TEST REPORT

Product Name:	Portable Computer
FCC ID:	2BEMH-N151S
Trademark:	N/A
Model Number:	N151S, N151R, N151B
Prepared For:	YEAHER INC.
Address:	51 Steel Dr,Unit A, New Castle,Delaware,19720
Manufacturer:	YEAHER INC.
Address:	51 Steel Dr,Unit A, New Castle,Delaware,19720
Prepared By:	Shenzhen CTB Testing Technology Co., Ltd.
Address:	1&2/F., Building A, No.26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	Dec. 29, 2023
Sample tested Date:	Dec. 29, 2023 to Jan. 22, 2024
Issue Date:	Jan. 22, 2024
Report No.:	CTB240122022RFX
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:
Zhou Kui	Arron Liu	Bin Mei / Director

Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. 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. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

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(NOTE: N/A MEANS NOT APPLICABLE)

1. VERSION

Report No.	Issue Date	Description	Approved
CTB240122022RFX	Jan. 22, 2024	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 (b)	47 CFR Part 15 Subpart E	PASS
Antenna Requirement	47 CFR Part 15 Subpart E Section 15.203	/	PASS

Remark:
Test according to 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.

Item	Uncertainty
Occupancy bandwidth	U=±54.3Hz
Adjacent channel power	U=±1.3dB
Conducted Adjacent channel power	U=±1.38dB
Conducted output power Above 1G	U=±1.0dB
Conducted output power below 1G	U=±0.9dB
Power Spectral Density , Conduction	U=±1.0dB
Conduction spurious emissions	U=±2.8dB
Out of band emission	U=±54Hz
3m camber Radiated spurious emission(9KHz-30MHz)	U=±4.8dB
3m camber Radiated spurious emission(30MHz-1GHz)	U=±4.3dB
3m chamber Radiated spurious emission(1GHz-18GHz)	U=±4.5dB
3m chamber Radiated spurious emission(18GHz-40GHz)	U=±3.4dB
humidity uncertainty	U=±5.3%
Temperature uncertainty	U=±0.59℃
Supply voltages	U=±3%
Time	U=±5%
Conducted emission(150K-30MHz)	3.2dB

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	N151S, N151R, N151B
Model Description:	All the model are the same circuit and RF module, only different for model name. Test sample model: N151S
Wi-Fi Specification:	IEEE 802.11a/b/g/n/ac/ax
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	IEEE 802.11a/n/ac/ax(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac/ax(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11ac/ax(80M): 5150MHz ~5250MHz/ 1 channel IEEE 802.11a/n/ac/ax(20M): 5725MHz ~5850MHz/ 5 channel IEEE 802.11n/ac/ax(40M): 5725MHz ~5850MHz/ 2 channel IEEE 802.11ac/ax(80M): 5725MHz ~5850MHz/ 1 channel
Max. RF output power:	WiFi (5G): 17.552dBm
Type of Modulation:	WiFi: OFDM
Antenna installation:	WiFi: FPC antenna
Antenna Gain:	WiFi (5.2G):Ant1: 2.31dBi Ant2: 4.01dBi WiFi (5.8G):Ant1:3.61dBi Ant2: 3.47dBi
Ratings:	Adapter: Input: 100-240V~50/60Hz 1.5A Output: 12V⎓3000mA DC 7.6V by battery

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

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	AC/DC ADAPTER	JHD	JHD-AP045U-120300-AS	/	/

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

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

For 802.11ac/ax(80M) Operation in the 5210 MHz band			
Channel	Frequency	Channel	Frequency
42	5210MHz	NA	NA
For 802.11ac/ax(80M) Operation in the 5775 MHz band			
Channel	Frequency	NA	NA
155	5775MHz	NA	NA

NOTE: Dutycycle>98%.

Test mode	rate
802.11a	54M
802.11n	500M
802.11/ac/ax	500M

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/ax(20M)	5180MHz ~5240 MHz	Channel 36	Channel 40	Channel 48
		5180MHz	5200MHz	5240MHz
802.11n/ac/ax(40M)		Channel 38	N/A	Channel 46
		5190MHz	N/A	5230MHz
802.11ac/ax(80M)		N/A	Channel 42	N/A
		N/A	5210MHz	N/A
802.11a/n/ac/ax(20M)	5745MHz ~5825MHz	Channel 149	Channel 157	Channel 165
		5745MHz	5785MHz	5825MHz
802.11n/ac/ax(40M)		Channel 151	N/A	Channel 159
		5755MHz	N/A	5795MHz
802.11ac/ax(80M)		N/A	Channel 155	N/A
		N/A	5775MHz	N/A

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):NV	7.6V
Normal Temperature(℃):NT	23
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 1&2F., Building A, No. 26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, 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.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	2024.07.05
2	Power Sensor	Agilent	U2021XA	MY56120032	2024.07.05
3	Power Sensor	Agilent	U2021XA	MY56120034	2024.07.05
4	Communication test set	R&S	CMW500	108058	2024.07.05
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2024.07.05
6	Signal Generator	Agilent	N5181A	MY50140365	2024.07.05
7	Vector signal generator	Agilent	N5182A	MY47420195	2024.07.05
8	Communication test set	Agilent	E5515C	MY50102567	2024.07.06
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	2024.07.05
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	2024.07.06
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	2024.07.06
12	BT&WI-FI Automatic test software	Micowave	MTS8000	Ver. 2.0.0.0	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	2024.10.30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	2024.07.05
15	234G Automatic test software	Micowave	MTS8200	Ver. 2.0.0.0	/
16	966 chamber	C.R.T.	966	/	2024.08.11
17	Receiver	R&S	ESPI	100362	2024.07.05
18	Amplifier	HP	8447E	2945A02747	2024.07.05
19	Amplifier	Agilent	8449B	3008A01838	2024.07.05
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2024.07.08

21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	2024.07.08
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	2024.07.08
24	loop antenna	ZHINAN	ZN30900A	GTS534	/
25	40G Horn antenna	A/H/System	SAS-574	588	2024.10.30
26	Amplifier	AEROFLEX	Aeroflex	097	2024.07.05

Continuous disturbance

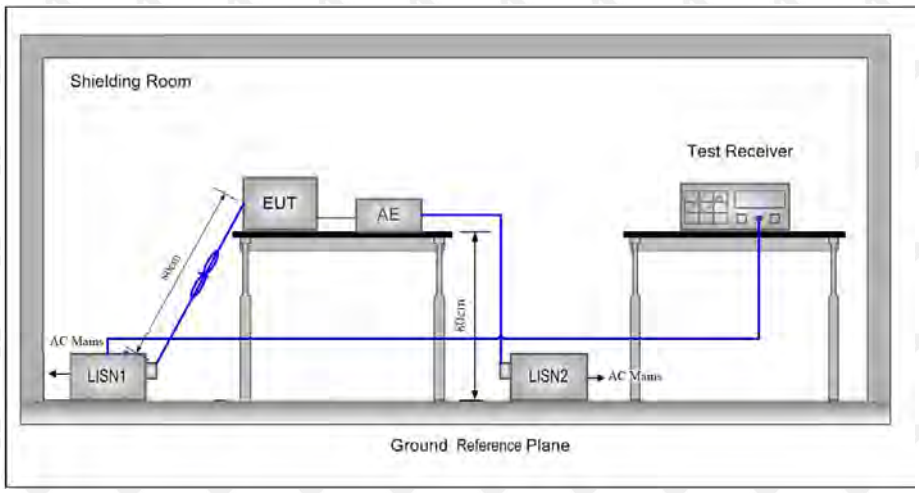
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	ROHDE&SCHWARZ	ESH3-Z5	100318	2024.07.05
2	Pulse limiter	ROHDE&SCHWARZ	ESH3Z2	357881052	2024.07.05
3	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428/003	2024.07.05
4	Coaxial cable	ZDECL	Z302S-NJ-SMA J-12M	18091905	2024.07.05
5	ISN	Schwarzbeck	NTFM8158	183	2024.07.05
6	Communication test set	Agilent	E5515C	MY50102567	2024.07.05
7	Communication test set	R&S	CMW500	108058	2024.07.05
8	EZ-EMC	Frad	EMC-con3A1.1	/	/

Radiated emission

No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	2024.07.08
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2024.07.08
3	Amplifier	Agilent	8449B	3008A01838	2024.07.05
4	Amplifier	HP	8447E	2945A02747	2024.07.05
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428/003	2024.07.05
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2024.07.05
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2024.07.05
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2024.07.05
9	Coaxial cable	ETS	RFC-NNS-100 -NMS-300 NI	/	2024.07.05
10	Communication test set	Agilent	E5515C	MY50102567	2024.07.05
11	Communication test set	R&S	CMW500	108058	2024.07.05
12	EZ-EMC	Frad	EMC-con3A1.1	/	/

6. AC POWER LINE CONDUCTED EMISSION

6.1 Block Diagram Of Test Setup



6.2 Limit

Table 4 – AC power-line conducted emissions limits

Frequency (MHz)	Conducted limit (dBµV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56[Note 1]	56 to 46[Note 1]
0.5 – 5	56	46
5 – 30	60	50

Note 1: The level decreases linearly with the logarithm of the frequency.

* 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.

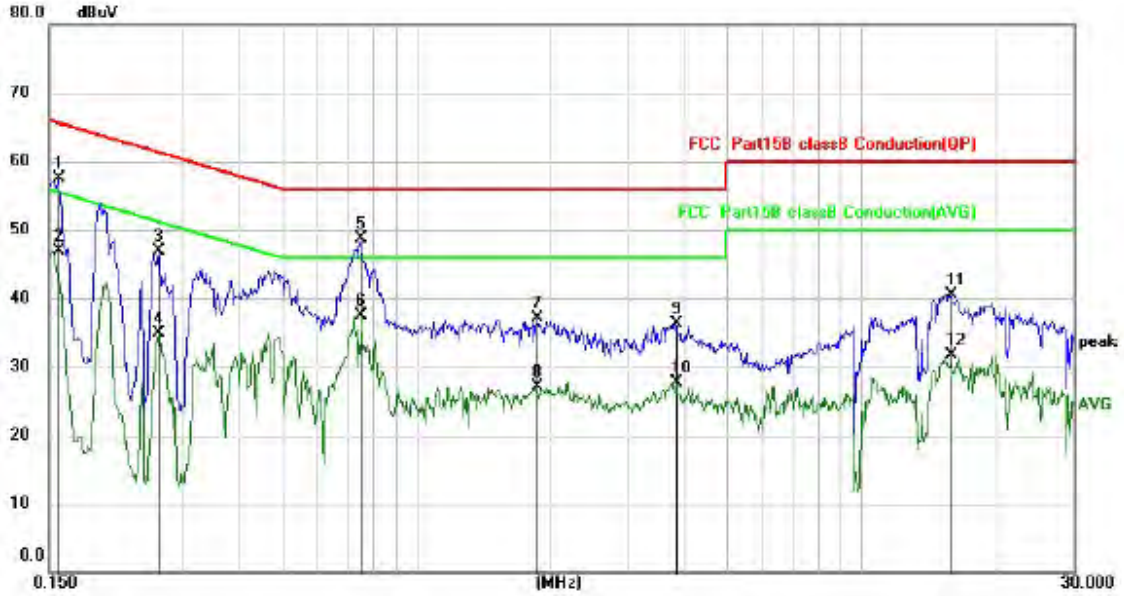
This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.

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

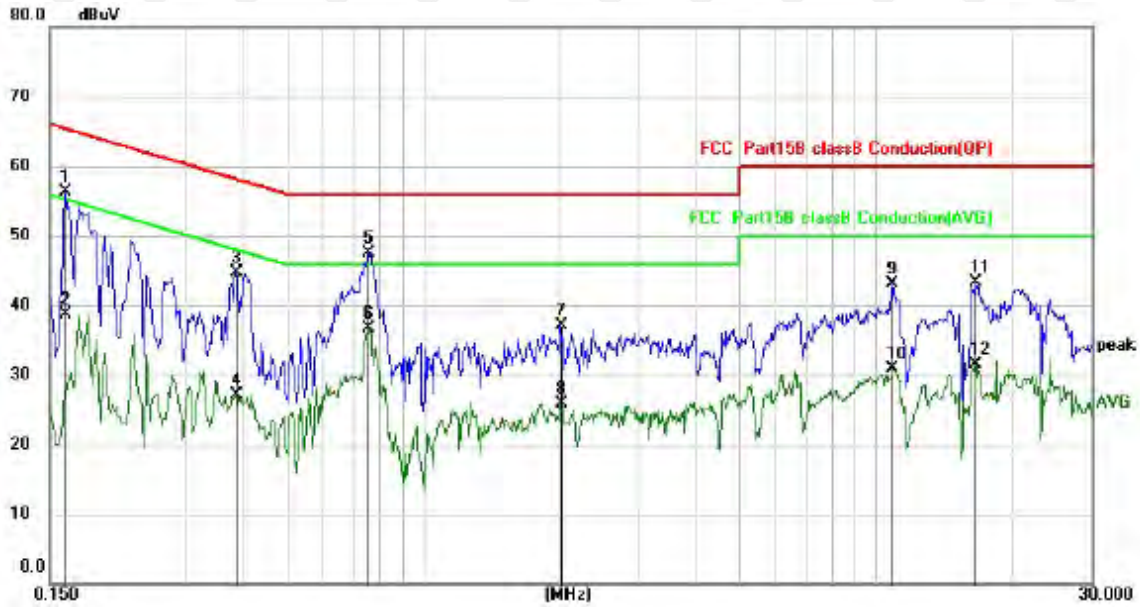
Modulation : 802.11a (the worst data)

L:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1580	47.61	9.95	57.56	65.57	-8.01	QP
2		0.1580	36.89	9.95	46.84	55.57	-8.73	AVG
3		0.2644	36.99	9.96	46.95	61.29	-14.34	QP
4		0.2644	24.93	9.96	34.89	51.29	-16.40	AVG
5	*	0.7539	38.63	10.02	48.65	56.00	-7.35	QP
6		0.7539	27.39	10.02	37.41	46.00	-8.59	AVG
7		1.8777	26.99	10.08	37.07	56.00	-18.93	QP
8		1.8777	17.03	10.08	27.11	46.00	-18.89	AVG
9		3.8300	25.98	10.27	36.25	56.00	-19.75	QP
10		3.8300	17.40	10.27	27.67	46.00	-18.33	AVG
11		15.8700	29.84	10.75	40.59	60.00	-19.41	QP
12		15.8700	20.97	10.75	31.72	50.00	-18.28	AVG

N:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1620	46.35	9.95	56.30	65.36	-9.06	QP
2		0.1620	28.69	9.95	38.64	55.36	-16.72	AVG
3		0.3860	34.73	9.97	44.70	58.15	-13.45	QP
4		0.3860	17.09	9.97	27.06	48.15	-21.09	AVG
5	*	0.7580	37.51	10.02	47.53	56.00	-8.47	QP
6		0.7580	26.63	10.02	36.65	46.00	-9.35	AVG
7		2.0178	27.00	10.09	37.09	56.00	-18.91	QP
8		2.0178	15.77	10.09	25.86	46.00	-20.14	AVG
9		10.8856	32.40	10.61	43.01	60.00	-16.99	QP
10		10.8856	20.29	10.61	30.90	50.00	-19.10	AVG
11		16.6139	32.48	10.76	43.24	60.00	-16.76	QP
12		16.6139	20.70	10.76	31.46	50.00	-18.54	AVG

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

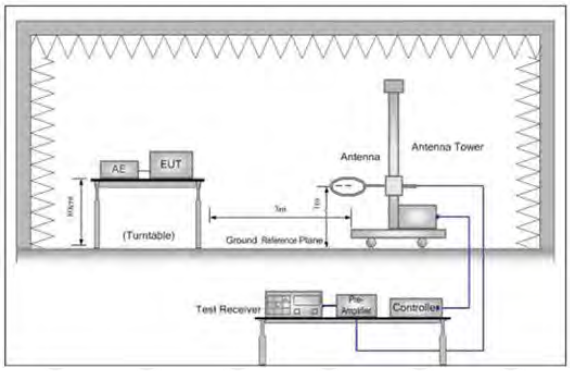


Figure 1. Below 30MHz

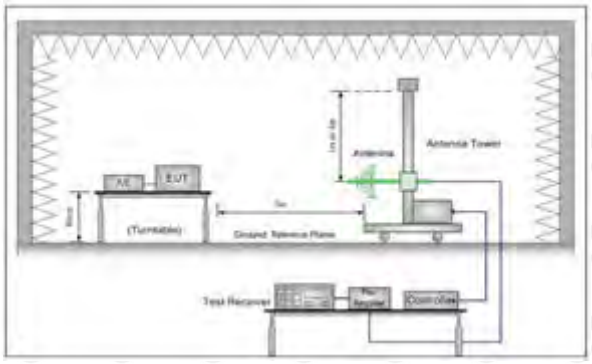


Figure 2. 30MHz to 1GHz

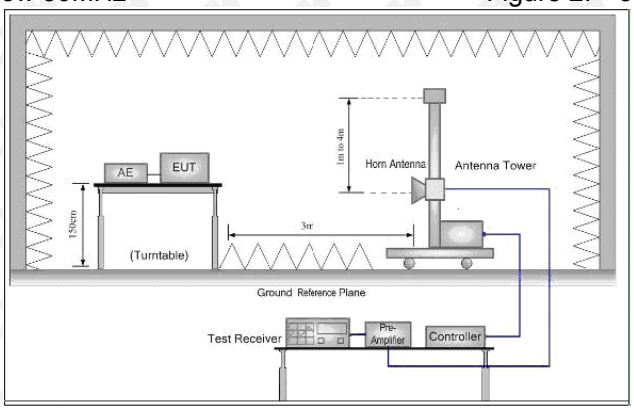


Figure 3. Above 1GHz

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

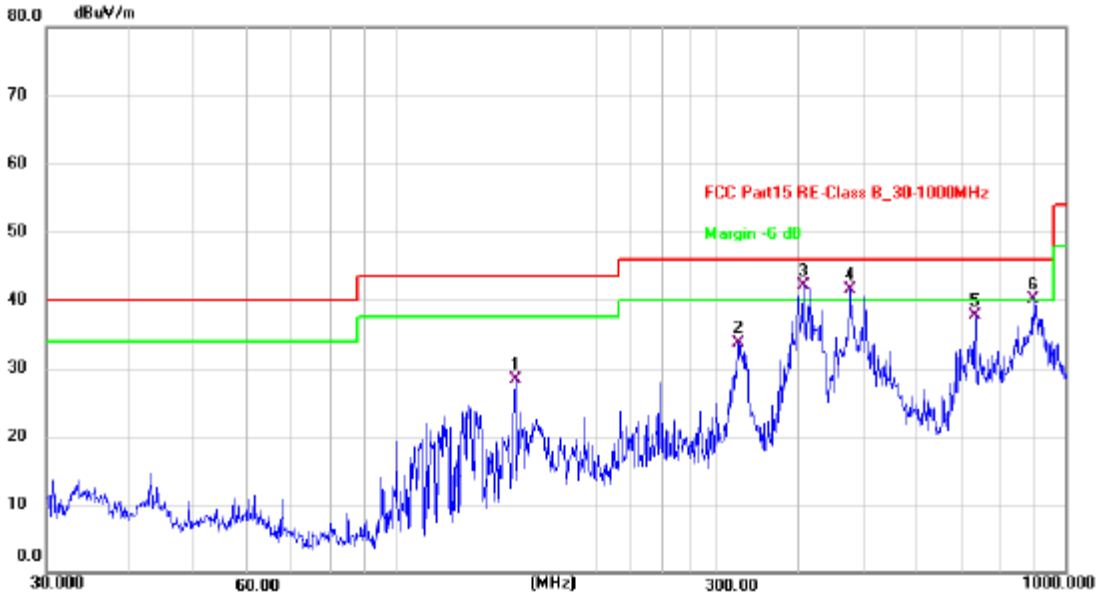
Below 1GHz test procedure as below:
a.The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b.The EUT was set 3 meters away from the interference-receiving 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

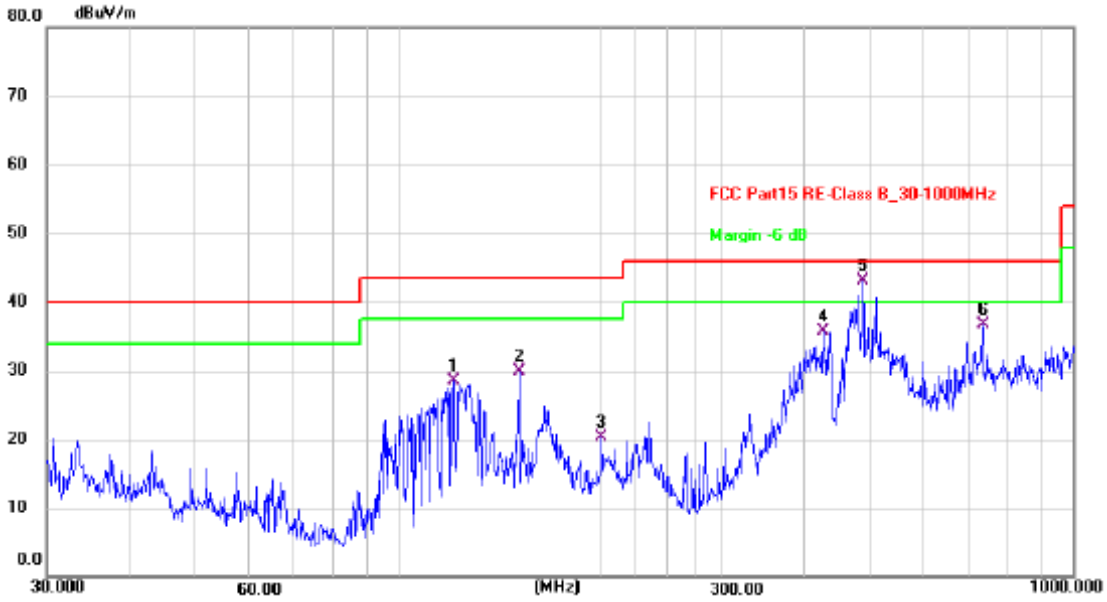
7.4 Test Result

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



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	150.5377	42.61	-14.35	28.26	43.50	-15.24	QP
2	324.4560	47.93	-14.21	33.72	46.00	-12.28	QP
3 *	406.0880	54.84	-12.78	42.06	46.00	-3.94	QP
4 !	477.1693	51.82	-10.40	41.42	46.00	-4.58	QP
5	731.9202	42.10	-4.44	37.66	46.00	-8.34	QP
6 !	893.8565	39.89	0.18	40.07	46.00	-5.93	QP

Antenna polarity: V



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	120.2766	44.74	-16.32	28.42	43.50	-15.08	QP
2	150.5378	43.65	-13.73	29.92	43.50	-13.58	QP
3	199.9856	35.01	-14.71	20.30	43.50	-23.20	QP
4	425.0280	42.15	-6.45	35.70	46.00	-10.30	QP
5 *	487.3151	46.47	-3.44	43.03	46.00	-2.97	QP
6	734.4913	34.76	2.03	36.79	46.00	-9.21	QP

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

Radiated Spurious Emission (Above 1GHz):

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	41.19	16.39	57.58	74	-16.42	PK	1.48	135	H
10360	25.44	16.39	41.83	54	-12.17	AV	1.29	348	H
10360	41.70	16.39	58.09	74	-15.91	PK	1.15	2	V
10360	27.06	16.39	43.45	54	-10.55	AV	1.15	177	V
Channel:5240MHz									
10480	41.19	16.11	57.30	74	-16.70	PK	1.28	258	H
10480	26.69	16.11	42.80	54	-11.20	AV	1.30	117	H
10480	40.77	16.11	56.88	74	-17.12	PK	1.49	98	V
10480	26.21	16.11	42.32	54	-11.68	AV	1.15	250	V
Channel:5745MHz									
11490	41.79	17.46	59.25	74	-14.75	PK	1.86	133	H
11490	27.15	17.46	44.61	54	-9.39	AV	1.14	335	H
11490	41.79	17.46	59.25	74	-14.75	PK	1.69	19	V
11490	26.84	17.46	44.30	54	-9.70	AV	1.08	72	V
Channel:5825MHz									
11650	39.45	17.57	57.02	74	-16.98	PK	1.04	337	H
11650	27.95	17.57	45.52	54	-8.48	AV	1.70	84	H
11650	40.29	17.57	57.86	74	-16.14	PK	1.20	262	V
11650	27.68	17.57	45.25	54	-8.75	AV	1.20	33	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	39.92	16.34	56.26	74	-17.74	PK	1.32	186	H
10380	25.98	16.34	42.32	54	-11.68	AV	1.01	220	H
10380	39.97	16.34	56.31	74	-17.69	PK	1.27	132	V
10380	25.76	16.34	42.10	54	-11.90	AV	1.11	22	V
Channel:5230MHz									
10460	40.77	16.15	56.92	74	-17.08	PK	1.38	75	H
10460	27.45	16.15	43.60	54	-10.40	AV	1.38	11	H
10460	41.77	16.15	57.92	74	-16.08	PK	1.49	213	V
10460	27.58	16.15	43.73	54	-10.27	AV	1.09	175	V
Channel:5755MHz									
11510	39.95	17.49	57.44	74	-16.56	PK	1.05	179	H
11510	26.38	17.49	43.87	54	-10.13	AV	1.65	171	H
11510	40.05	17.49	57.54	74	-16.46	PK	1.35	352	V
11510	27.75	17.49	45.24	54	-8.76	AV	1.47	309	V
Channel:5795MHz									
11590	40.93	17.52	58.45	74	-15.94	PK	1.16	18	H
11590	25.40	17.52	42.92	54	-15.55	AV	1.65	180	H
11590	39.49	17.52	57.01	74	-16.99	PK	1.62	94	V
11590	27.19	17.52	44.71	54	-9.29	AV	1.45	119	V

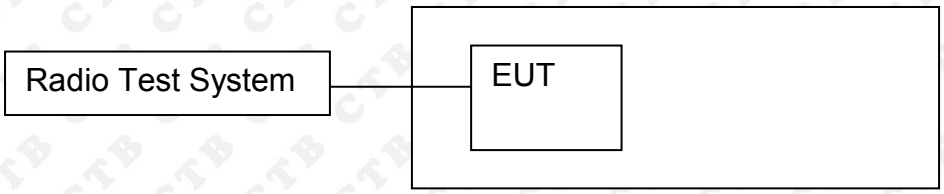
Modulation : 802.11(VH80) (the worst data)

Freq (MHz)	Rd_level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	detector	Height	Degree	Antenna polarization
Channel:5210MHz									
10420	39.44	16.25	55.69	74	-18.31	PK	1.10	13	H
10420	26.85	16.25	43.10	54	-10.90	AV	1.57	196	H
10420	40.72	16.25	56.97	74	-17.03	PK	1.37	32	V
10420	25.32	16.25	41.57	54	-12.43	AV	1.23	84	V
Channel:5775MHz									
11550	40.46	17.50	57.96	74	-16.04	PK	1.78	316	H
11550	26.76	17.50	44.26	54	-9.74	AV	1.21	175	H
11550	39.59	17.50	57.09	74	-16.91	PK	1.00	68	V
11550	27.29	17.50	44.79	54	-9.21	AV	1.53	91	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

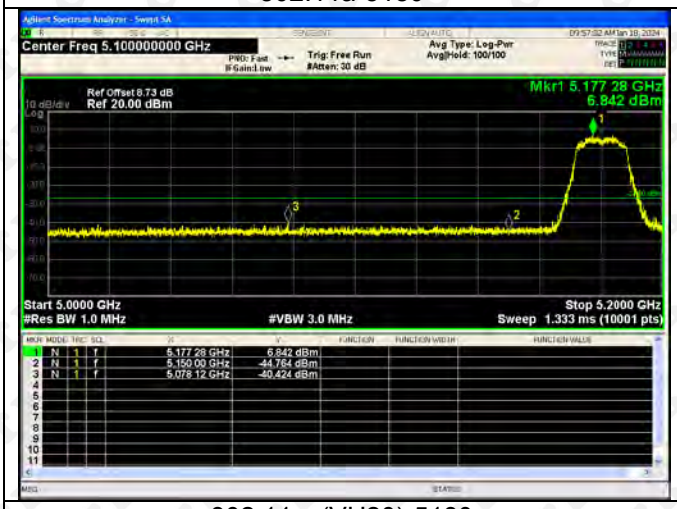
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then 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

