Test Report

Report No.:	MTi20061601-12E3
Date of issue:	Apr. 07, 2021
Applicant:	Shenzhen Gudsen Technology Co., Ltd.
Product name:	MOIN Camera
Model(s):	MOIN Camera
FCC ID:	2AMJR-MOINCAMERA

Shenzhen Microtest Co., Ltd.
http://www.mtitest.com

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Instructions

1. The report shall not be partially reproduced without the written consent of the laboratory;
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5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

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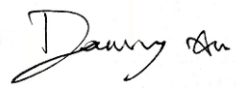
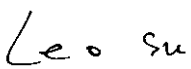
TEST RESULT CERTIFICATION

Applicant's name.....	Shenzhen Gudsen Technology Co., Ltd.
Address.....	6/F, 10th Building, Jiuxiang Ling Industrial Park, Ave Xili, Nanshan District, Shenzhen, China
Manufacturer's Name	Shenzhen Gudsen Technology Co., Ltd.
Address.....	6/F, 10th Building, Jiuxiang Ling Industrial Park, Ave Xili, Nanshan District, Shenzhen, China
Product description	
Product name	MOIN Camera
Trademark	MOZA
Model Name	MOIN Camera
Serial Model	N/A
Standards.....	FCC Part 15.407
Test procedure	ANSI C63.10-2013 KDB789033 D02 v02r01
Date of Test	
Date (s) of performance of tests..... :	Dec. 21, 2020 ~Jan. 29, 2021
Test Result ..... :	Pass
This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.	

Testing Engineer : 

(Danny Xu)

Technical Manager : 

(Leo Su)

Authorized Signatory : 

(Tom Xue)

1 General information

1.1 Description of EUT

Equipment:	MOIN Camera
Model name:	MOIN Camera
Serial model:	N/A
Model difference:	N/A
Frequency range:	U-NII-1: 5180 MHz to 5240 MHz,
Modulation type:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
Transfer rate:	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40): MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40):NSS1, MCS0-MCS9 802.11ac(VHT80) :NSS1,MCS0-MCS9
Channel bandwidth:	802.11a: 20 MHz 802.11n: 20 MHz, 40 MHz 802.11ac: 20 MHz, 40 MHz, 80MHz
Antenna type:	FPC antenna
Antenna gain:	-0.6dBi
Max. output power:	U-NII-1: 10.20dBm
Hardware version:	V1.0
Software version:	V1.0.23
Power supply:	DC 5V from adapter AC 120V/60Hz or DC 7.7V from battery
Adapter information:	N/A
Battery:	DC 7.7V 950mAh
Serial number:	MTi20061601-12-S0001

1.2 Operation channel list

For U-NII-1:

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	--	--
44	5220	--	--	--	--
48	5240	--	--	--	--

1.3 Test channel list

For 802.11n/ac (HT20)

U-NII-1 (5150 - 5250 MHz)		
Channel Number	Channel	Frequency (MHz)
36	Low	5180
44	Mid	5220
48	High	5240

For 802.11n/ac (HT40)

U-NII-1 (5150 - 5250 MHz)		
Channel Number	Channel	Frequency (MHz)
38	Low	5190
46	High	5230

For 802.11ac (HT80)

80 MHz	
Channel Number	Frequency (MHz)
42	5210

1.4 Ancillary equipment list

Equipment	Model	S/N	Manufacturer	Certificate type
Adapter	HW-090200CH0	/	Huizhou BYD Electronics Co., Ltd.	/

1.5 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
/	/	/	/	/	/

Note:

(1)The support equipment was authorized by Declaration of Confirmation.

(2)For detachable type I/O cable should be specified the length in cm in『Length』column.

2 Summary of the Test Results

Test procedures according to the technical standards:

No.	Standard Section	Test Item	Result	Remark
1	15.203/15.407	Antenna Requirement	Pass	
2	15.407(a)	RF Output Power	Pass	
3	15.207	Power Line Conducted Emission	Pass	
4	15.407(a)	26dB Emission Bandwidth and Occupied bandwidth	Pass	
5	15.407(e)	6 dB bandwidth	Pass	
6	15.407(a)	Power Spectral Density	Pass	
7	15.407(b) 15.209	Radiation Spurious Emission	Pass	

3 Test Facilities and Accreditations

3.1 Test laboratory

Test Laboratory	Shenzhen Microtest Co., Ltd
Location	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao' an District, Shenzhen, Guangdong, China.
FCC Registration No.:	448573

3.2 Environmental conditions

Temperature:	15ºC~35ºC
Humidity	20%~75%
Atmospheric pressure	98kPa~101kPa

3.3 Measurement uncertainty

The reported uncertainty of measurement y ± U · where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2 · providing a level of confidence of approximately 95 %

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power, conducted	±0.16dB
3	Spurious emissions, conducted	±0.21dB
4	All emissions, radiated(<1G)	±4.68dB
5	All emissions, radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

3.4 Test software

Software Name	Manufacturer	Model	Version
Bluetooth and WiFi Test System	Shenzhen JS tonscend co., ltd	JS1120-3	2.5.77.0418

4 Equipment list

Equipment No.	Equipment Name	Manufacturer	Model	Serial No.	Calibration date	Due date
MTI-E043	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2020/06/04	2021/06/03
MTI-E044	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2020/06/05	2021/06/04
MTI-E047	Amplifier	Hewlett-Packard	8447F	3113A06150	2020/06/04	2021/06/03
MTI-E089	ESG Vector Signal Generator	Agilent	N5182A	MY49060455	2020/06/03	2021/06/02
MTI-E058	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2020/07/03	2021/07/04
MTI-E062	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2020/06/04	2021/06/03
MTI-E066	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2020/06/04	2021/06/03
MTI-E078	Synthesized Sweeper	Agilent	83752A	3610A01957	2020/06/04	2021/06/03
MTI-E079	DC Power Supply	Agilent	E3632A	MY40027695	2020/06/04	2021/06/03
MTI-E045	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	9120D-2278	2020/06/05	2021/06/04
MTI-E021	EMI Test Receiver	Rohde&schwarz	ESCS30	100210	2020/06/04	2021/06/03
MTI-E022	Pulse Limiter	Schwarzbeck	VSTD 9561-F	00679	2020/06/03	2021/06/02
MTI-E023	Artificial mains network	Schwarzbeck	NSLK 8127	NSLK 8127 #841	2020/06/04	2021/06/03
MTI-E046	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00044	2020/06/05	2021/06/04
MTI-E048	Amplifier	Agilent	8449B	3008A02400	2020/07/03	2021/07/04
MTI-E072	Thermometer Clock Humidity Monitor	-	HTC-1	/	2020/06/07	2021/06/06

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

5 Test Results

5.1 Antenna requirement

5.1.1 Standard requirement

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

5.1.2 EUT Antenna

The antenna is FPC antenna, which was permanently affixed to the device and un-replaced, complies with 15.203. In addition, the maximum antenna gain is -0.6 dBi.

5.2 RF output power

5.2.1 Limit

For the 5.15-5.25 GHz band

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz band

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

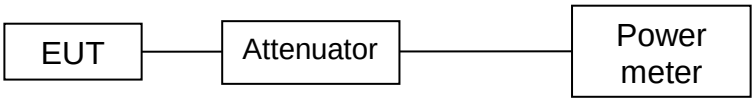
For the band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.2.2 Test procedure

The maximum peak conducted output power may be measured using a broadband Average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

5.2.3 Test setup



5.2.4 Test results

For U-NII-1

Modulation mode	Test Channel	Frequency(MHz)	Average Conducted Power		Limit(mW)
			(dBm)	(mW)	
11a	CH36	5180	9.13	8.18	250
11a	CH40	5200	9.78	9.51	250
11a	CH48	5240	10.20	10.47	250
11n (HT20)	CH36	5180	7.93	6.21	250
11n (HT20)	CH40	5200	8.41	6.93	250
11n (HT20)	CH48	5240	8.96	7.87	250
11n (HT40)	CH38	5190	7.59	5.74	250
11n (HT40)	CH46	5230	8.22	6.64	250

Modulation mode	Test Channel	Frequency(MHz)	Average Conducted Power		Limit(mW)
			(dBm)	(mW)	
11ac (HT20)	CH36	5180	7.90	6.17	250
11ac (HT20)	CH40	5200	8.42	6.95	250
11ac (HT20)	CH48	5240	9.04	8.02	250
11ac (HT40)	CH38	5190	7.53	5.66	250
11ac (HT40)	CH46	5230	8.56	7.18	250
11ac (HT80)	CH42	5210	8.22	6.64	250

5.3 Power line conducted emission

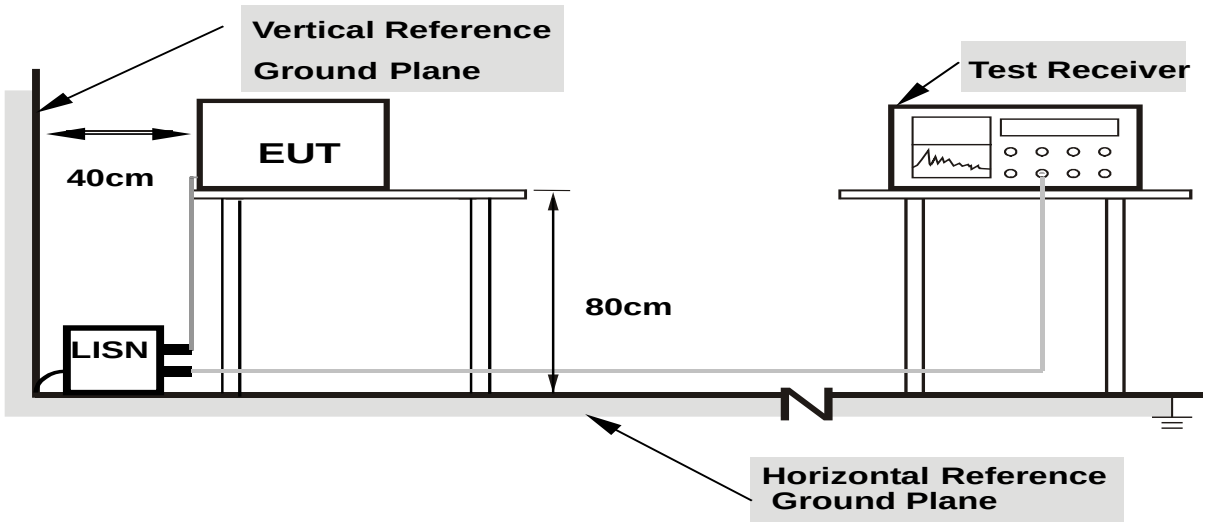
5.3.1 Limits

FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note

1. The tighter limit applies at the band edges.
2. The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

5.3.2 Test setup



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

5.3.3 Test procedure

a. EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

b. The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

c. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

d. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

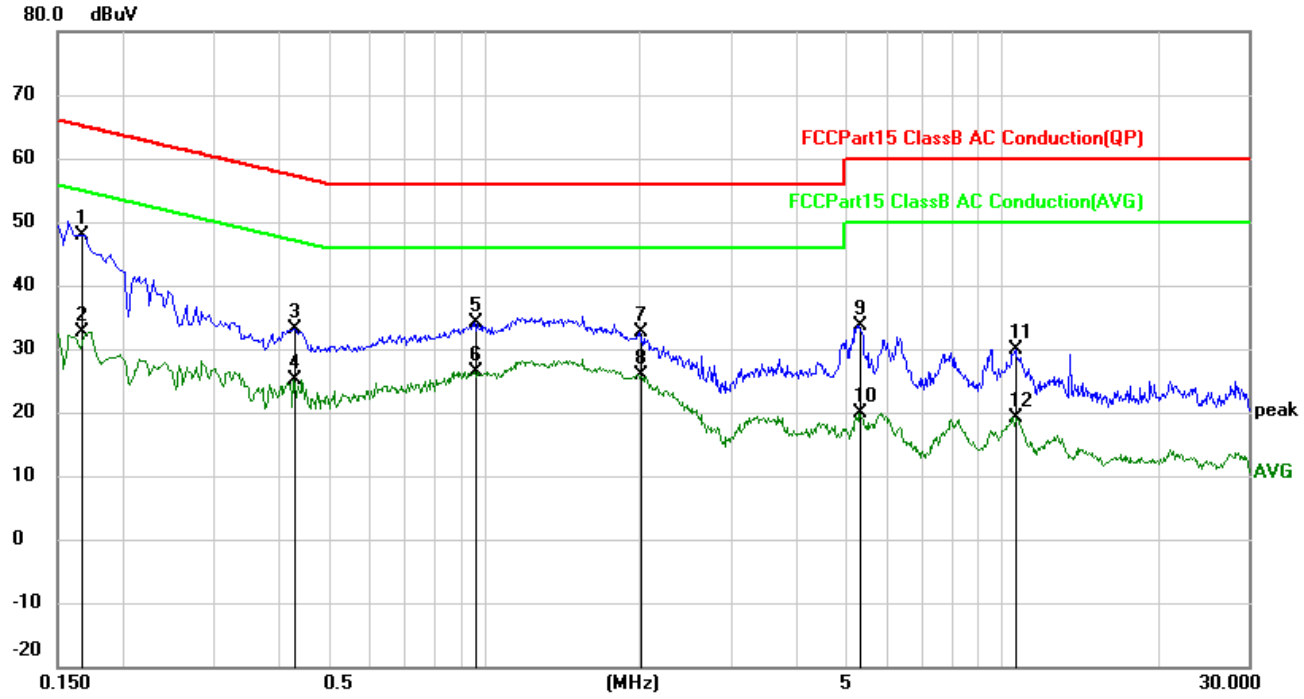
e. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

f. LISN at least 80 cm from nearest part of EUT chassis.

For the actual test configuration, please refer to the related Item –EUT Test Photos.

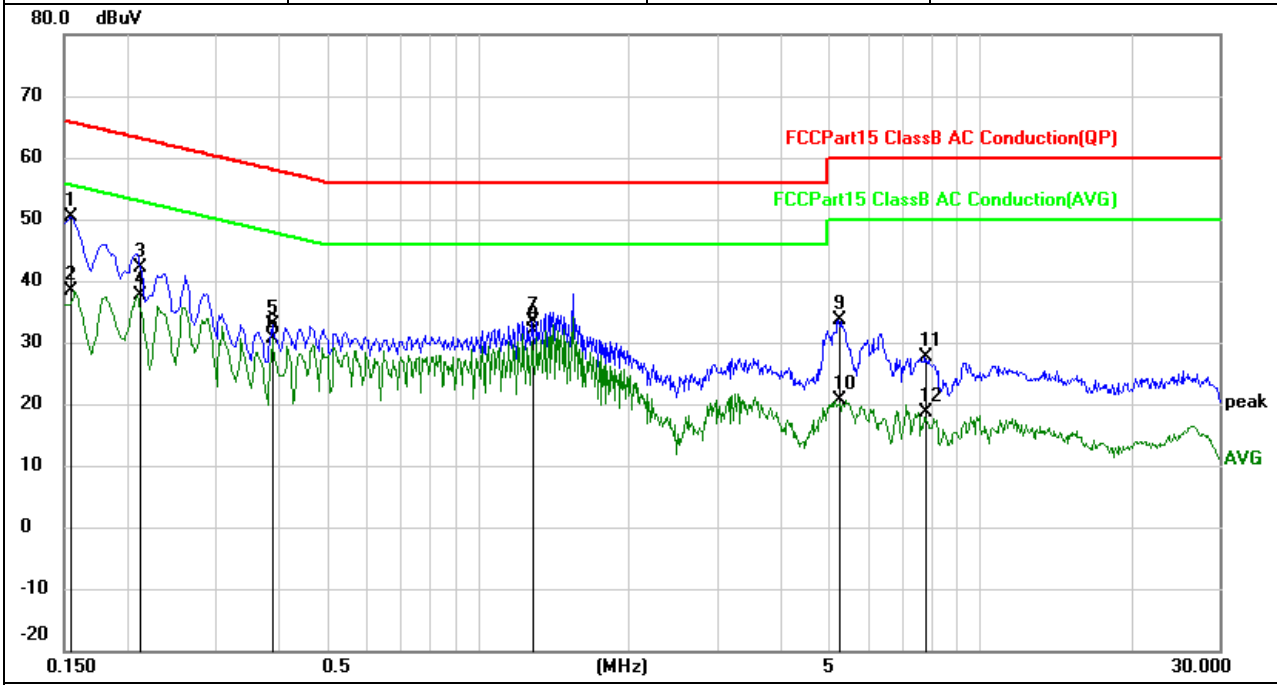
5.3.4 Test results

EUT:	MOIN Camera	Model Name:	MOIN Camera
Pressure:	1010hPa	Phase:	L
Test Voltage:	DC 5V from adapter AC 120V/60Hz	Test Mode:	Charging+TX



