TEST REPORT

Report No.:	BCTC2308201707E
Applicant:	Dongguan Huaxin Lighting Electrical Appliances Co., Ltd
Product Name:	ESP32 WROOM 32E - WIFI VOICE CONTROL
Model/Type reference:	HXCS8686C-A
Tested Date:	2023-08-07 to 2023-10-23
Issued Date:	2023-11-08

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2BCI4-HXCS8686C-A

Product Name:	ESP32 WROOM 32E - WIFI VOICE CONTROL
Trademark:	Esp32
Model/Type reference:	HXCS8686C-A, MGC001, MGC002, MGC003, MGC004, MGC005, MGC006, MGC007, MGC008, MGC009, MGC010, MGC011, MGC012, MGC013, MGC014, MGC015, MGC016, MGC017, MGC018, MGC019, MGC020
Prepared For:	Dongguan Huaxin Lighting Electrical Appliances Co., Ltd
Address:	Room 201, No. 10, 9th St., ChunCheng Rd., QiShi Town, GuangDong, Dongguan City China 523500
Manufacturer:	Dongguan Huaxin Lighting Electrical Appliances Co., Ltd
Address:	Room 201, No. 10, 9th St., ChunCheng Rd., QiShi Town, GuangDong, Dongguan City China 523500
Prepared By:	Shenzhen BCTC Testing Co., Ltd
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2023-08-07
Sample tested Date:	2023-08-07 to 2023-10-23
Report No.:	BCTC2308201707E
Test Standards:	FCC Part15.247 ANSI C63.10-2013
Test Results:	PASS
Remark:	This is WIFI-2.4GHz band radio test report.

Tested by:

Brave Zeng/ Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

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1. Version

Report No.	Issue Date	Description	Approved
BCTC2308201707E	2023-11-08	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
1	Conducted Emission	15.207	PASS
2	6dB Bandwidth	15.247 (a)(2)	PASS
3	Peak Output Power	15.247 (b)	PASS
4	Radiated Spurious Emission	15.247 (d)	PASS
5	Power Spectral Density	15.247 (e)	PASS
6	Restricted Band of Operation	15.205	PASS
7	Band Edge (Out of Band Emissions)	15.247 (d)	PASS
8	Antenna Requirement	15.203	PASS
NOTE1: According to FCC OET KDB 558074, the report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.			

3. Measurement Uncertainty

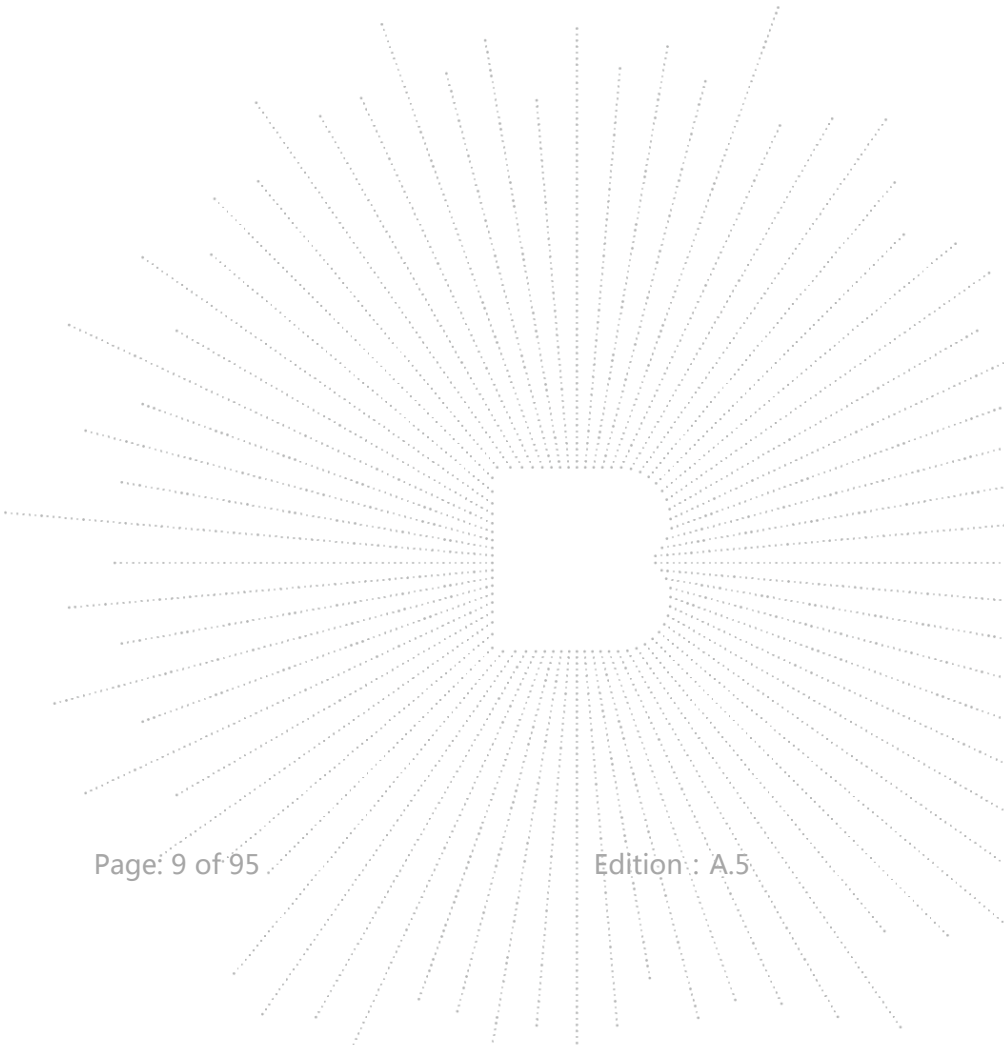
Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(9KHz-30MHz)	U=3.7dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission (150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59℃

4. Product Information and Test Setup

4.1 Product Information

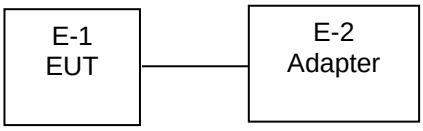
Model/Type Ref.	HXCS8686C-A, MGC001, MGC002, MGC003, MGC004, MGC005, MGC006, MGC007, MGC008, MGC009, MGC010, MGC011, MGC012, MGC013, MGC014, MGC015, MGC016, MGC017, MGC018, MGC019, MGC020
Model differences:	The following models of units we produce are identical in electrical, mechanical and physical structure; The only difference is the model name and appearancethe test model is HXCS8686C-A and the test results are applicable to other tests.
Hardware Version:	N/A
Software Version:	N/A
IEEE 802.11 WLAN Mode Supported	802.11b 802.11g 802.11n(20MHz channel bandwidth) 802.11n(40MHz channel bandwidth)
Operation Frequency:	802.11b/g/n20MHz:2412~2462 MHz 802.11n/ 40MHz:2422~2452 MHz
Type of Modulation:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Number Of Channel:	11 channels for 802.11b/g/n(HT20); 7 Channels for 802.11n(HT40)
Antenna installation:	Internal antenna
Antenna Gain:	3.76 dBi
power supply:	AC 100-240,50/60Hz
Adapter:	Mode 1: Model: JT-DC300V0120-C Input: 120V/60Hz 0.2A Output: 30V0.12A Mode 2: Model: JT-DC300V0240-C Input: 120V/60Hz 0.2A Output: 30V0.24A Mode 3: Model: JT-DC300V0300-D Input: 120V/60Hz 0.3A Output: 30V0.3A Mode 4: Model: JT-DC300V0500-F Input: 120V/60Hz 0.5A Output: 30V0.5A Mode 5: Model: JT-DC300V0666-G Input: 120V/60Hz 0.8A Output: 30V0.66A Mode 6: Model: JT-DC300V0800-G Input:120V/60Hz 0.8A Output: 30V0.8A



4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP Photographs for the actual connections between Product and support equipment.

Radiated Spurious Emission & Conducted Emission:



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	ESP32 WROOM 32E - WIFI VOICE CONTROL	N/A	HXCS8686C-A	N/A	EUT
E-2	Adapter	N/A	N/A	N/A	Adapter

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	N/A	N/A

Notes:
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

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

4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

For All Mode	Description	Modulation Type
Mode 1	CH 01	802.11b
Mode 2	CH 06	
Mode 3	CH 11	
Mode 4	CH 01	802.11g
Mode 5	CH 06	
Mode 6	CH 11	
Mode 7	CH 01	802.11n20
Mode 8	CH 06	
Mode 9	CH 11	
Mode 10	CH 03	802.11n 40
Mode 11	CH 06	
Mode 12	CH 09	
Mode 13	Link mode (Conducted emission and Radiated emission)	

Notes:

1. The measurements are performed at the highest, middle, lowest available channels.
2. The measurements are performed at all Bit Rate of Transmitter, the worst data was reported
3. According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b,6Mbps for 802.11g,13Mbps for 802.11n20, 802.11n40.

4.6 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

Test software Version	CMD		
Frequency	2412 MHz	2437 MHz	2462 MHz
Parameters	DEF	DEF	DEF
Frequency	2422MHz	2437MHz	2452MHz
Parameters	DEF	DEF	DEF

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address:1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.
FCC Test Firm Registration Number: 712850
A2LA certificate registration number is: CN1212
ISED Registered No.: 23583
ISED CAB identifier: CN0017

5.2 Test Instrument Used

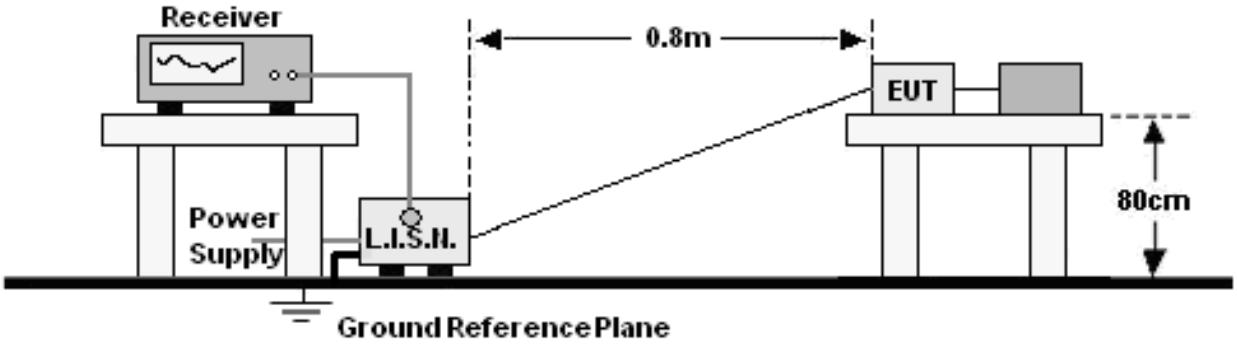
Conducted Emissions Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 15, 2023	May 14, 2024

RF Conducted Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Power Metter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	\	May 15, 2023	May 14, 2024

Radiated Emissions Test (966 Chamber)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024
Amplifier	SKET	LAPA_01G18G-45dB	\	May 15, 2023	May 14, 2024
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 15, 2023	May 14, 2024
Horn Antenn(18GHz-40GHz)	Schwarzbeck	BBHA9170	00822	May 15, 2023	May 14, 2024
Amplifier(18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 15, 2023	May 14, 2024
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	May 15, 2023	May 14, 2024
RF cables1(9kHz-30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-0008	May 15, 2023	May 14, 2024
RF cables2(30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 15, 2023	May 14, 2024
RF cables3(1GHz-40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 15, 2023	May 14, 2024
Power Metter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	\	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Limit (dBuV)	
	Quas-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
Notes: 1. *Decreasing linearly with logarithm of frequency. 2. The lower limit shall apply at the transition frequencies.		

6.3 Test procedure

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

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

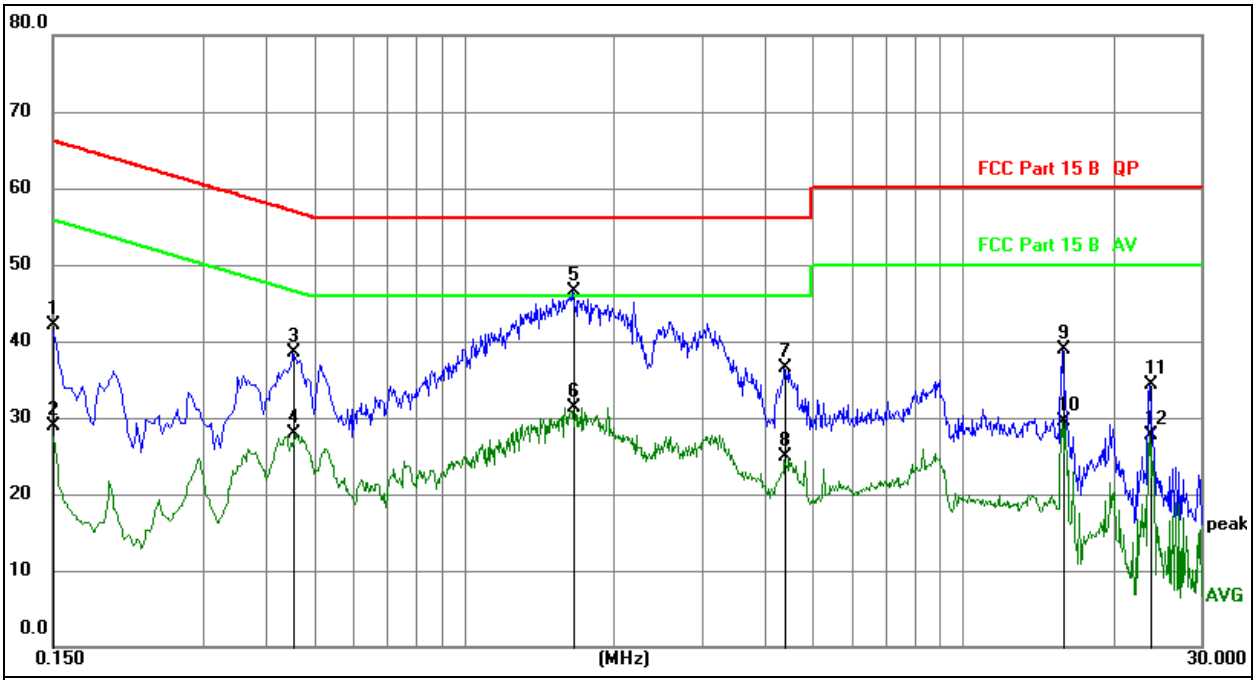
6.4 EUT operating Conditions

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

6.5 Test Result

JT-DC300V0120-C

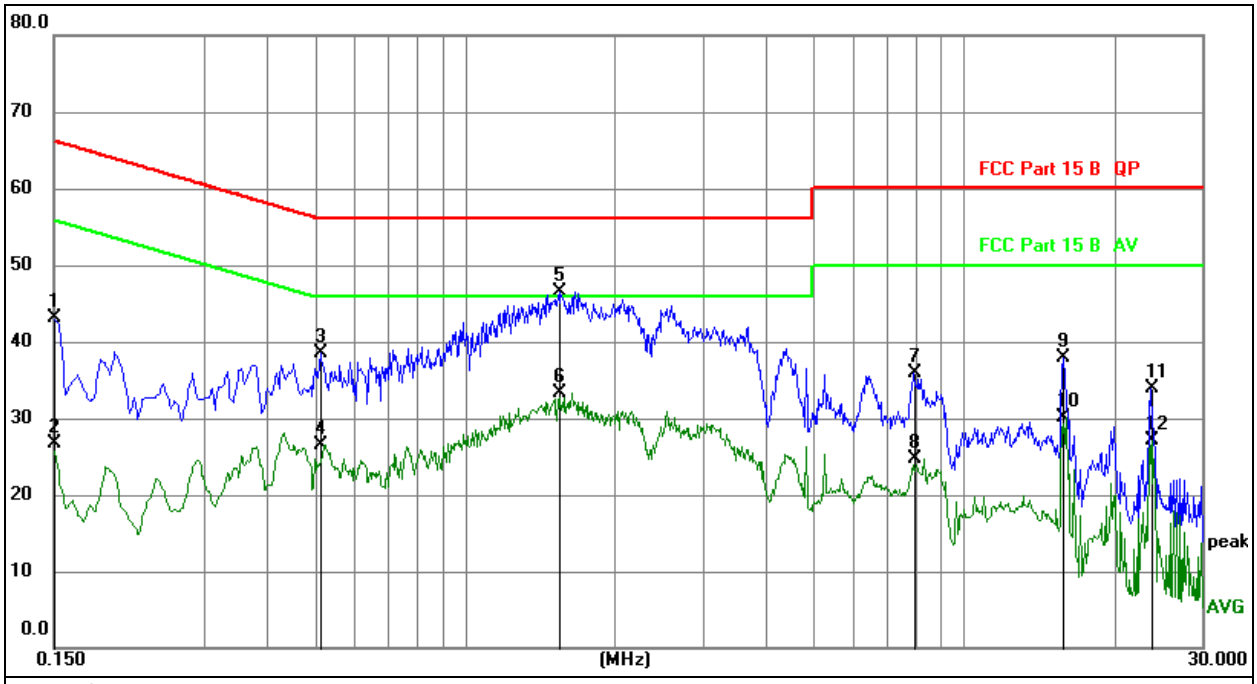
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	L



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	31.89	10.18	42.07	66.00	-23.93	QP	
2		0.1500	18.64	10.18	28.82	56.00	-27.18	AVG	
3		0.4560	28.30	10.19	38.49	56.77	-18.28	QP	
4		0.4560	17.66	10.19	27.85	46.77	-18.92	AVG	
5	*	1.6575	36.43	10.13	46.56	56.00	-9.44	QP	
6		1.6575	21.27	10.13	31.40	46.00	-14.60	AVG	
7		4.3890	26.10	10.37	36.47	56.00	-19.53	QP	
8		4.3890	14.50	10.37	24.87	46.00	-21.13	AVG	
9		15.8820	28.57	10.42	38.99	60.00	-21.01	QP	
10		15.8820	19.05	10.42	29.47	50.00	-20.53	AVG	
11		23.6805	23.76	10.47	34.23	60.00	-25.77	QP	
12		23.6805	17.15	10.47	27.62	50.00	-22.38	AVG	

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	N

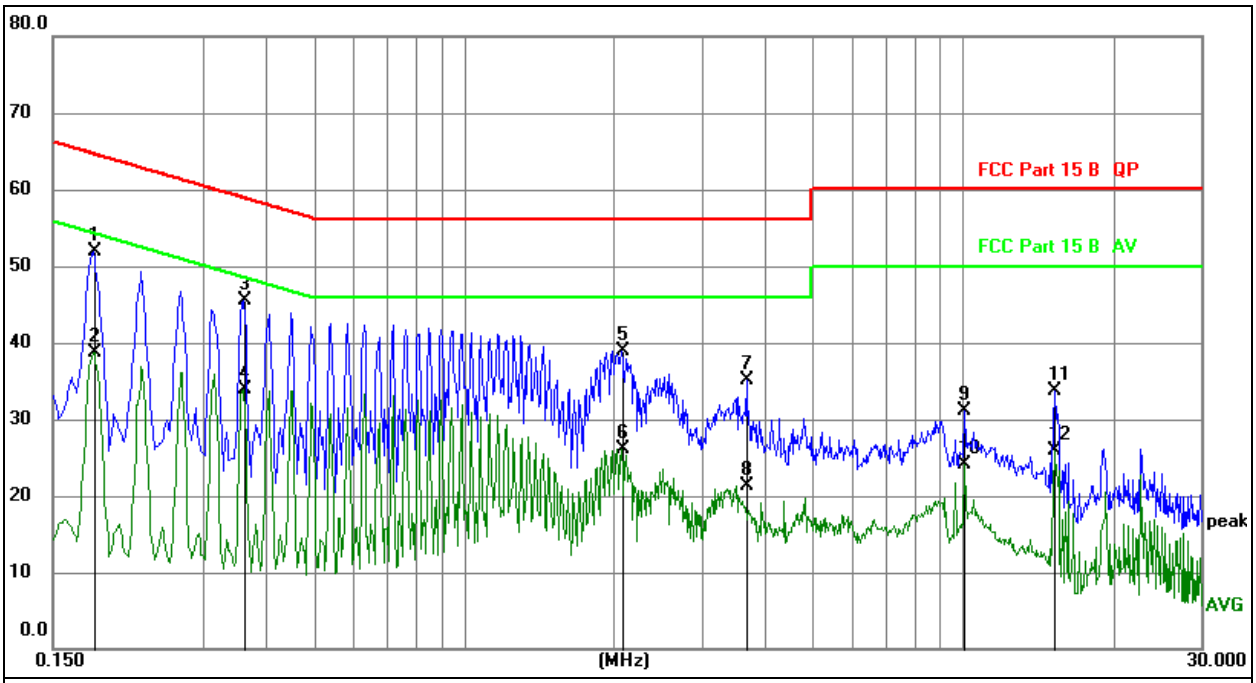


Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	32.96	10.18	43.14	66.00	-22.86	QP	
2		0.1500	16.54	10.18	26.72	56.00	-29.28	AVG	
3		0.5128	28.31	10.19	38.50	56.00	-17.50	QP	
4		0.5128	16.30	10.19	26.49	46.00	-19.51	AVG	
5	*	1.5518	36.35	10.14	46.49	56.00	-9.51	QP	
6		1.5518	23.19	10.14	33.33	46.00	-12.67	AVG	
7		7.9353	25.57	10.43	36.00	60.00	-24.00	QP	
8		7.9353	14.20	10.43	24.63	50.00	-25.37	AVG	
9		15.8014	27.53	10.42	37.95	60.00	-22.05	QP	
10		15.8014	19.69	10.42	30.11	50.00	-19.89	AVG	
11		23.6361	23.52	10.47	33.99	60.00	-26.01	QP	
12		23.6361	16.56	10.47	27.03	50.00	-22.97	AVG	

JT-DC300V0240-C

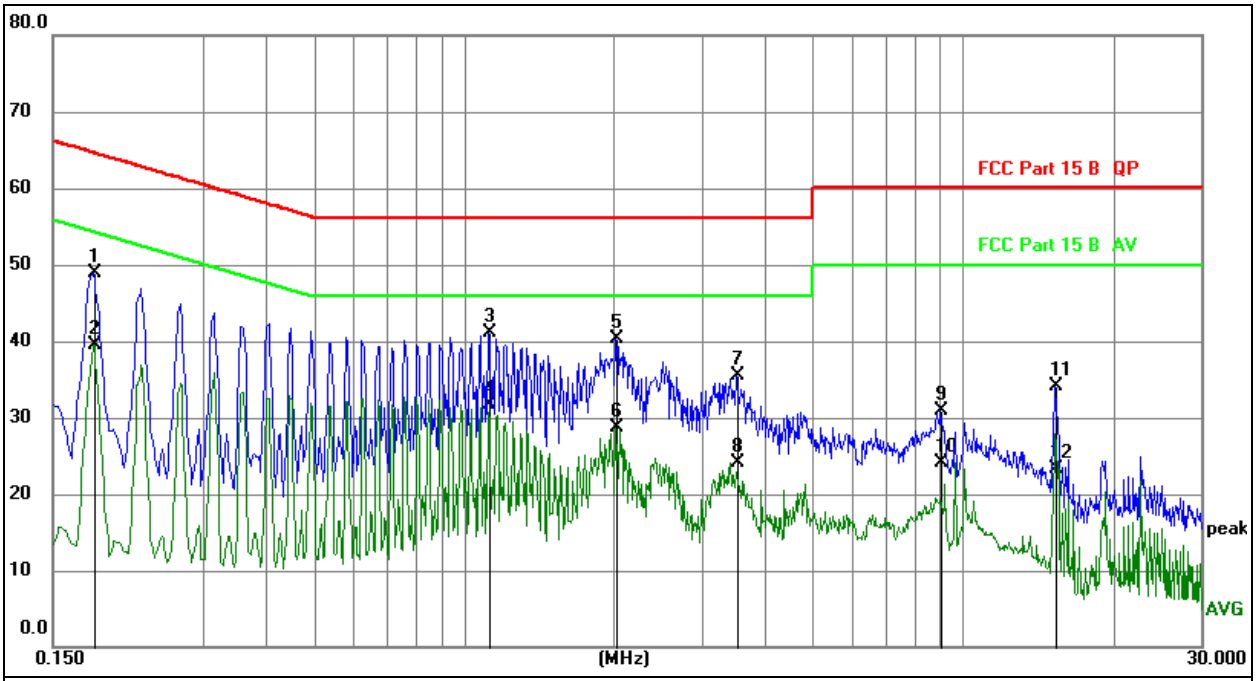
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	L



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1806	41.73	10.19	51.92	64.46	-12.54	QP	
2		0.1806	28.55	10.19	38.74	54.46	-15.72	AVG	
3		0.3615	35.39	10.18	45.57	58.69	-13.12	QP	
4		0.3615	23.64	10.18	33.82	48.69	-14.87	AVG	
5		2.0659	28.78	10.10	38.88	56.00	-17.12	QP	
6		2.0659	15.98	10.10	26.08	46.00	-19.92	AVG	
7		3.6806	24.73	10.29	35.02	56.00	-20.98	QP	
8		3.6806	11.02	10.29	21.31	46.00	-24.69	AVG	
9		10.0718	20.63	10.43	31.06	60.00	-28.94	QP	
10		10.0718	13.59	10.43	24.02	50.00	-25.98	AVG	
11		15.3070	23.22	10.41	33.63	60.00	-26.37	QP	
12		15.3070	15.41	10.41	25.82	50.00	-24.18	AVG	

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	N

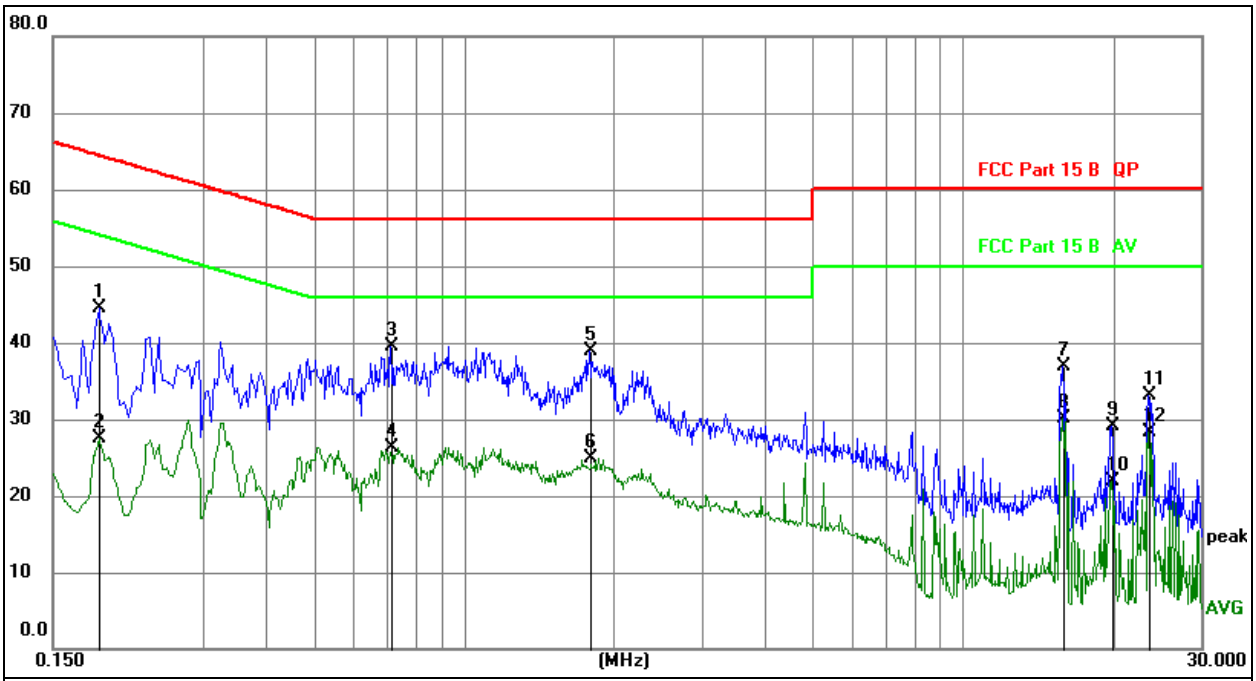


Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1815	38.78	10.19	48.97	64.42	-15.45	QP	
2		0.1815	29.40	10.19	39.59	54.42	-14.83	AVG	
3		1.1220	30.96	10.20	41.16	56.00	-14.84	QP	
4	*	1.1220	21.42	10.20	31.62	46.00	-14.38	AVG	
5		2.0175	30.17	10.09	40.26	56.00	-15.74	QP	
6		2.0175	18.60	10.09	28.69	46.00	-17.31	AVG	
7		3.5205	25.30	10.26	35.56	56.00	-20.44	QP	
8		3.5205	13.81	10.26	24.07	46.00	-21.93	AVG	
9		9.0195	20.41	10.43	30.84	60.00	-29.16	QP	
10		9.0195	13.68	10.43	24.11	50.00	-25.89	AVG	
11		15.3240	23.62	10.41	34.03	60.00	-25.97	QP	
12		15.3240	12.88	10.41	23.29	50.00	-26.71	AVG	

JT-DC300V0300-D

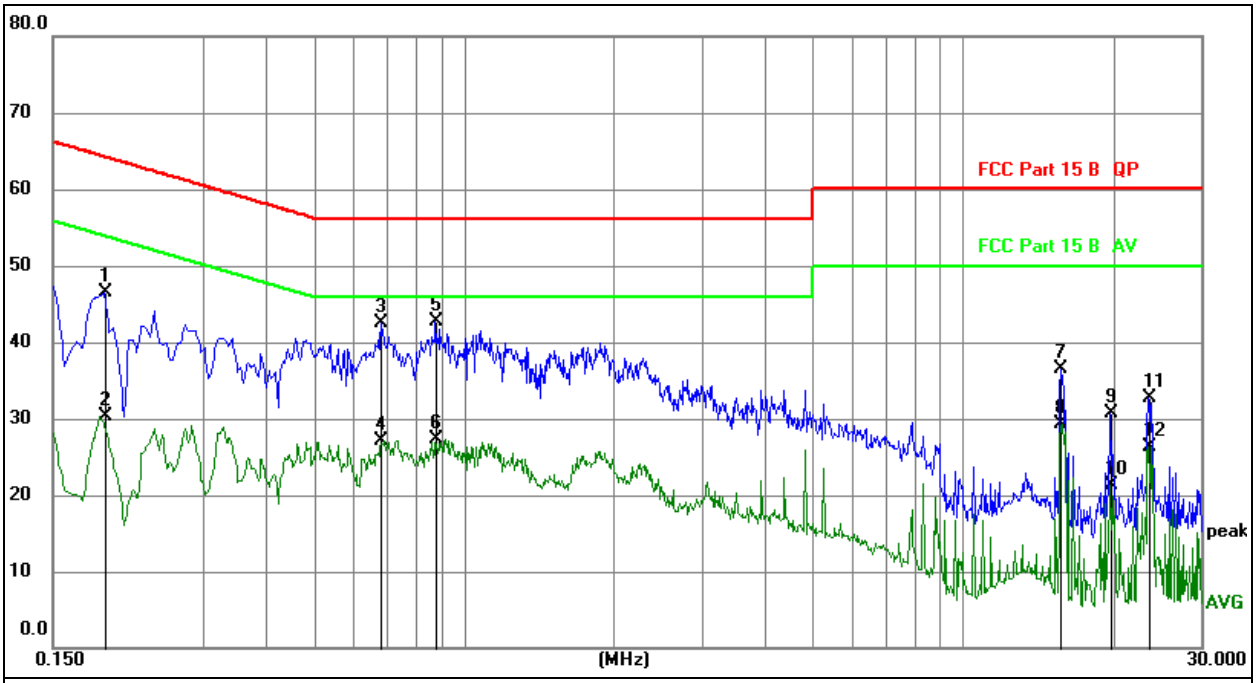
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	L



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1860	34.31	10.19	44.50	64.21	-19.71	QP	
2		0.1860	17.23	10.19	27.42	54.21	-26.79	AVG	
3	*	0.7125	29.38	10.19	39.57	56.00	-16.43	QP	
4		0.7125	16.12	10.19	26.31	46.00	-19.69	AVG	
5		1.7880	28.88	10.12	39.00	56.00	-17.00	QP	
6		1.7880	14.86	10.12	24.98	46.00	-21.02	AVG	
7		15.8460	26.44	10.42	36.86	60.00	-23.14	QP	
8		15.8460	19.67	10.42	30.09	50.00	-19.91	AVG	
9		19.9365	18.68	10.51	29.19	60.00	-30.81	QP	
10		19.9365	11.46	10.51	21.97	50.00	-28.03	AVG	
11		23.6310	22.62	10.47	33.09	60.00	-26.91	QP	
12		23.6310	17.78	10.47	28.25	50.00	-21.75	AVG	

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	N

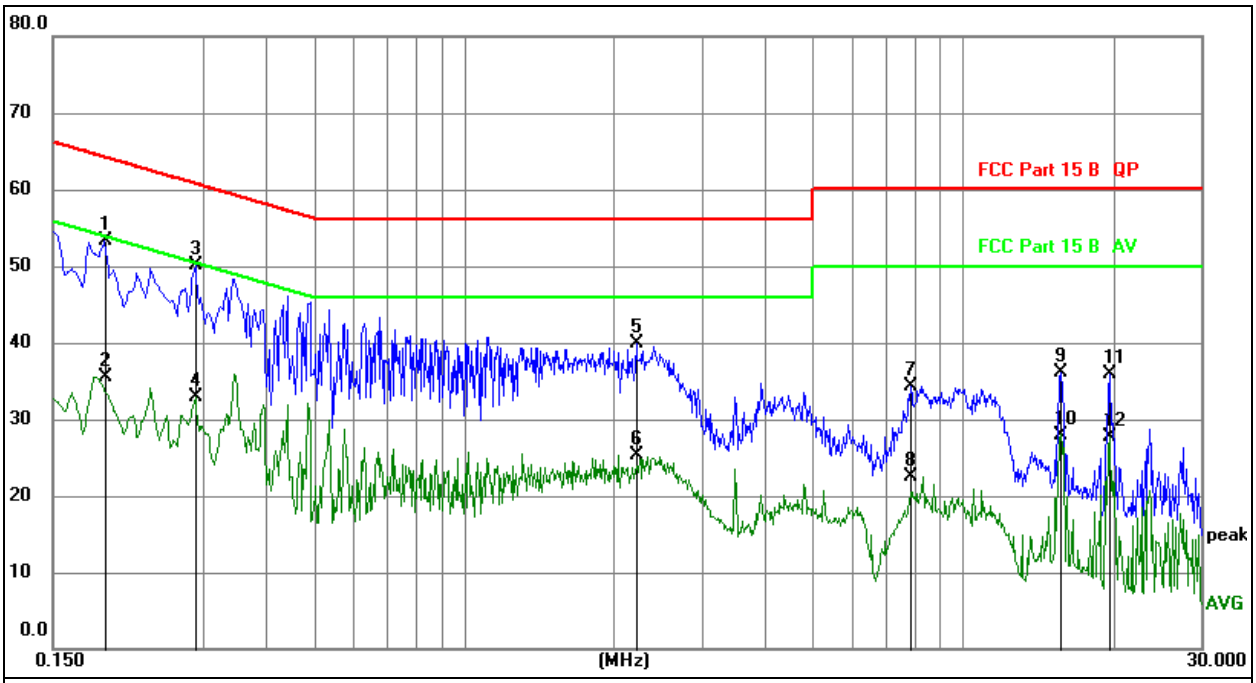


Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1904	36.27	10.19	46.46	64.02	-17.56	QP	
2		0.1904	20.05	10.19	30.24	54.02	-23.78	AVG	
3		0.6826	32.22	10.19	42.41	56.00	-13.59	QP	
4		0.6826	16.93	10.19	27.12	46.00	-18.88	AVG	
5	*	0.8757	32.44	10.21	42.65	56.00	-13.35	QP	
6		0.8757	17.07	10.21	27.28	46.00	-18.72	AVG	
7		15.7179	26.02	10.41	36.43	60.00	-23.57	QP	
8		15.7179	18.86	10.41	29.27	50.00	-20.73	AVG	
9		19.7397	20.22	10.50	30.72	60.00	-29.28	QP	
10		19.7397	10.73	10.50	21.23	50.00	-28.77	AVG	
11		23.5112	22.25	10.47	32.72	60.00	-27.28	QP	
12		23.5112	15.88	10.47	26.35	50.00	-23.65	AVG	

