

TEST REPORT

Report number:

DRTTEC2608-0040

Issue Date:

2026-08-20

Applicant

- Company Name : THINKWARE Corporation

- Address : 9FL., Samwhan Hipex, 240, Pangyoyeok-ro, Bundang-gu
Seongnam-si, Gyeonggi-do, Republic of Korea**Equipment under test**

- Product Name : HYBEOFFLOLSV101

- Model Name : EVAN OFFICIAL LIGHT STICK VER.1

Date of Test : 2026.08.03 ~ 2026.08.10

Laboratory

- Company Name : Dt&C Co., Ltd.

- Address : 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si,
Gyeonggi-do, Korea 449-935

Test Results : PASS

The results in this reports are applicable only to the samples tested.

This report shall not be re-produced except in full without the written approval of
Dt&C Co., Ltd.

Tested Engineer;

TaeHoon Kwon

Approval Person;

HyunSu Son

1. Summary of Test

1. Purpose of test

Ordinance on Technical Standards Conformity Certification of Specified Radio Equipment
2.4GHz Band wide band low power data communication System

2. Standards

Certification Ordinance Article 2 Clause 1 Item19

1) Test Methods

Ministry of Internal Affairs and Communications Notification Article 88 Appendix 43

2) Deviation from standards

None

3. List of applied test to the EUT

Article 88 Appendix 43	Classification of EUT	Condition	Result
1	Voltage fluctuation	Conducted	PASS
2	Frequency Tolerance	Conducted	PASS
3	Occupied Bandwidth	Conducted	PASS
4	Unwanted (Spurious) Emission Strength	Conducted	PASS
5	RF Output Power Tolerance	Conducted	PASS
6	Secondary Emitted Radio Wave Strength	Conducted	PASS
7	Carrier Sensing Function	Conducted	NA
8	Absolute Gain of Transmission Antenna	Conducted	NA
9	Angle Width of Principal Radiation from Transmission Antenna	Conducted	NA
10	Interference Prevention Function	Conducted	PASS
11	Hopping frequency dwell time	Conducted	NA

1) Test set up

Table-Top

2) Modification to the EUT by laboratory

None

2. Test Information

1. Applicant

THINKWARE Corporation

9FL., Samwhan Hipex, 240, Pangyoyeok-ro, Bundang-gu Seongnam-si, Gyeonggi-do, Republic of Korea

2. Product Name

HYBEOFFLOLSV101

3. Model Name

EVAN OFFICIAL LIGHT STICK VER.1

4. Serial number

Identical Prototype

5. Size

(W) 90 x (D) 90 x (H) 233 mm

6. Terminal limitation

-20°C to 50°C

7. RF Specification Frequency range

2480 MHz

8. Number of RF Channels

1 Channel

9. Modulation method

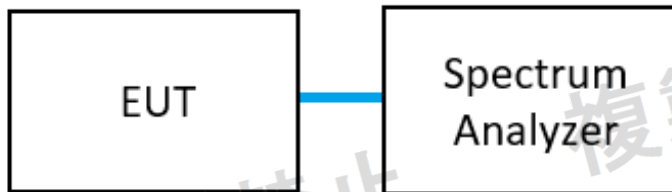
O-QPSK

10. Variation of the family model(s)

-

3. Configuration of equipment

1. Frequency tolerance, Spread bandwidth, Occupied Bandwidth, Unwanted(Spurious) emission strength, Secondary emitted radio wave strength
RF output power tolerance



4. List of Measuring Instruments

[illegible]

Note1: "X" は使用した測定機器です。
"X" used equipment.

Note2: 較正期限は、較正を行った日の翌月から起算して1年以内です。

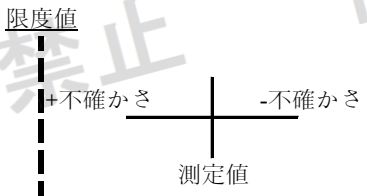
The validity of measurement equipment is one year from the first day of the following month of the calibration date.

