FCC PART 15 SUBPART C
ISED RSS-247 ISSUE 2

CERTIFICATION TEST REPORT

For

WIFI+BLE Module

MODEL NUMBER: GRJW05-J8

FCC ID: 2ADAP-GRJW05J8
IC: 12478A-GRJW05J8

REPORT NUMBER: 4790401446.1

ISSUE DATE: **21 June 2022**

Prepared for

GREE Electric Appliances,Inc.of Zhuhai
West Jinji Rd, Qianshan, Zhuhai, Guangdong, China 519070

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	21/06/2022	Initial Issue	--

Summary of Test Results			
Clause	**Test Items**	**FCC/IC Rules**	**Test Results**
1	6 dB Bandwidth and 99% Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) RSS-Gen Clause 6.7	Pass
2	Conducted Output Power	FCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (d)	Pass
3	Power Spectral Density	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d) RSS-247 Clause 5.5	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
6	Conducted Emission Test For AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 6.8	Pass
Remark: 1) The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C, when <Accuracy Method> decision rule is applied.			

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	GREE Electric Appliances,Inc.of Zhuhai
Address:	West Jinji Rd, Qianshan, Zhuhai, Guangdong, China 519070

Manufacturer Information

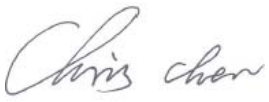
Company Name:	Same the Applicant
Address:	Same the Applicant

EUT Description

EUT Name:	WIFI+BLE Module
Model:	GRJW05-J8
Brand Name:	N/A
Sample Status:	Normal
Sample ID:	22060602003-4
Sample Received Date:	07 June 2022
Date of Tested:	07 June 2022 ~ 21 June 2022

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC Part 15 Subpart C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-GEN Issue 5	PASS

Prepared By:



Chris Chen
Engineer Project Associate

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 558074 D01 15.247 Meas Guidance v05r02, 414788 D01 Radiated Test Site v01r01, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4338.01)** Shenzhen STS Test Services Co., Ltd. has been assessed and proved to be in compliance with A2LA**.** **CNAS (Registration No.: L7649)** Shenzhen STS Test Services Co., Ltd. has been assessed and proved to be in compliance with CNAS. **IC(Company No.: 12108A)** Shenzhen STS Test Services Co., Ltd. has been registered and fully described in a report filed with Industry Canada. The Company Number is 12108A.

Note: All tests measurement facilities use to collect the measurement data are located at A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognize national standards.

4.2. 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	±0.87dB
2	Unwanted Emissions, conducted	±2.895dB
3	All emissions, radiated 9K-30MHz	±3.80dB
4	All emissions, radiated 30M-1GHz	±4.09dB
5	All emissions, radiated 1G-6GHz	±4.92dB
6	All emissions, radiated>6G	±5.49dB
7	Conducted Emission (9KHz-30MHz)	±2.73dB

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	WIFI+BLE Module
EUT Description	WIFI+BLE Module
Model	GRJW05-J8
PMN	WIFI+BLE Module
HVIN	GRJW05-J8
FVIN	N/A
Serial number	N/A
HMN	N/A
Radio Technology	IEEE802.11b/g/n HT20
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
Power Supply	Input: DC 3.3V
Hardware Version	N/A
Software Version	N/A

5.2. MAXIMUM OUTPUT POWER

Frequency Range (MHz)	Number of Transmit Chains (NTX)	IEE Std. 802.11	Frequency (MHz)	Channel Number	Max Peak Conducted Power (dBm)
2400-2483.5	1	IEEE 802.11b	2412-2462	1-11[11]	8.14
2400-2483.5	1	IEEE 802.11g	2412-2462	1-11[11]	12.88
2400-2483.5	1	IEEE 802.11nHT20	2412-2462	1-11[11]	13.16

5.3. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
802.11b/g/n(20MHz)					
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447	N/A	N/A

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
WiFi TX(802.11b)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11g)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11n HT20)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz

5.5. THE WORSE CASE CONFIGURATIONS

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Modulation Mode	Transmit Antenna Number	Test Channel		
		NCB: 20MHz		
		CH 1	CH 6	CH 11
802.11b	1	48	48	48
802.11g	1	38	38	38
802.11n HT20	1	39	39	39

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2412-2462	PCB Antenna	1 (Provided by applicant)

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	Notebook Adapter	LENOVO	ADLX45DLC3A	N/A
2	Notebook	LENOVO	Think Pad E470	N/A

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(cm)	Remarks
1	USB Cable	N/A	N/A	150cm	N/A

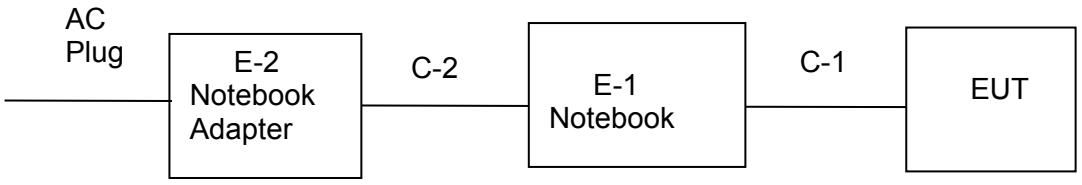
ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	N/A	N/A	N/A	N/A

TEST SETUP

The EUT can work in engineering mode with firmware QRCT from QUALCOMM through a Laptop.

SETUP DIAGRAM FOR TESTS



Note: After finishing the test setting, the notebook will be removed during measurements.

6. MEASURING INSTRUMENT AND SOFTWARE USED

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
Signal Analyzer	R&S	FSV 40-N	101823	2021.09.30	2022.09.29
Active loop Antenna	ZHINAN	ZN30900C	16035	2021.04.11	2023.04.10
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2021.10.11	2023.10.10
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier (0.1M-3GHz)	EM	EM330	060665	2021.10.08	2022.10.07
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2021.09.30	2022.09.29
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2021.09.28	2022.09.27
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Band Reject Filter (2.4G-2.5GHz)	COM-MW	ZBSF-2400-2500	N/A	2021.09.30	2022.09.29
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
LISN	R&S	ENV216	101242	2021.09.30	2022.09.29
LISN	EMCO	3810/2NM	23625	2021.09.30	2022.09.29
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Power Sensor	Keysight	U2021XA	MY55520005	2021.09.30	2022.09.29
			MY55520006	2021.09.30	2022.09.29
			MY56120038	2021.09.30	2022.09.29
			MY56280002	2021.09.30	2022.09.29
Signal Analyzer	Agilent	N9020A	MY51110105	2022.03.01	2023.02.28
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	FARAD	EZ-EMC(Ver.STSLAB-03A1 RE)			

7. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6 dB Bandwidth and 99% Bandwidth	558074 D01 15.247 Meas Guidance v05r02	8.2
2	Output Power	558074 D01 15.247 Meas Guidance v05r02	8.3.1
3	Power Spectral Density	558074 D01 15.247 Meas Guidance v05r02	8.4
4	Out-of-band emissions in non-restricted bands	558074 D01 15.247 Meas Guidance v05r02	8.5
5	Out-of-band emissions in restricted bands	558074 D01 15.247 Meas Guidance v05r02	8.6
6	Band-edge	558074 D01 15.247 Meas Guidance v05r02	8.7
7	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	6.2

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

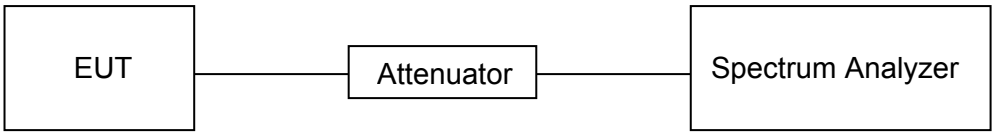
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



TEST ENVIRONMENT

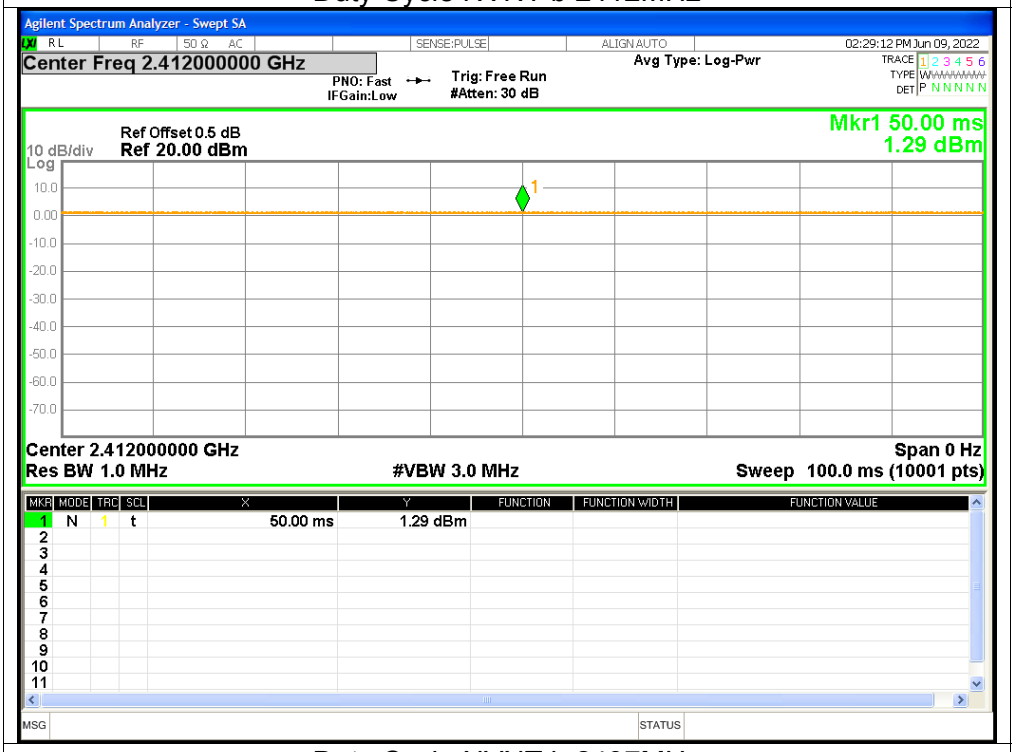
Temperature	25.5°C	Relative Humidity	37%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

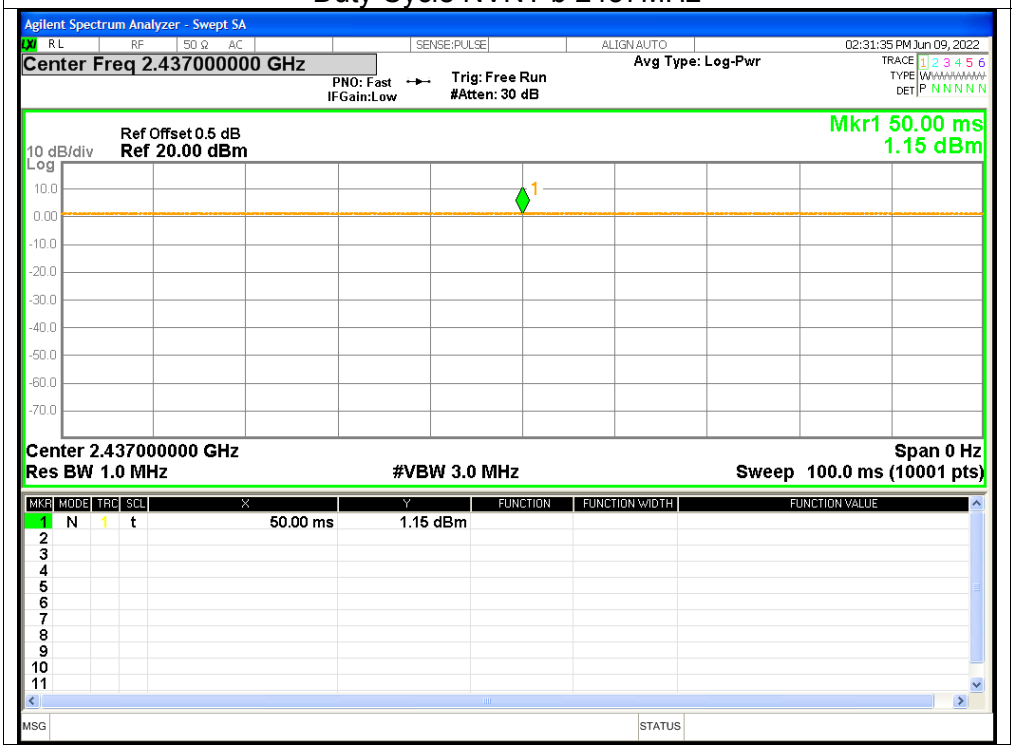
Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	100	0	0.01
NVNT	b	2437	100	0	0.01
NVNT	b	2462	100	0	0.01
NVNT	g	2412	100	0	0.01
NVNT	g	2437	100	0	0.01
NVNT	g	2462	100	0	0.01
NVNT	n20	2412	100	0	0.01
NVNT	n20	2437	100	0	0.01
NVNT	n20	2462	100	0	0.01

Test Graphs

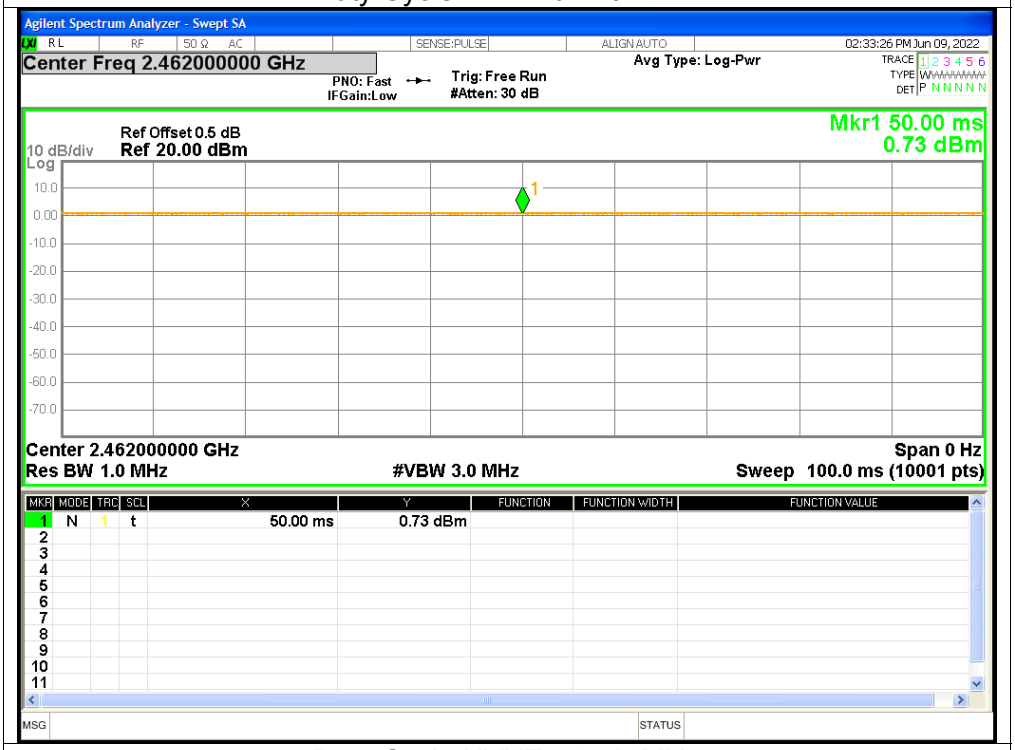
Duty Cycle NVNT b 2412MHz



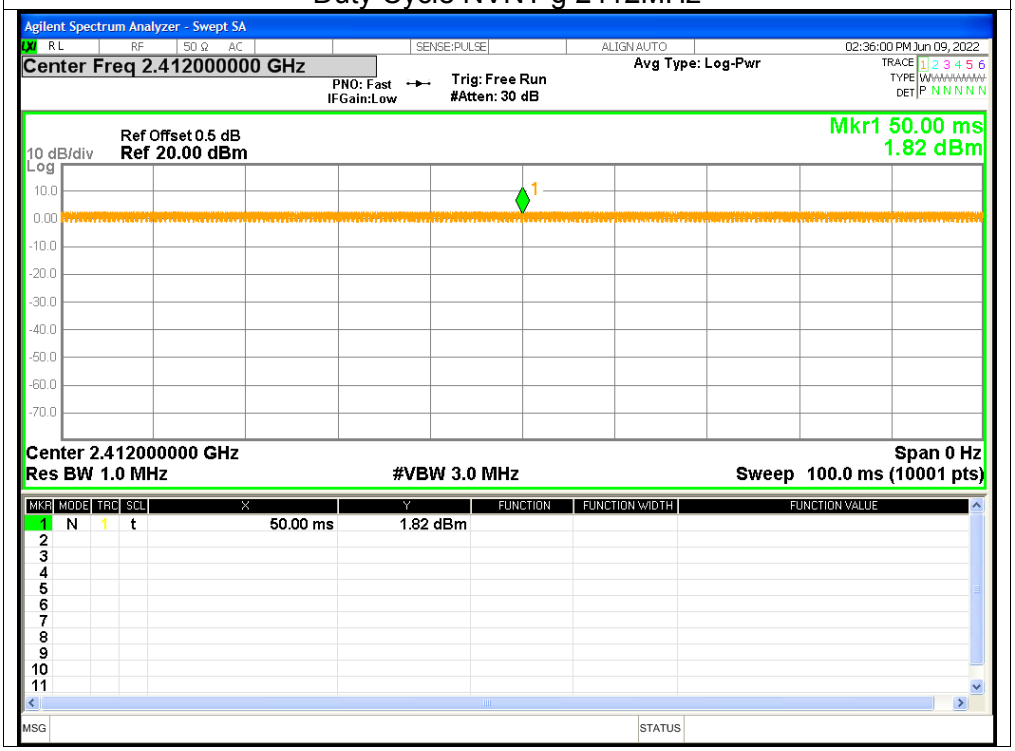
Duty Cycle NVNT b 2437MHz



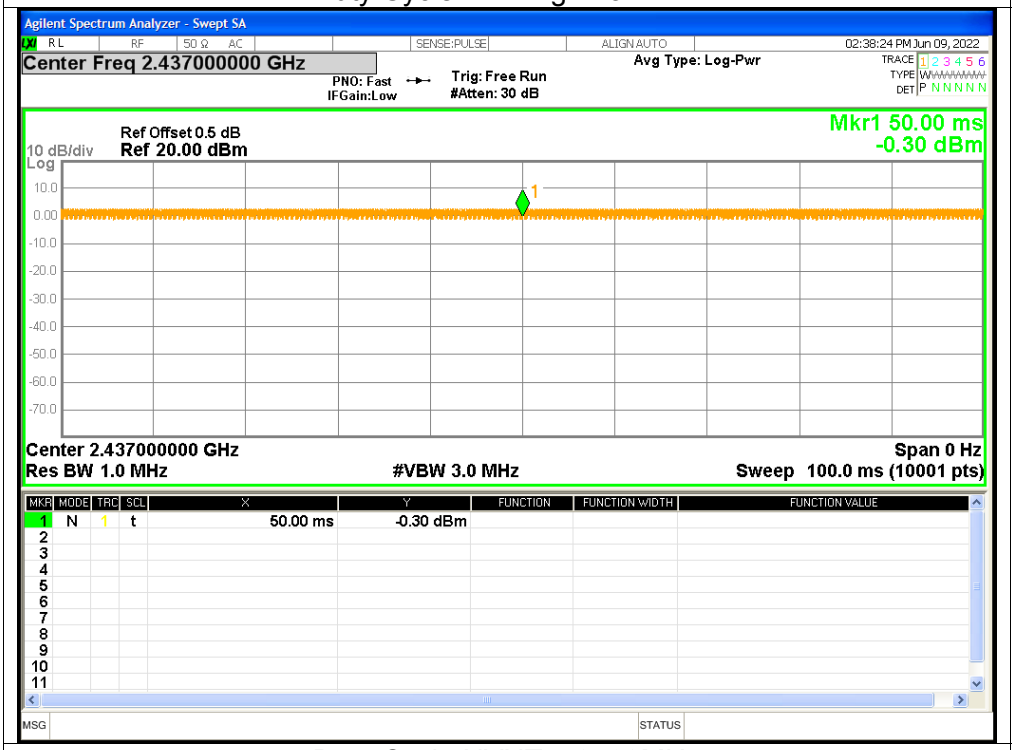
Duty Cycle NVNT b 2462MHz



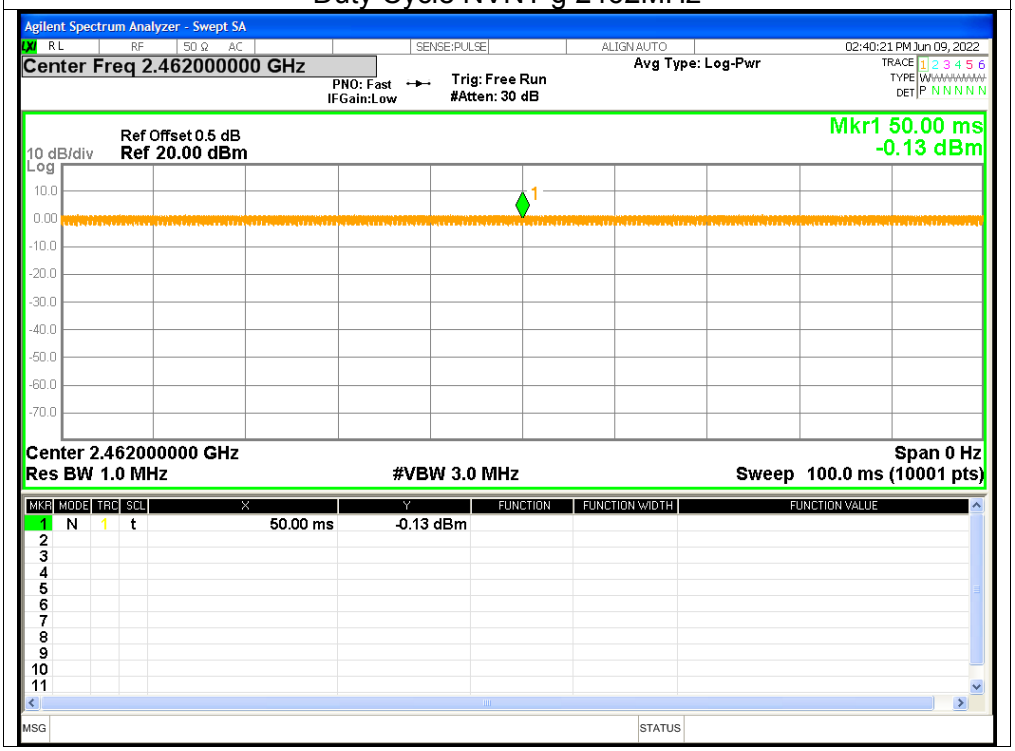
Duty Cycle NVNT g 2412MHz



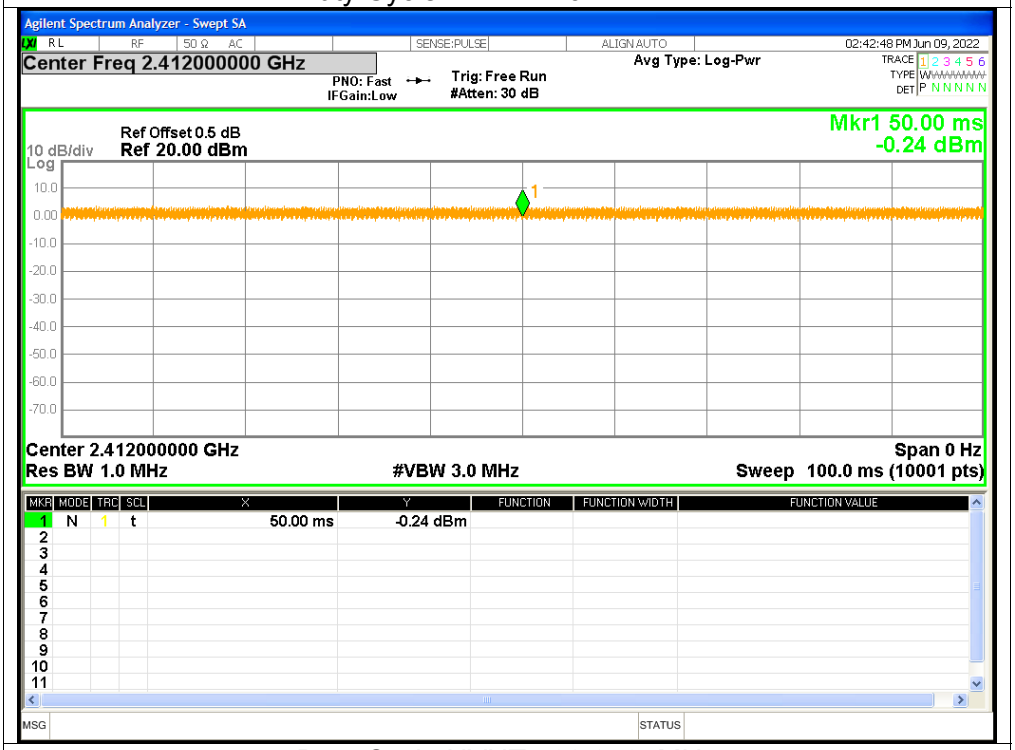
Duty Cycle NVNT g 2437MHz



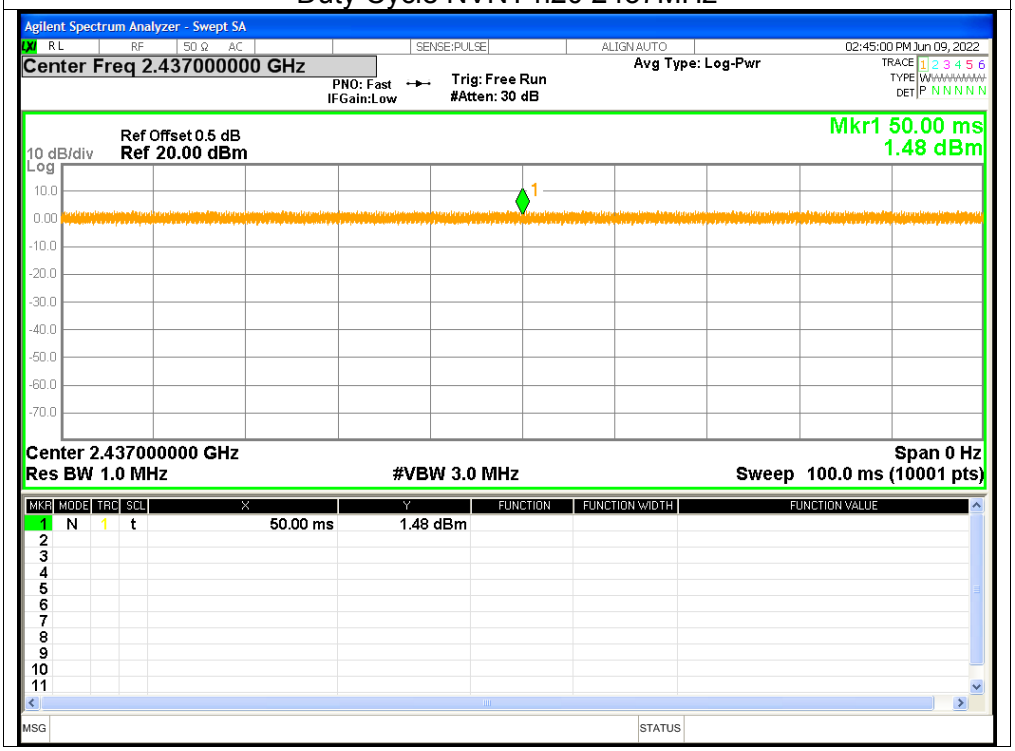
Duty Cycle NVNT g 2462MHz



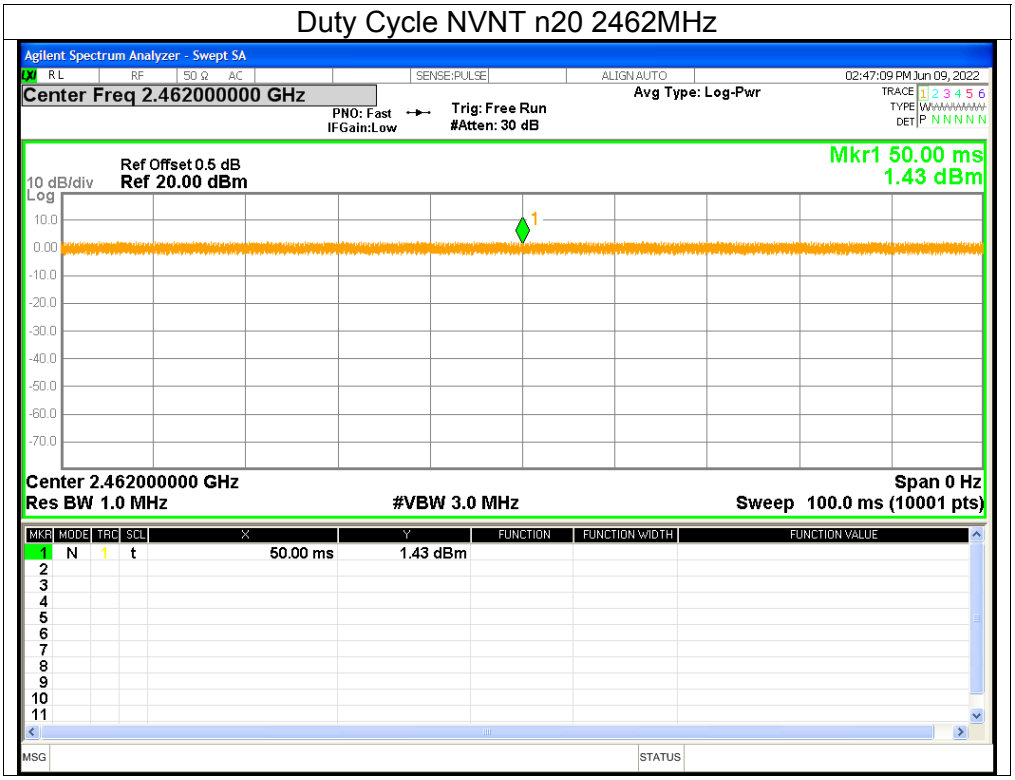
Duty Cycle NVNT n20 2412MHz



Duty Cycle NVNT n20 2437MHz



Duty Cycle NVNT n20 2462MHz



8.2. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2) RSS-247 5.2 (a)	6 dB Bandwidth	>= 500KHz	2400-2483.5
RSS-Gen Clause 6.7	99% Bandwidth	For reporting purposes only.	2400-2483.5

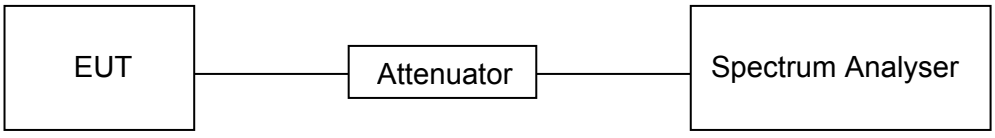
TEST PROCEDURE

Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6dB Bandwidth :100K For 99% Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Bandwidth : approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB and 99% relative to the maximum level measured in the fundamental emission.

TEST SETUP



TEST ENVIRONMENT

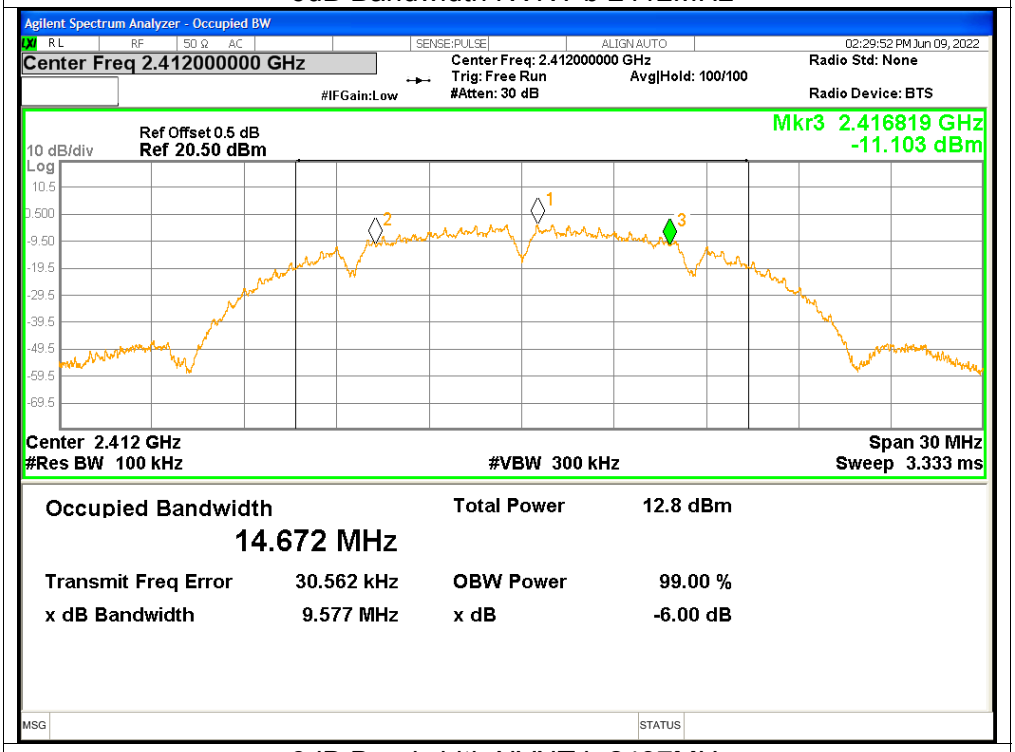
Temperature	25.5°C	Relative Humidity	37%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

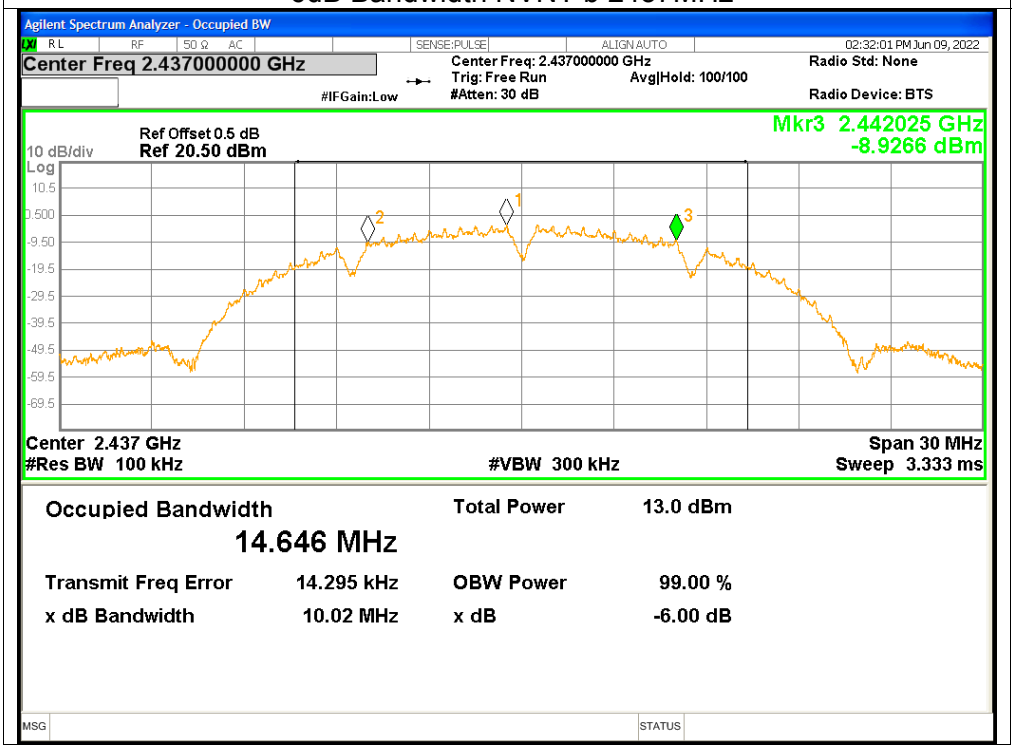
Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	99% bandwidth (MHz)	Limit (MHz)	Verdict
NVNT	b	2412	9.577	14.930	>=0.5	Pass
NVNT	b	2437	10.021	14.950	>=0.5	Pass
NVNT	b	2462	10.023	14.951	>=0.5	Pass
NVNT	g	2412	16.488	19.373	>=0.5	Pass
NVNT	g	2437	16.517	19.081	>=0.5	Pass
NVNT	g	2462	16.542	18.792	>=0.5	Pass
NVNT	n20	2412	17.647	19.716	>=0.5	Pass
NVNT	n20	2437	17.758	19.317	>=0.5	Pass
NVNT	n20	2462	17.631	18.551	>=0.5	Pass

