



FCC RF Test Report

APPLICANT : Nokia Shanghai Bell Co., Ltd.
EQUIPMENT : NOK 5G21 GATEWAY GRY KIT
BRAND NAME : T-Mobile
MODEL NAME : 5G21-12W-A
FCC ID : 2ADZR5G2112WA
STANDARD : FCC Part 15 Subpart E §15.407
CLASSIFICATION : (NII) Unlicensed National Information Infrastructure

The product was received on Mar. 11, 2020 and testing was completed on Jul. 22, 2020. We, Sporton International (Kunshan) Inc., 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 (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

James Huang

Approved by: James Huang / Manager



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR9D2705C	Rev. 01	Initial issue of report	Aug. 28, 2020

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	2.1049 & 15.403(i)	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	≤ 24 dBm	Pass	-
3.3	15.407(a)	Power Spectral Density	≤ 11 dBm	Pass	-
3.4	15.407(b)	Unwanted Emissions	15.407(b) & 15.209(a)	Pass	Under limit 0.02 dB at 5470.000 MHz
3.5	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 11.87 dB at 0.367 MHz
3.6	15.407(c)	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.7	15.203 & 15.407(a)	Antenna Requirement	N/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.

388#, Ningqiao Road, China (Shanghai) 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	NOK 5G21 GATEWAY GRY KIT
Brand Name	T-Mobile
Model Name	5G21-12W-A
FCC ID	2ADZR5G2112WA
EUT supports Radios application	LTE/5G NR/GNSS WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac/ax VHT20/VHT40/VHT80/HE20/HE40/HE80 Bluetooth LE
HW Version	3TG00739A
SW Version	HB5GGW_D010000B42T0101E0379.tar
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. This is a variant report for 5G21-12W-A, the change note could be referred to the product equality declaration which is exhibit separately. Only DFS band for full test, all the other WLAN 5G test results are leveraged from original report FR9D2703C and FR9D2703D.

Specification of Accessory				
AC Adapter 1	Brand Name	DELTA	Model Name	UPD-480WNAB B
	Power Rating	I/P: 100-240Vac, 1600mA, O/P:12Vdc, 4000mA		
AC Adapter 2	Brand Name	FSP	Model Name	FSP048-A12U01
	Power Rating	I/P: 100-240Vac, 1300mA, O/P:12Vdc, 4000mA		

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Frequency Range	5260 MHz ~ 5320 MHz 5500 MHz ~ 5720 MHz
Maximum Output Power to Antenna	<SISO Ant.1/2/3/4> <5260 MHz ~ 5320 MHz> 802.11a : 19.20 dBm / 0.0832 W <5500 MHz ~ 5720 MHz > 802.11a : 18.45 dBm / 0.0700 W <MIMO Ant.1+2+3+4> <5260 MHz ~ 5320 MHz> 802.11n HT20 : 22.27 dBm / 0.1687 W 802.11n HT40 : 23.82 dBm / 0.2410 W 802.11ac VHT80 : 23.69 dBm / 0.2339 W 802.11ax HE20 : 22.38 dBm / 0.1730 W 802.11ax HE40 : 23.73 dBm / 0.2360 W 802.11ax HE80 : 23.95 dBm / 0.2483 W <5500 MHz ~ 5720 MHz > 802.11n HT20 : 22.25 dBm / 0.1679 W 802.11n HT40 : 23.93 dBm / 0.2472 W 802.11ac VHT80 : 23.21 dBm / 0.2094 W 802.11ax HE20 : 22.47 dBm / 0.1766 W 802.11ax HE40 : 23.52 dBm / 0.2249 W 802.11ax HE80 : 23.88 dBm / 0.2443 W
99% Occupied Bandwidth	<SISO Ant.2> <5260 MHz ~ 5320 MHz> 802.11a : 17.03 MHz <5500 MHz ~ 5720 MHz > 802.11a : 17.13 MHz <MIMO Ant.1+2+3+4> <5260 MHz ~ 5320 MHz> 802.11n HT20 : 18.18 MHz 802.11n HT40 : 36.36 MHz 802.11ac VHT80 : 75.40 MHz 802.11ax HE20 : 19.43 MHz 802.11ax HE40 : 37.96 MHz 802.11ax HE80 : 77.08 MHz <5500 MHz ~ 5720 MHz > 802.11n HT20 : 18.23 MHz 802.11n HT40 : 36.46 MHz 802.11ac VHT80 : 75.40 MHz 802.11ax HE20 : 19.53 MHz 802.11ax HE40 : 38.16 MHz 802.11ax HE80 : 77.32 MHz
Antenna Type / Gain	<5250 MHz ~ 5350 MHz> <Ant. 1> : PCB Antenna with gain 5.00 dBi <Ant. 2> : PCB Antenna with gain 5.00 dBi <Ant. 3> : PCB Antenna with gain 5.00 dBi <Ant. 4> : PCB Antenna with gain 5.00 dBi MIMO Gain (Ant. 1+2+3+4): 5.0 dBi Beamforming Gain (Ant. 1+2+3+4): 5.51 dBi <5470 MHz ~ 5725 MHz>

	<Ant. 1> : PCB Antenna with gain 5.00 dBi <Ant. 2> : PCB Antenna with gain 5.00 dBi <Ant. 3> : PCB Antenna with gain 5.00 dBi <Ant. 4> : PCB Antenna with gain 5.00 dBi MIMO Gain (Ant. 1+2+3+4): 5.0 dBi Beamforming Gain (Ant. 1+2+3+4): 5.65 dBi				
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac/ax : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 512QAM / 1024QAM)				
Antenna Function Description		Ant. 1	Ant. 2	Ant. 3	Ant. 4
	802.11 a SISO	V	V	V	V
	802.11 n/ac/ax MIMO/ Beamforming	V	V	V	V

Note:

1. For 802.11n HT20 / ac VHT20 and 802.11n HT40 / ac VHT40 mode, the whole testing have assessed only 802.11n HT20/ HT40 by referring to their maximum conducted power.
2. For 11ax, manufacturer declared the EUT does not support OFDMA of Resource unit combination (26 tones, 52 tones, 106 tones, 242 tones...etc).
3. The EUT supports for MIMO/ Beamforming mode for 802.11n/ac/ax mode only.
4. The Tx Power of EUT will less than or equal to non-beamforming power when Beamforming mode is active. So we only evaluate RSE testing would be verified.
5. For 802.11a mode, the whole testing has assessed Ant.2 for band1/Ant.3 for band2/3 by referring to their higher conducted power for RSE testing.

1.5 Modification of EUT

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



1.6 Testing Location

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

Test Firm	Sporton International (Kunshan) Inc.		
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 03CH06-KS TH01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH06-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). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.
- 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)
5250-5350 MHz Band 2 (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 Band 3 (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, 802.11ac VHT40 and 802.11ax HE40.
2. The above Frequency and Channel in "[#]" were 802.11ac VHT80 and 802.11ax HE80.

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Single Mode

Modulation	Data Rate
802.11a	6 Mbps

MIMO Mode

Modulation	Data Rate
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT80	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0

TXBF Mode

Modulation	Data Rate
802.11ax HE40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : LTE Band 5 Idle + Bluetooth Link + WLAN Link (5G) + Lan 1 Link + Lan 2 Link + RJ11 Link + Adapter 1
Remark: - For Radiated Test Cases, The tests were performance with Adapter 1. - Tx BF mode evaluation is to select the worst mode in the MIMO mode for testing.	



Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11a	802.11a
L	Low	52	100
M	Middle	60	116
H	High	64	140
Straddle		-	144

Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11n HT20	802.11n HT20
L	Low	52	100
M	Middle	60	116
H	High	64	140
Straddle		-	144

Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11n HT40	802.11n HT40
L	Low	54	102
M	Middle	-	110
H	High	62	134
Straddle		-	142

Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ac VHT80	802.11ac VHT80
L	Low	-	106
M	Middle	58	-
H	High	-	-
Straddle		-	138



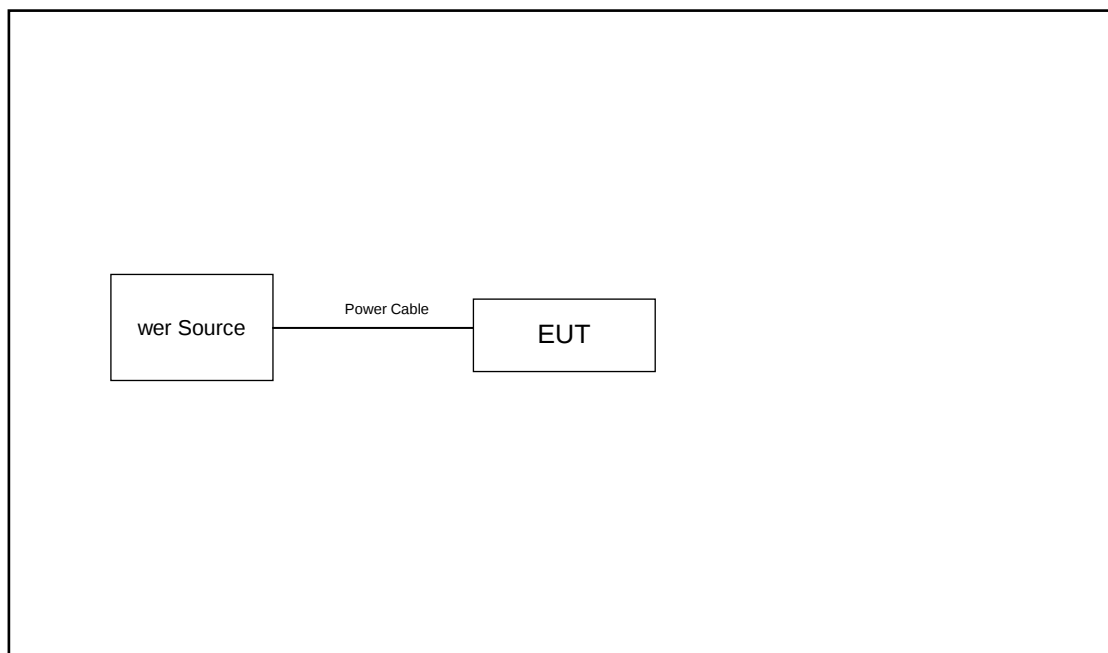
Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ax HE20	802.11ax HE20
L	Low	52	100
M	Middle	60	116
H	High	64	140
Straddle		-	144

Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ax HE40	802.11ax HE40
L	Low	54	102
M	Middle	-	110
H	High	62	134
Straddle		-	142

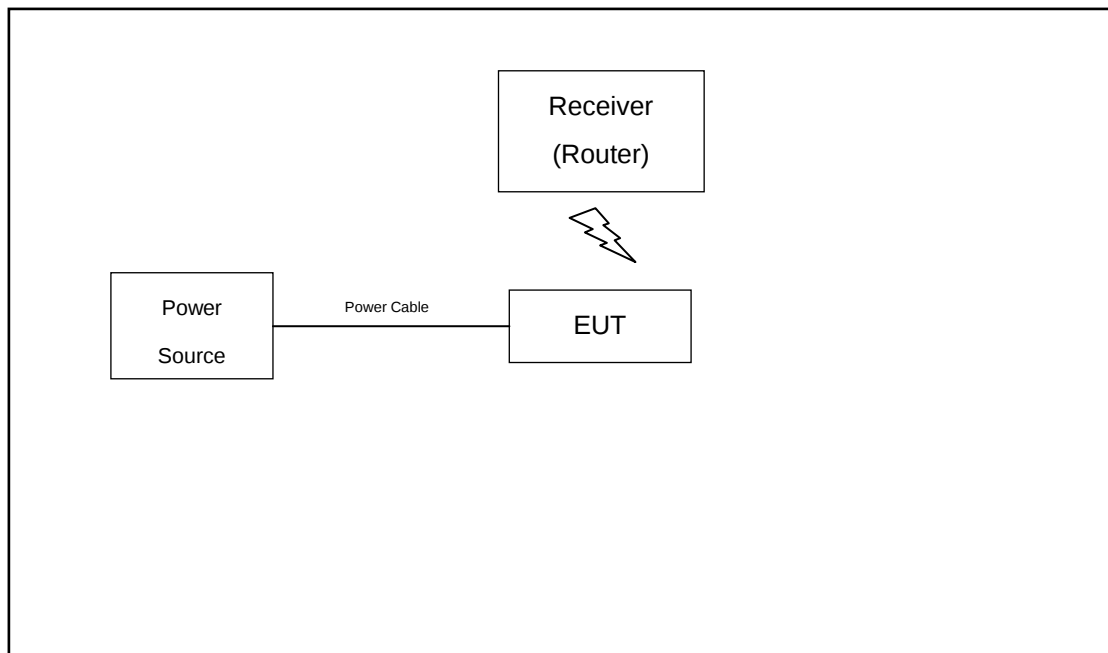
Ch. #		Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11ax HE80	802.11ax HE80
L	Low	-	106
M	Middle	58	-
H	High	-	-
Straddle		-	138

2.3 Connection Diagram of Test System

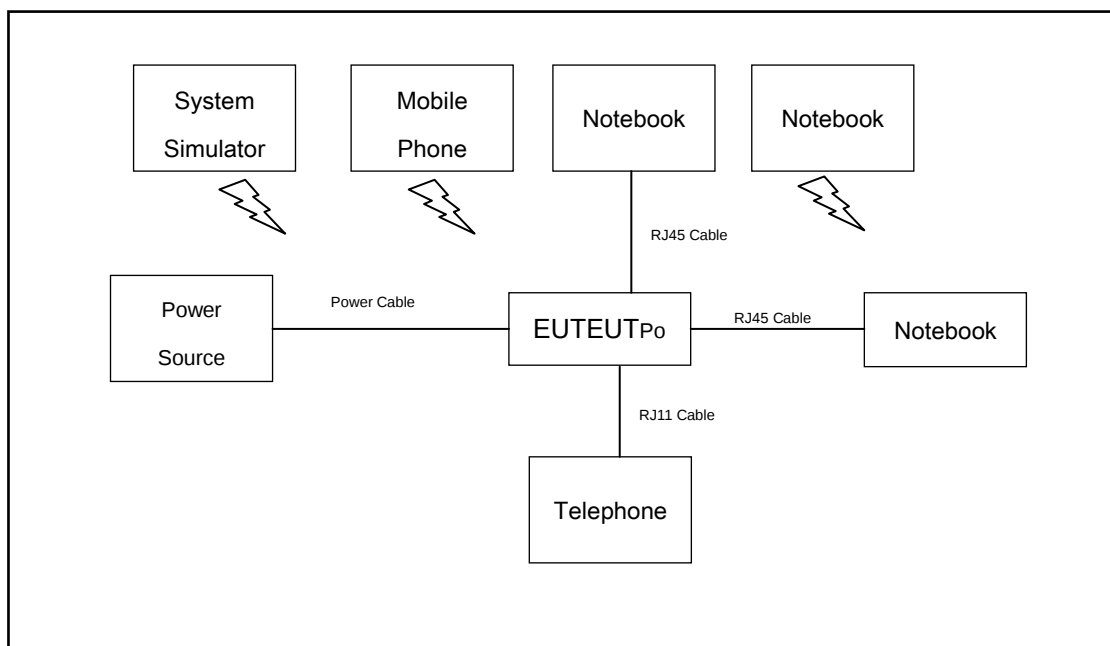
For Radiation (SISO/MIMO)



For Radiation (Beamforming)



For Conducted Emission



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Base Station	Anritus	MT8821C	N/A	N/A	Unshielded,1.8m
2.	Mobile Phone	MOTO	XT1952-1	XXXX	N/A	N/A
3.	Lenovo	G480	QDS-BRCM1050I	N/A	Lenovo	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
4.	Notebook	Lenovo	V130-15IKB005	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Notebook	Lenovo	V130-14IKB004	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
6.	Hard DISK*2	WD	C6B	N/A	N/A	N/A
7.	Earphone*2	Lenovo	P121	N/A	N/A	Unshielded,1.2m
8.	U Disk	Sandra Disk	SDDDC2	N/A	N/A	N/A
9.	Telephone	bubugao	HCD007(6082)TSD	N/A	N/A	N/A
10.	RJ45 cable	N/A	N/A	N/A	N/A	N/A
11.	RJ11 cable	N/A	N/A	N/A	N/A	N/A
12.	Receiver(Router)	Nokia	N/A	N/A	N/A	N/A

2.5 EUT Operation Test Setup

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

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 and attenuator factor 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 6.9dB.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 6.9 \text{ (dB)}\end{aligned}$$

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.

