FCC REPORT
(WIFI)

Applicant:	INFINIX MOBILITY LIMITED
Address of Applicant:	FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET FOTAN NT

Equipment Under Test (EUT)

Product Name:	Mobile Phone
Model No.:	X693
Trade mark:	Infinix
FCC ID:	2AIZN-X693
Applicable standards:	**FCC CFR Title 47 Part 15 Subpart C Section 15.247**
Date of sample receipt:	08 Jan., 2021
Date of Test:	09 Jan., to 20 Jan., 2021
Date of report issued:	21 Jan., 2021
Test Result:	PASS*

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

Authorized Signature:

Bruce Zhang
Laboratory Manager

2 Version

Version No.	Date	Description
00	*21 Jan., 2021*	*Original*

Tested by: Janet Wei ***Date:*** *21 Jan., 2021*

Test Engineer

Reviewed by: Winner Zhang ***Date:*** *21 Jan., 2021*

Project Engineer

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4 Test Summary

Test Items	Section in CFR 47	Test Data	Result
Antenna requirement	15.203 & 15.247 (b)	See Section 6.1	Pass
AC Power Line Conducted Emission	15.207	See Section 6.2	Pass
Duty Cycle	ANSI C63.10-2013	Appendix A – 2.4G Wi-Fi	Pass
Conducted Peak Output Power	15.247 (b)(3)	Appendix A – 2.4G Wi-Fi	Pass
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	Appendix A – 2.4G Wi-Fi	Pass
Power Spectral Density	15.247 (e)	Appendix A – 2.4G Wi-Fi	Pass
Conducted Band Edge	15.247 (d)	Appendix A – 2.4G Wi-Fi	Pass
Radiated Band Edge		See Section 6.6.2	Pass
Conducted Spurious Emission	15.205 & 15.209	Appendix A – 2.4G Wi-Fi	Pass
Radiated Spurious Emission		See Section 6.7.2	Pass

Remark:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *N/A: Not Applicable.*
3. *The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).*

Test Method:	*ANSI C63.10-2013* *KDB 558074 D01 15.247 Meas Guidance v05r02*

5 General Information

5.1 Client Information

Applicant:	INFINIX MOBILITY LIMITED
Address:	FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET FOTAN NT
Manufacturer:	INFINIX MOBILITY LIMITED
Address:	FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET FOTAN NT
Factory:	SHENZHEN TECNO TECHNOLOGY CO.,LTD.
Address:	101, Building 24, Waijing Industrial Park, Fumin Community, Fucheng Street, Longhua District, Shenzhen City, P.R.China

5.2 General Description of E.U.T.

Product Name:	Mobile Phone
Model No.:	X693
Operation Frequency:	2412MHz~2462MHz: 802.11b/802.11g/802.11n(HT20) 2422MHz~2452MHz: 802.11n(HT40)
Channel numbers:	11: 802.11b/802.11g/802.11(HT20) 7: 802.11n(HT40)
Channel separation:	5MHz
Modulation technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	Internal Antenna
Antenna gain:	1.2dBi
Power supply:	Rechargeable Li-ion polymer Battery DC3.85V-4900mAh
AC adapter:	Model: CQ-18LX Input: AC100-240V, 50/60Hz, 0.6A Output: DC 5.0V - 9.0V ⎓ 2.0A, 9.0V - 12.0V ⎓ 1.5A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation Frequency each of channel for 802.11b/g/n(HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

1. *For 802.11n-HT40 mode, the channel number is from 3 to 9;*
2. *Channel 1, 6 & 11 selected for 802.11b/g/n-HT20 as Lowest, Middle and Highest channel. Channel 3, 6 & 9 selected for 802.11n-HT40 as Lowest, Middle and Highest Channel.*

5.3 Test environment and mode, and test samples plans

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Transmitting mode	Keep the EUT in continuous transmitting with modulation

Radiated Emission: The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate, the follow list were the worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13.5Mbps

Test Samples Plans:

Samples Number	**Used for Test Items**
1#	*Conducted measurements test method*
1#	*Radiated measurements test method*
1#	*EUT constructional details*

Remark: JianYan Testing Group Shenzhen Co., Ltd. is only responsible for the test project data of the above samples, and will keep the above samples for a month.

5.4 Description of Support Units

The EUT has been tested as an independent unit.

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±1.60 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±3.12 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.16 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±3.20 dB (k=2)

5.6 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.7 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.8 Test Instruments list

Radiated Emission:

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-21-2020	07-20-2021
Loop Antenna	SCHWARZBECK	FMZB1519B	044	03-07-2020	03-06-2021
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-07-2020	03-06-2021
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-07-2020	03-06-2021
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-20-2020	06-19-2021
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-18-2020	11-17-2021
EMI Test Software	AUDIX	E3	Version: 6.110919b		
Pre-amplifier	HP	8447D	2944A09358	03-07-2020	03-06-2021
Pre-amplifier	CD	PAP-1G18	11804	03-07-2020	03-06-2021
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-05-2020	03-04-2021
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-18-2020	11-17-2021
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-05-2020	03-04-2021
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-07-2020	03-06-2021
Cable	MICRO-COAX	MFR64639	K10742-5	03-07-2020	03-06-2021
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-07-2020	03-06-2021
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTEST	MTS8200	Version: 2.0.0.0		

Conducted Emission:

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-05-2020	03-04-2021
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-05-2020	03-04-2021
LISN	CHASE	MN2050D	1447	03-05-2020	03-04-2021
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	06-18-2020	07-17-2021
Cable	HP	10503A	N/A	03-05-2020	03-04-2021
EMI Test Software	AUDIX	E3	Version: 6.110919b		

Conducted method:

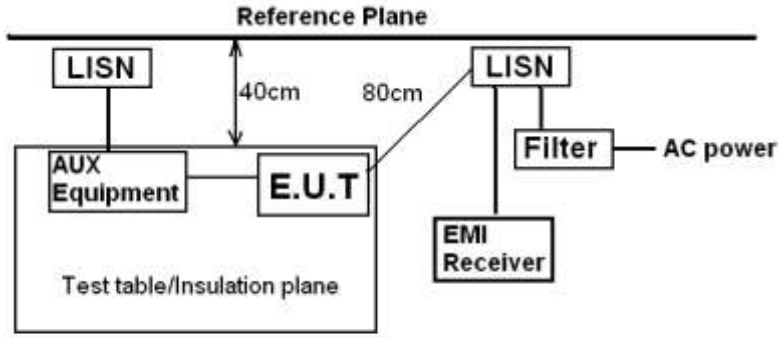
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
Spectrum Analyzer	Keysight	N9010B	MY60240202	11-27-2020	11-26-2021
Vector Signal Generator	Keysight	N5182B	MY59101009	11-27-2020	11-26-2021
Analog Signal Generator	Keysight	N5173B	MY59100765	11-27-2020	11-26-2021
Power Detector Box	MWRF-test	MW100-PSB	MW201020JYT	11-27-2020	11-26-2021
Simulated Station	Rohde & Schwarz	CMW270	102335	11-27-2020	11-26-2021
RF Control Box	MWRF-test	MW100-RFCB	MW200927JYT	N/A	N/A
PDU	MWRF-test	XY-G10	N/A	N/A	N/A
Test Software	MWRF-tes	MTS 8310	Version: 2.0.0.0		
DC Power Supply	Keysight	E3642A	MY60296194	11-27-2020	11-26-2021

6 Test results and Measurement Data

6.1 Antenna requirement

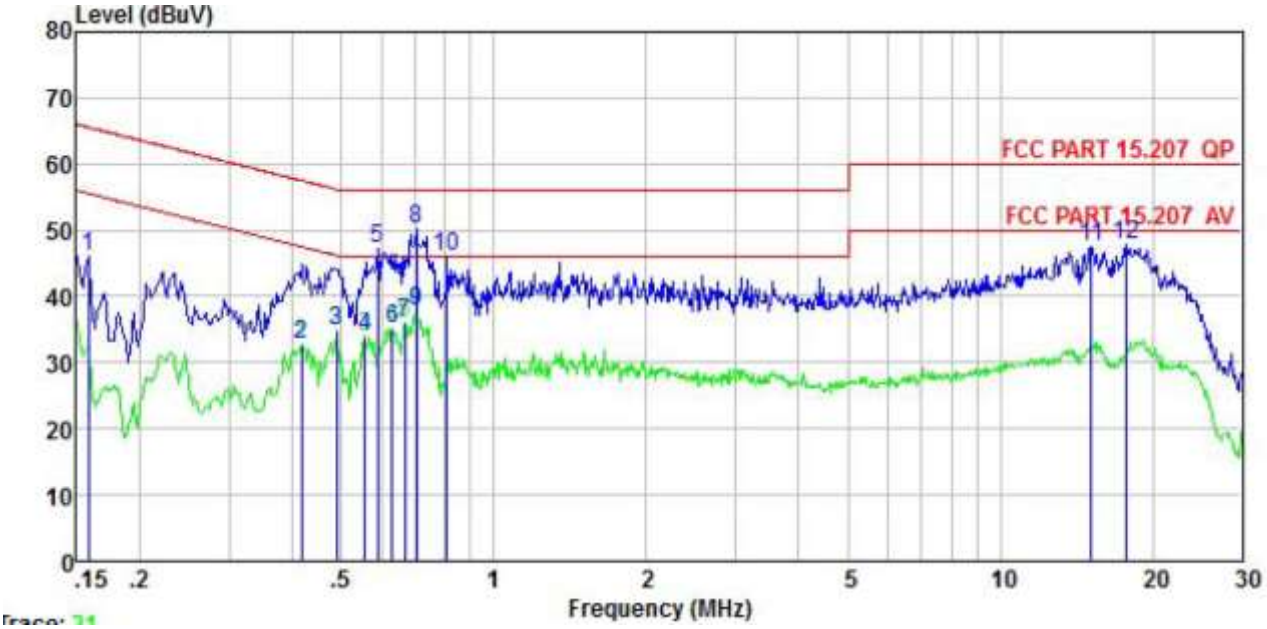
Standard requirement:	FCC Part 15 C Section 15.203 /247(b)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
E.U.T Antenna:	
The Wi-Fi antenna is an Internal antenna which cannot replace by end-user, the best case gain of the antenna is 1.2dBi.	

6.2 Conducted Emission

Test Requirement:	FCC Part 15 C Section 15.207		
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9 kHz, VBW=30 kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test procedure	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10(latest version) on conducted measurement.		
Test setup:	 *Remark* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*		
Test Instruments:	Refer to section 5.9 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

Measurement Data:

Product name:	Mobile Phone	Product model:	X693
Test by:	Janet	Test mode:	Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Huni: 55%

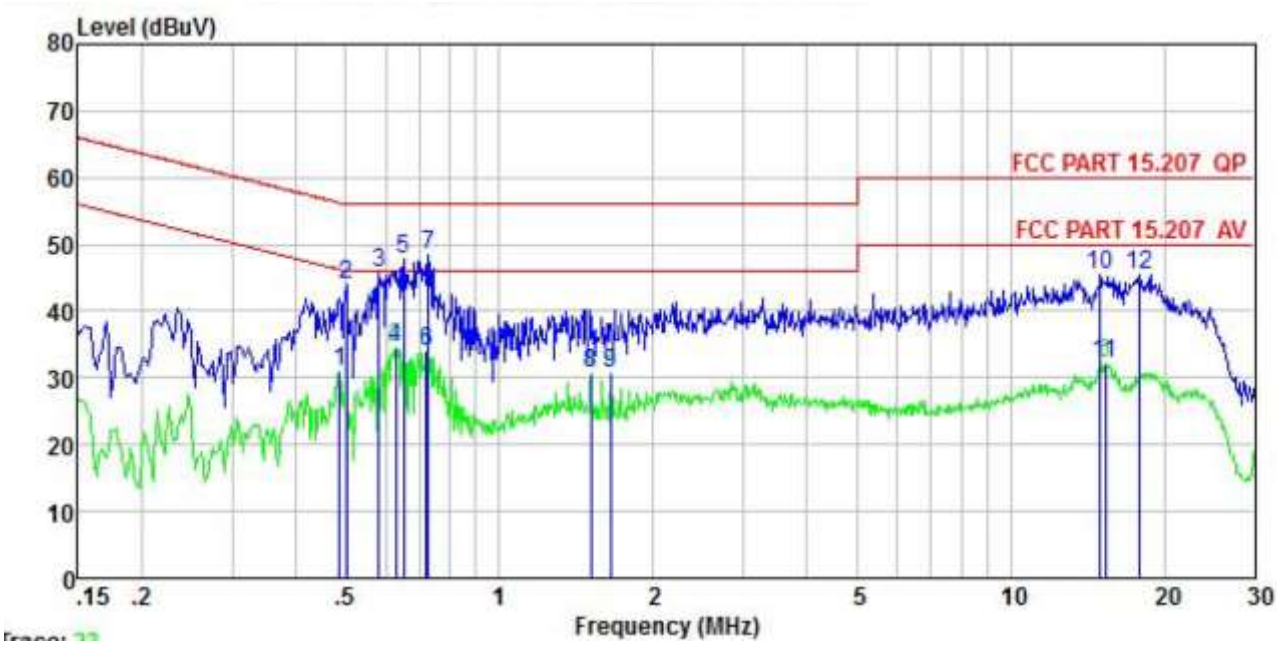


	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.158	35.92	-0.57	-0.07	10.77	46.05	65.56	-19.51	QP
2	0.417	22.13	-0.47	0.28	10.73	32.67	47.51	-14.84	Average
3	0.489	24.81	-0.44	-0.26	10.76	34.87	46.19	-11.32	Average
4	0.555	23.90	-0.46	-0.37	10.76	33.83	46.00	-12.17	Average
5	0.589	37.22	-0.48	-0.37	10.76	47.13	56.00	-8.87	QP
6	0.630	25.27	-0.50	-0.38	10.77	35.16	46.00	-10.84	Average
7	0.668	26.06	-0.52	-0.39	10.77	35.92	46.00	-10.08	Average
8	0.705	40.22	-0.53	-0.38	10.77	50.08	56.00	-5.92	QP
9	0.705	27.89	-0.53	-0.38	10.77	37.75	46.00	-8.25	Average
10	0.809	35.94	-0.57	-0.05	10.81	46.13	56.00	-9.87	QP
11	15.146	33.85	-0.70	3.53	10.90	47.58	60.00	-12.42	QP
12	17.755	35.57	-0.79	2.06	10.92	47.76	60.00	-12.24	QP

Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Aux Factor + Cable Loss.*

Product name:	Mobile Phone	Product model:	X693
Test by:	Janet	Test mode:	Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Huni: 55%

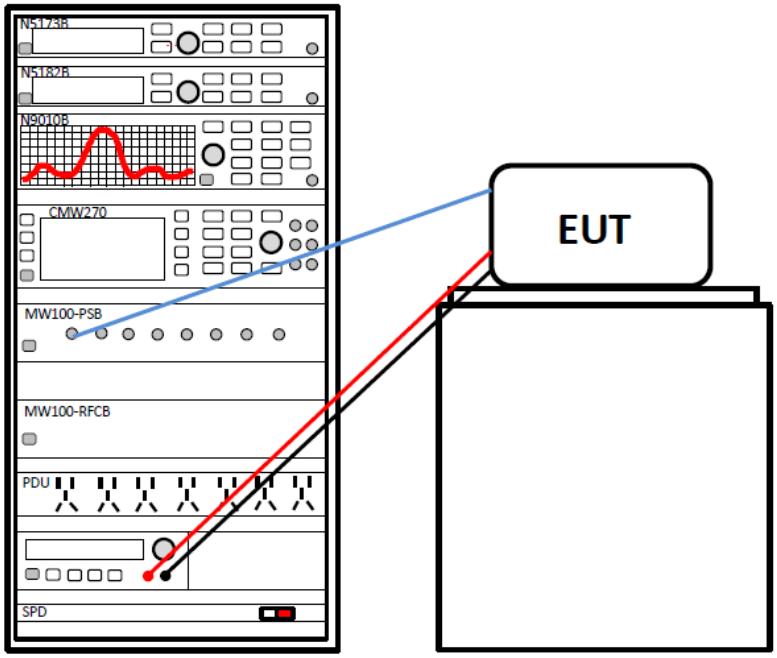


	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.486	20.78	-0.65	0.02	10.76	30.91	46.23	-15.32	Average
2	0.502	33.97	-0.65	0.03	10.76	44.11	56.00	-11.89	QP
3	0.582	35.64	-0.65	0.03	10.76	45.78	56.00	-10.22	QP
4	0.627	24.34	-0.64	0.04	10.77	34.51	46.00	-11.49	Average
5	0.651	37.55	-0.64	0.04	10.77	47.72	56.00	-8.28	QP
6	0.720	23.78	-0.64	0.04	10.78	33.96	46.00	-12.04	Average
7	0.727	38.09	-0.64	0.04	10.78	48.27	56.00	-7.73	QP
8	1.511	20.38	-0.70	0.13	10.92	30.73	46.00	-15.27	Average
9	1.654	20.26	-0.70	0.15	10.94	30.65	46.00	-15.35	Average
10	14.986	32.26	-0.81	3.09	10.90	45.44	60.00	-14.56	QP
11	15.307	19.06	-0.84	2.95	10.90	32.07	50.00	-17.93	Average
12	17.849	34.36	-1.09	1.39	10.92	45.58	60.00	-14.42	QP

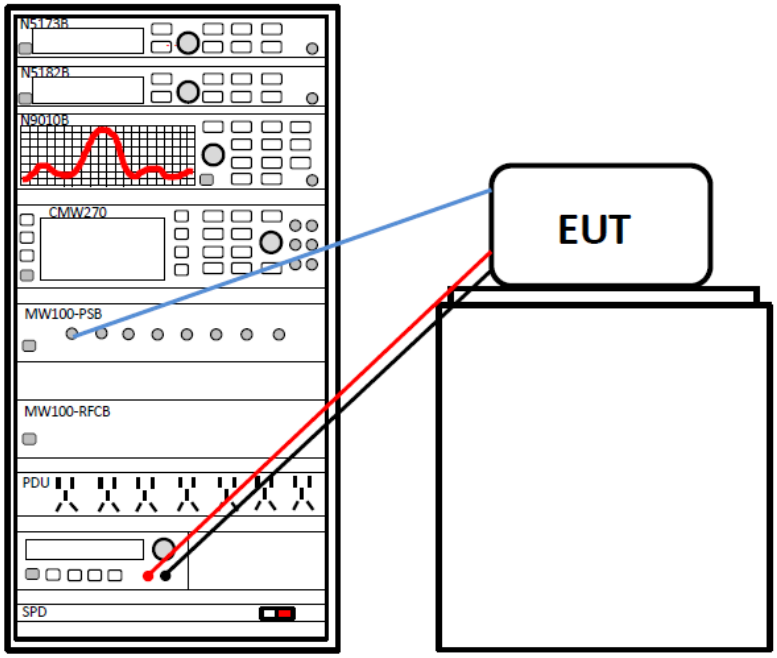
Notes:

1. *An initial pre-scan was performed on the line and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Aux Factor + Cable Loss.*

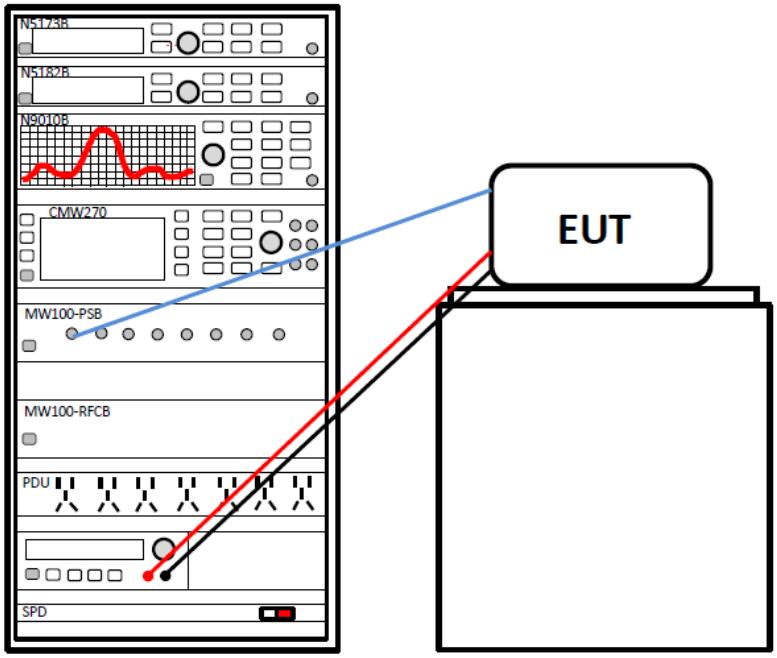
6.3 Conducted Output Power

Test Requirement:	FCC Part 15 C Section 15.247 (b)(3)
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 2.4G Wi-Fi**

6.4 Occupy Bandwidth

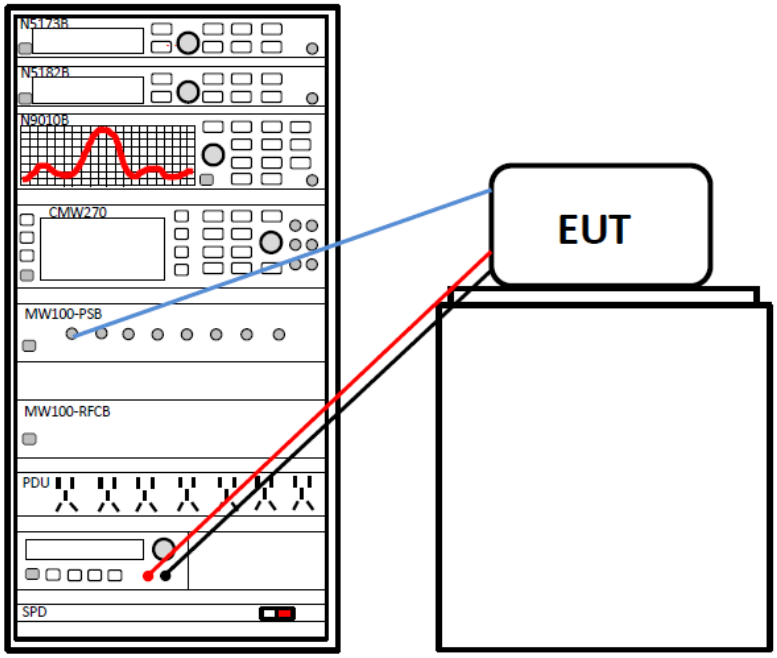
Test Requirement:	FCC Part 15 C Section 15.247 (a)(2)
Limit:	>500kHz
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 2.4G Wi-Fi**

6.5 Power Spectral Density

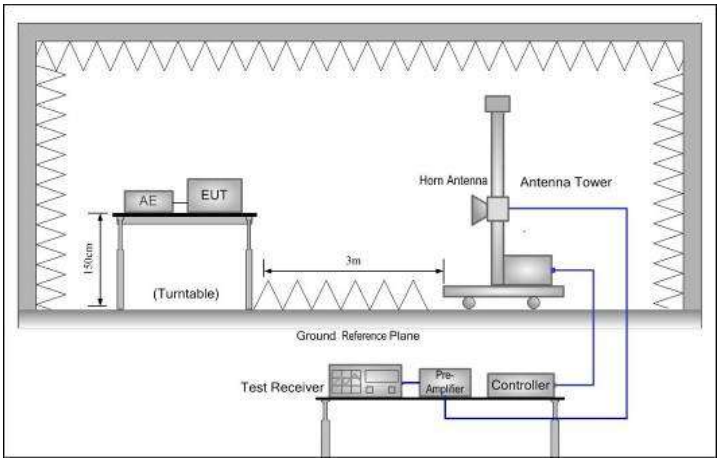
Test Requirement:	FCC Part 15 C Section 15.247 (e)
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 2.4G Wi-Fi**

6.6 Band Edge

6.6.1 Conducted Emission Method

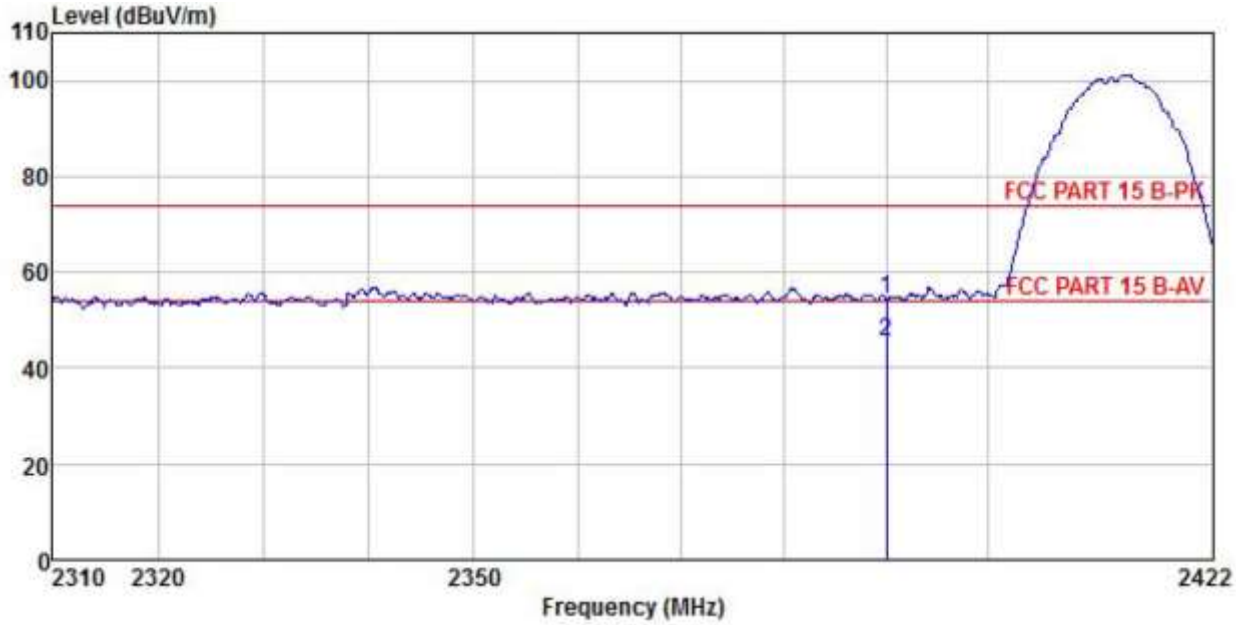
Test Requirement:	FCC Part 15 C Section 15.247 (d)
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 2.4G Wi-Fi**

6.6.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part 15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">2310 MHz to 2390 MHz and 2483.5 MHz to 2500 MHz</td></tr>
<tr><td>Test Distance:</td><td colspan="5">3m</td></tr>
<tr><td rowspan="4">Receiver setup:</td><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td rowspan="3">Limit:</td><td colspan="2">Frequency</td><td colspan="2">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td colspan="2" rowspan="2">Above 1GHz</td><td colspan="2">54.00</td><td>Average Value</td></tr>
<tr><td colspan="2">74.00</td><td>Peak Value</td></tr>
<tr><td>Test Procedure:</td><td colspan="5">1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td colspan="5"> 
</td></tr>
<tr><td>Test Instruments:</td><td colspan="5">Refer to section 5.9 for details</td></tr>
<tr><td>Test mode:</td><td colspan="5">Refer to section 5.3 for details</td></tr>
<tr><td>Test results:</td><td colspan="5">Passed</td></tr>
</table>

802.11b mode:

Product Name:	Mobile Phone	**Product Model:**	X693
Test By:	Janet	**Test mode:**	802.11b Tx mode
Test Channel:	Lowest channel	**Polarization:**	Vertical
Test Voltage:	AC 120/60Hz	**Environment:**	Temp: 24℃ Huni: 57%

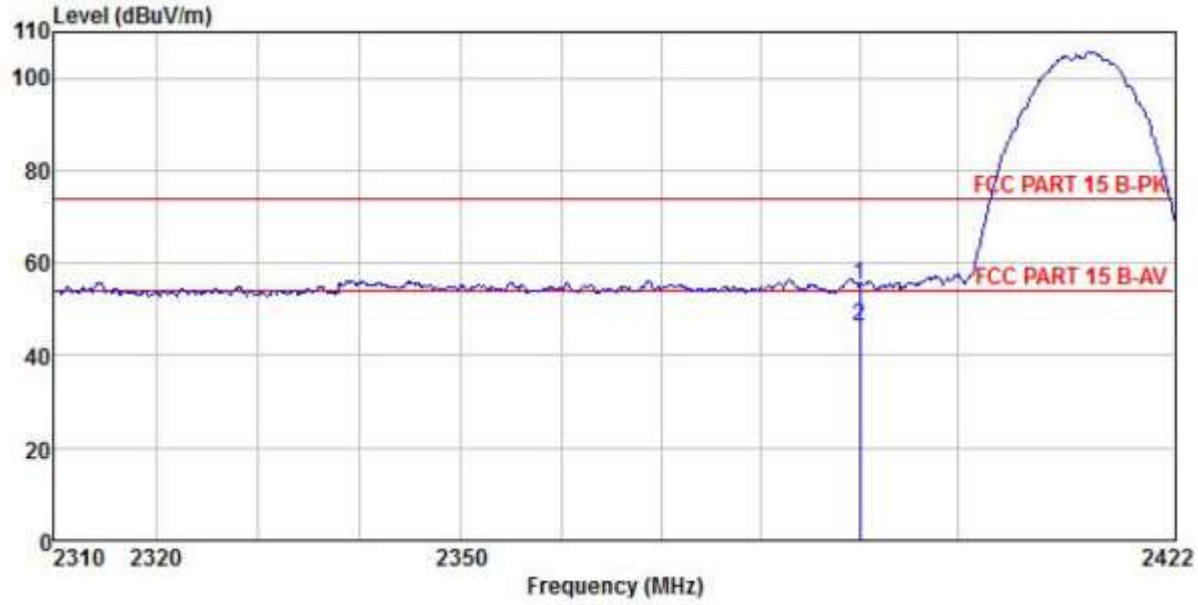


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	21.25	27.03	4.28	1.68	0.00	54.24	74.00	-19.76	Peak
2	2390.000	12.40	27.03	4.28	1.68	0.00	45.39	54.00	-8.61	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11b Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

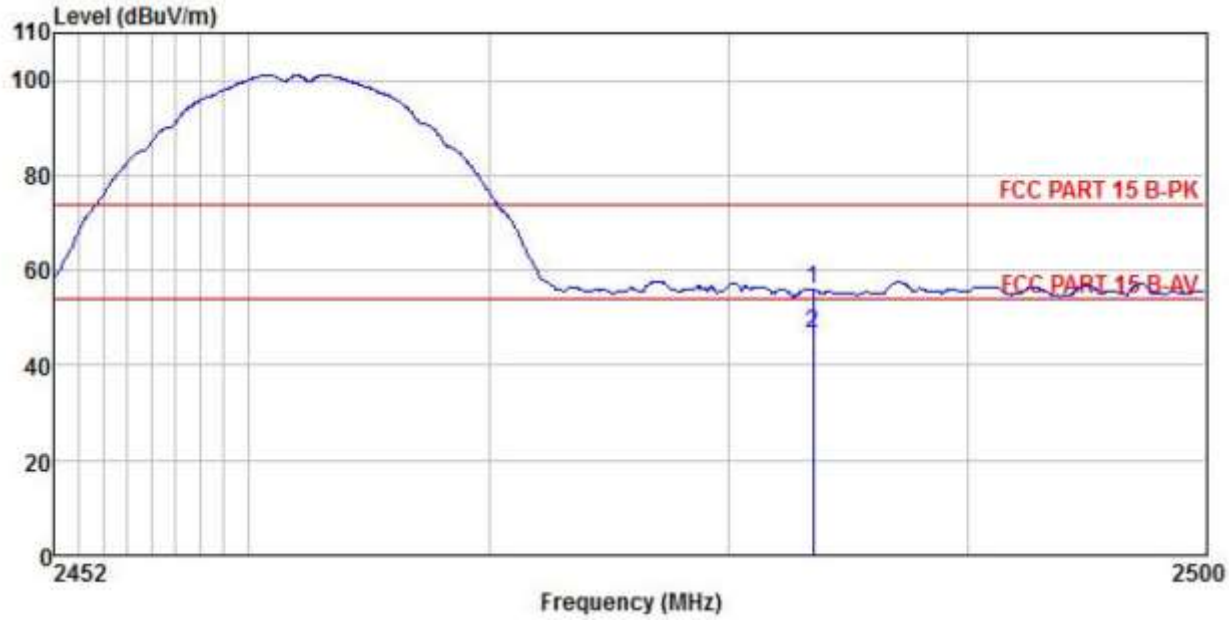


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	22.32	27.03	4.28	1.68	0.00	55.31	74.00	-18.69	Peak
2	2390.000	13.40	27.03	4.28	1.68	0.00	46.39	54.00	-7.61	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11b Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

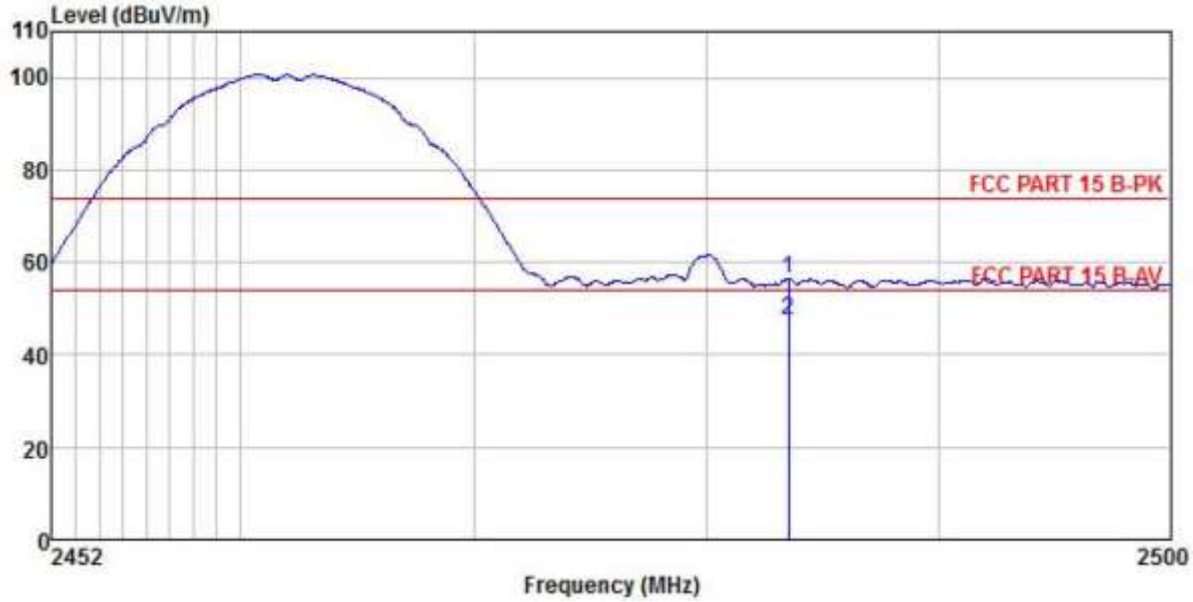


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	22.73	27.27	4.38	1.70	0.00	56.08	74.00	-17.92	Peak
2	2483.500	13.47	27.27	4.38	1.70	0.00	46.82	54.00	-7.18	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11b Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



