Shenzhen Global Test Service Co.,Ltd.
No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong

FCC PART 15 SUBPART E TEST REPORT

FCC PART 15.407

Report Reference No.....:	**GTS20210121001-1-2**
FCC ID..... :	**2AL6K-AX1800**
Compiled by (position+printed name+signature)..:	File administrators Peter Xiao
Supervised by (position+printed name+signature)..:	Test Engineer Moon Tan
Approved by (position+printed name+signature)..:	Manager Simon Hu
Date of issue.....:	Apr. 14, 2021

Representative Laboratory Name. :	**Shenzhen Global Test Service Co.,Ltd.**
Address..... :	No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong,China
Applicant's name.....:	**ShenZhen BiLian Electronic Co.,Ltd.**
Address..... :	Room 501,Building 3,No.32,Dafu Road, Zhangge Community,Fucheng Street,Longhua District, Shenzhen, China, 518000
Test specification.....:	
Standard.....:	**FCC Part 15.407: UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE DEVICES**
TRF Originator.....:	Shenzhen Global Test Service Co.,Ltd.
Master TRF.....:	Dated 2014-12

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Test item description.....:	**AX1800 Dual Band Wi-Fi6 Router**
Trade Mark.....:	N/A
Manufacturer.....:	ShenZhen BiLian Electronic Co.,Ltd.
Model/Type reference.....:	AX1800
Listed Models .....:	N/A
Operation Frequency.....:	From 5180MHz to 5240MHz/ 5745MHz to 5825MHz
Hardware Version .....:	V1.0
Software Version.....:	V1.0
Rating.....:	DC 12V by adapter
Result.....:	**PASS**

TEST REPORT

Test Report No. : GTS20210121001-1-2	Apr. 14, 2021 Date of issue

Equipment under Test	:	AX1800 Dual Band Wi-Fi6 Router
Model /Type	:	AX1800
Listed Models	:	N/A
Applicant	:	**ShenZhen BiLian Electronic Co.,Ltd.**
Address	:	Room 501,Building 3,No.32,Dafu Road, Zhangge Community,Fuchen gStreet,Longhua District, Shenzhen, China, 518000
Manufacturer	:	**ShenZhen BiLian Electronic Co.,Ltd.**
Address	:	Room 501,Building 3,No.32,Dafu Road, Zhangge Community,Fuchen gStreet,Longhua District, Shenzhen, China, 518000

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.407: UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE DEVICES.
ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices
KDB789033 D02 General U-NII Test Procedures New Rules v02r01: UNII, U-NII, U-NII Test Procedures
662911 D01 Multiple Transmitter Output v02r01 : Measurement of Transmitters with Multiple Output, MIMO, Smart Antenna

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Apr. 08, 2021
Testing commenced on	:	Apr. 08, 2021
Testing concluded on	:	Apr. 14, 2021

2.2. Product Description

Product Name	AX1800 Dual Band Wi-Fi6 Router
Trade Mark	N/A
Model/Type reference	AX1800
List Model	N/A
Model Declaration	N/A
Hardware version	V1.0
Software version	V1.0
Power supply:	DC 12V by adapter
Sample ID	GTS20210121001-1-1#& GTS20210121001-1-2#
WIFI(2.4G Band)	
Frequency Range	2412MHz ~ 2462MHz
Channel Spacing	5MHz
Channel Number	11 Channel for 20MHz bandwidth(2412~2462MHz) 7 channels for 40MHz bandwidth(2422~2452MHz)
Modulation Type	802.11b: DSSS; 802.11g/n/ax/ac: OFDM
Antenna Description	Two same Integrated antennas, support 2*2MIMO technology ANT0 used for WIFI TX/RX, 5 dBi(Max.) for 2.4G Band ANT1 used for WIFI TX/RX, 5 dBi(Max.) for 2.4G Band
WIFI(5.2G Band)	
Frequency Range	5180MHz ~ 5240MHz
Channel Number	4 Channels for 20MHz bandwidth(5180-5240MHz) 2 channels for 40MHz bandwidth(5190~5230MHz) 1 channels for 80MHz bandwidth(5210MHz)
Modulation Type	802.11a/n/ac/ax: OFDM
Antenna Description	Two Integrated antennas; support 2*2MIMO technology ANT2 used for WIFI TX/RX, 5 dBi(Max.) for 5.2G Band ANT3 used for WIFI TX/RX, 5 dBi(Max.) for 5.2G Band
WIFI (5.8G Band)	
Frequency Range	5745MHz ~ 5825MHz
Channel Number	5 channels for 20MHz bandwidth(5745-5825MHz) 2 channels for 40MHz bandwidth(5755~5795MHz) 1 channels for 80MHz bandwidth(5775MHz)
Modulation Type	802.11a/n/ac/ax: OFDM
Antenna Description	Two Integrated antennas; support 2*2MIMO technology ANT2 used for WIFI TX/RX, 5 dBi(Max.) for 5.8G Band ANT3 used for WIFI TX/RX, 5 dBi(Max.) for 5.8G Band

2.3. Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	230V / 50 Hz	○	120V / 60Hz
		○	12 V DC	○	24 V DC
		●	Other (specified in blank below)		

DC 12V by adapter

2.4. Short description of the Equipment under Test (EUT)

This is a Portable computer.
For more details, refer to the user's manual of the EUT.

2.5. EUT operation mode

The application provider specific test software to control sample in continuous TX and RX.

Antenna	Chain2			Chain3			Simultaneously
Bandwidth Mode	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz	/
IEEE 802.11a	☑	☐	☐	☑	☐	☐	☐
IEEE 802.11n	☑	☑	☐	☑	☑	☐	☑
IEEE 802.11ac	☑	☑	☑	☑	☑	☑	☑
IEEE 802.11ax	☑	☑	☑	☑	☑	☑	☑

Antenna	Chain2			Chain3			Simultaneously
Bandwidth Mode	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz	/
IEEE 802.11a	☑	☐	☐	☑	☐	☐	☐
IEEE 802.11n	☑	☑	☐	☑	☑	☐	☑
IEEE 802.11ac	☑	☑	☑	☑	☑	☑	☑
IEEE 802.11ax	☑	☑	☑	☑	☑	☑	☑

IEEE 802.11a/ac20/ac40/ac80/n20/n40/ax20/ax40/ax80:

UNII-1		UNII-1		UNII-1	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	**5180**	38	5190	42	5210
40	**5200**	46	5230		
44	5220				
48	**5240**				

UNII-3		UNII-3		UNII-3	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	**5745**	151	5755	155	5775
153	5765	159	5795		
157	**5785**				
161	5805				
165	**5825**				

The EUT has been tested under operating condition.

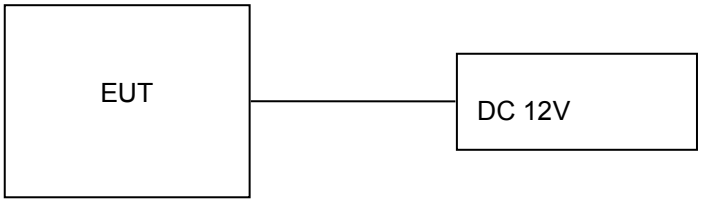
This test was performed with EUT in X, Y, Z position and the worst case was found when EUT in X position.

AC main conducted emission pre-test voltage at both AC 120V/60Hz and AC 240V/50Hz, recorded worst case;

AC main conducted emission pre-test at charge from PC modes, recorded worst case;

Worst-case mode and channel used for 9 KHz-1000 MHz radiated emissions was the mode and channel with the highest output power, that was determined to be IEEE 802.11ax80 mode (HCH).

2.6. Block Diagram of Test Setup



2.7. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: 2AL6K-AX1800** filing to comply with Section 15.407 of the FCC Part 15, Subpart E Rules.

2.8. EUT Exercise Software

The system was configured for testing in a continuous transmits condition and change test channels by software (package_UIv2.13_DLLv5.11_20191004-alpha-RSSI -DFS) provided by application.

2.9. Special Accessories

Manufacturer	Description	Model	Serial Number	Certificate
Dong GuangQi Electronic Co Ltd	Adapter	GQ18-120-150-AU	/	SDOC
Lenovo	Laptop	DESKTOP-G3FKNG9	/	SDOC

Note: The Displayer is only used for auxiliary testing.

2.10. External I/O Cable

I/O Port Description	Quantity	Cable
POWER Port	1	N/A
USB Port	1	N/A
WAN Port	1	N/A
LAN Port	3	N/A

2.11. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Global Test Service Co.,Ltd.
No.7-101 and 8A-104, Building 7 and 8, DCC Cultural and Creative Garden, No.98, Pingxin North Road, Shangmugu Community, Pinghu Street, Longgang District, Shenzhen, Guangdong, China.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS (No. CNAS L8169)
Shenzhen Global Test Service Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2019 General Requirements) for the Competence of Testing and Calibration Laboratories.
A2LA (Certificate No. 4758.01)
Shenzhen Global Test Service Co., Ltd. has been assessed by the American Association for Laboratory Accreditation (A2LA). Certificate No. 4758.01.
Industry Canada Registration Number. is 24189.
FCC Designation Number is CN1234.
FCC Registered Test Site Number is165725.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Global Test Service Co.,Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen GTS laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10 dB	(1)
Radiated Emission	1~18GHz	4.32 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.12 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.5. Test Description

Applied Standard: FCC Part 15 Subpart E				
FCC Rules	Description of Test	Test Sample	Result	Remark
/	On Time and Duty Cycle	GTS20210121001-1-1#	Compliant	Note 1
§15.407(a)	Maximum Conducted Output Power	GTS20210121001-1-1#	Compliant	Note 1
§15.407(a)	Power Spectral Density	GTS20210121001-1-1#	Compliant	Note 1
§15.407(a)	26dB&6dB Bandwidth and 99% Bandwidth	GTS20210121001-1-1#	Compliant	Note 1
§15.209, §15.407(b)	Radiated Emissions	GTS20210121001-1-1# GTS20210121001-1-2#	Compliant	Note 1
§15.209, §15.407(b)	Emissions at Restricted Band	GTS20210121001-1-1# GTS20210121001-1-2#	Compliant	Note 1
§15.407(g)	Frequency Stability	GTS20210121001-1-1#	Compliant	Note 1
§15.207(a)	AC Mians Line Conducted Emissions	GTS20210121001-1-2#	Compliant	Note 1
§15.203	Antenna Requirements	GTS20210121001-1-1#	Compliant	Note 1
§15.407 §2.1091	RF Exposure	GTS20210121001-1-1#	Compliant	Note 2

Remark:
1. The measurement uncertainty is not included in the test result.
2. NA = Not Applicable; NP = Not Performed
3. Note 1 – Test results inside test report;
4. Note 2 – Test results in other test report (SAR Report).
5. We tested all test mode and recorded worst case in report

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate
Maximum Peak Conducted Output Power Power Spectral Density 6dB Bandwidth 26dB Bandwidth Radiated Emission30M~1GHz& Radiated Emission 1GHz~10th Harmonic	802.11a	6 Mbps
	802.11ac20/ac40/ac80 802.11n HT20/40/ ax20/ax40/ax80	MCS0
Band Edge	802.11a	6 Mbps
	802.11ac20/ac40/ac80 802.11n HT20/40/ ax20/ax40/ax80	MCS0

3.6. Equipments Used during the Test

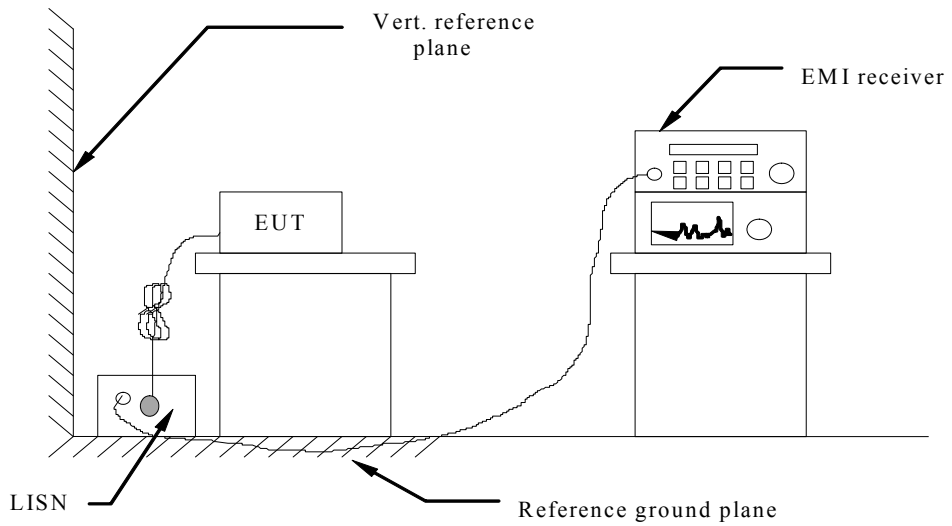
Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	3560.6550.08	2020/09/19	2021/09/18
LISN	R&S	ESH2-Z5	893606/008	2020/09/19	2021/09/18
EMI Test Receiver	R&S	ESPI3	101841-cd	2020/09/19	2021/09/18
EMI Test Receiver	R&S	ESCI7	101102	2020/09/19	2021/09/18
Spectrum Analyzer	Agilent	N9020A	MY48010425	2020/09/19	2021/09/18
Spectrum Analyzer	R&S	FSV40	100019	2020/09/19	2021/09/18
Vector Signal generator	Agilent	N5181A	MY49060502	2020/09/19	2021/09/18
Signal generator	Agilent	E4421B	3610AO1069	2020/09/19	2021/09/18
Climate Chamber	ESPEC	EL-10KA	A20120523	2020/09/19	2021/09/18
Controller	EM Electronics	Controller EM 1000	N/A	N/A	N/A
Horn Antenna	Schwarzbeck	BBHA 9120D	01622	2020/09/22	2021/09/21
Active Loop Antenna	Beijing Da Ze Technology Co.,Ltd.	ZN30900C	15006	2020/10/12	2021/10/11
Bilog Antenna	Schwarzbeck	VULB9163	000976	2020/05/26	2021/05/25
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	791	2020/09/19	2021/09/18
Amplifier	Schwarzbeck	BBV 9743	#202	2020/09/19	2021/09/18
Amplifier	Schwarzbeck	BBV9179	9719-025	2020/09/19	2021/09/18
Amplifier	EMCI	EMC051845B	980355	2020/09/19	2021/09/18
Temperature/Humidity Meter	Gangxing	CTH-608	02	2020/09/19	2021/09/18
High-Pass Filter	K&L	9SH10-2700/X12750-O/O	KL142031	2020/09/19	2021/09/18
High-Pass Filter	K&L	41H10-1375/U12750-O/O	KL142032	2020/09/19	2021/09/18
RF Cable(below 1GHz)	HUBER+SUHNER	RG214	RE01	2020/09/19	2021/09/18
RF Cable(above 1GHz)	HUBER+SUHNER	RG214	RE02	2020/09/19	2021/09/18
Data acquisition card	Agilent	U2531A	TW53323507	2020/09/19	2021/09/18
Power Sensor	Agilent	U2021XA	MY5365004	2020/09/19	2021/09/18
Test Control Unit	Tonscend	JS0806-1	178060067	2020/06/20	2021/06/19
Automated filter bank	Tonscend	JS0806-F	19F8060177	2020/06/20	2021/06/19
EMI Test Software	Tonscend	JS1120-1	Ver 2.6.8.0518	/	/
EMI Test Software	Tonscend	JS1120-3	Ver 2.5.77.0418	/	/
EMI Test Software	Tonscend	JS32-CE	Ver 2.5	/	/
EMI Test Software	Tonscend	JS32-RE	Ver 2.5.1.8	/	/

Note: The Cal.Interval was one year.

4. TEST CONDITIONS AND RESULTS

4.1. AC Power Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10-2013.
2 Support equipment, if needed, was placed as per ANSI C63.10-2013
3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10-2013
4 The EUT received DC 28V power from Computer, the PC received AC120V/60Hz and AC 240V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5 All support equipments received AC power from a second LISN, if any.
6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT.The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7 Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8 During the above scans, the emissions were maximized by cable manipulation.

AC Power Conducted Emission Limit

For intentional device, according to § 15.207(a) AC Power Conducted Emission Limits is as following：

Frequency range (MHz)	Limit (dBuV)	
	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.		

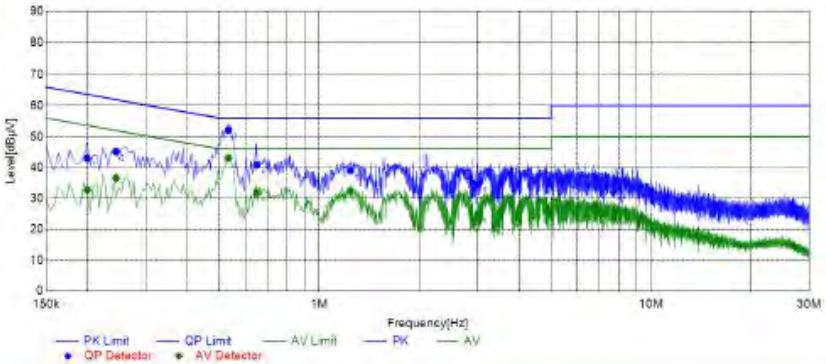
TEST RESULTS

Remark: We measured Conducted Emission at all mode in AC 120V/60Hz, the worst case was recorded .

Temperature	22.3℃	Humidity	53.7%
Test Engineer	Moon Tan	Configurations	IEEE 802.11ac20 HCH

Power supply:	AC 120V/60Hz	Polarization	L

Test Graph



Final Data List

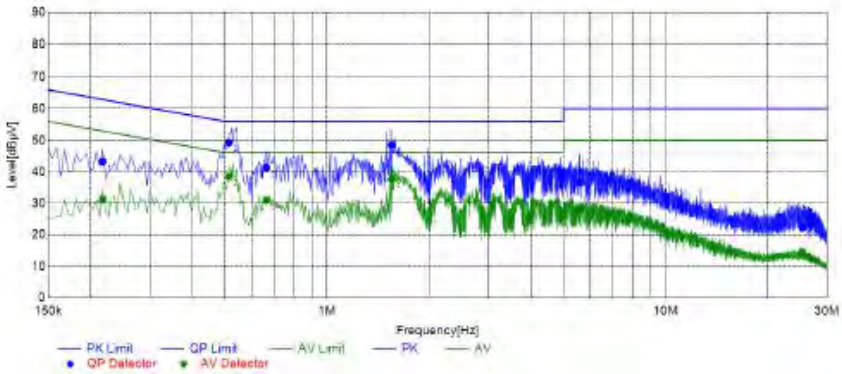
NO.	Frequency [MHz]	QP Reading [dBµV]	AVG. Reading [dBµV]	Factor [dB]	QP Result [dBµV]	AVG. Result [dBµV]	QP Limit [dBµV]	AVG. Limit [dBµV]	QP Margin [dB]	AVG. Margin [dB]	Line	Remark
1	0.2000	32.97	22.76	10.06	43.03	32.82	63.61	53.61	20.58	20.79	L1	PASS
2	0.2439	35.14	26.53	10.02	45.16	36.55	61.96	51.96	16.80	15.41	L1	PASS
3	0.5319	42.04	32.96	10.06	52.10	43.02	56.00	46.00	3.90	2.98	L1	PASS
4	0.6476	30.75	21.69	10.06	40.81	31.75	56.00	46.00	15.19	14.25	L1	PASS
5	1.2418	28.93	22.41	10.09	39.02	32.50	56.00	46.00	16.98	13.50	L1	PASS
6	3.0091	24.27	14.73	10.29	34.56	25.02	56.00	46.00	21.44	20.98	L1	PASS

Note:1. Result (dBµV) = Reading (dBµV) + Factor (dB).

2. Factor (dB) = Cable loss (dB) + LISN Factor (dB).

Power supply:	AC 120V/60Hz	Polarization	N

Test Graph



Final Data List

NO.	Frequency [MHz]	QP Reading [dBµV]	AVG. Reading [dBµV]	Factor [dB]	QP Result [dBµV]	AVG. Result [dBµV]	QP Limit [dBµV]	AVG. Limit [dBµV]	QP Margin [dB]	AVG. Margin [dB]	Line	Remark
1	0.2174	33.25	21.24	10.05	43.30	31.29	62.92	52.92	19.62	21.63	N	PASS
2	0.5135	39.14	28.43	10.06	49.20	38.49	56.00	46.00	6.80	7.51	N	PASS
3	0.6618	31.30	20.91	10.05	41.35	30.96	56.00	46.00	14.65	15.04	N	PASS
4	1.5512	38.44	27.62	10.12	48.56	37.74	56.00	46.00	7.44	8.26	N	PASS
5	5.5985	26.04	17.60	10.52	36.56	28.12	60.00	50.00	23.44	21.88	N	PASS
6	25.3380	10.55	2.89	11.64	22.19	14.53	60.00	50.00	37.81	35.47	N	PASS

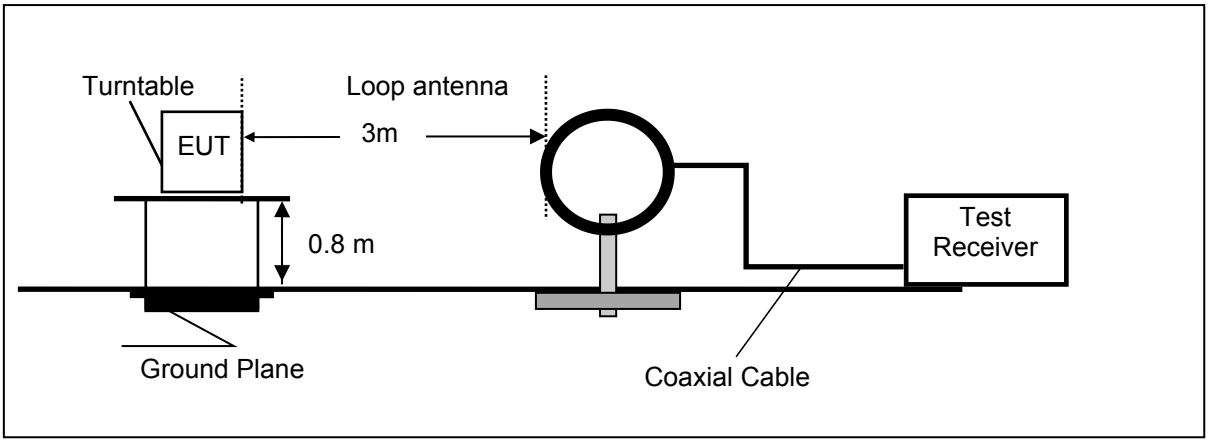
Note:1. Result (dBµV) = Reading (dBµV) + Factor (dB).

