TEST REPORT

Product Name:	Artemis Robot V6
FCC ID:	2AWJ5V6-T11
Trademark:	Artemis Robot
Model Number:	Artemis-V6-T11
Prepared For:	CreativeStar Solutions Inc.
Address:	1601 Trapelo Road, Suite 260, Waltham MA 02451, USA
Manufacturer:	Chengdu Meixiang Technology Co., Ltd
Address:	Suite 1303, Building 3, Da Ding Century Plaza, 387 Tian Ren Road, Gaoxin District, Chengdu, China 610041
Prepared By:	Shenzhen CTB Testing Technology Co., Ltd.
Address:	Floor 1&2, Building A, No. 26 of Xinhe Road, Xinqiao Street, Baoan District, Shenzhen China
Sample Received Date:	Nov. 18, 2020
Sample tested Date:	Nov. 18, 2020 to Nov. 28, 2020
Issue Date:	Nov. 28, 2020
Report No.:	CTB201119006RFX
Test Standards	47 CFR Part 15 Subpart E
Test Results	PASS
Remark:	This is WIFI-5GHz band radio test report.

Compiled by:	Reviewed by:	Approved by:
Arron Liu	Bin Mei	Rita Xiao / Director

The test report is effective only with both signature and specialized stamp.This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

TABLE OF CONTENT

(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
CTB201119006RFX	Nov. 28, 2020	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

Test Item	Test Requirement	Test method	Result
AC Power Line Conducted Emission	47 CFR Part 15 Subpart E Section 15.407 (b)(6)	ANSI C63.10-2013	PASS
Radiated Spurious emissions	47 CFR Part 15 Subpart E Section 15.205/15.407(b)	KDB789033	PASS
Band edge	47 CFR Part 15 Subpart E Section 15.205/15.407(b)	KDB789033	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart E Section 15.407 (a)	KDB789033	PASS
Emission Bandwidth & Occupied Bandwidth	47 CFR Part 15 Subpart E Section 15.407 (a)(e)	KDB789033	PASS
Power Spectral Density	47 CFR Part 15 Subpart E Section 15.407 (a)	KDB789033	PASS
Frequency stability	47 CFR Part 15 Subpart E Section 15.407 (g)	KDB789033	PASS
Operation in the absence of information to the transmit	47 CFR Part 15 Subpart E Section 15.407 (c)	47 CFR Part 15 Subpart E	PASS
Antenna Requirement	47 CFR Part 15 Subpart E Section 15.203	ANSI C63.10-2013	PASS

Remark:
Test according to ANSI C63.4-2014 & ANSI C63.10-2013.

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	Occupancy bandwidth	U=±54.3Hz
2	Adjacent channel power	U=±1.3dB
3	Conducted Adjacent channel power	U=±1.38dB
4	Conducted output power Above 1G	U=±1.0dB
5	Conducted output power below 1G	U=±0.9dB
6	Power Spectral Density , Conduction	U=±1.0dB
7	Conduction spurious emissions	U=±2.8dB
8	Out of band emission	U=±54Hz
9	3m camber Radiated spurious emission(30MHz-1GHz)	U=±4.3dB
10	3m chamber Radiated spurious emission(1GHz-18GHz)	U=±4.5dB
11	humidity uncertainty	U=±5.3%
12	Temperature uncertainty	U=±0.59℃
13	Supply volyages	U=±3%
14	Time	U=±5%

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	Artemis-V6-T11
Model Description:	N/A
Wi-Fi Specification:	IEEE 802.11a/b/g/n/ac
Hardware Version:	V1.0.0.1
Software Version:	V1.0.0.1
Operation Frequency:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11ac(80M): 5150MHz ~5250MHz/ 1 channel IEEE 802.11a/n/ac(20M): 5725MHz ~5850MHz/ 5 channel IEEE 802.11n/ac(40M): 5725MHz ~5850MHz/ 2 channel IEEE 802.11ac(80M): 5725MHz ~5850MHz/ 1 channel
Max. RF output power:	WiFi (5G): 9.888dBm
Type of Modulation:	WiFi: DSSS, OFDM
Antenna installation:	Internal antenna
Antenna Gain:	: 2dBi Antenna 2 (512AN_HMW) : 2dBi Antenna 3 (512AN_HMW) : 2dBi
Ratings:	INPUT:AC 100~240V. 50-60HZ OUTPUT:DC 42V,3A DC 37V from battery, 20800mAh

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	---	---	---	---	---	---

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

For 802.11a/n/ac(20M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
36	5180MHz	44	5220MHz
40	5200MHz	48	5240MHz
For 802.11a/n/ac(20M) Operation in the 5725MHz ~5850 MHz band			
Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz	NA	NA

For 802.11n/ac(40M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz
For 802.11n/ac(40M) Operation in the 5725MHz ~5850 MHz band			
Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

For 802.11ac(80M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
42	5210MHz	NA	NA
For 802.11ac(80M) Operation in the 5725MHz ~5850 MHz band			
Channel	Frequency	NA	NA
155	5775MHz	NA	NA

4.5 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11a/n/ac(20M)	5150MHz ~5250 MHz	Channel 36	Channel 40	Channel 48
		5180MHz	5200MHz	5240MHz
802.11n/ac(40M)	5150MHz ~5250 MHz	Channel 38	N/A	Channel 46
		5190MHz	N/A	5230MHz
802.11ac(80M)	5150MHz ~5250 MHz	N/A	Channel 42	N/A
		N/A	5210MHz	N/A
802.11a/n/ac(20M)	5725MHz ~5850 MHz	Channel 149	Channel 157	Channel 165
		5745MHz	5785MHz	5825MHz
802.11n/ac(40M)	5725MHz ~5850 MHz	Channel 151	N/A	Channel 159
		5755MHz	N/A	5795MHz
802.11ac(80M)	5725MHz ~5850 MHz	N/A	Channel 155	N/A
		N/A	5775MHz	N/A

4.6 Test Environment

Humidity(%):	55
Atmospheric Pressure(kPa):	101.1
Normal Voltage(AC):NV	230
Normal Temperature(℃):NT	25
Low Temperature(℃):LT	0
High Temperature(℃):HT	40

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Floor 1&2, Building A, No. 26 of Xinhe Road, Xinqiao Street, Baoan District, Shenzhen China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

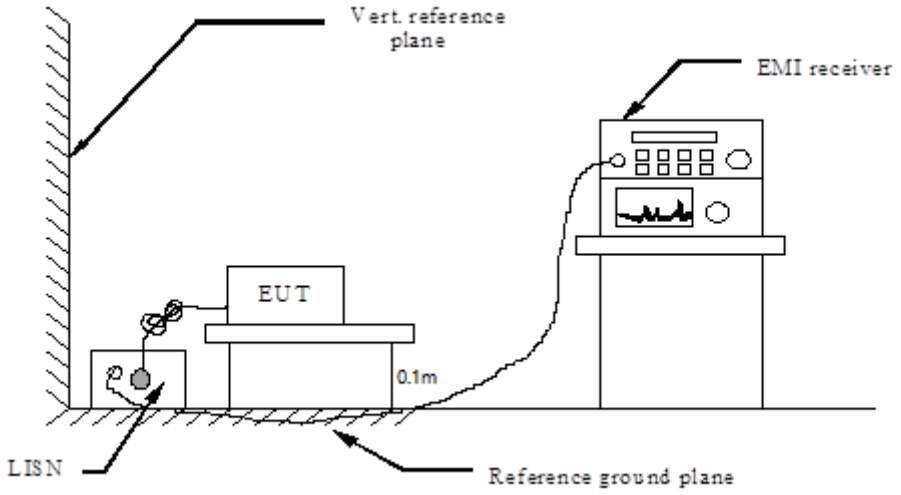
Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	Sep. 28, 2020	Sep. 28, 2021
2	Power Sensor	Agilent	U2021XA	MY56120032	Sep. 28, 2020	Sep. 28, 2021
3	Power Sensor	Agilent	U2021XA	MY56120034	Sep. 28, 2020	Sep. 28, 2021
4	Communication test set	R&S	CMW500	108058	Sep. 28, 2020	Sep. 28, 2021
5	Spectrum Analyzer	R&S	FSP40	100550	Sep. 28, 2020	Sep. 28, 2021
6	Signal Generator	Agilent	N5181A	MY49060920	Sep. 28, 2020	Sep. 28, 2021
7	Signal Generator	Agilent	N5182A	MY47420195	Sep. 28, 2020	Sep. 28, 2021
8	Communication test set	Agilent	E5515C	MY50102567	Oct. 10, 2020	Oct. 10, 2021
9	band rejection filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	Sep. 28, 2020	Sep. 28, 2021
10	band rejection filter	Shenxiang	MSF5150-5850MS-1155	20181015001	Sep. 28, 2020	Sep. 28, 2021
11	band rejection filter	Xingbo	XBLBQ-DZA120	190821-1-1	Sep. 28, 2020	Sep. 28, 2021
12	BT&WI-FI Automatic test software	Micowave	MTS8310	Ver. 2.0.0.0	\	\
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	Sep. 28, 2020	Sep. 28, 2021
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	Sep. 28, 2020	Sep. 28, 2021
15	234G Automatic test software	Micowave	MTS8200	Ver. 2.0.0.0	\	\
16	966 chamber	C.R.T.	966 Room	966	Nov. 9, 2019	Nov. 08, 2022
17	Receiver	R&S	ESPI	100362	Sep. 28, 2020	Sep. 28, 2021

18	Amplifier	HP	8447E	2945A02747	Sep. 28, 2020	Sep. 28, 2021
19	Amplifier	Agilent	8449B	3008A01838	Sep. 28, 2020	Sep. 28, 2021
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	Nov. 02, 2020	Nov. 01, 2021
21	Horn Antenna	Schwarzbeck	BBHA9120D	1911	Nov. 02, 2020	Nov. 01, 2021
22	Software	Fala	EZ-EMC	FA-03A2 RE	\	\
23	3-Loop Antenna	Daze	ZN30401	17014	Sep. 28, 2020	Sep. 28, 2021
24	loop antenna	ZHINAN	ZN30900A	/	Sep. 28, 2020	Sep. 28, 2021
25	Horn antenna	A/H/System	SAS-574	588	Sep. 28, 2020	Sep. 28, 2021
26	Amplifier	AEROFLEX	/	S/N/ 097	Sep. 28, 2020	Sep. 28, 2021

Conducted emissions Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
AMN	ROHDE&SCHWARZ	ESH3-Z5	100318	Sep. 28, 2020	Sep. 28, 2021
Pulse limiter	ROHDE&SCHWARZ	ESH3Z2	357881052	Sep. 28, 2020	Sep. 28, 2021
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCS30	834115/006	Sep. 28, 2020	Sep. 28, 2021
Coaxial cable	ZDECL	Z302S	18091804	Sep. 28, 2020	Sep. 28, 2021
ISN	TESEQ	NTFM8158	183	Sep. 28, 2020	Sep. 28, 2021
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428/003	Sep. 28, 2020	Sep. 28, 2021
Software	Fala	EZ-EMC	EMC-CON 3A1.1	\	\

6. AC POWER LINE CONDUCTED EMISSION

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

6.3 Test procedure

1) The mains terminal disturbance voltage test was conducted in a shielded room.

