

FCC DTS REPORT

Certification

Applicant Name: SAMSUNG Electronics Co., Ltd.	Date of Issue: August 19, 2021
Address: 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea	Test Site/Location: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
	Report No.: HCT-RF-2108-FC013

FCC ID:	A3LSMM526B
APPLICANT:	SAMSUNG Electronics Co., Ltd.

Model:	SM-M526B/DS
EUT Type:	Mobile Phone
Average Output Power:	802.11b : 18.91 dBm, 802.11g : 17.66 dBm, 802.11n(HT20) : 17.45 dBm
Frequency Range:	2412 MHz ~ 2472 MHz
Modulation type:	CCK/DSSS/OFDM
FCC Classification:	Digital Transmission System(DTS)
FCC Rule Part(s):	Part 15.247

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.

Report No.: HCT-RF-2108-FC013

REVIEWED BY



Report prepared by : Woong Jin Kim
Engineer of Telecommunication Testing Center

Report approved by : Kwon Jeong
Manager of Telecommunication Testing Center

This test results were applied only to the test methods required by the standard.

This laboratory is not accredited for the test results marked *.

The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA. (HCT Accreditation No.: KT197)

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

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2108-FC013	August 19, 2021	- First Approval Report

Table of Contents

REVIEWED BY	2
1. EUT DESCRIPTION	5
2. TEST METHODOLOGY	6
EUT CONFIGURATION	6
EUT EXERCISE	6
GENERAL TEST PROCEDURES	6
DESCRIPTION OF TEST MODES	6
3. INSTRUMENT CALIBRATION.....	7
4. FACILITIES AND ACCREDITATIONS	7
FACILITIES	7
EQUIPMENT	7
5. ANTENNA REQUIREMENTS	8
6. MEASUREMENT UNCERTAINTY	8
7. DESCRIPTION OF TESTS.....	9
8. SUMMARY TEST OF RESULTS	24
9. TEST RESULT	25
9.1 DUTY CYCLE.....	25
9.2 6 dB BANDWIDTH	28
9.3 OUTPUT POWER	31
9.4 POWER SPECTRAL DENSITY	37
9.5 BAND EDGE / CONDUCTED SPURIOUS EMISSIONS.....	40
9.6 RADIATED SPURIOUS EMISSIONS	54
9.7 RADIATED RESTRICTED BAND EDGES	62
9.8 POWERLINE CONDUCTED EMISSIONS	70
10. LIST OF TEST EQUIPMENT	74
11. ANNEX A_ TEST SETUP PHOTO	76

1. EUT DESCRIPTION

Model	SM-M526B/DS	
Additional Model	-	
EUT Type	Mobile Phone	
Power Supply	DC 3.86 V	
Frequency Range	2412 MHz ~ 2472 MHz	
Max. RF Output Power	<u>Peak Power</u> (For information only)	802.11b : 24.48 dBm 802.11g : 25.85 dBm 802.11n(HT20) : 25.26 dBm
	<u>Average Power</u>	802.11b : 18.91 dBm 802.11g : 17.66 dBm 802.11n(HT20) : 17.45 dBm
Modulation Type	DSSS/CCK : 802.11b OFDM : 802.11g, 802.11n	
Number of Channels	13 Channels	
Date(s) of Tests	July 20, 2021 ~ August 13, 2021	
Serial number	Radiated: RCR41328LB Conducted: R3CR41329HN	

2. TEST METHODOLOGY

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

EUT CONFIGURATION

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

EUT EXERCISE

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

GENERAL TEST PROCEDURES

Conducted Emissions

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

Radiated Emissions

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

DESCRIPTION OF TEST MODES

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

3. INSTRUMENT CALIBRATION

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

Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

4. FACILITIES AND ACCREDITATIONS

FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22.

Detailed description of test facility was submitted to the Commission and accepted dated April 02, 2018 (Registration Number: KR0032).

EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203:

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

- (1) The antennas of this E.U.T are permanently attached.
- (2) The E.U.T Complies with the requirement of §15.203

6. MEASUREMENT UNCERTAINTY

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

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

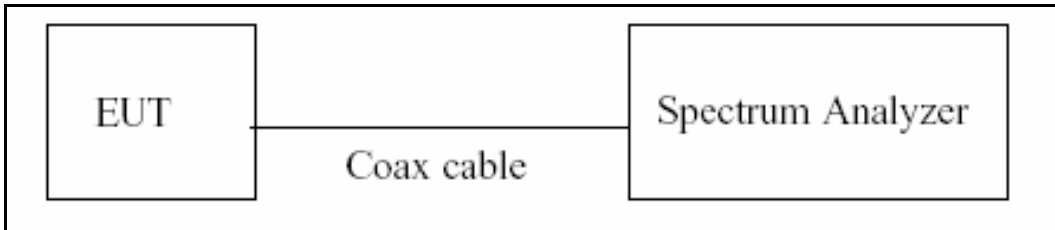
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82 (Confidence level about 95 %, k=2)
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40 (Confidence level about 95 %, k=2)
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80 (Confidence level about 95 %, k=2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70 (Confidence level about 95 %, k=2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05 (Confidence level about 95 %, k=2)

7. DESCRIPTION OF TESTS

7.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to the zero-span measurement method.

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

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

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

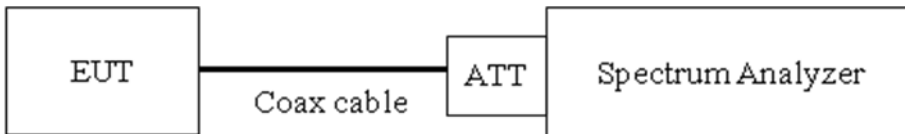
1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz (\geq RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on} / T_{total} and Duty Cycle Factor = $10\log(1/\text{Duty Cycle})$

7.2. 6 dB Bandwidth

Limit

The minimum permissible 6 dB bandwidth is 500 kHz.

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to (Procedure 11.8.1 in ANSI 63.10-2013)

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

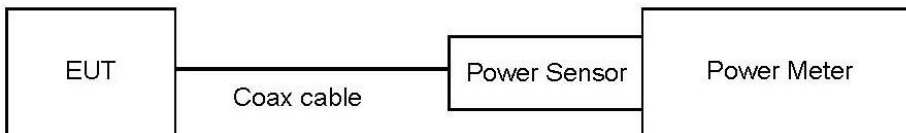
Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

7.3. Output Power

Limit

The maximum permissible conducted output power is 1 Watt.

Test Configuration



Test Procedure

The transmitter output is connected to the Power Meter.

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

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

Sample Calculation

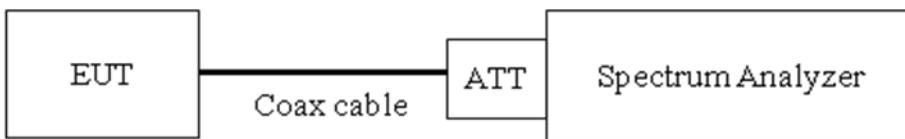
- Conducted Output Power(Peak) = Measured Value + ATT loss + Cable loss
- Conducted Output Power(Average) = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

7.4. Power Spectral Density

Limit

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

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

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

The spectrum analyzer is set to :

- 1) Set analyzer center frequency to DTS channel center frequency.
- 2) Set span to at least 1.5 times the OBW.
- 3) $RBW = 3 \text{ kHz} \leq RBW \leq 100 \text{ kHz}$.
- 4) $VBW \geq 3 \times RBW$.
- 5) Sweep = auto couple
- 6) Detector = power averaging (rms) or sample detector (when rms not available).
- 7) Ensure that the number of measurement points in the sweep $\geq [2 \times \text{span} / RBW]$.
- 8) Employ trace averaging (rms) mode over a minimum of 100 traces
- 9) Use the peak marker function to determine the maximum amplitude level.
- 10) Use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11) if then duty factor shall be added to adjust the result if the duty cycle is less than 98 %

Sample Calculation

• Power Spectral Density = Measured Value + ATT loss + Cable loss + Duty Cycle Factor

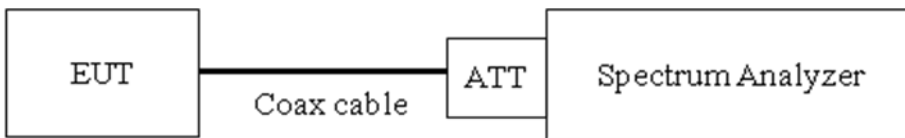
7.5. Conducted Band Edge(Out of Band Emissions) & Conducted Spurious Emissions

Limit

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

[Conducted > 30 dBc]

Test Configuration



Test Procedure

The transmitter output is connected to the spectrum analyzer.

(Procedure 11.11 in ANSI 63.10-2013)

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

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

Factors for frequency

Freq(MHz)	Factor(dB)
30	10.04
100	10.07
200	10.12
300	10.17
400	10.20
500	10.21
600	10.21
700	10.23
800	10.24
900	10.26
1000	10.27
2000	10.41
2400	10.45
2500	10.47
3000	10.52
4000	10.60
5000	10.71
6000	10.73
7000	10.80
8000	10.85
9000	10.91
10000	10.97
11000	11.02
12000	11.10
13000	11.19
14000	11.16
15000	11.21
16000	11.22
17000	11.25
18000	11.30
19000	11.32
20000	11.36
21000	11.48
22000	11.55
23000	11.55
24000	11.59
25000	11.68
26000	11.69

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

2. Factor = Attenuator loss(10 dB) + Cable loss(1ea)

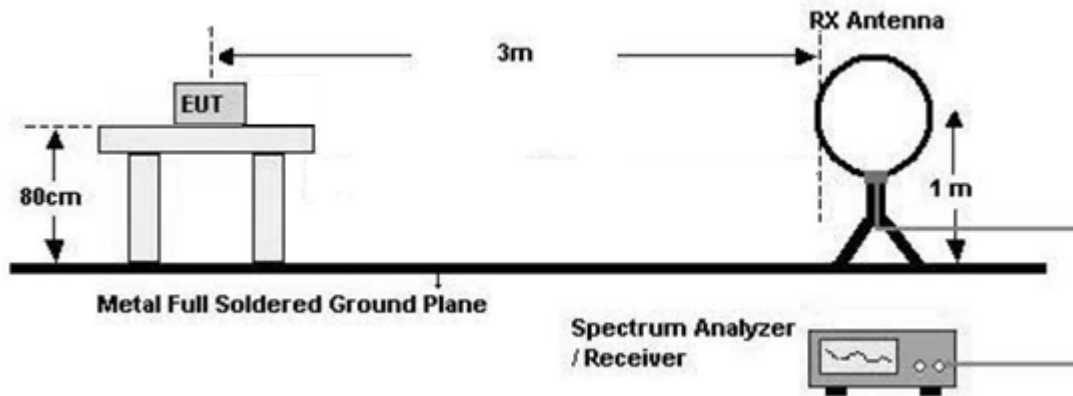
7.6. Radiated Test

Limit

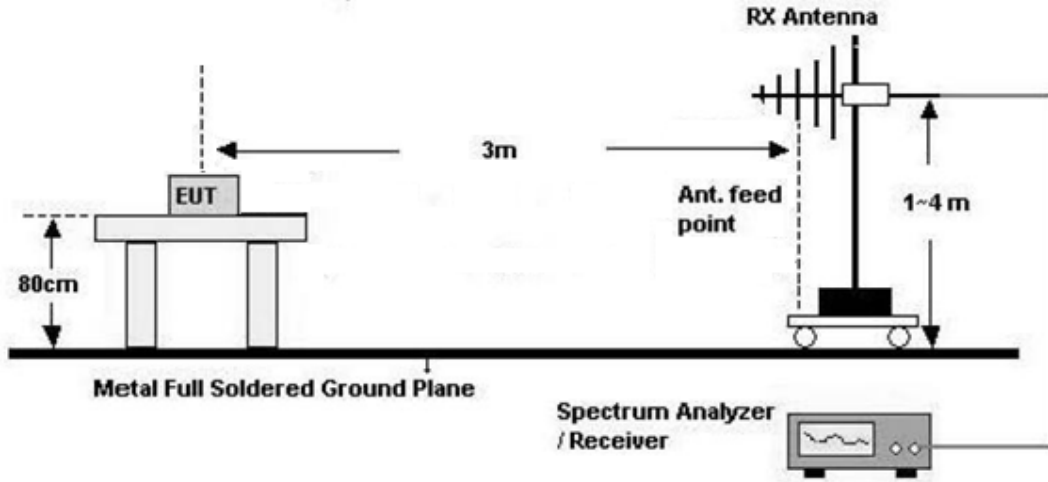
Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 – 0.490	$2400/F(\text{kHz})$	300
0.490 – 1.705	$24000/F(\text{kHz})$	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

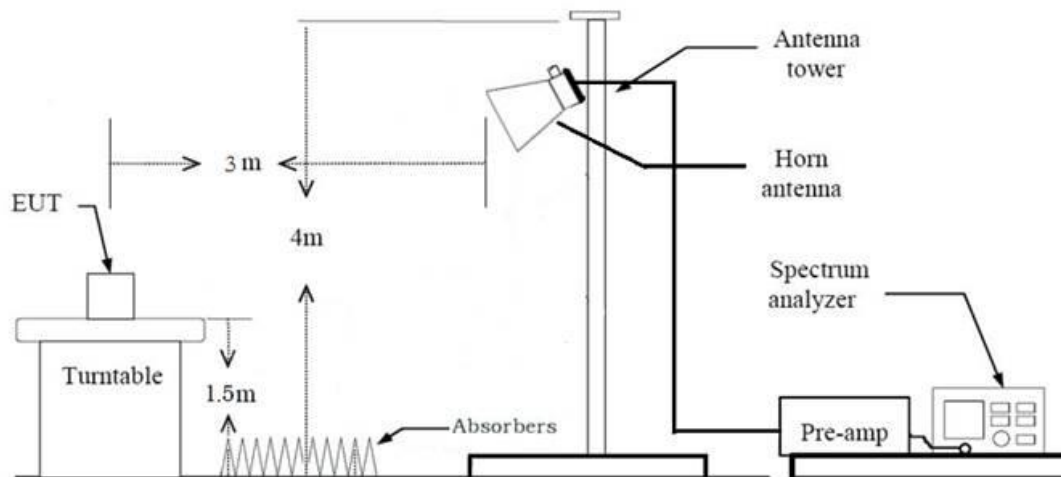
Below 30 MHz



30 MHz - 1 GHz



Above 1 GHz



Test Procedure of Radiated spurious emissions(Below 30 MHz)

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

KDB 414788 OFS and Chamber Correlation Justification

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

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

Test Procedure of Radiated spurious emissions(Below 1 GHz)

1. The EUT was placed on a non-conductive table located on semi-anechoic chamber.
2. The EUT is placed on a turntable, which is 0.8 m above ground plane.
3. The Hybrid antenna was placed at a location 3 m from the EUT, which is varied from 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 Setting

(1) Measurement Type(Peak):

- Measured Frequency Range : 30 MHz – 1 GHz
- Detector = Peak
- Trace = Maxhold
- 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. The unit was tested with its standard battery.
8. Spectrum Setting (Method 8.6 in KDB 558074 v05r02, Procedure 11.12 in ANSI 63.10-2013)

(1) Measurement Type(Peak):

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = Peak
- Trace = Maxhold

- RBW = 1 MHz
- VBW \geq 3 x RBW

(2) Measurement Type(Average): Duty cycle \geq 98 %

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW \geq 3 x RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).

(3) Measurement Type(Average): Duty cycle < 98 %, duty cycle variations are less than ± 2 %

- Measured Frequency Range : 1 GHz – 25 GHz
- Detector = RMS
- Averaging type = power (*i.e.*, RMS)
- RBW = 1 MHz
- VBW \geq 3 x RBW
- Sweep time = auto.
- Trace mode = average (at least 100 traces).
- Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 % duty cycle.
- Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1.

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

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

11. Total(Measurement Type : Peak)

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

Total(Measurement Type : Average, Duty cycle \geq 98 %)

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

Total(Measurement Type : Average, Duty cycle < 98 %)

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

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. The unit was tested with its standard battery.
8. Spectrum Setting
 - (1) Measurement Type(Peak):
 - Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
 - Detector = Peak
 - Trace = Maxhold
 - RBW = 1 MHz
 - VBW \geq 3 x RBW
 - (2) Measurement Type(Average): Duty cycle \geq 98 %,
 - Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
 - Detector = RMS
 - Averaging type = power (*i.e.*, RMS)
 - RBW = 1 MHz
 - VBW \geq 3 x RBW
 - Sweep time = auto.
 - Trace mode = average (at least 100 traces).
 - (3) Measurement Type(Average): Duty cycle < 98 %, duty cycle variations are less than ± 2 %
 - Measured Frequency Range : 2310 MHz ~ 2390 MHz/ 2483.5 MHz ~ 2500 MHz
 - Detector = RMS
 - Averaging type = power (*i.e.*, RMS)
 - RBW = 1 MHz
 - VBW \geq 3 x RBW
 - Sweep time = auto.
 - Trace mode = average (at least 100 traces).
 - Correction factor shall be added to the measurement results prior to comparing to the emission limit in order to compute the emission level that would have been measured had the test been performed at 100 % duty cycle.
 - Duty Cycle Factor (dB) : Please refer to the please refer to section 9.1.

