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FCC UNII REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Date of Issue:
October 29, 2020

Test Site/Location:
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA

Report No.: HCT-RF-2010-FC013

FCC ID:	**A3LSMG991U**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Model:	SM-G991U
Additional Model:	SM-G991U1
EUT Type:	Mobile Phone
Modulation type	OFDMA
FCC Classification:	Unlicensed National Information Infrastructure(NII)
FCC Rule Part(s):	Part 15.407

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.

REVIEWED BY

Report prepared by : Jung Ki Lim
Engineer of Telecommunication Testing Center

Report approved by : Jong Seok Lee
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)

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-2010-FC013	October 29, 2020	- First Approval Report

Table of Contents

1. GENERAL INFORMATION

EUT DESCRIPTION

Model	SM-G991U	
Additional Model	SM-G991U1	
EUT Type	Mobile Phone	
Power Supply	DC 3.88 V	
Battery Information	Model: EB-BG991ABY Type: Li-ion Battery	
Travel Adapter Information	Model : EP-TA800 Manufacture: DONGYANG E&P	
Data Cable Information	Model : EP-DN980BBZ Manufacture: RF-Tech	
Ear-jack Information	Model : YBD-19HS-026 Manufacture: ALMUS	
Modulation Type	OFDMA	
Frequency Range (MHz)	U-NII-1	20MHz BW : 5180 - 5240 40MHz BW : 5190 - 5230 80MHz BW : 5210
	U-NII-2A	20MHz BW : 5260 - 5320 40MHz BW : 5270 - 5310 80MHz BW : 5290
	U-NII-2C	20MHz BW : 5500 - 5720 40MHz BW : 5510 - 5710 80MHz BW : 5530 – 5690
	U-NII-3	20MHz BW : 5745 - 5825 40MHz BW : 5755 - 5795 80MHz BW : 5775
Antenna Specification	Antenna type Ant.1: Metal, Ant.2: LDS	
	Peak Gain	
	Ant.1 UNII 1: -6.71 dBi UNII 2A: -6.55 dBi UNII 2C: -6.66 dBi UNII 3: -6.69 dBi	Ant.2 UNII 1: -7.11 dBi UNII 2A: -6.59 dBi UNII 2C: -6.30 dBi UNII 3: -7.30 dBi
Straddle channel	Supported	
TDWR Band	Supported	
Dynamic Frequency Selection	Slave without radar detection	
Date(s) of Tests	September 15, 2020 ~ October 28, 2020	

ANTENNA CONFIGURATIONS

1. The device employs MIMO technology. Below are the possible configurations

Configurations	SISO		SDM	CDD
	Ant1	Ant2	Ant1 + Ant2	Ant1 + Ant2
802.11ax	X	X	O	O

Note:

(1) O = Support, X = Not Support

(2) SISO = Single Input Single Output

(3) SDM = Spatial Diversity Multiplexing

(4) CDD = Cyclic Delay Diversity

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

RSDB Scenario	2.4 GHz WiFi Ant.1	2.4 GHz WiFi Ant.2	5GHz WiFi Ant.1	5GHz WiFi Ant.2	Test Case
2.4 GHz WiFi + 5GHz WiFi MIMO		On	On	On	1
2.4 GHz WiFi MIMO + 5GHz WiFi MIMO	On	On	On	On	2

Non-DBS	5GHz WiFi Ant.1	5GHz WiFi Ant.2	Bluetooth	Test Case
5GHz WiFi MIMO + Bluetooth	On	On	On	3

3. Directional Gain Calculation

According to KDB 662911 D01 Multiple Transmitter Output v02r01 F) 2) f) (ii)

Directional gain =

- $$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

Band	Ant Gain (dBi)		N_{ANT}/ N_{ss}	Directional Gain (dBi)
UNII 1	ANT.1	-6.71	2 / 2	-3.90
	ANT.2	-7.11		
UNII 2A	ANT.1	-6.55	2 / 2	-3.56
	ANT.2	-6.59		
UNII 2C	ANT.1	-6.66	2 / 2	-3.47
	ANT.2	-6.30		
UNII 3	ANT.1	-6.69	2 / 2	-3.98
	ANT.2	-7.30		

2. MAXIMUM OUTPUT POWER

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

Band	Mode	SUM (MIMO Ant 1 + MIMO Ant 2) Power	
		(dBm)	(W)
UNII1	802.11ax (HE20)	15.50	0.035
	802.11ax (HE40)	13.44	0.022
	802.11ax (HE80)	12.33	0.017
UNII2A	802.11ax (HE20)	15.89	0.039
	802.11ax (HE40)	13.83	0.024
	802.11ax (HE80)	12.63	0.018
UNII2C	802.11ax (HE20)	15.98	0.040
	802.11ax (HE40)	13.95	0.025
	802.11ax (HE80)	12.96	0.020
UNII3	802.11ax (HE20)	15.98	0.040
	802.11ax (HE40)	13.92	0.025
	802.11ax (HE80)	12.93	0.020

3. TEST METHODOLOGY

The measurement procedure described in FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01 dated December 14, 2017 entitled “Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part15, Subpart E” and ANSI C63.10(Version : 2013) ‘the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices’ were used in the measurement.

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. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz 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 1GHz. Above 1GHz with 1.5m 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.

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 C63.5 (Version : 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, 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).

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 CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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."

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

(2) The E.U.T Complies with the requirement of §15.203, §15.407

7. 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.

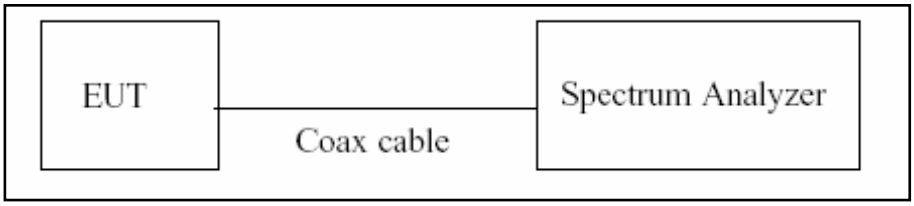
The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.82
Radiated Disturbance (9 kHz ~ 30 MHz)	3.40
Radiated Disturbance (30 MHz ~ 1 GHz)	4.80
Radiated Disturbance (1 GHz ~ 18 GHz)	5.70
Radiated Disturbance (18 GHz ~ 40 GHz)	5.05

8. DESCRIPTION OF TESTS

8.1. Duty Cycle

Test Configuration



Test Procedure

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure B.2 in KDB 789033 D02 v02r01.

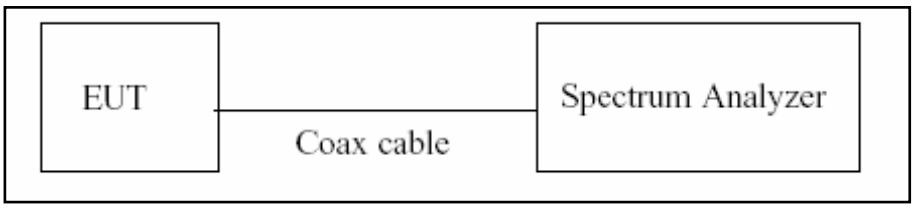
1. RBW = 8 MHz (the largest availble value)
2. VBW = 8 MHz (≥ RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on}/ T_{total} and Duty Cycle Factor = 10log(1/Duty Cycle)

8.2. 6dB Bandwidth & 26dB Bandwidth

Limit

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

Test Configuration



Test Procedure(26dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure C.1 in KDB 789033 D02 v02r01.

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 (6dB Bandwidth)

The transmitter output is connected to the Spectrum Analyzer.

We tested according to Procedure C.2 in KDB 789033 D02 v02r01.

1. RBW = 100 kHz
2. VBW ≥ 3 x 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 lever 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.

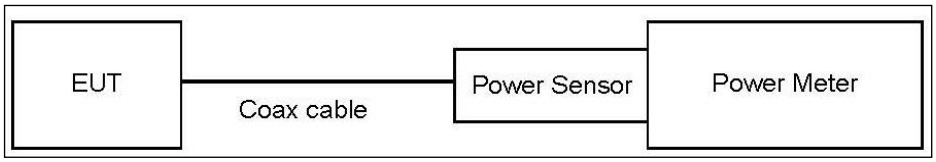
8.3. Output Power Measurement

Limit

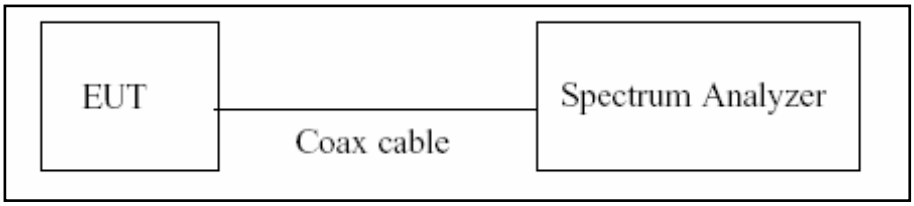
Band	Limit
UNII 1	- Master : Not exceed 1 W(=30dBm) - Slave : Not exceed 250 mW(=23.98 dBm)
UNII 2A, 2C	Not exceed the lesser of 250 mW or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
UNII 3	Not exceed 1 W(=30dBm)

Test Configuration

Power Meter



Spectrum Analyzer(Only Straddle Channel)



Test Procedure(Power Meter)

We tested according to Procedure E.3.a in KDB 789033 D02 v02r01.

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)

The transmitter output is connected to the Spectrum Analyzer.

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

We tested according to Procedure E.2.d) in KDB 789033 D02 v02r01.

1. Measure the duty cycle.
2. Set span to encompass the 26 dB EBW of the signal.
3. RBW = 1 MHz.
4. VBW ≥ 3 MHz.
5. Number of points in sweep ≥ 2 x span/RBW.
6. Sweep time = auto.
7. Detector = 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 10log(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) = Reading Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum reading values are not plot data.
   The power results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss(20 dB) + Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	20.50
UNII 2A	20.50
UNII 2C	20.50
UNII 3	20.50

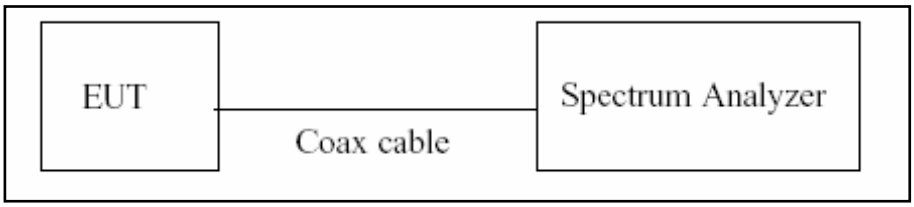
(Actual value of loss for the attenuator and cable combination)

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

We tested according to Procedure F in KDB 789033 D02 v02r01.

1. Set span to encompass the entire emission bandwidth(EBW) of the signal.
2. RBW = 1 MHz(510 kHz for UNII 3)
3. VBW ≥ 3 MHz
4. Number of points in sweep ≥ 2 x span/RBW.
5. Sweep time = auto.
6. Detector = RMS(i.e., power averaging), if available. Otherwise, use sample detector 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) = Reading Value(dBm) + ATT loss(dB) + Cable loss(dB) + Duty Cycle Factor(dB)

Note

1. Spectrum reading 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(20 dB) + Cable loss
3. Actual value of loss for the attenuator and cable combination is below table.

Band	Loss(dB)
UNII 1	20.50
UNII 2A	20.50
UNII 2C	20.50
UNII 3	20.50

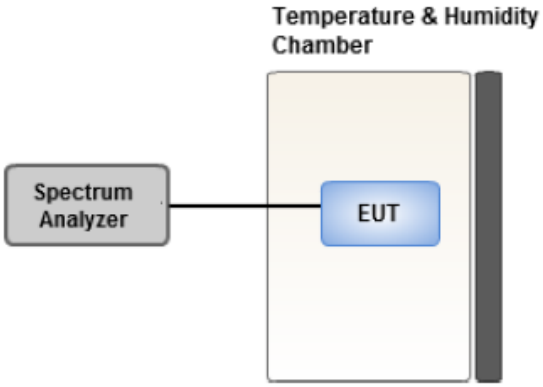
(Actual value of loss for the attenuator and cable combination)

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 ℃ and 50 ℃.
2. The temperature was incremented by 10 ℃ 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 battety 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 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) = Reading 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.

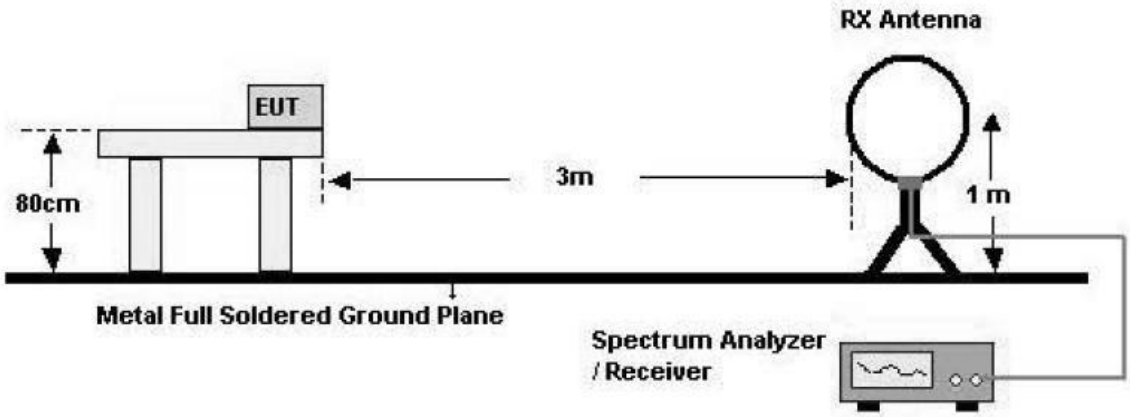
3. UNII 3: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below 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.

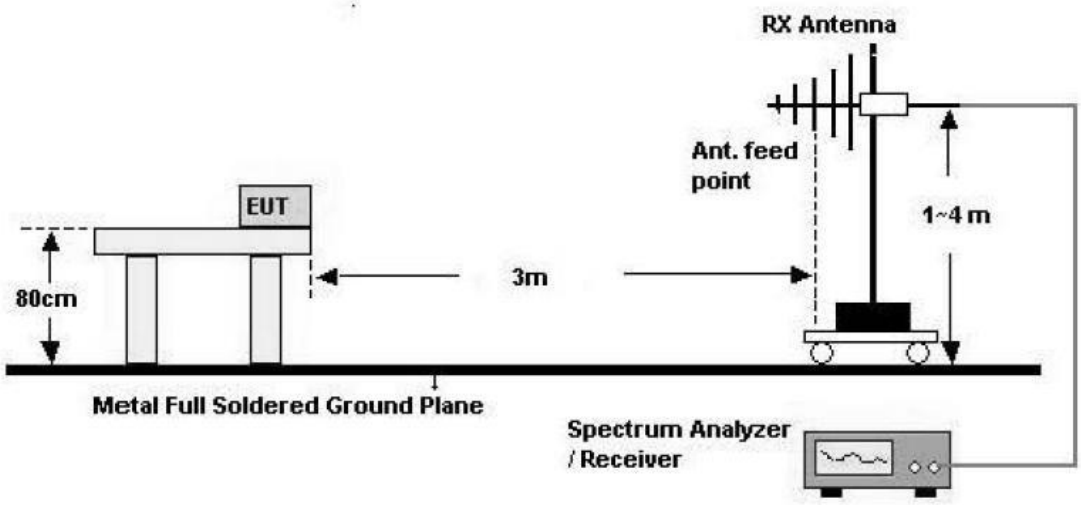
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Configuration

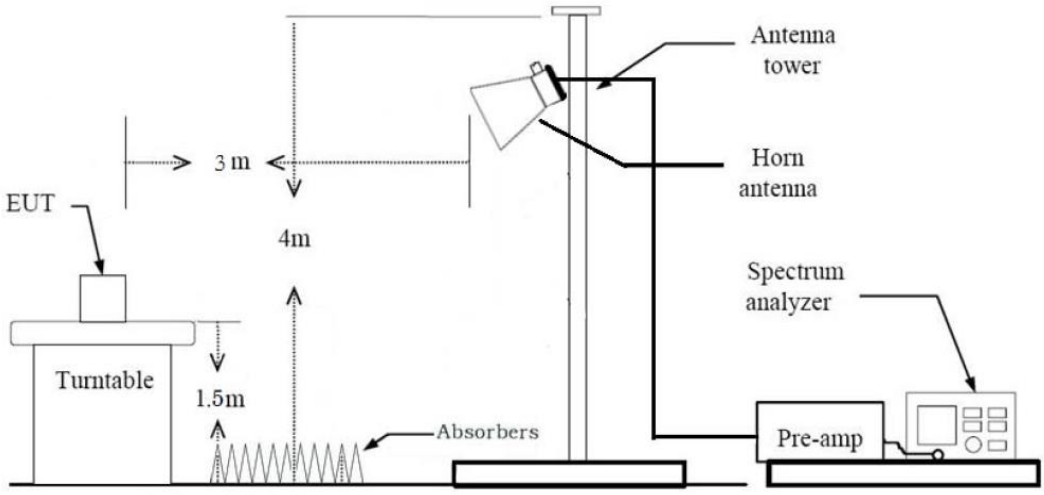
Below 30 MHz



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 3m 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) = 40log(3 m/300 m) = - 80 dB
   Measurement Distance : 3 m
7. Distance Correction Factor(0.490 MHz – 30 MHz) = 40log(3 m/30 m) = - 40 dB
   Measurement Distance : 3 m
8. Spectrum Setting
   - Frequency Range = 9 kHz ~ 30 MHz
   - Detector = Peak
   - Trace = Maxhold
   - RBW = 9 kHz
   - VBW ≥ 3 x RBW
9. Total = Reading 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 1GHz)

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 3m from the EUT, which is varied from 1m to 4m 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 ≥ 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 = Reading 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 1m to 4m 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, G.5 in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW ≥ 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, G.6.d in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW(Duty cycle ≥ 98 percent) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 percent) = VBW ≥ 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 minimym number of traces by a factor of 1/x, where x is the duty cycle.

