

Test Report

Telecommunications Technology Association

Address: 815, Daewangpangyo-ro, Sujeong-gu, Seongnam-city,
Gyeonggi-do, 13449, Republic of Korea

Tel : +82-31-780-9117

Fax : +82-70-4705-0909

E-mail : ldh7547@tta.or.kr

<http://www.tta.or.kr>

Report No.: TTA-21-1022



1. Client:

o Name: SAMILCTS CO.,LTD

o Address: 8F, Woolim Lion's Valley 3cha, Dunchon-daero 388beon-gil 24, Jungwon-gu, Seongnam-si, Gyeonggi-do,
13403, Republic of Korea

o Telephone: +82-70-7094-9000

2. Test Sample:

Product Name	Hardware Version	Software Version
SMARTGUARD (SCS-0200)	RevB.0	LC.AS.16.29

3. Date of Test:

o Date of first test : June 10, 2021

o Date of last test : June 10, 2021

4. Test Location: 815, Daewangpangyo-ro, Sujeong-gu, Seongnam-city, Gyeonggi-do, 13449, Republic of Korea

5. Test Method Used: Refer to section 2.3 of the attached test report.

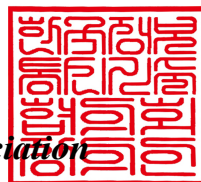
6. Test Results: Refer to section 4 of the attached test report.

* The results of this test are for the test item only provided by client and prohibited to use for any other purpose.

Affirmation	Written By:		Approved By:	
	<u>Mr. Dongho Lee</u>		<u>Mr. Jong-min Lee</u>	

President

Telecommunications Technology Association



June 18, 2021





Test Report

Report No.: TTA-21-1022

Test Name : **LoRa Alliance Certification**
Test Scope : **LoRa End Device Certification AS923**
Product Category : **LoRa End-Device**
Product Name : **SMARTGUARD**
Product ID : **SCS-0200**

This report shall not be reproduced except in full without the written permission of the Test Laboratory and shall not be quoted out of context.



TABLE OF CONTENTS

- 1. GENERAL INFORMATION..... 4**
 - 1.1. ADMINISTRATIVE DATA OF TEST FACILITY..... 4**
 - 1.2. ADMINISTRATIVE DATA OF CLIENT 4**
 - 1.3. DESCRIPTION OF DUT (DEVICE UNDER TEST) 4**
- 2. CONFIGURATION OF TEST SETUP 5**
 - 2.1 TEST SCOPE 5**
 - 2.2 DESCRIPTION OF TEST SET-UP..... 5**
 - 2.2.1. Test conditions..... 5*
 - 2.2.2. Test Configuration..... 5*
 - 2.2.3. Limits and reservations..... 5*
 - 2.3 REFERENCED DOCUMENTS 5**
 - 2.3.1 Test Specification..... 5*
- 3 SUMMARY OF ALL PERFORMED TESTS..... 6**
- 4. TEST RESULTS 7**
 - 4.1 LoRa END DEVICE CERTIFICATION AS923 (OTAA)..... 7**



※ You can verify the forgery and authenticity by the barcode at the end of this document.

1. General Information

1.1. Administrative Data of Test Facility

Company Name	TTA
Address	815, Daewangpangyo-ro, Sujeong-gu
City	Seongnam-city, Gyeonggi-do
Postal code	13449
Country	Republic of Korea
Telephone	+82-31-780-9117
Fax	+82-70-4705-0909
Responsible person	Dongho Lee
e-mail	ldh7547@tta.or.kr
Date of Testing	2021.06.10.

1.2. Administrative Data of Client

Company Name	SAMILCTS CO.,LTD
Address	8F, Woolim Lion's Valley 3cha, Dunchon-daero 388beon-gil 24, Jungwon-gu
City	Seongnam-city, Gyeonggi-do
Postal code	13403
Country	Republic of Korea
Telephone	+82-70-7094-9000
Fax	+82-31-720-5168
Contact person	William Cho
e-mail	ihcho001@samilcts.com

1.3. Description of DUT (Device Under Test)

Product Name	SMARTGUARD
Product ID	SCS-0200
Product Category	LoRa End-Device
Hardware version	RevB.0
Software version	LC.AS.16.29
Chipset & Module	Semtech SX1261
Test According LoRaWAN spec	v1.0.2
LoRaWAN physical regional	AS923
LoRaWAN Classes	Class A
Adaptive Data Rate(ADR)	Support
Optional data rates supported	DR6(SF7BW250), DR7(FSK50)
DIChannelReq	Support
Block of LinkADRReq	Support
Activation for OTAA	OTAA DevEUI: 0000000001010101, AppEUI: 0000000001010101 AppKey: 112233445566778899aabbccddeeff00
Output Power Range (dBm)	0 ~ 14



※ You can verify the forgery and authenticity by the barcode at the end of this document.

2. Configuration of Test Setup

2.1 Test Scope

Certification Programs	Support
LoRa EndDevice Certification AS923	Yes

2.2 Description of Test Set-up

2.2.1. Test conditions

Nominal

Temperature in the range 15 °C to 35 °C	Yes
Relative humidity in the range 15 % to 80 %	Yes

2.2.2. Test Configuration

2.2.2.1. Test Bed Components

Type	Manufacturer	Product	Version
Test Solution	DEKRA	TACS4 LPWAN	LORA v6.2.0_R1
Gateway	Semtech	IOT922STK1-8	Packet Forwarder v2.2.1

2.2.3. Limits and reservations

This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of the Test Laboratory.

2.3 Referenced Documents

2.3.1 Test Specification

NO	Title	Version
1	LoRa Alliance® End-Device Certification Requirements for AS923MHz ISM Band Devices	1.1.1



3 Summary of All Performed Tests

Program	Date	Result	Comment
LoRa End Device Certification AS923 (OTAA)	2021.06.10.	PASS	



※ You can verify the forgery and authenticity by the barcode at the end of this document.

4. Test Results

4.1 LoRa End Device Certification AS923 (OTAA)

Test ID	Test Case	Date	Result
2.1	Test mode activation	2021.06.10.	PASS
2.2	Test application functionality	2021.06.10.	PASS
2.3	Over The Air activation	2021.06.10.	PASS
2.4	Downlink error rate	2021.06.10.	PASS
2.5	Cryptography	2021.06.10.	PASS
2.6	Downlink window timing	2021.06.10.	PASS
2.7	Frame sequence number	2021.06.10.	PASS
2.8	DevStatusReq MAC command	2021.06.10.	PASS
2.9	MAC commands	2021.06.10.	PASS
2.10	NewChannelReq MAC command	2021.06.10.	PASS
2.11	DIChannelReq MAC command	2021.06.10.	PASS
2.12	Confirmed packets	2021.06.10.	PASS
2.13	RXParamSetupReq MAC command	2021.06.10.	PASS
2.14	RXTimingSetupReq MAC command	2021.06.10.	PASS
2.15	LinkADRRReq MAC command	2021.06.10.	PASS
2.16	Packet error rate RX1	2021.06.10.	PASS
2.17	Packet error rate RX2	2021.06.10.	PASS
2.18	TxParamSetupReq MAC command	2021.06.10.	PASS

- End of Test Report -



※ You can verify the forgery and authenticity by the barcode at the end of this document.