TEST REPORT

FCC BT LE Test for LGSWNAC64
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2510-FC029-R1

DATE OF ISSUE
November 25, 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 LGSWNAC64
FCC ID	2BO3LLGSWNAC64
Date of Test	July 21, 2025 ~ August 29, 2025
FCC Classification	Digital Transmission System(DTS)
Test Standard Used	FCC Rule Part(s): Part 15.247
Test Results	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

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REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	October 20, 2025	Initial Release
1	November 25, 2025	Revised the typo on page 1. (Permissive Change -> Certification)

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)

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1. EUT DESCRIPTION

Model	LGSWNAC64	
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	Peak	1 M Bit/s: 7.979 dBm (6.28 mW) 2 M Bit/s: 8.071 dBm (6.41 mW) 125 k Bit/s: 8.033 dBm (6.36 mW) 500 k Bit/s: 8.159 dBm (6.54 mW)
	Average	1 M Bit/s: 7.67 dBm (5.84 mW) 2 M Bit/s: 7.75 dBm (5.96 mW) 125 k Bit/s: 7.78 dBm (6.00 mW) 500 k Bit/s: 7.75 dBm (5.96 mW)
Modulation Type	GFSK	
Bluetooth Version	5.4	
Antenna Specification	Type: Metal Press Peak Gain: -2.73 dBi	
Serial number	Conducted : 6C15DB1726F0 Radiated : 0827A8A35ED2	

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ANTENNA CONFIGURATIONS

1. Below Tables are the possible configurations.

Configurations	SISO		Dual BT
	Ant1	Ant2	Ant1 & Ant2
Bluetooth Low Energy	O	X	X

Note:

1) O = Support, X = Not Support
2) SISO = Single Input Single Output

2.This device supports simultaneous transmission operation, which allows for two channels to operate independent of one another in the 2.4 GHz and 5 GHz Bands simultaneously on each antenna.

Simultaneous transmission Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	Bluetooth	Test Case
Bluetooth + 2.4 GHz WiFi MIMO	on	on	-	-	on	
Bluetooth + 5 GHz WiFi MIMO	-	-	on	on	on	Scenario 1
2.4 GHz WiFi SISO + 5 GHz WiFi SISO	-	on	on	-	-	
Bluetooth + 2.4 GHz WiFi SISO + 5 GHz WiFi SISO	-	on	on	-	on	Scenario 2

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2. TEST METHODOLOGY

Unlicensed wireless device were tested using the following measurement procedure.

[1] KDB 558074 D01 15.247 Meas Guidance v05r02

[2] ANSI C63.10-2020

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 C63.10-2020 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

According to the requirements in Section 6.3 ~ Section 6.6 of ANSI C63.10-2020

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.

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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 ANSI/USEMCSC C63.2-2023, "American National Standard for Specifications of Electromagnetic Interference and Field Strength Measuring Instrumentation in the Frequency Range 9 kHz to 40 GHz".

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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 C63.10-2020.

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)

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7. DESCRIPTION OF TESTS

Test Item	Test Procedure
Duty Cycle	- ANSI C63.10-2020 – Section 11.6
6 dB Bandwidth	- ANSI C63.10-2020 – Section 11.8
Output Power	- ANSI C63.10-2020 – Section 11.9.1.2(Peak) & 11.9.2.3(Avg)
Power Spectral Density	- ANSI C63.10-2020 – Section 11.10
Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions	- ANSI C63.10-2020– Section 11.11
Radiated Test	- ANSI C63.10-2020 – Section 6.4 (Below 30 MHz) - ANSI C63.10-2020 – Section 6.5 (30 MHz to 1000 MHz) - ANSI C63.10-2020 – Section 6.6 (1 GHz to 40 GHz) - ANSI C63.10-2020 – Section 6.10 & 11.12 (Restricted frequency bands)
AC Power line Conducted Emissions	- ANSI C63.10-2020– Section 6.2

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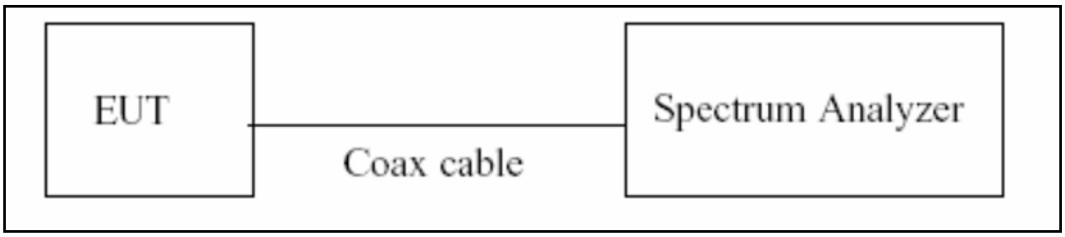
7.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

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*.

The Spectrum Analyzer is set to

1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
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)

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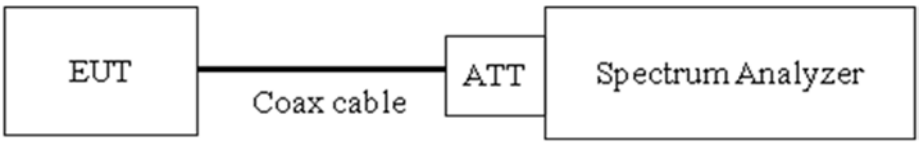
7.2. 6 dB Bandwidth

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

1) RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
2) VBW ≥ 3 x RBW
3) Detector = Peak
4) Trace mode = max hold
5) Sweep = No faster than coupled (auto) time.
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.

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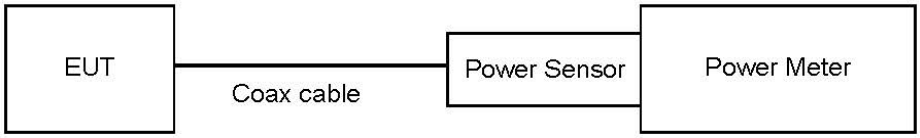
7.3. Output Power

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

  : Measure the peak power of the transmitter.

- Average Power
  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

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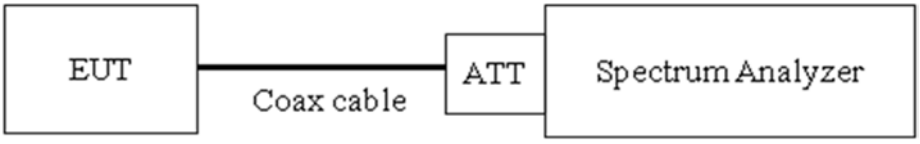
7.4. Power Spectral Density

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.

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 = No faster than coupled (auto) time.
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 + Duty Cycle Factor

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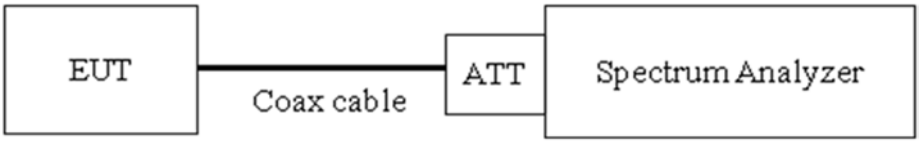
7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

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.

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 = No faster than coupled (auto) time.
7) Allow trace to fully stabilize.
8) 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.