2. Factor (dB) = Cable loss (dB) + LISN Factor (dB).

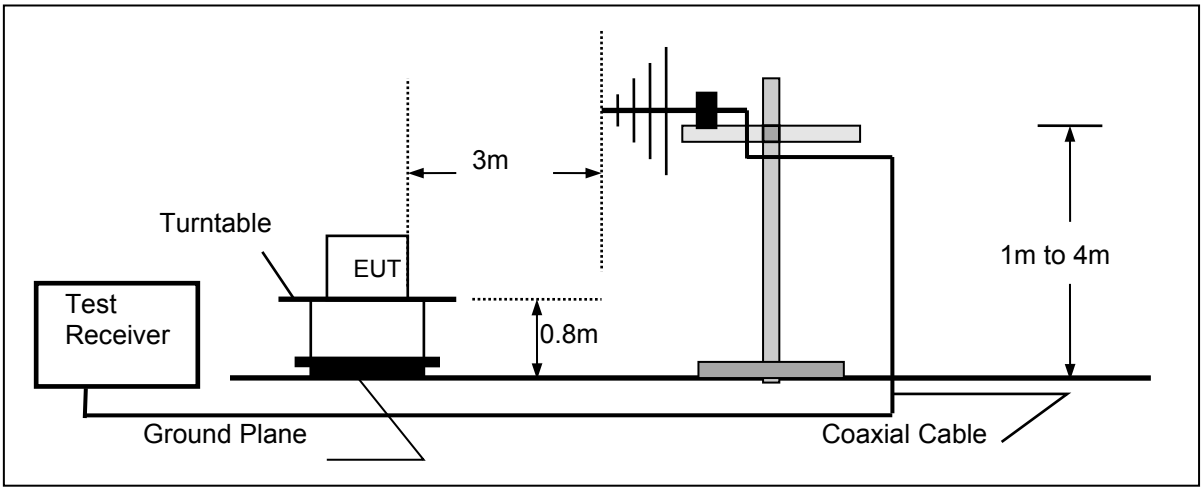
4.2. Radiated Emission

TEST CONFIGURATION

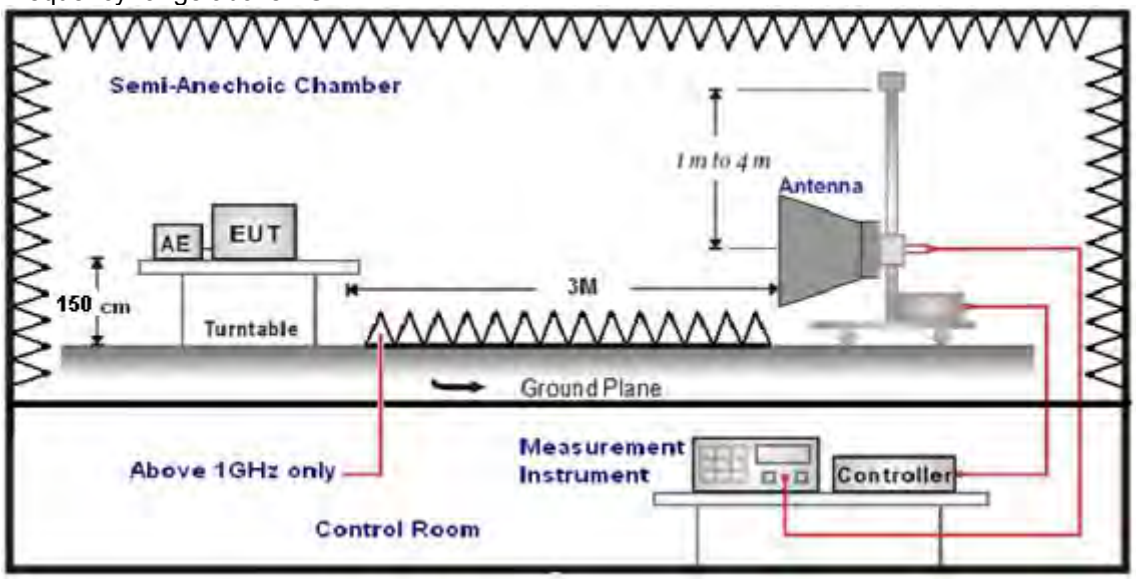
Frequency range 9 KHz – 30MHz



Frequency range 30MHz – 1000MHz



Frequency range above 1GHz



TEST PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane when testing frequency range 9 KHz –1GHz;the EUT was placed on a turn table which is 1.5m above ground plane when testing above 1GHz.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. The EUT minimum operation frequency was 24MHz and maximum operation frequency was 5825MHz.so radiated emission test frequency band from 9KHz to 40GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Ultra-Broadband Antenna	3
1GHz-18GHz	Double Ridged Horn Antenna	3
18GHz-25GHz	Horn Anternna	1

7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
1GHz-40GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

Transd=AF +CL-AG

RADIATION LIMIT

According to §15.407 (b): Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits

Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m)
5150-5250	-27	68.2
5250-5350	-27	68.2
5470-5725	-27	682
5725-5850	-27 (beyond 10MHz of the bandedge)	68.2
	-17 (within 10 MHz of band edge)	78.2

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST RESULTS

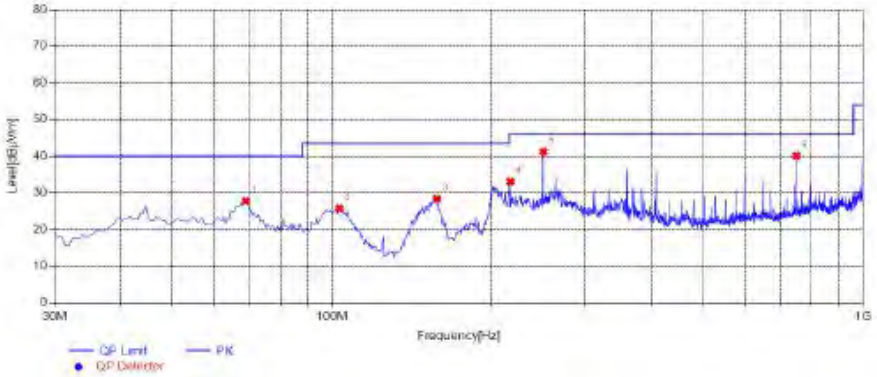
Remark: We measured Radiated Emission at all mode from30MHz to 25GHz in AC 120V/60Hz and the worst case was recorded.

Temperature	22.3℃	Humidity	54.5%
Test Engineer	Moon Tan	Configurations	IEEE 802.11ac20 HCH

For 30MHz-1GHz

Horizontal

Test Graph



Suspected List

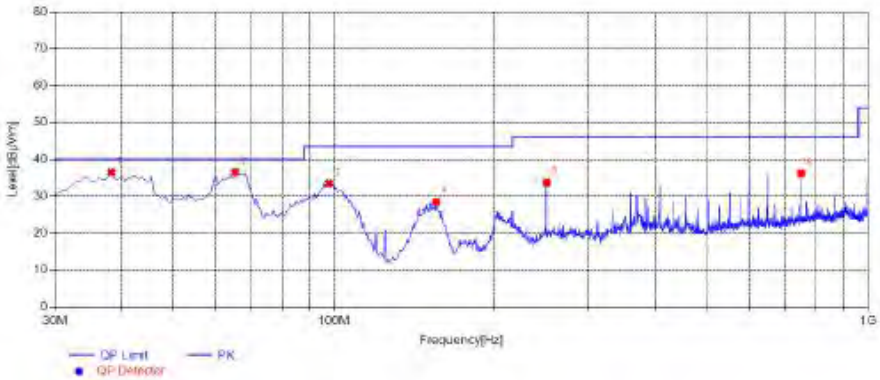
NO.	Frequency [MHz]	Reading [dBμV/m]	Factor [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity	Remark
1	68.8000	37.68	-9.85	27.83	40.00	12.17	100	3	PK	Horizonta	PASS
2	103.2350	34.16	-8.40	25.76	43.50	17.74	100	352	PK	Horizonta	PASS
3	157.5550	40.57	-12.13	28.44	43.50	15.06	100	356	PK	Horizonta	PASS
4	216.7250	42.38	-9.25	33.13	46.00	12.87	100	305	PK	Horizonta	PASS
5	250.1900	49.43	-8.18	41.25	46.00	4.75	100	115	PK	Horizonta	PASS
6	750.2250	39.03	1.12	40.15	46.00	5.85	100	145	PK	Horizonta	PASS

Note:1. Result (dBμV/m) = Reading(dBμV/m) + Factor (dB) .

2. Factor (dB) = Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB).

Vertical

Test Graph



Suspected List

NO.	Frequency [MHz]	Reading [dBμV/m]	Factor [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity	Remark
1	38.2450	46.14	-9.58	36.56	40.00	3.44	100	238	PK	Vertical	PASS
2	65.4050	46.20	-9.60	36.60	40.00	3.40	100	340	PK	Vertical	PASS
3	97.9000	42.34	-8.80	33.54	43.50	9.96	100	96	PK	Vertical	PASS
4	155.6150	40.89	-12.29	28.60	43.50	14.90	100	333	PK	Vertical	PASS
5	250.1900	41.96	-8.18	33.78	46.00	12.22	100	204	PK	Vertical	PASS
6	750.2250	35.11	1.12	36.23	46.00	9.77	100	184	PK	Vertical	PASS

Note:1. Result (dBμV/m) = Reading(dBμV/m) + Factor (dB) .

2. Factor (dB) = Antenna Factor (dB/m) + Cable loss (dB) - Pre Amplifier gain (dB).

For 1GHz to 40GHz
5150-5250MHz:

802.11a Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	40.36	38.55	33.13	11.26	57.04	68.20	-11.16	Peak	Horizontal
1	10360	31.60	38.55	33.13	11.26	48.28	54.00	-5.72	AV	Horizontal
1	10360	42.18	38.55	33.13	11.26	58.86	68.20	-9.34	Peak	Vertical
1	10360	29.35	38.55	33.13	11.26	46.03	54.00	-7.97	AV	Vertical

802.11a Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	39.68	38.55	33.13	11.26	56.36	68.20	-11.84	Peak	Horizontal
1	10400	31.25	38.55	33.13	11.26	47.93	54.00	-6.07	AV	Horizontal
1	10400	41.27	38.55	33.13	11.26	57.95	68.20	-10.25	Peak	Vertical
1	10400	28.40	38.55	33.13	11.26	45.08	54.00	-8.92	AV	Vertical

802.11a Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	40.84	38.55	33.13	11.26	57.52	68.20	-10.68	Peak	Horizontal
1	10480	31.48	38.55	33.13	11.26	48.16	54.00	-5.84	AV	Horizontal
1	10480	42.17	38.55	33.13	11.26	58.85	68.20	-9.35	Peak	Vertical
1	10480	28.73	38.55	33.13	11.26	45.41	54.00	-8.59	AV	Vertical

802.11n20 Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	40.75	38.55	33.13	11.26	57.43	68.20	-10.77	Peak	Horizontal
1	10360	31.60	38.55	33.13	11.26	48.28	54.00	-5.72	AV	Horizontal
1	10360	40.82	38.55	33.13	11.26	57.50	68.20	-10.70	Peak	Vertical
1	10360	29.99	38.55	33.13	11.26	46.67	54.00	-7.33	AV	Vertical

802.11n20 Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	38.93	38.55	33.13	11.26	55.61	68.20	-12.59	Peak	Horizontal
1	10400	30.70	38.55	33.13	11.26	47.38	54.00	-6.62	AV	Horizontal
1	10400	40.83	38.55	33.13	11.26	57.51	68.20	-10.69	Peak	Vertical
1	10400	29.59	38.55	33.13	11.26	46.27	54.00	-7.73	AV	Vertical

802.11n20 Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	39.59	38.55	33.13	11.26	56.27	68.20	-11.93	Peak	Horizontal
1	10480	31.22	38.55	33.13	11.26	47.90	54.00	-6.10	AV	Horizontal
1	10480	42.08	38.55	33.13	11.26	58.76	68.20	-9.44	Peak	Vertical
1	10480	29.59	38.55	33.13	11.26	46.27	54.00	-7.73	AV	Vertical

802.11n40 Mode_Channel 38 _5190 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10380	40.62	38.55	33.13	11.26	57.30	68.20	-10.90	Peak	Horizontal
1	10380	32.33	38.55	33.13	11.26	49.01	54.00	-4.99	AV	Horizontal
1	10380	41.03	38.55	33.13	11.26	57.71	68.20	-10.49	Peak	Vertical
1	10380	29.90	38.55	33.13	11.26	46.58	54.00	-7.42	AV	Vertical

802.11n40 Mode_Channel 46 _ 5230 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10460	39.64	38.55	33.13	11.26	56.32	68.20	-11.88	Peak	Horizontal
1	10460	31.11	38.55	33.13	11.26	47.79	54.00	-6.21	AV	Horizontal
1	10460	41.22	38.55	33.13	11.26	57.90	68.20	-10.30	Peak	Vertical
1	10460	29.52	38.55	33.13	11.26	46.20	54.00	-7.80	AV	Vertical

802.11ac20 Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	40.23	38.55	33.13	11.26	56.91	68.20	-11.29	Peak	Horizontal
1	10360	32.26	38.55	33.13	11.26	48.94	54.00	-5.06	AV	Horizontal
1	10360	41.44	38.55	33.13	11.26	58.12	68.20	-10.08	Peak	Vertical
1	10360	29.21	38.55	33.13	11.26	45.89	54.00	-8.11	AV	Vertical

802.11ac20 Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	39.18	38.55	33.13	11.26	55.86	68.20	-12.34	Peak	Horizontal
1	10400	32.50	38.55	33.13	11.26	49.18	54.00	-4.82	AV	Horizontal
1	10400	41.76	38.55	33.13	11.26	58.44	68.20	-9.76	Peak	Vertical
1	10400	27.50	38.55	33.13	11.26	44.18	54.00	-9.82	AV	Vertical

802.11ac20 Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	38.09	38.55	33.13	11.26	54.77	68.20	-13.43	Peak	Horizontal
1	10480	29.91	38.55	33.13	11.26	46.59	54.00	-7.41	AV	Horizontal
1	10480	39.77	38.55	33.13	11.26	56.45	68.20	-11.75	Peak	Vertical
1	10480	28.53	38.55	33.13	11.26	45.21	54.00	-8.79	AV	Vertical

802.11ac40 Mode_Channel 38 _5190 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10380	40.57	38.55	33.13	11.26	57.25	68.20	-10.95	Peak	Horizontal
1	10380	29.68	38.55	33.13	11.26	46.36	54.00	-7.64	AV	Horizontal
1	10380	41.92	38.55	33.13	11.26	58.60	68.20	-9.60	Peak	Vertical
1	10380	27.99	38.55	33.13	11.26	44.67	54.00	-9.33	AV	Vertical

802.11ac40 Mode_Channel 46 _ 5230 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10460	39.01	38.55	33.13	11.26	55.69	68.20	-12.51	Peak	Horizontal
1	10460	31.49	38.55	33.13	11.26	48.17	54.00	-5.83	AV	Horizontal
1	10460	41.03	38.55	33.13	11.26	57.71	68.20	-10.49	Peak	Vertical
1	10460	29.72	38.55	33.13	11.26	46.40	54.00	-7.60	AV	Vertical

802.11ac80 Mode_Channel 42 _5210 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10420	40.00	38.55	33.13	11.26	56.68	68.20	-11.52	Peak	Horizontal
1	10420	31.26	38.55	33.13	11.26	47.94	54.00	-6.06	AV	Horizontal
1	10420	41.93	38.55	33.13	11.26	58.61	68.20	-9.59	Peak	Vertical
1	10420	28.82	38.55	33.13	11.26	45.50	54.00	-8.50	AV	Vertical

802.11ax20 Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	39.25	38.55	33.13	11.26	55.93	68.20	-12.27	Peak	Horizontal
1	10360	32.22	38.55	33.13	11.26	48.90	54.00	-5.10	AV	Horizontal
1	10360	41.77	38.55	33.13	11.26	58.45	68.20	-9.75	Peak	Vertical
1	10360	28.18	38.55	33.13	11.26	44.86	54.00	-9.14	AV	Vertical

802.11ax20 Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	41.20	38.55	33.13	11.26	57.88	68.20	-10.32	Peak	Horizontal
1	10400	30.59	38.55	33.13	11.26	47.27	54.00	-6.73	AV	Horizontal
1	10400	40.64	38.55	33.13	11.26	57.32	68.20	-10.88	Peak	Vertical
1	10400	28.07	38.55	33.13	11.26	44.75	54.00	-9.25	AV	Vertical

802.11ax20 Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	40.85	38.55	33.13	11.26	57.53	68.20	-10.67	Peak	Horizontal
1	10480	31.64	38.55	33.13	11.26	48.32	54.00	-5.68	AV	Horizontal
1	10480	41.44	38.55	33.13	11.26	58.12	68.20	-10.08	Peak	Vertical
1	10480	28.68	38.55	33.13	11.26	45.36	54.00	-8.64	AV	Vertical

802.11ax40 Mode_Channel 38 _5190 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10380	39.88	38.55	33.13	11.26	56.56	68.20	-11.64	Peak	Horizontal
1	10380	30.28	38.55	33.13	11.26	46.96	54.00	-7.04	AV	Horizontal
1	10380	40.45	38.55	33.13	11.26	57.13	68.20	-11.07	Peak	Vertical
1	10380	28.07	38.55	33.13	11.26	44.75	54.00	-9.25	AV	Vertical

802.11ax40 Mode_Channel 46 _ 5230 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10460	39.94	38.55	33.13	11.26	56.62	68.20	-11.58	Peak	Horizontal
1	10460	30.70	38.55	33.13	11.26	47.38	54.00	-6.62	AV	Horizontal
1	10460	39.95	38.55	33.13	11.26	56.63	68.20	-11.57	Peak	Vertical
1	10460	29.01	38.55	33.13	11.26	45.69	54.00	-8.31	AV	Vertical

802.11ax80 Mode_Channel 42 _5210 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10420	40.14	38.55	33.13	11.26	56.82	68.20	-11.38	Peak	Horizontal
1	10420	29.26	38.55	33.13	11.26	45.94	54.00	-8.06	AV	Horizontal
1	10420	40.63	38.55	33.13	11.26	57.31	68.20	-10.89	Peak	Vertical
1	10420	28.56	38.55	33.13	11.26	45.24	54.00	-8.76	AV	Vertical

NOTE: We measured Radiated Emission at Antenna 2 & Antenna 3 mode from 1GHz to 25GHz and the worst case was recorded.