2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

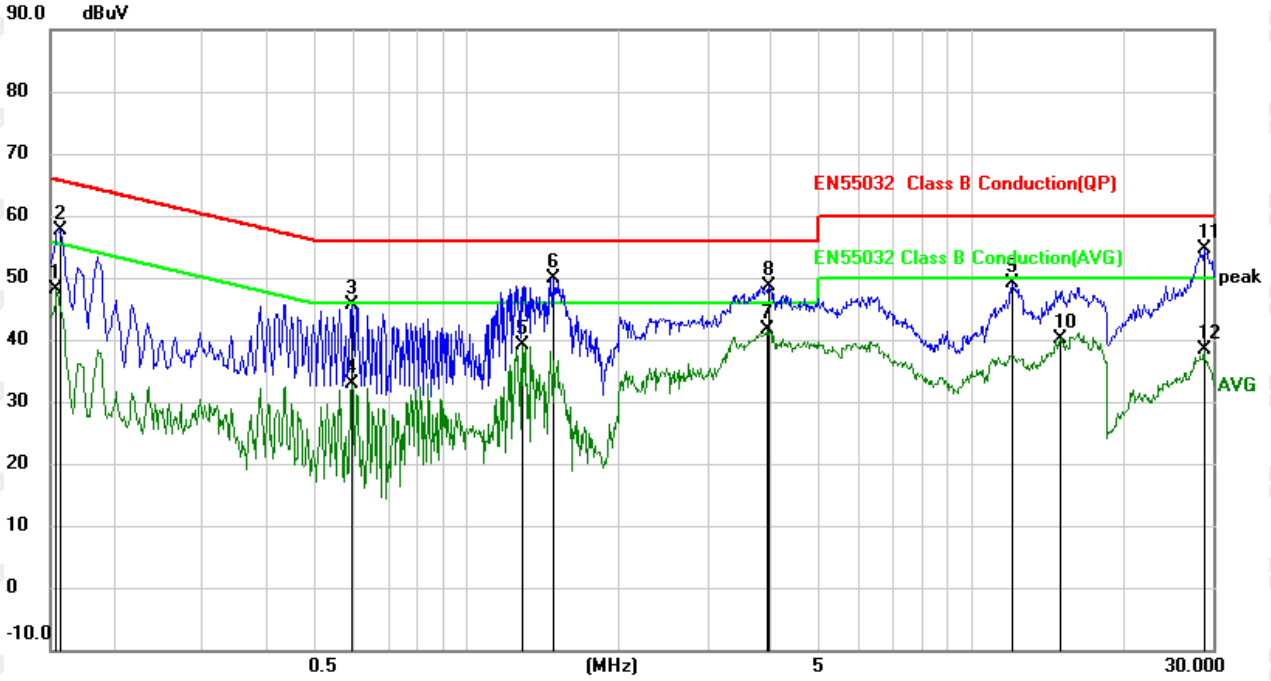
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test and bonded to a ground reference

plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

6.4 Test Result

L:

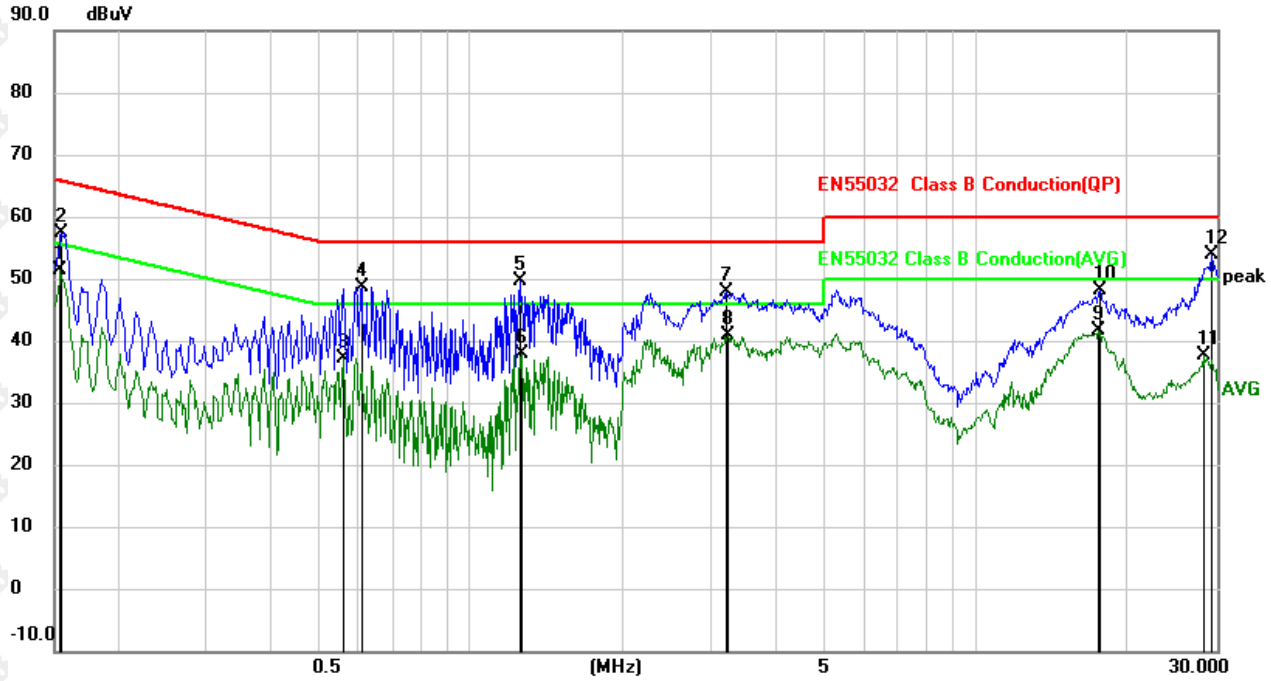


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1539	37.95	10.08	48.03	55.79	-7.76	AVG
2		0.1580	47.63	10.09	57.72	65.57	-7.85	QP
3		0.5936	35.52	10.23	45.75	56.00	-10.25	QP
4		0.5936	22.61	10.23	32.84	46.00	-13.16	AVG
5		1.2940	29.05	10.15	39.20	46.00	-6.80	AVG
6		1.4818	39.73	10.15	49.88	56.00	-6.12	QP
7	*	3.9300	31.34	10.37	41.71	46.00	-4.29	AVG
8		3.9780	38.17	10.37	48.54	56.00	-7.46	QP
9		12.0137	38.41	10.66	49.07	60.00	-10.93	QP
10		15.0539	29.35	10.70	40.05	50.00	-9.95	AVG
11		28.8780	44.00	10.67	54.67	60.00	-5.33	QP
12		28.8780	27.67	10.67	38.34	50.00	-11.66	AVG

Remark:

Factor = Cable loss + LISN factor, Margin = Measurement – Limit

N:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1539	41.25	10.08	51.33	55.79	-4.46	AVG
2		0.1547	47.25	10.08	57.33	65.74	-8.41	QP
3		0.5620	26.96	10.23	37.19	46.00	-8.81	AVG
4		0.6100	38.51	10.23	48.74	56.00	-7.26	QP
5		1.2500	39.59	10.15	49.74	56.00	-6.26	QP
6		1.2660	27.61	10.15	37.76	46.00	-8.24	AVG
7		3.2139	37.53	10.29	47.82	56.00	-8.18	QP
8		3.2300	30.53	10.29	40.82	46.00	-5.18	AVG
9		17.5213	30.98	10.73	41.71	50.00	-8.29	AVG
10		17.6173	37.50	10.73	48.23	60.00	-11.77	QP
11		28.2620	26.82	10.69	37.51	50.00	-12.49	AVG
12		29.2540	43.22	10.67	53.89	60.00	-6.11	QP

Remark:

Factor = Cable loss + LISN factor, Margin = Measurement – Limit

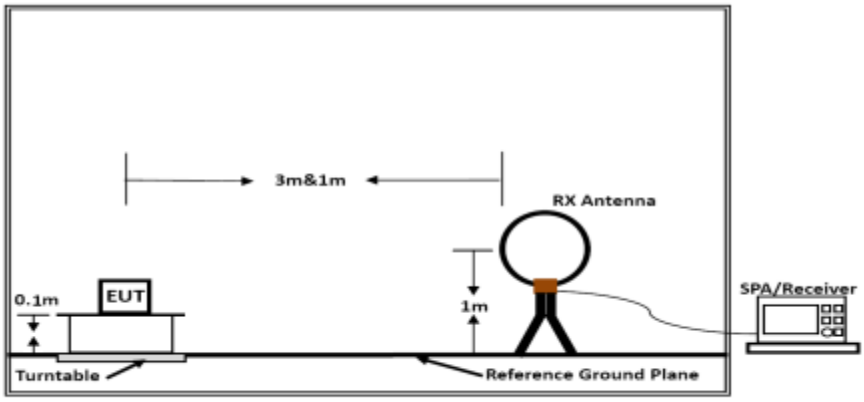
Remark:

1. Factor = Cable loss + LISN factor, Margin = Limit – Level
2. All modes were tested at AC 120V and 240V, only the worst result of AC 120V 60Hz was reported.
3. All the test modes completed for test. Only the worst result of was reported.

7. RADIATED SPURIOUS EMISSIONS

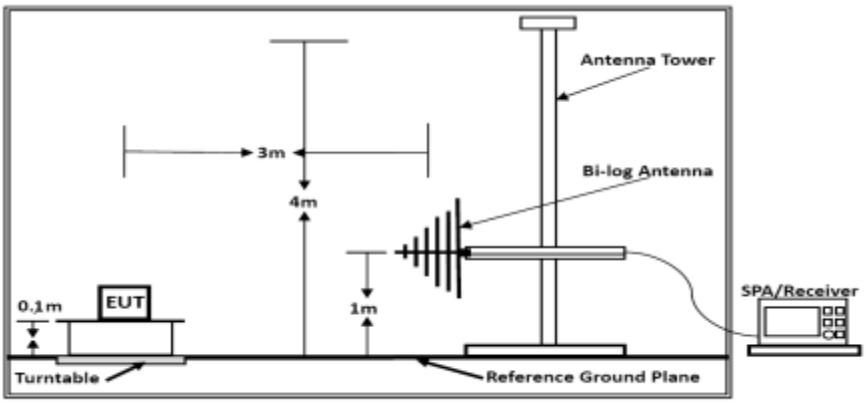
7.1 Block Diagram Of Test Setup

Figure 1. Below 30MHz



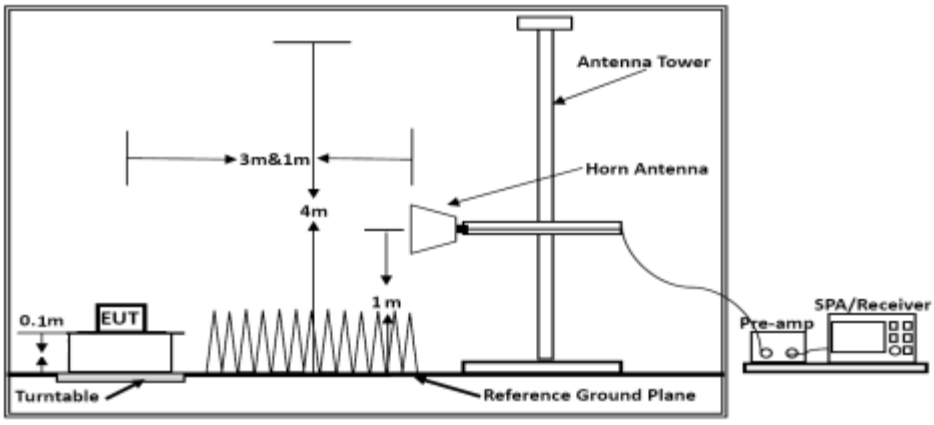
Below 30MHz

Figure 2. 30MHz to 1GHz



Below 1GHz

Figure 3. Above 1GHz



Above 1GHz

7.2 Limit

Spurious Emissions:

Frequency	Field strength (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	20log 2400/F (kHz) + 80	Quasi-peak	3
0.490MHz-1.705MHz	20log 24000/F (kHz) + 40	Quasi-peak	3
1.705MHz-30MHz	20log 30 + 40	Quasi-peak	3
30MHz-88MHz	40.0	Quasi-peak	3
88MHz-216MHz	43.5	Quasi-peak	3
216MHz-960MHz	46.0	Quasi-peak	3
960MHz-1GHz	54.0	Quasi-peak	3
Above 1GHz	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

If radiated measurements are performed, field strength is then converted to EIRP as follows:
(i) EIRP = ((E*d)^2) / 30
where:
• E is the field strength in V/m;
• d is the measurement distance in meters;
• EIRP is the equivalent isotropically radiated power in watts.
(ii) Working in dB units, the above equation is equivalent to:
EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77
(iii) Or, if d is 3 meters:
EIRP[dBm] = E[dBμV/m] - 95.2