Test Graphs

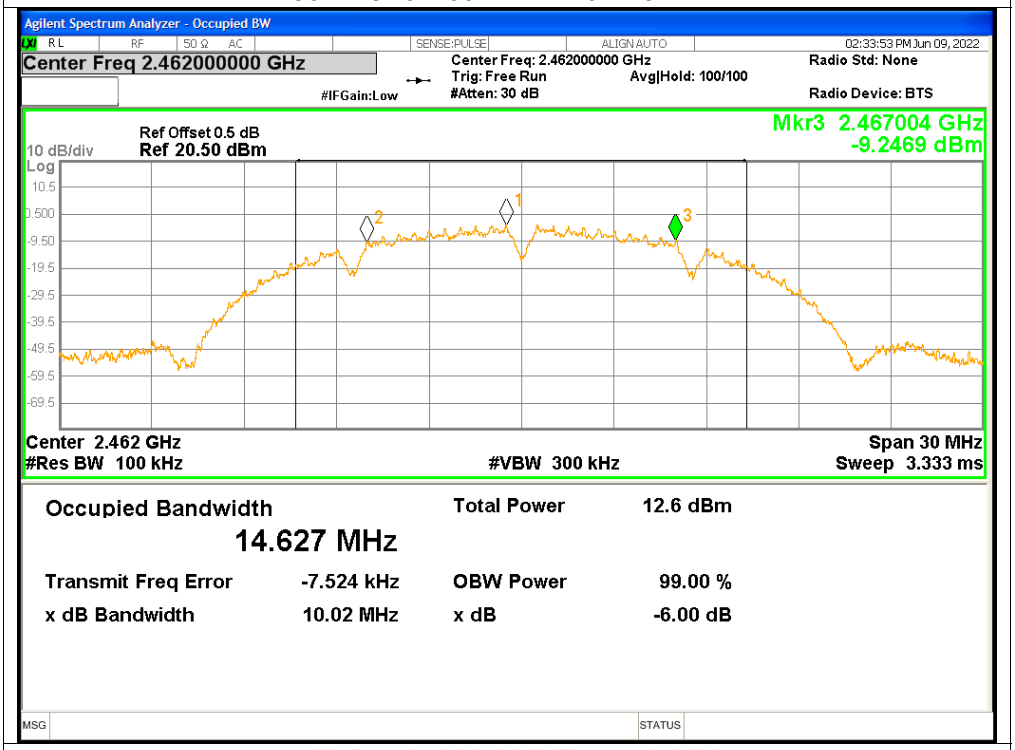
-6dB Bandwidth NVNT b 2412MHz



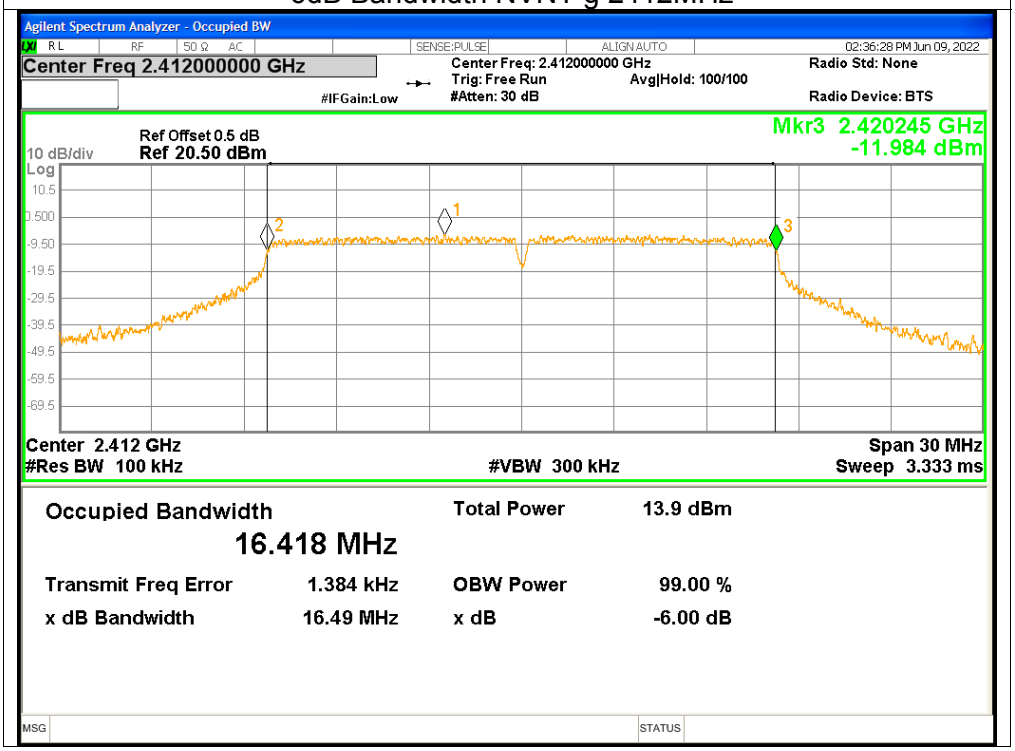
-6dB Bandwidth NVNT b 2437MHz



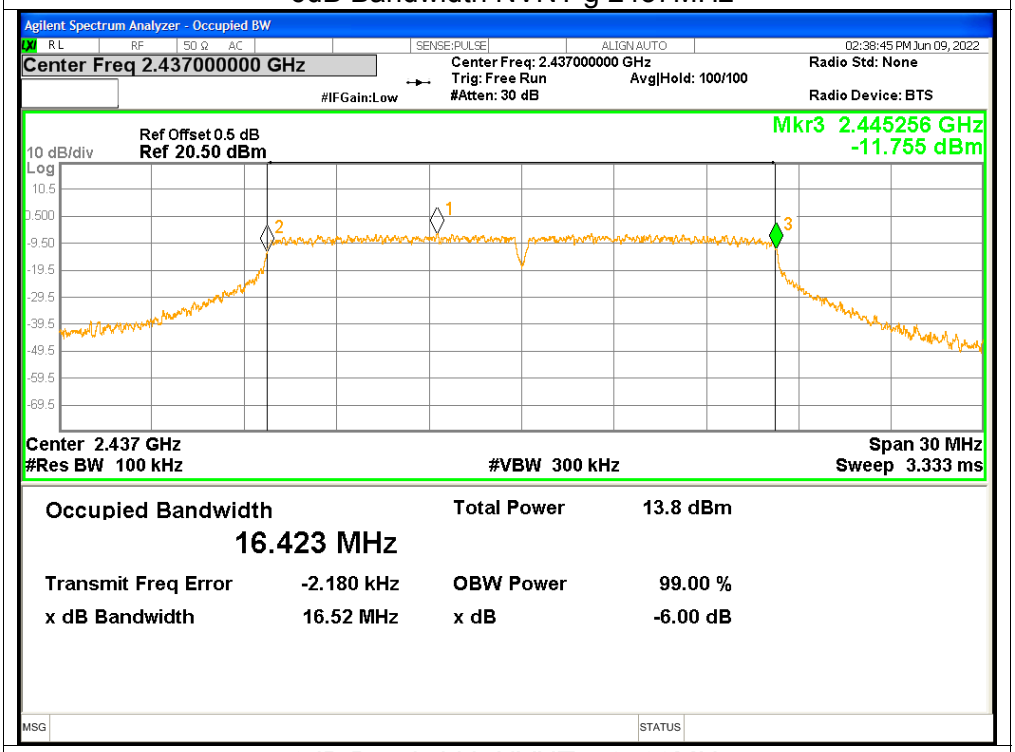
-6dB Bandwidth NVNT b 2462MHz



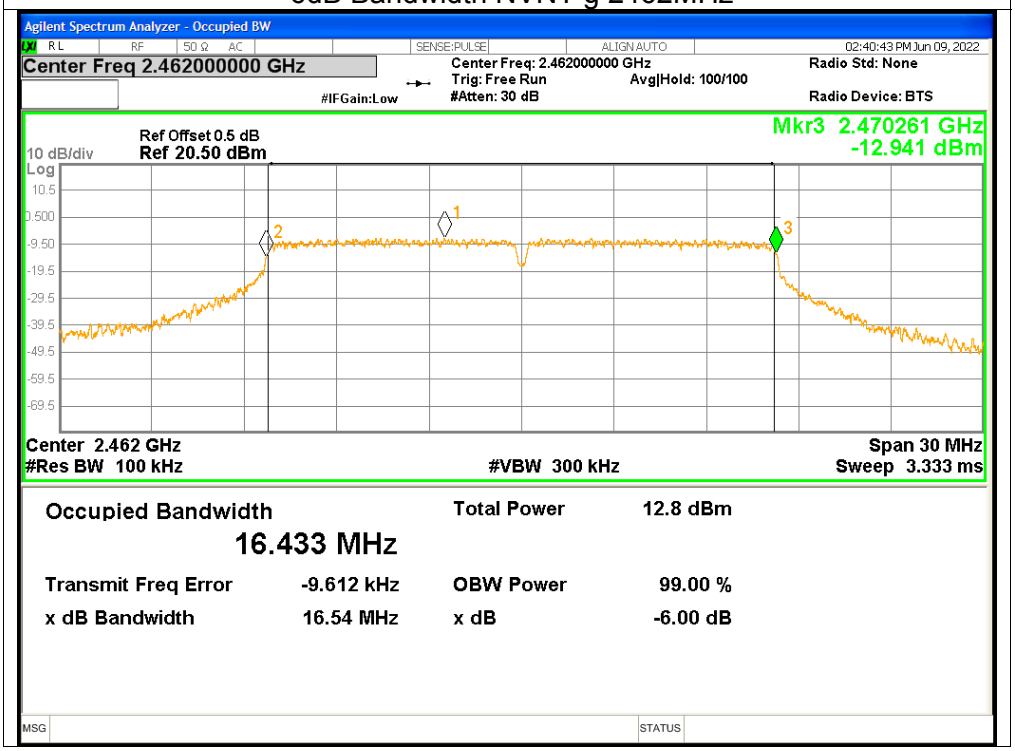
-6dB Bandwidth NVNT g 2412MHz



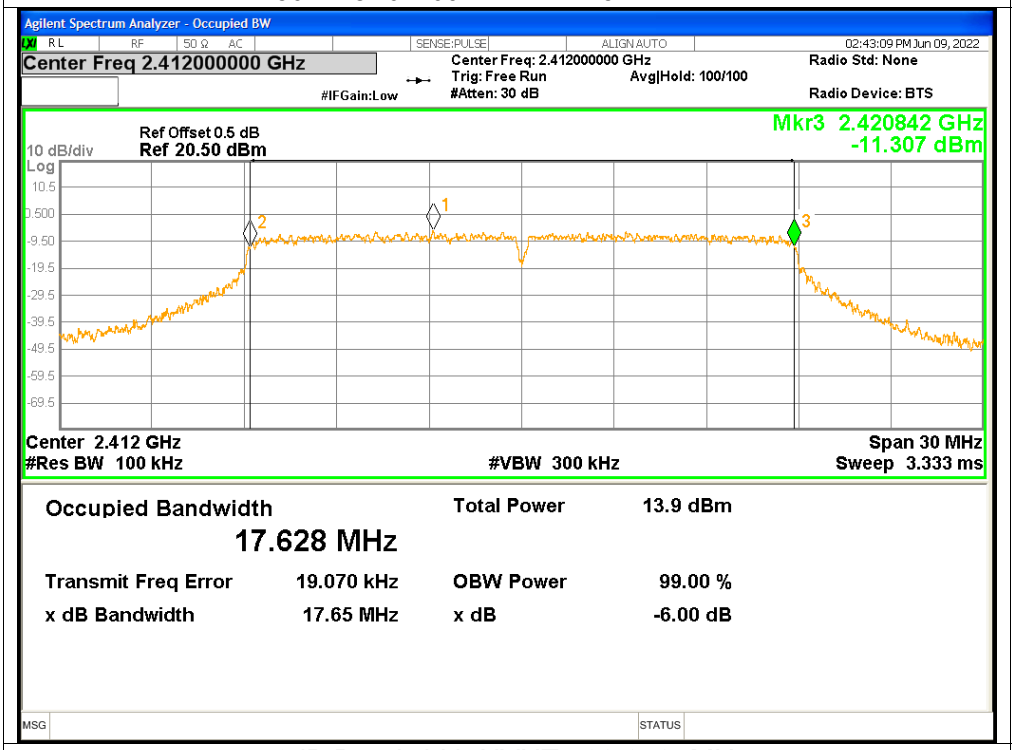
-6dB Bandwidth NVNT g 2437MHz



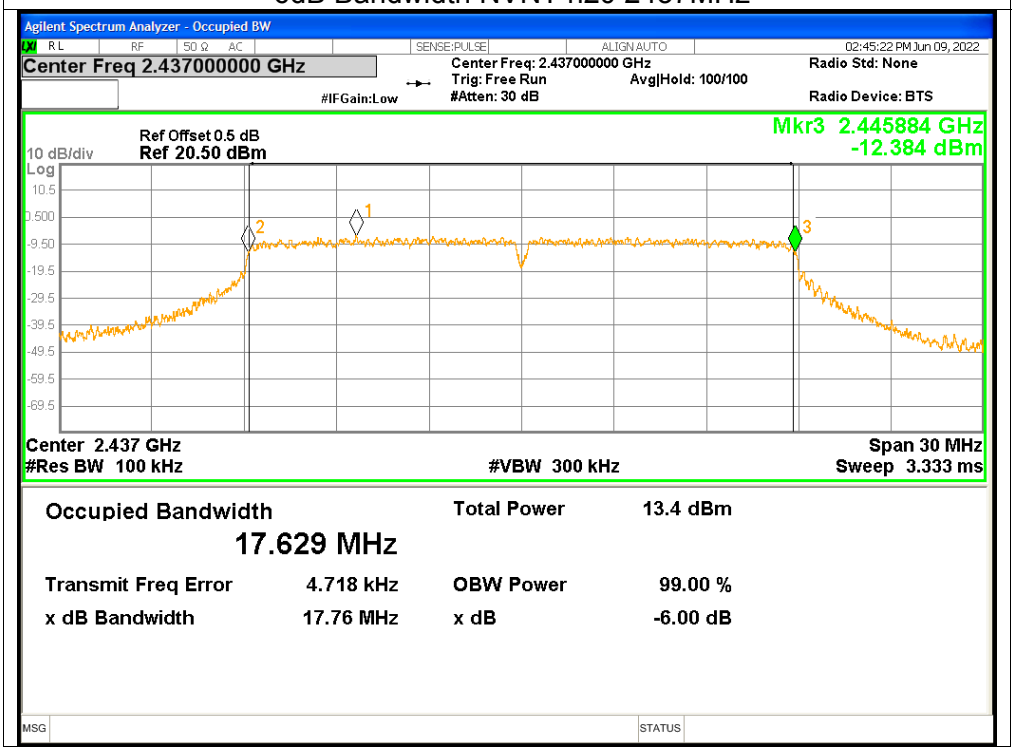
-6dB Bandwidth NVNT g 2462MHz



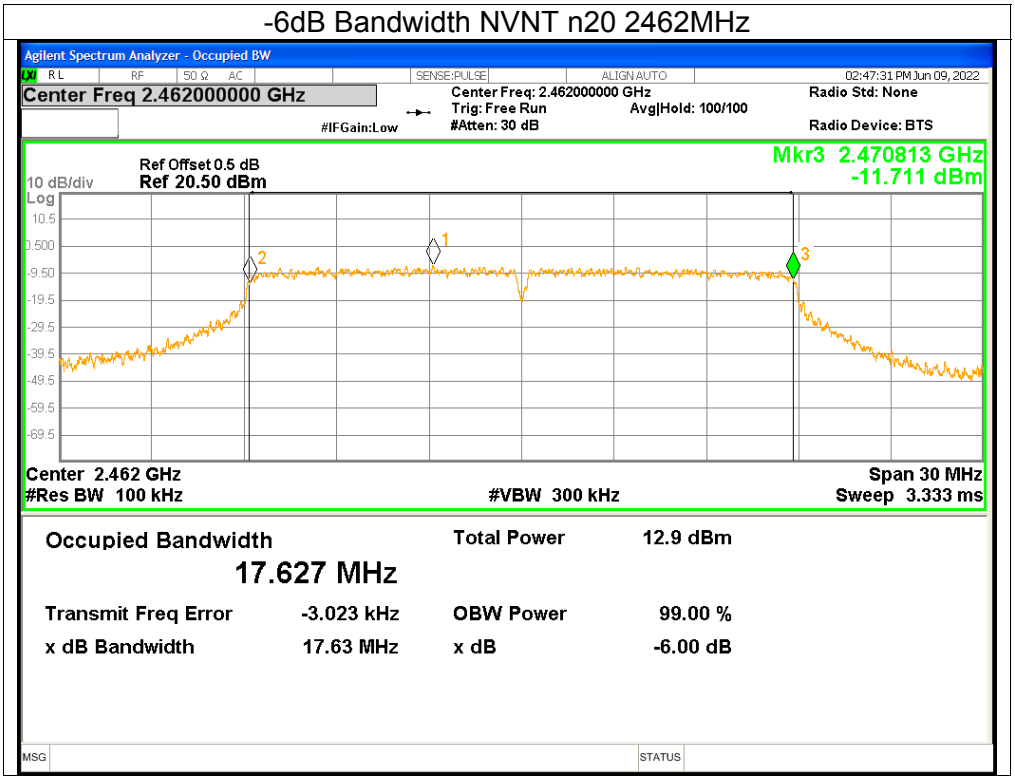
-6dB Bandwidth NVNT n20 2412MHz



-6dB Bandwidth NVNT n20 2437MHz

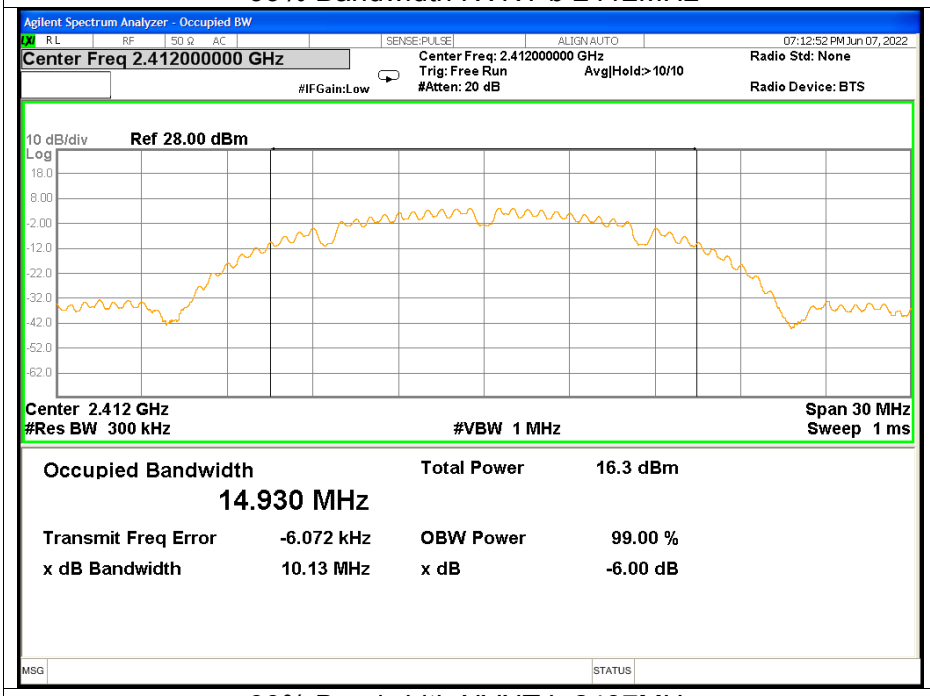


-6dB Bandwidth NVNT n20 2462MHz

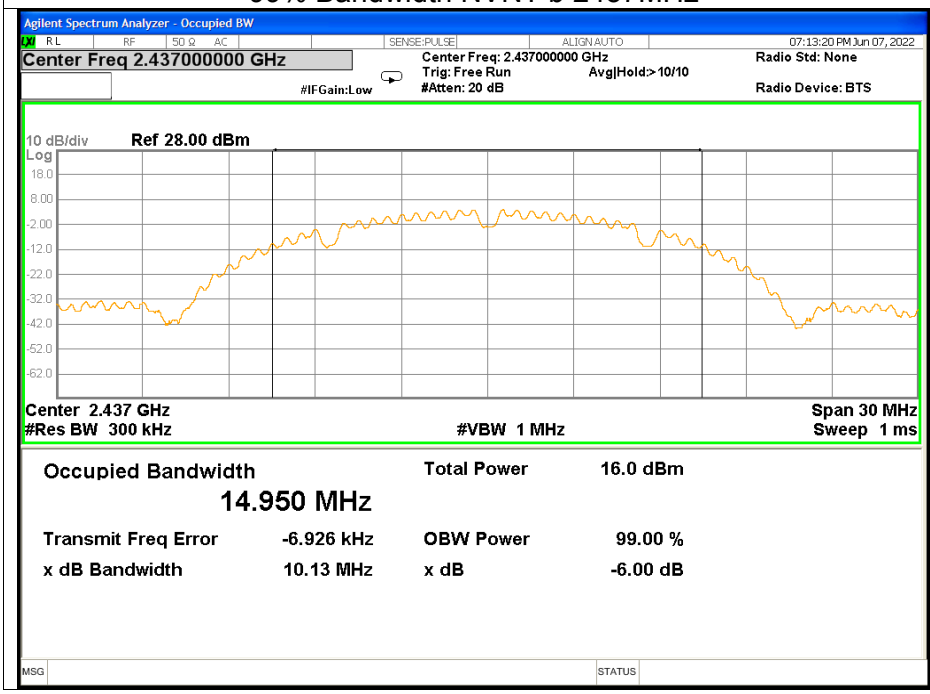


Test Graphs

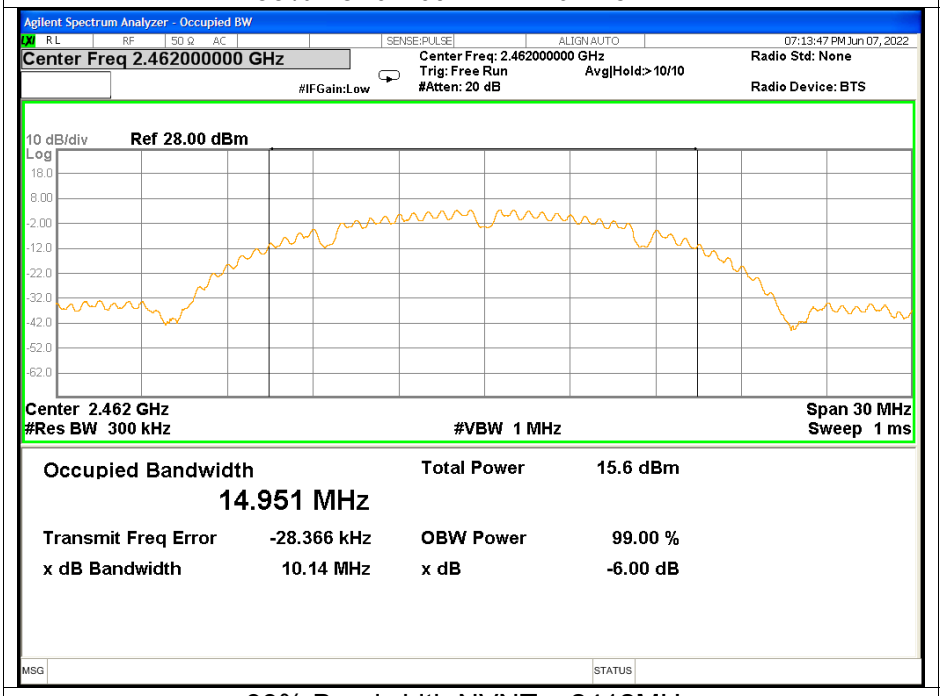
99% Bandwidth NVNT b 2412MHz



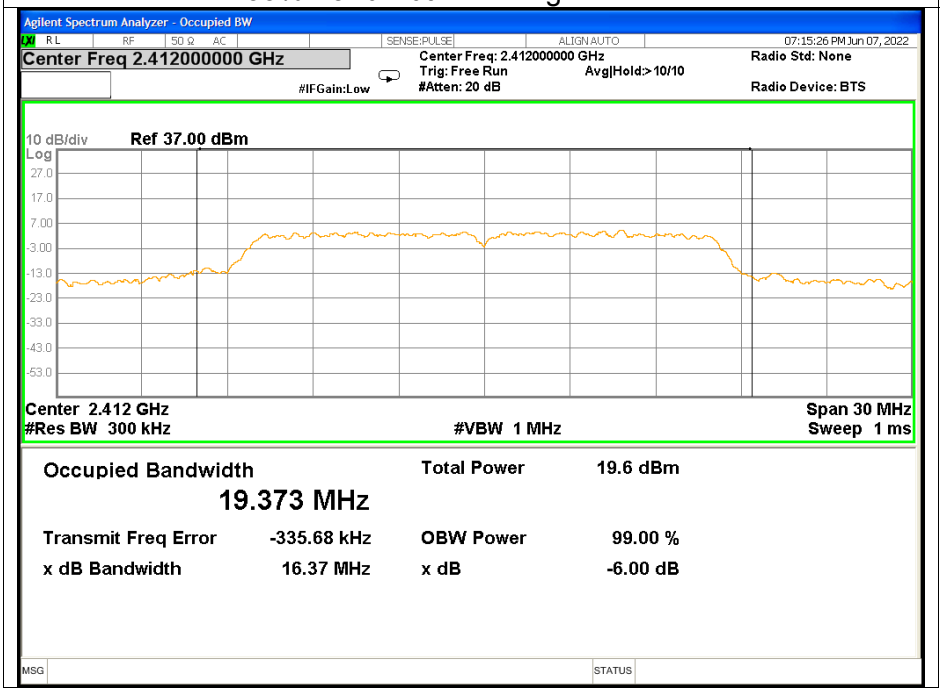
99% Bandwidth NVNT b 2437MHz



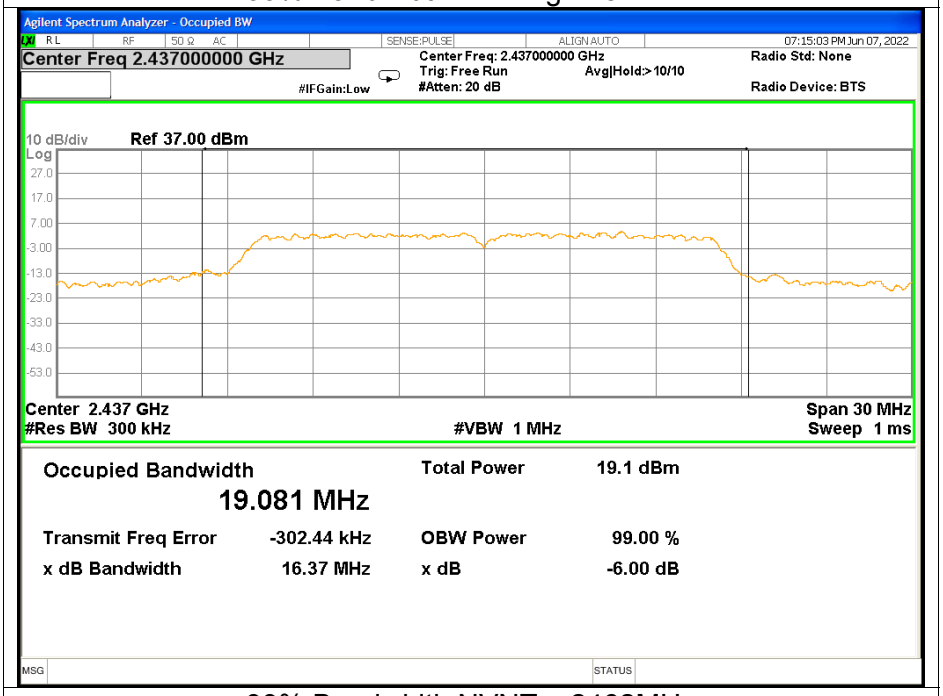
- 99% Bandwidth NVNT b 2462MHz



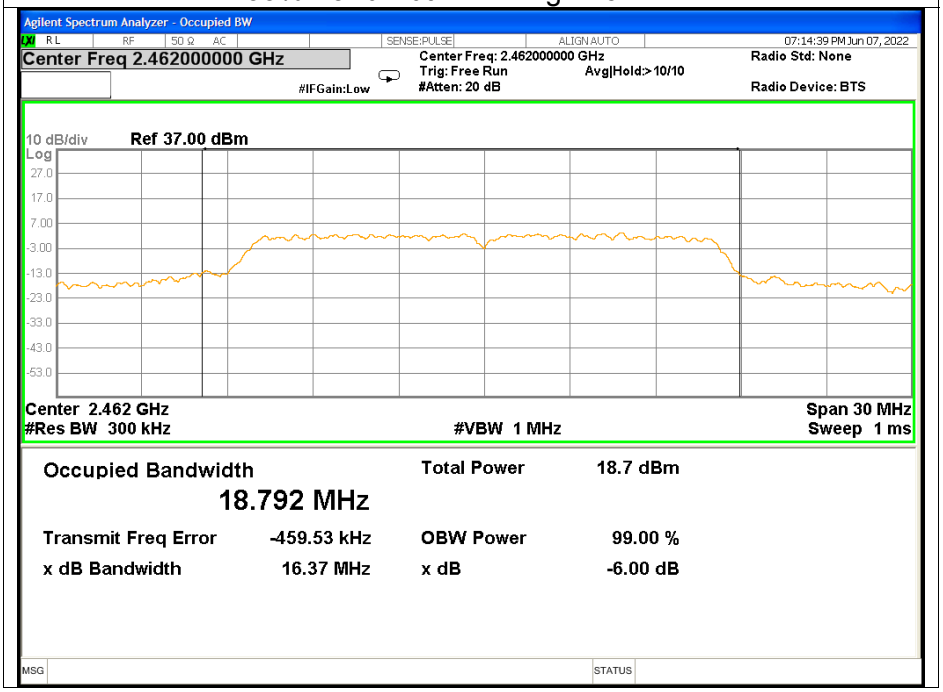
99% Bandwidth NVNT g 2412MHz



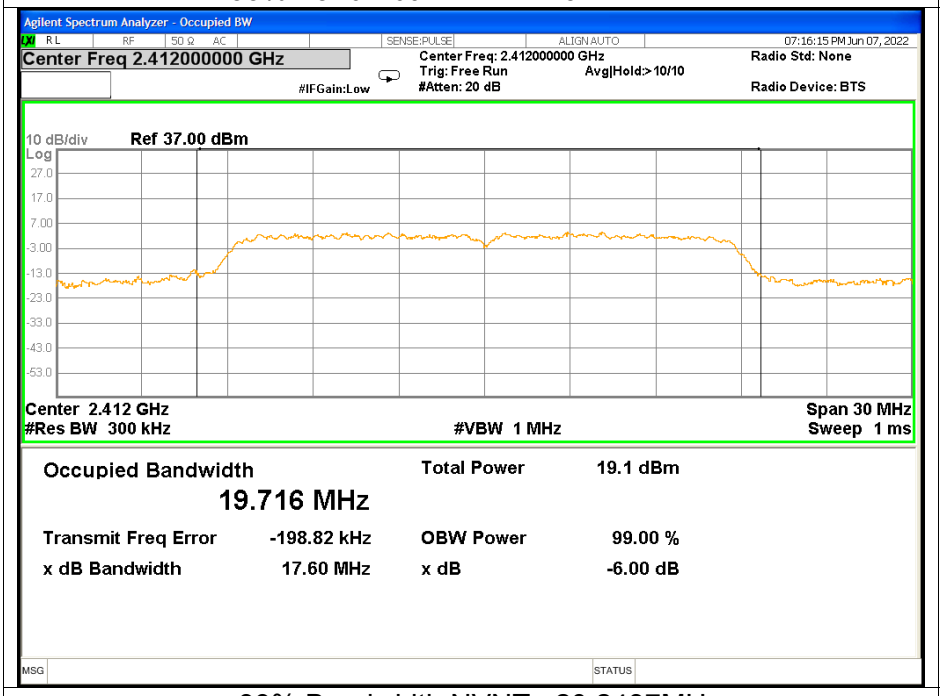
99% Bandwidth NVNT g 2437MHz



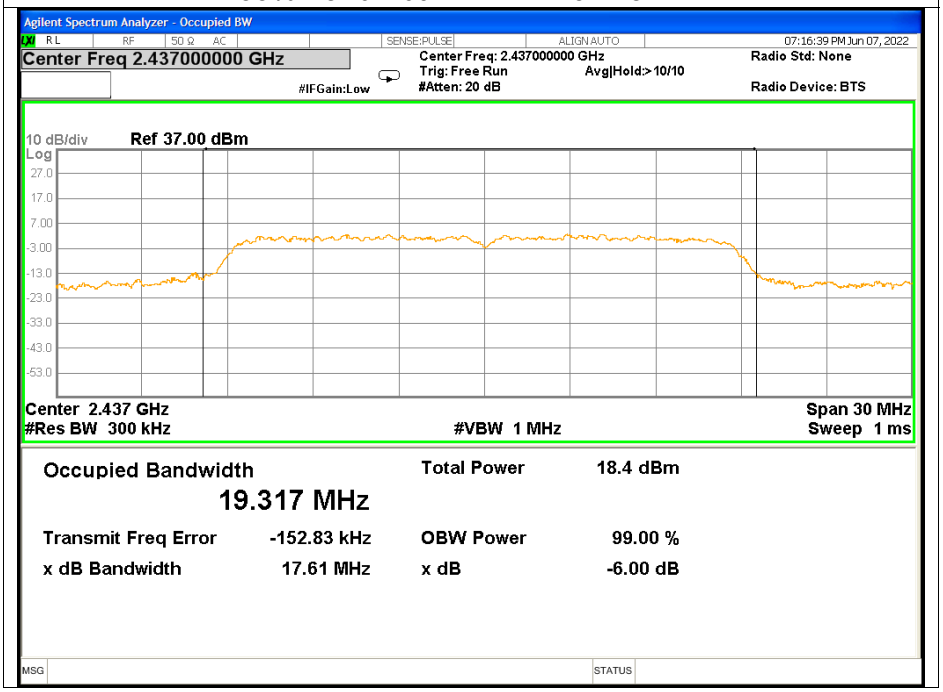
99% Bandwidth NVNT g 2462MHz



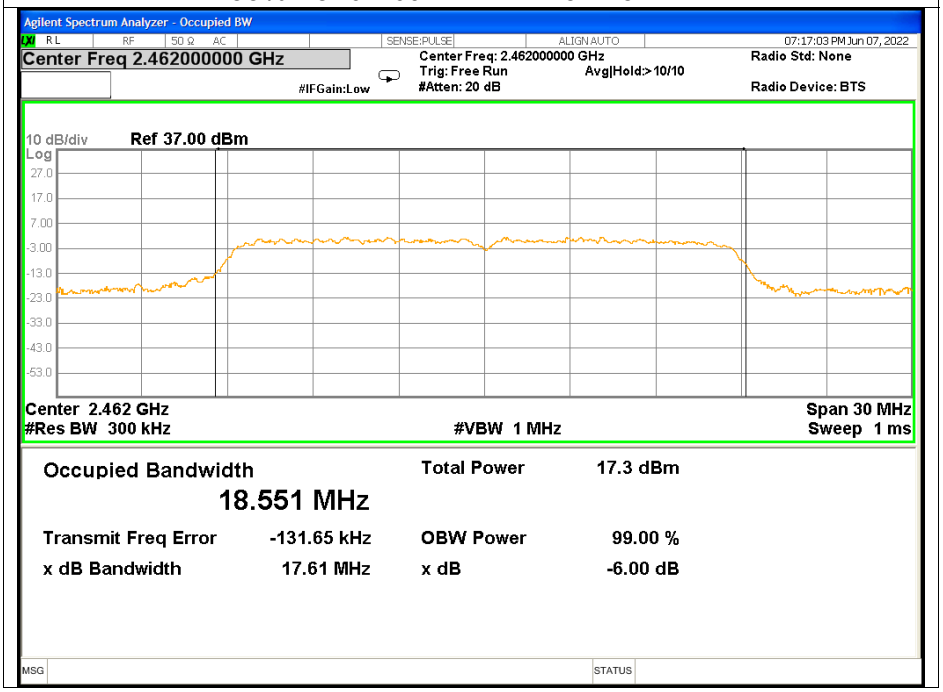
99% Bandwidth NVNT n20 2412MHz



- 99% Bandwidth NVNT n20 2437MHz



99% Bandwidth NVNT n20 2462MHz



8.3. CONDUCTED OUTPUT POWER

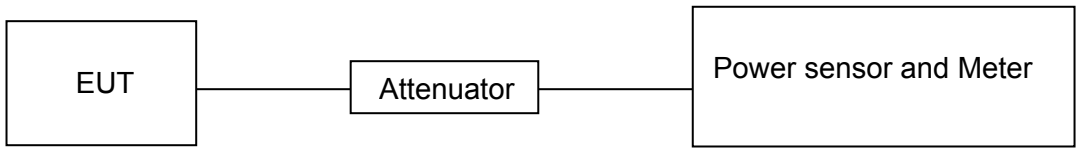
LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3) RSS-247 5.4 (d)	Output Power	1 watt or 30dBm	2400-2483.5
RSS-247	EIRP	4W	2400-2483.5

TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.
Measure peak power each channel.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.5°C	Relative Humidity	37%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

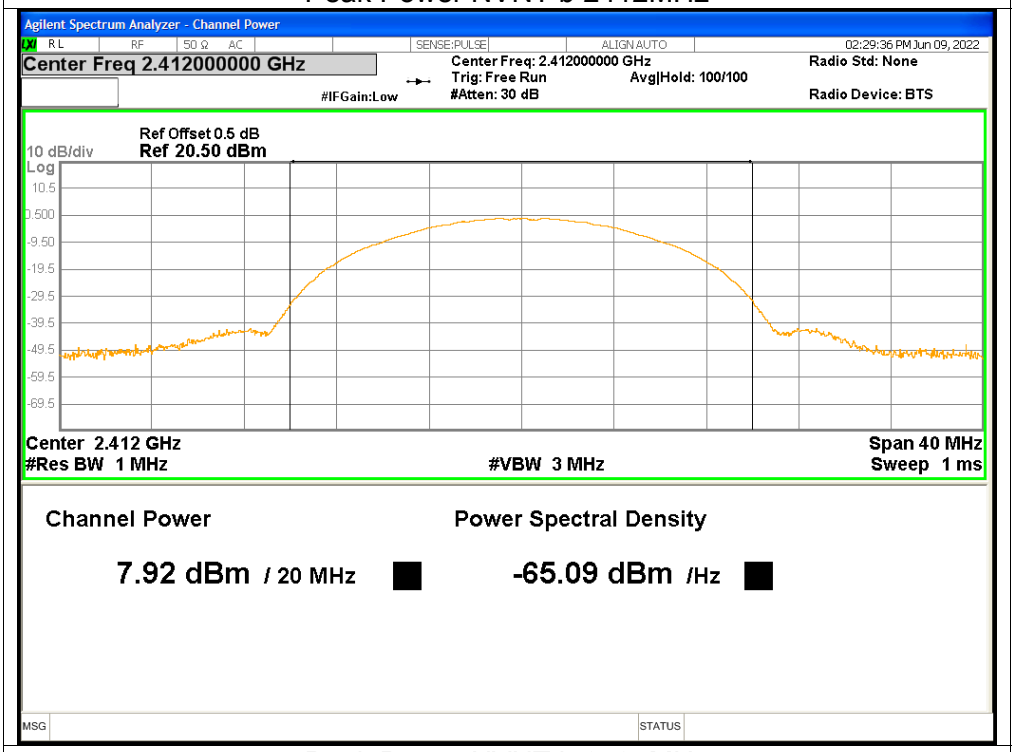
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	b	2412	7.92	<=30	Pass
NVNT	b	2437	8.14	<=30	Pass
NVNT	b	2462	7.73	<=30	Pass
NVNT	g	2412	12.88	<=30	Pass
NVNT	g	2437	12.8	<=30	Pass
NVNT	g	2462	11.73	<=30	Pass
NVNT	n20	2412	13.16	<=30	Pass
NVNT	n20	2437	12.5	<=30	Pass
NVNT	n20	2462	11.98	<=30	Pass