JT-DC300V0500-F

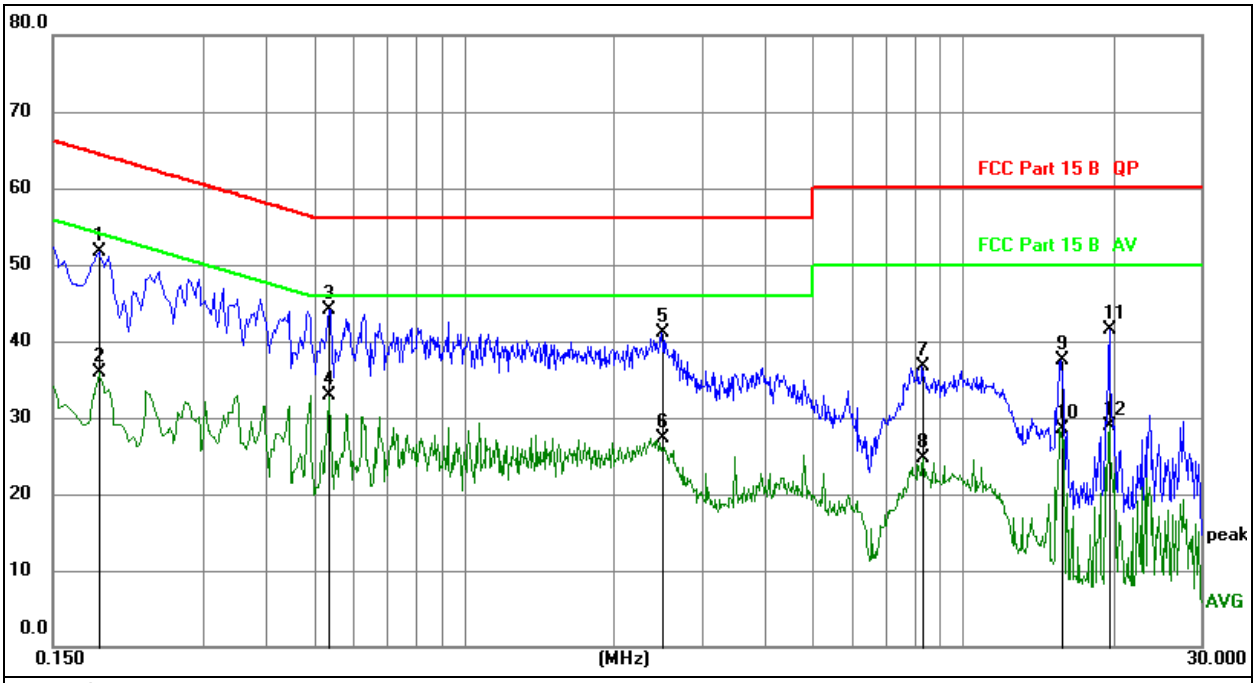
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	L



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1904	43.15	10.19	53.34	64.02	-10.68	QP	
2		0.1904	25.37	10.19	35.56	54.02	-18.46	AVG	
3	*	0.2893	39.92	10.19	50.11	60.54	-10.43	QP	
4		0.2893	22.70	10.19	32.89	50.54	-17.65	AVG	
5		2.2132	29.77	10.11	39.88	56.00	-16.12	QP	
6		2.2132	15.14	10.11	25.25	46.00	-20.75	AVG	
7		7.8516	23.91	10.43	34.34	60.00	-25.66	QP	
8		7.8516	12.11	10.43	22.54	50.00	-27.46	AVG	
9		15.7179	25.70	10.41	36.11	60.00	-23.89	QP	
10		15.7179	17.59	10.41	28.00	50.00	-22.00	AVG	
11		19.6354	25.41	10.50	35.91	60.00	-24.09	QP	
12		19.6354	17.15	10.50	27.65	50.00	-22.35	AVG	

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	N

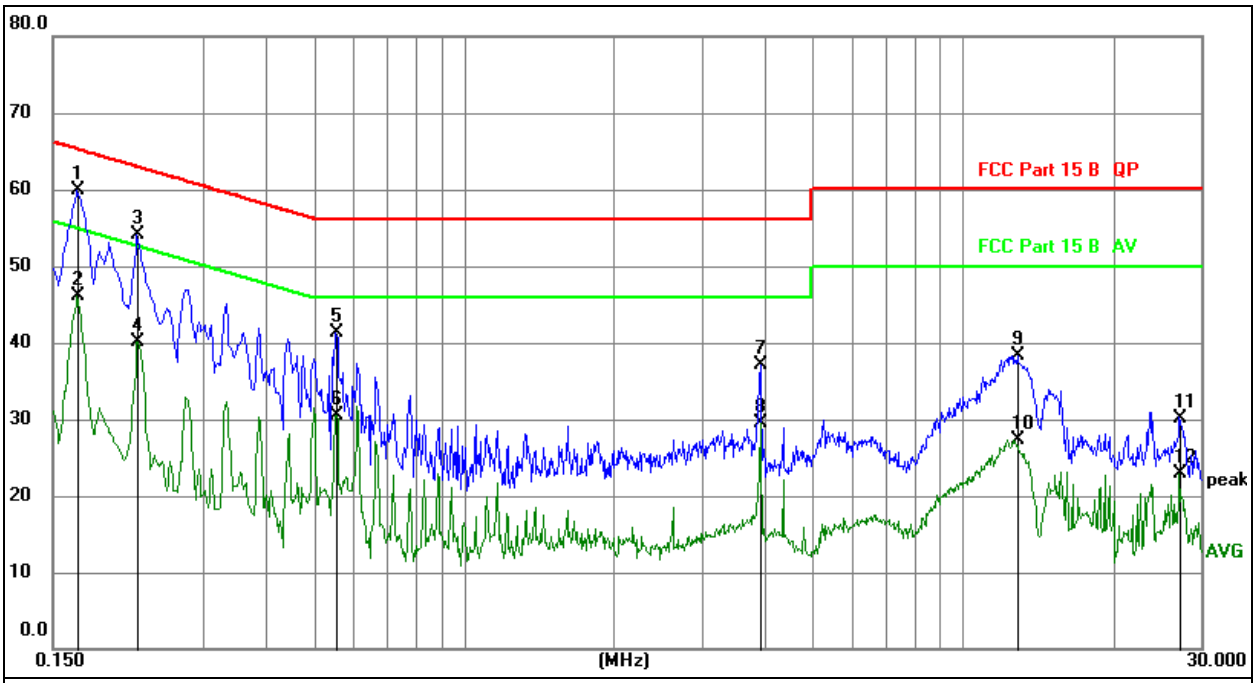


Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1860	41.54	10.19	51.73	64.21	-12.48	QP	
2		0.1860	25.62	10.19	35.81	54.21	-18.40	AVG	
3	*	0.5370	33.91	10.19	44.10	56.00	-11.90	QP	
4		0.5370	22.69	10.19	32.88	46.00	-13.12	AVG	
5		2.4900	30.96	10.13	41.09	56.00	-14.91	QP	
6		2.4900	17.08	10.13	27.21	46.00	-18.79	AVG	
7		8.3220	26.23	10.43	36.66	60.00	-23.34	QP	
8		8.3220	14.33	10.43	24.76	50.00	-25.24	AVG	
9		15.7425	27.08	10.41	37.49	60.00	-22.51	QP	
10		15.7425	18.19	10.41	28.60	50.00	-21.40	AVG	
11		19.6440	31.06	10.50	41.56	60.00	-18.44	QP	
12		19.6440	18.47	10.50	28.97	50.00	-21.03	AVG	

JT-DC300V0666-G

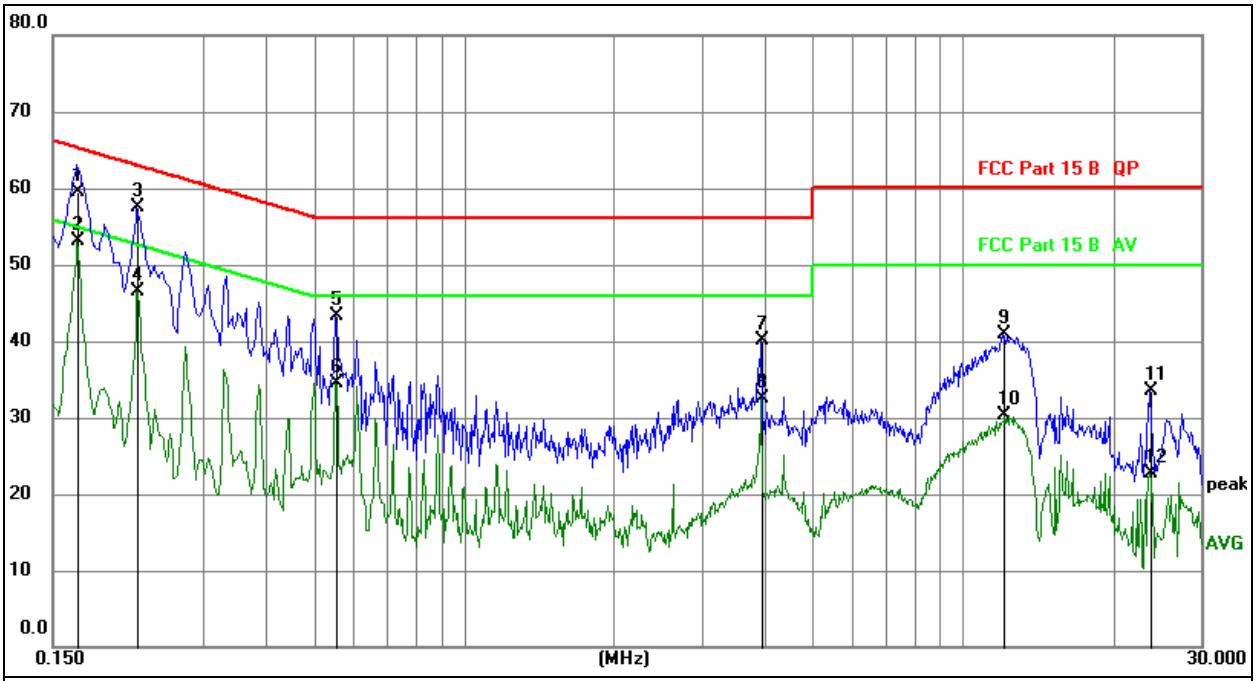
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	L



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1680	49.78	10.18	59.96	65.06	-5.10	QP	
2		0.1680	35.87	10.18	46.05	55.06	-9.01	AVG	
3		0.2220	43.88	10.19	54.07	62.74	-8.67	QP	
4		0.2220	29.82	10.19	40.01	52.74	-12.73	AVG	
5		0.5550	31.16	10.19	41.35	56.00	-14.65	QP	
6		0.5550	20.37	10.19	30.56	46.00	-15.44	AVG	
7		3.9390	26.79	10.33	37.12	56.00	-18.88	QP	
8		3.9390	19.11	10.33	29.44	46.00	-16.56	AVG	
9		12.8670	27.97	10.42	38.39	60.00	-21.61	QP	
10		12.8670	16.92	10.42	27.34	50.00	-22.66	AVG	
11		27.1320	19.76	10.44	30.20	60.00	-29.80	QP	
12		27.1320	12.51	10.44	22.95	50.00	-27.05	AVG	

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	N

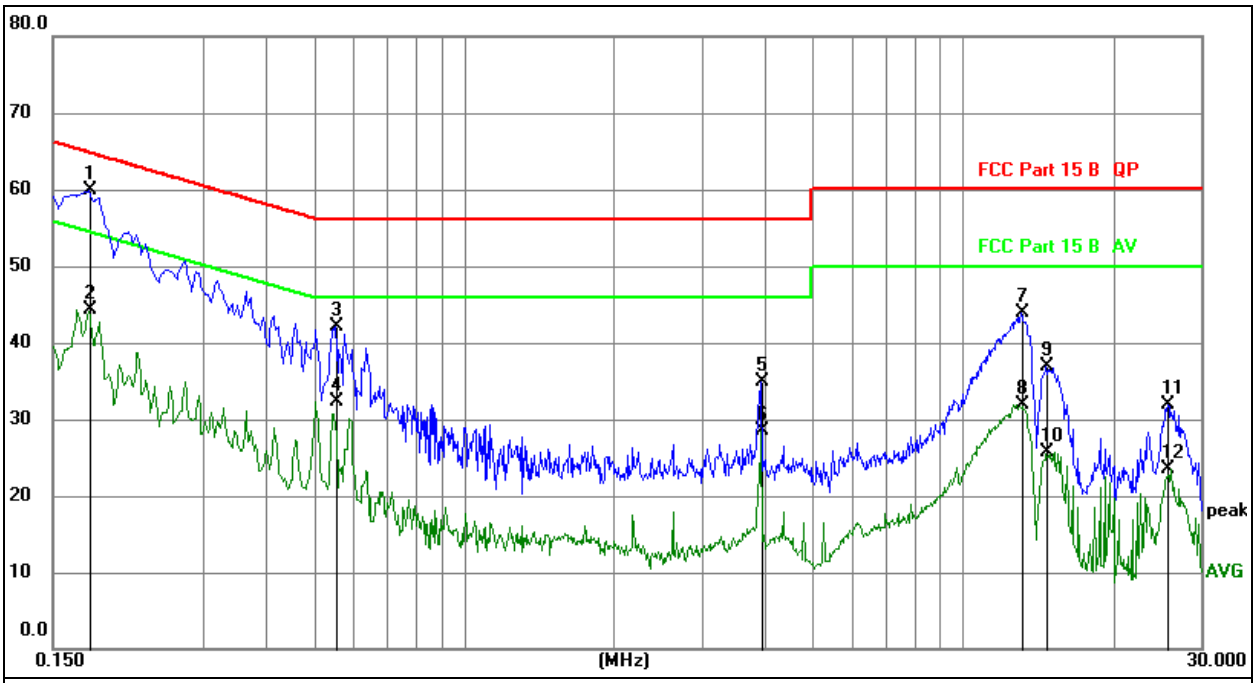


Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1		0.1680	49.42	10.18	59.60	65.06	-5.46	QP	
2	*	0.1680	42.96	10.18	53.14	55.06	-1.92	AVG	
3		0.2220	47.24	10.19	57.43	62.74	-5.31	QP	
4		0.2220	36.26	10.19	46.45	52.74	-6.29	AVG	
5		0.5550	33.15	10.19	43.34	56.00	-12.66	QP	
6		0.5550	24.33	10.19	34.52	46.00	-11.48	AVG	
7		3.9435	29.71	10.33	40.04	56.00	-15.96	QP	
8		3.9435	22.14	10.33	32.47	46.00	-13.53	AVG	
9		12.0075	30.45	10.41	40.86	60.00	-19.14	QP	
10		12.0075	19.85	10.41	30.26	50.00	-19.74	AVG	
11		23.7255	23.07	10.47	33.54	60.00	-26.46	QP	
12		23.7255	12.25	10.47	22.72	50.00	-27.28	AVG	

JT-DC300V0800-G

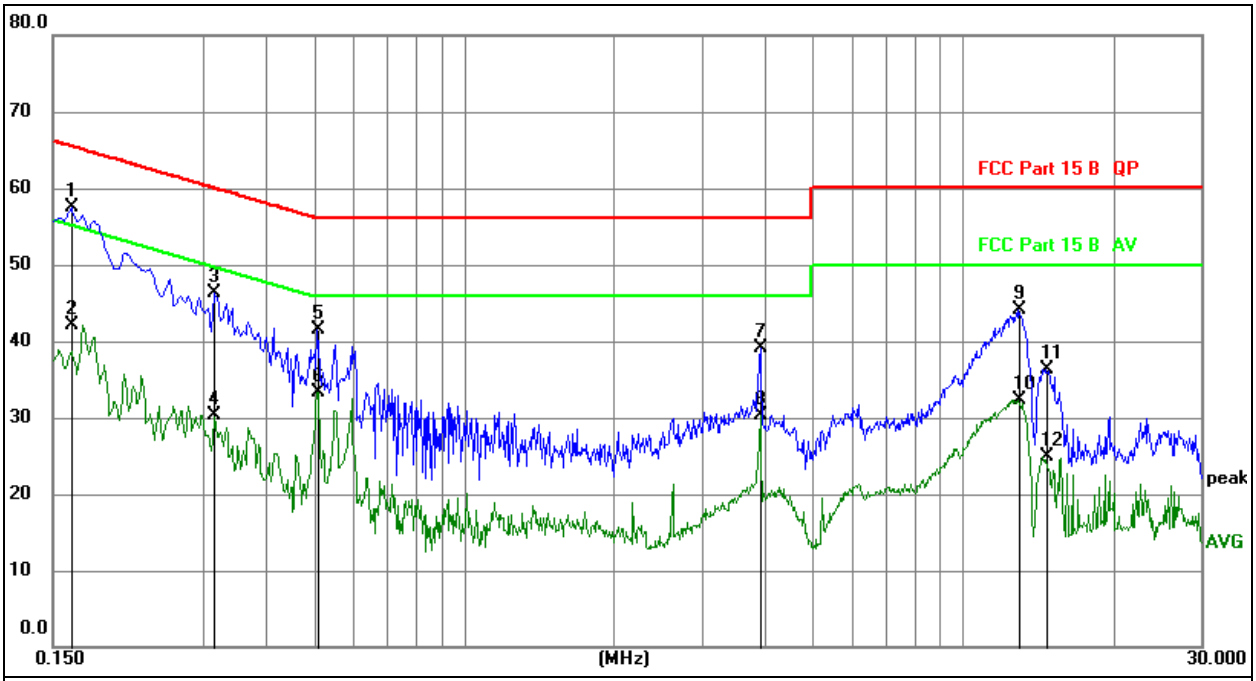
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	L



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1770	49.62	10.19	59.81	64.63	-4.82	QP	
2		0.1770	34.06	10.19	44.25	54.63	-10.38	AVG	
3		0.5550	31.88	10.19	42.07	56.00	-13.93	QP	
4		0.5550	22.19	10.19	32.38	46.00	-13.62	AVG	
5		3.9435	24.60	10.33	34.93	56.00	-21.07	QP	
6		3.9435	18.15	10.33	28.48	46.00	-17.52	AVG	
7		13.0965	33.56	10.42	43.98	60.00	-16.02	QP	
8		13.0965	21.42	10.42	31.84	50.00	-18.16	AVG	
9		14.6718	26.45	10.40	36.85	60.00	-23.15	QP	
10		14.6718	15.38	10.40	25.78	50.00	-24.22	AVG	
11		25.7271	21.51	10.46	31.97	60.00	-28.03	QP	
12		25.7271	13.08	10.46	23.54	50.00	-26.46	AVG	

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
Test Mode:	Mode 13	Polarization :	N



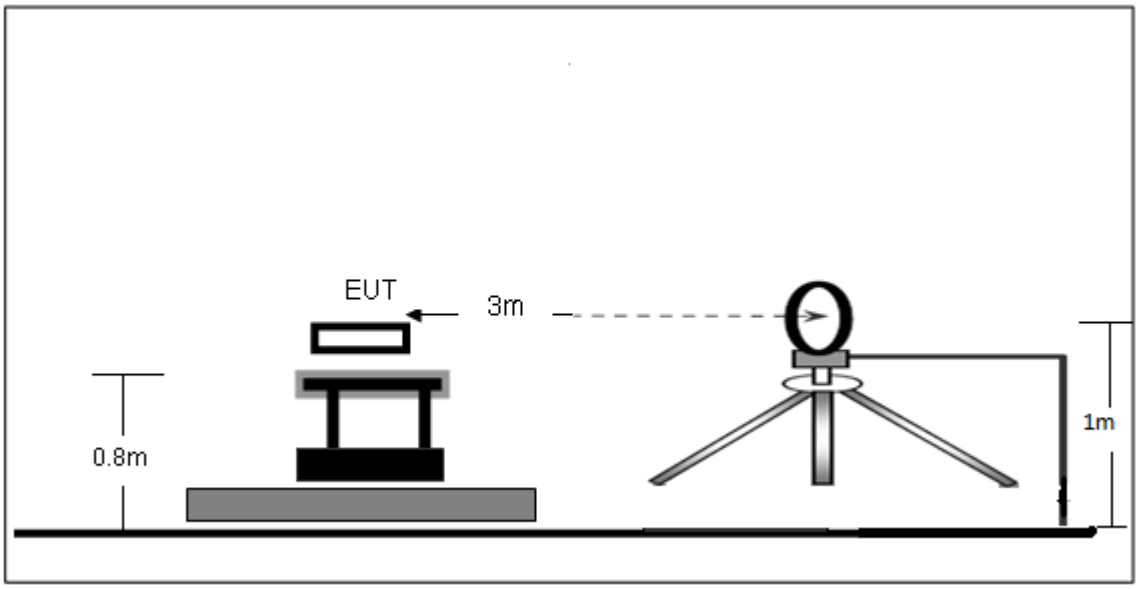
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz		dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1635	47.24	10.18	57.42	65.28	-7.86	QP	
2		0.1635	32.00	10.18	42.18	55.28	-13.10	AVG	
3		0.3165	36.06	10.19	46.25	59.80	-13.55	QP	
4		0.3165	20.15	10.19	30.34	49.80	-19.46	AVG	
5		0.5100	31.39	10.19	41.58	56.00	-14.42	QP	
6		0.5100	23.14	10.19	33.33	46.00	-12.67	AVG	
7		3.9345	28.74	10.33	39.07	56.00	-16.93	QP	
8		3.9345	20.06	10.33	30.39	46.00	-15.61	AVG	
9		12.9389	33.59	10.42	44.01	60.00	-15.99	QP	
10		12.9389	21.96	10.42	32.38	50.00	-17.62	AVG	
11		14.7435	25.82	10.40	36.22	60.00	-23.78	QP	
12		14.7435	14.53	10.40	24.93	50.00	-25.07	AVG	

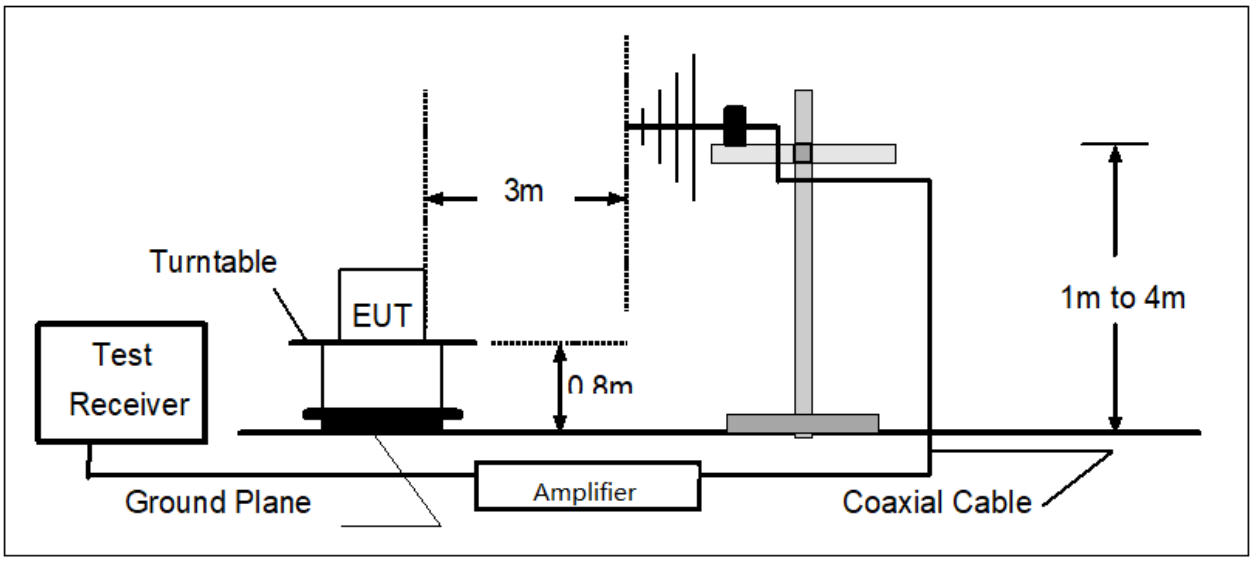
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

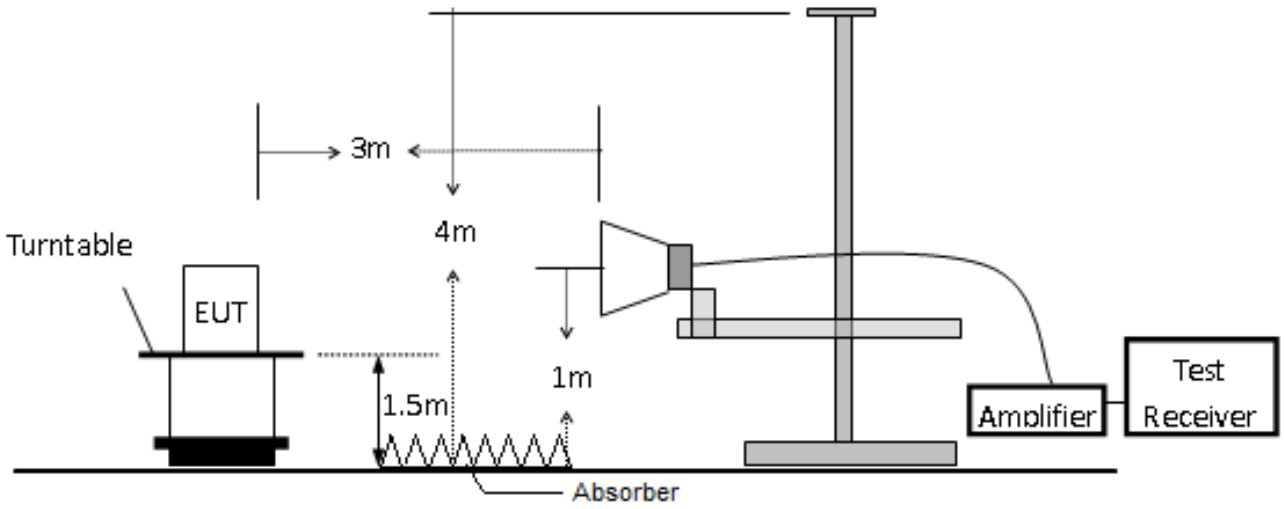
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency	Field Strength	Distance	Field Strength Limit at 3m Distance	
(MHz)	uV/m	(m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))}$ + 80
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))}$ + 40
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)}$ + 40
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Limit (dBuV/m) (at 3M)	
	Peak	Average
Above 1000	74	54

Notes:
(1)The limit for radiated test was performed according to FCC PART 15C.
(2)The tighter limit applies at the band edges.
(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Frequency Range Of Radiated Measurement

(a) For an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
(4) If the intentional radiator operates at or above 95 GHz: To the third harmonic of the highest fundamental frequency or to 750 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
(5) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a) (1)through (4) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

7.3 Test procedure

Receiver Parameter	Setting
Attenuation	Auto
9kHz~150kHz	RBW 200Hz for QP
150kHz~30MHz	RBW 9kHz for QP
30MHz~1000MHz	RBW 120kHz for QP

Spectrum Parameter	Setting
1-25GHz	RBW 1 MHz /VBW 1 MHz for Peak, RBW 1 MHz / VBW 10Hz for Average

Below 1GHz test procedure as below:
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:
a. 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.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.
Note:
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

7.4 EUT Operating Conditions

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

7.5 Test Result

Below 30MHz

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 13	Polarization:	---

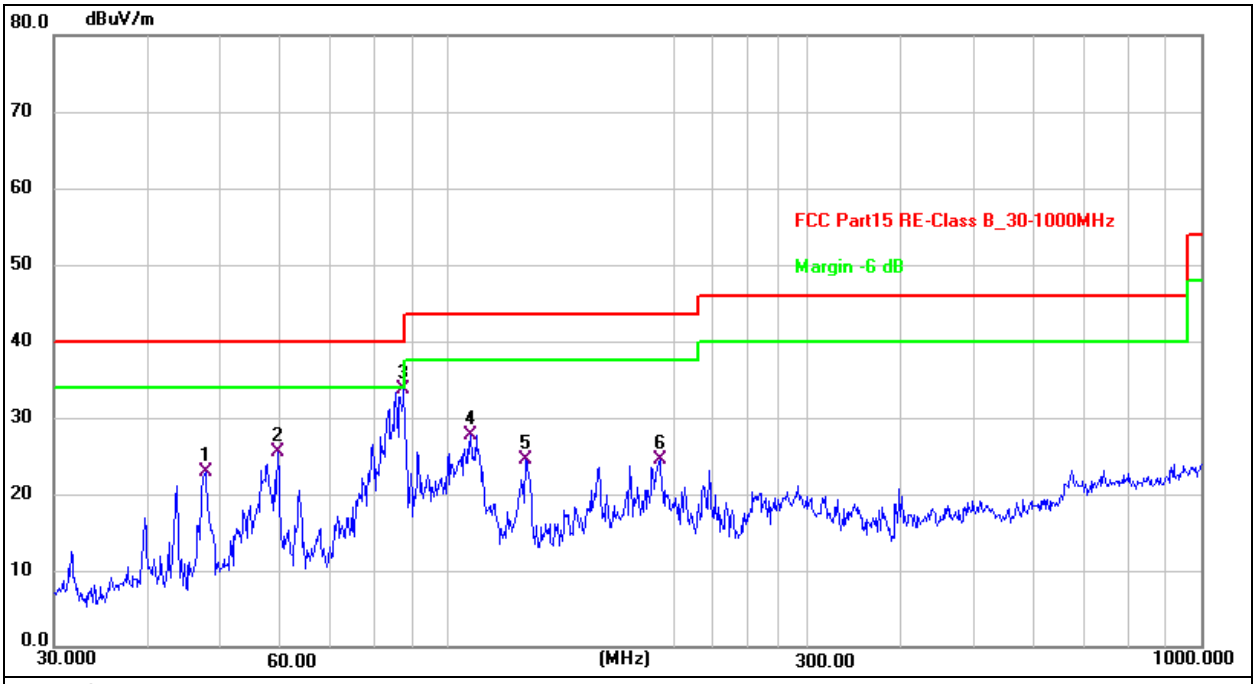
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

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.

