TEST REPORT

FCC BT LE Test for LGSWNAC62
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2508-FC010

DATE OF ISSUE
August 21, 2025

Tested by
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Accredited by KOLAS, Republic of KOREA

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Applicant	LG Electronics Inc. 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Republic of Korea
Product Name Model Name	RF Module LGSWNAC62
FCC ID	2BO3LLGSWNAC62
Date of Test	June 27, 2025 ~ August 21, 2025
FCC Classification	Digital Transmission System(DTS)
Test Standard Used	FCC Rule Part(s): Part 15 subpart C 15.247
Test	PASS
Location of Test	■ Permanent Testing Lab ☐ On Site Testing Lab (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)
Brand	LG

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	August 21, 2025	Initial Release

Notice

Content
Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance. The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. When confirmation of authenticity of this test report is required, please contact www.hct.co.kr This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA. (KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197)

CONTENTS

1. EUT DESCRIPTION

Model	LGSWNAC62	
Additional Model	-	
EUT Type	RF Module	
Power Supply	DC 3.30 V	
Frequency Range	2 402 MHz – 2 480 MHz	
Number of Channels	40 Channels	
Max. RF Output Power (Normal)	Peak	1M Bit/s: 8.368 dBm (6.87 mW) 2M Bit/s: 8.441 dBm (6.98 mW) 125k Bit/s: 8.071 dBm (6.41 mW) 500k Bit/s: 8.400 dBm (6.92 mW)
	Average	1M Bit/s: 8.09 dBm (6.44 mW) 2M Bit/s: 8.07 dBm (6.42 mW) 125k Bit/s: 7.82 dBm (6.05 mW) 500k Bit/s: 8.18 dBm (6.58 mW)
Modulation Type	GFSK	
Bluetooth Version	5.3	
Antenna Specification	Type: Metal press Peak Gain: -2.17 dBi	
Serial number	Radiated : 0827A8A2DE32 Conducted : 0827A8B40A42	

This device supports simultaneous transmission operation.

Simultaneous transmission Scenario	2.4 GHz WiFi	5 GHz WiFi	BTLE	Test Case
BTLE + 2.4 GHz WiFi	on	-	on	Scenario1
BTLE + 5 GHz WiFi	-	on	on	Scenario2

2. TEST METHODOLOGY

FCC KDB 558074 D01 15.247 Meas Guidance v05r02 dated April 02, 2019 entitled "guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices and the measurement procedure described in ANSI C63.10(Version : 2013) 'the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices'.

EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1 GHz. Above 1 GHz with 1.5 m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 6.6.5 of ANSI C63.10. (Version: 2013)

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

3. 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's, which is traceable to recognized national standards.
Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

4. FACILITIES AND ACCREDITATIONS

FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.
Detailed description of test facility was submitted to the Commission and accepted dated March 11, 2024 (Registration Number: KR0032).

EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.
All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5. ANTENNA REQUIREMENTS

According to FCC 47 CFR § 15.203

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

(1) The antennas of this E.U.T are permanently attached.

(2) The E.U.T Complies with the requirement of § 15.203

6. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.10-2013.

All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95 % level of confidence.

The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

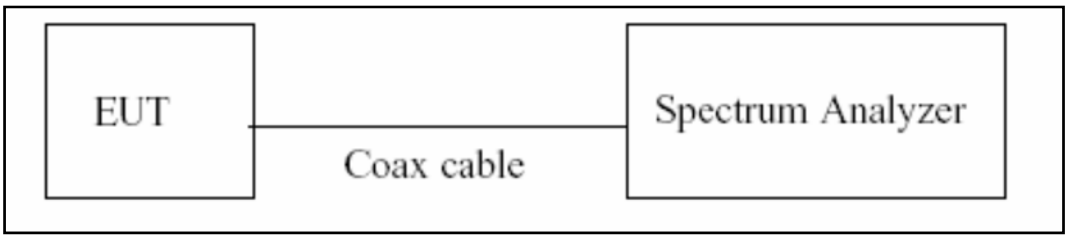
Parameter	Expanded Uncertainty (±kHz)
X dB, 99% Bandwidth	95 (Confidence level about 95 %, k=2)
Frequency stability	28 (Confidence level about 95 %, k=2)

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.54 (Confidence level about 95 %, k=2)
Conducted Output Power(Power Meter)	0.54 (Confidence level about 95 %, k=2)
Conducted Output Power(Signal Analyzer)	0.68 (Confidence level about 95 %, k=2)
Power Spectral Density	1.03 (Confidence level about 95 %, k=2)
Band Edge (Out of Band Emissions)	0.70 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.68 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.75 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.82 (Confidence level about 95 %, k=2)

7. DESCRIPTION OF TESTS

7.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to the zero-span measurement method.

The largest available value of RBW is 8 MHz and VBW is 50 MHz.

The zero-span method of measuring duty cycle shall not be used if T ≤ 6.25 microseconds. (50/6.25 = 8)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/*T*.

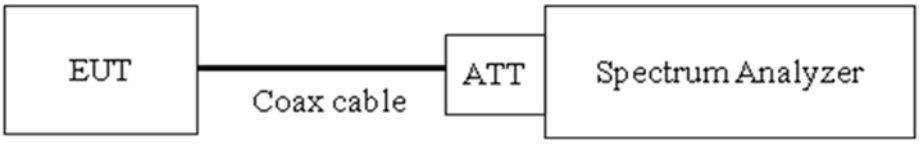
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Average
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on} / T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

7.2. 6 dB Bandwidth

Limit

The minimum permissible 6 dB bandwidth is 500 kHz.

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

(Procedure 8.2 in KDB 558074 v05r02, Procedure 11.8.1 in ANSI 63.10-2013)

1) RBW = 100 kHz
2) VBW ≥ 3 x RBW
3) Detector = Peak
4) Trace mode = max hold
5) Sweep = auto couple
6) Allow the trace to stabilize
7) We tested 6 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 6 dB.

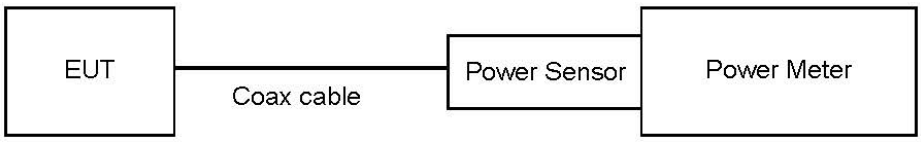
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

7.3. Output Power

Limit

The maximum permissible conducted output power is 1 Watt.

Test Configuration



Test Procedure

The transmitter output is connected to the Power Meter.

- Peak Power (Procedure 11.9.1.3 in ANSI 63.10-2013)
  : Measure the peak power of the transmitter.

- Average Power (Procedure 11.9.2.3 in ANSI 63.10-2013)
  1) Measure the duty cycle.
  2) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
  3) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Sample Calculation

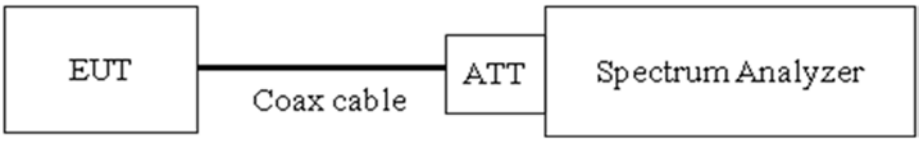
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

7.4. Power Spectral Density

Limit

The transmitter power density average over 1-second interval shall not be greater than 8 dBm in any 3 kHz BW.