Note3: 較正方法
Cal.Method

- イ)：国立研究開発法人情報通信研究機構（NICT）（以下「機構」という。）又は第百二条の十八第一項の指定較正機関（TELEC、インターテックジャパン、キーサイト）が行う較正
- ア)：Calibration conducted by the National Institute of Information and Communications Technology～NICT～ or a designated calibration agency under Article 102-18 paragraph (1)～ Telecom Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc～.
- ロ)：計量法（平成四年法律第五十一号）第百三十五条 又は第百四十四条 の規定に基づく校正（JCSS校正）
- バ)：Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992)～Japan Calibration Service System～
- ハ)：外国において行う較正であつて、機構又は第百二条の十八第一項の指定較正機関（TELEC、インターテックジャパン、キーサイト）が行う較正に相当するもの
- カ)：Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1)～ Telecom Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc～.
- ニ)：イからハまでのいずれかに掲げる較正等を受けたものを用いて行う較正等
- ド)：Calibration conducted by using other equipment that listed above from a) to c)

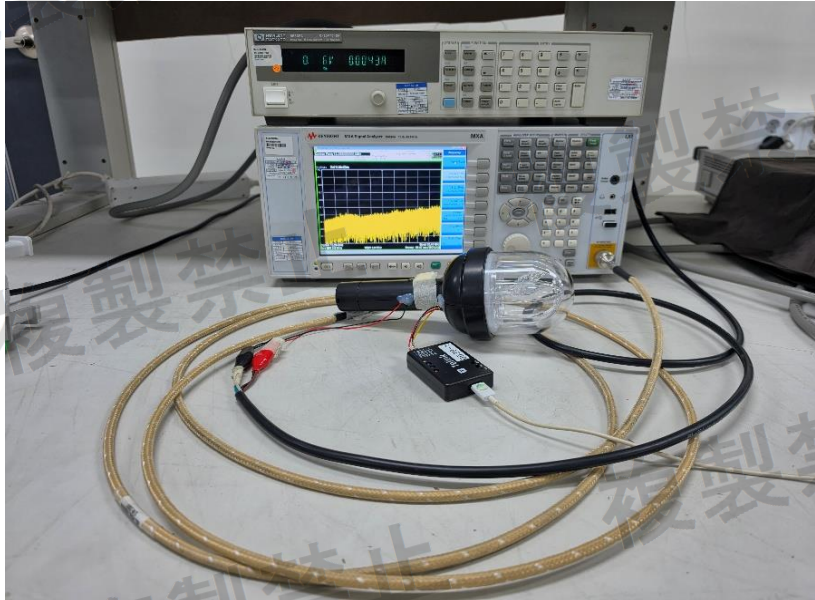
5. Uncertainty

Parameter	Uncertainty
Total RF power conducted	1.0 dB
Spurious emissions conducted	1.0 dB
Temperature	0.9°C
Humidity	3.0%

判定	測定データにおける不確かさの判断とその範囲	
適合	例 A 	測定結果と不確かさは与えられた 限度値内に入っています。 これを『適合』と呼びます。
	例 B 	完全には、限度値内でも限度値外 でもありません。 この場合の適合性については、確 実な結論を出すことは出来ません 。
不適合	例 C 	完全には、限度値内でも限度値外 でもありません。 この場合の適合性については、確 実な結論を出すことは出来ません 。
	例 D 	測定結果も不確かさも与えられた 限度値内に入っていません。 これは『不適合』と呼びます。

6. Configuration Photographs

Conducted Measurement Photo



7. Laboratory description

1. Location

- Name: Dt&C Co., Ltd.
- Address: 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935
- Phone: +81-031-321-2664
- Fax: +81-031-321-2855

2. Accreditation and Registration

1) VLAC

Accreditation No.: N/A

2) NVLAP

LAB CODE: N/A

3) BSMI

Laboratory Code: TL652

4) KOLAS

Registration number	Facility	Expiration date
KT393	Dt&C Co., Ltd.	2029-01-21

3. Test Site

1) Conducted test

Conducted Test-room

8. Test Results

Zigbee

Environment of Test Room	Test Date	2026.08.03 ~ 2026.08.10	
	Temperature	23 ~ 25	°C
	Humidity	45 ~ 46	%

Peak Antenna Gain	3.950	dBi
Declaration Output Power	1.003	mW/MHz
Declaration Output Power	0.013	dBm/MHz
E.I.R.P.	3.963	dBm/MHz
Input Power Voltage	4.500	VDC

Tested Circuit Insertion Loss		0.000	dB
Transmission Time	ON TIME	0.840	ms
	OFF TIME	1.610	ms
	Ratio	34.286%	%
Packet Type (Mode)		Not Applicable	mode
Transmit Speed		Not Applicable	MHz

Note: The insertion loss was corrected during the test.