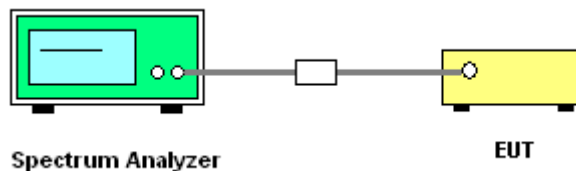
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

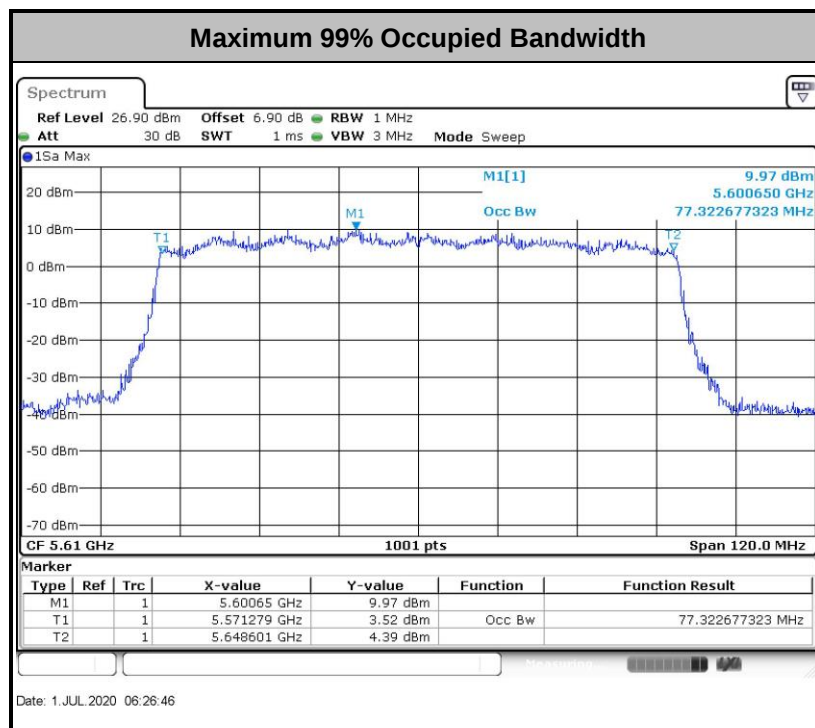
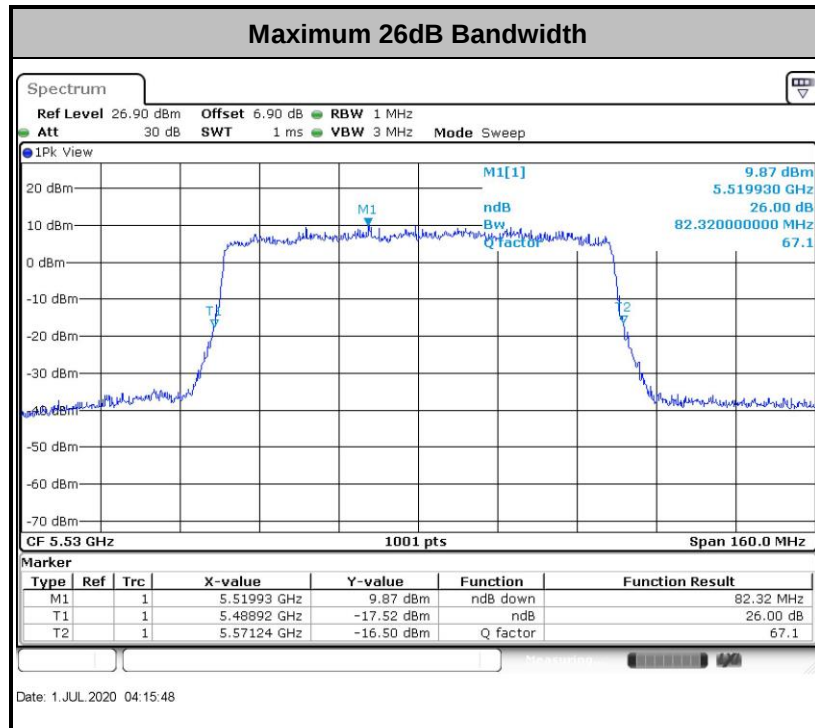
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB 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 1MHz and set the Video bandwidth (VBW) $\geq 3 * \text{RBW}$.
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.



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 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 the 5.47–5.6 GHz and 5.65–5.725 GHz band, the maximum conducted output power shall not exceed 250 mW or 11 + 10 log₁₀ B, dBm, whichever power is less. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log₁₀B, dBm, whichever is less. B is the 99% 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

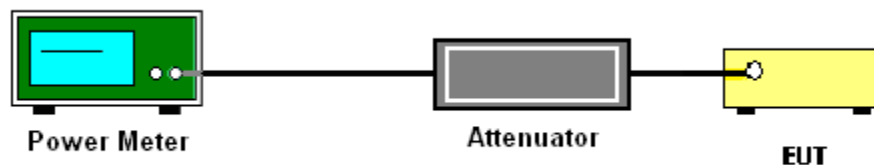
The testing follows Method PM of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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.

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 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).

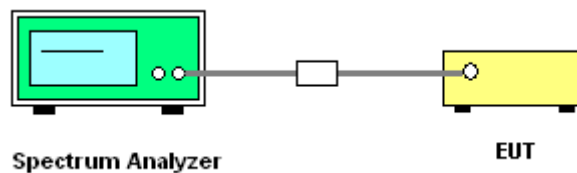
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW $\geq$ 3 MHz.
- Number of points in sweep $\geq$ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add $10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

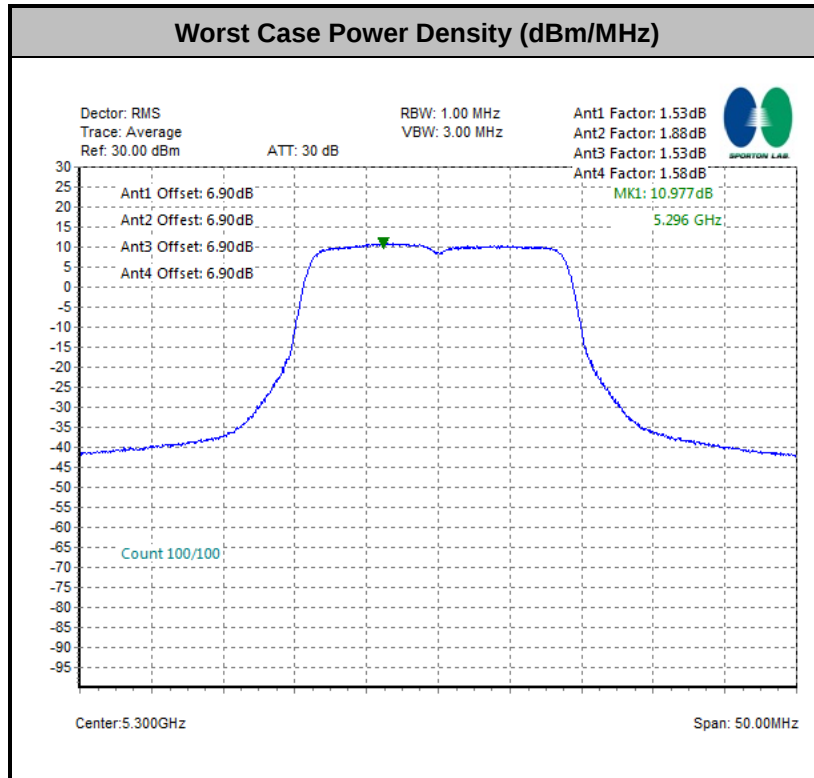
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



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 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 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz 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

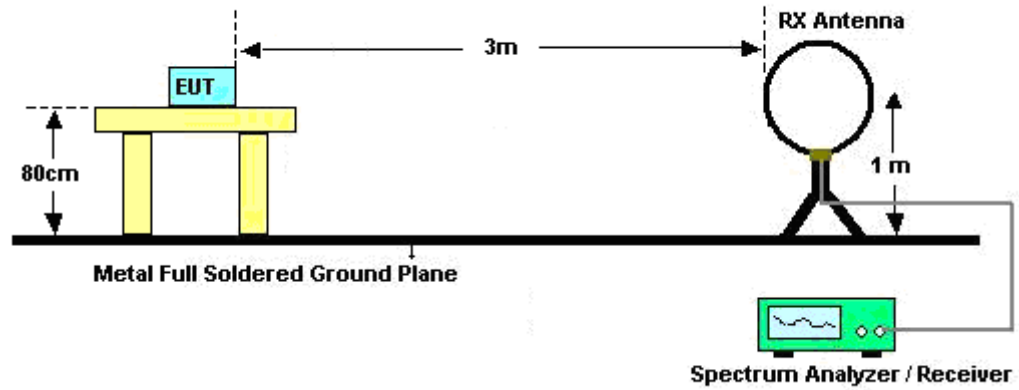
The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

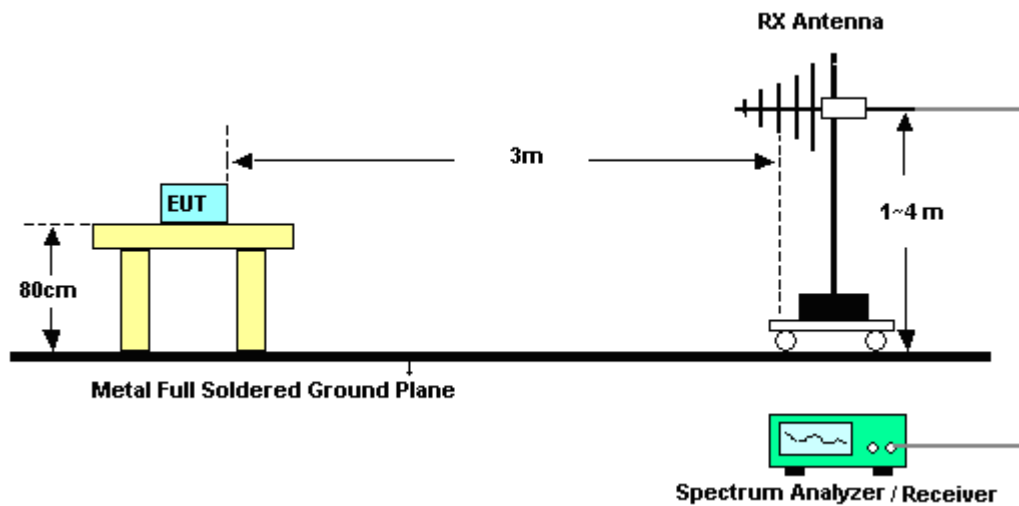
1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
 - (1) Procedure for Unwanted Emissions Measurements Below 1000MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
 - (2) Procedure for Peak 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 average 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

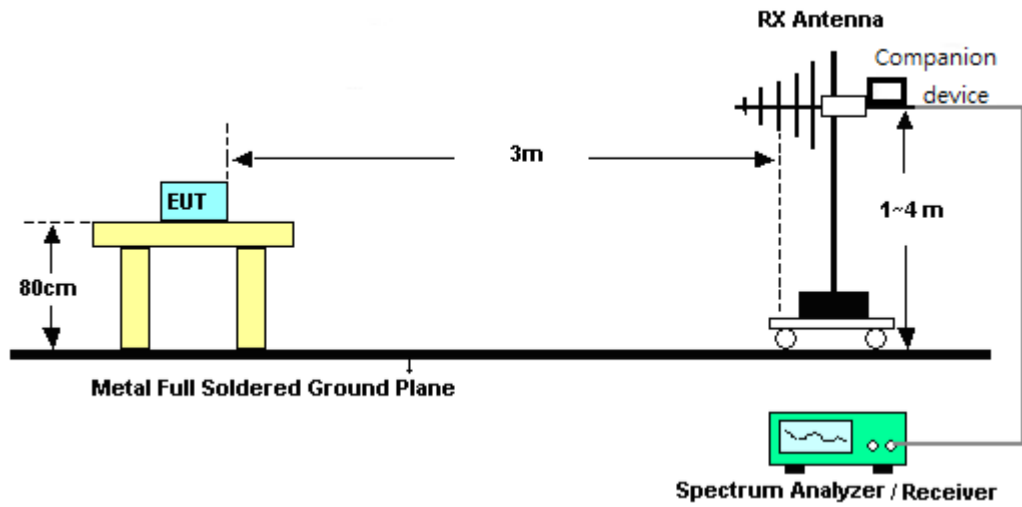
For radiated emissions below 30MHz



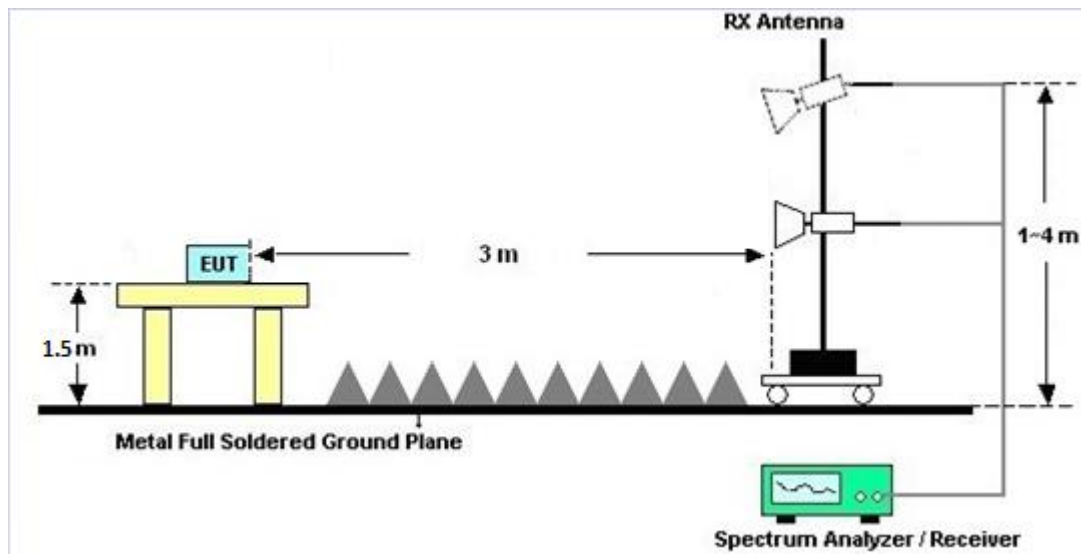
For radiated emissions from 30MHz to 1GHz



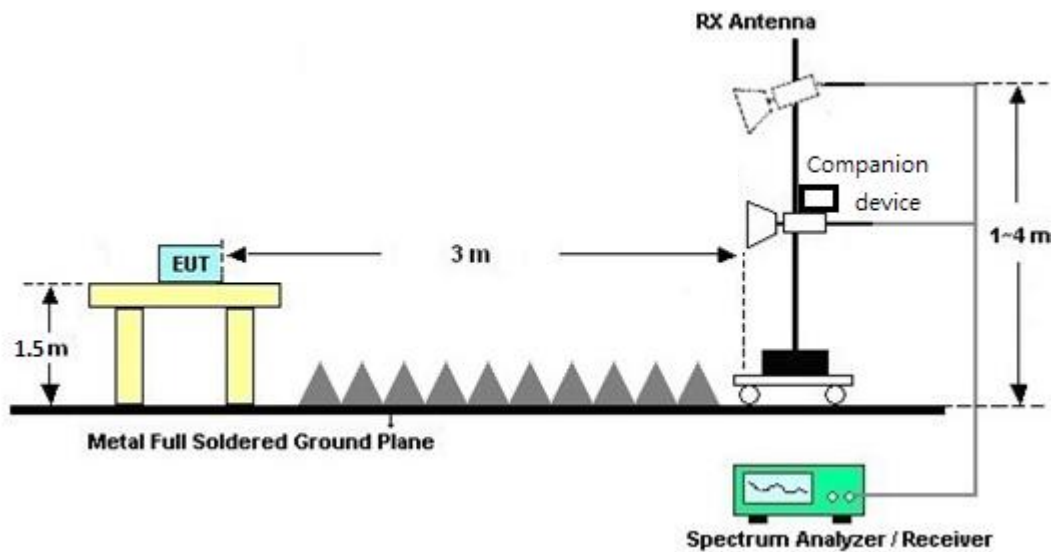
<TXBF Modes>



For radiated emissions above 1GHz



<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)

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 (dB μ V)	
	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.

