RADIO TEST REPORT

Report No.: SHATBL2109019W01

Applicant:

Applied Digital Research Corporation DBA SKYBOXE

Address:

15 Paradise Plaza, Suite 299 Sarasota FL. 34239

Product Name	:	5G Fixed Wireless Router
Brand Name	:	skyboxe
Model Name	:	SB5GCPE-150
Series Model	:	N/A
Test Standard	:	FCC Part15.247
FCC ID	:	2AWJSSB5GCPE-100

TEST RESULT CERTIFICATION

Applicant's Name.....:	Applied Digital Research Corporation DBA SKYBOXE
Address..... :	15 Paradise Plaza, Suite 299 Sarasota FL. 34239
Manufacturer's Name.....:	Applied Digital Research Corporation DBA SKYBOXE
Address..... :	15 Paradise Plaza, Suite 299 Sarasota FL. 34239

Product Description

Product Name..... :	5G Fixed Wireless Router
Brand Name.....:	skyboxe
Model Name..... :	SB5GCPE-150
Series Model.....:	N/A
Test Standards..... :	FCC Part15.247
Test Procedure.....:	ANSI C63.10-2013

This device described above has been tested by ATBL, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test..... :	
Date of receipt of test item.....:	Aug. 25, 2022
Date (s) of performance of tests.....:	Aug. 26, 2022 ~ Sep. 16, 2022
Date of Issue.....:	Sep. 23, 2022
Test Result..... :	**Pass**

Report Prepared by :

Roean Wei

(Roean Wei)

Report Approved by :

Ghost Li

(Ghost Li)

Authorized Signatory :

Terry Yang

(Terry Yang)

Table of Contents Page

Table of Contents Page

Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	Sep. 23, 2022	SHATBL2109019W01	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

KDB 558074 D01 15.247 Meas Guidance v05r02.

FCC Part 15.247,Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	--
15.247 (a)(2)	6dB&99% Bandwidth	PASS	--
15.247 (b)(3)	Output Power	PASS	--
15.247(d) & 15.209 & 15.205	Radiated Spurious Emission	PASS	--
§15.247(d) & 15.205	Conducted Spurious & Band Edge Emission	PASS	--
15.247 (e)	Power Spectral Density	PASS	--
15.205	Restricted bands of operation	PASS	--
15.203	Antenna Requirement	PASS	--

REMARKS:

(1) 'N/A' denotes test is not applicable in this Test Report.

(2) All tests are according to ANSI C63.10-2013.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	5G Fixed Wireless Router
Trade Name	skyboxe
Model Name	SB5GCPE-150
Series Model	N/A
Model Difference	N/A
Product Description	The EUT is a 5G Fixed Wireless Router
Channel List	Please refer to the REMARK 2.
Voltage Input	Minimum 9V Nominal 12V Maximum 15V
Adapter	I/P: 100-240V ~ 50/60Hz 0.7A O/P: 12.0V ⎓ 2.0A
Hardware version number	N/A
Software version number	N/A
Connecting I/O Port(s)	Please refer to the REMARK 1.

Operation Frequency:	802.11b/g/n20/ax20: 2412~2462 MHz 802.11n40/ax40:2422~2452MHz
Modulation Type:	802.11b: CCK,DQPSK,DBPSK 802.11g: BPSK,QPSK,16/64-QAM 802.11n: BPSK,QPSK,16/64-QAM 802.11ax:BPSK,QPSK,16/64/256/1024-QAM
Bit Rate of Transmitter:	802.11b:1/2/5.5/11Mbps 802.11g:6/12/18/24/36/48/54Mbps 802.11n:MCS0-MCS7 802.11ax:MCS0-MCS11
Number of Channel:	802.11b/g/n20/ax: 11CH 802.11n40/ax40: 7CH
Antenna Designation:	Please refer to the REMARK 3.
Antenna Gain (dBi):	Ant. 0: 2.3dBi; Ant. 1: 2.4dBi
Duty Cycle:	>98%

REMARKS:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.

2.

Operation Frequency of channel			
802.11b/g/n/ax(20MHz)		Channel List for 802.11n/ax(40MHz)	
Channel	Frequency	Channel	Frequency
01	2412	03	2422
02	2417	04	2427
03	2422	05	2432
04	2427	06	2437
05	2432	07	2442
06	2437	08	2447
07	2442	09	2452
08	2447	N/A	N/A
09	2452	N/A	N/A
10	2457	N/A	N/A
11	2462	N/A	N/A

REMARK:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Carrier Frequency Channel
2.4GHz Test Frequency:

For 802.11b/g/n/ax (HT20)		For 802.11n/ax (HT40)	
Channel	Freq.(MHz)	Channel	Freq.(MHz)
01	2412	03	2422
06	2437	06	2437
11	2462	09	2452

3.

Ant.	Antenna Type	Connector	Gain (dBi)	REMARK
0	PCB	N/A	2.3	WLAN ANT
1	PCB	N/A	2.4	WLAN ANT

2.2 DESCRIPTION OF THE TEST MODES

Test Mode	Description	Data Rate
Mode 1	TX IEEE 802.11b CH1 MIMO	1 Mbps
Mode 2	TX IEEE 802.11b CH6 MIMO	1 Mbps
Mode 3	TX IEEE 802.11 b CH11 MIMO	1 Mbps
Mode 4	TX IEEE 802.11g CH1 MIMO	6 Mbps
Mode 5	TX IEEE 802.11g CH6 MIMO	6 Mbps
Mode 6	TX IEEE 802.11g CH11 MIMO	6 Mbps
Mode 7	TX IEEE 802.11n HT20 CH1 MIMO	MCS 0
Mode 8	TX IEEE 802.11n HT20 CH6 MIMO	MCS 0
Mode 9	TX IEEE 802.11n HT20 CH11 MIMO	MCS 0
Mode 10	TX IEEE 802.11n HT40 CH3 MIMO	MCS 0
Mode 11	TX IEEE 802.11n HT40 CH6 MIMO	MCS 0
Mode 12	TX IEEE 802.11n HT40 CH9 MIMO	MCS 0
Mode 13	TX IEEE 802.11ax HT20 CH1 MIMO	MCS 0
Mode 14	TX IEEE 802.11ax HT20 CH6 MIMO	MCS 0
Mode 15	TX IEEE 802.11ax HT20 CH11 MIMO	MCS 0
Mode 16	TX IEEE 802.11ax HT40 CH3 MIMO	MCS 0
Mode 17	TX IEEE 802.11ax HT40 CH6 MIMO	MCS 0
Mode 18	TX IEEE 802.11ax HT40 CH9 MIMO	MCS 0

Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

REMARKS:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

(2) We have be tested for all available U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/60Hz is shown in the report.

Conducted Emission

Test Case	
Conducted Emission	Mode19: Keeping WIFI TX + WLAN Link

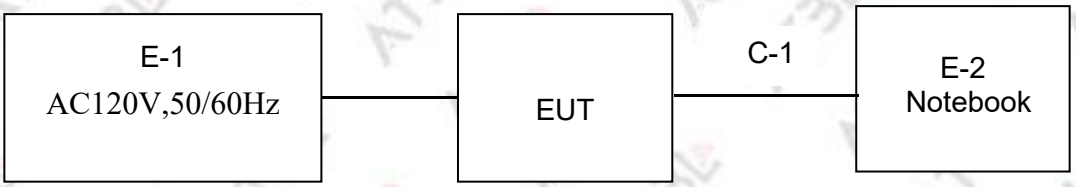
2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

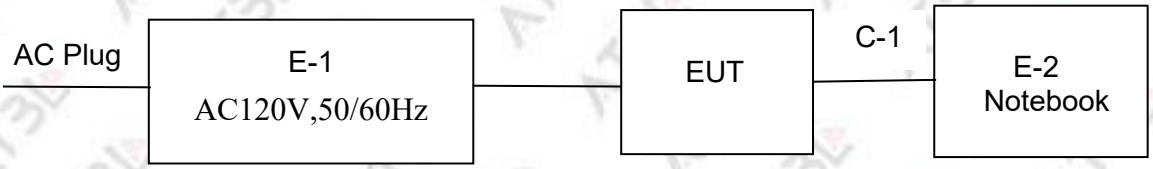
RF Function	Ant No.	Mode Or Modulation type	Ant Gain(dBi)	Power Class	Software For Testing
WIFI(2.4G)	0	802.11b	2.3	30	QRCT
		802.11g		30	
		802.11n(HT20)		30	
		802.11n(HT40)		30	
		802.11ax(HT20)		30	
		802.11ax(HT40)		30	
WIFI(2.4G)	1	802.11b	2.4	30	
		802.11g		30	
		802.11n(HT20)		30	
		802.11n(HT40)		30	
		802.11ax(HT20)		30	
		802.11ax(HT40)		30	

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiation Test Set



Conduction Test Set



2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Necessary accessories

Item	Equipment	Mfr/Brand	Model/Type No.	Length	REMARK
N/A	N/A	N/A	N/A	N/A	N/A

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Type No.	REMARK
E-2	Notebook	Lenovo	DESKTOP-USDEO09	00326-10000-00000-AA636	N/A
C-1	USB Cable	N/A	100cm	N/A	N/A

REMARK:

(1) For detachable type I/O cable should be specified the length in cm in『Length』column.

2.6 LABORATORY INFORMATION

Company Name:	Shanghai ATBL Technology Co., Ltd.
Address:	Building 8, No. 160, Basheng Road, Waigaoqiao Free Trade Zone, Pudong New Area, Shanghai
Telephone:	+86(0)21-51298625
The FCC Registration Number (FRN):	0031025281
A2LA Number:	6184.01
CNAS Number:	CNAS L14531

2.7 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	RF output power, conducted	±0.958dB
2	Conducted spurious emissions	±2.988dB
3	All emissions, radiated 30MHz-1GHz	±2.50dB
4	All emissions, radiated 1GHz-18GHz	±3.51dB
5	Occupied bandwidth	±23.20dB
6	Power spectral density	±0.886dB

2.8 EQUIPMENTS LIST

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Management number	Calibrated until
Test Receiver	R&S	ESCI	100469	SHATBL-E003	2023.05.20
Spectrum Analyzer	Agilent	N9020A	MY50200811	SHATBL-E017	2023.05.20
Loop Antenna	Daze	ZN30900C	20077	SHATBL-E042	2023.05.20
Bilog Antenna	SCHWARZBECK	VLUB 9168	01174	SHATBL-E008	2023.05.20
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	SHATBL-E009	2023.05.20
Horn Antenna(18-40G)	COM-POWER	AH-1840	10100008	SHATBL-E043	2023.05.20
Pre-Amplifier (0.1M-3GHz)	JPT	JPA-10M1G35	21010100035001	SHATBL-E005	2023.05.20
Pre-Amplifier (1G-18GHz)	JPT	JPA0118-55-303A	1910001800055000	SHATBL-E006	2023.05.20
Temperature & Humidity	DeLi	DeLi	N/A	SHATBL-E016	2023.05.20
Antenna/Turntable Controller	Brilliant	N/A	N/A	SHATBL-E007	N/A
Test SW	FALA	EMC-RI(Ver.4A2)		SHATBL-E046	N/A

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESPI	101679	SHATBL-E012	2023.05.20
LISN	R&S	ENV216	101300	SHATBL-E013	2023.05.20
LISN	R&S	ENV216	100333	SHATBL-E041	2023.05.20
Temperature & Humidity	DeLi	DeLi	N/A	SHATBL-E015	2023.05.20
Test SW	FALA	EZ-EMC(Ver.EMC-CON3A1.1)		SHATBL-E044	N/A

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Management number	Calibrated until
MIMO Power measurement test Set	DARE	RPR3006W	16I00054SN016	SHATBL-W006	2023.09.27
			RPR6W-20001005	SHATBL-W013	2023.09.27
Signal Analyzer	R&S	FSP40	100626	SHATBL-W041	2023.05.28
Signal Generator	Agilent	N5182B	MY46240556	SHATBL-W005	2023.09.27
Wireless Communications Test Set	R&S	CMW500	101331	SHATBL-W007	2023.09.27
Temperature & Humidity	Deli	deli	N/A	SHATBL-W011	2023.09.27
Attenuator	Agilent	8494B	DC-18G	SHATBL-W009	2023.09.27
Attenuator	Agilent	8496B	DC-18G	SHATBL-W010	2023.09.27
power splitter	MNK	MPD-DC/6-2S	62315 G51	SHATBL-W015	2023.09.27
			62315 G52	SHATBL-W016	2023.09.27
Filter	Chengdu kangmaiwei	ZBSF-C2400-2483.5-T3	N/A	SHATBL-W021	N/A
		ZBSF-C5150-5350-T5	N/A	SHATBL-W022	2023.01.25
		ZBSF-C5725-5850-T5	N/A	SHATBL-W024	N/A
Constant temperature and humidity box	KSON	THS-B6C-150	6159K	SHATBL-W019	2023.01.17
Test SW	FALA	LZ-RF(Ver.LzRF-03A3.1)		SHATBL-W020	N/A

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

FREQUENCY (MHz)	Conducted Emission limit (dBμV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

REMARKS:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	**Setting**
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

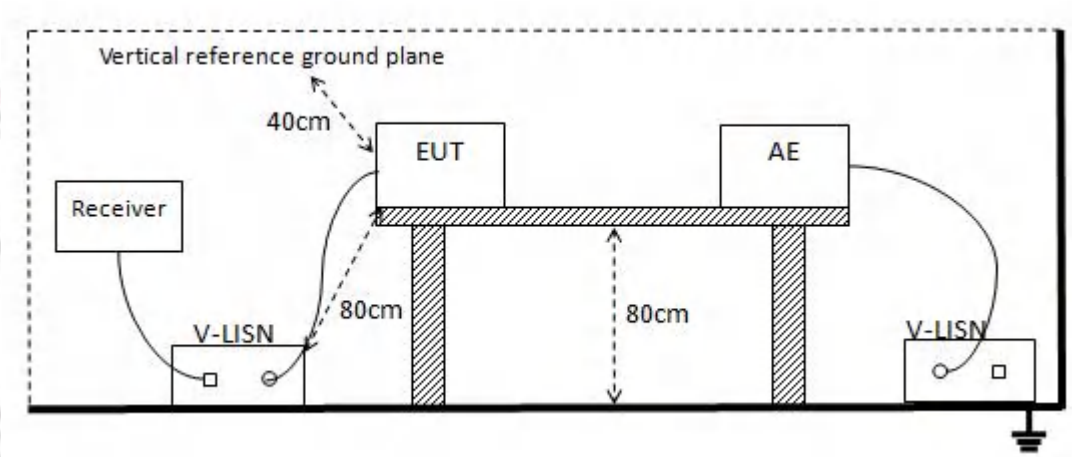
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The over all length shall not exceed 1 m.

d. LISN is at least 80 cm from the nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP

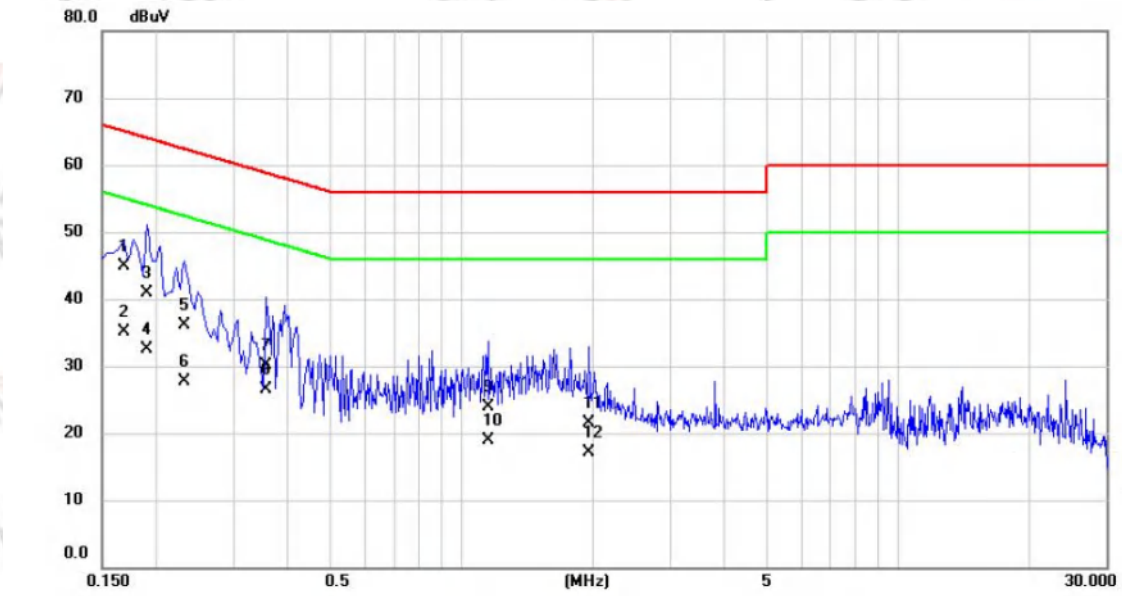


3.1.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5 TEST RESULT

Temperature:	26.2℃	Relative Humidity:	53%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 19		



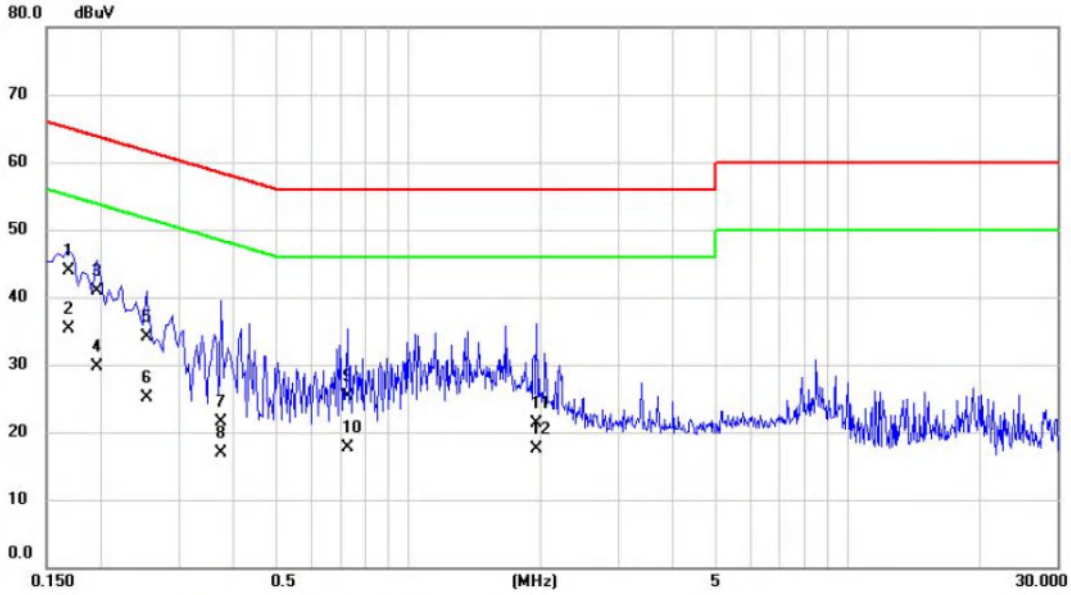
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1680	35.10	9.78	44.88	65.06	-20.18	QP	
2	*	0.1680	25.40	9.78	35.18	55.06	-19.88	AVG	
3		0.1905	31.10	9.78	40.88	64.01	-23.13	QP	
4		0.1905	22.70	9.78	32.48	54.01	-21.53	AVG	
5		0.2310	26.40	9.78	36.18	62.41	-26.23	QP	
6		0.2310	17.90	9.78	27.68	52.41	-24.73	AVG	
7		0.3570	20.30	9.78	30.08	58.80	-28.72	QP	
8		0.3570	16.80	9.78	26.58	48.80	-22.22	AVG	
9		1.1490	14.00	9.83	23.83	56.00	-32.17	QP	
10		1.1490	9.00	9.83	18.83	46.00	-27.17	AVG	
11		1.9545	11.70	9.89	21.59	56.00	-34.41	QP	
12		1.9545	7.30	9.89	17.19	46.00	-28.81	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Temperature:	26.2℃	Relative Humidity:	53%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 19		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1680	34.20	9.77	43.97	65.06	-21.09	QP	
2	*	0.1680	25.50	9.77	35.27	55.06	-19.79	AVG	
3		0.1950	31.20	9.77	40.97	63.82	-22.85	QP	
4		0.1950	20.00	9.77	29.77	53.82	-24.05	AVG	
5		0.2535	24.30	9.78	34.08	61.64	-27.56	QP	
6		0.2535	15.40	9.78	25.18	51.64	-26.46	AVG	
7		0.3750	11.70	9.78	21.48	58.39	-36.91	QP	
8		0.3750	7.20	9.78	16.98	48.39	-31.41	AVG	
9		0.7260	15.50	9.80	25.30	56.00	-30.70	QP	
10		0.7260	8.00	9.80	17.80	46.00	-28.20	AVG	
11		1.9590	11.40	9.89	21.29	56.00	-34.71	QP	
12		1.9590	7.60	9.89	17.49	46.00	-28.51	AVG	

Remark:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (Frequency Range 9kHz-1000MHz)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBμV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

REMARKS:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBμV/m)=20log Emission level (μV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FCC:

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9kHz/150kHz(Peak/QP/AV)
Stop Frequency	150kHz/30MHz(Peak/QP/AV)
RB / VB (emission in restricted band)	200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz); 200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted band)	120 kHz / 300 kHz

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic(Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)

For Restricted band

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stop Frequency	Lower Band Edge: 2310 to 2430 MHz Upper Band Edge: 2445 to 2500 MHz
RB / VB	1 MHz / 3 MHz(Peak) 1 MHz/1/T MHz(AVG)

Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

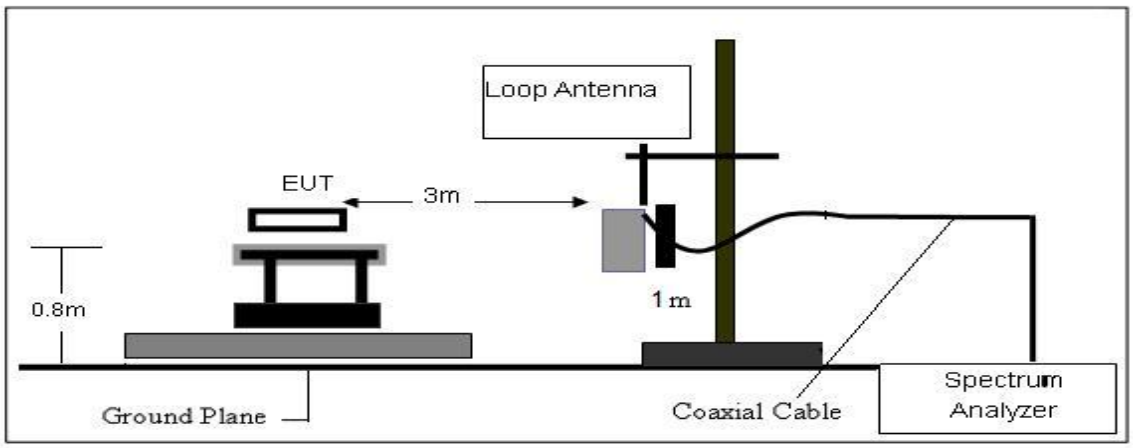
a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and Quasi Peak detector mode will be re-measured.
e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

REMARK:

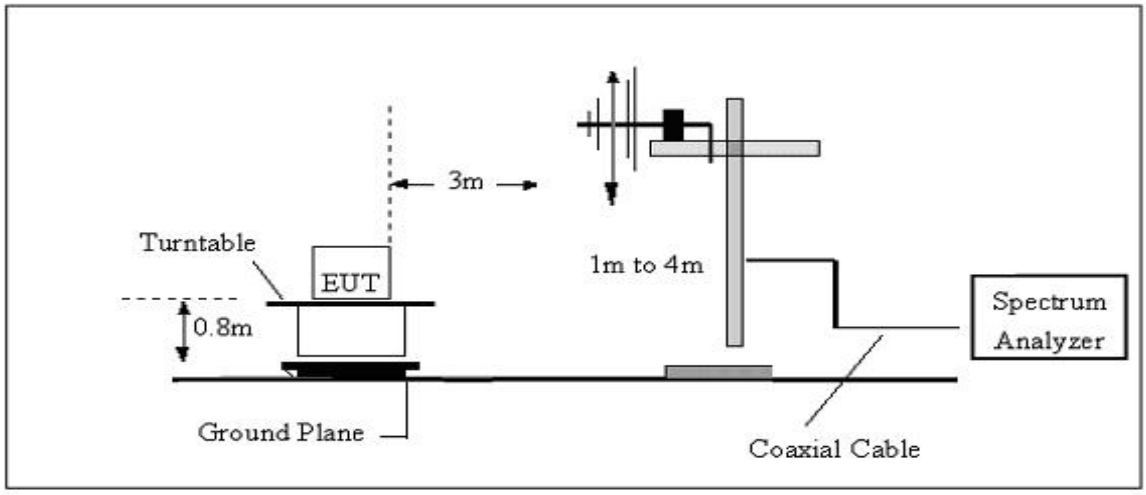
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.3 TEST SETUP

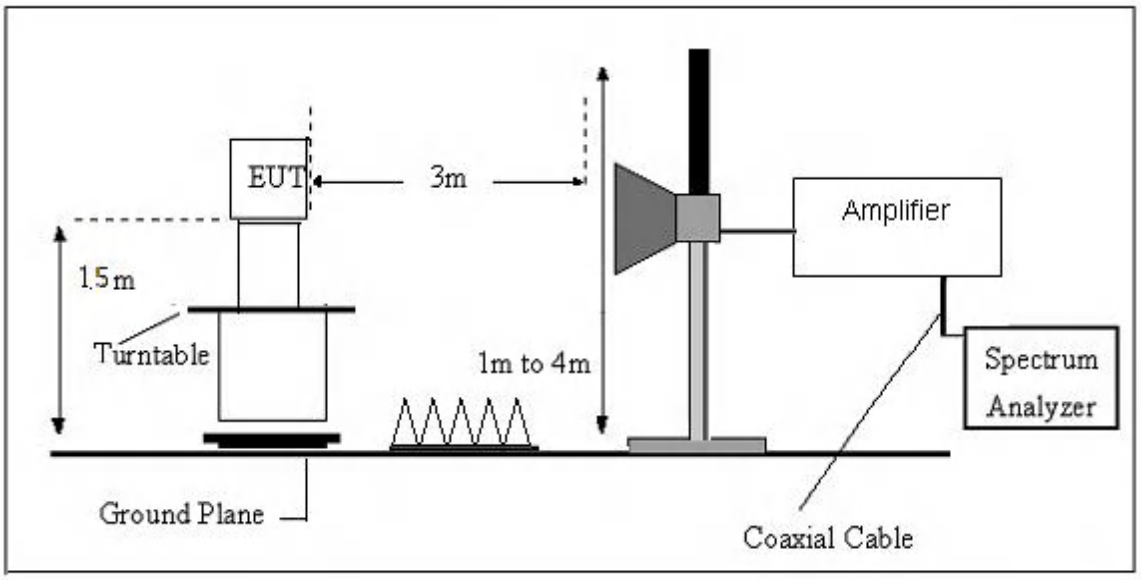
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

Please refer to section 3.1.4 of this report.

3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF + CL - AG

3.2.6 TEST RESULTS

FOR RADIATED SPURIOUS EMISSIONS

9kHz~30MHz

Temperature:	23.0℃	Relative Humidity:	59%RH
Test Voltage:	AC120V	Polarization:	--
Test Mode:	TX Mode		

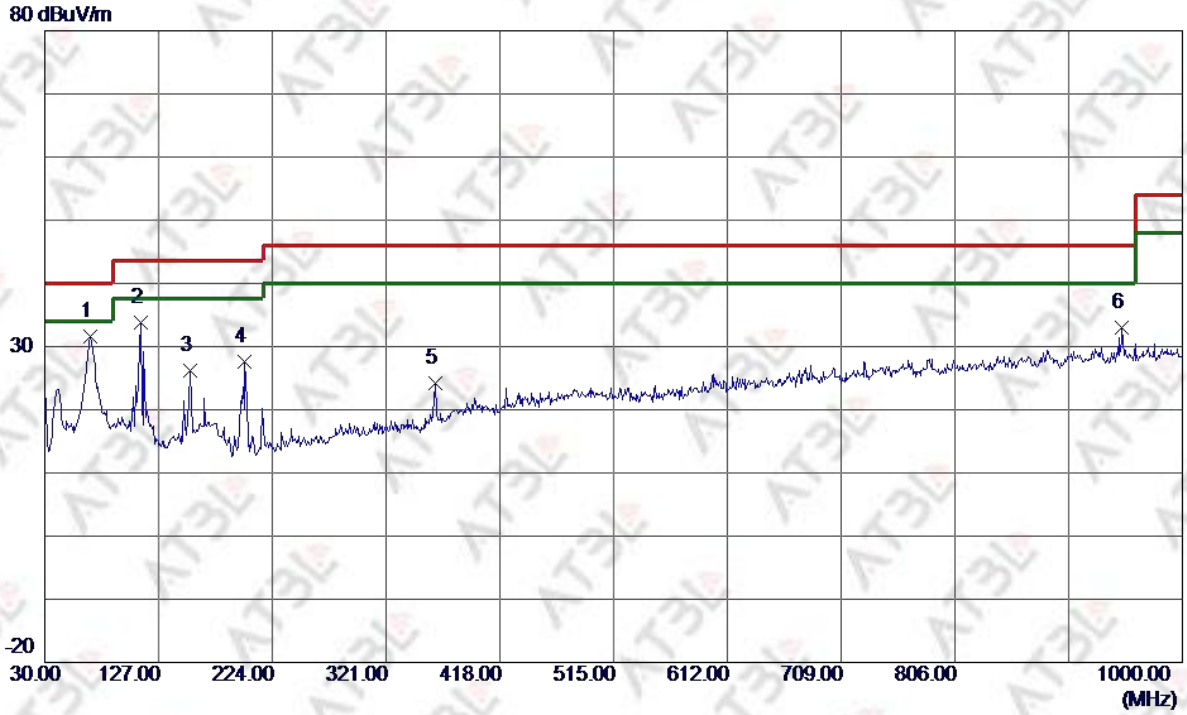
REMARK:

The measured value have enough margin over 20dB than the limit, therefore they are not reported.