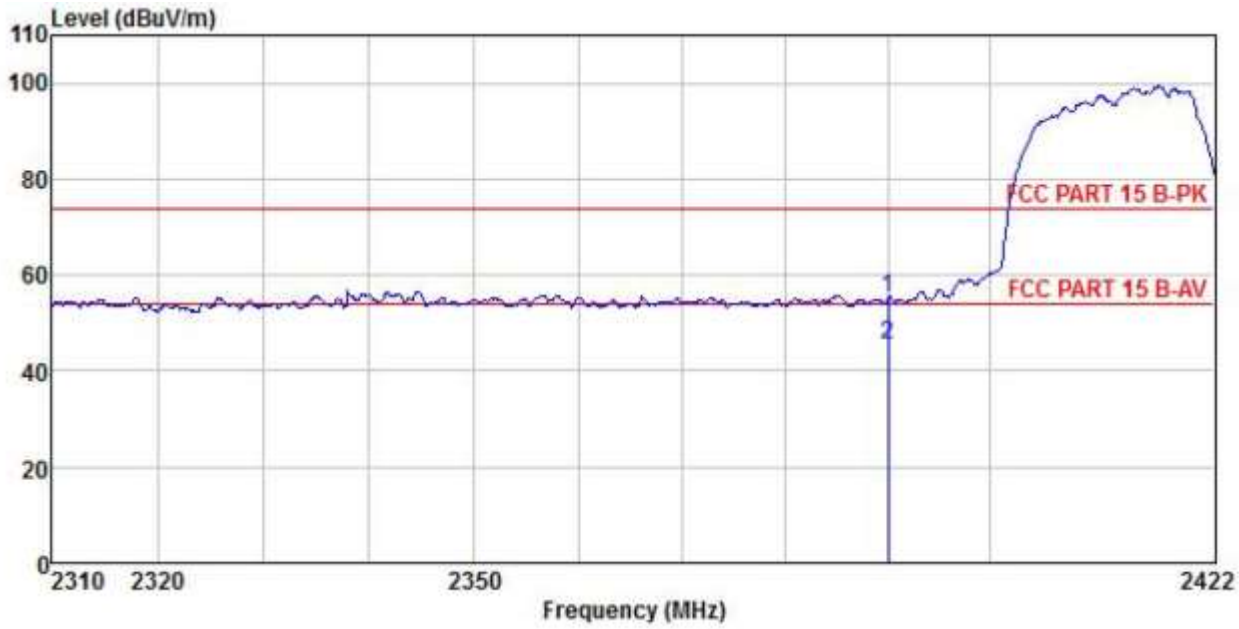
	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	23.05	27.27	4.38	1.70	0.00	56.40	74.00	-17.60	Peak
2	2483.500	14.21	27.27	4.38	1.70	0.00	47.56	54.00	-6.44	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

802.11g mode:

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11g Tx mode
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

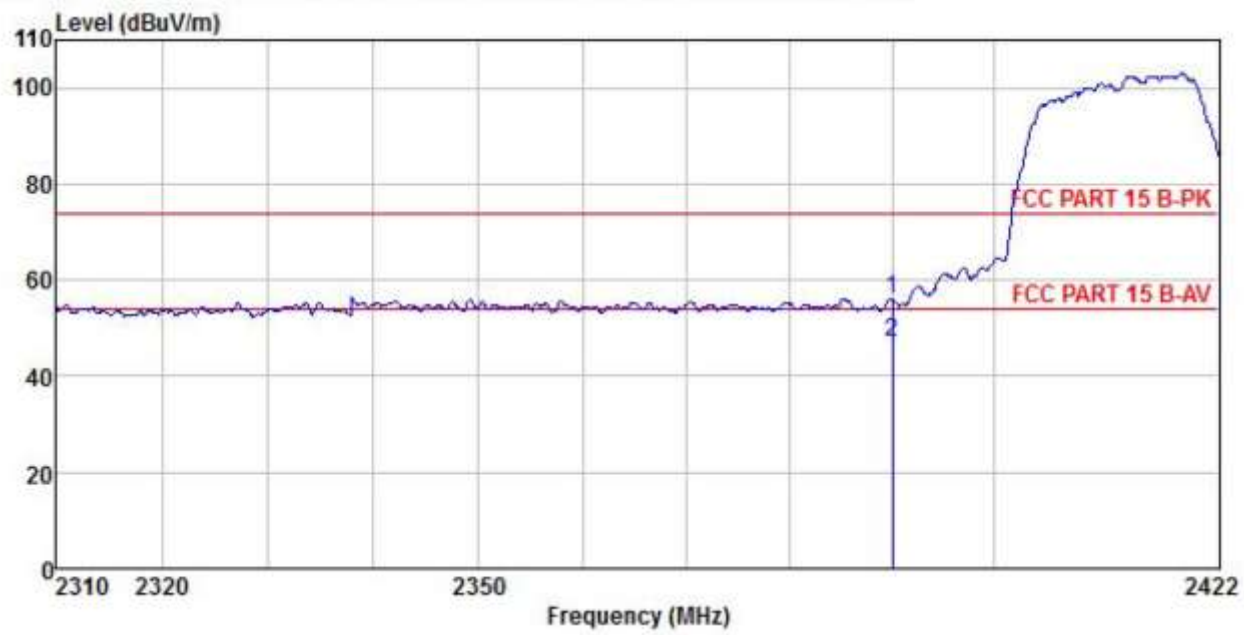


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	22.33	27.03	4.28	1.68	0.00	55.32	74.00	-18.68	Peak
2	2390.000	12.48	27.03	4.28	1.68	0.00	45.47	54.00	-8.53	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11g Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

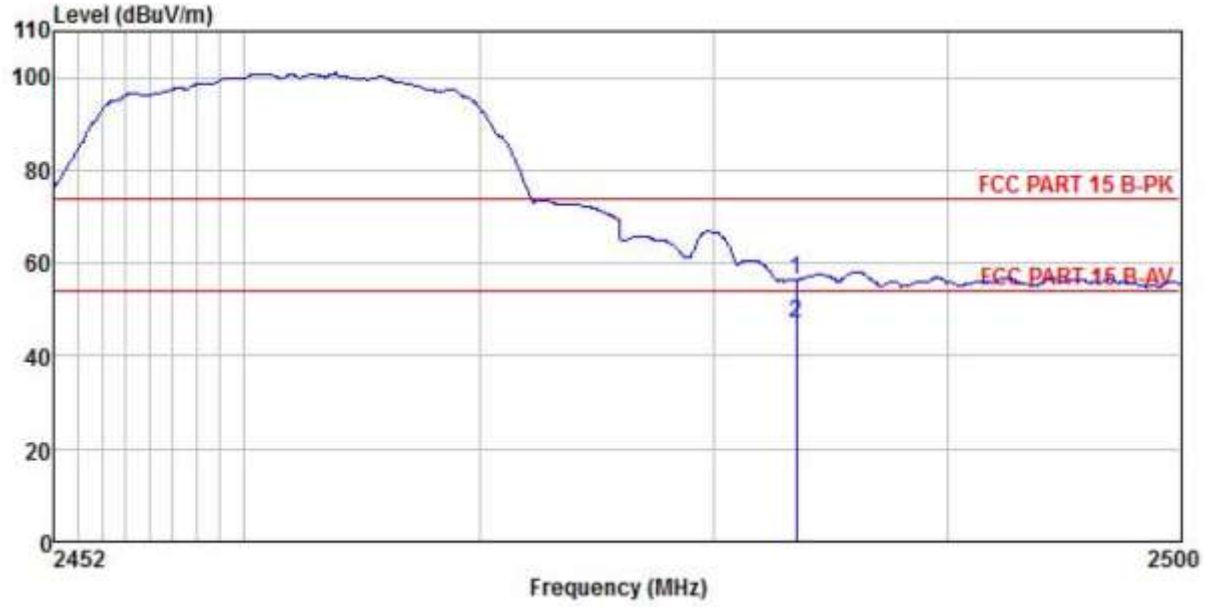


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	23.09	27.03	4.28	1.68	0.00	56.08	74.00	-17.92	Peak
2	2390.000	14.23	27.03	4.28	1.68	0.00	47.22	54.00	-6.78	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11g Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

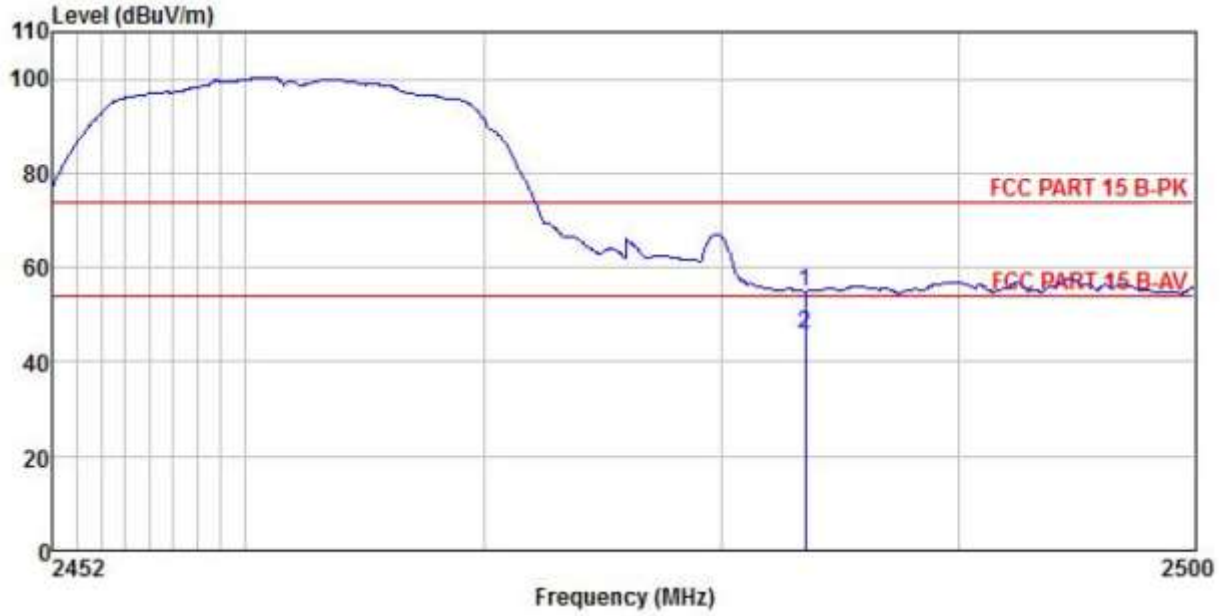


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	23.12	27.27	4.38	1.70	0.00	56.47	74.00	-17.53	Peak
2	2483.500	13.93	27.27	4.38	1.70	0.00	47.28	54.00	-6.72	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11g Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



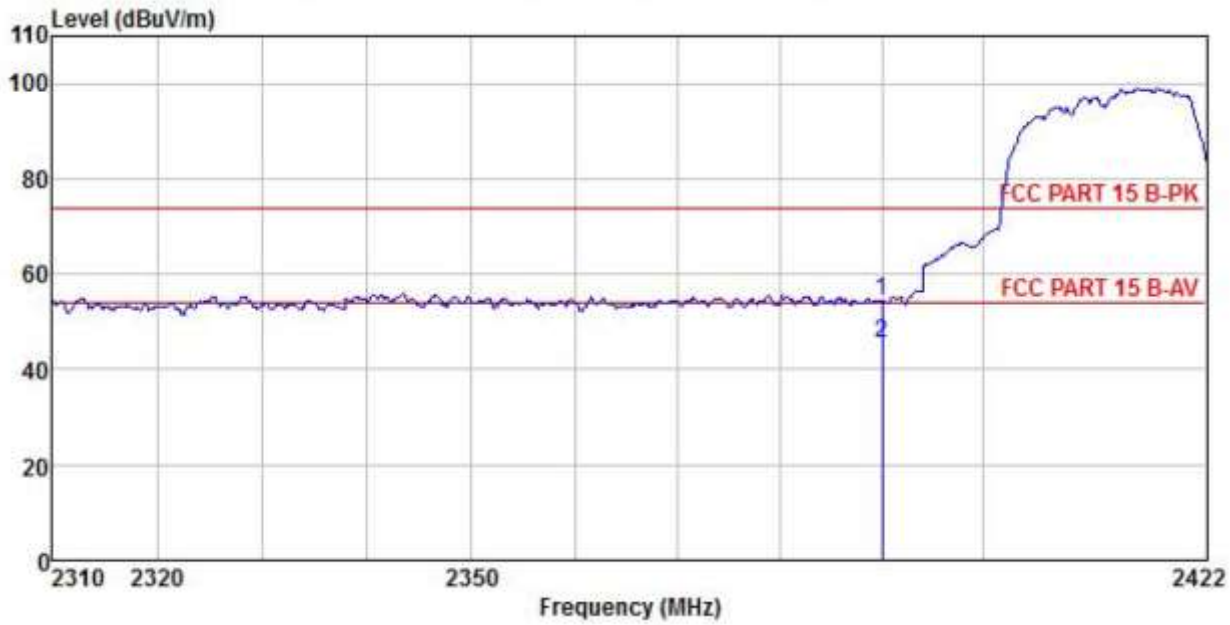
	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	21.36	27.27	4.38	1.70	0.00	54.71	74.00	-19.29	Peak
2	2483.500	12.42	27.27	4.38	1.70	0.00	45.77	54.00	-8.23	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

802.11n(HT20):

Product Name:	Mobile Phone	**Product Model:**	X693
Test By:	Janet	**Test mode:**	802.11n(HT20) Tx mode
Test Channel:	Lowest channel	**Polarization:**	Vertical
Test Voltage:	AC 120/60Hz	**Environment:**	Temp: 24℃ Huni: 57%

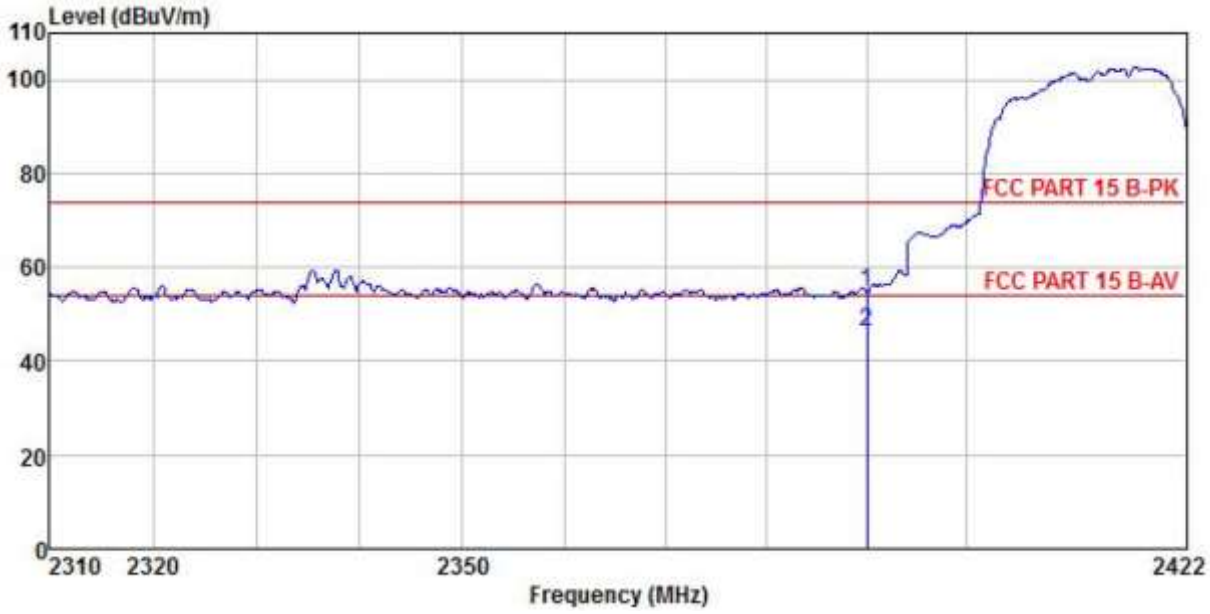


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	21.46	27.03	4.28	1.68	0.00	54.45	74.00	-19.55	Peak
2	2390.000	12.37	27.03	4.28	1.68	0.00	45.36	54.00	-8.64	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11n(HT20) Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

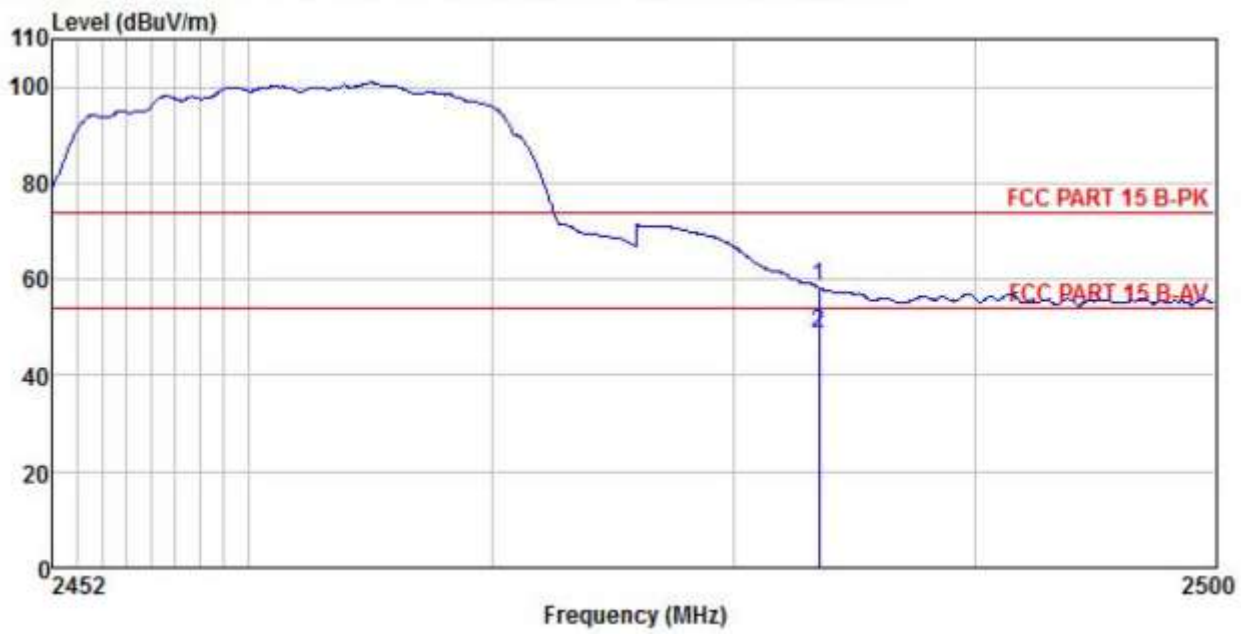


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	22.00	27.03	4.28	1.68	0.00	54.99	74.00	-19.01	Peak
2	2390.000	13.15	27.03	4.28	1.68	0.00	46.14	54.00	-7.86	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11n(HT20) Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

