



TEST REPORT

Product Name: NOTE BOOK
FCC ID: 2BLRA-NA01
Trademark: WVX
Model Number: Portablebook-A01, Portablebook
Prepared For: Shenzhen SA-Peace Technology Co. , Ltd.
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Sample Received Date: Jan. 06, 2025
Sample tested Date: Jan. 06, 2025 to Feb. 19, 2025
Issue Date: Feb. 19, 2025
Report No.: CTB25010610202RF03
Test Standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247
ANSI C63.10:2013
Test Results: PASS
Remark: This is WIFI-2.4GHz band radio test report.

Compiled by:

Reviewed by:

Approved by:

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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
CTB25010610202RF03	Feb. 19, 2025	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 C Section 15.207	ANSI C63.10-2013	PASS
Radiated Spurious emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Band edge and RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)/15.205(a)	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013/ KDB 558074 D01 v05r02	PASS
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (b)	/	PASS
RF Exposure Evaluation	47 CFR Part 15 Subpart C Section 15.247 (i)/1.1310/2.1091	KDB447498D01v06	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
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 chamber Radiated spurious emission(9KHz-30MHz)	U=±4.8dB
3m chamber Radiated spurious emission(30MHz-1GHz)	U=±4.3dB
3m chamber Radiated spurious emission(1GHz-18GHz)	U=±4.5dB
3m chamber Radiated spurious emission(1GHz-40GHz)	U=±4.8dB
humidity uncertainty	U=±5.3%
Temperature uncertainty	U=±0.59℃
Supply voltages	U=±3%
Time	U=±5%
Conducted Emission (9KHz-30MHz)	3.2 dB

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	Portablebook-A01, Portablebook
Model Description:	All the model are the same circuit and RF module, only the name is different. Test sample model: Portablebook-A01
Wi-Fi Specification:	IEEE 802.11b/g/n/ax
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	WiFi (2.4G): IEEE 802.11b/g/n/ax20: 2412-2462MHz/ 11 channel IEEE 802.11n/ax40: 2422-2452MHz/ 7 channel
Max. RF output power:	WiFi (2.4G): 9.462dBm
Type of Modulation:	WiFi (2.4G): DSSS, OFDM, OFDMA
Antenna installation:	WiFi (2.4G): FPC antenna
Antenna Gain:	WiFi (2.4G): Ant1: 1.18dBi; Ant2: 3.11dBi
Ratings:	Adapter input: 100V~240V,50-60Hz,1.0A Adapter output: 12.0V=3.0A,36.0W 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	Monitor	DELL	SE2218HV	N/A	AE
2	Router	Huawei	AX2 Pro	/	AE

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

CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
1	2412	2	2417	3	2422	4	2427
5	2432	6	2437	7	2442	8	2447
9	2452	10	2457	11	2462	/	/

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.

ANT 1, ANT 2

Test mode	Low channel	Middle channel	High channel
Transmitting(802.11b/g/n/ax20)	2412MHz	2437MHz	2462MHz
Transmitting(802.11n/ax40)	2422MHz	2437MHz	2452MHz

MIMO(ANT 1+ANT 2)

Test mode	Low channel	Middle channel	High channel
Transmitting(802.11n/ax20)	2412MHz	2437MHz	2462MHz
Transmitting(802.11n/ax40)	2422MHz	2437MHz	2452MHz

NOTE: Dutycycle>98%.

Test mode	Rate
802.11b	11M
802.11g	54M
802.11n20	65M
802.11n40	65M
802.11/ax20	65M
802.11/ax40	65M

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	7.6V
Normal Temperature(°C)	23
Low Temperature(°C)	0
High Temperature(°C)	50

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, Xinghe Road, Xingqiao, Xingqiao 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.

the test lab designation number CN1276

5.2 Test Instrument Used

No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	A.14.16	2025/6/28
2	Power Sensor	Agilent	U2021XA	MY56120032	/	2025/6/28
3	Power Sensor	Agilent	U2021XA	MY56120034	/	2025/6/28
4	Communication test set	R&S	CMW500	108058	V3.5.80	2025/6/28
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/6/28
6	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2025/6/28
7	Vector signal generator	Agilent	N5182A	MY47420195	A.01.87	2025/6/28
8	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/6/28
9	2.4 GHz Filter	Shenxiang	MSF2400-24 83.5MS-1154	20181015001	/	2025/6/30
10	5 GHz Filter	Shenxiang	MSF5150-58 50MS-1155	20181015001	/	2025/6/30
11	Filter	Xingbo	XBLBQ-DZA 120	190821-1-1	/	2025/6/30
12	BT&Wi-Fi Automatic test software	Microwave	MTS8310	Ver. 2.0.0.0	/	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	/	2025/6/28
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	/	2025/6/28
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/	/
16	966 chamber	C.R.T.	966	/	/	2027/6/21
17	Receiver	R&S	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/6/28
18	Amplifier	HP	8447E	2945A02747	/	2025/6/28
19	Amplifier	Agilent	8449B	3008A01838	/	2025/6/28
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/28

21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	/	2025/6/28
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/28
24	loop antenna	ZHINAN	ZN30900A	GTS534	/	/
25	40G Horn antenna	A/H/System	SAS-574	588	/	2025/6/28
26	Amplifier	AEROFLEX	Aeroflex	097	/	2025/6/28
27	Power Metter	KEYSIGHT	N1912AP	N/A	A.05.00	2025/6/28

Continuous disturbance						
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until
1	843 Shield Room	C/ R/ T	843	/	/	2027/6/21
2	AMN	ROHDE&SCHWARZ	ESH3-Z5	831551852	/	2025/6/30
3	Pulse limiter	ROHDE&SCHWARZ	ESH3Z2	357881052	/	2025/6/28
4	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428	V4.42.SP3	2025/6/30
5	Coaxial cable	ZDECL	Z302S	18091904	/	2025/6/30
6	ISN	Schwarzbeck	NTFM8158	183	/	2025/6/30
7	Voltage sensor	Schwarzbeck	TK 9420	01189	/	2025/10/25
8	EZ-EMC	Frad	EMC-con3A1.1	/	/	/
9	Current Probe	FCC	F-52B	199453	/	2025/5/27
10	Communication test set	R&S	CMW500	108058	B.19.07 (E1962B)	2025/6/28
11	Communication test set	Agilent	E5515C	MY50102567	V3.5.80	2025/6/28

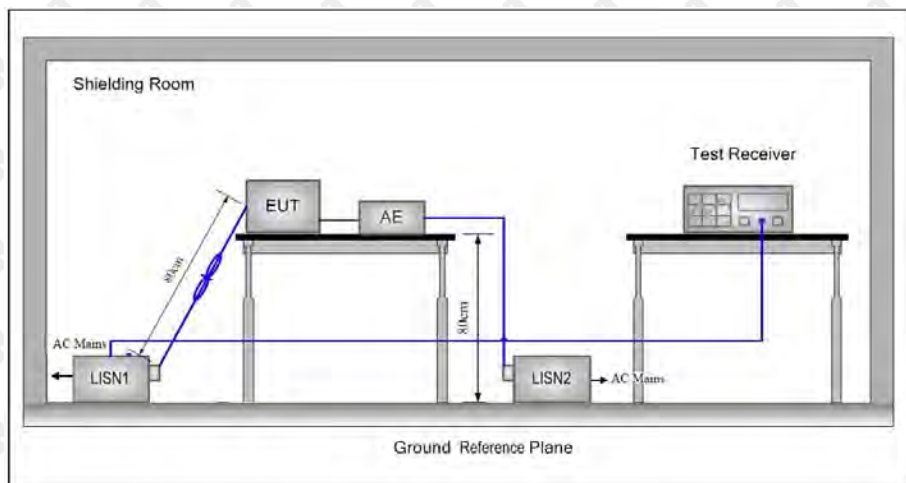
Radiated emission(No.1 Chamber)						
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until
1	966 Chamber	C/ R/ T	966	/	/	2027/6/21
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	/	2025/7/06
3	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/29
4	Amplifier	Agilent	8449B	3008A01838	/	2025/6/30
5	Amplifier	HP	8447E	2945A02747	/	2025/6/28
6	loop antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/29

7	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/6/28
8	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/6/28
9	Coaxial cable	ETS	RFC-SNS-100-NMS-80	/	/	2025/6/28
10	Coaxial cable	ETS	RFC-SN-100-NMS-20	/	/	2025/6/28
11	Coaxial cable	ETS	RFC-SNS-100-SMS-20	/	/	2025/6/28
12	Coaxial cable	ETS	RFC-NNS-100-NMS-300	/	/	2025/6/28
13	EMI test software	Frad	EZ-EMC	Ver/ FA-03A2 RE	/	/
14	Communication test set	R&S	CMW500	108058	B.19.07 (E1962B)	2025/6/28
15	Communication test set	Agilent	E5515C	MY50102567	V3.5.80	2025/6/28

Testing Software					
Equipment	Manufacturer	Model No.	Serial No.	Software version	Calibrated until
BT&WI-FI Automatic test software	Microwave	MTS8310	/	Ver. 2.0.0.0	/
234G Automatic test software	Microwave	MTS8200	/	Ver. 2.0.0.0	/
EZ-EMC	Frad	EMC-con3A1.1	/	/	/
EMI test software	Farad	EZ-EMC	/	Ver. FARAD-3A1+	/

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

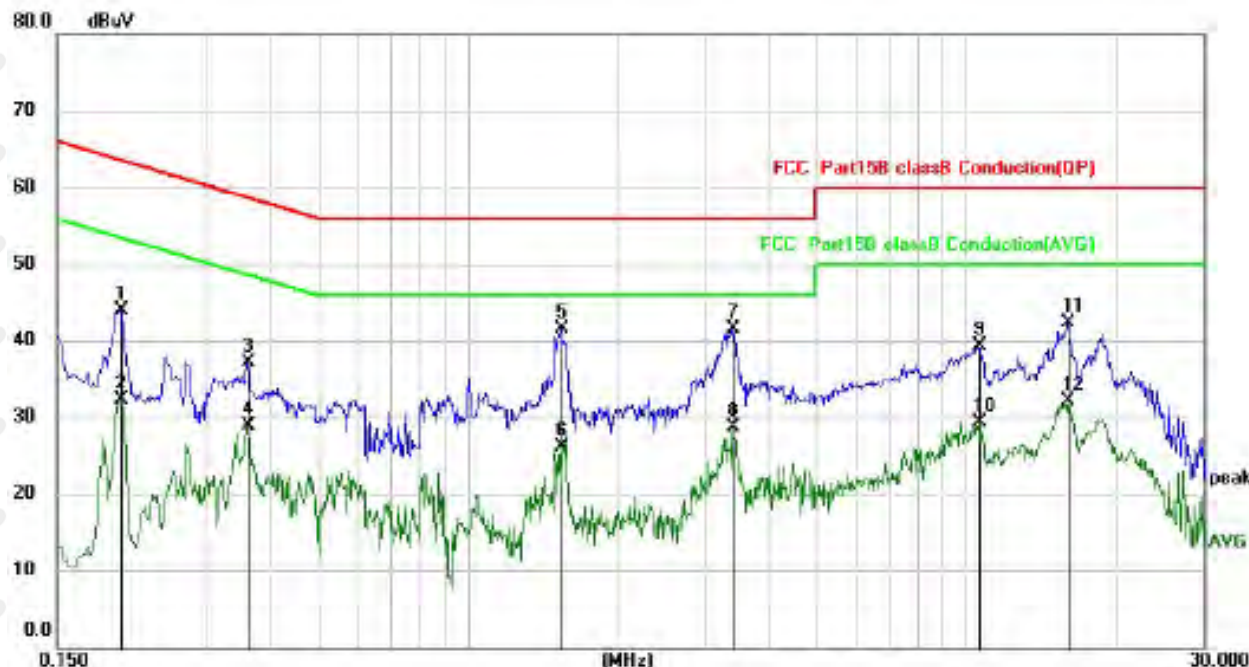
- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a 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

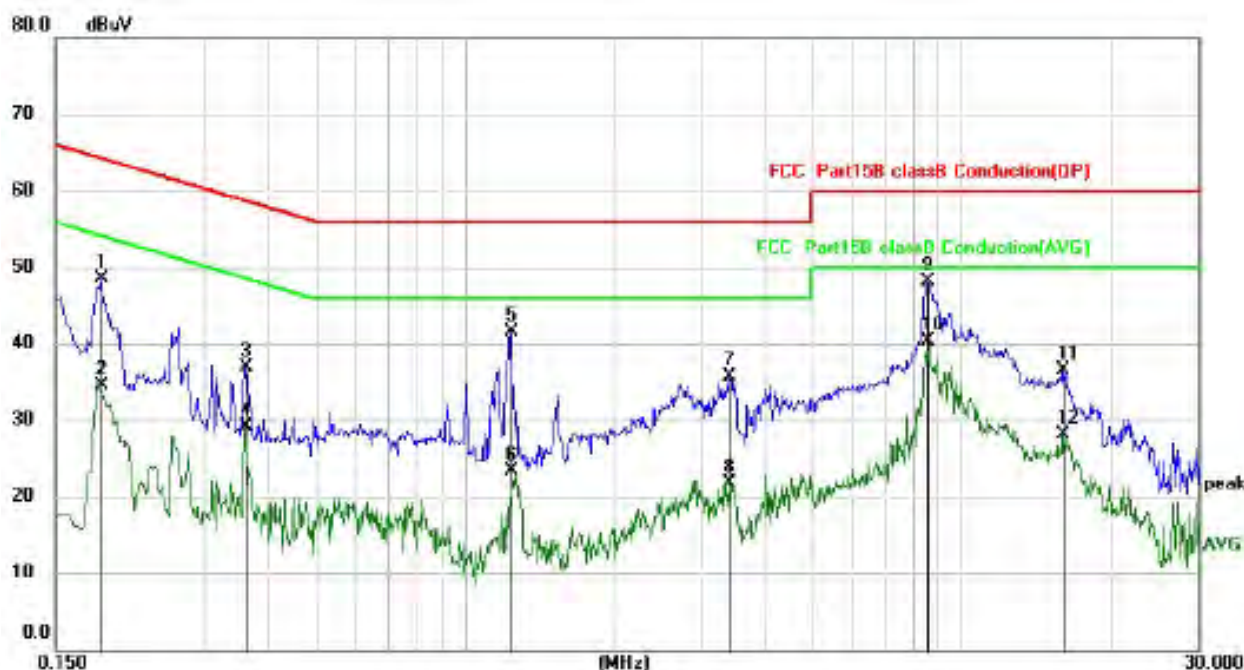
Test Specification: Line
AC 120V 60Hz



No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Over dB	Detector
1		0.2020	33.22	10.71	43.93	63.53	-19.60	QP
2		0.2020	21.63	10.71	32.34	53.53	-21.19	AVG
3		0.3618	26.46	10.60	37.06	58.69	-21.63	QP
4		0.3618	18.25	10.60	28.85	48.69	-19.84	AVG
5	*	1.5380	30.26	11.29	41.55	56.00	-14.45	QP
6		1.5380	14.83	11.29	26.12	46.00	-19.88	AVG
7		3.4140	29.52	11.89	41.41	56.00	-14.59	QP
8		3.4140	16.75	11.89	28.64	46.00	-17.36	AVG
9		10.5700	26.15	13.25	39.40	60.00	-20.60	QP
10		10.5700	15.96	13.25	29.21	50.00	-20.79	AVG
11		16.0137	28.93	13.39	42.32	60.00	-17.68	QP
12		16.0137	18.79	13.39	32.18	50.00	-17.82	AVG

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

Test Specification: Neutral
AC 120V 60Hz



No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Over dB	Detector
1		0.1859	37.84	10.76	48.60	64.22	-15.62	QP
2		0.1859	23.66	10.76	34.42	54.22	-19.80	AVG
3		0.3618	26.35	10.60	36.95	58.69	-21.74	QP
4		0.3618	18.46	10.60	29.06	48.69	-19.63	AVG
5		1.2379	30.40	11.10	41.50	56.00	-14.50	QP
6		1.2379	12.21	11.10	23.31	46.00	-22.69	AVG
7		3.4100	23.83	11.89	35.72	56.00	-20.28	QP
8		3.4100	9.91	11.89	21.80	46.00	-24.20	AVG
9		8.5379	34.98	13.09	48.07	60.00	-11.93	QP
10	*	8.5379	27.18	13.09	40.27	50.00	-9.73	AVG
11		16.0137	23.05	13.39	36.44	60.00	-23.56	QP
12		16.0137	14.67	13.39	28.06	50.00	-21.94	AVG

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

7. RADIATED SPURIOUS EMISSION

7.1 Block Diagram Of Test Setup

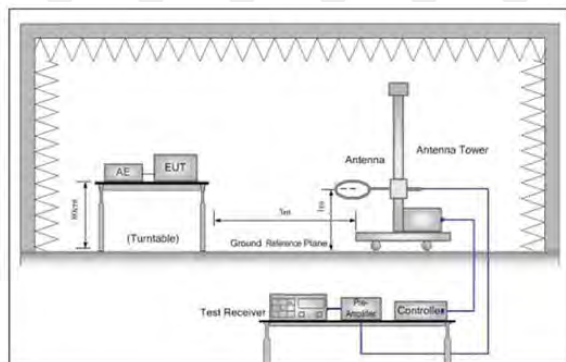


Figure 1. Below 30MHz

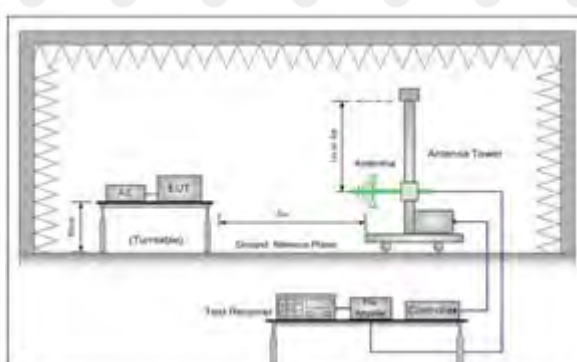


Figure 2. 30MHz to 1GHz

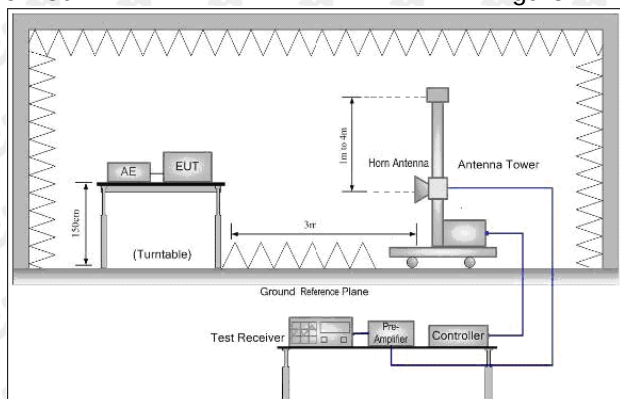


Figure 3. Above 1GHz

7.2 Limit

Spurious Emissions:

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	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.

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 chamber. 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	RBW
9 kHz to 150 kHz	200 Hz to 300 Hz
0.15 MHz to 30 MHz	9 kHz to 10 kHz
30 MHz to 1000 MHz	100 kHz to 120 kHz
>1000 MHz	1 MHz

The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

7.4 Test Result

After pre-scanning three directions, the report recorded the worst case

Below 1GHz Test Results:

Antenna polarity: H



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV/m	dB/m	dB	
1	!	147.9214	41.81	-3.16	38.65	43.50	-4.85	QP
2	!	211.8976	44.54	-4.58	39.96	43.50	-3.54	QP
3	!	355.4272	43.20	-1.69	41.51	46.00	-4.49	QP
4	*	500.3009	40.45	2.14	42.59	46.00	-3.41	QP
5	!	633.9071	36.73	4.18	40.91	46.00	-5.09	QP
6	!	948.7608	31.51	8.60	40.11	46.00	-5.89	QP

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

Antenna polarity: V



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
		MHz	Level	Factor	ment			Detector
			dBuV	dB	dBuV/m	dB/m	dB	
1	!	160.0646	39.87	-0.84	39.03	43.50	-4.47	QP
2	!	206.3975	43.97	-4.69	39.28	43.50	-4.22	QP
3		266.1419	43.47	-3.52	39.95	46.00	-6.05	QP
4	!	352.3249	42.06	-1.76	40.30	46.00	-5.70	QP
5	*	446.4139	41.43	0.61	42.04	46.00	-3.96	QP
6	!	612.0641	37.85	3.78	41.63	46.00	-4.37	QP

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

1. The margin of 9K-30MH measurement exceeds 20dB, so the test chart is not included.
2. All modes have been tested, and the test results show that ANT2 b-mode data is the worst, only ANT2 b-mode test chart is put.