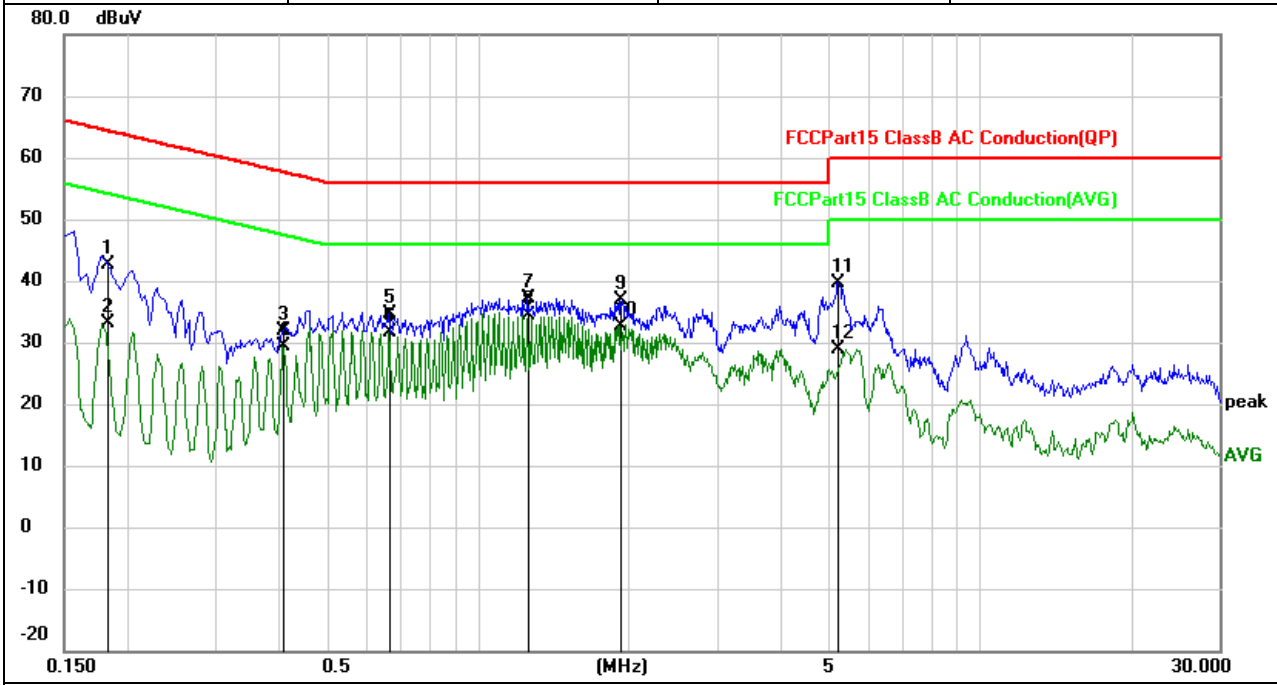
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1660	36.90	10.99	47.89	65.16	-17.27	QP
2		0.1660	21.58	10.99	32.57	55.16	-22.59	AVG
3		0.4300	22.20	11.02	33.22	57.25	-24.03	QP
4		0.4300	14.06	11.02	25.08	47.25	-22.17	AVG
5		0.9616	22.89	11.27	34.16	56.00	-21.84	QP
6		0.9616	15.20	11.27	26.47	46.00	-19.53	AVG
7		2.0019	21.30	11.39	32.69	56.00	-23.31	QP
8		2.0019	14.55	11.39	25.94	46.00	-20.06	AVG
9		5.3178	22.13	11.50	33.63	60.00	-26.37	QP
10		5.3178	8.29	11.50	19.79	50.00	-30.21	AVG
11		10.6615	18.20	11.59	29.79	60.00	-30.21	QP
12		10.6615	7.62	11.59	19.21	50.00	-30.79	AVG

EUT:	MOIN Camera	Model Name:	MOIN Camera
Pressure:	1010hPa	Phase:	N
Test Voltage:	DC 5V from adapter AC 120V/60Hz	Test Mode:	Charging+TX



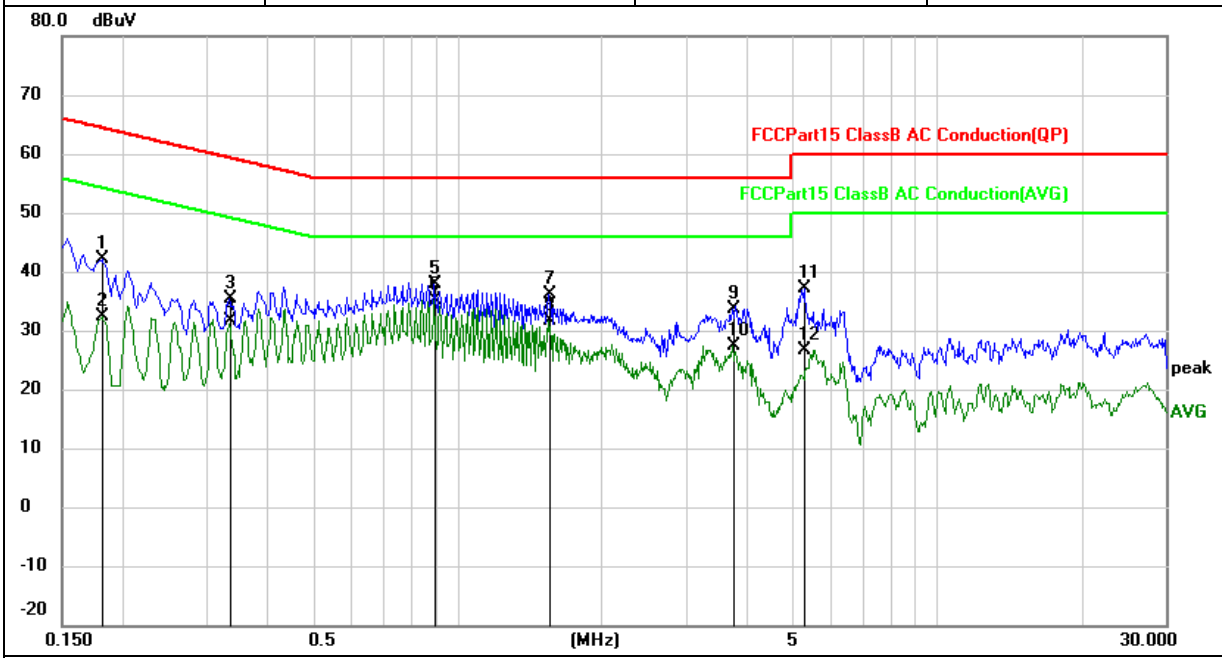
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1547	39.33	10.94	50.27	65.74	-15.47	QP
2		0.1547	27.43	10.94	38.37	55.74	-17.37	AVG
3		0.2127	31.27	10.92	42.19	63.10	-20.91	QP
4		0.2127	26.60	10.92	37.52	53.10	-15.58	AVG
5		0.3899	21.91	10.89	32.80	58.07	-25.27	QP
6		0.3899	19.69	10.89	30.58	48.07	-17.49	AVG
7		1.2860	22.14	11.26	33.40	56.00	-22.60	QP
8	*	1.2860	20.73	11.26	31.99	46.00	-14.01	AVG
9		5.2378	22.20	11.40	33.60	60.00	-26.40	QP
10		5.2378	9.32	11.40	20.72	50.00	-29.28	AVG
11		7.8059	16.31	11.44	27.75	60.00	-32.25	QP
12		7.8059	7.29	11.44	18.73	50.00	-31.27	AVG

EUT:	MOIN Camera	Model Name:	MOIN Camera
Pressure:	1010hPa	Phase:	L
Test Voltage:	DC 5V from adapter AC 240V/60Hz	Test Mode:	Charging+TX



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1833	31.60	10.92	42.52	64.33	-21.81	QP
2		0.1833	22.10	10.92	33.02	54.33	-21.31	AVG
3		0.4100	21.04	10.88	31.92	57.65	-25.73	QP
4		0.4100	18.58	10.88	29.46	47.65	-18.19	AVG
5		0.6660	23.47	11.05	34.52	56.00	-21.48	QP
6		0.6660	20.67	11.05	31.72	46.00	-14.28	AVG
7		1.2579	25.77	11.26	37.03	56.00	-18.97	QP
8	*	1.2579	23.15	11.26	34.41	46.00	-11.59	AVG
9		1.9213	25.54	11.38	36.92	56.00	-19.08	QP
10		1.9213	21.37	11.38	32.75	46.00	-13.25	AVG
11		5.2137	28.32	11.40	39.72	60.00	-20.28	QP
12		5.2137	17.42	11.40	28.82	50.00	-21.18	AVG

EUT:	MOIN Camera	Model Name:	MOIN Camera
Pressure:	1010hPa	Phase:	N
Test Voltage:	DC 5V from adapter AC 240V/60Hz	Test Mode:	Charging+TX



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1819	31.09	10.92	42.01	64.40	-22.39	QP
2		0.1819	21.50	10.92	32.42	54.40	-21.98	AVG
3		0.3339	24.41	10.90	35.31	59.35	-24.04	QP
4		0.3339	20.78	10.90	31.68	49.35	-17.67	AVG
5		0.8980	26.72	11.17	37.89	56.00	-18.11	QP
6	*	0.8980	23.97	11.17	35.14	46.00	-10.86	AVG
7		1.5540	24.78	11.31	36.09	56.00	-19.91	QP
8		1.5540	20.37	11.31	31.68	46.00	-14.32	AVG
9		3.7540	22.37	11.38	33.75	56.00	-22.25	QP
10		3.7540	15.96	11.38	27.34	46.00	-18.66	AVG
11		5.2857	25.69	11.39	37.08	60.00	-22.92	QP
12		5.2857	15.21	11.39	26.60	50.00	-23.40	AVG

Note:

1. All the mode has been tested for this test, just incarnate report the worst mode 11a CH36 data.
2. Emission Level =Reading Level + Factor, Margin= Emission Level- Limit, Factor = LISN modulus + Cable Loss.

5.4 26dB Emission Bandwidth and Occupied bandwidth

5.4.1 Limit

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

5.4.2 Test procedure

26d Emission bandwidth

Set RBW = approximately 1% of the emission bandwidth.

Set VBW ≥ 3*RBW

Detector = Peak.

Trace mode = Max hold.

Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

Set Span = 1.5 times to 5.0 times the OBW

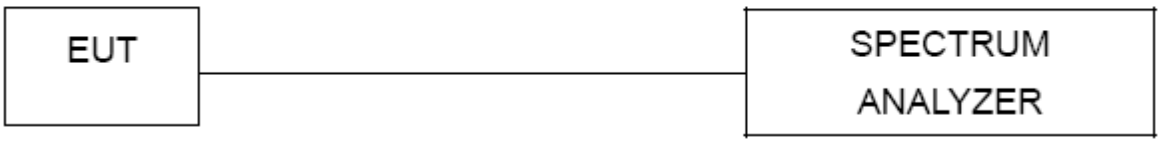
Set RBW = 1% to 5% of the OBW.

Set VBW ≥ 3*RBW, Detector = Peak.

Trace mode = Max hold.

Use the 99% power bandwidth function of the instrument.

5.4.3 Test setup



5.4.4 Test results

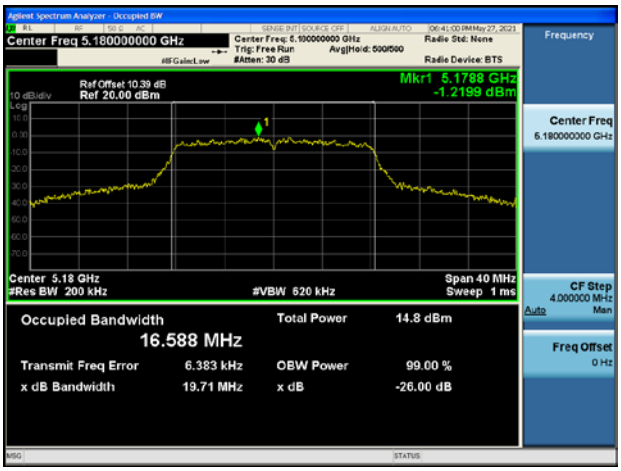
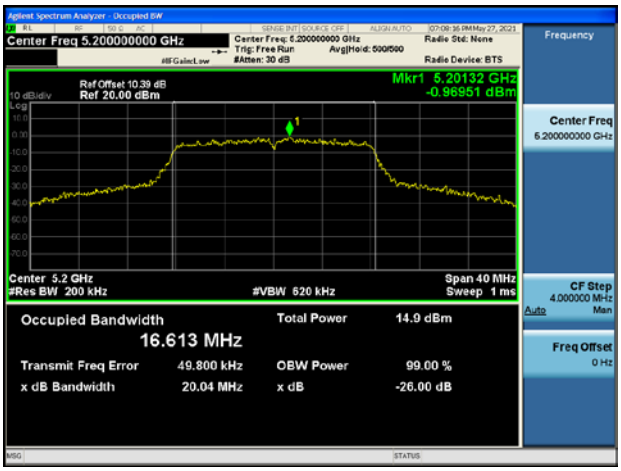
For U-NII-1

Channel	Test Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% bandwidth	Limit (kHz)	Result
11a	CH36	5180	19.71	16.445	/	Pass
11a	CH40	5200	20.04	16.426	/	Pass
11a	CH48	5240	20.31	16.434	/	Pass
11n (HT20)	CH36	5180	22.28	17.575	/	Pass
11n (HT20)	CH40	5200	21.17	17.556	/	Pass
11n (HT20)	CH48	5240	21.58	17.568	/	Pass
11n (HT40)	CH38	5190	53.71	35.918	/	Pass
11n (HT40)	CH46	5230	55.30	35.917	/	Pass

Channel	Test Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% bandwidth	Limit (kHz)	Result
11ac (HT20)	CH36	5180	21.56	17.573	/	Pass
11ac (HT20)	CH40	5200	20.13	17.545	/	Pass
11ac (HT20)	CH48	5240	20.37	17.549	/	Pass
11ac (HT40)	CH38	5190	56.71	35.877	/	Pass
11ac (HT40)	CH46	5230	61.79	35.899	/	Pass
11ac (HT80)	CH42	5210	78.22	75.238	/	Pass

Test plots:

For U-NII-1 26dB bandwidth

11a CH36	11a CH40
	
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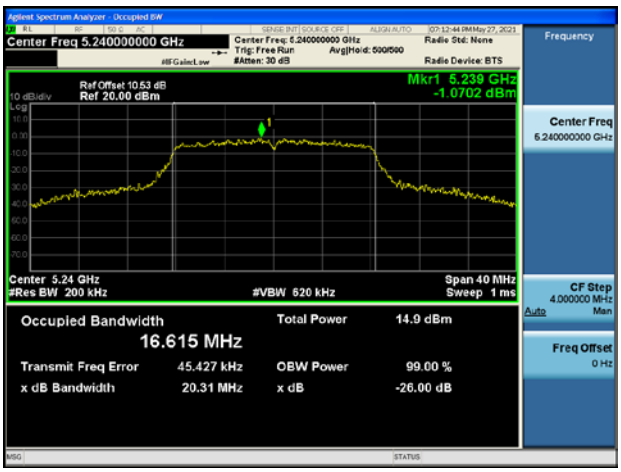	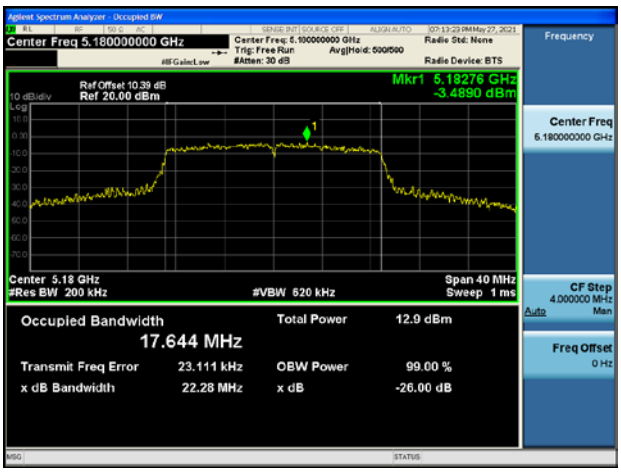
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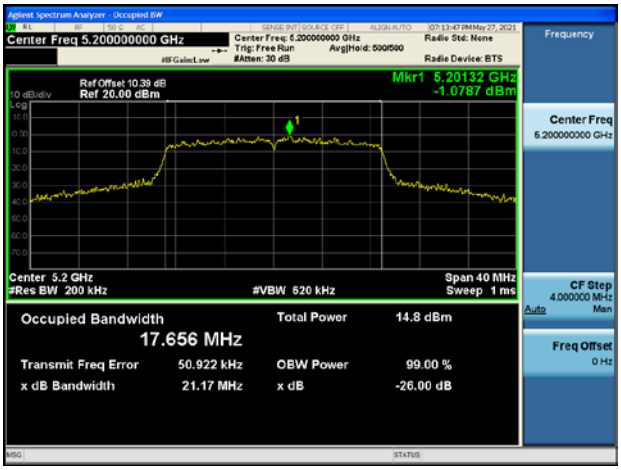	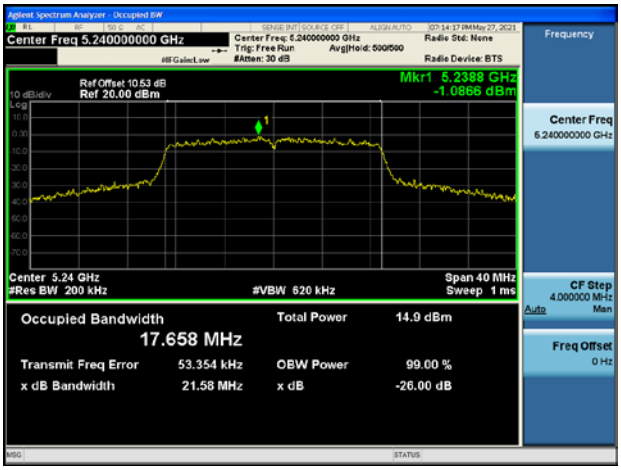

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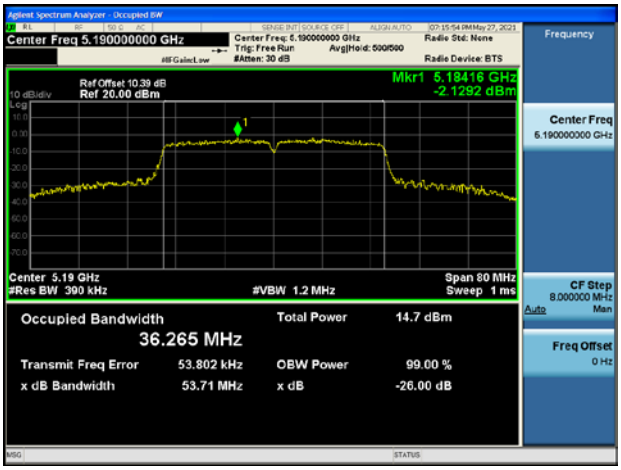	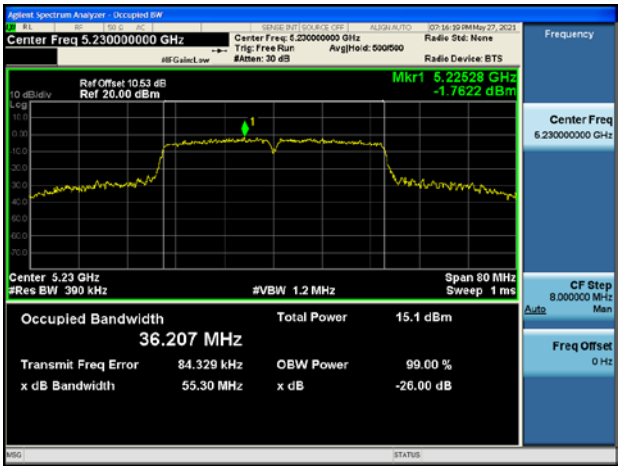
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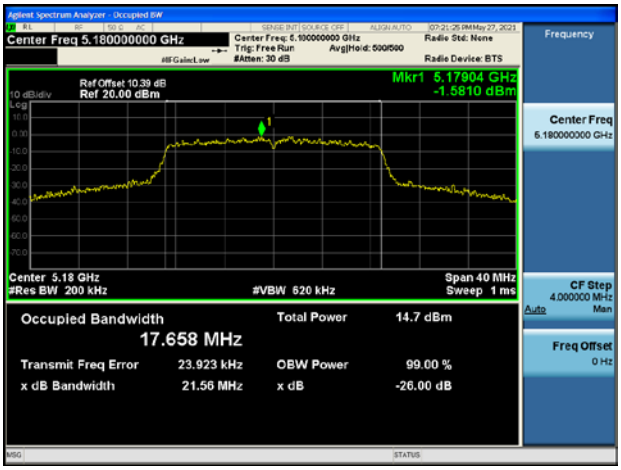
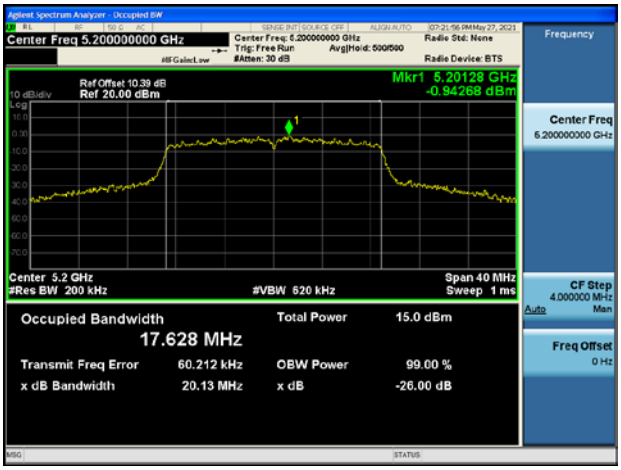
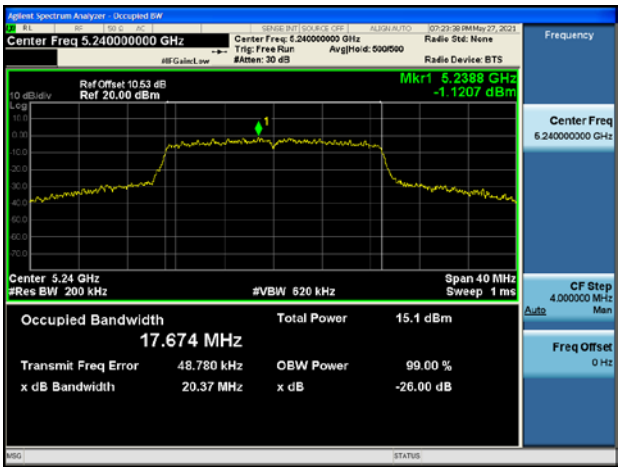
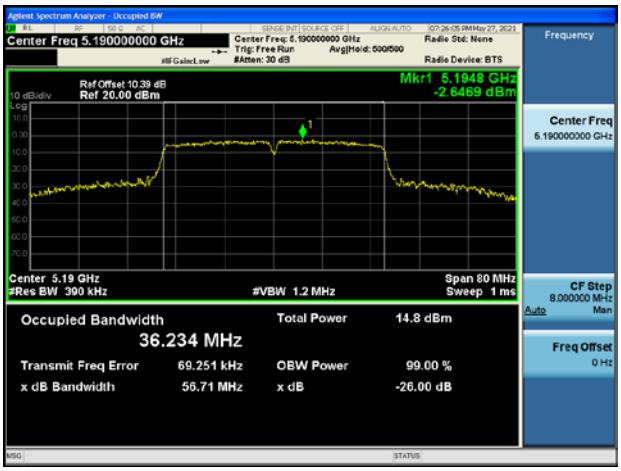
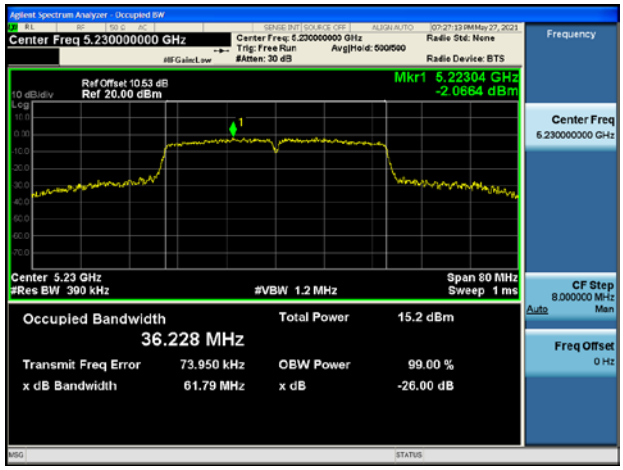
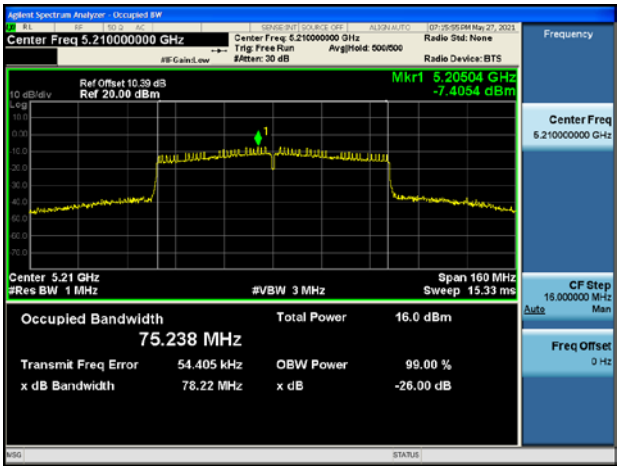
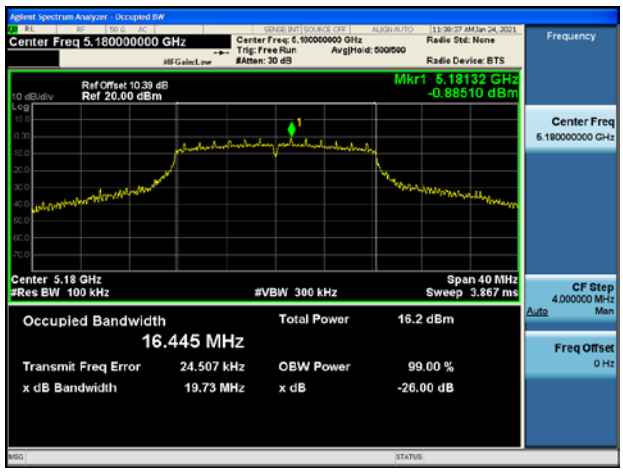
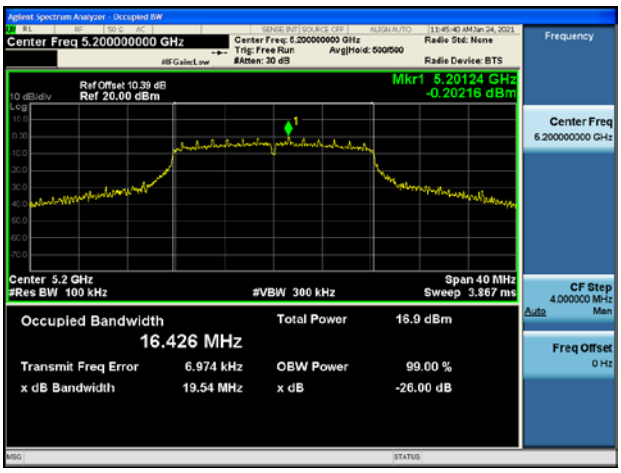
	