9. Measurement value only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
10. Distance extrapolation factor = $20\log(\text{test distance} / \text{specific distance})$ (dB)
11. Total(Measurement Type : Peak)
= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
- Total(Measurement Type : Average, Duty cycle $\geq 98\%$)
= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)
- Total(Measurement Type : Average, Duty cycle < 98 %)
= Measured value + Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F) + Duty Cycle Factor

7.7. AC Power line Conducted Emissions

Limit

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

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

^(a)Decreases with the logarithm of the frequency.

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

Test Configuration

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

Test Procedure

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

Sample Calculation

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

7.8. Worst case configuration and mode

Radiated test

1. All modes of operation were investigated and the worst case configuration results are reported.
 - Mode : Stand alone, Stand alone + External accessories(Earphone, etc)
 - Worstcase : Stand alone
2. EUT Axis
 - Radiated Spurious Emissions : Y
 - Radiated Restricted Band Edge : Z
3. Duty cycle factor applies only 802.11g/n (Duty cycle < 98 %).
4. All data rate of operation were investigated and the test results are worst case in lowest Data Rate of each mode.
 - 802.11b : 1 Mbps
 - 802.11g : 6 Mbps
 - 802.11n(HT20): MCS0
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 + External accessories(Earphone, etc)+Travel Adapter,
Stand alone + Travel Adapter
 - Worstcase : Stand alone + Travel Adapter

Conducted test

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

8. SUMMARY TEST OF RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	§15.247(a)(2)	> 500 kHz	Conducted	PASS
Conducted Maximum Output Power	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§15.247(e)	< 8 dBm / 3 kHz Band		PASS
Band Edge (Out of Band Emissions)	§15.247(d)	Conducted > 30 dBc		PASS
AC Power line Conducted Emissions	§15.207	cf. Section 7.7		PASS
Radiated Spurious Emissions	§15.247(d), 15.205, 15.209	cf. Section 7.6	Radiated	PASS
Radiated Restricted Band Edge	§15.247(d), 15.205, 15.209	cf. Section 7.6		PASS

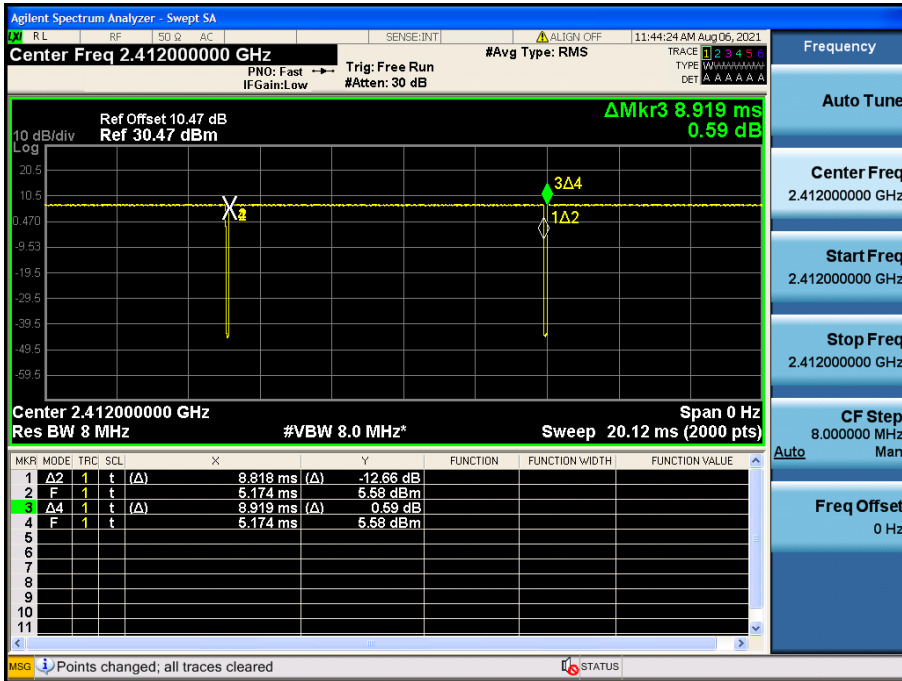
9. TEST RESULT

9.1 DUTY CYCLE

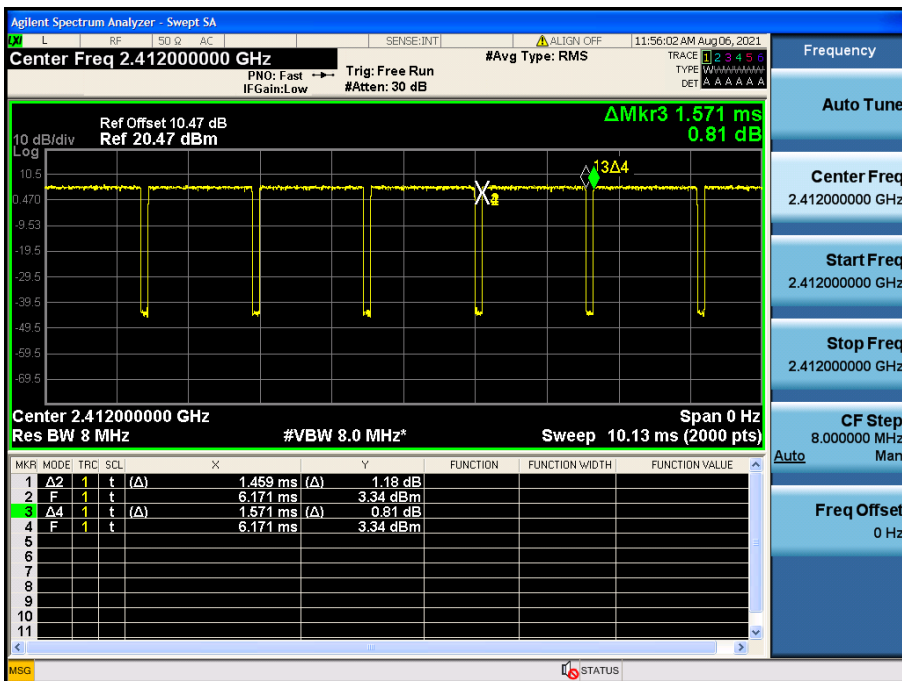
Mode	Data Rate (Mbps)	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11b	1	8.818	8.919	0.989	0.049
	2	4.410	4.514	0.977	0.100
	5.5	1.662	1.768	0.940	0.270
	11	0.877	0.983	0.892	0.498
802.11g	6	1.459	1.571	0.929	0.320
	9	0.983	1.089	0.902	0.446
	12	0.745	0.851	0.875	0.580
	18	0.502	0.613	0.818	0.872
	24	0.385	0.491	0.784	1.060
	36	0.269	0.370	0.726	1.390
	48	0.203	0.309	0.656	1.833
	54	0.182	0.289	0.632	1.996
802.11n (HT20)	6.5 (MCS0)	1.246	1.353	0.921	0.356
	13 (MCS1)	0.643	0.750	0.858	0.665
	19.5 (MCS2)	0.436	0.547	0.796	0.989
	26 (MCS3)	0.339	0.446	0.761	1.184
	39 (MCS4)	0.243	0.350	0.696	1.576
	52 (MCS5)	0.187	0.294	0.638	1.952
	58.5 (MCS6)	0.172	0.279	0.618	2.089
	65 (MCS7)	0.157	0.263	0.596	2.246

Test Plots

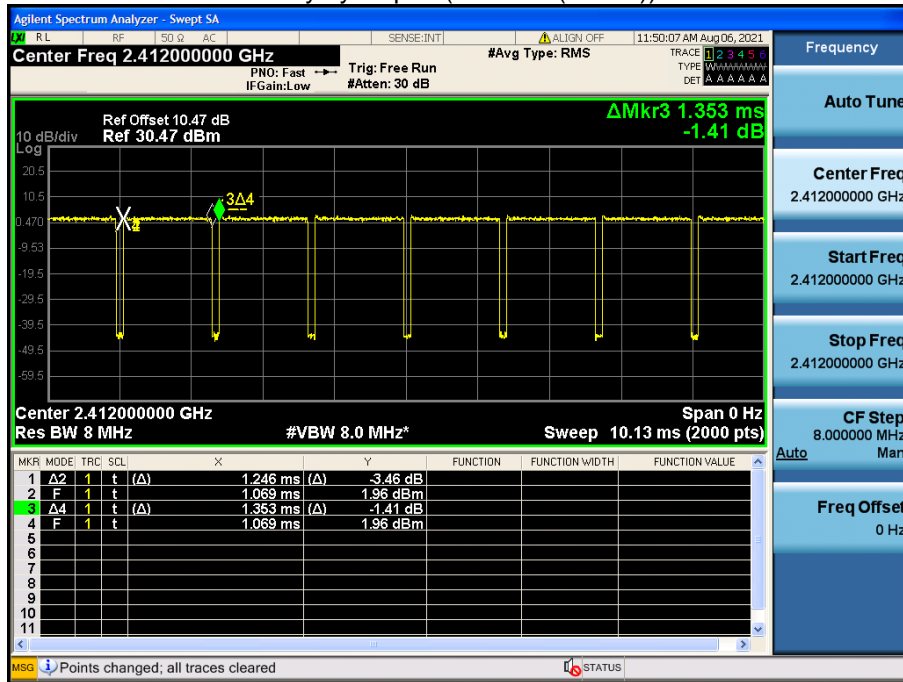
Duty cycle plot (802.11b(1 Mbps))



Duty cycle plot (802.11g(6 Mbps))



Duty cycle plot (802. 11n(MCS0))



Note:

In order to simplify the report, attached plots were only the most lowest data rate.

9.2 6 dB BANDWIDTH

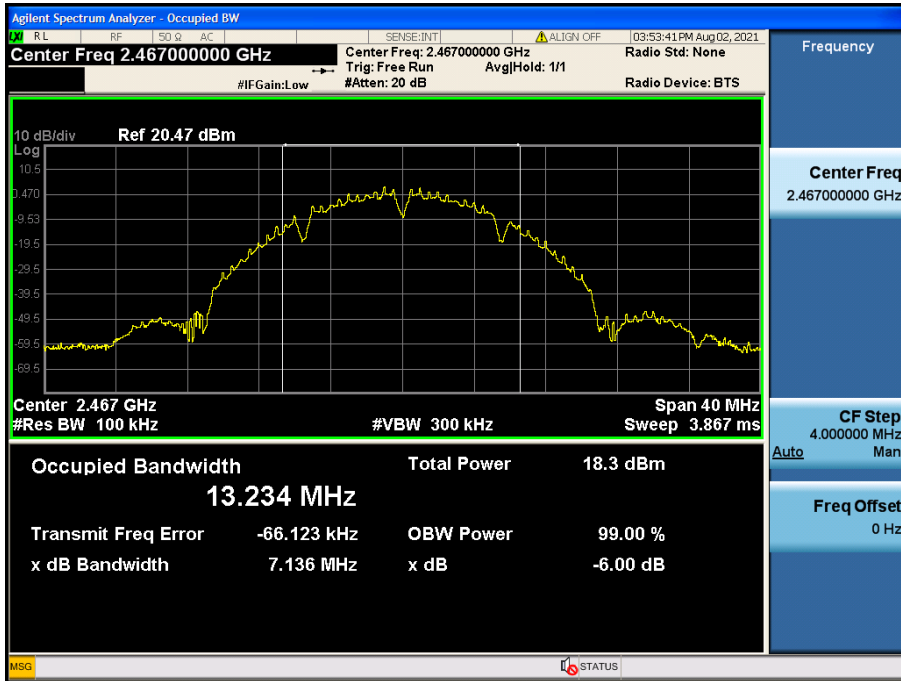
802.11b Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]
Frequency [MHz]	Channel No.		
2412	1	7.637	0.5
2437	6	8.131	0.5
2462	11	8.135	0.5
2467	12	7.136	0.5
2472	13	8.102	0.5

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]
Frequency [MHz]	Channel No.		
2412	1	15.15	0.5
2437	6	15.15	0.5
2462	11	15.14	0.5
2467	12	15.15	0.5
2472	13	15.16	0.5

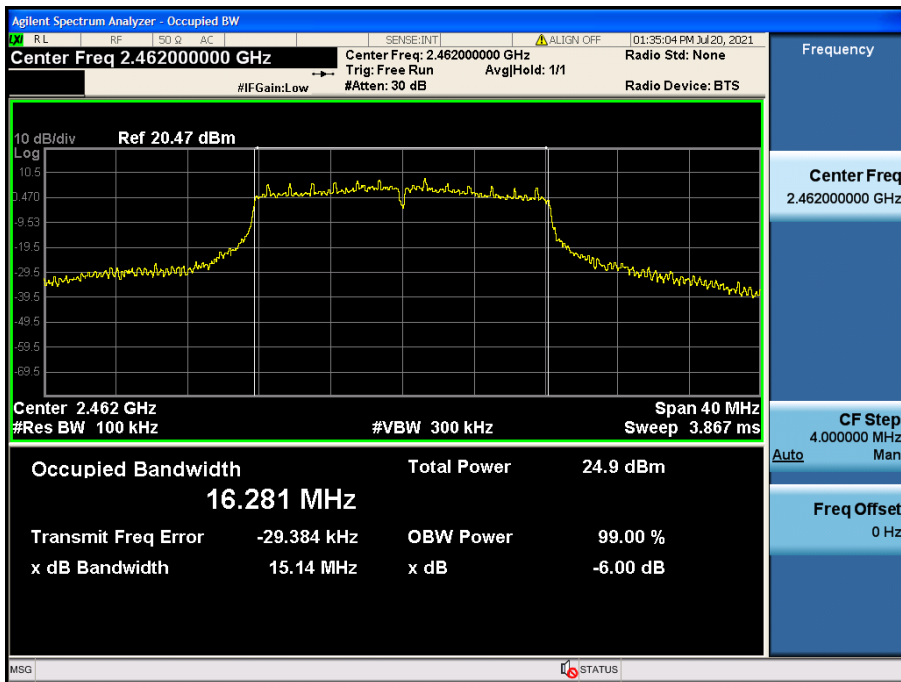
802.11n(HT20) Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]
Frequency [MHz]	Channel No.		
2412	1	15.13	0.5
2437	6	15.16	0.5
2462	11	15.15	0.5
2467	12	15.16	0.5
2472	13	15.16	0.5

▣ Test Plots

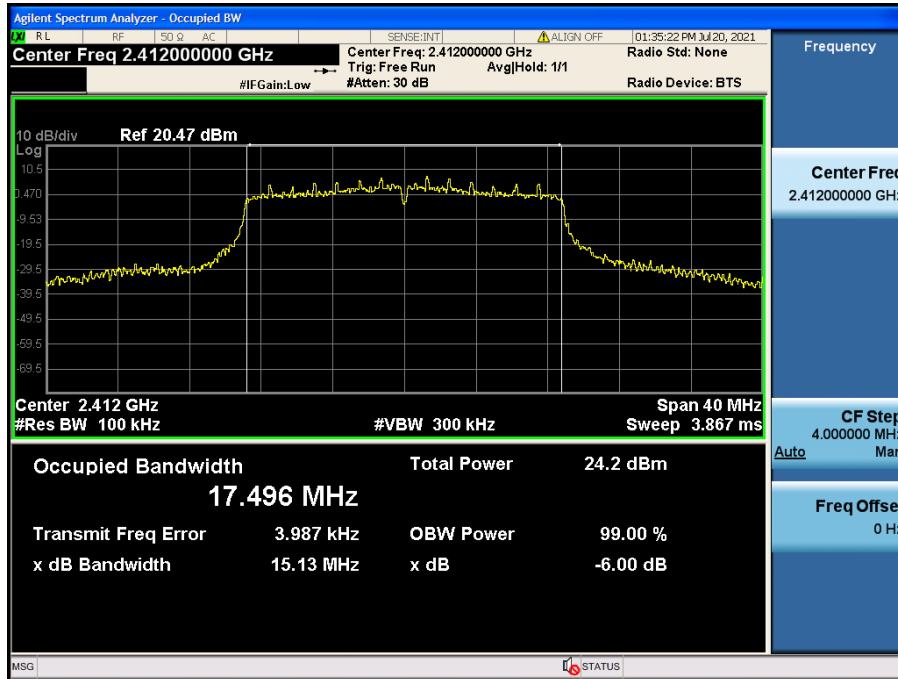
6 dB Bandwidth plot (802.11b-CH 12)



6 dB Bandwidth plot (802.11g-CH 11)



6 dB Bandwidth plot (802.11n_HT20-CH 1)



Note:

In order to simplify the report, attached plots were only the most narrow 6 dB BW channel.

