

Test report No:

NIE: 55114RMV.003

Test Report

LoRa Alliance End Device Certification Requirements

Identification of item tested.....:	Localisation Tracker
Trade	Invoxia
Model and /or type reference.....:	LWT - Roadie
Final HW version	01
Final SW version	1.24.0 US
Features.....:	LoRaWAN, Bluetooth, NFC communication.
Manufacturer.....:	INVOXIA 2 rue Maurice hartmann 92130 Paris,France
Test method requested	Lora Alliance Certification Program
Standard	LoRaWAN v1.0.1
Test procedure(s)	LoRa Alliance End-Device Certification Requirements for US 915VMHz ISM Band Devices.v1.5
Approved by (name / position & signature).....:	Fernando Cerván LoRa Lab Responsible
Date of issue	2018-03-21

LoRa accredited Test Lab



Index

Competences and guarantees.....	3
General conditions.....	3
Uncertainty.....	3
Usage of samples.....	3
Test sample description.....	4
Aplicant.....	4
Testing period.....	4
Environmental conditions.....	4
Remarks and comments.....	4
Testing verdicts.....	4
Appendix A – Test result.....	5
Appendix B – Test Systems.....	7
Appendix C – ICS.....	9
Appendix D – IXIT.....	11
Appendix E – Photographs.....	13

Competences and guarantees

DEKRA Testing and Certification, S.A.U. is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification, S.A.U. has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification, S.A.U. guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification, S.A.U. at the time of performance of the test.

DEKRA Testing and Certification, S.A.U. is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA Testing and Certification, S.A.U.

General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA Testing and Certification, S.A.U.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification, S.A.U. and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA internal document PODT000.

Usage of samples

Samples undergoing test have been selected by: Telit.

Following samples have been used:

Control N°	Description	Model	HW version	SW version	Serial N°	Date of reception
55114_2.1	LoRa Device	LWT - Roadie	01	1.24.0 US	DEVEUI: 18:b7:9e:ff:00:06:1b:40	2018-03-20

All Samples have undergone total or partially the test(s) specified in subclause “Test method requested”.

Test sample description

The test sample consists of a localization tracker.

Applicant

INVOXIA

2 rue Maurice Hartmann

92130 Paris, France

Testing period

The performed test started on 2018-03-20 and finished on 2018-03-21.

Environmental conditions

The testing has been performed within the following limits:

	NORMAL
Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 25 % Max. = 75 %

Remarks and comments

The tests have been performed by the technical personnel: José Gómez Ramírez.

Testing verdicts

Not applicable	N/A
Pass	P
Fail	F
Not measured	N/M

Appendix A – Test result

Test Results

US 915MHz ISM

TC ID	Packet Version	Name	Date	Test sample	Result
000	5.0.0	Test Mode activation	2018-03-20	55114_2.1	PASS
001	5.0.0	Over The Air Activation	2018-03-20	55114_2.1	PASS
002	5.0.0	Test Application Functionality	2018-03-20	55114_2.1	PASS
003	5.0.0	AES encryption and message integrity	2018-03-20	55114_2.1	PASS
004	5.0.0	Downlink error rate	2018-03-20	55114_2.1	PASS
005	5.0.0	Downlink window timing	2018-03-20	55114_2.1	PASS
006_A	5.0.0	Frame sequence number	2018-03-20	55114_2.1	PASS
006_B	5.0.0	Downlink sequence number rollover	2018-03-20	55114_2.1	PASS
007	5.0.0	DevStatusReq MAC command	2018-03-20	55114_2.1	PASS
008_A	5.0.0	MAC commands	2018-03-20	55114_2.1	PASS
008_B	5.0.0	MAC commands in App-Payload & Fopts	2018-03-20	55114_2.1	PASS
009	5.0.0	NewChannelReq MAC command	2018-03-20	55114_2.1	PASS
010	5.0.0	Confirmed packets	2018-03-20	55114_2.1	PASS
011	5.0.0	RXParamSetupReq MAC command	2018-03-20	55114_2.1	PASS
012	5.0.0	RX1 Receive window test	2018-03-20	55114_2.1	PASS
013	5.0.0	RX2 Receive window test	2018-03-20	55114_2.1	PASS
014	5.0.0	RXTimingSetupReq MAC command	2018-03-20	55114_2.1	PASS
015_A	5.0.0	LinkADRReq MAC command	2018-03-21	55114_2.1	PASS
015_B	5.0.0	LinkADRReq MAC command	2018-03-20	55114_2.1	PASS
016	5.0.0	RX Oversized payload	2018-03-20	55114_2.1	PASS
017	5.0.0	Maximum Allowed Payload	2018-03-20	55114_2.1	PASS