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. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency
11. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
12. Total = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(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 1m to 4m 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, G.5 in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW ≥ 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, G.6.d in KDB 789033 v02r01):

- RBW = 1 MHz
- VBW(Duty cycle ≥ 98 percent) = VBW ≤ RBW/100(i.e., 10 kHz) but not less than 10 Hz.
- VBW(Duty cycle is < 98 percent) = VBW ≥ 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 minimym number of traces by a factor of 1/x, where x is the duty cycle.

9. 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)
10. Distance extrapolation factor = 20log (test distance / specific distance) (dB)
11. Total = Reading Value + Antenna Factor(A.F) + Cable Loss(C.L) - Amp Gain(G) + Attenuator + Distance Factor(D.F)

The actual setting value of VBW

Mode	Tone	Worst Data rate (Mbps)	Duty Cycle	Duty Cycle Factor (dB)	VBW (1/T) (kHz)	The actual setting value of VBW (Hz)
802.11ax (HE20)	26	MCS 0	0.981	0.08	0.191	1000
	52	MCS 0	0.963	0.16	0.378	1000
	106	MCS 0	0.929	0.32	0.779	1000
	242	MCS 0	0.859	0.66	1.659	2000
	SU	MCS 0	0.857	0.67	1.694	2000
802.11ax (HE40)	26	MCS 0	0.981	0.08	0.191	1000
	52	MCS 0	0.963	0.16	0.377	1000
	106	MCS 0	0.927	0.33	0.779	1000
	242	MCS 0	0.856	0.68	1.666	2000
	484	MCS 0	0.775	1.11	2.946	3000
	SU	MCS 0	0.769	1.14	3.036	5000
802.11ax (HE80)	26	MCS 0	0.981	0.08	0.191	1000
	52	MCS 0	0.963	0.16	0.378	1000
	106	MCS 0	0.927	0.33	0.779	1000
	242	MCS 0	0.856	0.68	1.666	2000
	484	MCS 0	0.775	1.11	2.946	3000
	996	MCS 0	0.664	1.78	4.997	5000
	SU	MCS 0	0.655	1.84	5.194	10000

8.8. Test RU offset for Tones

BW (MHz)	Tones (T)	RU offset	Test RU offset		
			Low	Mid	High
20	26	0~8	0	4	8
	52	37~40	37	38	40
	106	53~54	53	-	54
	242	61	-	61	-
40	26	0~17	0	9	17
	52	37~44	37	41	44
	106	53~56	53	54	56
	242	61~62	61	-	62
	484	65	-	65	-
80	26	0~36	0	18	36
	52	37~52	37	45	52
	106	53~60	53	57	60
	242	61~64	61	62	64
	484	65~66	65	-	66
	996	67	-	67	-

8.8. Worst case configuration and mode

Conducted test

1. All data rate of operation were investigated and the worst case results are reported.
   - HE20, HE40, HE80: MCS0 (All Tone)
2. SM-G991U, SM-G991U1 were tested and the worst case results are reported.

(Worst case : SM-G991U)

Radiated test

1. Full RU(Resource Unit) mode and SU(Single Unit) mode have no difference in physical waveform.
   This Report has been described only SU(Single Unit) mode with worst output power
2. 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
3. EUT Axis
   - Radiated Spurious Emissions : X
   - Radiated Restricted Band Edge : X,Y
4. All data rate of operation were investigated and the worst case results are reported.
   (Worst case : MCS0)
5. All Antenna of operation were investigated and the worst case results are reported
   - Mode : Ant1+Ant2(SDM), Ant1+Ant2(CDD)
   - Worstcase : Ant1+Ant2(CDD)
6. 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
7. All mode(Tone, RU Offset) of operation were investigated and the worst case configuration results are reported

Test	Tone	RU Offset
RSE	[HE 20] Worst case(Highest Power) : 242T	[HE 20] Mid 61
Bandedge (UNII1,2A,2C)	[HE 20] Worst case(Highest Power) : 242T [HE 40] Worst case(Highest Power) : 484T [HE 80] Worst case(Highest Power) : 996T	[HE 20] Mid 61 [HE 40] Mid 65 [HE 80] Mid 67
	[HE 20] Additional Tone: 26T, 52T, 106T [HE 40] Additional Tone: 26T, 52T, 106T, 242T [HE 80] Additional Tone: 26T, 52T, 106T, 242T, 484T	[HE20] Low Edge: 0, 37, 53 High Edge: 8, 40, 54 [HE40] Low Edge: 0, 37, 53, 61 High Edge: 17, 44, 56, 62 [HE80] Low Edge: 0, 37, 53, 61, 65 High Edge: 36, 52, 60, 64, 66

Bandedge (Straddle, UNII3)	[HE 20] Worst case(Highest Power) : 242T [HE 40] Worst case(Highest Power) : 484T [HE 80] Worst case(Highest Power) : 996T	[HE 20] Mid 61 [HE 40] Mid 65 [HE 80] Mid 67

8. SM-G991U, SM-G991U1 were tested and the worst case results are reported.

(Worst case : SM-G991U)

Radiated test(DBS)

1. Please refer to the SM-G991U [UNII] Test Report.

2. SM-G991U, SM-G991U1 were tested and the worst case results are reported.

(Worst case : SM-G991U)

AC Power line Conducted Emissions

1. Please refer to the SM-G991U [UNII] Test Report.

2. SM-G991U, SM-G991U1 were tested and the worst case results are reported.

(Worst case : SM-G991U)

9. SUMMARY OF TEST RESULTS

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
26dB Bandwidth	§15.407 (for Power Measurement)	N/A	Conducted	PASS
6 dB Bandwidth	§15.407(e)	>500 kHz (5725-5850 MHz)		PASS
Maximum Conducted Output Power	§15.407(a)(1)	< 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
Peak Power Spectral Density	§15.407(a)(1),(5)	<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 (Note1)
AC Conducted Emissions 150 kHz-30 MHz	15.207	<FCC 15.207 limits		PASS (Note1)
Undesirable Emissions	§15.407(b)	<-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)(5), (6)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS

Note:

1. Please refer to the SM-G991U [UNII] Test Report.

10. TEST RESULT

10.1 DUTY CYCLE

802.11ax(HE20)

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE20)	26	MCS0	5.223	5.324	0.981	0.08
		MCS1	2.650	2.751	0.963	0.16
		MCS2	1.566	1.571	0.997	0.01
		MCS3	1.358	1.459	0.931	0.31
		MCS4	0.932	1.034	0.902	0.45
		MCS5	0.714	0.816	0.876	0.58
		MCS6	0.646	0.745	0.867	0.62
		MCS7	0.590	0.692	0.853	0.69
		MCS8	0.502	0.603	0.832	0.80
		MCS9	0.464	0.562	0.824	0.84
	52	MCS0	2.647	2.749	0.963	0.16
		MCS1	1.360	1.459	0.932	0.30
		MCS2	0.930	1.031	0.902	0.45
		MCS3	0.717	0.816	0.879	0.56
		MCS4	0.504	0.603	0.836	0.78
		MCS5	0.393	0.494	0.795	1.00
		MCS6	0.360	0.461	0.780	1.08
		MCS7	0.337	0.436	0.773	1.12
		MCS8	0.286	0.388	0.739	1.32
		MCS9	0.271	0.372	0.728	1.38
	106	MCS0	1.284	1.383	0.929	0.32
		MCS1	0.679	0.780	0.870	0.60
		MCS2	0.476	0.578	0.825	0.84
		MCS3	0.375	0.476	0.787	1.04
		MCS4	0.279	0.377	0.738	1.32
		MCS5	0.225	0.327	0.690	1.61
		MCS6	0.208	0.309	0.672	1.73
		MCS7	0.200	0.299	0.669	1.74
		MCS8	0.180	0.279	0.645	1.90
		MCS9	0.165	0.263	0.625	2.04
	242	MCS0	0.603	0.702	0.859	0.66
		MCS1	0.337	0.438	0.769	1.14

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
		MCS2	0.248	0.347	0.715	1.45
		MCS3	0.205	0.304	0.675	1.71
		MCS4	0.165	0.263	0.625	2.04
		MCS5	0.139	0.241	0.579	2.37
		MCS6	0.137	0.236	0.581	2.36
		MCS7	0.129	0.228	0.567	2.47
		MCS8	0.122	0.223	0.545	2.63
		MCS9	0.117	0.215	0.541	2.67
		MCS10	0.111	0.213	0.524	2.81
		MCS11	0.104	0.203	0.513	2.90

802.11ax(HE40)

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax(HE40)	26	MCS0	5.223	5.324	0.981	0.08
		MCS1	2.650	2.751	0.963	0.16
		MCS2	1.789	1.890	0.946	0.24
		MCS3	1.360	1.462	0.931	0.31
		MCS4	0.932	1.034	0.902	0.45
		MCS5	0.717	0.816	0.879	0.56
		MCS6	0.643	0.745	0.864	0.64
		MCS7	0.590	0.694	0.850	0.70
		MCS8	0.504	0.605	0.833	0.80
		MCS9	0.464	0.565	0.821	0.86
	52	MCS0	2.650	2.751	0.963	0.16
		MCS1	1.360	1.462	0.931	0.31
		MCS2	0.930	1.031	0.902	0.45
		MCS3	0.717	0.816	0.879	0.56
		MCS4	0.504	0.605	0.833	0.80
		MCS5	0.395	0.497	0.796	0.99
		MCS6	0.360	0.461	0.780	1.08
		MCS7	0.334	0.436	0.767	1.15
		MCS8	0.289	0.388	0.745	1.28
		MCS9	0.271	0.372	0.728	1.38
	106	MCS0	1.284	1.386	0.927	0.33
		MCS1	0.679	0.778	0.873	0.59
		MCS2	0.479	0.580	0.825	0.83
		MCS3	0.377	0.479	0.788	1.03
		MCS4	0.276	0.377	0.732	1.36
		MCS5	0.228	0.327	0.698	1.56
		MCS6	0.208	0.309	0.672	1.73
		MCS7	0.200	0.301	0.664	1.78
		MCS8	0.180	0.281	0.640	1.94
		MCS9	0.165	0.266	0.619	2.08
	242	MCS0	0.600	0.702	0.856	0.68
		MCS1	0.337	0.438	0.769	1.14
		MCS2	0.248	0.347	0.715	1.45
		MCS3	0.205	0.304	0.675	1.71

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
		MCS4	0.165	0.266	0.619	2.08
		MCS5	0.139	0.238	0.585	2.33
		MCS6	0.137	0.238	0.574	2.41
		MCS7	0.127	0.228	0.556	2.55
		MCS8	0.122	0.223	0.545	2.63
		MCS9	0.117	0.215	0.541	2.67
		MCS10	0.111	0.210	0.530	2.76
		MCS11	0.104	0.203	0.513	2.90
	484	MCS0	0.339	0.438	0.775	1.11
		MCS1	0.208	0.304	0.683	1.65
		MCS2	0.167	0.266	0.629	2.02
		MCS3	0.142	0.241	0.589	2.30
		MCS4	0.124	0.223	0.557	2.54
		MCS5	0.109	0.208	0.524	2.80
		MCS6	0.104	0.205	0.506	2.96
		MCS7	0.101	0.200	0.506	2.96
		MCS8	0.096	0.195	0.494	3.07
		MCS9	0.096	0.195	0.494	3.07
		MCS10	0.094	0.193	0.487	3.13
		MCS11	0.094	0.193	0.487	3.13

802.11ax(HE80)

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (HE80)	26	MCS0	5.223	5.324	0.981	0.08
		MCS1	2.650	2.751	0.963	0.16
		MCS2	1.789	1.890	0.946	0.24
		MCS3	1.360	1.462	0.931	0.31
		MCS4	0.932	1.034	0.902	0.45
		MCS5	0.714	0.816	0.876	0.58
		MCS6	0.643	0.745	0.864	0.64
		MCS7	0.593	0.694	0.854	0.69
		MCS8	0.504	0.605	0.833	0.80
		MCS9	0.464	0.565	0.821	0.86
	52	MCS0	2.647	2.749	0.963	0.16
		MCS1	1.360	1.462	0.931	0.31
		MCS2	0.935	1.034	0.904	0.44
		MCS3	0.714	0.816	0.876	0.58
		MCS4	0.504	0.605	0.833	0.80
		MCS5	0.395	0.497	0.796	0.99
		MCS6	0.360	0.461	0.780	1.08
		MCS7	0.334	0.433	0.772	1.12
		MCS8	0.286	0.388	0.739	1.32
		MCS9	0.271	0.372	0.728	1.38
	106	MCS0	1.284	1.386	0.927	0.33
		MCS1	0.681	0.780	0.873	0.59
		MCS2	0.479	0.578	0.829	0.81
		MCS3	0.375	0.476	0.787	1.04
		MCS4	0.276	0.377	0.732	1.36
		MCS5	0.228	0.327	0.698	1.56
		MCS6	0.208	0.309	0.672	1.73
		MCS7	0.200	0.301	0.664	1.78
		MCS8	0.180	0.281	0.640	1.94
		MCS9	0.165	0.266	0.619	2.08
	242	MCS0	0.600	0.702	0.856	0.68
		MCS1	0.339	0.438	0.775	1.11
		MCS2	0.248	0.350	0.710	1.49

Mode	Tone (T)	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
		MCS3	0.203	0.304	0.667	1.76
		MCS4	0.165	0.266	0.619	2.08
		MCS5	0.142	0.241	0.589	2.30
		MCS6	0.137	0.238	0.574	2.41
		MCS7	0.129	0.228	0.567	2.47
		MCS8	0.122	0.223	0.545	2.63
		MCS9	0.117	0.218	0.535	2.72
		MCS10	0.111	0.210	0.530	2.76
		MCS11	0.104	0.203	0.513	2.90
	484	MCS0	0.339	0.438	0.775	1.11
		MCS1	0.208	0.304	0.683	1.65
		MCS2	0.165	0.266	0.619	2.08
		MCS3	0.142	0.241	0.589	2.30
		MCS4	0.122	0.220	0.552	2.58
		MCS5	0.108	0.207	0.522	2.83
		MCS6	0.104	0.205	0.506	2.96
		MCS7	0.101	0.200	0.506	2.96
		MCS8	0.099	0.198	0.500	3.01
		MCS9	0.091	0.193	0.474	3.25
		MCS10	0.091	0.193	0.474	3.25
		MCS11	0.094	0.193	0.487	3.13
	996	MCS0	0.200	0.301	0.664	1.78
		MCS1	0.134	0.236	0.570	2.44
		MCS2	0.117	0.218	0.535	2.72
		MCS3	0.104	0.203	0.513	2.90
		MCS4	0.096	0.198	0.487	3.12
		MCS5	0.089	0.187	0.473	3.25
		MCS6	0.091	0.190	0.480	3.19
		MCS7	0.089	0.190	0.467	3.31
		MCS8	0.081	0.182	0.444	3.52
		MCS9	0.081	0.182	0.444	3.52
		MCS10	0.086	0.185	0.466	3.32
		MCS11	0.081	0.182	0.444	3.52

