



FCC RF Test Report

APPLICANT : Nokia Shanghai Bell Co. Ltd.
EQUIPMENT : Nokia FastMile 5G Gateway 3.2
BRAND NAME : Nokia
MODEL NAME : 5G16-12W-A
FCC ID : 2ADZR5G1612WA
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure
TEST DATE(S) : Dec. 06, 2021 ~ Dec. 31, 2021

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager



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People's Republic of China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR1O2908B	Rev. 01	Initial issue of report	Jan. 20, 2022

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 & 15.403(i)	26dB & 99% Bandwidth	-	Report only	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 30 dBm for Band 1, and 24 dBm for Band 2 / 3	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 17 dBm for Band 1, and 11 dBm for Band 2 / 3	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	Pass	Under limit 0.54 dB at 5148.8 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 5.63 dB at 0.365 MHz
3.6	15.203 & 15.407(a)	Antenna Requirement	15.203 & 15.407(a)	Pass	-

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Nokia Shanghai Bell Co. Ltd.

No. 388, Ningqiao Rd. Pilot Free Trade Zone, Shanghai 201206, China

1.2 Manufacturer

Nokia Solutions and Networks Oy

Karakaari 7 02610 Espoo Finland

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Nokia FastMile 5G Gateway 3.2
Brand Name	Nokia
Model Name	5G16-12W-A
FCC ID	2ADZR5G1612WA
HW Version	3TG01797A
SW Version	5GGW3-OMNI-1_D210400Bh3T0301E0156
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. There are two types of EUT: sample 1 with 1st source antenna and sample 2 with 2nd source antenna. Only the antenna manufacturer is different and the parameters are the same. According to the difference, we chose sample 1 to perform full test and sample 2 to verify the worse cases.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5720 MHz
Maximum Output Power to Antenna	<CDD Mode> <5180 MHz ~ 5240 MHz> 802.11a : 26.46 dBm / 0.4426 W <5260 MHz ~ 5320 MHz> 802.11a : 20.66 dBm / 0.1164 W <5500 MHz ~ 5720 MHz > 802.11a : 21.19 dBm / 0.1315 W <Beamforming Mode> <5180 MHz ~ 5240 MHz> 802.11n HT20 : 26.99 dBm / 0.5000 W 802.11n HT40 : 27.27 dBm / 0.5333 W 802.11ac VHT20 : 26.90 dBm / 0.4898 W 802.11ac VHT40 : 27.20 dBm / 0.5248 W



	802.11ac VHT80 : 19.18 dBm / 0.0828 W 802.11ax HE20 : 27.29 dBm / 0.5358 W 802.11ax HE40 : 27.91 dBm / 0.6180 W 802.11ax HE80 : 19.46 dBm / 0.0883 W <5260 MHz ~ 5320 MHz> 802.11n HT20 : 20.93 dBm / 0.1239 W 802.11n HT40 : 23.26 dBm / 0.2118 W 802.11ac VHT20 : 20.76 dBm / 0.1191 W 802.11ac VHT40 : 23.15 dBm / 0.2065 W 802.11ac VHT80 : 20.67 dBm / 0.1167 W 802.11ax HE20 : 21.29 dBm / 0.1346 W 802.11ax HE40 : 23.52 dBm / 0.2249 W 802.11ax HE80 : 20.90 dBm / 0.1230 W <5500 MHz ~ 5720 MHz > 802.11n HT20 : 22.31 dBm / 0.1702 W 802.11n HT40 : 23.45 dBm / 0.2213 W 802.11ac VHT20 : 22.20 dBm / 0.1660 W 802.11ac VHT40 : 23.28 dBm / 0.2128 W 802.11ac VHT80 : 23.29 dBm / 0.2158 W 802.11ax HE20 : 22.54 dBm / 0.1795 W 802.11ax HE40 : 23.83 dBm / 0.2415 W 802.11ax HE80 : 23.52 dBm / 0.2249 W																			
99% Occupied Bandwidth	<CDD Mode> <5180 MHz ~ 5250 MHz> 802.11a : 16.53 MHz <5260 MHz ~ 5320 MHz > 802.11a : 16.58 MHz <5500 MHz ~ 5720 MHz > 802.11a : 16.58 MHz <Beamforming Mode> <5180 MHz ~ 5250 MHz> 802.11ax HE20 : 19.03 MHz 802.11ax HE40 : 38.46 MHz 802.11ax HE80 : 76.84 MHz <5260 MHz ~ 5320 MHz > 802.11ax HE20 : 19.03 MHz 802.11ax HE40 : 37.66 MHz 802.11ax HE80 : 76.60 MHz <5500 MHz ~ 5720 MHz > 802.11ax HE20 : 19.03 MHz 802.11ax HE40 : 37.76 MHz 802.11ax HE80 : 76.72 MHz																			
Antenna Type	Dipole Antenna																			
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11ax : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)																			
Antenna Function Description	<table><tr><td></td><td>Ant. 1</td><td>Ant. 2</td><td>Ant. 3</td><td>Ant. 4</td></tr><tr><td>802.11a CDD</td><td colspan="4">V</td></tr><tr><td>802.11n/ac/ax CDD/Beamforming</td><td colspan="4">V</td></tr></table>						Ant. 1	Ant. 2	Ant. 3	Ant. 4	802.11a CDD	V				802.11n/ac/ax CDD/Beamforming	V			
	Ant. 1	Ant. 2	Ant. 3	Ant. 4																
802.11a CDD	V																			
802.11n/ac/ax CDD/Beamforming	V																			

Note:

1. WLAN 5GHz support MIMO mode (CDD mode for 802.11a, CDD and Beamforming mode for 802.11n/ac/ax) only.
2. The beamforming mode EIRP is greater than CDD mode EIRP. So we only evaluate beamforming mode by referring to their maximum EIRP
3. For 802.11n HT20 / ac VHT20 / ax HE20 and 802.11n HT40 / ac VHT40 / ax HE40 and 802.11ac VHT80 / ax HE80 mode the whole testing have assessed only 802.11ax HE20/ HE40/HE80 by referring to the higher output power for OB/PSD/RSE testing.
4. The device does not support partial RU for 802.11ax mode.
5. WLAN antenna gain refer to Section 3.6
6. The device support TPC mechanism.

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-KS 03CH05-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH05-KS	AUDIX	E3	6.2009-8-24a1
2.	CO01-KS	AUDIX	E3	6.2009-8-24



1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz U-NII-1	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42 [#]	5210		
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz U-NII-2A	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58 [#]	5290		
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz U-NII-2C	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106 [#]	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
TDWR Channel	118*	5590	124	5620
	120	5600	126*	5630
	122 [#]	5610	128	5640
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	138 [#]	5690	144	5720
	142*	5710		

**Note:**

1. The above Frequency and Channel in "" were 802.11n HT40/11ac VHT40/11ax HE40.
2. The above Frequency and Channel in "" were 802.11ac VHT80 /11ax HE80.

2.2 Test Mode

Radiated Spurious Emission Test Modes

Mode	Sample	Band	Channel	Test Mode	
CDD 4*4	1	11a Tx	CH36	11a	fundamental+BE+Harmonic
CDD 4*4	1	11a Tx	CH44	11a	Harmonic
CDD 4*4	1	11a Tx	CH48	11a	fundamental+BE+Harmonic
CDD 4*4	1	11a Tx	CH52	11a	fundamental+BE+Harmonic
CDD 4*4	1	11a Tx	CH60	11a	Harmonic
CDD 4*4	1	11a Tx	CH64	11a	fundamental+BE+Harmonic
CDD 4*4	1	11a Tx	CH100	11a	fundamental+BE+Harmonic
CDD 4*4	1	11a Tx	CH116	11a	Harmonic
CDD 4*4	1	11a Tx	CH140	11a	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH36	HE20	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH44	HE20	Harmonic
BF 4*4	1	11ax Tx	CH48	HE20	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH52	HE20	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH60	HE20	Harmonic
BF 4*4	1	11ax Tx	CH64	HE20	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH100	HE20	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH116	HE20	Harmonic
BF 4*4	1	11ax Tx	CH140	HE20	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH38	HE40	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH46	HE40	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH54	HE40	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH62	HE40	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH102	HE40	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH110	HE40	Harmonic
BF 4*4	1	11ax Tx	CH134	HE40	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH42	HE80	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH58	HE80	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH106	HE80	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH122	HE80	fundamental+BE+Harmonic
CDD 4*4	1	11a Tx	CH144	11a	fundamental+Harmonic
BF 4*4	1	11ax Tx	CH144	HE20	fundamental+Harmonic
BF 4*4	1	11ax Tx	CH142	HE40	fundamental+Harmonic

BF 4*4	1	11ax Tx	CH138	HE80	fundamental+Harmonic
BF 4*4	2	11ax Tx	CH42	HE80	fundamental+BE+Harmonic
BF 4*4	1	11ax Tx	CH42	HE80	LF

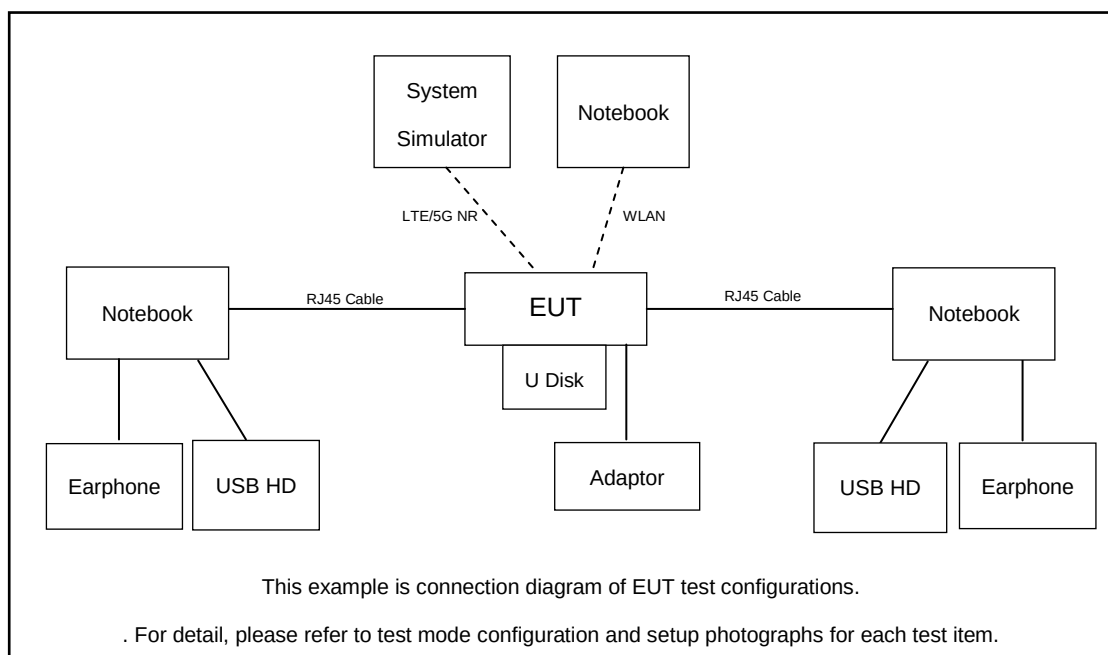
Note:

1. For Radiated Test Cases, The tests were performance with Adapter 1.
2. All the test modes of Radiated Spurious Emission (RSE) were tested at the worst data rate; only the worse data in each bandwidth (20/40/80MHz) shown in bold for these modes is reported.

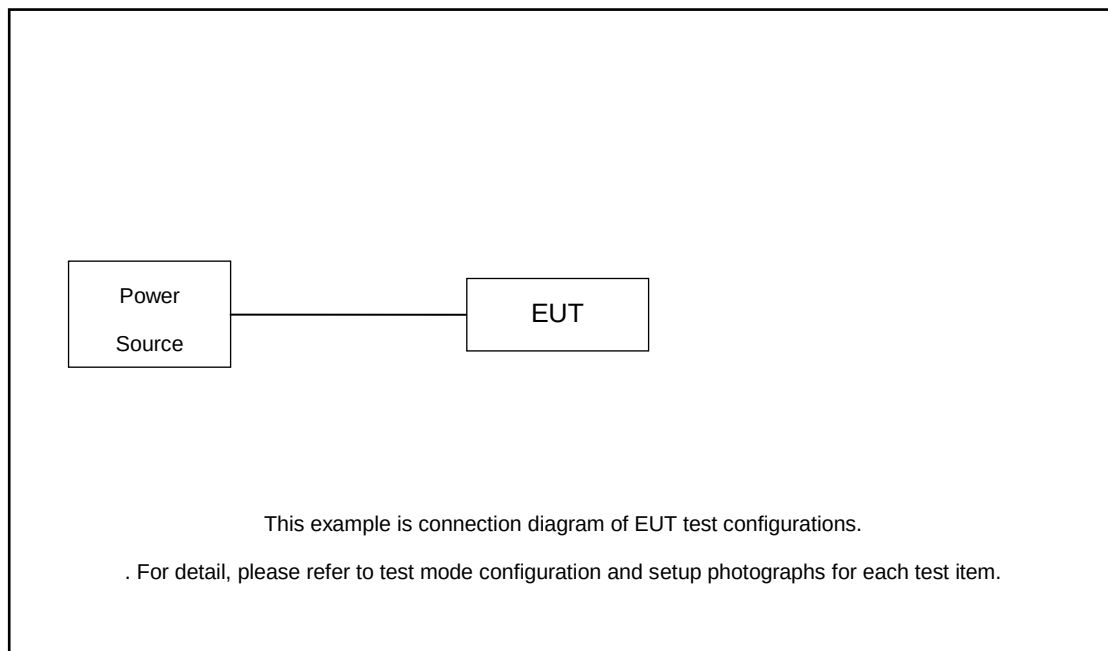
Co-location
WLAN 5G 802.11ax HE80 CH42 + LTE Band 48
Conducted Emission Test mode
Mode 1 : LTE Band 5 Rx(Middle) + WLAN (2.4G&5G) Link + LAN Link + WAN Link + USB Cable (Data Link With U Disk) + Power from Adapter1 + USIM for Sample 1

2.3 Connection Diagram of Test System

For Conducted Emission:



For Radiated Emission:



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritus	MT8821C	N/A	N/A	Unshielded,1.8m
2.	Notebook	Lenovo	V130-15IKB005	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
3.	Notebook	Lenovo	V130-14IKB004	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	Hard Disk	WD	C6B	N/A	N/A	N/A
5.	Earphone	Lenovo	P121	N/A	N/A	Unshielded,1.2m

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit.

For AC power line conducted emissions, the EUT was set to connect with the notebook under large package sizes transmission.



2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 7.0 dB.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 7.0 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

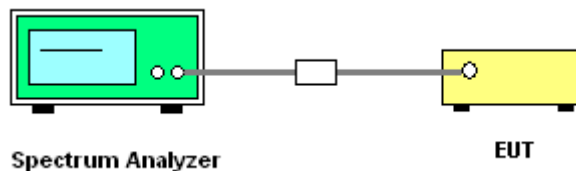
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak 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%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1%~5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * RBW$.
8. Measure and record the results in the test report.

3.1.4 Test Setup



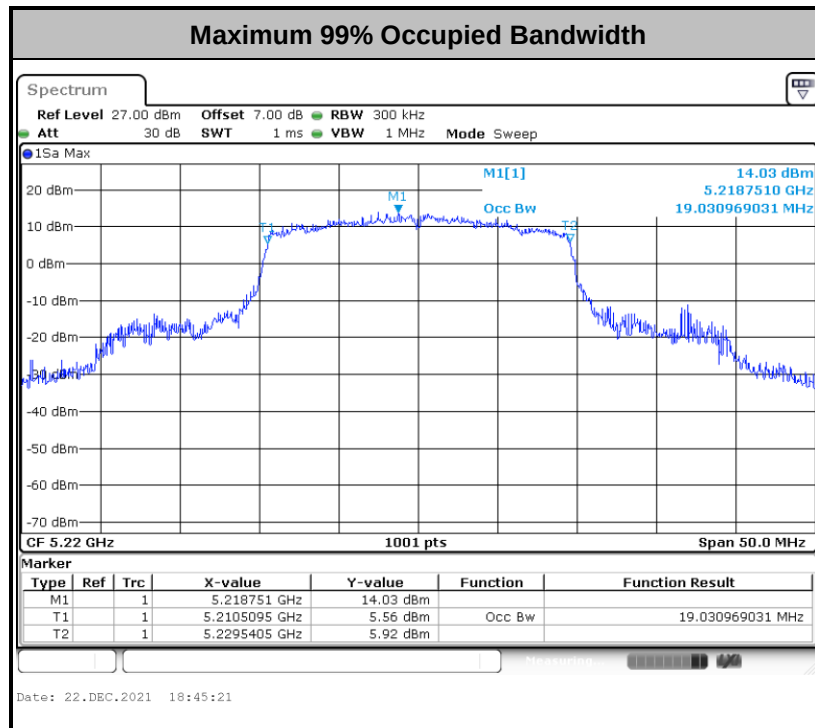
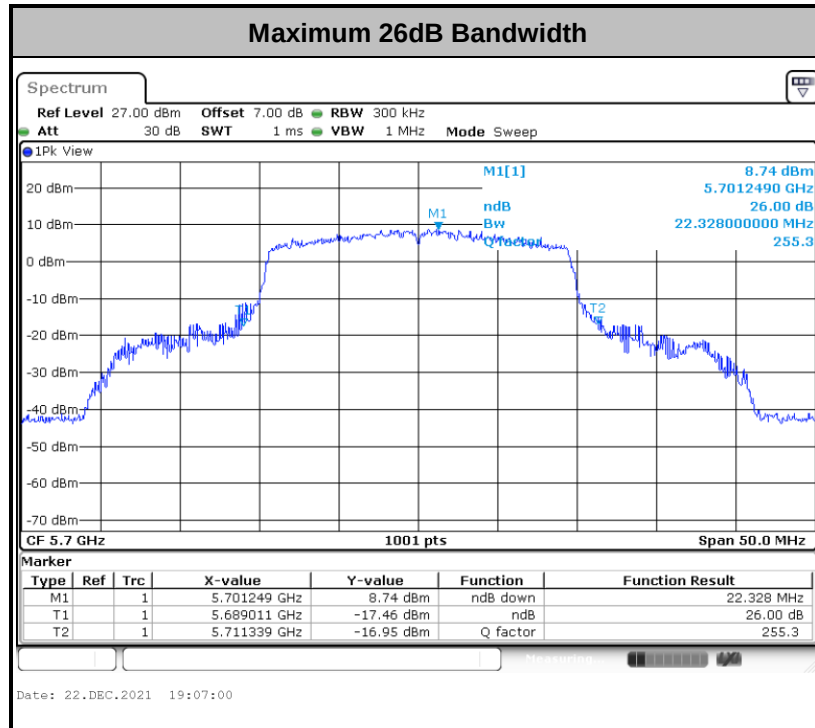
3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.