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure 8.4 in KDB 558074 v05r02, Procedure 11.10 in ANSI 63.10-2013.

The spectrum analyzer is set to :

1) Set analyzer center frequency to DTS channel center frequency.
2) Set span to at least 1.5 times the DTS bandwidth.
3) RBW = 3 kHz ≤ RBW ≤ 100 kHz.
4) VBW ≥ 3 x RBW.
5) Sweep = auto couple.
6) Detector = Peak.
7) Trace mode = max hold.
8) Allow trace to fully stabilize.
9) Use the peak marker function to determine the maximum amplitude level within the RBW.
10) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Sample Calculation

- Power Spectral Density = Measured Value + ATT loss + Cable loss

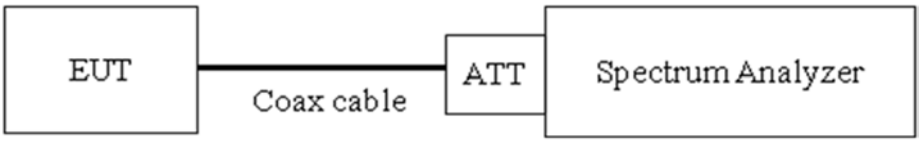
7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

Limit

The maximum conducted (Peak) output power was used to demonstrate compliance, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz.

[Conducted > 20 dBc]

Test Configuration



Test Procedure

The transmitter output is connected to the spectrum analyzer.

(Procedure 11.11 in ANSI 63.10-2013)

1) RBW = 100 kHz
2) VBW ≥ 3 x RBW
3) Set span to encompass the spectrum to be examined
4) Detector = Peak
5) Trace Mode = max hold
6) Sweep time = auto couple
7) Ensure that the number of measurement points ≥ 2 x Span/RBW
8) Allow trace to fully stabilize.
9) Use peak marker function to determine the maximum amplitude level.

Measurements are made over the 30 MHz to 25 GHz range with the transmitter set to the lowest, middle, and highest channels.

Factors for frequency

Freq(MHz)	Factor(dB)
30	16.75
100	16.83
200	16.91
300	17.04
400	17.10
500	17.12
600	17.12
700	17.16
800	17.20
900	17.23
1 000	17.27
2 000	17.54
2400	17.51
2500	17.51
3 000	17.75
4 000	17.93
5 000	18.13
6 000	18.13
7 000	18.24
8 000	18.23
9 000	18.42
1 0000	18.54
11 000	18.67
12 000	18.81
13 000	18.90
14 000	19.02
15 000	19.13
16 000	19.21
17 000	19.33
18 000	19.35
19 000	19.34
2 0000	19.39
21 000	19.42
22 000	19.49
23 000	19.65
24 000	19.66
25 000	19.68
26 000	19.74

Note : 1. 2400 ~ 2500 MHz is fundamental frequency range.

2. Factor = Attenuator + Cable loss

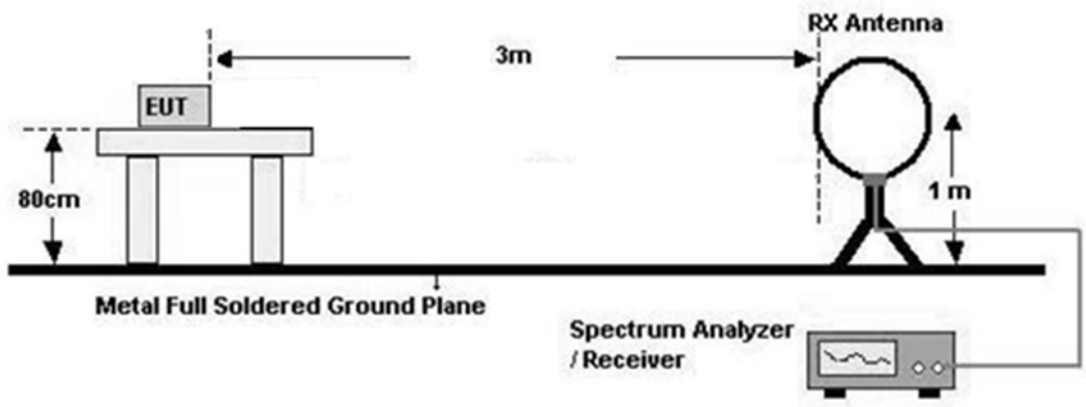
7.6. Radiated Test

Limit

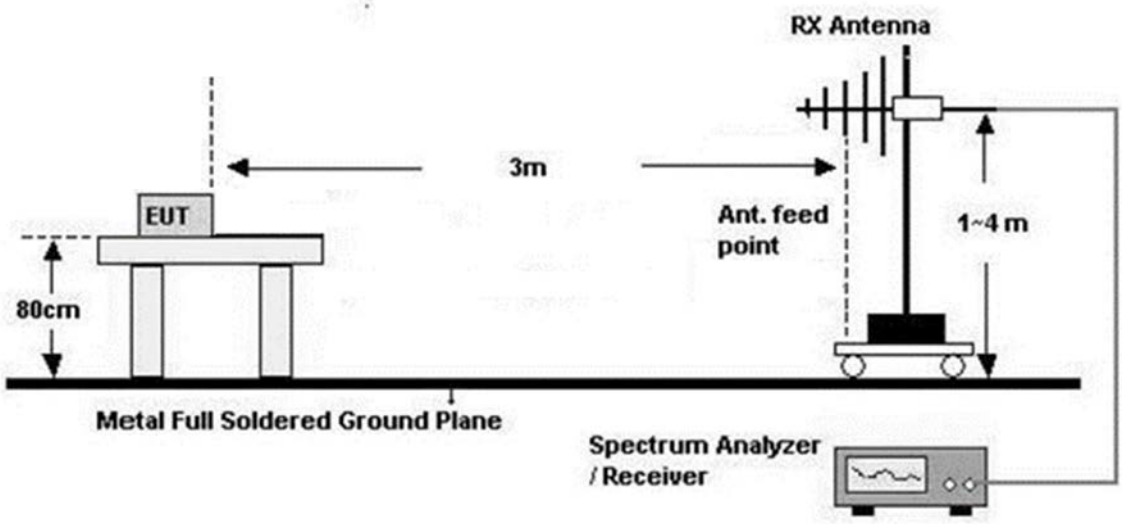
Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

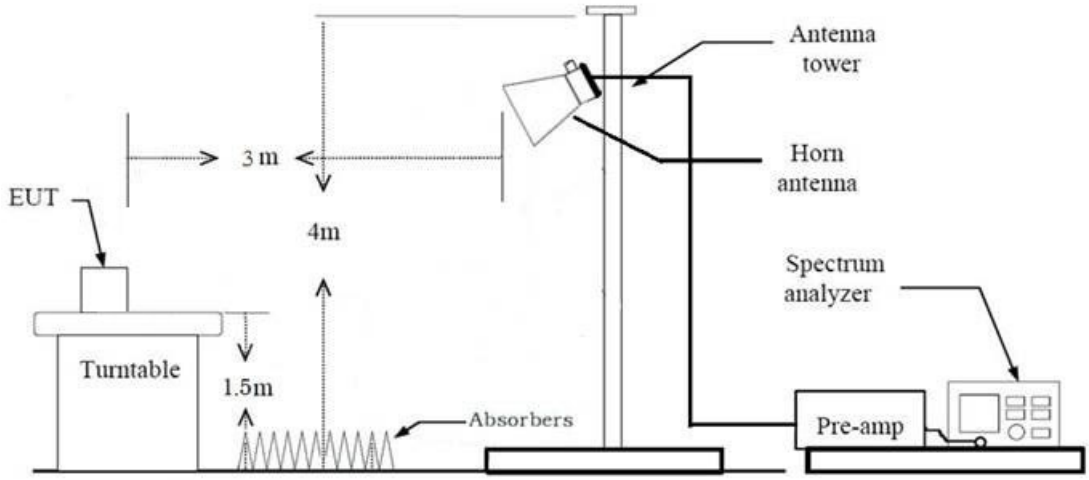
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions(Below 30 MHz)