Mode	BW	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
802.11ax (SU)	BW 20	MCS0	0.590	0.689	0.857	0.67
		MCS1	0.329	0.428	0.769	1.14
		MCS2	0.243	0.342	0.711	1.48
		MCS3	0.200	0.299	0.669	1.74
		MCS4	0.160	0.258	0.618	2.09
		MCS5	0.137	0.236	0.581	2.36
		MCS6	0.132	0.231	0.571	2.43
		MCS7	0.122	0.220	0.552	2.58
		MCS8	0.117	0.215	0.541	2.67
		MCS9	0.114	0.210	0.542	2.66
		MCS10	0.109	0.208	0.524	2.80
		MCS11	0.099	0.200	0.494	3.07
	BW 40	MCS0	0.329	0.428	0.769	1.14
		MCS1	0.200	0.299	0.669	1.74
		MCS2	0.162	0.261	0.621	2.07
		MCS3	0.137	0.236	0.581	2.36
		MCS4	0.117	0.215	0.541	2.67
		MCS5	0.104	0.203	0.513	2.90
		MCS6	0.099	0.198	0.500	3.01
		MCS7	0.099	0.198	0.500	3.01
		MCS8	0.089	0.187	0.473	3.25
		MCS9	0.089	0.187	0.473	3.25
		MCS10	0.089	0.187	0.473	3.25
		MCS11	0.089	0.187	0.473	3.25
	BW 80	MCS0	0.193	0.294	0.655	1.84
		MCS1	0.132	0.231	0.571	2.43
		MCS2	0.111	0.213	0.524	2.81
		MCS3	0.099	0.200	0.494	3.07
		MCS4	0.091	0.190	0.480	3.19
		MCS5	0.086	0.185	0.466	3.32
		MCS6	0.084	0.182	0.458	3.39
		MCS7	0.084	0.182	0.458	3.39
		MCS8	0.079	0.177	0.443	3.54
		MCS9	0.079	0.177	0.443	3.54

Mode	BW	Data Rate	On Time (ms)	Total Time (ms)	Duty Cycle	Duty Cycle Factor (dB)
		MCS10	0.079	0.177	0.443	3.54
		MCS11	0.081	0.180	0.451	3.46

10.2 26dB BANDWIDTH

10.2.1 MIMO Ant1

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

Straddle channel data were added in section 10.6.1.

802.11ax(HE20)

HE20	Frequency [MHz]	Channel No.	RU Index	26dB BW (MHz)				
				26 T	52 T	106 T	242 T	SU
UNII 1	5180	36	Low	19.81	20.34	20.78	-	-
			Mid	18.83	19.92	-	21.78	21.77
			High	20.28	20.74	21.10	-	-
	5200	40	Low	19.99	20.35	20.79	-	-
			Mid	19.20	19.48	-	21.83	21.43
			High	20.31	20.98	20.79	-	-
	5240	48	Low	19.90	20.24	20.86	-	-
			Mid	19.04	19.59	-	21.73	21.63
			High	20.66	21.00	21.30	-	-
UNII 2A	5260	52	Low	19.83	20.32	20.90	-	-
			Mid	18.93	19.84	-	21.65	21.82
			High	20.35	21.01	21.22	-	-
	5280	56	Low	20.18	20.22	20.71	-	-
			Mid	19.11	19.28	-	21.92	21.74
			High	20.41	20.74	21.26	-	-
	5320	64	Low	20.06	20.32	20.92	-	-
			Mid	18.95	19.65	-	21.81	21.73
			High	20.53	21.16	21.32	-	-
UNII 2C	5500	100	Low	20.08	20.47	21.06	-	-
			Mid	19.04	19.83	-	21.92	21.54
			High	20.38	20.95	21.38	-	-
	5600	120	Low	19.80	20.56	20.88	-	-
			Mid	19.29	19.71	-	21.79	21.58
			High	20.80	20.77	21.28	-	-
	5720	144	Low	19.81	20.32	21.09	-	-
			Mid	19.00	19.58	-	21.59	21.69
			High	20.72	20.93	21.35	-	-
UNII 3	5745	149	Low	20.03	20.22	21.22	-	-

HE20	Frequency [MHz]	Channel No.	RU Index	26dB BW (MHz)				
				26 T	52 T	106 T	242 T	SU
			Mid	19.21	19.80	-	21.83	21.93
			High	20.43	20.98	21.06	-	-
	5785	157	Low	20.06	20.35	21.04	-	-
			Mid	18.94	19.78	-	21.98	21.74
			High	20.58	20.78	21.16	-	-
	5825	165	Low	19.91	20.14	20.98	-	-
			Mid	18.94	19.71	-	21.71	21.70
			High	20.62	20.87	21.21	-	-

802.11ax(HE40)

HE40	Frequency [MHz]	Channel No.	RU Index	26dB BW(MHz)					
				26 T	52 T	106 T	242 T	484 T	SU
UNII 1	5190	38	Low	20.02	21.16	23.59	31.50	-	-
			Mid	23.60	25.29	26.62	-	40.32	40.44
			High	20.07	21.54	24.28	30.13	-	-
	5230	46	Low	20.16	21.39	24.14	31.30	-	-
			Mid	22.82	24.98	27.32	-	40.41	40.27
			High	20.13	21.74	24.37	30.92	-	-
UNII 2A	5270	54	Low	20.28	21.26	22.88	29.74	-	-
			Mid	23.03	25.41	26.58	-	40.22	40.20
			High	20.37	22.12	24.40	30.21	-	-
	5310	62	Low	20.48	21.42	22.90	30.67	-	-
			Mid	23.96	27.06	26.37	-	40.16	40.22
			High	20.30	21.92	24.26	31.05	-	-
UNII 2C	5510	102	Low	20.13	21.56	23.41	31.43	-	-
			Mid	22.87	25.00	27.50	-	40.39	40.21
			High	20.06	22.13	24.64	31.76	-	-
	5590	118	Low	20.04	21.33	23.15	31.54	-	-
			Mid	23.21	24.54	26.68	-	40.43	40.16
			High	20.19	22.25	24.77	32.94	-	-
	5710	142	Low	19.92	21.77	23.19	33.05	-	-
			Mid	23.42	24.57	26.96	-	40.30	40.33
			High	20.11	21.58	24.29	32.20	-	-
UNII 3	5755	151	Low	20.32	21.26	22.72	31.25	-	-
			Mid	23.23	24.92	25.76	-	40.24	40.14
			High	20.15	21.42	24.31	33.71	-	-
	5795	159	Low	20.40	21.76	24.90	31.12	-	-
			Mid	23.83	24.61	26.27	-	40.24	40.36
			High	20.29	22.58	24.25	32.08	-	-

802.11ax(HE80)

HE80	Freq. [MHz]	Channel No.	RU Index	26dB BW (MHz)						
				26 T	52 T	106 T	242 T	484 T	996 T	SU
UNII 1	5210	42	Low	21.11	21.84	24.97	33.65	57.94	-	-
			Mid	39.24	26.56	32.77	50.83	-	81.31	81.53
			High	22.49	23.36	26.25	37.27	56.79	-	-
UNII 2A	5290	58	Low	20.39	21.13	23.03	33.72	49.79	-	-
			Mid	40.17	26.70	31.83	53.44	-	81.79	81.54
			High	22.10	23.66	27.48	39.03	57.81	-	-
UNII 2C	5530	106	Low	20.84	21.92	23.85	33.75	49.37	-	-
			Mid	40.88	27.53	29.07	53.05	-	81.64	81.61
			High	22.38	23.06	29.06	37.85	57.69	-	-
	5610	122	Low	20.38	22.61	23.61	38.53	54.87	-	-
			Mid	40.38	29.03	30.35	53.40	-	81.62	81.74
			High	22.52	24.55	27.75	33.92	58.99	-	-
	5690	138	Low	20.26	21.90	22.73	30.98	54.98	-	-
			Mid	40.46	24.40	32.40	51.14	-	81.40	81.72
			High	21.49	23.92	27.53	35.01	59.45	-	-
UNII 3	5775	155	Low	20.90	21.63	24.17	33.54	55.18	-	-
			Mid	38.63	26.26	29.69	52.88	-	81.43	81.65
			High	22.29	23.93	27.08	34.58	56.05	-	-

10.2.2 MIMO Ant2

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

Straddle channel data were added in section 10.6.1.

802.11ax(HE20)

HE20	Frequency [MHz]	Channel No.	RU Index	26dB BW (MHz)				
				26 T	52 T	106 T	242 T	SU
UNII 1	5180	36	Low	20.04	20.44	20.93	-	-
			Mid	18.94	19.68	-	21.70	21.65
			High	20.46	20.94	21.35	-	-
	5200	40	Low	20.04	20.28	21.00	-	-
			Mid	18.93	19.99	-	21.59	21.64
			High	20.56	20.97	21.00	-	-
	5240	48	Low	19.95	20.40	20.74	-	-
			Mid	19.25	19.62	-	21.66	21.59
			High	20.56	20.75	21.32	-	-
UNII 2a	5260	52	Low	20.07	20.27	20.81	-	-
			Mid	19.18	19.69	-	21.87	21.85
			High	20.49	20.55	21.24	-	-
	5280	56	Low	19.95	20.15	20.68	-	-
			Mid	18.85	19.84	-	21.79	21.70
			High	20.62	21.07	21.48	-	-
	5320	64	Low	19.92	20.42	20.92	-	-
			Mid	19.20	19.73	-	21.79	21.58
			High	20.29	20.94	21.46	-	-
UNII 2c	5500	100	Low	19.93	20.42	20.89	-	-
			Mid	19.11	19.78	-	21.80	21.65
			High	20.34	20.74	21.36	-	-
	5600	120	Low	19.97	20.37	20.97	-	-
			Mid	19.09	19.89	-	21.71	21.78
			High	20.49	21.10	21.30	-	-
	5720	144	Low	20.03	20.32	20.97	-	-
			Mid	19.19	19.64	-	21.78	21.56
			High	20.80	21.06	21.41	-	-
UNII 3	5745	149	Low	20.00	20.38	20.99	-	-
			Mid	19.03	19.89	-	21.80	21.88

HE20	Frequency [MHz]	Channel No.	RU Index	26dB BW (MHz)				
				26 T	52 T	106 T	242 T	SU
			High	20.67	21.12	21.37	-	-
	5785	157	Low	19.85	20.40	20.84	-	-
			Mid	19.19	19.46	-	21.67	21.71
			High	20.68	20.91	21.06	-	-
	5825	165	Low	19.83	20.24	20.93	-	-
			Mid	19.13	19.76	-	21.67	21.46
			High	20.43	21.07	21.28	-	-

802.11ax(HE40)

HE40	Frequency [MHz]	Channel No.	RU Index	26dB BW(MHz)					
				26 T	52 T	106 T	242 T	484 T	SU
UNII 1	5190	38	Low	20.11	21.28	23.46	30.69	-	-
			Mid	22.94	24.83	27.97	-	40.24	40.08
			High	19.90	21.87	24.42	32.02	-	-
	5230	46	Low	20.11	21.02	23.74	30.88	-	-
			Mid	23.66	25.14	26.39	-	40.25	40.09
			High	20.01	21.83	24.16	31.01	-	-
UNII 2a	5270	54	Low	20.53	20.62	23.58	30.18	-	-
			Mid	23.40	25.03	27.15	-	40.41	40.22
			High	20.49	21.93	24.55	31.53	-	-
	5310	62	Low	19.99	21.37	22.80	30.72	-	-
			Mid	23.11	24.35	26.09	-	40.30	40.22
			High	20.39	21.81	24.48	35.07	-	-
UNII 2c	5510	102	Low	19.64	21.00	23.48	29.81	-	-
			Mid	22.84	23.98	26.88	-	40.44	40.14
			High	20.89	21.41	24.69	29.58	-	-
	5590	118	Low	20.06	20.88	23.13	29.24	-	-
			Mid	24.30	25.09	27.57	-	40.42	40.16
			High	19.35	22.15	24.67	30.64	-	-
	5710	142	Low	19.17	21.27	23.44	35.43	-	-
			Mid	22.68	26.09	26.71	-	40.49	40.16
			High	19.72	22.53	24.31	32.54	-	-
UNII 3	5755	151	Low	20.21	21.76	23.42	30.64	-	-
			Mid	23.51	23.80	28.12	-	40.34	40.35
			High	20.27	21.87	24.33	30.11	-	-
	5795	159	Low	20.35	21.99	23.86	30.90	-	-
			Mid	22.64	24.49	26.34	-	40.28	40.23
			High	20.85	22.67	24.31	30.12	-	-

802.11ax(HE80)

HE80	Freq. [MHz]	Channel No.	RU Index	26dB BW (MHz)						
				26 T	52 T	106 T	242 T	484 T	996 T	SU
UNII 1	5210	42	Low	20.07	21.57	24.49	37.02	50.20	-	-
			Mid	40.27	25.10	29.82	51.20	-	81.46	81.21
			High	20.22	23.98	27.25	39.04	57.26	-	-
UNII 2a	5290	58	Low	20.54	22.46	24.17	41.12	57.75	-	-
			Mid	39.52	26.64	28.91	54.89	-	81.40	81.70
			High	22.37	22.73	27.37	37.26	58.02	-	-
UNII 2c	5530	106	Low	21.53	22.18	25.07	34.72	52.40	-	-
			Mid	39.80	28.01	32.88	53.47	-	81.76	81.48
			High	21.95	23.68	27.62	34.53	58.92	-	-
	5610	122	Low	20.61	21.29	23.59	35.86	51.54	-	-
			Mid	40.59	25.71	33.27	52.11	-	81.69	81.53
			High	23.50	22.89	25.57	40.40	57.79	-	-
	5690	138	Low	20.80	21.96	24.83	30.93	51.61	-	-
			Mid	39.93	26.86	31.11	51.18	-	81.37	81.43
			High	22.11	25.13	27.73	34.29	61.93	-	-
UNII 3	5775	155	Low	20.49	21.36	24.46	35.69	53.51	-	-
			Mid	40.02	27.28	30.54	53.04	-	81.36	81.36
			High	22.00	24.93	28.78	33.20	61.15	-	-

10.3 6dB BANDWIDTH

10.3.1 MIMO Ant1

802.11ax(HE20)

HE20	Frequency [MHz]	Channel No.	RU Index	6dB BW (MHz)				
				26 T	52 T	106 T	242 T	SU
UNII 3	5745	149	Low	2.104	4.08	17.19	-	-
			Mid	2.691	13.78	-	19.07	19.10
			High	2.107	17.03	17.18	-	-
	5785	157	Low	2.123	17.07	17.20	-	-
			Mid	2.692	12.51	-	19.00	19.07
			High	2.102	17.05	17.17	-	-
	5825	165	Low	2.102	14.52	17.20	-	-
			Mid	2.702	15.01	-	19.09	19.04
			High	2.124	14.49	17.12	-	-

Limit : > 0.5 MHz

802.11ax(HE40)

HE40	Frequency [MHz]	Channel No.	RU Index	6dB BW(MHz)					
				26 T	52 T	106 T	242 T	484 T	SU
UNII 3	5755	151	Low	2.122	16.59	17.58	18.71	-	-
			Mid	2.125	14.80	17.20	-	37.93	37.91
			High	2.100	16.54	16.77	18.65	-	-
	5795	159	Low	2.031	16.59	17.58	18.72	-	-
			Mid	2.106	14.81	17.33	-	37.72	37.86
			High	2.120	16.48	16.73	18.70	-	-

Limit : > 0.5 MHz

802.11ax(HE80)

HE80	Frequency [MHz]	Channel No.	RU Index	6dB BW (MHz)						
				26 T	52 T	106 T	242 T	484 T	996 T	SU
UNII 3	5775	155	Low	2.174	16.59	17.59	18.75	37.38	-	-
			Mid	2.867	16.29	17.25	36.40	-	77.43	77.70
			High	2.164	14.17	16.65	18.85	37.61	-	-