9.3 OUTPUT POWER

Peak Power

1. Power Meter offset Attenuator loss(10 dB) + Cable loss
2. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB.
So, 10.47 dB is offset for 2.4 GHz Band

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)	Power Level Setting
Frequency[MHz]	Channel No.				
2412	1	1	20.63	30	20
		2	21.04	30	
		5.5	22.56	30	
		11	23.91	30	
2437	6	1	21.03	30	
		2	21.47	30	
		5.5	22.90	30	
		11	24.35	30	
2462	11	1	21.18	30	
		2	21.54	30	
		5.5	23.03	30	
		11	24.48	30	
2467	12	1	13.59	30	13
		2	14.00	30	
		5.5	15.62	30	
		11	16.96	30	
2472	13	1	13.58	30	
		2	13.92	30	
		5.5	15.51	30	
		11	16.87	30	

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)	Power Level Setting
Frequency[MHz]	Channel No.				
2412	1	6	23.26	30	18
		9	23.10	30	
		12	22.59	30	
		18	23.06	30	
		24	23.32	30	
		36	23.06	30	
		48	20.85	30	16
		54	20.65	30	
2437	6	6	25.33	30	19
		9	25.33	30	
		12	24.81	30	
		18	25.26	30	
		24	25.79	30	
		36	25.48	30	
		48	20.97	30	16
		54	20.75	30	
2462	11	6	25.43	30	18
		9	25.56	30	
		12	24.98	30	
		18	25.39	30	
		24	25.85	30	
		36	25.68	30	
		48	21.21	30	16
		54	21.08	30	
2467	12	6	18.99	30	13
		9	19.03	30	
		12	18.50	30	
		18	18.61	30	
		24	19.23	30	
		36	18.90	30	
		48	18.99	30	
		54	19.05	30	
2472	13	6	17.53	30	12
		9	17.60	30	
		12	17.06	30	
		18	17.47	30	
		24	17.97	30	
		36	17.56	30	
		48	17.63	30	
		54	17.77	30	

802.11n(HT20) Mode		MCS Index	Measured Power(dBm)	Limit (dBm)	Power Level Setting
Frequency[MHz]	Channel No.				
2412	1	0	22.85	30	18
		1	22.71	30	
		2	22.73	30	
		3	23.25	30	
		4	22.85	30	
		5	23.16	30	
		6	20.45	30	16
		7	20.38	30	
2437	6	0	24.75	30	19
		1	24.57	30	
		2	24.79	30	
		3	25.06	30	
		4	24.84	30	
		5	25.00	30	
		6	20.69	30	16
		7	20.41	30	
2462	11	0	24.98	30	18
		1	24.78	30	
		2	25.00	30	
		3	25.14	30	
		4	25.06	30	
		5	25.26	30	
		6	20.71	30	16
		7	20.66	30	
2467	12	0	18.60	30	13
		1	18.41	30	
		2	18.56	30	
		3	18.49	30	
		4	18.43	30	
		5	18.55	30	
		6	18.56	30	
		7	18.41	30	
2472	13	0	14.77	30	10
		1	14.60	30	
		2	14.90	30	
		3	15.15	30	
		4	15.04	30	
		5	15.17	30	
		6	15.15	30	
		7	15.07	30	

Average Power

1. Power Meter offset Attenuator loss(10 dB) + Cable loss
 2. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB.
- So, 10.47 dB is offset for 2.4 GHz Band

802.11b Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)	Power Level Setting
Frequency [MHz]	Channel No.						
2412	1	1	18.29	0.049	18.34	30	20
		2	18.40	0.100	18.50	30	
		5.5	18.20	0.270	18.47	30	
		11	18.09	0.498	18.59	30	
2437	6	1	18.50	0.049	18.55	30	
		2	18.66	0.100	18.76	30	
		5.5	18.41	0.270	18.68	30	
		11	18.27	0.498	18.77	30	
2462	11	1	18.72	0.049	18.77	30	
		2	18.76	0.100	18.86	30	
		5.5	18.62	0.270	18.89	30	
		11	18.41	0.498	18.91	30	
2467	12	1	11.28	0.049	11.32	30	
		2	11.44	0.100	11.54	30	
		5.5	11.24	0.270	11.51	30	
		11	11.06	0.498	11.56	30	
2472	13	1	10.99	0.049	11.04	30	
		2	11.01	0.100	11.11	30	
		5.5	10.92	0.270	11.19	30	
		11	10.71	0.498	11.21	30	

802.11g Mode		Rate (Mbps)	Measured Power (dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)	Power Level Setting
Frequency [MHz]	Channel No.						
2412	1	6	16.28	0.320	16.60	30	18
		9	16.05	0.446	16.50	30	
		12	15.36	0.580	15.94	30	
		18	15.76	0.872	16.63	30	
		24	15.42	1.060	16.48	30	
		36	14.95	1.390	16.34	30	
		48	12.03	1.833	13.86	30	16
		54	11.85	1.996	13.85	30	
2437	6	6	17.24	0.320	17.56	30	19
		9	17.07	0.446	17.52	30	
		12	16.33	0.580	16.91	30	
		18	16.79	0.872	17.66	30	
		24	16.32	1.060	17.38	30	
		36	15.98	1.390	17.37	30	
		48	12.09	1.833	13.92	30	16
54	11.88	1.996	13.88	30			
2462	11	6	16.27	0.320	16.59	30	18
		9	16.14	0.446	16.59	30	
		12	15.53	0.580	16.11	30	
		18	15.87	0.872	16.74	30	
		24	15.62	1.060	16.68	30	
		36	15.12	1.390	16.51	30	
		48	12.30	1.833	14.13	30	16
54	12.12	1.996	14.12	30			
2467	12	6	10.89	0.320	11.21	30	13
		9	10.75	0.446	11.19	30	
		12	10.12	0.580	10.70	30	
		18	10.34	0.872	11.21	30	
		24	9.89	1.060	10.95	30	
		36	9.42	1.390	10.81	30	
		48	9.08	1.833	10.91	30	
54	8.80	1.996	10.80	30			
2472	13	6	9.50	0.320	9.82	30	12
		9	9.29	0.446	9.74	30	
		12	8.62	0.580	9.20	30	
		18	9.01	0.872	9.89	30	
		24	8.49	1.060	9.55	30	
		36	8.01	1.390	9.40	30	
		48	7.67	1.833	9.50	30	
54	7.53	1.996	9.53	30			

802.11n(HT20) Mode		MCS Index	Measured Power (dBm)	Duty Cycle Factor	Measured Power(dBm) + Duty Cycle Factor	Limit (dBm)	Power Level Setting
Frequency [MHz]	Channel No.						
2412	1	0	15.82	0.356	16.18	30	18
		1	15.35	0.665	16.01	30	
		2	15.45	0.989	16.44	30	
		3	15.34	1.184	16.52	30	
		4	14.89	1.576	16.47	30	
		5	14.52	1.952	16.47	30	
		6	11.78	2.089	13.87	30	16
7	11.61	2.246	13.86	30			
2437	6	0	16.58	0.356	16.94	30	19
		1	16.22	0.665	16.88	30	
		2	16.35	0.989	17.34	30	
		3	16.27	1.184	17.45	30	
		4	15.69	1.576	17.27	30	
		5	15.46	1.952	17.41	30	
		6	11.86	2.089	13.95	30	16
7	11.69	2.246	13.94	30			
2462	11	0	15.84	0.356	16.20	30	18
		1	15.53	0.665	16.19	30	
		2	15.60	0.989	16.59	30	
		3	15.45	1.184	16.63	30	
		4	15.02	1.576	16.60	30	
		5	14.64	1.952	16.59	30	
		6	12.07	2.089	14.16	30	16
7	11.90	2.246	14.15	30			
2467	12	0	10.46	0.356	10.82	30	13
		1	10.13	0.665	10.80	30	
		2	10.01	0.989	11.00	30	
		3	9.85	1.184	11.03	30	
		4	9.31	1.576	10.88	30	
		5	8.97	1.952	10.92	30	
		6	8.87	2.089	10.96	30	
7	8.69	2.246	10.94	30			
2472	13	0	6.65	0.356	7.01	30	10
		1	6.25	0.665	6.91	30	
		2	6.34	0.989	7.33	30	
		3	6.45	1.184	7.63	30	
		4	5.94	1.576	7.52	30	
		5	5.61	1.952	7.56	30	
		6	5.50	2.089	7.58	30	
7	5.35	2.246	7.60	30			

9.4 POWER SPECTRAL DENSITY

Mode	Frequency (MHz)	Channel No.	Test Result			Limit (dBm)
			Measured PSD (dBm)	Duty Cycle Factor	Measured PSD(dBm) + Duty Cycle Factor	
802.11b	2412	1	-2.117	0.498	-1.619	8 dBm / 3 kHz
	2437	6	-1.890	0.498	-1.392	
	2462	11	-2.475	0.498	-1.977	
	2467	12	-9.480	0.498	-8.982	
	2472	13	-9.743	0.498	-9.245	
802.11g	2412	1	-6.691	0.872	-5.819	
	2437	6	-6.046	0.872	-5.174	
	2462	11	-6.076	0.872	-5.204	
	2467	12	-12.161	0.872	-11.289	
	2472	13	-13.959	0.872	-13.087	
802.11n(HT20)	2412	1	-7.731	1.184	-6.547	
	2437	6	-6.465	1.184	-5.281	
	2462	11	-6.605	1.184	-5.421	
	2467	12	-12.788	1.184	-11.604	
	2472	13	-15.910	1.184	-14.726	

Note :

1. Spectrum Measured Values are not plot data.

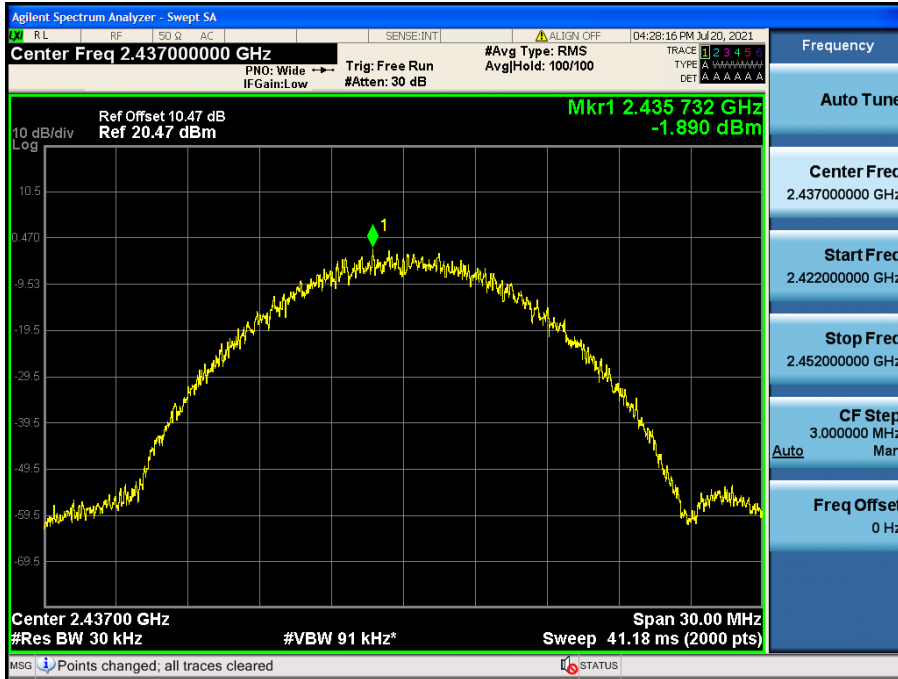
The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.

2. Spectrum offset Attenuator loss(10 dB) + Cable loss

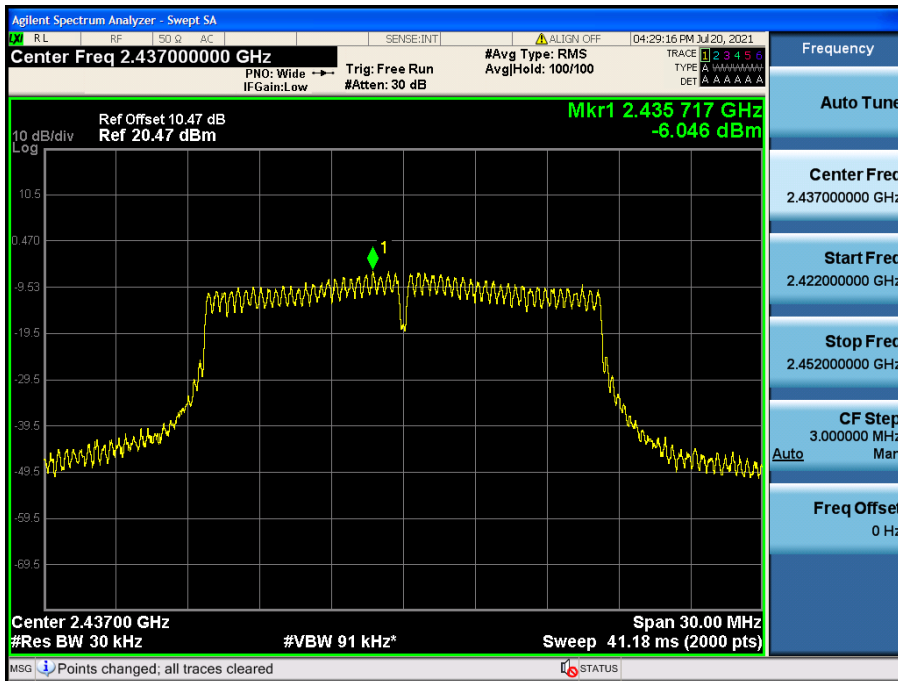
3. 10.47 dB is offset for 2.4 GHz Band

▣ Test Plots

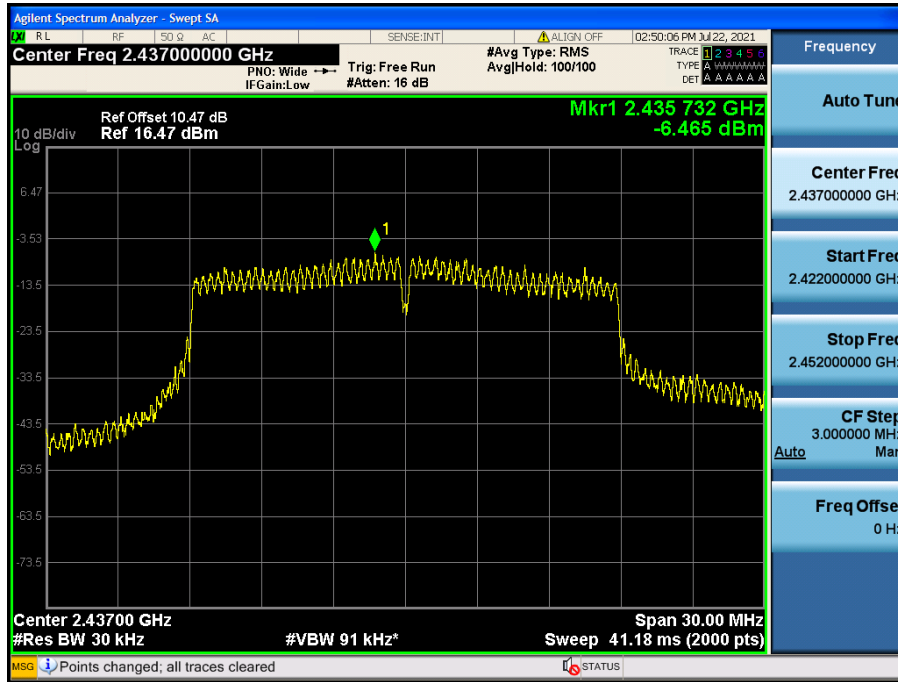
Power Spectral Density (802.11b-CH 6)



Power Spectral Density (802.11g-CH 6)



Power Spectral Density (802.11n_HT20-CH 6)



Note :

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

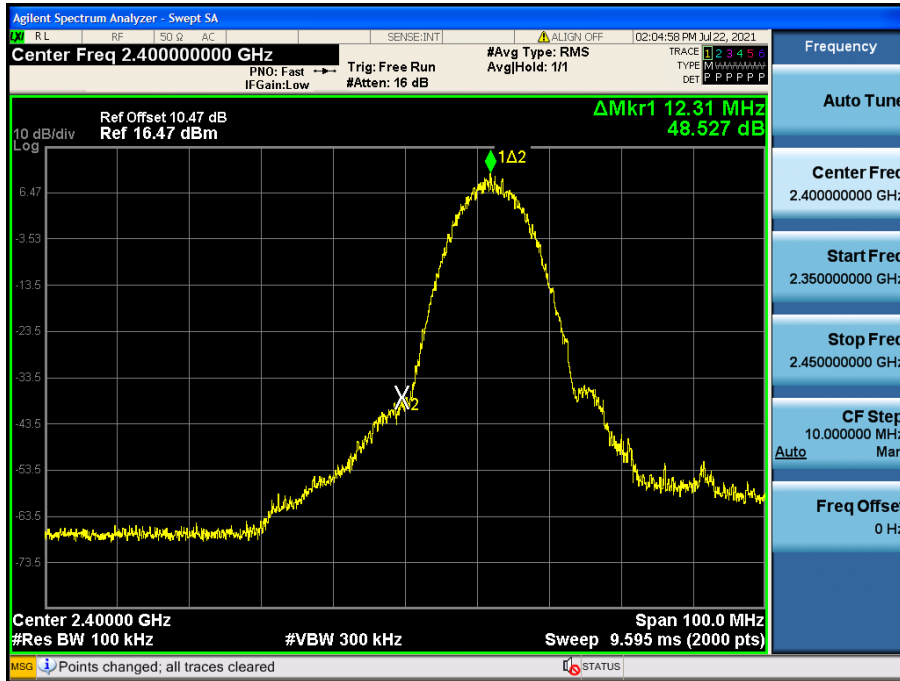
9.5 BAND EDGE / CONDUCTED SPURIOUS EMISSIONS

Test Result : please refer to the plot below.