We tested according to Procedure 8.5 in KDB558074 D01

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The loop antenna was placed at a location 3 m from the EUT
3. The EUT is placed on a turntable, which is 0.8 m above ground plane.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization and Parallel to the ground plane in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Distance Correction Factor(0.009 MHz – 0.490 MHz) = 40log(3 m/300 m) = - 80 dB
   Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = 40log(3 m/30 m) = - 40 dB
   Measurement Distance : 3 m
8. Spectrum Setting
   - Frequency Range = 9 kHz ~ 30 MHz
   - Detector = Peak
   - Trace = Max hold
   - RBW = 9 kHz
   - VBW ≥ 3 x RBW
9. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
10. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

KDB 414788 OFS and Chamber Correlation Justification

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

OFS and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

Test Procedure of Radiated spurious emissions(Below 1 GHz)

We tested according to Procedure 8.5 in KDB558074 D01

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. The Hybrid antenna was placed at a location 3 m from the EUT, which is varied from 1m to 4 m to find out the highest emissions.
4. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
5. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
6. Spectrum Setting
   (1) Measurement Type(Peak):
      - Measured Frequency Range : 30 MHz – 1 GHz
      - Detector = Peak
      - Trace = Max hold
      - RBW = 100 kHz
      - VBW ≥ 3 x RBW
   (2) Measurement Type(Quasi-peak):
      - Measured Frequency Range : 30 MHz – 1 GHz
      - Detector = Quasi-Peak
      - RBW = 120 kHz

   In general, (1) is used mainly
7. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L)
8. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.

Test Procedure of Radiated spurious emissions (Above 1 GHz)

We tested according to Procedure 8.5 in KDB558074 D01

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with provied jig and setup guide.
8. Spectrum Setting (Method 8.6 in KDB 558074 v05r02, Procedure 11.12 in ANSI 63.10-2013)
   (1) Measurement Type(Peak):
      - Measured Frequency Range : 1 GHz – 25 GHz
      - Detector = Peak
      - Trace = Max hold
      - RBW = 1 MHz
      - VBW ≥ 3 x RBW
   (2) Measurement Type(Average):
      - Duty cycle < 98 %, duty cycle variations are less than ±2 %
      - Measured Frequency Range : 1 GHz – 25 GHz
      - Detector = RMS
      - Averaging type = power (*i.e.*, RMS)
      - RBW = 1 MHz
      - VBW ≥ 3 x RBW
      - Sweep time = auto.
      - Trace mode = average (at least 100 traces).
      - 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.

- Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1

9. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
10. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
11. Total (Measurement Type : Peak)

= Peak Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)

Total (Measurement Type : Average)

= Average Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G) + Distance Factor(D.F)

#Note : Used Average measurement method according to KDB 558074 Section11 Q3

Test Procedure of Radiated Restricted Band Edge

We tested according to Procedure 8.6 in KDB558074 D01

1. The EUT is placed on a turntable, which is 1.5 m above ground plane.
2. We have done x, y, z planes in EUT and horizontal and vertical polarization in detecting antenna.
3. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
4. EUT is set 3 m away from the receiving antenna, which is varied from 1 m to 4 m to find out the highest emissions.
5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
6. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
7. The unit was tested with provied jig and setup guide.
8. Spectrum Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
- Detector = Peak
- Trace = Max hold
- RBW = 1 MHz
- VBW ≥ 3 x RBW

(2) Measurement Type(Average):

- Duty cycle < 98 %, duty cycle variations are less than ±2 %
- Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW ≥ 3 x RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- 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.

- Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1.

9. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
10. Distance extrapolation factor = 20log (test distance / specific distance) (dB)

(1)Measurement(Peak)

= Measured Value(Peak)

(2)Measurement(Avg)

= Measured Value(Avg)

- We apply to the offset in range 1 GHz - 18 GHz
- The offset = Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)

#Note : Used Average measurement method according to KDB 558074 Section11 Q3

7.7. AC Power line Conducted Emissions

Limit

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56[a]	56 to 46[a]
0.50 to 5	56	46
5 to 30	60	50

[a]Decreases with the logarithm of the frequency.

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

Test Configuration

See test photographs attached in Annex A for the actual connections between EUT and support equipment.

Test Procedure

1. The EUT is placed on a wooden table 80 cm above the reference ground plane.
2. The EUT is connected via LISN to a test power supply.
3. The measurement results are obtained as described below:
4. Detectors : Quasi Peak and Average Detector.

Sample Calculation

Quasi-peak(Final Result) = Measured Value + Correction Factor

7.8. Worst case configuration and mode

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone
   - Worstcase : Stand alone
2. EUT Axis:
   - Radiated Spurious Emissions : Z
   - Radiated Restricted Band Edge : X
3. All packet length of operation were investigated and the test results are worst case in lowest packet length.
   (Worst case :1M Bit/s 37 Byte)
   (125k, 500k, 1M Bit/s all have the same 1 MHz Bandwidth and only Worst result is attached.)
4. All datarate of operation were investigated and the worst case configuration results are reported.
   - Worst case : 1 M, 2 M
5. All position of loop antenna were investigated and the test result is a no critical peak found at all positions.
   - Position : Horizontal, Vertical, Parallel to the ground plane

AC Power line Conducted Emissions

1. All modes of operation were investigated and the worst case configuration results are reported.
   - Mode : Stand alone
   - Worstcase : Stand alone

Conducted test

1. The EUT was configured with data rate of highest power.

Radiated test(Simultaneous transmission Scenario)

All modes of operation were investigated and the worst case configuration results are reported.

- Mode : Stand alone
- Worstcase : Stand alone

2. EUT Axis

- Radiated Spurious Emissions : Z

3. All of Simultaneous transmission Scenario were investigated and the worst case configuration results are reported.

Simultaneous transmission Scenario	2.4 GHz WiFi	5 GHz WiFi	BTLE	Test Case
BTLE + 2.4 GHz WiFi	on	-	on	Scenario1
BTLE + 5 GHz WiFi	-	on	on	Scenario2

4. The Simultaneous transmission mode test investigated both intermodulation and radiated spurious emissions. And the worst results were reported.