Above 1 GHz Test Results:

ANT1 LOW CH1 (802.11b Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	64.38	-3.64	60.74	74	-13.26	peak
4824	49.44	-3.64	45.80	54	-8.20	AVG
7236	59.31	-0.95	58.36	74	-15.64	peak
7236	46.56	-0.95	45.61	54	-8.39	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	66.90	-3.64	63.26	74	-10.74	peak
4824	48.96	-3.64	45.32	54	-8.68	AVG
7236	58.67	-0.95	57.72	74	-16.28	peak
7236	45.82	-0.95	44.87	54	-9.13	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1 MID CH6 (802.11b Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	63.63	-3.51	60.12	74	-13.88	peak
4874	50.31	-3.51	46.80	54	-7.20	AVG
7311	60.41	-0.82	59.59	74	-14.41	peak
7311	43.03	-0.82	42.21	54	-11.79	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	63.17	-3.51	59.66	74	-14.34	peak
4874	47.38	-3.51	43.87	54	-10.13	AVG
7311	60.35	-0.82	59.53	74	-14.47	peak
7311	43.94	-0.82	43.12	54	-10.88	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1 HIGH CH11 (802.11b Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	64.83	-3.43	61.40	74	-12.60	peak
4924	48.05	-3.43	44.62	54	-9.38	AVG
7386	57.44	-0.75	56.69	74	-17.31	peak
7386	44.80	-0.75	44.05	54	-9.95	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	63.60	-3.43	60.17	74	-13.83	peak
4924	47.35	-3.43	43.92	54	-10.08	AVG
7386	56.69	-0.75	55.94	74	-18.06	peak
7386	42.96	-0.75	42.21	54	-11.79	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Remark:

- (1). Measuring frequencies from 9KHz to the 25 GHz. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

ANT1 LOW CH1 (802.11g Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	64.56	-3.64	60.92	74	-13.08	peak
4824	49.19	-3.64	45.55	54	-8.45	AVG
7236	57.89	-0.95	56.94	74	-17.06	peak
7236	46.55	-0.95	45.60	54	-8.40	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	66.35	-3.64	62.71	74	-11.29	peak
4824	48.09	-3.64	44.45	54	-9.55	AVG
7236	58.38	-0.95	57.43	74	-16.57	peak
7236	43.72	-0.95	42.77	54	-11.23	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1 MID CH6 (802.11g Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	63.90	-3.51	60.39	74	-13.61	peak
4874	47.81	-3.51	44.30	54	-9.70	AVG
7311	59.79	-0.82	58.97	74	-15.03	peak
7311	45.81	-0.82	44.99	54	-9.01	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	63.56	-3.51	60.05	74	-13.95	peak
4874	49.14	-3.51	45.63	54	-8.37	AVG
7311	60.31	-0.82	59.49	74	-14.51	peak
7311	44.74	-0.82	43.92	54	-10.08	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1 HIGH CH11 (802.11g Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	62.03	-3.43	58.60	74	-15.40	peak
4924	47.41	-3.43	43.98	54	-10.02	AVG
7386	58.10	-0.75	57.35	74	-16.65	peak
7386	44.02	-0.75	43.27	54	-10.73	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	62.67	-3.43	59.24	74	-14.76	peak
4924	47.61	-3.43	44.18	54	-9.82	AVG
7386	59.05	-0.75	58.30	74	-15.70	peak
7386	41.71	-0.75	40.96	54	-13.04	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Remark:

- (1). Measuring frequencies from 9KHz to the 25 GHz. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

Above 1GHz ANT1+ANT2 :

LOW CH1 (802.11n/H20 Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	63.84	-3.64	60.20	74	-13.80	peak
4824	48.57	-3.64	44.93	54	-9.07	AVG
7236	59.27	-0.95	58.32	74	-15.68	peak
7236	43.84	-0.95	42.89	54	-11.11	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	67.28	-3.64	63.64	74	-10.36	peak
4824	46.92	-3.64	43.28	54	-10.72	AVG
7236	57.42	-0.95	56.47	74	-17.53	peak
7236	43.23	-0.95	42.28	54	-11.72	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

LOW CH1 (802.11n/H20 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	65.80	-3.51	62.29	74	-11.71	peak
4874	50.31	-3.51	46.80	54	-7.20	AVG
7311	58.53	-0.82	57.71	74	-16.29	peak
7311	43.25	-0.82	42.43	54	-11.57	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	64.97	-3.51	61.46	74	-12.54	peak
4874	49.44	-3.51	45.93	54	-8.07	AVG
7311	58.64	-0.82	57.82	74	-16.18	peak
7311	42.91	-0.82	42.09	54	-11.91	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

LOW CH1 (802.11n/H20 Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	62.35	-3.43	58.92	74	-15.08	peak
4924	47.06	-3.43	43.63	54	-10.37	AVG
7386	57.97	-0.75	57.22	74	-16.78	peak
7386	43.14	-0.75	42.39	54	-11.61	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	64.82	-3.43	61.39	74	-12.61	peak
4924	48.57	-3.43	45.14	54	-8.86	AVG
7386	57.45	-0.75	56.70	74	-17.30	peak
7386	42.15	-0.75	41.40	54	-12.60	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Remark:

- (1). Measuring frequencies from 9KHz to the 25 GHz. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

ANT1+ANT2 LOW CH3 (802.11n/H40 Mode)/2422

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4844	64.39	-3.63	60.76	74	-13.24	peak
4844	49.55	-3.63	45.92	54	-8.08	AVG
7266	57.67	-0.94	56.73	74	-17.27	peak
7266	44.66	-0.94	43.72	54	-10.28	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4844	65.78	-3.63	62.15	74	-11.85	peak
4844	48.77	-3.63	45.14	54	-8.86	AVG
7266	59.26	-0.94	58.32	74	-15.68	peak
7266	45.32	-0.94	44.38	54	-9.62	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 MID CH6 (802.11n/H40 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	62.87	-3.51	59.36	74	-14.64	peak
4874	48.66	-3.51	45.15	54	-8.85	AVG
7311	60.48	-0.82	59.66	74	-14.34	peak
7311	46.09	-0.82	45.27	54	-8.73	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	62.31	-3.51	58.80	74	-15.20	peak
4874	46.49	-3.51	42.98	54	-11.02	AVG
7311	56.65	-0.82	55.83	74	-18.17	peak
7311	43.35	-0.82	42.53	54	-11.47	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 HIGH CH9 (802.11n/H40 Mode)/2452

Horizontal:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4904	63.36	-3.43	59.93	74	-14.07	peak
4904	48.56	-3.43	45.13	54	-8.87	AVG
7356	56.45	-0.75	55.70	74	-18.30	peak
7356	42.23	-0.75	41.48	54	-12.52	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
4904	62.53	-3.43	59.10	74	-14.90	peak
4904	46.44	-3.43	43.01	54	-10.99	AVG
7356	56.59	-0.75	55.84	74	-18.16	peak
7356	43.94	-0.75	43.19	54	-10.81	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Remark:

- (1). Measuring frequencies from 9KHz to the 25 GHz. The test range is 9K ~10 times the main wave, and other spurious below the limit of 20dB will not be reflected in the report
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

ANT1+ANT2 LOW CH1 (802.11ax/H20 Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	65.08	-3.64	61.44	74	-12.56	peak
4824	48.05	-3.64	44.41	54	-9.59	AVG
7236	59.14	-0.95	58.19	74	-15.81	peak
7236	43.55	-0.95	42.60	54	-11.40	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4824	64.82	-3.64	61.18	74	-12.82	peak
4824	47.18	-3.64	43.54	54	-10.46	AVG
7236	58.01	-0.95	57.06	74	-16.94	peak
7236	45.91	-0.95	44.96	54	-9.04	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 MID CH6 (802.11ax/H20 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874.00	65.12	-3.51	61.61	74.00	-12.39	peak
4874.00	48.91	-3.51	45.40	54.00	-8.60	AVG
7311.00	56.63	-0.82	55.81	74.00	-18.19	peak
7311.00	45.24	-0.82	44.42	54.00	-9.58	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874.00	62.30	-3.51	58.79	74.00	-15.21	peak
4874.00	46.14	-3.51	42.63	54.00	-11.37	AVG
7311.00	59.27	-0.82	58.45	74.00	-15.55	peak
7311.00	41.41	-0.82	40.59	54.00	-13.41	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 HIGH CH11 (802.11ax/H20 Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	63.19	-3.43	59.76	74	-14.24	peak
4924	48.15	-3.43	44.72	54	-9.28	AVG
7386	58.84	-0.75	58.09	74	-15.91	peak
7386	42.73	-0.75	41.98	54	-12.02	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4924	64.73	-3.43	61.30	74	-12.70	peak
4924	47.06	-3.43	43.63	54	-10.37	AVG
7386	56.98	-0.75	56.23	74	-17.77	peak
7386	43.94	-0.75	43.19	54	-10.81	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 LOW CH3 (802.11ax/H40 Mode)/2422

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4844	63.50	-3.63	59.87	74	-14.13	peak
4844	47.28	-3.63	43.65	54	-10.35	AVG
7266	57.87	-0.94	56.93	74	-17.07	peak
7266	46.55	-0.94	45.61	54	-8.39	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4844	64.11	-3.63	60.48	74	-13.52	peak
4844	48.96	-3.63	45.33	54	-8.67	AVG
7266	57.96	-0.94	57.02	74	-16.98	peak
7266	45.22	-0.94	44.28	54	-9.72	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits

ANT1+ANT2 MID CH6 (802.11ax/H40 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	65.07	-3.51	61.56	74	-12.44	peak
4874	48.65	-3.51	45.14	54	-8.86	AVG
7311	60.29	-0.82	59.47	74	-14.53	peak
7311	45.97	-0.82	45.15	54	-8.85	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874	62.25	-3.51	58.74	74	-15.26	peak
4874	46.52	-3.51	43.01	54	-10.99	AVG
7311	56.65	-0.82	55.83	74	-18.17	peak
7311	43.37	-0.82	42.55	54	-11.45	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

ANT1+ANT2 HIGH CH9 (802.11ax/H40 Mode)/2452

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4904	62.79	-3.43	59.36	74	-14.64	peak
4904	49.19	-3.43	45.76	54	-8.24	AVG
7356	55.96	-0.75	55.21	74	-18.79	peak
7356	43.68	-0.75	42.93	54	-11.07	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4904	63.00	-3.43	59.57	74	-14.43	peak
4904	47.92	-3.43	44.49	54	-9.51	AVG
7356	56.56	-0.75	55.81	74	-18.19	peak
7356	44.80	-0.75	44.05	54	-9.95	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Remark :

- (1) Measuring frequencies from 1 GHz to the 25 GHz .
- (2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
- (3) Data of measurement within this frequency range shown “--- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed
- (5)Have tested in three orientations for radiated emissions, Only The worst record is in this report

Restricted bands around fundamental frequency (Radiated)

Operation Mode:

ANT 1 802.11b Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	56.87	-5.81	51.06	74	-22.94	peak
2310	/	-5.81	/	54	/	AVG
2390	64.69	-5.84	58.85	74	-15.15	peak
2390	48.64	-5.84	42.80	54	-11.20	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	57.71	-5.81	51.90	74	-22.10	peak
2310	/	-5.81	/	54	/	AVG
2390	62.28	-5.84	56.44	74	-17.56	peak
2390	46.73	-5.84	40.89	54	-13.11	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

When the peak value is smaller than the AVG limit, AVG is not reflected.

Operation Mode:

ANT1 802.11b Mode TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.02	-5.65	51.37	74	-22.63	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.78	-5.65	51.13	74	-22.87	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode:

ANT1 802.11g Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	58.44	-5.81	52.63	74	-21.37	peak
2310	/	-5.81	/	54	/	AVG
2390	63.36	-5.84	57.52	74	-16.48	peak
2390	47.06	-5.84	41.22	54	-12.78	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	56.15	-5.81	50.34	74	-23.66	peak
2310	/	-5.81	/	54	/	AVG
2390	62.98	-5.84	57.14	74	-16.86	peak
2390	45.65	-5.84	39.81	54	-14.19	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Operation Mode:

ANT1 802.11g Mode TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.49	-5.65	50.84	74	-23.16	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.53	-5.65	50.88	74	-23.12	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode:

ANT1+ANT2 802.11n/H20 Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	56.71	-5.81	50.90	74	-23.10	peak
2310	/	-5.81	/	54	/	AVG
2390	63.35	-5.84	57.51	74	-16.49	peak
2390	48.85	-5.84	43.01	54	-10.99	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	56.20	-5.81	50.39	74	-23.61	peak
2310	/	-5.81	/	54	/	AVG
2390	60.13	-5.84	54.29	74	-19.71	peak
2390	47.37	-5.84	41.53	54	-12.47	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Operation Mode:

ANT1+ANT2 802.11n/H20 Mode TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.83	-5.65	51.18	74	-22.82	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.00	-5.65	50.35	74	-23.65	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode:

ANT1+ANT2 802.11n/H40 Mode TX CH Low (2422MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	59.37	-5.81	53.56	74	-20.44	peak
2310	/	-5.81	/	54	/	AVG
2390	62.97	-5.84	57.13	74	-16.87	peak
2390	47.44	-5.84	41.60	54	-12.40	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	57.30	-5.81	51.49	74	-22.51	peak
2310	/	-5.81	/	54	/	AVG
2390	61.27	-5.84	55.43	74	-18.57	peak
2390	45.37	-5.84	39.53	54	-14.47	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Operation Mode:

ANT1+ANT2 802.11n/H40 Mode TX CH High (2452MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.42	-5.65	50.77	74	-23.23	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.56	-5.65	50.91	74	-23.09	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode:

ANT1+ANT2 802.11ax/H20 Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	56.21	-5.81	50.40	74	-23.60	peak
2310	/	-5.81	/	54	/	AVG
2390	63.53	-5.84	57.69	74	-16.31	peak
2390	48.12	-5.84	42.28	54	-11.72	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	56.99	-5.81	51.18	74	-22.82	peak
2310	/	-5.81	/	54	/	AVG
2390	61.33	-5.84	55.49	74	-18.51	peak
2390	47.09	-5.84	41.25	54	-12.75	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Operation Mode:

ANT1+ANT2 802.11ax/H20 Mode TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.07	-5.65	50.42	74	-23.58	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	56.81	-5.65	51.16	74	-22.84	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode:

ANT1+ANT2 802.11ax/H40 Mode TX CH Low (2422MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	58.34	-5.81	52.53	74	-21.47	peak
2310	/	-5.81	/	54	/	AVG
2390	63.79	-5.84	57.95	74	-16.05	peak
2390	45.74	-5.84	39.90	54	-14.10	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2310	58.09	-5.81	52.28	74	-21.72	peak
2310	/	-5.81	/	54	/	AVG
2390	61.87	-5.84	56.03	74	-17.97	peak
2390	45.81	-5.84	39.97	54	-14.03	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor,
Margin = Emission level - Limits



Operation Mode:

ANT1+ANT2 802.11ax/H40 Mode TX CH High (2452MHz)

Horizontal

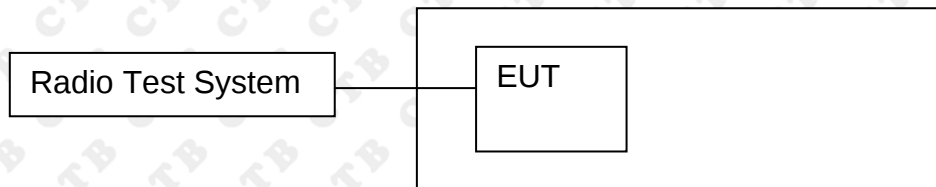
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.76	-5.65	52.11	74	-21.89	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.02	-5.65	51.37	74	-22.63	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

8. BAND EDGE AND RF CONDUCTED SPURIOUS EMISSIONS

8.1 Block Diagram Of Test Setup



8.2 Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

8.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer:

Below 30MHz:

RBW = 100kHz, VBW = 300kHz, Sweep = auto

Detector function = peak, Trace = max hold

Above 30MHz:

RBW = 100kHz, VBW = 300kHz, Sweep = auto

Detector function = peak, Trace = max hold

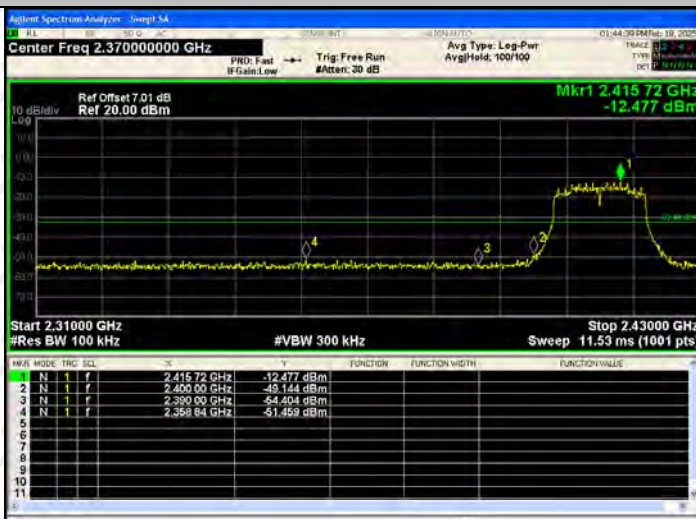
8.4 Test Result

ANT1:



BAND EDGE Graphs

802.11g/LCH



802.11g/HCH



BAND EDGE Graphs

802.11n(HT20)/LCH



802.11n(HT20)/HCH



BAND EDGE Graphs

802.11n(HT40)/LCH

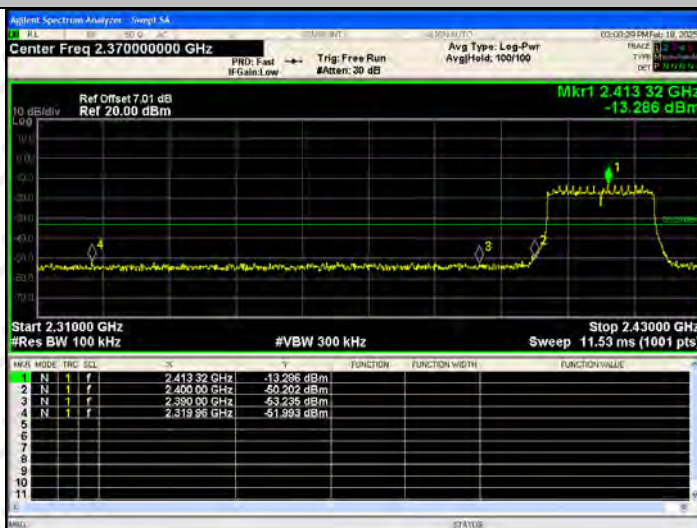


802.11n(HT40)/HCH

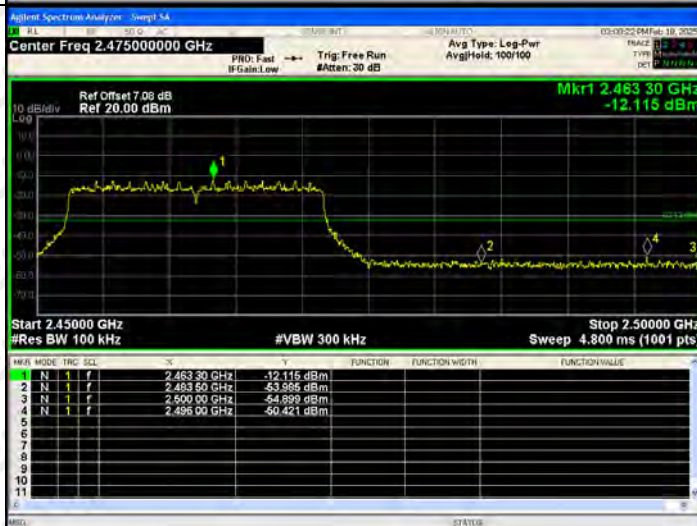


BAND EDGE Graphs

802.11ax(HT20)/
LCH

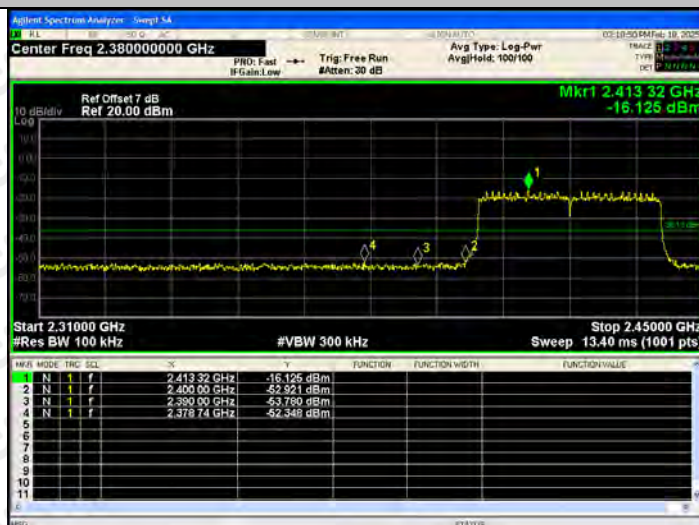


802.11ax(HT20)/
HCH



BAND EDGE Graphs

802.11ax(HT40)/
LCH

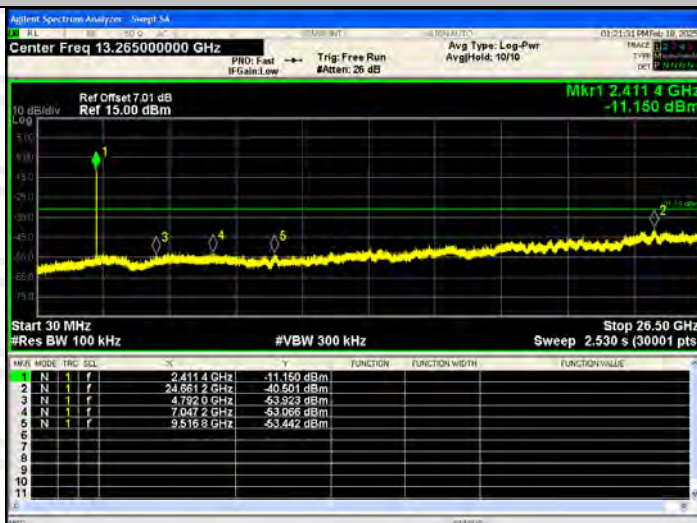


802.11ax(HT40)/
HCH

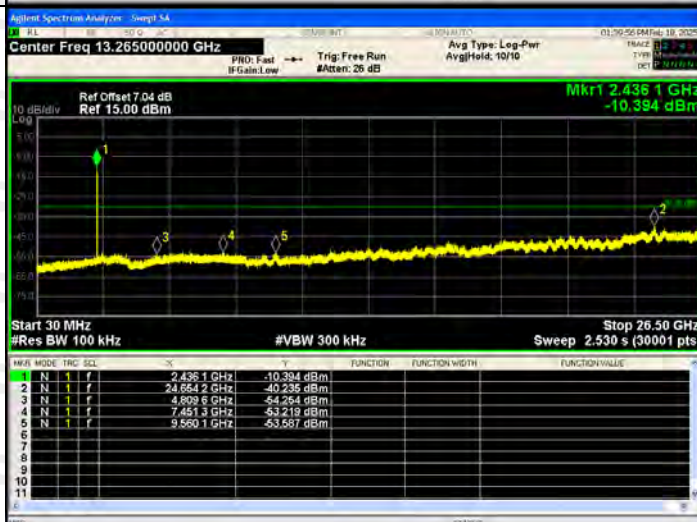


RF Conducted Spurious Emissions Graphs

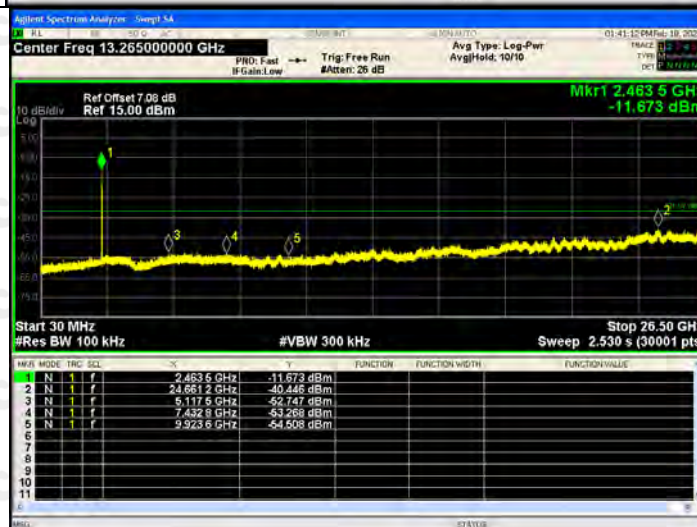
802.11b/LCH



802.11b/MCH



802.11b/HCH

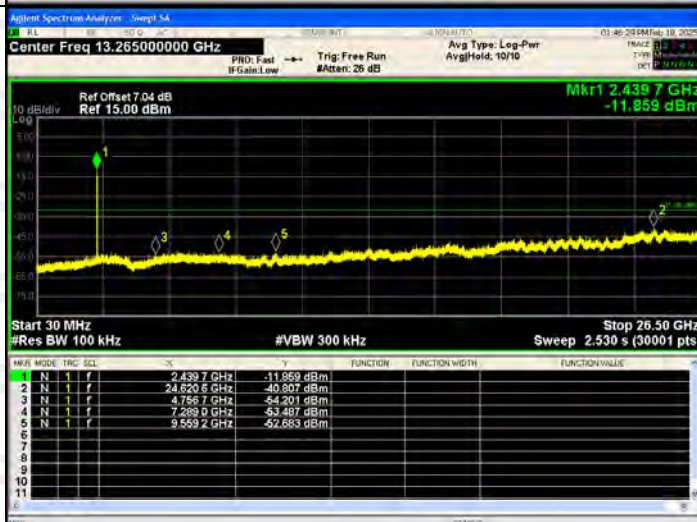


RF Conducted Spurious Emissions Graphs

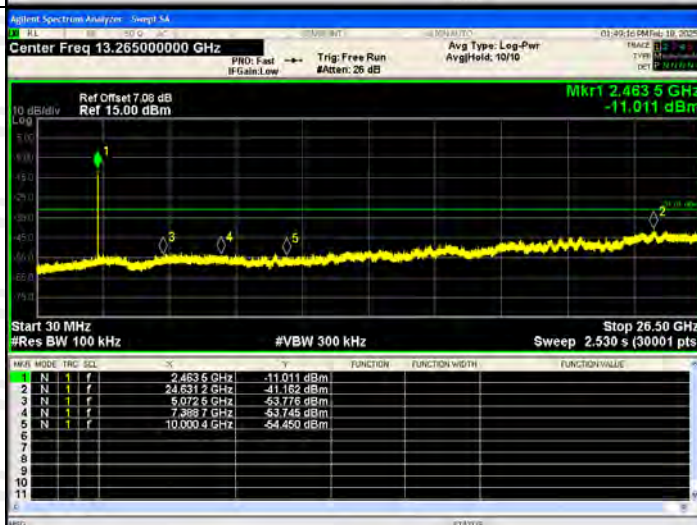
802.11g/LCH



802.11g/MCH

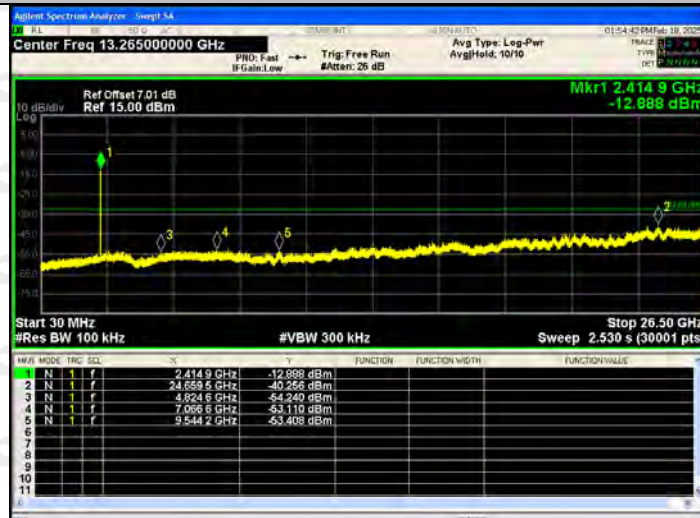


802.11g/HCH

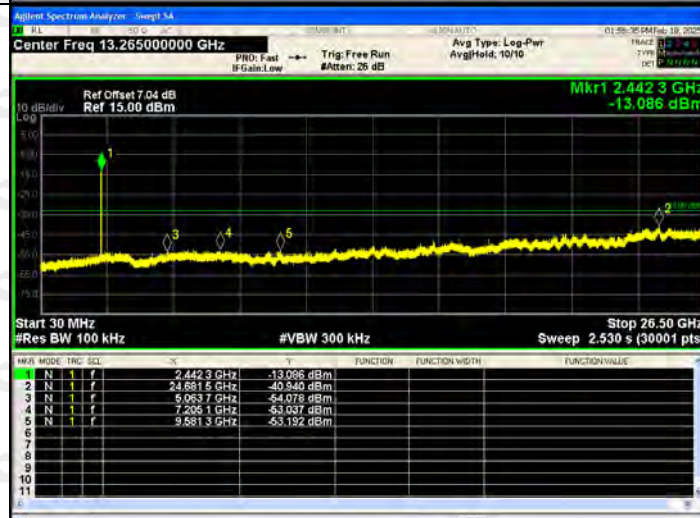


RF Conducted Spurious Emissions Graphs

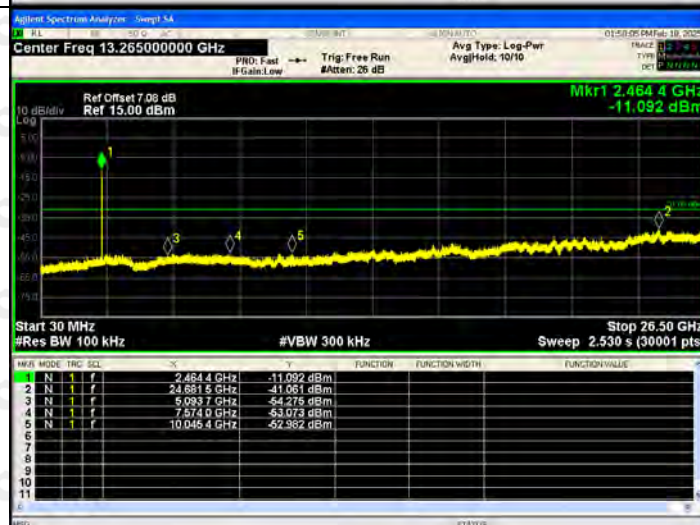
802.11n(HT20)/
LCH

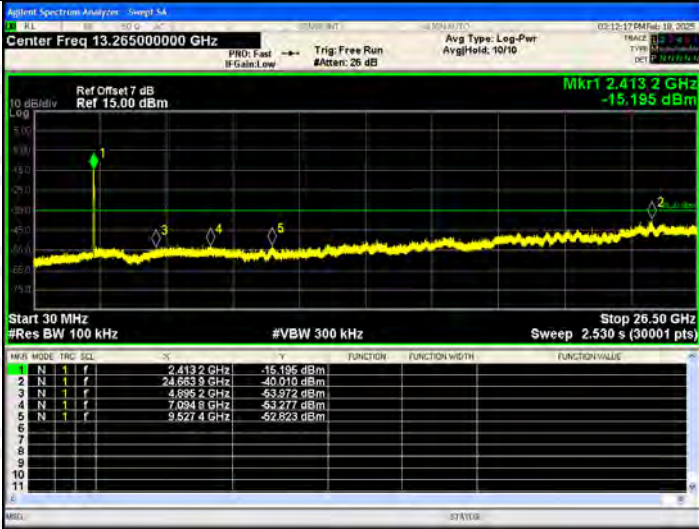
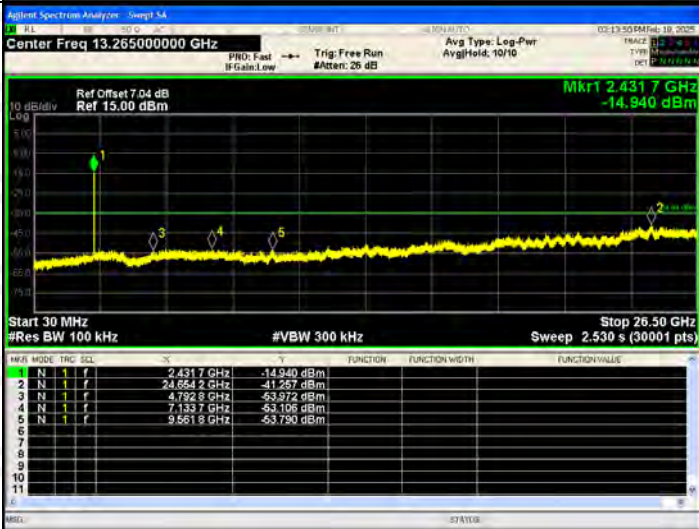
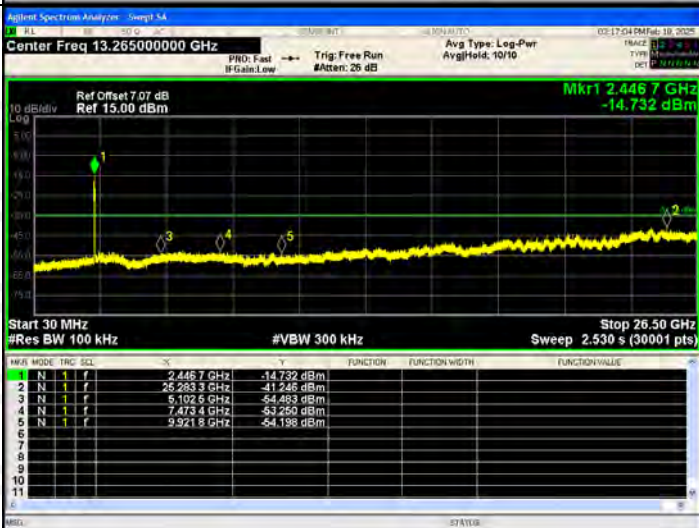


802.11
n(HT20)/MCH



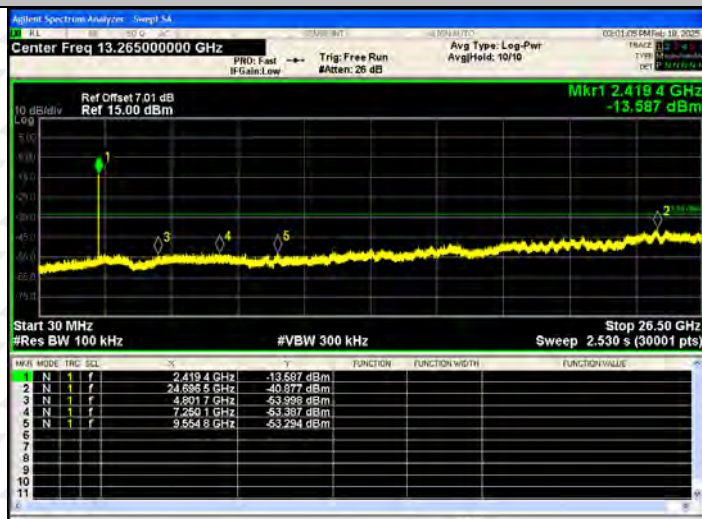
802.11
n(HT20)/HCH



802.11n(HT40)/LCH	
802.11 n(HT40)/MCH	
802.11 n(HT40)/HCH	

RF Conducted Spurious Emissions Graphs

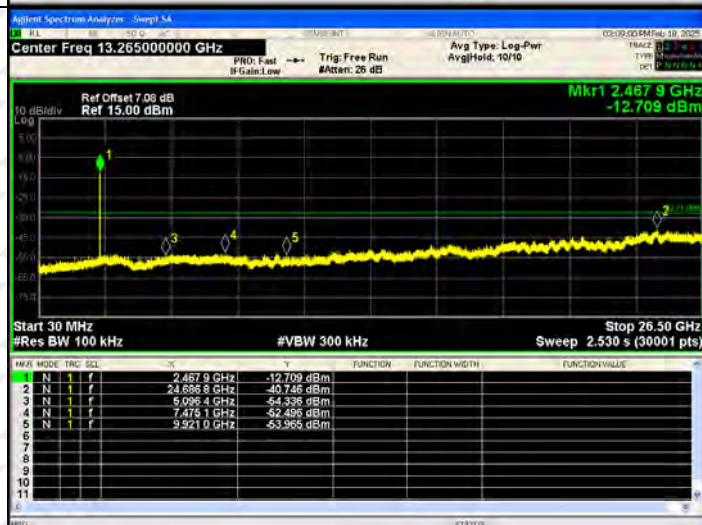
802.11ax(HT20)/LCH



802.11 ax(HT20)/MCH

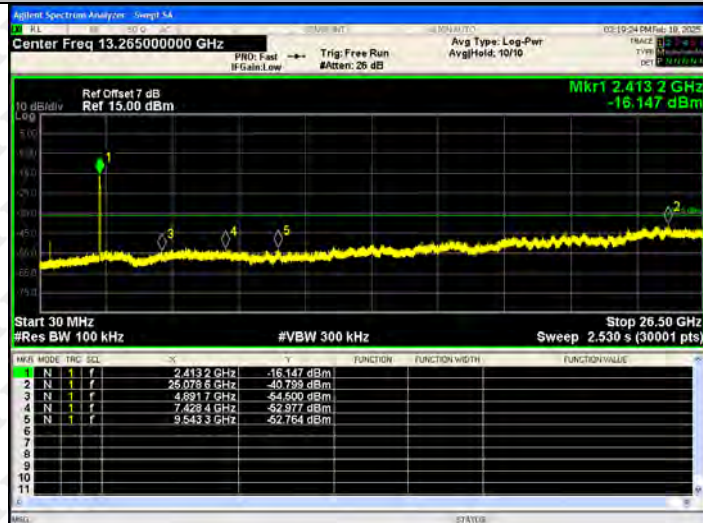


802.11 ax(HT20)/HCH

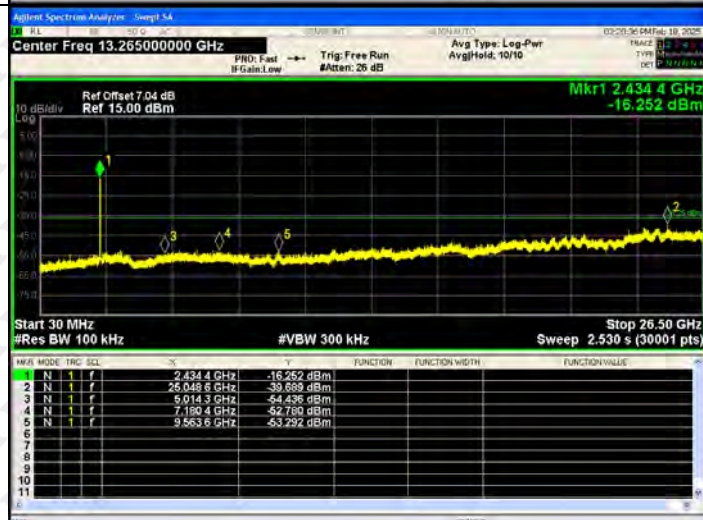


RF Conducted Spurious Emissions Graphs

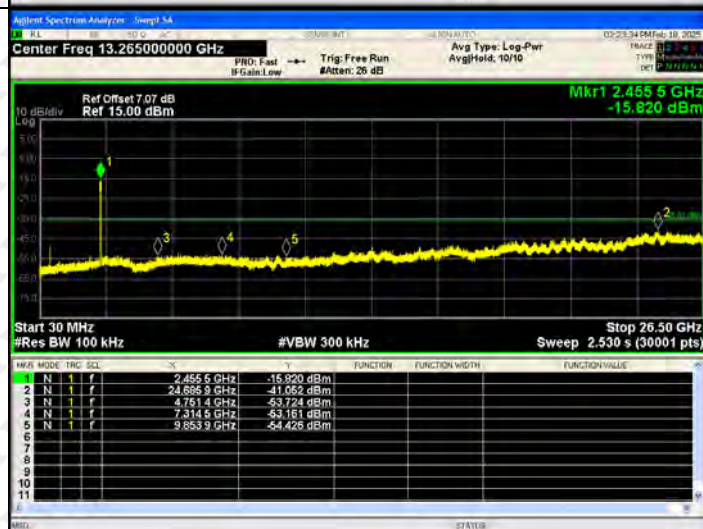
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802.11 ax(HT40)/MCH