Only the maximum 26dB & 99% OB plots of each bandwidth shown in the report

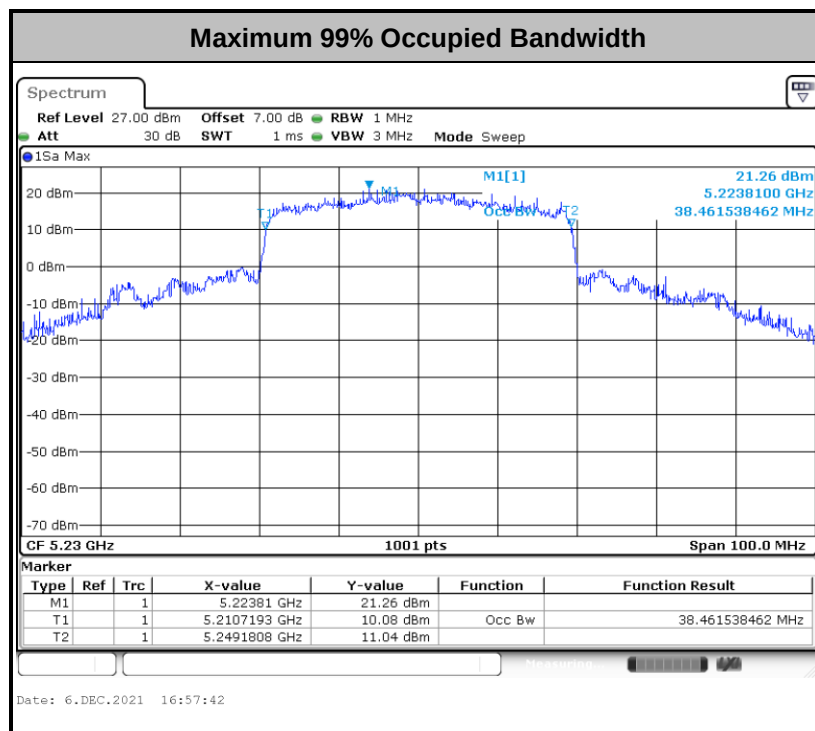
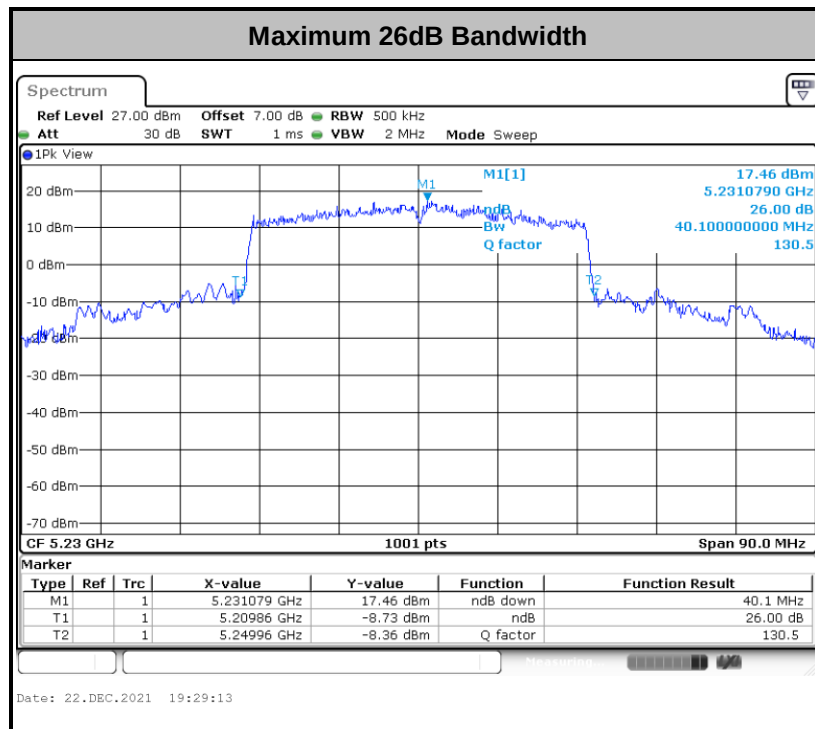


For 20MHz:



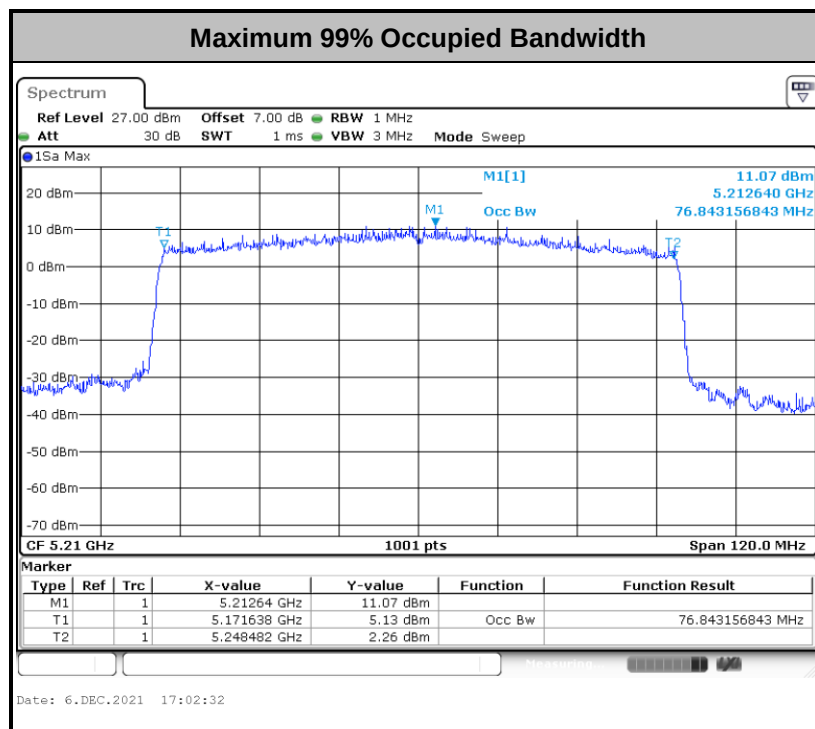
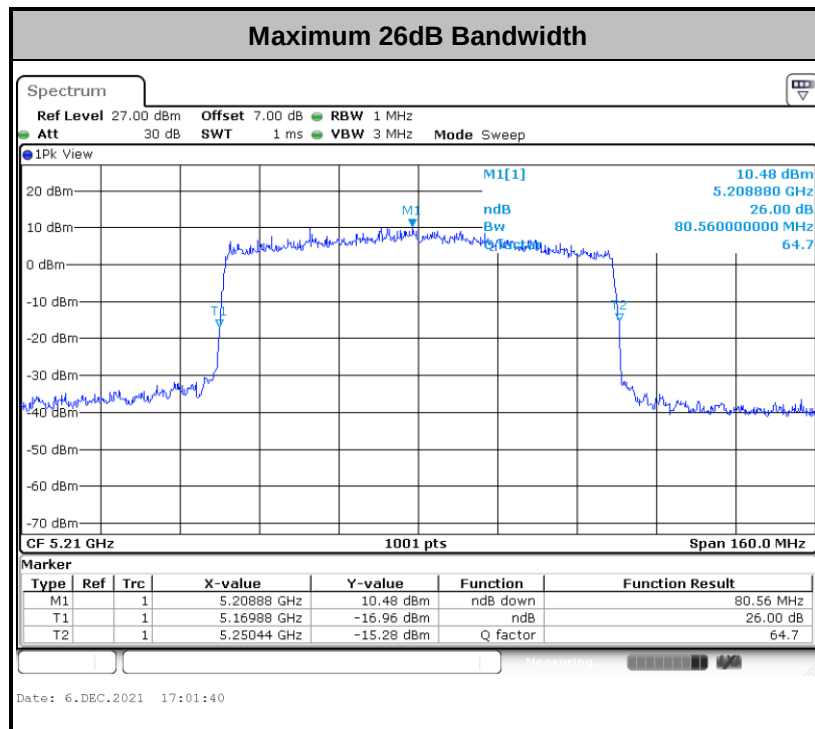


For 40MHz:





For 80MHz:



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

For the 5.25–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm $10 \log B$, where B is the 26 dB emission bandwidth in megahertz.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

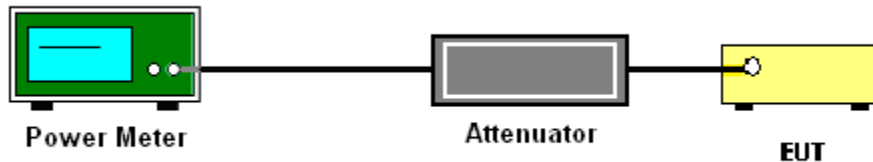
The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.
4. For MIMO mode, the measure-and-sum technique should be used for measuring the in-band transmit power of a device.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band.

For the 5.25–5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For Straddle Channel, According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, If the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section F) Maximum power spectral density.

Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW $\geq$ 3 MHz.
- Number of points in sweep $\geq$ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- 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. For example, add $10 \log(1/0.25) = 6$

dB if the duty cycle is 25 percent.

1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (a): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is the bin-by-bin summation to obtain the combined spectrum. For the device with 4 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2, output 3 and output 4 to obtain the value for the first frequency bin of the summed spectrum.

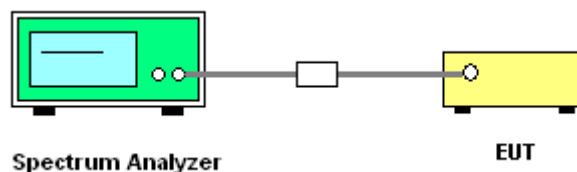
Method (b): Measure and sum spectral maxima across the outputs.

The measurement on each individual output were performed with the same span and number on each individual output. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs.

Method (c): Measure and add $10 \log(N_{\text{ANT}})$ dB, where N_{ANT} is the number of outputs.

The measurement on each individual output were performed with the same span and number on each individual output. The quantity $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit.

3.3.4 Test Setup



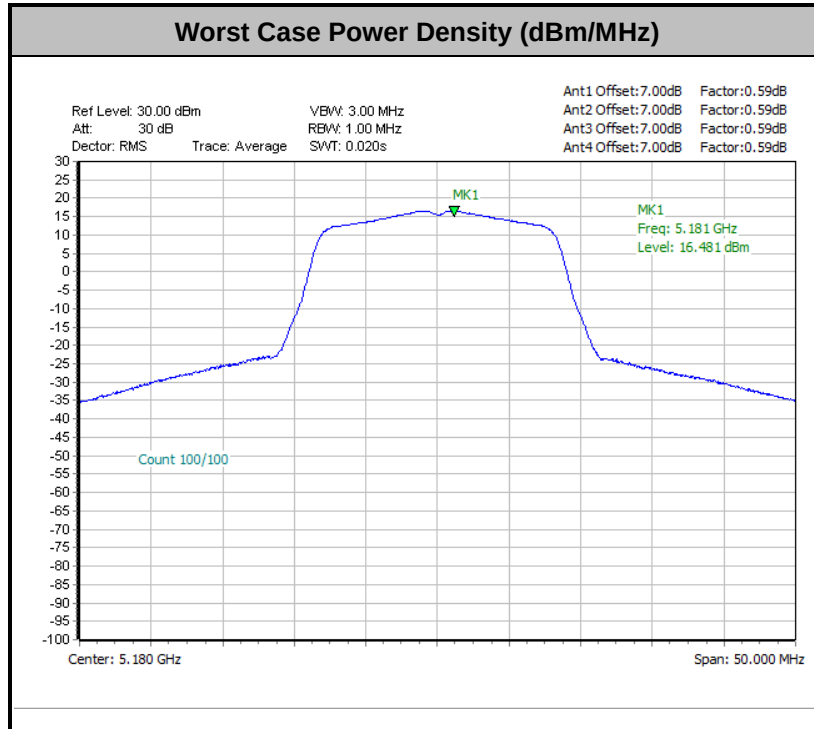


3.3.5 Test Result of Power Spectral Density

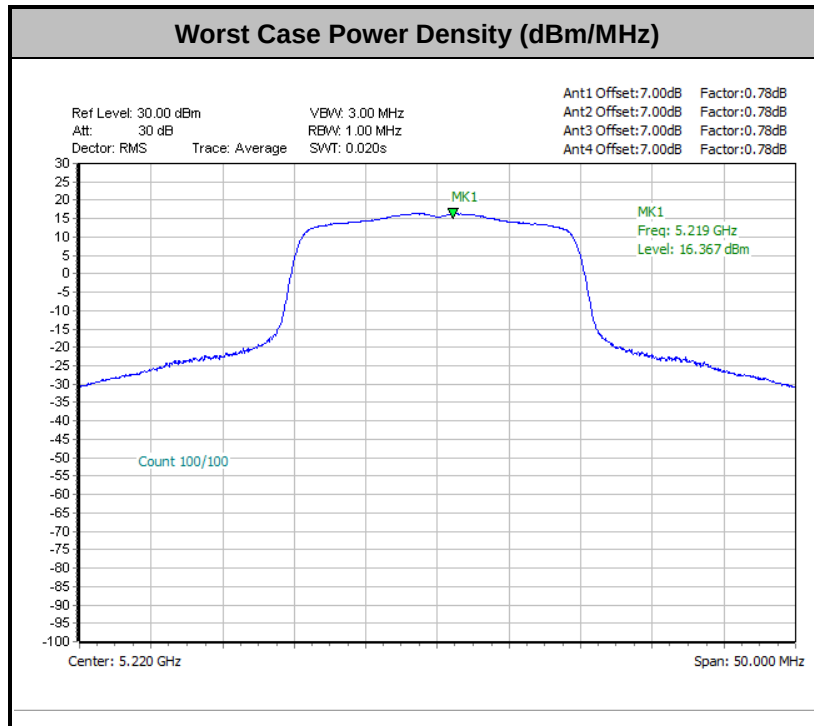
Please refer to Appendix A.

Only the maximum PSD plots of each bandwidth shown in the report.

802.11a:

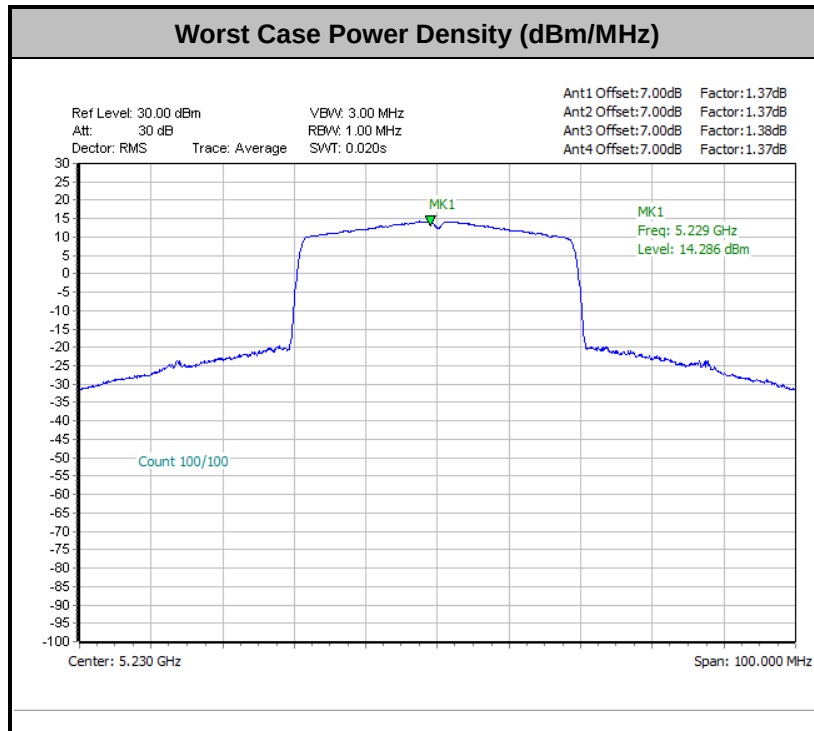


802.11ax HE20:

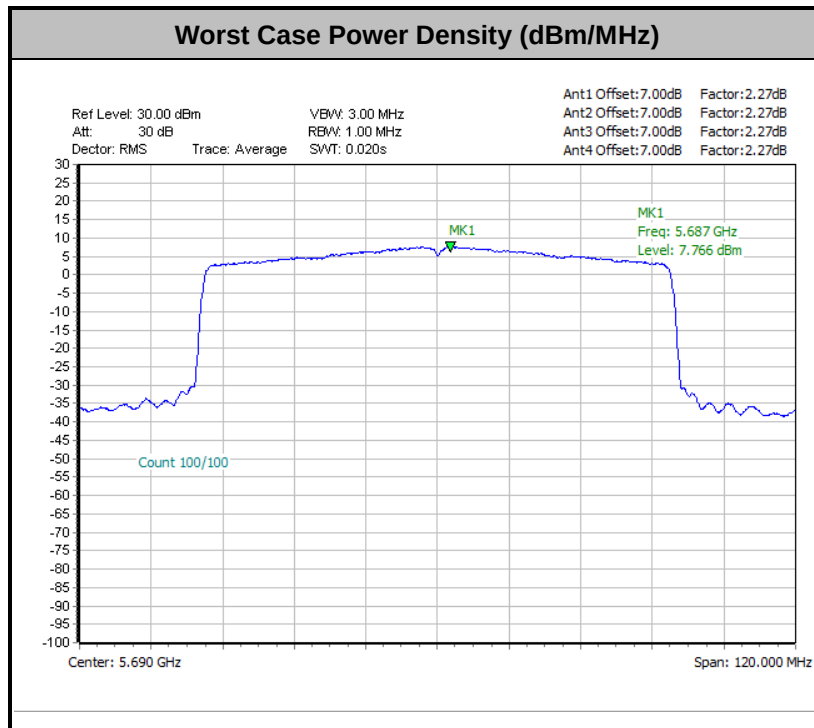




802.11ax HE40:



802.11ax HE80:



3.4 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5725 MHz band: all emissions outside of the 5470-5725 MHz band shall not exceed an EIRP of -27 dBm/MHz.