Limit : > 0.5 MHz

10.3.2 MIMO Ant2

802.11ax(HE20)

HE20	Frequency [MHz]	Channel No.	RU Index	6dB BW (MHz)				
				26 T	52 T	106 T	242 T	SU
UNII 3	5745	149	Low	2.132	17.06	18.14	-	-
			Mid	2.682	10.05	-	19.09	19.05
			High	2.077	17.05	17.15	-	-
	5785	157	Low	2.138	17.09	17.19	-	-
			Mid	2.695	12.51	-	19.14	19.11
			High	2.084	15.76	17.16	-	-
	5825	165	Low	2.122	13.26	17.19	-	-
			Mid	2.681	12.88	-	19.12	19.07
			High	2.110	17.05	17.19	-	-

Limit : > 0.5 MHz

802.11ax(HE40)

HE40	Frequency [MHz]	Channel No.	RU Index	6dB BW(MHz)					
				26 T	52 T	106 T	242 T	484 T	SU
UNII 3	5755	151	Low	2.060	15.35	17.59	18.76	-	-
			Mid	2.129	13.53	17.33	-	37.88	37.89
			High	2.125	16.53	16.77	18.78	-	-
	5795	159	Low	2.072	16.56	17.55	18.78	-	-
			Mid	2.105	7.30	17.34	-	37.53	37.81
			High	2.116	16.54	16.81	18.62	-	-

Limit : > 0.5 MHz

802.11ax(HE80)

HE80	Frequency [MHz]	Channel No.	RU Index	6dB BW (MHz)						
				26 T	52 T	106 T	242 T	484 T	996 T	SU
UNII 3	5775	155	Low	2.161	16.57	17.62	18.89	37.59	-	-
			Mid	2.838	16.27	16.36	36.43	-	77.43	77.82
			High	2.161	16.60	16.93	18.88	37.82	-	-

Limit : > 0.5 MHz

10.4 OUTPUT POWER MEASUREMENT

Power Level Setting

MIMO

802.11ax(HE20)		Frequency [MHz]	Channel No.	26 T	52T	106T	242 T	SU
UNII 1	Low	5180	36	5.5	7.5	9.5	10.5	
	Mid	5200	40					
	High	5240	48					
UNII 2A	Low	5260	52					
	Mid	5300	60					
	High	5320	64					
UNII 2C	Low	5500	100					
	Mid	5600	120					
	High	5720	144					
UNII 3	Low	5745	149					
	Mid	5785	157					
	High	5825	165					

802.11ax(HE40)		Frequency [MHz]	Channel No.	26 T	52T	106T	242 T	484T	SU
UNII 1	Low	5190	38	5	6	7	8.5		
	High	5230	46						
UNII 2A	Low	5270	54						
	High	5310	62						
UNII 2C	Low	5510	102						
	Mid	5590	118						
	High	5710	142						
UNII 3	Low	5755	151						
	High	5795	159						

802.11ax(HE80)		Frequency [MHz]	Channel No.	26 T	52T	106T	242 T	484T	996T	SU
UNII 1	Mid	5210	42	5.5		6.5	7.5			
UNII 2A	Mid	5290	58							
UNII 2C	Low	5530	106							
	Mid	5610	122							
	High	5690	138							
UNII 3	Mid	5775	155							

10.4.1 SUM (MIMO Ant 1 + MIMO Ant 2)

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

Straddle channel data were added in section 10.6.3.

802.11ax(HE20)

HE20	Frequency [MHz]	Channel No.	RU Index	Sum Power (dBm)				
				26 T	52 T	106 T	242 T	SU
UNII 1	5180	36	Low	9.93	12.12	14.25	-	-
			Mid	10.30	12.31	-	15.29	15.29
			High	10.15	12.28	14.36	-	-
	5200	40	Low	9.88	12.16	14.22	-	-
			Mid	10.41	12.41	-	15.39	15.28
			High	10.14	12.34	14.36	-	-
	5240	48	Low	10.01	12.29	14.35	-	-
			Mid	10.48	12.50	-	15.50	15.37
			High	10.35	12.44	14.53	-	-
UNII 2A	5260	52	Low	10.40	12.54	14.72	-	-
			Mid	10.83	12.71	-	15.89	15.70
			High	10.62	12.66	14.83	-	-
	5280	56	Low	10.48	12.56	14.73	-	-
			Mid	10.92	12.83	-	15.89	15.73
			High	10.70	12.79	14.93	-	-
	5320	64	Low	10.53	12.59	14.81	-	-
			Mid	10.83	12.84	-	15.89	15.75
			High	10.59	12.78	14.90	-	-
UNII 2C	5500	100	Low	10.71	12.85	14.93	-	-
			Mid	10.98	12.95	-	15.97	15.97
			High	10.77	12.92	14.97	-	-
	5600	120	Low	10.81	12.93	14.96	-	-
			Mid	10.95	12.98	-	15.96	15.94
			High	10.79	12.95	14.96	-	-
	5720	144	Low	10.96	12.96	14.95	-	-
			Mid	10.98	12.98	-	15.98	15.94
			High	10.86	12.90	14.96	-	-
UNII 3	5745	149	Low	10.91	12.80	14.97	-	-
			Mid	10.98	12.96	-	15.98	15.93

HE20	Frequency [MHz]	Channel No.	RU Index	Sum Power (dBm)				
				26 T	52 T	106 T	242 T	SU
			High	10.93	12.91	14.98	-	-
	5785	157	Low	10.94	12.89	14.94	-	-
			Mid	10.97	12.98	-	15.98	15.91
			High	10.92	12.83	14.94	-	-
	5825	165	Low	10.74	12.82	14.80	-	-
			Mid	10.98	12.95	-	15.81	15.73
			High	10.84	12.84	14.82	-	-

Limit

(UNII 1) : 23.98 dBm

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

(UNII 3) : 30.00 dBm

802.11ax(HE40)

HE40	Frequency [MHz]	Channel No.	RU Index	Sum Power (dBm)					
				26 T	52 T	106 T	242 T	484 T	SU
UNII 1	5190	38	Low	9.01	10.23	11.58	13.37	-	-
			Mid	10.05	11.11	12.23	-	13.04	13.02
			High	9.25	10.48	11.65	13.38	-	-
	5230	46	Low	9.03	10.19	11.47	13.35	-	-
			Mid	10.12	11.24	12.22	-	13.15	13.06
			High	9.32	10.65	11.78	13.44	-	-
UNII 2a	5270	54	Low	9.37	10.74	11.84	13.69	-	-
			Mid	10.44	11.60	12.42	-	13.51	13.47
			High	9.59	10.79	11.99	13.75	-	-
	5310	62	Low	9.56	10.74	12.03	13.81	-	-
			Mid	10.45	11.46	12.61	-	13.67	13.47
			High	9.61	10.77	11.96	13.83	-	-
UNII 2c	5510	102	Low	9.85	11.05	12.30	13.91	-	-
			Mid	10.91	11.99	12.90	-	13.92	13.87
			High	9.99	11.22	12.43	13.95	-	-
	5590	118	Low	9.84	11.02	12.26	13.88	-	-
			Mid	10.88	11.97	12.76	-	13.87	13.79
			High	9.90	11.13	12.40	13.95	-	-
	5710	142	Low	9.95	11.14	12.35	13.85	-	-
			Mid	10.98	11.93	12.92	-	13.86	13.69
			High	10.04	11.33	12.52	13.85	-	-
UNII 3	5755	151	Low	10.05	11.18	12.38	13.86	-	-
			Mid	10.95	11.94	12.97	-	13.77	13.75
			High	10.13	11.23	12.52	13.90	-	-
	5795	159	Low	9.76	10.76	12.10	13.89	-	-
			Mid	10.98	11.97	12.89	-	13.63	13.70
			High	9.69	10.82	12.18	13.92	-	-

Limit

(UNII 1) : 23.98 dBm

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

(UNII 3) : 30.00 dBm

802.11ax(HE80)

HE80	Frequency [MHz]	Channel No.	RU Index	Sum Power (dBm)						
				26 T	52 T	106 T	242 T	484 T	996 T	SU
UNII 1	5210	42	Low	9.34	9.46	10.83	12.20	11.95	-	-
			Mid	10.12	9.98	11.16	12.32	-	12.14	12.02
			High	9.76	9.85	11.08	12.33	12.12	-	-
UNII 2a	5290	58	Low	9.70	9.83	11.12	12.47	12.22	-	-
			Mid	10.35	10.30	11.45	12.63	-	12.32	12.09
			High	9.96	10.03	11.18	12.63	12.34	-	-
UNII 2c	5530	106	Low	10.39	10.36	11.53	12.92	12.57	-	-
			Mid	10.84	10.85	11.92	12.92	-	12.86	12.77
			High	10.47	10.56	11.71	12.94	12.71	-	-
	5610	122	Low	10.39	10.32	11.64	12.86	12.55	-	-
			Mid	10.75	10.77	11.91	12.93	-	12.79	12.84
			High	10.34	10.38	11.64	12.94	12.64	-	-
	5690	138	Low	10.19	10.35	11.63	12.73	12.61	-	-
			Mid	10.62	10.79	11.90	12.89	-	12.90	12.87
			High	10.23	10.38	11.83	12.96	12.71	-	-
UNII 3	5775	155	Low	10.20	10.37	11.72	12.77	12.70	-	-
			Mid	10.77	10.88	11.96	12.90	-	12.90	12.89
			High	10.29	10.57	11.73	12.93	12.85	-	-

Limit

(UNII 1) : 23.98 dBm

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

(UNII 3) : 30.00 dBm

10.5 POWER SPECTRAL DENSITY

10.5.1 SUM (MIMO Ant 1 + MIMO Ant 2)

802.11ax(HE20)

HE20	Frequency [MHz]	Channel No.	RU Index	Total Sum PSD (dBm)				
				26 T	52 T	106 T	242 T	SU
UNII 1	5180	36	Low	6.459	5.576	4.956	-	-
			Mid	5.750	5.887	-	2.638	2.781
			High	6.682	5.931	5.147	-	-
	5200	40	Low	6.376	5.613	4.981	-	-
			Mid	5.854	5.879	-	2.736	2.800
			High	6.763	5.858	5.102	-	-
	5240	48	Low	6.608	5.833	5.094	-	-
			Mid	5.933	5.979	-	2.869	3.234
			High	6.866	6.089	5.292	-	-
UNII 2A	5260	52	Low	6.895	6.249	5.459	-	-
			Mid	6.273	6.299	-	3.366	3.295
			High	7.013	6.412	5.591	-	-
	5280	56	Low	7.061	6.261	5.408	-	-
			Mid	6.165	6.399	-	3.376	3.315
			High	7.119	6.561	5.667	-	-
	5320	64	Low	6.909	6.306	5.502	-	-
			Mid	6.103	6.467	-	3.382	3.577
			High	7.104	6.448	5.579	-	-
UNII 2C	5500	100	Low	6.977	6.419	5.567	-	-
			Mid	6.316	6.459	-	3.423	3.360
			High	6.932	6.533	5.759	-	-
	5600	120	Low	7.711	6.772	5.978	-	-
			Mid	6.549	6.908	-	3.692	3.485
			High	7.363	6.428	5.842	-	-
	5720	144	Low	7.556	6.783	6.129	-	-
			Mid	6.537	6.716	-	3.729	3.975
			High	7.420	6.750	6.004	-	-
UNII 3	5745	149	Low	4.737	3.925	3.013	-	-
			Mid	4.615	3.940	-	0.535	0.697
			High	4.626	3.799	2.965	-	-
	5785	157	Low	4.632	3.940	3.712	-	-

HE20	Frequency [MHz]	Channel No.	RU Index	Total Sum PSD (dBm)				
				26 T	52 T	106 T	242 T	SU
			Mid	4.770	4.039	-	0.634	0.792
			High	4.622	3.953	2.902	-	-
	5825	165	Low	4.380	3.523	2.691	-	-
			Mid	4.614	3.702	-	0.428	0.670
			High	4.346	3.640	2.894	-	-

Limit(UNII 1, 2A, 2C) : 11.0 dBm/MHz

Limit(UNII 3) : 30.0 dBm/500kHz

802.11ax(HE40)

HE40	Frequency [MHz]	Channel No.	RU Index	Total Sum PSD (dBm)					
				26 T	52 T	106 T	242 T	484 T	SU
UNII 1	5190	38	Low	5.977	4.449	2.736	0.972	-	-
			Mid	6.999	4.941	3.257	-	-2.218	-2.575
			High	6.338	4.489	2.871	0.839	-	-
	5230	46	Low	6.097	4.419	2.913	1.237	-	-
			Mid	7.019	5.306	3.385	-	-2.069	-1.771
			High	6.270	4.835	3.014	1.031	-	-
UNII 2A	5270	54	Low	6.501	4.806	3.427	1.298	-	-
			Mid	7.048	5.443	3.750	-	-1.910	-1.604
			High	6.518	5.035	3.403	1.369	-	-
	5310	62	Low	6.411	4.897	3.380	1.455	-	-
			Mid	7.065	5.520	3.805	-	-1.606	-1.899
			High	6.503	4.820	3.123	1.279	-	-
UNII 2C	5510	102	Low	6.670	5.162	3.415	1.611	-	-
			Mid	7.739	6.003	3.995	-	-1.647	-1.525
			High	7.067	5.345	3.651	1.584	-	-
	5590	118	Low	7.041	5.405	3.601	1.731	-	-
			Mid	7.742	6.170	3.993	-	-1.441	-1.512
			High	6.793	5.390	3.722	1.677	-	-
	5710	142	Low	7.166	5.603	3.780	1.967	-	-
			Mid	7.739	6.149	4.221	-	-1.526	-1.393
			High	7.158	5.263	3.828	1.757	-	-
UNII 3	5755	151	Low	4.306	2.555	1.200	-1.001	-	-
			Mid	5.339	3.222	1.402	-	-3.921	-3.961
			High	4.476	2.719	1.042	-1.080	-	-
	5795	159	Low	3.758	2.214	0.526	-1.244	-	-
			Mid	5.319	3.500	1.209	-	-3.896	-3.771
			High	4.015	2.250	0.540	-0.950	-	-

Limit(UNII 1, 2A, 2C) : 11.0 dBm/MHz

Limit(UNII 3) : 30.0 dBm/500kHz

802.11ax(HE80)

HE80	Frequency [MHz]	Channel No.	RU Index	Total Sum PSD (dBm)						
				26 T	52 T	106 T	242 T	484 T	996 T	SU
UNII 1	5210	42	Low	5.757	3.232	1.422	-0.521	-3.314	-	-
			Mid	5.065	3.458	1.710	-0.388	-	-5.861	-6.121
			High	5.932	3.599	1.685	-0.295	-3.574	-	-
UNII 2A	5290	58	Low	5.877	3.591	1.802	0.064	-2.765	-	-
			Mid	5.340	3.695	2.066	0.828	-	-5.981	-6.097
			High	6.086	3.567	1.862	0.017	-3.285	-	-
UNII 2C	5530	106	Low	6.374	4.055	2.140	0.311	-2.535	-	-
			Mid	5.614	4.195	2.349	0.188	-	-4.948	-4.821
			High	6.568	4.187	2.485	0.452	-2.385	-	-
	5610	122	Low	6.426	4.063	2.168	0.338	-2.936	-	-
			Mid	5.415	4.104	2.439	0.181	-	-4.883	-5.165
			High	6.310	3.966	2.235	0.266	-2.630	-	-
	5690	138	Low	6.357	3.974	1.954	0.109	-2.638	-	-
			Mid	5.651	4.048	2.263	0.111	-	-5.023	-5.160
			High	6.221	4.058	2.099	0.252	-2.900	-	-
UNII 3	5775	155	Low	3.763	1.177	-0.777	-2.934	-5.443	-	-
			Mid	3.842	1.579	-0.441	-2.755	-	-7.460	-6.809
			High	3.858	1.252	-0.667	-2.589	-5.445	-	-

Limit(UNII 1, 2A, 2C) : 11.0 dBm/MHz

Limit(UNII 3) : 30.0 dBm/500kHz

10.6 STRADDLE CHANNEL

10.6.1 26dB Bandwidth

Test Note:

1. [UNII 2C] 26dB Bandwidth = 5725MHz **-** Measured Frequency[MHz]
2. [UNII 3] 26dB Bandwidth = Measured Frequency[MHz] -5725MHz
3. # : 26dB bandwidth is only located in UNII 2C. Therefore 26dB bandwidth do not overlap.