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Factors for frequency

Freq(MHz)	Factor(dB)
30	10.10
100	10.11
200	10.15
300	10.18
400	10.19
500	10.26
600	10.25
700	10.28
800	10.29
900	10.30
1000	10.30
2000	10.52
2400	**10.60**
2500	**10.60**
3000	10.62
4000	10.67
5000	10.80
6000	10.90
7000	10.90
8000	10.94
9000	11.04
10000	11.14
11000	11.18
12000	11.22
13000	11.28
14000	11.35
15000	11.44
16000	11.49
17000	11.53
18000	11.57
19000	11.63
20000	11.68
21000	11.71
22000	11.80
23000	11.82
24000	11.93
25000	11.95

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

2. Factor = Attenuator loss + Cable loss

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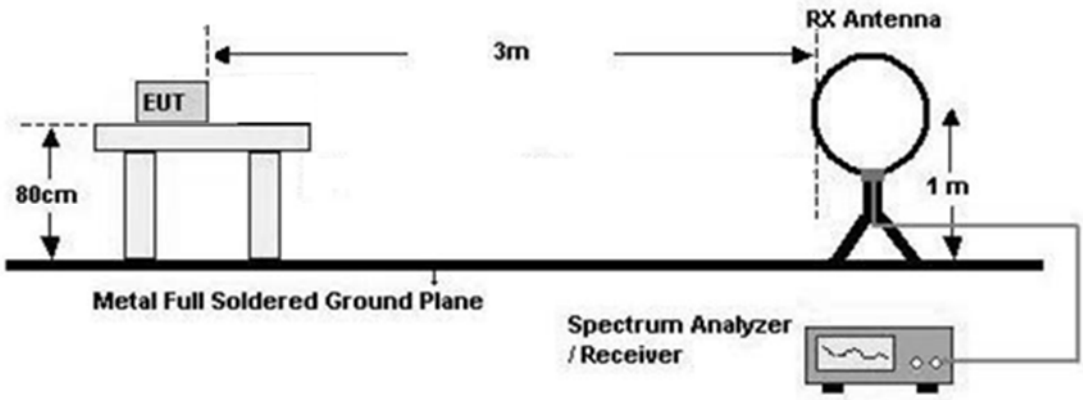
7.6. Radiated Test

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



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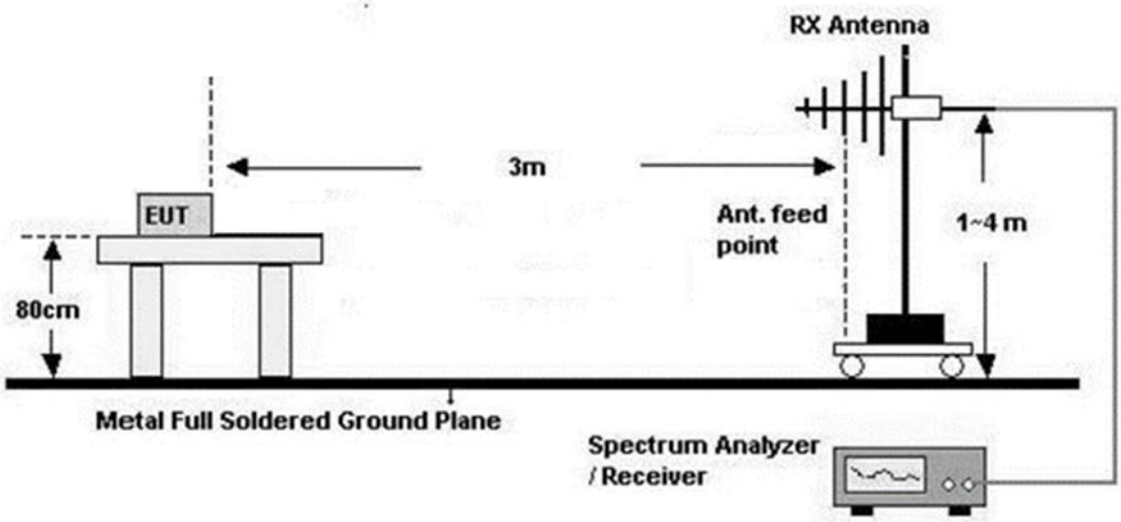
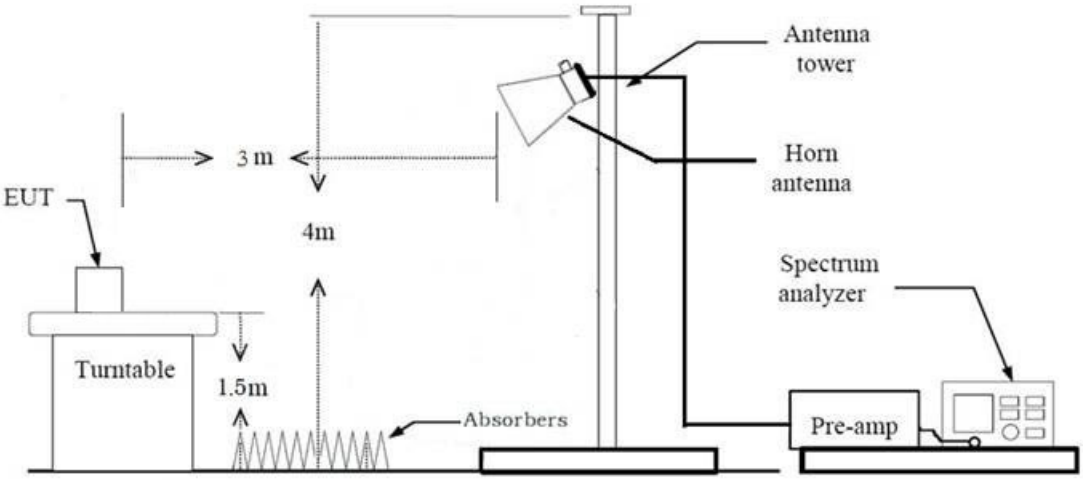
30 MHz - 1 GHz



Above 1 GHz



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Test Procedure of Radiated spurious emissions(Below 30 MHz)

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.

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Test Procedure of Radiated spurious emissions(Below 1 GHz)

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.

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Test Procedure of Radiated spurious emissions (Above 1 GHz)

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. Spectrum Setting
   (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 duty cycle test result.

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.
9. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
10. 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)

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= 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

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. 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 duty cycle test result.
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.
9. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
10. Total

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(1)Measurement(Peak)

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

+ Distance Factor(D.F) + Attenuator (ATT)

(2)Measurement(Avg)

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

+ Distance Factor(D.F) + Attenuator (ATT)

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

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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

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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(Connector Type FFC / HW ver.1.0), Stand alone(Connector Type Harness / HW ver.1.1)
   - Worstcase : Stand alone(Connector Type FFC / HW ver.1.0)
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 + Notebook
   - Worstcase : Stand alone + Notebook
2. Harness Cable Type, FFC Cable Type were tested and the worst case results are reported.
(Worst case : FFC Cable Type)

Conducted test

1. The EUT was configured with packet length of highest power.
   - All supported mode tested.
   - Worst Results refer to Notes for each test item

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Radiated test(Simultaneous transmission Scenario)

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

- Mode : Stand alone(Connector Type FFC / HW ver.1.0), Stand alone(Connector Type Harness / HW ver.1.1)

- Worstcase : Stand alone(Connector Type FFC / HW ver.1.0)

2. EUT Axis

- Radiated Spurious Emissions : Y, Z

3. All of Simultaneous transmission Scenario were investigated and the worst case configuration results are reported. (Bluetooth Worst case : BTLE)

Simultaneous transmission Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5 GHz WiFi Ant.1	5 GHz WiFi Ant.2	Bluetooth	Test Case
Bluetooth + 2.4 GHz WiFi MIMO	on	on	-	-	on	
Bluetooth + 5 GHz WiFi MIMO	-	-	on	on	on	Scenario 1
2.4 GHz WiFi SISO + 5 GHz WiFi SISO	-	on	on	-	-	
Bluetooth + 2.4 GHz WiFi SISO + 5 GHz WiFi SISO	-	on	on	-	on	Scenario 2

4. The Simultaneous transmission Scenario mode test investigated both intermodulation and radiated spurious emissions.

- Worst result: Radiated spurious emissions

- Intermodulation: No signals are generated.

- Radiated spurious emissions: cf. Section 9.6

5. The following tables show the worst cases configurations determined during testing.

(Worst case: The lowest margin condition the channels and modes were selected for test.)

Scenario 1	Description	Bluetooth Emission	5 GHz Emission
Bluetooth + 5 GHz WiFi MIMO	Antenna	Bluetooth ANT	ANT ALL
	Channel	39	149
	Data Rate	1 Mbps	6 Mbps
	Mode	1M 37 Bytes	802.11a

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

Scenario 2	Description	Bluetooth Emission	2.4 GHz Emission	5 GHz Emission
Bluetooth + 2.4 GHz WiFi SISO + 5 GHz WiFi SISO	Antenna	Bluetooth ANT	ANT 2	ANT 1
	Channel	39	6	149
	Data Rate	1 Mbps	1 Mbps	6 Mbps
	Mode	1M 37 Bytes	802.11b	802.11a

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

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

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8. SUMMARY TEST OF RESULTS

Test Item	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: The decision rule applies 'simple acceptance'

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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	0.383	0.626	0.611	2.137
	255	2.130	2.500	0.852	0.696
2M	37	0.198	0.624	0.316	4.997
	255	1.072	1.876	0.571	2.430
125k	37	3.100	3.750	0.827	0.827
	255	17.03	17.50	0.973	0.117
500k	37	1.060	1.877	0.564	2.484
	255	4.550	5.000	0.910	0.410