30MHz - 1GHz

Temperature:	23.0℃	Relative Humidity:	59%RH
Test Voltage:	AC120V	Phase:	Horizontal
Test Mode:	Mode 3		

Mode 3



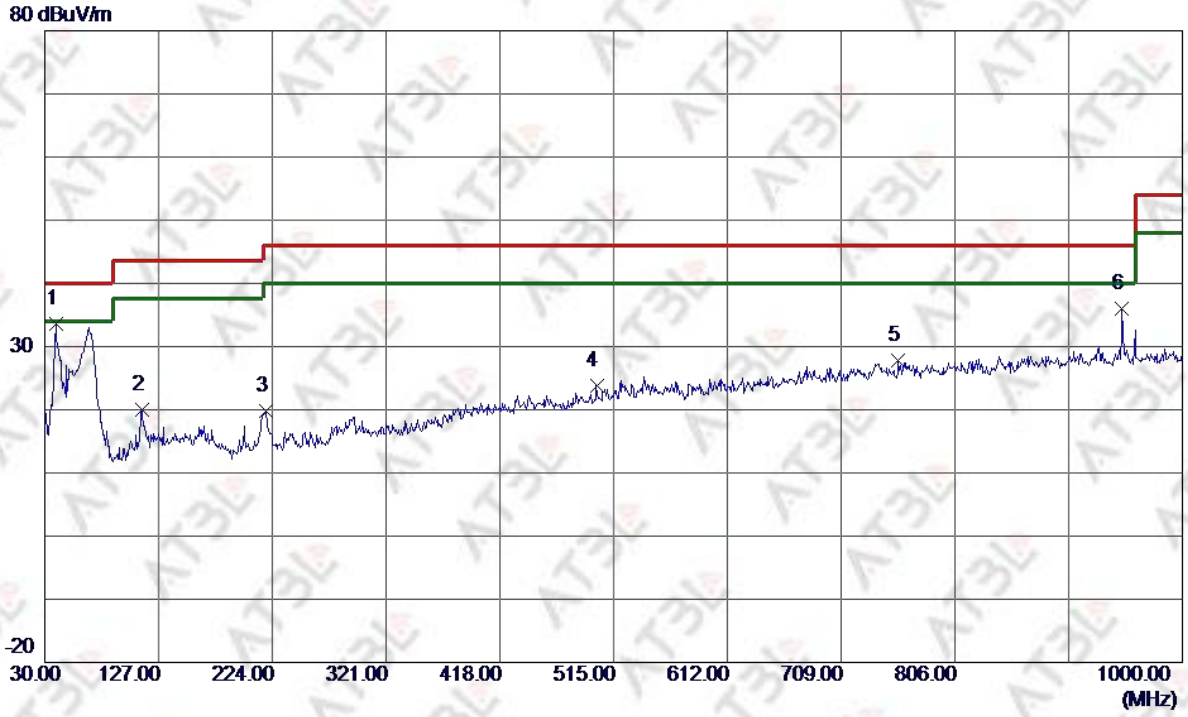
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	69.2850	50.64	-19.10	31.54	40.00	-8.46	Peak	
2	111.9650	52.46	-18.60	33.86	43.50	-9.64	Peak	
3	154.1600	42.14	-16.01	26.13	43.50	-17.37	Peak	
4	200.7200	46.21	-18.63	27.58	43.50	-15.92	Peak	
5	362.7100	37.90	-13.65	24.25	46.00	-21.75	Peak	
6	948.5900	37.40	-4.38	33.02	46.00	-12.98	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

30MHz - 1GHz

Temperature:	23.0℃	Relative Humidity:	59%RH
Test Voltage:	AC120V	Phase:	Vertical
Test Mode:	Mode 3		

Mode 3



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	39.2150	51.49	-17.92	33.57	40.00	-6.43	Peak	
2	112.9350	38.57	-18.52	20.05	43.50	-23.45	Peak	
3	218.1800	38.20	-18.39	19.81	46.00	-26.19	Peak	
4	500.4500	34.39	-10.57	23.82	46.00	-22.18	Peak	
5	757.5000	33.87	-6.10	27.77	46.00	-18.23	Peak	
6	948.5900	40.36	-4.38	35.98	46.00	-10.02	Peak	

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

1GHz - 18GHz

Temperature:	23.0℃	Relative Humidity:	59%RH
Test Voltage:	AC120V	Phase:	Horizontal
Test Mode:	Mode 3		

TX_B_2412

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	*	4823.725	61.71	-17.20	44.51	74.00	-29.49	peak

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

1GHz - 18GHz

Temperature:	23.0℃	Relative Humidity:	59%RH
Test Voltage:	AC120V	Phase:	Vertical
Test Mode:	Mode 3		

TX_B_2412

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	*	4823.725	63.80	-17.20	46.60	74.00	-27.40	peak

REMARKS:
(1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Above 18GHz

Temperature:	23.0℃	Relative Humidity:	59%RH
Test Voltage:	AC120V	Polarization:	--
Test Mode:	TX Mode		

REMARK:

The measured value have enough margin over 20dB than the limit, therefore they are not reported.

NOTE:

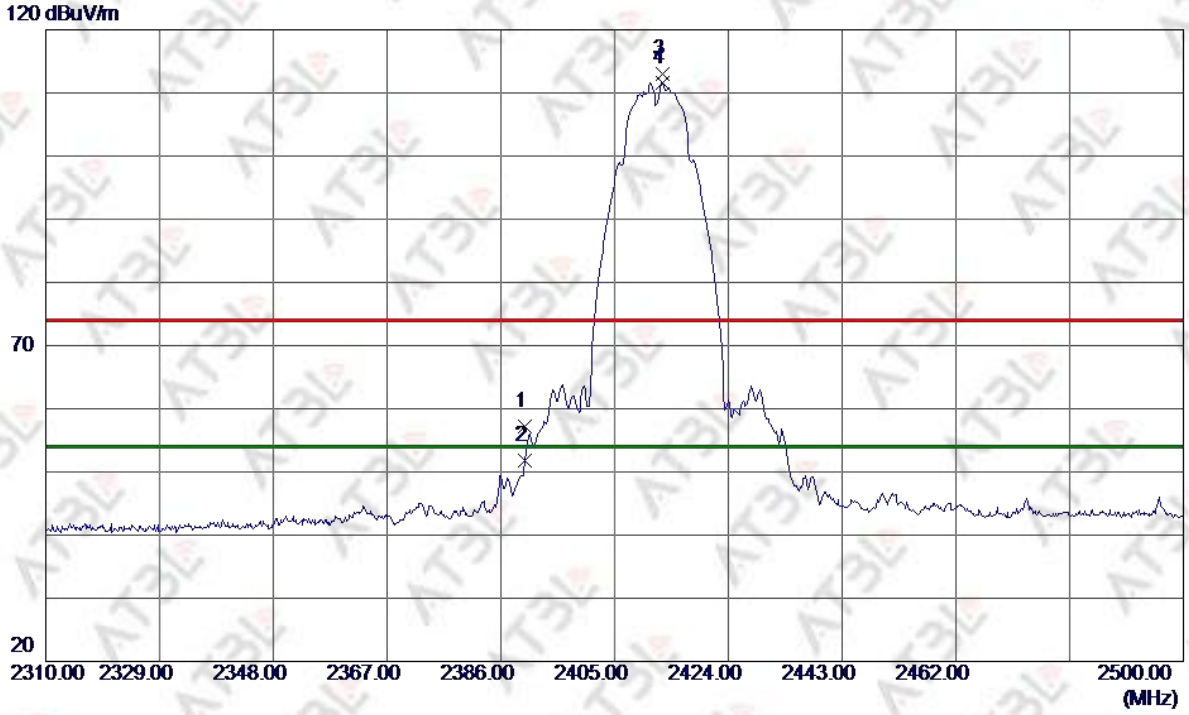
All modes have been tested and the worst mode is Mode 3. In the report, the radiated spurious emission only presents the test data of mode 3.

FOR RESTRICTED BANDS OF OPERATION

802.11b

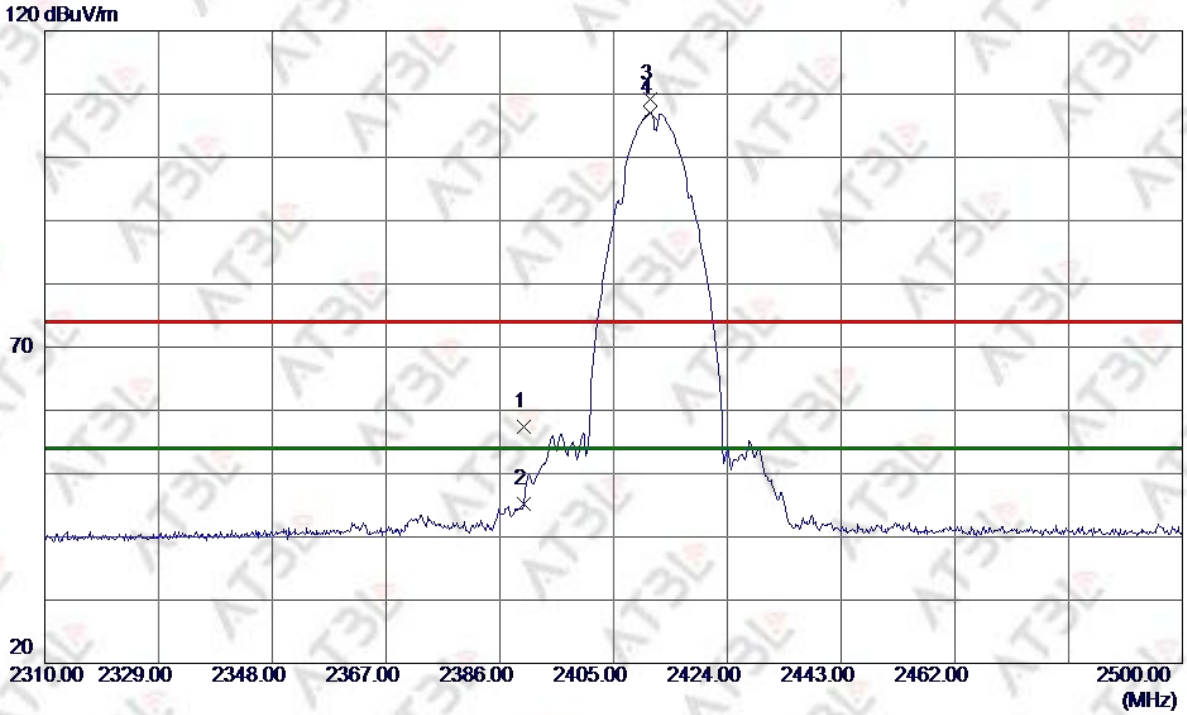
Low Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	26.70	30.55	57.25	74.00	-16.75	Peak	
2	2390.0000	21.16	30.55	51.71	54.00	-2.29	AVG	
3	2412.9800	82.28	30.64	112.92	74.00	38.92	Peak	No limit
4 *	2412.9800	81.03	30.64	111.67	54.00	57.67	AVG	No limit

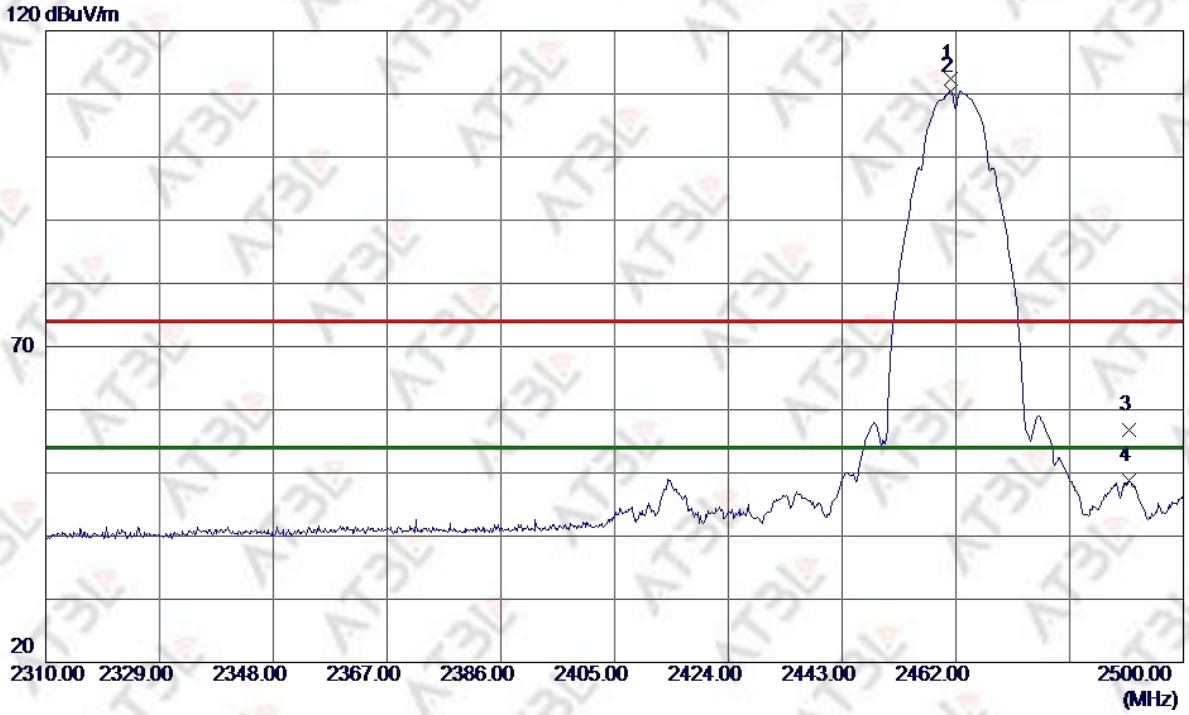
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	26.80	30.55	57.35	74.00	-16.65	Peak	
2	2390.0000	14.73	30.55	45.28	54.00	-8.72	AVG	
3	2411.1750	78.59	30.64	109.23	74.00	35.23	Peak	No limit
4 *	2411.1750	76.44	30.64	107.08	54.00	53.08	AVG	No limit

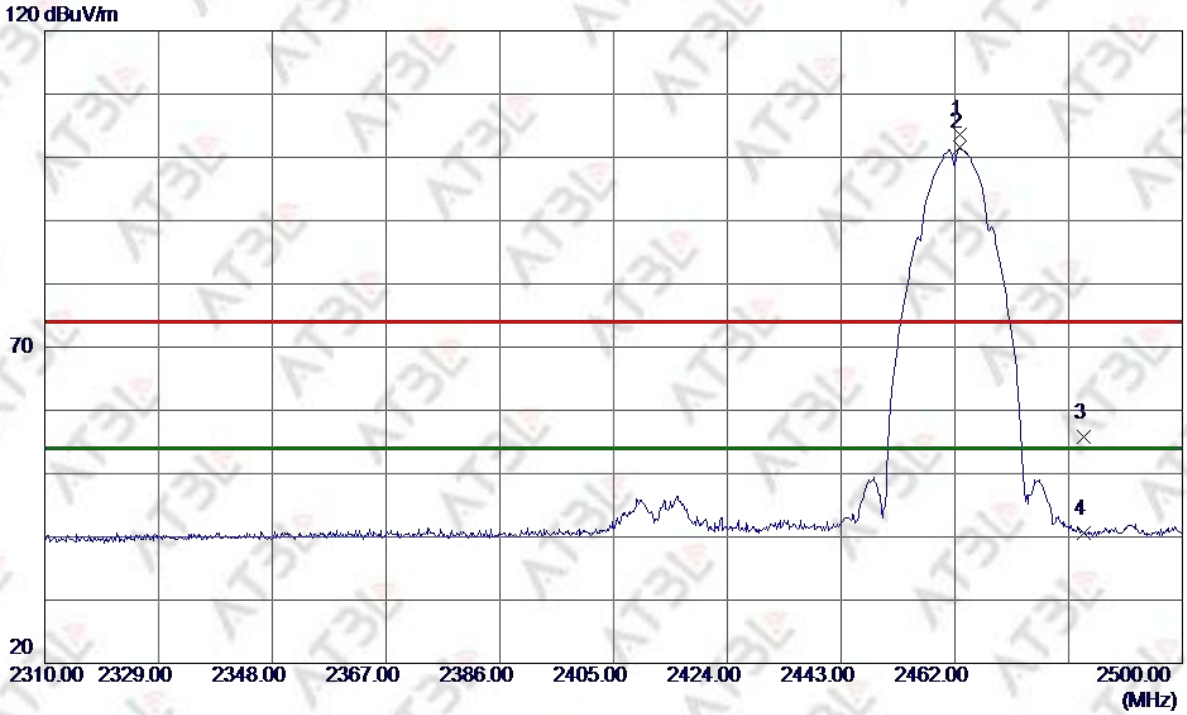
High Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2461.2400	81.62	30.85	112.47	74.00	38.47	Peak	No limit
2 *	2461.2400	79.63	30.85	110.48	54.00	56.48	AVG	No limit
3	2490.9750	25.80	30.97	56.77	74.00	-17.23	Peak	
4	2490.9750	17.88	30.97	48.85	54.00	-5.15	AVG	

Vertical

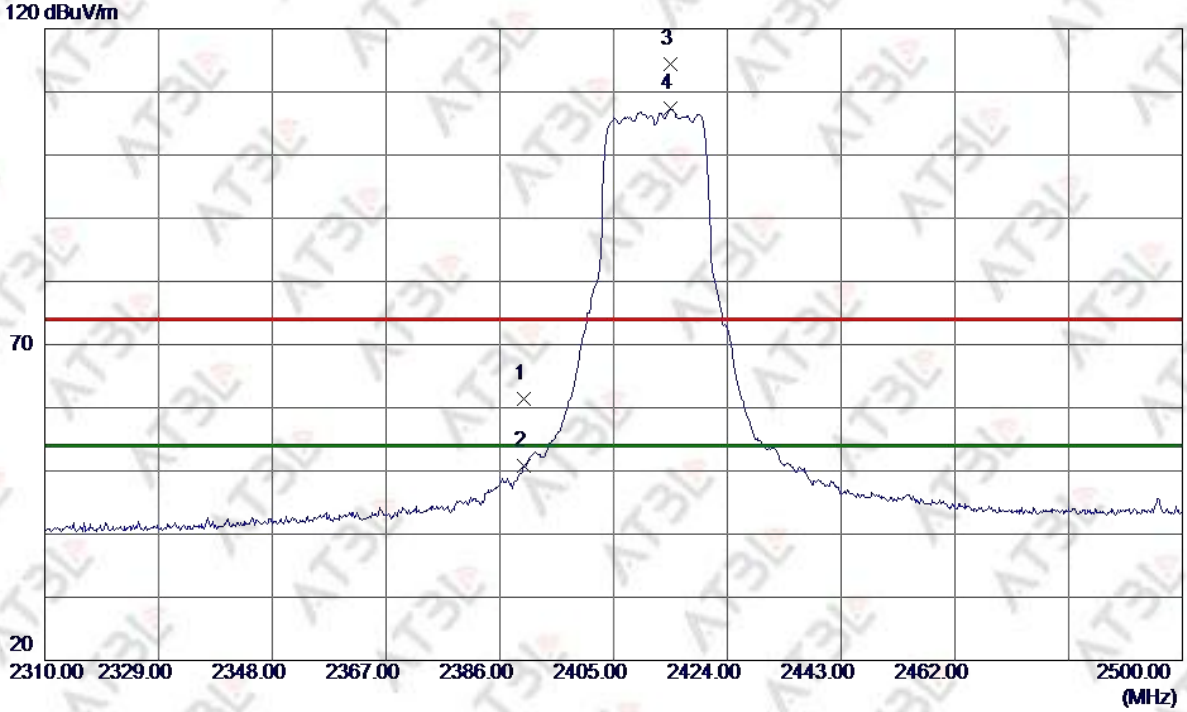


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2462.8550	72.71	30.85	103.56	74.00	29.56	Peak	No limit
2 *	2462.8550	70.76	30.85	101.61	54.00	47.61	AVG	No limit
3	2483.5000	24.76	30.94	55.70	74.00	-18.30	Peak	
4	2483.5000	9.56	30.94	40.50	54.00	-13.50	AVG	

802.11g

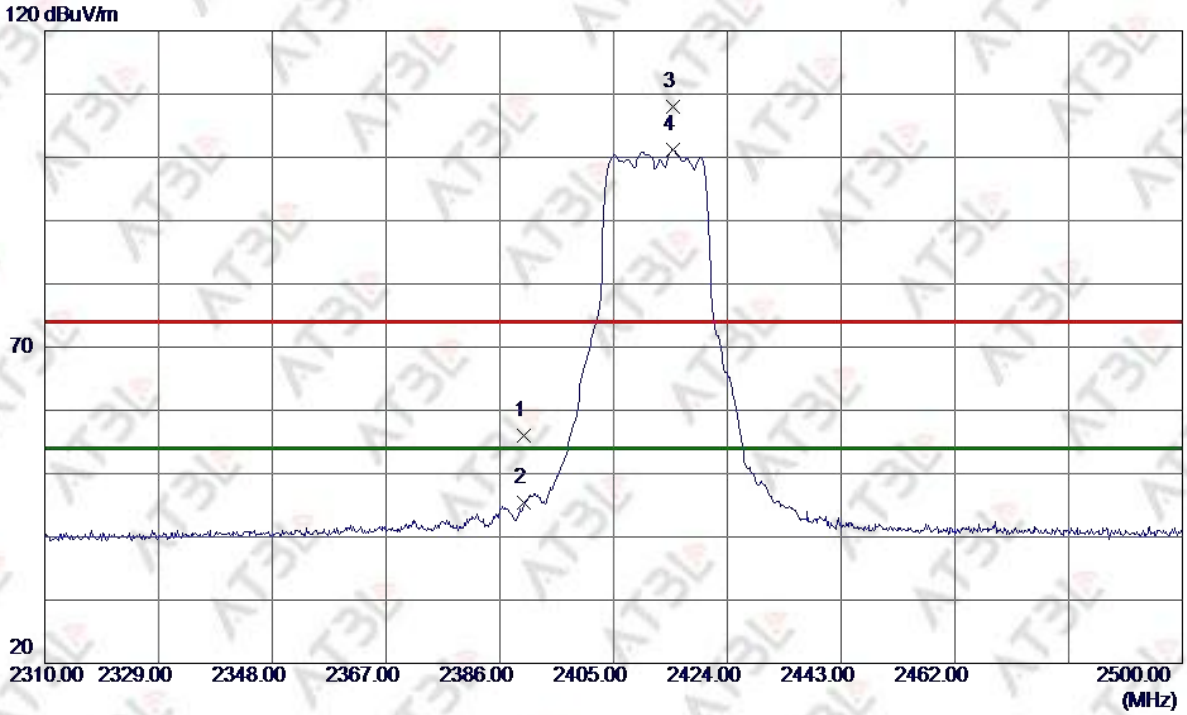
Low Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	30.78	30.55	61.33	74.00	-12.67	Peak	
2	2390.0000	20.17	30.55	50.72	54.00	-3.28	AVG	
3	2414.5000	83.73	30.65	114.38	74.00	40.38	Peak	No limit
4 *	2414.5000	76.73	30.65	107.38	54.00	53.38	AVG	No limit

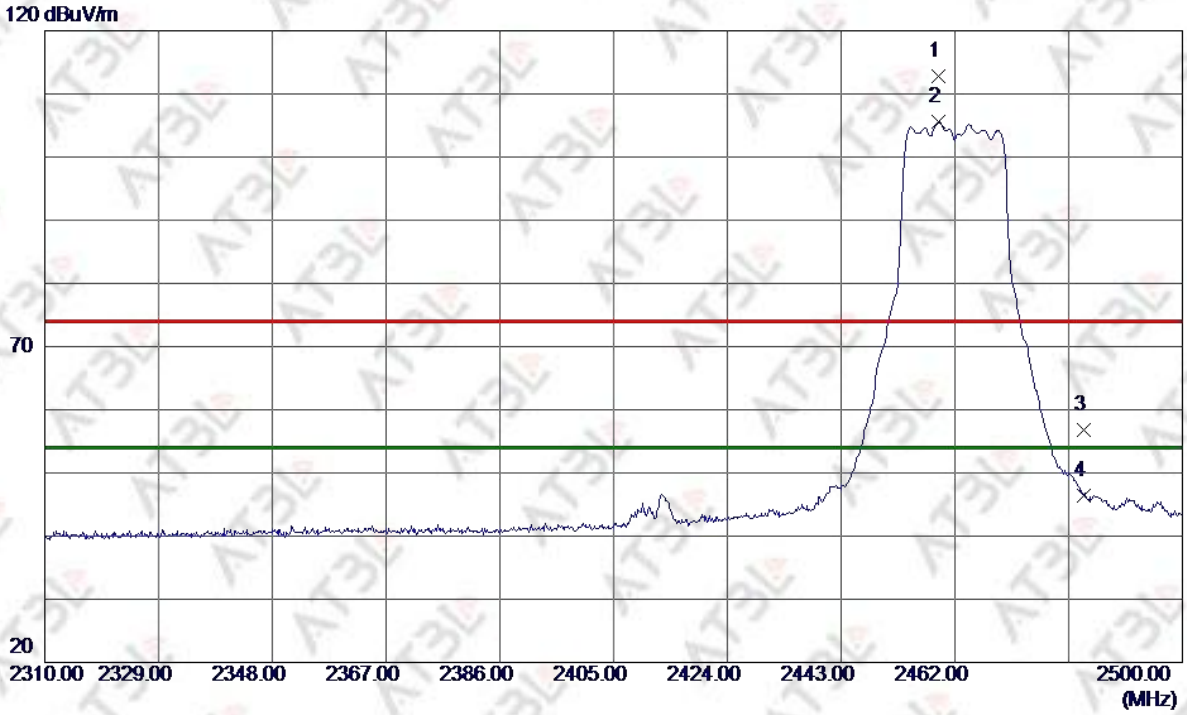
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	25.36	30.55	55.91	74.00	-18.09	Peak	
2	2390.0000	14.89	30.55	45.44	54.00	-8.56	AVG	
3	2414.8799	77.35	30.65	108.00	74.00	34.00	Peak	No limit
4 *	2414.8799	70.54	30.65	101.19	54.00	47.19	AVG	No limit

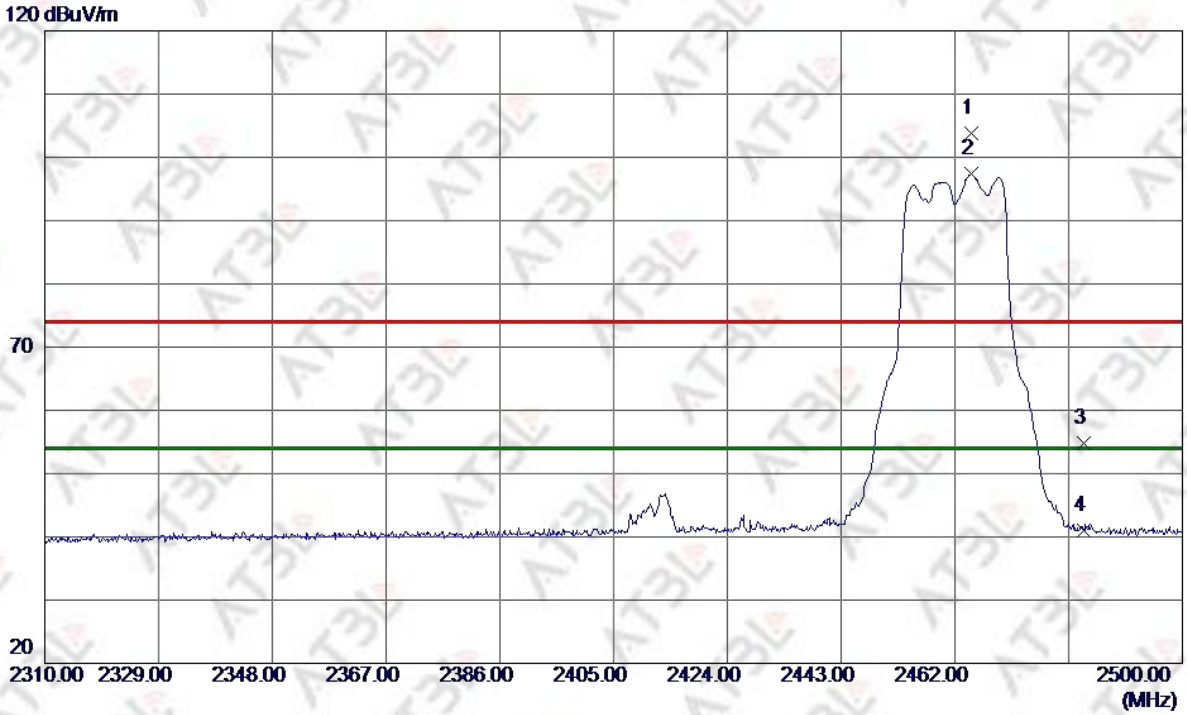
High Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2459.3400	81.86	30.84	112.70	74.00	38.70	Peak	No limit
2 *	2459.3400	74.74	30.84	105.58	54.00	51.58	AVG	No limit
3	2483.5000	25.81	30.94	56.75	74.00	-17.25	Peak	
4	2483.5000	15.39	30.94	46.33	54.00	-7.67	AVG	

Vertical

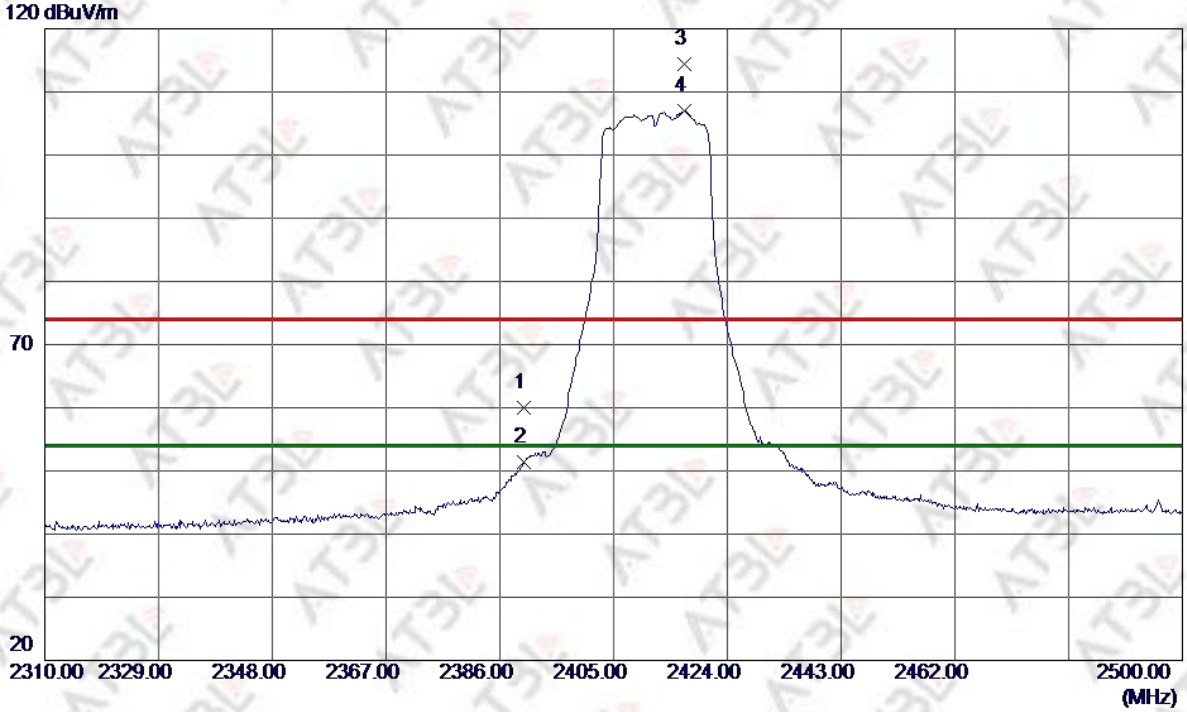


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2464.8500	72.90	30.86	103.76	74.00	29.76	Peak	No limit
2 *	2464.8500	66.53	30.86	97.39	54.00	43.39	AVG	No limit
3	2483.5000	23.85	30.94	54.79	74.00	-19.21	Peak	
4	2483.5000	10.09	30.94	41.03	54.00	-12.97	AVG	