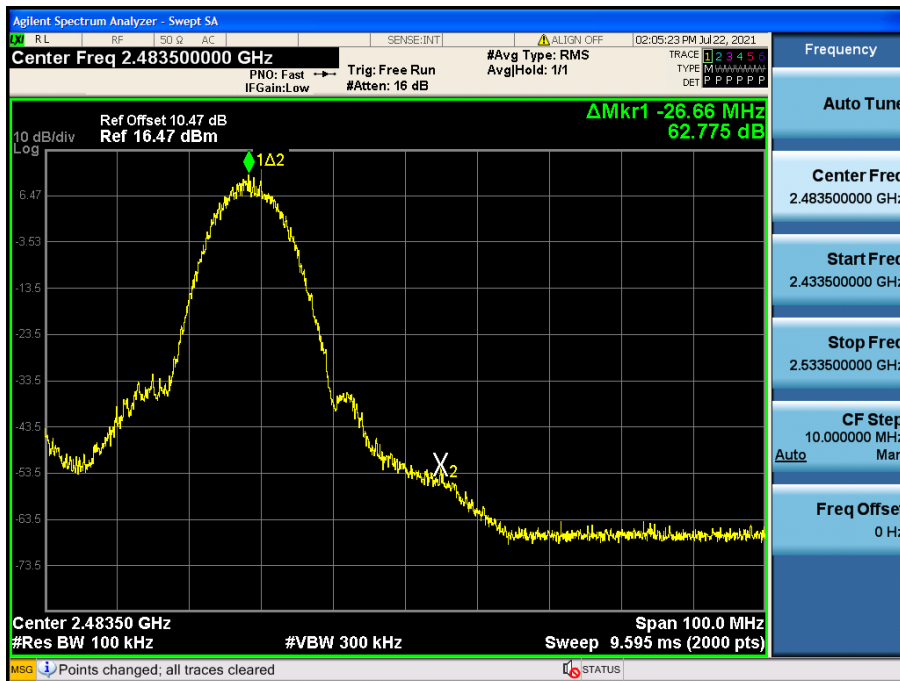
In order to simplify the report, attached plots were only the worst case channel and data rate.

▣ Test Plots(Band Edge)

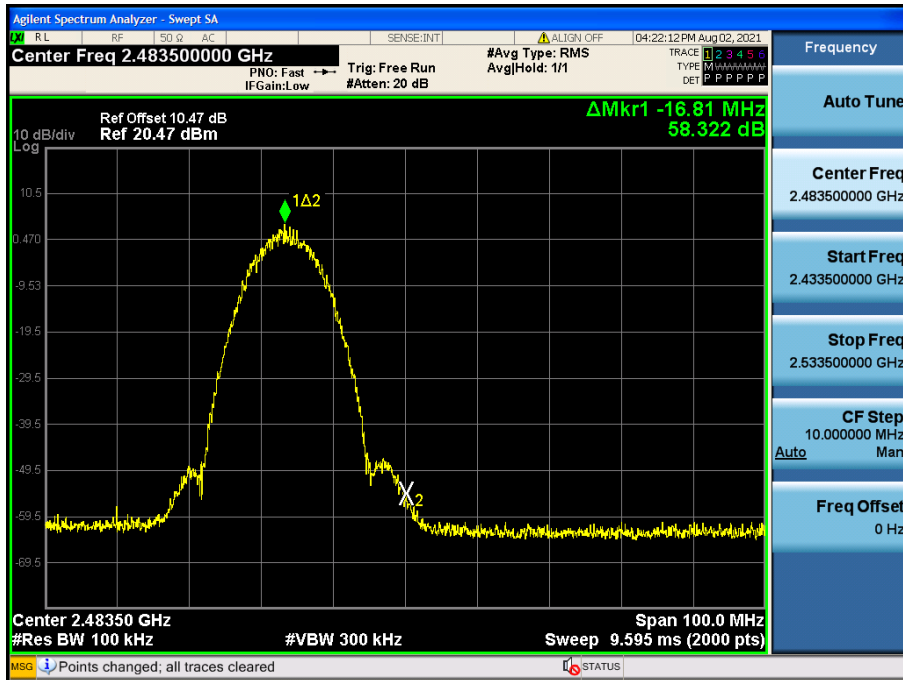
Band Edge (802.11b-CH1)



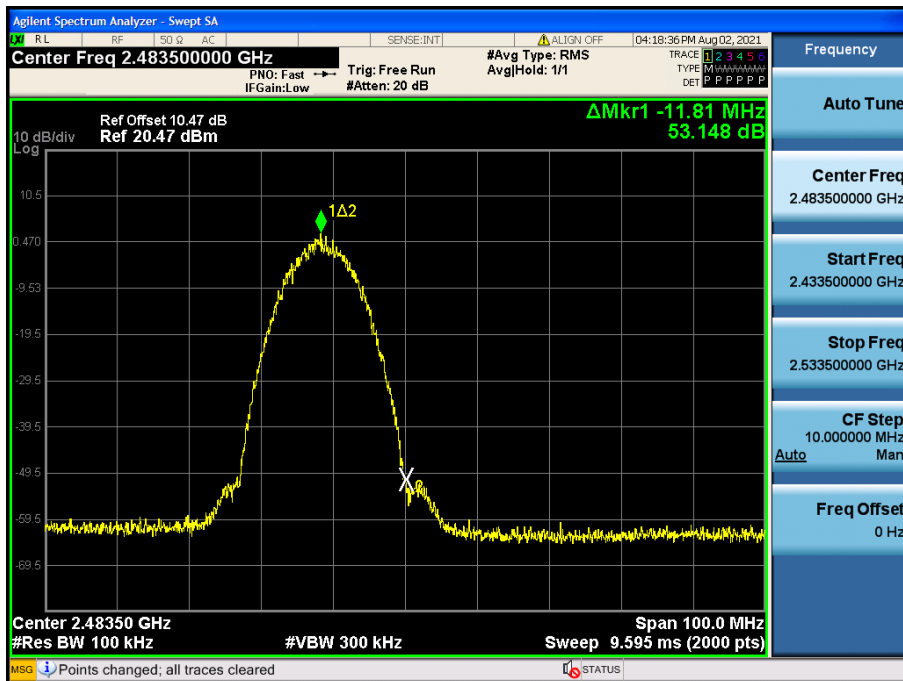
Band Edge (802.11b-CH11)



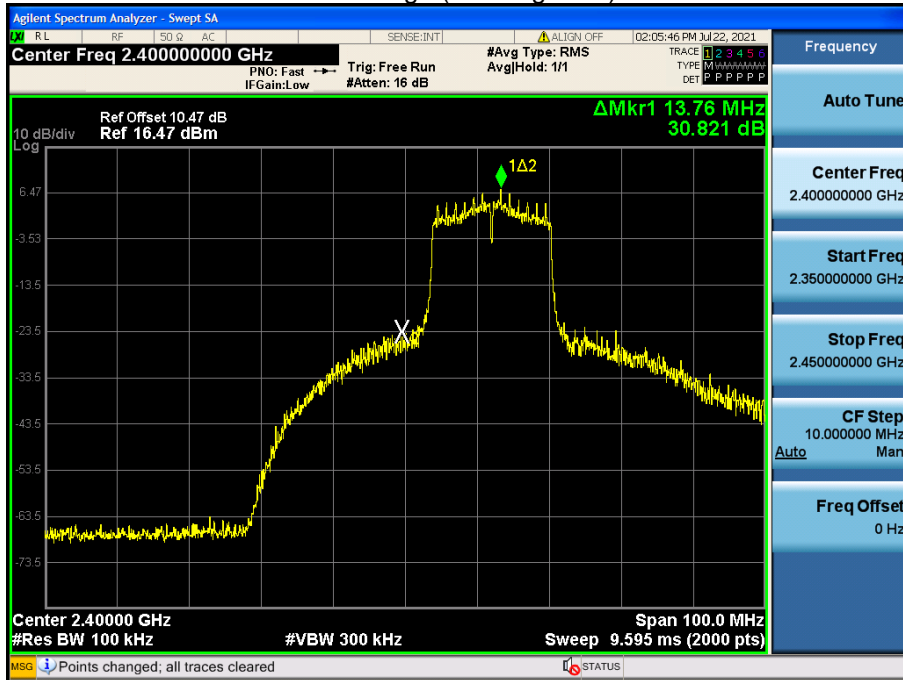
Band Edge (802.11b-CH12)



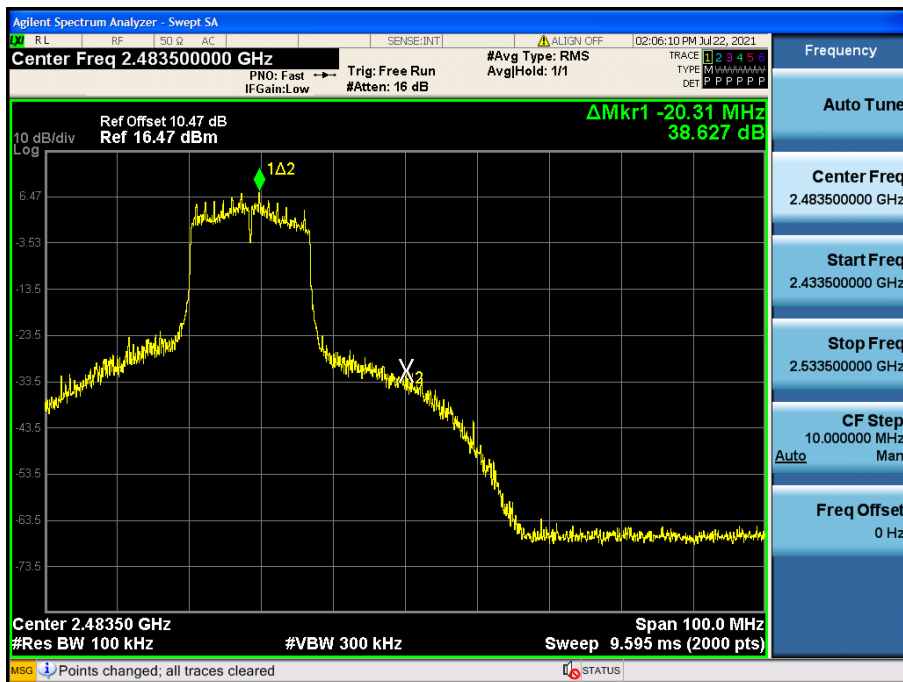
Band Edge (802.11b-CH13)



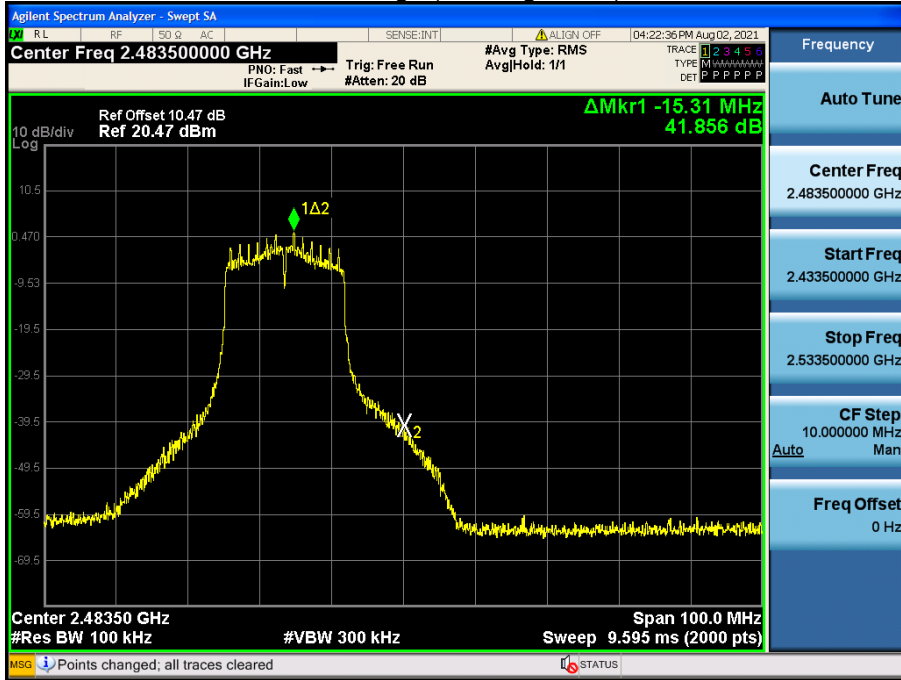
Band Edge (802.11g-CH1)



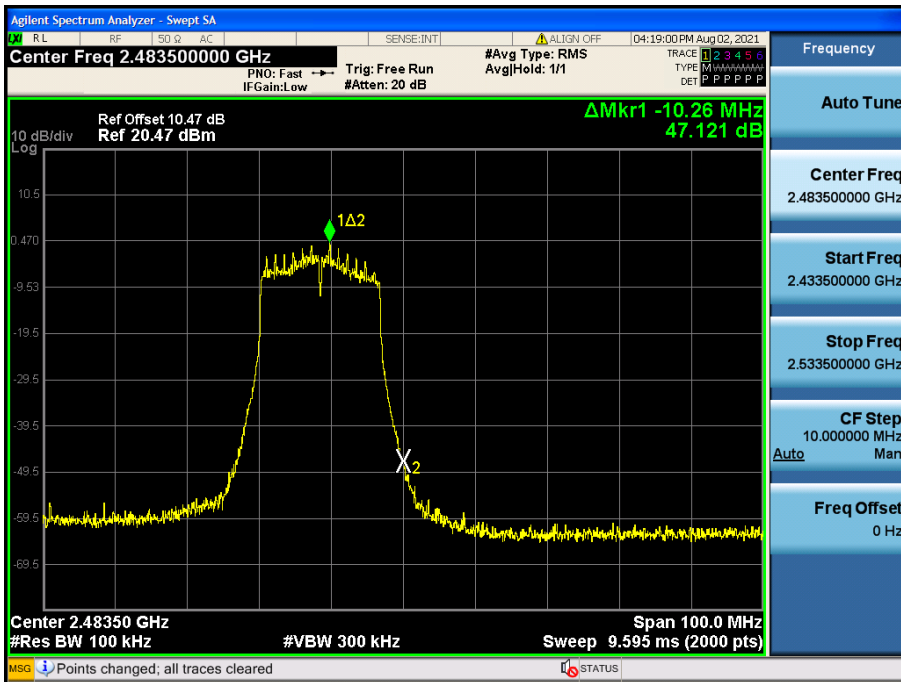
Band Edge (802.11g-CH11)



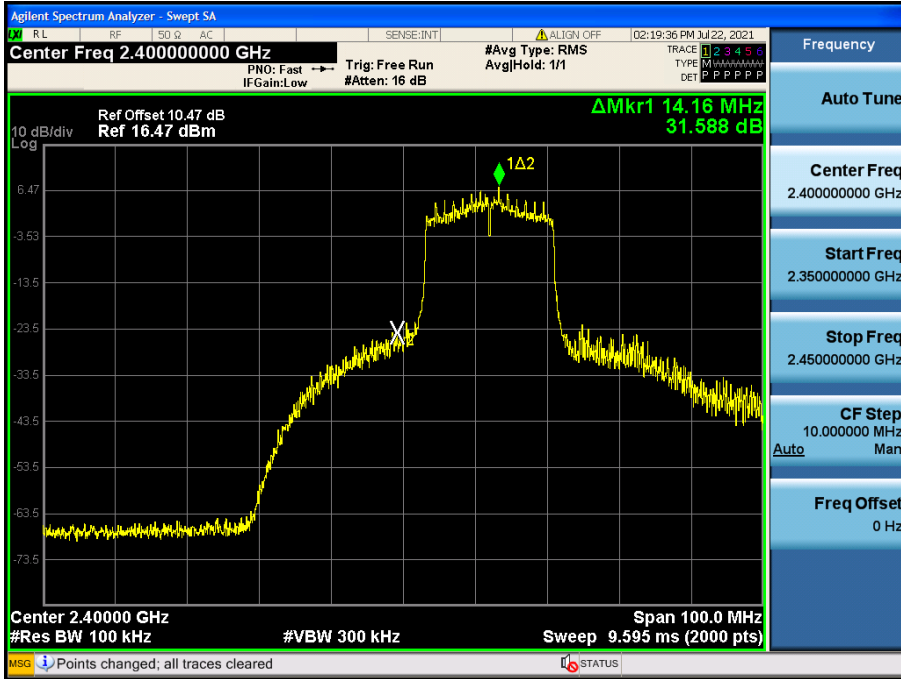
Band Edge (802.11g-CH12)



