

TEST REPORT

FCC UNII Test for ETWMCNSL01
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2606-FC006

DATE OF ISSUE
July 20, 2026

Tested by
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Technical Manager
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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

Unlicensed National Information Infrastructure(NII)

Test Standard Used

FCC Rule Part(s): Part 15.407

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 laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. 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). 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. GENERAL INFORMATION

EUT DESCRIPTION

Model	ETWMCNSL01	
Additional Model	-	
EUT Type	RF Module	
Power Supply	DC 3.3 V	
Modulation Type	OFDM : 802.11a, 802.11n(HT20/40), 802.11ac(VHT20/40/80)	
Frequency Range (MHz)	U-NII-1	20 MHz BW : 5180 - 5240 40 MHz BW : 5190 - 5230 80 MHz BW : 5210
	U-NII-2A	20 MHz BW : 5260 - 5320 40 MHz BW : 5270 - 5310 80 MHz BW : 5290
	U-NII-2C	20 MHz BW : 5500 - 5720 40 MHz BW : 5510 - 5710 80 MHz BW : 5530 - 5690
	U-NII-3	20 MHz BW : 5745 - 5825 40 MHz BW : 5755 - 5795 80 MHz BW : 5775
Straddle channel	Supported	
TDWR Band	Supported	
Dynamic Frequency Selection	Slave without radar detection	
Antenna Information	Please refer to the Antenna Specification document.	
Serial number	Conducted : ETWMCNSL01-01 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	

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. Antenna Gain

Band	Ant Gain (dBi)
UNII 1	0.80
UNII 2A	1.00
UNII 2C	0.80
UNII 3	0.60

2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted average output power as follows:

Band	Mode	Power	
		(dBm)	(W)
UNII1	802.11a	16.23	0.042
	802.11n (HT20)	17.10	0.051
	802.11n (HT40)	12.89	0.019
	802.11ac (VHT20)	16.24	0.042
	802.11ac (VHT40)	12.95	0.020
	802.11ac (VHT80)	11.95	0.016
UNII2A	802.11a	17.79	0.060
	802.11n (HT20)	17.69	0.059
	802.11n (HT40)	12.78	0.019
	802.11ac (VHT20)	17.80	0.060
	802.11ac (VHT40)	13.86	0.024
	802.11ac (VHT80)	12.80	0.019
UNII2C	802.11a	14.99	0.032
	802.11n (HT20)	15.93	0.039
	802.11n (HT40)	15.07	0.032
	802.11ac (VHT20)	20.19	0.105
	802.11ac (VHT40)	20.38	0.109
	802.11ac (VHT80)	15.27	0.034
UNII3	802.11a	20.75	0.119
	802.11n (HT20)	20.76	0.119
	802.11n (HT40)	20.59	0.115
	802.11ac (VHT20)	20.82	0.121
	802.11ac (VHT40)	20.59	0.115
	802.11ac (VHT80)	13.99	0.025

3. TEST METHODOLOGY

Unlicensed wireless device were tested using the following measurement procedure.

[1] KDB 789033 D02 15.407 Meas Guidance v02r01.

[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 15.407 under the FCC Rules Part 15 Subpart E.

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.

4. 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.

5. FACILITIES AND ACCREDITATIONS

5.1 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).

5.2 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".

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR § 15.203, § 15.407:

“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.”

7. 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 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

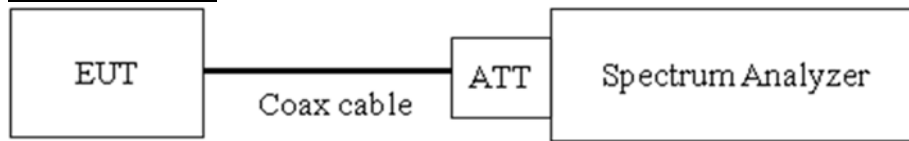
Parameter	Expanded Uncertainty ($\pm$ dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.96 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Power Meter)	0.54 (Confidence level about 95 %, $k=2$)
Conducted Output Power(Signal Analyzer)	0.73 (Confidence level about 95 %, $k=2$)
Power Spectral Density	0.98 (Confidence level about 95 %, $k=2$)
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 %, $k=2$)

8. DESCRIPTION OF TESTS

Test Item	Test Procedure
Duty Cycle	- KDB 789033 D02 – Section B.2
6 dB Bandwidth & 26dB Bandwidth	- KDB 789033 D02 - Section C
Output Power	- KDB 789033 D02 - Section E
Power Spectral Density	- KDB 789033 D02 - Section F
Frequency Stability	- ANSI C63.10-2020 - Section 6.8
AC Power line Conducted Emissions	- ANSI C63.10-2020– Section 6.2
Radiated Test	- KDB 789033 D02 – Section II.G - 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 & 12.7 (Unwanted emissions)

8.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

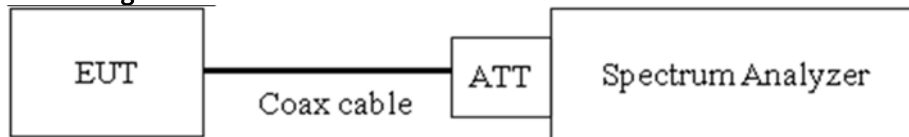
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz ($\geq$ RBW)
3. SPAN = 0 Hz
4. Detector = Average
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = $T_{\text{on}} / T_{\text{total}}$ and Duty Cycle Factor = $10\log(1/\text{Duty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

8.2. 6 dB Bandwidth & 26 dB Bandwidth

Limit

Within the 5.725-5.85 GHz(NII-3) band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Configuration



Test Procedure (26 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

1. RBW = approximately 1 % of the emission bandwidth
2. VBW > RBW
3. Detector = Peak
4. Trace mode = max hold
5. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

Test Procedure (6 dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

1. RBW = 100 kHz
2. $VBW \geq 3 \times RBW$
3. Detector = Peak
4. Trace mode = max hold
5. Allow the trace to stabilize
6. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points(upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note:

1. We tested X dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer.
2. DFS test channels should be defined. So, we performed the OBW test to prove that no part of the fundamental emissions of any channels belong to UNII1 and UNII3 band for DFS.
3. The 26 dB bandwidth is used to determine the conducted power limits.

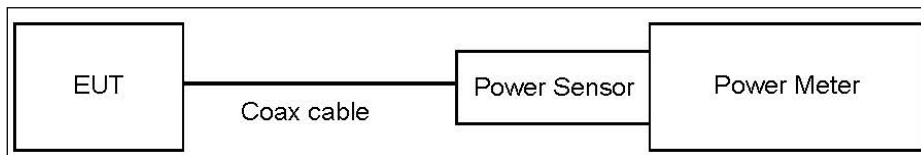
8.3. Output Power Measurement

Limit

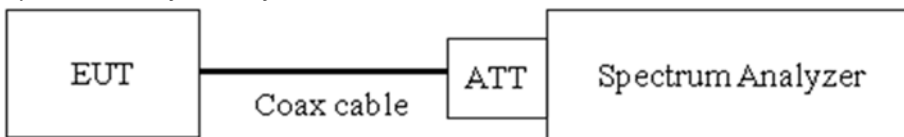
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30 dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30 dBm)

Test Configuration

Power Meter



Spectrum Analyzer(Only Straddle Channel)



Test Procedure(Power Meter)

The transmitter output is connected to the Power Meter.

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.

Test Procedure (Spectrum Analyzer)

We use the spectrum analyzer's integrated band power measurement function

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

1. Measure the duty cycle.
2. Set span to encompass the 26 dB EBW of the signal.
3. RBW = 1 MHz.
4. VBW $\geq$ 3 MHz.
5. Number of points in sweep $\geq$ 2 x span/RBW.
6. Sweep time = auto.
7. Measurement Type or = RMS.
8. Do not use sweep triggering. Allow the sweep to "free run".
9. Trace average at least 100 traces in power averaging(RMS) mode
10. Integrated bandwidth = OBW
11. 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

Total Power(dBm) = Measured Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum Measured Levels are not plot data.

The power results in plot is already including the actual values of loss for the attenuator and cable combination.

2. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	11.95
UNII 2A	11.95
UNII 2C	11.95
UNII 3	11.95

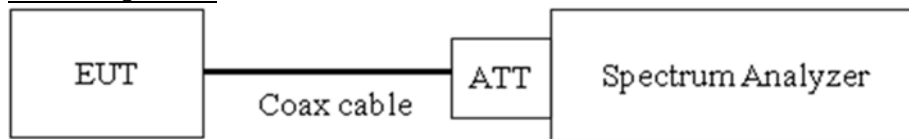
(Actual value of loss for the attenuator and cable combination)

8.4. Power Spectral Density

Limit

Band	Limit
UNII 1	11 dBm/MHz
UNII 2A, 2C	11 dBm/MHz
UNII 3	30 dBm/500 kHz

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz(510 kHz for UNII 3)
→ For portion within the NII-3 be used RBW 510kHz
3. VBW $\geq$ 3 MHz
4. Number of points in sweep $\geq$ 2 x span/RBW.
5. Sweep time = auto.
6. Measurement Typeor = RMS(i.e., power averaging), if available. Otherwise, use sample Measurement Typeor mode.
7. Do not use sweep triggering. Allow the sweep to “free run”.
8. Trace average at least 100 traces in power averaging(RMS) mode
9. Use the peak search function on the spectrum analyzer to find the peak of the spectrum.
10. If Method SA-2 was used, add $10 \log(1/x)$, where x is the duty cycle, to the peak of the spectrum.

Sample Calculation

Total PSD(dBm) = Measured Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum Measured Levels are not plot data.

The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.

2. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	11.95
UNII 2A	11.95
UNII 2C	11.95
UNII 3	11.95

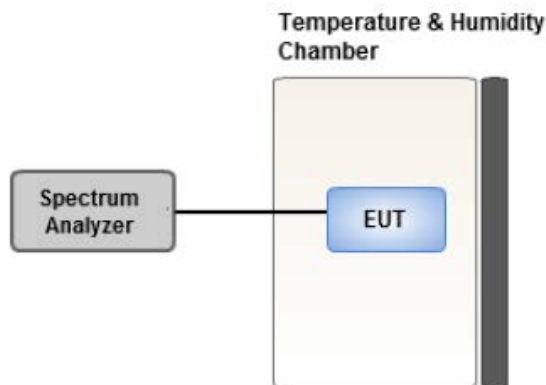
(Actual value of loss for the attenuator and cable combination)

8.5. Frequency Stability

Limit

Maintained within the band

Test Configuration



Test Procedure

1. The EUT was placed inside an environmental chamber as the temperature in the chamber was varied between -30 °C and 50 °C.
2. The temperature was incremented by 10 °C intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.
3. The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.
4. While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

8.6. 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

8.7. Radiated Test

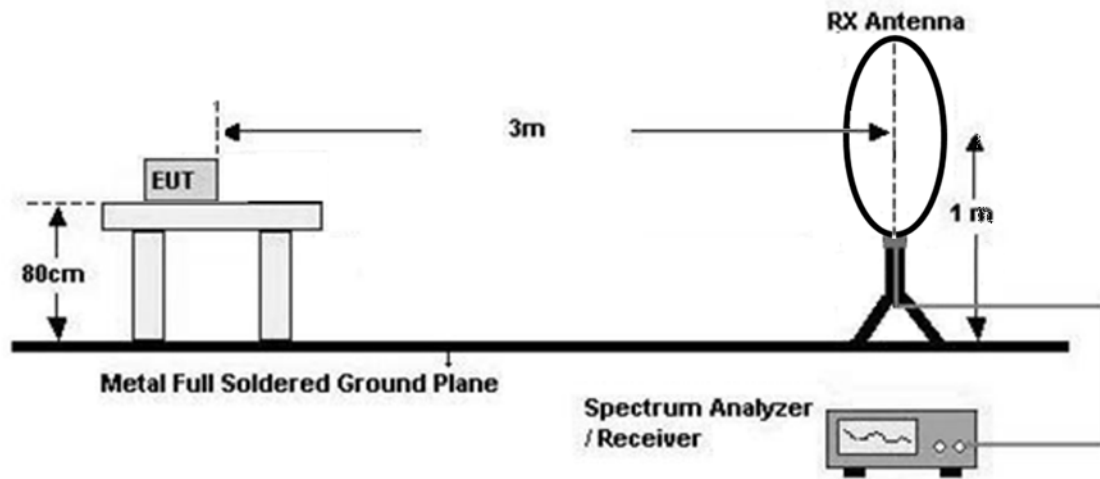
Limit

1. UNII 1: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
2. UNII 2A, 2C: All emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
3. UNII 3: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
4. All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Section 15.209.

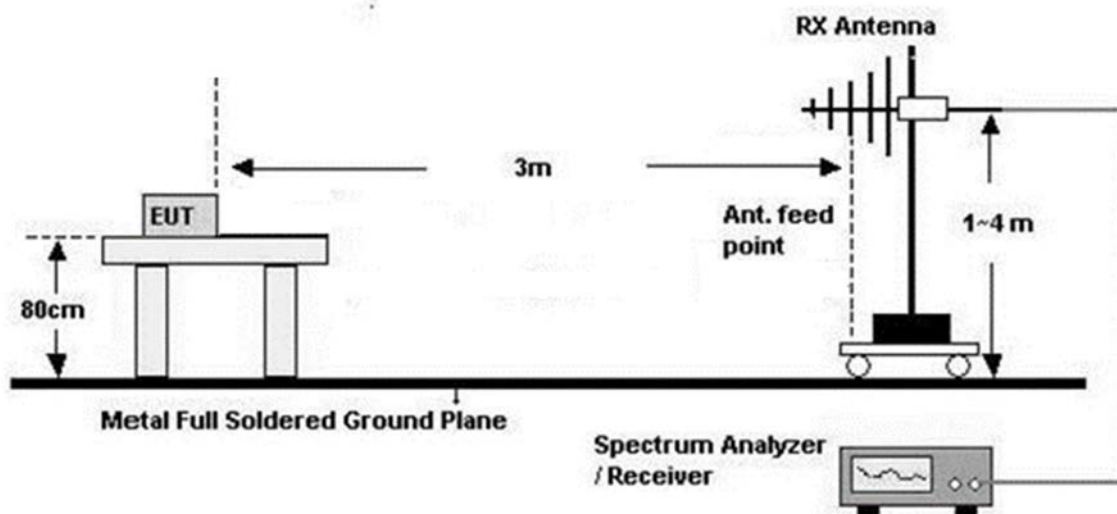
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

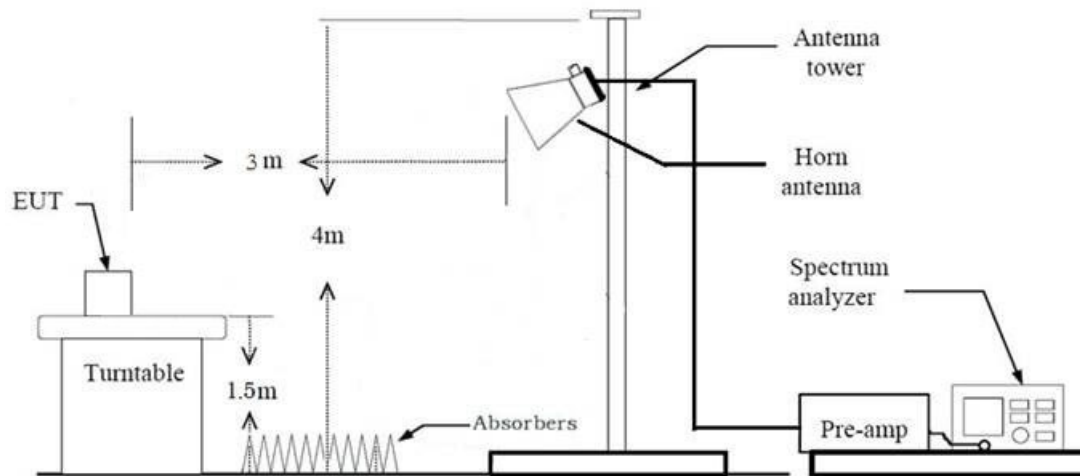
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions (Below 30 MHz)

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 0.8m 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
Measurement Type(Peak) :
 - 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 0.8m above ground plane.
3. The Hybrid antenna was placed at a location 3 m from the EUT, which is varied from 1 m 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) :
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep Time = auto
 - Trace mode = Max Hold
 - Allow sweeps to continue until the trace stabilizes.

Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately $1/x$, where x is the duty cycle.
 - (2) Measurement Type (Average) :
 - RBW = 1 MHz
 - VBW(Duty cycle $\geq$ 98 percent) = VBW $\leq$ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
 - VBW(Duty cycle is < 98 percent) = VBW $\geq$ $1/T$, where T is the minimum transmission duration.
 - The analyzer is set to linear detector mode.
 - Detector = Peak.
 - Sweep time = auto.
 - Trace mode = Max Hold.
 - Allow Max Hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of $1/x$, where x is the duty cycle.
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. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency
10. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance})$ (dB)
11. Total = Measured Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(A.G)
+ Distance Factor(D.F)

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) :**

- RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep Time = auto
 - Trace mode = Max Hold
 - Allow sweeps to continue until the trace stabilizes.
- Note that if the transmission is not continuous, the time required for the trace to stabilize will increase by a factor of approximately $1/x$, where x is the duty cycle.

(2) Measurement Type (Average) :

- RBW = 1 MHz
- VBW(Duty cycle $\geq$ 98 percent) = VBW $\leq$ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 percent) = VBW $\geq$ $1/T$, where T is the minimum transmission duration.
- The analyzer is set to linear detector mode.
- Detector = Peak.
- Sweep time = auto.
- Trace mode = Max Hold.
- Allow Max Hold to run for at least 50 traces if the transmitted signal is continuous or has at least 98 percent duty cycle. For lower duty cycles, increase the minimum number of traces by a factor of $1/x$, where x is the duty cycle.

8. Measured Frequency Range :

- 4 500 MHz ~ 5 150 MHz
- 5 350 MHz ~ 5 460 MHz
- 5 460 MHz ~ 5 470 MHz
- (75 MHz or more below the 5 725 MHz) ~ 5 725 MHz
- 5 850 MHz ~ (75 MHz or more above the 5 850 MHz)

9. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance})$ (dB)

10. Total

(1) Measurement(Peak)

= Measured Value(Peak)

(2) Measurement(Avg)

= Measured Value (Avg)

- 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) – Amp. Gain(A.G) +
Attenuator (ATT)

The actual setting value of VBW

Mode	Worst Data rate (Mbps)	Duty Cycle	Duty Cycle Factor (dB)	The actual setting value of VBW (Hz)
802.11a	6	0.989	0.000	1 000
802.11n(HT20)	MCS0	0.988	0.000	1 000
802.11n(HT40)	MCS0	0.976	0.103	2 000
802.11ac(VHT20)	MCS0	0.989	0.000	1 000
802.11ac(VHT40)	MCS0	0.977	0.100	2 000
802.11ac(VHT80)	MCS0	0.954	0.205	10 000

8.8. Worst case configuration and mode

Conducted test

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

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 : X
 - Radiated Restricted Band Edge : X
3. All datarate of operation were investigated and the worst case datarate results are reported.
 - 802.11a : 6 Mbps
 - 802.11n_HT20 : MCS0
 - 802.11n_HT40 : MCS0
 - 802.11ac_VHT20 : MCS0
 - 802.11ac_VHT40 : MCS0
 - 802.11ac_VHT80 : MCS0
4. Radiated Spurious Emission
 - All modulations of operation were investigated and the worst case modulation results are reported.
 - Worst-case : 802.11a_6 Mbps
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 : X, Y

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	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.

- Worst result: Radiated spurious emissions
- Intermodulation: No signals are generated.
- Radiated spurious emissions: cf. Section 10.8

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 : BLE Simultaneous transmission Data refer to [BT LE] Test Report

Scenario 2	Description	Thread Emission	5 GHz Emission
5 GHz WiFi Ant1 + Thread	Antenna	ANT 1	ANT 1
	Channel	11	104
	Data Rate	250 kbps	MCS0
	Mode	O-QPSK	802.11ac_VHT20

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

9. SUMMARY OF TEST RESULTS

Test Item	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26 dB Bandwidth	§ 15.407 (for Power Measurement)	N/A	Conducted	PASS
6 dB Bandwidth	§ 15.407(e)	>500 kHz (5725-5850 MHz)(UNII-3)		PASS
Maximum Conducted Output Power	§ 15.407(a)(1),(2),(3)	< 250 mW(5150-5250 MHz) < 250 mW or 11+10log ₁₀ (BW) dBm (5250-5350 MHz) < 250 mW or 11+10log ₁₀ (BW) dBm (5470-5725 MHz) <1 W (5725-5850 MHz)		PASS
Maximum Power Spectral Density	§ 15.407(a)(1),(2),(3)	<11 dBm/ MHz (5150-5250 MHz) <11 dBm/ MHz (5250-5350 MHz) <11 dBm/ MHz (5470-5725 MHz) <30 dBm/500 kHz(5725-5850 MHz)		PASS
Frequency Stability	§ 15.407(g) § 2.1055	Maintained within the band		PASS
AC Conducted Emissions 150 kHz-30 MHz	15.207 15.407(b)(9)	<FCC 15.207 limits		PASS
Undesirable Emissions	§ 15.407(b) (1),(2),(3),(4)	<-27 dBm/MHz EIRP (UNII1, 2A, 2C) cf. Section 8.7 (UNII 3)	Radiated	PASS
General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	15.205, 15.407(b)(9),(10)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS

Note:

- UNII 2A, 2C: TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.
- The decision rule applies 'simple acceptance'

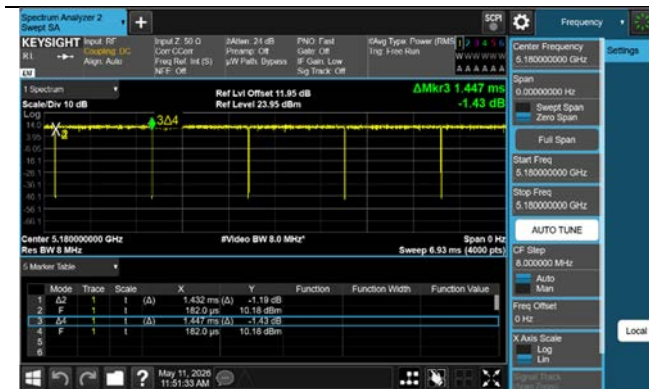
10. TEST RESULT

10.1 DUTY CYCLE

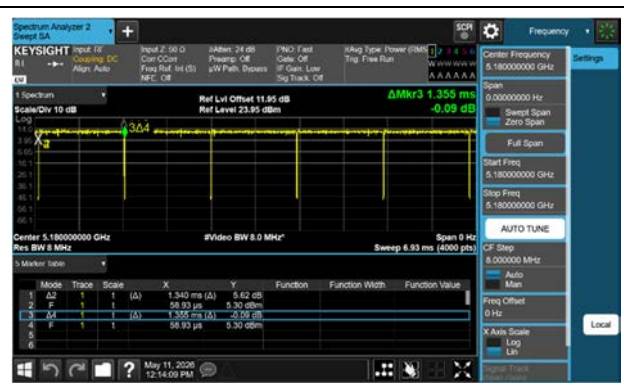
Mode	Data Rate (Mbps)	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor(dB)
802.11a	6Mbps	1.432	1.447	0.989	0.000
802.11n(HT20)	MCS0	1.340	1.355	0.988	0.000
802.11n(HT40)	MCS0	0.664	0.680	0.976	0.103
802.11ac(VHT20)	MCS0	1.349	1.363	0.989	0.000
802.11ac(VHT40)	MCS0	0.672	0.687	0.977	0.100
802.11ac(VHT80)	MCS0	0.332	0.348	0.954	0.205

Test Plots(DUTY CYCLE)

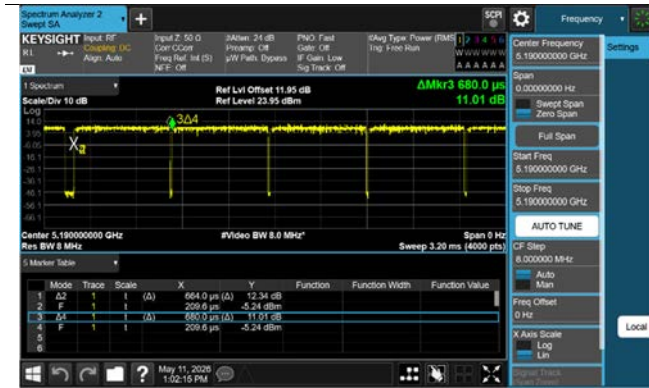
802.11a



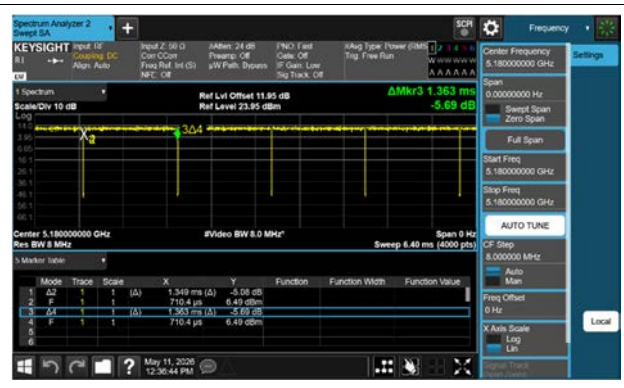
802.11n(HT20)



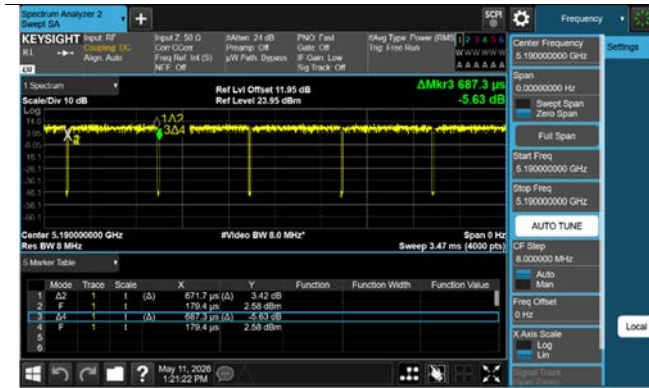
802.11n(HT40)



802.11ac(VHT20)



802.11ac(VHT40)



802.11ac(VHT80)



10.2 26 dB Bandwidth

Note:

Straddle channel data in the table below are for reporting purposes only. Straddle channel data were added in section 10.7

Mode : 802.11a				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	19.62	16.588
	5200	40	19.72	16.587
	5240	48	19.70	16.592
UNII2A	5260	52	19.81	16.622
	5300	60	19.79	16.617
	5320	64	19.73	16.614
UNII2C	5500	100	19.63	16.595
	5600	120	19.69	16.598
	5720	144	19.78	16.600
UNII3	5745	149	37.44	18.680
	5785	157	41.02	19.561
	5825	165	40.35	24.188

Mode : 802.11n(HT20)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	19.98	17.627
	5200	40	20.01	17.623
	5240	48	20.06	17.628
UNII2A	5260	52	20.03	17.648
	5300	60	19.99	17.612
	5320	64	19.91	17.609
UNII2C	5500	100	20.07	17.607
	5600	120	19.97	17.593
	5720	144	20.05	17.614
UNII3	5745	149	40.94	19.432
	5785	157	39.17	20.745
	5825	165	41.21	24.087

Mode : 802.11ac(VHT20)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5180	36	20.01	17.600
	5200	40	20.04	17.605
	5240	48	20.03	17.587
UNII2A	5260	52	19.91	17.633
	5300	60	19.95	17.619
	5320	64	19.95	17.607
UNII2C	5500	100	20.08	17.628
	5520	104	37.28	18.124
	5540	108	37.14	18.050
	5600	120	33.08	17.960
	5660	132	29.51	17.961
	5680	136	30.80	17.940
	5700	140	20.16	17.606
	5720	144	31.37	18.007
UNII3	5745	149	41.47	19.707
	5785	157	39.72	20.461
	5825	165	40.44	23.413

Mode : 802.11n(HT40)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5190	38	40.40	36.146
	5230	46	40.49	36.138
UNII2A	5270	54	40.44	36.174
	5310	62	40.37	36.138
UNII2C	5510	102	40.37	36.189
	5590	118	40.70	36.168
	5710	142	40.79	36.143
UNII3	5755	151	56.80	36.488
	5795	159	58.45	36.505

Mode : 802.11ac(VHT40)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5190	38	40.68	36.147
	5230	46	40.68	36.158
UNII2A	5270	54	40.65	36.147
	5310	62	40.36	36.159
UNII2C	5510	102	41.01	36.264
	5550	110	73.57	36.994
	5590	118	77.31	38.045
	5630	126	75.83	37.302
	5670	134	58.56	36.527
	5710	142	72.36	36.829
UNII3	5755	151	55.29	36.425
	5795	159	61.30	36.455

Mode : 802.11ac(VHT80)				
BAND	Freq. [MHz]	CH.	26 dB Bandwidth [MHz]	99% Occupied Bandwidth [MHz]
UNII1	5210	42	81.82	76.362
UNII2A	5290	58	81.85	76.329
UNII2C	5530	106	82.05	76.354
	5610	122	81.75	76.465
	5690	138	81.91	76.404
UNII3	5775	155	81.99	76.392

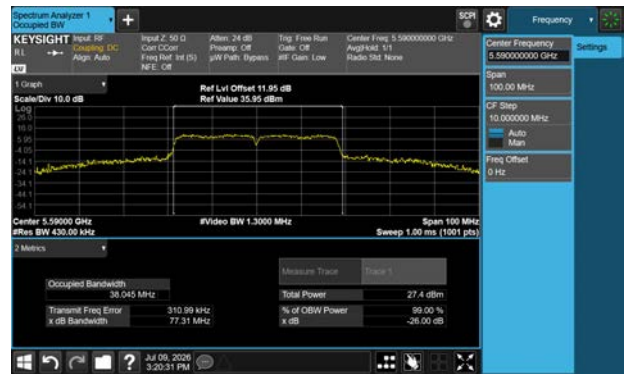
Test Plots(26 dB Bandwidth)

Note:In order to simplify the report, attached plots were only the widest channel per channel bandwidth.

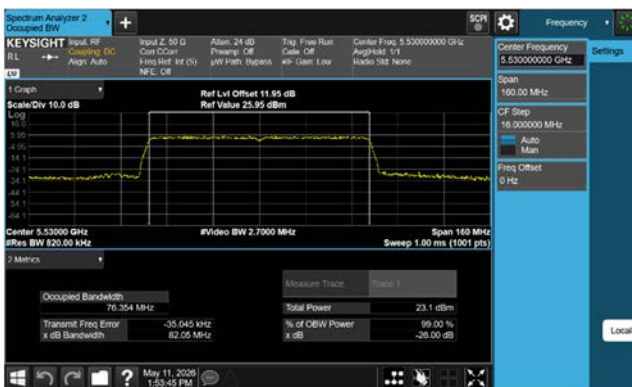
Bandwidth 20M, 802.11ac(VHT20) Ch.149



Bandwidth 40M, 802.11ac(VHT40) Ch.118



Bandwidth 80M, 802.11ac(VHT80) Ch.106



10.3 6 dB BANDWIDTH

Mode : 802.11a				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	16.40	> 0.5
	5785	157	16.36	> 0.5
	5825	165	16.39	> 0.5
Mode : 802.11n(HT20)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	17.32	> 0.5
	5785	157	17.31	> 0.5
	5825	165	17.58	> 0.5
Mode : 802.11ac(VHT20)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5745	149	17.56	> 0.5
	5785	157	17.30	> 0.5
	5825	165	17.33	> 0.5
Mode : 802.11n(HT40)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5755	151	35.58	> 0.5
	5795	159	35.71	> 0.5
Mode : 802.11ac(VHT40)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5755	151	35.51	> 0.5
	5795	159	35.48	> 0.5
Mode : 802.11ac(VHT80)				
BAND	Freq. [MHz]	CH.	6 dB Bandwidth [MHz]	Limit [MHz]
UNII3	5775	155	76.43	> 0.5

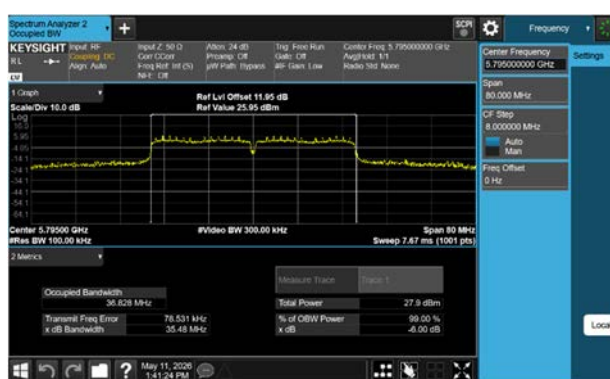
▣ Test Plots(6 dB BANDWIDTH)

Note: In order to simplify the report, attached plots were only the narrowest channel.