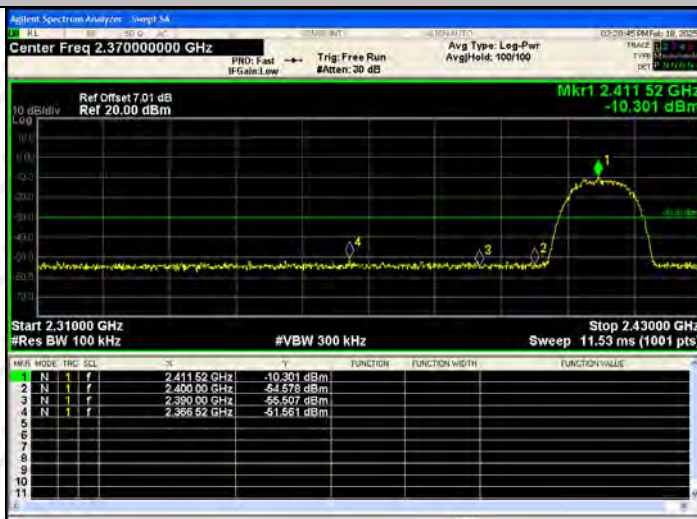
802.11 ax(HT40)/HCH



ANT2:

BAND EDGE Graphs

802.11b/LCH

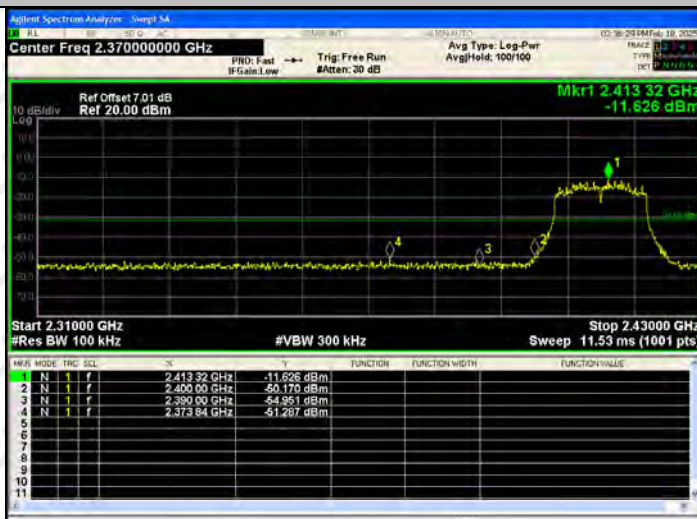


802.11b/HCH



BAND EDGE Graphs

802.11g/LCH

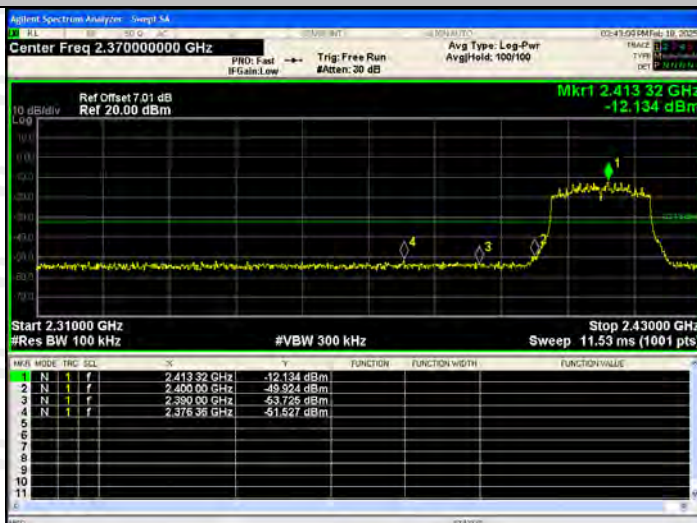


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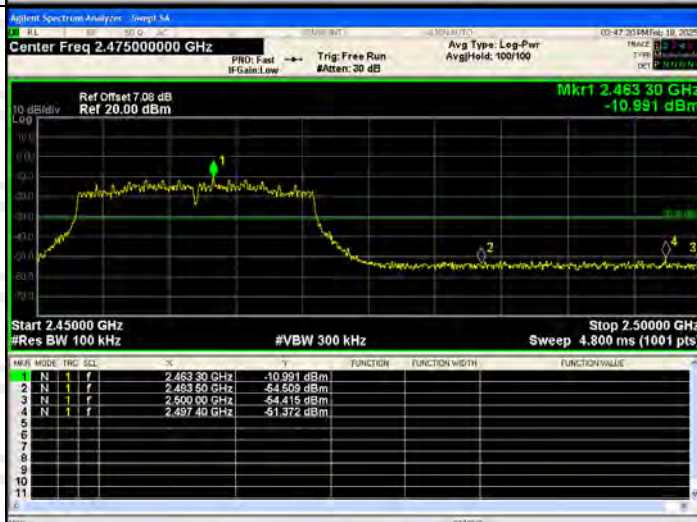


BAND EDGE Graphs

802.11n(HT20)/
LCH

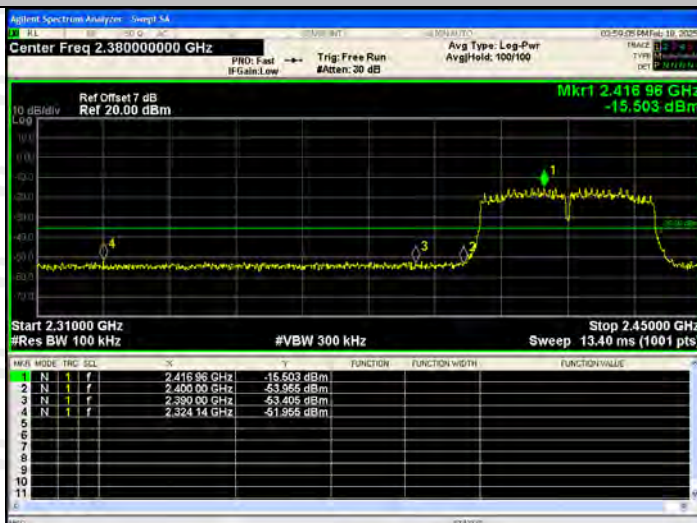


802.11n(HT20)/
HCH



BAND EDGE Graphs

802.11n(HT40)/
LCH



802.11n(HT40)/
HCH



BAND EDGE Graphs

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LCH

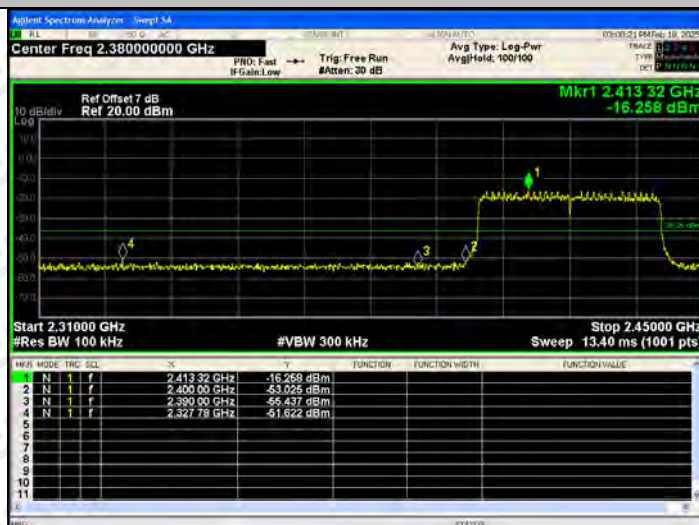


802.11ax(HT20)/
HCH



BAND EDGE Graphs

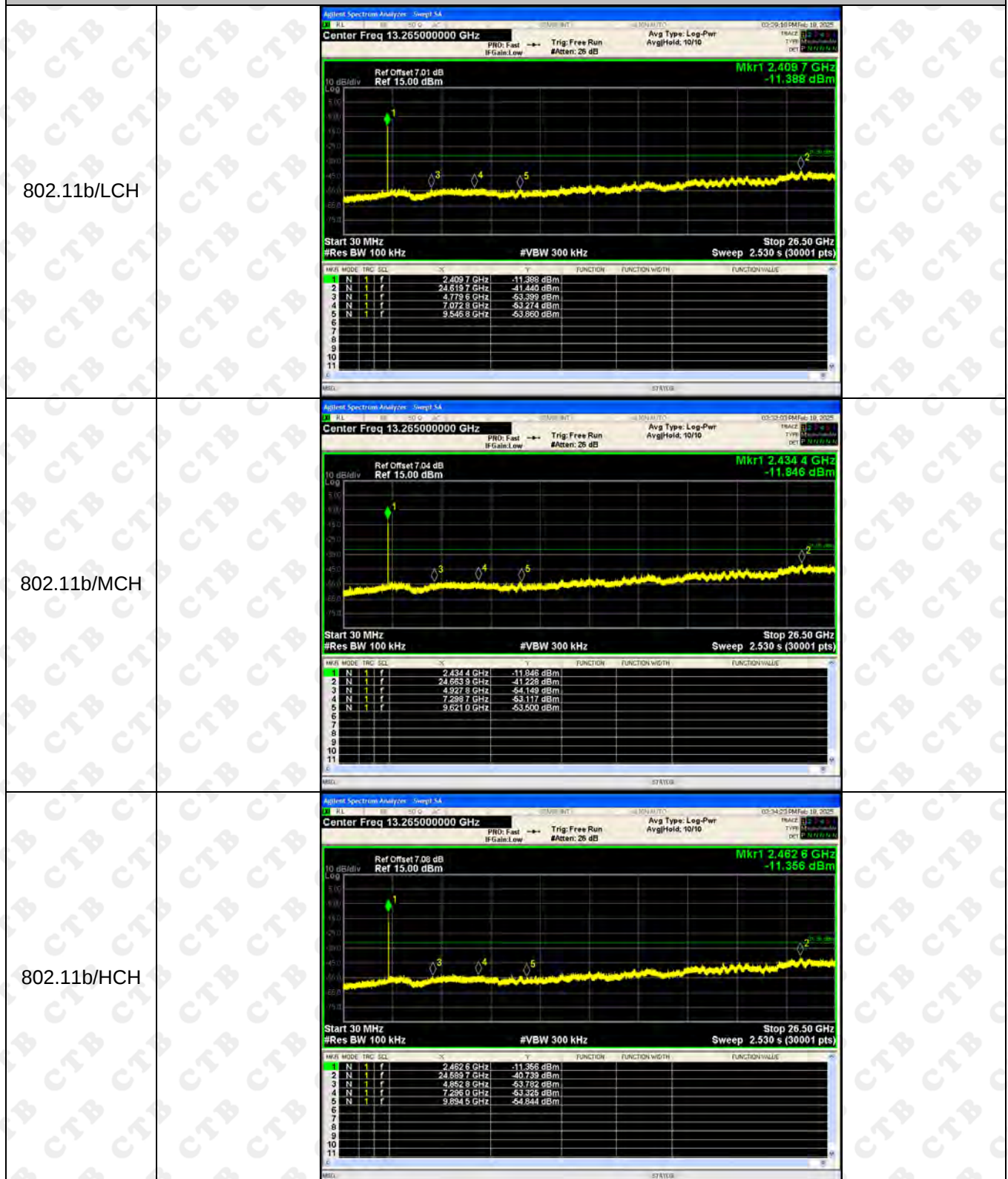
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LCH



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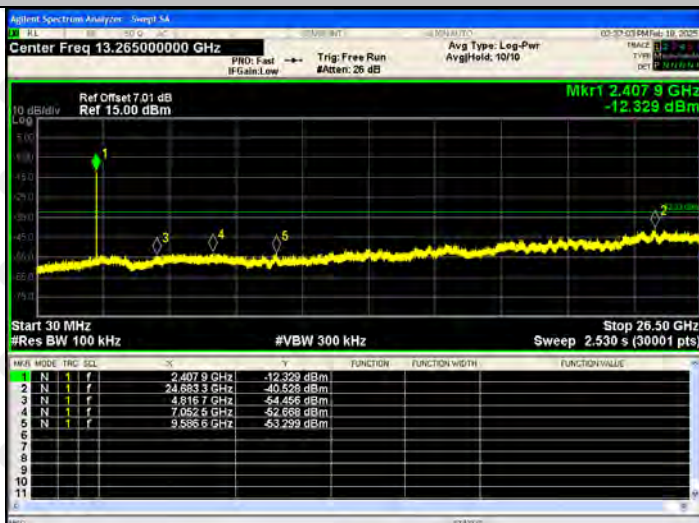


RF Conducted Spurious Emissions Graphs

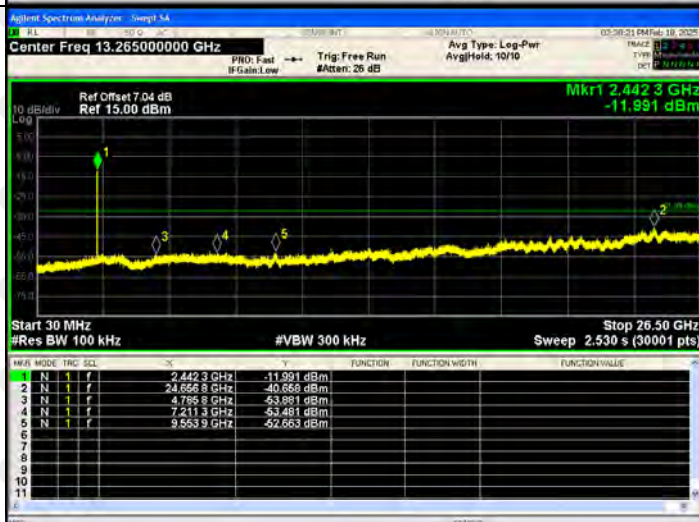


RF Conducted Spurious Emissions Graphs

802.11g/LCH



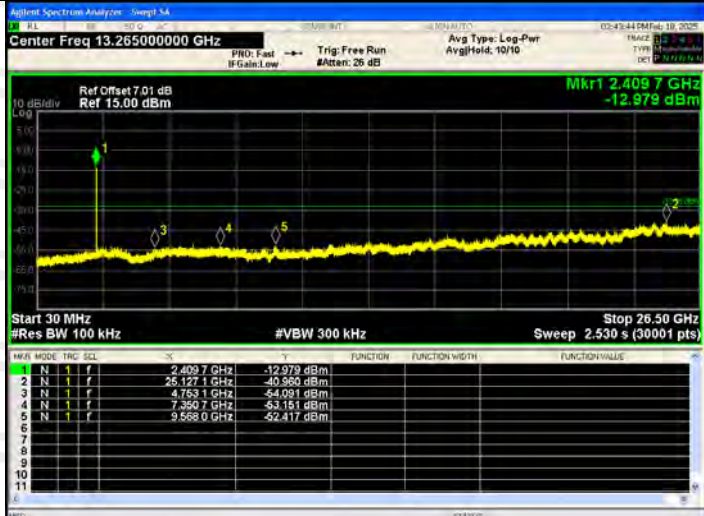
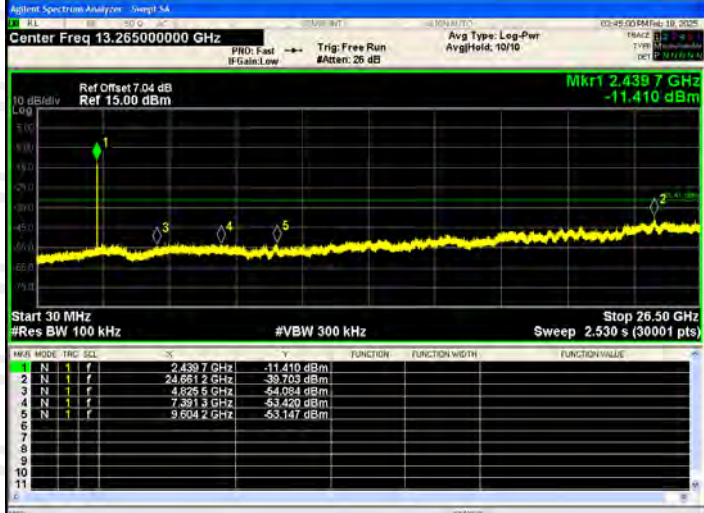
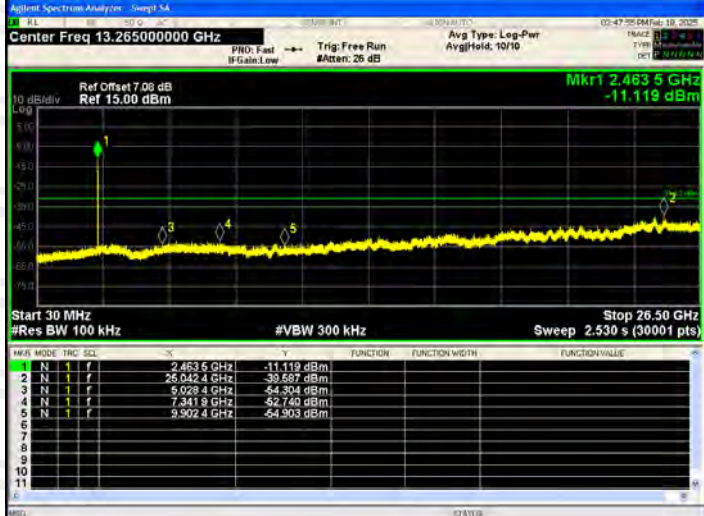
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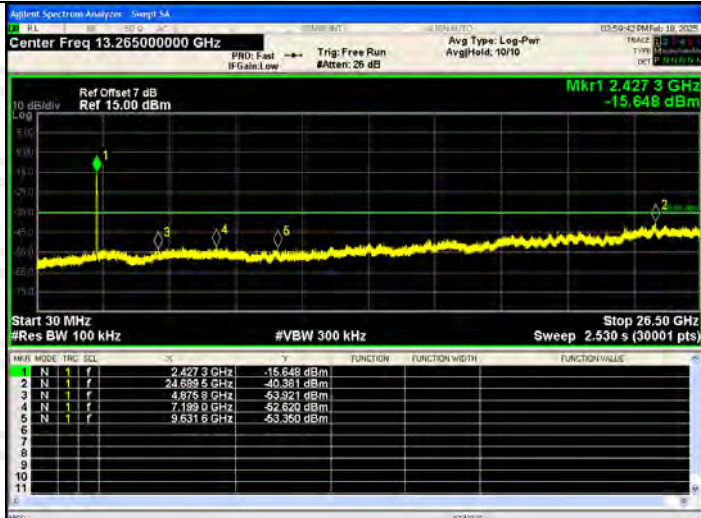
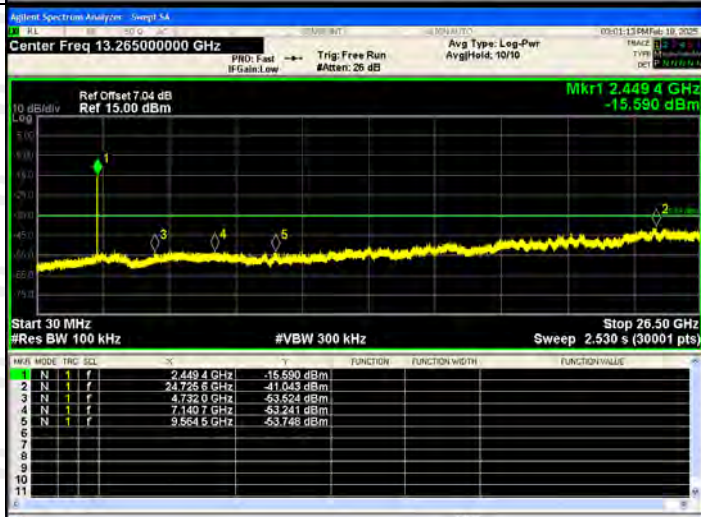