Between 30MHz – 1GHz

JT-DC300V0120-C

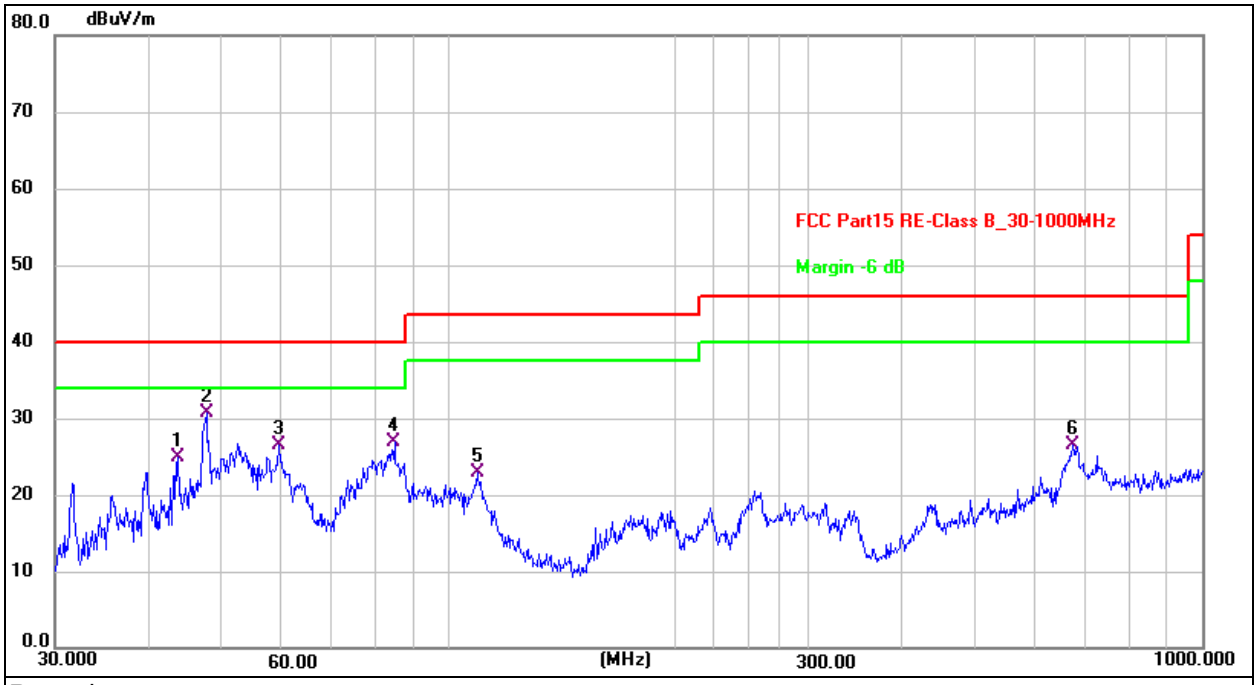
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 13	Polarization :	Horizontal



Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.6586	39.73	-16.75	22.98	40.00	-17.02	QP
2	59.4405	42.92	-17.49	25.43	40.00	-14.57	QP
3 *	87.4177	54.50	-20.70	33.80	40.00	-6.20	QP
4	107.1337	47.88	-20.16	27.72	43.50	-15.78	QP
5	126.7723	43.15	-18.69	24.46	43.50	-19.04	QP
6	191.0738	44.11	-19.62	24.49	43.50	-19.01	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 1	Polarization :	Vertical

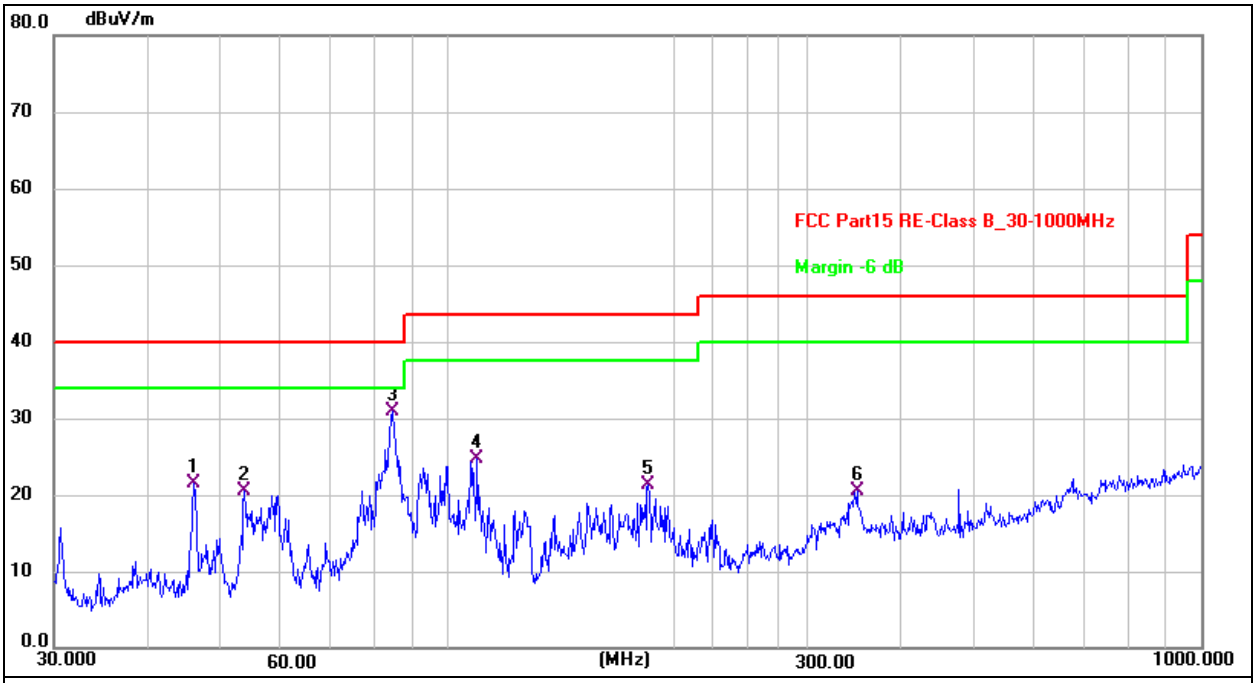


Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	43.6584	41.80	-16.88	24.92	40.00	-15.08	QP
2 *	47.6586	47.40	-16.75	30.65	40.00	-9.35	QP
3	59.4405	44.03	-17.49	26.54	40.00	-13.46	QP
4	84.7019	47.40	-20.51	26.89	40.00	-13.11	QP
5	109.0286	42.96	-20.04	22.92	43.50	-20.58	QP
6	672.8444	35.37	-8.95	26.42	46.00	-19.58	QP

JT-DC300V0240-C

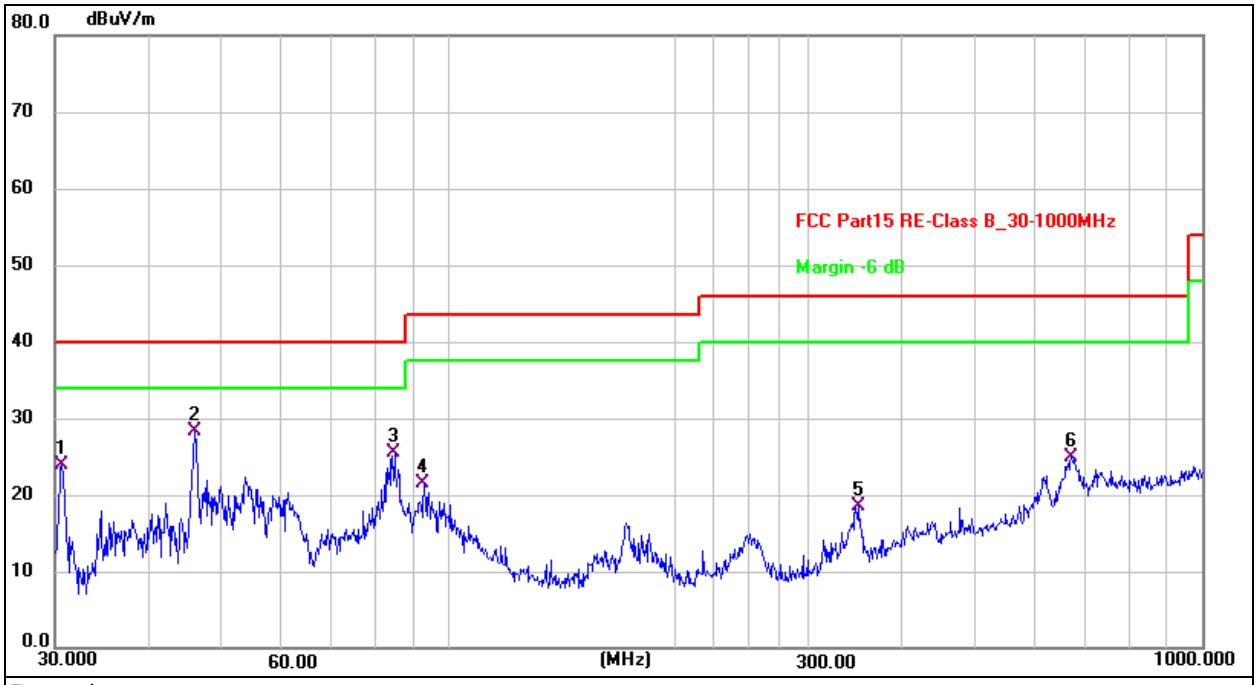
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 2	Polarization :	Horizontal



Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	46.0164	38.35	-16.82	21.53	40.00	-18.47	QP
2	53.6932	37.41	-16.98	20.43	40.00	-19.57	QP
3 *	84.4054	51.32	-20.49	30.83	40.00	-9.17	QP
4	109.4116	44.67	-20.01	24.66	43.50	-18.84	QP
5	184.4898	40.12	-18.89	21.23	43.50	-22.27	QP
6	349.2500	36.55	-15.98	20.57	46.00	-25.43	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 2	Polarization :	Vertical

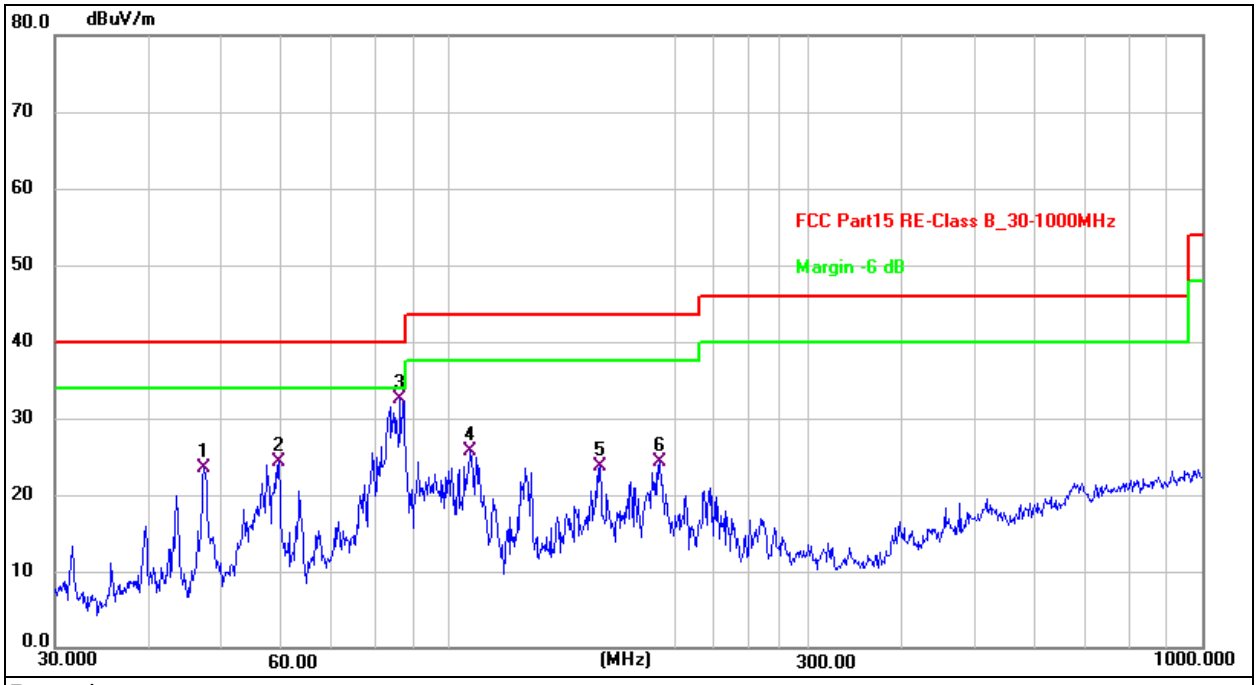


Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.6379	40.99	-17.07	23.92	40.00	-16.08	QP
2 *	46.0164	45.17	-16.82	28.35	40.00	-11.65	QP
3	84.7019	45.92	-20.51	25.41	40.00	-14.59	QP
4	92.7871	42.33	-20.79	21.54	43.50	-21.96	QP
5	349.2500	34.52	-15.98	18.54	46.00	-27.46	QP
6	670.4893	33.82	-8.96	24.86	46.00	-21.14	QP

JT-DC300V0300-D

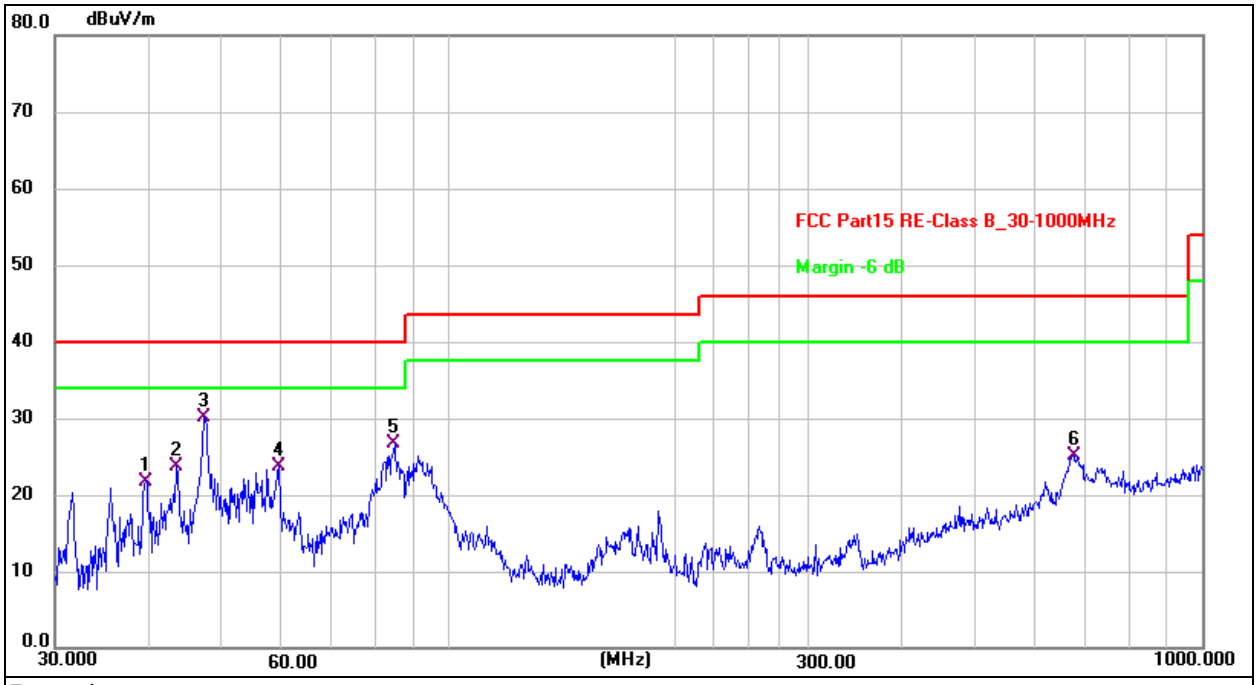
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 3	Polarization :	Horizontal



Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.3255	40.34	-16.77	23.57	40.00	-16.43	QP
2	59.4405	41.88	-17.49	24.39	40.00	-15.61	QP
3 *	86.2001	53.11	-20.61	32.50	40.00	-7.50	QP
4	106.7587	45.94	-20.19	25.75	43.50	-17.75	QP
5	158.6677	40.73	-17.09	23.64	43.50	-19.86	QP
6	190.4050	43.88	-19.57	24.31	43.50	-19.19	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 3	Polarization :	Vertical

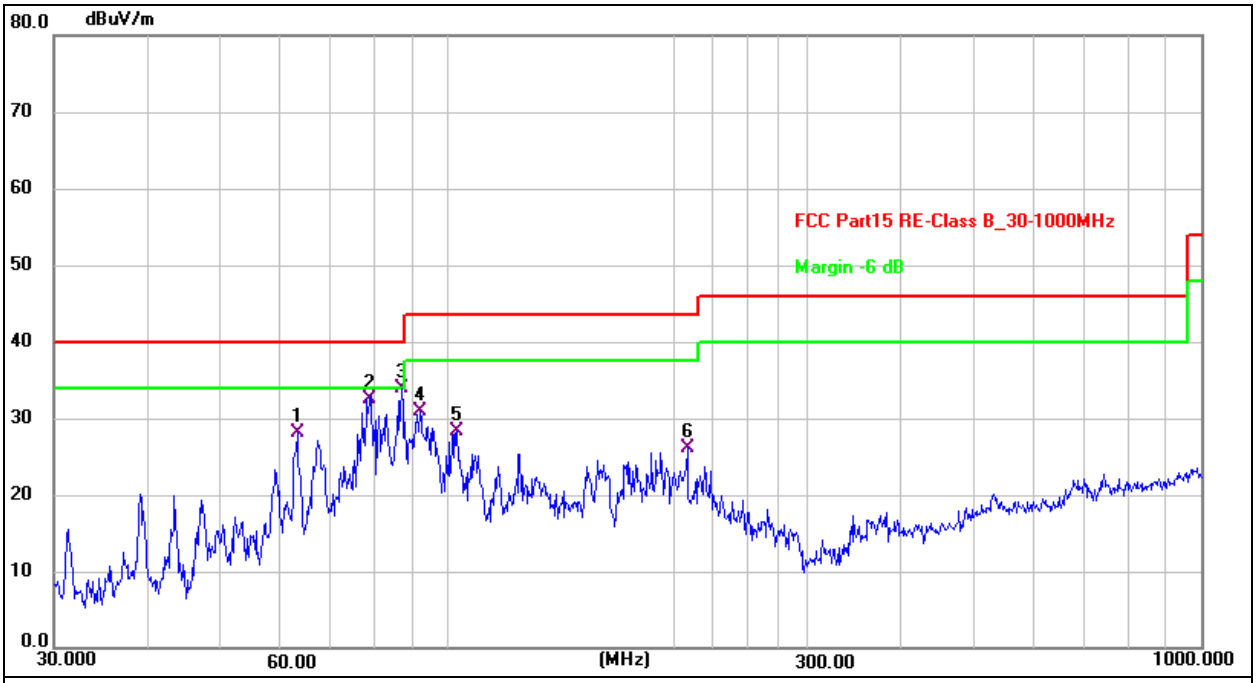


Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	39.7146	38.61	-16.91	21.70	40.00	-18.30	QP
2	43.5057	40.52	-16.88	23.64	40.00	-16.36	QP
3 *	47.3255	46.79	-16.77	30.02	40.00	-9.98	QP
4	59.4405	41.18	-17.49	23.69	40.00	-16.31	QP
5	84.7019	47.24	-20.51	26.73	40.00	-13.27	QP
6	675.2080	34.00	-8.92	25.08	46.00	-20.92	QP

JT-DC300V0500-F

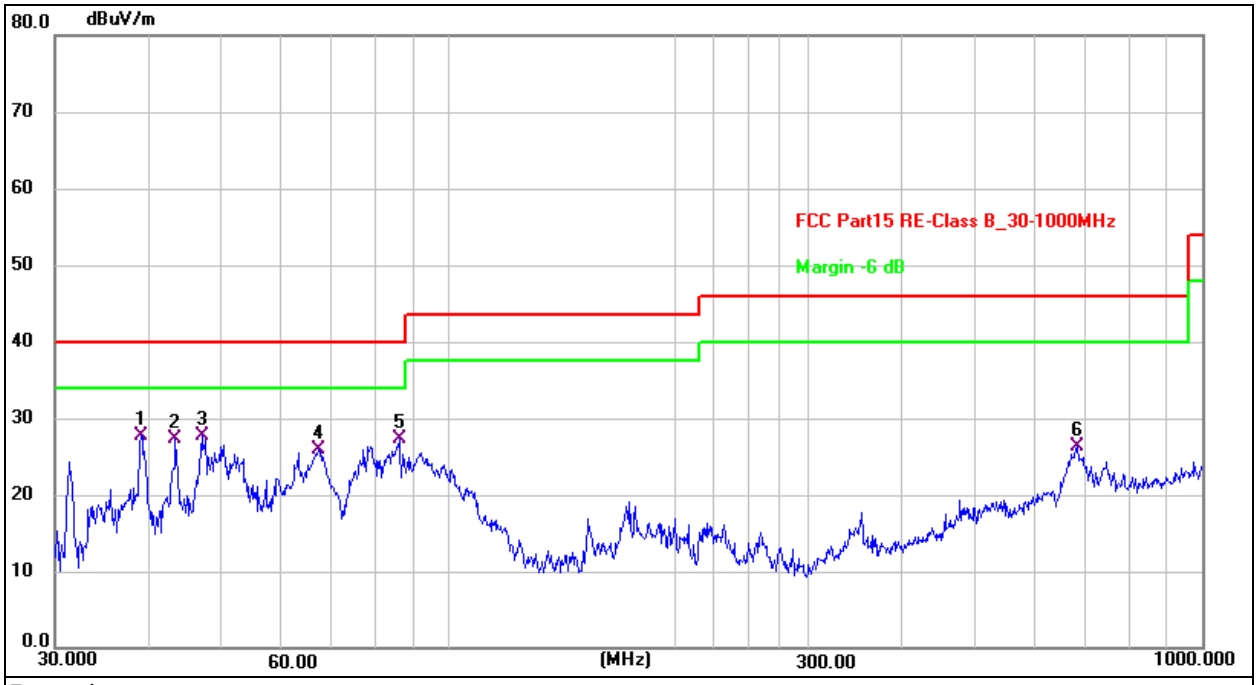
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 4	Polarization :	Horizontal



Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	63.0916	46.02	-17.91	28.11	40.00	-11.89	QP
2	78.6888	52.62	-20.03	32.59	40.00	-7.41	QP
3 *	86.8068	54.52	-20.65	33.87	40.00	-6.13	QP
4	91.8163	51.64	-20.81	30.83	43.50	-12.67	QP
5	102.7192	48.69	-20.48	28.21	43.50	-15.29	QP
6	207.8501	46.44	-20.30	26.14	43.50	-17.36	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 4	Polarization :	Vertical

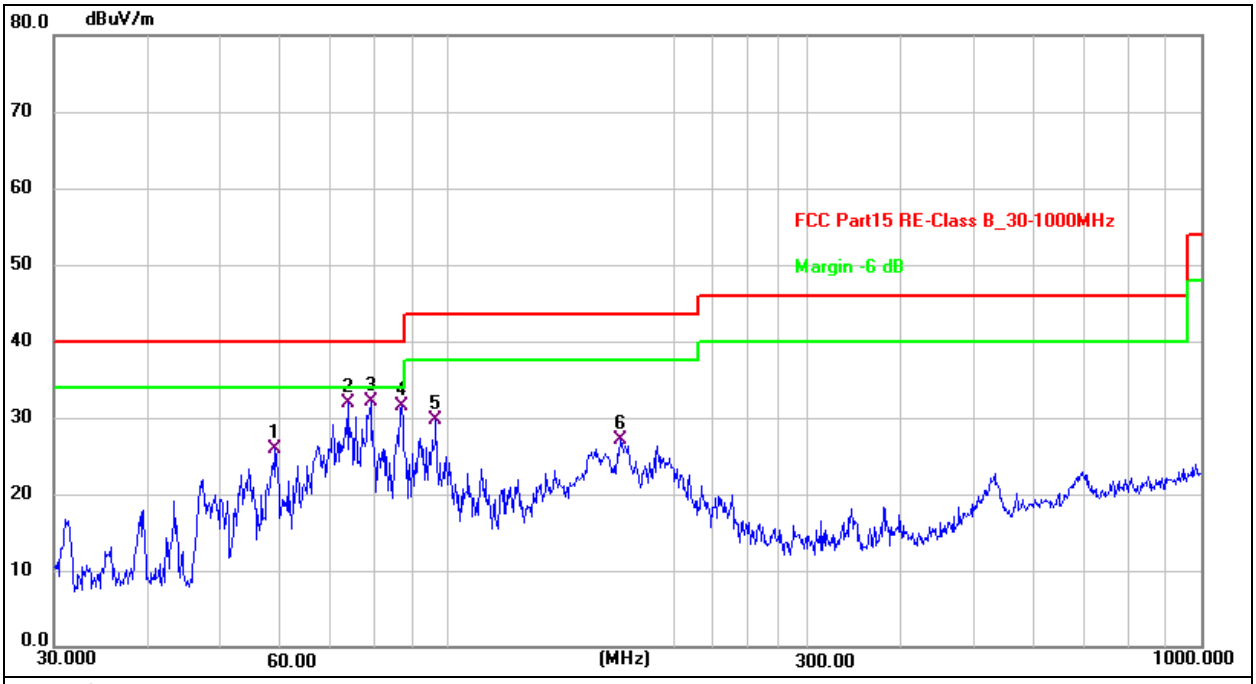


Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	39.0245	44.74	-16.98	27.76	40.00	-12.24	QP
2	43.3534	44.18	-16.88	27.30	40.00	-12.70	QP
3	46.9948	44.49	-16.78	27.71	40.00	-12.29	QP
4	67.2022	44.24	-18.39	25.85	40.00	-14.15	QP
5	85.8984	47.80	-20.59	27.21	40.00	-12.79	QP
6	682.3484	35.12	-8.83	26.29	46.00	-19.71	QP

JT-DC300V0666-G

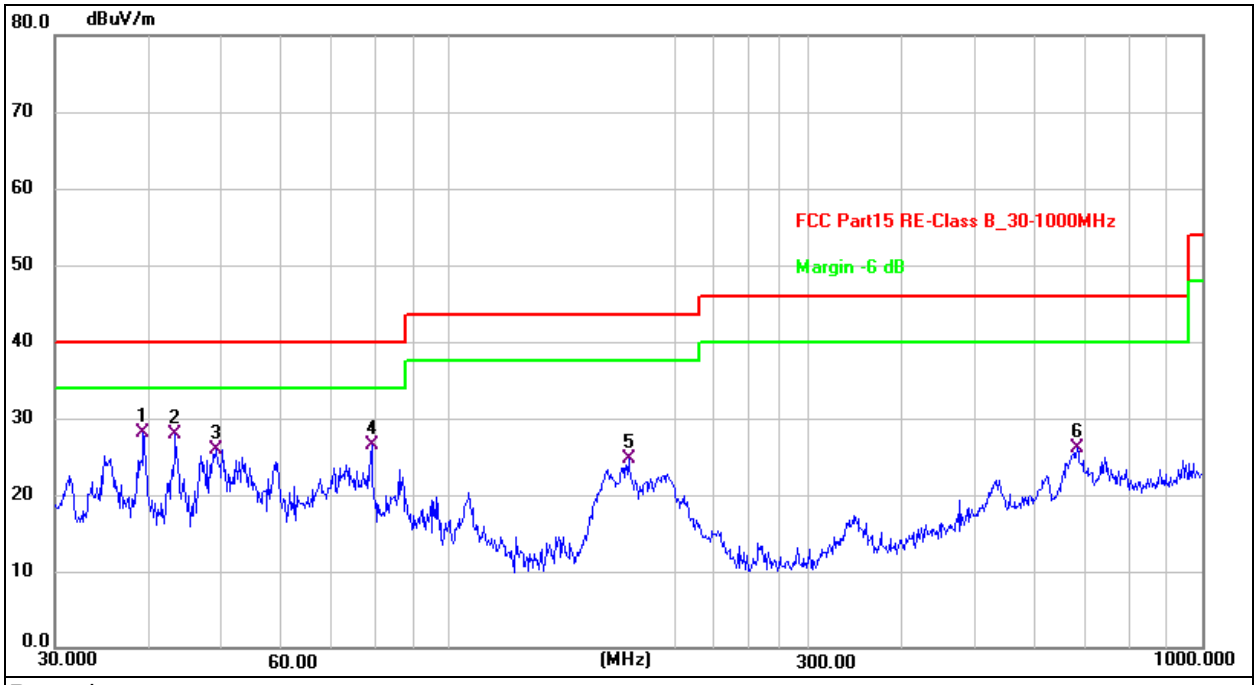
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 5	Polarization :	Horizontal



Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	59.0251	43.29	-17.45	25.84	40.00	-14.16	QP
2	73.6170	51.27	-19.27	32.00	40.00	-8.00	QP
3 *	78.9652	52.21	-20.07	32.14	40.00	-7.86	QP
4	86.8068	52.20	-20.65	31.55	40.00	-8.45	QP
5	96.4362	50.40	-20.73	29.67	43.50	-13.83	QP
6	169.5990	44.51	-17.43	27.08	43.50	-16.42	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 5	Polarization :	Vertical

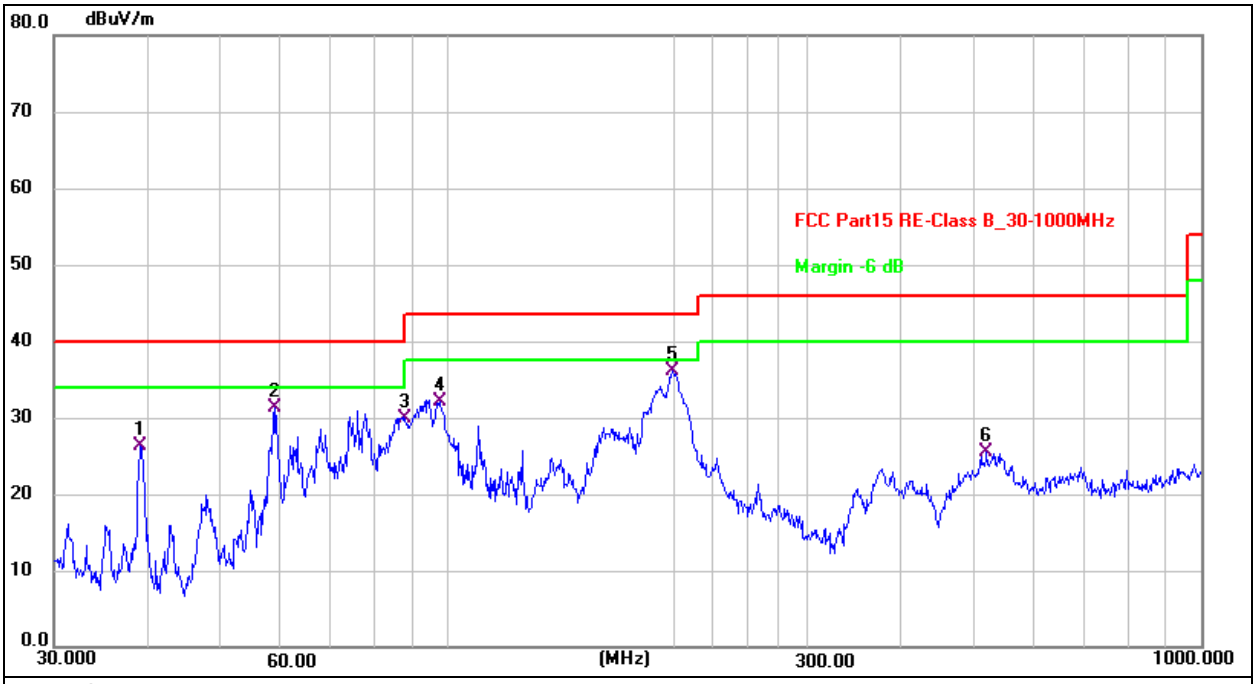


Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	39.2991	45.09	-16.95	28.14	40.00	-11.86	QP
2	43.3534	44.84	-16.88	27.96	40.00	-12.04	QP
3	49.1865	42.61	-16.68	25.93	40.00	-14.07	QP
4	78.9652	46.51	-20.07	26.44	40.00	-13.56	QP
5	173.2051	42.44	-17.74	24.70	43.50	-18.80	QP
6	682.3484	34.99	-8.83	26.16	46.00	-19.84	QP

JT-DC300V0800-G

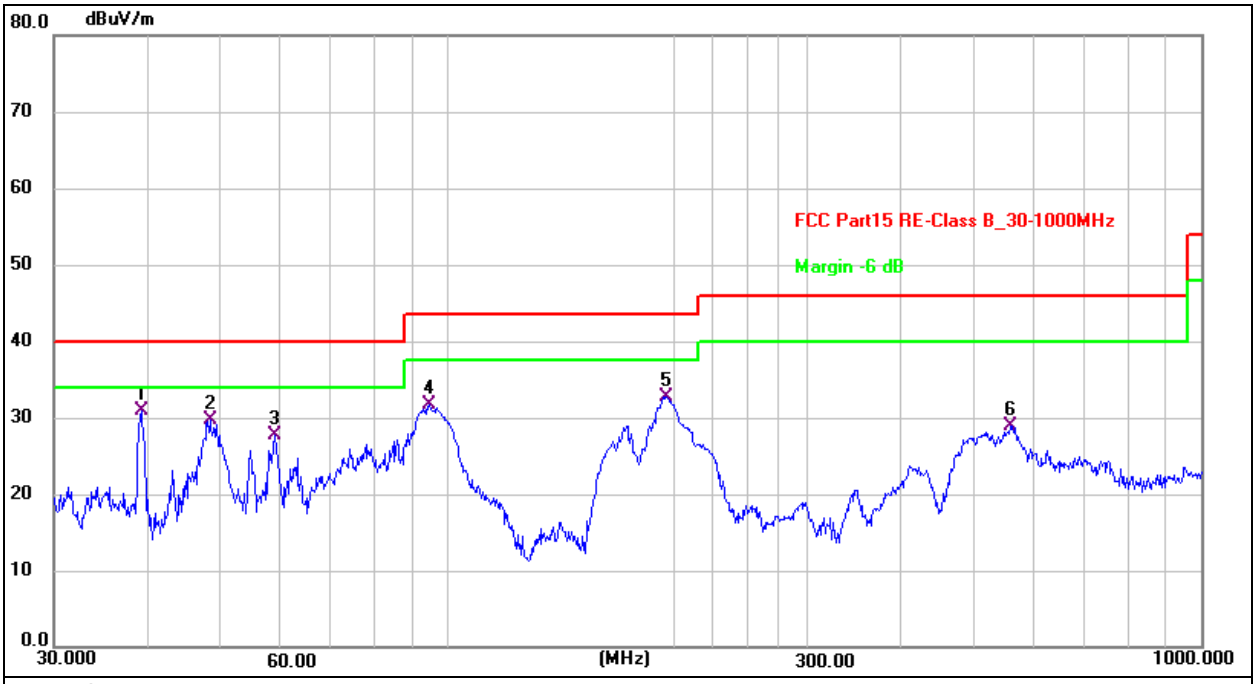
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 6	Polarization :	Horizontal



Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	39.0245	43.28	-16.98	26.30	40.00	-13.70	QP
2	58.8185	48.76	-17.44	31.32	40.00	-8.68	QP
3	87.7248	50.62	-20.70	29.92	40.00	-10.08	QP
4	97.4560	52.81	-20.72	32.09	43.50	-11.41	QP
5 *	198.5880	56.30	-20.14	36.16	43.50	-7.34	QP
6	519.0649	37.78	-12.29	25.49	46.00	-20.51	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC 120V/60HZ
Test Mode:	Mode 6	Polarization :	Vertical



Remark:
1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement = Reading Level + Correct Factor
3. Over = Measurement - Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	39.1616	47.96	-16.97	30.99	40.00	-9.01	QP
2	48.3318	46.40	-16.73	29.67	40.00	-10.33	QP
3	58.8185	45.12	-17.44	27.68	40.00	-12.32	QP
4	94.4284	52.54	-20.77	31.77	43.50	-11.73	QP
5	195.1365	52.69	-19.90	32.79	43.50	-10.71	QP
6	558.7302	40.05	-11.22	28.83	46.00	-17.17	QP

Between 1GHz – 25GHz

802.11b

Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure-ment (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low channel:2412MHz							
V	4824.00	72.61	-19.95	52.66	74.00	-21.34	PK
V	4824.00	63.76	-19.95	43.81	54.00	-10.19	AV
V	7236.00	63.96	-14.14	49.82	74.00	-24.18	PK
V	7236.00	53.23	-14.14	39.09	54.00	-14.91	AV
H	4824.00	67.80	-19.95	47.85	74.00	-26.15	PK
H	4824.00	58.22	-19.95	38.27	54.00	-15.73	AV
H	7236.00	61.39	-14.14	47.25	74.00	-26.75	PK
H	7236.00	53.16	-14.14	39.02	54.00	-14.98	AV
Middle channel:2437MHz							
V	4874.00	68.92	-19.85	49.07	74.00	-24.93	PK
V	4874.00	61.76	-19.85	41.91	54.00	-12.09	AV
V	7311.00	59.66	-13.93	45.73	74.00	-28.27	PK
V	7311.00	50.29	-13.93	36.36	54.00	-17.64	AV
H	4874.00	66.82	-19.85	46.97	74.00	-27.03	PK
H	4874.00	56.52	-19.85	36.67	54.00	-17.33	AV
H	7311.00	58.63	-13.93	44.70	74.00	-29.30	PK
H	7311.00	50.88	-13.93	36.95	54.00	-17.05	AV
High channel:2462MHz							
V	4924.00	70.00	-19.75	50.25	74.00	-23.75	PK
V	4924.00	60.47	-19.75	40.72	54.00	-13.28	AV
V	7386.00	61.86	-13.72	48.14	74.00	-25.86	PK
V	7386.00	52.71	-13.72	38.99	54.00	-15.01	AV
H	4924.00	68.97	-19.75	49.22	74.00	-24.78	PK
H	4924.00	59.18	-19.75	39.43	54.00	-14.57	AV
H	7386.00	59.16	-13.72	45.44	74.00	-28.56	PK
H	7386.00	50.41	-13.72	36.69	54.00	-17.31	AV

Remark:
1.Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level - Limit
2. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11g

Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure-ment (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low channel:2412MHz							
V	4824.00	71.29	-19.95	51.34	74.00	-22.66	PK
V	4824.00	63.07	-19.95	43.12	54.00	-10.88	AV
V	7236.00	62.75	-14.14	48.61	74.00	-25.39	PK
V	7236.00	53.54	-14.14	39.40	54.00	-14.60	AV
H	4824.00	66.36	-19.95	46.41	74.00	-27.59	PK
H	4824.00	56.53	-19.95	36.58	54.00	-17.42	AV
H	7236.00	61.21	-14.14	47.07	74.00	-26.93	PK
H	7236.00	53.32	-14.14	39.18	54.00	-14.82	AV
Middle channel:2437MHz							
V	4874.00	68.63	-19.85	48.78	74.00	-25.22	PK
V	4874.00	60.47	-19.85	40.62	54.00	-13.38	AV
V	7311.00	61.34	-13.93	47.41	74.00	-26.59	PK
V	7311.00	52.88	-13.93	38.95	54.00	-15.05	AV
H	4874.00	66.50	-19.85	46.65	74.00	-27.35	PK
H	4874.00	56.78	-19.85	36.93	54.00	-17.07	AV
H	7311.00	60.08	-13.93	46.15	74.00	-27.85	PK
H	7311.00	51.16	-13.93	37.23	54.00	-16.77	AV
High channel:2462MHz							
V	4924.00	70.91	-19.75	51.16	74.00	-22.84	PK
V	4924.00	61.69	-19.75	41.94	54.00	-12.06	AV
V	7386.00	62.98	-13.72	49.26	74.00	-24.74	PK
V	7386.00	52.56	-13.72	38.84	54.00	-15.16	AV
H	4924.00	67.94	-19.75	48.19	74.00	-25.81	PK
H	4924.00	58.86	-19.75	39.11	54.00	-14.89	AV
H	7386.00	60.07	-13.72	46.35	74.00	-27.65	PK
H	7386.00	52.14	-13.72	38.42	54.00	-15.58	AV

Remark:
1.Emission Level = Meter Reading + Factor,
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Over= Emission Level - Limit
2. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n20

Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure-ment (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low channel:2412MHz							
V	4824.00	71.22	-19.95	51.27	74.00	-22.73	PK
V	4824.00	61.40	-19.95	41.45	54.00	-12.55	AV
V	7236.00	62.13	-14.14	47.99	74.00	-26.01	PK
V	7236.00	52.04	-14.14	37.90	54.00	-16.10	AV
H	4824.00	68.22	-19.95	48.27	74.00	-25.73	PK
H	4824.00	58.36	-19.95	38.41	54.00	-15.59	AV
H	7236.00	60.48	-14.14	46.34	74.00	-27.66	PK
H	7236.00	52.42	-14.14	38.28	54.00	-15.72	AV
Middle channel:2437MHz							
V	4874.00	67.35	-19.85	47.50	74.00	-26.50	PK
V	4874.00	58.55	-19.85	38.70	54.00	-15.30	AV
V	7311.00	59.73	-13.93	45.80	74.00	-28.20	PK
V	7311.00	51.39	-13.93	37.46	54.00	-16.54	AV
H	4874.00	65.34	-19.85	45.49	74.00	-28.51	PK
H	4874.00	55.10	-19.85	35.25	54.00	-18.75	AV
H	7311.00	57.39	-13.93	43.46	74.00	-30.54	PK
H	7311.00	49.64	-13.93	35.71	54.00	-18.29	AV
High channel:2462MHz							
V	4924.00	70.05	-19.75	50.30	74.00	-23.70	PK
V	4924.00	61.56	-19.75	41.81	54.00	-12.19	AV
V	7386.00	61.36	-13.72	47.64	74.00	-26.36	PK
V	7386.00	51.31	-13.72	37.59	54.00	-16.41	AV
H	4924.00	68.43	-19.75	48.68	74.00	-25.32	PK
H	4924.00	58.52	-19.75	38.77	54.00	-15.23	AV
H	7386.00	60.04	-13.72	46.32	74.00	-27.68	PK
H	7386.00	51.50	-13.72	37.78	54.00	-16.22	AV

Remark:
1.Emission Level = Meter Reading + Factor,
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Over= Emission Level - Limit
2. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n40

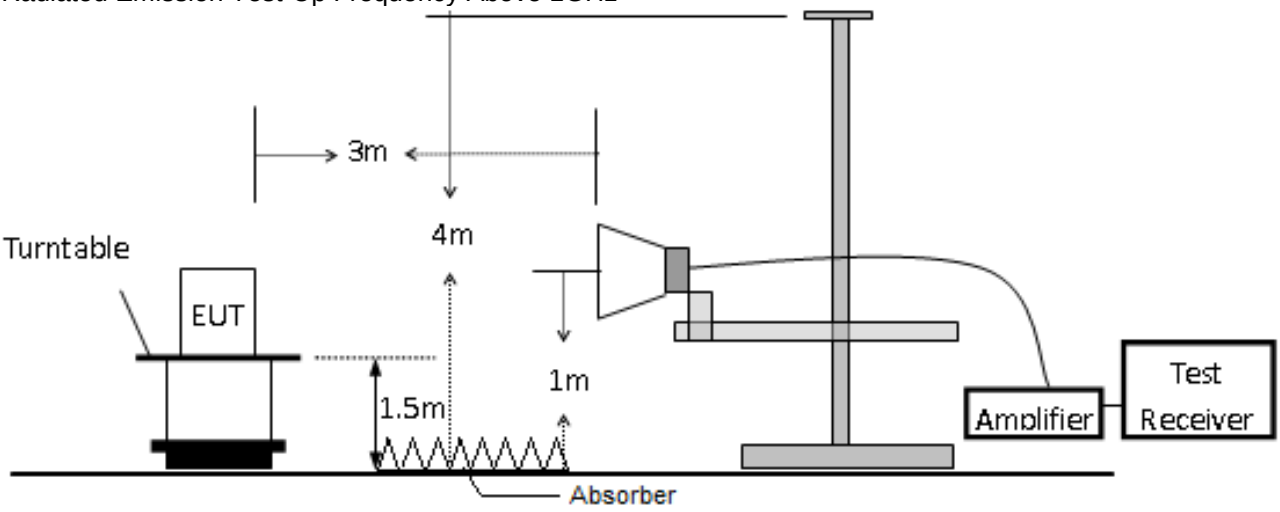
Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure-ment (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low channel:2422MHz							
V	4844.00	72.49	-19.91	52.58	74.00	-21.42	PK
V	4844.00	62.39	-19.91	42.48	54.00	-11.52	AV
V	7266.00	65.28	-14.06	51.22	74.00	-22.78	PK
V	7266.00	54.80	-14.06	40.74	54.00	-13.26	AV
H	4844.00	69.59	-19.91	49.68	74.00	-24.32	PK
H	4844.00	59.69	-19.91	39.78	54.00	-14.22	AV
H	7266.00	62.87	-14.06	48.81	74.00	-25.19	PK
H	7266.00	55.37	-14.06	41.31	54.00	-12.69	AV
Middle channel:2437MHz							
V	4874.00	70.75	-19.85	50.90	74.00	-23.10	PK
V	4874.00	63.40	-19.85	43.55	54.00	-10.45	AV
V	7311.00	62.13	-13.93	48.20	74.00	-25.80	PK
V	7311.00	53.20	-13.93	39.27	54.00	-14.73	AV
H	4874.00	66.76	-19.85	46.91	74.00	-27.09	PK
H	4874.00	55.86	-19.85	36.01	54.00	-17.99	AV
H	7311.00	59.84	-13.93	45.91	74.00	-28.09	PK
H	7311.00	51.28	-13.93	37.35	54.00	-16.65	AV
High channel:2452MHz							
V	4904.00	71.77	-19.79	51.98	74.00	-22.02	PK
V	4904.00	61.09	-19.79	41.30	54.00	-12.70	AV
V	7356.00	63.35	-13.80	49.55	74.00	-24.45	PK
V	7356.00	54.33	-13.80	40.53	54.00	-13.47	AV
H	4904.00	69.05	-19.79	49.26	74.00	-24.74	PK
H	4904.00	58.98	-19.79	39.19	54.00	-14.81	AV
H	7356.00	60.40	-13.80	46.60	74.00	-27.40	PK
H	7356.00	53.21	-13.80	39.41	54.00	-14.59	AV

Remark:
1.Emission Level = Meter Reading + Factor,
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Over= Emission Level - Limit
2. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

8. Radiated Band Emission Measurement and Restricted Bands Of Operation

8.1 Block Diagram Of Test Setup

Radiated Emission Test-Up Frequency Above 1GHz



8.2 Limit

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

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			

Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Limit (dBuV/m) (at 3M)	
	Peak	Average
Above 1000	74	54

Notes:
(1)The limit for radiated test was performed according to FCC PART 15C.
(2)The tighter limit applies at the band edges.
(3)Emission level (dBuV/m)=20log Emission level (uV/m).

8.3 Test procedure

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Above 1GHz test procedure as below:
a.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.
b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.
Note:
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

8.4 EUT Operating Conditions

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

8.5 Test Result

Test mode	Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure-ment (dBuV/m)	Limits (dBuV/m)		Result
					PK	PK	AV	
802.11b	Low Channel 2412MHz							
	H	2390.00	72.38	-25.43	46.95	74.00	54.00	PASS
	H	2400.00	74.55	-25.40	49.15	74.00	54.00	PASS
	V	2390.00	72.26	-25.43	46.83	74.00	54.00	PASS
	V	2400.00	72.16	-25.40	46.76	74.00	54.00	PASS
	High Channel 2462MHz							
	H	2483.50	71.70	-25.15	46.55	74.00	54.00	PASS
	H	2500.00	69.01	-25.10	43.91	74.00	54.00	PASS
	V	2483.50	70.72	-25.15	45.57	74.00	54.00	PASS
	V	2500.00	67.70	-25.10	42.60	74.00	54.00	PASS
802.11g	Low Channel 2412MHz							
	H	2390.00	73.65	-25.43	48.22	74.00	54.00	PASS
	H	2400.00	75.08	-25.40	49.68	74.00	54.00	PASS
	V	2390.00	73.90	-25.43	48.47	74.00	54.00	PASS
	V	2400.00	74.34	-25.40	48.94	74.00	54.00	PASS
	High Channel 2462MHz							
	H	2483.50	73.94	-25.15	48.79	74.00	54.00	PASS
	H	2500.00	69.94	-25.10	44.84	74.00	54.00	PASS
	V	2483.50	71.98	-25.15	46.83	74.00	54.00	PASS
	V	2500.00	67.85	-25.10	42.75	74.00	54.00	PASS

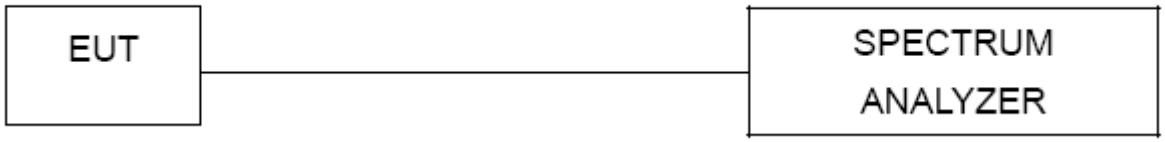
Remark:
1. Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Over= Emission Level – Limit
2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.
3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
4.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Test mode	Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure-ment (dBuV/m)	Limits (dBuV/m)		Result
					PK	PK	AV	
802.11n20	Low Channel 2412MHz							
	H	2390.00	73.81	-25.43	48.38	74.00	54.00	PASS
	H	2400.00	75.57	-25.40	50.17	74.00	54.00	PASS
	V	2390.00	74.02	-25.43	48.59	74.00	54.00	PASS
	V	2400.00	74.91	-25.40	49.51	74.00	54.00	PASS
	High Channel 2462MHz							
	H	2483.50	72.54	-25.15	47.39	74.00	54.00	PASS
	H	2500.00	69.89	-25.10	44.79	74.00	54.00	PASS
	V	2483.50	72.28	-25.15	47.13	74.00	54.00	PASS
	V	2500.00	68.66	-25.10	43.56	74.00	54.00	PASS
802.11n40	Low Channel 2422MHz							
	H	2390.00	73.30	-25.43	47.87	74.00	54.00	PASS
	H	2400.00	75.42	-25.40	50.02	74.00	54.00	PASS
	V	2390.00	73.48	-25.43	48.05	74.00	54.00	PASS
	V	2400.00	74.23	-25.40	48.83	74.00	54.00	PASS
	High Channel 2452MHz							
	H	2483.50	72.56	-25.15	47.41	74.00	54.00	PASS
	H	2500.00	68.69	-25.10	43.59	74.00	54.00	PASS
	V	2483.50	73.24	-25.15	48.09	74.00	54.00	PASS
	V	2500.00	68.27	-25.10	43.17	74.00	54.00	PASS

Remark:
1. Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level – Limit
2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.
3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB
4.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

9. Power Spectral Density Test

9.1 Block Diagram Of Test Setup



9.2 Limit

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

Limits Of Radiated Emission Measurement (Above 1000MHz)

9.3 Test procedure

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

9.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.
Note: Power Spectral Density(dBm)=Reading+Cable Loss

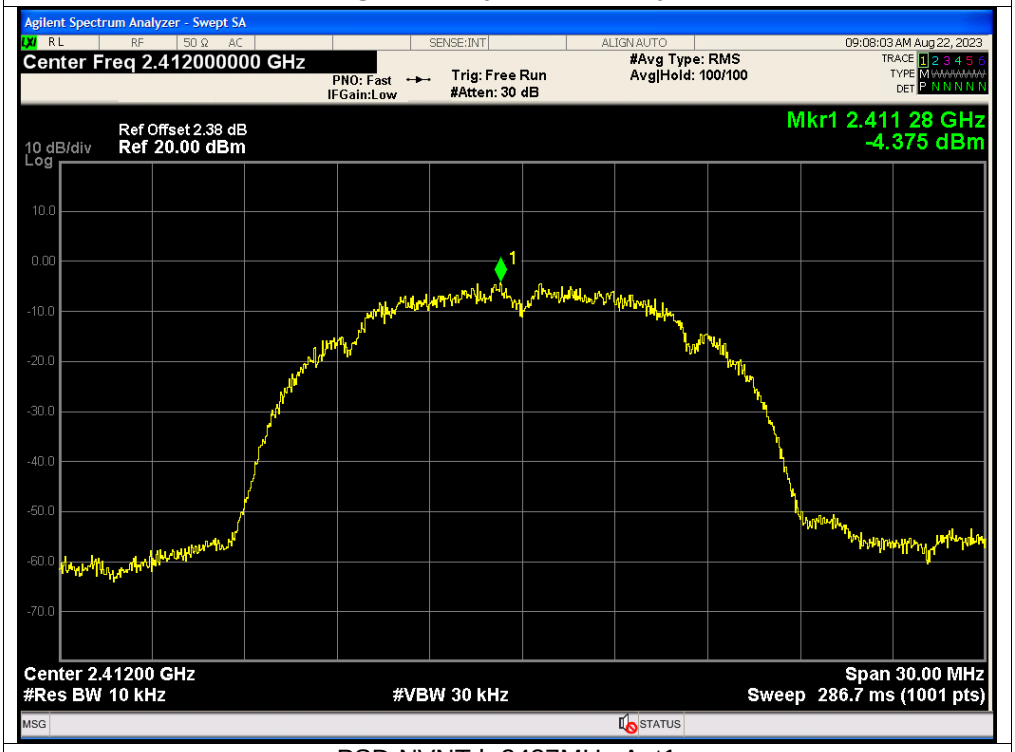
9.5 Test Result

Temperature:	22 ℃	Relative Humidity:	50%
Pressure:	101KPa	Test Voltage:	AC 120V/60HZ

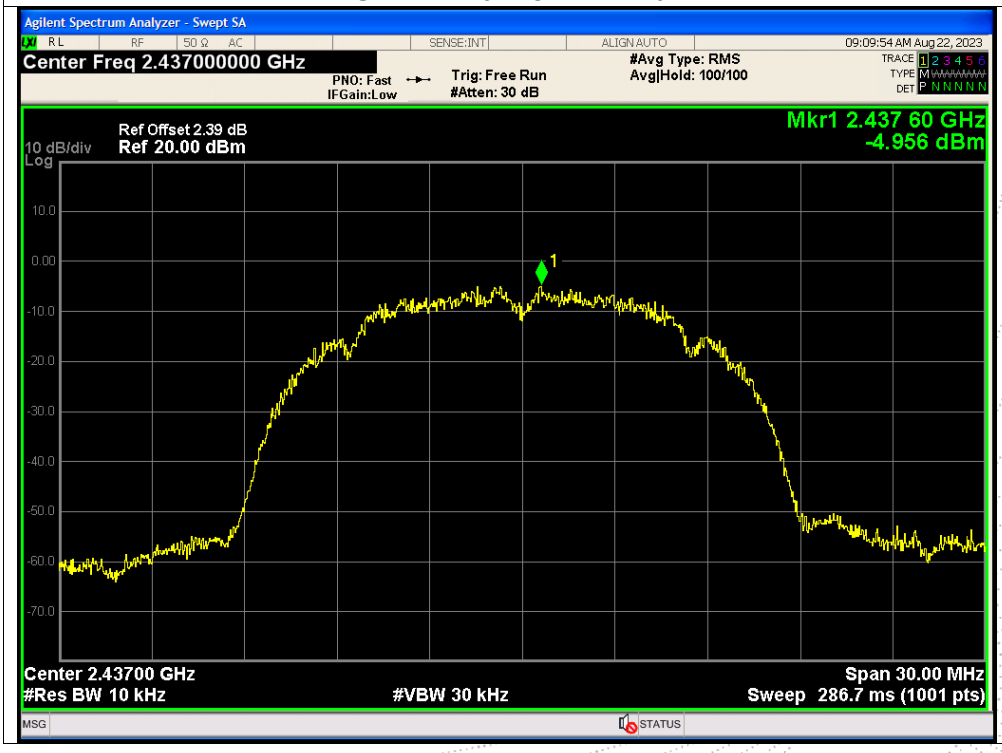
Test Mode	Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
TX b Mode	2412 MHz	-4.38	8	PASS
	2437 MHz	-4.96	8	PASS
	2462 MHz	-4.97	8	PASS
TX g Mode	2412 MHz	-8.39	8	PASS
	2437 MHz	-8.82	8	PASS
	2462 MHz	-8.63	8	PASS
TX n Mode(20M)	2412 MHz	-7.43	8	PASS
	2437 MHz	-7.66	8	PASS
	2462 MHz	-7.61	8	PASS
TX n Mode(40M)	2422 MHz	-10.29	8	PASS
	2437 MHz	-9.97	8	PASS
	2452 MHz	-10.43	8	PASS

Test Graphs

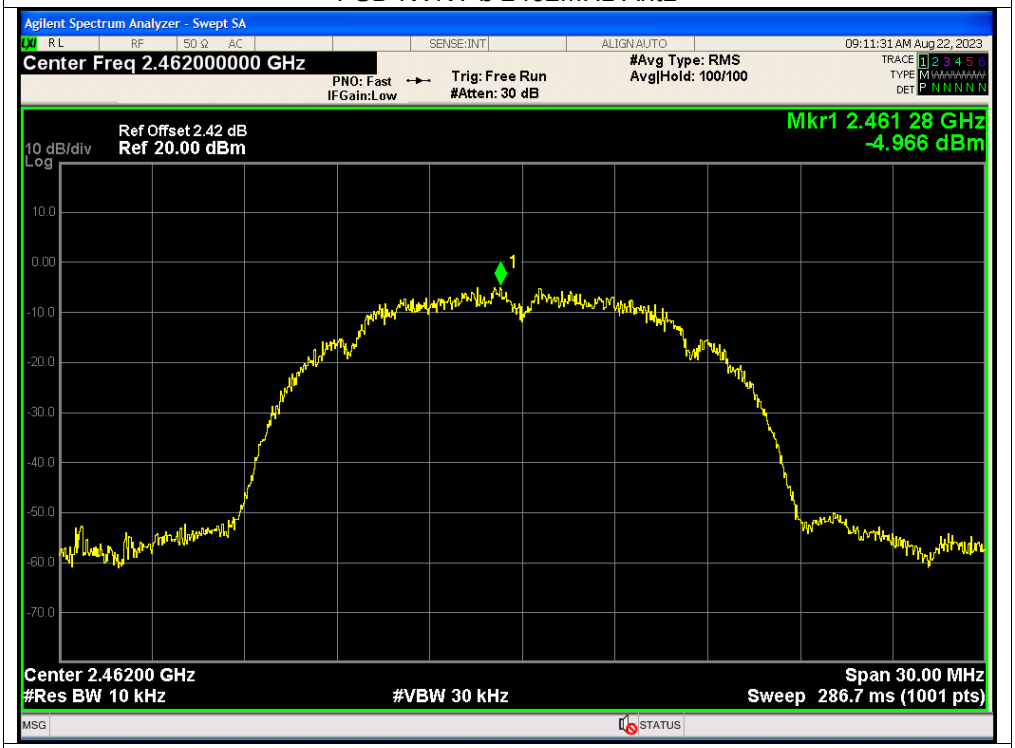
PSD NVNT b 2412MHz Ant1



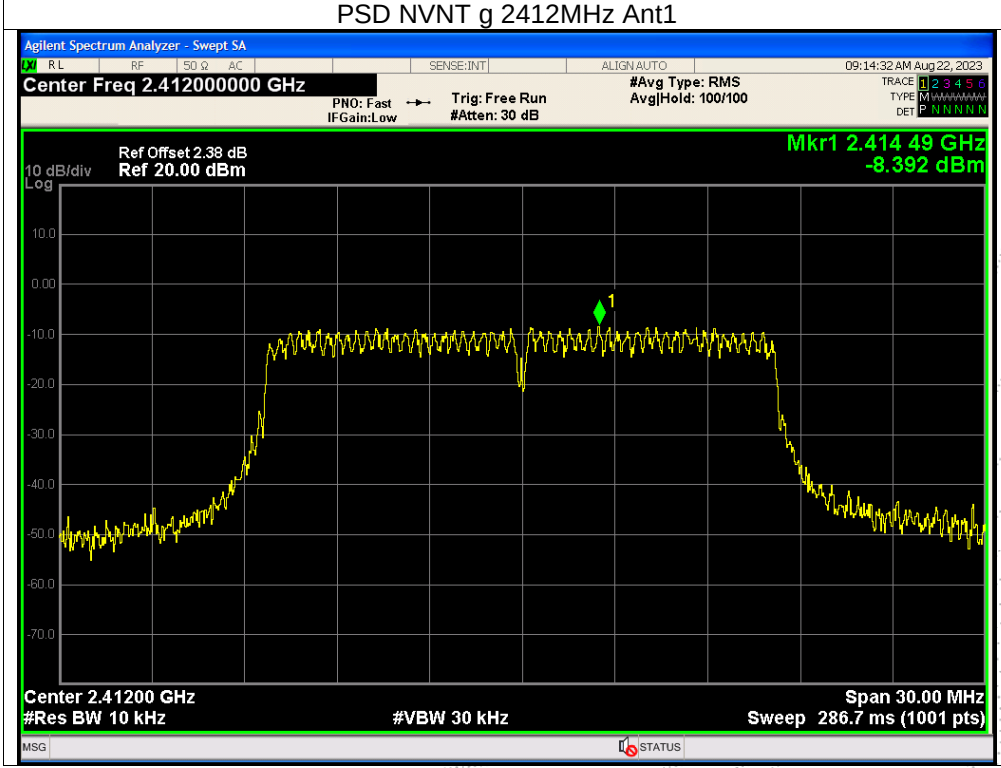
PSD NVNT b 2437MHz Ant1



PSD NVNT b 2462MHz Ant1



PSD NVNT g 2412MHz Ant1



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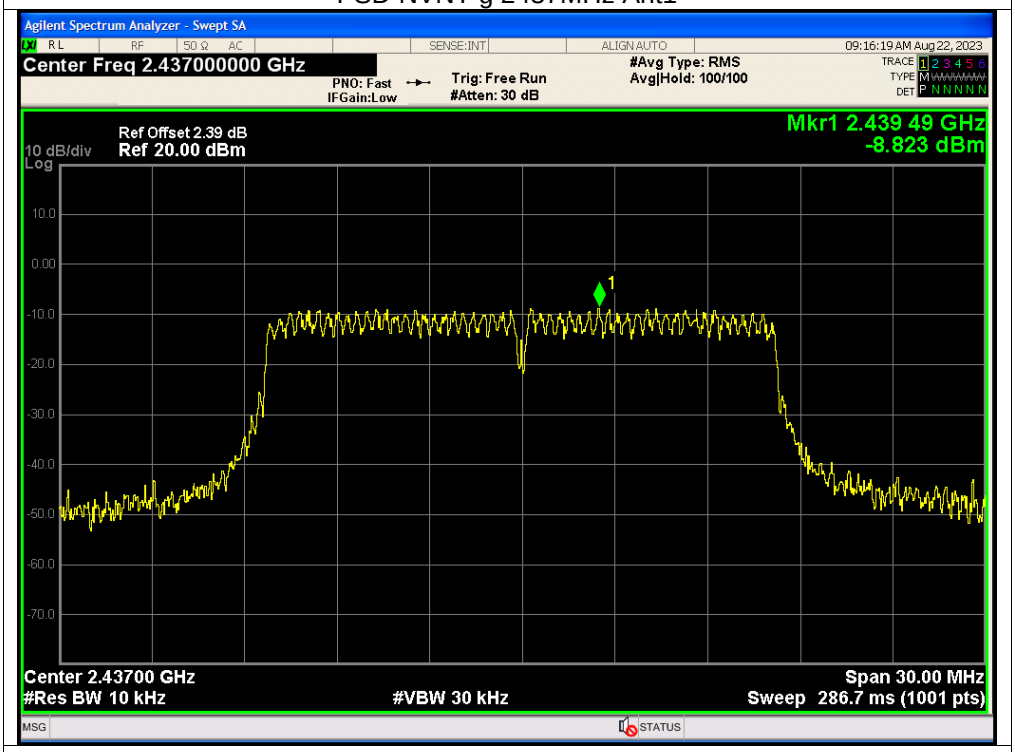

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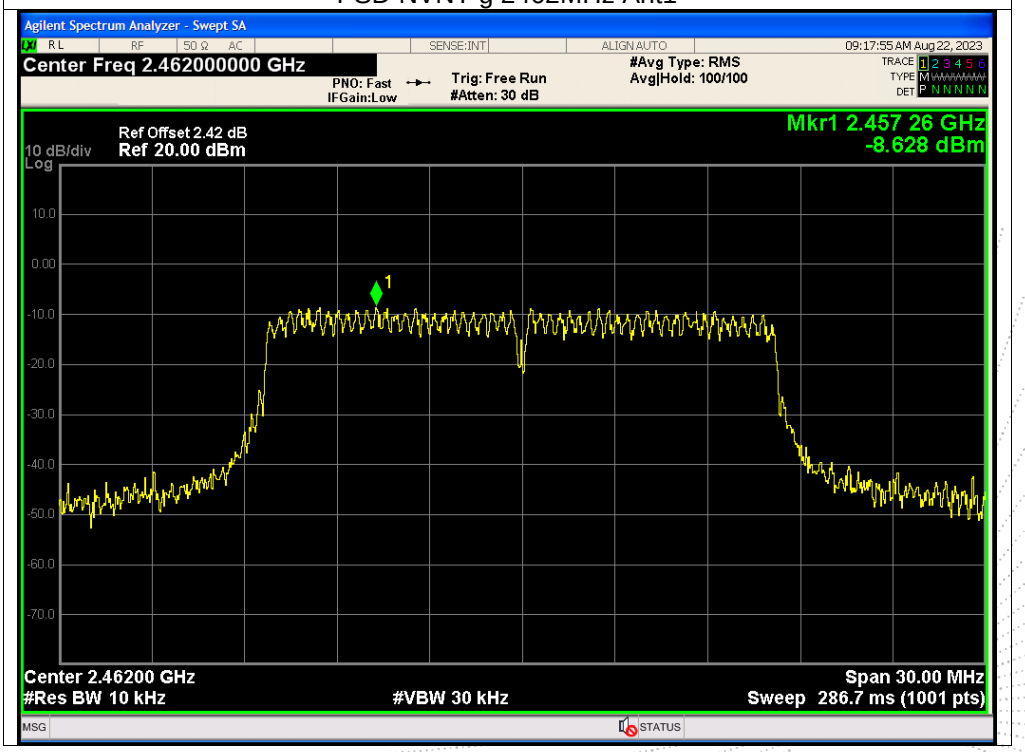
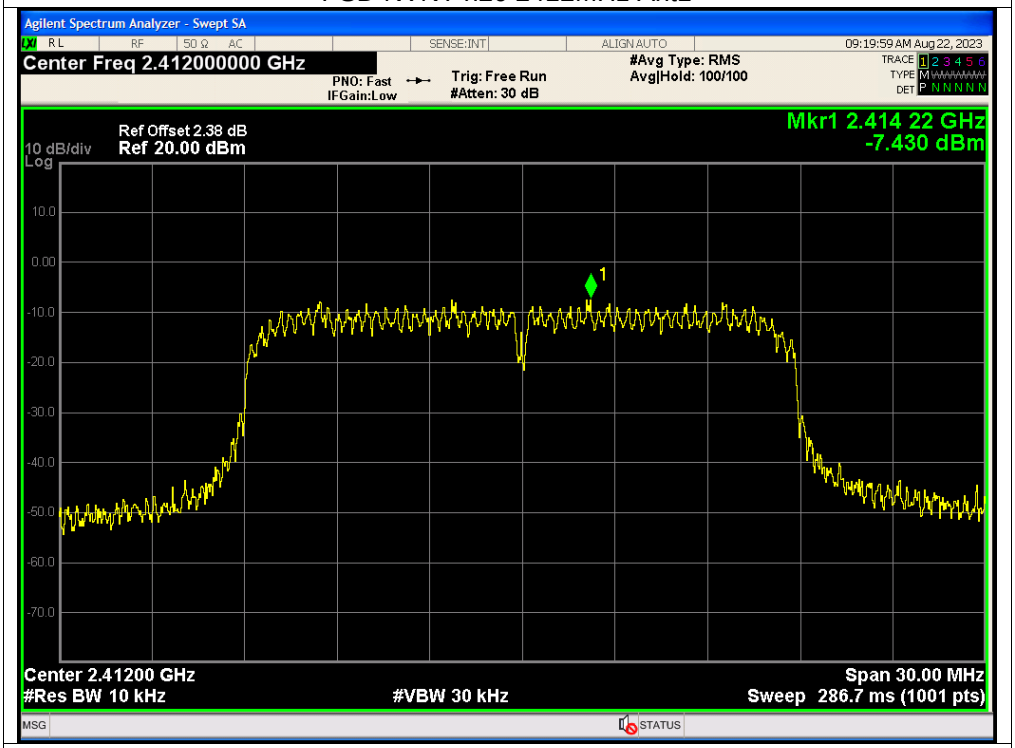
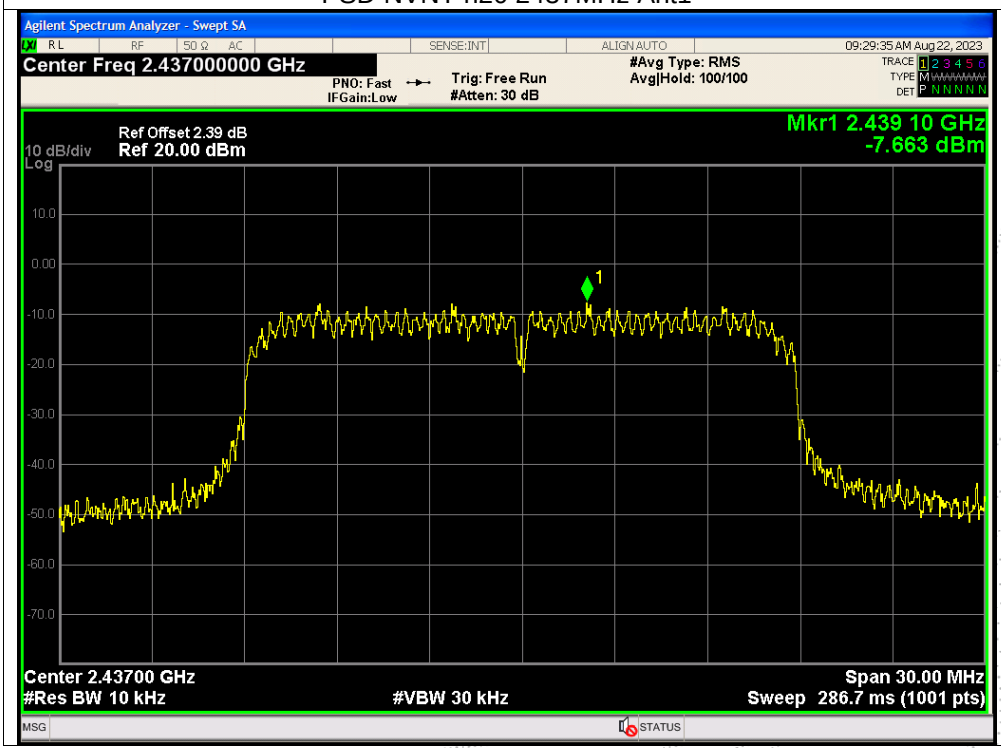


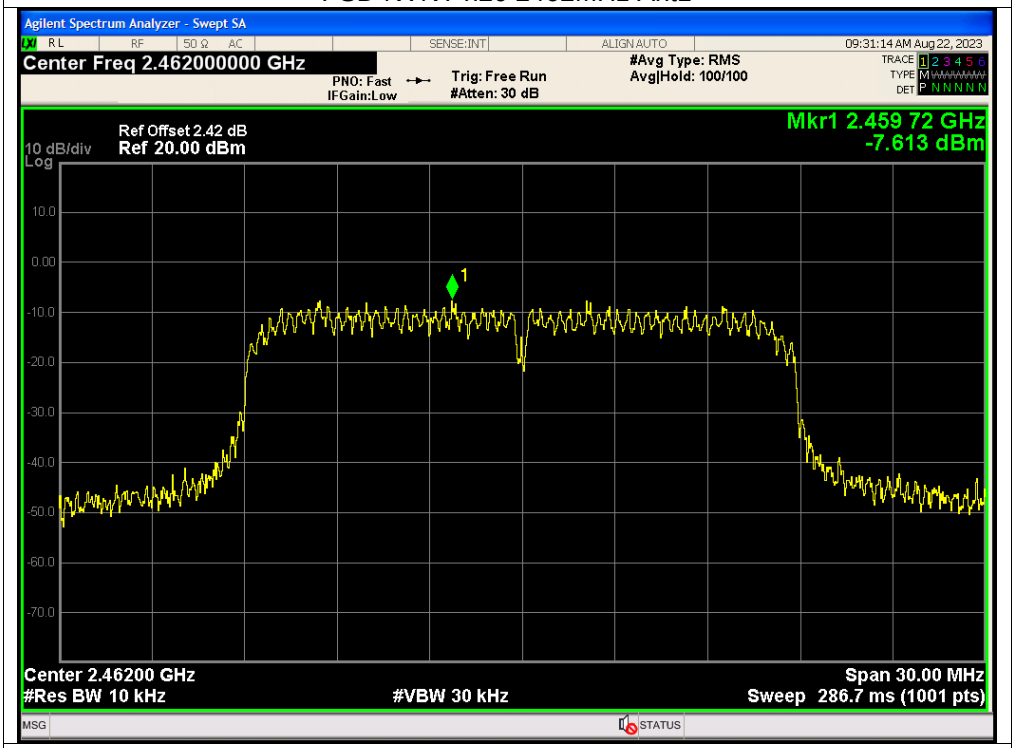
PSD NVNT n20 2412MHz Ant1



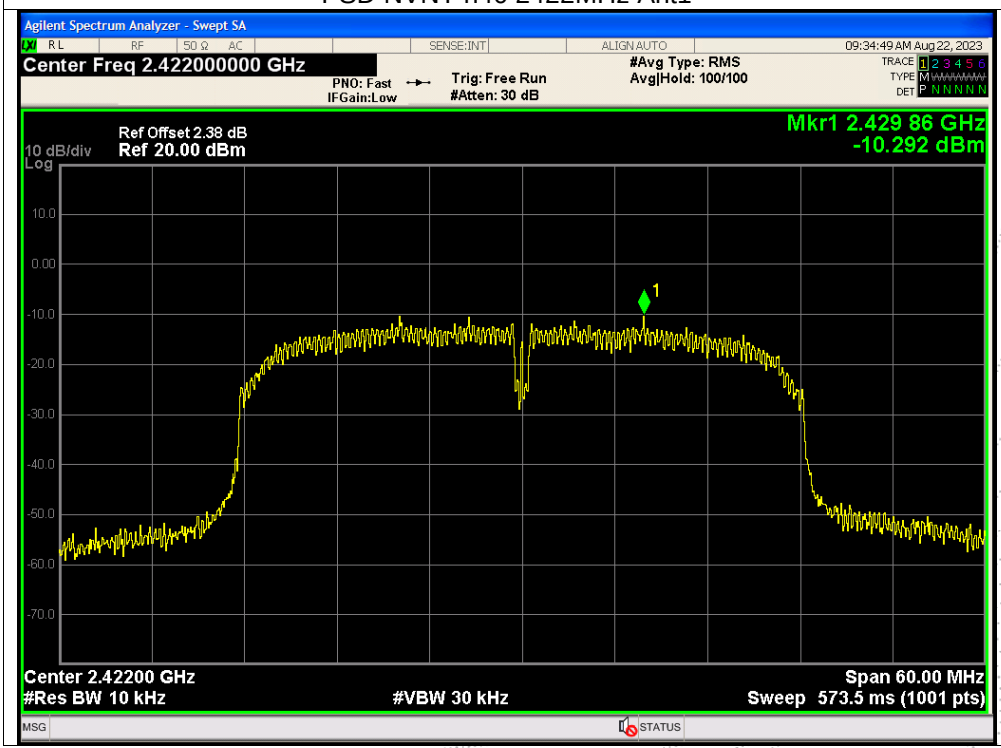
PSD NVNT n20 2437MHz Ant1



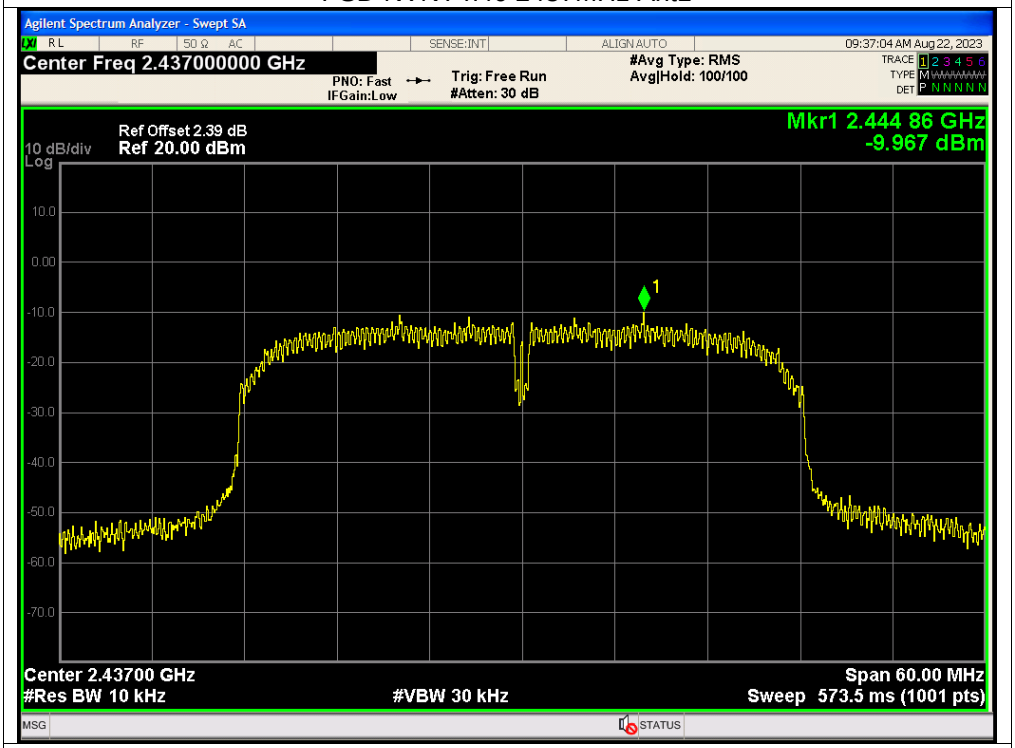
PSD NVNT n20 2462MHz Ant1



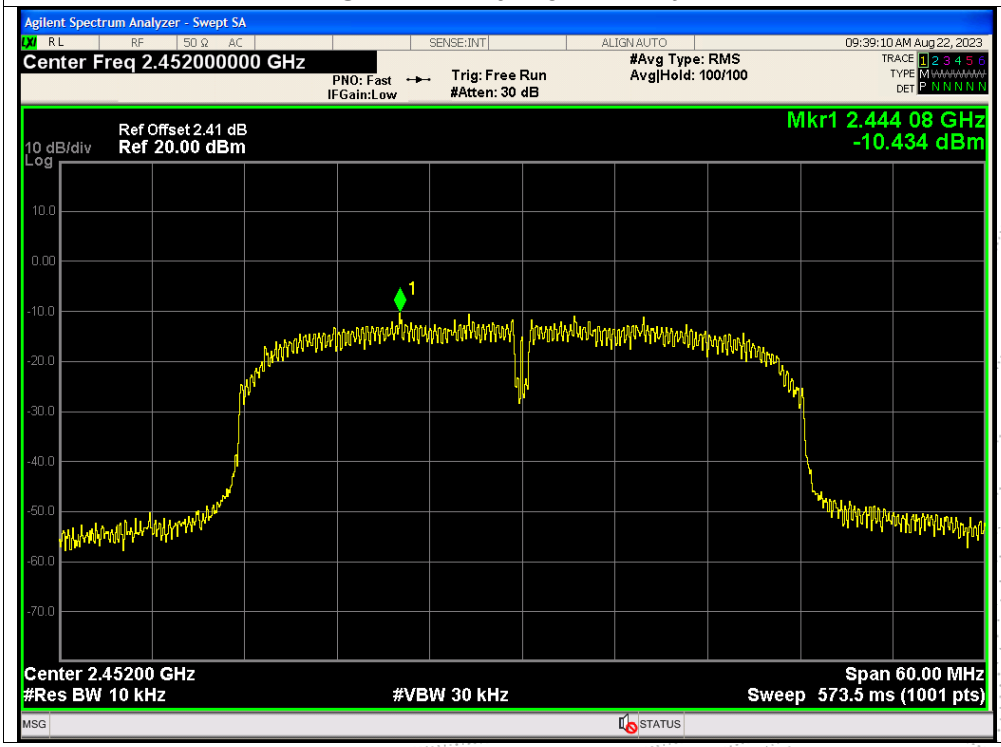
PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1

