

TEST REPORT

FCC BT LE Test for ETWMCNSL01
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2606-FC001

DATE OF ISSUE
July 20, 2026

Tested by
Jin Gwan Lee



Technical Manager
Jong Seok Lee



Accredited by KOLAS, Republic of KOREA

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Applicant

LG Electronics Inc.

128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea

Product Name

RF Module

Model Name

ETWMCNSL01

FCC ID

2B03LETWMCNSL01

Date of Test

April 06, 2026 ~ July 20, 2026

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

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	July 20, 2026	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)

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1. EUT DESCRIPTION

Model	ETWMCNSL01	
Additional Model	-	
EUT Type	RF Module	
Power Supply	DC 3.3 V	
Frequency Range	125k, 500k, 1M Bit/s : 2402 - 2480 MHz 2M Bit/s : 2404 - 2478 MHz (Except for 2426 MHz)	
Number of Channels	125k, 500k, 1M Bit/s : 40 Channels 2M Bit/s : 37 Channels	
Max. RF Output Power (Normal)	Peak	1 M Bit/s : 9.198 dBm (8.31 mW) 2 M Bit/s : 9.329 dBm (8.57 mW) 125 k Bit/s : 9.223 dBm (8.36 mW) 500 k Bit/s : 9.618 dBm (9.16 mW)
	Average	1 M Bit/s : 9.083 dBm (8.10 mW) 2 M Bit/s : 9.163 dBm (8.25 mW) 125 k Bit/s : 9.062 dBm (8.06 mW) 500 k Bit/s : 9.548 dBm (9.01 mW)
Modulation Type	GFSK	
Bluetooth Version	5.4	
Antenna Information	Please refer to the Antenna Specification document.	
Serial number	Conducted : ETWMCNSL01-04 Radiated : ETWMCNSL01-02	
Factory	LG INNOTEK Vietnam HAIPHONG COMPAY LIMITED Lot I-4, Trang Due Industrial Park, a part of Dinh Vu - Cat Hai Economic Zone, Hong Phong Commune, An Duong district, Hai Phong City, Vietnam	

Grant Notes :

1. Output Power listed is conducted(Peak)

ANTENNA CONFIGURATIONS

1.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 or 6GHz Bands simultaneously on each antenna.

Simultaneous transmission Scenario	2.4 GHz WiFi Ant.1	5 GHz WiFi Ant.1	BLE	Thread	Test Case
5 GHz WiFi Ant1 + BLE	-	on	on		Scenario 1-
5 GHz WiFi Ant1 + Thread	-	on		on	Scenario 2

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 + Cor. 1-2023

Note : Here in after, ANSI C63.10-2020 + Cor. 1-2023 will be referred to as 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.

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 ANSI C63.5-2017.

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 C63.4-2014 and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated February 26, 2026 (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".

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.”

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 ($\pm$ kHz)
X dB, 99% Bandwidth	95 (Confidence level about 95 %, $k=2$)

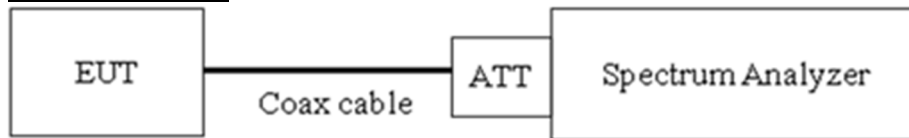
Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.96 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Power Meter)	0.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Signal Analyzer)	0.73 (Confidence level about 95 %, $k=2$)
Power Spectral Density	0.98 (Confidence level about 95 %, $k=2$)
Band Edge (Out of Band Emissions)	1.11 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.54 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.80 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.86 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.44 (Confidence level about 95 %, $k=2$)

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

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 $T \leq 6.25$ 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

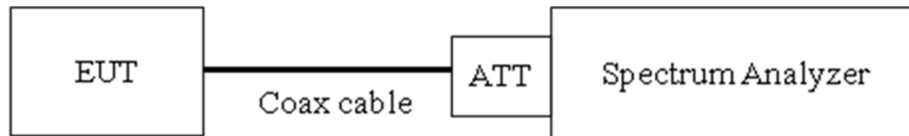
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = $T_{\text{on}}/T_{\text{total}}$ and Duty Cycle Factor = $10\log(1/\text{Duty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

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

- 1) RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
- 2) VBW $\geq 3 \times$ 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.

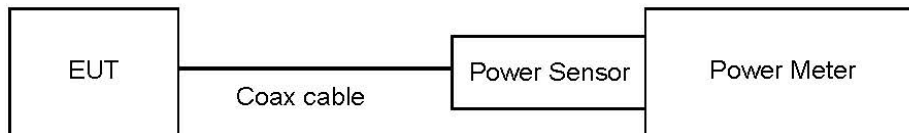
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

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

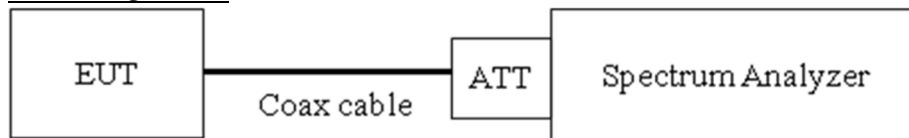
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

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) $RBW = 3 \text{ kHz} \leq RBW \leq 100 \text{ kHz}$.
- 4) $VBW \geq 3 \times RBW$.
- 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

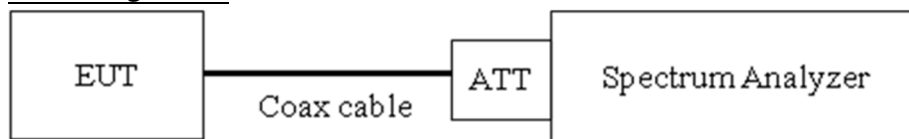
7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

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 $\geq 3 \times$ 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.

Factors for frequency

Freq(MHz)	Factor(dB)
30	10.88
100	10.88
200	10.93
300	11.01
400	11.04
500	11.06
600	11.06
700	11.09
800	11.11
900	11.13
1000	11.16
2000	11.18
2400	11.46
2500	11.46
3000	11.47
4000	11.50
5000	11.57
5150	11.65
5850	11.65
6000	11.74
7000	11.74
8000	11.84
9000	11.95
10000	12.14
11000	12.29
12000	12.25
13000	12.20
14000	12.21
15000	12.21
16000	12.26
17000	12.30
18000	12.34
19000	12.38
20000	12.43
21000	12.50
22000	12.51
23000	12.67
24000	12.73
25000	12.80
26000	12.81