- Worst result: Radiated spurious emissions
- Intermodulation: No signals are generated.
- Radiated spurious emissions: cf. Section 9.6

Scenario	Description	BTLE Emission	2.4 GHz Emission
1	Antenna	ANT 1	ANT ALL
	Channel	0	1
	Data Rate	1 Mbps	1 Mbps
	Mode	1M 37 Byte	802.11b

Note : DTS Simultaneous transmission Scenario Data refer to [DTS] Test Report

Scenario 2	Description	BTLE Emission	5 GHz Emission
2	Antenna	ANT 1	ANT ALL
	Channel	0	144
	Data Rate	1 Mbps	6 Mbps
	Mode	1M_37byte	802.11a

Note : UNII Simultaneous transmission Data refer to [UNII] Test Report

8. SUMMARY TEST OF RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	§ 15.247(a)(2)	> 500 kHz	Conducted	PASS
Conducted Maximum Output Power	§ 15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§ 15.247(e)	< 8 dBm / 3 kHz Band		PASS
Band Edge (Out of Band Emissions)	§ 15.247(d)	Conducted > 20 dBc		PASS
AC Power line Conducted Emissions	§ 15.207	cf. Section 7.7		PASS
Radiated Spurious Emissions	§ 15.247(d), 15.205, 15.209	cf. Section 7.6	Radiated	PASS
Radiated Restricted Band Edge	§ 15.247(d), 15.205, 15.209	cf. Section 7.6		PASS

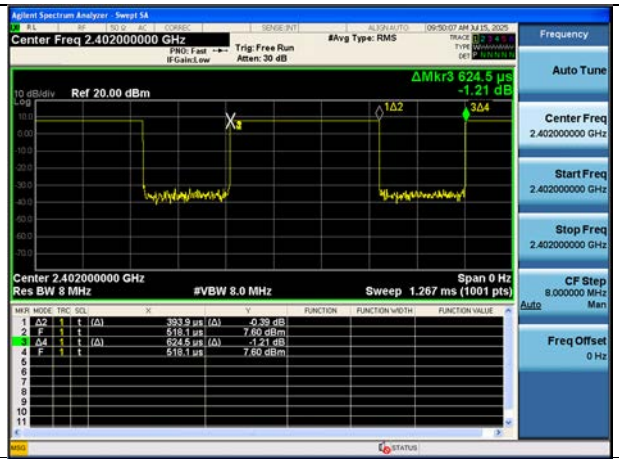
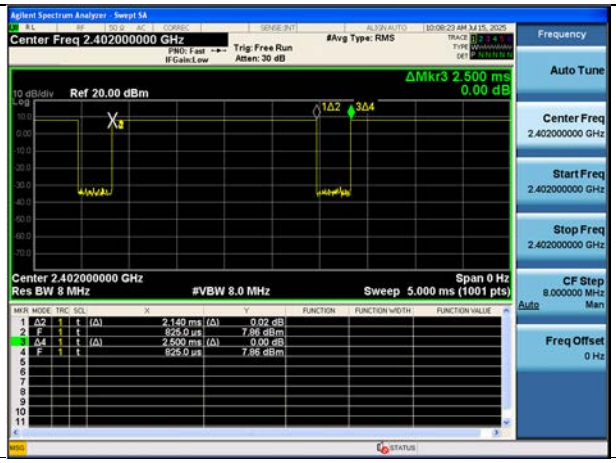
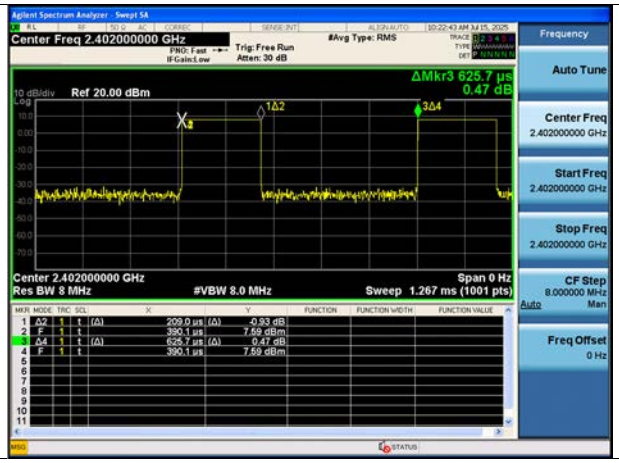
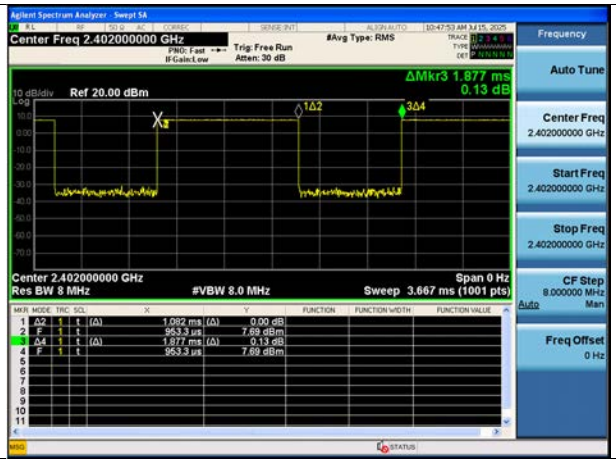
Note

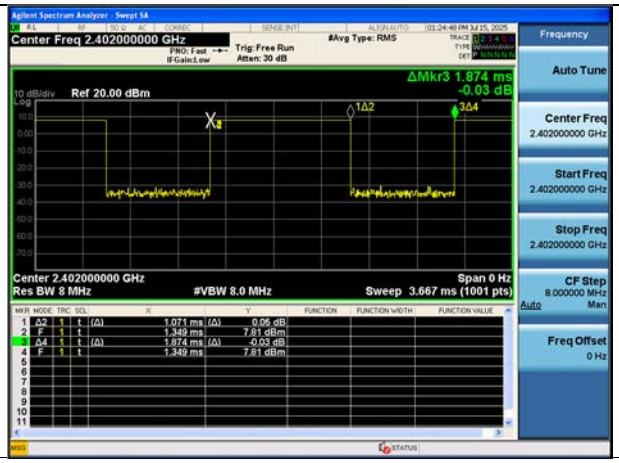
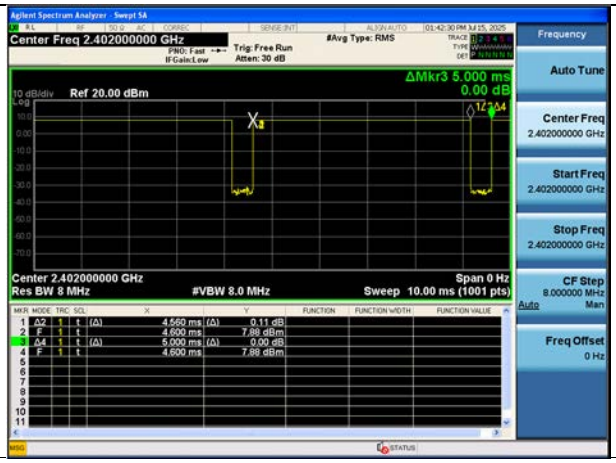
1. The decision rule applies 'simple acceptance'

9. TEST RESULT

9.1 DUTY CYCLE

Data rate (Bit/s)	Packet length (Byte)	T_{on} (ms)	T_{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
1M	37	0.394	0.624	0.631	2.001
	255	2.140	2.500	0.856	0.675
2M	37	0.209	0.626	0.334	4.762
	255	1.082	1.877	0.576	2.394
125k	37	3.107	3.747	0.829	0.814
	255	17.067	17.500	0.975	0.109
500k	37	1.071	1.874	0.571	2.430
	255	4.560	5.000	0.912	0.400