11ac (HT20) CH48	**11ac (HT40) CH38**
	

11ac (HT40) CH46	11ac (HT80) CH42
	

For U-NII-1 99% bandwidth

11a CH36	11a CH40
	
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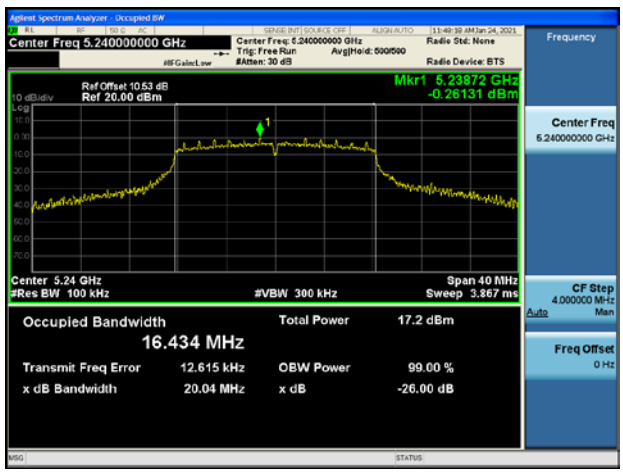
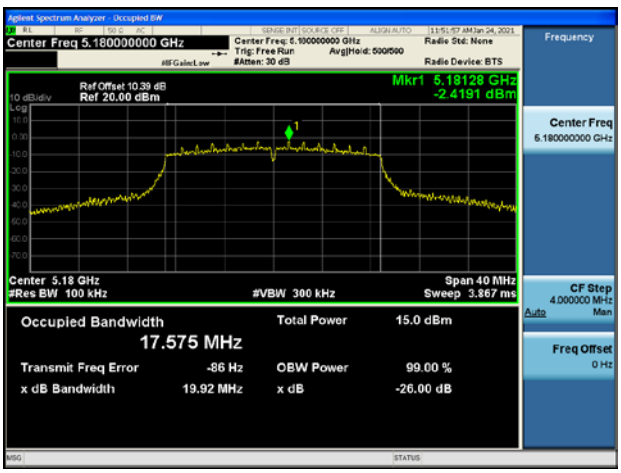
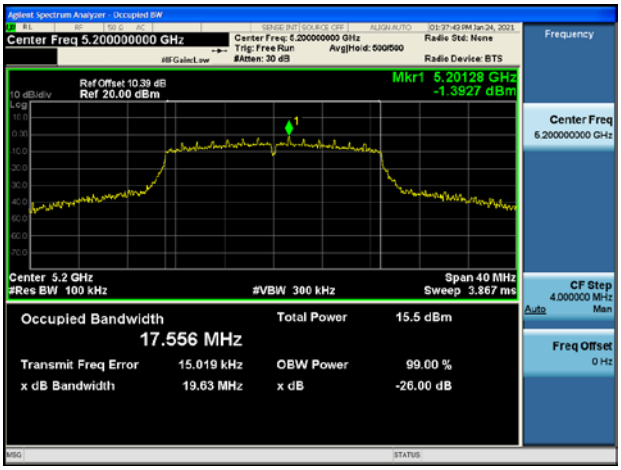
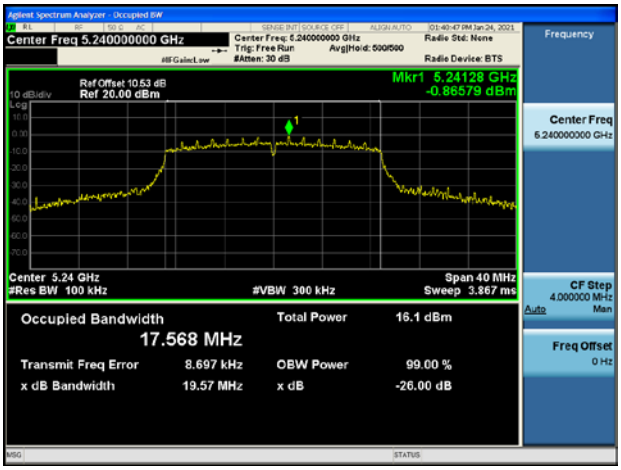
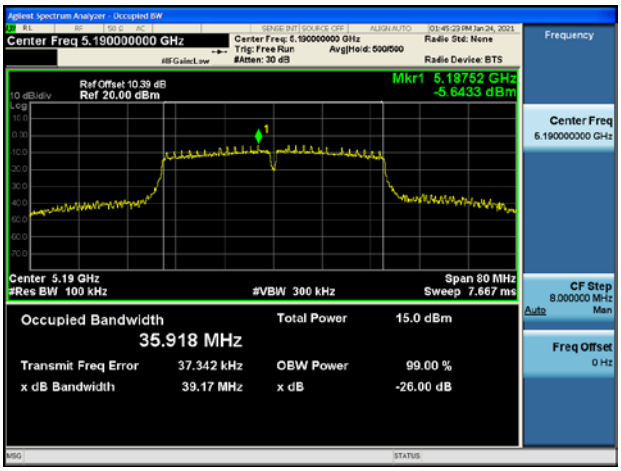
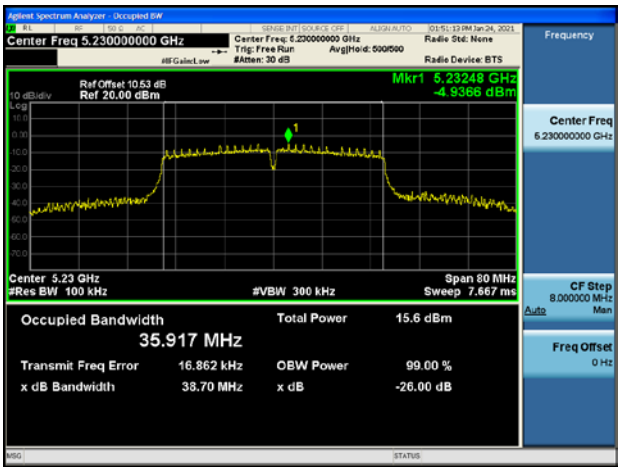
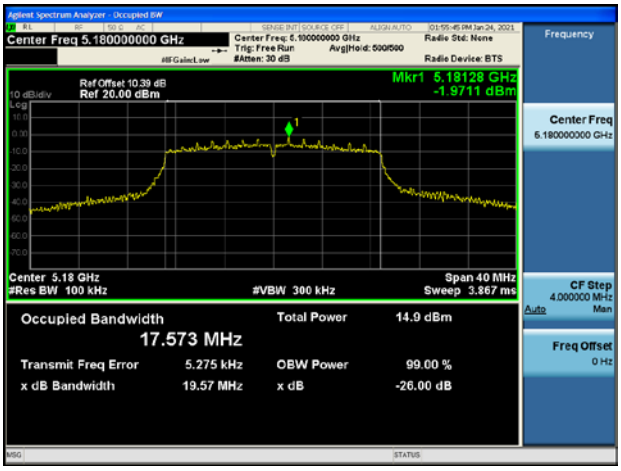
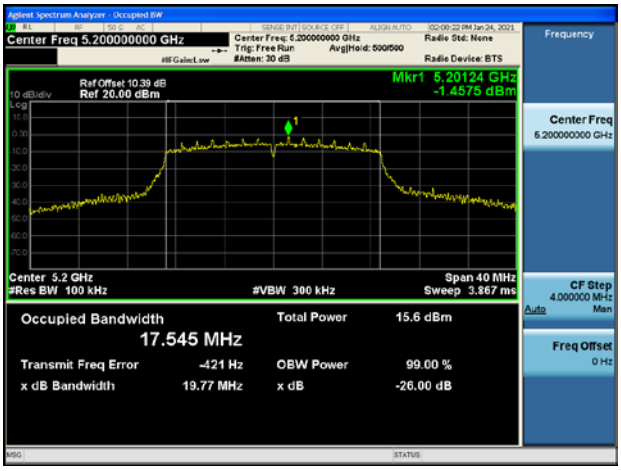
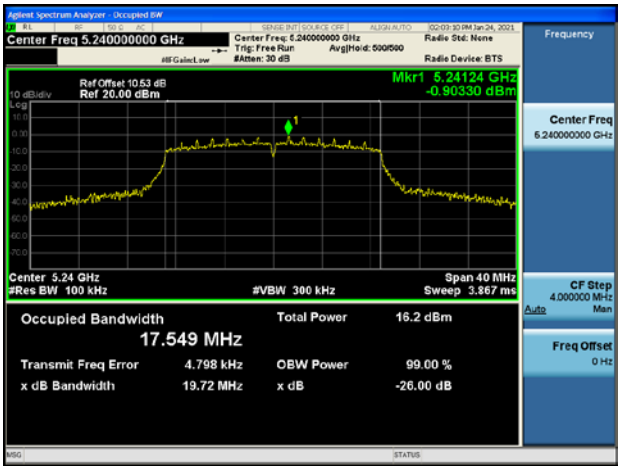
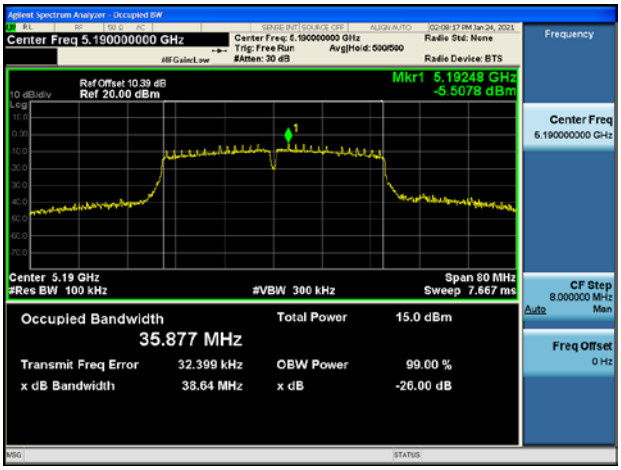
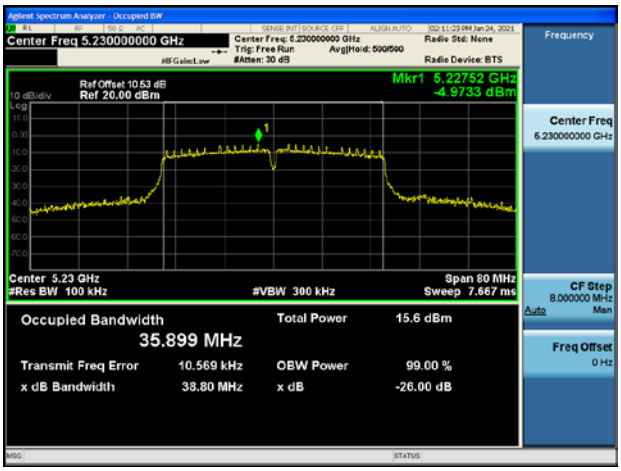
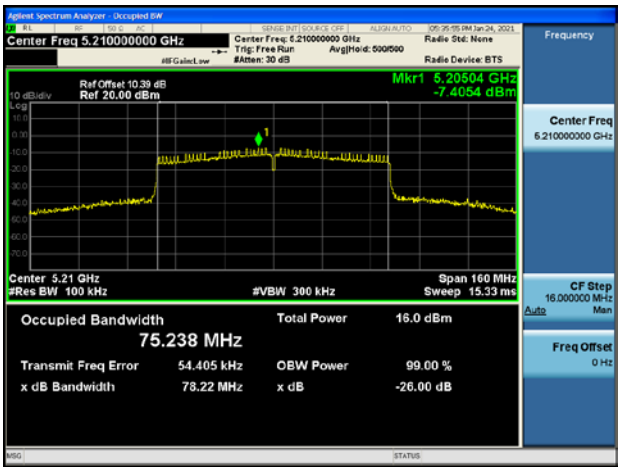
	

11n (HT20) CH40	11n (HT20) CH48
	
11n (HT40) CH38	11n (HT40) CH46
	
11ac (HT20) CH36	11ac (HT20) CH40
	

11ac (HT20) CH48	11ac (HT40) CH38
	
11ac (HT40) CH46	**11ac (HT80) CH42**
	

5.5 6dB Bandwidth

5.5.1 Limit

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

5.5.2 Test procedure

1. Set RBW= 100 kHz.

2. Set the video bandwidth (VBW) ≥ 3 x RBW.

3. Detector = Peak.

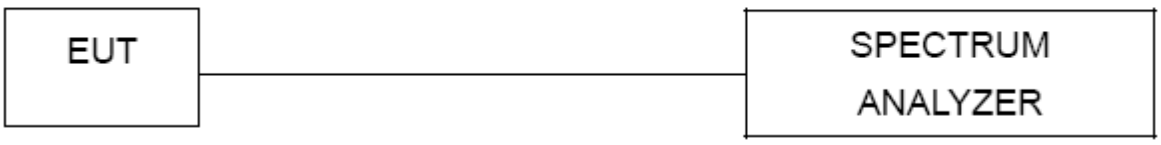
4. Trace mode = max hold.

5. Sweep = auto couple.

6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

5.5.3 Test setup



5.5.4 Test results

The test item doesn't apply for band 1 5180-5240MHz.

5.6 Radiated spurious emission

5.6.1 Radiated Emission Limits

1. For transmitters operating in the 5.15-5.25 GHz band:
   All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

2. For transmitters operating in the 5.25-5.35 GHz band:
   All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

3. For transmitters operating in the 5.47-5.725 GHz band:
   All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

4. For transmitters operating in the 5.725-5.85 GHz band:

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

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

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

Frequency Range	RBW	VBW	Measurement
30MHz-1GHz	1MHz	3MHz	Peak
Above 1GHz	1MHz	10Hz[Note1]	Average
	1MHz	>1/T [Note2]	Average
Note1	When duty cycle is no less than 98%		
Note2	When duty cycle is less than 98%		

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

5.6.2 Test procedure

The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the floor on a support that is RF transparent for the frequencies of interest. Final measurements for the EUT require a measurement antenna height scan of 1 m to 4 m.

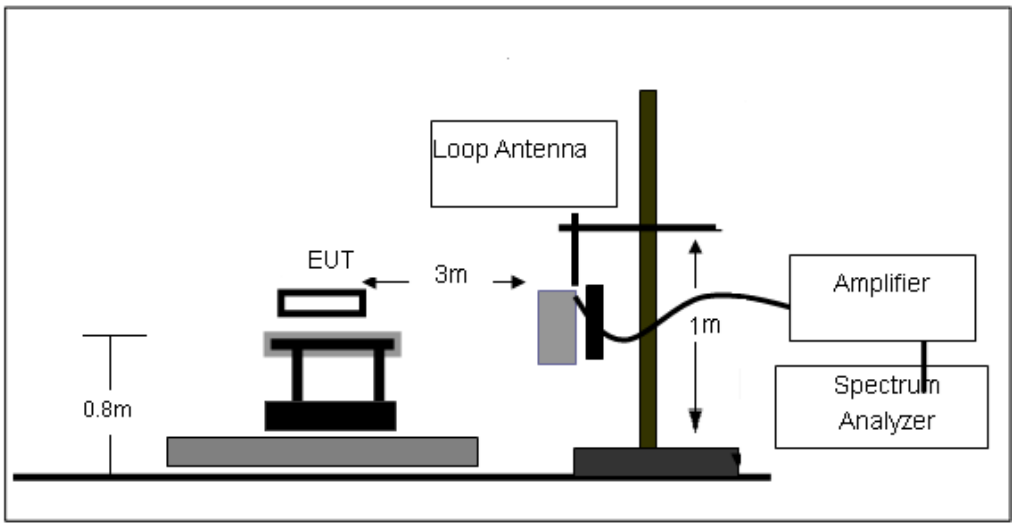
The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
For the actual test configuration, please refer to the related Item –EUT Test Photos.

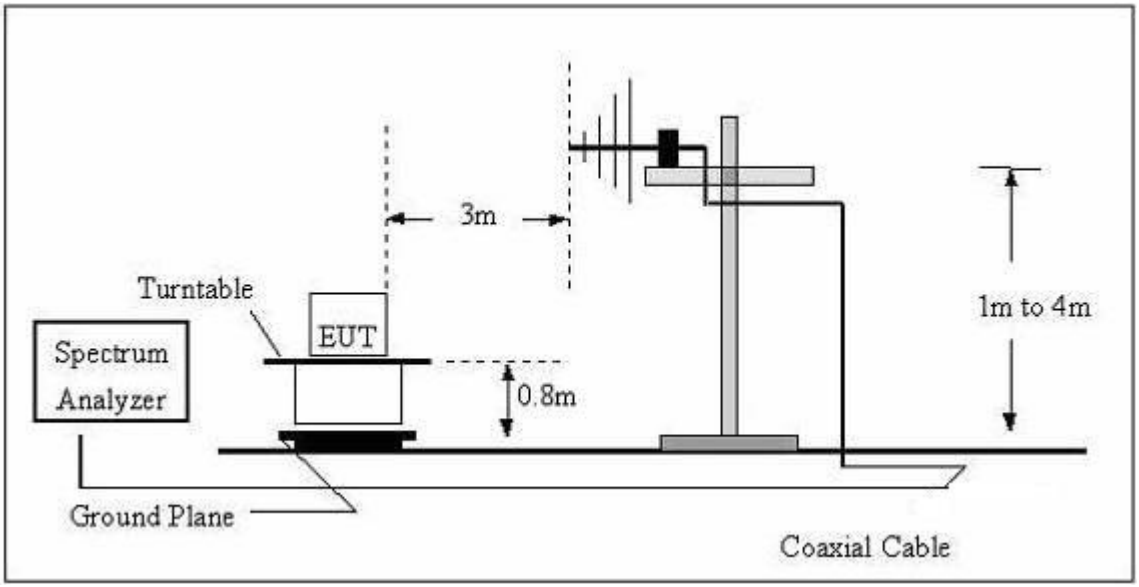
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

5.6.3 Test setup

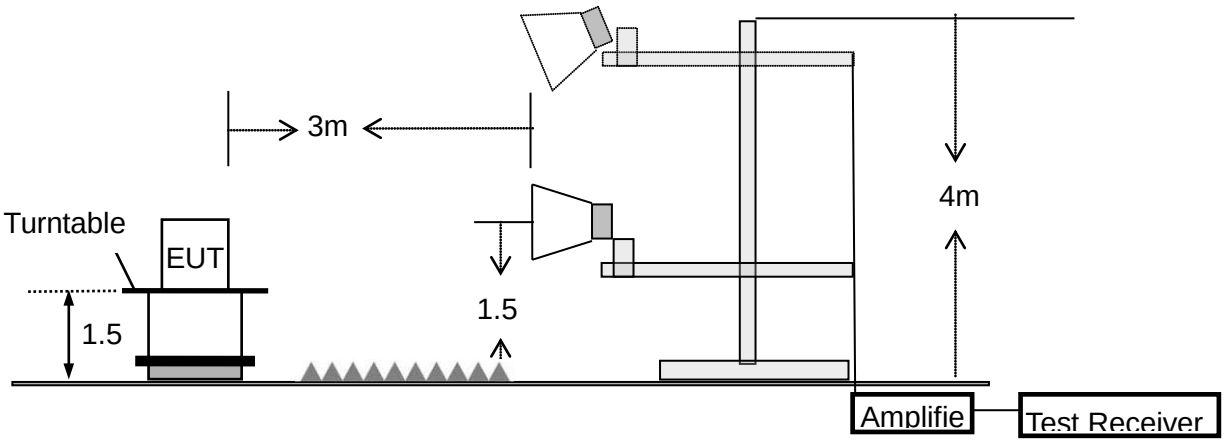
（A）Radiated Emission test-up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



5.6.4 Test results

EUT:	MOIN Camera	Model Name:	MOIN Camera
Pressure:	1010 hPa	Test Voltage:	DC 3.7V from battery
Test Mode:	TX	Polarization:	--