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

2. Factor = Attenuator loss + Cable loss + EUT Cable loss

3. Total Port offset = 11.46 dB

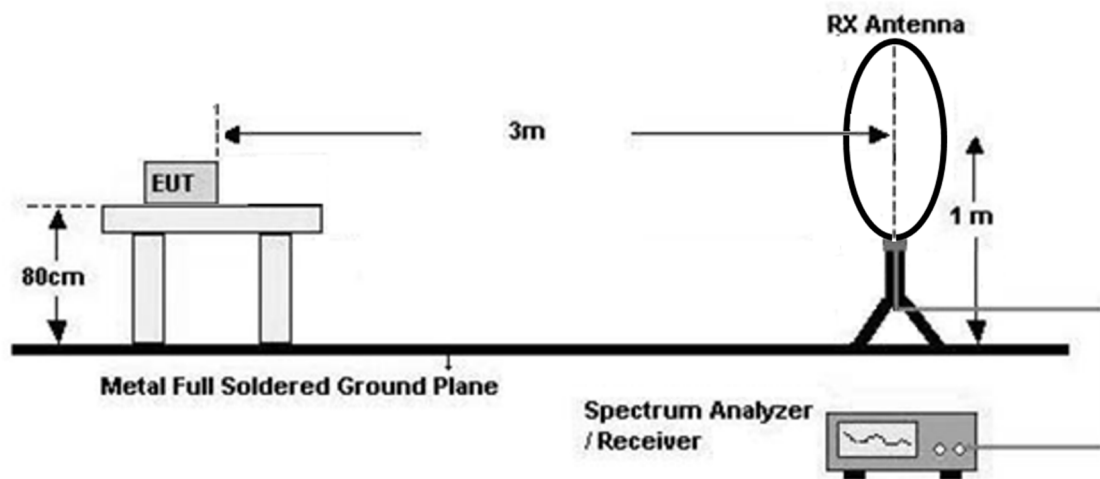
7.6. Radiated Test

Limit

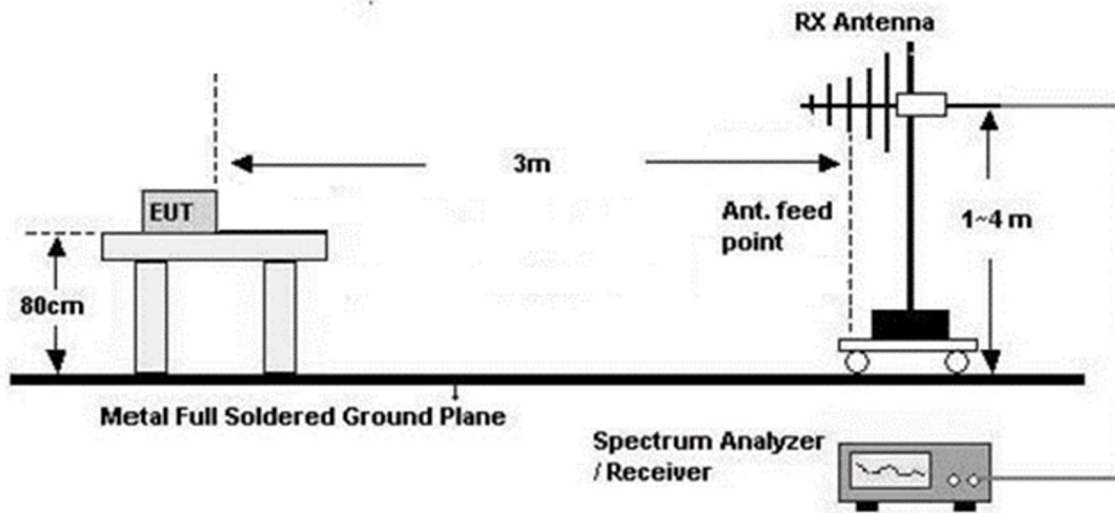
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

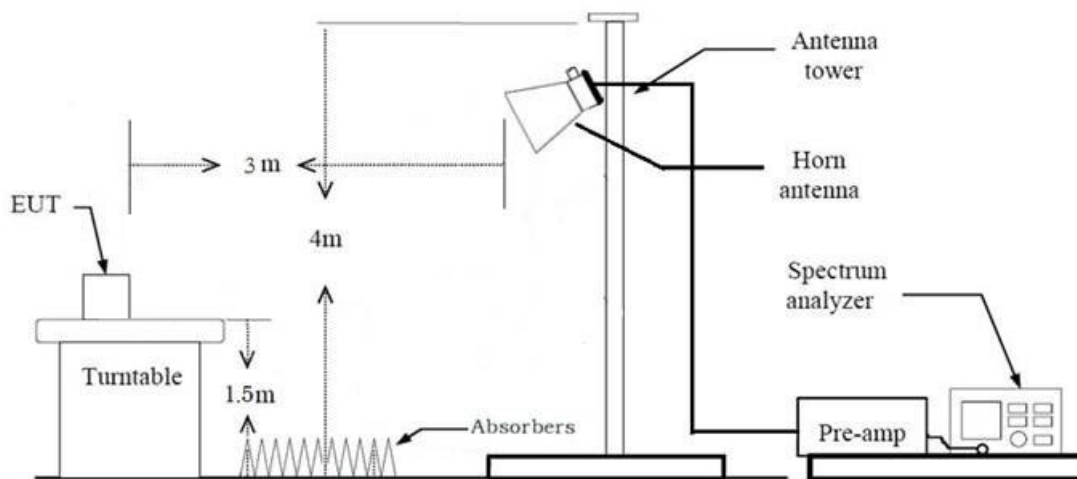
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions(Below 30 MHz)

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) = $40\log(3\text{ m}/300\text{ m}) = -80\text{ dB}$
Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = $40\log(3\text{ m}/30\text{ m}) = -40\text{ dB}$
Measurement Distance : 3 m
8. Spectrum Analyzer Setting
 - Frequency Range = 9 kHz ~ 30 MHz
 - Detector = Peak
 - Trace = Max hold
 - RBW = 9 kHz
 - VBW $\geq 3 \times$ 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)

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 Analyzer Setting**(1) Measurement Type(Peak):**

- Measured Frequency Range : 30 MHz – 1 GHz
- Detector = Peak
- Trace = Max hold
- RBW = 100 kHz
- VBW $\geq$ 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)

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 Analyzer Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = Peak
- Trace = Max hold
- RBW = 1 MHz
- VBW $\geq 3 \times$ RBW

(2) Measurement Type(Average):

- Duty cycle $< 98\%$, duty cycle variations are less than $\pm 2\%$
- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW $\geq 3 \times$ 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 = $20\log(\text{test distance} / \text{specific distance})$ (dB)

10. Total (Measurement Type : Peak)

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

- Total (Measurement Type : Average)

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

+ 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 Analyzer Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = Peak
- Trace = Max hold
- RBW = 1 MHz
- VBW $\geq 3 \times$ 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 $\geq 3 \times$ 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.

(3) Measurement Type(Average , Integration Method) : 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 = 100 kHz

- $VBW \geq 3 \times RBW$
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Compute the power by integrating the spectrum over 1 MHz using the analyzer's band-power measurement function with band limits set equal to the emission frequency ($f_{\text{emission}} \pm 0.5$ MHz). If the instrument does not have a band-power function, then sum the amplitude levels (in power units) at 100 kHz intervals extending across the 1 MHz spectrum defined by $f_{\text{emission}} \pm 0.5$ MHz.
- 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 % 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 = $20\log(\text{test distance} / \text{specific distance})$ (dB)

10.Total

(1)Measurement(Peak)

= Peak Measured Value + Cable Loss(C.L)

(2)Measurement(Average)

= Average Measured Value + Cable Loss(C.L)

- We apply to the offset in the 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 μ H/50 ohms line impedance stabilization network (LISN).