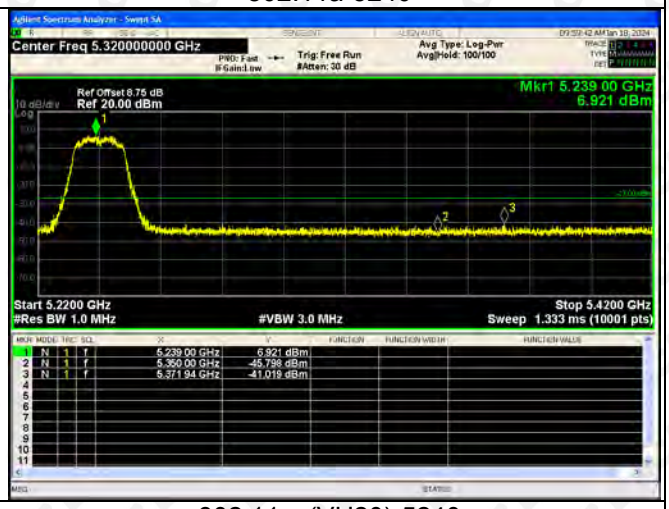
Test Graph

ANT 1

802.11a-5180



802.11a-5240



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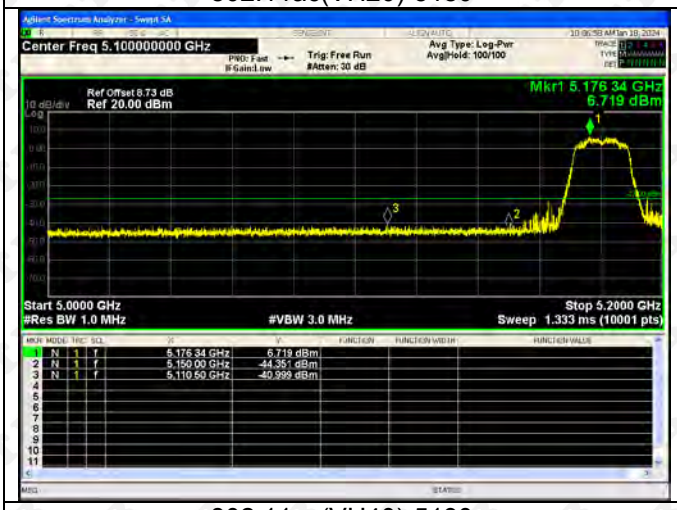
802.11ac(VH20)-5240



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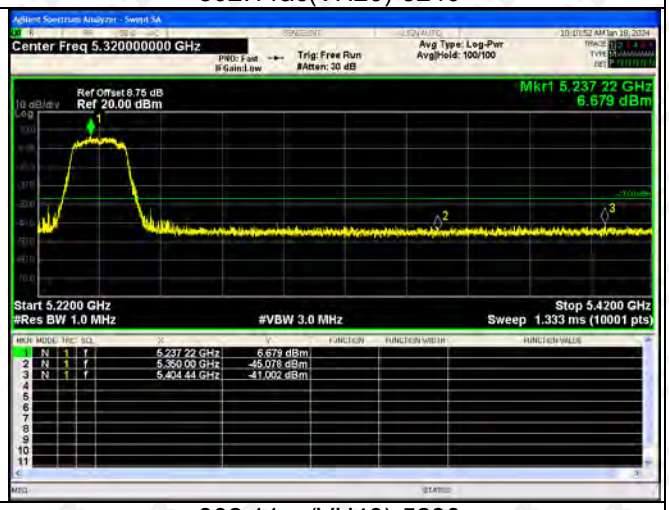

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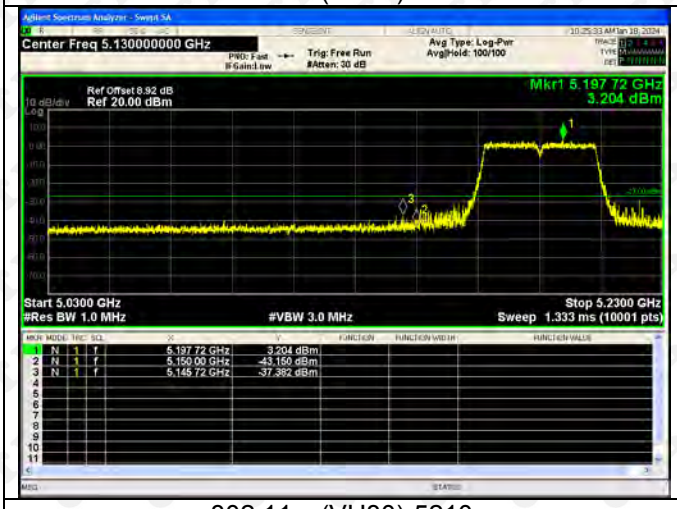
802.11ac(VH40)-5230



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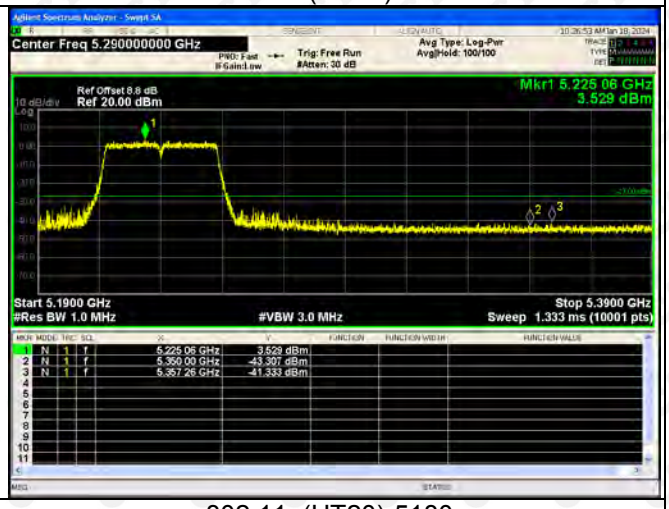

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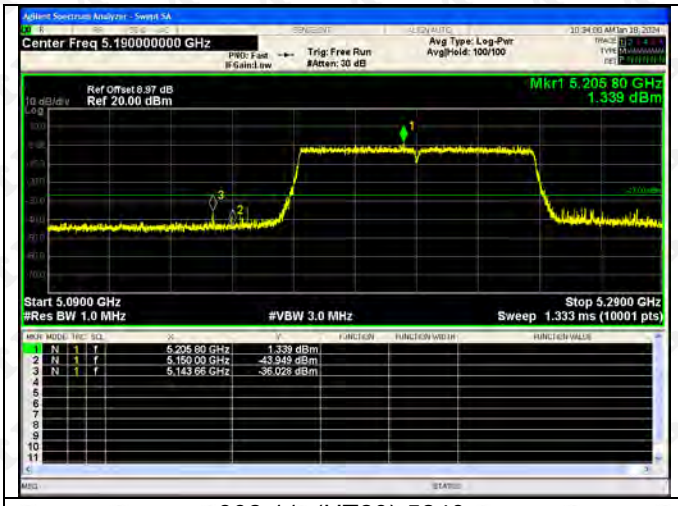

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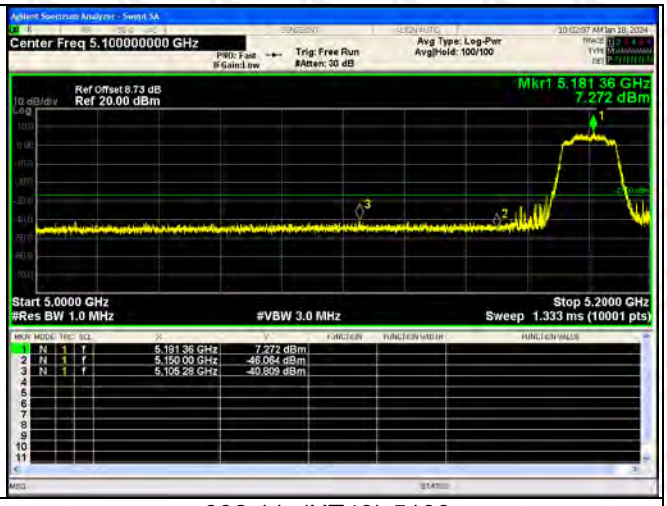

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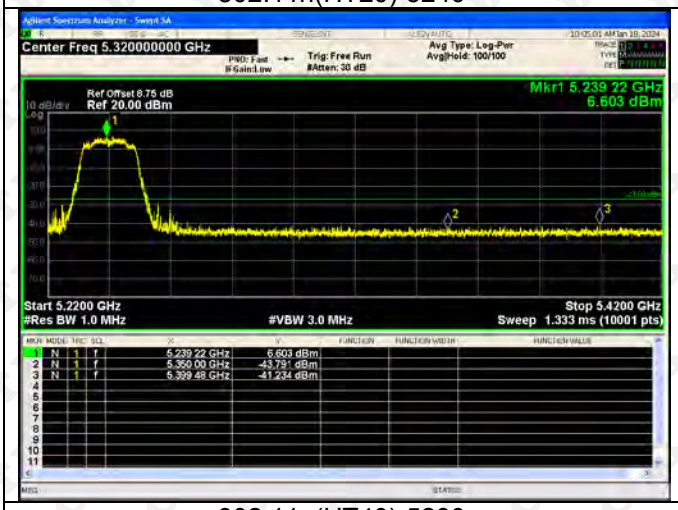

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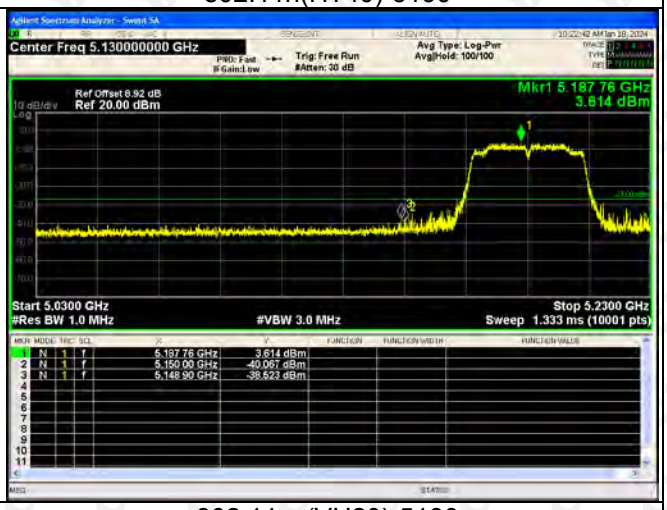

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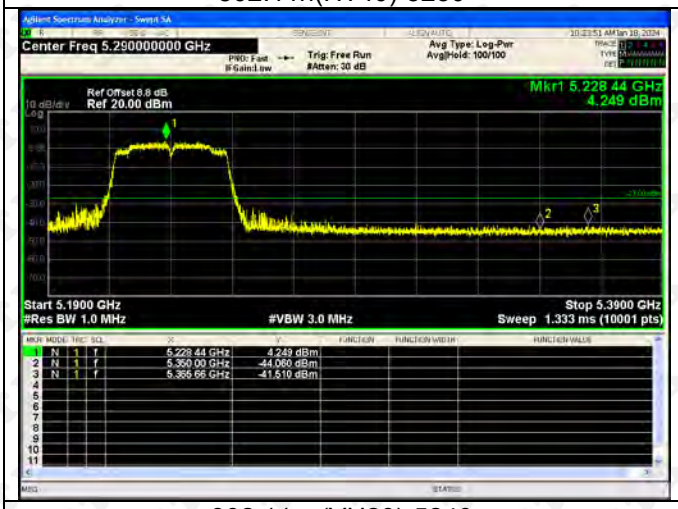

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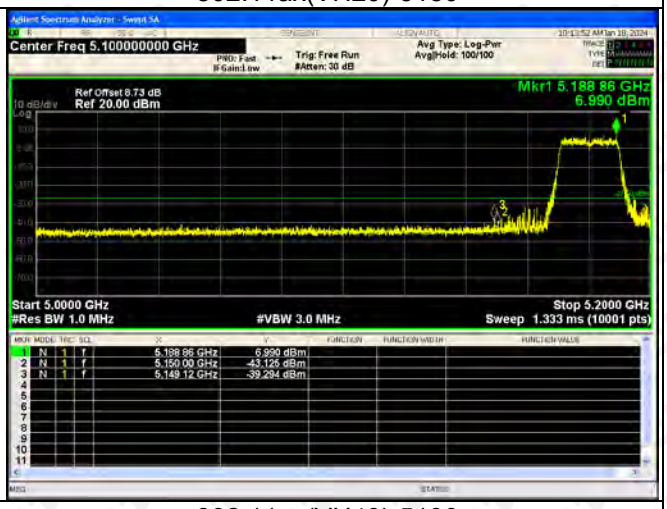

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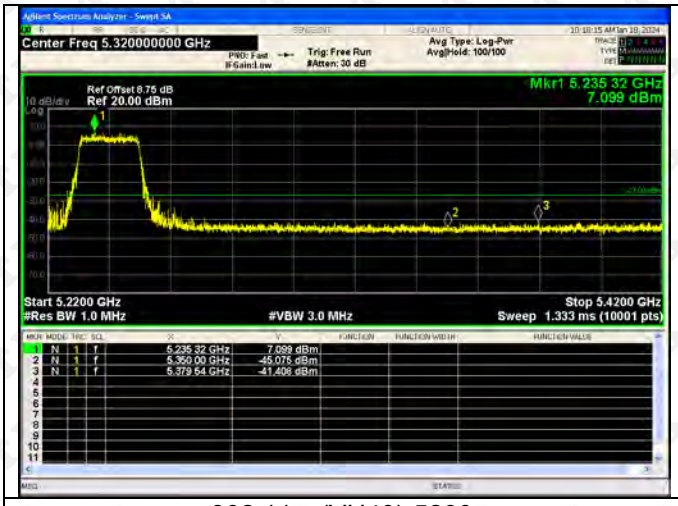

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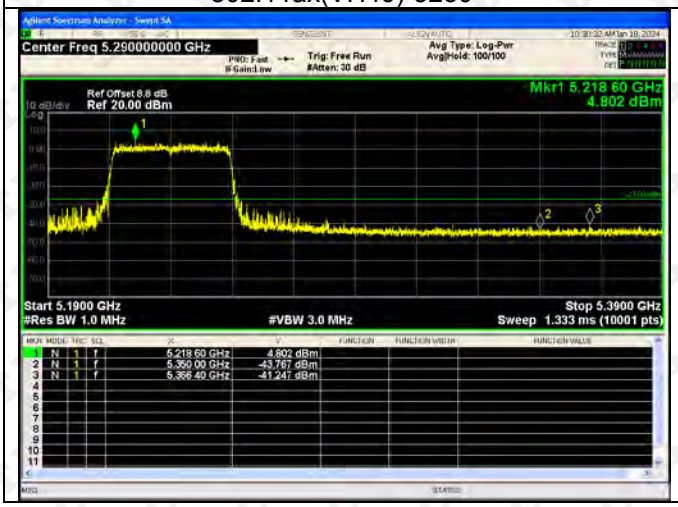
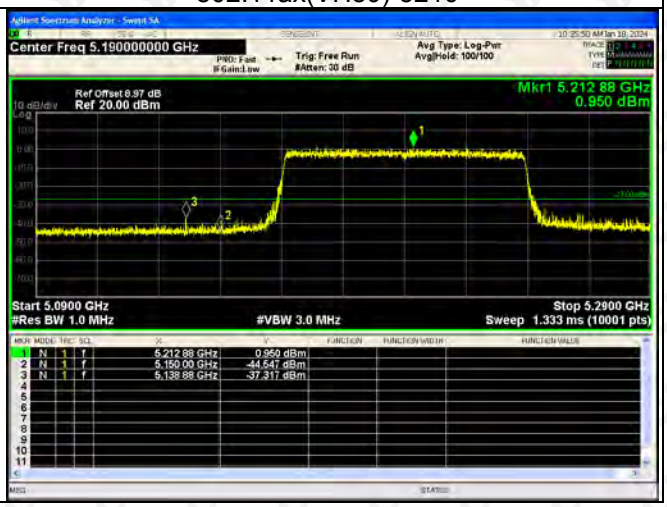
802.11ax(VH80)-5210





ANT1:

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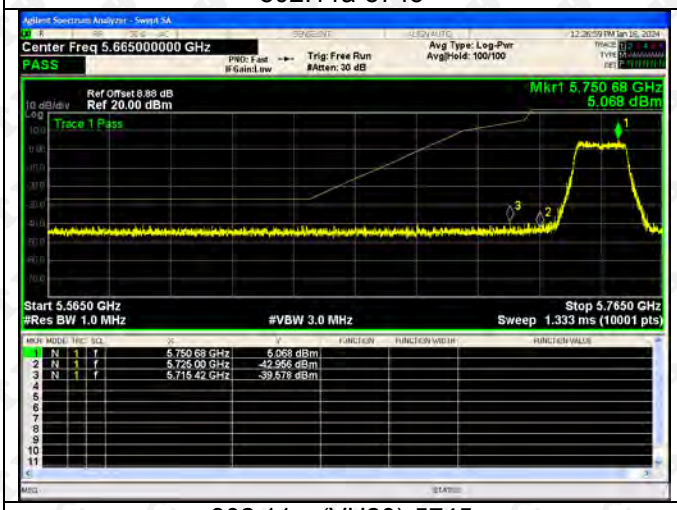	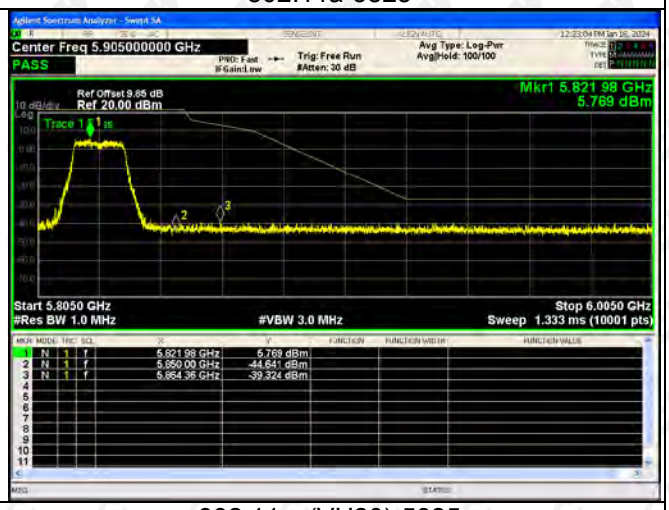
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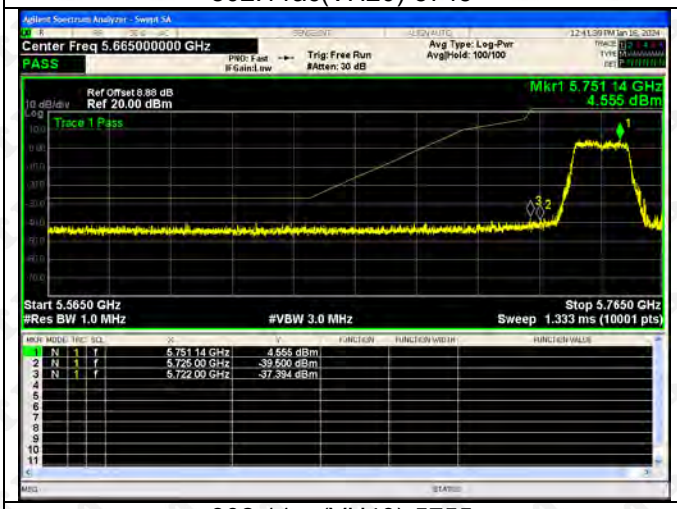	
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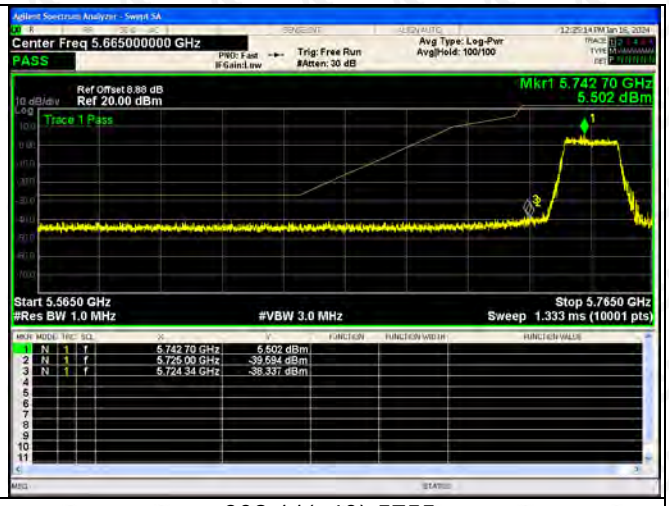
802.11ac(VH80)-5775	802.11(n20)-5745

802.11(n20)-5825



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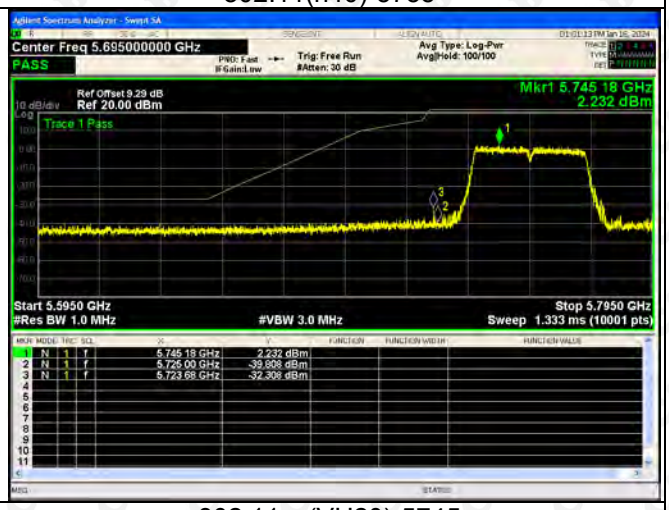

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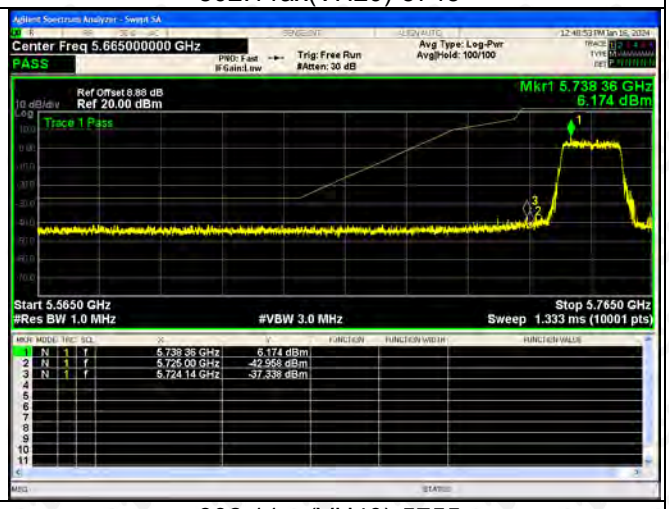

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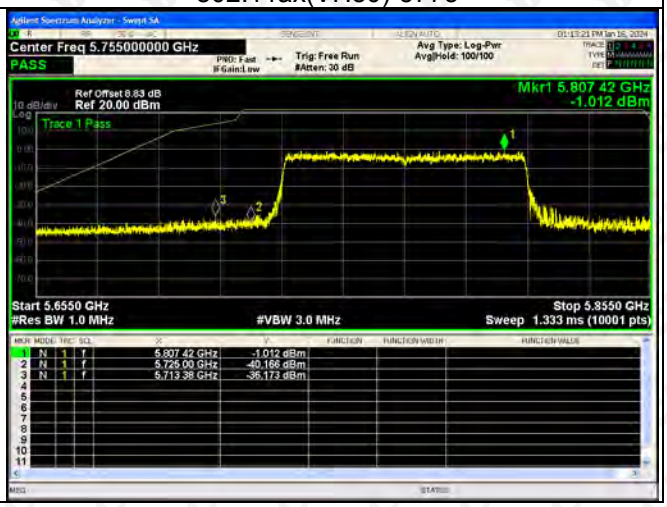
802.11ax(VH40)-5795

802.11ax(VH80)-5775



ANT 2

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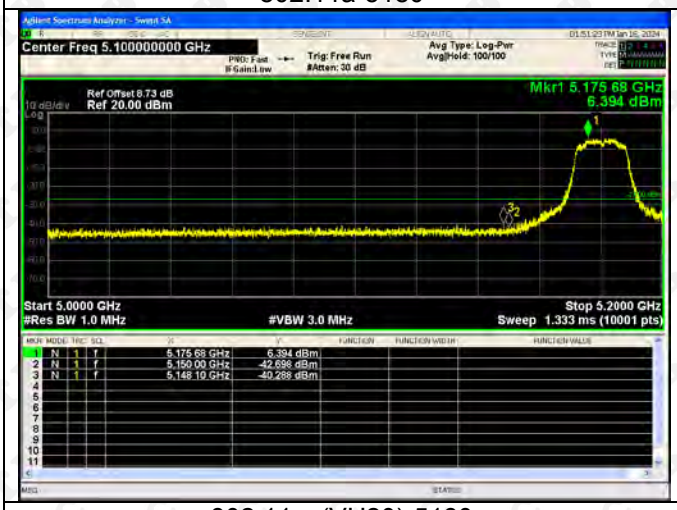	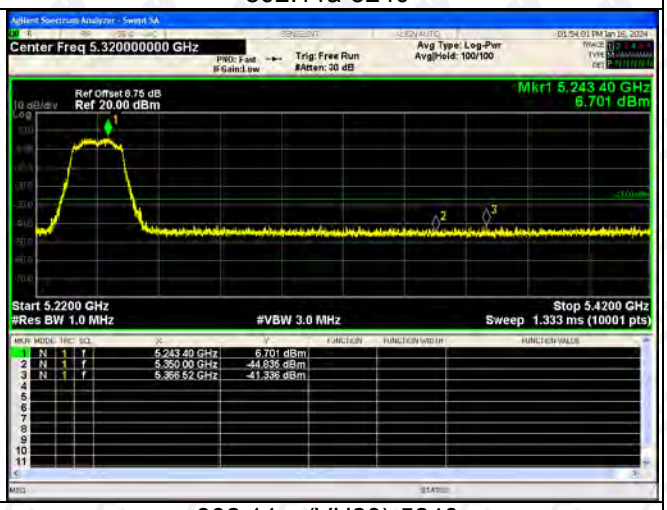
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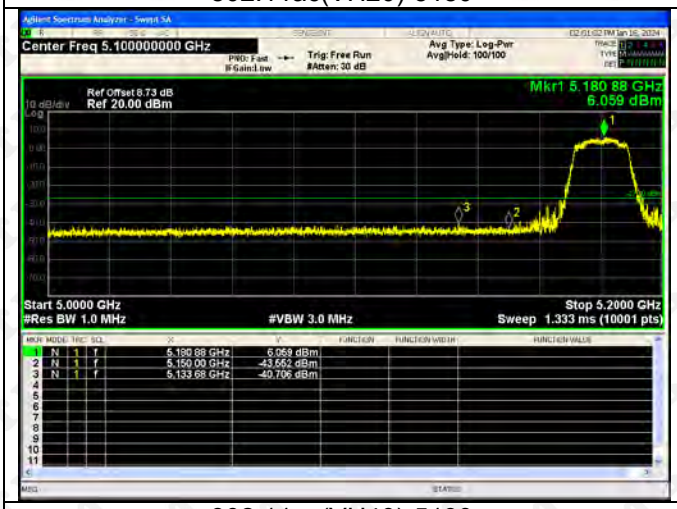	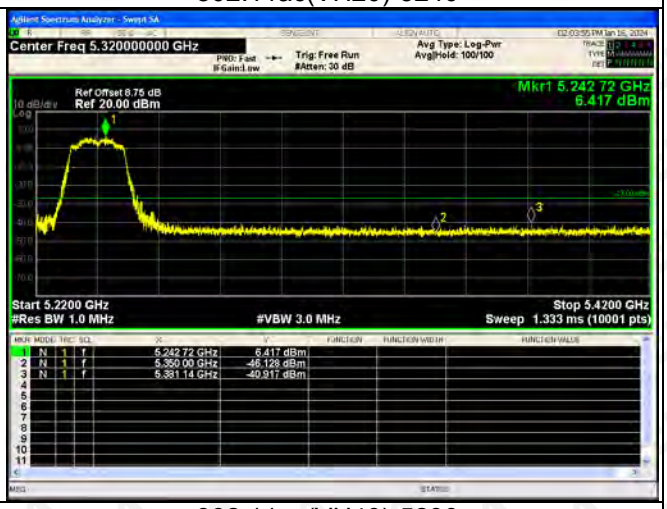
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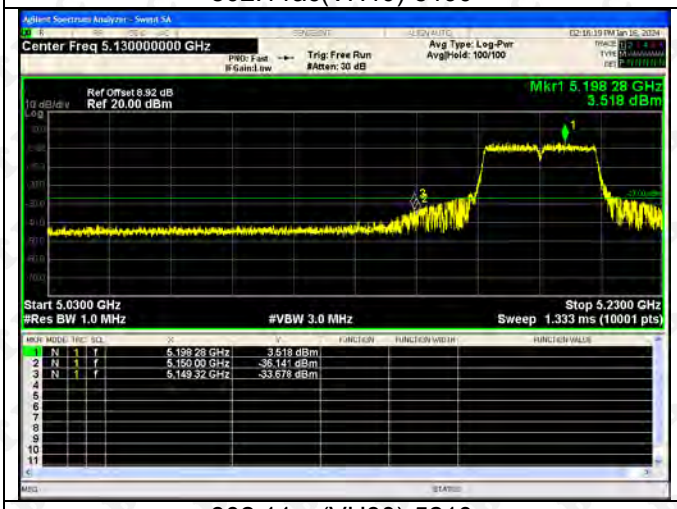	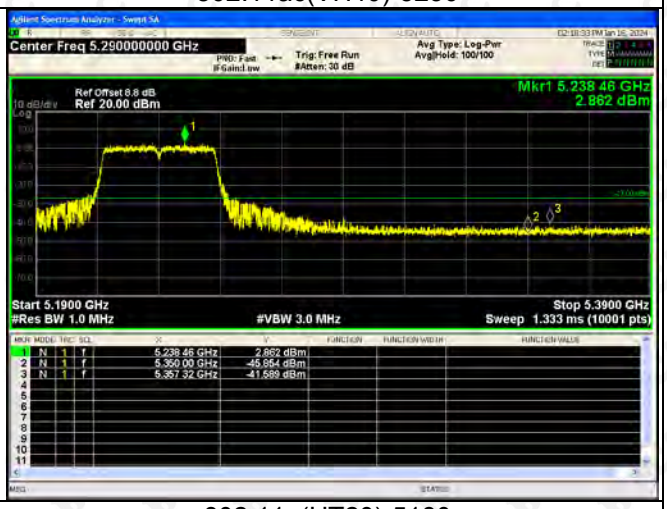
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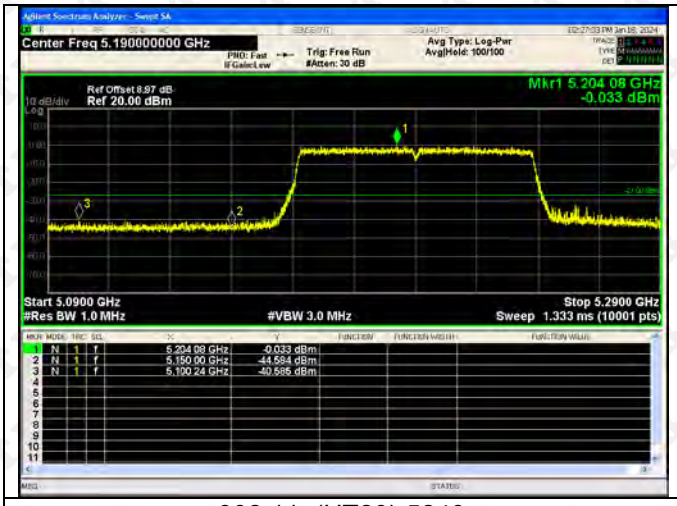