5725-5850MHz:

802.11a Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	39.99	38.55	33.13	11.26	56.67	68.20	-11.53	Peak	Horizontal
1	11490	30.39	38.55	33.13	11.26	47.07	54.00	-6.93	AV	Horizontal
1	11490	40.87	38.55	33.13	11.26	57.55	68.20	-10.65	Peak	Vertical
1	11490	28.95	38.55	33.13	11.26	45.63	54.00	-8.37	AV	Vertical

802.11a Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	39.07	38.55	33.13	11.26	55.75	68.20	-12.45	Peak	Horizontal
1	11570	30.51	38.55	33.13	11.26	47.19	54.00	-6.81	AV	Horizontal
1	11570	41.45	38.55	33.13	11.26	58.13	68.20	-10.07	Peak	Vertical
1	11570	30.19	38.55	33.13	11.26	46.87	54.00	-7.13	AV	Vertical

802.11a Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	39.26	38.55	33.13	11.26	55.94	68.20	-12.26	Peak	Horizontal
1	11650	30.06	38.55	33.13	11.26	46.74	54.00	-7.26	AV	Horizontal
1	11650	40.45	38.55	33.13	11.26	57.13	68.20	-11.07	Peak	Vertical
1	11650	29.62	38.55	33.13	11.26	46.30	54.00	-7.70	AV	Vertical

802.11n20 Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	39.91	38.55	33.13	11.26	56.59	68.20	-11.61	Peak	Horizontal
1	11490	30.09	38.55	33.13	11.26	46.77	54.00	-7.23	AV	Horizontal
1	11490	40.29	38.55	33.13	11.26	56.97	68.20	-11.23	Peak	Vertical
1	11490	28.78	38.55	33.13	11.26	45.46	54.00	-8.54	AV	Vertical

802.11n20 Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	40.73	38.55	33.13	11.26	57.41	68.20	-10.79	Peak	Horizontal
1	11570	32.06	38.55	33.13	11.26	48.74	54.00	-5.26	AV	Horizontal
1	11570	41.05	38.55	33.13	11.26	57.73	68.20	-10.47	Peak	Vertical
1	11570	29.17	38.55	33.13	11.26	45.85	54.00	-8.15	AV	Vertical

802.11n20 Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	38.18	38.55	33.13	11.26	54.86	68.20	-13.34	Peak	Horizontal
1	11650	32.32	38.55	33.13	11.26	49.00	54.00	-5.00	AV	Horizontal
1	11650	39.92	38.55	33.13	11.26	56.60	68.20	-11.60	Peak	Vertical
1	11650	29.08	38.55	33.13	11.26	45.76	54.00	-8.24	AV	Vertical

802.11n40 Mode_Channel 151 _5755 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11510	38.54	38.55	33.13	11.26	55.22	68.20	-12.98	Peak	Horizontal
1	11510	29.67	38.55	33.13	11.26	46.35	54.00	-7.65	AV	Horizontal
1	11510	40.70	38.55	33.13	11.26	57.38	68.20	-10.82	Peak	Vertical
1	11510	29.65	38.55	33.13	11.26	46.33	54.00	-7.67	AV	Vertical

802.11n40 Mode_Channel 159 _ 5795MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11590	39.52	38.55	33.13	11.26	56.20	68.20	-12.00	Peak	Horizontal
1	11590	31.88	38.55	33.13	11.26	48.56	54.00	-5.44	AV	Horizontal
1	11590	41.36	38.55	33.13	11.26	58.04	68.20	-10.16	Peak	Vertical
1	11590	30.62	38.55	33.13	11.26	47.30	54.00	-6.70	AV	Vertical

802.11ac20 Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	39.11	38.55	33.13	11.26	55.79	68.20	-12.41	Peak	Horizontal
1	11490	30.38	38.55	33.13	11.26	47.06	54.00	-6.94	AV	Horizontal
1	11490	41.52	38.55	33.13	11.26	58.20	68.20	-10.00	Peak	Vertical
1	11490	28.79	38.55	33.13	11.26	45.47	54.00	-8.53	AV	Vertical

802.11ac20 Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	41.55	38.55	33.13	11.26	58.23	68.20	-9.97	Peak	Horizontal
1	11570	31.21	38.55	33.13	11.26	47.89	54.00	-6.11	AV	Horizontal
1	11570	40.23	38.55	33.13	11.26	56.91	68.20	-11.29	Peak	Vertical
1	11570	28.91	38.55	33.13	11.26	45.59	54.00	-8.41	AV	Vertical

802.11ac20 Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	40.14	38.55	33.13	11.26	56.82	68.20	-11.38	Peak	Horizontal
1	11650	31.73	38.55	33.13	11.26	48.41	54.00	-5.59	AV	Horizontal
1	11650	40.64	38.55	33.13	11.26	57.32	68.20	-10.88	Peak	Vertical
1	11650	28.90	38.55	33.13	11.26	45.58	54.00	-8.42	AV	Vertical

802.11ac40 Mode_Channel 151 _5755 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11510	39.84	38.55	33.13	11.26	56.52	68.20	-11.68	Peak	Horizontal
1	11510	29.71	38.55	33.13	11.26	46.39	54.00	-7.61	AV	Horizontal
1	11510	41.09	38.55	33.13	11.26	57.77	68.20	-10.43	Peak	Vertical
1	11510	28.57	38.55	33.13	11.26	45.25	54.00	-8.75	AV	Vertical

802.11ac40 Mode_Channel 159 _ 5795MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11590	40.73	38.55	33.13	11.26	57.41	68.20	-10.79	Peak	Horizontal
1	11590	29.96	38.55	33.13	11.26	46.64	54.00	-7.36	AV	Horizontal
1	11590	40.91	38.55	33.13	11.26	57.59	68.20	-10.61	Peak	Vertical
1	11590	28.59	38.55	33.13	11.26	45.27	54.00	-8.73	AV	Vertical

802.11ac80 Mode_Channel 155 _5775 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11550	39.25	38.55	33.13	11.26	55.93	68.20	-12.27	Peak	Horizontal
1	11550	30.43	38.55	33.13	11.26	47.11	54.00	-6.89	AV	Horizontal
1	11550	39.47	38.55	33.13	11.26	56.15	68.20	-12.05	Peak	Vertical
1	11550	30.39	38.55	33.13	11.26	47.07	54.00	-6.93	AV	Vertical

802.11ax20 Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	40.06	38.55	33.13	11.26	56.74	68.20	-11.46	Peak	Horizontal
1	11490	31.76	38.55	33.13	11.26	48.44	54.00	-5.56	AV	Horizontal
1	11490	40.52	38.55	33.13	11.26	57.20	68.20	-11.00	Peak	Vertical
1	11490	30.05	38.55	33.13	11.26	46.73	54.00	-7.27	AV	Vertical

802.11ax20 Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	39.88	38.55	33.13	11.26	56.56	68.20	-11.64	Peak	Horizontal
1	11570	30.06	38.55	33.13	11.26	46.74	54.00	-7.26	AV	Horizontal
1	11570	40.87	38.55	33.13	11.26	57.55	68.20	-10.65	Peak	Vertical
1	11570	29.64	38.55	33.13	11.26	46.32	54.00	-7.68	AV	Vertical

802.11ax20 Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	40.63	38.55	33.13	11.26	57.31	68.20	-10.89	Peak	Horizontal
1	11650	31.62	38.55	33.13	11.26	48.30	54.00	-5.70	AV	Horizontal
1	11650	41.89	38.55	33.13	11.26	58.57	68.20	-9.63	Peak	Vertical
1	11650	29.50	38.55	33.13	11.26	46.18	54.00	-7.82	AV	Vertical

802.11ax40 Mode_Channel 151 _5755 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11510	40.38	38.55	33.13	11.26	57.06	68.20	-11.14	Peak	Horizontal
1	11510	30.60	38.55	33.13	11.26	47.28	54.00	-6.72	AV	Horizontal
1	11510	40.28	38.55	33.13	11.26	56.96	68.20	-11.24	Peak	Vertical
1	11510	29.44	38.55	33.13	11.26	46.12	54.00	-7.88	AV	Vertical

802.11ax40 Mode_Channel 159 _ 5795MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11590	39.82	38.55	33.13	11.26	56.50	68.20	-11.70	Peak	Horizontal
1	11590	30.42	38.55	33.13	11.26	47.10	54.00	-6.90	AV	Horizontal
1	11590	40.55	38.55	33.13	11.26	57.23	68.20	-10.97	Peak	Vertical
1	11590	29.08	38.55	33.13	11.26	45.76	54.00	-8.24	AV	Vertical

802.11ax80 Mode_Channel 155 _5775 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11550	38.80	38.55	33.13	11.26	55.48	68.20	-12.72	Peak	Horizontal
1	11550	32.85	38.55	33.13	11.26	49.53	54.00	-4.47	AV	Horizontal
1	11550	41.00	38.55	33.13	11.26	57.68	68.20	-10.52	Peak	Vertical
1	11550	28.63	38.55	33.13	11.26	45.31	54.00	-8.69	AV	Vertical

NOTE: We measured Radiated Emission at Antenna 2& Antenna 3 mode from 1GHz to 25GHz and the worst case was recorded.

2*2MIMO:
For 1GHz to 40GHz
5150-5250MHz:

802.11a Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	40.85	38.55	33.13	11.26	57.53	68.20	-10.67	Peak	Horizontal
1	10360	32.22	38.55	33.13	11.26	48.90	54.00	-5.10	AV	Horizontal
1	10360	41.02	38.55	33.13	11.26	57.70	68.20	-10.50	Peak	Vertical
1	10360	27.84	38.55	33.13	11.26	44.52	54.00	-9.48	AV	Vertical

802.11a Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	40.30	38.55	33.13	11.26	56.98	68.20	-11.22	Peak	Horizontal
1	10400	31.41	38.55	33.13	11.26	48.09	54.00	-5.91	AV	Horizontal
1	10400	42.32	38.55	33.13	11.26	59.00	68.20	-9.20	Peak	Vertical
1	10400	28.54	38.55	33.13	11.26	45.22	54.00	-8.78	AV	Vertical

802.11a Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	39.84	38.55	33.13	11.26	56.52	68.20	-11.68	Peak	Horizontal
1	10480	32.21	38.55	33.13	11.26	48.89	54.00	-5.11	AV	Horizontal
1	10480	41.72	38.55	33.13	11.26	58.40	68.20	-9.80	Peak	Vertical
1	10480	28.10	38.55	33.13	11.26	44.78	54.00	-9.22	AV	Vertical

802.11n20 Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	41.23	38.55	33.13	11.26	57.91	68.20	-10.29	Peak	Horizontal
1	10360	31.75	38.55	33.13	11.26	48.43	54.00	-5.57	AV	Horizontal
1	10360	41.50	38.55	33.13	11.26	58.18	68.20	-10.02	Peak	Vertical
1	10360	29.88	38.55	33.13	11.26	46.56	54.00	-7.44	AV	Vertical

802.11n20 Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	38.79	38.55	33.13	11.26	55.47	68.20	-12.73	Peak	Horizontal
1	10400	31.66	38.55	33.13	11.26	48.34	54.00	-5.66	AV	Horizontal
1	10400	39.89	38.55	33.13	11.26	56.57	68.20	-11.63	Peak	Vertical
1	10400	29.33	38.55	33.13	11.26	46.01	54.00	-7.99	AV	Vertical

802.11n20 Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	39.41	38.55	33.13	11.26	56.09	68.20	-12.11	Peak	Horizontal
1	10480	31.74	38.55	33.13	11.26	48.42	54.00	-5.58	AV	Horizontal
1	10480	40.22	38.55	33.13	11.26	56.90	68.20	-11.30	Peak	Vertical
1	10480	30.15	38.55	33.13	11.26	46.83	54.00	-7.17	AV	Vertical

802.11n40 Mode_Channel 38 _5190 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10380	40.03	38.55	33.13	11.26	56.71	68.20	-11.49	Peak	Horizontal
1	10380	32.01	38.55	33.13	11.26	48.69	54.00	-5.31	AV	Horizontal
1	10380	41.91	38.55	33.13	11.26	58.59	68.20	-9.61	Peak	Vertical
1	10380	29.39	38.55	33.13	11.26	46.07	54.00	-7.93	AV	Vertical

802.11n40 Mode_Channel 46 _ 5230 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10460	39.60	38.55	33.13	11.26	56.28	68.20	-11.92	Peak	Horizontal
1	10460	30.38	38.55	33.13	11.26	47.06	54.00	-6.94	AV	Horizontal
1	10460	40.86	38.55	33.13	11.26	57.54	68.20	-10.66	Peak	Vertical
1	10460	28.59	38.55	33.13	11.26	45.27	54.00	-8.73	AV	Vertical

802.11ac20 Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	39.52	38.55	33.13	11.26	56.20	68.20	-12.00	Peak	Horizontal
1	10360	32.42	38.55	33.13	11.26	49.10	54.00	-4.90	AV	Horizontal
1	10360	40.37	38.55	33.13	11.26	57.05	68.20	-11.15	Peak	Vertical
1	10360	27.41	38.55	33.13	11.26	44.09	54.00	-9.91	AV	Vertical

802.11ac20 Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	40.62	38.55	33.13	11.26	57.30	68.20	-10.90	Peak	Horizontal
1	10400	30.96	38.55	33.13	11.26	47.64	54.00	-6.36	AV	Horizontal
1	10400	41.32	38.55	33.13	11.26	58.00	68.20	-10.20	Peak	Vertical
1	10400	28.57	38.55	33.13	11.26	45.25	54.00	-8.75	AV	Vertical

802.11ac20 Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	38.61	38.55	33.13	11.26	55.29	68.20	-12.91	Peak	Horizontal
1	10480	30.64	38.55	33.13	11.26	47.32	54.00	-6.68	AV	Horizontal
1	10480	39.96	38.55	33.13	11.26	56.64	68.20	-11.56	Peak	Vertical
1	10480	28.49	38.55	33.13	11.26	45.17	54.00	-8.83	AV	Vertical

802.11ac40 Mode_Channel 38 _5190 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10380	40.46	38.55	33.13	11.26	57.14	68.20	-11.06	Peak	Horizontal
1	10380	31.32	38.55	33.13	11.26	48.00	54.00	-6.00	AV	Horizontal
1	10380	42.38	38.55	33.13	11.26	59.06	68.20	-9.14	Peak	Vertical
1	10380	28.01	38.55	33.13	11.26	44.69	54.00	-9.31	AV	Vertical

802.11ac40 Mode_Channel 46 _ 5230 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10460	39.22	38.55	33.13	11.26	55.90	68.20	-12.30	Peak	Horizontal
1	10460	30.91	38.55	33.13	11.26	47.59	54.00	-6.41	AV	Horizontal
1	10460	39.37	38.55	33.13	11.26	56.05	68.20	-12.15	Peak	Vertical
1	10460	28.96	38.55	33.13	11.26	45.64	54.00	-8.36	AV	Vertical

802.11ac80 Mode_Channel 42 _5210 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10420	38.71	38.55	33.13	11.26	55.39	68.20	-12.81	Peak	Horizontal
1	10420	32.09	38.55	33.13	11.26	48.77	54.00	-5.23	AV	Horizontal
1	10420	41.12	38.55	33.13	11.26	57.80	68.20	-10.40	Peak	Vertical
1	10420	29.11	38.55	33.13	11.26	45.79	54.00	-8.21	AV	Vertical

802.11ax20 Mode_Channel 36 _5180 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10360	39.79	38.55	33.13	11.26	56.47	68.20	-11.73	Peak	Horizontal
1	10360	32.75	38.55	33.13	11.26	49.43	54.00	-4.57	AV	Horizontal
1	10360	40.81	38.55	33.13	11.26	57.49	68.20	-10.71	Peak	Vertical
1	10360	28.69	38.55	33.13	11.26	45.37	54.00	-8.63	AV	Vertical

802.11ax20 Mode_Channel 40 _ 5200 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10400	40.98	38.55	33.13	11.26	57.66	68.20	-10.54	Peak	Horizontal
1	10400	30.35	38.55	33.13	11.26	47.03	54.00	-6.97	AV	Horizontal
1	10400	40.46	38.55	33.13	11.26	57.14	68.20	-11.06	Peak	Vertical
1	10400	28.31	38.55	33.13	11.26	44.99	54.00	-9.01	AV	Vertical

802.11ax20 Mode_ Channel 48_ 5240 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10480	41.59	38.55	33.13	11.26	58.27	68.20	-9.93	Peak	Horizontal
1	10480	31.22	38.55	33.13	11.26	47.90	54.00	-6.10	AV	Horizontal
1	10480	39.61	38.55	33.13	11.26	56.29	68.20	-11.91	Peak	Vertical
1	10480	30.22	38.55	33.13	11.26	46.90	54.00	-7.10	AV	Vertical

802.11ax40 Mode_Channel 38 _5190 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10380	39.48	38.55	33.13	11.26	56.16	68.20	-12.04	Peak	Horizontal
1	10380	29.64	38.55	33.13	11.26	46.32	54.00	-7.68	AV	Horizontal
1	10380	40.68	38.55	33.13	11.26	57.36	68.20	-10.84	Peak	Vertical
1	10380	28.12	38.55	33.13	11.26	44.80	54.00	-9.20	AV	Vertical

802.11ax40 Mode_Channel 46 _ 5230 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10460	39.54	38.55	33.13	11.26	56.22	68.20	-11.98	Peak	Horizontal
1	10460	32.09	38.55	33.13	11.26	48.77	54.00	-5.23	AV	Horizontal
1	10460	40.92	38.55	33.13	11.26	57.60	68.20	-10.60	Peak	Vertical
1	10460	29.34	38.55	33.13	11.26	46.02	54.00	-7.98	AV	Vertical

802.11ax80 Mode_Channel 42 _5210 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	10420	41.07	38.55	33.13	11.26	57.75	68.20	-10.45	Peak	Horizontal
1	10420	30.69	38.55	33.13	11.26	47.37	54.00	-6.63	AV	Horizontal
1	10420	41.54	38.55	33.13	11.26	58.22	68.20	-9.98	Peak	Vertical
1	10420	28.14	38.55	33.13	11.26	44.82	54.00	-9.18	AV	Vertical

5725-5850MHz:

802.11a Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	40.21	38.55	33.13	11.26	56.89	68.20	-11.31	Peak	Horizontal
1	11490	29.24	38.55	33.13	11.26	45.92	54.00	-8.08	AV	Horizontal
1	11490	42.19	38.55	33.13	11.26	58.87	68.20	-9.33	Peak	Vertical
1	11490	29.37	38.55	33.13	11.26	46.05	54.00	-7.95	AV	Vertical

802.11a Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	40.13	38.55	33.13	11.26	56.81	68.20	-11.39	Peak	Horizontal
1	11570	29.59	38.55	33.13	11.26	46.27	54.00	-7.73	AV	Horizontal
1	11570	40.76	38.55	33.13	11.26	57.44	68.20	-10.76	Peak	Vertical
1	11570	28.63	38.55	33.13	11.26	45.31	54.00	-8.69	AV	Vertical

802.11a Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	39.71	38.55	33.13	11.26	56.39	68.20	-11.81	Peak	Horizontal
1	11650	31.11	38.55	33.13	11.26	47.79	54.00	-6.21	AV	Horizontal
1	11650	41.19	38.55	33.13	11.26	57.87	68.20	-10.33	Peak	Vertical
1	11650	28.75	38.55	33.13	11.26	45.43	54.00	-8.57	AV	Vertical

802.11n20 Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	41.35	38.55	33.13	11.26	58.03	68.20	-10.17	Peak	Horizontal
1	11490	30.52	38.55	33.13	11.26	47.20	54.00	-6.80	AV	Horizontal
1	11490	41.19	38.55	33.13	11.26	57.87	68.20	-10.33	Peak	Vertical
1	11490	29.44	38.55	33.13	11.26	46.12	54.00	-7.88	AV	Vertical

802.11n20 Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	40.82	38.55	33.13	11.26	57.50	68.20	-10.70	Peak	Horizontal
1	11570	30.74	38.55	33.13	11.26	47.42	54.00	-6.58	AV	Horizontal
1	11570	41.13	38.55	33.13	11.26	57.81	68.20	-10.39	Peak	Vertical
1	11570	29.38	38.55	33.13	11.26	46.06	54.00	-7.94	AV	Vertical

802.11n20 Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	38.71	38.55	33.13	11.26	55.39	68.20	-12.81	Peak	Horizontal
1	11650	31.88	38.55	33.13	11.26	48.56	54.00	-5.44	AV	Horizontal
1	11650	40.07	38.55	33.13	11.26	56.75	68.20	-11.45	Peak	Vertical
1	11650	28.97	38.55	33.13	11.26	45.65	54.00	-8.35	AV	Vertical

802.11n40 Mode_Channel 151 _5755 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11510	38.61	38.55	33.13	11.26	55.29	68.20	-12.91	Peak	Horizontal
1	11510	29.89	38.55	33.13	11.26	46.57	54.00	-7.43	AV	Horizontal
1	11510	41.77	38.55	33.13	11.26	58.45	68.20	-9.75	Peak	Vertical
1	11510	28.28	38.55	33.13	11.26	44.96	54.00	-9.04	AV	Vertical

802.11n40 Mode_Channel 159 _ 5795MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11590	38.84	38.55	33.13	11.26	55.52	68.20	-12.68	Peak	Horizontal
1	11590	31.05	38.55	33.13	11.26	47.73	54.00	-6.27	AV	Horizontal
1	11590	40.14	38.55	33.13	11.26	56.82	68.20	-11.38	Peak	Vertical
1	11590	29.67	38.55	33.13	11.26	46.35	54.00	-7.65	AV	Vertical

802.11ac20 Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	38.24	38.55	33.13	11.26	54.92	68.20	-13.28	Peak	Horizontal
1	11490	29.97	38.55	33.13	11.26	46.65	54.00	-7.35	AV	Horizontal
1	11490	41.54	38.55	33.13	11.26	58.22	68.20	-9.98	Peak	Vertical
1	11490	28.37	38.55	33.13	11.26	45.05	54.00	-8.95	AV	Vertical

802.11ac20 Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	39.88	38.55	33.13	11.26	56.56	68.20	-11.64	Peak	Horizontal
1	11570	30.16	38.55	33.13	11.26	46.84	54.00	-7.16	AV	Horizontal
1	11570	41.17	38.55	33.13	11.26	57.85	68.20	-10.35	Peak	Vertical
1	11570	30.10	38.55	33.13	11.26	46.78	54.00	-7.22	AV	Vertical

802.11ac20 Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	40.23	38.55	33.13	11.26	56.91	68.20	-11.29	Peak	Horizontal
1	11650	31.57	38.55	33.13	11.26	48.25	54.00	-5.75	AV	Horizontal
1	11650	41.12	38.55	33.13	11.26	57.80	68.20	-10.40	Peak	Vertical
1	11650	29.20	38.55	33.13	11.26	45.88	54.00	-8.12	AV	Vertical

802.11ac40 Mode_Channel 151 _5755 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11510	40.99	38.55	33.13	11.26	57.67	68.20	-10.53	Peak	Horizontal
1	11510	30.74	38.55	33.13	11.26	47.42	54.00	-6.58	AV	Horizontal
1	11510	42.44	38.55	33.13	11.26	59.12	68.20	-9.08	Peak	Vertical
1	11510	28.17	38.55	33.13	11.26	44.85	54.00	-9.15	AV	Vertical

802.11ac40 Mode_Channel 159 _ 5795MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11590	40.86	38.55	33.13	11.26	57.54	68.20	-10.66	Peak	Horizontal
1	11590	30.29	38.55	33.13	11.26	46.97	54.00	-7.03	AV	Horizontal
1	11590	40.40	38.55	33.13	11.26	57.08	68.20	-11.12	Peak	Vertical
1	11590	27.95	38.55	33.13	11.26	44.63	54.00	-9.37	AV	Vertical

802.11ac80 Mode_Channel 155 _5775 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11550	39.20	38.55	33.13	11.26	55.88	68.20	-12.32	Peak	Horizontal
1	11550	30.03	38.55	33.13	11.26	46.71	54.00	-7.29	AV	Horizontal
1	11550	39.34	38.55	33.13	11.26	56.02	68.20	-12.18	Peak	Vertical
1	11550	30.07	38.55	33.13	11.26	46.75	54.00	-7.25	AV	Vertical

802.11ax20 Mode_Channel 149 _5745 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11490	38.33	38.55	33.13	11.26	55.01	68.20	-13.19	Peak	Horizontal
1	11490	30.58	38.55	33.13	11.26	47.26	54.00	-6.74	AV	Horizontal
1	11490	41.07	38.55	33.13	11.26	57.75	68.20	-10.45	Peak	Vertical
1	11490	29.30	38.55	33.13	11.26	45.98	54.00	-8.02	AV	Vertical

802.11ax20 Mode_Channel 157 _ 5785 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11570	40.70	38.55	33.13	11.26	57.38	68.20	-10.82	Peak	Horizontal
1	11570	30.39	38.55	33.13	11.26	47.07	54.00	-6.93	AV	Horizontal
1	11570	40.48	38.55	33.13	11.26	57.16	68.20	-11.04	Peak	Vertical
1	11570	28.48	38.55	33.13	11.26	45.16	54.00	-8.84	AV	Vertical