RSS-247 EIRP Power

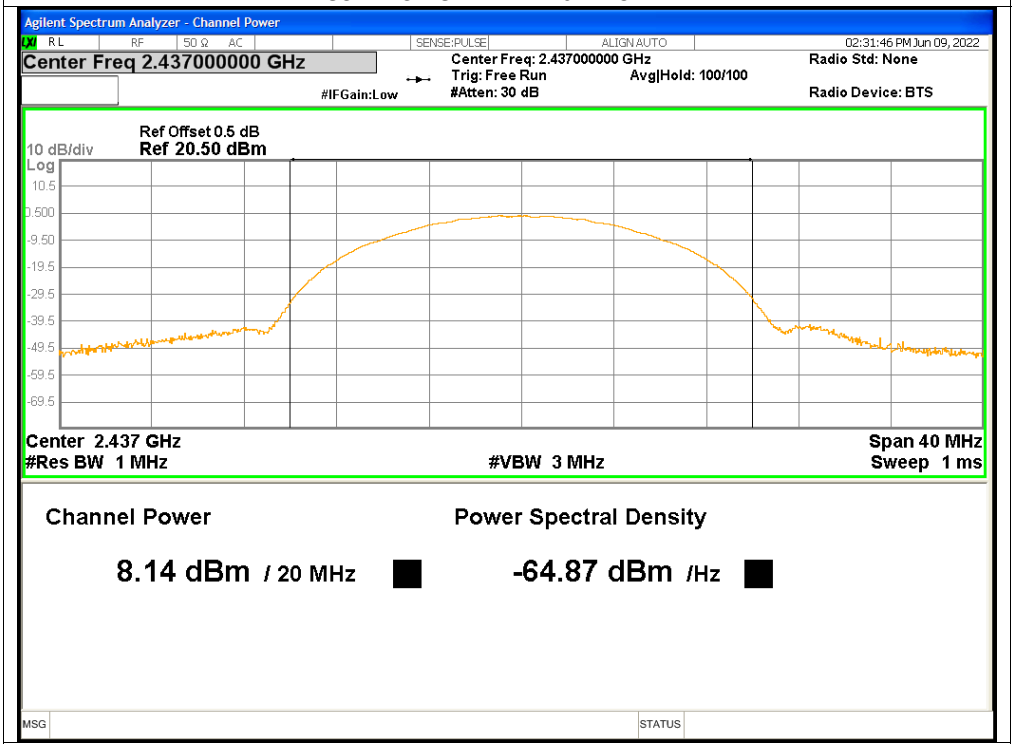
TX 802.11b Mode					
Test Channel	Frequency	Peak Power	Antenna Gain	EIRP Power	LIMIT
	(MHz)	(dBm)	(dBi)	(dBm)	dBm
CH01	2412	7.92	1.00	8.92	36.02
CH06	2437	8.14	1.00	9.14	36.02
CH11	2462	7.73	1.00	8.73	36.02
TX 802.11g Mode					
Test Channel	Frequency	Peak Power	Antenna Gain	EIRP Power	LIMIT
	(MHz)	(dBm)	(dBi)	(dBm)	dBm
CH01	2412	12.88	1.00	13.88	36.02
CH06	2437	12.80	1.00	13.80	36.02
CH11	2462	11.73	1.00	12.73	36.02
TX 802.11n20 Mode					
Test Channel	Frequency	Peak Power	Antenna Gain	EIRP Power	LIMIT
	(MHz)	(dBm)	(dBi)	(dBm)	dBm
CH01	2412	13.16	1.00	14.16	36.02
CH06	2437	12.50	1.00	13.50	36.02
CH11	2462	11.98	1.00	12.98	36.02

Test Graphs

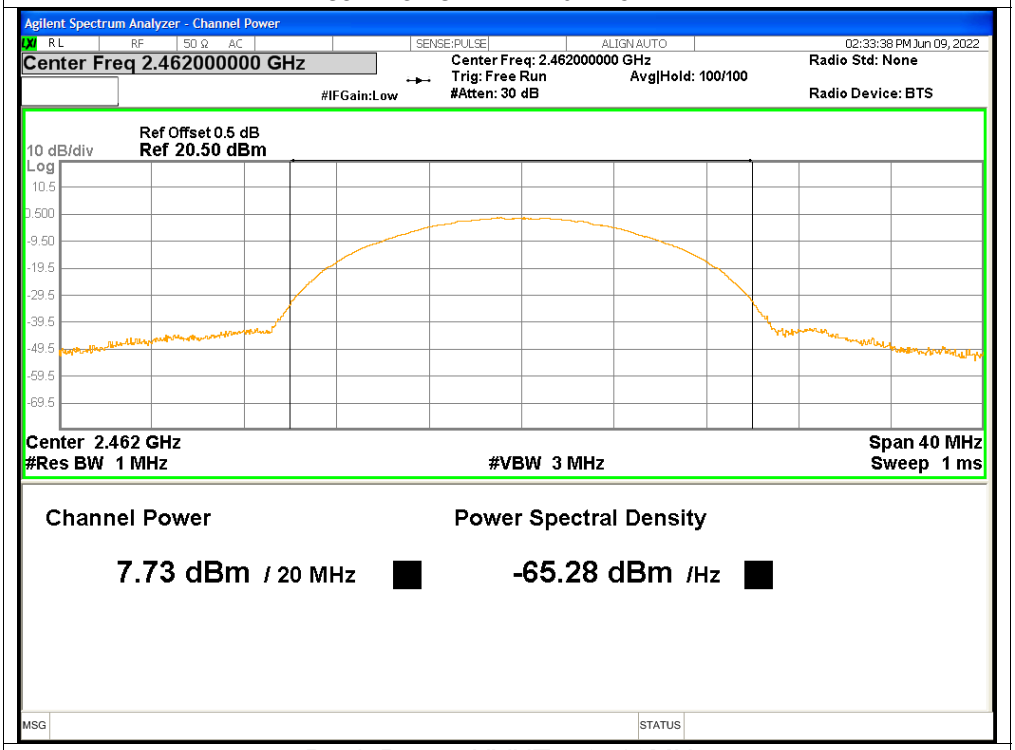
Peak Power NVNT b 2412MHz



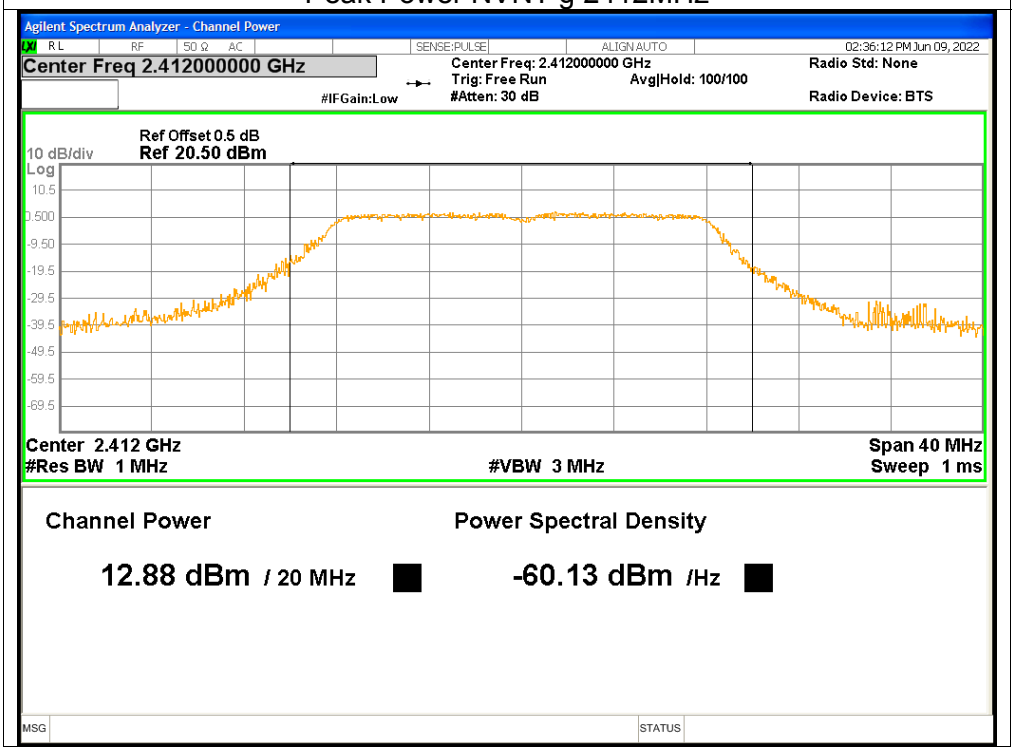
Peak Power NVNT b 2437MHz



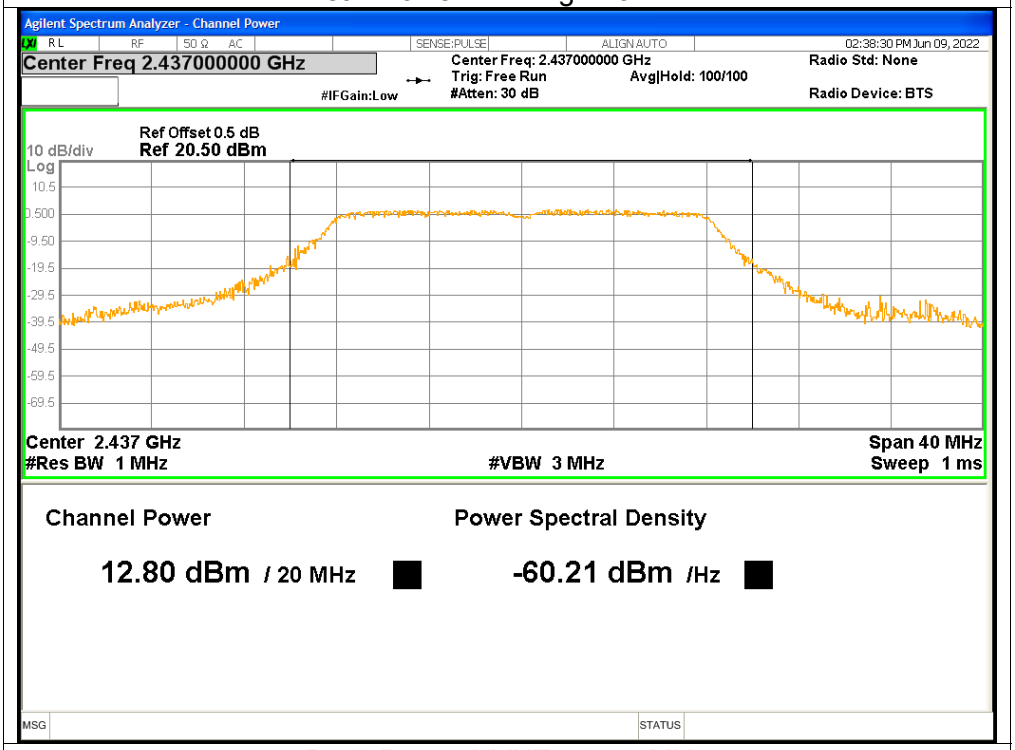
Peak Power NVNT b 2462MHz



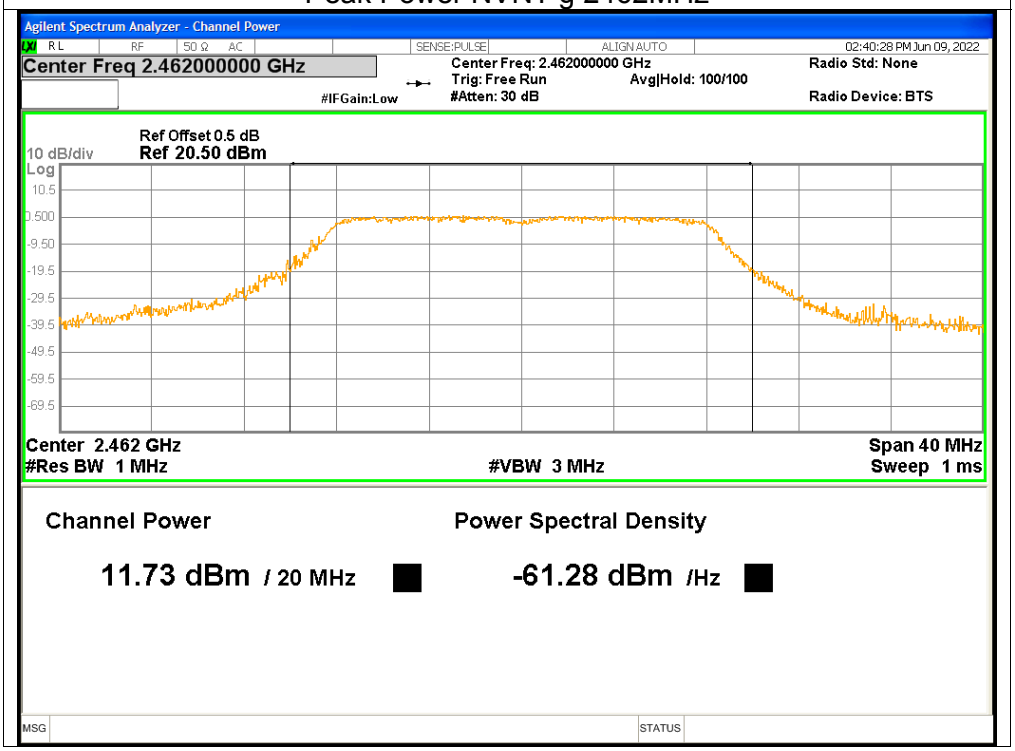
Peak Power NVNT g 2412MHz



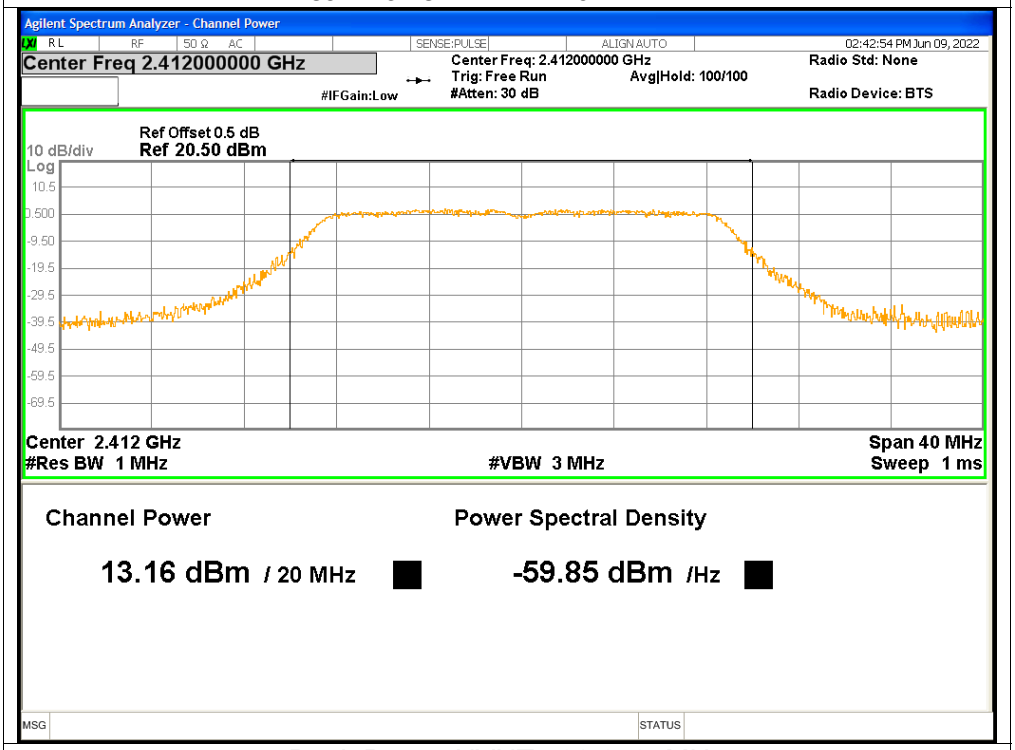
Peak Power NVNT g 2437MHz



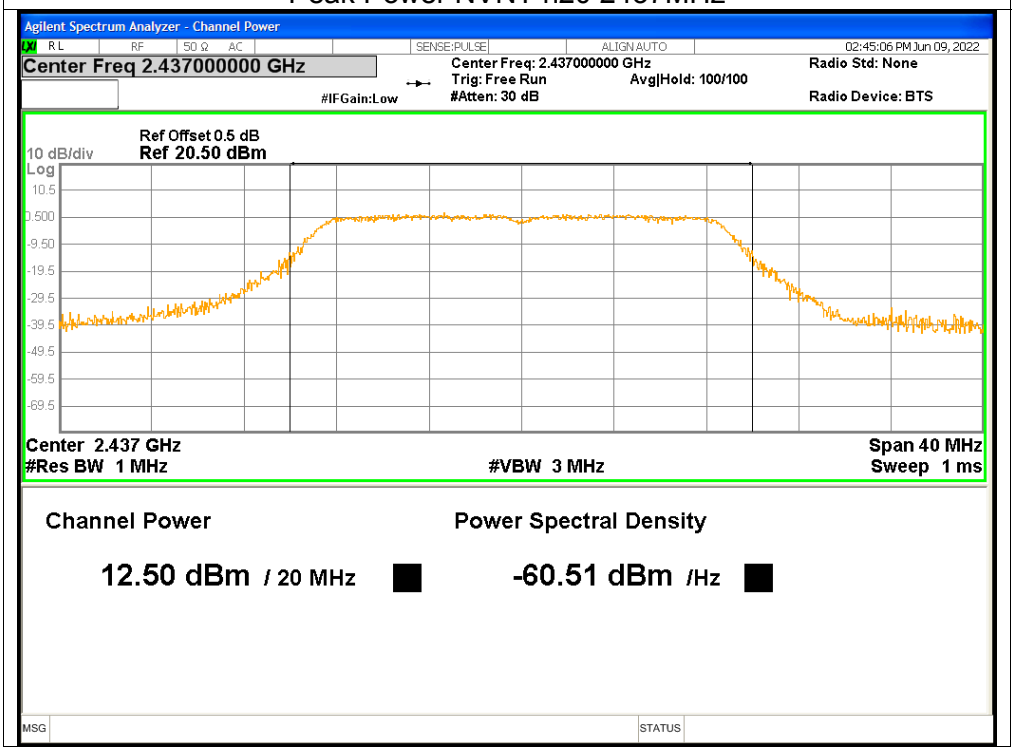
Peak Power NVNT g 2462MHz



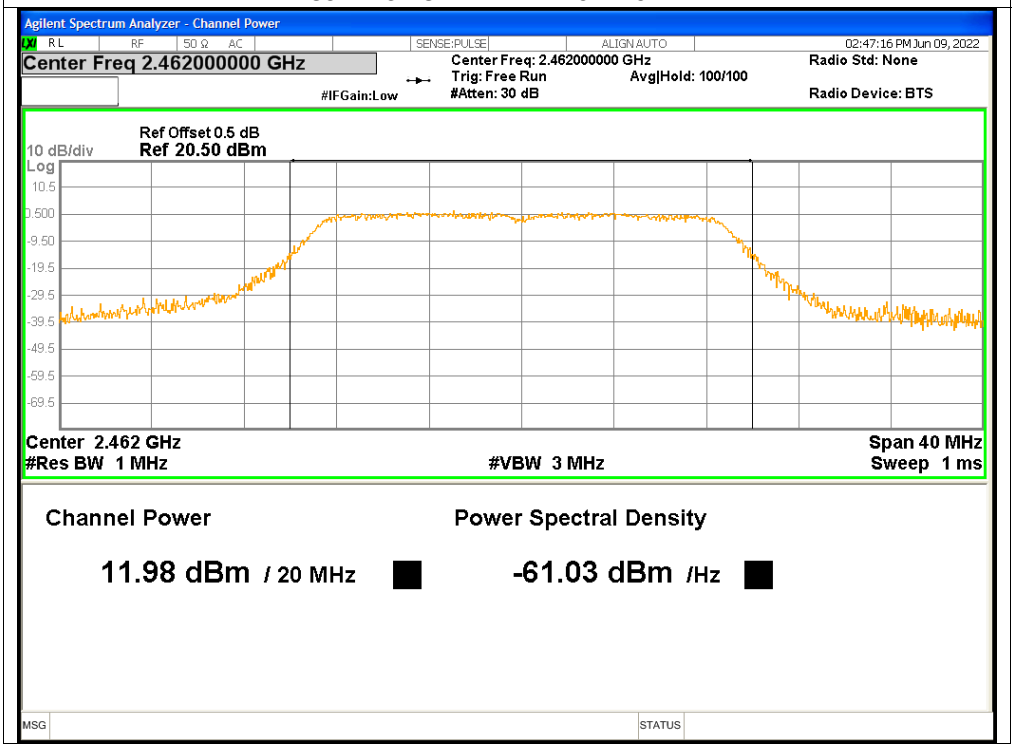
Peak Power NVNT n20 2412MHz



Peak Power NVNT n20 2437MHz



Peak Power NVNT n20 2462MHz



8.4. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC §15.247 (e) RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

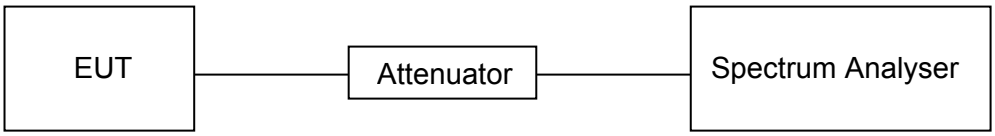
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

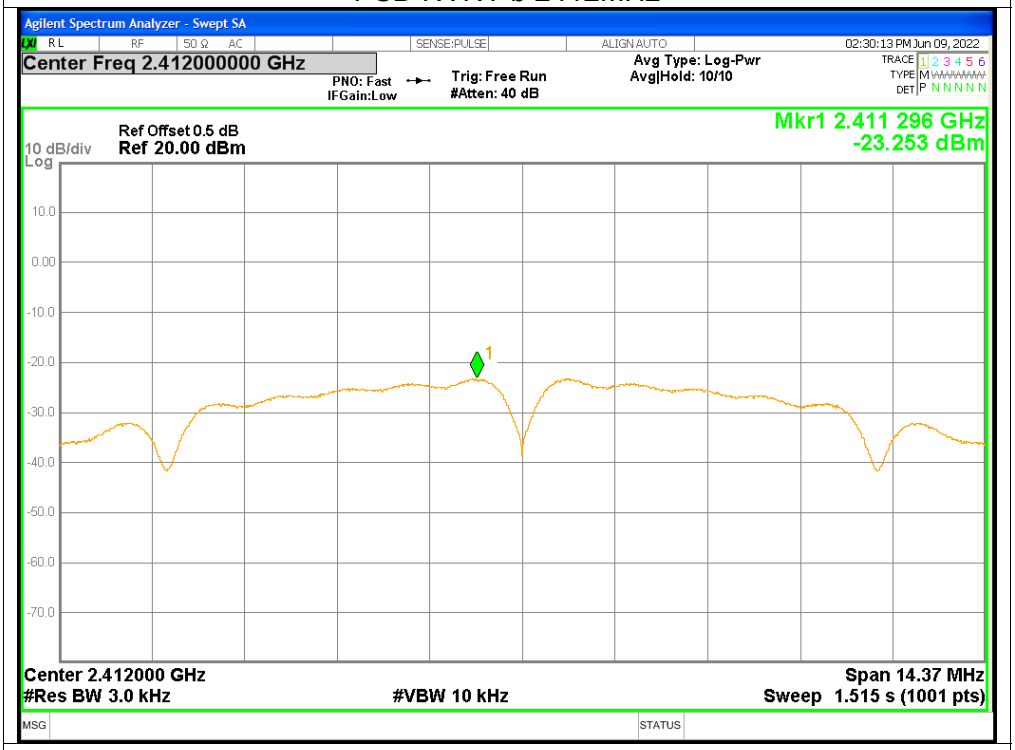
Temperature	25.5°C	Relative Humidity	37%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

RESULTS

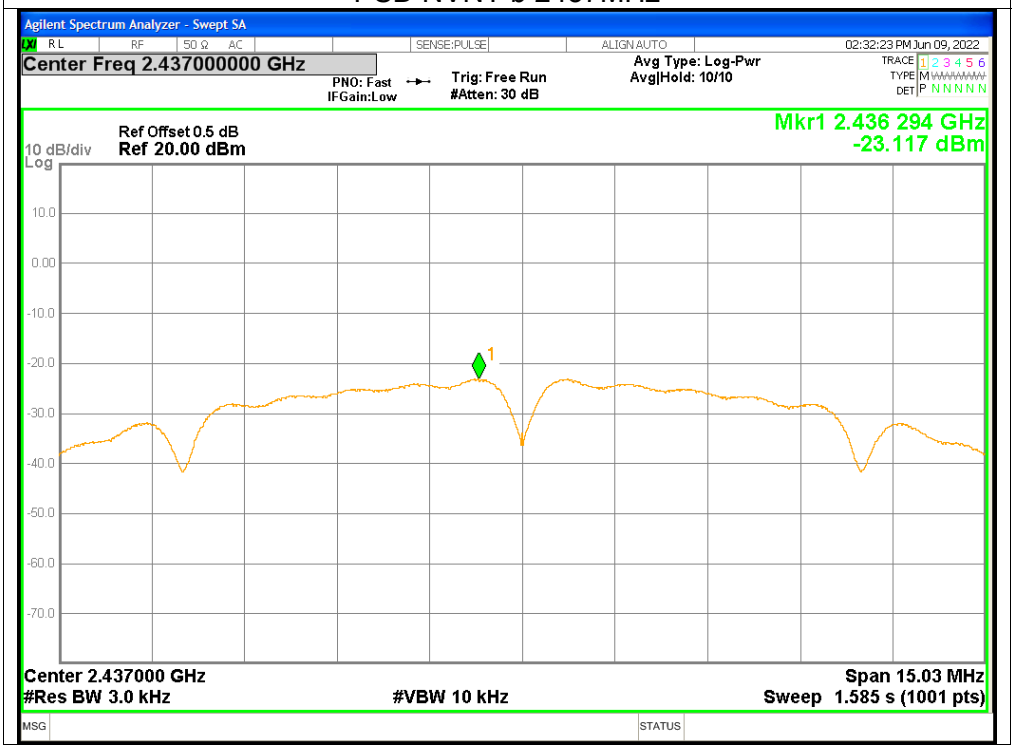
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	-23.25	<=8	Pass
NVNT	b	2437	-23.12	<=8	Pass
NVNT	b	2462	-23.47	<=8	Pass
NVNT	g	2412	-19.97	<=8	Pass
NVNT	g	2437	-19.99	<=8	Pass
NVNT	g	2462	-20.89	<=8	Pass
NVNT	n20	2412	-19.65	<=8	Pass
NVNT	n20	2437	-20.12	<=8	Pass
NVNT	n20	2462	-20.46	<=8	Pass

Test Graphs

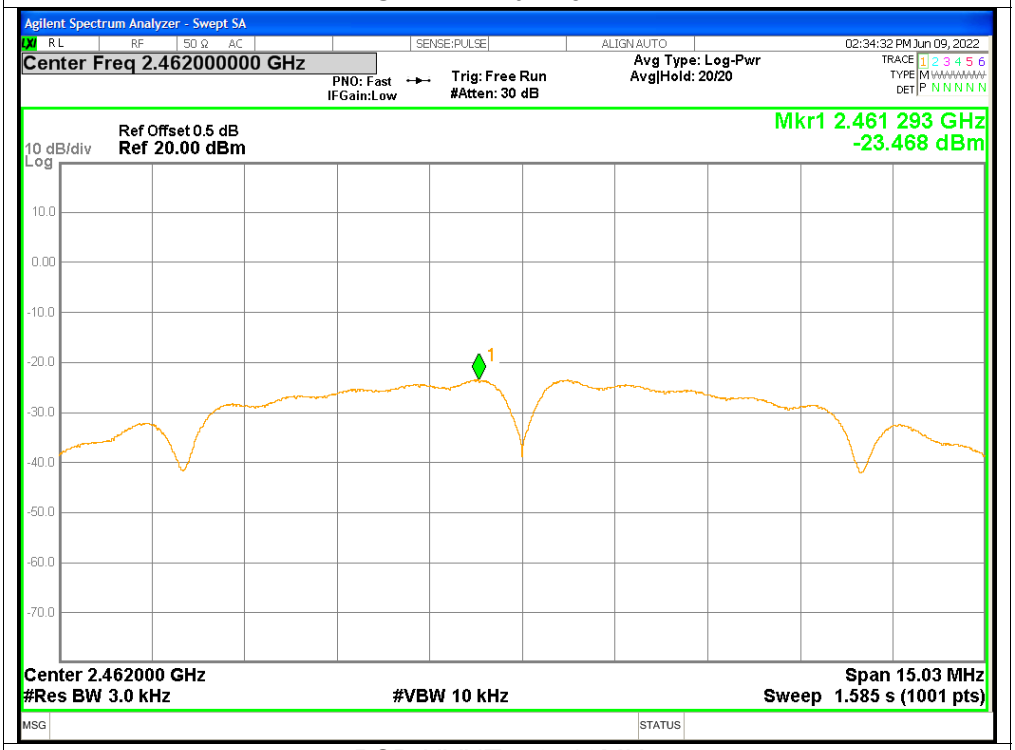
PSD NVNT b 2412MHz



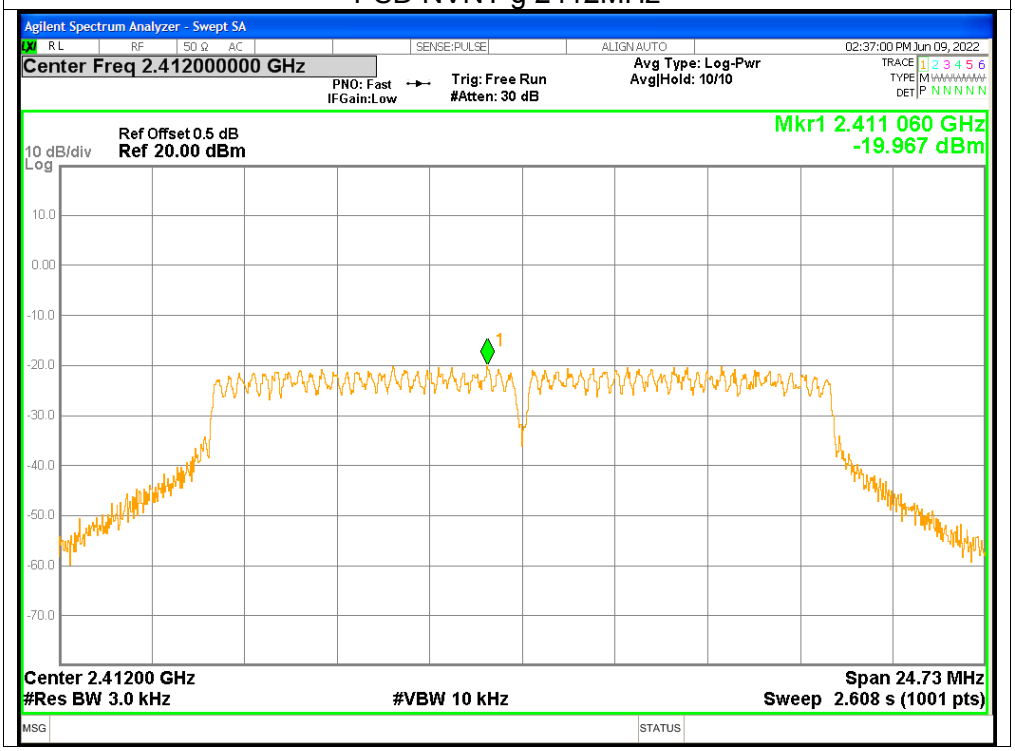
PSD NVNT b 2437MHz



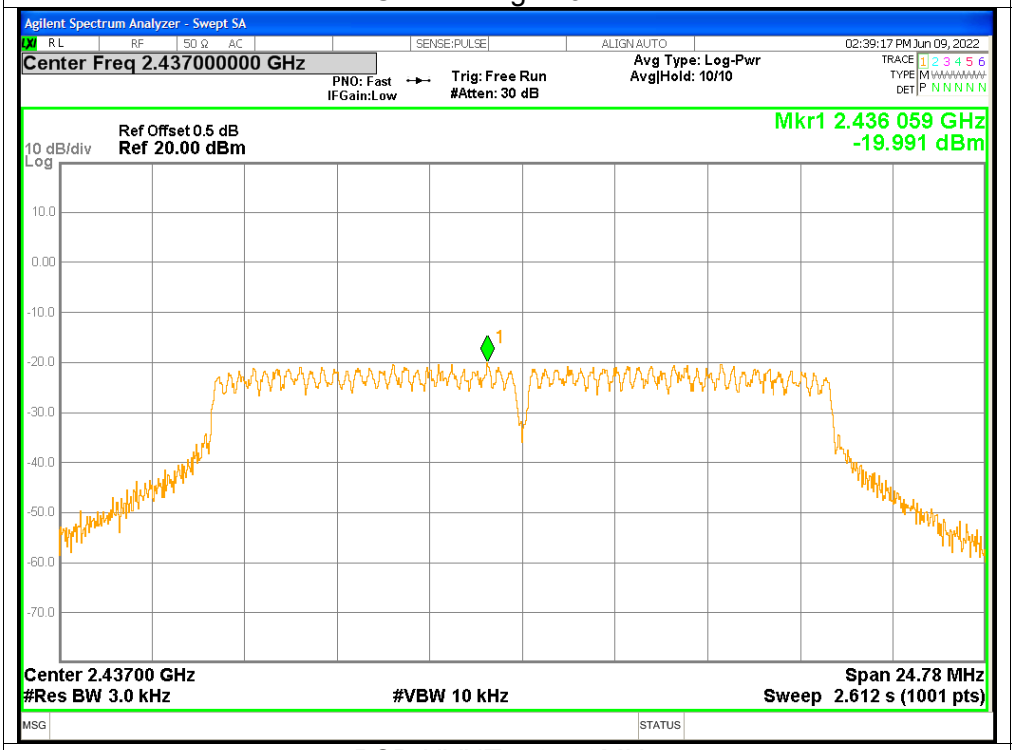
PSD NVNT b 2462MHz



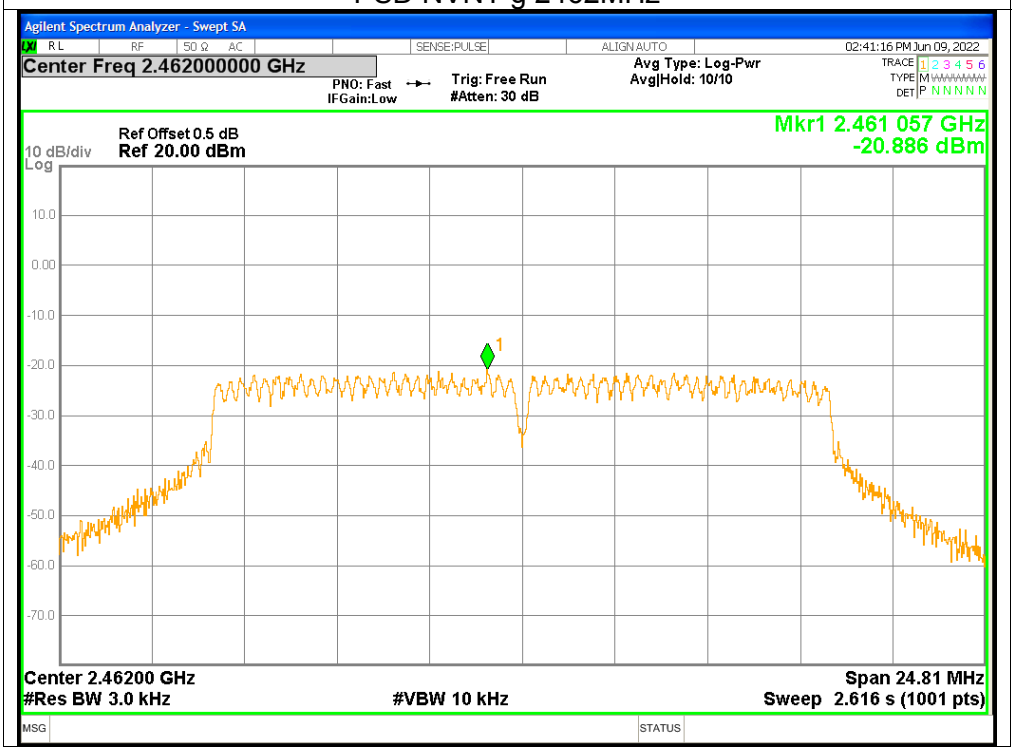
PSD NVNT g 2412MHz



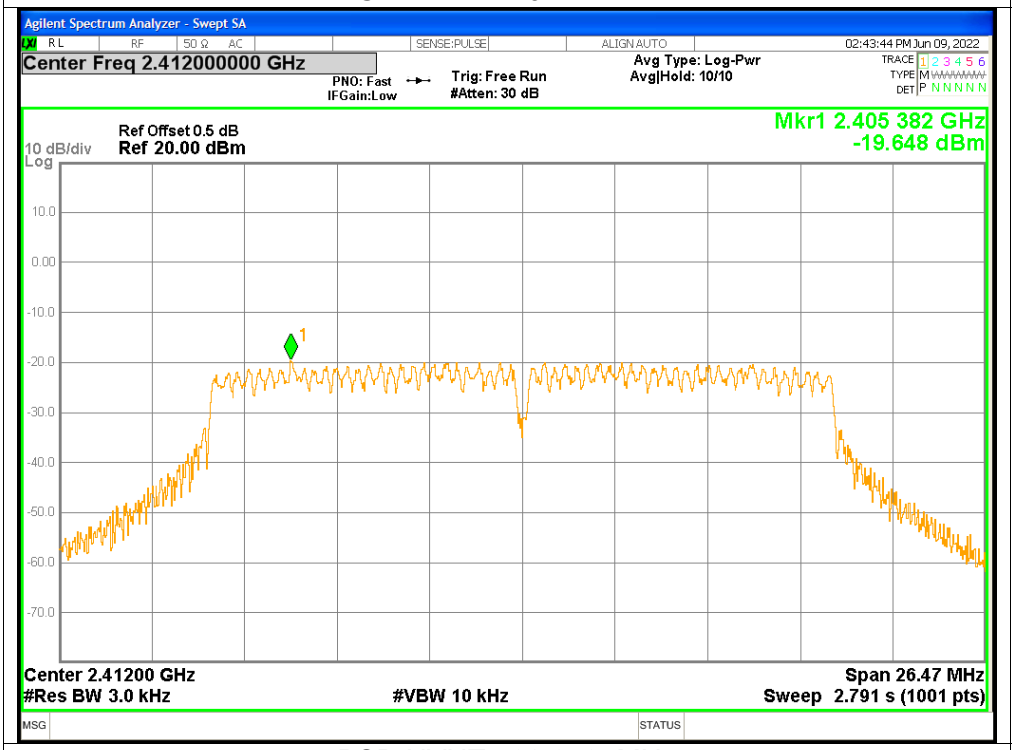
PSD NVNT g 2437MHz



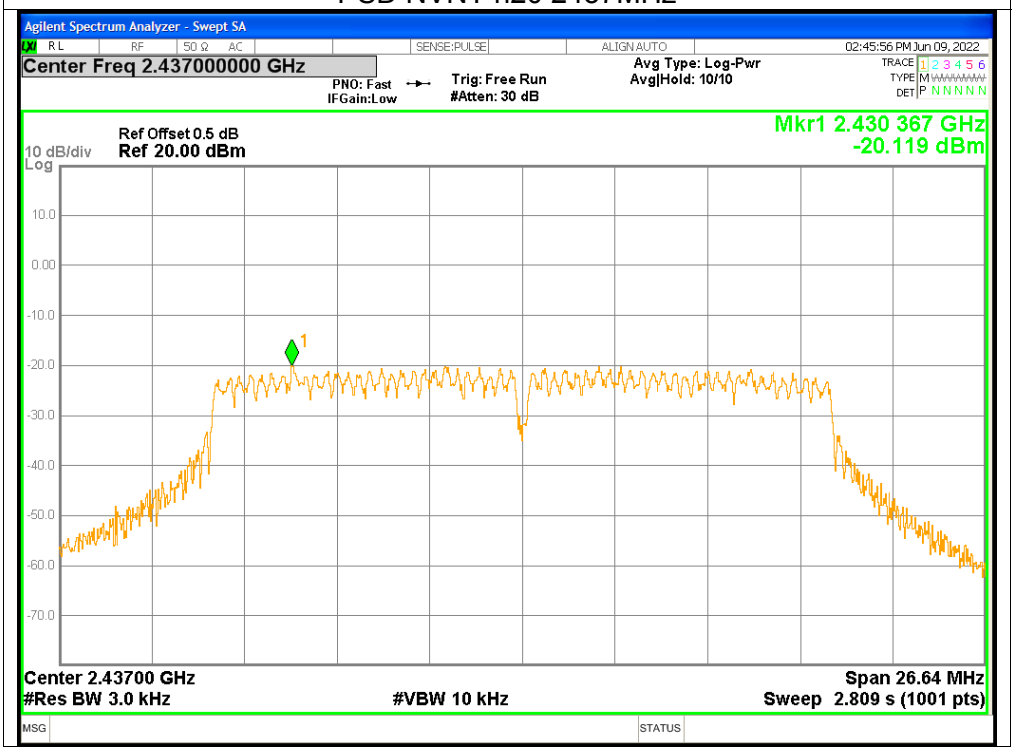
PSD NVNT g 2462MHz



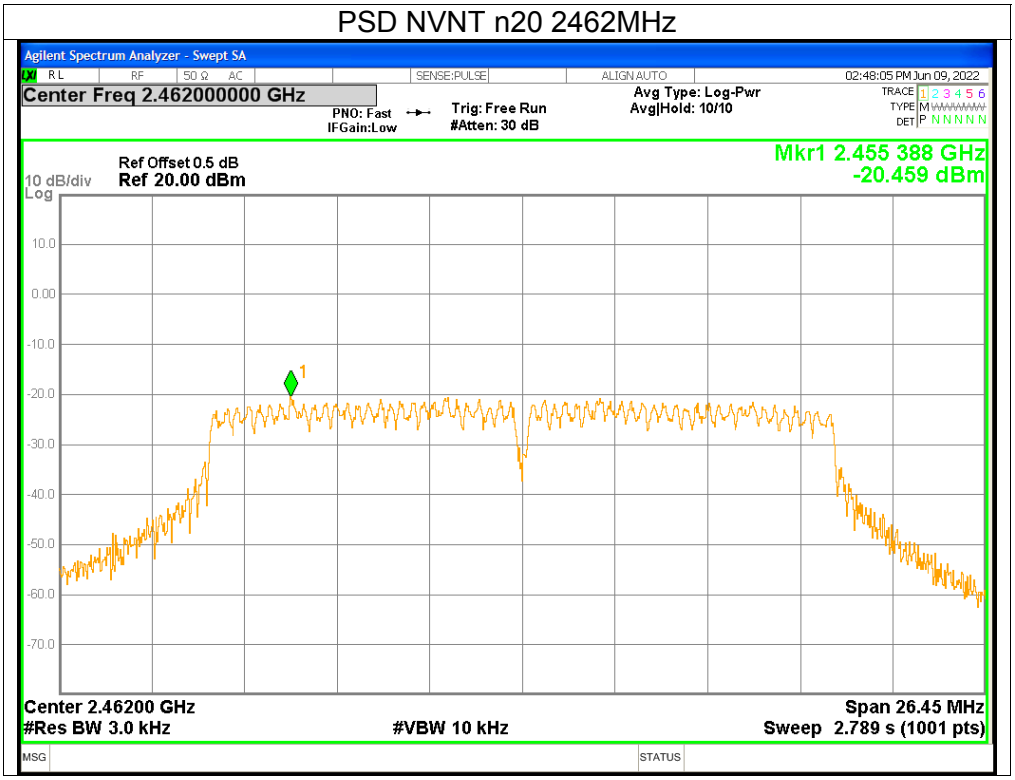
PSD NVNT n20 2412MHz



PSD NVNT n20 2437MHz



PSD NVNT n20 2462MHz



8.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2		
Section	Test Item	Limit
FCC §15.247 (d) RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