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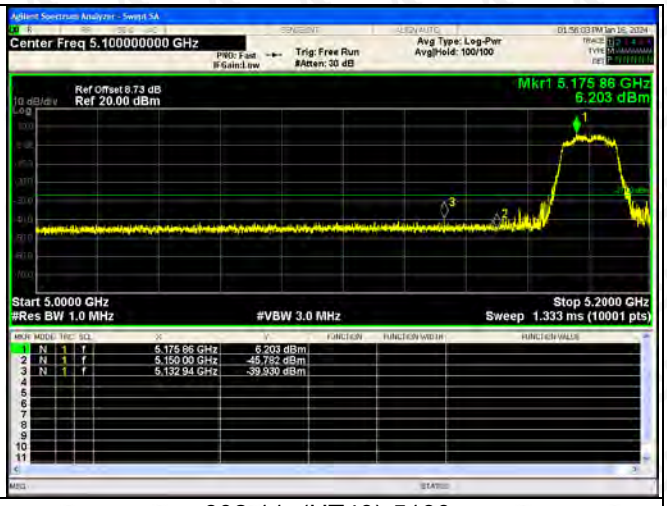

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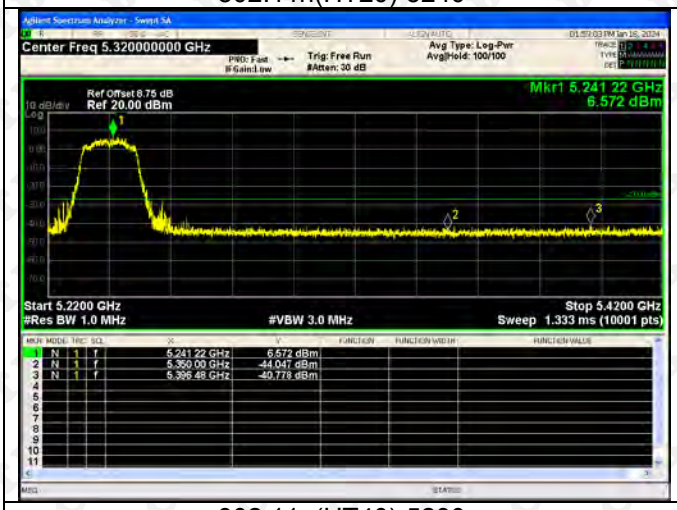

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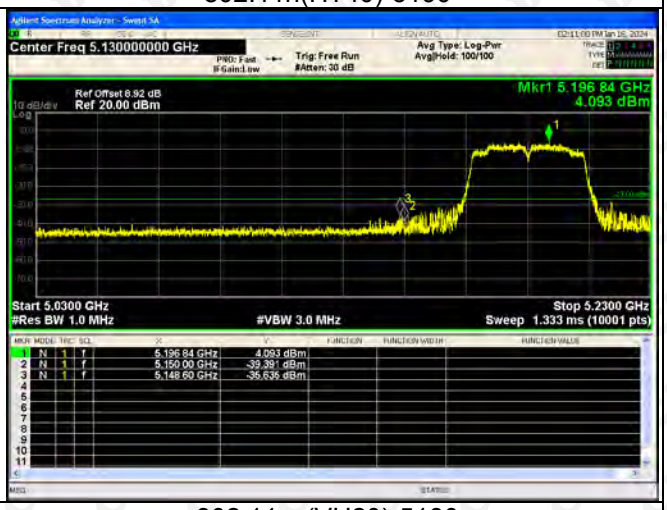

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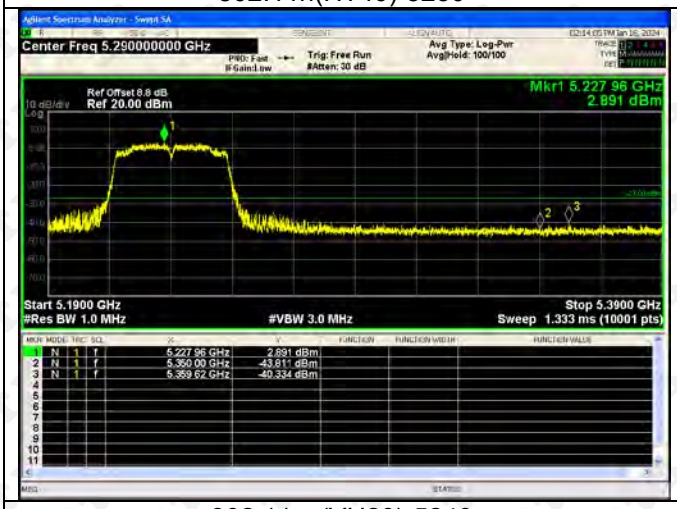

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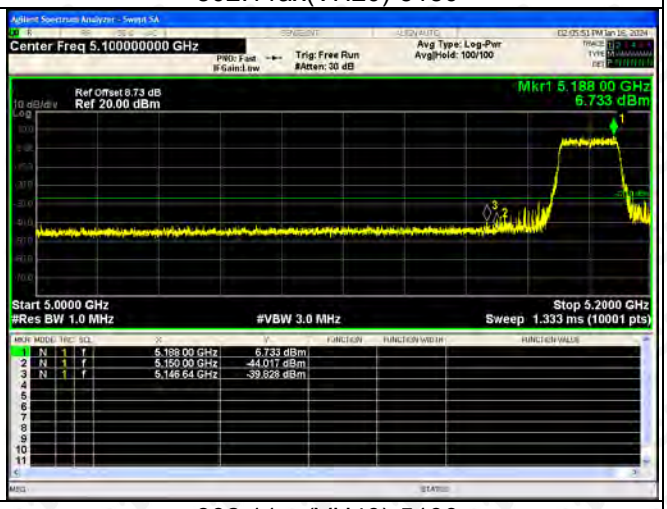

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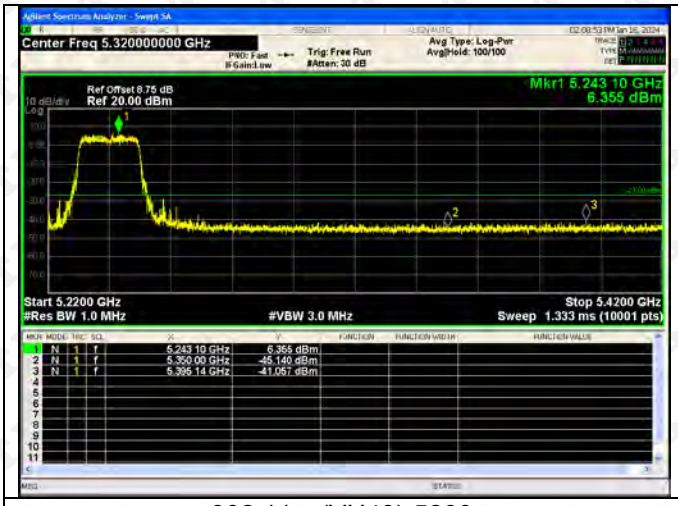

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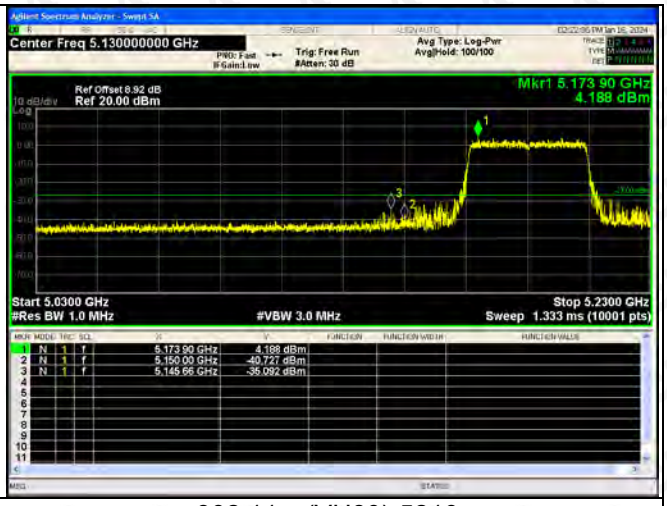

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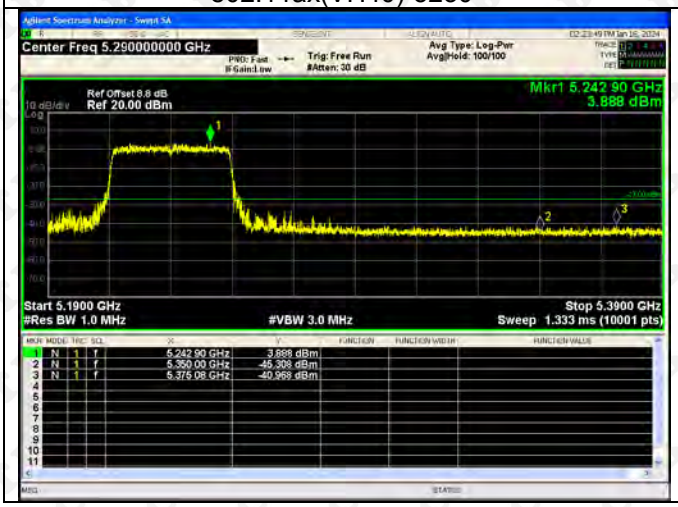

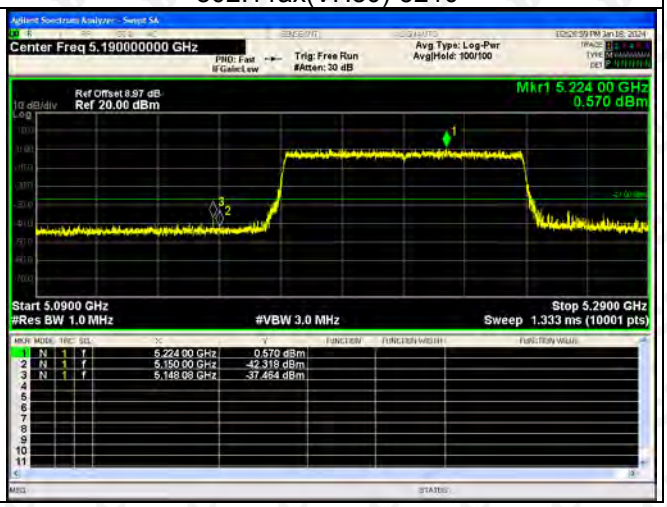

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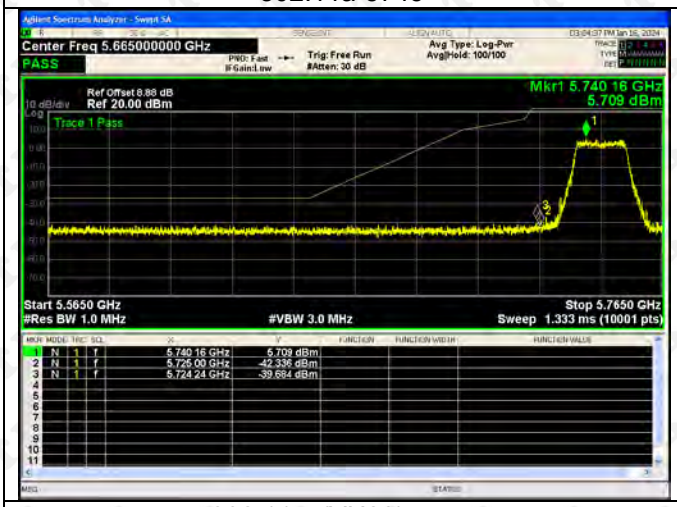	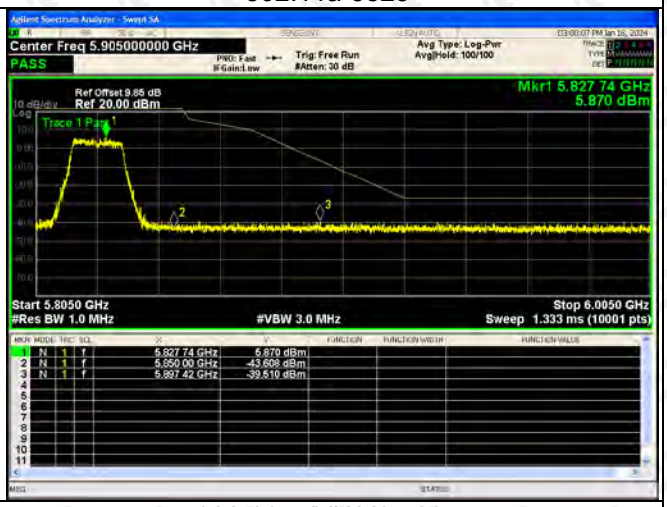
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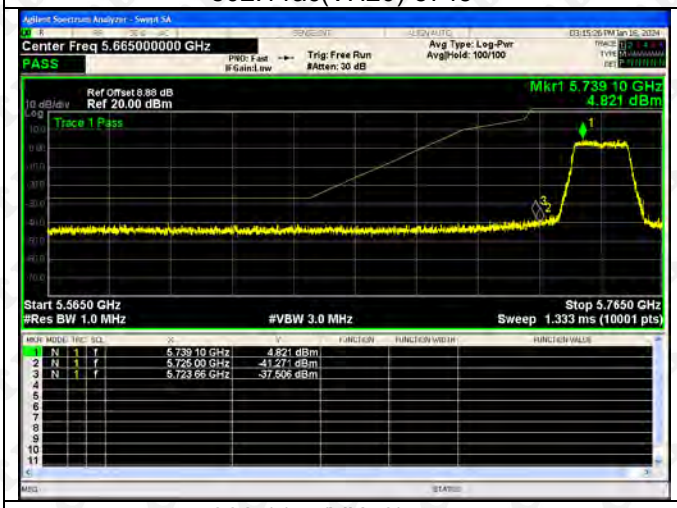	
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	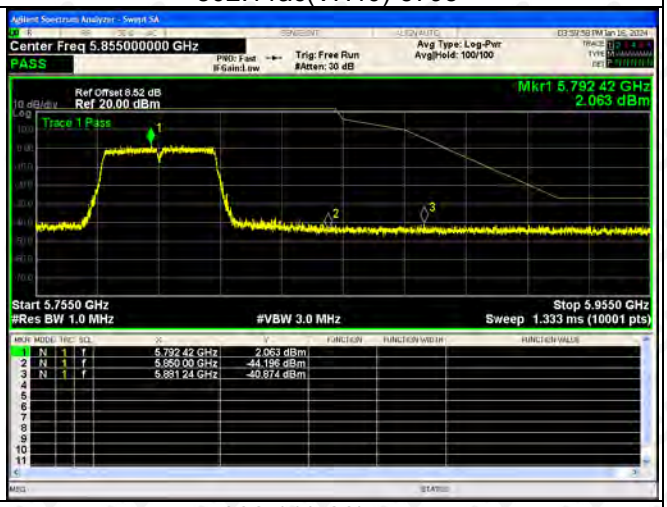
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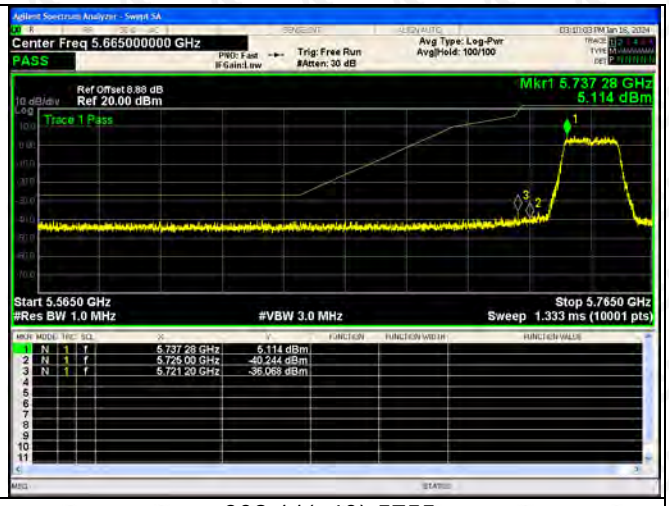
802.11(n20)-5825



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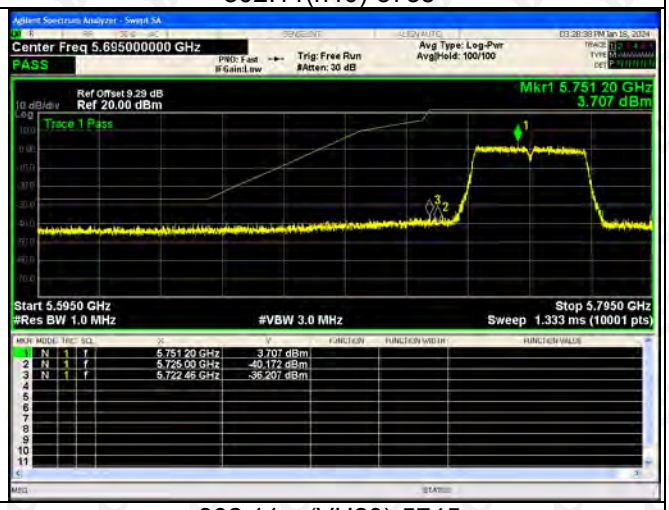

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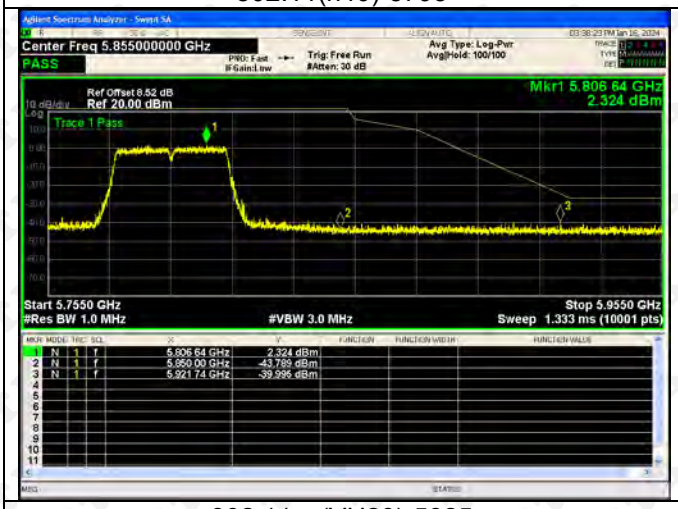

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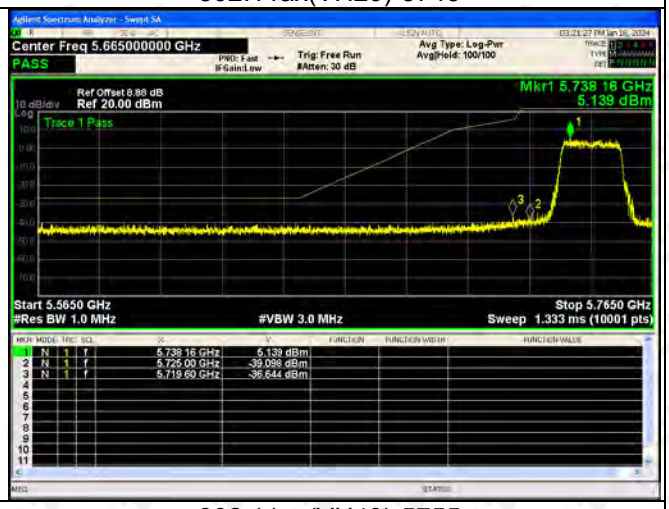

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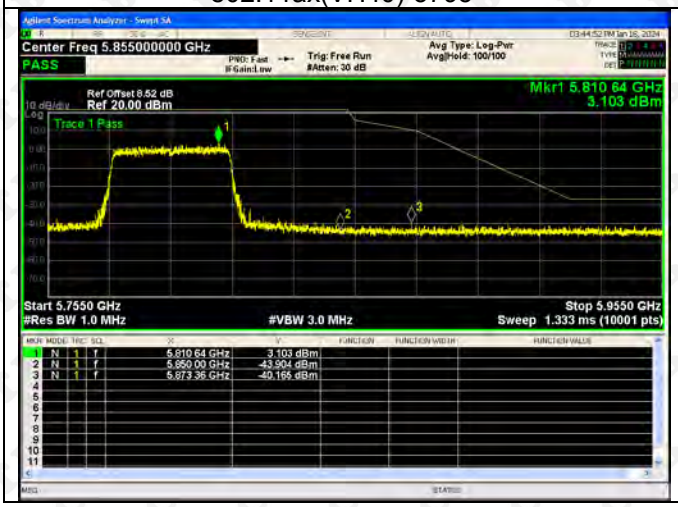
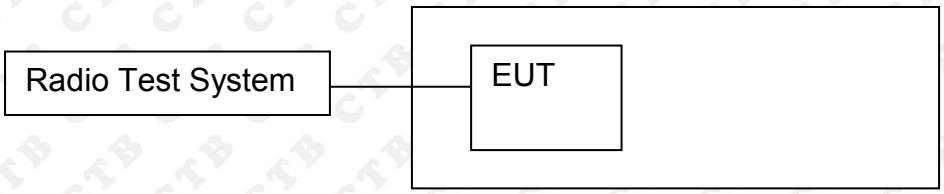


9. CONDUCTED OUTPUT POWER

9.1 Block Diagram Of Test Setup



9.2 Limit

(1) For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p.
at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition,the maximum power spectral density shall not exceed 17 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.
(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
(iv) For mobile and portable 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.
(2) 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.
(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.
(5) The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution

bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

(h) Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS).
(1) Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

9.3 Test procedure

According to KDB789033 D02v02r01 sectionE, the following is the measurement procedure.

(i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW ≥ 3 MHz.