802.11ax20 Mode_ Channel 165_ 5825 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11650	41.25	38.55	33.13	11.26	57.93	68.20	-10.27	Peak	Horizontal
1	11650	31.17	38.55	33.13	11.26	47.85	54.00	-6.15	AV	Horizontal
1	11650	40.45	38.55	33.13	11.26	57.13	68.20	-11.07	Peak	Vertical
1	11650	29.45	38.55	33.13	11.26	46.13	54.00	-7.87	AV	Vertical

802.11ax40 Mode_Channel 151 _5755 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11510	39.92	38.55	33.13	11.26	56.60	68.20	-11.60	Peak	Horizontal
1	11510	30.68	38.55	33.13	11.26	47.36	54.00	-6.64	AV	Horizontal
1	11510	40.87	38.55	33.13	11.26	57.55	68.20	-10.65	Peak	Vertical
1	11510	30.79	38.55	33.13	11.26	47.47	54.00	-6.53	AV	Vertical

802.11ax40 Mode_Channel 159 _ 5795MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11590	39.03	38.55	33.13	11.26	55.71	68.20	-12.49	Peak	Horizontal
1	11590	30.63	38.55	33.13	11.26	47.31	54.00	-6.69	AV	Horizontal
1	11590	41.87	38.55	33.13	11.26	58.55	68.20	-9.65	Peak	Vertical
1	11590	27.28	38.55	33.13	11.26	43.96	54.00	-10.04	AV	Vertical

802.11ax80 Mode_Channel 155 _5775 MHz

Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11550	38.37	38.55	33.13	11.26	55.05	68.20	-13.15	Peak	Horizontal
1	11550	31.41	38.55	33.13	11.26	48.09	54.00	-5.91	AV	Horizontal
1	11550	41.56	38.55	33.13	11.26	58.24	68.20	-9.96	Peak	Vertical
1	11550	29.06	38.55	33.13	11.26	45.74	54.00	-8.26	AV	Vertical

REMARKS:

1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor.
2. Margin = Result Level - Limit
3. The other emission levels were very low against the limit.
4. Detector AV is setting spectrum/receiver. RBW=1MHz/VBW=10Hz/Sweep time=Auto/Detector=Peak;

4.3. Duty Cycle

TEST CONFIGURATION

TEST PROCEDURE

According to KDB789033 D02 General UNII Test Procedures New Rules v02r01 B Duty Cycle (x), Transmission Duration (T):

a. A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on and off times of the transmitted signal
b. The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ EBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ RBW. Set detector = peak or average. The zerospan measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in section II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)

TEST RESULTS

Temperature	23.6℃	Humidity	55.7%
Test Engineer	Moon Tan	Configurations	IEEE 802.11a/n/ac

Antenna 2:
5150-5250MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.95	0.21

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.96	0.20

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.38	0.92

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.92	0.37

802.11ac40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.85	0.69

802.11ac80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
42	5210	0.35	4.62

802.11ax20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.90	0.46

802.11ax40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.83	0.79

802.11ax80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
42	5210	0.34	4.69

Antenna 2:

5725-5850MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.96	0.18

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.96	0.20

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.90	0.45

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.92	0.37

802.11ac40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.85	0.69

802.11ac80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
155	5775	0.33	4.85

802.11ax20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.90	0.46

802.11ax40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.83	0.79

802.11ax80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
155	5775	0.31	5.02

Antenna 3:
5150-5250MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.96	0.18

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.96	0.19

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.92	0.38

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.92	0.37

802.11ac40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.85	0.69

802.11ac80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
42	5210	0.33	4.85

802.11ax20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.90	0.46

802.11ax40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.83	0.79

802.11ax80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
42	5210	0.34	4.69

Antenna 3:

5725-5850MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.95	0.21

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.96	0.20

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.90	0.45

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.92	0.37

802.11ac40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.85	0.69

802.11ac80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
155	5775	0.93	0.29

802.11ax20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.90	0.46

802.11ax40 Test Mode

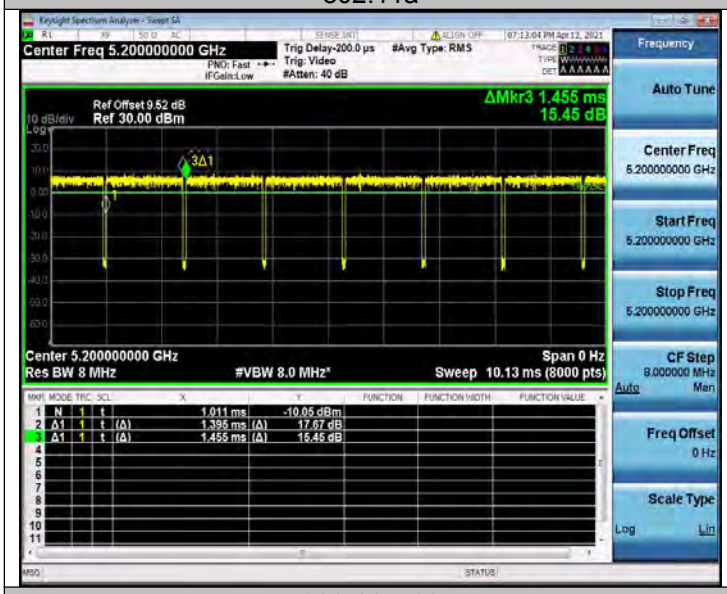
Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.83	0.79

802.11ax80 Test Mode

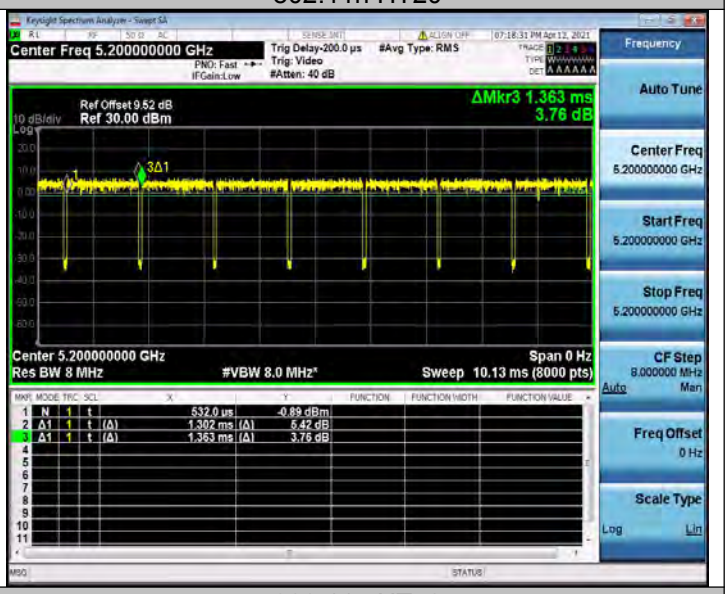
Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
155	5775	0.31	5.02

Antenna 2:
5150-5250MHz:

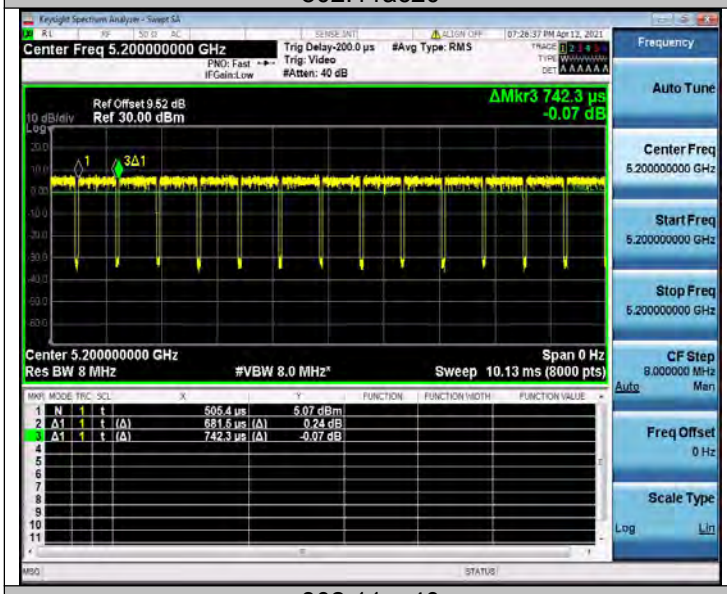
802.11a



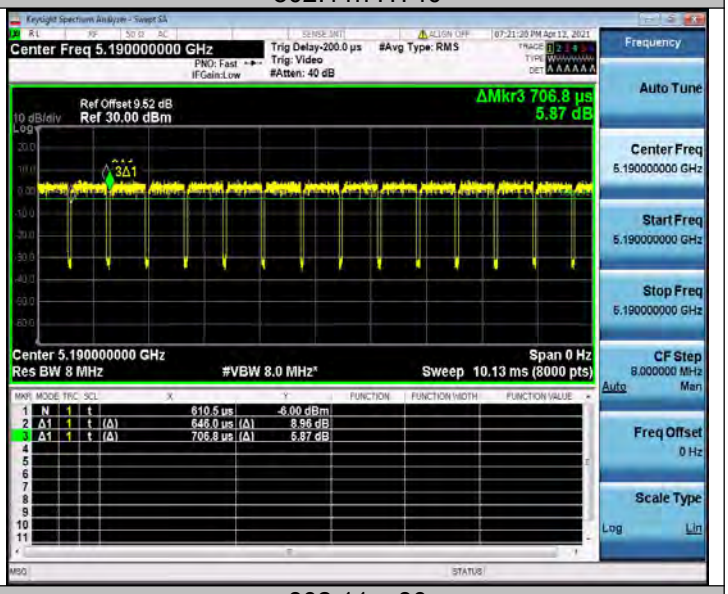
802.11n HT20



802.11ac20



802.11n HT40



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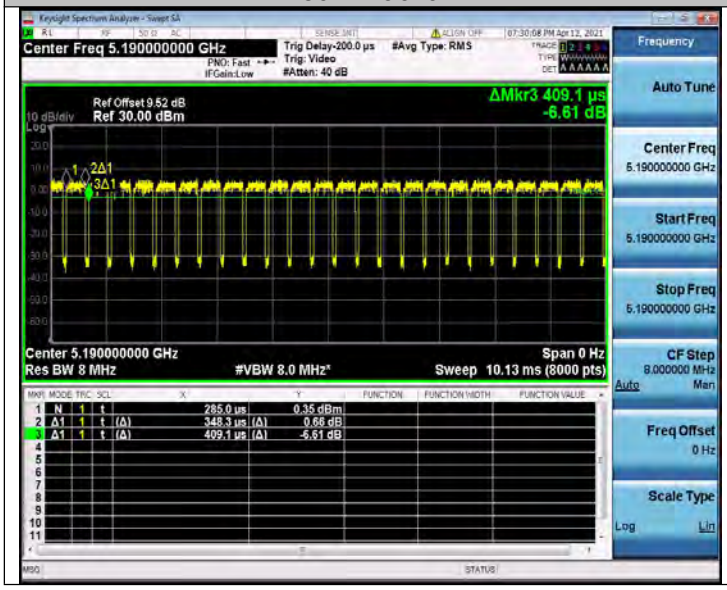

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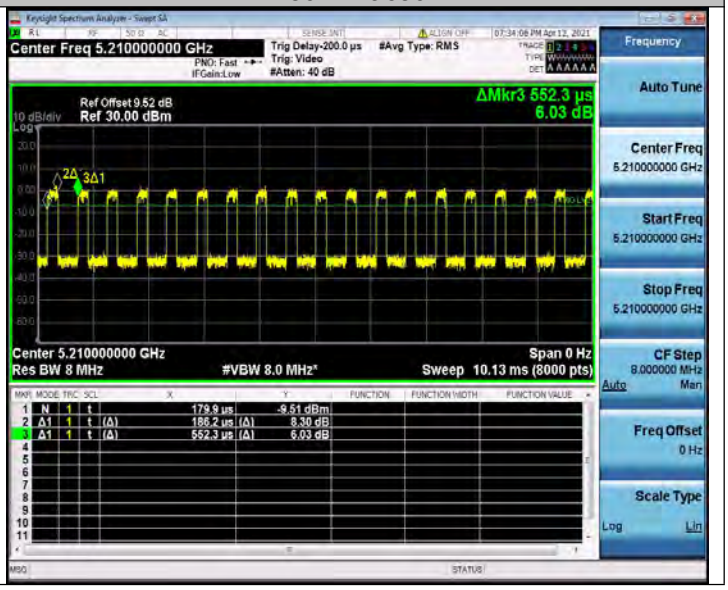
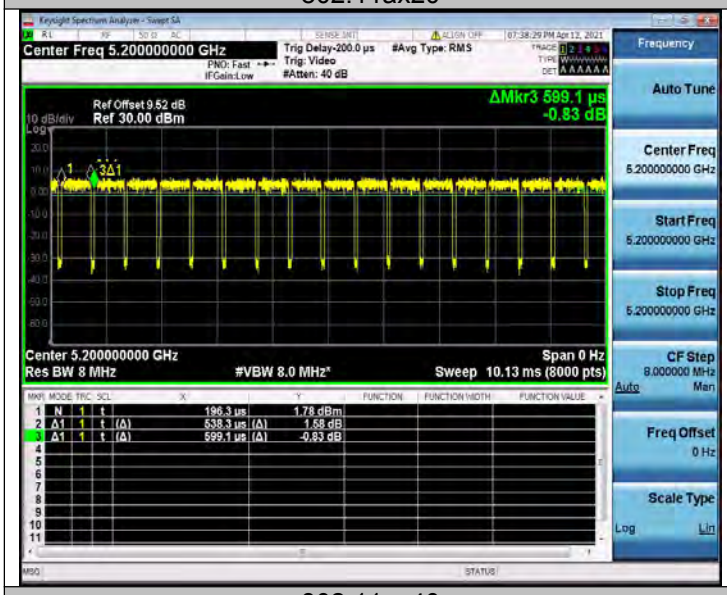


802.11ax20



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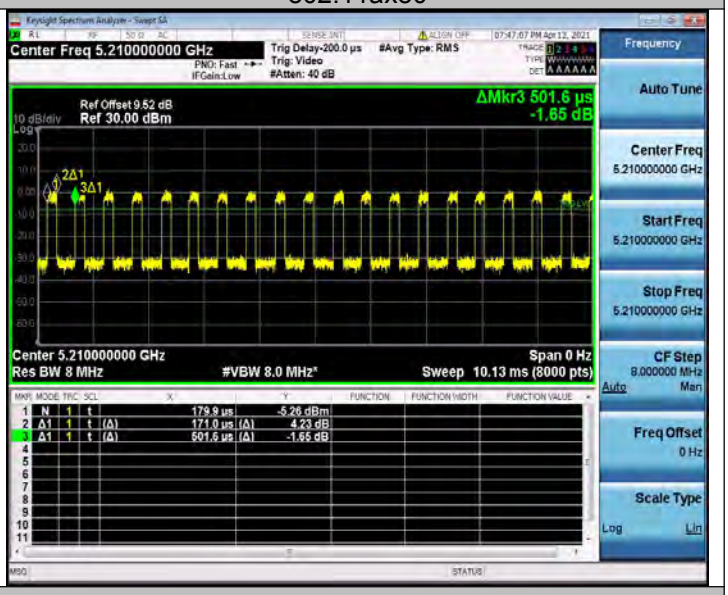
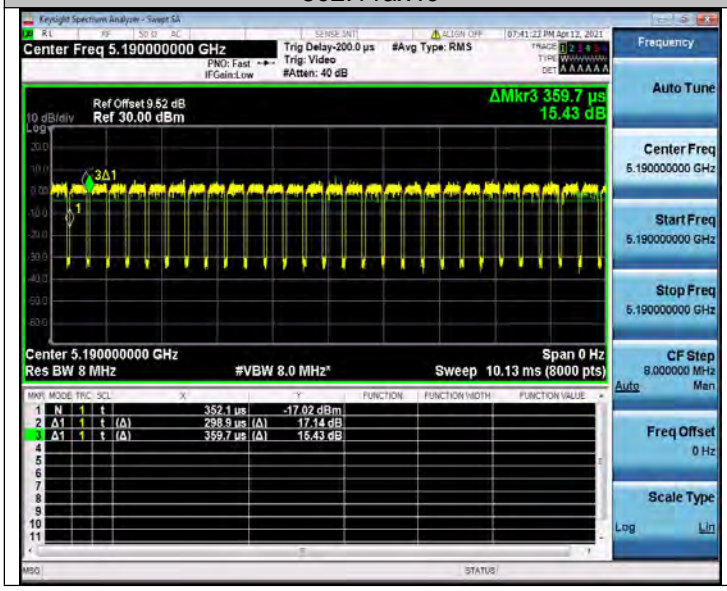
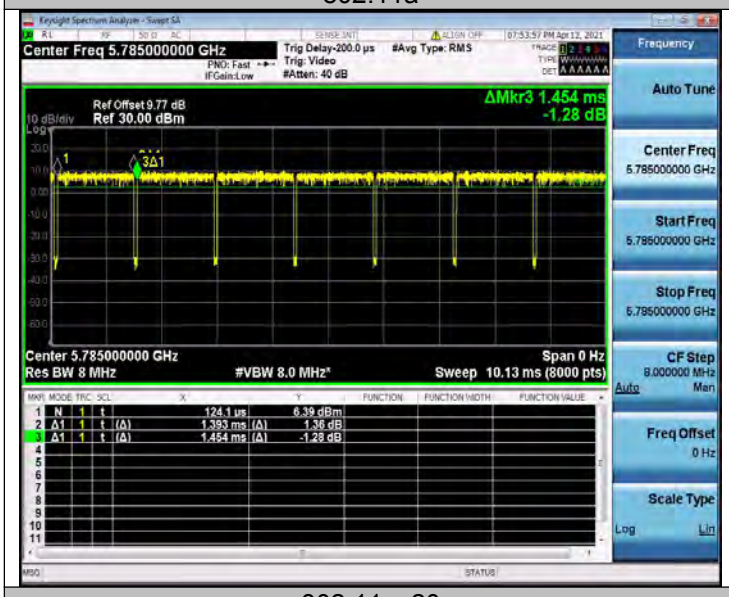


802.11ax40

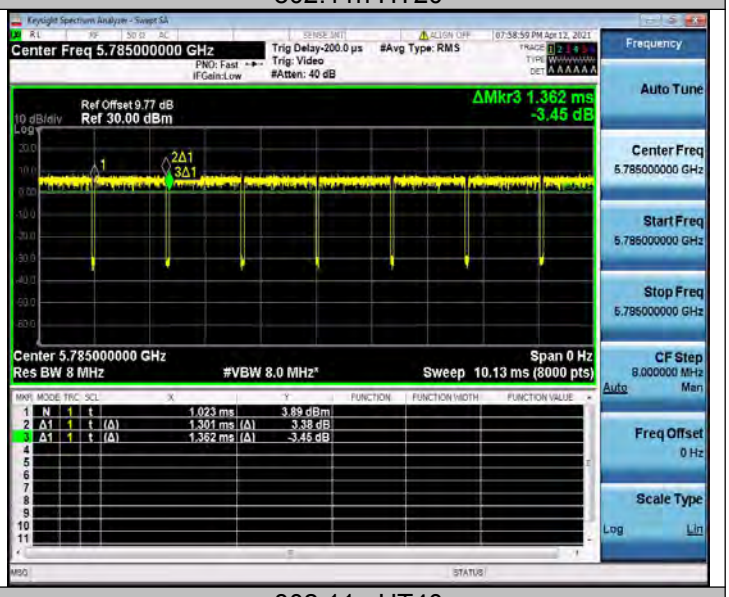


Antenna 2:
5725-5850MHz:

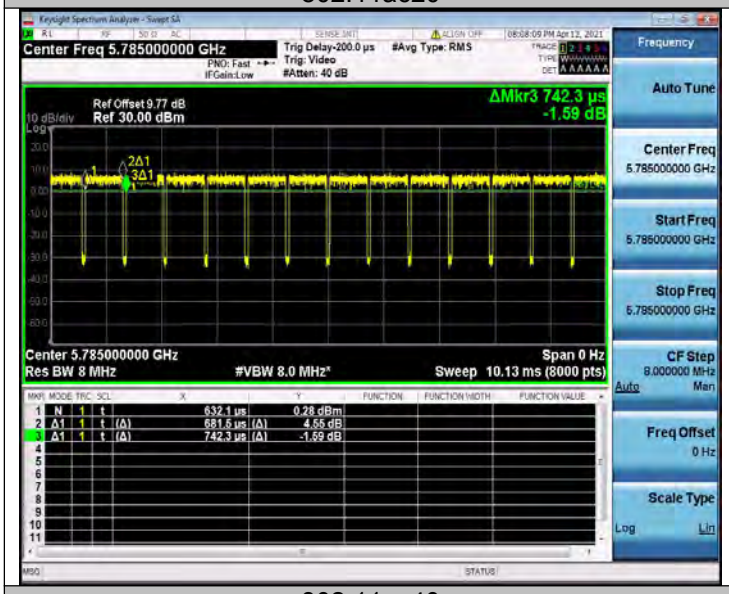
802.11a



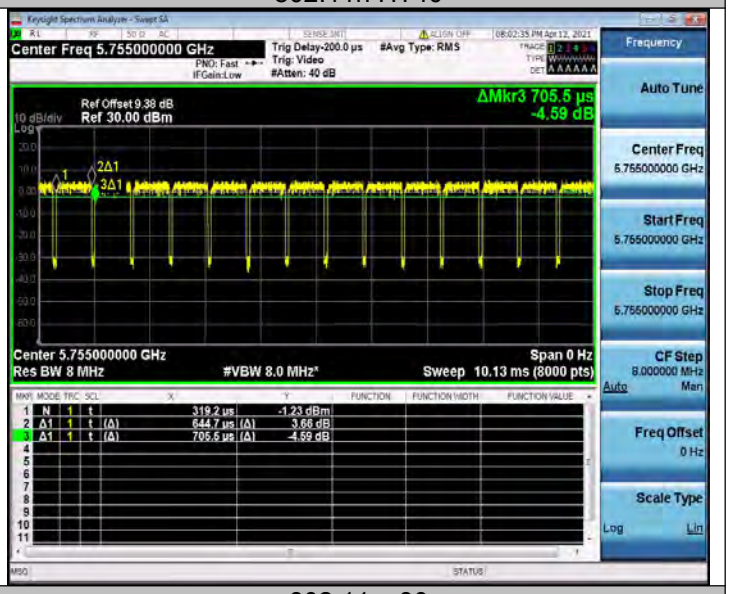
802.11n HT20



802.11ac20



802.11n HT40



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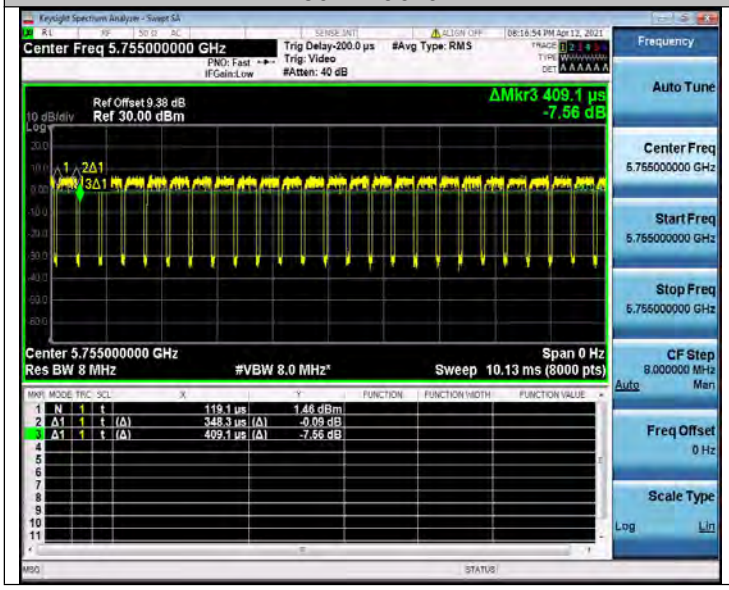