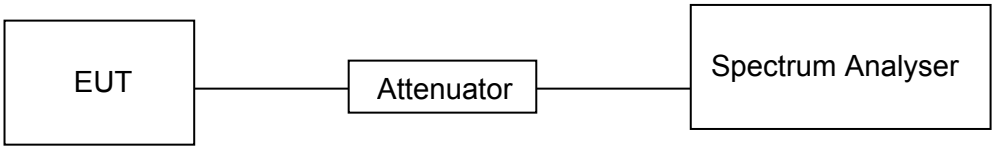
Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100K
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level**.**

TEST SETUP



TEST ENVIRONMENT

Temperature	25.5°C	Relative Humidity	37%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

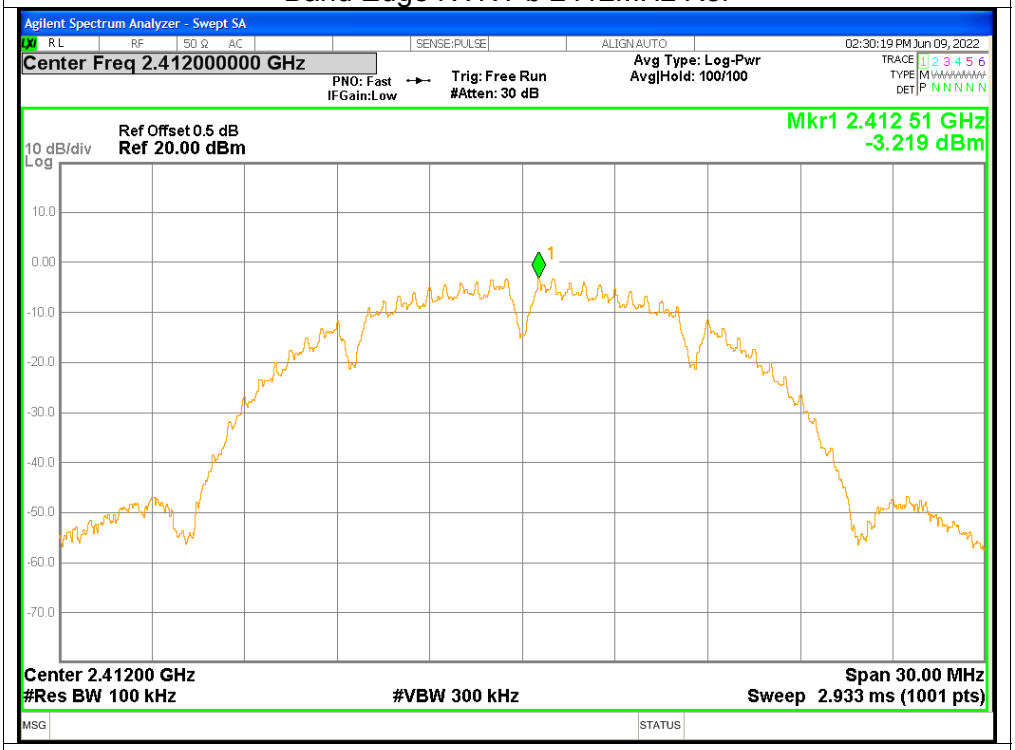
RESULTS

Band Edge

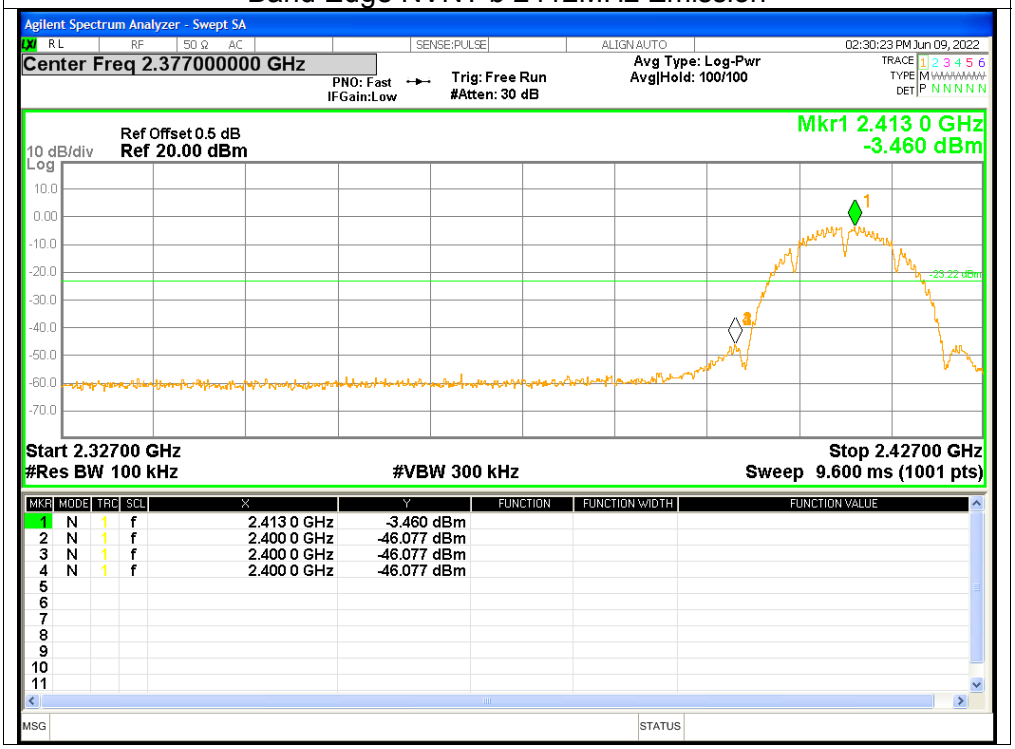
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	-42.85	<=-20	Pass
NVNT	b	2462	-53.46	<=-20	Pass
NVNT	g	2412	-33.09	<=-20	Pass
NVNT	g	2462	-42.36	<=-20	Pass
NVNT	n20	2412	-32.99	<=-20	Pass
NVNT	n20	2462	-41.57	<=-20	Pass

Test Graphs

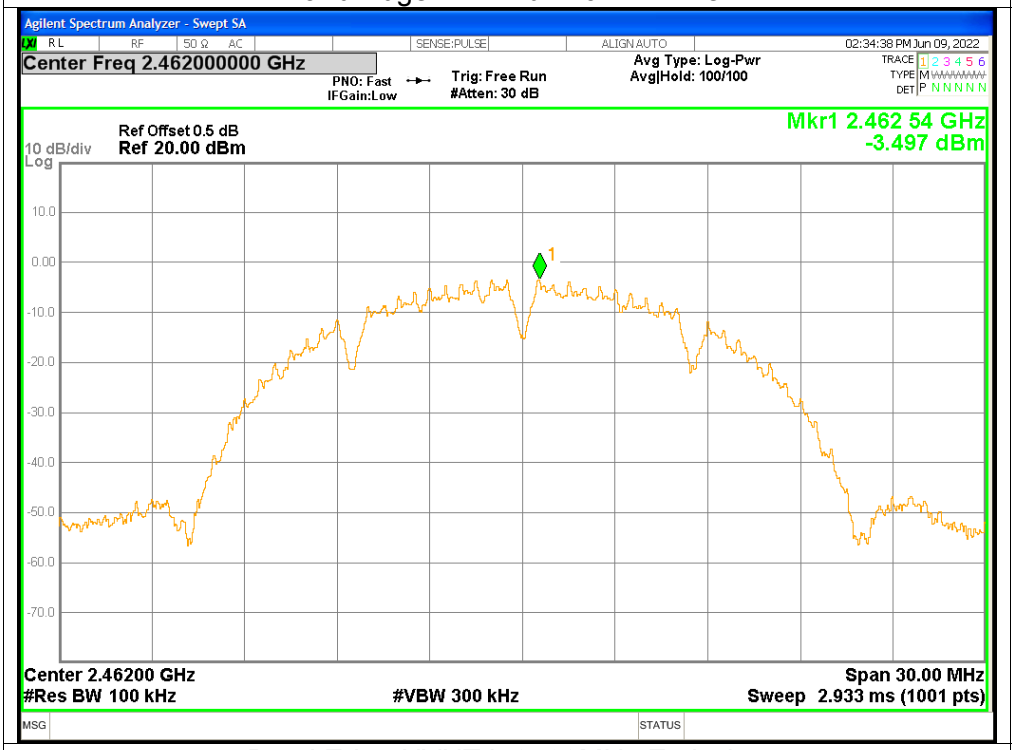
Band Edge NVNT b 2412MHz Ref



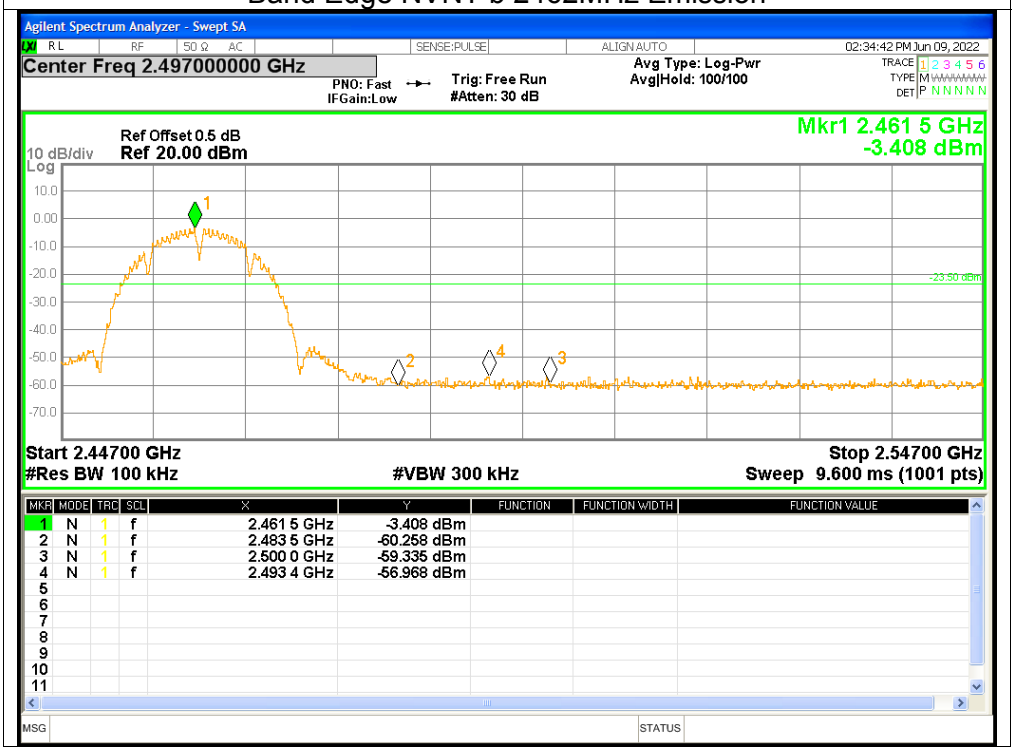
Band Edge NVNT b 2412MHz Emission



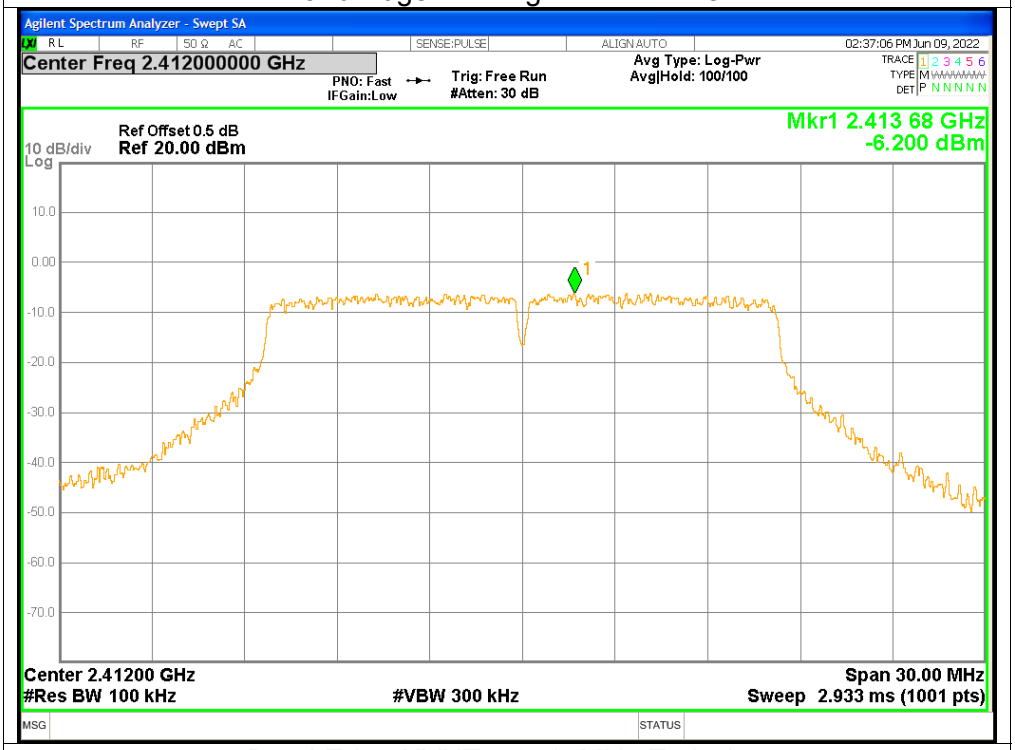
Band Edge NVNT b 2462MHz Ref



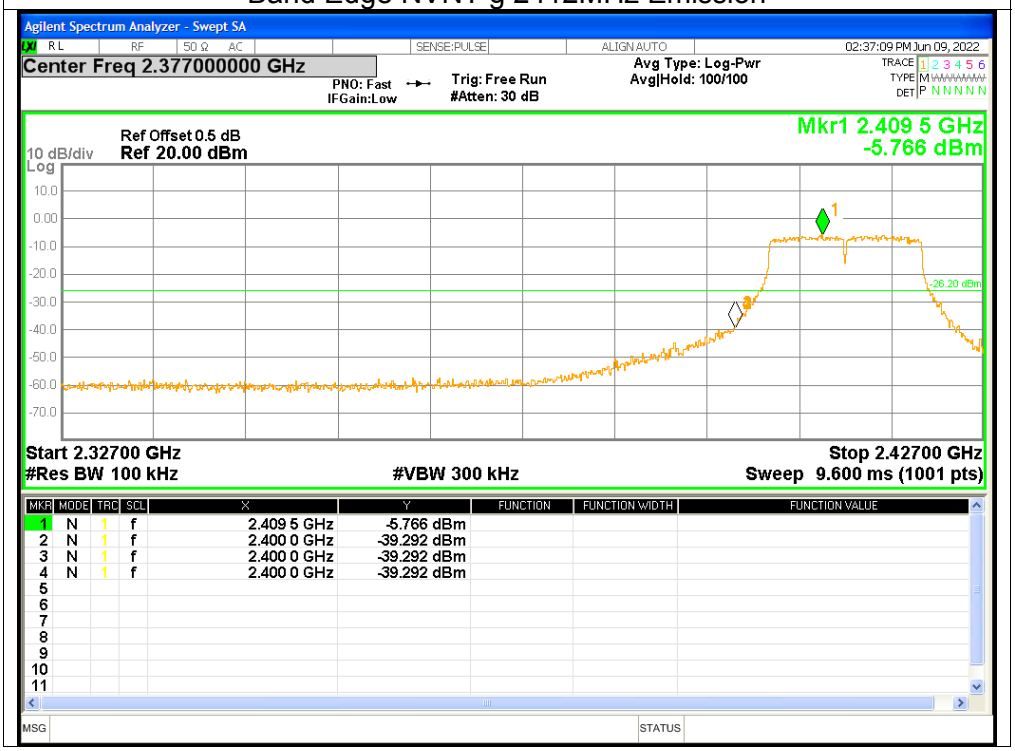
Band Edge NVNT b 2462MHz Emission



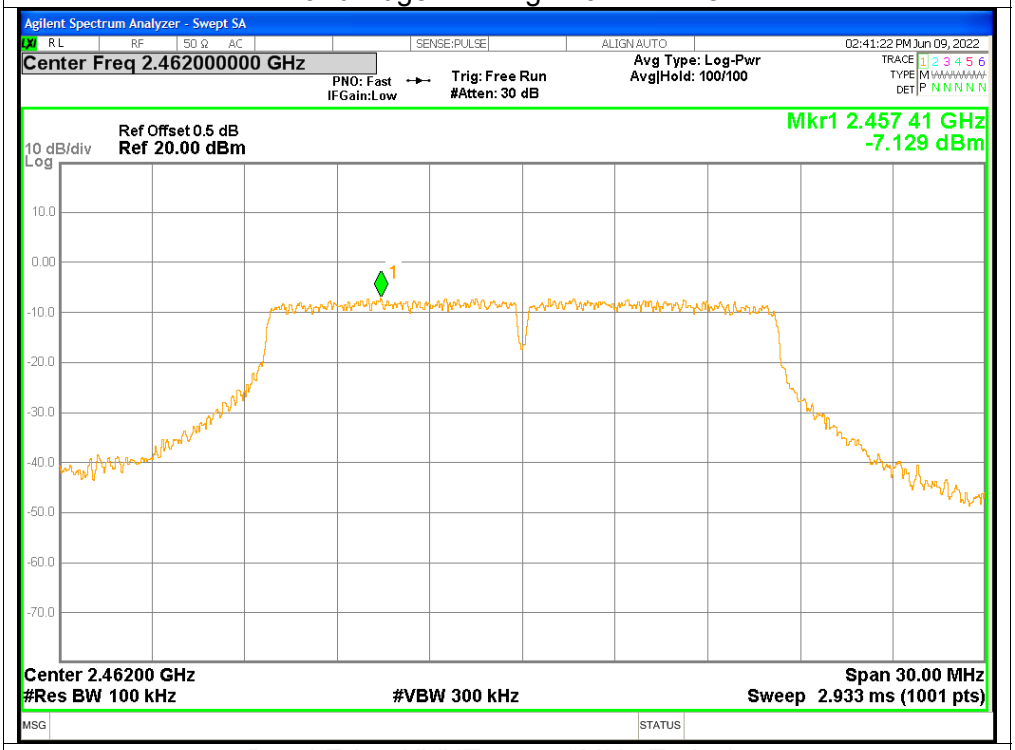
Band Edge NVNT g 2412MHz Ref



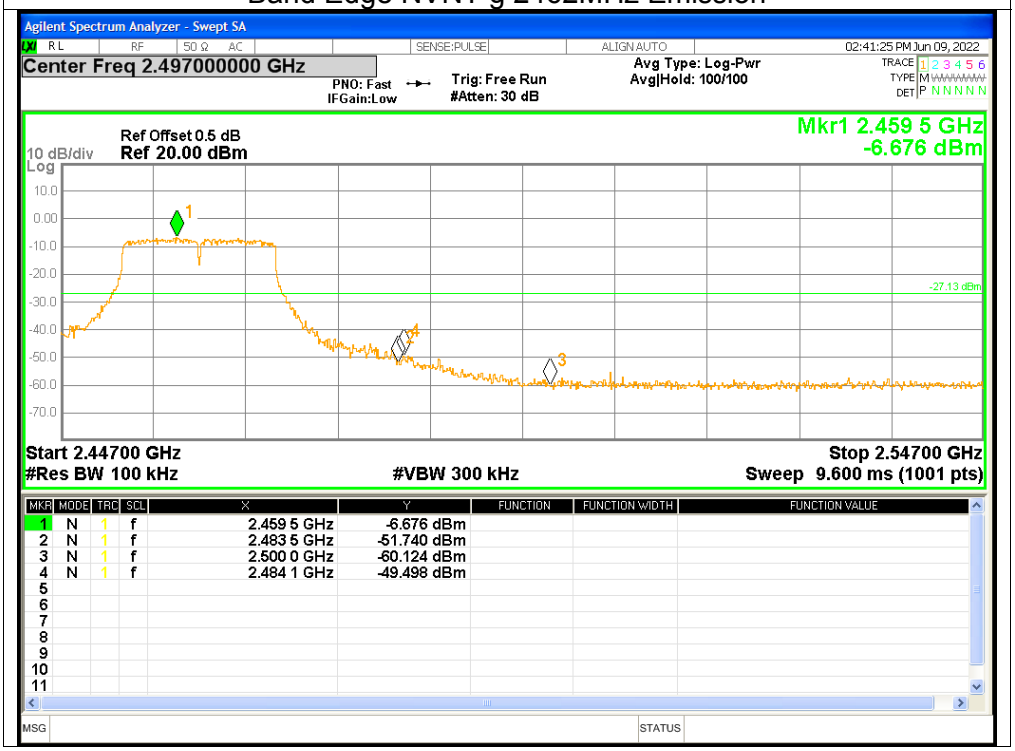
Band Edge NVNT g 2412MHz Emission



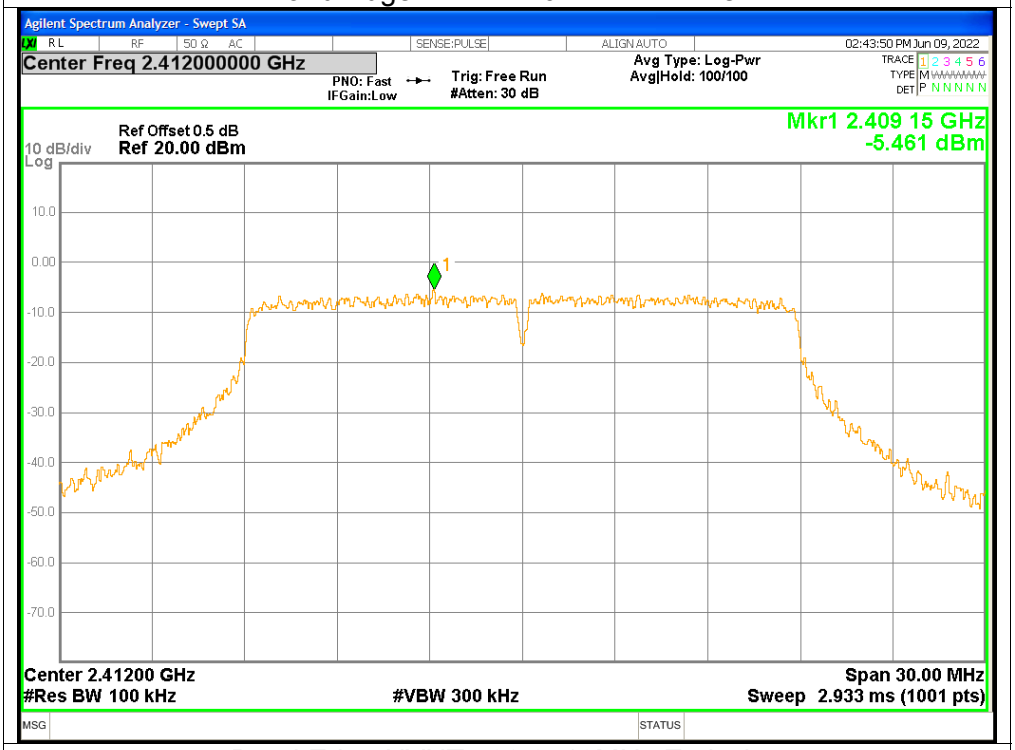
Band Edge NVNT g 2462MHz Ref



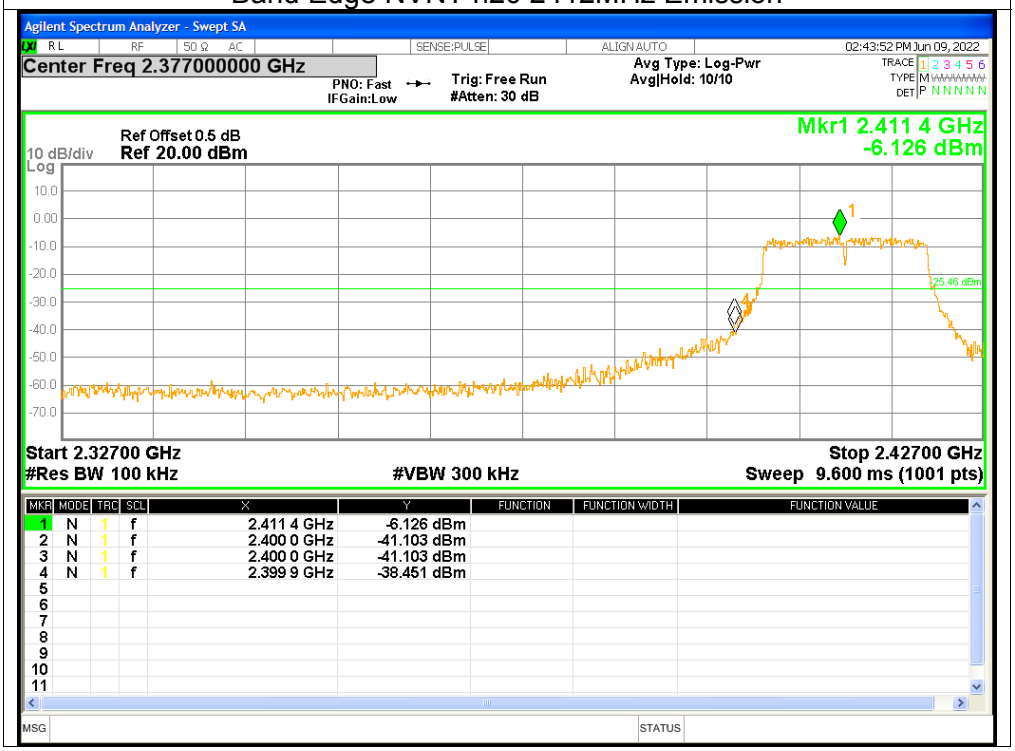
Band Edge NVNT g 2462MHz Emission



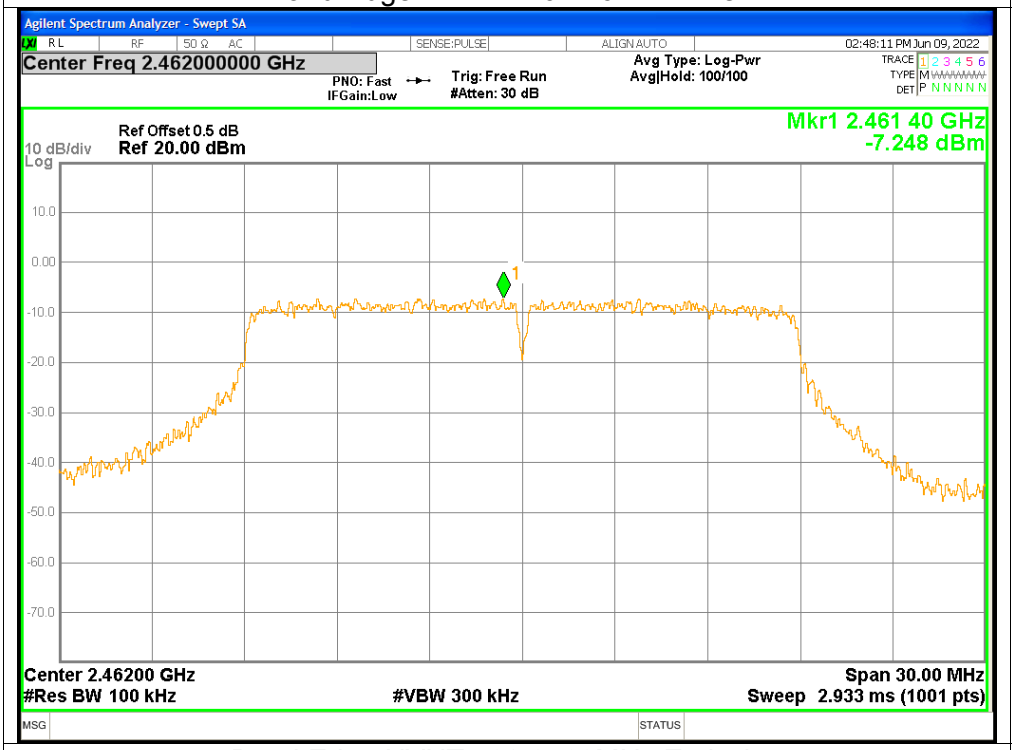
Band Edge NVNT n20 2412MHz Ref



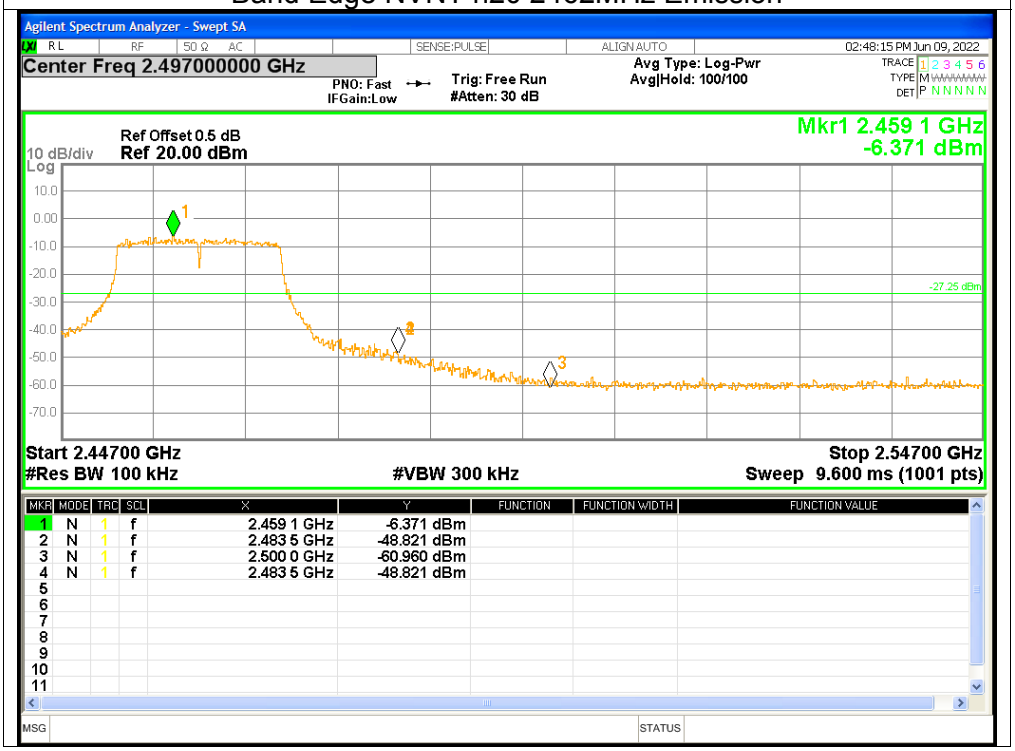
Band Edge NVNT n20 2412MHz Emission



Band Edge NVNT n20 2462MHz Ref



Band Edge NVNT n20 2462MHz Emission

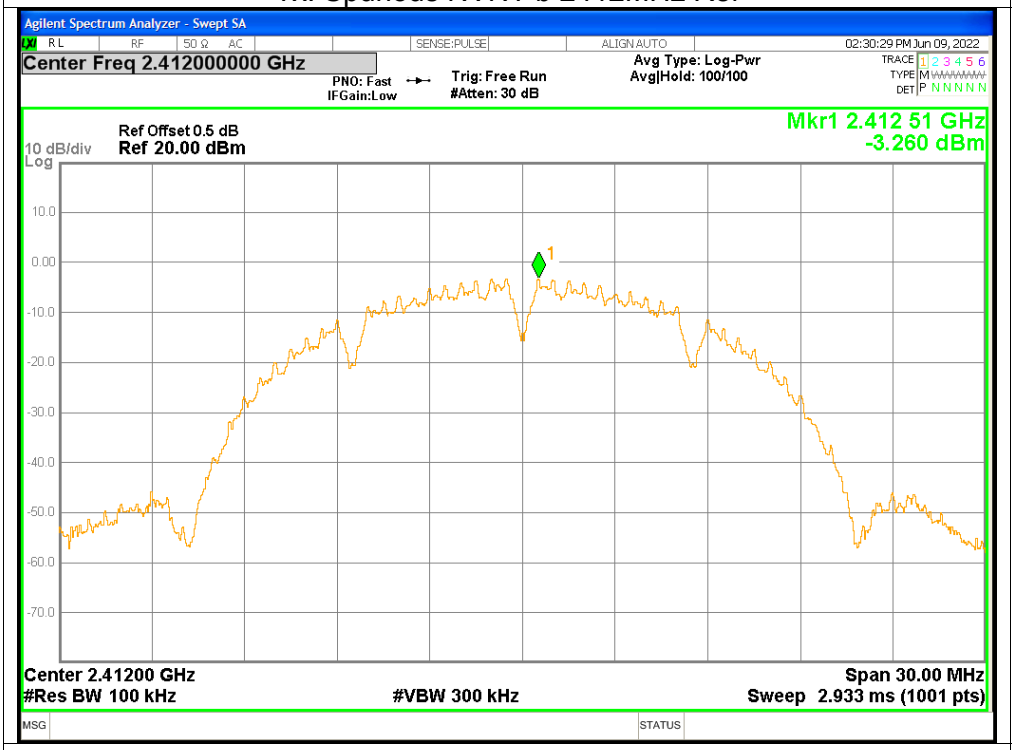


Conducted RF Spurious Emission

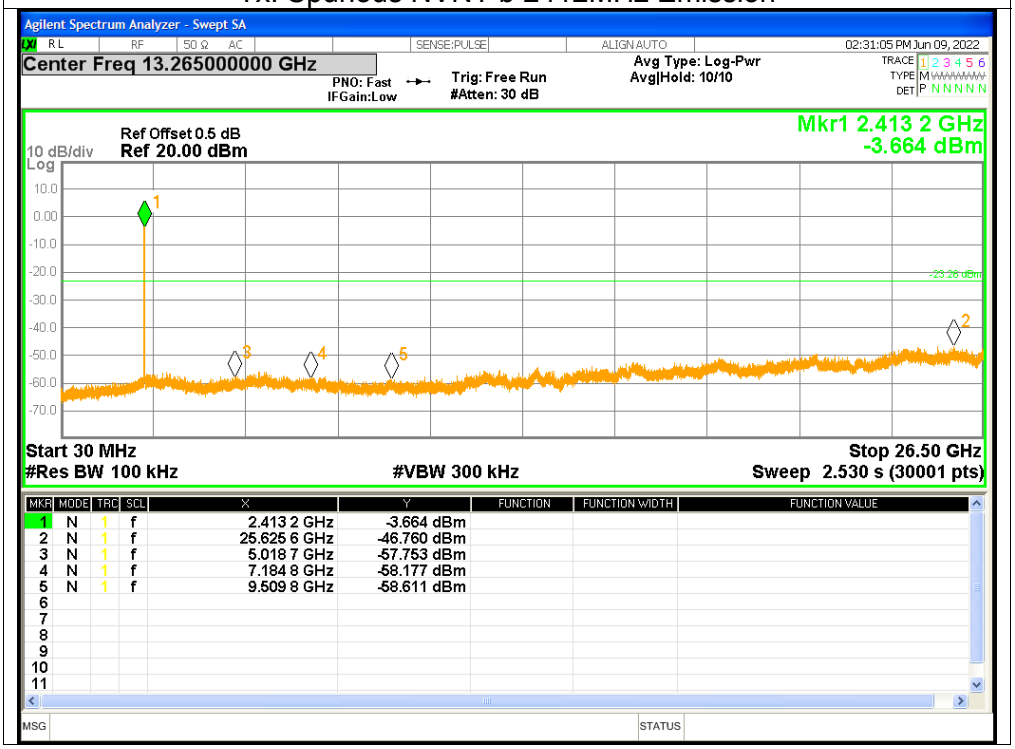
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	-43.5	<=-20	Pass
NVNT	b	2437	-43.83	<=-20	Pass
NVNT	b	2462	-42.56	<=-20	Pass
NVNT	g	2412	-40.92	<=-20	Pass
NVNT	g	2437	-41.02	<=-20	Pass
NVNT	g	2462	-39.92	<=-20	Pass
NVNT	n20	2412	-40.59	<=-20	Pass
NVNT	n20	2437	-40.76	<=-20	Pass
NVNT	n20	2462	-40.47	<=-20	Pass