Below 30MHz

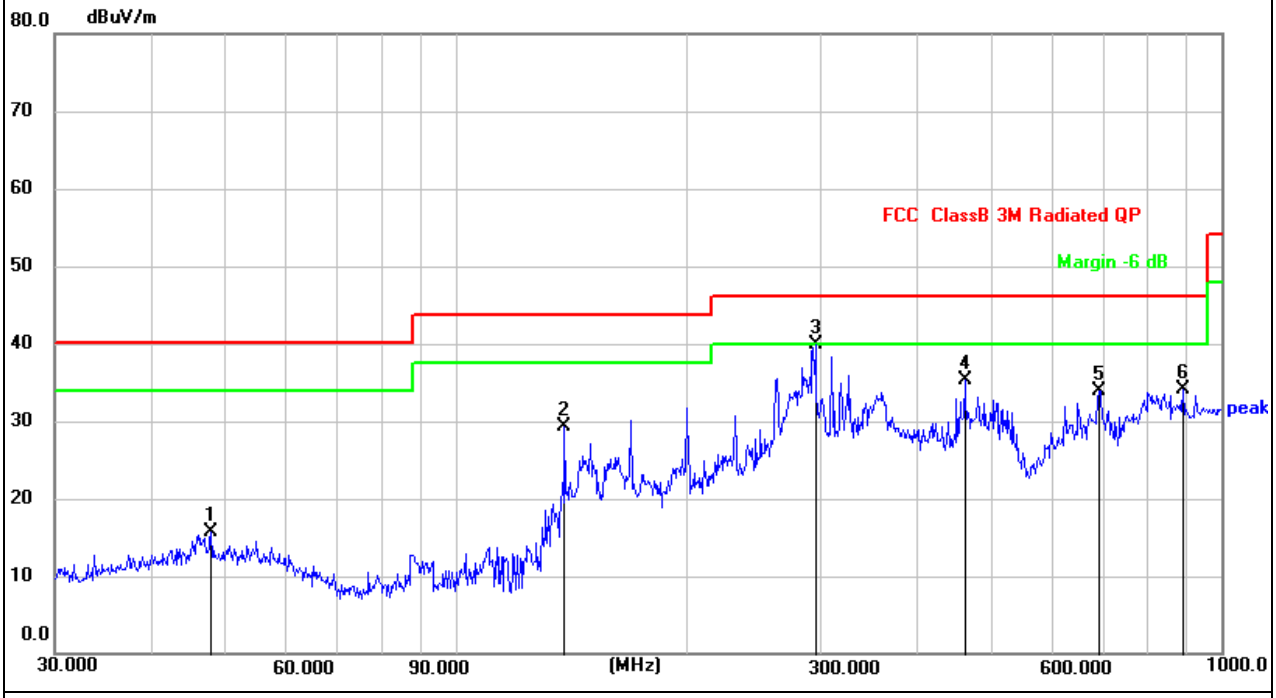
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	Pass
--	--	--	--	Pass

Note:

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

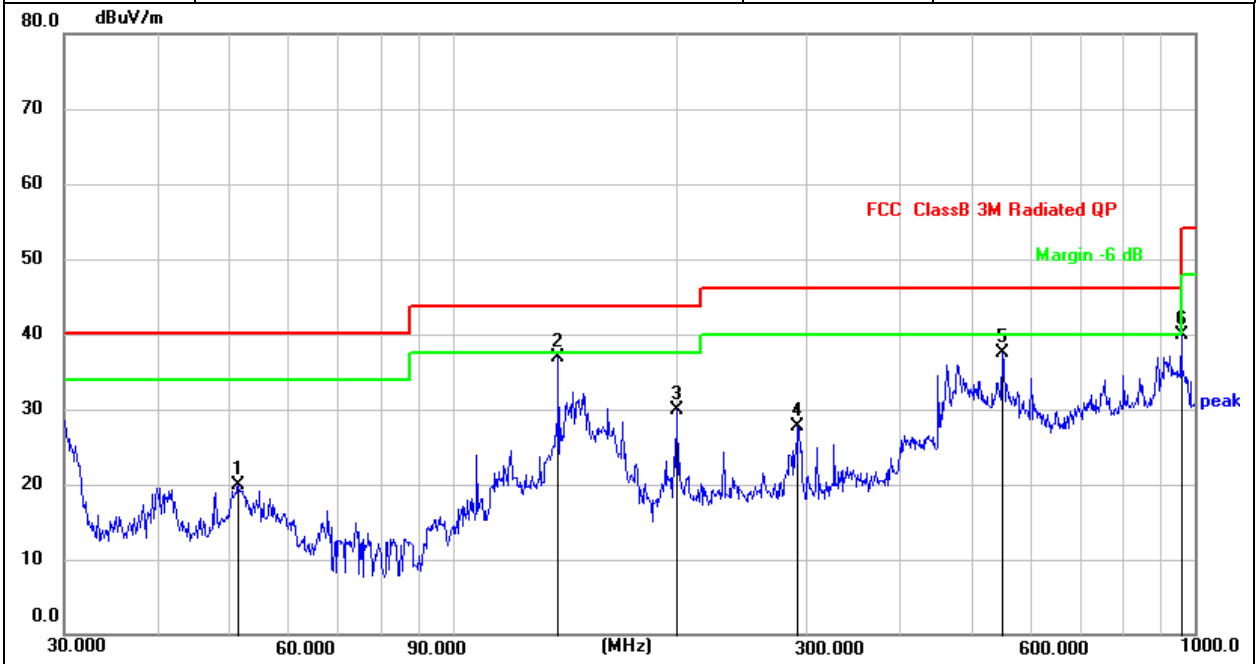
Between 30MHz – 1GHz

EUT:	MOIN Camera	Model Name:	MOIN Camera
Pressure:	1010 hPa	Phase:	H
Test Voltage:	DC 3.7V from battery	Mode:	TX 802.11a CH48



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9938	29.26	-13.63	15.63	40.00	-24.37	QP
2	138.8734	46.73	-17.36	29.37	43.50	-14.13	QP
3 *	295.1467	50.59	-10.61	39.98	46.00	-6.02	QP
4	462.3455	42.99	-7.74	35.25	46.00	-10.75	QP
5	691.9864	37.53	-3.56	33.97	46.00	-12.03	QP
6	890.7277	34.08	0.09	34.17	46.00	-11.83	QP

EUT:	MOIN Camera	Model Name:	MOIN Camera
Pressure:	1010 hPa	Phase:	V
Test Voltage:	DC 3.7V from battery	Mode:	TX 802.11a CH48



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	51.4806	33.53	-13.68	19.85	40.00	-20.15	QP
2	138.8734	54.23	-17.36	36.87	43.50	-6.63	QP
3	200.6879	43.65	-13.75	29.90	43.50	-13.60	QP
4	292.0581	38.36	-10.71	27.65	46.00	-18.35	QP
5	550.9479	43.45	-5.93	37.52	46.00	-8.48	QP
6 *	958.7943	38.71	1.17	39.88	46.00	-6.12	QP

Note:

1. All the mode has been tested for this test, the mode 11a CH36 is the worst mode. Just report the worst data.
2. Emission Level = Meter Reading + Factor, Margin= Emission Level- Limit, Factor = Antenna Factor + Cable Loss – Pre-amplifier.
3. The peak value is less than the AV value, AV value is not required Factor added by measurement software automatically.

1GHz-40GHz:

For U-NII-1

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (TX 802.11a 5180 MHz)-Above 1G									
Vertical	4534.205	54.94	5.94	35.40	44.00	52.28	74.00	-21.72	Pk
Vertical	4534.205	45.00	5.94	35.40	44.00	42.34	54.00	-11.66	AV
Vertical	10370.154	63.40	8.46	39.75	44.50	67.11	68.20	-6.89	Pk
Vertical	15540.126	55.62	10.12	38.80	44.10	60.44	74.00	-13.56	Pk
Vertical	15540.126	42.48	10.12	38.80	42.70	48.70	54.00	-5.30	AV
Horizontal	4534.242	59.21	5.94	35.18	44.00	56.33	74.00	-17.67	Pk
Horizontal	4534.242	43.57	5.94	35.18	44.00	40.69	54.00	-13.31	AV
Horizontal	10370.121	61.54	8.46	38.71	44.50	64.21	68.20	-9.79	Pk
Horizontal	15540.115	58.20	10.12	38.38	44.10	62.60	68.20	-11.40	Pk
Horizontal	15540.115	42.74	10.12	38.38	44.10	47.14	54.00	-6.86	AV
middle Channel (TX 802.11a 5200 MHz)-Above 1G									
Vertical	4592.142	58.33	6.48	36.35	44.05	57.11	74.00	-16.89	Pk
Vertical	4592.142	42.22	6.48	36.35	44.05	41.00	54.00	-13.00	AV
Vertical	10401.205	60.47	8.47	37.88	44.51	62.31	68.20	-11.69	Pk
Vertical	15600.176	57.88	10.12	38.8	44.10	62.70	68.20	-11.30	Pk
Vertical	15600.176	42.59	10.12	38.8	42.70	48.81	54.00	-5.19	AV
Horizontal	4592.313	59.96	6.48	36.37	44.05	58.76	74.00	-15.24	Pk
Horizontal	4592.313	43.23	6.48	36.37	44.05	42.03	54.00	-11.97	AV
Horizontal	10400.215	62.40	8.47	38.64	44.50	65.01	68.20	-8.99	Pk
Horizontal	15600.175	58.07	10.12	38.38	44.10	62.47	68.20	-11.53	Pk
Horizontal	15600.175	43.64	10.12	38.38	44.10	48.04	54.00	-5.96	AV
High Channel (TX 802.11a 5240 MHz)-Above 1G									
Vertical	4739.216	59.25	7.10	37.24	43.50	60.09	74.00	-13.91	Pk
Vertical	4739.216	46.63	7.10	37.24	43.50	47.47	54.00	-6.53	AV
Vertical	10480.274	62.10	8.46	37.68	44.50	63.74	68.20	-10.26	Pk
Vertical	15720.189	58.17	10.12	38.8	44.10	62.99	68.20	-11.01	Pk
Vertical	15720.189	43.74	10.12	38.8	42.70	49.96	54.00	-4.04	AV
Horizontal	4739.116	60.12	7.10	37.24	43.50	60.96	74.00	-13.04	Pk
Horizontal	4739.116	44.84	7.10	37.24	43.50	45.68	54.00	-8.32	AV

Horizontal	10481.402	58.64	8.46	38.57	44.50	61.17	68.20	-12.83	Pk
Horizontal	15720.263	57.88	10.12	38.38	44.10	62.28	68.20	-11.72	Pk
Horizontal	15720.263	42.66	10.12	38.38	44.10	47.06	54.00	-6.94	AV

Note: Both horizontal and vertical antenna polarities were tested and only the worst case (802.11a CH48) emissions were reported.

Band edge - radiated

For U-NII-1

For 802.11a mode: (CH36 5180MHz)

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150.00	65.46	8.69	29.40	42.59	60.96	74.00	-13.04	Pk
Horizontal	5350.00	62.40	9.37	30.41	43.25	58.93	74.00	-15.07	Pk
Horizontal	5460.00	60.03	8.46	30.75	43.96	55.28	74.00	-18.72	Pk
Vertical	5150.00	67.39	9.21	29.40	42.59	63.41	74.00	-10.59	Pk
Vertical	5350.00	59.27	9.12	30.41	43.25	55.55	74.00	-18.45	Pk
Vertical	5460.00	62.31	8.46	30.75	43.96	57.56	74.00	-16.44	Pk

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
Horizontal	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150.00	45.60	8.69	29.40	42.59	41.10	54.00	-12.90	AV
Horizontal	5350.00	49.41	8.46	30.41	43.25	45.03	54.00	-8.97	AV
Horizontal	5460.00	48.58	9.36	30.75	43.96	44.73	54.00	-9.27	AV
Vertical	5150.00	48.12	9.21	29.40	42.59	44.14	54.00	-9.86	AV
Vertical	5350.00	49.69	9.12	30.41	43.25	45.97	54.00	-8.03	AV
Vertical	5460.00	43.74	8.46	30.75	43.96	38.99	54.00	-15.01	AV

For 802.11n-(HT20) mode: (CH36 5180MHz)

Polarization /	Frequency (MHz)	Read Lavel (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Over Limit (dB)	Detector Type
Horizontal	5150.00	65.39	8.69	29.40	42.59	60.89	74.00	-13.11	Pk
Horizontal	5350.00	62.40	9.37	30.41	43.25	58.93	74.00	-15.07	Pk
Horizontal	5460.00	60.10	8.46	30.75	43.96	55.35	74.00	-18.65	Pk
Vertical	5150.00	67.86	9.21	29.40	42.59	63.88	74.00	-10.12	Pk
Vertical	5350.00	60.01	9.12	30.41	43.25	56.29	74.00	-17.71	Pk
Vertical	5460.00	62.65	8.46	30.75	43.96	57.90	74.00	-16.10	Pk

Polarization Horizontal	Frequency (MHz)	Read Lavel (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Over Limit (dB)	Detector Type
Horizontal	5150.00	45.76	8.69	29.40	42.59	41.26	54.00	-12.74	AV
Horizontal	5350.00	46.36	8.46	30.41	43.25	41.98	54.00	-12.02	AV
Horizontal	5460.00	46.67	9.36	30.75	43.96	42.82	54.00	-11.18	AV
Vertical	5150.00	48.05	9.21	29.40	42.59	44.07	54.00	-9.93	AV
Vertical	5350.00	46.14	9.12	30.41	43.25	42.42	54.00	-11.58	AV
Vertical	5460.00	43.49	8.46	30.75	43.96	38.74	54.00	-15.26	AV

For 802.11n-(HT40) mode: (CH38 5190MHz)

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150.00	65.45	8.69	29.40	42.59	60.95	74.00	-13.05	Pk
Horizontal	5350.00	62.42	9.37	30.41	43.25	58.95	74.00	-15.05	Pk
Horizontal	5460.00	60.21	8.46	30.75	43.96	55.46	74.00	-18.54	Pk
Vertical	5150.00	67.75	9.21	29.40	42.59	63.77	74.00	-10.23	Pk
Vertical	5350.00	59.97	9.12	30.41	43.25	56.25	74.00	-17.75	Pk
Vertical	5460.00	62.87	8.46	30.75	43.96	58.12	74.00	-15.88	Pk

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150.00	45.77	8.69	29.40	42.59	41.27	54.00	-12.73	AV
Horizontal	5350.00	46.08	8.46	30.41	43.25	41.70	54.00	-12.30	AV
Horizontal	5460.00	46.49	9.36	30.75	43.96	42.64	54.00	-11.36	AV
Vertical	5150.00	47.55	9.21	29.40	42.59	43.57	54.00	-10.43	AV
Vertical	5350.00	47.03	9.12	30.41	43.25	43.31	54.00	-10.69	AV
Vertical	5460.00	43.71	8.46	30.75	43.96	38.96	54.00	-15.04	AV

For 802.11n-(ac80) mode: (CH42 5210MHz)

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150.00	65.71	8.69	29.40	42.59	61.21	74.00	-12.79	Pk
Horizontal	5350.00	62.39	9.37	30.41	43.25	58.92	74.00	-15.08	Pk
Horizontal	5460.00	60.12	8.46	30.75	43.96	55.37	74.00	-18.63	Pk
Vertical	5150.00	67.75	9.21	29.40	42.59	63.77	74.00	-10.23	Pk
Vertical	5350.00	59.94	9.12	30.41	43.25	56.22	74.00	-17.78	Pk
Vertical	5460.00	62.97	8.46	30.75	43.96	58.22	74.00	-15.78	Pk

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150.00	45.59	8.69	29.40	42.59	41.09	54.00	-12.91	AV
Horizontal	5350.00	46.50	8.46	30.41	43.25	42.12	54.00	-11.88	AV
Horizontal	5460.00	46.60	9.36	30.75	43.96	42.75	54.00	-11.25	AV
Vertical	5150.00	47.62	9.21	29.40	42.59	43.64	54.00	-10.36	AV
Vertical	5350.00	46.62	9.12	30.41	43.25	42.90	54.00	-11.10	AV
Vertical	5460.00	44.01	8.46	30.75	43.96	39.26	54.00	-14.74	AV

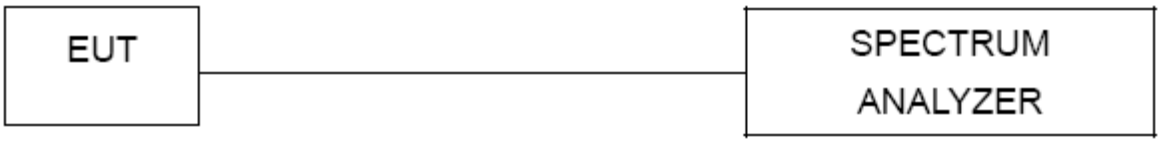
5.7 Conduction spurious emission

5.7.1 Limits

Undesirable emission limits. 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 Band (MHz)	Limit
5150 - 5250	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5250 - 5350	Outside of the 5.15-5.35 GHz band: e.i.r.p. -27 dBm
5470 - 5725	Outside of the 5.47-5.725 GHz band: e.i.r.p. -27 dBm
5725 - 5850	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

