





Test report No:

22B0886R-A332250010S-A

Test Report

LoRa Alliance End Device Certification Requirements

Identification of item tested..... :	PARISE Smart Water Meter
Trademark	LAISON
Model and/or type reference	LXSZ
Final HW version..... :	745
Final FW version..... :	450
Final SW version..... :	450
Features	LoRa Alliance End Device Certification Requirements for EU 868MHz ISM Band Devices
Manufacturer	Hangzhou Laison Technology Co., Ltd. No.525 Xixi Road, Hangzhou, 310023, China
Test method requested..... :	LoRa Alliance Certification
Standard	LoRa Alliance End Device Certification Requirements for EU 868MHz ISM Band Devices Ver.1.6
Test According LoRaWAN™ Spec	V1.0.2
Supported optional features..... :	YES
Adaptive Data Rate..... :	YES
→ SF7BW250	YES
→ FSK.....	YES
Test procedure(s)	TERD-WTS-TP-02 – LORA_TSSTP_PART_1_v1.0
Summary	IN COMPLIANCE
Approved by..... :	Jimmy Chang Manager  2022-12-21
Test Engineer	Gavin Yang Project Engineer  2022-12-21
ATH Identifier	DEKRA – TWN
Date of issue..... :	2022-12-21
Report Revision..... :	01

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Uncertainty

N/A

Usage of samples

Samples undergoing test have been selected by: Hangzhou Laison Technology Co., Ltd.

DUT Label ID	PSR-2032198
Model or type reference	LXSZ
Serial number	0120200391353
HW version	745
SW version	450
FW version	450
Description of test sample	PARISE Smart Water Meter supports smart features, like Remote Meter Recharge in STS Prepaid mode, Remote Reading and Valve Control in Postpaid mode, etc. PARISE smart meter is applicable for mobile money payment solutions and online water consumption checking via LAISON APP for each customer. It could support leakage detection, illegal connection detection to reduce the Non-Revenue Water rate.
Date of reception	2022-12-08

Identification of the client

Company name	Hangzhou Laison Technology Co., Ltd.
Address	No.525 Xixi Road, Hangzhou, 310023, China

Testing period

Start Date	2022-12-13
Finish Date	2022-12-13

The tests have been performed at DEKRA Testing and Certification, Co., Ltd. (Taiwan)

Environmental conditions

The testing has been performed within the following limits:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 80 %

Revision History

Revision	Modification Date	Description
01	NA	Initial Report

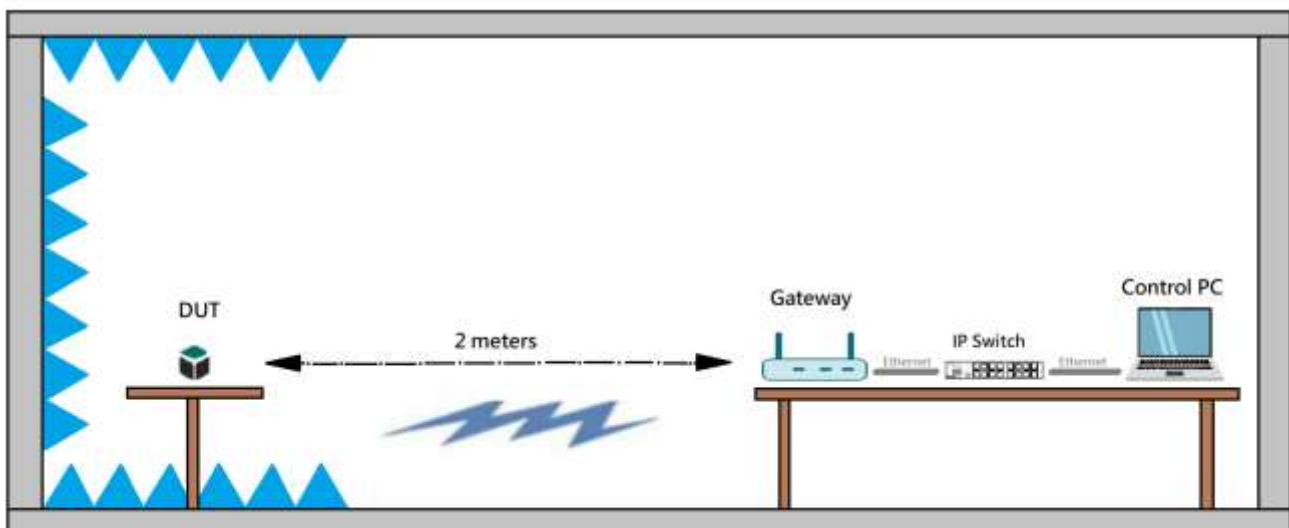
Means of testing identification

Following equipment was used to perform the testing:

EU868 SETUP			
Test System	LoRaWAN Certification Test System		
Hardware:	Control No.	Equipment	Serial No.
	0742	Control PC with LCTT installed	GANXCV193086433
	0741	CoreCell Gateway	-
Software:	0559	LoRaWAN LCTT - UI version: 2.3.0 - Reporting Module v1.5.0	
	0560	Technology Package: LCTT v3.8.0_R1	