802.11n20

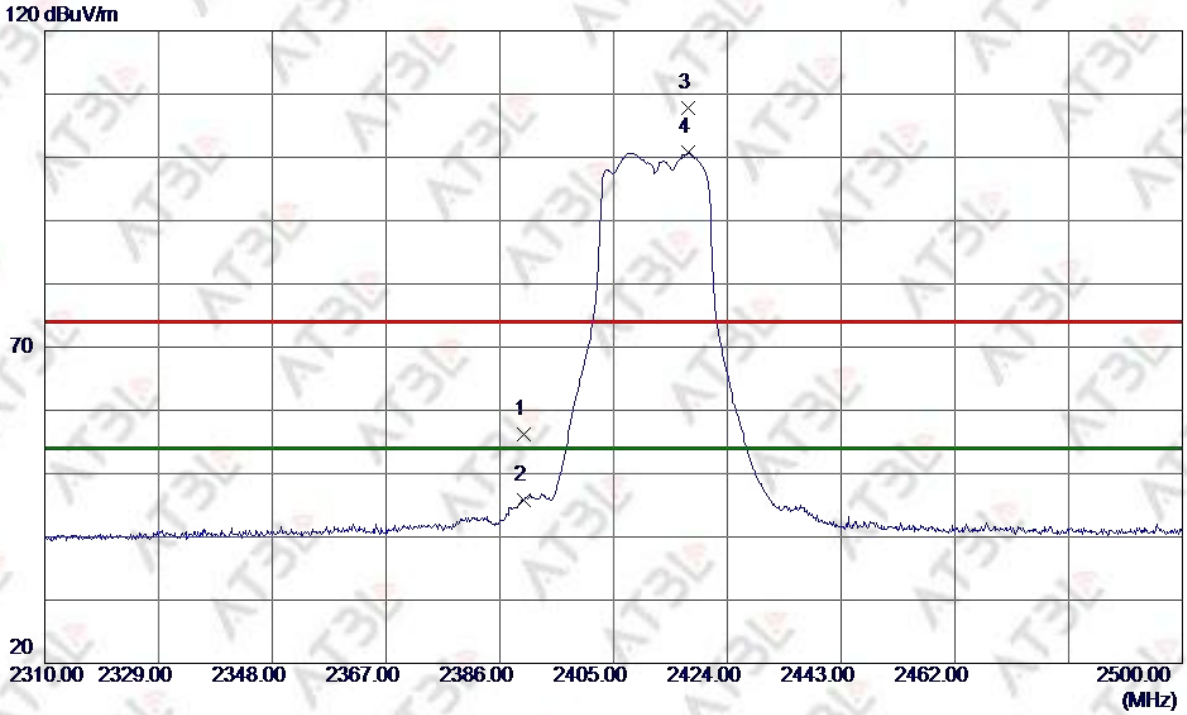
Low Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	29.37	30.55	59.92	74.00	-14.08	Peak	
2	2390.0000	20.79	30.55	51.34	54.00	-2.66	AVG	
3	2416.7800	83.69	30.66	114.35	74.00	40.35	Peak	No limit
4 *	2416.7800	76.26	30.66	106.92	54.00	52.92	AVG	No limit

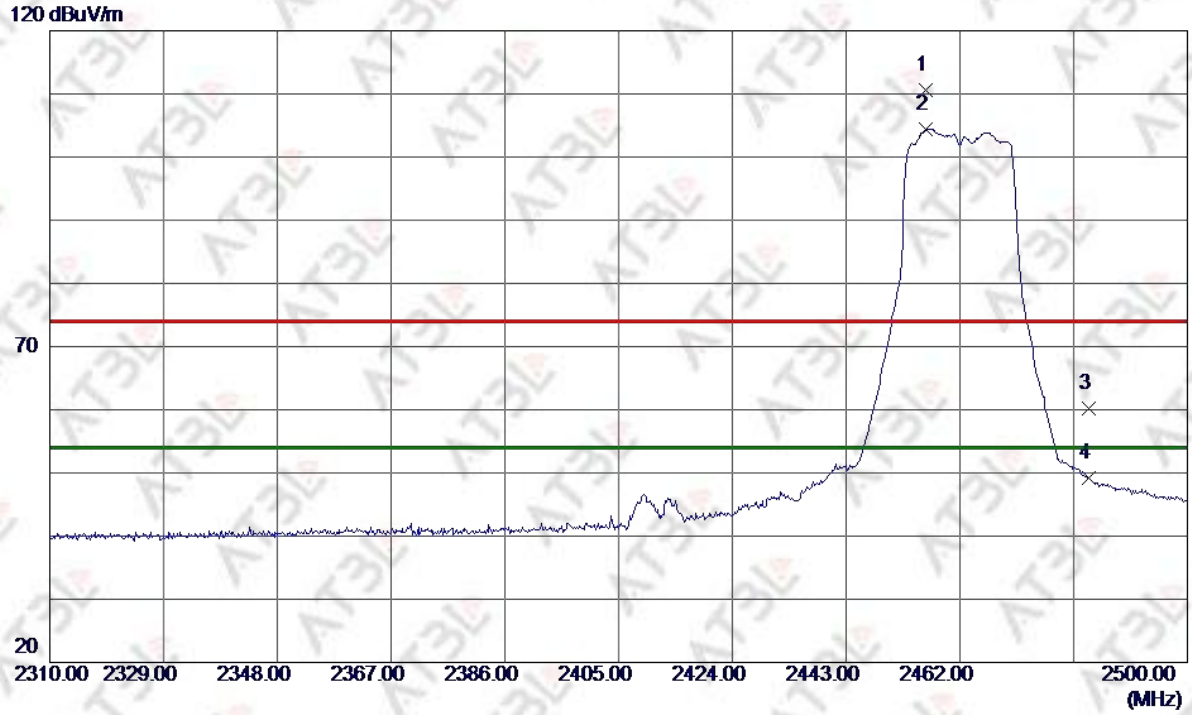
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	25.68	30.55	56.23	74.00	-17.77	Peak	
2	2390.0000	15.16	30.55	45.71	54.00	-8.29	AVG	
3	2417.4450	77.13	30.66	107.79	74.00	33.79	Peak	No limit
4 *	2417.4450	70.14	30.66	100.80	54.00	46.80	AVG	No limit

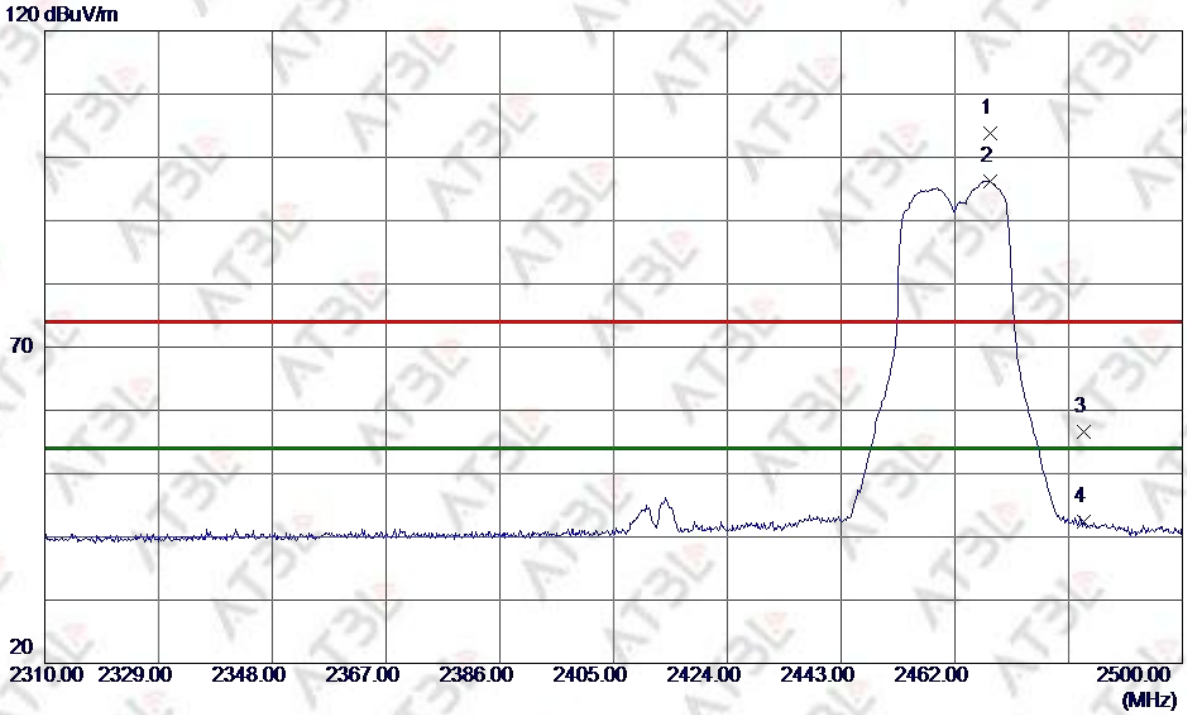
High Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2456.3950	79.72	30.83	110.55	74.00	36.55	Peak	No limit
2 *	2456.3950	73.66	30.83	104.49	54.00	50.49	AVG	No limit
3	2483.5000	29.33	30.94	60.27	74.00	-13.73	Peak	
4	2483.5000	18.28	30.94	49.22	54.00	-4.78	AVG	

Vertical

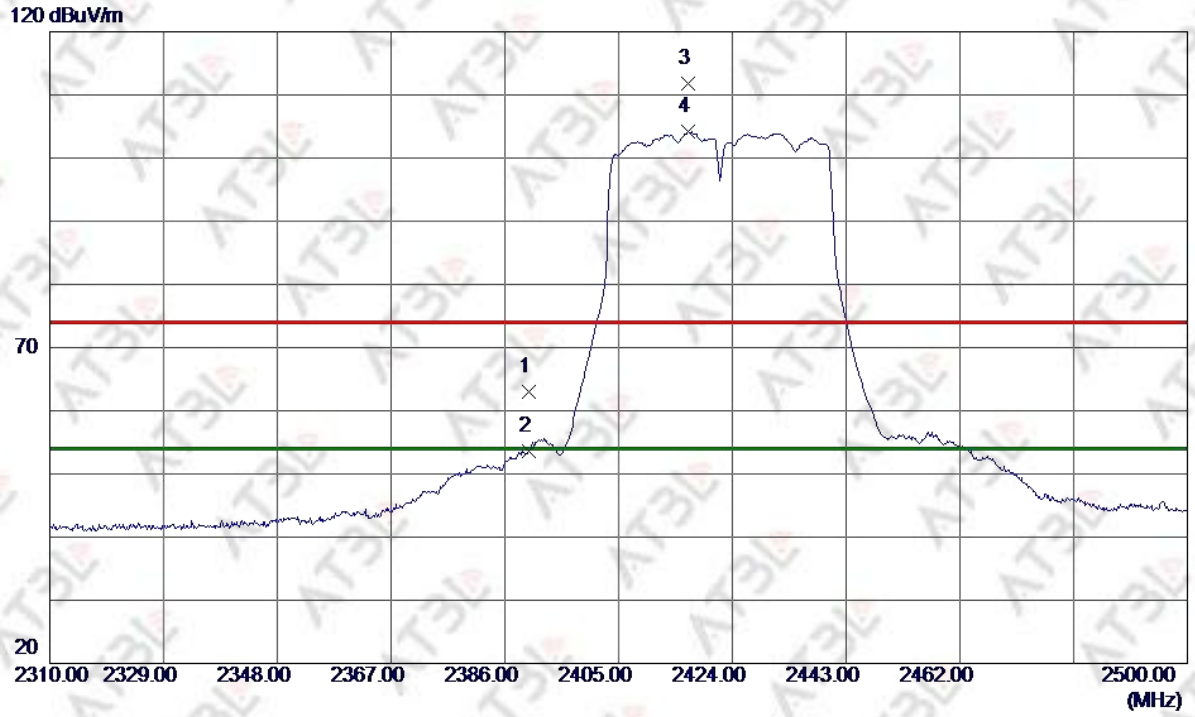


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2467.8899	72.89	30.88	103.77	74.00	29.77	Peak	No limit
2 *	2467.8899	65.40	30.88	96.28	54.00	42.28	AVG	No limit
3	2483.5000	25.73	30.94	56.67	74.00	-17.33	Peak	
4	2483.5000	11.50	30.94	42.44	54.00	-11.56	AVG	

802.11n40

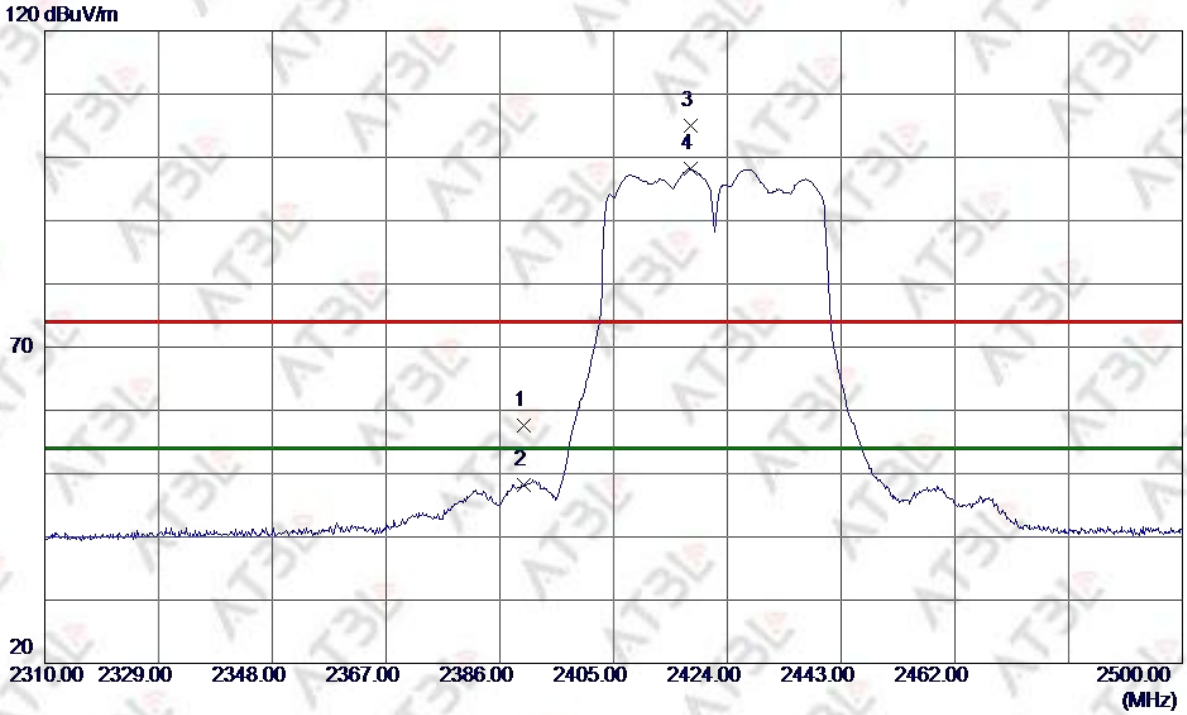
Low Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	32.42	30.55	62.97	74.00	-11.03	Peak	
2	2390.0000	23.10	30.55	53.65	54.00	-0.35	AVG	
3	2416.6850	81.06	30.66	111.72	74.00	37.72	Peak	No limit
4 *	2416.6850	73.50	30.66	104.16	54.00	50.16	AVG	No limit

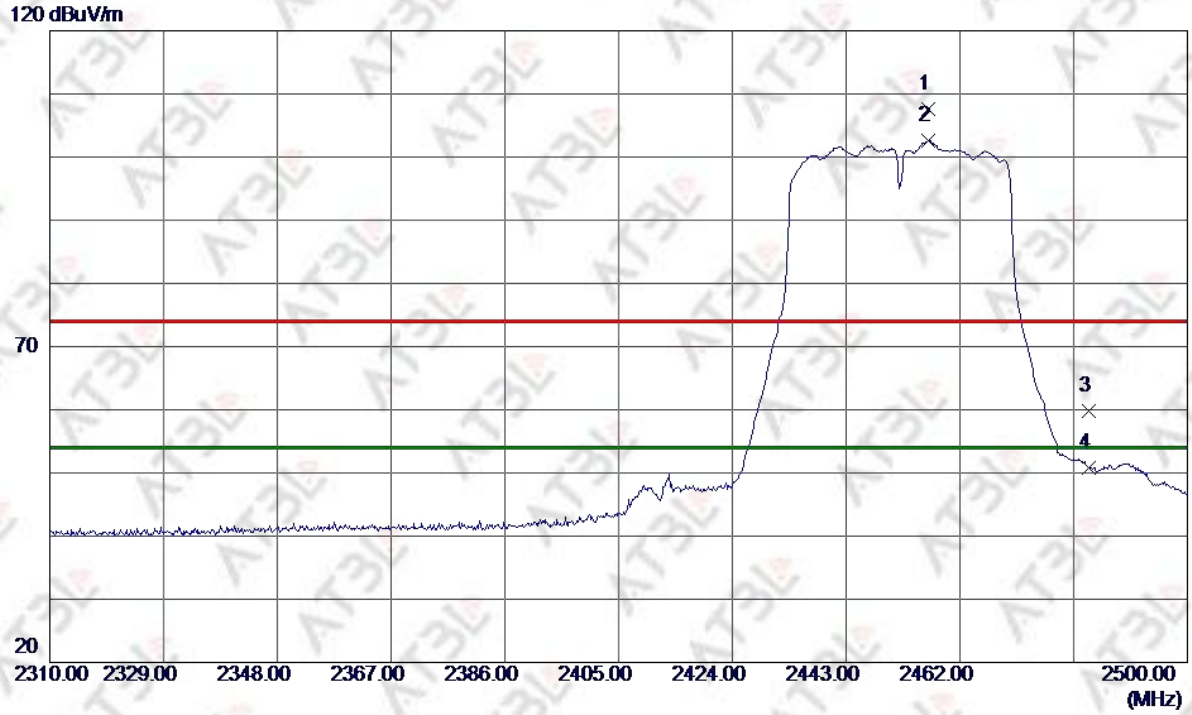
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	27.12	30.55	57.67	74.00	-16.33	Peak	
2	2390.0000	17.61	30.55	48.16	54.00	-5.84	AVG	
3	2417.8250	74.42	30.66	105.08	74.00	31.08	Peak	No limit
4 *	2417.8250	67.51	30.66	98.17	54.00	44.17	AVG	No limit

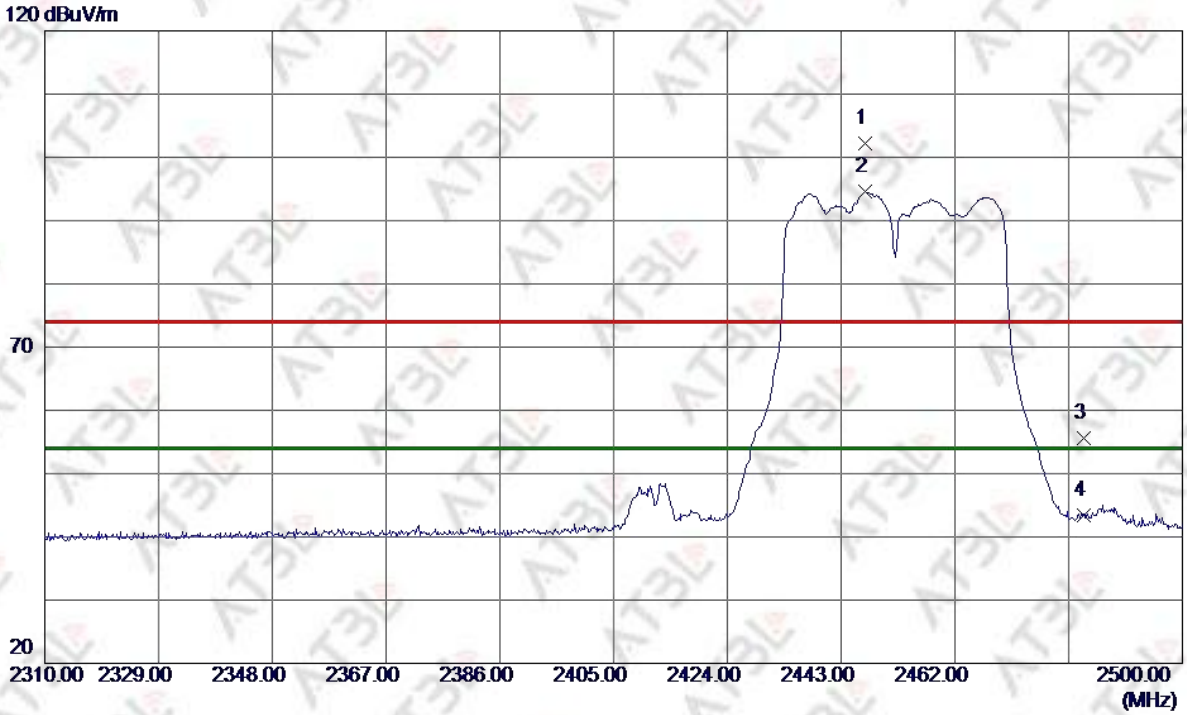
High Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2456.6800	76.74	30.83	107.57	74.00	33.57	Peak	No limit
2 *	2456.6800	71.75	30.83	102.58	54.00	48.58	AVG	No limit
3	2483.5000	28.90	30.94	59.84	74.00	-14.16	Peak	
4	2483.5000	19.88	30.94	50.82	54.00	-3.18	AVG	

Vertical

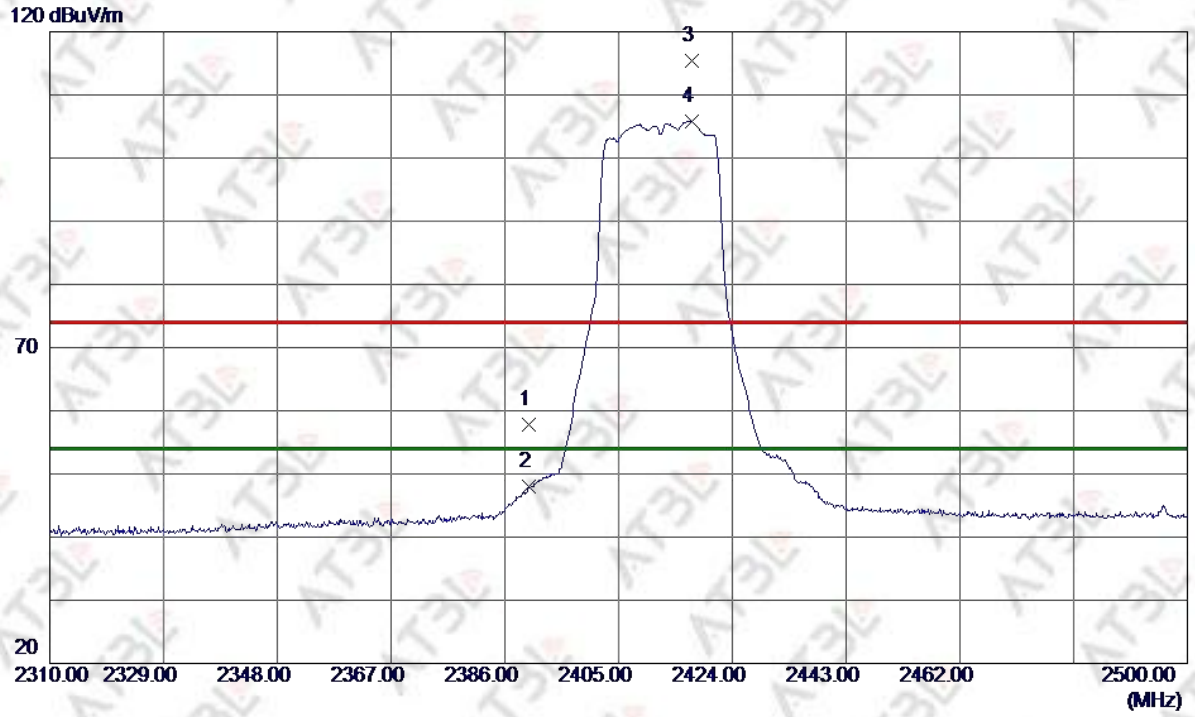


No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2446.9900	71.35	30.79	102.14	74.00	28.14	Peak	No limit
2 *	2446.9900	63.73	30.79	94.52	54.00	40.52	AVG	No limit
3	2483.5000	24.65	30.94	55.59	74.00	-18.41	Peak	
4	2483.5000	12.42	30.94	43.36	54.00	-10.64	AVG	

802.11ax20

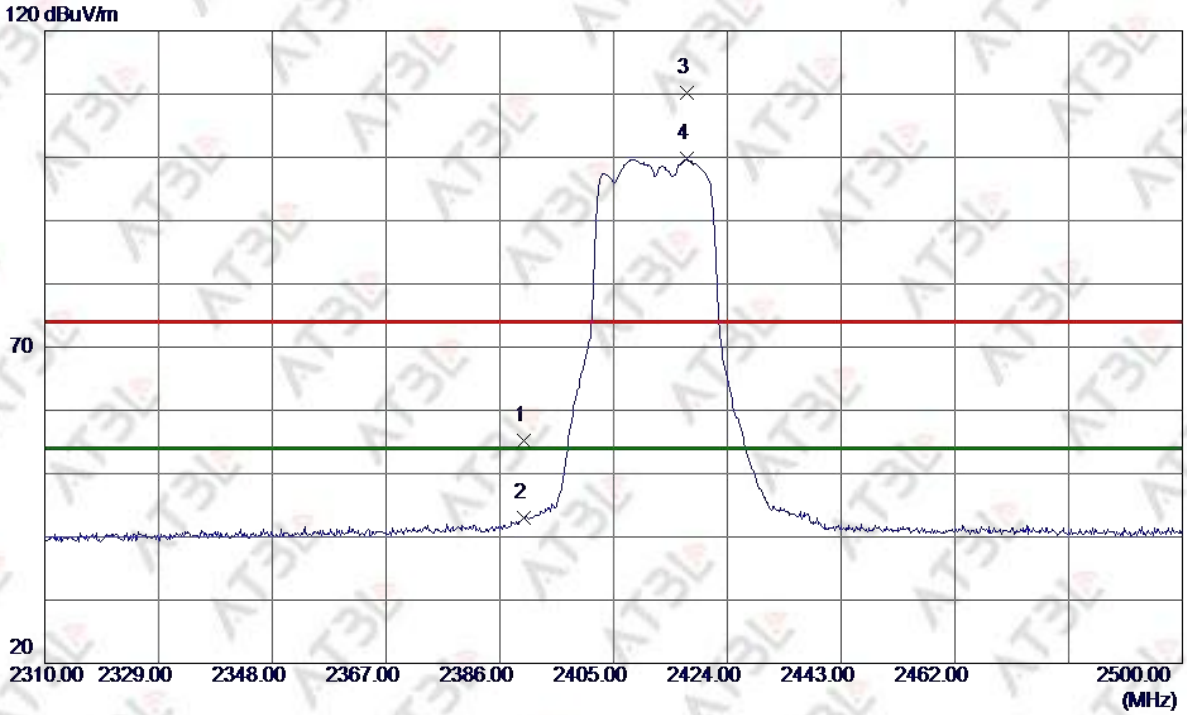
Low Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	27.19	30.55	57.74	74.00	-16.26	Peak	
2	2390.0000	17.40	30.55	47.95	54.00	-6.05	AVG	
3	2417.1600	84.76	30.66	115.42	74.00	41.42	Peak	No limit
4 *	2417.1600	75.23	30.66	105.89	54.00	51.89	AVG	No limit

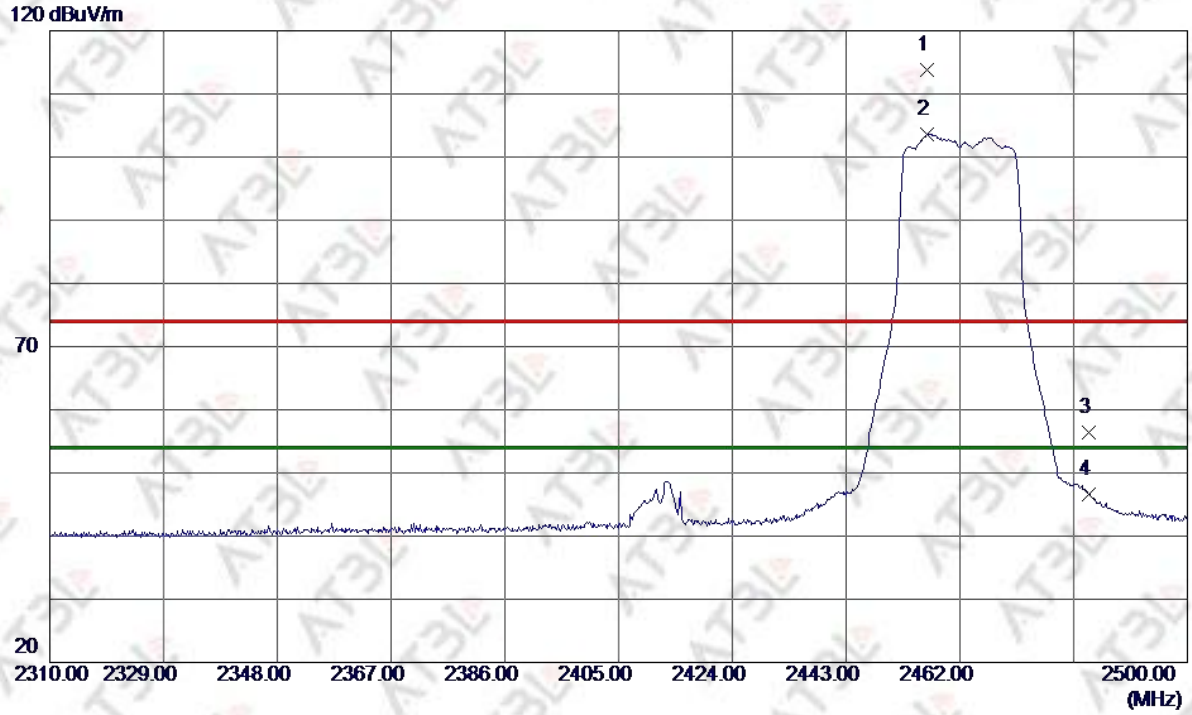
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	24.71	30.55	55.26	74.00	-18.74	Peak	
2	2390.0000	12.38	30.55	42.93	54.00	-11.07	AVG	
3	2417.3500	79.47	30.66	110.13	74.00	36.13	Peak	No limit
4 *	2417.3500	69.17	30.66	99.83	54.00	45.83	AVG	No limit

