DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29 507 456

LoRa accredited Test Lab

Test report No:
NIE: 69971RLR.001

Test report
LoRa Alliance End Device Certification Requirements

(*) Identification of item tested	RAK7201 Button
(*) Trademark	Shenzhen RAKwireless Technology Co.,Ltd.
(*) Model and /or type reference tested	RAK7201 Button
(*) Other identification of the product	Final HW version: N/A Final FW Version: 1.0.3
(*) Features	Supports DlChannelReq Command processing. Test sample description. Activation modes: OTAA and ABP.
Manufacturer	Shenzhen RAKwireless Technology Co.,Ltd. Room 506, Building B, New Compark, Pingshan First Road, Taoyuan Street, Nanshan District, Shenzhen, Guangdong, China
Test method requested, standard	Lora Alliance Certification Program
Standard……..:	LoRaWAN v.1.0.2
Test Specification……...:	LoRa Alliance End-Device Certification Requirements for EU863-870 V1.6
LoRa_Certification_Questionnaire……..:	LoRaWAN_Certification_Questionnaire_V2.2
Test procedure(s)……...:	PELR000_00 LoRa Alliance Testing Procedure
Supported Optional Features	
Adaptive Data Rate (ADR)……..:	Yes
SF7BW250…….……...:	Yes
FSK50 ……..……..:	Yes
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Noemí Pérez Dans IoT Lab. Manager Noemi Perez Dans Firmado digitalmente por Noemi Perez Dans Fecha: 2022.01.20 14:09:10 +01'00'
Date of issue	2022-01-13
Report template No	FLR001_05 (*) "Data provided by the client"

Index

Competences and guarantees 3
General conditions 3
Uncertainty 4
Data provided by the client 4
Usage of samples 4
(*)Test sample description 4
Identification of the client 4
Testing period and place 5
Document history 5
Remarks and comments 5
Means of testing identification 5
Test setup 6
Testing verdicts 6
Appendix A: Test results 7
Appendix B: ICS 9
Appendix C: Photographs 10

Competences and guarantees

DEKRA Testing and Certification S.A.U is a LoRa Alliance accredited Test Lab 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 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

N/A

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of item tested ", "Trademark", "Model and /or type reference tested", "Other identification of the product", "Features" and "Test Sample Description").

2. The ICS provided by the customer via the LoRa_Certification_Questionnaire_V2.2 and used for testing are indicated in Annex B.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: Shenzhen RAKwireless Technology Co., Ltd.

Sample M/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
69971B/001	RAK7201 WisNode Button 4K	RAK7201	N/A	2021-10-1
	1.0.3			2021-11-19

1. Sample M/01 has undergone the test(s) specified in subclause "Test method requested".

(*)Test sample description

The RAK7201 WisNode Button 4K is a remote wireless trigger device. It supports user-defined functions for each key and is based on the LoRaWAN 1.0.2 protocol. Supported LoRaWAN bands are IN865, EU868, AU915, US915, KR920, and AS923.
The Button is suitable for a variety of Smart Home applications: Entertainment system control,Control of Lights, as a Snooze Button for your Alarms, or a Remote trigger. With long range wireless connectivity, amazing battery life, and four programmable buttons, there are a ton of applications this device can fit into.

Identification of the client

Shenzhen RAKwireless Technology Co.,Ltd.

Room 506, Building B, New Compark,
Pingshan First Road, Taoyuan Street, Nanshan District,
Shenzhen, Guangdong, China

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2022-01-10
Date (finish)	2022-01-10

Document history

Report number	Date	Description
69971RLR.001	2022-01-13	First release (test report without logs to be uploaded to the public area of LoRa Alliance website) **EU Band**
69971RLR.002	2022-01-13	Identical test report as '69971RLR.001' with the addition of the test logs. **EU Band**
69971RLR.003	2022-01-13	First release (test report without logs to be uploaded to the public area of LoRa Alliance website) **US Band**
69971RLR.004	2022-01-13	Identical test report as '69971RLR.003' with the addition of the test logs **US Band**