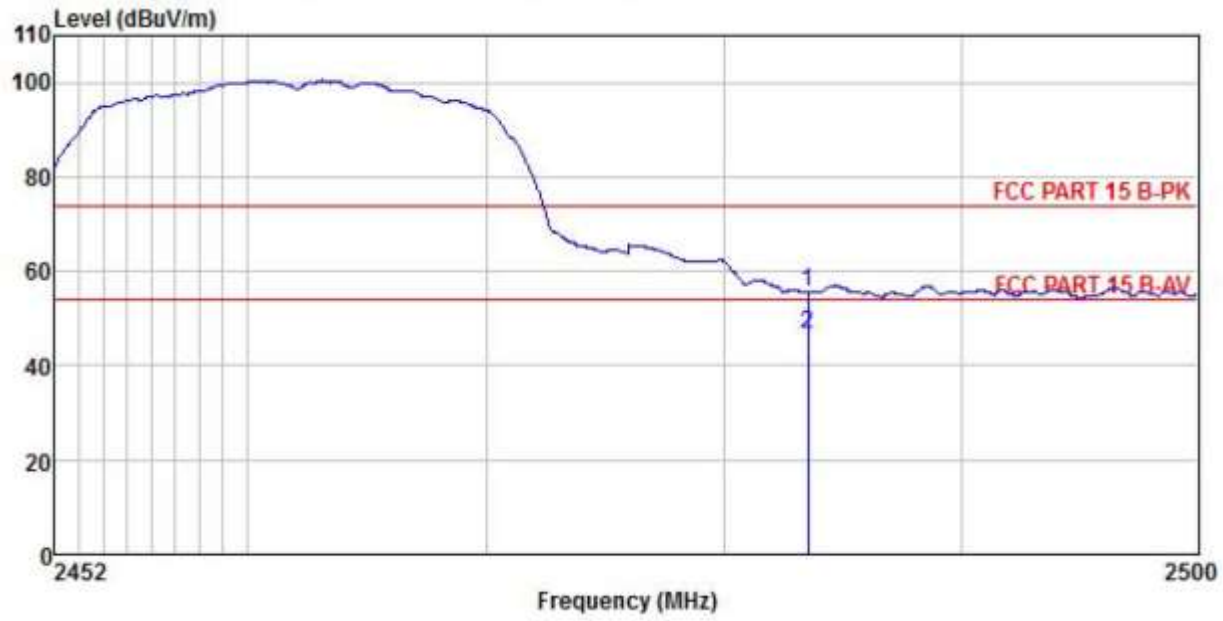


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	24.94	27.27	4.38	1.70	0.00	58.29	74.00	-15.71	Peak
2	2483.500	15.43	27.27	4.38	1.70	0.00	48.78	54.00	-5.22	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11n(HT20) Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



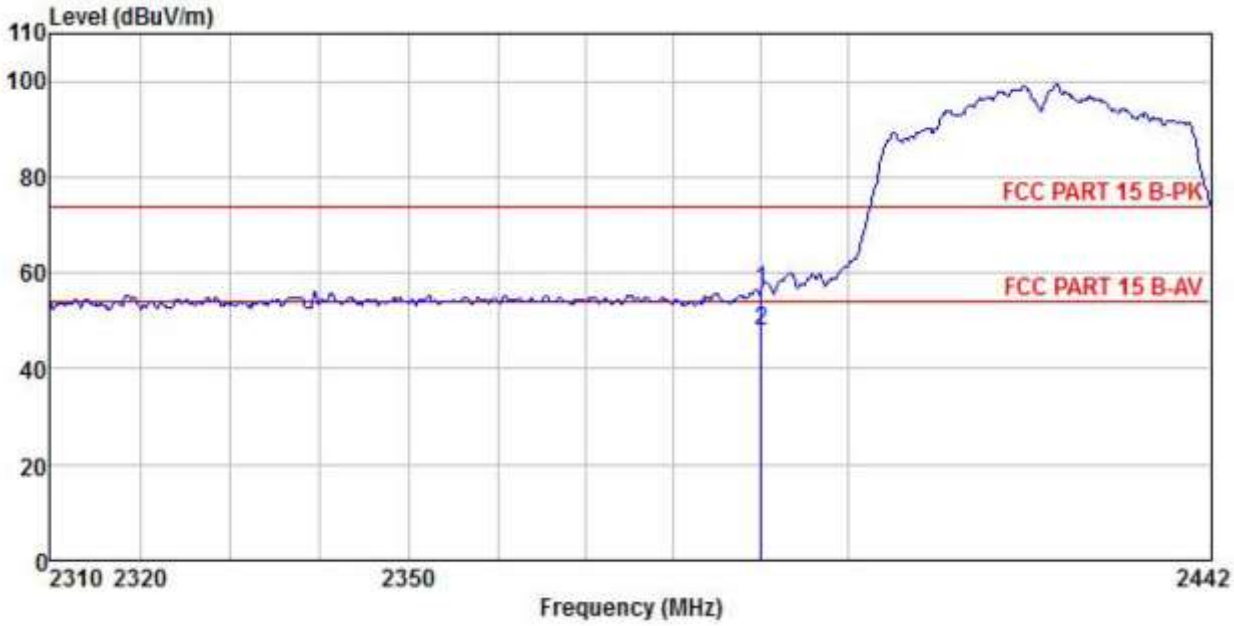
	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	22.26	27.27	4.38	1.70	0.00	55.61	74.00	-18.39	Peak
2	2483.500	13.48	27.27	4.38	1.70	0.00	46.83	54.00	-7.17	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

802.11n(HT40):

Product Name:	Mobile Phone	**Product Model:**	X693
Test By:	Janet	**Test mode:**	802.11n(HT40) Tx mode
Test Channel:	Lowest channel	**Polarization:**	Vertical
Test Voltage:	AC 120/60Hz	**Environment:**	Temp: 24℃ Huni: 57%

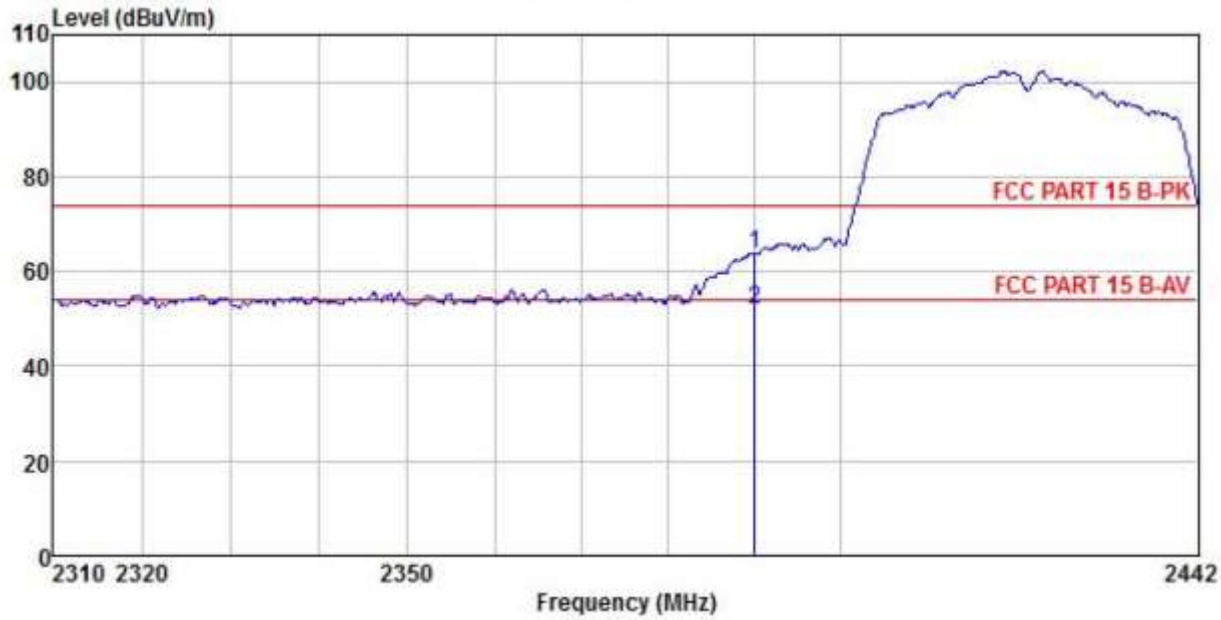


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	23.38	27.03	4.28	1.68	0.00	56.37	74.00	-17.63	Peak
2	2390.000	14.82	27.03	4.28	1.68	0.00	47.81	54.00	-6.19	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11n(HT40) Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

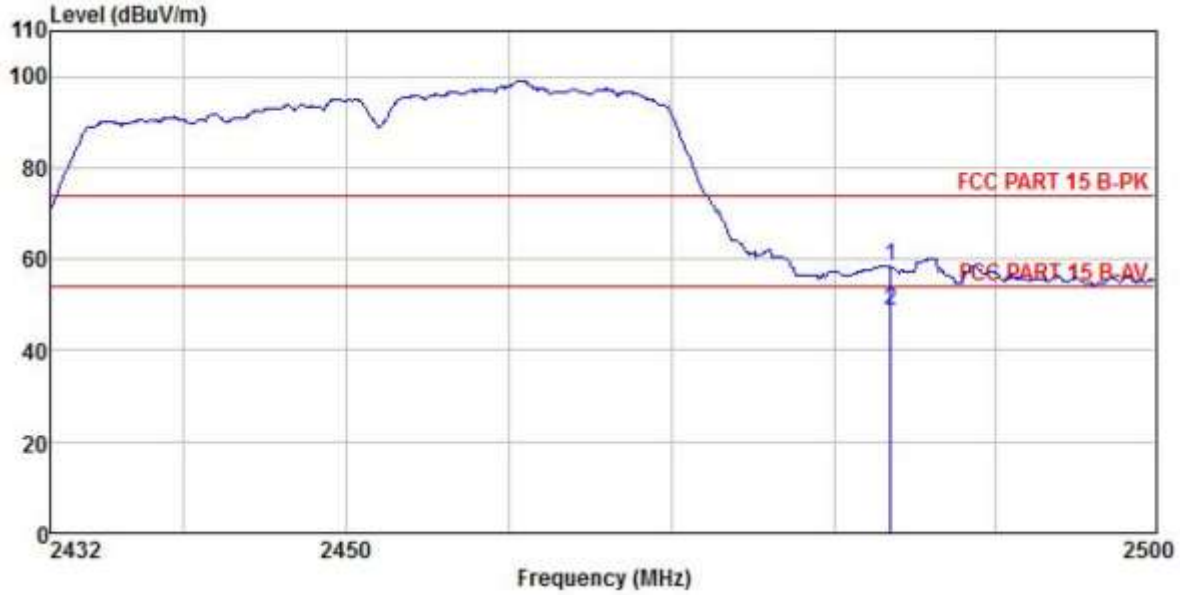


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	30.63	27.03	4.28	1.68	0.00	63.62	74.00	-10.38	Peak
2	2390.000	18.94	27.03	4.28	1.68	0.00	51.93	54.00	-2.07	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11n(HT40) Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%

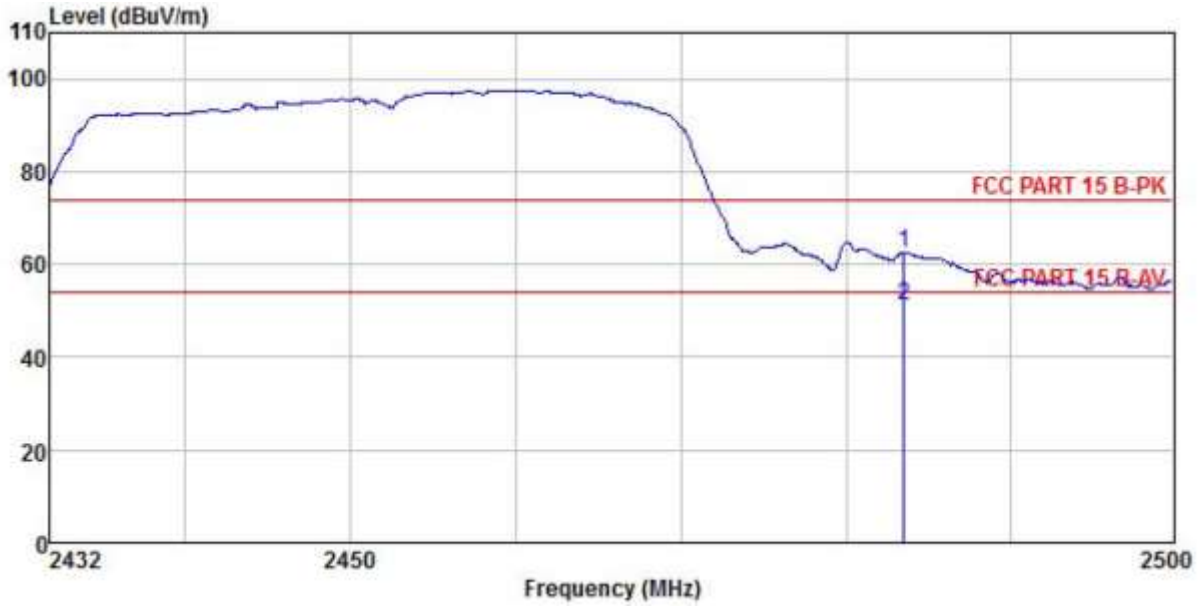


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	24.98	27.27	4.38	1.70	0.00	58.33	74.00	-15.67	Peak
2	2483.500	15.33	27.27	4.38	1.70	0.00	48.68	54.00	-5.32	Average

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	802.11n(HT40) Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



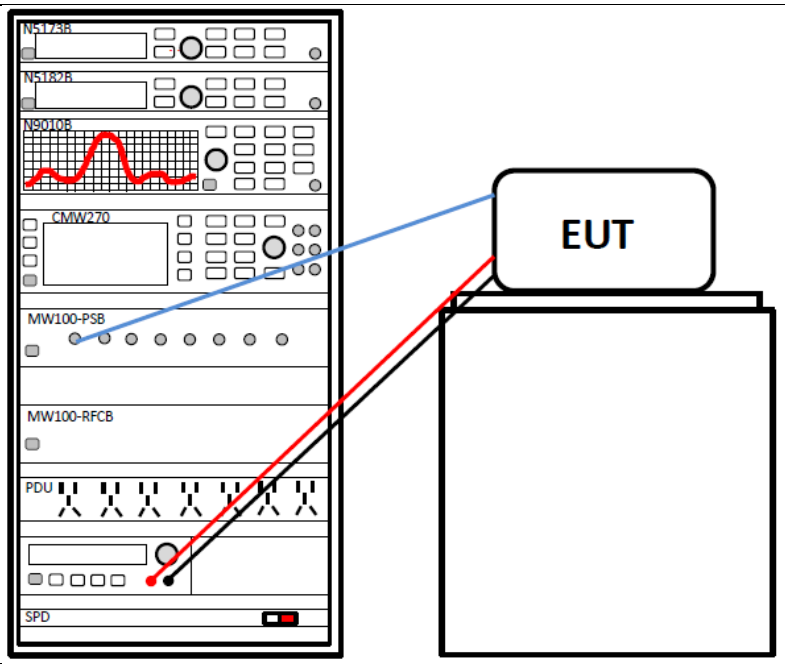
	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	29.30	27.27	4.38	1.70	0.00	62.65	74.00	-11.35	Peak
2	2483.500	17.93	27.27	4.38	1.70	0.00	51.28	54.00	-2.72	Average

Remark:

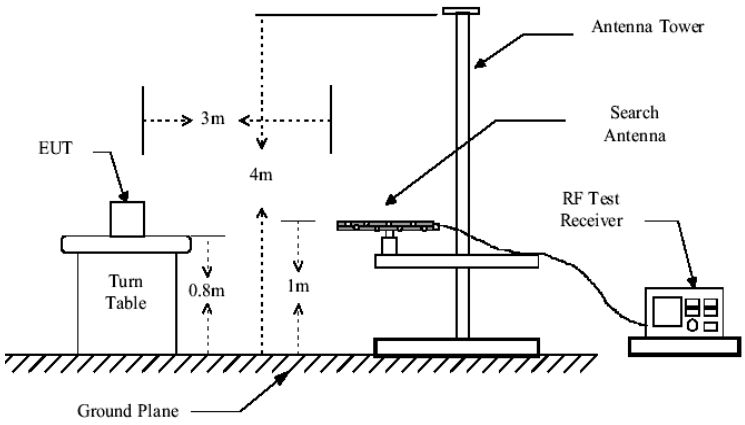
1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

6.7 Spurious Emission

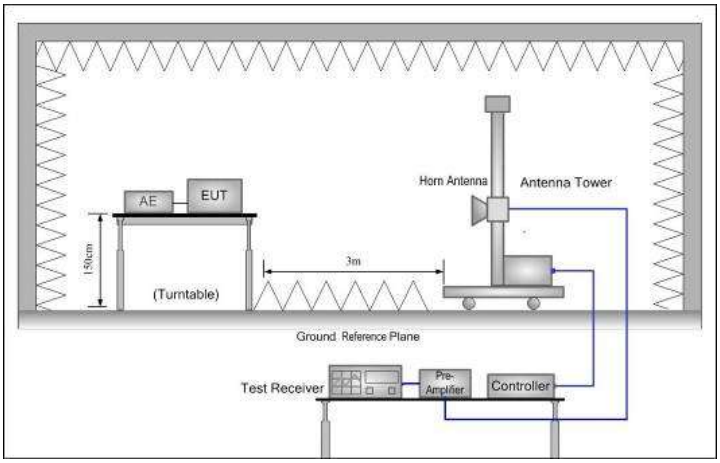
6.7.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
Test setup:	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Measurement Data:	**Refer to Appendix A - 2.4G WIFI**

6.7.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td colspan="5">FCC Part 15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="5">9kHz to 25GHz</td></tr>
<tr><td>Test Distance:</td><td colspan="5">3m</td></tr>
<tr><td>Receiver setup:</td><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td></td><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td></td><td>RMS</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr>
<tr><td>Limit:</td><td colspan="2">Frequency</td><td colspan="2">Limit (dBuV/m @3m)</td><td>Remark</td></tr>
<tr><td></td><td colspan="2">30MHz-88MHz</td><td colspan="2">40.0</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2">88MHz-216MHz</td><td colspan="2">43.5</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2">216MHz-960MHz</td><td colspan="2">46.0</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2">960MHz-1GHz</td><td colspan="2">54.0</td><td>Quasi-peak Value</td></tr>
<tr><td></td><td colspan="2" rowspan="2">Above 1GHz</td><td colspan="2">54.0</td><td>Average Value</td></tr>
<tr><td></td><td colspan="2">74.0</td><td>Peak Value</td></tr>
<tr><td>Test Procedure:</td><td colspan="5">1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</td></tr>
<tr><td>Test setup:</td><td colspan="5">Below 1GHz
 