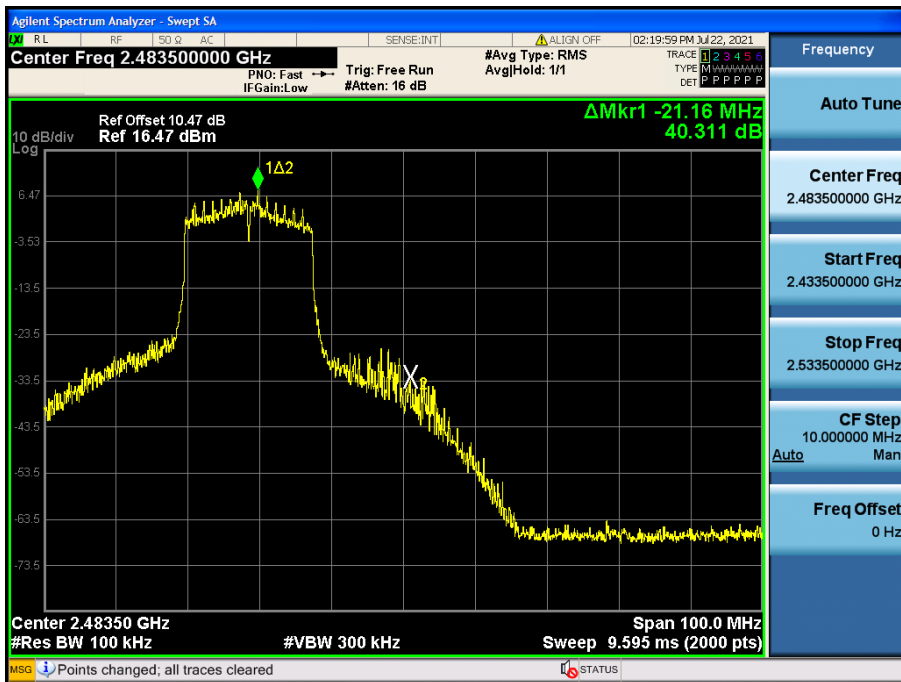
Band Edge (802.11g-CH13)



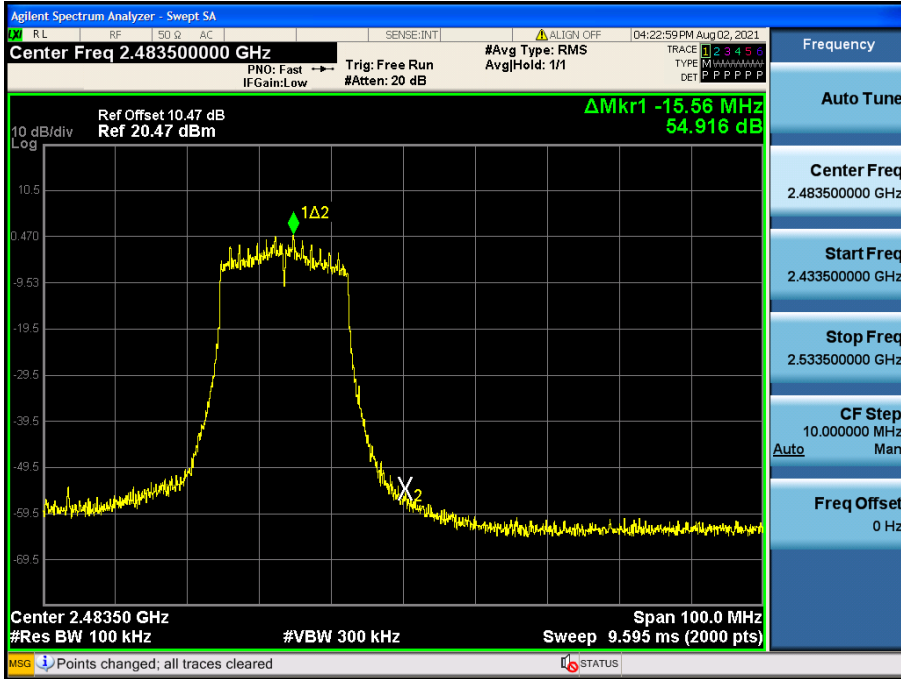
Band Edge (802.11n_HT20 -CH1)



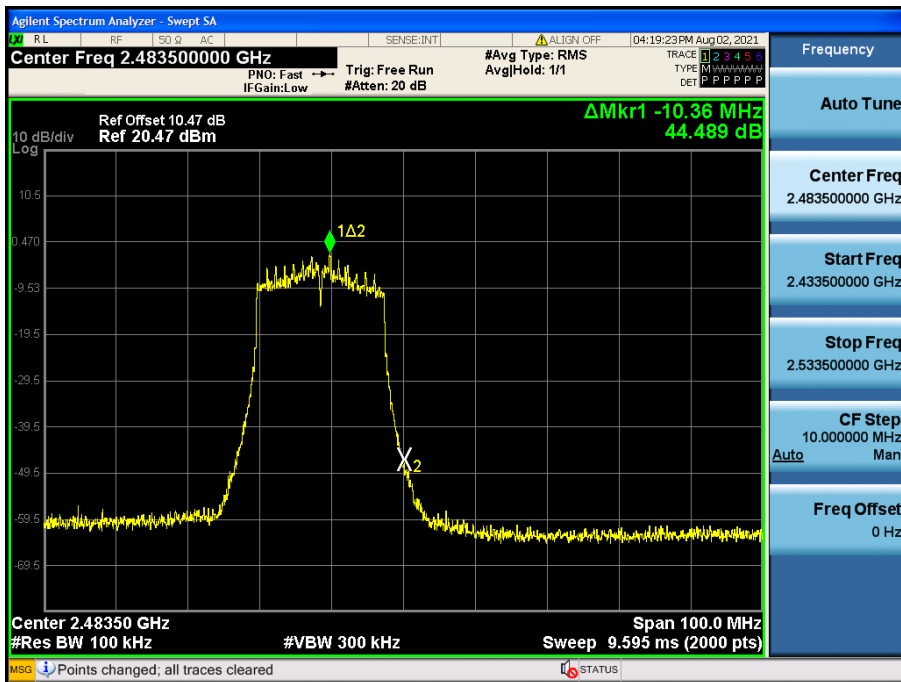
Band Edge (802.11n_HT20 -CH11)



Band Edge (802.11n_HT20 -CH12)



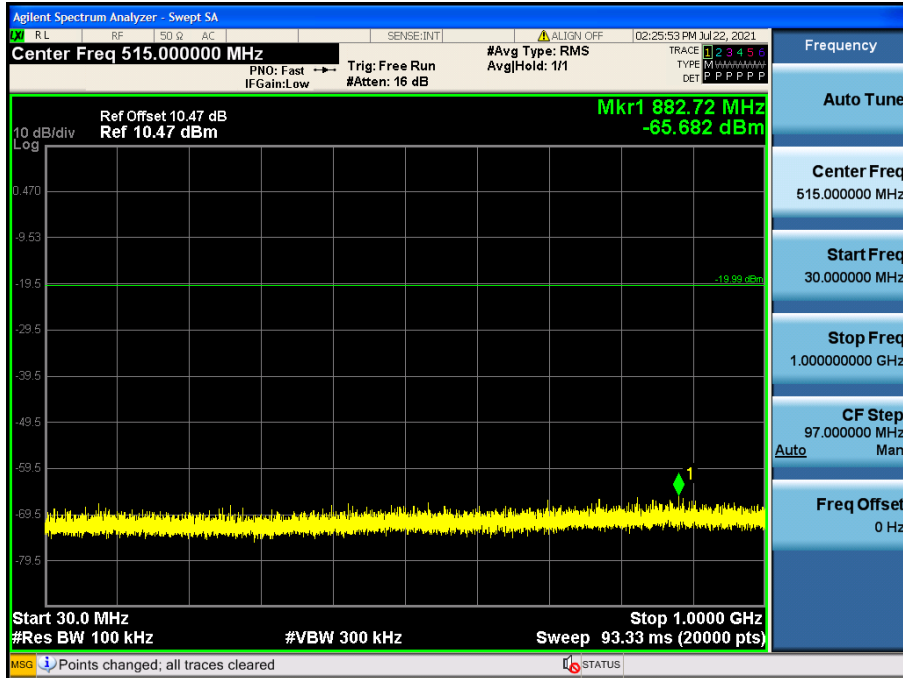
Band Edge (802.11n_HT20 -CH13)



☑ Test Plots(Conducted Spurious Emission)

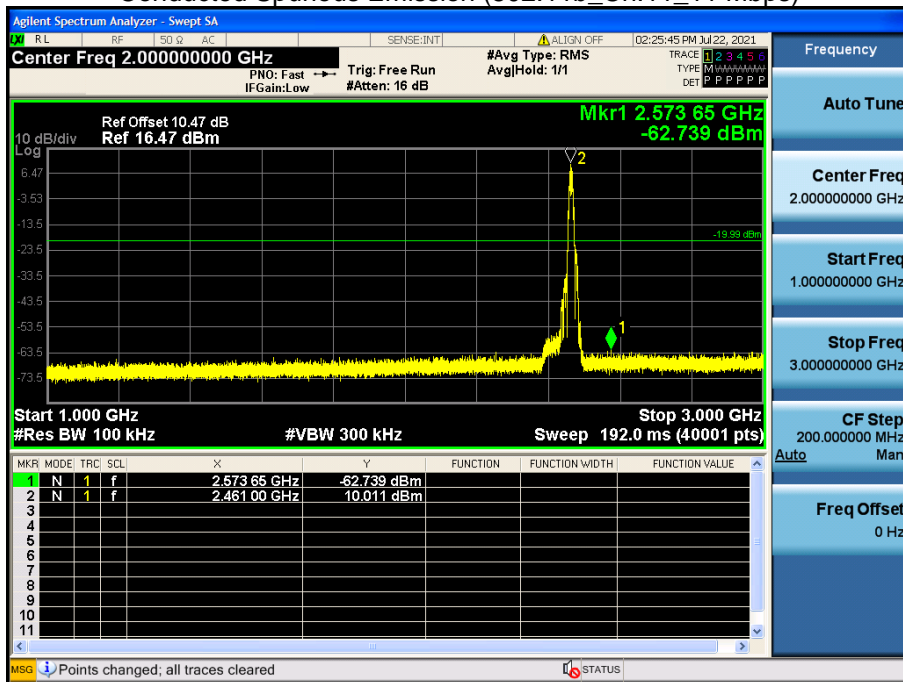
30 MHz ~ 1 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



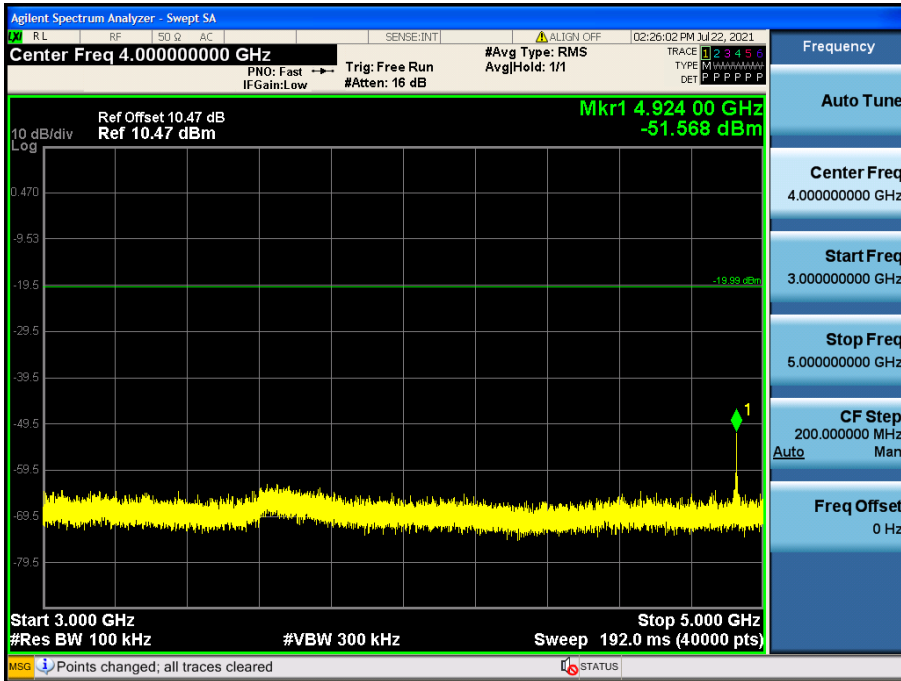
1 GHz ~ 3 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



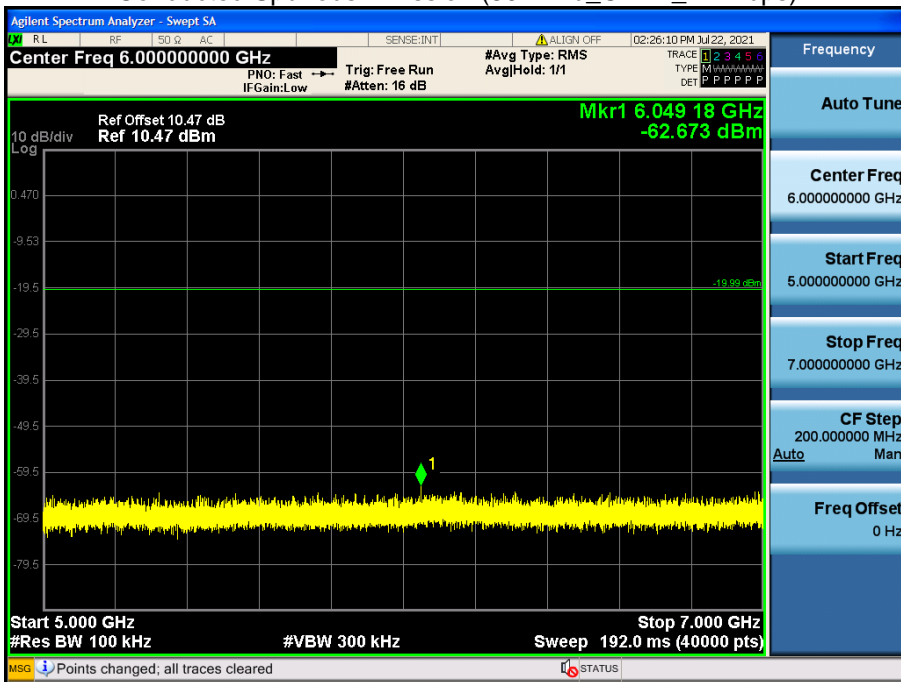
3 GHz ~ 5 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



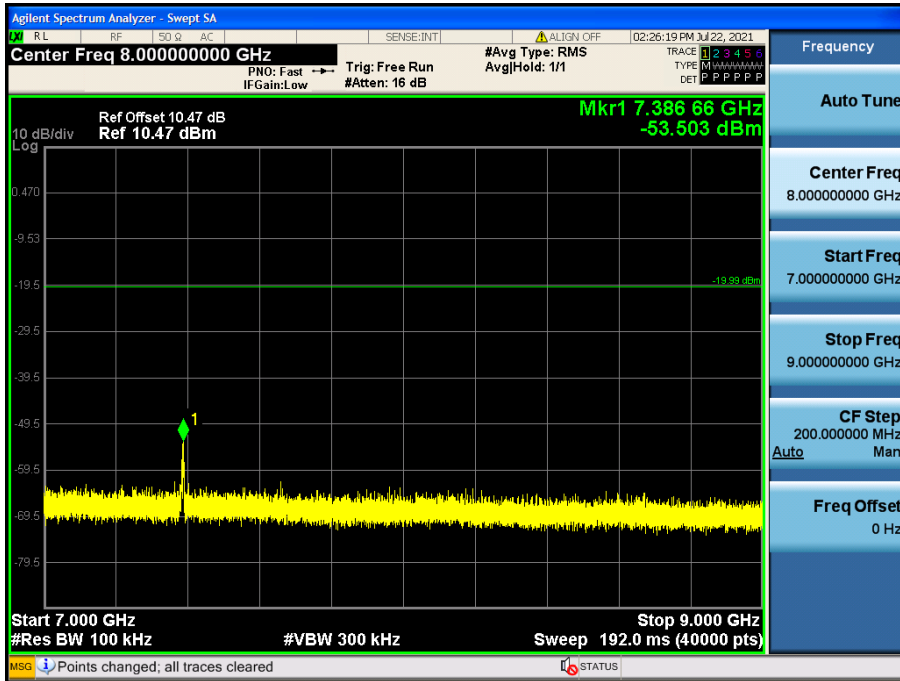
5 GHz ~ 7 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



