

TEST REPORT

Product Name: 24 INCH ELED TV
FCC ID: 2AHU2-JTV2423DCS
Trademark: JENSEN
Model Number: JTV2423DCS
Prepared For: ASA Electronics Shenzhen Limited
Address: Room 503, 5/F., Unit A, Skyworth Building, Gaoxin Avenue.1.S., Nanshan District, Shen Zhen 518057, China
Manufacturer: ASA Electronics Shenzhen Limited
Address: Room 503, 5/F., Unit A, Skyworth Building, Gaoxin Avenue.1.S., Nanshan District, Shen Zhen 518057, China
Prepared By: Shenzhen CTB Testing Technology Co., Ltd.
Address: 1&2/F., Building A, No.26, Xinxhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date: Feb.13, 2023
Sample tested Date: Feb.13, 2023 to Feb.17, 2023
Issue Date: Feb.17, 2023
Report No.: CTB230217007RF
Test Standards: FCC Part15.247
ANSI C63.10:2013
Test Results: PASS
Remark: This is WIFI-2.4GHz band radio test report.
Compiled by: Reviewed by: Approved by:

ChenZheng

Chen Zheng

Arron Liu

Arron LiuBin 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.

TABLE OF CONTENT

Test Report Declaration	Page
1. VERSION	3
2. TEST SUMMARY	4
3. MEASUREMENT UNCERTAINTY	5
4. PRODUCT INFORMATION AND TEST SETUP	6
4.1 Product Information	6
4.2 Test Setup Configuration	6
4.3 Support Equipment	6
4.4 Channel List	6
4.5 Test Mode	7
4.6 Test Environment	7
5. TEST FACILITY AND TEST INSTRUMENT USED	8
5.1 Test Facility	8
5.2 Test Instrument Used	8
6. AC POWER LINE CONDUCTED EMISSION	10
6.1 Block Diagram Of Test Setup	10
6.2 Limit	10
6.3 Test procedure	10
6.4 Test Result	12
7. RADIATED SPURIOUS EMISSION	13
7.1 Block Diagram Of Test Setup	13
7.2 Limit	13
7.3 Test procedure	14
7.4 Test Result	15
8. BAND EDGE AND RF CONDUCTED SPURIOUS EMISSIONS	37
8.1 Block Diagram Of Test Setup	37
8.2 Limit	37
8.3 Test procedure	37
8.4 Test Result	38
9. CONDUCTED OUTPUT POWER	54
9.1 Block Diagram Of Test Setup	54
9.2 Limit	54
9.3 Test procedure	54
9.4 Test Result	55
10. 6DB OCCUPIED BANDWIDTH	56
10.1 Block Diagram Of Test Setup	56
10.2 Limit	56
10.3 Test procedure	56
10.4 Test Result	57
11. POWER SPECTRAL DENSITY	67
11.1 Block Diagram Of Test Setup	67
11.2 Limit	67
11.3 Test procedure	67
11.4 Test Result	68
12. ANTENNA REQUIREMENT	77
13. EUT PHOTOGRAPHS	78
14. EUT TEST SETUP PHOTOGRAPHS	79

(Note: N/A means not applicable)

**1. VERSION**

Report No.	Issue Date	Description	Approved
CTB230217007RF	Feb.17, 2023	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	/	N/A
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	$U=\pm 54.3\text{Hz}$
Conducted output power Above 1G	$U=\pm 1.0\text{dB}$
Conducted output power below 1G	$U=\pm 0.9\text{dB}$
Power Spectral Density , Conduction	$U=\pm 1.0\text{dB}$
Conduction spurious emissions	$U=\pm 2.8\text{dB}$
Out of band emission	$U=\pm 54\text{Hz}$
3m chamber Radiated spurious emission(9KHz-30MHz)	$U=\pm 4.8\text{dB}$
3m chamber Radiated spurious emission(30MHz-1GHz)	$U=\pm 4.3\text{dB}$
3m chamber Radiated spurious emission(1GHz-18GHz)	$U=\pm 4.5\text{dB}$
3m chamber Radiated spurious emission(1GHz-40GHz)	$U=\pm 4.8\text{dB}$
humidity uncertainty	$U=\pm 5.3\%$
Temperature uncertainty	$U=\pm 0.59^{\circ}\text{C}$
Supply voltages	$U=\pm 3\%$
Time	$U=\pm 5\%$
Conducted Emission (9KHz-30MHz)	3.2 dB

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	JTV2423DCS
Model Description:	N/A
Wi-Fi Specification:	IEEE 802.11b/g/n
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	WiFi: IEEE 802.11b/g/n 20: 2412-2462MHz/ 11 channel IEEE 802.11n 40: 2422-2452MHz/ 7 channel
Max. RF output power:	WiFi (2.4G) : 15.496dBm
Type of Modulation:	WiFi: DSSS, OFDM
Antenna installation:	WiFi: Internal antenna
Antenna Gain:	WiFi (2.4G) : ANT1:0.92dBi, ANT2:0.92dBi
Ratings:	DC 12V/3A by DC power supply

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
/	/	/	/	/	/

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.

MIMO(ANT 1+ANT 2)

Test mode	Low channel	Middle channel	High channel
Transmitting(802.11b/g/n20)	2412MHz	2437MHz	2462MHz
Transmitting(802.11n40)	2422MHz	2437MHz	2452MHz

MIMO(ANT 1+ANT 2)

Test mode	Low channel	Middle channel	High channel
Transmitting(802.11n20)	2412MHz	2437MHz	2462MHz
Transmitting(802.11n40)	2422MHz	2437MHz	2452MHz

EUT has two Internal Antenna with Max Antenna Gain 0.92dBi on every antenna, CDD device with two spatial streams, according to KDB662911 D01 v02r01,

Directional gain= GANT + Array Gain, where Array Gain is as follows.

1) For power spectral density(PSD) measurements,

Array Gain=10log(NANT/NSS)dB=10log(2/1)=3.01dB,

So the directional gain for PSD is 4.01dBi

2) For power measurements,

The Array gain=0 dB for NANT≤4,

So the directional gain for Power measurements is 1dBi

NOTE: Dutycycle>98%.

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

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	12
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, Xinh 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

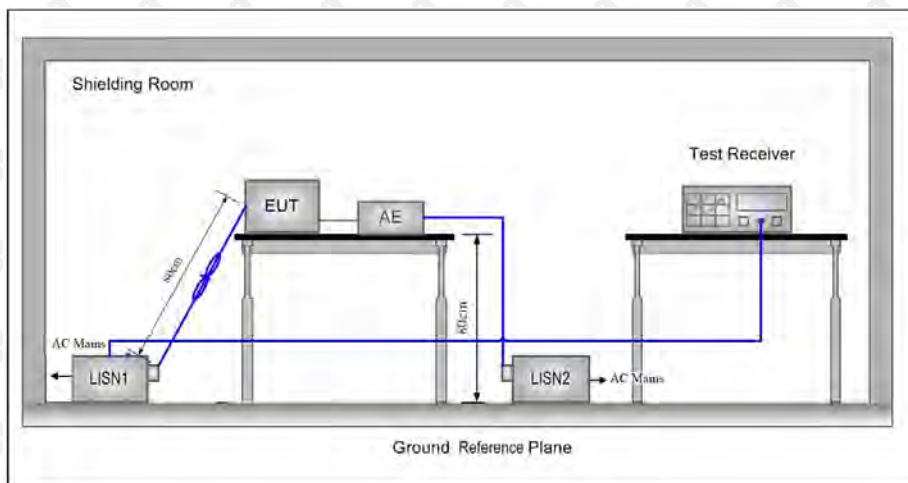
Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	2023.07.19
2	Power Sensor	Agilent	U2021XA	MY56120032	2023.07.19
3	Power Sensor	Agilent	U2021XA	MY56120034	2023.07.19
4	Communication test set	R&S	CMW500	108058	2023.07.19
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2023.07.19
6	Signal Generator	Agilent	N5181A	MY50140365	2023.07.19
7	Vector signal generator	Agilent	N5182A	MY47420195	2023.07.19
8	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	2023.07.19
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	2023.07.19
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	2023.07.19
12	BT&WI-FI Automatic test software	Microwave	MTS8000	Ver. 2.0.0.0	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	2023.10.30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	2023.07.19
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/
16	966 chamber	C.R.T.	966	/	2024.08.11
17	Receiver	R&S	ESPI	100362	2023.07.19
18	Amplifier	HP	8447E	2945A02747	2023.07.19
19	Amplifier	Agilent	8449B	3008A01838	2023.07.19
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2023.07.22

21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	2023.07.22
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	2023.07.23
24	loop antenna	ZHINAN	ZN30900A	GTS534	/
25	40G Horn antenna	A/H/System	SAS-574	588	2024.10.30
26	Amplifier	AEROFLEX	Aeroflex	097	2024.10.30

Radiated emission					
No.	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	2023.07.22
2	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2023.07.22
3	Amplifier	Agilent	8449B	3008A01838	2023.07.19
4	Amplifier	HP	8447E	2945A02747	2023.07.19
5	EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100428/003	2023.07.19
6	Coaxial cable	ETS	RFC-SNS-100-NMS-80 NI	/	2023.07.19
7	Coaxial cable	ETS	RFC-SNS-100-NMS-20 NI	/	2023.07.19
8	Coaxial cable	ETS	RFC-SNS-100-SMS-20 NI	/	2023.07.19
9	Coaxial cable	ETS	RFC-NNS-100-NMS-300 NI	/	2023.07.19
10	Communication test set	Agilent	E5515C	MY50102567	2023.07.19
11	Communication test set	R&S	CMW500	108058	2023.07.19
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 $50\Omega/50\mu\text{H} + 5\Omega$ 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

N/A

NOTE: This EUT is powered by DC power only, this test item is not applicabl

7. RADIATED SPURIOUS EMISSION

7.1 Block Diagram Of Test Setup

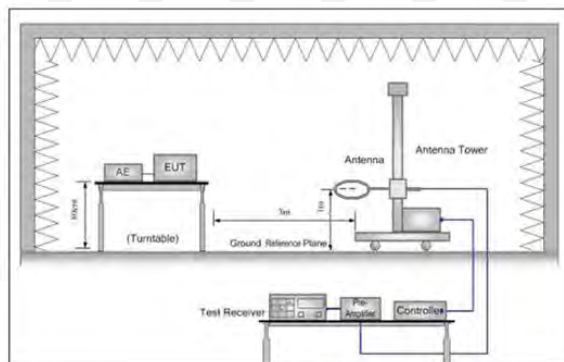


Figure 1. Below 30MHz

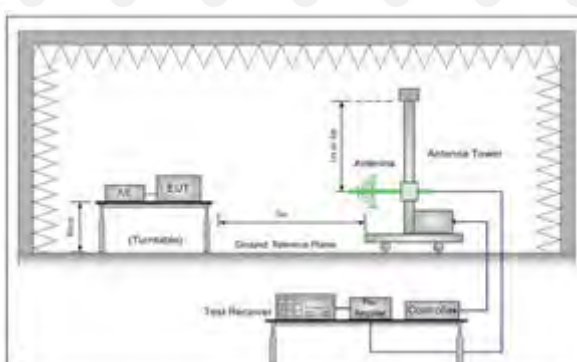


Figure 2. 30MHz to 1GHz

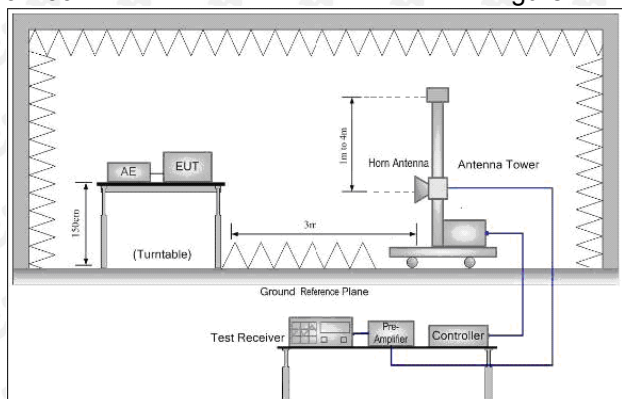


Figure 3. Above 1GHz

7.2 Limit

Spurious Emissions:

Frequency	Field strength (microvolt/meter)	Limit (dB μ V/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	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

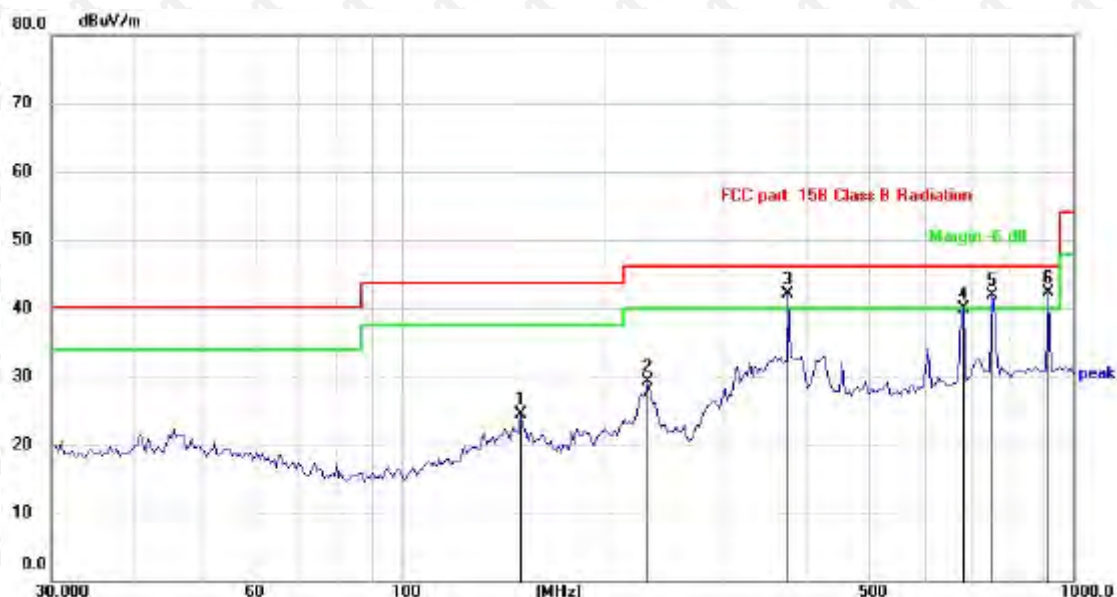
The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

