TEST REPORT

Applicant Name :	Fanvil Technology Co., LTD.
Address :	10/F Block A, Dualshine Global Science Innovation, Honglang North 2nd Road, Bao'an District,Shenzhen, 518101, China
Report Number :	SZNS220815-37077E-RF-00B
FCC ID:	2APPZ-W611W

Test Standard (s)

FCC PART 15.247

Sample Description

Product Type:	Portable Wi-Fi Phone
Model No.:	W611W
Multiple Model(s) No.:	N/A
Trade Mark:	LINKVIL
Date Received:	2022/08/15
Report Date:	2022/09/28

Test Result:	Pass*

* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Andy Yu
EMC Engineer

Approved By:

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★ ".
Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	BLE 1M&2M: 2402-2480MHz Wi-Fi: 2412-2462MHz
Maximum Conducted Peak Output Power	BLE 1M: 8.24dBm BLE 2M: 8.33dBm Wi-Fi: 23.11dBm(802.11b), 24.77dBm(802.11g) 25.05dBm(802.11n20), 27.58dBm(802.11ax20)
Modulation Technique	BLE: GFSK Wi-Fi: DSSS, OFDM, OFDMA
Antenna Specification*	WiFi ANT 1:4.3 dBi BLE& WiFi ANT 2:1.8 dBi (provided by the applicant)
Voltage Range	DC 3.8V from battery or DC 5V from adapter
Sample serial number	SZNS220815-37077E-RF-S1for Conducted and Radiated Emissions SZNS220815-37077E-RF-S2 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter 1 information	Model: AS1201A-0502000USL Input: AC100-240V,50/60Hz,0.35A MAX Output: DC5V,2000mA
Adapter 2 information	Model: GQ12-050200-AU Input: AC100-240V,50/60Hz,0.4A Max Output: DC5V,2.0A

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Line Conducted emission		2.72dB
Emissions, Radiated	30MHz - 1GHz	4.28dB
	1GHz- 18GHz	4.98dB
	18GHz- 26.5GHz	5.06dB
Temperature		1℃
Humidity		6%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISEDC), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For 802.11b, 802.11g, 802.11n-HT20 and 802.11ax20 mode, total 11 channels are provided to testing:

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

EUT was tested with Channel 1, 6 and 11.

For BLE mode, 40 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

EUT was tested with Channel 0, 19 and 39.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

"Tera Term"* exercise software was used.

The device was tested with the worst case was performed as below:

Mode	Data rate	Power Level		
		Low Channel	Middle Channel	High Channel
802.11b	1Mbps	Default	Default	Default
802.11g	6Mbps	15	15	15
802.11n-HT20	MCS0	15	15	15
802.11AX-HE20	MCS0	15	15	15
BLE	1Mbps	Default	Default	Default
BLE	2Mbps	Default	Default	Default

Note: for Wi-Fi mode,
The device support SISO/MIMO transmit except the 802.11 b mode only support SISO.
The SISO/MIMO have same settings, the worst case MIMO was tested and recorded in report.
The two antenna port have same power level setting
For 80.211 ax mode, all the RU mode have same power level setting

The software and power level was provided by applicant.

Duty cycle

Test Result: Compliant. Please refer to the Appendix Wi-Fi and Appendix BLE.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Unknown	Earphone	Unknown	Unknown

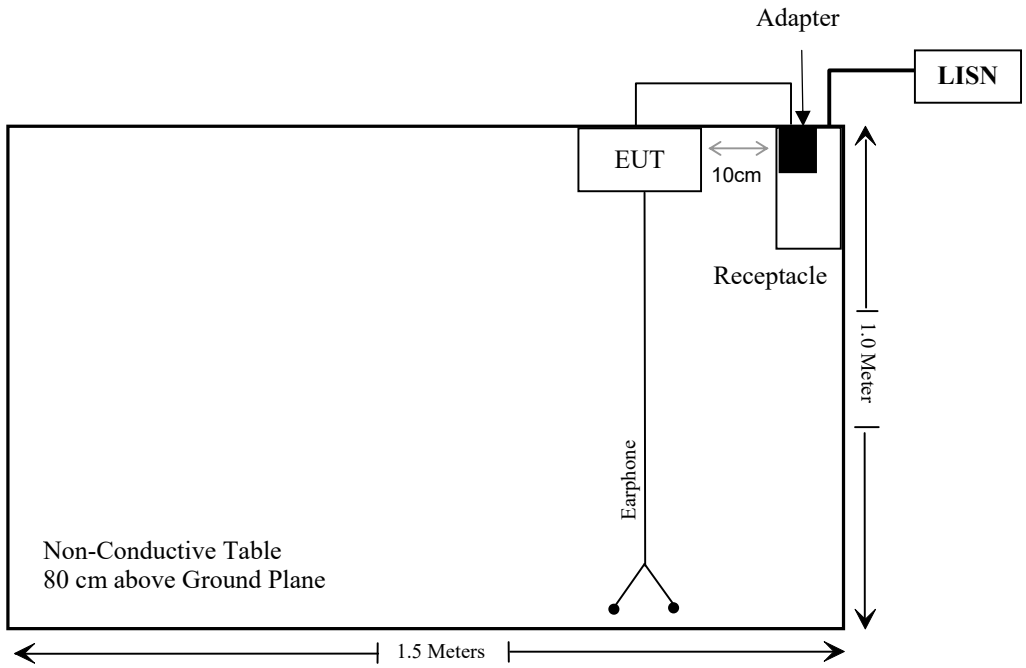
External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielding Un-Detachable DC Cable	1.5	EUT	Adapter

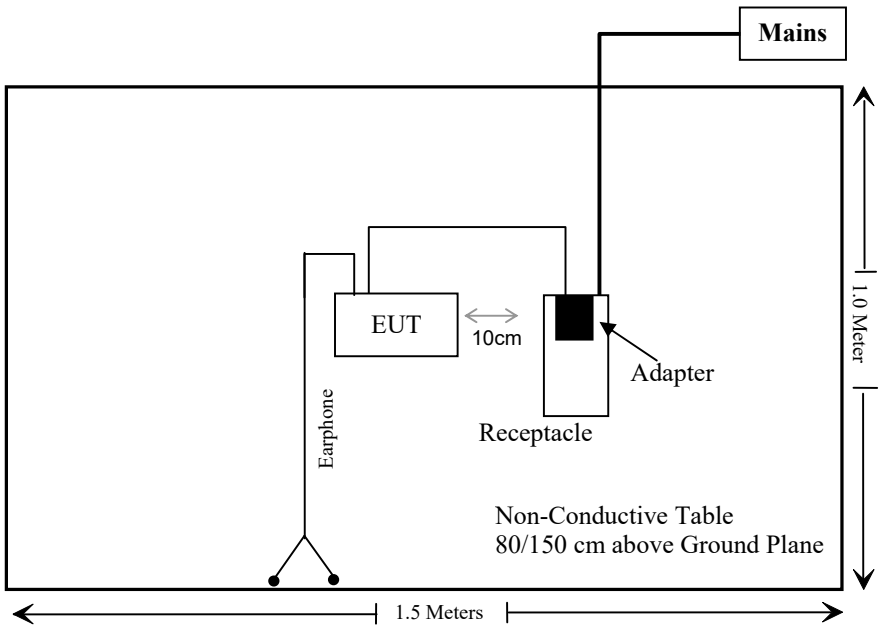
Block Diagram of Test Setup

Direct charging:

For conducted emission:

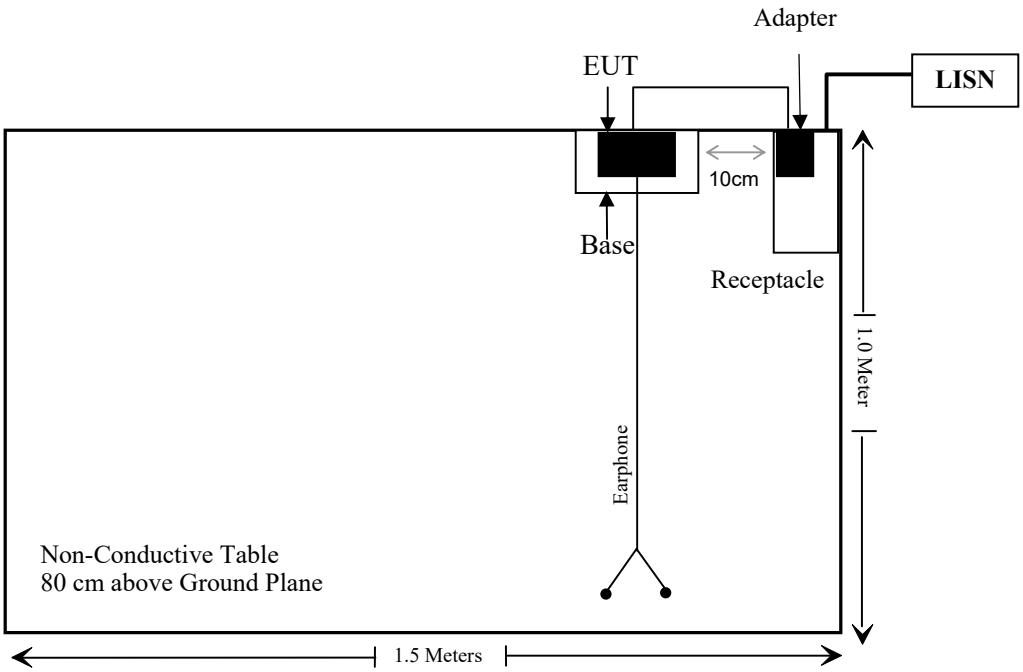


For Radiated Emissions:

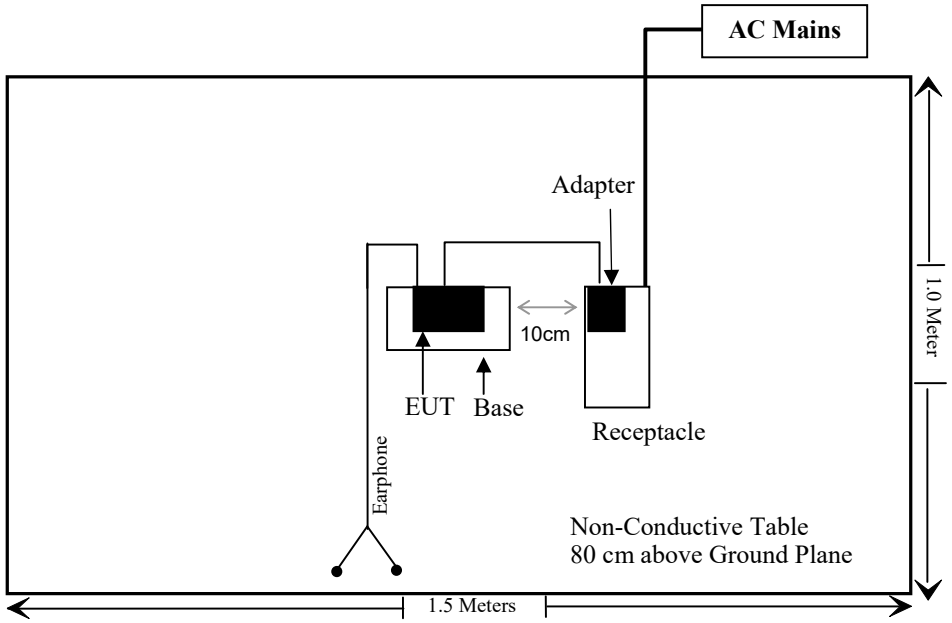


Desktop(base) charging:

For conducted emission:



For Radiated Emissions:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §2.1093	RF EXPOSURE	Compliance
§15.203	Antenna Requirement	Compliant
§15.207 (a)	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant
§15.247 (a)(2)	6 dB Emission Bandwidth & Occupied Bandwidth	Compliant
§15.247(b)(3)	Maximum Conducted Output Power	Compliant
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliant
§15.247(e)	Power Spectral Density	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emission test					
Rohde& Schwarz	EMI Test Receiver	ESCI	100784	2021/12/13	2022/12/12
Rohde & Schwarz	L.I.S.N.	ENV216	101314	2021/12/13	2022/12/12
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2021/12/13	2022/12/12
Unknown	RF Coaxial Cable	No.17	N0350	2021/12/14	2022/12/13
Conducted Emission Test Software: e3 19821b (V9)					
Radiated emission test					
Rohde& Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2021/11/11	2022/11/10
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04
Radiated Emission Test Software: e3 19821b (V9)					
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.16	N650	2021/12/14	2022/12/13
Wainwright	High Pass Filter	WHKX3.6/18G-10SS	5	2021/12/14	2022/12/13

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF conducted test					
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101590	2022/01/19	2023/01/18
Tonscend	RF Control Unit	JS0806-2	19G8060182	2021/10/26	2022/10/25
Unknown	RF Cable	Unknown	1	Each time	/

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307 & §2.1093 - RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: SZNS220815-37077E-SA

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.
And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT have two internal antenna which was permanently attached, one share with BT/Wi-Fi and the maximum antenna gain is 1.8dBi, another only for Wi-Fi and the antenna gain is 4.3dBi, fulfill the requirement of this section. Please refer to the EUT photos.

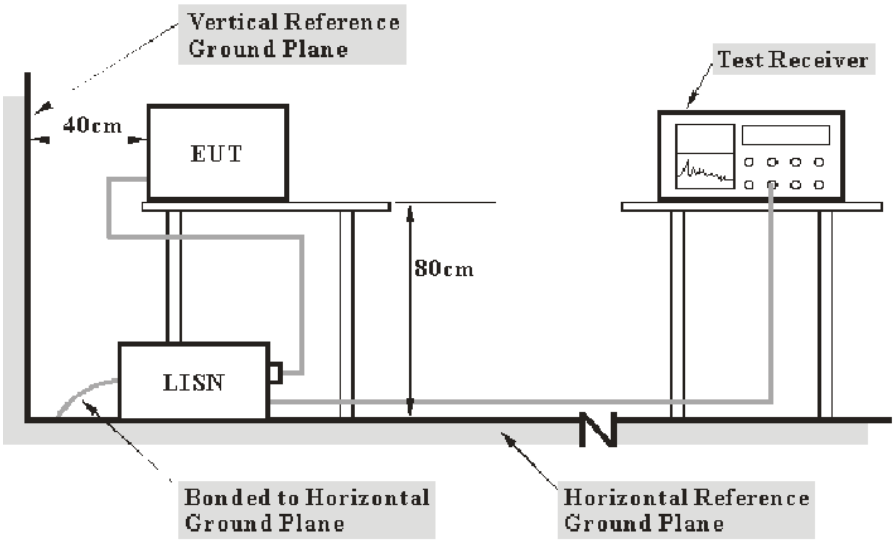
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



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

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Transd Factor & Margin Calculation

The Transd factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Transd Factor = LISN VDF + Cable Loss

The "**Over limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over limit of -7 dB means the emission is 7 dB below the limit. The equation for calculation is as follows:

Over Limit = Level – Limit
Level = Read Level + Factor

Test Data

Environmental Conditions

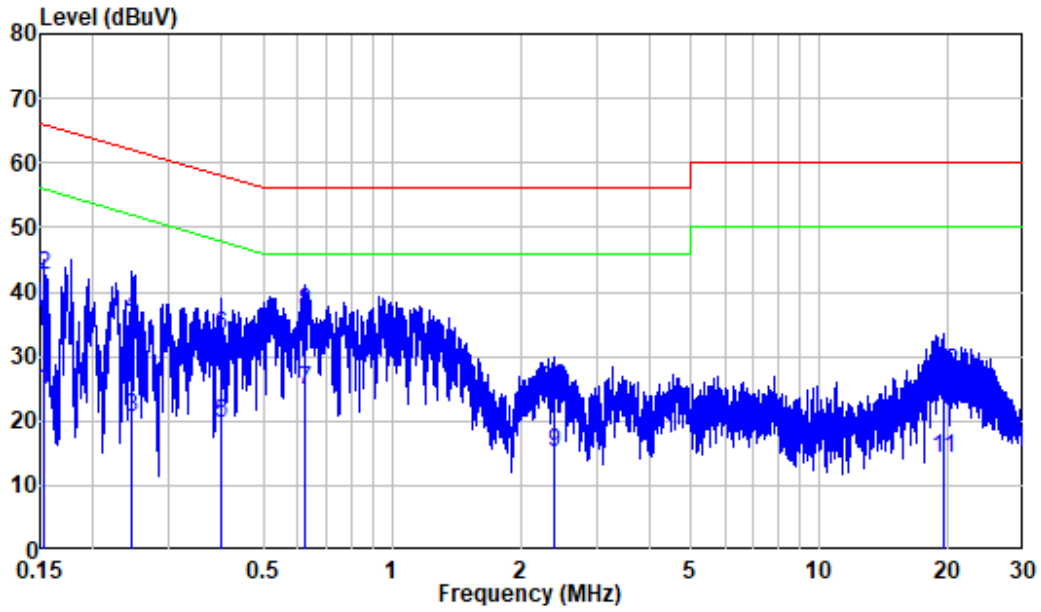
Temperature:	24~25 ℃
Relative Humidity:	41~42 %
ATM Pressure:	101.0 kPa

The testing was performed by Jason from 2022-08-23 to 2022-09-28.

EUT operation mode: Transmitting (Worst case is 802.11ax20, low channel)

For adapter AS1201A-0502000USL:

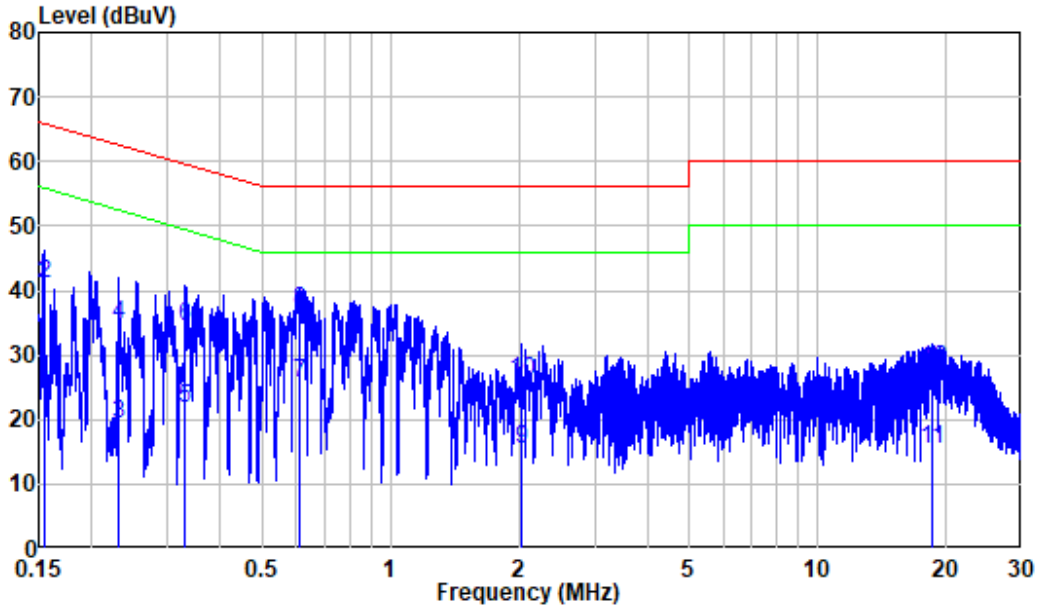
AC 120V/60 Hz, Line



Site : Shielding Room
Condition: Line
Job No. : SZNS220815-37077E-RF
Mode : Charging + 2.4G WIFI Transmitting
Power : AC 120V 60Hz
Note : Desktop Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.153	9.80	14.97	24.77	55.84	-31.07	Average
2	0.153	9.80	32.87	42.67	65.84	-23.17	QP
3	0.245	9.80	10.81	20.61	51.92	-31.31	Average
4	0.245	9.80	26.43	36.23	61.92	-25.69	QP
5	0.398	9.80	9.93	19.73	47.90	-28.17	Average
6	0.398	9.80	23.29	33.09	57.90	-24.81	QP
7	0.627	9.81	14.95	24.76	46.00	-21.24	Average
8	0.627	9.81	27.02	36.83	56.00	-19.17	QP
9	2.382	9.82	5.26	15.08	46.00	-30.92	Average
10	2.382	9.82	15.20	25.02	56.00	-30.98	QP
11	19.506	10.00	4.26	14.26	50.00	-35.74	Average
12	19.506	10.00	17.45	27.45	60.00	-32.55	QP

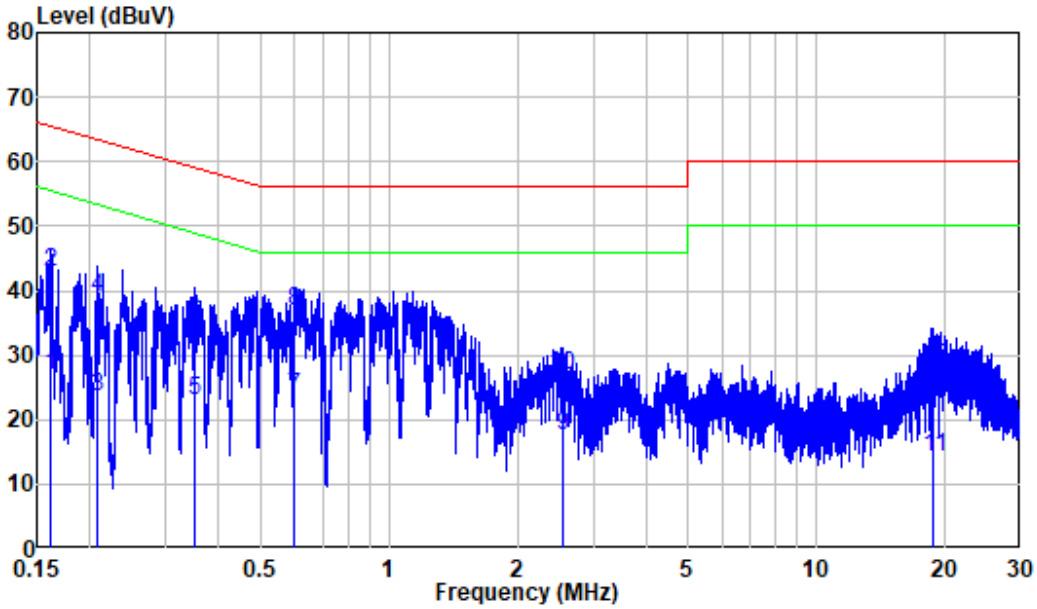
AC 120V/60 Hz, Neutral



Site : Shielding Room
Condition: Neutral
Job No. : SZNS220815-37077E-RF
Mode : Charging + 2.4G WIFI Transmitting
Power : AC 120V 60Hz
Note : Desktop Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.154	9.80	14.06	23.86	55.77	-31.91	Average
2	0.154	9.80	31.14	40.94	65.77	-24.83	QP
3	0.231	9.80	9.37	19.17	52.41	-33.24	Average
4	0.231	9.80	24.84	34.64	62.41	-27.77	QP
5	0.331	9.80	11.87	21.67	49.42	-27.75	Average
6	0.331	9.80	24.53	34.33	59.42	-25.09	QP
7	0.609	9.81	15.91	25.72	46.00	-20.28	Average
8	0.609	9.81	27.09	36.90	56.00	-19.10	QP
9	2.023	9.82	5.64	15.46	46.00	-30.54	Average
10	2.023	9.82	16.23	26.05	56.00	-29.95	QP
11	18.499	10.08	5.46	15.54	50.00	-34.46	Average
12	18.499	10.08	17.70	27.78	60.00	-32.22	QP

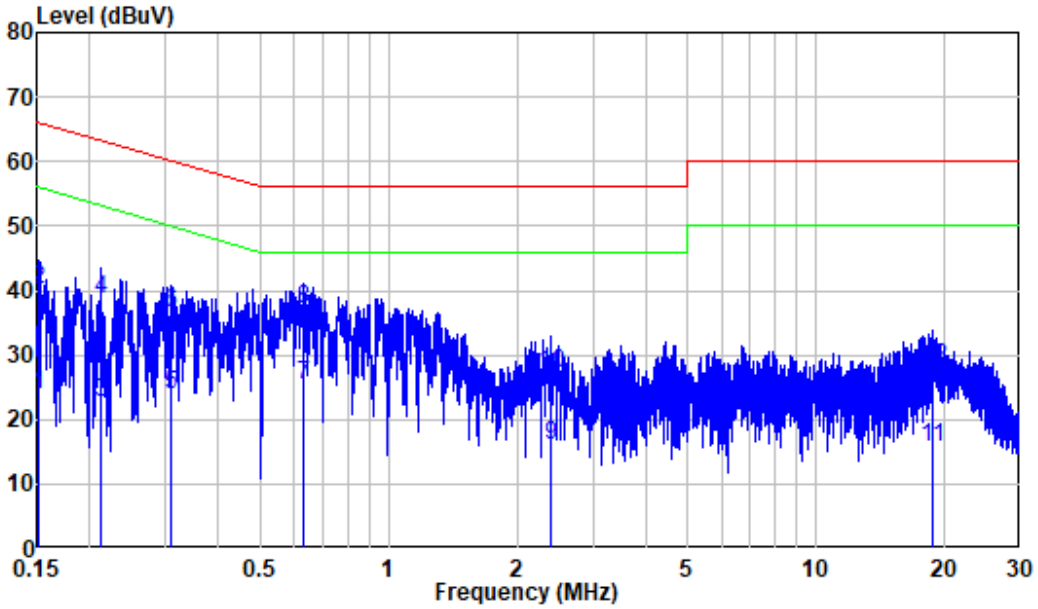
AC 120V/60 Hz, Line



Site : Shielding Room
Condition: Line
Job No. : SZNS220815-37077E-RF
Mode : Charging + 2.4G WIFI Transmitting
Power : AC 120V 60Hz
Note : Direct Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.162	9.80	17.16	26.96	55.36	-28.40	Average
2	0.162	9.80	33.09	42.89	65.36	-22.47	QP
3	0.208	9.80	13.85	23.65	53.30	-29.65	Average
4	0.208	9.80	29.06	38.86	63.30	-24.44	QP
5	0.352	9.80	13.08	22.88	48.92	-26.04	Average
6	0.352	9.80	25.33	35.13	58.92	-23.79	QP
7	0.600	9.81	13.86	23.67	46.00	-22.33	Average
8	0.600	9.81	27.04	36.85	56.00	-19.15	QP
9	2.537	9.83	7.56	17.39	46.00	-28.61	Average
10	2.537	9.83	17.16	26.99	56.00	-29.01	QP
11	18.758	9.99	4.19	14.18	50.00	-35.82	Average
12	18.758	9.99	18.07	28.06	60.00	-31.94	QP

AC 120V/60 Hz, Neutral

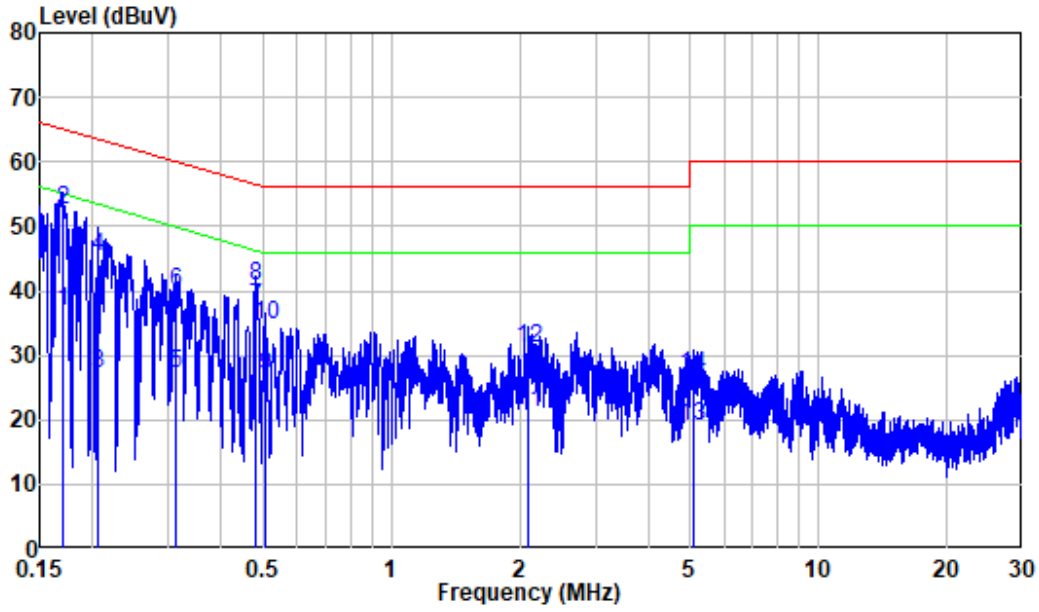


Site : Shielding Room
Condition: Neutral
Job No. : SZNS220815-37077E-RF
Mode : Charging + 2.4G WIFI Transmitting
Power : AC 120V 60Hz
Note : Direct Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.152	9.80	13.90	23.70	55.88	-32.18	Average
2	0.152	9.80	30.42	40.22	65.88	-25.66	QP
3	0.212	9.80	12.88	22.68	53.13	-30.45	Average
4	0.212	9.80	28.82	38.62	63.13	-24.51	QP
5	0.311	9.80	13.96	23.76	49.95	-26.19	Average
6	0.311	9.80	26.72	36.52	59.95	-23.43	QP
7	0.631	9.81	15.48	25.29	46.00	-20.71	Average
8	0.631	9.81	27.41	37.22	56.00	-18.78	QP
9	2.388	9.82	6.20	16.02	46.00	-29.98	Average
10	2.388	9.82	17.36	27.18	56.00	-28.82	QP
11	18.647	10.09	5.60	15.69	50.00	-34.31	Average
12	18.647	10.09	17.85	27.94	60.00	-32.06	QP

For adapter GQ12-050200-AU:

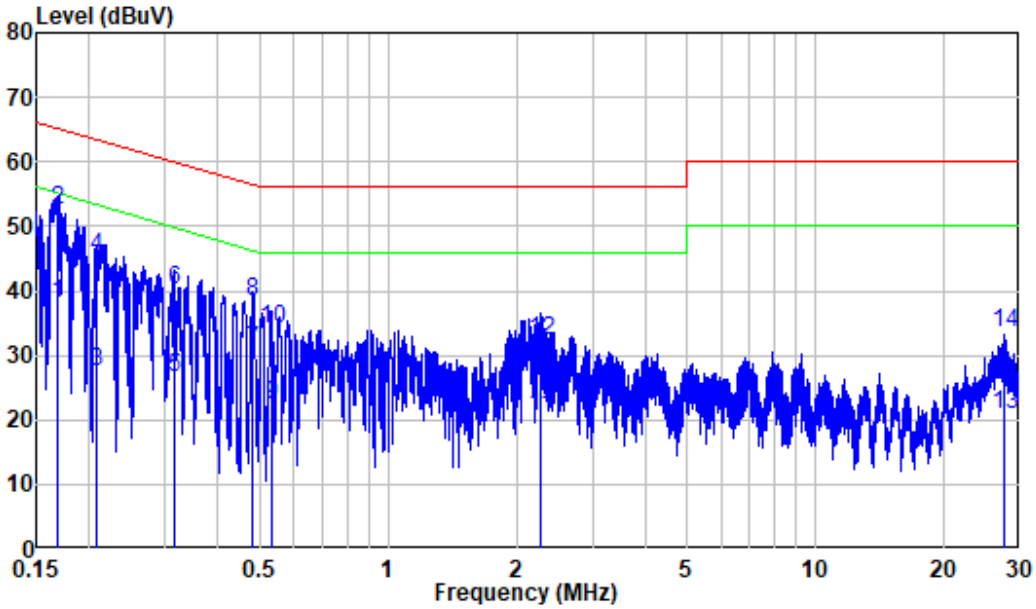
AC 120V/60 Hz, Line



Site : Shielding Room
Condition: Line
Job No. : SZNS220815-37077E-RF
Mode : 2.4G WIFI
Power : AC 120V 60Hz
Note : Desktop Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.169	9.80	26.96	36.76	54.99	-18.23	Average
2	0.169	9.80	42.65	52.45	64.99	-12.54	QP
3	0.205	9.80	17.35	27.15	53.39	-26.24	Average
4	0.205	9.80	35.45	45.25	63.39	-18.14	QP
5	0.314	9.80	17.48	27.28	49.87	-22.59	Average
6	0.314	9.80	30.05	39.85	59.87	-20.02	QP
7	0.482	9.80	27.62	37.42	46.31	-8.89	Average
8	0.482	9.80	30.95	40.75	56.31	-15.56	QP
9	0.508	9.80	17.13	26.93	46.00	-19.07	Average
10	0.508	9.80	25.02	34.82	56.00	-21.18	QP
11	2.092	9.82	11.33	21.15	46.00	-24.85	Average
12	2.092	9.82	21.14	30.96	56.00	-25.04	QP
13	5.071	9.85	9.31	19.16	50.00	-30.84	Average
14	5.071	9.85	16.91	26.76	60.00	-33.24	QP