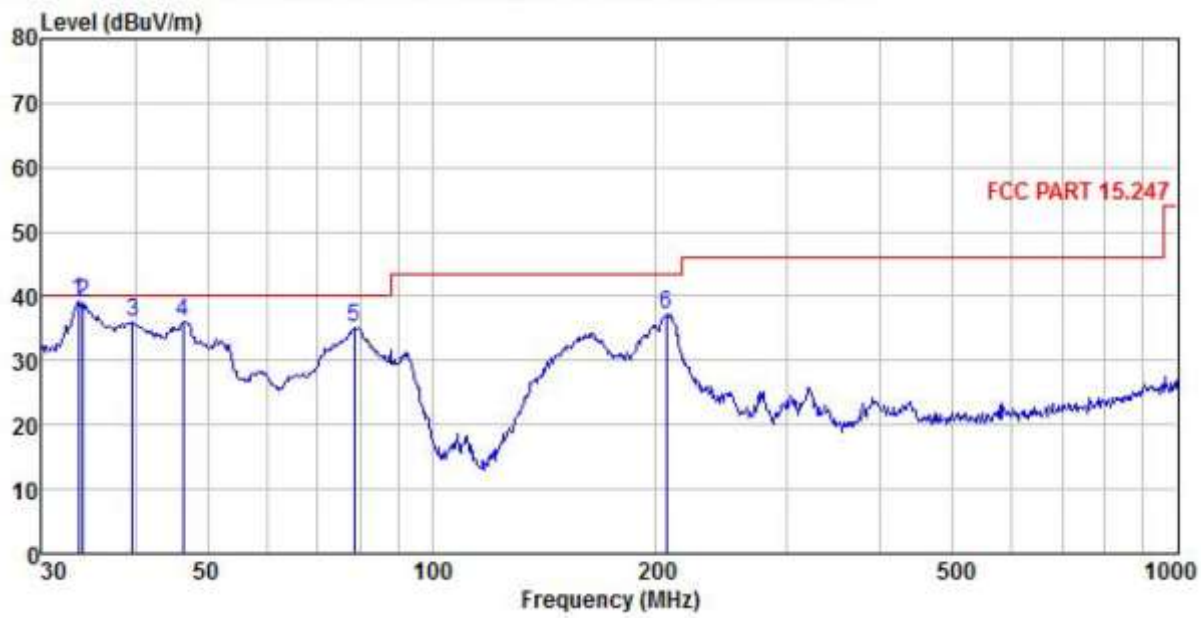
Above 1GHz</td></tr>
</table>

	
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 2. 9 kHz to 30MHz is lower than the limit 20dB, so only shows the data of above 30MHz in this report.

Measurement Data (worst case):

Below 1GHz:

Product Name:	Mobile Phone	**Product Model:**	X693
Test By:	Janet	**Test mode:**	Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Vertical
Test Voltage:	AC 120/60Hz	**Environment:**	Temp: 24℃ Huni: 57%

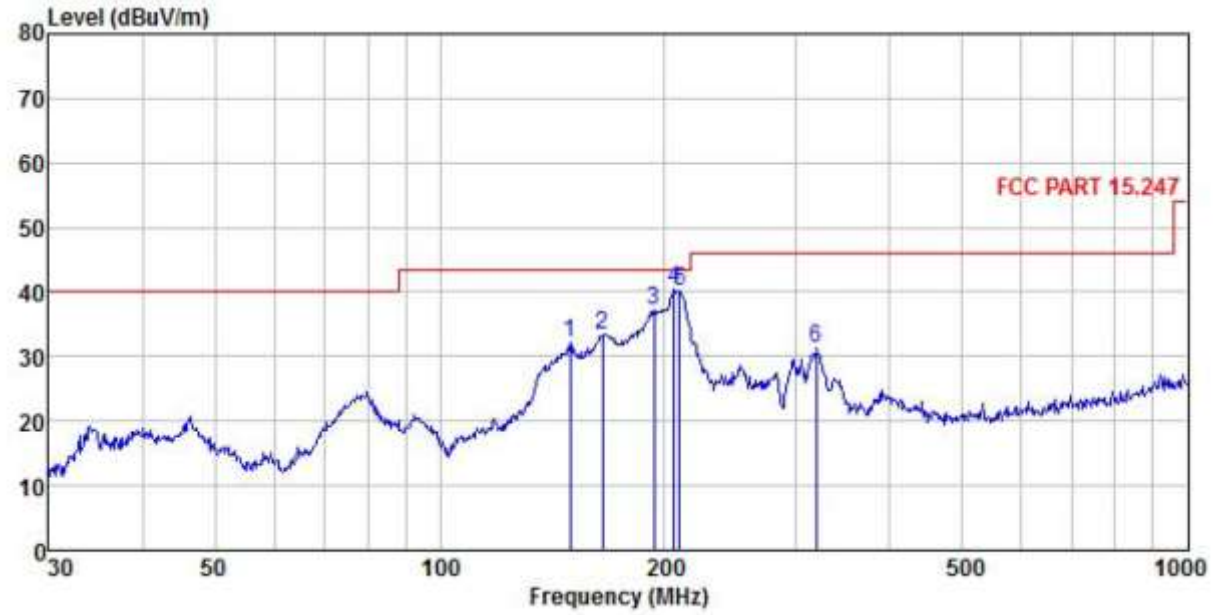


	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	33.562	56.39	12.38	0.36	0.00	29.96	39.17	40.00	-0.83	QP
2	34.037	56.24	12.45	0.35	0.00	29.96	39.08	40.00	-0.92	QP
3	39.715	52.76	12.79	0.35	0.00	29.90	36.00	40.00	-4.00	QP
4	46.340	52.61	12.98	0.38	0.00	29.85	36.12	40.00	-3.88	QP
5	78.689	51.77	12.46	0.47	0.00	29.65	35.05	40.00	-4.95	QP
6	206.398	46.87	18.33	0.73	0.00	28.79	37.14	43.50	-6.36	QP

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*
3. *The Aux Factor is a notch filter switch box loss, this item is not used.*

Product Name:	Mobile Phone	Product Model:	X693
Test By:	Janet	Test mode:	Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	149.486	46.51	14.26	0.62	0.00	29.22	32.17	43.50	-11.33	QP
2	164.908	46.25	15.60	0.64	0.00	29.09	33.40	43.50	-10.10	QP
3	193.095	47.60	17.65	0.71	0.00	28.88	37.08	43.50	-6.42	QP
4	205.675	50.08	18.32	0.73	0.00	28.79	40.34	43.50	-3.16	QP
5	209.313	49.93	18.34	0.73	0.00	28.77	40.23	43.50	-3.27	QP
6	318.817	40.14	18.74	0.89	0.00	28.49	31.28	46.00	-14.72	QP

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*
3. *The Aux Factor is a notch filter switch box loss, this item is not used.*

Above 1GHz

802.11b									
Test channel: Lowest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	52.34	30.81	6.81	2.46	41.82	50.60	74.00	-23.40	Vertical
4824.00	52.87	30.81	6.81	2.46	41.82	51.13	74.00	-22.87	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	48.38	30.81	6.81	2.46	41.82	46.64	54.00	-7.36	Vertical
4824.00	48.20	30.81	6.81	2.46	41.82	46.46	54.00	-7.54	Horizontal
Test channel: Middle channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	52.85	30.93	6.85	2.47	41.84	51.26	74.00	-22.74	Vertical
4874.00	52.61	30.93	6.85	2.47	41.84	51.02	74.00	-22.98	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	48.13	30.93	6.85	2.47	41.84	46.54	54.00	-7.46	Vertical
4874.00	48.97	30.93	6.85	2.47	41.84	47.38	54.00	-6.62	Horizontal
Test channel: Highest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	52.93	31.05	6.89	2.48	41.86	51.49	74.00	-22.51	Vertical
4924.00	51.47	31.05	6.89	2.48	41.86	50.03	74.00	-23.97	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	48.16	31.05	6.89	2.48	41.86	46.72	54.00	-7.28	Vertical
4924.00	47.92	31.05	6.89	2.48	41.86	46.48	54.00	-7.52	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

802.11g									
Test channel: Lowest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	52.14	30.81	6.81	2.46	41.82	50.40	74.00	-23.60	Vertical
4824.00	52.16	30.81	6.81	2.46	41.82	50.42	74.00	-23.58	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	48.97	30.81	6.81	2.46	41.82	47.23	54.00	-6.77	Vertical
4824.00	48.10	30.81	6.81	2.46	41.82	46.36	54.00	-7.64	Horizontal
Test channel: Middle channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	52.69	30.93	6.85	2.47	41.84	51.10	74.00	-22.90	Vertical
4874.00	52.47	30.93	6.85	2.47	41.84	50.88	74.00	-23.12	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	48.37	30.93	6.85	2.47	41.84	46.78	54.00	-7.22	Vertical
4874.00	48.31	30.93	6.85	2.47	41.84	46.72	54.00	-7.28	Horizontal
Test channel: Highest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	52.47	31.05	6.89	2.48	41.86	51.03	74.00	-22.97	Vertical
4924.00	52.09	31.05	6.89	2.48	41.86	50.65	74.00	-23.35	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	48.97	31.05	6.89	2.48	41.86	47.53	54.00	-6.47	Vertical
4924.00	47.14	31.05	6.89	2.48	41.86	45.70	54.00	-8.30	Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.

2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

802.11n(HT20)									
Test channel: Lowest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	52.97	30.81	6.81	2.46	41.82	51.23	74.00	-22.77	Vertical
4824.00	51.47	30.81	6.81	2.46	41.82	49.73	74.00	-24.27	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	48.36	30.81	6.81	2.46	41.82	46.62	54.00	-7.38	Vertical
4824.00	48.69	30.81	6.81	2.46	41.82	46.95	54.00	-7.05	Horizontal
Test channel: Middle channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	52.97	30.93	6.85	2.47	41.84	51.38	74.00	-22.62	Vertical
4874.00	52.14	30.93	6.85	2.47	41.84	50.55	74.00	-23.45	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	48.58	30.93	6.85	2.47	41.84	46.99	54.00	-7.01	Vertical
4874.00	48.12	30.93	6.85	2.47	41.84	46.53	54.00	-7.47	Horizontal
Test channel: Highest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	52.33	31.05	6.89	2.48	41.86	50.89	74.00	-23.11	Vertical
4924.00	52.47	31.05	6.89	2.48	41.86	51.03	74.00	-22.97	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	48.16	31.05	6.89	2.48	41.86	46.72	54.00	-7.28	Vertical
4924.00	47.25	31.05	6.89	2.48	41.86	45.81	54.00	-8.19	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

802.11n(HT40)									
Test channel: Lowest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	52.36	30.87	6.83	2.46	41.83	50.69	74.00	-23.31	Vertical
4844.00	52.47	30.87	6.83	2.46	41.83	50.80	74.00	-23.20	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4844.00	48.16	30.87	6.83	2.46	41.83	46.49	54.00	-7.51	Vertical
4844.00	48.09	30.87	6.83	2.46	41.83	46.42	54.00	-7.58	Horizontal
Test channel: Middle channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	52.39	30.93	6.85	2.47	41.84	50.80	74.00	-23.20	Vertical
4874.00	52.47	30.93	6.85	2.47	41.84	50.88	74.00	-23.12	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4874.00	48.13	30.93	6.85	2.47	41.84	46.54	54.00	-7.46	Vertical
4874.00	48.97	30.93	6.85	2.47	41.84	47.38	54.00	-6.62	Horizontal
Test channel: Highest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4904.00	52.47	30.99	6.87	2.48	41.85	50.96	74.00	-23.04	Vertical
4904.00	52.92	30.99	6.87	2.48	41.85	51.41	74.00	-22.59	Horizontal
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4904.00	48.37	30.99	6.87	2.48	41.85	46.86	54.00	-7.14	Vertical
4904.00	47.16	30.99	6.87	2.48	41.85	45.65	54.00	-8.35	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Appendix A - 2.4G Wi-Fi
Test Data

Duty Cycle

Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)
NVNT	b	2412	Ant1	99.7	0.01
NVNT	b	2437	Ant1	99.68	0.01
NVNT	b	2462	Ant1	99.71	0.01
NVNT	g	2412	Ant1	97.74	0.1
NVNT	g	2437	Ant1	97.77	0.1
NVNT	g	2462	Ant1	97.78	0.1
NVNT	n20	2412	Ant1	97.63	0.1
NVNT	n20	2437	Ant1	98.18	0.08
NVNT	n20	2462	Ant1	97.6	0.11
NVNT	n40	2422	Ant1	95.39	0.2
NVNT	n40	2437	Ant1	95.37	0.21
NVNT	n40	2452	Ant1	95.37	0.21

Duty Cycle NVNT b 2412MHz Ant1

Duty Cycle NVNT b 2437MHz Ant1

Duty Cycle NVNT b 2462MHz Ant1

Duty Cycle NVNT g 2412MHz Ant1

Duty Cycle NVNT g 2437MHz Ant1

Duty Cycle NVNT g 2462MHz Ant1

Duty Cycle NVNT n20 2412MHz Ant1

Duty Cycle NVNT n20 2437MHz Ant1

Duty Cycle NVNT n20 2462MHz Ant1

Duty Cycle NVNT n40 2422MHz Ant1

Duty Cycle NVNT n40 2437MHz Ant1

Duty Cycle NVNT n40 2452MHz Ant1

Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2402	Ant1	16	0	16	30	Pass
NVNT	b	2437	Ant1	15.65	0.01	15.66	30	Pass
NVNT	b	2462	Ant1	15.44	0.01	15.45	30	Pass
NVNT	g	2412	Ant1	13.77	0.1	13.87	30	Pass
NVNT	g	2437	Ant1	13.55	0.1	13.65	30	Pass
NVNT	g	2462	Ant1	13.21	0.1	13.31	30	Pass
NVNT	n20	2412	Ant1	13.81	0.1	13.91	30	Pass
NVNT	n20	2437	Ant1	13.4	1.48	14.88	30	Pass
NVNT	n20	2462	Ant1	13.08	0.11	13.19	30	Pass
NVNT	n40	2422	Ant1	12.89	0.2	13.09	30	Pass
NVNT	n40	2437	Ant1	12.79	0.21	13	30	Pass
NVNT	n40	2452	Ant1	12.57	0.21	12.78	30	Pass

-6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	b	2412	Ant1	8.022	0.5	Pass
NVNT	b	2437	Ant1	7.535	0.5	Pass

NVNT	b	2462	Ant1	8.076	0.5	Pass
NVNT	g	2412	Ant1	15.929	0.5	Pass
NVNT	g	2437	Ant1	13.828	0.5	Pass
NVNT	g	2462	Ant1	15.717	0.5	Pass
NVNT	n20	2412	Ant1	15.921	0.5	Pass
NVNT	n20	2437	Ant1	13.174	0.5	Pass
NVNT	n20	2462	Ant1	16.283	0.5	Pass
NVNT	n40	2422	Ant1	35.734	0.5	Pass
NVNT	n40	2437	Ant1	31.279	0.5	Pass
NVNT	n40	2452	Ant1	28.822	0.5	Pass

-6dB Bandwidth NVNT b 2412MHz Ant1

-6dB Bandwidth NVNT b 2437MHz Ant1

-6dB Bandwidth NVNT b 2462MHz Ant1

-6dB Bandwidth NVNT g 2412MHz Ant1

-6dB Bandwidth NVNT g 2437MHz Ant1

-6dB Bandwidth NVNT g 2462MHz Ant1

-6dB Bandwidth NVNT n20 2412MHz Ant1

-6dB Bandwidth NVNT n20 2437MHz Ant1

-6dB Bandwidth NVNT n20 2462MHz Ant1

-6dB Bandwidth NVNT n40 2422MHz Ant1

-6dB Bandwidth NVNT n40 2437MHz Ant1

-6dB Bandwidth NVNT n40 2452MHz Ant1

Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	b	2412	Ant1	13.1395716
NVNT	b	2437	Ant1	12.69806612
NVNT	b	2462	Ant1	13.37917184
NVNT	g	2412	Ant1	16.51753897
NVNT	g	2437	Ant1	16.36602799
NVNT	g	2462	Ant1	16.57533952
NVNT	n20	2412	Ant1	17.6574513
NVNT	n20	2437	Ant1	17.51716121
NVNT	n20	2462	Ant1	17.6923294
NVNT	n40	2422	Ant1	36.23054495
NVNT	n40	2437	Ant1	35.64908547
NVNT	n40	2452	Ant1	35.78477429

OBW NVNT b 2412MHz Ant1

OBW NVNT b 2437MHz Ant1

OBW NVNT b 2462MHz Ant1

OBW NVNT g 2412MHz Ant1

OBW NVNT g 2437MHz Ant1

OBW NVNT g 2462MHz Ant1

OBW NVNT n20 2412MHz Ant1

OBW NVNT n20 2437MHz Ant1

OBW NVNT n20 2462MHz Ant1

OBW NVNT n40 2422MHz Ant1

OBW NVNT n40 2437MHz Ant1

OBW NVNT n40 2452MHz Ant1

Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	Ant1	-15.511	8	Pass
NVNT	b	2437	Ant1	-15.018	8	Pass
NVNT	b	2462	Ant1	-15.589	8	Pass
NVNT	g	2412	Ant1	-20.207	8	Pass

NVNT	g	2437	Ant1	-19.143	8	Pass
NVNT	g	2462	Ant1	-20.136	8	Pass
NVNT	n20	2412	Ant1	-20.298	8	Pass
NVNT	n20	2437	Ant1	-19.603	8	Pass
NVNT	n20	2462	Ant1	-19.778	8	Pass
NVNT	n40	2422	Ant1	-24.287	8	Pass
NVNT	n40	2437	Ant1	-22.382	8	Pass
NVNT	n40	2452	Ant1	-22.733	8	Pass