5.7.2 Test setup

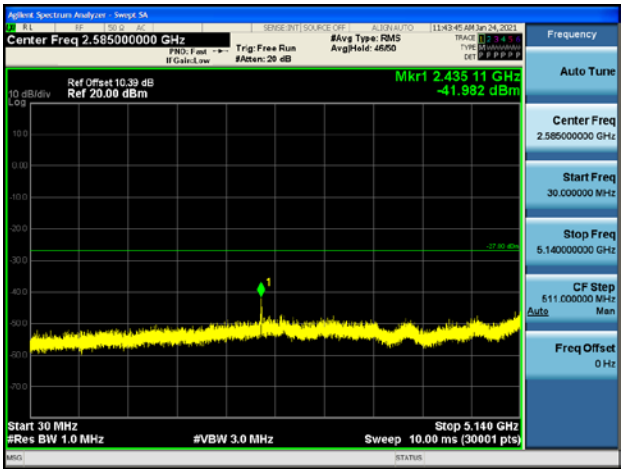
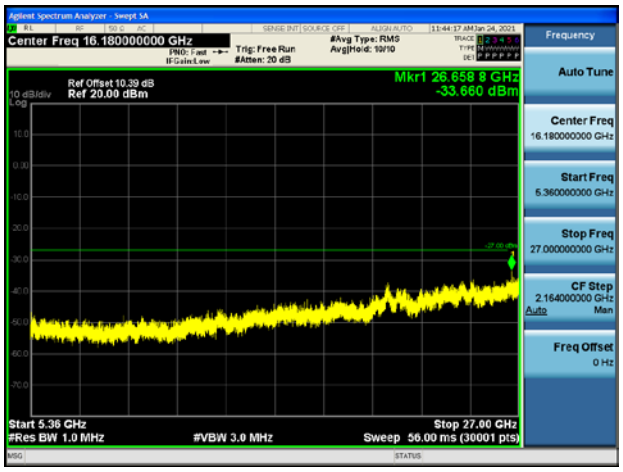
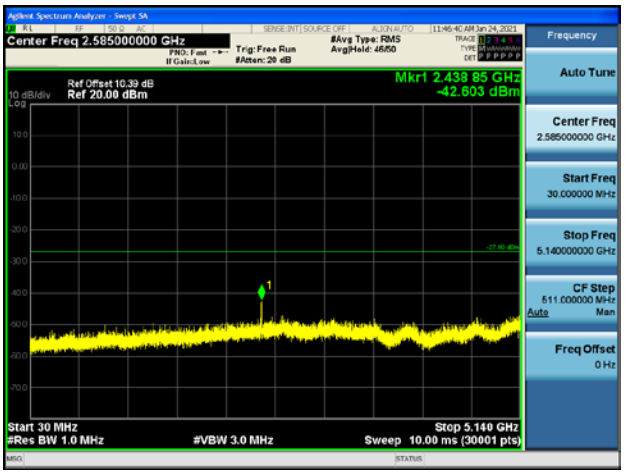
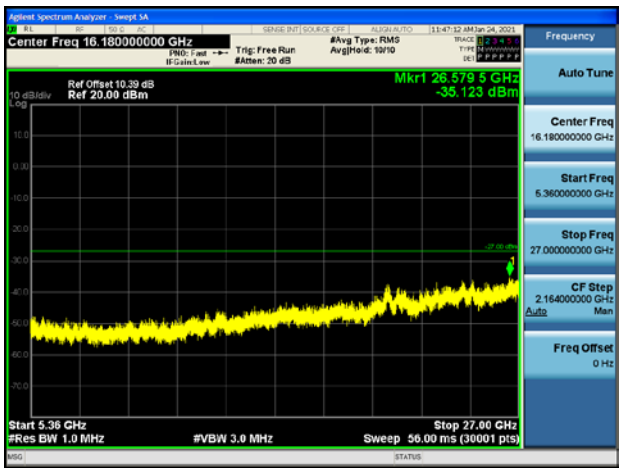
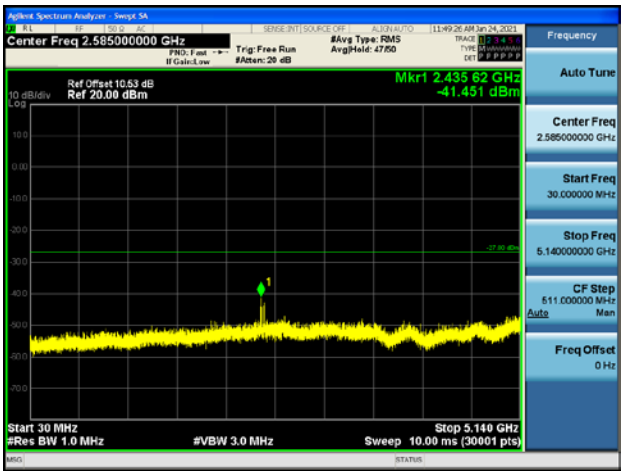
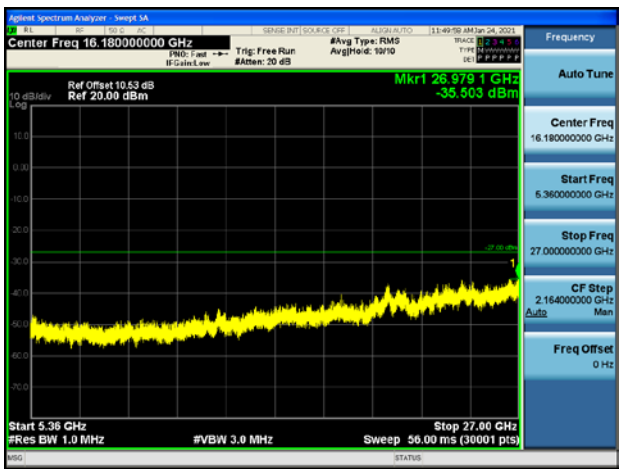


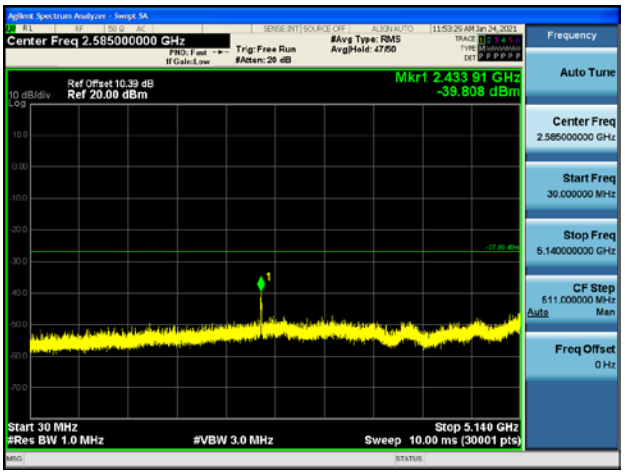
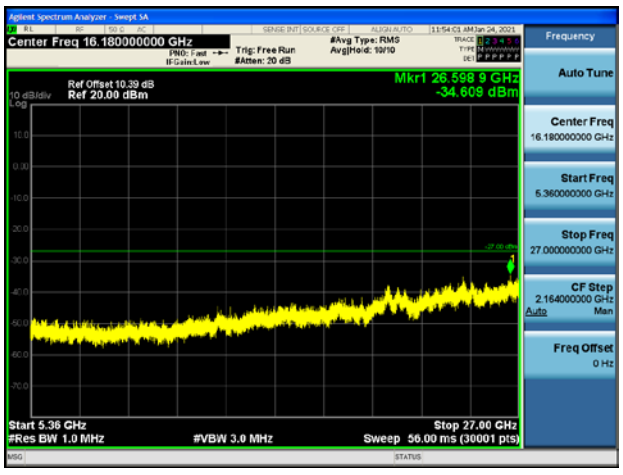
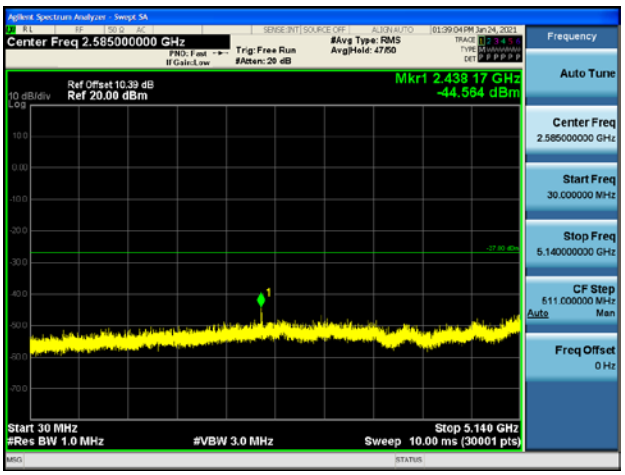
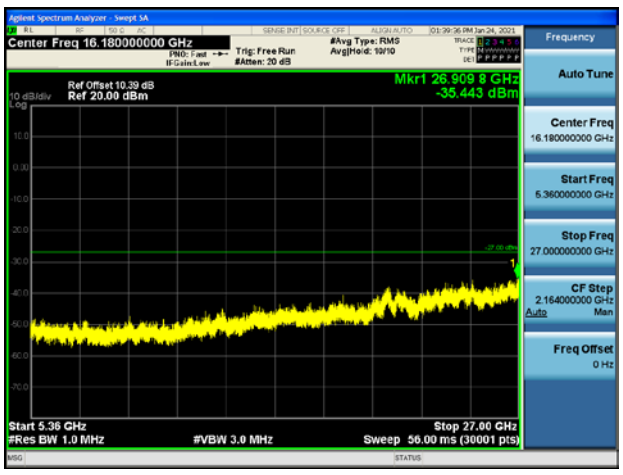
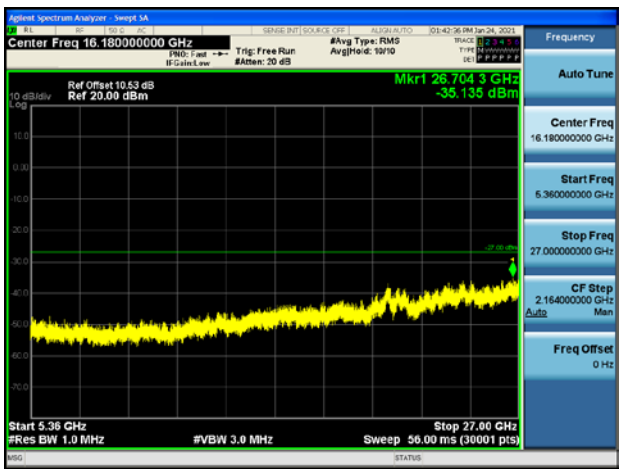
5.7.3 Test procedure

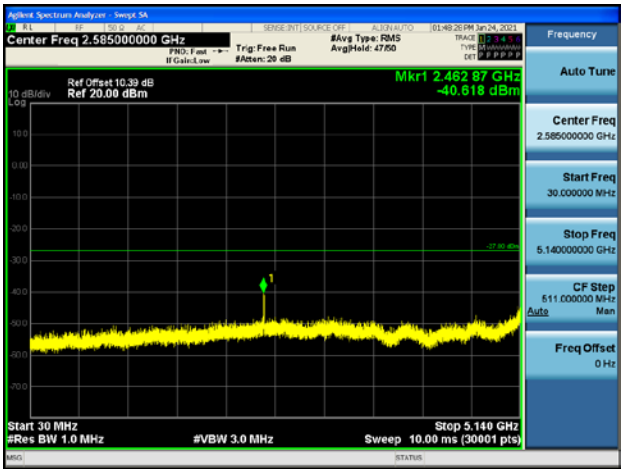
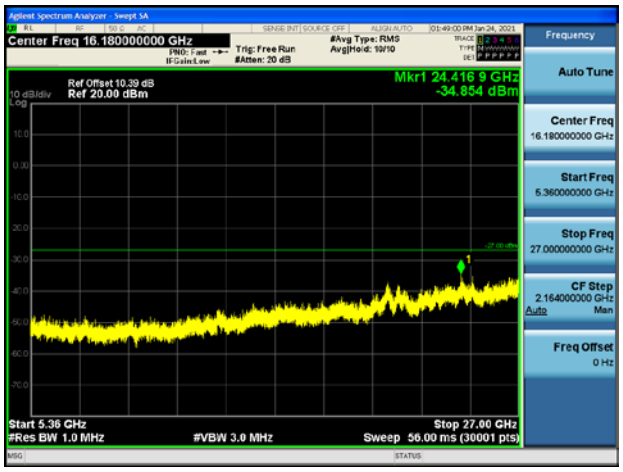
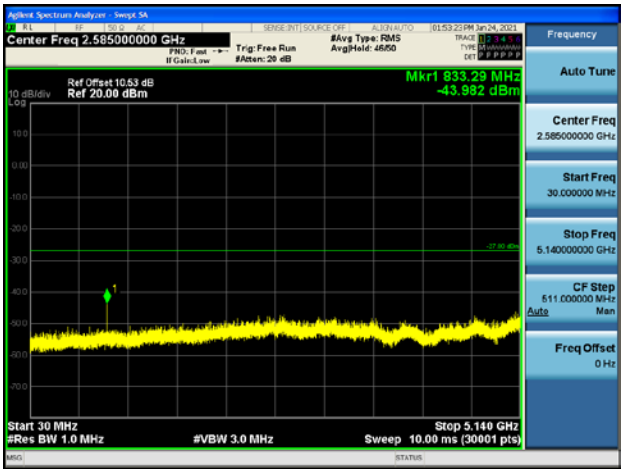
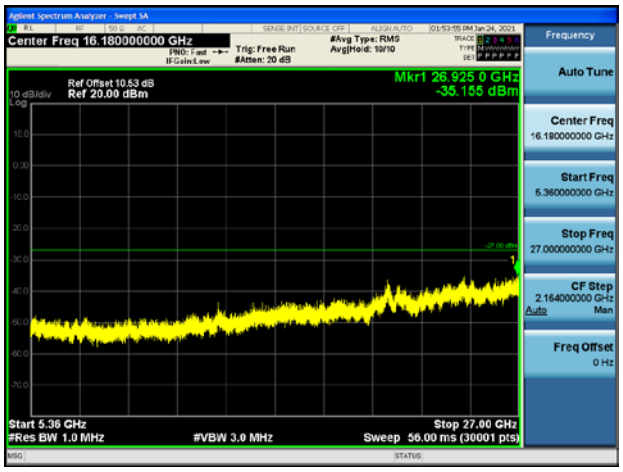
Use the following spectrum analyzer settings:
Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize