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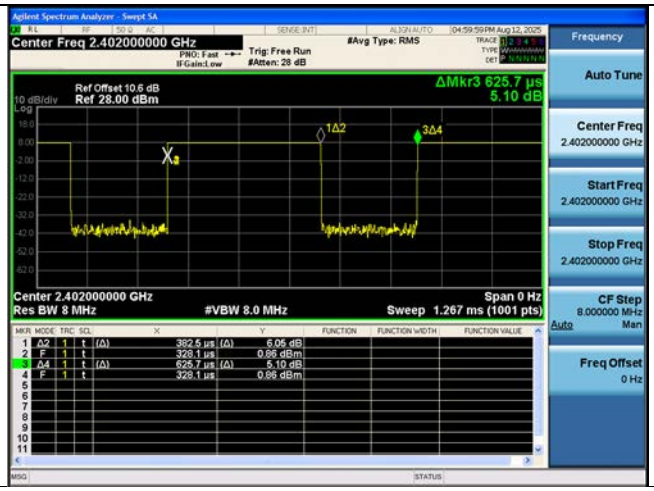
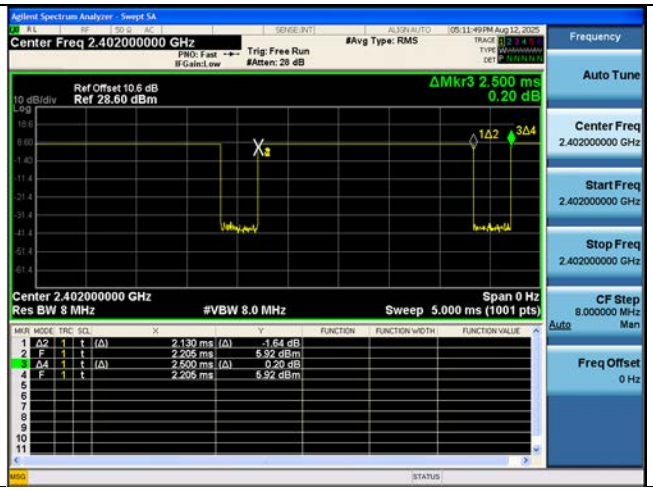
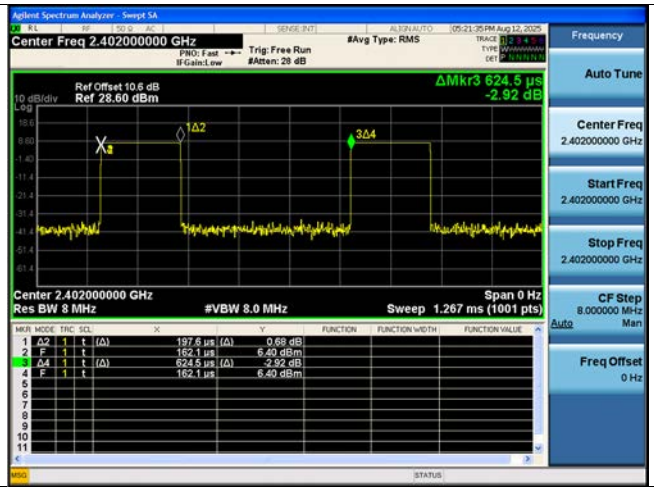
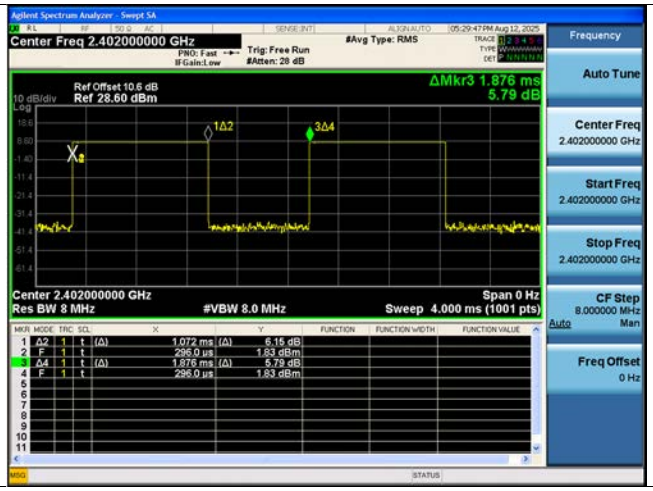
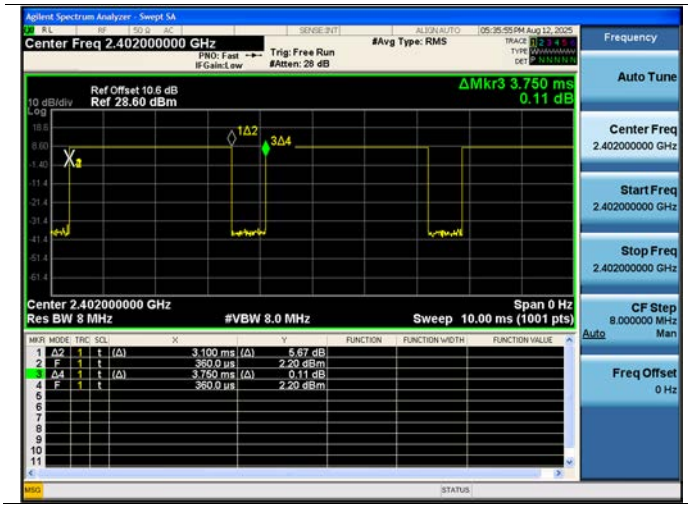
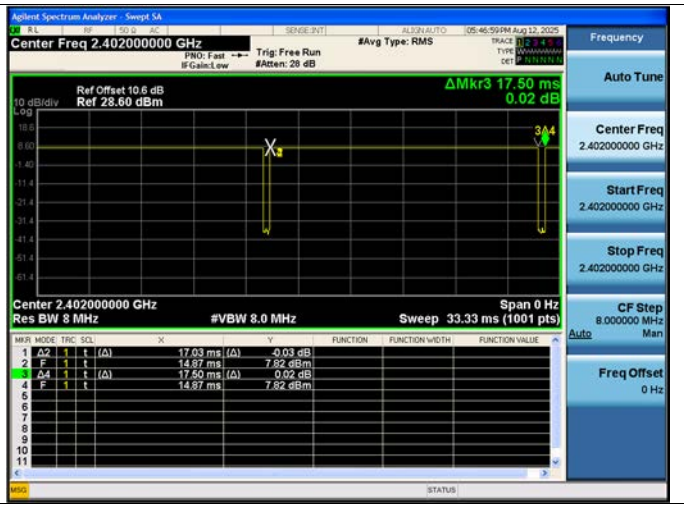
1 M Bit/s (37 Byte)	1 M Bit/s (255 Byte)
	
2 M Bit/s (37 Byte)	**2 M Bit/s (255 Byte)**
	
125 k Bit/s(37 Byte)	**125 k Bit/s(255 Byte)**
	

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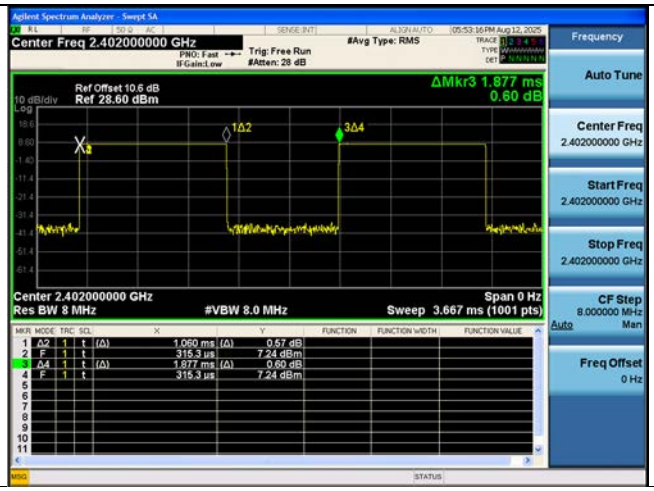
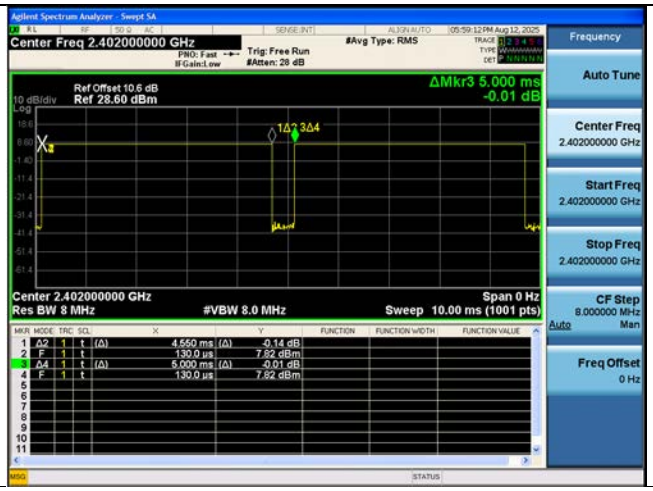
500 k Bit/s(37 Byte)	500 k Bit/s(255 Byte)
	