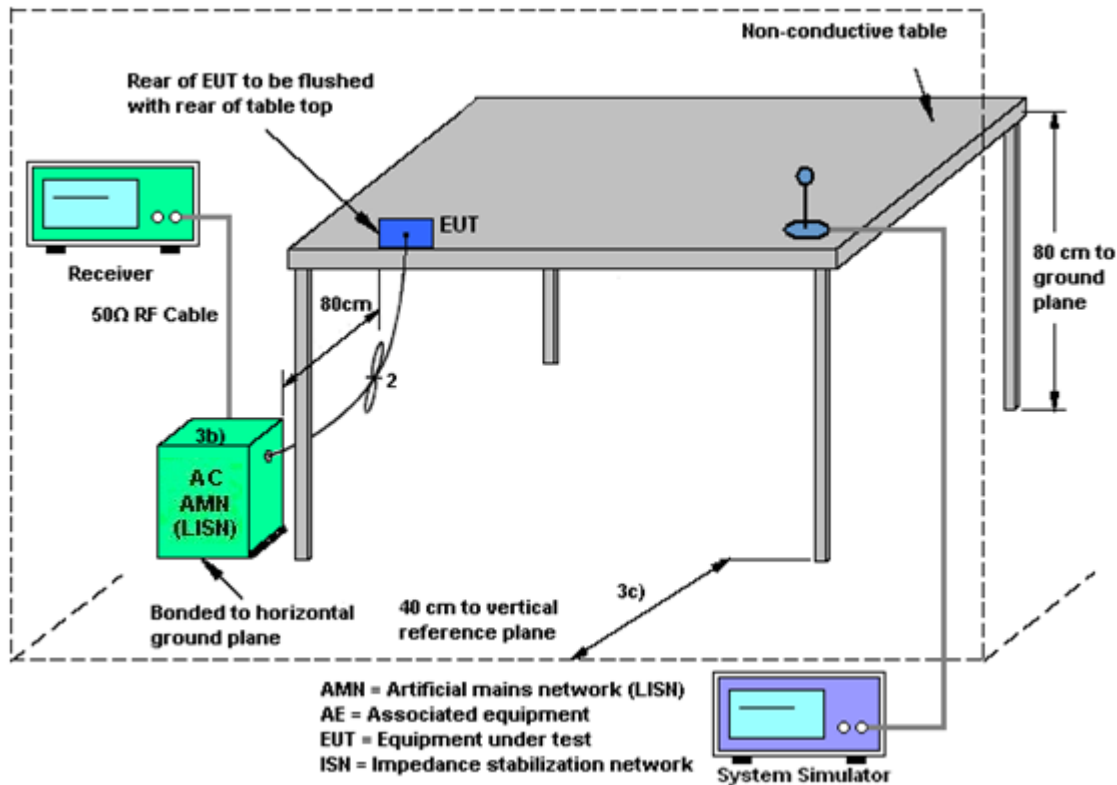
3.5.2 Measuring Instruments

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 Automatically Discontinue Transmission

3.6.1 Limit of Automatically Discontinue Transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

3.6.2 Measuring Instruments

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

3.6.3 Test Result of Automatically Discontinue Transmission

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

Directional gain = GANT + 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 NANT ≤ 4.

For power, the directional gain GANT is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

					DG for Power	DG for PSD	Power Limit Reduction	PSD Limit Reduction
	Ant. 1 (dBi)	Ant. 2 (dBi)	Ant. 3 (dBi)	Ant. 4 (dBi)	(dBi)	(dBi)	(dB)	(dB)
Band II	5.00	5.00	5.00	5.00	5.00	5.51	0.00	0.00
Band III	5.00	5.00	5.00	5.00	5.00	5.65	0.00	0.00

Power limit reduction = Composite gain – 6dBi, (min = 0)

PSD limit reduction = Composite gain + PSD Array gain – 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	Nov. 02, 2019	Jul. 01, 2020	Nov. 01, 2020	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 15, 2020	Jul. 01, 2020	Jan. 14, 2021	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 08, 2020	Jul. 01, 2020	Jan. 07, 2021	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY57290157	3Hz~8.5GHz;Max 30dBm	Jul. 18, 2019	Apr. 20, 2020~Jul. 22, 2020	Jul. 17, 2020	Radiation (03CH06-KS)
EMI Test Receiver	Keysight	N9038A	MY57290157	3Hz~8.5GHz;Max 30dBm	Jul. 16, 2020		Jul. 15, 2021	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150208	10Hz~44GHz	Apr. 15, 2020	Apr. 20, 2020~Jul. 22, 2020	Apr. 16, 2021	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 10, 2019	Apr. 20, 2020~Jul. 22, 2020	Nov. 09, 2020	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	49921	30MHz~1GHz	May 30, 2020	Apr. 20, 2020~Jul. 22, 2020	May 29, 2021	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 27, 2019	Apr. 20, 2020~Jul. 22, 2020	Apr. 26, 2020	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 27, 2020		Apr. 26, 2021	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 10, 2019	Apr. 20, 2020~Jul. 22, 2020	Nov. 09, 2020	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	187289	9KHz ~1GHZ	Aug. 06, 2019	Apr. 20, 2020~Jul. 22, 2020	Aug. 05, 2020	Radiation (03CH06-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 08, 2020	Apr. 20, 2020~Jul. 22, 2020	Jan. 07, 2021	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Aug. 16, 2019	Apr. 20, 2020~Jul. 22, 2020	Aug. 15, 2020	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY53270203	500MHz~26.5GHz	Apr. 15, 2020	Apr. 20, 2020~Jul. 22, 2020	Apr. 14, 2021	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Apr. 20, 2020~Jul. 22, 2020	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Apr. 20, 2020~Jul. 22, 2020	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Apr. 20, 2020~Jul. 22, 2020	NCR	Radiation (03CH06-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 14, 2020	Jul. 22, 2020	Apr. 13, 2021	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 18, 2019	Jul. 22, 2020	Oct. 17, 2020	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Oct. 28, 2019	Jul. 22, 2020	Oct. 27, 2020	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000811	AC 0V~300V, 45Hz~1000Hz	Oct. 18, 2019	Jul. 22, 2020	Oct. 17, 2020	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% ($U = 2Uc(y)$)	2.9dB
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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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Appendix A. Conducted Test Results

Test Engineer:	Weller Liu	Temperature:	21~25	°C
Test Date:	2020/7/1	Relative Humidity:	51~54	%

TEST RESULTS DATA
26dB and 99% OBW

Band II													
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	1	52	5260		21.13				23.98			
11a	6Mbps	1	60	5300		20.98				23.98			
11a	6Mbps	1	64	5320		21.28				23.98			

Band II													
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	
HT20	MCS0	4	52	5260	21.93	21.68	22.03	21.33	23.98	23.98	23.98	23.98	
HT20	MCS0	4	60	5300	21.78	21.83	22.08	21.78	23.98	23.98	23.98	23.98	
HT20	MCS0	4	64	5320	21.93	21.38	21.63	21.63	23.98	23.98	23.98	23.98	
HT40	MCS0	4	54	5270	41.27	41.27	41.27	40.99	23.98	23.98	23.98	23.98	
HT40	MCS0	4	62	5310	41.27	40.73	40.91	40.82	23.98	23.98	23.98	23.98	
AX20	MCS0	4	52	5260	22.63	22.23	22.33	21.98	23.98	23.98	23.98	23.98	
AX20	MCS0	4	60	5300	22.28	22.38	22.28	22.53	23.98	23.98	23.98	23.98	
AX20	MCS0	4	64	5320	22.48	22.53	22.43	22.38	23.98	23.98	23.98	23.98	
AX40	MCS0	4	54	5270	41.36	41.72	41.45	41.54	23.98	23.98	23.98	23.98	
AX40	MCS0	4	62	5310	41.54	41.81	41.45	41.36	23.98	23.98	23.98	23.98	
VHT80	MCS0	4	58	5290	81.68	81.52	81.36	81.36	23.98	23.98	23.98	23.98	
ax80	MCS0	4	58	5290	81.84	82.16	81.84	82.00	23.98	23.98	23.98	23.98	

Band II																
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	1	52	5260		17.03				23.31				29.31		
11a	6Mbps	1	60	5300		16.98				23.30				29.30		
11a	6Mbps	1	64	5320		17.03				23.31				29.31		

Band II																
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
HT20	MCS0	4	52	5260	18.08	18.03	18.13	18.13	23.57	23.56	23.58	23.58	29.57	29.56	29.58	29.58
HT20	MCS0	4	60	5300	18.08	18.08	18.18	18.13	23.57	23.57	23.60	23.58	29.57	29.57	29.60	29.58
HT20	MCS0	4	64	5320	18.08	18.03	18.08	18.18	23.57	23.56	23.57	23.60	29.57	29.56	29.57	29.60
HT40	MCS0	4	54	5270	36.36	36.36	36.26	36.26	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HT40	MCS0	4	62	5310	36.26	36.16	36.26	36.26	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
AX20	MCS0	4	52	5260	19.38	19.28	19.38	19.33	23.87	23.85	23.87	23.86	29.87	29.85	29.87	29.86
AX20	MCS0	4	60	5300	19.38	19.38	19.43	19.38	23.87	23.87	23.88	23.87	29.87	29.87	29.88	29.87
AX20	MCS0	4	64	5320	19.43	19.43	19.43	19.38	23.88	23.88	23.88	23.87	29.88	29.88	29.88	29.87
AX40	MCS0	4	54	5270	37.86	37.96	37.86	37.96	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
AX40	MCS0	4	62	5310	37.86	37.66	37.86	37.86	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
VHT80	MCS0	4	58	5290	75.28	75.16	75.40	75.28	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
AX80	MCS0	4	58	5290	77.08	77.08	77.08	76.96	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00

TEST RESULTS DATA
Average Power Table

FCC Band II															
Mod.	Data Rate	N _{Tx}	CH.	Freq. (MHz)	Ant	Average Conducted Power with Duty Factor (dB)					FCC Power Limit (dBm)	Ant. Gain (dBi)	FCC EIRP Power (dBm)	FCC EIRP Power Limit (dBm)	Pass/Fail
						Ant 1	Ant 2	Ant 3	Ant 4	SUM					
11a	6Mbps	1	52	5260	1	17.97					23.98	5.00	22.97	30.00	Pass
11a	6Mbps	1	60	5300	1	17.94					23.98	5.00	22.94	30.00	Pass
11a	6Mbps	1	64	5320	1	17.03					23.98	5.00	22.03	30.00	Pass
11a	6Mbps	1	52	5260	2		19.14				23.98	5.00	24.14	30.00	Pass
11a	6Mbps	1	60	5300	2		17.66				23.98	5.00	22.66	30.00	Pass
11a	6Mbps	1	64	5320	2		17.08				23.98	5.00	22.08	30.00	Pass
11a	6Mbps	1	52	5260	3			19.20			23.98	5.00	24.20	30.00	Pass
11a	6Mbps	1	60	5300	3			18.18			23.98	5.00	23.18	30.00	Pass
11a	6Mbps	1	64	5320	3			17.21			23.98	5.00	22.21	30.00	Pass

FCC Band II															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Ant	Average Conducted Power with Duty Factor (dB)					FCC Power Limit (dBm)	Ant. Gain (dBi)	FCC EIRP Power (dBm)	FCC EIRP Power Limit (dBm)	Pass/Fail
						Ant 1	Ant 2	Ant 3	Ant 4	SUM					
11a	6Mbps	1	52	5260	4				19.20		23.98	5.00	24.20	30.00	Pass
11a	6Mbps	1	60	5300	4				18.03		23.98	5.00	23.03	30.00	Pass
11a	6Mbps	1	64	5320	4				17.18		23.98	5.00	22.18	30.00	Pass

FCC Band II															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Ant	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					
HT20	MCS0	4	52	5260	1+2+3+4	15.46	16.11	15.30	14.93	21.49	23.98	5.00	26.49	30.00	Pass
HT20	MCS0	4	60	5300	1+2+3+4	15.75	16.16	16.79	16.22	22.27	23.98	5.00	27.27	30.00	Pass
HT20	MCS0	4	64	5320	1+2+3+4	15.66	15.93	15.76	15.74	21.79	23.98	5.00	26.79	30.00	Pass
HT40	MCS0	4	54	5270	1+2+3+4	17.94	17.54	17.82	17.88	23.82	23.98	5.00	28.82	30.00	Pass
HT40	MCS0	4	62	5310	1+2+3+4	16.92	17.09	17.34	17.00	23.11	23.98	5.00	28.11	30.00	Pass
AX20	MCS0	4	52	5260	1+2+3+4	16.20	15.77	15.64	15.81	21.88	23.98	5.00	26.88	30.00	Pass
AX20	MCS0	4	60	5300	1+2+3+4	16.53	16.07	16.60	16.23	22.38	23.98	5.00	27.38	30.00	Pass
AX20	MCS0	4	64	5320	1+2+3+4	15.75	15.51	17.67	15.62	22.26	23.98	5.00	27.26	30.00	Pass
AX40	MCS0	4	54	5270	1+2+3+4	17.60	17.72	17.76	17.75	23.73	23.98	5.00	28.73	30.00	Pass
AX40	MCS0	4	62	5310	1+2+3+4	17.21	17.08	17.49	17.45	23.33	23.98	5.00	28.33	30.00	Pass
VHT80	MCS0	4	58	5290	1+2+3+4	18.09	17.27	17.73	17.52	23.69	23.98	5.00	28.69	30.00	Pass
AX80	MCS0	4	58	5290	1+2+3+4	18.03	17.87	17.78	18.02	23.95	23.98	5.00	28.95	30.00	Pass