Frequency Range (MHz)	Limits (dB μ V)	
	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

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

Radiated Test

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone + Notebook Computer
 - Worstcase : Stand alone + Notebook Computer
2. EUT Axis
 - Radiated Spurious Emissions : Y
 - 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 data rate 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 Computer
 - Worstcase : Stand alone + Notebook Computer

Radiated test(Simultaneous transmission Scenario)

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

- Mode : Stand alone + Notebook Computer
- Worstcase : Stand alone + Notebook Computer

2. EUT Axis

- Radiated Spurious Emissions : Y

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

Simultaneous transmission Scenario	2.4 GHz WiFi Ant.1	5 GHz WiFi Ant.1	BLE	Thread	Test Case
5 GHz WiFi Ant1 + BLE	-	on	on		Scenario 1-
5 GHz WiFi Ant1 + Thread	-	on		on	Scenario 2

4. The Simultaneous transmission Scenario 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

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

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

Scenario 1	Description	BTLE Emission	5 GHz Emission
5 GHz WiFi Ant1 + BLE	Antenna	ANT 1	ANT 1
	Channel	37	104
	Data Rate	1 Mbps	MCS0
	Mode	1M 37 Bytes	802.11ac_VHT20

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

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		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'

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	0.388	0.624	0.621	2.071
	255	2.135	2.500	0.854	0.685
2M	37	0.204	0.624	0.327	4.860
	255	1.075	2.500	0.430	3.665
125k	37	3.104	3.752	0.827	0.823
	255	17.07	17.50	0.975	0.109
500k	37	1.070	2.500	0.428	3.686
	255	4.550	5.000	0.910	0.410

Test Plots(DUTY CYCLE)

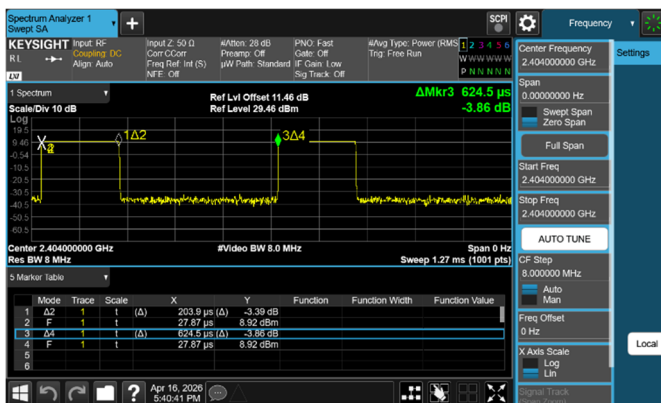
1 M Bit/s (37 Byte)



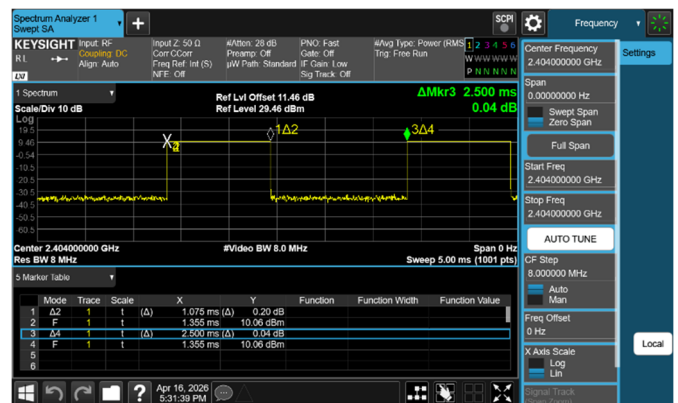
1 M Bit/s (255 Byte)



2 M Bit/s (37 Byte)



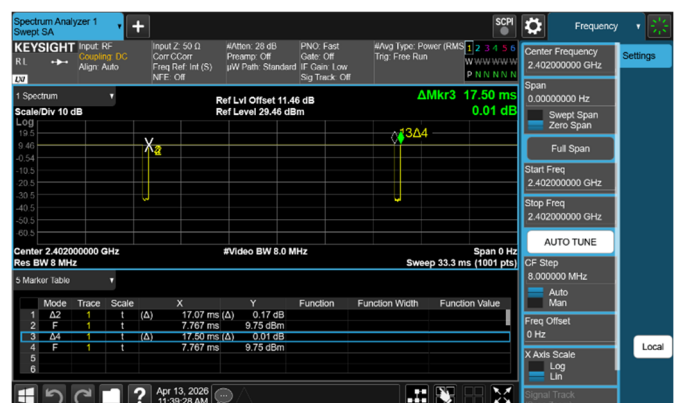
2 M Bit/s (255 Byte)



125 k Bit/s(37 Byte)

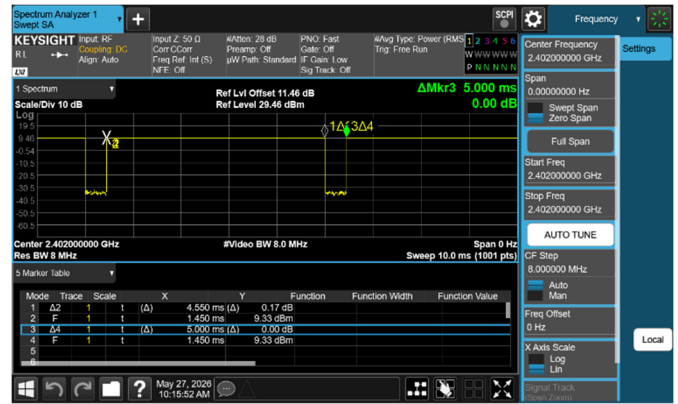
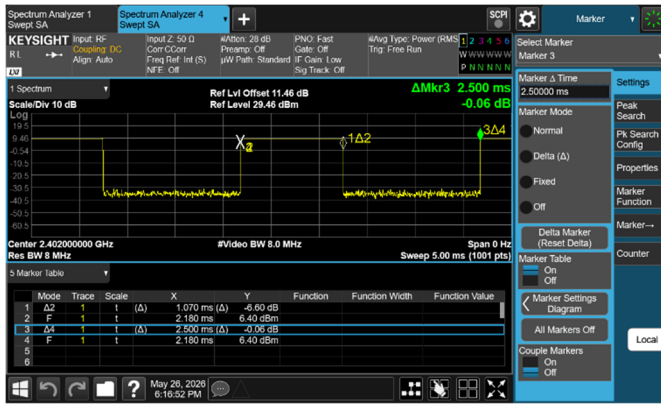


125 k Bit/s(255 Byte)



500 k Bit/s(37 Byte)

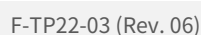
500 k Bit/s(255 Byte)



9.2 6 dB BANDWIDTH

Mode	Channel	Frequency [MHz]	6dB BW [kHz]	Limit [kHz]
1M 37Byte	37	2402	712.8	> 500
	17	2440	715.7	
	39	2480	717.5	
1M 255Byte	37	2402	681.5	
	17	2440	685.7	
	39	2480	686.8	
2M 37Byte	0	2404	1163	
	17	2440	1166	
	36	2478	1164	
2M 255Byte	0	2404	1243	
	17	2440	1230	
	36	2478	1241	
125k 37Byte	37	2402	649.1	
	17	2440	647.5	
	39	2480	651.5	
125k 255Byte	37	2402	650.0	
	17	2440	649.8	
	39	2480	648.2	
500k 37Byte	37	2402	670.7	
	17	2440	674.0	
	39	2480	669.7	
500k 255Byte	37	2402	671.3	
	17	2440	675.5	
	39	2480	666.7	

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.)