7.3 Test procedure

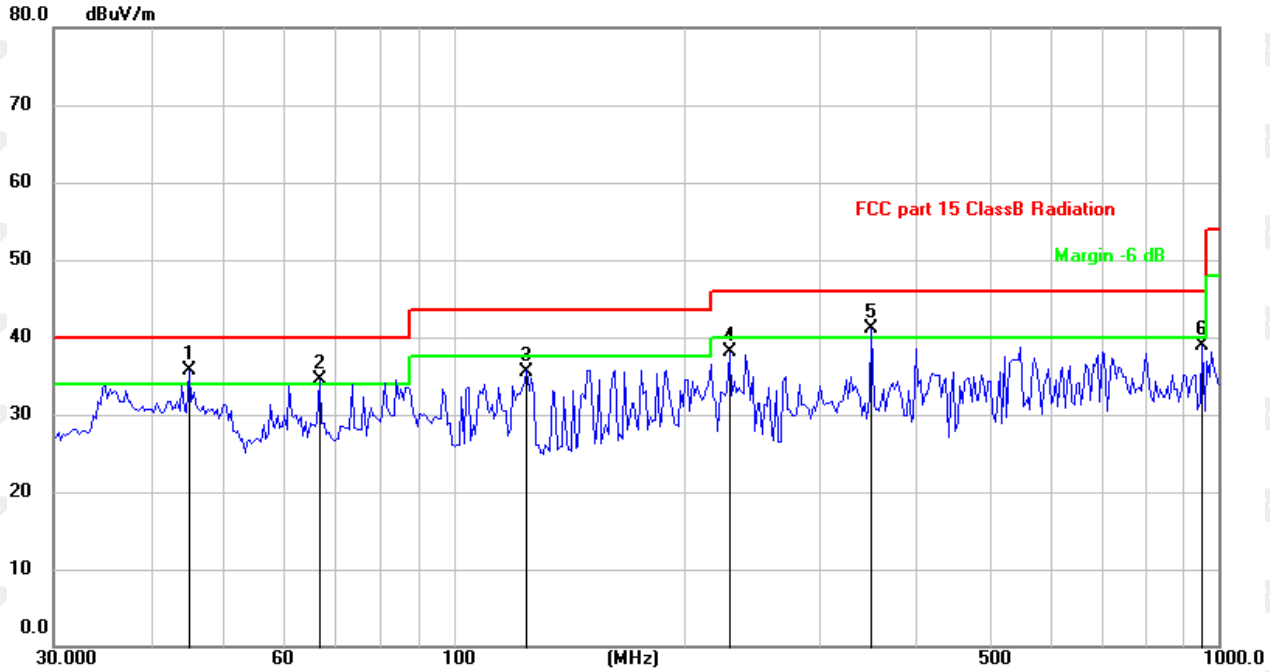
Below 1GHz test procedure as below:
a.The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.
e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f.If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Above 1GHz test procedure as below:
g.Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h.Test the EUT in the lowest channel ,the middle channel ,the Highest channel
j.Repeat above procedures until all frequencies measured was complete.

Receiver set:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30KHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30KHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30KHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30KHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30KHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120 kHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

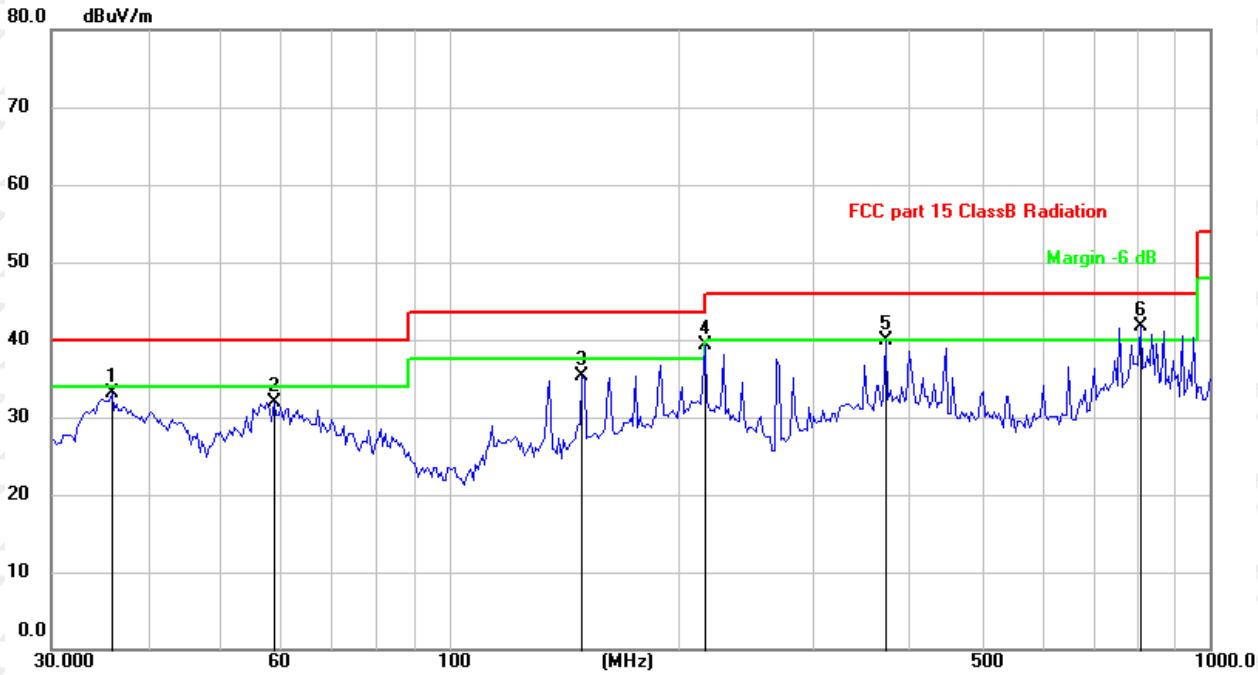
7.4 Test Result

30MHz-1GHzTest Results:
Modulation : 802.11a (the worst data)
Test Channel : 5780MHz
Antenna polarity: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	45.0583	41.45	-5.78	35.67	40.00	-4.33	QP
2	!	66.7325	42.59	-8.07	34.52	40.00	-5.48	QP
3		124.5690	43.07	-7.47	35.60	43.50	-7.90	QP
4		229.2930	45.46	-7.42	38.04	46.00	-7.96	QP
5	!	351.7078	44.64	-3.60	41.04	46.00	-4.96	QP
6		952.0937	31.30	7.65	38.95	46.00	-7.05	QP

Antenna polarity: V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		36.0007	39.55	-6.51	33.04	40.00	-6.96	QP
2		58.8185	38.66	-6.69	31.97	40.00	-8.03	QP
3		149.4857	41.55	-6.32	35.23	43.50	-8.27	QP
4		216.7828	47.57	-8.36	39.21	46.00	-6.79	QP
5		374.6225	43.12	-3.16	39.96	46.00	-6.04	QP
6	*	810.2653	35.88	5.90	41.78	46.00	-4.22	QP

Remark: Factor = Cable lose + Antenna factor - Pre-amplifier; Margin = Limit – Level

Radiated Spurious Emission (Above 1GHz):

ANT 1

Modulation : 802.11(a) (the worst data)

Freq (MHz)	Rd_level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	detector	Height	Degree	Antenna polarization
Channel:5180MHz									
10360	45.35	16.39	61.74	74	-12.26	PK	6	1.4	H
10360	28.24	16.39	44.63	54	-9.37	AV	245	1.5	H
10360	44.16	16.39	60.55	74	-13.45	PK	251	1.7	V
10360	30.43	16.39	46.82	54	-7.18	AV	39	1.3	V
Channel:5240MHz									
10480	44.12	16.11	60.23	74	-13.77	PK	308	1.4	H
10480	28.88	16.11	44.99	54	-9.01	AV	121	1.7	H
10480	42.10	16.11	58.21	74	-15.79	PK	205	1.5	V
10480	28.40	16.11	44.51	54	-9.49	AV	235	1.4	V
Channel:5745MHz									
11490	45.09	17.46	62.55	74	-11.45	PK	308	1.4	H
11490	26.46	17.46	43.92	54	-10.08	AV	121	1.7	H
11490	42.91	17.46	60.37	74	-13.63	PK	205	1.5	V
11490	27.90	17.46	45.36	54	-8.64	AV	235	1.4	V
Channel:5825MHz									
11650	43.62	17.57	61.19	74	-12.81	PK	308	1.4	H
11650	28.11	17.57	45.68	54	-8.32	AV	121	1.7	H
11650	42.26	17.57	59.83	74	-14.17	PK	205	1.5	V
11650	28.99	17.57	46.56	54	-7.44	AV	235	1.4	V

Modulation : 802.11(n40) (the worst data)

Freq (MHz)	Rd_level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	detector	Height	Degree	Antenna polarization
Channel:5190MHz									
10380	40.93	16.34	57.27	74	-16.73	PK	6	1.4	H
10380	27.68	16.34	44.02	54	-9.98	AV	245	1.5	H
10380	43.47	16.34	59.81	74	-14.19	PK	251	1.7	V
10380	25.20	16.34	41.54	54	-12.46	AV	39	1.3	V
Channel:5230MHz									
10460	42.09	16.15	58.24	74	-15.76	PK	308	1.4	H
10460	24.03	16.15	40.18	54	-13.82	AV	121	1.7	H
10460	43.94	16.15	60.09	74	-13.91	PK	205	1.5	V
10460	26.94	16.15	43.09	54	-10.91	AV	235	1.4	V
Channel:5755MHz									
11510	42.62	17.49	60.11	74	-13.89	PK	308	1.4	H
11510	26.09	17.49	43.58	54	-10.42	AV	121	1.7	H
11510	40.42	17.49	57.91	74	-16.09	PK	205	1.5	V
11510	26.16	17.49	43.65	54	-10.35	AV	235	1.4	V
Channel:5795MHz									
11590	42.48	17.52	60.00	74	-14.00	PK	308	1.4	H
11590	27.43	17.52	44.95	54	-9.05	AV	121	1.7	H
11590	43.39	17.52	60.91	74	-13.09	PK	205	1.5	V
11590	26.82	17.52	44.34	54	-9.66	AV	235	1.4	V

Modulation : 802.11(VH80) (the worst data)

Freq (MHz)	Rd_level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	detector	Height	Degree	Antenna polarization
Channel:5210MHz									
10420	42.42	16.25	58.67	74	-15.33	PK	6	1.4	H
10420	29.90	16.25	46.15	54	-7.85	AV	245	1.5	H
10420	41.70	16.25	57.95	74	-16.05	PK	251	1.7	V
10420	25.07	16.25	41.32	54	-12.68	AV	39	1.3	V
Channel:5775MHz									
11550	41.01	17.5	58.51	74	-15.49	PK	308	1.4	H
11550	28.20	17.5	45.70	54	-8.30	AV	121	1.7	H
11550	41.65	17.5	59.15	74	-14.85	PK	205	1.5	V
11550	26.97	17.5	44.47	54	-9.53	AV	235	1.4	V

Remark:
1.Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits
2.The EUT was tested in the low, high channel and the worst case position data was reported.
3.Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Radiated Spurious Emission (Above 1GHz):

ANT 2+ANT 3

Modulation : 802.11(a) (the worst data)

Freq (MHz)	Rd_level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	detector	Height	Degree	Antenna polarization
Channel:5180MHz									
10360	45.53	16.39	61.92	74	-12.08	PK	6	1.4	H
10360	29.54	16.39	45.93	54	-8.07	AV	245	1.5	H
10360	45.01	16.39	61.40	74	-12.60	PK	251	1.7	V
10360	28.48	16.39	44.87	54	-9.13	AV	39	1.3	V
Channel:5240MHz									
10480	44.25	16.11	60.36	74	-13.64	PK	308	1.4	H
10480	28.48	16.11	44.59	54	-9.41	AV	121	1.7	H
10480	43.80	16.11	59.91	74	-14.09	PK	205	1.5	V
10480	29.41	16.11	45.52	54	-8.48	AV	235	1.4	V
Channel:5745MHz									
11490	45.39	17.46	62.85	74	-11.15	PK	308	1.4	H
11490	27.33	17.46	44.79	54	-9.21	AV	121	1.7	H
11490	42.82	17.46	60.28	74	-13.72	PK	205	1.5	V
11490	26.81	17.46	44.27	54	-9.73	AV	235	1.4	V
Channel:5825MHz									
11650	44.08	17.57	61.65	74	-12.35	PK	308	1.4	H
11650	29.31	17.57	46.88	54	-7.12	AV	121	1.7	H
11650	41.70	17.57	59.27	74	-14.73	PK	205	1.5	V
11650	26.42	17.57	43.99	54	-10.01	AV	235	1.4	V

Modulation : 802.11(n40) (the worst data)

Freq (MHz)	Rd_level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	detector	Height	Degree	Antenna polarization
Channel:5190MHz									
10380	43.02	16.34	59.36	74	-14.64	PK	6	1.4	H
10380	25.97	16.34	42.31	54	-11.69	AV	245	1.5	H
10380	41.46	16.34	57.80	74	-16.20	PK	251	1.7	V
10380	26.20	16.34	42.54	54	-11.46	AV	39	1.3	V
Channel:5230MHz									
10460	43.59	16.15	59.74	74	-14.26	PK	308	1.4	H
10460	26.58	16.15	42.73	54	-11.27	AV	121	1.7	H
10460	40.87	16.15	57.02	74	-16.98	PK	205	1.5	V
10460	24.30	16.15	40.45	54	-13.55	AV	235	1.4	V
Channel:5755MHz									
11510	43.79	17.49	61.28	74	-12.72	PK	308	1.4	H
11510	27.63	17.49	45.12	54	-8.88	AV	121	1.7	H
11510	40.57	17.49	58.06	74	-15.94	PK	205	1.5	V
11510	25.88	17.49	43.37	54	-10.63	AV	235	1.4	V
Channel:5795MHz									
11590	42.98	17.52	60.50	74	-13.50	PK	308	1.4	H
11590	26.21	17.52	43.73	54	-10.27	AV	121	1.7	H
11590	41.02	17.52	58.54	74	-15.46	PK	205	1.5	V
11590	28.22	17.52	45.74	54	-8.26	AV	235	1.4	V