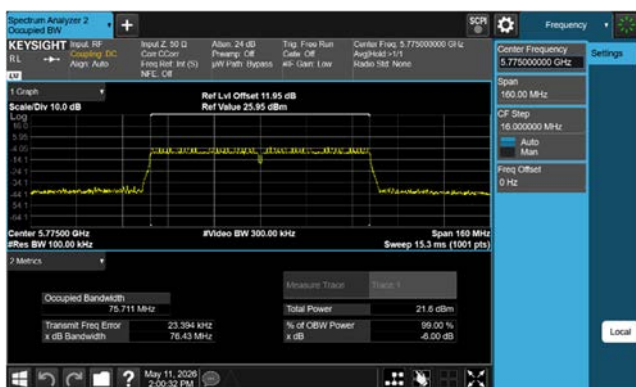
Bandwidth 20M, 802.11a Ch.157



Bandwidth 40M, 802.11ac(VHT40) Ch.159



Bandwidth 80M, 802.11ac(VHT80) Ch.155



10.4 OUTPUT POWER MEASUREMENT

Straddle channel data in the table below are for reporting purposes only.

Straddle channel data were added in section 10.7

Limit

(UNII 1) : 23.98 dBm

(UNII 2A, 2C) : 23.98 dBm or $11 \text{ dBm} + 10 \log B$, (where B is the 26 dB emission bandwidth in megahertz.)

(UNII 3) : 30.00 dBm

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

Mode : 802.11a							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured Power [dBm]	Duty cycle Factor [dB]	Total Power [dBm]	Limit [dBm]
UNII1	5180	36	6M	16.23	0.00	16.23	23.98
	5200	40	6M	16.05	0.00	16.05	23.98
	5240	48	6M	15.58	0.00	15.58	23.98
UNII2A	5260	52	6M	17.79	0.00	17.79	23.97
	5300	60	6M	17.35	0.00	17.35	23.96
	5320	64	6M	17.14	0.00	17.14	23.95
UNII2C	5500	100	6M	14.99	0.00	14.99	23.93
	5600	120	6M	14.74	0.00	14.74	23.94
	5720	144	6M	13.58	0.00	13.58	23.96
UNII3	5745	149	6M	20.42	0.00	20.42	30.00
	5785	157	6M	20.45	0.00	20.45	30.00
	5825	165	6M	20.75	0.00	20.75	30.00

Mode : 802.11n(HT20)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured Power [dBm]	Duty cycle Factor [dB]	Total Power [dBm]	Limit [dBm]
UNII1	5180	36	MCS0	17.10	0.00	17.10	23.98
	5200	40	MCS0	16.92	0.00	16.92	23.98
	5240	48	MCS0	16.48	0.00	16.48	23.98
UNII2A	5260	52	MCS0	17.69	0.00	17.69	23.98
	5300	60	MCS0	17.28	0.00	17.28	23.98
	5320	64	MCS0	17.11	0.00	17.11	23.98
UNII2C	5500	100	MCS0	15.93	0.00	15.93	23.98
	5600	120	MCS0	15.74	0.00	15.74	23.98
	5720	144	MCS0	14.52	0.00	14.52	23.98
UNII3	5745	149	MCS0	20.41	0.00	20.41	30.00
	5785	157	MCS0	20.48	0.00	20.48	30.00
	5825	165	MCS0	20.76	0.00	20.76	30.00

Mode : 802.11ac(VHT20)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured Power [dBm]	Duty cycle Factor [dB]	Total Power [dBm]	Limit [dBm]
UNII1	5180	36	MCS0	16.24	0.00	16.24	23.98
	5200	40	MCS0	16.02	0.00	16.02	23.98
	5240	48	MCS0	15.59	0.00	15.59	23.98
UNII2A	5260	52	MCS0	17.80	0.00	17.80	23.98
	5300	60	MCS0	17.38	0.00	17.38	23.98
	5320	64	MCS0	17.18	0.00	17.18	23.98
UNII2C	5500	100	MCS0	19.92	0.00	19.92	23.98
	5520	104	MCS0	20.19	0.00	20.19	23.98
	5540	108	MCS0	20.05	0.00	20.05	23.98
	5600	120	MCS0	19.70	0.00	19.70	23.98
	5660	132	MCS0	19.60	0.00	19.60	23.98
	5680	136	MCS0	19.57	0.00	19.57	23.98
	5700	140	MCS0	14.10	0.00	14.10	23.98
	5720	144	MCS0	19.04	0.00	19.04	23.98
	5745	149	MCS0	20.49	0.00	20.49	30.00
UNII3	5785	157	MCS0	20.52	0.00	20.52	30.00
	5825	165	MCS0	20.82	0.00	20.82	30.00

Mode : 802.11n(HT40)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured Power [dBm]	Duty cycle Factor [dB]	Total Power [dBm]	Limit [dBm]
UNII1	5190	38	MCS0	12.79	0.10	12.89	23.98
	5230	46	MCS0	12.41	0.10	12.52	23.98
UNII2A	5270	54	MCS0	12.68	0.10	12.78	23.98
	5310	62	MCS0	12.25	0.10	12.35	23.98
UNII2C	5510	102	MCS0	14.96	0.10	15.07	23.98
	5590	118	MCS0	14.80	0.10	14.90	23.98
	5710	142	MCS0	13.59	0.10	13.70	23.98
UNII3	5755	151	MCS0	20.44	0.10	20.54	30.00
	5795	159	MCS0	20.49	0.10	20.59	30.00

Mode : 802.11ac(VHT40)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured Power [dBm]	Duty cycle Factor [dB]	Total Power [dBm]	Limit [dBm]
UNII1	5190	38	MCS0	12.85	0.10	12.95	23.98
	5230	46	MCS0	12.46	0.10	12.56	23.98
UNII2A	5270	54	MCS0	13.76	0.10	13.86	23.98
	5310	62	MCS0	13.30	0.10	13.40	23.98
UNII2C	5510	102	MCS0	17.22	0.10	17.32	23.98
	5550	110	MCS0	20.28	0.10	20.38	23.98
	5590	118	MCS0	19.50	0.10	19.60	23.98
	5630	126	MCS0	19.48	0.10	19.58	23.98
	5670	134	MCS0	17.12	0.10	17.22	23.98
	5710	142	MCS0	19.00	0.10	19.10	23.98
	5755	151	MCS0	20.45	0.10	20.55	30.00
UNII3	5795	159	MCS0	20.49	0.10	20.59	30.00

Mode : 802.11ac(VHT80)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured Power [dBm]	Duty cycle Factor [dB]	Total Power [dBm]	Limit [dBm]
UNII1	5210	42	MCS0	11.75	0.20	11.95	23.98
UNII2A	5290	58	MCS0	12.60	0.20	12.80	23.98
UNII2C	5530	106	MCS0	15.07	0.20	15.27	23.98
	5610	122	MCS0	14.88	0.20	15.09	23.98
	5690	138	MCS0	13.89	0.20	14.10	23.98
UNII3	5775	155	MCS0	13.79	0.20	13.99	30.00

10.5 POWER SPECTRAL DENSITY

Note :

1. UNII3 Measured PSD, Total PSD Unit : [dBm/500kHz]

Ant Total PSD [dBm] = Measured PSD [dBm/MHz] + Duty Cycle Factor [dB]

Mode : 802.11a							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured PSD [dBm/MHz]	Duty cycle Factor [dB]	Total PSD [dBm/MHz]	Limit [dBm/MHz]
UNII1	5180	36	6M	5.603	0.000	5.603	11
	5200	40	6M	5.445	0.000	5.445	11
	5240	48	6M	4.827	0.000	4.827	11
UNII2A	5260	52	6M	7.064	0.000	7.064	11
	5300	60	6M	6.674	0.000	6.674	11
	5320	64	6M	6.425	0.000	6.425	11
UNII2C	5500	100	6M	4.186	0.000	4.186	11
	5600	120	6M	3.875	0.000	3.875	11
	5720	144	6M	2.841	0.000	2.841	11
UNII3	5745	149	6M	6.852	0.000	6.852	30 dBm/500kHz
	5785	157	6M	7.129	0.000	7.129	30 dBm/500kHz
	5825	165	6M	7.215	0.000	7.215	30 dBm/500kHz

Mode : 802.11n(HT20)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured PSD [dBm/MHz]	Duty cycle Factor [dB]	Total PSD [dBm/MHz]	Limit [dBm/MHz]
UNII1	5180	36	MCS0	5.857	0.000	5.857	11
	5200	40	MCS0	5.761	0.000	5.761	11
	5240	48	MCS0	5.471	0.000	5.471	11
UNII2A	5260	52	MCS0	6.683	0.000	6.683	11
	5300	60	MCS0	6.343	0.000	6.343	11
	5320	64	MCS0	6.063	0.000	6.063	11
UNII2C	5500	100	MCS0	4.917	0.000	4.917	11
	5600	120	MCS0	4.569	0.000	4.569	11
	5720	144	MCS0	3.508	0.000	3.508	11
UNII3	5745	149	MCS0	6.412	0.000	6.412	30 dBm/500kHz
	5785	157	MCS0	6.740	0.000	6.740	30 dBm/500kHz
	5825	165	MCS0	6.960	0.000	6.960	30 dBm/500kHz

Mode : 802.11ac(VHT20)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured PSD [dBm/MHz]	Duty cycle Factor [dB]	Total PSD [dBm/MHz]	Limit [dBm/MHz]
UNII1	5180	36	MCS0	5.271	0.000	5.271	11
	5200	40	MCS0	4.889	0.000	4.889	11
	5240	48	MCS0	4.655	0.000	4.655	11
UNII2A	5260	52	MCS0	6.639	0.000	6.639	11
	5300	60	MCS0	6.419	0.000	6.419	11
	5320	64	MCS0	6.149	0.000	6.149	11
UNII2C	5500	100	MCS0	9.104	0.000	9.104	11
	5520	104	MCS0	9.097	0.000	9.097	11
	5540	108	MCS0	8.910	0.000	8.910	11
	5600	120	MCS0	8.596	0.000	8.596	11
	5660	132	MCS0	8.616	0.000	8.616	11
	5680	136	MCS0	8.430	0.000	8.430	11
	5700	140	MCS0	3.112	0.000	3.112	11
	5720	144	MCS0	8.119	0.000	8.119	11
UNII3	5745	149	MCS0	6.834	0.000	6.834	30 dBm/500kHz
	5785	157	MCS0	6.652	0.000	6.652	30 dBm/500kHz
	5825	165	MCS0	7.079	0.000	7.079	30 dBm/500kHz

Mode : 802.11n(HT40)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured PSD [dBm/MHz]	Duty cycle Factor [dB]	Total PSD [dBm/MHz]	Limit [dBm/MHz]
UNII1	5190	38	MCS0	-1.212	0.103	-1.109	11
	5230	46	MCS0	-1.670	0.103	-1.567	11
UNII2A	5270	54	MCS0	-1.238	0.103	-1.135	11
	5310	62	MCS0	-1.621	0.103	-1.518	11
UNII2C	5510	102	MCS0	0.874	0.103	0.977	11
	5590	118	MCS0	0.722	0.103	0.825	11
	5710	142	MCS0	-0.612	0.103	-0.509	11
UNII3	5755	151	MCS0	3.612	0.103	3.715	30 dBm/500kHz
	5795	159	MCS0	3.671	0.103	3.774	30 dBm/500kHz

Mode : 802.11ac(VHT40)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured PSD [dBm/MHz]	Duty cycle Factor [dB]	Total PSD [dBm/MHz]	Limit [dBm/MHz]
UNII1	5190	38	MCS0	-1.205	0.100	-1.105	11
	5230	46	MCS0	-1.717	0.100	-1.617	11
UNII2A	5270	54	MCS0	-0.284	0.100	-0.184	11
	5310	62	MCS0	-0.573	0.100	-0.473	11
UNII2C	5510	102	MCS0	3.218	0.100	3.318	11
	5550	110	MCS0	6.277	0.100	6.377	11
	5590	118	MCS0	5.435	0.100	5.535	11
	5630	126	MCS0	5.322	0.100	5.422	11
	5670	134	MCS0	3.093	0.100	3.193	11
	5710	142	MCS0	5.016	0.100	5.116	11
UNII3	5755	151	MCS0	3.552	0.100	3.652	30 dBm/500kHz
	5795	159	MCS0	3.518	0.100	3.618	30 dBm/500kHz

Mode : 802.11ac(VHT80)							
Band	Freq. [MHz]	CH.	Worstcase Datarate	Measured PSD [dBm/MHz]	Duty cycle Factor [dB]	Total PSD [dBm/MHz]	Limit [dBm/MHz]
UNII1	5210	42	MCS0	-5.968	0.205	-5.763	11
UNII2A	5290	58	MCS0	-5.051	0.205	-4.846	11
UNII2C	5530	106	MCS0	-2.793	0.205	-2.588	11
	5610	122	MCS0	-2.904	0.205	-2.699	11
	5690	138	MCS0	-3.769	0.205	-3.564	11
UNII3	5775	155	MCS0	-6.547	0.205	-6.342	30 dBm/500kHz

Test Plots(POWER SPECTRAL DENSITY)

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

Bandwidth 20M, 802.11ac(VHT20) (Ch. 100)



Bandwidth 40M, 802.11ac(VHT40) (Ch. 110)



Bandwidth 80M, 802.11ac(VHT80) (Ch. 106)



10.6 FREQUENCY STABILITY

Note:

1. All modes of operation were investigated and the worst case configuration results are reported.
2. Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency error noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

10.6.1 802.11ac 80 MHz BW

REFERENCE VOLTAGE: 3.3 VDC

Startup after the EUT is energized

OPERATING BAND:			UNII Band 1		UNII Band 2A		UNII Band 2C		UNII Band 3	
OPERATING FREQUENCY:			5,210,000,000 Hz		5,290,000,000 Hz		5,530,000,000 Hz		5,775,000,000 Hz	
CHANNEL:			42		58		106		155	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100 %	3.30	+20(Ref)	5210051.66	51.66	5290031.38	31.38	5530064.37	64.37	5775050.59	50.59
100 %		-30	5210037.57	37.57	5290052.48	52.48	5530056.61	56.61	5775043.60	43.60
100 %		-20	5210039.35	39.35	5290055.58	55.58	5530049.43	49.43	5775044.31	44.31
100 %		-10	5210036.54	36.54	5290054.33	54.33	5530064.66	64.66	5775031.65	31.65
100 %		0	5210052.39	52.39	5290031.37	31.37	5530040.45	40.45	5775064.34	64.34
100 %		+10	5210033.58	33.58	5290050.43	50.43	5530046.60	46.60	5775032.45	32.45
100 %		+30	5210059.33	59.33	5290032.44	32.44	5530034.63	34.63	5775044.32	44.32
100 %		+40	5210060.35	60.35	5290063.31	63.31	5530039.49	39.49	5775046.53	46.53
100 %		+50	5210054.35	54.35	5290030.69	30.69	5530051.48	51.48	5775070.43	70.43
High	3.45	+20	5210059.59	59.59	5290041.35	41.35	5530051.48	51.48	5775066.57	66.57
Low	3.15	+20	5210037.40	37.40	5290032.32	32.32	5530051.60	51.60	5775043.56	43.56

