

## 1. TEST RESULT REPORT

**Applicant (Salted Co., Ltd.)**

**Cho HyungJin, CEO**

**Test Laboratory: ESTECH CO., LTD**

**Tested Engineer;**

  
Young Dea, Kim

**Approval person;**

  
Keum Bum, Lee

Equipment Type	VIVA TAG
Model Name	DP0266
Serial Number	-
Number of Tested Equipment	1
Date of Testing	2024-01-11 ~ 2024-01-19
Place of Testing	ESTECH CO., LTD. Suite 1015, World Venture Center II, 123 Gasan Digital 2-ro, Geumcheon-gu, Seoul, 08505, Korea
Test Result	PASS (Refer to attachment)

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## **2. TEST INFORMATION**

- |                                                                          |                                                                                       |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1 Classification of Specified Radio Equipment                            | Article 2 Paragraph 1 of Item 19                                                      |
| 2 Test Method                                                            | Ministry of Internal Affairs and Communications<br>MIC Notification. No. 88, Annex 43 |
| 3 Supply Voltage                                                         | DC 3 V (Battery)                                                                      |
| 4 Size ( W x D x H )                                                     | 82.0 x 41.7 x 11.7 mm                                                                 |
| 5 RF Specification Frequency range                                       | GFSK : 2402 - 2480 MHz                                                                |
| 6 RF Channels                                                            | GFSK : 40 Channels (2 MHz interval)                                                   |
| 7 Modulation method & Data rate                                          | GFSK & 2Mbps                                                                          |
| 8 Measurement Equipment                                                  | <u>Refer to Item 4</u>                                                                |
| 9 Type of Emissions, Frequency and Declaration Output Power to be tested | <u>Refer to Test Results</u>                                                          |

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**2.1 TEST RESULTS DATA FOR JAPANESE CERTIFICATION (GFSK High Voltage)**

Environment of Test Room	Temperature	23 °C
	Humidity	48 %

Peak Antenna Gain	-2.43	dBi
Declaration Output Power	0.7	mW
Declaration Output Power	-1.55	dBm
<b>E.I.R.P</b>	<b>-3.98</b>	<b>dBm</b>
Input Power Voltage	3.3	VDC

Tested Circuit Insertion Loss	1	dB
Burst	ON TIME	-Not applicable- sec
	OFF TIME	-Not applicable- sec
	Ratio	-Not applicable- %
Packet Type (Mode)	-Not applicable-	mode

Frequency equal to the transmission rate  
of the modulation signal

N/A

Test Category ; 2.4GHz Band Wideband direct sequence spread spectrum Communication System

**Comprehensive operation test**

"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)."

**2.4.1. TEST Results**

Measurement Frequency		MHz	2402	2440	2480	Result	NOTES
Channel Number		Ch.	0	19	39	----	
Reading Frequency		MHz	2402.01228	2440.01247	2480.01266	----	
Frequency Tolerance		ppm	5.11199	5.10984	5.10363	PASS	
Occupied Bandwidth		MHz	1.08	1.062846	1.0739	PASS	
Spread Bandwidth		MHz	0.707144	0.7182469	0.7046944	PASS	
RF Output Power		mW	0.213	0.152	0.157	PASS	
RF Output Power Tolerance		%	-69.60	-78.25	-77.58	PASS	
Real Total Output Power		dBm	-6.72	-8.17	-8.04	----	<Reference>
Unwanted Emission Strength	Under 2387MHz	μW/MHz	0.008561	0.015556	0.017195	PASS	
		MHz	2168.02	2167.44	2165.43	----	
	2387-2400MHz	μW/MHz	0.030775	0.000621	0.000500	PASS	
		MHz	2399.987	2391.212	2399.09	----	
	2483.5-2496.5MHz	μW/MHz	0.000357	0.000324	0.000688	PASS	
		MHz	2483.565	2487.777	2483.604	----	
	2496.5 - 12.5GHz	μW/MHz	0.002633	0.003678	0.005038	PASS	
		MHz	7207	7319.7	7439.9	----	
Secondarily Emitted Radio Wave Strength (RX Spurious)	Under 1GHz	nW	0.002390	0.002000	0.002000	PASS	
		MHz	88.5	88.5	110.53	----	
	1 - 12.5GHz	nW	0.059000	0.053520	0.053860	PASS	
		MHz	7518.4	12605.1	7079.4	----	
Interference Prevention Function		----	good			PASS	