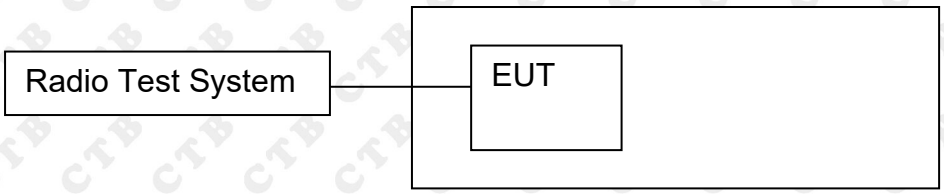
Modulation : 802.11(VH80) (the worst data)

Freq (MHz)	Rd_level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	detector	Height	Degree	Antenna polarization
Channel:5210MHz									
10420	43.24	16.25	59.49	74	-14.51	PK	6	1.4	H
10420	26.26	16.25	42.51	54	-11.49	AV	245	1.5	H
10420	39.83	16.25	56.08	74	-17.92	PK	251	1.7	V
10420	29.56	16.25	45.81	54	-8.19	AV	39	1.3	V
Channel:5775MHz									
11550	41.79	17.5	59.29	74	-14.71	PK	308	1.4	H
11550	28.62	17.5	46.12	54	-7.88	AV	121	1.7	H
11550	43.14	17.5	60.64	74	-13.36	PK	205	1.5	V
11550	27.43	17.5	44.93	54	-9.07	AV	235	1.4	V

Remark:
1.Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits
2.The EUT was tested in the low, high channel and the worst case position data was reported.
3.Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

8. BAND EDGE

8.1 Block Diagram Of Test Setup



8.2 Limit

(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: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

8.3 Test procedure

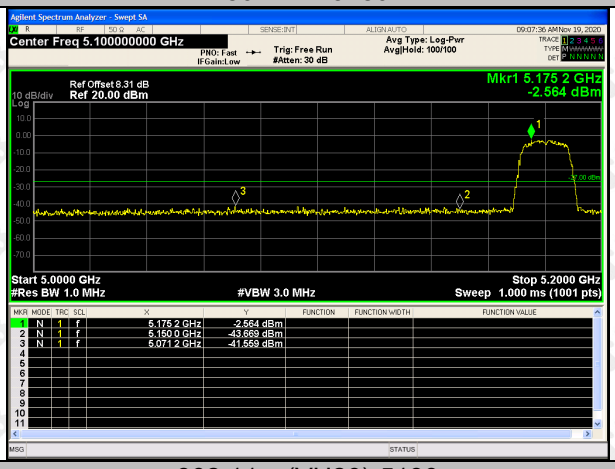
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

8.4 Test Result

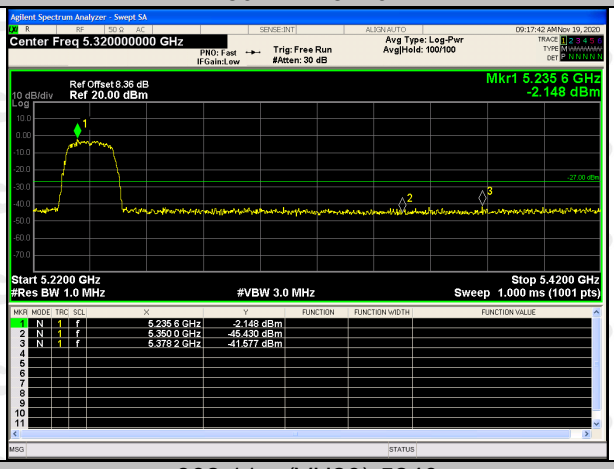
Test Graph

ANT 1

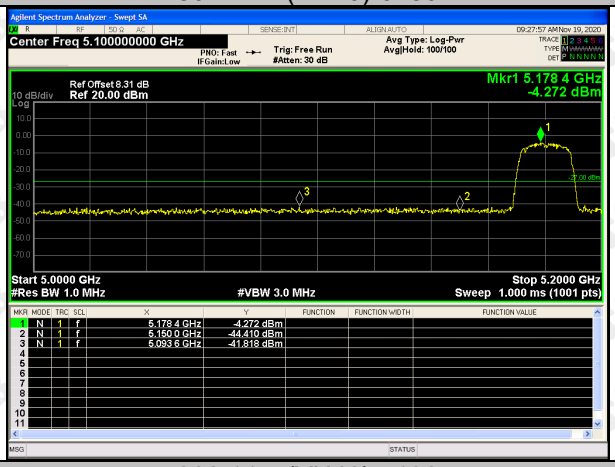
802.11a-5180



802.11a-5240



802.11ac(VH20)-5180



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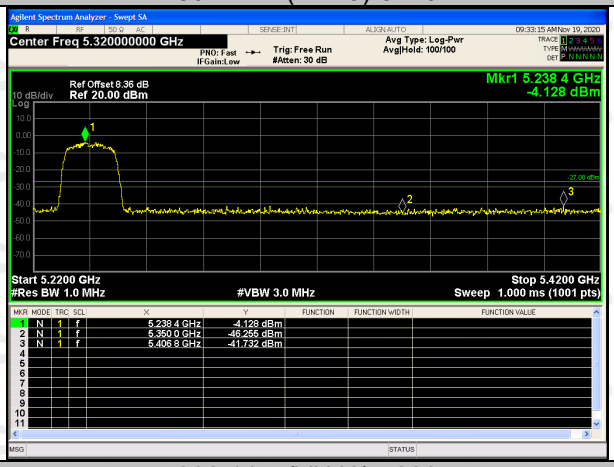

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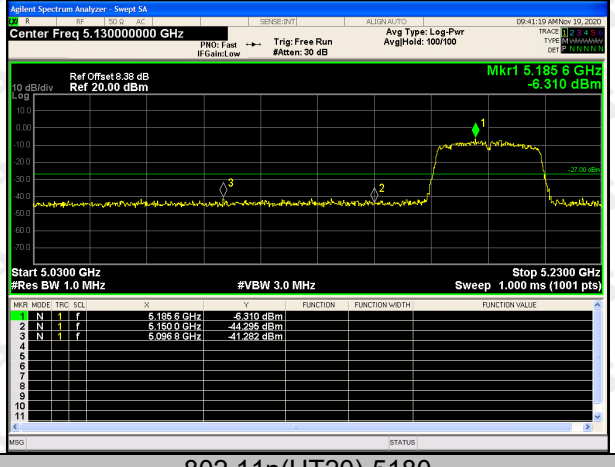
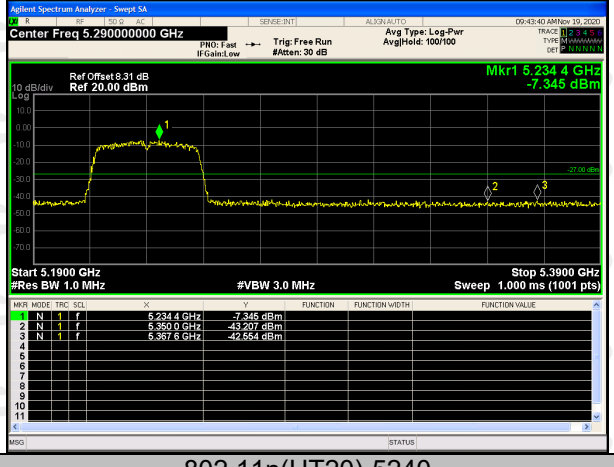
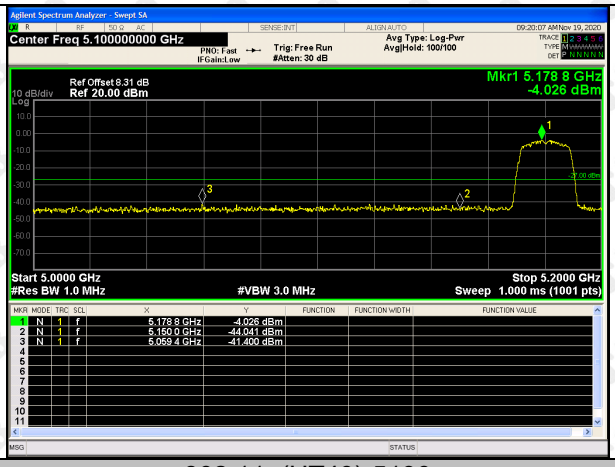


802.11ac(VH40)-5230



802.11n(HT20)-5180

802.11n(HT20)-5240



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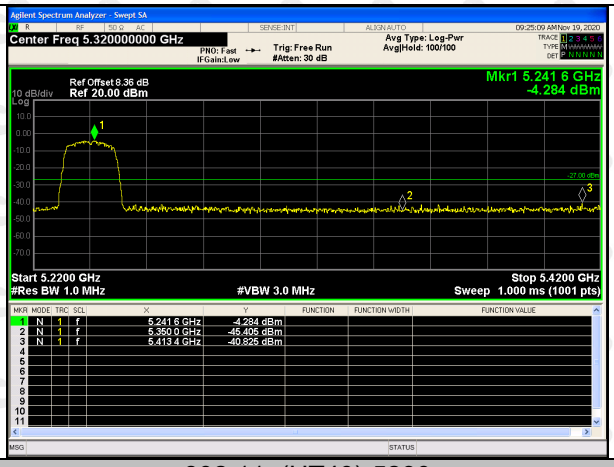

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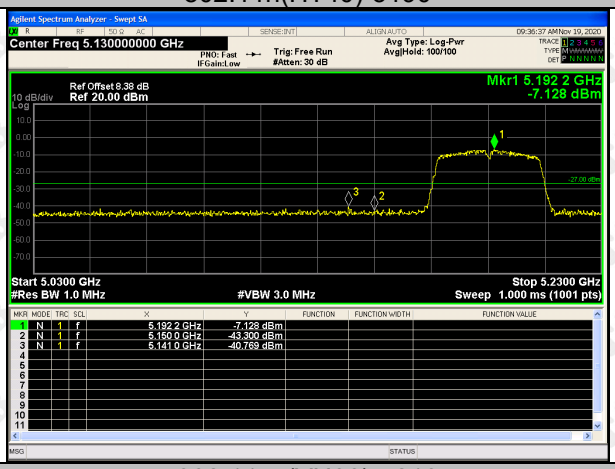
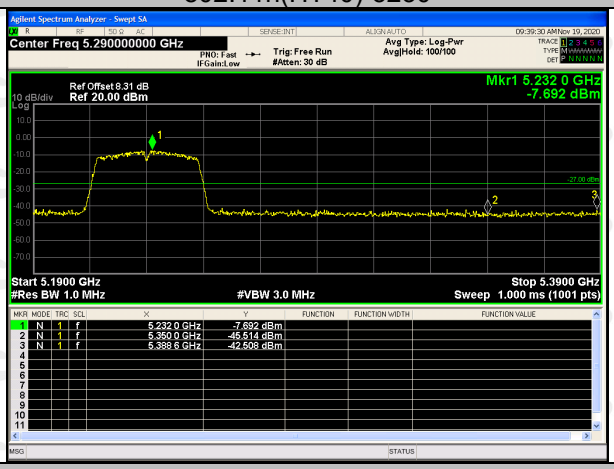
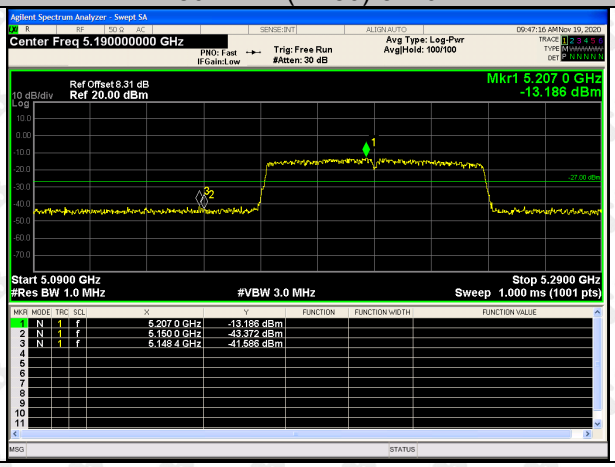
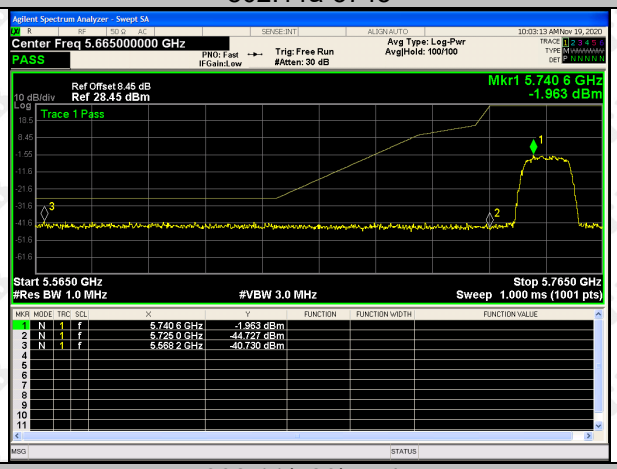


