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 C TEST REPORT

FCC PART 15.407

Report Reference No.....:	**GTS20220307015-1-4**
FCC ID..... :	**2AC68-CRUISE2A**
Compiled by (position+printed name+signature) .:	File administrators Peter Xiao
Supervised by (position+printed name+signature) .:	Test Engineer Jenny Zeng
Approved by (position+printed name+signature) .:	Manager Simon Hu
Date of issue .....:	Apr.20, 2022
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.....:	**SEUIC Technologies Co., Ltd.**
Address .....:	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, Nanjing, China, 210061
Test specification .....:	
Standard .....:	**FCC Part 15.407: General technical requirements**
TRF Originator.....:	Shenzhen Global Test Service Co.,Ltd.
Master TRF .....:	Dated 2014-12

Test item description .....:	**Portable Data Collection Terminal**
Trade Mark .....:	N/A
Manufacturer .....:	SEUIC Technologies Co., Ltd.
Model/Type reference .....:	CRUISE2A
Listed Models .....:	CRUISE2
Operation Frequency.....:	From 5180MHz to 5240MHz/ 5745MHz to 5825MHz
Hardware Version .....:	MC561_MB_V1.02
Software Version .....:	D730_V0.1.7
Rating .....:	DC 3.85V by battery Recharged by DC 9.0V
Result .....:	**PASS**

T E S T R E P O R T

Test Report No. : GTS20220307015-1-4	Apr.20, 2022 Date of issue

Equipment under Test	:	Portable Data Collection Terminal
Model /Type	:	CRUISE2A
Listed model	:	CRUISE2
Applicant	:	**SEUIC Technologies Co., Ltd.**
Address	:	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, Nanjing, China, 210061
Manufacturer	:	**SEUIC Technologies Co., Ltd.**
Address	:	NO.15 Xinghuo Road, Nanjing New & High Technology Industry Development Zone, Nanjing, China, 210061

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.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules Part 15.407: General technical requirements.
ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices
KDB 789033 D02 General U-NII Test Procedures New Rules v02r01: UNII, U-NII, U-NII Test Procedures

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Mar. 09, 2022
Testing commenced on	:	Mar. 09, 2022
Testing concluded on	:	Apr.20, 2022

2.2. Product Description

Product Name	Portable Data Collection Terminal
Trade Mark	N/A
Model/Type reference	CRUISE2A
List Models	CRUISE2
Model Declaration	PCB board, structure and internal of these model(s) are the same, Only the model name different , So no additional models were tested.
Power supply:	DC 3.85V by battery Recharged by DC 9.0V
Sample ID	GTS20220307015-1-1# & GTS20220307015-1-2#
Bluetooth	
Operation frequency	2402-2480MHz
Channel Number	79 channels for Bluetooth (DSS) 40 channels for Bluetooth (DTS)
Channel Spacing	1MHz for Bluetooth (DSS) 2MHz for Bluetooth (DTS)
Modulation Type	GFSK, π/4-DQPSK, 8DPSK for Bluetooth (DSS) GFSK for Bluetooth (DTS)
WIFI(2.4G Band)	
Frequency Range	2412MHz ~ 2462MHz
Channel Spacing	5MHz
Channel Number	11 Channel for 20MHz bandwidth(2412~2462MHz) 7 Channel for 40MHz bandwidth(2422~2452MHz)
Modulation Type	802.11b: DSSS(CCK,DQPSK,DBPSK); 802.11g/n: OFDM(64QAM, 16QAM, QPSK, BPSK)
WIFI(5.2G Band)	
Frequency Range	5180MHz ~ 5240MHz, 5260MHz ~ 5320MHz, 5500MHz ~ 5700MHz
Channel Number	4 Channels for 20MHz bandwidth(5180-5240MHz) 4 Channels for 20MHz bandwidth(5260-5320MHz) 11 Channels for 20MHz bandwidth(5500-5700MHz) 2 channels for 40MHz bandwidth(5190~5230MHz) 2 channels for 40MHz bandwidth(5270~5310MHz) 5 Channels for 40MHz bandwidth(5510-5670MHz) 1 channels for 80MHz bandwidth(5210MHz) 1 channels for 80MHz bandwidth(5290MHz) 2 Channels for 80MHz bandwidth(5530-5610MHz)
Modulation Type	802.11a/n/ac: OFDM(256QAM,64QAM, 16QAM, QPSK, BPSK)
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: OFDM(256QAM,64QAM, 16QAM, QPSK, BPSK)
Antenna Description	Internal Antenna, -1dBi(Max.) for 2.4G Band and 5G Band
2G	
Support Band	GSM850/GSM1900/GPRS850/GPRS1900/EDGE850/EDGE1900

Release Version	R99
GPRS Class	Class 12
EGPRS Class	Class 12
GSM/EDGE/GPRS Power Class	GSM850:Power Class 4/ PCS1900:Power Class 1
GPRS/EDGE Multislot Class	GPRS/EDGE: Multi-slot Class 12
Type Of Modulation	GMSK for GSM/GPRS; GMSK/8PSK for EGPRS
Antenna Description	Internal Antenna; 2.52dBi (max.) For GSM 850, DCS 1900
3G	
UMTS Operation Frequency Band	UMTS FDD Band 2(1850 MHz -1910MHz) UMTS FDD Band 4(1710 MHz -1755MHz) UMTS FDD Band 5(824 MHz -849MHz)
WCDMA Release Version	R8
HSDPA Release Version	Release 8
HSUPA Release Version	Release 8
Modulation Type	QPSK/16QAM
Antenna Description	Internal Antenna; 2.52dBi (max.) For WCDMA Band 2, 4, 5;
LTE	
LTE Operation Frequency Band	E-UTRA Band 2(1850 MHz -1910MHz) E-UTRA Band 4(1710 MHz -1755MHz) E-UTRA Band 5(824 MHz -849MHz) E-UTRA Band 7(2500 MHz -2570MHz) E-UTRA Band 12(699 MHz -716MHz) E-UTRA Band 13(777 MHz -787MHz) E-UTRA Band 17(704 MHz -716MHz) E-UTRA Band 25(1850 MHz -1915MHz) E-UTRA Band 26(814 MHz -824MHz) E-UTRA Band 26(824 MHz -849MHz) E-UTRA Band 38(2570 MHz -2620MHz) E-UTRA Band 41(2555 MHz -2655MHz) E-UTRA Band 66(1710 MHz -1780MHz)
LTE Release Version	R10
Type Of Modulation	QPSK/16QAM/64QAM
Antenna Description	Internal Antenna; 2.52dBi (max.) For LTE Band 2, 4, 5, 7, 12, 13, 17, 25, 26, 38, 41, 66;
RFID(13.56MHz) (Optional)	
Frequency Range	13.56MHz
Channel Number	1
Modulation Type	ASK
Antenna Description	Internal Antenna, 0dBi (Max.)
GPS(RX)	Support

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 3.85V

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

This is a Portable Data Collection Terminal .
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	Chain0 (ANT0)			Chain1 (ANT1)			Simultaneously
Bandwidth Mode	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz	/
IEEE 802.11a	☑	☐	☐	☐	☐	☐	☐
IEEE 802.11n	☑	☑	☐	☐	☐	☐	☐
IEEE 802.11ac	☑	☑	☑	☐	☐	☐	☐

IEEE 802.11a/ac20/ac40/ac80/n20/n40:

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**				

U-NI-2A		U-NI-2A		U-NI-2A	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	54	5270	58	5290
56	5280	62	5310		
60	5300				
64	5320				

U-NI-2C		U-NI-2C		U-NI-2C	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	102	5510	106	5530
104	5520	110	5550	122	5610
108	5540	118	5590		
112	5560	126	5630		
116	5580	134	5670		
120	5600				
124	5620				
128	5640				
132	5660				
136	5680				
140	5700				

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.

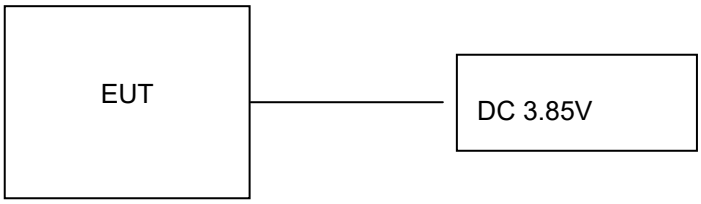
This test was performed with EUT in X, Y, Z position and the worst case was found when EUT in X position.

AC main conducted emission pre-test voltage at both AC 120V/60Hz and AC 240V/60Hz, 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 802.11ac VHT20 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: 2AC68-CRUISE2A** 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 (QRCR--Extelnal Licensed) provided by application.

2.9. Special Accessories

Manufacturer	Description	Model	Serial Number	Certificate
Shenzhen Tianyin Electronics Co., Ltd.	Adapter	TPA-10R120150UU01	--	SDOC

2.10. External I/O Cable

I/O Port Description	Quantity	Cable
DC IN Port	1	1.0M, Unscreened Cable

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)

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	GTS20220307015-1-1#	Compliant	Note 1
§15.407(a)	Maximum Conducted Output Power	GTS20220307015-1-1#	Compliant	Note 1
§15.407(a)	Power Spectral Density	GTS20220307015-1-1#	Compliant	Note 1
§15.407(a)	26dB&6dB Bandwidth and 99% Bandwidth	GTS20220307015-1-1#	Compliant	Note 1
§15.209, §15.407(b)	Radiated Emissions	GTS20220307015-1-1# GTS20220307015-1-2#	Compliant	Note 1
§15.209, §15.407(b)	Emissions at Restricted Band	GTS20220307015-1-1# GTS20220307015-1-2#	Compliant	Note 1
§15.407(g)	Frequency Stability	GTS20220307015-1-1#	Compliant	Note 1
§15.207(a)	AC Mians Line Conducted Emissions	GTS20220307015-1-2#	Compliant	Note 1
§15.203 §15.407(h)	Antenna Requirements	GTS20220307015-1-1#	Compliant	Note 1
§15.407 §2.1091	RF Exposure	/	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

PreIN/Aary 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	MCS0
Band Edge	802.11a	6 Mbps
	802.11ac20/ac40/ac80 802.11n HT20/40	MCS0

3.6. Equipments Used during the Test

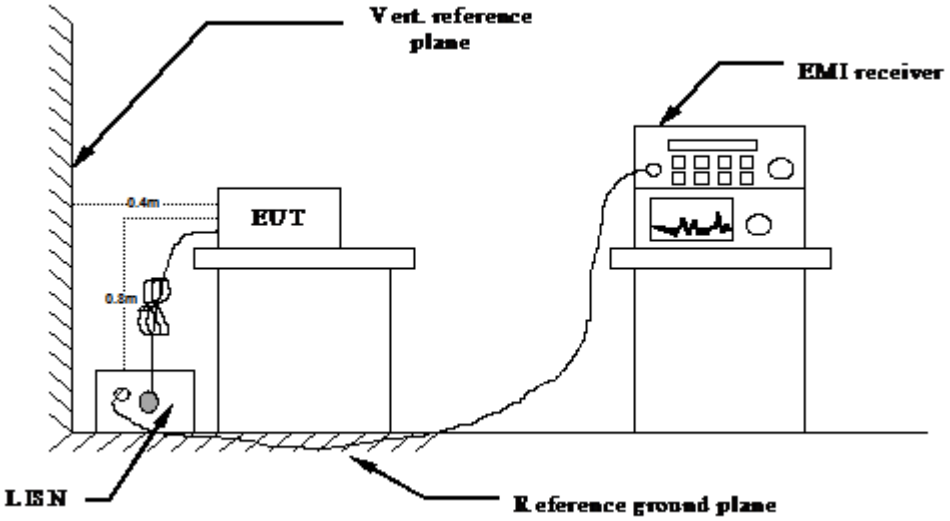
Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	CYBERTEK	EM5040A	E1850400105	2021/07/17	2022/07/16
LISN	R&S	ESH2-Z5	893606/008	2021/07/17	2022/07/16
EMI Test Receiver	R&S	ESPI3	101841-cd	2021/07/17	2022/07/16
EMI Test Receiver	R&S	ESCI7	101102	2021/09/19	2022/09/18
Spectrum Analyzer	Agilent	N9020A	MY48010425	2021/09/19	2022/09/18
Spectrum Analyzer	R&S	FSV40	100019	2021/07/17	2022/07/16
Vector Signal generator	Agilent	N5181A	MY49060502	2021/07/17	2022/07/16
Signal generator	Agilent	N5182A	3610AO1069	2021/09/19	2022/09/18
Climate Chamber	ESPEC	EL-10KA	A20120523	2021/09/19	2022/09/18
Controller	EM Electronics	Controller EM 1000	N/A	N/A	N/A
Horn Antenna	Schwarzbeck	BBHA 9120D	01622	2021/11/07	2022/11/06
Active Loop Antenna	Beijing Da Ze Technology Co.,Ltd.	ZN30900C	15006	2021/10/10	2022/11/09
Bilog Antenna	Schwarzbeck	VULB9163	000976	2021/07/23	2022/07/22
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	791	2021/11/07	2022/11/06
Amplifier	Schwarzbeck	BBV 9743	#202	2021/08/08	2022/08/07
Amplifier	Schwarzbeck	BBV9179	9719-025	2021/07/17	2022/07/16
Amplifier	EMCI	EMC051845B	980355	2021/07/17	2022/07/16
Temperature/Humidity Meter	Gangxing	CTH-608	02	2021/07/17	2022/07/16
High-Pass Filter	K&L	9SH10-2700/X12750-O/O	KL142031	2021/07/17	2022/07/16
High-Pass Filter	K&L	41H10-1375/U12750-O/O	KL142032	2021/07/17	2022/07/16
RF Cable(below 1GHz)	HUBER+SUHNER	RG214	RE01	2021/07/17	2022/07/16
RF Cable(above 1GHz)	HUBER+SUHNER	RG214	RE02	2021/07/17	2022/07/16
Data acquisition card	Agilent	U2531A	TW53323507	2021/07/17	2022/07/16
Power Sensor	Agilent	U2021XA	MY5365004	2021/07/17	2022/07/16
Test Control Unit	Tonscend	JS0806-1	178060067	2021/07/17	2022/07/16
Automated filter bank	Tonscend	JS0806-F	19F8060177	2021/07/17	2022/07/16
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 5V power, the adapter or POE received AC120V/60Hz or 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.		

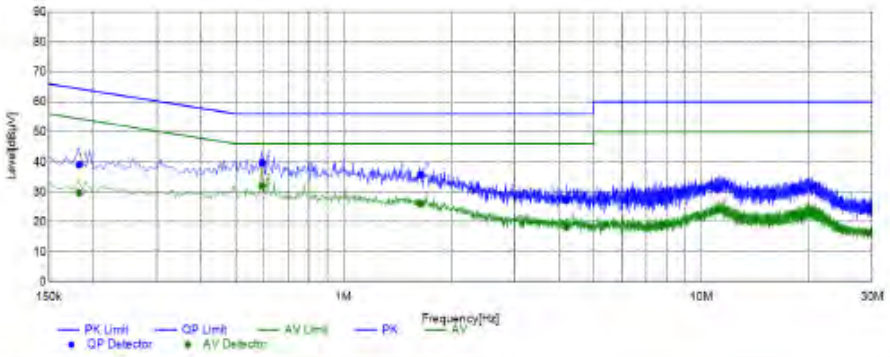
TEST RESULTS

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

Temperature	24.5℃	Humidity	53.7%
Test Engineer	Jenny Zeng	Configurations	IEEE 802.11ac20 HCH

Power supply:	AC 120V/60Hz	Polarization	L

Test Graph



Final Data List

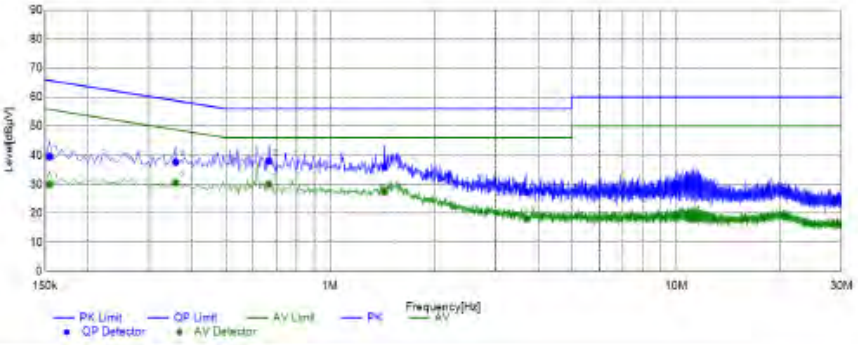
NO.	Frequency [MHz]	QP Reading [dBµV]	AVG Reading [dBµV]	Factor [dB]	QP Result [dBµV]	AVG. Result [dBµV]	QP Limit [dBµV]	AVG. Limit [dBµV]	QP Margin [dB]	AVG. Margin [dB]	Line	Remark
1	0.1824	29.49	20.11	9.59	39.08	29.70	64.38	54.38	25.30	24.68	L1	PASS
2	0.5934	29.89	22.40	9.68	39.57	32.08	56.00	46.00	16.43	13.92	L1	PASS
3	1.6398	26.33	16.59	9.37	35.70	25.96	56.00	46.00	20.30	20.04	L1	PASS
4	4.1947	17.73	8.87	9.40	27.13	18.27	56.00	46.00	28.87	27.73	L1	PASS
5	11.1308	21.71	14.79	9.17	30.88	23.96	60.00	50.00	29.12	26.04	L1	PASS
6	19.0157	21.27	12.88	9.20	30.47	22.08	60.00	50.00	29.53	27.92	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	0.1547	29.91	20.33	9.61	39.52	29.94	65.74	55.74	26.22	25.80	N	PASS
2	0.3584	28.15	21.05	9.47	37.62	30.52	58.77	48.77	21.15	18.25	N	PASS
3	0.6649	28.65	20.56	9.39	38.04	29.95	56.00	46.00	17.96	16.05	N	PASS
4	1.4384	26.56	18.09	9.36	35.92	27.45	56.00	46.00	20.08	18.55	N	PASS
5	3.6870	18.03	8.71	9.37	27.40	18.08	56.00	46.00	28.60	27.92	N	PASS
6	11.1552	20.19	8.83	9.25	29.44	18.08	60.00	50.00	30.56	31.92	N	PASS

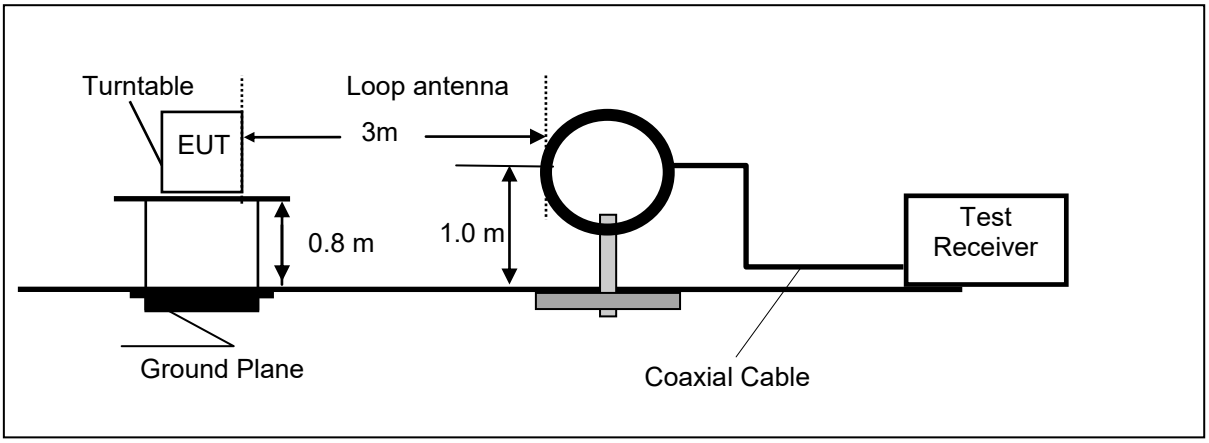
Note:1. Result (dBµV) = Reading (dBµV) + Factor (dB).