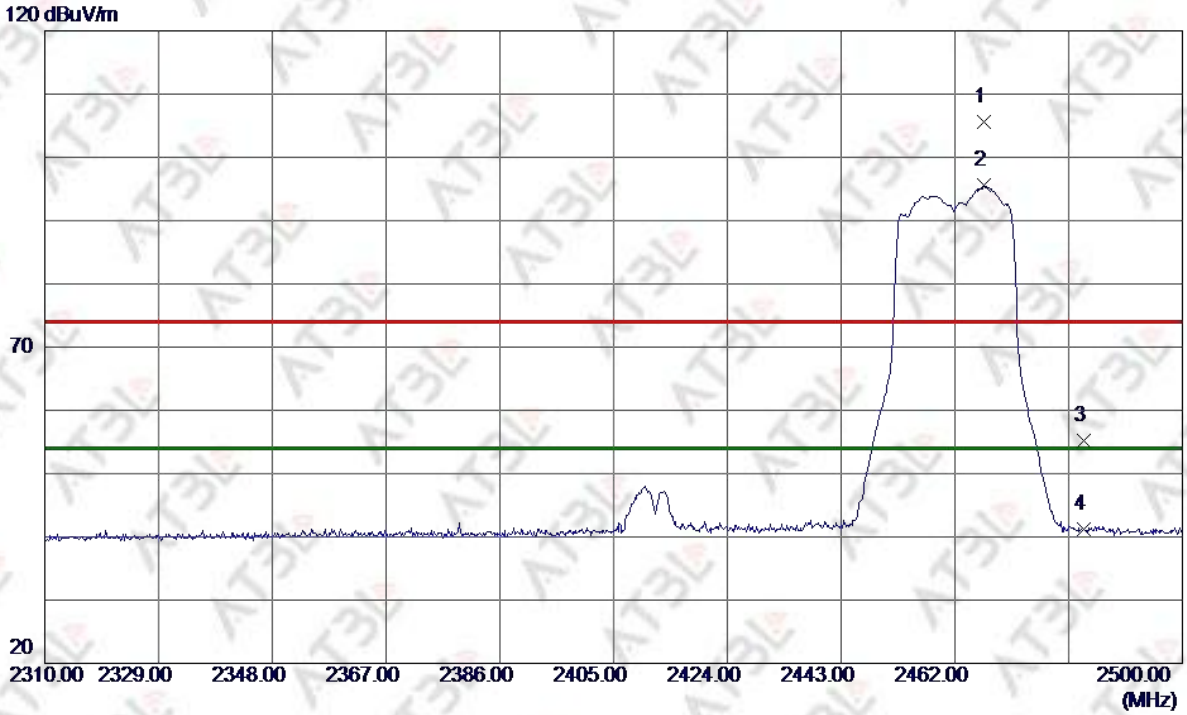
High Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2456.5850	82.89	30.83	113.72	74.00	39.72	Peak	No limit
2 *	2456.5850	72.80	30.83	103.63	54.00	49.63	AVG	No limit
3	2483.5000	25.48	30.94	56.42	74.00	-17.58	Peak	
4	2483.5000	15.67	30.94	46.61	54.00	-7.39	AVG	

Vertical



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	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2466.8450	74.64	30.87	105.51	74.00	31.51	Peak	No limit
2 *	2466.8450	64.64	30.87	95.51	54.00	41.51	AVG	No limit
3	2483.5000	24.23	30.94	55.17	74.00	-18.83	Peak	
4	2483.5000	10.19	30.94	41.13	54.00	-12.87	AVG	

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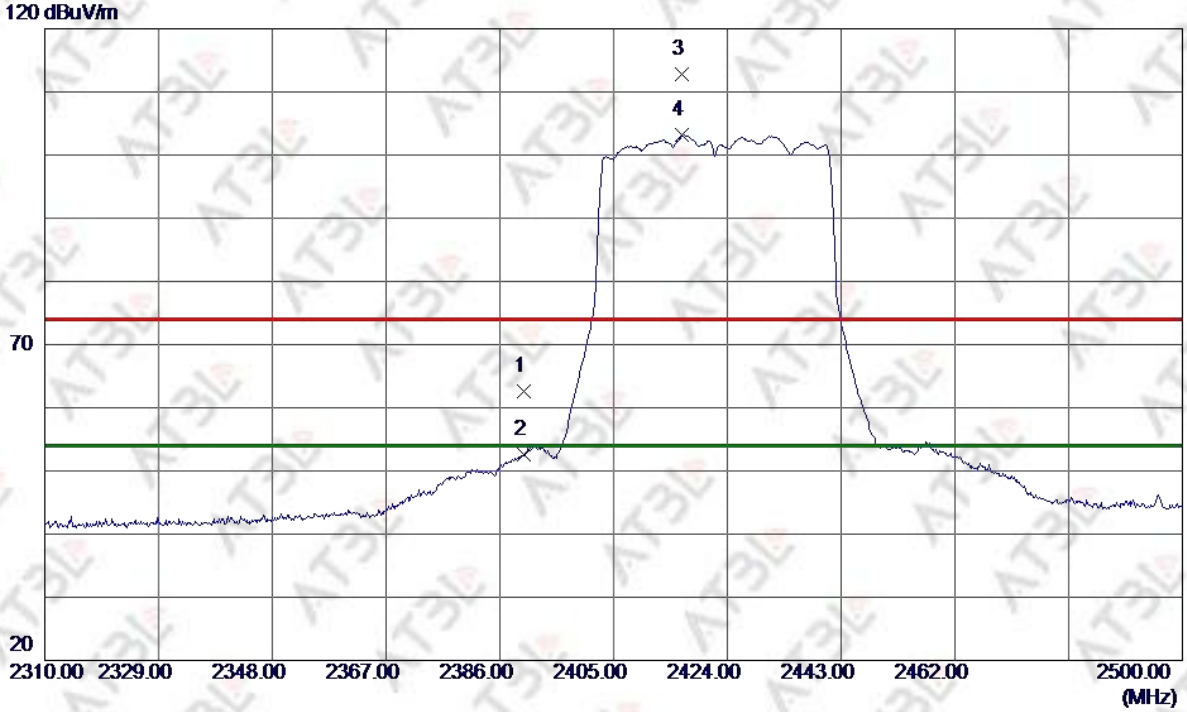
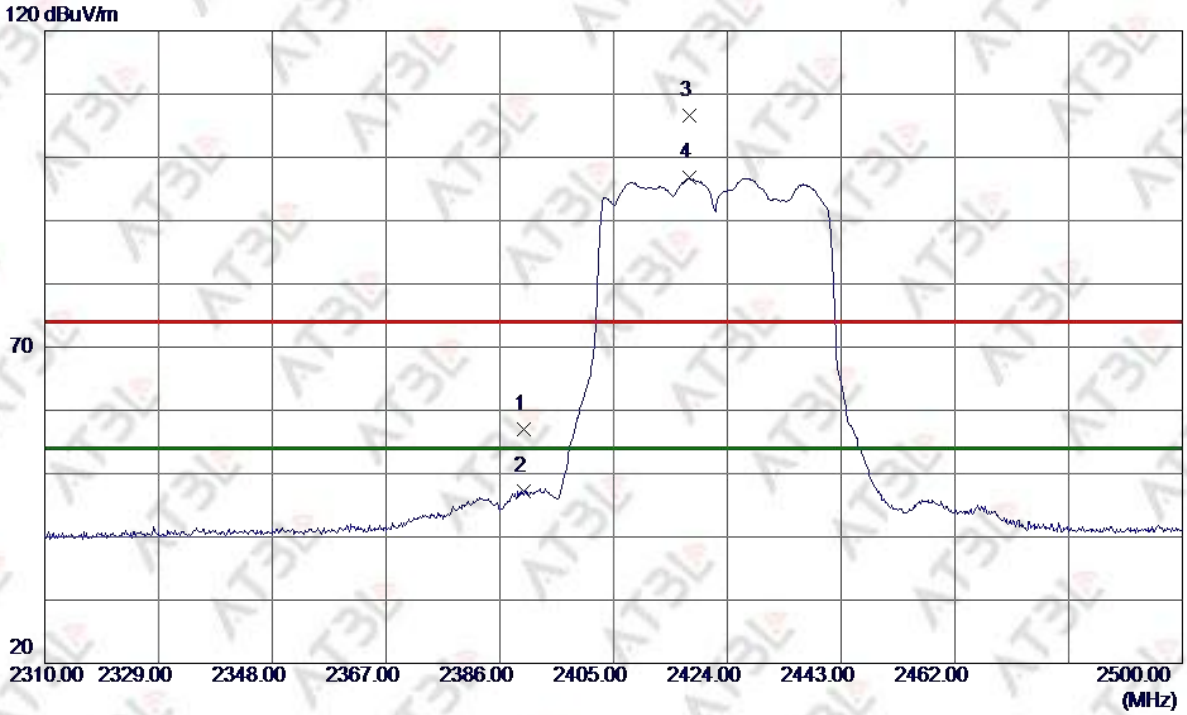
Low Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	32.07	30.55	62.62	74.00	-11.38	Peak	
2	2390.0000	22.00	30.55	52.55	54.00	-1.45	AVG	
3	2416.4000	82.16	30.66	112.82	74.00	38.82	Peak	No limit
4 *	2416.4000	72.56	30.66	103.22	54.00	49.22	AVG	No limit

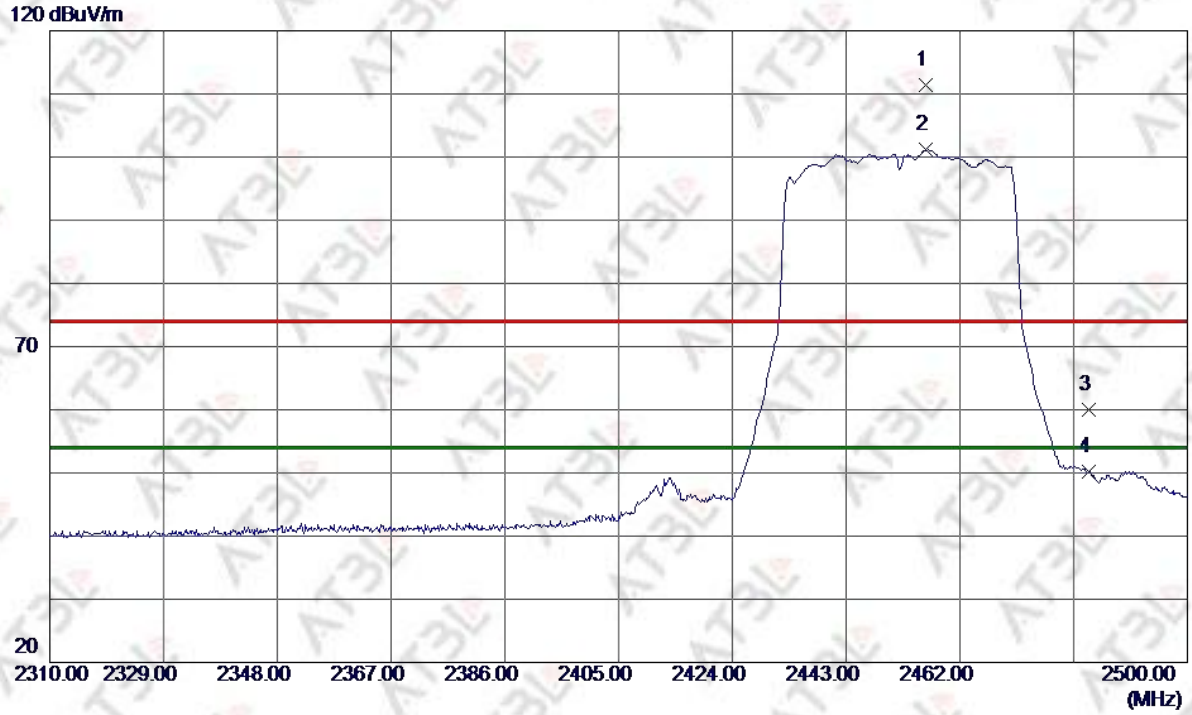
Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2390.0000	26.51	30.55	57.06	74.00	-16.94	Peak	
2	2390.0000	16.60	30.55	47.15	54.00	-6.85	AVG	
3	2417.6350	75.85	30.66	106.51	74.00	32.51	Peak	No limit
4 *	2417.6350	66.18	30.66	96.84	54.00	42.84	AVG	No limit

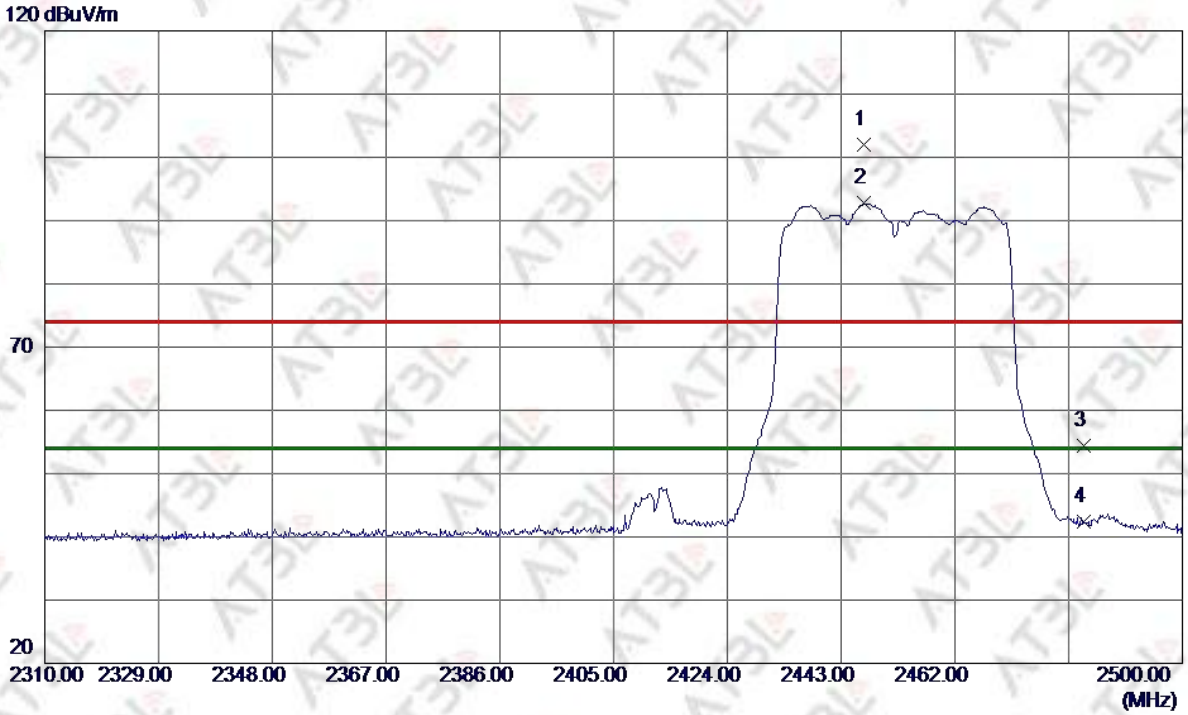
High Channel

Horizontal



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2456.2050	80.54	30.83	111.37	74.00	37.37	Peak	No limit
2 *	2456.2050	70.36	30.83	101.19	54.00	47.19	AVG	No limit
3	2483.5000	29.04	30.94	59.98	74.00	-14.02	Peak	
4	2483.5000	19.31	30.94	50.25	54.00	-3.75	AVG	

Vertical



No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2446.8000	71.22	30.79	102.01	74.00	28.01	Peak	No limit
2 *	2446.8000	61.93	30.79	92.72	54.00	38.72	AVG	No limit
3	2483.5000	23.43	30.94	54.37	74.00	-19.63	Peak	
4	2483.5000	11.39	30.94	42.33	54.00	-11.67	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

4. CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 LIMIT

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 kHz/300 kHz
Trace-Mode:	Max hold

For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2432 MHz Upper Band Edge: 2442 to 2500 MHz
RB / VB (emission in restricted band)	100 kHz/300 kHz
Trace-Mode:	Max hold

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP

The EUT which is powered by the Battery, is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

4.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

4.6 TEST RESULTS

Temperature:	25℃	Relative Humidity:	60%RH
Test Voltage:	AC 120V	Test Mode:	All Modes

For Conducted Spurious Emission

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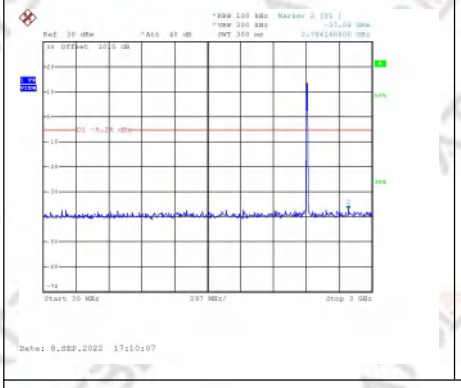	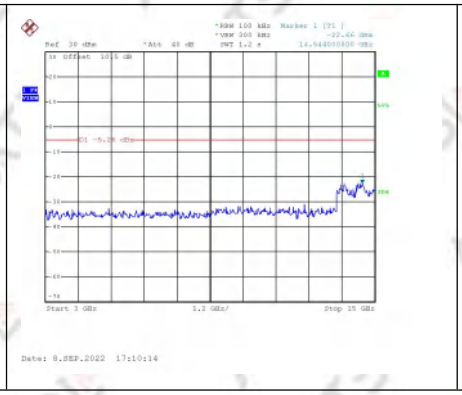	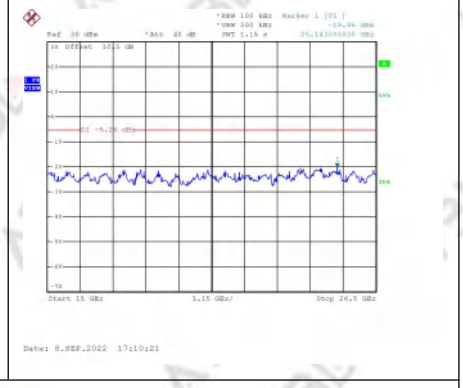
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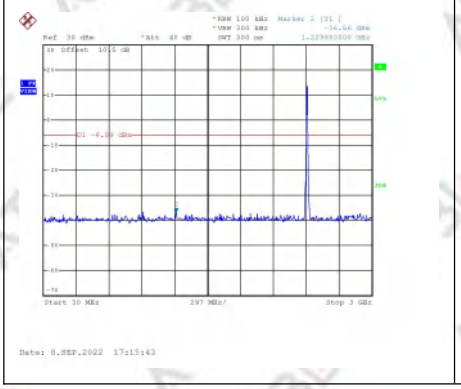	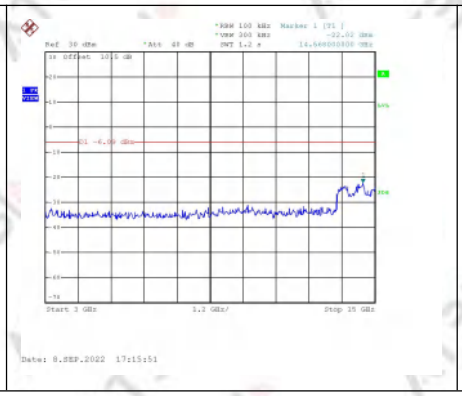	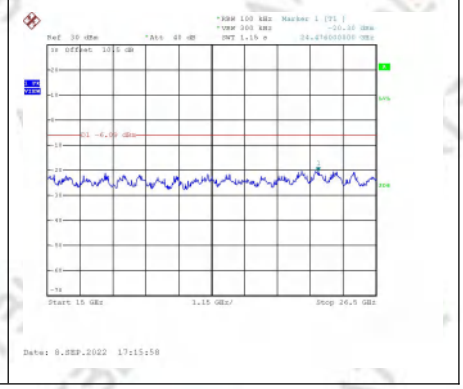

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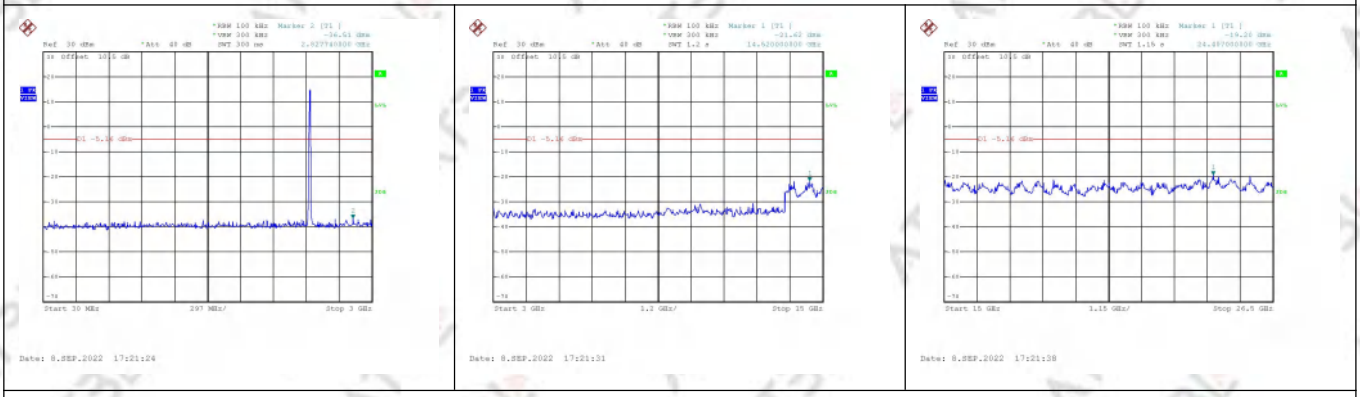

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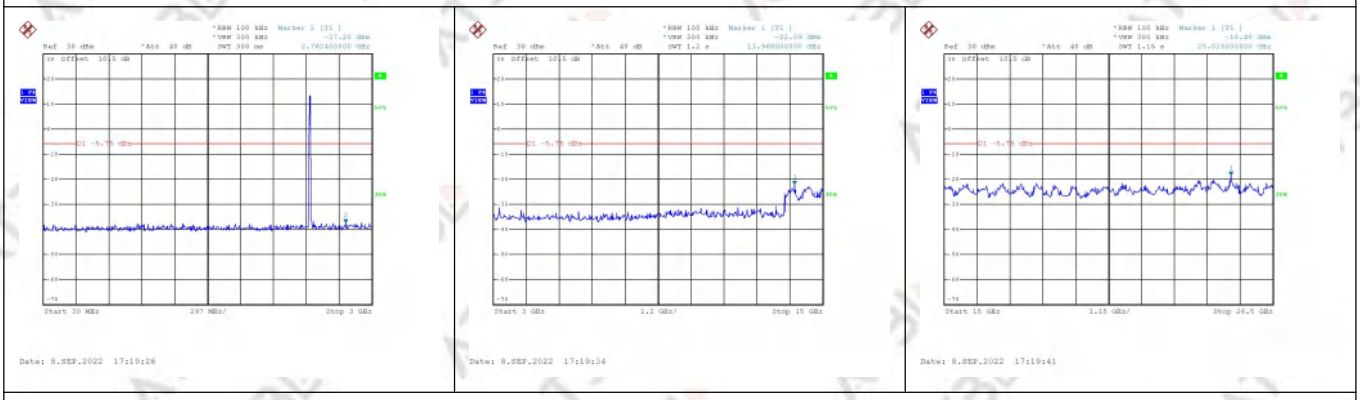

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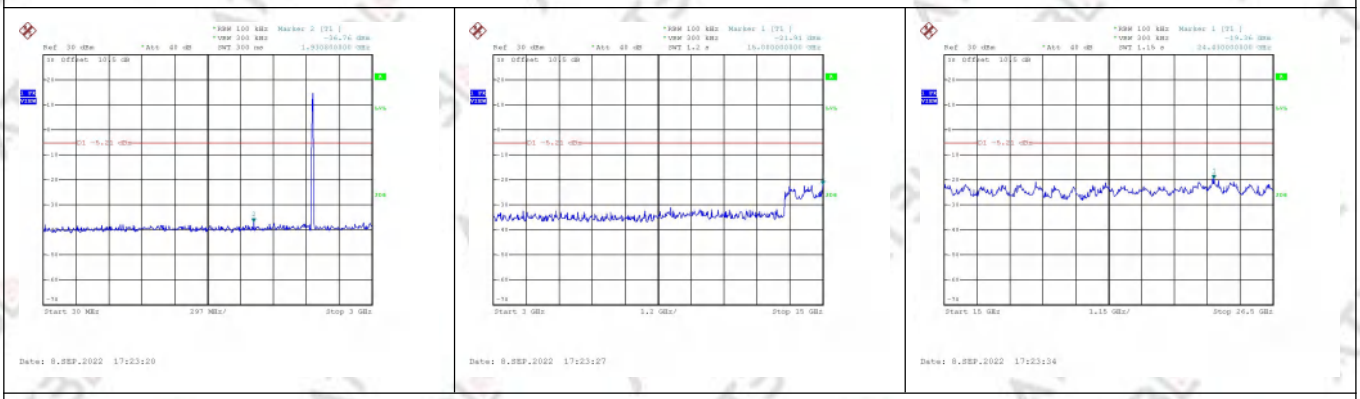

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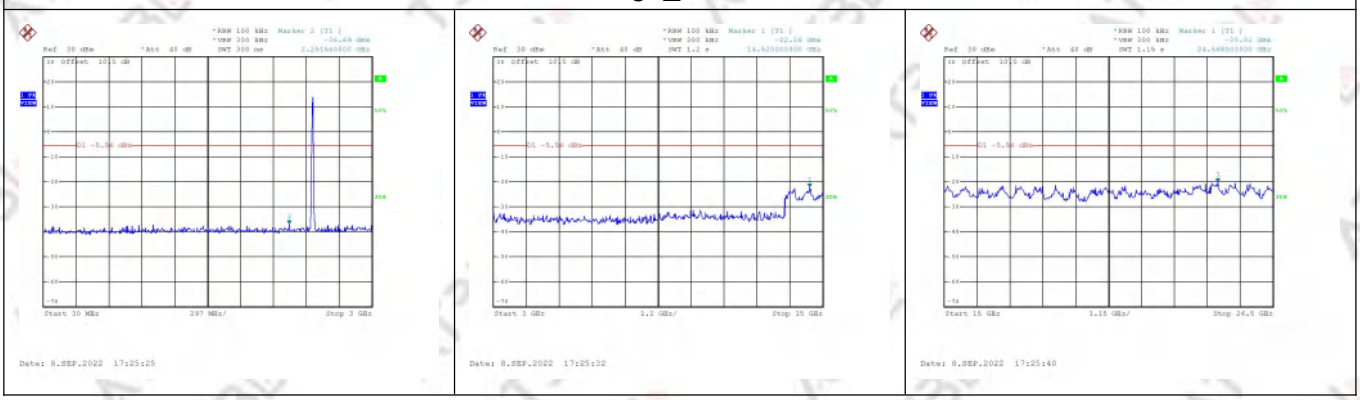

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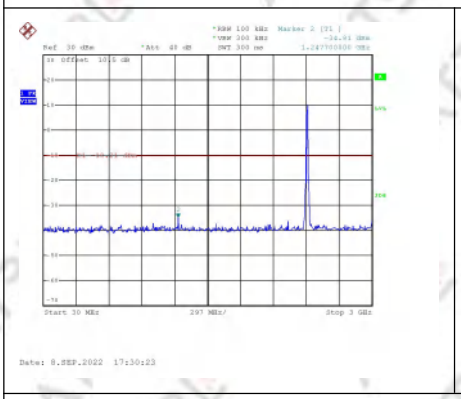
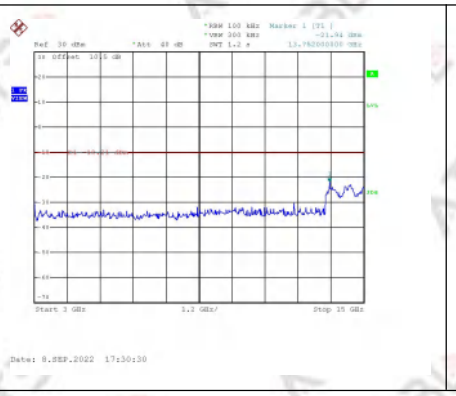
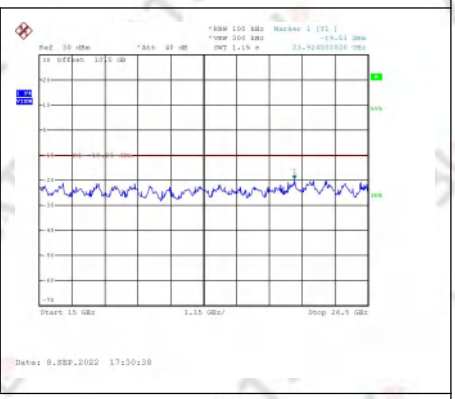

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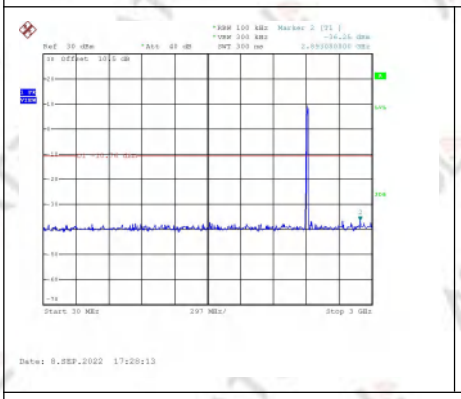
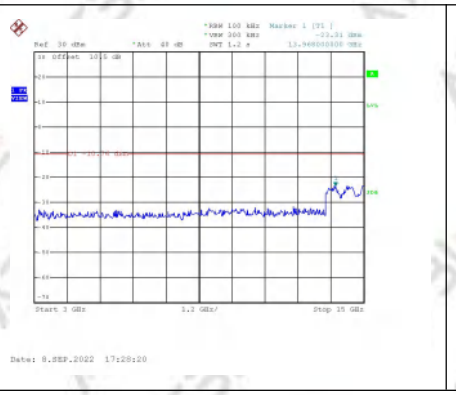
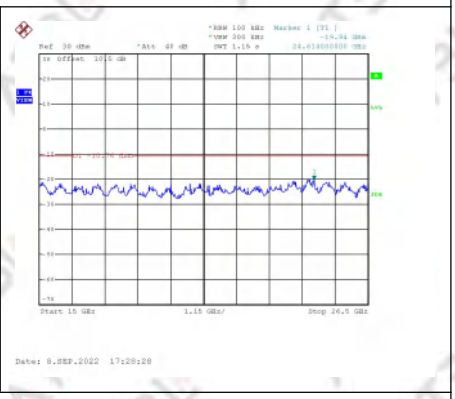

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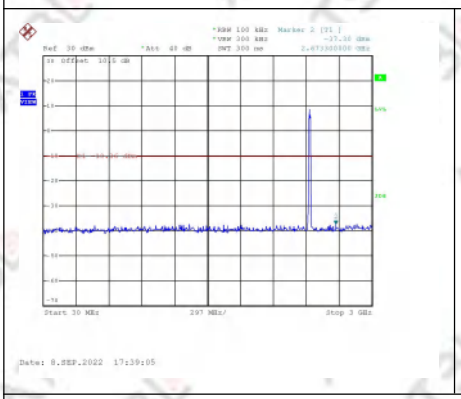
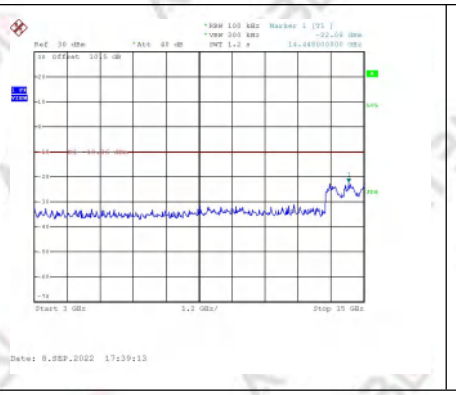
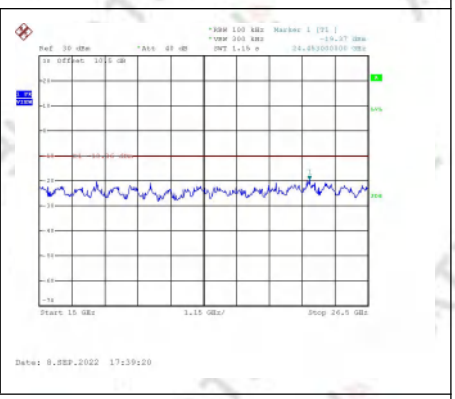