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9.2 6 dB BANDWIDTH

Mode	Channel	Frequency [MHz]	6dB BW [kHz]	Limit [kHz]
1M 37Byte	0	2402	692.5	> 500
	19	2440	707.7	
	39	2480	716.6	
1M 255Byte	0	2402	671.3	
	19	2440	670.4	
	39	2480	669.7	
2M 37Byte	0	2402	1179	
	19	2440	1181	
	39	2480	1178	
2M 255Byte	0	2402	1181	
	19	2440	1180	
	39	2480	1181	
125k 37Byte	0	2402	687.8	
	19	2440	687.5	
	39	2480	688.4	
125k 255Byte	0	2402	689.9	
	19	2440	688.0	
	39	2480	682.6	
500k 37Byte	0	2402	662.5	
	19	2440	668.3	
	39	2480	669.4	
500k 255Byte	0	2402	667.0	
	19	2440	671.0	
	39	2480	666.0	

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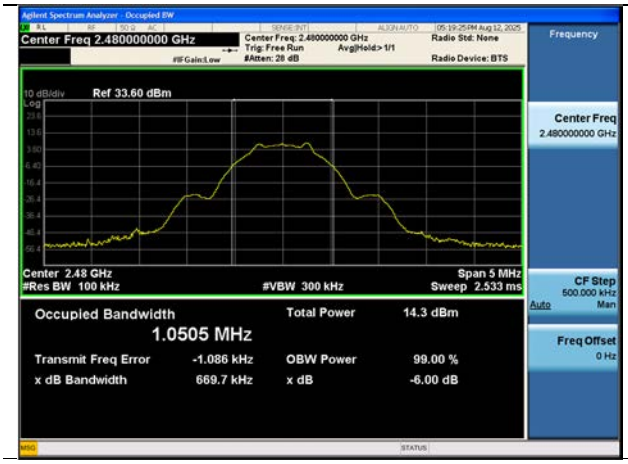
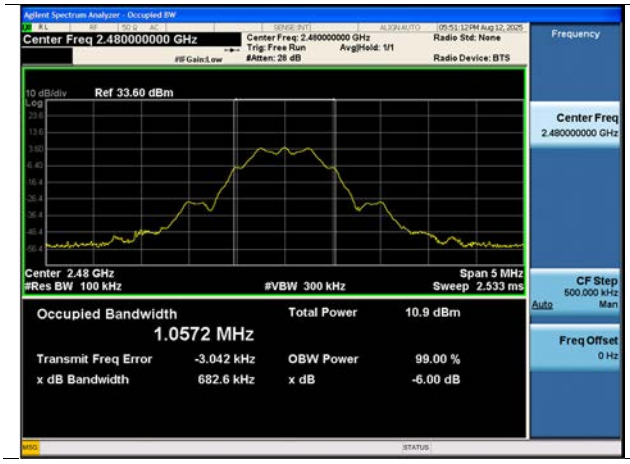
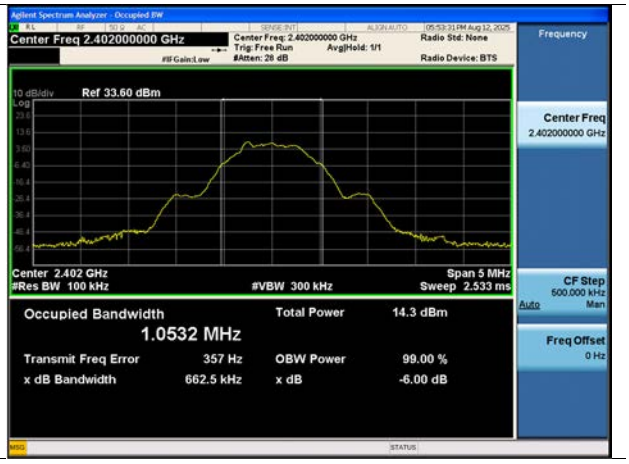
▣ Test Plots

Note: In order to simplify the report, attached plots were only the narrowest 6 dB BW channel

1 MBit/s 255 Byte (CH 39)	2 MBit/s 37 Byte (CH 39)
	
125k Bit/s 255 Byte (CH 39)	500k Bit/s 37 Byte (CH 0)
	

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9.3 OUTPUT POWER

Peak Power

Mode	Channel	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]
1M 37Byte	0	2402	7.979	30
	19	2440	7.752	
	39	2480	7.813	
1M 255Byte	0	2402	7.955	
	19	2440	7.890	
	39	2480	7.809	
2M 37Byte	0	2402	7.971	
	19	2440	7.990	
	39	2480	7.884	
2M 255Byte	0	2402	7.956	
	19	2440	8.071	
	39	2480	7.794	
125k 37Byte	0	2402	8.029	
	19	2440	7.945	
	39	2480	7.860	
125k 255Byte	0	2402	7.908	
	19	2440	8.033	
	39	2480	7.913	
500k 37Byte	0	2402	8.025	
	19	2440	7.952	
	39	2480	7.892	
500k 255Byte	0	2402	8.159	
	19	2440	8.039	
	39	2480	7.915	

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Average Power

Note : Total Power [dBm] = Measured Power [dBm] + Duty Cycle Factor [dB]

Mode	Channel	Frequency [MHz]	Measured Power [dBm]	D.C.F [dB]	Total Power [dBm]	Limit [dBm]
1M 37Byte	0	2402	5.50	2.14	7.64	30
	19	2440	5.46	2.14	7.60	
	39	2480	5.38	2.14	7.51	
1M 255Byte	0	2402	6.97	0.70	7.67	
	19	2440	6.89	0.70	7.59	
	39	2480	6.70	0.70	7.39	
2M 37Byte	0	2402	2.62	5.00	7.61	
	19	2440	2.58	5.00	7.57	
	39	2480	2.41	5.00	7.40	
2M 255Byte	0	2402	5.19	2.43	7.62	
	19	2440	5.07	2.43	7.50	
	39	2480	5.32	2.43	7.75	
125k 37Byte	0	2402	6.96	0.83	7.78	
	19	2440	6.83	0.83	7.66	
	39	2480	6.71	0.83	7.54	
125k 255Byte	0	2402	7.64	0.12	7.76	
	19	2440	7.64	0.12	7.76	
	39	2480	7.47	0.12	7.58	
500k 37Byte	0	2402	4.92	2.48	7.40	
	19	2440	5.27	2.48	7.75	
	39	2480	4.91	2.48	7.39	
500k 255Byte	0	2402	7.29	0.41	7.70	
	19	2440	7.24	0.41	7.65	
	39	2480	7.16	0.41	7.57	

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9.4 POWER SPECTRAL DENSITY

Mode	Channel	Frequency [MHz]	Peak PSD [dBm/kHz]	Limit [dBm/3kHz]
1M 37Byte	0	2402	3.988	8
	19	2440	3.944	
	39	2480	3.844	
1M 255Byte	0	2402	4.071	
	19	2440	4.011	
	39	2480	3.847	
2M 37Byte	0	2402	2.068	
	19	2440	1.928	
	39	2480	1.972	
2M 255Byte	0	2402	2.060	
	19	2440	2.043	
	39	2480	1.927	
125k 37Byte	0	2402	4.394	
	19	2440	4.369	
	39	2480	3.965	
125k 255Byte	0	2402	4.539	
	19	2440	4.094	
	39	2480	3.601	
500k 37Byte	0	2402	4.590	
	19	2440	5.159	
	39	2480	5.274	
500k 255Byte	0	2402	6.846	
	19	2440	5.568	
	39	2480	6.624	

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▣ Test Plots

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

1 MBit/s 255 Byte (CH 0)	2 MBit/s 37 Byte (CH 0)
125k Bit/s 255 Byte (CH 0)	500k Bit/s 255 Byte (CH 0)

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9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS

[BAND EDGE]