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

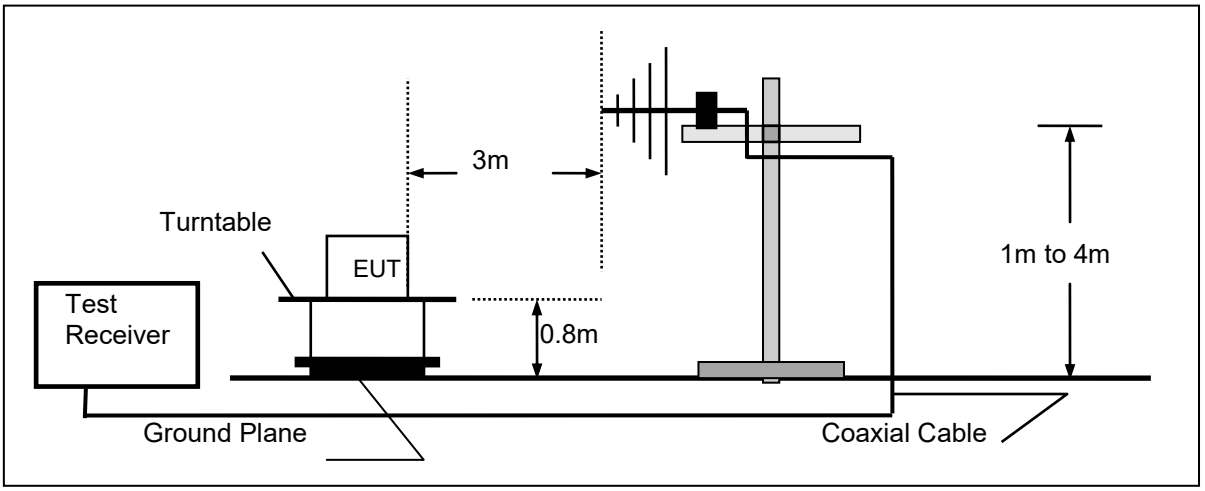
4.2. Radiated Emission

TEST CONFIGURATION

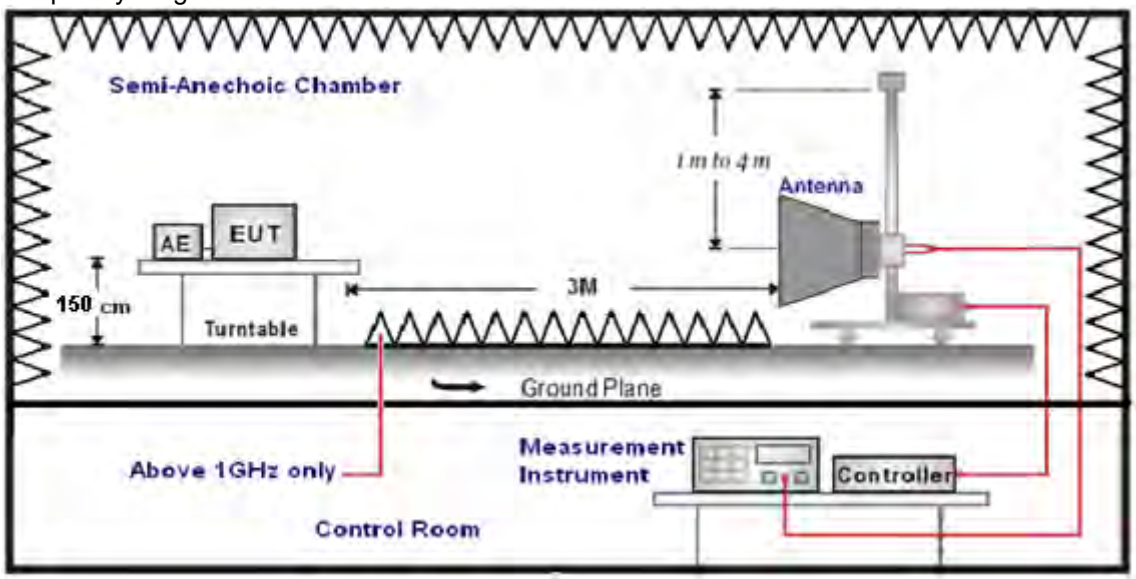
Frequency range 9 KHz – 30MHz



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	23.4℃	Humidity	54.5%
Test Engineer	Jenny Zeng	Configurations	IEEE 802.11ac20 HCH

For 9 KHz~30MHz

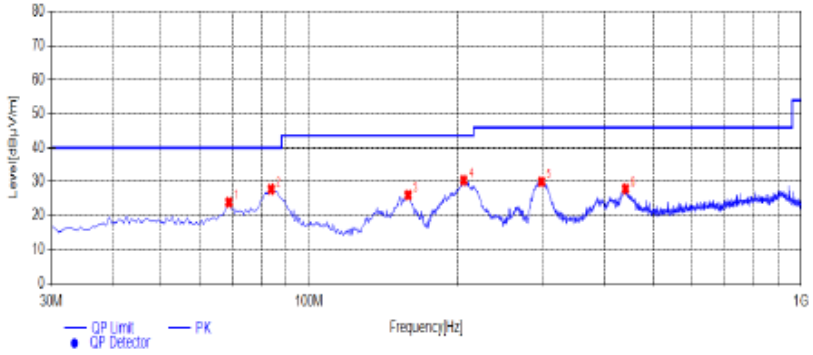
Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Over Limit (dBuV)	Remark
-	-	-	-	See Note

Note:
The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);
Limit line = specific limits (dBuV) + distance extrapolation factor.

For 30MHz-1GHz

Horizontal

Test Graph



Suspected List

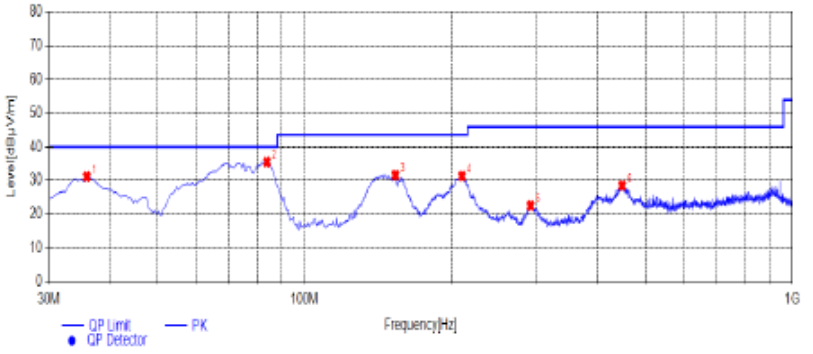
NO.	Frequency [MHz]	Reading [dBµV/m]	Factor [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Polarity	Remark
1	68.8000	33.76	-9.80	23.96	40.00	16.04	100	137	PK	Horizonta	PASS
2	83.8350	39.63	-11.78	27.85	40.00	12.15	100	4	PK	Horizonta	PASS
3	159.0100	37.68	-11.63	26.05	43.50	17.45	100	70	PK	Horizonta	PASS
4	206.5400	39.47	-9.01	30.46	43.50	13.04	100	104	PK	Horizonta	PASS
5	297.2350	37.59	-7.48	30.11	46.00	15.89	100	94	PK	Horizonta	PASS
6	440.3100	32.07	-4.12	27.95	46.00	18.05	100	284	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	35.8200	40.84	-9.68	31.16	40.00	8.84	100	14	PK	Vertical	PASS
2	83.8350	47.34	-11.78	35.56	40.00	4.44	100	247	PK	Vertical	PASS
3	153.6750	43.86	-12.25	31.61	43.50	11.89	100	84	PK	Vertical	PASS
4	210.4200	40.56	-9.23	31.33	43.50	12.17	100	98	PK	Vertical	PASS
5	290.9300	29.79	-7.29	22.50	46.00	23.50	100	14	PK	Vertical	PASS
6	448.0700	33.02	-4.53	28.49	46.00	17.51	100	347	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	39.82	38.55	33.13	11.26	56.50	68.20	-11.70	Peak	Horizontal
1	10360	31.63	38.55	33.13	11.26	48.31	54.00	-5.69	AV	Horizontal
1	10360	41.50	38.55	33.13	11.26	58.18	68.20	-10.02	Peak	Vertical
1	10360	27.71	38.55	33.13	11.26	44.39	54.00	-9.61	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	38.53	38.55	33.13	11.26	55.21	68.20	-12.99	Peak	Horizontal
1	10400	32.07	38.55	33.13	11.26	48.75	54.00	-5.25	AV	Horizontal
1	10400	40.45	38.55	33.13	11.26	57.13	68.20	-11.07	Peak	Vertical
1	10400	28.47	38.55	33.13	11.26	45.15	54.00	-8.85	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	39.33	38.55	33.13	11.26	56.01	68.20	-12.19	Peak	Horizontal
1	10480	31.61	38.55	33.13	11.26	48.29	54.00	-5.71	AV	Horizontal
1	10480	41.22	38.55	33.13	11.26	57.90	68.20	-10.30	Peak	Vertical
1	10480	28.56	38.55	33.13	11.26	45.24	54.00	-8.76	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	40.76	38.55	33.13	11.26	57.44	68.20	-10.76	Peak	Horizontal
1	10360	30.83	38.55	33.13	11.26	47.51	54.00	-6.49	AV	Horizontal
1	10360	41.50	38.55	33.13	11.26	58.18	68.20	-10.02	Peak	Vertical
1	10360	29.51	38.55	33.13	11.26	46.19	54.00	-7.81	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	39.29	38.55	33.13	11.26	55.97	68.20	-12.23	Peak	Horizontal
1	10400	29.87	38.55	33.13	11.26	46.55	54.00	-7.45	AV	Horizontal
1	10400	39.89	38.55	33.13	11.26	56.57	68.20	-11.63	Peak	Vertical
1	10400	27.89	38.55	33.13	11.26	44.57	54.00	-9.43	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	38.83	38.55	33.13	11.26	55.51	68.20	-12.69	Peak	Horizontal
1	10480	31.27	38.55	33.13	11.26	47.95	54.00	-6.05	AV	Horizontal
1	10480	40.29	38.55	33.13	11.26	56.97	68.20	-11.23	Peak	Vertical
1	10480	29.39	38.55	33.13	11.26	46.07	54.00	-7.93	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	40.32	38.55	33.13	11.26	57.00	68.20	-11.20	Peak	Horizontal
1	10380	32.28	38.55	33.13	11.26	48.96	54.00	-5.04	AV	Horizontal
1	10380	42.17	38.55	33.13	11.26	58.85	68.20	-9.35	Peak	Vertical
1	10380	29.94	38.55	33.13	11.26	46.62	54.00	-7.38	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	38.89	38.55	33.13	11.26	55.57	68.20	-12.63	Peak	Horizontal
1	10460	31.23	38.55	33.13	11.26	47.91	54.00	-6.09	AV	Horizontal
1	10460	41.65	38.55	33.13	11.26	58.33	68.20	-9.87	Peak	Vertical
1	10460	28.18	38.55	33.13	11.26	44.86	54.00	-9.14	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	41.02	38.55	33.13	11.26	57.70	68.20	-10.50	Peak	Horizontal
1	10360	31.82	38.55	33.13	11.26	48.50	54.00	-5.50	AV	Horizontal
1	10360	41.61	38.55	33.13	11.26	58.29	68.20	-9.91	Peak	Vertical
1	10360	29.14	38.55	33.13	11.26	45.82	54.00	-8.18	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	40.85	38.55	33.13	11.26	57.53	68.20	-10.67	Peak	Horizontal
1	10400	31.97	38.55	33.13	11.26	48.65	54.00	-5.35	AV	Horizontal
1	10400	41.06	38.55	33.13	11.26	57.74	68.20	-10.46	Peak	Vertical
1	10400	27.66	38.55	33.13	11.26	44.34	54.00	-9.66	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	38.37	38.55	33.13	11.26	55.05	68.20	-13.15	Peak	Horizontal
1	10480	30.34	38.55	33.13	11.26	47.02	54.00	-6.98	AV	Horizontal
1	10480	41.17	38.55	33.13	11.26	57.85	68.20	-10.35	Peak	Vertical
1	10480	29.57	38.55	33.13	11.26	46.25	54.00	-7.75	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	41.05	38.55	33.13	11.26	57.73	68.20	-10.47	Peak	Horizontal
1	10380	30.40	38.55	33.13	11.26	47.08	54.00	-6.92	AV	Horizontal
1	10380	41.02	38.55	33.13	11.26	57.70	68.20	-10.50	Peak	Vertical
1	10380	29.70	38.55	33.13	11.26	46.38	54.00	-7.62	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	39.13	38.55	33.13	11.26	55.81	68.20	-12.39	Peak	Horizontal
1	10460	30.74	38.55	33.13	11.26	47.42	54.00	-6.58	AV	Horizontal
1	10460	40.25	38.55	33.13	11.26	56.93	68.20	-11.27	Peak	Vertical
1	10460	30.32	38.55	33.13	11.26	47.00	54.00	-7.00	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	39.44	38.55	33.13	11.26	56.12	68.20	-12.08	Peak	Horizontal
1	10420	31.89	38.55	33.13	11.26	48.57	54.00	-5.43	AV	Horizontal
1	10420	41.47	38.55	33.13	11.26	58.15	68.20	-10.05	Peak	Vertical
1	10420	28.05	38.55	33.13	11.26	44.73	54.00	-9.27	AV	Vertical

5260-5320MHz:

802.11a Mode_Channel 52 _5260 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	10520	39.57	38.55	33.13	11.26	56.25	68.20	-11.95	Peak	Horizontal
1	10520	30.19	38.55	33.13	11.26	46.87	54.00	-7.13	AV	Horizontal
1	10520	41.04	38.55	33.13	11.26	57.72	68.20	-10.48	Peak	Vertical
1	10520	29.11	38.55	33.13	11.26	45.79	54.00	-8.21	AV	Vertical

802.11a Mode_Channel 56 _ 5280 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	10560	39.11	38.55	33.13	11.26	55.79	68.20	-12.41	Peak	Horizontal
1	10560	31.93	38.55	33.13	11.26	48.61	54.00	-5.39	AV	Horizontal
1	10560	41.31	38.55	33.13	11.26	57.99	68.20	-10.21	Peak	Vertical
1	10560	29.89	38.55	33.13	11.26	46.57	54.00	-7.43	AV	Vertical

802.11a Mode_ Channel 64_ 5320 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	10640	40.50	38.55	33.13	11.26	57.18	68.20	-11.02	Peak	Horizontal
1	10640	31.89	38.55	33.13	11.26	48.57	54.00	-5.43	AV	Horizontal
1	10640	40.48	38.55	33.13	11.26	57.16	68.20	-11.04	Peak	Vertical
1	10640	29.90	38.55	33.13	11.26	46.58	54.00	-7.42	AV	Vertical

802.11n20 Mode_Channel 52 _5260 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	10520	39.09	38.55	33.13	11.26	55.77	68.20	-12.43	Peak	Horizontal
1	10520	31.17	38.55	33.13	11.26	47.85	54.00	-6.15	AV	Horizontal
1	10520	41.99	38.55	33.13	11.26	58.67	68.20	-9.53	Peak	Vertical
1	10520	29.47	38.55	33.13	11.26	46.15	54.00	-7.85	AV	Vertical

802.11n20 Mode_Channel 56 _ 5280 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	10560	40.57	38.55	33.13	11.26	57.25	68.20	-10.95	Peak	Horizontal
1	10560	30.59	38.55	33.13	11.26	47.27	54.00	-6.73	AV	Horizontal
1	10560	41.83	38.55	33.13	11.26	58.51	68.20	-9.69	Peak	Vertical
1	10560	28.66	38.55	33.13	11.26	45.34	54.00	-8.66	AV	Vertical

802.11n20 Mode_ Channel 64_ 5320 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	10640	40.73	38.55	33.13	11.26	57.41	68.20	-10.79	Peak	Horizontal
1	10640	30.47	38.55	33.13	11.26	47.15	54.00	-6.85	AV	Horizontal
1	10640	41.57	38.55	33.13	11.26	58.25	68.20	-9.95	Peak	Vertical
1	10640	28.92	38.55	33.13	11.26	45.60	54.00	-8.40	AV	Vertical

802.11n40 Mode_Channel 54 _5270 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	10540	39.72	38.55	33.13	11.26	56.40	68.20	-11.80	Peak	Horizontal
1	10540	31.92	38.55	33.13	11.26	48.60	54.00	-5.40	AV	Horizontal
1	10540	41.98	38.55	33.13	11.26	58.66	68.20	-9.54	Peak	Vertical
1	10540	29.38	38.55	33.13	11.26	46.06	54.00	-7.94	AV	Vertical