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table,

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.3

Note: The following formula is used to convert the EIRP to field strength.

$$\text{EIRP} = E_{\text{Meas}} + 20\log(d_{\text{Meas}}) - 104.77$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBμV/m

d_{Meas} is the measurement distance, in m

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

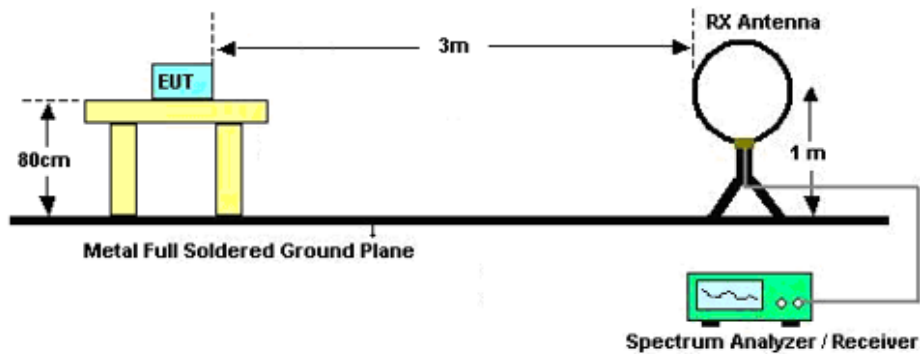
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
 - (3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be

repeated one by one using the CISPR quasi-peak method and reported.

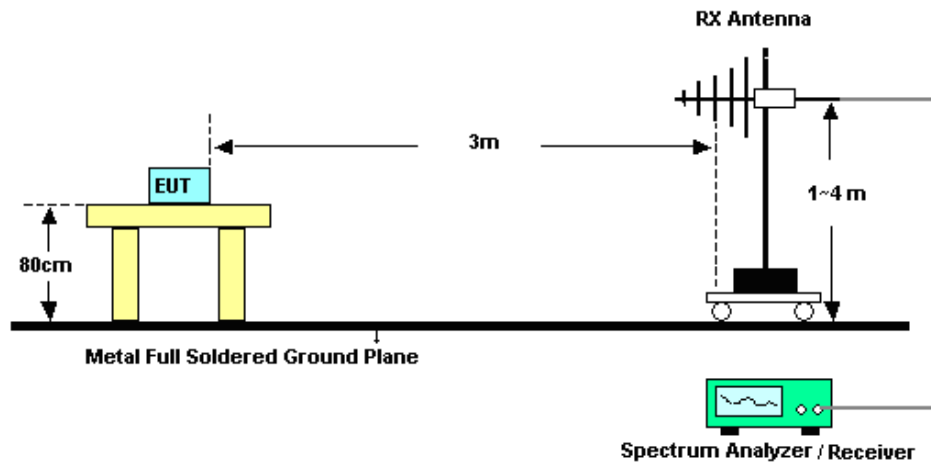
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than peak limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

3.4.4 Test Setup

For radiated emissions below 30MHz

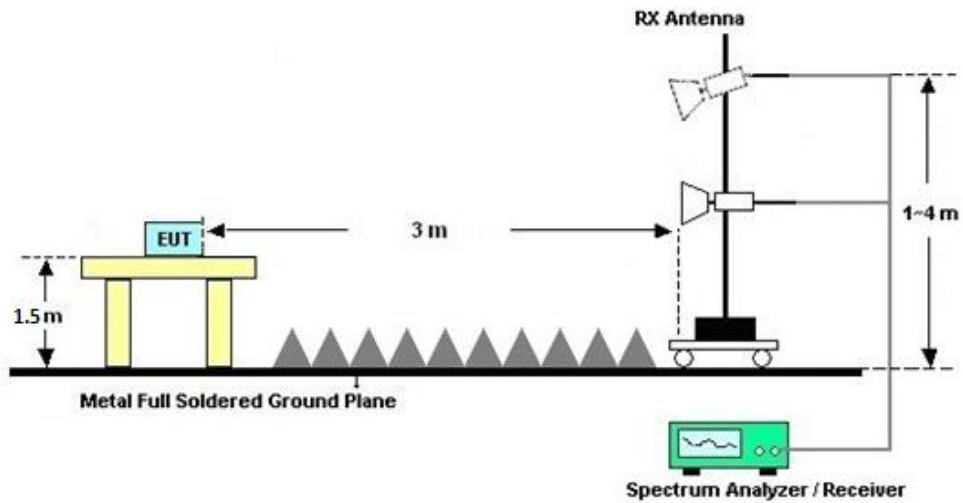


For radiated emissions from 30MHz to 1GHz

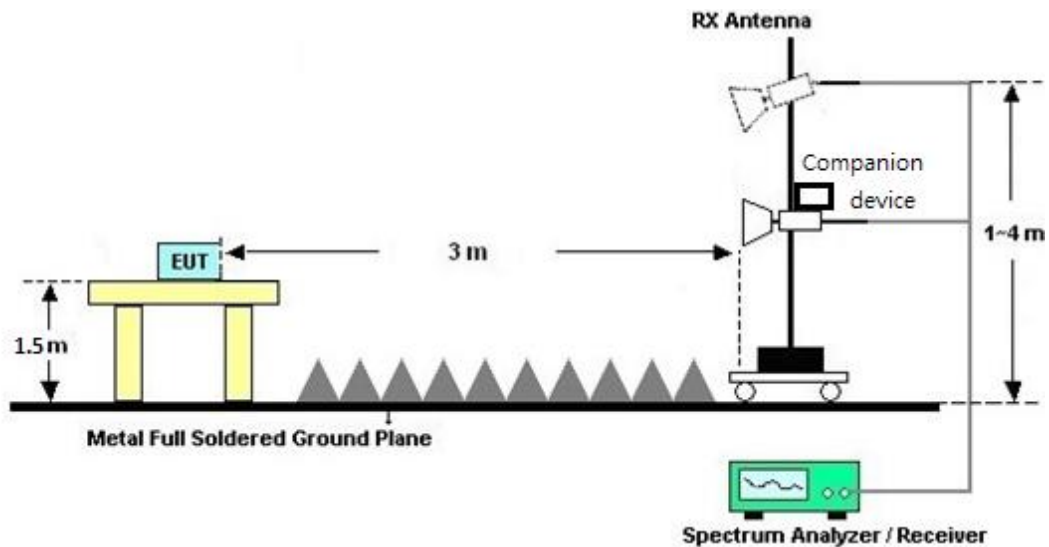


For radiated emissions above 1GHz

<CDD Mode>



<TXBF Modes>



3.4.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.



3.4.7 Duty Cycle

Please refer to Appendix D.

3.4.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic or 40GHz, whichever is lower)

Please refer to Appendix C.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

For equipment 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.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

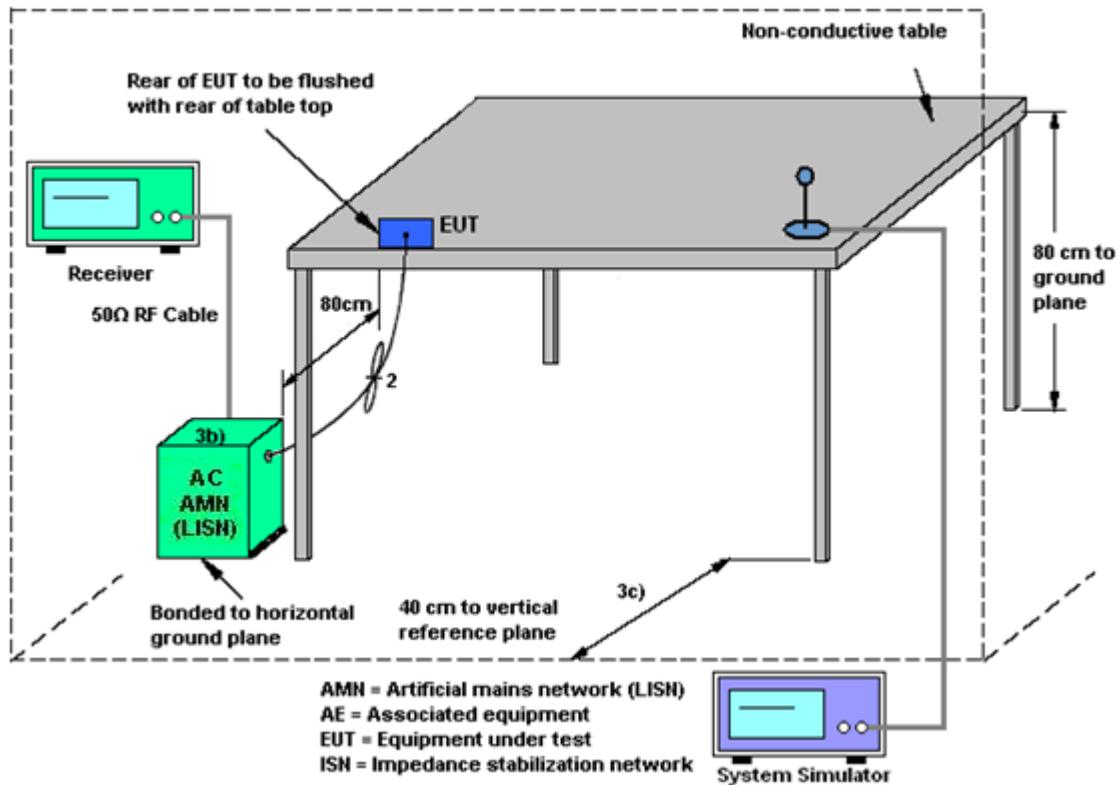
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.6 Antenna Requirements

3.6.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

Band	Frequency (TX,MHz)	BW	Sub Frequency&CH		Max TX Antenna gain (dBi)				TX Antenna gain (dBi) (The angle at which DG gain is the largest)				CDD(dBi)		Beamforming (dBi)		Beamforming Limit(dBm)		CDD Limit(dBm)	
					ANT1	ANT2	ANT3	ANT4	ANT1	ANT2	ANT3	ANT4	For Power	For PSD	For Power	For PSD	For Power	For PSD	For Power	For PSD
U-NII-1	5150 ~ 5250	20M	36	5180	4.57	3.08	3.63	2.28	-0.51	3.08	-0.88	-0.41	4.57	6.50	6.50	6.50	29.50	16.50	30.00	16.50
			40	5200	4.57	3.08	3.63	2.28	-0.51	3.08	-0.88	-0.41	4.57	6.50	6.50	6.50	29.50	16.50	30.00	16.50
			44	5220	3.94	2.70	3.58	1.52	2.23	-0.53	1.70	-2.20	3.94	6.50	6.50	6.50	29.50	16.50	30.00	16.50
			48	5240	3.94	2.70	3.58	1.52	2.23	-0.53	1.70	-2.20	3.94	6.50	6.50	6.50	29.50	16.50	30.00	16.50
		40M	38	5190	4.57	3.08	3.63	2.28	-0.51	3.08	-0.88	-0.41	4.57	6.50	6.50	6.50	29.50	16.50	30.00	16.50
			46	5230	3.94	2.70	3.58	1.52	2.23	-0.53	1.70	-2.20	3.94	6.50	6.50	6.50	29.50	16.50	30.00	16.50
U-NII-2A	5250 ~ 5350	20M	42	5210	4.57	3.08	3.63	2.28	-0.51	3.08	-0.88	-0.41	4.57	6.50	6.50	6.50	29.50	16.50	30.00	16.50
			52	5260	3.94	2.70	3.58	1.52	2.23	-0.53	1.70	-2.20	3.94	6.50	6.50	6.50	23.48	10.50	23.98	10.50
			56	5280	3.94	2.70	3.58	1.52	2.23	-0.53	1.70	-2.20	3.94	6.50	6.50	6.50	23.48	10.50	23.98	10.50
			60	5300	4.77	3.14	4.10	1.14	0.96	0.51	1.35	-1.67	4.77	6.38	6.38	6.38	23.60	10.62	23.98	10.62
		40M	64	5320	3.68	2.56	3.95	-0.13	3.68	-1.81	0.89	-4.15	3.95	6.17	6.17	6.17	23.81	10.83	23.98	10.83
			54	5270	3.94	2.70	3.58	1.52	2.23	-0.53	1.70	-2.20	3.94	6.50	6.50	6.50	23.48	10.50	23.98	10.50
U-NII-2C	5470 ~ 5725	20M	62	5310	4.77	3.14	4.10	1.14	0.96	0.51	1.35	-1.67	4.77	6.38	6.38	6.38	23.60	10.62	23.98	10.62
			58	5290	3.94	2.70	3.58	1.52	2.23	-0.53	1.70	-2.20	3.94	6.50	6.50	6.50	23.48	10.50	23.98	10.50
			100	5500	3.73	2.80	4.79	-0.12	3.73	-1.28	1.20	-6.41	4.79	6.08	6.08	6.08	23.90	10.92	23.98	10.92
			104	5520	3.96	3.09	4.45	0.44	1.00	0.42	2.75	-5.69	4.45	6.16	6.16	6.16	23.82	10.84	23.98	10.84
			108	5540	3.49	2.50	4.50	-0.30	3.49	-2.31	0.75	-4.76	4.50	5.87	5.87	5.87	23.98	11.00	23.98	11.00
			112	5560	3.49	2.50	4.50	-0.30	3.49	-2.31	0.75	-4.76	4.50	5.87	5.87	5.87	23.98	11.00	23.98	11.00
			116	5580	3.96	3.09	4.45	0.44	1.00	0.42	2.75	-5.69	4.45	6.16	6.16	6.16	23.82	10.84	23.98	10.84
			120	5600	3.96	3.09	4.45	0.44	1.00	0.42	2.75	-5.69	4.45	6.16	6.16	6.16	23.82	10.84	23.98	10.84
			124	5620	4.73	3.13	5.09	3.02	-0.11	1.40	1.99	-2.36	5.09	6.41	6.41	6.41	23.57	10.59	23.98	10.59
			128	5640	4.73	3.13	5.09	3.02	-0.11	1.40	1.99	-2.36	5.09	6.41	6.41	6.41	23.57	10.59	23.98	10.59
		40M	132	5660	4.73	3.13	5.09	3.02	-0.11	1.40	1.99	-2.36	5.09	6.41	6.41	6.41	23.57	10.59	23.98	10.59
			136	5680	3.96	2.35	4.47	2.42	0.50	1.27	0.68	-1.00	4.47	6.42	6.42	6.42	23.56	10.58	23.98	10.58
			140	5700	3.96	2.35	4.47	2.42	0.50	1.27	0.68	-1.00	4.47	6.42	6.42	6.42	23.56	10.58	23.98	10.58
			144	5720	3.96	2.35	4.47	2.42	0.50	1.27	0.68	-1.00	4.47	6.42	6.42	6.42	23.56	10.58	23.98	10.58
			102	5510	3.96	3.09	4.45	0.44	1.00	0.42	2.75	-5.69	4.45	6.16	6.16	6.16	23.82	10.84	23.98	10.84
			110	5550	3.49	2.50	4.50	-0.30	3.49	-2.31	0.75	-4.76	4.50	5.87	5.87	5.87	23.98	11.00	23.98	11.00
		80M	118	5590	3.96	3.09	4.45	0.44	1.00	0.42	2.75	-5.69	4.45	6.16	6.16	6.16	23.82	10.84	23.98	10.84
			126	5630	4.73	3.13	5.09	3.02	-0.11	1.40	1.99	-2.36	5.09	6.41	6.41	6.41	23.57	10.59	23.98	10.59
			134	5670	3.96	2.35	4.47	2.42	0.50	1.27	0.68	-1.00	4.47	6.42	6.42	6.42	23.56	10.58	23.98	10.58
			142	5710	3.96	2.35	4.47	2.42	0.50	1.27	0.68	-1.00	4.47	6.42	6.42	6.42	23.56	10.58	23.98	10.58
			106	5530	3.96	3.09	4.45	0.44	1.00	0.42	2.75	-5.69	4.45	6.16	6.16	6.16	23.82	10.84	23.98	10.84
			122	5610	4.73	3.13	5.09	3.02	-0.11	1.40	1.99	-2.36	5.09	6.41	6.41	6.41	23.57	10.59	23.98	10.59



			138	5690	3.96	2.35	4.47	2.42	0.50	1.27	0.68	-1.00	4.47	6.42	6.42	6.42	23.56	10.58	23.98	10.58
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Note:

1. TX Antenna gain (dBi) is the angle at which DG gain is the largest, the directional gain of CDD for PSD and Beamforming for Power/PSD is calculated using the TX Antenna gain in the table.

2. FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as:

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain (Max TX Antenna gain in table);

For power spectral density (PSD) measurements on the devices:

The directional gain = $10 \cdot \log[(10^{G_{ANT1}/20} + 10^{G_{ANT2}/20} + 10^{G_{ANT3}/20} + 10^{G_{ANT4}/20})^2 / 4]$ dBi.

For Beamforming transmissions, directional gain for power and PSD is calculated as:

The directional gain = $10 \cdot \log[(10^{G_{ANT1}/20} + 10^{G_{ANT2}/20} + 10^{G_{ANT3}/20} + 10^{G_{ANT4}/20})^2 / 4]$ dBi.