10.6.1.1 MIMO Ant1

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	26dB BW (MHz)	
					UNII 2C	UNII 3
HE20	5720	144	26 T	0	15.80	4.04
				4	14.72	3.92
				7	15.08	4.96
				8	14.80	5.72
			52 T	37	15.92	4.64
				38	15.36	4.56
				39	15.08	4.16
				40	15.36	5.72
			106 T	53	15.84	5.08
				54	15.60	5.76
			242 T	61	15.96	5.80
			SU	-	15.80	5.64

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	26dB BW (MHz)	
					UNII 2C	UNII 3
HE40	5710	142	26 T	# 0	-	-
				9	19.96	4.20
				16	14.84	4.20
				17	15.32	4.92
			52 T	# 37	-	-
				41	20.92	4.52
				43	16.84	4.52
				44	17.00	4.92
			106 T	# 53	-	-
				# 54	-	-
				55	22.20	4.68
				56	18.92	5.00
			242 T	# 61	-	-
				62	29.24	5.08
			484 T	65	35.48	5.16
			SU	-	35.16	4.84

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	26dB BW (MHz)	
					UNII 2C	UNII 3
HE80	5690	138	26 T	# 0	-	-
				# 18	-	-
				35	16.76	4.84
				36	16.44	5.64
			52 T	# 37	-	-
				# 45	-	-
				51	17.08	4.36
				52	18.52	5.80
			106 T	# 53	-	-
				# 57	-	-
				59	27.64	4.68
				60	20.28	5.64
			242 T	# 61	-	-
				# 62	-	-
				63	50.52	5.16
				64	35.48	5.64
			484 T	# 65	-	-
				66	56.60	5.48
			996 T	67	76.28	6.12
			SU	-	75.64	5.48

10.6.1.2 MIMO Ant2

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	26dB BW (MHz)	
					UNII 2C	UNII 3
HE20	5720	144	26 T	0	15.80	3.92
				4	14.08	3.96
				7	14.28	4.72
				8	14.28	5.64
			52 T	37	15.80	4.08
				38	14.36	4.04
				39	14.40	4.12
				40	14.16	5.68
			106 T	53	15.76	4.16
				54	14.44	5.56
			242 T	61	15.80	5.60
			SU	-	15.96	5.56

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	26dB BW (MHz)	
					UNII 2C	UNII 3
HE40	5710	142	26 T	# 0	-	-
				9	19.24	4.04
				16	14.36	4.20
				17	14.44	4.84
			52 T	# 37	-	-
				41	20.44	4.20
				43	15.32	4.20
				44	15.40	5.00
			106 T	# 53	-	-
				# 54	-	-
				55	21.00	4.36
				56	15.48	4.84
			242 T	# 61	-	-
				62	22.76	4.84
			484 T	65	35.08	4.76
			SU	-	34.92	4.76

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	26dB BW (MHz)	
					UNII 2C	UNII 3
HE80	5690	138	26 T	# 0	-	-
				# 18	-	-
				35	15.16	4.84
				36	14.68	5.48
			52 T	# 37	-	-
				# 45	-	-
				51	35.16	4.36
				52	15.32	5.64
			106 T	# 53	-	-
				# 57	-	-
				59	35.64	4.52
				60	35.48	5.48
			242 T	# 61	-	-
				# 62	-	-
				63	45.08	4.68
				64	35.80	5.80
			484 T	# 65	-	-
				66	51.32	5.48
			996 T	67	75.80	5.48
			SU	-	75.96	5.48

10.6.2 6dB Bandwidth

Test Note:

1. 6dB Bandwidth = Measured Frequency[MHz] – 5725MHz
2. # : 6dB bandwidth is only located in UNII 2C. Therefore 6dB bandwidth do not overlap.
3. Limit : > 0.5 MHz

10.6.2.1 MIMO Ant1

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	6dB BW (MHz)
					UNII 3
HE20	5720	144	26 T	# 0	-
				# 4	-
				7	2.40
				8	4.44
			52 T	# 37	-
				# 38	-
				39	-
				40	4.48
			106 T	# 53	-
				54	4.56
			242 T	61	4.48
			SU	-	4.48

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	6dB BW (MHz)
					UNII 3
HE40	5710	142	26 T	# 0	-
				# 9	-
				16	2.04
				17	3.96
			52 T	# 37	-
				# 41	-
				# 43	-
				44	3.96
			106 T	# 53	-
				# 54	-
				# 55	2.60
				56	3.96
			242 T	# 61	-
				62	3.88
			484 T	65	3.64
			SU	-	3.80

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	6dB BW (MHz)
					UNII 3
HE80	5690	138	26 T	# 0	-
				# 18	-
				35	2.12
				36	4.04
			52 T	# 37	-
				# 45	-
				# 51	2.60
				52	4.04
			106 T	# 53	-
				# 57	-
				# 59	2.60
				60	4.04
			242 T	# 61	-
				# 62	-
				# 63	2.60
				64	4.04
			484 T	# 65	-
				66	3.72
			996 T	67	3.72
			SU	-	3.72

10.6.2.2 MIMO Ant2

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	6dB BW (MHz)
					UNII 3
HE20	5720	144	26 T	# 0	-
				# 4	-
				7	2.44
				8	4.44
			52 T	# 37	-
				# 38	-
				39	-
				40	4.48
			106 T	# 53	-
				54	4.56
			242 T	61	4.44
			SU	-	4.40

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	6dB BW (MHz)
					UNII 3
HE40	5710	142	26 T	# 0	-
				# 9	-
				16	2.04
				17	3.96
			52 T	# 37	-
				# 41	-
				# 43	-
				44	3.96
			106 T	# 53	-
				# 54	-
				# 55	2.52
				56	3.96
			242 T	# 61	-
				62	3.88
			484 T	65	3.40
			SU	-	3.48

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	6dB BW (MHz)
					UNII 3
HE80	5690	138	26 T	# 0	-
				# 18	-
				35	2.12
				36	4.04
			52 T	# 37	-
				# 45	-
				# 51	2.60
				52	4.04
			106 T	# 53	-
				# 57	-
				# 59	2.60
				60	4.04
			242 T	# 61	-
				# 62	-
				# 63	2.60
				64	3.88
			484 T	# 65	-
				66	3.40
			996 T	67	3.24
			SU	-	2.76

10.6.3 Output Power

Test Note:

1. # : 26dB bandwidth is only located in UNII 2C. Therefore 26dB bandwidth do not overlap.
2. Limit(2C) : 23.98 dBm or 11 dBm + 10 log B, (where B is the 26 dB emission bandwidth in megahertz.)
3. Limit(UNII 3) : 30.00 dBm

10.6.3.1 MIMO Ant1

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	Total Power (dBm)	
					UNII 2C	UNII 3
HE20	5720	144	26 T	0	6.47	-21.15
				4	6.75	-22.05
				7	-8.48	6.53
				8	-16.39	6.57
			52 T	37	8.53	-16.13
				38	8.97	-17.59
				39	8.57	-1.74
				40	-7.27	8.61
			106 T	53	10.46	-12.18
				54	7.41	7.83
			242 T	61	10.51	5.40
			SU	-	10.52	5.37

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	Total Power (dBm)	
					UNII 2C	UNII 3
HE40	5710	142	26 T	# 0	-	-
				9	6.81	-22.97
				16	-2.72	5.89
				17	-15.44	6.04
			52 T	# 37	-	-
				41	8.03	-18.90
				43	7.63	-9.24
				44	-4.10	6.80
			106 T	# 53	-	-
				# 54	-	-
				55	9.09	-14.26
				56	6.05	4.93
			242 T	# 61	-	-
				62	8.94	2.51
			484 T	65	8.94	-0.91
			SU	-	8.93	-0.92

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	Total Power (dBm)	
					UNII 2C	UNII 3
HE80	5690	138	26 T	# 0	-	-
				# 18	-	-
				35	-3.16	5.59
				36	-16.13	5.84
			52 T	# 37	-	-
				# 45	-	-
				51	6.37	-10.72
				52	-5.81	5.64
			106 T	# 53	-	-
				# 57	-	-
				59	7.79	-15.30
				60	4.71	3.75
			242 T	# 61	-	-
				# 62	-	-
				63	8.97	-14.89
				64	7.81	1.42
			484 T	# 65	-	-
				66	7.91	-2.51
			996 T	67	8.33	-5.53
			SU	-	8.23	-5.66

10.6.3.2 MIMO Ant2

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	Total Power (dBm)	
					UNII 2C	UNII 3
HE20	5720	144	26 T	0	5.85	-22.99
				4	6.30	-22.68
				7	-8.61	5.96
				8	-14.26	5.84
			52 T	37	8.42	-17.17
				38	8.39	-17.71
				39	8.05	-2.16
				40	-7.68	8.12
			106 T	53	10.30	-12.76
				54	7.09	7.47
			242 T	61	10.16	4.94
			SU	-	10.17	4.86

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	Total Power (dBm)	
					UNII 2C	UNII 3
HE40	5710	142	26 T	# 0	-	-
				9	6.58	-23.25
				16	-3.14	5.33
				17	-16.00	5.61
			52 T	# 37	-	-
				41	7.68	-19.44
				43	7.35	-9.56
				44	-4.39	6.35
			106 T	# 53	-	-
				# 54	-	-
				55	8.74	-14.50
				56	5.76	4.60
			242 T	# 61	-	-
				62	8.68	2.15
			484 T	65	8.56	-1.28
			SU	-	8.46	-1.41

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	Total Power (dBm)	
					UNII 2C	UNII 3
HE80	5690	138	26 T	# 0	-	-
				# 18	-	-
				35	-3.77	4.89
				36	-15.50	5.27
			52 T	# 37	-	-
				# 45	-	-
				51	6.00	-11.25
				52	-5.90	5.23
			106 T	# 53	-	-
				# 57	-	-
				59	7.51	-16.11
				60	4.17	3.19
			242 T	# 61	-	-
				# 62	-	-
				63	8.43	-15.60
				64	7.37	0.93
			484 T	# 65	-	-
				66	7.46	-3.07
			996 T	67	8.44	-5.88
			SU	-	8.17	-6.14

10.6.4 Power Spectral Density

Test Note:

1. # : 26dB bandwidth is only located in UNII 2C. Therefore 26dB bandwidth do not overlap.
2. Limit(UNII 1, 2A, 2C) : 11.0 dBm/MHz
3. Limit(UNII 3) : 30.0 dBm/500kHz

10.6.4.1 MIMO Ant1

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	PSD (dBm)	
					UNII 2C	UNII 3
HE20	5720	144	26 T	0	3.694	-26.914
				4	2.961	-28.024
				7	-3.648	1.328
				8	-18.799	1.226
			52 T	37	3.203	-24.721
				38	3.438	-19.533
				39	3.514	-0.271
				40	-4.608	0.509
			106 T	53	2.146	-15.871
				54	2.082	-0.718
			242 T	61	0.017	-3.140
			SU	-	-0.198	-2.989

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	PSD (dBm)	
					UNII 2C	UNII 3
HE40	5710	142	26 T	# 0	-	-
				9	4.241	-23.638
				16	1.232	1.176
				17	-21.579	1.187
			52 T	# 37	-	-
				41	2.805	-25.387
				43	2.362	-13.056
				44	-0.842	-0.682
			106 T	# 53	-	-
				# 54	-	-
				55	0.719	-20.625
				56	0.281	-2.925
			242 T	# 61	-	-
				62	-1.853	-5.208
			484 T	65	-4.587	-8.345
			SU	-	-4.573	-7.426

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	PSD (dBm)	
					UNII 2C	UNII 3
HE80	5690	138	26 T	# 0	-	-
				# 18	-	-
				35	-0.159	0.691
				36	-22.160	1.050
			52 T	# 37	-	-
				# 45	-	-
				51	1.173	-16.345
				52	-3.309	-1.842
			106 T	# 53	-	-
				# 57	-	-
				59	-0.564	-20.262
				60	-0.963	-3.977
			242 T	# 61	-	-
				# 62	-	-
				63	-2.941	-20.961
				64	-2.896	-6.283
			484 T	# 65	-	-
				66	-5.594	-9.629
			996 T	67	-8.520	-12.639
			SU	-	-8.606	-12.311

10.6.4.2 MIMO Ant2

802.11ax(HE20)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	PSD (dBm)	
					UNII 2C	UNII 3
HE20	5720	144	26 T	0	3.364	-27.674
				4	2.461	-24.507
				7	-4.716	0.622
				8	-19.710	0.812
			52 T	37	3.228	-20.869
				38	2.961	-22.035
				39	3.113	-0.682
				40	-5.486	0.160
			106 T	53	2.027	-17.654
				54	1.648	-0.934
			242 T	61	-0.320	-3.702
			SU	-	-0.473	-3.406

802.11ax(HE40)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	PSD (dBm)	
					UNII 2C	UNII 3
HE40	5710	142	26 T	# 0	-	-
				9	4.234	-26.802
				16	0.622	0.625
				17	-18.224	0.848
			52 T	# 37	-	-
				41	2.662	-21.712
				43	2.090	-13.463
				44	-1.374	-1.333
			106 T	# 53	-	-
				# 54	-	-
				55	0.398	-18.667
				56	0.111	-3.089
			242 T	# 61	-	-
				62	-2.317	-5.726
			484 T	65	-5.142	-8.466
			SU	-	-4.655	-7.819

802.11ax(HE80)

BW	Frequency [MHz]	Channel No.	Tone	RU Index	PSD (dBm)	
					UNII 2C	UNII 3
HE80	5690	138	26 T	# 0	-	-
				# 18	-	-
				35	-0.392	0.122
				36	-18.204	0.629
			52 T	# 37	-	-
				# 45	-	-
				51	0.785	-16.471
				52	-3.391	-2.240
			106 T	# 53	-	-
				# 57	-	-
				59	-0.831	-23.499
				60	-1.354	-4.713
			242 T	# 61	-	-
				# 62	-	-
				63	-3.375	-22.911
				64	-3.288	-7.038
			484 T	# 65	-	-
				66	-6.143	-10.386
			996 T	67	-8.047	-12.741
			SU	-	-8.629	-13.113

10.7 RADIATED SPURIOUS EMISSIONS (9 kHz – 1GHz)

Frequency Range : 9 kHz – 30MHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/m	dB
No Critical peaks found							

Note:

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

Frequency Range : Below 1 GHz

Frequency	Reading	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	dBuV/m	dBm/m	dBm	(H/V)	dBuV/m	dBuV/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

10.8 RADIATED SPURIOUS EMISSIONS (Above 1 GHz)

10.8.1 802.11ax(HE20)

1) 242 Tone RU 61_MIMO

Band :	UNII 1
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5180 MHz
Channel No.	36 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10360	51.95	0.49	V	52.44	68.20	15.76	PK
15540	48.57	2.62	V	51.19	73.98	22.79	PK
15540	36.60	2.62	V	39.22	53.98	14.76	AV
10360	51.48	0.49	H	51.97	68.20	16.23	PK
15540	49.09	2.62	H	51.71	73.98	22.27	PK
15540	36.47	2.62	H	39.09	53.98	14.89	AV

Band :	UNII 1
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5200 MHz
Channel No.	40 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10400	51.97	1.38	V	53.35	68.20	14.85	PK
15600	48.66	1.50	V	50.16	73.98	23.82	PK
15600	36.67	1.50	V	38.17	53.98	15.81	AV
10400	51.58	1.38	H	52.96	68.20	15.24	PK
15600	49.39	1.50	H	50.89	73.98	23.09	PK
15600	36.79	1.50	H	38.29	53.98	15.69	AV