1 M Bit/s (37 Byte) Duty Cycle (Low-CH 0)	1 M Bit/s (255 Byte) Duty Cycle (Low-CH 0)
	
2 M Bit/s (37 Byte) Duty Cycle (Low-CH 0)	2 M Bit/s (255 Byte) Duty Cycle (Low-CH 0)
	
125 k Bit/s (37 Byte) Duty Cycle (Low-CH 0)	125 k Bit/s (255 Byte) Duty Cycle (Low-CH 0)
	

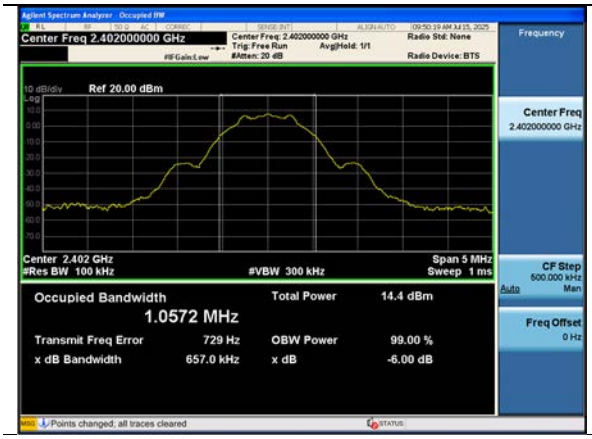
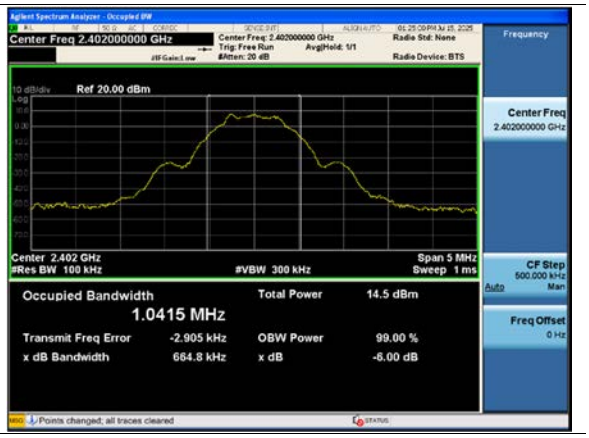
500 k Bit/s (37 Byte) Duty Cycle (Low-CH 0)	500 k Bit/s (255 Byte) Duty Cycle (Low-CH 0)
	

9.2 6 dB BANDWIDTH

Mode (Bit/s)	Channel	6 dB Bandwidth (kHz)	Limit (kHz)
1M(37)	0	657.0	> 500
	19	665.7	
	39	664.7	
1M(255)	0	707.8	> 500
	19	679.9	
	39	709.2	
2M(37)	0	957.3	> 500
	19	1129	
	39	1094	
2M(255)	0	1144	> 500
	19	1137	
	39	1139	
125k (37)	0	603.0	> 500
	19	604.2	
	39	641.8	
125k (255)	0	661.5	> 500
	19	696.8	
	39	696.9	
500k (37)	0	664.8	> 500
	19	676.2	
	39	668.6	
500k (255)	0	674.8	> 500
	19	665.8	
	39	680.2	

▣ Test Plots

Note: In order to simplify the report, attached plots were only the narrowest 6 dB BW channel (125k, 500k, 1M Bit/s all have the same 1 MHz Band width and only Worst result is attached.)

1 M Bit/s 37 Byte (Low-CH 0)	2 M Bit/s 37 Byte (Low-CH 0)
	
125k Bit/s 37 Byte (Low-CH 0)	500k Bit/s 37 Byte (Low-CH 0)
	

9.3 OUTPUT POWER

Peak Power

Mode	Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)
1M 37Byte	0	2402	7.705	30
	19	2440	8.194	
	39	2480	8.368	
1M 255Byte	0	2402	7.984	
	19	2440	8.046	
	39	2480	8.175	
2M 37Byte	0	2402	8.199	
	19	2440	7.927	
	39	2480	8.441	
2M 255Byte	0	2402	7.837	
	19	2440	7.883	
	39	2480	8.160	
125k 37Byte	0	2402	7.635	
	19	2440	7.710	
	39	2480	7.829	
125k 255Byte	0	2402	7.932	
	19	2440	7.861	
	39	2480	8.071	
500k 37Byte	0	2402	8.007	
	19	2440	8.215	
	39	2480	8.400	
500k 255Byte	0	2402	8.011	
	19	2440	8.069	
	39	2480	8.265	

Average Power

Mode	Channel	Frequency (MHz)	Measured Power [dBm]	D.C.F [dB]	Total Power [dBm]	Limit (dBm)
1M 37Byte	0	2402	5.48	2.00	7.48	30
	19	2440	5.99	2.00	7.99	
	39	2480	6.09	2.00	8.09	
1M 255Byte	0	2402	7.10	0.68	7.78	
	19	2440	7.23	0.68	7.91	
	39	2480	7.24	0.68	7.92	
2M 37Byte	0	2402	2.96	4.76	7.72	
	19	2440	2.80	4.76	7.56	
	39	2480	3.31	4.76	8.07	
2M 255Byte	0	2402	5.33	2.39	7.72	
	19	2440	5.09	2.39	7.48	
	39	2480	5.55	2.39	7.94	
125k 37Byte	0	2402	6.61	0.81	7.42	
	19	2440	6.67	0.81	7.48	
	39	2480	6.68	0.81	7.49	
125k 255Byte	0	2402	7.63	0.11	7.74	
	19	2440	7.60	0.11	7.71	
	39	2480	7.71	0.11	7.82	
500k 37Byte	0	2402	5.42	2.43	7.85	
	19	2440	5.48	2.43	7.91	
	39	2480	5.75	2.43	8.18	
500k 255Byte	0	2402	7.39	0.40	7.79	
	19	2440	6.99	0.40	7.39	
	39	2480	7.64	0.40	8.04	

9.4 POWER SPECTRAL DENSITY

Mode	Channel	Frequency (MHz)	Total PSD (dBm/kHz)	Limit (dBm/3kHz)
1M 37Byte	0	2402	-1.563	8
	19	2440	-1.154	
	39	2480	-1.257	
1M 255Byte	0	2402	-1.715	
	19	2440	-1.564	
	39	2480	-1.218	
2M 37Byte	0	2402	-2.560	
	19	2440	-2.517	
	39	2480	-1.291	
2M 255Byte	0	2402	-2.188	
	19	2440	-2.638	
	39	2480	-2.143	
125k 37Byte	0	2402	3.218	
	19	2440	3.275	
	39	2480	3.330	
125k 255Byte	0	2402	2.173	
	19	2440	3.477	
	39	2480	3.481	
500k 37Byte	0	2402	2.201	
	19	2440	2.450	
	39	2480	2.565	
500k 255Byte	0	2402	2.663	
	19	2440	2.861	
	39	2480	2.983	

▣ Test Plots

Note : In order to simplify the report, attached plots were only the worst case PSD channel.