Test setup

The configuration used for Test Cases in nominal temperature conditions was the following one:



Appendix A – Test result

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

- Test Case ID: As it can be found on the LCTT.
- Description: As it can be found on the LCTT and Test Standard.
- Date: Date of the beginning of the execution.
- Verdict: Records the verdict assigned to each Test Case run to completion. Following verdicts are possible:
 - PASS**: If the Test case passed.
 - FAIL**: If the Test case failed.
 - INCONC**: Inconclusive. The test case did not reach a PASS or FAIL verdict.
 - NA**: Not applicable.
- Observations: Provides a reference to additional information relevant to the test (when required).

Activation Mode: OTAA

Test Case ID	Description	Verdict	Date	Observations
TP_A_EU868_ED_MAC_BV_000	Device activation	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_001_A	Over the Air activation	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_002	Test application functionality	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_003	AES encryption and message integrity	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_004	Downlink Error Rate	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_005	Downlink window timing	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_006	Frame sequence number	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_007	DevStatusReq MAC command	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_008	MAC commands	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_009	NewChannelReq MAC command	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_010	DlChannelReq MAC command	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_011	Confirmed packets	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_012	RXParamSetupReq MAC command	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_013	RXTimingSetupReq MAC command	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_014_A	LinkADRReq MAC command (part 1)	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_014_B	LinkADRReq MAC command (part 2)	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_015_A	RX1 Receive window test (part 1)	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_015_B	RX1 Receive window test (part 2)	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_016	RX2 Receive window test	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_017	RX1 and RX2 simultaneous frames	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_018	TXParamSetupReq MAC command	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_019	LinkCheckReq MAC command	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_020	RX Oversize payload	Pass	2022-12-13	
TP_A_EU868_ED_MAC_BV_021	Maximum allowed payload	Pass	2022-12-13	

Appendix B – ICS

Item	Name	Value
1	DUT works in EU 868MHz ISM Band	TRUE
2	DUT implements LoRaWAN v1.0.2rB certification requirements	TRUE
3	DUT implements LoRaWAN v1.0.4 certification requirements	FALSE
4	DUT is a Class A Device (All End Device)	TRUE
5	DUT is a Class B Device (Beacon Mode)	FALSE
6	DUT is a Class C Device (Continuously Listening)	FALSE
7	DUT supports Adaptive Data Rate (ADR) feature	TRUE
8	DUT supports LinkADRRReq block	TRUE
9	DUT supports uplink re-transmissions for Confirmed frames	TRUE
10	DUT supports DlChannelReq MAC command	TRUE
11	DUT supports the Lorawan-1.0.x-join-synch-issues-remedies-v1.0.0	FALSE
12	DUT supports Over-The-Air Activation (OTAA) mechanism	TRUE
13	DUT permanent enabled Class C	FALSE
14	DUT needs a reset after deactivating Test Mode	FALSE
15	DUT supports SCHC	FALSE
16	DUT supports Trigger Join Request command in Test Mode	TRUE

Appendix C – IXIT

Item	Name	Value
1	End-Device Address (DvAddr)	NA
2	Application Session Key (AppSKey)	NA
3	Network Session Key (NwkSKey)	NA
4	Application Identifier (AppEUI)	0102030405060708
5	Frame counter size	32 bits
6	Max number of Confirmed re-transmissions	3
7	Maximum Transmission Power	20 dBm
8	Minumum Transmission Power	2 dBm
9	End-device Address assigned during activation (DevAddr)	00000000
10	Application Key (AppKey)	000102030405060708090A0B0C0D0E0F
11	Device Identifier (DevEUI)	00956906000042F8

Appendix D – General Parameters

Item	Name	Value
GW	Default TX Antenna	0
	List of IP address of the GWs	192.168.31.228;
	Gateway model	CoreCell
	Number of supported channels in Gateway	8 Channels
	Default TX Power	14 dBm
	Gateway Socket Port	1780
	Gateway supports LR-FHSS	FALSE
	Size of the reception window	100
	Number of GWs	1
TM	General Timer	90 min
	Network Server IP Address	192.168.31.16
	Testing Category	Certification Testing
	Verbosity level for Logs	TRUE
EU868	EU868 Beacon default frequency	869.525 MHz
	EU868 Beacon DR	SF9BW125
	EU868 Class B default pingSlot frequency	869.525 MHz
	EU868 Class C Response Timeout	8.0 s
	EU868 Join_Accept_Delay1	5.0 s
	EU868 Join_Accept_Delay2	6.0 s
	EU868 Receive_Delay1	1.0 s
	EU868 Receive_Delay2	2.0 s
	EU868 RX2 Receive Window DR	SF12BW125
	EU868 RX2 Receive Window Frequency	869.525 MHz

Appendix E - Photographs

FRONT



REAR