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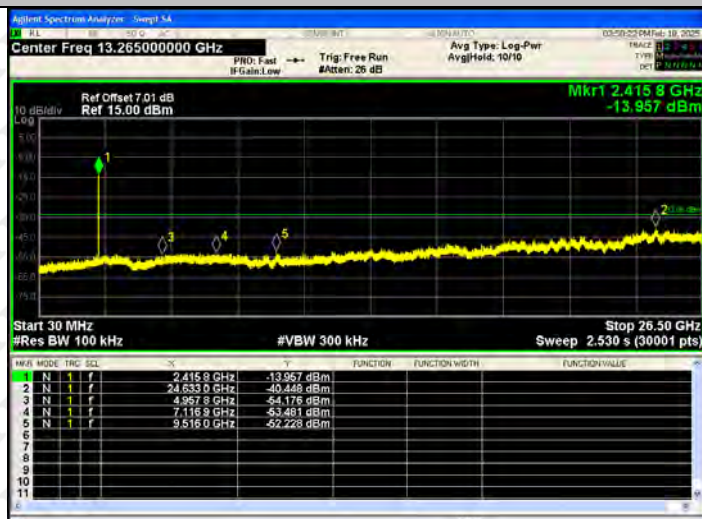
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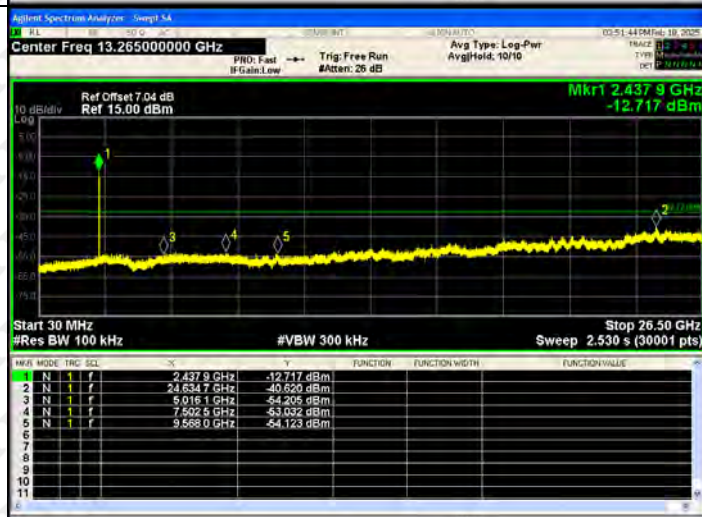
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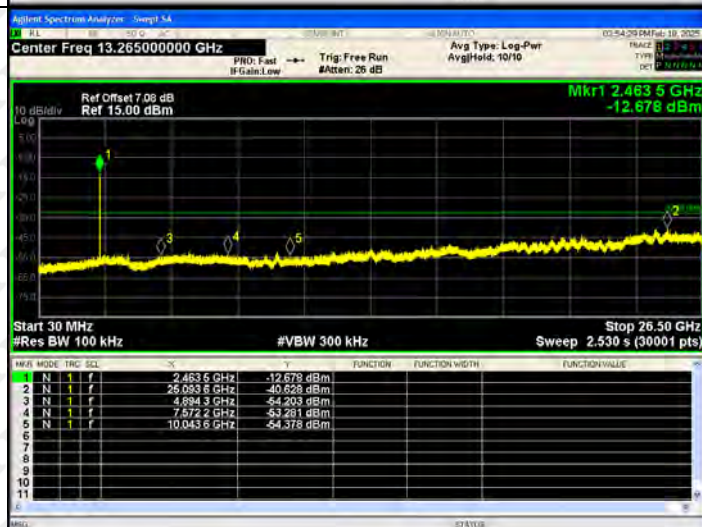
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802.11 ax(HT20)/MCH



802.11 ax(HT20)/HCH

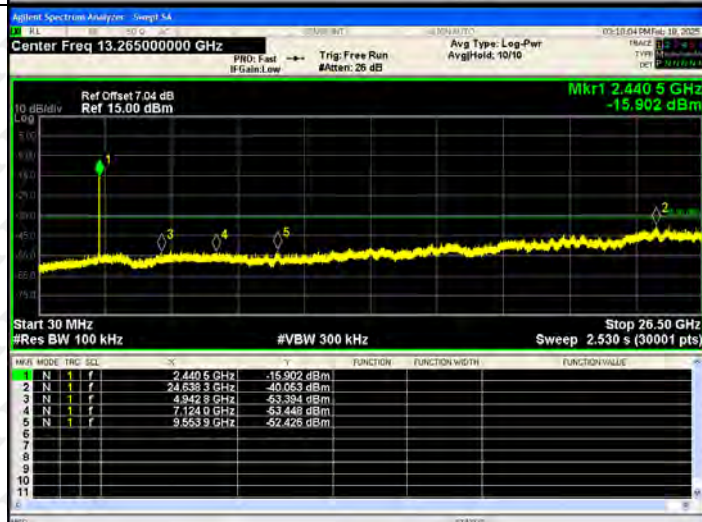


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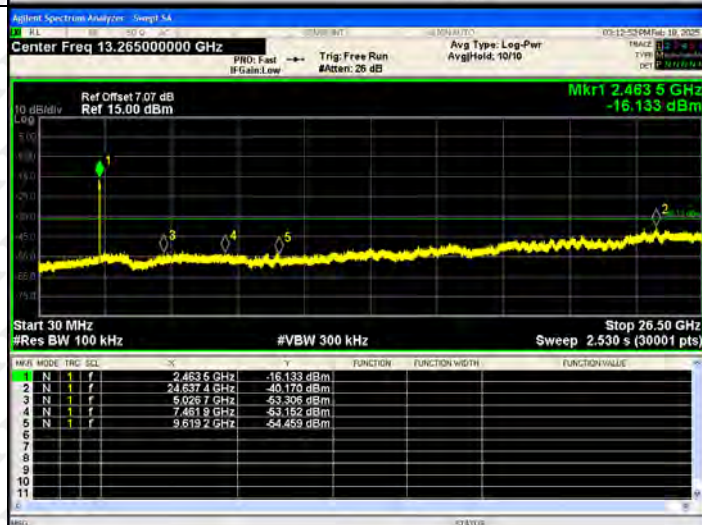
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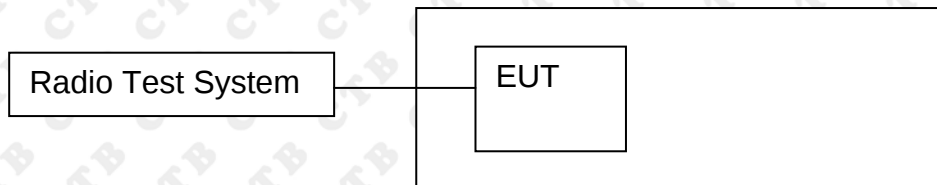


802.11 ax(HT40)/HCH



9. COUDUCTED OUTPUT POWER

9.1 Block Diagram Of Test Setup



9.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

9.3 Test procedure

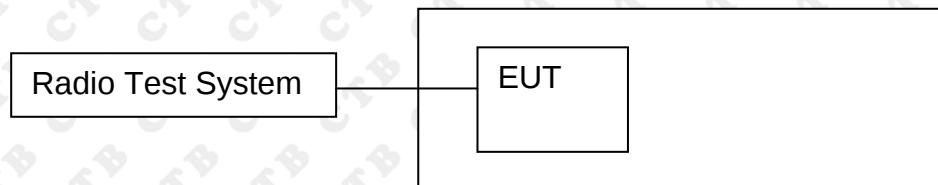
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak. Channel power function is used
3. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

9.4 Test Result

Mode	Channel.	Maximum Peak Power [dBm] ant 1	Maximum Peak Power [dBm] ant 2	Total Power Peak Output Power(dBm)	Limit[dBm]
802.11b	LCH	5.201	5	/	30
	MCH	5.511	4.404	/	30
	HCH	5.778	4.714	/	30
802.11g	LCH	5.473	6.041	/	30
	MCH	6.362	6.961	/	30
	HCH	6.508	5.961	/	30
802.11n(HT20)	LCH	4.807	5.275	8.058	30
	MCH	6.344	6.225	9.295	30
	HCH	5.64	5.4	8.532	30
802.11n(HT40)	LCH	5.55	5.462	8.517	30
	MCH	5.974	5.985	8.990	30
	HCH	6.202	6.337	9.280	30
802.11ax(HT20)	LCH	5.897	5.595	8.759	30
	MCH	5.781	5.489	8.648	30
	HCH	6.35	6.328	9.349	30
802.11ax(HT40)	LCH	5.698	5.789	8.754	30
	MCH	6.232	6.211	9.232	30
	HCH	6.438	6.466	9.462	30

10. 6DB OCCUPIED BANDWIDTH

10.1 Block Diagram Of Test Setup



10.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

10.3 Test procedure

1. Rem1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

10.4 Test Result

ANT1:

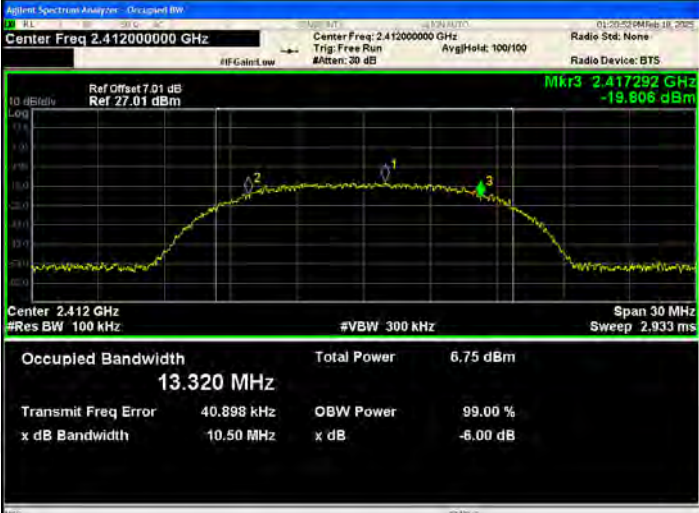
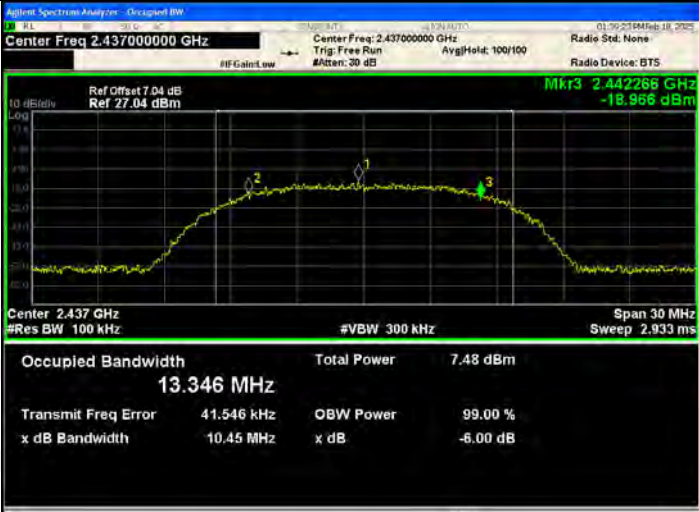
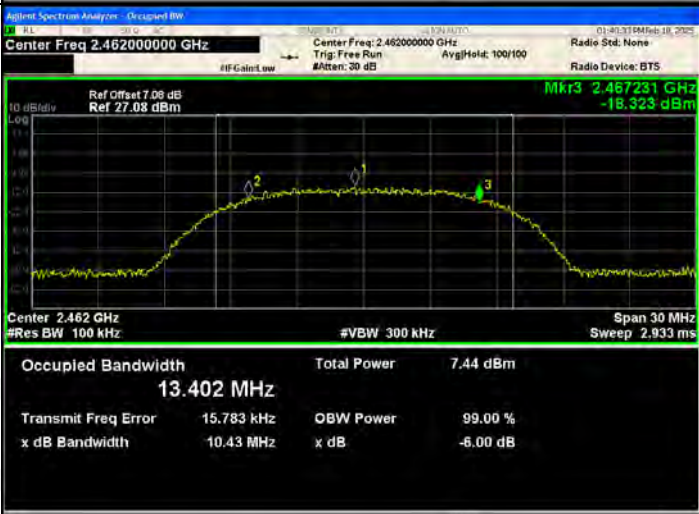
Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.502	500	PASS
	MCH	10.448	500	PASS
	HCH	10.43	500	PASS
802.11g	LCH	15.182	500	PASS
	MCH	15.416	500	PASS
	HCH	15.678	500	PASS
802.11n(HT20)	LCH	16.074	500	PASS
	MCH	15.453	500	PASS
	HCH	16.656	500	PASS
802.11n(HT40)	LCH	35.155	500	PASS
	MCH	35.16	500	PASS
	HCH	35.172	500	PASS
802.11ax(HT20)	LCH	18.84	500	PASS
	MCH	19.002	500	PASS
	HCH	19.07	500	PASS
802.11ax(HT40)	LCH	37.99	500	PASS
	MCH	37.841	500	PASS
	HCH	37.995	500	PASS

ANT2:

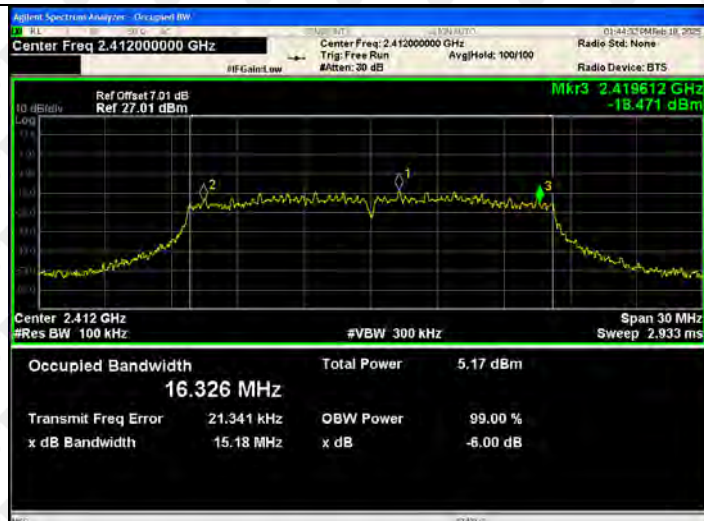
Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.41	500	PASS
	MCH	10.484	500	PASS
	HCH	10.386	500	PASS
802.11g	LCH	15.432	500	PASS
	MCH	15.427	500	PASS
	HCH	16.256	500	PASS
802.11n(HT20)	LCH	15.432	500	PASS
	MCH	15.678	500	PASS
	HCH	16.391	500	PASS
802.11n(HT40)	LCH	35.172	500	PASS
	MCH	35.178	500	PASS
	HCH	35.178	500	PASS
802.11ax(HT20)	LCH	18.888	500	PASS
	MCH	19.058	500	PASS
	HCH	19.005	500	PASS
802.11ax(HT40)	LCH	37.972	500	PASS
	MCH	38.05	500	PASS
	HCH	37.998	500	PASS

ANT1:

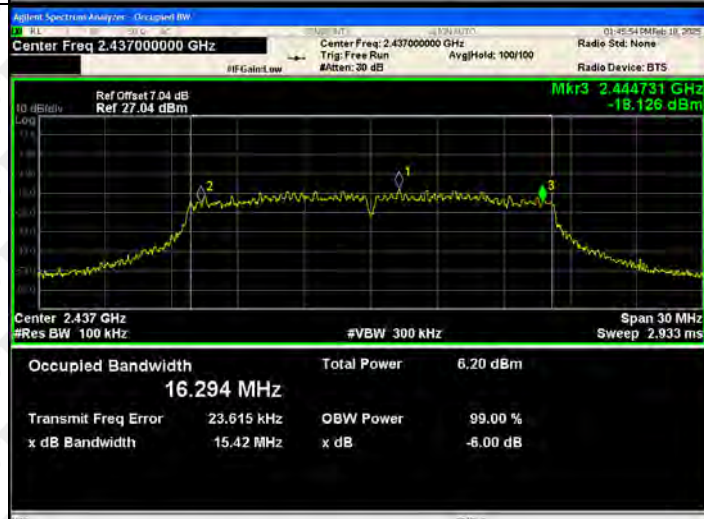
Test Graph:

Graphs	
802.11b /LCH	
802.11b /MCH	
802.11b/HCH	

802.11g/LCH

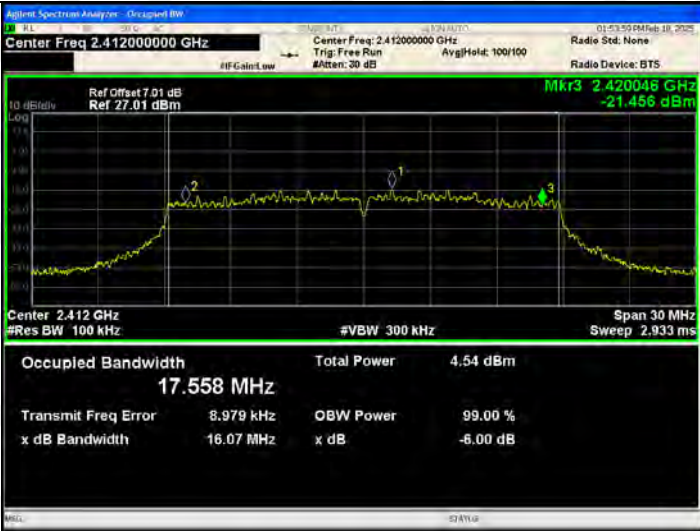
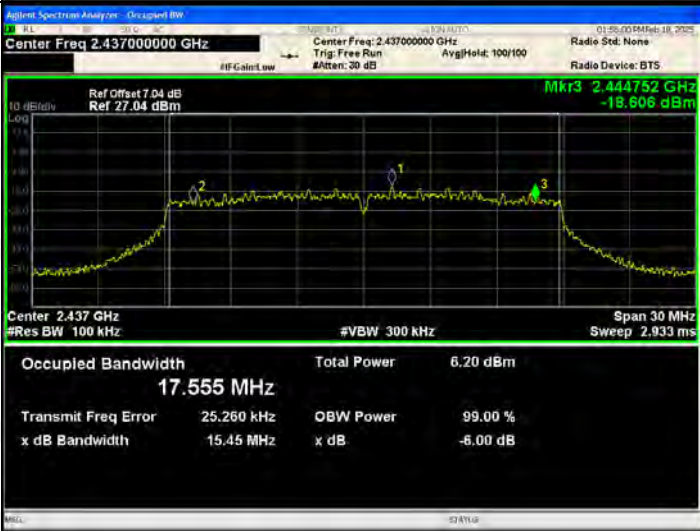
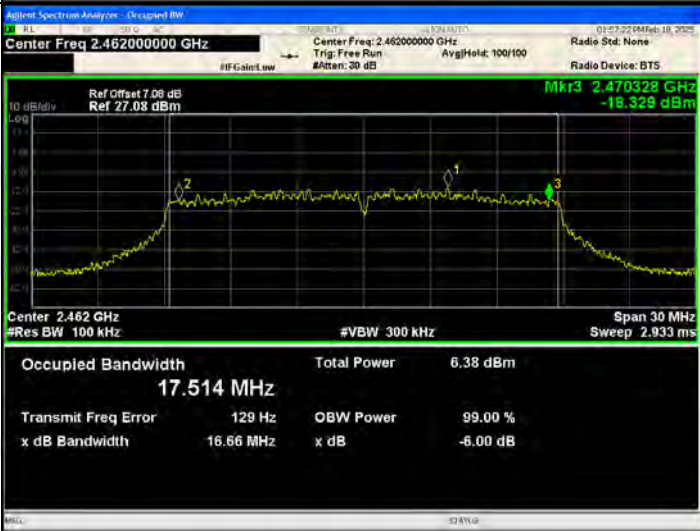