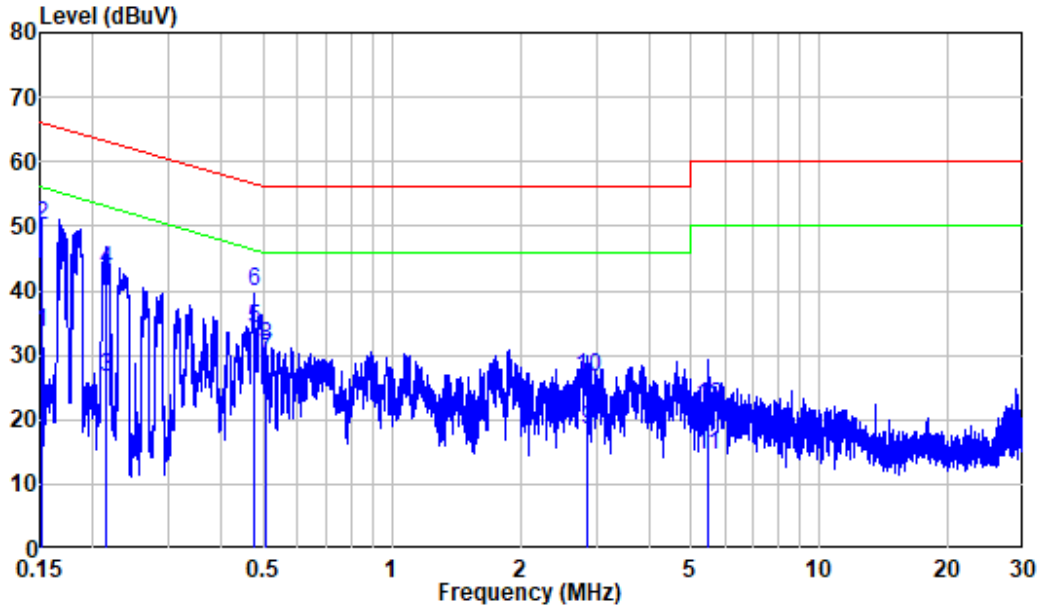
AC 120V/60 Hz, Neutral



Site : Shielding Room
Condition: Neutral
Job No. : SZNS220815-37077E-RF
Mode : 2.4G WIFI
Power : AC 120V 60Hz
Note : Desktop Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.169	9.80	28.21	38.01	55.03	-17.02	Average
2	0.169	9.80	42.86	52.66	65.03	-12.37	QP
3	0.207	9.80	17.73	27.53	53.33	-25.80	Average
4	0.207	9.80	35.56	45.36	63.33	-17.97	QP
5	0.315	9.80	16.87	26.67	49.84	-23.17	Average
6	0.315	9.80	30.31	40.11	59.84	-19.73	QP
7	0.481	9.80	21.14	30.94	46.32	-15.38	Average
8	0.481	9.80	28.65	38.45	56.32	-17.87	QP
9	0.533	9.81	12.55	22.36	46.00	-23.64	Average
10	0.533	9.81	24.44	34.25	56.00	-21.75	QP
11	2.267	9.82	10.85	20.67	46.00	-25.33	Average
12	2.267	9.82	22.43	32.25	56.00	-23.75	QP
13	27.726	10.18	10.62	20.80	50.00	-29.20	Average
14	27.726	10.18	23.26	33.44	60.00	-26.56	QP

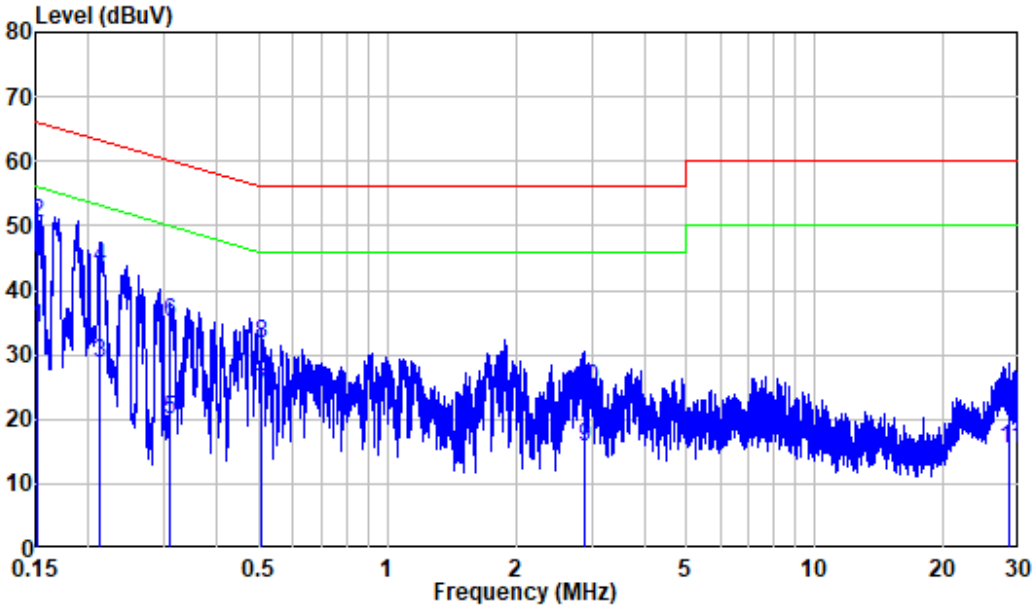
AC 120V/60 Hz, Line



Site : Shielding Room
Condition: Line
Job No. : SZNS220815-37077E-RF
Mode : 2.4G WIFI
Power : AC 120V 60Hz
Note : Direct Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.151	9.80	23.61	33.41	55.94	-22.53	Average
2	0.151	9.80	40.43	50.23	65.94	-15.71	QP
3	0.214	9.80	16.63	26.43	53.05	-26.62	Average
4	0.214	9.80	33.27	43.07	63.05	-19.98	QP
5	0.476	9.80	24.24	34.04	46.41	-12.37	Average
6	0.476	9.80	30.07	39.87	56.41	-16.54	QP
7	0.507	9.80	19.88	29.68	46.00	-16.32	Average
8	0.507	9.80	21.58	31.38	56.00	-24.62	QP
9	2.865	9.83	8.64	18.47	46.00	-27.53	Average
10	2.865	9.83	16.59	26.42	56.00	-29.58	QP
11	5.484	9.85	4.73	14.58	50.00	-35.42	Average
12	5.484	9.85	12.24	22.09	60.00	-37.91	QP

AC 120V/60 Hz, Neutral



Site : Shielding Room
Condition: Neutral
Job No. : SZNS220815-37077E-RF
Mode : 2.4G WIFI
Power : AC 120V 60Hz
Note : Direct Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.151	9.80	24.42	34.22	55.94	-21.72	Average
2	0.151	9.80	40.57	50.37	65.94	-15.57	QP
3	0.213	9.80	18.78	28.58	53.10	-24.52	Average
4	0.213	9.80	33.57	43.37	63.10	-19.73	QP
5	0.310	9.80	10.18	19.98	49.97	-29.99	Average
6	0.310	9.80	25.27	35.07	59.97	-24.90	QP
7	0.507	9.80	14.44	24.24	46.00	-21.76	Average
8	0.507	9.80	21.98	31.78	56.00	-24.22	QP
9	2.892	9.83	5.96	15.79	46.00	-30.21	Average
10	2.892	9.83	14.81	24.64	56.00	-31.36	QP
11	28.603	10.19	5.21	15.40	50.00	-34.60	Average
12	28.603	10.19	12.40	22.59	60.00	-37.41	QP

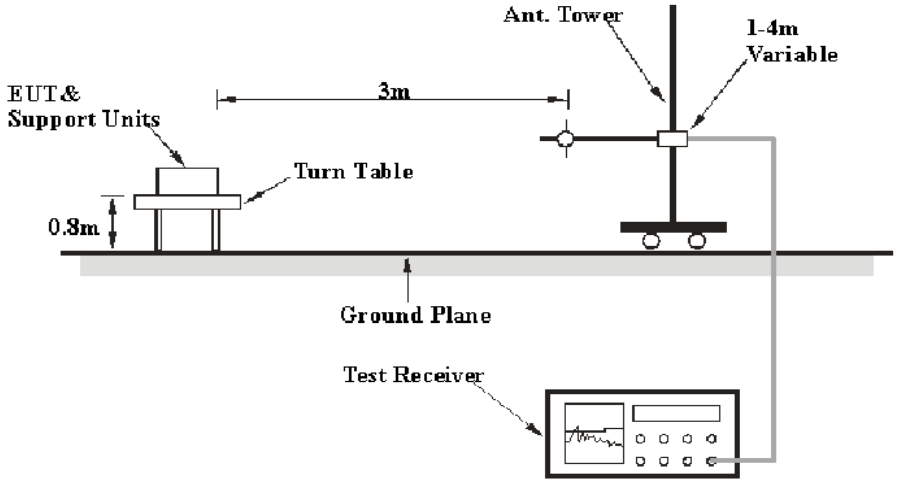
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

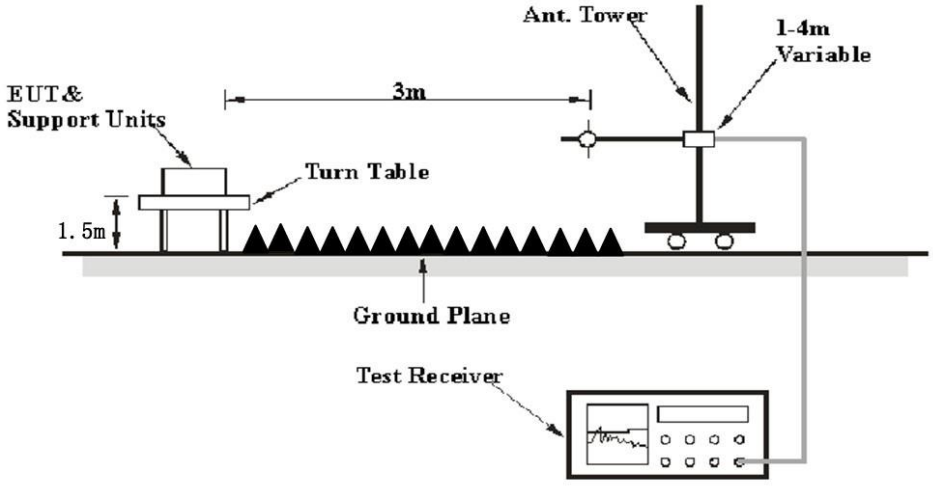
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1 GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz Note 1	/	Average
	1MHz	＞1/T Note 2	/	Average

Note 1: when duty cycle is no less than 98%
Note 2: when duty cycle is less than 98%

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Factor & Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

Temperature:	25~25.6 ℃
Relative Humidity:	50~62 %
ATM Pressure:	101.0 kPa

The testing was performed by Level from 2022-08-22 to 2022-09-27 for below 1GHz ,by Jeff Jiang and Bruce Lin from 2022-09-15 to 2022-09-16 for above 1GHz.

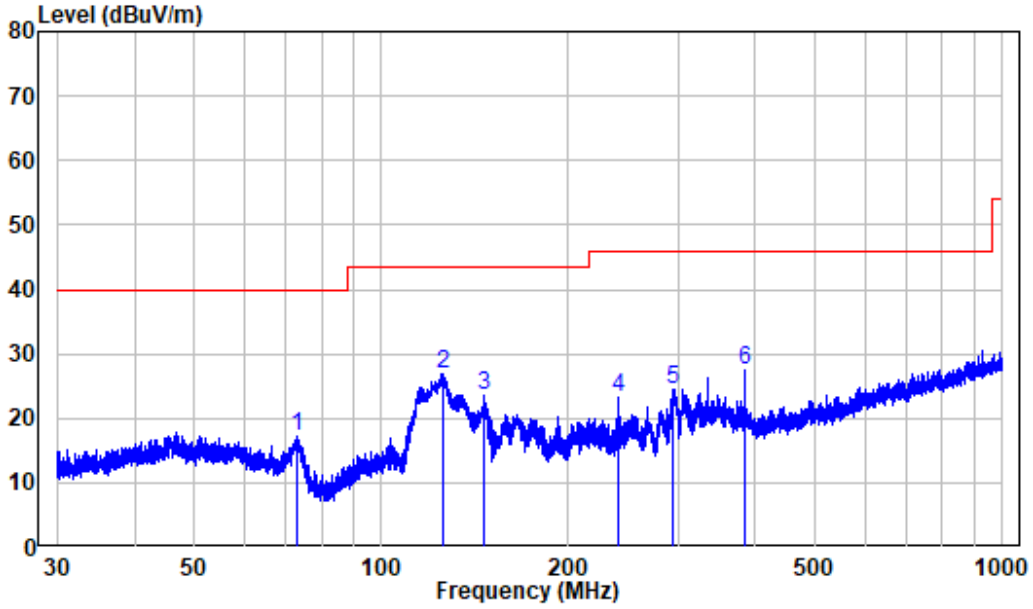
EUT operation mode: Transmitting(Pre-scan in the X,Y and Z axes of orientation, the worst case of orientation was recorded)

30MHz-1GHz: *(Worst case is 802.11g, middle channel)*

Note: when the test result of peak was less than the limit of QP more than 6dB, just the peak level was recorded.

For adapter AS1201A-0502000USL:

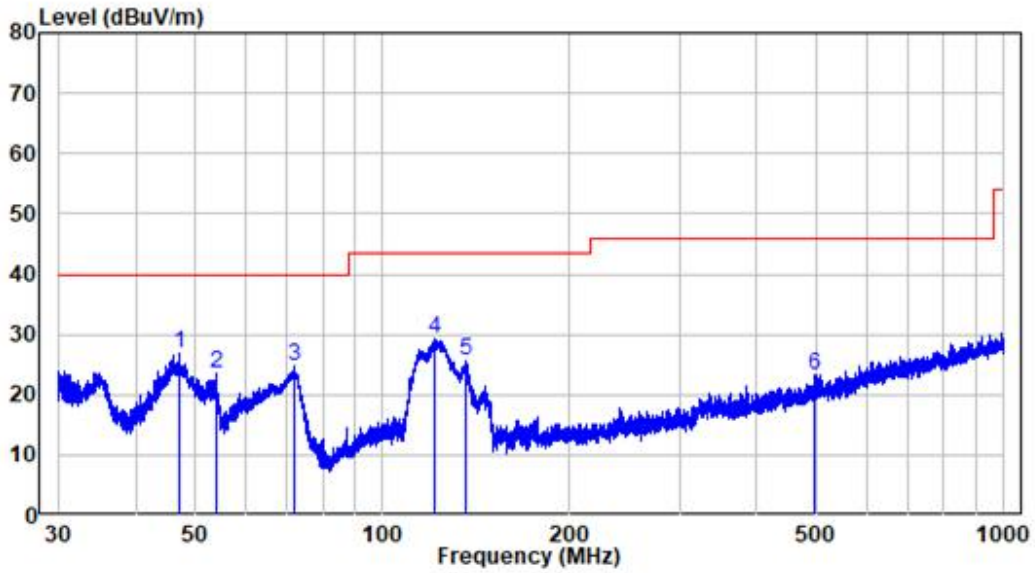
Horizontal:



Site : chamber
Condition: 3m HORIZONTAL
Job No. : SZNS220815-37077E-RF
Test Mode: Charging+2.4G WIFI Transmitting
Note : Direct Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	73.006	-15.84	33.03	17.19	40.00	-22.81	Peak
2	125.886	-14.40	41.24	26.84	43.50	-16.66	Peak
3	146.566	-15.47	38.88	23.41	43.50	-20.09	Peak
4	239.987	-10.91	34.08	23.17	46.00	-22.83	Peak
5	295.018	-9.27	33.78	24.51	46.00	-21.49	Peak
6	384.100	-7.08	34.65	27.57	46.00	-18.43	Peak

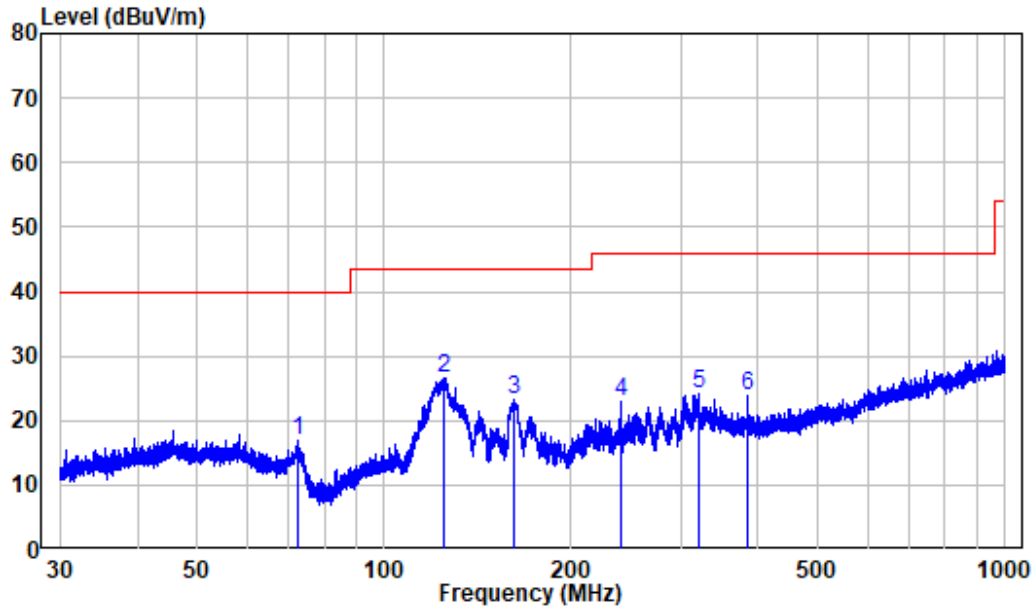
Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS220815-37077E-RF
Test Mode: Charging+2.4G WIFI Transmitting
Note : Direct Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	46.974	-10.00	36.86	26.86	40.00	-13.14	Peak
2	53.811	-10.31	33.85	23.54	40.00	-16.46	Peak
3	72.084	-15.63	40.30	24.67	40.00	-15.33	Peak
4	120.805	-13.69	42.89	29.20	43.50	-14.30	Peak
5	135.566	-15.05	40.63	25.58	43.50	-17.92	Peak
6	493.982	-4.51	27.87	23.36	46.00	-22.64	Peak

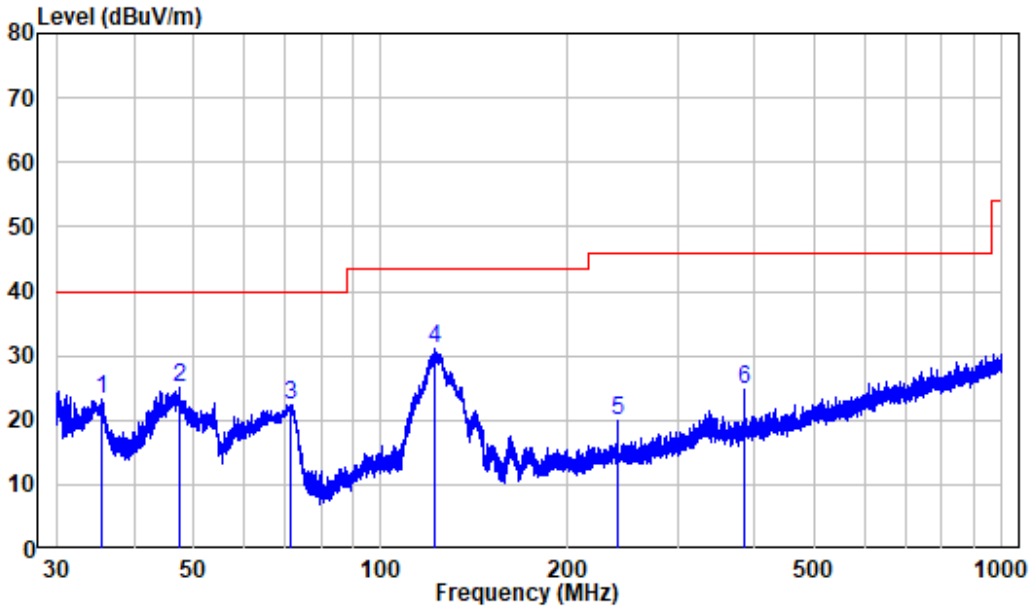
Horizontal:



Site : chamber
Condition: 3m HORIZONTAL
Job No. : SZNS220815-37077E-RF
Test Mode: Charging+2.4G WIFI Transmitting
Note : Desktop Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	72.401	-15.70	32.53	16.83	40.00	-23.17	Peak
2	124.514	-14.26	40.89	26.63	43.50	-16.87	Peak
3	161.333	-14.25	37.64	23.39	43.50	-20.11	Peak
4	239.987	-10.91	33.88	22.97	46.00	-23.03	Peak
5	320.218	-8.44	32.54	24.10	46.00	-21.90	Peak
6	384.100	-7.08	30.85	23.77	46.00	-22.23	Peak

Vertical



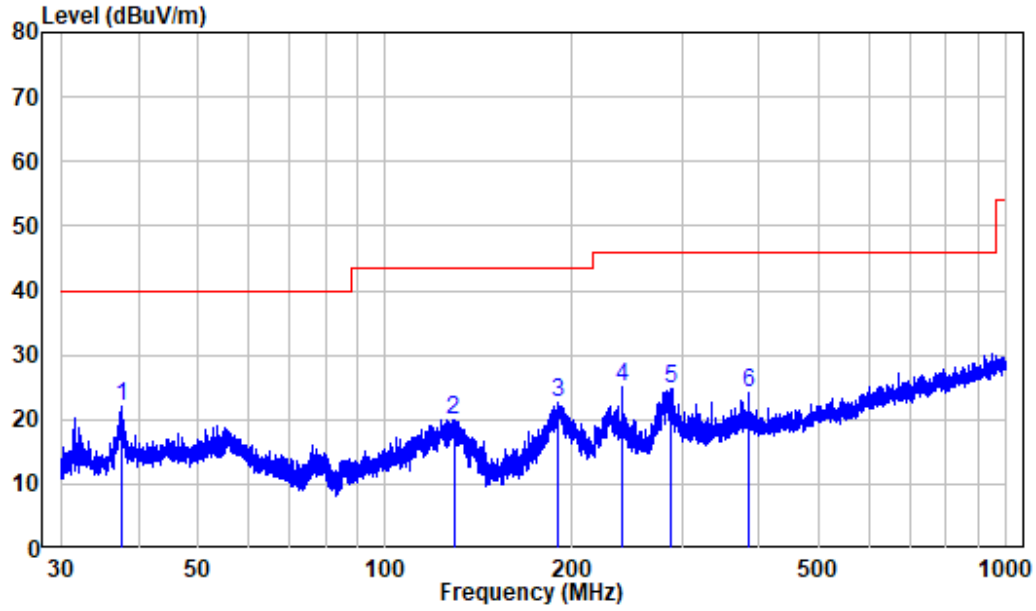
Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS220815-37077E-RF
Test Mode: Charging+2.4G WIFI Transmitting
Note : Desktop Charging

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	35.484	-11.37	34.50	23.13	40.00	-16.87	Peak
2	47.409	-10.00	34.96	24.96	40.00	-15.04	Peak
3	71.330	-15.34	37.77	22.43	40.00	-17.57	Peak
4	122.243	-13.96	45.03	31.07	43.50	-12.43	Peak
5	239.987	-10.91	30.88	19.97	46.00	-26.03	Peak
6	383.932	-7.08	31.77	24.69	46.00	-21.31	Peak

For adapter GQ12-050200-AU:

Direct charging:

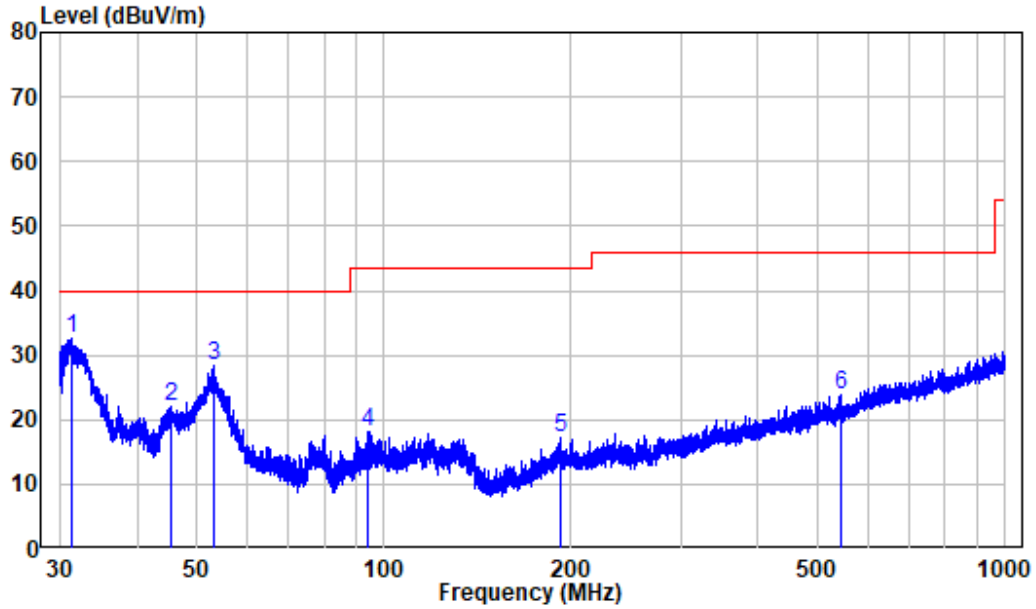
Horizontal:



Site : chamber
Condition: 3m HORIZONTAL
Job No. : SZNS220815-37077E-RF
Test Mode: 2.4G WIFI

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	37.548	-10.90	32.88	21.98	40.00	-18.02	Peak
2	128.845	-14.78	34.85	20.07	43.50	-23.43	Peak
3	189.739	-11.62	34.37	22.75	43.50	-20.75	Peak
4	239.987	-10.91	35.97	25.06	46.00	-20.94	Peak
5	287.990	-9.36	34.22	24.86	46.00	-21.14	Peak
6	384.100	-7.08	31.12	24.04	46.00	-21.96	Peak

Vertical

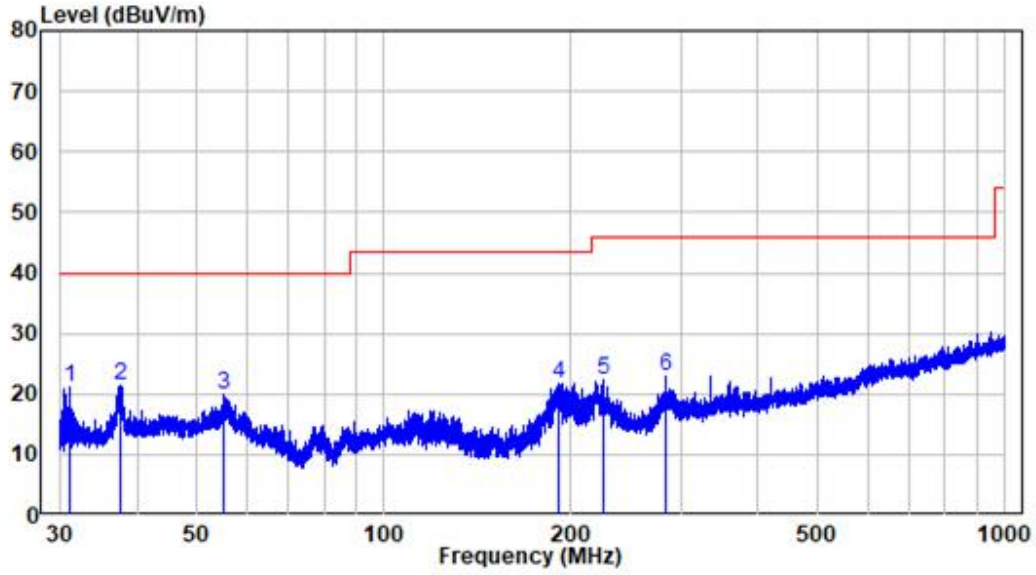


Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS220815-37077E-RF
Test Mode: 2.4G WIFI

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	31.358	-12.25	44.86	32.61	40.00	-7.39	Peak
2	45.316	-9.96	31.91	21.95	40.00	-18.05	Peak
3	53.085	-10.18	38.43	28.25	40.00	-11.75	Peak
4	94.387	-12.61	30.64	18.03	43.50	-25.47	Peak
5	192.503	-11.27	28.61	17.34	43.50	-26.16	Peak
6	542.560	-3.96	27.84	23.88	46.00	-22.12	Peak

Desktop charging:

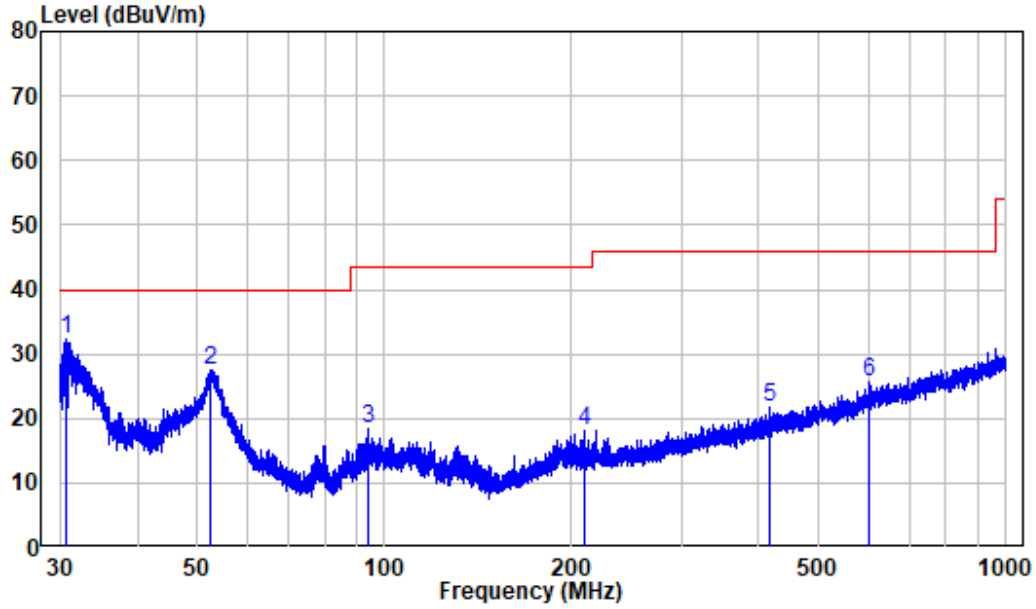
Horizontal:



Site : chamber
Condition: 3m HORIZONTAL
Job No. : SZNS220815-37077E-RF
Test Mode: 2.4G WIFI
Note : Charger base

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	31.084	-12.28	33.36	21.08	40.00	-18.92	Peak
2	37.515	-10.90	32.36	21.46	40.00	-18.54	Peak
3	55.172	-10.26	30.28	20.02	40.00	-19.98	Peak
4	191.074	-11.40	33.25	21.85	43.50	-21.65	Peak
5	225.604	-11.24	33.58	22.34	46.00	-23.66	Peak
6	283.233	-9.50	32.59	23.09	46.00	-22.91	Peak

Vertical



Site : chamber
Condition: 3m VERTICAL
Job No. : SZNS220815-37077E-RF
Test Mode: 2.4G WIFI
Note : Charger base

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.624	-12.33	44.58	32.25	40.00	-7.75	Peak
2	52.414	-10.05	37.62	27.57	40.00	-12.43	Peak
3	94.346	-12.62	31.06	18.44	43.50	-25.06	Peak
4	209.864	-11.86	29.97	18.11	43.50	-25.39	Peak
5	415.268	-6.22	27.83	21.61	46.00	-24.39	Peak
6	600.636	-2.41	28.14	25.73	46.00	-20.27	Peak

1-25 GHz: *(worst case is direct charging+adapter GQ12-050200-AU)*

BLE 1M:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H/V)				
Low Channel									
2310	67.91	PK	207	2.4	H	-7.24	60.67	74	-13.33
2310	53.91	AV	207	2.4	H	-7.24	46.67	54	-7.33
2310	68.54	PK	137	2.1	V	-7.24	61.30	74	-12.70
2310	53.90	AV	137	2.1	V	-7.24	46.66	54	-7.34
2390	69.13	PK	44	1.7	H	-7.22	61.91	74	-12.09
2390	55.05	AV	44	1.7	H	-7.22	47.83	54	-6.17
2390	69.34	PK	323	1.2	V	-7.22	62.12	74	-11.88
2390	54.88	AV	323	1.2	V	-7.22	47.66	54	-6.34
4804	54.95	PK	71	2.4	H	-3.51	51.44	74	-22.56
4804	54.37	PK	40	2.4	V	-3.51	50.86	74	-23.14
Middle Channel									
4880	55.61	PK	256	2.4	H	-3.38	52.23	74	-21.77
4880	54.96	PK	112	2.4	V	-3.38	51.58	74	-22.42
High Channel									
2483.5	70.41	PK	282	2.1	H	-7.20	63.21	74	-10.79
2483.5	56.38	AV	282	2.1	H	-7.20	49.18	54	-4.82
2483.5	70.45	PK	309	2.5	V	-7.20	63.25	74	-10.75
2483.5	56.34	AV	309	2.5	V	-7.20	49.14	54	-4.86
2500	68.32	PK	82	1.1	H	-7.18	61.14	74	-12.86
2500	56.02	AV	82	1.1	H	-7.18	48.84	54	-5.16
2500	69.19	PK	126	1.8	V	-7.18	62.01	74	-11.99
2500	56.08	AV	126	1.8	V	-7.18	48.9	54	-5.10
4960	54.35	PK	183	1.7	H	-3.01	51.34	74	-22.66
4960	54.50	PK	89	1.7	V	-3.01	51.49	74	-22.51

BLE 2M:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/QP/AV		Height (m)	Polar (H/V)				
Low Channel									
2310	68.06	PK	316	2	H	-7.24	60.82	74	-13.18
2310	54.98	AV	316	2	H	-7.24	47.74	54	-6.26
2310	68.46	PK	241	1.3	V	-7.24	61.22	74	-12.78
2310	55.17	AV	241	1.3	V	-7.24	47.93	54	-6.07
2390	69.39	PK	157	1.1	H	-7.22	62.17	74	-11.83
2390	55.99	AV	157	1.1	H	-7.22	48.77	54	-5.23
2390	69.67	PK	104	1.4	V	-7.22	62.45	74	-11.55
2390	55.96	AV	104	1.4	V	-7.22	48.74	54	-5.26
4804	54.37	PK	196	2.2	H	-3.51	50.86	74	-23.14
4804	54.60	PK	281	2.2	V	-3.51	51.09	74	-22.91
Middle Channel									
4880	54.68	PK	159	2.4	H	-3.38	51.30	74	-22.70
4880	55.01	PK	131	2.4	V	-3.38	51.63	74	-22.37
High Channel									
2483.5	71.15	PK	26	1.5	H	-7.20	63.95	74	-10.05
2483.5	57.08	AV	26	1.5	H	-7.20	49.88	54	-4.12
2483.5	70.90	PK	30	1.2	V	-7.20	63.7	74	-10.30
2483.5	56.93	AV	30	1.2	V	-7.20	49.73	54	-4.27
2500	68.76	PK	353	1.3	H	-7.18	61.58	74	-12.42
2500	56.12	AV	353	1.3	H	-7.18	48.94	54	-5.06
2500	68.70	PK	354	2.4	V	-7.18	61.52	74	-12.48
2500	56.08	AV	354	2.4	V	-7.18	48.9	54	-5.10
4960	54.63	PK	260	1.7	H	-3.01	51.62	74	-22.38
4960	54.59	PK	302	1.7	V	-3.01	51.58	74	-22.42

Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak value were recorded.