For CDD and Beamforming:

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 14, 2021	Dec. 06, 2021~ Dec. 22, 2021	Oct. 13, 2022	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 07, 2021	Dec. 06, 2021~ Dec. 22, 2021	Jan. 06, 2022	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 07, 2021	Dec. 06, 2021~ Dec. 22, 2021	Jan. 06, 2022	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY564000 04	3Hz~8.5GHz;Max x 30dBm	Oct. 16, 2021	Dec. 31, 2021	Oct. 15, 2022	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY551502 44	10Hz~44G,MAX 30dB	Apr. 13, 2021	Dec. 31, 2021	Apr. 12, 2022	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Oct. 30, 2021	Dec. 31, 2021	Oct. 29, 2022	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	Jun. 04, 2021	Dec. 31, 2021	Jun. 03, 2022	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 24, 2021	Dec. 31, 2021	Apr. 23, 2022	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Jan. 06, 2021	Dec. 31, 2021	Jan. 05, 2022	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	187289	9KHz~1GHz	Apr. 12, 2021	Dec. 31, 2021	Apr. 11, 2022	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GG A	060728	18~40GHz	Jan. 07, 2021	Dec. 31, 2021	Jan. 06, 2022	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	2012228	1Ghz-18Ghz	Oct. 16, 2021	Dec. 31, 2021	Oct. 15, 2022	Radiation (03CH05-KS)
Amplifier	Keysight	83017A	MY532703 16	500MHz~26.5GHz	Oct. 16, 2021	Dec. 31, 2021	Oct. 15, 2022	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F1040900 04	N/A	NCR	Dec. 31, 2021	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Dec. 31, 2021	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Dec. 31, 2021	NCR	Radiation (03CH05-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 21, 2021	Dec. 06, 2021	Apr. 20, 2022	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 14, 2021	Dec. 06, 2021	Oct. 13, 2022	Conduction (CO01-KS)
AC LISN	R&S	ENV216	100334	9kHz~30MHz	Oct. 14, 2021	Dec. 06, 2021	Oct. 13, 2022	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000 0811	AC 0V~300V, 45Hz~1000Hz	Oct. 14, 2021	Dec. 06, 2021	Oct. 13, 2022	Conduction (CO01-KS)

NCR: No Calibration Required



5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.94dB
---	--------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
---	-------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
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----- THE END -----



Appendix A. Conducted Test Results

Report Number : FR1O2908B

Test Engineer:	Long Wu	Temperature:	21~25	°C
Test Date:	2021/12/6~2021/12/22	Relative Humidity:	51~54	%

TEST RESULTS DATA
26dB and 99% OBW

U-NII-1																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	26 dB Bandwidth (MHz)				99% Bandwidth (MHz)				IC 99% Bandwidth EIRP Limit (dBm)			
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4
11a	6Mbps	4	36	5180	19.63	19.83	19.63	19.73	16.43	16.48	16.38	16.53	22.16	22.17	22.14	22.18
11a	6Mbps	4	44	5220	19.78	19.63	19.78	19.68	16.48	16.43	16.43	16.48	22.17	22.16	22.16	22.17
11a	6Mbps	4	48	5240	20.03	19.93	19.78	19.93	16.48	16.38	16.43	16.43	22.17	22.14	22.16	22.16
HE20	MCS0	4	36	5180	21.53	21.43	21.43	21.58	18.98	18.98	18.98	19.03	22.78	22.78	22.78	22.79
HE20	MCS0	4	44	5220	21.28	21.43	21.38	21.78	19.03	18.93	18.98	19.03	22.79	22.77	22.78	22.79
HE20	MCS0	4	48	5240	20.03	19.98	19.98	19.98	18.73	18.73	18.78	18.78	22.73	22.73	22.74	22.74
HE40	MCS0	4	38	5190	39.65	39.65	39.65	39.65	37.66	37.66	37.76	37.66	23.01	23.01	23.01	23.01
HE40	MCS0	4	46	5230	39.65	39.74	40.10	40.10	38.16	37.86	38.46	38.16	23.01	23.01	23.01	23.01
HE80	MCS0	4	42	5210	80.4	80.56	80.40	80.40	76.60	76.48	76.84	76.60	23.01	23.01	23.01	23.01

TEST RESULTS DATA
Average Power Table

U-NII-1														
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Average Conducted Power with duty factor (dBm)					FCC Power Limit (dBm)	DG (dBi)	FCC EIRP Power (dBm)	FCC EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 4	SUM					
11a	6Mbps	4	36	5180	19.92	19.30	21.10	21.16	26.46	30.00	4.57	31.03	-	Pass
11a	6Mbps	4	44	5220	19.98	19.41	21.18	20.74	26.40	30.00	3.94	30.34	-	Pass
11a	6Mbps	4	48	5240	19.75	19.23	21.10	20.62	26.25	30.00	3.94	30.19	-	Pass
HT20	MCS0	4	36	5180	17.04	17.29	18.63	19.43	24.23	29.50	6.50	30.73	-	Pass
HT20	MCS0	4	44	5220	20.57	20.30	21.54	21.34	26.99	29.50	6.50	33.49	-	Pass
HT20	MCS0	4	48	5240	20.21	19.80	21.51	20.87	26.67	29.50	6.50	33.17	-	Pass
HT40	MCS0	4	38	5190	15.51	15.29	16.88	16.16	22.03	29.50	6.50	28.53	-	Pass
HT40	MCS0	4	46	5230	20.06	20.56	22.13	21.89	27.27	29.62	6.38	33.65	-	Pass
VHT20	MCS0	4	36	5180	16.99	17.47	18.65	19.12	24.17	29.50	6.50	30.66	-	Pass
VHT20	MCS0	4	44	5220	20.49	20.16	21.47	21.26	26.90	29.50	6.50	33.40	-	Pass
VHT20	MCS0	4	48	5240	20.05	19.64	21.30	21.30	26.66	29.50	6.50	33.16	-	Pass
VHT40	MCS0	4	38	5190	15.52	15.19	16.90	16.09	22.00	29.50	6.50	28.49	-	Pass
VHT40	MCS0	4	46	5230	20.07	20.57	21.85	21.92	27.20	29.50	6.50	33.70	-	Pass
VHT80	MCS0	4	42	5210	12.84	12.72	14.09	12.86	19.18	29.50	6.50	25.68	-	Pass
HE20	MCS0	4	36	5180	17.60	17.90	19.00	19.57	24.62	29.50	6.50	31.11	-	Pass
HE20	MCS0	4	44	5220	20.82	20.53	22.02	21.52	27.29	29.50	6.50	33.78	-	Pass
HE20	MCS0	4	48	5240	20.61	20.10	21.83	21.17	27.00	29.50	6.50	33.50	-	Pass
HE40	MCS0	4	38	5190	16.17	15.57	17.09	16.50	22.39	29.50	6.50	28.89	-	Pass
HE40	MCS0	4	46	5230	21.52	21.25	22.43	22.23	27.91	29.50	6.50	34.41	-	Pass
HE80	MCS0	4	42	5210	13.07	12.96	14.37	13.19	19.46	29.50	6.50	25.95	-	Pass

TEST RESULTS DATA
Power Spectral Density

U-NII-1												
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)				Average PSD with Duty Factor (dBm/MHz)	PSD Limit (dBm/MHz)	DG (dBi)	Pass /Fail
					Ant 1	Ant 2	Ant 3	Ant 4				
11a	6Mbps	4	36	5180	0.59	0.59	0.59	0.59	16.48	16.50	6.50	Pass
11a	6Mbps	4	44	5220	0.59	0.59	0.59	0.59	16.35	16.50	6.50	Pass
11a	6Mbps	4	48	5240	0.59	0.59	0.59	0.59	16.16	16.50	6.50	Pass
HE20	MCS0	4	36	5180	0.78	0.78	0.78	0.78	13.91	16.50	6.50	Pass
HE20	MCS0	4	44	5220	0.78	0.78	0.78	0.78	16.37	16.50	6.50	Pass
HE20	MCS0	4	48	5240	0.78	0.78	0.78	0.78	16.30	16.50	6.50	Pass
HE40	MCS0	4	38	5190	1.37	1.37	1.38	1.37	8.78	16.50	6.50	Pass
HE40	MCS0	4	46	5230	1.37	1.37	1.38	1.37	14.29	16.50	6.50	Pass
HE80	MCS0	4	42	5210	2.27	2.27	2.27	2.27	3.17	16.50	6.50	Pass

TEST RESULTS DATA
26dB and 99% OBW

U-NII-2A													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	26 dB Bandwidth (MHz)				FCC 26dB Bandwidth Power Limit (dBm)				Note
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4	
11a	6Mbps	4	52	5260	20.03	19.93	19.78	19.88	23.98	23.98	23.96	23.98	
11a	6Mbps	4	60	5300	20.03	19.83	19.73	19.53	23.98	23.97	23.95	23.91	
11a	6Mbps	4	64	5320	20.13	19.73	19.88	19.73	23.98	23.95	23.98	23.95	
HE20	MCS0	4	52	5260	21.53	21.43	21.43	21.63	23.98	23.98	23.98	23.98	
HE20	MCS0	4	60	5300	21.98	21.88	21.78	21.63	23.98	23.98	23.98	23.98	
HE20	MCS0	4	64	5320	22.28	21.63	21.58	21.78	23.98	23.98	23.98	23.98	
HE40	MCS0	4	54	5270	39.65	39.65	39.65	39.65	23.98	23.98	23.98	23.98	
HE40	MCS0	4	62	5310	39.65	39.65	39.65	39.74	23.98	23.98	23.98	23.98	
HE80	MCS0	4	58	5290	80.24	80.24	80.24	80.24	23.98	23.98	23.98	23.98	

U-NII-2A																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)				IC 99% Bandwidth Power Limit (dBm)				IC 99% Bandwidth EIRP Limit (dBm)			
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4
11a	6Mbps	4	52	5260	16.48	16.43	16.43	16.33	23.17	23.16	23.16	23.13	29.17	29.16	29.16	29.13
11a	6Mbps	4	60	5300	16.58	16.53	16.43	16.33	23.20	23.18	23.16	23.13	29.20	29.18	29.16	29.13
11a	6Mbps	4	64	5320	16.53	16.38	16.48	16.43	23.18	23.14	23.17	23.16	29.18	29.14	29.17	29.16
HE20	MCS0	4	52	5260	18.93	18.93	18.98	18.98	23.77	23.77	23.78	23.78	29.77	29.77	29.78	29.78
HE20	MCS0	4	60	5300	19.03	18.98	18.93	18.98	23.79	23.78	23.77	23.78	29.79	29.78	29.77	29.78
HE20	MCS0	4	64	5320	19.03	18.98	18.98	19.03	23.79	23.78	23.78	23.79	29.79	29.78	29.78	29.79
HE40	MCS0	4	54	5270	37.56	37.56	37.66	37.46	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE40	MCS0	4	62	5310	37.56	37.66	37.66	37.46	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE80	MCS0	4	58	5290	76.48	76.48	76.60	76.60	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00

TEST RESULTS DATA
Average Power Table

U-NII-2A														
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Average Conducted Power with Duty Factor (dB)					FCC Power Limit (dBm)	DG (dBi)	FCC EIRP Power (dBm)	FCC EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 4	SUM					
11a	6Mbps	4	52	5260	14.64	14.43	14.62	14.43	20.55	23.98	3.94	24.49	30.00	Pass
11a	6Mbps	4	60	5300	14.68	14.89	14.64	14.32	20.66	23.98	4.77	25.43	30.00	Pass
11a	6Mbps	4	64	5320	14.71	14.84	14.33	14.40	20.59	23.98	3.95	24.54	30.00	Pass
HT20	MCS0	4	52	5260	14.74	14.18	14.94	14.48	20.62	23.98	6.50	27.12	30.00	Pass
HT20	MCS0	4	60	5300	14.87	14.65	14.76	14.61	20.75	23.98	6.38	27.13	30.00	Pass
HT20	MCS0	4	64	5320	15.15	14.94	14.83	14.68	20.93	23.98	6.17	27.09	30.00	Pass
HT40	MCS0	4	54	5270	17.21	17.14	17.21	16.70	23.09	23.98	6.50	29.59	30.00	Pass
HT40	MCS0	4	62	5310	17.37	17.39	17.19	16.99	23.26	23.98	6.38	29.65	30.00	Pass
VHT20	MCS0	4	52	5260	14.67	14.01	14.83	14.38	20.51	23.98	6.50	27.01	30.00	Pass
VHT20	MCS0	4	60	5300	14.76	14.56	14.60	14.45	20.62	23.98	6.38	27.00	30.00	Pass
VHT20	MCS0	4	64	5320	14.94	14.76	14.73	14.51	20.76	23.98	6.17	26.93	30.00	Pass
VHT40	MCS0	4	54	5270	17.13	17.04	17.07	16.58	22.98	23.98	6.50	29.48	30.00	Pass
VHT40	MCS0	4	62	5310	17.30	17.33	17.04	16.83	23.15	23.98	6.38	29.54	30.00	Pass
VHT80	MCS0	4	58	5290	14.89	14.84	14.78	14.04	20.67	23.98	6.50	27.17	30.00	Pass
HE20	MCS0	4	52	5260	15.03	14.47	15.32	14.71	20.92	23.98	6.50	27.42	30.00	Pass
HE20	MCS0	4	60	5300	15.14	14.99	15.10	14.85	21.05	23.98	6.38	27.43	30.00	Pass
HE20	MCS0	4	64	5320	15.46	15.36	15.16	15.07	21.29	23.98	6.17	27.46	30.00	Pass
HE40	MCS0	4	54	5270	17.45	17.38	17.49	16.98	23.35	23.98	6.50	29.85	30.00	Pass
HE40	MCS0	4	62	5310	17.51	17.85	17.41	17.22	23.52	23.98	6.38	29.91	30.00	Pass
HE80	MCS0	4	58	5290	15.13	15.07	14.96	14.33	20.90	23.98	6.50	27.40	30.00	Pass

TEST RESULTS DATA
Power Spectral Density

U-NII-2A												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)				Average PSD with Duty Factor (dBm/MHz)	PSD Limit (dBm/MHz)	DG (dBi)	Pass /Fail
					Ant 1	Ant 2	Ant 3	Ant 4				
11a	6Mbps	4	52	5260	0.59	0.59	0.59	0.59	10.47	10.50	6.50	Pass
11a	6Mbps	4	60	5300	0.59	0.59	0.59	0.59	10.54	10.62	6.38	Pass
11a	6Mbps	4	64	5320	0.59	0.59	0.59	0.59	10.42	10.83	6.17	Pass
HE20	MCS0	4	52	5260	0.78	0.78	0.78	0.78	10.23	10.50	6.50	Pass
HE20	MCS0	4	60	5300	0.78	0.78	0.78	0.78	10.36	10.62	6.38	Pass
HE20	MCS0	4	64	5320	0.78	0.78	0.78	0.78	10.65	10.83	6.17	Pass
HE40	MCS0	4	54	5270	1.37	1.37	1.38	1.37	9.93	10.50	6.50	Pass
HE40	MCS0	4	62	5310	1.37	1.37	1.38	1.37	10.60	10.62	6.38	Pass
HE80	MCS0	4	58	5290	2.27	2.27	2.27	2.27	4.75	10.50	6.50	Pass

TEST RESULTS DATA
26dB and 99% OBW

U-NII-2C													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	26 dB Bandwidth (MHz)				FCC 26dB Bandwidth Power Limit (dBm)				Note
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4	
11a	6Mbps	4	100	5500	19.93	19.88	19.98	19.83	23.98	23.98	23.98	23.97	
11a	6Mbps	4	116	5580	20.08	19.83	19.83	19.78	23.98	23.97	23.97	23.96	
11a	6Mbps	4	140	5700	20.08	19.83	19.88	19.93	23.98	23.97	23.98	23.98	
11a	6Mbps	4	144	5720	20.03	19.88	19.93	19.73	23.98	23.98	23.98	23.95	
HE20	MCS0	4	100	5500	21.88	21.98	21.98	21.58	23.98	23.98	23.98	23.98	
HE20	MCS0	4	116	5580	21.73	21.68	21.38	21.53	23.98	23.98	23.98	23.98	
HE20	MCS0	4	140	5700	22.33	21.23	21.58	21.88	23.98	23.98	23.98	23.98	
HE20	MCS0	4	144	5720	21.83	21.28	21.88	21.88	23.98	23.98	23.98	23.98	
HE40	MCS0	4	102	5510	39.56	39.56	39.65	39.47	23.98	23.98	23.98	23.98	
HE40	MCS0	4	110	5550	39.56	39.56	39.65	39.56	23.98	23.98	23.98	23.98	
HE40	MCS0	4	134	5670	39.74	39.65	39.74	39.56	23.98	23.98	23.98	23.98	
HE40	MCS0	4	142	5710	39.56	39.74	39.74	39.65	23.98	23.98	23.98	23.98	
HE80	MCS0	4	106	5530	80.40	80.24	80.24	80.24	23.98	23.98	23.98	23.98	
HE80	MCS0	4	122	5610	80.24	80.56	80.40	80.40	23.98	23.98	23.98	23.98	
HE80	MCS0	4	138	5690	80.40	80.40	80.40	80.40	23.98	23.98	23.98	23.98	

U-NII-2C																
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Bandwidth (MHz)				IC 99% Bandwidth Power Limit (dBm)				IC 99% Bandwidth EIRP Limit (dBm)			
					Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4	Ant 1	Ant 2	Ant 3	Ant 4
11a	6Mbps	4	100	5500	16.53	16.43	16.43	16.43	23.18	23.16	23.16	23.16	29.18	29.16	29.16	29.16
11a	6Mbps	4	116	5580	16.53	16.43	16.38	16.38	23.18	23.16	23.14	23.14	29.18	29.16	29.14	29.14
11a	6Mbps	4	140	5700	16.58	16.43	16.43	16.38	23.20	23.16	23.16	23.14	29.20	29.16	29.16	29.14
11a	6Mbps	4	144	5720	16.53	16.43	16.48	16.43	23.18	23.16	23.17	23.16	29.18	29.16	29.17	29.16
HE20	MCS0	4	100	5500	19.03	18.93	18.93	18.98	23.79	23.77	23.77	23.78	29.79	29.77	29.77	29.78
HE20	MCS0	4	116	5580	18.98	18.93	18.93	18.98	23.78	23.77	23.77	23.78	29.78	29.77	29.77	29.78
HE20	MCS0	4	140	5700	18.98	18.98	18.98	18.98	23.78	23.78	23.78	23.78	29.78	29.78	29.78	29.78
HE20	MCS0	4	144	5720	19.03	18.93	18.93	18.93	23.79	23.77	23.77	23.77	29.79	29.77	29.77	29.77
HE40	MCS0	4	102	5510	37.66	37.56	37.66	37.56	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE40	MCS0	4	110	5550	37.56	37.56	37.56	37.56	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE40	MCS0	4	134	5670	37.76	37.56	37.56	37.66	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE40	MCS0	4	142	5710	37.56	37.56	37.66	37.56	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE80	MCS0	4	106	5530	76.60	76.48	76.48	76.60	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE80	MCS0	4	122	5610	76.60	76.60	76.48	76.48	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HE80	MCS0	4	138	5690	76.60	76.60	76.72	76.60	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00