Mode	Channel	Frequency [MHz]	Position	Band Edge [dB]	Limit [dBc]
1M 37Byte	0	2402	Lower	59.742	20
	39	2480	Upper	59.553	
1M 255Byte	0	2402	Lower	59.922	
	39	2480	Upper	60.517	
2M 37Byte	0	2402	Lower	31.786	
	39	2480	Upper	58.943	
2M 255Byte	0	2402	Lower	31.948	
	39	2480	Upper	58.761	
125k 37Byte	0	2402	Lower	57.550	
	39	2480	Upper	57.527	
125k 255Byte	0	2402	Lower	57.704	
	39	2480	Upper	57.420	
500k 37Byte	0	2402	Lower	61.498	
	39	2480	Upper	58.815	
500k 255Byte	0	2402	Lower	59.508	
	39	2480	Upper	59.788	

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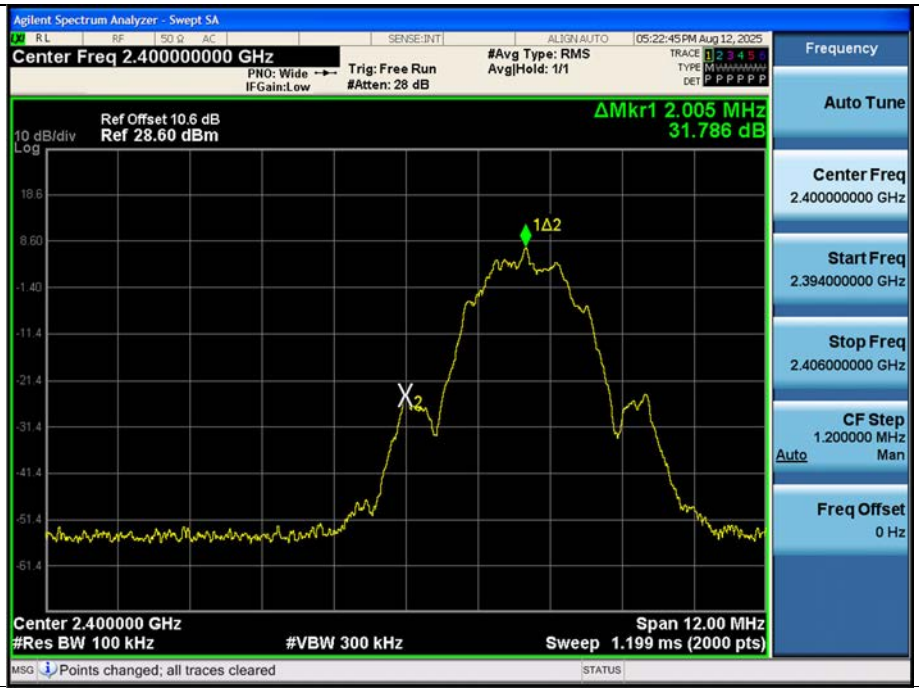
▣ Test Plot(Band Edge)

2M 37Byte **(CH 0)**



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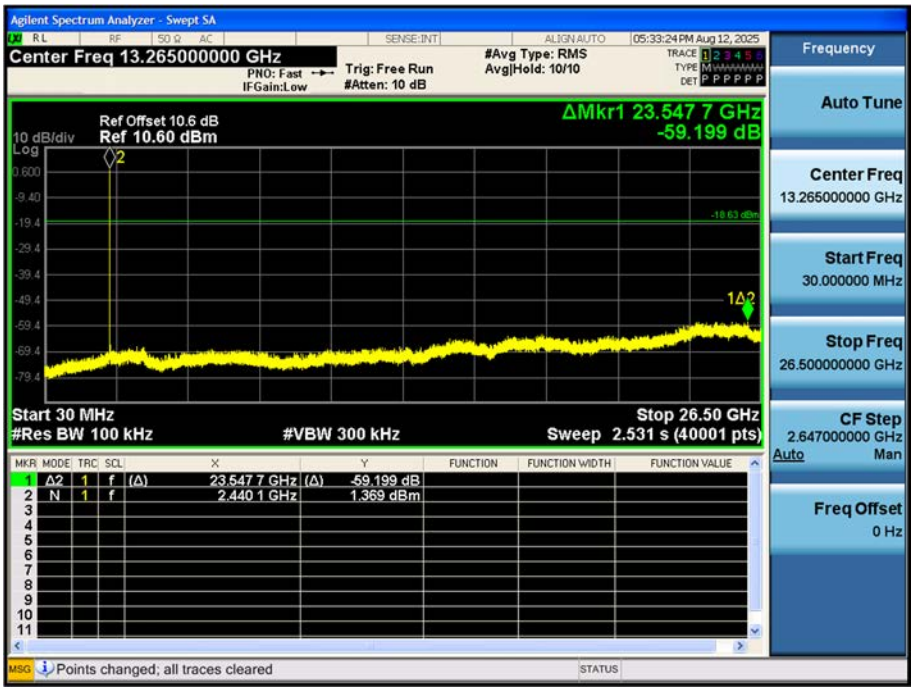
[CONDUCTED SPURIOUS EMISSIONS]

In order to simplify the report, attached plots were only the worst case channel and data rate.
- Worst case: 2M Bit/s 255 Byte Ch. 19

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

Conducted Spurious Emission



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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.

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Frequency Range : Above 1 GHz

CH 0	2402	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4804	44.12	4.78	V	48.90	73.98	25.08	PK
4804	34.06	4.78	V	38.84	53.98	15.14	AV
7206	38.47	12.53	V	51.00	73.98	22.98	PK
7206	26.36	12.53	V	38.89	53.98	15.09	AV
4804	45.09	4.78	H	49.87	73.98	24.11	PK
4804	34.97	4.78	H	39.75	53.98	14.23	AV
7206	38.29	12.53	H	50.82	73.98	23.16	PK
7206	26.28	12.53	H	38.81	53.98	15.17	AV

CH 19	2440	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4880	46.21	5.27	V	51.48	73.98	22.50	PK
4880	37.68	5.27	V	42.95	53.98	11.03	AV
7320	38.83	12.52	V	51.35	73.98	22.63	PK
7320	26.50	12.52	V	39.02	53.98	14.96	AV
4880	46.97	5.27	H	52.24	73.98	21.74	PK
4880	38.44	5.27	H	43.71	53.98	10.27	AV
7320	38.62	12.52	H	51.14	73.98	22.84	PK
7320	26.33	12.52	H	38.85	53.98	15.13	AV

CH 39	2480	MHz	Mode :		1 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4960	47.32	5.77	V	53.09	73.98	20.89	PK
4960	39.55	5.77	V	45.32	53.98	8.66	AV
7440	40.14	12.40	V	52.54	73.98	21.44	PK
7440	26.72	12.40	V	39.12	53.98	14.86	AV
4960	48.14	5.77	H	53.91	73.98	20.07	PK
4960	40.37	5.77	H	46.14	53.98	7.84	AV
7440	39.92	12.40	H	52.32	73.98	21.66	PK
7440	26.57	12.40	H	38.97	53.98	15.01	AV

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CH 0	2402	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4804	43.34	4.78	V	48.12	73.98	25.86	PK
4804	31.35	4.78	V	36.13	53.98	17.85	AV
7206	38.52	12.53	V	51.05	73.98	22.93	PK
7206	26.38	12.53	V	38.91	53.98	15.07	AV
4804	44.27	4.78	H	49.05	73.98	24.93	PK
4804	32.18	4.78	H	36.96	53.98	17.02	AV
7206	38.21	12.53	H	50.74	73.98	23.24	PK
7206	26.32	12.53	H	38.85	53.98	15.13	AV

CH 19	2440	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4880	45.30	5.27	V	50.57	73.98	23.41	PK
4880	33.57	5.27	V	38.84	53.98	15.14	AV
7320	38.79	12.52	V	51.31	73.98	22.67	PK
7320	26.45	12.52	V	38.97	53.98	15.01	AV
4880	45.96	5.27	H	51.23	73.98	22.75	PK
4880	34.43	5.27	H	39.70	53.98	14.28	AV
7320	38.58	12.52	H	51.10	73.98	22.88	PK
7320	26.30	12.52	H	38.82	53.98	15.16	AV

CH 39	2480	MHz	Mode :		2 M Bit/s (37 Bytes)		
Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4960	46.73	5.77	V	52.50	73.98	21.48	PK
4960	35.06	5.77	V	40.83	53.98	13.15	AV
7440	39.50	12.40	V	51.90	73.98	22.08	PK
7440	26.65	12.40	V	39.05	53.98	14.93	AV
4960	47.53	5.77	H	53.30	73.98	20.68	PK
4960	35.87	5.77	H	41.64	53.98	12.34	AV
7440	39.21	12.40	H	51.61	73.98	22.37	PK
7440	26.53	12.40	H	38.93	53.98	15.05	AV