Wi-Fi:

Frequency (MHz)	Receiver		Turn-Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Angle Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11b (worst case ANT 1)									
Low Channel									
2310	68.61	PK	129	1.8	H	-7.24	61.37	74	-12.63
2310	53.25	AV	129	1.8	H	-7.24	46.01	54	-7.99
2310	68.23	PK	175	2.2	V	-7.24	60.99	74	-13.01
2310	53.28	AV	175	2.2	V	-7.24	46.04	54	-7.96
2390	70.58	PK	358	2.4	H	-7.22	63.36	74	-10.64
2390	56.94	AV	358	2.4	H	-7.22	49.72	54	-4.28
2390	69.35	PK	74	1.2	V	-7.22	62.13	74	-11.87
2390	55.90	AV	74	1.2	V	-7.22	48.68	54	-5.32
4824	60.00	PK	299	1.1	H	-3.52	56.48	74	-17.52
4824	54.37	AV	299	1.1	H	-3.52	50.85	54	-3.15
4824	56.94	PK	221	2.2	V	-3.52	53.42	74	-20.58
Middle Channel									
4874	60.03	PK	24	2.5	H	-3.42	56.61	74	-17.39
4874	54.36	AV	24	2.5	H	-3.42	50.94	54	-3.06
4874	57.39	PK	300	2.2	V	-3.42	53.97	74	-20.03
High Channel									
2483.5	71.68	PK	296	1.1	H	-7.20	64.48	74	-9.52
2483.5	60.04	AV	296	1.1	H	-7.20	52.84	54	-1.16
2483.5	70.65	PK	263	1.4	V	-7.20	63.45	74	-10.55
2483.5	58.97	AV	263	1.4	V	-7.20	51.77	54	-2.23
2500	68.52	PK	3	2.1	H	-7.18	61.34	74	-12.66
2500	55.06	AV	3	2.1	H	-7.18	47.88	54	-6.12
2500	68.95	PK	209	2.1	V	-7.18	61.77	74	-12.23
2500	55.00	AV	209	2.1	V	-7.18	47.82	54	-6.18
4924	59.86	PK	222	2.1	H	-3.16	56.70	74	-17.30
4924	55.18	AV	222	2.1	H	-3.16	52.02	54	-1.98
4924	57.38	PK	229	1.5	V	-3.16	54.22	74	-19.78
4924	51.13	AV	229	1.5	V	-3.16	47.97	54	-6.03

Frequency (MHz)	Receiver		Turn-Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Angle Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11g (worst case MIMO)									
Low Channel									
2310	68.27	PK	243	1.7	H	-7.24	61.03	74	-12.97
2310	53.20	AV	243	1.7	H	-7.24	45.96	54	-8.04
2310	68.76	PK	172	1.8	V	-7.24	61.52	74	-12.48
2310	53.24	AV	172	1.8	V	-7.24	46.00	54	-8.00
2390	73.43	PK	101	1.8	H	-7.22	66.21	74	-7.79
2390	57.66	AV	101	1.8	H	-7.22	50.44	54	-3.56
2390	72.39	PK	195	2.2	V	-7.22	65.17	74	-8.83
2390	56.33	AV	195	2.2	V	-7.22	49.11	54	-4.89
4824	55.42	PK	329	1.2	H	-3.52	51.90	74	-22.10
4824	54.12	PK	233	1.2	V	-3.52	50.60	74	-23.40
Middle Channel									
4874	55.97	PK	157	1.7	H	-3.42	52.55	74	-21.45
4874	54.64	PK	282	1.7	V	-3.42	51.22	74	-22.78
High Channel									
2483.5	78.24	PK	295	1.3	H	-7.20	71.04	74	-2.96
2483.5	57.87	AV	295	1.3	H	-7.20	50.67	54	-3.33
2483.5	77.11	PK	274	1.8	V	-7.20	69.91	74	-4.09
2483.5	57.57	AV	274	1.8	V	-7.20	50.37	54	-3.63
2500	69.19	PK	288	1.4	H	-7.18	62.01	74	-11.99
2500	54.94	AV	288	1.4	H	-7.18	47.76	54	-6.24
2500	68.99	PK	244	1.9	V	-7.18	61.81	74	-12.19
2500	54.97	AV	244	1.9	V	-7.18	47.79	54	-6.21
4924	55.82	PK	302	1.7	H	-3.16	52.66	74	-21.34
4924	54.02	PK	61	1.7	V	-3.16	50.86	74	-23.14

Frequency (MHz)	Receiver		Turn-Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Angle Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11n20(worst case MIMO)									
Low Channel									
2310	68.67	PK	278	2.2	H	-7.24	61.43	74	-12.57
2310	53.47	AV	278	2.2	H	-7.24	46.23	54	-7.77
2310	68.02	PK	101	1	V	-7.24	60.78	74	-13.22
2310	53.33	AV	101	1	V	-7.24	46.09	54	-7.91
2390	75.48	PK	193	1.4	H	-7.22	68.26	74	-5.74
2390	57.59	AV	193	1.4	H	-7.22	50.37	54	-3.63
2390	72.82	PK	179	1.3	V	-7.22	65.60	74	-8.40
2390	56.15	AV	179	1.3	V	-7.22	48.93	54	-5.07
4824	55.31	PK	115	2.4	H	-3.52	51.79	74	-22.21
4824	53.81	PK	342	2.4	V	-3.52	50.29	74	-23.71
Middle Channel									
4874	56.01	PK	279	2	H	-3.42	52.59	74	-21.41
4874	54.23	PK	298	2	V	-3.42	50.81	74	-23.19
High Channel									
2483.5	79.18	PK	162	1.8	H	-7.20	71.98	74	-2.02
2483.5	57.83	AV	162	1.8	H	-7.20	50.63	54	-3.37
2483.5	76.49	PK	77	2.1	V	-7.20	69.29	74	-4.71
2483.5	57.43	AV	77	2.1	V	-7.20	50.23	54	-3.77
2500	68.62	PK	259	2.3	H	-7.18	61.44	74	-12.56
2500	54.91	AV	259	2.3	H	-7.18	47.73	54	-6.27
2500	68.83	PK	264	1.9	V	-7.18	61.65	74	-12.35
2500	54.99	AV	264	1.9	V	-7.18	47.81	54	-6.19
4924	56.61	PK	133	1.7	H	-3.16	53.45	74	-20.55
4924	54.06	PK	46	1.7	V	-3.16	50.90	74	-23.10

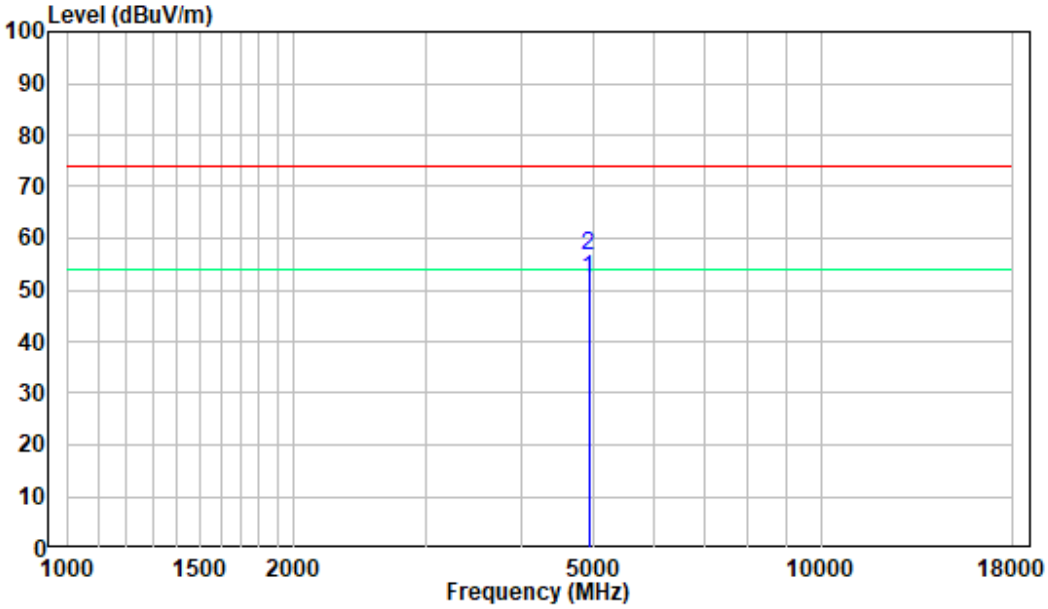
Frequency (MHz)	Receiver		Turn-Table	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Angle Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11AX20(worst case MIMO)									
Low Channel 2412MHz_26Tone_RU0(Worst Case)									
2310	68.30	PK	57	1.8	H	-7.24	61.06	74	-12.94
2310	53.43	AV	57	1.8	H	-7.24	46.19	54	-7.81
2310	68.05	PK	100	1.8	V	-7.24	60.81	74	-13.19
2310	53.22	AV	100	1.8	V	-7.24	45.98	54	-8.02
2390	76.11	PK	24	1.7	H	-7.22	68.89	74	-5.11
2390	58.31	AV	24	1.7	H	-7.22	51.09	54	-2.91
2390	74.66	PK	130	1.5	V	-7.22	67.44	74	-6.56
2390	57.19	AV	130	1.5	V	-7.22	49.97	54	-4.03
4824	55.02	PK	323	1.4	H	-3.52	51.50	74	-22.50
4824	53.85	PK	7	1.4	V	-3.52	50.33	74	-23.67
Middle Channel 2437MHz_26Tone_RU0(Worst Case)									
4874	55.38	PK	28	1.4	H	-3.42	51.96	74	-22.04
4874	54.44	PK	216	1.4	V	-3.42	51.02	74	-22.98
High Channel 2462MHz_26Tone_RU8(Worst Case)									
2483.5	78.57	PK	66	1	H	-7.20	71.37	74	-2.63
2483.5	59.40	AV	66	1	H	-7.20	52.2	54	-1.80
2483.5	76.38	PK	97	1.5	V	-7.20	69.18	74	-4.82
2483.5	58.54	AV	97	1.5	V	-7.20	51.34	54	-2.66
2500	68.40	PK	155	2.2	H	-7.18	61.22	74	-12.78
2500	55.07	AV	155	2.2	H	-7.18	47.89	54	-6.11
2500	68.73	PK	268	1.8	V	-7.18	61.55	74	-12.45
2500	55.08	AV	268	1.8	V	-7.18	47.9	54	-6.10
4924	56.22	PK	16	1.7	H	-3.16	53.06	74	-20.94
4924	54.18	PK	1	1.7	V	-3.16	51.02	74	-22.98

Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.
The test result of peak was less than the limit of average, so just peak value were recorded.

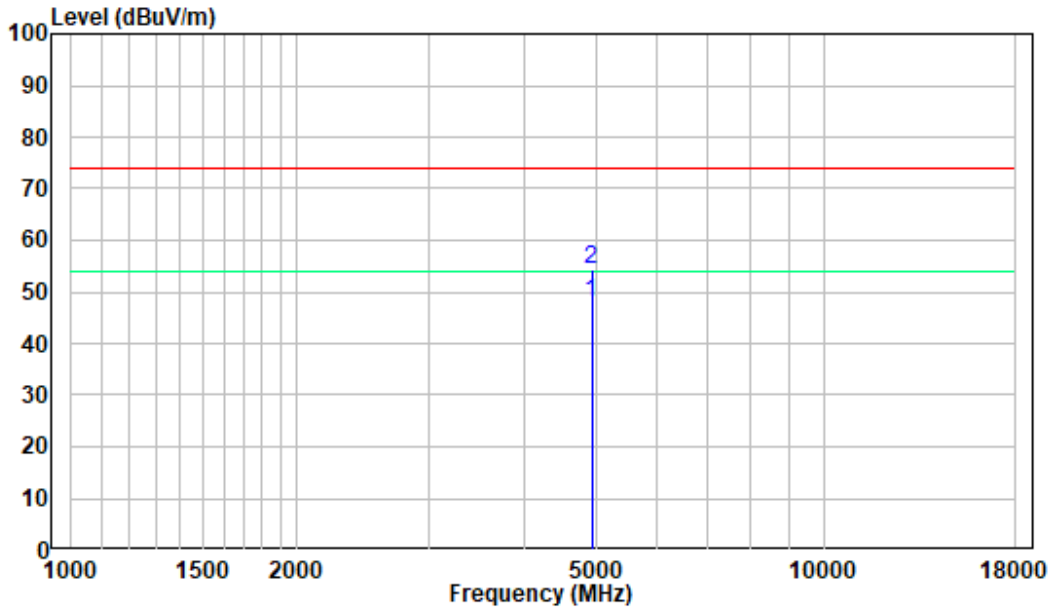
1-18 GHz:

Pre-scan for 802.11b High channel

Horizontal



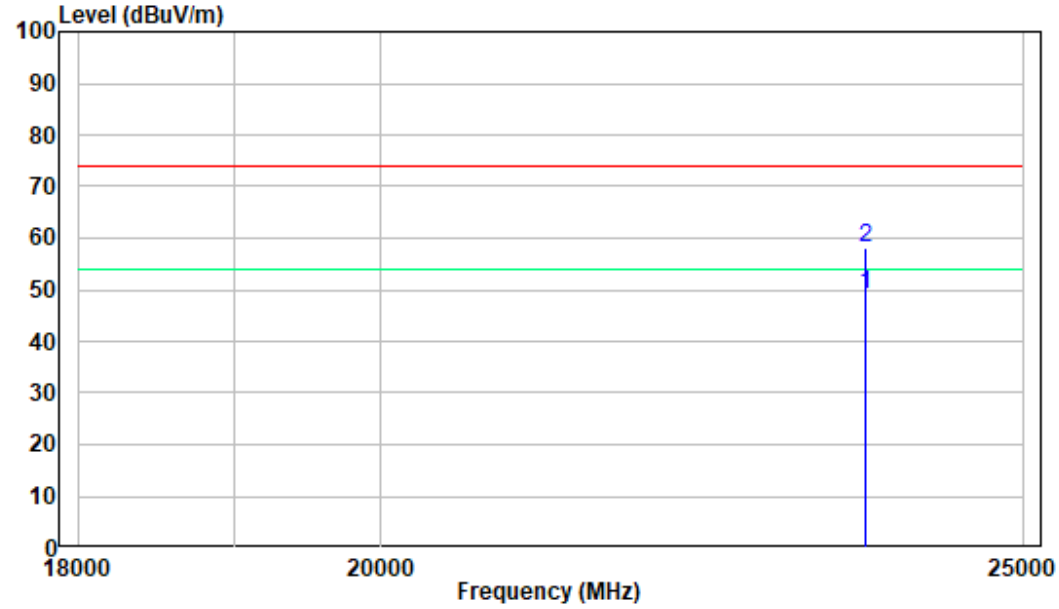
Vertical



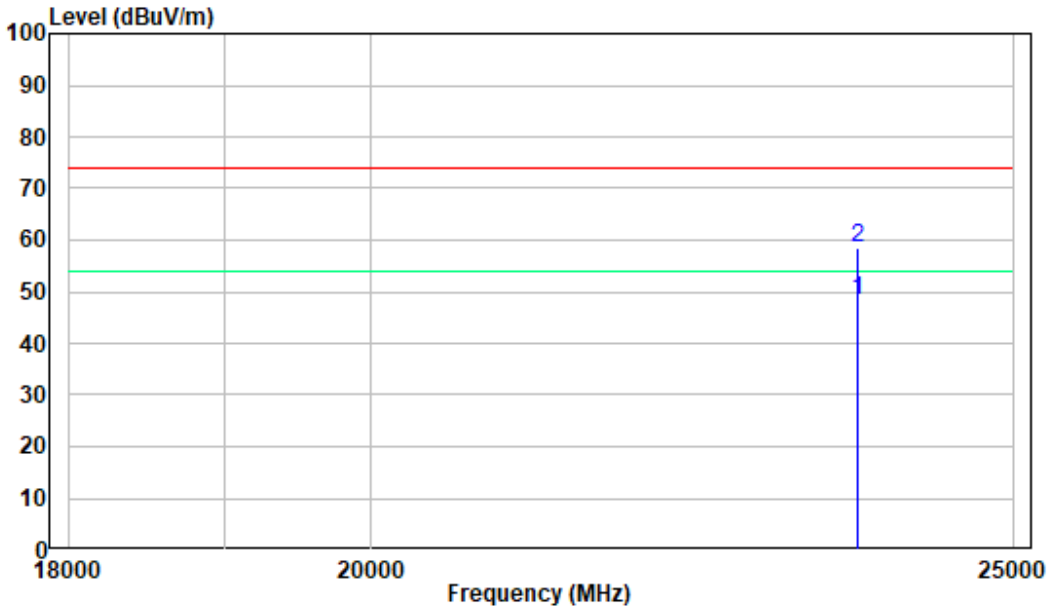
18 -25GHz:

Pre-scan for 802.11b High channel

Horizontal



Vertical



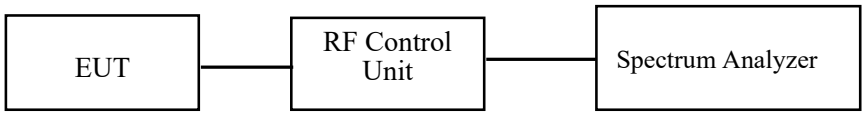
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH & OCCUPIED BANDWIDTH

Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Roger Ling from 2022-09-16 to 2022-09-17.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix Wi-Fi and Appendix BLE.

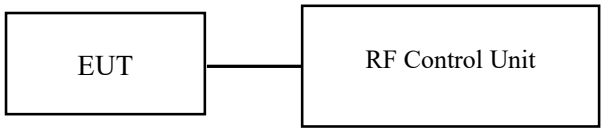
FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Note: the RF Control Unit has a built-in power sensor.

Test Data

Environmental Conditions

Temperature:	25~28 ℃
Relative Humidity:	55~56 %
ATM Pressure:	101.0 kPa

The testing was performed by Roger Ling from 2022-09-16 to 2022-09-27.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix Wi-Fi and Appendix BLE.

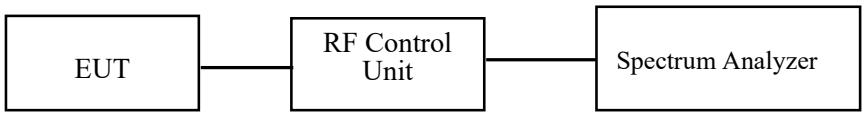
FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

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)).

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.



Test Data

Environmental Conditions

Temperature:	25~28 ℃
Relative Humidity:	55~56 %
ATM Pressure:	101.0 kPa

The testing was performed by Roger Ling from 2022-09-16 to 2022-09-27.

EUT operation mode: Transmitting

Test Result: Compliant.

Conducted Band Edge Result:

Please refer to the Appendix Wi-Fi and Appendix BLE.

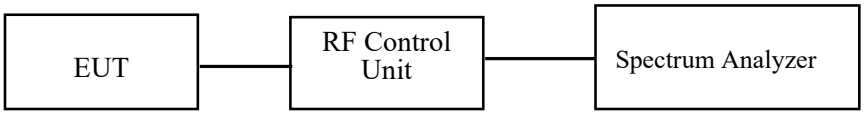
FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW to: 3kHz≤ RBW≤100 kHz.
3. Set the VBW ≥ 3×RBW.
4. Set the span to 1.5 times the DTS bandwidth.
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.



Test Data

Environmental Conditions

Temperature:	25~28 ℃
Relative Humidity:	55~56 %
ATM Pressure:	101.0 kPa

The testing was performed by Roger Ling from 2022-09-16 to 2022-09-28.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix Wi-Fi and Appendix BLE.

APPENDIX Wi-Fi

Appendix A: DTS Bandwidth

Test Result

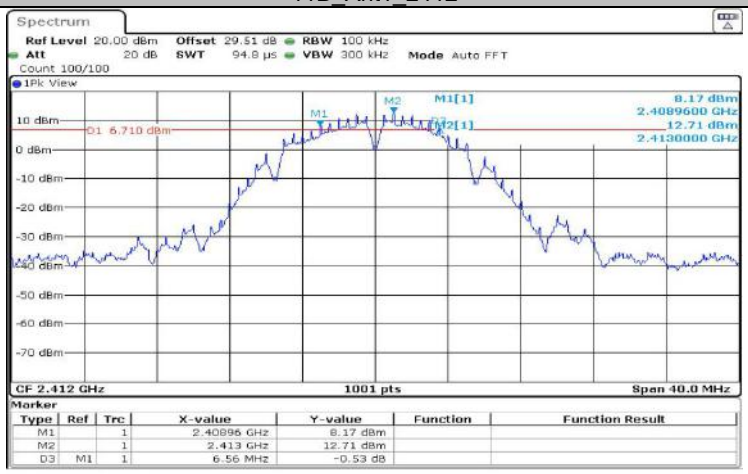
Test Mode	Antenna	Channel	DTS BW [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	6.56	0.5	PASS
	Ant2	2412	6.56	0.5	PASS
	Ant1	2437	7.08	0.5	PASS
	Ant2	2437	6.56	0.5	PASS
	Ant1	2462	6.60	0.5	PASS
	Ant2	2462	7.08	0.5	PASS
11G-CDD	Ant1	2412	16.32	0.5	PASS
	Ant2	2412	16.32	0.5	PASS
	Ant1	2437	16.32	0.5	PASS
	Ant2	2437	16.36	0.5	PASS
	Ant1	2462	16.36	0.5	PASS
	Ant2	2462	16.32	0.5	PASS
11N20MIMO	Ant1	2412	17.60	0.5	PASS
	Ant2	2412	17.56	0.5	PASS
	Ant1	2437	17.60	0.5	PASS
	Ant2	2437	17.56	0.5	PASS
	Ant1	2462	17.56	0.5	PASS
	Ant2	2462	17.56	0.5	PASS

Test Mode	Antenna	Frequency[MHz]	Ru Size	Ru Index	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11AX20MIMO	Ant1	2412	26Tone	RU0	2.08	2402.48	2404.56	0.5	PASS
				RU8	2.12	2419.44	2421.56	0.5	PASS
			52Tone	RU37	16.96	2402.56	2419.52	0.5	PASS
				RU40	17.08	2404.48	2421.56	0.5	PASS
			106Tone	RU53	17.12	2402.44	2419.56	0.5	PASS
				RU54	17.20	2404.44	2421.64	0.5	PASS
			242Tone	RU61	18.96	2402.56	2421.52	0.5	PASS
	Ant2	2412	26Tone	RU0	2.00	2402.56	2404.56	0.5	PASS
				RU8	16.96	2404.56	2421.52	0.5	PASS
			52Tone	RU37	11.96	2402.56	2414.52	0.5	PASS
				RU40	17.00	2404.52	2421.52	0.5	PASS
			106Tone	RU53	17.08	2402.48	2419.56	0.5	PASS
				RU54	17.12	2404.44	2421.56	0.5	PASS
			242Tone	RU61	19.00	2402.56	2421.56	0.5	PASS
	Ant1	2437	26Tone	RU0	2.04	2427.52	2429.56	0.5	PASS
				RU8	2.12	2444.44	2446.56	0.5	PASS
			52Tone	RU37	16.96	2427.56	2444.52	0.5	PASS
				RU40	17.04	2429.52	2446.56	0.5	PASS
			106Tone	RU53	17.08	2427.48	2444.56	0.5	PASS
				RU54	17.16	2429.44	2446.60	0.5	PASS
			242Tone	RU61	19.00	2427.56	2446.56	0.5	PASS
	Ant2	2437	26Tone	RU0	2.00	2427.56	2429.56	0.5	PASS
				RU8	2.08	2444.48	2446.56	0.5	PASS
			52Tone	RU37	12.04	2427.52	2439.56	0.5	PASS
				RU40	15.80	2430.72	2446.52	0.5	PASS
			106Tone	RU53	18.08	2427.44	2445.52	0.5	PASS

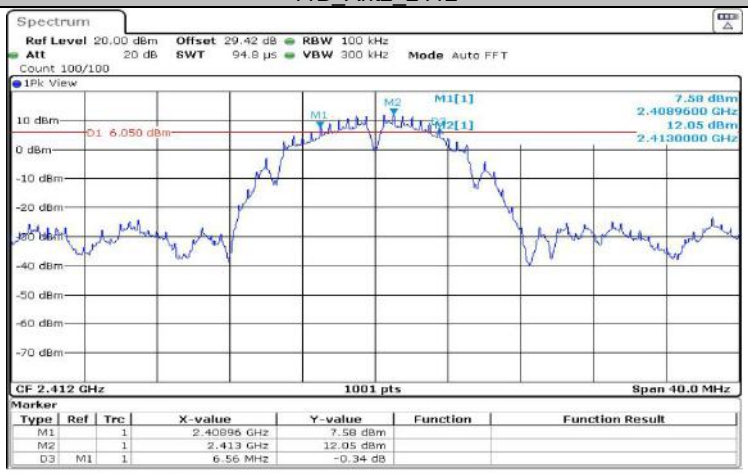
				RU54	17.12	2429.48	2446.60	0.5	PASS
			242Tone	RU61	19.04	2427.52	2446.56	0.5	PASS
	Ant1	2462	26Tone	RU0	2.04	2452.52	2454.56	0.5	PASS
				RU8	2.04	2469.48	2471.52	0.5	PASS
			52Tone	RU37	17.00	2452.52	2469.52	0.5	PASS
				RU40	17.04	2454.52	2471.56	0.5	PASS
			106Tone	RU53	17.04	2452.52	2469.56	0.5	PASS
				RU54	17.20	2454.44	2471.64	0.5	PASS
			242Tone	RU61	17.68	2453.80	2471.48	0.5	PASS
	Ant2	2462	26Tone	RU0	2.00	2452.56	2454.56	0.5	PASS
				RU8	2.08	2469.48	2471.56	0.5	PASS
			52Tone	RU37	17.04	2452.52	2469.56	0.5	PASS
				RU40	17.04	2454.52	2471.56	0.5	PASS
			106Tone	RU53	18.04	2452.52	2470.56	0.5	PASS
				RU54	17.16	2454.44	2471.60	0.5	PASS
			242Tone	RU61	18.64	2452.84	2471.48	0.5	PASS