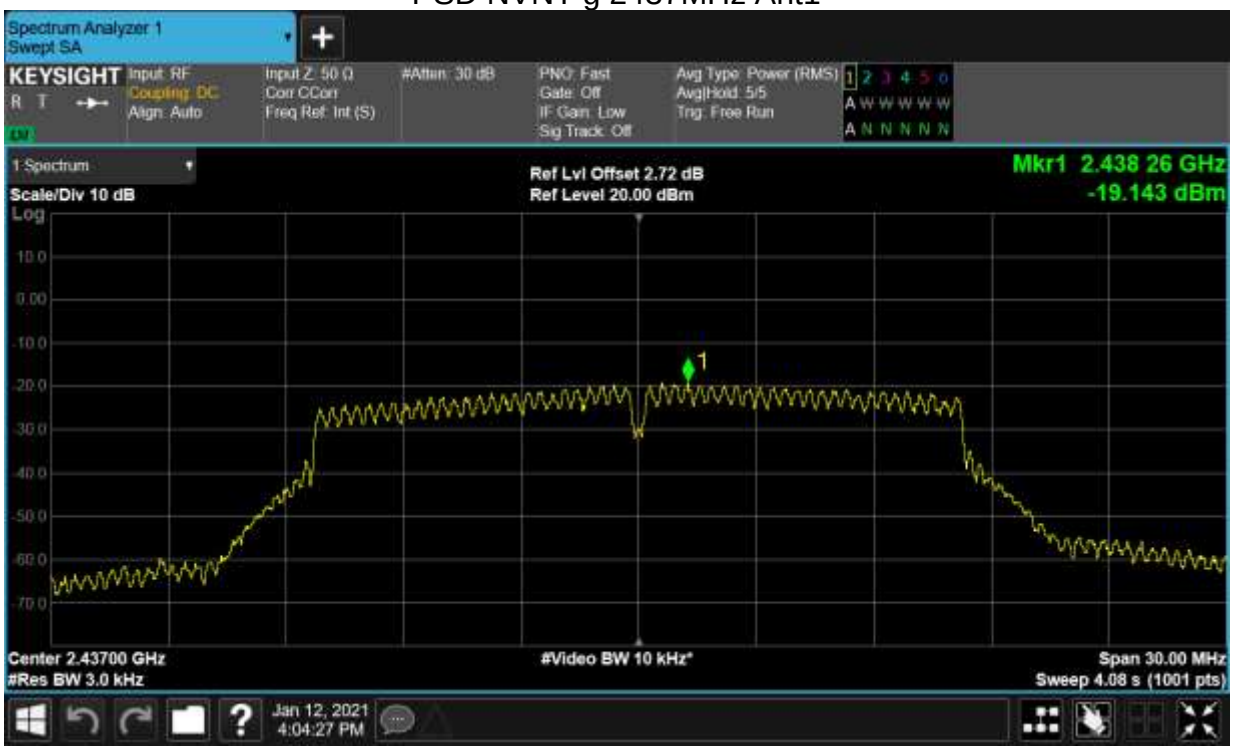
PSD NVNT b 2412MHz Ant1

PSD NVNT b 2437MHz Ant1

PSD NVNT b 2462MHz Ant1

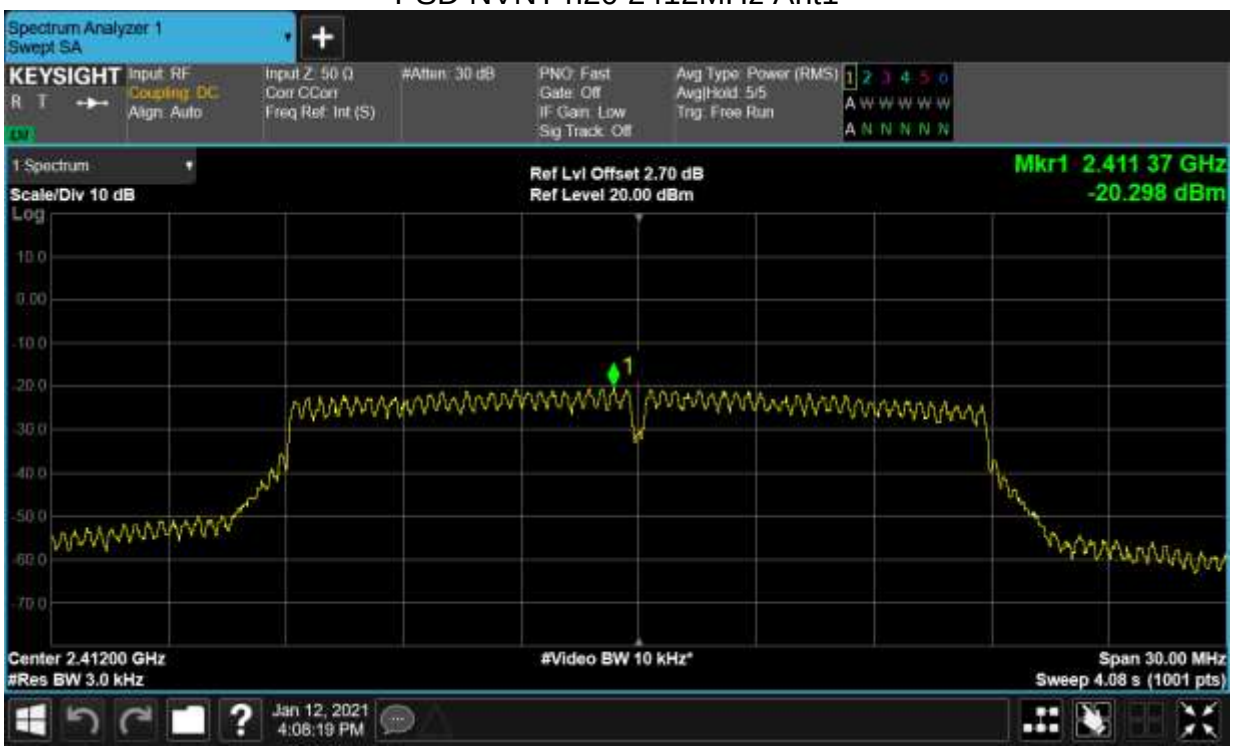
PSD NVNT g 2412MHz Ant1

PSD NVNT g 2437MHz Ant1



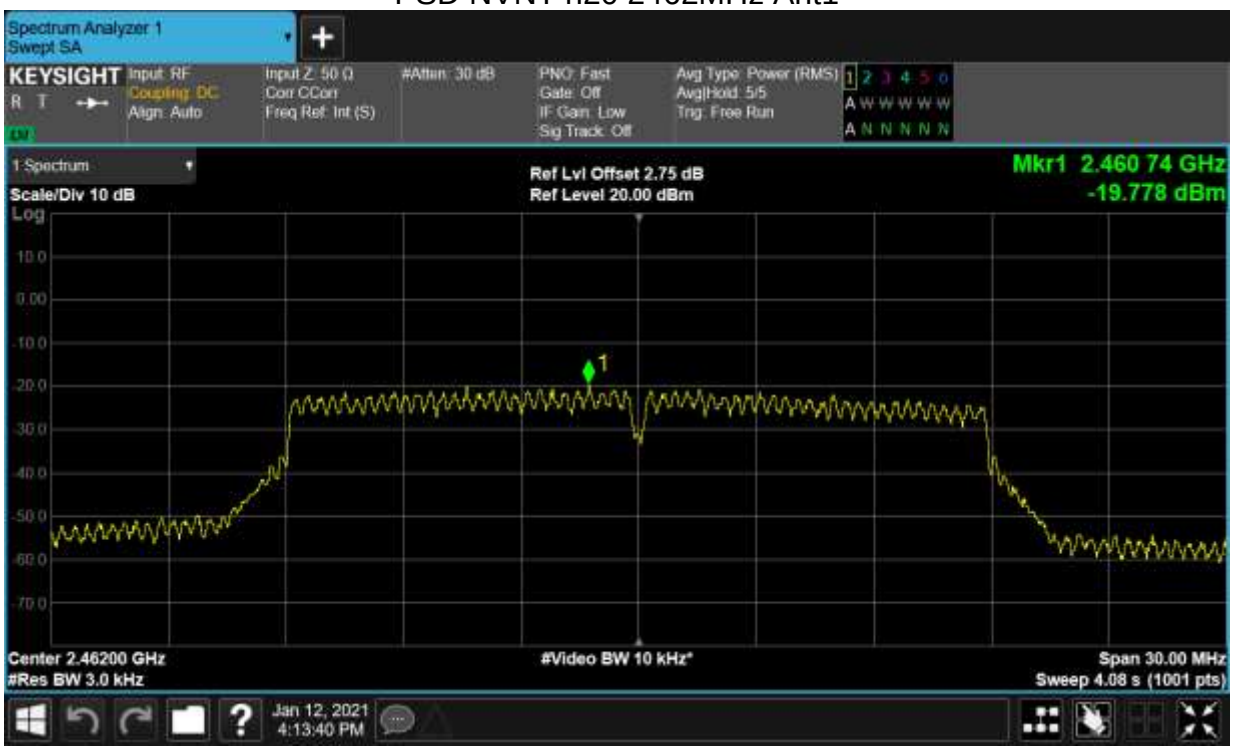
PSD NVNT g 2462MHz Ant1

PSD NVNT n20 2412MHz Ant1

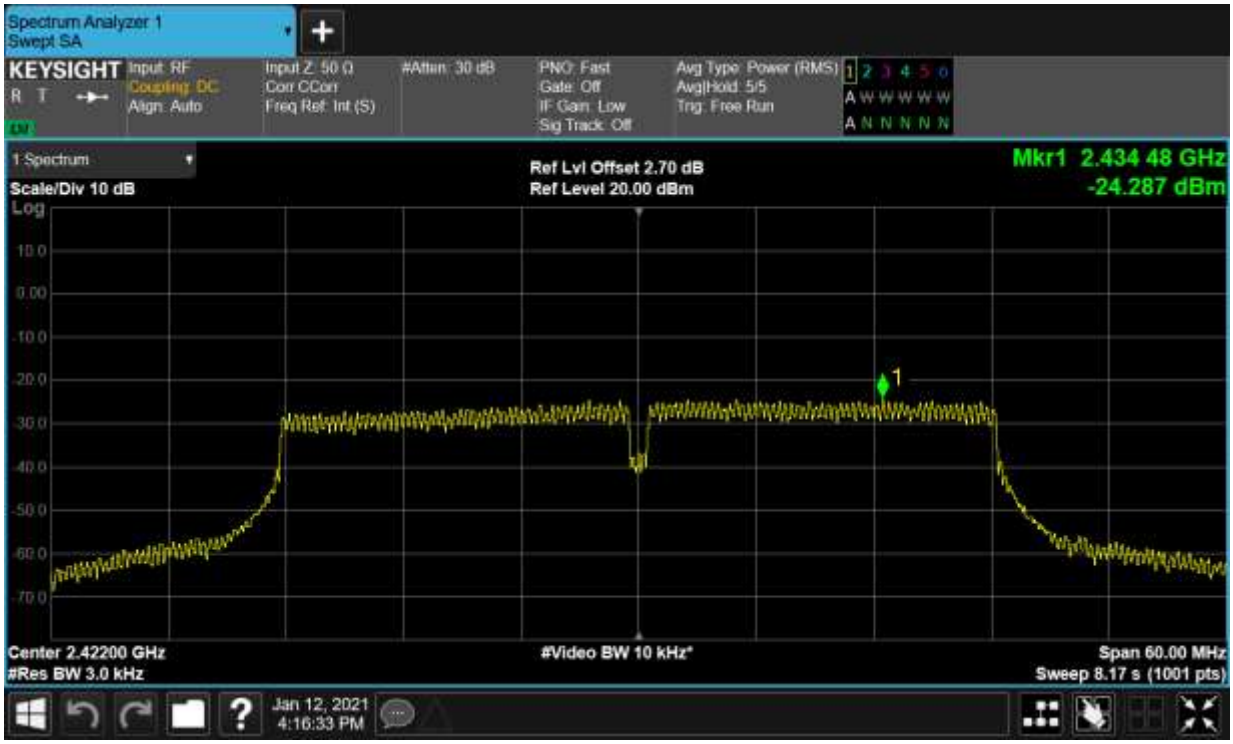


PSD NVNT n20 2437MHz Ant1

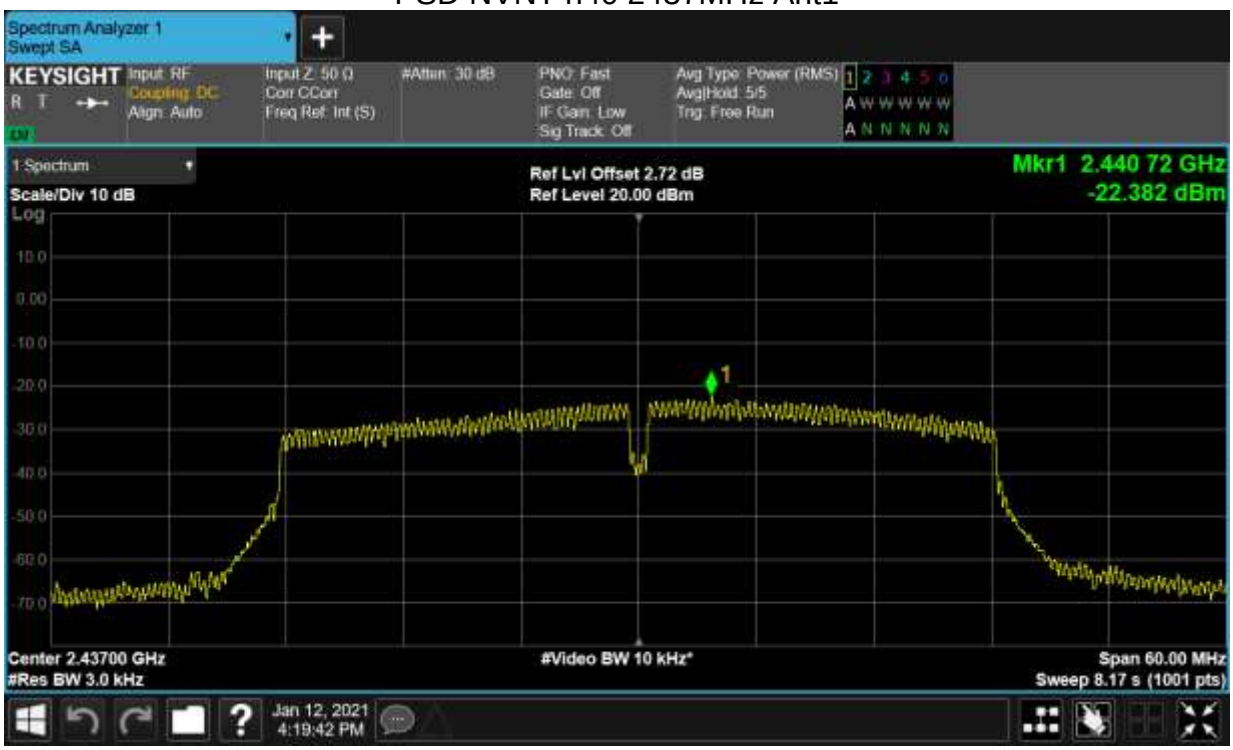
PSD NVNT n20 2462MHz Ant1



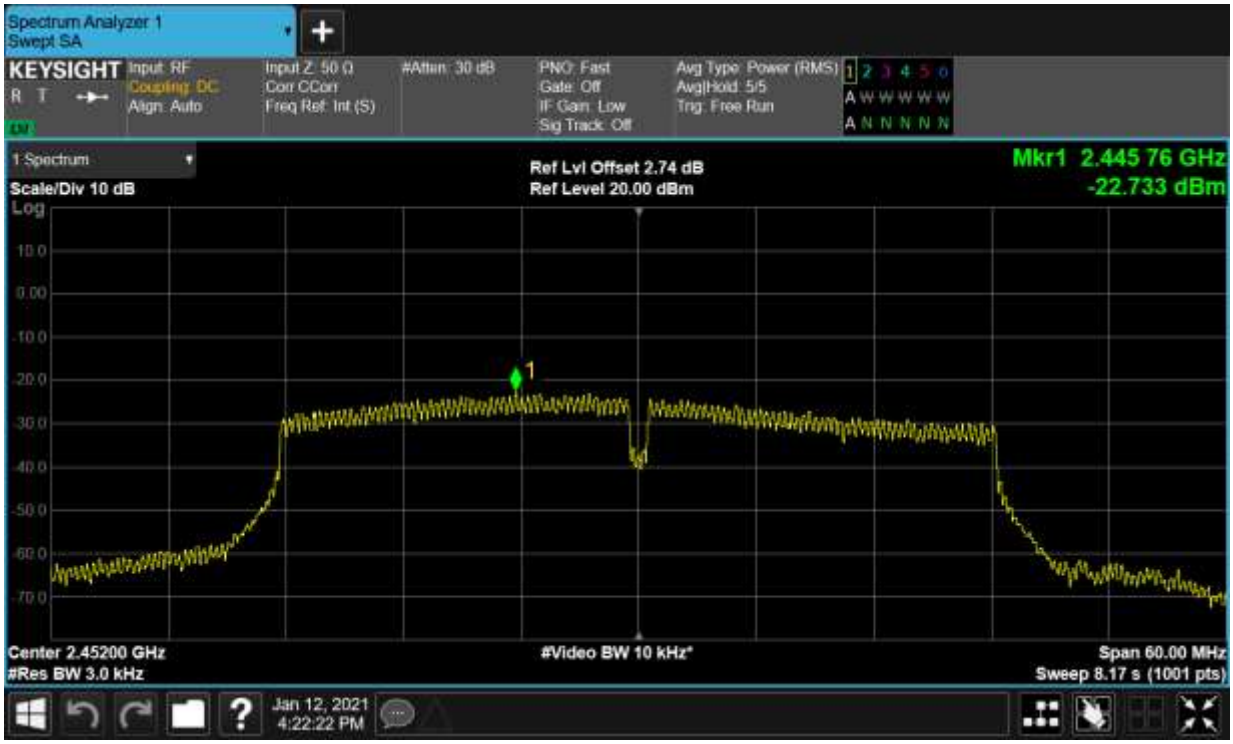
PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1