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[Simultaneous transmission Scenario]

Scenario 1

BT LE Ch. 39_1M 37 Bytes + ANT ALL(MIMO)_5 GHz 802.11a Ch. 149_6 Mbps

Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4960	43.71	5.77	V	49.48	73.98	24.50	PK
4960	32.62	5.77	V	38.39	53.98	15.59	AV
7440	39.60	12.40	V	52.00	73.98	21.98	PK
7440	27.30	12.40	V	39.70	53.98	14.28	AV
4960	44.34	5.77	H	50.11	73.98	23.87	PK
4960	33.40	5.77	H	39.17	53.98	14.81	AV
7440	39.12	12.40	H	51.52	73.98	22.46	PK
7440	27.18	12.40	H	39.58	53.98	14.40	AV

Scenario 2

BT LE Ch. 39_1M 37 Bytes + ANT 2_2.4 GHz 802.11b Ch. 6_1 Mbps + ANT 1_5 GHz 802.11a Ch. 149_6 Mbps

Frequency	Measured value	AF+CL-AG+DF	Pol.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4960	43.76	5.77	V	49.53	73.98	24.45	PK
4960	32.65	5.77	V	38.42	53.98	15.56	AV
7440	39.99	12.40	V	52.39	73.98	21.59	PK
7440	27.40	12.40	V	39.80	53.98	14.18	AV
4960	44.55	5.77	H	50.32	73.98	23.66	PK
4960	33.52	5.77	H	39.29	53.98	14.69	AV
7440	39.78	12.40	H	52.18	73.98	21.80	PK
7440	27.23	12.40	H	39.63	53.98	14.35	AV

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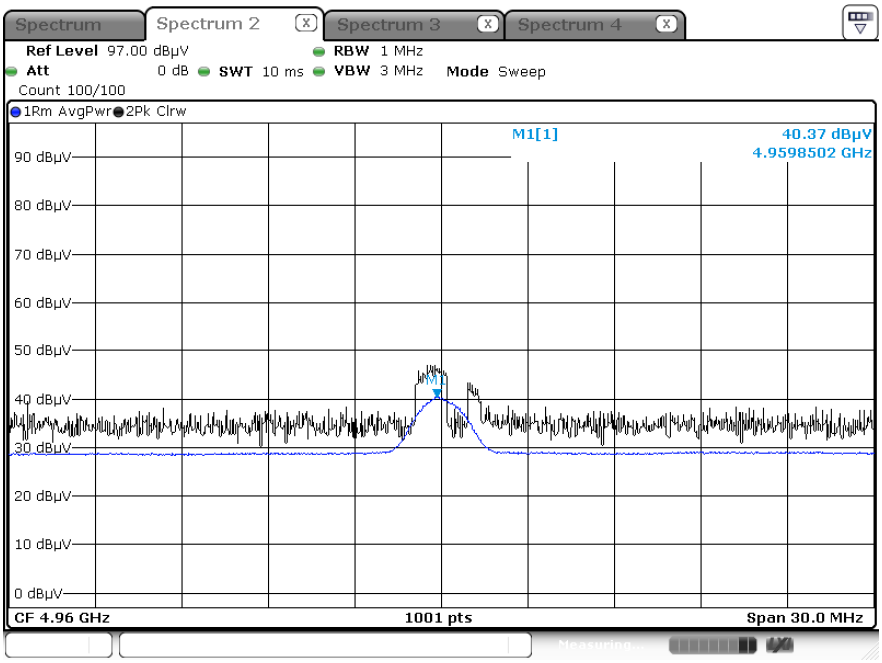
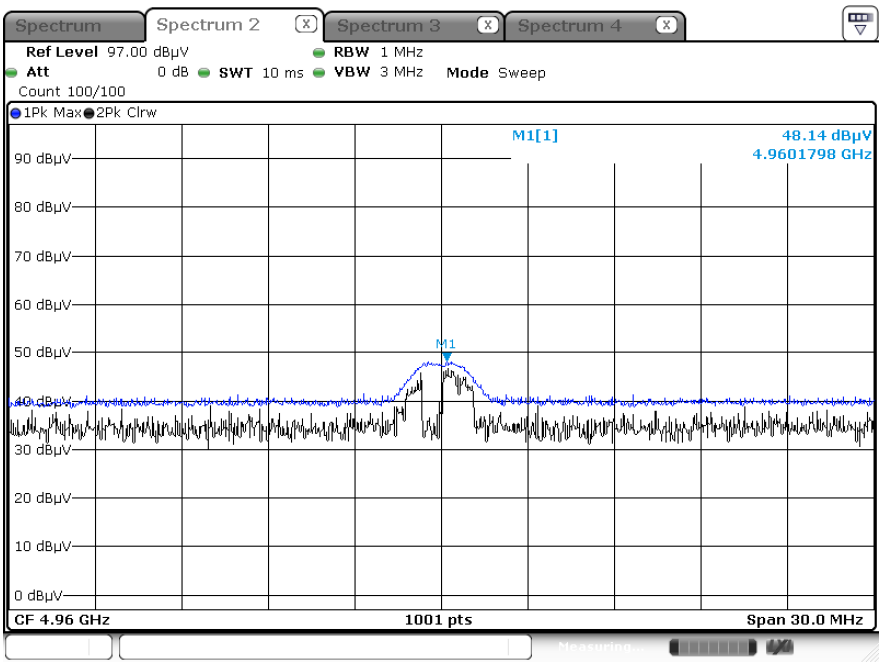
▣ 1 M Bit/s 37 Bytes Test Plots (Worst case : Z-H)

Radiated Spurious Emissions plot – Average Result (Ch.39 2nd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.39 2nd Harmonic)



Note:

Plots of worst case are only reported.

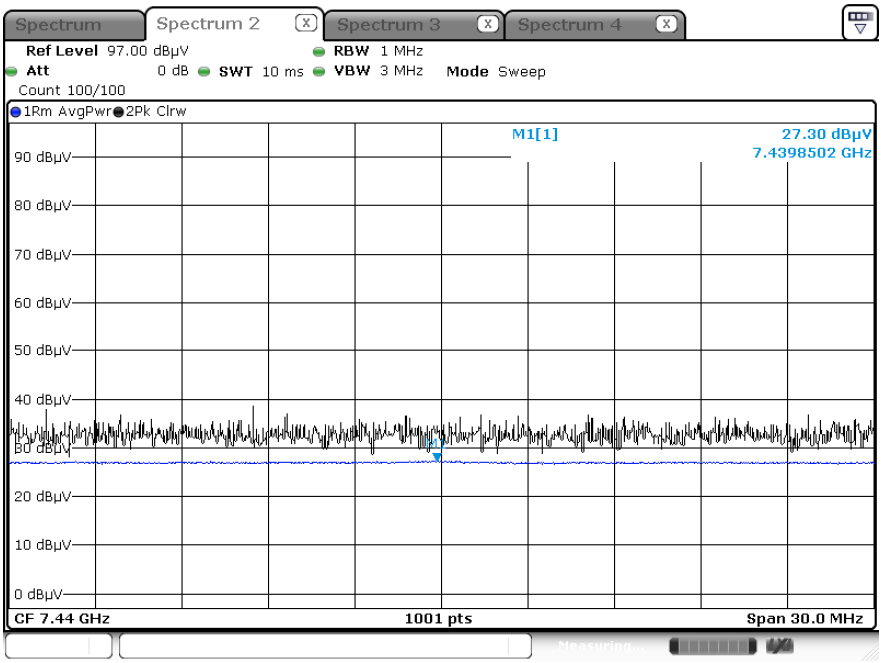
The report shall not be (partly) reproduced except in full without approval of the laboratory.