TEST RESULTS DATA
Power Spectral Density

Band II														
Mod.	Data Rate	Nrx	CH.	Freq. (MHz)	Ant	Duty Factor (dB)				Average PSD with Duty Factor (dBm/MHz)	PSD Limit (dBm/ MHz)	Ant. Gain (dBi)		Pass /Fail
						Ant 1	Ant 2	Ant 3	Ant 4					
11a	6Mbps	1	52	5260	2		0.32			8.59	11.00	5.00		Pass
11a	6Mbps	1	60	5300	2		0.32			7.31	11.00	5.00		Pass
11a	6Mbps	1	64	5320	2		0.32			6.80	11.00	5.00		Pass

Band II														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Ant	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					
HT20	MCS0	4	52	5260	1+2+3+4	1.53	1.88	1.53	1.58	10.26	11.00	5.51		Pass
HT20	MCS0	4	60	5300	1+2+3+4	1.53	1.88	1.53	1.58	10.98	11.00	5.51		Pass
HT20	MCS0	4	64	5320	1+2+3+4	1.53	1.88	1.53	1.58	10.49	11.00	5.51		Pass
HT40	MCS0	4	54	5270	1+2+3+4	1.76	1.62	1.61	1.57	9.33	11.00	5.51		Pass
HT40	MCS0	4	62	5310	1+2+3+4	1.76	1.62	1.61	1.57	8.44	11.00	5.51		Pass
AX20	MCS0	4	52	5260	1+2+3+4	1.69	1.49	1.49	1.70	10.03	11.00	5.51		Pass
AX20	MCS0	4	60	5300	1+2+3+4	1.69	1.49	1.49	1.70	10.96	11.00	5.51		Pass
AX20	MCS0	4	64	5320	1+2+3+4	1.69	1.49	1.49	1.70	10.01	11.00	5.51		Pass
AX40	MCS0	4	54	5270	1+2+3+4	1.76	1.62	1.57	1.76	9.18	11.00	5.51		Pass
AX40	MCS0	4	62	5310	1+2+3+4	1.76	1.62	1.57	1.76	8.38	11.00	5.51		Pass
VHT80	MCS0	4	58	5290	1+2+3+4	1.68	1.66	1.62	1.66	6.14	11.00	5.51		Pass
AX80	MCS0	4	58	5290	1+2+3+4	1.61	1.63	1.69	1.70	6.75	11.00	5.51		Pass

TEST RESULTS DATA
26dB and 99% OBW

Band III													
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	1	100	5500		21.13				23.98			
11a	6Mbps	1	116	5580		21.18				23.98			
11a	6Mbps	1	140	5700		21.13				23.98			
11a	6Mbps	1	144	5720		20.88				23.98			

Band III													
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	
HT20	MCS0	4	100	5500	21.93	21.48	21.88	21.83	23.98	23.98	23.98	23.98	
HT20	MCS0	4	116	5580	22.03	21.68	21.88	21.63	23.98	23.98	23.98	23.98	
HT20	MCS0	4	140	5700	21.78	21.73	21.93	21.68	23.98	23.98	23.98	23.98	
HT20	MCS0	4	144	5720	21.73	21.58	21.73	21.58	23.98	23.98	23.98	23.98	
HT40	MCS0	4	102	5510	41.09	41.27	41.18	40.73	23.98	23.98	23.98	23.98	
HT40	MCS0	4	110	5550	41.27	41.00	41.00	40.91	23.98	23.98	23.98	23.98	
HT40	MCS0	4	134	5670	41.45	40.64	40.82	40.64	23.98	23.98	23.98	23.98	
HT40	MCS0	4	142	5710	41.36	41.18	41.36	41.45	23.98	23.98	23.98	23.98	
ax20	MCS0	4	100	5500	22.43	22.18	22.48	22.43	23.98	23.98	23.98	23.98	
ax20	MCS0	4	116	5580	22.38	22.28	22.13	22.13	23.98	23.98	23.98	23.98	
ax20	MCS0	4	140	5700	22.28	22.33	22.23	22.38	23.98	23.98	23.98	23.98	
ax20	MCS0	4	144	5720	22.33	22.18	22.08	22.18	23.98	23.98	23.98	23.98	
ax40	MCS0	4	102	5510	41.18	41.27	41.45	40.82	23.98	23.98	23.98	23.98	
ax40	MCS0	4	110	5550	41.54	41.72	41.63	41.72	23.98	23.98	23.98	23.98	
ax40	MCS0	4	134	5670	41.54	41.54	41.99	41.54	23.98	23.98	23.98	23.98	
ax40	MCS0	4	142	5710	41.81	41.63	41.72	41.54	23.98	23.98	23.98	23.98	
VHT80	MCS0	4	106	5530	81.52	81.36	81.20	81.04	23.98	23.98	23.98	23.98	
VHT80	MCS0	4	122	5610	81.68	81.36	81.52	81.36	23.98	23.98	23.98	23.98	
VHT80	MCS0	4	138	5690	81.36	81.84	82.16	81.84	23.98	23.98	23.98	23.98	
ax80	MCS0	4	106	5530	82.16	81.84	82.32	81.52	23.98	23.98	23.98	23.98	
ax80	MCS0	4	122	5610	81.84	81.52	82.16	81.84	23.98	23.98	23.98	23.98	
ax80	MCS0	4	138	5690	82.00	81.84	82.00	82.16	23.98	23.98	23.98	23.98	

Band III																
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	1	100	5500		17.13				23.34				29.34		
11a	6Mbps	1	116	5580		17.03				23.31				29.31		
11a	6Mbps	1	140	5700		17.03				23.31				29.31		
11a	6Mbps	1	144	5720		17.03				23.31				29.31		

Band III																
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
HT20	MCS0	4	100	5500	18.13	18.08	18.13	18.13	23.58	23.57	23.58	23.58	29.58	29.57	29.58	29.58
HT20	MCS0	4	116	5580	18.18	17.98	18.23	18.13	23.60	23.55	23.61	23.58	29.60	29.55	29.61	29.58
HT20	MCS0	4	140	5700	18.18	18.08	18.08	18.13	23.60	23.57	23.57	23.58	29.60	29.57	29.57	29.58
HT20	MCS0	4	144	5720	18.13	18.13	18.08	18.13	23.58	23.58	23.57	23.58	29.58	29.58	29.57	29.58
HT40	MCS0	4	102	5510	36.16	36.46	36.36	36.26	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HT40	MCS0	4	110	5550	36.26	36.16	36.26	36.36	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HT40	MCS0	4	134	5670	36.26	36.16	36.26	36.26	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
HT40	MCS0	4	142	5710	36.36	36.26	36.26	36.36	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
ax20	MCS0	4	100	5500	19.38	19.38	19.43	19.33	23.87	23.87	23.88	23.86	29.87	29.87	29.88	29.86
ax20	MCS0	4	116	5580	19.53	19.38	19.33	19.38	23.91	23.87	23.86	23.87	29.91	29.87	29.86	29.87
ax20	MCS0	4	140	5700	19.43	19.38	19.28	19.33	23.88	23.87	23.85	23.86	29.88	29.87	29.85	29.86
ax20	MCS0	4	144	5720	19.43	19.33	19.38	19.33	23.88	23.86	23.87	23.86	29.88	29.86	29.87	29.86
ax40	MCS0	4	102	5510	36.16	36.36	36.26	36.26	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
ax40	MCS0	4	110	5550	37.96	37.96	37.96	37.96	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
ax40	MCS0	4	134	5670	37.96	38.16	38.06	37.96	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
ax40	MCS0	4	142	5710	37.96	37.96	37.96	38.06	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
VHT80	MCS0	4	106	5530	75.28	75.28	75.40	75.40	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
VHT80	MCS0	4	122	5610	75.16	75.28	75.40	75.28	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
VHT80	MCS0	4	138	5690	75.28	75.40	75.40	75.16	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
ax80	MCS0	4	106	5530	77.20	77.20	77.20	76.96	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
ax80	MCS0	4	122	5610	77.32	77.20	77.08	76.96	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00
ax80	MCS0	4	138	5690	76.96	76.96	76.96	77.08	23.98	23.98	23.98	23.98	30.00	30.00	30.00	30.00

TEST RESULTS DATA
Average Power Table

FCC Band III															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Ant	Average Conducted Power with Duty Factor (dB)					FCC Power Limit (dBm)	Ant. Gain (dBi)	FCC EIRP Power (dBm)	FCC EIRP Power Limit (dBm)	Pass/Fail
						Ant 1	Ant 2	Ant 3	Ant 4	SUM					
11a	6Mbps	1	100	5500	1	18.23					23.98	5.00	23.23	30.00	Pass
11a	6Mbps	1	116	5580	1	16.49					23.98	5.00	21.49	30.00	Pass
11a	6Mbps	1	140	5700	1	17.85					23.98	5.00	22.85	30.00	Pass
11a	6Mbps	1	144	5720	1	18.39					23.98	5.00	23.39	30.00	Pass
11a	6Mbps	1	100	5500	2		18.29				23.98	5.00	23.29	30.00	Pass
11a	6Mbps	1	116	5580	2		16.63				23.98	5.00	21.63	30.00	Pass
11a	6Mbps	1	140	5700	2		18.12				23.98	5.00	23.12	30.00	Pass
11a	6Mbps	1	144	5720	2		18.37				23.98	5.00	23.37	30.00	Pass

FCC Band III															
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Ant	Average Conducted Power with Duty Factor (dB)					FCC Power Limit (dBm)	Ant. Gain (dBi)	FCC EIRP Power (dBm)	FCC EIRP Power Limit (dBm)	Pass/Fail
						Ant 1	Ant 2	Ant 3	Ant 4	SUM					
11a	6Mbps	1	100	5500	3			18.25			23.98	5.00	23.25	30.00	Pass
11a	6Mbps	1	116	5580	3			16.60			23.98	5.00	21.60	30.00	Pass
11a	6Mbps	1	140	5700	3			17.81			23.98	5.00	22.81	30.00	Pass
11a	6Mbps	1	144	5720	3			18.45			23.98	5.00	23.45	30.00	Pass
11a	6Mbps	1	100	5500	4				18.20		23.98	5.00	23.20	30.00	Pass
11a	6Mbps	1	116	5580	4				16.20		23.98	5.00	21.20	30.00	Pass
11a	6Mbps	1	140	5700	4				17.65		23.98	5.00	22.65	30.00	Pass
11a	6Mbps	1	144	5720	4				18.34		23.98	5.00	23.34	30.00	Pass

FCC Band III															
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Ant	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					
HT20	MCS0	4	100	5500	1+2+3+4	15.82	16.26	15.66	15.93	21.94	23.98	5.00	26.94	30.00	Pass
HT20	MCS0	4	116	5580	1+2+3+4	16.04	16.46	15.84	15.65	22.03	23.98	5.00	27.03	30.00	Pass
HT20	MCS0	4	140	5700	1+2+3+4	16.08	16.59	16.00	15.70	22.12	23.98	5.00	27.12	30.00	Pass
HT20	MCS0	4	144	5720	1+2+3+4	16.01	16.65	15.95	16.29	22.25	23.98	5.00	27.25	30.00	Pass
HT40	MCS0	4	102	5510	1+2+3+4	17.91	17.82	17.81	17.87	23.87	23.98	5.00	28.87	30.00	Pass
HT40	MCS0	4	110	5550	1+2+3+4	17.28	17.14	17.78	17.91	23.56	23.98	5.00	28.56	30.00	Pass
HT40	MCS0	4	134	5670	1+2+3+4	17.77	17.90	17.77	17.74	23.82	23.98	5.00	28.82	30.00	Pass
HT40	MCS0	4	142	5710	1+2+3+4	17.90	18.05	17.90	17.78	23.93	23.98	5.00	28.93	30.00	Pass
AX20	MCS0	4	100	5500	1+2+3+4	16.77	16.47	16.26	16.26	22.47	23.98	5.00	27.47	30.00	Pass
AX20	MCS0	4	116	5580	1+2+3+4	16.71	15.92	16.24	15.98	22.25	23.98	5.00	27.25	30.00	Pass
AX20	MCS0	4	140	5700	1+2+3+4	16.03	16.52	16.11	16.54	22.33	23.98	5.00	27.33	30.00	Pass
Ax20	MCS0	4	144	5720	1+2+3+4	11.81	10.87	10.86	10.68	17.10	23.98	5.00	22.10	30.00	Pass
AX40	MCS0	4	102	5510	1+2+3+4	17.51	17.10	17.34	17.14	23.29	23.98	5.00	28.29	30.00	Pass
AX40	MCS0	4	110	5550	1+2+3+4	17.33	17.22	17.09	17.31	23.26	23.98	5.00	28.26	30.00	Pass
AX40	MCS0	4	134	5670	1+2+3+4	17.52	17.35	17.53	17.59	23.52	23.98	5.00	28.52	30.00	Pass
Ax40	MCS0	4	142	5710	1+2+3+4	12.98	12.77	12.79	13.10	18.93	23.98	5.00	23.93	30.00	Pass
VHT80	MCS0	4	106	5530	1+2+3+4	16.93	16.81	17.26	17.69	23.21	23.98	5.00	28.21	30.00	Pass
VHT80	MCS0	4	122	5610	1+2+3+4	16.87	17.34	17.27	17.01	23.15	23.98	5.00	28.15	30.00	Pass
VHT80	MCS0	4	138	5690	1+2+3+4	17.10	17.08	17.14	17.01	23.11	23.98	5.00	28.11	30.00	Pass
AX80	MCS0	4	106	5530	1+2+3+4	17.79	17.10	17.72	18.18	23.73	23.98	5.00	28.73	30.00	Pass
AX80	MCS0	4	122	5610	1+2+3+4	17.54	18.07	17.84	17.71	23.81	23.98	5.00	28.81	30.00	Pass
Ax80	MCS0	4	138	5690	1+2+3+4	17.56	18.10	17.71	18.03	23.88	23.98	5.00	28.88	30.00	Pass

