

# TEST REPORT



**Dt&C Co., Ltd.**

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1. Report No : DRTFCC2507-0046(1)

2. Customer

- Name (FCC) : LG Electronics Inc.
- Name (ISED) : LG ELECTRONICS INC.
- Address (FCC) : 222 LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, South Korea, 17709
- Address (ISED) : 222, LG-ro, Jinwi-myeon Pyeongtaek-si, Gyeonggi-do 451-713 Korea (Republic Of)

3. Use of Report : Verification test for simultaneous transmission

4. Product Name / Model Name : RF Module / WC1NH25

FCC ID : 2BO3L-WC1NH25

IC : 2703H-WC1NH25

5. FCC Regulation(s): Part 15.247, Part 15.407

ISED Standard(s): RSS-247 Issue 4, RSS-248 Issue 3, RSS-Gen Issue 5

Test Method used: ANSI C63.10-2020, KDB558074 D01v05r02, KDB789033 D02v02r01,  
KDB662911 D01v02r01, KDB987594 D02v03

6. Date of Test : 2025.07.15 ~ 2025.07.22

7. Location of Test :  Permanent Testing Lab  On Site Testing

8. Testing Environment : See appended test report.

9. Test Result : Refer to the attached test result.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test report is not related to KOLAS accreditation.

Affirmation	Tested by Name : SeungMin Gil 	Technical Manager Name : JaeJin Lee 
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2025 . 07 . 29 .

**Dt&C Co., Ltd.**

If this report is required to confirmation of authenticity, please contact to [report@dtnc.net](mailto:report@dtnc.net)

## Test Report Version

Test Report No.	Date	Description	Revised by	Reviewed by
DRTFCC2507-0046	Jul. 22, 2025	Initial issue	SeungMin Gil	JaeJin Lee
DRTFCC2507-0046(1)	Jul. 29, 2025	Update standard	SeungMin Gil	JaeJin Lee

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## 1. GENERAL INFORMATION

<b>Product Name</b>	RF Module
<b>Model Name</b>	WC1NH25
<b>Add Model Name</b>	-
<b>Product Marketing Name (PMN)</b>	RF Module
<b>Firmware Version Identification Number</b>	V1.0
<b>EUT Serial Number</b>	Radiated: 2504020190000(MAC: 287B11F38D36)
<b>Power Supply</b>	DC 3.3 V

## 2. INTRODUCTION

### 2.1. EUT DESCRIPTION

This EUT contains the following capabilities:

BT(BDR, EDR, LE 1M, LE 2M), 802.11b/g/n/ac/ax WLAN(2.4 GHz), 802.11a/n/ac/ax WLAN(5GHz), 802.11ax WLAN(6GHz)

### 2.2. SIMULTANEOUS TRANSMISSION CONFIGURATION

- (BLE or BT) + 2.4GHz WLAN + 5GHz WLAN
- (BLE or BT) + 2.4GHz WLAN
- (BLE or BT) + 5GHz WLAN
- (BLE or BT) + 6GHz WLAN
- 2.4GHz WLAN + 5GHz WLAN
- 2.4GHz WLAN + 6GHz WLAN

## 2.3. TESTING ENVIRONMENT

Ambient Condition	
▪ Temperature	+23 °C ~ +25 °C
▪ Relative Humidity	+40 % ~ +45 %

## 2.4. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

## 2.5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C63.10-2020. All measurement uncertainty values are shown with a coverage factor of  $k = 2$  to indicate a 95 % level of confidence.

Parameter	Measurement uncertainty
Radiated emission (1 GHz Below)	5.0 dB (The confidence level is about 95 %, $k = 2$ )
Radiated emission (1 GHz ~ 18 GHz)	4.8 dB (The confidence level is about 95 %, $k = 2$ )
Radiated emission (18 GHz Above)	5.8 dB (The confidence level is about 95 %, $k = 2$ )

## 2.6. TESTING LABORATORY

### Dt&C Co., Ltd.

The 3 m test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042.

The test site complies with the requirements of Part 2.948.