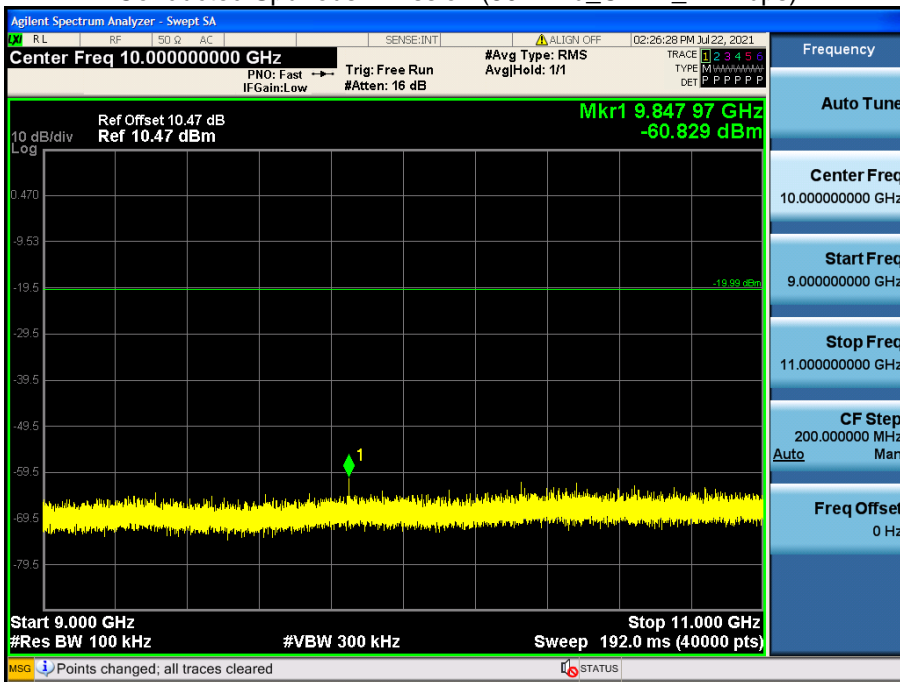
7 GHz ~ 9 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



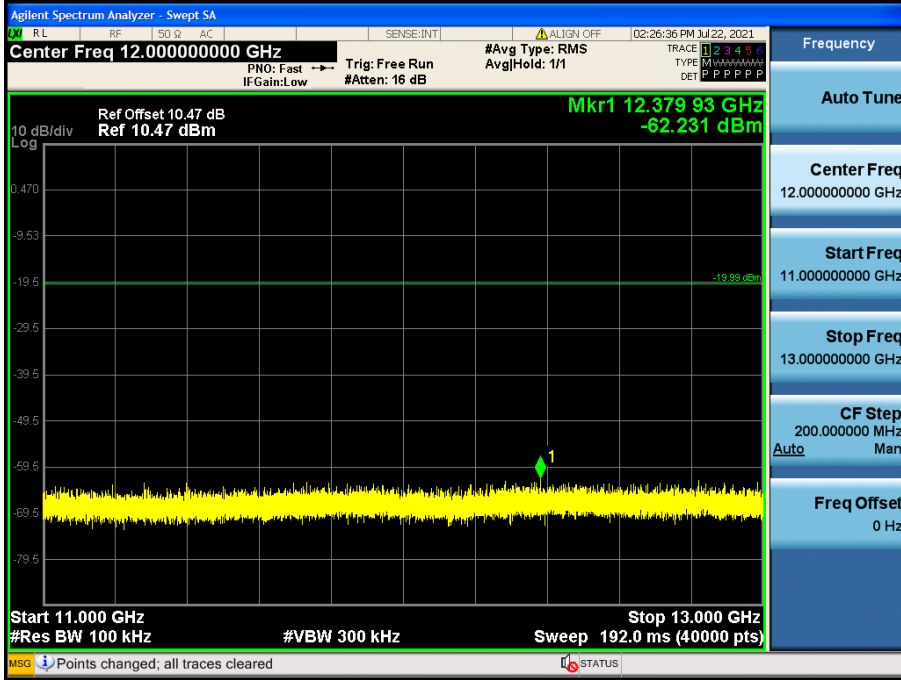
9 GHz ~ 11 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



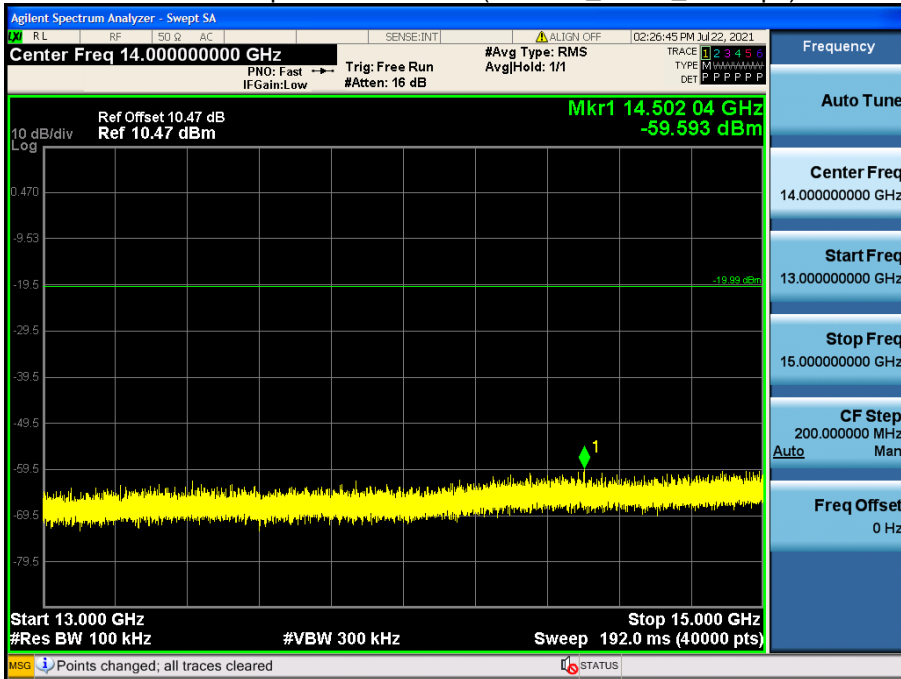
11 GHz ~ 13 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



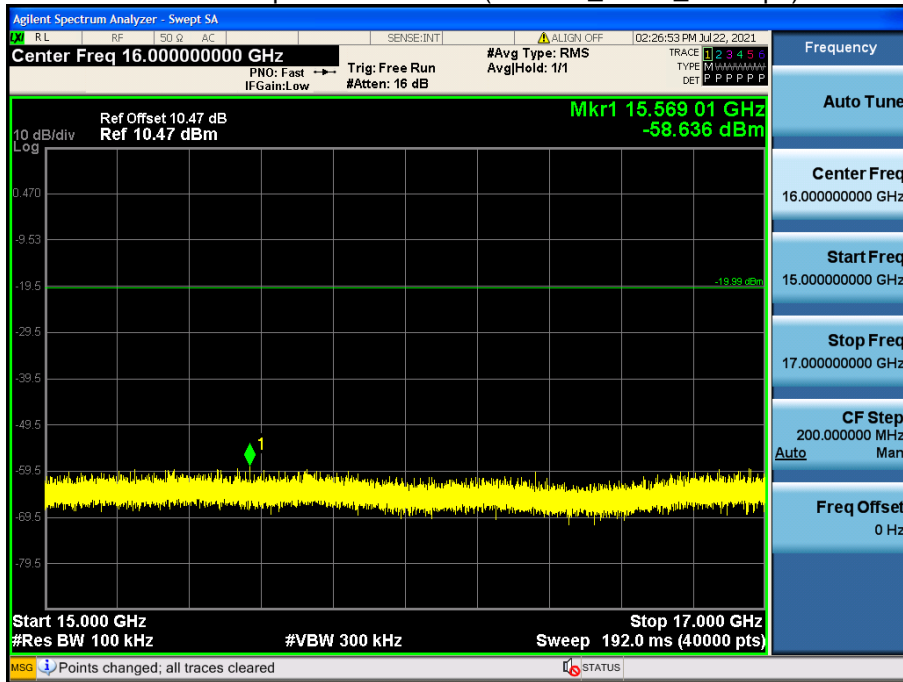
13 GHz ~ 15 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



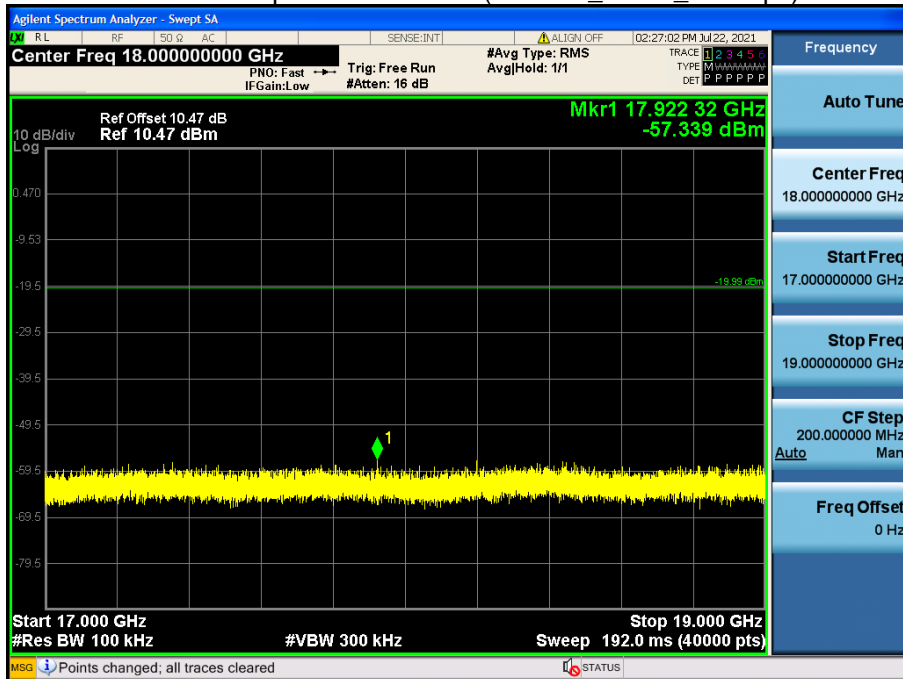
15 GHz ~ 17 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



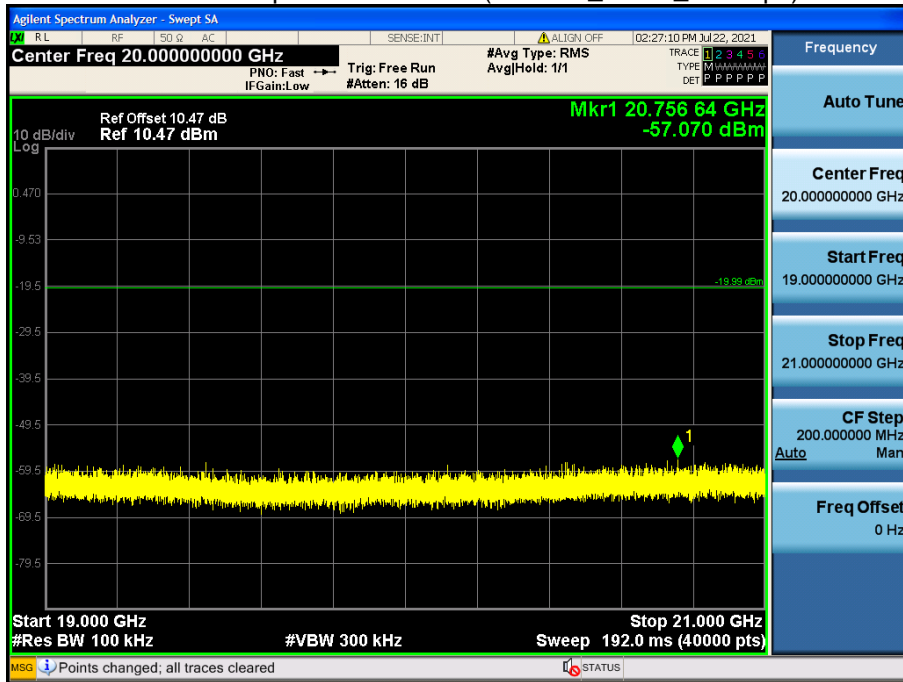
17 GHz ~ 19 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



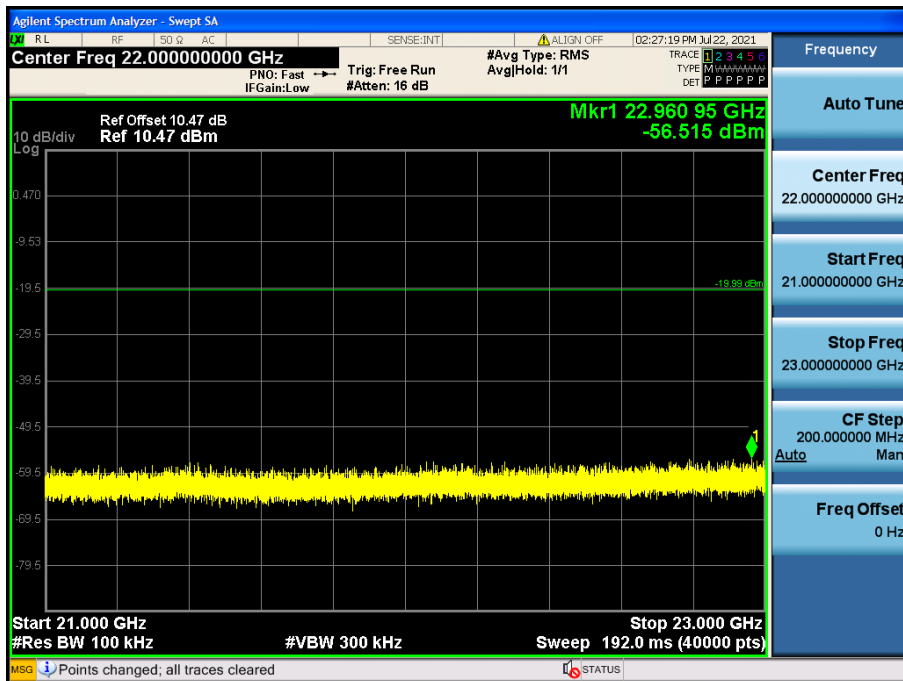
19 GHz ~ 21 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



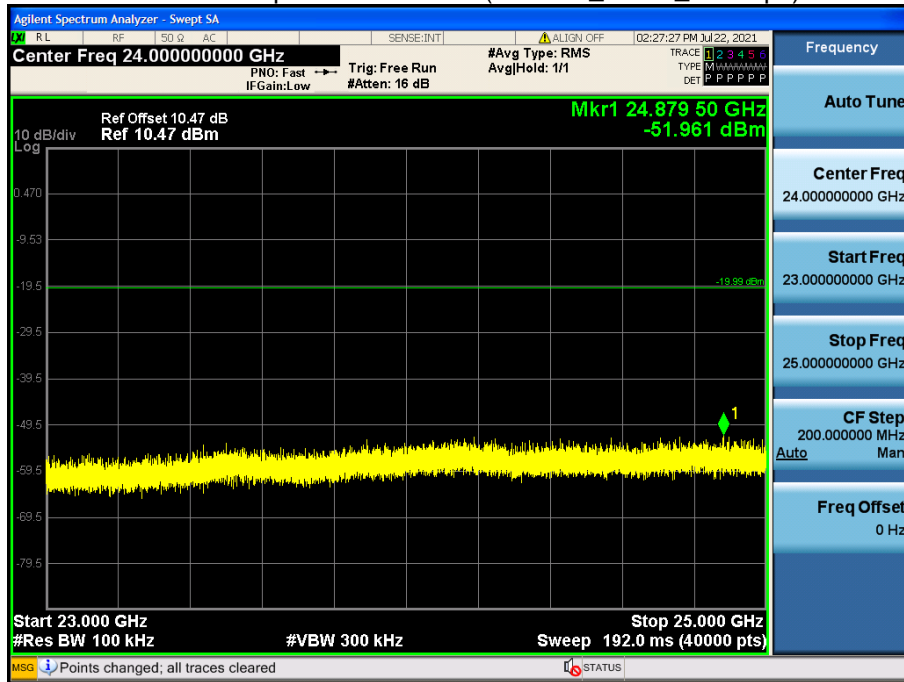
21 GHz ~ 23 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