Appendix B – Test Systems

ITEM	EU868 SETUP	
TEST SYSTEM	TACS4 LPWAN	
	Equipment	Serial N°
	Semtech GW IOT SX1301 Starter Kit	PCB_E340V02A 0915
	Equipment	
	TACS4 LORA GUI v1.10.0 TACS4 LORA Reporting Module v1.5.0 TACS4 LORA Technology Package v5.0.0_r1 TACS4 LORA ED Certification EU v1.4	

Appendix C – ICS

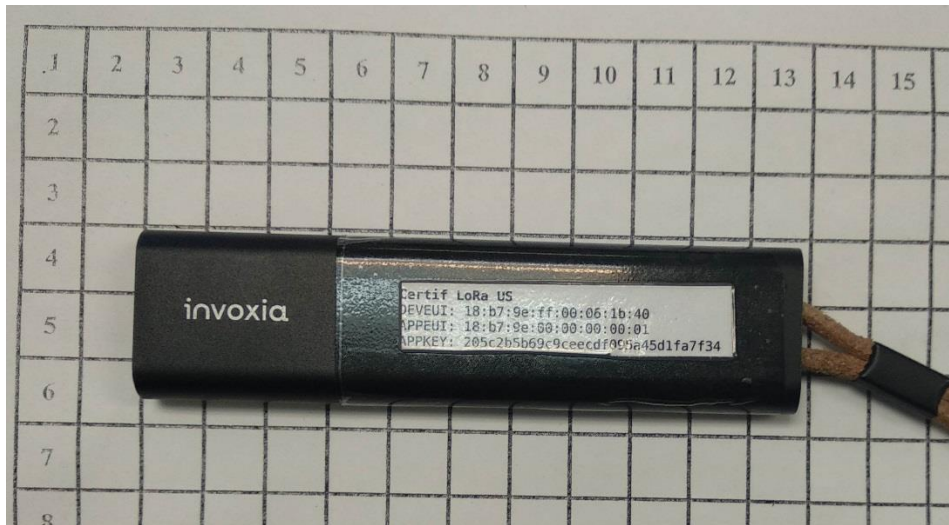
NAME	DESCRIPTION	VALUE
C_ED_ADR	DUT supports Adaptative Data Rate (ADR) feature	TRUE
C_ED_ADR_BLOCK	DUT supports LinkADRDRReq block	FALSE
C_ED_DL_CHAN	DUT supports DIChannelReq MAC Command	FALSE
C_ED_OTAA	DUT supports Over-The-Air Activation (OTAA) mechanism	TRUE
C_ED_RESET	DUT needs a reset after deactivating Test Mode	TRUE
C_ED_TM_TRI	DUT supports Trigger Join request command in Test Mode.	TRUE

Appendix D – IXIT

NAME	DESCRIPTION	VALUE
I_ED_APPEUI	Application identifier (AppEUI)	18:B7:9E:00:00:00:01
I_OTAA_APPKEY	Application Key (AppKey)	205c2b5b69c9ceecdf095a45d1fa7f34

Appendix E – Photographs

FRONT VIEW



REAR VIEW