9.3 OUTPUT POWER

Peak Power

Mode	Channel	Frequency [MHz]	Peak Power [dBm]	Limit [dBm]
1M 37Byte	37	2402	9.06	30
	17	2440	9.20	
	39	2480	9.15	
1M 255Byte	37	2402	9.02	
	17	2440	9.19	
	39	2480	9.14	
2M 37Byte	0	2404	9.15	
	17	2440	9.33	
	36	2478	9.30	
2M 255Byte	0	2404	9.14	
	17	2440	9.28	
	36	2478	9.27	
125k 37Byte	37	2402	9.02	
	17	2440	9.22	
	39	2480	9.19	
125k 255Byte	37	2402	9.05	
	17	2440	9.19	
	39	2480	9.16	
500k 37Byte	37	2402	9.08	
	17	2440	9.27	
	39	2480	9.22	
500k 255Byte	37	2402	9.54	
	17	2440	9.61	
	39	2480	9.62	

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	37	2402	6.86	2.07	8.93	30
	17	2440	7.01	2.07	9.08	
	39	2480	6.98	2.07	9.05	
1M 255Byte	37	2402	8.27	0.69	8.96	
	17	2440	8.39	0.69	9.07	
	39	2480	8.35	0.69	9.04	
2M 37Byte	0	2404	3.98	4.86	8.84	
	17	2440	4.29	4.86	9.15	
	36	2478	4.18	4.86	9.04	
2M 255Byte	0	2404	5.43	3.67	9.09	
	17	2440	5.50	3.67	9.16	
	36	2478	5.50	3.67	9.16	
125k 37Byte	37	2402	8.04	0.82	8.87	
	17	2440	7.10	0.82	7.92	
	39	2480	7.02	0.82	7.84	
125k 255Byte	37	2402	8.30	0.11	8.41	
	17	2440	8.40	0.11	8.51	
	39	2480	8.95	0.11	9.06	
500k 37Byte	37	2402	5.37	3.69	9.06	
	17	2440	5.36	3.69	9.05	
	39	2480	5.43	3.69	9.12	
500k 255Byte	37	2402	9.00	0.41	9.41	
	17	2440	9.14	0.41	9.55	
	39	2480	8.83	0.41	9.24	

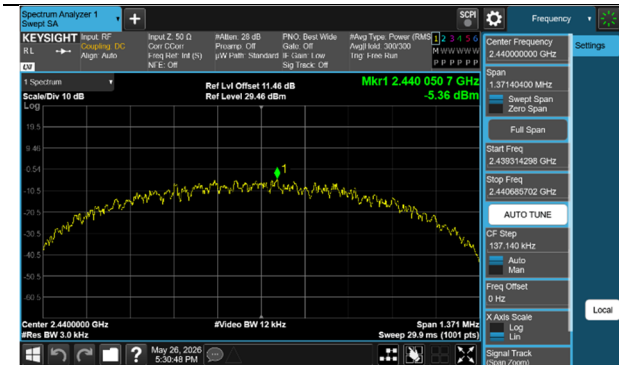
9.4 POWER SPECTRAL DENSITY

Mode	Channel	Frequency [MHz]	Total PSD [dBm/3kHz]	Limit [dBm/3kHz]
1M 37Byte	37	2402	-6.700	8
	17	2440	-6.578	
	39	2480	-6.646	
1M 255Byte	37	2402	-5.691	
	17	2440	-5.358	
	39	2480	-5.420	
2M 37Byte	0	2404	-9.621	
	17	2440	-9.458	
	36	2478	-9.477	
2M 255Byte	0	2404	-7.098	
	17	2440	-7.004	
	36	2478	-7.016	
125k 37Byte	37	2402	2.884	
	17	2440	3.090	
	39	2480	3.054	
125k 255Byte	37	2402	2.927	
	17	2440	3.081	
	39	2480	3.035	
500k 37Byte	37	2402	2.705	
	17	2440	2.914	
	39	2480	2.841	
500k 255Byte	37	2402	3.073	
	17	2440	3.279	
	39	2480	3.260	

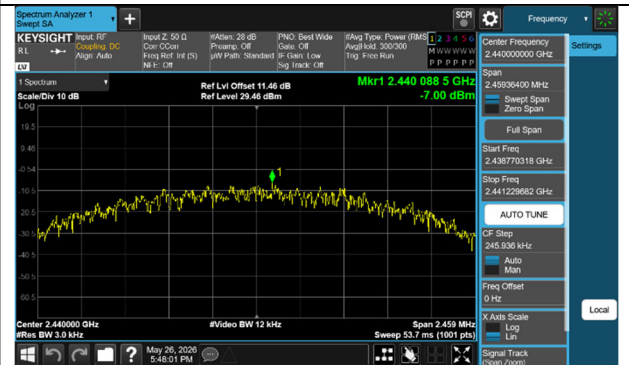
Test Plots(POWER SPECTRAL DENSITY)

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

1 MBit/s 255 Byte (CH 17)



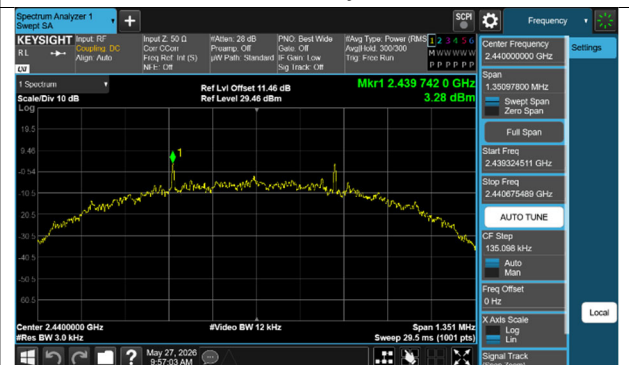
2 MBit/s 255 Byte (CH 17)



125k Bit/s 37 Byte (CH 17)



500k Bit/s 255 Byte (CH 17)



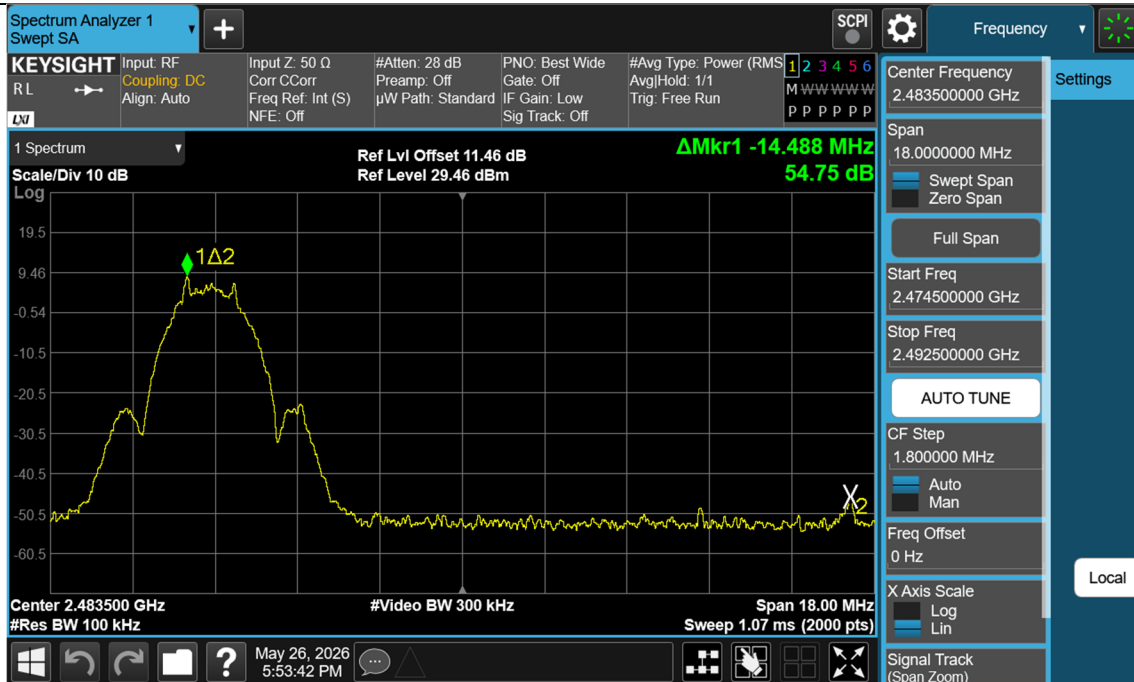
9.5 BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS

[BAND EDGE]