2 minutes after the EUT is energized

OPERATING BAND:			UNII Band 1		UNII Band 2A		UNII Band 2C		UNII Band 3	
OPERATING FREQUENCY:			5,210,000,000 Hz		5,290,000,000 Hz		5,530,000,000 Hz		5,775,000,000 Hz	
CHANNEL:			42		58		106		155	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100 %	3.30	+20(Ref)	5210063.45	63.45	5290050.57	50.57	5530053.32	53.32	5775048.53	48.53
100 %		-30	5210040.36	40.36	5290062.53	62.53	5530061.36	61.36	5775070.44	70.44
100 %		-20	5210047.42	47.42	5290057.63	57.63	5530035.36	35.36	5775052.58	52.58
100 %		-10	5210049.69	49.69	5290055.67	55.67	5530060.63	60.63	5775033.69	33.69
100 %		0	5210036.56	36.56	5290068.33	68.33	5530043.60	43.60	5775059.33	59.33
100 %		+10	5210031.69	31.69	5290057.31	57.31	5530030.67	30.67	5775032.55	32.55
100 %		+30	5210033.56	33.56	5290069.56	69.56	5530048.62	48.62	5775056.67	56.67
100 %		+40	5210030.65	30.65	5290061.47	61.47	5530069.32	69.32	5775045.52	45.52
100 %		+50	5210053.63	53.63	5290056.37	56.37	5530058.44	58.44	5775044.60	44.60
High	3.45	+20	5210058.41	58.41	5290031.50	31.50	5530068.31	68.31	5775034.46	34.46
Low	3.15	+20	5210067.57	67.57	5290040.31	40.31	5530052.32	52.32	5775037.60	37.60

5 minutes after the EUT is energized

OPERATING BAND:			UNII Band 1		UNII Band 2A		UNII Band 2C		UNII Band 3	
OPERATING FREQUENCY:			5,210,000,000 Hz		5,290,000,000 Hz		5,530,000,000 Hz		5,775,000,000 Hz	
CHANNEL:			42		58		106		155	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100 %	3.30	+20(Ref)	5210040.34	40.34	5290034.68	34.68	5530060.34	60.34	5775035.64	35.64
100 %		-30	5210048.41	48.41	5290063.61	63.61	5530032.45	32.45	5775048.36	48.36
100 %		-20	5210030.62	30.62	5290065.33	65.33	5530047.65	47.65	5775039.33	39.33
100 %		-10	5210046.50	46.50	5290035.48	35.48	5530067.46	67.46	5775051.31	51.31
100 %		0	5210039.39	39.39	5290032.53	32.53	5530065.46	65.46	5775039.67	39.67
100 %		+10	5210035.39	35.39	5290052.39	52.39	5530064.41	64.41	5775060.64	60.64
100 %		+30	5210061.51	61.51	5290064.40	64.40	5530031.38	31.38	5775061.50	61.50
100 %		+40	5210063.55	63.55	5290035.35	35.35	5530039.44	39.44	5775070.67	70.67
100 %		+50	5210060.68	60.68	5290064.43	64.43	5530053.64	53.64	5775030.61	30.61
High	3.45	+20	5210037.67	37.67	5290032.34	32.34	5530046.35	46.35	5775045.67	45.67
Low	3.15	+20	5210052.60	52.60	5290056.62	56.62	5530058.35	58.35	5775058.38	58.38

10 minutes after the EUT is energized

OPERATING BAND:			UNII Band 1		UNII Band 2A		UNII Band 2C		UNII Band 3	
OPERATING FREQUENCY:			5,210,000,000 Hz		5,290,000,000 Hz		5,530,000,000 Hz		5,775,000,000 Hz	
CHANNEL:			42		58		106		155	
Voltage	Power	Temp.	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error	Frequency	Frequency Error
(%)	(VDC)	(°C)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)	(kHz)
100 %	3.30	+20(Ref)	5210046.34	46.34	5290040.31	40.31	5530054.41	54.41	5775033.39	33.39
100 %		-30	5210062.33	62.33	5290043.50	43.50	5530052.41	52.41	5775052.38	52.38
100 %		-20	5210042.51	42.51	5290032.66	32.66	5530062.33	62.33	5775053.36	53.36
100 %		-10	5210045.53	45.53	5290046.32	46.32	5530051.33	51.33	5775054.51	54.51
100 %		0	5210048.49	48.49	5290047.64	47.64	5530030.48	30.48	5775060.62	60.62
100 %		+10	5210065.35	65.35	5290031.64	31.64	5530044.50	44.50	5775051.55	51.55
100 %		+30	5210052.55	52.55	5290054.39	54.39	5530053.57	53.57	5775070.36	70.36
100 %		+40	5210033.59	33.59	5290070.51	70.51	5530068.39	68.39	5775043.40	43.40
100 %		+50	5210069.48	69.48	5290067.42	67.42	5530058.37	58.37	5775065.64	65.64
High	3.45	+20	5210061.41	61.41	5290039.54	39.54	5530042.59	42.59	5775058.63	58.63
Low	3.15	+20	5210031.57	31.57	5290047.47	47.47	5530031.32	31.32	5775045.39	45.39

10.7 STRADDLE CHANNEL

Test Description	Note
26 dB Bandwidth	1. [UNII 2C] 26 dB Bandwidth = 5725 MHz - Measured Frequency[MHz] 2. [UNII 3] 26 dB Bandwidth = Measured Frequency[MHz] -5725 MHz
6 dB Bandwidth	1. 6 dB Bandwidth = Measured Frequency[MHz] – 5725 MHz 2. Limit : > 0.5 MHz
Output Power	1. Limit(UNII2C) : 23.98 dBm or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.) 2. Limit(UNII 3) : 30.00 dBm 3. Total Power (dBm) = Measured Value (dBm) + Duty Cycle Factor (dB)
Power Spectral Density	1. Limit(UNII 2C) : 11.0 dBm/MHz 2. Limit(UNII 3) : 30.0 dBm/500kHz 3. Total PSD (dBm/MHz) = Measured Value (dBm/MHz) + Duty Cycle Factor (dB)

Mode	Band	Freq. [MHz]	CH.	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Output Power Limit [dBm]	Total PSD [dBm]
802.11a	UNII2C	5720	144	14.92	-	12.6	22.74	2.666
802.11n(HT20)				15.04	-	13.5	22.77	3.370
802.11ac(VHT20)				20.04	-	17.9	23.98	7.813
802.11a	UNII3	5720	144	4.88	3.20	6.5	30.00	-0.399
802.11n(HT20)				5.04	3.76	7.8	30.00	0.482
802.11ac(VHT20)				13.36	3.76	11.9	30.00	4.387

Mode	Band	Freq. [MHz]	Channel	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Output Power Limit [dBm]	Total PSD [dBm]
802.11n(HT40)	UNII2C	5710	142	35.56	-	13.3	23.98	-0.276
802.11ac(VHT40)				52.92	-	18.6	23.98	4.838
802.11n(HT40)	UNII3	5710	142	5.24	2.92	3.3	30.00	-3.649
802.11ac(VHT40)				23.72	2.84	8.4	30.00	1.370

Mode	Band	Freq. [MHz]	Channel	26dB BW [MHz]	6dB BW [MHz]	Total Power [dBm]	Output Power Limit [dBm]	Total PSD [dBm]
802.11ac(VHT80)	UNII2C	5690	138	76.12	-	14.0	23.98	-3.589
802.11ac(VHT80)	UNII3	5690	138	5.96	3.40	0.4	30.00	-7.005

Test Plots (UNII 2C Band 26 dB Bandwidth)

802.11a UNII Band



802.11n(HT20) UNII Band



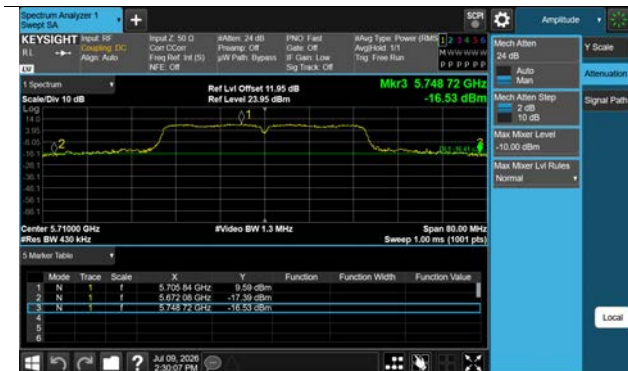
802.11ac(VHT20) UNII Band



802.11n(HT40) UNII Band



802.11ac(VHT40) UNII Band



802.11ac(VHT80) UNII Band



Test Plots(UNII 3 Band 6 dB Bandwidth)

802.11a UNII Band



802.11n(HT20) UNII Band



802.11ac(VHT20) UNII Band



802.11n(HT40) UNII Band



802.11ac(VHT40) UNII Band



802.11ac(VHT80) UNII Band



Test Plots(Output Power)

802.11a UNII 2C Band



802.11a UNII 3 Band



802.11n(HT20) UNII 2C Band



802.11n(HT20) UNII 3 Band



802.11ac(VHT20) UNII 2C Band



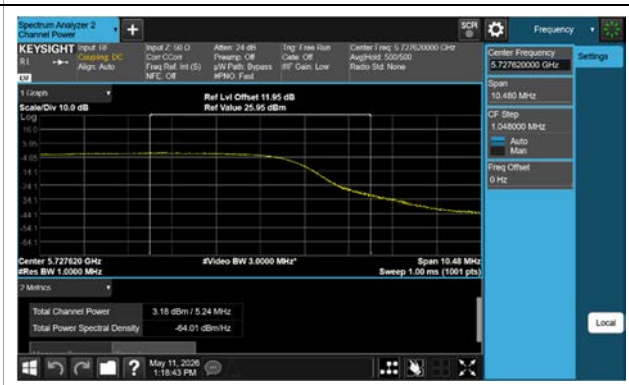
802.11ac(VHT20) UNII 3 Band



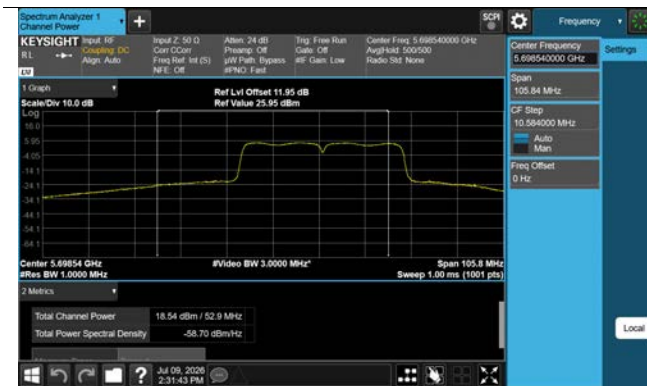
802.11n(HT40) UNII 2C Band



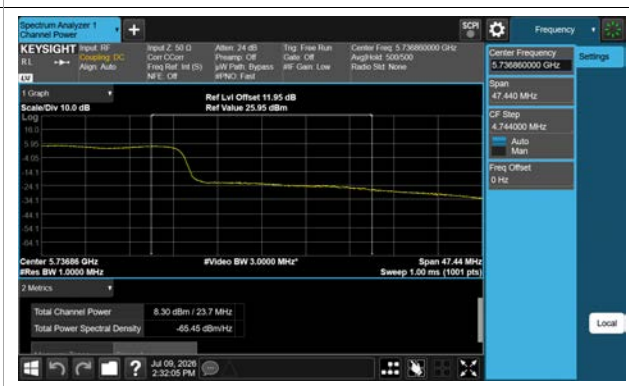
802.11n(HT40) UNII 3 Band



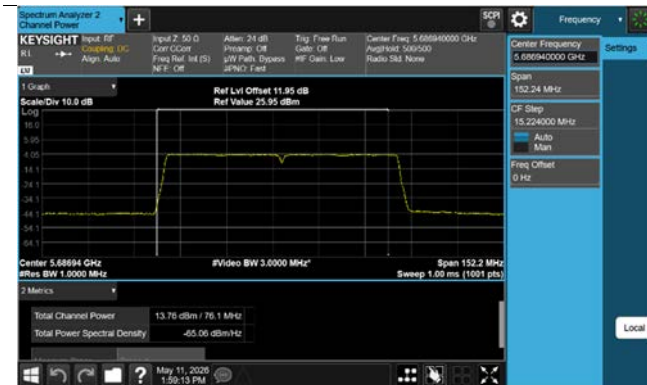
802.11ac(VHT40) UNII 2C Band



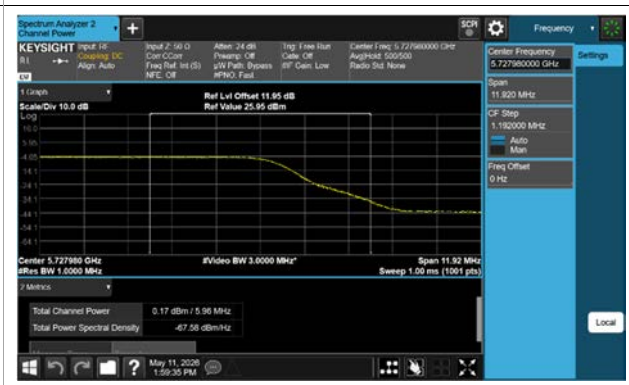
802.11ac(VHT40) UNII 3 Band



802.11ac(VHT80) UNII 2C Band



802.11ac(VHT80) UNII 3 Band



Test Plots(Power Spectral Density)

802.11a UNII 2C Band



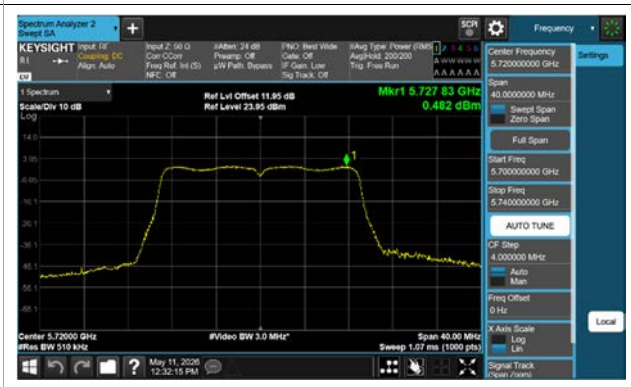
802.11a UNII 3 Band



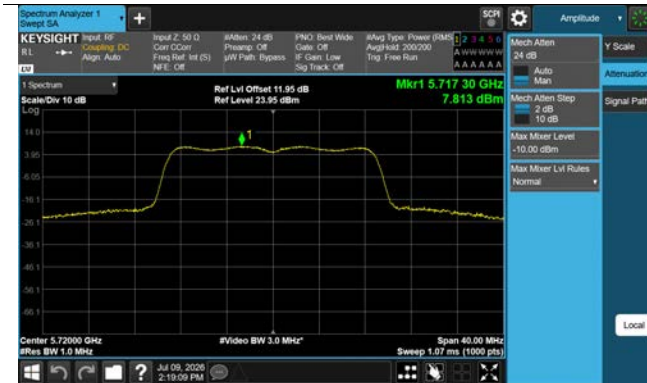
802.11n(HT20) UNII 2C Band



802.11n(HT20) UNII 3 Band



802.11ac(VHT20) UNII 2C Band



802.11ac(VHT20) UNII 3 Band



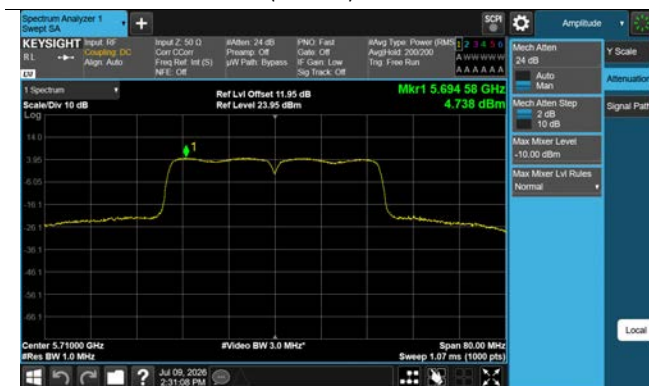
802.11n(HT40) UNII 2C Band



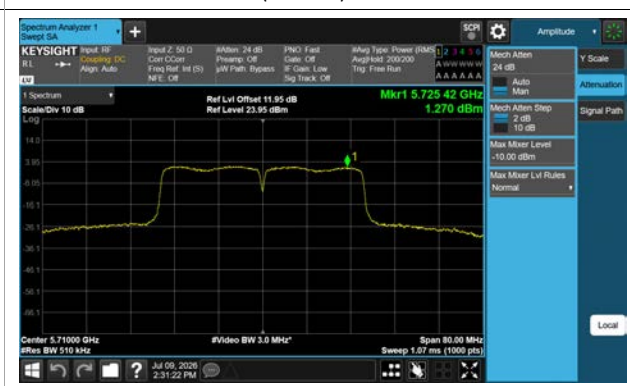
802.11n(HT40) UNII 3 Band



802.11ac(VHT40) UNII 2C Band



802.11ac(VHT40) UNII 3 Band



802.11ac(VHT80) UNII 2C Band



802.11ac(VHT80) UNII 3 Band



10.8 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

Frequency	Measured Value	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]