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. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		150.5377	30.05	-5.46	24.59	43.50	-18.91	QP
2		233.3486	37.83	-8.59	29.24	46.00	-16.76	QP
3	!	377.9211	45.43	-3.26	42.17	46.00	-3.83	QP
4		685.9469	36.15	3.66	39.81	46.00	-6.19	QP
5	!	755.3872	36.98	4.92	41.90	46.00	-4.10	QP
6	*	916.0685	35.00	7.25	42.25	46.00	-3.75	QP

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

Antenna polarity: V



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		43.7351	33.93	-6.53	27.40	40.00	-12.60	QP
2		80.0805	34.20	-10.50	23.70	40.00	-16.30	QP
3		142.8242	29.71	-5.50	24.21	43.50	-19.29	QP
4	*	377.9211	45.93	-3.26	42.67	46.00	-3.33	QP
5	!	685.9470	38.65	3.66	42.31	46.00	-3.69	QP
6	!	948.7608	34.77	7.63	42.40	46.00	-3.60	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:

ANT2 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	63.90	-3.64	60.26	74	-13.74	peak
4824	50.04	-3.64	46.40	54	-7.60	AVG
7236	59.54	-0.95	58.59	74	-15.41	peak
7236	44.57	-0.95	43.62	54	-10.38	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	67.21	-3.64	63.57	74	-10.43	peak
4824	47.19	-3.64	43.55	54	-10.45	AVG
7236	56.60	-0.95	55.65	74	-18.35	peak
7236	45.23	-0.95	44.28	54	-9.72	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 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	65.82	-3.51	62.31	74	-11.69	peak
4874	50.28	-3.51	46.77	54	-7.23	AVG
7311	58.25	-0.82	57.43	74	-16.57	peak
7311	44.04	-0.82	43.22	54	-10.78	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)	
4874	64.34	-3.51	60.83	74	-13.17	peak
4874	48.83	-3.51	45.32	54	-8.68	AVG
7311	57.89	-0.82	57.07	74	-16.93	peak
7311	42.32	-0.82	41.50	54	-12.50	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 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	62.26	-3.43	58.83	74	-15.17	peak
4924	47.60	-3.43	44.17	54	-9.83	AVG
7386	57.61	-0.75	56.86	74	-17.14	peak
7386	42.93	-0.75	42.18	54	-11.82	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	64.66	-3.43	61.23	74	-12.77	peak
4924	45.87	-3.43	42.44	54	-11.56	AVG
7386	57.48	-0.75	56.73	74	-17.27	peak
7386	42.70	-0.75	41.95	54	-12.05	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.

ANT2 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	65.08	-3.64	61.44	74	-12.56	peak
4824	48.71	-3.64	45.07	54	-8.93	AVG
7236	57.04	-0.95	56.09	74	-17.91	peak
7236	44.40	-0.95	43.45	54	-10.55	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	63.53	-3.64	59.89	74	-14.11	peak
4824	48.36	-3.64	44.72	54	-9.28	AVG
7236	60.46	-0.95	59.51	74	-14.49	peak
7236	45.01	-0.95	44.06	54	-9.94	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 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	65.36	-3.51	61.85	74	-12.15	peak
4874	46.87	-3.51	43.36	54	-10.64	AVG
7311	59.45	-0.82	58.63	74	-15.37	peak
7311	43.47	-0.82	42.65	54	-11.35	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	63.11	-3.51	59.60	74	-14.40	peak
4874	48.67	-3.51	45.16	54	-8.84	AVG
7311	56.47	-0.82	55.65	74	-18.35	peak
7311	41.21	-0.82	40.39	54	-13.61	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT2 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	65.15	-3.43	61.72	74	-12.28	peak
4924	49.18	-3.43	45.75	54	-8.25	AVG
7386	57.72	-0.75	56.97	74	-17.03	peak
7386	43.13	-0.75	42.38	54	-11.62	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	61.96	-3.43	58.53	74	-15.47	peak
4924	47.49	-3.43	44.06	54	-9.94	AVG
7386	57.84	-0.75	57.09	74	-16.91	peak
7386	42.61	-0.75	41.86	54	-12.14	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	64.51	-3.64	60.87	74	-13.13	peak
4824	47.13	-3.64	43.49	54	-10.51	AVG
7236	57.78	-0.95	56.83	74	-17.17	peak
7236	43.04	-0.95	42.09	54	-11.91	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	65.47	-3.64	61.83	74	-12.17	peak
4824	48.04	-3.64	44.40	54	-9.60	AVG
7236	60.65	-0.95	59.70	74	-14.30	peak
7236	44.82	-0.95	43.87	54	-10.13	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

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

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4874.00	63.60	-3.51	60.09	74.00	-13.91	peak
4874.00	47.42	-3.51	43.91	54.00	-10.09	AVG
7311.00	58.41	-0.82	57.59	74.00	-16.41	peak
7311.00	46.47	-0.82	45.65	54.00	-8.35	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	64.28	-3.51	60.77	74.00	-13.23	peak
4874.00	47.62	-3.51	44.11	54.00	-9.89	AVG
7311.00	58.72	-0.82	57.90	74.00	-16.10	peak
7311.00	43.27	-0.82	42.45	54.00	-11.55	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

ANT1+ANT2 HIGH CH11 (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	63.10	-3.43	59.67	74	-14.33	peak
4924	48.16	-3.43	44.73	54	-9.27	AVG
7386	56.36	-0.75	55.61	74	-18.39	peak
7386	42.69	-0.75	41.94	54	-12.06	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	63.08	-3.43	59.65	74	-14.35	peak
4924	47.28	-3.43	43.85	54	-10.15	AVG
7386	56.93	-0.75	56.18	74	-17.82	peak
7386	43.54	-0.75	42.79	54	-11.21	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

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	64.77	-3.63	61.14	74	-12.86	peak
4844	48.28	-3.63	44.65	54	-9.35	AVG
7266	57.75	-0.94	56.81	74	-17.19	peak
7266	44.09	-0.94	43.15	54	-10.85	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)	
4844	65.44	-3.63	61.81	74	-12.19	peak
4844	48.93	-3.63	45.30	54	-8.70	AVG
7266	58.57	-0.94	57.63	74	-16.37	peak
7266	45.14	-0.94	44.20	54	-9.80	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	63.68	-3.51	60.17	74	-13.83	peak
4874	47.15	-3.51	43.64	54	-10.36	AVG
7311	60.75	-0.82	59.93	74	-14.07	peak
7311	46.00	-0.82	45.18	54	-8.82	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	62.29	-3.51	58.78	74	-15.22	peak
4874	46.46	-3.51	42.95	54	-11.05	AVG
7311	56.69	-0.82	55.87	74	-18.13	peak
7311	43.36	-0.82	42.54	54	-11.46	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	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4904	65.07	-3.43	61.64	74	-12.36	peak
4904	47.44	-3.43	44.01	54	-9.99	AVG
7356	56.21	-0.75	55.46	74	-18.54	peak
7356	43.81	-0.75	43.06	54	-10.94	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	64.04	-3.43	60.61	74	-13.39	peak
4904	47.14	-3.43	43.71	54	-10.29	AVG
7356	57.88	-0.75	57.13	74	-16.87	peak
7356	42.19	-0.75	41.44	54	-12.56	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.

Restricted bands around fundamental frequency (Radiated)

Operation Mode:

ANT 2 802.11b Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2390	57.05	-5.81	51.24	74	-22.76	peak
2390	/	-5.81	/	54	/	AVG
2399	63.91	-5.84	58.07	74	-15.93	peak
2399	49.54	-5.84	43.70	54	-10.30	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)	
2390	56.77	-5.81	50.96	74	-23.04	peak
2390	/	-5.81	/	54	/	AVG
2399	62.30	-5.84	56.46	74	-17.54	peak
2399	46.60	-5.84	40.76	54	-13.24	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: ANT2 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	56.57	-5.65	50.92	74	-23.08	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	56.76	-5.65	51.11	74	-22.89	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						
Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.						

Operation Mode: ANT2 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)	
2390	58.58	-5.81	52.77	74	-21.23	peak
2390	/	-5.81	/	54	/	AVG
2399	62.88	-5.84	57.04	74	-16.96	peak
2399	45.69	-5.84	39.85	54	-14.15	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)	
2390	56.64	-5.81	50.83	74	-23.17	peak
2390	/	-5.81	/	54	/	AVG
2399	62.98	-5.84	57.14	74	-16.86	peak
2399	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

Operation Mode: ANT2 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	56.00	-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						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.54	-5.65	51.89	74	-22.11	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)	
2390	57.22	-5.81	51.41	74	-22.59	peak
2390	/	-5.81	/	54	/	AVG
2399	62.91	-5.84	57.07	74	-16.93	peak
2399	47.70	-5.84	41.86	54	-12.14	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)	
2390	55.80	-5.81	49.99	74	-24.01	peak
2390	/	-5.81	/	54	/	AVG
2399	60.49	-5.84	54.65	74	-19.35	peak
2399	46.71	-5.84	40.87	54	-13.13	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	57.13	-5.65	51.48	74	-22.52	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	57.14	-5.65	51.49	74	-22.51	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)	
2390	59.12	-5.81	53.31	74	-20.69	peak
2390	/	-5.81	/	54	/	AVG
2399	63.15	-5.84	57.31	74	-16.69	peak
2399	45.94	-5.84	40.10	54	-13.90	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)	
2390	57.71	-5.81	51.90	74	-22.10	peak
2390	/	-5.81	/	54	/	AVG
2399	61.85	-5.84	56.01	74	-17.99	peak
2399	46.80	-5.84	40.96	54	-13.04	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

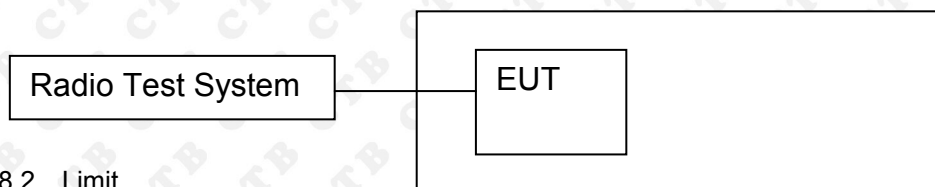
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.45	-5.65	51.80	74	-22.20	peak
2483.5	/	-5.65	/	54	/	AVG
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Emission level = Reading Result + Factor, Margin = Emission level - Limits						

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
2483.5	57.89	-5.65	52.24	74	-21.76	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

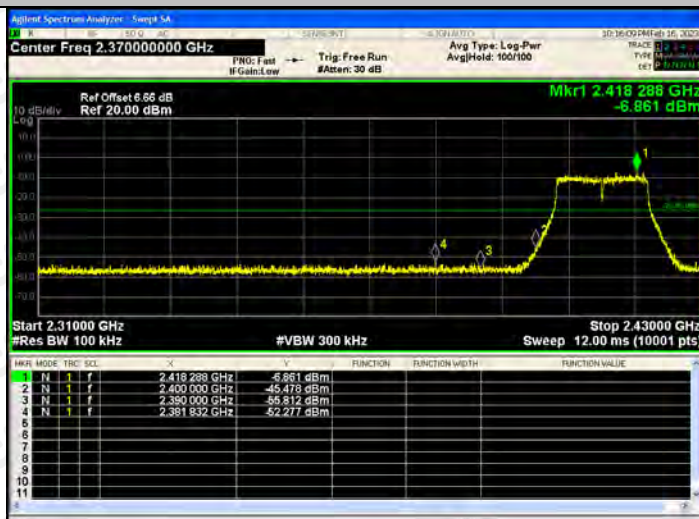
8.4 Test Result

ANT1:



BAND EDGE Graphs

802.11g/LCH

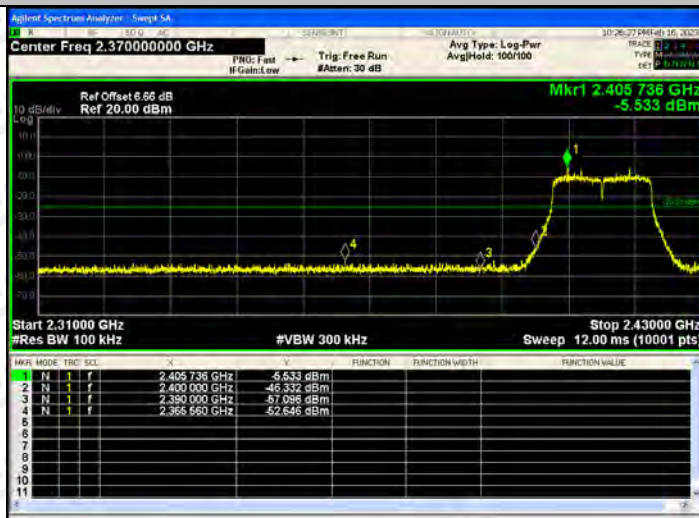


802.11g/HCH

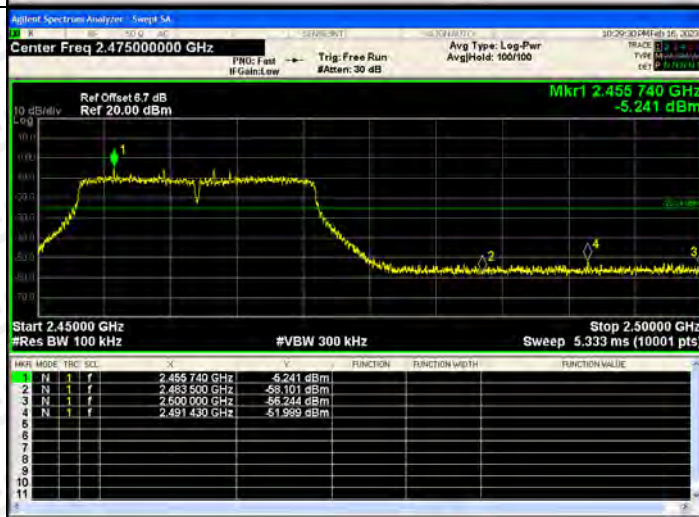


BAND EDGE Graphs

802.11n(HT20)/L
CH

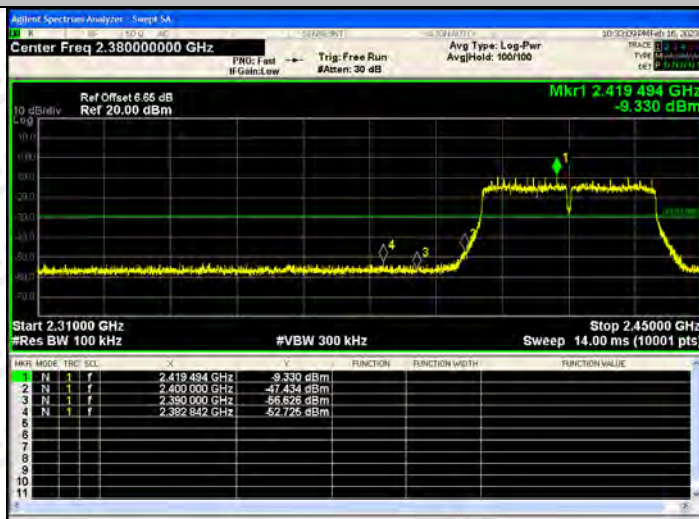


802.11n(HT20)/H
CH



BAND EDGE Graphs

802.11n(HT40)/L
CH



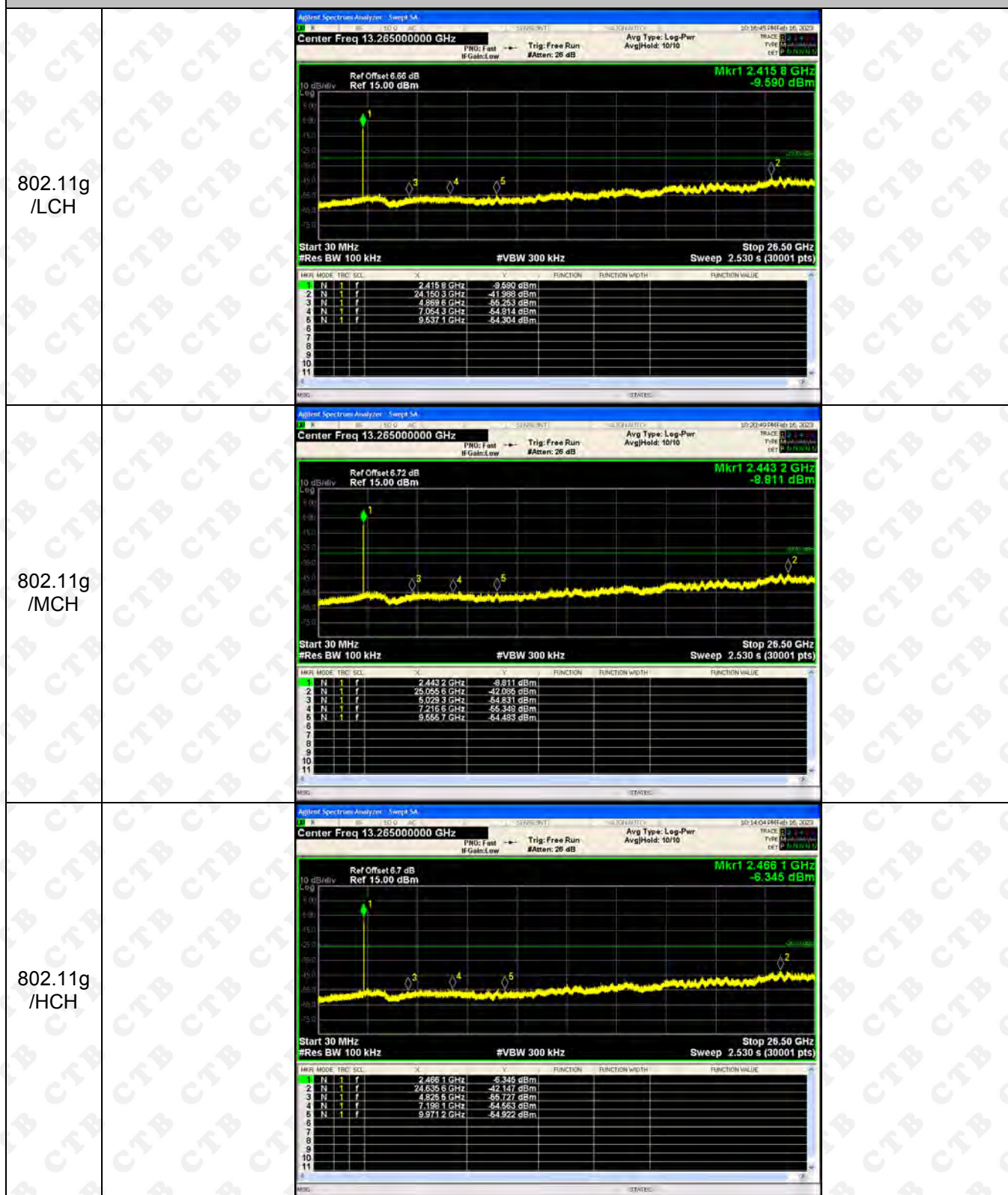
802.11n(HT40)/H
CH



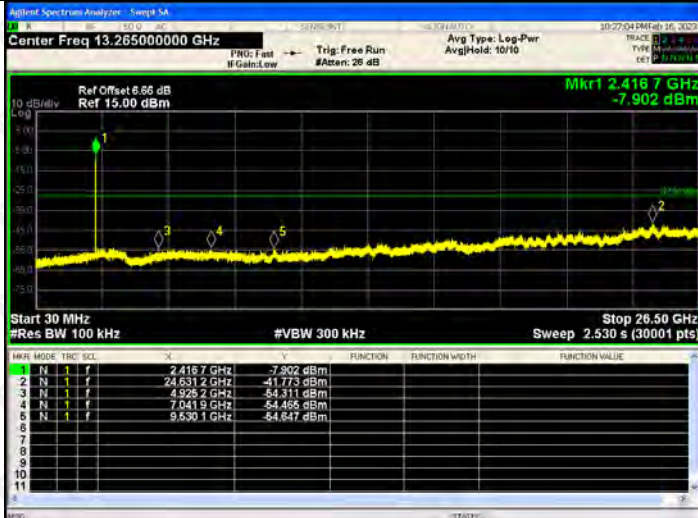
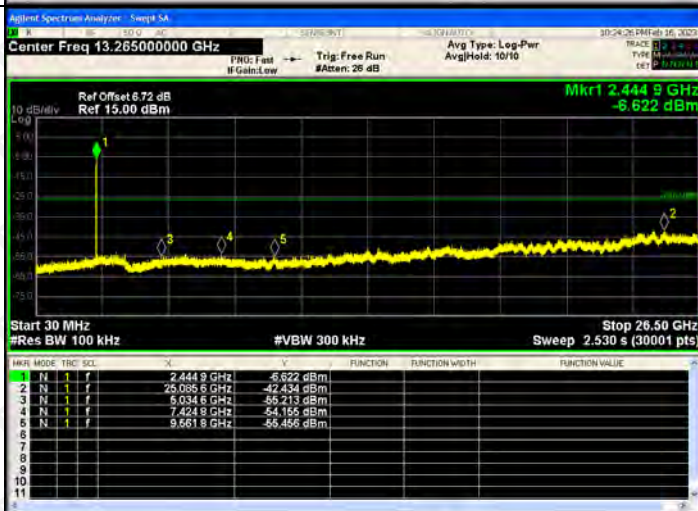
RF Conducted Spurious Emissions Graphs

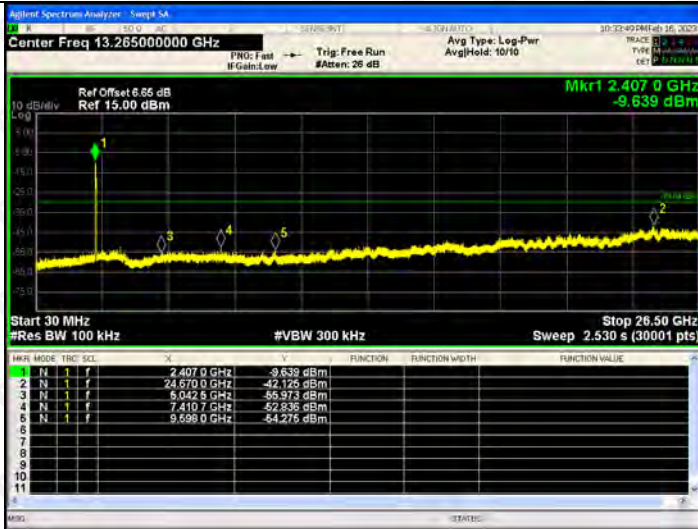
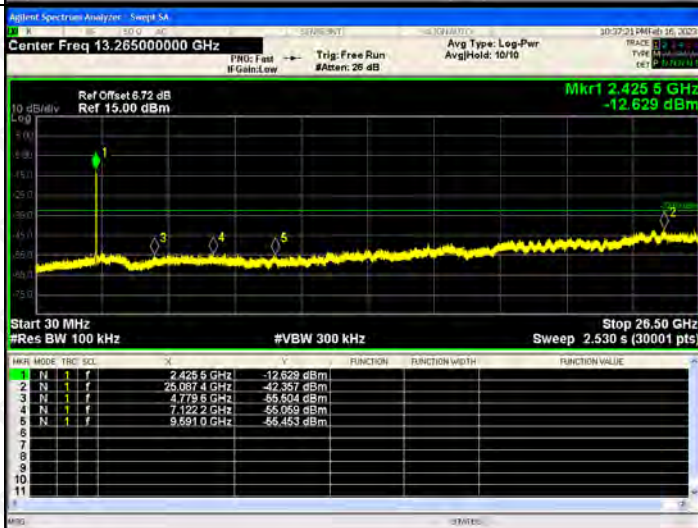
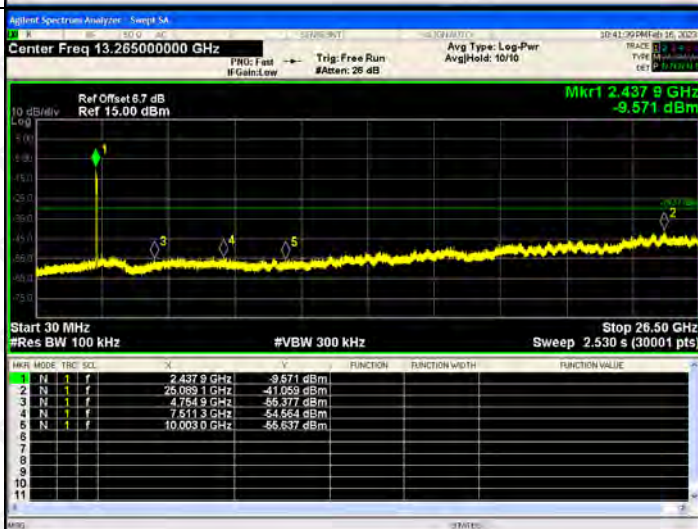