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**2.2 TEST RESULTS DATA FOR JAPANESE CERTIFICATION (GFSK Rated Voltage)**

Environment of Test Room	Temperature	23 °C
	Humidity	48 %

Peak Antenna Gain	-2.43	dBi
Declaration Output Power	0.7	mW
Declaration Output Power	-1.55	dBm
<b>E.I.R.P</b>	<b>-3.98</b>	<b>dBm</b>
Input Power Voltage	3	VDC

Tested Circuit Insertion Loss	1	dB
Burst	ON TIME	-Not applicable- sec
	OFF TIME	-Not applicable- sec
	Ratio	-Not applicable- %
Packet Type (Mode)	-Not applicable-	mode

Frequency equal to the transmission rate of the modulation signal

N/A

Test Category ; 2.4GHz Band Wideband direct sequence spread spectrum Communication System

**Comprehensive operation test**

"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)."

**2.4.1. TEST Results**

Measurement Frequency			MHz	2402	2440	2480	Result	NOTES
Channel Number			Ch.	0	19	39	----	
Reading Frequency			MHz	2402.01222	2440.0124	2480.0126	----	
Frequency Tolerance			ppm	5.08659	5.08238	5.07903	PASS	
Occupied Bandwidth			MHz	1.0739	1.062846	1.074483	PASS	
Spread Bandwidth			MHz	0.7423083	0.709835	0.7220717	PASS	
RF Output Power			mW	0.209	0.153	0.157	PASS	
RF Output Power Tolerance			%	-70.15	-78.20	-77.62	PASS	
Real Total Output Power			dBm	-6.80	-8.16	-8.05	----	<Reference>
Unwanted Emission Strength	Under 2387MHz	$\mu$ W/MHz	0.007843	0.008738	0.017960	PASS		
		MHz	2166.58	2167.16	2165.72	----		
	2387-2400MHz	$\mu$ W/MHz	0.033830	0.000563	0.000515	PASS		
		MHz	2399.974	2393.63	2400	----		
	2483.5-2496.5MHz	$\mu$ W/MHz	0.000396	0.000342	0.000697	PASS		
		MHz	2484.735	2487.283	2483.981	----		
	2496.5 - 12.5GHz	$\mu$ W/MHz	0.002915	0.003667	0.005255	PASS		
		MHz	7205.8	7319.7	7439.9	----		
Secondarily Emitted Radio Wave Strength (RX Spurious)	Under 1GHz	nW	0.003090	0.003000	0.003000	PASS		
		MHz	110.53	88.5	110.53	----		
	1 - 12.5GHz	nW	0.057000	0.053420	0.057780	PASS		
		MHz	6786.8	7156.9	7264.5	----		
Interference Prevention Function			----	good			PASS	

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**2.3 TEST RESULTS DATA FOR JAPANESE CERTIFICATION (GFSK Low Voltage)**

Environment of Test Room	Temperature	23 °C
	Humidity	48 %

Peak Antenna Gain	-2.43	dBi
Declaration Output Power	0.7	mW
Declaration Output Power	-1.55	dBm
<b>E.I.R.P</b>	<b>-3.98</b>	<b>dBm</b>
Input Power Voltage	2.7	VDC

Tested Circuit Insertion Loss	1	dB
Burst	ON TIME	-Not applicable- sec
	OFF TIME	-Not applicable- sec
	Ratio	-Not applicable- %
Packet Type (Mode)	-Not applicable-	mode

Frequency equal to the transmission rate  
of the modulation signal

N/A

Test Category ; 2.4GHz Band Wideband direct sequence spread spectrum Communication System

**Comprehensive operation test**

"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)."