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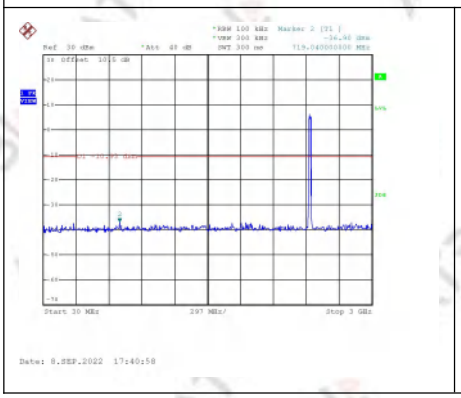

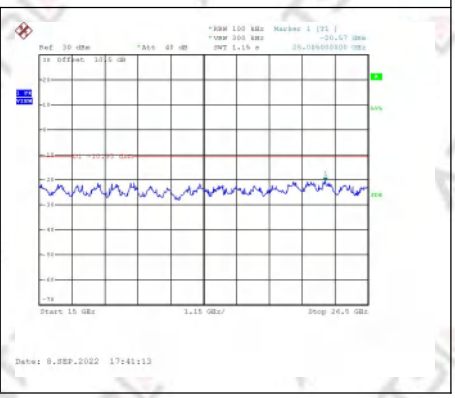

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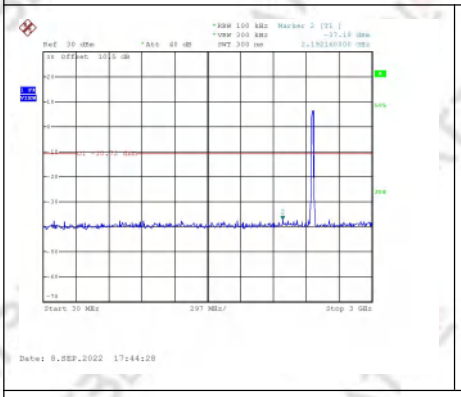	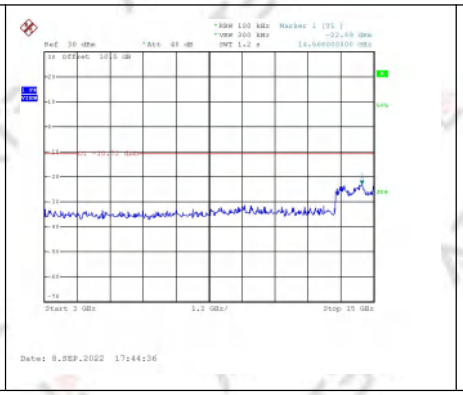	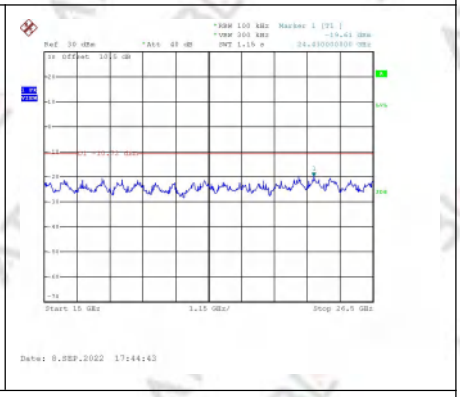
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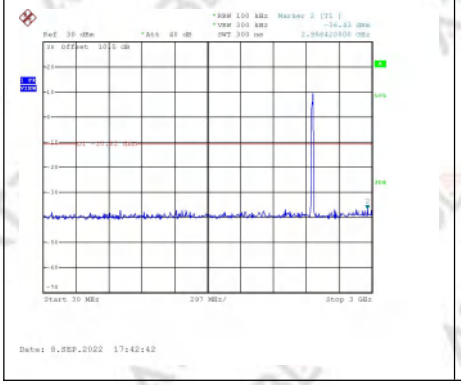	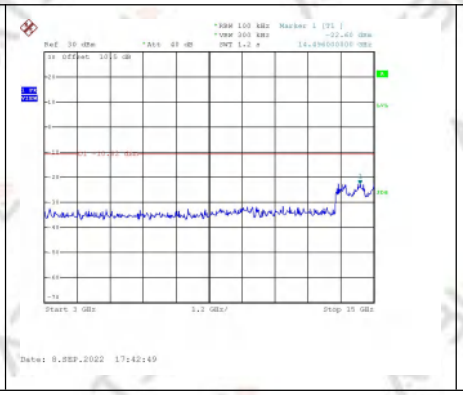	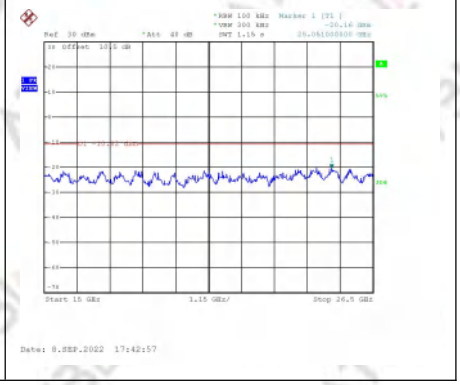

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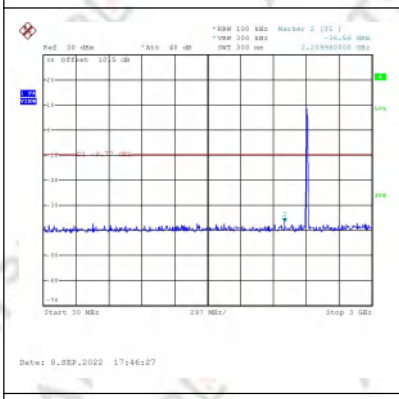	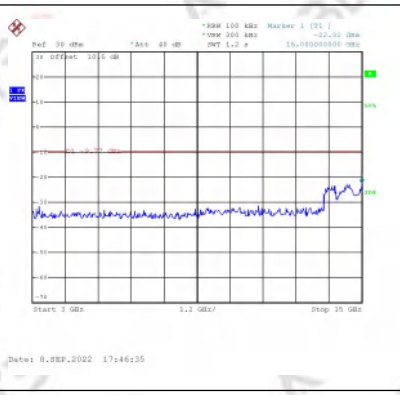	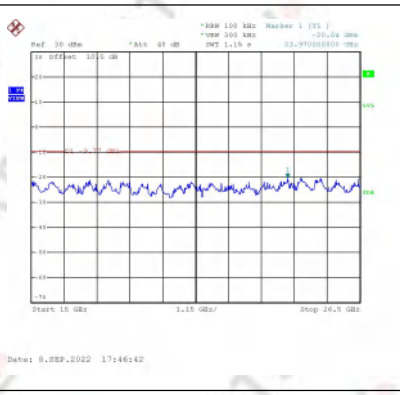
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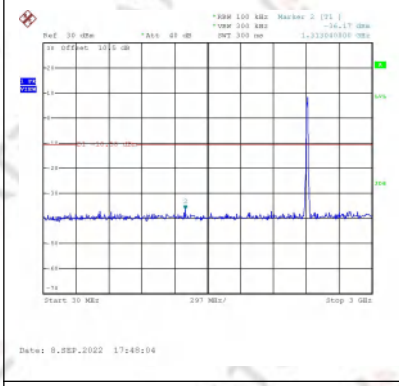	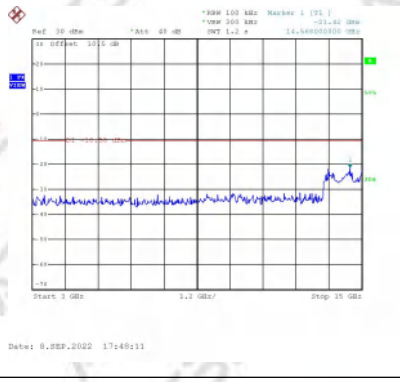	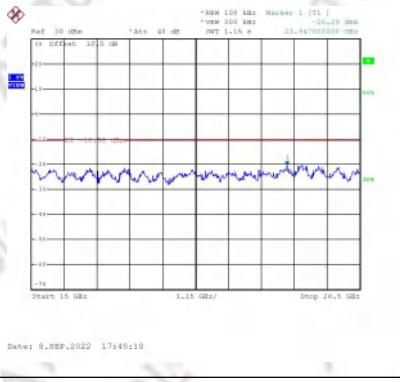
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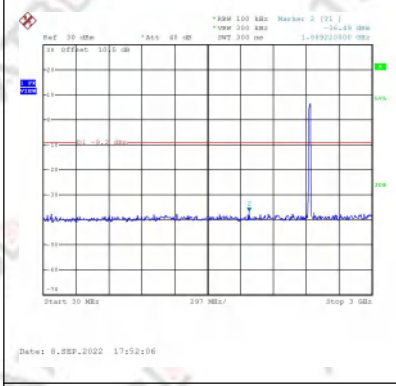	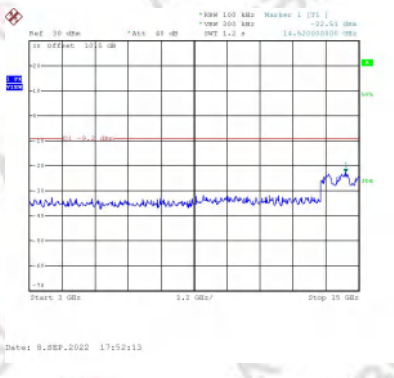	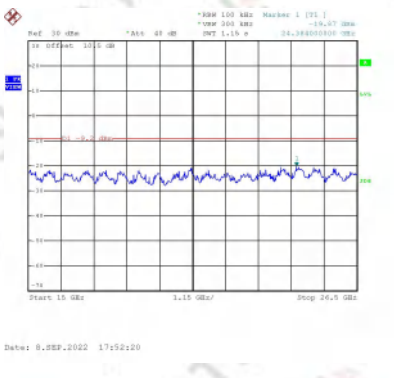
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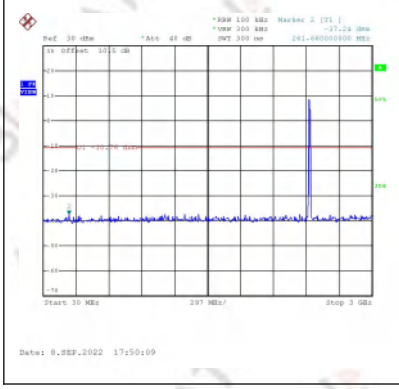	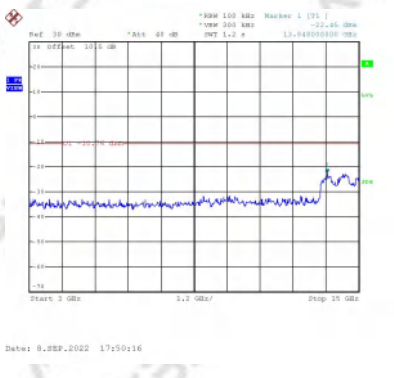	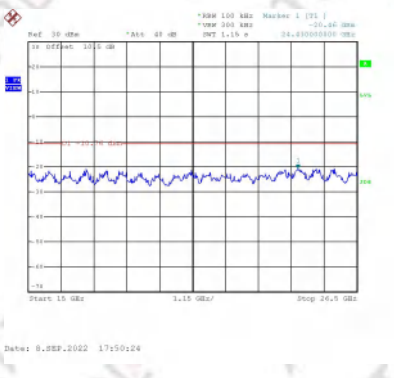

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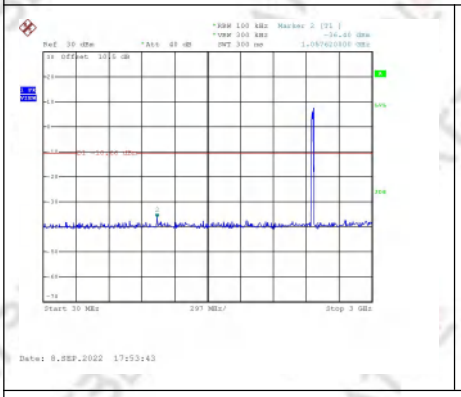	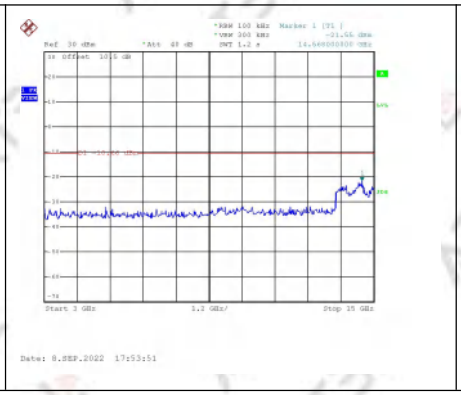	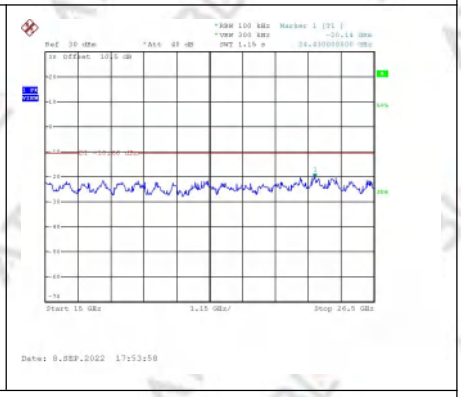
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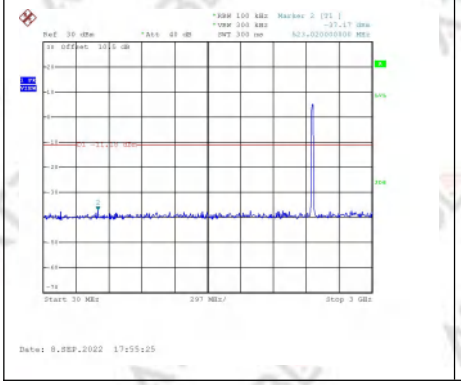	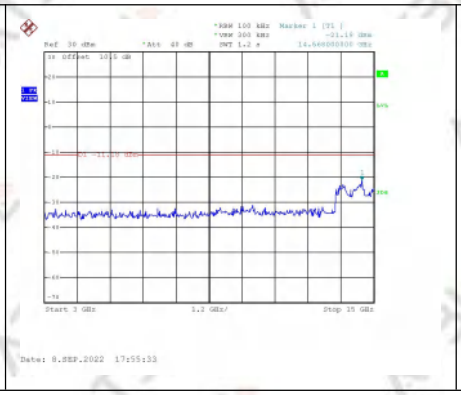	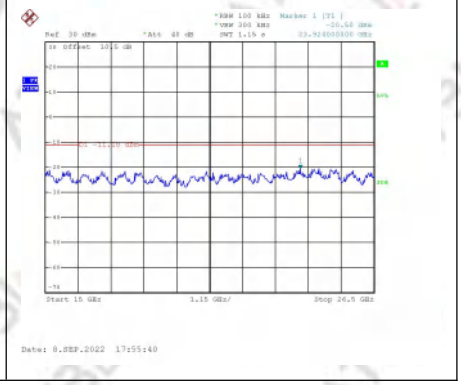

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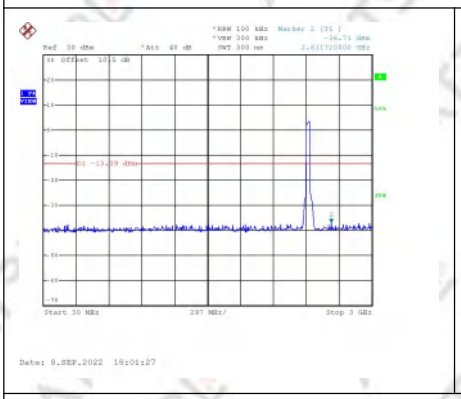	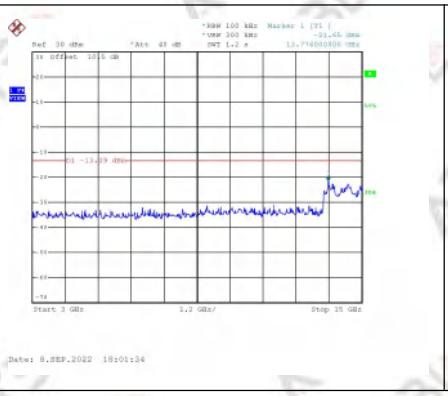	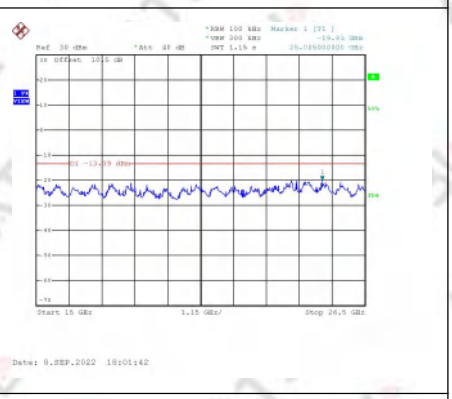
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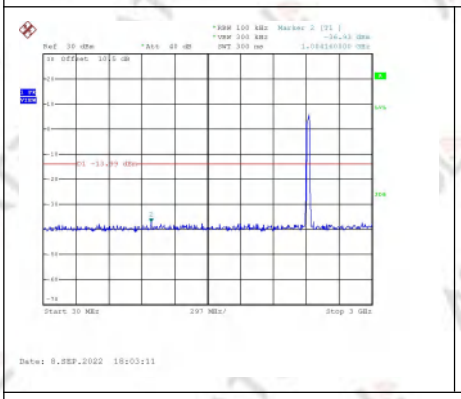	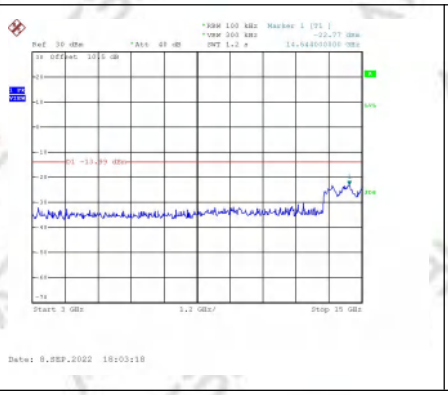	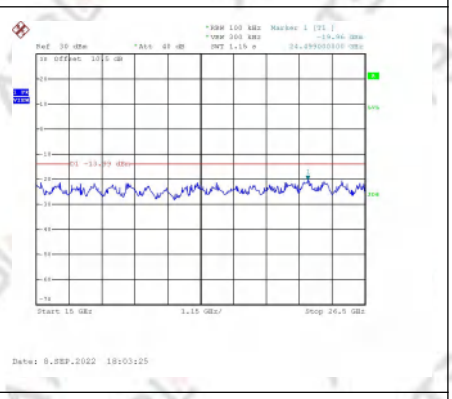
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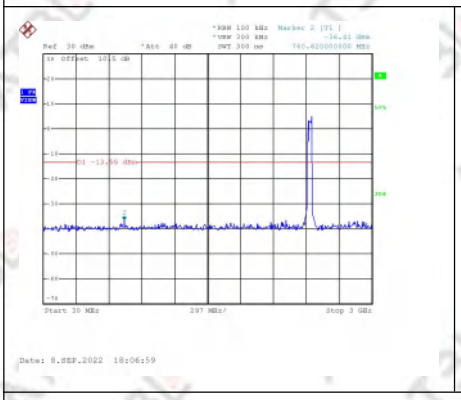	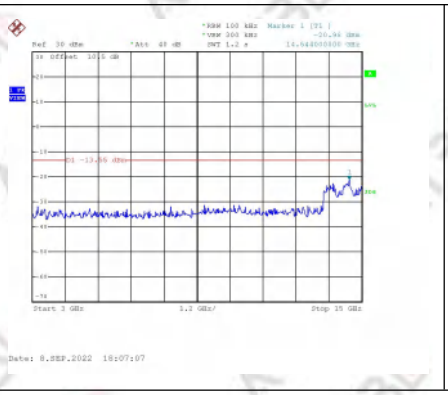	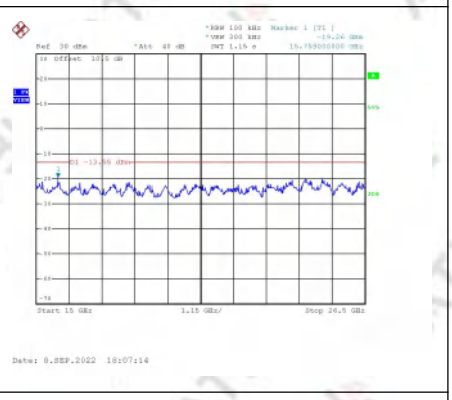
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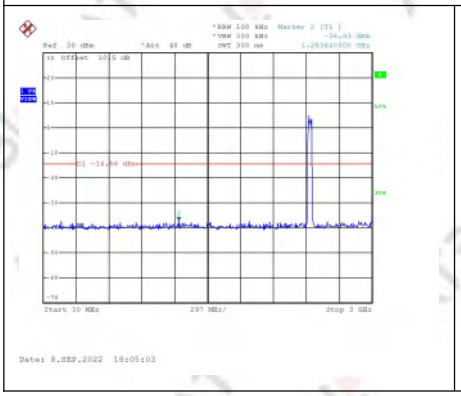		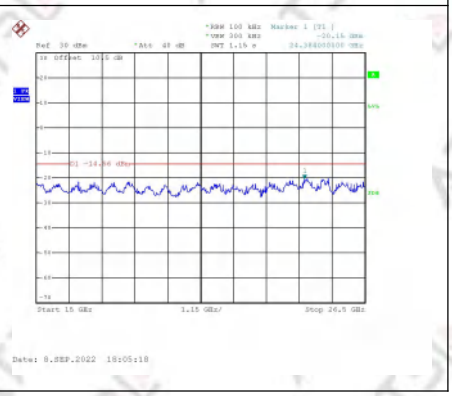

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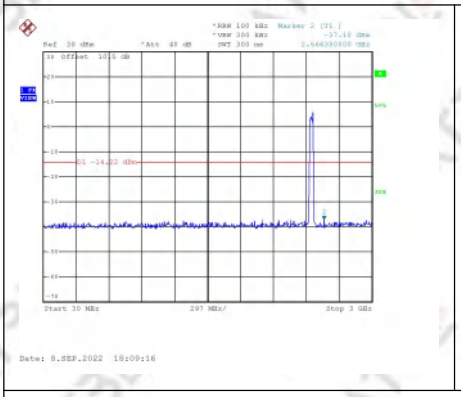	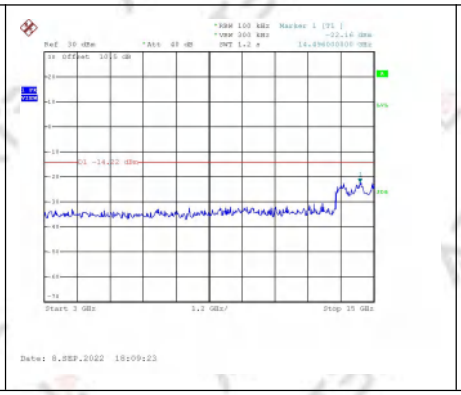	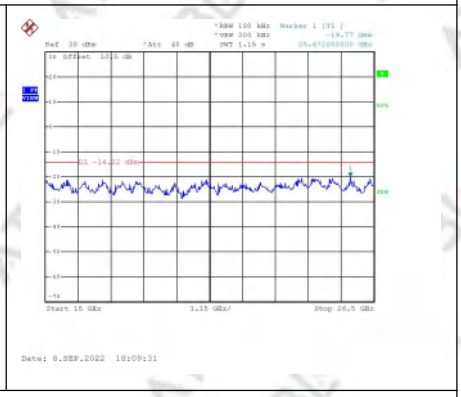
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	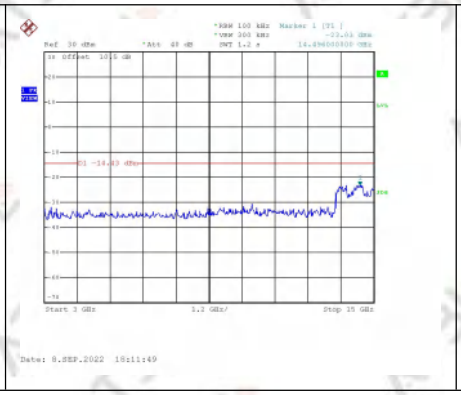	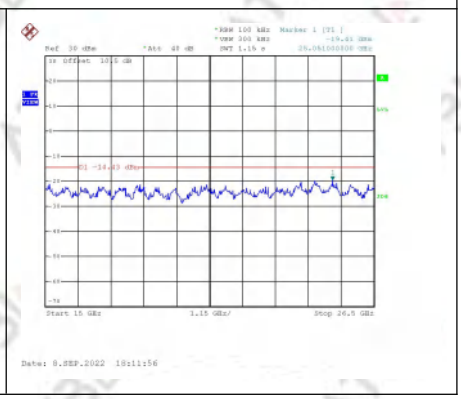

802.11ax20

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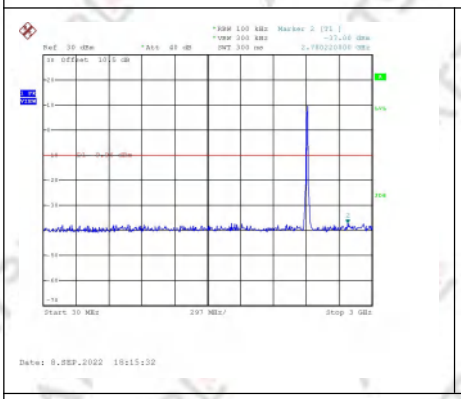
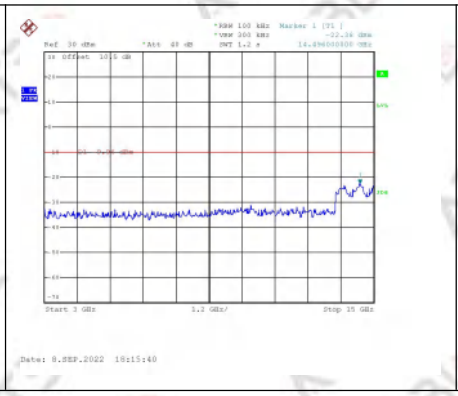
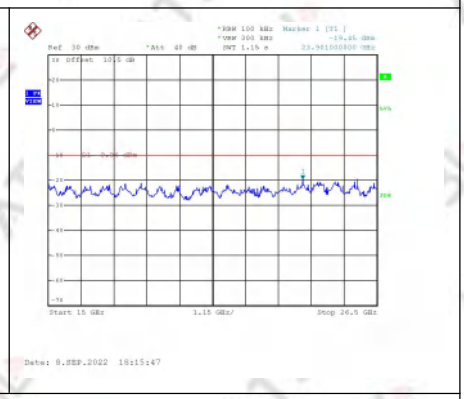

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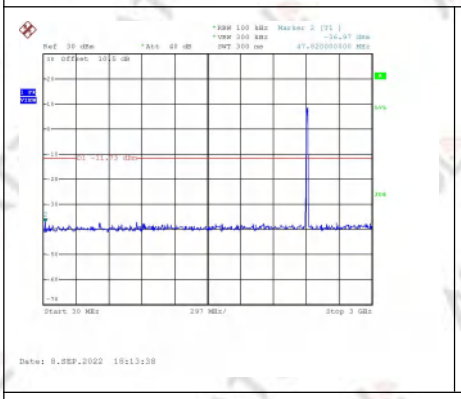
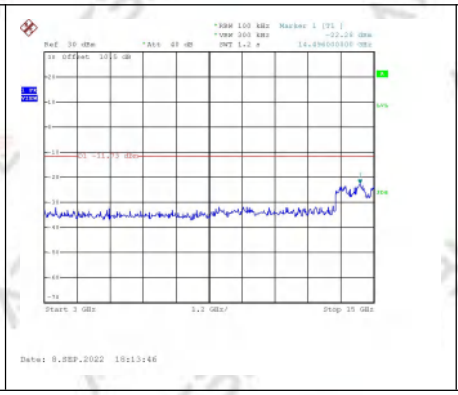
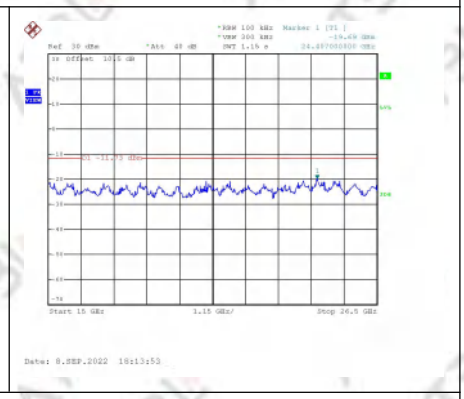

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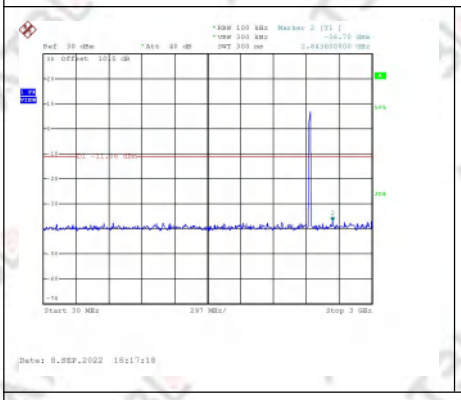
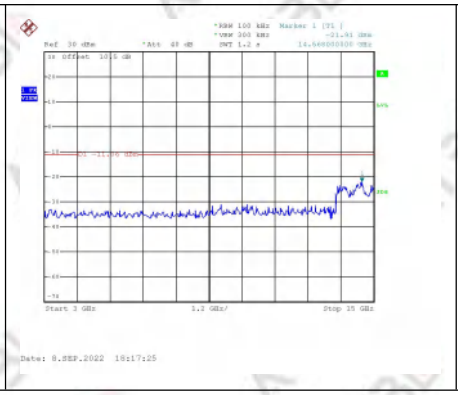
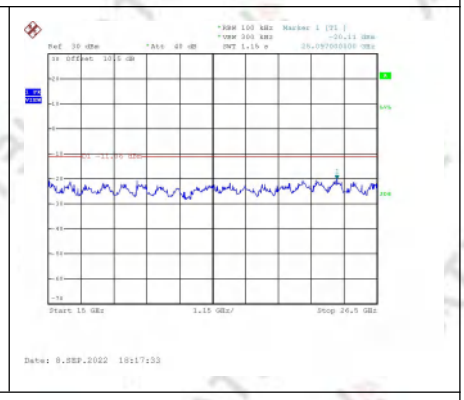