802.11n40 Mode_Channel 62 _ 5310 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	10620	40.44	38.55	33.13	11.26	57.12	68.20	-11.08	Peak	Horizontal
1	10620	31.28	38.55	33.13	11.26	47.96	54.00	-6.04	AV	Horizontal
1	10620	40.13	38.55	33.13	11.26	56.81	68.20	-11.39	Peak	Vertical
1	10620	29.79	38.55	33.13	11.26	46.47	54.00	-7.53	AV	Vertical

802.11ac20 Mode_Channel 52 _5260 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	10520	40.08	38.55	33.13	11.26	56.76	68.20	-11.44	Peak	Horizontal
1	10520	30.88	38.55	33.13	11.26	47.56	54.00	-6.44	AV	Horizontal
1	10520	41.26	38.55	33.13	11.26	57.94	68.20	-10.26	Peak	Vertical
1	10520	28.53	38.55	33.13	11.26	45.21	54.00	-8.79	AV	Vertical

802.11ac20 Mode_Channel 56 _ 5280 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	10560	39.61	38.55	33.13	11.26	56.29	68.20	-11.91	Peak	Horizontal
1	10560	31.76	38.55	33.13	11.26	48.44	54.00	-5.56	AV	Horizontal
1	10560	40.38	38.55	33.13	11.26	57.06	68.20	-11.14	Peak	Vertical
1	10560	28.01	38.55	33.13	11.26	44.69	54.00	-9.31	AV	Vertical

802.11ac20 Mode_ Channel 64_ 5320 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	10640	40.45	38.55	33.13	11.26	57.13	68.20	-11.07	Peak	Horizontal
1	10640	31.09	38.55	33.13	11.26	47.77	54.00	-6.23	AV	Horizontal
1	10640	41.41	38.55	33.13	11.26	58.09	68.20	-10.11	Peak	Vertical
1	10640	28.15	38.55	33.13	11.26	44.83	54.00	-9.17	AV	Vertical

802.11ac40 Mode_Channel 54 _5270 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	10540	40.92	38.55	33.13	11.26	57.60	68.20	-10.60	Peak	Horizontal
1	10540	30.74	38.55	33.13	11.26	47.42	54.00	-6.58	AV	Horizontal
1	10540	41.86	38.55	33.13	11.26	58.54	68.20	-9.66	Peak	Vertical
1	10540	28.27	38.55	33.13	11.26	44.95	54.00	-9.05	AV	Vertical

802.11ac40 Mode_Channel 62 _ 5310 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	10620	39.20	38.55	33.13	11.26	55.88	68.20	-12.32	Peak	Horizontal
1	10620	30.76	38.55	33.13	11.26	47.44	54.00	-6.56	AV	Horizontal
1	10620	41.67	38.55	33.13	11.26	58.35	68.20	-9.85	Peak	Vertical
1	10620	29.00	38.55	33.13	11.26	45.68	54.00	-8.32	AV	Vertical

802.11ac80 Mode_Channel 58 _5290 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	10580	40.38	38.55	33.13	11.26	57.06	68.20	-11.14	Peak	Horizontal
1	10580	31.64	38.55	33.13	11.26	48.32	54.00	-5.68	AV	Horizontal
1	10580	41.66	38.55	33.13	11.26	58.34	68.20	-9.86	Peak	Vertical
1	10580	29.44	38.55	33.13	11.26	46.12	54.00	-7.88	AV	Vertical

5500-5700MHz:

802.11a Mode_Channel 100 _5500 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	11000	39.59	38.55	33.13	11.26	56.27	68.20	-11.93	Peak	Horizontal
1	11000	31.95	38.55	33.13	11.26	48.63	54.00	-5.37	AV	Horizontal
1	11000	40.30	38.55	33.13	11.26	56.98	68.20	-11.22	Peak	Vertical
1	11000	29.11	38.55	33.13	11.26	45.79	54.00	-8.21	AV	Vertical

802.11a Mode_Channel 120 _ 5600 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	11200	40.31	38.55	33.13	11.26	56.99	68.20	-11.21	Peak	Horizontal
1	11200	31.29	38.55	33.13	11.26	47.97	54.00	-6.03	AV	Horizontal
1	11200	40.84	38.55	33.13	11.26	57.52	68.20	-10.68	Peak	Vertical
1	11200	29.60	38.55	33.13	11.26	46.28	54.00	-7.72	AV	Vertical

802.11a Mode_ Channel 140_ 5700 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	11400	39.73	38.55	33.13	11.26	56.41	68.20	-11.79	Peak	Horizontal
1	11400	31.95	38.55	33.13	11.26	48.63	54.00	-5.37	AV	Horizontal
1	11400	41.09	38.55	33.13	11.26	57.77	68.20	-10.43	Peak	Vertical
1	11400	29.37	38.55	33.13	11.26	46.05	54.00	-7.95	AV	Vertical

802.11n20 Mode_Channel 100 _5500 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	11000	39.39	38.55	33.13	11.26	56.07	68.20	-12.13	Peak	Horizontal
1	11000	30.20	38.55	33.13	11.26	46.88	54.00	-7.12	AV	Horizontal
1	11000	41.63	38.55	33.13	11.26	58.31	68.20	-9.89	Peak	Vertical
1	11000	28.98	38.55	33.13	11.26	45.66	54.00	-8.34	AV	Vertical

802.11n20 Mode_Channel 120 _ 5600 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	11200	39.36	38.55	33.13	11.26	56.04	68.20	-12.16	Peak	Horizontal
1	11200	30.41	38.55	33.13	11.26	47.09	54.00	-6.91	AV	Horizontal
1	11200	41.28	38.55	33.13	11.26	57.96	68.20	-10.24	Peak	Vertical
1	11200	28.01	38.55	33.13	11.26	44.69	54.00	-9.31	AV	Vertical

802.11n20 Mode_ Channel 140_ 5700 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	11400	39.82	38.55	33.13	11.26	56.50	68.20	-11.70	Peak	Horizontal
1	11400	31.60	38.55	33.13	11.26	48.28	54.00	-5.72	AV	Horizontal
1	11400	40.13	38.55	33.13	11.26	56.81	68.20	-11.39	Peak	Vertical
1	11400	28.54	38.55	33.13	11.26	45.22	54.00	-8.78	AV	Vertical

802.11n40 Mode_Channel 102 _5510 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	11020	40.72	38.55	33.13	11.26	57.40	68.20	-10.80	Peak	Horizontal
1	11020	31.08	38.55	33.13	11.26	47.76	54.00	-6.24	AV	Horizontal
1	11020	40.08	38.55	33.13	11.26	56.76	68.20	-11.44	Peak	Vertical
1	11020	28.95	38.55	33.13	11.26	45.63	54.00	-8.37	AV	Vertical

802.11n40 Mode_Channel 110 _ 5550 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	11100	40.54	38.55	33.13	11.26	57.22	68.20	-10.98	Peak	Horizontal
1	11100	31.57	38.55	33.13	11.26	48.25	54.00	-5.75	AV	Horizontal
1	11100	40.37	38.55	33.13	11.26	57.05	68.20	-11.15	Peak	Vertical
1	11100	29.34	38.55	33.13	11.26	46.02	54.00	-7.98	AV	Vertical

802.11n40 Mode_Channel 134 _ 5670 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	11340	40.61	38.55	33.13	11.26	57.29	68.20	-10.91	Peak	Horizontal
1	11340	30.32	38.55	33.13	11.26	47.00	54.00	-7.00	AV	Horizontal
1	11340	40.56	38.55	33.13	11.26	57.24	68.20	-10.96	Peak	Vertical
1	11340	28.65	38.55	33.13	11.26	45.33	54.00	-8.67	AV	Vertical

802.11ac20 Mode_Channel 100 _5550 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	11000	39.74	38.55	33.13	11.26	56.42	68.20	-11.78	Peak	Horizontal
1	11000	31.31	38.55	33.13	11.26	47.99	54.00	-6.01	AV	Horizontal
1	11000	40.35	38.55	33.13	11.26	57.03	68.20	-11.17	Peak	Vertical
1	11000	28.17	38.55	33.13	11.26	44.85	54.00	-9.15	AV	Vertical

802.11ac20 Mode_Channel 120 _ 5600 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	11200	40.12	38.55	33.13	11.26	56.80	68.20	-11.40	Peak	Horizontal
1	11200	30.94	38.55	33.13	11.26	47.62	54.00	-6.38	AV	Horizontal
1	11200	41.95	38.55	33.13	11.26	58.63	68.20	-9.57	Peak	Vertical
1	11200	29.34	38.55	33.13	11.26	46.02	54.00	-7.98	AV	Vertical

802.11ac20 Mode_ Channel 140_ 5700 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	11400	40.16	38.55	33.13	11.26	56.84	68.20	-11.36	Peak	Horizontal
1	11400	31.06	38.55	33.13	11.26	47.74	54.00	-6.26	AV	Horizontal
1	11400	41.54	38.55	33.13	11.26	58.22	68.20	-9.98	Peak	Vertical
1	11400	29.55	38.55	33.13	11.26	46.23	54.00	-7.77	AV	Vertical

802.11ac40 Mode_Channel 102 _5510 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	11020	40.70	38.55	33.13	11.26	57.38	68.20	-10.82	Peak	Horizontal
1	11020	31.74	38.55	33.13	11.26	48.42	54.00	-5.58	AV	Horizontal
1	11020	40.15	38.55	33.13	11.26	56.83	68.20	-11.37	Peak	Vertical
1	11020	28.86	38.55	33.13	11.26	45.54	54.00	-8.46	AV	Vertical

802.11ac40 Mode_Channel 110 _ 5550 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	11100	39.25	38.55	33.13	11.26	55.93	68.20	-12.27	Peak	Horizontal
1	11100	30.96	38.55	33.13	11.26	47.64	54.00	-6.36	AV	Horizontal
1	11100	40.26	38.55	33.13	11.26	56.94	68.20	-11.26	Peak	Vertical
1	11100	29.29	38.55	33.13	11.26	45.97	54.00	-8.03	AV	Vertical

802.11ac40 Mode_Channel 134 _ 5670 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	11340	39.11	38.55	33.13	11.26	55.79	68.20	-12.41	Peak	Horizontal
1	11340	30.22	38.55	33.13	11.26	46.90	54.00	-7.10	AV	Horizontal
1	11340	40.60	38.55	33.13	11.26	57.28	68.20	-10.92	Peak	Vertical
1	11340	29.20	38.55	33.13	11.26	45.88	54.00	-8.12	AV	Vertical

802.11ac80 Mode_Channel 106 _5530 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	11060	40.79	38.55	33.13	11.26	57.47	68.20	-10.73	Peak	Horizontal
1	11060	30.47	38.55	33.13	11.26	47.15	54.00	-6.85	AV	Horizontal
1	11060	41.01	38.55	33.13	11.26	57.69	68.20	-10.51	Peak	Vertical
1	11060	28.84	38.55	33.13	11.26	45.52	54.00	-8.48	AV	Vertical

802.11ac80 Mode_Channel 122 _5610 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	11060	40.76	38.55	33.13	11.26	57.44	68.20	-10.76	Peak	Horizontal
1	11060	31.75	38.55	33.13	11.26	48.43	54.00	-5.57	AV	Horizontal
1	11060	40.09	38.55	33.13	11.26	56.77	68.20	-11.43	Peak	Vertical
1	11060	29.70	38.55	33.13	11.26	46.38	54.00	-7.62	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	40.82	38.55	33.13	11.26	57.50	68.20	-10.70	Peak	Horizontal
1	11490	30.32	38.55	33.13	11.26	47.00	54.00	-7.00	AV	Horizontal
1	11490	41.11	38.55	33.13	11.26	57.79	68.20	-10.41	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	40.16	38.55	33.13	11.26	56.84	68.20	-11.36	Peak	Horizontal
1	11570	31.18	38.55	33.13	11.26	47.86	54.00	-6.14	AV	Horizontal
1	11570	40.44	38.55	33.13	11.26	57.12	68.20	-11.08	Peak	Vertical
1	11570	29.21	38.55	33.13	11.26	45.89	54.00	-8.11	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	39.76	38.55	33.13	11.26	56.44	68.20	-11.76	Peak	Horizontal
1	11650	29.93	38.55	33.13	11.26	46.61	54.00	-7.39	AV	Horizontal
1	11650	41.22	38.55	33.13	11.26	57.90	68.20	-10.30	Peak	Vertical
1	11650	28.94	38.55	33.13	11.26	45.62	54.00	-8.38	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	40.71	38.55	33.13	11.26	57.39	68.20	-10.81	Peak	Horizontal
1	11490	31.49	38.55	33.13	11.26	48.17	54.00	-5.83	AV	Horizontal
1	11490	39.57	38.55	33.13	11.26	56.25	68.20	-11.95	Peak	Vertical
1	11490	29.57	38.55	33.13	11.26	46.25	54.00	-7.75	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	40.69	38.55	33.13	11.26	57.37	68.20	-10.83	Peak	Horizontal
1	11570	30.93	38.55	33.13	11.26	47.61	54.00	-6.39	AV	Horizontal
1	11570	40.72	38.55	33.13	11.26	57.40	68.20	-10.80	Peak	Vertical
1	11570	29.26	38.55	33.13	11.26	45.94	54.00	-8.06	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	39.18	38.55	33.13	11.26	55.86	68.20	-12.34	Peak	Horizontal
1	11650	30.94	38.55	33.13	11.26	47.62	54.00	-6.38	AV	Horizontal
1	11650	41.14	38.55	33.13	11.26	57.82	68.20	-10.38	Peak	Vertical
1	11650	28.57	38.55	33.13	11.26	45.25	54.00	-8.75	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	39.23	38.55	33.13	11.26	55.91	68.20	-11.37	Peak	Horizontal
1	11510	29.71	38.55	33.13	11.26	46.39	54.00	-6.15	AV	Horizontal
1	11510	40.87	38.55	33.13	11.26	57.55	68.20	-10.94	Peak	Vertical
1	11510	28.78	38.55	33.13	11.26	45.46	54.00	-7.76	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	39.11	38.55	33.13	11.26	55.79	68.20	-12.41	Peak	Horizontal
1	11590	30.84	38.55	33.13	11.26	47.52	54.00	-6.48	AV	Horizontal
1	11590	40.14	38.55	33.13	11.26	56.82	68.20	-11.38	Peak	Vertical
1	11590	30.10	38.55	33.13	11.26	46.78	54.00	-7.22	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	38.63	38.55	33.13	11.26	55.31	68.20	-12.89	Peak	Horizontal
1	11490	30.23	38.55	33.13	11.26	46.91	54.00	-7.09	AV	Horizontal
1	11490	42.42	38.55	33.13	11.26	59.10	68.20	-9.10	Peak	Vertical
1	11490	27.68	38.55	33.13	11.26	44.36	54.00	-9.64	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	39.87	38.55	33.13	11.26	56.55	68.20	-11.65	Peak	Horizontal
1	11570	30.36	38.55	33.13	11.26	47.04	54.00	-6.96	AV	Horizontal
1	11570	39.92	38.55	33.13	11.26	56.60	68.20	-11.60	Peak	Vertical
1	11570	30.00	38.55	33.13	11.26	46.68	54.00	-7.32	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	40.74	38.55	33.13	11.26	57.42	68.20	-10.78	Peak	Horizontal
1	11650	31.30	38.55	33.13	11.26	47.98	54.00	-6.02	AV	Horizontal
1	11650	40.88	38.55	33.13	11.26	57.56	68.20	-10.64	Peak	Vertical
1	11650	29.75	38.55	33.13	11.26	46.43	54.00	-7.57	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	40.41	38.55	33.13	11.26	57.09	68.20	-11.11	Peak	Horizontal
1	11510	30.35	38.55	33.13	11.26	47.03	54.00	-6.97	AV	Horizontal
1	11510	42.51	38.55	33.13	11.26	59.19	68.20	-9.01	Peak	Vertical
1	11510	27.86	38.55	33.13	11.26	44.54	54.00	-9.46	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	40.05	38.55	33.13	11.26	56.73	68.20	-11.47	Peak	Horizontal
1	11590	31.05	38.55	33.13	11.26	47.73	54.00	-6.27	AV	Horizontal
1	11590	40.69	38.55	33.13	11.26	57.37	68.20	-10.83	Peak	Vertical
1	11590	28.74	38.55	33.13	11.26	45.42	54.00	-8.58	AV	Vertical

802.11ac80 Mode_Channel 155 _5775 MHz

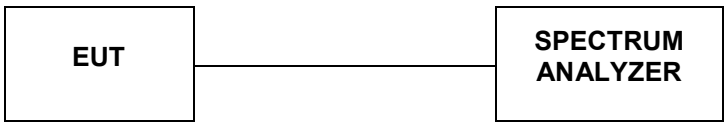
Item (Mark)	Freq (MHz)	Read Level (dBμV)	Antenna Factor (dB/m)	PRM Factor dB	Cable Loss (dB)	Result Level (dBμV/m)	Limit Line (dBμV/m)	Margin (dB)	Detector	Polarization
1	11550	39.68	38.55	33.13	11.26	56.36	68.20	-11.84	Peak	Horizontal
1	11550	29.96	38.55	33.13	11.26	46.64	54.00	-7.36	AV	Horizontal
1	11550	39.72	38.55	33.13	11.26	56.40	68.20	-11.80	Peak	Vertical
1	11550	29.28	38.55	33.13	11.26	45.96	54.00	-8.04	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 U-NII Test Procedures New Rules v02r01 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	Jenny Zeng	Configurations	IEEE 802.11a/n/ac

Antenna 0:
5150-5250MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.98	0.09

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.98	0.09

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.98	0.09

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
40	5200	0.98	0.09

802.11ac40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
38	5190	0.96	0.18

802.11ac80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
42	5210	0.92	0.36

5260-5320MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
56	5280	0.98	0.09

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
56	5280	0.98	0.09

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
54	5270	0.97	0.13

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
56	5280	0.98	0.09

802.11ac40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
54	5270	0.97	0.13

802.11ac80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
58	5290	0.94	0.27

5500-5700MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
120	5600	0.98	0.09

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
120	5600	0.98	0.09

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
118	5590	0.96	0.18

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
120	5600	0.98	0.09

802.11ac40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
118	5590	0.97	0.13