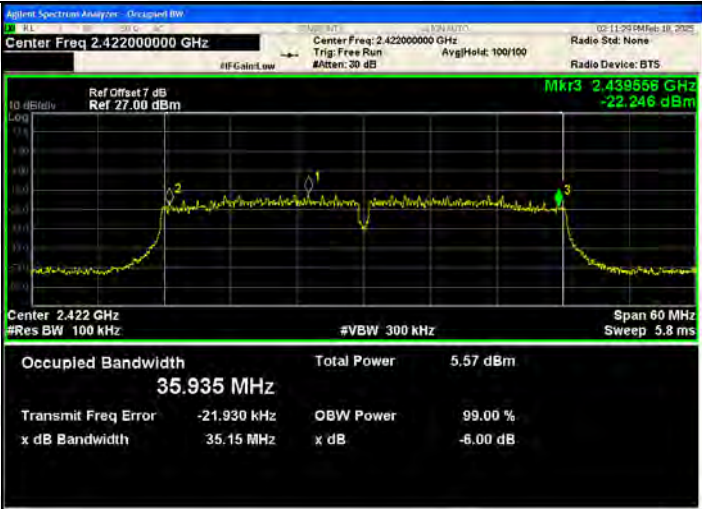
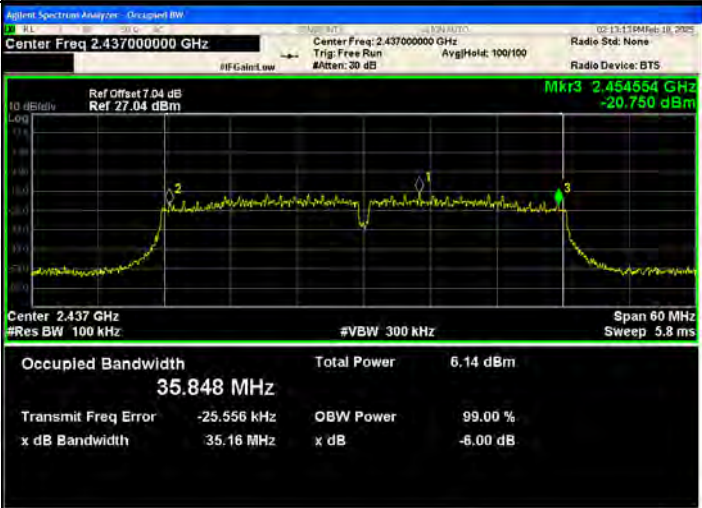
802.11g/MCH

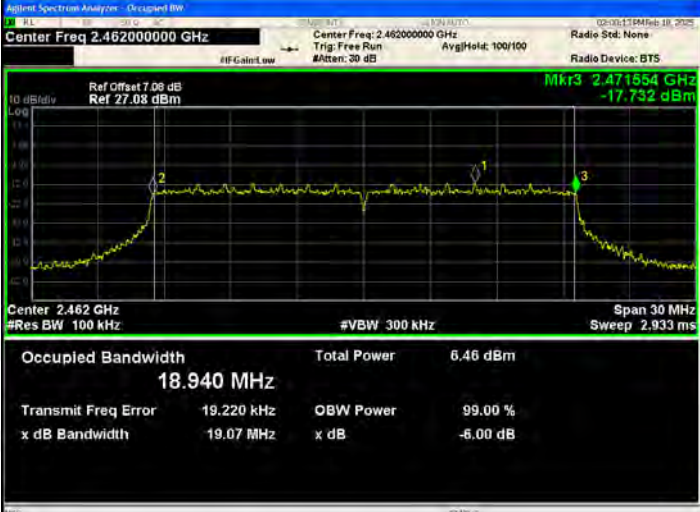


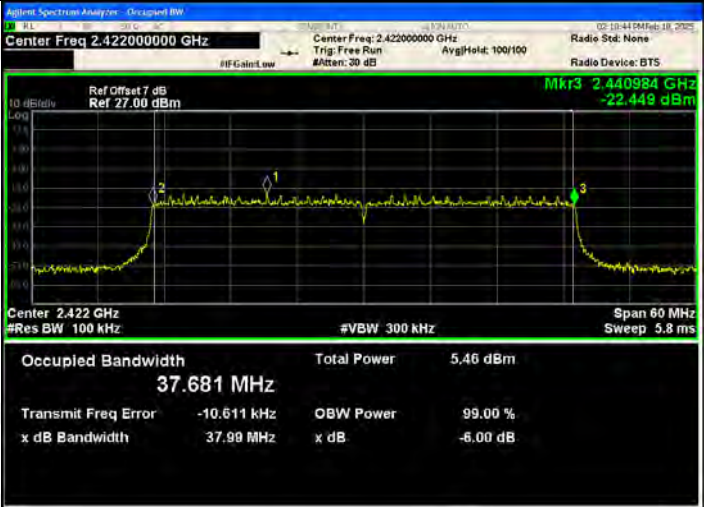
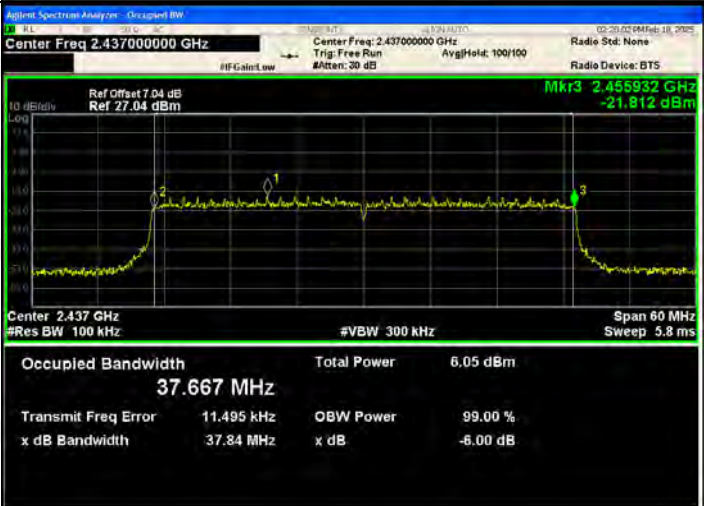
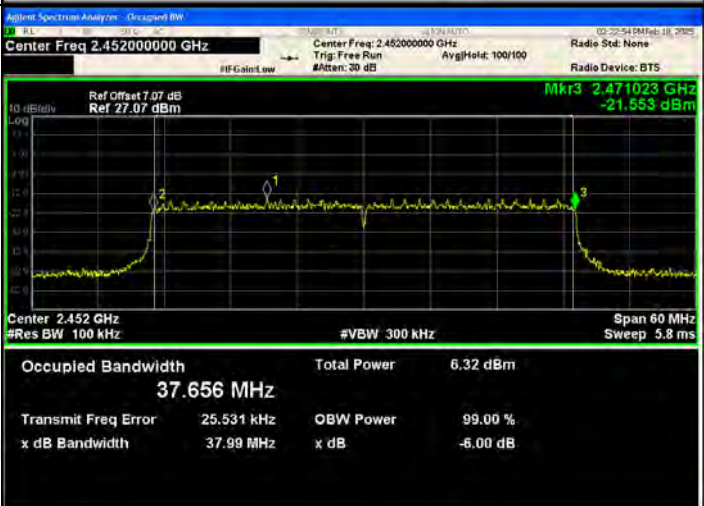
802.11g/HCH



802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.420048 GHz -21.456 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.558 MHz Total Power 4.54 dBm Transmit Freq Error 8.979 kHz OBW Power 99.00 % x dB Bandwidth 16.07 MHz x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.444752 GHz -18.606 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.555 MHz Total Power 6.20 dBm Transmit Freq Error 25.260 kHz OBW Power 99.00 % x dB Bandwidth 15.45 MHz x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 7.08 dB Ref 27.08 dBm Mkr3 2.470328 GHz -18.329 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.514 MHz Total Power 6.38 dBm Transmit Freq Error 129 Hz OBW Power 99.00 % x dB Bandwidth 16.66 MHz x dB -6.00 dB

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.42200000 GHz Ref Offset: 7.0 dB Ref: 27.00 dBm Occupied Bandwidth: 35.935 MHz Total Power: 5.57 dBm Transmit Freq Error: -21.930 kHz OBW Power: 99.00 % x dB Bandwidth: 35.15 MHz x dB: -6.00 dB
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.43700000 GHz Ref Offset: 7.04 dB Ref: 27.04 dBm Occupied Bandwidth: 35.848 MHz Total Power: 6.14 dBm Transmit Freq Error: -25.556 kHz OBW Power: 99.00 % x dB Bandwidth: 35.16 MHz x dB: -6.00 dB
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.45200000 GHz Ref Offset: 7.07 dB Ref: 27.07 dBm Occupied Bandwidth: 35.890 MHz Total Power: 6.32 dBm Transmit Freq Error: 41.216 kHz OBW Power: 99.00 % x dB Bandwidth: 35.17 MHz x dB: -6.00 dB

802.11ax(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Mkr3 2.421443 GHz -17.336 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 18.892 MHz Total Power 5.34 dBm Transmit Freq Error 23.138 kHz OBW Power 99.00 % x dB Bandwidth 18.84 MHz x dB -6.00 dB
802.11ax(HT20)/M CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.446527 GHz -18.759 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 18.885 MHz Total Power 6.38 dBm Transmit Freq Error 25.958 kHz OBW Power 99.00 % x dB Bandwidth 19.00 MHz x dB -6.00 dB
802.11ax(HT20)/H CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.46200000 GHz Ref Offset 7.08 dB Ref 27.08 dBm Mkr3 2.471554 GHz -17.732 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 18.940 MHz Total Power 6.46 dBm Transmit Freq Error 19.220 kHz OBW Power 99.00 % x dB Bandwidth 19.07 MHz x dB -6.00 dB

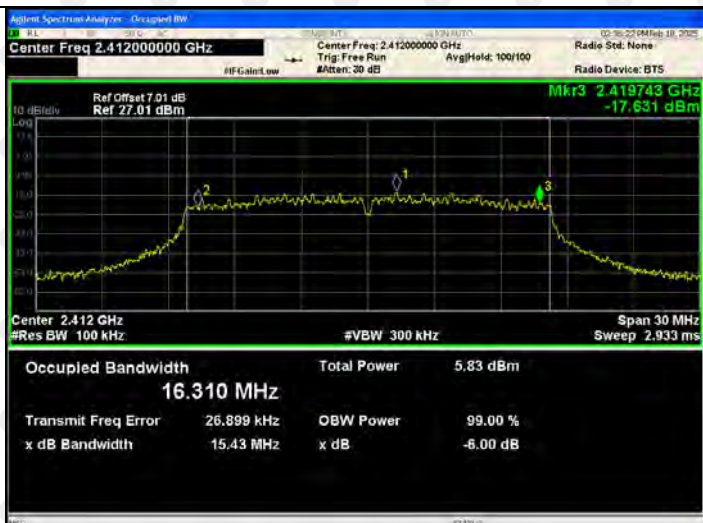
802.11ax(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.42200000 GHz Ref Offset 7 dB Ref 27.00 dBm Mkr3 2.440984 GHz -22.449 dBm Center 2.422 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 37.681 MHz Total Power 5.46 dBm Transmit Freq Error -10.611 kHz OBW Power 99.00 % x dB Bandwidth 37.99 MHz x dB -6.00 dB
802.11ax(HT40)/M CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Mkr3 2.455932 GHz -21.812 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 37.667 MHz Total Power 6.05 dBm Transmit Freq Error 11.495 kHz OBW Power 99.00 % x dB Bandwidth 37.84 MHz x dB -6.00 dB
802.11ax(HT40)/H CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.45200000 GHz Ref Offset 7.07 dB Ref 27.07 dBm Mkr3 2.471023 GHz -21.553 dBm Center 2.452 GHz #Res BW 100 kHz #VBW 300 kHz Span 60 MHz Sweep 5.8 ms Occupied Bandwidth 37.656 MHz Total Power 6.32 dBm Transmit Freq Error 25.531 kHz OBW Power 99.00 % x dB Bandwidth 37.99 MHz x dB -6.00 dB

ANT2:

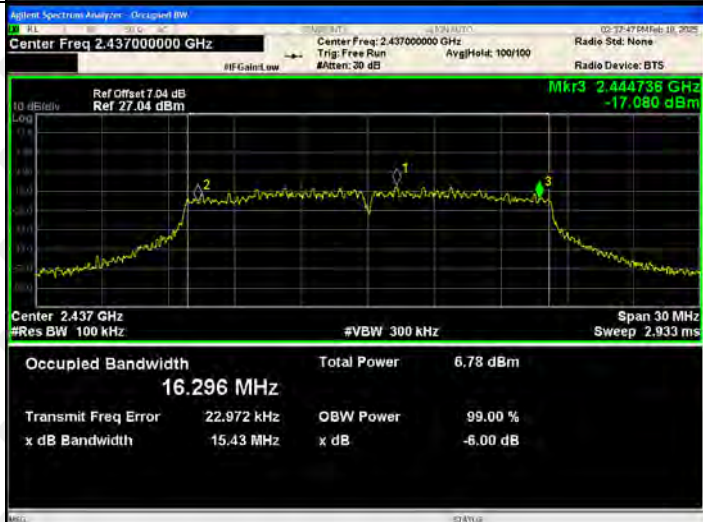
Test Graph:



802.11g/LCH

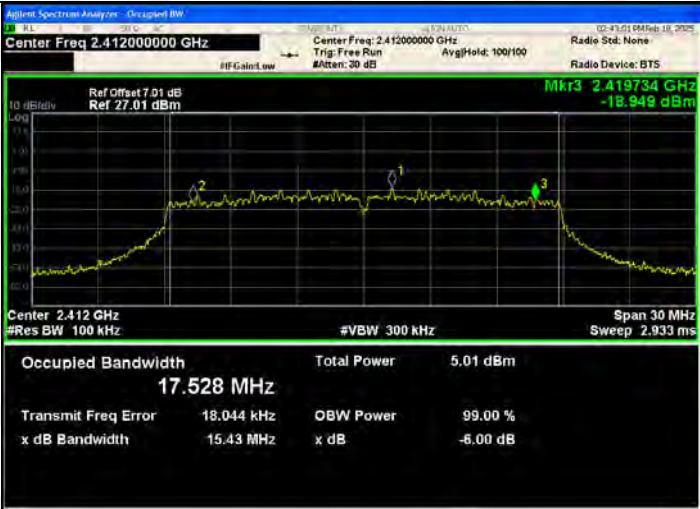


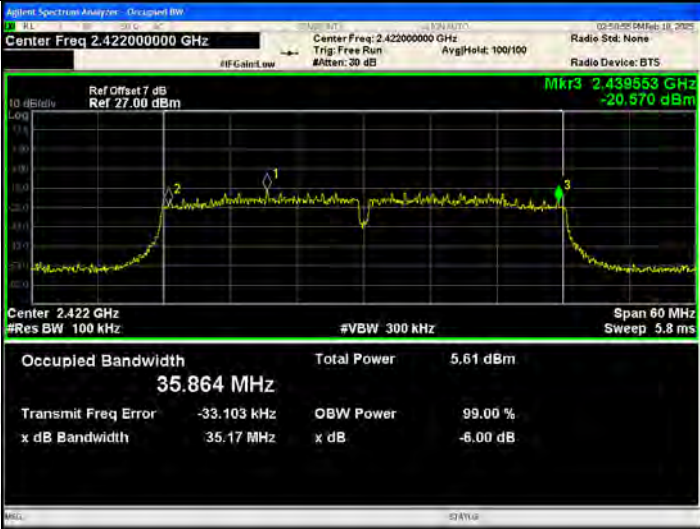
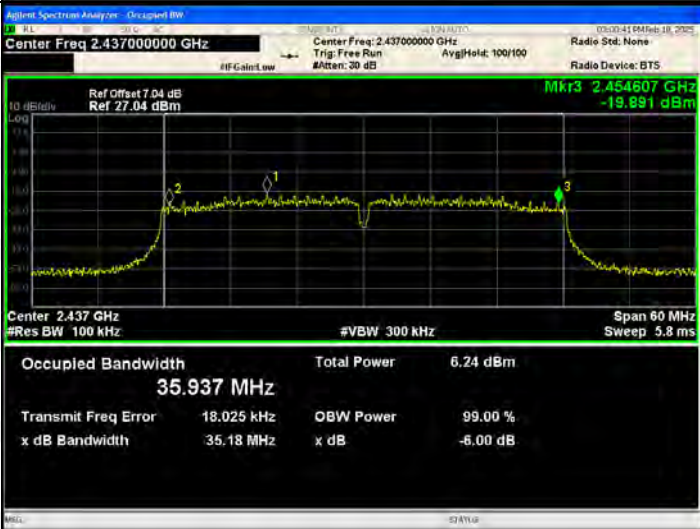
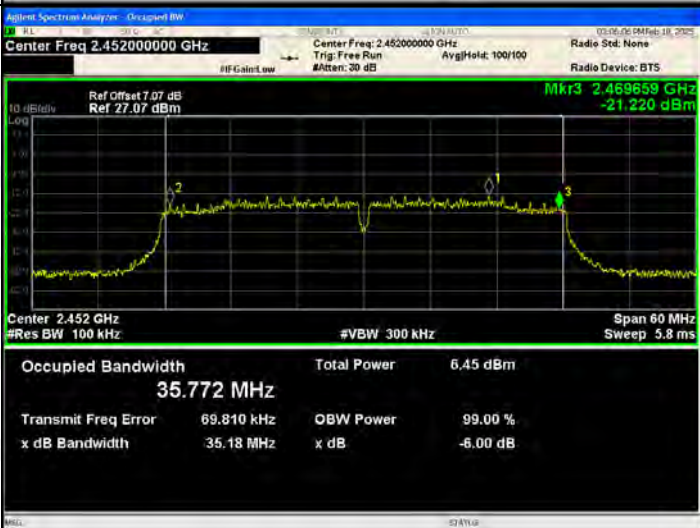
802.11g/MCH

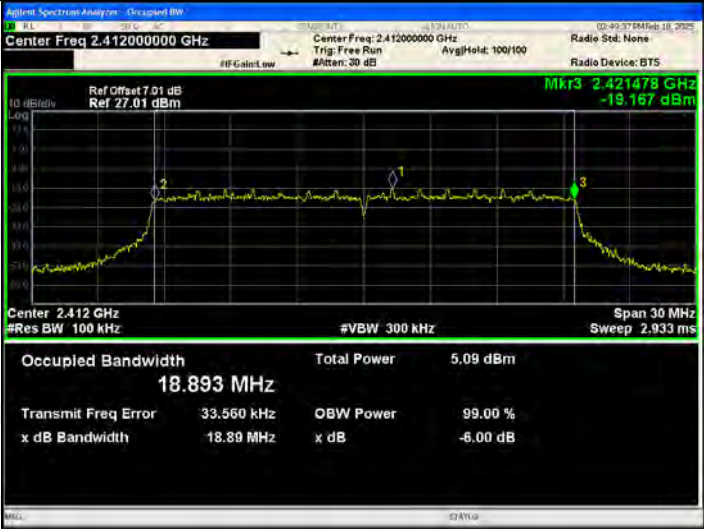
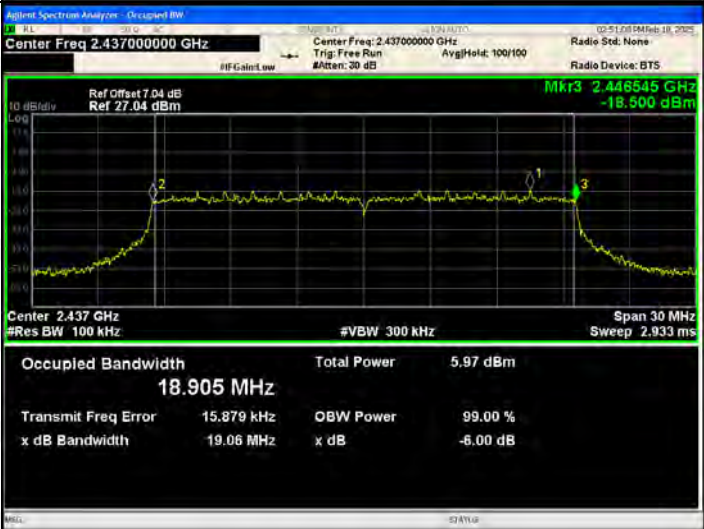
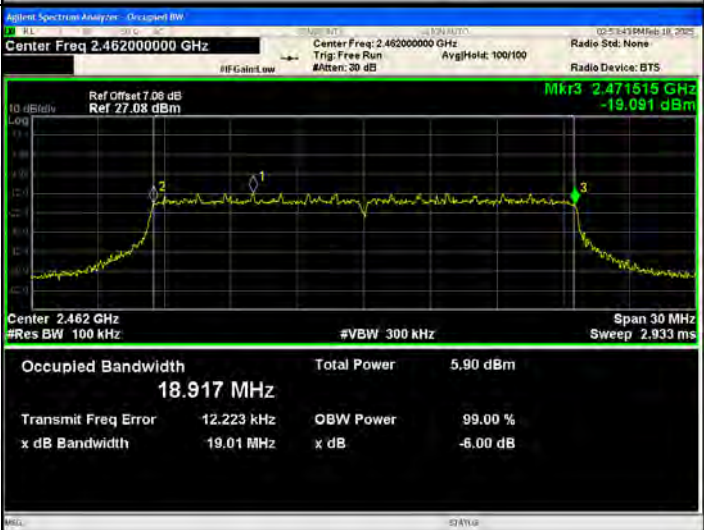