Remarks and comments

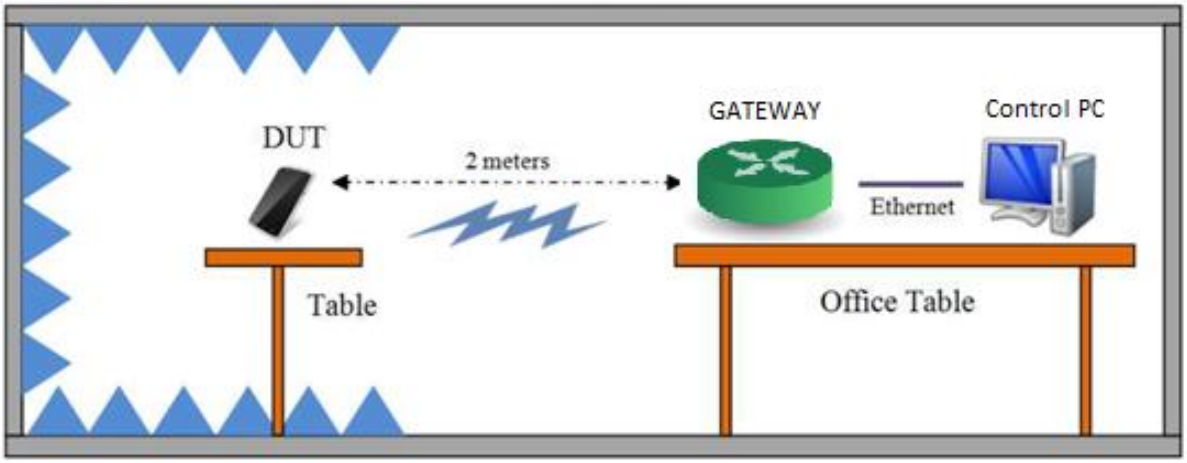
Testing was performed by: Martín Sánchez Revuelta

Means of testing identification

TEST SYSTEM	BANCO LORA V1.0.2 (EU / AS / IN / KR)		
Control Number	5866		
Control PC	Control No.	Equipment	Serial No.
	7218	Control PC with TACS4 version v2.0.0_R1 and Technology Packet Version LORA v.6.5.0_R1	-
LoRa Gateway	7342	Semtech Gateway	-
RF Shielded box	5387	RF Shielded Test Enclosure	0001114
Test Setup:	See "Test Setup" section.		

Test setup

This Test Setup has been used for testing:



Testing verdicts

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

Appendix A: Test results

Test campaign report

The abbreviations used in the header row of the test campaign report tables are:

Test Case ID :	As it can be found on the standard
Verdict:	Records the verdict assigned to each Test Case run to completion (Testing verdicts)
Date:	Date of the beginning of the execution.
Observations:	Provides a reference to additional information relevant to the test presented in "Test Setup" section.
Logs:	See 69971RLR.002

Test Case ID	Description	Date	Verdict	Observations
TP_A_EU868_ED_MAC_BV_000 (ABP)	Device Activation (ABP)	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_000 (OTA)	Device Activation (OTA)	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_001_A	Over The Air Activation	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_001_B	Activation by Personalization	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_002	Test application functionality	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_003	AES encryption and message integrity	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_004	Downlink error rate	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_005	Downlink window timing	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_006	Frame sequence number	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_007	DevStatusReq MAC command	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_008	MAC commands	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_009	NewChannelReq MAC command	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_010	DlChannelReq MAC command	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_011	Confirmed packets	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_012	RXParamSetupReq MAC command	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_013	RXTimingSetupReq MAC command	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_014_A	LinkADRReq MAC command Part 1	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_014_B	LinkADRReq MAC command Part 2	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_015_A	RX1 Receive window test (Part 1)	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_015_B	RX1 Receive window test (Part 2)	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_016	RX2 Receive window test	10/01/2022	P	
TP_A_EU868_ED_MAC_BV_017	RX1 and RX2 simultaneous frames	10/01/2022	P	

TP_A_EU868_ED_MAC_BV_018	TXParamSetupReq MAC command	10/01/2022	P
TP_A_EU868_ED_MAC_BV_019	LinkCheckReq MAC command	10/01/2022	P
TP_A_EU868_ED_MAC_BV_020	RX Oversized payload	10/01/2022	P
TP_A_EU868_ED_MAC_BV_021	Maximum Allowed Payload	10/01/2022	P