TEST RESULTS DATA
Power Spectral Density

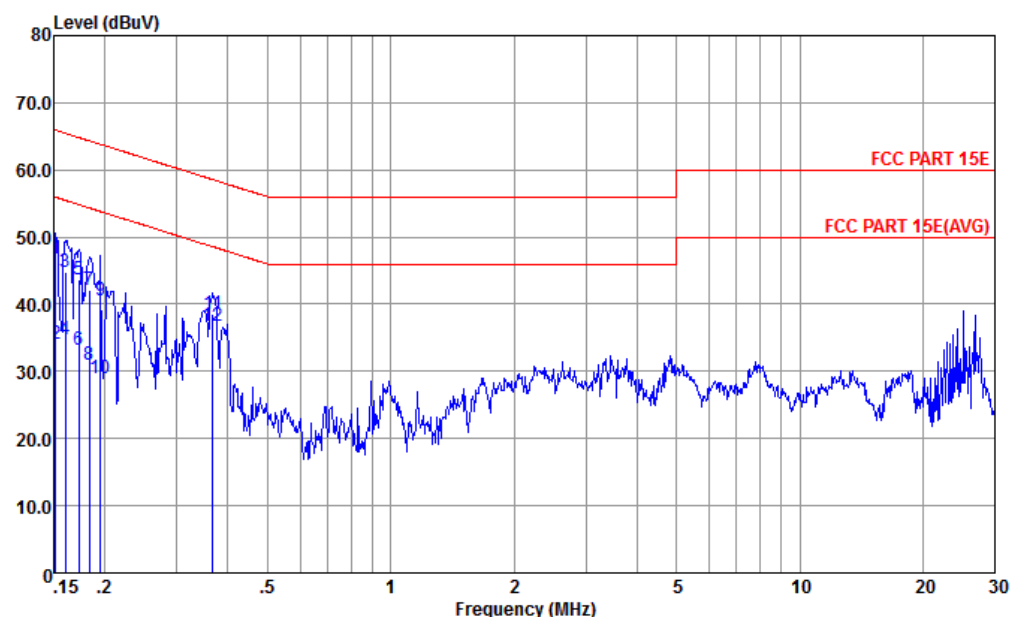
Band III													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Ant	Duty Factor (dB)				Average PSD with Duty Factor (dBm/MHz)	PSD Limit (dBm/MHz)	Ant. Gain (dBi)	Pass /Fail
						Ant 1	Ant 2	Ant 3	Ant 4				
11a	6Mbps	1	100	5500	2		0.32			8.00	11.00	5.00	Pass
11a	6Mbps	1	116	5580	2		0.32			6.16	11.00	5.00	Pass
11a	6Mbps	1	140	5700	2		0.32			7.86	11.00	5.00	Pass
11a	6Mbps	1	144	5720	2		0.32			6.92	11.00	5.00	Pass

Band III													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Ant	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				
HT20	MCS0	4	100	5500	1+2+3+4	1.53	1.88	1.53	1.58	10.47	11.00	5.65	Pass
HT20	MCS0	4	116	5580	1+2+3+4	1.53	1.88	1.53	1.58	10.83	11.00	5.65	Pass
HT20	MCS0	4	140	5700	1+2+3+4	1.53	1.88	1.53	1.58	10.70	11.00	5.65	Pass
HT20	MCS0	4	144	5720	1+2+3+4	1.53	1.88	1.53	1.58	10.21	11.00	5.65	Pass
HT40	MCS0	4	102	5510	1+2+3+4	1.76	1.62	1.61	1.57	9.88	11.00	5.65	Pass
HT40	MCS0	4	110	5550	1+2+3+4	1.76	1.62	1.61	1.57	8.32	11.00	5.65	Pass
HT40	MCS0	4	134	5670	1+2+3+4	1.76	1.62	1.61	1.57	9.96	11.00	5.65	Pass
HT40	MCS0	4	142	5710	1+2+3+4	1.76	1.62	1.61	1.57	9.77	11.00	5.65	Pass
AX20	MCS0	4	100	5500	1+2+3+4	1.70	1.72	1.82	1.57	10.95	11.00	5.65	Pass
AX20	MCS0	4	116	5580	1+2+3+4	1.70	1.72	1.82	1.57	10.68	11.00	5.65	Pass
AX20	MCS0	4	140	5700	1+2+3+4	1.70	1.72	1.82	1.57	10.61	11.00	5.65	Pass
AX20	MCS0	4	144	5720	1+2+3+4	1.70	1.72	1.82	1.57	9.89	11.00	5.65	Pass
AX40	MCS0	4	102	5510	1+2+3+4	1.76	1.62	1.57	1.76	8.77	11.00	5.65	Pass
AX40	MCS0	4	110	5550	1+2+3+4	1.76	1.62	1.57	1.76	8.36	11.00	5.65	Pass
AX40	MCS0	4	134	5670	1+2+3+4	1.76	1.62	1.57	1.76	8.84	11.00	5.65	Pass
AX40	MCS0	4	142	5710	1+2+3+4	1.76	1.62	1.57	1.76	8.23	11.00	5.65	Pass
VHT80	MCS0	4	106	5530	1+2+3+4	1.68	1.66	1.62	1.66	6.04	11.00	5.65	Pass
VHT80	MCS0	4	122	5610	1+2+3+4	1.68	1.66	1.62	1.66	6.33	11.00	5.65	Pass
VHT80	MCS0	4	138	5690	1+2+3+4	1.68	1.66	1.62	1.66	5.96	11.00	5.65	Pass
AX80	MCS0	4	106	5530	1+2+3+4	1.61	1.63	1.69	1.70	6.50	11.00	5.65	Pass
AX80	MCS0	4	122	5610	1+2+3+4	1.61	1.63	1.69	1.70	6.60	11.00	5.65	Pass
AX80	MCS0	4	138	5690	1+2+3+4	1.68	1.66	1.62	1.66	6.20	11.00	5.65	Pass



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2℃
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Test mode :	LTE Band 5 Idle + Bluetooth Link + WLAN Link (5G) + Lan 1 Link + Lan 2 Link + RJ11 Link + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

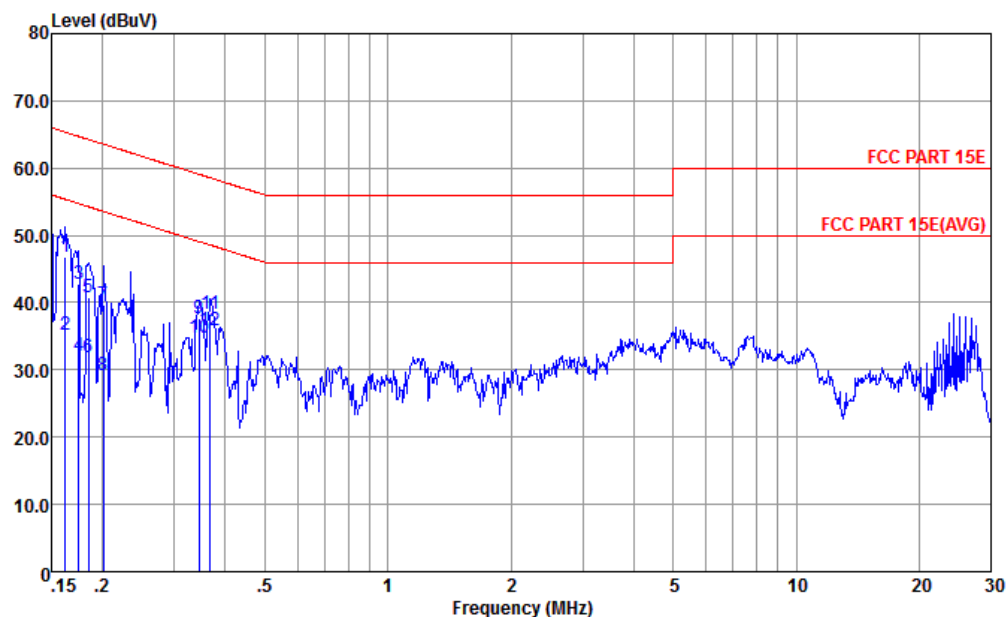


Site : CO01-KS
Condition : FCC PART 15E LISN-L-191028-CN02 LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.152	46.75	-19.16	65.91	36.20	0.07	10.48	QP
2	0.152	34.15	-21.76	55.91	23.60	0.07	10.48	Average
3	0.160	44.73	-20.74	65.47	34.21	0.07	10.45	QP
4	0.160	34.83	-20.64	55.47	24.31	0.07	10.45	Average
5	0.173	43.70	-21.11	64.81	33.20	0.08	10.42	QP
6	0.173	33.10	-21.71	54.81	22.60	0.08	10.42	Average
7	0.183	42.08	-22.25	64.33	31.60	0.08	10.40	QP
8	0.183	31.08	-23.25	54.33	20.60	0.08	10.40	Average
9	0.195	40.66	-23.14	63.80	30.20	0.09	10.37	QP
10	0.195	29.06	-24.74	53.80	18.60	0.09	10.37	Average
11	0.367	38.59	-19.97	58.56	28.19	0.12	10.28	QP
12 *	0.367	36.69	-11.87	48.56	26.29	0.12	10.28	Average



Test Engineer :	Amos Zhang	Temperature :	25.3~26.2℃
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Test mode :	LTE Band 5 Idle + Bluetooth Link + WLAN Link (5G) + Lan 1 Link + Lan 2 Link + RJ11 Link + Adapter 1		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC PART 15E LISN-N-191028-CN02 NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.162	46.80	-18.54	65.34	36.20	0.15	10.45	QP
2	0.162	35.10	-20.24	55.34	24.50	0.15	10.45	Average
3	0.175	42.78	-21.94	64.72	32.20	0.16	10.42	QP
4	0.175	32.18	-22.54	54.72	21.60	0.16	10.42	Average
5	0.184	40.76	-23.52	64.28	30.20	0.16	10.40	QP
6	0.184	31.76	-22.52	54.28	21.20	0.16	10.40	Average
7	0.201	39.73	-23.85	63.58	29.20	0.17	10.36	QP
8	0.201	29.13	-24.45	53.58	18.60	0.17	10.36	Average
9	0.345	37.69	-21.40	59.09	27.20	0.20	10.29	QP
10	0.345	34.79	-14.30	49.09	24.30	0.20	10.29	Average
11	0.367	38.29	-20.27	58.56	27.80	0.21	10.28	QP
12 *	0.367	35.99	-12.57	48.56	25.50	0.21	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



Band 2 - 5250~5350MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 64 5320MHz		5355.3	58.56	-15.44	74	43.1	34.7	11.11	30.35	115	93	P	H
		5355	49.38	-4.62	54	33.92	34.7	11.11	30.35	115	93	A	H
	*	5314	116.82	-	-	101.48	34.63	11.08	30.37	115	93	P	H
		5314	109.34	-	-	94	34.63	11.08	30.37	115	93	A	H
		5350.8	60.99	-13.01	74	45.53	34.7	11.11	30.35	303	32	P	V
		5350	52.48	-1.52	54	37.02	34.7	11.11	30.35	303	32	A	V
	*	5314	120.96	-	-	105.62	34.63	11.08	30.37	303	32	P	V
		5314	114.32	-	-	98.98	34.63	11.08	30.37	303	32	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 52 5260MHz		10520	43.7	-24.6	68.3	53.3	37.82	15.19	62.61	100	0	P	H
		10520	41.28	-27.02	68.3	50.88	37.82	15.19	62.61	100	360	P	V
802.11a CH 60 5300MHz		10600	43.8	-30.2	74	53.27	37.9	15.26	62.63	300	0	P	H
		10600	43.14	-30.86	74	52.61	37.9	15.26	62.63	100	360	P	V
802.11a CH 64 5320MHz		10640	41.28	-32.72	74	50.73	37.9	15.29	62.64	300	0	P	H
		10640	41.66	-32.34	74	51.11	37.9	15.29	62.64	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 64 5320MHz		5351.1	60.65	-13.35	74	45.19	34.7	11.11	30.35	318	324	P	H
		5350.7	52.37	-1.63	54	36.91	34.7	11.11	30.35	318	324	A	H
	*	5320	116.33	-	-	100.99	34.63	11.08	30.37	318	324	P	H
		5320	109.47	-	-	94.13	34.63	11.08	30.37	318	324	A	H
		5355.5	64.03	-9.97	74	48.57	34.7	11.11	30.35	303	41	P	V
		5353.7	53.23	-0.77	54	37.77	34.7	11.11	30.35	303	41	A	V
	*	5314	121.61	-	-	106.27	34.63	11.08	30.37	303	41	P	V
		5314	114.17	-	-	98.83	34.63	11.08	30.37	303	41	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20		10520	41.29	-27.01	68.3	50.89	37.82	15.19	62.61	300	0	P	H
CH 52 5260MHz		10520	41.64	-26.66	68.3	51.24	37.82	15.19	62.61	100	360	P	V
802.11n HT20		10600	42.81	-31.19	74	52.28	37.9	15.26	62.63	300	0	P	H
CH 60 5300MHz		10600	41.04	-32.96	74	50.51	37.9	15.26	62.63	100	360	P	V
802.11n HT20		10640	42.66	-31.34	74	52.11	37.9	15.29	62.64	300	0	P	H
CH 64 5320MHz		10640	40.79	-33.21	74	50.24	37.9	15.29	62.64	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 62 5310MHz		5134.08	55.83	-18.17	74	41.16	34.27	10.87	30.47	134	97	P	H
		5108	46.33	-7.67	54	31.73	34.23	10.86	30.49	134	97	A	H
	*	5314	111.08	-	-	95.74	34.63	11.08	30.37	134	97	P	H
		5314	104.11	-	-	88.77	34.63	11.08	30.37	134	97	A	H
		5350.3	56.2	-17.8	74	40.74	34.7	11.11	30.35	134	97	P	H
		5350.3	48.72	-5.28	54	33.26	34.7	11.11	30.35	134	97	A	H
		5145.28	56.21	-17.79	74	41.48	34.3	10.89	30.46	282	161	P	V
		5135.36	47.14	-6.86	54	32.47	34.27	10.87	30.47	282	161	A	V
	*	5308	119.15	-	-	103.86	34.6	11.06	30.37	282	161	P	V
		5308	111.04	-	-	95.75	34.6	11.06	30.37	282	161	A	V
		5350	58.14	-15.86	74	42.68	34.7	11.11	30.35	282	161	P	V
		5350	51.56	-2.44	54	36.1	34.7	11.11	30.35	282	161	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 54 5270MHz		10540	44.2	-24.1	68.3	53.77	37.83	15.21	62.61	300	0	P	H
		10540	42.28	-26.02	68.3	51.85	37.83	15.21	62.61	100	360	P	V
802.11n HT40 CH 62 5310MHz		10620	43.83	-30.17	74	53.29	37.9	15.27	62.63	300	0	P	H
		10620	41.31	-32.69	74	50.77	37.9	15.27	62.63	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 58 5290MHz		5127.68	56.82	-17.18	74	42.15	34.27	10.87	30.47	109	289	P	H
		5146.72	46.76	-7.24	54	32.03	34.3	10.89	30.46	109	289	A	H
	*	5284	109.7	-	-	94.48	34.57	11.04	30.39	109	289	P	H
		5284	102.33	-	-	87.11	34.57	11.04	30.39	109	289	A	H
		5353	57.28	-16.72	74	41.82	34.7	11.11	30.35	109	289	P	H
		5353.8	49.39	-4.61	54	33.93	34.7	11.11	30.35	109	289	A	H
		5129.76	56.18	-17.82	74	41.51	34.27	10.87	30.47	281	165	P	V
		5143.2	47.92	-6.08	54	33.2	34.3	10.89	30.47	281	165	A	V
	*	5284	113.42	-	-	98.2	34.57	11.04	30.39	281	165	P	V
		5284	106.34	-	-	91.12	34.57	11.04	30.39	281	165	A	V
		5355	61.93	-12.07	74	46.47	34.7	11.11	30.35	281	165	P	V
		5350	53.51	-0.49	54	38.05	34.7	11.11	30.35	281	165	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz****WIFI 802.11ac VHT80 (Harmonic @ 3m)**