Test Graphs

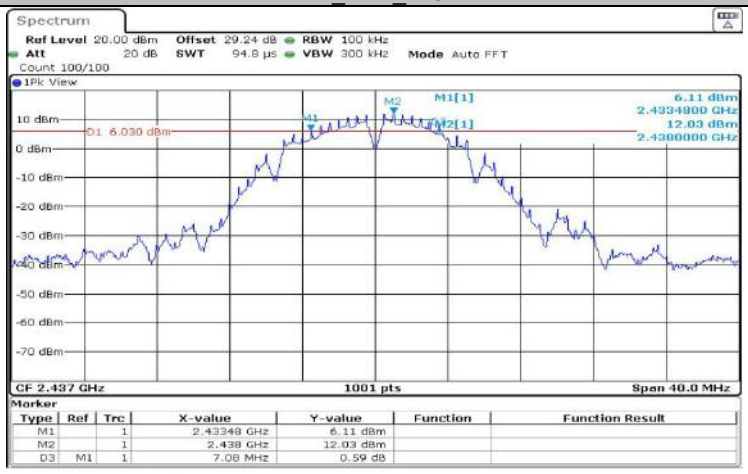
11B_Ant1_2412



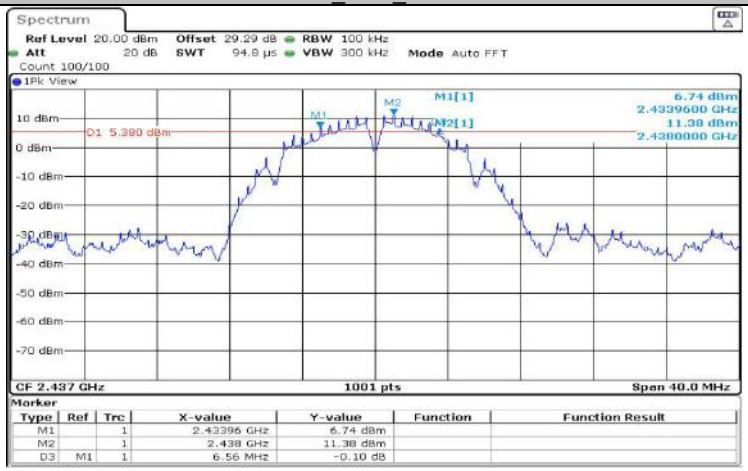
11B_Ant2_2412



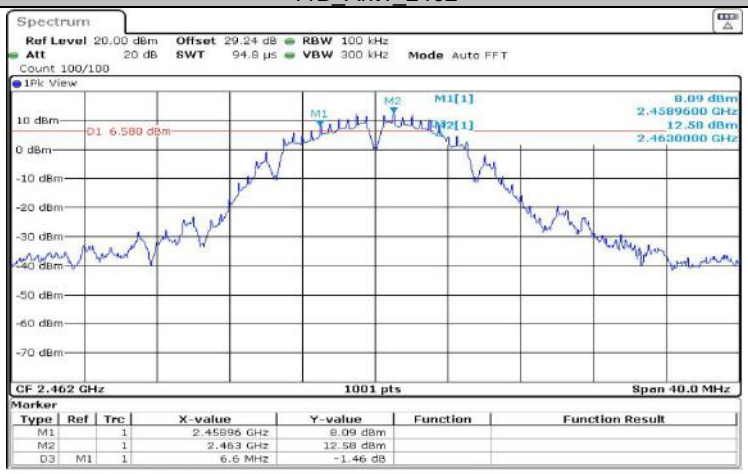
11B_Ant1_2437



11B_Ant2_2437



11B_Ant1_2462



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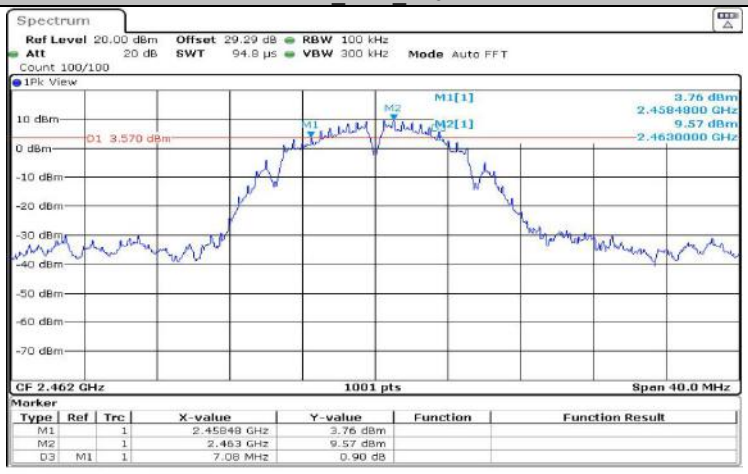
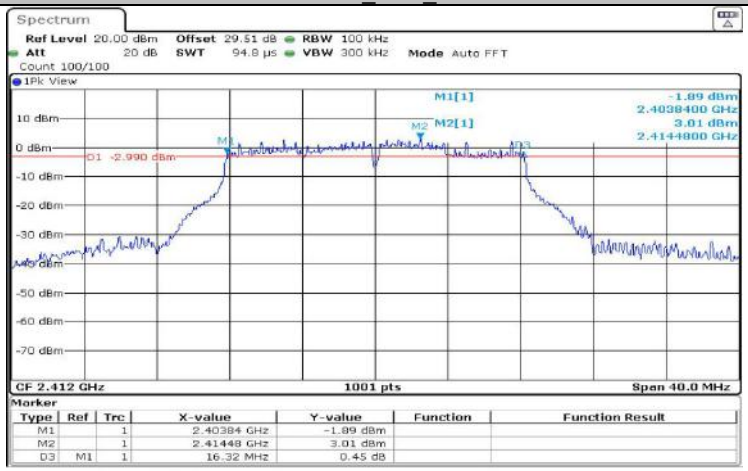


11G-CDD_Ant1_2412



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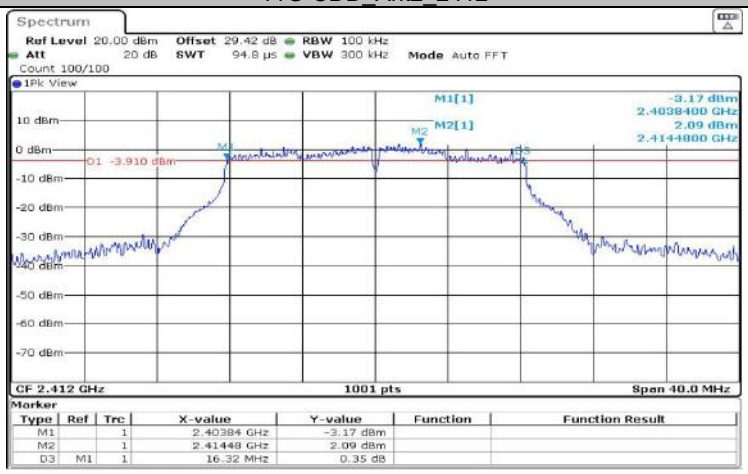

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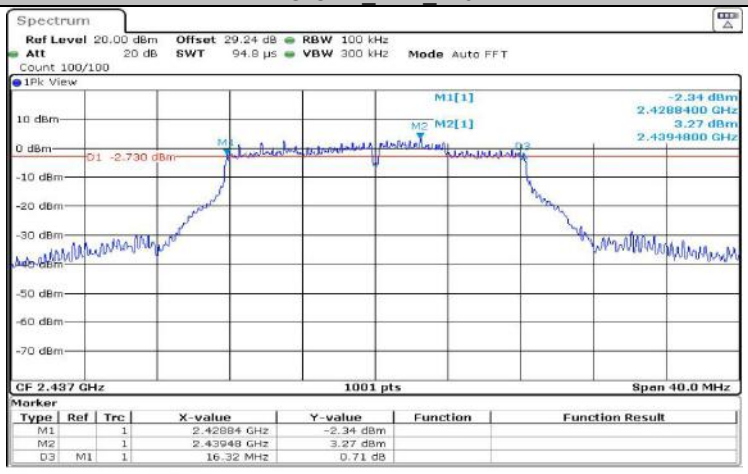

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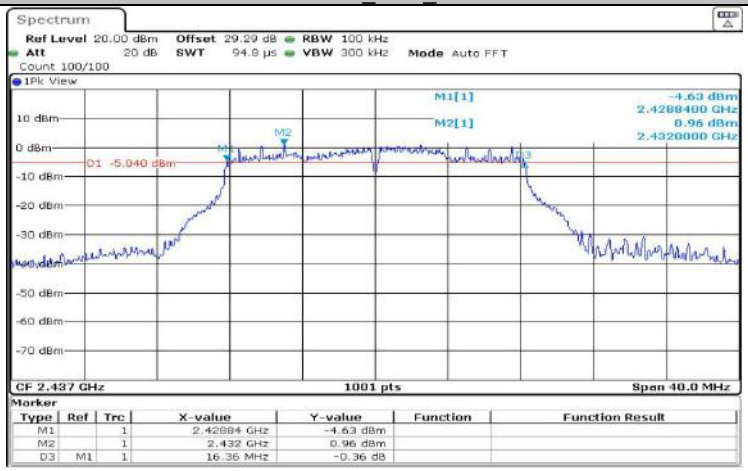

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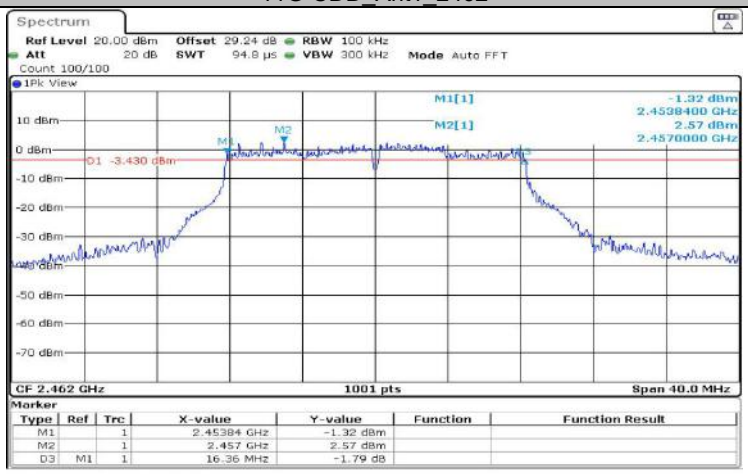

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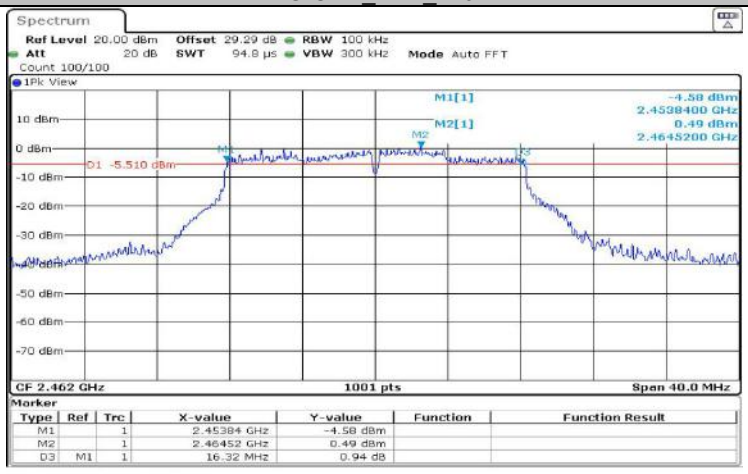
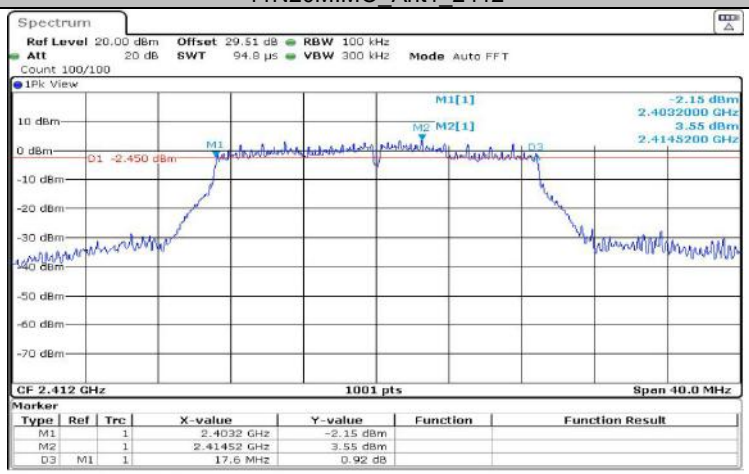


11N20MIMO_Ant1_2412



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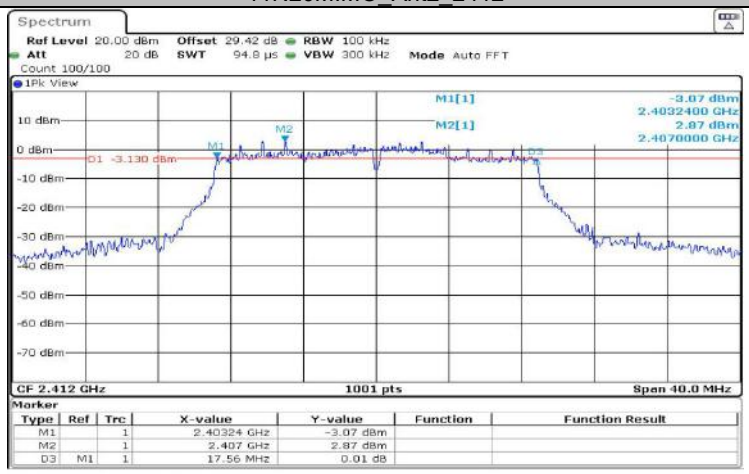

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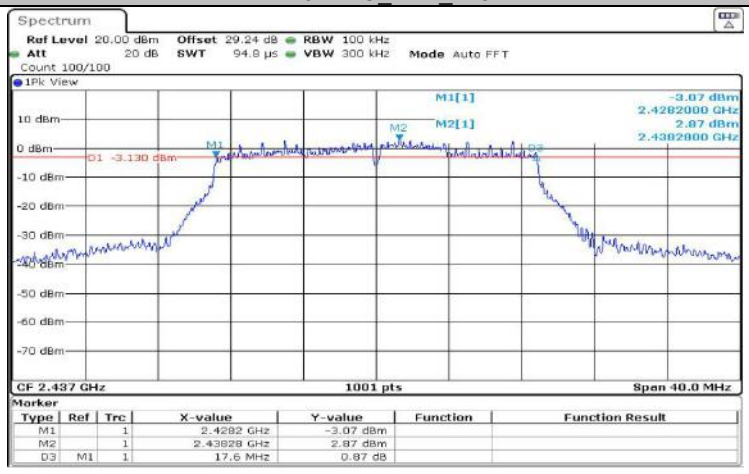

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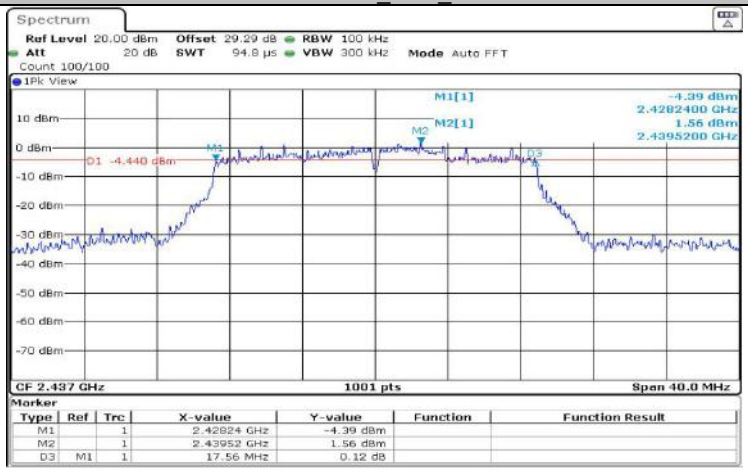

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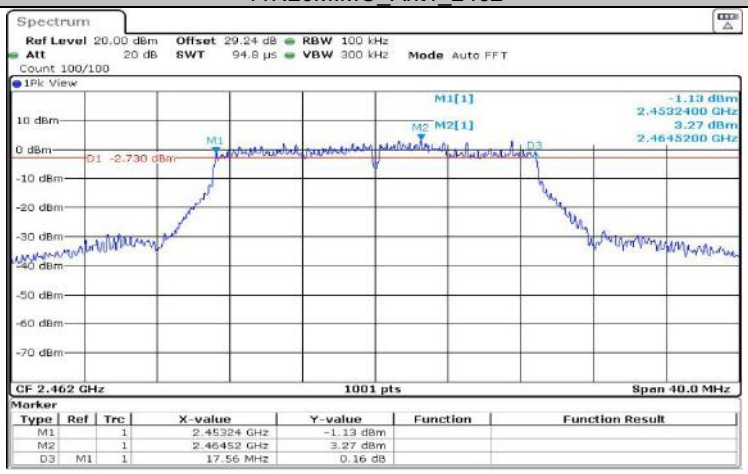

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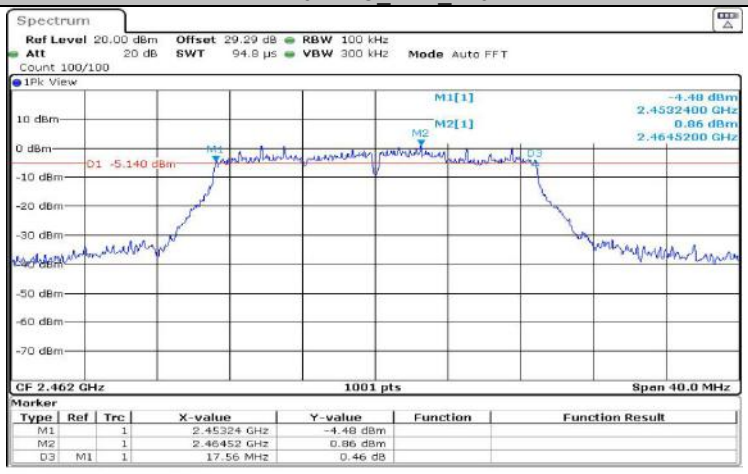
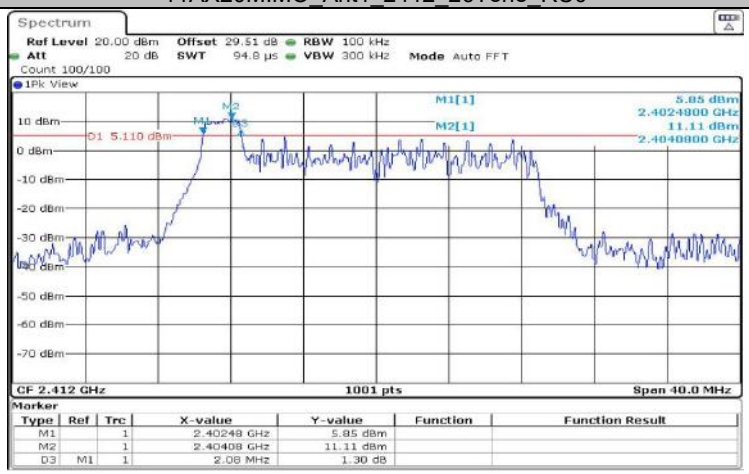
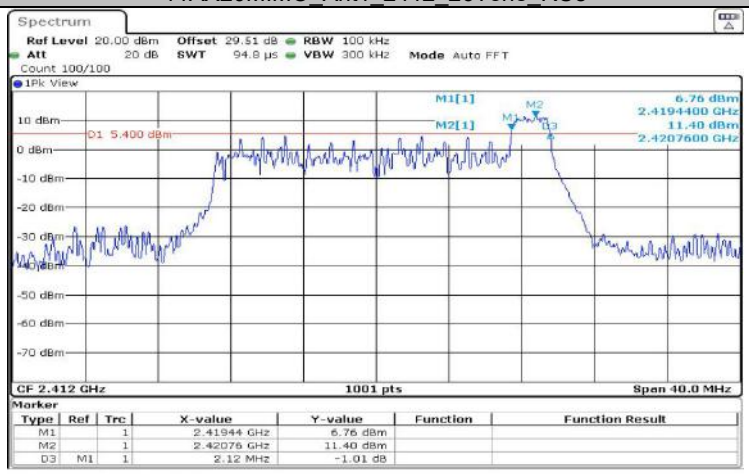


11AX20MIMO_Ant1_2412_26Tone_RU0



11AX20MIMO_Ant1_2412_26Tone_RU8



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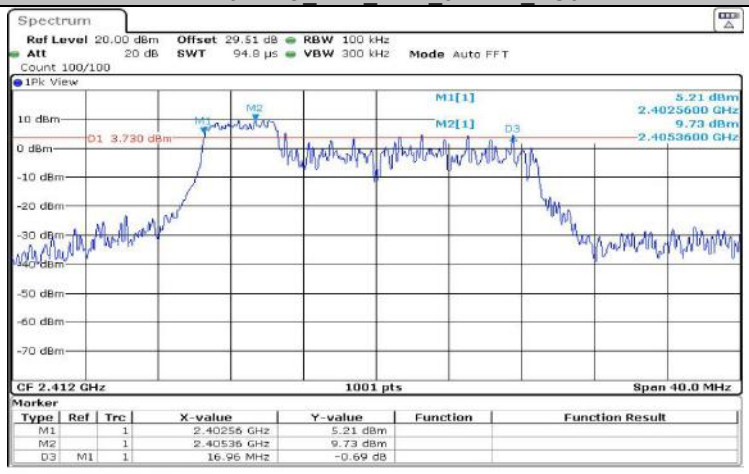

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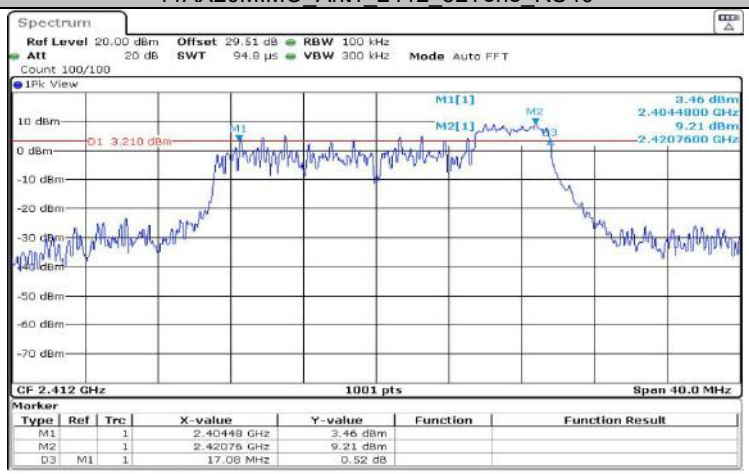

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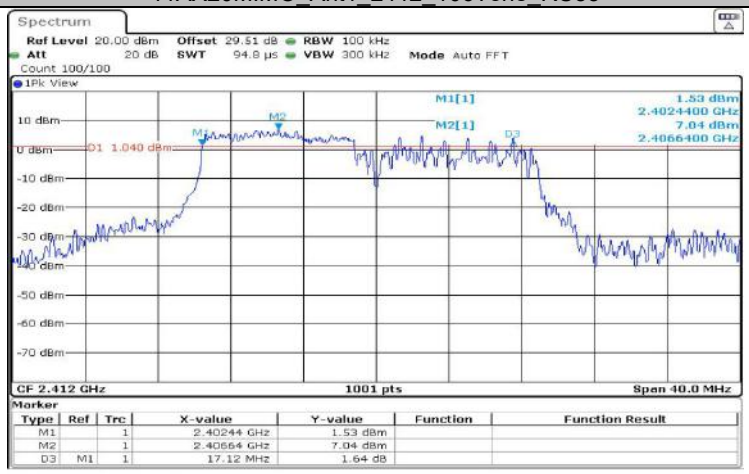

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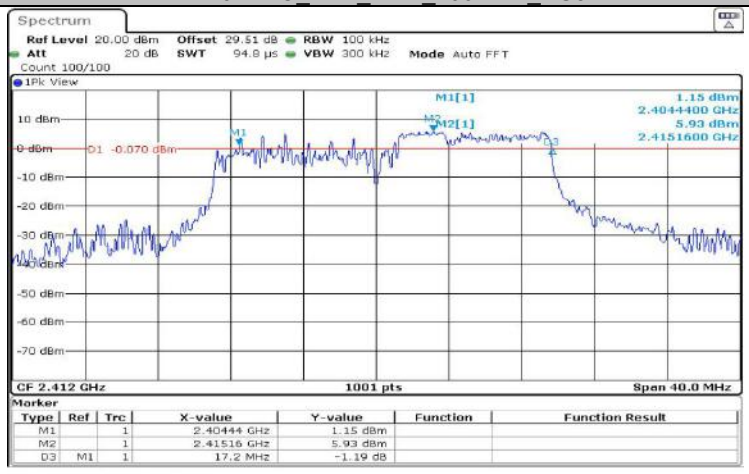
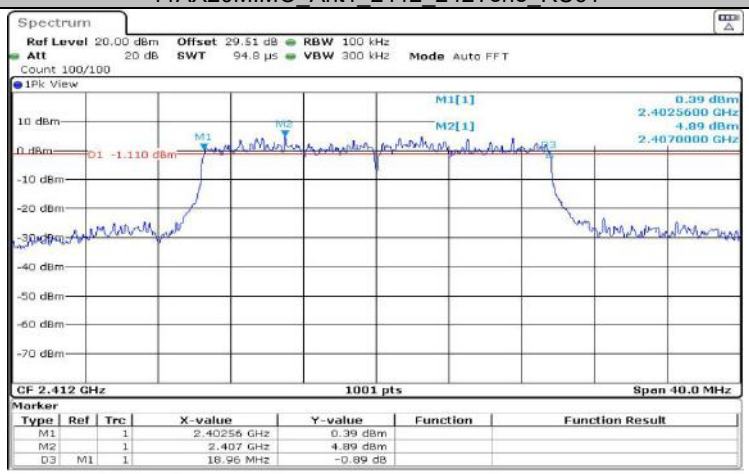
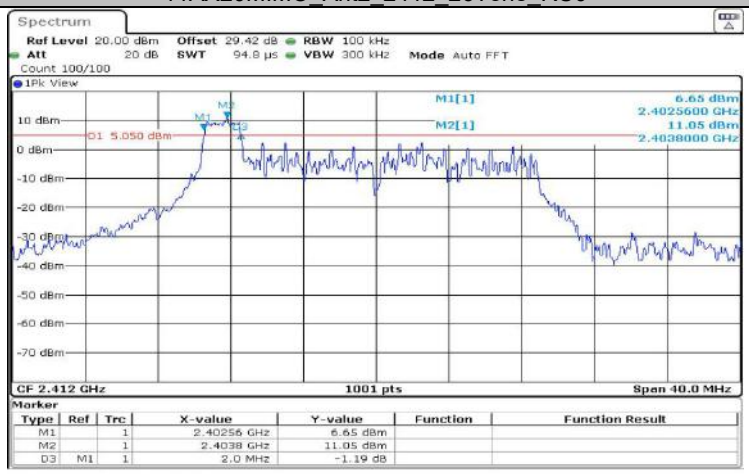


11AX20MIMO_Ant1_2412_242Tone_RU61



11AX20MIMO_Ant2_2412_26Tone_RU0



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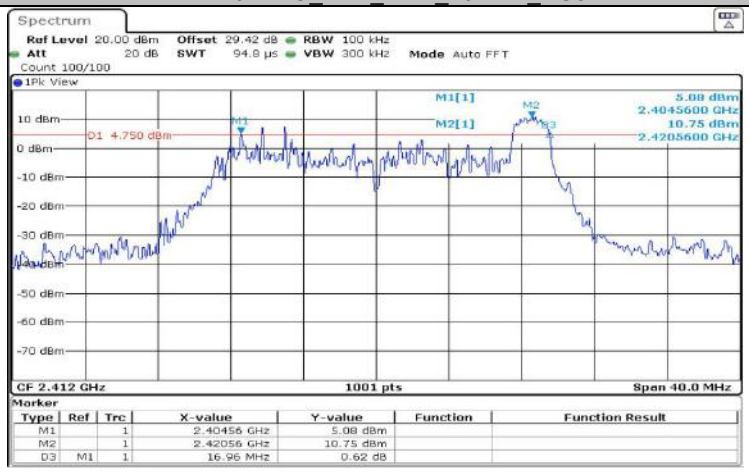

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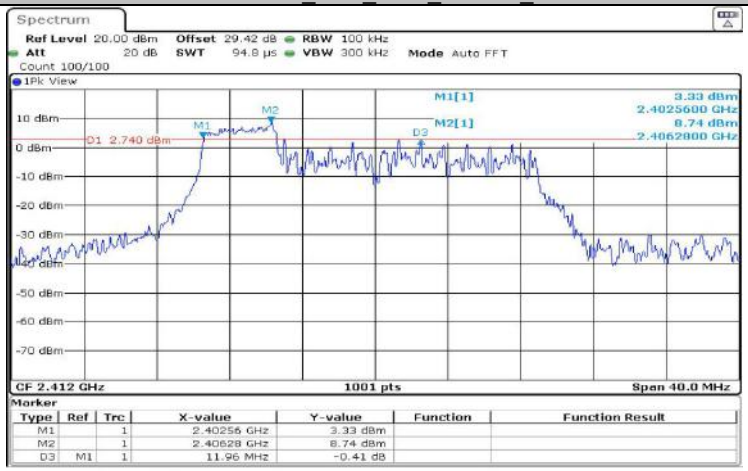

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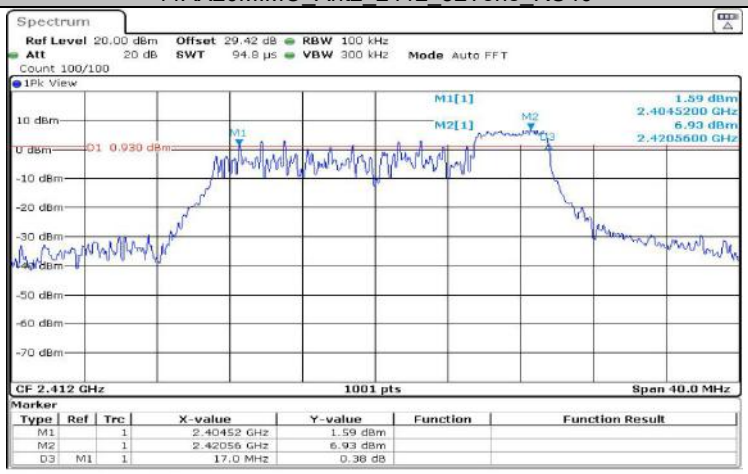

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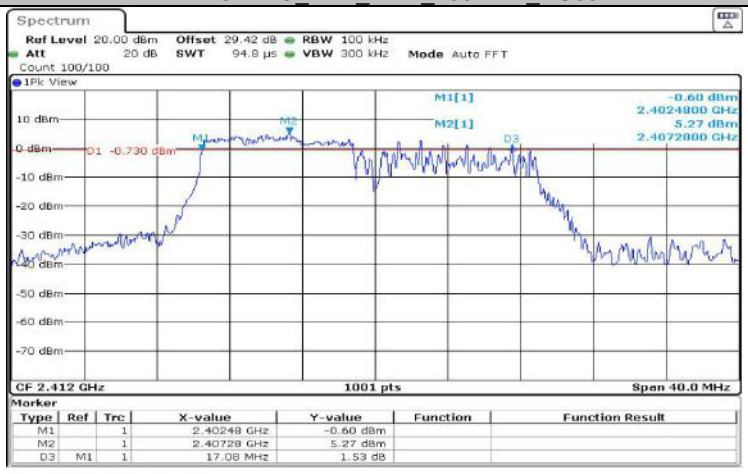

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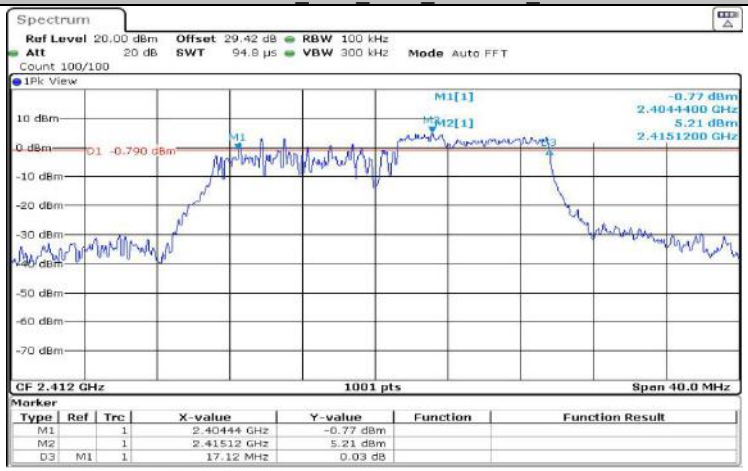

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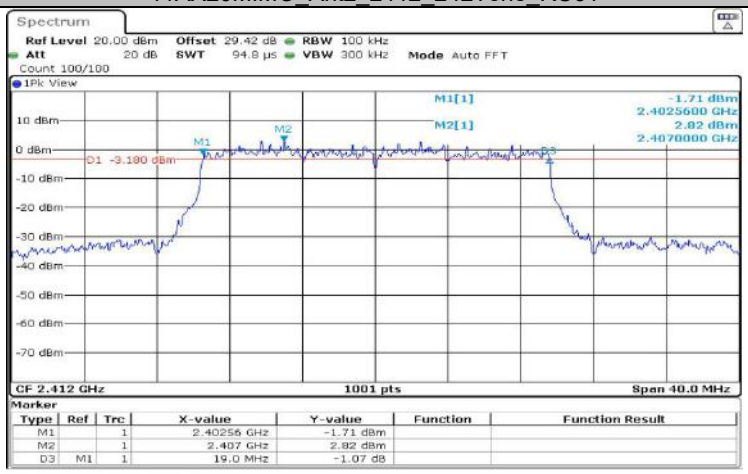

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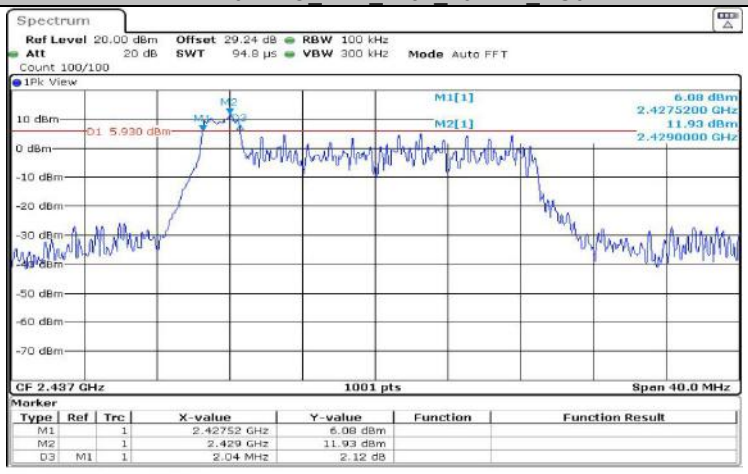