- FCC & ISED MRA Designation No. : KR0034

- ISED#: 5740A

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### 3. SUMMARY OF TEST RESULTS

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Status Note 1
15.247(d) 15.407(b) 15.205 15.209	RSS-247[6.6] RSS-247[7.3] RSS-248[4.6] RSS-Gen[8.9] RSS-Gen[8.10]	Undesirable Emissions	Refer to the section 4	<b>C</b>

Note 1: **C**=Comply   **NC**=Not Comply   **NT**=Not Tested   **NA**=Not Applicable

Note 2: Radiated test items were performed in three orthogonal EUT positions and the worst case data was reported.

Note 3: If the spurious emission caused by the simultaneous operation of both devices, the limit was applied to highest limit by either rule part.

## 4. UNWANTED EMISSIONS

### Test Procedure

The following procedure was used for measurement of the radiated spurious emissions.

- 1) The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements at above 1 GHz, the table height is 1.5 m
- 2) The table was rotated 360 degrees to determine the position of the highest radiation.
- 3) During performing radiated emission below 1 GHz, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 GHz, the EUT was set 0.5 ~ 3 meter away from the interference-receiving antenna.
- 4) For measurements above 1GHz absorbers are placed on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1 GHz, the absorbers are removed.
- 5) The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 6) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.

### Frequency Range Below 1GHz

RBW = 100 or 120 kHz, VBW = 3 x RBW, Detector = Peak or Quasi Peak

### Frequency Range > 1GHz

Peak Measurement > 1 GHz

RBW = 1 MHz, VBW = 3 MHz, Detector = Peak, Sweep time = Auto, Trace mode = Max Hold until the trace stabilizes

### For spurious emissions from the Part 15.247 device (2.4GHz WLAN, Bluetooth LE),

Average Measurement > 1 GHz

- **KDB558074 D01v05r02 - Section 8.6**
- **ANSI C63.10-2020 Section 11.12**

If the EUT cannot be configured to transmit continuously (i.e., D < 98%) and duty cycle is constant, the following procedure was used.

Average Measurement > 1 GHz

1. RBW = 1 MHz (unless otherwise specified).
2. VBW  $\geq$  3 x RBW.
3. Detector = RMS (Number of points  $\geq$  2 x Span / RBW)
4. Averaging type = power (i.e., RMS).
5. Sweep time = auto.

6. Perform a trace average of at least 100 traces.

7. A correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 percent duty cycle. The correction factor is computed as follows:

- 1) If power averaging (RMS) mode was used in step 4, then the applicable correction factor is  $10 \log(1 / D)$ , where D is the duty cycle.
- 2) If linear voltage averaging mode was used in step 4, then the applicable correction factor is  $20 \log(1 / D)$ , where D is the duty cycle.
- 3) If a specific emission is demonstrated to be continuous ( $\geq$  98 percent duty cycle) rather than turning on and off with the transmit cycle, then no duty cycle correction is required for that emission.

**For spurious emissions from the Part 15.407 device (5, 6GHz WLAN)**

Average Measurement > 1 GHz

**- KDB789033 D02v02r01 - Section 8.6 d)**

Method VB-A is averaging using reduced video bandwidth. The procedure for this method is as follows:

1. RBW = 1 MHz.
2. Video bandwidth.
  - If the EUT is configured to transmit with duty cycle  $\geq 98\%$ , set  $VBW \leq RBW/100$  (i.e., 10 kHz) but not less than 10 Hz.
  - If the EUT duty cycle is  $< 98\%$ , set  $VBW \geq 1/T$ , where  $T$  is defined in II.B.1.a).
3. Video bandwidth mode or display mode
  - The instrument shall be set to ensure that video filtering is applied in the power domain. Typically, this requires setting the detector mode to rms and setting the Average-VBW Type to power averaging (rms).
  - As an alternative, the analyzer may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some analyzers require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode.
4. Detector = Peak.
5. Sweep time = auto.
6. Trace mode = max hold.
7. Allow max hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98% duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of  $1/x$ , where  $x$  is the duty cycle. For example, use at least 200 traces if the duty cycle is 25%. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—rather than turning on and off with the transmit cycle, at least 50 traces shall be averaged.)

**□ Test Requirements and limit,****Part 15.247(d)**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of Part 15.247 the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

**Part 15.407(b)**

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- 1) For transmitters operating in the 5.15 GHz - 5.25 GHz band: all emissions outside of the 5.15 GHz - 5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- 2) For transmitters operating in the 5.25 GHz - 5.35 GHz band: all emissions outside of the 5.15 GHz - 5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- 3) For transmitters operating in the 5.47 GHz - 5.725 GHz band: all emissions outside of the 5.47 GHz - 5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- 4) For transmitters operating in the 5.725 GHz - 5.85 GHz band: (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- 5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209.