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80		10575	40.83	-27.47	68.3	50.35	37.87	15.23	62.62	100	360	P	H
CH 58 5290MHz		10580	41.16	-27.14	68.3	50.66	37.88	15.25	62.63	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ax HEX20 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX20 CH 64 5320MHz		5351	60.81	-13.19	74	45.35	34.7	11.11	30.35	304	326	P	H
		5352.1	51.32	-2.68	54	35.86	34.7	11.11	30.35	304	326	A	H
		5314	115.6	-	-	100.26	34.63	11.08	30.37	304	326	P	H
		5314	107.83	-	-	92.49	34.63	11.08	30.37	304	326	A	H
		5356.3	64.24	-9.76	74	48.78	34.7	11.11	30.35	235	70	P	V
		5355	53.43	-0.57	54	37.97	34.7	11.11	30.35	235	70	A	V
		5320	122.49	-	-	107.15	34.63	11.08	30.37	235	70	P	V
		5320	115.2	-	-	99.86	34.63	11.08	30.37	235	70	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ax HEX20 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX20		10520	43.91	-24.39	68.3	53.51	37.82	15.19	62.61	100	360	P	H
CH 52 5260MHz		10520	41.09	-27.21	68.3	50.69	37.82	15.19	62.61	100	360	P	V
802.11ax HEX20		10600	42.33	-31.67	74	51.8	37.9	15.26	62.63	100	360	P	H
CH 60 5300MHz		10600	40.97	-33.03	74	50.44	37.9	15.26	62.63	100	360	P	V
802.11ax HEX20		10640	42.44	-31.56	74	51.89	37.9	15.29	62.64	100	360	P	H
CH 64 5320MHz		10640	41.02	-32.98	74	50.47	37.9	15.29	62.64	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ax HEX40 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX 40 CH 62 5310MHz		5102.4	55.31	-18.69	74	40.76	34.2	10.84	30.49	135	98	P	H
		5121.44	46.36	-7.64	54	31.74	34.23	10.86	30.47	135	98	A	H
		5320	113.1	-	-	97.76	34.63	11.08	30.37	135	98	P	H
		5320	104.68	-	-	89.34	34.63	11.08	30.37	135	98	A	H
		5361.3	55.07	-18.93	74	39.59	34.7	11.13	30.35	135	98	P	H
		5350	48.85	-5.15	54	33.39	34.7	11.11	30.35	135	98	A	H
		5149.12	56.57	-17.43	74	41.84	34.3	10.89	30.46	286	158	P	V
		5148.8	47.22	-6.78	54	32.49	34.3	10.89	30.46	286	158	A	V
		5314	117.97	-	-	102.63	34.63	11.08	30.37	286	158	P	V
		5314	109.99	-	-	94.65	34.63	11.08	30.37	286	158	A	V
		5355.8	60.79	-13.21	74	45.33	34.7	11.11	30.35	286	158	P	V
		5350.2	52.1	-1.9	54	36.64	34.7	11.11	30.35	286	158	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ax HEX40 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX 40		10540	43.4	-24.9	68.3	52.97	37.83	15.21	62.61	100	360	P	H
CH 54 5270MHz		10540	41	-27.3	68.3	50.57	37.83	15.21	62.61	100	360	P	V
802.11ax HEX 40		10620	42.84	-31.16	74	52.3	37.9	15.27	62.63	100	360	P	H
CH 62 5310MHz		10620	40.11	-33.89	74	49.57	37.9	15.27	62.63	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 2 5250~5350MHz

WIFI 802.11ax HEX80 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX80 CH 58 5290MHz		5147.68	56.27	-17.73	74	41.54	34.3	10.89	30.46	100	290	P	H
		5149.6	46.86	-7.14	54	32.13	34.3	10.89	30.46	100	290	A	H
		5272	109.77	-	-	94.61	34.53	11.02	30.39	100	290	P	H
		5272	100.8	-	-	85.64	34.53	11.02	30.39	100	290	A	H
		5351.1	58.06	-15.94	74	42.6	34.7	11.11	30.35	100	290	P	H
		5351.7	50.43	-3.57	54	34.97	34.7	11.11	30.35	100	290	A	H
		5146.56	56.17	-17.83	74	41.44	34.3	10.89	30.46	281	160	P	V
		5147.52	48.05	-5.95	54	33.32	34.3	10.89	30.46	281	160	A	V
		5308	113.76	-	-	98.47	34.6	11.06	30.37	281	160	P	V
		5308	106.65	-	-	91.36	34.6	11.06	30.37	281	160	A	V
		5365.6	61.7	-12.3	74	46.22	34.7	11.13	30.35	281	160	P	V
		5351.5	53.17	-0.83	54	37.71	34.7	11.11	30.35	281	160	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 2 5250~5350MHz****WIFI 802.11ax HEX80 (Harmonic @ 3m)**

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX80		10580	42.16	-26.14	68.3	51.66	37.88	15.25	62.63	100	360	P	H
CH 58 5290MHz		10580	41.74	-26.56	68.3	51.24	37.88	15.25	62.63	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 100 5500MHz		5455.44	55.99	-18.01	74	40.36	34.7	11.22	30.29	302	154	P	H
		5467.28	60.14	-8.16	68.3	44.49	34.7	11.24	30.29	302	154	P	H
		5458.64	48.58	-5.42	54	32.95	34.7	11.22	30.29	302	154	A	H
	*	5500	118.27	-	-	102.57	34.7	11.28	30.28	302	154	P	H
		5500	112.65	-	-	96.95	34.7	11.28	30.28	302	154	A	H
		5456.24	56.66	-17.34	74	41.03	34.7	11.22	30.29	297	89	P	V
		5465.04	59.57	-8.73	68.3	43.92	34.7	11.24	30.29	297	89	P	V
		5456.72	47.72	-6.28	54	32.09	34.7	11.22	30.29	297	89	A	V
	*	5494	117.61	-	-	101.93	34.7	11.26	30.28	297	89	P	V
		5494	110.63	-	-	94.95	34.7	11.26	30.28	297	89	A	V
802.11a CH 140 5700MHz		5459.44	56.21	-17.79	74	40.58	34.7	11.22	30.29	224	360	P	H
		5464.88	54.7	-13.6	68.3	39.05	34.7	11.24	30.29	224	360	P	H
		5456.72	46.25	-7.75	54	30.62	34.7	11.22	30.29	224	360	A	H
	*	5698	119.26	-	-	103.27	34.7	11.52	30.23	224	360	P	H
		5698	111.75	-	-	95.76	34.7	11.52	30.23	224	360	A	H
		5727.72	59.75	-8.55	68.3	43.64	34.77	11.58	30.24	224	360	P	H
		5414.96	56.01	-17.99	74	40.44	34.7	11.19	30.32	373	238	P	V
		5469.04	54.98	-13.32	68.3	39.33	34.7	11.24	30.29	373	238	P	V
		5451.12	46.08	-7.92	54	30.45	34.7	11.22	30.29	373	238	A	V
	*	5698	116.4	-	-	100.41	34.7	11.52	30.23	373	238	P	V
		5698	116.4	-	-	100.41	34.7	11.52	30.23	373	238	A	V
		5727.72	60.52	-7.78	68.3	44.41	34.77	11.58	30.24	373	238	P	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 100 5500MHz		11000	42.39	-31.61	74	51.65	37.9	15.57	62.73	300	0	P	H
		11000	41.67	-32.33	74	50.93	37.9	15.57	62.73	100	360	P	V
802.11a CH 116 5580MHz		11160	43.62	-30.38	74	52.76	37.9	15.73	62.77	300	0	P	H
		11160	41.39	-32.61	74	50.53	37.9	15.73	62.77	100	360	P	V
802.11a CH 140 5700MHz		11400	43.44	-30.56	74	52.32	38	15.95	62.83	300	0	P	H
		11400	41.9	-32.1	74	50.78	38	15.95	62.83	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 100 5500MHz		5457.68	55.67	-18.33	74	40.04	34.7	11.22	30.29	283	346	P	H
		5468.88	61.33	-6.97	68.3	45.68	34.7	11.24	30.29	283	346	P	H
		5456.4	48.73	-5.27	54	33.1	34.7	11.22	30.29	283	346	A	H
	*	5494	118.19	-	-	102.51	34.7	11.26	30.28	283	346	P	H
		5494	111.81	-	-	96.13	34.7	11.26	30.28	283	346	A	H
		5740.04	56.7	-11.6	68.3	40.55	34.8	11.61	30.26	283	346	P	H
		5459.76	56.29	-17.71	74	40.66	34.7	11.22	30.29	348	200	P	V
		5469.36	57.32	-10.98	68.3	41.67	34.7	11.24	30.29	348	200	P	V
		5458.8	48.84	-5.16	54	33.21	34.7	11.22	30.29	348	200	A	V
	*	5500	118.7	-	-	103	34.7	11.28	30.28	348	200	P	V
		5500	111.39	-	-	95.69	34.7	11.28	30.28	348	200	A	V
		5762.28	56.17	-12.13	68.3	39.98	34.83	11.64	30.28	348	200	P	V
802.11n HT20 CH 140 5700MHz		5429.84	54.99	-19.01	74	39.39	34.7	11.2	30.3	223	359	P	H
		5464.88	55.58	-12.72	68.3	39.93	34.7	11.24	30.29	223	359	P	H
		5456.88	46.66	-7.34	54	31.03	34.7	11.22	30.29	223	359	A	H
	*	5698	117.51	-	-	101.52	34.7	11.52	30.23	223	359	P	H
		5698	110.92	-	-	94.93	34.7	11.52	30.23	223	359	A	H
		5726.2	60.06	-8.24	68.3	43.95	34.77	11.58	30.24	223	359	P	H
		5416.72	55.37	-18.63	74	39.8	34.7	11.19	30.32	286	335	P	V
		5466.96	54.37	-13.93	68.3	38.72	34.7	11.24	30.29	286	335	P	V
		5450.32	46.57	-7.43	54	30.94	34.7	11.22	30.29	286	335	A	V
	*	5704	116.31	-	-	100.26	34.73	11.55	30.23	286	335	P	V
		5704	109.01	-	-	92.96	34.73	11.55	30.23	286	335	A	V
		5725.64	62.88	-5.42	68.3	46.77	34.77	11.58	30.24	286	335	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20		11000	43.11	-30.89	74	52.37	37.9	15.57	62.73	300	0	P	H
CH 100 5500MHz		11000	41.29	-32.71	74	50.55	37.9	15.57	62.73	100	360	P	V
802.11n HT20		11160	43.93	-30.07	74	53.07	37.9	15.73	62.77	300	0	P	H
CH 116 5580MHz		11160	41.52	-32.48	74	50.66	37.9	15.73	62.77	100	360	P	V
802.11n HT20		11400	43.33	-30.67	74	52.21	38	15.95	62.83	300	0	P	H
CH 140 5700MHz		11400	41.52	-32.48	74	50.4	38	15.95	62.83	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 102 5510MHz		5460.08	58.28	-10.02	68.3	42.65	34.7	11.22	30.29	305	334	P	H
		5468.72	65.36	-2.94	68.3	49.71	34.7	11.24	30.29	305	334	P	H
		5459.76	51.72	-2.28	54	36.09	34.7	11.22	30.29	305	334	A	H
	*	5500	115.87	-	-	100.17	34.7	11.28	30.28	305	334	P	H
		5500	108.76	-	-	93.06	34.7	11.28	30.28	305	334	A	H
		5735.88	56.38	-11.92	68.3	40.23	34.8	11.61	30.26	305	334	P	H
		5459.76	58.89	-15.11	74	43.26	34.7	11.22	30.29	313	111	P	V
		5461.2	60.04	-8.26	68.3	44.41	34.7	11.22	30.29	313	111	P	V
		5460	51.96	-2.04	54	36.33	34.7	11.22	30.29	313	111	A	V
	*	5518	113.25	-	-	97.51	34.7	11.3	30.26	313	111	P	V
		5518	107.01	-	-	91.27	34.7	11.3	30.26	313	111	A	V
		5742.68	55.66	-12.64	68.3	39.51	34.8	11.61	30.26	313	111	P	V
802.11n HT40 CH 134 5670MHz		5452.72	56.05	-17.95	74	40.42	34.7	11.22	30.29	385	333	P	H
		5464.4	54.34	-13.96	68.3	38.69	34.7	11.24	30.29	385	333	P	H
		5459.44	46.44	-7.56	54	30.81	34.7	11.22	30.29	385	333	A	H
	*	5668	112.69	-	-	96.72	34.7	11.48	30.21	385	333	P	H
		5668	105.4	-	-	89.43	34.7	11.48	30.21	385	333	A	H
		5728.6	59.24	-9.06	68.3	43.13	34.77	11.58	30.24	385	333	P	H
		5454.8	54.96	-19.04	74	39.33	34.7	11.22	30.29	385	333	P	V
		5468.72	55.38	-12.92	68.3	39.73	34.7	11.24	30.29	385	333	P	V
		5453.68	46.59	-7.41	54	30.96	34.7	11.22	30.29	385	333	A	V
	*	5674	115.35	-	-	99.38	34.7	11.48	30.21	385	333	P	V
		5674	108.41	-	-	92.44	34.7	11.48	30.21	385	333	A	V
		5734.84	60.68	-7.62	68.3	44.53	34.8	11.61	30.26	385	333	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 102 5510MHz		11020	43.35	-30.65	74	52.59	37.9	15.59	62.73	300	0	P	H
		11020	41.67	-32.33	74	50.91	37.9	15.59	62.73	100	360	P	V
802.11n HT40 CH 110 5550MHz		11100	42.31	-31.69	74	51.49	37.9	15.67	62.75	300	0	P	H
		11100	42.16	-31.84	74	51.34	37.9	15.67	62.75	100	360	P	V
802.11n HT40 CH 134 5670MHz		11340	44.27	-29.73	74	53.26	37.93	15.89	62.81	300	0	P	H
		11340	41.44	-32.56	74	50.43	37.93	15.89	62.81	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80 CH 106 5530MHz		5456.56	61.38	-12.62	74	45.75	34.7	11.22	30.29	260	62	P	H
		5465.84	60.27	-8.03	68.3	44.62	34.7	11.24	30.29	260	62	P	H
		5456.24	53.73	-0.27	54	38.1	34.7	11.22	30.29	260	62	A	H
	*	5518	112.01	-	-	96.27	34.7	11.3	30.26	260	62	P	H
		5518	104.56	-	-	88.82	34.7	11.3	30.26	260	62	A	H
		5748.76	55.53	-12.77	68.3	39.38	34.8	11.61	30.26	260	62	P	H
		5458.8	58.39	-15.61	74	42.76	34.7	11.22	30.29	314	198	P	V
		5470	57.66	-10.64	68.3	42.01	34.7	11.24	30.29	314	198	P	V
		5457.36	51.37	-2.63	54	35.74	34.7	11.22	30.29	314	198	A	V
	*	5518	108.91	-	-	93.17	34.7	11.3	30.26	314	198	P	V
		5518	102.5	-	-	86.76	34.7	11.3	30.26	314	198	A	V
		5725.32	57.43	-10.87	68.3	41.32	34.77	11.58	30.24	314	198	P	V
802.11ac VHT80 CH 122 5610MHz		5439.76	55.84	-18.16	74	40.24	34.7	11.2	30.3	280	153	P	H
		5469.84	55.59	-12.71	68.3	39.94	34.7	11.24	30.29	280	153	P	H
		5459.92	47.18	-6.82	54	31.55	34.7	11.22	30.29	280	153	A	H
	*	5614	113.53	-	-	97.74	34.6	11.39	30.2	280	153	P	H
		5614	105.94	-	-	90.15	34.6	11.39	30.2	280	153	A	H
		5730.36	62.41	-5.89	68.3	46.32	34.77	11.58	30.26	280	153	P	H
		5454.16	54.92	-19.08	74	39.29	34.7	11.22	30.29	329	323	P	V
		5467.12	55.71	-12.59	68.3	40.06	34.7	11.24	30.29	329	323	P	V
		5455.76	46.7	-7.3	54	31.07	34.7	11.22	30.29	329	323	A	V
	*	5614	111.22	-	-	95.43	34.6	11.39	30.2	329	323	P	V
		5614	104.47	-	-	88.68	34.6	11.39	30.2	329	323	A	V
		5729.88	60.42	-7.88	68.3	44.31	34.77	11.58	30.24	329	323	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80		11060	43.73	-30.27	74	52.94	37.9	15.63	62.74	100	360	P	H
CH 106 5530MHz		11060	41.99	-32.01	74	51.2	37.9	15.63	62.74	100	360	P	V
802.11ac VHT80		11220	44.6	-29.4	74	53.7	37.9	15.78	62.78	100	360	P	H
CH 122 5610MHz		11220	40.84	-33.16	74	49.94	37.9	15.78	62.78	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI 802.11ax HEX20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HEX20 CH 100 5500MHz		5453.68	59.02	-14.98	74	43.39	34.7	11.22	30.29	266	107	P	H
		5469.68	64	-4.3	68.3	48.35	34.7	11.24	30.29	266	107	P	H
		5459.6	52.09	-1.91	54	36.46	34.7	11.22	30.29	266	107	P	H
		5500	118.78	-	-	103.08	34.7	11.28	30.28	266	107	P	H
		5500	111.68	-	-	95.98	34.7	11.28	30.28	266	107	A	H
		5459.92	56.56	-17.44	74	40.93	34.7	11.22	30.29	334	120	P	V
		5465.04	60.35	-7.95	68.3	44.7	34.7	11.24	30.29	334	120	P	V
		5459.44	47.71	-6.29	54	32.08	34.7	11.22	30.29	334	120	A	V
		5506	119.02	-	-	103.3	34.7	11.28	30.26	334	120	P	V
		5506	110.13	-	-	94.41	34.7	11.28	30.26	334	120	A	V
802.11ax HEX20 CH 140 5700MHz		5727.56	67.56	-0.74	68.3	51.45	34.77	11.58	30.24	223	7	P	H
		5692	118.47	-	-	102.48	34.7	11.52	30.23	223	7	P	H
		5692	111.43	-	-	95.44	34.7	11.52	30.23	223	7	A	H
		5725.88	65.02	-3.28	68.3	48.91	34.77	11.58	30.24	253	56	P	V
		5704	115.47	-	-	99.42	34.73	11.55	30.23	253	56	P	V
		5704	108.39	-	-	92.34	34.73	11.55	30.23	253	56	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11ax HEX20 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX20		11000	42.99	-31.01	74	52.25	37.9	15.57	62.73	100	360	P	H
CH 100 5500MHz		11000	41.88	-32.12	74	51.14	37.9	15.57	62.73	100	360	P	V
802.11ax HEX20		11160	43.41	-30.59	74	52.55	37.9	15.73	62.77	100	360	P	H
CH 116 5580MHz		11160	41.64	-32.36	74	50.78	37.9	15.73	62.77	100	360	P	V
802.11ax HEX20		11400	44.3	-29.7	74	53.18	38	15.95	62.83	100	360	P	H
CH 140 5700MHz		11400	40.56	-33.44	74	49.44	38	15.95	62.83	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz
WIFI 802.11ax HEX40 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HEX40 CH 102 5510MHz		5454.96	61.68	-12.32	74	46.05	34.7	11.22	30.29	348	60	P	H
		5470	68.28	-0.02	68.3	52.63	34.7	11.24	30.29	348	60	P	H
		5452.56	51.58	-2.42	54	35.95	34.7	11.22	30.29	348	60	A	H
		5512	117.2	-	-	101.48	34.7	11.28	30.26	348	60	P	H
		5512	110.06	-	-	94.34	34.7	11.28	30.26	348	60	A	H
		5726.76	56.5	-11.8	68.3	40.39	34.77	11.58	30.24	348	60	P	H
		5459.44	62.12	-11.88	74	46.49	34.7	11.22	30.29	342	211	P	V
		5469.84	63.24	-5.06	68.3	47.59	34.7	11.24	30.29	342	211	P	V
		5456.4	51.78	-2.22	54	36.15	34.7	11.22	30.29	342	211	A	V
		5512	115.06	-	-	99.34	34.7	11.28	30.26	342	211	P	V
		5512	108.31	-	-	92.59	34.7	11.28	30.26	342	211	A	V
		5751.4	55.65	-12.65	68.3	39.5	34.8	11.61	30.26	342	211	P	V
802.11ax HEX40 CH 134 5670MHz		5388.56	55.51	-18.49	74	39.99	34.7	11.15	30.33	300	360	P	H
		5461.84	55.01	-13.29	68.3	39.38	34.7	11.22	30.29	300	360	P	H
		5459.92	46.98	-7.02	54	31.35	34.7	11.22	30.29	300	360	A	H
		5674	117.52	-	-	101.55	34.7	11.48	30.21	300	360	P	H
		5674	109.27	-	-	93.3	34.7	11.48	30.21	300	360	A	H
		5725.16	62.04	-6.26	68.3	45.93	34.77	11.58	30.24	300	360	P	H
		5446.32	55.51	-18.49	74	39.89	34.7	11.22	30.3	270	325	P	V
		5460.88	55.37	-12.93	68.3	39.74	34.7	11.22	30.29	270	325	P	V
		5459.28	46.53	-7.47	54	30.9	34.7	11.22	30.29	270	325	A	V
		5662	116.05	-	-	100.11	34.7	11.45	30.21	270	325	P	V
		5662	108.67	-	-	92.73	34.7	11.45	30.21	270	325	A	V
		5743.8	61.13	-7.17	68.3	44.98	34.8	11.61	30.26	270	325	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - 5470~5725MHz