**2.4.1. TEST Results**

Measurement Frequency			MHz	2402	2440	2480	Result	NOTES
Channel Number			Ch.	0	19	39	----	
Reading Frequency			MHz	2402.01216	2440.0124	2480.01254	----	
Frequency Tolerance			ppm	5.06370	5.08238	5.05444	PASS	
Occupied Bandwidth			MHz	1.082	1.079111	1.077897	PASS	
Spread Bandwidth			MHz	0.709426	0.7288721	0.7154296	PASS	
RF Output Power			mW	0.206	0.153	0.156	PASS	
RF Output Power Tolerance			%	-70.56	-78.20	-77.72	PASS	
Real Total Output Power			dBm	-6.86	-8.16	-8.07	----	<Reference>
Unwanted Emission Strength	Under 2387MHz	$\mu$ W/MHz	0.007114	0.010464	0.020059	PASS		
		MHz	2166.29	2168.02	2168.02	----		
	2387-2400MHz	$\mu$ W/MHz	0.033830	0.000493	0.000488	PASS		
		MHz	2399.974	2393.136	2397.946	----		
	2483.5-2496.5MHz	$\mu$ W/MHz	0.000396	0.000372	0.000652	PASS		
		MHz	2484.735	2488.141	2483.968	----		
	2496.5 - 12.5GHz	$\mu$ W/MHz	0.002915	0.003428	0.004884	PASS		
		MHz	7205.8	7319.7	7439.9	----		
Secondarily Emitted Radio Wave Strength (RX Spurious)	Under 1GHz	nW	0.003090	0.002000	0.002000	PASS		
		MHz	110.53	88.5	88.5	----		
	1 - 12.5GHz	nW	0.057000	0.054160	0.059480	PASS		
		MHz	6786.8	7067.9	7294.6	----		
Interference Prevention Function			----	good			PASS	

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2. "X" used equipment.

a) : Calibration conducted by the National Institute of Information and Communications Technology(NICT) or a designated calibration agency under Article 102-18 paragraph (1) of the Radio Law.

b) : Calibration conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992) Japan Calibration Service System.

c) : 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).

d) : Calibration conducted by using other equipment that listed above from a) to c).

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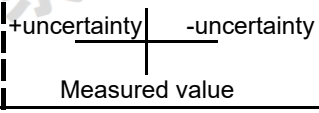
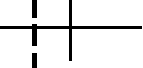

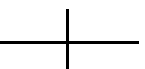
#### 4. About Uncertainty of Measured Value

\*In this test, the influence of an error or uncertainty may be done according to the following factors.

- Bias of a measurement equipment, Change by aging, Attrition, Noise
- Skill and capability of an inspector
- Environment (Temperature, Humidity)
- Dispersion in a EUT (Equipment Under Test)
- Uncertainty of calibration of a measurement equipment

Therefore, Synthetic uncertainty is calculated using "k=2" of coverage factor, and about 95% of confidence level shall be obtained.

In consideration of the above, it judged as follows.

JUDGE	Measured value and Standard limit value	
PASS	<b>Case1</b> <u>Standard limit value</u>  <p>*Even if it takes uncertainty into consideration, a standard limit value is fulfilled.</p>	
	<b>Case2</b>  <p>*Although measured value is in a standard limit value, a limit value won't be fulfilled if uncertainty is taken into consideration.</p>	
FAIL	<b>Case3</b>  <p>*Although measured value exceeds a standard limit value, a limit value will be fulfilled if uncertainty is taken into consideration.</p>	
	<b>Case4</b>  <p>*Even if it takes uncertainty into consideration, a standard limit value isn't fulfilled.</p>	