**Part 15.407(b)(6)**

For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.

**Part 15.407(b)(9)**

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

**Part 15.407(b)(10)**

The provisions of § 15.205 apply to intentional radiators operating under this section.

**RSS-247[5.5]**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

**RSS-247[7.3.1.3]**

For transmitters with operating frequencies in the band 5150-5250 MHz:

- a. all emissions outside the 5150-5350 MHz band shall not exceed -27 dBm/MHz peak e.i.r.p. spectral density;
- b. any unwanted emissions that falls between the upper edge of the 26 dB bandwidth and 5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth.
- c. if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing DFS (see section 7.3.6) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band

**RSS-247[7.3.2.3]**

Devices shall comply with the following:

- a. all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz peak e.i.r.p spectral density.
- b. all emissions inside the band 5150-5250 MHz shall either:
  - i. not exceed -27 dBm/MHz peak e.i.r.p spectral density, or
  - ii. comply with the power spectral density for operation in section 7.3.1.2.

**RSS-247[7.3.3.3]**

Equipment operating in the bands 5470-5725 MHz shall comply with the following unwanted emission limits:

- a. for devices with fundamental emissions fully contained within the 5470-5725 MHz band, all unwanted emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz peak e.i.r.p. spectral density.
- b. for devices with bandwidth overlapping the band edge of 5725 MHz, all unwanted emissions shall not exceed -27 dBm/MHz peak e.i.r.p. spectral density at 5850 MHz instead of 5725 MHz.

**RSS-247[7.3.4.4]**

Equipment operating in the band 5725-5850 MHz shall comply with the following peak e.i.r.p. spectral density limits:

- a. 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
- b. 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- c. 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- d. -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

**RSS-248[4.6.2]**

The following unwanted emission limits shall apply:

- a. any emissions outside of the 5925-7125 MHz frequency band shall not exceed -27 dBm/MHz e.i.r.p. spectral density

**Part 15.209 & RSS-Gen[8.9]: General requirement**

Frequency (MHz)	FCC Limit (uV/m)	ISED Limit (μA/m)	Measurement Distance (m)
0.009 – 0.490	2 400 / F (kHz)	6.37/F (F in kHz)	300
0.490 – 1.705	24 000 / F (kHz)	63.7/F (F in kHz)	30
1.705 – 30.0	30	0.08	30

Frequency (MHz)	FCC Limit (uV/m)	ISED Limit (uV/m)	Measurement Distance (m)
30 ~ 88	100 **	100	3
88 ~ 216	150 **	150	3
216 ~ 960	200 **	200	3
Above 960	500	500	3

\*\*Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §15.231 and 15.241.