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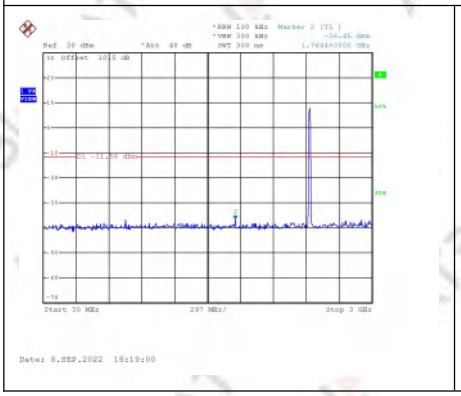
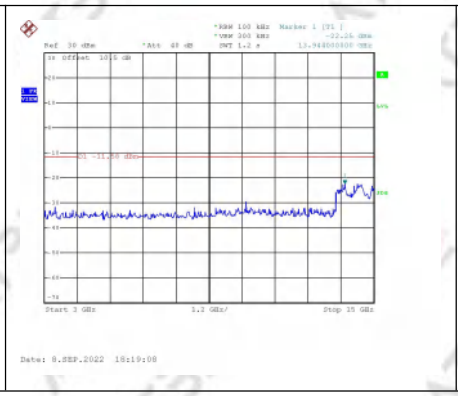
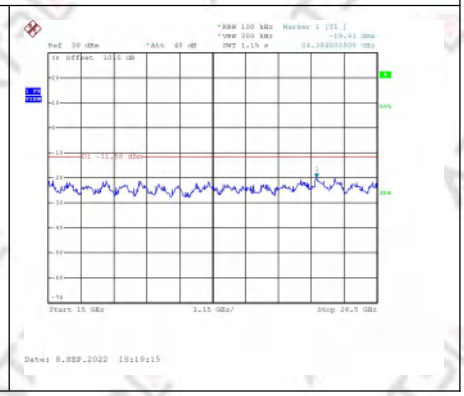

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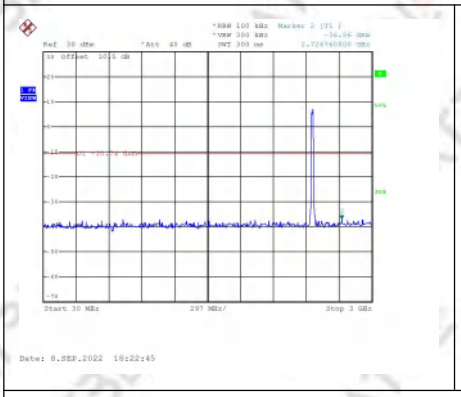	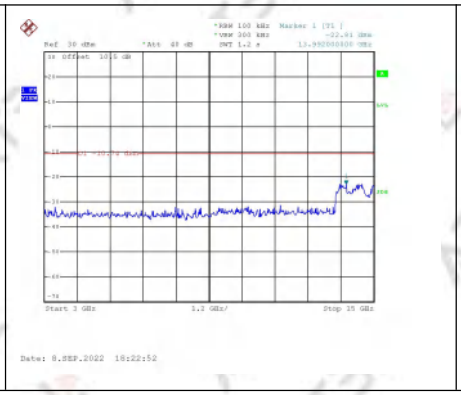	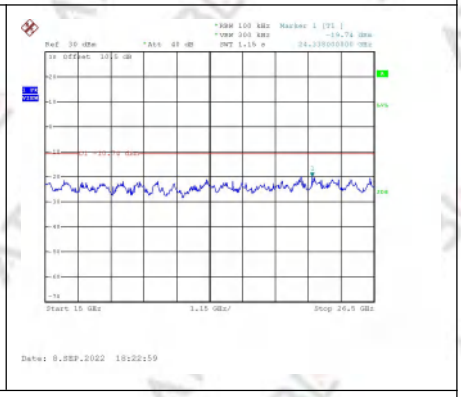
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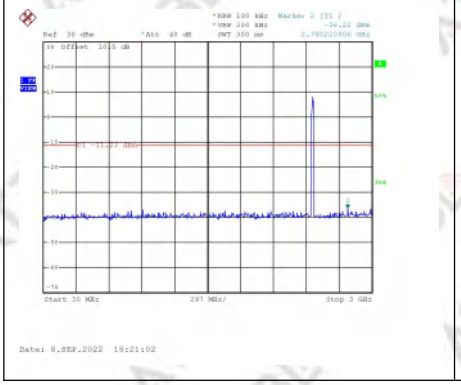	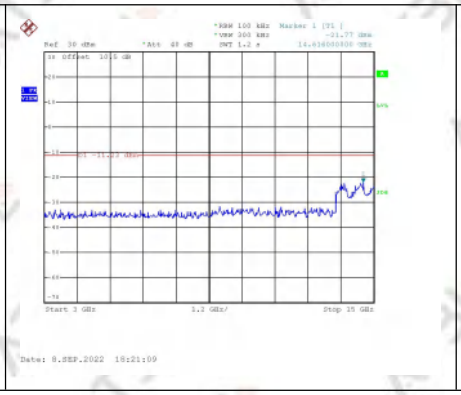	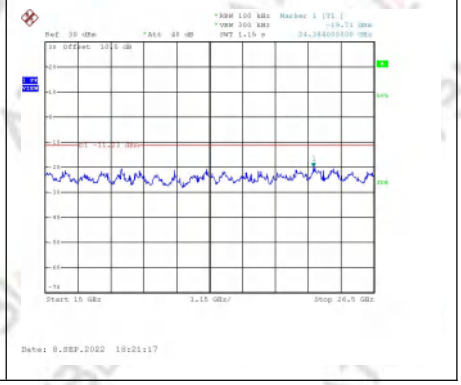

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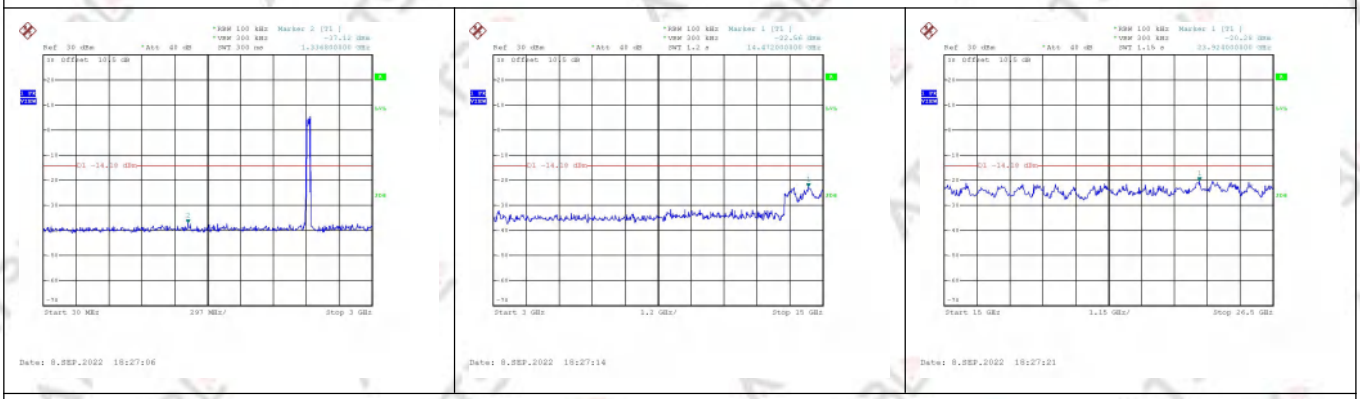

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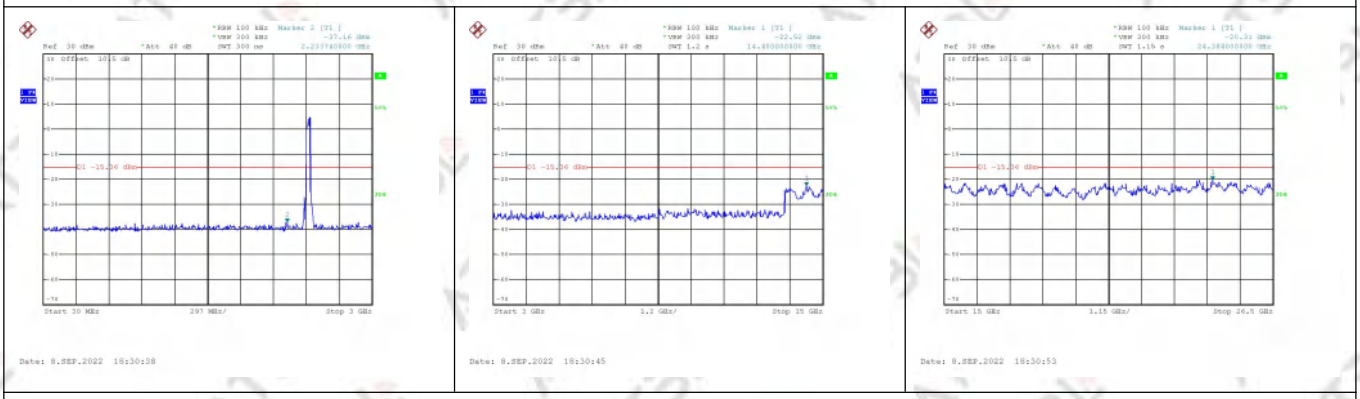

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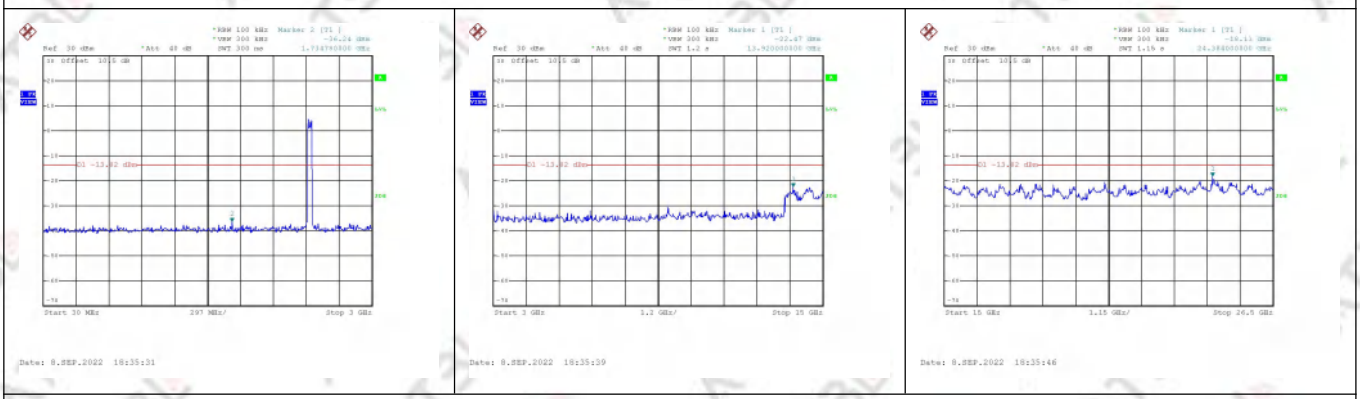

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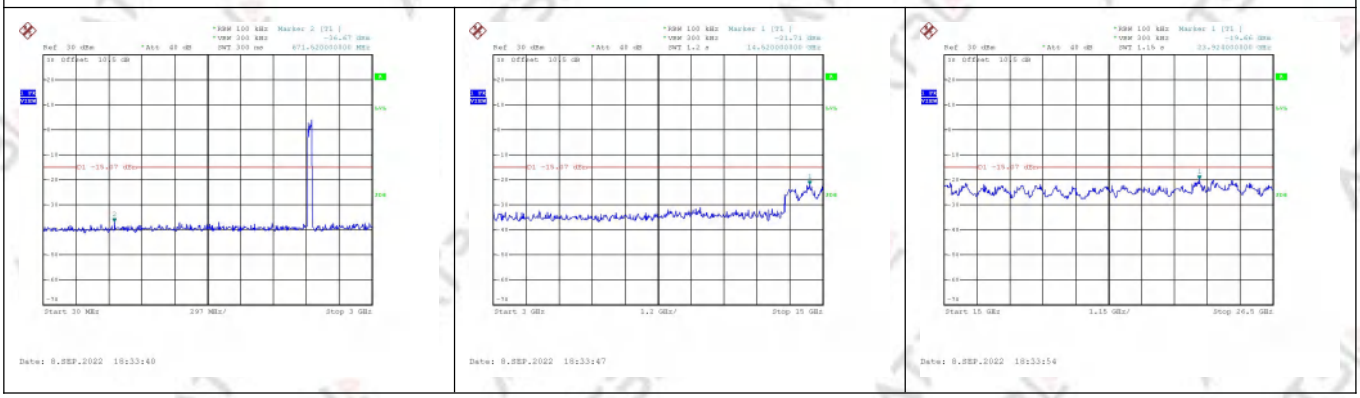

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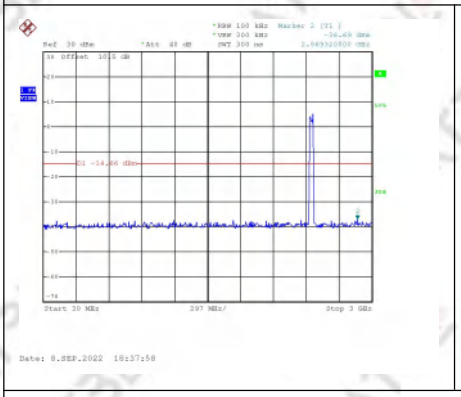	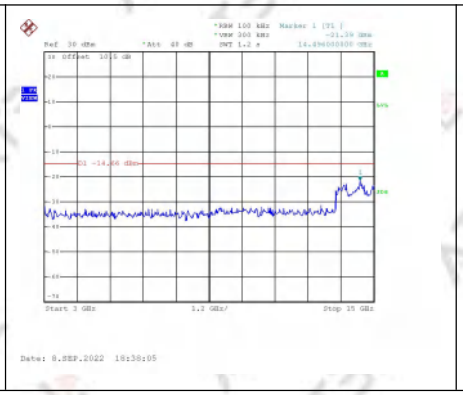	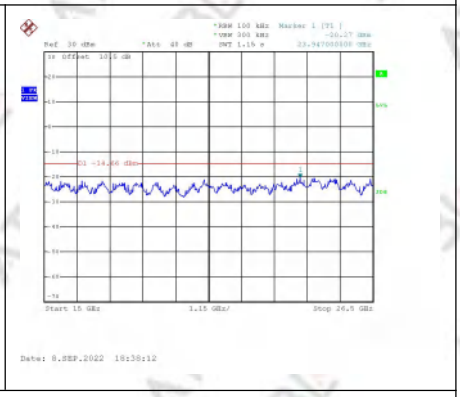
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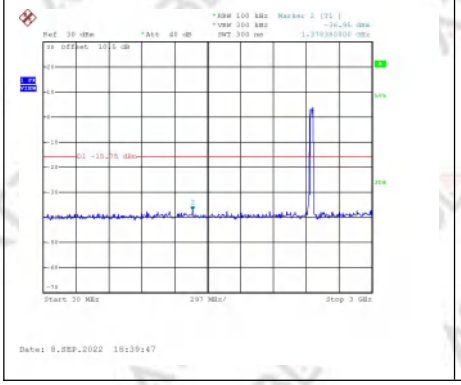
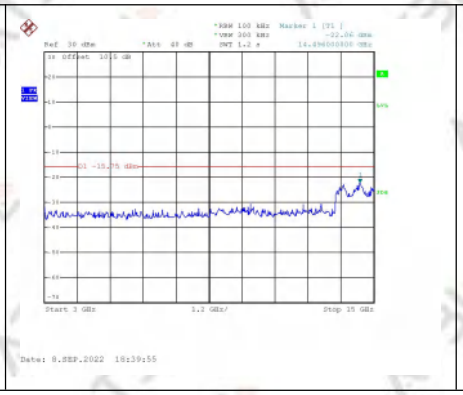
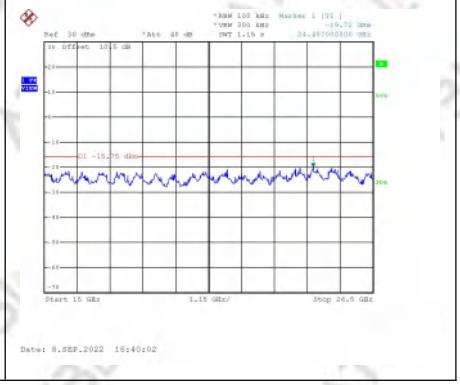
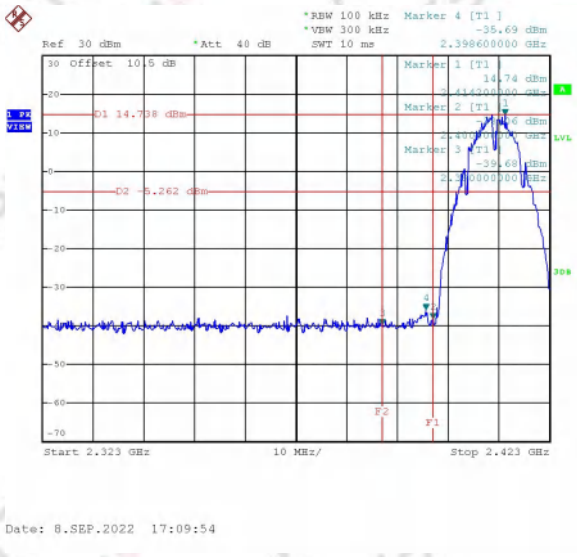
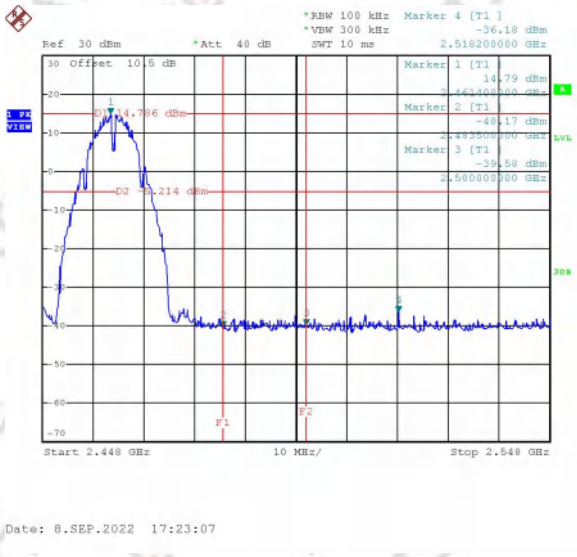
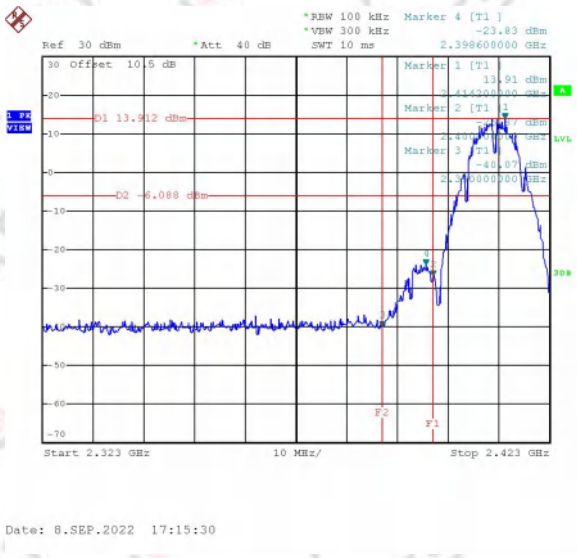
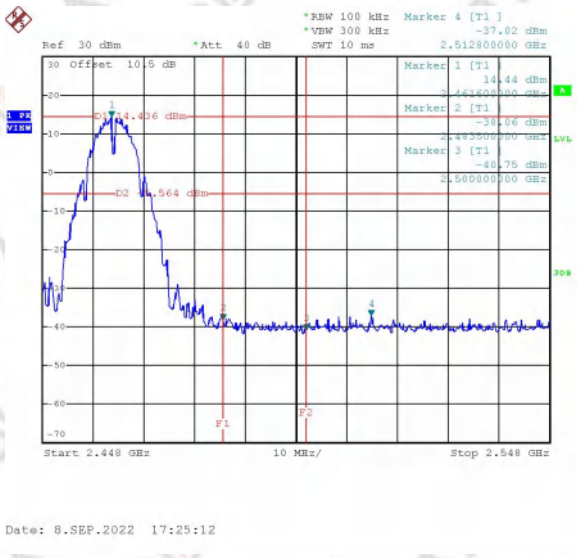
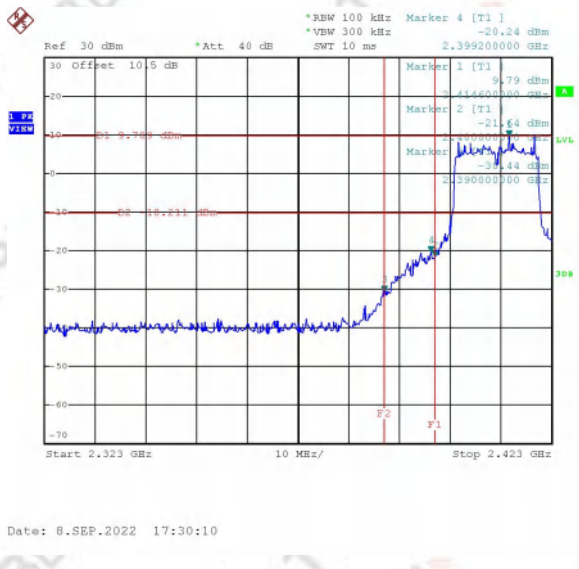
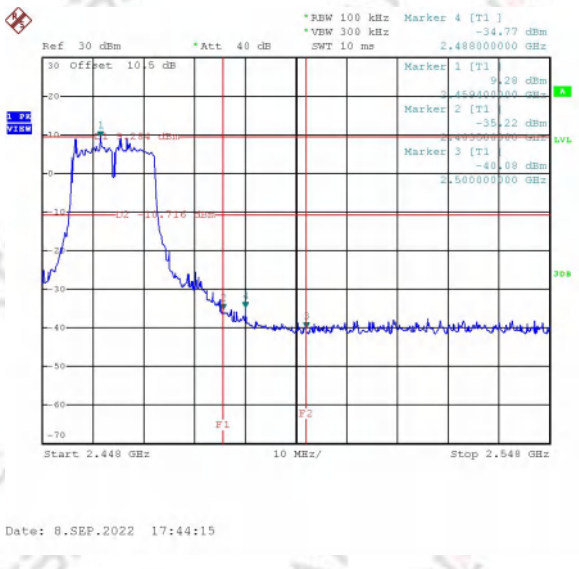
		

For Band edge(it's also the reference level for conducted spurious emission)

802.11b

Low_Ant. 0	High_Ant. 0
	
Low_Ant. 1	High_Ant. 1
	

802.11g

Low_Ant. 0	High_Ant. 0
	
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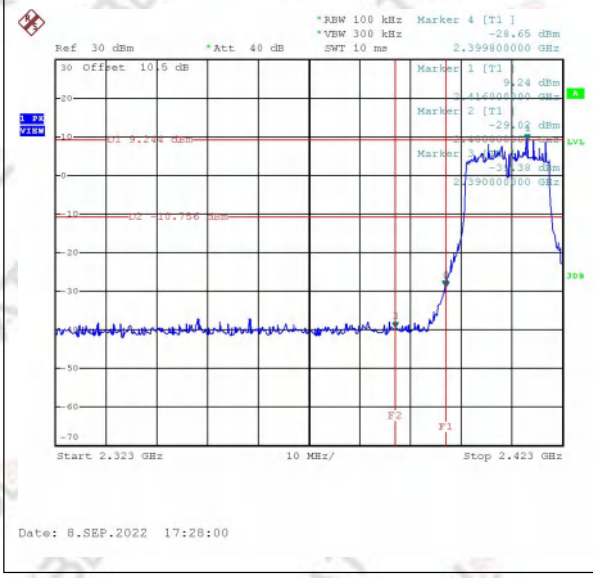
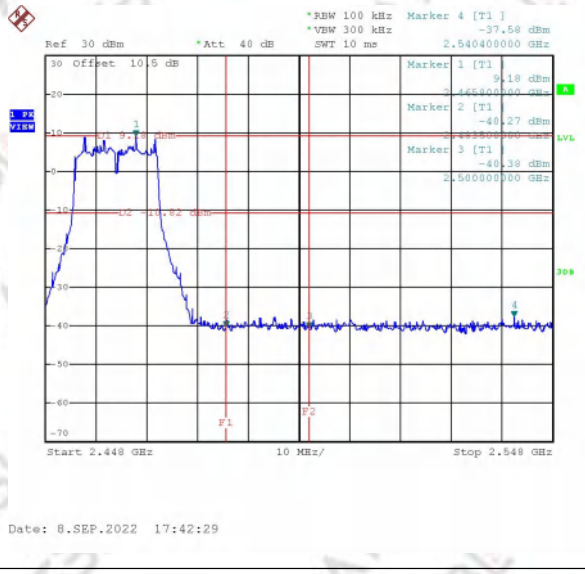
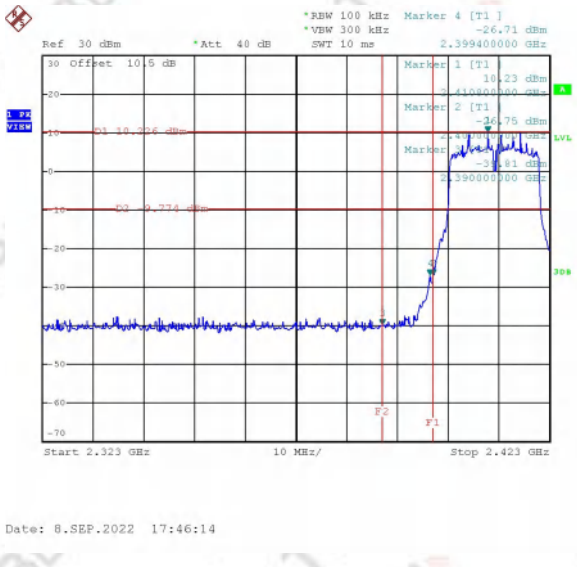
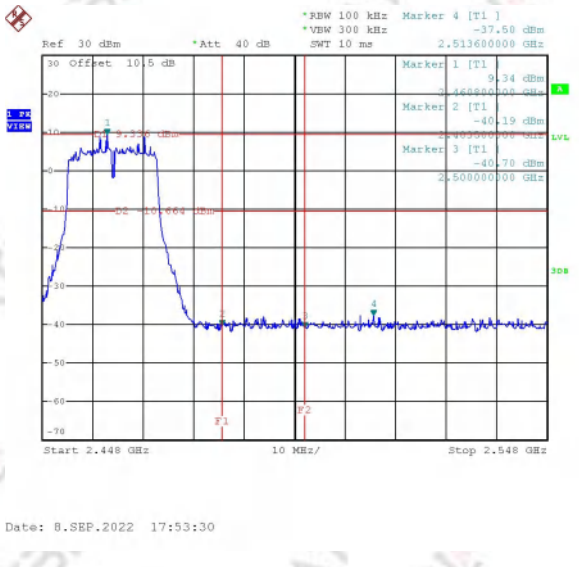
	

802.11n20

Low_Ant. 0	High_Ant. 0
	
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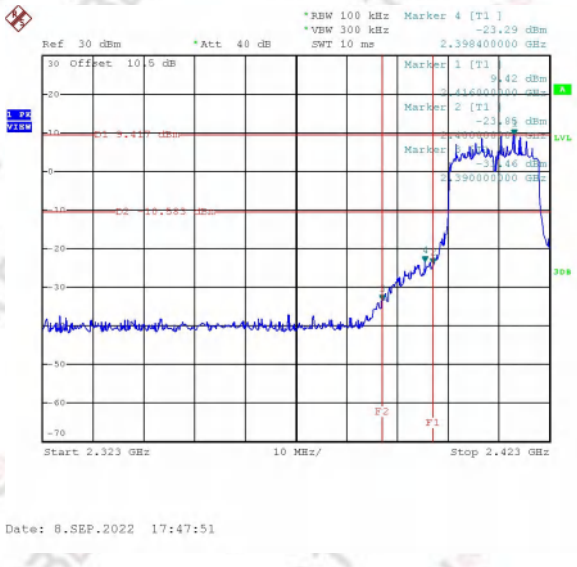	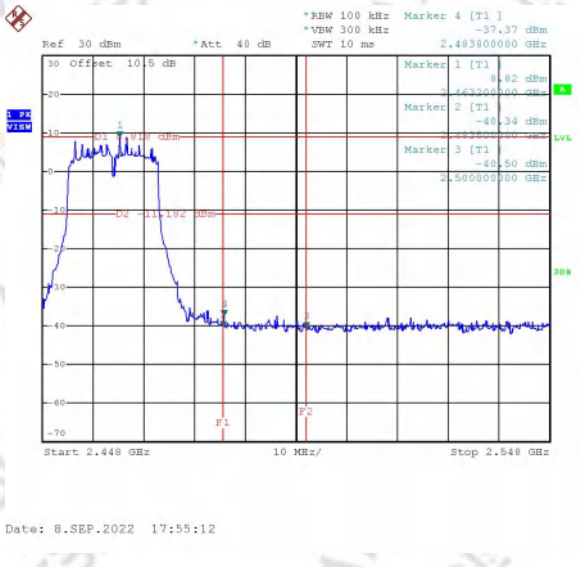