Test Category ;	2.4GHz Band Wideband Low-Power Data Communication System_Zigbee		
The reason why the tests are performed only at rated voltage :	When the input voltage to receiver RF circuit varies below $\pm 1\%$ as the input voltage from the external power supply to the receiver varies $\pm 10\%$ (excluding power supply).		

Measurement Frequency		MHz	-	-	2480	Result	Limit	Note
Channel Number		Ch.	-	-	1	---	---	
Reading Frequency		MHz	-	-	2480.028	---	---	
Frequency Tolerance		ppm	-	-	11.394	PASS	±50×10 ⁻⁶ (50ppm)	
Occupied Bandwidth		MHz	-	-	2.346	PASS	26MHz or below	
RF Output Power		mW/MHz	-	-	1.0020	PASS	10mW/MHz	
RF Output Power Tolerance		%	-	-	-0.095	PASS	+20 %	
Tx Spurious Emission Strength	30 to 2387MHz	uW/MHz	-	-	0.003	PASS	2.5uW/MHz or below	
		MHz	-	-	2348.580	----		
	2387 to 2400MHz	uW/MHz	-	-	0.013	PASS	25uW/MHz or below	
		MHz	-	-	2396.789	----		
	2483.5 to 2496.5MHz	uW/MHz	-	-	4.467	PASS	25uW/MHz or below	
		MHz	-	-	2484.423	----		
	2496.5 to 12500MHz	uW/MHz	-	-	0.012	PASS	2.5uW/MHz or below	
		MHz	-	-	4959.110	----		
Rx Spurious Emission Strength	10 to 1000MHz	nW	-	-	0.006	PASS	4nW or below	
		MHz	-	-	880.903	----		
	1000 to 5000MHz	nW	-	-	0.340	PASS	20nW or below	
		MHz	-	-	4945.600	----		
	5000 to 12500MHz	nW	-	-	0.235	PASS	20nW or below	
		MHz	-	-	10926.690	----		
Interference Prevention Function		-----	-	-	Good	PASS		

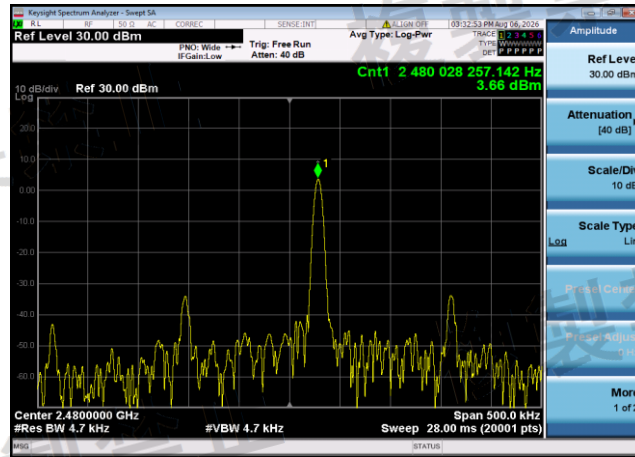
For Zigbee Plot Report [TELEC Zigbee Result_EVAN OFFICIAL LIGHT STICK VER.1]