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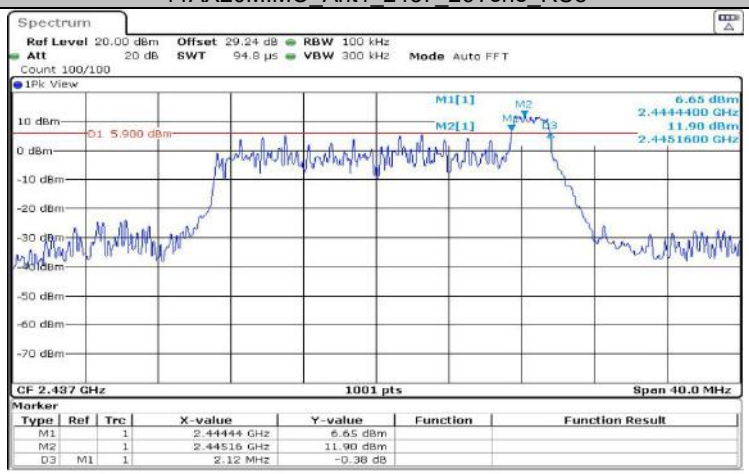

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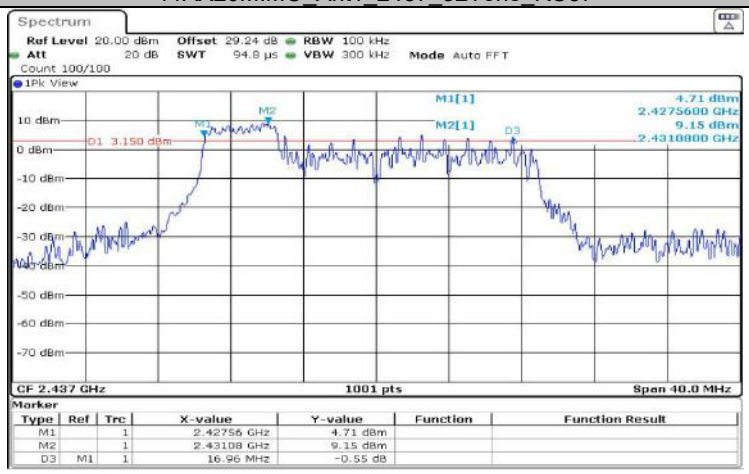

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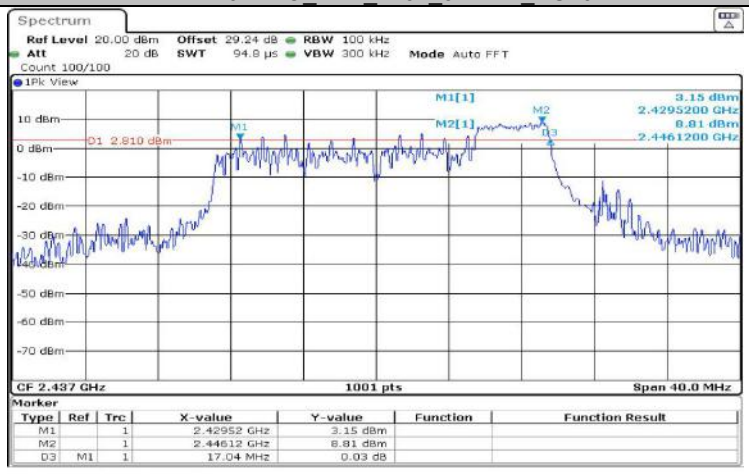

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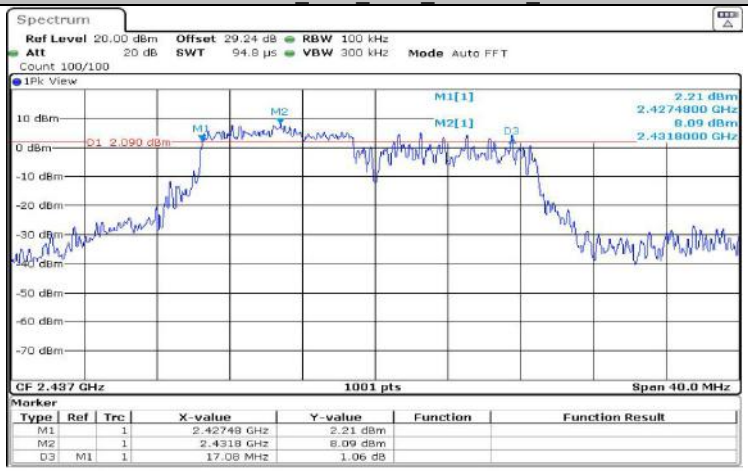

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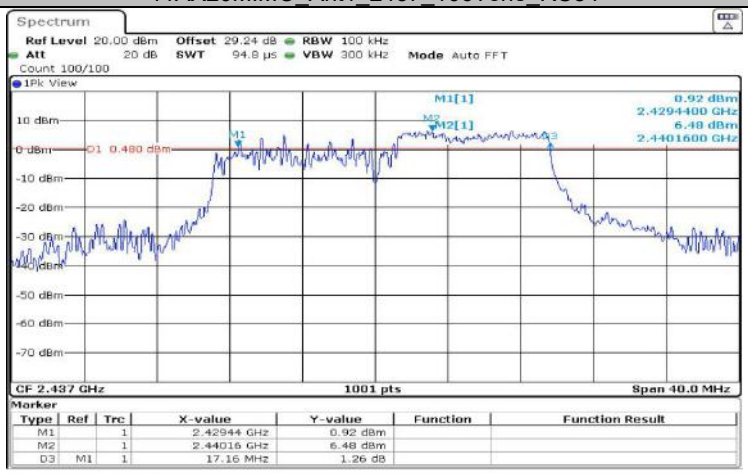

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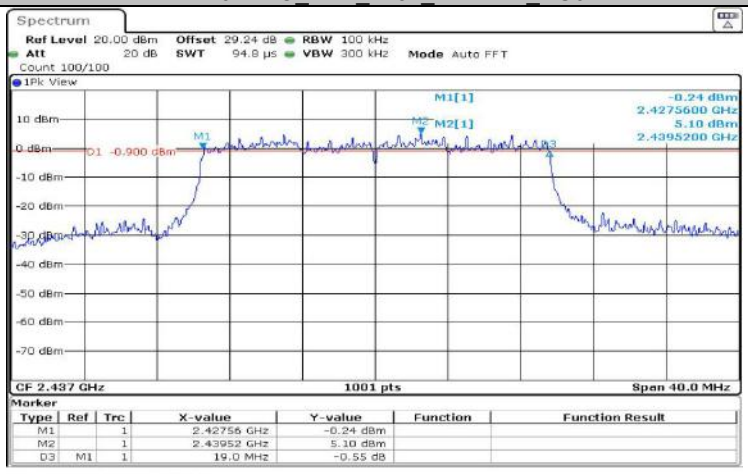
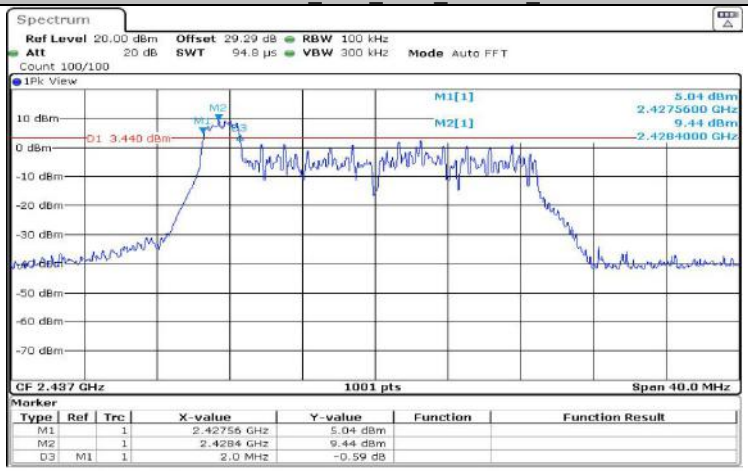


11AX20MIMO_Ant2_2437_26Tone_RU0



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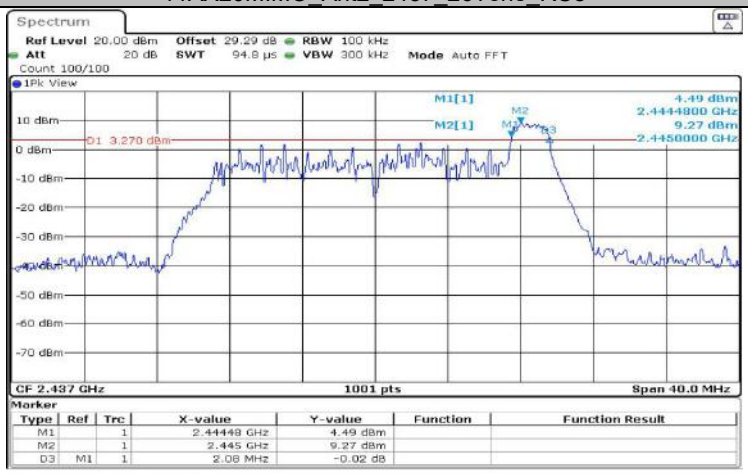

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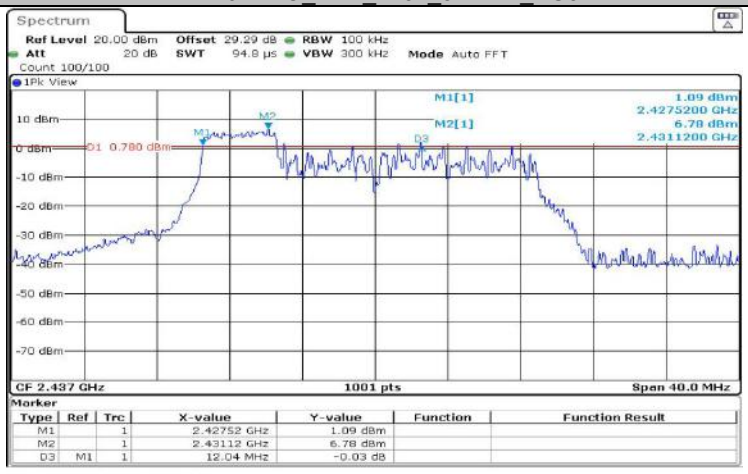

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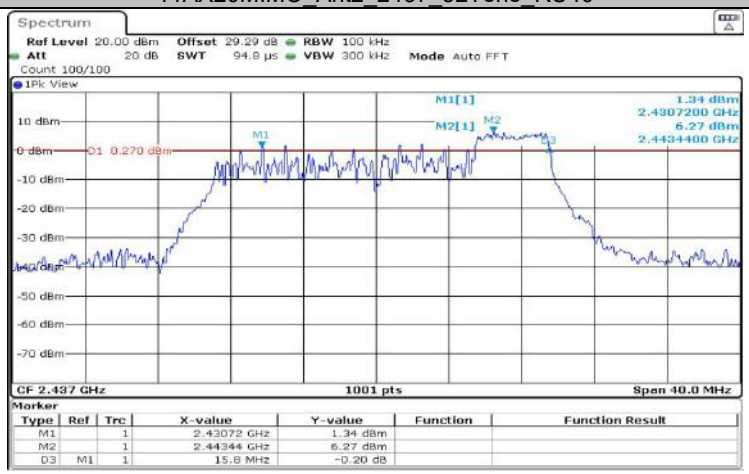

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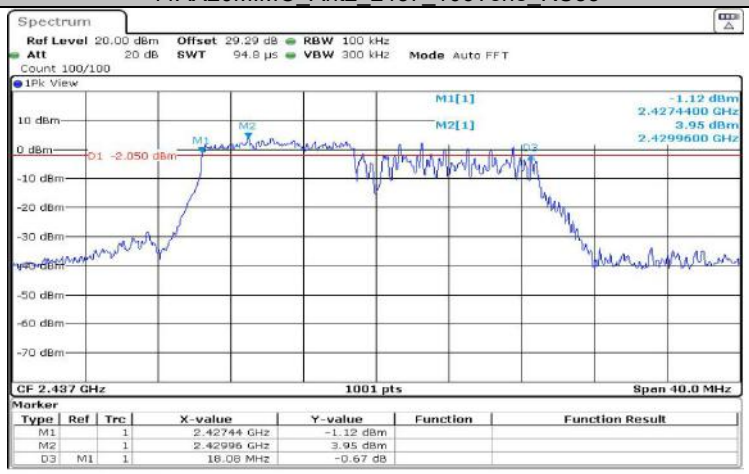

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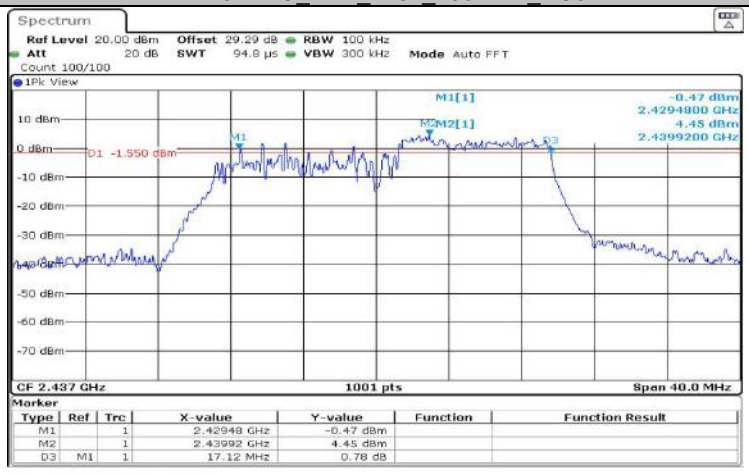

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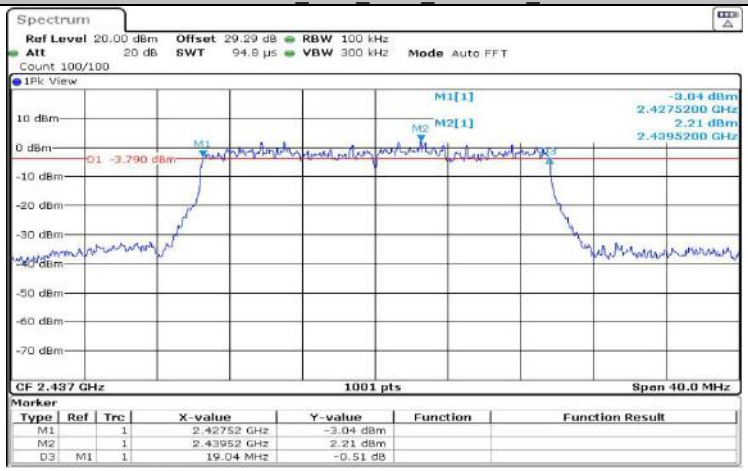

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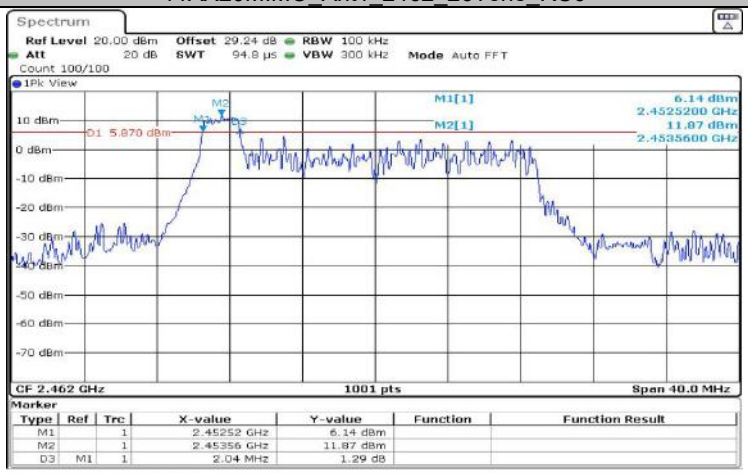

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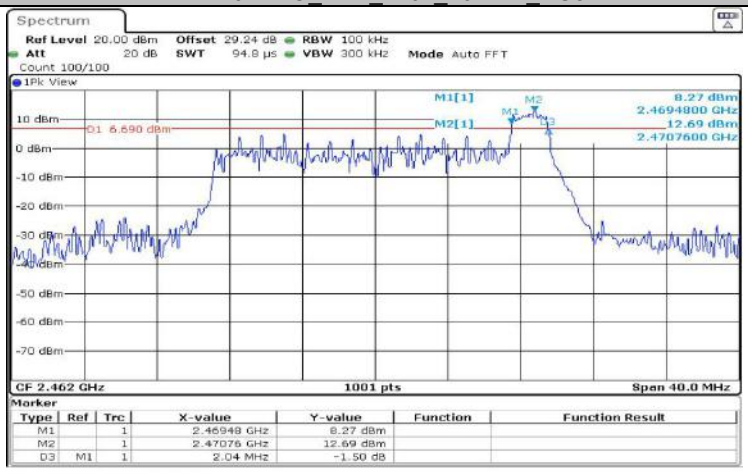

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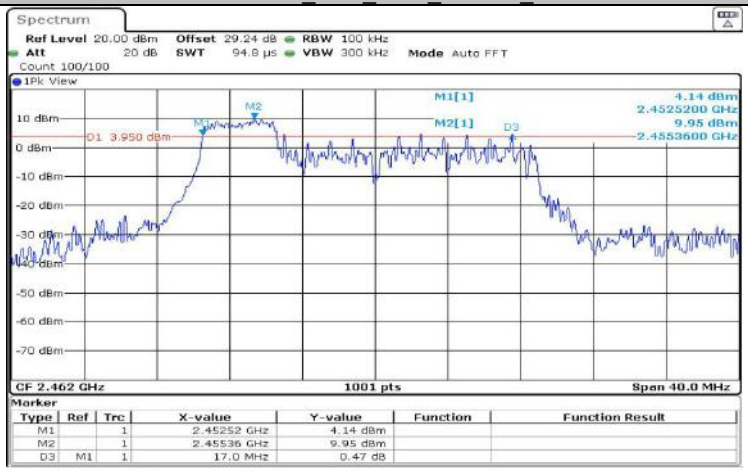

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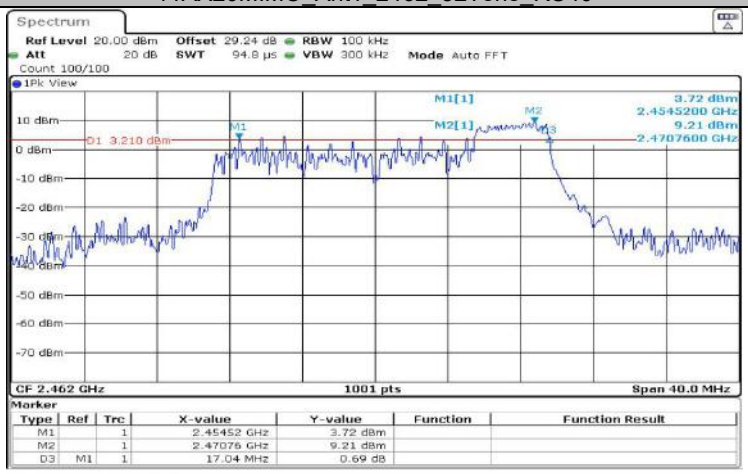

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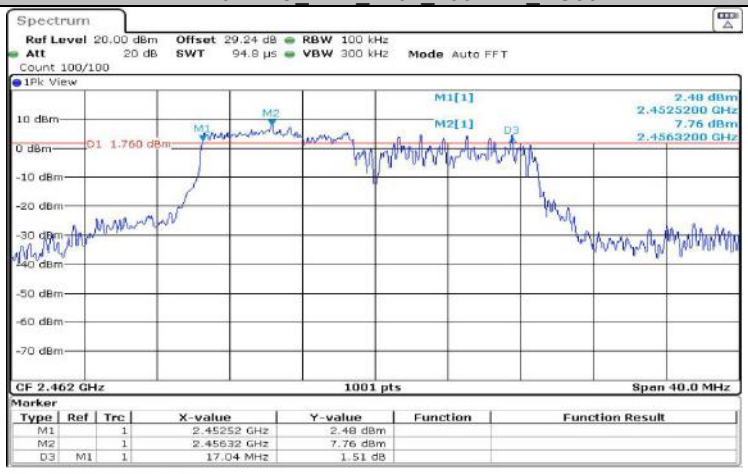

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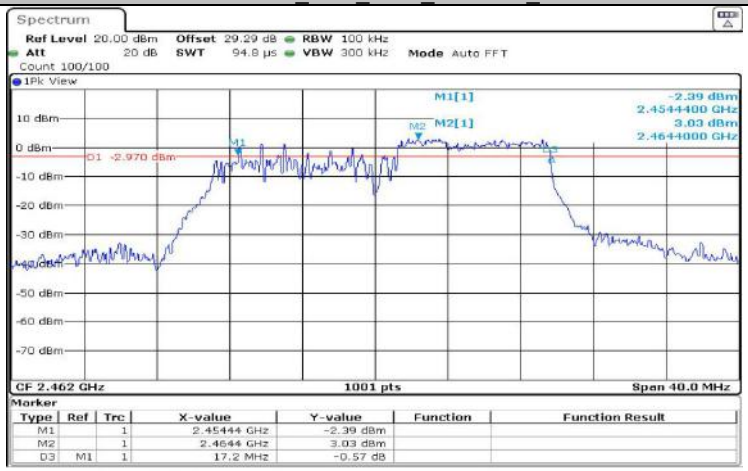

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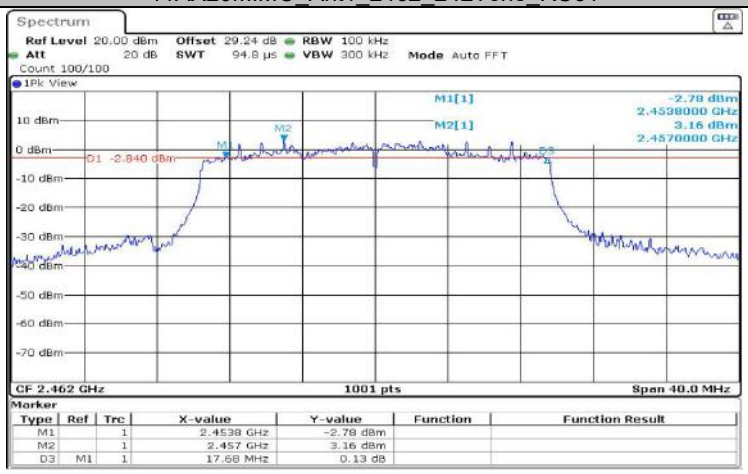

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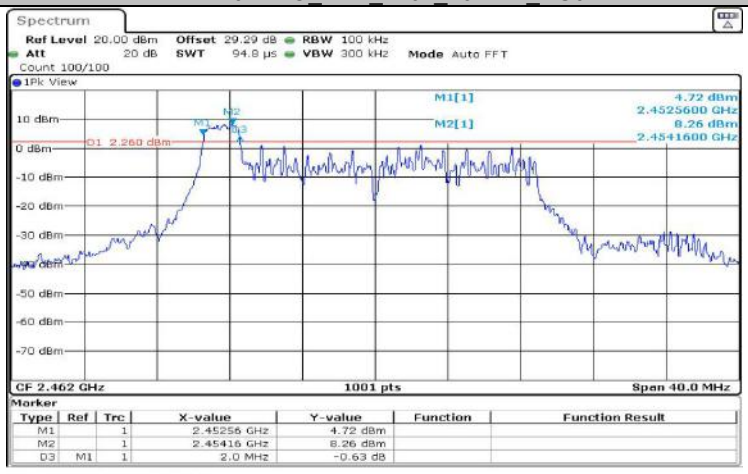

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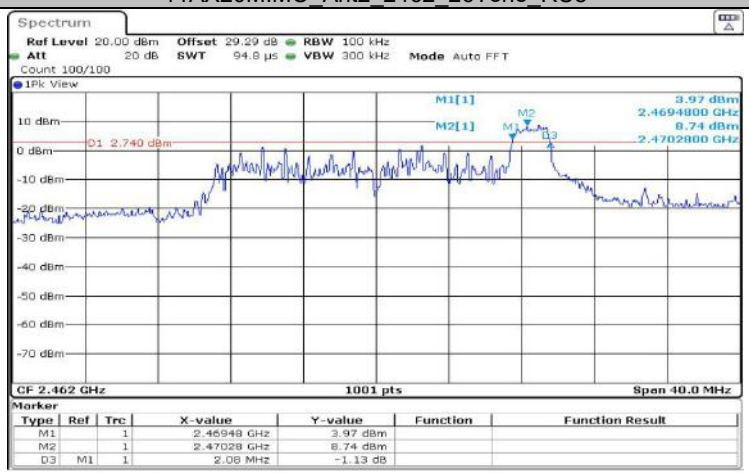

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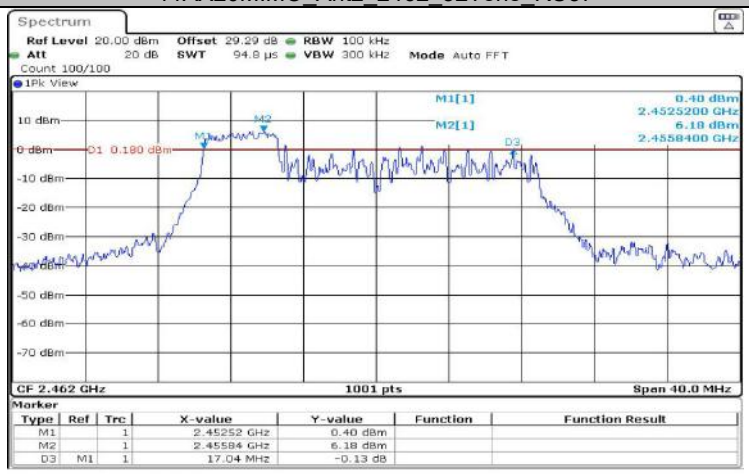

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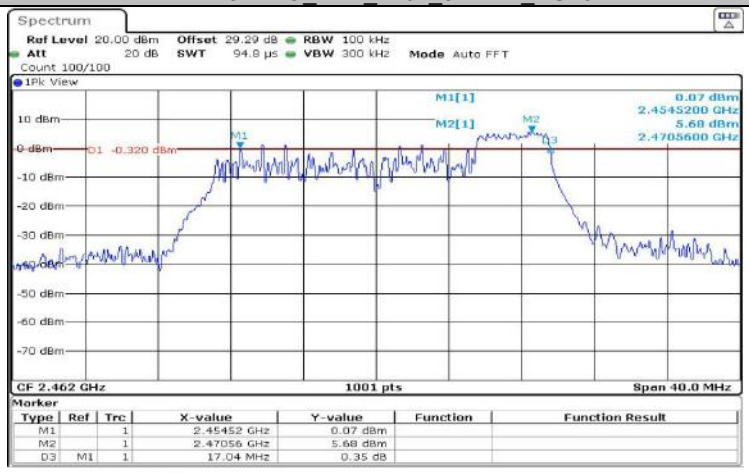
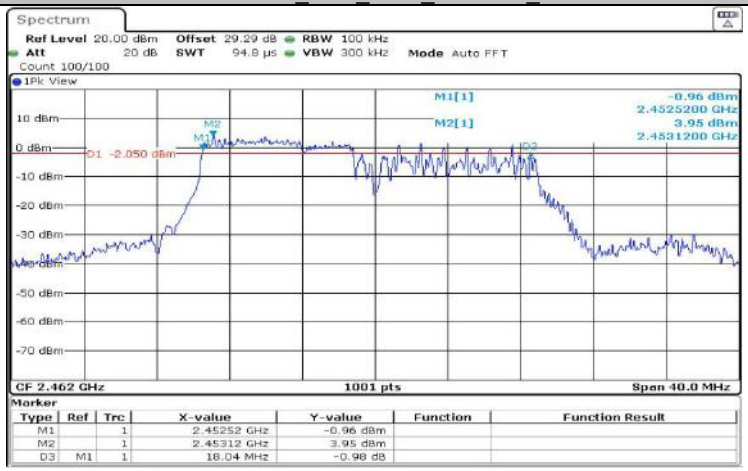
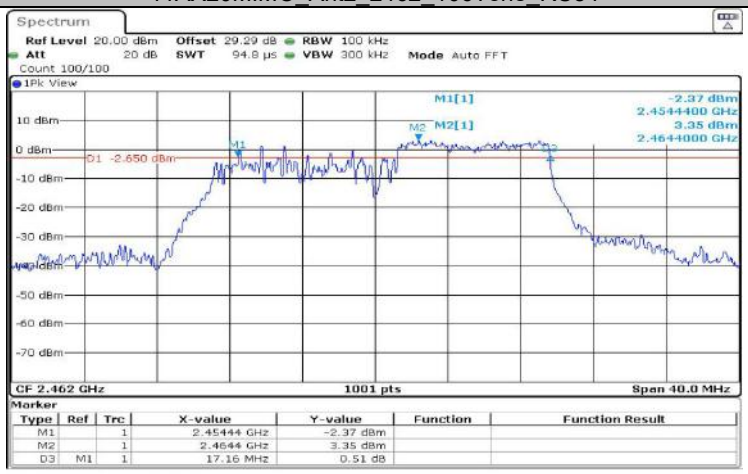


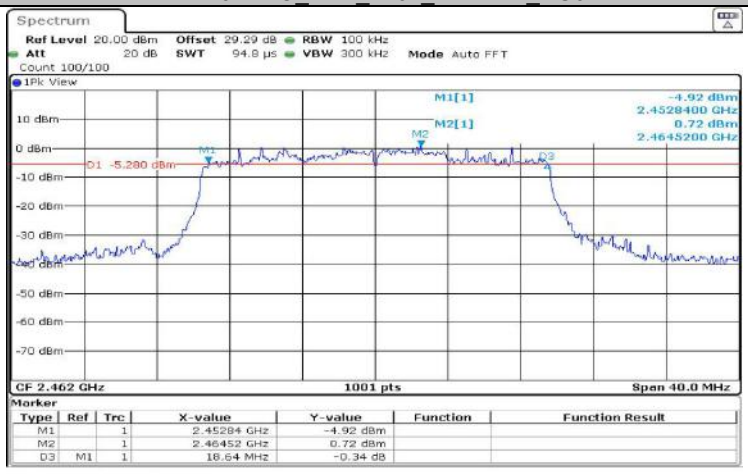
11AX20MIMO_Ant2_2462_106Tone_RU53



11AX20MIMO_Ant2_2462_106Tone_RU54



11AX20MIMO_Ant2_2462_242Tone_RU61



Appendix B: Occupied Channel Bandwidth

Test Result

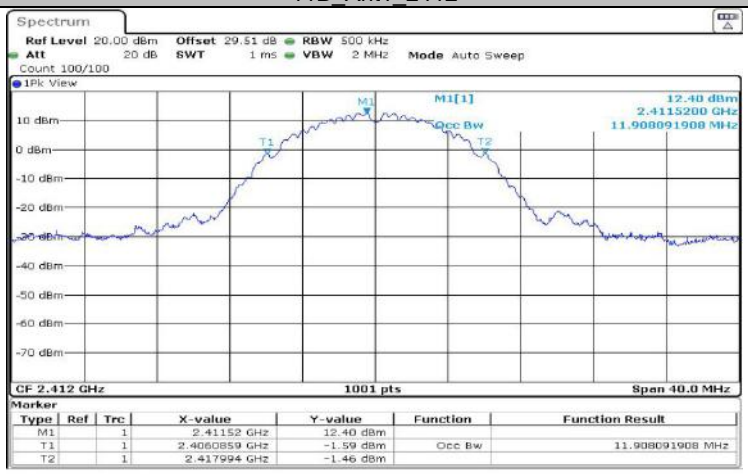
Test Mode	Antenna	Channel	OCB [MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	11.908	---	---
	Ant2	2412	11.469	---	---
	Ant1	2437	11.988	---	---
	Ant2	2437	11.748	---	---
	Ant1	2462	12.188	---	---
	Ant2	2462	11.828	---	---
11G-CDD	Ant1	2412	17.423	---	---
	Ant2	2412	17.942	---	---
	Ant1	2437	17.383	---	---
	Ant2	2437	17.822	---	---
	Ant1	2462	17.383	---	---
	Ant2	2462	17.862	---	---
11N20MIMO	Ant1	2412	18.182	---	---
	Ant2	2412	18.941	---	---
	Ant1	2437	18.142	---	---
	Ant2	2437	18.741	---	---
	Ant1	2462	18.222	---	---
	Ant2	2462	18.781	---	---