802.11n40

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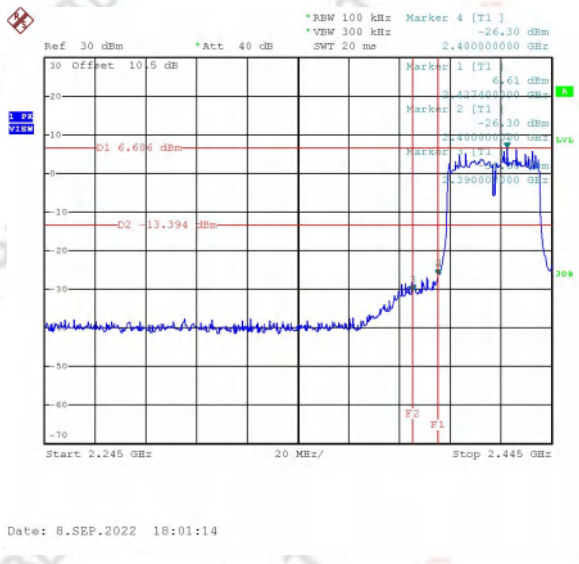	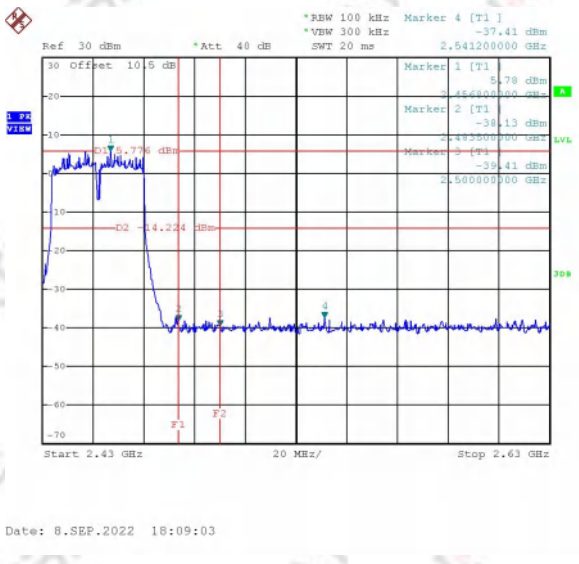
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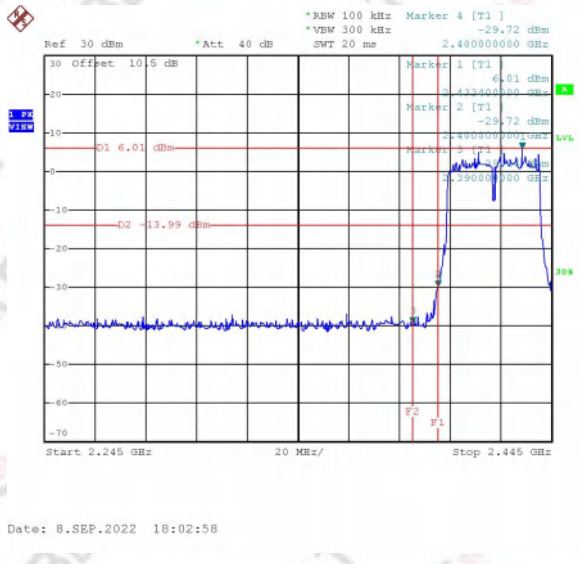
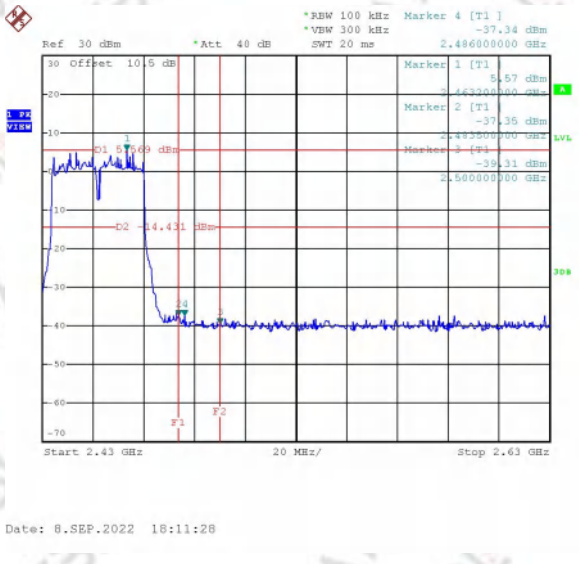
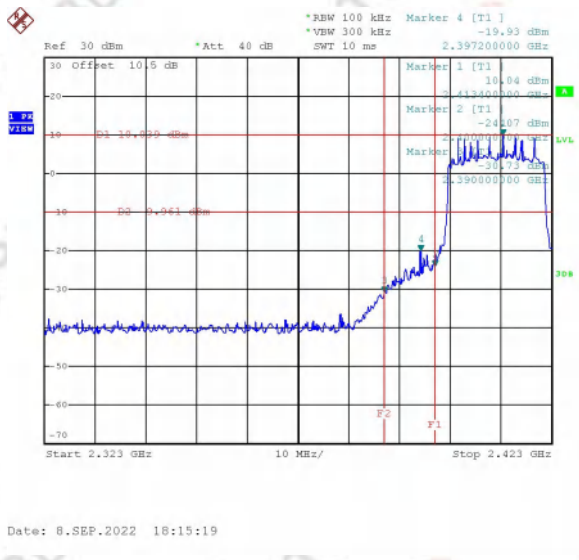
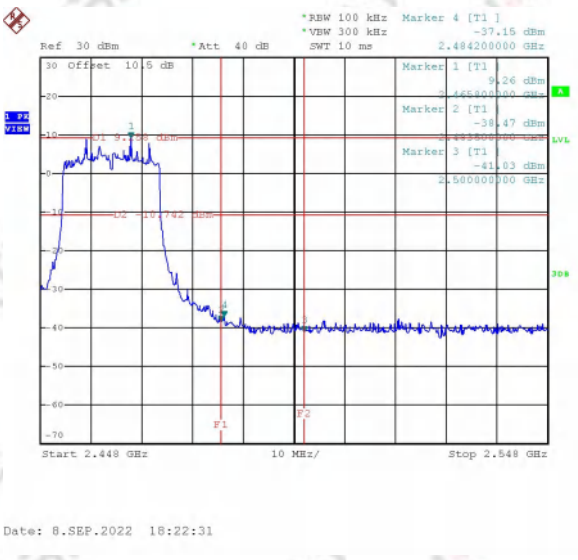
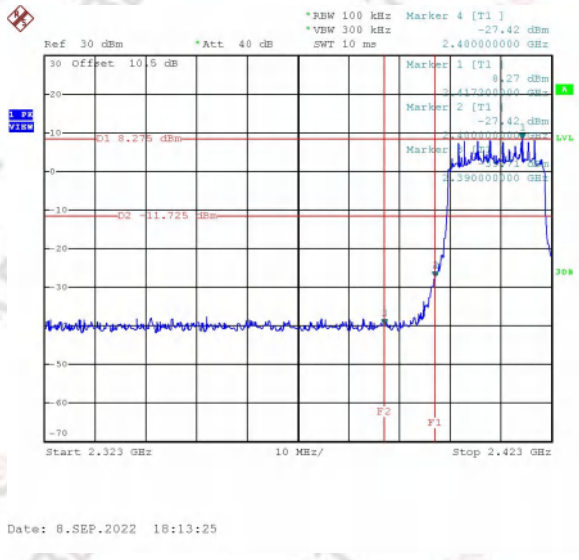
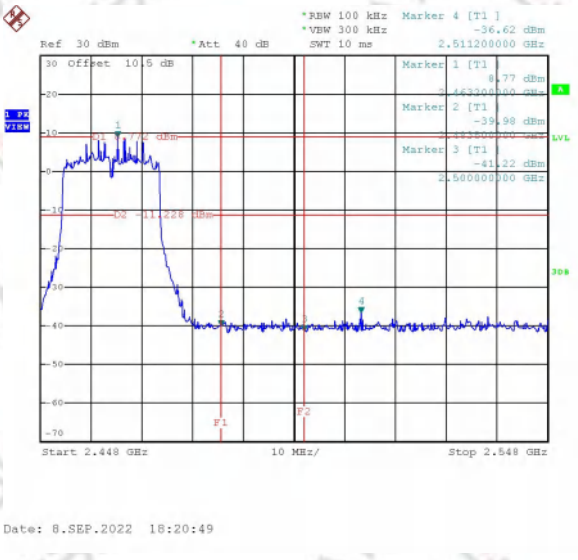
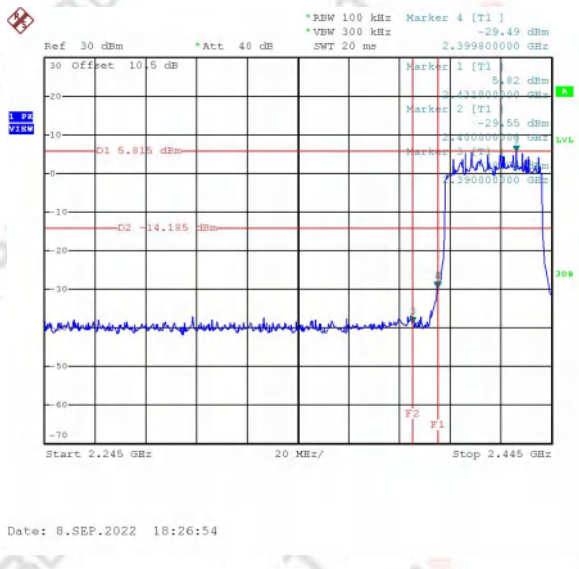
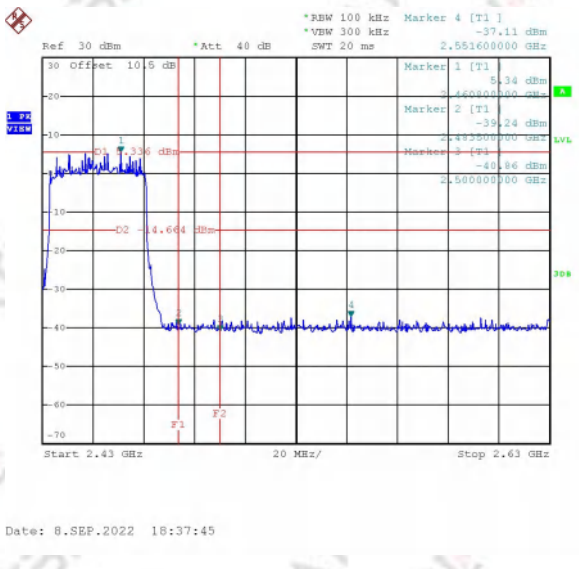
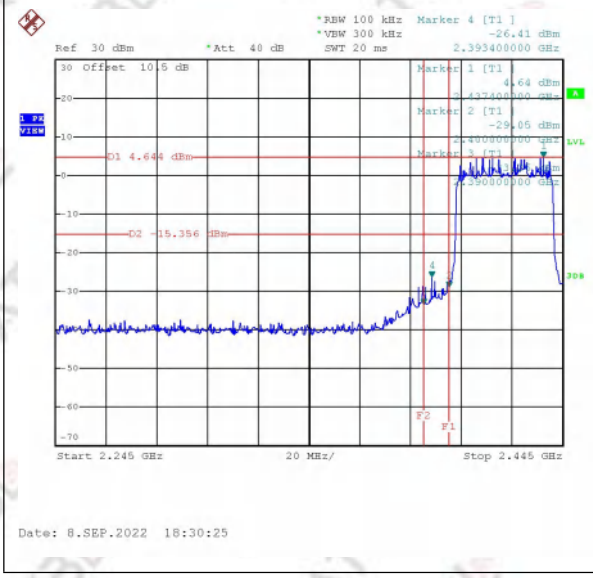
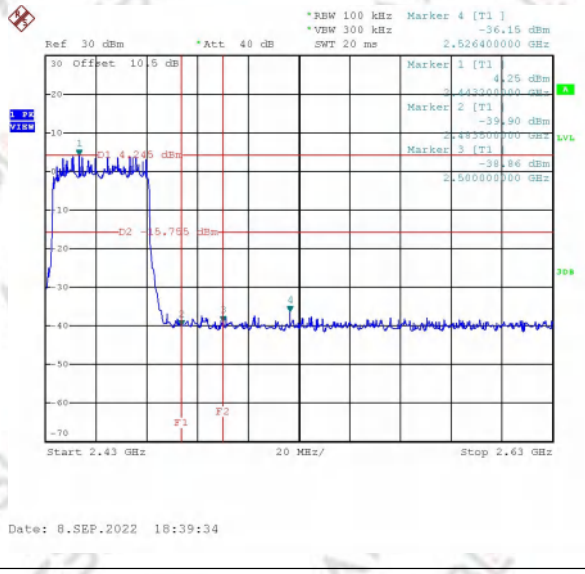
	

802.11ax20

Low_Ant. 0	High_Ant. 0
	
Low_Ant. 1	High_Ant. 1
	

802.11ax40

Low_Ant. 0	High_Ant. 0
	
Low_Ant. 1	High_Ant. 1
	

5. POWER SPECTRAL DENSITY TEST

5.1 LIMIT

FCC Part15.247 , Subpart C RSS-247 Clause 5.2(b)				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e) RSS-247 Clause 5.2(b)	Power Spectral Density	≤8 dBm (RBW ≥3kHz)	2400-2483.5	PASS

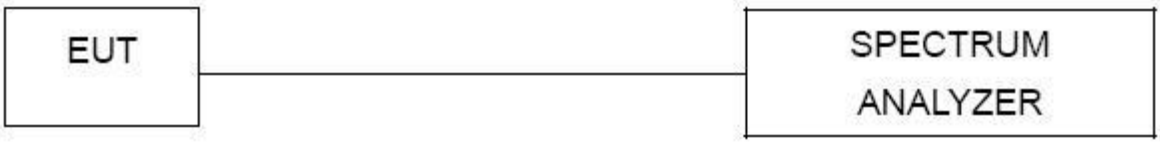
5.2 TEST PROCEDURE

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

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

5.6 TEST RESULTS

Temperature:	25℃	Relative Humidity:	60%RH
Test Voltage:	AC120V	Test Mode:	All Modes

802.11b

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	0	2.3	-0.60	8	PASS
		1	2.4	-1.43	8	PASS
		0+1	2.4	2.02	8	PASS
06	2437	0	2.3	-1.05	8	PASS
		1	2.4	-0.97	8	PASS
		0+1	2.4	2.00	8	PASS
11	2462	0	2.3	-0.49	8	PASS
		1	2.4	-1.43	8	PASS
		0+1	2.4	2.08	8	PASS

802.11g

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	0	2.3	-4.85	8	PASS
		1	2.4	-6.22	8	PASS
		0+1	2.4	-2.47	8	PASS
06	2437	0	2.3	-6.84	8	PASS
		1	2.4	-6.33	8	PASS
		0+1	2.4	-3.57	8	PASS
11	2462	0	2.3	-4.74	8	PASS
		1	2.4	-6.84	8	PASS
		0+1	2.4	-2.65	8	PASS

802.11n20

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	0	2.3	-7.09	8	PASS
		1	2.4	-7.05	8	PASS
		0+1	2.4	-4.06	8	PASS
06	2437	0	2.3	-7.44	8	PASS
		1	2.4	-8.08	8	PASS
		0+1	2.4	-4.74	8	PASS
11	2462	0	2.3	-7.89	8	PASS
		1	2.4	-7.94	8	PASS
		0+1	2.4	-4.90	8	PASS

802.11n40

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
03	2422	0	2.3	-10.36	8	PASS
		1	2.4	-8.64	8	PASS
		0+1	2.4	-6.41	8	PASS
06	2437	0	2.3	-10.08	8	PASS
		1	2.4	-9.71	8	PASS
		0+1	2.4	-6.88	8	PASS
09	2452	0	2.3	-9.26	8	PASS
		1	2.4	-11.17	8	PASS
		0+1	2.4	-7.10	8	PASS

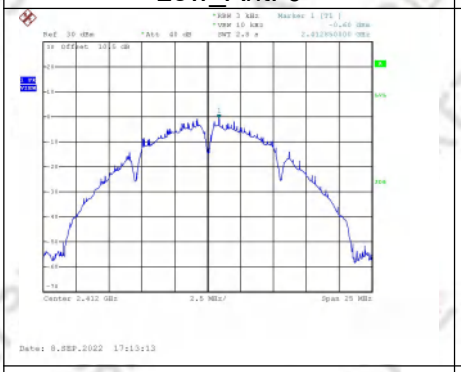
802.11ax20

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
01	2412	0	2.3	-8.38	8	PASS
		1	2.4	-8.98	8	PASS
		0+1	2.4	-5.66	8	PASS
06	2437	0	2.3	-9.17	8	PASS
		1	2.4	-8.94	8	PASS
		0+1	2.4	-6.04	8	PASS
11	2462	0	2.3	-8.73	8	PASS
		1	2.4	-8.62	8	PASS
		0+1	2.4	-5.66	8	PASS

802.11ax40

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
03	2422	0	2.3	-9.91	8	PASS
		1	2.4	-10.86	8	PASS
		0+1	2.4	-7.35	8	PASS
06	2437	0	2.3	-10.33	8	PASS
		1	2.4	-11.40	8	PASS
		0+1	2.4	-7.82	8	PASS
09	2452	0	2.3	-11.00	8	PASS
		1	2.4	-10.89	8	PASS
		0+1	2.4	-7.93	8	PASS

802.11b

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
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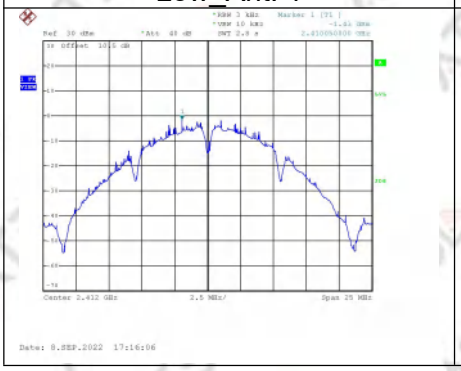
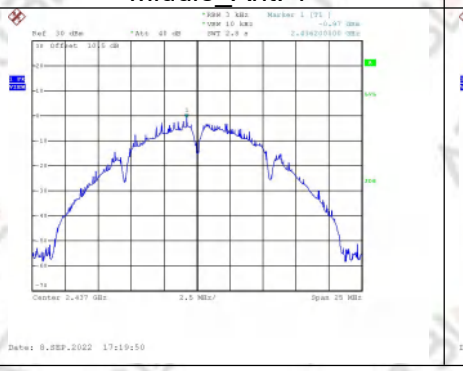
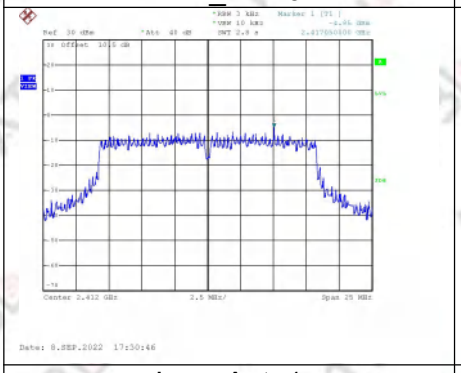
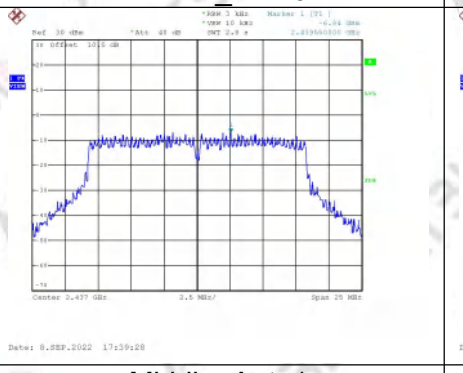
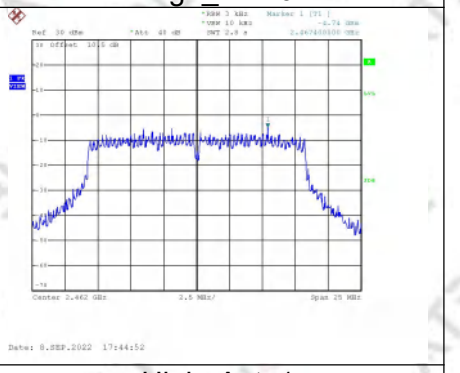
		

802.11g

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
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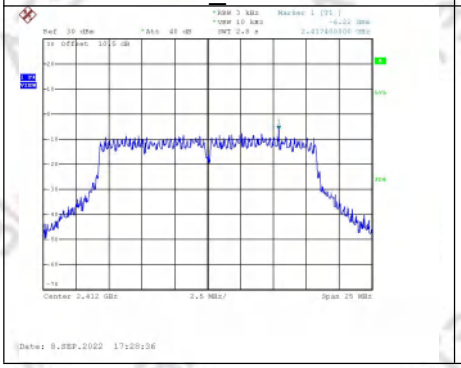	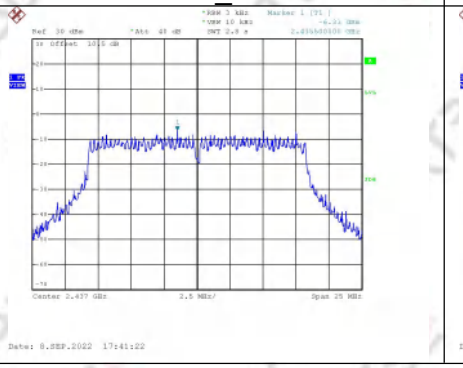	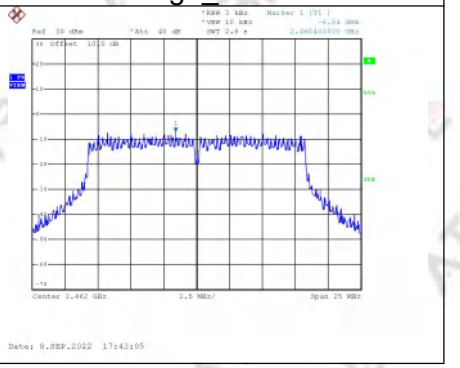

802.11n20

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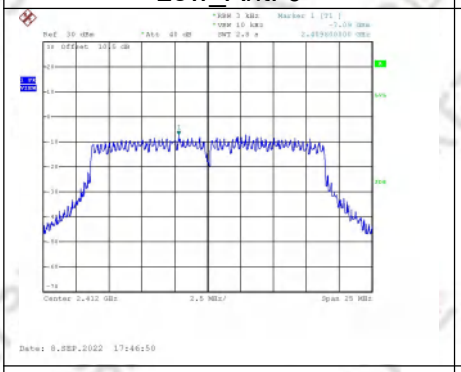	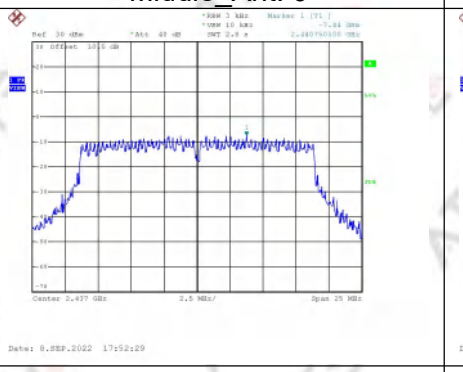	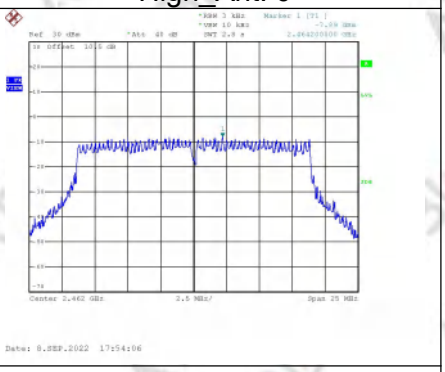
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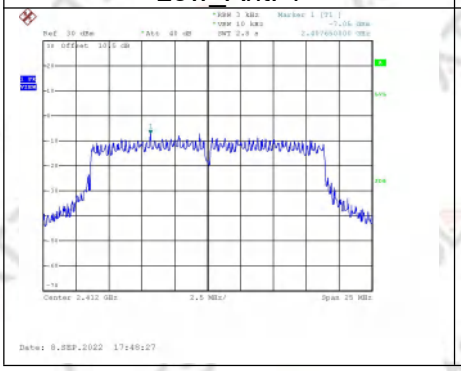	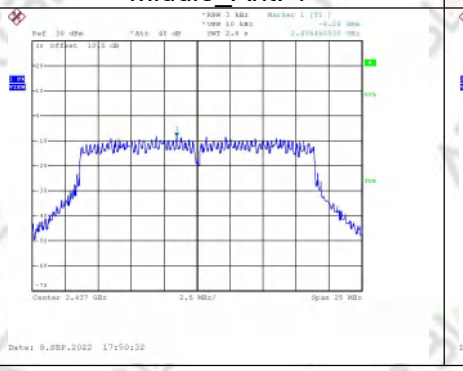	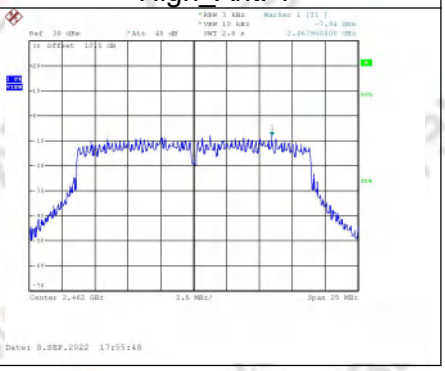

802.11n40

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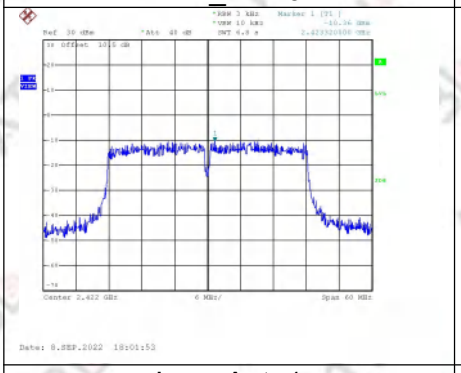	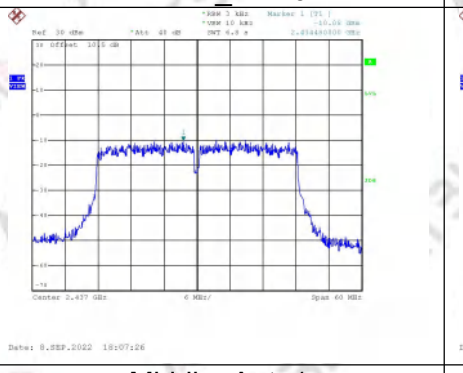	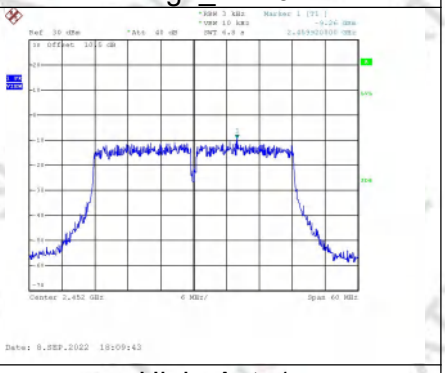
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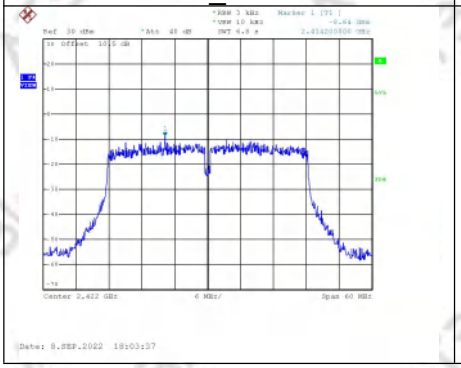
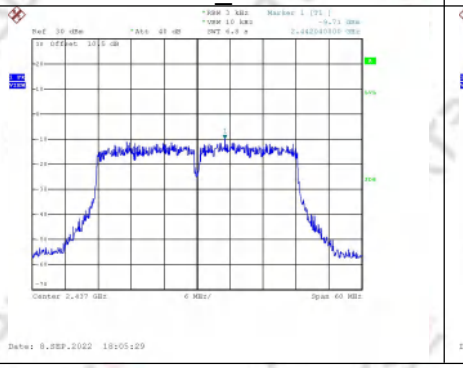
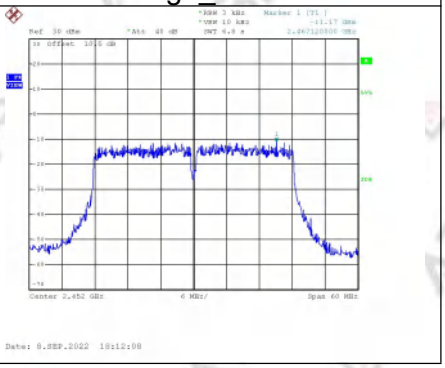
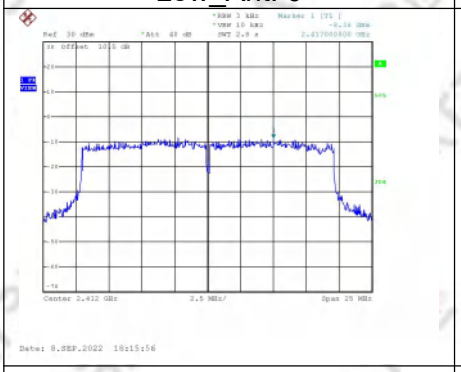
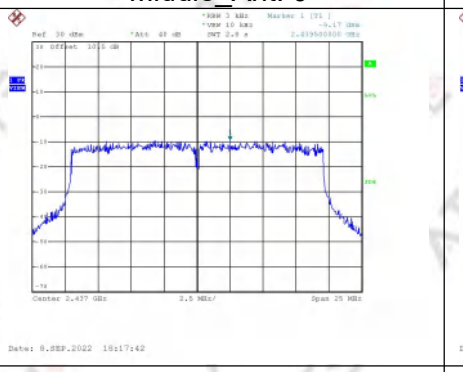
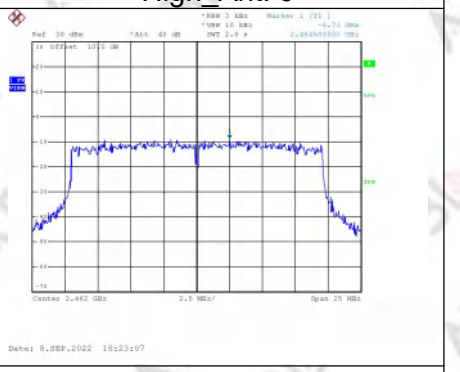
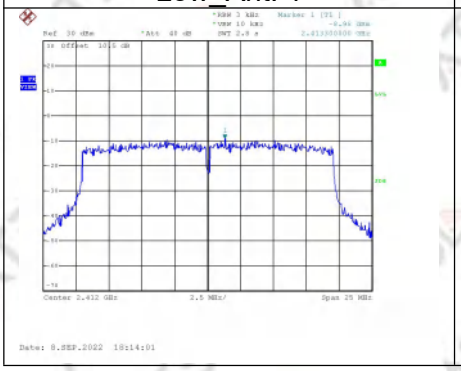
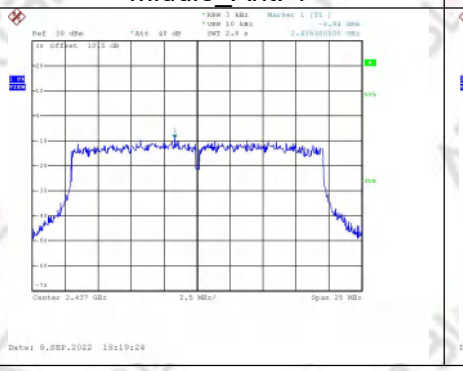
		