No Critical peaks found

Note:

1. The Measured Value 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	ANT. 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
[UNII-1]
[802.11a]

Band : UNII 1			Operation Mode : 802.11a				
CH.36 5180 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10360	60.46	-2.98	V	57.48	68.20	10.72	PK
15540	55.30	-2.53	V	52.77	73.98	21.21	PK
15540	41.68	-2.53	V	39.15	53.98	14.83	AV
10360	59.64	-2.98	H	56.66	68.20	11.54	PK
15540	53.88	-2.53	H	51.35	73.98	22.63	PK
15540	41.33	-2.53	H	38.80	53.98	15.18	AV

Band : UNII 1			Operation Mode : 802.11a				
CH.40 5200 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10400	60.12	-2.73	V	57.39	68.20	10.81	PK
15600	54.82	-2.77	V	52.05	73.98	21.93	PK
15600	41.90	-2.77	V	39.13	53.98	14.85	AV
10400	60.05	-2.73	H	57.32	68.20	10.88	PK
15600	55.11	-2.77	H	52.34	73.98	21.64	PK
15600	41.96	-2.77	H	39.19	53.98	14.79	AV

Band : UNII 1			Operation Mode : 802.11a				
CH.48 5240 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10480	58.58	-2.36	V	56.22	68.20	11.98	PK
15720	55.71	-3.42	V	52.29	73.98	21.69	PK
15720	42.57	-3.42	V	39.15	53.98	14.83	AV
10480	58.97	-2.36	H	56.61	68.20	11.59	PK
15720	55.97	-3.42	H	52.55	73.98	21.43	PK
15720	42.81	-3.42	H	39.39	53.98	14.59	AV

[UNII 2A]

[802.11a]

Band : UNII 2A			Operation Mode : 802.11a				
CH.52 5260 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10520	59.43	-2.32	V	57.11	68.20	11.09	PK
15780	54.34	-3.68	V	50.66	73.98	23.32	PK
15780	41.84	-3.68	V	38.16	53.98	15.82	AV
10520	58.29	-2.32	H	55.97	68.20	12.23	PK
15780	55.51	-3.68	H	51.83	73.98	22.15	PK
15780	42.15	-3.68	H	38.47	53.98	15.51	AV

Band : UNII 2A			Operation Mode : 802.11a				
CH.60 5300 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10600	58.18	-2.23	V	55.95	73.98	18.03	PK
10600	44.93	-2.23	V	42.70	53.98	11.28	AV
15900	53.55	-3.64	V	49.91	73.98	24.07	PK
15900	40.61	-3.64	V	36.97	53.98	17.01	AV
10600	57.27	-2.23	H	55.04	73.98	18.94	PK
10600	44.58	-2.23	H	42.35	53.98	11.63	AV
15900	54.16	-3.64	H	50.52	73.98	23.46	PK
15900	41.04	-3.64	H	37.40	53.98	16.58	AV

Band : UNII 2A			Operation Mode : 802.11a				
CH.64 5320 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
10640	58.26	-2.39	V	55.87	73.98	18.11	PK
10640	44.87	-2.39	V	42.48	53.98	11.50	AV
15960	53.74	-4.30	V	49.44	73.98	24.54	PK
15960	40.75	-4.30	V	36.45	53.98	17.53	AV
10640	57.22	-2.39	H	54.83	73.98	19.15	PK
10640	44.40	-2.39	H	42.01	53.98	11.97	AV
15960	54.87	-4.30	H	50.57	73.98	23.41	PK
15960	40.93	-4.30	H	36.63	53.98	17.35	AV

[UNII 2C]
[802.11a]

Band : UNII 2C			Operation Mode : 802.11a				
CH.100	5500	MHz	Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11000	56.18	-2.24	V	53.94	73.98	20.04	PK
11000	42.73	-2.24	V	40.49	53.98	13.49	AV
16500	54.27	-2.93	V	51.34	68.20	16.86	PK
11000	55.77	-2.24	H	53.53	73.98	20.45	PK
11000	42.78	-2.24	H	40.54	53.98	13.44	AV
16500	54.37	-2.93	H	51.44	68.20	16.76	PK

Band : UNII 2C			Operation Mode : 802.11a				
CH.120	5600	MHz	Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11200	54.54	-2.80	V	51.74	73.98	22.24	PK
11200	41.58	-2.80	V	38.78	53.98	15.20	AV
16800	55.45	-1.69	V	53.76	68.20	14.44	PK
11200	54.69	-2.80	H	51.89	73.98	22.09	PK
11200	41.80	-2.80	H	39.00	53.98	14.98	AV
16800	54.75	-1.69	H	53.06	68.20	15.14	PK

Band : UNII 2C			Operation Mode : 802.11a				
CH.144	5720	MHz	Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11440	54.28	-2.66	V	51.62	73.98	22.36	PK
11440	40.64	-2.66	V	37.98	53.98	16.00	AV
17160	55.20	-2.80	V	52.40	68.20	15.80	PK
11440	53.87	-2.66	H	51.21	73.98	22.77	PK
11440	40.71	-2.66	H	38.05	53.98	15.93	AV
17160	54.93	-2.80	H	52.13	68.20	16.07	PK

[802.11ac_VHT20]

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.100 5500 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11000	59.72	-2.24	V	57.48	73.98	16.50	PK
11000	46.33	-2.24	V	44.09	53.98	9.89	AV
16500	54.42	-2.93	V	51.49	68.20	16.71	PK
11000	58.35	-2.24	H	56.11	73.98	17.87	PK
11000	45.69	-2.24	H	43.45	53.98	10.53	AV
16500	54.48	-2.93	H	51.55	68.20	16.65	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.104 5520 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11040	62.39	-2.22	V	60.17	73.98	13.81	PK
11040	49.19	-2.22	V	46.97	53.98	7.01	AV
16560	54.47	-2.57	V	51.90	68.20	16.30	PK
11040	60.49	-2.22	H	58.27	73.98	15.71	PK
11040	47.58	-2.22	H	45.36	53.98	8.62	AV
16560	54.80	-2.57	H	52.23	68.20	15.97	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.108 5540 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11080	60.70	-2.24	V	58.46	73.98	15.52	PK
11080	47.91	-2.24	V	45.67	53.98	8.31	AV
16620	54.45	-2.41	V	52.04	68.20	16.16	PK
11080	60.32	-2.24	H	58.08	73.98	15.90	PK
11080	47.45	-2.24	H	45.21	53.98	8.77	AV
16620	55.42	-2.88	H	52.54	68.20	15.66	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.120 5600 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11200	58.89	-2.80	V	56.09	73.98	17.89	PK
11200	46.02	-2.80	V	43.22	53.98	10.76	AV
16800	55.07	-1.69	V	53.38	68.20	14.82	PK
11200	58.77	-2.80	H	55.97	73.98	18.01	PK
11200	46.17	-2.80	H	43.37	53.98	10.61	AV
16800	55.22	-1.69	H	53.53	68.20	14.67	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.132 5660 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11320	57.17	-2.96	V	54.21	73.98	19.77	PK
11320	44.53	-2.96	V	41.57	53.98	12.41	AV
16980	57.13	-2.88	V	54.25	68.20	13.95	PK
11320	56.67	-2.96	H	53.71	73.98	20.27	PK
11320	43.24	-2.96	H	40.28	53.98	13.70	AV
16980	56.94	-2.88	H	54.06	68.20	14.14	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.136 5680 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11360	55.73	-2.81	V	52.92	73.98	21.06	PK
11360	43.37	-2.81	V	40.56	53.98	13.42	AV
17040	55.86	-2.58	V	53.28	68.20	14.92	PK
11360	56.01	-2.81	H	53.20	73.98	20.78	PK
11360	43.28	-2.81	H	40.47	53.98	13.51	AV
17040	56.43	-2.58	H	53.85	68.20	14.35	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.140 5700 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11400	55.35	-2.66	V	52.69	73.98	21.29	PK
11400	41.28	-2.66	V	38.62	53.98	15.36	AV
17100	56.24	-2.48	V	53.76	68.20	14.44	PK
11400	54.45	-2.66	H	51.79	73.98	22.19	PK
11400	41.38	-2.66	H	38.72	53.98	15.26	AV
17100	54.93	-2.48	H	52.45	68.20	15.75	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT20 MCS0				
CH.144 5720 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11440	56.13	-2.66	V	53.47	73.98	20.51	PK
11440	42.89	-2.66	V	40.23	53.98	13.75	AV
17160	55.23	-2.80	V	52.43	68.20	15.77	PK
11440	55.09	-2.66	H	52.43	73.98	21.55	PK
11440	42.07	-2.66	H	39.41	53.98	14.57	AV
17160	55.69	-2.80	H	52.89	68.20	15.31	PK

[802.11ac_VHT40]

Band : UNII 2C			Operation Mode : 802.11ac_VHT40 MCS0				
CH.102 5510 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11020	56.86	-2.16	V	54.70	73.98	19.28	PK
11020	44.62	-2.16	V	42.46	53.98	11.52	AV
16530	53.67	-2.39	V	51.28	68.20	16.92	PK
11020	56.75	-2.16	H	54.59	73.98	19.39	PK
11020	43.89	-2.16	H	41.73	53.98	12.25	AV
16530	53.91	-2.39	H	51.52	68.20	16.68	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT40 MCS0				
CH.110 5550 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11100	58.81	-2.34	V	56.47	73.98	17.51	PK
11100	45.73	-2.34	V	43.39	53.98	10.59	AV
16650	53.83	-2.63	V	51.20	68.20	17.00	PK
11100	57.85	-2.34	H	55.51	73.98	18.47	PK
11100	45.69	-2.34	H	43.35	53.98	10.63	AV
16650	54.58	-2.63	H	51.95	68.20	16.25	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT40 MCS0				
CH.118 5590 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11180	56.85	-2.59	V	54.26	73.98	19.72	PK
11180	44.87	-2.59	V	42.28	53.98	11.70	AV
16770	54.97	-1.91	V	53.06	68.20	15.14	PK
11180	56.79	-2.59	H	54.20	73.98	19.78	PK
11180	45.12	-2.59	H	42.53	53.98	11.45	AV
16770	54.88	-1.91	H	52.97	68.20	15.23	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT40 MCS0				
CH.126 5630 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11260	55.99	-3.07	V	52.92	73.98	21.06	PK
11260	43.97	-3.07	V	40.90	53.98	13.08	AV
16890	56.59	-2.11	V	54.48	68.20	13.72	PK
11260	55.63	-3.07	H	52.56	73.98	21.42	PK
11260	43.33	-3.07	H	40.26	53.98	13.72	AV
16890	56.10	-2.11	H	53.99	68.20	14.21	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT40 MCS0				
CH.134 5670 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11340	54.67	-2.87	V	51.80	73.98	22.18	PK
11340	42.12	-2.87	V	39.25	53.98	14.73	AV
17010	55.47	-2.97	V	52.50	68.20	15.70	PK
11340	55.22	-2.87	H	52.35	73.98	21.63	PK
11340	42.65	-2.87	H	39.78	53.98	14.20	AV
17010	55.85	-2.97	H	52.88	68.20	15.32	PK

Band : UNII 2C			Operation Mode : 802.11ac_VHT40 MCS0				
CH.142 5710 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11420	54.17	-2.71	V	51.46	73.98	22.52	PK
11420	42.38	-2.71	V	39.67	53.98	14.31	AV
17130	54.60	-2.18	V	52.42	68.20	15.78	PK
11420	53.93	-2.71	H	51.22	73.98	22.76	PK
11420	41.79	-2.71	H	39.08	53.98	14.90	AV
17130	54.64	-2.18	H	52.46	68.20	15.74	PK

[UNII 3]

Band : UNII 3			Operation Mode : 802.11a				
CH.149 5745 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11490	54.14	-2.46	V	51.68	73.98	22.30	PK
11490	41.24	-2.46	V	38.78	53.98	15.20	AV
17235	55.39	-2.93	V	52.46	68.20	15.74	PK
11490	55.70	-2.46	H	53.24	73.98	20.74	PK
11490	42.07	-2.46	H	39.61	53.98	14.37	AV
17235	58.66	-2.93	H	55.73	68.20	12.47	PK

Band : UNII 3			Operation Mode : 802.11a				
CH.157 5785 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11570	54.10	-2.21	V	51.89	73.98	22.09	PK
11570	40.92	-2.21	V	38.71	53.98	15.27	AV
17355	54.61	-1.25	V	53.36	68.20	14.84	PK
11570	54.39	-2.21	H	52.18	73.98	21.80	PK
11570	41.11	-2.21	H	38.90	53.98	15.08	AV
17355	57.43	-1.25	H	56.18	68.20	12.02	PK

Band : UNII 3			Operation Mode : 802.11a				
CH.165 5825 MHz			Transfer Rate : 6M				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11650	53.86	-2.67	V	51.19	73.98	22.79	PK
11650	41.27	-2.67	V	38.60	53.98	15.38	AV
17475	55.82	-0.66	V	55.16	68.20	13.04	PK
11650	55.05	-2.67	H	52.38	73.98	21.60	PK
11650	41.45	-2.67	H	38.78	53.98	15.20	AV
17475	58.22	-0.66	H	57.56	68.20	10.64	PK

[Simultaneous transmission Scenario]

Scenario 1

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

Band : UNII 2C			Operation Mode : Wi-Fi 5G_BLE (11ac20_Ch.104 + BLE 1M37_Ch.37)				
CH.104 5520 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11040	61.96	-2.22	V	59.74	73.98	14.24	PK
11040	49.49	-2.22	V	47.27	53.98	6.71	AV
16560	54.29	-2.57	V	51.72	68.20	16.48	PK
11040	63.37	-2.22	H	61.15	73.98	12.83	PK
11040	50.53	-2.22	H	48.31	53.98	5.67	AV
16560	55.68	-2.57	H	53.11	68.20	15.09	PK