Test Graphs

Tx. Spurious NVNT b 2412MHz Ref

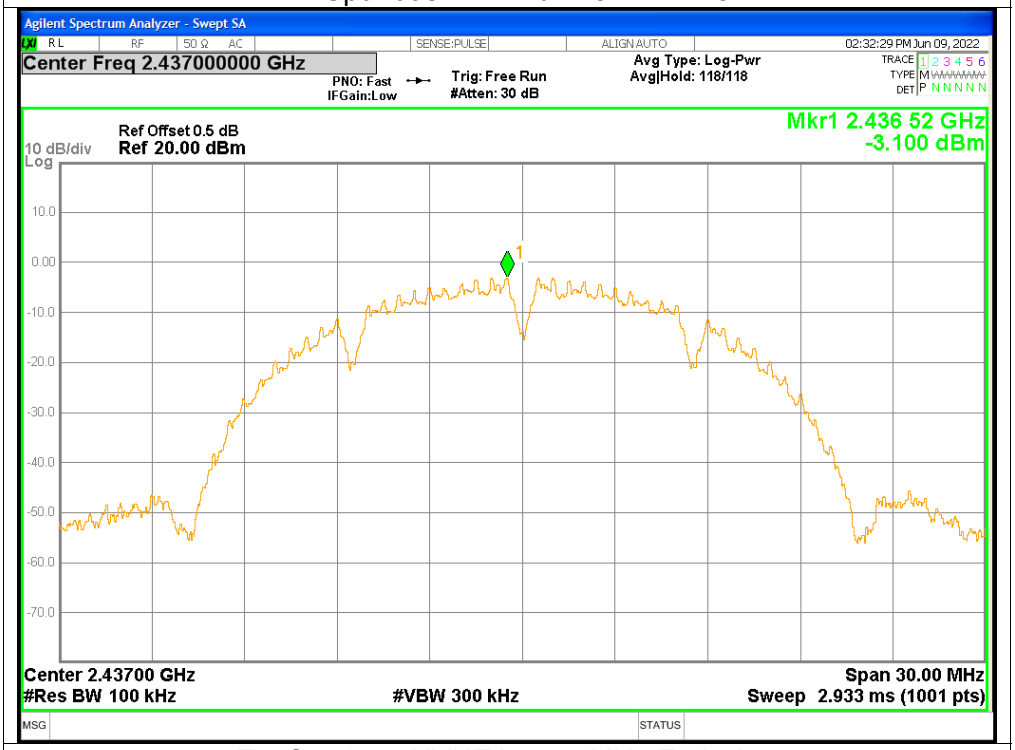


Tx. Spurious NVNT b 2412MHz Emission

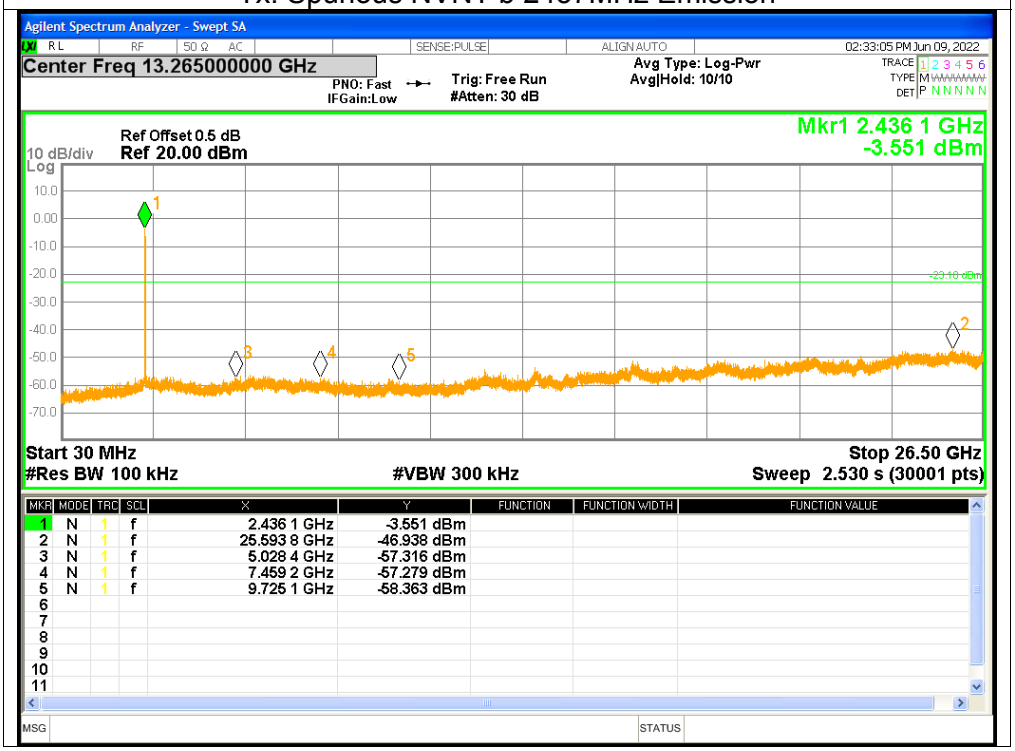


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.413 2 GHz	-3.664 dBm			
2	N	1	f	25.625 6 GHz	-46.760 dBm			
3	N	1	f	5.018 7 GHz	-57.753 dBm			
4	N	1	f	7.184 8 GHz	-58.177 dBm			
5	N	1	f	9.509 8 GHz	-58.611 dBm			

Tx. Spurious NVNT b 2437MHz Ref

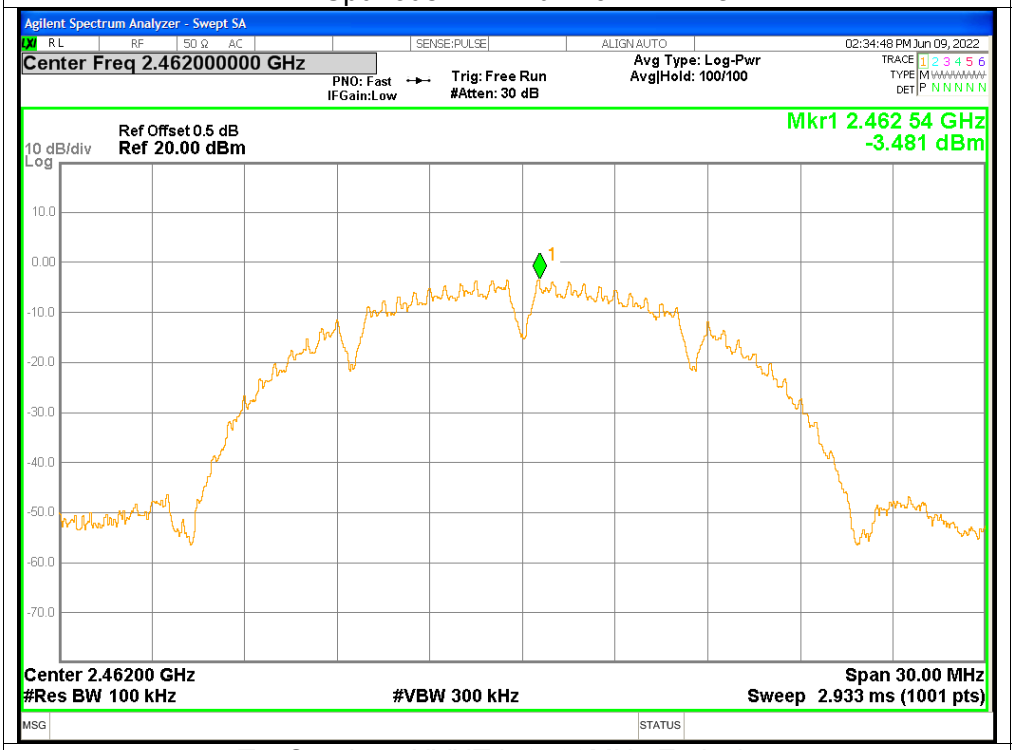


Tx. Spurious NVNT b 2437MHz Emission

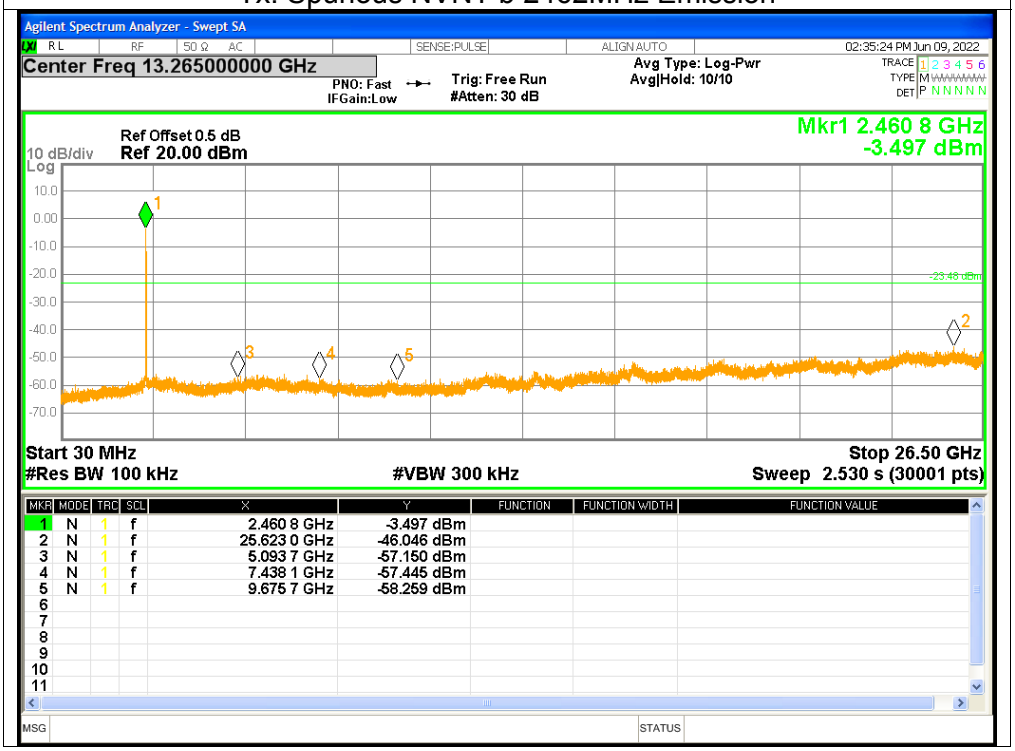


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.436 1 GHz	-3.551 dBm			
2	N	1	f	25.593 8 GHz	-46.938 dBm			
3	N	1	f	5.028 4 GHz	-57.316 dBm			
4	N	1	f	7.459 2 GHz	-57.279 dBm			
5	N	1	f	9.725 1 GHz	-58.363 dBm			
6								
7								
8								
9								
10								
11								

Tx. Spurious NVNT b 2462MHz Ref

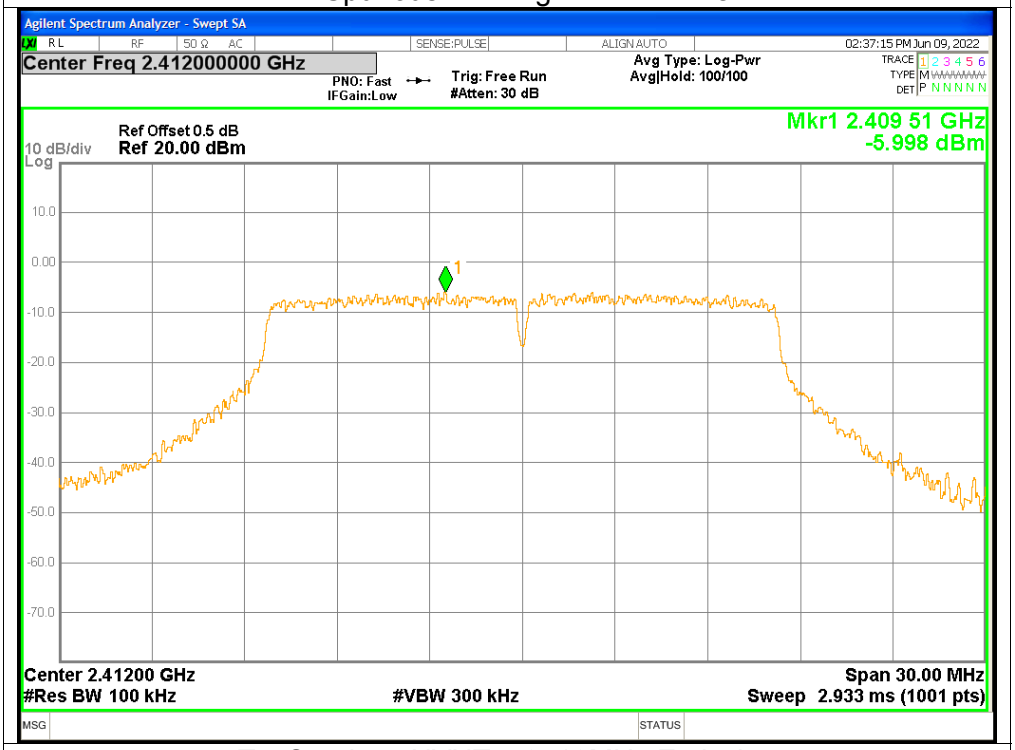


Tx. Spurious NVNT b 2462MHz Emission

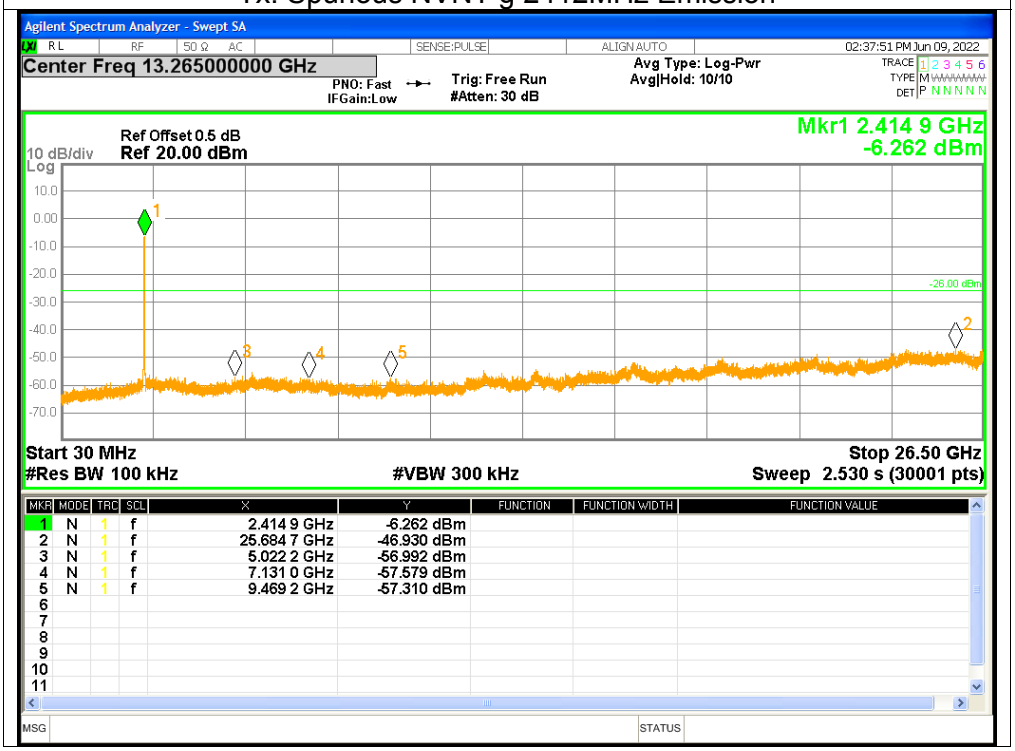


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.460 8 GHz	-3.497 dBm			
2	N	1	f	25.623 0 GHz	-46.046 dBm			
3	N	1	f	5.093 7 GHz	-57.150 dBm			
4	N	1	f	7.438 1 GHz	-57.445 dBm			
5	N	1	f	9.675 7 GHz	-58.259 dBm			
6								
7								
8								
9								
10								
11								

Tx. Spurious NVNT g 2412MHz Ref

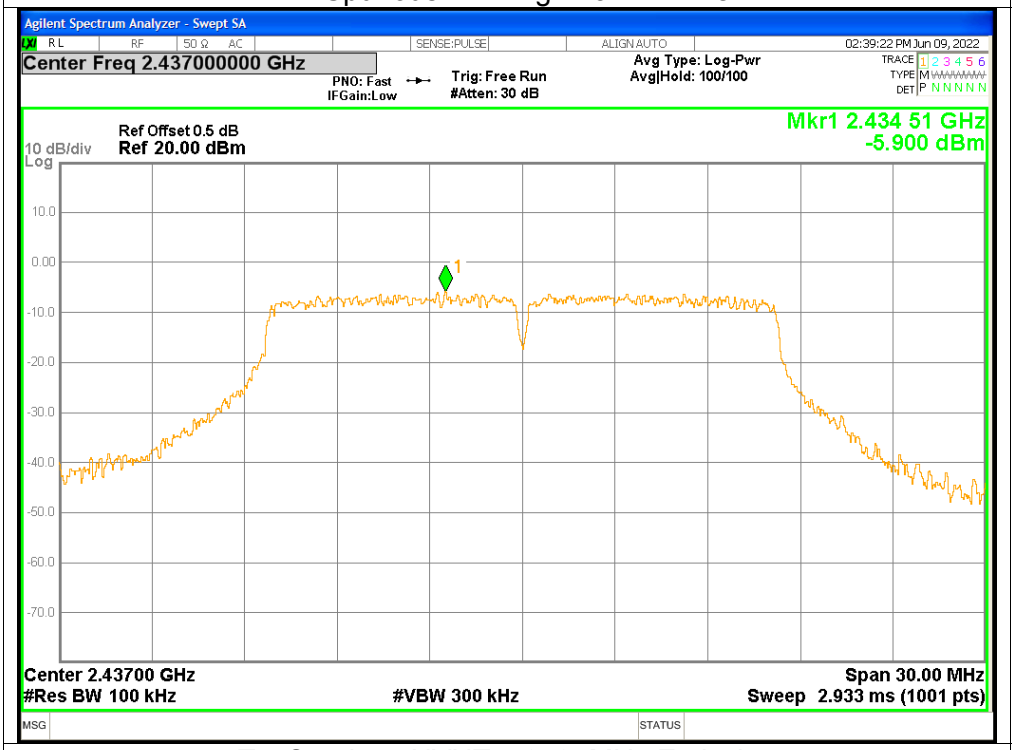


Tx. Spurious NVNT g 2412MHz Emission

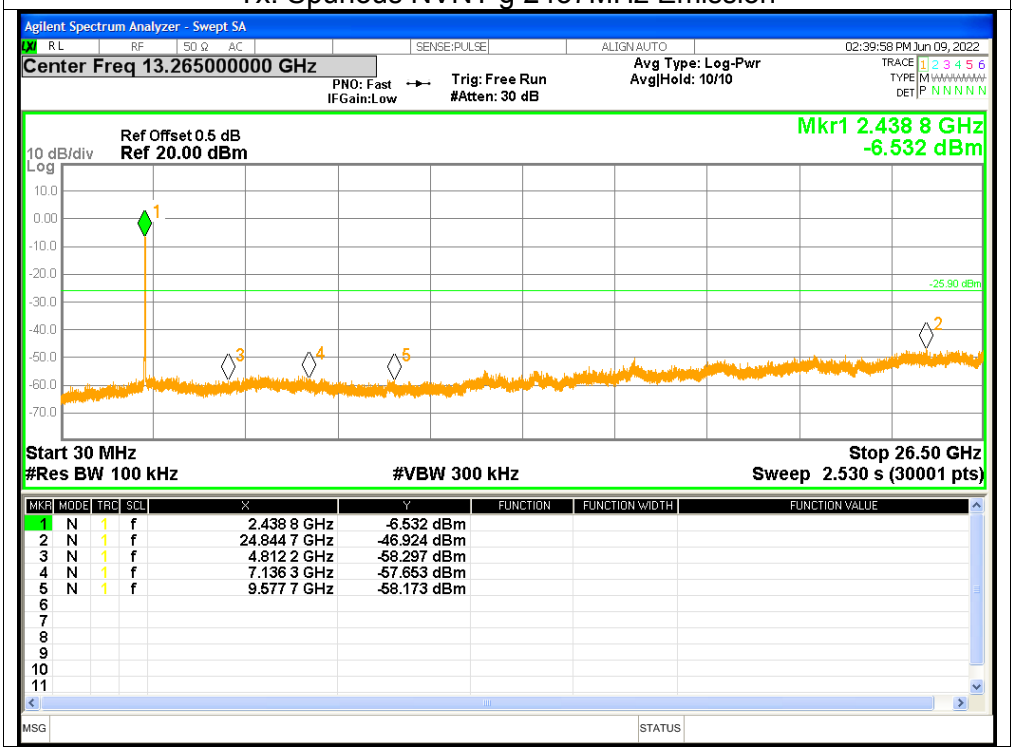


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.414 9 GHz	-6.262 dBm			
2	N	1	f	25.684 7 GHz	-46.930 dBm			
3	N	1	f	5.022 2 GHz	-56.992 dBm			
4	N	1	f	7.131 0 GHz	-57.579 dBm			
5	N	1	f	9.469 2 GHz	-57.310 dBm			
6								
7								
8								
9								
10								
11								

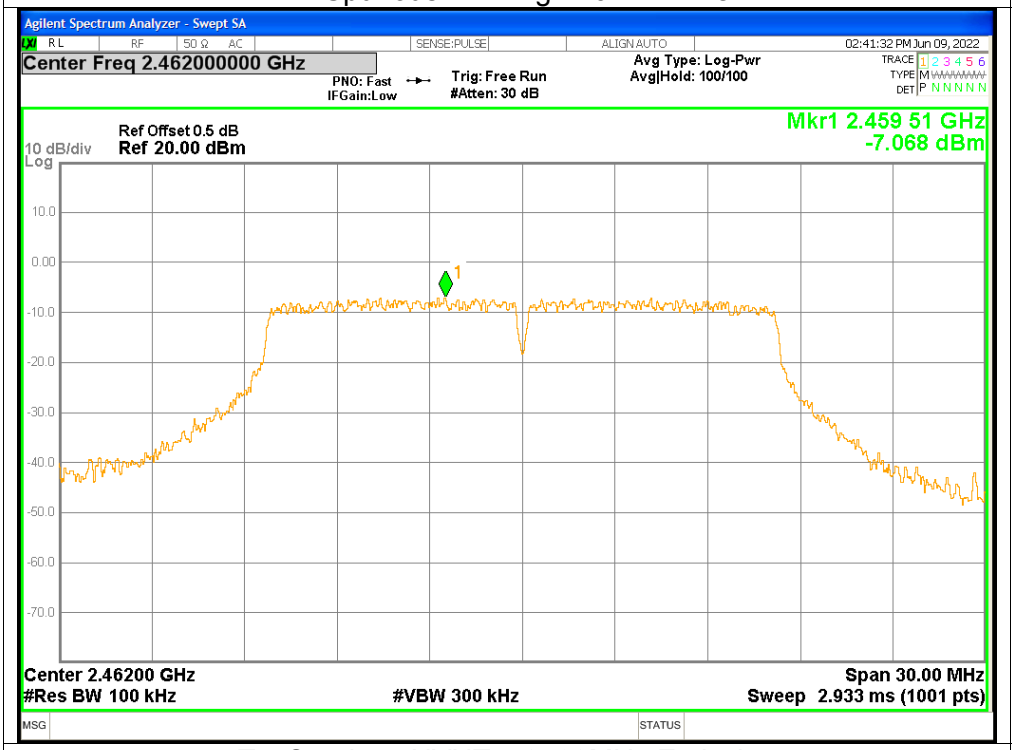
Tx. Spurious NVNT g 2437MHz Ref



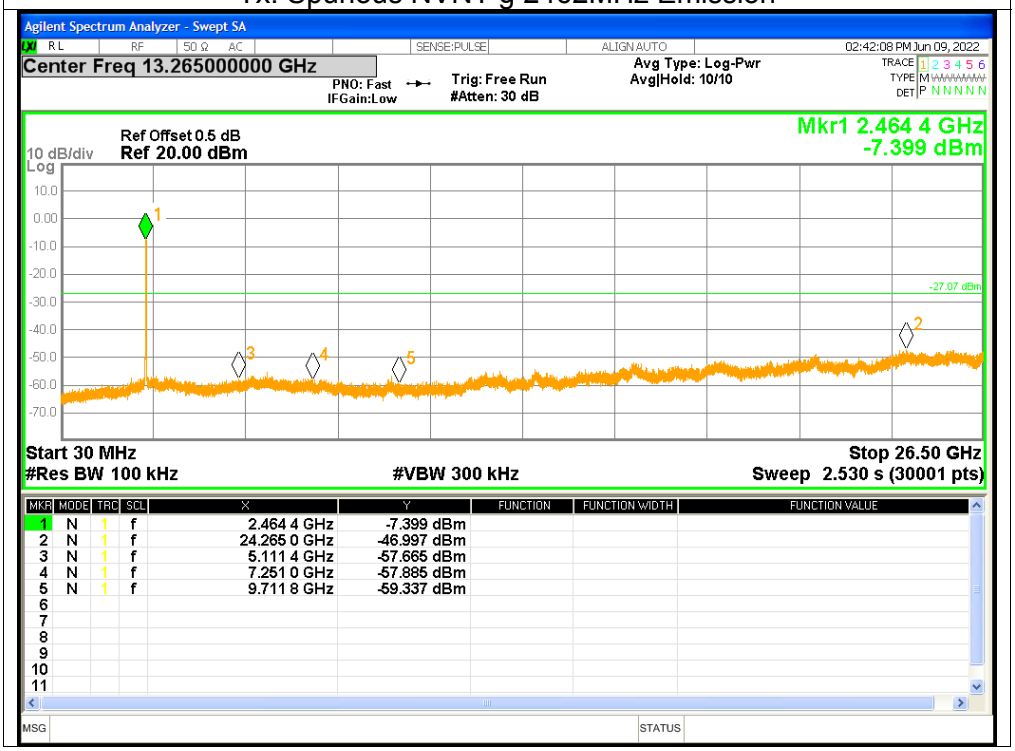
Tx. Spurious NVNT g 2437MHz Emission



Tx. Spurious NVNT g 2462MHz Ref

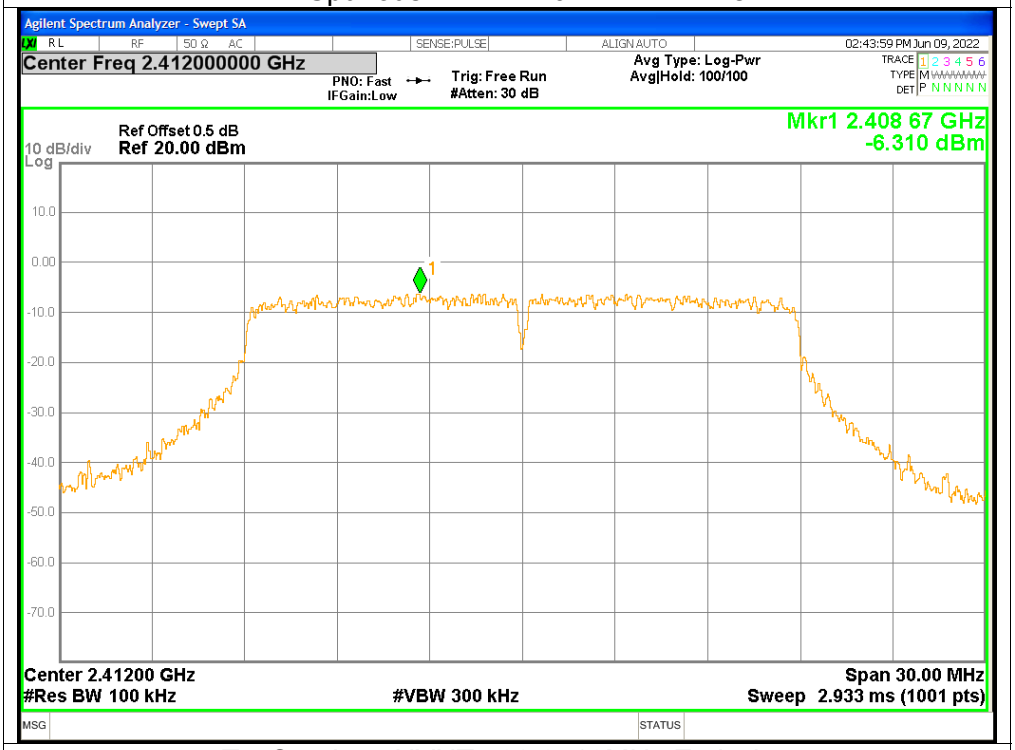


Tx. Spurious NVNT g 2462MHz Emission

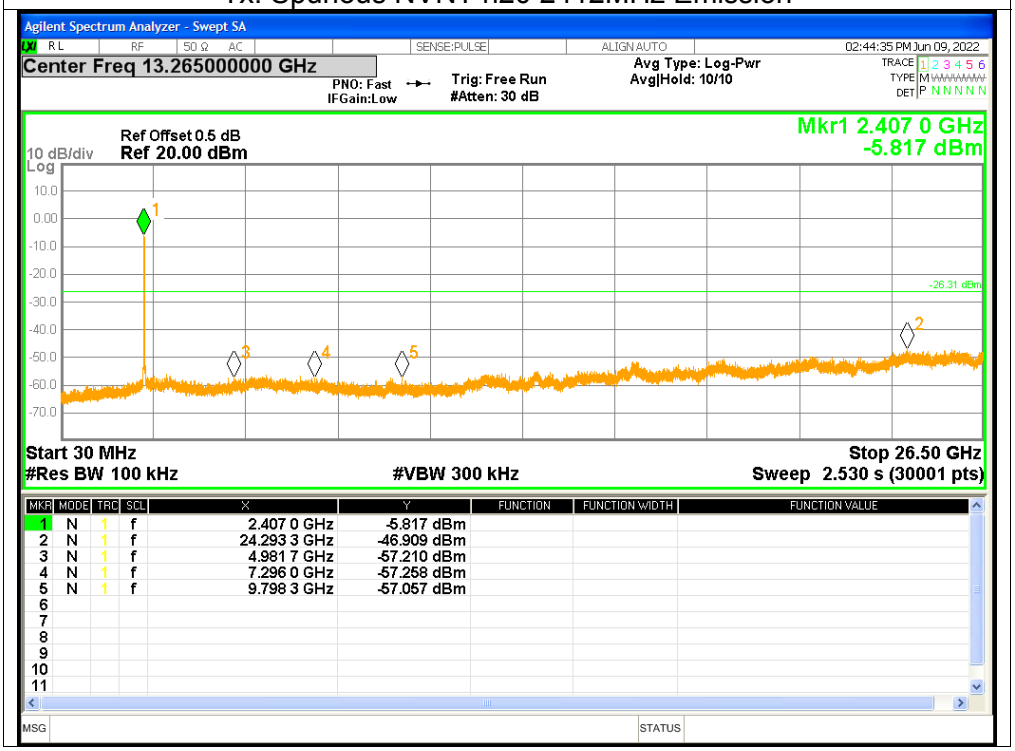


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.464 4 GHz	-7.399 dBm			
2	N	1	f	24.265 0 GHz	-46.997 dBm			
3	N	1	f	5.111 4 GHz	-57.665 dBm			
4	N	1	f	7.251 0 GHz	-57.885 dBm			
5	N	1	f	9.711 8 GHz	-59.337 dBm			
6								
7								
8								
9								
10								
11								

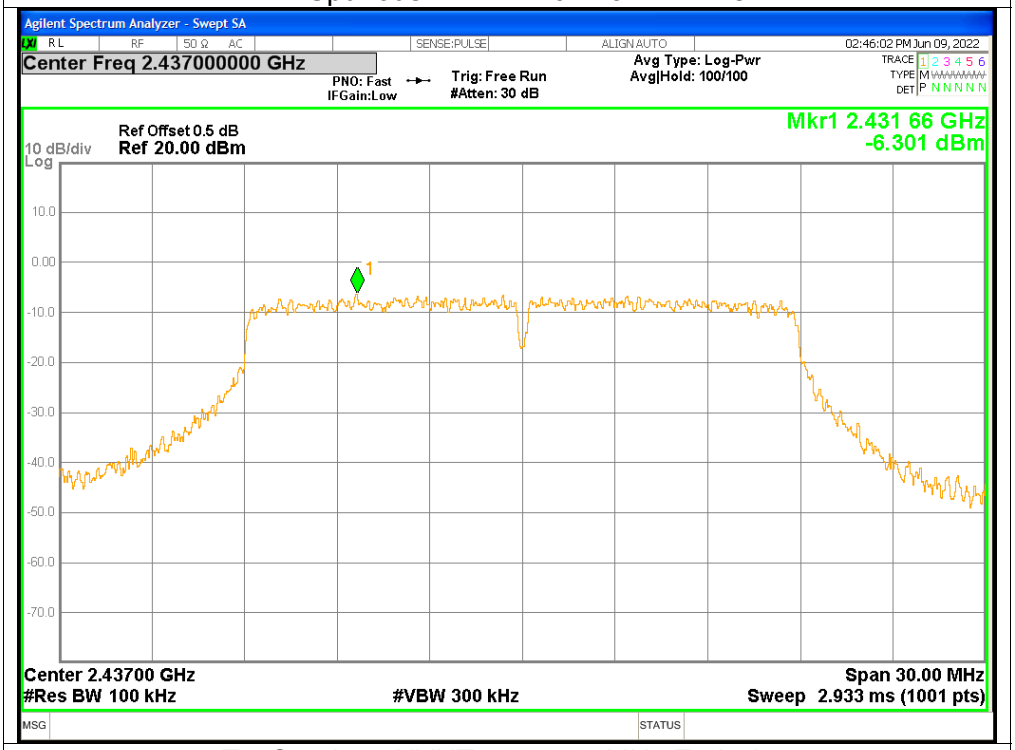
Tx. Spurious NVNT n20 2412MHz Ref



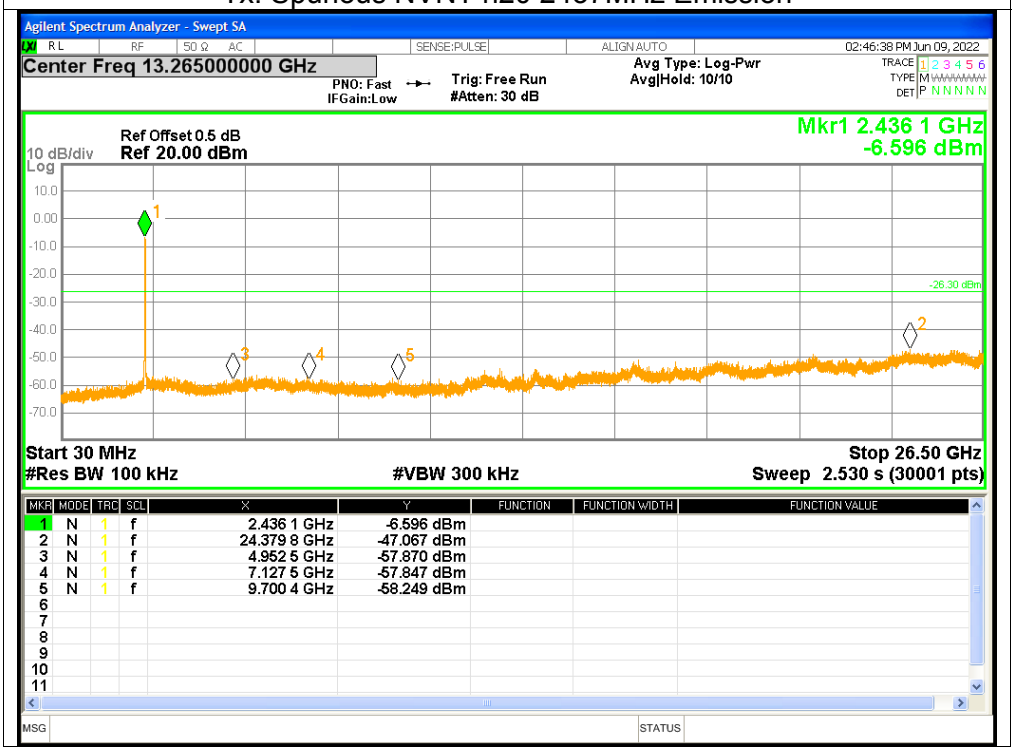
Tx. Spurious NVNT n20 2412MHz Emission



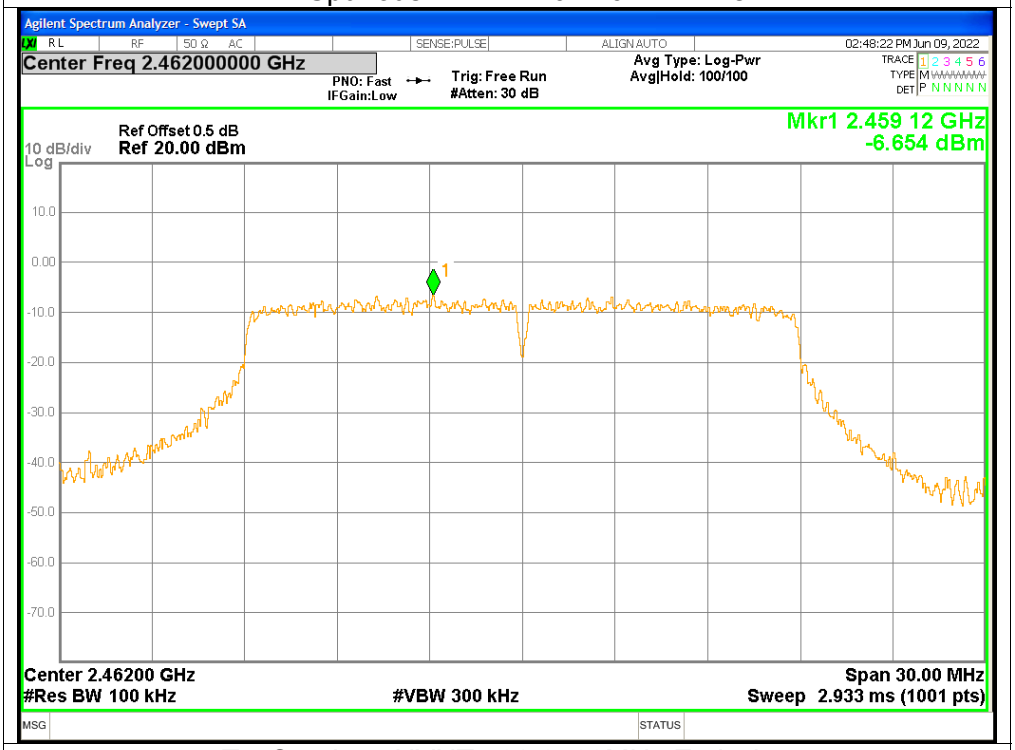
Tx. Spurious NVNT n20 2437MHz Ref



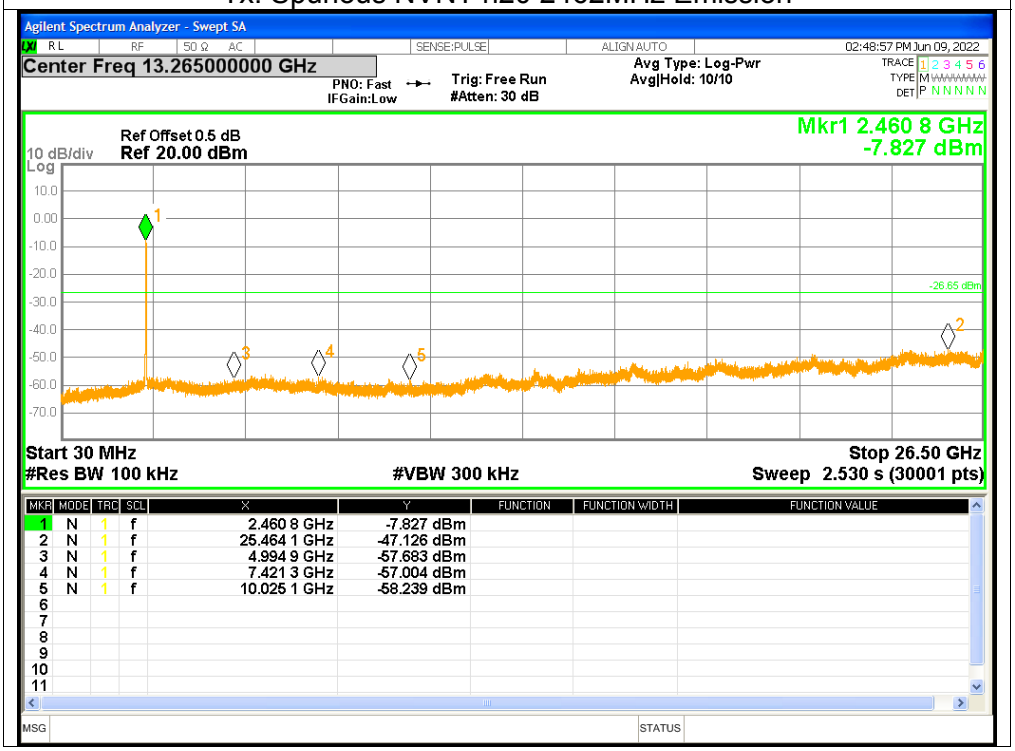
Tx. Spurious NVNT n20 2437MHz Emission



Tx. Spurious NVNT n20 2462MHz Ref



Tx. Spurious NVNT n20 2462MHz Emission



9. RADIATED TEST RESULTS

LIMITS

Please refer to FCC §15.205 and §15.209

Please refer to RSS-GEN Clause 8.9 (Transmitter)

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

Frequency (MHz)	Field Strength (microvolts/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
960~1000	500	3

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

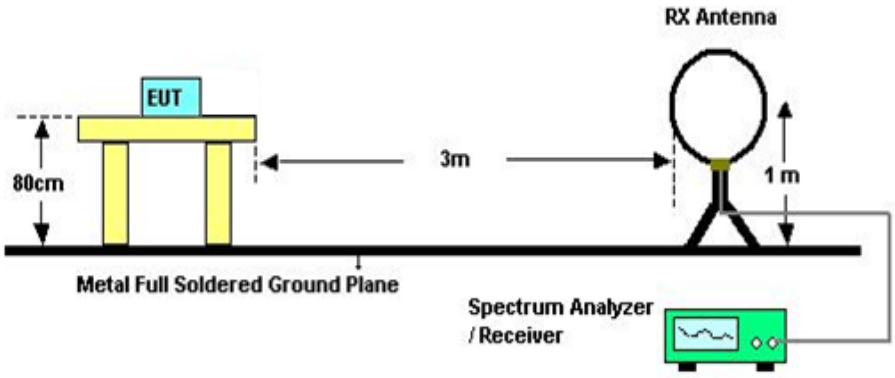
Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]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	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST SETUP AND PROCEDURE

Below 30MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 0.8 meter above ground.