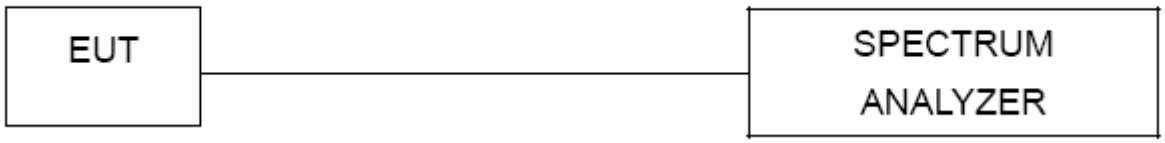


PSD NVNT n40 2452MHz Ant1



10. -6dB Bandwidth Test

10.1 Block Diagram Of Test Setup



10.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (-6dB bandwidth)	2400-2483.5	PASS

10.3 Test procedure

1. Set RBW = 100 kHz.

2. Set the video bandwidth (VBW) ≥ 3 x RBW.

3. Detector = Peak.

4. Trace mode = max hold.

5. Sweep = auto couple.

6. Allow the trace to stabilize.

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

10.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

Note: Power Spectral Density(dBm)=Reading+Cable Loss

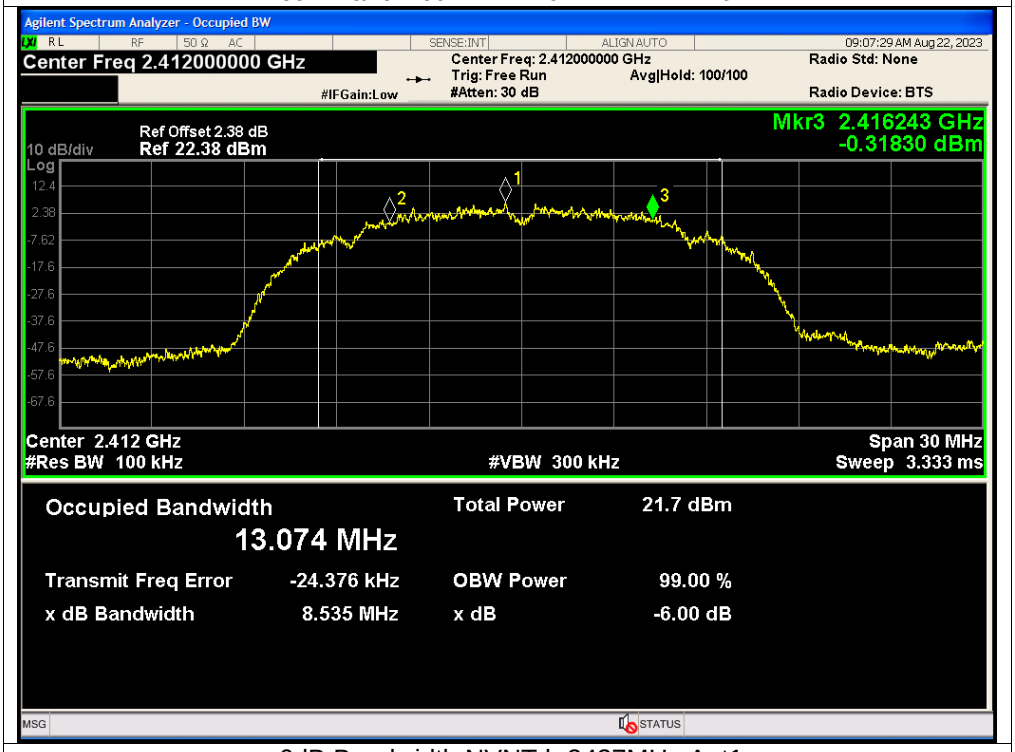
10.5 Test Result

Temperature:	22 ℃	Relative Humidity:	50%
Pressure:	101KPa	Test Voltage:	AC 120V/60HZ

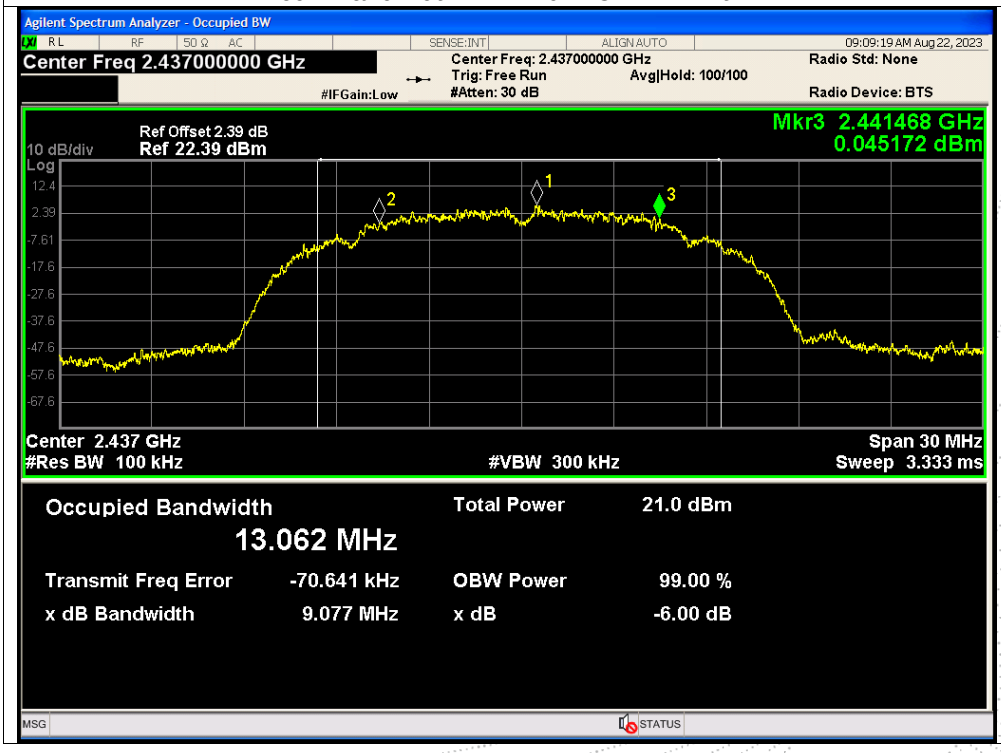
Test Mode	Frequency (MHz)	-6dB bandwidth (MHz)	Limit (kHz)	Result
TX b Mode	2412	8.535	500	Pass
	2437	9.077	500	Pass
	2462	8.926	500	Pass
TX g Mode	2412	16.381	500	Pass
	2437	16.37	500	Pass
	2462	16.367	500	Pass
TX n Mode(20M)	2412	16.972	500	Pass
	2437	16.795	500	Pass
	2462	16.816	500	Pass
TX n Mode(40M)	2422	31.827	500	Pass
	2437	32.685	500	Pass
	2452	31.791	500	Pass

Test Graphs

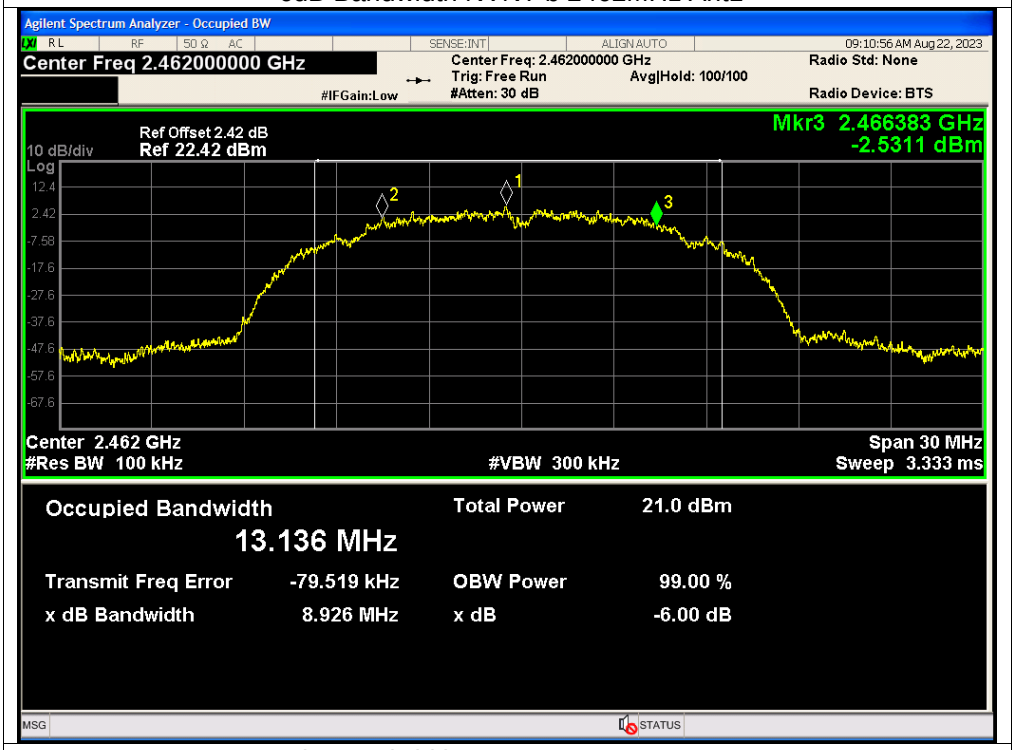
-6dB Bandwidth NVNT b 2412MHz Ant1



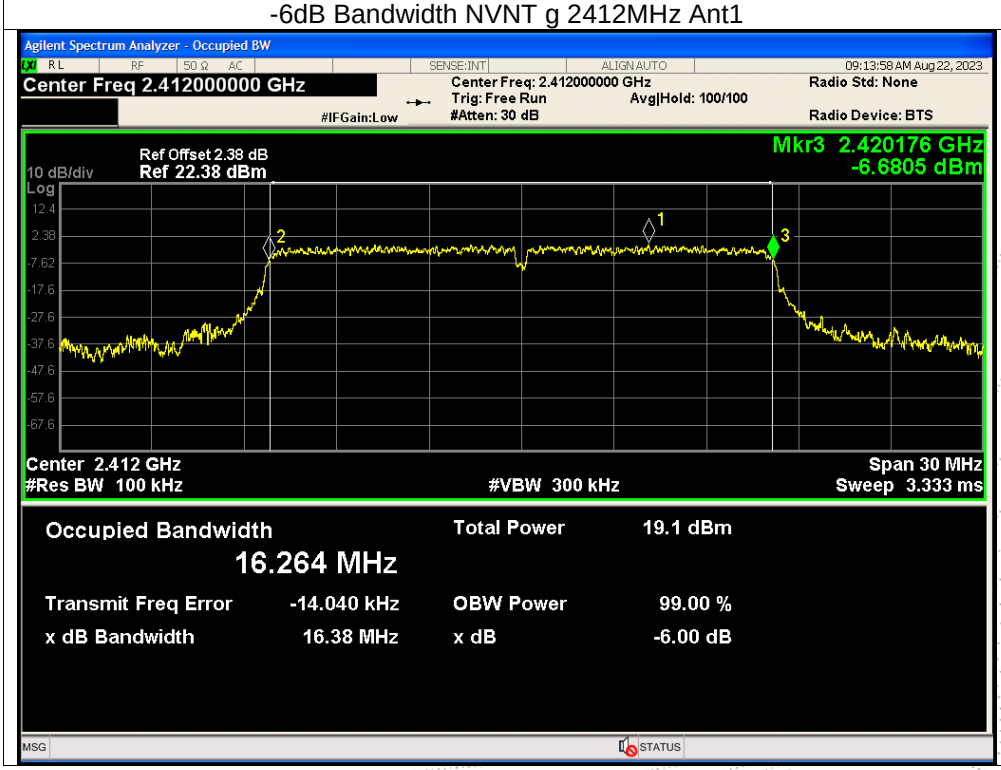
-6dB Bandwidth NVNT b 2437MHz Ant1



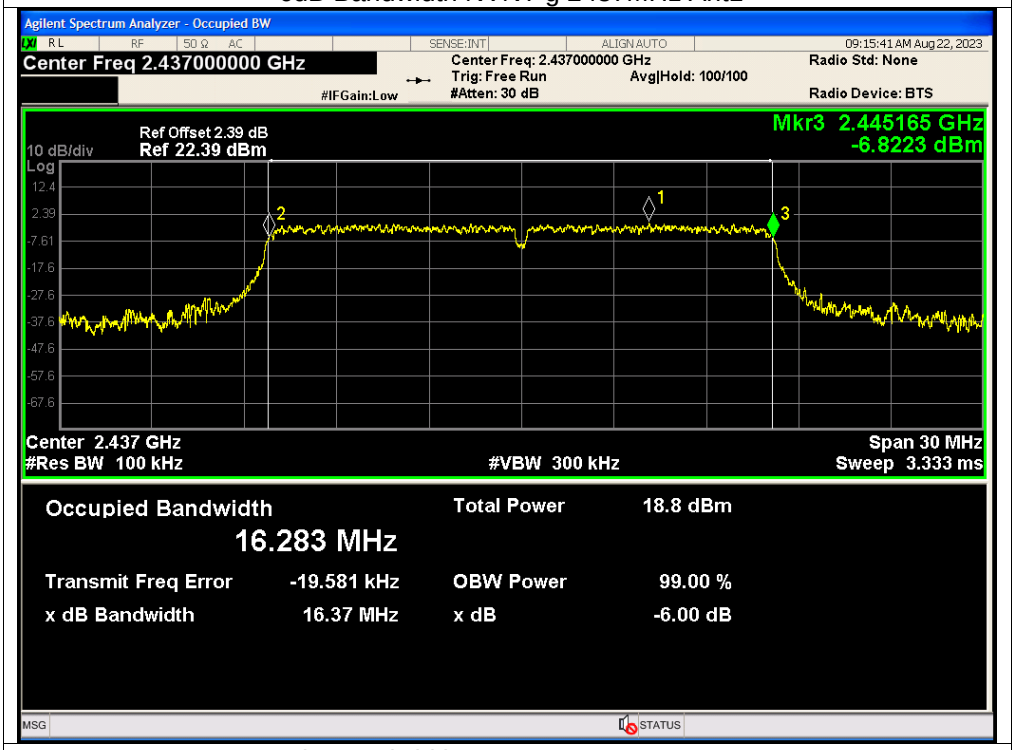
-6dB Bandwidth NVNT b 2462MHz Ant1



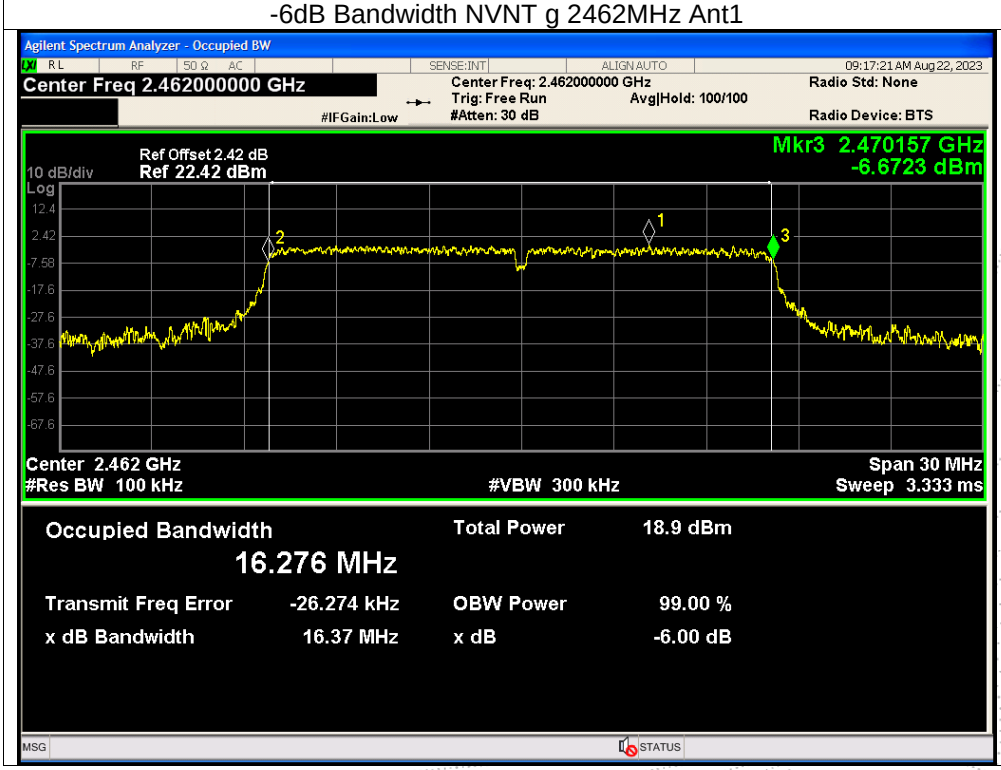
-6dB Bandwidth NVNT g 2412MHz Ant1



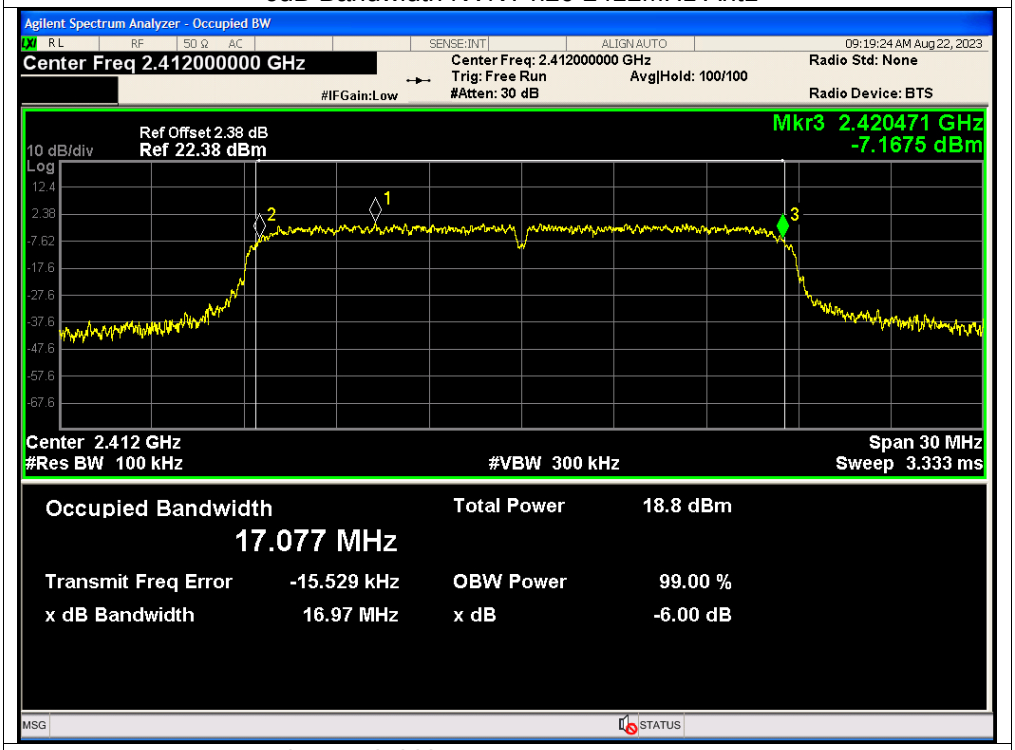
-6dB Bandwidth NVNT g 2437MHz Ant1



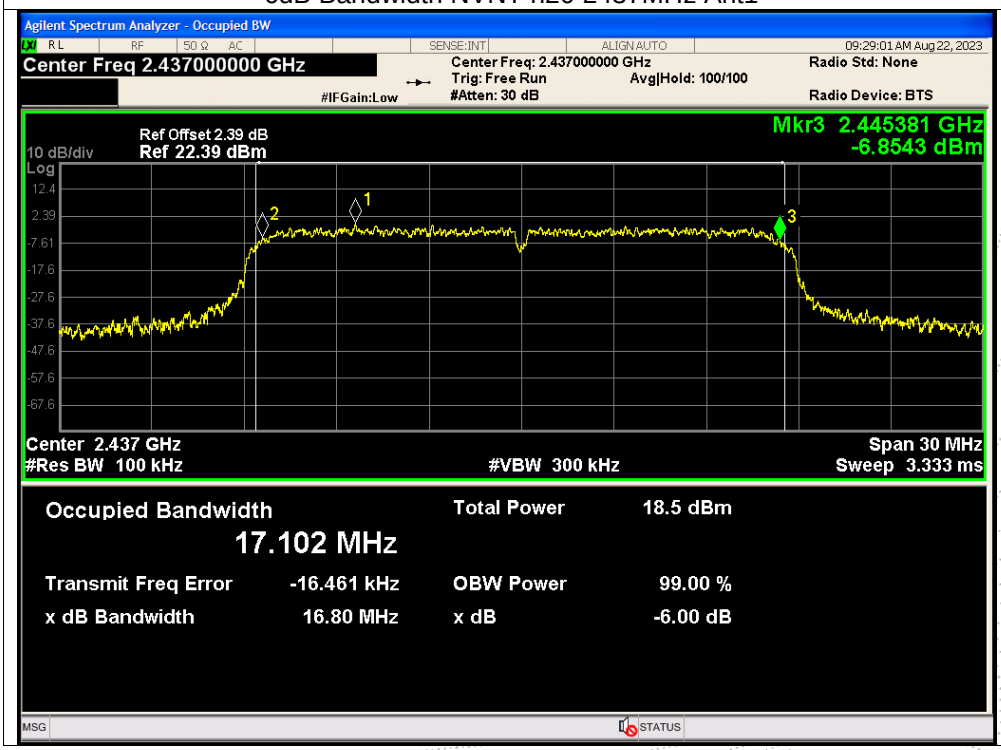
-6dB Bandwidth NVNT g 2462MHz Ant1



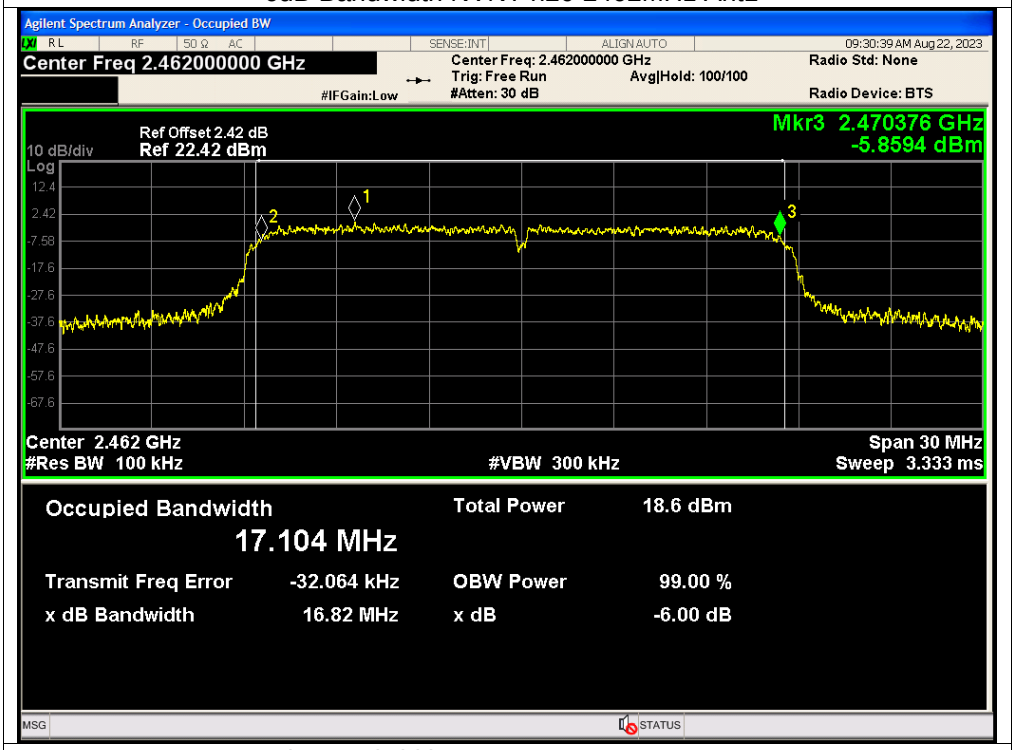
-6dB Bandwidth NVNT n20 2412MHz Ant1



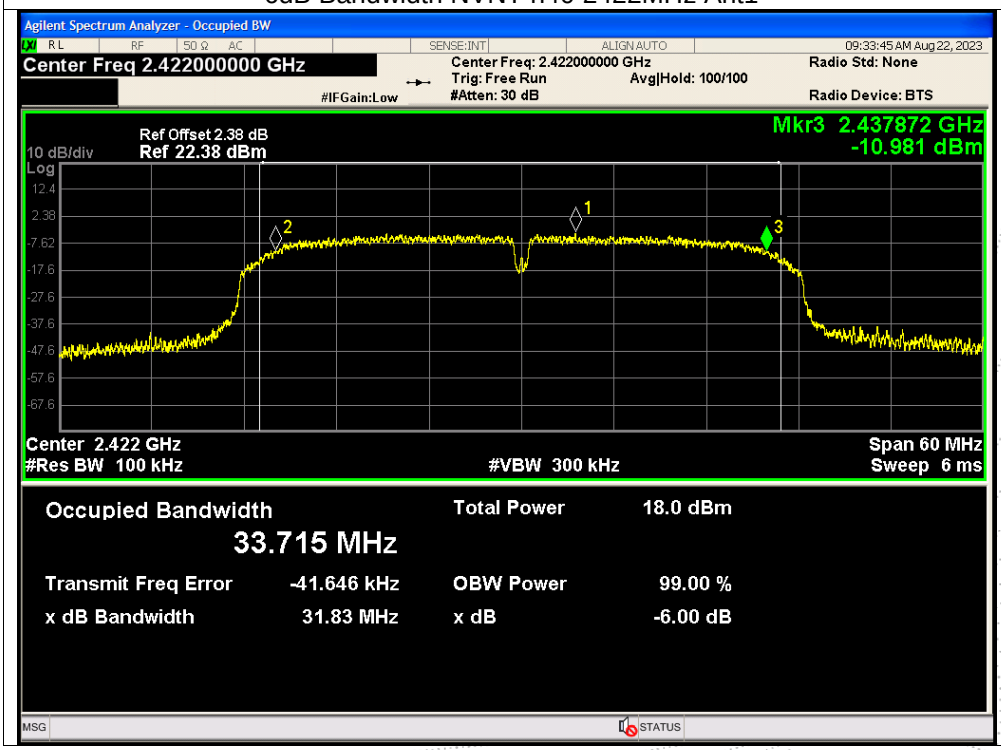
-6dB Bandwidth NVNT n20 2437MHz Ant1



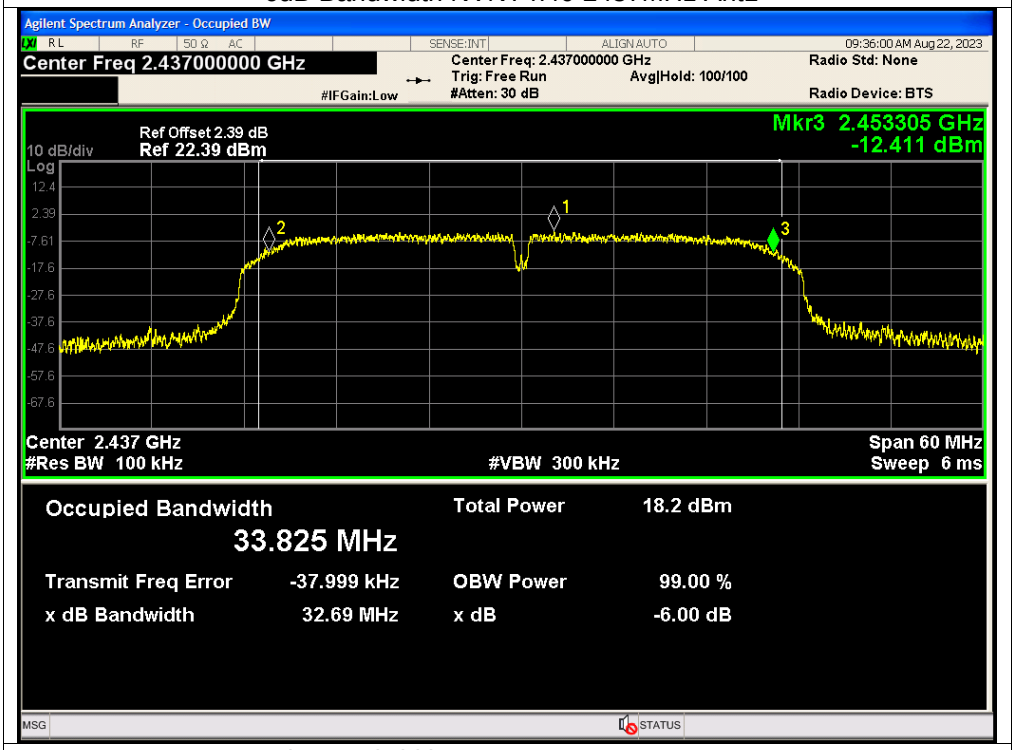
-6dB Bandwidth NVNT n20 2462MHz Ant1



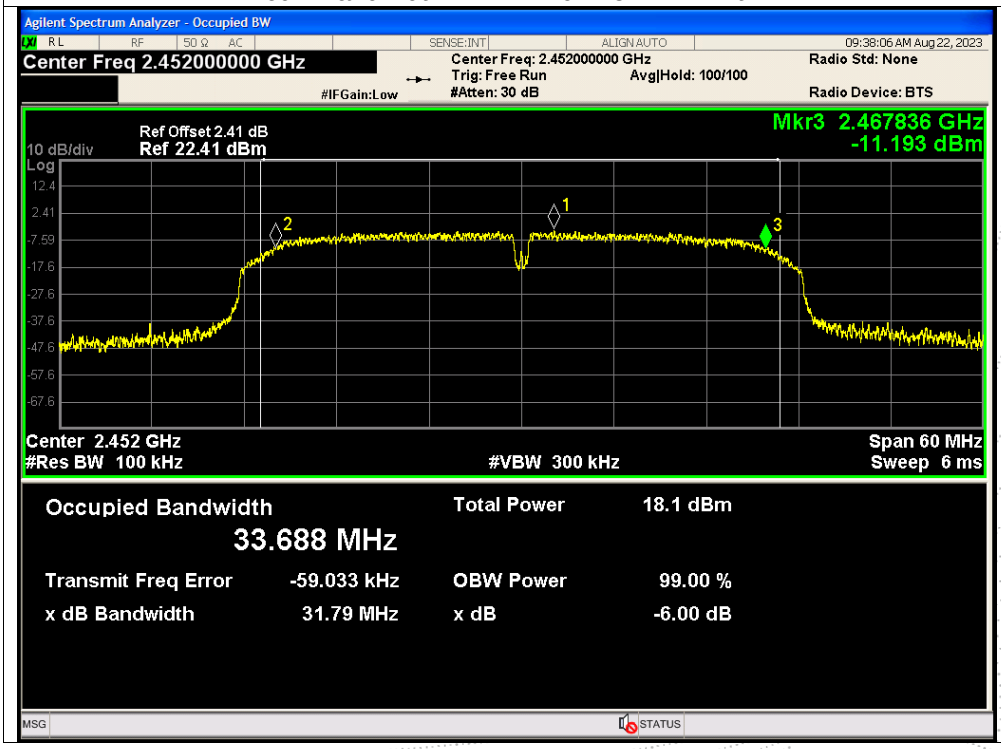
-6dB Bandwidth NVNT n40 2422MHz Ant1



-6dB Bandwidth NVNT n40 2437MHz Ant1



-6dB Bandwidth NVNT n40 2452MHz Ant1



11. Peak Output Power Test

11.1 Block Diagram Of Test Setup

11.2 Limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

11.3 Test Procedure

a. The EUT was directly connected to the Power meter

11.4 EUT Operating Conditions

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.
Note: Power Spectral Density(dBm)=Reading+Cable Loss

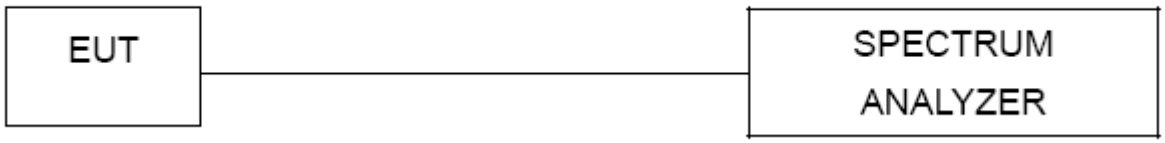
11.5 Test Result

Temperature:	22 ℃	Relative Humidity:	50%
Pressure:	101KPa	Test Voltage:	AC 120V/60HZ

Test Mode	Frequency(MHz)	Maximum Conducted Output Power(PK) (dBm)	Limit (dBm)
802.11b	2412	14.92	30
	2437	13.99	30
	2462	13.99	30
802.11g	2412	13.62	30
	2437	13.37	30
	2462	13.4	30
802.11n20	2412	13.41	30
	2437	13.11	30
	2462	13.17	30
802.11n40	2422	12.43	30
	2437	12.56	30
	2452	12.51	30

12. 100 kHz Bandwidth Of Frequency Band Edge

12.1 Block Diagram Of Test Setup



12.2 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.