TEST RESULTS DATA
Average Power Table

U-NII-2C														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power with Duty Factor (dB)					FCC Power Limit (dBm)	DG (dBi)	FCC EIRP Power (dBm)	FCC EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	Ant 3	Ant 4	SUM					
11a	6Mbps	4	100	5500	14.53	15.20	14.98	15.29	21.03	23.98	4.79	25.82	30.00	Pass
11a	6Mbps	4	116	5580	14.93	15.02	15.20	15.51	21.19	23.98	4.45	25.64	30.00	Pass
11a	6Mbps	4	140	5700	15.10	14.62	14.71	15.12	20.91	23.98	4.47	25.38	30.00	Pass
11a	6Mbps	4	144	5720	15.11	14.73	14.64	15.07	20.91	23.98	4.47	25.38	30.00	Pass
HT20	MCS0	4	100	5500	15.83	16.47	16.25	16.56	22.31	23.90	6.08	28.39	30.00	Pass
HT20	MCS0	4	116	5580	15.01	15.10	15.29	15.76	21.32	23.82	6.16	27.48	30.00	Pass
HT20	MCS0	4	140	5700	15.48	15.40	14.73	15.26	21.25	23.56	6.42	27.67	30.00	Pass
HT20	MCS0	4	144	5720	15.14	15.01	14.93	15.28	21.12	23.56	6.42	27.54	30.00	Pass
HT40	MCS0	4	102	5510	16.97	17.53	17.30	17.30	23.30	23.82	6.16	29.46	30.00	Pass
HT40	MCS0	4	110	5550	17.04	17.41	17.44	17.77	23.45	23.98	5.87	29.31	30.00	Pass
HT40	MCS0	4	134	5670	17.31	16.89	16.27	17.61	23.07	23.56	6.42	29.49	30.00	Pass
HT40	MCS0	4	142	5710	17.28	16.99	16.67	17.03	23.02	23.56	6.42	29.44	30.00	Pass
VHT20	MCS0	4	100	5500	15.75	16.30	16.16	16.47	22.20	23.90	6.08	28.28	30.00	Pass
VHT20	MCS0	4	116	5580	14.60	14.74	14.74	15.25	20.86	23.82	6.16	27.02	30.00	Pass
VHT20	MCS0	4	140	5700	15.17	15.25	14.68	14.99	21.05	23.56	6.42	27.47	30.00	Pass
VHT20	MCS0	4	144	5720	14.98	14.83	14.35	14.91	20.80	23.56	6.42	27.22	30.00	Pass
VHT40	MCS0	4	102	5510	16.85	17.41	17.19	17.23	23.20	23.82	6.16	29.35	30.00	Pass
VHT40	MCS0	4	110	5550	16.76	17.35	17.32	17.55	23.28	23.98	5.87	29.14	30.00	Pass
VHT40	MCS0	4	134	5670	16.88	16.81	16.21	17.58	22.92	23.56	6.42	29.34	30.00	Pass
VHT40	MCS0	4	142	5710	17.19	16.76	16.48	16.91	22.87	23.56	6.42	29.29	30.00	Pass
VHT80	MCS0	4	106	5530	15.62	16.02	15.97	15.71	21.85	23.82	6.16	28.01	30.00	Pass
VHT80	MCS0	4	122	5610	17.22	17.15	17.29	17.33	23.27	23.57	6.41	29.67	30.00	Pass
VHT80	MCS0	4	138	5690	17.53	17.20	16.80	17.52	23.29	23.56	6.42	29.71	30.00	Pass
HE20	MCS0	4	100	5500	16.04	16.74	16.50	16.75	22.54	23.90	6.08	28.62	30.00	Pass
HE20	MCS0	4	116	5580	15.12	15.28	15.35	15.81	21.42	23.82	6.16	27.58	30.00	Pass
HE20	MCS0	4	140	5700	15.94	15.81	15.10	15.67	21.67	23.56	6.42	28.09	30.00	Pass
HE20	MCS0	4	144	5720	15.21	15.32	14.82	15.40	21.22	23.56	6.42	27.64	30.00	Pass
HE40	MCS0	4	102	5510	17.33	18.01	17.67	17.73	23.71	23.82	6.16	29.87	30.00	Pass
HE40	MCS0	4	110	5550	17.26	17.90	17.86	18.16	23.83	23.98	5.87	29.69	30.00	Pass
HE40	MCS0	4	134	5670	17.49	17.26	16.62	18.07	23.41	23.56	6.42	29.83	30.00	Pass
HE40	MCS0	4	142	5710	17.43	17.35	16.92	17.40	23.30	23.56	6.42	29.72	30.00	Pass
HE80	MCS0	4	106	5530	15.81	16.43	16.12	16.15	22.15	23.82	6.16	28.31	30.00	Pass
HE80	MCS0	4	122	5610	17.52	17.32	17.50	17.67	23.52	23.57	6.41	29.93	30.00	Pass
HE80	MCS0	4	138	5690	17.71	17.39	16.99	17.76	23.49	23.56	6.42	29.92	30.00	Pass

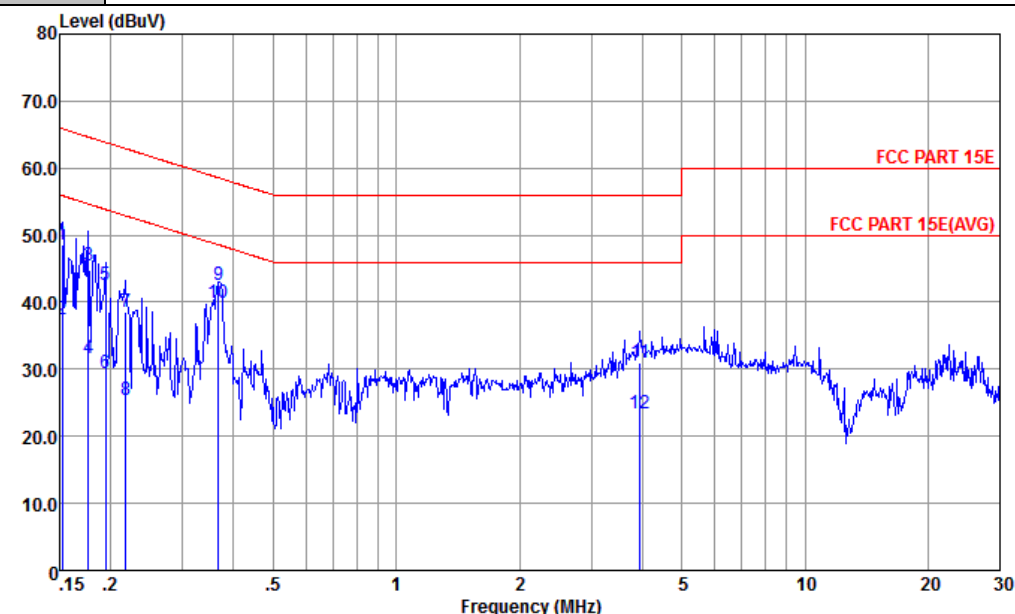
TEST RESULTS DATA
Power Spectral Density

U-NII-2C												
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)				Average PSD with Duty Factor (dBm/MHz)	PSD Limit (dBm/MHz)	DG (dBi)	Pass /Fail
					Ant 1	Ant 2	Ant 3	Ant 4				
11a	6Mbps	4	100	5500	0.59	0.59	0.59	0.59	10.75	10.92	6.08	Pass
11a	6Mbps	4	116	5580	0.59	0.59	0.59	0.59	10.83	10.84	6.16	Pass
11a	6Mbps	4	140	5700	0.59	0.59	0.59	0.59	10.50	10.58	6.42	Pass
11a	6Mbps	4	144	5720	0.59	0.59	0.59	0.59	10.55	10.58	6.42	Pass
HE20	MCS0	4	100	5500	0.78	0.78	0.78	0.78	10.72	10.92	6.08	Pass
HE20	MCS0	4	116	5580	0.78	0.78	0.78	0.78	10.23	10.84	6.16	Pass
HE20	MCS0	4	140	5700	0.78	0.78	0.78	0.78	10.50	10.58	6.42	Pass
HE20	MCS0	4	144	5720	0.78	0.78	0.78	0.78	10.24	10.58	6.42	Pass
HE40	MCS0	4	102	5510	1.37	1.37	1.38	1.37	10.58	10.84	6.16	Pass
HE40	MCS0	4	110	5550	1.37	1.37	1.38	1.37	10.92	11.00	5.87	Pass
HE40	MCS0	4	134	5670	1.37	1.37	1.38	1.37	9.65	10.58	6.42	Pass
HE40	MCS0	4	142	5710	1.37	1.37	1.38	1.37	10.16	10.58	6.42	Pass
HE80	MCS0	4	106	5530	2.27	2.27	2.27	2.27	5.60	10.84	6.16	Pass
HE80	MCS0	4	122	5610	2.27	2.27	2.27	2.27	7.56	10.59	6.41	Pass
HE80	MCS0	4	138	5690	2.27	2.27	2.27	2.27	7.77	10.58	6.42	Pass



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

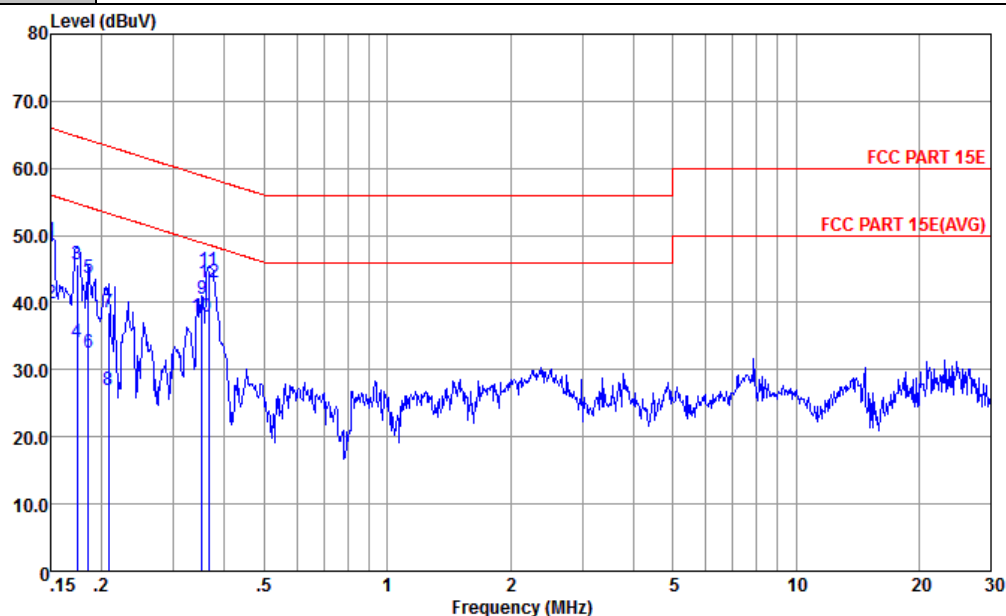


Site : CO01-KS
Condition : FCC PART 15E LISN-060105-L LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.152	48.59	-17.28	65.87	38.10	0.02	10.47	QP
2	0.152	37.39	-18.48	55.87	26.90	0.02	10.47	Average
3	0.177	45.55	-19.09	64.64	35.11	0.03	10.41	QP
4	0.177	31.75	-22.89	54.64	21.31	0.03	10.41	Average
5	0.194	42.61	-21.23	63.84	32.20	0.04	10.37	QP
6	0.194	29.31	-24.53	53.84	18.90	0.04	10.37	Average
7	0.217	38.60	-24.32	62.92	28.20	0.05	10.35	QP
8	0.217	25.30	-27.62	52.92	14.90	0.05	10.35	Average
9	0.367	42.66	-15.90	58.56	32.30	0.08	10.28	QP
10 *	0.367	39.96	-8.60	48.56	29.60	0.08	10.28	Average
11	3.943	31.02	-24.98	56.00	20.60	0.17	10.25	QP
12	3.943	23.32	-22.68	46.00	12.90	0.17	10.25	Average



Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC PART 15E LISN-060105-N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.150	49.19	-16.81	66.00	38.60	0.11	10.48	QP
2	0.150	39.89	-16.11	56.00	29.30	0.11	10.48	Average
3	0.174	45.73	-19.04	64.77	35.21	0.10	10.42	QP
4	0.174	34.13	-20.64	54.77	23.61	0.10	10.42	Average
5	0.185	43.70	-20.54	64.24	33.21	0.10	10.39	QP
6	0.185	32.60	-21.64	54.24	22.11	0.10	10.39	Average
7	0.208	38.56	-24.71	63.27	28.10	0.10	10.36	QP
8	0.208	27.06	-26.21	53.27	16.60	0.10	10.36	Average
9	0.352	40.59	-18.32	58.91	30.21	0.10	10.28	QP
10	0.352	37.99	-10.92	48.91	27.61	0.10	10.28	Average
11	0.365	44.68	-13.93	58.61	34.30	0.10	10.28	QP
12 *	0.365	42.98	-5.63	48.61	32.60	0.10	10.28	Average

Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

For Sample 1

UNII-1 - 5150~5250MHz

WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
BF 4*4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE20 Full CH 36 5180MHz		5148.8	63.21	-10.79	74	54.31	35.03	10.6	36.73	276	101	P	H
		5148.96	52.31	-1.69	54	43.41	35.03	10.6	36.73	276	101	A	H
	*	5176	117.84	-	-	108.83	35.06	10.64	36.69	276	101	P	H
		5176	110.93	-	-	101.92	35.06	10.64	36.69	276	101	A	H
		5149.92	61.47	-12.53	74	52.57	35.03	10.6	36.73	315	0	P	V
		5150	48.89	-5.11	54	39.99	35.03	10.6	36.73	315	0	A	V
	*	5182	113.58	-	-	104.57	35.06	10.64	36.69	315	0	P	V
		5182	106.65	-	-	97.64	35.06	10.64	36.69	315	0	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

UNII-1 5150~5250MHz

WIFI 802.11ax HE20 Full (Harmonic @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
BF 4*4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE20 Full CH 36 5180MHz		7660	52.66	-21.34	74	69.26	36.73	13.08	66.41	300	65	P	H
		7660	47.92	-6.08	54	64.52	36.73	13.08	66.41	300	65	A	H
		10360	46.11	-22.19	68.3	59.35	38.32	15.46	67.02	300	0	P	H
		10355	45.86	-22.44	68.3	59.13	38.32	15.44	67.03	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



UNII-1 5150~5250MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI Ant. BF 4*4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 46 5230MHz		5141.76	66.06	-7.94	74	57.16	35.03	10.6	36.73	291	329	P	H
		5150	52.92	-1.08	54	44.02	35.03	10.6	36.73	291	329	A	H
		5230	117.35	-	-	108.2	35.11	10.68	36.64	291	329	P	H
		5230	111.06	-	-	101.91	35.11	10.68	36.64	291	329	A	H
		5351.94	60.26	-13.74	74	50.81	35.22	10.75	36.52	291	329	P	H
		5355.36	47.51	-6.49	54	38.06	35.22	10.75	36.52	291	329	A	H
		5146.72	61.91	-12.09	74	53.01	35.03	10.6	36.73	393	181	P	V
		5146.72	47.71	-6.29	54	38.81	35.03	10.6	36.73	393	181	A	V
		5236	115.54	-	-	106.39	35.11	10.68	36.64	393	181	P	V
		5236	106.97	-	-	97.82	35.11	10.68	36.64	393	181	A	V
		5354.82	54.03	-19.97	74	44.58	35.22	10.75	36.52	393	181	P	V
		5353.2	44.73	-9.27	54	35.28	35.22	10.75	36.52	393	181	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



UNII-1 5150~5250MHz
WIFI 802.11ax HE40 Full (Harmonic @ 3m)

WIFI Ant. BF 4*4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 46 5230MHz		7660	51.65	-22.35	74	68.25	36.73	13.08	66.41	300	66	P	H
		7660	48.09	-5.91	54	64.69	36.73	13.08	66.41	300	66	A	H
		10460	45.65	-22.65	68.3	58.74	38.35	15.54	66.98	300	0	P	H
		7660	47.61	-26.39	74	64.21	36.73	13.08	66.41	100	0	P	V
		10460	45.35	-22.95	68.3	58.44	38.35	15.54	66.98	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



UNII-1 5150~5250MHz
WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI Ant. BF 4*4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 42 5210MHz		5146.56	61.07	-12.93	74	52.17	35.03	10.6	36.73	277	327	P	H
		5150	53.22	-0.78	54	44.32	35.03	10.6	36.73	277	327	A	H
		5206	107.7	-	-	98.64	35.08	10.66	36.68	277	327	P	H
		5206	100.31	-	-	91.25	35.08	10.66	36.68	277	327	A	H
		5351.22	52.02	-21.98	74	42.57	35.22	10.75	36.52	277	327	P	H
		5350.86	43.34	-10.66	54	33.89	35.22	10.75	36.52	277	327	A	H
		5142.4	58.78	-15.22	74	49.88	35.03	10.6	36.73	370	188	P	V
		5142.4	48.68	-5.32	54	39.78	35.03	10.6	36.73	370	188	A	V
		5206	103.86	-	-	94.8	35.08	10.66	36.68	370	188	P	V
		5206	96.17	-	-	87.11	35.08	10.66	36.68	370	188	A	V
		5388.3	51.38	-22.62	74	41.84	35.26	10.77	36.49	370	188	P	V
		5362.92	42.04	-11.96	54	32.55	35.24	10.76	36.51	370	188	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