(iv) Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”

(viii) Trace average at least 100 traces in power averaging (rms) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

9.4 Test Result

ANT 1+ANT 2

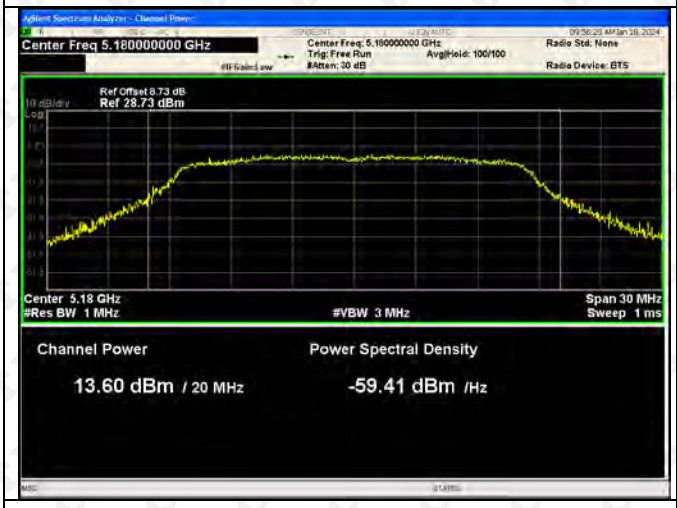
Test mode1	Test Channel (MHz)	Output Power dBm ANT1	Output Power dBm ANT2	Output Power dBm Total	Limit dBm
802.11a	5180	13.597	13.347	/	23.98
	5200	13.925	13.355	/	23.98
	5240	13.814	13.119	/	23.98
802.11ac20	5180	13.623	13.237	16.445	23.98
	5200	13.921	13.466	16.710	23.98
	5240	13.803	13.378	16.606	23.98
802.11ac40	5190	13.921	13.636	16.791	23.98
	5230	13.993	13.355	16.696	23.98
802.11ac80	5210	14.203	13.866	17.048	23.98
802.11n(HT20)	5180	13.662	13.215	16.455	23.98
	5200	13.957	13.048	16.537	23.98
	5240	13.881	13.028	16.486	23.98
802.11n(HT40)	5190	13.978	13.708	16.855	23.98
	5230	13.934	13.352	16.663	23.98
802.11ax20	5180	14.233	14.147	17.201	23.98
	5200	14.368	14.080	17.237	23.98
	5240	8.677	13.973	15.097	23.98
802.11ax40	5190	14.523	14.276	17.412	23.98
	5230	14.536	14.042	17.306	23.98
802.11ax80	5210	14.736	14.339	17.552	23.98

ANT 1+ANT 2

Test mode1	Test Channel (MHz)	Output Power dBm ANT1	Output Power dBm ANT2	Output Power dBm Total	Limit dBm
802.11a	5745	12.153	12.256	/	30
	5785	11.864	12.271	/	30
	5825	13.142	13.331	/	30
802.11ac20	5745	12.093	12.621	15.375	30
	5785	11.624	12.631	15.167	30
	5825	12.974	13.706	16.366	30
802.11ac40	5755	12.797	13.127	15.975	30
	5795	12.151	12.753	15.473	30
802.11ac80	5775	12.454	12.935	15.711	30
802.11n(HT20)	5745	12.158	12.651	15.422	30
	5785	11.747	12.518	15.160	30
	5825	12.983	13.674	16.353	30
802.11n(HT40)	5755	12.757	13.049	15.916	30
	5795	12.198	12.875	15.560	30
802.11ax20	5745	12.751	13.060	15.919	30
	5785	12.383	12.992	15.708	30
	5825	13.602	14.07	16.853	30
802.11ax40	5755	13.072	13.535	16.320	30
	5795	12.486	13.171	15.852	30
802.11ax80	5775	12.880	13.419	16.168	30

ANT 1

802.11a-5180



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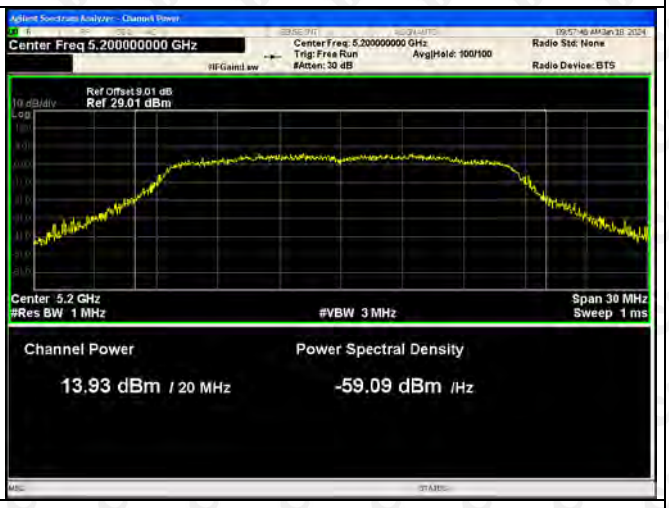

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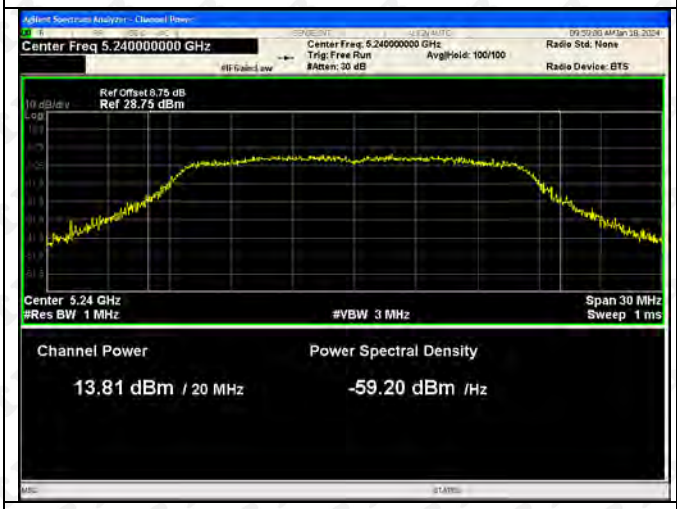

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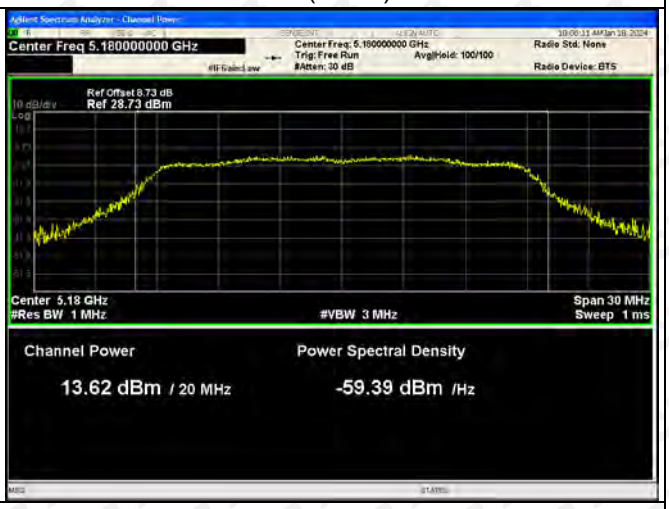

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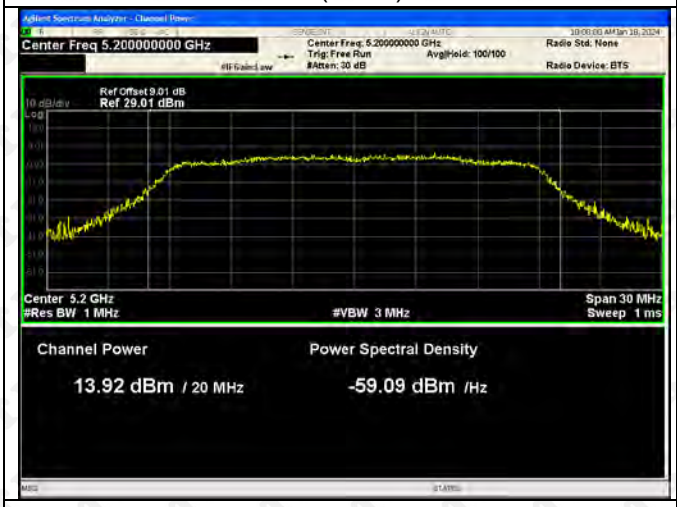

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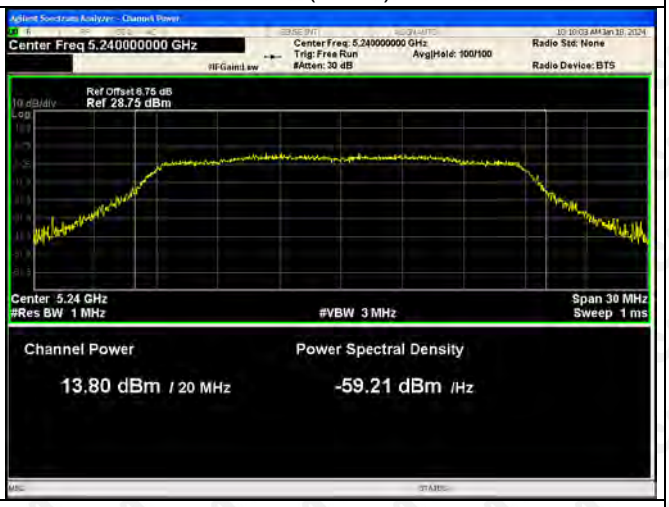

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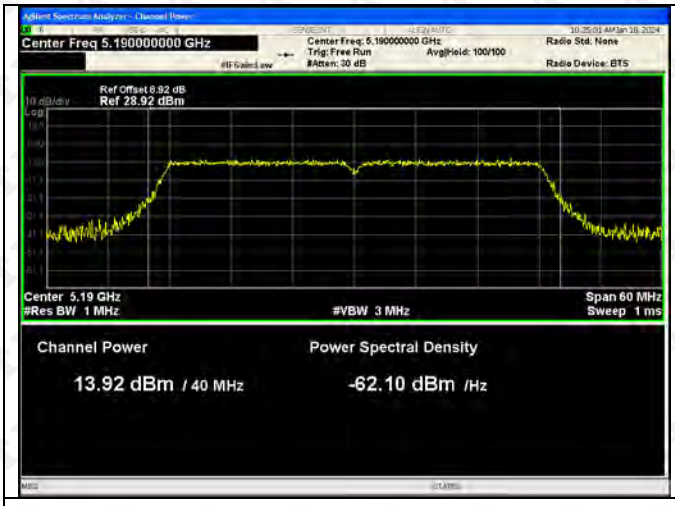

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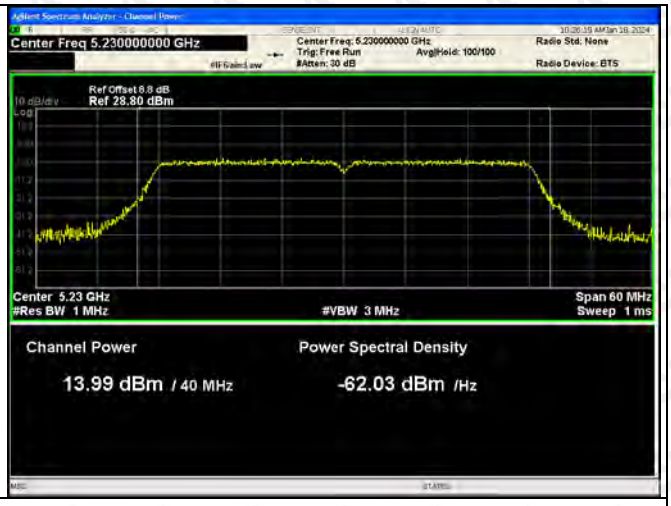

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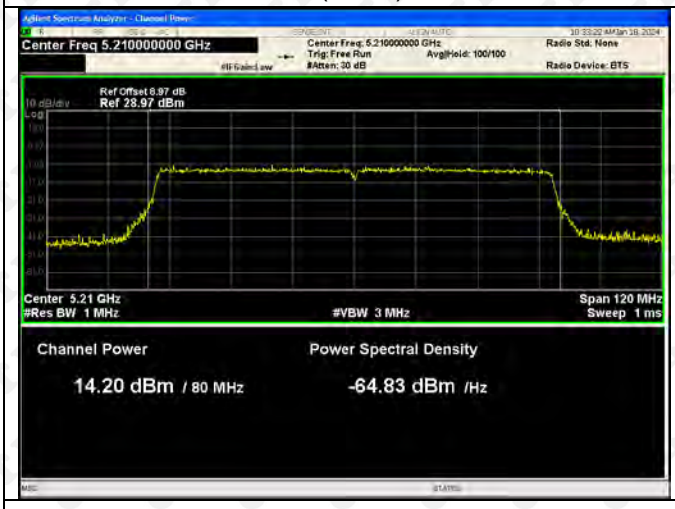

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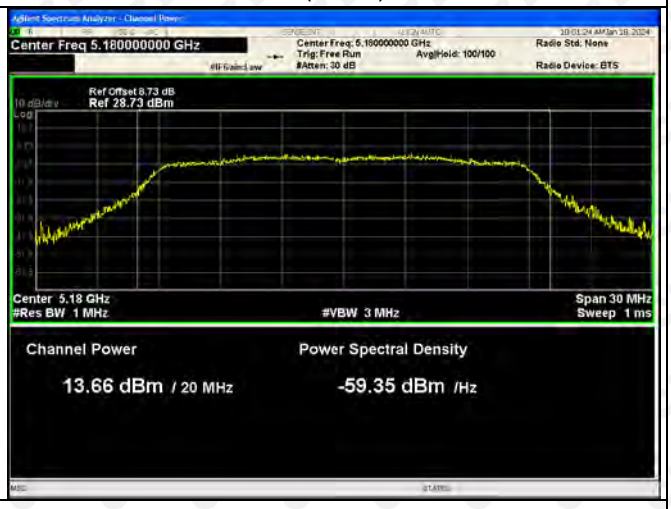

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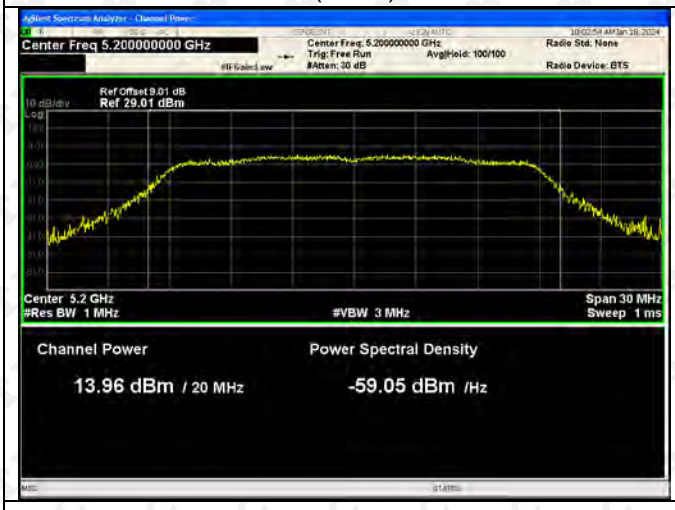

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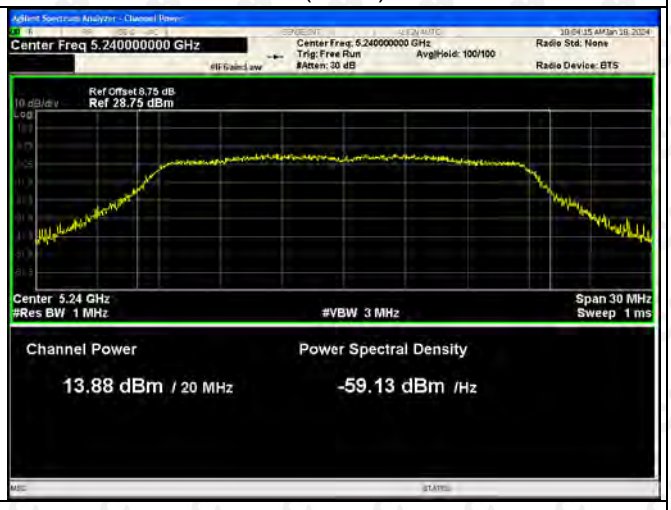

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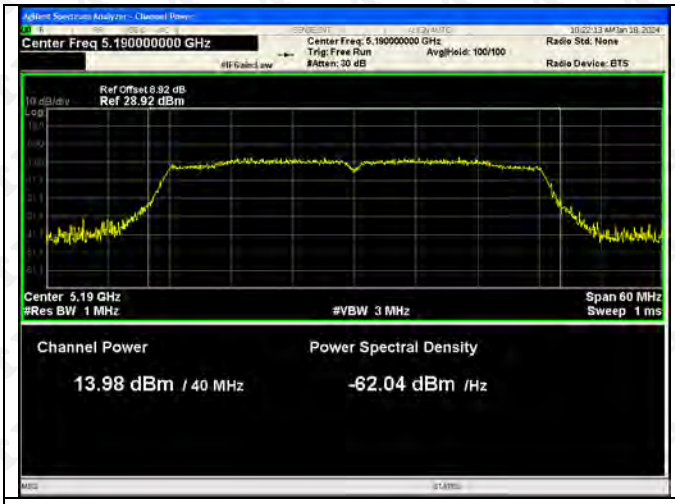

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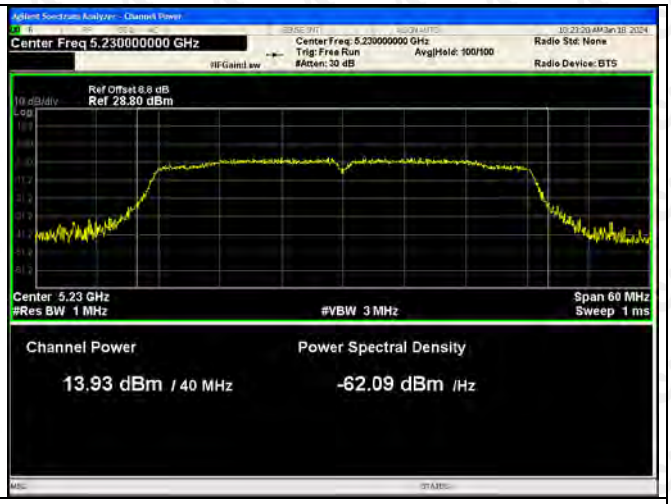

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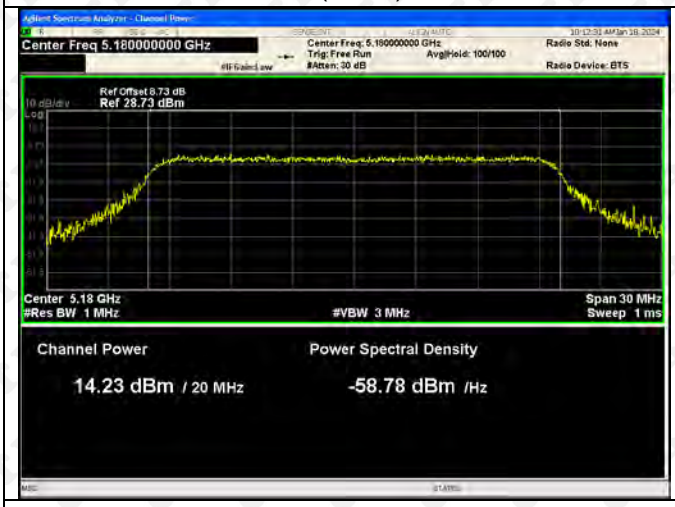

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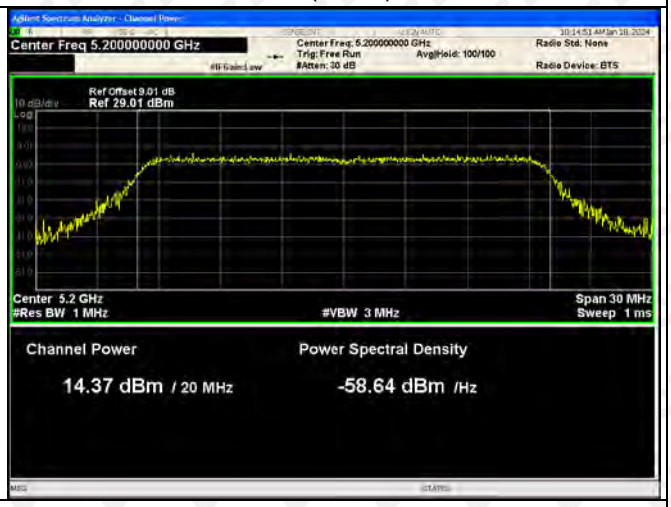

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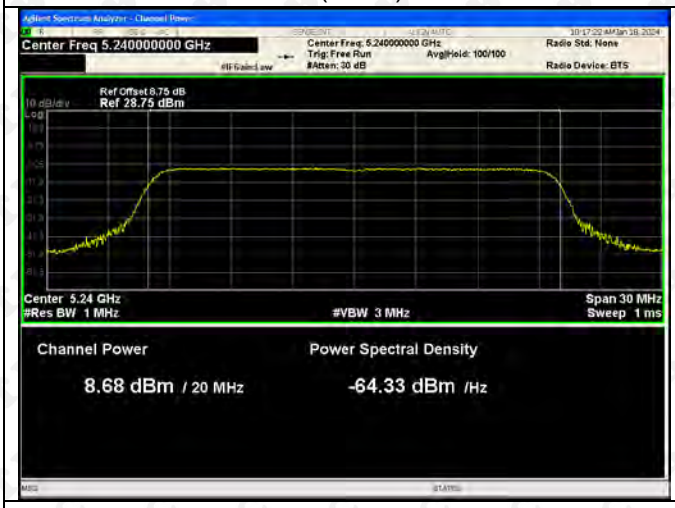

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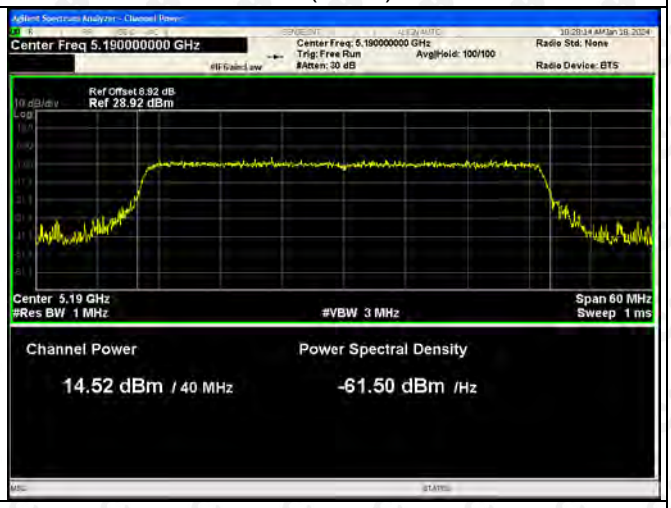

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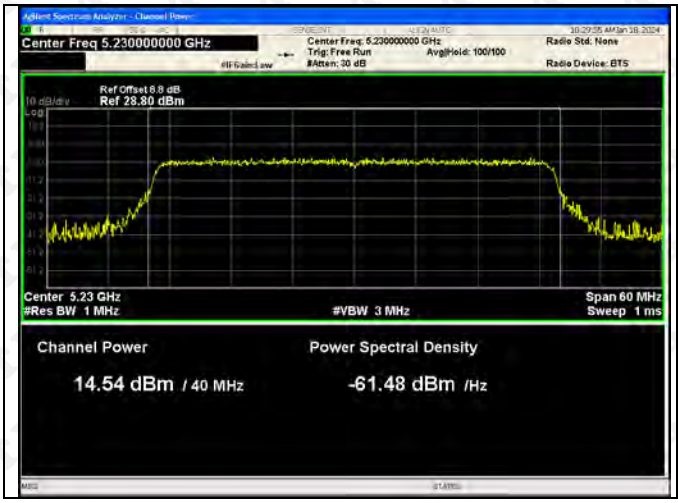

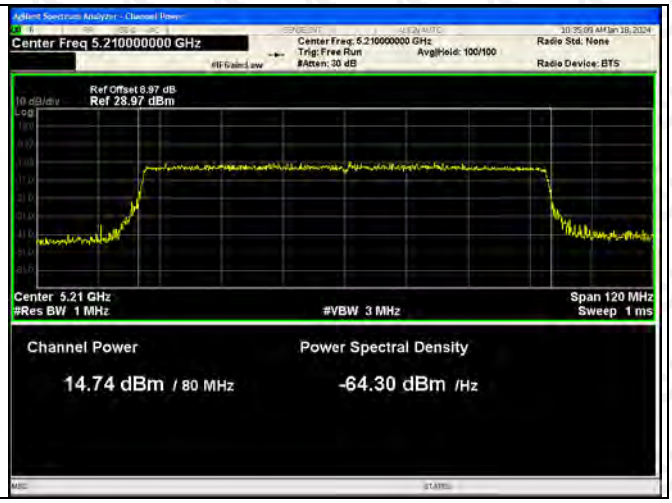

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	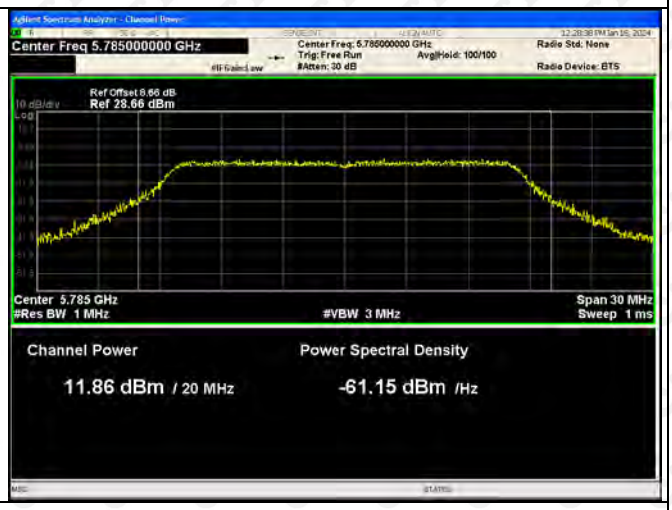
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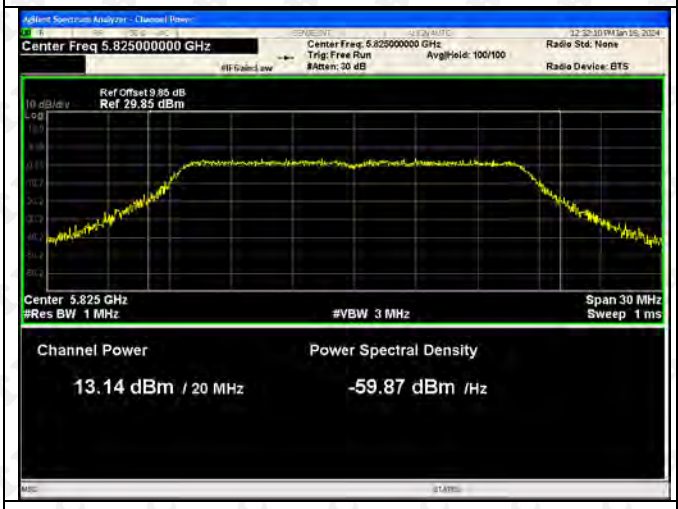	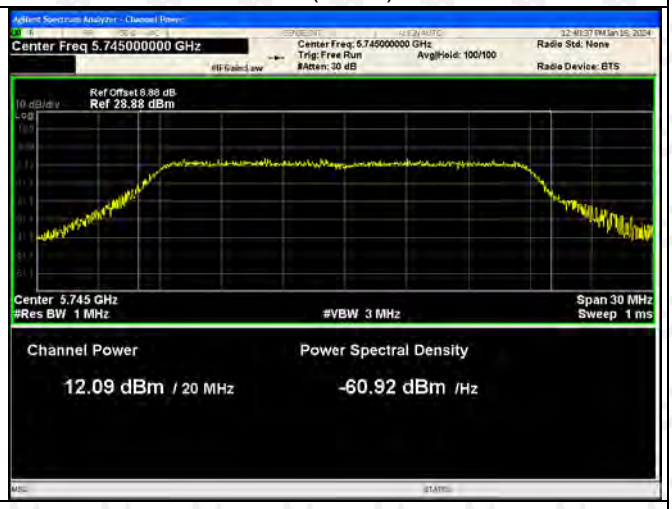
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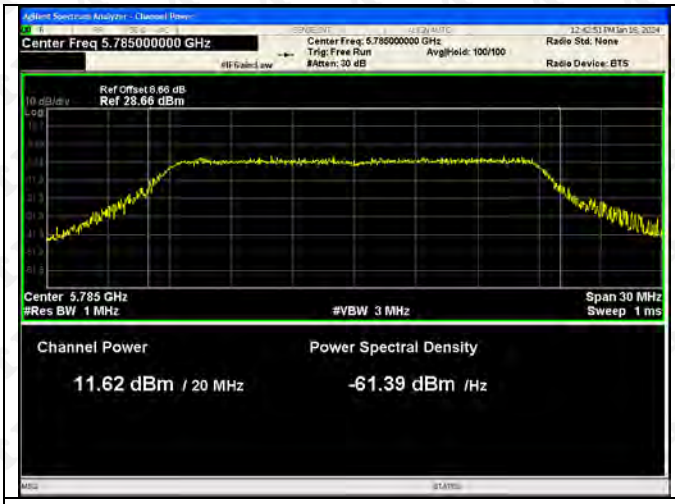

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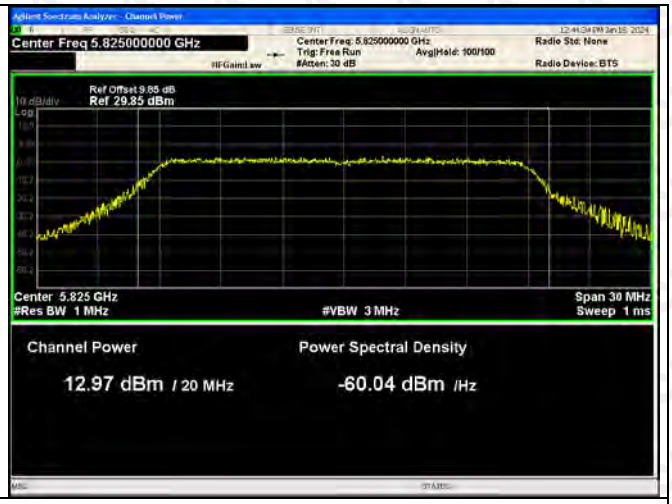
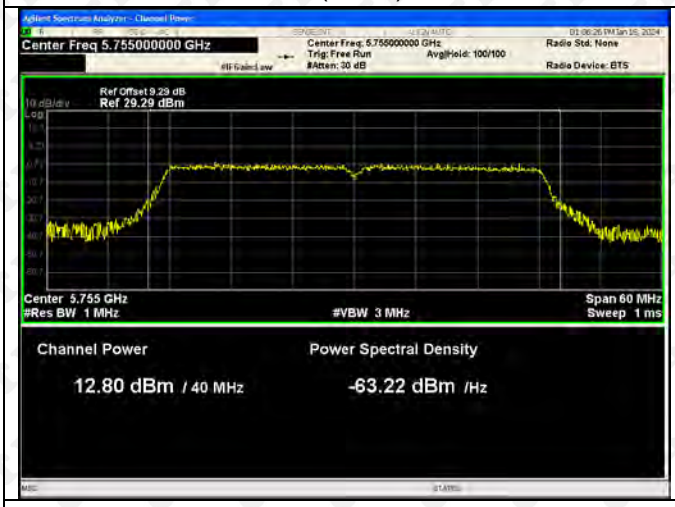


802.11ac(VH40)-5795



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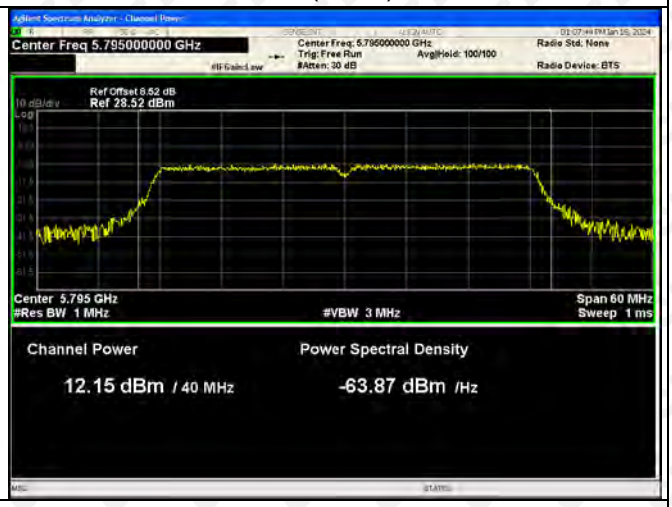