Scenario 2

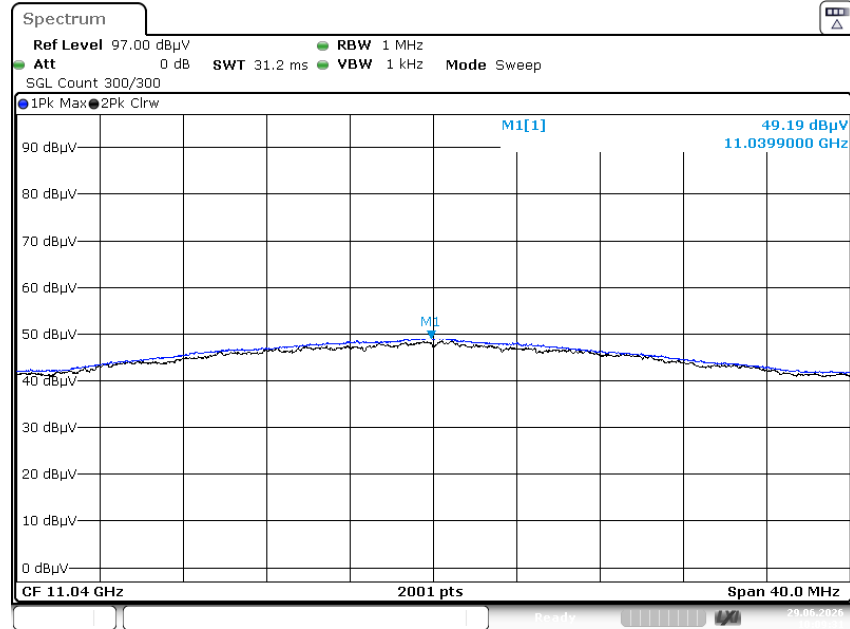
ANT1_5 GHz 802.11ac_VHT20 Ch. 104 + ANT1_Thread

Band : UNII 2C			Operation Mode : Wi-Fi 5G_Thread (11ac20_Ch.104 + Thread)				
CH.104 5520 MHz			Transfer Rate : MCS0				
Frequency [MHz]	Measured value [dBμV]	CL+AF+DF-AG [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
11040	61.68	-2.22	V	59.46	73.98	14.52	PK
11040	48.29	-2.22	V	46.07	53.98	7.91	AV
16560	55.22	-2.57	V	52.65	68.20	15.55	PK
11040	59.64	-2.22	H	57.42	73.98	16.56	PK
11040	46.64	-2.22	H	44.42	53.98	9.56	AV
16560	54.57	-2.57	H	52.00	68.20	16.20	PK

Test Plots(RADIATED SPURIOUS EMISSIONS)

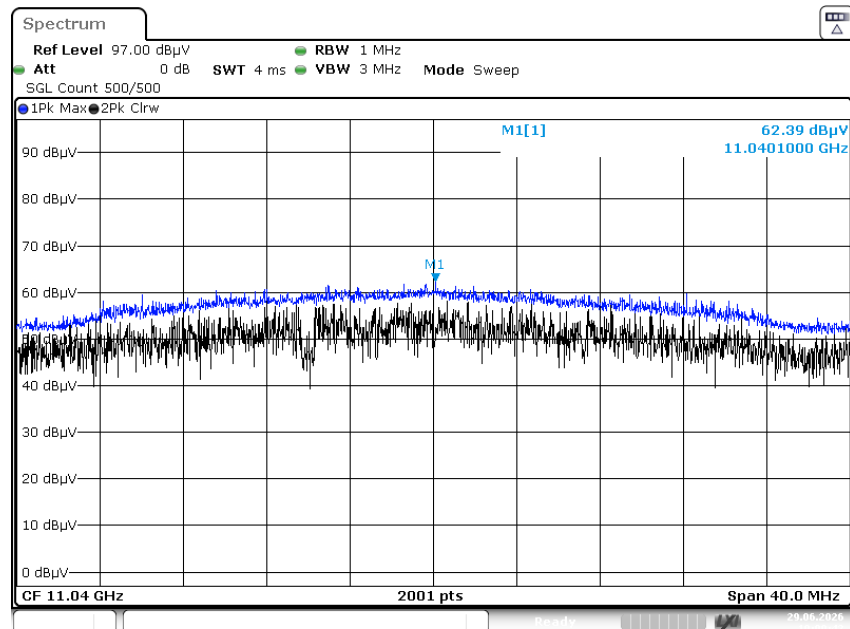
Note: Only the worst case plot for Radiated Spurious Emissions.

Radiated Spurious Emissions plot – Average Result (802.11ac(VHT20)_MCS0, Ch. 104, X-V)



Date: 29.JUN.2026 10:09:31

Radiated Spurious Emissions plot – Peak Result (802.11ac(VHT20)_MCS0, Ch. 104, X-V)



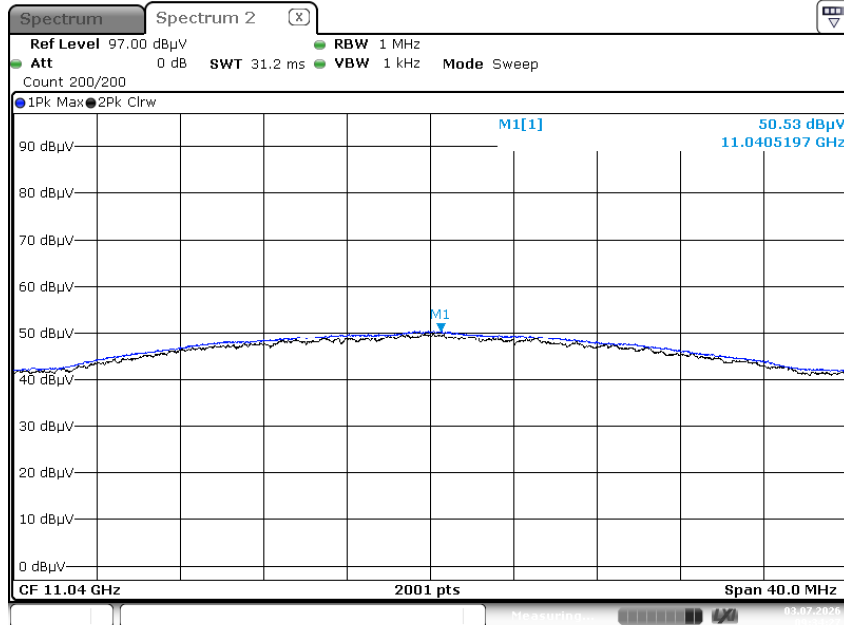
Date: 29.JUN.2026 10:09:42

[Simultaneous transmission Scenario]

Scenario 1

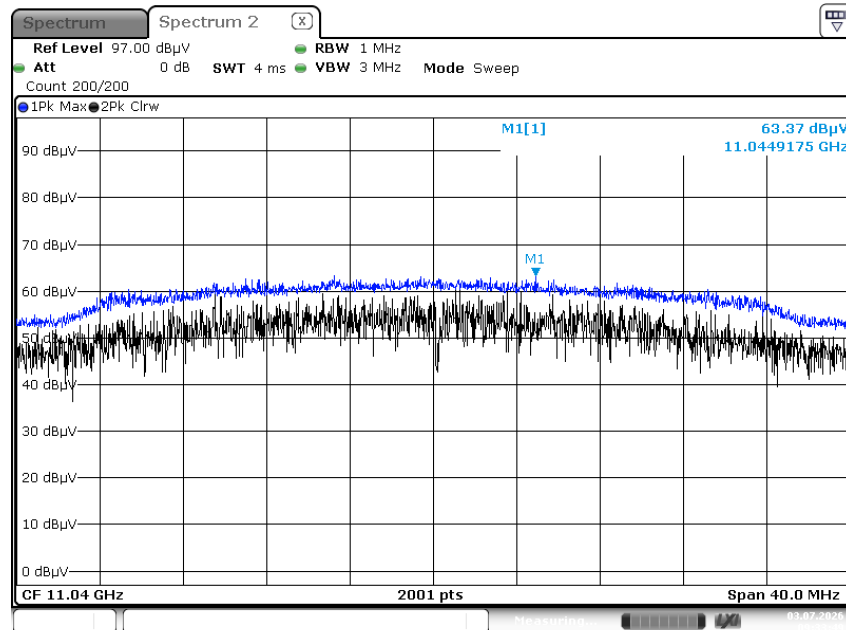
ANT1_5 GHz 802.11ac_VHT20 Ch. 104 + ANT1_ BTLE 1M 37 Bytes Ch. 37

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



Date: 3.JUL.2026 09:34:27

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

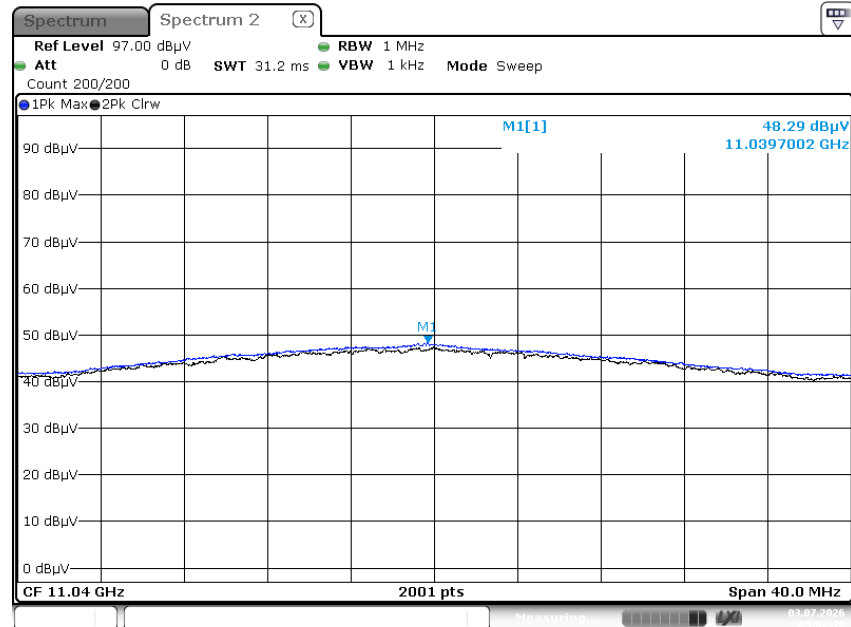


Date: 3.JUL.2026 09:33:49

Scenario 2

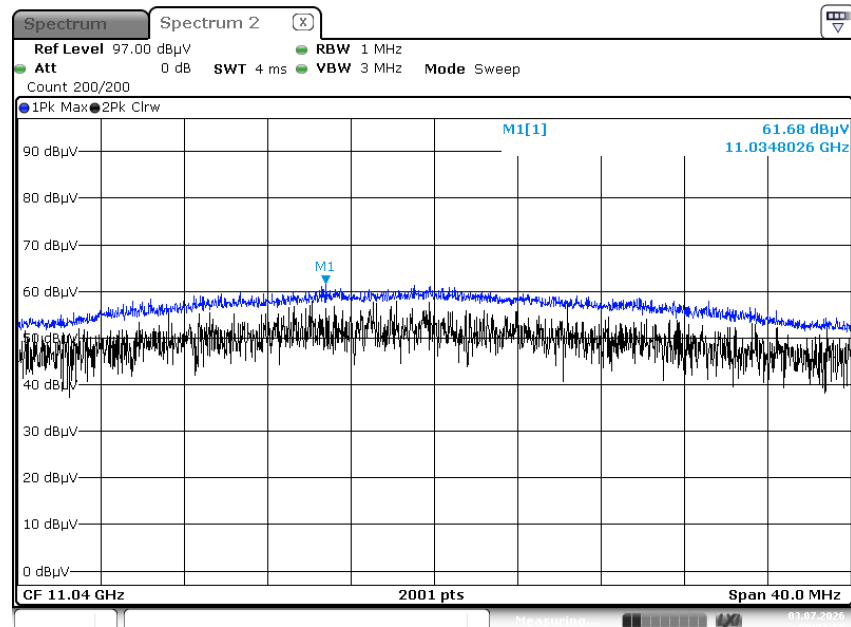
ANT1_5 GHz 802.11ac_VHT20 Ch. 104 + ANT1_Thread

Radiated Spurious Emissions plot – Average Result (Spurious Emissions, X-V)



Date: 3.JUL.2026 09:02:10

Radiated Spurious Emissions plot – Peak Result (Spurious Emissions, X-V)



Date: 3.JUL.2026 09:01:51

10.9 RADIATED RESTRICTED BAND EDGE

[UNII-1]

[802.11a]

Operation Mode : 802.11a_20		Tone & RU Index : -		MCS index : 6M		
Channel No. : 36		Frequency : 5180 MHz		Band : UNII-1		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4500 - 5150	65.59	H	65.59	73.98	8.39	PK
4500 - 5150	49.49	H	49.49	53.98	4.49	AV

[802.11n(HT20)]

Operation Mode : 802.11n_20		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 36		Frequency : 5180 MHz		Band : UNII-1		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4500 - 5150	66.56	H	66.56	73.98	7.42	PK
4500 - 5150	50.64	H	50.64	53.98	3.34	AV

[802.11ac(VHT20)]

Operation Mode : 802.11ac_20		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 36		Frequency : 5180 MHz		Band : UNII-1		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4500 - 5150	67.21	H	67.21	73.98	6.77	PK
4500 - 5150	50.59	H	50.59	53.98	3.39	AV

[802.11n(HT40)]

Operation Mode : 802.11n_40		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 38		Frequency : 5190 MHz		Band : UNII-1		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4500 - 5150	70.42	H	70.42	73.98	3.56	PK
4500 - 5150	49.46	H	49.46	53.98	4.52	AV

[802.11ac(VHT40)]

Operation Mode : 802.11ac_40		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 38		Frequency : 5190 MHz		Band : UNII-1		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4500 - 5150	68.37	H	68.37	73.98	5.61	PK
4500 - 5150	49.41	H	49.41	53.98	4.57	AV

[802.11ac(VHT80)]

Operation Mode :		802.11ac_80	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		42	Frequency :		5210 MHz	Band :		UNII-1
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
4500 - 5150	66.01	H	66.01	73.98	7.97	PK		
4500 - 5150	50.26	H	50.26	53.98	3.72	AV		

[UNII-2A]

[802.11a]

Operation Mode :		802.11a_20	Tone & RU Index :		-	MCS index :		6M
Channel No. :		64	Frequency :		5320 MHz	Band :		UNII-2A
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	67.95	H	67.95	73.98	6.03	PK		
5350 - 5460	49.92	H	49.92	53.98	4.06	AV		

[802.11n(HT20)]

Operation Mode :		802.11n_20	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		64	Frequency :		5320 MHz	Band :		UNII-2A
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	67.60	H	67.60	73.98	6.38	PK		
5350 - 5460	49.76	H	49.76	53.98	4.22	AV		

[802.11ac(VHT20)]

Operation Mode :		802.11ac_20	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		64	Frequency :		5320 MHz	Band :		UNII-2A
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	67.86	H	67.86	73.98	6.12	PK		
5350 - 5460	49.93	H	49.93	53.98	4.05	AV		

[802.11n(HT40)]

Operation Mode :		802.11n_40	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		62	Frequency :		5310 MHz	Band :		UNII-2A
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	67.37	H	67.37	73.98	6.61	PK		
5350 - 5460	45.07	H	45.07	53.98	8.91	AV		

[802.11ac(VHT40)]

Operation Mode :		802.11ac_40	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		62	Frequency :		5310 MHz	Band :		UNII-2A
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	68.73	H	68.73	73.98	5.25	PK		
5350 - 5460	48.15	H	48.15	53.98	5.83	AV		

[802.11ac(VHT80)]

Operation Mode :		802.11ac_80	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		58	Frequency :		5290 MHz	Band :		UNII-2A
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	65.56	H	65.56	73.98	8.42	PK		
5350 - 5460	49.08	H	49.08	53.98	4.90	AV		

[UNII-2C]

[802.11a]

Operation Mode :		802.11a_20	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		100	Frequency :		5500 MHz	Band :		UNII-2C
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	54.23	H	54.23	73.98	19.75	PK		
5350 - 5460	41.90	H	41.90	53.98	12.08	AV		
5460 - 5470	54.88	H	54.88	68.23	13.35	PK		

[802.11n(HT20)]

Operation Mode :		802.11n_20	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		100	Frequency :		5500 MHz	Band :		UNII-2C
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	54.46	H	54.46	73.98	19.52	PK		
5350 - 5460	41.95	H	41.95	53.98	12.03	AV		
5460 - 5470	54.26	H	54.26	68.23	13.97	PK		