Mode	Channel	Frequency [MHz]	Position	Band Edge [dB]	Limit [dBc]
1M 37Byte	37	2402	Lower	54.966	20
	39	2480	Upper	57.771	
1M 255Byte	37	2402	Lower	56.559	
	39	2480	Upper	58.906	
2M 37Byte	0	2404	Lower	59.358	
	36	2478	Upper	56.403	
2M 255Byte	0	2404	Lower	59.677	
	36	2478	Upper	54.753	
125k 37Byte	37	2402	Lower	56.669	
	39	2480	Upper	56.961	
125k 255Byte	37	2402	Lower	55.672	
	39	2480	Upper	56.022	
500k 37Byte	37	2402	Lower	56.631	
	39	2480	Upper	59.541	
500k 255Byte	37	2402	Lower	55.965	
	39	2480	Upper	59.155	

Test Plot(Band Edge)

2 MBit/s 255 Byte (CH 36)



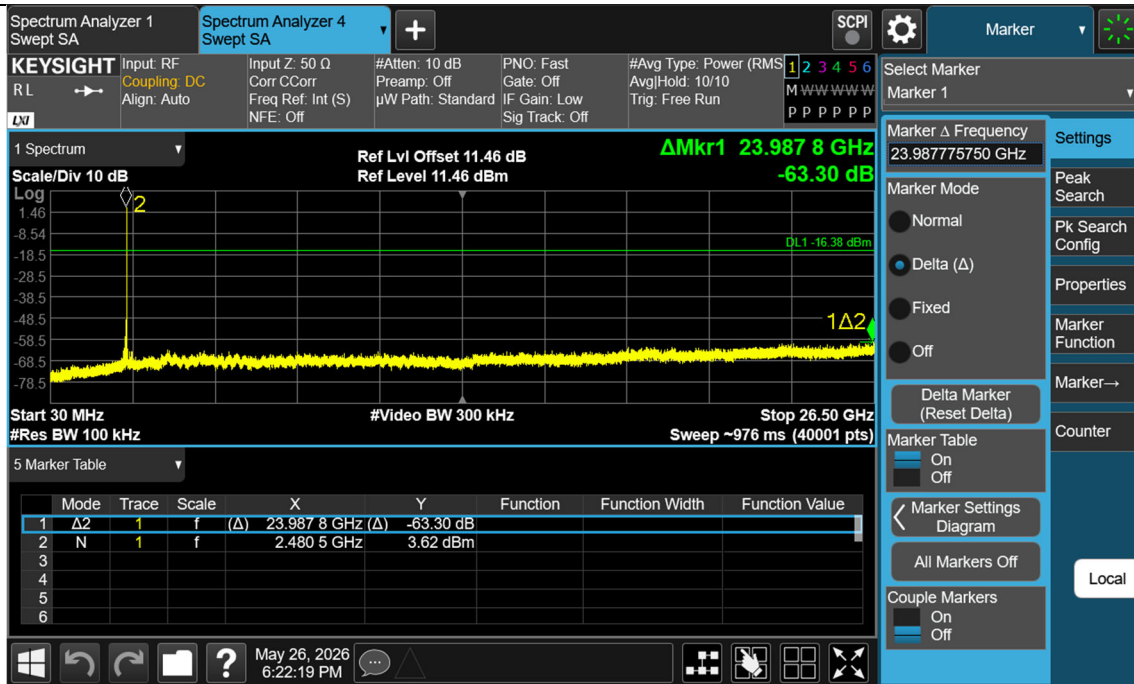
[CONDUCTED SPURIOUS EMISSIONS]

In order to simplify the report, attached plots were only the worst case channel and data rate.

- Worst case : 500k Bit/s 37 Byte Ch. 39

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

Conducted Spurious Emission



Note:

Limit (dBm): -16.38

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 = $40 \log (\text{specific distance} / \text{test distance})$ (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 37		2402	MHz	Mode :		1 M Bit/s (37 Bytes)	
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4804	53.94	-10.56	V	43.38	73.98	30.60	PK
4804	42.64	-10.56	V	32.08	53.98	21.90	AV
7206	52.33	-3.91	V	48.42	73.98	25.56	PK
7206	39.94	-3.91	V	36.03	53.98	17.95	AV
4804	54.83	-10.56	H	44.27	73.98	29.71	PK
4804	42.65	-10.56	H	32.09	53.98	21.89	AV
7206	52.37	-3.91	H	48.46	73.98	25.52	PK
7206	40.01	-3.91	H	36.10	53.98	17.88	AV

CH 17		2440	MHz	Mode :		1 M Bit/s (37 Bytes)	
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4880	54.73	-10.35	V	44.38	73.98	29.60	PK
4880	43.00	-10.35	V	32.65	53.98	21.33	AV
7320	51.28	-3.70	V	47.58	73.98	26.40	PK
7320	39.78	-3.70	V	36.08	53.98	17.90	AV
4880	55.31	-10.35	H	44.96	73.98	29.02	PK
4880	43.06	-10.35	H	32.71	53.98	21.27	AV
7320	51.53	-3.70	H	47.83	73.98	26.15	PK
7320	39.80	-3.70	H	36.10	53.98	17.88	AV

CH 39		2480	MHz	Mode :		1 M Bit/s (37 Bytes)	
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4960	54.01	-10.14	V	43.87	73.98	30.11	PK
4960	42.88	-10.14	V	32.74	53.98	21.24	AV
7440	50.37	-3.55	V	46.82	73.98	27.16	PK
7440	39.50	-3.55	V	35.95	53.98	18.03	AV
4960	54.88	-10.14	H	44.74	73.98	29.24	PK
4960	43.54	-10.14	H	33.40	53.98	20.58	AV
7440	50.88	-3.55	H	47.33	73.98	26.65	PK
7440	39.61	-3.55	H	36.06	53.98	17.92	AV

CH 0		2404	MHz	Mode :		2 M Bit/s (37 Bytes)	
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4808	53.39	-10.56	V	42.83	73.98	31.15	PK
4808	42.11	-10.56	V	31.55	53.98	22.43	AV
7212	51.24	-3.91	V	47.33	73.98	26.65	PK
7212	39.74	-3.91	V	35.83	53.98	18.15	AV
4808	53.82	-10.56	H	43.26	73.98	30.72	PK
4808	42.54	-10.56	H	31.98	53.98	22.00	AV
7212	51.75	-3.91	H	47.84	73.98	26.14	PK
7212	39.82	-3.91	H	35.91	53.98	18.07	AV

CH 17		2440	MHz	Mode :		2 M Bit/s (37 Bytes)	
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4880	54.86	-10.35	V	44.51	73.98	29.47	PK
4880	42.84	-10.35	V	32.49	53.98	21.49	AV
7320	51.59	-3.70	V	47.89	73.98	26.09	PK
7320	39.68	-3.70	V	35.98	53.98	18.00	AV
4880	54.53	-10.35	H	44.18	73.98	29.80	PK
4880	42.92	-10.35	H	32.57	53.98	21.41	AV
7320	51.80	-3.70	H	48.10	73.98	25.88	PK
7320	39.77	-3.70	H	36.07	53.98	17.91	AV

CH 36		2478	MHz	Mode :		2 M Bit/s (37 Bytes)	
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4956	55.39	-10.14	V	45.25	73.98	28.73	PK
4956	43.22	-10.14	V	33.08	53.98	20.90	AV
7434	51.09	-3.55	V	47.54	73.98	26.44	PK
7434	39.51	-3.55	V	35.96	53.98	18.02	AV
4956	55.51	-10.14	H	45.37	73.98	28.61	PK
4956	43.43	-10.14	H	33.29	53.98	20.69	AV
7434	51.28	-3.55	H	47.73	73.98	26.25	PK
7434	39.58	-3.55	H	36.03	53.98	17.95	AV