12.3 Test Procedure

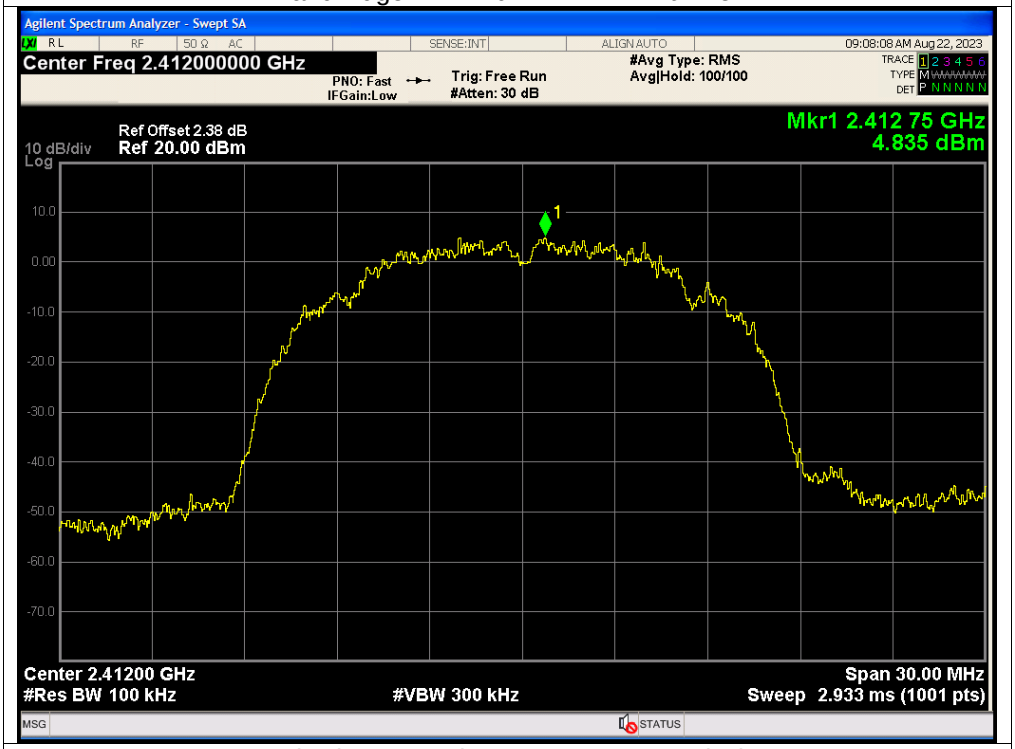
Using the following spectrum analyzer setting:
a) Set the RBW = 100KHz.
b) Set the VBW = 300KHz.
c) Sweep time = auto couple.
d) Detector function = peak.
e) Trace mode = max hold.
f) Allow trace to fully stabilize..

12.4 EUT Operating Conditions

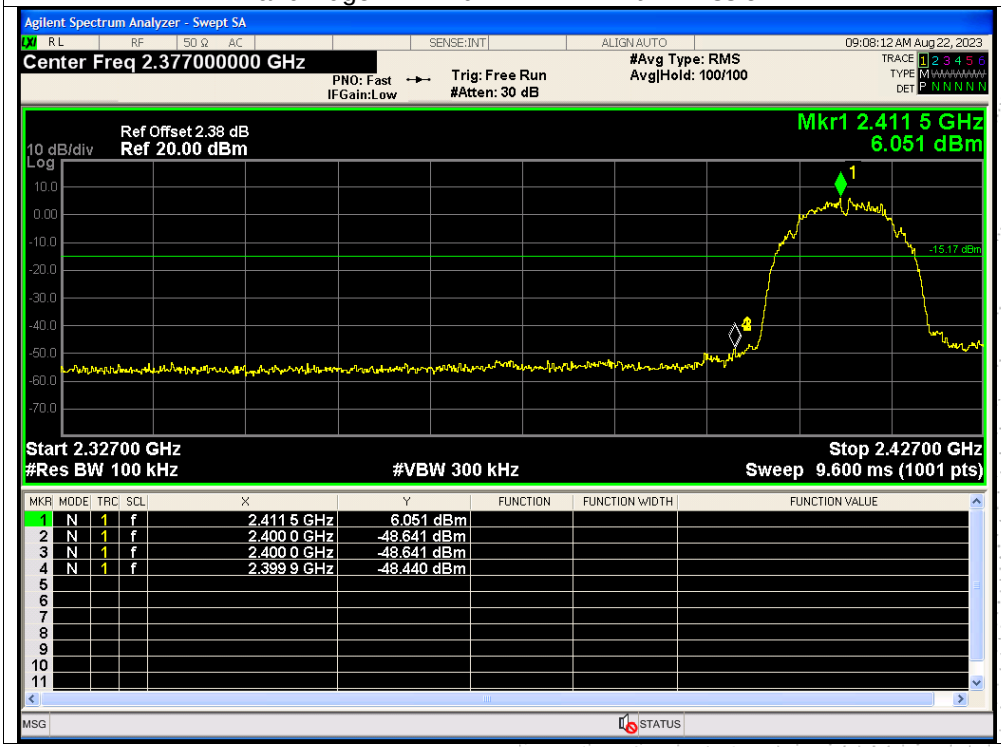
The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.
Note: Power Spectral Density(dBm)=Reading+Cable Loss

12.5 Test Result

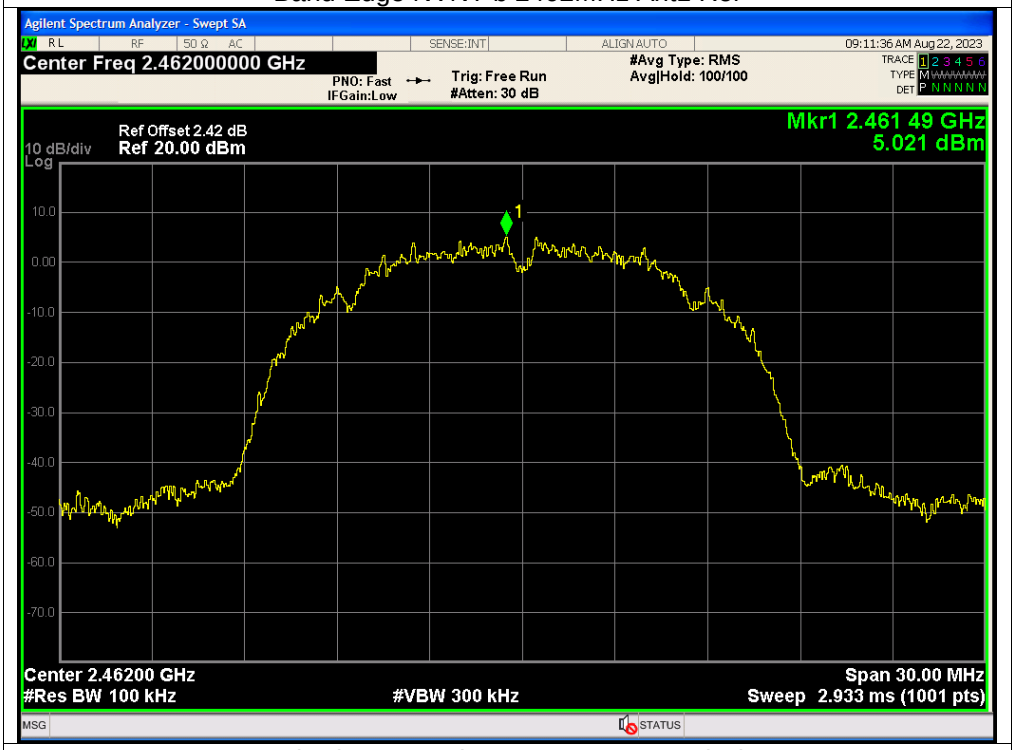
Test Graphs
Band Edge NVNT b 2412MHz Ant1 Ref



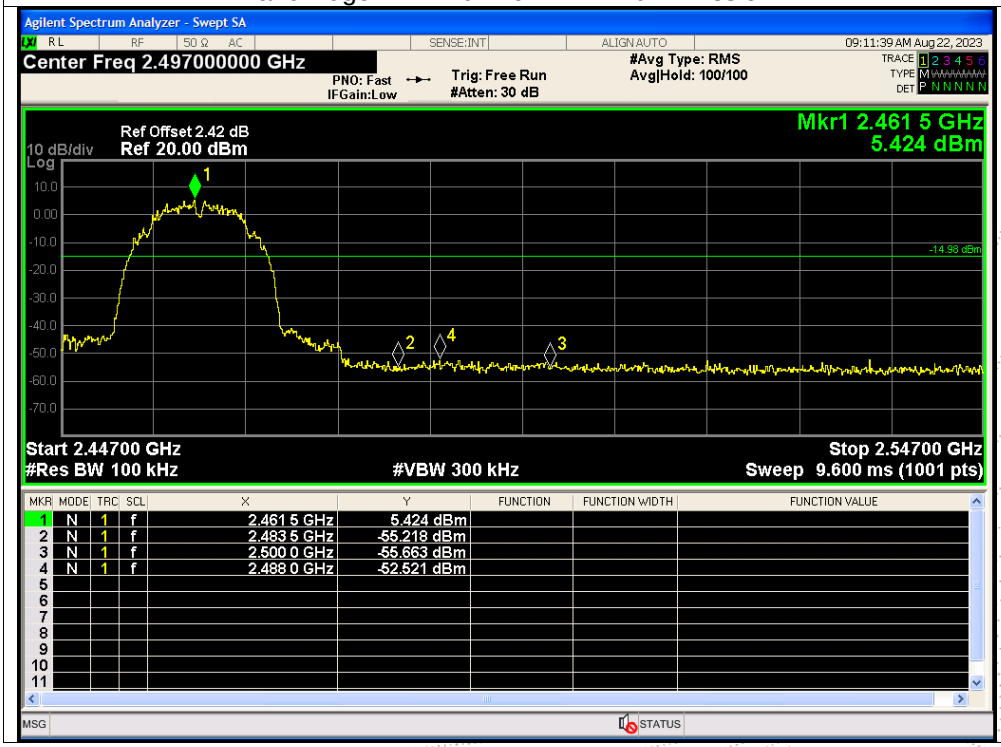
Band Edge NVNT b 2412MHz Ant1 Emission



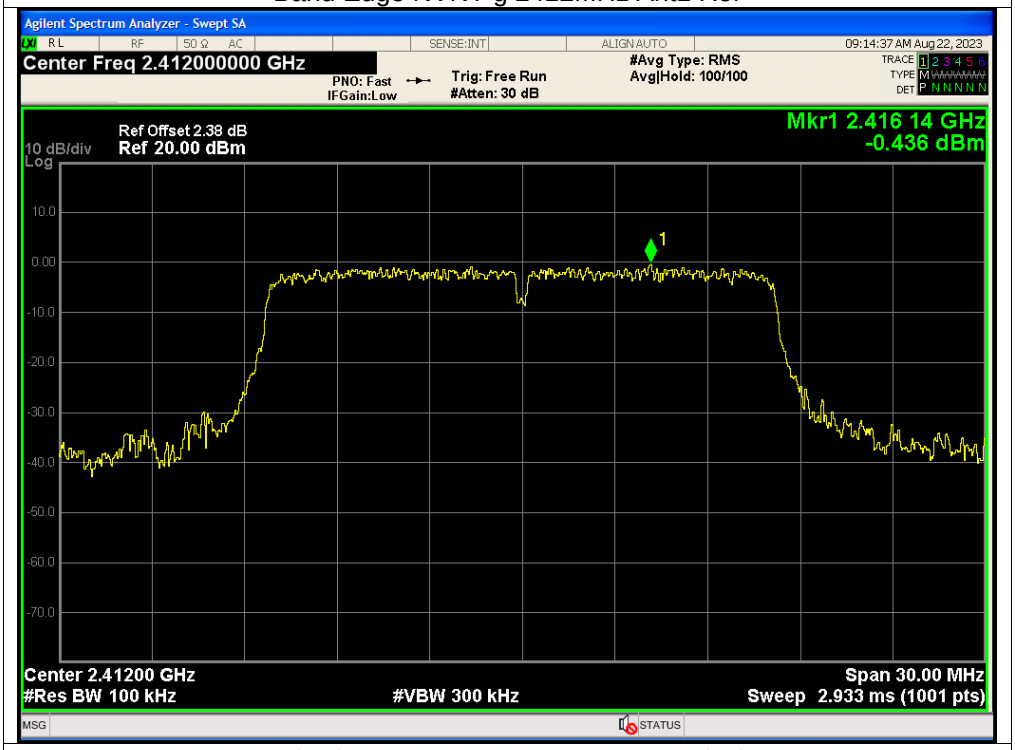
Band Edge NVNT b 2462MHz Ant1 Ref



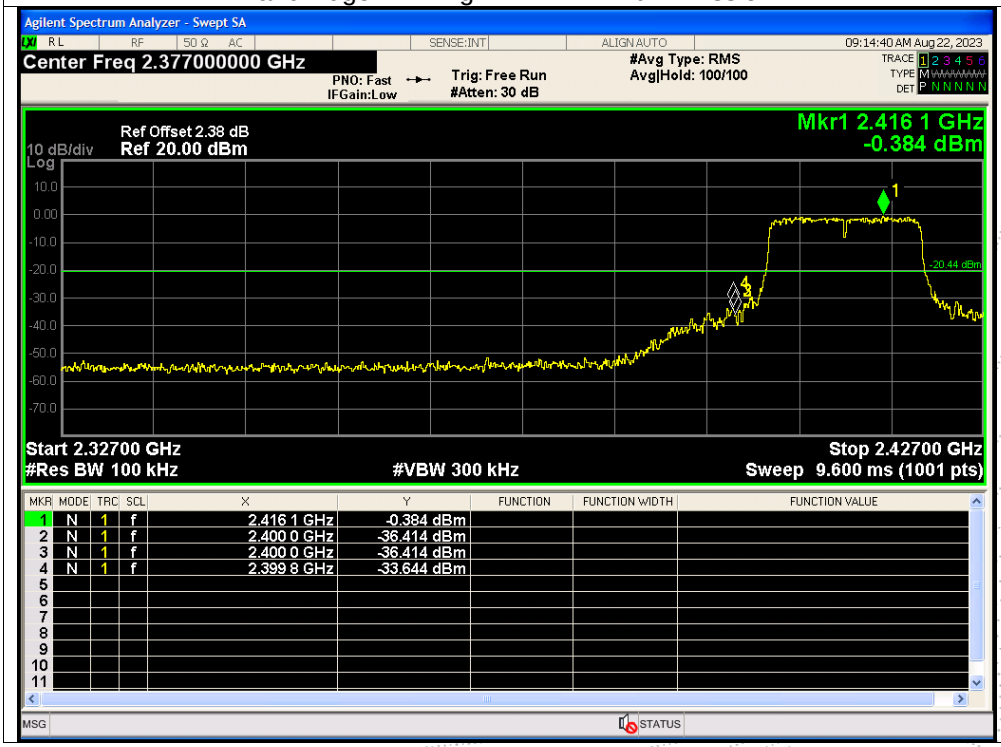
Band Edge NVNT b 2462MHz Ant1 Emission



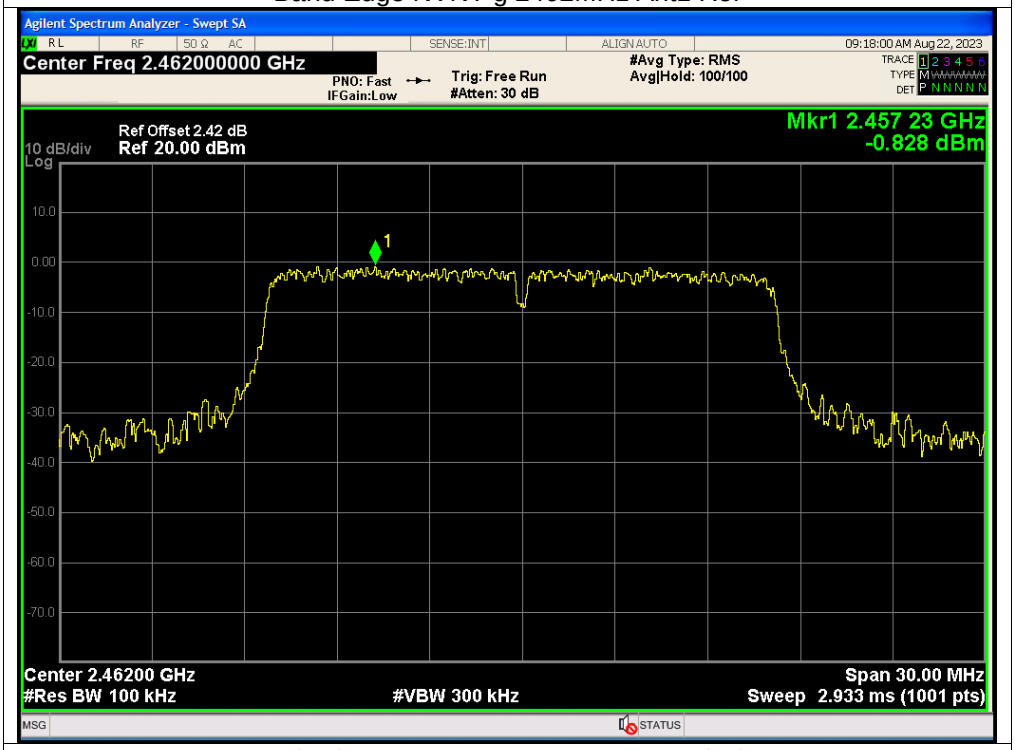
Band Edge NVNT g 2412MHz Ant1 Ref



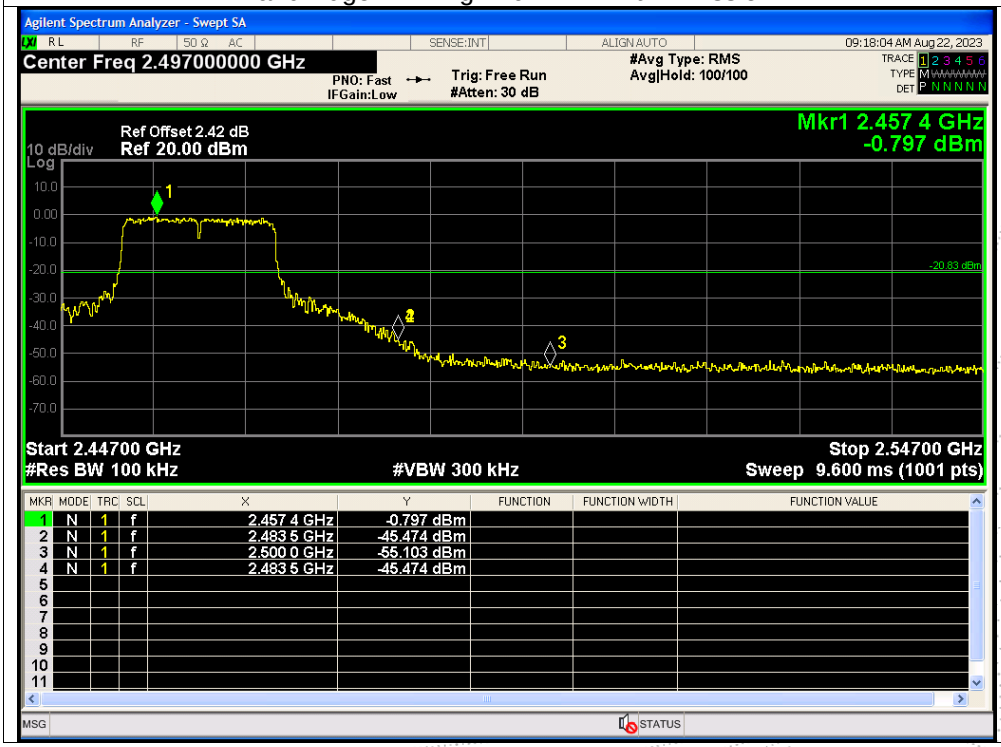
Band Edge NVNT g 2412MHz Ant1 Emission



Band Edge NVNT g 2462MHz Ant1 Ref

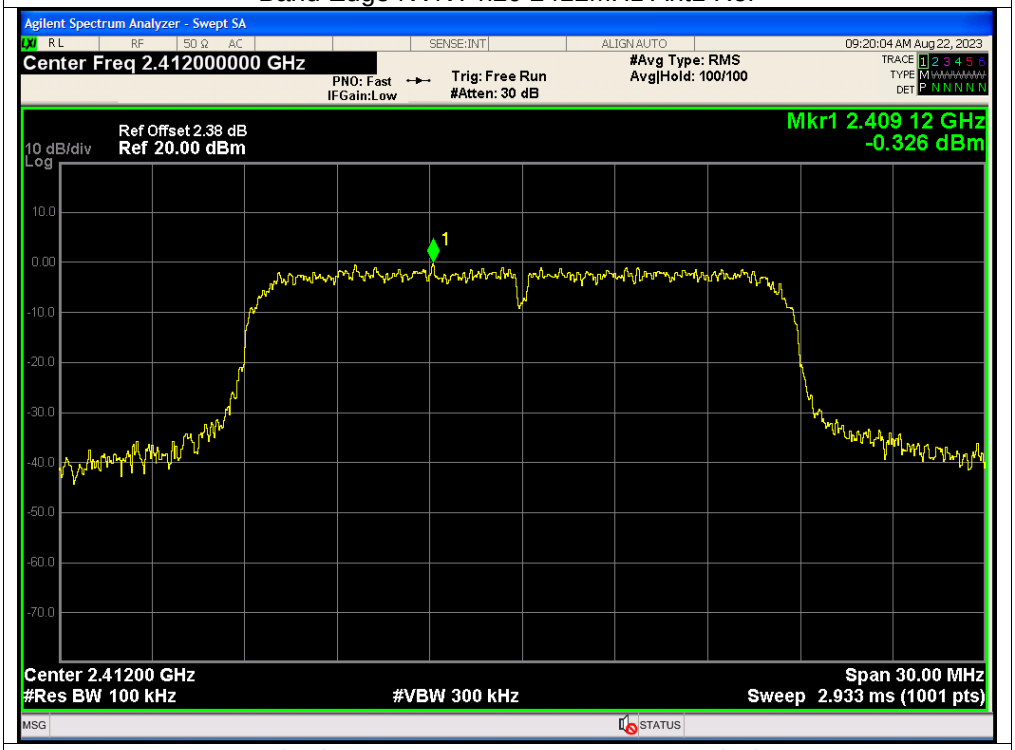


Band Edge NVNT g 2462MHz Ant1 Emission

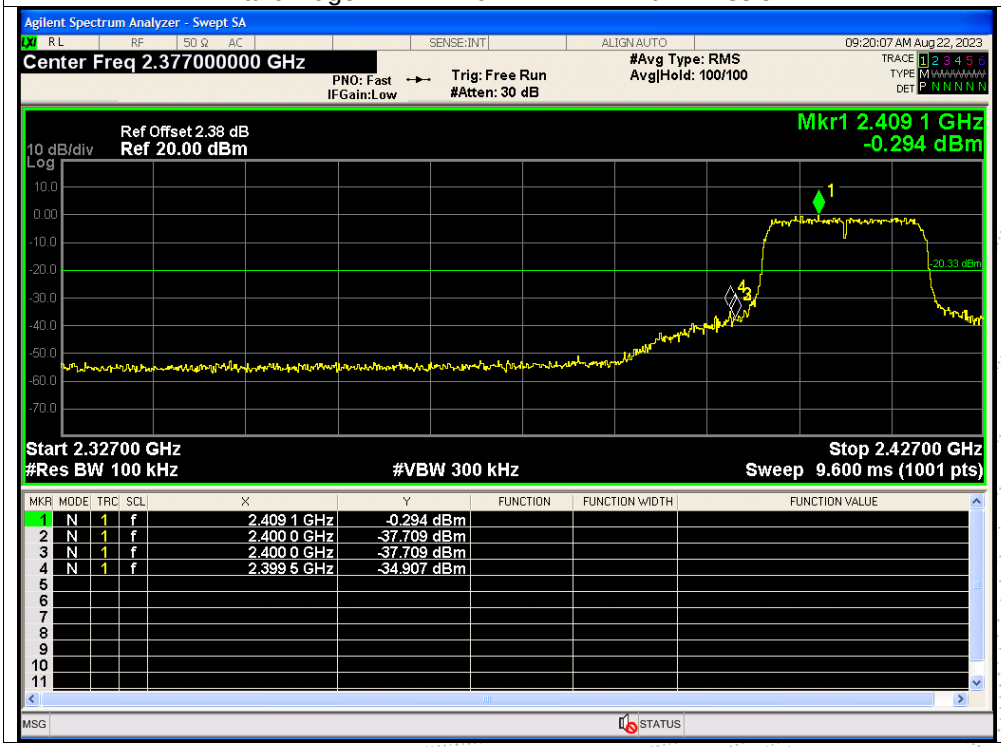


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.457 4 GHz	-0.797 dBm			
2	N	1	f	2.483 5 GHz	-45.474 dBm			
3	N	1	f	2.500 0 GHz	-55.103 dBm			
4	N	1	f	2.483 5 GHz	-45.474 dBm			
5								
6								
7								
8								
9								
10								
11								

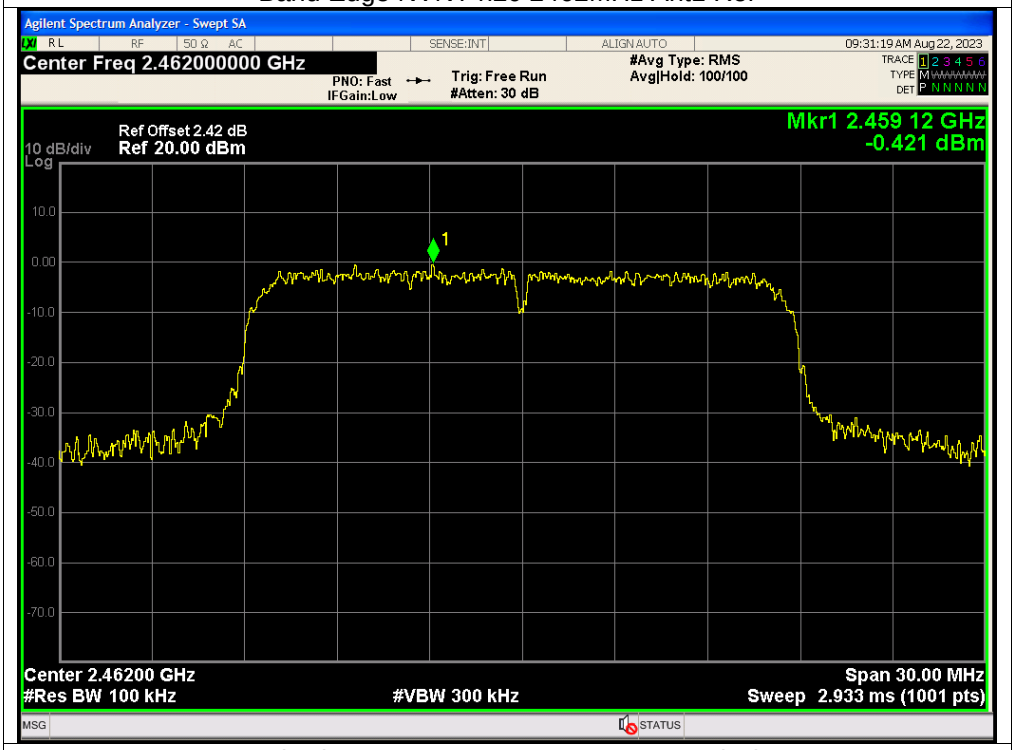
Band Edge NVNT n20 2412MHz Ant1 Ref



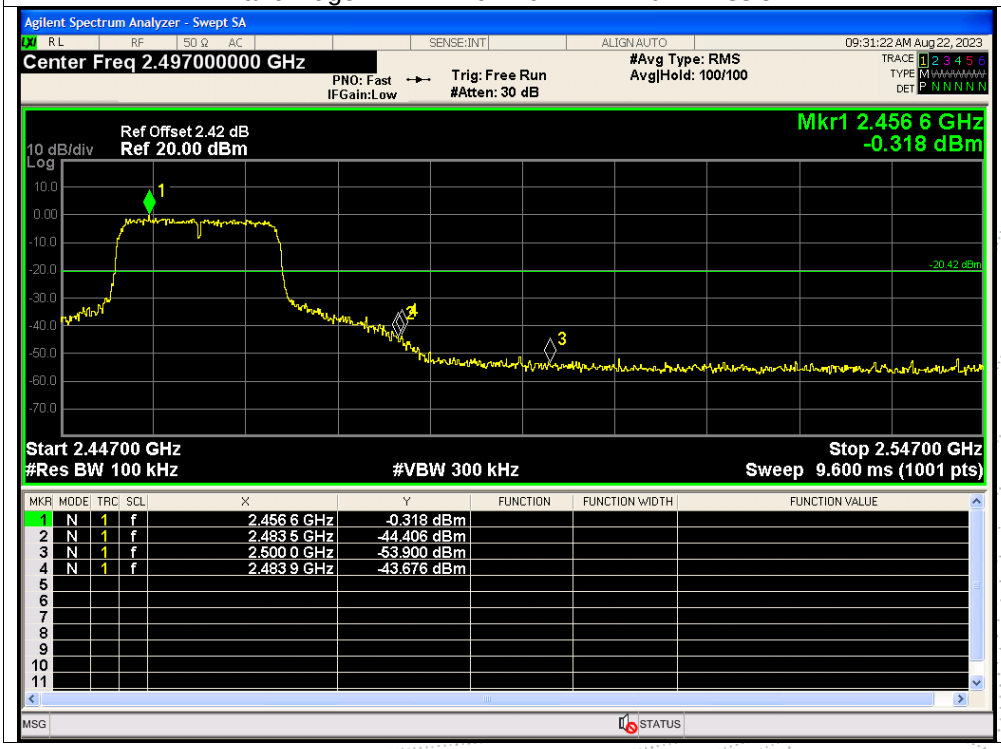
Band Edge NVNT n20 2412MHz Ant1 Emission



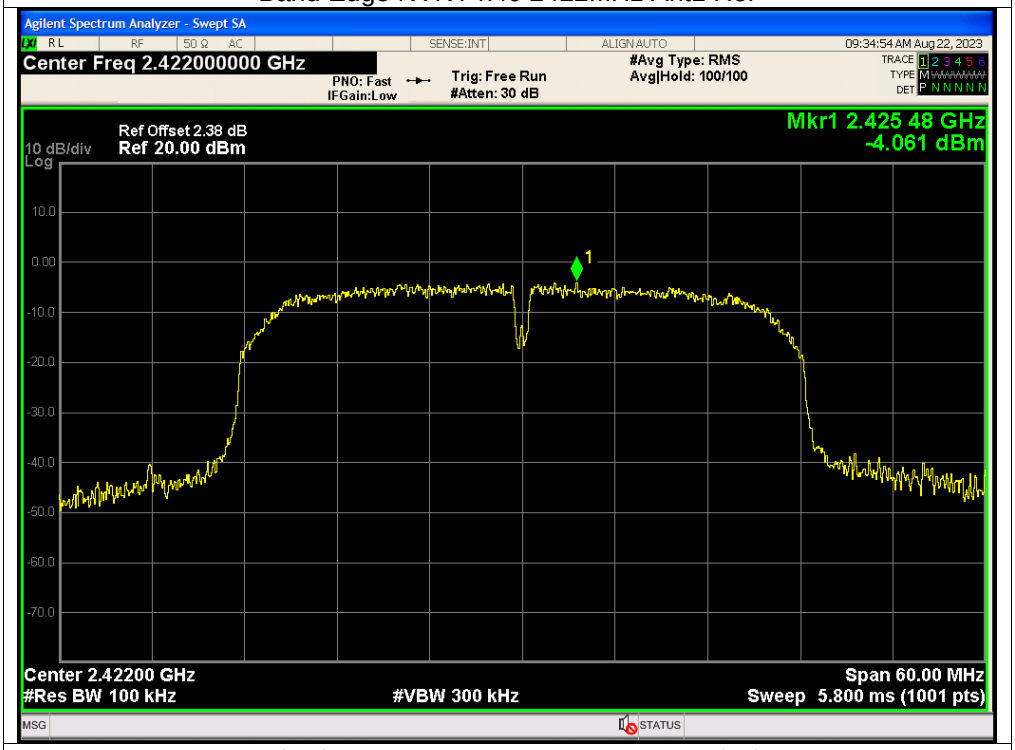
Band Edge NVNT n20 2462MHz Ant1 Ref



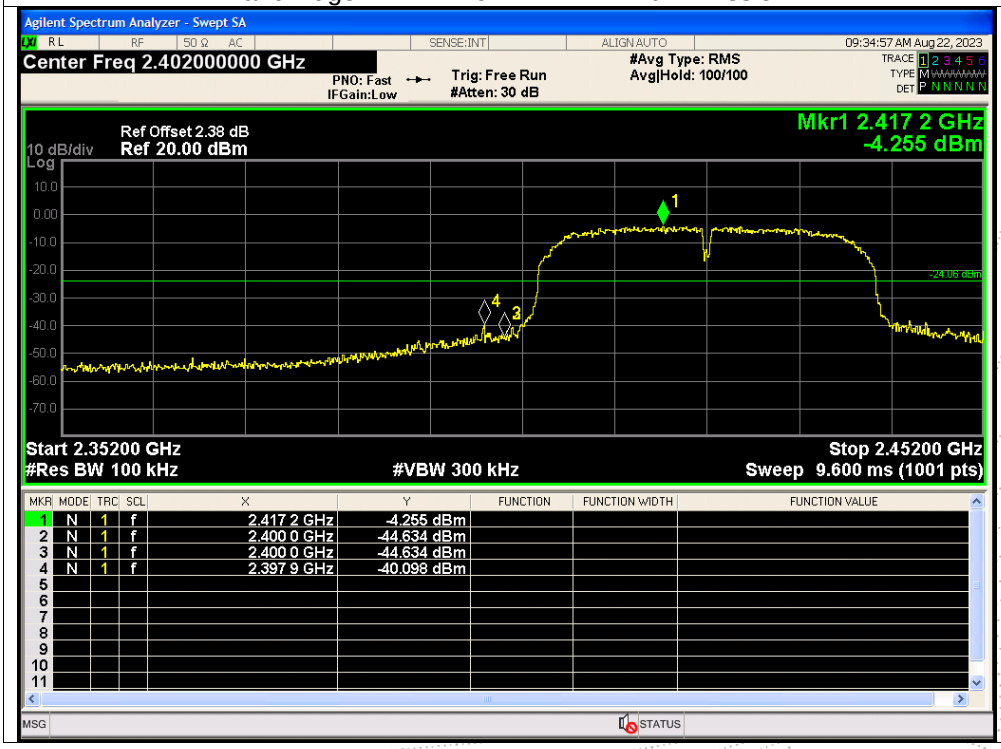
Band Edge NVNT n20 2462MHz Ant1 Emission