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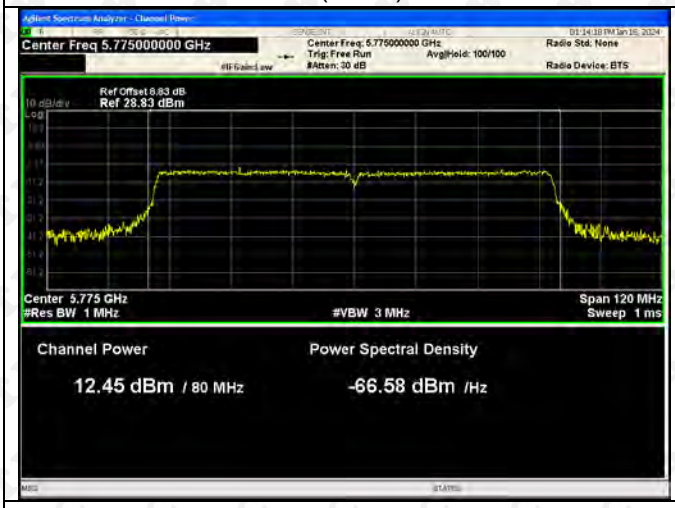

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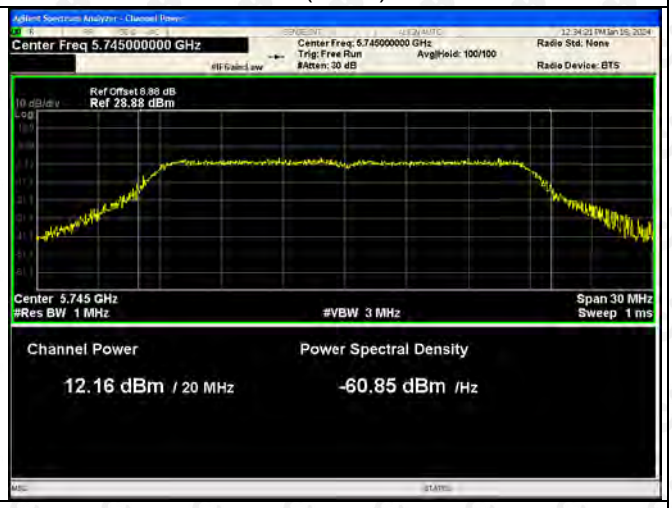

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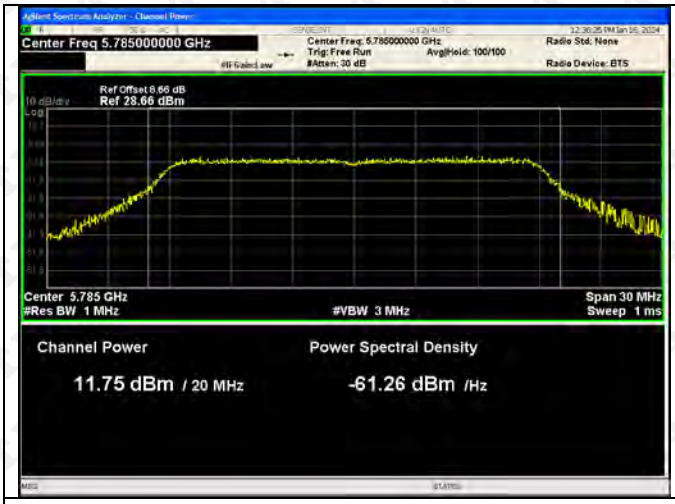

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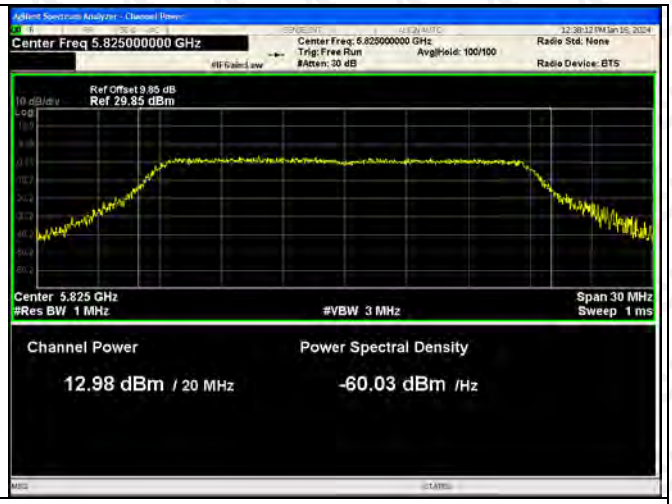

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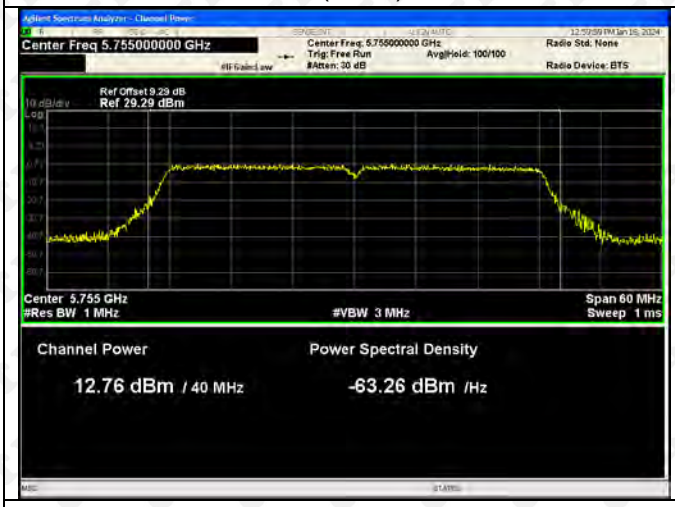

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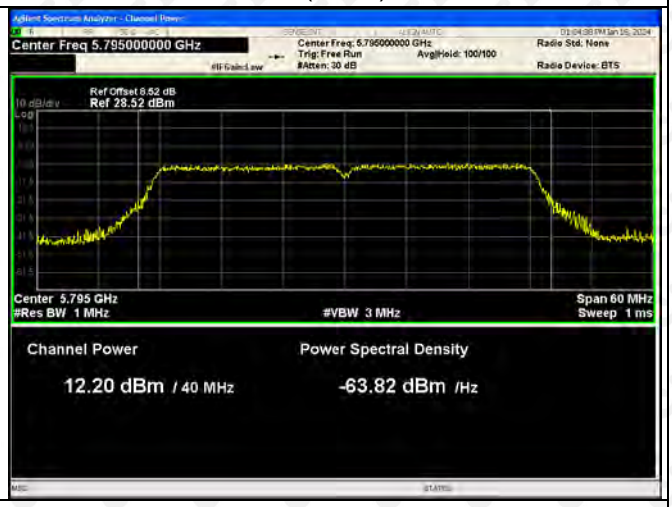

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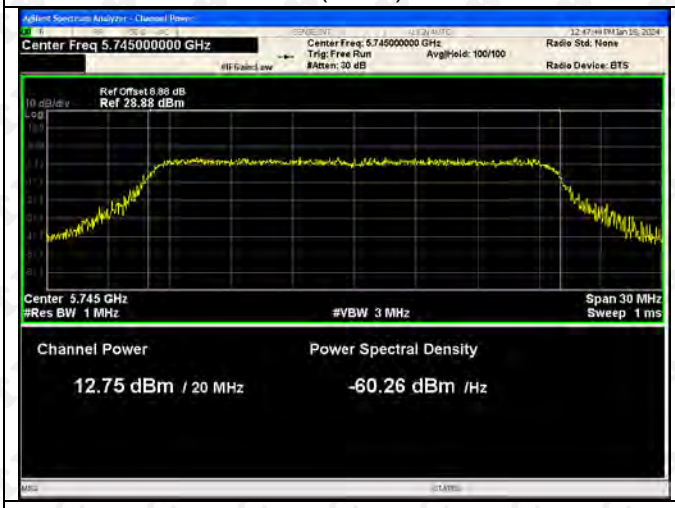

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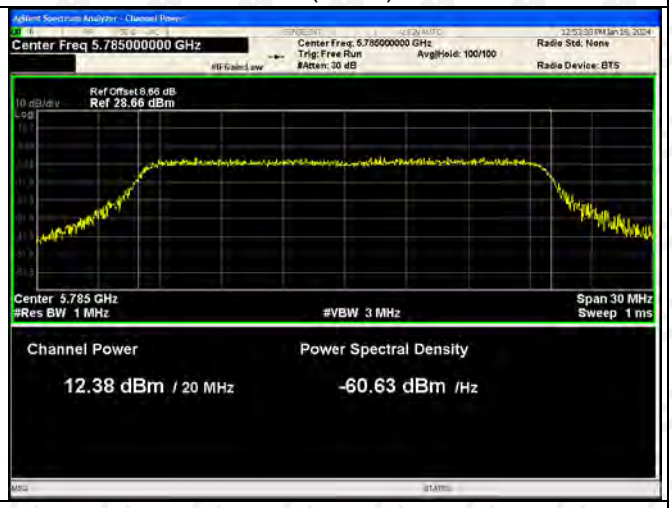

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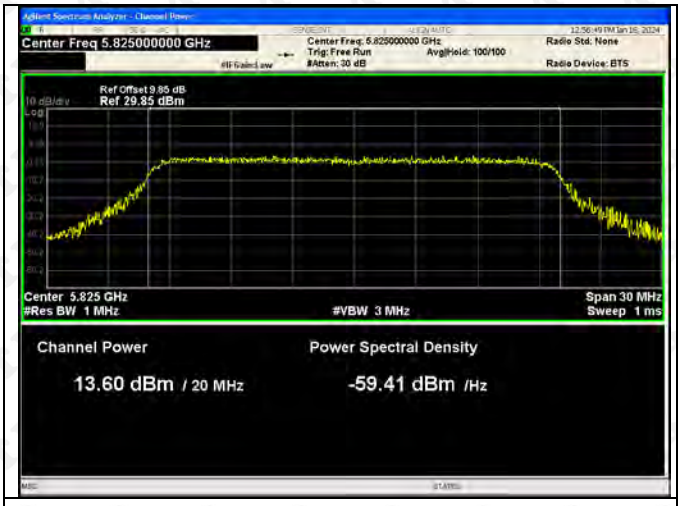

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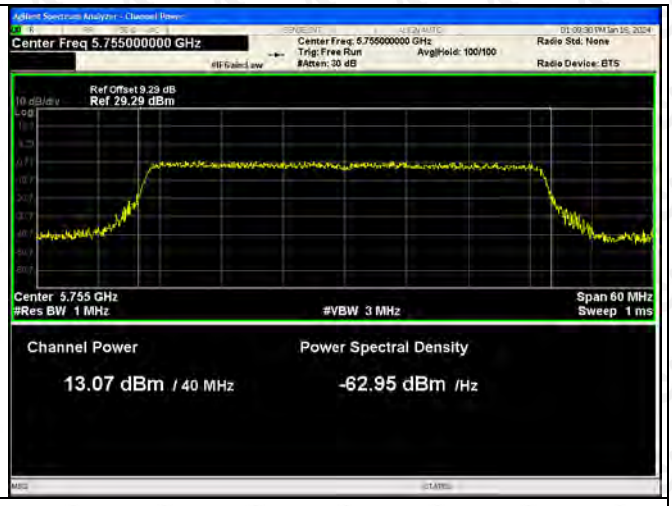

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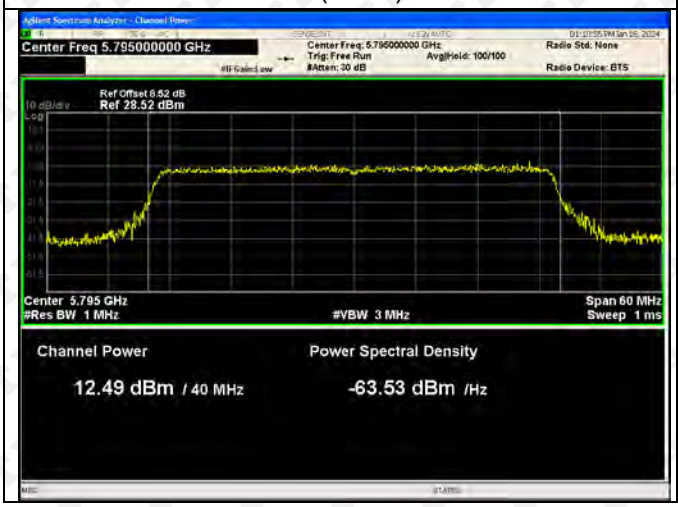
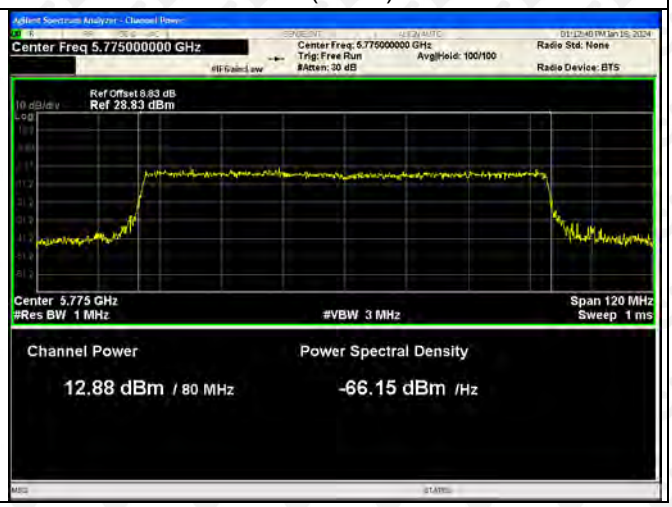
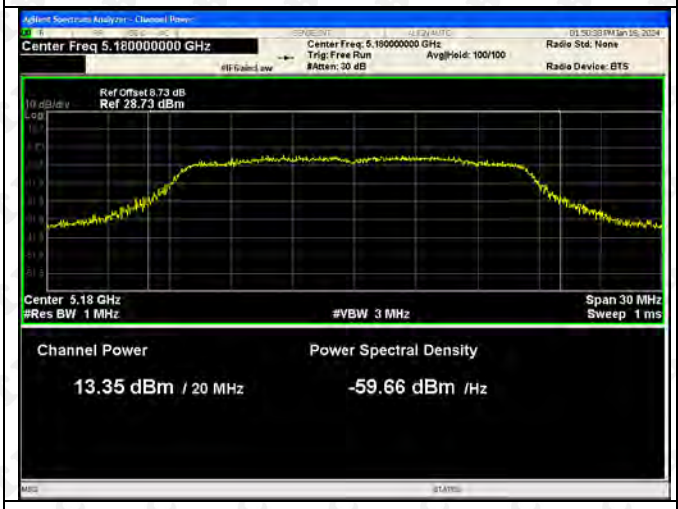


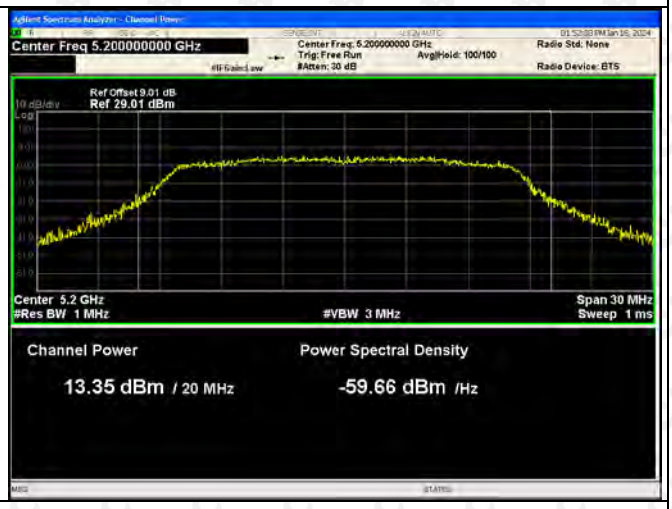


ANT 2

802.11a-5180



802.11a-5200



802.11a-5240

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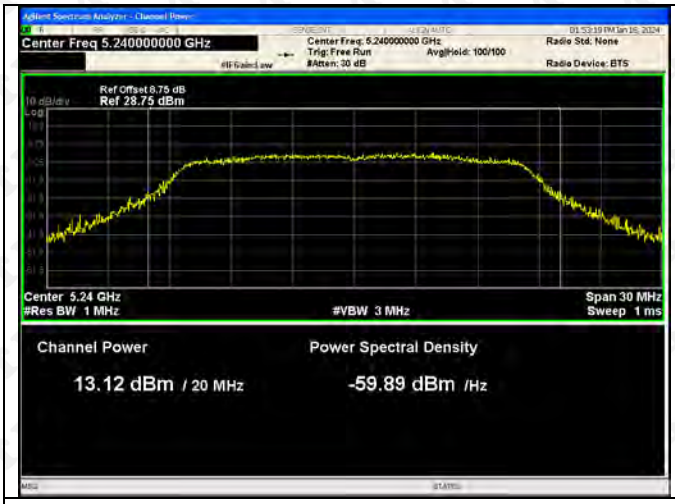

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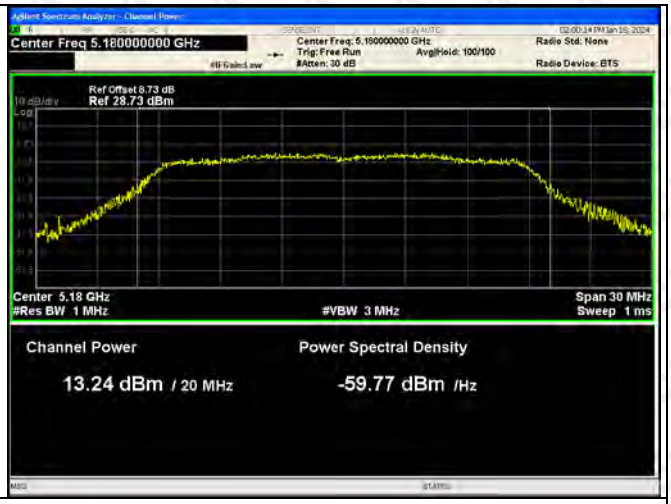

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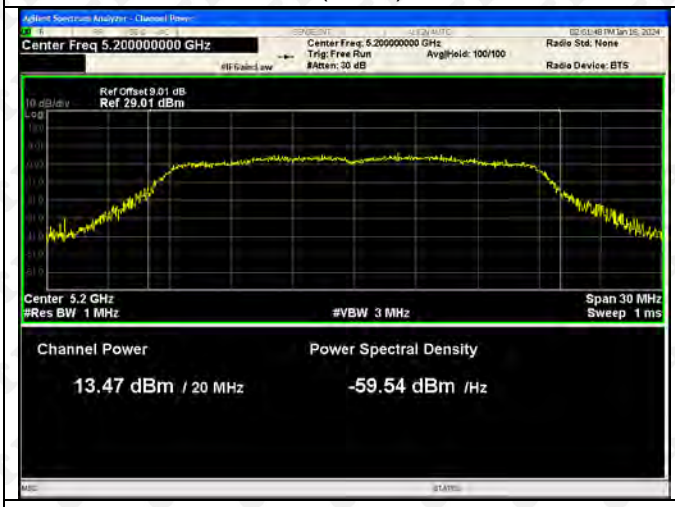

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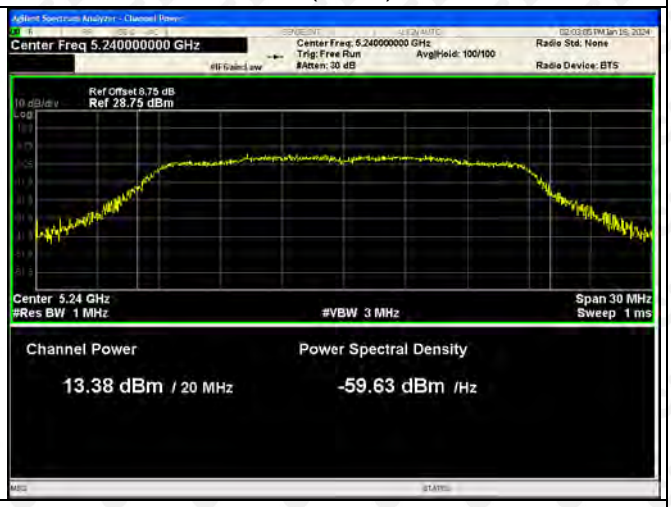

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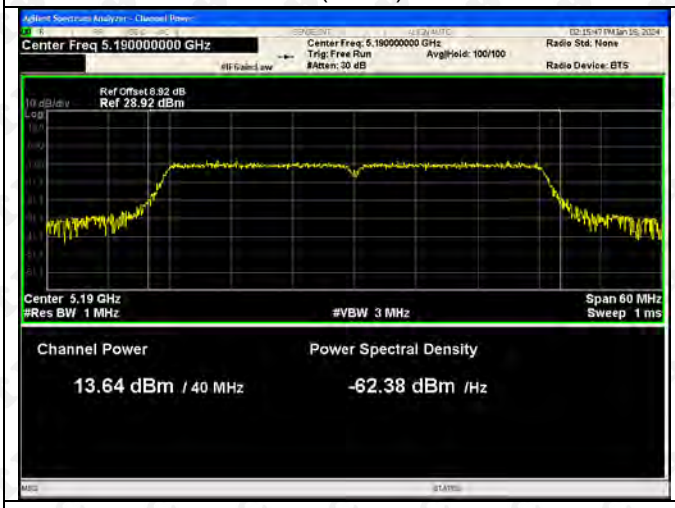

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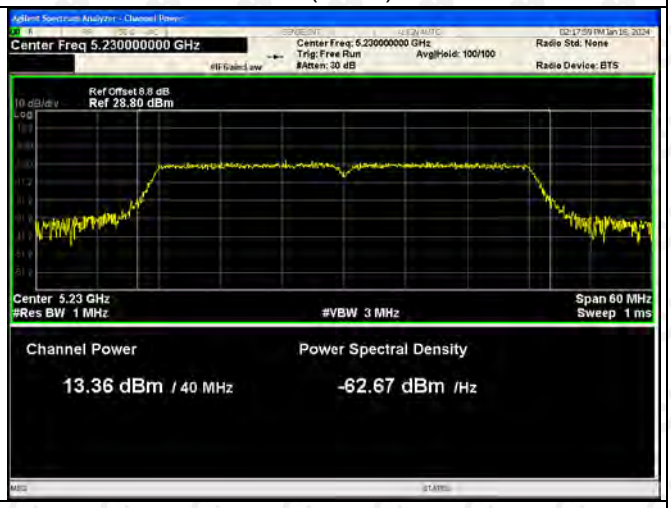

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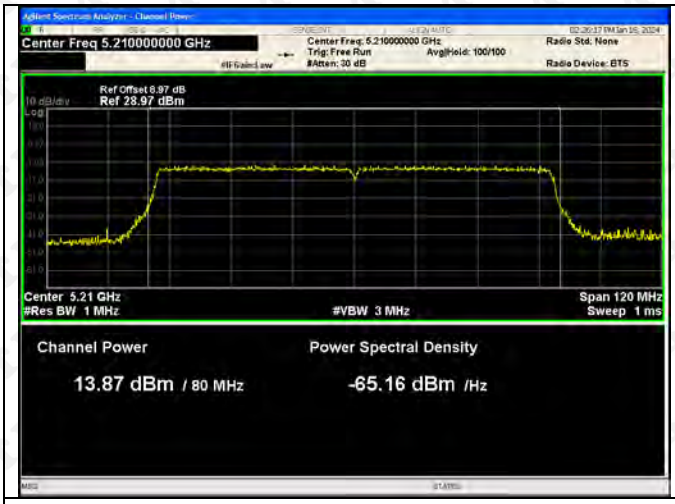

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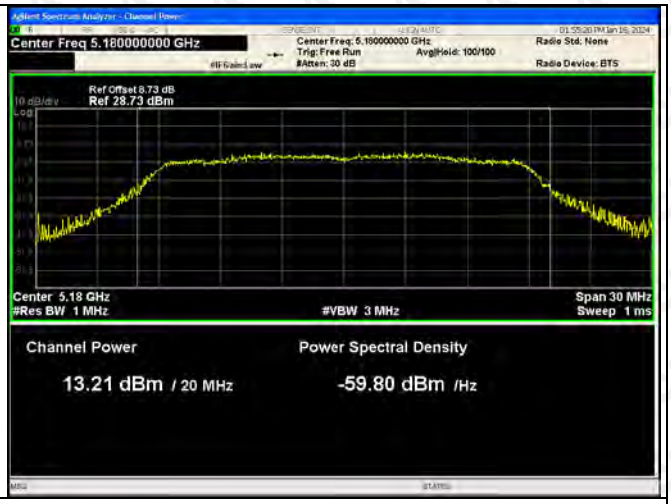

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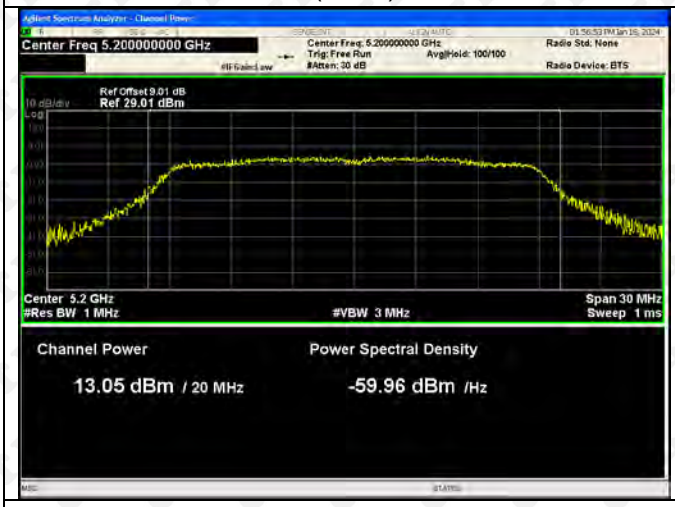

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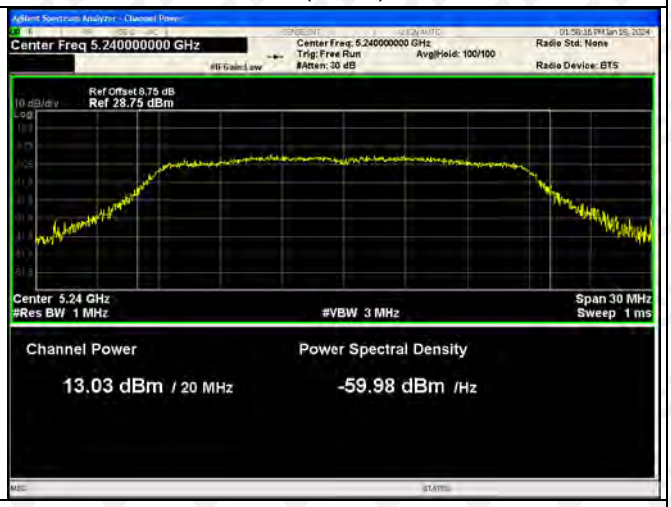

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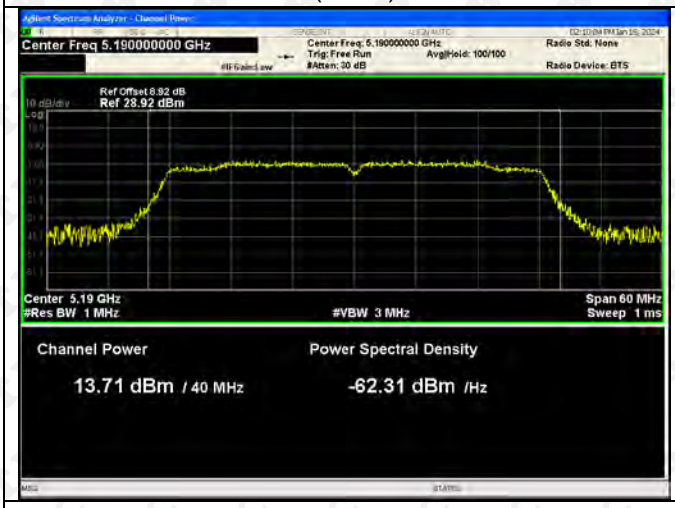