Test Mode	Antenna	Frequency[MHz]	Ru Size	Ru Index	DTS BW [MHz]	FL [MHz]	FH [MHz]	Limit [MHz]	Verdict
11AX20MIMO	Ant1	2412	26Tone	RU0	18.661	2401.890	2420.551	---	---
				RU8	18.741	2403.449	2422.190	---	---
			52Tone	RU37	18.541	2402.050	2420.591	---	---
				RU40	18.621	2403.449	2422.070	---	---
			106Tone	RU53	18.501	2402.130	2420.631	---	---
				RU54	18.541	2403.409	2421.950	---	---
			242Tone	RU61	19.341	2402.410	2421.750	---	---
	Ant2	2412	26Tone	RU0	18.981	2401.730	2420.711	---	---
				RU8	19.381	2402.849	2422.230	---	---
			52Tone	RU37	18.701	2402.050	2420.751	---	---
				RU40	19.261	2402.809	2422.070	---	---
			106Tone	RU53	18.741	2402.170	2420.911	---	---
				RU54	19.221	2402.769	2421.990	---	---
			242Tone	RU61	19.421	2402.330	2421.750	---	---
	Ant1	2437	26Tone	RU0	18.741	2426.890	2445.631	---	---
				RU8	18.701	2428.528	2447.230	---	---
			52Tone	RU37	18.541	2427.090	2445.631	---	---
				RU40	18.581	2428.528	2447.110	---	---
			106Tone	RU53	18.462	2427.210	2445.671	---	---
				RU54	18.462	2428.528	2446.990	---	---
			242Tone	RU61	19.341	2427.410	2446.750	---	---
	Ant2	2437	26Tone	RU0	18.941	2426.890	2445.831	---	---
				RU8	19.341	2427.929	2447.270	---	---
			52Tone	RU37	18.781	2427.010	2445.791	---	---
				RU40	19.181	2427.889	2447.070	---	---
			106Tone	RU53	18.741	2427.170	2445.911	---	---
				RU54	19.101	2427.849	2446.950	---	---
			242Tone	RU61	19.341	2427.370	2446.710	---	---

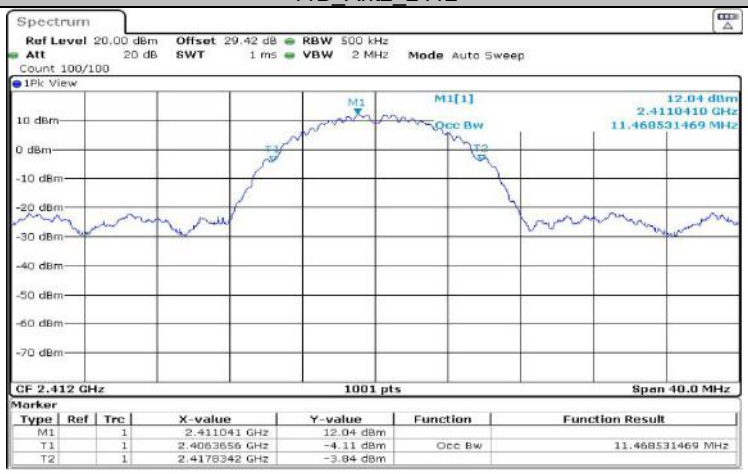
	Ant1	2462	26Tone	RU0	18.701	2451.890	2470.591	---	---
				RU8	18.781	2453.489	2472.270	---	---
			52Tone	RU37	18.581	2452.050	2470.631	---	---
				RU40	18.621	2453.489	2472.110	---	---
			106Tone	RU53	18.501	2452.130	2470.631	---	---
				RU54	19.181	2452.809	2471.990	---	---
			242Tone	RU61	19.101	2452.490	2471.590	---	---
	Ant2	2462	26Tone	RU0	19.021	2451.770	2470.791	---	---
				RU8	29.291	2449.413	2478.703	---	---
			52Tone	RU37	18.901	2451.930	2470.831	---	---
				RU40	19.261	2452.849	2472.110	---	---
			106Tone	RU53	18.781	2452.170	2470.951	---	---
				RU54	19.261	2452.849	2472.110		
			242Tone	RU61	19.181	2452.490	2471.670	---	---

Test Graphs

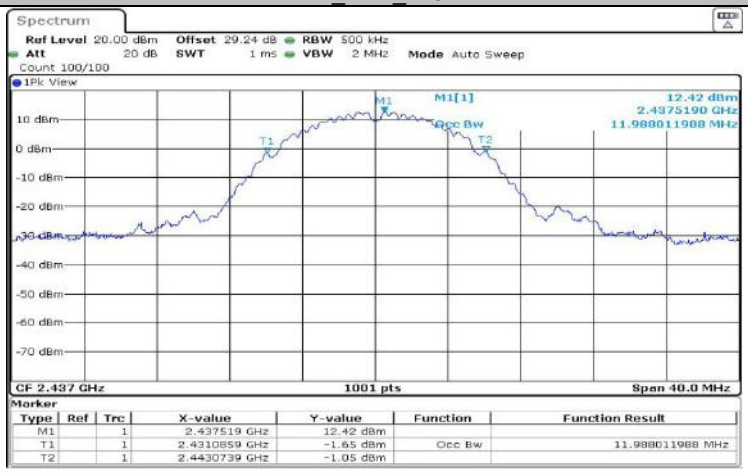
11B_Ant1_2412



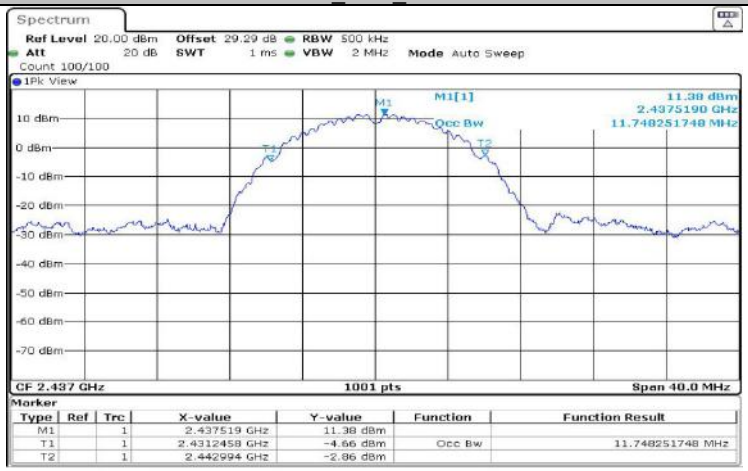
11B_Ant2_2412



11B_Ant1_2437



11B_Ant2_2437



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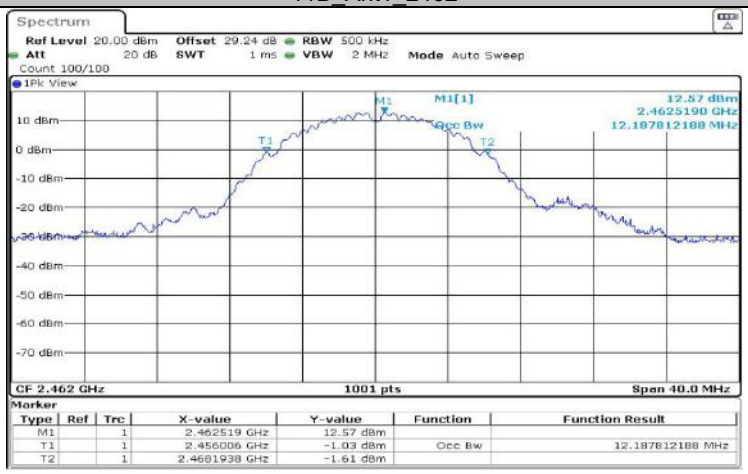
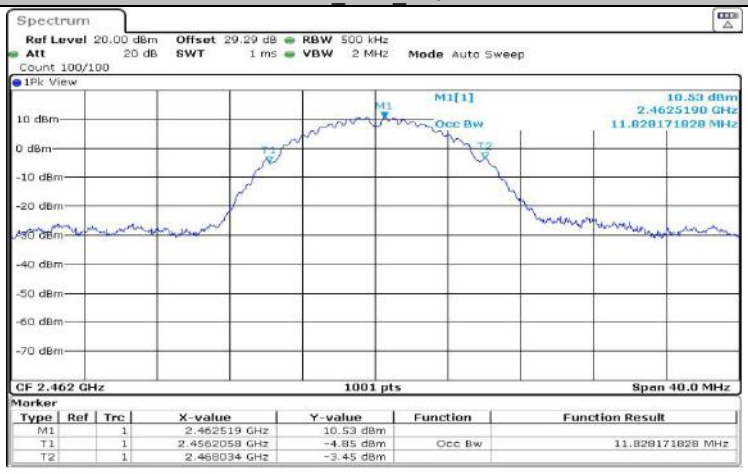


11B_Ant2_2462



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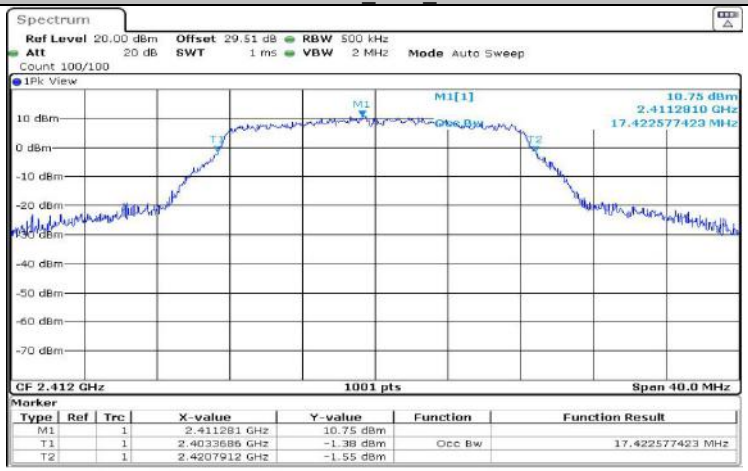
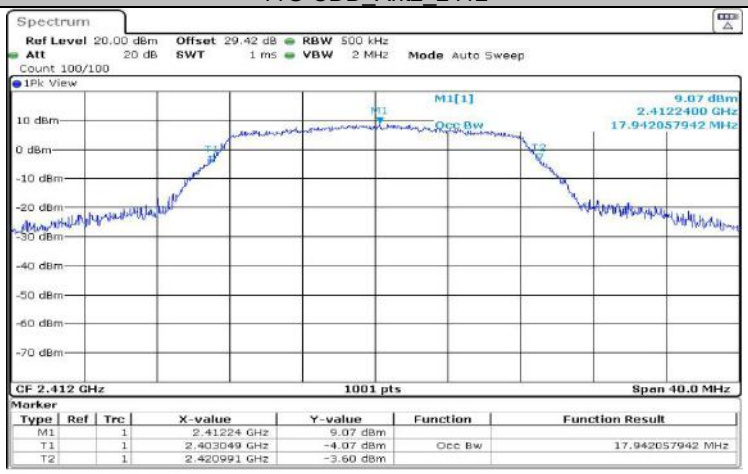


11G-CDD_Ant2_2412



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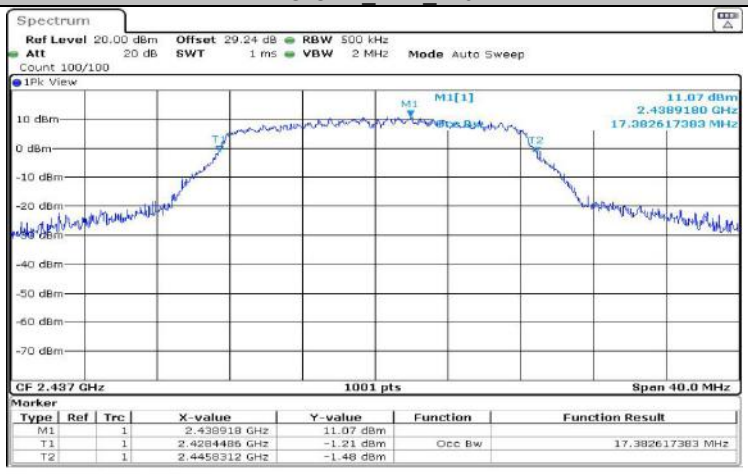

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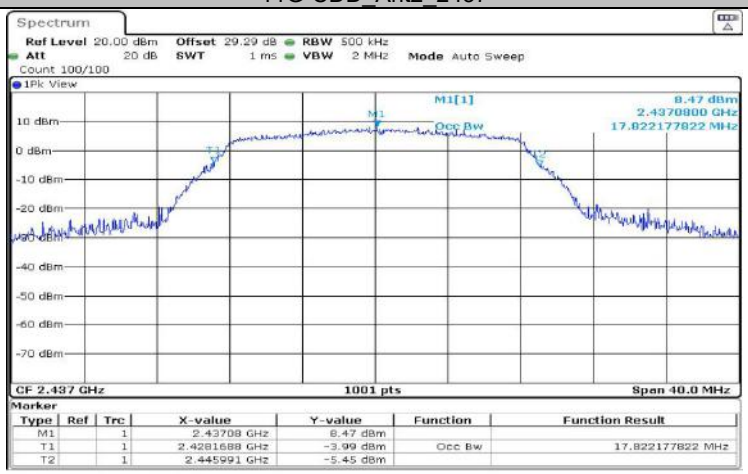

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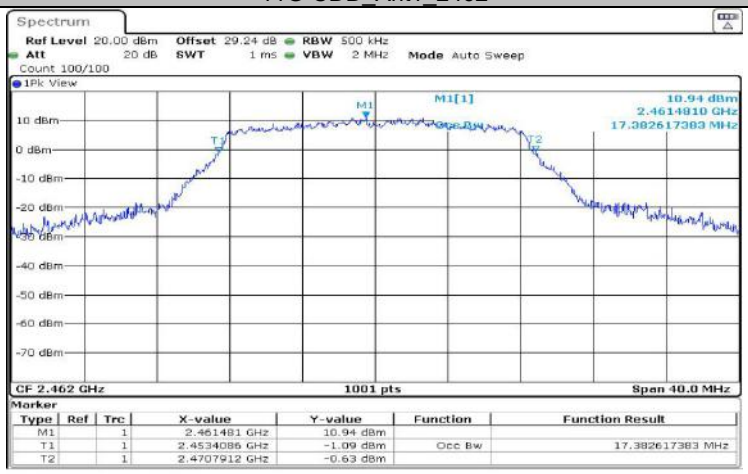

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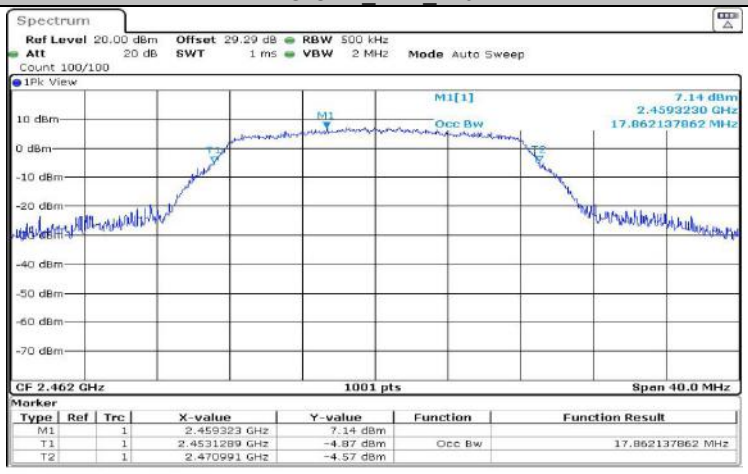
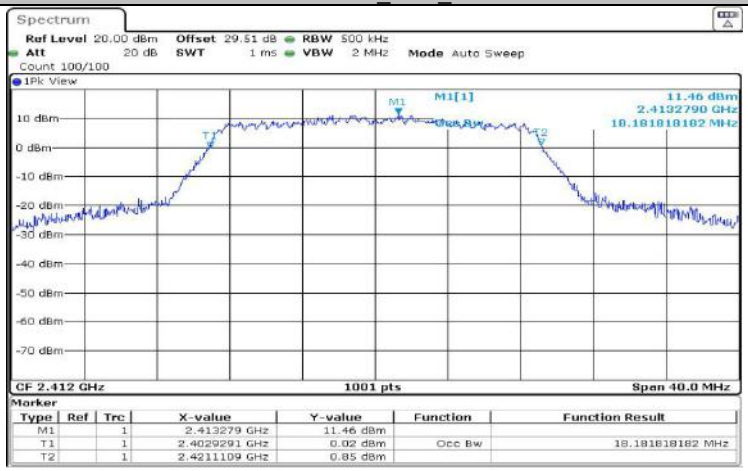


11N20MIMO_Ant1_2412



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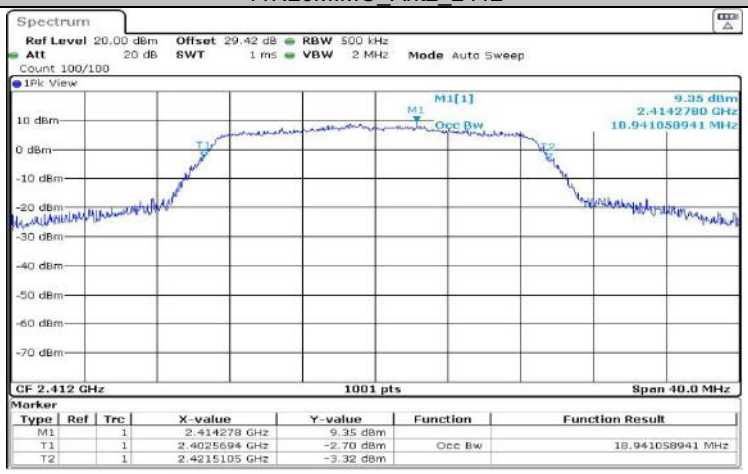

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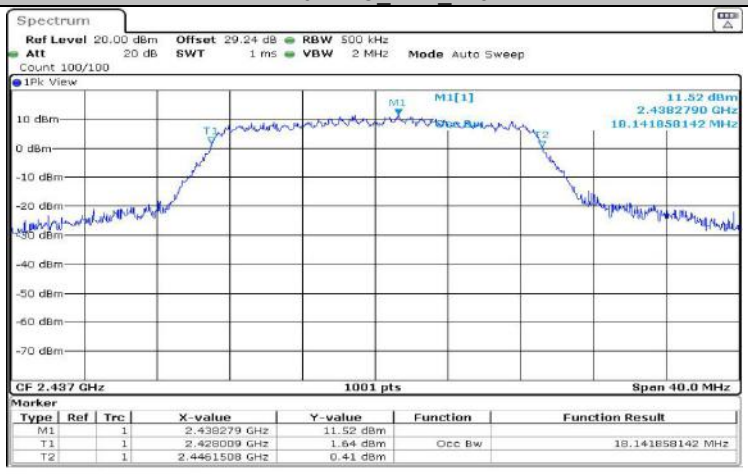

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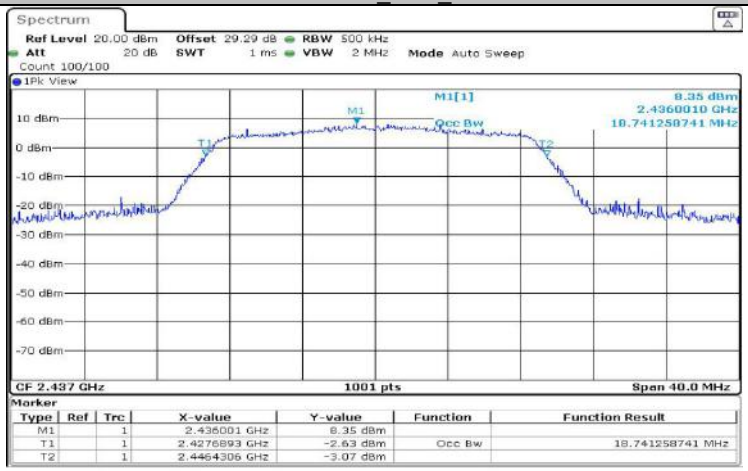

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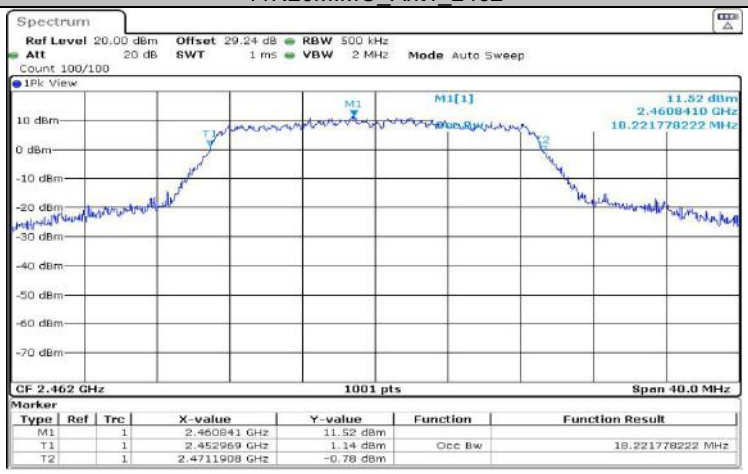

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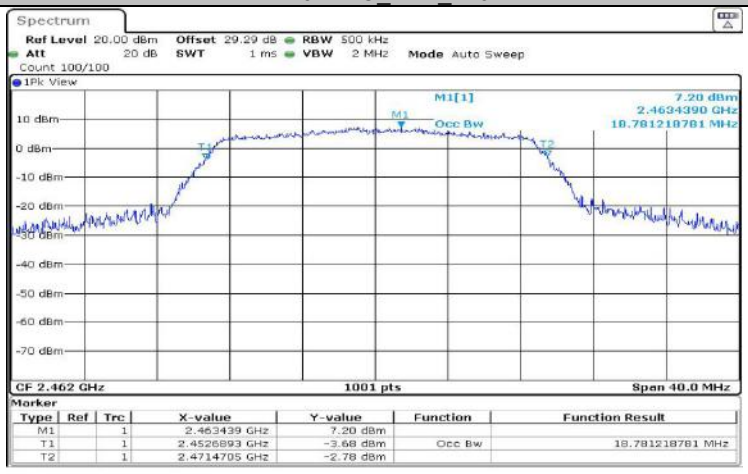
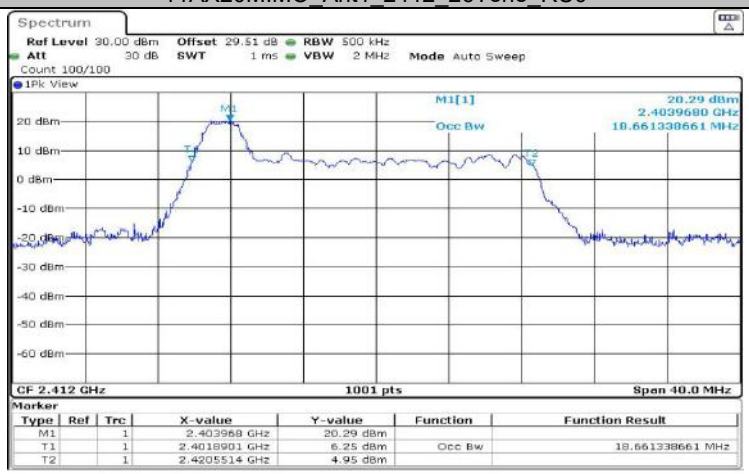
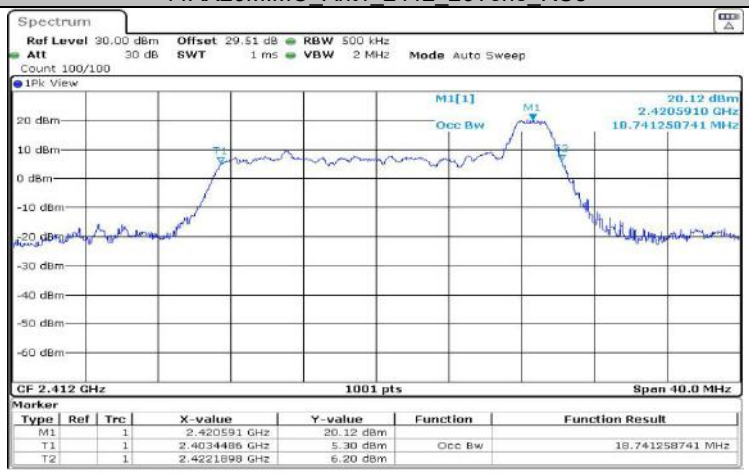


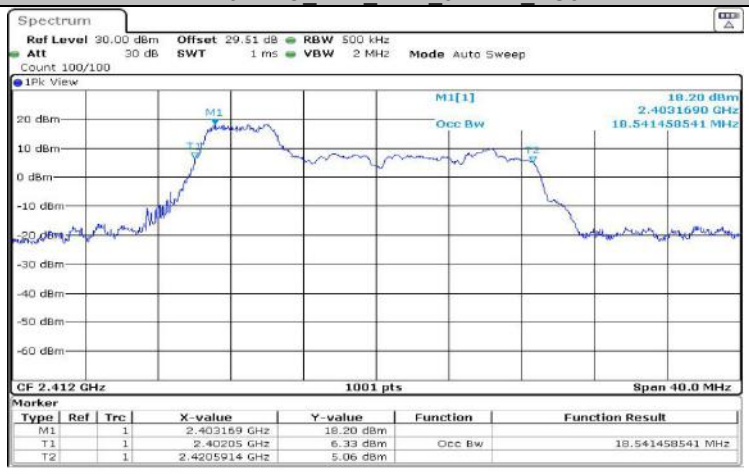
11AX20MIMO_Ant1_2412_26Tone_RU0



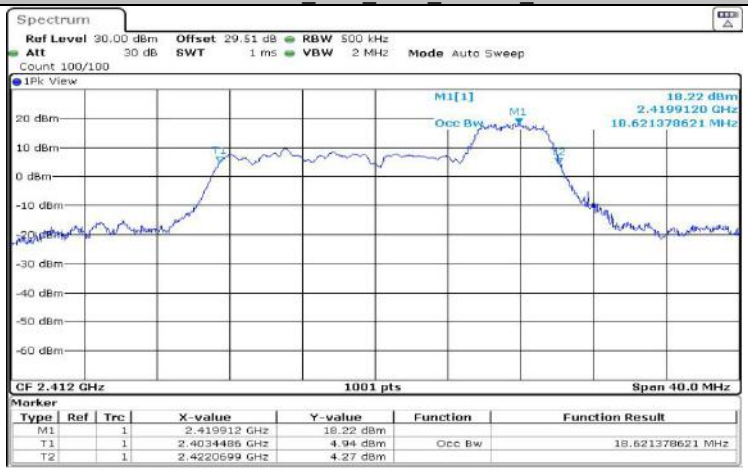
11AX20MIMO_Ant1_2412_26Tone_RU8



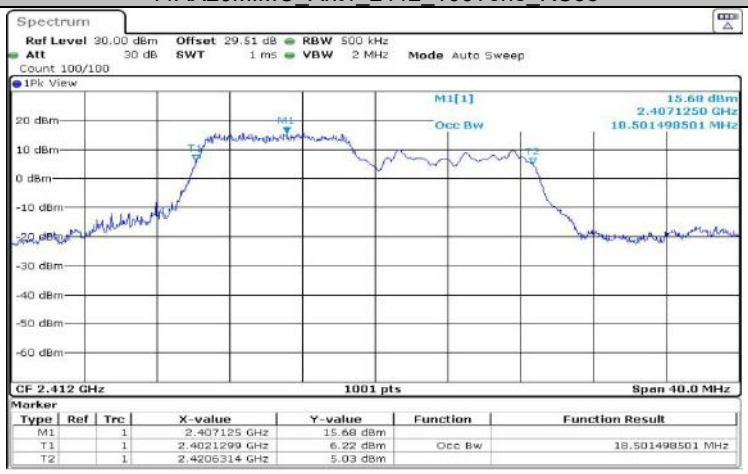
11AX20MIMO_Ant1_2412_52Tone_RU37



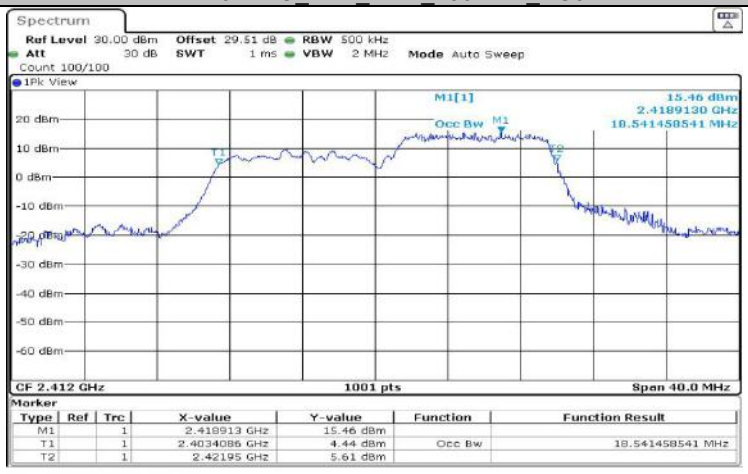
11AX20MIMO_Ant1_2412_52Tone_RU40



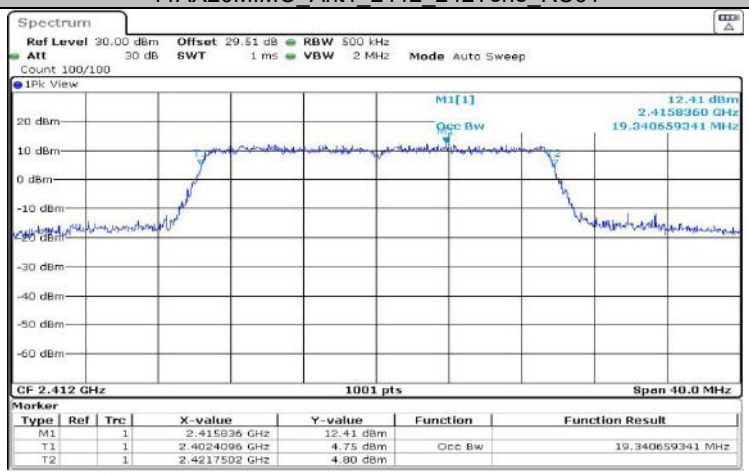
11AX20MIMO_Ant1_2412_106Tone_RU53



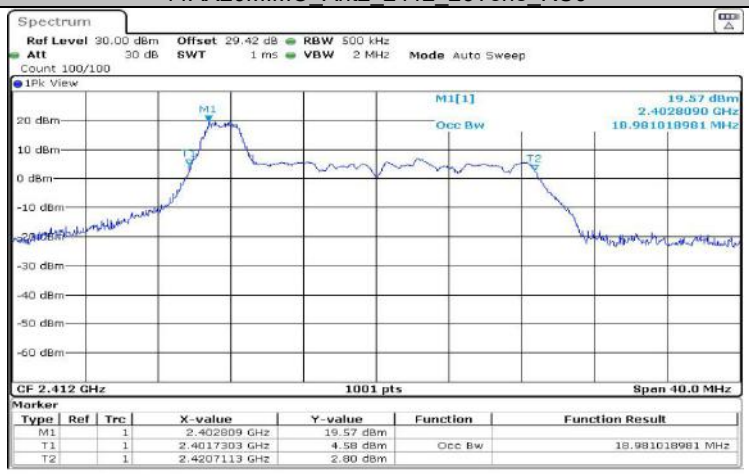
11AX20MIMO_Ant1_2412_106Tone_RU54



11AX20MIMO_Ant1_2412_242Tone_RU61



11AX20MIMO_Ant2_2412_26Tone_RU0



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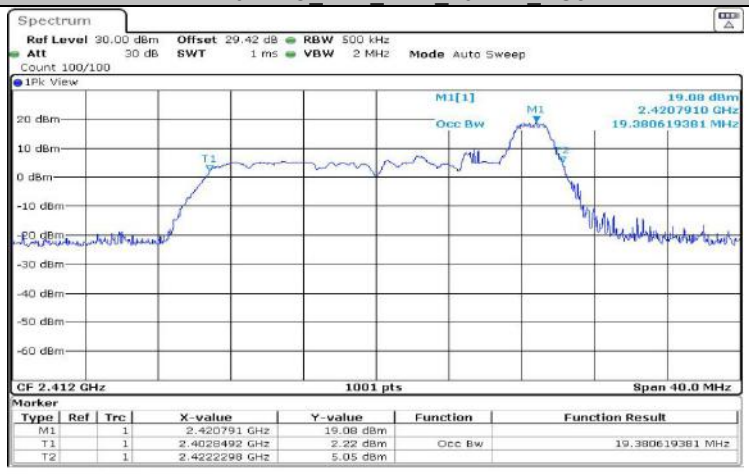
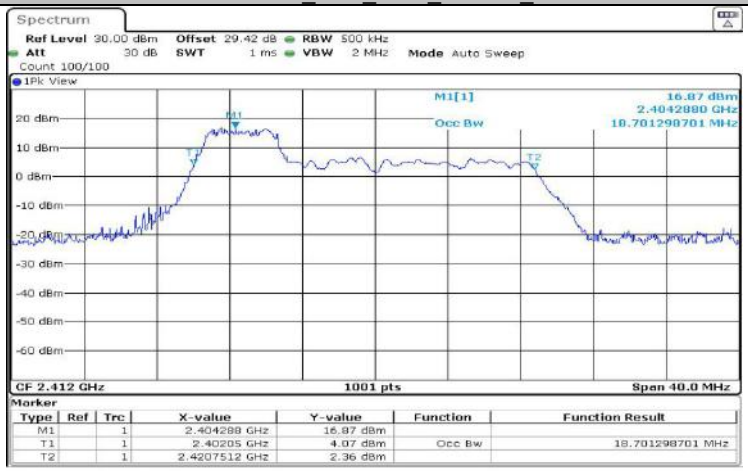