UNII-1 5150~5250MHz
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI Ant. BF 4*4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 42 5210MHz		7660	52.97	-21.03	74	69.57	36.73	13.08	66.41	301	65	P	H
		7660	48.74	-5.26	54	65.34	36.73	13.08	66.41	301	65	A	H
		10420	45.21	-23.09	68.3	58.35	38.34	15.51	66.99	300	0	P	H
		7660	47.66	-26.34	74	64.26	36.73	13.08	66.41	100	0	P	V
		10420	44.78	-23.52	68.3	57.92	38.34	15.51	66.99	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11ax HE80 Full (LF @ 3m)

WIFI Ant. BF 4*4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full LF		45.52	28.22	-11.78	40	43.19	16.92	1.03	32.92	-	-	P	H
		83.35	29	-11	40	45.86	14.6	1.38	32.84	-	-	P	H
		184.23	31.16	-12.34	43.5	45.43	16.68	2.06	33.01	-	-	P	H
		341.37	36.39	-9.61	46	45.29	21.19	2.81	32.9	-	-	P	H
		416.06	38.79	-7.21	46	45.46	22.99	3.11	32.77	-	-	P	H
		468.44	37.84	-8.16	46	43.34	23.93	3.31	32.74	-	-	P	H
		45.52	28.16	-11.84	40	43.13	16.92	1.03	32.92	-	-	P	V
		84.32	29.6	-10.4	40	46.23	14.8	1.39	32.82	-	-	P	V
		244.37	22.98	-23.02	46	34.65	19.04	2.39	33.1	-	-	P	V
		336.52	29.92	-16.08	46	38.95	21.08	2.79	32.9	-	-	P	V
		385.99	32.19	-13.81	46	39.68	22.34	3	32.83	-	-	P	V
		449.04	32.52	-13.48	46	38.4	23.58	3.24	32.7	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Co-location

UNII-1 - 5150~5250MHz

WIFI 802.11ax HE80 Full + Part 96 LTE Band 48- BW 20M (Band Edge @ 3m)

WIFI Ant. BF 4*4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 42 5210MHz		5148.96	60.67	-13.33	74	51.77	35.03	10.6	36.73	304	339	P	H
		5148.8	53.46	-0.54	54	44.56	35.03	10.6	36.73	304	339	A	H
		5200	106.4	-	-	97.34	35.08	10.66	36.68	304	339	P	H
		5200	99.63	-	-	90.57	35.08	10.66	36.68	304	339	A	H
		5350.86	50.86	-23.14	74	41.41	35.22	10.75	36.52	304	339	P	H
		5354.82	42.48	-11.52	54	33.03	35.22	10.75	36.52	304	339	A	H
		5149.12	62.36	-11.64	74	53.46	35.03	10.6	36.73	315	338	P	V
		5149.12	53.1	-0.9	54	44.2	35.03	10.6	36.73	315	338	A	V
		5212	106.61	-	-	97.51	35.09	10.67	36.66	315	338	P	V
		5212	98.03	-	-	88.93	35.09	10.67	36.66	315	338	A	V
		5375.88	50.75	-23.25	74	41.26	35.24	10.76	36.51	315	338	P	V
		5356.8	42.15	-11.85	54	32.7	35.22	10.75	36.52	315	338	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



UNII-1 5150~5250MHz

WIFI 802.11ax HE80 Full + Part 96 LTE Band 48- BW 20M (Harmonic @ 3m)

WIFI Ant. BF 4*4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 42 5210MHz		7660	52.54	-21.46	74	69.14	36.73	13.08	66.41	302	68	P	H
		7660	47.94	-6.06	54	64.54	36.73	13.08	66.41	302	68	A	H
		10420	45.97	-22.33	68.3	59.11	38.34	15.51	66.99	300	0	P	H
		7660	48.37	-25.63	74	64.97	36.73	13.08	66.41	100	0	P	V
		10420	46.59	-21.71	68.3	59.73	38.34	15.51	66.99	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
CDD 4*4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
 = 55.45 (dBμV/m)
2. Over Limit(dB)
 = Level(dBμV/m) – Limit Line(dBμV/m)
 = 55.45(dBμV/m) – 74(dBμV/m)
 = -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
 = 43.54 (dBμV/m)
2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
 = 43.54(dBμV/m) – 54(dBμV/m)
 = -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Radiated Spurious Emission

Note symbol

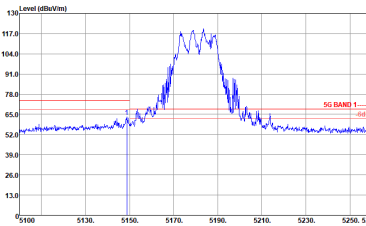
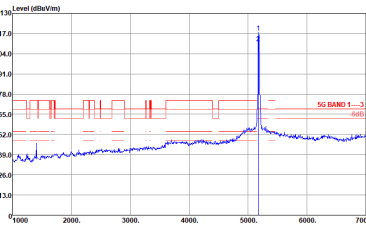
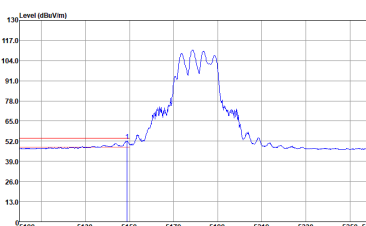
-L	Low channel location
-R	High channel location



For Sample 1

UNII-1 - 5150~5250MHz

WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI	UNII-1 5150~5250MHz Band Edge @ 3m																																																																																																																																																	
ANT	802.11ax HE20 Full CH36 5180MHz																																																																																																																																																	
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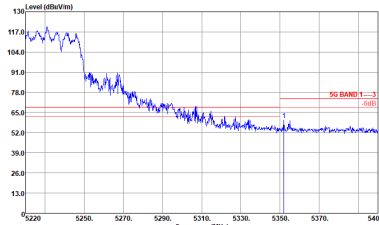
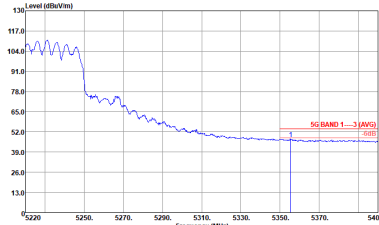
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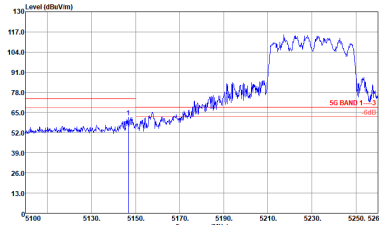
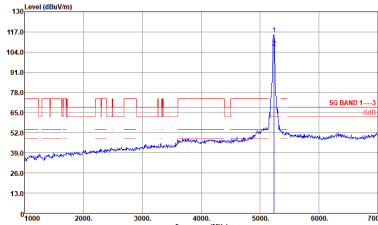
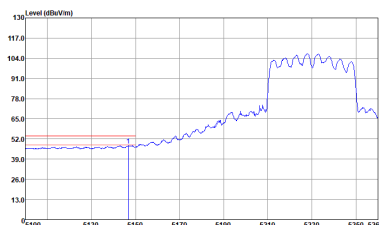
UNII-1 5150~5250MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

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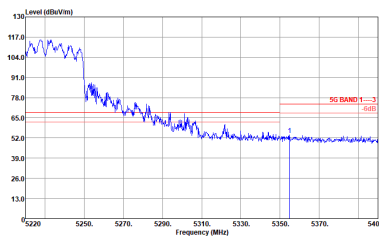
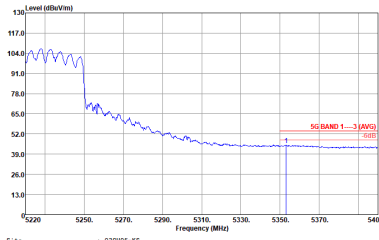


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Peak	 Site : 030605-KS Condition : 5G BAND 1----3 3m 3117 00218652 HORIZONTAL Project : RRM-1000-000000-VSR-3000-000000-SMT-Auto Model : (FR)102908 Plane : Z Polarization : Full-directivity IMEI : #16 PowerSetting : 18.5 Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBV/m</th><th>dB</th><th>dBV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>5351.94</td><td>60.26</td><td>-13.74</td><td>74.00</td><td>50.81</td><td>35.22</td><td>10.75</td><td>36.52</td><td>291</td><td>329 Peak</td><td>HORIZONTAL</td></tr></table>	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBV/m	dB	dBV/m	dB	dB	dB	cm	deg			1	5351.94	60.26	-13.74	74.00	50.81	35.22	10.75	36.52	291	329 Peak	HORIZONTAL	/
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WIFI		UNII-1 5150~5250MHz Band Edge @ 3m																																																																																																
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Peak		 Site : 030405-KS Condition : 5G BAND 1----3 2m 3117 00218652 VERTICAL Project : RSM-1000-000000 VSM-3000-000000 SRT-Auto Model : 27 Plane : Y Polar : Full-directivity Polarization : #15 PowerSetting : 18.5 Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBm</th><th>dBm</th><th>dBm</th><th>dBm</th><th>dBm</th><th>dBm</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>5146.72</td><td>61.91</td><td>-12.09</td><td>74.00</td><td>53.01</td><td>35.03</td><td>10.60</td><td>36.73</td><td>393</td><td>181 Peak VERTICAL</td></tr></table>										Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBm	dBm	dBm	dBm	dBm	dBm	cm	deg			1	5146.72	61.91	-12.09	74.00	53.01	35.03	10.60	36.73	393	181 Peak VERTICAL	 Site : 030405-KS Condition : 5G BAND 1----3 2m 3117 00218652 VERTICAL Project : RSM-1000-000000 VSM-3000-000000 SRT-Auto Model : 27 Plane : Y Polar : Full-directivity Polarization : #15 PowerSetting : 18.5 Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBm</th><th>dBm</th><th>dBm</th><th>dBm</th><th>dBm</th><th>dBm</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>5236.00</td><td>115.54</td><td>47.24</td><td>68.30</td><td>105.39</td><td>35.11</td><td>10.68</td><td>36.64</td><td>393</td><td>181 Peak VERTICAL</td></tr><tr><td>2</td><td>5236.00</td><td>105.97</td><td></td><td></td><td>97.82</td><td>35.11</td><td>10.68</td><td>36.64</td><td>393</td><td>181 Average VERTICAL</td></tr></table>										Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBm	dBm	dBm	dBm	dBm	dBm	cm	deg			1	5236.00	115.54	47.24	68.30	105.39	35.11	10.68	36.64	393	181 Peak VERTICAL	2	5236.00	105.97			97.82	35.11	10.68	36.64	393	181 Average VERTICAL
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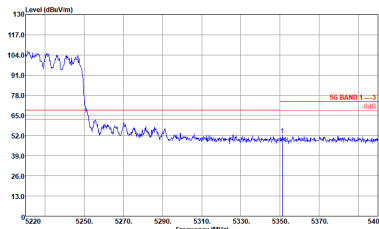
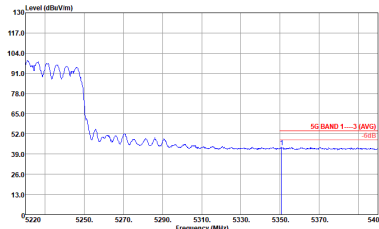
WIFI		UNII-1 5150~5250MHz Band Edge @ 3m																																											
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Peak	 Site : 030905-KS Condition : 5G BAND 1----3 3w 3117 00218652 VERTICAL Project : RRM-1000 0000Hz VSW-3000 0000Hz SWT-Auto Node : (FR)102908 Mode : 27 Plane : Full-directivity IMEI : #15 Powersetting : 18.5 Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>5354.82</td><td>54.03</td><td>-19.97</td><td>74.00</td><td>44.58</td><td>35.22</td><td>10.75</td><td>36.52</td><td>393</td><td>181 Peak</td><td>VERTICAL</td></tr></table>										Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg			1	5354.82	54.03	-19.97	74.00	44.58	35.22	10.75	36.52	393	181 Peak	VERTICAL	/
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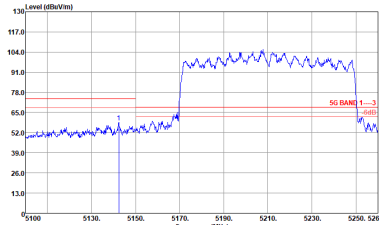
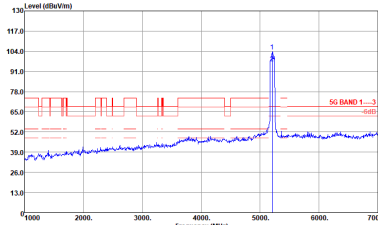
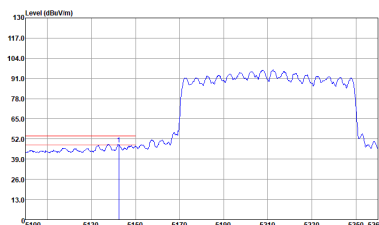
UNII-1 5150~5250MHz
WIFI 802.11ax HE80 Full (Band Edge @ 3m)

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1	5351.22	52.02	-21.98	74.00	42.57	35.22	10.75	36.52	277	327 Peak	HORIZONTAL																					
Avg.	 Site : 030605-KS Condition : 5G BAND 1----3 (AVG) 3m 3117 00218652 HORIZONTAL Project : RSM-1000 00000u VSW-3000 00000u SMT-Auto Model : UFR102908 Plane : Y Polarization : Full-directivity Polarization : #15 Power setting : 10.5 Sample : 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable Presamp</th><th>A/Poss</th><th>T/Poss</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>5350.86</td><td>43.34</td><td>-10.66</td><td>54.00</td><td>33.89</td><td>35.22</td><td>10.75</td><td>36.52</td><td>277</td><td>327 Average</td><td>HORIZONTAL</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable Presamp	A/Poss	T/Poss	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	dB	cm	deg		1	5350.86	43.34	-10.66	54.00	33.89	35.22	10.75	36.52	277	327 Average	HORIZONTAL	/
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WIFI	UNII-1 5150~5250MHz Band Edge @ 3m																																																																																						
ANT	802.11ax HE80 Full CH42 5210MHz - L																																																																																						
BF 4*4	Vertical					Fundamental																																																																																	
Peak	 Site : 030005-KS Condition : 5G BAND 1----3 3m 3117 00218652 VERTICAL Project : RSM-1000-0000Hz VSM-3000-0000Hz SRT:Auto Mode : (FR)102908 Plane : Y Full-directivity #15 Powersetting : 10.5 Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1 5142.40</td><td>58.78</td><td>-15.22</td><td>74.00</td><td>49.88</td><td>35.03</td><td>10.60</td><td>36.73</td><td>370</td><td>188 Peak</td><td>VERTICAL</td></tr></table>					Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg			1 5142.40	58.78	-15.22	74.00	49.88	35.03	10.60	36.73	370	188 Peak	VERTICAL	 Site : 030005-KS Condition : 5G BAND 1----3 3m 3117 00218652 VERTICAL Project : RSM-1000-0000Hz VSM-3000-0000Hz SRT:Auto Mode : (FR)102908 Plane : Y Full-directivity #15 Powersetting : 10.5 Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1 * 5206.00</td><td>103.86</td><td>35.56</td><td>68.30</td><td>94.80</td><td>35.08</td><td>10.66</td><td>36.68</td><td>370</td><td>188 Peak</td><td>VERTICAL</td></tr><tr><td>2 5206.00</td><td>76.17</td><td>-----</td><td>-----</td><td>67.11</td><td>35.08</td><td>10.66</td><td>36.68</td><td>370</td><td>188 Average</td><td>VERTICAL</td></tr></table>					Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg			1 * 5206.00	103.86	35.56	68.30	94.80	35.08	10.66	36.68	370	188 Peak	VERTICAL	2 5206.00	76.17	-----	-----	67.11	35.08	10.66	36.68	370	188 Average	VERTICAL
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas																																																																												
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Avg.	 Site : 030005-KS Condition : 5G BAND 1----3 (AVG) 3m 3117 00218652 VERTICAL Project : RSM-1000-0000Hz VSM-3000-0000Hz SRT:Auto Mode : (FR)102908 Plane : Y Full-directivity #15 Powersetting : 10.5 Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable</th><th>Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1 5142.40</td><td>48.68</td><td>-5.32</td><td>54.00</td><td>39.78</td><td>35.03</td><td>10.60</td><td>36.73</td><td>370</td><td>188 Average</td><td>VERTICAL</td></tr></table>					Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg			1 5142.40	48.68	-5.32	54.00	39.78	35.03	10.60	36.73	370	188 Average	VERTICAL	/																																																
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WIFI	UNII-1 5150~5250MHz Band Edge @ 3m																															
ANT	802.11ax HE80 Full CH42 5210MHz - R																															
BF 4*4	Vertical	Fundamental																														
Peak	Site Condition : 030805-KE : 5G BAND 1----3 3w 3117 00218652 VERTICAL : RRM 1000.0000KHz VSW:3000.0000KHz SWT:Auto Project : (FR)102908 Mode : 27 Plane : Y : Full-directivity IMEI : #16 Powersetting : 10.5 <table><tr><th>Sample 1</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Presamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>5388.30</td><td>51.38</td><td>-22.62</td><td>74.00</td><td>41.84</td><td>35.26</td><td>10.77</td><td>36.49</td><td>370</td><td>188 Peak</td><td>VERTICAL</td></tr></table>	Sample 1	Over	Limit	ReadAntenna	Cable Presamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	dB	deg			1	5388.30	51.38	-22.62	74.00	41.84	35.26	10.77	36.49	370	188 Peak	VERTICAL	/
	Sample 1	Over	Limit	ReadAntenna	Cable Presamp	A/Pos	T/Pos	Remark	Pol/Phas																							
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Avg.	Site Condition : 030805-KE : 5G BAND 1----3 (AVG) 3w 3117 00218652 VERTICAL : RRM 1000.0000KHz VSW:3.0000KHz SWT:Auto Project : (FR)102908 Mode : 27 Plane : Y : Full-directivity IMEI : #16 Powersetting : 10.5 <table><tr><th>Sample 1</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Presamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>5362.92</td><td>42.04</td><td>-11.96</td><td>54.00</td><td>32.55</td><td>35.24</td><td>10.76</td><td>36.51</td><td>370</td><td>188 Average</td><td>VERTICAL</td></tr></table>	Sample 1	Over	Limit	ReadAntenna	Cable Presamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	dB	deg			1	5362.92	42.04	-11.96	54.00	32.55	35.24	10.76	36.51	370	188 Average	VERTICAL	/
Sample 1	Over	Limit	ReadAntenna	Cable Presamp	A/Pos	T/Pos	Remark	Pol/Phas																								
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UNII-1 - 5150~5250MHz