**Part 15.205(a): Restricted band of operation**

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.414 25 ~ 8.414 75	108 ~ 121.94	1 300 ~ 1 427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1 435 ~ 1 626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.173 5 ~ 2.190 5	12.519 75 ~ 12.520 25	149.9 ~ 150.05	1 645.5 ~ 1 646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.576 75 ~ 12.577 25	156.524 75 ~ 156.525 25	1 660 ~ 1 710	8.025 ~ 8.5	22.01 ~ 23.12
4.177 25 ~ 4.177 75	13.36 ~ 13.41	156.7 ~ 156.9	1 718.8 ~ 1 722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.207 25 ~ 4.207 75	16.42 ~ 16.423	162.012 5 ~ 167.17	2 200 ~ 2 300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.694 75 ~ 16.695 25	167.72 ~ 173.2	2 310 ~ 2 390	10.6 ~ 12.7	36.43 ~ 36.5
6.267 75 ~ 6.268 25	16.804 25 ~ 16.804 75	240 ~ 285	2 483.5 ~ 2 500	13.25 ~ 13.4	Above 38.6
6.311 75 ~ 6.312 25	25.5 ~ 25.67	322 ~ 335.4	2 655 ~ 2 900		
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3 260 ~ 3 267		
8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3 332 ~ 3 339		
8.376 25 ~ 8.386 75	74.8 ~ 75.2	1 435 ~ 1 626.5	3 345.8 ~ 3 358		
108 ~ 121.94	149.9 ~ 150.05	1 645.5 ~ 1 646.5	3 500 ~ 4 400		
123 ~ 138	156.524 75 ~ 156.525 25	1 660 ~ 1 710	4 500 ~ 5 150		
156.7 ~ 156.9	162.012 5 ~ 167.17	1 718.8 ~ 1 722.2	5 350 ~ 5 460		
167.72 ~ 173.2	167.72 ~ 173.2	2 200 ~ 2 300	7 250 ~ 7 750		
240 ~ 285	240 ~ 285	2 310 ~ 2 390	8 025 ~ 8 500		
322 ~ 335.4	322 ~ 335.4	2 483.5 ~ 2 500	10.6 ~ 12.7		
399.90 ~ 410	399.90 ~ 410	2 655 ~ 2 900	13.25 ~ 13.4		
608 ~ 614	608 ~ 614	3 260 ~ 3 267	14.47 ~ 14.5		
1 435 ~ 1 626.5	1 645.5 ~ 1 646.5	3 332 ~ 3 339	15.35 ~ 16.2		
1 660 ~ 1 710	1 718.8 ~ 1 722.2	3 345.8 ~ 3 358	17.7 ~ 21.4		
1 718.8 ~ 1 722.2	2 200 ~ 2 300	3 500 ~ 4 400	22.01 ~ 23.12		
2 200 ~ 2 300	2 310 ~ 2 390	4 500 ~ 5 150	23.6 ~ 24.0		
2 310 ~ 2 390	2 483.5 ~ 2 500	5 350 ~ 5 460	31.2 ~ 31.8		
2 483.5 ~ 2 500	2 655 ~ 2 900	7 250 ~ 7 750	36.43 ~ 36.5		
2 655 ~ 2 900	3 260 ~ 3 267	8 025 ~ 8 500	Above 38.6		
3 260 ~ 3 267	3 332 ~ 3 339	10.6 ~ 12.7			
3 332 ~ 3 339	3 345.8 ~ 3 358	13.25 ~ 13.4			
3 345.8 ~ 3 358	3 500 ~ 4 400	14.47 ~ 14.5			
3 500 ~ 4 400	4 500 ~ 5 150	15.35 ~ 16.2			
4 500 ~ 5 150	5 350 ~ 5 460	17.7 ~ 21.4			
5 350 ~ 5 460	7 250 ~ 7 750	22.01 ~ 23.12			
7 250 ~ 7 750	8 025 ~ 8 500	23.6 ~ 24.0			
8 025 ~ 8 500	10.6 ~ 12.7	31.2 ~ 31.8			
10.6 ~ 12.7	13.25 ~ 13.4	36.43 ~ 36.5			
13.25 ~ 13.4	14.47 ~ 14.5	Above 38.6			
14.47 ~ 14.5	15.35 ~ 16.2				
15.35 ~ 16.2	17.7 ~ 21.4				
17.7 ~ 21.4	22.01 ~ 23.12				
22.01 ~ 23.12	23.6 ~ 24.0				
23.6 ~ 24.0	31.2 ~ 31.8				
31.2 ~ 31.8	36.43 ~ 36.5				
36.43 ~ 36.5	Above 38.6				
Above 38.6					

**RSS-Gen[8.10]: Restricted frequency bands**

MHz	MHz	MHz	MHz	MHz	GHz
0.090 ~ 0.110	8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3 345.8 ~ 3 358	9.0 ~ 9.2
0.495 ~ 0.505	8.376 25 ~ 8.386 75	74.8 ~ 75.2	960 ~ 1 427	3 500 ~ 4 400	9.3 ~ 9.5
2.173 5 ~ 2.190 5	8.414 25 ~ 8.414 75	108 ~ 138	1 435 ~ 1 626.5	4 500 ~ 5 150	10.6 ~ 12.7
3.020 ~ 3.026	12.29 ~ 12.293	149.9 ~ 150.05	1 645.5 ~ 1 646.5	5 350 ~ 5 460	13.25 ~ 13.4
4.125 ~ 4.128	12.519 75 ~ 12.520 25	156.524 75 ~	1 660 ~ 1 710	7 250 ~ 7 750	14.47 ~ 14.5
4.177 25 ~ 4.177 75	12.576 75 ~ 12.577 25	156.525 25	1 718.8 ~ 1 722.2	8 025 ~ 8 500	15.35 ~ 16.2
4.207 25 ~ 4.207 75	13.36 ~ 13.41	156.7 ~ 156.9	2 200 ~ 2 300		17.7 ~ 21.4
5.677 ~ 5.683	16.42 ~ 16.423	162.01 25 ~ 167.17	2 310 ~ 2 390		22.01 ~ 23.12
6.215 ~ 6.218	16.694 75 ~ 16.695 25	167.72 ~ 173.2	2 483.5 ~ 2 500		23.6 ~ 24.0
6.267 75 ~ 6.268 25	16.804 25 ~ 16.804 75	240 ~ 285	2 655 ~ 2 900		31.2 ~ 31.8
6.311 75 ~ 6.312 25	25.5 ~ 25.67	322 ~ 335.4	3 260 ~ 3 267		36.43 ~ 36.5
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3 332 ~ 3 339		Above 38.6