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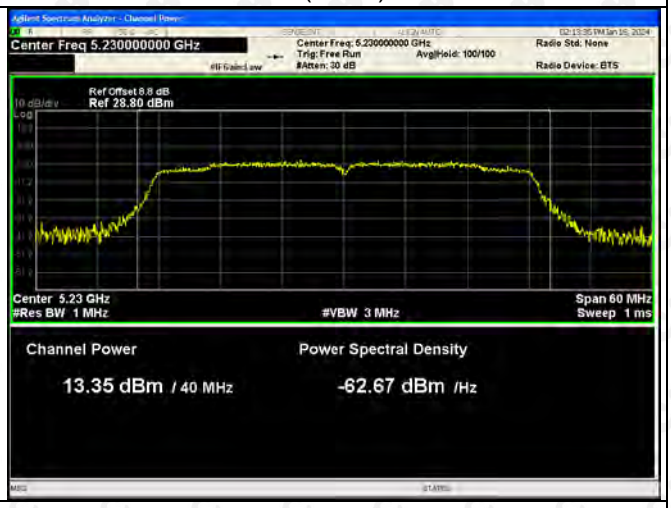

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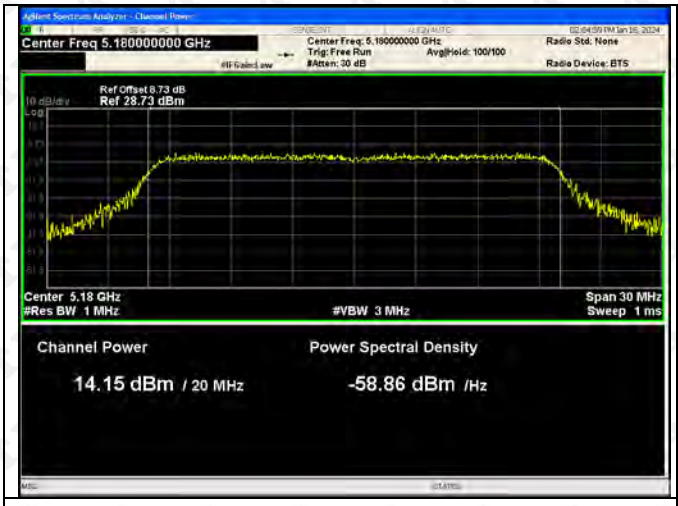

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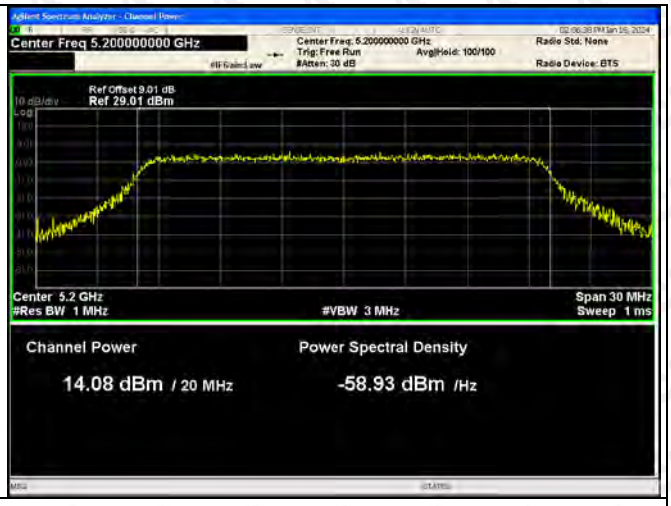

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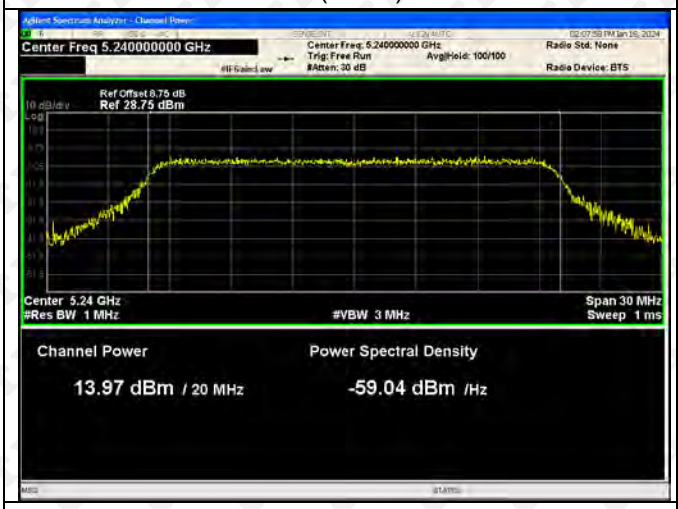

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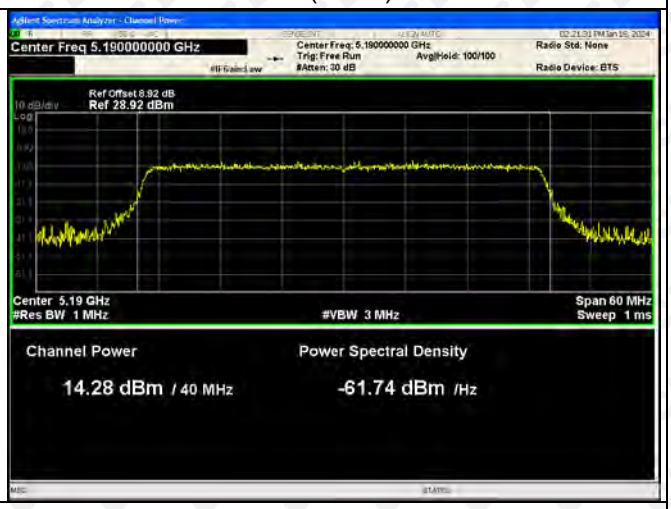

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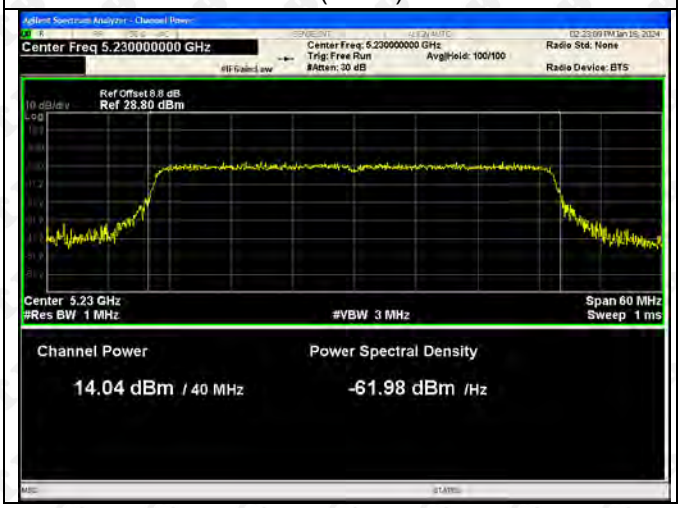
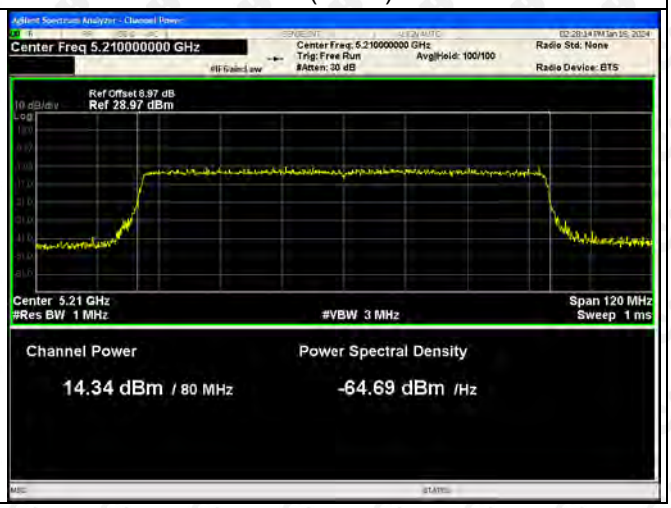
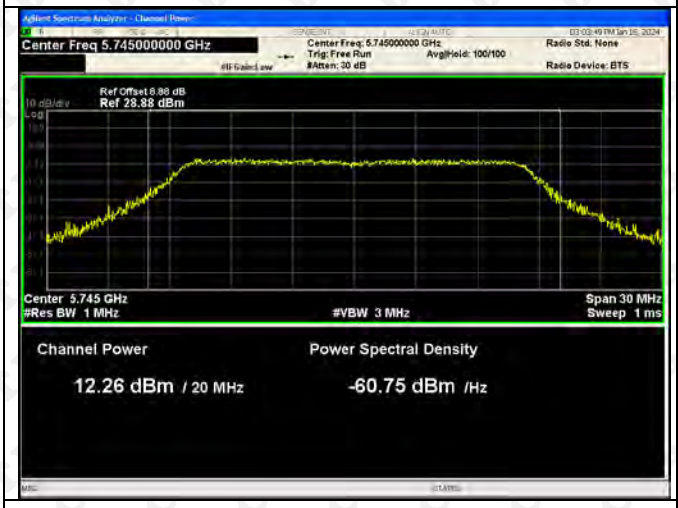




ANT2:

802.11a-5745



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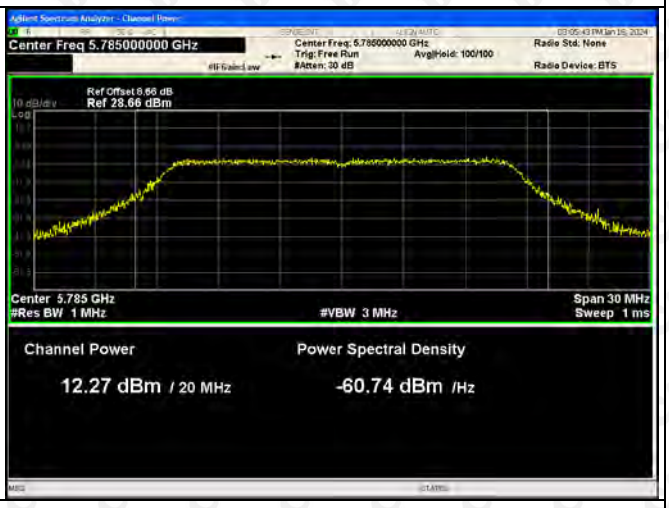

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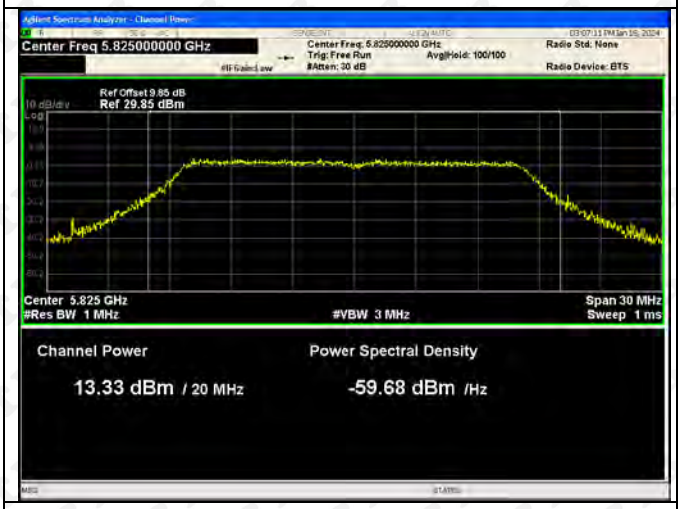

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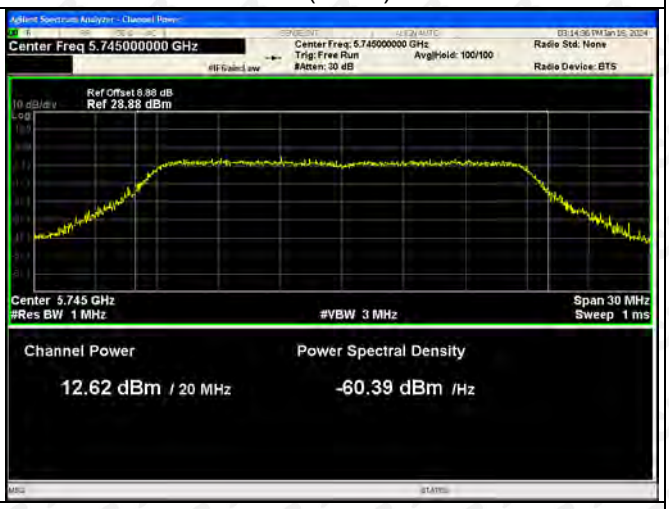

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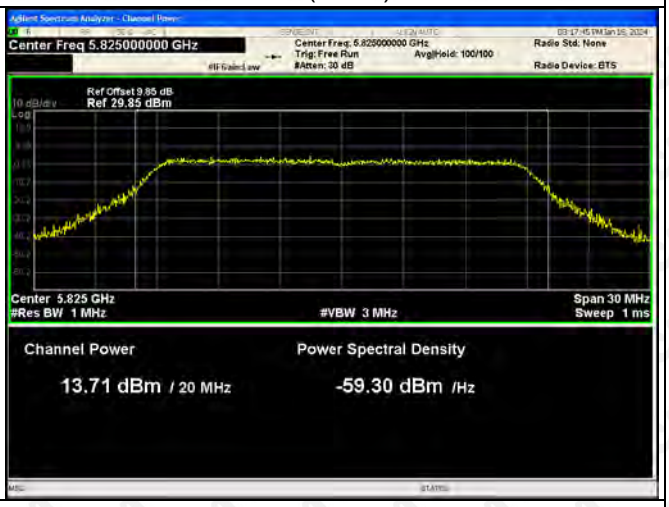
802.11ac(VH20)-5825



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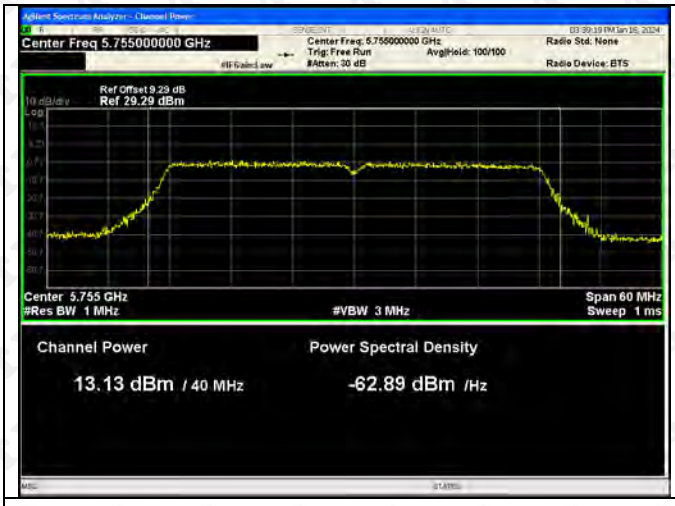

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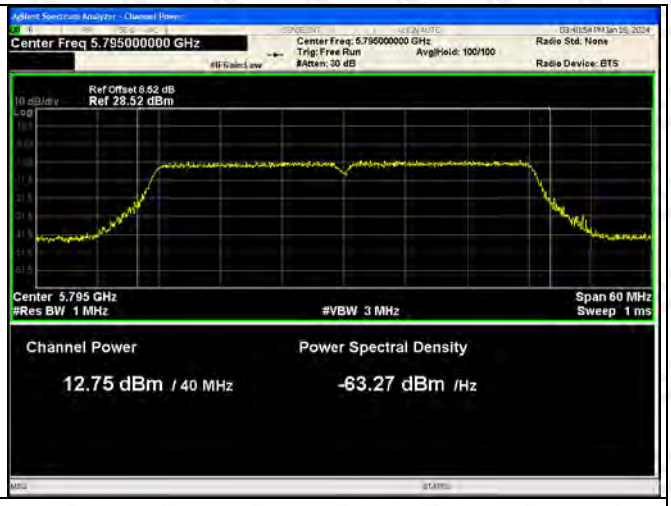

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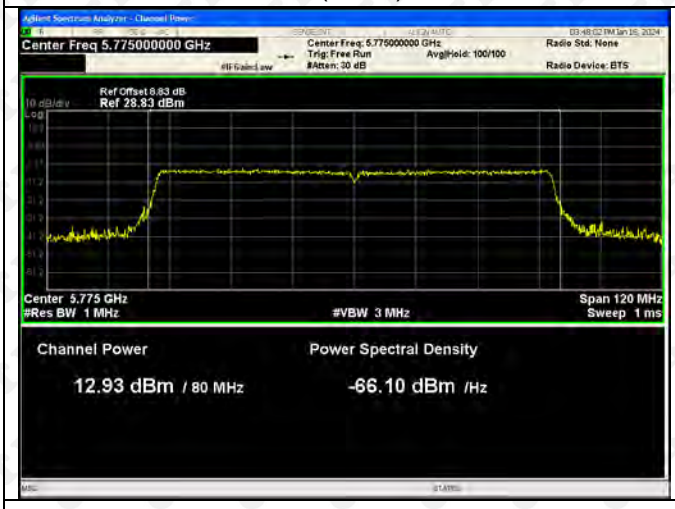

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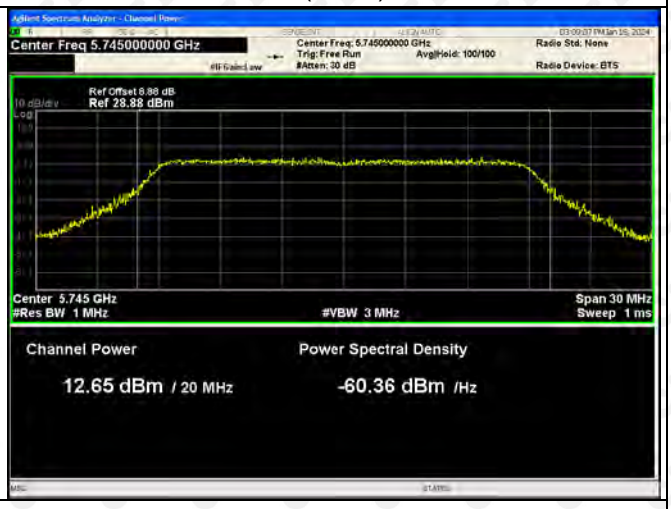

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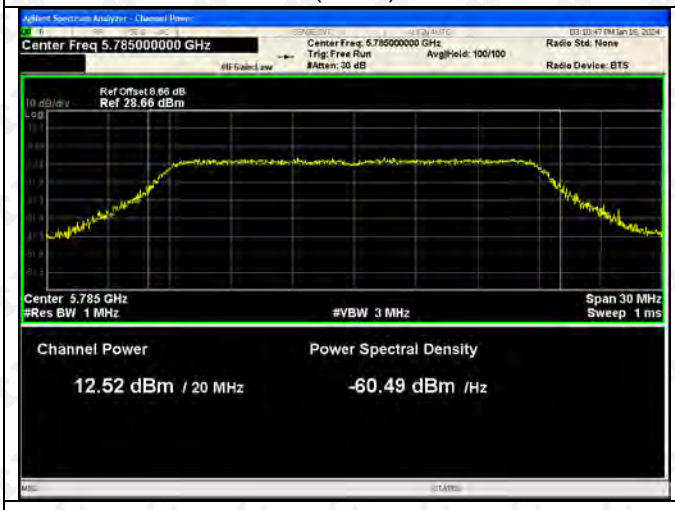

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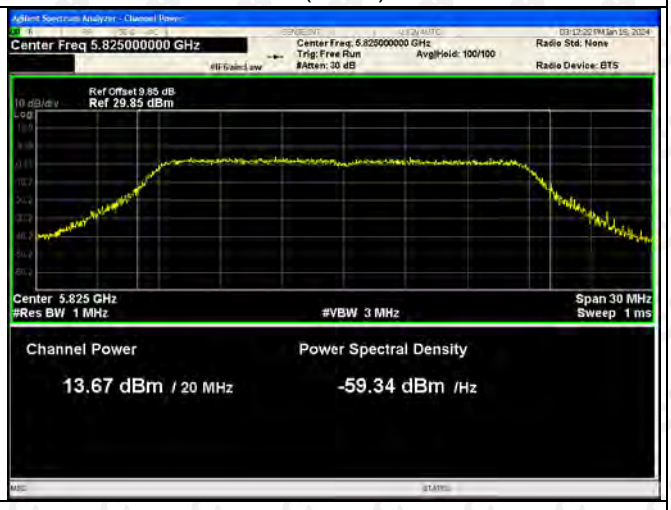

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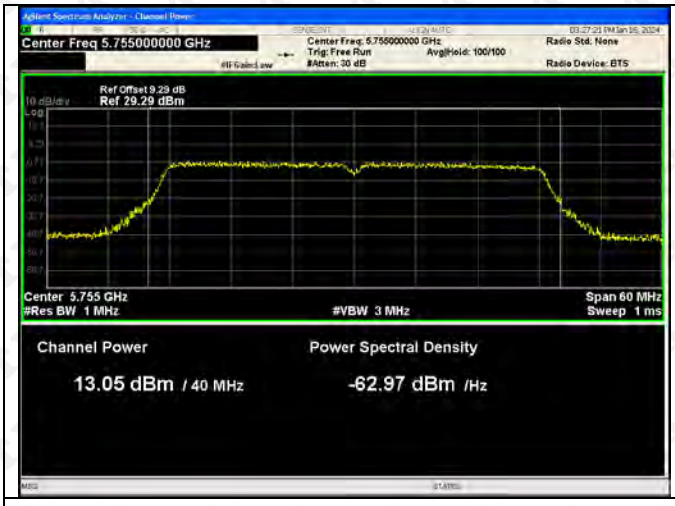

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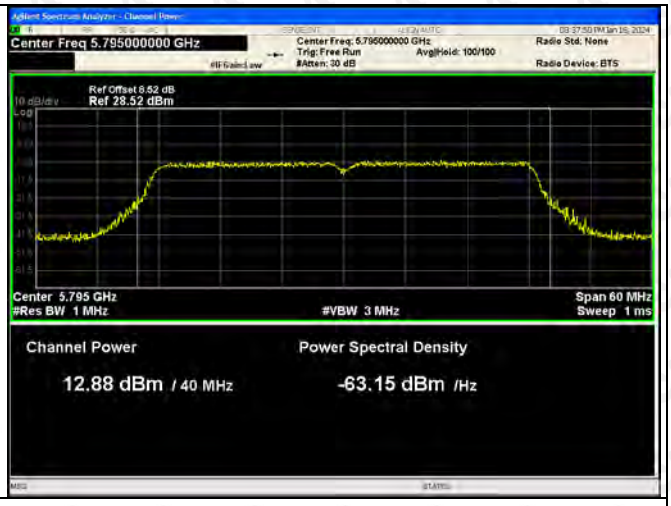

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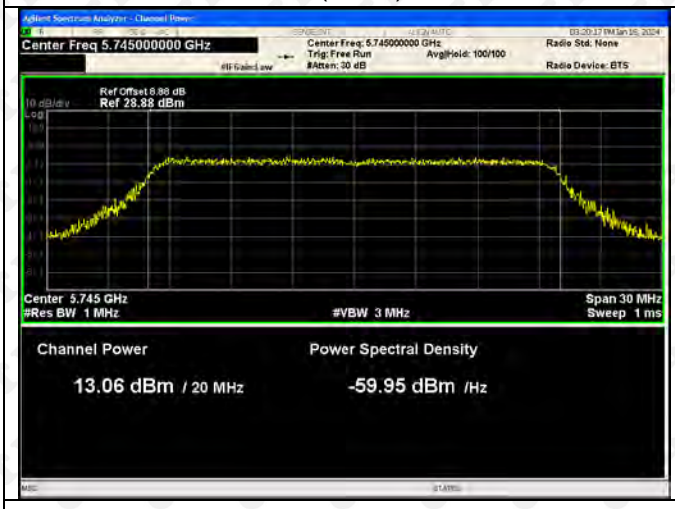

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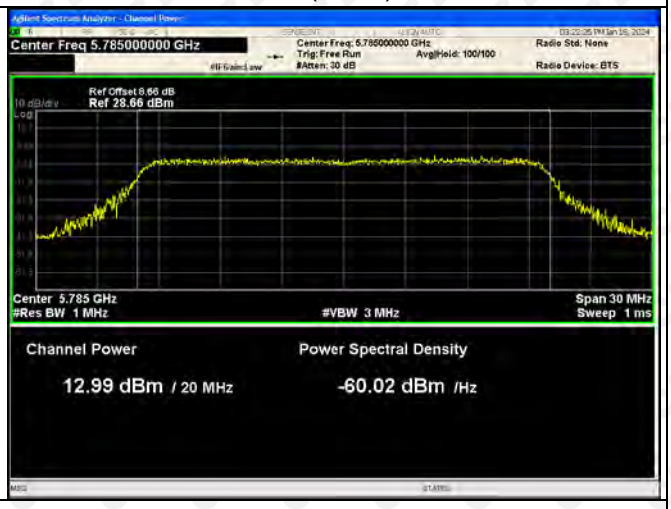

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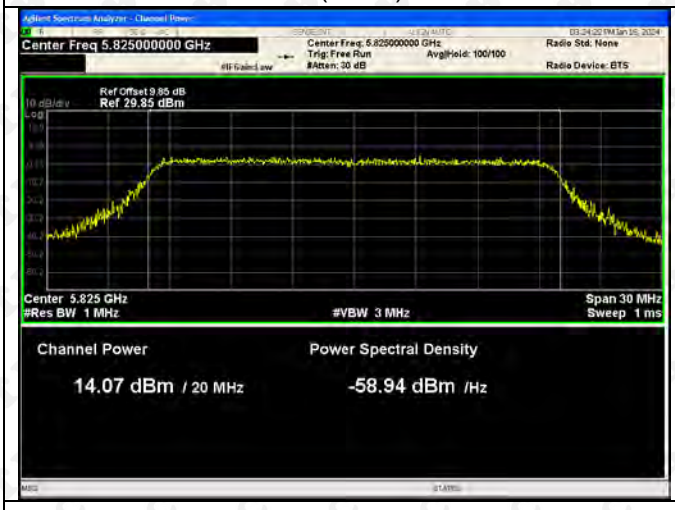

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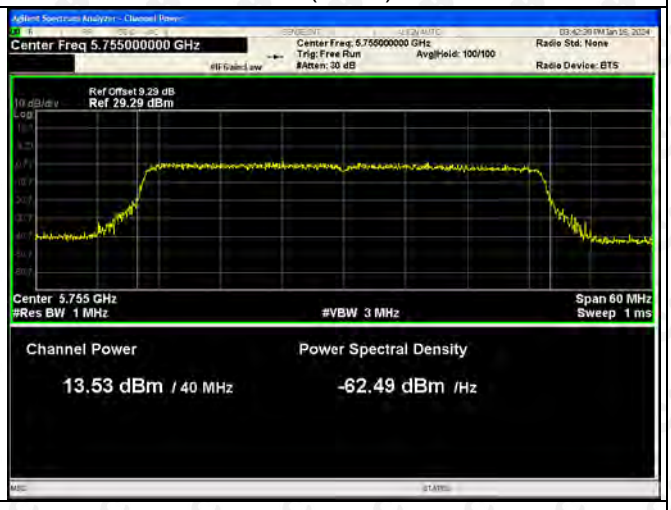

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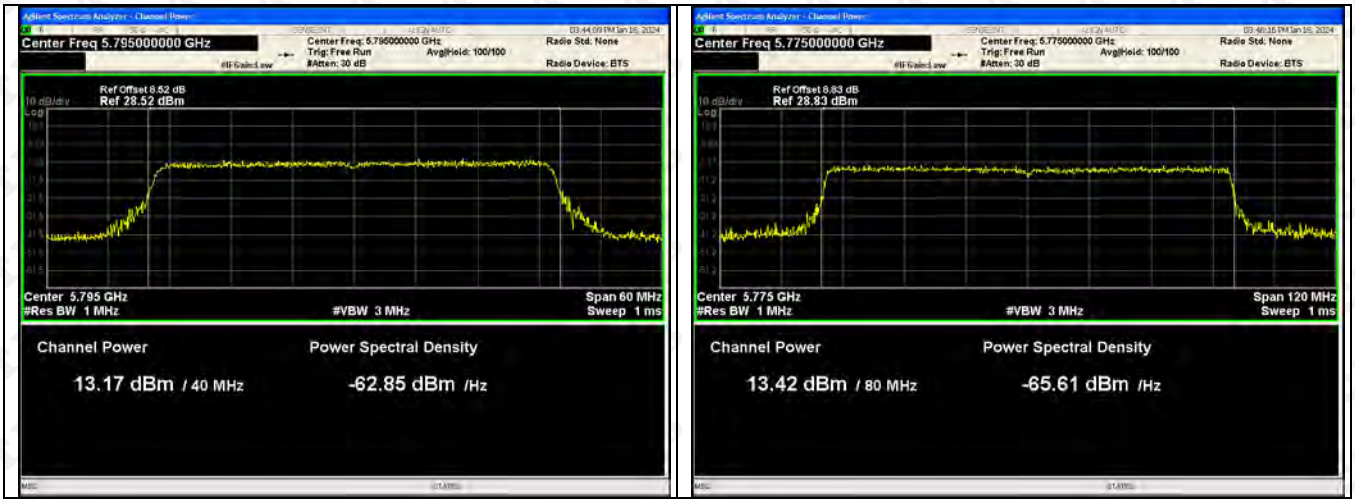
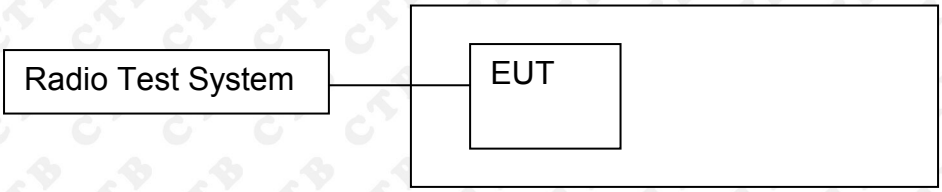

Agilent Spectrum Analyzer - Channel Power
Center Freq 5.795000000 GHz
Center Freq: 5.795000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.52 dB
10 dB/div
Ref 28.52 dBm
Center 5.795 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 60 MHz
Sweep 1 ms
Channel Power
13.17 dBm / 40 MHz
Power Spectral Density
-62.85 dBm /Hz
Agilent Spectrum Analyzer - Channel Power
Center Freq 5.775000000 GHz
Center Freq: 5.775000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Ref Offset 8.83 dB
10 dB/div
Ref 28.83 dBm
Center 5.775 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 120 MHz
Sweep 1 ms
Channel Power
13.42 dBm / 80 MHz
Power Spectral Density
-65.61 dBm /Hz

10. EMISSION BANDWIDTH& OCCUPIED BANDWIDTH

10.1 Block Diagram Of Test Setup



10.2 Limits

(1) For the band 5.15-5.25 GHz.