802.11ac(VH80)-5210

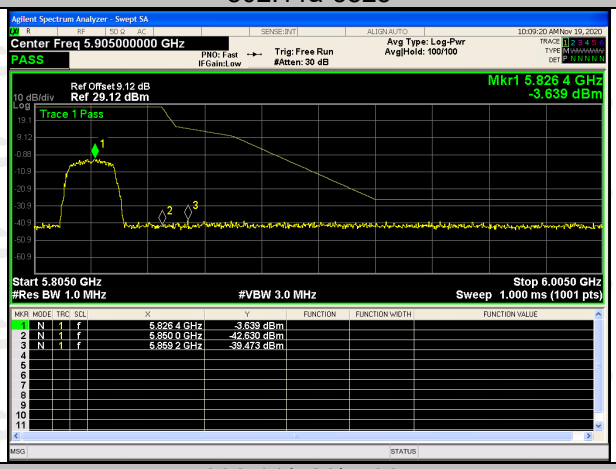




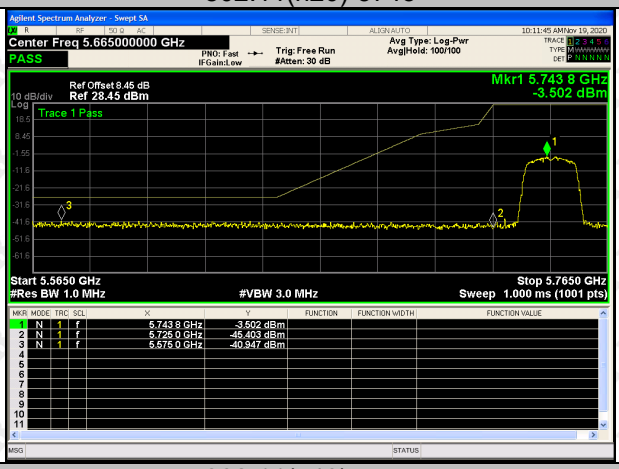
802.11a-5745



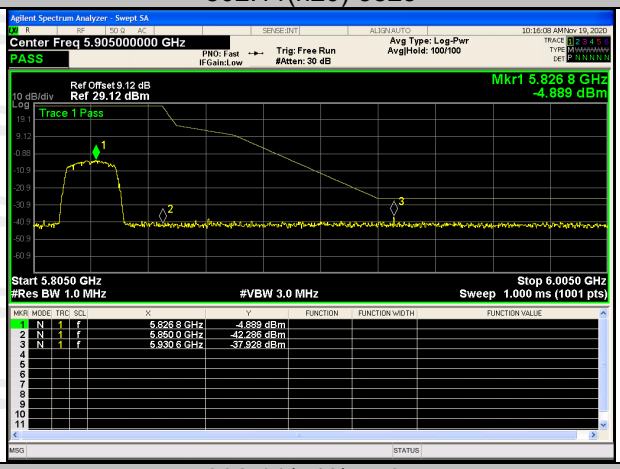
802.11a-5825



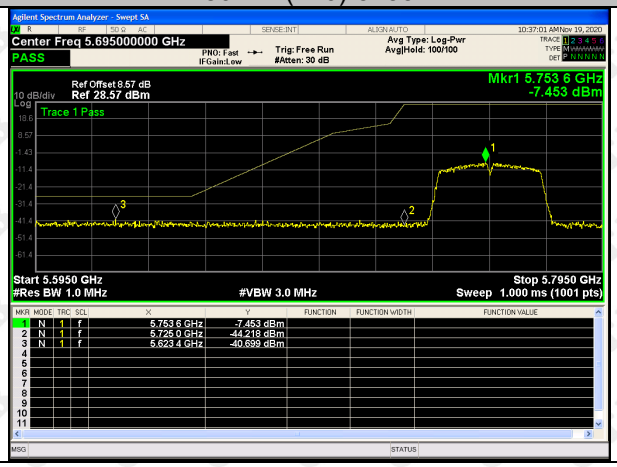
802.11(n20)-5745



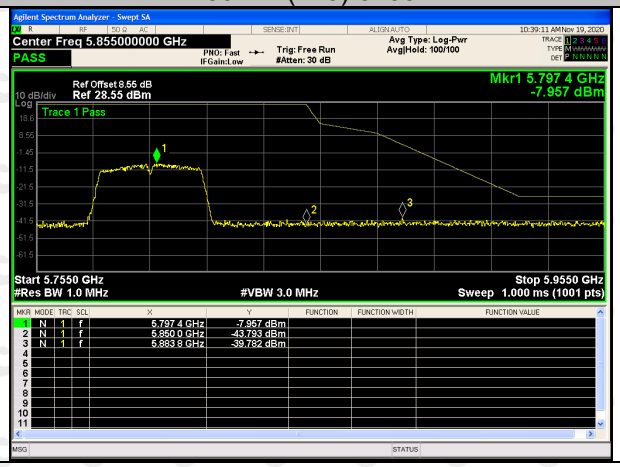
802.11(n20)-5825



802.11(n40)-5755



802.11(n40)-5795



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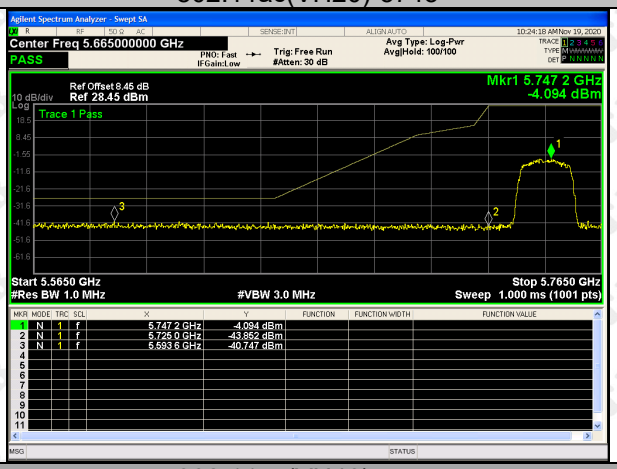

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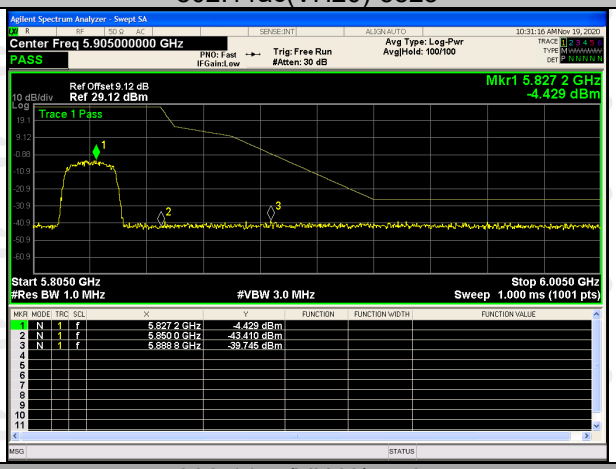

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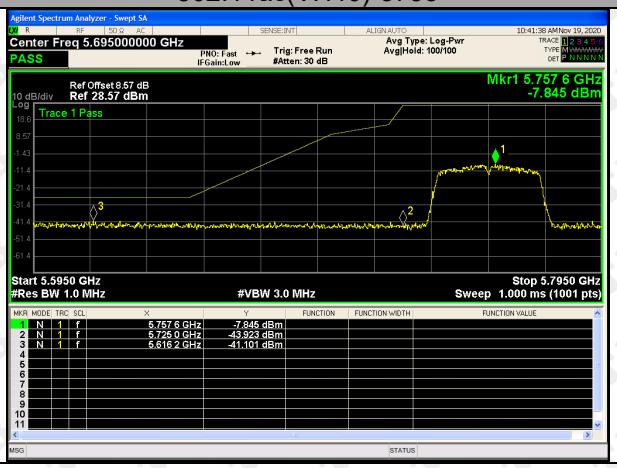

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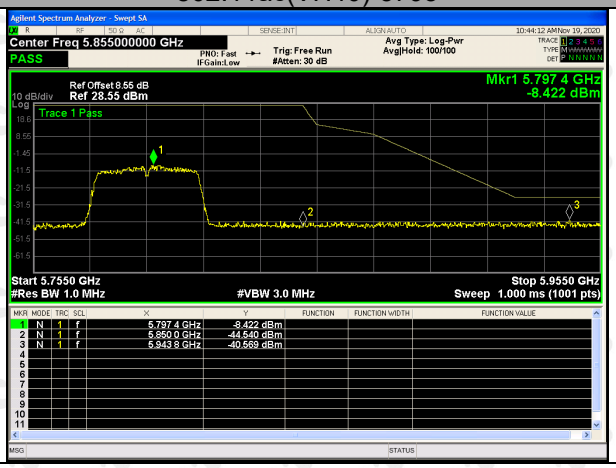

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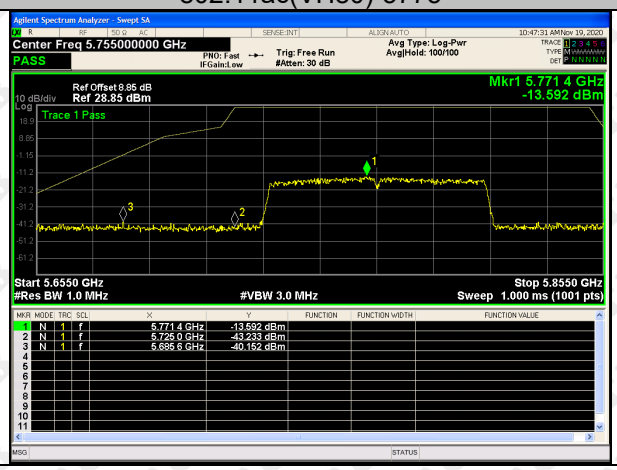
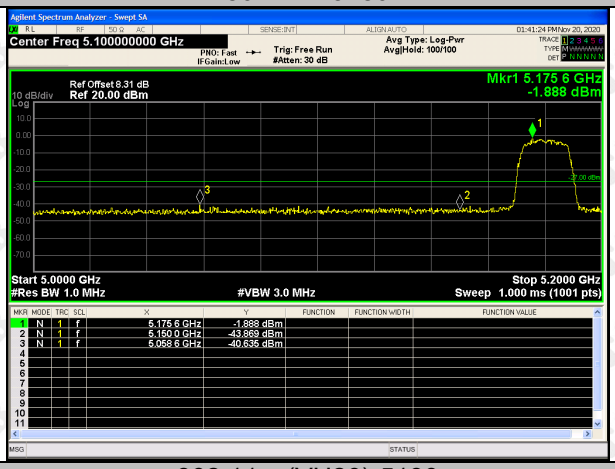
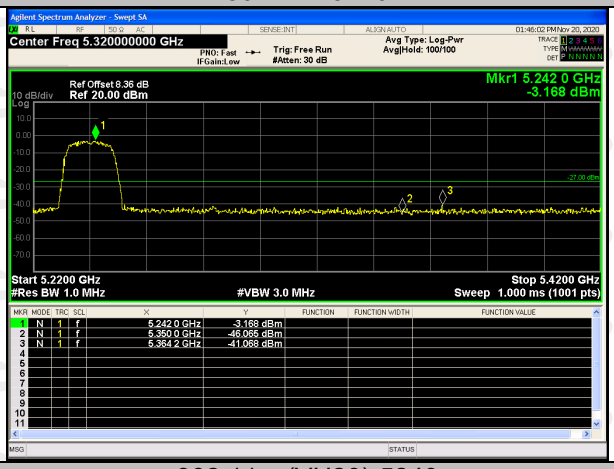