WIFI 802.11ax HE20 Full (Harmonic @ 3m)

WIFI

UNII-1 5150~5250MHz Harmonic @ 3m

ANT

802.11ax HE20 Full CH36 5180MHz

BF 4*4

Horizontal

Vertical

117

Level (dBm/5m)

105.3

93.6

81.9

70.2

58.5

46.8

35.1

23.4

11.7

7000

8000

10000

12000

14000

16000

18000

Frequency (MHz)

5G BAND 1-3

5G BAND 1-3 (AVG)

Site

Condition

Project

Mode

Flame

IME

Pre-setting

Sample 1

Over

Limit

ReadAntenna

Cable

Preamp

A/Pas

T/Pas

Remark

Pol/Phas

020005-K2

5G BAND 1-3 3m 3117 00218052 HORIZONTAL

802.11ax HE20 Full CH36 5180MHz JNT Auto

(FPI)02000

14

Y

R16

15.5

1

Over

Limit

ReadAntenna

Cable

Preamp

A/Pas

T/Pas

Remark

Pol/Phas

1

7500.00

52.60

-21.34

74.00

69.26

36.73

13.00

66.43

300

65

Peak

HORIZONTAL

2

7600.00

47.92

-6.00

54.00

64.52

36.73

13.00

66.43

300

65

Average

HORIZONTAL

3

18300.00

46.11

-22.19

68.30

59.35

38.32

15.46

67.82

300

0

Peak

HORIZONTAL

117

Level (dBm/5m)

105.3

93.6

81.9

70.2

58.5

46.8

35.1

23.4

11.7

7000

8000

10000

12000

14000

16000

18000

Frequency (MHz)

5G BAND 1-3

5G BAND 1-3 (AVG)

Site

Condition

Project

Mode

Flame

IME

Pre-setting

Sample 1

Over

Limit

ReadAntenna

Cable

Preamp

A/Pas

T/Pas

Remark

Pol/Phas

020005-K2

5G BAND 1-3 3m 3117 00218052 VERTICAL

802.11ax HE20 Full CH36 5180MHz JNT Auto

(FPI)02000

14

Y

R16

15.5

1

Over

Limit

ReadAntenna

Cable

Preamp

A/Pas

T/Pas

Remark

Pol/Phas

1

18355.00

45.66

-22.44

68.30

59.13

38.32

15.44

67.83

100

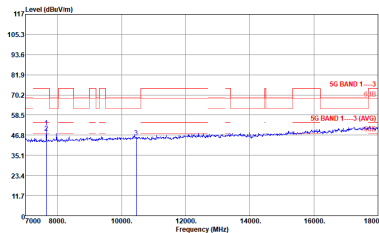
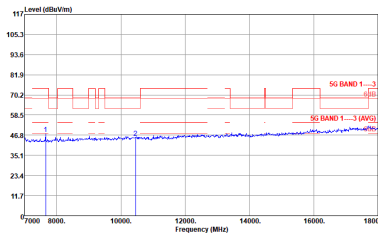
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Peak

VERTICAL

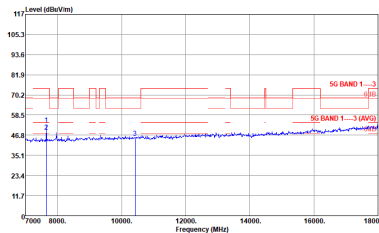
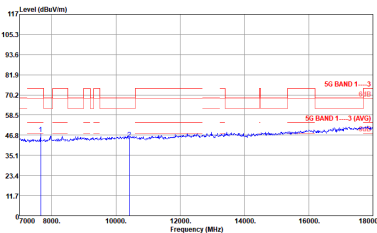


UNII-1 5150~5250MHz
WIFI 802.11ax HE40 Full (Harmonic @ 3m)

WIFI	UNII-1 5150~5250MHz Harmonic @ 3m																																																																																																	
ANT	802.11ax HE40 Full CH46 5230MHz																																																																																																	
BF 4*4	Horizontal	Vertical																																																																																																
Peak	 Site : 632802-82 Condition : 5G BAND 1-3 3m 3117 00218652 HORIZONTAL Project : RF1001.000MHz TWP.3000.000MHz SWT.Auto Mode : C7 Plane : F Polar-directivity : Full-directivity IMEI : #16 Powersetting : Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>7660.00</td><td>51.85</td><td>-22.35</td><td>74.00</td><td>69.25</td><td>36.73</td><td>13.80</td><td>66.41</td><td>300</td><td>66 Peak</td><td>HORIZONTAL</td></tr><tr><td>2</td><td>7660.00</td><td>48.89</td><td>-5.35</td><td>54.00</td><td>64.69</td><td>36.73</td><td>13.80</td><td>66.41</td><td>300</td><td>66 Average</td><td>HORIZONTAL</td></tr><tr><td>3</td><td>10460.00</td><td>45.85</td><td>-22.65</td><td>69.30</td><td>58.74</td><td>38.35</td><td>15.54</td><td>66.90</td><td>300</td><td>0 Peak</td><td>HORIZONTAL</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	cm	deg		1	7660.00	51.85	-22.35	74.00	69.25	36.73	13.80	66.41	300	66 Peak	HORIZONTAL	2	7660.00	48.89	-5.35	54.00	64.69	36.73	13.80	66.41	300	66 Average	HORIZONTAL	3	10460.00	45.85	-22.65	69.30	58.74	38.35	15.54	66.90	300	0 Peak	HORIZONTAL	 Site : 632802-82 Condition : 5G BAND 1-3 3m 3117 00218652 VERTICAL Project : RF1001.000MHz TWP.3000.000MHz SWT.Auto Mode : C7 Plane : F Polar-directivity : Full-directivity IMEI : #16 Powersetting : Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dBuV</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>7660.00</td><td>47.41</td><td>-26.39</td><td>74.00</td><td>64.21</td><td>36.73</td><td>13.80</td><td>66.41</td><td>100</td><td>0 Peak</td><td>VERTICAL</td></tr><tr><td>2</td><td>10460.00</td><td>45.35</td><td>-22.95</td><td>69.30</td><td>58.44</td><td>38.35</td><td>15.54</td><td>66.90</td><td>100</td><td>0 Peak</td><td>VERTICAL</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	cm	deg		1	7660.00	47.41	-26.39	74.00	64.21	36.73	13.80	66.41	100	0 Peak	VERTICAL	2	10460.00	45.35	-22.95	69.30	58.44	38.35	15.54	66.90	100	0 Peak	VERTICAL
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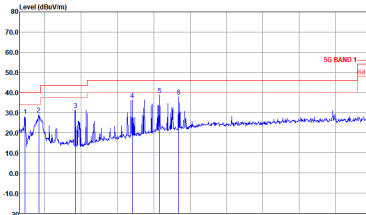
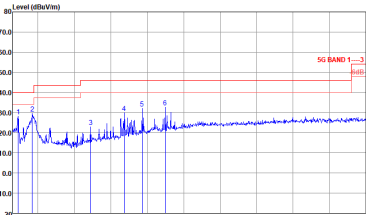
UNII-1 5150~5250MHz
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI	UNII-1 5150~5250MHz Harmonic @ 3m																																																																																																	
ANT	802.11ax HE80 Full CH42 5210MHz																																																																																																	
BF 4*4	Horizontal	Vertical																																																																																																
Peak	 Site : 632802-82 Condition : 5G BAND 1-3 3m 3117 00218652 HORIZONTAL Project : FR102908B TWP 3000.000MHz SWT.Auto Model : (F)102908B Plane : Y Polar : Pull-directivity IMEI : #16 Powersetting : Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>7668.00</td><td>52.97</td><td>21.83</td><td>74.00</td><td>69.57</td><td>36.73</td><td>13.88</td><td>66.41</td><td>381</td><td>65 Peak</td><td>HORIZONTAL</td></tr><tr><td>2</td><td>7668.00</td><td>48.74</td><td>-5.26</td><td>54.00</td><td>65.34</td><td>56.75</td><td>13.88</td><td>66.41</td><td>381</td><td>65 Average</td><td>HORIZONTAL</td></tr><tr><td>3</td><td>10428.00</td><td>45.21</td><td>-23.89</td><td>68.30</td><td>58.35</td><td>58.34</td><td>15.51</td><td>66.99</td><td>380</td><td>0 Peak</td><td>HORIZONTAL</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	cm	deg		1	7668.00	52.97	21.83	74.00	69.57	36.73	13.88	66.41	381	65 Peak	HORIZONTAL	2	7668.00	48.74	-5.26	54.00	65.34	56.75	13.88	66.41	381	65 Average	HORIZONTAL	3	10428.00	45.21	-23.89	68.30	58.35	58.34	15.51	66.99	380	0 Peak	HORIZONTAL	 Site : 632802-82 Condition : 5G BAND 1-3 3m 3117 00218652 VERTICAL Project : FR102908B TWP 3000.000MHz SWT.Auto Model : (F)102908B Plane : Y Polar : Pull-directivity IMEI : #16 Powersetting : Sample 1 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB/m</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1</td><td>7668.00</td><td>47.66</td><td>-26.34</td><td>74.00</td><td>64.26</td><td>36.73</td><td>13.88</td><td>66.41</td><td>100</td><td>0 Peak</td><td>VERTICAL</td></tr><tr><td>2</td><td>10428.00</td><td>44.78</td><td>-25.52</td><td>68.30</td><td>57.52</td><td>58.34</td><td>15.51</td><td>66.99</td><td>100</td><td>0 Peak</td><td>VERTICAL</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	cm	deg		1	7668.00	47.66	-26.34	74.00	64.26	36.73	13.88	66.41	100	0 Peak	VERTICAL	2	10428.00	44.78	-25.52	68.30	57.52	58.34	15.51	66.99	100	0 Peak	VERTICAL
Freq	Level	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas																																																																																										
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Avg.																																																																																																		



Emission below 1GHz

5GHz WIFI 802.11ax HE80 Full (LF)

WIFI	5GHz WIFI																																																																																																																																																													
ANT	802.11ax HE80 Full LF																																																																																																																																																													
BF 4*4	Horizontal	Vertical																																																																																																																																																												
QP / Peak	 Site : a Condition : 5G BAND 1-3 3m 026.0110 0N2188 H0R120NTAL Project : FR102908 Mode : 27 Plane : Y Full-directivity : #10 Power setting : 10.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>45.52</td><td>28.23</td><td>-11.78</td><td>40.00</td><td>43.19</td><td>1.03</td><td>32.92</td><td>--- Peak</td><td>H0R120NT</td></tr><tr><td>2</td><td>83.35</td><td>29.00</td><td>-11.00</td><td>40.00</td><td>40.86</td><td>1.39</td><td>32.84</td><td>--- Peak</td><td>H0R120NT</td></tr><tr><td>3</td><td>184.33</td><td>31.16</td><td>-12.34</td><td>43.00</td><td>45.43</td><td>1.68</td><td>33.01</td><td>--- Peak</td><td>H0R120NT</td></tr><tr><td>4</td><td>341.37</td><td>36.39</td><td>-9.41</td><td>46.00</td><td>45.29</td><td>2.19</td><td>32.90</td><td>--- Peak</td><td>H0R120NT</td></tr><tr><td>5</td><td>476.06</td><td>38.79</td><td>-7.71</td><td>46.00</td><td>45.46</td><td>2.29</td><td>32.77</td><td>--- Peak</td><td>H0R120NT</td></tr><tr><td>6</td><td>468.44</td><td>37.84</td><td>-8.16</td><td>46.00</td><td>43.34</td><td>2.33</td><td>32.74</td><td>--- Peak</td><td>H0R120NT</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	cm	deg			1	45.52	28.23	-11.78	40.00	43.19	1.03	32.92	--- Peak	H0R120NT	2	83.35	29.00	-11.00	40.00	40.86	1.39	32.84	--- Peak	H0R120NT	3	184.33	31.16	-12.34	43.00	45.43	1.68	33.01	--- Peak	H0R120NT	4	341.37	36.39	-9.41	46.00	45.29	2.19	32.90	--- Peak	H0R120NT	5	476.06	38.79	-7.71	46.00	45.46	2.29	32.77	--- Peak	H0R120NT	6	468.44	37.84	-8.16	46.00	43.34	2.33	32.74	--- Peak	H0R120NT	 Site : a Condition : 5G BAND 1-3 3m 026.0110 0N2188 V0R120NTAL Project : FR102908 Mode : 27 Plane : Y Full-directivity : #10 Power setting : 10.5 <table><tr><th>Freq</th><th>Level</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><td>1</td><td>45.52</td><td>28.16</td><td>-11.84</td><td>40.00</td><td>43.13</td><td>1.03</td><td>32.92</td><td>--- Peak</td><td>V0R120NT</td></tr><tr><td>2</td><td>84.32</td><td>29.40</td><td>-10.40</td><td>40.00</td><td>46.23</td><td>1.39</td><td>32.82</td><td>--- Peak</td><td>V0R120NT</td></tr><tr><td>3</td><td>184.37</td><td>32.96</td><td>-12.02</td><td>46.00</td><td>56.46</td><td>19.04</td><td>33.10</td><td>--- Peak</td><td>V0R120NT</td></tr><tr><td>4</td><td>336.52</td><td>29.92</td><td>-16.08</td><td>46.00</td><td>38.95</td><td>21.08</td><td>32.90</td><td>--- Peak</td><td>V0R120NT</td></tr><tr><td>5</td><td>385.99</td><td>31.19</td><td>-13.81</td><td>46.00</td><td>39.48</td><td>22.34</td><td>32.83</td><td>--- Peak</td><td>V0R120NT</td></tr><tr><td>6</td><td>449.04</td><td>32.52</td><td>-13.48</td><td>46.00</td><td>38.40</td><td>23.58</td><td>32.70</td><td>--- Peak</td><td>V0R120NT</td></tr></table>	Freq	Level	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBuV/m	dB	dBuV/m	dB	cm	deg			1	45.52	28.16	-11.84	40.00	43.13	1.03	32.92	--- Peak	V0R120NT	2	84.32	29.40	-10.40	40.00	46.23	1.39	32.82	--- Peak	V0R120NT	3	184.37	32.96	-12.02	46.00	56.46	19.04	33.10	--- Peak	V0R120NT	4	336.52	29.92	-16.08	46.00	38.95	21.08	32.90	--- Peak	V0R120NT	5	385.99	31.19	-13.81	46.00	39.48	22.34	32.83	--- Peak	V0R120NT	6	449.04	32.52	-13.48	46.00	38.40	23.58	32.70	--- Peak	V0R120NT
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Co-location

UNII-1 - 5150~5250MHz

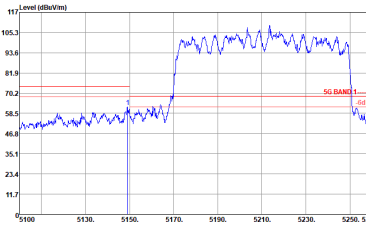
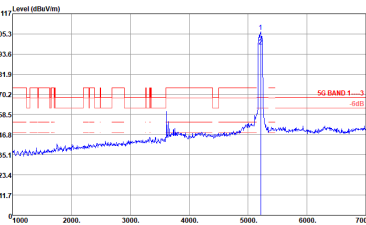
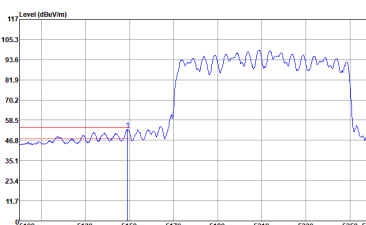
WIFI 802.11ax HE80 Full + Part 96 LTE Band 48- BW 20M (Band Edge @ 3m)

WIFI	UNII-1 5150~5250MHz Band Edge @ 3m																																																																		
ANT	802.11ax HE80 Full CH42 5210MHz - L																																																																		
BF 4*4	Horizontal	Fundamental																																																																	
Peak	Site : 030805-KS Condition : 5G BAND 1-3 3m 3117 00218652 HORIZONTAL Project : RSR 1000 000000 VSW 3000 000000 SWT Auto Mode : 43 Plane : Y Full-directivity : Y Powersetting : #10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBm/100kHz</th><th>dBm/100kHz</th><th>dBm/100kHz</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1 5148.96</td><td>60.67</td><td>-13.33</td><td>74.00</td><td>51.77</td><td>35.03</td><td>10.60</td><td>36.73</td><td>304</td><td>339 Peak</td><td>HORIZONTAL</td></tr></table>	Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBm/100kHz	dBm/100kHz	dBm/100kHz	dB	cm	deg		1 5148.96	60.67	-13.33	74.00	51.77	35.03	10.60	36.73	304	339 Peak	HORIZONTAL	Site : 030805-KS Condition : 5G BAND 1-3 3m 3117 00218652 HORIZONTAL Project : RSR 1000 000000 VSW 3000 000000 SWT Auto Mode : 43 Plane : Y Full-directivity : Y Powersetting : #10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBm/100kHz</th><th>dBm/100kHz</th><th>dBm/100kHz</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1 * 5200.00</td><td>106.40</td><td>38.10</td><td>68.30</td><td>97.34</td><td>35.08</td><td>10.66</td><td>36.68</td><td>304</td><td>339 Peak</td><td>HORIZONTAL</td></tr><tr><td>2 5200.00</td><td>99.63</td><td>-----</td><td>90.57</td><td>35.08</td><td>10.66</td><td>36.68</td><td></td><td>304</td><td>339 Average</td><td>HORIZONTAL</td></tr></table>	Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBm/100kHz	dBm/100kHz	dBm/100kHz	dB	cm	deg		1 * 5200.00	106.40	38.10	68.30	97.34	35.08	10.66	36.68	304	339 Peak	HORIZONTAL	2 5200.00	99.63	-----	90.57	35.08	10.66	36.68		304	339 Average	HORIZONTAL
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Avg.	Site : 030805-KS Condition : 5G BAND 1-3 (AVG) 3m 3117 00218652 HORIZONTAL Project : RSR 1000 000000 VSW 3.000000 SWT Auto Mode : 43 Plane : Y Full-directivity : Y Powersetting : #10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>MHz</th><th>dBm/100kHz</th><th>dBm/100kHz</th><th>dBm/100kHz</th><th>dB</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1 5148.80</td><td>53.46</td><td>-0.54</td><td>54.00</td><td>44.56</td><td>35.03</td><td>10.60</td><td>36.73</td><td>304</td><td>339 Average</td><td>HORIZONTAL</td></tr></table>	Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	MHz	dBm/100kHz	dBm/100kHz	dBm/100kHz	dB	cm	deg		1 5148.80	53.46	-0.54	54.00	44.56	35.03	10.60	36.73	304	339 Average	HORIZONTAL	/																																						
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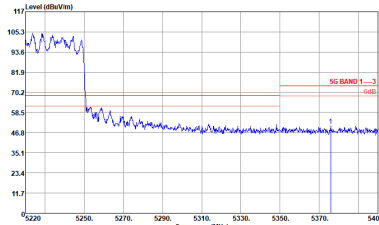
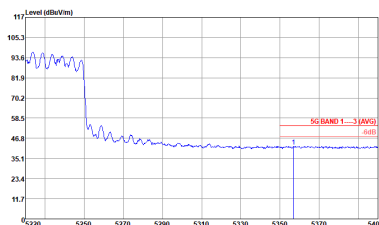