(iv) For mobile and portable 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.
(2) 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.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, 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, 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
(e) Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

10.3 Test Procedure

According to KDB789033 D02v02r01 sectionE, the following is the measurement procedure.

1. Emission Bandwidth (EBW)
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
2. Minimum Emission Bandwidth for the band 5.725−5.85 GHz
Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 kHz for the band 5.725−5.85 GHz. The following procedure shall be used for measuring this bandwidth:
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 * RBW.
c) Detector = Peak.

d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described in this section. For devices that use channel aggregation refer to III.A and III.C for determining emission bandwidth.

D. 99% Occupied Bandwidth

The 99% occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. Measurement of the 99% occupied bandwidth is *required* only as a condition for using the optional band-edge measurement techniques described in II.G.3.d). Measurements of 99% occupied bandwidth may also optionally be used in lieu of the EBW to define the minimum frequency range over which the 789033 D02 General UNII Test Procedures New Rules v02r01 Page 4 spectrum is integrated when measuring maximum conducted output power as described in II.E. However, the EBW must be measured to determine bandwidth dependent limits on maximum conducted output power in accordance with Section 15.407(a).
The following procedure shall be used for measuring (99%) power bandwidth:
1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 5.0 times the OBW.

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

4. Set VBW ≥ 3 * RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

6. Use the 99% power bandwidth function of the instrument (if available).

7. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

10.4 Test Results

Test mode Ant 1	Test Channel (MHz)	26dB Bandwidth (MHz)
802.11a	5180	19.328
	5200	19.456
	5240	19.483
802.11ac20	5180	20.483
	5200	20.734
	5240	20.695
802.11ac40	5190	40.021
	5230	40.152
802.11ac80	5210	80.360
802.11n(HT20)	5180	20.932
	5200	20.658
	5240	20.332
802.11n(HT40)	5190	39.111
	5230	39.223
802.11ax20	5180	22.194
	5200	21.457
	5240	21.903
802.11ax40	5190	41.096
	5230	41.062
802.11ax80	5210	81.121

Test mode Ant 2	Test Channel (MHz)	26dB Bandwidth (MHz)
802.11a	5180	20.233
	5200	19.712
	5240	19.412
802.11ac20	5180	20.711
	5200	20.759
	5240	21.166
802.11ac40	5190	40.897
	5230	40.642
802.11ac80	5210	80.244
802.11n(HT20)	5180	20.351
	5200	20.785
	5240	20.713
802.11n(HT40)	5190	39.111
	5230	39.183
802.11ax20	5180	21.846
	5200	21.964
	5240	21.704
802.11ax40	5190	40.510
	5230	40.815
802.11ax80	5210	80.892

5725-5850 MHz

Test mode Ant 1	Test Channel (MHz)	6dB Bandwidth (MHz)	Result
802.11a	5745	16.482	Pass
	5785	16.476	Pass
	5825	16.421	Pass
802.11ac20	5745	17.730	Pass
	5785	17.713	Pass
	5825	17.674	Pass
802.11ac40	5755	36.441	Pass
	5795	36.453	Pass
802.11ac80	5775	76.594	Pass
802.11n(HT20)	5745	17.686	Pass
	5785	17.726	Pass
	5825	17.758	Pass
802.11n(HT40)	5755	36.418	Pass
	5795	36.418	Pass
802.11ax20	5745	19.090	Pass
	5785	19.018	Pass
	5825	18.958	Pass
802.11ax40	5755	37.737	Pass
	5795	37.901	Pass
802.11ax80	5775	78.133	Pass

Test mode Ant 2	Test Channel (MHz)	6dB Bandwidth (MHz)	Result
802.11a	5745	16.484	Pass
	5785	16.494	Pass
	5825	16.477	Pass
802.11ac20	5745	17.757	Pass
	5785	17.768	Pass
	5825	17.718	Pass
802.11ac40	5755	36.496	Pass
	5795	36.502	Pass
802.11ac80	5775	76.560	Pass
802.11n(HT20)	5745	17.760	Pass
	5785	17.786	Pass
	5825	17.758	Pass
802.11n(HT40)	5755	36.501	Pass
	5795	36.483	Pass
802.11ax20	5745	19.018	Pass
	5785	19.013	Pass
	5825	19.040	Pass
802.11ax40	5755	38.020	Pass
	5795	38.072	Pass
802.11ax80	5775	78.121	Pass