ANT 2

802.11a-5180



802.11a-5240



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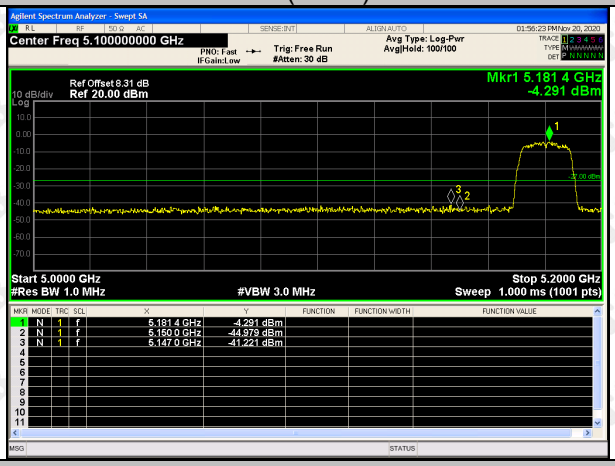

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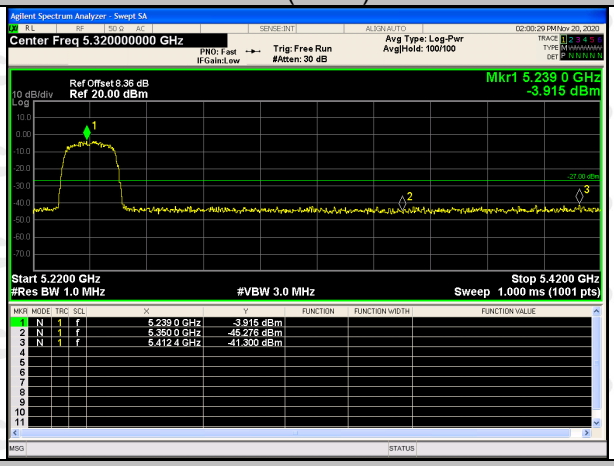

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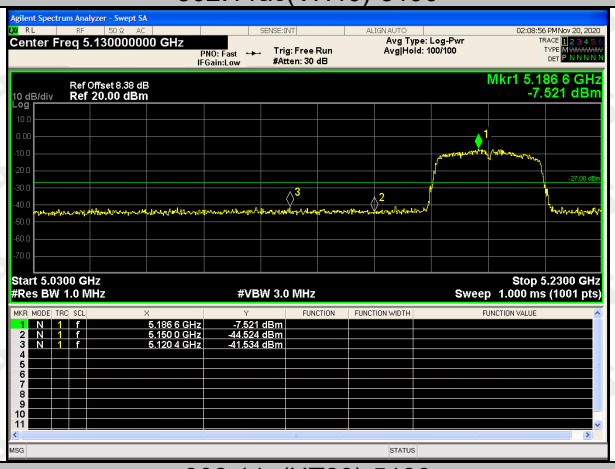

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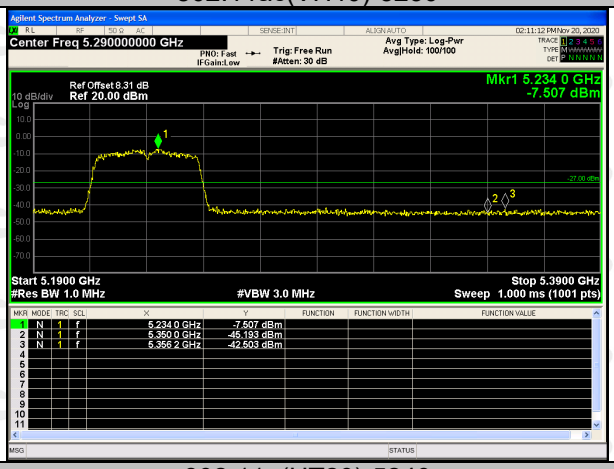
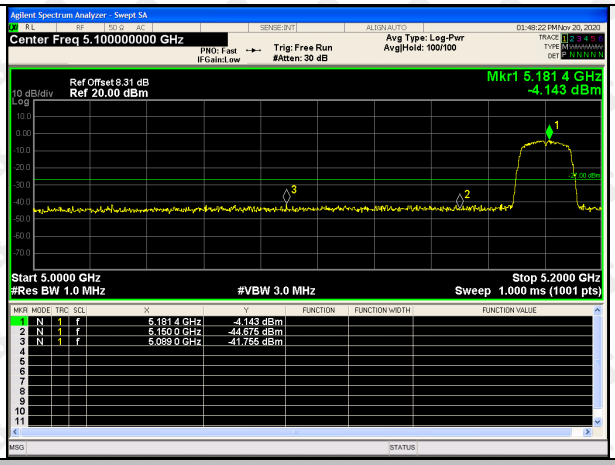


802.11n(HT20)-5180

802.11n(HT20)-5240



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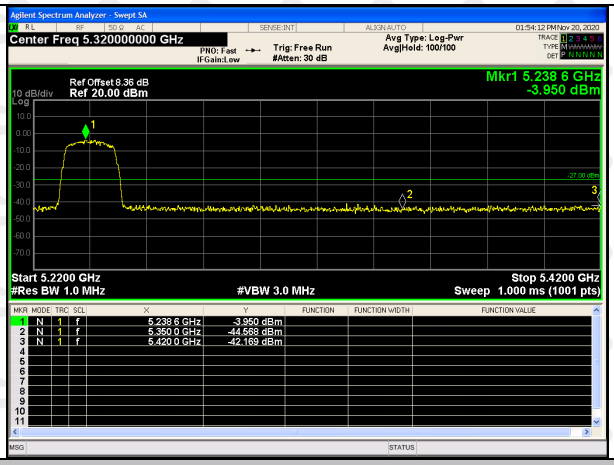

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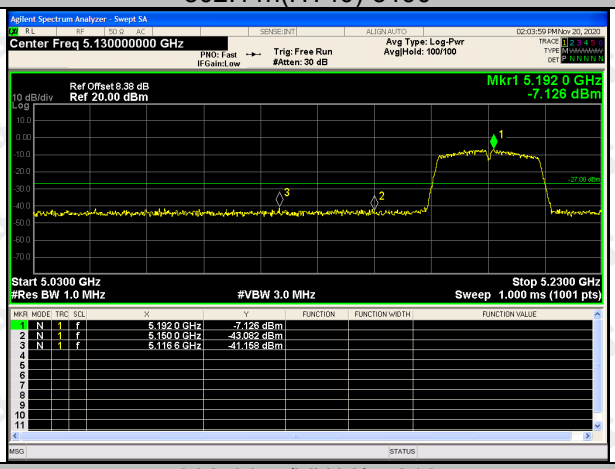

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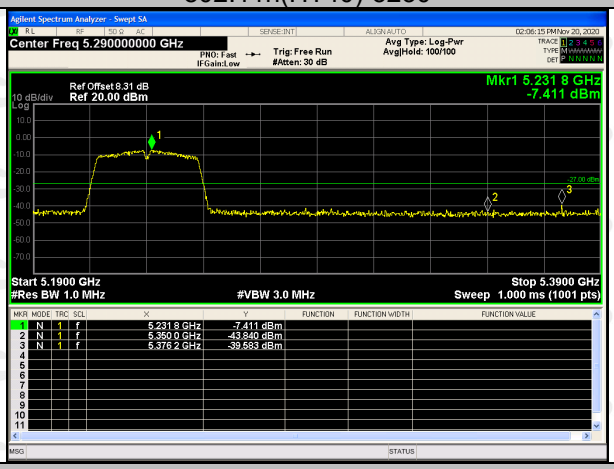

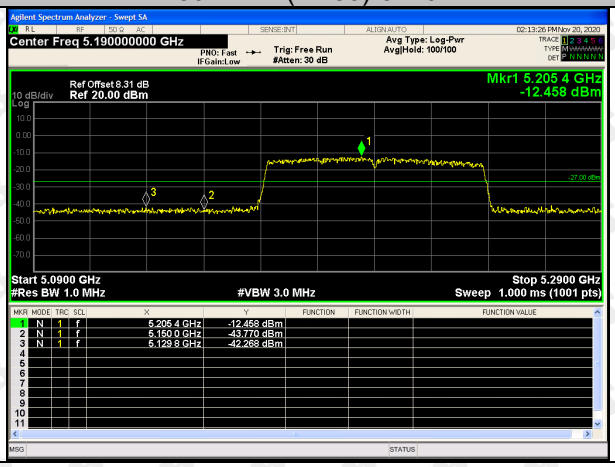

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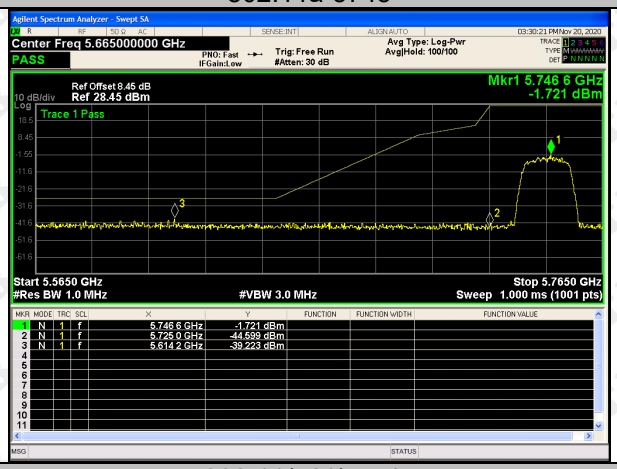	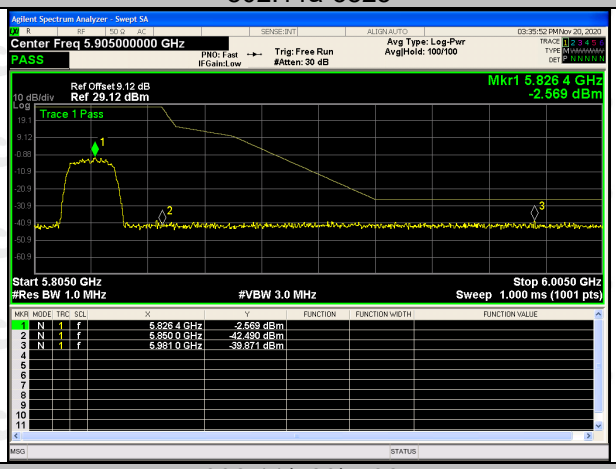
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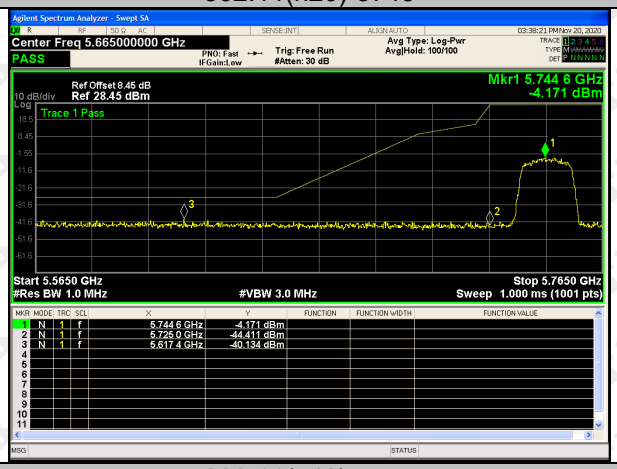	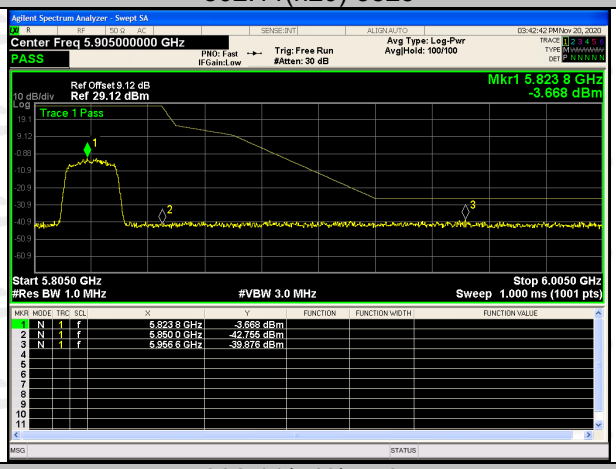
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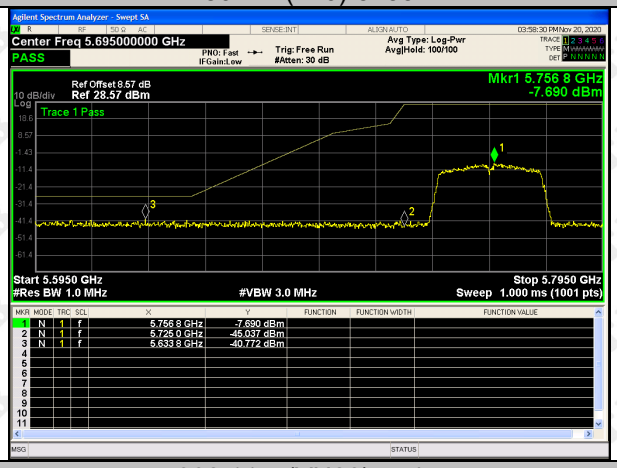	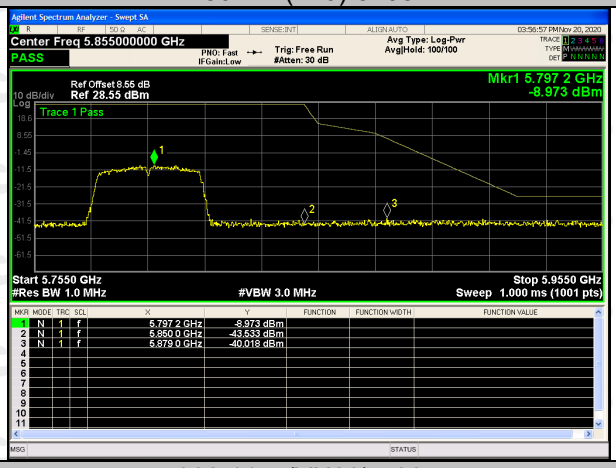
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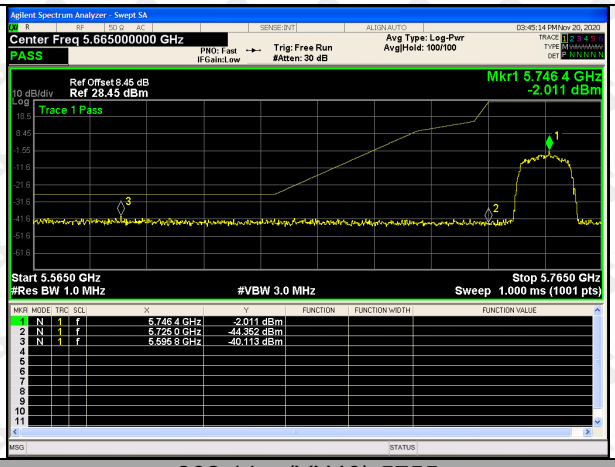