RF Conducted Spurious Emissions Graphs



RF Conducted Spurious Emissions Graphs

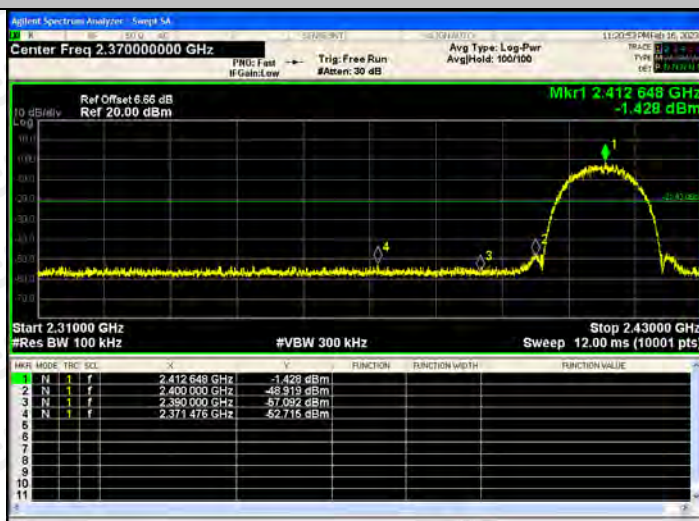
802.11n (HT20)/ LCH	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.265000000 GHz Ref Offset 6.66 dB Ref 15.00 dBm Mkr1 2.416 7 GHz -7.902 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>Marker</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.416 7 GHz</td><td>-7.902 dBm</td></tr><tr><td>2</td><td>24.631 2 GHz</td><td>-41.773 dBm</td></tr><tr><td>3</td><td>4.928 2 GHz</td><td>-54.311 dBm</td></tr><tr><td>4</td><td>7.041 9 GHz</td><td>-54.455 dBm</td></tr><tr><td>5</td><td>9.530 1 GHz</td><td>-54.647 dBm</td></tr></table>	Marker	Freq	Power	1	2.416 7 GHz	-7.902 dBm	2	24.631 2 GHz	-41.773 dBm	3	4.928 2 GHz	-54.311 dBm	4	7.041 9 GHz	-54.455 dBm	5	9.530 1 GHz	-54.647 dBm
Marker	Freq	Power																	
1	2.416 7 GHz	-7.902 dBm																	
2	24.631 2 GHz	-41.773 dBm																	
3	4.928 2 GHz	-54.311 dBm																	
4	7.041 9 GHz	-54.455 dBm																	
5	9.530 1 GHz	-54.647 dBm																	
802.11 n(HT20) /MCH	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.265000000 GHz Ref Offset 6.72 dB Ref 15.00 dBm Mkr1 2.444 9 GHz -6.622 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>Marker</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.444 9 GHz</td><td>-6.622 dBm</td></tr><tr><td>2</td><td>25.095 6 GHz</td><td>-42.434 dBm</td></tr><tr><td>3</td><td>5.034 6 GHz</td><td>-55.213 dBm</td></tr><tr><td>4</td><td>7.424 8 GHz</td><td>-54.155 dBm</td></tr><tr><td>5</td><td>9.561 9 GHz</td><td>-55.455 dBm</td></tr></table>	Marker	Freq	Power	1	2.444 9 GHz	-6.622 dBm	2	25.095 6 GHz	-42.434 dBm	3	5.034 6 GHz	-55.213 dBm	4	7.424 8 GHz	-54.155 dBm	5	9.561 9 GHz	-55.455 dBm
Marker	Freq	Power																	
1	2.444 9 GHz	-6.622 dBm																	
2	25.095 6 GHz	-42.434 dBm																	
3	5.034 6 GHz	-55.213 dBm																	
4	7.424 8 GHz	-54.155 dBm																	
5	9.561 9 GHz	-55.455 dBm																	
802.11 n(HT20) /HCH	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.265000000 GHz Ref Offset 6.7 dB Ref 15.00 dBm Mkr1 2.459 1 GHz -8.520 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>Marker</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>2.459 1 GHz</td><td>-8.520 dBm</td></tr><tr><td>2</td><td>24.649 7 GHz</td><td>-42.163 dBm</td></tr><tr><td>3</td><td>4.777 0 GHz</td><td>-55.610 dBm</td></tr><tr><td>4</td><td>7.662 5 GHz</td><td>-53.894 dBm</td></tr><tr><td>5</td><td>10.034 8 GHz</td><td>-56.025 dBm</td></tr></table>	Marker	Freq	Power	1	2.459 1 GHz	-8.520 dBm	2	24.649 7 GHz	-42.163 dBm	3	4.777 0 GHz	-55.610 dBm	4	7.662 5 GHz	-53.894 dBm	5	10.034 8 GHz	-56.025 dBm
Marker	Freq	Power																	
1	2.459 1 GHz	-8.520 dBm																	
2	24.649 7 GHz	-42.163 dBm																	
3	4.777 0 GHz	-55.610 dBm																	
4	7.662 5 GHz	-53.894 dBm																	
5	10.034 8 GHz	-56.025 dBm																	

802.11n (HT40)/ LCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 13.265000000 GHz Ref Offset 6.65 dB Ref 15.00 dBm Mkr1 2.407 0 GHz -9.639 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>MARK</th><th>MODE</th><th>TRIG</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.407 0 GHz</td><td>-9.639 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>24.670 0 GHz</td><td>-42.125 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>5.042 5 GHz</td><td>-55.973 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>7.410 7 GHz</td><td>-52.836 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>1</td><td>f</td><td>9.698 0 GHz</td><td>-54.275 dBm</td><td></td><td></td><td></td></tr></table>	MARK	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.407 0 GHz	-9.639 dBm				2	N	1	f	24.670 0 GHz	-42.125 dBm				3	N	1	f	5.042 5 GHz	-55.973 dBm				4	N	1	f	7.410 7 GHz	-52.836 dBm				5	N	1	f	9.698 0 GHz	-54.275 dBm			
MARK	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																															
1	N	1	f	2.407 0 GHz	-9.639 dBm																																																		
2	N	1	f	24.670 0 GHz	-42.125 dBm																																																		
3	N	1	f	5.042 5 GHz	-55.973 dBm																																																		
4	N	1	f	7.410 7 GHz	-52.836 dBm																																																		
5	N	1	f	9.698 0 GHz	-54.275 dBm																																																		
802.11 n(HT40) /MCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 13.265000000 GHz Ref Offset 6.72 dB Ref 15.00 dBm Mkr1 2.425 5 GHz -12.629 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>MARK</th><th>MODE</th><th>TRIG</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.425 5 GHz</td><td>-12.629 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>25.087 4 GHz</td><td>-42.357 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>4.779 5 GHz</td><td>-55.504 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>7.122 2 GHz</td><td>-55.059 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>1</td><td>f</td><td>9.691 0 GHz</td><td>-55.453 dBm</td><td></td><td></td><td></td></tr></table>	MARK	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.425 5 GHz	-12.629 dBm				2	N	1	f	25.087 4 GHz	-42.357 dBm				3	N	1	f	4.779 5 GHz	-55.504 dBm				4	N	1	f	7.122 2 GHz	-55.059 dBm				5	N	1	f	9.691 0 GHz	-55.453 dBm			
MARK	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																															
1	N	1	f	2.425 5 GHz	-12.629 dBm																																																		
2	N	1	f	25.087 4 GHz	-42.357 dBm																																																		
3	N	1	f	4.779 5 GHz	-55.504 dBm																																																		
4	N	1	f	7.122 2 GHz	-55.059 dBm																																																		
5	N	1	f	9.691 0 GHz	-55.453 dBm																																																		
802.11 n(HT40) /HCH	 Agilent Spectrum Analyzer - Sweep SA Center Freq 13.265000000 GHz Ref Offset 6.7 dB Ref 15.00 dBm Mkr1 2.437 9 GHz -9.571 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><tr><th>MARK</th><th>MODE</th><th>TRIG</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.437 9 GHz</td><td>-9.571 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>25.089 1 GHz</td><td>-41.059 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>4.784 9 GHz</td><td>-55.377 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>7.511 3 GHz</td><td>-54.654 dBm</td><td></td><td></td><td></td></tr><tr><td>5</td><td>N</td><td>1</td><td>f</td><td>10.003 0 GHz</td><td>-55.637 dBm</td><td></td><td></td><td></td></tr></table>	MARK	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.437 9 GHz	-9.571 dBm				2	N	1	f	25.089 1 GHz	-41.059 dBm				3	N	1	f	4.784 9 GHz	-55.377 dBm				4	N	1	f	7.511 3 GHz	-54.654 dBm				5	N	1	f	10.003 0 GHz	-55.637 dBm			
MARK	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																																															
1	N	1	f	2.437 9 GHz	-9.571 dBm																																																		
2	N	1	f	25.089 1 GHz	-41.059 dBm																																																		
3	N	1	f	4.784 9 GHz	-55.377 dBm																																																		
4	N	1	f	7.511 3 GHz	-54.654 dBm																																																		
5	N	1	f	10.003 0 GHz	-55.637 dBm																																																		

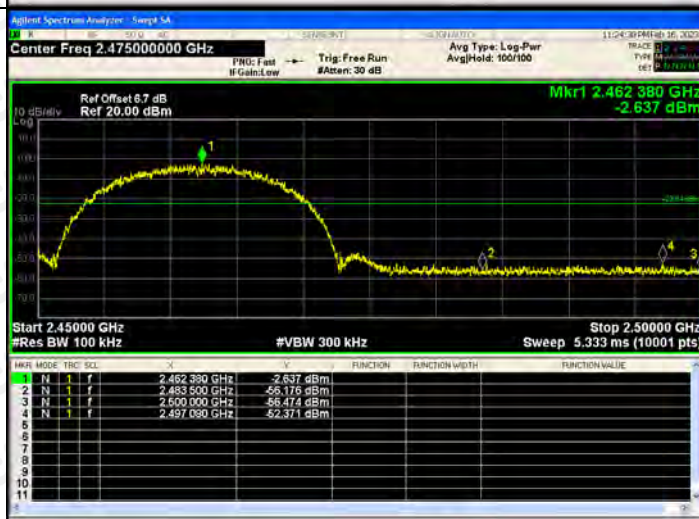
ANT2:

BAND EDGE Graphs

802.11b/LCH

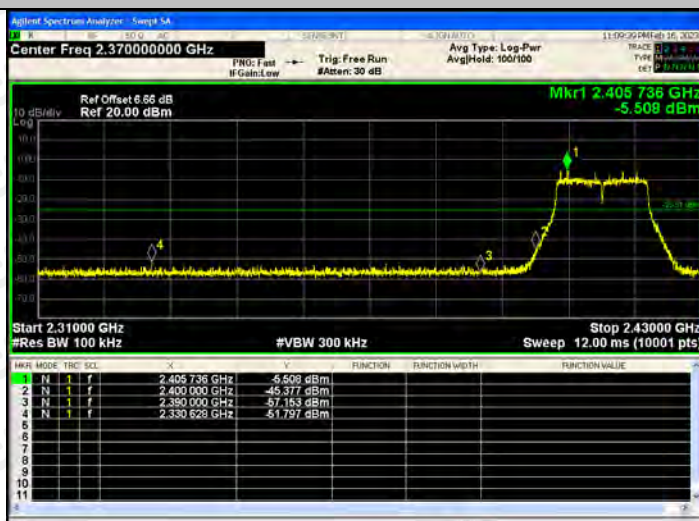


802.11b/HCH



BAND EDGE Graphs

802.11g/LCH



802.11g/HCH

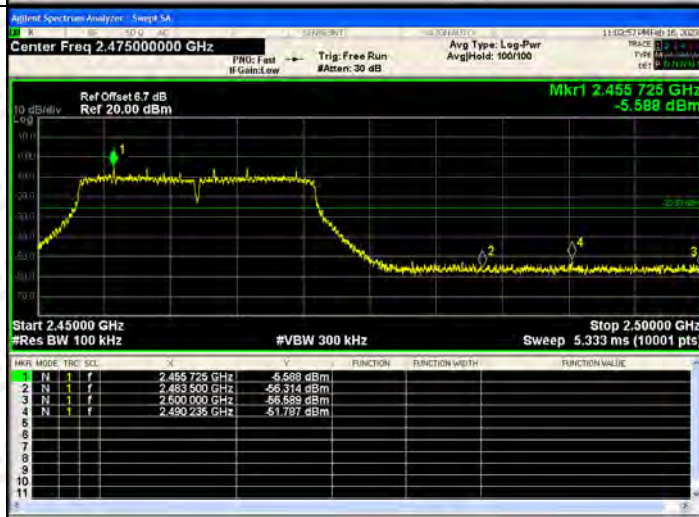


BAND EDGE Graphs

802.11n(HT20)/L
CH

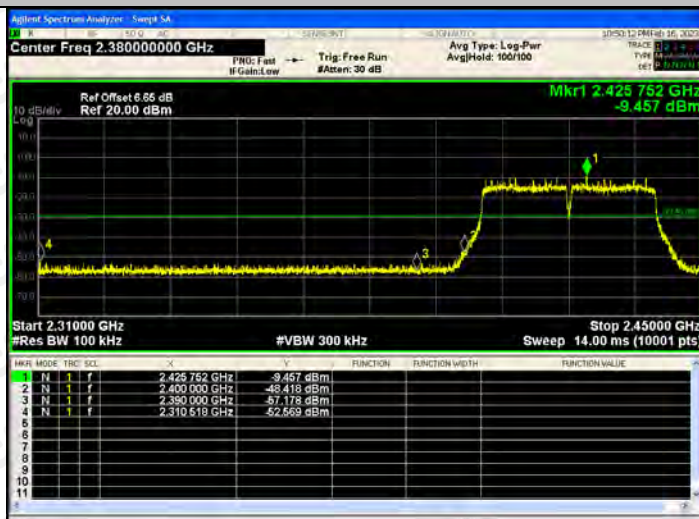


802.11n(HT20)/H
CH



BAND EDGE Graphs

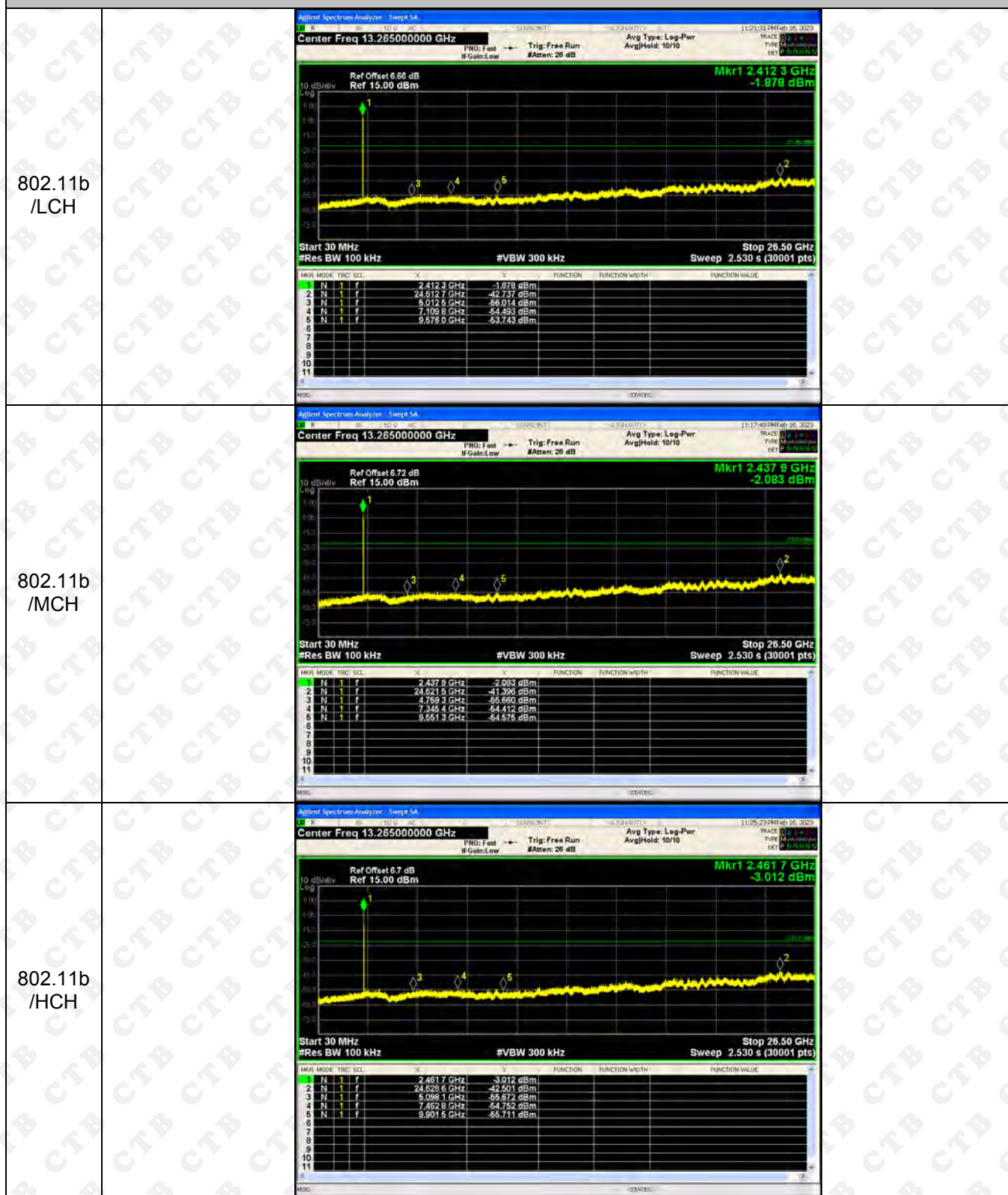
802.11n(HT40)/L
CH



802.11n(HT40)/H
CH



RF Conducted Spurious Emissions Graphs



RF Conducted Spurious Emissions Graphs

802.11g /LCH	Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.265000000 GHz Ref Offset 6.66 dB Ref 15.00 dBm Mkr1 2.406 1 GHz -5.663 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><thead><tr><th>Marker</th><th>Freq</th><th>Power</th></tr></thead><tbody><tr><td>1</td><td>2.406 1 GHz</td><td>-5.663 dBm</td></tr><tr><td>2</td><td>2.439 7 GHz</td><td>-6.492 dBm</td></tr><tr><td>3</td><td>2.467 9 GHz</td><td>-6.291 dBm</td></tr><tr><td>4</td><td>2.483 5 GHz</td><td>-6.135 dBm</td></tr><tr><td>5</td><td>2.500 0 GHz</td><td>-6.000 dBm</td></tr></tbody></table>	Marker	Freq	Power	1	2.406 1 GHz	-5.663 dBm	2	2.439 7 GHz	-6.492 dBm	3	2.467 9 GHz	-6.291 dBm	4	2.483 5 GHz	-6.135 dBm	5	2.500 0 GHz	-6.000 dBm
Marker	Freq	Power																	
1	2.406 1 GHz	-5.663 dBm																	
2	2.439 7 GHz	-6.492 dBm																	
3	2.467 9 GHz	-6.291 dBm																	
4	2.483 5 GHz	-6.135 dBm																	
5	2.500 0 GHz	-6.000 dBm																	
802.11g /MCH	Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.265000000 GHz Ref Offset 6.72 dB Ref 15.00 dBm Mkr1 2.439 7 GHz -6.492 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><thead><tr><th>Marker</th><th>Freq</th><th>Power</th></tr></thead><tbody><tr><td>1</td><td>2.439 7 GHz</td><td>-6.492 dBm</td></tr><tr><td>2</td><td>2.467 9 GHz</td><td>-6.291 dBm</td></tr><tr><td>3</td><td>2.483 5 GHz</td><td>-6.135 dBm</td></tr><tr><td>4</td><td>2.500 0 GHz</td><td>-6.000 dBm</td></tr><tr><td>5</td><td>2.516 6 GHz</td><td>-5.844 dBm</td></tr></tbody></table>	Marker	Freq	Power	1	2.439 7 GHz	-6.492 dBm	2	2.467 9 GHz	-6.291 dBm	3	2.483 5 GHz	-6.135 dBm	4	2.500 0 GHz	-6.000 dBm	5	2.516 6 GHz	-5.844 dBm
Marker	Freq	Power																	
1	2.439 7 GHz	-6.492 dBm																	
2	2.467 9 GHz	-6.291 dBm																	
3	2.483 5 GHz	-6.135 dBm																	
4	2.500 0 GHz	-6.000 dBm																	
5	2.516 6 GHz	-5.844 dBm																	
802.11g /HCH	Agilent Spectrum Analyzer - Sweep 5A Center Freq 13.265000000 GHz Ref Offset 6.7 dB Ref 15.00 dBm Mkr1 2.467 9 GHz -6.291 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 26.50 GHz Sweep 2.530 s (30001 pts) <table><thead><tr><th>Marker</th><th>Freq</th><th>Power</th></tr></thead><tbody><tr><td>1</td><td>2.467 9 GHz</td><td>-6.291 dBm</td></tr><tr><td>2</td><td>2.483 5 GHz</td><td>-6.135 dBm</td></tr><tr><td>3</td><td>2.500 0 GHz</td><td>-6.000 dBm</td></tr><tr><td>4</td><td>2.516 6 GHz</td><td>-5.844 dBm</td></tr><tr><td>5</td><td>2.533 2 GHz</td><td>-5.688 dBm</td></tr></tbody></table>	Marker	Freq	Power	1	2.467 9 GHz	-6.291 dBm	2	2.483 5 GHz	-6.135 dBm	3	2.500 0 GHz	-6.000 dBm	4	2.516 6 GHz	-5.844 dBm	5	2.533 2 GHz	-5.688 dBm
Marker	Freq	Power																	
1	2.467 9 GHz	-6.291 dBm																	
2	2.483 5 GHz	-6.135 dBm																	
3	2.500 0 GHz	-6.000 dBm																	
4	2.516 6 GHz	-5.844 dBm																	
5	2.533 2 GHz	-5.688 dBm																	

RF Conducted Spurious Emissions Graphs

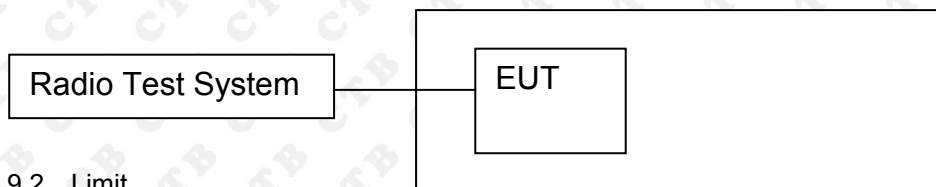
802.11n (HT20)/ LCH	
802.11 n(HT20) /MCH	
802.11 n(HT20) /HCH	

RF Conducted Spurious Emissions Graphs



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

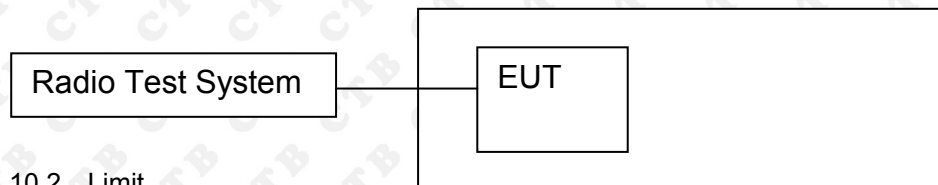
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 1MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak. Channel power function is used
3. Keep the EUT in transmitting at lowest, middle and highest channel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

9.4 Test Result

Mode	Channel.	Maximum Output Power [dBm] ant 1	Maximum Output Power [dBm] ant 2	Total Power Conducted Output Power(PK)	Limit[dBm]
802.11b	LCH	13.219	13.596	/	30
	MCH	13.237	13.451	/	30
	HCH	13.298	13.013	/	30
802.11g	LCH	12.516	12.51	/	30
	MCH	12.284	12.368	/	30
	HCH	12.241	12.202	/	30
802.11n(HT20)	LCH	12.393	12.577	15.496	30
	MCH	12.128	12.174	15.161	30
	HCH	12.405	12.52	15.473	30
802.11n(HT40)	LCH	11.41	11.307	14.369	30
	MCH	11.232	11.016	14.136	30
	HCH	11.556	11.571	14.574	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	9.718	500	PASS
	MCH	10.108	500	PASS
	HCH	9.857	500	PASS
802.11g	LCH	16.341	500	PASS
	MCH	16.339	500	PASS
	HCH	16.372	500	PASS
802.11n(HT20)	LCH	17.332	500	PASS
	MCH	17.554	500	PASS
	HCH	17.564	500	PASS
802.11n(HT40)	LCH	35.555	500	PASS
	MCH	35.273	500	PASS
	HCH	35.514	500	PASS

ANT2:

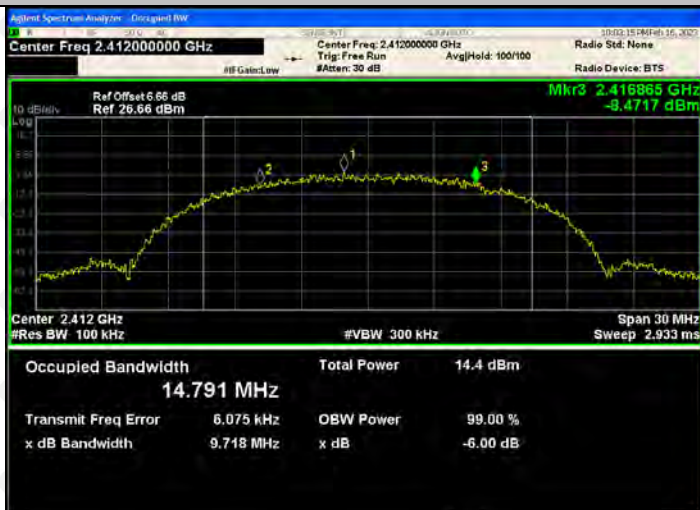
Test Mode	Frequency	6dB Bandwidth (MHz)	Limit(kHz)	Result
802.11b	LCH	10.193	500	PASS
	MCH	10.285	500	PASS
	HCH	10.171	500	PASS
802.11g	LCH	16.359	500	PASS
	MCH	16.37	500	PASS
	HCH	16.32	500	PASS
802.11n(HT20)	LCH	17.052	500	PASS
	MCH	17.167	500	PASS
	HCH	17.536	500	PASS
802.11n(HT40)	LCH	35.203	500	PASS
	MCH	35.664	500	PASS
	HCH	35.442	500	PASS

ANT1:

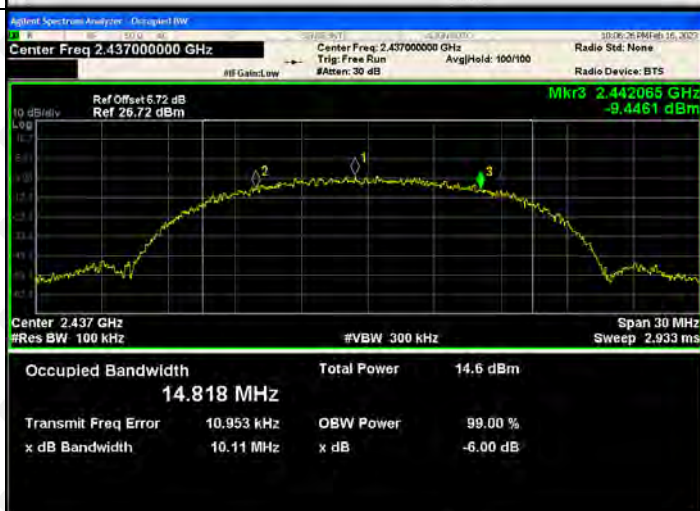
Test Graph:

Graphs

802.11b /LCH



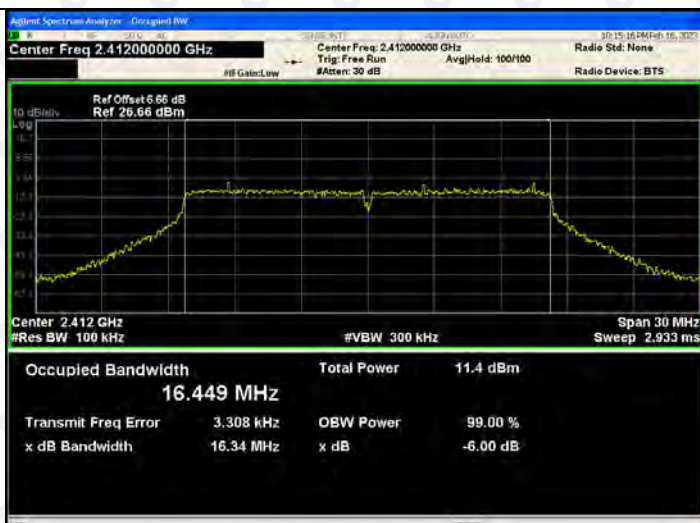
802.11b /MCH



802.11b/HCH



802.11g/LCH

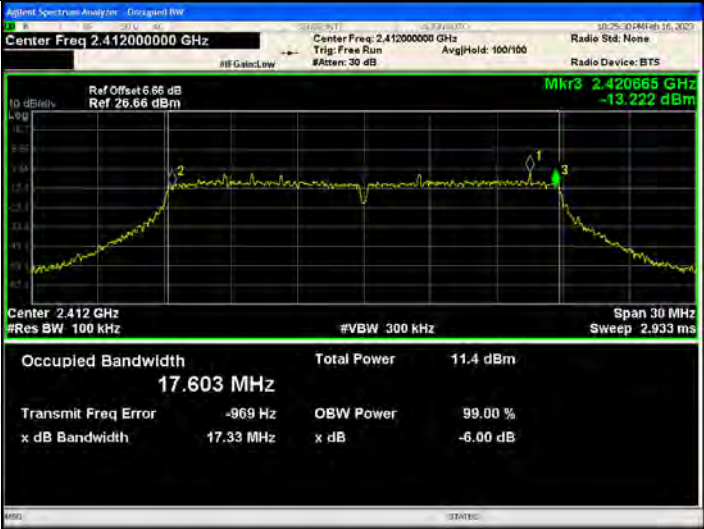


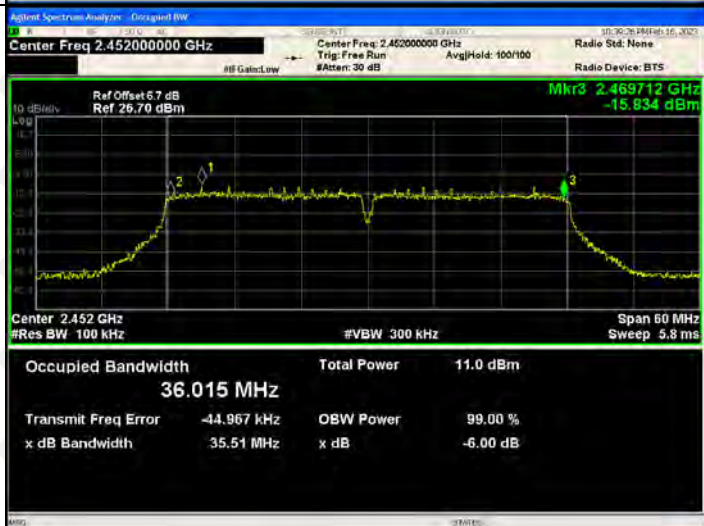
802.11g/MCH



802.11g/HCH



802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Ref Offset 6.66 dB Ref 26.66 dBm Mkr3 2.420865 GHz -13.222 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.603 MHz Total Power 11.4 dBm Transmit Freq Error -969 Hz OBW Power 99.00 % x dB Bandwidth 17.33 MHz x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 26.72 dBm Mkr3 2.445767 GHz -12.452 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.593 MHz Total Power 11.2 dBm Transmit Freq Error -10.017 kHz OBW Power 99.00 % x dB Bandwidth 17.55 MHz x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.46200000 GHz Ref Offset 6.7 dB Ref 26.70 dBm Mkr3 2.470777 GHz -13.157 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.594 MHz Total Power 11.5 dBm Transmit Freq Error -4.623 kHz OBW Power 99.00 % x dB Bandwidth 17.56 MHz x dB -6.00 dB

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.42200000 GHz Ref Offset: 6.65 dB Ref: 26.65 dBm Mkr3: 2.439764 GHz -15.237 dBm Center: 2.422 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>10.9 dBm</td></tr><tr><td>36.045 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-13.287 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.55 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	10.9 dBm	36.045 MHz			Transmit Freq Error	OBW Power	99.00 %	-13.287 kHz	x dB	-6.00 dB	x dB Bandwidth			35.55 MHz		
Occupied Bandwidth	Total Power	10.9 dBm																	
36.045 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-13.287 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.55 MHz																			
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.43700000 GHz Ref Offset: 6.72 dB Ref: 26.72 dBm Mkr3: 2.454605 GHz -12.915 dBm Center: 2.437 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>10.6 dBm</td></tr><tr><td>36.036 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-31.663 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.27 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	10.6 dBm	36.036 MHz			Transmit Freq Error	OBW Power	99.00 %	-31.663 kHz	x dB	-6.00 dB	x dB Bandwidth			35.27 MHz		
Occupied Bandwidth	Total Power	10.6 dBm																	
36.036 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-31.663 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.27 MHz																			
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.45200000 GHz Ref Offset: 6.7 dB Ref: 26.70 dBm Mkr3: 2.469712 GHz -15.934 dBm Center: 2.452 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>11.0 dBm</td></tr><tr><td>36.015 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-44.967 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.51 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	11.0 dBm	36.015 MHz			Transmit Freq Error	OBW Power	99.00 %	-44.967 kHz	x dB	-6.00 dB	x dB Bandwidth			35.51 MHz		
Occupied Bandwidth	Total Power	11.0 dBm																	
36.015 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-44.967 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.51 MHz																			

ANT2:

Test Graph:

Graphs	
802.11b /LCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.66 dB Ref 26.66 dBm Mkr3 2.41709 GHz -9.8780 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 14.824 MHz Total Power 15.1 dBm Transmit Freq Error -6.065 kHz OBW Power 99.00 % x dB Bandwidth 10.19 MHz x dB -6.00 dB
802.11b /MCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.72 dB Ref 26.72 dBm Mkr3 2.44209 GHz -9.5776 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 14.825 MHz Total Power 14.9 dBm Transmit Freq Error -52.369 kHz OBW Power 99.00 % x dB Bandwidth 10.29 MHz x dB -6.00 dB
802.11b/HCH	Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Ref Offset 6.7 dB Ref 26.70 dBm Mkr3 2.467018 GHz -9.9262 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 14.812 MHz Total Power 14.7 dBm Transmit Freq Error -67.095 kHz OBW Power 99.00 % x dB Bandwidth 10.17 MHz x dB -6.00 dB

802.11g/LCH

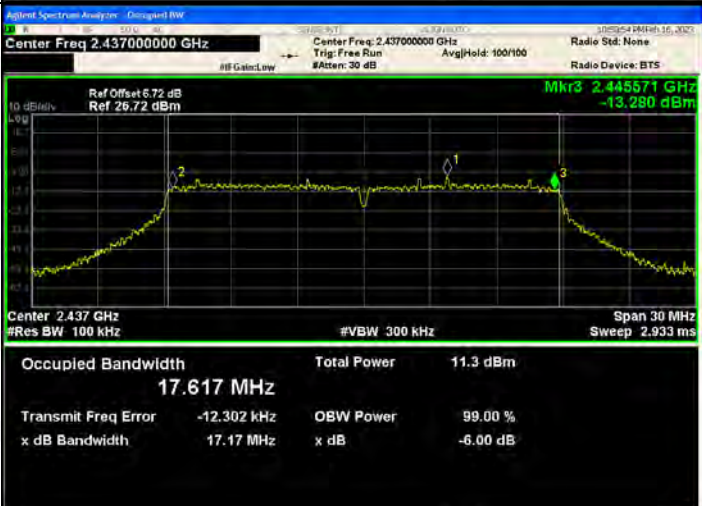
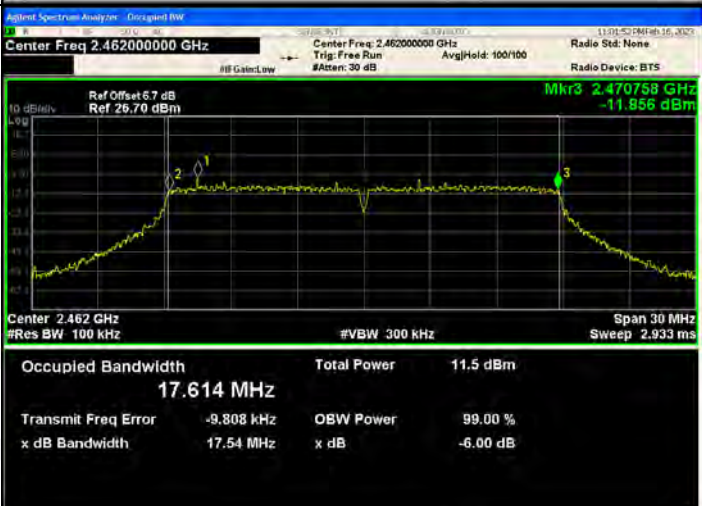


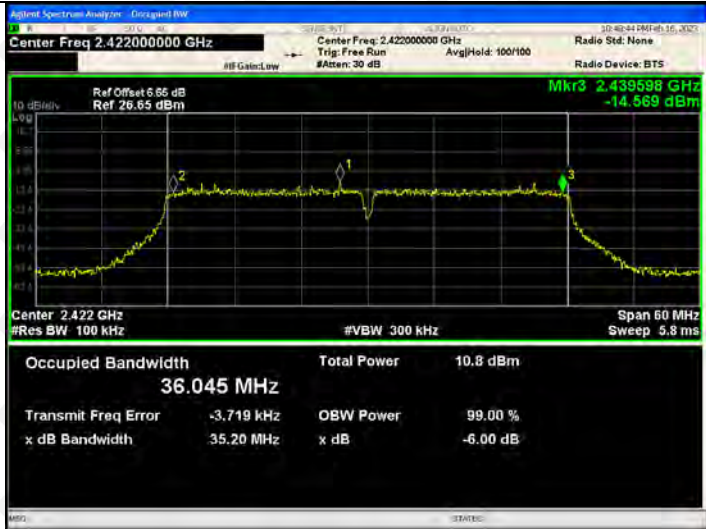
802.11g/MCH



802.11g/HCH

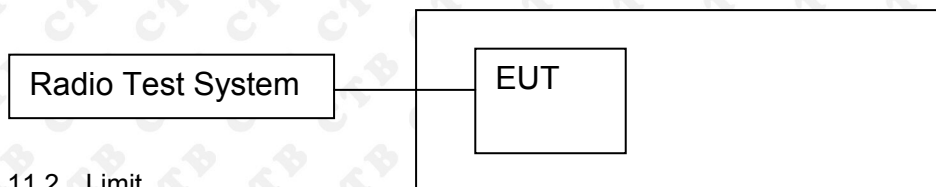


802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Ref Offset 6.66 dB Ref 26.66 dBm Center Freq 2.412000000 GHz Trig: Free Run #Att: 30 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.420528 GHz -11.231 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.597 MHz Total Power 11.6 dBm Transmit Freq Error 2.475 kHz OBW Power 99.00 % x dB Bandwidth 17.05 MHz x dB -6.00 dB
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Ref Offset 6.72 dB Ref 26.72 dBm Center Freq 2.437000000 GHz Trig: Free Run #Att: 30 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.445571 GHz -13.280 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.617 MHz Total Power 11.3 dBm Transmit Freq Error -12.302 kHz OBW Power 99.00 % x dB Bandwidth 17.17 MHz x dB -6.00 dB
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Ref Offset 6.7 dB Ref 26.70 dBm Center Freq 2.462000000 GHz Trig: Free Run #Att: 30 dB Avg/Hold: 100/100 Radio Std: None Radio Device: BTS Mkr3 2.470758 GHz -11.856 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 30 MHz Sweep 2.933 ms Occupied Bandwidth 17.614 MHz Total Power 11.5 dBm Transmit Freq Error -9.808 kHz OBW Power 99.00 % x dB Bandwidth 17.54 MHz x dB -6.00 dB

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.422000000 GHz Ref Offset: 6.65 dB Ref: 26.65 dBm Mkr3: 2.439598 GHz -14.569 dBm Center: 2.422 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>10.8 dBm</td></tr><tr><td>36.045 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-3.719 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.20 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	10.8 dBm	36.045 MHz			Transmit Freq Error	OBW Power	99.00 %	-3.719 kHz	x dB	-6.00 dB	x dB Bandwidth			35.20 MHz		
Occupied Bandwidth	Total Power	10.8 dBm																	
36.045 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-3.719 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.20 MHz																			
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.437000000 GHz Ref Offset: 6.72 dB Ref: 26.72 dBm Mkr3: 2.454809 GHz -16.163 dBm Center: 2.437 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>10.7 dBm</td></tr><tr><td>36.033 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-22.432 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.66 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	10.7 dBm	36.033 MHz			Transmit Freq Error	OBW Power	99.00 %	-22.432 kHz	x dB	-6.00 dB	x dB Bandwidth			35.66 MHz		
Occupied Bandwidth	Total Power	10.7 dBm																	
36.033 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-22.432 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.66 MHz																			
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Occupied BW Center Freq: 2.452000000 GHz Ref Offset: 6.7 dB Ref: 26.70 dBm Mkr3: 2.469694 GHz -15.574 dBm Center: 2.452 GHz #Res BW: 100 kHz #VBW: 300 kHz Span: 60 MHz Sweep: 5.8 ms <table><tr><td>Occupied Bandwidth</td><td>Total Power</td><td>11.0 dBm</td></tr><tr><td>36.062 MHz</td><td></td><td></td></tr><tr><td>Transmit Freq Error</td><td>OBW Power</td><td>99.00 %</td></tr><tr><td>-27.215 kHz</td><td>x dB</td><td>-6.00 dB</td></tr><tr><td>x dB Bandwidth</td><td></td><td></td></tr><tr><td>35.44 MHz</td><td></td><td></td></tr></table>	Occupied Bandwidth	Total Power	11.0 dBm	36.062 MHz			Transmit Freq Error	OBW Power	99.00 %	-27.215 kHz	x dB	-6.00 dB	x dB Bandwidth			35.44 MHz		
Occupied Bandwidth	Total Power	11.0 dBm																	
36.062 MHz																			
Transmit Freq Error	OBW Power	99.00 %																	
-27.215 kHz	x dB	-6.00 dB																	
x dB Bandwidth																			
35.44 MHz																			