WIFI		UNII-1 5150~5250MHz Band Edge @ 3m																																								
ANT		802.11ax HE80 Full CH42 5210MHz - R																																								
BF 4*4		Horizontal	Fundamental																																							
Peak	Site : 030905-KS Condition : 5G BAND 1----3 3m 3117 00218652 HORIZONTAL Project : RRM-1000 0000Hz VSW:3000 0000Hz SMT:Auto Model : (FR)102908 Plane : 43 Polarization : Full-directivity JMEI : #10 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>cm</th><th>deg</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5350.86</td><td>50.86</td><td>-23.14</td><td>74.00</td><td>41.41</td><td>35.22</td><td>10.75</td><td>36.52</td><td>304</td><td>339</td><td>Peak</td><td>HORIZONTAL</td></tr></table>	Sample 1	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Freq	Level	Line	Level	Factor	Loss	Factor	cm	deg	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg	1	5350.86	50.86	-23.14	74.00	41.41	35.22	10.75	36.52	304	339	Peak	HORIZONTAL	/
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MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg																																		
1	5350.86	50.86	-23.14	74.00	41.41	35.22	10.75	36.52	304	339	Peak	HORIZONTAL																														
Avg.	Site : 030905-KS Condition : 5G BAND 1----3 (AVG) 3m 3117 00218652 HORIZONTAL Project : RRM-1000 0000Hz VSW:3.0000Hz SMT:Auto Model : (FR)102908 Plane : 43 Polarization : Full-directivity JMEI : #10 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Line</th><th>Level</th><th>Factor</th><th>Loss</th><th>Factor</th><th>cm</th><th>deg</th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5354.82</td><td>42.48</td><td>-11.52</td><td>54.00</td><td>33.03</td><td>35.22</td><td>10.75</td><td>36.52</td><td>304</td><td>339</td><td>Average</td><td>HORIZONTAL</td></tr></table>	Sample 1	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Freq	Level	Line	Level	Factor	Loss	Factor	cm	deg	MHz	dBuV/m	dB	dBuV/m	dB	dB	dB	cm	deg	1	5354.82	42.48	-11.52	54.00	33.03	35.22	10.75	36.52	304	339	Average	HORIZONTAL	/
Sample 1	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas																																		
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WIFI	UNII-1 5150~5250MHz Band Edge @ 3m																																																																																													
ANT	802.11ax HE80 Full CH42 5210MHz - L																																																																																													
BF 4*4	Vertical						Fundamental																																																																																							
Peak	 Site : 030405-KS Condition : SG BAND 1----3 3e 3117 00218652 VERTICAL Project : RRM-1000-0000Hz VSW-3000-0000Hz SRT-Auto Mode : FFR102908 Plane : Y Full-directivity : Full-directivity #15 : #15 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Wz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5149.12</td><td>62.36</td><td>-11.64</td><td>74.00</td><td>53.46</td><td>35.03</td><td>10.60</td><td>36.73</td><td>315</td><td>338</td><td>Peak</td><td>VERTICAL</td></tr></table>												Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Wz	dBuV/m	dB	dBuV/m	dB	dB	cm	deg	1	5149.12	62.36	-11.64	74.00	53.46	35.03	10.60	36.73	315	338	Peak	VERTICAL	 Site : 030405-KS Condition : SG BAND 1----3 3e 3117 00218652 VERTICAL Project : RRM-1000-0000Hz VSW-3000-0000Hz SRT-Auto Mode : FFR102908 Plane : Y Full-directivity : Full-directivity #15 : #15 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Wz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5212.00</td><td>106.61</td><td>38.31</td><td>68.30</td><td>97.51</td><td>35.09</td><td>10.67</td><td>36.66</td><td>315</td><td>338</td><td>Peak</td><td>VERTICAL</td></tr><tr><td>2</td><td>5212.00</td><td>98.03</td><td>-----</td><td>68.93</td><td>35.09</td><td>10.67</td><td>36.66</td><td>315</td><td>338</td><td>Average</td><td>VERTICAL</td></tr></table>												Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Wz	dBuV/m	dB	dBuV/m	dB	dB	cm	deg	1	5212.00	106.61	38.31	68.30	97.51	35.09	10.67	36.66	315	338	Peak	VERTICAL	2	5212.00	98.03	-----	68.93	35.09	10.67	36.66	315	338	Average	VERTICAL
	Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas																																																																																						
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2	5212.00	98.03	-----	68.93	35.09	10.67	36.66	315	338	Average	VERTICAL																																																																																			
Avg.	 Site : 030405-KS Condition : SG BAND 1----3 (AVG) 3e 3117 00218652 VERTICAL Project : RRM-1000-0000Hz VSW-3-0000Hz SRT-Auto Mode : FFR102908 Plane : Y Full-directivity : Full-directivity #15 : #15 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Wz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>cm</th><th>deg</th></tr><tr><td>1</td><td>5149.12</td><td>53.10</td><td>-0.90</td><td>54.00</td><td>44.20</td><td>35.03</td><td>10.60</td><td>36.73</td><td>315</td><td>338</td><td>Average</td><td>VERTICAL</td></tr></table>												Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Wz	dBuV/m	dB	dBuV/m	dB	dB	cm	deg	1	5149.12	53.10	-0.90	54.00	44.20	35.03	10.60	36.73	315	338	Average	VERTICAL	/																																																				
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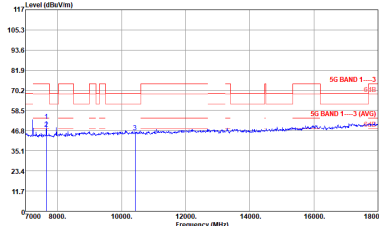
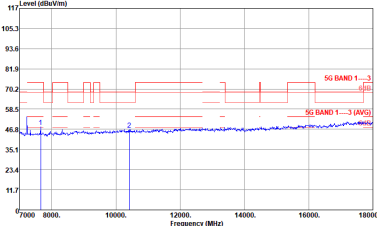


WIFI		UNII-1 5150~5250MHz Band Edge @ 3m																																														
ANT		802.11ax HE80 Full CH42 5210MHz - R																																														
BF 4*4		Vertical					Fundamental																																									
Peak	 Site Condition : 030805-KS : 5G BAND 1-3 @ 3117 00218682 VERTICAL Project : RRM-1000-000000-VSR-3000-000000-SRT-Auto Mode : (FR) 102908 Plane : 43 : Full-directivity IMEI : #15 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Line</th><th>Level Factor</th><th>Loss Factor</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th></th><th></th></tr><tr><td>1 5375.88</td><td>50.75</td><td>-23.25</td><td>74.00</td><td>41.26</td><td>35.24</td><td>10.76</td><td>36.51</td><td>315 338 Peak</td><td>VERTICAL</td></tr></table>										Sample 1	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Freq	Level	Line	Level Factor	Loss Factor	cm	deg			MHz	dBuV/m	dB	dBuV/m	dB	dB	dB			1 5375.88	50.75	-23.25	74.00	41.26	35.24	10.76	36.51	315 338 Peak	VERTICAL	/
	Sample 1	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas																																							
Freq	Level	Line	Level Factor	Loss Factor	cm	deg																																										
MHz	dBuV/m	dB	dBuV/m	dB	dB	dB																																										
1 5375.88	50.75	-23.25	74.00	41.26	35.24	10.76	36.51	315 338 Peak	VERTICAL																																							
Avg.	 Site Condition : 030805-KS : 5G BAND 1-3 (AVG) @ 3117 00218682 VERTICAL Project : RRM-1000-000000-VSR-3000-000000-SRT-Auto Mode : (FR) 102908 Plane : 43 : Full-directivity IMEI : #15 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over</th><th>Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Line</th><th>Level Factor</th><th>Loss Factor</th><th>cm</th><th>deg</th><th></th><th></th></tr><tr><th>MHz</th><th>dBuV/m</th><th>dB</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>dB</th><th></th><th></th></tr><tr><td>1 5356.80</td><td>42.15</td><td>-11.85</td><td>54.00</td><td>32.70</td><td>35.22</td><td>10.75</td><td>36.52</td><td>315 338 Average</td><td>VERTICAL</td></tr></table>										Sample 1	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Freq	Level	Line	Level Factor	Loss Factor	cm	deg			MHz	dBuV/m	dB	dBuV/m	dB	dB	dB			1 5356.80	42.15	-11.85	54.00	32.70	35.22	10.75	36.52	315 338 Average	VERTICAL	/
	Sample 1	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas																																							
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MHz	dBuV/m	dB	dBuV/m	dB	dB	dB																																										
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UNII-1 - 5150~5250MHz

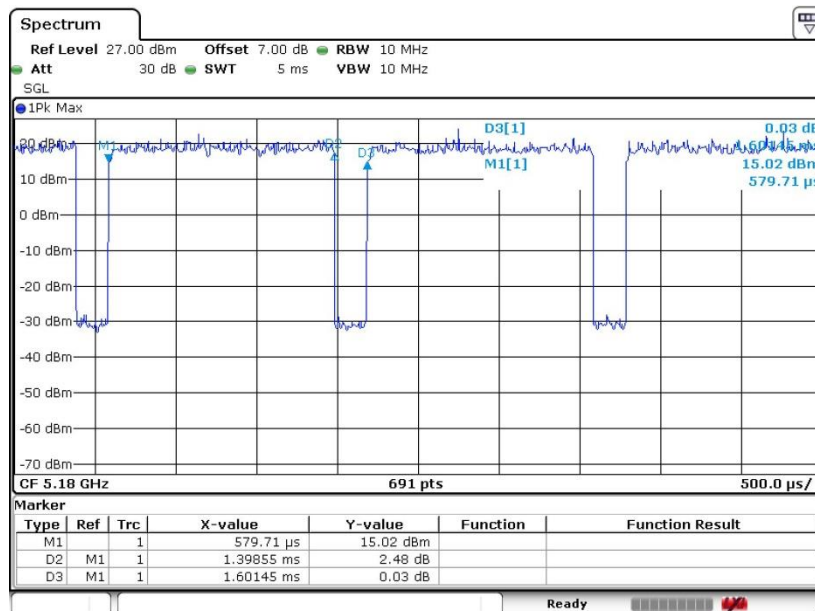
WIFI 802.11ax HE80 Full + Part 96 LTE Band 48- BW 20M (Harmonic @ 3m)

WIFI	UNII-1 5150~5250MHz Harmonic @ 3m																																																																									
ANT	802.11ax HE80 Full CH42 5210MHz																																																																									
BF 4*4	Horizontal	Vertical																																																																								
Peak	 Site : 030805-KS Condition : 5G BAND 1-3 3m 3117 00218607 HORIZONTAL Project : RF-102908 Mode : 43 Plane : Y Full-directivity : Full-directivity MEI : 815 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Line</th><th>Level Factor</th><th>Loss Factor</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1 7660.00</td><td>52.54</td><td>-21.46</td><td>74.00</td><td>69.14</td><td>35.73</td><td>13.08</td><td>66.41</td></tr><tr><td>2 7660.00</td><td>47.94</td><td>-46.06</td><td>64.00</td><td>64.54</td><td>36.73</td><td>13.08</td><td>66.41</td></tr><tr><td>3 10420.00</td><td>45.97</td><td>-22.33</td><td>68.30</td><td>59.11</td><td>38.34</td><td>15.51</td><td>66.99</td></tr></table>	Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Freq	Level	Line	Level Factor	Loss Factor	cm	deg		1 7660.00	52.54	-21.46	74.00	69.14	35.73	13.08	66.41	2 7660.00	47.94	-46.06	64.00	64.54	36.73	13.08	66.41	3 10420.00	45.97	-22.33	68.30	59.11	38.34	15.51	66.99	 Site : 030805-KS Condition : 5G BAND 1-3 3m 3117 00218607 VERTICAL Project : RF-102908 Mode : 43 Plane : Y Full-directivity : Full-directivity MEI : 815 Powersetting : 10 <table><tr><th>Sample 1</th><th>Over Limit</th><th>ReadAntenna</th><th>Cable Preamp</th><th>A/Pos</th><th>T/Pos</th><th>Remark</th><th>Pol/Phas</th></tr><tr><th>Freq</th><th>Level</th><th>Line</th><th>Level Factor</th><th>Loss Factor</th><th>cm</th><th>deg</th><th></th></tr><tr><td>1 7660.00</td><td>48.37</td><td>-25.63</td><td>74.00</td><td>64.97</td><td>35.73</td><td>13.08</td><td>66.41</td></tr><tr><td>2 10420.00</td><td>45.99</td><td>-21.71</td><td>68.30</td><td>59.73</td><td>38.34</td><td>15.51</td><td>66.99</td></tr></table>	Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas	Freq	Level	Line	Level Factor	Loss Factor	cm	deg		1 7660.00	48.37	-25.63	74.00	64.97	35.73	13.08	66.41	2 10420.00	45.99	-21.71	68.30	59.73	38.34	15.51	66.99
Sample 1	Over Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark	Pol/Phas																																																																			
Freq	Level	Line	Level Factor	Loss Factor	cm	deg																																																																				
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Avg.																																																																										

Appendix E. Duty Cycle Plots

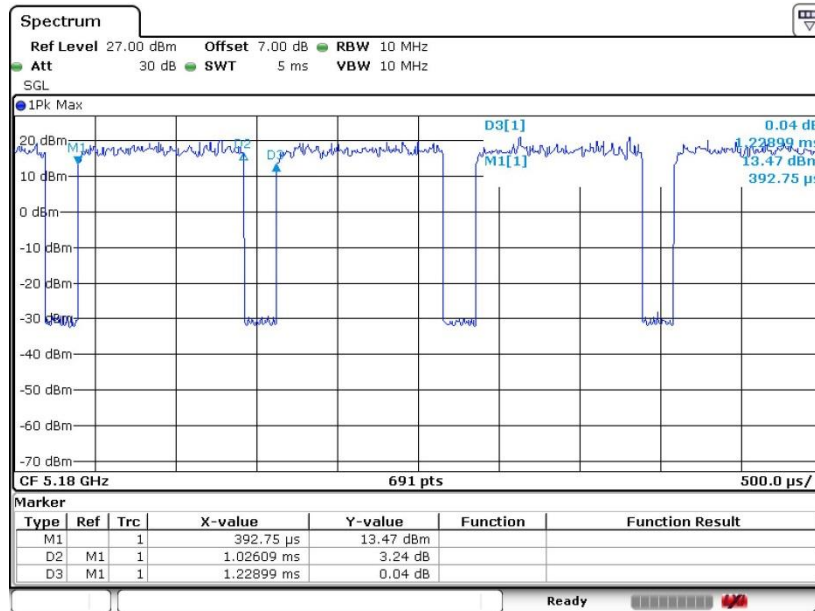
Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1+2+3+4	802.11a	87.33	1.399	0.715	0.75KHz
1+2+3+4	802.11ax HE20	83.49	1.026	0.975	1KHz
1+2+3+4	802.11ax HE40	72.97	0.548	1.825	2KHz
1+2+3+4	802.11ax HE80	59.30	0.296	3.382	3.6KHz

802.11a

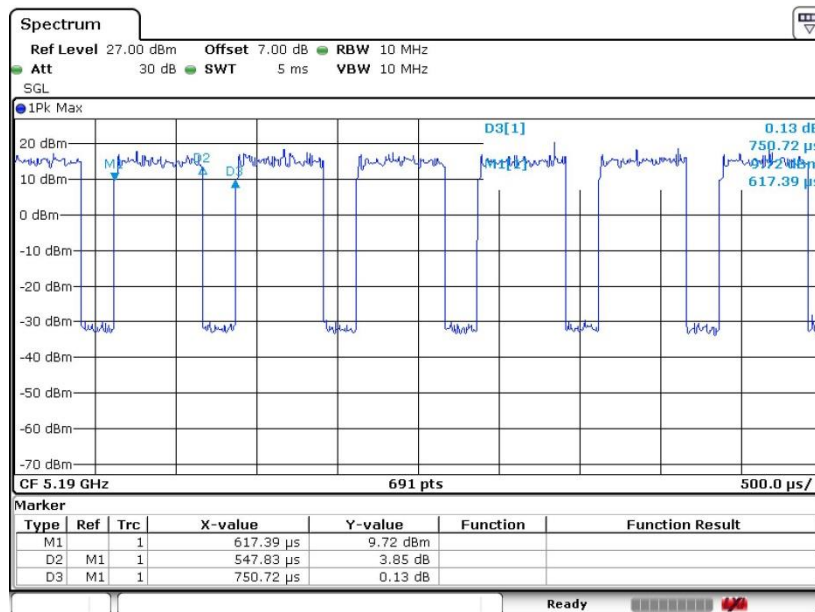




802.11ax HE20



802.11ax HE40



802.11ax HE80