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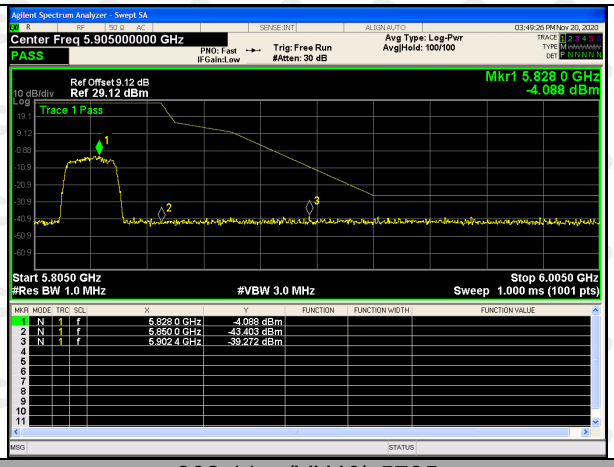

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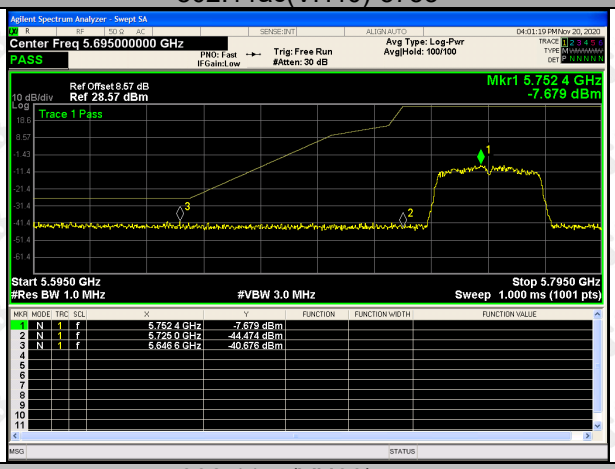

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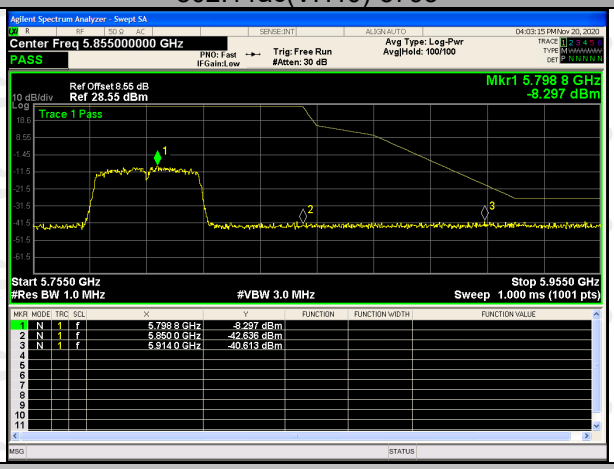

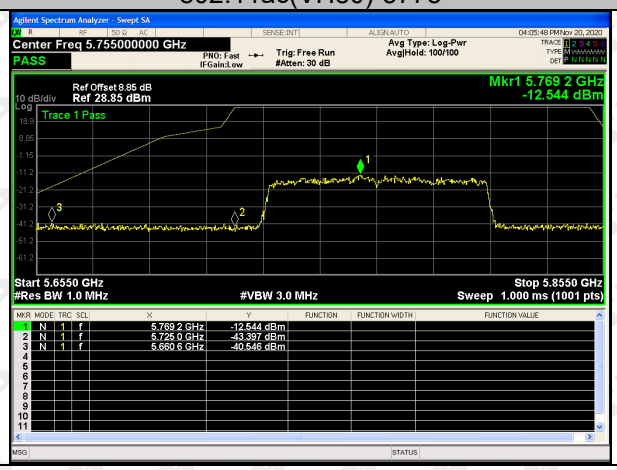

ANT 3

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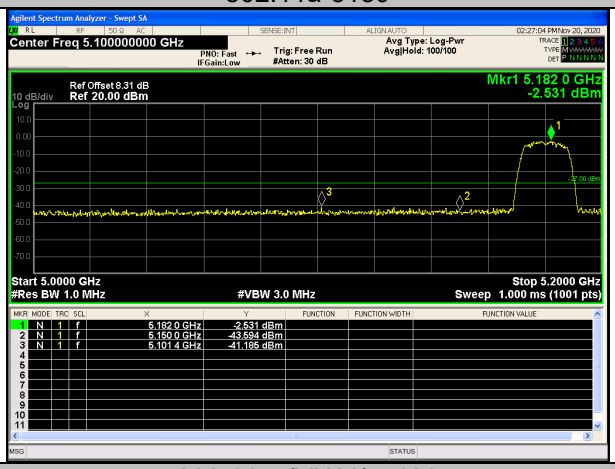

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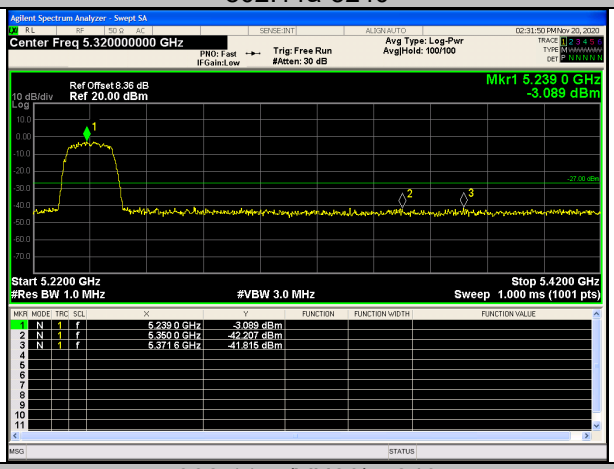

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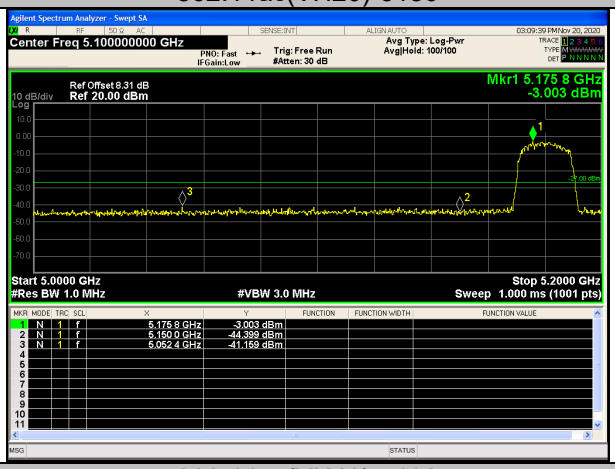

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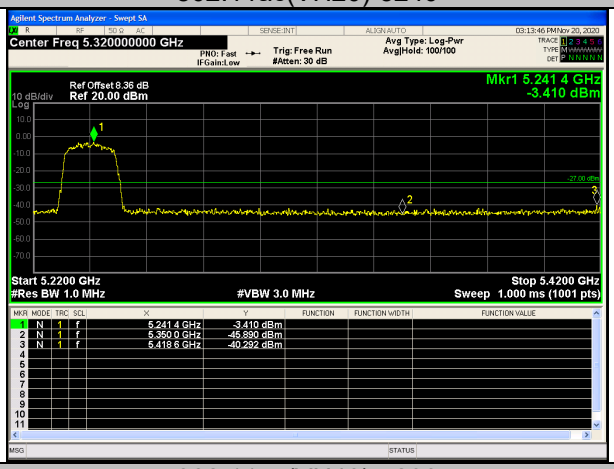

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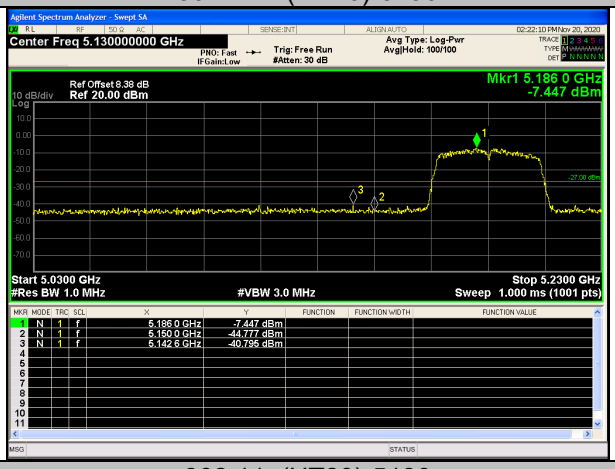

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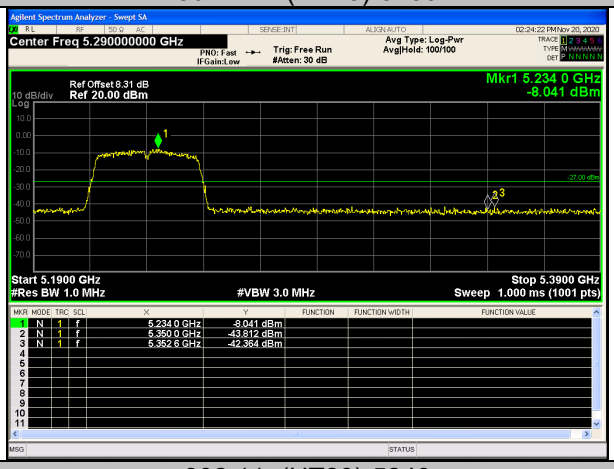

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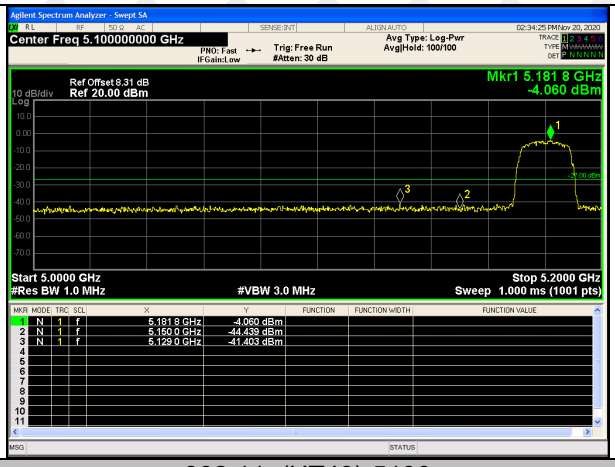
802.11n(HT20)-5240