11. POWER SPECTRAL DENSITY

11.1 Block Diagram Of Test Setup



11.2 Limit

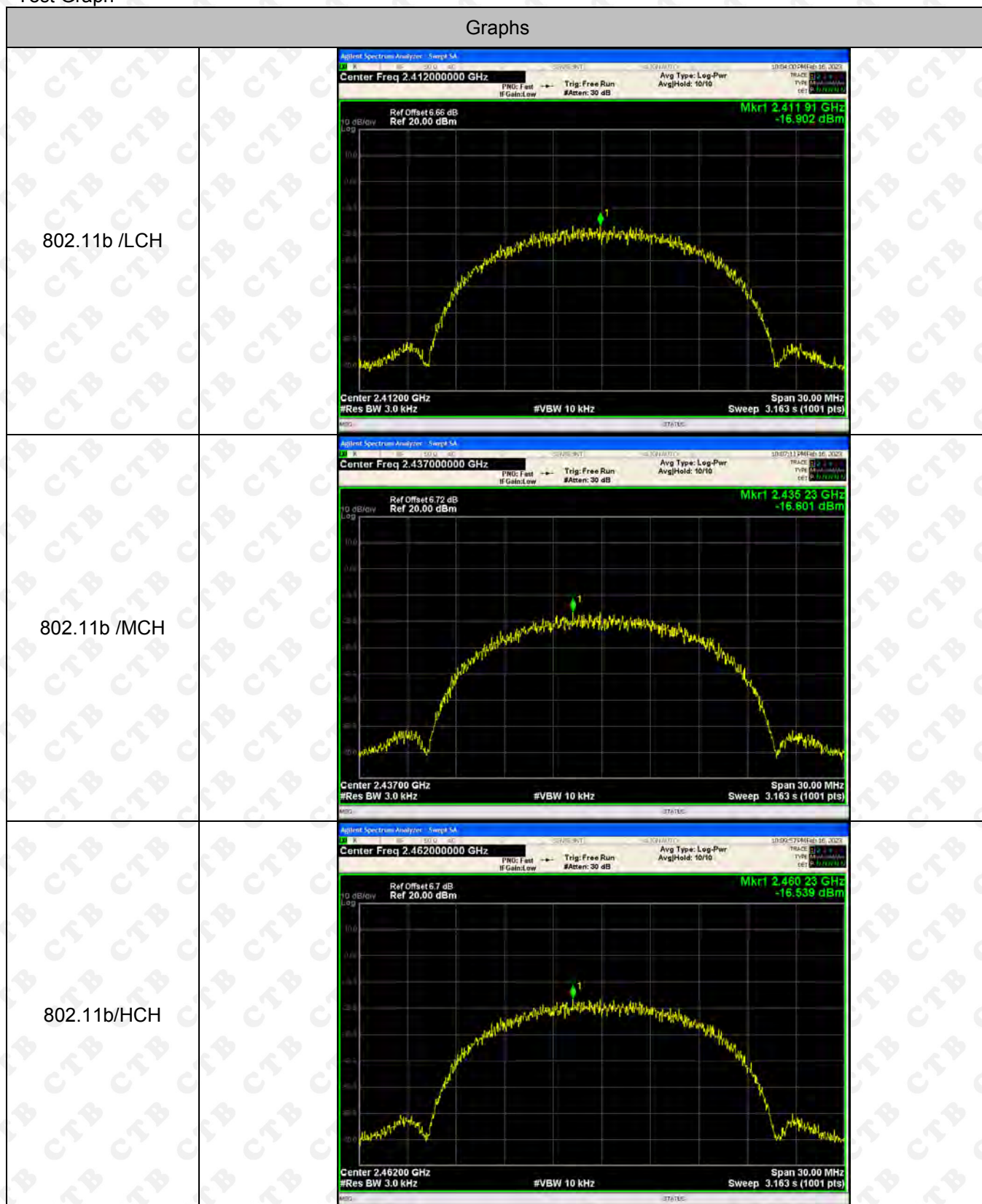
FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

11.3 Test procedure

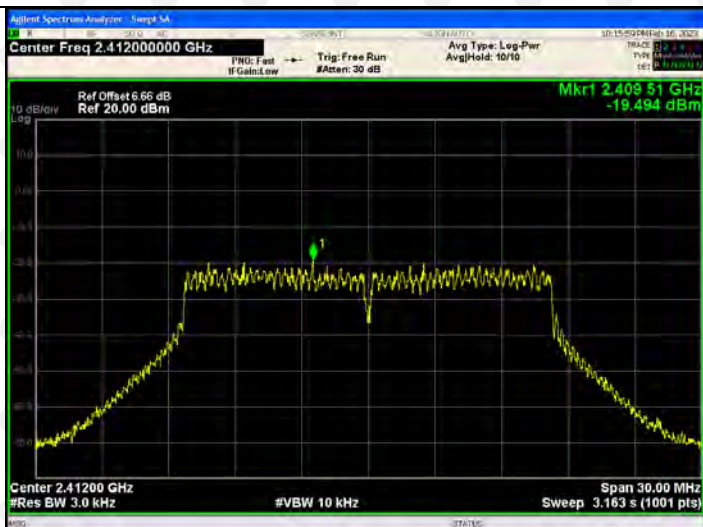
1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = Peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
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

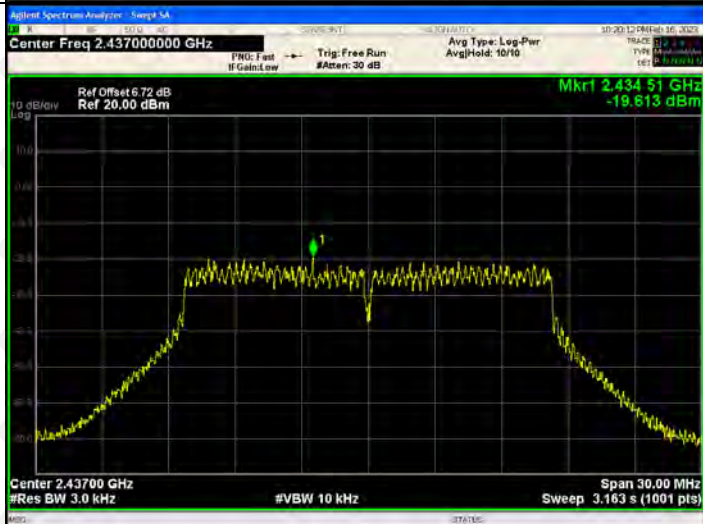
Mode	Channel.	Power Spectral Density [dBm /3KHz] ANT 1	Power Spectral Density [dBm /3KHz] ANT 2	Power Spectral Density [dBm /3KHz] Total	Limit(dBm)
802.11b	LCH	-16.902	-15.674	/	8
	MCH	-16.601	-16.251	/	8
	HCH	-16.539	-16.501	/	8
802.11g	LCH	-19.494	-19.426	/	8
	MCH	-19.613	-19.982	/	8
	HCH	-20.009	-20.089	/	8
802.11n(H T20)	LCH	-19.843	-19.928	-16.875	8
	MCH	-20.204	-20.29	-17.236	8
	HCH	-20.101	-19.748	-16.911	8
802.11n(H T40)	LCH	-23.677	-23.64	-20.648	8
	MCH	-24.08	-24.293	-21.175	8
	HCH	-24.1	-24.091	-21.085	8

ANT1:
Test Graph


802.11g/LCH

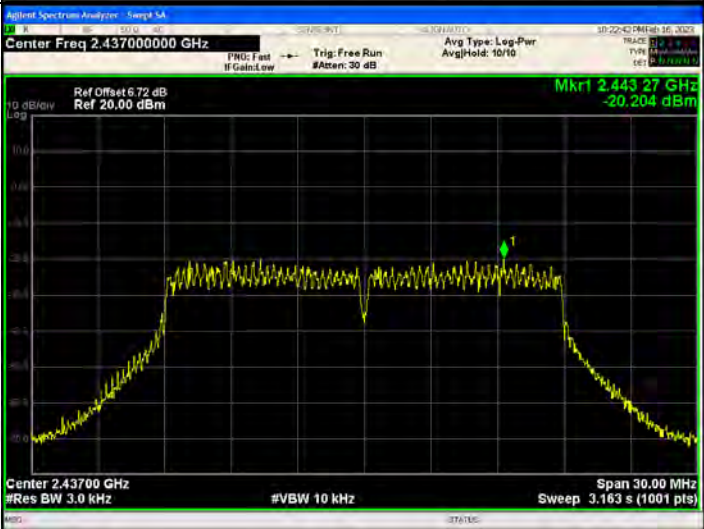


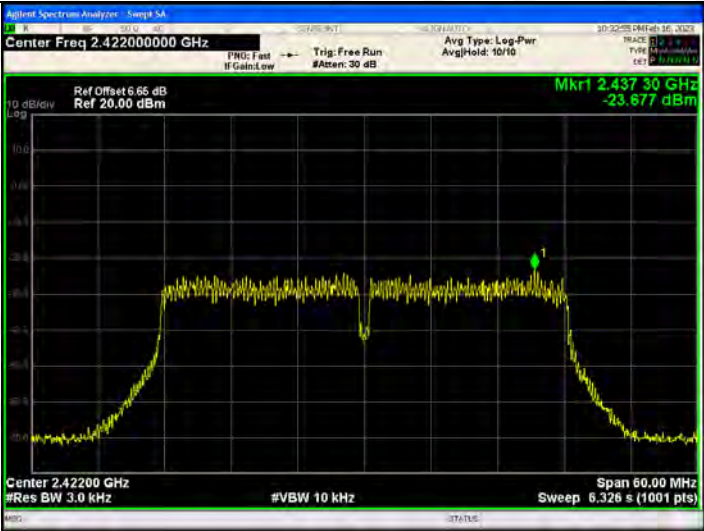
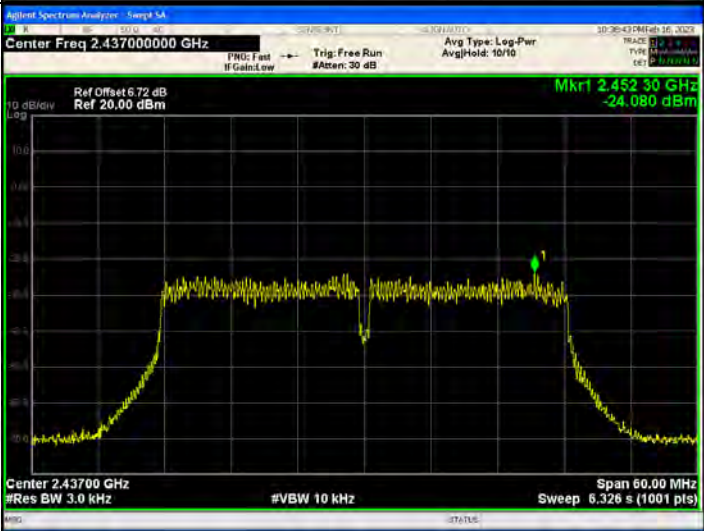
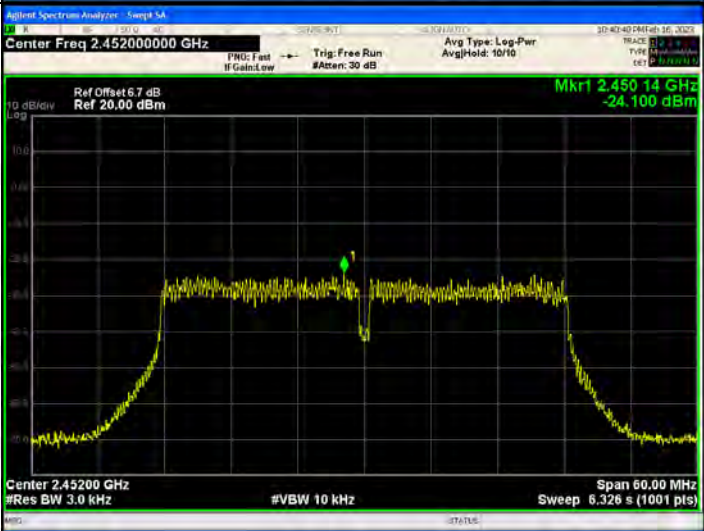
802.11g/MCH