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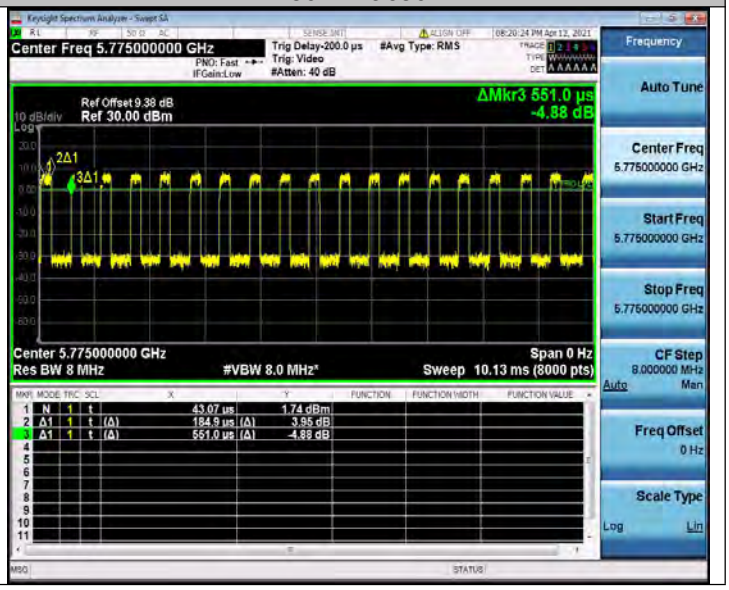

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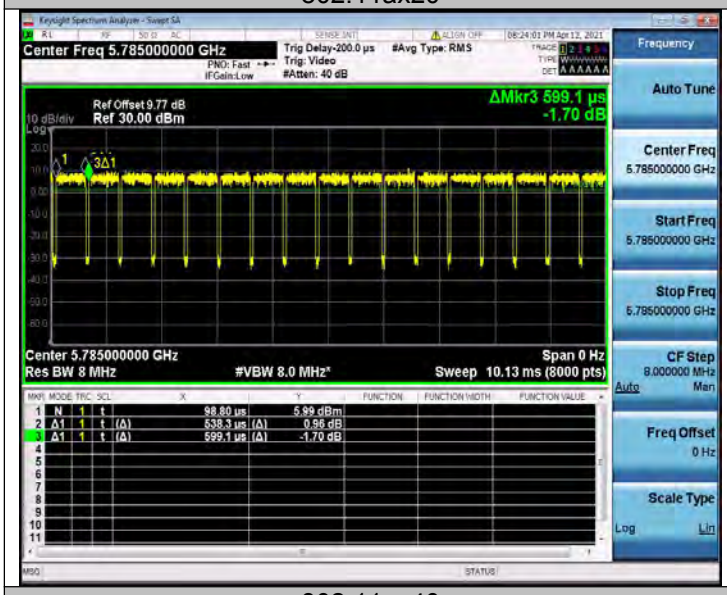

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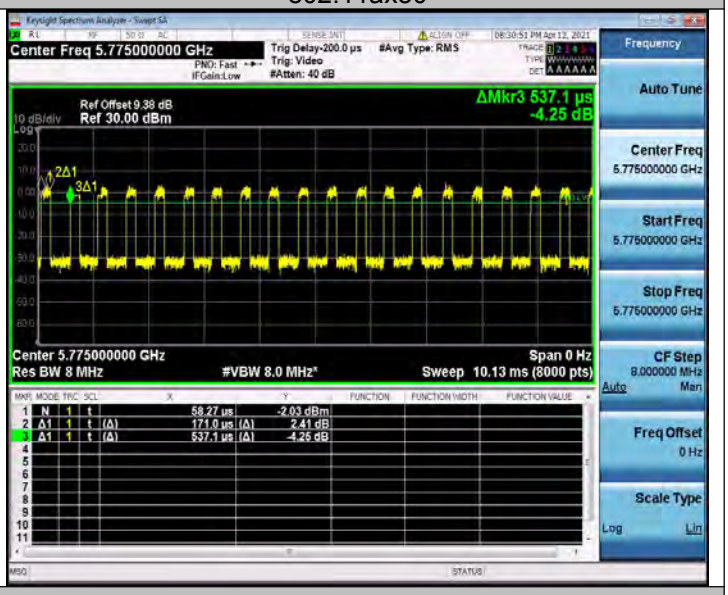

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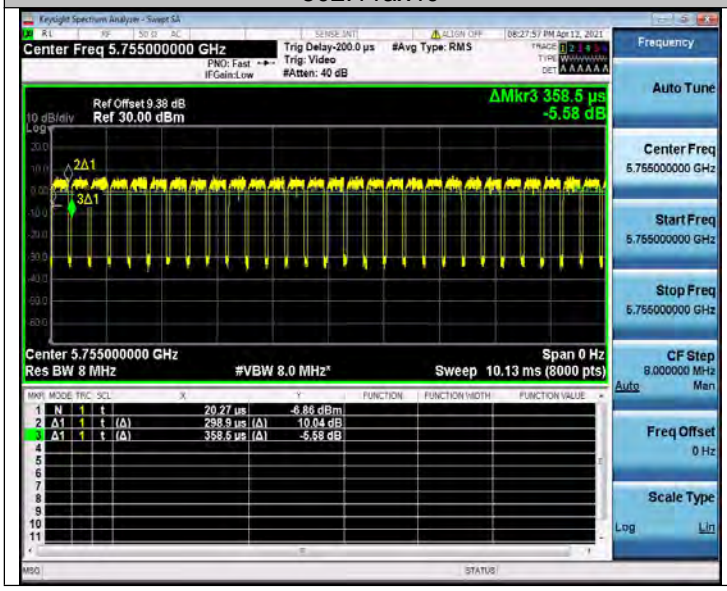
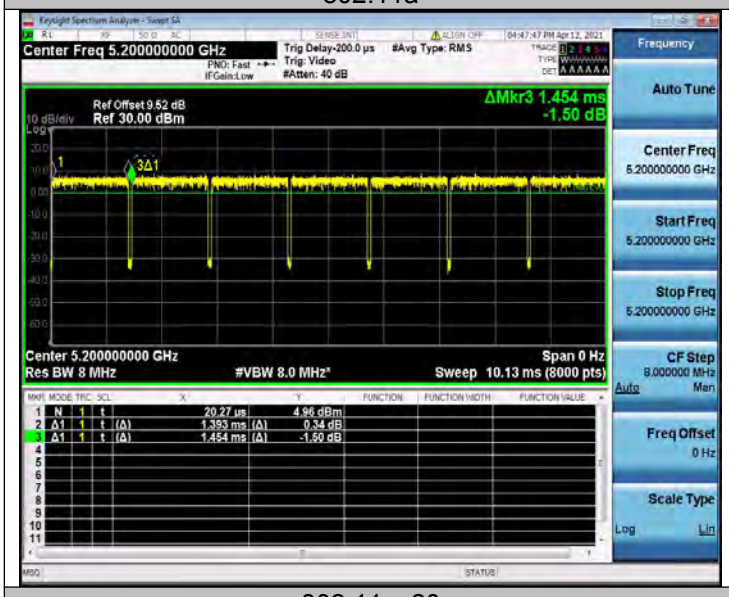
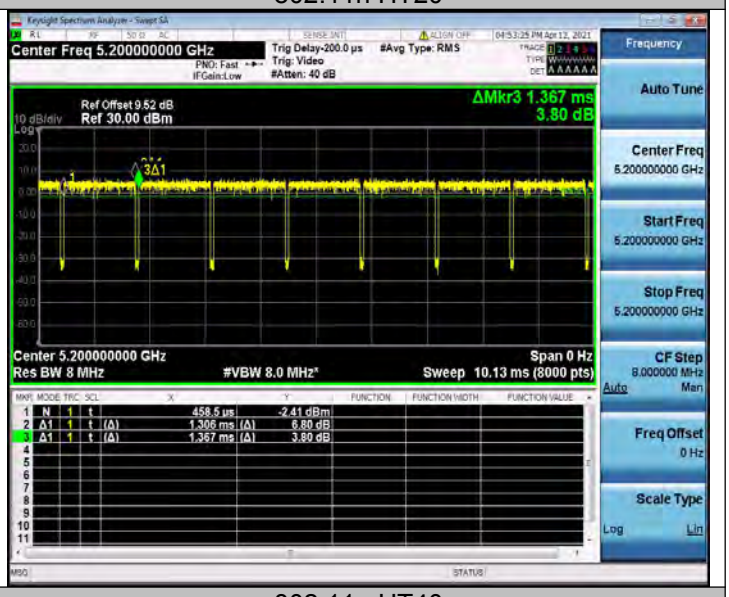


Antenna 3:
5150-5250MHz:

802.11a



802.11n HT20



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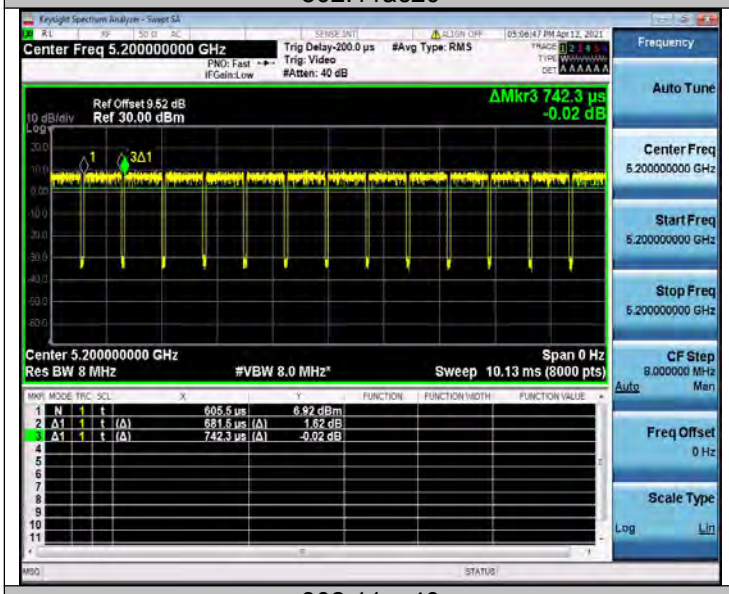

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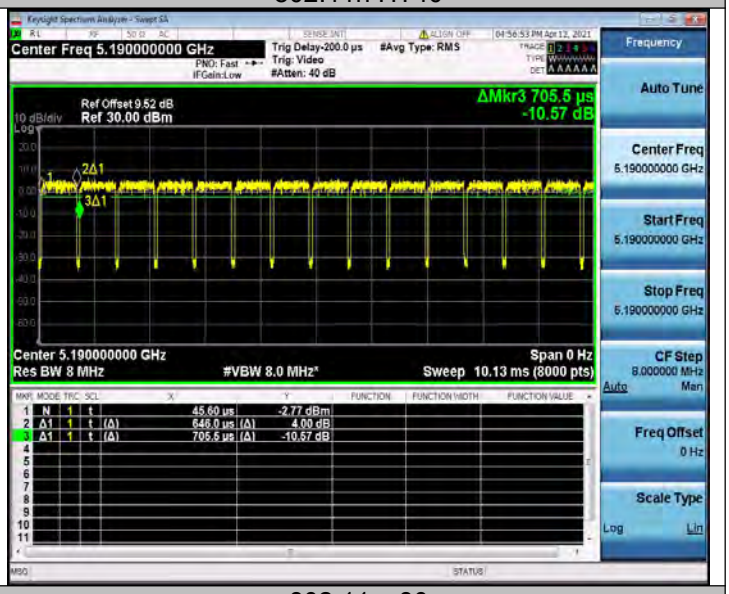

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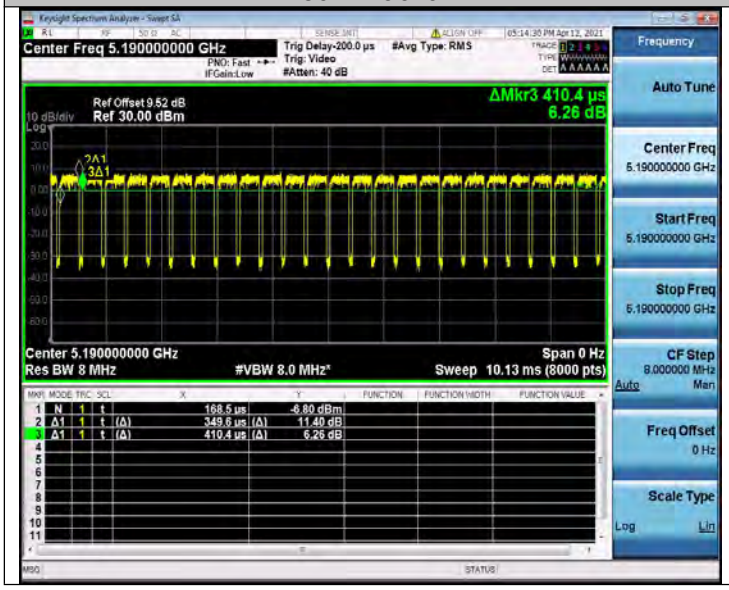
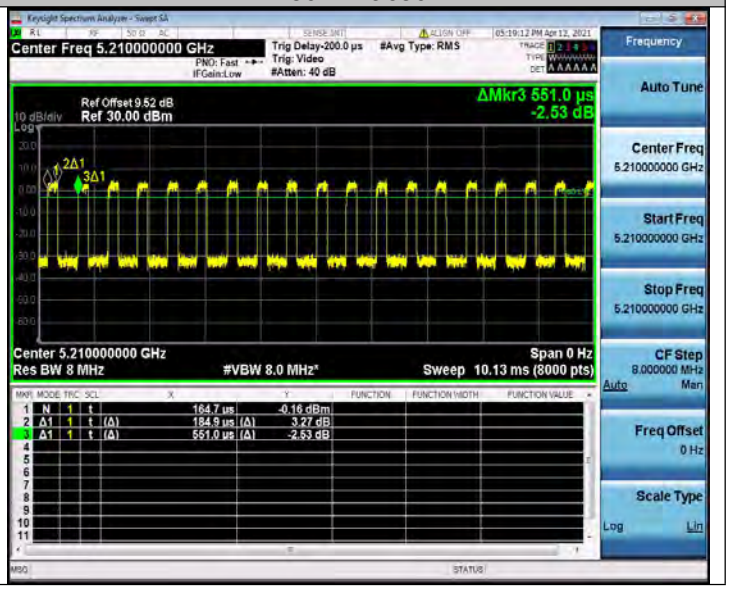


802.11ac80



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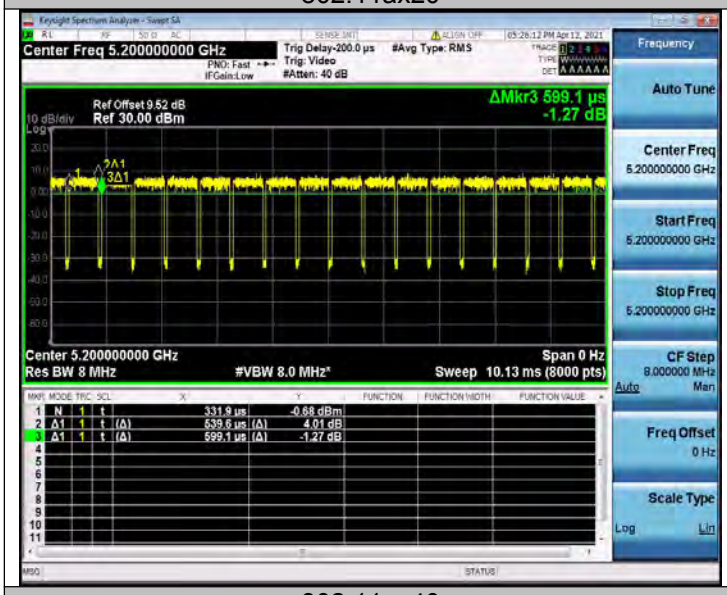

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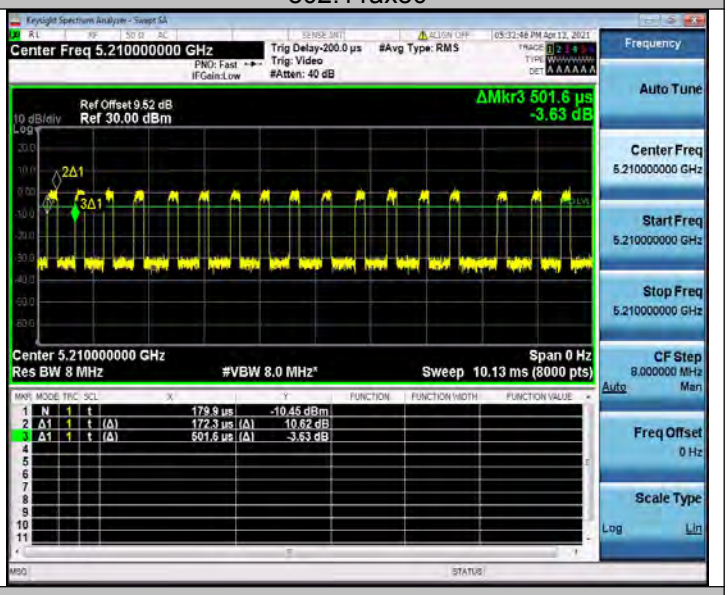

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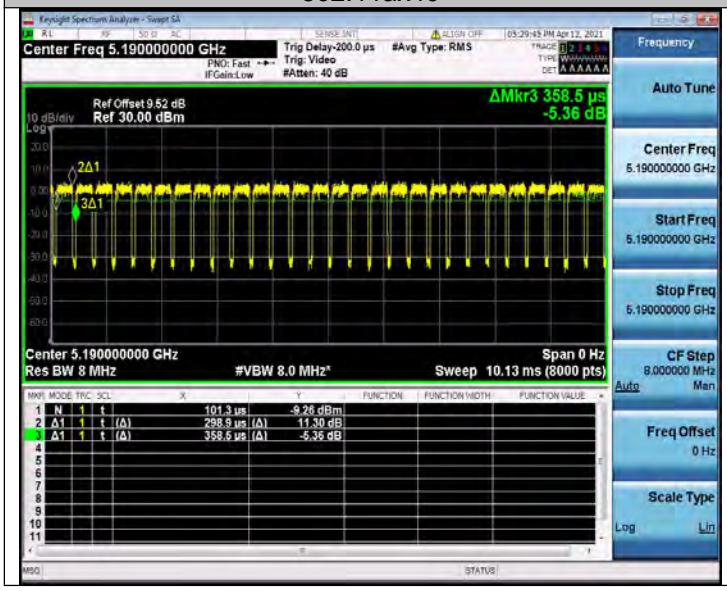
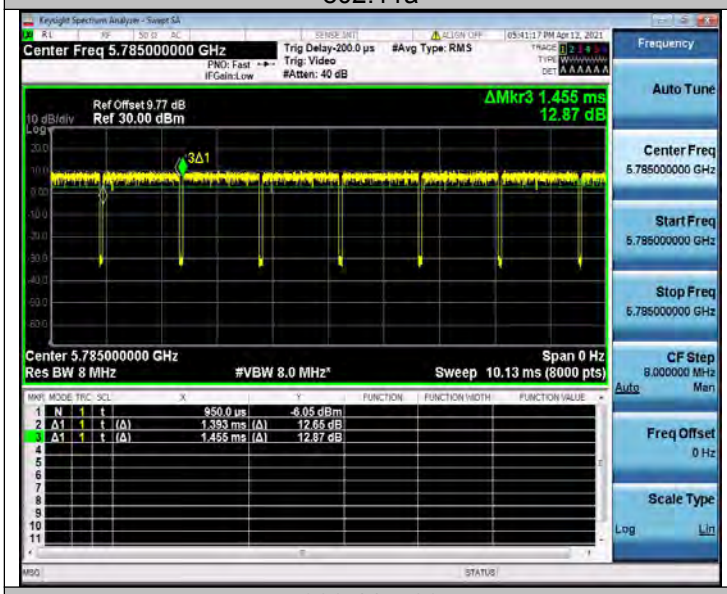
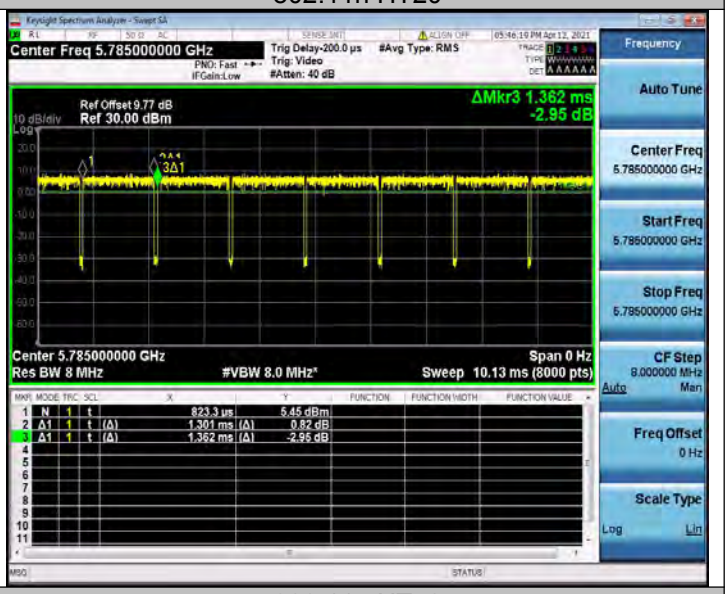