Band :	UNII 1
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5240 MHz
Channel No.	48 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10480	52.30	-0.33	V	51.97	68.20	16.23	PK
15720	49.70	0.56	V	50.26	73.98	23.72	PK
15720	37.22	0.56	V	37.78	53.98	16.20	AV
10480	52.08	-0.33	H	51.75	68.20	16.45	PK
15720	50.01	0.56	H	50.57	73.98	23.41	PK
15720	37.10	0.56	H	37.66	53.98	16.32	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5260 MHz
Channel No.	52 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10520	52.55	-0.06	V	52.49	68.20	15.71	PK
15780	50.06	0.96	V	51.02	73.98	22.96	PK
15780	36.95	0.96	V	37.91	53.98	16.07	AV
10520	51.33	-0.06	H	51.27	68.20	16.93	PK
15780	50.32	0.96	H	51.28	73.98	22.70	PK
15780	37.22	0.96	H	38.18	53.98	15.80	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5280 MHz
Channel No.	56 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10560	51.53	-0.21	V	51.32	73.98	22.66	PK
10560	39.46	-0.21	V	39.25	53.98	14.73	AV
15840	51.01	0.05	V	51.06	73.98	22.92	PK
15840	37.78	0.05	V	37.83	53.98	16.15	AV
10560	51.92	-0.21	H	51.71	73.98	22.27	PK
10560	39.37	-0.21	H	39.16	53.98	14.82	AV
15840	50.86	0.05	H	50.91	73.98	23.07	PK
15840	37.87	0.05	H	37.92	53.98	16.06	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5320 MHz
Channel No.	64 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
10640	52.89	-0.04	V	52.85	73.98	21.13	PK
10640	39.18	-0.04	V	39.14	53.98	14.84	AV
15960	50.77	-0.36	V	50.41	73.98	23.57	PK
15960	37.77	-0.36	V	37.41	53.98	16.57	AV
10640	51.65	-0.04	H	51.61	73.98	22.37	PK
10640	39.08	-0.04	H	39.04	53.98	14.94	AV
15960	50.01	-0.36	H	49.65	73.98	24.33	PK
15960	37.83	-0.36	H	37.47	53.98	16.51	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5500 MHz
Channel No.	100 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11000	51.80	1.75	V	53.55	73.98	20.43	PK
11000	39.06	1.75	V	40.81	53.98	13.17	AV
16500	50.32	1.06	V	51.38	68.20	16.82	PK
11000	51.97	1.75	H	53.72	73.98	20.26	PK
11000	39.20	1.75	H	40.95	53.98	13.03	AV
16500	49.66	1.06	H	50.72	68.20	17.48	PK

Band :	UNII 2C
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5600 MHz
Channel No.	120 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11200	51.53	0.26	V	51.79	73.98	22.19	PK
11200	38.91	0.26	V	39.17	53.98	14.81	AV
16800	51.01	3.41	V	54.42	68.20	13.78	PK
11200	51.83	0.26	H	52.09	73.98	21.89	PK
11200	38.79	0.26	H	39.05	53.98	14.93	AV
16800	49.93	3.41	H	53.34	68.20	14.86	PK

Band :	UNII 2C
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5720 MHz
Channel No.	144 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11440	51.88	0.74	V	52.62	73.98	21.36	PK
11440	39.22	0.74	V	39.96	53.98	14.02	AV
17160	50.90	5.47	V	56.37	68.20	11.83	PK
11440	51.72	0.74	H	52.46	73.98	21.52	PK
11440	39.24	0.74	H	39.98	53.98	14.00	AV
17160	50.56	5.47	H	56.03	68.20	12.17	PK

Band :	UNII 3
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5745MHz
Channel No.	149 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11490	50.61	0.57	V	51.18	73.98	22.80	PK
11490	38.12	0.57	V	38.69	53.98	15.29	AV
17235	51.00	5.22	V	56.22	68.20	11.98	PK
11490	51.43	0.57	H	52.00	73.98	21.98	PK
11490	38.26	0.57	H	38.83	53.98	15.15	AV
17235	50.12	5.22	H	55.34	68.20	12.86	PK

Band :	UNII 3
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5785 MHz
Channel No.	157 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11570	51.33	0.73	V	52.06	73.98	21.92	PK
11570	39.68	0.73	V	40.41	53.98	13.57	AV
17355	50.54	6.04	V	56.58	68.20	11.62	PK
11570	51.77	0.73	H	52.50	73.98	21.48	PK
11570	39.61	0.73	H	40.34	53.98	13.64	AV
17355	50.20	6.04	H	56.24	68.20	11.96	PK

Band :	UNII 3
Operation Mode:	802.11ax(HE20)
Transfer MCS Index:	MCS0
Operating Frequency	5825 MHz
Channel No.	165 Ch

Frequency [MHz]	Reading [dBuV]	A.F.+C.L. -A.G+D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
11650	51.47	-0.65	V	50.82	73.98	23.16	PK
11650	39.01	-0.65	V	38.36	53.98	15.62	AV
17475	50.18	7.62	V	57.80	68.20	10.40	PK
11650	50.82	-0.65	H	50.17	73.98	23.81	PK
11650	38.89	-0.65	H	38.24	53.98	15.74	AV
17475	48.54	7.62	H	56.16	68.20	12.04	PK

Note:

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

In order to simplify the report, We only have attached RSE result of worst case.

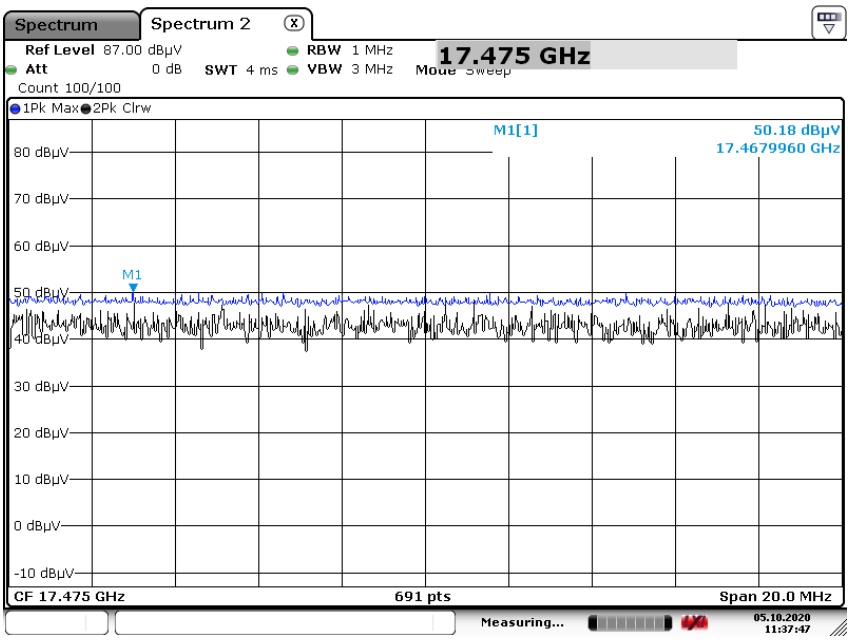
[Worst Case]

- UNII 1, 2A, 2C, 3 : HE20
- HE20 : Worst case(Highest Power) : 242 Tone RU 61

▣ Test Plots_242 Tone RU 61

[MIMO]

Peak Reading (802.11ax(HE20), Ch.165 3rd Harmonic, X-V)



Note:

Only the worst case plots for Radiated Spurious Emissions.

10.9 RADIATED RESTRICTED BAND EDGE

10.9.1 MIMO

1) 802.11ax(HE20)

1.1) 26 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5180 MHz
Channel No.	36 Ch
RU offset.	0

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.91	5.75	H	50.66	73.98	23.32	PK
5150	32.34	5.75	H	38.09	53.98	15.89	AV
5150	44.65	5.75	V	50.4	73.98	23.58	PK
5150	32.15	5.75	V	37.9	53.98	16.08	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5320 MHz
Channel No.	64 Ch
RU offset.	8

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	44.78	5.52	H	50.30	73.98	23.68	PK
5350	32.40	5.52	H	37.92	53.98	16.06	AV
5350	44.50	5.52	V	50.02	73.98	23.96	PK
5350	32.13	5.52	V	37.65	53.98	16.33	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5500 MHz
Channel No.	100 Ch
RU offset.	0

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	44.44	7.05	H	51.49	73.98	22.49	PK
5460	31.78	7.05	H	38.83	53.98	15.15	AV
5470	44.78	6.59	H	51.37	68.20	16.83	PK
5460	44.14	7.05	V	51.19	73.98	22.79	PK
5460	31.60	7.05	V	38.65	53.98	15.33	AV
5470	43.80	6.59	V	50.39	68.20	17.81	PK

1.2) 52 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5180 MHz
Channel No.	36 Ch
RU offset.	37

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	45.69	5.75	H	51.44	73.98	22.54	PK
5150	32.83	5.75	H	38.58	53.98	15.40	AV
5150	45.18	5.75	V	50.93	73.98	23.05	PK
5150	32.67	5.75	V	38.42	53.98	15.56	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5320 MHz
Channel No.	64 Ch
RU offset.	40

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	45.26	5.52	H	50.78	73.98	23.20	PK
5350	33.95	5.52	H	39.47	53.98	14.51	AV
5350	45.02	5.52	V	50.54	73.98	23.44	PK
5350	33.74	5.52	V	39.26	53.98	14.72	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5500 MHz
Channel No.	100 Ch
RU offset.	37

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	44.82	7.05	H	51.87	73.98	22.11	PK
5460	32.13	7.05	H	39.18	53.98	14.80	AV
5470	46.62	6.59	H	53.21	68.20	14.99	PK
5460	44.60	7.05	V	51.65	73.98	22.33	PK
5460	32.08	7.05	V	39.13	53.98	14.85	AV
5470	45.99	6.59	V	52.58	68.20	15.62	PK

1.3) 106 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5180 MHz
Channel No.	36 Ch
RU offset.	53

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	46.28	5.75	H	52.03	73.98	21.95	PK
5150	33.20	5.75	H	38.95	53.98	15.03	AV
5150	45.87	5.75	V	51.62	73.98	22.36	PK
5150	33.11	5.75	V	38.86	53.98	15.12	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5320 MHz
Channel No.	64 Ch
RU offset.	54

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	45.92	5.52	H	51.44	73.98	22.54	PK
5350	34.47	5.52	H	39.99	53.98	13.99	AV
5350	45.65	5.52	V	51.17	73.98	22.81	PK
5350	34.20	5.52	V	39.72	53.98	14.26	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5500 MHz
Channel No.	100 Ch
RU offset.	53

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.19	7.05	H	52.24	73.98	21.74	PK
5460	32.56	7.05	H	39.61	53.98	14.37	AV
5470	46.12	6.59	H	52.71	68.20	15.49	PK
5460	44.93	7.05	V	51.98	73.98	22.00	PK
5460	32.45	7.05	V	39.5	53.98	14.48	AV
5470	45.89	6.59	V	52.48	68.20	15.72	PK

1.4) 242 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5180 MHz
Channel No.	36 Ch
RU offset.	61

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	45.53	5.75	H	51.28	73.98	22.70	PK
5150	34.10	5.75	H	39.85	53.98	14.13	AV
5150	44.87	5.75	V	50.62	73.98	23.36	PK
5150	34.08	5.75	V	39.83	53.98	14.15	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5320 MHz
Channel No.	64 Ch
RU offset.	61

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	46.56	5.52	H	52.08	73.98	21.90	PK
5350	34.61	5.52	H	40.13	53.98	13.85	AV
5350	45.48	5.52	V	51	73.98	22.98	PK
5350	33.57	5.52	V	39.09	53.98	14.89	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE20)
Transfer Rate:	MCS0
Operating Frequency	5500 MHz
Channel No.	100 Ch
RU offset.	61

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	44.86	7.05	H	51.91	73.98	22.07	PK
5460	32.90	7.05	H	39.95	53.98	14.03	AV
5470	47.18	6.59	H	53.77	68.20	14.43	PK
5460	45.47	7.05	V	52.52	73.98	21.46	PK
5460	32.56	7.05	V	39.61	53.98	14.37	AV
5470	45.83	6.59	V	52.42	68.20	15.78	PK

2) 802.11ax(HE40)

2.1) 26 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5190 MHz
Channel No.	38 Ch
RU offset.	0

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.38	5.75	H	50.13	73.98	23.85	PK
5150	32.30	5.75	H	38.05	53.98	15.93	AV
5150	43.75	5.75	V	49.5	73.98	24.48	PK
5150	32.10	5.75	V	37.85	53.98	16.13	AV

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5310 MHz
Channel No.	62 Ch
RU offset.	17

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	44.63	5.52	H	50.15	73.98	23.83	PK
5350	32.55	5.52	H	38.07	53.98	15.91	AV
5350	43.85	5.52	V	49.37	73.98	24.61	PK
5350	32.20	5.52	V	37.72	53.98	16.26	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5510 MHz
Channel No.	102 Ch
RU offset.	0

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	44.59	7.05	H	51.64	73.98	22.34	PK
5460	31.87	7.05	H	38.92	53.98	15.06	AV
5470	44.82	6.59	H	51.41	68.20	16.79	PK
5460	42.95	7.05	V	50	73.98	23.98	PK
5460	31.72	7.05	V	38.77	53.98	15.21	AV
5470	43.61	6.59	V	50.2	68.20	18.00	PK

2.2) 52 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5190 MHz
Channel No.	38 Ch
RU offset.	37

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.96	5.75	H	50.71	73.98	23.27	PK
5150	32.38	5.75	H	38.13	53.98	15.85	AV
5150	44.50	5.75	V	50.25	73.98	23.73	PK
5150	32.10	5.75	V	37.85	53.98	16.13	AV

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5310 MHz
Channel No.	62 Ch
RU offset.	44

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	47.24	5.52	H	52.76	73.98	21.22	PK
5350	32.79	5.52	H	38.31	53.98	15.67	AV
5350	46.89	5.52	V	52.41	73.98	21.57	PK
5350	32.65	5.52	V	38.17	53.98	15.81	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5510 MHz
Channel No.	102 Ch
RU offset.	37

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	44.72	7.05	H	51.77	73.98	22.21	PK
5460	32.18	7.05	H	39.23	53.98	14.75	AV
5470	45.08	6.59	H	51.67	68.20	16.53	PK
5460	44.51	7.05	V	51.56	73.98	22.42	PK
5460	32.10	7.05	V	39.15	53.98	14.83	AV
5470	44.28	6.59	V	50.87	68.20	17.33	PK

2.3) 106 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5190 MHz
Channel No.	38 Ch
RU offset.	53

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.53	5.75	H	50.28	73.98	23.70	PK
5150	32.68	5.75	H	38.43	53.98	15.55	AV
5150	43.18	5.75	V	48.93	73.98	25.05	PK
5150	32.40	5.75	V	38.15	53.98	15.83	AV

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5310 MHz
Channel No.	62 Ch
RU offset.	56

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	45.53	5.52	H	51.05	73.98	22.93	PK
5350	32.84	5.52	H	38.36	53.98	15.62	AV
5350	44.65	5.52	V	50.17	73.98	23.81	PK
5350	32.33	5.52	V	37.85	53.98	16.13	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5510 MHz
Channel No.	102 Ch
RU offset.	53

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.02	7.05	H	52.07	73.98	21.91	PK
5460	32.27	7.05	H	39.32	53.98	14.66	AV
5470	45.11	6.59	H	51.7	68.20	16.50	PK
5460	44.85	7.05	V	51.9	73.98	22.08	PK
5460	32.10	7.05	V	39.15	53.98	14.83	AV
5470	44.60	6.59	V	51.19	68.20	17.01	PK

2.4) 242 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5190 MHz
Channel No.	38 Ch
RU offset.	61

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.38	5.75	H	50.13	73.98	23.85	PK
5150	32.97	5.75	H	38.72	53.98	15.26	AV
5150	43.95	5.75	V	49.7	73.98	24.28	PK
5150	32.70	5.75	V	38.45	53.98	15.53	AV

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5310 MHz
Channel No.	62 Ch
RU offset.	62

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	45.35	5.52	H	50.87	73.98	23.11	PK
5350	33.10	5.52	H	38.62	53.98	15.36	AV
5350	45.10	5.52	V	50.62	73.98	23.36	PK
5350	32.95	5.52	V	38.47	53.98	15.51	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5510 MHz
Channel No.	102 Ch
RU offset.	61

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.65	7.05	H	52.70	73.98	21.28	PK
5460	32.36	7.05	H	39.41	53.98	14.57	AV
5470	45.53	6.59	H	52.12	68.20	16.08	PK
5460	44.65	7.05	V	51.7	73.98	22.28	PK
5460	32.18	7.05	V	39.23	53.98	14.75	AV
5470	44.67	6.59	V	51.26	68.20	16.94	PK