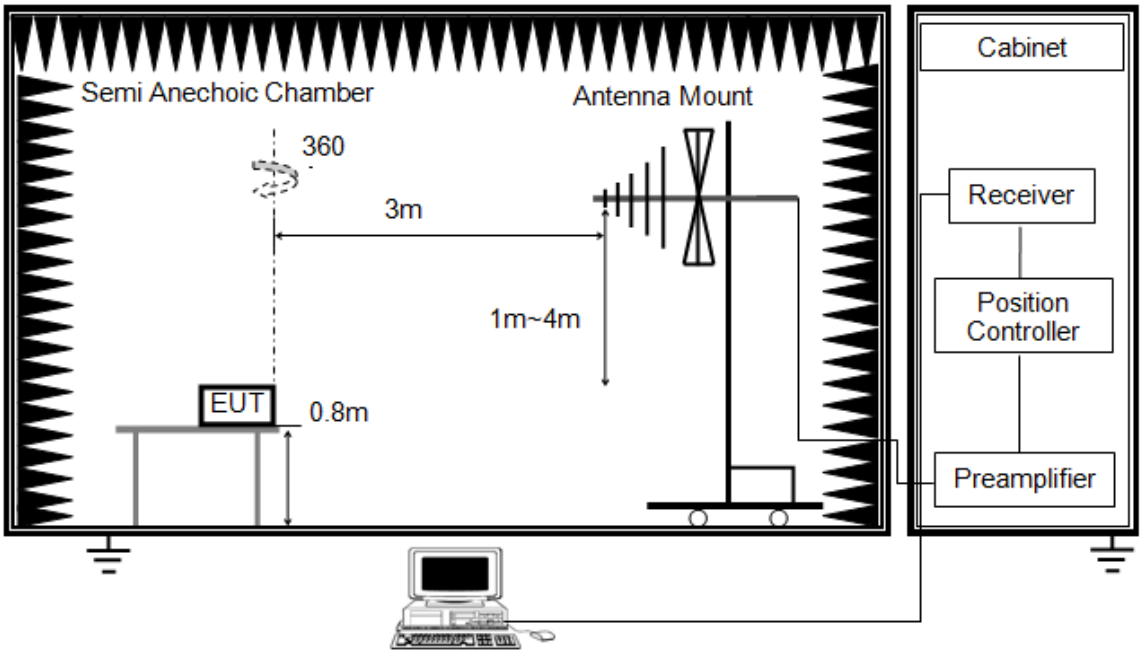
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, 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 then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

Note: Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G



The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

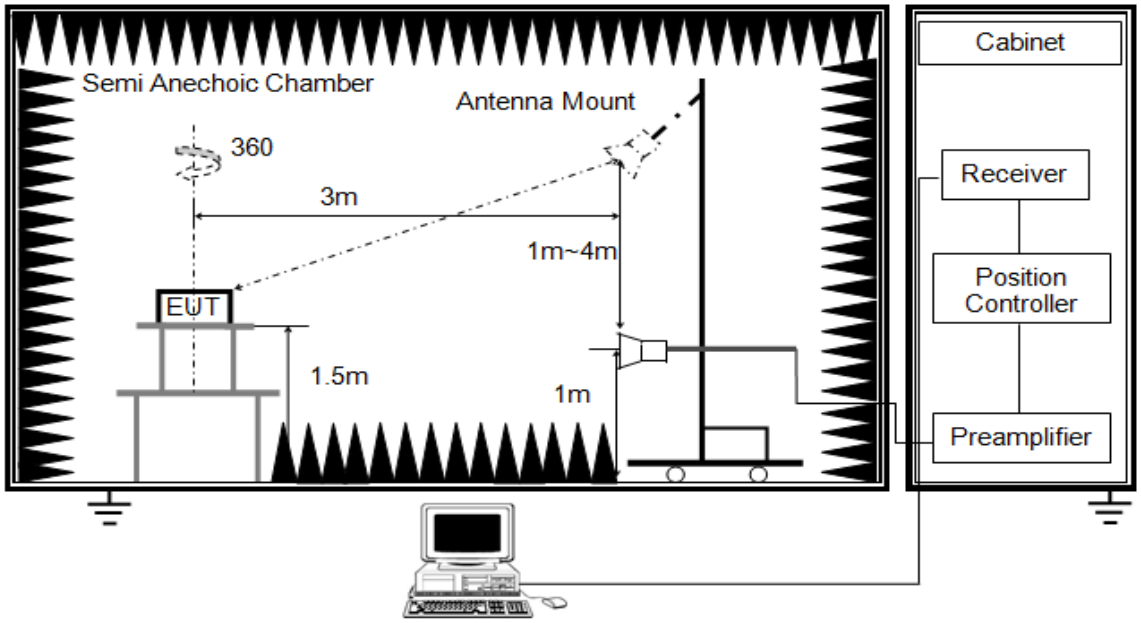
3. The EUT was placed on a turntable with 0.8 meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, 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 then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

6. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration)

ABOVE 1G



The setting of the spectrum analyser

RBW	1M
VBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 1.5m above ground.

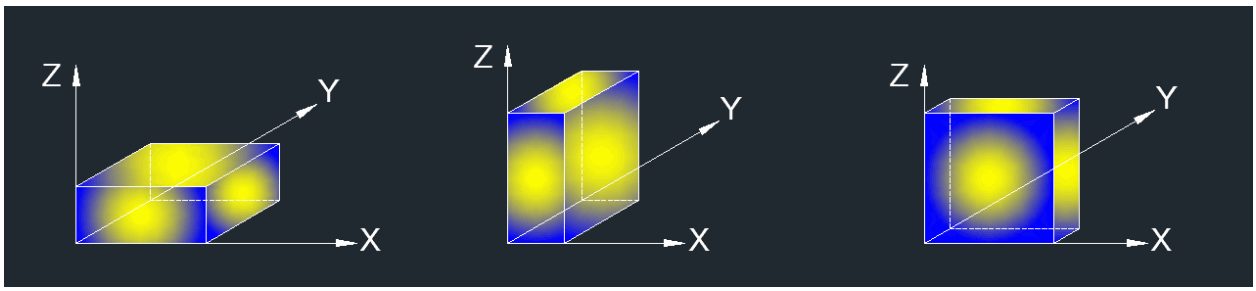
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For peak measurements, the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz with peak detector; For average measurements, the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 10Hz for 802.11b/g/nHT20/nHT40 modes with peak detector.

7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

X axis, Y axis, Z axis positions:



8.The EUT as shown in Figure 1 is the worst mode, the report only shown the worst mode data.

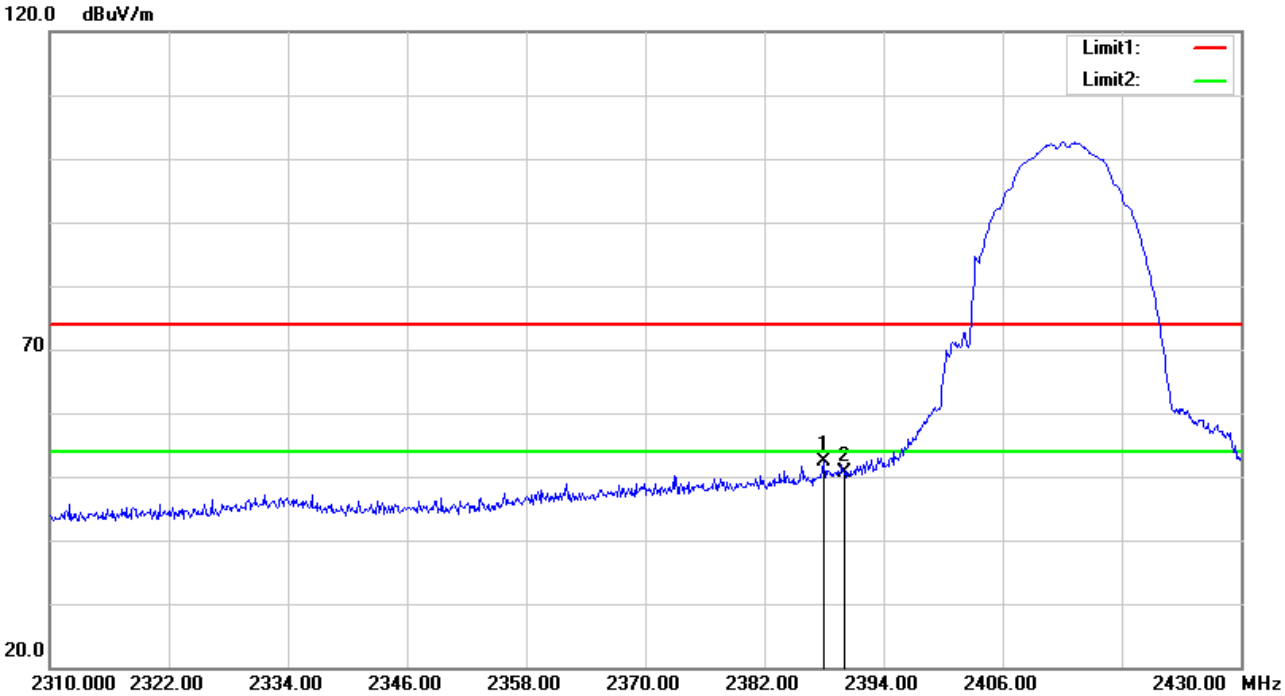
TEST ENVIRONMENT

Temperature	23.1°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

9.1. RESTRICTED BANDEDGE

802.11 b mode

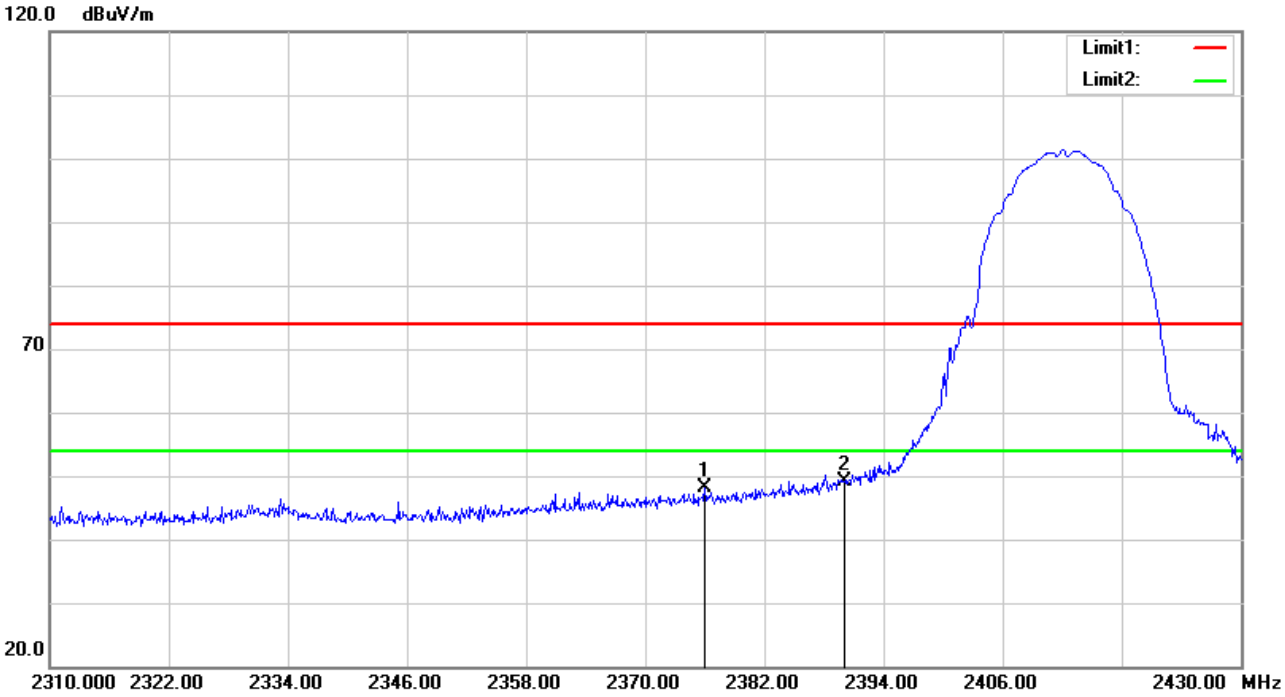
RESTRICTED BANDEDGE (01 CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.000	48.01	4.31	52.32	74.00	-21.68	peak
2	2390.000	46.29	4.34	50.63	74.00	-23.37	peak

Note: Measurement = Reading Level + Correct Factor.

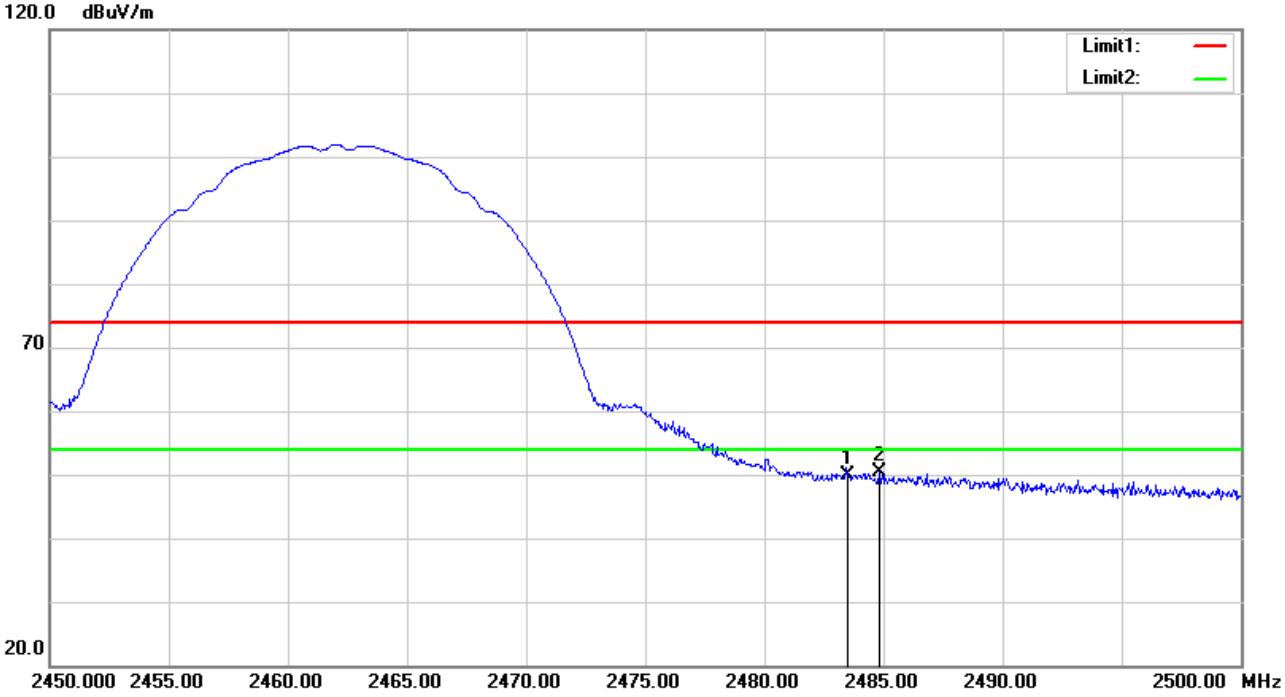
RESTRICTED BANDEDGE (01 CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2376.000	43.89	4.13	48.02	74.00	-25.98	peak
2	2390.000	44.71	4.34	49.05	74.00	-24.95	peak

Note: Measurement = Reading Level + Correct Factor.

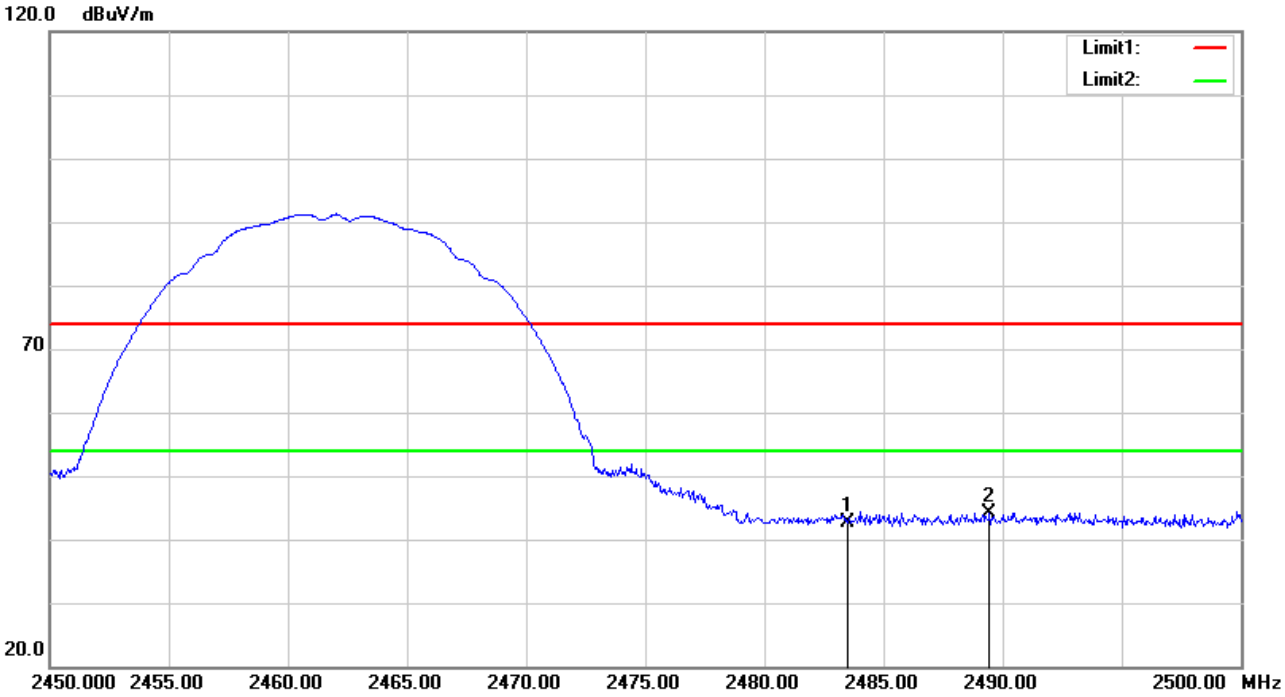
RESTRICTED BANDEDGE (11 CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	45.18	4.60	49.78	74.00	-24.22	peak
2	2484.850	45.70	4.61	50.31	74.00	-23.69	peak

Note: Measurement = Reading Level + Correct Factor.

RESTRICTED BANDEDGE (11 CHANNEL, VERTICAL)

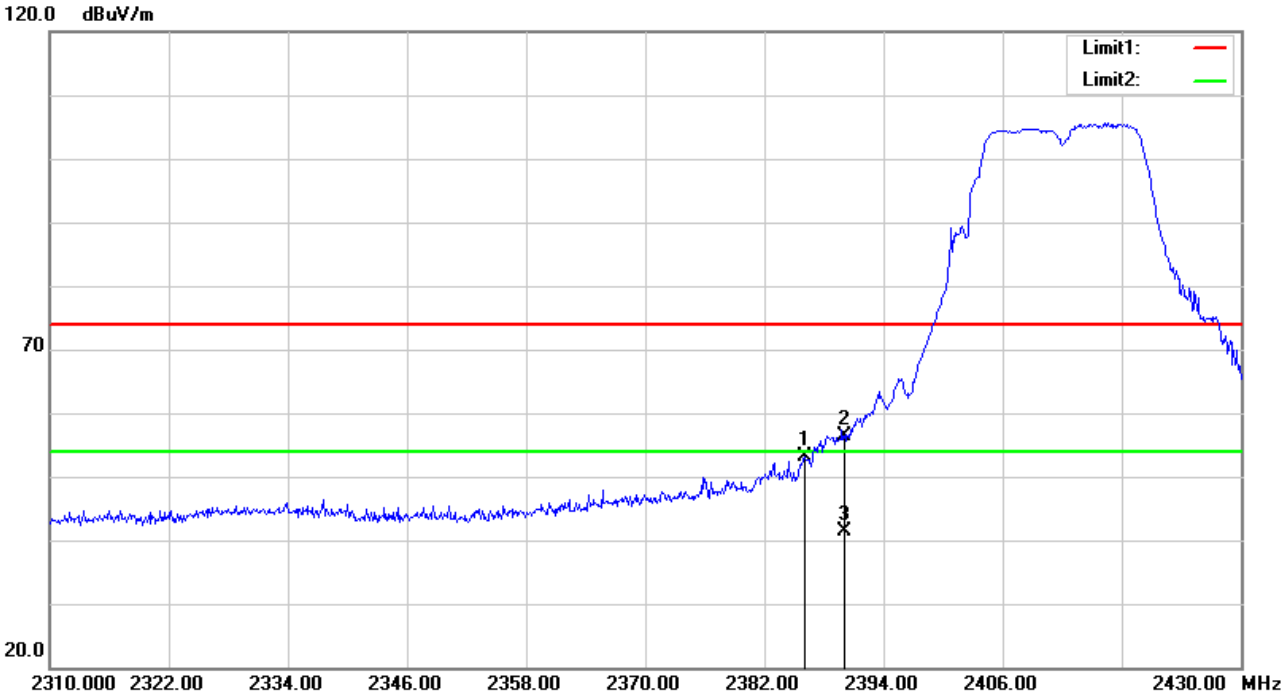


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	38.06	4.60	42.66	74.00	-31.34	peak
2	2489.450	39.62	4.62	44.24	74.00	-29.76	peak

Note: Measurement = Reading Level + Correct Factor.

802.11 g mode

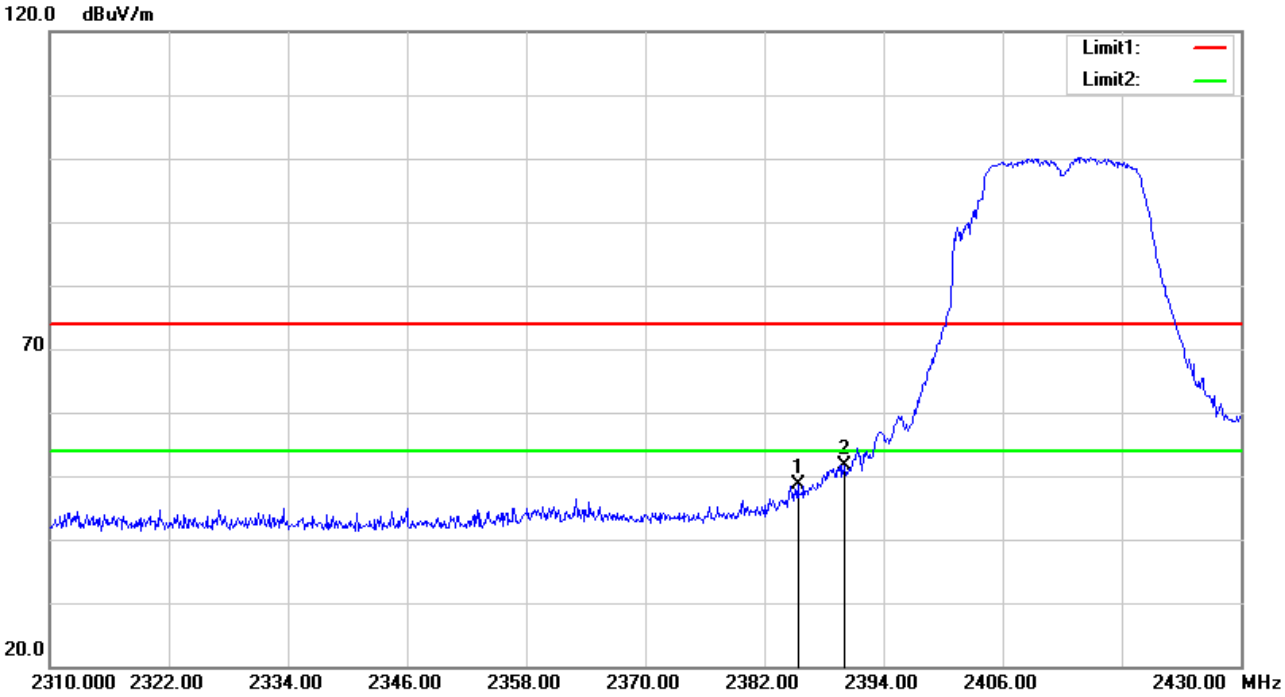
RESTRICTED BANDEDGE (01 CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.080	48.81	4.28	53.09	74.00	-20.91	peak
2	2390.000	52.03	4.34	56.37	74.00	-17.63	peak
3	2390.000	37.05	4.34	41.39	54.00	-12.61	AVG

Note: Measurement = Reading Level + Correct Factor.

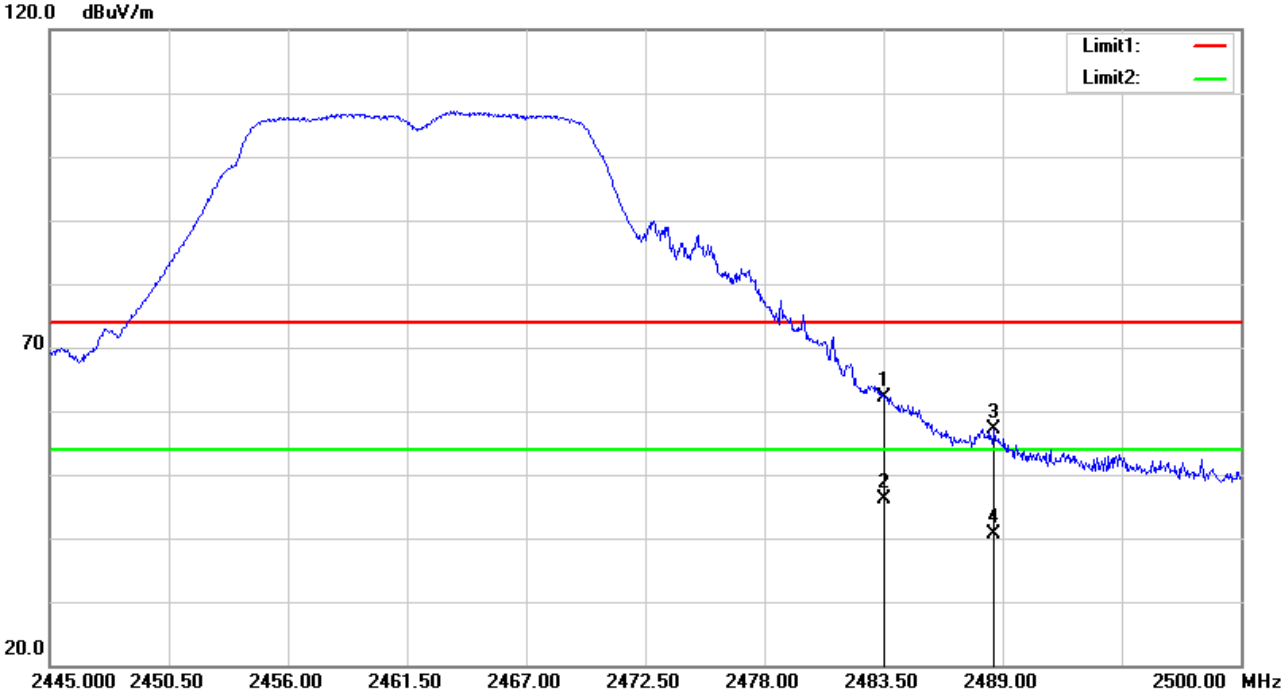
RESTRICTED BANDEDGE (01 CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2385.360	44.27	4.27	48.54	74.00	-25.46	peak
2	2390.000	47.25	4.34	51.59	74.00	-22.41	peak

Note: Measurement = Reading Level + Correct Factor.

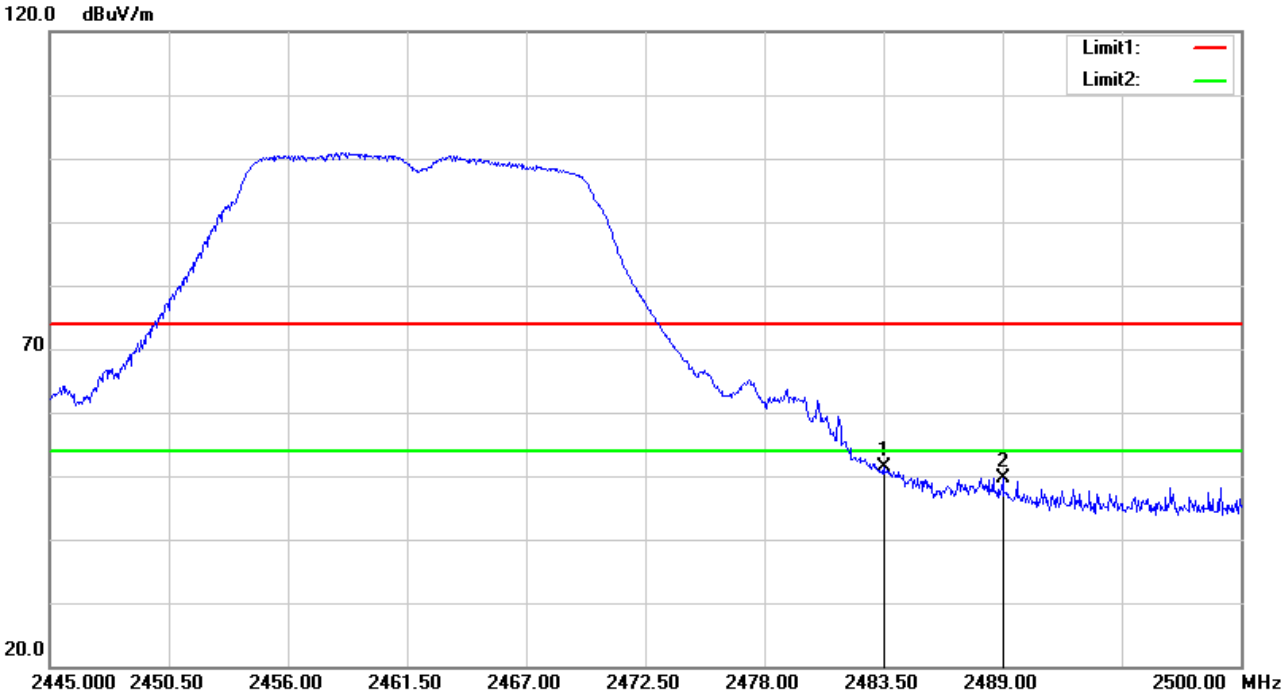
RESTRICTED BANDEDGE (11 CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	57.46	4.60	62.06	74.00	-11.94	peak
2	2483.500	41.60	4.60	46.20	54.00	-7.80	AVG
3	2488.615	52.59	4.62	57.21	74.00	-16.79	peak
4	2488.615	36.03	4.62	40.65	54.00	-13.35	AVG

Note: Measurement = Reading Level + Correct Factor.

RESTRICTED BANDEDGE (11 CHANNEL, VERTICAL)

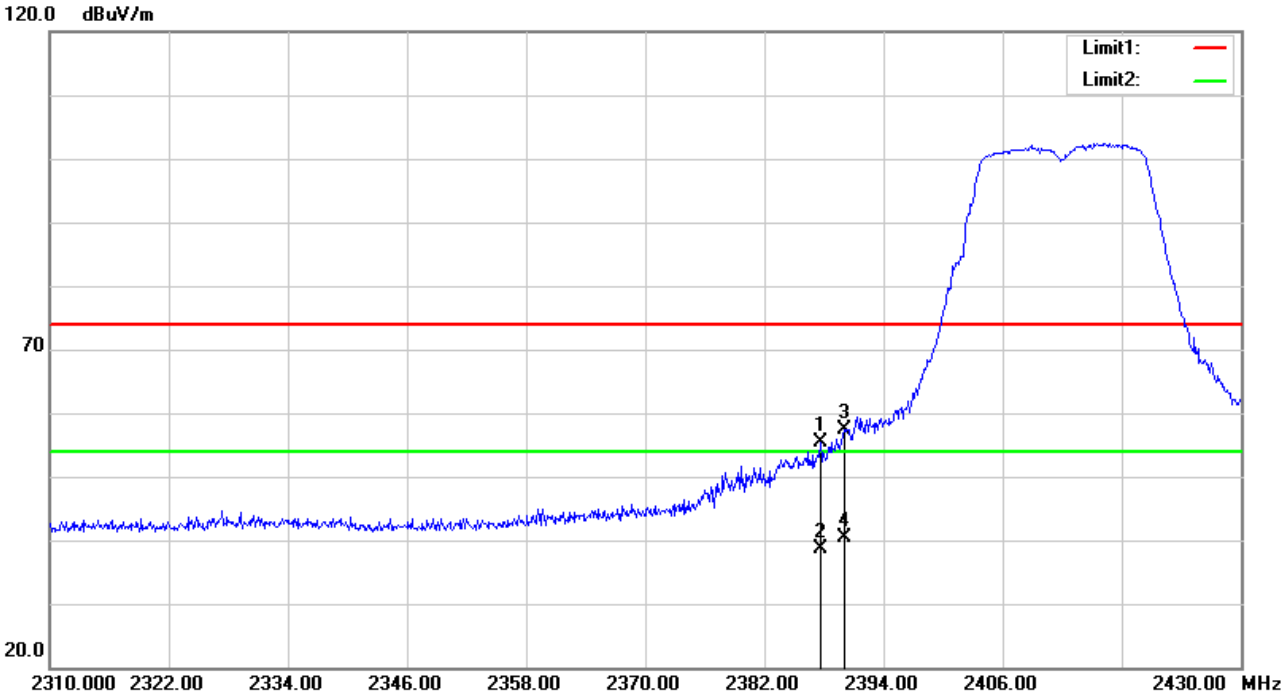


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	46.68	4.60	51.28	74.00	-22.72	peak
2	2489.000	45.08	4.62	49.70	74.00	-24.30	peak

Note: Measurement = Reading Level + Correct Factor.