[Simultaneous transmission Scenario]

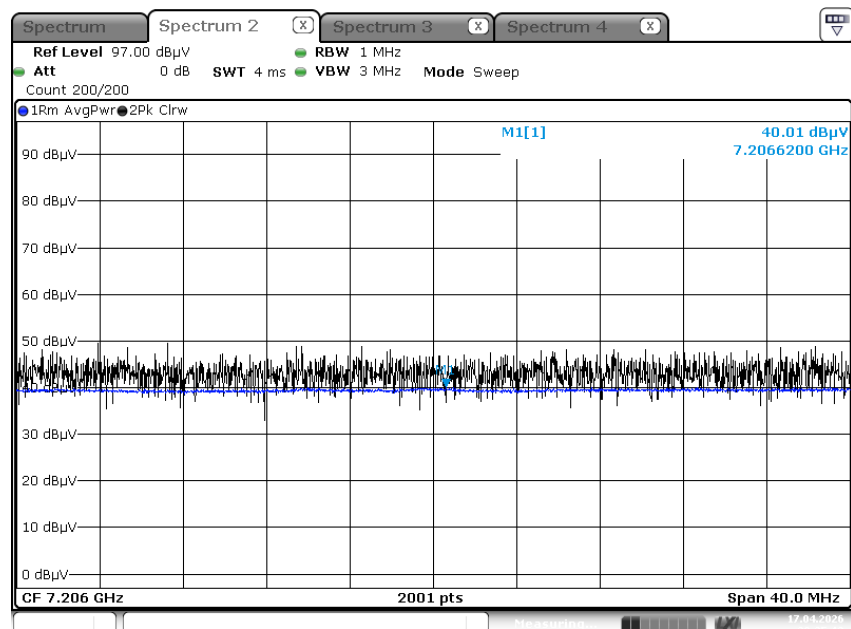
Scenario 1

ANT1_ BTLE 1M 37 Bytes Ch. 37 + ANT1_5 GHz 802.11ac_VHT20 Ch. 104

CH 37		2402	MHz	Mode :		1 M Bit/s (37 Bytes)	
Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
4804	54.37	-10.56	V	43.81	73.98	30.17	PK
4804	43.22	-10.56	V	32.66	53.98	21.32	AV
7206	54.02	-3.91	V	50.11	73.98	23.87	PK
7206	44.80	-3.91	V	40.89	53.98	13.09	AV
4804	54.33	-10.56	H	43.77	73.98	30.21	PK
4804	43.13	-10.56	H	32.57	53.98	21.41	AV
7206	55.48	-3.91	H	51.57	73.98	22.41	PK
7206	46.52	-3.91	H	42.61	53.98	11.37	AV

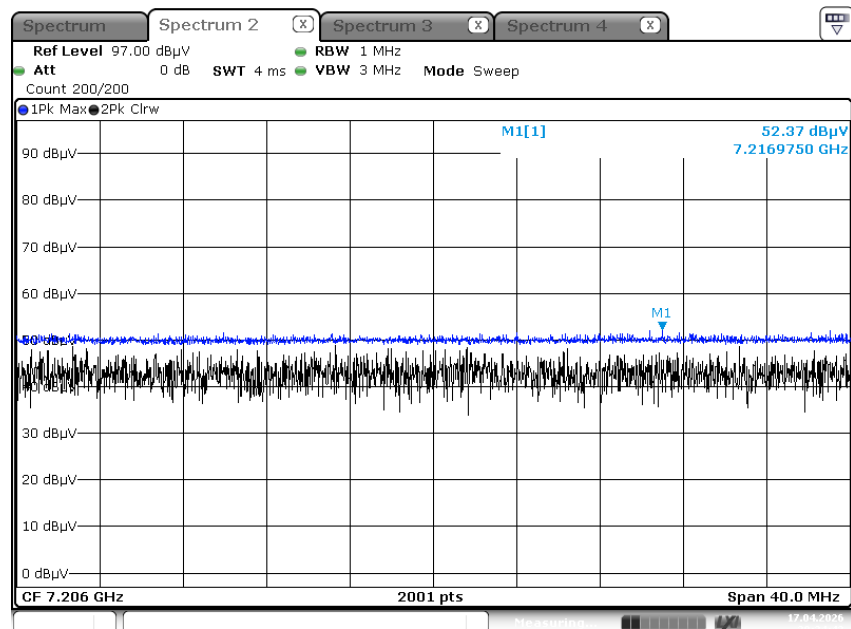
1 M Bit/s 37 Bytes Test Plots (Worst case : Y-H)

Radiated Spurious Emissions plot – Average Result (Ch.37 3rd Harmonic, Y-H)



Date: 17.APR.2026 20:25:13

Radiated Spurious Emissions plot – Peak Result (Ch.37 3rd Harmonic, Y-H)



Date: 17.APR.2026 20:24:43

Note:

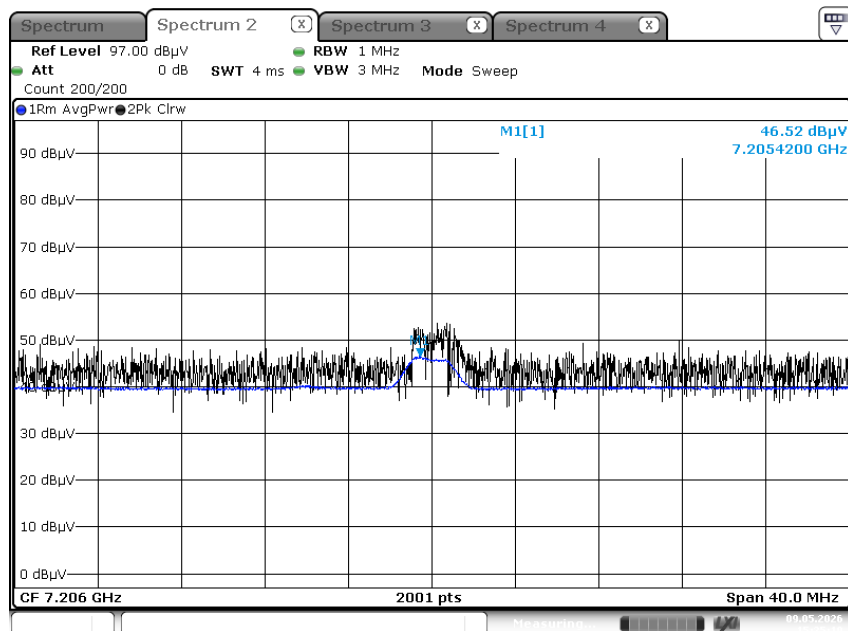
Plots of worst case are only reported.