2.5) 484 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5190 MHz
Channel No.	38 Ch
RU offset.	65

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	50.18	5.75	H	55.93	73.98	18.05	PK
5150	36.14	5.75	H	41.89	53.98	12.09	AV
5150	49.85	5.75	V	55.6	73.98	18.38	PK
5150	35.89	5.75	V	41.64	53.98	12.34	AV

Band :	UNII 1
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5310 MHz
Channel No.	62 Ch
RU offset.	65

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	54.67	5.52	H	60.19	73.98	13.79	PK
5350	38.37	5.52	H	43.89	53.98	10.09	AV
5350	54.10	5.52	V	59.62	73.98	14.36	PK
5350	38.25	5.52	V	43.77	53.98	10.21	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE40)
Transfer MCS Index:	MCS0
Operating Frequency	5510 MHz
Channel No.	102 Ch
RU offset.	65

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.50	7.05	H	52.55	73.98	21.43	PK
5460	33.19	7.05	H	40.24	53.98	13.74	AV
5470	49.28	6.59	H	55.87	68.20	12.33	PK
5460	45.08	7.05	V	52.13	73.98	21.85	PK
5460	32.72	7.05	V	39.77	53.98	14.21	AV
5470	48.26	6.59	V	54.85	68.20	13.35	PK

3) 802.11ax(HE80)

3.1) 26 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5210 MHz
Channel No.	42 Ch
RU offset.	0

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.20	5.75	H	49.95	73.98	24.03	PK
5150	32.80	5.75	H	38.55	53.98	15.43	AV
5150	43.84	5.75	V	49.59	73.98	24.39	PK
5150	32.65	5.75	V	38.4	53.98	15.58	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5290 MHz
Channel No.	58 Ch
RU offset.	36

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	46.67	5.52	H	52.19	73.98	21.79	PK
5350	34.17	5.52	H	39.69	53.98	14.29	AV
5350	45.94	5.52	V	51.46	73.98	22.52	PK
5350	34.02	5.52	V	39.54	53.98	14.44	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5530 MHz
Channel No.	106 Ch
RU offset.	0

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	44.90	7.05	H	51.95	73.98	22.03	PK
5460	32.71	7.05	H	39.76	53.98	14.22	AV
5470	44.00	6.59	H	50.59	68.20	17.61	PK
5460	44.84	7.05	V	51.89	73.98	22.09	PK
5460	32.50	7.05	V	39.55	53.98	14.43	AV
5470	42.93	6.59	V	49.52	68.20	18.68	PK

3.2) 52 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5210 MHz
Channel No.	42 Ch
RU offset.	37

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.97	5.75	H	50.72	73.98	23.26	PK
5150	32.65	5.75	H	38.4	53.98	15.58	AV
5150	43.79	5.75	V	49.54	73.98	24.44	PK
5150	32.56	5.75	V	38.31	53.98	15.67	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5290 MHz
Channel No.	58 Ch
RU offset.	52

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	47.47	5.52	H	52.99	73.98	20.99	PK
5350	33.98	5.52	H	39.5	53.98	14.48	AV
5350	47.32	5.52	V	52.84	73.98	21.14	PK
5350	33.78	5.52	V	39.3	53.98	14.68	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5530 MHz
Channel No.	106 Ch
RU offset.	37

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.03	7.05	H	52.08	73.98	21.90	PK
5460	32.59	7.05	H	39.64	53.98	14.34	AV
5470	44.68	6.59	H	51.27	68.20	16.93	PK
5460	44.28	7.05	V	51.33	73.98	22.65	PK
5460	32.48	7.05	V	39.53	53.98	14.45	AV
5470	43.16	6.59	V	49.75	68.20	18.45	PK

3.3) 106 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5210 MHz
Channel No.	42 Ch
RU offset.	53

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.09	5.75	H	49.84	73.98	24.14	PK
5150	32.66	5.75	H	38.41	53.98	15.57	AV
5150	43.61	5.75	V	49.36	73.98	24.62	PK
5150	32.41	5.75	V	38.16	53.98	15.82	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5290 MHz
Channel No.	58 Ch
RU offset.	60

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	49.05	5.52	H	54.57	73.98	19.41	PK
5350	33.17	5.52	H	38.69	53.98	15.29	AV
5350	48.25	5.52	V	53.77	73.98	20.21	PK
5350	33.02	5.52	V	38.54	53.98	15.44	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5530 MHz
Channel No.	106 Ch
RU offset.	53

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.49	7.05	H	52.54	73.98	21.44	PK
5460	32.62	7.05	H	39.67	53.98	14.31	AV
5470	45.73	6.59	H	52.32	68.20	15.88	PK
5460	45.08	7.05	V	52.13	73.98	21.85	PK
5460	32.40	7.05	V	39.45	53.98	14.53	AV
5470	45.20	6.59	V	51.79	68.20	16.41	PK

3.4) 242 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5210 MHz
Channel No.	42 Ch
RU offset.	61

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	44.23	5.75	H	49.98	73.98	24.00	PK
5150	32.83	5.75	H	38.58	53.98	15.40	AV
5150	43.92	5.75	V	49.67	73.98	24.31	PK
5150	32.61	5.75	V	38.36	53.98	15.62	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5290 MHz
Channel No.	58 Ch
RU offset.	64

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	48.54	5.52	H	54.06	73.98	19.92	PK
5350	33.19	5.52	H	38.71	53.98	15.27	AV
5350	48.01	5.52	V	53.53	73.98	20.45	PK
5350	33.11	5.52	V	38.63	53.98	15.35	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5530 MHz
Channel No.	106 Ch
RU offset.	61

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.22	7.05	H	52.27	73.98	21.71	PK
5460	32.41	7.05	H	39.46	53.98	14.52	AV
5470	46.22	6.59	H	52.81	68.20	15.39	PK
5460	45.18	7.05	V	52.23	73.98	21.75	PK
5460	32.30	7.05	V	39.35	53.98	14.63	AV
5470	45.61	6.59	V	52.2	68.20	16.00	PK

3.5) 484 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5210 MHz
Channel No.	42 Ch
RU offset.	65

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	45.19	5.75	H	50.94	73.98	23.04	PK
5150	34.34	5.75	H	40.09	53.98	13.89	AV
5150	44.89	5.75	V	50.64	73.98	23.34	PK
5150	34.20	5.75	V	39.95	53.98	14.03	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5290 MHz
Channel No.	58 Ch
RU offset.	66

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	50.08	5.52	H	55.60	73.98	18.38	PK
5350	35.92	5.52	H	41.44	53.98	12.54	AV
5350	49.61	5.52	V	55.13	73.98	18.85	PK
5350	35.66	5.52	V	41.18	53.98	12.80	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5530 MHz
Channel No.	106 Ch
RU offset.	65

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	44.65	7.05	H	51.70	73.98	22.28	PK
5460	32.75	7.05	H	39.8	53.98	14.18	AV
5470	45.98	6.59	H	52.57	68.20	15.63	PK
5460	44.28	7.05	V	51.33	73.98	22.65	PK
5460	32.50	7.05	V	39.55	53.98	14.43	AV
5470	45.51	6.59	V	52.1	68.20	16.10	PK

3.6) 996 Tone

Band :	UNII 1
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5210 MHz
Channel No.	42 Ch
RU offset.	67

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5150	50.65	5.75	H	56.40	73.98	17.58	PK
5150	36.94	5.75	H	42.69	53.98	11.29	AV
5150	49.18	5.75	V	54.93	73.98	19.05	PK
5150	36.30	5.75	V	42.05	53.98	11.93	AV

Band :	UNII 2A
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5290 MHz
Channel No.	58 Ch
RU offset.	67

Frequency [MHz]	Reading dBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5350	51.80	5.52	H	57.32	73.98	16.66	PK
5350	38.47	5.52	H	43.99	53.98	9.99	AV
5350	50.20	5.52	V	55.72	73.98	18.26	PK
5350	38.10	5.52	V	43.62	53.98	10.36	AV

Band :	UNII 2C
Operation Mode:	802.11ax(HE80)
Transfer MCS Index:	MCS0
Operating Frequency	5530 MHz
Channel No.	106 Ch
RU offset.	67

Frequency [MHz]	Reading DBuV	AN.+CL-AMP+ATT. +D.F. [dB]	ANT. POL [H/V]	Total [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Measurement Type
5460	45.30	7.05	H	52.35	73.98	21.63	PK
5460	34.00	7.05	H	41.05	53.98	12.93	AV
5470	47.33	6.59	H	53.92	68.20	14.28	PK
5460	45.16	7.05	V	52.21	73.98	21.77	PK
5460	33.85	7.05	V	40.9	53.98	13.08	AV
5470	46.61	6.59	V	53.2	68.20	15.00	PK

Note:

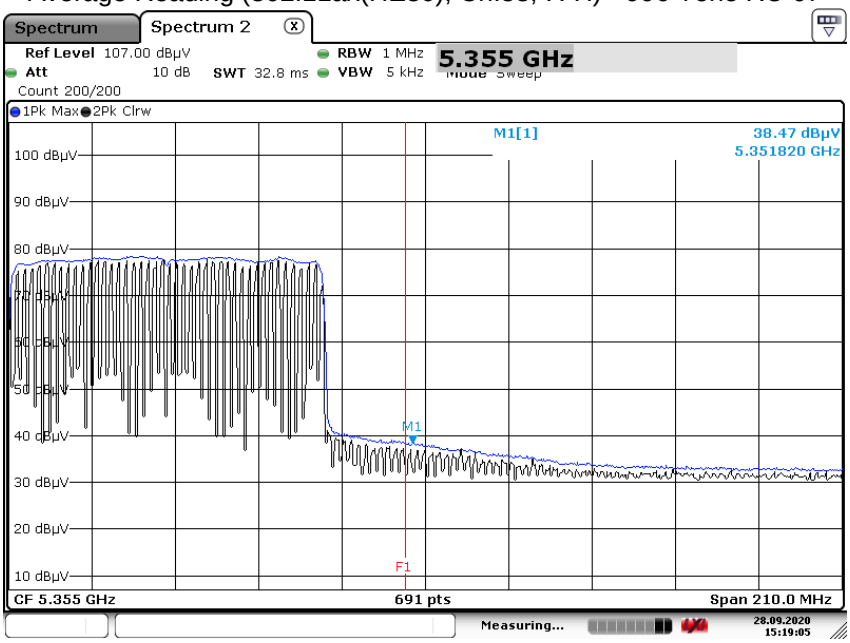
All Modes of operation were investigated and the worst case configuration results are reported.

In order to simplify the report, We only have attached Bandedge result of worst case.

▣ Test Plots(UNII 1, 2A, 2C),

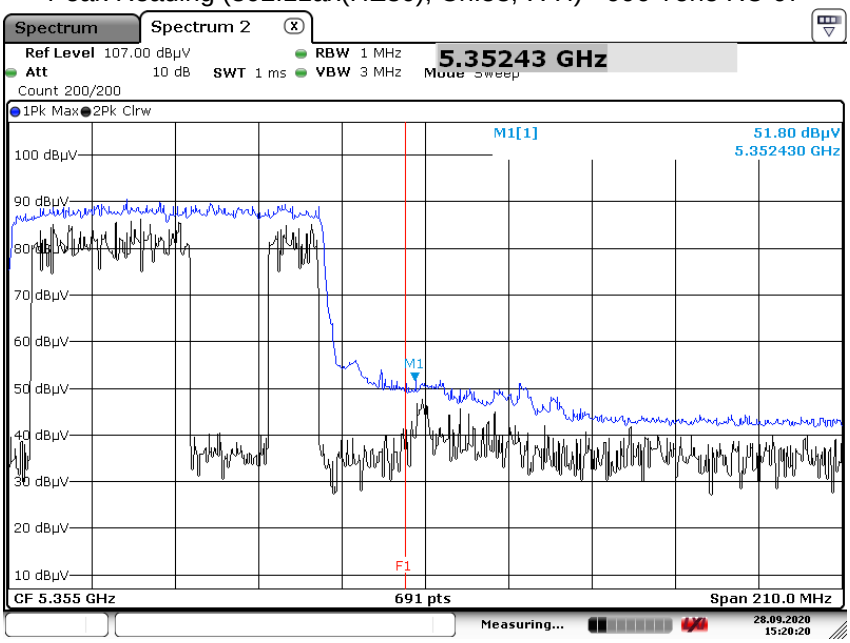
[MIMO]

Average Reading (802.11ax(HE80), Ch.58, X-H) - 996 Tone RU 67



Date: 28.SEP.2020 15:19:05

Peak Reading (802.11ax(HE80), Ch.58, X-H) - 996 Tone RU 67



Date: 28.SEP.2020 15:20:20

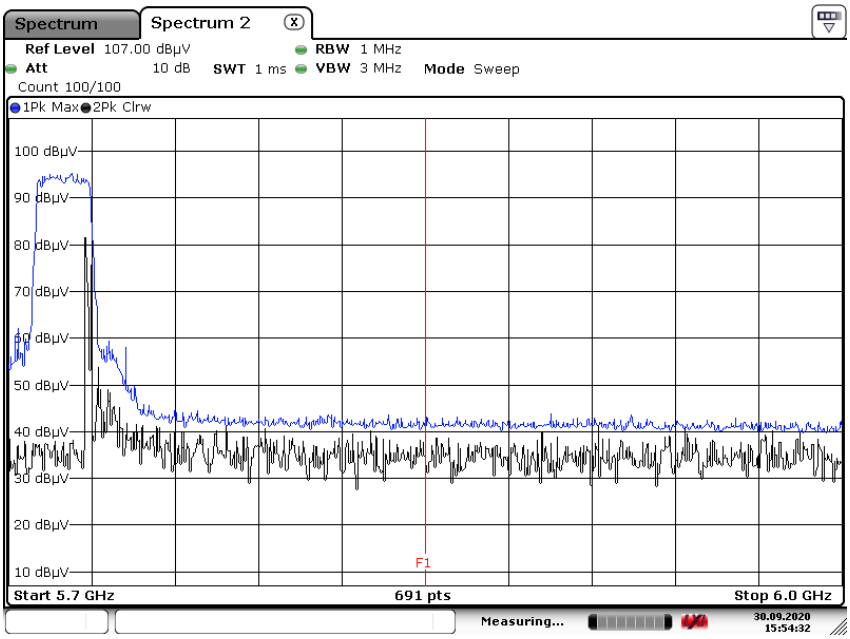
Note:

Only the worst case plots for Radiated Restricted Band Edge.