WIFI 802.11ax HEX40 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX40		11020	43.16	-30.84	74	52.4	37.9	15.59	62.73	100	360	P	H
CH 102 5510MHz		11020	42.04	-31.96	74	51.28	37.9	15.59	62.73	100	360	P	V
802.11ax HEX40		11100	43.47	-30.53	74	52.65	37.9	15.67	62.75	100	360	P	H
CH 110 5550MHz		11100	41.61	-32.39	74	50.79	37.9	15.67	62.75	100	360	P	V
802.11ax HEX40		11340	43.75	-30.25	74	52.74	37.93	15.89	62.81	300	0	P	H
CH 134 5670MHz		11340	41.77	-32.23	74	50.76	37.93	15.89	62.81	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ax HEX80 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX80 CH 106 5530MHz		5456.4	62.36	-11.64	74	46.73	34.7	11.22	30.29	229	6	P	H
		5469.84	64.61	-3.69	68.3	48.96	34.7	11.24	30.29	229	6	P	H
		5457.68	53.85	-0.15	54	38.22	34.7	11.22	30.29	229	6	A	H
		5548	112.36	-	-	96.58	34.7	11.33	30.25	229	6	P	H
		5548	105.24	-	-	89.46	34.7	11.33	30.25	229	6	A	H
		5736.44	56.35	-11.95	68.3	40.2	34.8	11.61	30.26	229	6	P	H
		5456.88	61.08	-12.92	74	45.45	34.7	11.22	30.29	283	4	P	V
		5469.84	60.13	-8.17	68.3	44.48	34.7	11.24	30.29	283	4	P	V
		5457.52	53.44	-0.56	54	37.81	34.7	11.22	30.29	283	4	A	V
		5518	109.6	-	-	93.86	34.7	11.3	30.26	283	4	P	V
		5518	101.47	-	-	85.73	34.7	11.3	30.26	283	4	A	V
		5738.6	55.55	-12.75	68.3	39.4	34.8	11.61	30.26	283	4	P	V
802.11ax HEX80 CH 122 5610MHz		5457.04	56.14	-17.86	74	40.51	34.7	11.22	30.29	203	360	P	H
		5461.2	55.71	-12.59	68.3	40.08	34.7	11.22	30.29	203	360	P	H
		5459.76	47.04	-6.96	54	31.41	34.7	11.22	30.29	203	360	A	H
		5620	113.67	-	-	97.84	34.63	11.4	30.2	203	360	P	H
		5620	105.91	-	-	90.08	34.63	11.4	30.2	203	360	A	H
		5729.24	67.44	-0.86	68.3	51.33	34.77	11.58	30.24	203	360	P	H
		5447.92	55.71	-18.29	74	40.09	34.7	11.22	30.3	282	330	P	V
		5464.56	56.87	-11.43	68.3	41.22	34.7	11.24	30.29	282	330	P	V
		5451.44	47.2	-6.8	54	31.57	34.7	11.22	30.29	282	330	A	V
		5614	111.73	-	-	95.94	34.6	11.39	30.2	282	330	P	V
		5614	104.3	-	-	88.51	34.6	11.39	30.2	282	330	A	V
		5729.64	62.73	-5.57	68.3	46.62	34.77	11.58	30.24	282	330	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 5470~5725MHz

WIFI 802.11ax HEX80 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX80		11060	43.39	-30.61	74	52.6	37.9	15.63	62.74	100	360	P	H
CH 106 5530MHz		11060	42.68	-31.32	74	51.89	37.9	15.63	62.74	100	360	P	V
802.11ax HEX80		11220	43.63	-30.37	74	52.73	37.9	15.78	62.78	100	360	P	H
CH 122 5610MHz		11220	41.12	-32.88	74	50.22	37.9	15.78	62.78	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 3 - Straddle Channel****WIFI 802.11a (Band Edge @ 3m)**

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 144 5720MHz		5716	119.13	-	-	103.09	34.73	11.55	30.24	316	333	P	H
		5716	111.54	-	-	95.5	34.73	11.55	30.24	316	333	A	H
		5716	118.33	-	-	102.29	34.73	11.55	30.24	299	227	P	V
		5716	110.86	-	-	94.82	34.73	11.55	30.24	299	227	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 3	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a		11440	42.88	-31.12	74	51.69	38.03	15.99	62.83	100	360	P	H
CH 144 5720MHz		11440	41.89	-32.11	74	50.7	38.03	15.99	62.83	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n		5716	117.17	-	-	101.13	34.73	11.55	30.24	355	226	P	H
HT20		5716	111.05	-	-	95.01	34.73	11.55	30.24	355	226	A	H
CH 144		5722	116.99	-	-	100.88	34.77	11.58	30.24	321	238	P	V
5720MHz		5722	109.47	-	-	93.36	34.77	11.58	30.24	321	238	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20		11440	43.93	-30.07	74	52.74	38.03	15.99	62.83	100	360	P	H
CH 144 5720MHz		11440	41.66	-32.34	74	50.47	38.03	15.99	62.83	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n		5722	114.27	-	-	98.16	34.77	11.58	30.24	209	357	P	H
HT40		5722	108.25	-	-	92.14	34.77	11.58	30.24	209	357	A	H
CH 142		5710	112.46	-	-	96.42	34.73	11.55	30.24	302	326	P	V
5710MHz		5710	106.57	-	-	90.53	34.73	11.55	30.24	302	326	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40		11420	42.81	-31.19	74	51.65	38.02	15.97	62.83	100	360	P	H
CH 142 5710MHz		11420	41.43	-32.57	74	50.27	38.02	15.97	62.83	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac		5698	110.68	-	-	94.69	34.7	11.52	30.23	293	334	P	H
VHT80		5698	103.88	-	-	87.89	34.7	11.52	30.23	293	334	A	H
CH 138		5692	111.06	-	-	95.07	34.7	11.52	30.23	324	334	P	V
5690MHz		5692	104.01	-	-	88.02	34.7	11.52	30.23	324	334	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 3 - Straddle Channel
WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ac VHT80		11380	43.43	-30.57	74	52.33	37.98	15.94	62.82	100	360	P	H
CH 138 5690MHz		11380	40.99	-33.01	74	49.89	37.98	15.94	62.82	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Emission below 1GHz

WIFI 802.11ac HT20 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2+3+4		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ac HT20 LF		30	20.75	-19.25	40	27.64	25.1	1.11	33.1	100	360	P	H
		96.93	15.73	-27.77	43.5	31.36	15.71	1.64	32.98	-	-	P	H
		188.11	18.5	-25	43.5	34.39	14.86	2.17	32.92	-	-	P	H
		239.52	25.45	-20.55	46	38.34	17.5	2.43	32.82	-	-	P	H
		457.77	21.25	-24.75	46	26.95	23.24	3.31	32.25	-	-	P	H
		735.19	25.76	-20.24	46	26.41	27.76	4.16	32.57	-	-	P	H
		31.94	30.07	-9.93	40	37.99	24.04	1.1	33.06	100	360	P	V
		55.22	23.29	-16.71	40	42.05	13.15	1.29	33.2	-	-	P	V
		128.94	22.89	-20.61	43.5	36.5	17.6	1.83	33.04	-	-	P	V
		395.69	19.13	-26.87	46	26.61	21.76	3.1	32.34	-	-	P	V
		589.69	28.36	-17.64	46	31.84	25.72	3.62	32.82	-	-	P	V
		951.5	29.96	-16.04	46	26.37	30.98	4.71	32.1	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



For Beamforming

WIFI 802.11ax HEX40 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX40 CH 102 5510MHz		5373.84	54.92	-19.08	74	40.02	34.35	11.24	30.69	274	12	P	H
		5468.56	57.51	-10.79	68.3	42.45	34.48	11.3	30.72	274	12	P	H
		5459.98	47.05	-6.95	54	32.02	34.46	11.29	30.72	274	12	A	H
		5500	107.69	-	-	92.58	34.53	11.31	30.73	274	12	P	H
		5500	101.99	-	-	86.88	34.53	11.31	30.73	274	12	A	H
		5762.44	57.35	-10.95	68.3	41.66	34.81	11.72	30.84	274	12	P	H
		5354.8	56.1	-17.9	74	41.23	34.33	11.22	30.68	395	197	P	V
		5469.36	55.1	-13.2	68.3	40.04	34.48	11.3	30.72	395	197	P	V
		5457.2	46.83	-7.17	54	31.8	34.46	11.29	30.72	395	197	A	V
		5494	104.2	-	-	89.11	34.51	11.31	30.73	395	197	P	V
		5494	101.88	-	-	86.79	34.51	11.31	30.73	395	197	A	V
		5725.08	56.73	-11.57	68.3	41.13	34.78	11.64	30.82	395	197	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 1 5150~5250MHz****WIFI 802.11ax HEX40 (Harmonic @ 3m)**

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX40		11020	45.32	-28.68	74	51.97	37.41	16.48	60.54	100	360	P	H
CH 102 5510MH		11020	43.78	-30.22	74	50.43	37.41	16.48	60.54	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



For Co-location

WIFI 2.4G + WIFI 5G Band3
(Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX40 CH 102 5510MHz		5459.12	61.61	-12.39	74	46.58	34.46	11.29	30.72	214	7	P	H
		5467.92	64.88	-3.42	68.3	49.82	34.48	11.3	30.72	214	7	P	H
		5457.68	52.76	-1.24	54	37.73	34.46	11.29	30.72	214	7	A	H
		5500	113.07	-	-	97.96	34.53	11.31	30.73	214	7	P	H
		5500	106.65	-	-	91.54	34.53	11.31	30.73	214	7	A	H
		5763.8	57.17	-11.13	68.3	41.48	34.81	11.72	30.84	214	7	P	H
		5458.32	57.62	-16.38	74	42.59	34.46	11.29	30.72	326	107	P	V
		5467.12	60.11	-8.19	68.3	45.05	34.48	11.3	30.72	326	107	P	V
		5458.48	49.57	-4.43	54	34.54	34.46	11.29	30.72	326	107	A	V
		5500	110.53	-	-	95.42	34.53	11.31	30.73	326	107	P	V
		5500	103.69	-	-	88.58	34.53	11.31	30.73	326	107	A	V
		5758.68	57.05	-11.25	68.3	41.35	34.81	11.72	30.83	326	107	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI 2.4G + WIFI 5G Band3

(Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
WIFI 2.4G + 802.11ax HEX40CH102 5510MHz		4874	37.74	-36.26	74	53.29	33.77	10.71	60.03	100	360	P	H
		7311	42.55	-31.45	74	53.99	35.86	13.21	60.51	300	0	P	H
		9748	62.17	-6.13	68.3	70.78	36.85	15.43	60.89	400	221	P	H
		10360	45.19	-23.11	68.3	53.09	37.02	15.76	60.68	300	0	P	H
		11020	48.33	-25.67	74	54.98	37.41	16.48	60.54	300	0	P	H
		4874	38.33	-35.67	74	53.88	33.77	10.71	60.03	100	0	P	V
		7314	42.77	-31.23	74	54.21	35.86	13.21	60.51	100	0	P	V
		9748	55.52	-12.78	68.3	64.13	36.85	15.43	60.89	312	157	P	V
		10360	43.14	-25.16	68.3	51.04	37.02	15.76	60.68	100	0	P	V
		11020	45.07	-28.93	74	51.72	37.41	16.48	60.54	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



LTE + WIFI 5G + 5G NR
WIFI 802.11ax HE40 (Band Edge @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX40 CH 102 5510MHz		5457.04	62.46	-11.54	74	47.43	34.46	11.29	30.72	244	112	P	H
		5469.84	62.87	-5.43	68.3	47.81	34.48	11.3	30.72	244	112	P	H
		5459.98	53.63	-0.37	54	38.6	34.46	11.29	30.72	244	112	A	H
		5518	116.39	-	-	101.26	34.55	11.32	30.74	244	112	P	H
		5518	109.16	-	-	94.03	34.55	11.32	30.74	244	112	A	H
		5730.44	56.9	-11.4	68.3	41.3	34.78	11.64	30.82	244	112	P	H
		5459.44	59.45	-14.55	74	44.42	34.46	11.29	30.72	301	106	P	V
		5466.48	64.41	-3.89	68.3	49.35	34.48	11.3	30.72	301	106	P	V
		5459.92	50.94	-3.06	54	35.91	34.46	11.29	30.72	301	106	A	V
		5512	112.28	-	-	97.17	34.53	11.31	30.73	301	106	P	V
		5512	105	-	-	89.89	34.53	11.31	30.73	301	106	A	V
		5729.56	56.81	-11.49	68.3	41.21	34.78	11.64	30.82	301	106	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



LTE + WIFI 5G + 5G NR
WIFI 802.11ax HE40 (Harmonic @ 3m)

WIFI Ant. 1+2+3+4	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HEX40		11020	47.92	-26.08	74	54.57	37.41	16.48	60.54	300	0	P	H
CH 102 5510MH		11020	45.11	-28.89	74	51.76	37.41	16.48	60.54	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	P eak or A verage
H/V	H orizontal or V ertical



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(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. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable 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) + Cable 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)

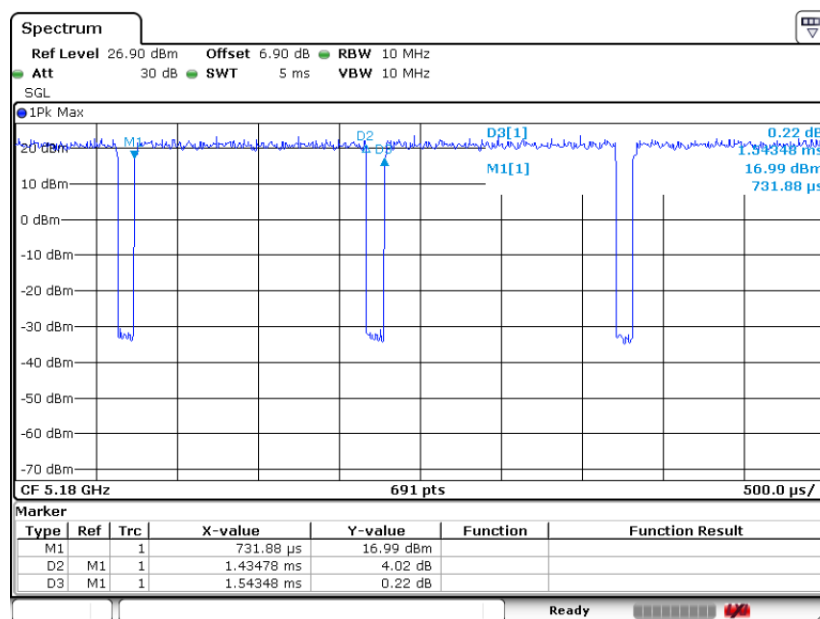
= -10.46(dB)

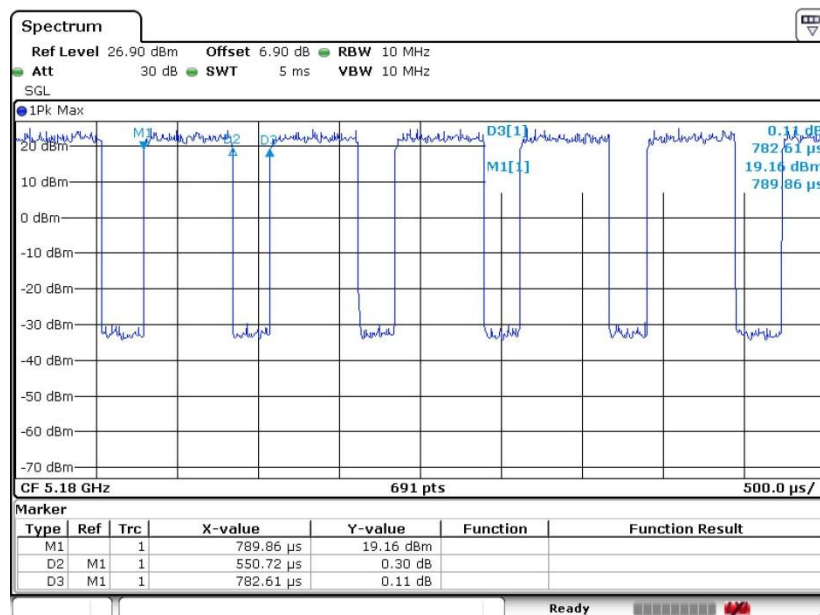
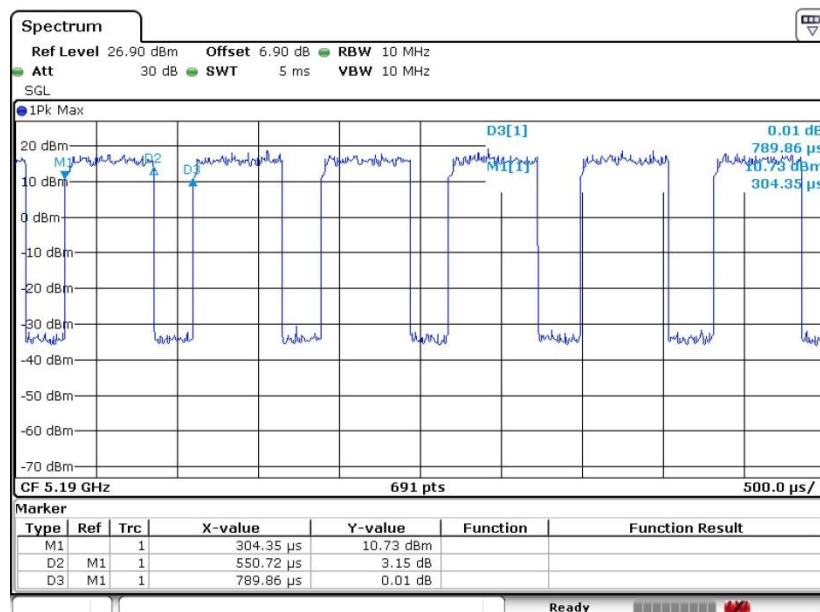
Both peak and average measured complies with the limit line, so test result is “PASS”.



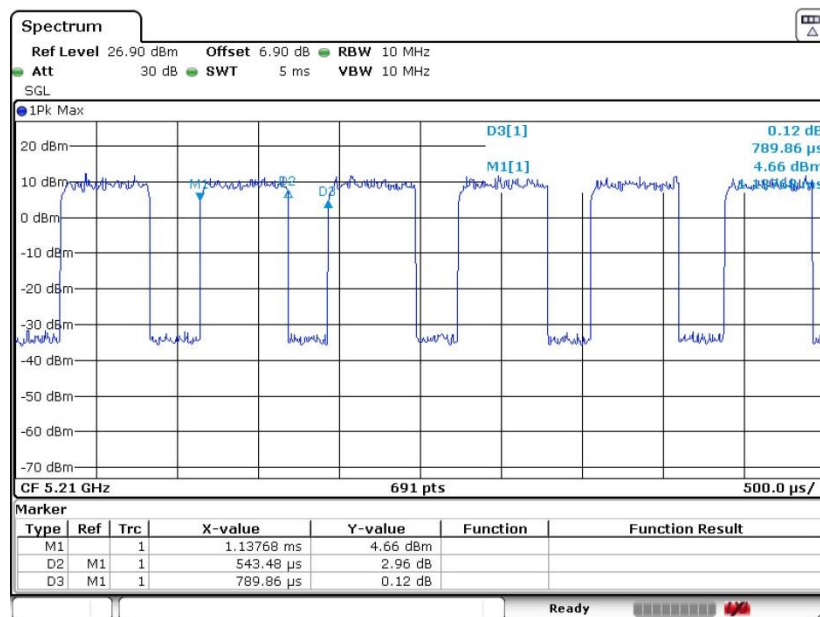
Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
1/2/3/4	802.11a	92.96	1.434	0.697	0.75KHz
1+2+3+4	802.11n HT20	70.37	0.551	1.816	2.2KHz
1+2+3+4	802.11n HT40	69.72	0.551	1.816	2.2KHz
1+2+3+4	802.11ac VHT80	68.81	0.543	1.840	2.2KHz
1+2+3+4	802.11ax HE20	70.91	0.565	1.769	1.8KHz
1+2+3+4	802.11ax HE40	69.64	0.565	1.769	1.8KHz
1+2+3+4	802.11ax HE80	69.03	0.565	1.769	1.8KHz

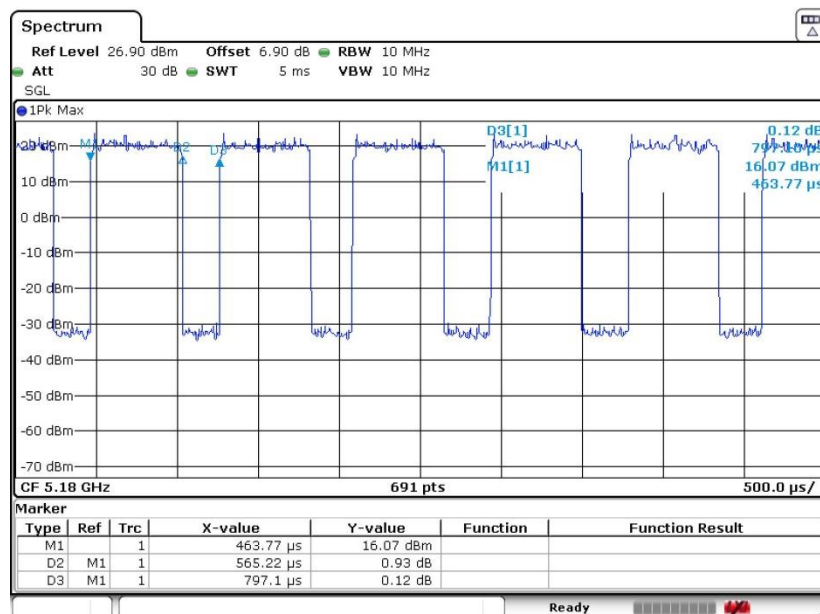
802.11a


802.11n HT20

802.11n HT40


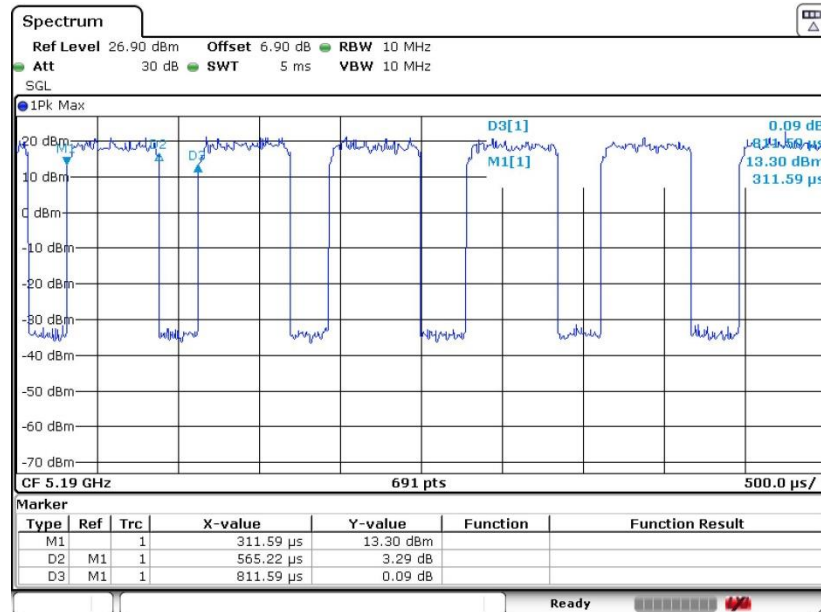
802.11ac VHT80



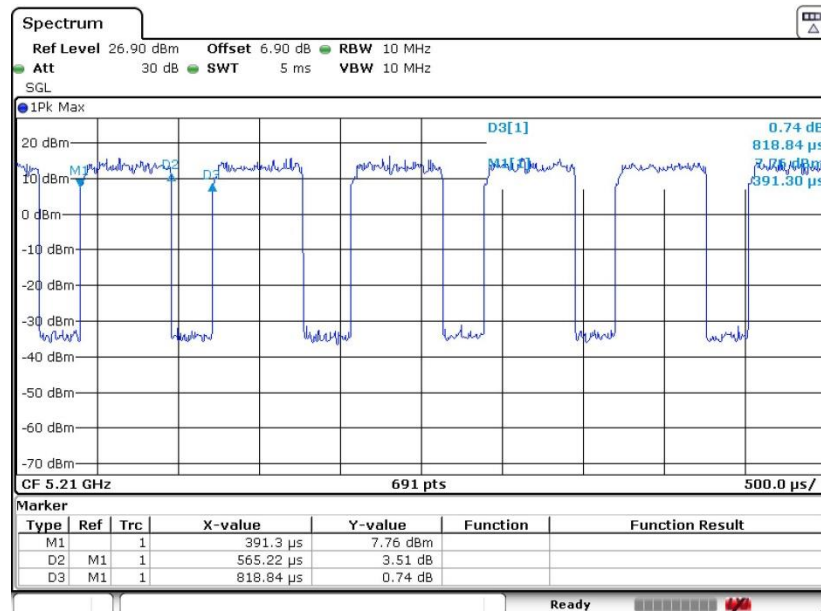
802.11ax HE20



802.11ax HE40



802.11ax HE80





Appendix E. Setup Photographs