23 GHz ~ 25 GHz

Conducted Spurious Emission (802.11b_Ch.11_11 Mbps)



9.6 RADIATED SPURIOUS EMISSIONS

Frequency Range : 9 kHz – 30 MHz

Frequency	Measured Value	A.F+C.L+D.F	Ant. POL	Total	Limit	Margin
[MHz]	[dB μ V/m]	[dB/m]	[H/V]	[dB μ V/m]	[dB μ V/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 (dB μ V) + Distance extrapolation factor

Frequency Range : Below 1 GHz

Frequency	Measured Value	A.F+C.L	Ant. POL	Total	Limit	Margin
[MHz]	[dB μ V/m]	[dB/m]	[H/V]	[dB μ V/m]	[dB μ V/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

Operation Mode:	802.11b
Transfer Rate:	1 Mbps
Operating Frequency	2412 MHz
Channel No.	01 Ch

Frequency [MHz]	Measured Value [dB μ V/m]	A.F.+C.L.-A.G + D.F [dB/m]	ANT. POL [H/V]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measurement Type
4824	49.48	3.46	V	52.94	73.98	21.04	PK
4824	45.32	3.46	V	48.78	53.98	5.20	AV
7236	40.85	12.51	V	53.36	73.98	20.62	PK
7236	30.55	12.51	V	43.06	53.98	10.92	AV
4824	50.66	3.46	H	54.12	73.98	19.86	PK
4824	46.51	3.46	H	49.97	53.98	4.01	AV
7236	40.91	12.51	H	53.42	73.98	20.56	PK
7236	30.63	12.51	H	43.14	53.98	10.84	AV

Operation Mode:	802.11b
Transfer Rate:	1 Mbps
Operating Frequency	2437 MHz
Channel No.	06 Ch

Frequency [MHz]	Measured Value [dB μ V/m]	A.F.+C.L.-A.G + D.F [dB/m]	ANT. POL [H/V]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measurement Type
4874	47.25	3.42	V	50.67	73.98	23.31	PK
4874	40.88	3.42	V	44.30	53.98	9.68	AV
7311	42.38	11.76	V	54.14	73.98	19.84	PK
7311	32.52	11.76	V	44.28	53.98	9.70	AV
4874	47.43	3.42	H	50.85	73.98	23.13	PK
4874	40.95	3.42	H	44.37	53.98	9.61	AV
7311	42.41	11.76	H	54.17	73.98	19.81	PK
7311	32.62	11.76	H	44.38	53.98	9.60	AV

Operation Mode:	802.11b
Transfer Rate:	1 Mbps
Operating Frequency	2462 MHz
Channel No.	11 Ch

Frequency [MHz]	Measured Value [dB μ V/m]	A.F.+C.L.-A.G + D.F [dB/m]	ANT. POL [H/V]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measurement Type
4924	46.55	4.55	V	51.10	73.98	22.88	PK
4924	40.87	4.55	V	45.42	53.98	8.56	AV
7386	41.72	12.13	V	53.85	73.98	20.13	PK
7386	32.48	12.13	V	44.61	53.98	9.37	AV
4924	47.17	4.55	H	51.72	73.98	22.26	PK
4924	41.35	4.55	H	45.90	53.98	8.08	AV
7386	41.81	12.13	H	53.94	73.98	20.04	PK
7386	32.68	12.13	H	44.81	53.98	9.17	AV

Note: Channel 12 and 13 are less powerful than channel 11 so the test for high channel was performed at channel 11.

Operation Mode:	<u>802.11g</u>
Transfer Rate:	<u>6 Mbps</u>
Operating Frequency	<u>2412 MHz</u>
Channel No.	<u>01 Ch</u>

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+C.L.- A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	49.85	0.00	3.46	V	53.31	73.98	20.67	PK
4824	32.12	0.32	3.46	V	35.90	53.98	18.08	AV
7236	41.44	0.00	12.51	V	53.95	73.98	20.03	PK
7236	28.54	0.32	12.51	V	41.37	53.98	12.61	AV
4824	49.99	0.00	3.46	H	53.45	73.98	20.53	PK
4824	35.25	0.32	3.46	H	39.03	53.98	14.95	AV
7236	41.59	0.00	12.51	H	54.10	73.98	19.88	PK
7236	28.62	0.32	12.51	H	41.45	53.98	12.53	AV

Operation Mode:	<u>802.11g</u>
Transfer Rate:	<u>6 Mbps</u>
Operating Frequency	<u>2437 MHz</u>
Channel No.	<u>06 Ch</u>

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+C.L.- A.G+D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	44.98	0.00	3.42	V	48.40	73.98	25.58	PK
4874	32.48	0.32	3.42	V	36.22	53.98	17.76	AV
7311	40.85	0.00	11.76	V	52.61	73.98	21.37	PK
7311	29.12	0.32	11.76	V	41.20	53.98	12.78	AV
4874	45.12	0.00	3.42	H	48.54	73.98	25.44	PK
4874	32.68	0.32	3.42	H	36.42	53.98	17.56	AV
7311	40.94	0.00	11.76	H	52.70	73.98	21.28	PK
7311	29.35	0.32	11.76	H	41.43	53.98	12.55	AV

Operation Mode:	802.11g
Transfer Rate:	6 Mbps
Operating Frequency	2462 MHz
Channel No.	11 Ch

Frequency [MHz]	Measured Value [dB μ V/m]	Duty Cycle Factor [dB]	A.F.+C.L. -A.G + D.F [dB/m]	ANT. POL [H/V]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measurement Type
4924	45.32	0.00	4.55	V	49.87	73.98	24.11	PK
4924	32.12	0.32	4.55	V	36.99	53.98	16.99	AV
7386	42.58	0.00	12.13	V	54.71	73.98	19.27	PK
7386	28.75	0.32	12.13	V	41.20	53.98	12.78	AV
4924	45.48	0.00	4.55	H	50.03	73.98	23.95	PK
4924	32.22	0.32	4.55	H	37.09	53.98	16.89	AV
7386	42.72	0.00	12.13	H	54.85	73.98	19.13	PK
7386	28.85	0.32	12.13	H	41.30	53.98	12.68	AV

Note: Channel 12 and 13 are less powerful than channel 11 so the test for high channel was performed at channel 11.

Operation Mode: 802.11n (HT20)
 Transfer MCS Index: 0
 Operating Frequency: 2412 MHz
 Channel No.: 01 Ch

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F.+C.L.-A.G + D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4824	49.78	0.00	3.46	V	53.24	73.98	20.74	PK
4824	34.32	0.36	3.46	V	38.14	53.98	15.84	AV
7236	40.52	0.00	12.51	V	53.03	73.98	20.95	PK
7236	28.22	0.36	12.51	V	41.09	53.98	12.89	AV
4824	49.96	0.00	3.46	H	53.42	73.98	20.56	PK
4824	34.44	0.36	3.46	H	38.26	53.98	15.72	AV
7236	40.62	0.00	12.51	H	53.13	73.98	20.85	PK
7236	28.32	0.36	12.51	H	41.19	53.98	12.79	AV

Operation Mode: 802.11n (HT20)
 Transfer MCS Index: 0
 Operating Frequency: 2437 MHz
 Channel No.: 06 Ch

Frequency [MHz]	Measured Value [dBμV]	Duty Cycle Factor [dB]	A.F.+C.L.-A.G + D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
4874	44.88	0.00	3.42	V	48.30	73.98	25.68	PK
4874	32.02	0.36	3.42	V	35.80	53.98	18.18	AV
7311	41.68	0.00	11.76	V	53.44	73.98	20.54	PK
7311	28.65	0.36	11.76	V	40.77	53.98	13.21	AV
4874	45.02	0.00	3.42	H	48.44	73.98	25.54	PK
4874	32.15	0.36	3.42	H	35.93	53.98	18.05	AV
7311	41.71	0.00	11.76	H	53.47	73.98	20.51	PK
7311	28.85	0.36	11.76	H	40.97	53.98	13.01	AV

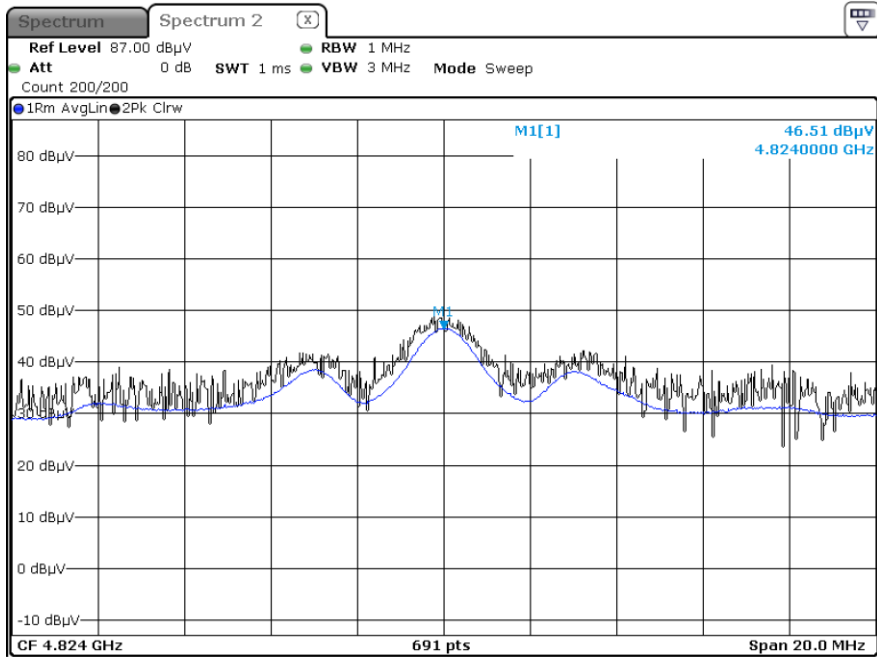
Operation Mode:	802.11n (HT20)
Transfer MCS Index:	0
Operating Frequency	2462 MHz
Channel No.	11 Ch

Frequency [MHz]	Measure d value [dB μ V]	Duty Cycle Factor [dB]	A.F.+C.L.- A.G + D.F [dB/m]	ANT. POL [H/V]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measure ment Type
4924	45.98	0.00	4.55	V	50.53	73.98	23.45	PK
4924	31.52	0.36	4.55	V	36.43	53.98	17.55	AV
7386	41.12	0.00	12.13	V	53.25	73.98	20.73	PK
7386	28.02	0.36	12.13	V	40.51	53.98	13.47	AV
4924	46.13	0.00	4.55	H	50.68	73.98	23.30	PK
4924	31.68	0.36	4.55	H	36.59	53.98	17.39	AV
7386	41.22	0.00	12.13	H	53.35	73.98	20.63	PK
7386	28.25	0.36	12.13	H	40.74	53.98	13.24	AV

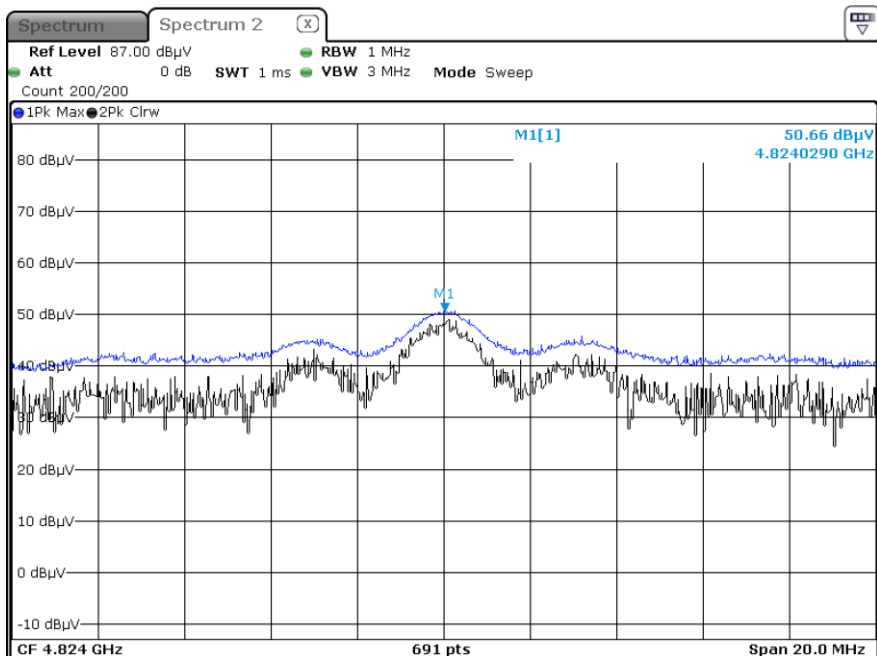
Note: Channel 12 and 13 are less powerful than channel 11 so the test for high channel was performed at channel 11.

▣ Test Plots (Worst case : Y-H)

Radiated Spurious Emissions plot – Average Result (802.11b_1 Mbps, Ch.1 2nd Harmonic)



Radiated Spurious Emissions plot – Peak Result (802.11b_1 Mbps, Ch.1 2nd Harmonic)



Note: Plot of worst case are only reported.

9.7 RADIATED RESTRICTED BAND EDGES

Operation Mode:	802.11b
Transfer Rate:	1 Mbps
Operating Frequency	2412 MHz, 2462 MHz
Channel No.	01 Ch, 11 Ch

Frequency [MHz]	Measured Value [dB μ V]	A.F.+ C.L+ D.F [dB/m]	ANT. POL [H/V]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measurement Type
2390.0	21.216	34.04	H	55.26	73.98	18.72	PK
2390.0	11.244	34.04	H	45.28	53.98	8.70	AV
2390.0	21.087	34.04	V	55.13	73.98	18.85	PK
2390.0	11.178	34.04	V	45.22	53.98	8.76	AV
2483.5	21.045	35.00	H	56.05	73.98	17.94	PK
2483.5	10.348	35.00	H	45.35	53.98	8.63	AV
2483.5	21.641	35.00	V	56.64	73.98	17.34	PK
2483.5	10.521	35.00	V	45.52	53.98	8.46	AV

Operation Mode:	802.11b
Transfer Rate:	1 Mbps
Operating Frequency	2467 MHz
Channel No.	12 Ch

Frequency [MHz]	Measured Value [dB μ V/m]	A.F.+ C.L+ D.F [dB/m]	ANT. POL [H/V]	Total [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]	Measurement Type
2483.5	21.713	35.00	H	56.71	73.98	17.27	PK
2483.5	10.341	35.00	H	45.34	53.98	8.64	AV
2483.5	21.685	35.00	V	56.69	73.98	17.30	PK
2483.5	10.222	35.00	V	45.22	53.98	8.76	AV

Operation Mode:	802.11b
Transfer Rate:	1 Mbps
Operating Frequency	2472 MHz
Channel No.	13 Ch

Frequency [MHz]	Measured Value [dBμV/m]	A.F.+ C.L+ D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	25.479	35.00	H	60.48	73.98	13.50	PK
2483.5	11.472	35.00	H	46.47	53.98	7.51	AV
2483.5	25.325	35.00	V	60.33	73.98	13.66	PK
2483.5	11.215	35.00	V	46.22	53.98	7.76	AV

Operation Mode: 802.11g
Transfer Rate: 6 Mbps
Operating Frequency: 2412 MHz, 2462 MHz
Channel No.: 01 Ch, 11 Ch

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+ C.L+ D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	24.899	0.00	34.04	H	58.94	73.98	15.04	PK
2390.0	14.115	0.32	34.04	H	48.48	53.98	5.51	AV
2390.0	24.675	0.00	34.04	V	58.72	73.98	15.27	PK
2390.0	14.078	0.32	34.04	V	48.44	53.98	5.54	AV
2483.5	25.133	0.00	35.00	H	60.13	73.98	13.85	PK
2483.5	13.672	0.32	35.00	H	48.99	53.98	4.99	AV
2483.5	25.213	0.00	35.00	V	60.21	73.98	13.77	PK
2483.5	13.705	0.32	35.00	V	49.03	53.98	4.96	AV

Operation Mode: 802.11g
Transfer Rate: 6 Mbps
Operating Frequency: 2467 MHz
Channel No.: 12 Ch

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+ C.L+ D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	17.723	0.00	35.00	H	52.72	73.98	21.26	PK
2483.5	7.768	0.32	35.00	H	43.09	53.98	10.89	AV
2483.5	17.689	0.00	35.00	V	52.69	73.98	21.29	PK
2483.5	7.685	0.32	35.00	V	43.01	53.98	10.98	AV

Operation Mode:	802.11g
Transfer Rate:	6 Mbps
Operating Frequency	2472 MHz
Channel No.	13 Ch