802.11ac80 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
106	5530	0.94	0.27

5725-5850MHz:

802.11a Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.99	0.06

802.11n HT20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.98	0.09

802.11n HT40 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.97	0.13

802.11ac20 Test Mode

Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
157	5785	0.98	0.09

802.11ac40 Test Mode

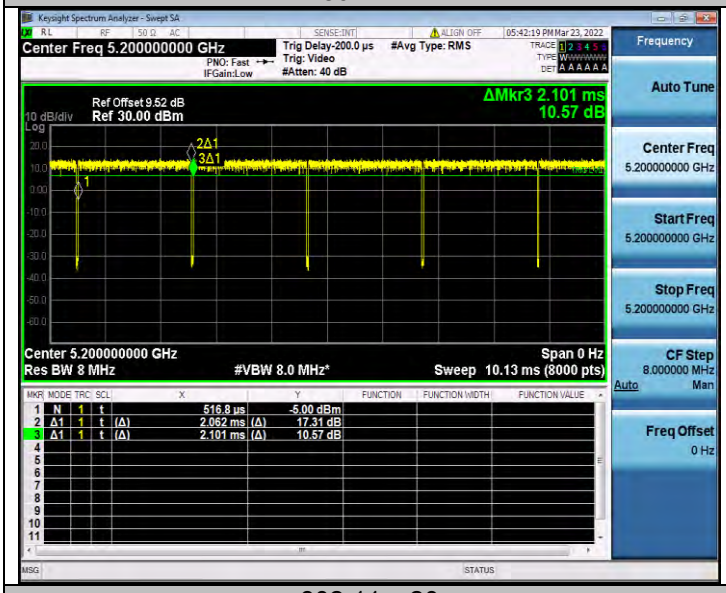
Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
151	5755	0.96	0.18

802.11ac80 Test Mode

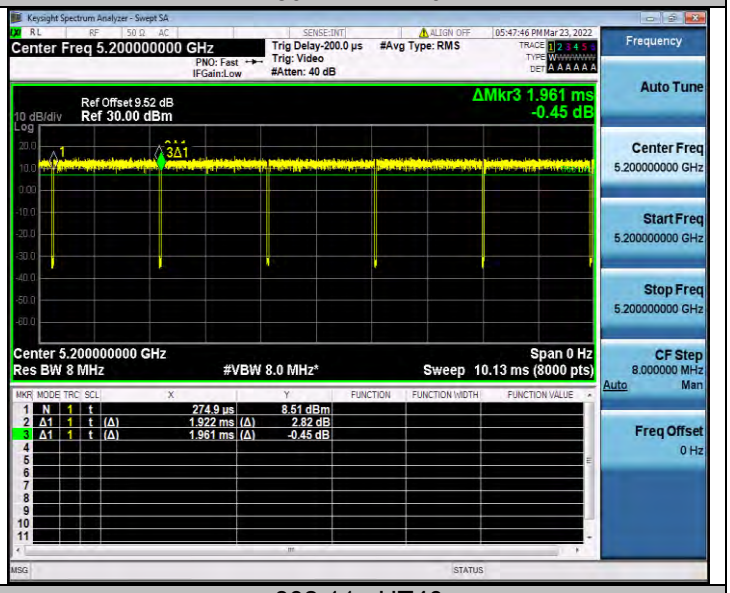
Channel	Frequency (MHz)	Duty Cycle	Duty factor (dB)
155	5775	0.92	0.36

5150-5250MHz:

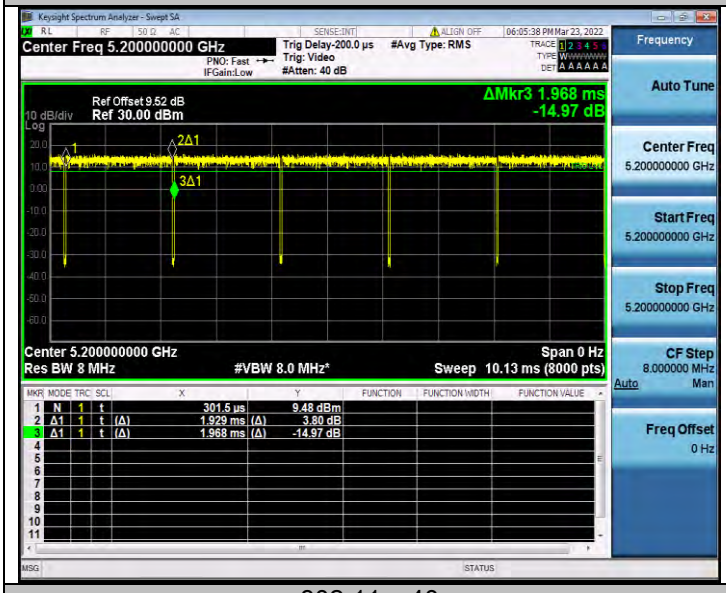
802.11a



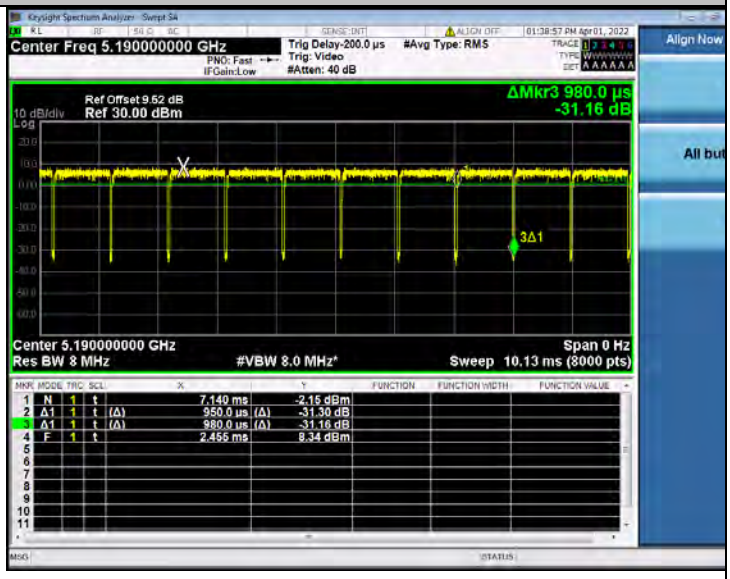
802.11n HT20



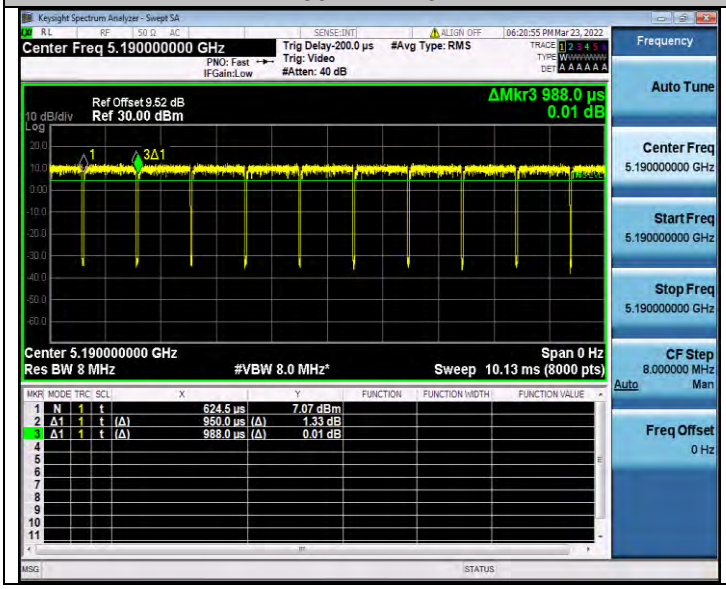
802.11ac20



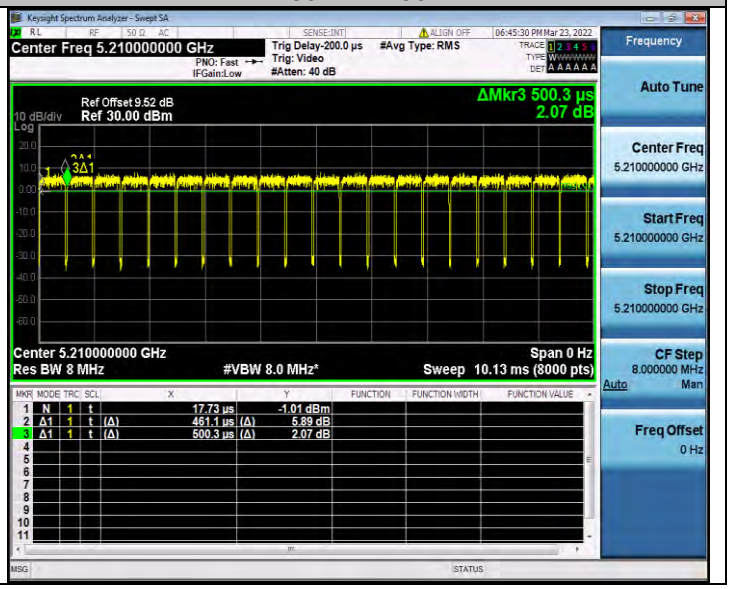
802.11n HT40



802.11ac40

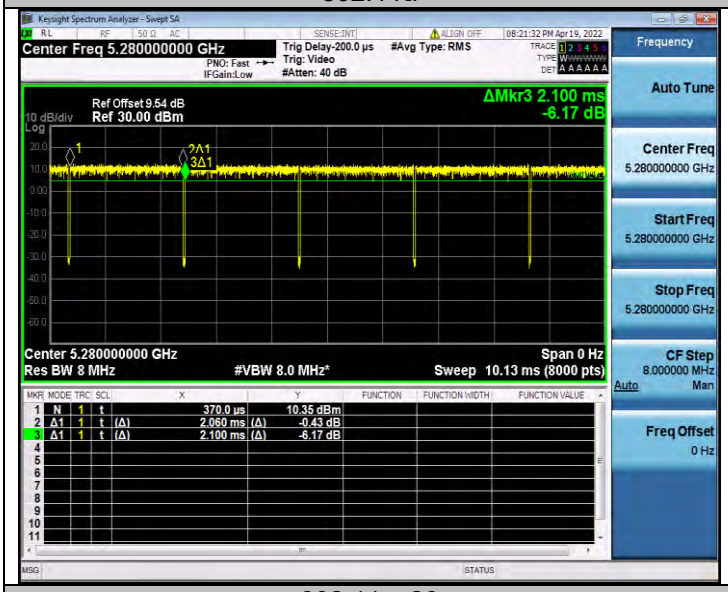


802.11ac80

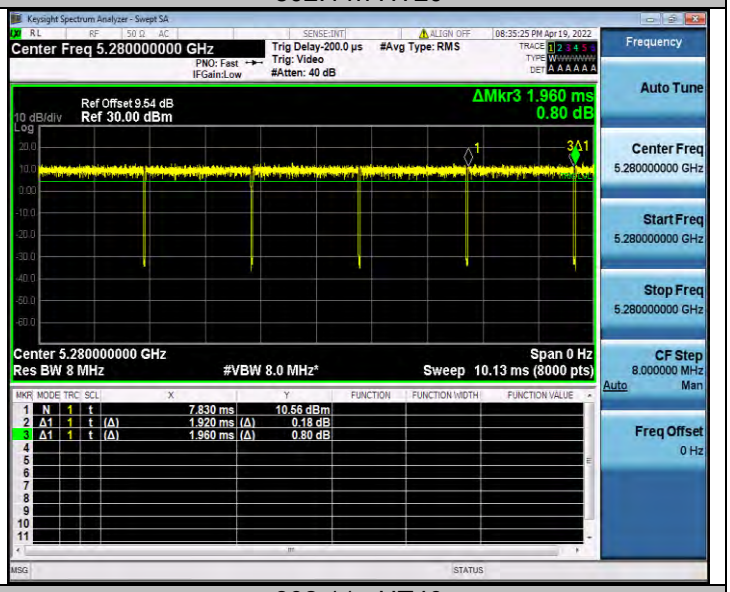


5260-5320MHz:

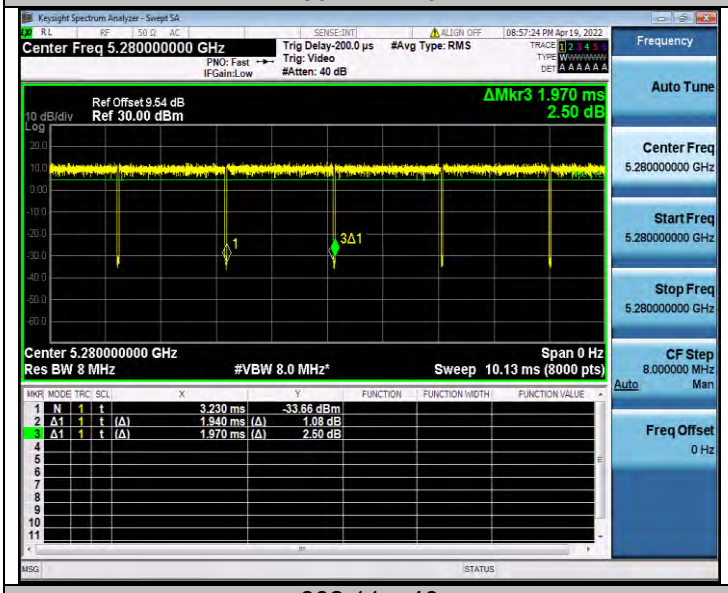
802.11a



802.11n HT20



802.11ac20



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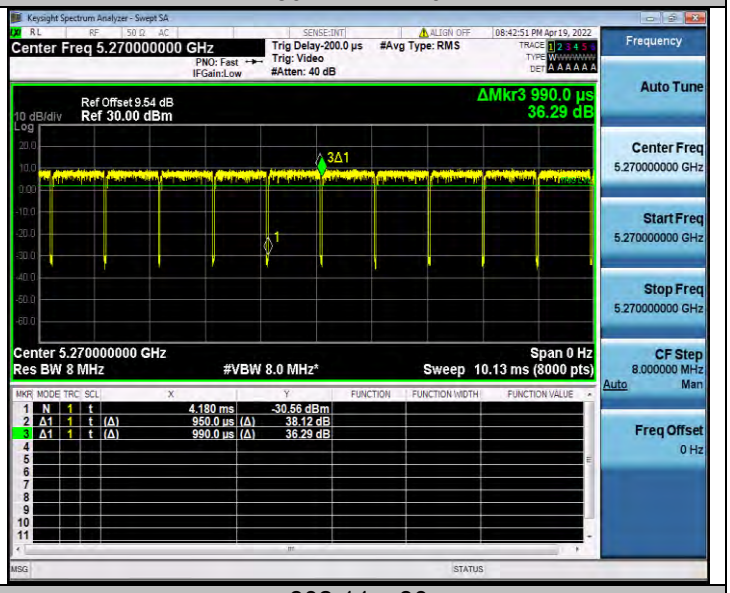
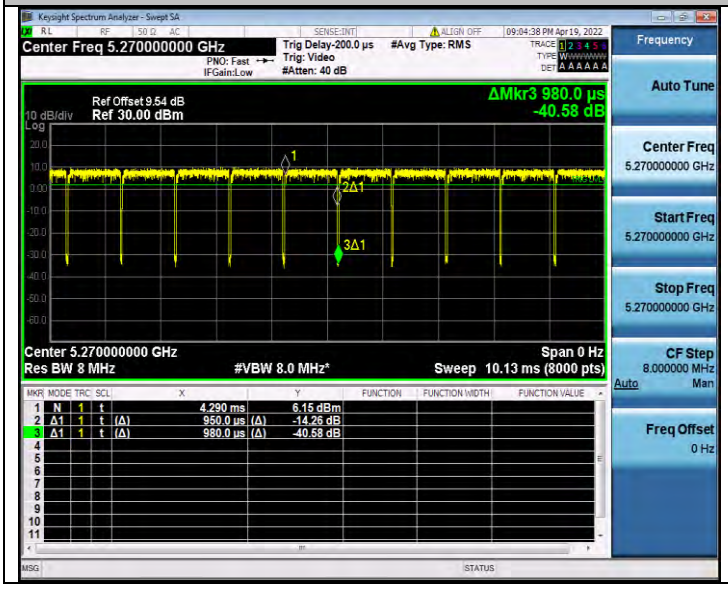