9. Trace Data

9.1 Frequency Tolerance

Zigbee

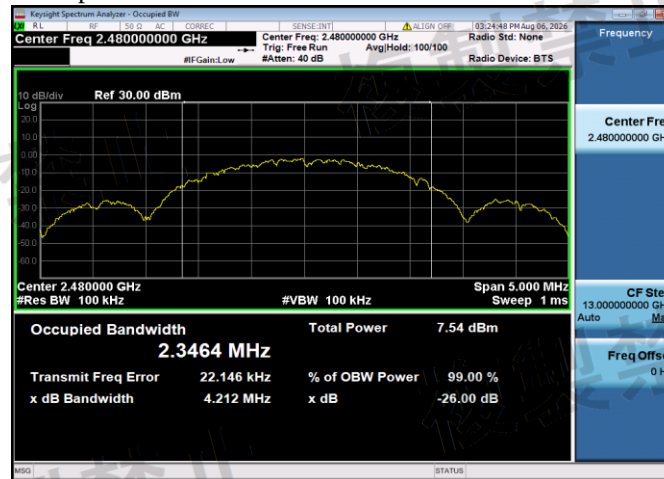
Ch.1: 2480 MHz



9.2 Occupied and Spread Bandwidth

Ch.1: 2480 MHz

Occupied Bandwidth



9.3 Tx Spurious Emission Strength

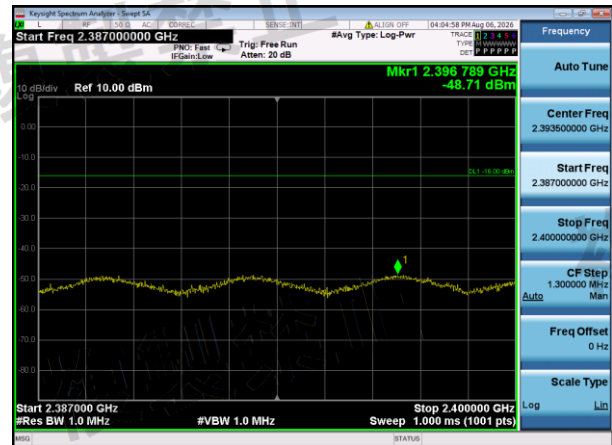
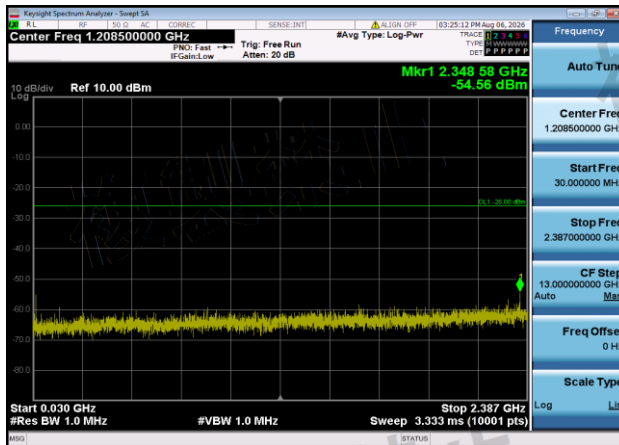
Ch.1: 2480 MHz

30.0 MHz ~ 2387.0 MHz

1.0 MHz

2387.0 MHz ~ 2400.0 MHz

1.0 MHz

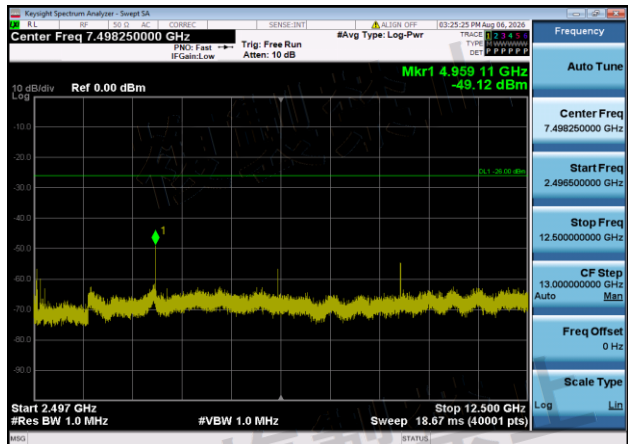
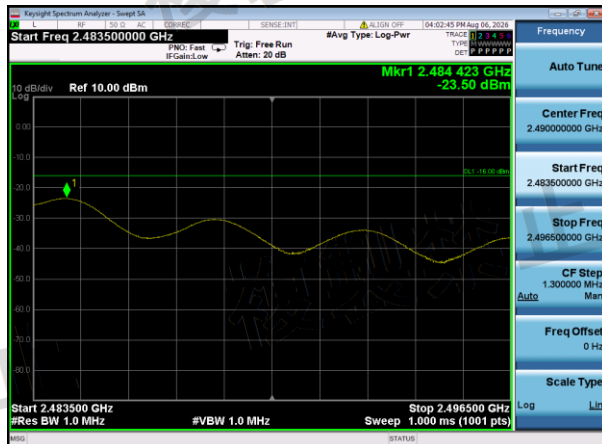