▣ Test Plots(Staraddle Channel)

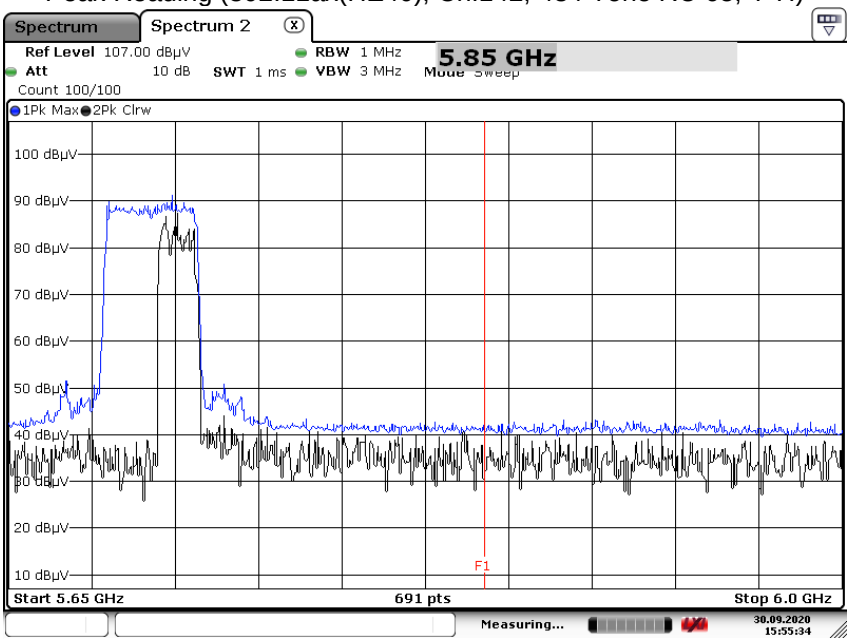
[MIMO]

Peak Reading (802.11ax(HE20), Ch.144, 242 Tone RU 61, Y-H)



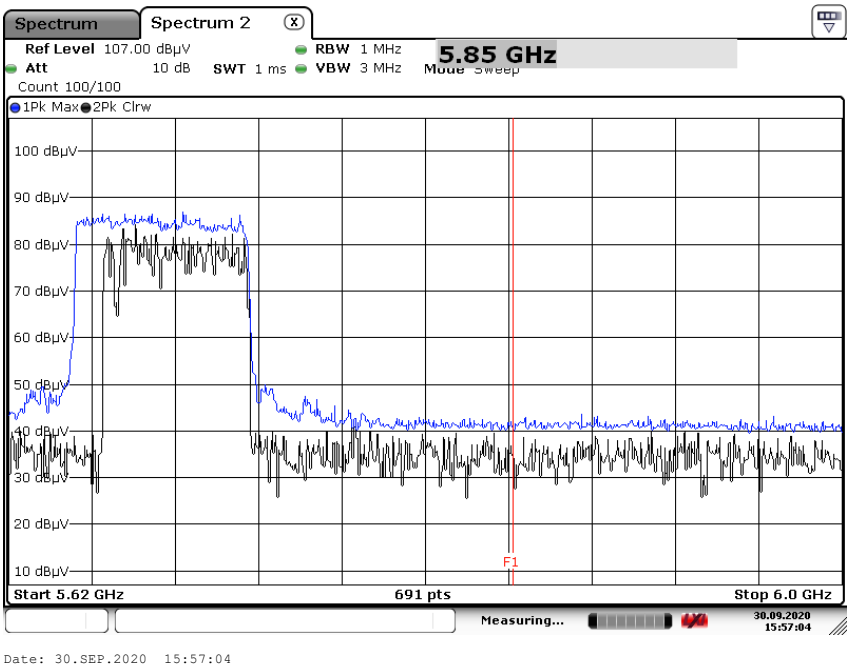
Date: 30.SEP.2020 15:54:32

Peak Reading (802.11ax(HE40), Ch.142, 484 Tone RU 65, Y-H)



Date: 30.SEP.2020 15:55:34

Peak Reading (802.11ax(HE80), Ch.138, 996 Tone RU 67, Y-H)



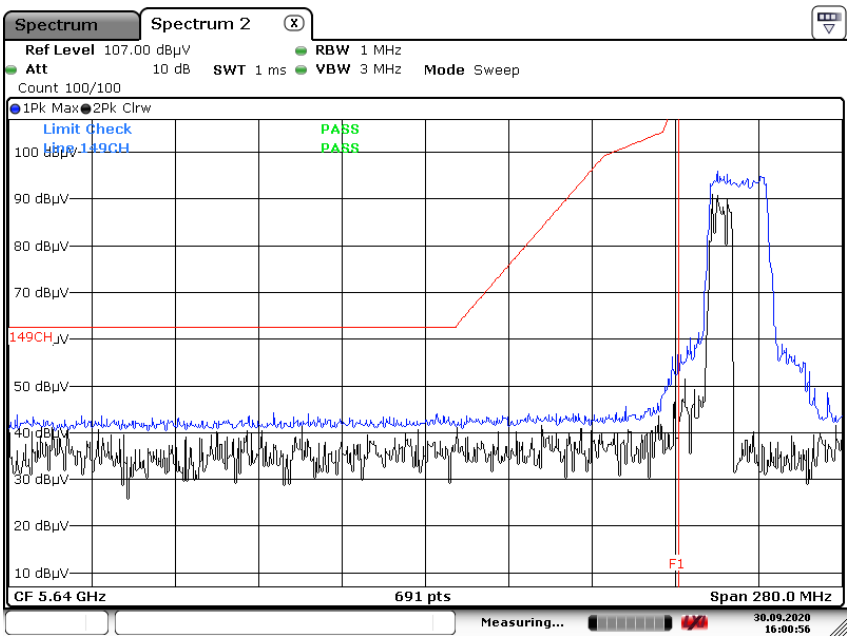
Note :

1. Only the worst case plots for Radiated Restricted Band Edge.
2. Red line : 5 850 MHz
3. Ambient Noise (Because of ambient noise, We attached only the worst plot without a data table)

▣ Test Plots(UNII 3)

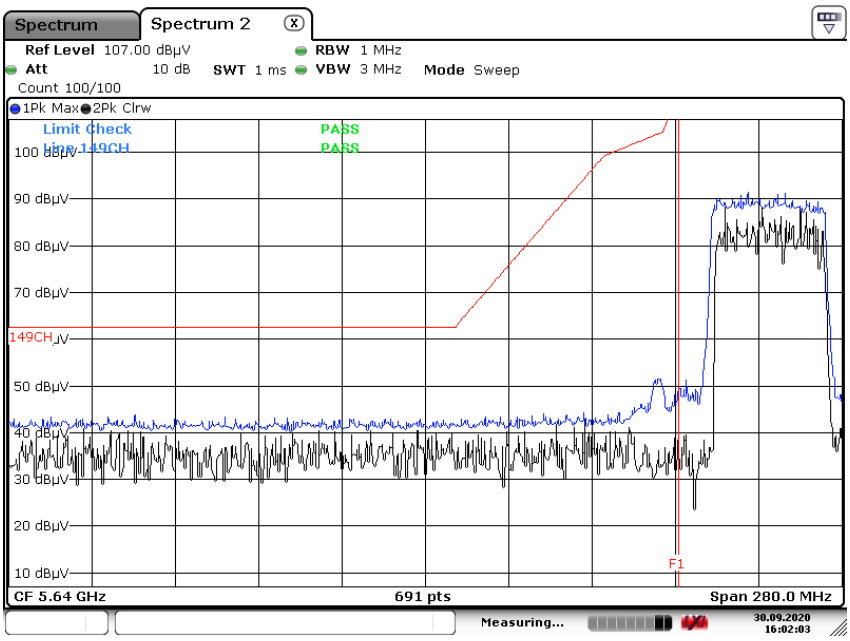
[MIMO]

Peak Reading (802.11ax(HE20), Ch.149, 242 Tone RU 61, Y-H)



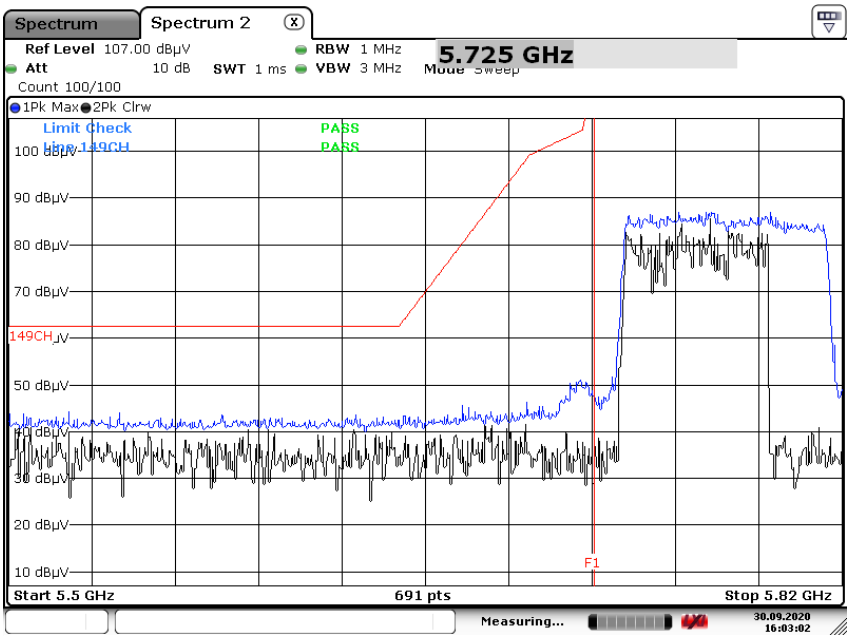
Date: 30.SEP.2020 16:00:57

Peak Reading (802.11ax(HE40), Ch.151, 484 Tone RU 65, Y-H)



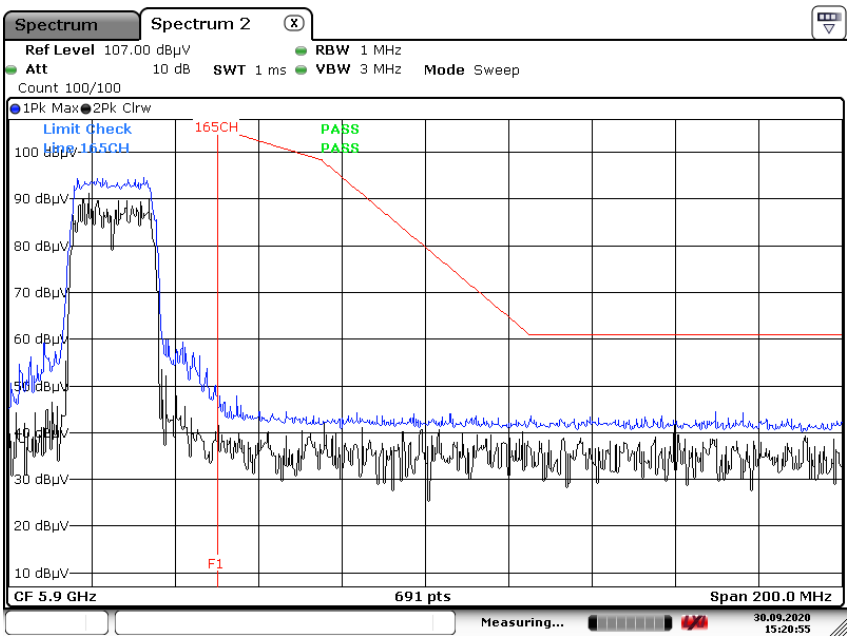
Date: 30.SEP.2020 16:02:03

Peak Reading (802.11ax(HE80), Ch.155, 996 Tone RU 67, Y-H)



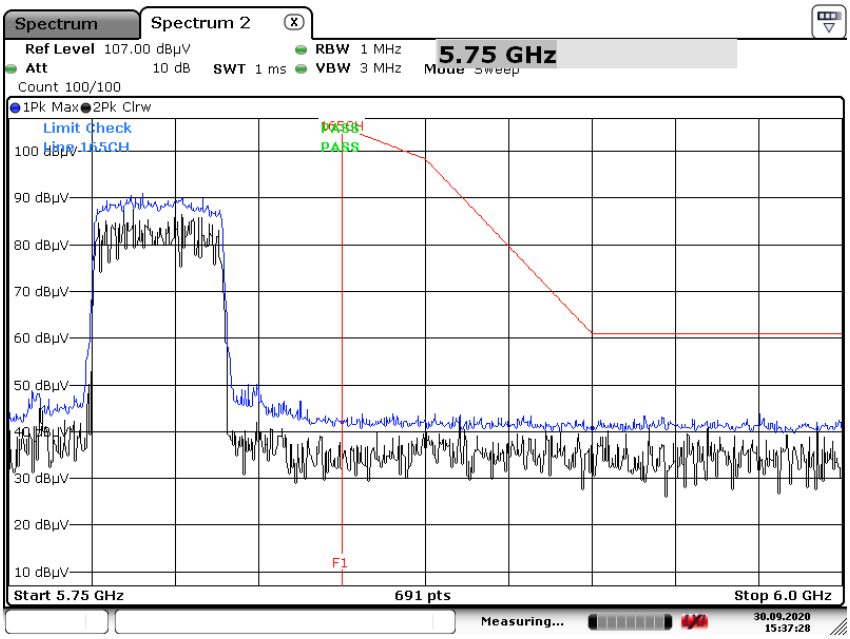
Date: 30.SEP.2020 16:03:01

Peak Reading (802.11ax(HE20), Ch.165, 242 Tone RU 61, Y-H)



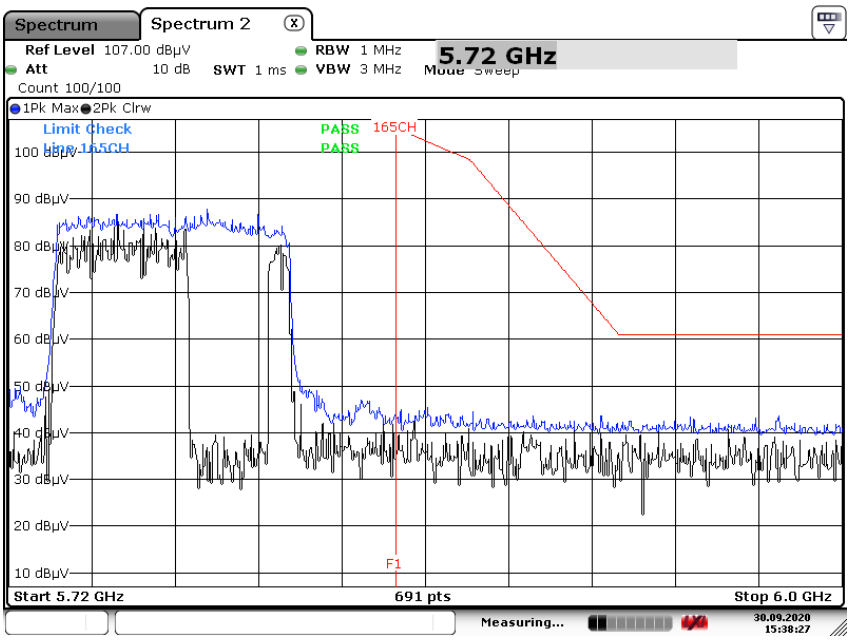
Date: 30.SEP.2020 15:20:56

Peak Reading (802.11ax(HE40), Ch.159, 484 Tone RU 65, Y-H)



Date: 30.SEP.2020 15:37:28

Peak Reading (802.11ax(HE80), Ch.155, 996 Tone RU 67, Y-H)



Date: 30.SEP.2020 15:38:27

11. 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	ESCI / Test Receiver	06/10/2020	Annual	100584
ESPAC	SU-642 /Temperature Chamber	03/18/2020	Annual	0093008124
Agilent	N9020A / Signal Analyzer	05/11/2020	Annual	MY51110085
Agilent	N9030A / Signal Analyzer	01/13/2020	Annual	MY49431210
Rohde & Schwarz	OSP 120 / Power Measurement Set	07/02/2020	Annual	101231
Agilent	N1911A / Power Meter	04/07/2020	Annual	MY45100523
Keysight	N1921A / Power Sensor	06/08/2020	Annual	MY57820067
Agilent	87300B / Directional Coupler	11/11/2019	Annual	3116A03621
Hewlett Packard	11667B / Power Splitter	05/25/2020	Annual	05001
Hewlett Packard	E3632A / DC Power Supply	06/12/2020	Annual	KR75303960
Agilent	8493C / Attenuator(10 dB)	06/26/2020	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	05/18/2020	Biennial	1513-175
Schwarzbeck	VULB 9168 / Hybrid Antenna	03/22/2019	Biennial	760
Schwarzbeck	BBHA 9120D / Horn Antenna	04/29/2019	Biennial	9120D-937
Schwarzbeck	BBHA9170 / Horn Antenna(15 GHz ~ 40 GHz)	11/29/2019	Biennial	BBHA9170541
Rohde & Schwarz	FSV40-N / Spectrum Analyzer	07/28/2020	Annual	102168
Agilent	N9030A / Signal Analyzer	01/13/2020	Annual	MY49431210
Wainwright Instruments	WRCJV2400/2483.5-2370/2520-60/12SS / Band Reject Filter	01/21/2020	Annual	2
Wainwright Instruments	WRCJV5100/5850-40/50-8EEK / Band Reject Filter	02/10/2020	Annual	1
Wainwright Instruments	WHK3.0/18G-10EF / High Pass Filter	03/02/2020	Annual	8
Wainwright Instruments	WHKX8-6090-7000-18000-40SS/ High Pass Filter	03/02/2020	Annual	25
Api tech.	18B-03 / Attenuator (3 dB)	03/02/2020	Annual	1
Agilent	8493C-10 / Attenuator(10 dB)	03/02/2020	Annual	08285
CERNEX	CBLU1183540 / Power Amplifier	03/02/2020	Annual	22964
CERNEX	CBL06185030 / Power Amplifier	03/02/2020	Annual	22965
CERNEX	CBL18265035 / Power Amplifier	12/26/2019	Annual	22966
CERNEX	CBL26405040 / Power Amplifier	03/23/2020	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).

12. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2010-FC013-P