[Simultaneous transmission Scenario]

Scenario 1

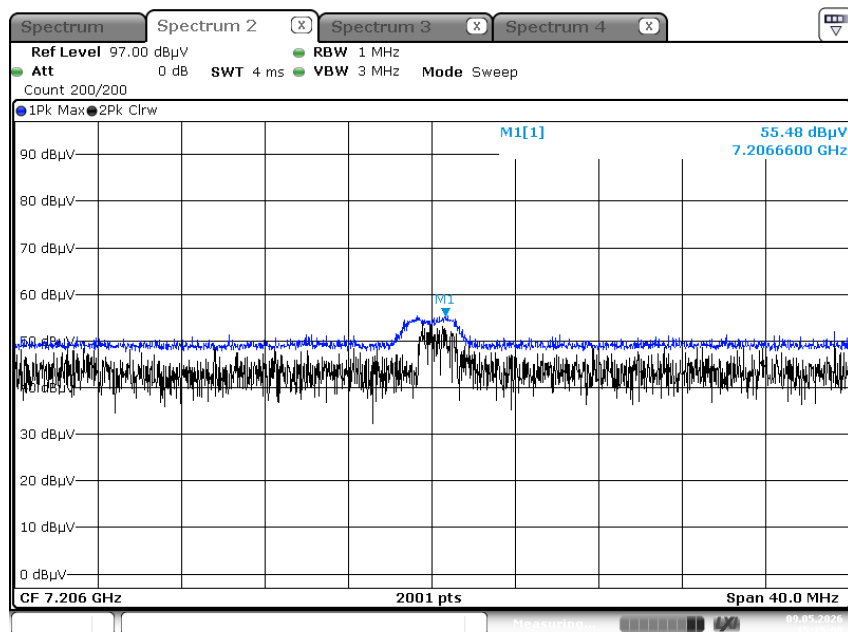
ANT1_ BTLE 1M 37 Bytes Ch. 37 + ANT1_5 GHz 802.11ac_VHT20 Ch. 104

Radiated Spurious Emissions plot – Average Result (3rd Harmonic, Y-H)



Date: 9.NOV.2026 15:25:20

Radiated Spurious Emissions plot – Peak Result (3rd Harmonic, Y-H)



Date: 9.NOV.2026 15:25:01

Note:

Plots of worst case are only reported.

9.7 RADIATED RESTRICTED BAND EDGES

1 M Bit/s (37 Bytes)							
Channel	CH 37, CH 39		Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	51.69	6.75	H	58.44	73.98	15.54	PK
2310 - 2390	36.68	6.75	H	43.43	53.98	10.55	AV
2483.5 - 2500	52.46	6.67	H	59.13	73.98	14.85	PK
2483.5 - 2500	37.70	6.67	H	44.37	53.98	9.61	AV
1 M Bit/s (255 Bytes)							
Channel	CH 37, CH 39		Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	51.15	6.75	H	57.90	73.98	16.08	PK
2310 - 2390	36.34	6.75	H	43.09	53.98	10.89	AV
2483.5 - 2500	51.93	6.67	H	58.60	73.98	15.38	PK
2483.5 - 2500	38.09	6.67	H	44.76	53.98	9.22	AV
2 M Bit/s (37 Bytes)							
Channel	CH 0, CH 36		Channel Frequency		2404 MHz, 2478 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	51.92	6.75	H	58.67	73.98	15.31	PK
2310 - 2390	36.66	6.75	H	43.41	53.98	10.57	AV
2483.5 - 2500	51.44	6.67	H	58.11	73.98	15.87	PK
2483.5 - 2500	36.90	6.67	H	43.57	53.98	10.41	AV
2 M Bit/s (255 Bytes)							
Channel	CH 0, CH 36		Channel Frequency		2404 MHz, 2478 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	51.56	6.75	H	58.31	73.98	15.67	PK
2310 - 2390	36.30	6.75	H	43.05	53.98	10.93	AV
2483.5 - 2500	50.66	6.67	H	57.33	73.98	16.65	PK
2483.5 - 2500	36.88	6.67	H	43.55	53.98	10.43	AV
125k Bit/s (37 Bytes)							
Channel	CH 37, CH 39		Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	51.57	6.75	H	58.32	73.98	15.66	PK
2310 - 2390	36.46	6.75	H	43.21	53.98	10.77	AV
2483.5 - 2500	53.07	6.67	H	59.74	73.98	14.24	PK
2483.5 - 2500	38.08	6.67	H	44.75	53.98	9.23	AV

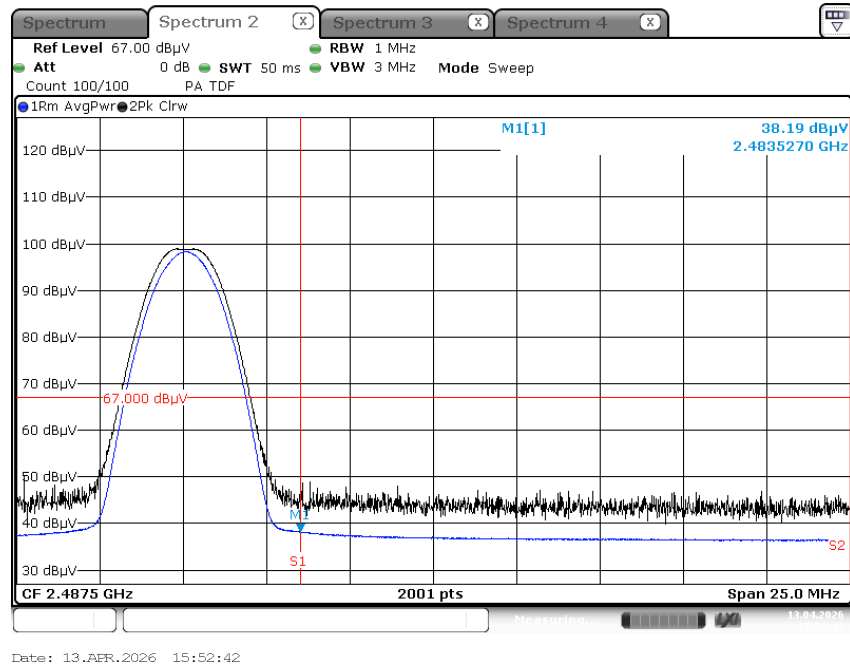
125k Bit/s (255 Bytes)							
Channel	CH 37, CH 39		Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	50.68	6.75	H	57.43	73.98	16.55	PK
2310 - 2390	36.39	6.75	H	43.14	53.98	10.84	AV
2483.5 - 2500	51.27	6.67	H	57.94	73.98	16.04	PK
2483.5 - 2500	38.19	6.67	H	44.86	53.98	9.12	AV

500k Bit/s (37 Bytes)							
Channel	CH 37, CH 39		Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	51.60	6.75	H	58.35	73.98	15.63	PK
2310 - 2390	36.36	6.75	H	43.11	53.98	10.87	AV
2483.5 - 2500	51.99	6.67	H	58.66	73.98	15.32	PK
2483.5 - 2500	38.02	6.67	H	44.69	53.98	9.29	AV

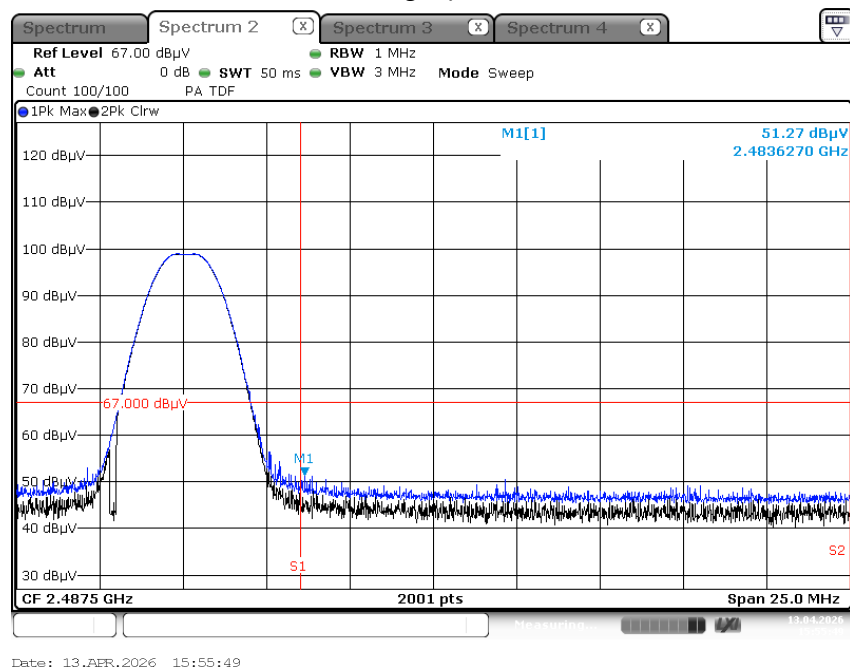
500k Bit/s (255 Bytes)							
Channel	CH 37, CH 39		Channel Frequency		2402 MHz, 2480 MHz		
Frequency	Measured Value	C.L	ANT. POL	Total	Limit	Margin	Measurement
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	Type
2310 - 2390	50.81	6.75	H	57.56	73.98	16.42	PK
2310 - 2390	36.33	6.75	H	43.08	53.98	10.90	AV
2483.5 - 2500	51.42	6.67	H	58.09	73.98	15.89	PK
2483.5 - 2500	38.16	6.67	H	44.83	53.98	9.15	AV

Mode : 125k 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.