1 MBit/s 37 Byte (Mid-CH 19)	2 M Bit/s 37 Byte (High-CH 39)
	
125k Bit/s 255 Byte (High-CH 39)	500k Bit/s 255 Byte (High-CH 39)
	

9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS

[BAND EDGE]

Mode	Channel	Frequency (MHz)	Position	Band Edge	Limit (dBc)
1M 37Byte	0	2402	Lower	54.233	20
	39	2480	Upper	56.339	
1M 255Byte	0	2402	Lower	54.076	
	39	2480	Upper	56.073	
2M 37Byte	0	2402	Lower	32.627	
	39	2480	Upper	56.985	
2M 255Byte	0	2402	Lower	32.696	
	39	2480	Upper	56.035	
125k 37Byte	0	2402	Lower	54.334	
	39	2480	Upper	55.393	
125k 255Byte	0	2402	Lower	54.438	
	39	2480	Upper	52.622	
500k 37Byte	0	2402	Lower	54.327	
	39	2480	Upper	55.788	
500k 255Byte	0	2402	Lower	54.382	
	39	2480	Upper	56.018	

▣ Test Plot(Band Edge)

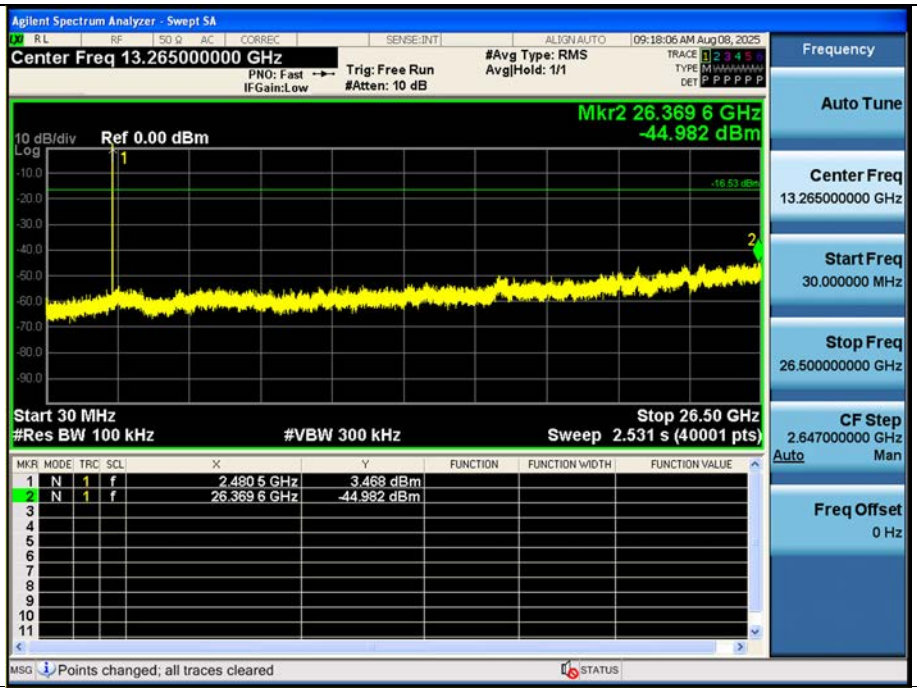
2M Bit/s 37 Byte (Low-CH 0)

[CONDUCTED SPURIOUS EMISSIONS]

In order to simplify the report, attached plots were only the worst case channel and data rate.
- Worst case (2M Bit/s 37 Byte Ch. 39(2 480 MHz))

▣ Test Plots(Conducted Spurious Emission (30 MHz – 26.5 GHz))

Conducted Spurious Emission



Note:

1. Limit: 16.532 dBm

9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

Frequency	Measured Value	A.F+C.L+D.F	POL	Total	Limit	Margin
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. The Measured of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
2. Distance extrapolation factor = 40log (specific distance / test distance) (dB)
3. Limit line = specific Limits (dBμV) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	POL	Total	Limit	Margin
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]
No Critical peaks found						

Note:

1. Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Quasi peak detector mode.

Frequency Range : Above 1 GHz

CH 0	2402	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	A.F+C.L-A.G+D.F	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4804	49.60	-0.48	V	49.12	73.98	24.86	PK
4804	40.66	-0.48	V	40.18	53.98	13.80	AV
7206	46.17	4.53	V	50.70	73.98	23.28	PK
7206	33.22	4.53	V	37.75	53.98	16.23	AV
4804	51.11	-0.48	H	50.63	73.98	23.35	PK
4804	42.95	-0.48	H	42.47	53.98	11.51	AV
7206	45.50	4.53	H	50.03	73.98	23.95	PK
7206	33.12	4.53	H	37.65	53.98	16.33	AV

CH 17	2440	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	A.F+C.L-A.G+D.F	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4880	48.41	-0.83	V	47.58	73.98	26.40	PK
4880	39.31	-0.83	V	38.48	53.98	15.50	AV
7320	45.62	4.85	V	50.47	73.98	23.51	PK
7320	33.08	4.85	V	37.93	53.98	16.05	AV
4880	50.34	-0.83	H	49.51	73.98	24.47	PK
4880	42.08	-0.83	H	41.25	53.98	12.73	AV
7320	45.59	4.85	H	50.44	73.98	23.54	PK
7320	33.05	4.85	H	37.90	53.98	16.08	AV

CH 39	2480	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	A.F+C.L-A.G+D.F	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4960	49.25	-0.70	V	48.55	73.98	25.43	PK
4960	39.38	-0.70	V	38.68	53.98	15.30	AV
7440	45.38	5.05	V	50.43	73.98	23.55	PK
7440	32.96	5.05	V	38.01	53.98	15.97	AV
4960	49.67	-0.70	H	48.97	73.98	25.01	PK
4960	40.82	-0.70	H	40.12	53.98	13.86	AV
7440	44.95	5.05	H	50.00	73.98	23.98	PK
7440	32.95	5.05	H	38.00	53.98	15.98	AV

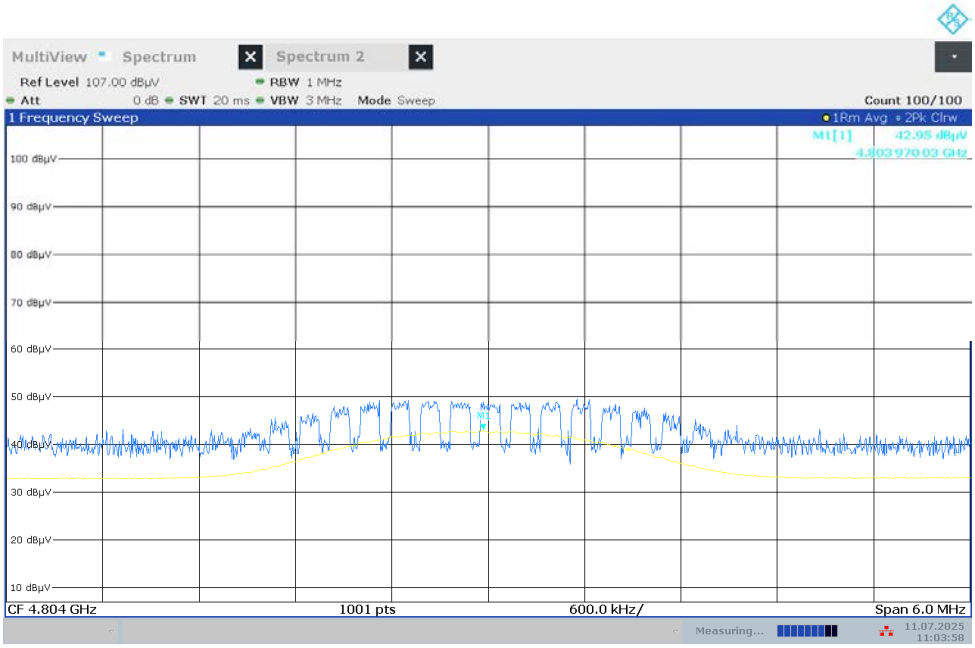
CH 0	2402	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	A.F+C.L-A.G+D.F	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	
4804	49.49	-0.48	V	49.01	73.98	24.97	PK
4804	37.29	-0.48	V	36.81	53.98	17.17	AV
7206	45.52	4.53	V	50.05	73.98	23.93	PK
7206	33.24	4.53	V	37.77	53.98	16.21	AV
4804	51.10	-0.48	H	50.62	73.98	23.36	PK
4804	39.08	-0.48	H	38.60	53.98	15.38	AV
7206	46.43	4.53	H	50.96	73.98	23.02	PK
7206	33.20	4.53	H	37.73	53.98	16.25	AV