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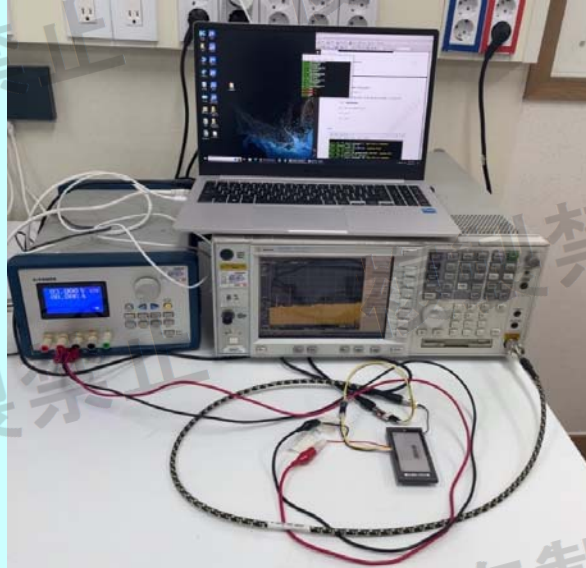
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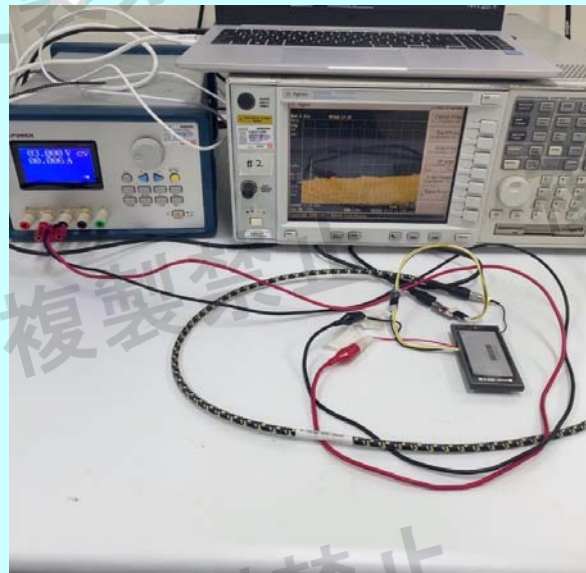
## 5. PHOTOGRAPHS

### 5 Test Conditions Photographs

Test Circuit Photo



Conducted Measurement Photo



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## 6. Antenna List Table

			MAX VALUE ;		-2.43 dBi		
ANTENNA			Gain Specification				NOTES ( Cable or Others )
No	Type	Model Name	Max Gain (dBi)	Polarization (H or V)	Attenuation (dB)	Net Gain (dBi)	
1	PCB	4 seils ANT #2	-2.43	Horizontal	0	-2.430	
2			0	Horizontal	0	0.000	
3			0	Horizontal	0	0.000	
4			0	Horizontal	0	0.000	
5			0	Horizontal	0	0.000	
6			0	Horizontal	0	0.000	
7			0	Horizontal	0	0.000	
8			0	Horizontal	0	0.000	
9			0	Horizontal	0	0.000	
10			0	Horizontal	0	0.000	
11			0	Horizontal	0	0.000	
12			0	Horizontal	0	0.000	
13			0	Horizontal	0	0.000	
14			0	Horizontal	0	0.000	
15			0	Horizontal	0	0.000	
16			0	Horizontal	0	0.000	
17			0	Horizontal	0	0.000	
18			0	Horizontal	0	0.000	
19			0	Horizontal	0	0.000	
20			0	Horizontal	0	0.000	
21			0	Horizontal	0	0.000	
22			0	Horizontal	0	0.000	
23			0	Horizontal	0	0.000	
24			0	Horizontal	0	0.000	
25			0	Horizontal	0	0.000	
26			0	Horizontal	0	0.000	
27			0	Horizontal	0	0.000	
28			0	Horizontal	0	0.000	
29			0	Horizontal	0	0.000	
30			0	Horizontal	0	0.000	
31			0	Horizontal	0	0.000	
32			0	Horizontal	0	0.000	
33			0	Horizontal	0	0.000	
34			0	Horizontal	0	0.000	
35			0	Horizontal	0	0.000	
36			0	Horizontal	0	0.000	
37			0	Horizontal	0	0.000	
38			0	Horizontal	0	0.000	
39			0	Horizontal	0	0.000	
40			0	Horizontal	0	0.000	
41			0	Horizontal	0	0.000	
42			0	Horizontal	0	0.000	

If the equipment has more than two transmission chains (such like MIMO), the antenna combination should be considered not to exceed the limit of total EIRP.

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