802.11 n20 mode

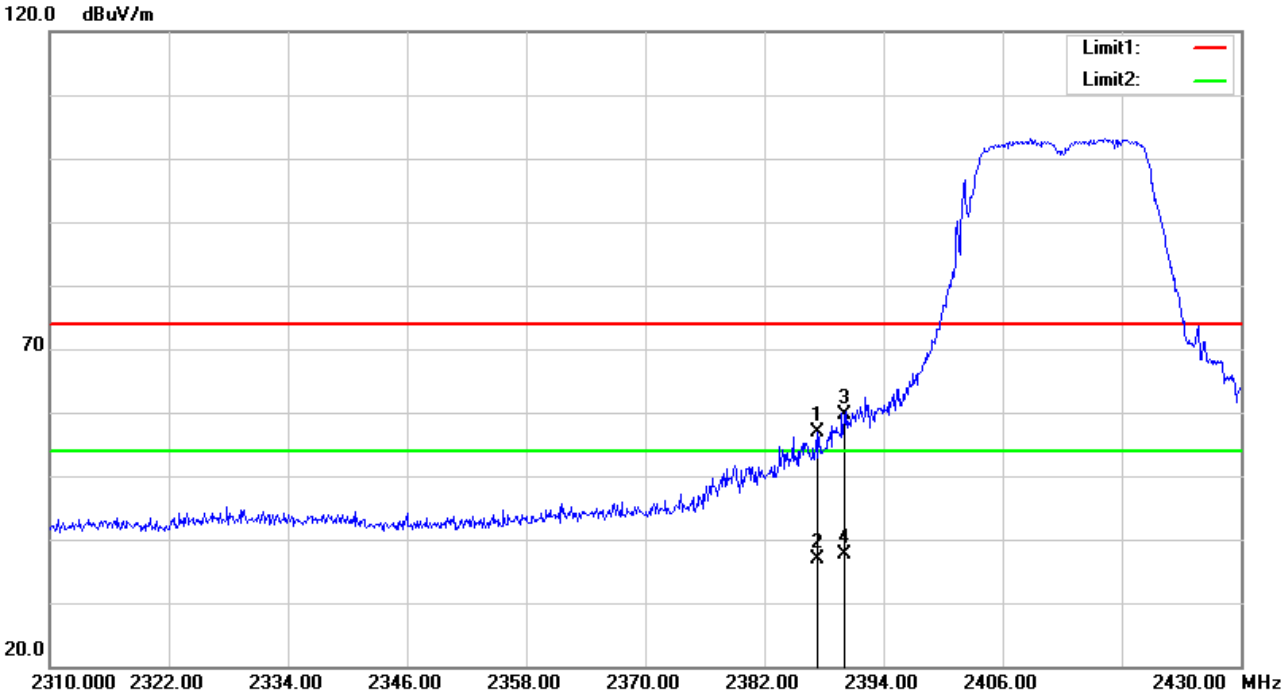
RESTRICTED BANDEDGE (01 CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.640	51.15	4.31	55.46	74.00	-18.54	peak
2	2387.640	34.24	4.31	38.55	54.00	-15.45	AVG
3	2390.000	52.99	4.34	57.33	74.00	-16.67	peak
4	2390.000	36.07	4.34	40.41	54.00	-13.59	AVG

Note: Measurement = Reading Level + Correct Factor.

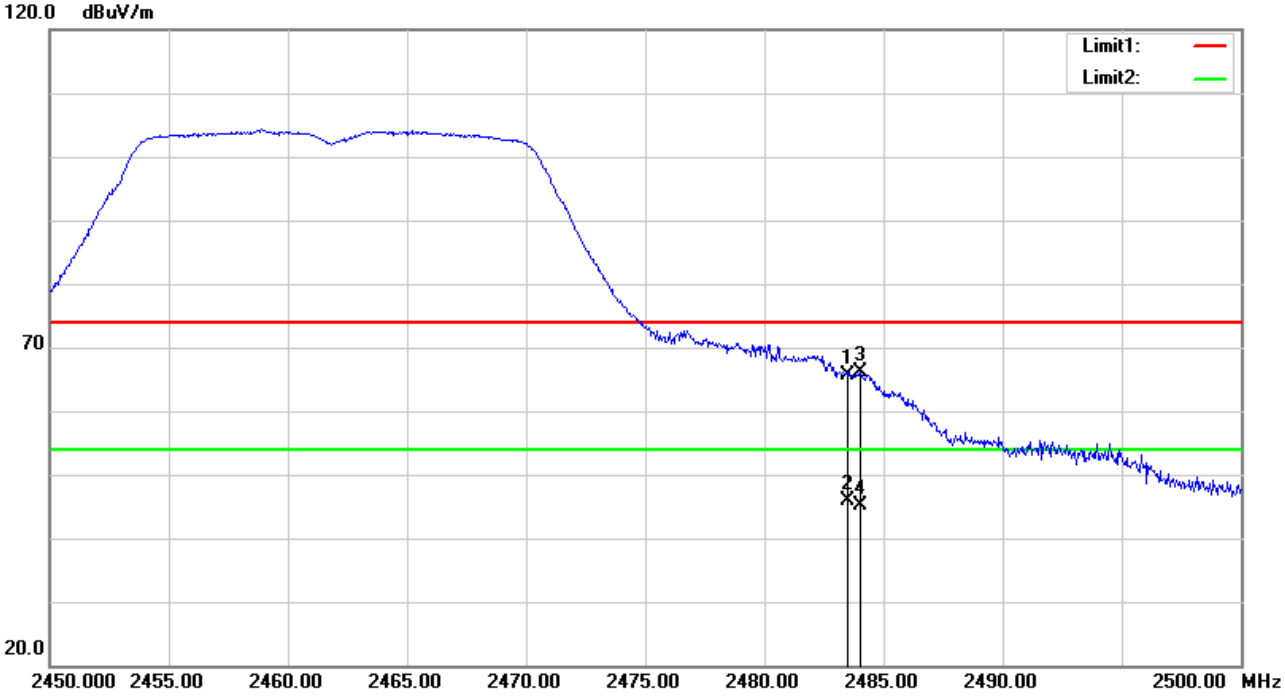
RESTRICTED BANDEDGE (01 CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.280	52.67	4.30	56.97	74.00	-17.03	peak
2	2387.280	32.48	4.30	36.78	54.00	-17.22	AVG
3	2390.000	55.21	4.34	59.55	74.00	-14.45	peak
4	2390.000	33.20	4.34	37.54	54.00	-16.46	AVG

Note: Measurement = Reading Level + Correct Factor.

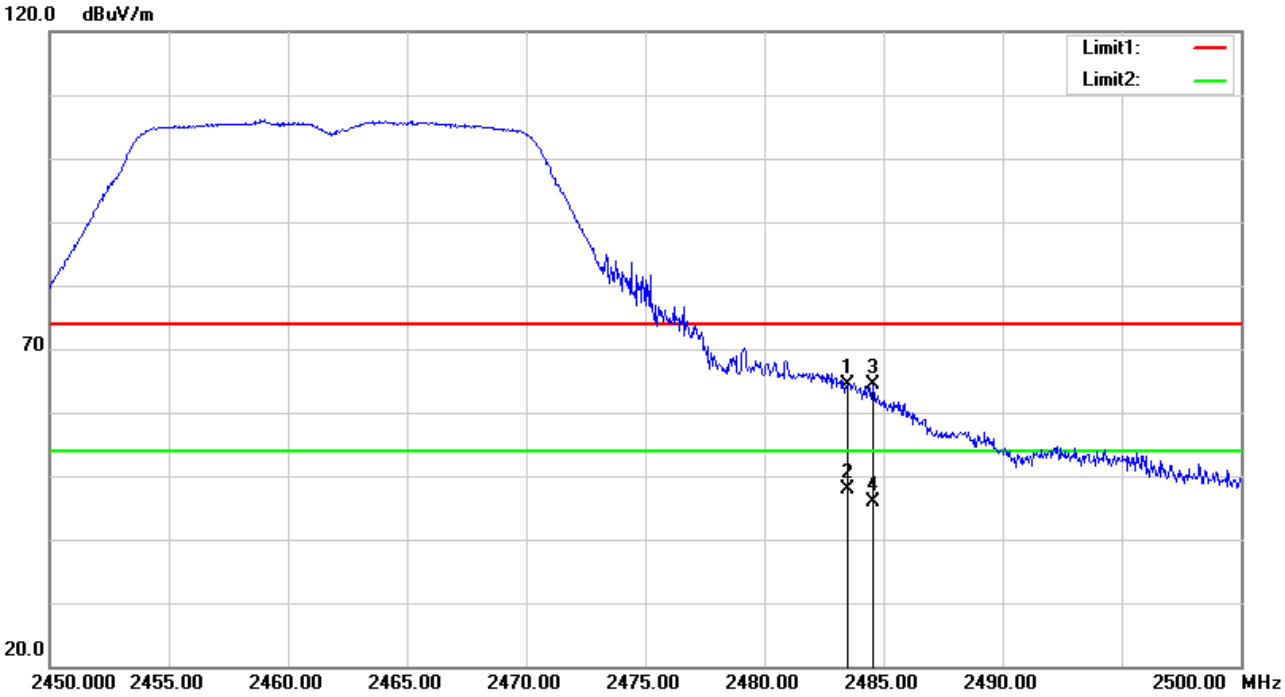
RESTRICTED BANDEDGE (11 CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	61.10	4.60	65.70	74.00	-8.30	peak
2	2483.500	41.17	4.60	45.77	54.00	-8.23	AVG
3	2484.000	61.52	4.61	66.13	74.00	-7.87	peak
4	2484.000	40.59	4.61	45.20	54.00	-8.80	AVG

Note: Measurement = Reading Level + Correct Factor.

RESTRICTED BANDEDGE (11 CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	59.74	4.60	64.34	74.00	-9.66	peak
2	2483.500	43.28	4.60	47.88	54.00	-6.12	AVG
3	2484.550	59.69	4.61	64.30	74.00	-9.70	peak
4	2484.550	41.38	4.61	45.99	54.00	-8.01	AVG

Note: Measurement = Reading Level + Correct Factor.

9.2. SPURIOUS EMISSIONS (30-1GHz)

Note: All the channels had been tested, but only the worst data recorded in the report.

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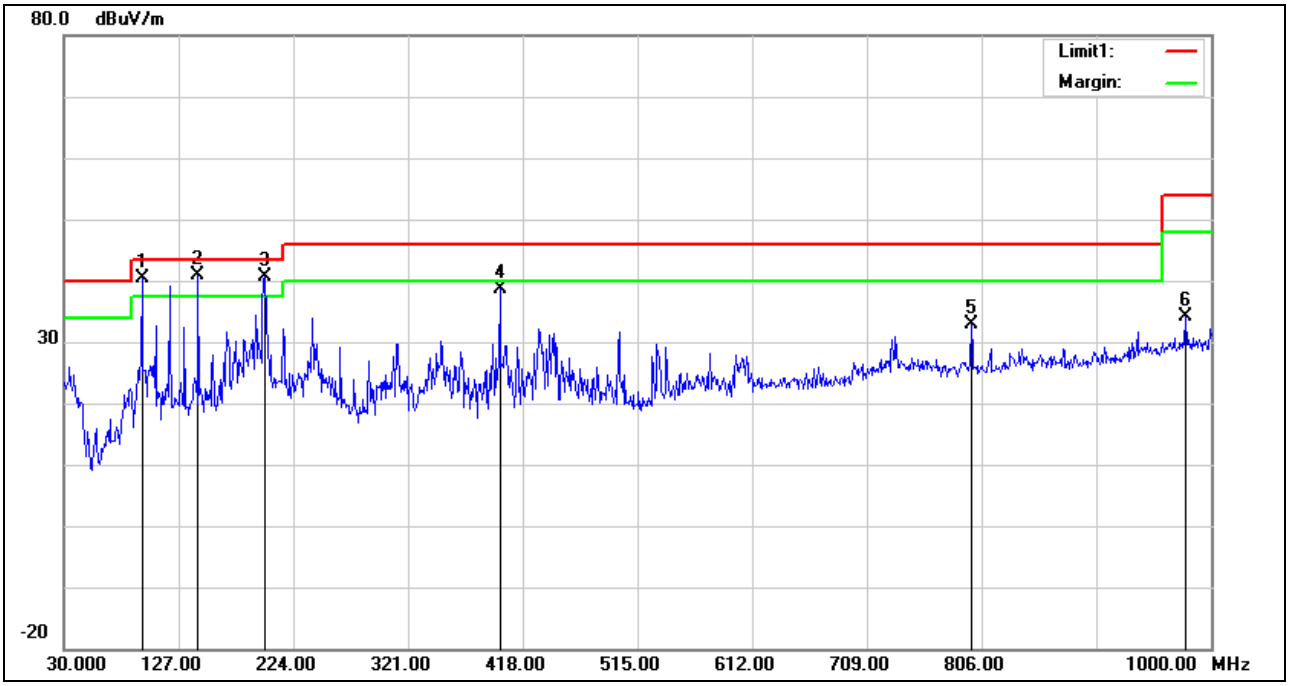
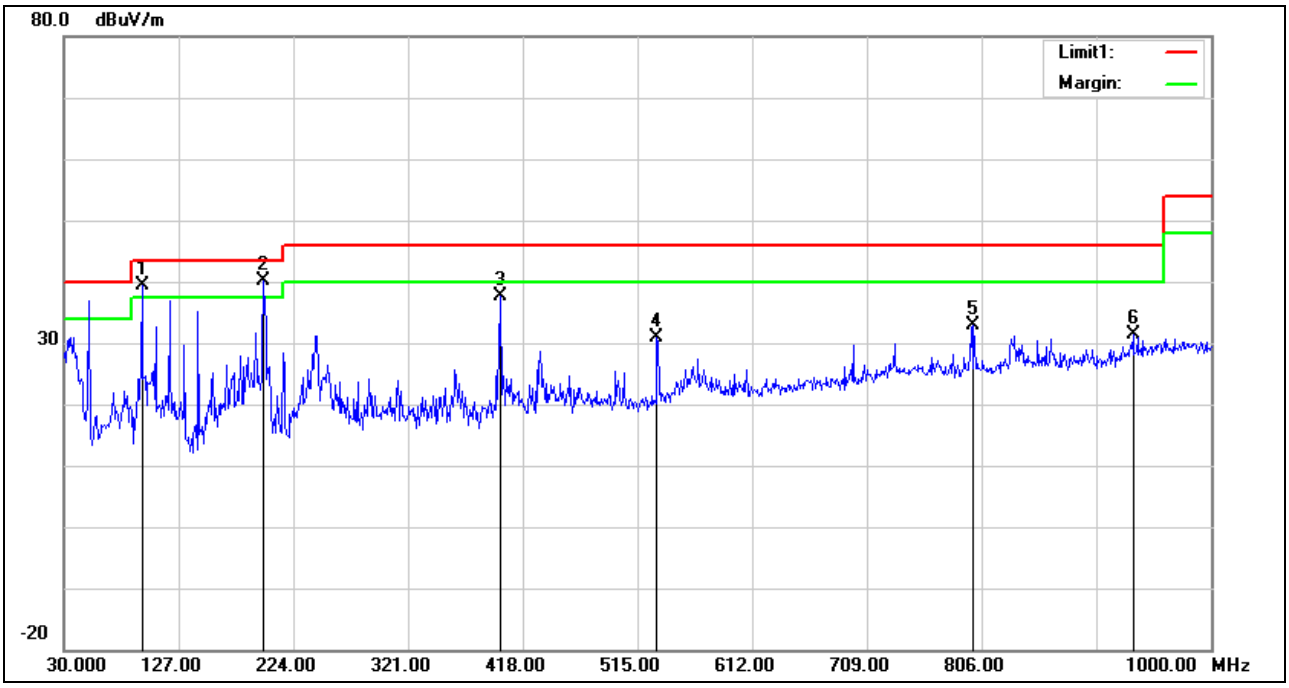
HARMONICS AND SPURIOUS EMISSIONS (HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	61.06	-20.67	40.39	43.50	-3.11	peak
2	143.4900	59.16	-18.23	40.93	43.50	-2.57	peak
3	199.7500	61.74	-21.11	40.63	43.50	-2.87	peak
4	398.6000	49.83	-11.20	38.63	46.00	-7.37	peak
5	797.2700	34.80	-2.03	32.77	46.00	-13.23	peak
6	978.6600	31.62	2.58	34.20	54.00	-19.80	peak

Note: Measurement = Reading Level + Correct Factor.

HARMONICS AND SPURIOUS EMISSIONS (VERTICAL)



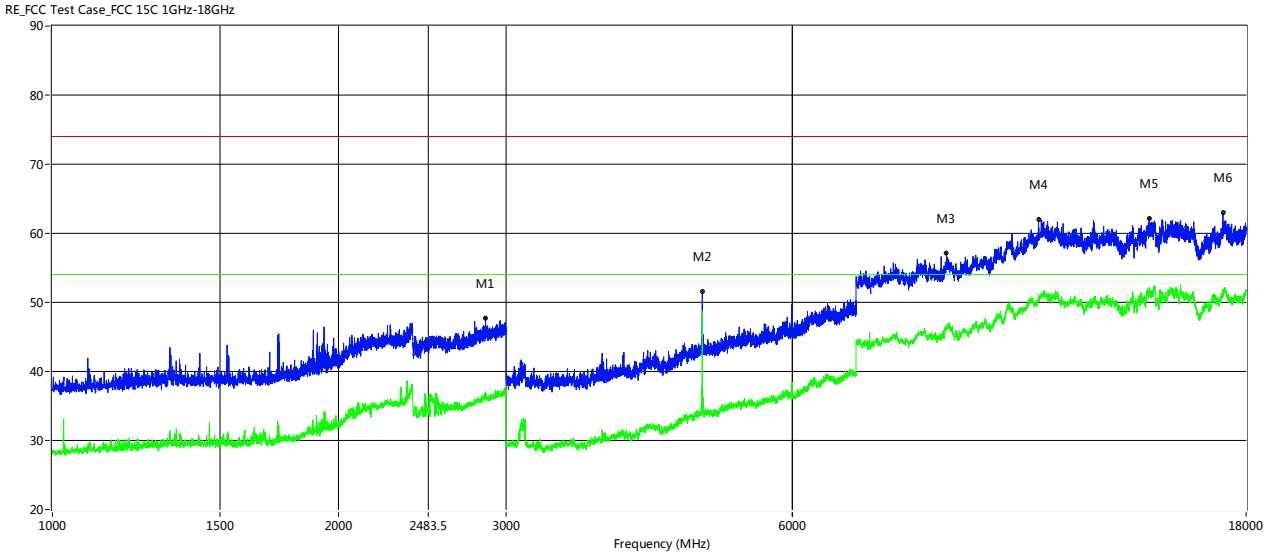
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	60.08	-20.67	39.41	43.50	-4.09	peak
2	198.7800	61.21	-21.12	40.09	43.50	-3.41	peak
3	399.5700	48.70	-11.16	37.54	46.00	-8.46	peak
4	531.4900	38.16	-7.37	30.79	46.00	-15.21	peak
5	799.2100	34.90	-2.04	32.86	46.00	-13.14	peak
6	934.0400	30.39	0.89	31.28	46.00	-14.72	peak

Note: Measurement = Reading Level + Correct Factor.

9.3. SPURIOUS EMISSIONS (1GHz-18GHz)

802.11 b mode

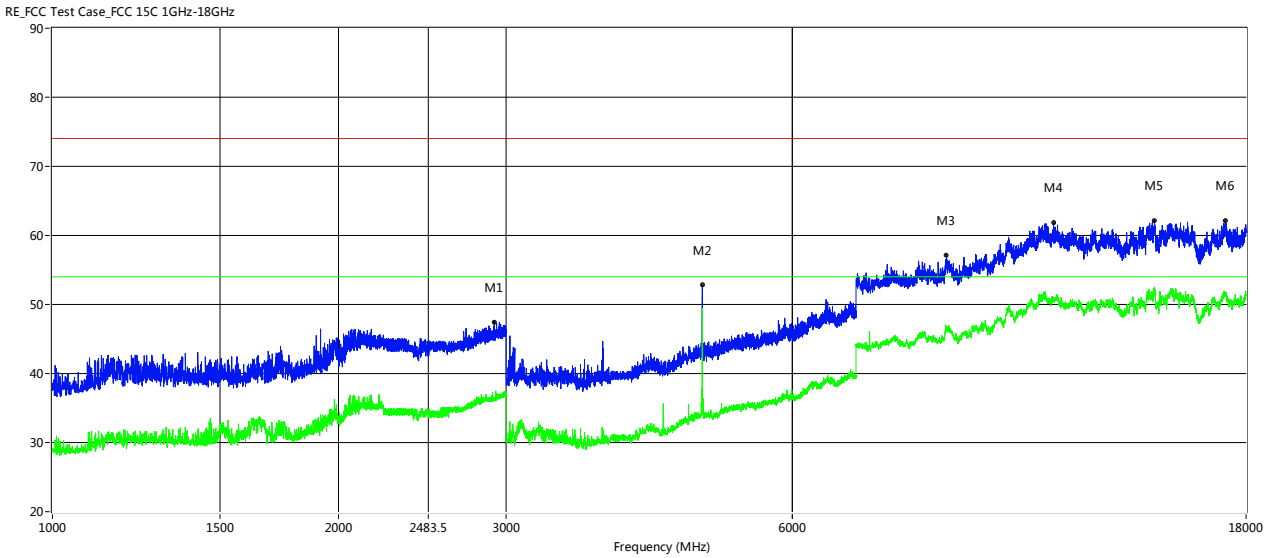
HARMONICS AND SPURIOUS EMISSIONS (01 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2855.000	47.77	36.68	5.61	74.0	54.0	-17.32	Horizontal	Pass
4824.000	51.54	48.74	-6.84	74.0	54.0	-5.26	Horizontal	Pass
8713.250	57.14	46.69	5.12	74.0	54.0	-7.31	Horizontal	Pass
10888.500	61.93	51.10	9.31	74.0	54.0	-2.90	Horizontal	Pass
14240.750	62.19	52.12	11.28	74.0	54.0	-1.88	Horizontal	Pass
17018.250	62.93	50.87	9.89	74.0	54.0	-3.13	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

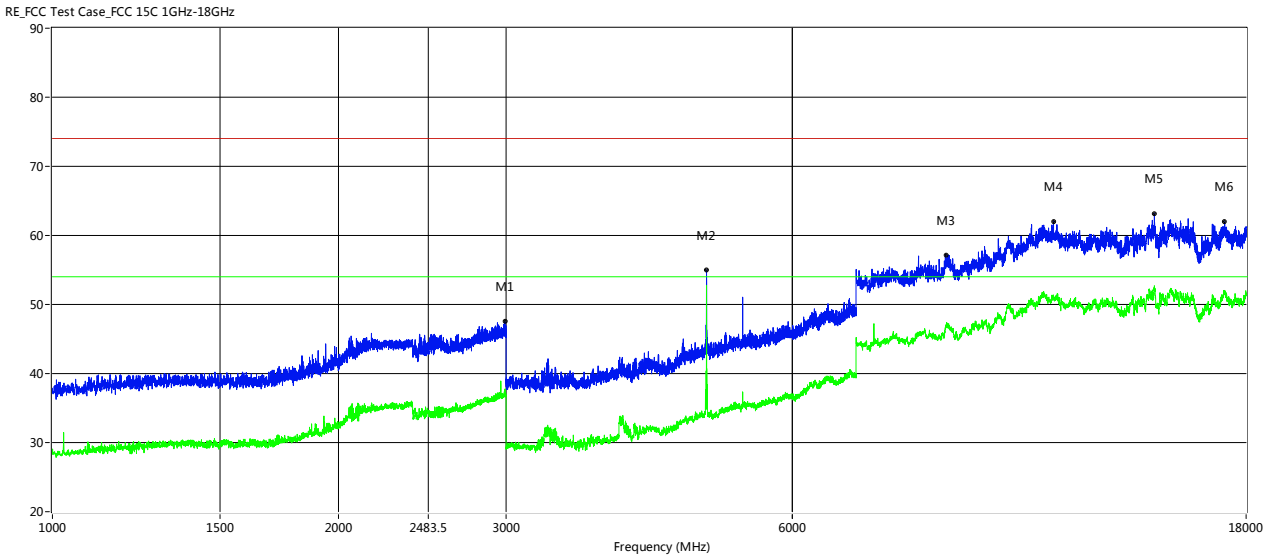
HARMONICS AND SPURIOUS EMISSIONS (01 CHANNEL, VERTICAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2915.500	47.44	36.24	5.70	74.0	54.0	-17.76	Vertical	Pass
4824.000	52.83	49.44	-6.84	74.0	54.0	-4.56	Vertical	Pass
8716.000	57.18	46.63	5.11	74.0	54.0	-7.37	Vertical	Pass
11292.750	61.84	50.92	9.54	74.0	54.0	-3.08	Vertical	Pass
14419.500	62.20	52.19	11.19	74.0	54.0	-1.81	Vertical	Pass
17122.750	62.19	51.30	10.35	74.0	54.0	-2.70	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

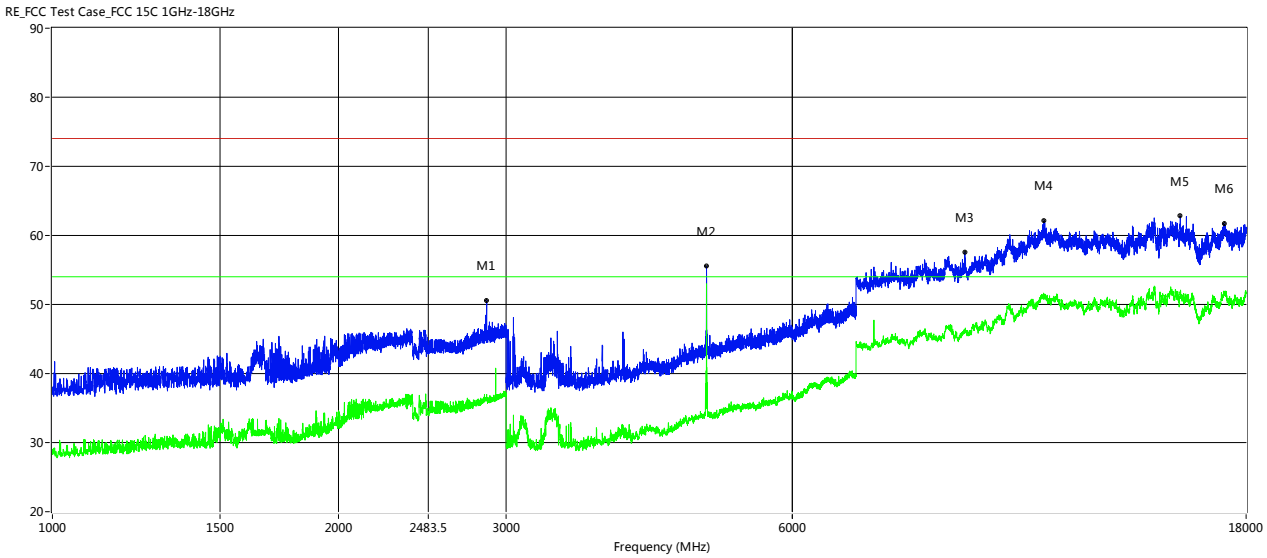
HARMONICS AND SPURIOUS EMISSIONS (06 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2992.000	47.53	37.77	6.08	74.0	54.0	-16.23	Horizontal	Pass
4874.000	55.01	52.75	-6.54	74.0	54.0	-1.25	Horizontal	Pass
8699.500	57.20	46.95	5.15	74.0	54.0	-7.05	Horizontal	Pass
11292.750	62.07	50.94	9.54	74.0	54.0	-3.06	Horizontal	Pass
14416.750	63.16	52.71	11.23	74.0	54.0	-1.29	Horizontal	Pass
17092.500	61.98	51.75	10.43	74.0	54.0	-2.25	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

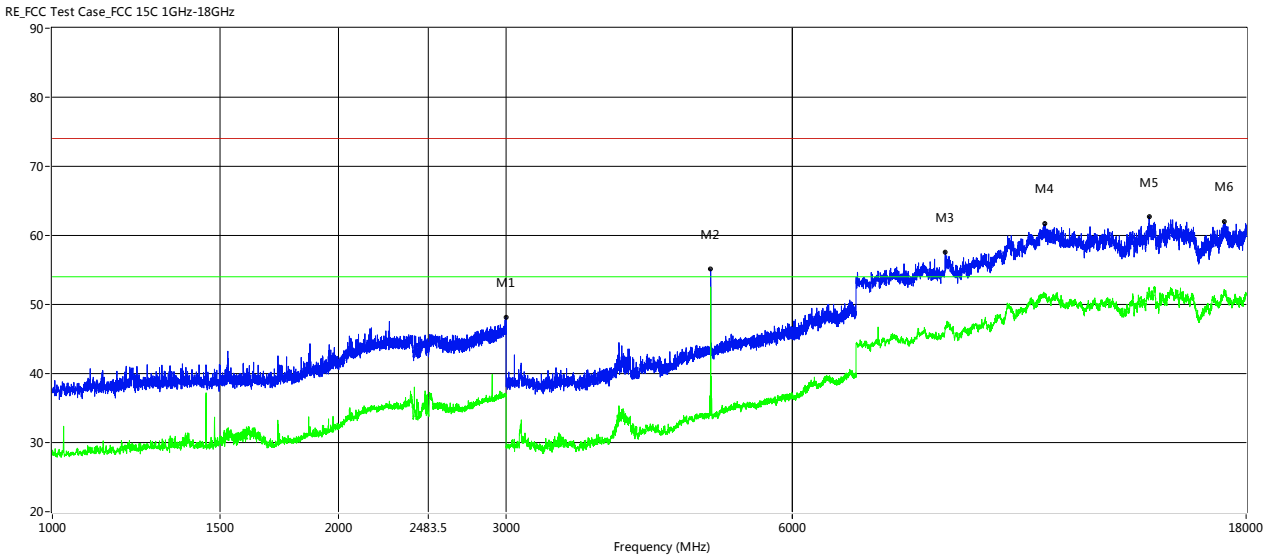
HARMONICS AND SPURIOUS EMISSIONS (06 CHANNEL, VERTICAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2862.500	50.56	36.98	5.61	74.0	54.0	-17.02	Vertical	Pass
4874.000	55.55	53.00	-6.54	74.0	54.0	-1.00	Vertical	Pass
9109.250	57.53	46.24	4.77	74.0	54.0	-7.76	Vertical	Pass
11037.000	62.12	51.50	10.02	74.0	54.0	-2.50	Vertical	Pass
15349.000	62.80	51.70	10.46	74.0	54.0	-2.30	Vertical	Pass
17081.500	61.68	51.46	10.35	74.0	54.0	-2.54	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

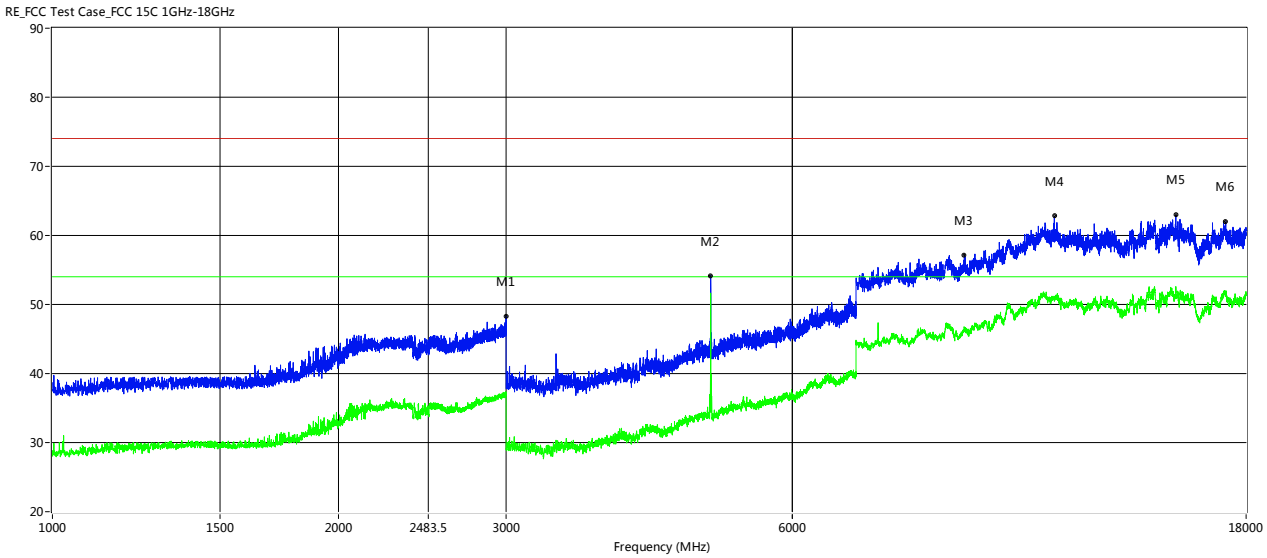
HARMONICS AND SPURIOUS EMISSIONS (11 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2999.500	48.09	36.87	6.11	74.0	54.0	-17.13	Horizontal	Pass
4924.000	59.14	52.53	-6.39	74.0	54.0	-3.53	Horizontal	Pass
8688.500	57.55	46.46	5.03	74.0	54.0	-7.54	Horizontal	Pass
11064.500	61.67	51.35	9.87	74.0	54.0	-2.65	Horizontal	Pass
14238.000	62.77	52.32	11.31	74.0	54.0	-1.68	Horizontal	Pass
17078.750	61.96	51.52	10.33	74.0	54.0	-2.48	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

HARMONICS AND SPURIOUS EMISSIONS (11 CHANNEL, VERTICAL)

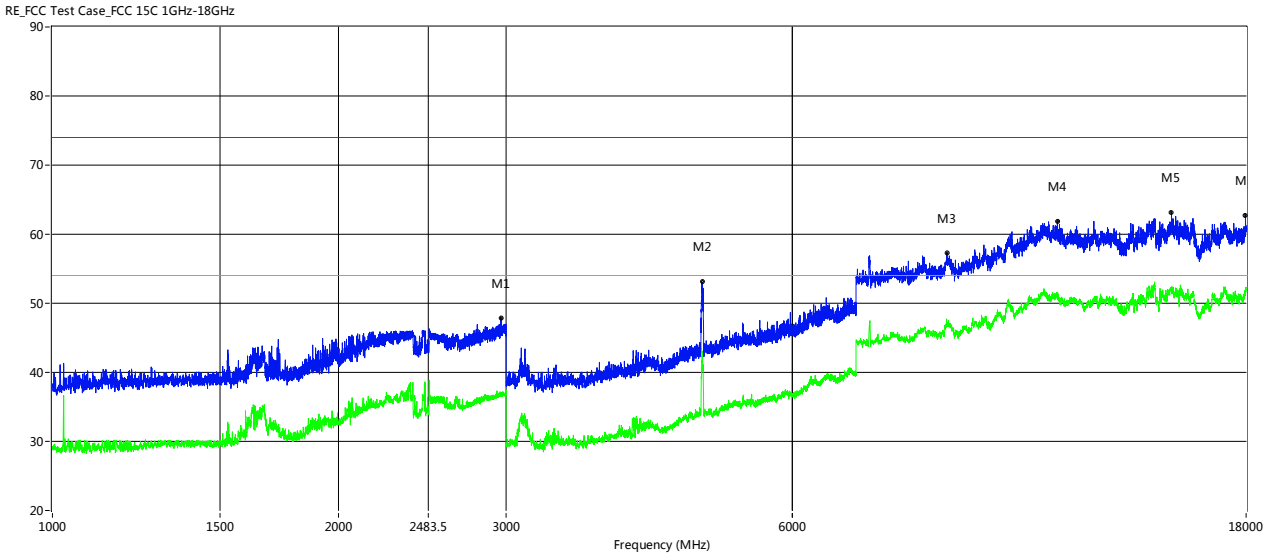


Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
3000.000	48.32	37.00	6.11	74.0	54.0	-17.00	Vertical	Pass
4924.000	54.19	51.66	-6.39	74.0	54.0	-2.34	Vertical	Pass
9098.250	57.12	46.55	4.81	74.0	54.0	-7.45	Vertical	Pass
11314.750	62.81	51.07	9.56	74.0	54.0	-2.93	Vertical	Pass
15184.000	62.96	51.81	10.92	74.0	54.0	-2.19	Vertical	Pass
17133.750	61.97	51.98	10.29	74.0	54.0	-2.02	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

802.11 g mode

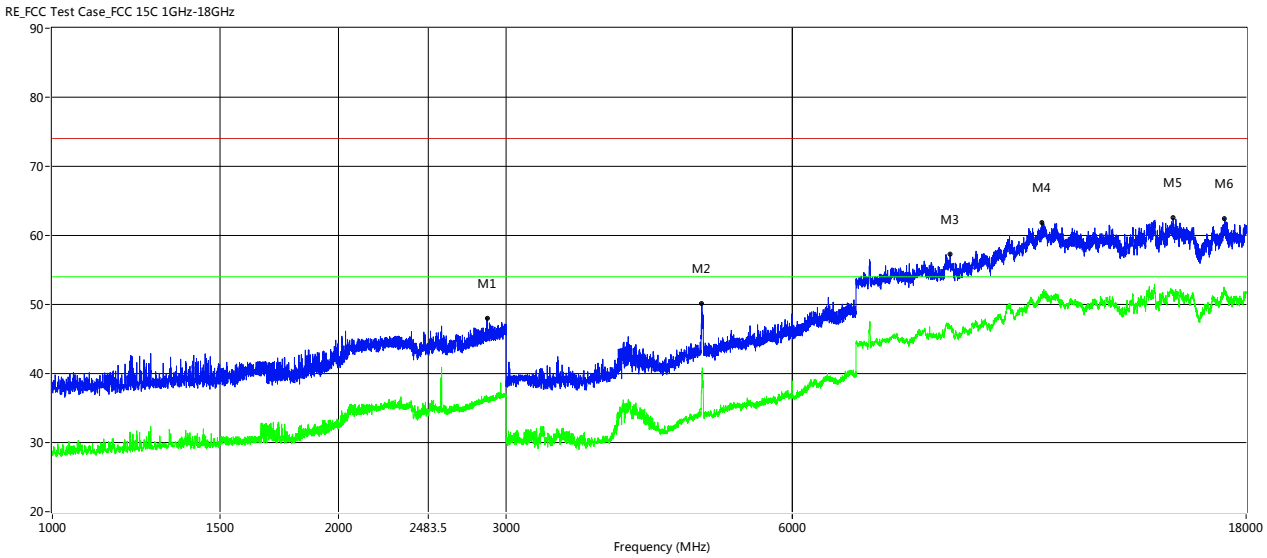
HARMONICS AND SPURIOUS EMISSIONS (01 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2963.500	47.92	36.84	5.95	74.0	54.0	-17.16	Horizontal	Pass
4822.000	53.07	43.02	-6.85	74.0	54.0	-10.98	Horizontal	Pass
8724.250	57.27	47.25	5.08	74.0	54.0	-6.75	Horizontal	Pass
11397.250	61.81	51.56	9.74	74.0	54.0	-2.44	Horizontal	Pass
15027.250	63.19	51.87	10.37	74.0	54.0	-2.13	Horizontal	Pass
17975.251	62.73	51.57	11.42	74.0	54.0	-2.43	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