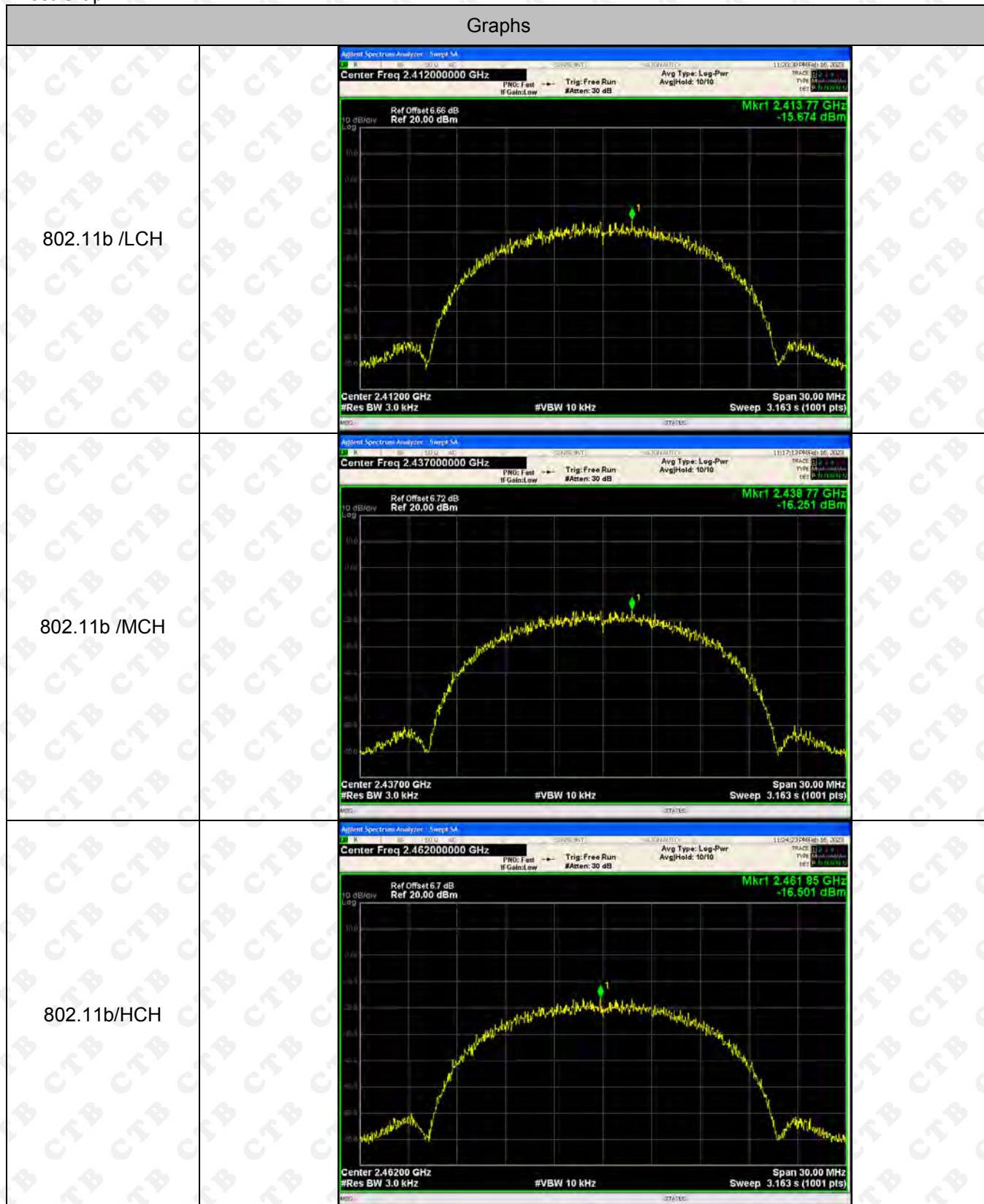
802.11g/HCH



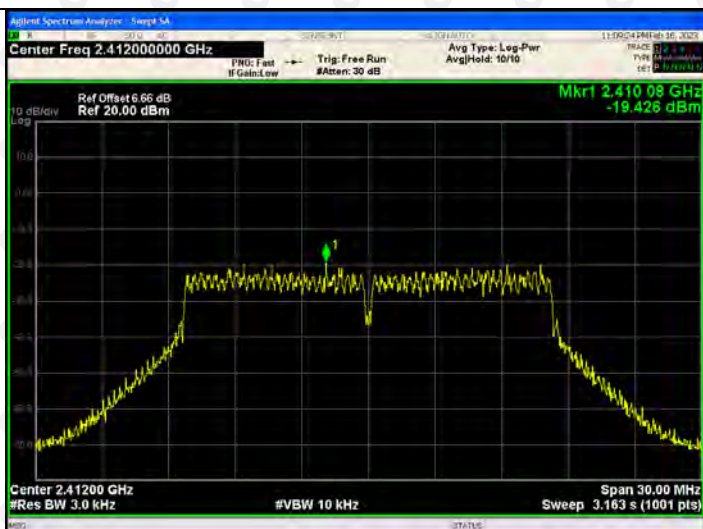
802.11n(HT20)/LC H	
802.11n(HT20)/MC H	
802.11n(HT20)/HC H	

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.42200000 GHz Ref Offset 6.85 dB Ref 20.00 dBm Mkr1 2.43730 GHz -23.677 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 20.00 dBm Mkr1 2.45230 GHz -24.080 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.45200000 GHz Ref Offset 6.7 dB Ref 20.00 dBm Mkr1 2.45014 GHz -24.100 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



802.11g/LCH

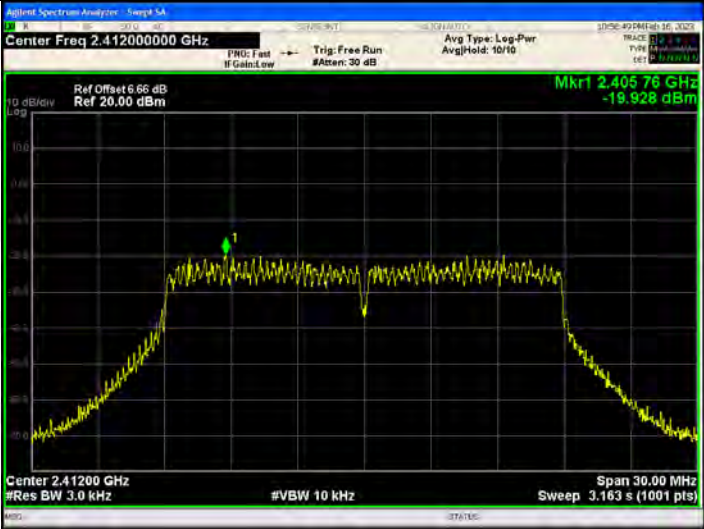
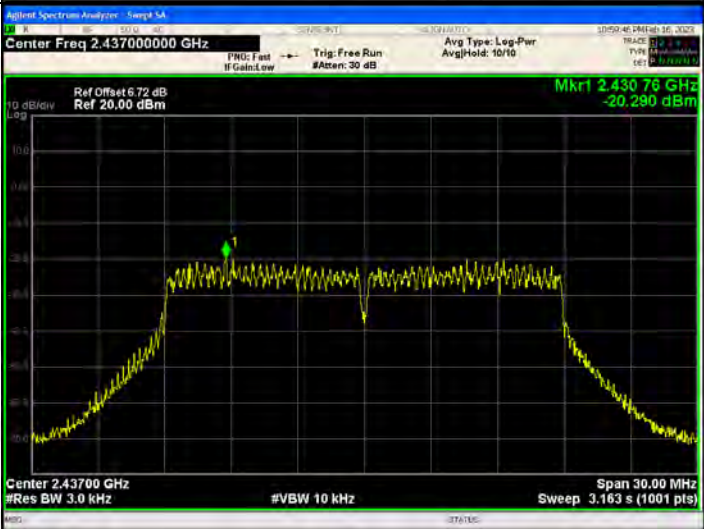


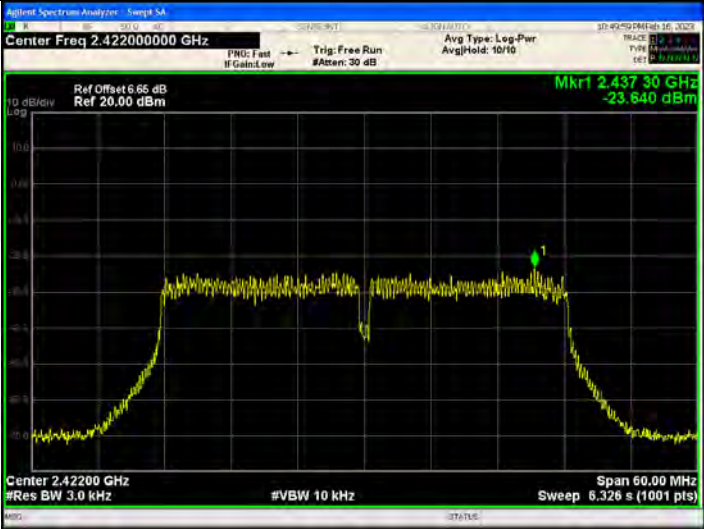
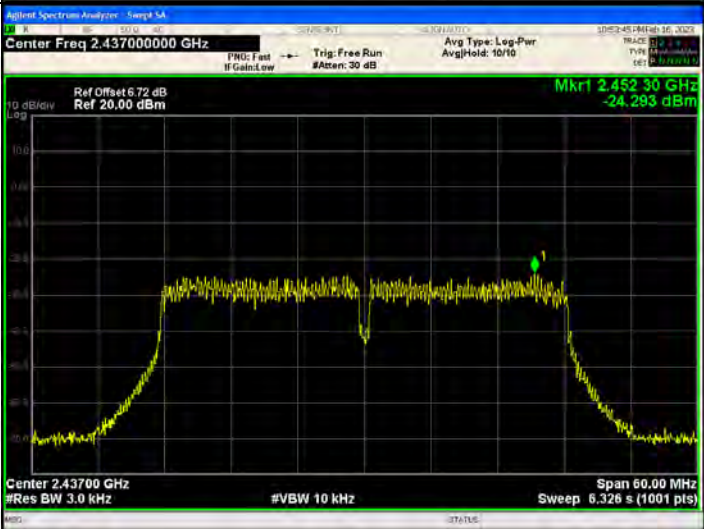
802.11g/MCH



802.11g/HCH



802.11n(HT20)/LC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.41200000 GHz Ref Offset 6.66 dB Ref 20.00 dBm Mkr1 2.40576 GHz -19.928 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/MC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 20.00 dBm Mkr1 2.43076 GHz -20.290 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)
802.11n(HT20)/HC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.46200000 GHz Ref Offset 6.7 dB Ref 20.00 dBm Mkr1 2.45576 GHz -19.748 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 30.00 MHz Sweep 3.163 s (1001 pts)

802.11n(HT40)/LC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.42200000 GHz Ref Offset 6.85 dB Ref 20.00 dBm Mkr1 2.43730 GHz -23.640 dBm Center 2.42200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/MC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 6.72 dB Ref 20.00 dBm Mkr1 2.45230 GHz -24.293 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 60.00 MHz Sweep 6.326 s (1001 pts)
802.11n(HT40)/HC H	 Agilent Spectrum Analyzer - Sweep SA Center Freq 2.45200000 GHz Ref Offset 6.7 dB Ref 20.00 dBm Mkr1 2.46730 GHz -24.091 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 Internal antenna and no consideration of replacement. The best case gain of the antenna is ANT1:0.92dBi, ANT2:0.92dBi.

13. EUT PHOTOGRAPHS

External Photos

EUT Photo 1



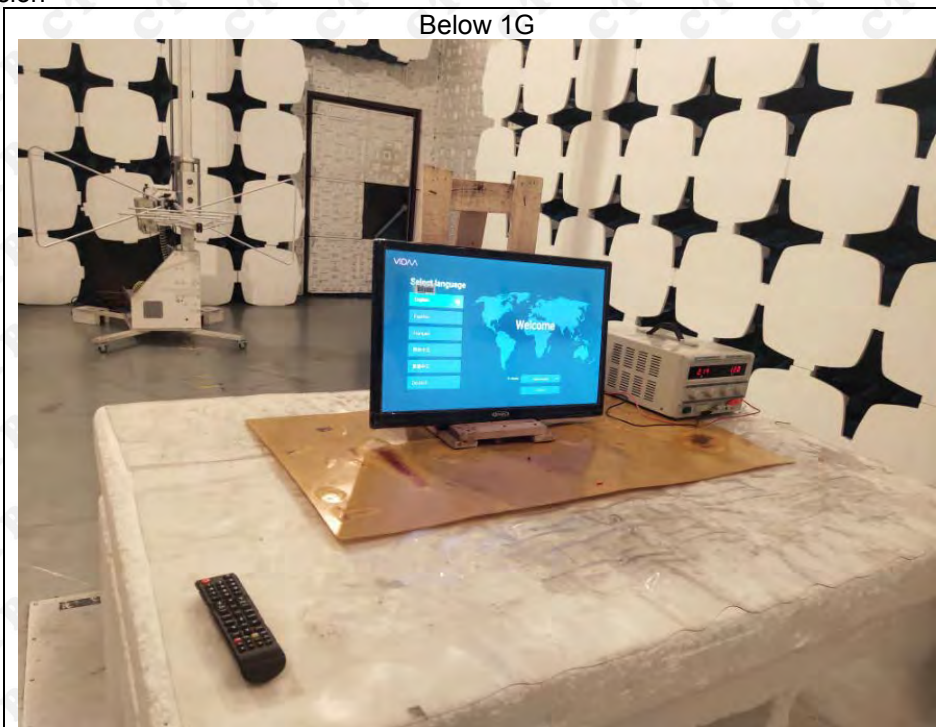
EUT Photo 2



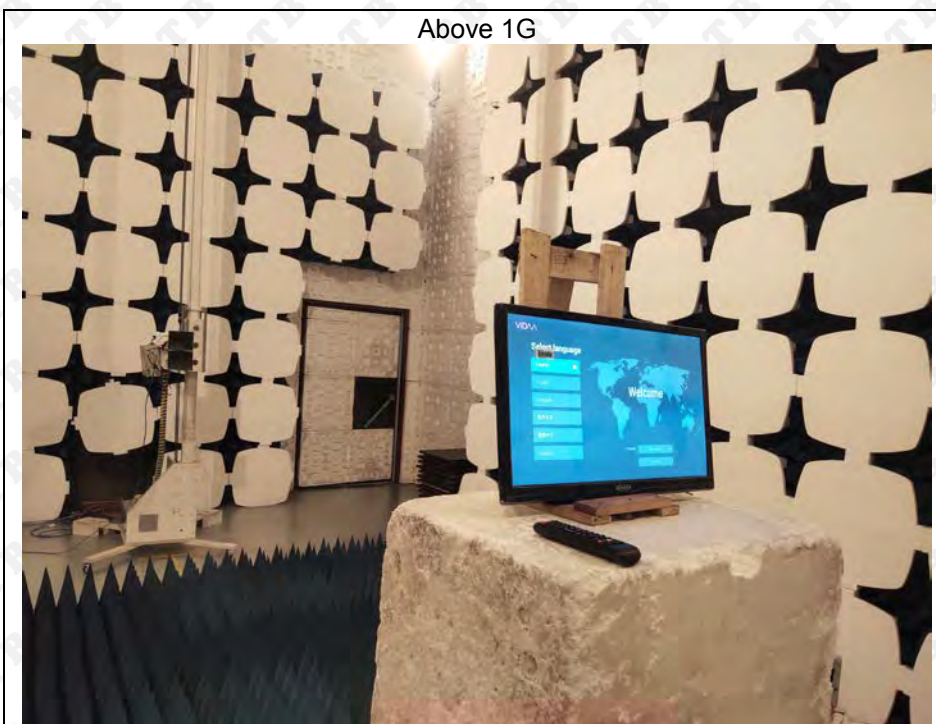
14. EUT TEST SETUP PHOTOGRAPHS

Radiated Emission

Below 1G



Above 1G



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