2483.5 MHz ~ 2496.5 MHz

1.0 MHz

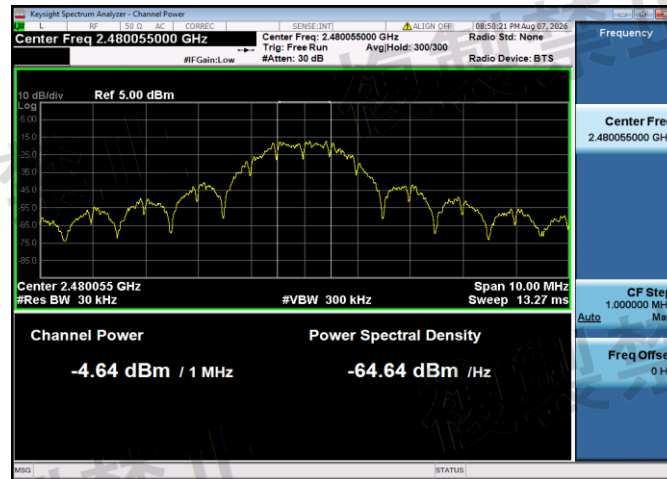
2496.5 MHz ~ 12500.0 MHz

1.0 MHz



9.4 RF Output Power

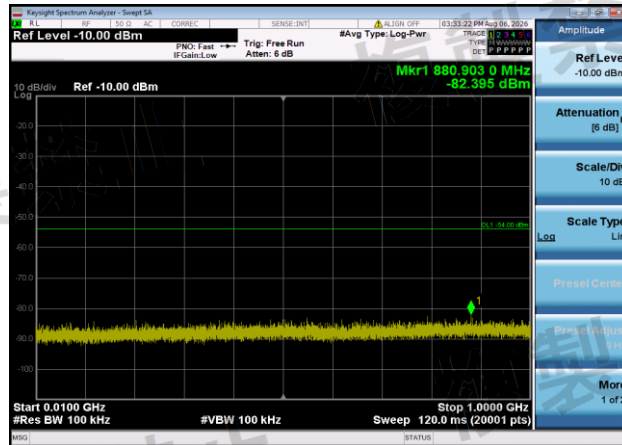
Ch.1: 2480 MHz



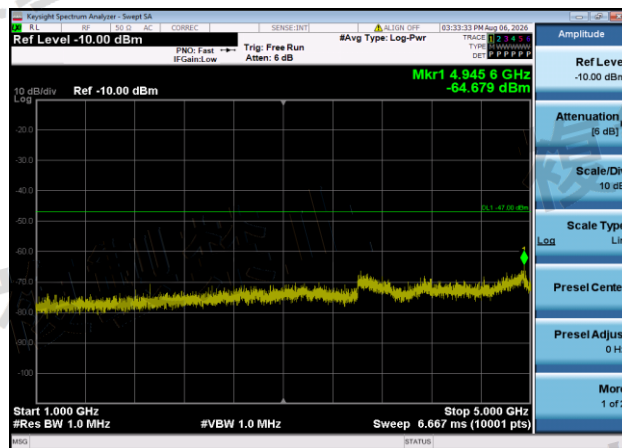
9.5 Rx Spurious Emission Strength

Ch.1: 2480 MHz

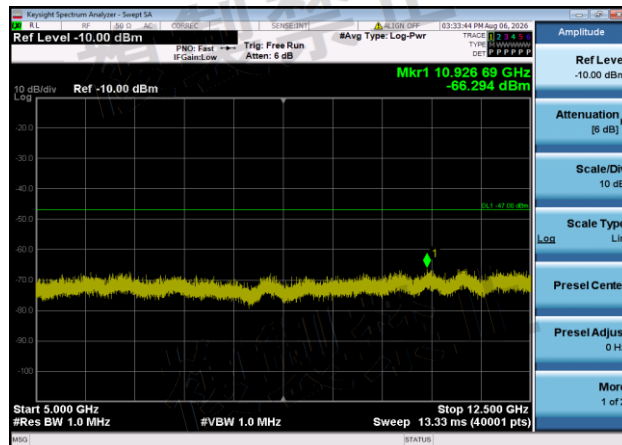
10 to 1000MHz



1000 to 5000MHz



5000 to 12500MHz



ON/OFF