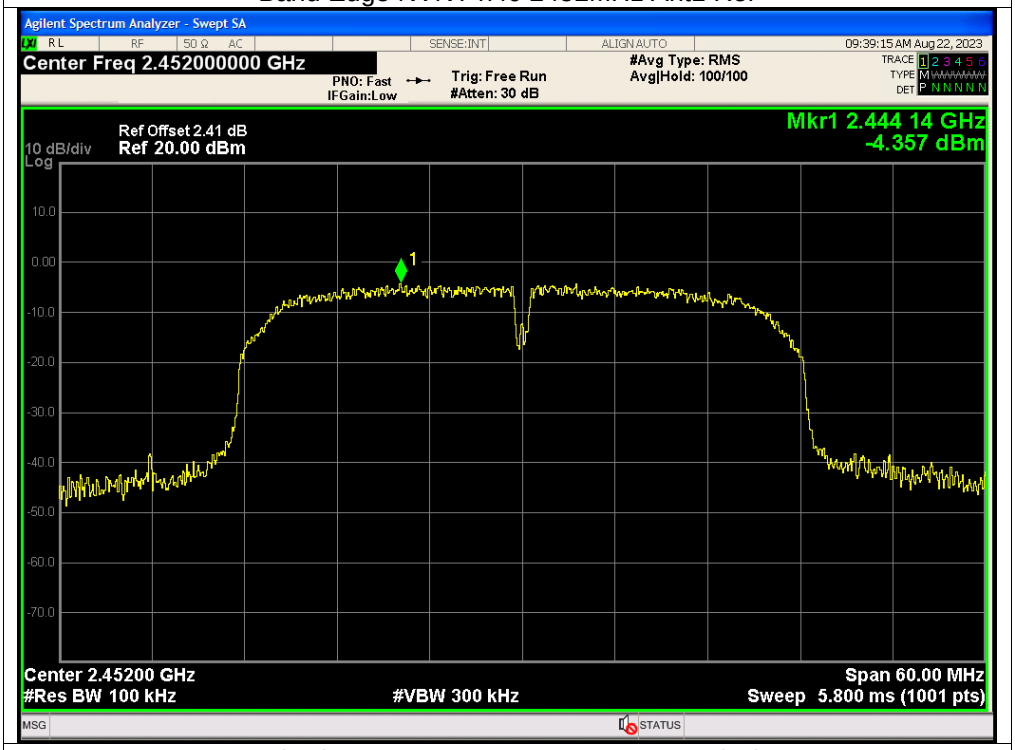
Band Edge NVNT n40 2422MHz Ant1 Ref



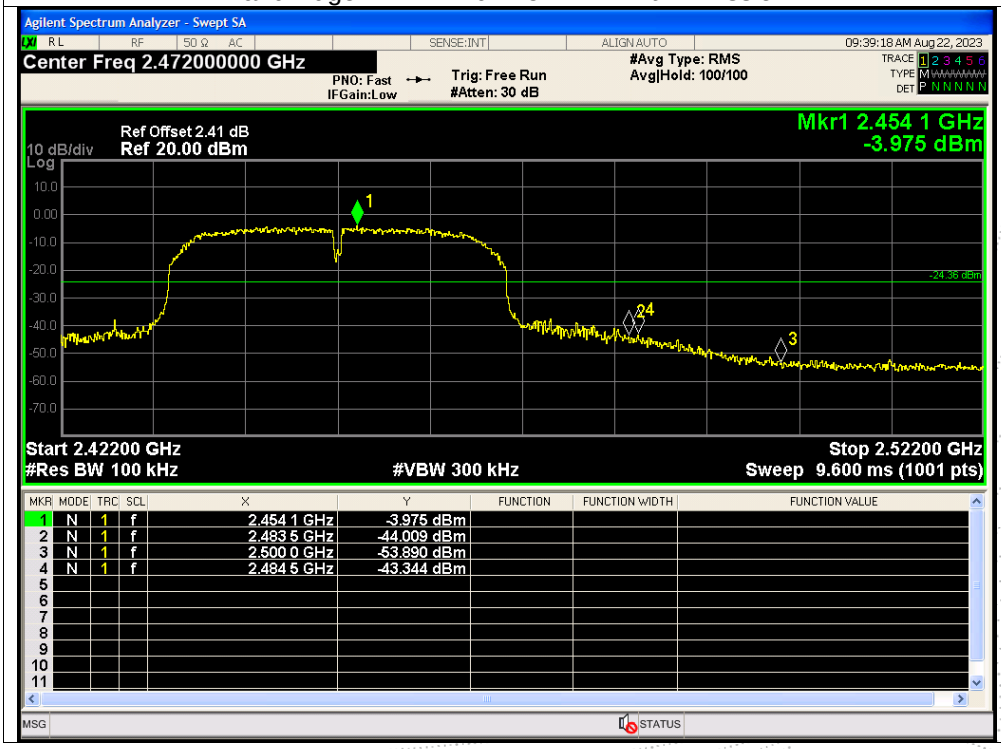
Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



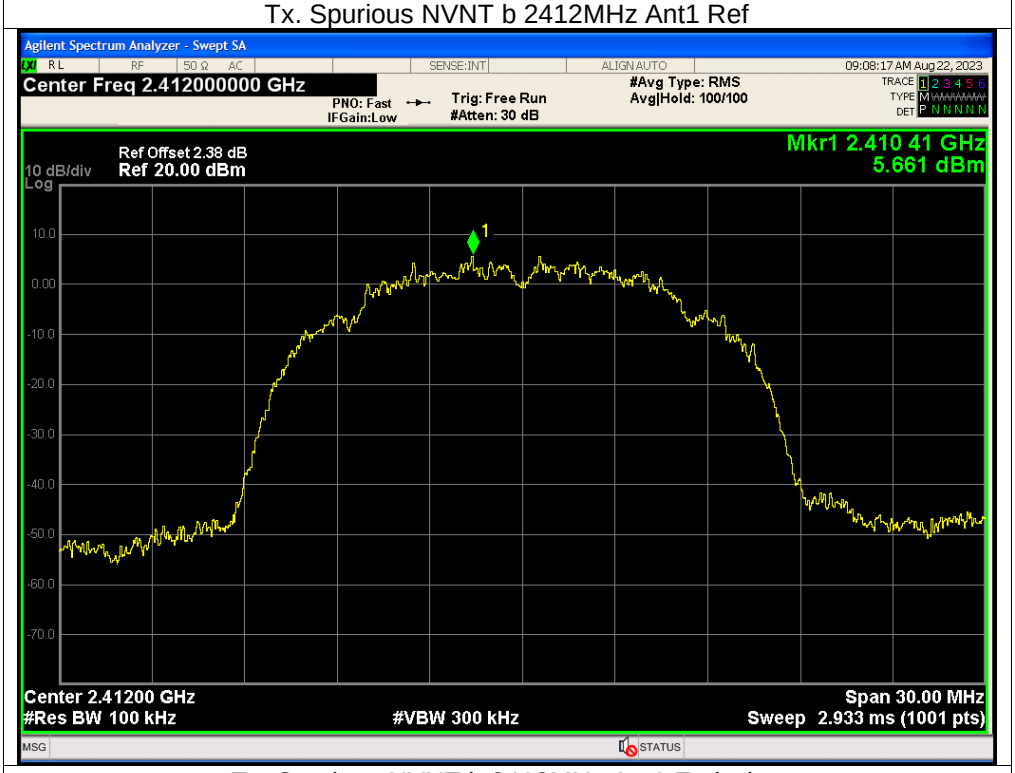
Band Edge NVNT n40 2452MHz Ant1 Emission



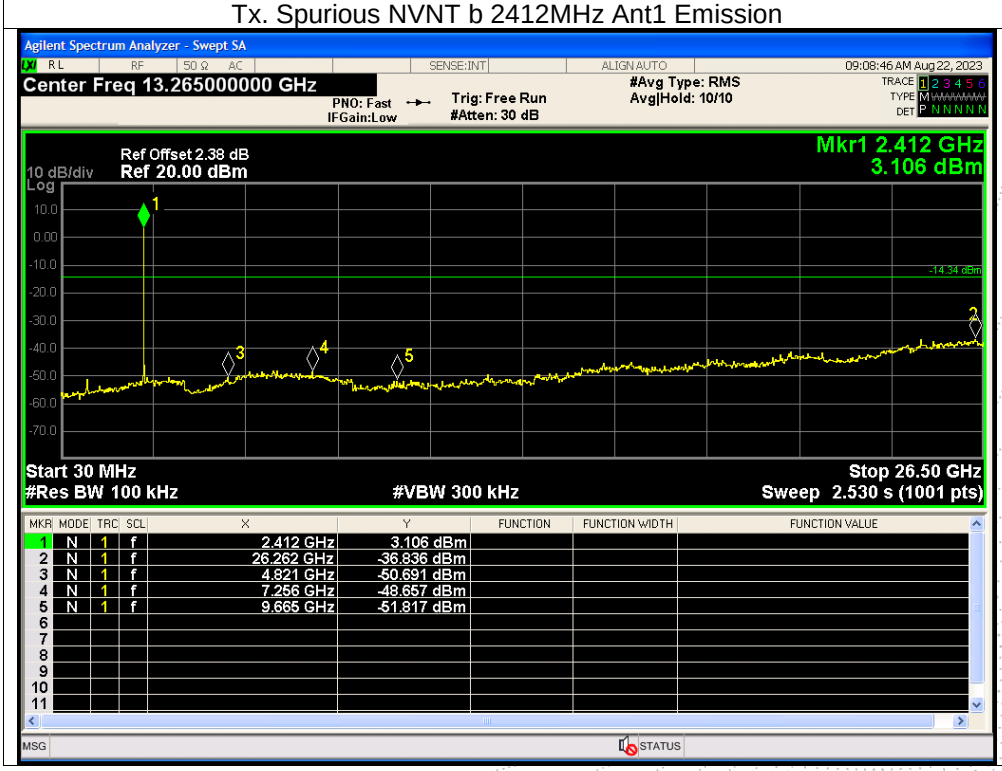
Conducted RF Spurious Emission

Test Graphs

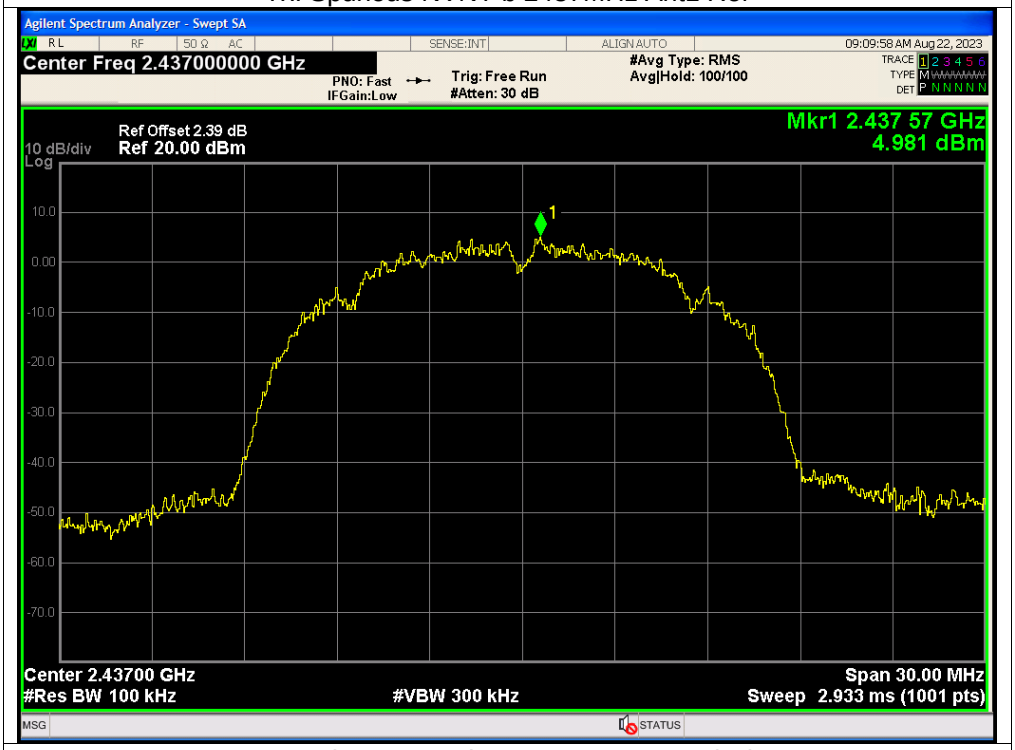
Tx. Spurious NVNT b 2412MHz Ant1 Ref



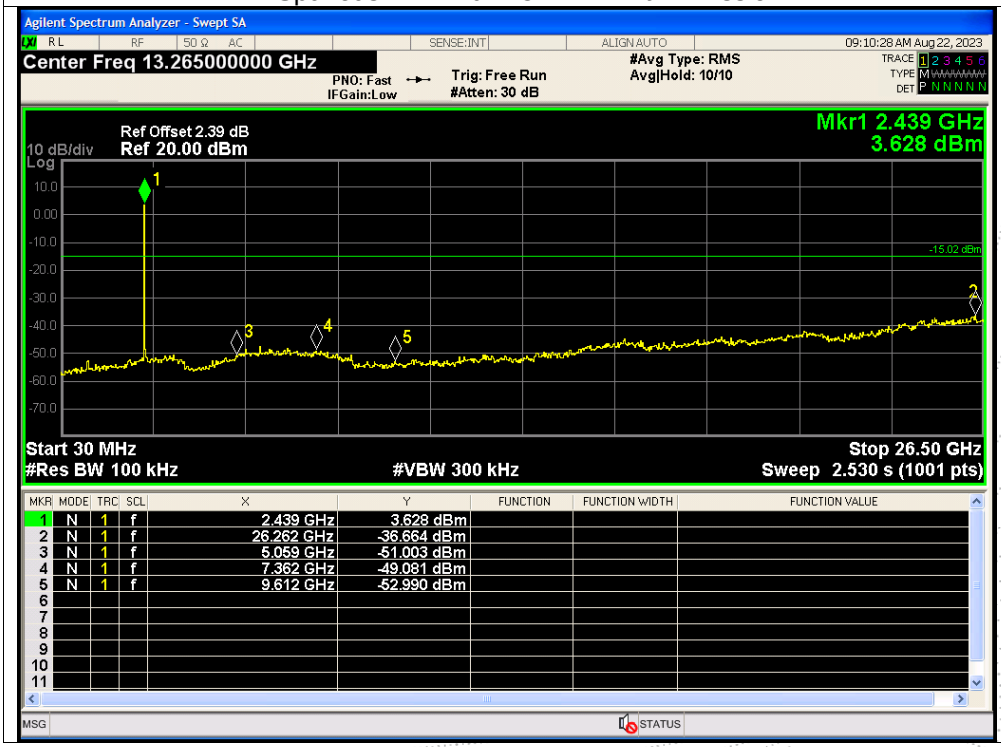
Tx. Spurious NVNT b 2412MHz Ant1 Emission



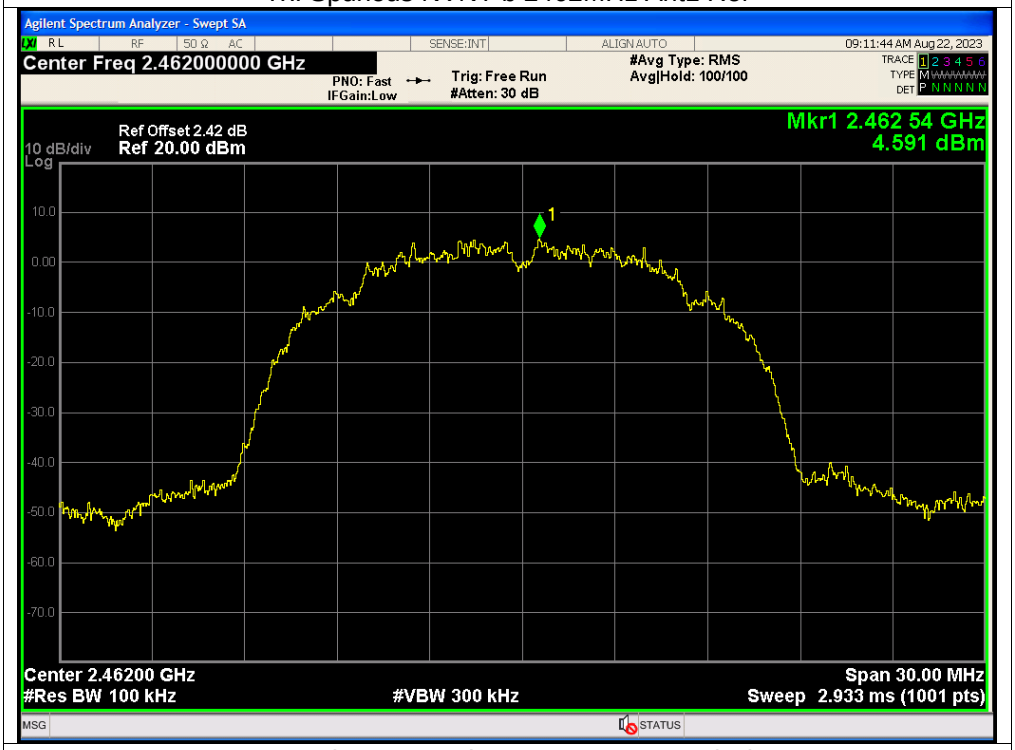
Tx. Spurious NVNT b 2437MHz Ant1 Ref



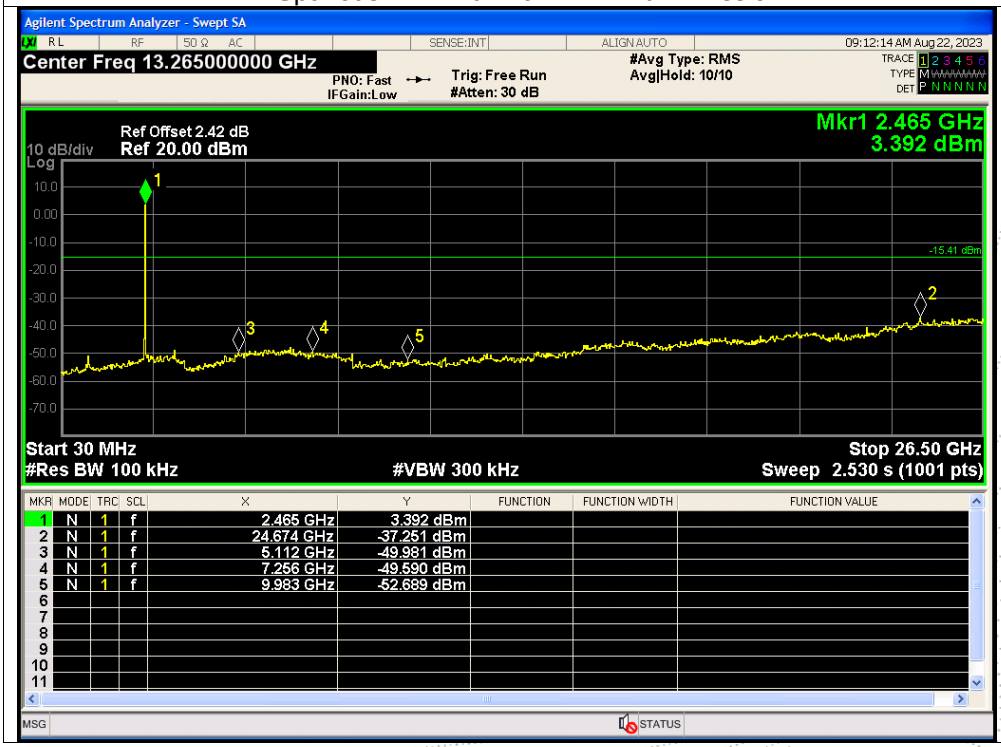
Tx. Spurious NVNT b 2437MHz Ant1 Emission



Tx. Spurious NVNT b 2462MHz Ant1 Ref



Tx. Spurious NVNT b 2462MHz Ant1 Emission



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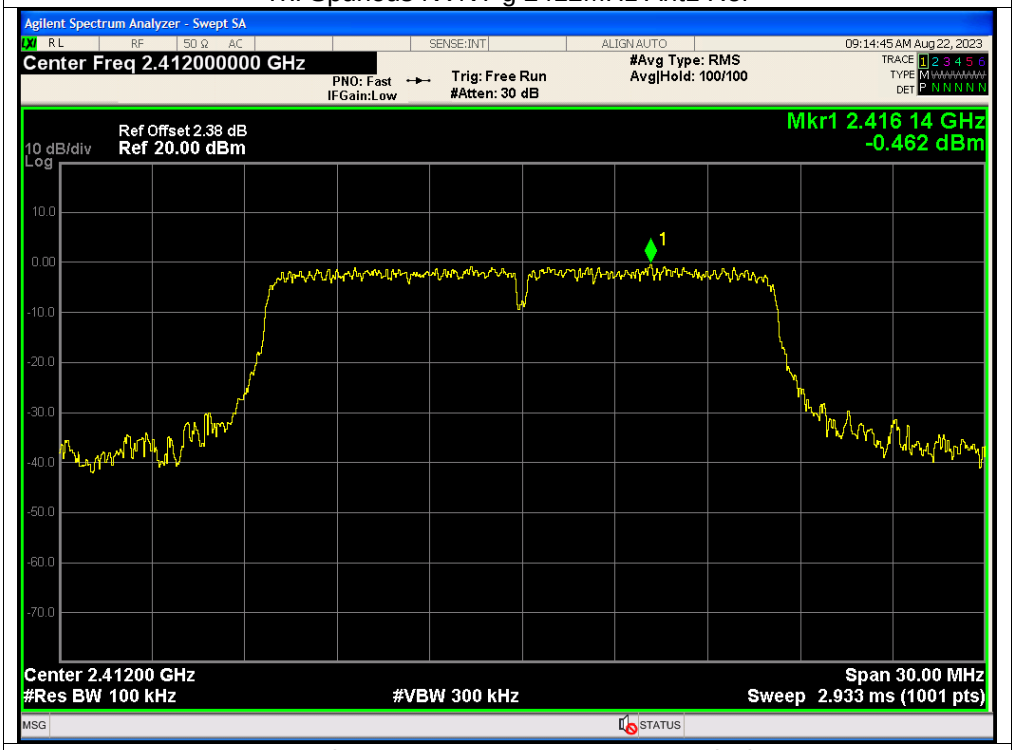
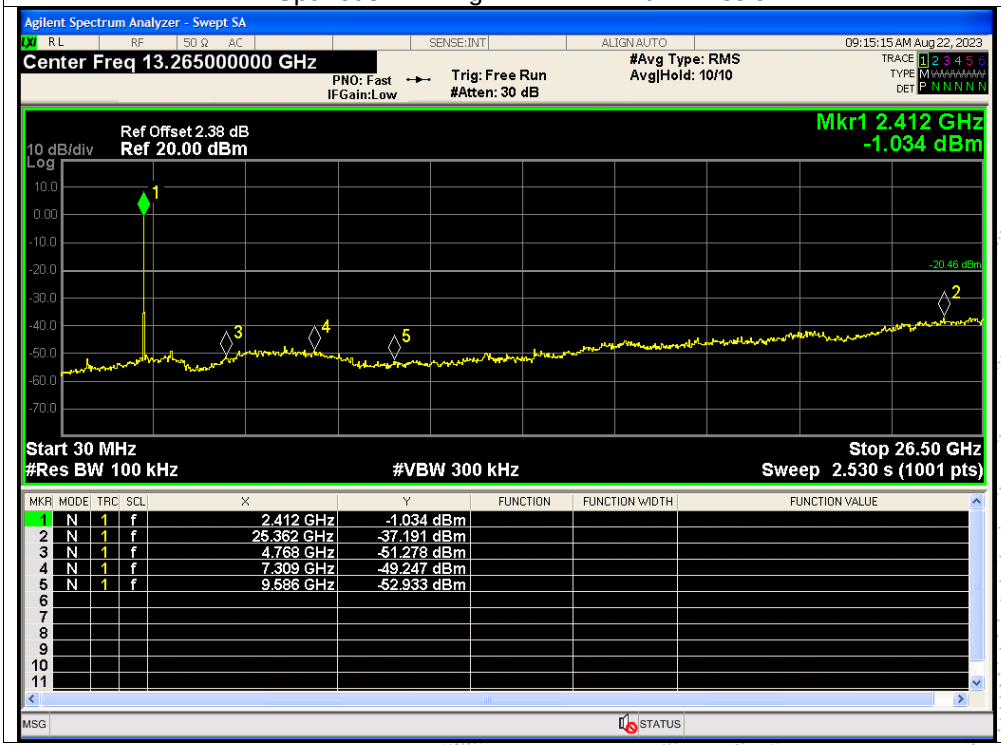


Tx. Spurious NVNT g 2412MHz Ant1 Emission



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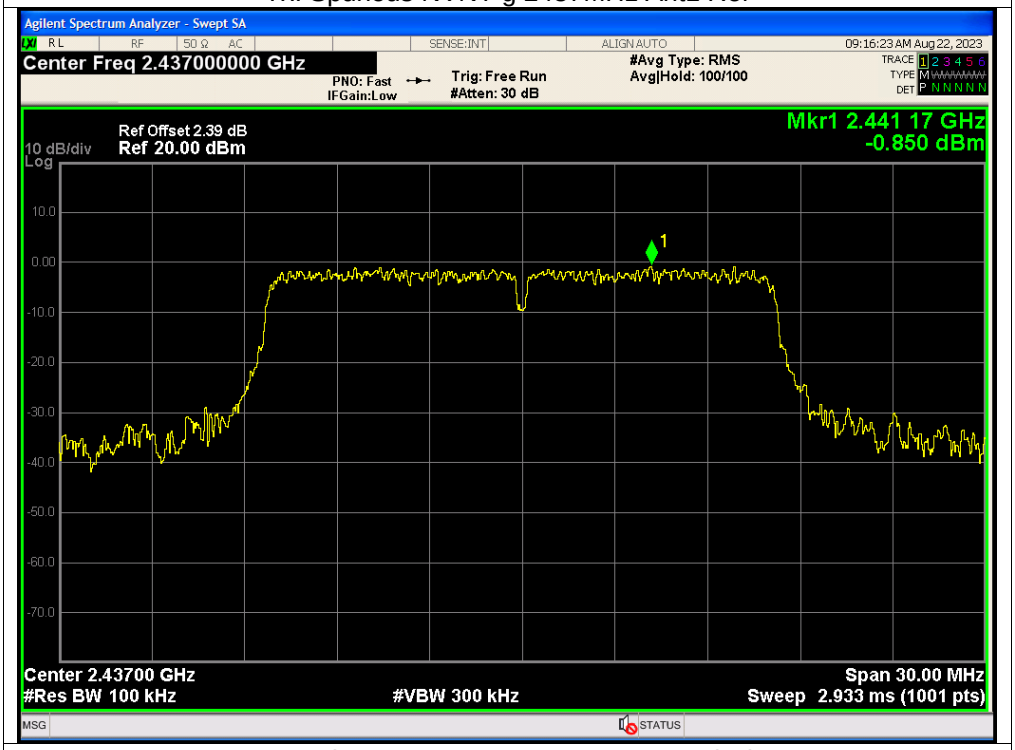
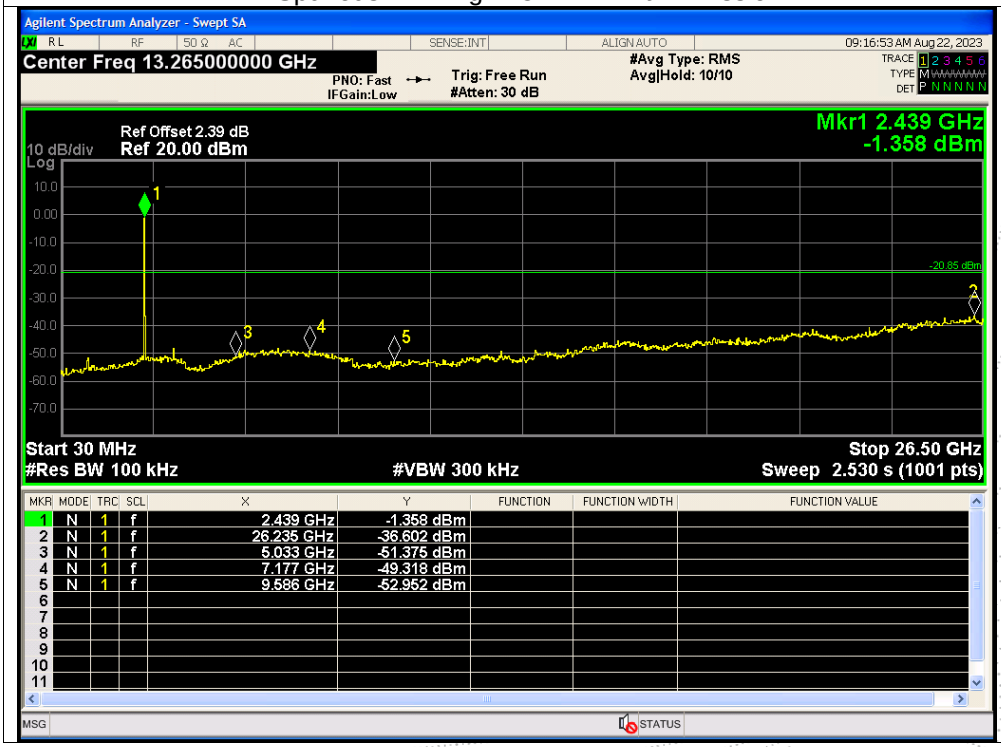
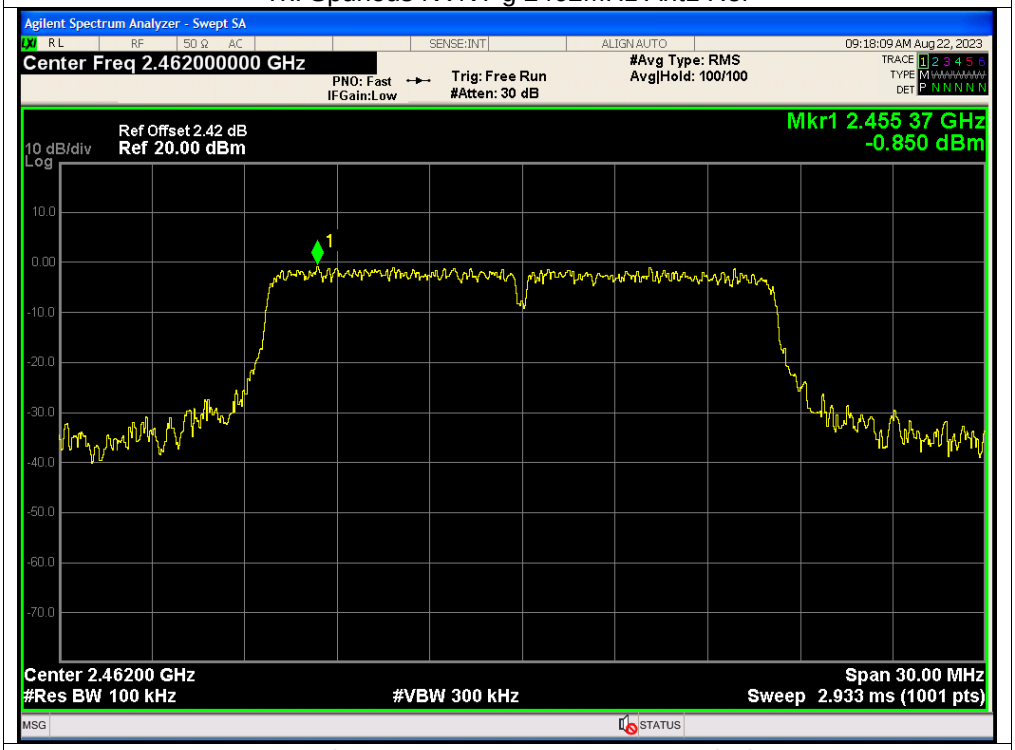


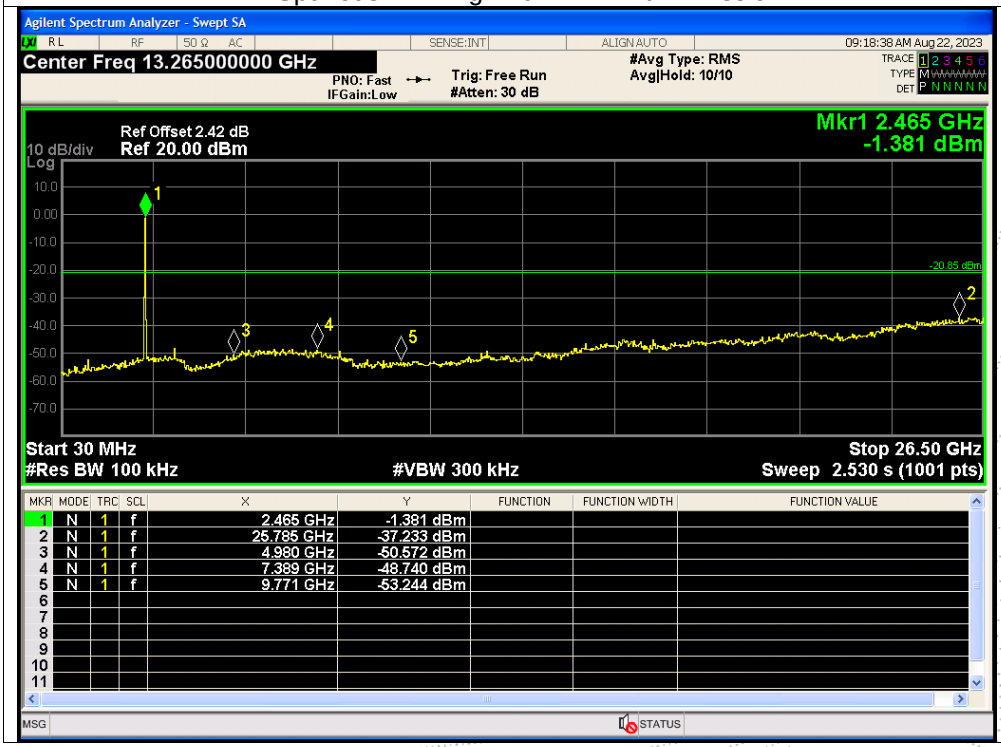
Tx. Spurious NVNT g 2437MHz Ant1 Emission