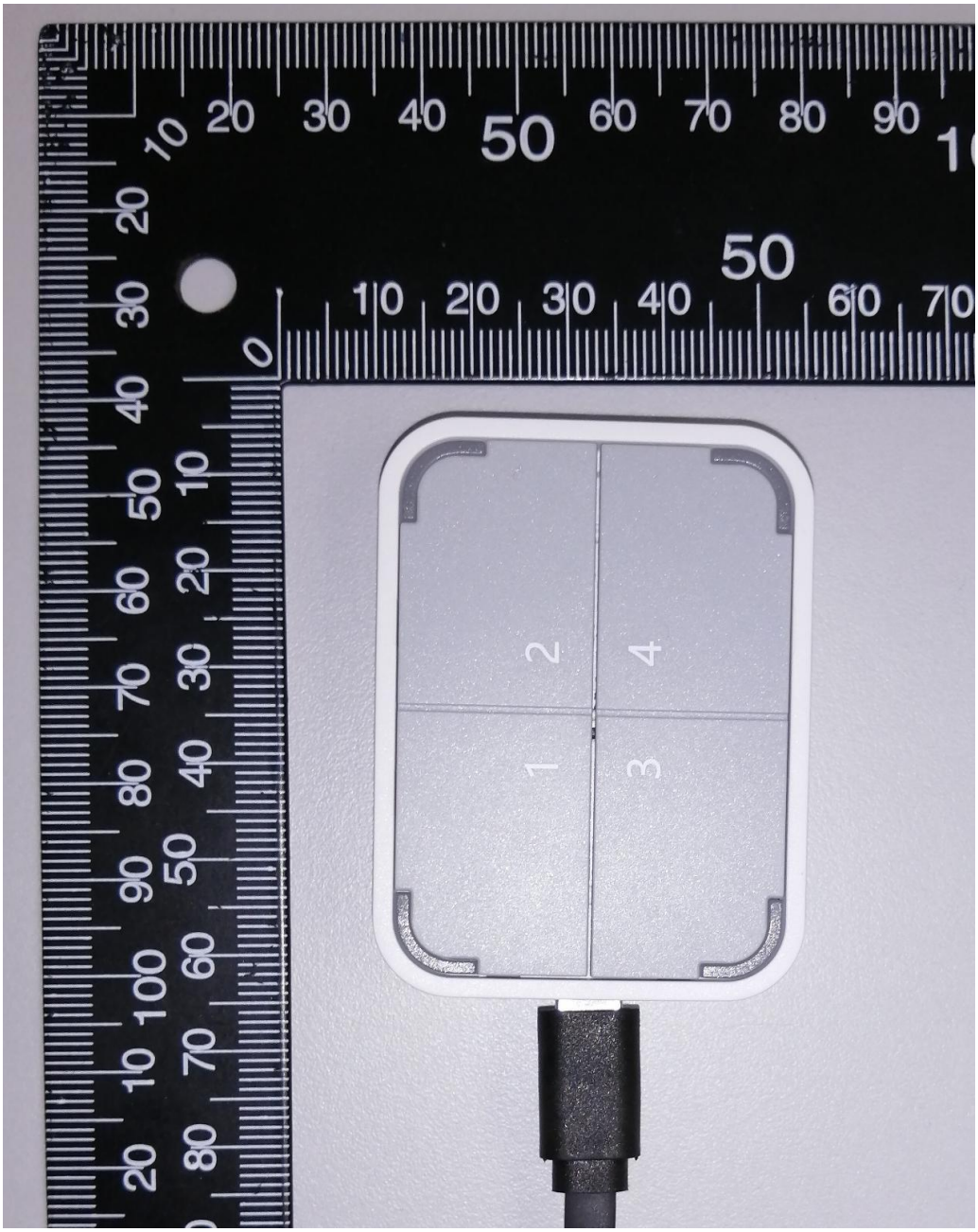
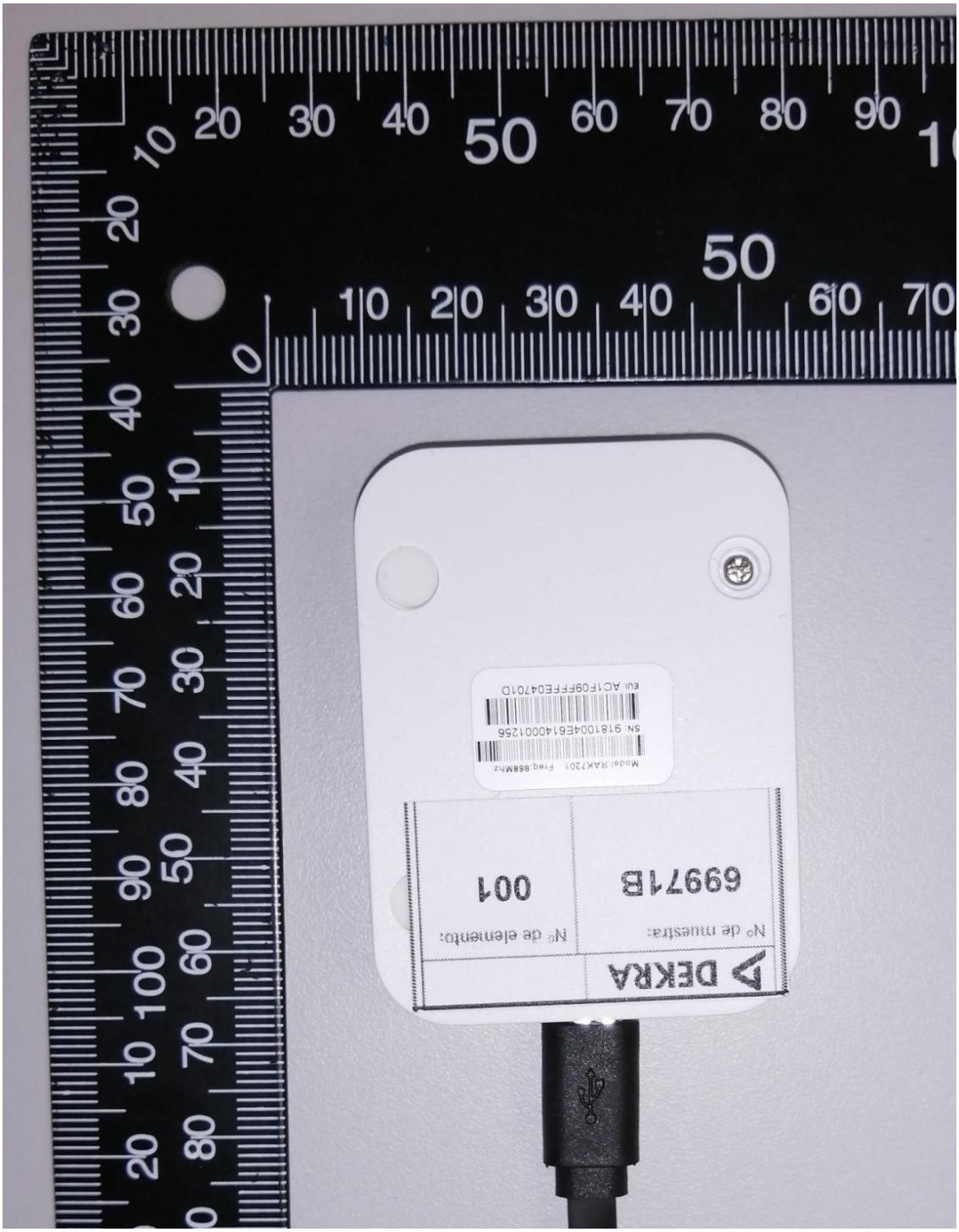
Appendix B: ICS