Antenna 3:
5725-5850MHz:

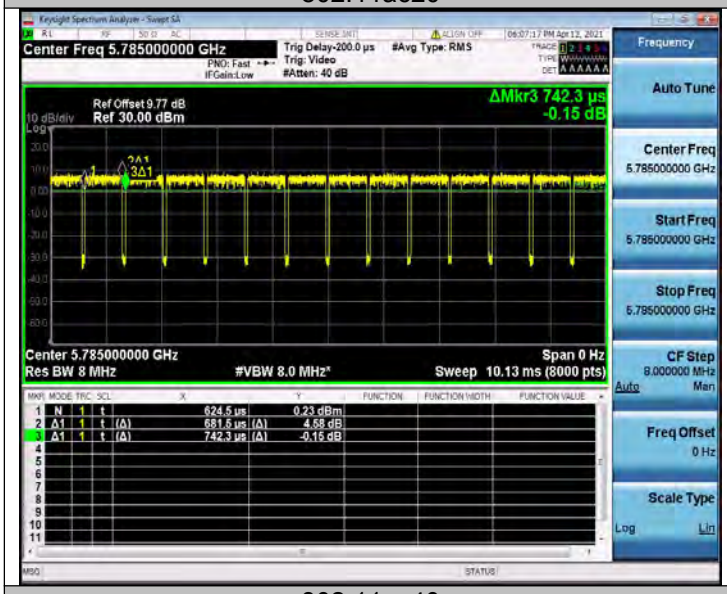
802.11a



802.11n HT20



802.11ac20



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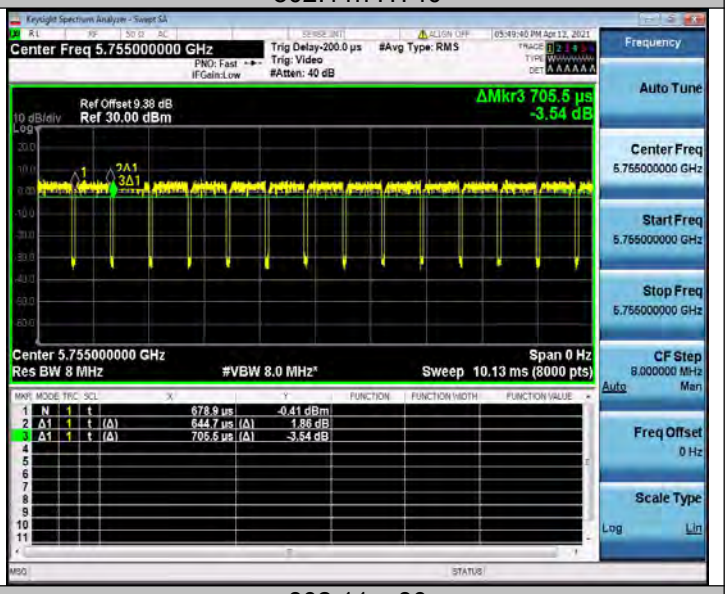

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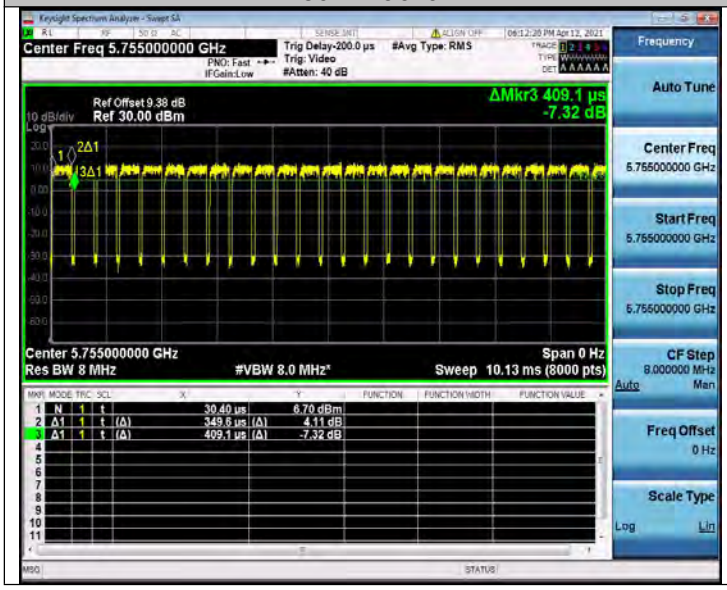

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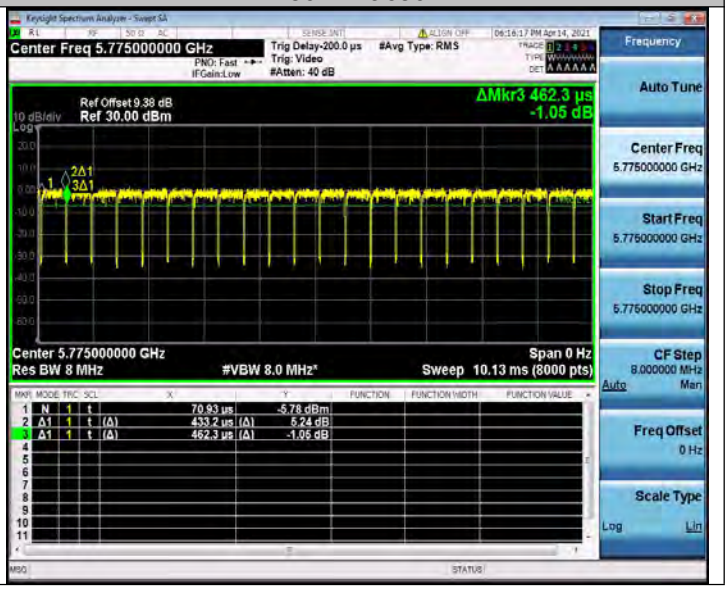
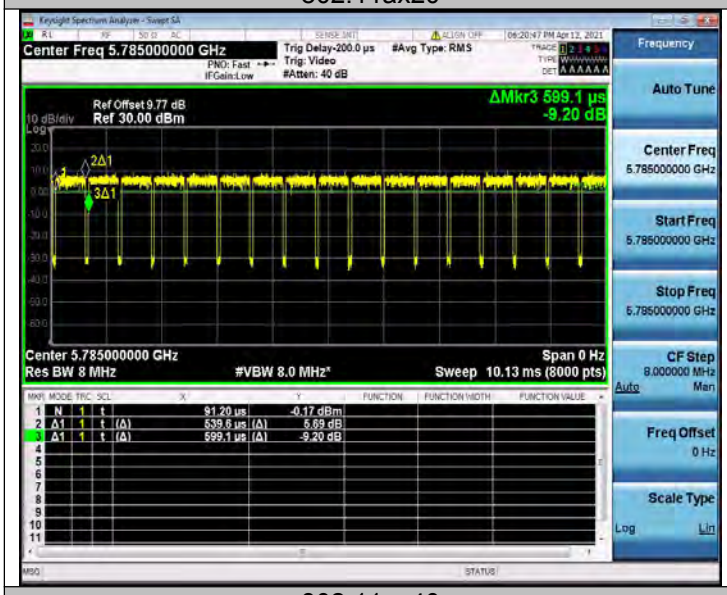
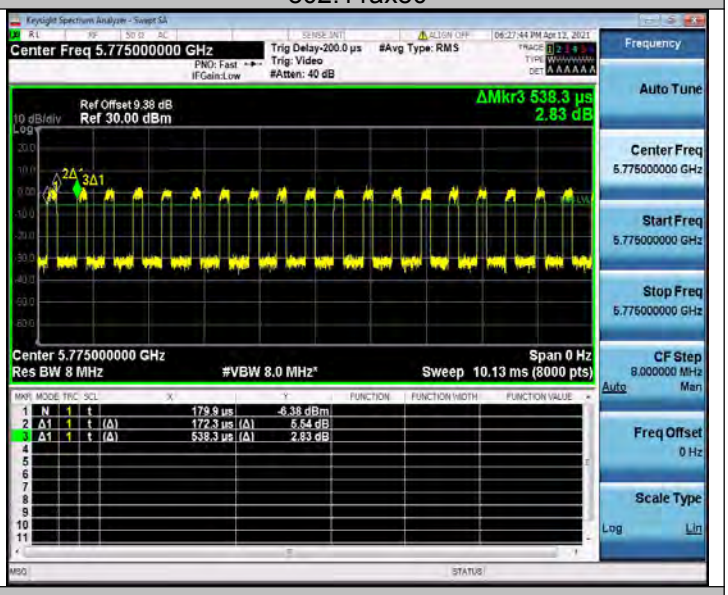


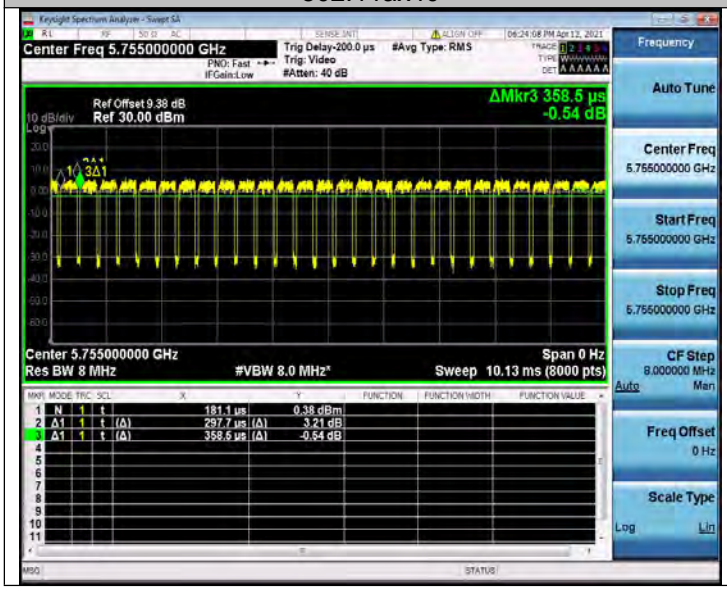
802.11ax20



802.11ax80



802.11ax40



4.4. Maximum Average Output Power

TEST CONFIGURATION

TEST PROCEDURE

According to KDB789033 D02 General UNII Test Procedures New Rules v02r01 Section E3 Measurement using a Power Meter (PM):

a. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied
   1. The EUT is configured to transmit continuously or to transmit with a constant duty cycle
   2. At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
   3. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
b. If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section II.B
c. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle (e.g., 10 log(1/0.25) if the duty cycle is 25 percent).

LIMIT

According to §15.407(a): The maximum output power should be not exceed follow:

Frequency Range (MHz)	Limit
5150-5250	Fixed:1 Watt (30dBm) Mobile and portable: 250mW (24dBm)
5250-5350	250mW (24dBm)
5470-5725	250mW (24dBm)
5725-5850	1 Watt (30dBm)
Note: The maximum e.i.r.p at anyelevation angle above 30 degrees as measured from the horizon must not exceed 125mW(21dBm)	

TEST RESULTS

Temperature	23.6℃	Humidity	55.7%
Test Engineer	Moon Tan	Configurations	IEEE 802.11a/n/ac

Antenna 2:
5150-5250MHz:

Channel	Frequency (MHz)	Output Power AV (dBm)	Duty factor (dB)	Output Power AV + Duty factor (dBm)	Limits (dBm)	Verdict
802.11a						
36	5180	16.10	0.21	16.31	24.00	PASS
40	5200	16.09	0.21	16.30	24.00	PASS
48	5240	16.43	0.21	16.64	24.00	PASS
802.11n20						
36	5180	15.80	0.20	15.99	24.00	PASS
40	5200	16.12	0.20	16.31	24.00	PASS
48	5240	15.65	0.20	15.84	24.00	PASS
802.11ac20						
36	5180	15.76	0.37	16.12	24.00	PASS
40	5200	16.56	0.37	16.93	24.00	PASS
48	5240	16.30	0.37	16.67	24.00	PASS
802.11n40						
38	5190	16.32	0.38	16.70	24.00	PASS
46	5230	16.21	0.38	16.59	24.00	PASS
802.11ac40						
38	5190	16.28	0.69	16.97	24.00	PASS
46	5230	15.66	0.69	16.35	24.00	PASS
802.11ac80						
42	5210	13.65	4.62	18.26	24.00	PASS
802.11ax20						
36	5180	16.44	0.46	16.89	24.00	PASS
40	5200	16.42	0.46	16.88	24.00	PASS
48	5240	16.24	0.46	16.70	24.00	PASS
802.11ax40						
38	5190	15.76	0.79	16.55	24.00	PASS
46	5230	15.82	0.79	16.61	24.00	PASS
802.11ax80						
42	5210	13.77	4.69	18.46	24.00	PASS

Antenna 2:
5725-5850MHz:

Channel	Frequency (MHz)	Output Power AV (dBm)	Duty factor (dB)	Output Power AV + Duty factor (dBm)	Limits (dBm)	Verdict
802.11a						
149	5745	15.94	0.18	16.12	30.00	PASS
157	5785	16.29	0.18	16.47	30.00	PASS
165	5825	16.20	0.18	16.38	30.00	PASS
802.11n20						
129	5745	15.76	0.20	15.96	30.00	PASS
157	5785	16.24	0.20	16.43	30.00	PASS
165	5825	16.53	0.20	16.72	30.00	PASS
802.11ac20						
149	5745	15.77	0.37	16.13	30.00	PASS
157	5785	16.26	0.37	16.63	30.00	PASS
165	5825	16.23	0.37	16.60	30.00	PASS
802.11n40						
151	5755	16.54	0.45	16.99	30.00	PASS
159	5795	16.26	0.45	16.71	30.00	PASS
802.11ac40						
151	5755	16.17	0.69	16.86	30.00	PASS
159	5795	16.31	0.69	17.00	30.00	PASS
802.11ac80						
155	5775	13.72	4.85	18.57	30.00	PASS

802.11ax20						
149	5745	15.81	0.46	16.27	30.00	PASS
157	5785	15.72	0.46	16.17	30.00	PASS
165	5825	15.81	0.46	16.27	30.00	PASS
802.11ax40						
151	5755	15.64	0.79	16.44	30.00	PASS
159	5795	16.21	0.79	17.00	30.00	PASS
802.11ax80						
155	5775	13.96	5.02	18.98	30.00	PASS

Antenna 3:
5150-5250MHz:

Channel	Frequency (MHz)	Output Power AV (dBm)	Duty factor (dB)	Output Power AV + Duty factor (dBm)	Limits (dBm)	Verdict
802.11a						
36	5180	16.20	0.18	16.38	24.00	PASS
40	5200	16.09	0.18	16.27	24.00	PASS
48	5240	16.11	0.18	16.30	24.00	PASS
802.11n20						
36	5180	16.28	0.19	16.47	24.00	PASS
40	5200	16.48	0.19	16.67	24.00	PASS
48	5240	15.93	0.19	16.12	24.00	PASS
802.11ac20						
36	5180	16.19	0.37	16.55	24.00	PASS
40	5200	16.13	0.37	16.50	24.00	PASS
48	5240	16.45	0.37	16.82	24.00	PASS
802.11n40						
38	5190	16.25	0.38	16.63	24.00	PASS
46	5230	16.17	0.38	16.55	24.00	PASS
802.11ac40						
38	5190	16.51	0.69	17.20	24.00	PASS
46	5230	15.88	0.69	16.56	24.00	PASS
802.11ac80						
42	5210	14.52	4.85	19.37	24.00	PASS
802.11ax20						
36	5180	15.66	0.46	16.12	24.00	PASS
40	5200	16.14	0.46	16.59	24.00	PASS
48	5240	16.16	0.46	16.61	24.00	PASS
802.11ax40						
38	5190	16.00	0.79	16.79	24.00	PASS
46	5230	15.61	0.79	16.40	24.00	PASS
802.11ax80						
42	5210	13.94	4.69	18.62	24.00	PASS

Antenna 3:
5725-5850MHz:

Channel	Frequency (MHz)	Output Power AV (dBm)	Duty factor (dB)	Output Power AV + Duty factor (dBm)	Limits (dBm)	Verdict
802.11a						
149	5745	15.70	0.21	15.91	30.00	PASS
157	5785	16.37	0.21	16.59	30.00	PASS
165	5825	16.35	0.21	16.56	30.00	PASS
802.11n20						
129	5745	16.56	0.20	16.75	30.00	PASS
157	5785	16.19	0.20	16.39	30.00	PASS
165	5825	15.90	0.20	16.10	30.00	PASS
802.11ac20						
149	5745	15.97	0.37	16.34	30.00	PASS
157	5785	15.86	0.37	16.22	30.00	PASS
165	5825	15.78	0.37	16.15	30.00	PASS
802.11n40						
151	5755	16.22	0.45	16.67	30.00	PASS
159	5795	15.65	0.45	16.10	30.00	PASS
802.11ac40						
151	5755	15.81	0.69	16.50	30.00	PASS
159	5795	15.76	0.69	16.45	30.00	PASS
802.11ac80						
155	5775	14.18	0.29	14.47	30.00	PASS

802.11ax20						
149	5745	16.51	0.46	16.97	30.00	PASS
157	5785	16.54	0.46	17.00	30.00	PASS
165	5825	16.31	0.46	16.77	30.00	PASS
802.11ax40						
151	5755	16.19	0.79	16.98	30.00	PASS
159	5795	15.77	0.79	16.56	30.00	PASS
802.11ax80						
155	5775	13.99	5.02	19.01	30.00	PASS

MIMO*2
5150-5250MHz:

Type	Channel	Power (dBm) ANT2	Power (dBm) ANT3	Total (dBm)	Limit (dBm)	Result
802.11n HT20	36	15.99	16.38	19.20	21.99	Pass
	40	16.31	16.27	19.30		
	48	15.84	16.30	19.09		
802.11ac20	36	16.12	16.47	19.31	21.99	Pass
	40	16.93	16.55	19.75		
	48	16.67	16.82	19.75		
802.11n HT40	38	16.70	16.63	19.68	21.99	Pass
	46	16.59	16.55	19.58		
802.11ac40	38	16.97	17.20	20.09	21.99	Pass
	46	16.35	16.56	19.47		
802.11ac80	42	18.26	19.37	21.86	21.99	Pass
802.11ax20	36	16.89	16.12	19.53	21.99	Pass
	40	16.88	16.59	19.75		
	48	16.70	16.61	19.67		
802.11ax40	38	16.55	16.79	19.69	21.99	Pass
	46	16.61	16.40	19.52		
802.11ax80	42	18.46	18.62	21.55	21.99	Pass

5725-5850MHz:

Type	Channel	Power (dBm) ANT2	Power (dBm) ANT3	Total (dBm)	Limit (dBm)	Result
802.11n HT20	149	15.96	15.91	18.94	27.99	Pass
	157	16.43	16.59	19.52		
	165	16.72	16.56	19.65		
802.11ac20	149	16.13	16.75	19.46	27.99	Pass
	157	16.63	16.34	19.50		
	165	16.60	16.15	19.39		
802.11n HT40	151	16.99	16.67	19.84	27.99	Pass
	159	16.71	16.10	19.42		
802.11ac40	151	16.86	16.50	19.69	27.99	Pass
	159	17.00	16.45	19.74		
802.11ac80	155	18.57	14.47	20.00	27.99	Pass
802.11ax20	149	16.27	16.97	19.64	27.99	Pass
	157	16.17	17.00	19.62		
	165	16.27	16.77	19.54		
802.11ax40	151	16.44	16.98	19.73	27.99	Pass
	159	17.00	16.56	19.80		
802.11ax80	155	18.98	19.01	22.00	27.99	Pass

Remark:
The Directional Gain= Gain of individual transmit antennas (dBi) + Array gain;
Array gain = 10 log (Nant), where Nant is the number of transmit antennas
Directional Gain=8.01 dBi

4.5. Power Spectral Density

TEST CONFIGURATION

TEST PROCEDURE

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 F: The rules requires "maximum power spectral density" measurements where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission

a. Create an average power spectrum for the EUT operating mode being tested by following the instructions in section II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, "Compute power…". (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)
b. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
c. Make the following adjustments to the peak value of the spectrum, if applicable:
   1. If Method SA-2 or SA-2 Alternative was used, add 10 log(1/x), where x is the duty cycle, to the peak of the spectrum.
   2.) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.
d. The result is the Maximum PSD over 1 MHz reference bandwidth.
e. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, "provided that the measured power is integrated over the full reference bandwidth" to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:
   1. Set RBW ≥ 1/T, where T is defined in section II.B.I.a).
   2. Set VBW ≥ 3 RBW.
   3. If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
   4. If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
   5. Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

   Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since RBW=100 KHz is available on nearly all spectrum analyzers.
f. Adjust the measurement in dBm by adding 10 log(1/x) where x is the duty cycle (e.g., 10 log(1/0.25) if the duty cycle is 25 percent).