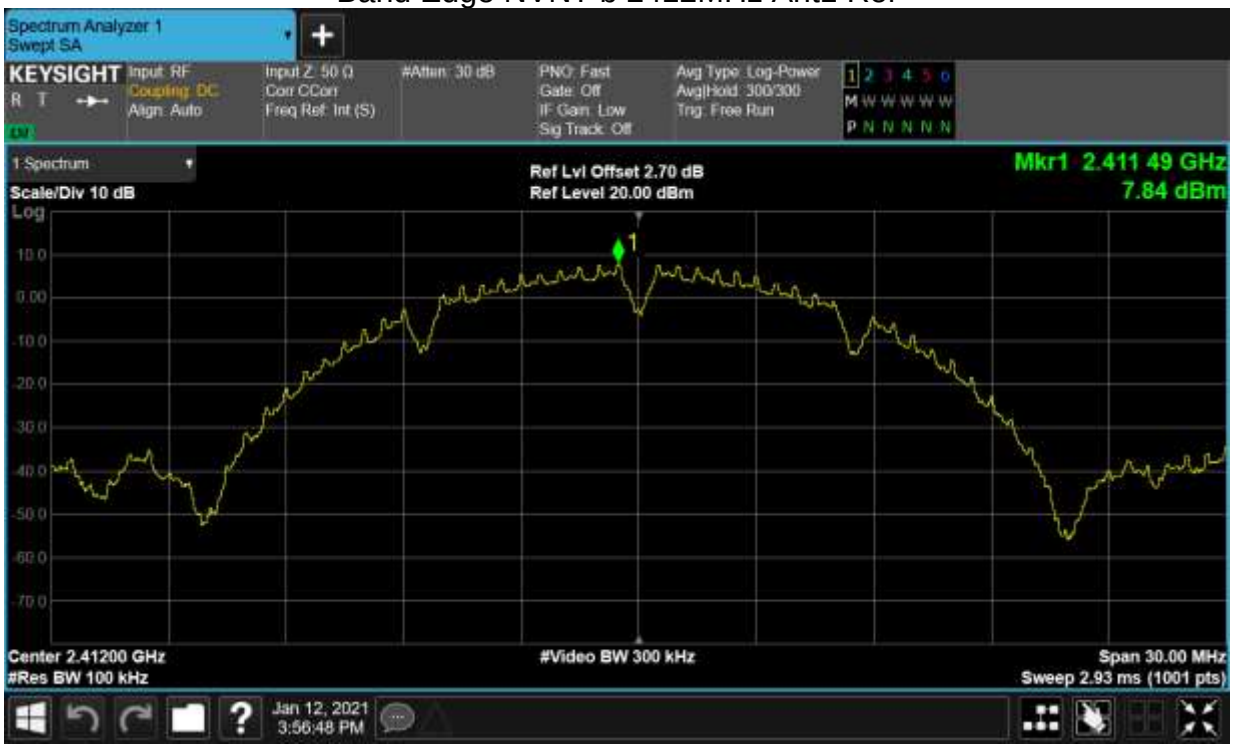
PSD NVNT n40 2452MHz Ant1



Band Edge

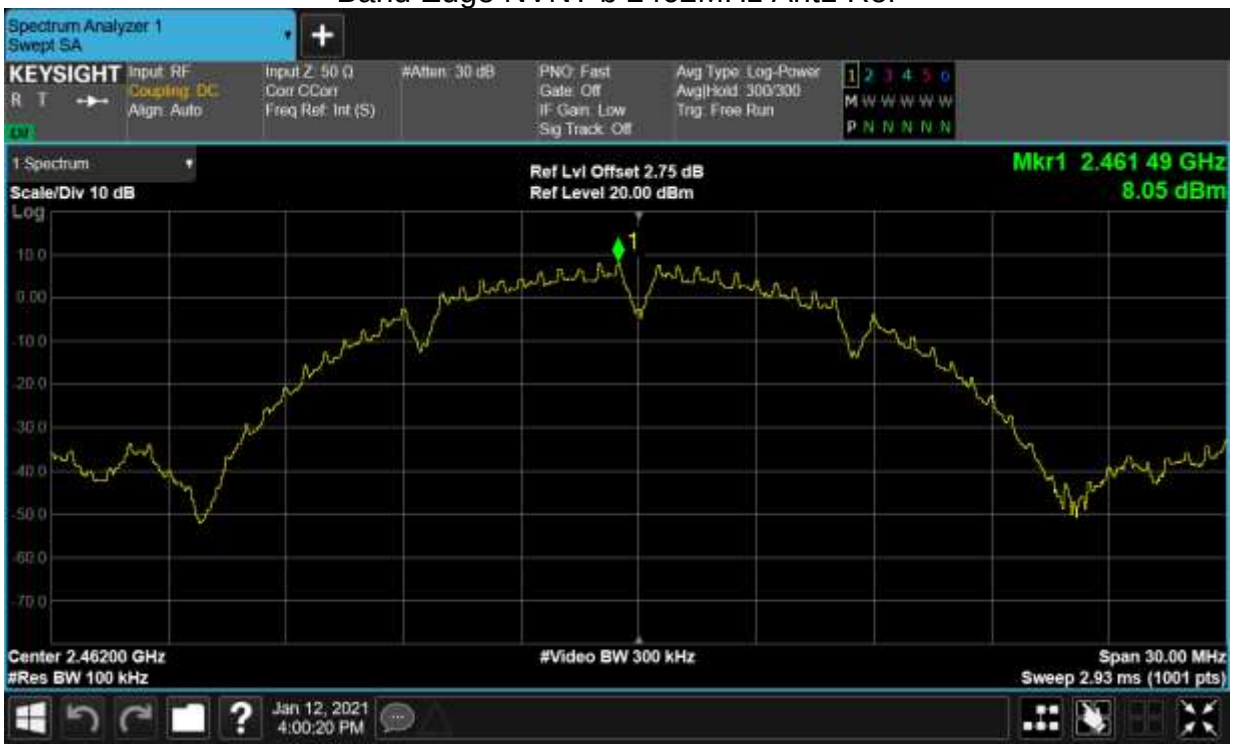
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-61.04	-30	Pass
NVNT	b	2462	Ant1	-60.66	-30	Pass
NVNT	g	2412	Ant1	-50.01	-30	Pass
NVNT	g	2462	Ant1	-50.29	-30	Pass
NVNT	n20	2412	Ant1	-46.47	-30	Pass
NVNT	n20	2462	Ant1	-47.86	-30	Pass
NVNT	n40	2422	Ant1	-39.11	-30	Pass
NVNT	n40	2452	Ant1	-44.6	-30	Pass

Band Edge NVNT b 2412MHz Ant1 Ref



Band Edge NVNT b 2412MHz Ant1 Emission

Band Edge NVNT b 2462MHz Ant1 Ref



Band Edge NVNT b 2462MHz Ant1 Emission

Band Edge NVNT g 2412MHz Ant1 Ref

Band Edge NVNT g 2412MHz Ant1 Emission

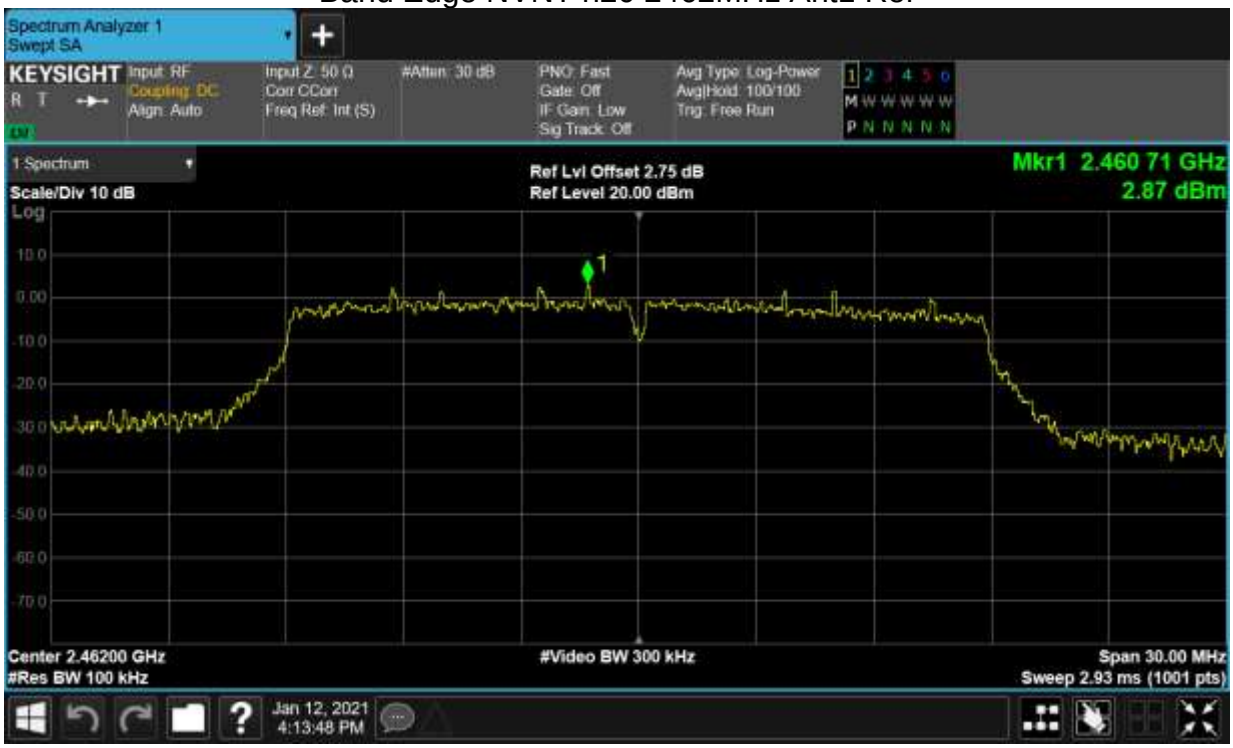
Band Edge NVNT g 2462MHz Ant1 Ref

Band Edge NVNT g 2462MHz Ant1 Emission

Band Edge NVNT n20 2412MHz Ant1 Ref

Band Edge NVNT n20 2412MHz Ant1 Emission

Band Edge NVNT n20 2462MHz Ant1 Ref



Band Edge NVNT n20 2462MHz Ant1 Emission

Band Edge NVNT n40 2422MHz Ant1 Ref

Band Edge NVNT n40 2422MHz Ant1 Emission

Band Edge NVNT n40 2452MHz Ant1 Ref

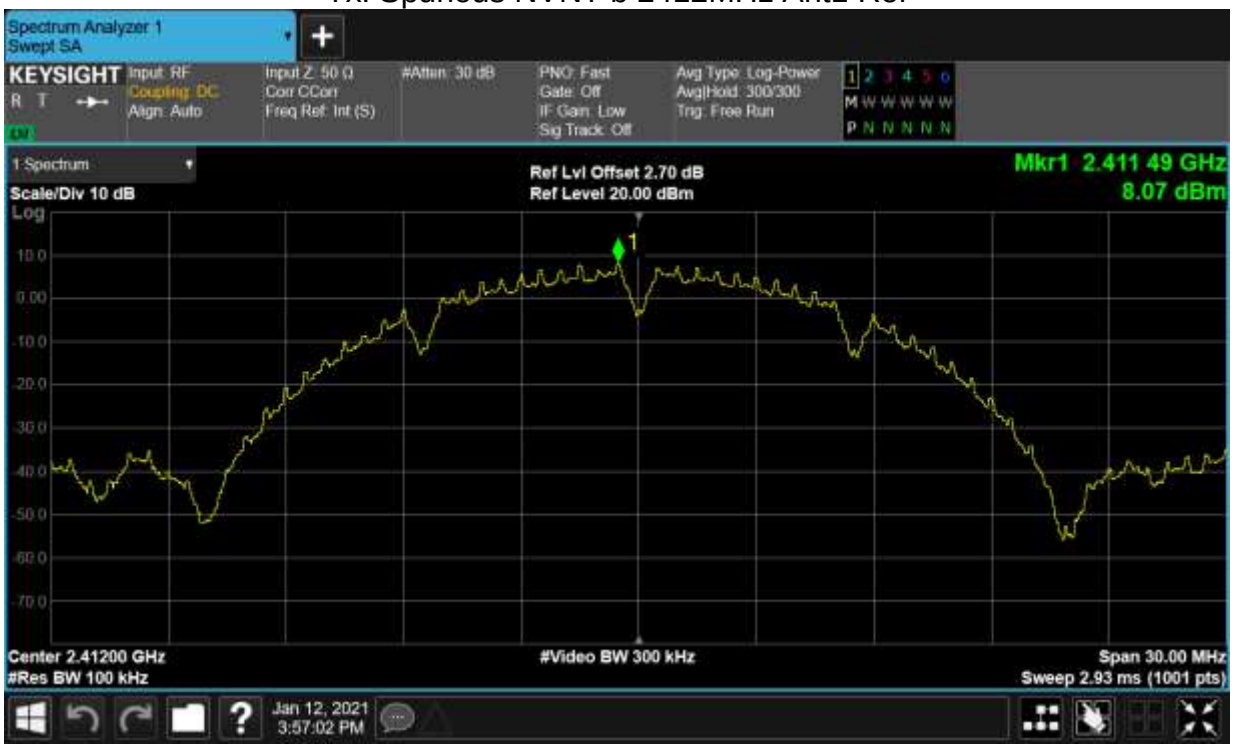
Band Edge NVNT n40 2452MHz Ant1 Emission

Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-44.12	-30	Pass
NVNT	b	2437	Ant1	-44.98	-30	Pass
NVNT	b	2462	Ant1	-41.17	-30	Pass
NVNT	g	2412	Ant1	-42.7	-30	Pass

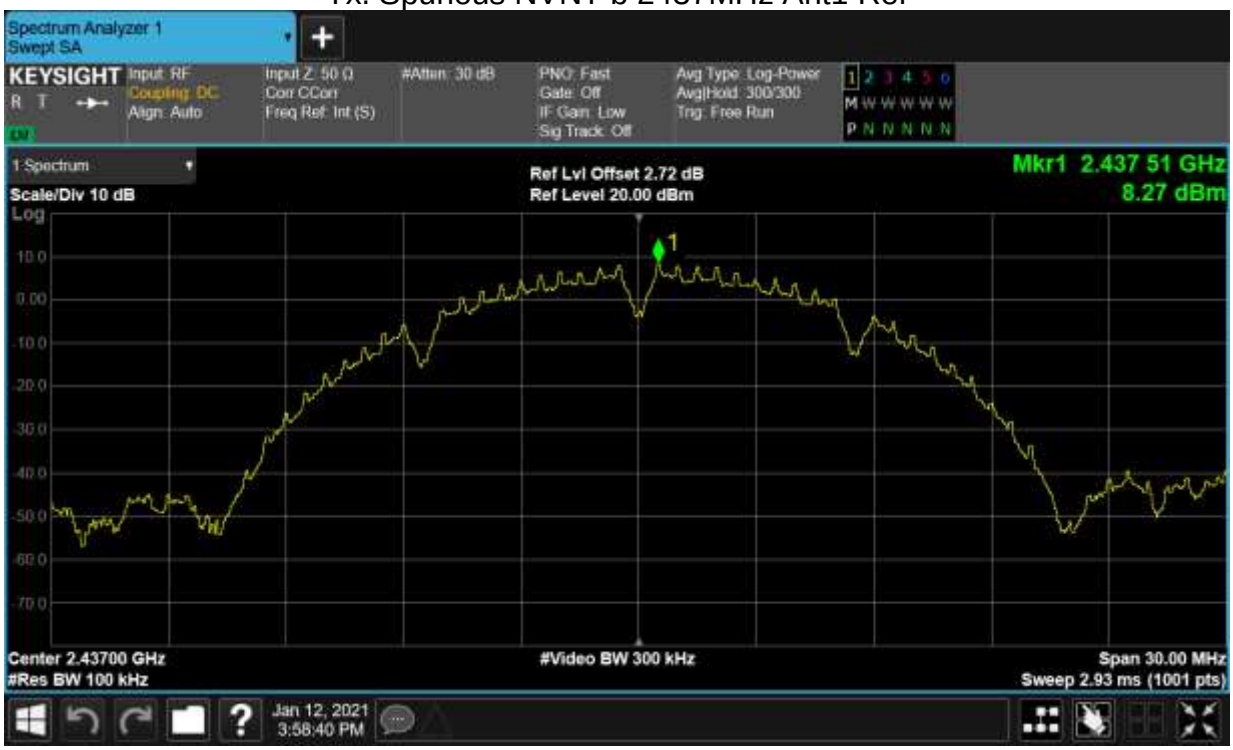
NVNT	g	2437	Ant1	-45.44	-30	Pass
NVNT	g	2462	Ant1	-37.02	-30	Pass
NVNT	n20	2412	Ant1	-36.78	-30	Pass
NVNT	n20	2437	Ant1	-42.94	-30	Pass
NVNT	n20	2462	Ant1	-39.44	-30	Pass
NVNT	n40	2422	Ant1	-38.25	-30	Pass
NVNT	n40	2437	Ant1	-50.2	-30	Pass
NVNT	n40	2452	Ant1	-40.66	-30	Pass