[802.11ac(VHT20)]

Operation Mode :		802.11ac_20	Tone & RU Index :		-	MCS index :		MCS0
Channel No. :		100	Frequency :		5500 MHz	Band :		UNII-2C
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type		
5350 - 5460	63.06	H	63.06	73.98	10.92	PK		
5350 - 5460	44.55	H	44.55	53.98	9.43	AV		
5460 - 5470	63.62	H	63.62	68.23	4.61	PK		

Operation Mode : 802.11ac_20		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 104		Frequency : 5520 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	59.50	H	59.50	73.98	14.48	PK
5350 - 5460	45.26	H	45.26	53.98	8.72	AV
5460 - 5470	63.92	H	63.92	68.23	4.31	PK

Operation Mode : 802.11ac_20		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 108		Frequency : 5540 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	58.03	H	58.03	73.98	15.95	PK
5350 - 5460	45.18	H	45.18	53.98	8.80	AV
5460 - 5470	59.80	H	59.80	68.23	8.43	PK

Operation Mode : 802.11ac_20		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 120		Frequency : 5600 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	56.85	H	56.85	73.98	17.13	PK
5350 - 5460	44.11	H	44.11	53.98	9.87	AV
5460 - 5470	56.28	H	56.28	68.23	11.95	PK

[802.11n(HT40)]

Operation Mode : 802.11n_40		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 102		Frequency : 5510 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	59.50	H	59.50	73.98	14.48	PK
5350 - 5460	43.51	H	43.51	53.98	10.47	AV
5460 - 5470	64.78	H	64.78	68.23	3.45	PK

[802.11ac(VHT40)]

Operation Mode : 802.11ac_40		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 102		Frequency : 5510 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	61.90	H	61.90	73.98	12.08	PK
5350 - 5460	46.20	H	46.20	53.98	7.78	AV
5460 - 5470	64.39	H	64.39	68.23	3.84	PK

Operation Mode : 802.11ac_40		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 110		Frequency : 5550 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	62.14	H	62.14	73.98	11.84	PK
5350 - 5460	45.32	H	45.32	53.98	8.66	AV
5460 - 5470	62.88	H	62.88	68.23	5.35	PK

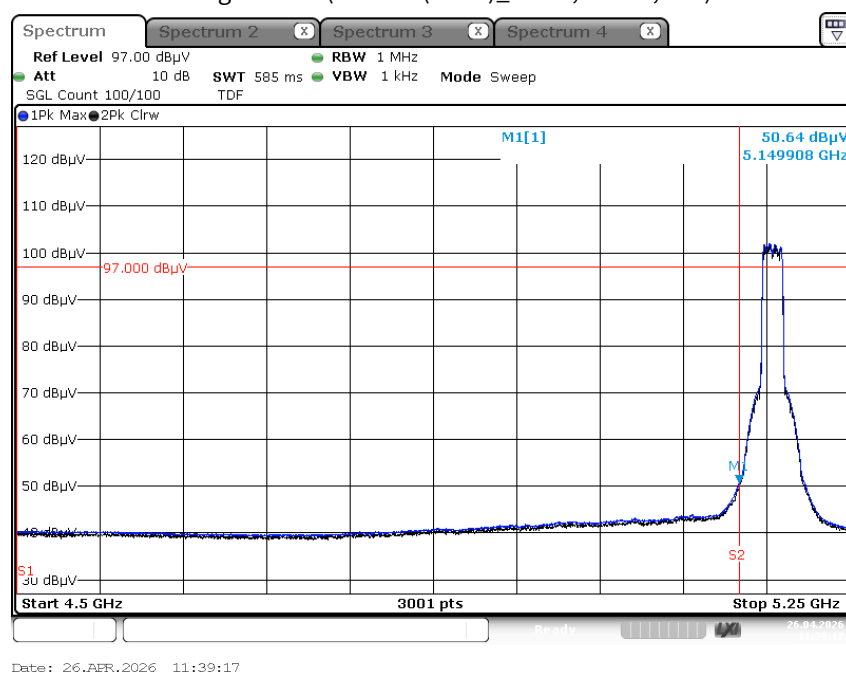
Operation Mode : 802.11ac_40		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 118		Frequency : 5590 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	57.97	H	57.97	73.98	16.01	PK
5350 - 5460	44.62	H	44.62	53.98	9.36	AV
5460 - 5470	57.02	H	57.02	68.23	11.21	PK

[802.11ac(VHT80)]

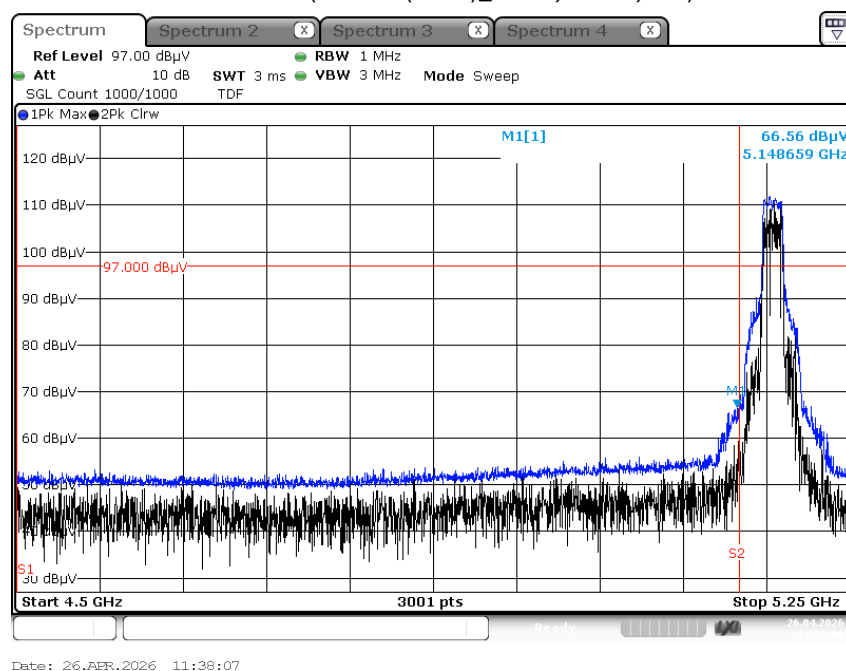
Operation Mode : 802.11ac_80		Tone & RU Index : -		MCS index : MCS0		
Channel No. : 106		Frequency : 5530 MHz		Band : UNII-2C		
Frequency [MHz]	Measured Value [dBμV]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
5350 - 5460	61.71	H	61.71	73.98	12.27	PK
5350 - 5460	50.30	H	50.30	53.98	3.68	AV
5460 - 5470	63.92	H	63.92	68.23	4.31	PK

Test Plots(UNII 1, 2A, 2C)

Average Result (802.11n(HT20)_MCS0, Ch. 36, X-H)



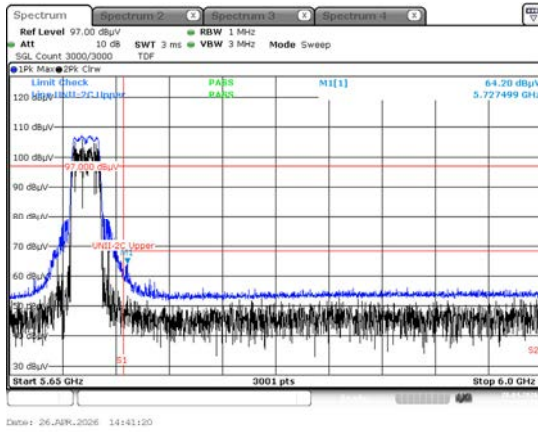
Peak Result (802.11n(HT20)_MCS0, Ch. 36, X-H)



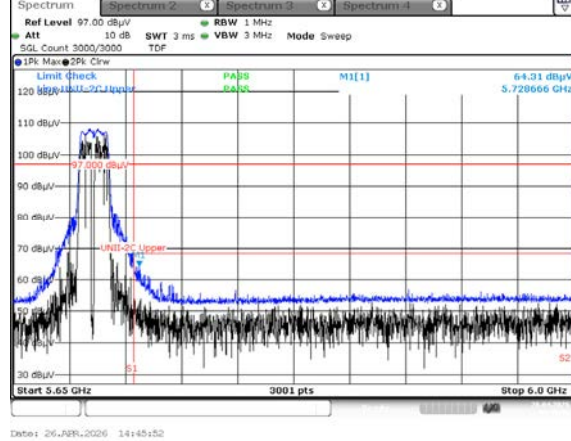
Note: Only the worst case plots for Radiated Restricted Band Edge.

Test Plots(UNII2C_Upper)

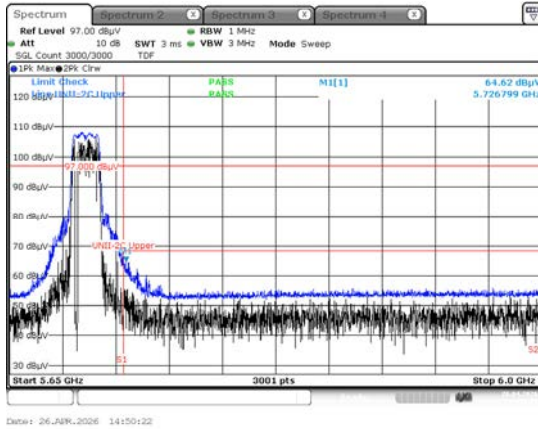
Peak Result (802.11a, Ch.140, X-H)



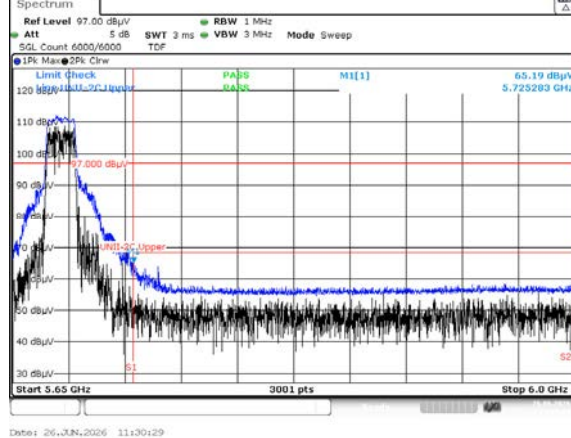
Peak Result (802.11n_HT20, Ch.140, X-H)



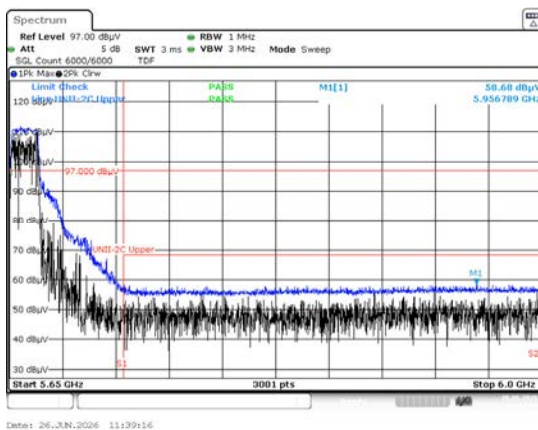
Peak Result (802.11ac_VHT20, Ch.140, X-H)



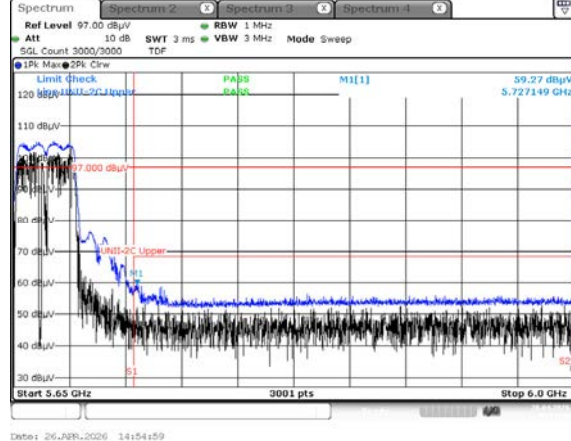
Peak Result (802.11ac_VHT20, Ch.136, X-H)



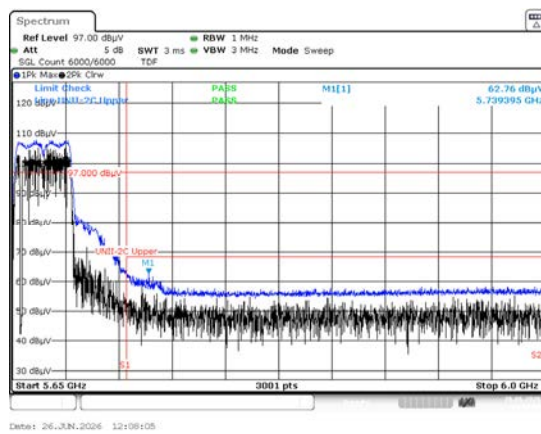
Peak Result (802.11ac_VHT20, Ch.132, X-H)



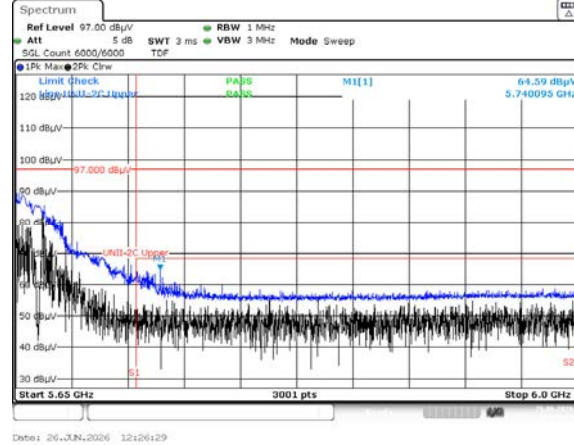
Peak Result (802.11n_HT40, Ch.134, X-H)



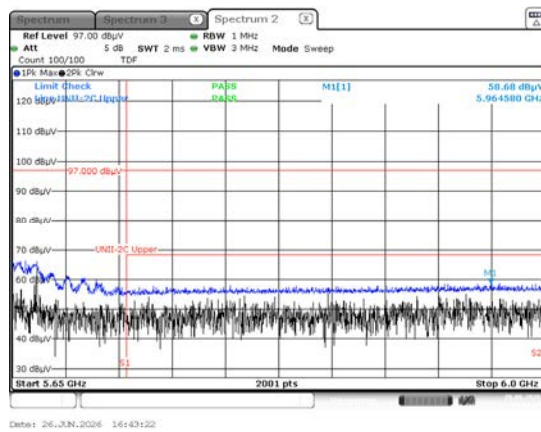
Peak Result (802.11ac_VHT40, Ch.134, X-H)



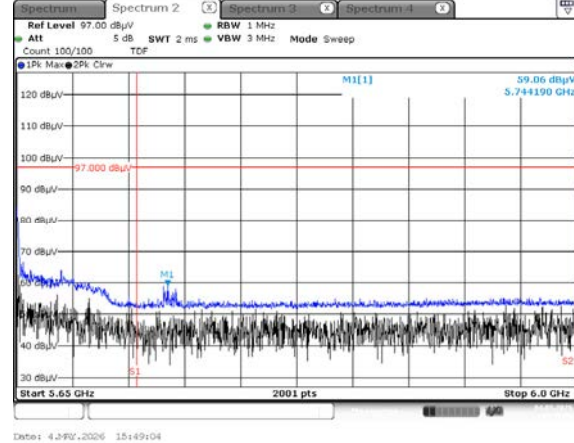
Peak Result (802.11ac_VHT40, Ch.126, X-H)



Peak Result (802.11ac_VHT40, Ch.118, X-H)