LIMIT

According to §15.407(a): The maximum output power should be not exceed follow:

Frequency Range (MHz)	Limit
5150-5250	Other then Mobile and portable:17dBm/MHz Mobile and portable:11dBm/MHz
5250-5350	11dBm/MHz
5470-5725	11dBm/MHz
5725-5850	30dBm/500kHz

TEST RESULTS

Temperature	23.6℃	Humidity	55.7%
Test Engineer	Moon Tan	Configurations	IEEE 802.11a/n/ac

Antenna 2:
5150-5250MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	2.93	0.21	0	3.14	11	PASS
40	5200	3.24	0.21	0	3.45	11	PASS
48	5240	3.3	0.21	0	3.51	11	PASS

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	1.26	0.20	0	1.46	11	PASS
40	5200	1.64	0.20	0	1.84	11	PASS
48	5240	2.16	0.20	0	2.36	11	PASS

802.11n40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
38	5190	0.37	0.38	0	0.75	11	PASS
46	5230	0.49	0.38	0	0.87	11	PASS

802.11ac20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	3	0.37	0	3.37	11	PASS
40	5200	3.06	0.37	0	3.43	11	PASS
48	5240	3.46	0.37	0	3.83	11	PASS

802.11ac40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
38	5190	0.67	0.69	0	1.36	11	PASS
46	5230	0.67	0.69	0	1.36	11	PASS

802.11ac80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
42	5210	-1.11	4.62	0	3.51	11	PASS

802.11ax20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	5.42	0.46	0	5.88	11	PASS
40	5200	3.81	0.46	0	4.27	11	PASS
48	5240	4	0.46	0	4.46	11	PASS

802.11ax40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
38	5190	0.88	0.79	0	1.67	11	PASS
46	5230	0.89	0.79	0	1.68	11	PASS

802.11ax80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
42	5210	0.41	4.69	0	5.10	11	PASS

Antenna 2:

5725-5850MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	3.08	0.18	2.2	5.46	30	PASS
157	5785	3.48	0.18	2.2	5.86	30	PASS
165	5825	3.96	0.18	2.2	6.34	30	PASS

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	1.62	0.20	2.2	4.02	30	PASS
157	5785	1.66	0.20	2.2	4.06	30	PASS
165	5825	2.23	0.20	2.2	4.63	30	PASS

802.11n40Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5755	-1.49	0.45	2.2	1.16	30	PASS
157	5795	-0.77	0.45	2.2	1.88	30	PASS

802.11ac20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	1.54	0.37	2.2	4.11	30	PASS
157	5785	2.02	0.37	2.2	4.59	30	PASS
165	5825	3.77	0.37	2.2	6.34	30	PASS

802.11ac40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5755	0.26	0.69	2.2	3.15	30	PASS
157	5795	-0.21	0.69	2.2	2.68	30	PASS

802.11ac80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
155	5775	5.74	4.85	2.2	12.79	30	PASS

802.11ax20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	4.72	0.46	2.2	7.38	30	PASS
157	5785	3.91	0.46	2.2	6.57	30	PASS
165	5825	4.52	0.46	2.2	7.18	30	PASS

802.11ax40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5755	1.7	0.79	2.2	4.69	30	PASS
157	5795	1.58	0.79	2.2	4.57	30	PASS

802.11ax80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
155	5775	0.79	5.02	2.2	8.01	30	PASS

Antenna 3:
5150-5250MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	3.21	0.18	0	3.39	11	PASS
40	5200	3.11	0.18	0	3.29	11	PASS
48	5240	2.79	0.18	0	2.97	11	PASS

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	0.87	0.19	0	1.06	11	PASS
40	5200	1.87	0.19	0	2.06	11	PASS
48	5240	2.75	0.19	0	2.94	11	PASS

802.11n40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
38	5190	0.67	0.38	0	1.05	11	PASS
46	5230	2.18	0.38	0	2.56	11	PASS

802.11ac20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	4.58	0.37	0	4.95	11	PASS
40	5200	5.39	0.37	0	5.76	11	PASS
48	5240	4.89	0.37	0	5.26	11	PASS

802.11ac40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
38	5190	3.44	0.69	0	4.13	11	PASS
46	5230	3.63	0.69	0	4.32	11	PASS

802.11ac80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
42	5210	-1	4.85	0	3.85	11	PASS

802.11ax20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
36	5180	5.14	0.46	0	5.60	11	PASS
40	5200	6.54	0.46	0	7.00	11	PASS
48	5240	4.15	0.46	0	4.61	11	PASS

802.11ax40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
38	5190	2.04	0.79	0	2.83	11	PASS
46	5230	1.12	0.79	0	1.91	11	PASS

802.11ax80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/1MHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/1MHz)	Limits (dBm/1MHz)	Verdict
42	5210	-0.19	4.69	0	4.50	11	PASS

Antenna 3:

5725-5850MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	2.54	0.21	2.2	4.95	30	PASS
157	5785	3.18	0.21	2.2	5.59	30	PASS
165	5825	3.78	0.21	2.2	6.19	30	PASS

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	0.9	0.20	2.2	3.30	30	PASS
157	5785	1.33	0.20	2.2	3.73	30	PASS
165	5825	2.11	0.20	2.2	4.51	30	PASS

802.11n40Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5755	-1.05	0.45	2.2	1.60	30	PASS
157	5795	-0.9	0.45	2.2	1.75	30	PASS

802.11ac20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	2.01	0.37	2.2	4.58	30	PASS
157	5785	1.94	0.37	2.2	4.51	30	PASS
165	5825	2.53	0.37	2.2	5.10	30	PASS

802.11ac40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5755	7.16	0.69	2.2	10.05	30	PASS
157	5795	-0.4	0.69	2.2	2.49	30	PASS

802.11ac80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
155	5775	-4.3	0.29	2.2	-1.81	30	PASS

802.11ax20 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5745	1.18	0.46	2.2	3.84	30	PASS
157	5785	2.83	0.46	2.2	5.49	30	PASS
165	5825	3.72	0.46	2.2	6.38	30	PASS

802.11ax40 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
149	5755	0.25	0.79	2.2	3.24	30	PASS
157	5795	2.39	0.79	2.2	5.38	30	PASS

802.11ax80 Test Mode

Channel	Frequency (MHz)	Report PSD (dBm/300KHz)	Duty factor (dB)	RBW factor (dB)	Report PSD+ Duty factor+ RBW factor (dBm/500kHz)	Limits (dBm/500kHz)	Verdict
155	5775	0.54	5.02	2.2	7.76	30	PASS

MIMO*2

5150-5250MHz:

Type	Channel	PSD (dBm/1MHz) ANT2	PSD (dBm/1MHz) ANT3	Total (dBm/1MHz)	Limit (dBm/1MHz)	Result
802.11 n HT20	36	1.46	1.06	4.27	8.99	Pass
	40	1.84	2.06	4.96		
	48	2.36	2.94	5.67		
802.11 n HT40	38	0.75	1.05	3.92	8.99	Pass
	46	0.87	2.56	4.81		
802.11 ac20	36	3.37	4.95	7.24	8.99	Pass
	40	3.43	5.76	7.76		
	48	3.83	5.26	7.61		
802.11 ac40	38	1.36	4.13	5.97	8.99	Pass
	46	1.36	4.32	6.09		
802.11 ac80	42	3.51	3.85	6.69	8.99	Pass
802.11 ax20	36	5.88	5.60	8.75	8.99	Pass
	40	4.27	7.00	8.85		
	48	4.46	4.61	7.54		
802.11 ax40	38	1.67	2.83	5.30	8.99	Pass
	46	1.68	1.91	4.81		
802.11 ax80	42	5.10	4.50	7.82	8.99	Pass

MIMO*2

5725-5850MHz:

Type	Channel	PSD (dBm/500 KHz) ANT2	PSD (dBm/500 KHz) ANT3	Total (dBm/500KHz)	Limit (dBm/500KHz)	Result
802.11 n HT20	149	4.02	3.30	6.68	27.99	Pass
	157	4.06	5.59	7.90		
	165	4.63	6.19	8.49		
802.11 n HT40	151	1.16	1.60	4.40	27.99	Pass
	159	1.88	1.75	4.83		
802.11 ac20	149	4.11	4.58	7.36	27.99	Pass
	157	4.59	4.51	7.56		
	165	6.34	5.10	8.77		
802.11 ac40	151	3.15	10.05	10.85	27.99	Pass
	159	2.68	2.49	5.59		
802.11 ac80	155	12.79	-1.81	12.94	27.99	Pass
802.11 ax20	149	7.38	3.84	8.97	27.99	Pass
	157	6.57	5.49	9.07		
	165	7.18	6.38	9.81		
802.11 ax40	151	4.69	3.24	7.04	27.99	Pass
	159	4.57	5.38	8.01		
802.11 ax80	155	8.01	7.76	10.90	27.99	Pass

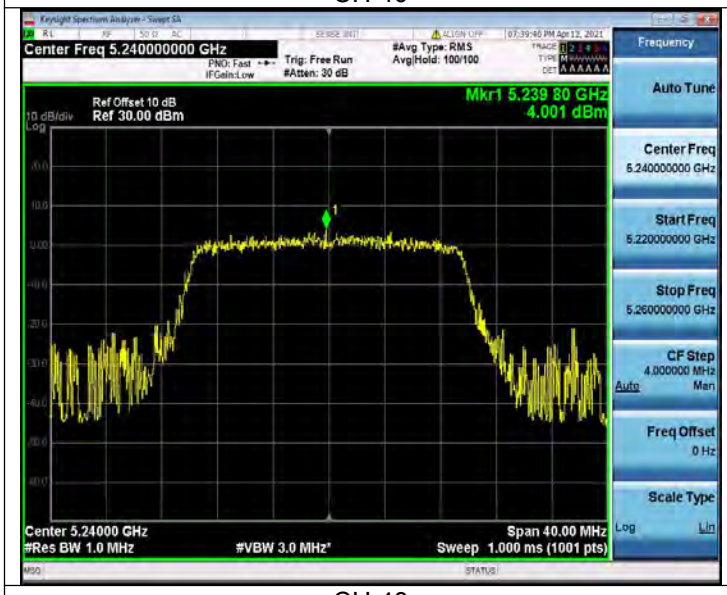
Remark:
The Directional Gain= Gain of individual transmit antennas (dBi) + Array gain;
Array gain = 10 log (Nant), where Nant is the number of transmit antennas
Directional Gain=8.01 dBi

Antenna 2:
5150-5250MHz:

802.11a	802.11n HT20
CH 36	CH 36
CH 40	CH 40
CH 48	CH 48

802.11ac20	802.11n HT40
CH 36	CH 38
CH 40	CH 46
CH 48	

802.11ac40	802.11ac80
CH 38	CH 42
CH 46	

802.11ax20	802.11ax HT40
CH 36	CH 38
CH 40	CH 46
	
CH 48	

802.11ax80	
CH 42	

Antenna 2:

5725-5850MHz:

802.11a	802.11n HT20
CH 149	CH 149
CH 157	CH 157
CH 165	CH 165

802.11ac20	802.11n HT40
CH 149	CH 151
CH 157	CH 159
CH 165	

802.11ac40	802.11ac80
CH 151	CH 155
CH 159	

802.11ax20	802.11ax HT40
CH 149	CH 151
CH 157	CH 159
CH 165	

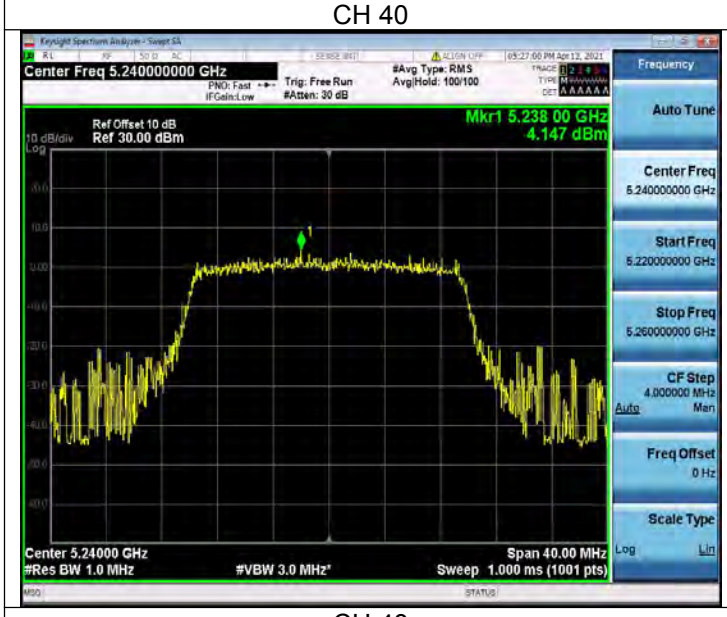
802.11ax80	
CH 155	

Antenna 3:
5150-5250MHz:

802.11a	802.11n HT20
CH 36	CH 36
CH 40	CH 40
CH 48	CH 48

802.11ac20	802.11n HT40
CH 36	CH 38
CH 40	CH 46
CH 48	

802.11ac40	802.11ac80
CH 38	CH 42
CH 46	

802.11ax20	802.11ax HT40
CH 36	CH 38
CH 40	CH 46
	
CH 48	

802.11ax80	
CH 42	

Antenna 3:

5725-5850MHz:

802.11a	802.11n HT20
CH 149	CH 149
CH 157	CH 157
CH 165	CH 165

802.11ac20	802.11n HT40
CH 149	CH 151
CH 157	CH 159
CH 165	

802.11ac40

CH 151

802.11ac80

CH 155

CH 159

802.11ax20

CH 149

802.11ax HT40

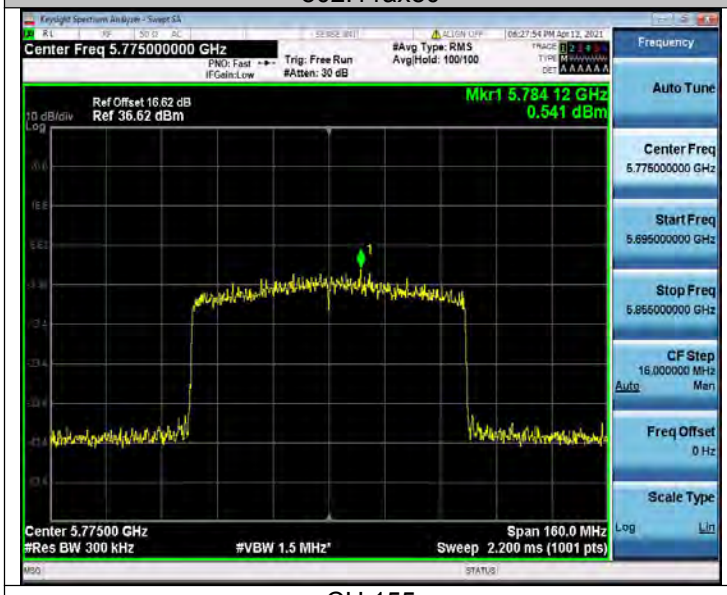
CH 151

CH 157

CH 159

CH 165

802.11ax80



CH 155

4.6. 6dB Bandwidth

TEST CONFIGURATION

TEST PROCEDURE

According to KDB789033 D02 General UNII Test Procedures New Rules v02r01 for one of the following procedures may be used for section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

a. Set RBW = 100 kHz.
b. Set the video bandwidth (VBW) ≥ 3 × RBW
c. Detector = Peak.
d. Trace mode = max hold.
e. Sweep = auto couple.
f. Allow the trace to stabilize
g. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

LIMIT

For Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.715-5.85 GHz

TEST RESULTS

Temperature	23.6℃	Humidity	55.7%
Test Engineer	Moon Tan	Configurations	IEEE 802.11a/n/ac

Antenna 2:

Type	Channel	99%Bandwidth (MHz)	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	17.138	15.600	≥500	Pass
	157	16.995	15.320		
	165	16.950	15.400		
802.11nHT20	149	17.925	15.160	≥500	Pass
	157	17.928	15.800		
	165	17.934	16.160		
802.11ac20	149	36.113	35.280	≥500	Pass
	157	36.051	35.200		
	165	17.957	15.240		
802.11n40	151	17.902	15.520	≥500	Pass
	159	17.962	15.800		
802.11ac40	151	36.067	35.200	≥500	Pass
	159	36.033	35.200		
802.11ac80	155	75.104	75.360	≥500	Pass
802.11ax20	149	19.304	18.840	≥500	Pass
	157	19.286	18.680		
	165	19.307	18.480		
802.11ax40	151	37.450	35.920	≥500	Pass
	159	37.505	36.240		
802.11ax80	155	76.627	75.360	≥500	Pass

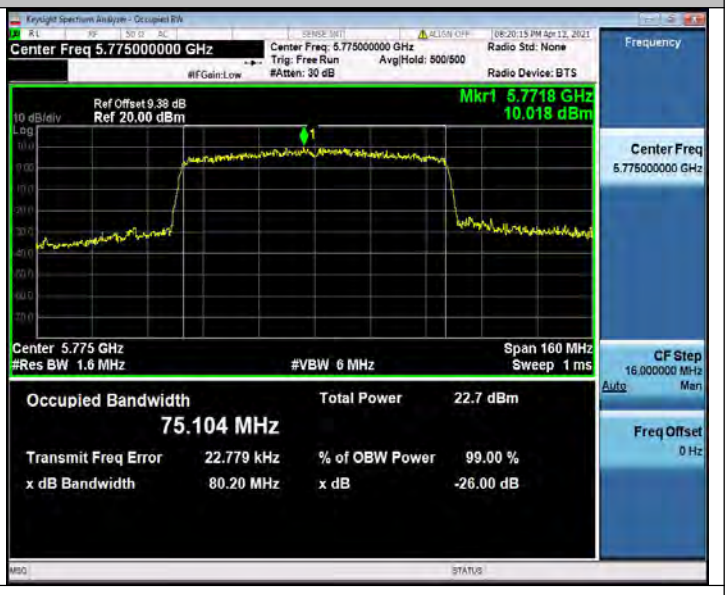
Antenna 3:

Type	Channel	99%Bandwidth (MHz)	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	16.986	16.360	≥500	Pass
	157	17.035	15.400		
	165	17.037	15.880		
802.11nHT20	149	17.977	15.400	≥500	Pass
	157	17.938	16.000		
	165	17.954	15.200		
802.11ac20	149	36.151	35.200	≥500	Pass
	157	36.038	35.120		
	165	17.959	15.800		
802.11n40	151	17.995	15.400	≥500	Pass
	159	17.918	15.560		
802.11ac40	151	36.176	35.200	≥500	Pass
	159	36.029	35.120		
802.11ac80	155	75.026	75.360	≥500	Pass
802.11ax20	149	19.277	18.360	≥500	Pass
	157	19.252	18.840		
	165	19.332	18.760		
802.11ax40	151	37.548	35.280	≥500	Pass
	159	37.542	36.480		
802.11ax80	155	76.632	75.360	≥500	Pass

Antenna 2:

99%Bandwidth	
802.11a	**802.11n HT20**
CH149	**CH149**
CH157	**CH157**
CH165	**CH165**