CH 17	2440	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	A.F+C.L-A.G+D.F	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	
4880	48.65	-0.83	V	47.82	73.98	26.16	PK
4880	36.17	-0.83	V	35.34	53.98	18.64	AV
7320	45.27	4.85	V	50.12	73.98	23.86	PK
7320	33.12	4.85	V	37.97	53.98	16.01	AV
4880	50.73	-0.83	H	49.90	73.98	24.08	PK
4880	37.75	-0.83	H	36.92	53.98	17.06	AV
7320	45.43	4.85	H	50.28	73.98	23.70	PK
7320	33.06	4.85	H	37.91	53.98	16.07	AV

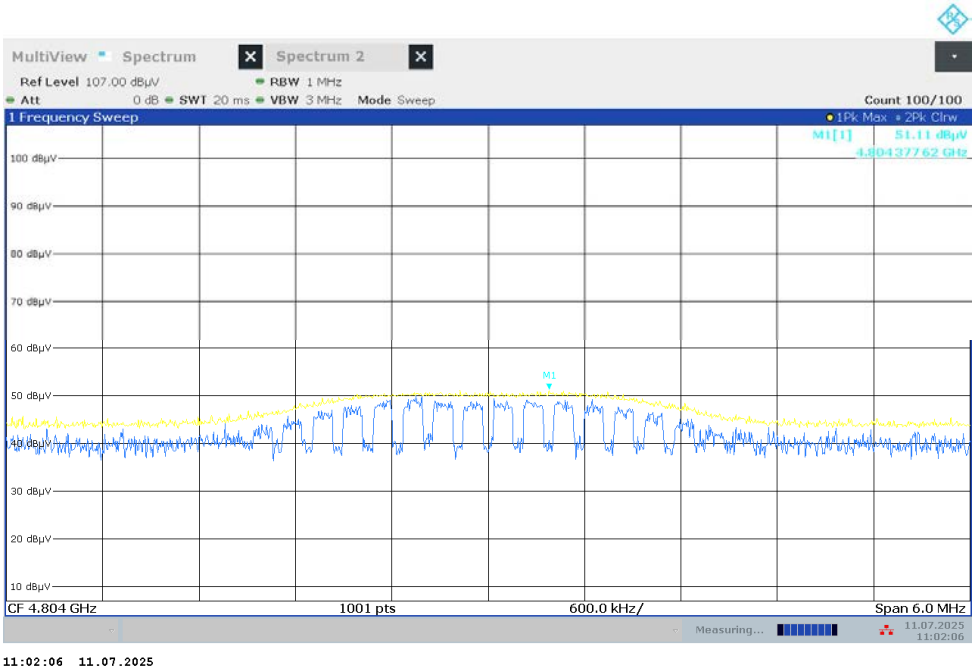
CH 39	2480	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	A.F+C.L-A.G+D.F	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	
4960	48.52	-0.70	V	47.82	73.98	26.16	PK
4960	36.07	-0.70	V	35.37	53.98	18.61	AV
7440	44.79	5.05	V	49.84	73.98	24.14	PK
7440	32.92	5.05	V	37.97	53.98	16.01	AV
4960	49.49	-0.70	H	48.79	73.98	25.19	PK
4960	37.32	-0.70	H	36.62	53.98	17.36	AV
7440	45.13	5.05	H	50.18	73.98	23.80	PK
7440	32.96	5.05	H	38.01	53.98	15.97	AV

▣ 1 M Bit/s 37 Bytes Test Plots (Worst case : Z-H)

Radiated Spurious Emissions plot – Average Result (Ch.0 2nd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.0 2nd Harmonic)



Note:

Plots of worst case are only reported.

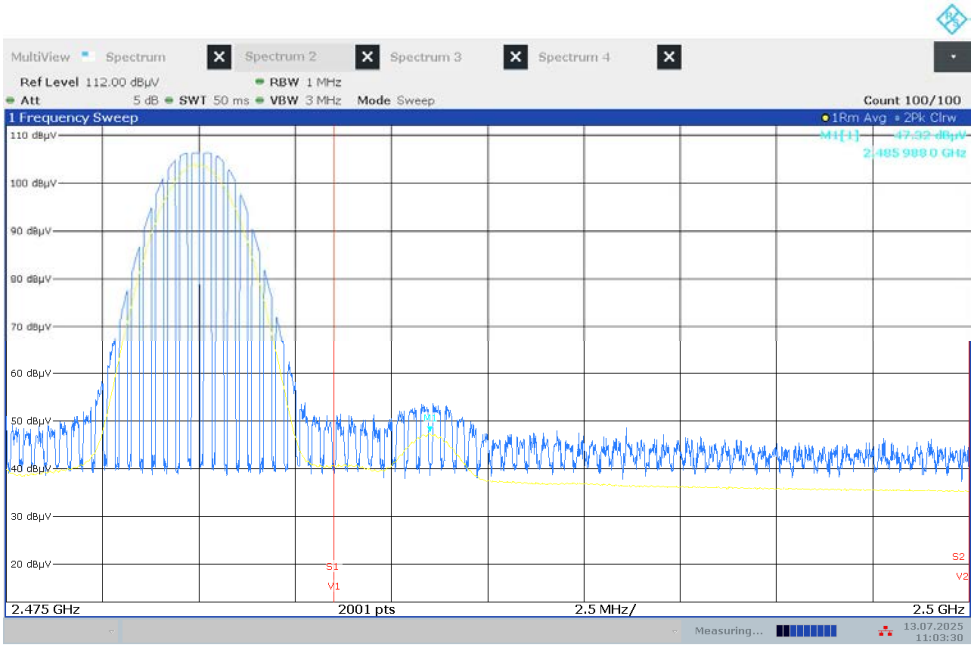
9.7 RADIATED RESTRICTED BAND EDGES

1 M Bit/s (37 Bytes)							
Channel	0 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L-A.G+ATT+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	47.30	3.35	H	50.65	73.98	23.33	PK
2390.0	35.03	3.35	H	38.38	53.98	15.60	AV
2483.5	55.33	3.55	H	58.88	73.98	15.10	PK
2483.5	47.32	3.55	H	50.87	53.98	3.11	AV

2 M Bit/s (37 Bytes)							
Channel	0 CH, 39 CH	Channel Frequency	2402 MHz, 2480 MHz				
Frequency	Measured Value	A.F+C.L-A.G+ATT+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	47.09	2.25	H	49.34	73.98	24.64	PK
2390.0	34.45	2.25	H	36.70	53.98	17.28	AV
2483.5	55.66	2.50	H	58.16	73.98	15.82	PK
2483.5	44.57	2.50	H	47.07	53.98	6.91	AV

▣ Mode : 1M Bit/s (37 Bytes) Test Plots

Radiated Restricted Band Edges plot – Average Result (Ch.39, X-H)