Tx. Spurious NVNT b 2412MHz Ant1 Ref



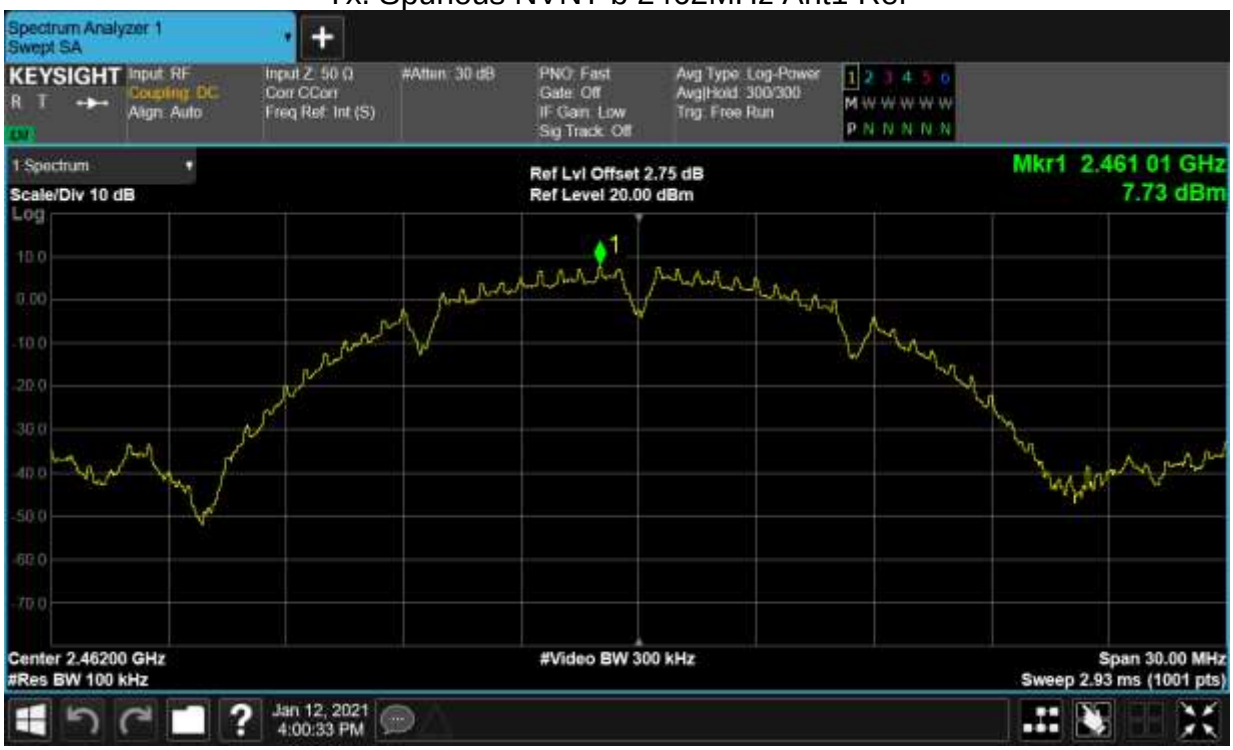
Tx. Spurious NVNT b 2412MHz Ant1 Emission

Tx. Spurious NVNT b 2437MHz Ant1 Ref



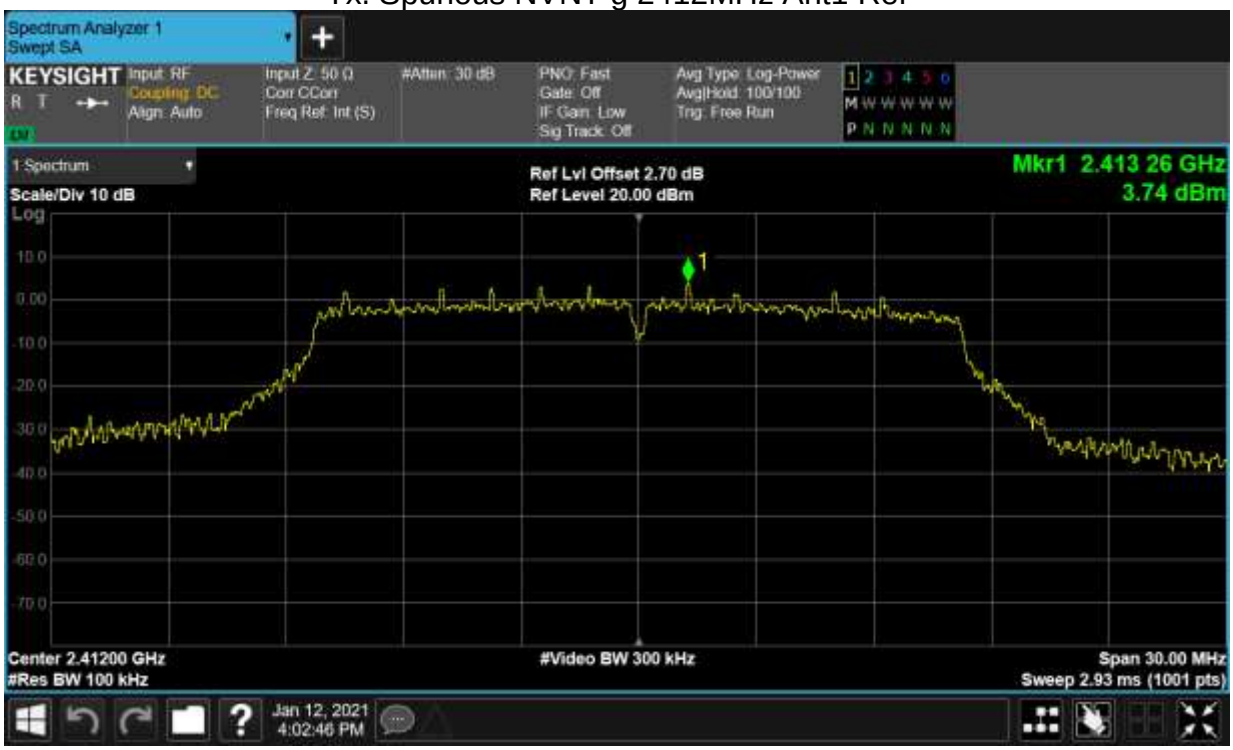
Tx. Spurious NVNT b 2437MHz Ant1 Emission

Tx. Spurious NVNT b 2462MHz Ant1 Ref



Tx. Spurious NVNT b 2462MHz Ant1 Emission

Tx. Spurious NVNT g 2412MHz Ant1 Ref

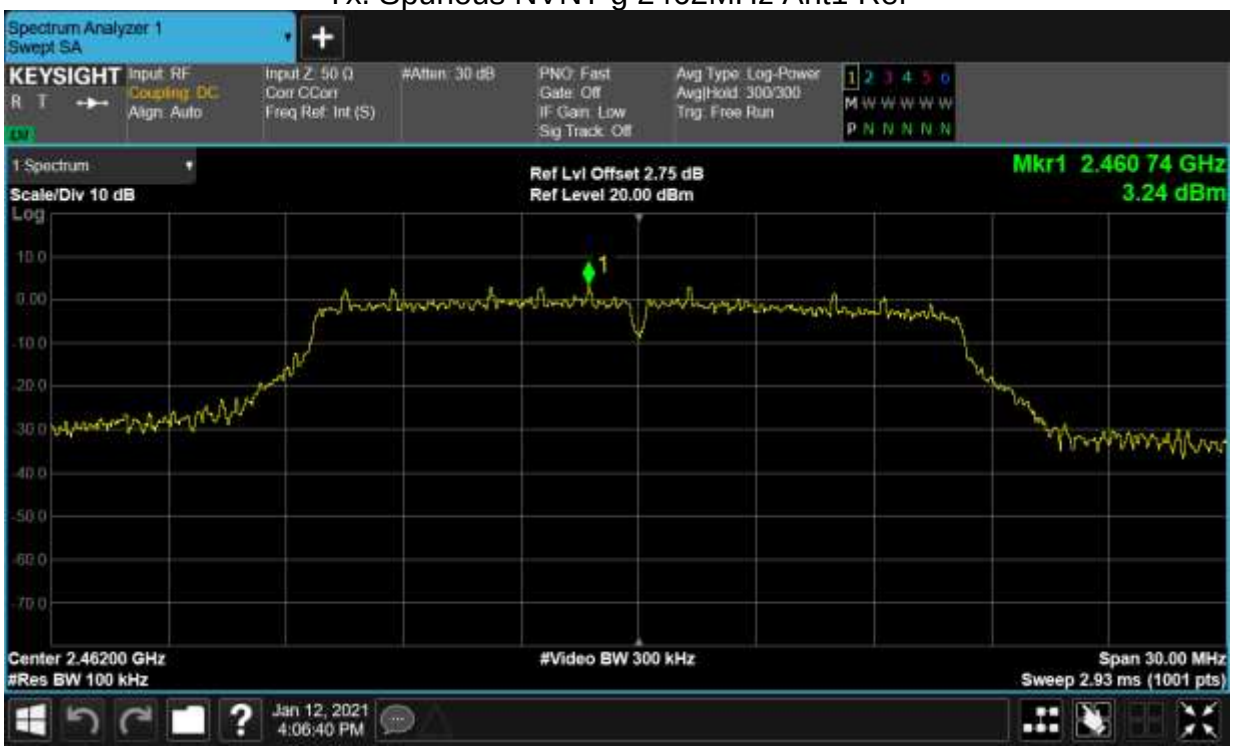


Tx. Spurious NVNT g 2412MHz Ant1 Emission

Tx. Spurious NVNT g 2437MHz Ant1 Ref

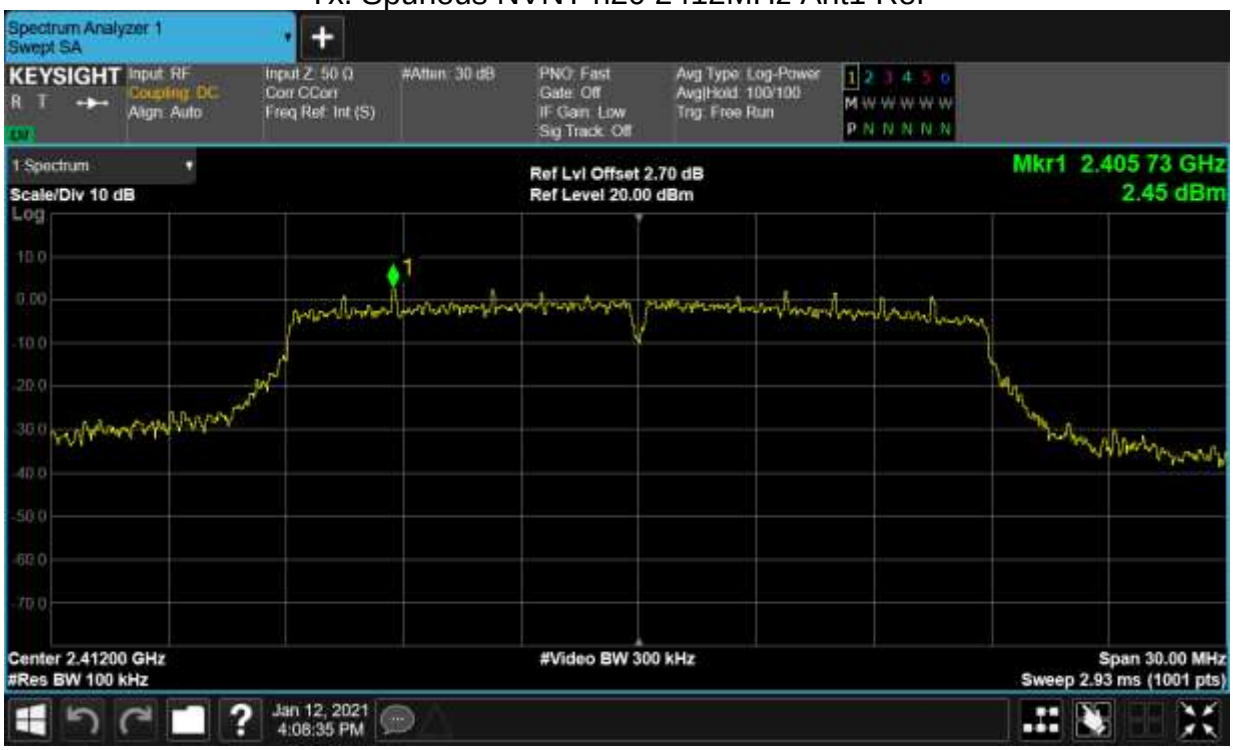
Tx. Spurious NVNT g 2437MHz Ant1 Emission

Tx. Spurious NVNT g 2462MHz Ant1 Ref



Tx. Spurious NVNT g 2462MHz Ant1 Emission

Tx. Spurious NVNT n20 2412MHz Ant1 Ref

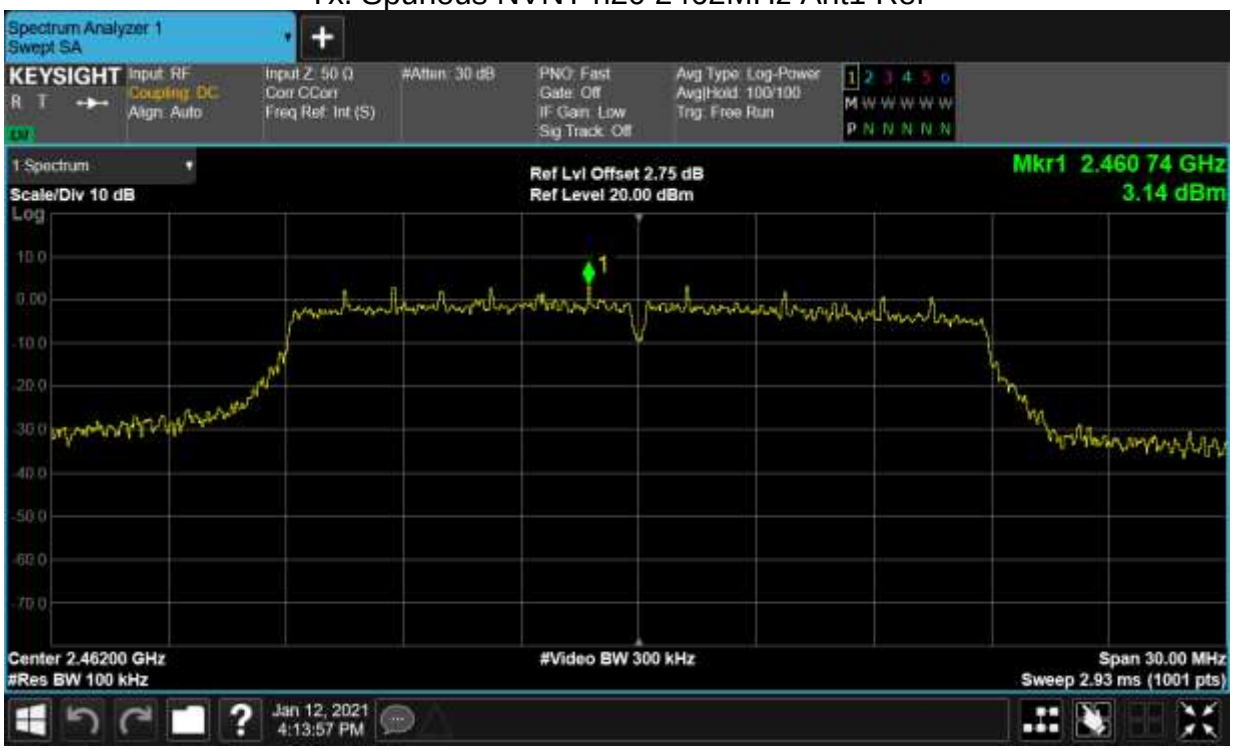


Tx. Spurious NVNT n20 2412MHz Ant1 Emission

Tx. Spurious NVNT n20 2437MHz Ant1 Ref

Tx. Spurious NVNT n20 2437MHz Ant1 Emission

Tx. Spurious NVNT n20 2462MHz Ant1 Ref

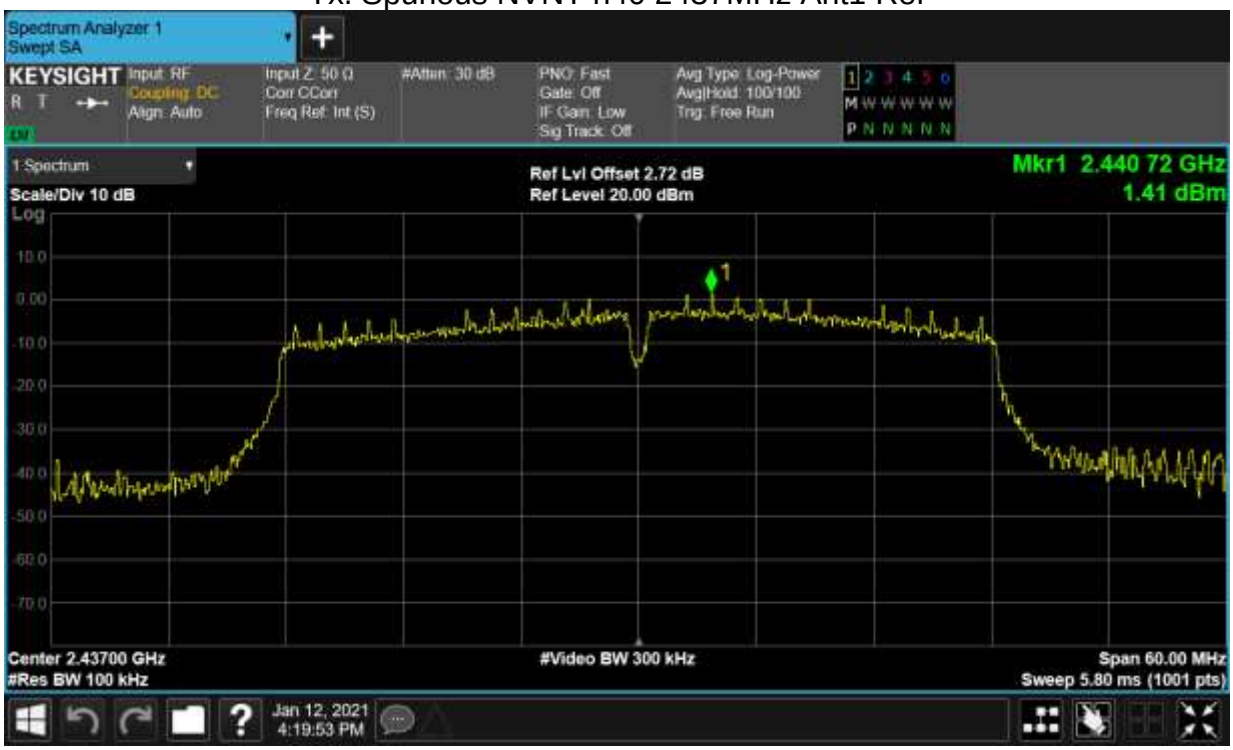


Tx. Spurious NVNT n20 2462MHz Ant1 Emission

Tx. Spurious NVNT n40 2422MHz Ant1 Ref

Tx. Spurious NVNT n40 2422MHz Ant1 Emission

Tx. Spurious NVNT n40 2437MHz Ant1 Ref



Tx. Spurious NVNT n40 2437MHz Ant1 Emission

Tx. Spurious NVNT n40 2452MHz Ant1 Ref

Tx. Spurious NVNT n40 2452MHz Ant1 Emission

------End of report------