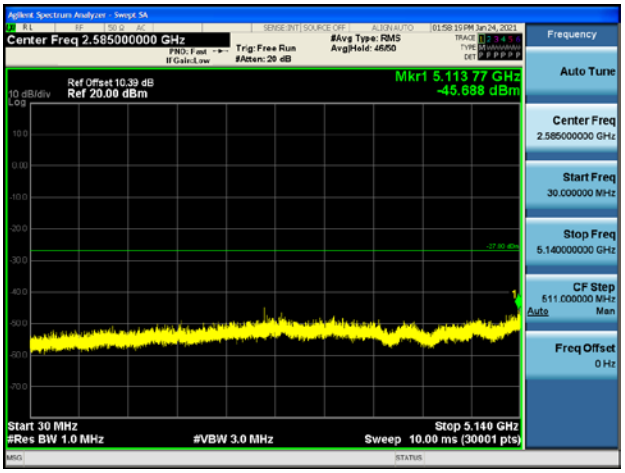
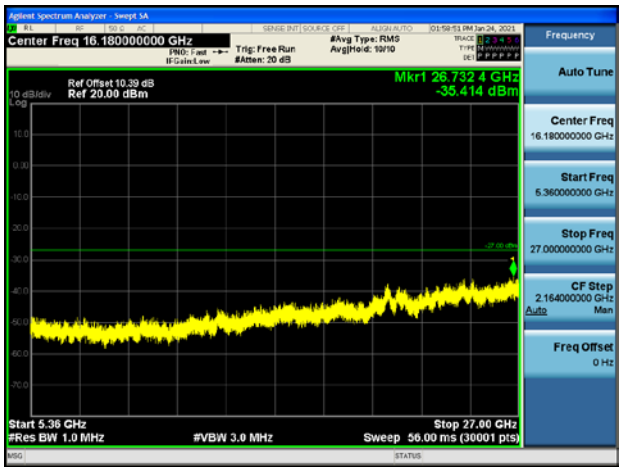
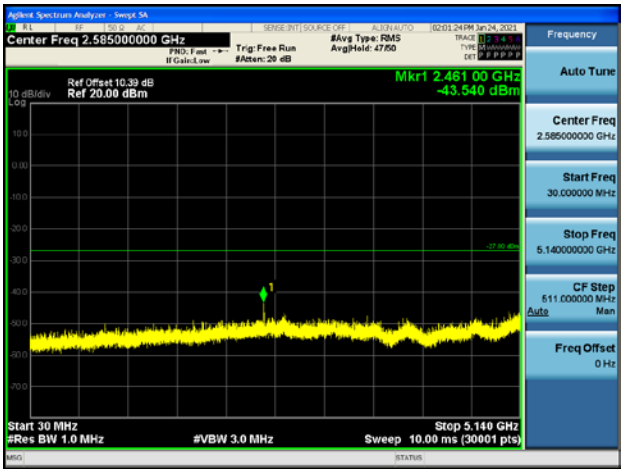
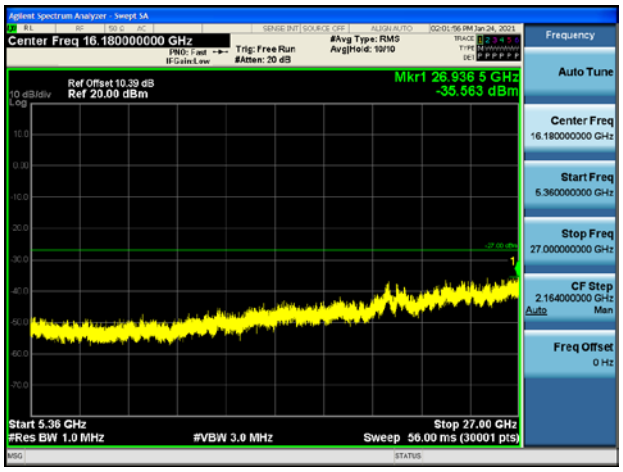
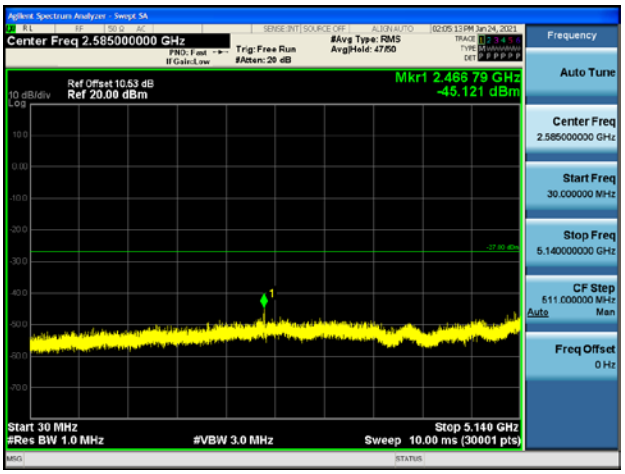
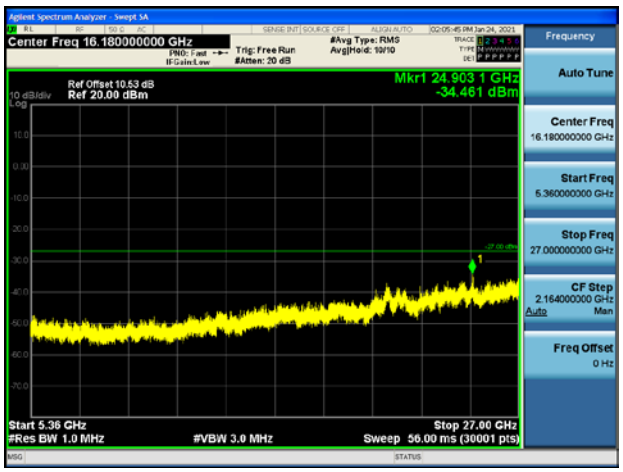
5.7.4 Test results

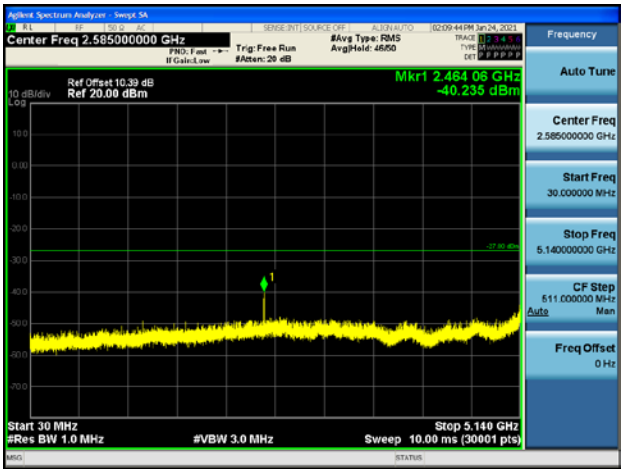
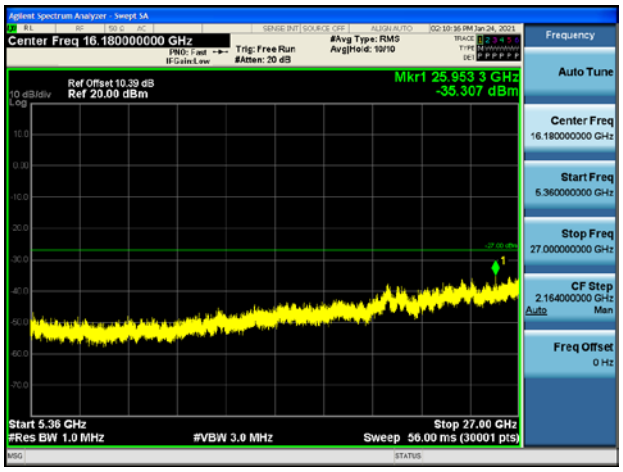
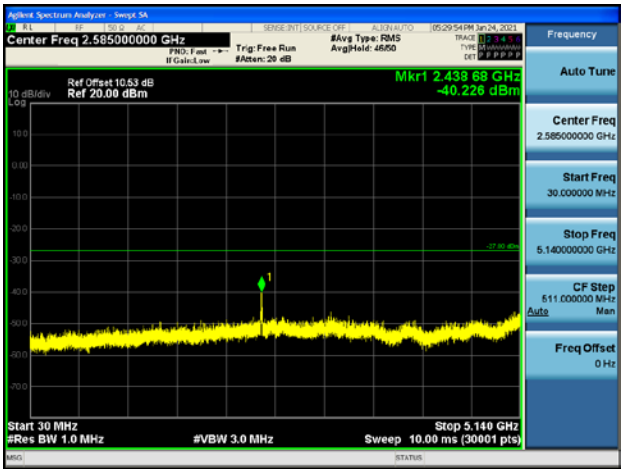
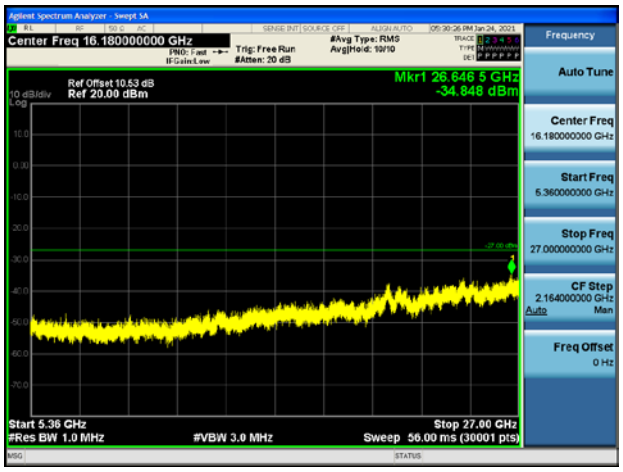
For U-NII-1

11a	
Low channel	Low channel
	
Middle channel	Middle channel
	
High channel	High channel
	

11n20	
Low channel	Low channel
	
Middle channel	Middle channel
	
High channel	High channel
	

11n40	
Low channel	Low channel
	
High channel	High channel
	

11ac20	
Low channel	Low channel
	
Middle channel	Middle channel
	
High channel	High channel
	

11ac40	
Low channel	Low channel
	
High channel	High channel
	

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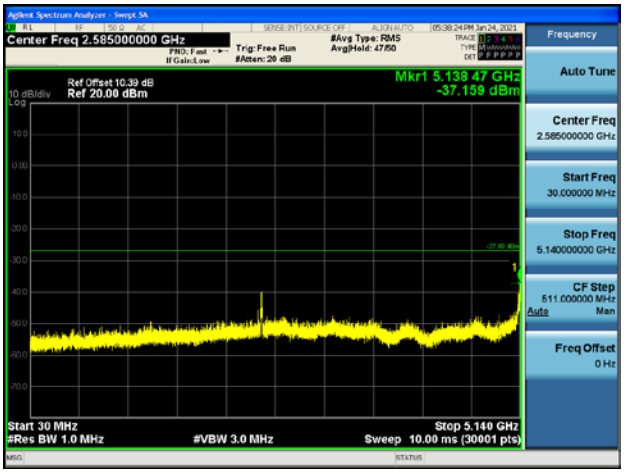
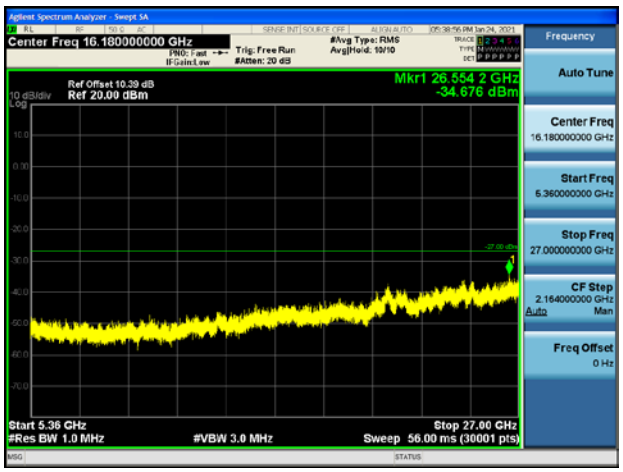
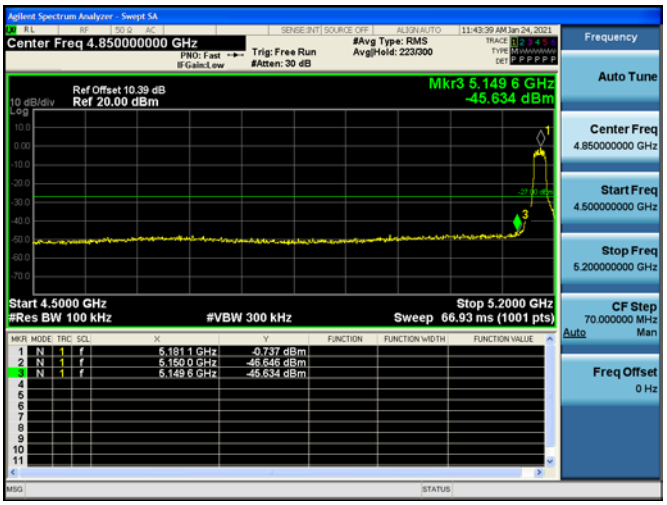
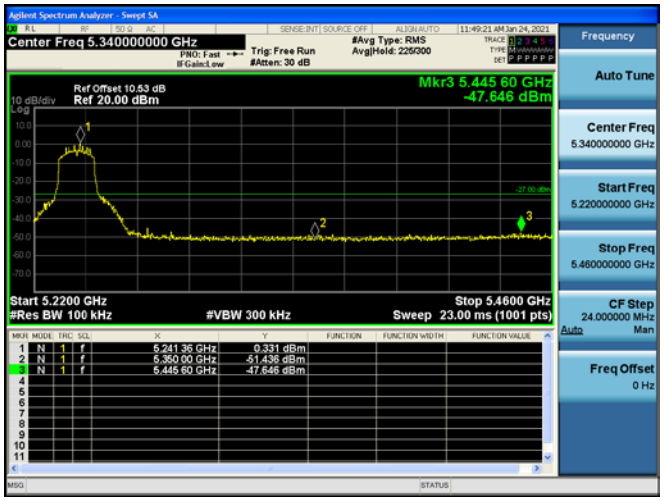
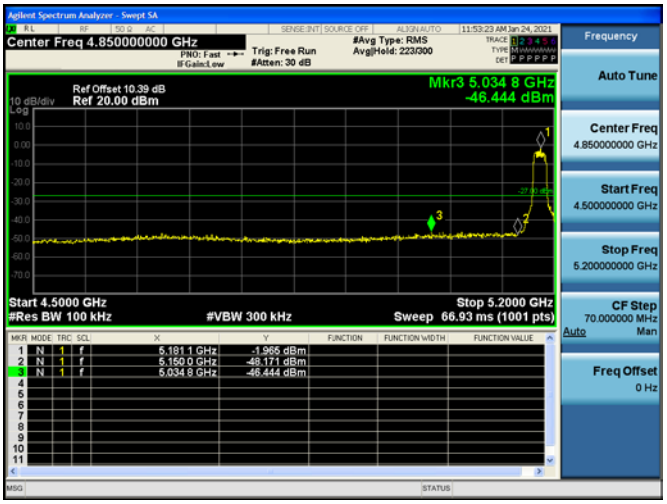
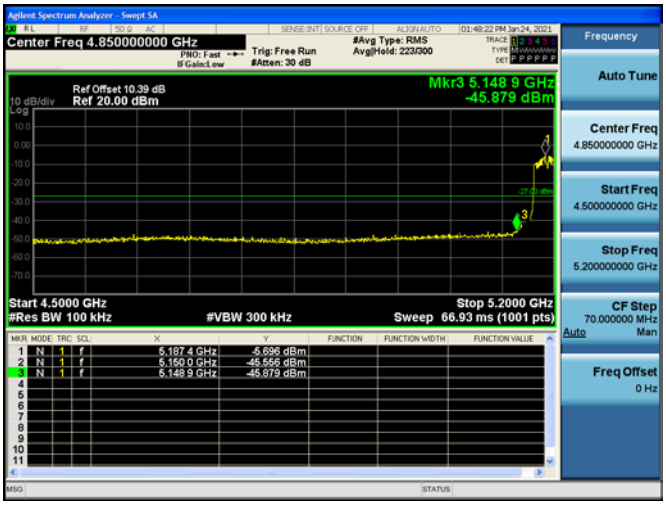
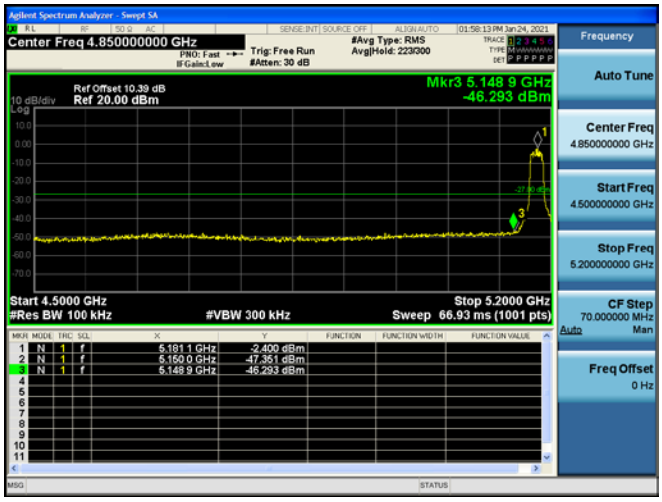
	

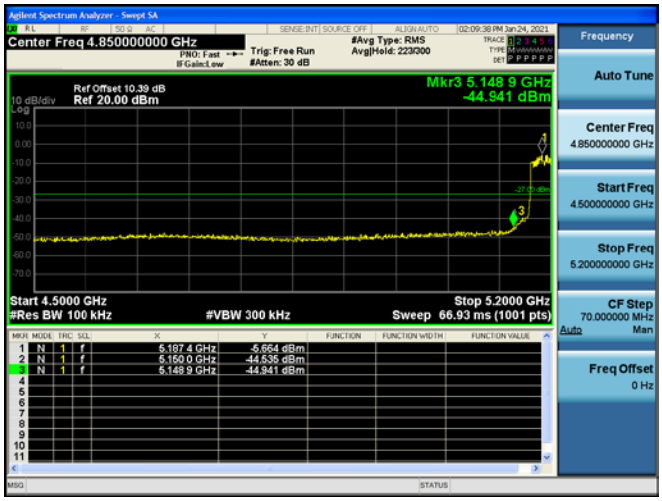
5.7.5 Conduction Band edge

For U-NII-1 test plot

11a	
Band edge-Left	Band edge-Right
	
11n20	
Band edge-Left	Band edge-Right
	

11n40	
Band edge-Left	Band edge-Right
	

11ac20	
Band edge-Left	Band edge-Right
	

11ac40	
Band edge-Left	Band edge-Right
	
11ac80	
Band edge-Left	Band edge-Right
	

5.8 Power spectral density

5.8.1 Limit

For the band 5.15-5.25 GHz

For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.25-5.35 GHz and 5.47-5.725 GHz