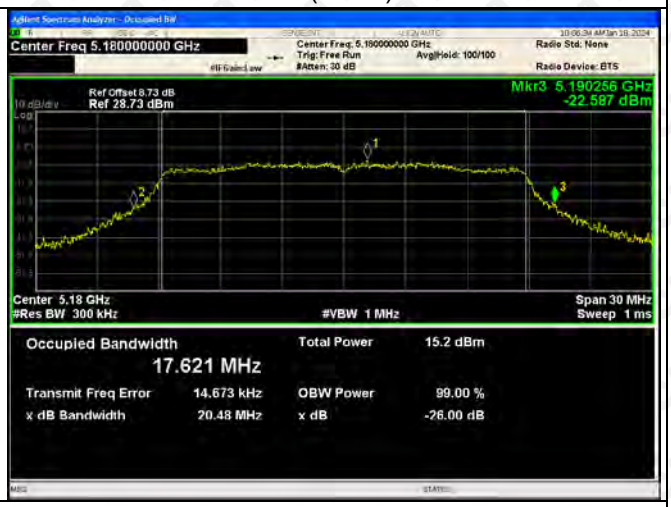
Test Graph ANT 1

802.11a-5180

802.11a-5200

802.11a-5240

802.11ac(VH20)-5180

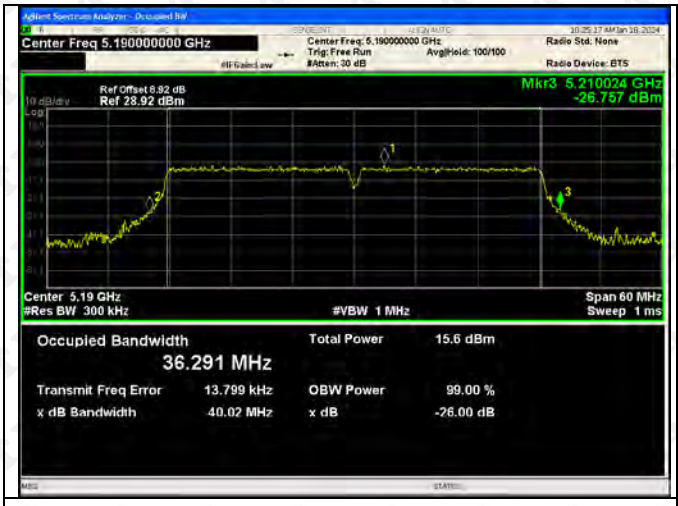


802.11ac(VH20)-5200

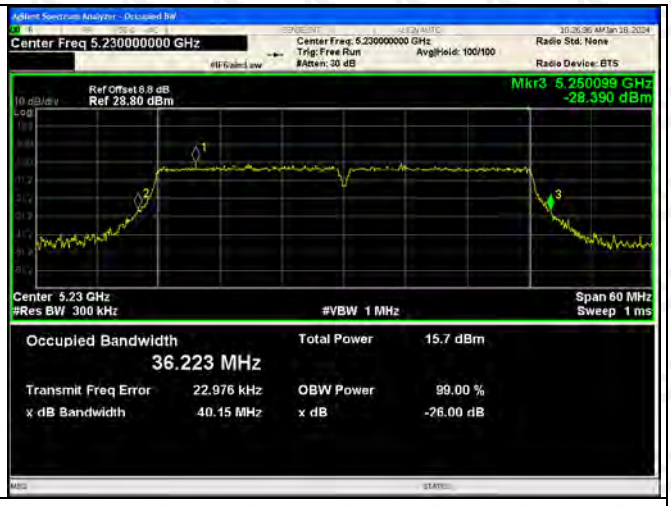
802.11ac(VH20)-5240

802.11ac(VH40)-5190

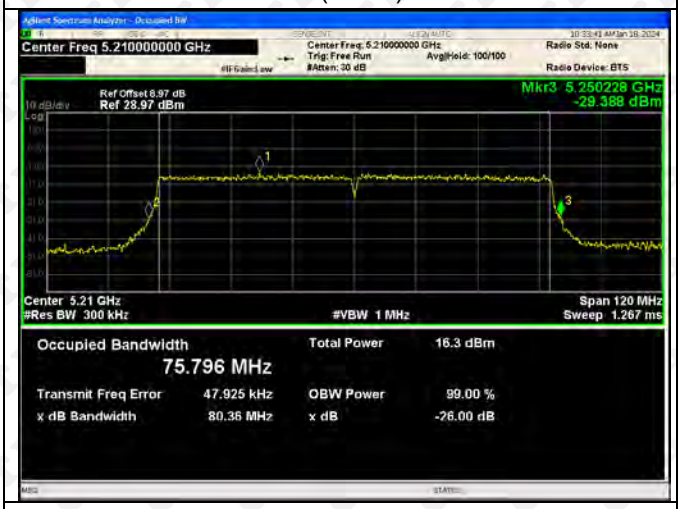
802.11ac(VH40)-5230



802.11ac(VH80)-5210



802.11n(HT20)-5180

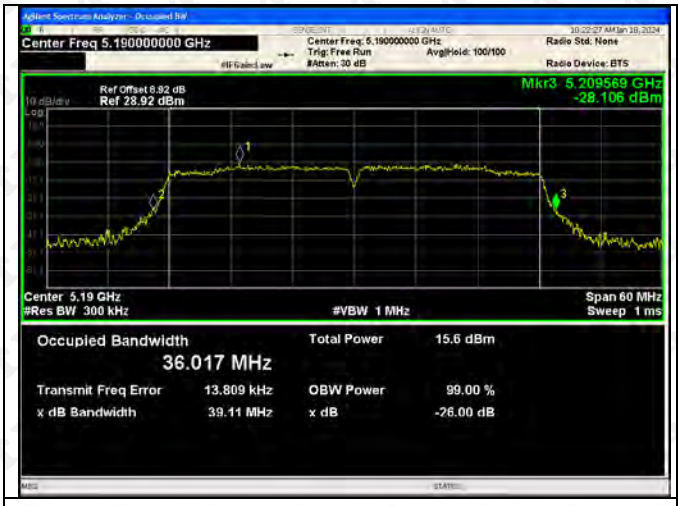


802.11n(HT20)-5200

802.11n(HT20)-5240

802.11n(HT40)-5190

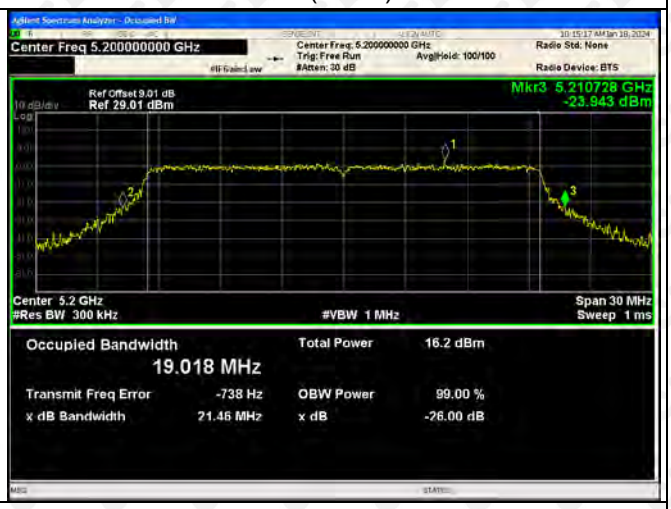
802.11n(HT40)-5230



802.11ax(VH20)-5180

802.11ax(VH20)-5200

802.11ax(VH20)-5240



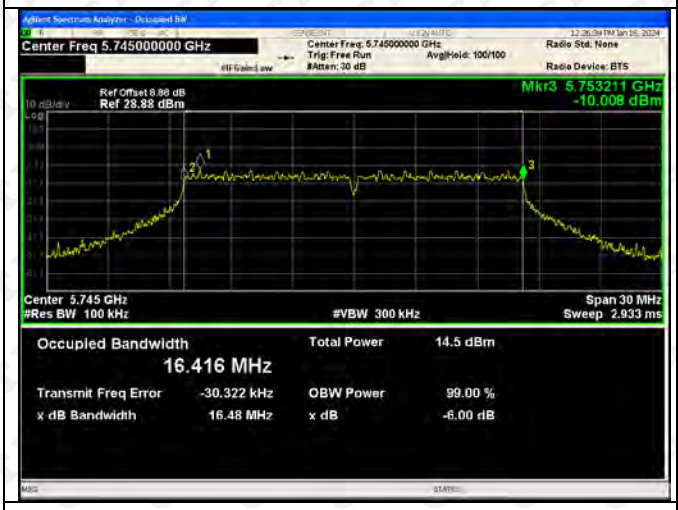
802.11ax(VH40)-5190

802.11ax(VH40)-5230

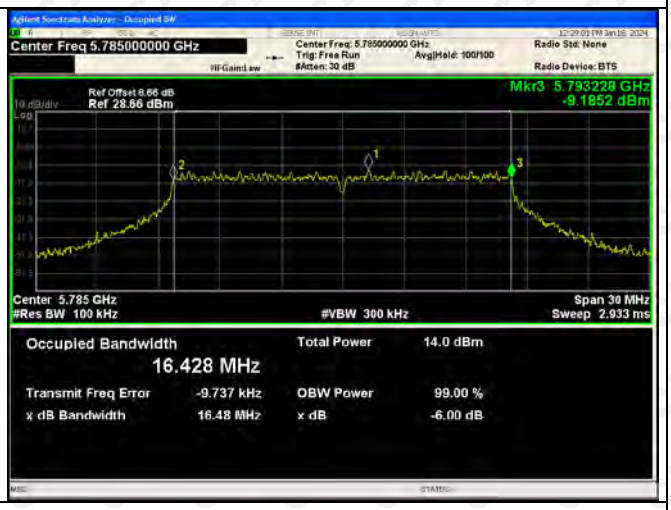
802.11ax(VH80)-5210

ANT1:
5725-5850MHz

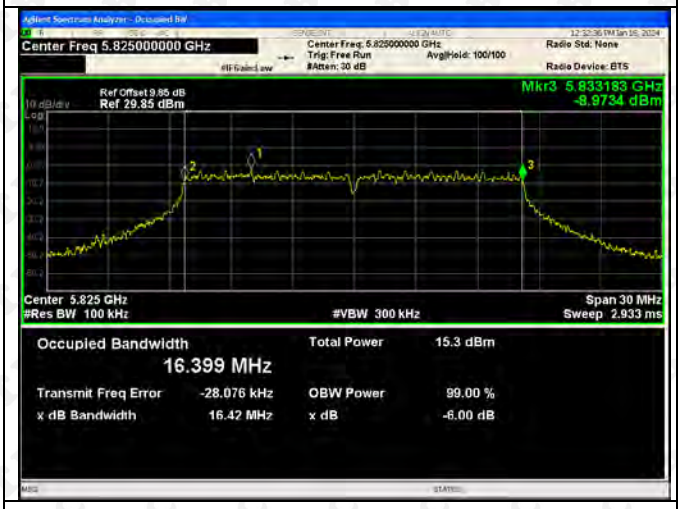
802.11a-5745



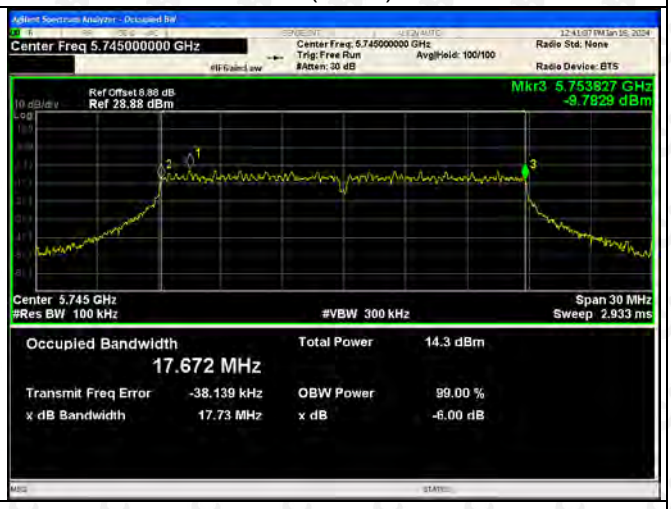
802.11a-5785



802.11a-5825

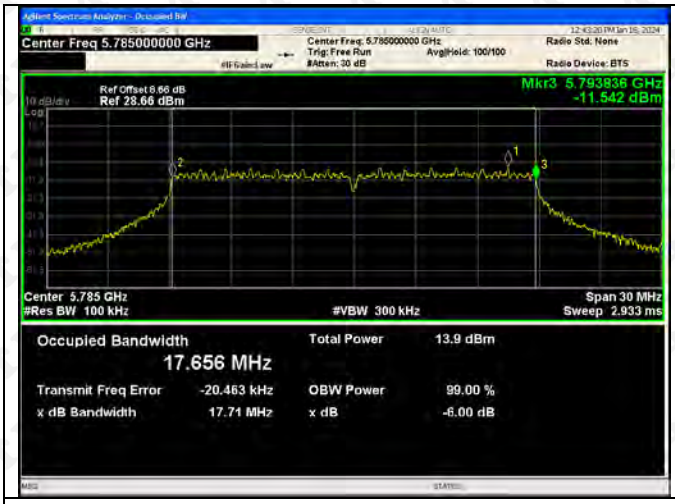


802.11ac(VH20)-5745



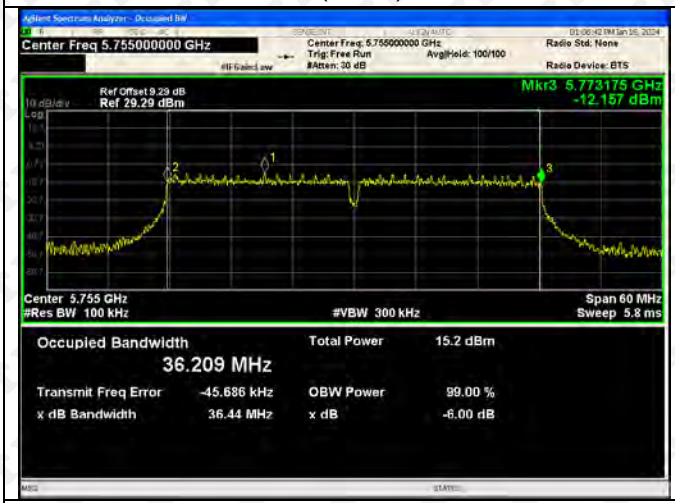
802.11ac(VH20)-5785

802.11ac(VH20)-5825

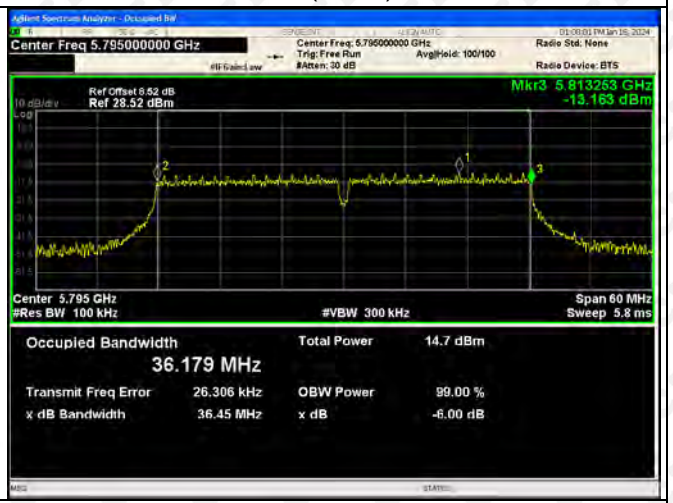


802.11ac(VH40)-5755

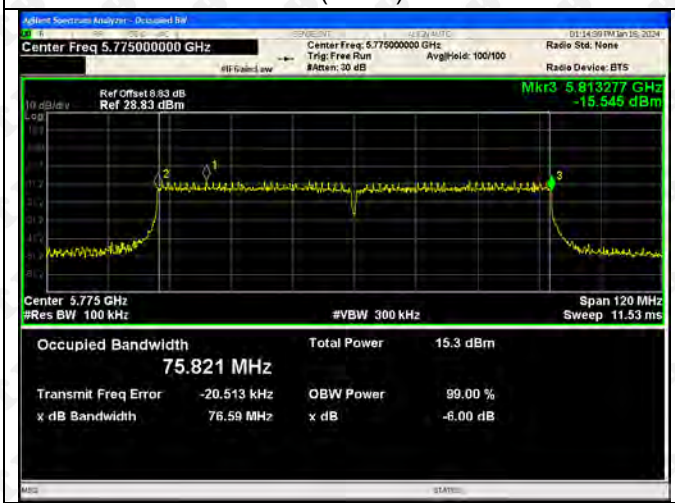
802.11ac(VH40)-5795



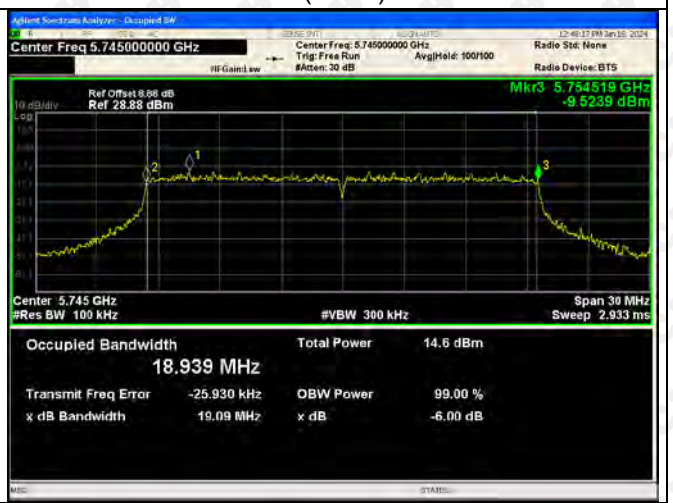
802.11ac(VH80)-5775



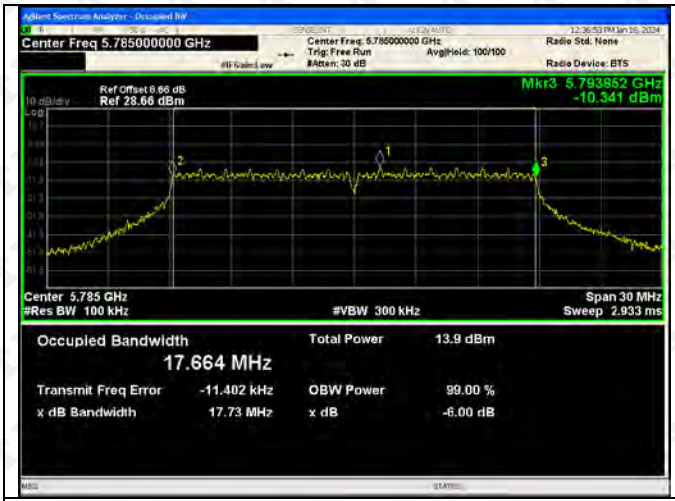
802.11n(HT20)-5745



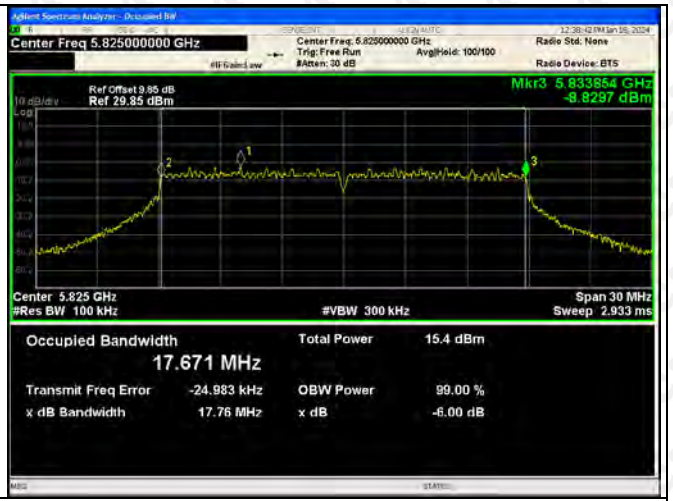
802.11n(HT20)-5785



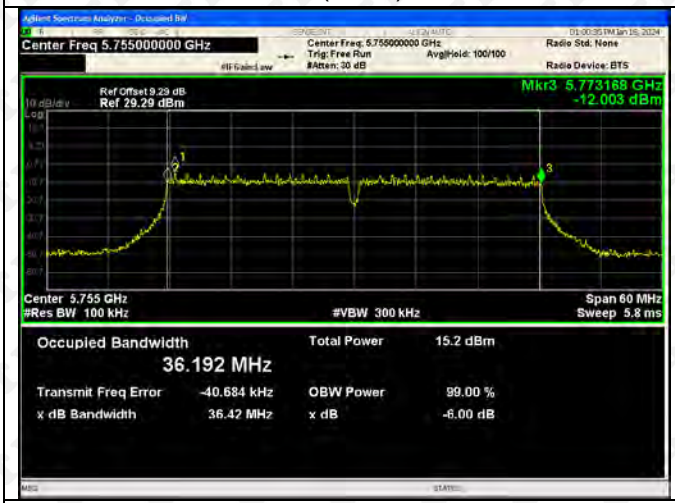
802.11n(HT20)-5825



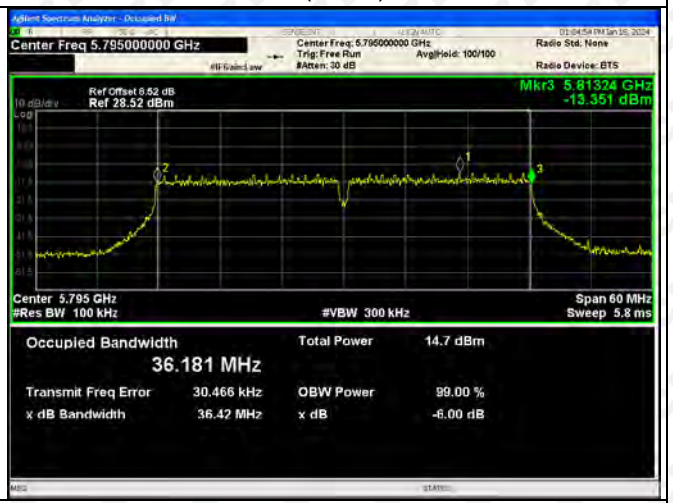
5802.11n(HT40)-5755



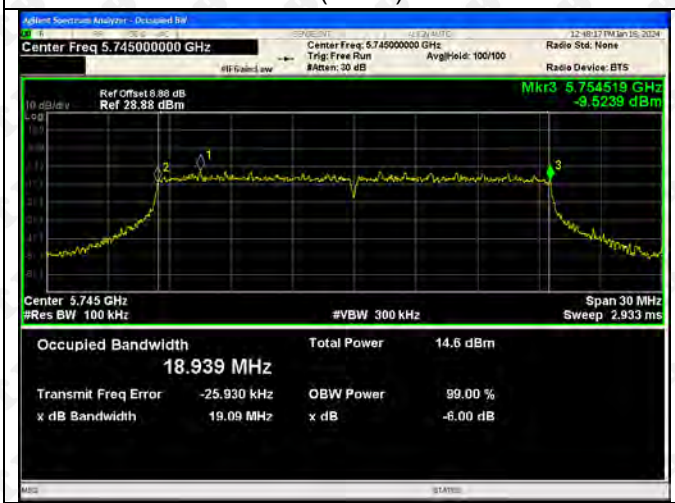
802.11n(HT40)-5795



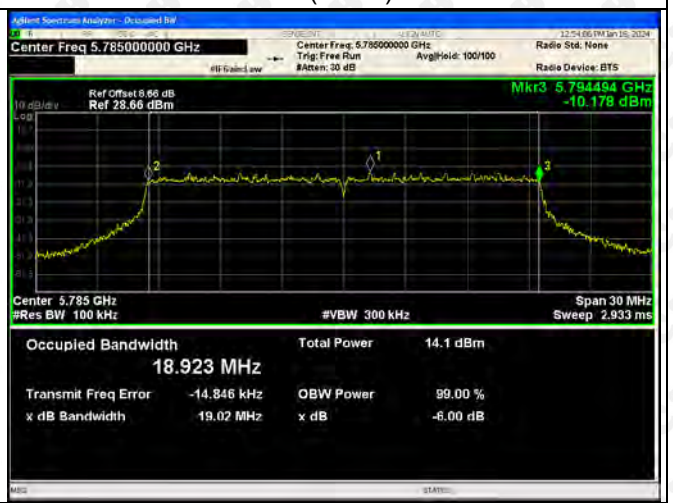
802.11ax(VH20)-5745



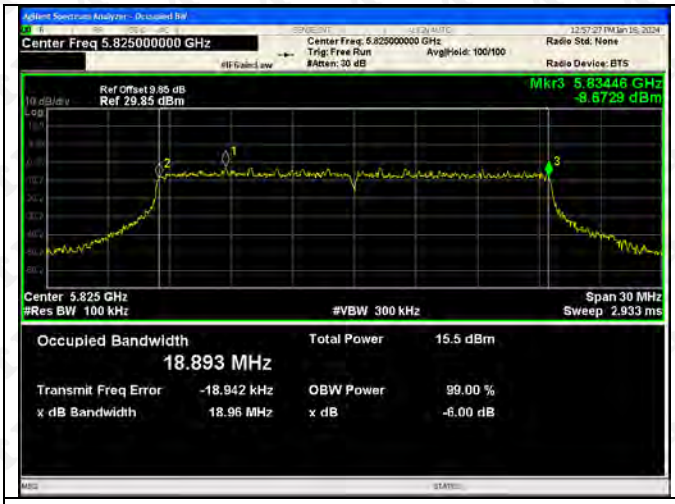
802.11ax(VH20)-5785



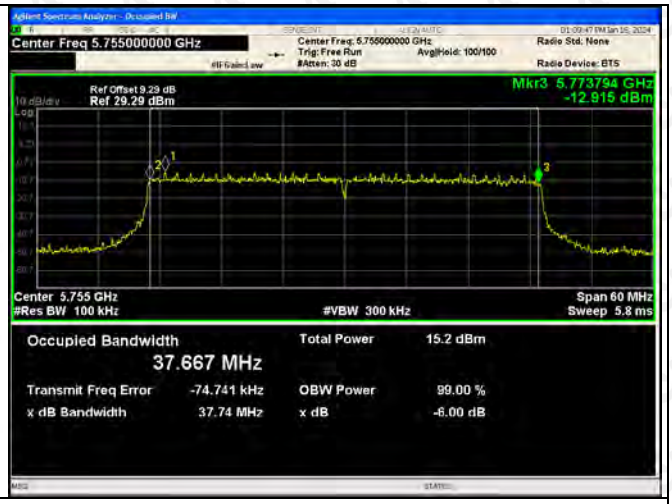
802.11ax(VH20)-5825



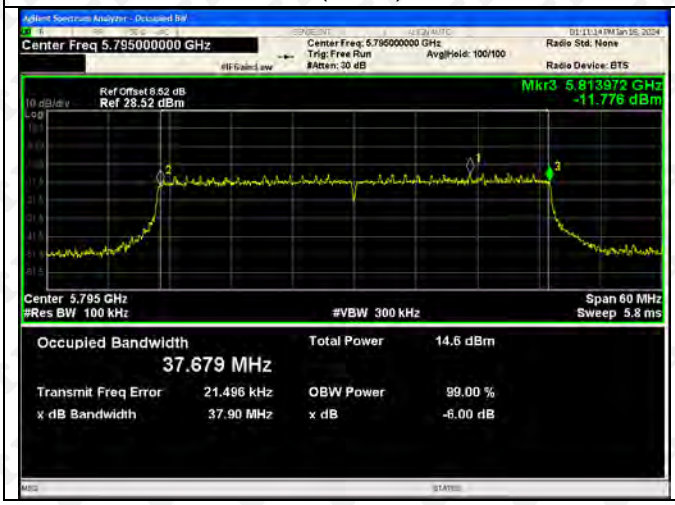
802.11ax(VH40)-5755

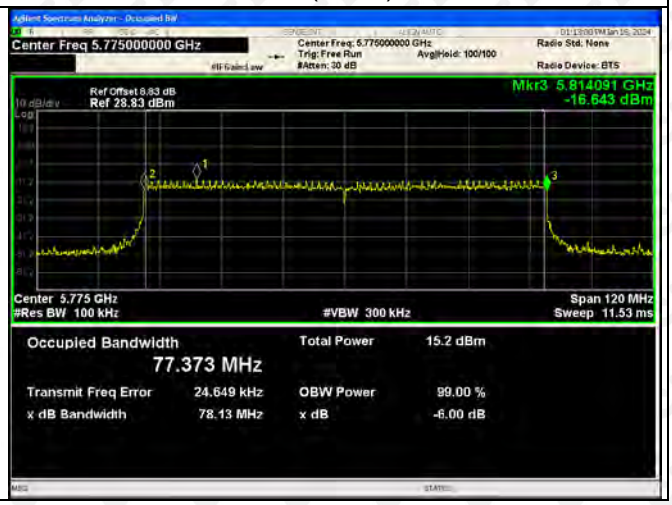


802.11ax(VH40)-5795



802.11ax(VH80)-5775





Test Graph ANT 2

802.11a-5180

802.11a-5200

802.11a-5240

802.11ac(VH20)-5180

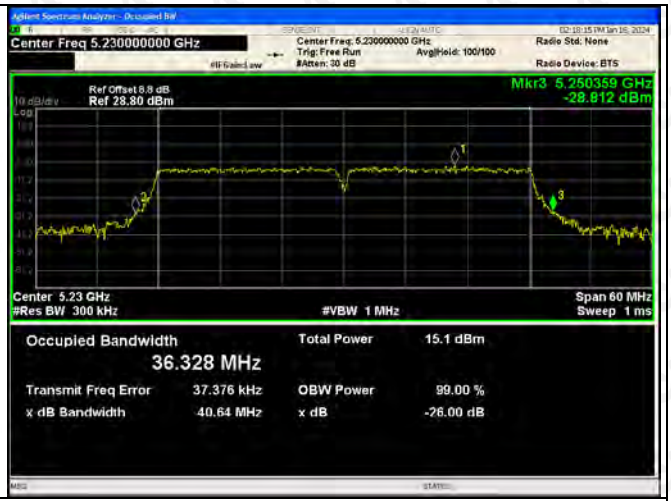
802.11ac(VH20)-5200

802.11ac(VH20)-5240

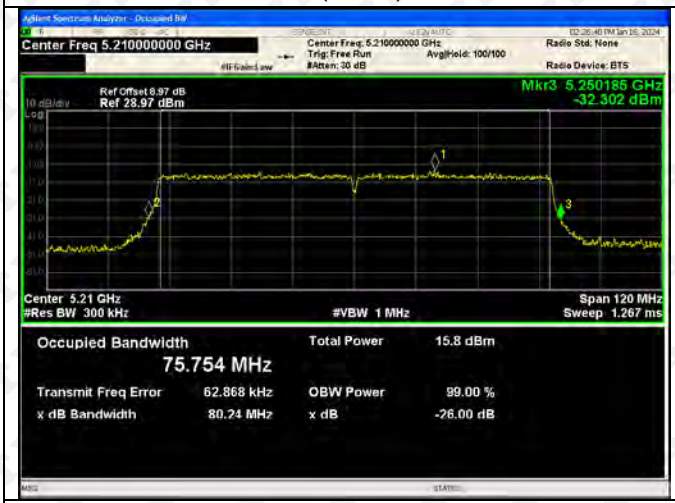
802.11ac(VH40)-5190

802.11ac(VH40)-5230

802.11ac(VH80)-5210



802.11n(HT20)-5180



802.11n(HT20)-5200

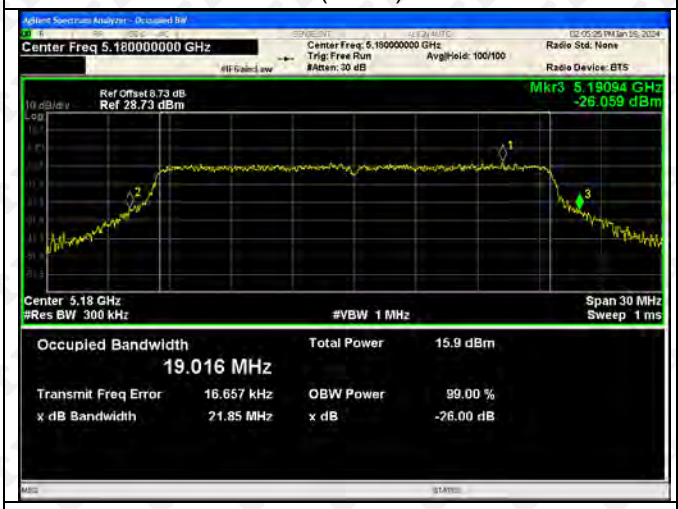
802.11n(HT20)-5240

802.11n(HT40)-5190

802.11n(HT40)-5230

802.11ax(VH20)-5180

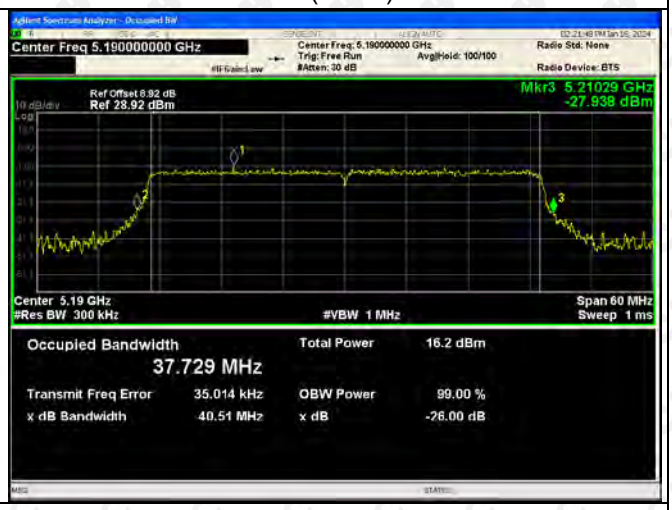
802.11ax(VH20)-5200



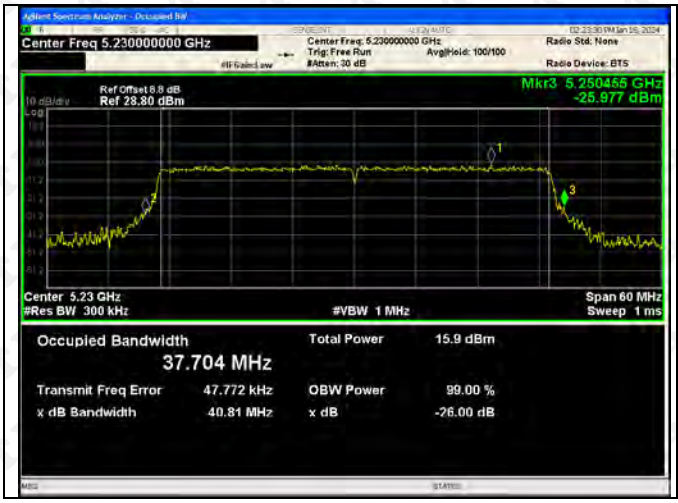
802.11ax(VH20)-5240

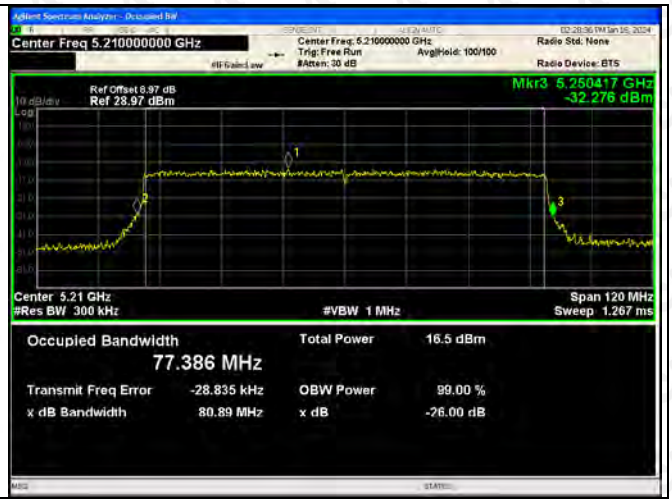
802.11ax(VH40)-5190

802.11ax(VH40)-5230



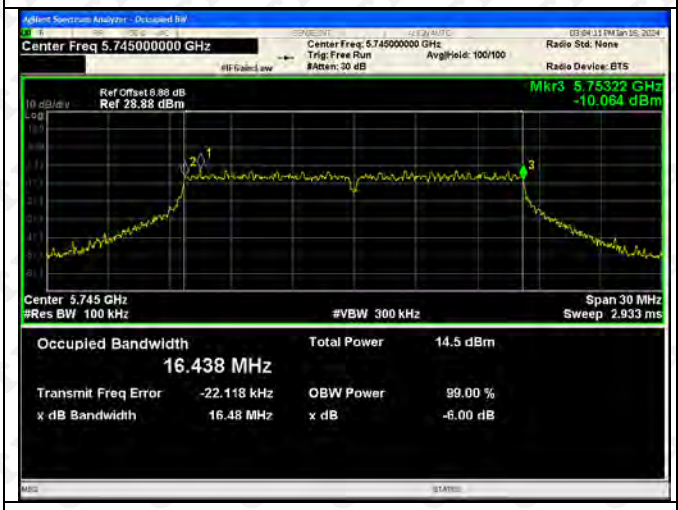
802.11ax(VH80)-5210



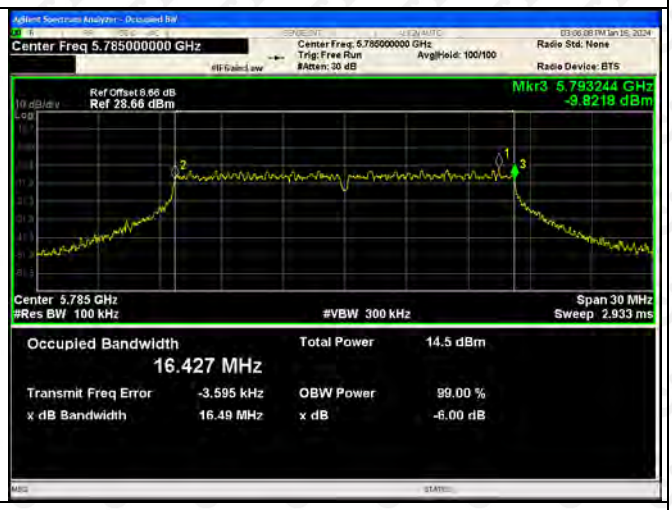


ANT2:
5725-5850MHz

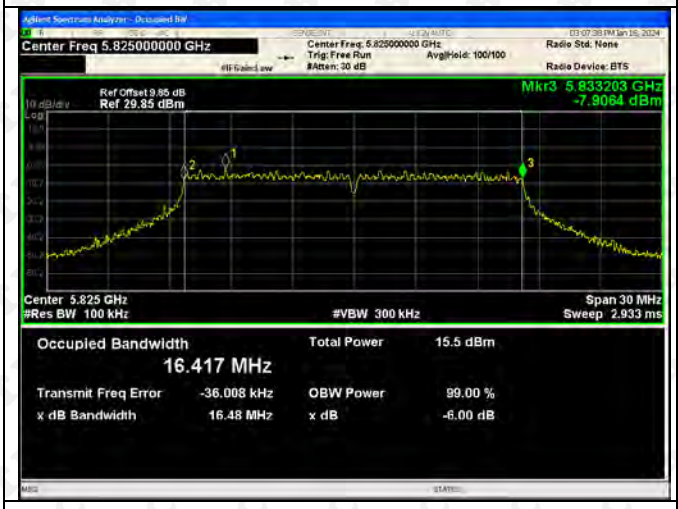
802.11a-5745



802.11a-5785



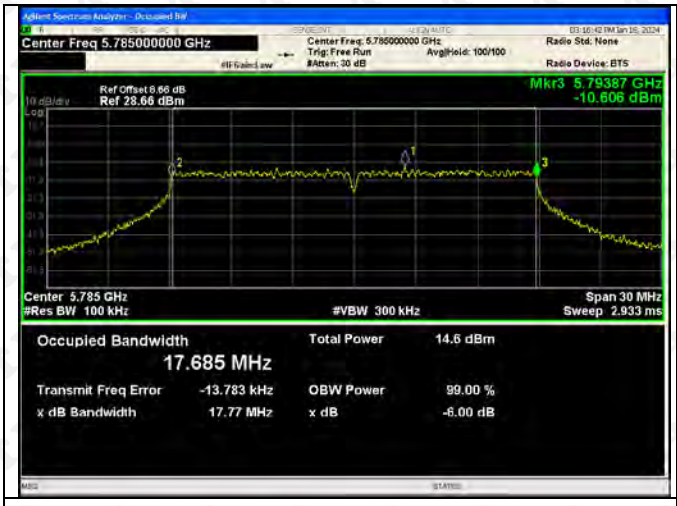
802.11a-5825



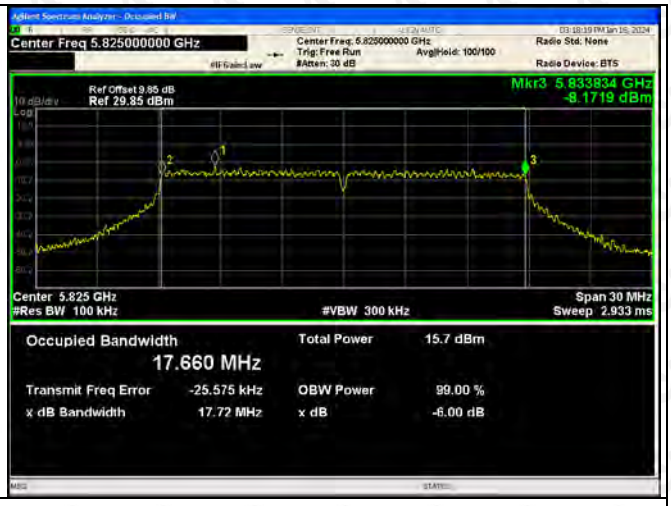
802.11ac(VH20)-5745

802.11ac(VH20)-5785

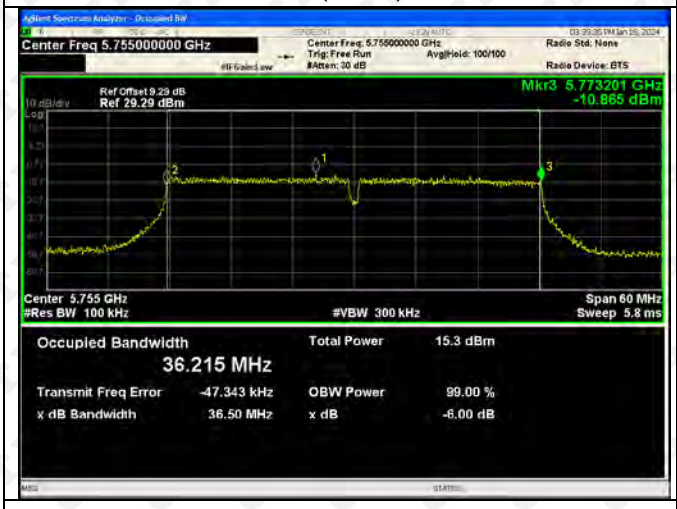
802.11ac(VH20)-5825



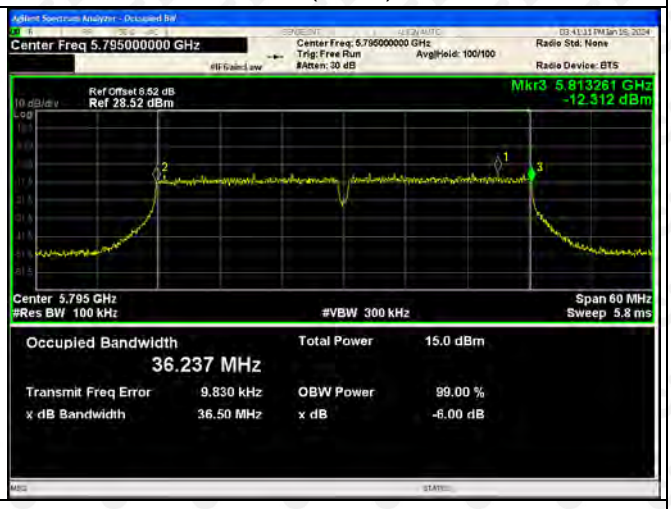
802.11ac(VH40)-5755



802.11ac(VH40)-5795



802.11ac(VH80)-5775



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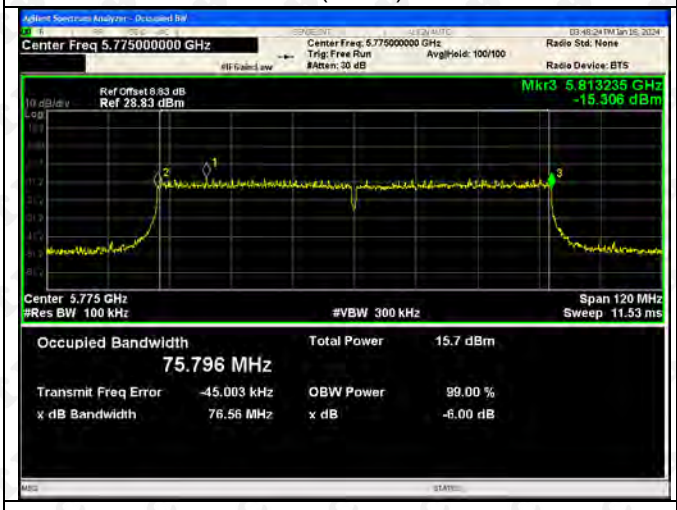

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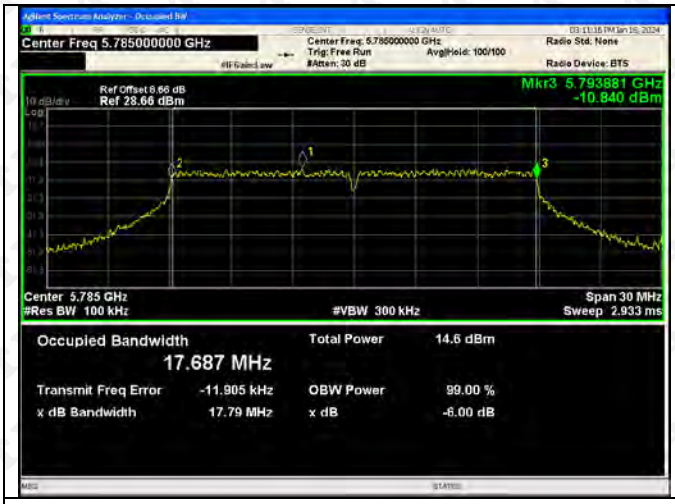

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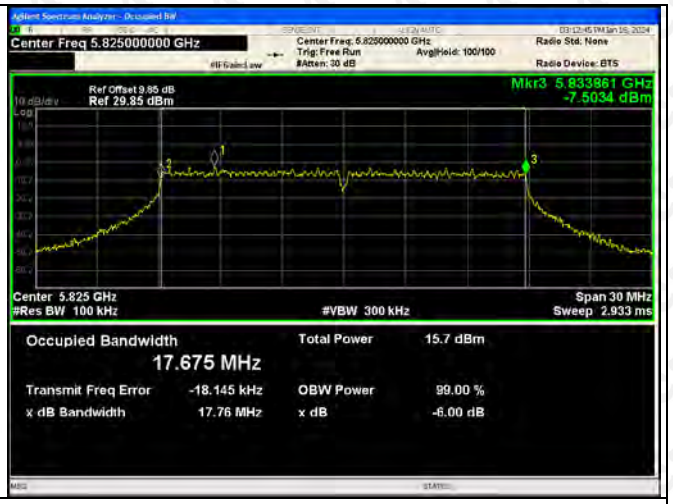

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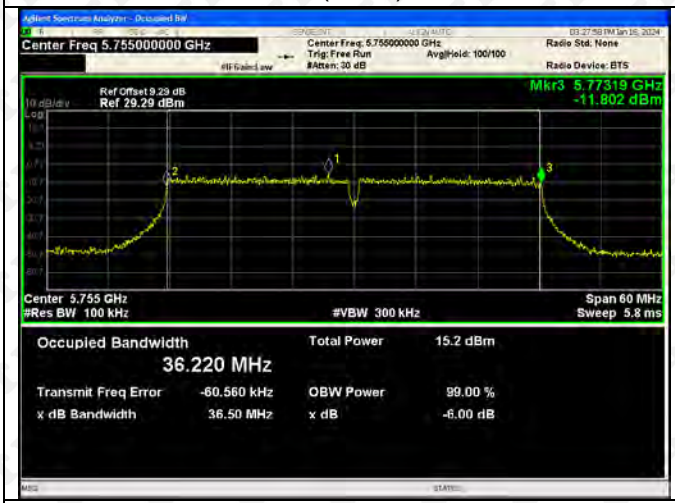

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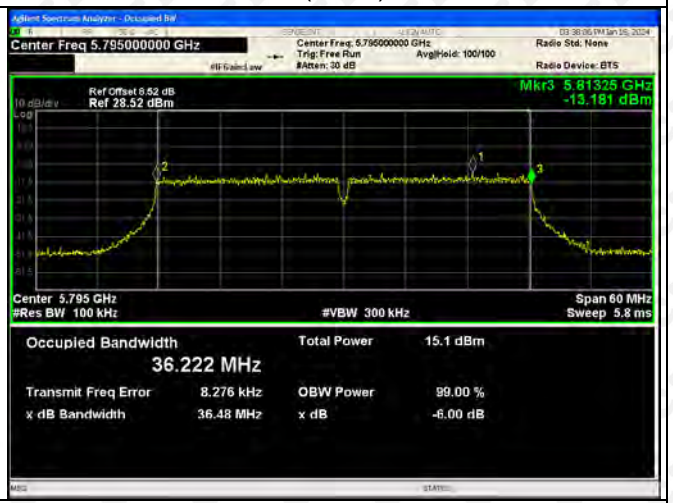

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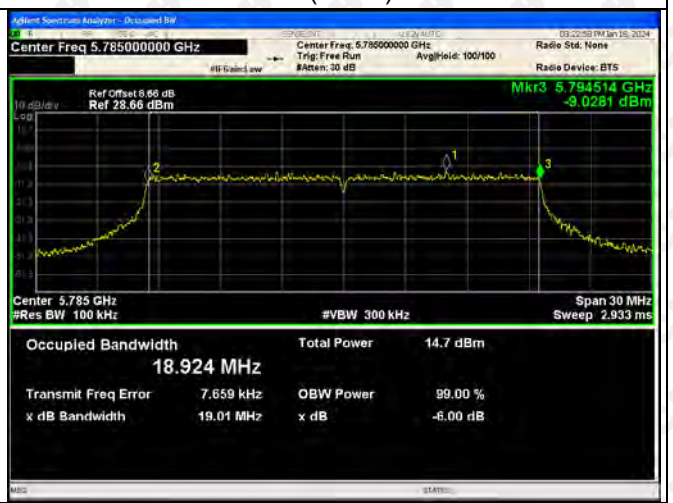

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