Implementation Conformance Statement (ICS)

Name	Title	Groupname	Mandatory	Value
C_ISM_AS923	DUT works in Asia 923MHz ISM Band	BAND	C	FALSE
C_ISM_AU915	DUT works in Australia 915MHz ISM Band	BAND	C	FALSE
C_ISM_EU868	DUT works in EU 868MHz ISM Band	BAND	C	TRUE
C_ISM_IN865	DUT works in India 865-867 MHz ISM Band	BAND	C	FALSE
C_ISM_KR920	DUT works in South Korea 920MHz ISM Band	BAND	C	FALSE
C_ISM_RU864	DUT works in Rusia 864MHz ISM Band	BAND	C	FALSE
C_ISM_US915	DUT works in USA 915MHz ISM Band	BAND	C	FALSE
C_CERT_101	DUT implements LoRaWAN v1.0.1 certification requirements	CERT	C	FALSE
C_CERT_102rB	DUT implements LoRaWAN v1.0.2rB certification requirements	CERT	C	TRUE
C_CERT_103rA	DUT implements LoRaWAN v1.0.3rA (Class B) certification requirements	CERT	C	FALSE
C_CERT_104	DUT implements LoRaWAN v1.0.4 certification requirements	CERT	C	FALSE
C_CLASS_A	DUT is a Class A Device (All End Devices)	CLASS	C	TRUE
C_CLASS_B	DUT is a Class B Device (Beacon Mode)	CLASS	C	FALSE
C_ED_ADR	DUT supports Adaptive Data Rate (ADR) feature	ED	C	TRUE
C_ED_ADR_BLOCK	DUT supports LinkADRReq block	ED	C	TRUE
C_ED_CONFIRMED_FRAME_RETRANSMIT	DUT support uplink re-transmissions for Confirmed frames	ED	C	TRUE
C_ED_CW	DUT supports Continuous Wave command	ED	C	TRUE
C_ED_DL_CHAN	DUT supports DlChannelReq MAC command	ED	C	TRUE
C_ED_JOIN_ISSUES_REMEDIES_100	DUT supports the Lorawan-1.0.x-join-synch-	ED	C	FALSE
C_ED_OTAA	DUT supports Over-The-Air Activation (OTAA) mechanism	ED	C	TRUE
C_ED_RESET	DUT needs a reset after deactivating Test Mode	ED	C	FALSE
C_ED_TM_TRI	DUT supports Trigger Join Request command in Test Mode	ED	C	TRUE

Appendix C: Photographs

Front view



Rear view