## Test Result

### - Test Notes

1. The radiated emissions were investigated 9 kHz to 25 GHz. And no other spurious and harmonic emissions were found below listed frequencies.

2. Information of Distance Correction Factor

For finding emissions, measurements may be performed at a distance closer than that specified in the regulations.

In this case, the distance factor is applied to the result.

- Calculation of distance correction factor

At frequencies below 30 MHz =  $40 \log(\text{tested distance} / \text{specified distance})$

At frequencies at or above 30 MHz =  $20 \log(\text{tested distance} / \text{specified distance})$

When distance factor is "N/A", the measurements were performed at the specified distance and distance factor is not applied.

3. Sample Calculation.

Margin = Limit – Result / Result = Reading + TF + DCCF + DCF / TF = AF + CL + HL + AL – AG

Where, TF = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, HL = High pass filter Loss, AL = Attenuator Loss, DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

4. The limit is converted to field strength.

$E(\text{dBuV/m}) = \text{EIRP}(\text{dBm}) + 95.2 \text{ dB} = -27 \text{ dBm} + 95.2 = 68.2 \text{ dBuV/m}$  at 3m

5. \* = Noise floor

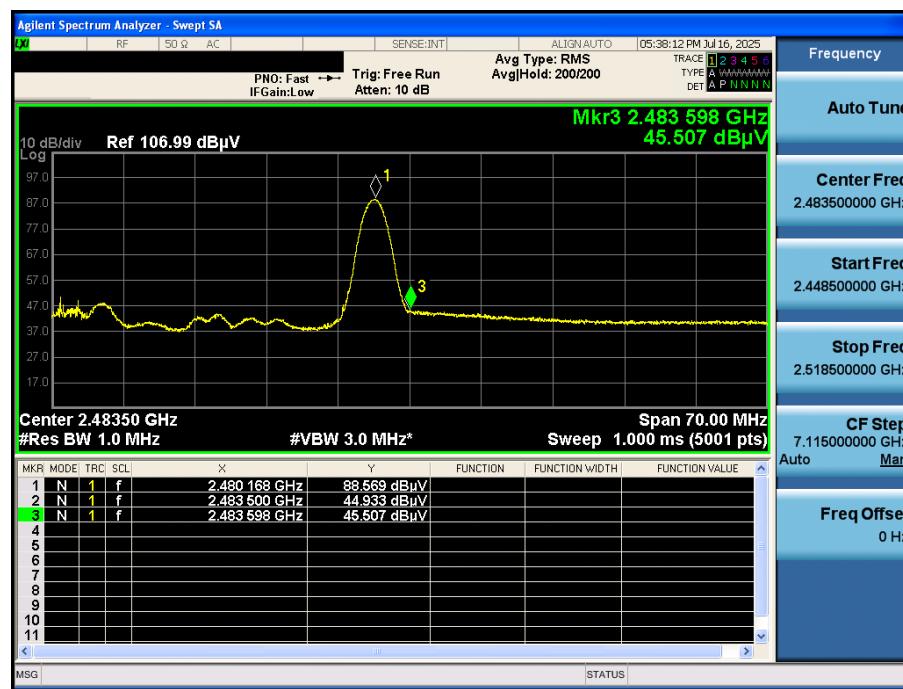
6. For simultaneous transmission, the test was performed based on the mode with worst-case condition(Standalone Tx Mode – Low Margin).