9.8 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions

Test

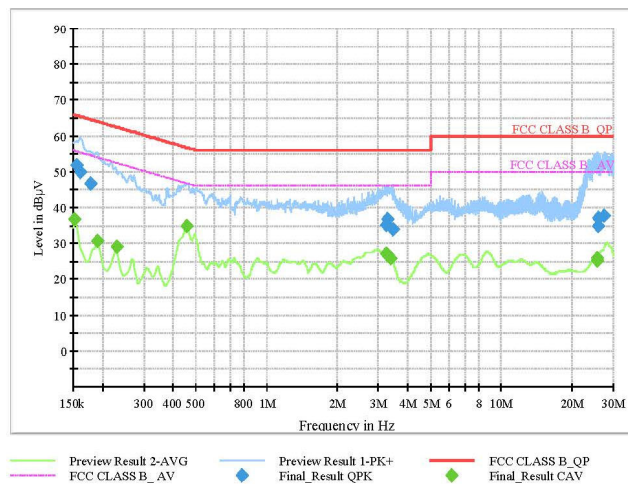
1 / 1

Test Report

Common Information

EUT : ETWMCNSL01
Operating Conditions : BTLE Mode
Comment :

Full Spectrum



Final Result QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1545	51.85	65.75	13.91	9.000	L1	9.7
0.1613	49.80	65.40	15.60	9.000	L1	9.7
0.1770	46.75	64.63	17.87	9.000	L1	9.7
3.2473	35.27	56.00	20.73	9.000	N	9.7
3.2765	36.84	56.00	19.16	9.000	N	9.7
3.4520	34.03	56.00	21.97	9.000	N	9.7
25.8080	37.06	60.00	22.94	9.000	L1	10.0
25.9340	34.93	60.00	25.07	9.000	L1	10.0
27.5698	37.82	60.00	22.18	9.000	L1	10.0

Final Result_CAV

Frequency (MHz)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1523	36.67	55.88	19.20	9.000	L1	9.7
0.1905	30.80	54.02	23.22	9.000	N	9.6
0.2288	29.06	52.50	23.44	9.000	N	9.6
0.4560	34.96	46.77	11.80	9.000	N	9.6
3.2495	27.09	46.00	18.91	9.000	N	9.7
3.2630	26.96	46.00	19.04	9.000	N	9.7
3.3755	25.77	46.00	20.23	9.000	N	9.7
25.6190	25.18	50.00	24.82	9.000	L1	10.0
25.7450	26.01	50.00	23.99	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	ESR7	Rohde & Schwarz	101910	08/20/2026	Annual
Chamber	SU-642	ESPEC	93022487	06/17/2027	Annual
Signal Analyzer	N9030B	Keysight	MY56320554	01/26/2027	Annual
Open switch and control platform	OSP 120	Rohde & Schwarz	100935	07/24/2026	Annual
Power Meter	N1911A	Agilent	MY45100523	02/13/2027	Annual
Wideband Power Sensor	N1921A	Keysight	MY57820067	01/26/2027	Annual
Directional Coupler	87300B	Agilent	3116A03621	10/14/2026	Annual
Power Splitter	11667B	Hewlett Packard	10545	01/15/2027	Annual
DC Power Supply	E3632A	Agilent	MY50360067	01/27/2027	Annual
Attenuator	10 dB	Sensor View	ATT10FC001	05/14/2027	Annual
Software	EMC32	Rohde & Schwarz	N/A	N/A	N/A
Bluetooth Tester	CBT	Rohde & Schwarz	100752	12/22/2026	Annual
Radio Communication Tester	CMX500	Rohde&Schwarz	100325	09/29/2026	Annual
4 Way Power DIVIDER	4456-4	Narda	01640	04/13/2027	Annual
Step Attenuator	8310-202-F	Aeroflex/Weinschel	1070	03/18/2027	Annual
Automation Software	FCC WLAN Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC Bluetooth Conducted	HCT CO.,LTD	-	-	-

Note:

1. Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update.
All reported measurements were performed using equipment within valid calibration.
2. Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Antenna Mast Controller	CO3000	Innco systems GmbH	CO3000/1542/57580623/G	N/A	N/A
Antenna Mast	MA4640-XP-ET	Innco systems GmbH	9320422	03/24/2027	Biennial
Turn Table	DT2000-2t	Innco systems GmbH	5930623	N/A	N/A
Loop Antenna	FMZB 1513	Schwarzbeck Mess-Elektronik OHG	1513-175	06/24/2027	Biennial
Trilog Broadband Antenna	VULB 9168	Schwarzbeck Mess-Elektronik OHG	01135	08/19/2026	Biennial
Horn Antenna	BBHA 9120 D	Schwarzbeck Mess-Elektronik OHG	9120D-1151	07/11/2027	Biennial
Horn Antenna	BBHA 9170	Schwarzbeck Mess-Elektronik OHG	BBHA9170342	09/20/2026	Biennial
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments GmbH	2	12/11/2026	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments GmbH	5	03/19/2027	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments GmbH	6	03/19/2027	Annual
Band Reject Filter	WRCJV5100/5850-40/50-8EEK	Wainwright Instruments GmbH	1	01/07/2027	Annual
RF Switching System	FBSR-04C (HPF(3~18GHz) + LNA1(1~18GHz))	T&M system	S5L1	02/12/2027	Annual
RF Switching System	FBSR-04C (ATT(10dB) + LNA1(1~18GHz))	T&M system	S5L2	02/12/2027	Annual
RF Switching System	FBSR-04C (ATT(3dB) + LNA1(1~18GHz))	T&M system	S5L3	02/12/2027	Annual
RF Switching System	FBSR-04C (LNA1(1~18GHz))	T&M system	S5L4	02/12/2027	Annual
RF Switching System	FBSR-04C (HPF(7~18GHz) + LNA2(6~18GHz))	T&M system	S5L5	02/12/2027	Annual
RF Switching System	FBSR-04C (Thru(30MHz ~ 18GHz))	T&M system	S5L6	02/12/2027	Annual
Broadband LNA	CBL18265035	CERNEX	22966	10/21/2026	Annual
Broadband LNA	CBL26405040	CERNEX	25956	02/09/2027	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/03/2027	Annual
Signal Analyzer	FSV40	Rohde & Schwarz	101510	09/17/2026	Annual
Attenuator	18B-03	API Technologies	1	04/13/2027	Annual
Automation Software	FCC WLAN Radiated	HCT CO., LTD	-	-	-

Note:

- Equipment whose calibration due date was updated during the test period was not used between the previous due date and the update.
All reported measurements were performed using equipment within valid calibration.
- Especially, all antenna for measurement is calibrated in accordance with the requirements of ANSI C63.5-2017.

11. ANNEX A_TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2606-FC001-P