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+ D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	30.809	0.00	35.00	H	65.81	73.98	8.17	PK
# 2483.5~2484.5	16.020	0.32	35.00	H	51.34	53.98	2.64	AV
2484.5	14.176	0.32	35.00	H	49.50	53.98	4.48	AV
2483.5	29.785	0.00	35.00	V	64.79	73.98	9.20	PK
# 2483.5~2484.5	15.850	0.32	35.00	V	51.17	53.98	2.81	AV
2484.5	13.985	0.32	35.00	V	49.31	53.98	4.68	AV

Note : integration method Used (ANSI C63.10 Section11.13.3)

Operation Mode: 802.11n (HT20)
Transfer Rate: 0
Operating Frequency: 2412 MHz, 2462 MHz
Channel No.: 01 Ch, 11 Ch

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+ C.L+ D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2390.0	25.552	0.00	34.04	H	59.59	73.98	14.39	PK
2390.0	14.574	0.36	34.04	H	48.97	53.98	5.01	AV
2390.0	25.342	0.00	34.04	V	59.38	73.98	14.60	PK
2390.0	14.497	0.36	34.04	V	48.89	53.98	5.09	AV
2483.5	24.003	0.00	35.00	H	59.00	73.98	14.98	PK
2483.5	12.049	0.36	35.00	H	47.41	53.98	6.58	AV
2483.5	24.118	0.00	35.00	V	59.12	73.98	14.86	PK
2483.5	12.125	0.36	35.00	V	47.48	53.98	6.50	AV

Operation Mode: 802.11n (HT20)
Transfer Rate: 0
Operating Frequency: 2467 MHz
Channel No.: 12 Ch

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+C.L.+ D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	25.892	0.00	35.00	H	60.89	73.98	13.09	PK
2483.5	14.217	0.36	35.00	H	49.57	53.98	4.41	AV
2483.5	25.785	0.00	35.00	V	60.79	73.98	13.20	PK
2483.5	14.125	0.36	35.00	V	49.48	53.98	4.50	AV

Operation Mode:	802.11n (HT20)
Transfer Rate:	0
Operating Frequency	2472 MHz
Channel No.	13 Ch

Frequency [MHz]	Measured Value [dBμV/m]	Duty Cycle Factor [dB]	A.F.+C.L. + D.F [dB/m]	ANT. POL [H/V]	Total [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Measurement Type
2483.5	30.321	0.00	35.00	H	65.32	73.98	8.66	PK
#2483.5~2484.5	15.180	0.36	35.00	H	50.54	53.98	3.44	AV
2484.5	13.407	0.36	35.00	H	48.76	53.98	5.22	AV
2483.5	30.025	0.00	35.00	V	65.03	73.98	8.96	PK
#2483.5~2484.5	14.890	0.36	35.00	V	50.25	53.98	3.73	AV
2484.5	13.125	0.36	35.00	V	48.48	53.98	5.50	AV

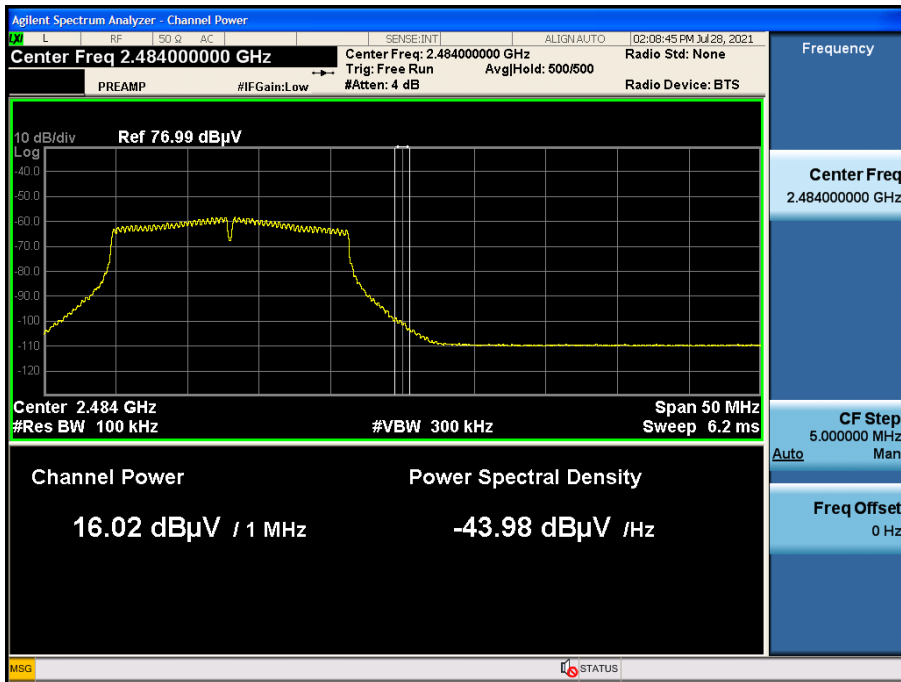
Note : integration method Used (ANSI C63.10 Section11.13.3)

■ Test Plots

(Worst case : Z-V)

Radiated Restricted Band Edges plot – Average Result (802.11g_6 Mbps Ch.13)

Integration method Used_2483.5 MHz ~ 2484.5 MHz



Radiated Restricted Band Edges plot – Peak Result (802.11g_6 Mbps Ch.13)

2483.5 MHz ~ 2500 MHz



Radiated Restricted Band Edges plot – Average Result (802.11g_6 Mbps Ch.13)
2484.5 MHz ~ 2500 MHz



Note:

Plot of worst case are only reported.

9.8 POWERLINE CONDUCTED EMISSIONS

Conducted Emissions (Line 1)

Test

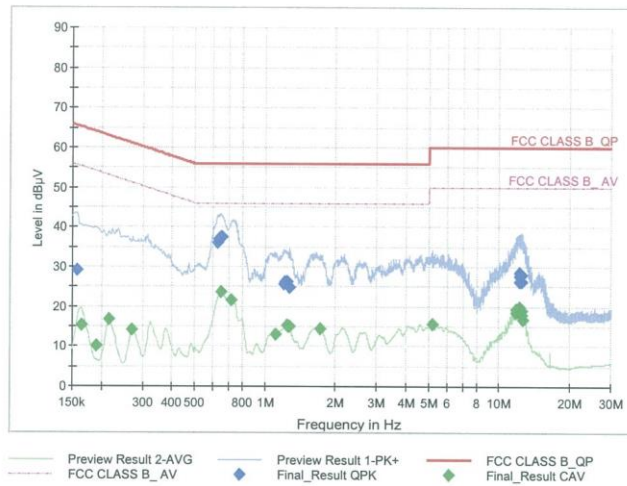
1 / 2

Test Report

Common Information

EUT : SM-M526B/DS
 Manufacturer : SAMSUNG
 Test Site: SHIELD ROOM
 Operating Conditions : 2.4GHz WLAN L1 MODE
 Operator Name:
 Comment:

Full Spectrum



Final Result QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1568	29.01	66.63	36.63	9.000	L1	OFF	9.6
0.6283	36.11	56.00	19.89	9.000	L1	OFF	9.7
0.6350	36.95	56.00	19.05	9.000	L1	OFF	9.7
0.6418	37.16	56.00	18.84	9.000	L1	OFF	9.7
0.6463	37.41	56.00	18.59	9.000	L1	OFF	9.7
0.6530	37.49	56.00	18.51	9.000	L1	OFF	9.7
1.2020	25.72	56.00	30.28	9.000	L1	OFF	9.7
1.2088	26.00	56.00	30.00	9.000	L1	OFF	9.7
1.2155	26.14	56.00	29.86	9.000	L1	OFF	9.7
1.2313	26.09	56.00	29.91	9.000	L1	OFF	9.7
1.2448	26.29	56.00	29.71	9.000	L1	OFF	9.7
1.2785	24.79	56.00	31.21	9.000	L1	OFF	9.7
12.1393	26.34	60.00	33.66	9.000	L1	OFF	10.1
12.2203	27.55	60.00	32.45	9.000	L1	OFF	10.1
12.2630	28.46	60.00	31.54	9.000	L1	OFF	10.1
12.2788	28.28	60.00	31.72	9.000	L1	OFF	10.1
12.4363	28.05	60.00	31.95	9.000	L1	OFF	10.1
12.5443	26.17	60.00	33.83	9.000	L1	OFF	10.2

2021-07-26

오전 9:47:14

Test

2 / 2

Final Result CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1635	15.42	55.28	39.86	9.000	L1	OFF	9.6
0.1905	9.97	54.02	44.05	9.000	L1	OFF	9.6
0.2153	16.67	53.00	36.33	9.000	L1	OFF	9.6
0.2693	14.10	51.14	37.04	9.000	L1	OFF	9.6
0.6463	23.76	46.00	22.24	9.000	L1	OFF	9.7
0.7183	21.66	46.00	24.34	9.000	L1	OFF	9.7
1.1120	13.12	46.00	32.88	9.000	L1	OFF	9.7
1.2380	15.32	46.00	30.68	9.000	L1	OFF	9.7
1.2515	15.11	46.00	30.89	9.000	L1	OFF	9.7
1.2763	14.86	46.00	31.14	9.000	L1	OFF	9.7
1.7308	14.31	46.00	31.69	9.000	L1	OFF	9.7
5.1598	15.69	50.00	34.31	9.000	L1	OFF	9.9
11.7365	18.39	50.00	31.61	9.000	L1	OFF	10.1
11.8175	19.19	50.00	30.81	9.000	L1	OFF	10.1
12.2630	19.86	50.00	30.14	9.000	L1	OFF	10.1
12.4498	18.92	50.00	31.08	9.000	L1	OFF	10.1
12.5420	17.84	50.00	32.16	9.000	L1	OFF	10.2
12.6208	16.81	50.00	33.19	9.000	L1	OFF	10.2

2021-07-26

오전 9:47:14

Conducted Emissions (Line 2)

Test

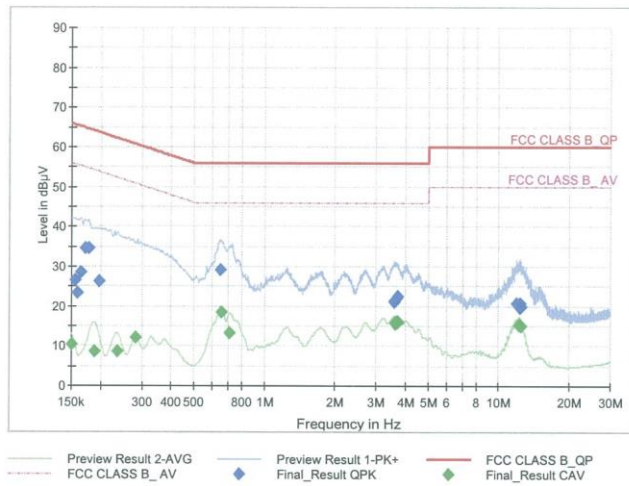
1 / 2

Test Report

Common Information

EUT : SM-M526B/DS
 Manufacturer : SAMSUNG
 Test Site: SHIELD ROOM
 Operating Conditions : 2.4GHz WLAN N MODE
 Operator Name:
 Comment:

Full Spectrum



Final Result QPK

Frequency (MHz)	QuasiPeak (dBµV)	Limit (dBµV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1545	26.53	65.75	39.23	9.000	N	OFF	9.6
0.1590	23.36	65.52	42.16	9.000	N	OFF	9.6
0.1635	28.59	65.28	36.69	9.000	N	OFF	9.6
0.1725	34.47	64.84	30.37	9.000	N	OFF	9.6
0.1770	34.75	64.63	29.88	9.000	N	OFF	9.6
0.1973	26.34	63.73	37.38	9.000	N	OFF	9.6
0.6463	28.99	56.00	27.01	9.000	N	OFF	9.6
3.5803	20.95	56.00	35.05	9.000	N	OFF	9.8
3.5960	21.23	56.00	34.77	9.000	N	OFF	9.8
3.6410	22.01	56.00	33.99	9.000	N	OFF	9.8
3.6613	22.01	56.00	33.99	9.000	N	OFF	9.8
3.6658	21.92	56.00	34.08	9.000	N	OFF	9.8
3.6973	22.37	56.00	33.63	9.000	N	OFF	9.8
11.9458	20.65	60.00	39.35	9.000	N	OFF	10.2
12.2855	20.76	60.00	39.24	9.000	N	OFF	10.2
12.3643	19.55	60.00	40.45	9.000	N	OFF	10.2
12.3823	19.94	60.00	40.06	9.000	N	OFF	10.2
12.4340	20.02	60.00	39.98	9.000	N	OFF	10.2

2021-07-26

오전 9:59:13

Test

2 / 2

Final Result_CAV

Frequency (MHz)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.1500	10.35	56.00	45.65	9.000	N	OFF	9.6
0.1883	8.52	54.11	45.60	9.000	N	OFF	9.6
0.2355	8.74	52.25	43.51	9.000	N	OFF	9.6
0.2828	12.23	50.74	38.50	9.000	N	OFF	9.6
0.6530	18.32	46.00	27.68	9.000	N	OFF	9.6
0.7115	13.30	46.00	32.70	9.000	N	OFF	9.6
3.6005	15.81	46.00	30.19	9.000	N	OFF	9.8
3.6073	15.64	46.00	30.36	9.000	N	OFF	9.8
3.6545	15.79	46.00	30.21	9.000	N	OFF	9.8
3.6905	15.81	46.00	30.19	9.000	N	OFF	9.8
3.6950	15.86	46.00	30.14	9.000	N	OFF	9.8
3.6995	16.05	46.00	29.95	9.000	N	OFF	9.8
12.2608	15.28	50.00	34.72	9.000	N	OFF	10.2
12.2653	15.21	50.00	34.79	9.000	N	OFF	10.2
12.2698	15.18	50.00	34.82	9.000	N	OFF	10.2
12.2810	15.16	50.00	34.84	9.000	N	OFF	10.2
12.4340	15.04	50.00	34.96	9.000	N	OFF	10.2
12.4385	15.02	50.00	34.98	9.000	N	OFF	10.2

2021-07-26

오전 9:59:13

10. LIST OF TEST EQUIPMENT

Conducted Test

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Rohde & Schwarz	ENV216 / LISN	09/04/2020	Annual	102245
Rohde & Schwarz	ESR / EMI Test Receiver	06/17/2021	Annual	101910
ESPAAC	SU-642 / Temperature Chamber	03/15/2021	Annual	0093008124
Agilent	N9030A / Signal Analyzer	01/11/2021	Annual	MY49431210
Rohde & Schwarz	OSP 120 / Power Measurement Set	07/02/2021	Annual	101231
Agilent	N1911A / Power Meter	04/08/2021	Annual	MY45100523
Keysight	N1921A / Power Sensor	04/08/2021	Annual	MY57820067
Agilent	87300B / Directional Coupler	11/10/2020	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	05/20/2021	Annual	05001
Hewlett Packard	E3632A / DC Power Supply	02/16/2021	Annual	MY50360067
Hewlett Packard	8493C / Attenuator(10 dB)	06/18/2021	Annual	07560
Rohde & Schwarz	EMC32 / Software	N/A	N/A	N/A
HCT CO., LTD.	FCC WLAN&BT&BLE Conducted Test Software v3.0	N/A	N/A	N/A

Note:

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

Radiated Test

Manufacturer	Model / Equipment	Calibration Date	Calibration Interval	Serial No.
Innco system	CO3000 / Controller(Antenna mast)	N/A	N/A	CO3000-4p
Innco system	MA4640/800-XP-EP / Antenna Position Tower	N/A	N/A	N/A
Audix	EM1000 / Controller	N/A	N/A	060520
Audix	Turn Table	N/A	N/A	N/A
Rohde & Schwarz	Loop Antenna	03/19/2020	Biennial	1513-333
Schwarzbeck	VULB 9168 / Hybrid Antenna	02/22/2021	Biennial	760
Schwarzbeck	BBHA 9120D / Horn Antenna	05/19/2020	Biennial	02299
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	11/29/2019	Biennial	BBHA9170541
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	07/05/2021	Annual	102168
Agilent	N9030A / Signal Analyzer	01/11/2021	Annual	MY49431210
Wainwright Instruments	WRCJV12-4900-5100-5900-6100-50SS	06/24/2021	Annual	5
Wainwright Instruments	WRCJV12-4900-5100-5900-6100-50SS	06/24/2021	Annual	6
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	01/06/2021	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	02/08/2021	Annual	1
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	02/03/2021	Annual	8
Wainwright Instruments	WHKX8-6090-7000-18000-40SS/ High Pass Filter	02/03/2021	Annual	25
Api tech.	18B-03 / Attenuator (3 dB)	02/03/2021	Annual	1
Agilent	8493C-10 / Attenuator(10 dB)	02/03/2021	Annual	08285
CERNEX	CBLU1183540 / Power Amplifier	02/03/2021	Annual	22964
CERNEX	CBL06185030 / Power Amplifier	02/03/2021	Annual	22965
CERNEX	CBL18265035 / Power Amplifier	12/04/2020	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	03/23/2021	Annual	25956

Note:

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

11. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2108-FC013-P