11AX20MIMO_Ant2_2412_52Tone_RU37



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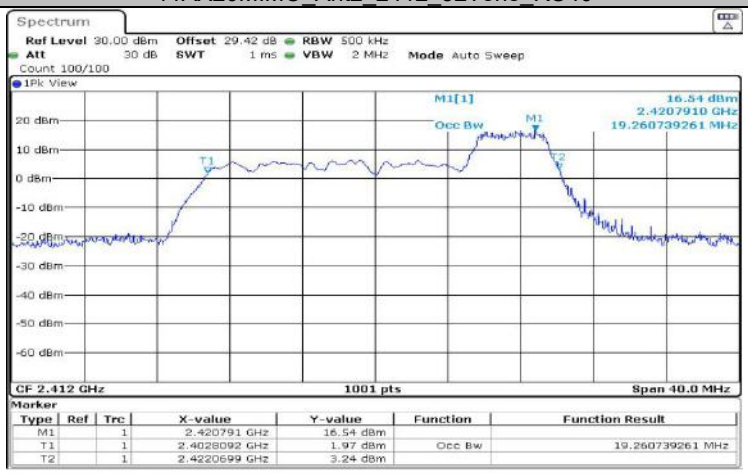

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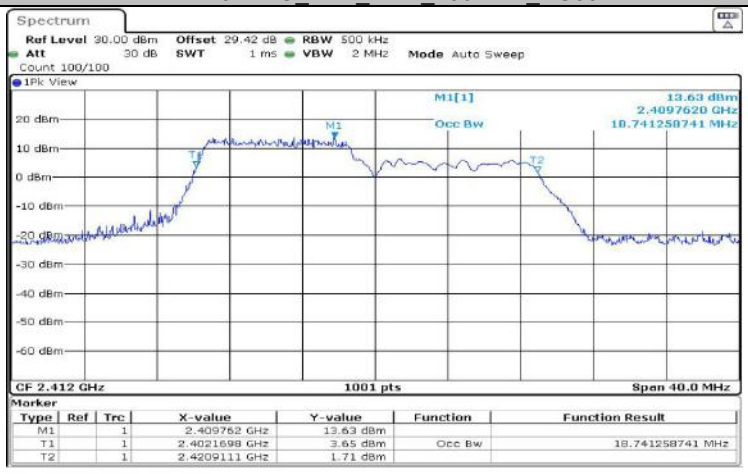
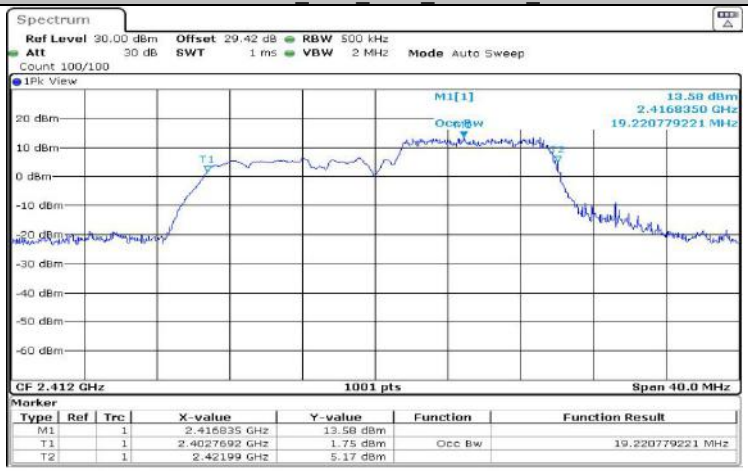
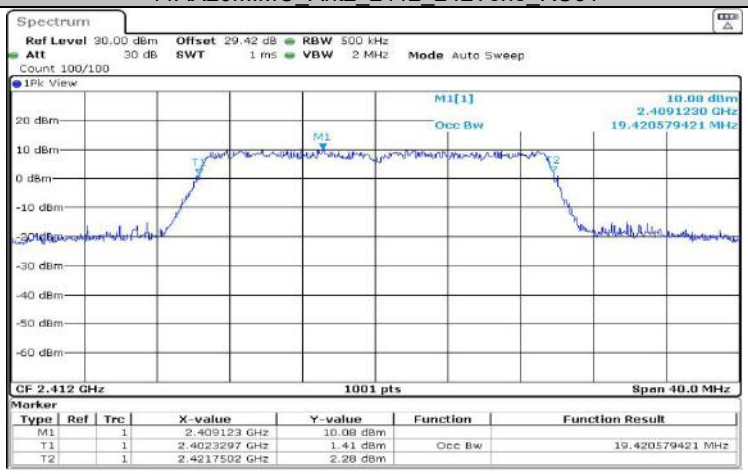


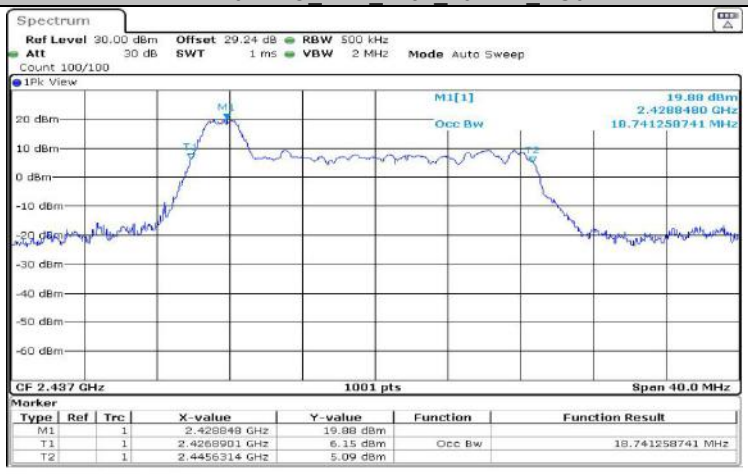
11AX20MIMO_Ant2_2412_106Tone_RU54



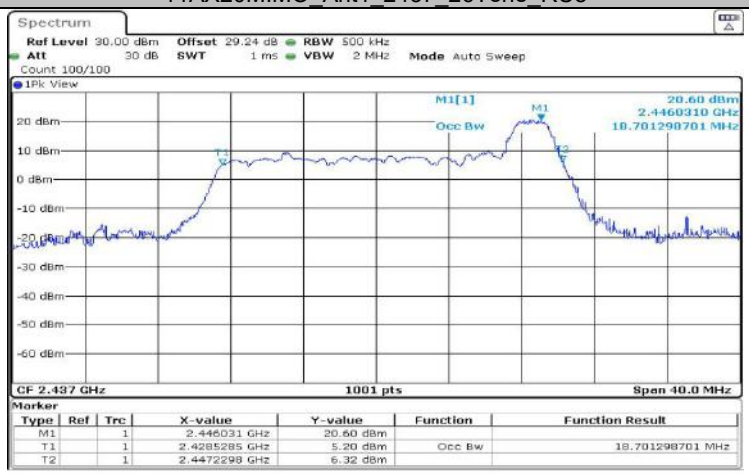
11AX20MIMO_Ant2_2412_242Tone_RU61



11AX20MIMO_Ant1_2437_26Tone_RU0



11AX20MIMO_Ant1_2437_26Tone_RU8



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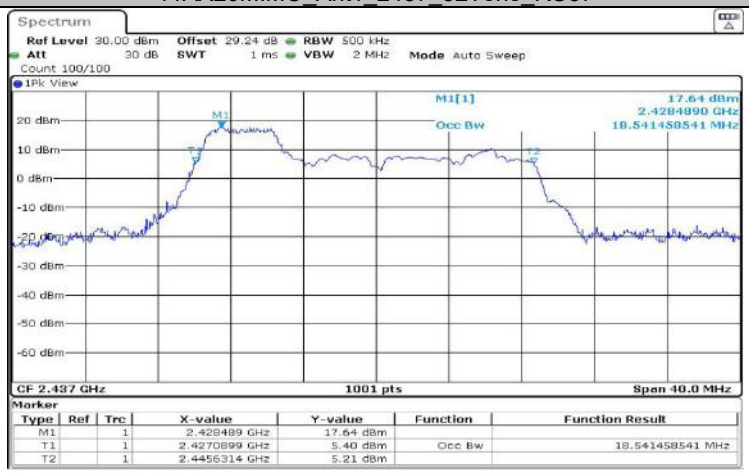

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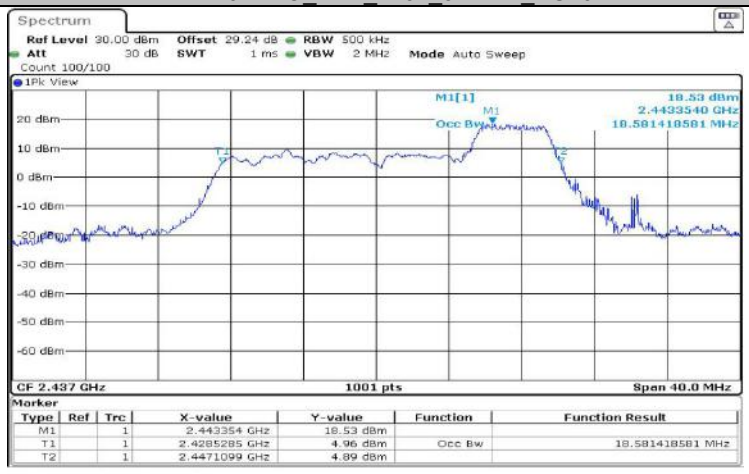

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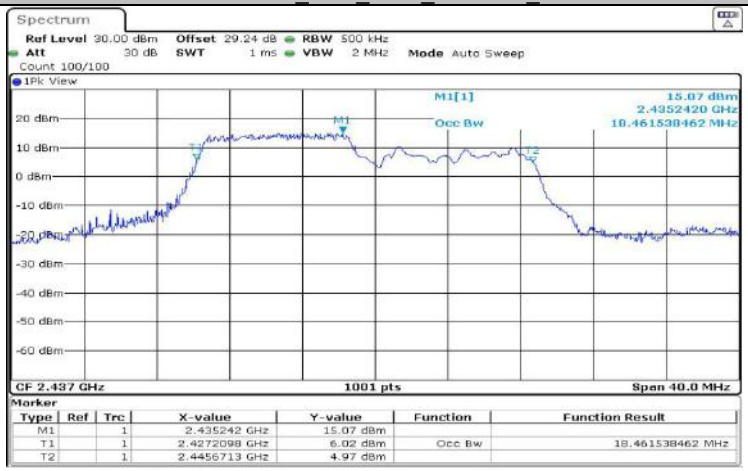
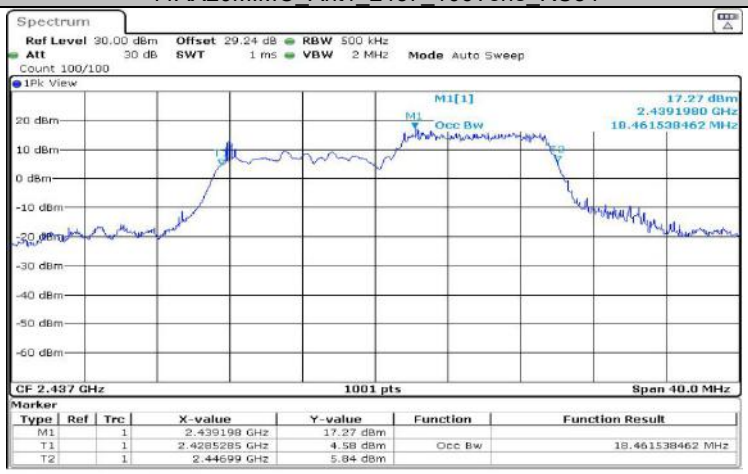
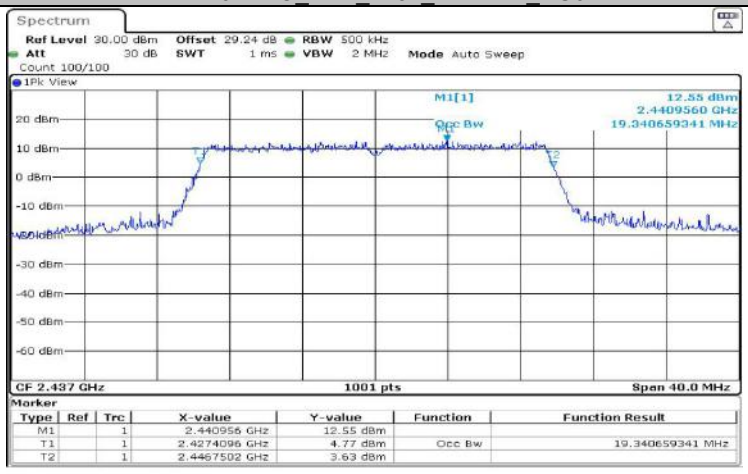


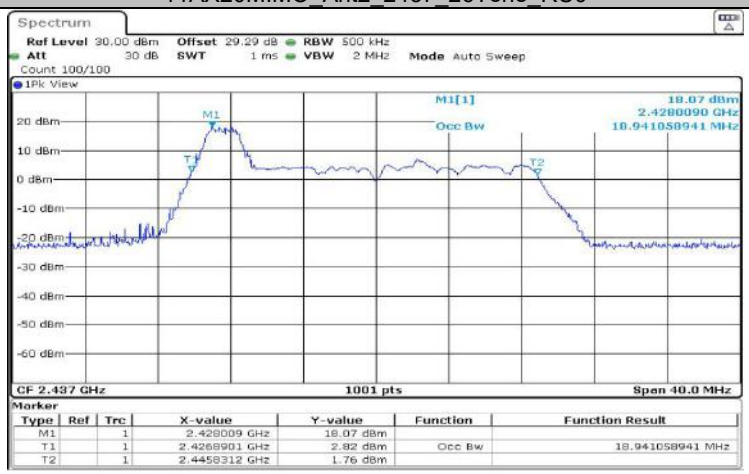
11AX20MIMO_Ant1_2437_106Tone_RU54



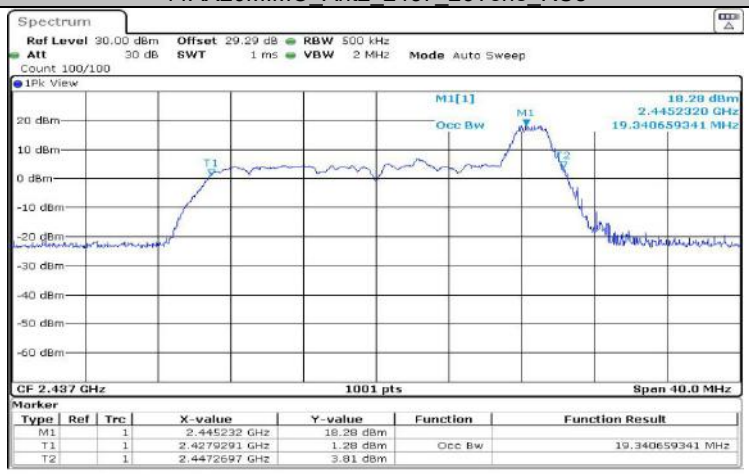
11AX20MIMO_Ant1_2437_242Tone_RU61



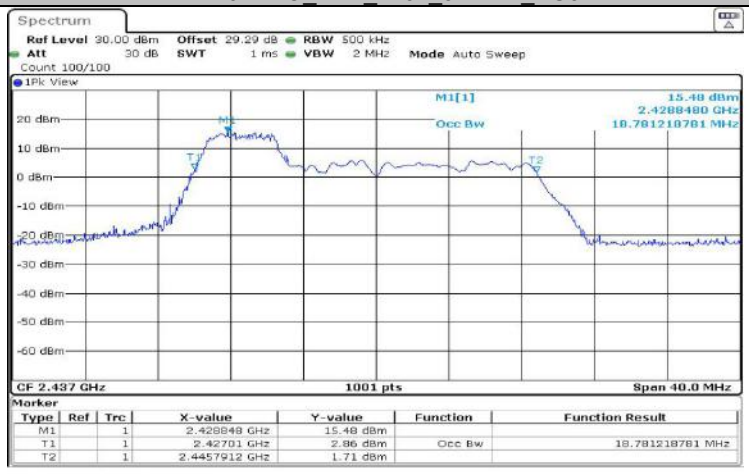
11AX20MIMO_Ant2_2437_26Tone_RU0



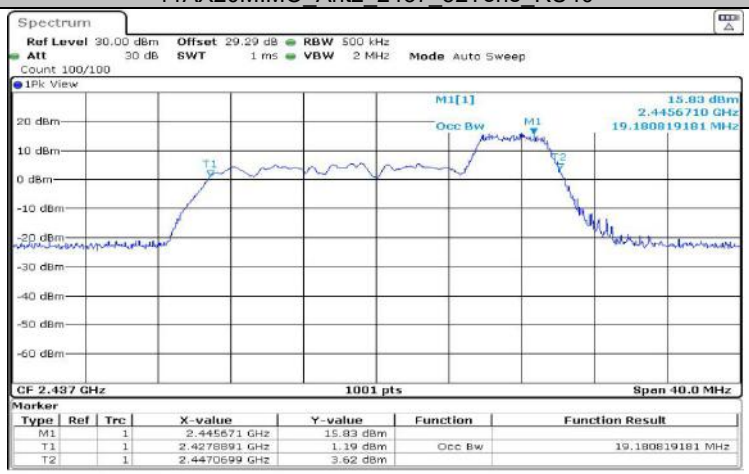
11AX20MIMO_Ant2_2437_26Tone_RU8



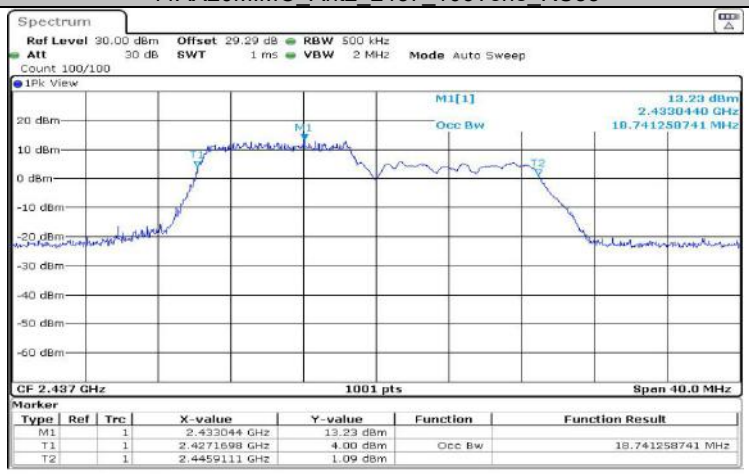
11AX20MIMO_Ant2_2437_52Tone_RU37



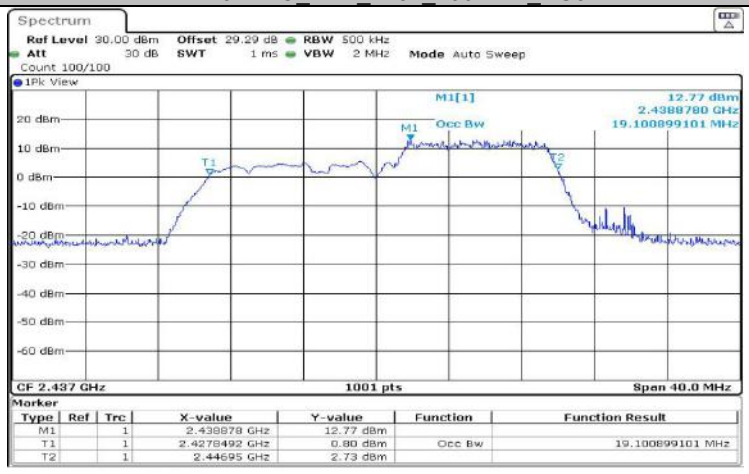
11AX20MIMO_Ant2_2437_52Tone_RU40



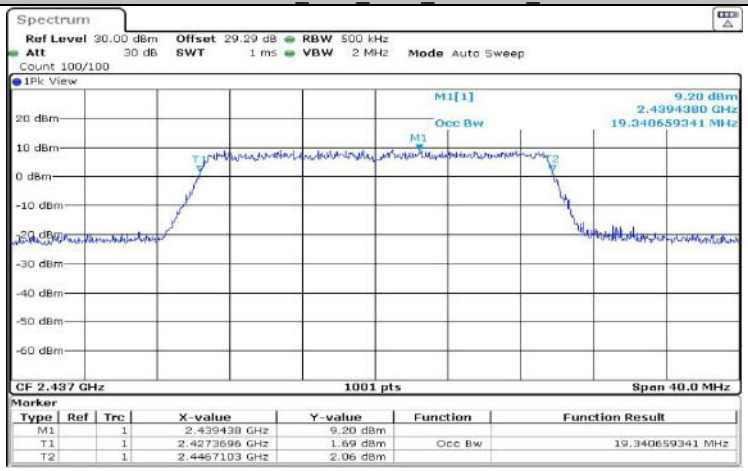
11AX20MIMO_Ant2_2437_106Tone_RU53



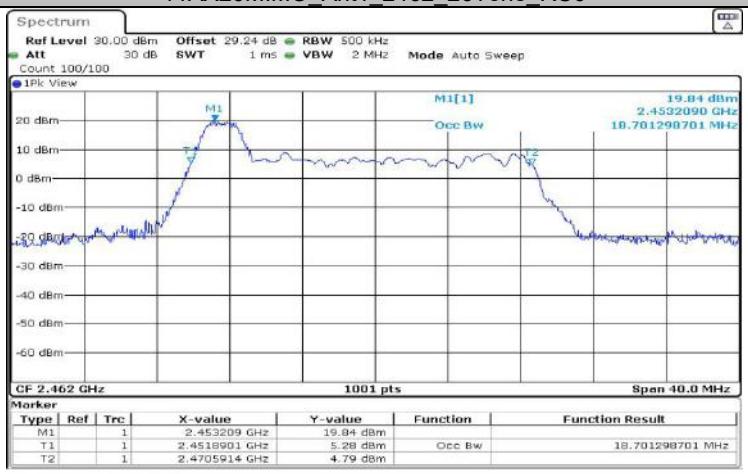
11AX20MIMO_Ant2_2437_106Tone_RU54



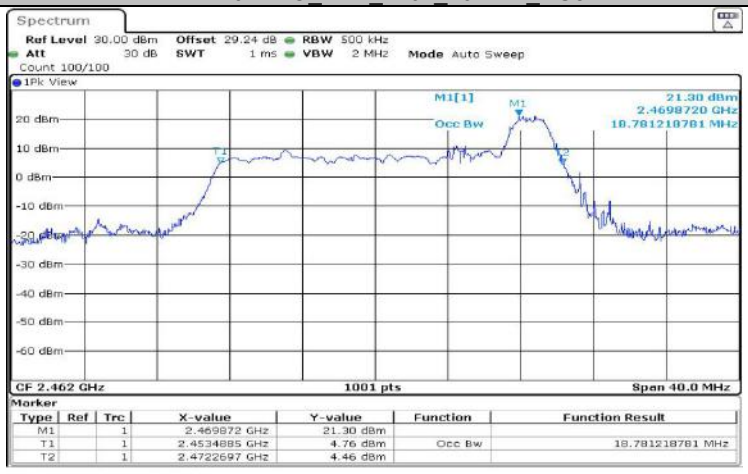
11AX20MIMO_Ant2_2437_242Tone_RU61



11AX20MIMO_Ant1_2462_26Tone_RU0

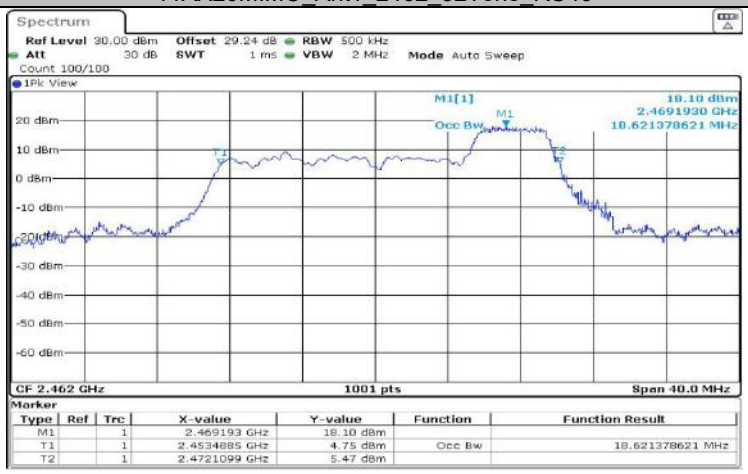


11AX20MIMO_Ant1_2462_26Tone_RU8

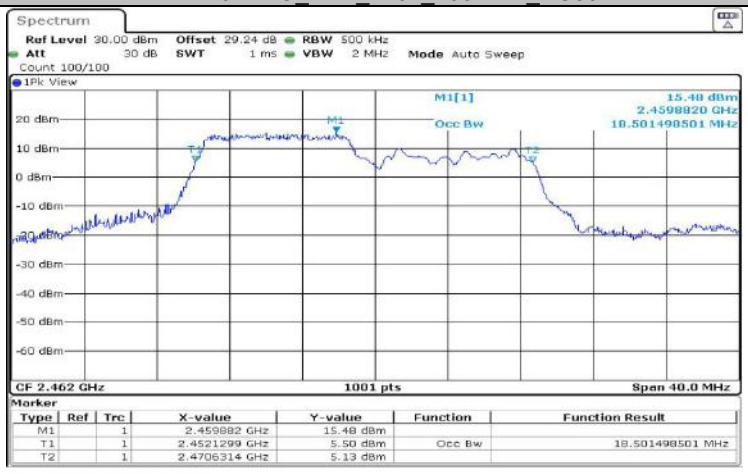


11AX20MIMO_Ant1_2462_52Tone_RU37

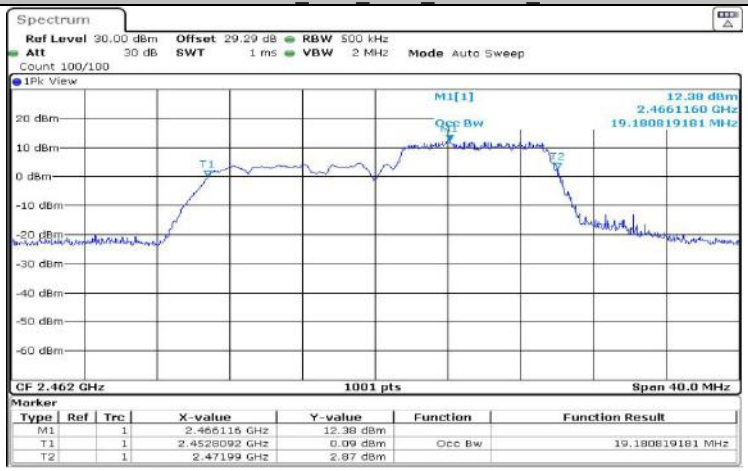
11AX20MIMO_Ant1_2462_52Tone_RU40



11AX20MIMO_Ant1_2462_106Tone_RU53

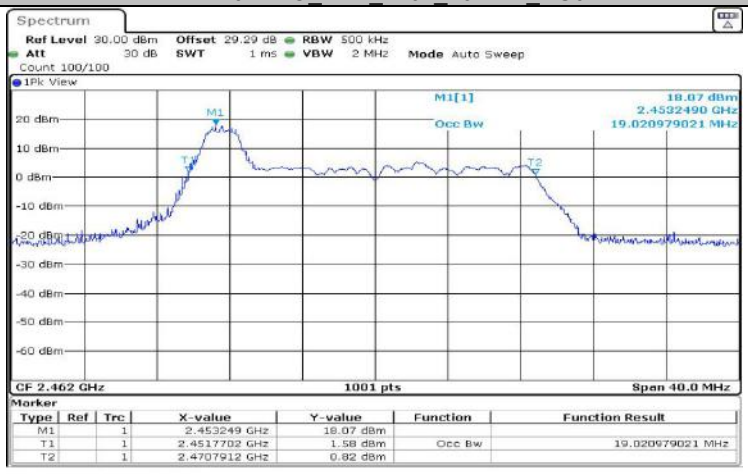


11AX20MIMO_Ant1_2462_106Tone_RU54

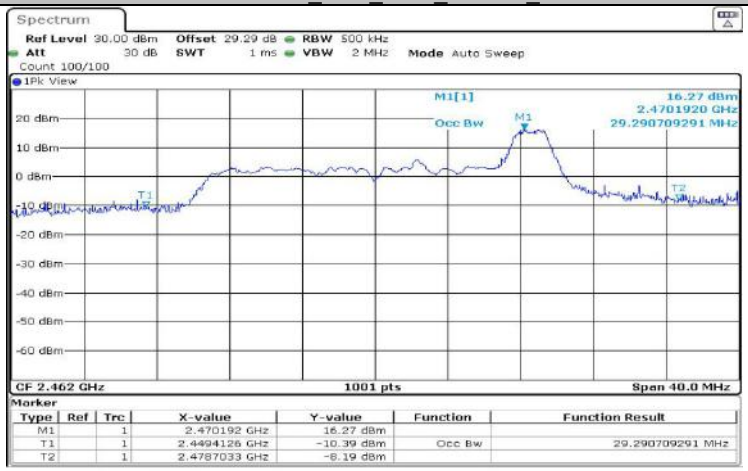


11AX20MIMO_Ant1_2462_242Tone_RU61

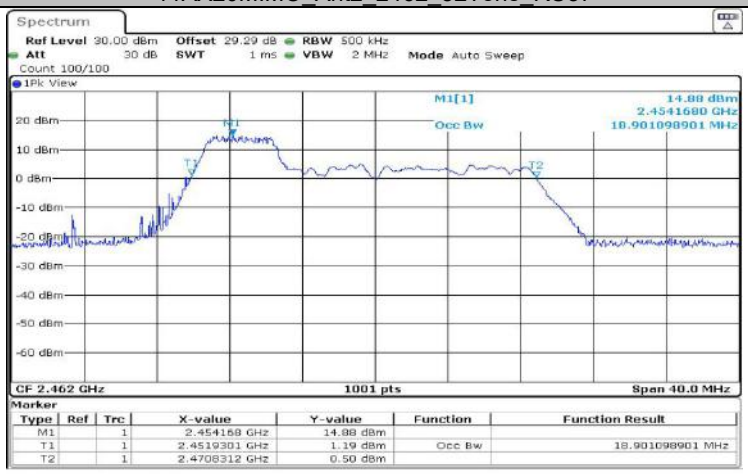
11AX20MIMO_Ant2_2462_26Tone_RU0



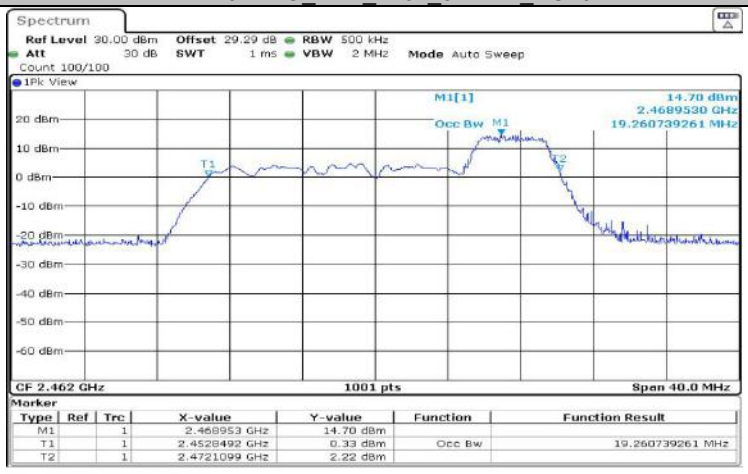
11AX20MIMO_Ant2_2462_26Tone_RU8



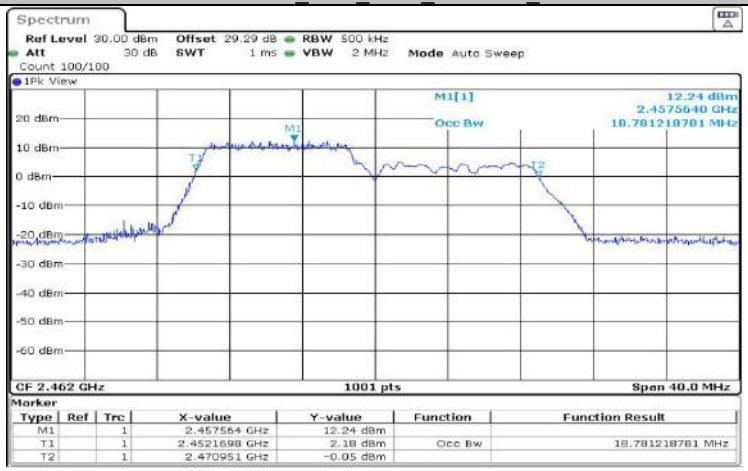
11AX20MIMO_Ant2_2462_52Tone_RU37



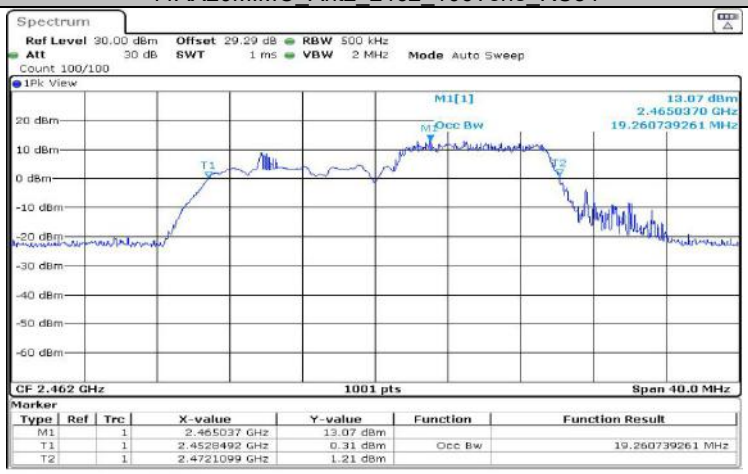
11AX20MIMO_Ant2_2462_52Tone_RU40



11AX20MIMO_Ant2_2462_106Tone_RU53



11AX20MIMO_Ant2_2462_106Tone_RU54



11AX20MIMO_Ant2_2462_242Tone_RU61

Appendix C: Maximum conducted output power

Test Result(AV)