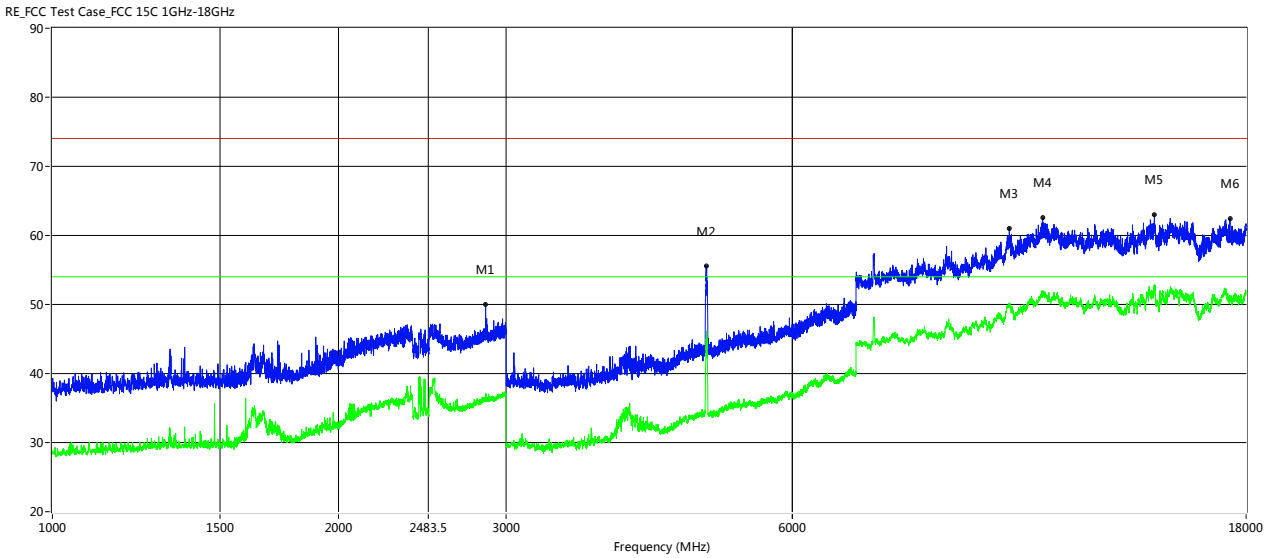
HARMONICS AND SPURIOUS EMISSIONS (01 CHANNEL, VERTICAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2864.500	48.06	36.67	5.61	74.0	54.0	-17.33	Vertical	Pass
4820.000	50.21	39.60	-6.86	74.0	54.0	-14.40	Vertical	Pass
8790.250	57.25	46.74	4.88	74.0	54.0	-7.26	Vertical	Pass
10973.750	61.86	51.49	10.02	74.0	54.0	-2.51	Vertical	Pass
15087.750	62.52	51.65	10.32	74.0	54.0	-2.35	Vertical	Pass
17098.000	62.49	51.81	10.47	74.0	54.0	-2.19	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

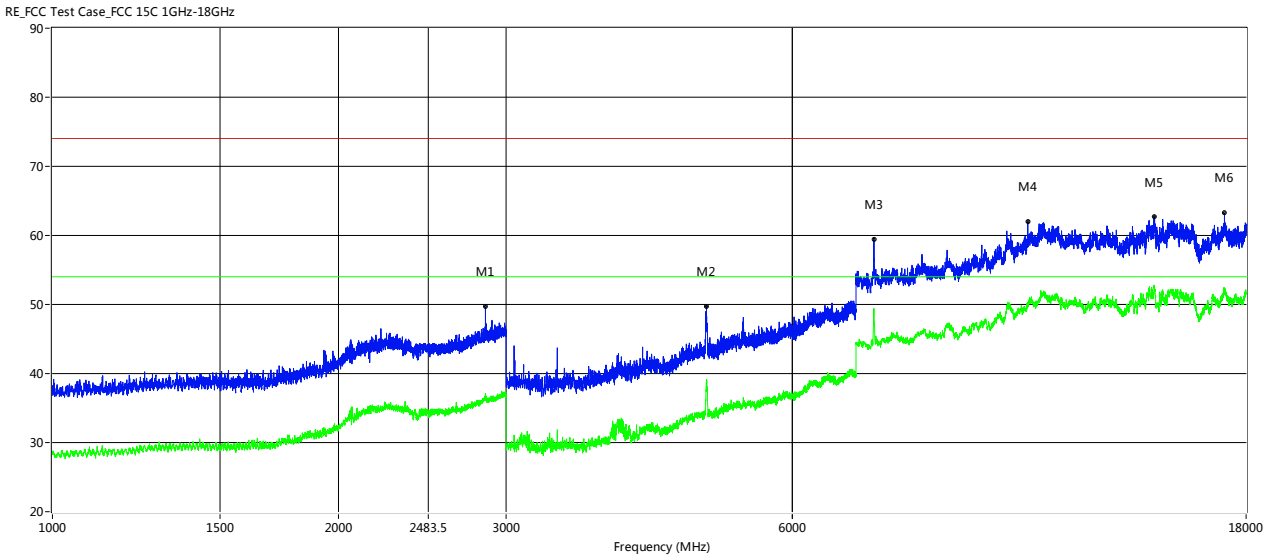
HARMONICS AND SPURIOUS EMISSIONS (06 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2855.500	49.99	37.12	5.61	74.0	54.0	-16.88	Horizontal	Pass
4870.000	55.59	44.99	-6.57	74.0	54.0	-9.01	Horizontal	Pass
10146.000	61.03	50.16	7.15	74.0	54.0	-3.84	Horizontal	Pass
10998.500	62.58	51.59	10.21	74.0	54.0	-2.41	Horizontal	Pass
14416.750	63.00	52.51	11.23	74.0	54.0	-1.49	Horizontal	Pass
17307.001	62.48	51.03	10.39	74.0	54.0	-2.97	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

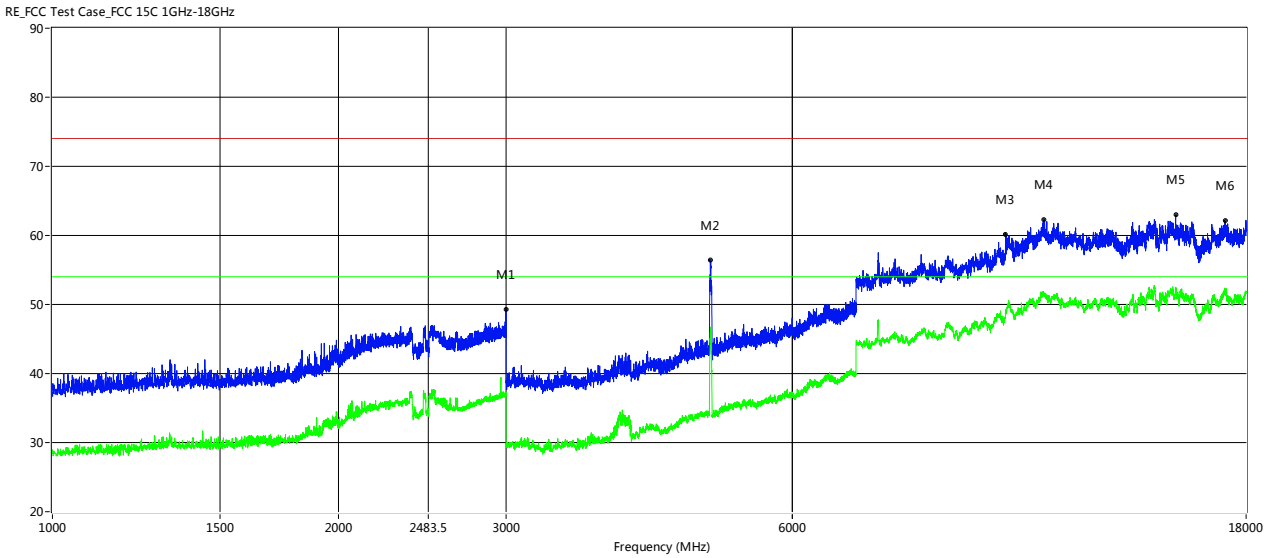
HARMONICS AND SPURIOUS EMISSIONS (06 CHANNEL, VERTICAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2854.000	49.65	37.10	5.61	74.0	54.0	-16.90	Vertical	Pass
4873.000	49.75	38.64	-6.55	74.0	54.0	-15.36	Vertical	Pass
7310.750	59.38	49.43	3.36	74.0	54.0	-4.57	Vertical	Pass
10610.750	62.02	50.33	8.13	74.0	54.0	-3.67	Vertical	Pass
14425.000	62.76	52.07	11.13	74.0	54.0	-1.93	Vertical	Pass
17081.500	63.25	51.81	10.35	74.0	54.0	-2.19	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

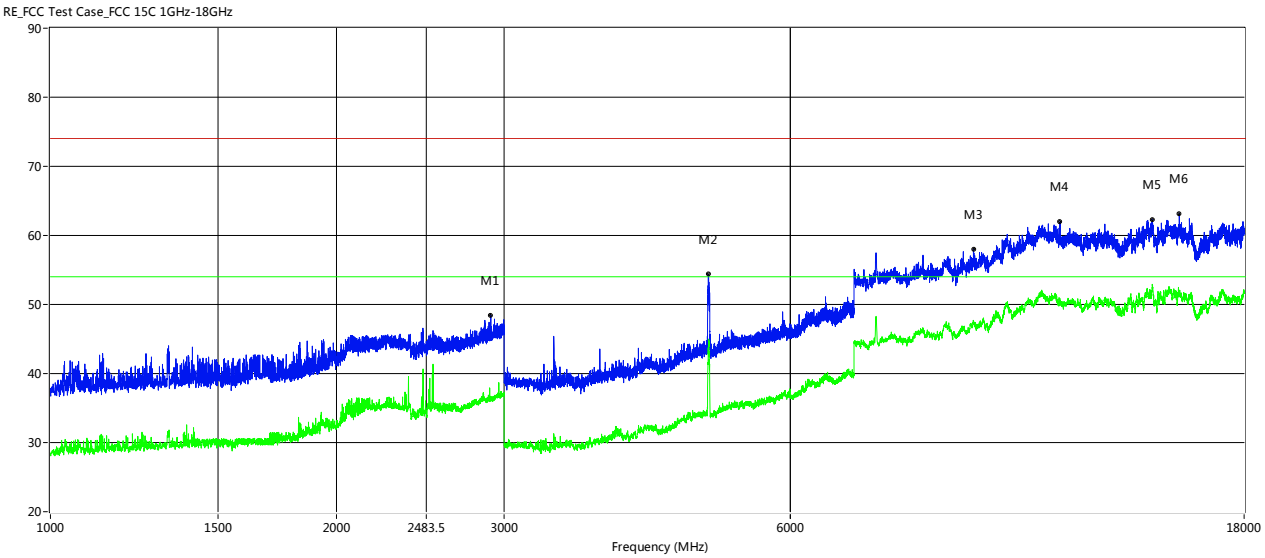
HARMONICS AND SPURIOUS EMISSIONS (11 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2999.500	49.36	37.35	6.11	74.0	54.0	-16.65	Horizontal	Pass
4920.000	56.42	45.94	-6.39	74.0	54.0	-8.06	Horizontal	Pass
10060.750	60.18	48.73	6.38	74.0	54.0	-5.27	Horizontal	Pass
11031.500	62.25	51.60	10.05	74.0	54.0	-2.40	Horizontal	Pass
15175.750	62.94	52.03	10.86	74.0	54.0	-1.97	Horizontal	Pass
17103.500	62.15	51.76	10.46	74.0	54.0	-2.24	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

HARMONICS AND SPURIOUS EMISSIONS (11 CHANNEL, VERTICAL)

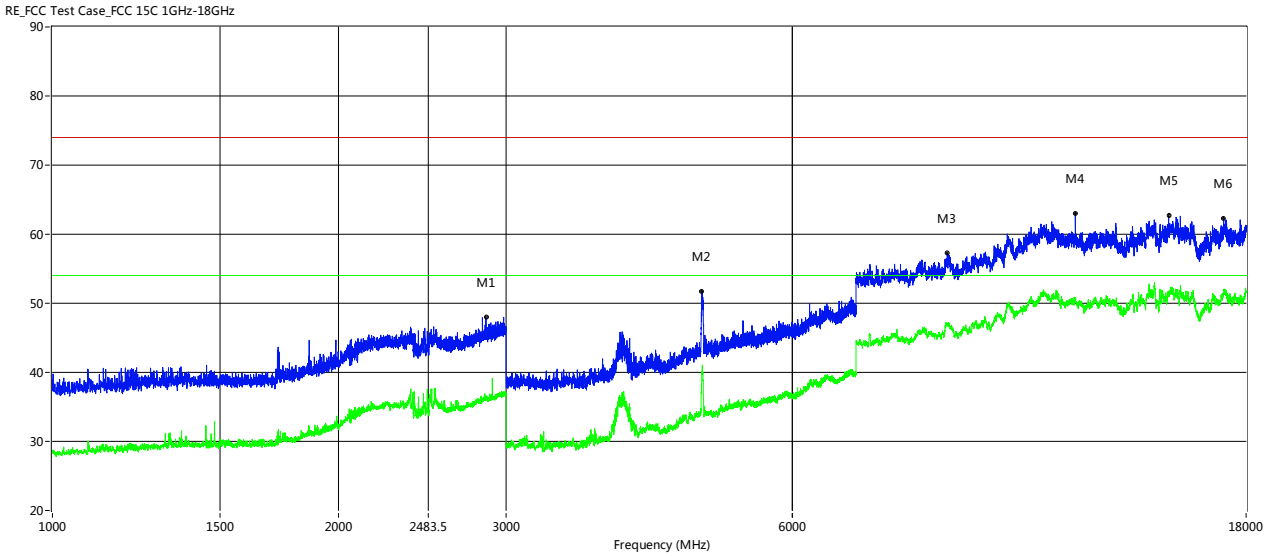


Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2905.000	48.43	36.70	5.64	74.0	54.0	-17.30	Vertical	Pass
4923.000	54.36	44.18	-6.39	74.0	54.0	-9.82	Vertical	Pass
9348.500	58.04	47.23	5.20	74.0	54.0	-6.77	Vertical	Pass
11526.500	62.01	50.43	9.98	74.0	54.0	-3.57	Vertical	Pass
14416.750	62.29	52.72	11.23	74.0	54.0	-1.28	Vertical	Pass
15390.250	63.17	51.87	10.87	74.0	54.0	-2.13	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

802.11 n20 mode

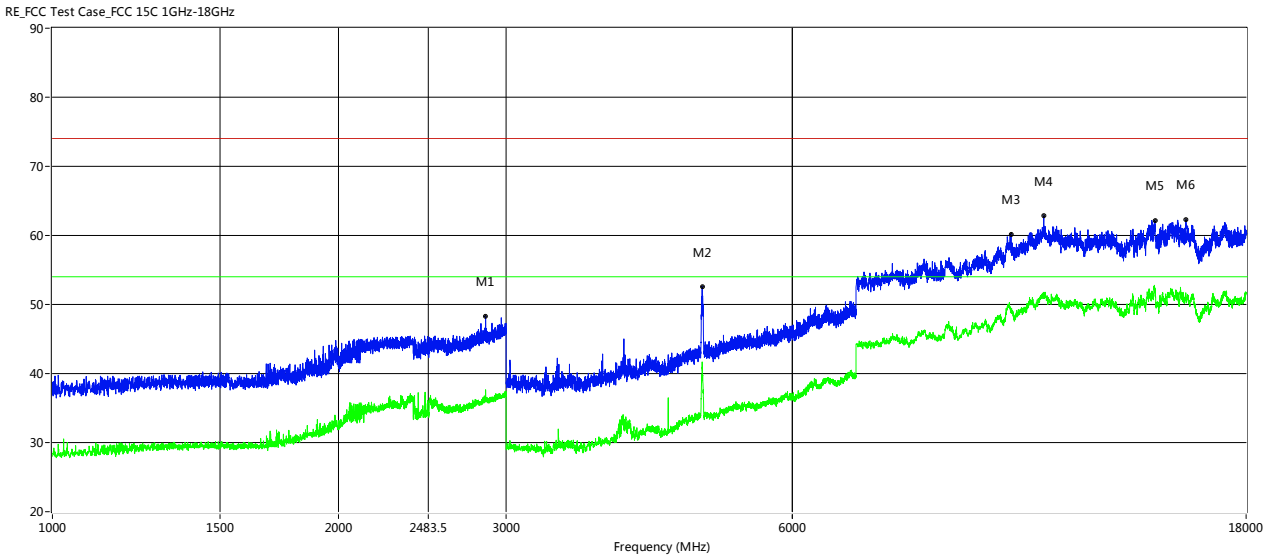
HARMONICS AND SPURIOUS EMISSIONS (01 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2857.500	47.94	36.21	5.61	74.0	54.0	-17.79	Horizontal	Pass
4820.000	51.78	39.71	-6.86	74.0	54.0	-14.29	Horizontal	Pass
8729.750	57.27	47.00	5.07	74.0	54.0	-7.00	Horizontal	Pass
11906.000	63.01	50.54	8.70	74.0	54.0	-3.46	Horizontal	Pass
14922.750	62.66	51.54	10.00	74.0	54.0	-2.46	Horizontal	Pass
17048.500	62.32	51.43	10.11	74.0	54.0	-2.57	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

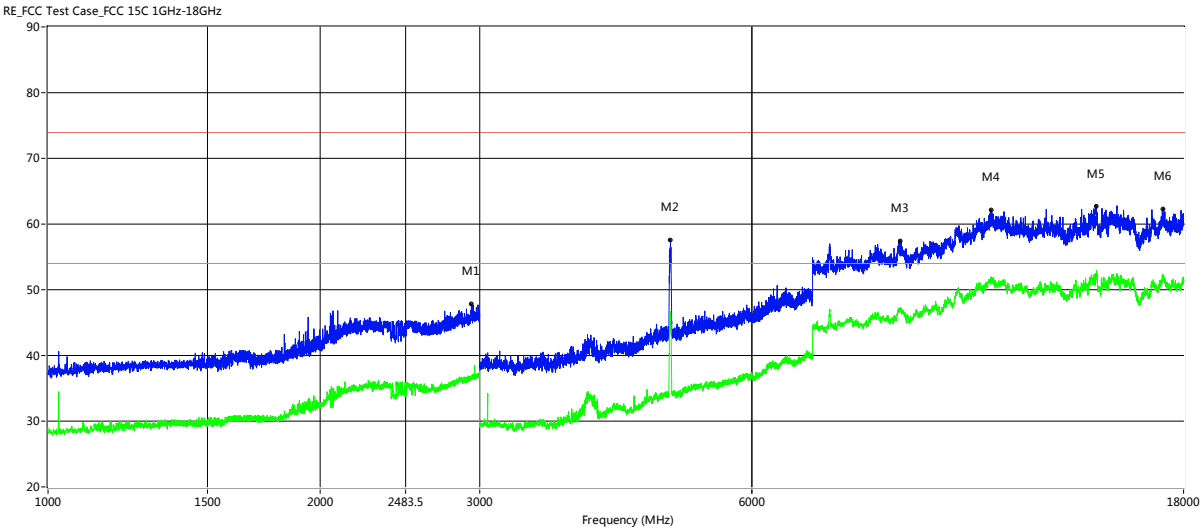
HARMONICS AND SPURIOUS EMISSIONS (01 CHANNEL, VERTICAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2855.500	48.30	37.66	5.61	74.0	54.0	-16.34	Vertical	Pass
4823.000	52.62	41.68	-6.84	74.0	54.0	-12.32	Vertical	Pass
10187.250	60.20	49.15	7.12	74.0	54.0	-4.85	Vertical	Pass
11028.750	62.87	51.41	10.06	74.0	54.0	-2.59	Vertical	Pass
14433.250	62.20	52.40	11.03	74.0	54.0	-1.60	Vertical	Pass
15560.750	62.26	51.11	10.77	74.0	54.0	-2.89	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

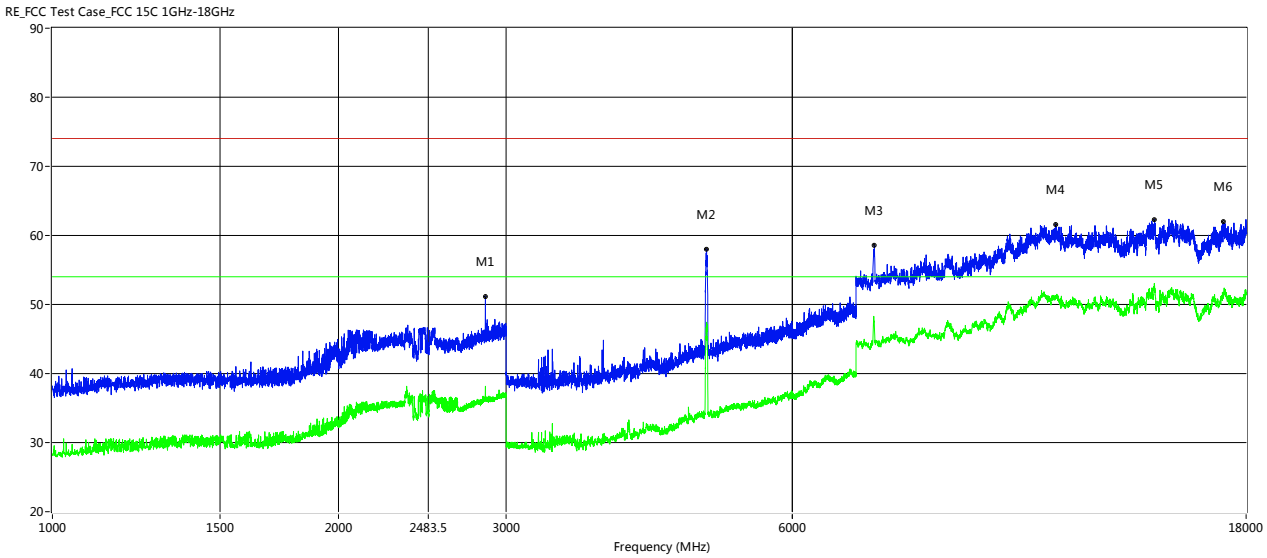
HARMONICS AND SPURIOUS EMISSIONS (06 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2937.500	47.79	36.79	5.82	74.0	54.0	-17.21	Horizontal	Pass
4877.000	57.57	46.50	-6.53	74.0	54.0	-7.50	Horizontal	Pass
8754.500	57.45	47.24	4.99	74.0	54.0	-6.76	Horizontal	Pass
11026.000	62.10	51.92	10.08	74.0	54.0	-2.08	Horizontal	Pass
14416.750	62.65	52.57	11.23	74.0	54.0	-1.43	Horizontal	Pass
17078.750	62.30	51.61	10.33	74.0	54.0	-2.39	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

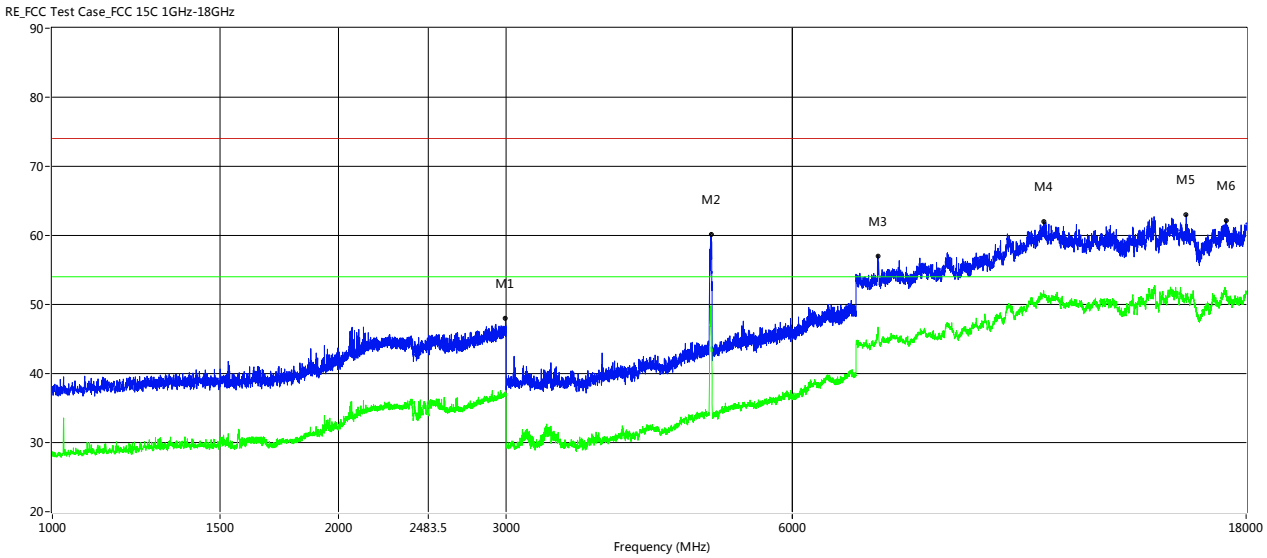
HARMONICS AND SPURIOUS EMISSIONS (06 CHANNEL, VERTICAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2853.500	51.19	38.16	5.61	74.0	54.0	-15.84	Vertical	Pass
4875.000	58.01	46.71	-6.54	74.0	54.0	-7.29	Vertical	Pass
7319.000	58.53	46.72	3.33	74.0	54.0	-7.28	Vertical	Pass
11345.000	61.63	50.95	9.63	74.0	54.0	-3.05	Vertical	Pass
14425.000	62.31	52.30	11.13	74.0	54.0	-1.70	Vertical	Pass
17037.500	61.93	51.38	10.03	74.0	54.0	-2.62	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

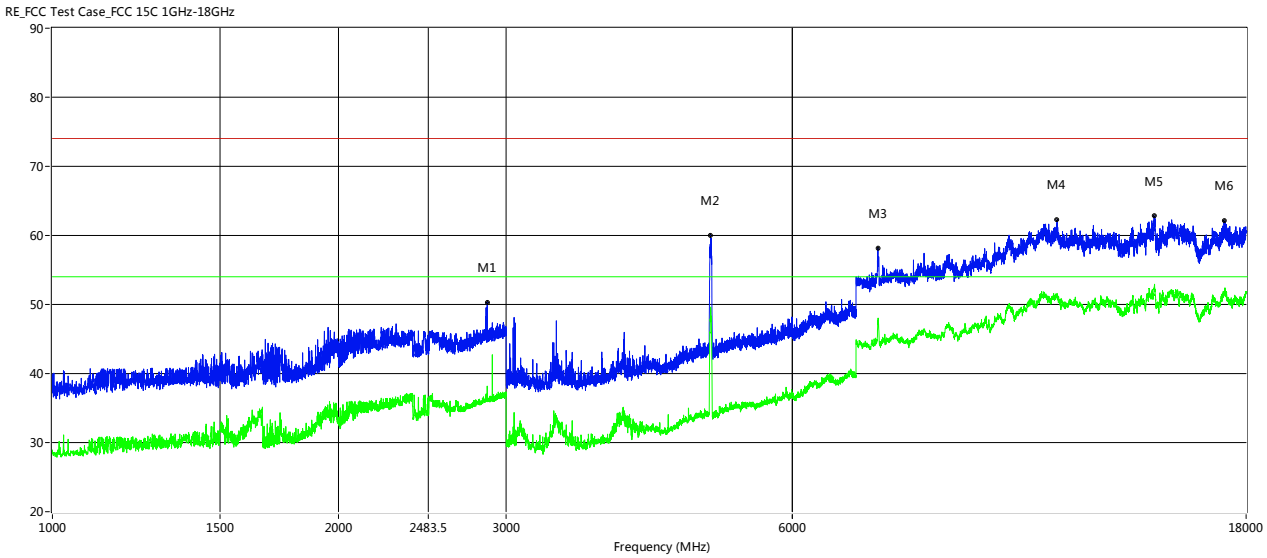
HARMONICS AND SPURIOUS EMISSIONS (11 CHANNEL, HORIZONTAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2995.500	47.99	37.26	6.09	74.0	54.0	-16.74	Horizontal	Pass
4928.000	60.13	49.69	-6.39	74.0	54.0	-4.31	Horizontal	Pass
7382.250	57.00	46.72	3.05	74.0	54.0	-7.28	Horizontal	Pass
11028.750	62.01	51.79	10.06	74.0	54.0	-2.21	Horizontal	Pass
15571.750	63.04	51.39	10.79	74.0	54.0	-2.61	Horizontal	Pass
17158.500	62.18	51.49	10.15	74.0	54.0	-2.51	Horizontal	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

HARMONICS AND SPURIOUS EMISSIONS (11 CHANNEL, VERTICAL)



Frequency (MHz)	Peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2865.500	50.34	37.61	5.61	74.0	54.0	-16.39	Vertical	Pass
4922.000	60.04	47.87	-6.39	74.0	54.0	-6.13	Vertical	Pass
7382.250	58.17	47.29	3.05	74.0	54.0	-6.71	Vertical	Pass
11391.750	62.26	51.60	9.73	74.0	54.0	-2.40	Vertical	Pass
14408.500	62.86	52.35	11.32	74.0	54.0	-1.65	Vertical	Pass
17065.000	62.15	51.66	10.23	74.0	54.0	-2.34	Vertical	Pass

Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier + BRF Factor.
2. Margin = Limit - Emission Level
3. Tests were performed in three frequency range 1GHz~3GHz, 3GHz~13GHz, 13GHz~18GHz.
4. Above 18GHz emissions are mainly from the environment noise, not show in report.

9.4. SPURIOUS EMISSIONS BELOW 30M

Freq.	Reading	Limit	Margin	State	Test Result
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F	
--	--	--	--	--	PASS
--	--	--	--	--	PASS

Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits (dBuv) + distance extrapolation factor.

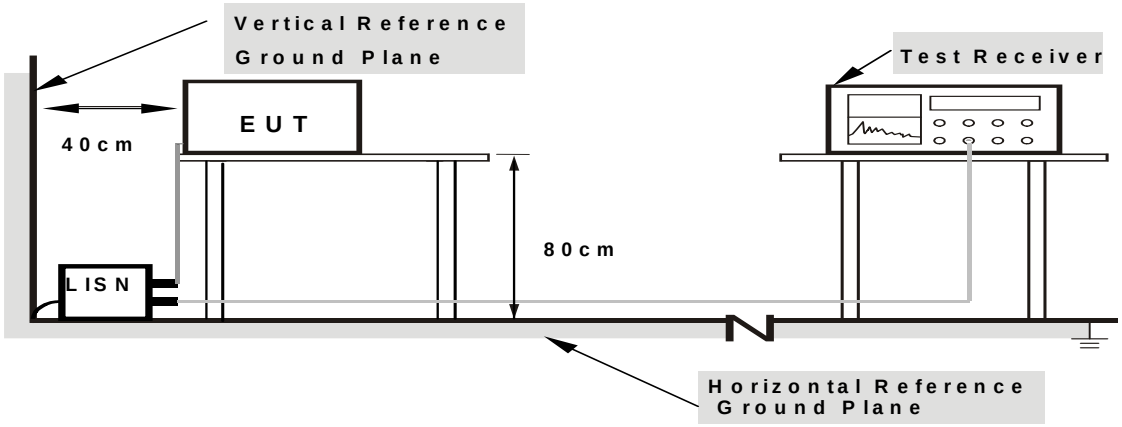
10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to FCC §15.207 (a) and RSS-Gen Clause 8.8

FREQUENCY (MHz)	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

TEST SETUP AND PROCEDURE



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

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

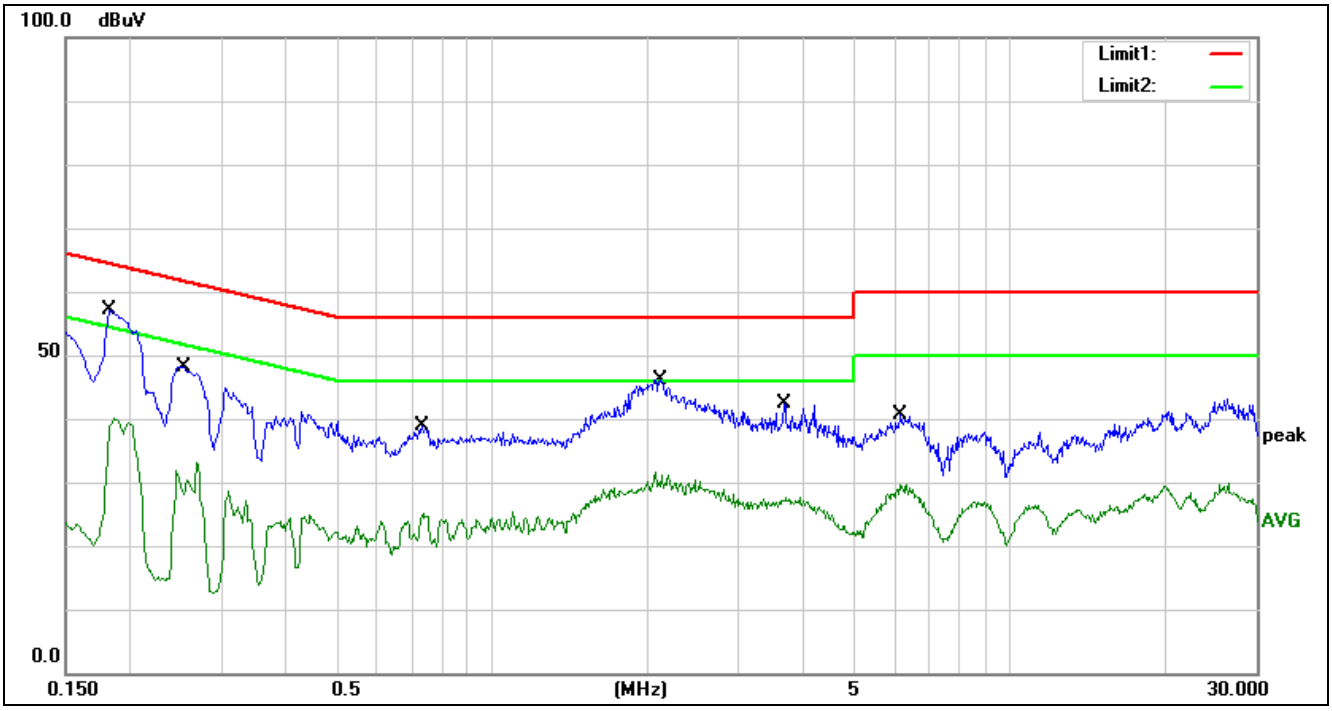
The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.3V

TEST RESULTS

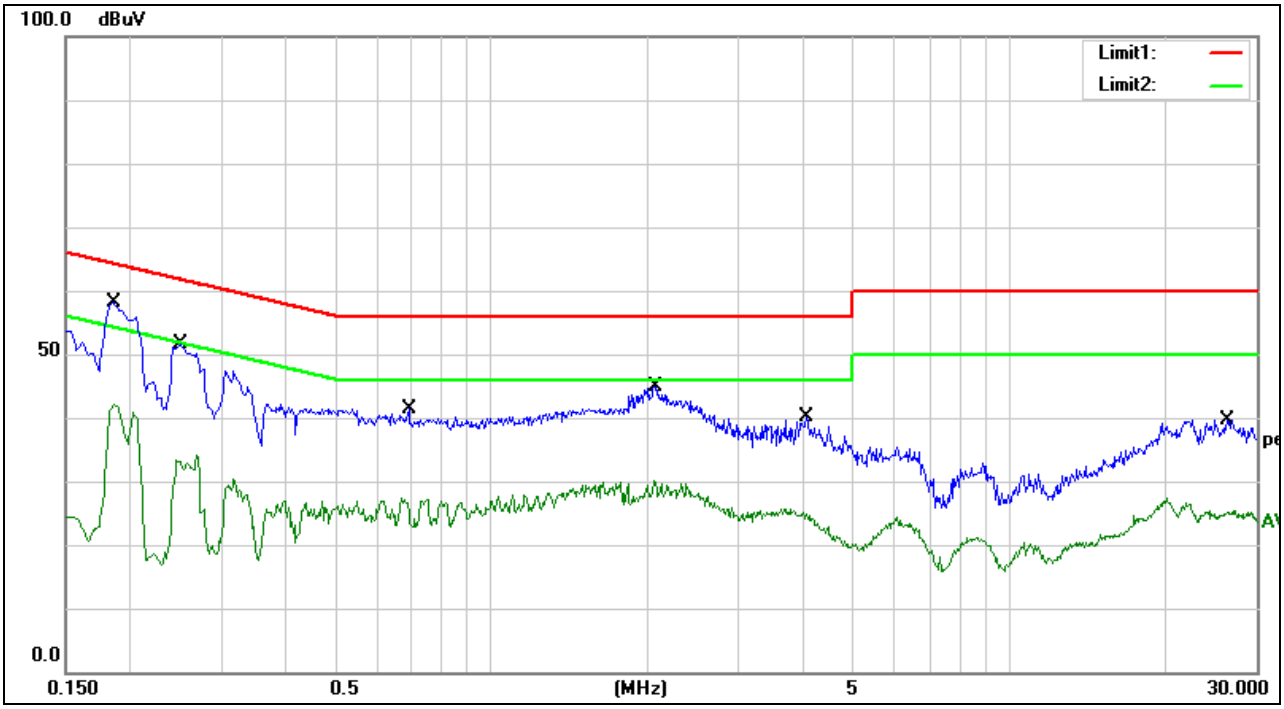
NEUTRAL N RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct dB	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1820	36.66	20.36	57.02	64.39	-7.37	QP
2	0.1820	19.68	20.36	40.04	54.39	-14.35	AVG
3	0.2540	27.57	20.61	48.18	61.63	-13.45	QP
4	0.2540	12.43	20.61	33.04	51.63	-18.59	AVG
5	0.7340	18.62	20.36	38.98	56.00	-17.02	QP
6	0.7340	4.71	20.36	25.07	46.00	-20.93	AVG
7	2.1140	25.79	20.39	46.18	56.00	-9.82	QP
8	2.1140	11.27	20.39	31.66	46.00	-14.34	AVG
9	3.6700	21.80	20.49	42.29	56.00	-13.71	QP
10	3.6700	7.06	20.49	27.55	46.00	-18.45	AVG
11	6.1620	19.98	20.56	40.54	60.00	-19.46	QP
12	6.1620	9.01	20.56	29.57	50.00	-20.43	AVG

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

LINE L RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct dB	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1860	37.87	20.31	58.18	64.21	-6.03	QP
2	0.1860	21.84	20.31	42.15	54.21	-12.06	AVG
3	0.2500	31.06	20.53	51.59	61.76	-10.17	QP
4	0.2500	13.66	20.53	34.19	51.76	-17.57	AVG
5	0.6900	20.94	20.36	41.30	56.00	-14.70	QP
6	0.6900	6.98	20.36	27.34	46.00	-18.66	AVG
7	2.0660	24.62	20.30	44.92	56.00	-11.08	QP
8	2.0660	9.77	20.30	30.07	46.00	-15.93	AVG
9	4.0620	19.79	20.40	40.19	56.00	-15.81	QP
10	4.0620	5.23	20.40	25.63	46.00	-20.37	AVG
11	26.3700	17.04	22.69	39.73	60.00	-20.27	QP
12	26.3700	4.57	22.69	27.26	50.00	-22.74	AVG

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

11. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(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.

ANTENNA CONNECTOR

EUT has a PCB Antenna without antenna connector.

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.

Test photos

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

END OF REPORT