802.11ac40



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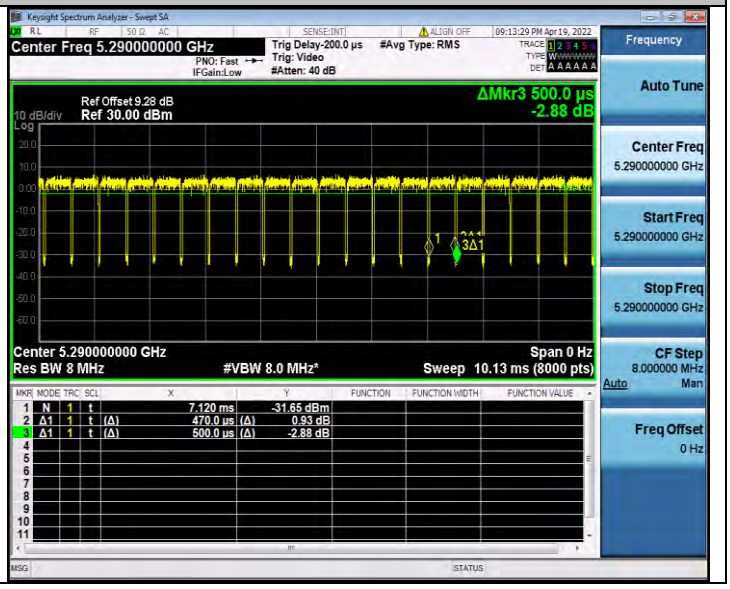
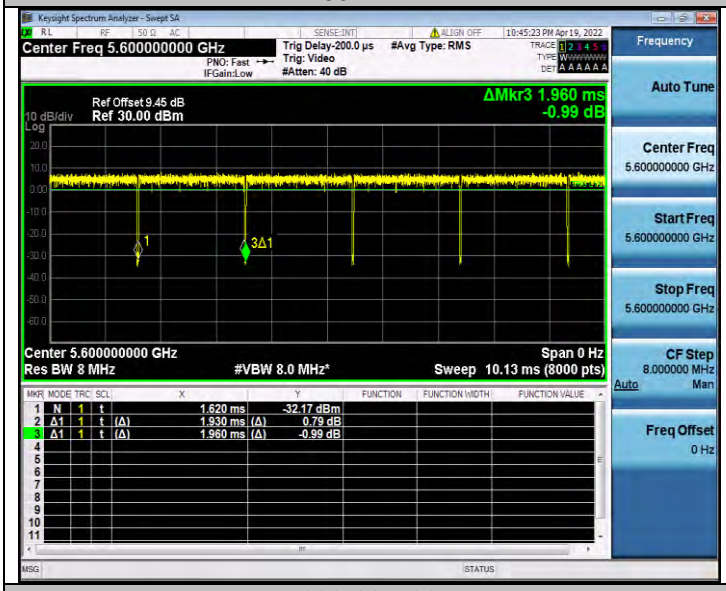
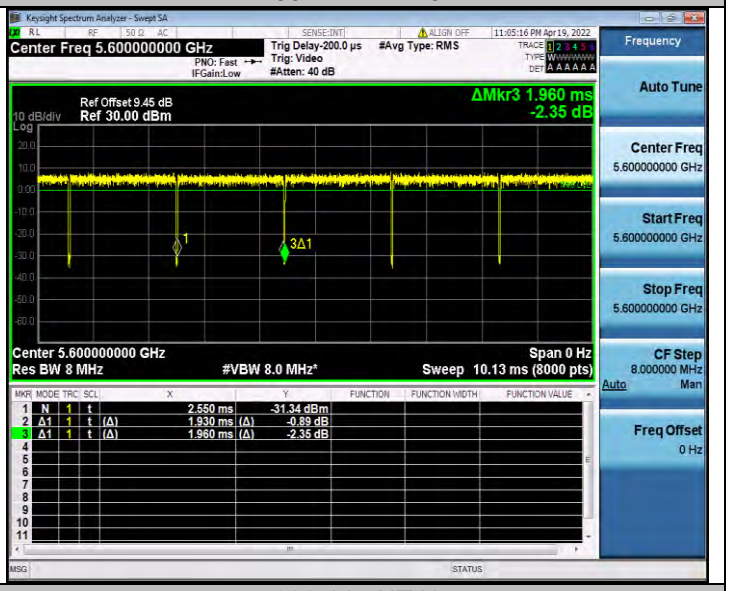


5500-5500MHz:

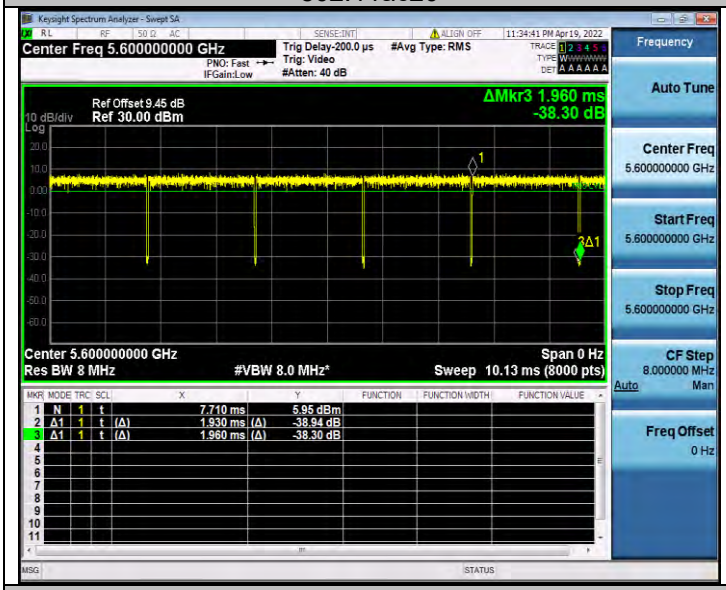
802.11a



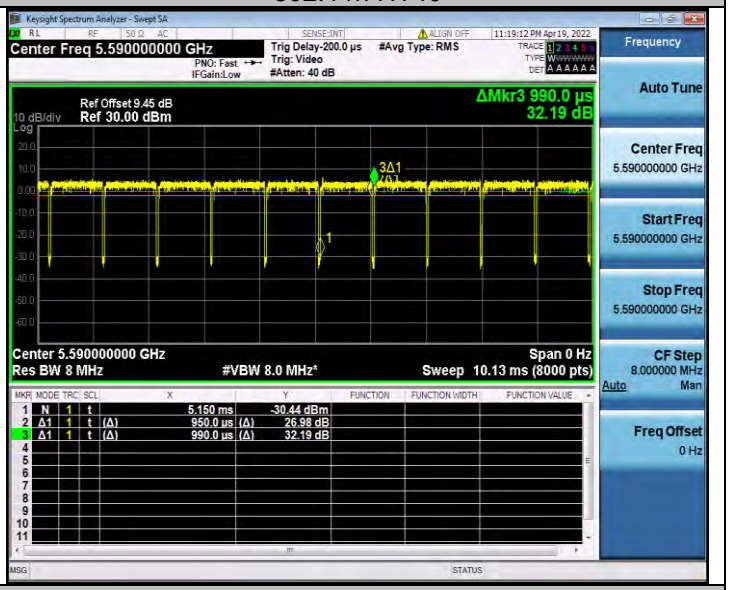
802.11n HT20



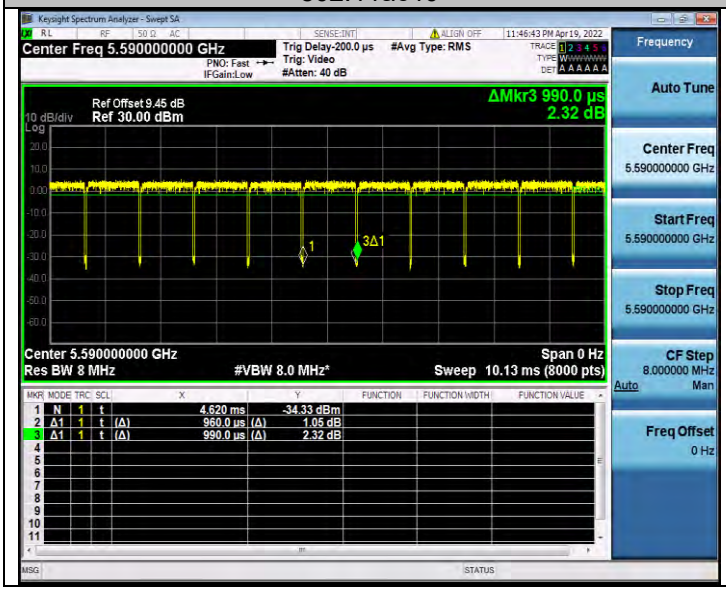
802.11ac20



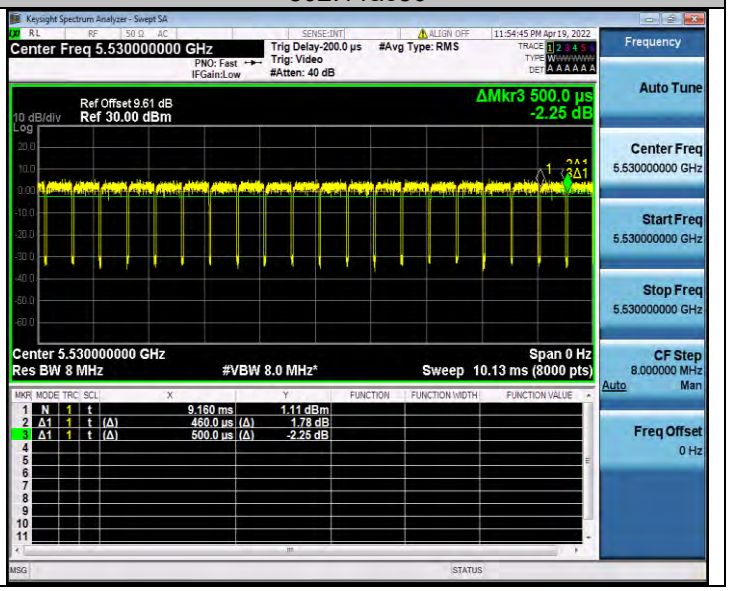
802.11n HT40



802.11ac40

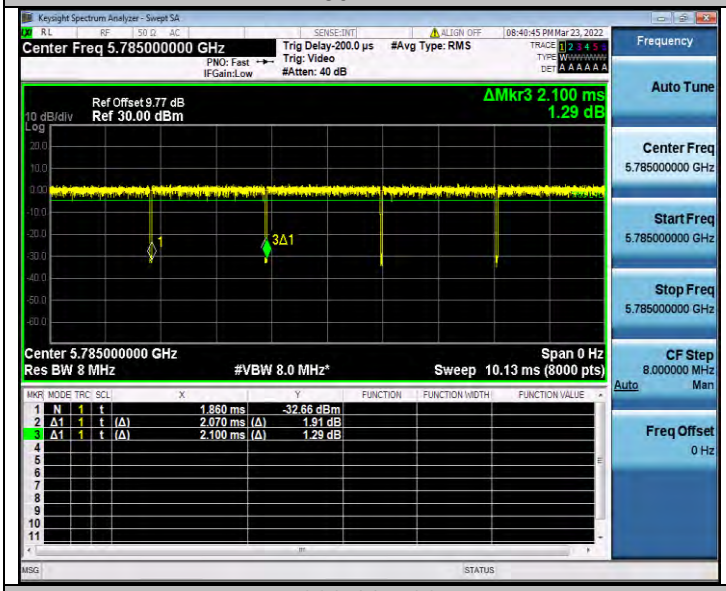


802.11ac80

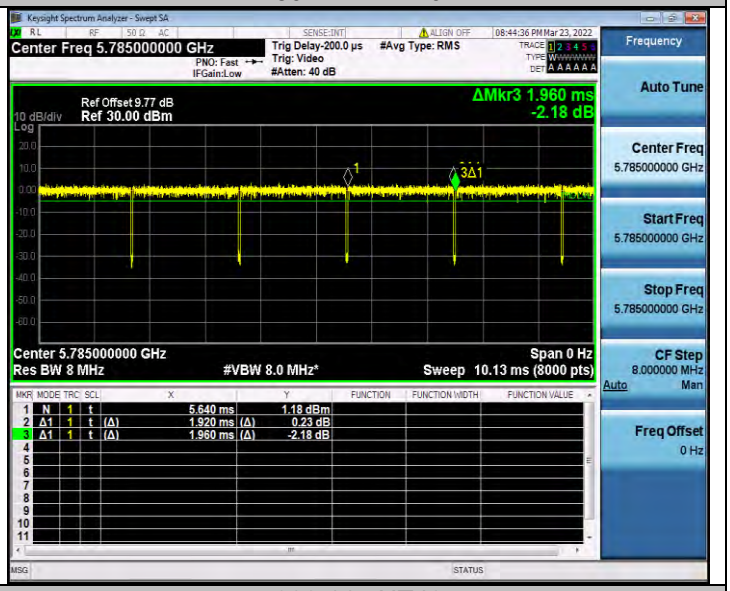


5725-5850MHz:

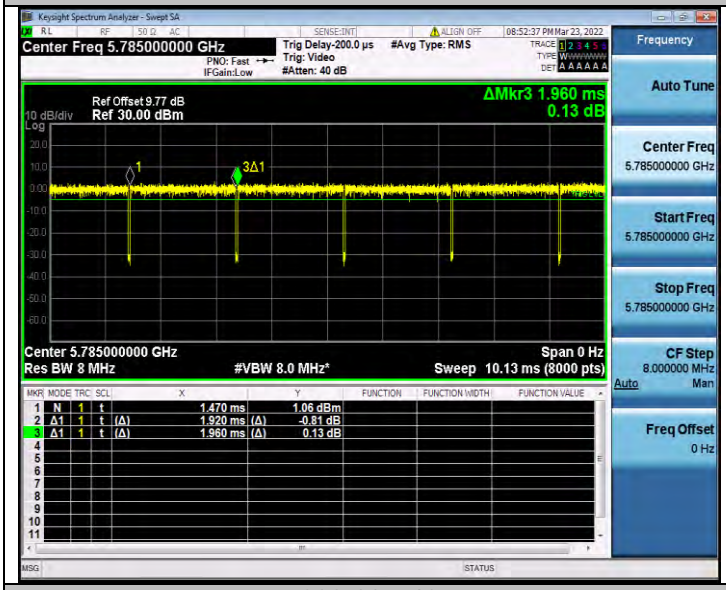
802.11a



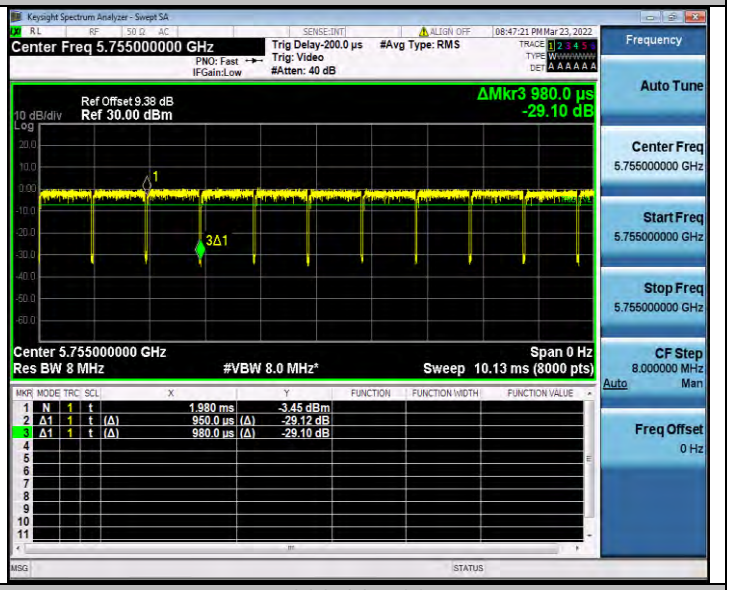
802.11n HT20



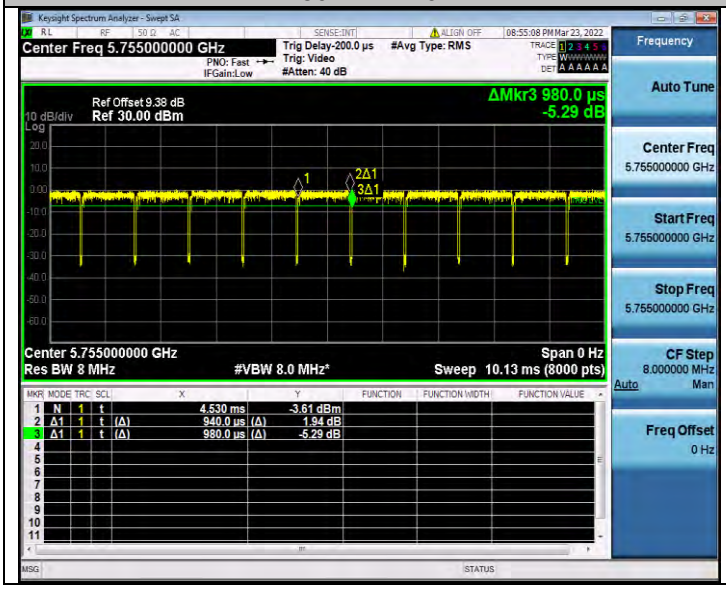
802.11ac20



802.11n HT40



802.11ac40



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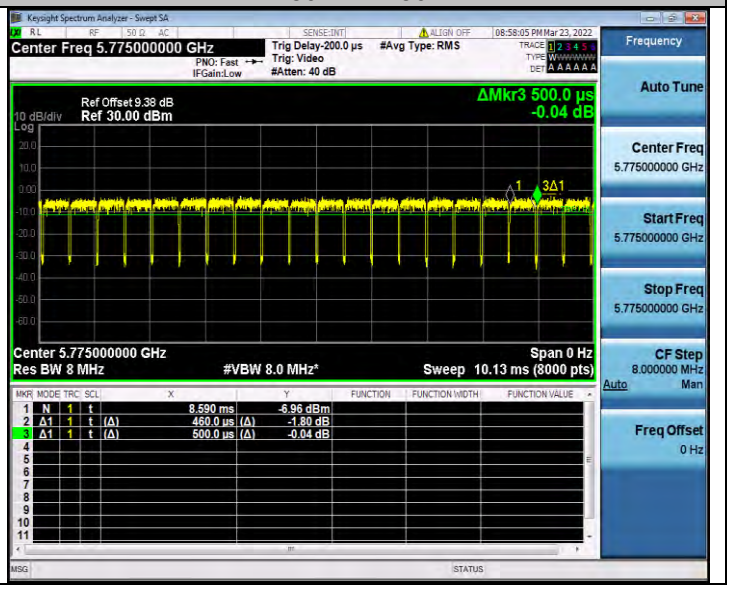
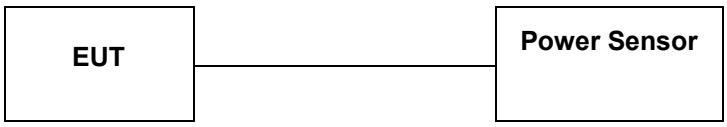


4.4. Maximum Average Output Power

TEST CONFIGURATION



TEST PROCEDURE

According to KDB789033 D02 General U-NII Test Procedures New Rules v02r01 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	Jenny Zeng	Configurations	IEEE 802.11a/n/ac

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	14.29	0.09	14.38	24.00	PASS
40	5200	14.76	0.09	14.85	24.00	PASS
48	5240	14.18	0.09	14.27	24.00	PASS
802.11n20						
36	5180	14.07	0.09	14.16	24.00	PASS
40	5200	14.23	0.09	14.32	24.00	PASS
48	5240	14.64	0.09	14.73	24.00	PASS
802.11ac20						
36	5180	14.94	0.09	15.03	24.00	PASS
40	5200	14.98	0.09	15.07	24.00	PASS
48	5240	14.35	0.09	14.44	24.00	PASS
802.11n40						
38	5190	14.63	0.09	14.72	24.00	PASS
46	5230	14.66	0.09	14.75	24.00	PASS
802.11ac40						
38	5190	14.20	0.18	14.38	24.00	PASS
46	5230	14.05	0.18	14.23	24.00	PASS
802.11ac80						
42	5210	14.69	0.36	15.05	24.00	PASS