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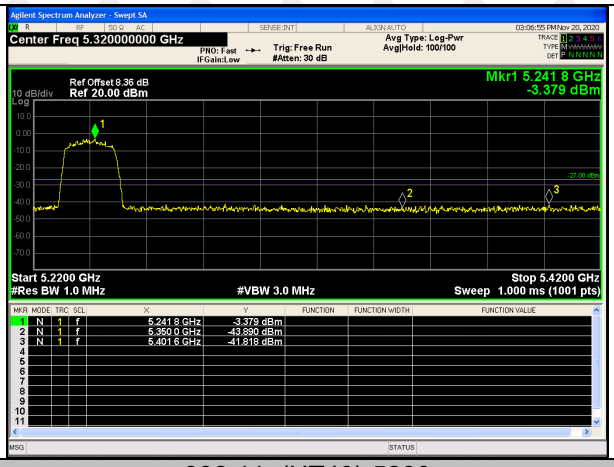

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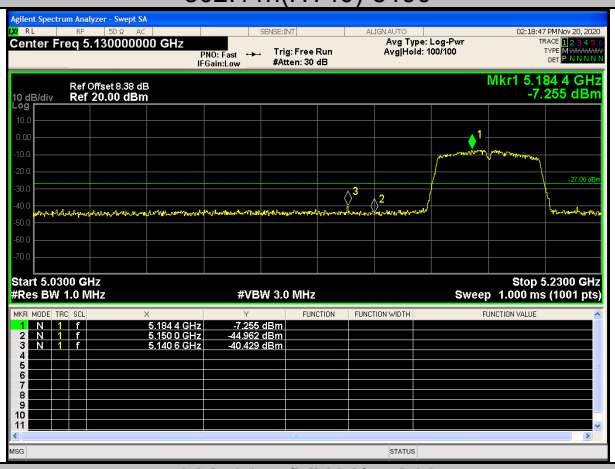

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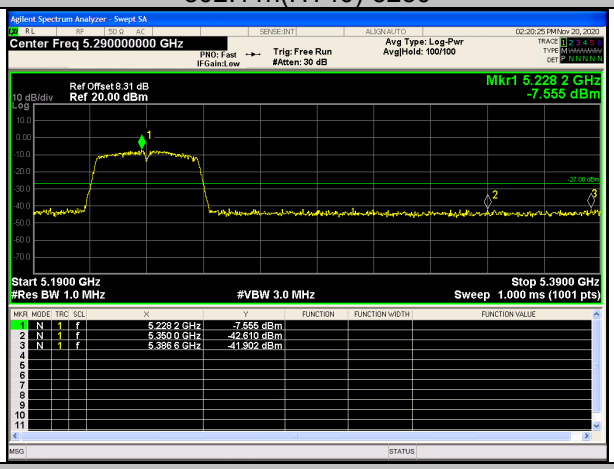

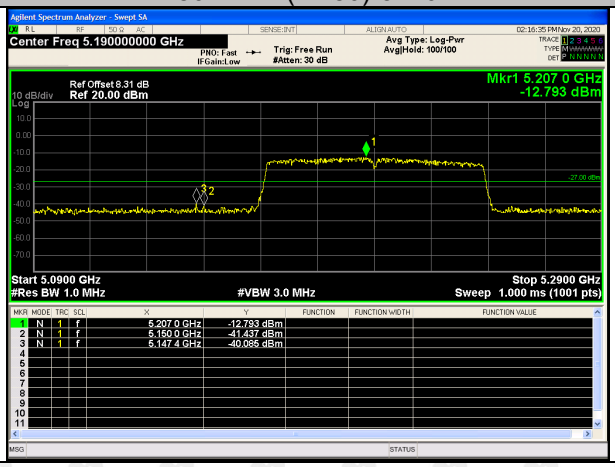

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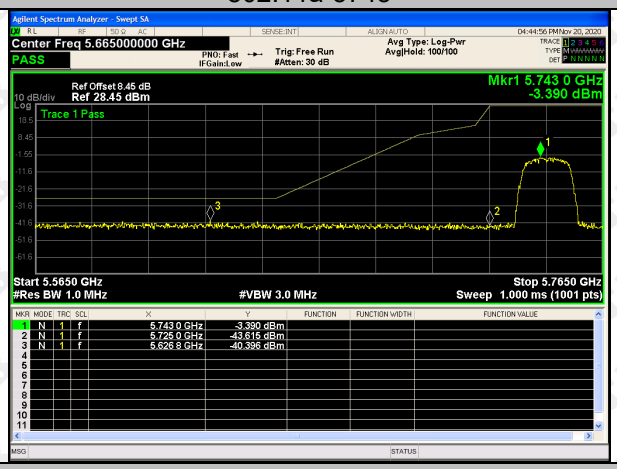

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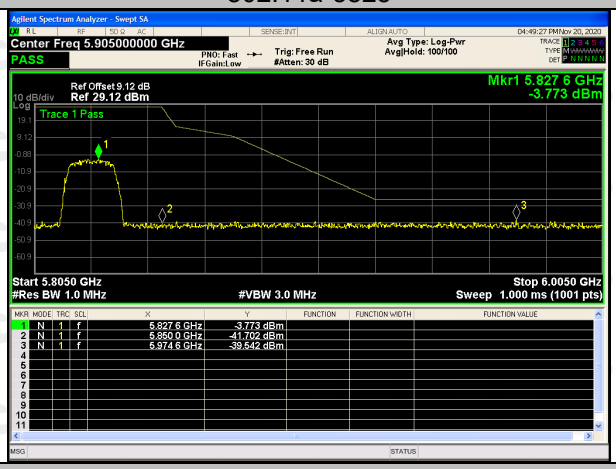

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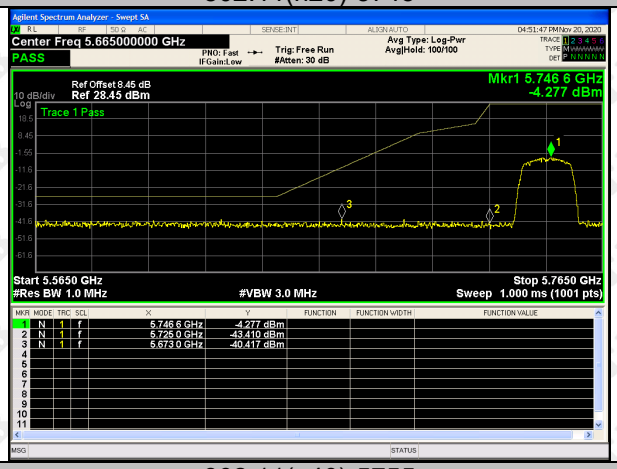

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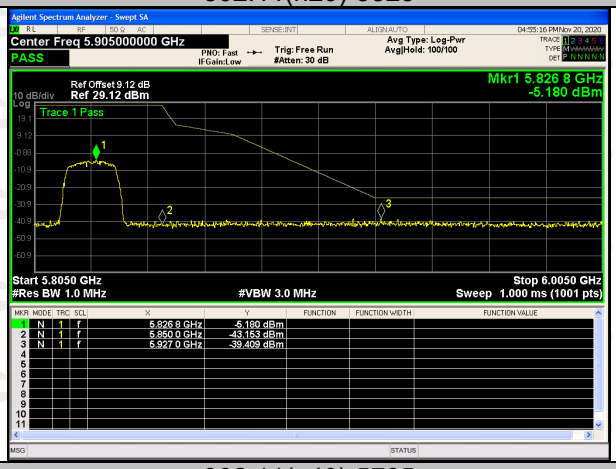

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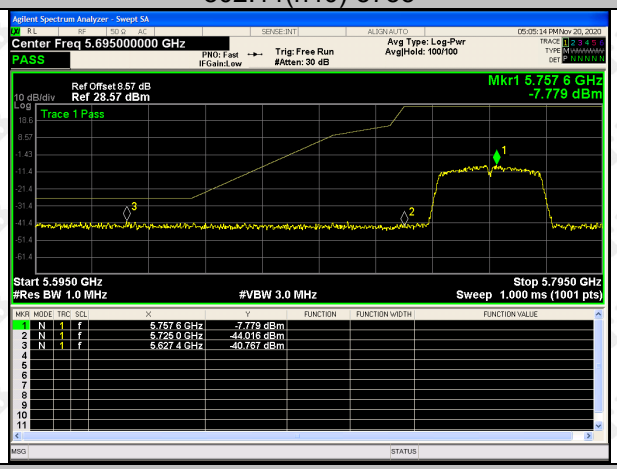

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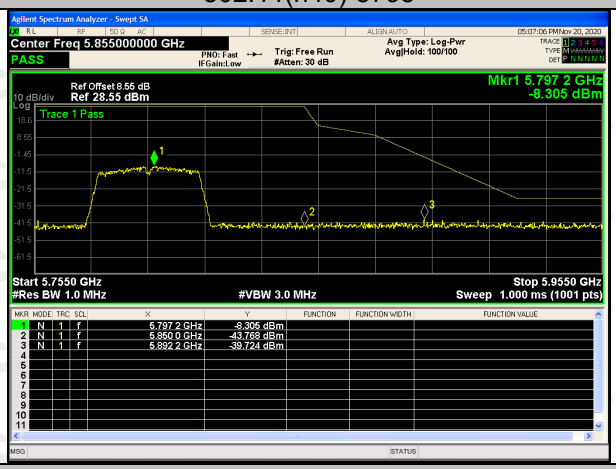

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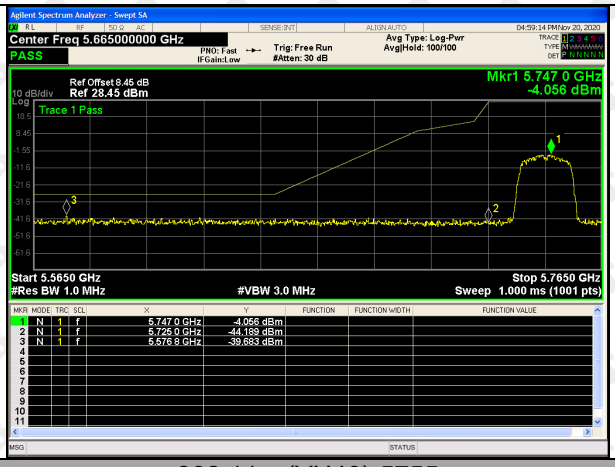

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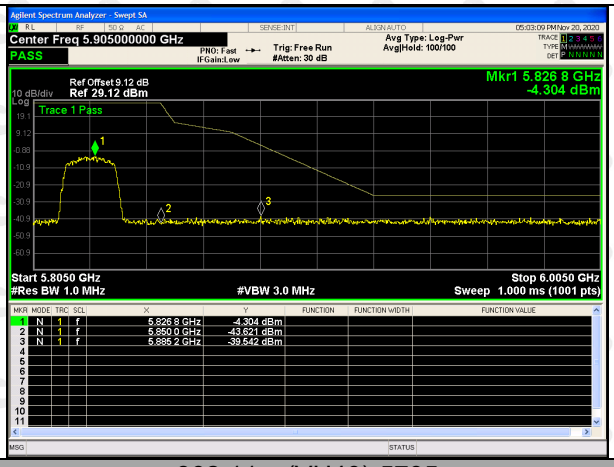

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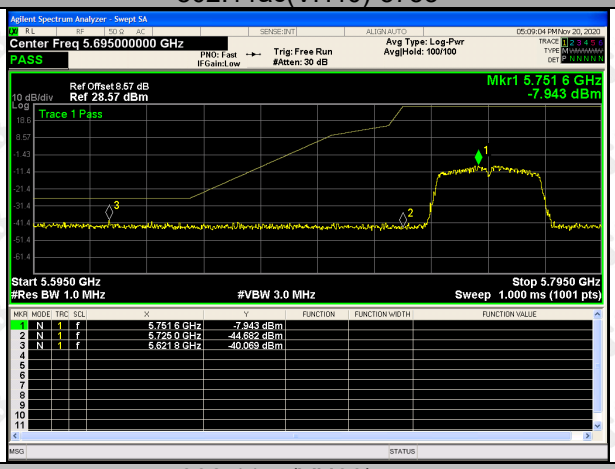

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