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	19.26	≤30.00	PASS
	Ant2	2412	17.90	≤30.00	PASS
	Ant1	2437	19.36	≤30.00	PASS
	Ant2	2437	17.98	≤30.00	PASS
	Ant1	2462	19.44	≤30.00	PASS
	Ant2	2462	17.67	≤30.00	PASS
11G-CDD	Ant1	2412	15.03	≤30.00	PASS
	Ant2	2412	15.31	≤30.00	PASS
	total	2412	18.18	≤30.00	PASS
	Ant1	2437	15.02	≤30.00	PASS
	Ant2	2437	13.21	≤30.00	PASS
	total	2437	17.22	≤30.00	PASS
	Ant1	2462	15.03	≤30.00	PASS
	Ant2	2462	12.67	≤30.00	PASS
	total	2462	17.02	≤30.00	PASS
11N20MIMO	Ant1	2412	15.03	≤30.00	PASS
	Ant2	2412	14.16	≤30.00	PASS
	total	2412	17.63	≤30.00	PASS
	Ant1	2437	15.01	≤30.00	PASS
	Ant2	2437	13.32	≤30.00	PASS
	total	2437	17.26	≤30.00	PASS
	Ant1	2462	14.94	≤30.00	PASS
	Ant2	2462	12.79	≤30.00	PASS
	total	2462	17.01	≤30.00	PASS

Test Mode	Antenna	Frequency [MHz]	Ru Size	Ru Index	Average Power [dBm]	Conducted Limit[dBm]	Verdict
11AX20MIMO	Ant1	2412	26Tone	RU0	14.06	≤30.00	PASS
				RU8	15.32	≤30.00	PASS
			52Tone	RU37	14.45	≤30.00	PASS
				RU40	15.30	≤30.00	PASS
			106Tone	RU53	14.50	≤30.00	PASS
				RU54	15.01	≤30.00	PASS
			242Tone	RU61	14.87	≤30.00	PASS
	Ant2	2412	26Tone	RU0	14.27	≤30.00	PASS
				RU8	14.63	≤30.00	PASS
			52Tone	RU37	12.41	≤30.00	PASS
				RU40	12.69	≤30.00	PASS
			106Tone	RU53	12.63	≤30.00	PASS
				RU54	12.75	≤30.00	PASS
			242Tone	RU61	11.78	≤30.00	PASS
	total	2412	26Tone	RU0	17.18	≤30.00	PASS
				RU8	18.00	≤30.00	PASS
			52Tone	RU37	16.56	≤30.00	PASS
				RU40	17.20	≤30.00	PASS
			106Tone	RU53	16.68	≤30.00	PASS
				RU54	17.04	≤30.00	PASS
			242Tone	RU61	16.60	≤30.00	PASS
	Ant1	2437	26Tone	RU0	14.42	≤30.00	PASS

				RU8	15.23	≤30.00	PASS
			52Tone	RU37	14.45	≤30.00	PASS
				RU40	15.11	≤30.00	PASS
			106Tone	RU53	14.59	≤30.00	PASS
				RU54	15.17	≤30.00	PASS
			242Tone	RU61	14.17	≤30.00	PASS
	Ant2	2437	26Tone	RU0	13.59	≤30.00	PASS
				RU8	13.99	≤30.00	PASS
			52Tone	RU37	12.79	≤30.00	PASS
				RU40	12.08	≤30.00	PASS
			106Tone	RU53	11.80	≤30.00	PASS
				RU54	12.97	≤30.00	PASS
			242Tone	RU61	11.76	≤30.00	PASS
	total	2437	26Tone	RU0	17.04	≤30.00	PASS
				RU8	17.66	≤30.00	PASS
			52Tone	RU37	16.71	≤30.00	PASS
				RU40	16.86	≤30.00	PASS
			106Tone	RU53	16.43	≤30.00	PASS
				RU54	17.22	≤30.00	PASS
			242Tone	RU61	16.14	≤30.00	PASS
	Ant1	2462	26Tone	RU0	14.65	≤30.00	PASS
				RU8	15.56	≤30.00	PASS
			52Tone	RU37	14.88	≤30.00	PASS
				RU40	15.48	≤30.00	PASS
			106Tone	RU53	14.86	≤30.00	PASS
				RU54	15.51	≤30.00	PASS
			242Tone	RU61	14.60	≤30.00	PASS
	Ant2	2462	26Tone	RU0	12.05	≤30.00	PASS
				RU8	12.59	≤30.00	PASS
			52Tone	RU37	11.07	≤30.00	PASS
				RU40	11.67	≤30.00	PASS
			106Tone	RU53	11.41	≤30.00	PASS
				RU54	11.60	≤30.00	PASS
			242Tone	RU61	11.72	≤30.00	PASS
	total	2462	26Tone	RU0	16.55	≤30.00	PASS
				RU8	17.33	≤30.00	PASS
			52Tone	RU37	16.39	≤30.00	PASS
				RU40	16.99	≤30.00	PASS
			106Tone	RU53	16.48	≤30.00	PASS
				RU54	16.99	≤30.00	PASS
			242Tone	RU61	16.40	≤30.00	PASS

Test Result（PK）

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	22.91	≤30.00	PASS
	Ant2	2412	22.31	≤30.00	PASS
	Ant1	2437	22.96	≤30.00	PASS
	Ant2	2437	21.80	≤30.00	PASS
	Ant1	2462	23.11	≤30.00	PASS
	Ant2	2462	21.05	≤30.00	PASS
11G-CDD	Ant1	2412	22.37	≤30.00	PASS
	Ant2	2412	21.06	≤30.00	PASS
	total	2412	24.77	≤30.00	PASS
	Ant1	2437	22.41	≤30.00	PASS
	Ant2	2437	20.11	≤30.00	PASS
	total	2437	24.42	≤30.00	PASS
	Ant1	2462	22.31	≤30.00	PASS
	Ant2	2462	19.86	≤30.00	PASS
	total	2462	24.27	≤30.00	PASS
11N20MIMO	Ant1	2412	22.56	≤30.00	PASS
	Ant2	2412	21.45	≤30.00	PASS
	total	2412	25.05	≤30.00	PASS
	Ant1	2437	22.27	≤30.00	PASS
	Ant2	2437	20.69	≤30.00	PASS
	total	2437	24.56	≤30.00	PASS
	Ant1	2462	22.52	≤30.00	PASS
	Ant2	2462	19.93	≤30.00	PASS
	total	2462	24.43	≤30.00	PASS

Test Mode	Antenna	Frequency [MHz]	Ru Size	Ru Index	Peak Power [dBm]	Conducted Limit[dBm]	Verdict
11AX20MIMO	Ant1	2412	26Tone	RU0	22.80	≤30.00	PASS
				RU8	22.94	≤30.00	PASS
			52Tone	RU37	25.45	≤30.00	PASS
				RU40	25.46	≤30.00	PASS
			106Tone	RU53	25.04	≤30.00	PASS
				RU54	25.05	≤30.00	PASS
			242Tone	RU61	24.19	≤30.00	PASS
	Ant2	2412	26Tone	RU0	22.04	≤30.00	PASS
				RU8	22.99	≤30.00	PASS
			52Tone	RU37	22.98	≤30.00	PASS
				RU40	23.46	≤30.00	PASS
			106Tone	RU53	23.14	≤30.00	PASS
				RU54	23.26	≤30.00	PASS
			242Tone	RU61	22.17	≤30.00	PASS
	total	2412	26Tone	RU0	25.45	≤30.00	PASS
				RU8	25.98	≤30.00	PASS
			52Tone	RU37	27.40	≤30.00	PASS
				RU40	27.58	≤30.00	PASS
			106Tone	RU53	27.20	≤30.00	PASS
				RU54	27.26	≤30.00	PASS
			242Tone	RU61	26.31	≤30.00	PASS
	Ant1	2437	26Tone	RU0	22.47	≤30.00	PASS
				RU8	23.53	≤30.00	PASS

			52Tone	RU37	25.05	≤30.00	PASS
				RU40	25.56	≤30.00	PASS
			106Tone	RU53	25.14	≤30.00	PASS
				RU54	25.40	≤30.00	PASS
			242Tone	RU61	24.21	≤30.00	PASS
	Ant2	2437	26Tone	RU0	20.25	≤30.00	PASS
				RU8	20.92	≤30.00	PASS
			52Tone	RU37	21.99	≤30.00	PASS
				RU40	22.78	≤30.00	PASS
			106Tone	RU53	22.43	≤30.00	PASS
				RU54	22.45	≤30.00	PASS
			242Tone	RU61	21.23	≤30.00	PASS
	total	2437	26Tone	RU0	24.51	≤30.00	PASS
				RU8	25.43	≤30.00	PASS
			52Tone	RU37	26.79	≤30.00	PASS
				RU40	27.40	≤30.00	PASS
			106Tone	RU53	27.00	≤30.00	PASS
				RU54	27.18	≤30.00	PASS
			242Tone	RU61	25.98	≤30.00	PASS
	Ant1	2462	26Tone	RU0	22.52	≤30.00	PASS
				RU8	23.03	≤30.00	PASS
			52Tone	RU37	25.23	≤30.00	PASS
				RU40	25.10	≤30.00	PASS
			106Tone	RU53	25.00	≤30.00	PASS
				RU54	25.03	≤30.00	PASS
			242Tone	RU61	25.21	≤30.00	PASS
	Ant2	2462	26Tone	RU0	20.02	≤30.00	PASS
				RU8	19.92	≤30.00	PASS
			52Tone	RU37	21.99	≤30.00	PASS
				RU40	21.81	≤30.00	PASS
			106Tone	RU53	21.74	≤30.00	PASS
				RU54	22.18	≤30.00	PASS
			242Tone	RU61	21.82	≤30.00	PASS
	total	2462	26Tone	RU0	24.46	≤30.00	PASS
				RU8	24.76	≤30.00	PASS
			52Tone	RU37	26.92	≤30.00	PASS
				RU40	26.77	≤30.00	PASS
			106Tone	RU53	26.68	≤30.00	PASS
				RU54	26.85	≤30.00	PASS
			242Tone	RU61	26.85	≤30.00	PASS

Note:
For 802.11 g/n20/ax20 mode, EUT employ CDD
Directional gain = G_{ANT} + Array Gain
Array Gain=0dB for $N_{ANT} \leqslant 4$
G_{ANT1}=4.3dBi, G_{ANT2}=1.8dBi, use the higher one to calculate the worst case
Directional gain=4.3dBi+0dB=4.3dBi⩽6dBi

Appendix D: Maximum power spectral density

Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-0.29	≤8.00	PASS
	Ant2	2412	-1.67	≤8.00	PASS
	Ant1	2437	-1.72	≤8.00	PASS
	Ant2	2437	-1.51	≤8.00	PASS
	Ant1	2462	0.01	≤8.00	PASS
	Ant2	2462	-3.3	≤8.00	PASS
11G-CDD	Ant1	2412	-9.11	≤6.70	PASS
	Ant2	2412	-10.59	≤6.70	PASS
	total	2412	-6.78	≤6.70	PASS
	Ant1	2437	-9.47	≤6.70	PASS
	Ant2	2437	-11.2	≤6.70	PASS
	total	2437	-7.24	≤6.70	PASS
	Ant1	2462	-9.36	≤6.70	PASS
	Ant2	2462	-11.01	≤6.70	PASS
	total	2462	-7.10	≤6.70	PASS
11N20MIMO	Ant1	2412	-9.16	≤6.70	PASS
	Ant2	2412	-10.24	≤6.70	PASS
	total	2412	-6.66	≤6.70	PASS
	Ant1	2437	-9.62	≤6.70	PASS
	Ant2	2437	-11.29	≤6.70	PASS
	total	2437	-7.36	≤6.70	PASS
	Ant1	2462	-7.65	≤6.70	PASS
	Ant2	2462	-11.7	≤6.70	PASS
	total	2462	-6.21	≤6.70	PASS

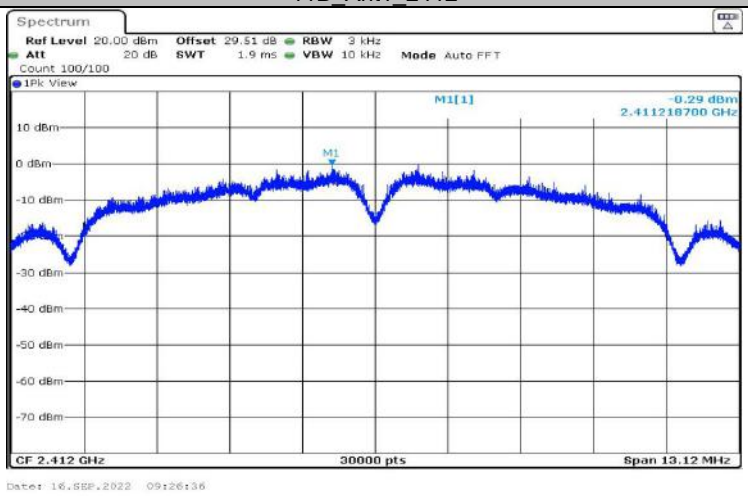
Test Mode	Antenna	Frequency[MHz]	RuSize	RuIndex	Result [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11AX20MIMO	Ant1	2412	26Tone	RU0	-0.69	≤6.70	PASS
				RU8	0.08	≤6.70	PASS
			52Tone	RU37	-2.81	≤6.70	PASS
				RU40	-2.96	≤6.70	PASS
			106Tone	RU53	-6.08	≤6.70	PASS
				RU54	-5.24	≤6.70	PASS
			242Tone	RU61	-9.47	≤6.70	PASS
	Ant2	2412	26Tone	RU0	-1.24	≤6.70	PASS
				RU8	-2	≤6.70	PASS
			52Tone	RU37	-4.5	≤6.70	PASS
				RU40	-5.38	≤6.70	PASS
			106Tone	RU53	-8.61	≤6.70	PASS
				RU54	-7.01	≤6.70	PASS
			242Tone	RU61	-12.18	≤6.70	PASS
	total	2412	26Tone	RU0	2.05	≤6.70	PASS
				RU8	2.17	≤6.70	PASS
			52Tone	RU37	-0.56	≤6.70	PASS
				RU40	-0.99	≤6.70	PASS
			106Tone	RU53	-4.15	≤6.70	PASS
				RU54	-3.03	≤6.70	PASS
			242Tone	RU61	-7.61	≤6.70	PASS
	Ant1	2437	26Tone	RU0	-1.17	≤6.70	PASS
				RU8	0.6	≤6.70	PASS
			52Tone	RU37	-3.18	≤6.70	PASS

				RU40	-2.08	≤6.70	PASS
			106Tone	RU53	-5.44	≤6.70	PASS
				RU54	-5.79	≤6.70	PASS
			242Tone	RU61	-9.07	≤6.70	PASS
	Ant2	2437	26Tone	RU0	-2.37	≤6.70	PASS
				RU8	-1.21	≤6.70	PASS
			52Tone	RU37	-5.95	≤6.70	PASS
				RU40	-4.55	≤6.70	PASS
			106Tone	RU53	-8.84	≤6.70	PASS
				RU54	-8.32	≤6.70	PASS
			242Tone	RU61	-12.05	≤6.70	PASS
	total	2437	26Tone	RU0	1.28	≤6.70	PASS
				RU8	2.80	≤6.70	PASS
			52Tone	RU37	-1.34	≤6.70	PASS
				RU40	-0.13	≤6.70	PASS
			106Tone	RU53	-3.81	≤6.70	PASS
				RU54	-3.86	≤6.70	PASS
			242Tone	RU61	-7.30	≤6.70	PASS
	Ant1	2462	26Tone	RU0	0.1	≤6.70	PASS
				RU8	1.26	≤6.70	PASS
			52Tone	RU37	-3.1	≤6.70	PASS
				RU40	-2.58	≤6.70	PASS
			106Tone	RU53	-5.6	≤6.70	PASS
				RU54	-7.15	≤6.70	PASS
			242Tone	RU61	-10.91	≤6.70	PASS
	Ant2	2462	26Tone	RU0	-4.06	≤6.70	PASS
				RU8	-3.57	≤6.70	PASS
			52Tone	RU37	-6.72	≤6.70	PASS
				RU40	-6	≤6.70	PASS
			106Tone	RU53	-9.3	≤6.70	PASS
				RU54	-9.36	≤6.70	PASS
			242Tone	RU61	-13.49	≤6.70	PASS
	total	2462	26Tone	RU0	1.51	≤6.70	PASS
				RU8	2.49	≤6.70	PASS
			52Tone	RU37	-1.53	≤6.70	PASS
				RU40	-0.95	≤6.70	PASS
			106Tone	RU53	-4.06	≤6.70	PASS
				RU54	-5.33	≤6.70	PASS
			242Tone	RU61	-9.00	≤6.70	PASS

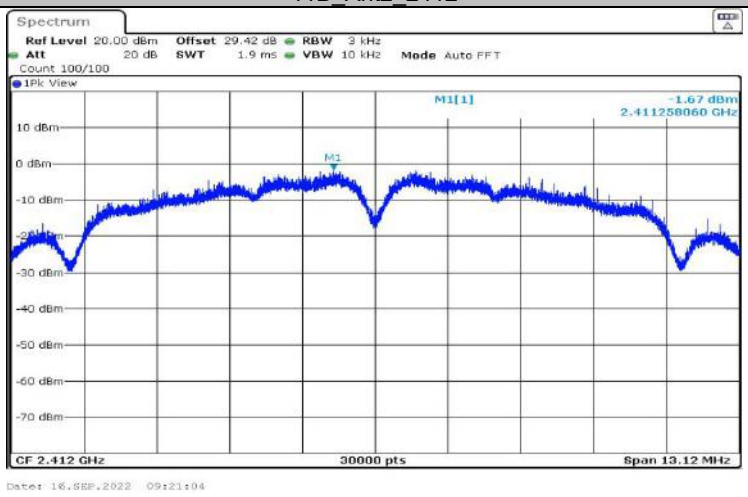
Note:
For 802.11 g/n20/ax20 mode, EUT employ CDD
Directional gain = G_{ANT} + Array Gain
Array Gain=10*logN_{ANT},
G_{ANT1}=4.3dBi, G_{ANT2}=1.8dBi, use the higher one to calculate the worst case
Directional gain=4.3dBi+10*log2dB=7.3dBi>6dBi
So the limit should reduce 1.3dB.

Test Graphs

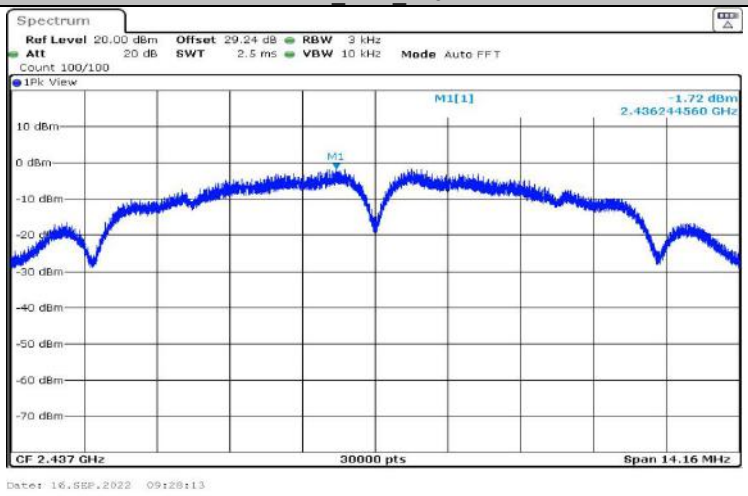
11B_Ant1_2412



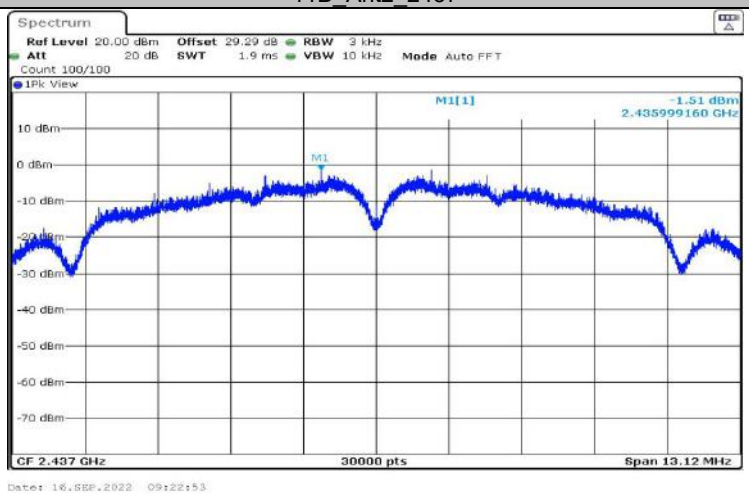
11B_Ant2_2412



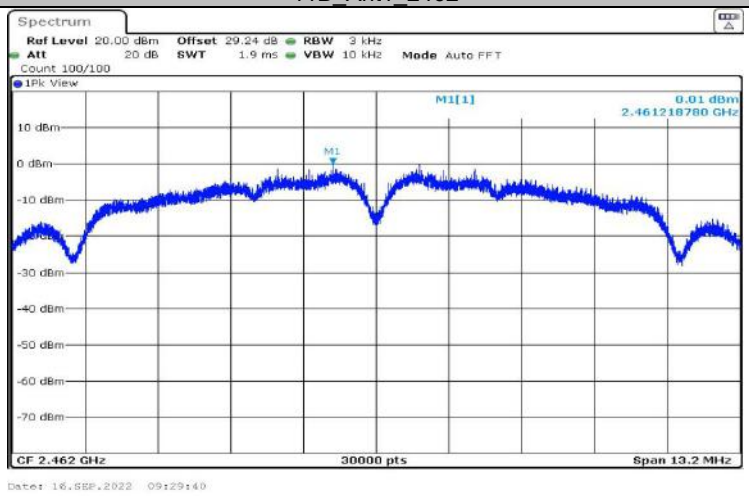
11B_Ant1_2437



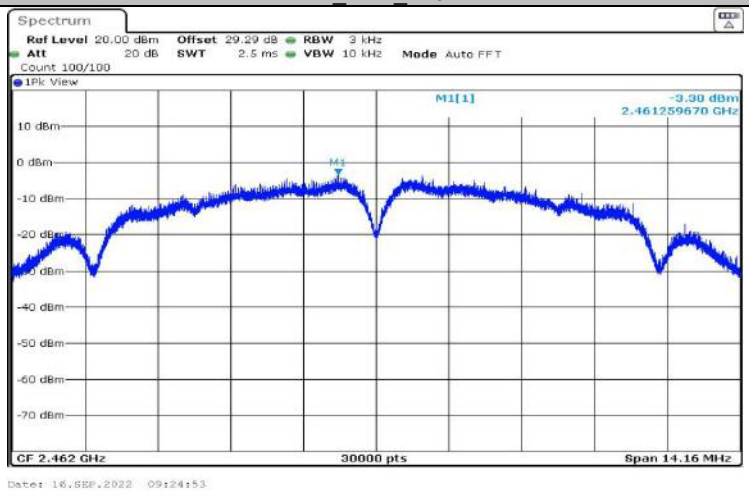
11B_Ant2_2437



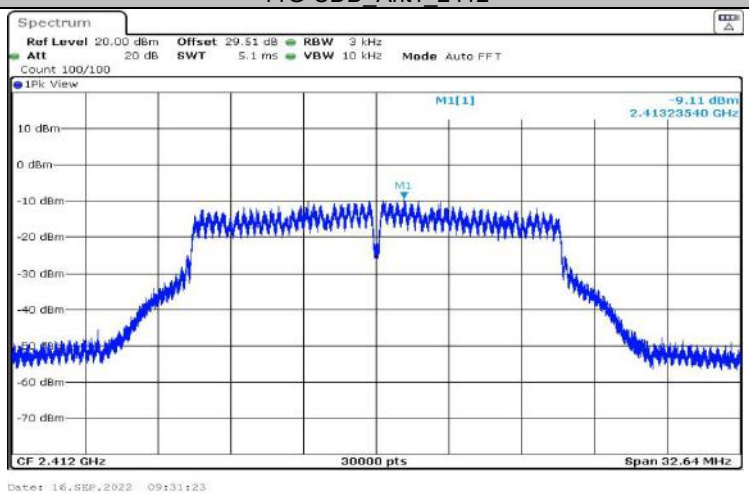
11B_Ant1_2462



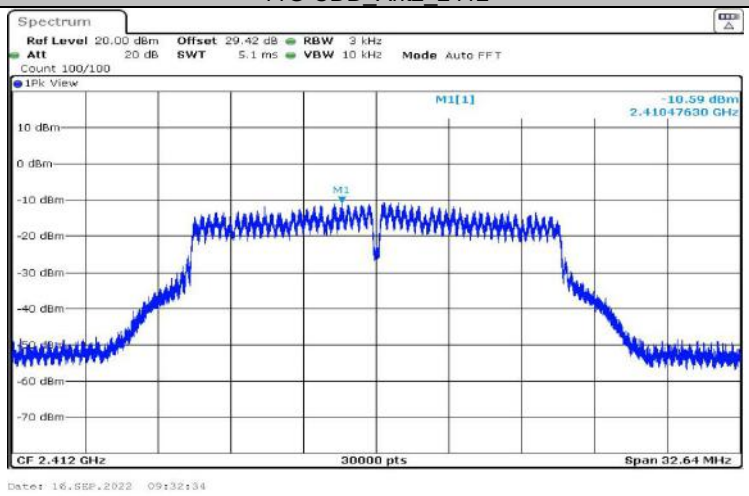
11B_Ant2_2462



11G-CDD_Ant1_2412



11G-CDD_Ant2_2412



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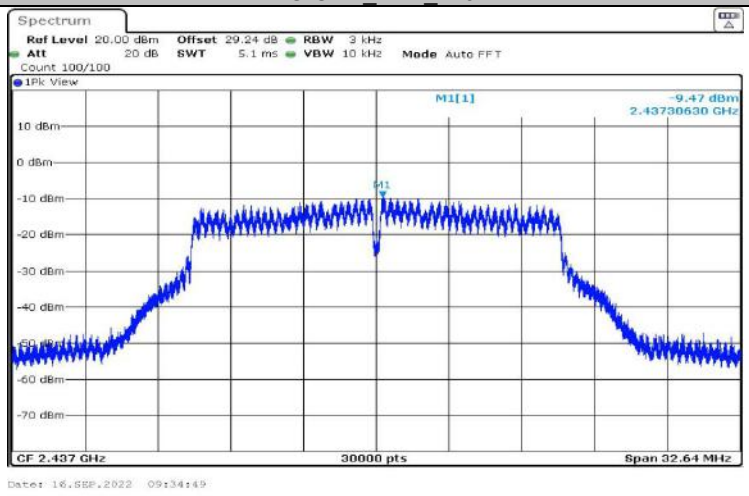

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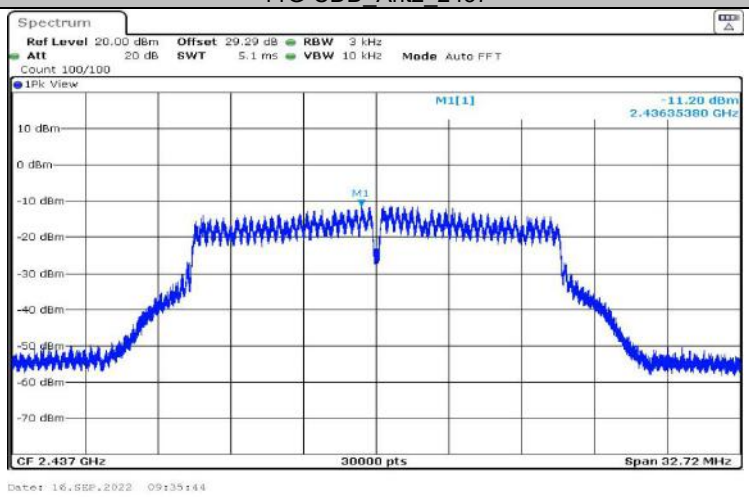

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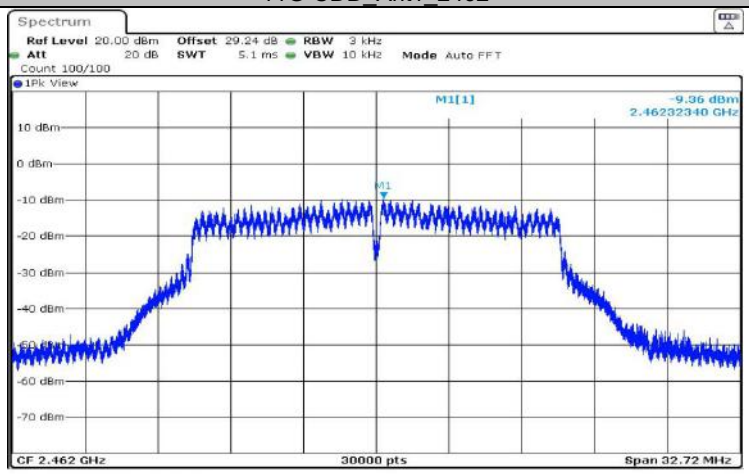

11G-CDD_Ant2_2462