5260-5320MHz:

Channel	Frequency (MHz)	Output Power AV (dBm)	Duty factor (dB)	Output Power AV + Duty factor (dBm)	Limits (dBm)	Verdict
802.11a						
52	5260	14.52	0.09	14.61	24.00	PASS
56	5280	14.20	0.09	14.29	24.00	PASS
64	5320	14.38	0.09	14.47	24.00	PASS
802.11n20						
52	5260	14.54	0.09	14.63	24.00	PASS
56	5280	14.43	0.09	14.52	24.00	PASS
64	5320	14.66	0.09	14.75	24.00	PASS
802.11ac20						
52	5260	14.80	0.09	14.89	24.00	PASS
56	5280	14.59	0.09	14.68	24.00	PASS
64	5320	14.70	0.09	14.79	24.00	PASS
802.11n40						
54	5270	14.65	0.13	14.78	24.00	PASS
62	5310	14.52	0.13	14.65	24.00	PASS
802.11ac40						
54	5270	14.45	0.13	14.58	24.00	PASS
62	5310	14.52	0.13	14.65	24.00	PASS
802.11ac80						
58	5290	14.60	0.27	14.87	24.00	PASS

5500-5700MHz:

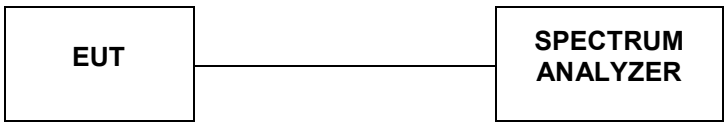
Channel	Frequency (MHz)	Output Power AV (dBm)	Duty factor (dB)	Output Power AV + Duty factor (dBm)	Limits (dBm)	Verdict
802.11a						
100	5500	14.60	0.09	14.69	24.00	PASS
120	5600	14.19	0.09	14.28	24.00	PASS
140	5700	14.68	0.09	14.77	24.00	PASS
802.11n20						
100	5500	14.78	0.09	14.87	24.00	PASS
120	5600	14.82	0.09	14.91	24.00	PASS
140	5700	14.74	0.09	14.83	24.00	PASS
802.11ac20						
100	5500	14.66	0.09	14.75	24.00	PASS
120	5600	14.56	0.09	14.65	24.00	PASS
140	5700	14.43	0.09	14.52	24.00	PASS
802.11n40						
102	5510	14.14	0.18	14.32	24.00	PASS
118	5590	14.61	0.18	14.79	24.00	PASS
134	5670	14.60	0.18	14.78	24.00	PASS
802.11ac40						
102	5510	14.45	0.13	14.58	24.00	PASS
118	5590	14.50	0.13	14.63	24.00	PASS
134	5670	14.45	0.13	14.58	24.00	PASS
802.11ac80						
106	5530	14.55	0.27	14.82	24.00	PASS
122	5610	14.34	0.27	14.61	24.00	PASS

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	16.20	0.06	16.26	30.00	PASS
157	5785	15.96	0.06	16.02	30.00	PASS
165	5825	15.72	0.06	15.78	30.00	PASS
802.11n20						
129	5745	15.86	0.09	15.95	30.00	PASS
157	5785	15.85	0.09	15.94	30.00	PASS
165	5825	16.30	0.09	16.39	30.00	PASS
802.11ac20						
149	5745	16.48	0.09	16.57	30.00	PASS
157	5785	16.16	0.09	16.25	30.00	PASS
165	5825	16.37	0.09	16.46	30.00	PASS
802.11n40						
151	5755	15.60	0.13	15.74	30.00	PASS
159	5795	16.32	0.13	16.45	30.00	PASS
802.11ac40						
151	5755	15.60	0.13	15.74	30.00	PASS
159	5795	16.32	0.13	16.45	30.00	PASS
802.11ac80						
155	5775	14.00	0.36	14.36	30.00	PASS

4.5. Power Spectral Density

TEST CONFIGURATION



TEST PROCEDURE

According to KDB789033 D02 General U-NII Test Procedures New Rules v02r01: 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	Jenny Zeng	Configurations	IEEE 802.11a/n/ac

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	3.47	0.09	0	3.56	11	PASS
40	5200	2.88	0.09	0	2.97	11	PASS
48	5240	1.53	0.09	0	1.62	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	3.74	0.09	0	3.83	11	PASS
40	5200	3.43	0.09	0	3.52	11	PASS
48	5240	1.88	0.09	0	1.97	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	4.34	0.09	0	4.43	11	PASS
40	5200	3.73	0.09	0	3.82	11	PASS
48	5240	2.15	0.09	0	2.24	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	1.24	0.09	0	1.33	11	PASS
46	5230	-0.17	0.09	0	-0.08	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	1.53	0.18	0	1.71	11	PASS
46	5230	0.64	0.18	0	0.82	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	-2.88	0.36	0	-2.52	11	PASS

5260-5320MHz:

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
52	5260	8.46	0.09	0	8.55	11	PASS
56	5280	7.74	0.09	0	7.83	11	PASS
64	5320	5.54	0.09	0	5.63	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
52	5260	8.59	0.09	0	8.68	11	PASS
56	5280	7.21	0.09	0	7.30	11	PASS
64	5320	5.49	0.09	0	5.58	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
52	5260	8.36	0.09	0	8.45	11	PASS
56	5280	7.46	0.09	0	7.55	11	PASS
64	5320	5.60	0.09	0	5.69	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
54	5270	5.32	0.13	0	5.45	11	PASS
62	5310	3.70	0.13	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
54	5270	5.59	0.13	0	5.72	11	PASS
62	5310	4.04	0.13	0	4.17	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
58	5290	2.07	0.27	0	2.34	11	PASS

5500-5700MHz:

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
100	5500	8.12	0.09	0	8.21	11	PASS
120	5600	4.07	0.09	0	4.16	11	PASS
140	5700	3.60	0.09	0	3.69	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
100	5500	8.34	0.09	0	8.43	11	PASS
120	5600	3.31	0.09	0	3.40	11	PASS
140	5700	3.74	0.09	0	3.83	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
100	5500	8.09	0.09	0	8.18	11	PASS
120	5600	3.10	0.09	0	3.19	11	PASS
140	5700	3.65	0.09	0	3.74	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
102	5510	5.34	0.18	0	5.52	11	PASS
118	5590	1.20	0.18	0	1.38	11	PASS
134	5670	0.86	0.18	0	1.04	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
102	5510	5.42	0.13	0	5.55	11	PASS
118	5590	1.18	0.13	0	1.31	11	PASS
134	5670	0.28	0.13	0	0.41	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
106	5530	0.80	0.27	0	1.07	11	PASS
122	5610	-2.77	0.27	0	-2.50	11	PASS

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	-2.74	0.06	2.2	-0.48	30	PASS
157	5785	-3.17	0.06	2.2	-0.91	30	PASS
165	5825	-4.66	0.06	2.2	-2.40	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	-2.63	0.09	2.2	-0.34	30	PASS
157	5785	-3.23	0.09	2.2	-0.94	30	PASS
165	5825	-4.61	0.09	2.2	-2.32	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	-6.37	0.13	2.2	-4.04	30	PASS
157	5795	-6.12	0.13	2.2	-3.79	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	-3.04	0.09	2.2	-0.75	30	PASS
157	5785	-3.09	0.09	2.2	-0.80	30	PASS
165	5825	-4.44	0.09	2.2	-2.15	30	PASS

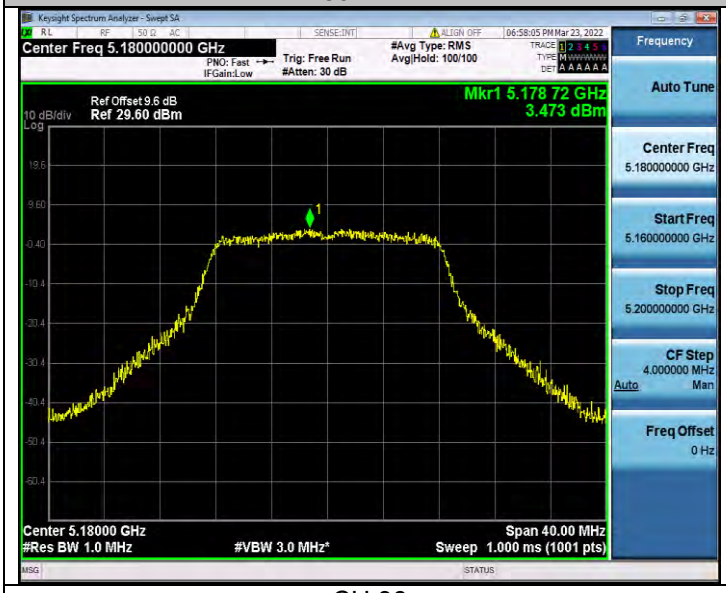
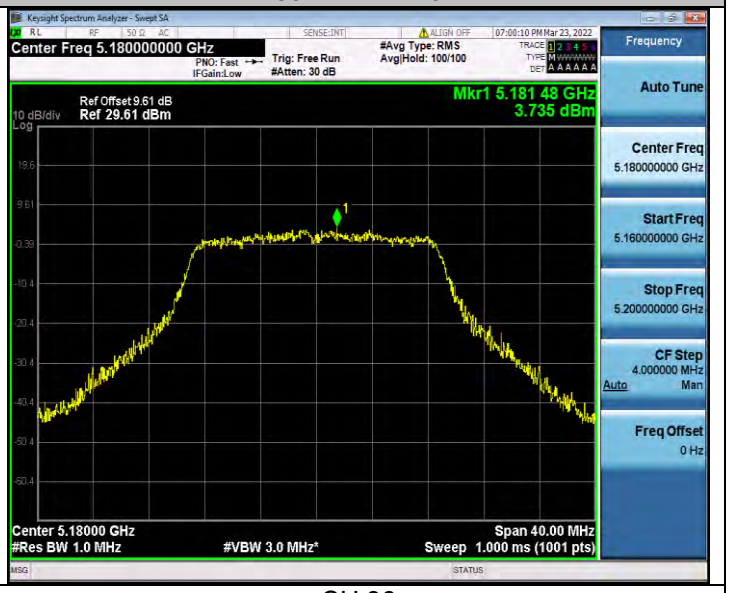
802.11ac40 Test Mode

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	-6.43	0.18	2.2	-4.05	30	PASS
157	5795	-6.23	0.18	2.2	-3.85	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	-9.13	0.36	2.2	-6.57	30	PASS

5150-5250MHz:

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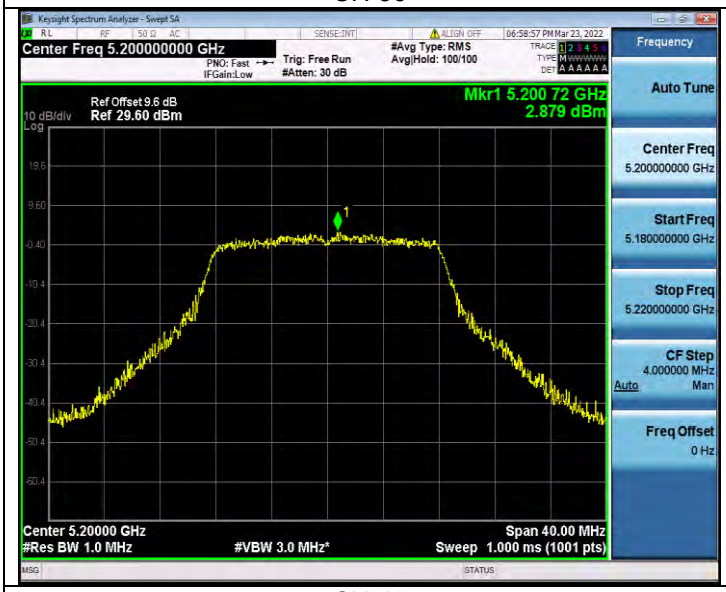
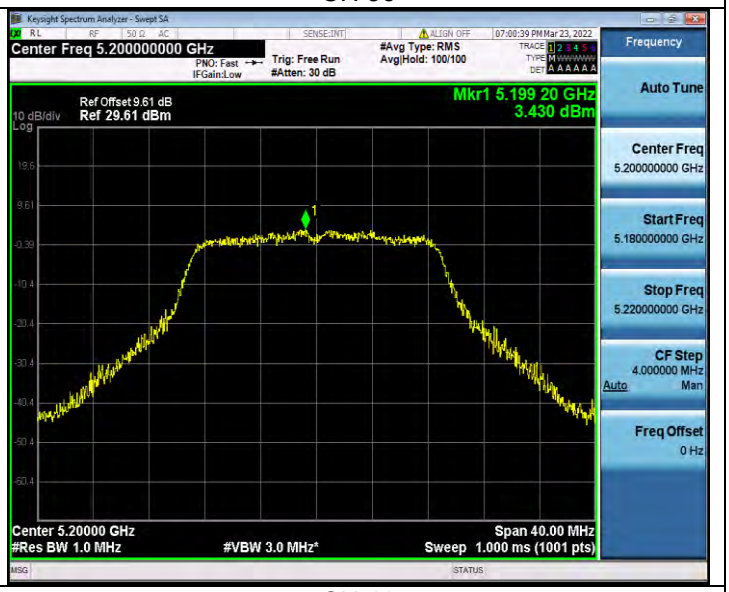
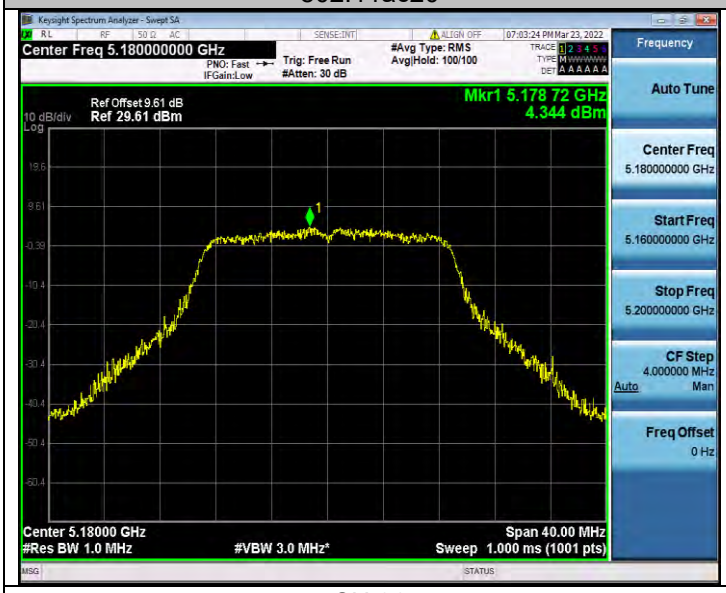
	
CH 40	CH 40
	
CH 48	CH 48

802.11ac20	802.11n HT40
	
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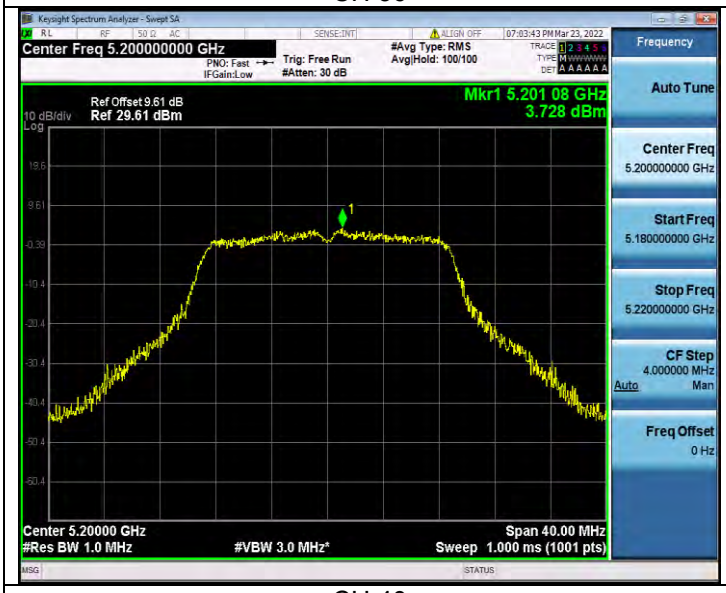
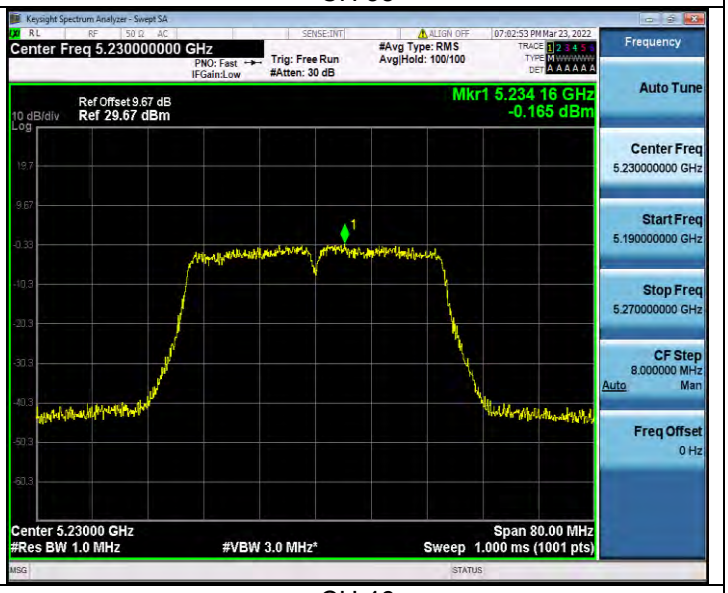
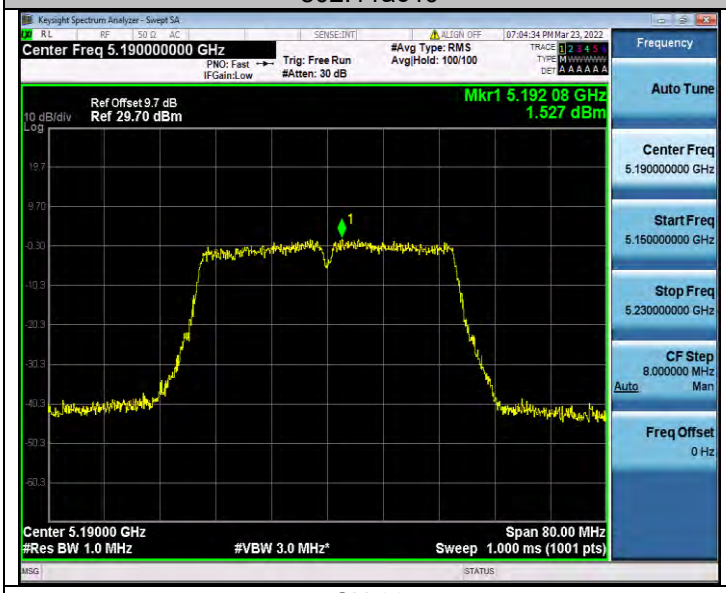
	