Configuration of simultaneously transmission						
Feature	Band	Mode	Antenna	Tone	RU	Tx frequency (MHz)
BLE	2.4GHz	2Mbps	-	NA	NA	2480
WLAN	2.4GHz	802.11ax(HE20)	WLAN Ant 2	242	61	2462
WLAN	5GHz	802.11ax(HE20)	WLAN Ant 1	26	0	5825

Freq. (MHz)	ANT Pol	Detector Mode	Reading (dBuV)	TF (dB/m)	DCCF (dB)	DCF (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2483.53	H	PK	57.48	6.36	N/A	N/A	64.14	74.00	10.16
<b>2483.60</b>	<b>H</b>	<b>AV</b>	<b>45.51</b>	<b>6.36</b>	<b>0.79</b>	<b>N/A</b>	<b>52.96</b>	<b>54.00</b>	<b>1.34</b>
3352.76	H	PK	52.85	0.96	N/A	N/A	53.81	74.00	20.19
3353.76	H	AV	40.16	0.96	0.52	N/A	41.64	54.00	12.36
*4923.10	V	PK	49.75	3.13	N/A	N/A	52.88	74.00	21.12
*4922.45	V	AV	39.08	3.13	0.79	N/A	43.00	54.00	11.00
*4960.44	V	PK	49.30	3.32	N/A	N/A	52.62	74.00	21.38
*4960.56	V	AV	38.73	3.32	2.42	N/A	44.47	54.00	9.53
5901.60	H	PK	52.21	4.31	N/A	N/A	56.52	85.52	29.00
5941.40	H	AV	51.68	4.75	N/A	N/A	56.43	68.20	11.77
11633.17	V	PK	48.05	9.47	N/A	N/A	57.52	74.00	16.48
11633.19	V	AV	38.31	9.47	0.52	N/A	48.30	54.00	5.70

### Worst-data plot

Detector Mode : AV



Configuration of simultaneously transmission						
Feature	Band	Mode	Antenna	Tone	RU	Tx frequency (MHz)
BLE	2.4GHz	2Mbps	NA	NA	NA	2480
WLAN	6GHz	802.11ax(HE20)	MIMO	26	8	7115

Freq. (MHz)	ANT Pol	Detector Mode	Reading (dBuV)	TF (dB/m)	DCCF (dB)	DCF (dB)	Delta (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2483.70	V	PK	50.37	5.74	N/A	N/A	N/A	56.11	74.00	17.89
2483.53	V	AV	40.40	5.74	2.42	N/A	N/A	48.56	54.00	5.44
*4958.95	V	PK	50.09	3.33	N/A	N/A	N/A	53.42	74.00	20.58
*4958.80	V	AV	38.51	3.33	2.42	N/A	N/A	44.26	54.00	9.74
#7125.05	H	PK	(7124.15MHz) 96.16	6.97	N/A	N/A	21.87	81.26	88.20	6.94
<b>7125.50</b>	<b>H</b>	<b>AV</b>	<b>56.94</b>	<b>6.98</b>	<b>0.54</b>	<b>N/A</b>	<b>N/A</b>	<b>64.46</b>	<b>68.20</b>	<b>3.74</b>
*14304.81	H	PK	45.06	10.84	N/A	N/A	N/A	55.90	88.20	32.30
*14304.94	H	AV	34.73	10.84	0.54	N/A	N/A	46.11	68.20	22.09

Note 1. # was measured using the marker-delta method.

Note 2. Sample Calculation.

$$\text{Margin} = \text{Limit} - \text{Result} / \text{Result} = \text{Reading} + \text{TF} + \text{DCCF} + \text{DCF} - \text{Delta} / \text{TF} = \text{AF} + \text{CL} + \text{HL} + \text{AL} - \text{AG}$$