[Simultaneous transmission Scenario]

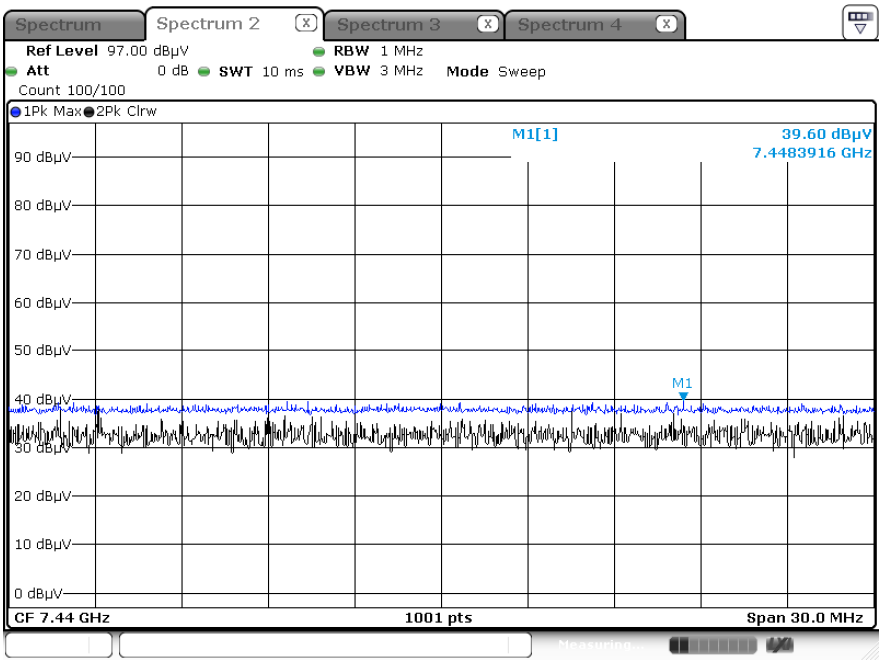
Scenario 1

BT LE Ch. 39_1M 37 Bytes + ANT ALL(MIMO)_5 GHz 802.11a Ch. 149_6 Mbps

Radiated Spurious Emissions plot – Average Result (Ch.39 3rd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.39 3rd Harmonic)



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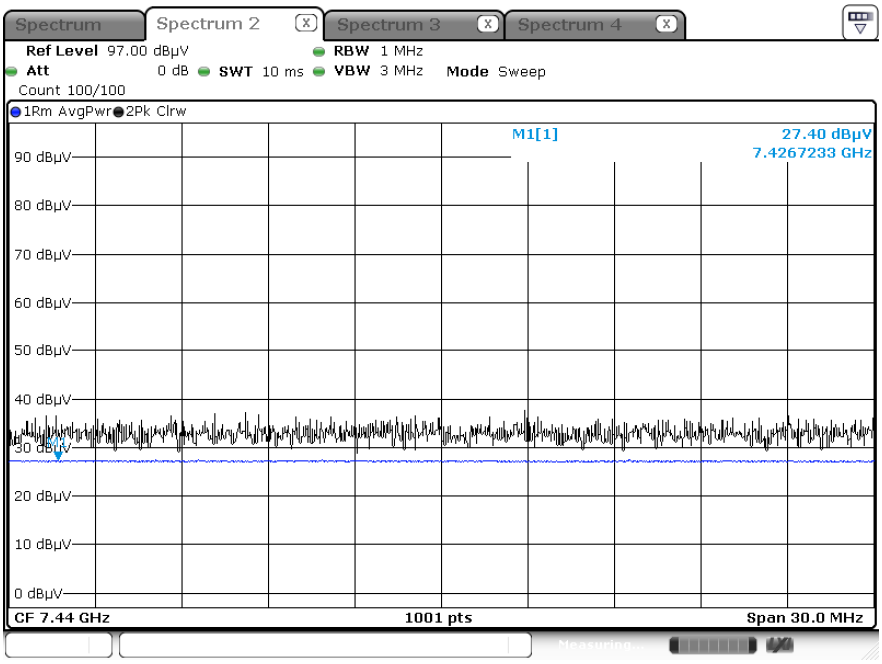
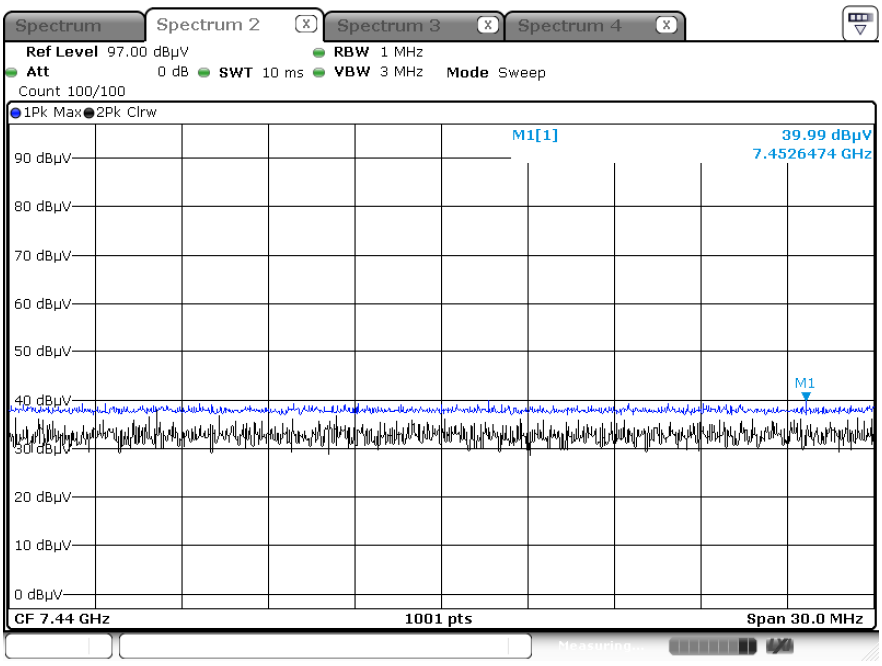
Scenario 2

BT LE Ch. 39_1M 37 Bytes + ANT 2_2.4 GHz 802.11b Ch. 6_1 Mbps + ANT 1_5 GHz 802.11a Ch. 149_6 Mbps

Radiated Spurious Emissions plot – Average Result (Ch.39 3rd Harmonic)



Radiated Spurious Emissions plot – Peak Result (Ch.39 3rd Harmonic)



Note:

Plots of worst case are only reported.

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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+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	47.19	2.59	H	49.78	73.98	24.20	PK
2390.0	34.80	2.59	H	37.39	53.98	16.59	AV
2483.5	47.63	3.34	H	50.97	73.98	23.01	PK
2483.5	35.49	3.34	H	38.83	53.98	15.15	AV

1 M Bit/s (255 Bytes)							
Channel	**0 CH, 39 CH**	**Channel Frequency**	**2402 MHz, 2480 MHz**				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	47.43	2.59	H	50.02	73.98	23.96	PK
2390.0	34.87	2.59	H	37.46	53.98	16.52	AV
2483.5	47.88	3.34	H	51.22	73.98	22.76	PK
2483.5	35.88	3.34	H	39.22	53.98	14.76	AV

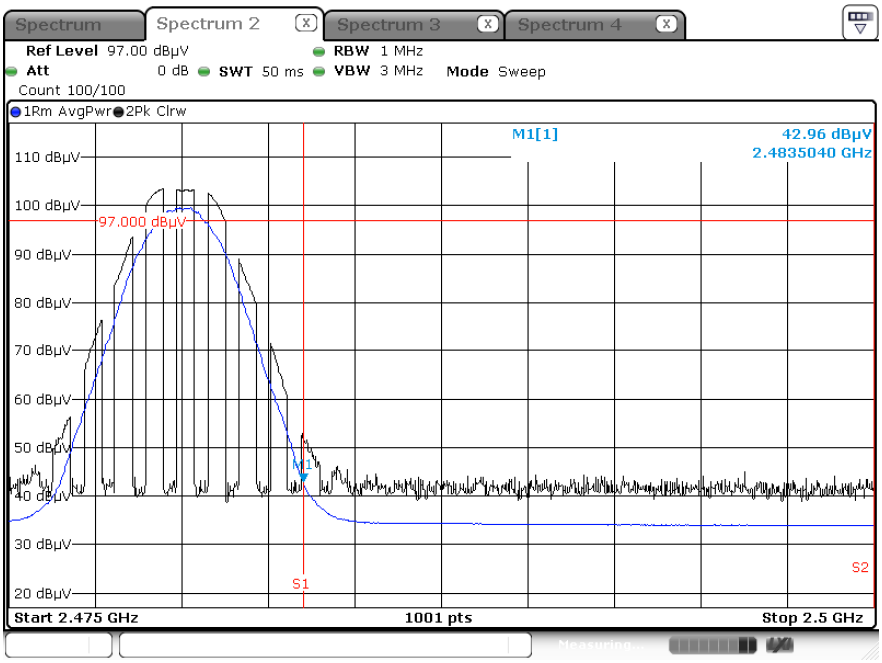
2 M Bit/s (37 Bytes)							
Channel	**0 CH, 39 CH**	**Channel Frequency**	**2402 MHz, 2480 MHz**				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	46.92	2.59	H	49.51	73.98	24.47	PK
2390.0	34.70	2.59	H	37.29	53.98	16.69	AV
2483.5	53.96	3.34	H	57.30	73.98	16.68	PK
2483.5	41.04	3.34	H	44.38	53.98	9.60	AV