CH 40	CH 46
	
CH 48	

802.11ac40	802.11ac80
	
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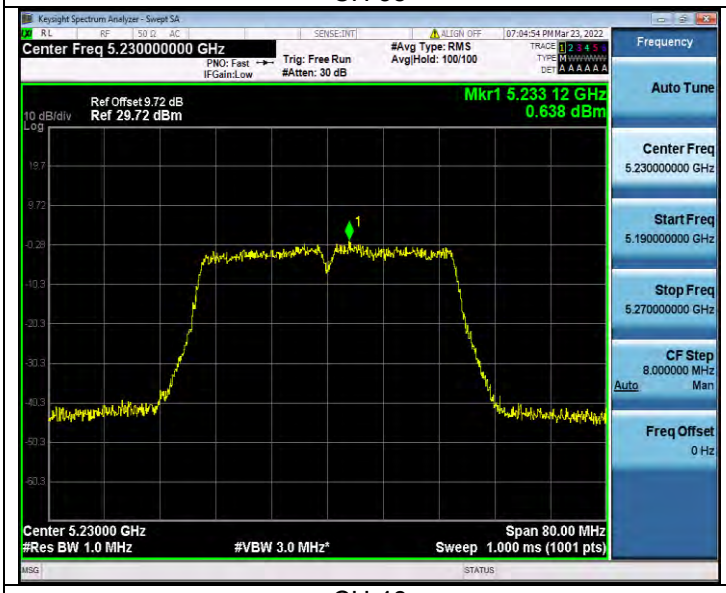	
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5260-5320MHz:

802.11a	802.11n HT20
	
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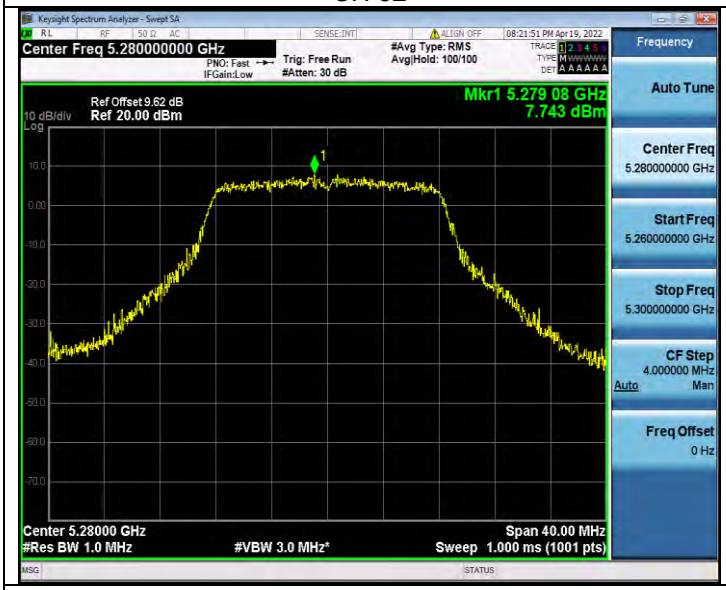	
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	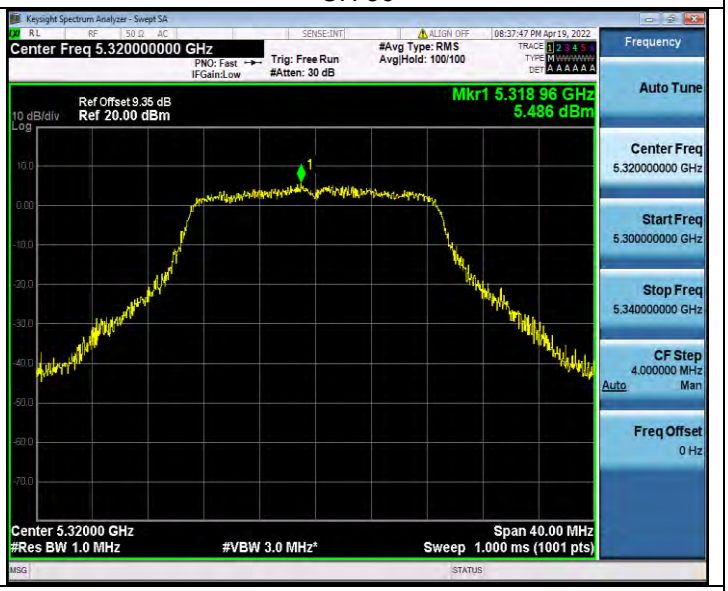
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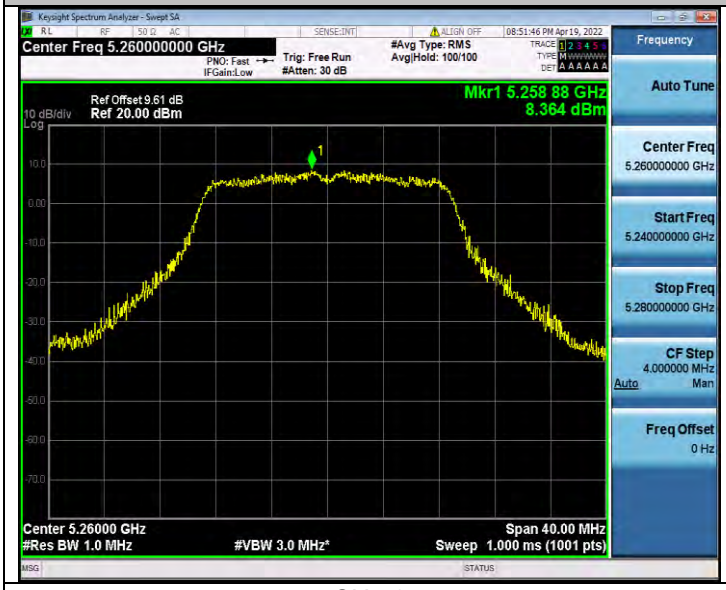
802.11ac20	802.11n HT40
	
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CH 56	CH 62
	
CH 64	

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	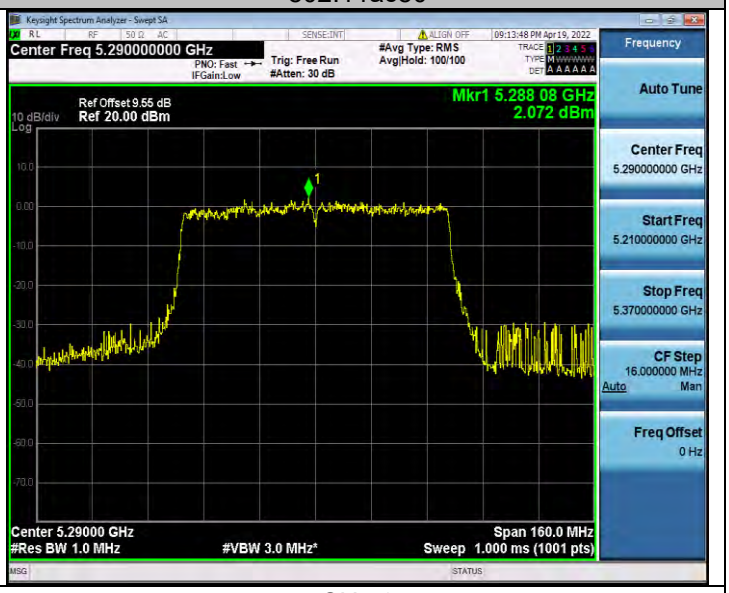
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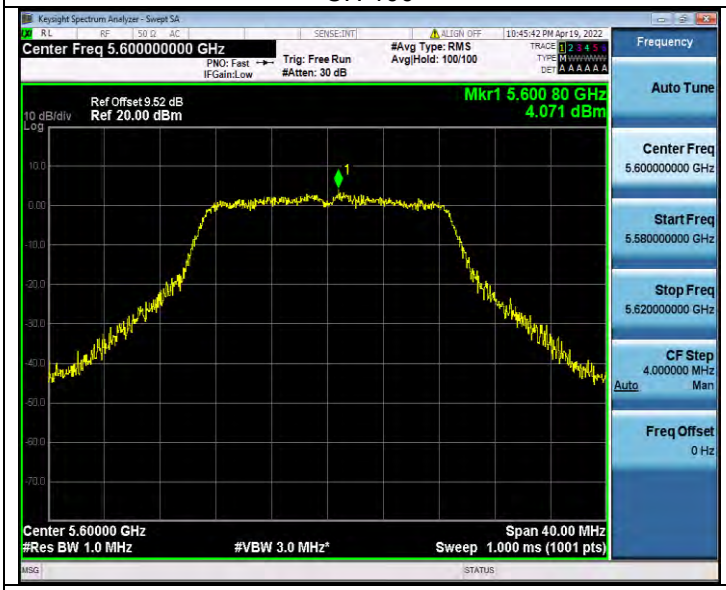
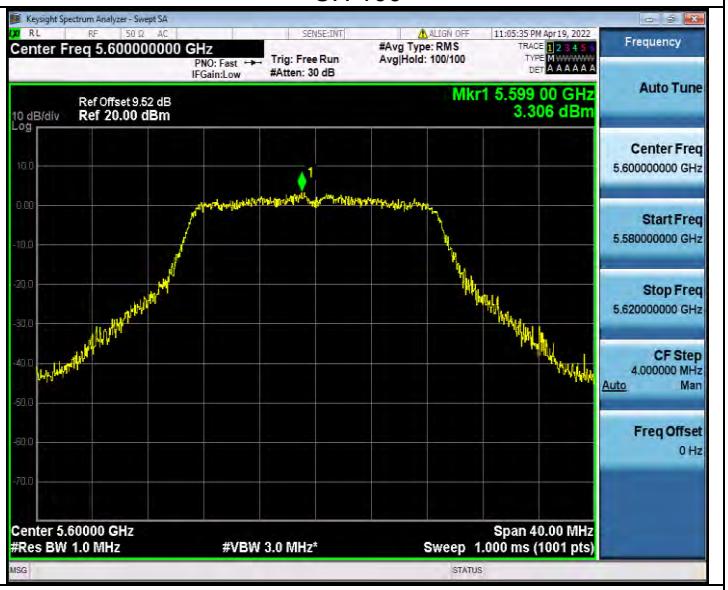
CH 62	

5500-5700MHz:

802.11a	802.11n HT20
	
CH 100	CH 100
	
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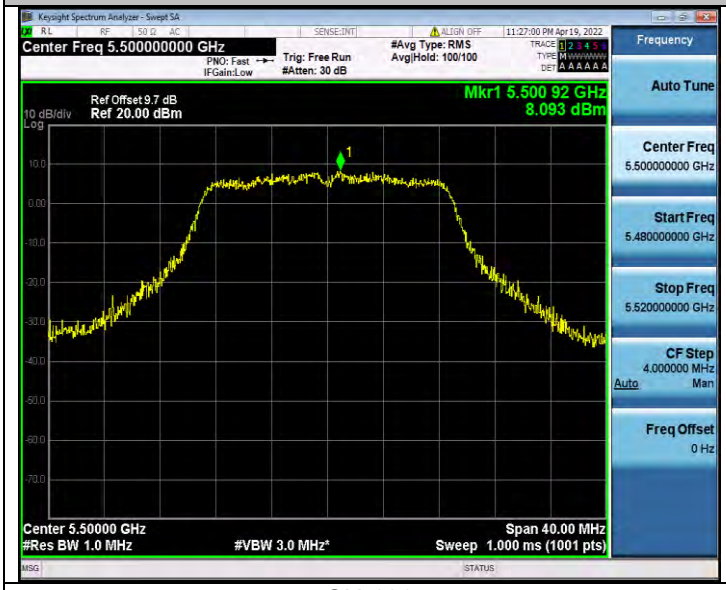
CH 140	CH 140

802.11ac20	802.11n HT40
	
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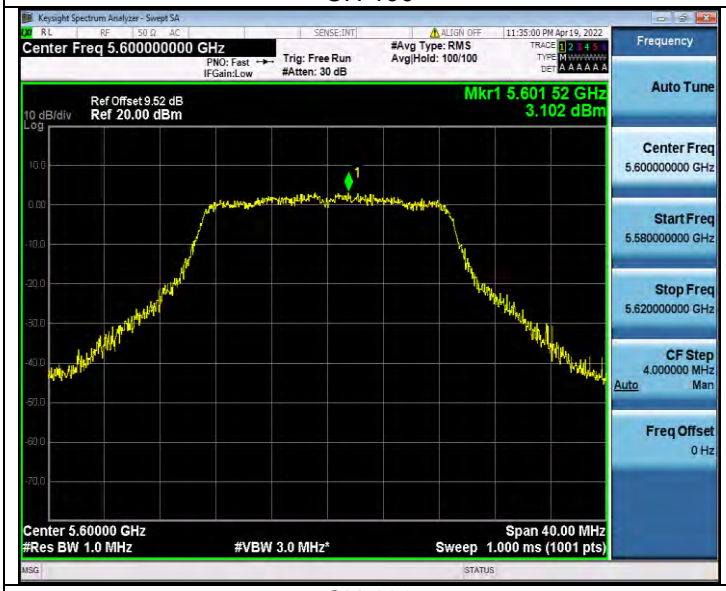	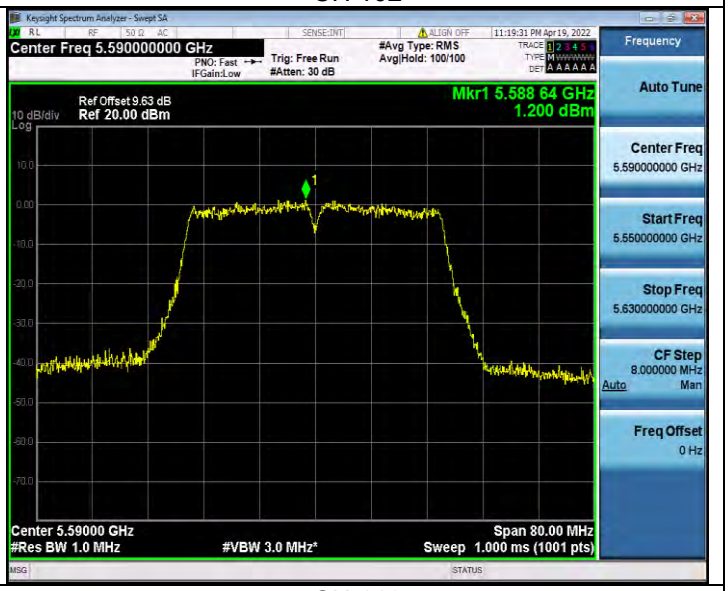
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	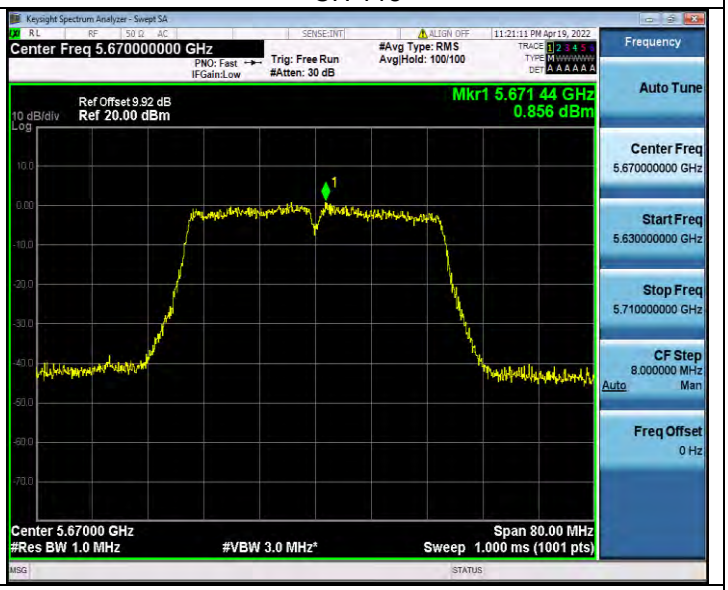
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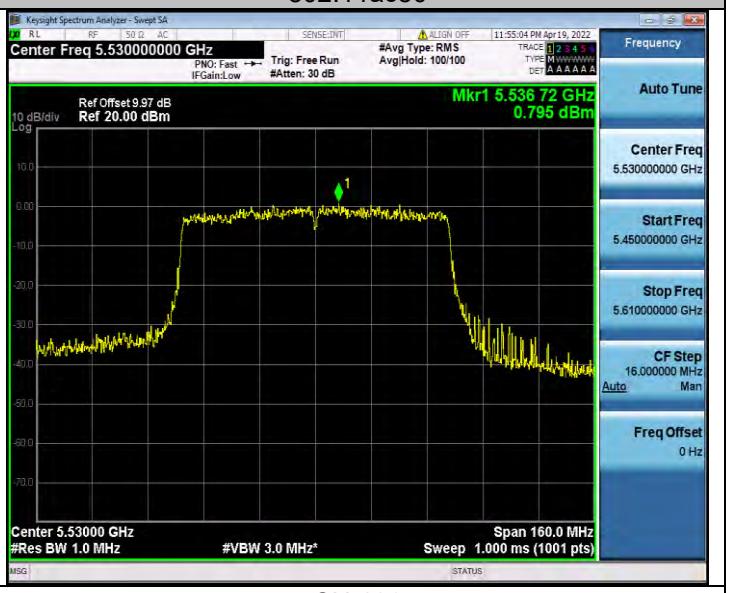
802.11ac40	802.11ac80
	