The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.8.2 Test procedure

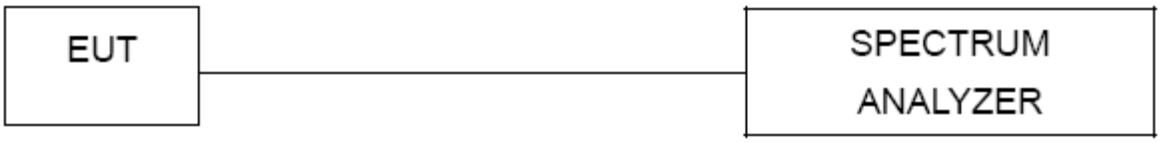
For U-NII-1

1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW ≥ 1MHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

For U-NII-3

1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW ≥ 510kHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

5.8.3 Test setup



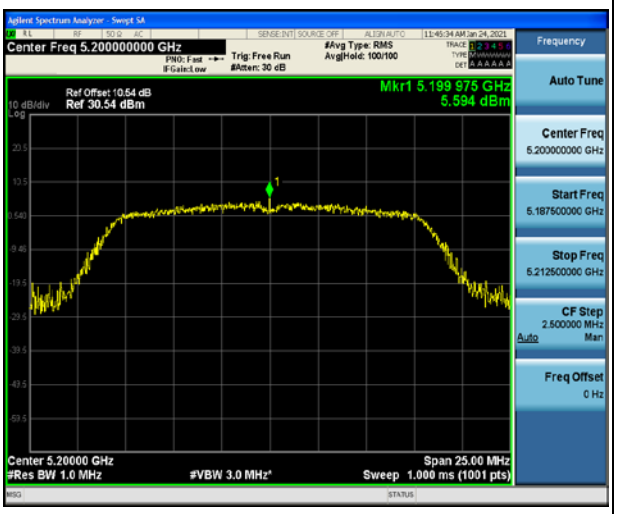
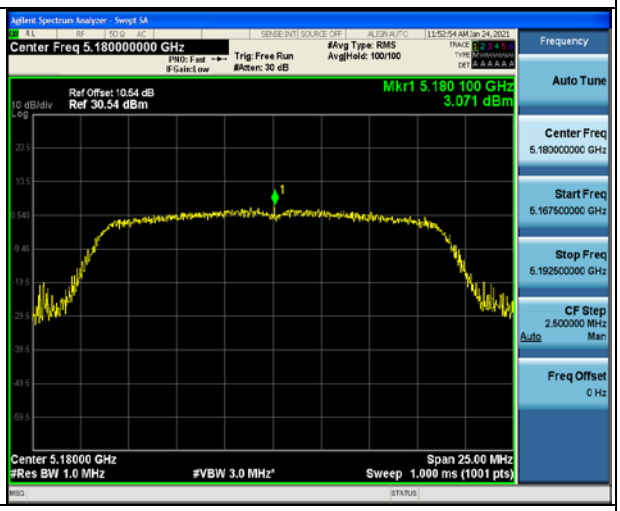
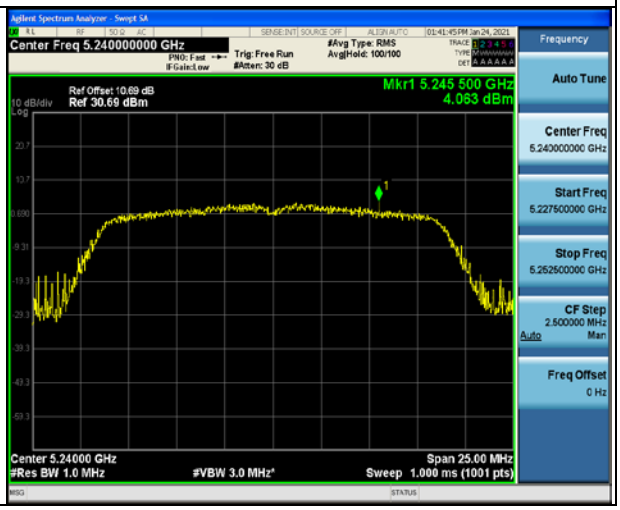
5.8.4 Test results

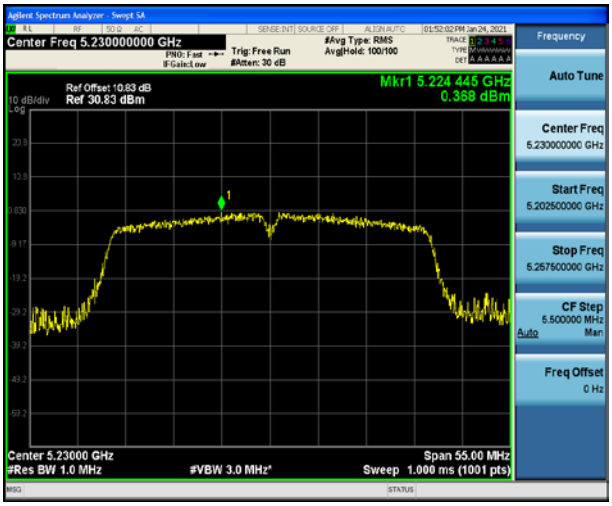
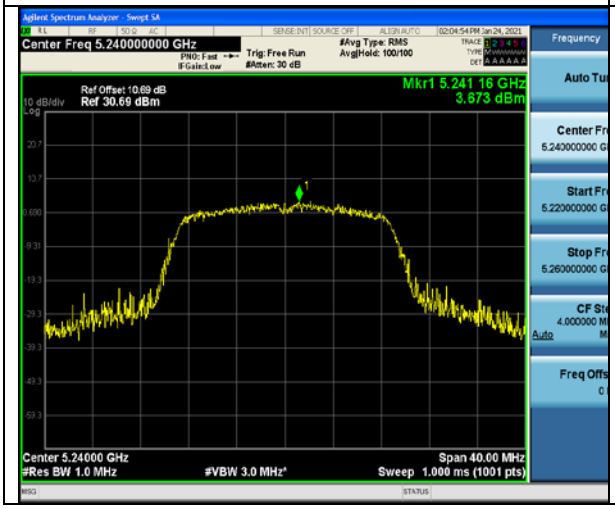
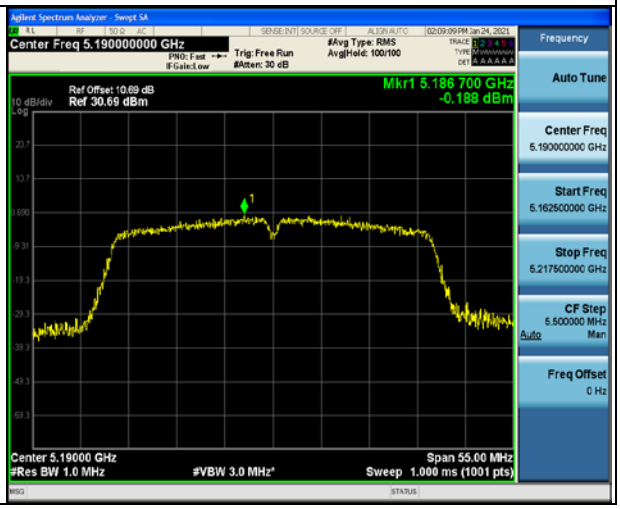
For U-NII-1

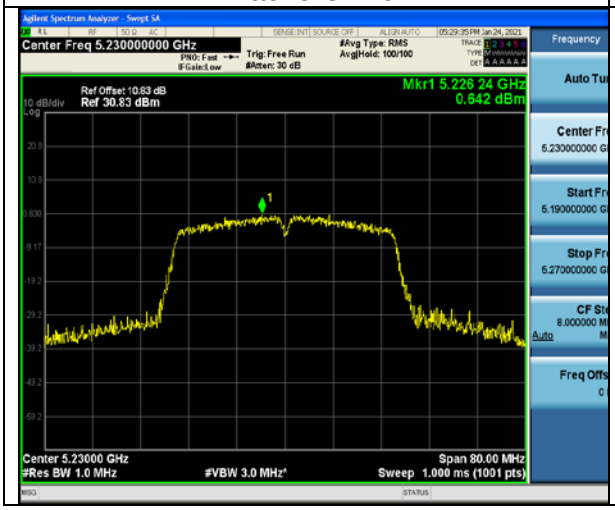
Mode	Channel	Frequency(MHz)	Measurement PSD (dBm/MHz)	Limit (dBm/MHz)	Result
11a	CH36	5180	4.192	11	Pass
11a	CH44	5220	5.594	11	Pass
11a	CH48	5240	5.267	11	Pass
11n(HT20)	CH36	5180	3.071	11	Pass
11n(HT20)	CH44	5220	3.199	11	Pass
11n(HT20)	CH48	5240	4.063	11	Pass
11n(HT40)	CH38	5190	-0.916	11	Pass
11n(HT40)	CH46	5230	0.368	11	Pass
11ac(HT20)	CH36	5180	2.439	11	Pass
11ac (HT20)	CH40	5200	3.554	11	Pass
11ac (HT20)	CH48	5240	3.673	11	Pass
11ac (HT40)	CH38	5190	-0.188	11	Pass
11ac (HT40)	CH46	5230	0.642	11	Pass
11ac (HT80)	CH42	5210	-2.235	11	Pass

Test plots

For U-NII-1

11a CH36	11a CH44
	
11a CH48	11n20 CH36
	
11n20 CH44	11n20 CH48
	

11n40 CH38	11n40 CH46
	
11ac20 CH36	11ac20 CH40
	
11ac20 CH48	11ac40 CH38
	

11ac40 CH46	11ac80 CH42
	

5.9 Frequency Stability Measurement

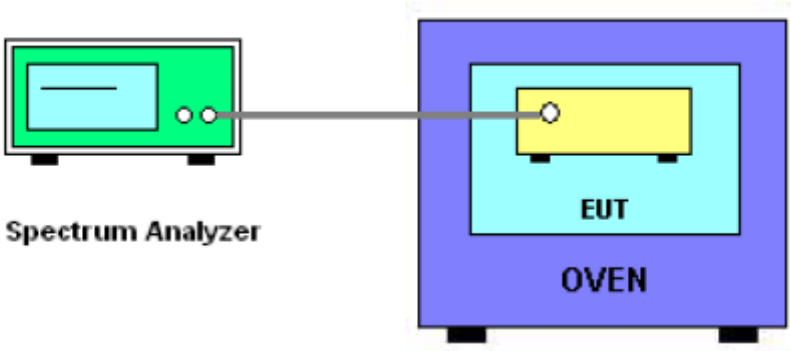
5.9.1 Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

5.9.2 Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and max hold settings.
5. Fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is -20°C~70°C.

5.9.3 Test Setup Layout



5.9.4 EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

5.9.5 TEST RESULTS

For U-NII-1

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.70	5180.0140	5180	0.0140	-2.7027
		V max (V)	8.86	5180.0197	5180	0.0197	-3.7992
		V min (V)	6.55	5180.0112	5180	0.0112	-2.1622
Limits				within 5150-5250MHz			
Result				Complies			

Temperature vs. Frequency Stability

V nom (V)	7.7	T (°C)	-20	5180.0136	5180	0.0136	-2.6274
		T (°C)	-10	5180.0102	5180	0.0102	-1.9691
		T (°C)	0	5180.0126	5180	0.0126	-2.4324
		T (°C)	10	5180.0130	5180	0.0130	-2.5097
		T (°C)	20	5180.0123	5180	0.0123	-2.3745
		T (°C)	30	5180.0134	5180	0.0134	-2.5869
		T (°C)	40	5180.0110	5180	0.0110	-2.1236
		T (°C)	50	5180.0123	5180	0.0123	-2.3745
		T (°C)	60	5180.0140	5180	0.0140	-2.7027
		T (°C)	70	5180.0143	5180	0.0143	-2.7606
Limits				within 5150-5250MHz			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.70	5200.0121	5200	0.0121	-2.3269
		V max (V)	8.86	5200.0119	5200	0.0119	-2.2885
		V min (V)	6.55	5200.0134	5200	0.0134	-2.5769
Limits				within 5150-5250MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.7	T (°C)	-20	5200.0190	5200	0.0190	-3.6538
		T (°C)	-10	5200.0135	5200	0.0135	-2.5962
		T (°C)	0	5200.0124	5200	0.0124	-2.3846
		T (°C)	10	5200.0113	5200	0.0113	-2.1731
		T (°C)	20	5200.0121	5200	0.0121	-2.3269
		T (°C)	30	5200.0131	5200	0.0131	-2.5192
		T (°C)	40	5200.0110	5200	0.0110	-2.1154
		T (°C)	50	5200.0112	5200	0.0112	-2.1538
		T (°C)	60	5200.0119	5200	0.0119	-2.2885
		T (°C)	70	5200.0129	5200	0.0129	-2.4808
Limits				within 5150-5250MHz			
Result				Complies			

Voltage vs. Frequency Stability

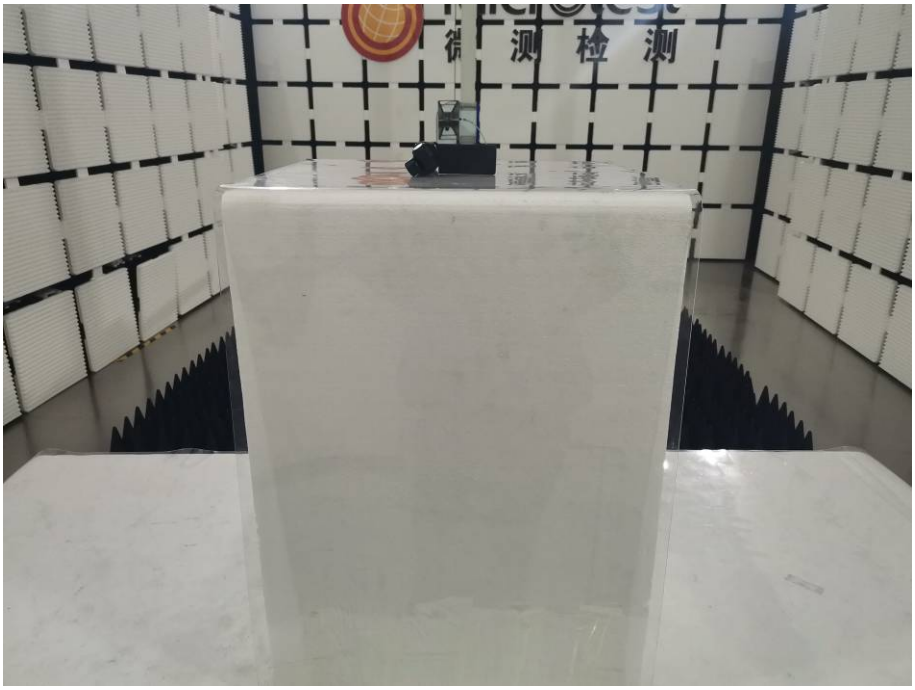
TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.70	5240.0154	5240	0.0154	-2.9389
		V max (V)	8.86	5240.0189	5240	0.0189	-3.6069
		V min (V)	6.55	5240.0144	5240	0.0144	-2.7481
Limits				within 5150-5250MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency：5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.7	T (°C)	-20	5240.0233	5240	0.0233	-4.4466
		T (°C)	-10	5240.0124	5240	0.0124	-2.3664
		T (°C)	0	5240.0137	5240	0.0137	-2.6145
		T (°C)	10	5240.0164	5240	0.0164	-3.1298
		T (°C)	20	5240.0140	5240	0.0140	-2.6718
		T (°C)	30	5240.0130	5240	0.0130	-2.4809
		T (°C)	40	5240.0120	5240	0.0120	-2.2901
		T (°C)	50	5240.0119	5240	0.0119	-2.2710
		T (°C)	60	5240.0110	5240	0.0110	-2.0992
		T (°C)	70	5240.0120	5240	0.0120	-2.2901
Limits				within 5150-5250MHz			
Result				Complies			

Photographs of the Test Setup

Radiated emission



Conducted emission


Photographs of the EUT

See the APPENDIX 1- EUT PHOTO.

----END OF REPORT----