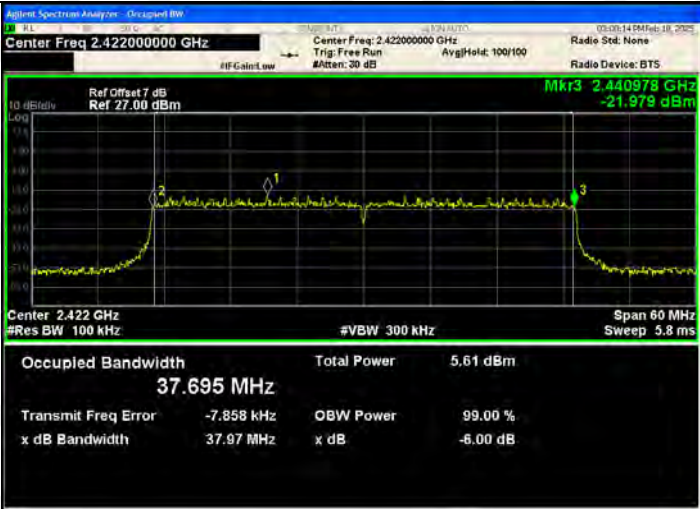
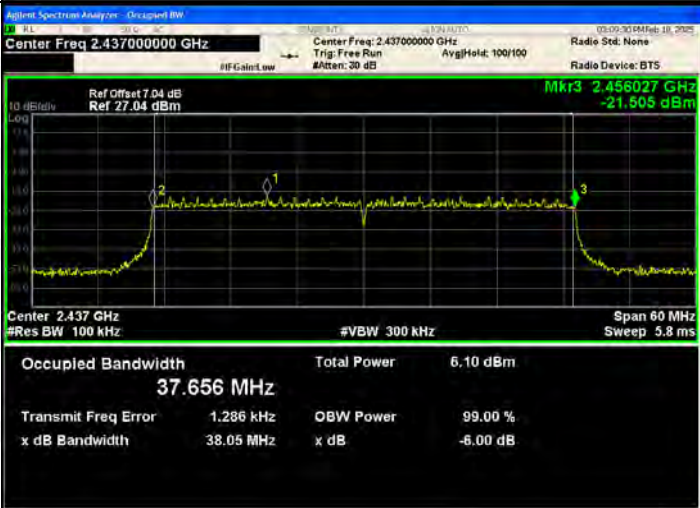
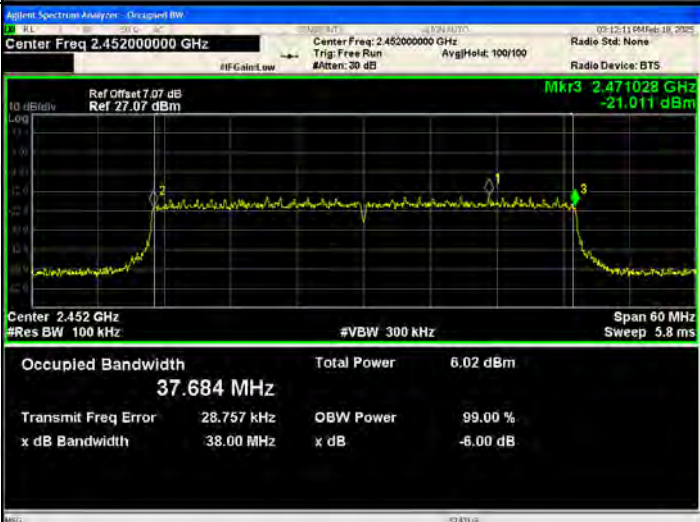
802.11g/HCH



802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Occupied Bandwidth 17.528 MHz Total Power 5.01 dBm Transmit Freq Error 18.044 kHz x dB Bandwidth 15.43 MHz OBW Power 99.00 % x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Occupied Bandwidth 17.521 MHz Total Power 6.06 dBm Transmit Freq Error 39.453 kHz x dB Bandwidth 15.68 MHz OBW Power 99.00 % x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 7.08 dB Ref 27.08 dBm Occupied Bandwidth 17.567 MHz Total Power 6.21 dBm Transmit Freq Error 11.885 kHz x dB Bandwidth 16.39 MHz OBW Power 99.00 % x dB -6.00 dB

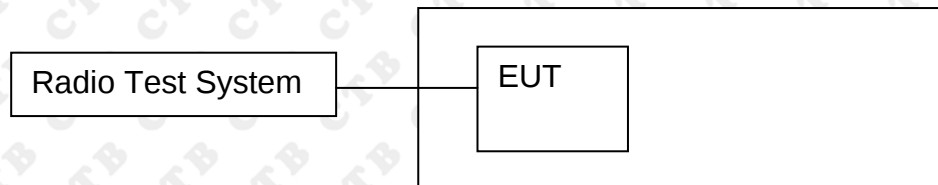
802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.42200000 GHz Ref Offset 7.0 dB Ref 27.00 dBm Occupied Bandwidth 35.864 MHz Total Power 5.61 dBm Transmit Freq Error -33.103 kHz OBW Power 99.00 % x dB Bandwidth 35.17 MHz x dB -6.00 dB
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Occupied Bandwidth 35.937 MHz Total Power 6.24 dBm Transmit Freq Error 18.025 kHz OBW Power 99.00 % x dB Bandwidth 35.18 MHz x dB -6.00 dB
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.45200000 GHz Ref Offset 7.07 dB Ref 27.07 dBm Occupied Bandwidth 35.772 MHz Total Power 6.45 dBm Transmit Freq Error 69.810 kHz OBW Power 99.00 % x dB Bandwidth 35.18 MHz x dB -6.00 dB

802.11ax(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 7.01 dB Ref 27.01 dBm Center Freq: 2.412000000 GHz Trig: Free Run #Atten: 20 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.421478 GHz -19.167 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 18.893 MHz Total Power 5.09 dBm Transmit Freq Error 33.560 kHz OBW Power 99.00 % x dB Bandwidth 18.89 MHz x dB -6.00 dB
802.11ax(HT20)/M CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 7.04 dB Ref 27.04 dBm Center Freq: 2.437000000 GHz Trig: Free Run #Atten: 20 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.448545 GHz -18.500 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 18.905 MHz Total Power 5.97 dBm Transmit Freq Error 15.879 kHz OBW Power 99.00 % x dB Bandwidth 19.06 MHz x dB -6.00 dB
802.11ax(HT20)/H CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 7.08 dB Ref 27.08 dBm Center Freq: 2.462000000 GHz Trig: Free Run #Atten: 20 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.471515 GHz -19.091 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 18.917 MHz Total Power 5.90 dBm Transmit Freq Error 12.223 kHz OBW Power 99.00 % x dB Bandwidth 19.01 MHz x dB -6.00 dB

802.11ax(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.42200000 GHz Ref Offset: 7.0 dB, Ref: 27.00 dBm Occupied Bandwidth: 37.695 MHz Total Power: 5.61 dBm Transmit Freq Error: -7.858 kHz x dB Bandwidth: 37.97 MHz OBW Power: 99.00 % x dB: -6.00 dB
802.11ax(HT40)/M CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.43700000 GHz Ref Offset: 7.04 dB, Ref: 27.04 dBm Occupied Bandwidth: 37.656 MHz Total Power: 6.10 dBm Transmit Freq Error: 1.286 kHz x dB Bandwidth: 38.05 MHz OBW Power: 99.00 % x dB: -6.00 dB
802.11ax(HT40)/H CH	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.45200000 GHz Ref Offset: 7.07 dB, Ref: 27.07 dBm Occupied Bandwidth: 37.684 MHz Total Power: 6.02 dBm Transmit Freq Error: 28.757 kHz x dB Bandwidth: 38.00 MHz OBW Power: 99.00 % x dB: -6.00 dB

11. POWER SPECTRAL DENSITY

11.1 Block Diagram Of Test Setup



11.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3kHz)	2400-2483.5	PASS

11.3 Test procedure

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = Peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

11.4 Test Result

Mode	Channel.	Power Spectral Density [dBm /3kHz] ANT 1	Power Spectral Density [dBm /3kHz] ANT 2	Power Spectral Density [dBm /3kHz] Total	Limit(dBm)
802.11b	LCH	-24.618	-24.835	/	8
	MCH	-24.219	-25.276	/	8
	HCH	-24.289	-25.098	/	8
802.11g	LCH	-27.154	-26.637	/	8
	MCH	-26.497	-26.281	/	8
	HCH	-25.829	-25.479	/	8
802.11n(H T20)	LCH	-27.991	-26.879	-24.389	8
	MCH	-25.484	-26.252	-22.841	8
	HCH	-24.698	-26.004	-22.292	8
802.11n(H T40)	LCH	-27.883	-29.264	-25.509	8
	MCH	-29.611	-28.635	-26.085	8
	HCH	-28.877	-29.178	-26.015	8
802.11ax(HT20)	LCH	-28.915	-28.993	-25.944	8
	MCH	-27.701	-28.499	-25.071	8
	HCH	-28.294	-28.136	-25.204	8
802.11ax(HT40)	LCH	-31.434	-31.687	-28.548	8
	MCH	-30.363	-30.082	-27.210	8
	HCH	-30.018	-29.48	-26.730	8

ANT1:
Test Graph

Graphs

802.11b /LCH



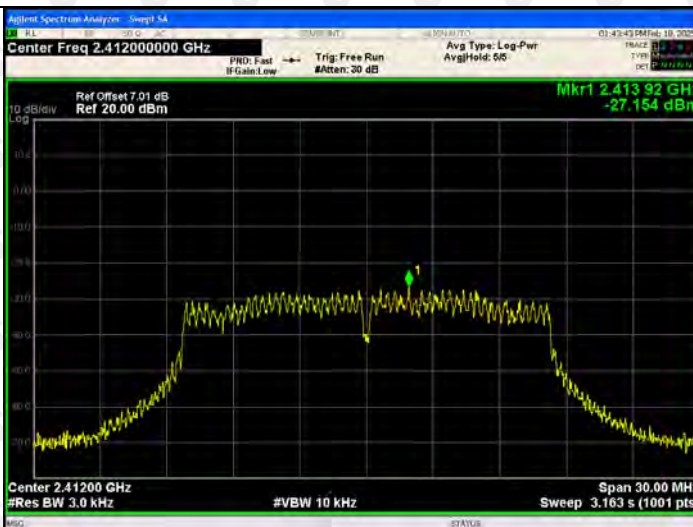
802.11b /MCH



802.11b/HCH



802.11g/LCH

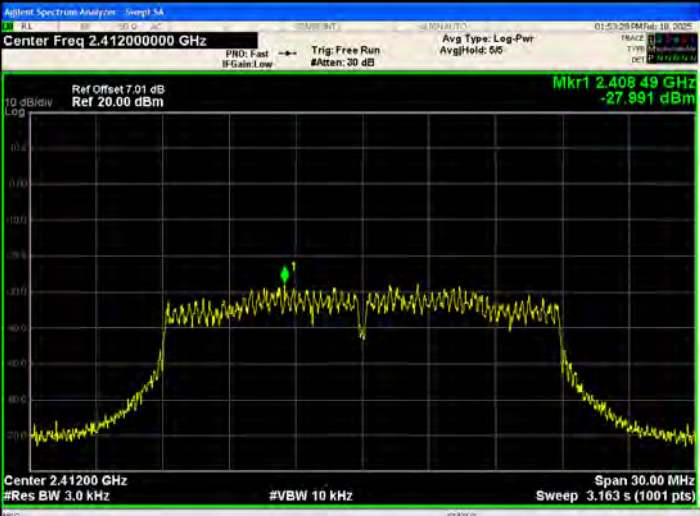
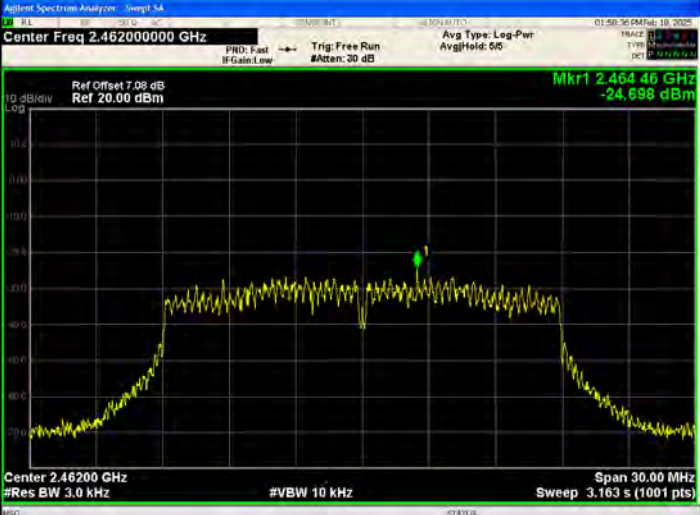


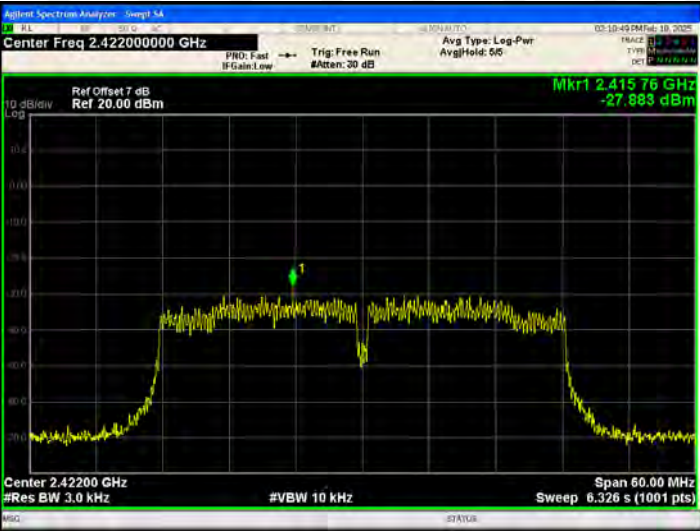
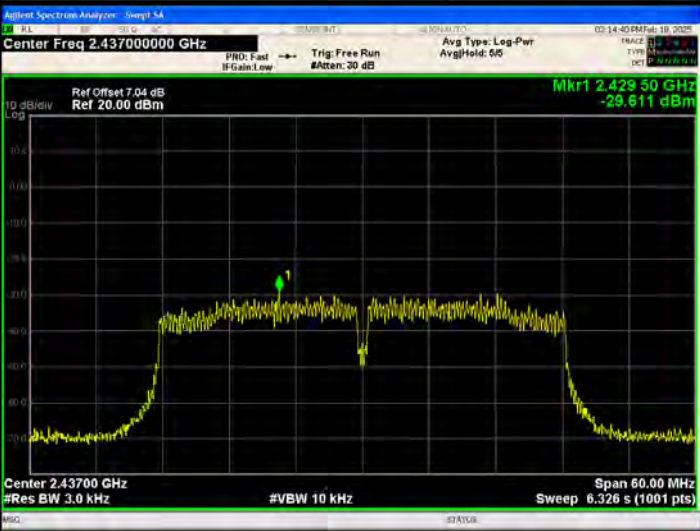
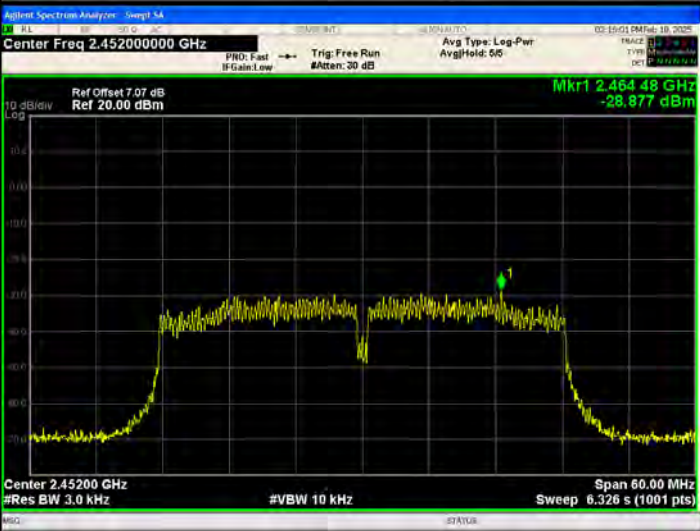
802.11g/MCH



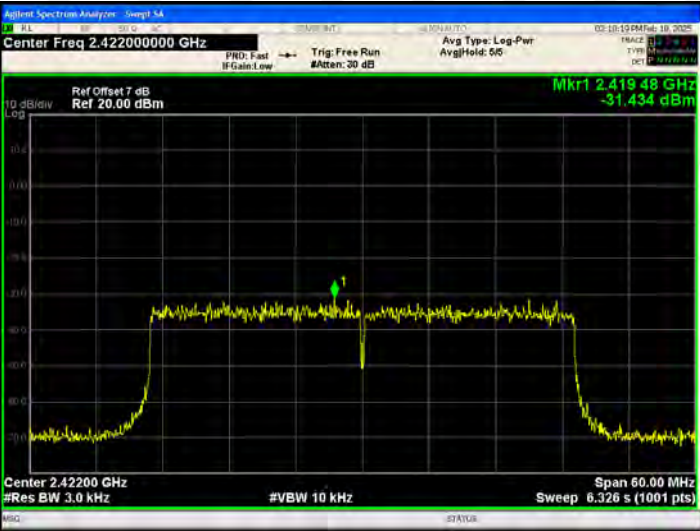
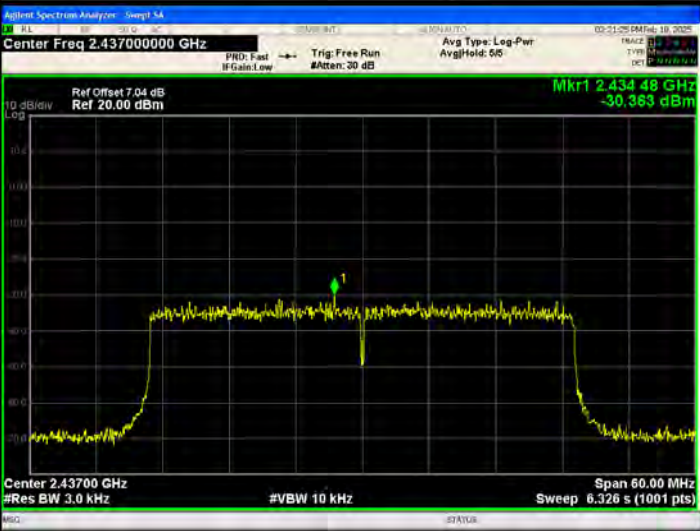
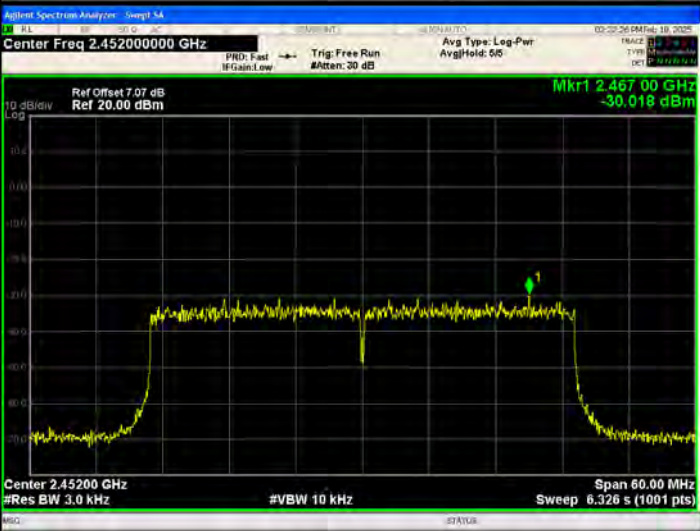
802.11g/HCH