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	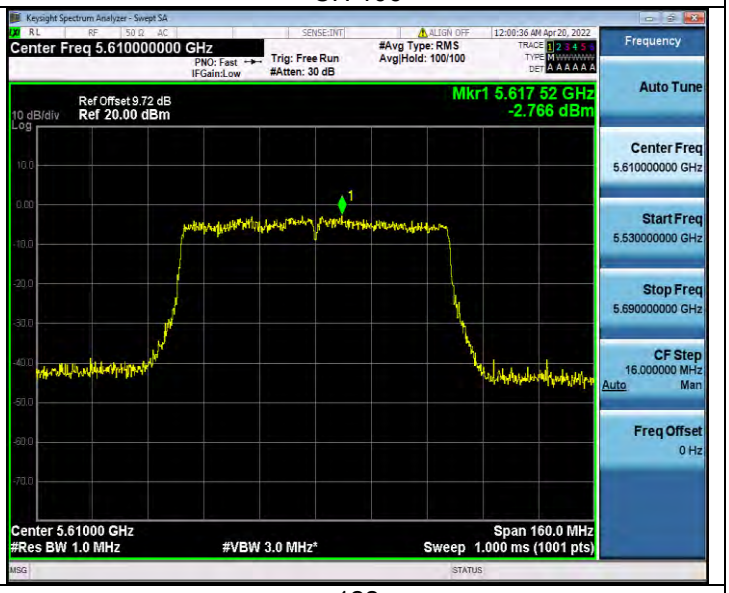
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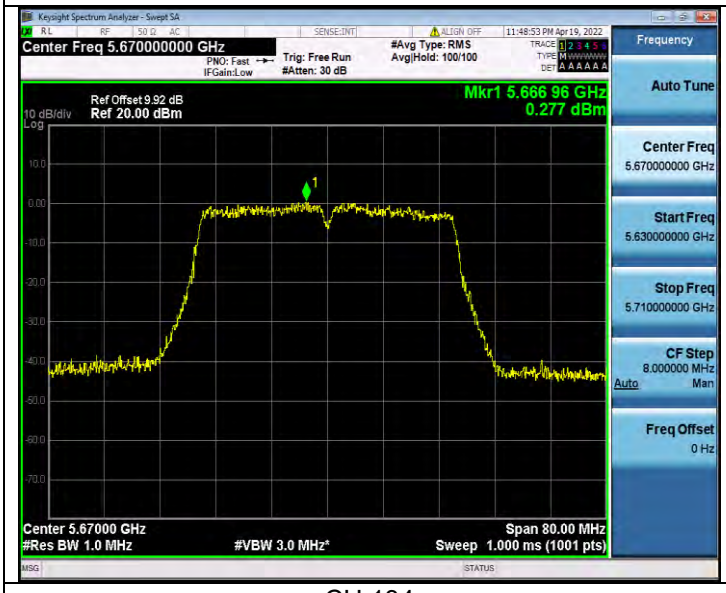
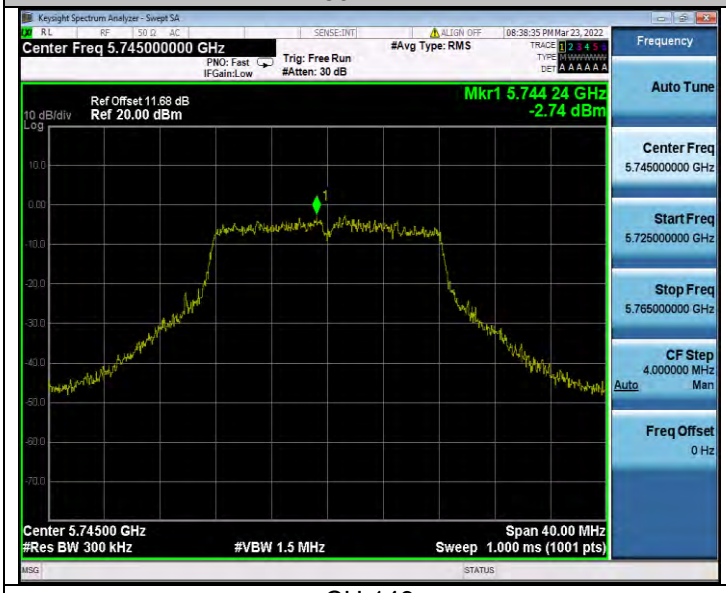
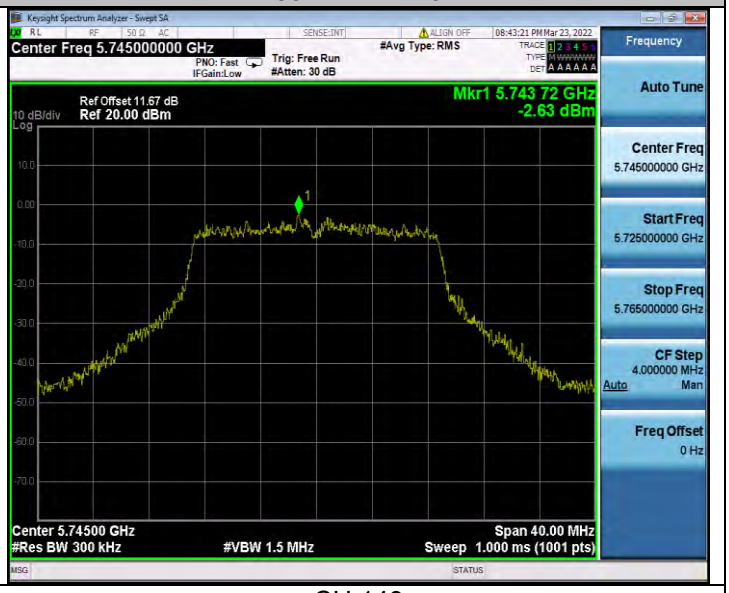
	
CH 134	

5725-5850MHz:

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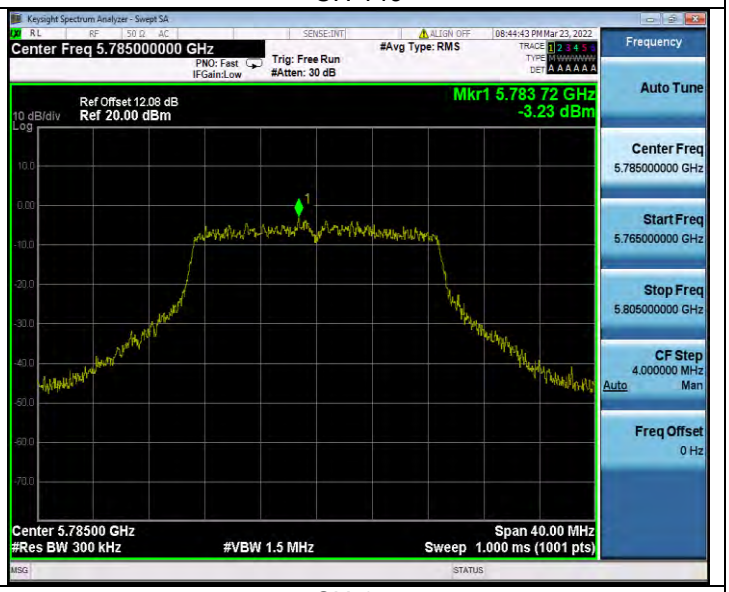
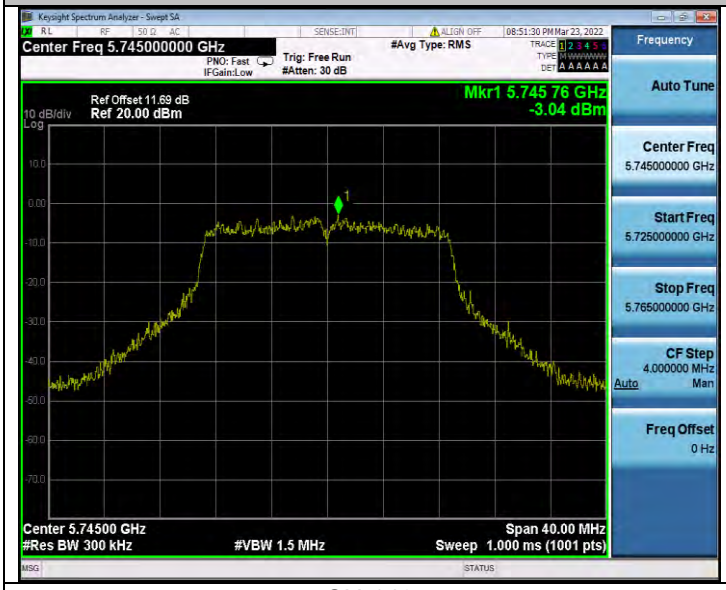
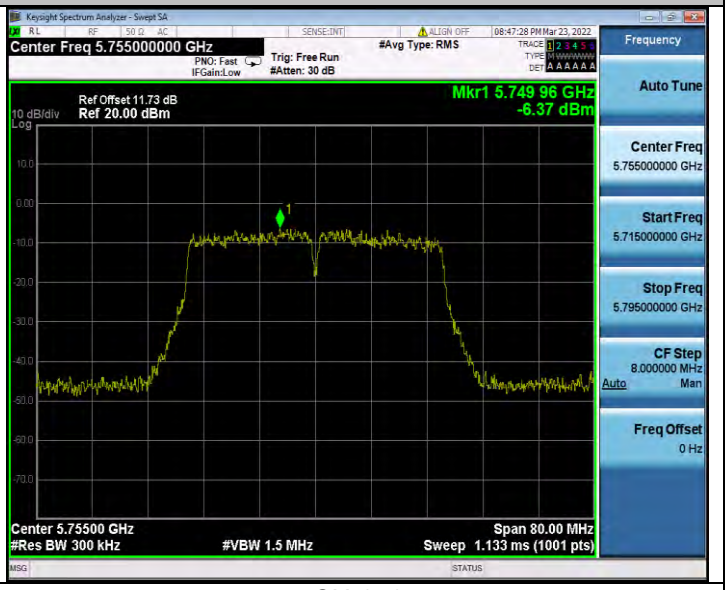
	
CH 157	CH 157
	
CH 165	CH 165

802.11ac20	802.11n HT40
	
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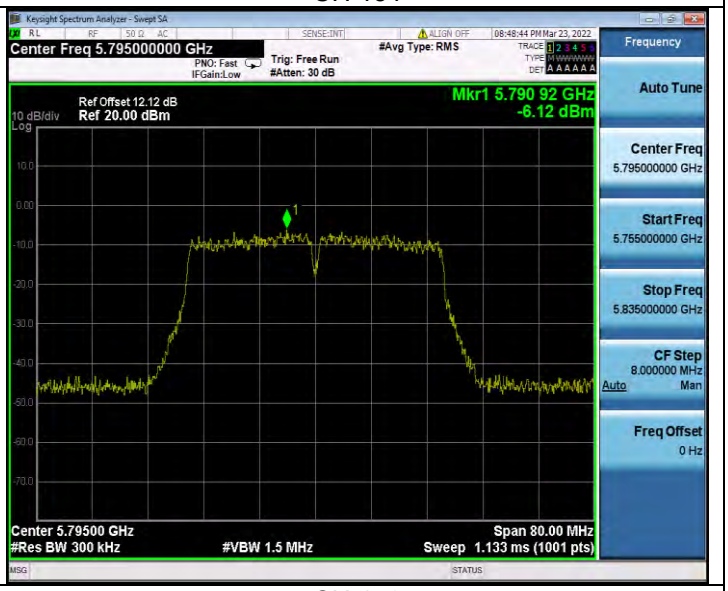
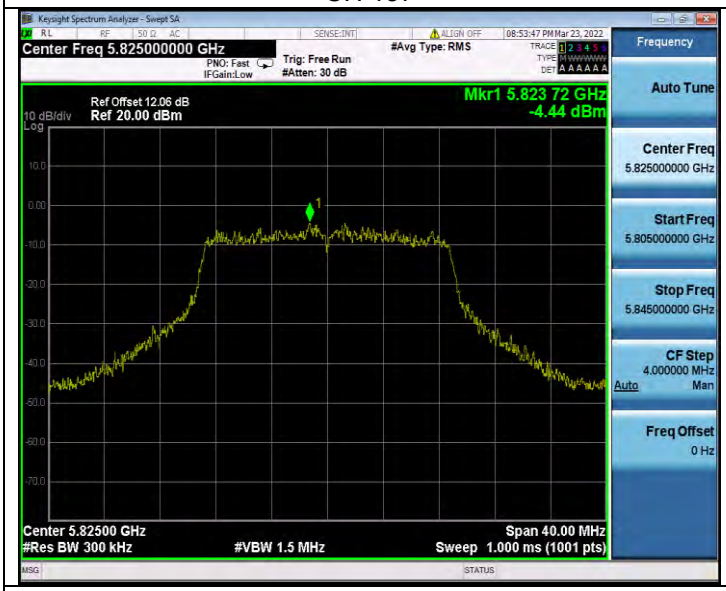
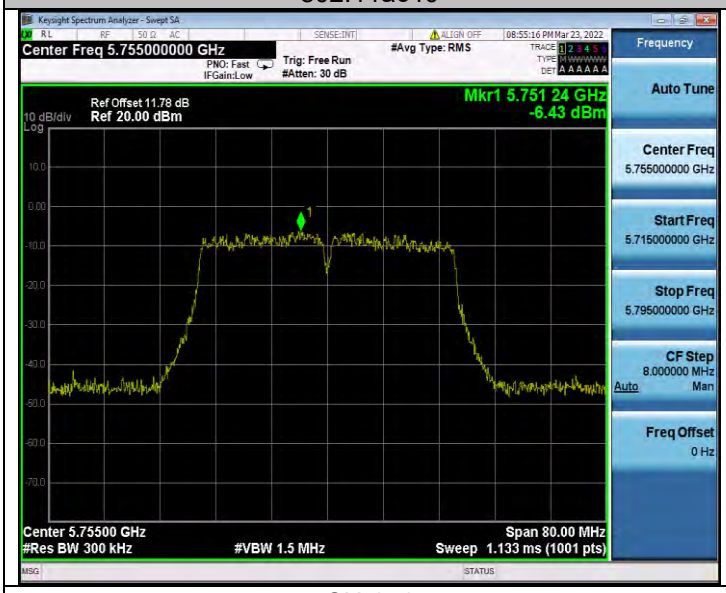
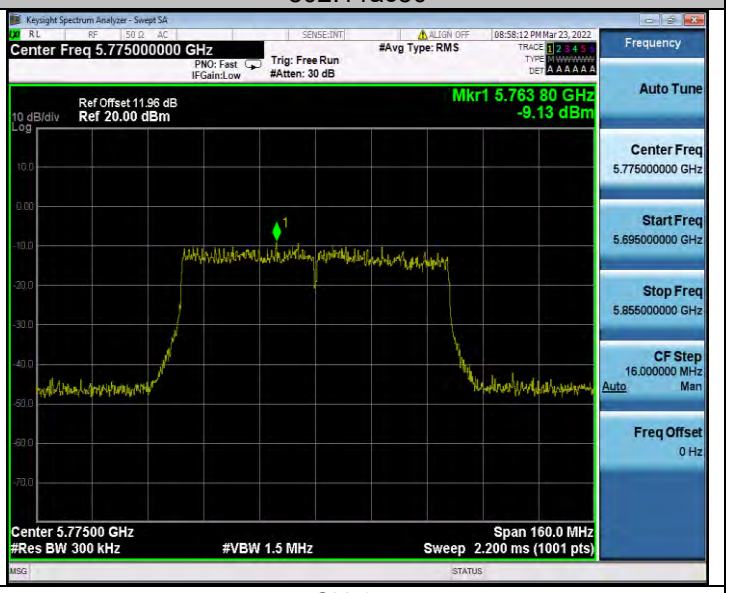
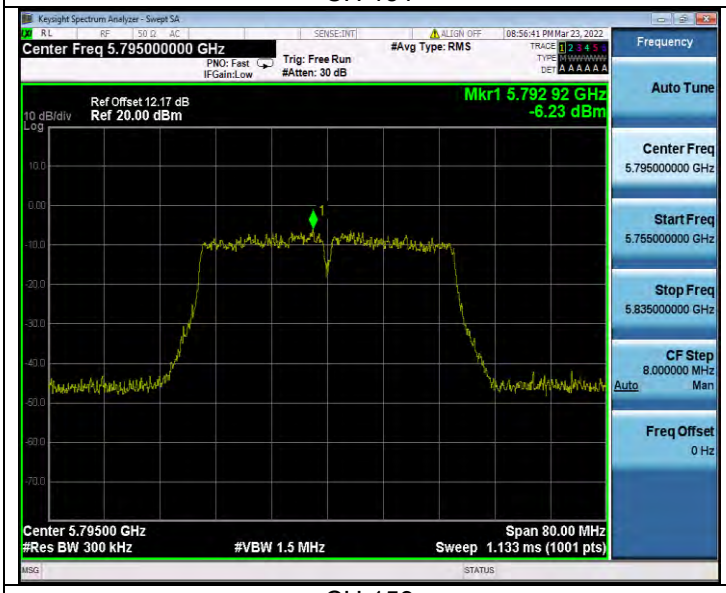
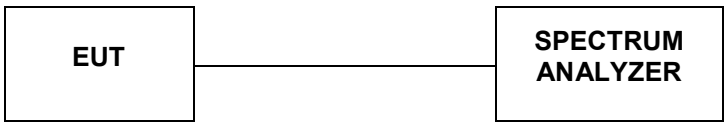
	
CH 157	CH 159
	
CH 165	

802.11ac40	802.11ac80
	
CH 151	CH 155
	
CH 159	

4.6. 6dB Bandwidth

TEST CONFIGURATION



TEST PROCEDURE

According to KDB789033 D02 General U-NII 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	Jenny Zeng	Configurations	IEEE 802.11a/n/ac

Type	Channel	6dB Bandwidth (MHz)	Limit (KHz)	Result
802.11a	149	15.160	>500	Pass
	157	15.520		
	165	15.720		
802.11nHT20	149	15.440	>500	Pass
	157	16.760		
	165	15.920		
802.11n40	151	35.680	>500	Pass
	159	35.360		
802.11ac20	149	15.920	>500	Pass
	157	15.400		
	165	16.760		
802.11ac40	151	35.680	>500	Pass
	159	35.760		
802.11ac80	155	75.200	>500	Pass