99%Bandwidth	
802.11ac20	802.11n HT40
CH149	CH151
CH157	CH159
CH165	

99%Bandwidth	
802.11ac40	802.11ac80
	
CH151	CH155
CH159	

99%Bandwidth

802.11ax20

CH149

802.11ax HT40

CH151

CH157

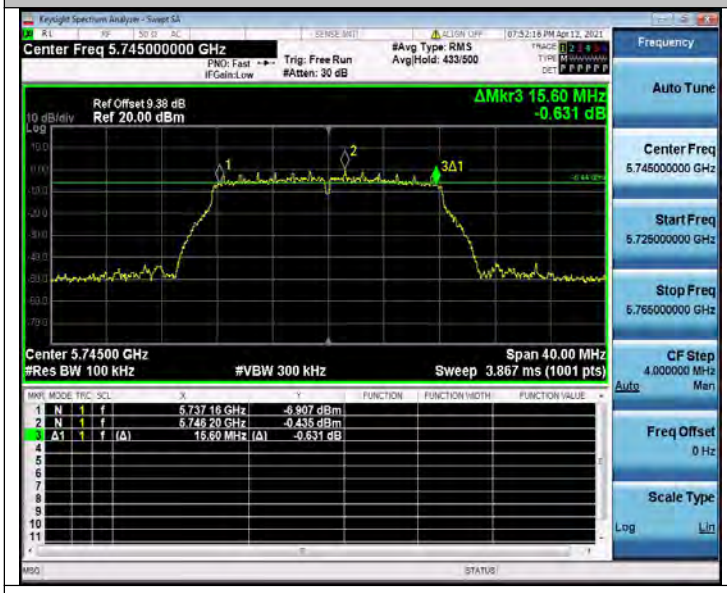
CH159

CH165

99%Bandwidth	
802.11ax80	
CH155	

6dB Bandwidth

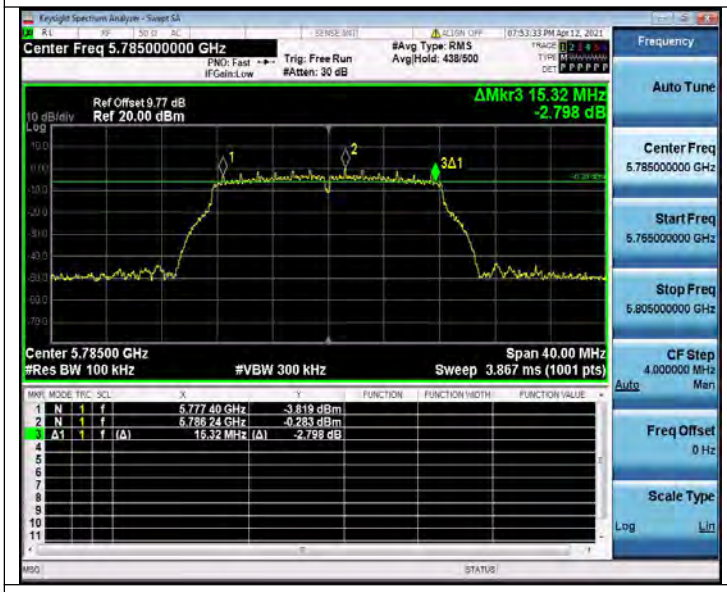
802.11a



CH149

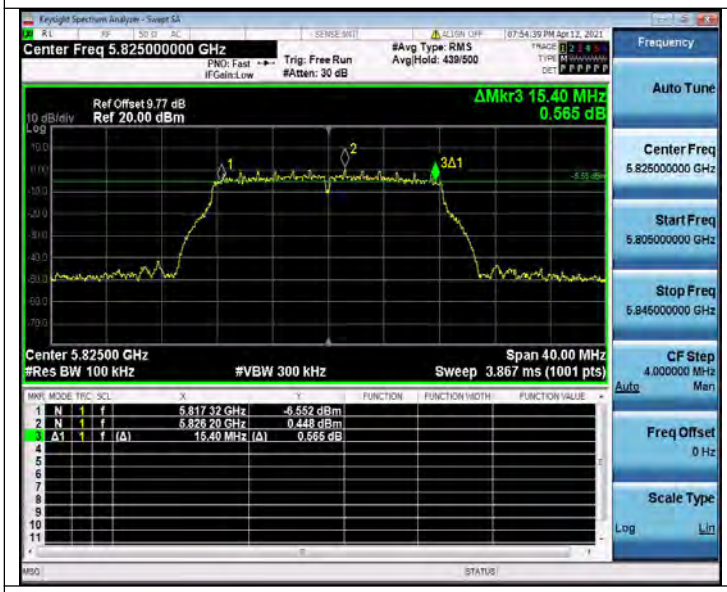
802.11n HT20

CH149

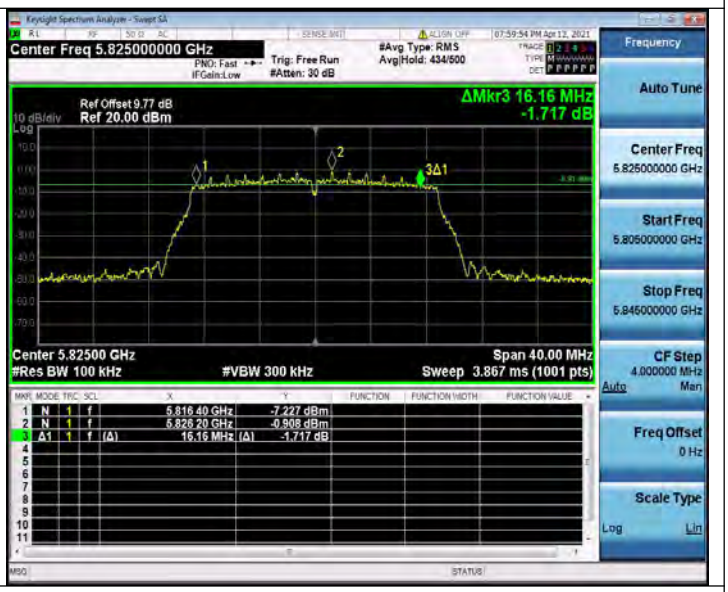


CH157

CH157



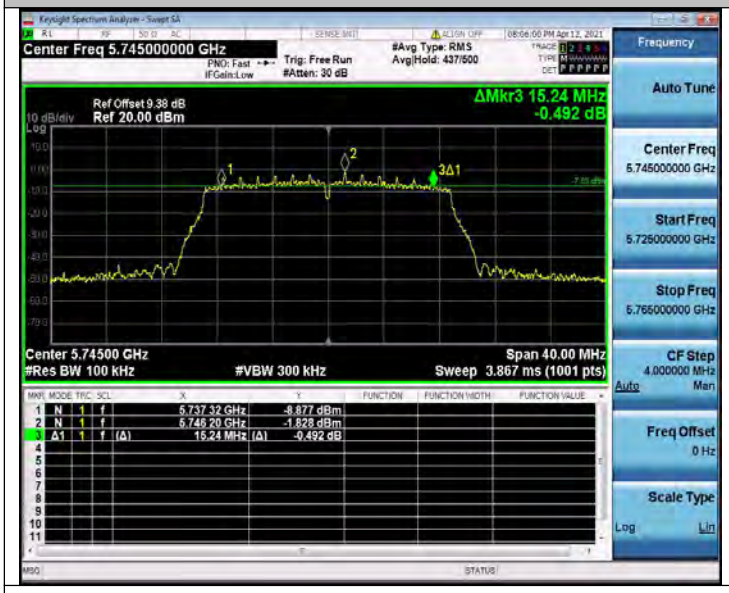
CH165



CH165

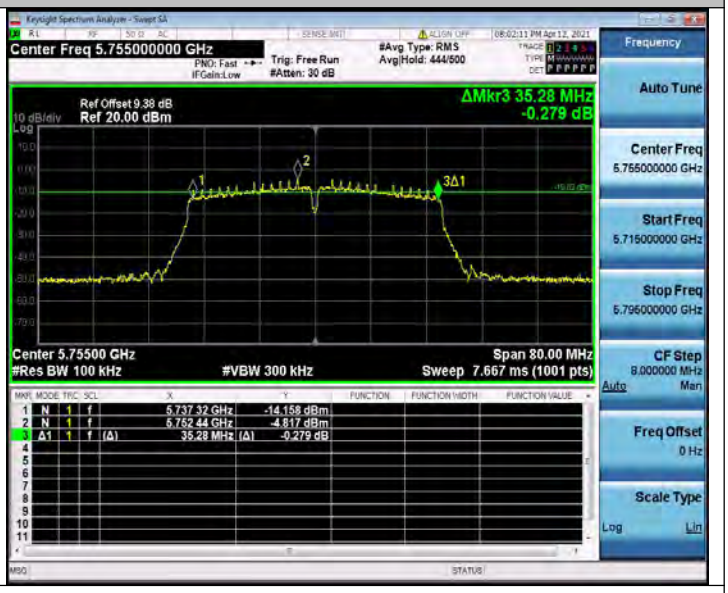
6dB Bandwidth

802.11ac20



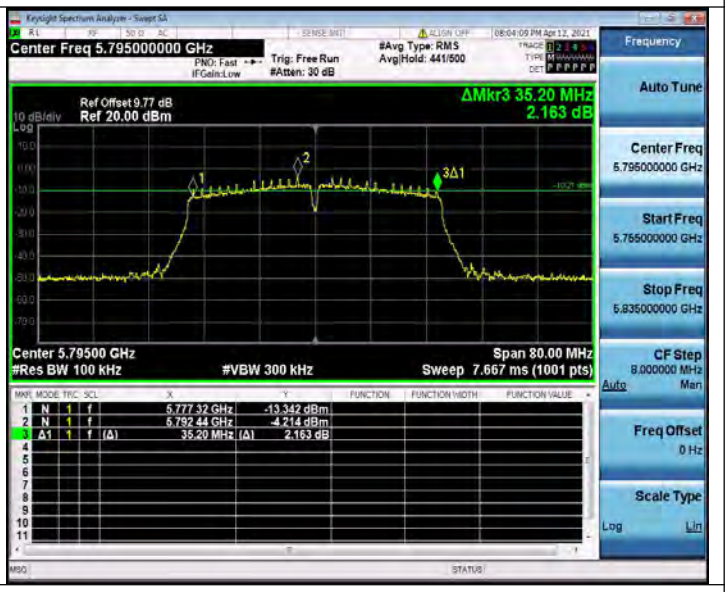
CH149

802.11n HT40

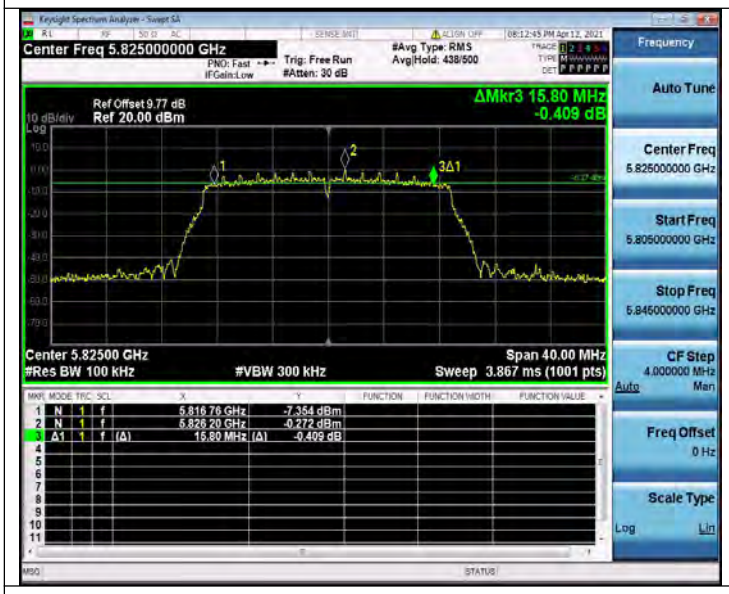


CH151

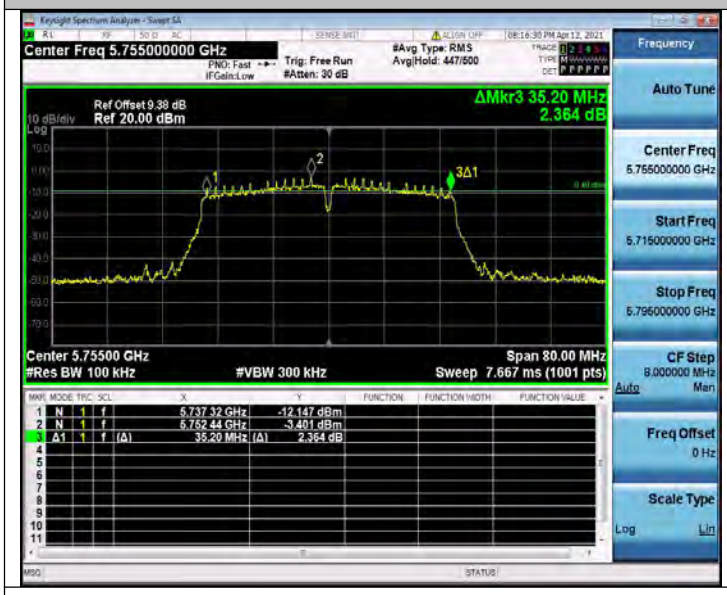
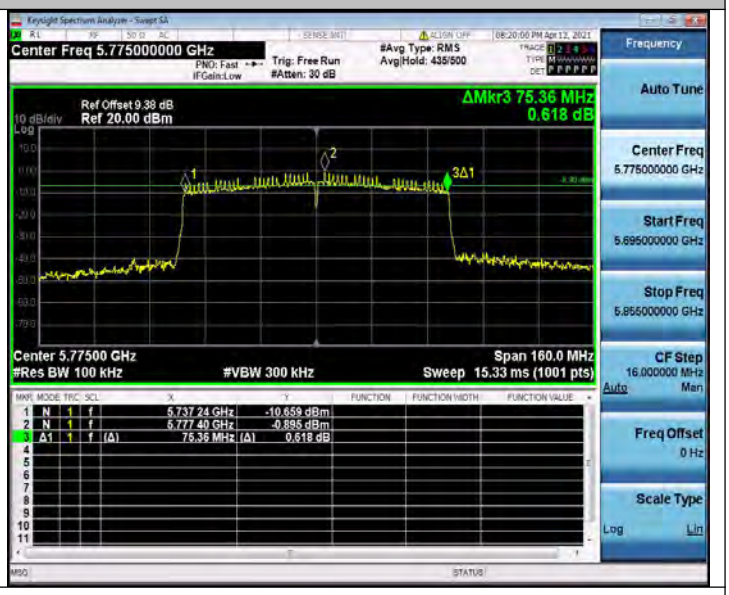
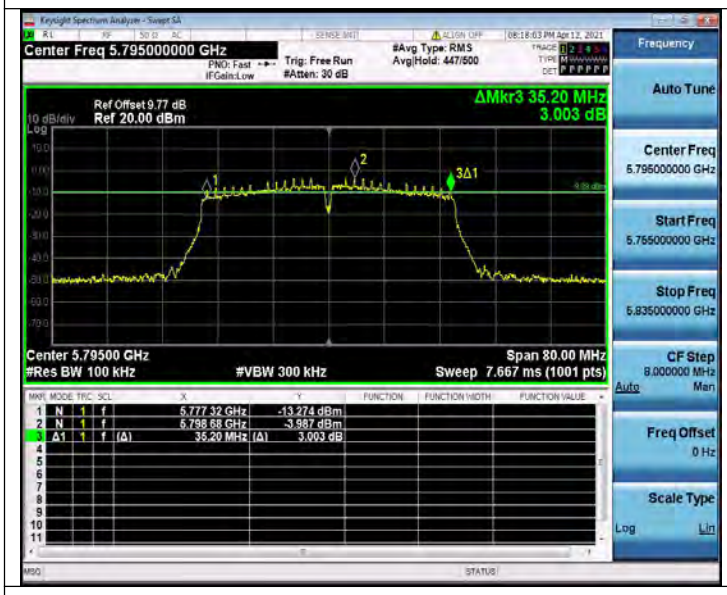
CH157



CH159

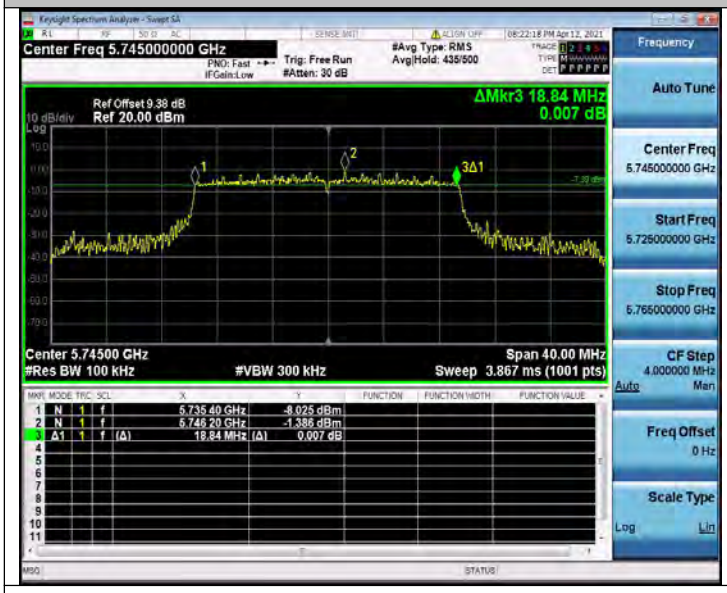


CH165

6dB Bandwidth	
802.11ac40	802.11ac80
	
CH151	CH155
	
CH159	

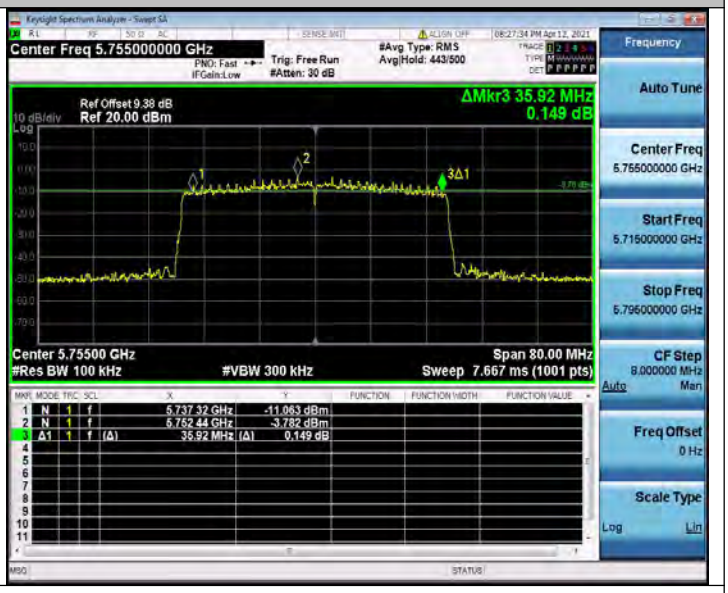
6dB Bandwidth

802.11ax20

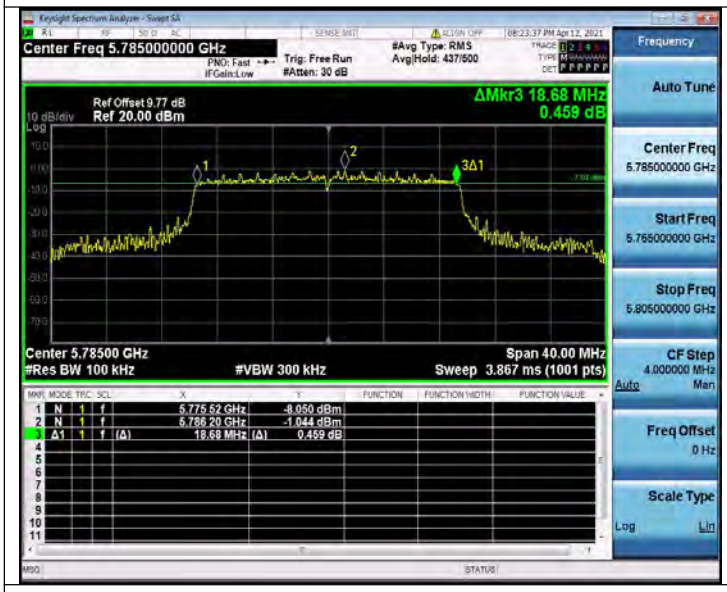


CH149

802.11ax HT40



CH151



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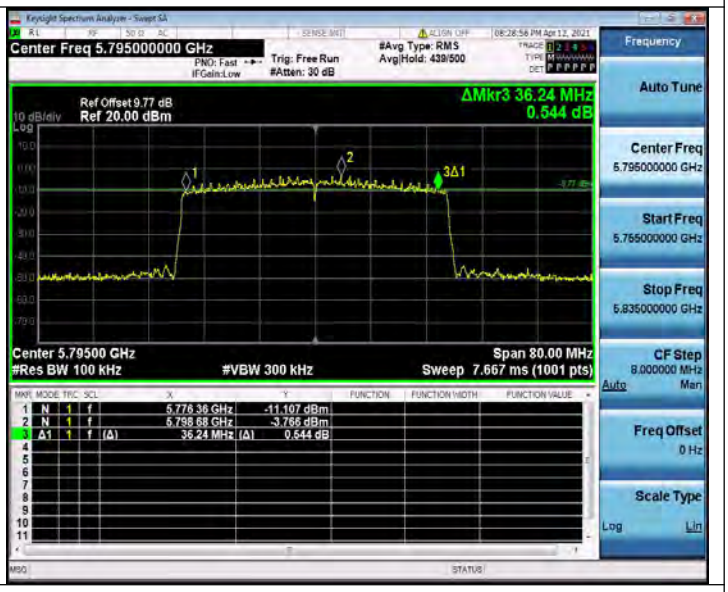
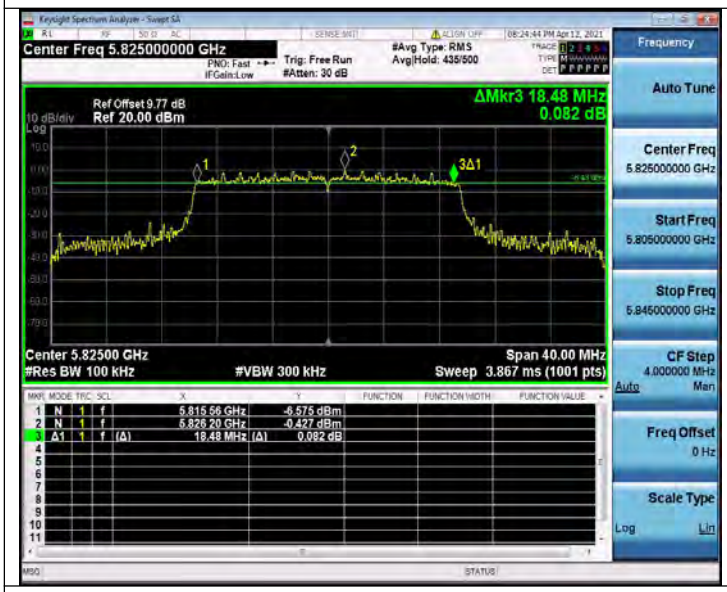
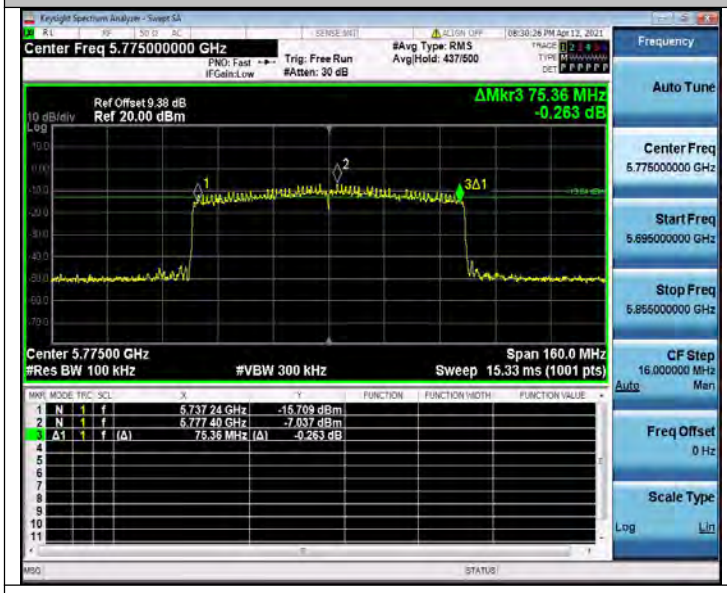


CH159



CH165

6dB Bandwidth	
802.11ax80	
	
CH155	

Antenna 3:

99%Bandwidth	
802.11a	**802.11n HT20**
CH149	**CH149**
CH157	**CH157**
CH165	**CH165**

99%Bandwidth	
802.11ac20	802.11n HT40
CH149	CH151
CH157	CH159
CH165	

99%Bandwidth	
802.11ac40	802.11ac80
CH151	CH155
CH159	

99%Bandwidth

802.11ax20

CH149

802.11ax HT40

CH151

CH157

CH159

CH165

99%Bandwidth	
802.11ax80	
CH155	