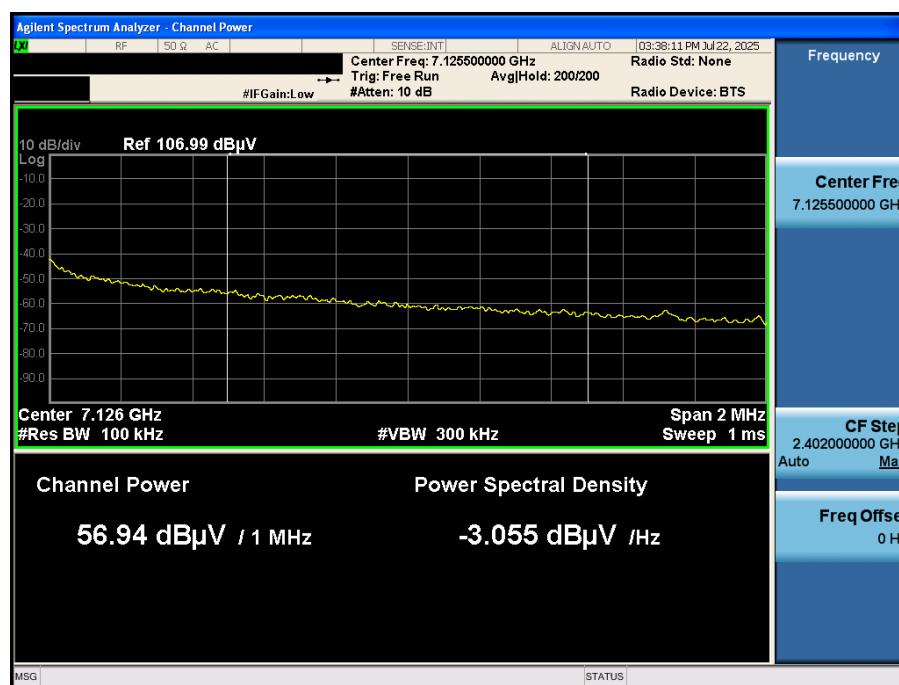
Where, TF = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain, HL = High pass filter Loss, AL = Attenuator Loss, DCCF = Duty Cycle Correction Factor, DCF = Distance Correction Factor

Delta = Field strength of fundamental measured with a 100 kHz RBW – Band edge field strength with a 100 kHz RBW

Please refer to the appendix II for duty cycle correction factor.

## Worst-data plot

Detector Mode : AV



## 5. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal. Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	25/05/26	26/05/26	US47360812
Spectrum Analyzer	KEYSIGHT	N9030B	24/11/25	25/11/25	MY55480168
Multimeter	FLUKE	17B	24/11/27	25/11/27	26030065WS
Signal Generator	Rohde Schwarz	SMBV100A	24/12/10	25/12/10	255571
Signal Generator	KEYSIGHT	M9383A	24/12/10	25/12/10	E76F804A28
Thermohygrometer	BODYCOM	BJ5478	24/12/17	25/12/17	090205-4
Loop Antenna	ETS-Lindgren	6502	24/11/08	26/11/08	00060496
Hybrid Antenna	Schwarzbeck	VULB 9160	24/12/13	25/12/13	3362
Horn Antenna	ETS-Lindgren	3117	25/05/27	26/05/27	00143278
Horn Antenna	A.H.Systems Inc.	SAS-574	25/06/12	26/06/12	155
PreAmplifier	tsj	MLA-0118-B01-40	24/11/26	25/11/26	1852267
PreAmplifier	tsj	MLA-1840-J02-45	25/05/29	26/05/29	16966-10728
PreAmplifier	H.P	8447D	24/12/11	25/12/11	2944A07774
Low Pass Filter	Wainwright Instruments	WLK10-3000-3480-18000-60SS	25/05/27	26/05/27	13
Band Reject Filter	Wainwright Instruments	WTRCT10-2450-2750-20-40-40SSM	25/05/27	26/05/27	1
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300-18000-60SS	25/05/26	26/05/26	1
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	25/05/26	26/05/26	3
Cable	Dt&C	Cable	25/01/02	26/01/02	G-2
Cable	HUBER+SUHNER	SUCOFLEX 100	25/01/02	26/01/02	G-3
Cable	Dt&C	Cable	25/01/02	26/01/02	G-4
Cable	OMT	YSS21S	25/01/02	26/01/02	G-5
Cable	Junkosha	MWX241	25/01/02	26/01/02	mmW-1
Cable	Junkosha	MWX241	25/01/02	26/01/02	mmW-4
Cable	Dt&C	Cable	25/01/02	26/01/02	RFC-46
3m Semi Anechoic Chamber	SYC	3m-SAC	25/01/14(NSA) 25/01/17(VSWR)	26/01/14(NSA) 26/01/17(VSWR)	3m-SAC-2

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

Note2: The cable is not a regular calibration item, so it has been calibrated by Dt&C itself.