2 M Bit/s (255 Bytes)							
Channel	**0 CH, 39 CH**	**Channel Frequency**	**2402 MHz, 2480 MHz**				
Frequency	Measured Value	A.F+C.L+Att-A.G+D.F	Ant. Pol.	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2390.0	46.96	2.59	H	49.55	73.98	24.43	PK
2390.0	34.76	2.59	H	37.35	53.98	16.63	AV
2483.5	53.74	3.34	H	57.08	73.98	16.90	PK
2483.5	42.96	3.34	H	46.30	53.98	7.68	AV

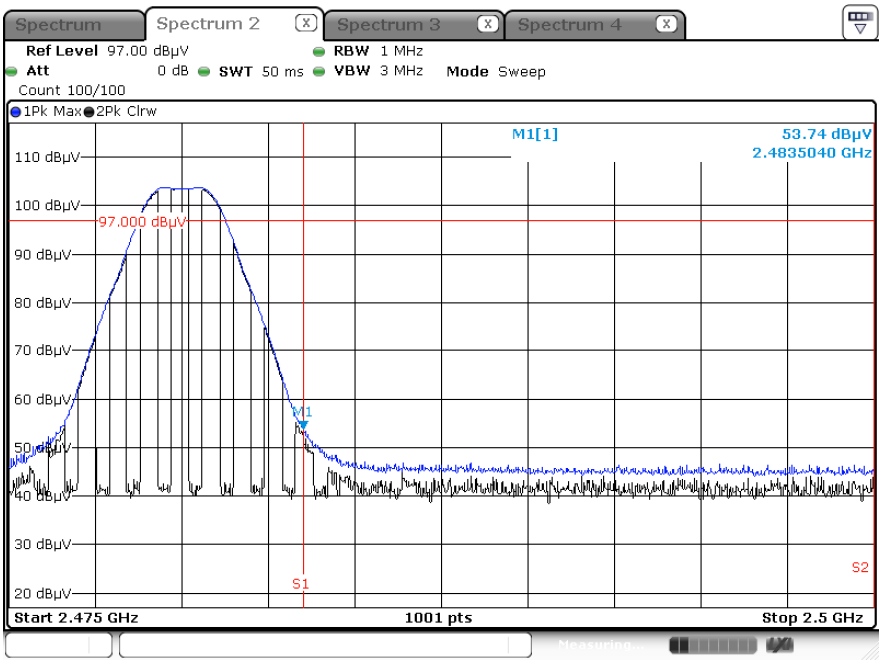
The report shall not be (partly) reproduced except in full without approval of the laboratory.

▣ Mode : 2 M Bit/s (255 Bytes) Test Plots

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



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



Note:

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

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9.8 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions

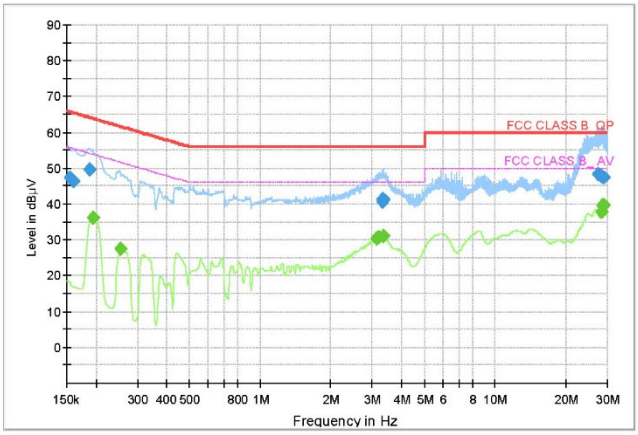
Test 1 / 1

Test Report

Common Information

EUT : LGSWNAX61
Operating Conditions : BTLE Mode
Comment :

Full Spectrum



Preview Result 2-AVG
FCC CLASS B_AV
Preview Result 1-PK+
Final_Result QPK
FCC CLASS B_QP
Final_Result CAV

Final_Result_QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1545	47.44	65.75	18.31	9.000	N	9.6
0.1613	46.52	65.40	18.87	9.000	L1	9.6
0.1883	49.51	64.11	14.60	9.000	L1	9.6
3.2900	41.26	56.00	14.74	9.000	N	9.7
3.3260	40.58	56.00	15.42	9.000	L1	9.7
3.3530	41.33	56.00	14.67	9.000	N	9.7
27.4370	48.24	60.00	11.76	9.000	N	10.0
28.3798	47.74	60.00	12.26	9.000	N	10.0
29.0818	47.38	60.00	12.62	9.000	N	10.0

Final_Result_CAV

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1950	36.28	53.82	17.54	9.000	L1	9.6
0.2558	27.38	51.57	24.19	9.000	N	9.6
3.1280	30.36	46.00	15.64	9.000	N	9.7
3.2113	30.76	46.00	15.24	9.000	N	9.7
3.3418	31.02	46.00	14.98	9.000	N	9.7
28.2313	37.82	50.00	12.18	9.000	L1	10.0
28.6048	39.25	50.00	10.75	9.000	L1	10.0
28.7285	39.56	50.00	10.44	9.000	L1	10.0
28.8590	39.83	50.00	10.17	9.000	L1	10.0

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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	08/20/2026	Annual
Temperature Chamber	SU-642	ESPEC	0093008124	02/11/2026	Annual
Signal Analyzer	N9030A	Agilent	MY49431210	12/12/2025	Annual
Power Measurement Set	OSP 120	Rohde & Schwarz	101231	10/17/2025	Annual
Power Meter	N1911A	Agilent	MY45100523	02/21/2026	Annual
Power Sensor	N1921A	Agilent	MY57820067	02/04/2026	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/21/2025	Annual
Power Splitter	11667B	Hewlett Packard	5001	04/10/2026	Annual
DC Power Supply	E3632A	H.P	KR75303243	04/16/2026	Annual
Attenuator(10 dB)	8493C	Hewlett Packard	07560	05/27/2026	Annual
Bluetooth Tester	CBT	Rohde & Schwarz	100752	12/27/2025	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
Automation Software	FCC WLAN Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC Bluetooth Conducted	HCT CO., LTD	-	-	-

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.

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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	S1AM	07/25/2026	Annual
Turn Table	DS2000-S-1t	Innco system	DS2000/572/54610422/P	N/A	N/A
Amp & Filter Bank Switch Controller	FBSM-01B	T&M system	TM19050002	N/A	N/A
Loop Antenna	1513	Schwarzbeck	1513-175	01/06/2027	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-0895	08/28/2026	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1300	01/03/2026	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-2296	05/16/2026	Biennial
Horn Antenna(15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Spectrum Analyzer	FSV(10 Hz ~ 40 GHz)	Rohde & Schwarz	101055	05/07/2026	Annual
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments	2	12/26/2025	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	5	05/27/2026	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	6	05/27/2026	Annual
High Pass Filter(7 GHz ~ 18 GHz)	WHKX10-7150-8000-18000-50SS	Wainwright Instruments	1	02/21/2026	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/19/2026	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/12/2026	Annual
RF Switching System	FMSR-05B (HPF(3~18GHz) + LNA1(1~18GHz))	T&M system	S1L1	12/23/2025	Annual
RF Switching System	FMSR -05B (ATT(10dB) + LNA1(1~18GHz))	T&M system	S1L2	12/23/2025	Annual
RF Switching System	FMSR -05B (ATT(3dB) + LNA1(1~18GHz))	T&M system	S1L3	12/23/2025	Annual
RF Switching System	FMSR -05B (LNA1(1~18GHz))	T&M system	S1L4	12/23/2025	Annual
RF Switching System	FMSR -05B (HPF(7~18GHz) + LNA2(6~18GHz))	T&M system	S1L5	12/23/2025	Annual
RF Switching System	FMSR -05B (Thru(30MHz ~ 18GHz))	T&M system	S1L6	12/23/2025	Annual
Automation Software	FCC WLAN Radiated	HCT CO., LTD	N/A	N/A	N/A
Attenuator(3 dB)	18B-03	Api tech.	1	04/21/2026	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).

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11. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2510-FC029-P

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