802.11ax20

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

802.11ax40

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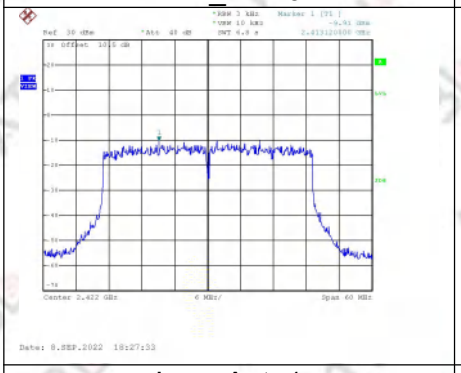
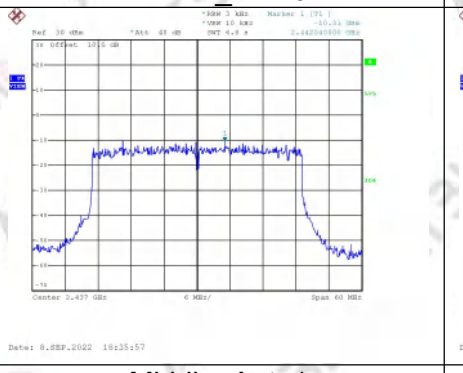
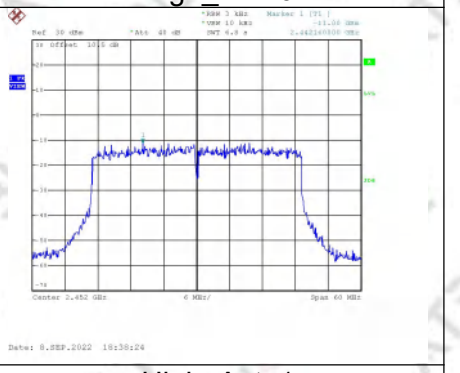
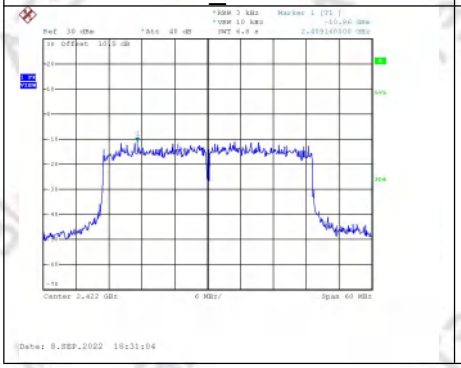
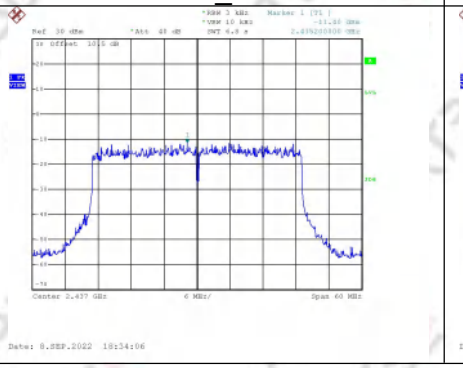
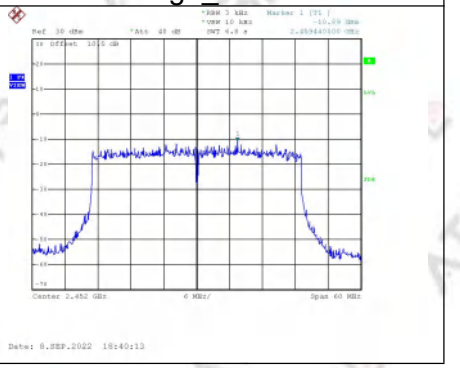
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

6. BANDWIDTH TEST

6.1 LIMIT

FCC Part15.247,Subpart C RSS-Gen Clause 6.7				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2) RSS-247 5.2 (a)	Bandwidth	≥500kHz (6dB bandwidth)	2400-2483.5	PASS
RSS-Gen Clause 6.7	99% Bandwidth	For reporting purposes only.	2400-2483.5	PASS

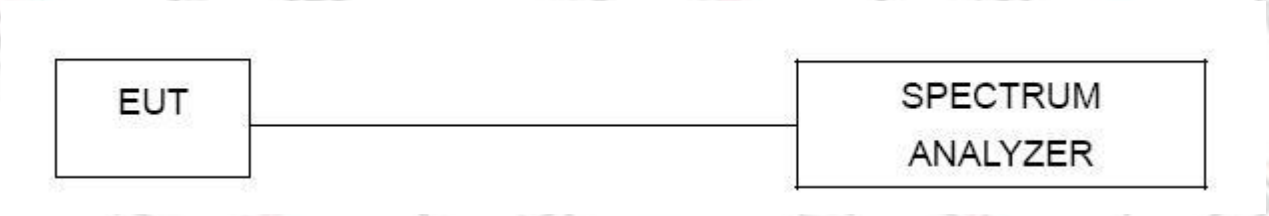
6.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW≥3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be≥6 dB.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

6.6 TEST RESULTS

Temperature:	25℃	Relative Humidity:	60%RH
Test Voltage:	AC120V	Test Mode:	All Modes

802.11b

CH.	Freq. MHz	Ant. No.	6 dB Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)	Result
01	2412	0	8.03	0.5	PASS
		1	7.27	0.5	PASS
06	2437	0	7.11	0.5	PASS
		1	7.13	0.5	PASS
11	2462	0	8.08	0.5	PASS
		1	7.63	0.5	PASS

802.11g

CH.	Freq. MHz	Ant. No.	6 dB Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)	Result
01	2412	0	16.06	0.5	PASS
		1	16.34	0.5	PASS
06	2437	0	16.34	0.5	PASS
		1	16.40	0.5	PASS
11	2462	0	16.04	0.5	PASS
		1	16.34	0.5	PASS

802.11n20

CH.	Freq. MHz	Ant. No.	6 dB Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)	Result
01	2412	0	16.30	0.5	PASS
		1	16.31	0.5	PASS
06	2437	0	16.32	0.5	PASS
		1	16.99	0.5	PASS
11	2462	0	16.87	0.5	PASS
		1	15.99	0.5	PASS

802.11n40

CH.	Freq. MHz	Ant. No.	6 dB Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)	Result
03	2422	0	36.12	0.5	PASS
		1	36.04	0.5	PASS
06	2437	0	35.36	0.5	PASS
		1	35.75	0.5	PASS
09	2452	0	35.80	0.5	PASS
		1	35.80	0.5	PASS

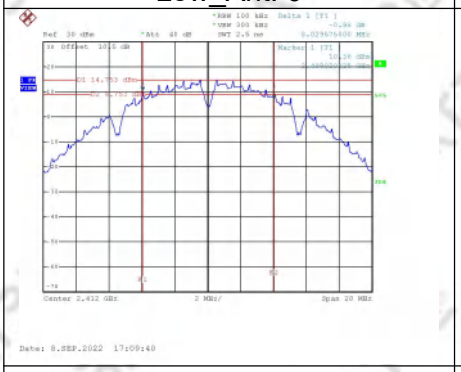
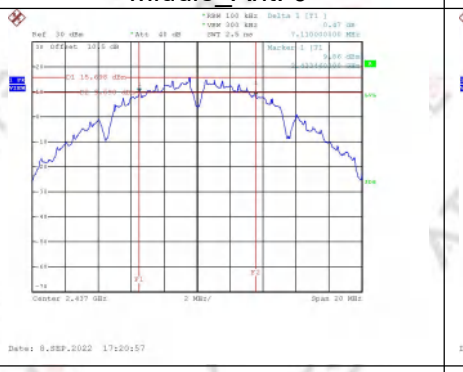
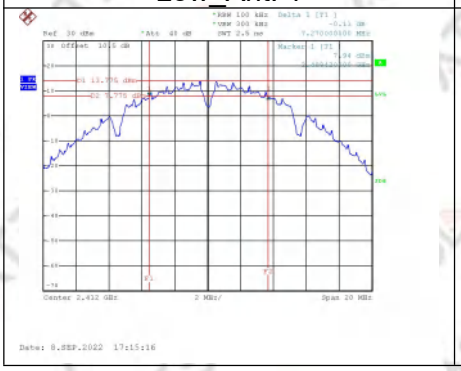
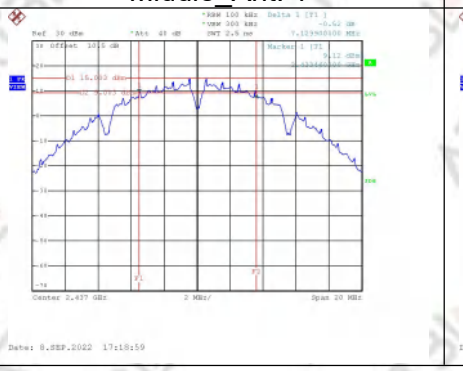
802.11ax20

CH.	Freq. MHz	Ant. No.	6 dB Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)	Result
01	2412	0	18.11	0.5	PASS
		1	17.47	0.5	PASS
06	2437	0	17.80	0.5	PASS
		1	18.06	0.5	PASS
11	2462	0	17.95	0.5	PASS
		1	16.44	0.5	PASS

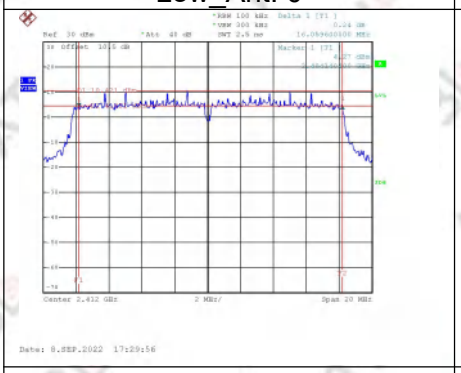
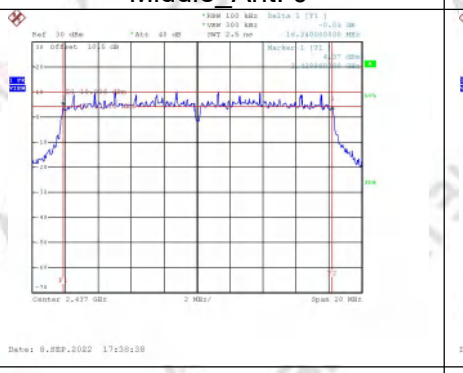
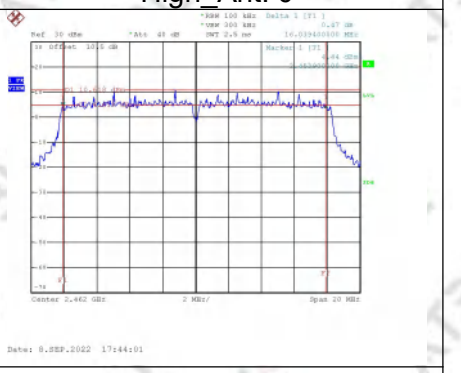
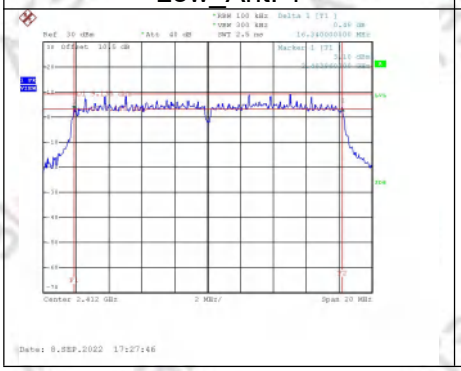
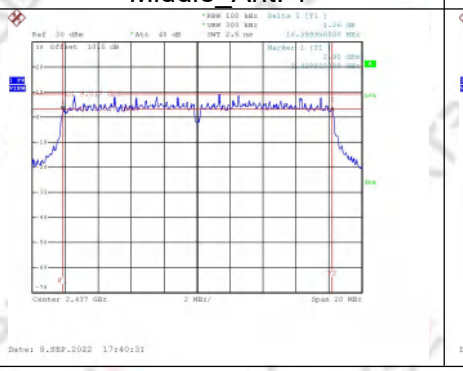
802.11ax40

CH.	Freq. MHz	Ant. No.	6 dB Bandwidth (MHz)	6 dB Bandwidth Limit (MHz)	Result
03	2422	0	37.80	0.5	PASS
		1	37.72	0.5	PASS
06	2437	0	37.72	0.5	PASS
		1	37.59	0.5	PASS
09	2452	0	37.56	0.5	PASS
		1	36.63	0.5	PASS

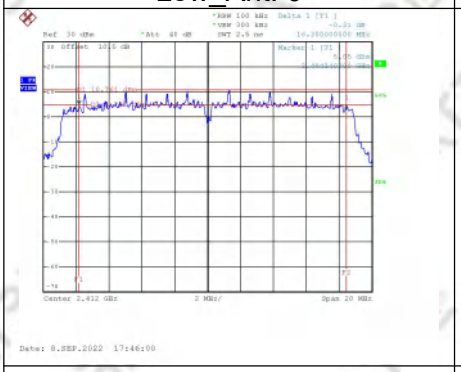
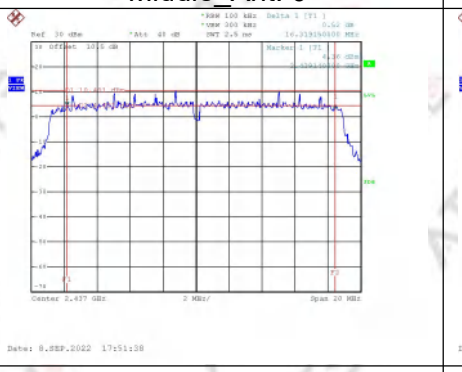
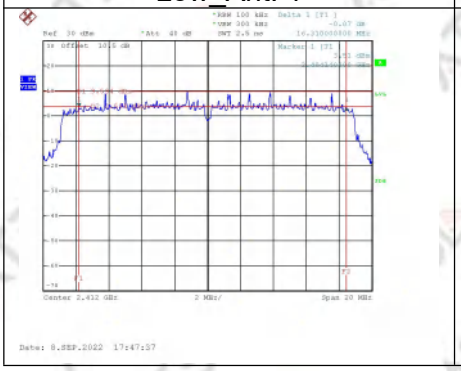
802.11b

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

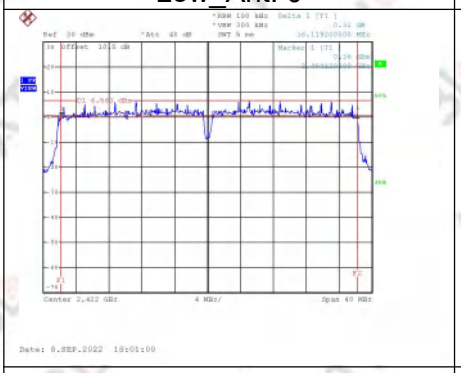
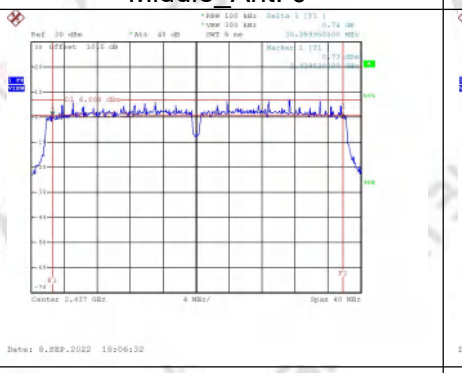
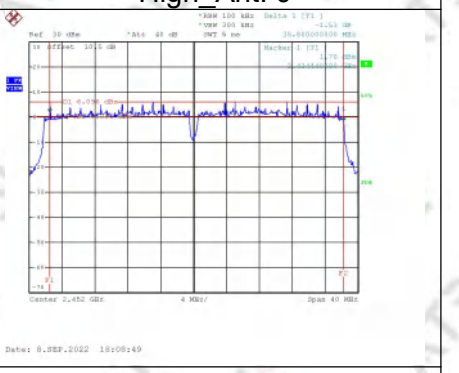
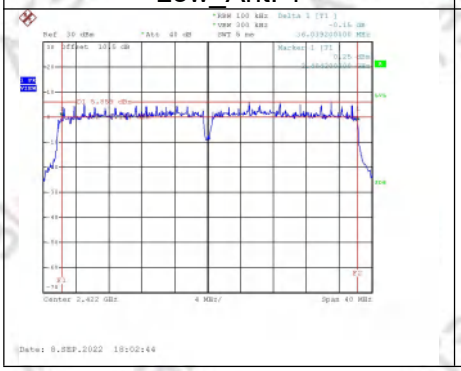
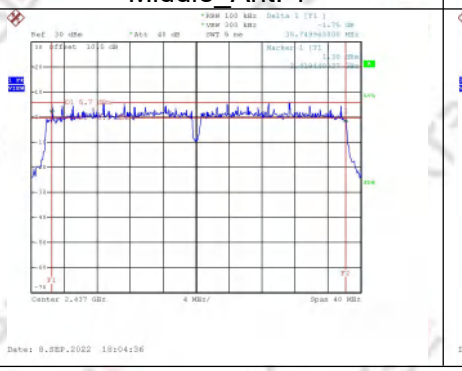
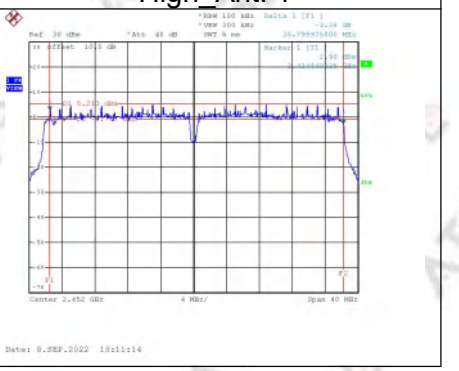
802.11g

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

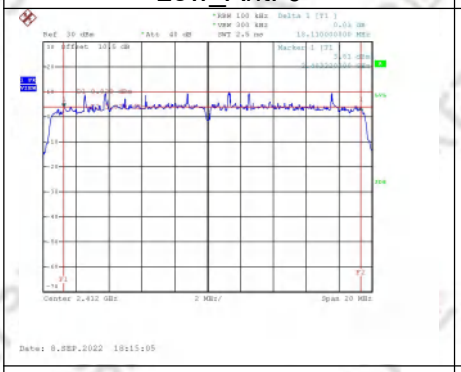
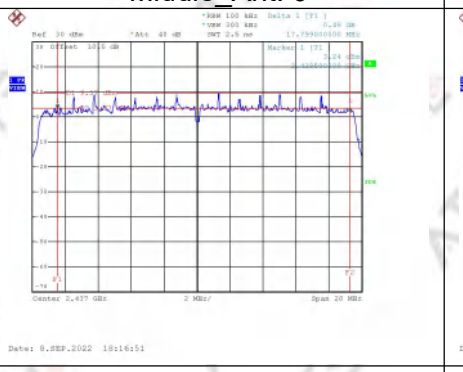
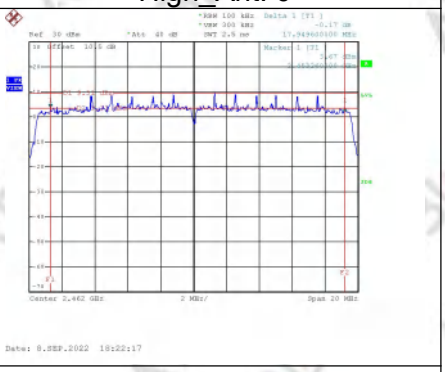
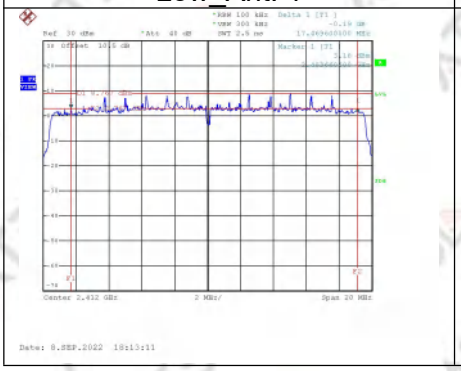
802.11n20

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

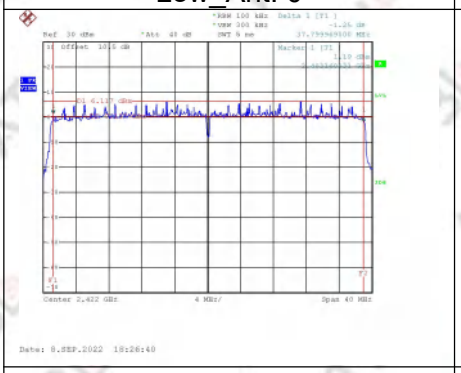
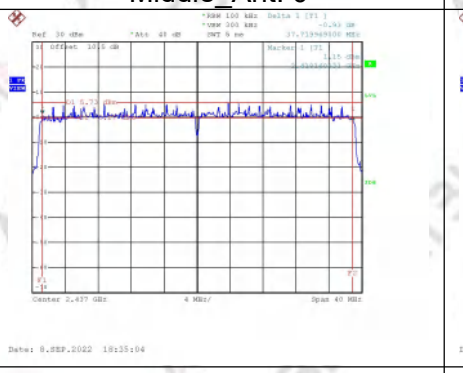
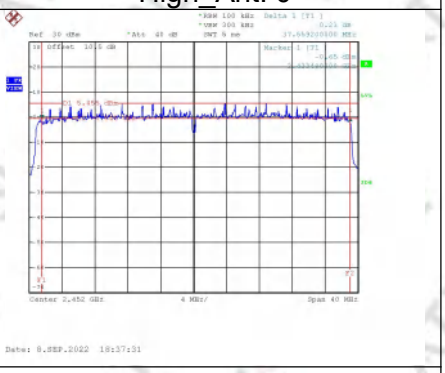
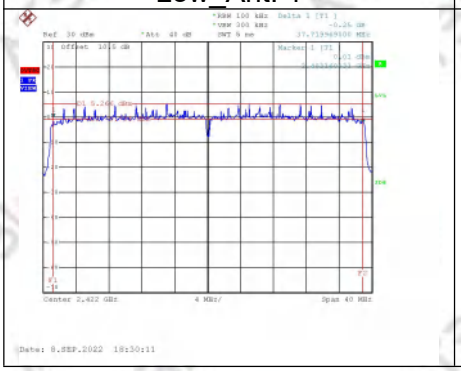
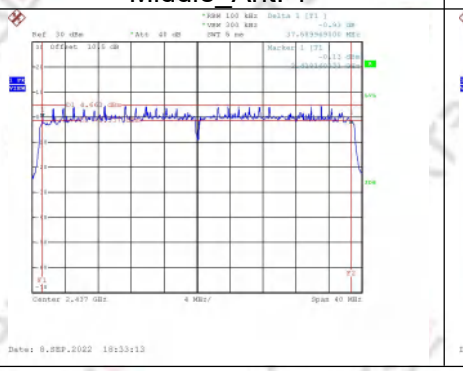
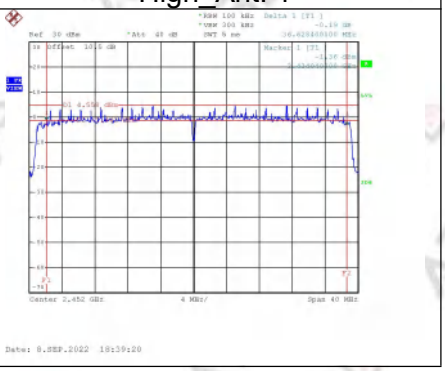
802.11n40

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

802.11ax20

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

802.11ax40

Low_Ant. 0	Middle_Ant. 0	High_Ant. 0
		
Low_Ant. 1	**Middle_Ant. 1**	**High_Ant. 1**
		

7. PEAK OUTPUT POWER TEST

7.1 LIMIT

FCC Part15.247,Subpart C RSS-247 Clause 5.4(d)				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3) RSS-247 Clause 5.4(d)	Output Power	1 watt or 30dBm	2400-2483.5	PASS
RSS-247	EIRP	4W	2400-2483.5	PASS

7.2 TEST PROCEDURE

PKPM1 Peak power meter method:

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

7.5 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

7.6 TEST RESULTS

Temperature:	25℃	Relative Humidity:	60%RH
Test Voltage:	AC120V	Test Mode:	All Modes

802.11b

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	Peak Power (dBm)	Power Limit (dBm)	Result
01	2412	0	2.3	26.97	30	PASS
		1	2.4	26.11	30	PASS
		0+1	2.4	29.57	30	PASS
06	2437	0	2.3	27.25	30	PASS
		1	2.4	26.20	30	PASS
		0+1	2.4	29.77	30	PASS
11	2462	0	2.3	27.55	30	PASS
		1	2.4	26.15	30	PASS
		0+1	2.4	29.92	30	PASS

802.11g

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	Peak Power (dBm)	Power Limit (dBm)	Result
01	2412	0	2.3	26.57	30	PASS
		1	2.4	25.69	30	PASS
		0+1	2.4	29.16	30	PASS
06	2437	0	2.3	27.33	30	PASS
		1	2.4	25.82	30	PASS
		0+1	2.4	29.65	30	PASS
11	2462	0	2.3	26.79	30	PASS
		1	2.4	26.82	30	PASS
		0+1	2.4	29.82	30	PASS

802.11n20

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	Peak Power (dBm)	Power Limit (dBm)	Result
01	2412	0	2.3	27.20	30	PASS
		1	2.4	26.01	30	PASS
		0+1	2.4	29.66	30	PASS
06	2437	0	2.3	27.09	30	PASS
		1	2.4	26.07	30	PASS
		0+1	2.4	29.62	30	PASS
11	2462	0	2.3	27.44	30	PASS
		1	2.4	25.82	30	PASS
		0+1	2.4	29.72	30	PASS

802.11n40

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	Peak Power (dBm)	Power Limit (dBm)	Result
03	2422	0	2.3	27.00	30	PASS
		1	2.4	26.11	30	PASS
		0+1	2.4	29.59	30	PASS
06	2437	0	2.3	26.99	30	PASS
		1	2.4	26.52	30	PASS
		0+1	2.4	29.77	30	PASS
09	2452	0	2.3	27.33	30	PASS
		1	2.4	25.82	30	PASS
		0+1	2.4	29.65	30	PASS

802.11ax20

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	Peak Power (dBm)	Power Limit (dBm)	Result
01	2412	0	2.3	27.28	30	PASS
		1	2.4	26.35	30	PASS
		0+1	2.4	29.85	30	PASS
06	2437	0	2.3	26.92	30	PASS
		1	2.4	26.34	30	PASS
		0+1	2.4	29.65	30	PASS
11	2462	0	2.3	26.84	30	PASS
		1	2.4	26.18	30	PASS
		0+1	2.4	29.53	30	PASS

802.11ax40

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	Peak Power (dBm)	Power Limit (dBm)	Result
03	2422	0	2.3	26.92	30	PASS
		1	2.4	25.88	30	PASS
		0+1	2.4	29.44	30	PASS
06	2437	0	2.3	26.56	30	PASS
		1	2.4	26.64	30	PASS
		0+1	2.4	29.61	30	PASS
09	2452	0	2.3	27.41	30	PASS
		1	2.4	25.71	30	PASS
		0+1	2.4	29.65	30	PASS

The worst mode of average power:
802.11b

CH.	Freq. MHz	Ant. No.	Ant. Gain (dBi)	Duty Cycle (%)	Duty offset (dB)	Avg. Power (dBm)	Power Limit (dBm)	Result
01	2412	0	2.3	88.31	0.54	23.74	30	PASS
		1	2.4	88.31	0.54	22.84	30	PASS
		0+1	2.4	88.31	0.54	26.32	30	PASS
06	2437	0	2.3	88.31	0.54	23.77	30	PASS
		1	2.4	88.31	0.54	22.94	30	PASS
		0+1	2.4	88.31	0.54	26.39	30	PASS
11	2462	0	2.3	88.31	0.54	23.80	30	PASS
		1	2.4	88.31	0.54	22.92	30	PASS
		0+1	2.4	88.31	0.54	26.39	30	PASS

REMARK:

Our power sensor test AVG power has no duty cycle display. The power sensor measures AVG power is Burst power. The software has considered the factor of the duty cycle factor, so it is unnecessary to add it again.

8. ANTENNA REQUIREMENT

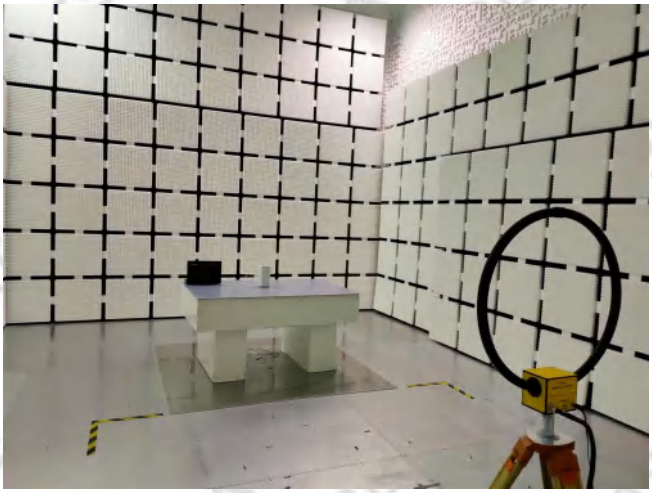
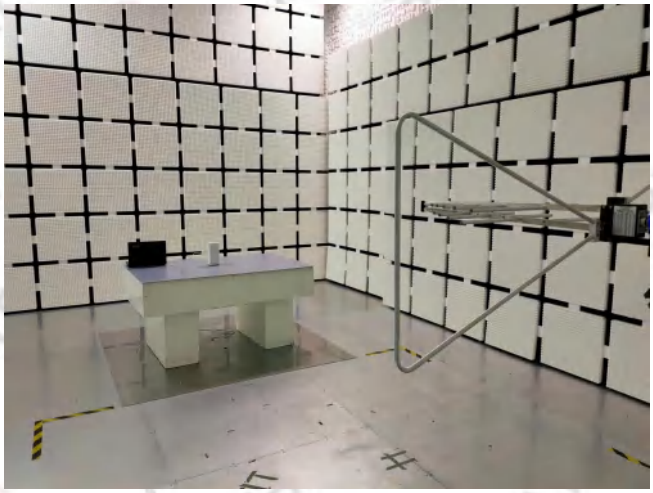
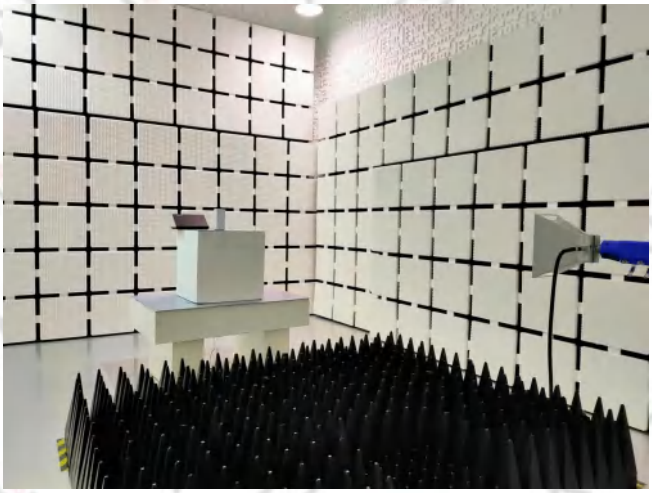
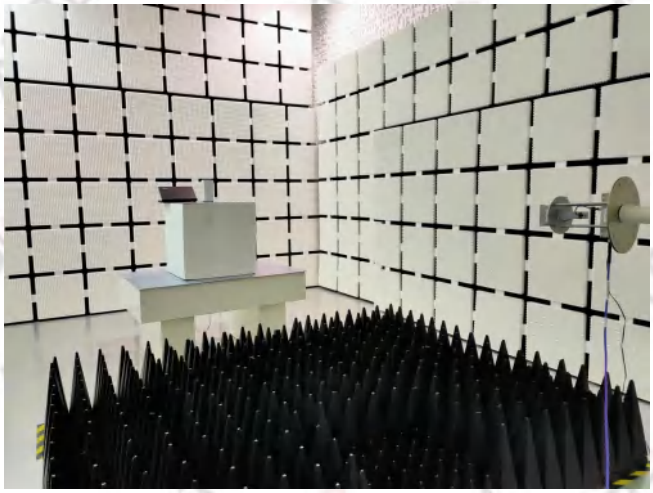
8.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, 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.

8.2 EUT ANTENNA

The EUT antenna is PCB Antenna. It comply with the standard requirement.

APPENDIX-PHOTOS OF TEST SETUP

AC Power Line Conducted Emissions	Radiated Emissions for 9kHz~30MHz
	
Radiated Emissions for 30MHz~1GHz	Radiated Emissions for 1GHz~18GHz
	
Radiated Emissions for above 18GHz	N/A
	N/A

※※※※※END OF THE REPORT※※※※※