802.11n(HT20)/LCH	 Agilent Spectrum Analyzer - Sweep 1.54 Center Freq 2.41200000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.408 49 GHz -27.991 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/MCH	 Agilent Spectrum Analyzer - Sweep 1.54 Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.440 15 GHz -25.484 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/HCH	 Agilent Spectrum Analyzer - Sweep 1.54 Center Freq 2.46200000 GHz Ref Offset 7.06 dB Ref 20.00 dBm Mkr1 2.464 46 GHz -24.698 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts)

802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.42200000 GHz Ref Offset 7.0 dB Ref 20.00 dBm Mkr1 2.41576 GHz -27.883 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.42950 GHz -29.611 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.45200000 GHz Ref Offset 7.07 dB Ref 20.00 dBm Mkr1 2.46448 GHz -28.877 dBm Center 2.45200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts)

802.11ax(HT20)/LC H	
802.11ax(HT20)/MC H	
802.11ax(HT20)/HC H	

802.11ax(HT40)/LC H	 Agilent Spectrum Analyzer - Sweep 1.54 Center Freq 2.42200000 GHz Ref Offset 7.0 dB Ref 20.00 dBm Mkr1 2.41948 GHz -31.434 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11ax(HT40)/MC H	 Agilent Spectrum Analyzer - Sweep 1.54 Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.43448 GHz -30.363 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11ax(HT40)/HC H	 Agilent Spectrum Analyzer - Sweep 1.54 Center Freq 2.45200000 GHz Ref Offset 7.07 dB Ref 20.00 dBm Mkr1 2.46700 GHz -30.018 dBm Center 2.45200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)

ANT 2:
Test Graph

Graphs

802.11b /LCH



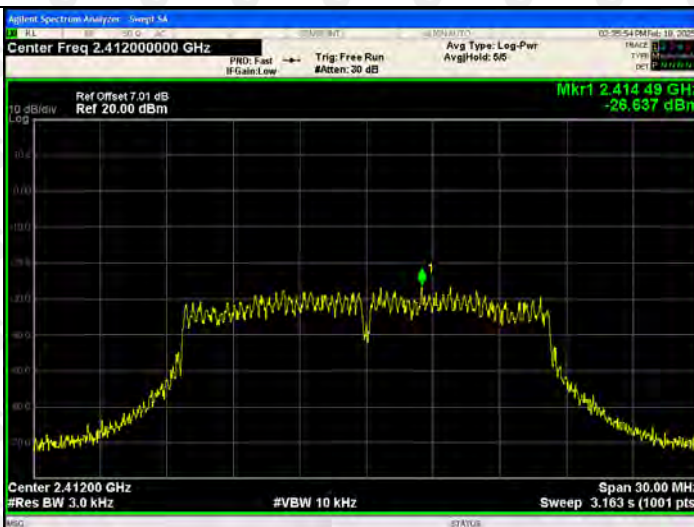
802.11b /MCH



802.11b/HCH



802.11g/LCH

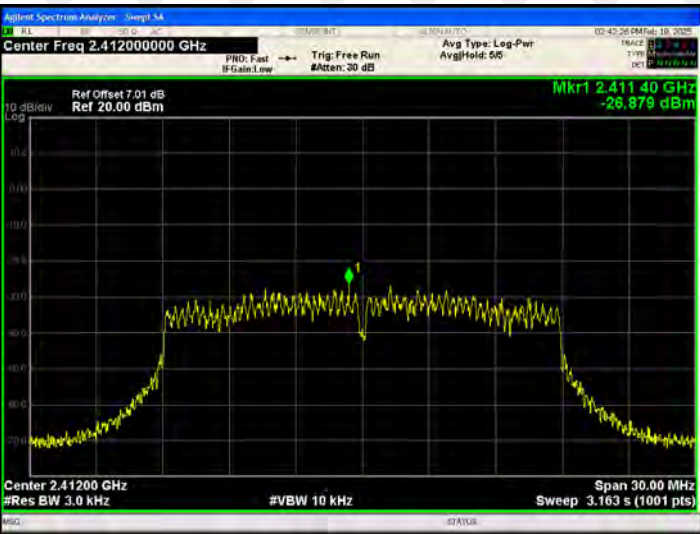


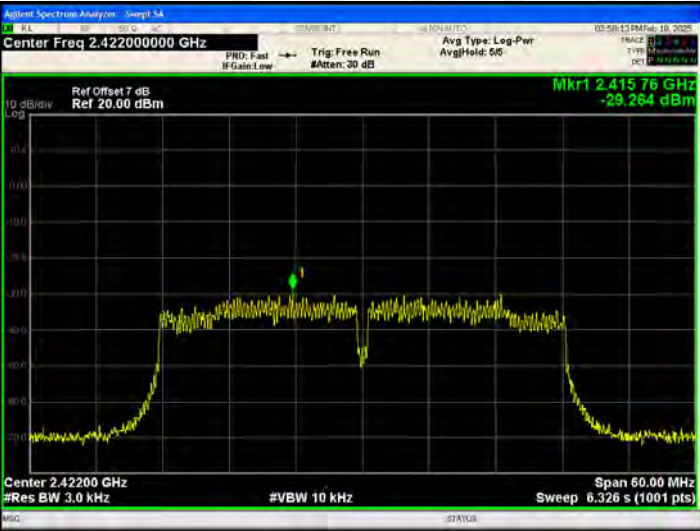
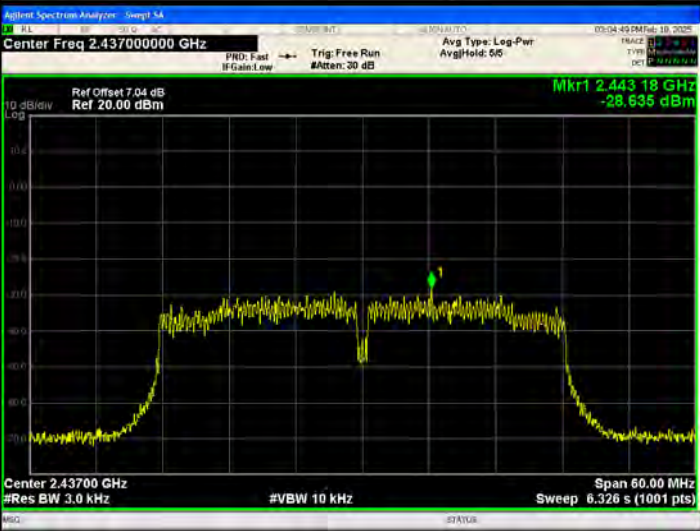
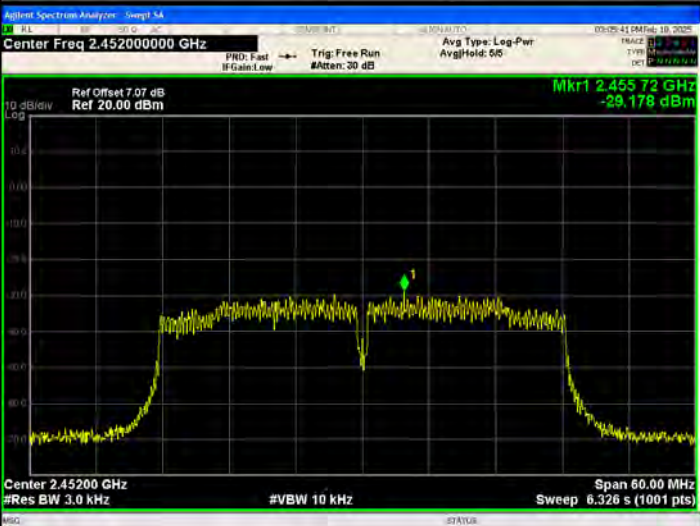
802.11g/MCH

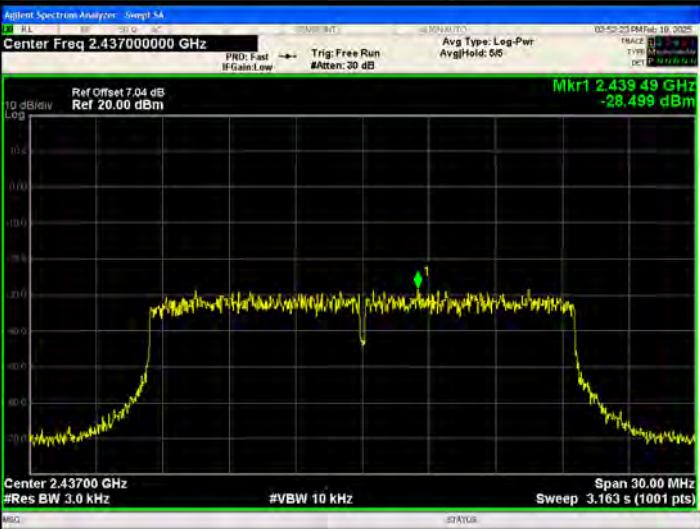
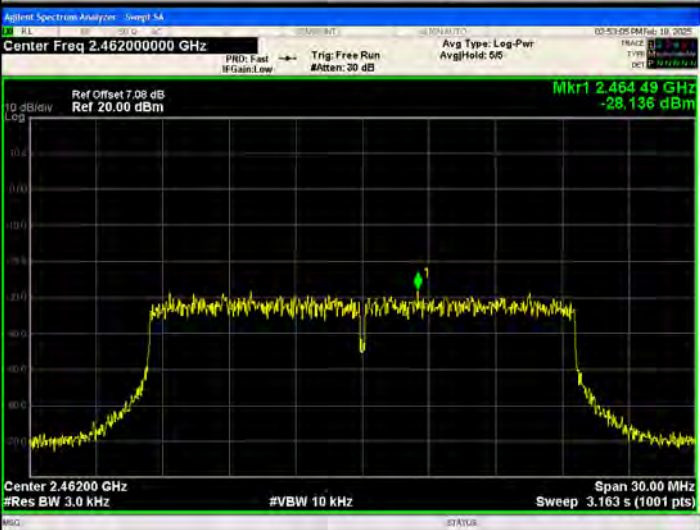


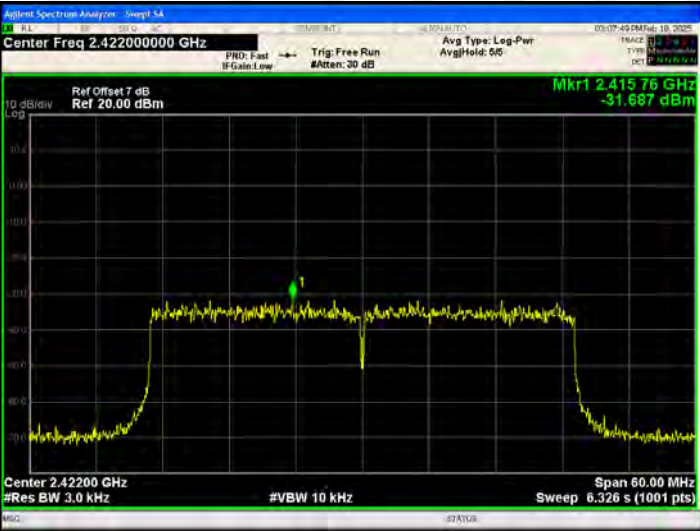
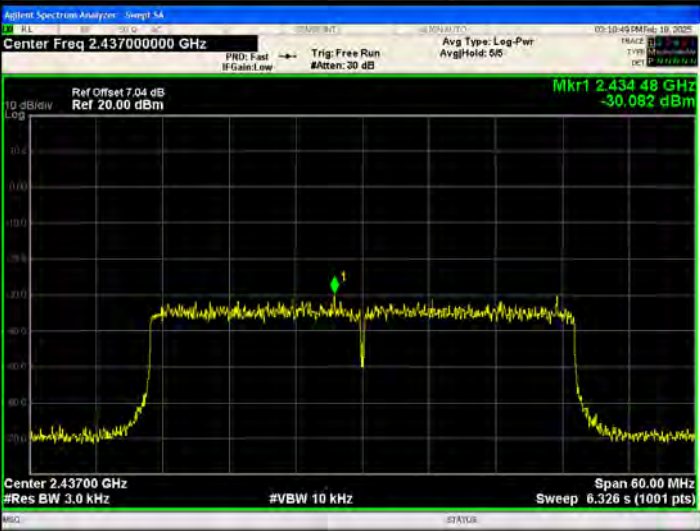
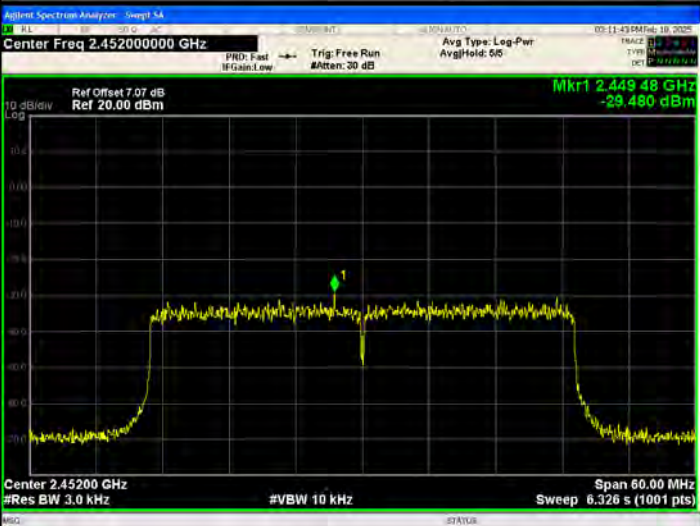
802.11g/HCH



802.11n(HT20)/LCH	
802.11n(HT20)/MCH	
802.11n(HT20)/HCH	

802.11n(HT40)/LCH	 Agilent Spectrum Analyzer - Sweep 1: M4 Center Freq 2.42200000 GHz Ref Offset 7.0 dB Ref 20.00 dBm Mkr1 2.41576 GHz -29.284 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/MCH	 Agilent Spectrum Analyzer - Sweep 1: M4 Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.44319 GHz -28.635 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/HCH	 Agilent Spectrum Analyzer - Sweep 1: M4 Center Freq 2.45200000 GHz Ref Offset 7.07 dB Ref 20.00 dBm Mkr1 2.45572 GHz -29.178 dBm Center 2.45200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 6.326 s (1001 pts)

802.11ax(HT20)/LC H	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.41200000 GHz Ref Offset 7.01 dB Ref 20.00 dBm Mkr1 2.41950 GHz -28.993 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts)
802.11ax(HT20)/MC H	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.43949 GHz -28.499 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts)
802.11ax(HT20)/HC H	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.46200000 GHz Ref Offset 7.06 dB Ref 20.00 dBm Mkr1 2.46449 GHz -28.136 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 3.163 s (1001 pts)

802.11ax(HT40)/LC H	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.42200000 GHz Ref Offset 7.0 dB Ref 20.00 dBm Mkr1 2.41576 GHz -31.687 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11ax(HT40)/MC H	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.43700000 GHz Ref Offset 7.04 dB Ref 20.00 dBm Mkr1 2.43448 GHz -30.082 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11ax(HT40)/HC H	 Agilent Spectrum Analyzer - Sweep 1.44 Center Freq 2.45200000 GHz Ref Offset 7.07 dB Ref 20.00 dBm Mkr1 2.44948 GHz -29.480 dBm Center 2.45200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)

12. ANTENNA REQUIREMENT

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

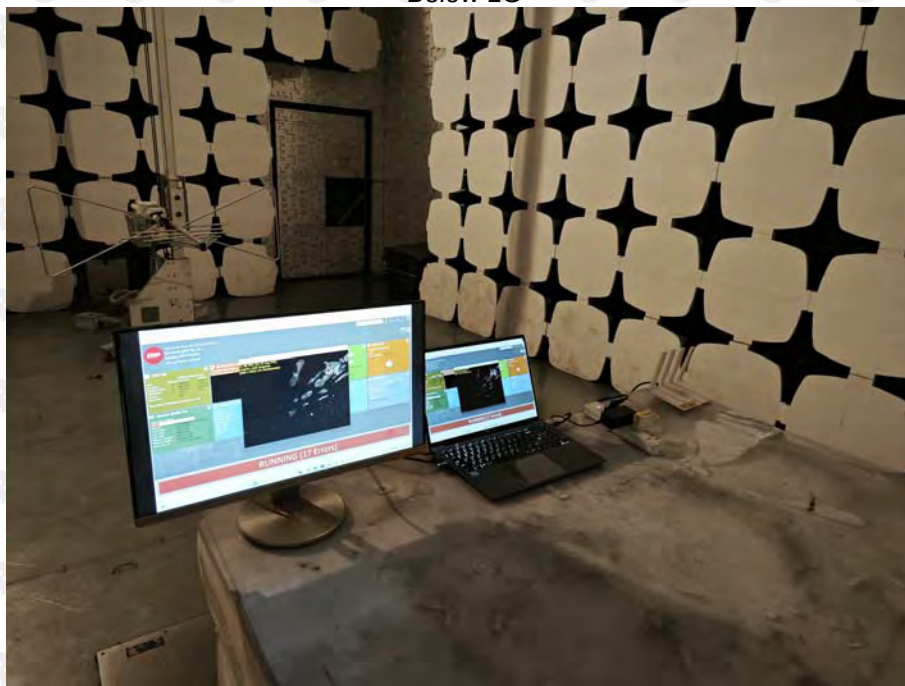
EUT Antenna:

The antenna is FPC antenna and no consideration of replacement. The best case gain of the antenna is Ant1: 1.18dBi, Ant2: 3.11dBi.

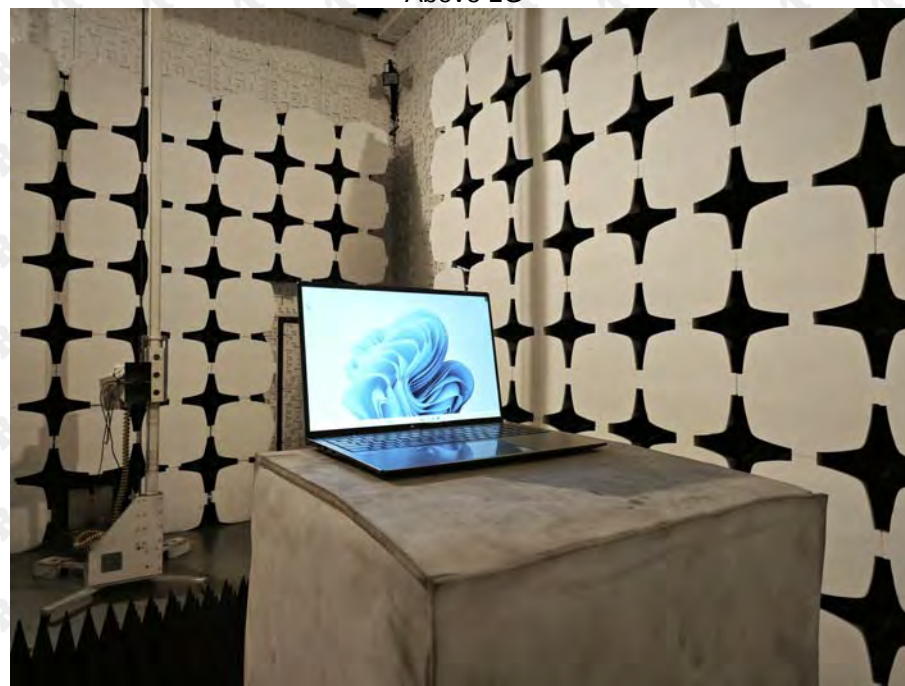
13. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G



Above 1G



Conducted Emission



***** END OF REPORT *****