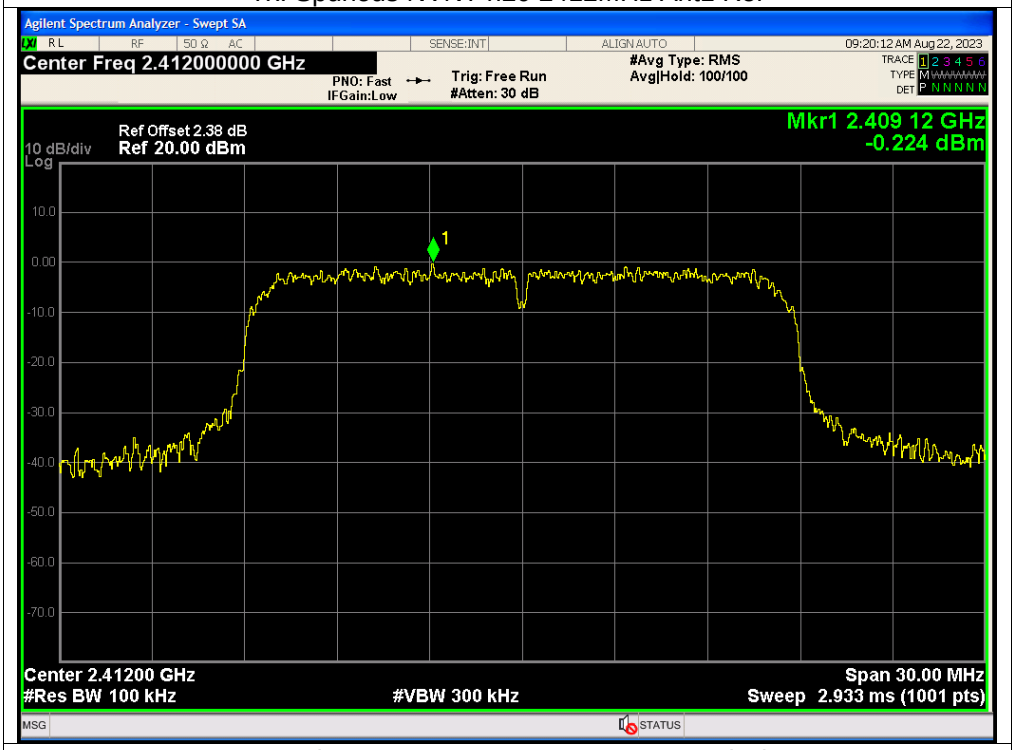
Tx. Spurious NVNT g 2462MHz Ant1 Ref



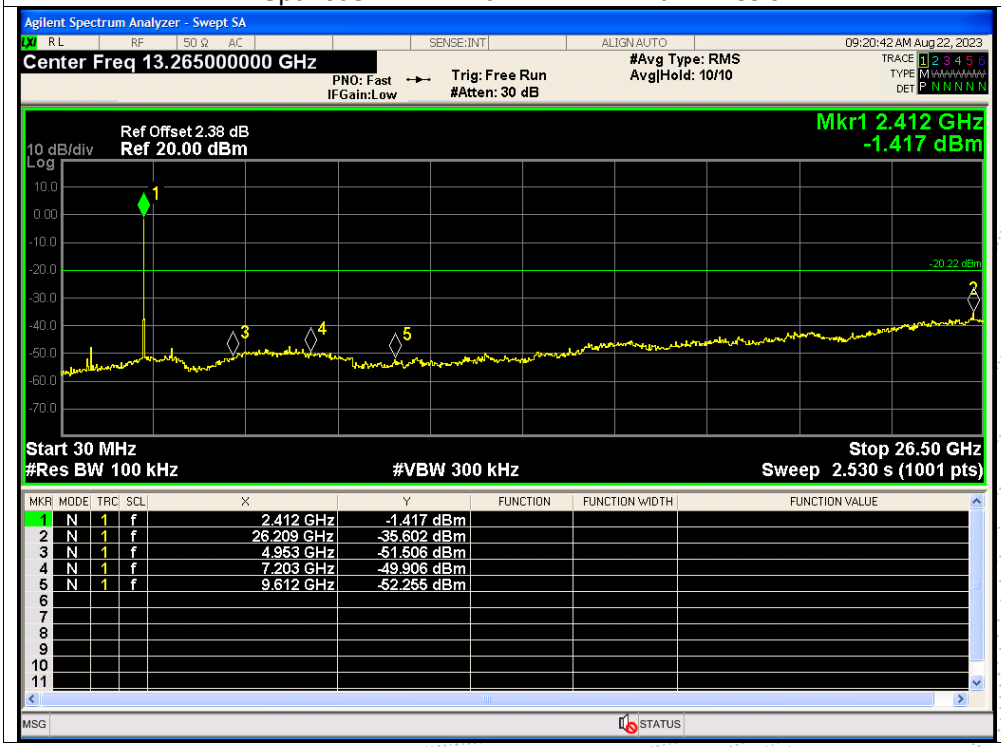
Tx. Spurious NVNT g 2462MHz Ant1 Emission



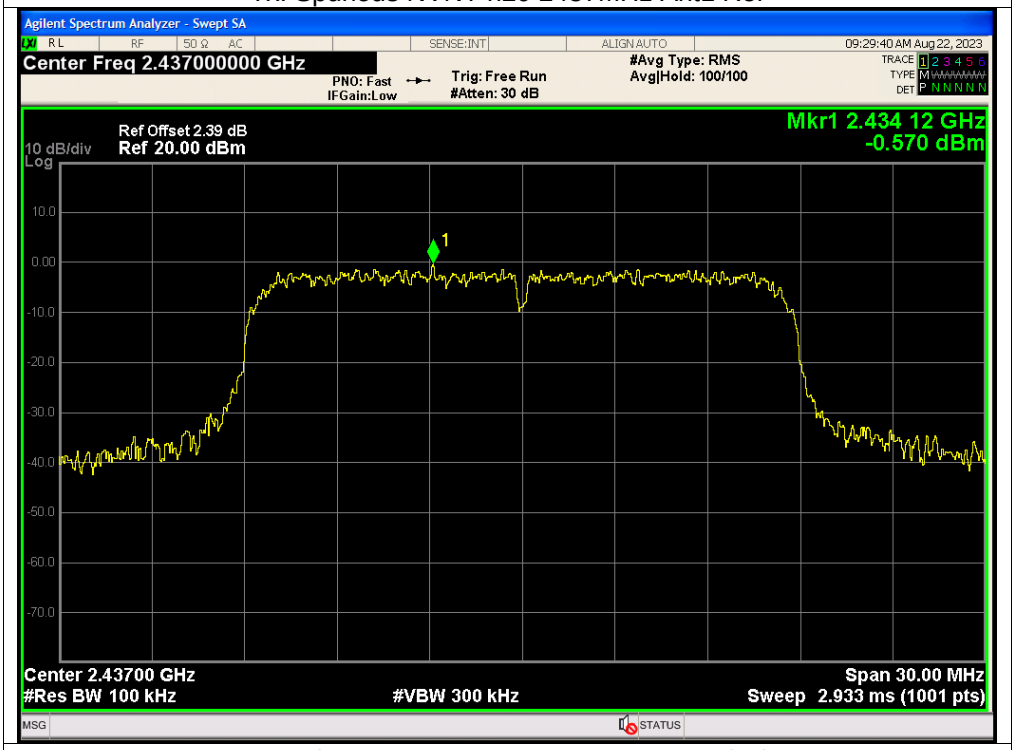
Tx. Spurious NVNT n20 2412MHz Ant1 Ref



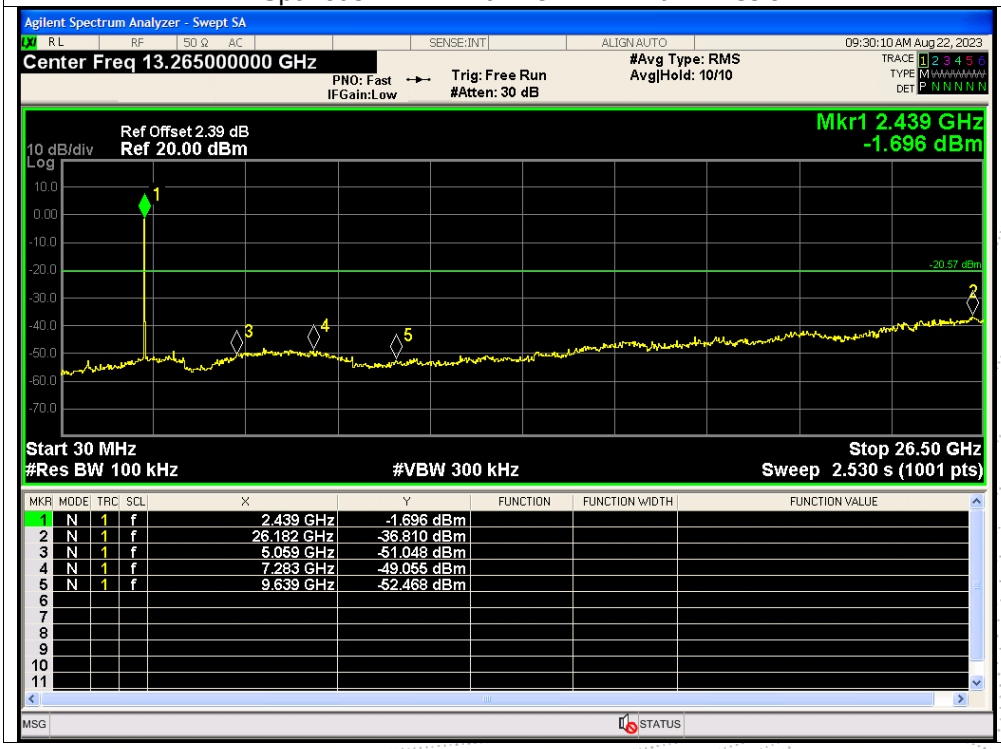
Tx. Spurious NVNT n20 2412MHz Ant1 Emission



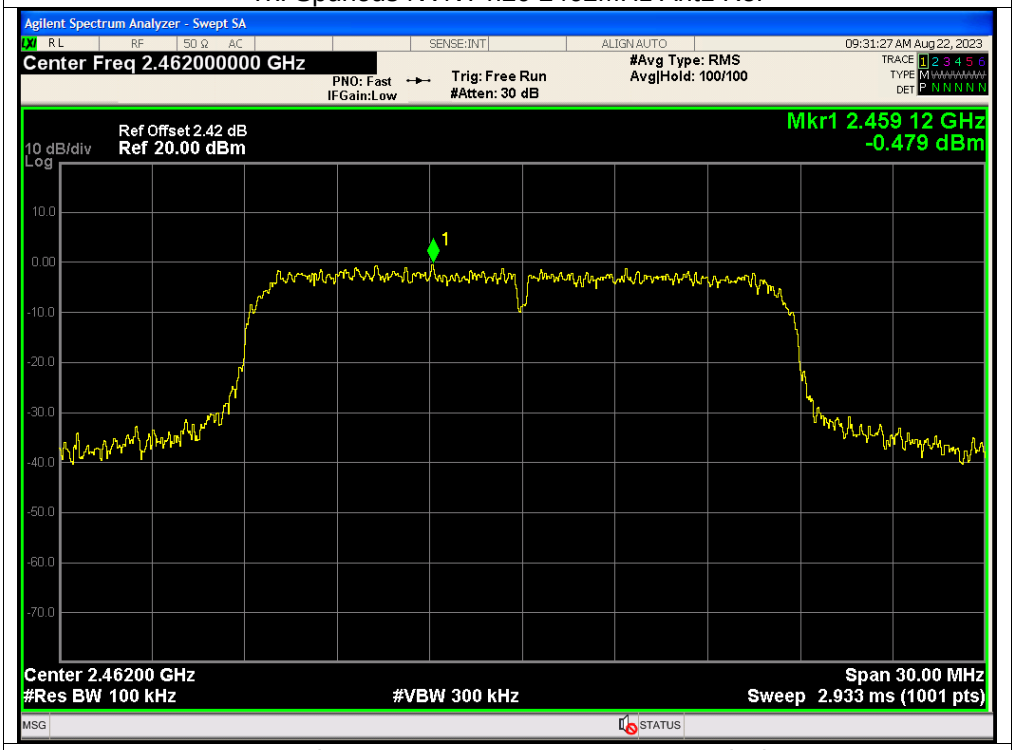
Tx. Spurious NVNT n20 2437MHz Ant1 Ref



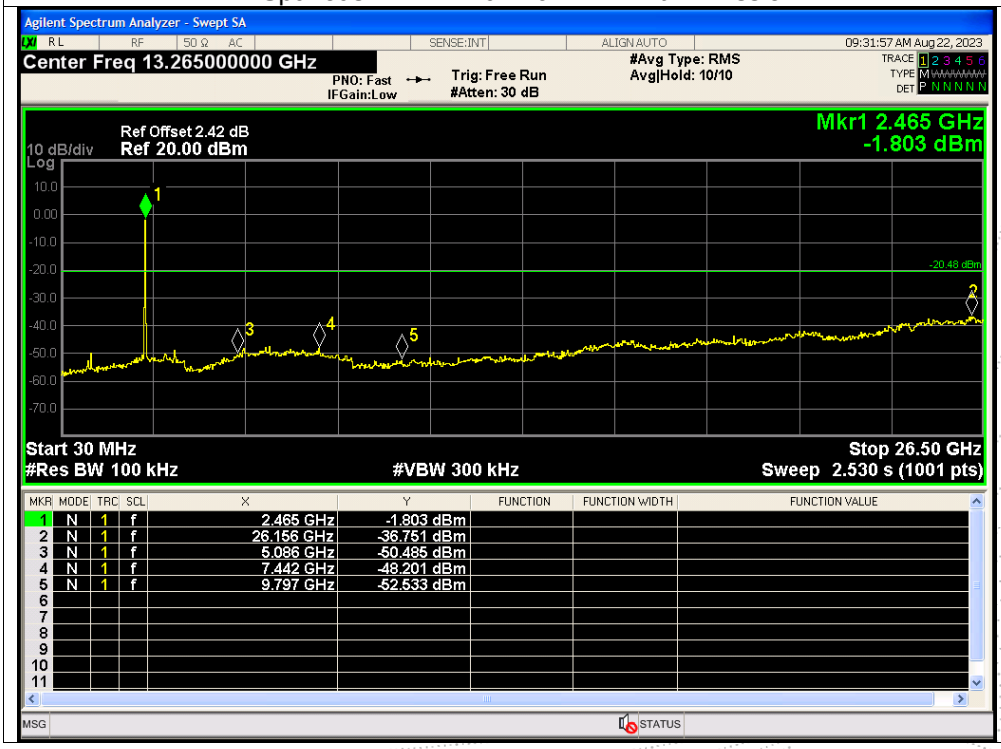
Tx. Spurious NVNT n20 2437MHz Ant1 Emission



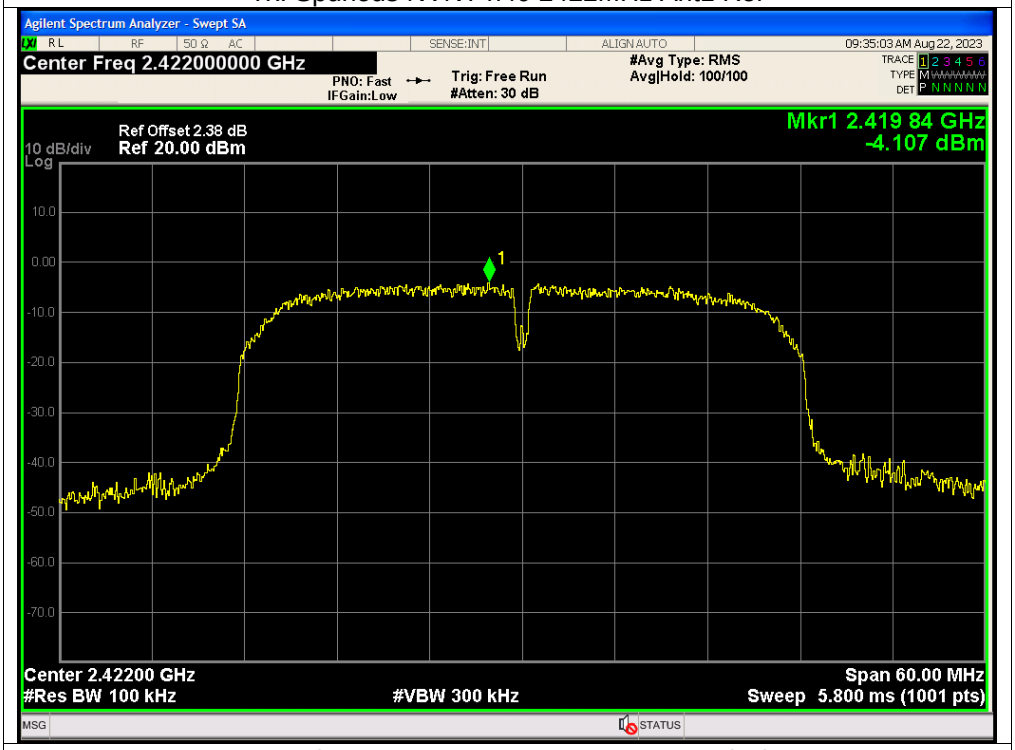
Tx. Spurious NVNT n20 2462MHz Ant1 Ref



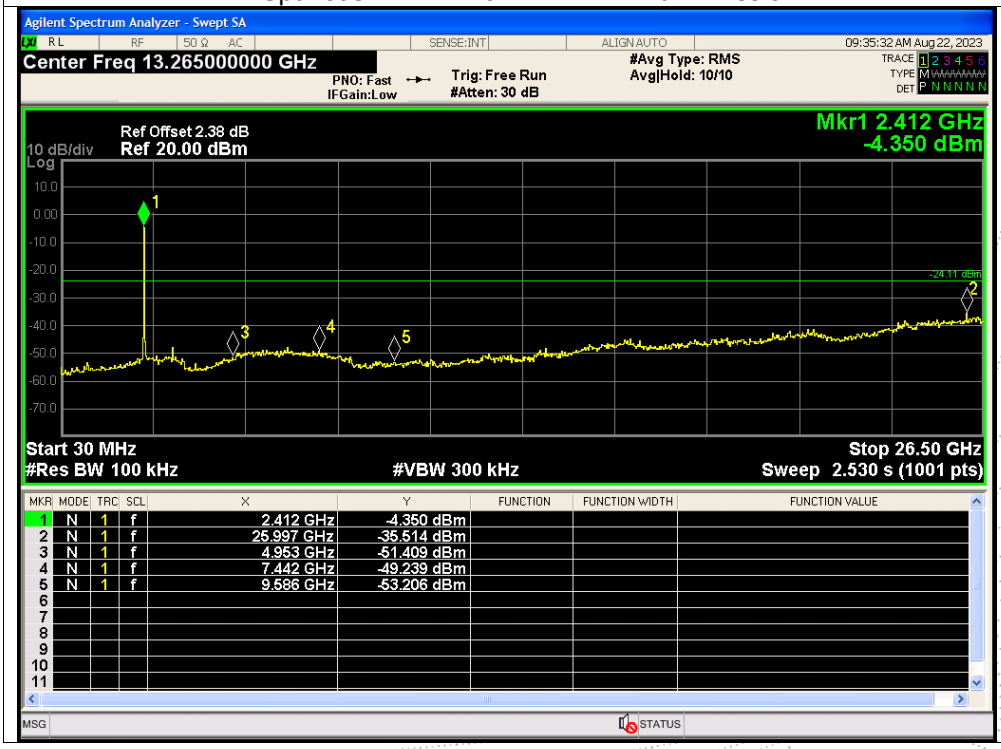
Tx. Spurious NVNT n20 2462MHz Ant1 Emission



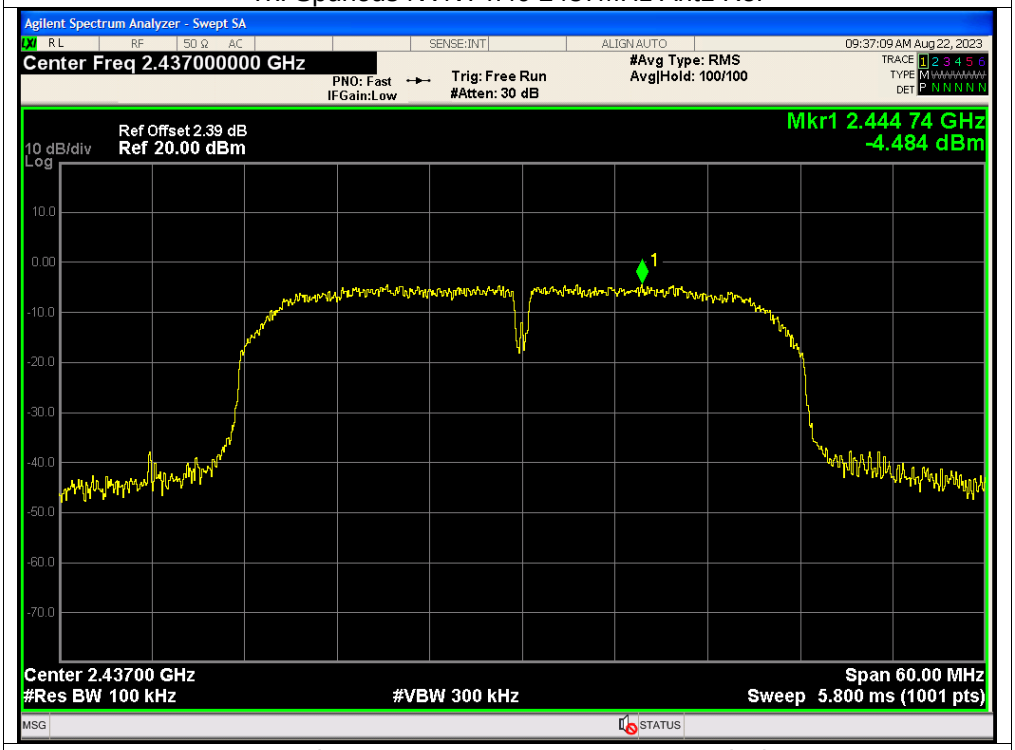
Tx. Spurious NVNT n40 2422MHz Ant1 Ref



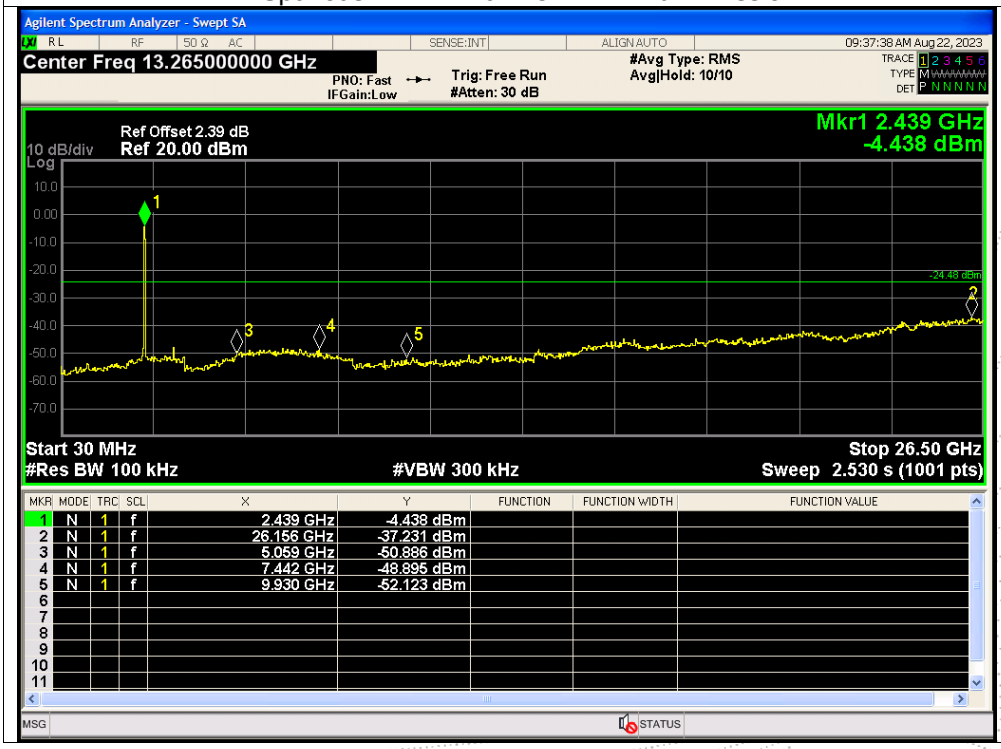
Tx. Spurious NVNT n40 2422MHz Ant1 Emission



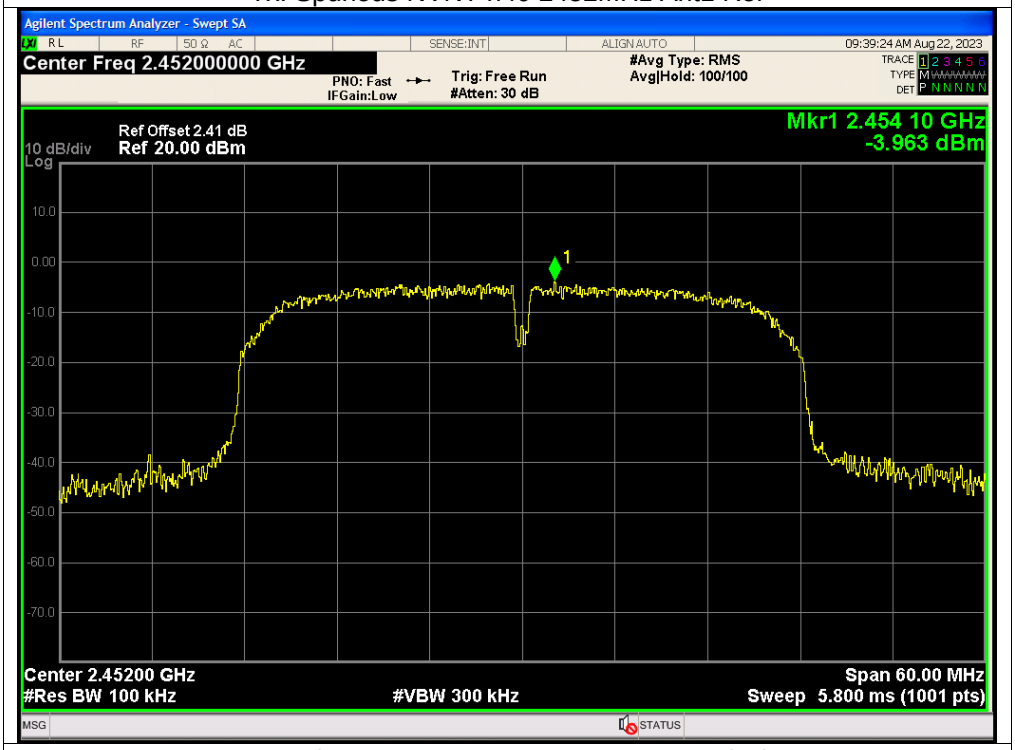
Tx. Spurious NVNT n40 2437MHz Ant1 Ref



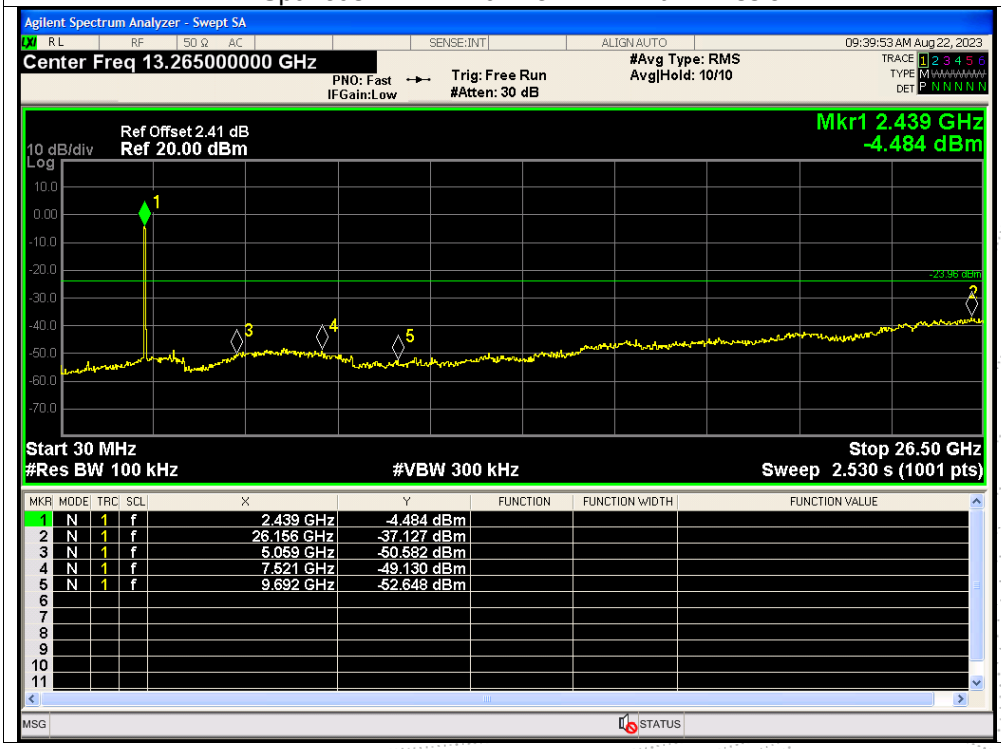
Tx. Spurious NVNT n40 2437MHz Ant1 Emission



Tx. Spurious NVNT n40 2452MHz Ant1 Ref



Tx. Spurious NVNT n40 2452MHz Ant1 Emission



13. Duty Cycle Of Test Signal

13.1 Standard Requirement

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

13.2 Formula

Duty Cycle = Ton / (Ton+Toff)

13.3 Test Procedure

1.Set span = Zero

2. RBW = 8MHz

3. VBW = 8MHz,

4. Detector = Peak

13.4 Test Result

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	b	2412	100	0	0
NVNT	b	2462	100	0	0
NVNT	g	2412	100	0	0
NVNT	g	2462	100	0	0
NVNT	n20	2412	100	0	0
NVNT	n20	2462	100	0	0
NVNT	N40	2422	100	0	0
NVNT	N40	2452	100	0	0

14. Antenna Requirement

14.1 Limit

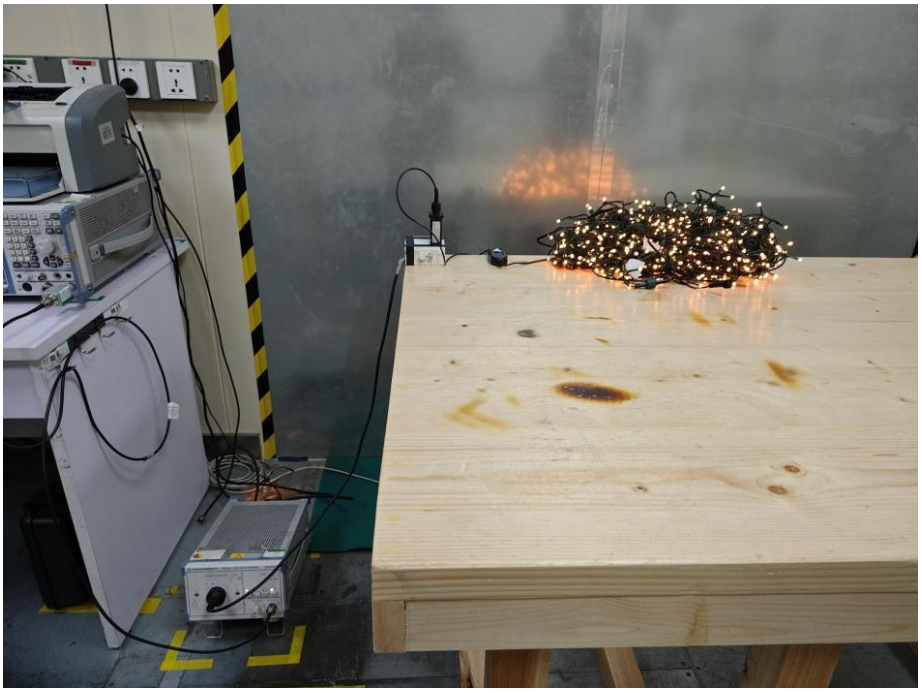
15.203 requirements: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

14.1 Test Result

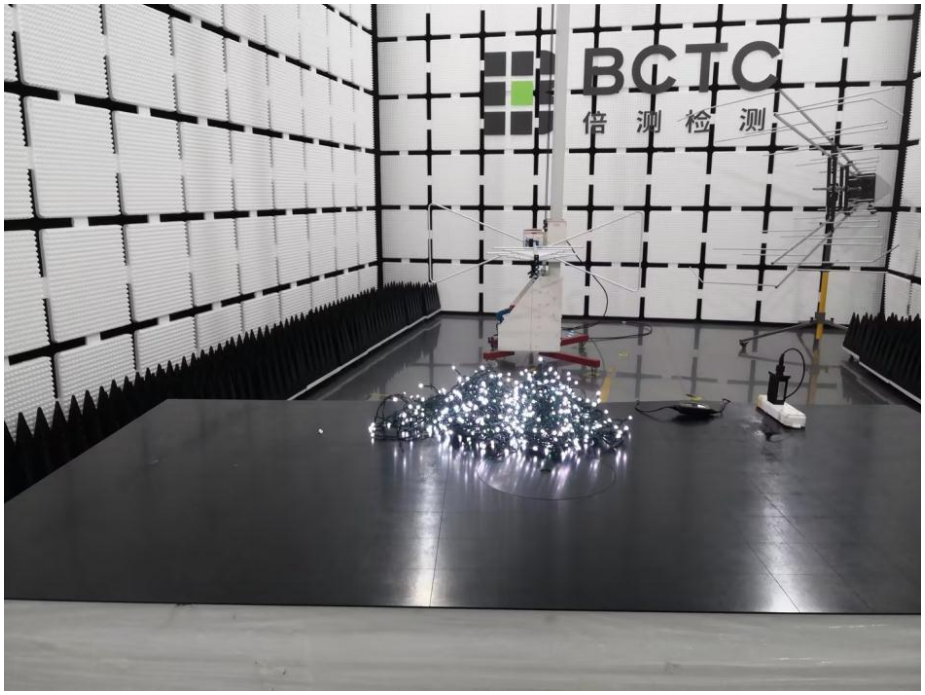
The EUT antenna is internal antenna, fulfill the requirement of this section.

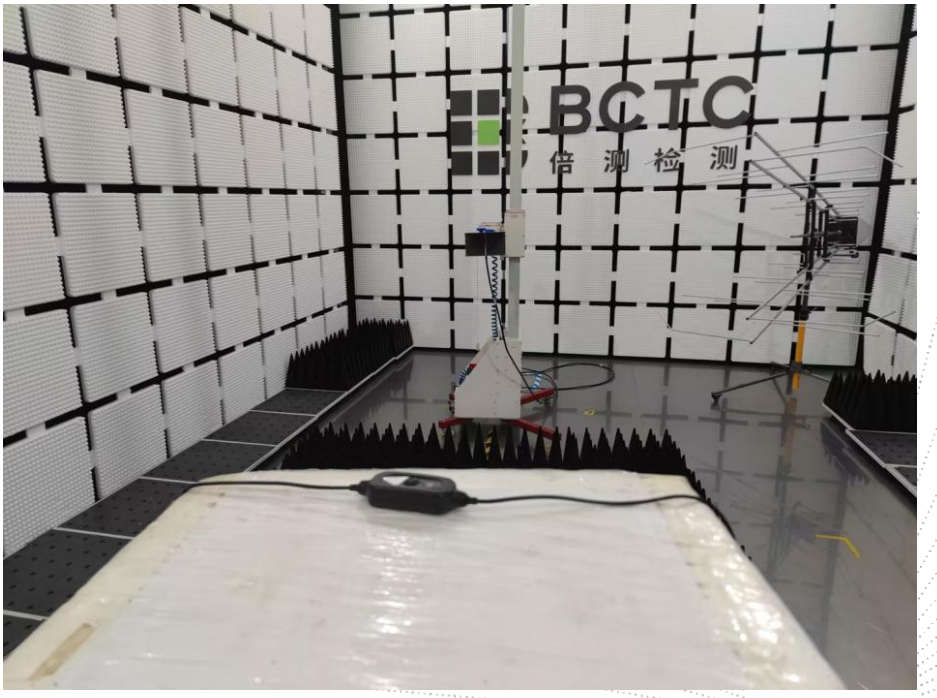
15. EUT Test Setup Photographs

Conducted emissions Photo



Radiated Measurement Photos





STATEMENT

1.The equipment lists are traceable to the national reference standards.

2.The test report can not be partially copied unless prior written approval is issued from our lab.

3.The test report is invalid without stamp of laboratory.

4.The test report is invalid without signature of person(s) testing and authorizing.

5.The test process and test result is only related to the Unit Under Test.

6.The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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