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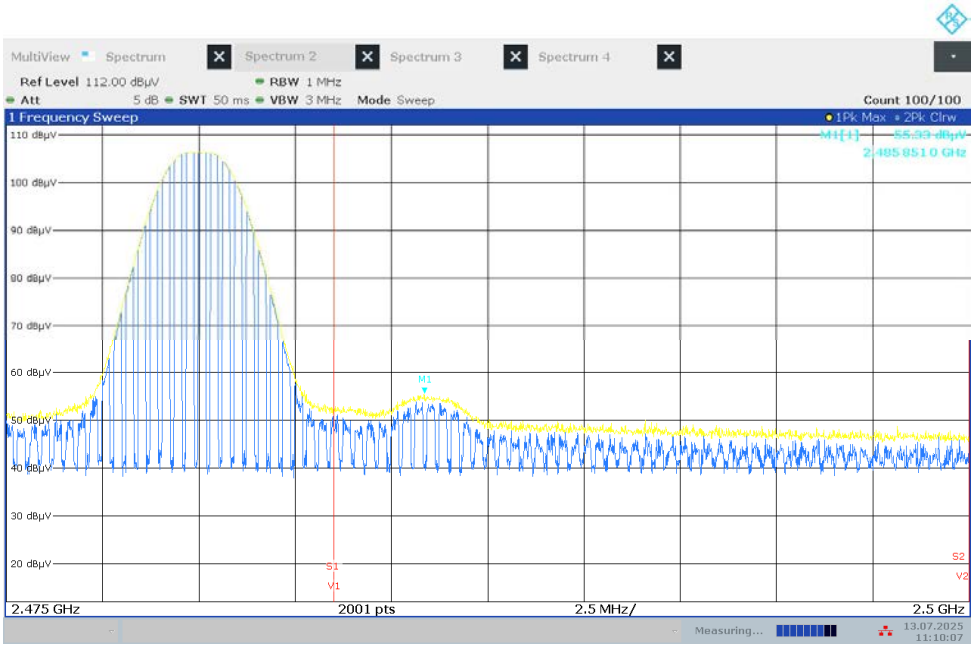
Radiated Restricted Band Edges plot – Peak Result (Ch.39, X-H)



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Note:

In order to simplify the report, Plot of worst case are only reported.

9.8 POWERLINE CONDUCTED EMISSIONS

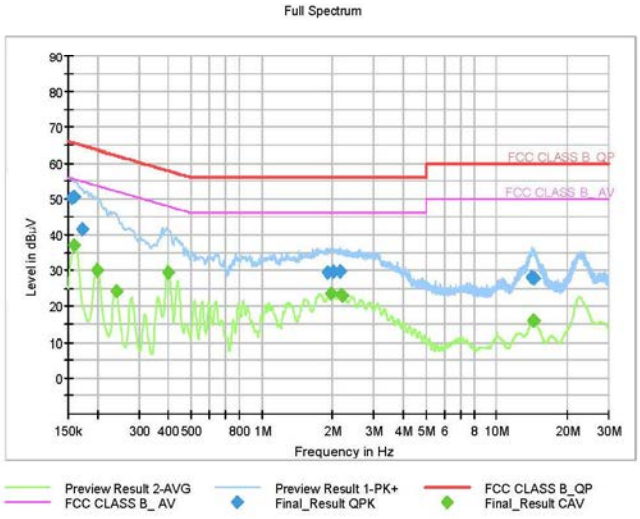
Conducted Emissions

BT LE Mode 1 / 1

Test Report

Common Information

EUT : LGSWNAC62
Operating Conditions : BT LE Mode
Comment :



Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1545	50.31	65.75	15.44	9.000	L1	9.6
0.1590	50.51	65.52	15.01	9.000	L1	9.6
0.1725	41.56	64.84	23.28	9.000	N	9.6
1.8995	29.43	56.00	26.57	9.000	N	9.6
2.0278	29.84	56.00	26.16	9.000	N	9.6
2.1628	29.76	56.00	26.24	9.000	N	9.6
14.1913	28.04	60.00	31.96	9.000	N	9.9
14.1958	27.98	60.00	32.02	9.000	N	9.9
14.4230	27.95	60.00	32.05	9.000	N	9.9

Final_Result_CAV

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1590	37.27	55.52	18.24	9.000	L1	9.6
0.1995	29.93	53.63	23.70	9.000	L1	9.6
0.2400	24.42	52.10	27.68	9.000	L1	9.7
0.3975	29.46	47.91	18.45	9.000	L1	9.7
1.9693	23.79	46.00	22.21	9.000	N	9.6
2.1740	23.19	46.00	22.81	9.000	N	9.6
2.2055	23.12	46.00	22.88	9.000	N	9.6
14.2880	15.86	50.00	34.14	9.000	N	9.9
14.4230	15.89	50.00	34.11	9.000	N	9.9

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10. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	07/15/2026	Annual
EMI Test Receiver	ESR	Rohde & Schwarz	101910	08/27/2025	Annual
Signal Analyzer	N9020A	Keysight	MY46471250	08/04/2026	Annual
Power Measurement Set	OSP 120	Rohde & Schwarz	100935	07/24/2026	Annual
Power Meter	N1911A	Agilent	MY45100523	02/21/2026	Annual
Power Sensor	N1921A	Agilent	MY57820067	02/04/2026	Annual
Power Splitter	11667B	Hewlett Packard	10545	01/23/2026	Annual
DC Power Supply	E3632A	Agilent	KR75305528	12/24/2025	Annual
Attenuator(10 dB)(DC-26.5 GHz)	8493C-010	Agilent	08285	05/19/2026	Annual
Attenuator(20 dB)	18N-20dB	Rohde & Schwarz	8	02/18/2026	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	HCT CO., LTD.	N/A	N/A	N/A
Bluetooth Tester	CBT	Rohde & Schwarz	100752	12/27/2025	Annual

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	S4AM	08/01/2026	Annual
Turn Table	1060	Innco system	N/A	N/A	N/A
Turn Table	N/A	Ets.	N/A	N/A	N/A
Loop Antenna	FMZB 1513	Rohde & Schwarz	1513-333	06/23/2027	Biennial
BILOG Antenna	VULB 9168	Schwarzbeck	9168-0895	08/28/2026	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1191	11/07/2025	Biennial
Horn Antenna	BBHA9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Amp & Filter Bank Switch Controller	FBSM-01B	TNM system	TM20090002	N/A	N/A
RF Switching System	FBSR-04C (3 GHz HPF + LNA)	TNM system	S4L1	03/12/2026	Annual
RF Switching System	FBSR-04C (10 dB ATT + LNA)	TNM system	S4L2	03/12/2026	Annual
RF Switching System	FBSR-04C (3 dB ATT + LNA)	TNM system	S4L3	03/12/2026	Annual
RF Switching System	FBSR-04C (LNA)	TNM system	S4L4	03/12/2026	Annual
RF Switching System	FBSR-04C (Thru)	TNM system	S4L6	03/12/2026	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/12/2026	Annual
Spectrum Analyzer	FSV30 (10 Hz ~ 30 GHz)	Rohde & Schwarz	100746	07/01/2026	Annual
Spectrum Analyzer	FSW (2 Hz ~ 67 GHz)	Rohde & Schwarz	101736	05/27/2026	Annual

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
3. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5(Version : 2017).

11. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2508-FC010-P