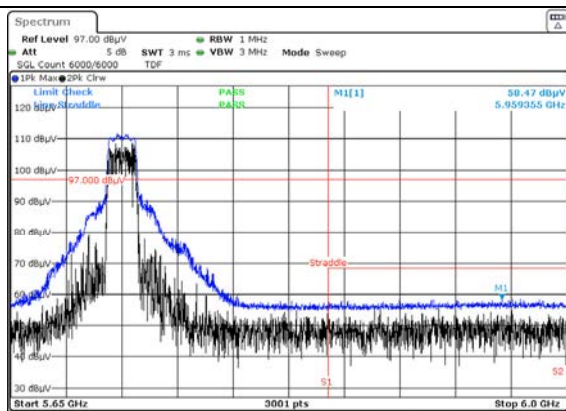


Peak Result (802.11ac_VHT80, Ch.122, X-H)



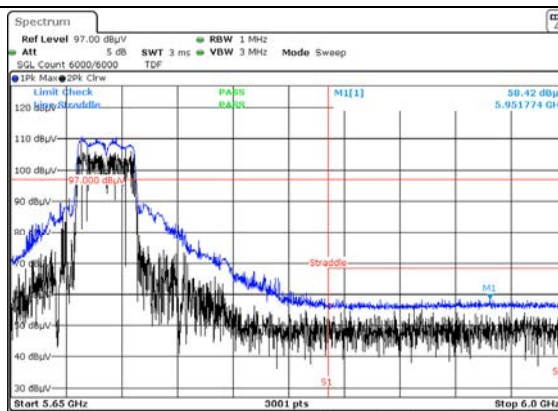
Test Plots(Straddle Channel)

Peak Result 20M, (802.11ac_VHT20, Ch.144, X-H)



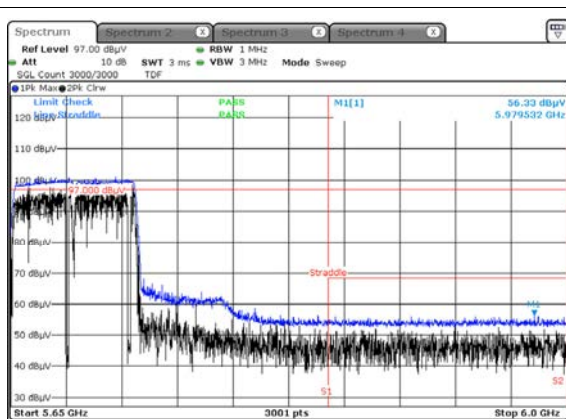
Date: 26 JUN 2026 12:42:28

Peak Result 40M, (802.11ac_VHT40, Ch.142, X-H)



Date: 26 JUN 2026 12:49:38

Peak Result 80M, (802.11ac_VHT80, Ch.138, X-H)



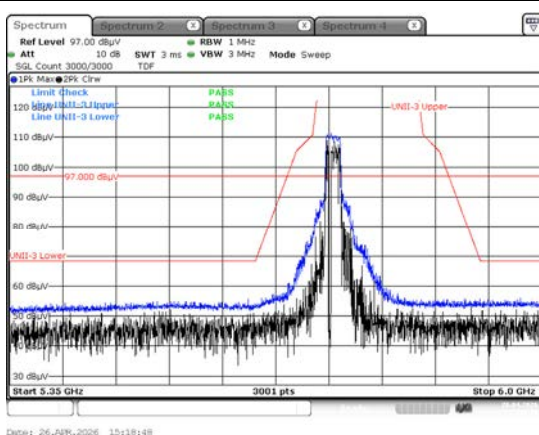
Date: 26 JUN 2026 15:14:05

Note:

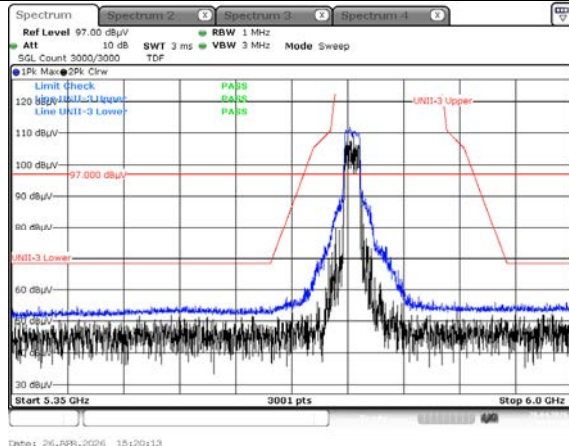
1. Only the worst case plots for Straddle channel.
2. Red line : 5 850 MHz

Test Plots(UNII 3)

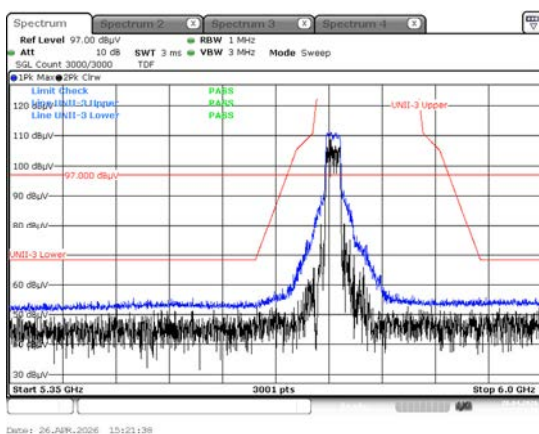
Peak Result (802.11a, Ch.149, X-H)



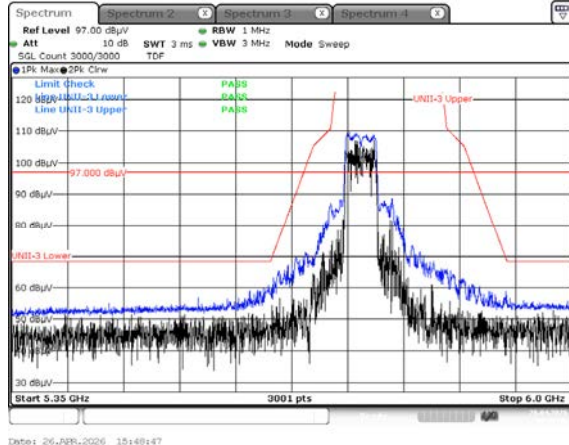
Peak Result (802.11n_HT20, Ch.149, X-H)



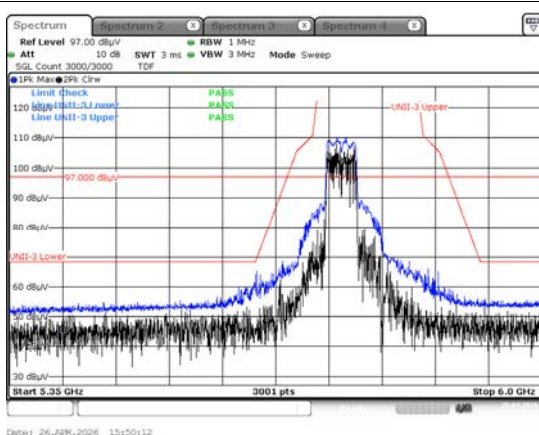
Peak Result (802.11ac_VHT20, Ch.149, X-H)



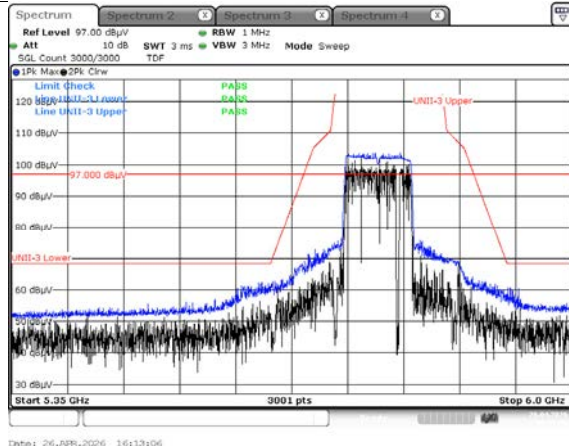
Peak Result (802.11n_HT40, Ch.151, X-H)



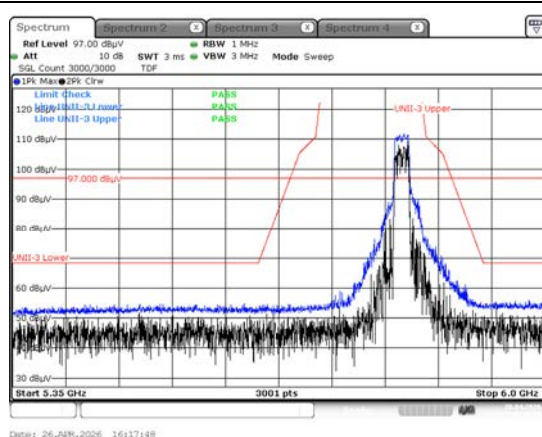
Peak Result (802.11ac_VHT40, Ch.151, X-H)



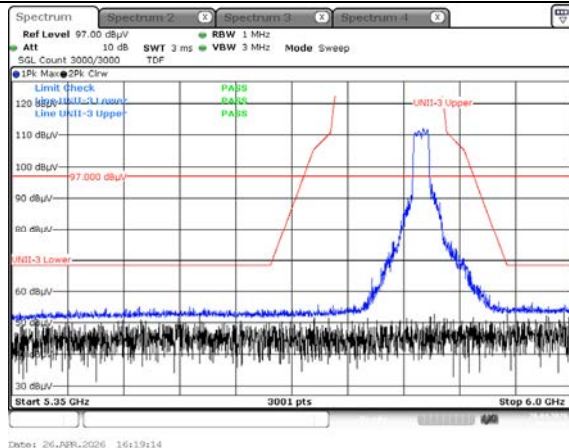
Peak Result (802.11ac_VHT80, Ch.155, X-H)



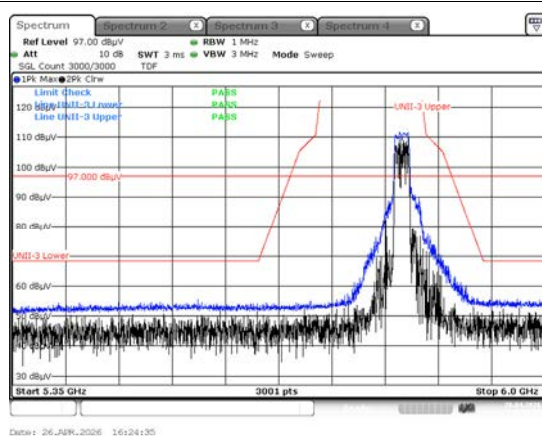
Peak Result (802.11a, Ch.165, X-H)



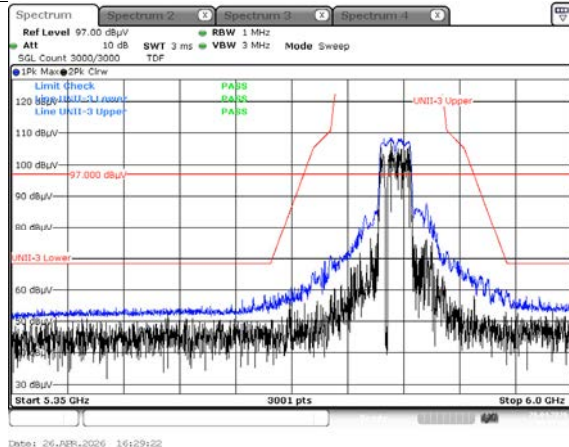
Peak Result (802.11n_HT20, Ch.165, X-H)



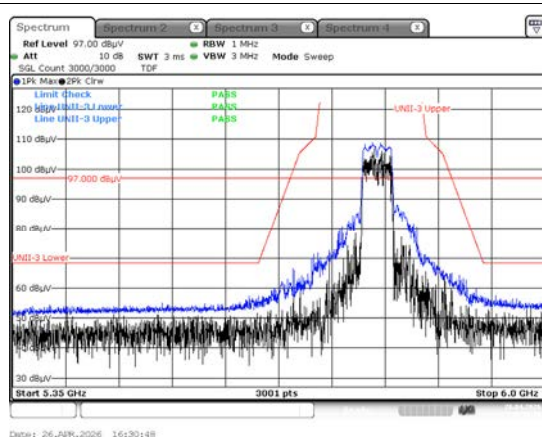
Peak Result (802.11ac_VHT20, Ch.165, X-H)



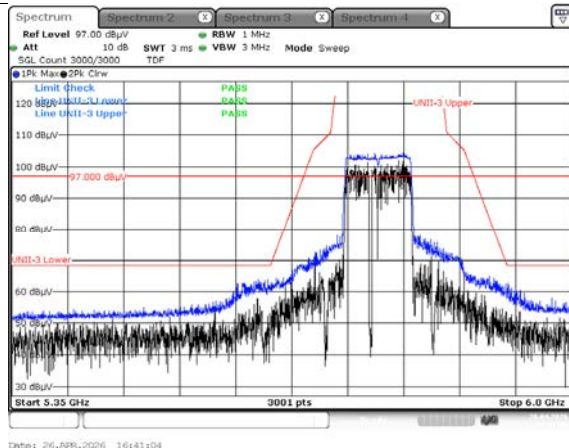
Peak Result (802.11n_HT40, Ch.159, X-H)



Peak Result (802.11ac_VHT40, Ch.159, X-H)



Peak Result (802.11ac_VHT80, Ch.155, X-H)



Note :

1. Only the worst case plots for U-NII-3 Out of Band e.i.r.p Emission.

10.10 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions

Test

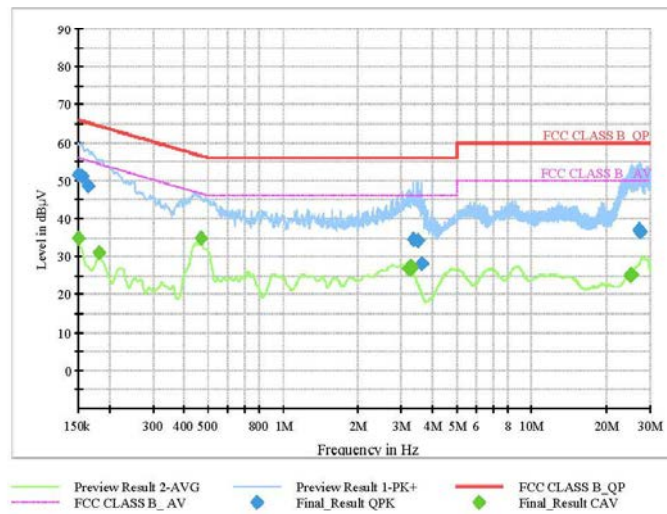
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Test Report

Common Information

EUT : ETWMCNSL01
Operating Conditions : 5G WLAN Mode
Comment :

Full Spectrum



Final Result QPK

Frequency (MHz)	QuasiPeak (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1500	51.62	66.00	14.38	9.000	L1	9.7
0.1545	51.07	65.75	14.68	9.000	L1	9.7
0.1635	48.79	65.28	16.49	9.000	L1	9.7
3.3485	34.39	56.00	21.61	9.000	L1	9.7
3.4813	34.13	56.00	21.87	9.000	L1	9.7
3.6140	28.23	56.00	27.77	9.000	L1	9.7
27.1333	36.65	60.00	23.35	9.000	N	9.9
27.1985	37.25	60.00	22.75	9.000	N	9.9
27.3313	36.40	60.00	23.60	9.000	N	9.9

Final Result CAV

Frequency (MHz)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.1500	34.75	56.00	21.25	9.000	L1	9.7
0.1815	30.98	54.42	23.44	9.000	N	9.6
0.4673	34.77	46.56	11.80	9.000	L1	9.7
3.2135	26.78	46.00	19.22	9.000	N	9.7
3.2675	27.54	46.00	18.46	9.000	N	9.7
3.2720	27.02	46.00	18.98	9.000	N	9.7
25.0610	24.96	50.00	25.04	9.000	N	9.9
25.1510	25.20	50.00	24.80	9.000	N	9.9
25.3198	25.18	50.00	24.82	9.000	N	9.9

2026-05-08

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11. LIST OF TEST EQUIPMENT

Conducted Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
LISN	ENV216	Rohde & Schwarz	102245	07/10/2027	Annual
EMI Test Receiver	ESR7	Rohde & Schwarz	101910	07/09/2027	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:

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.

12. ANNEX A_TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2606-FC006-P