Report No: CCISE190707002

TEST REPORT

Applicant:	**Binatone Electronics International Ltd.**
Address of Applicant:	Floor 23A, 9 Des Voeux Road West, Sheung Wan, Hong Kong, China

Equipment Under Test (EUT)

Product Name:	Video Baby Monitor (Baby Unit)
Model Name.:	MBP481AXLBU, MBP483BU
Trade mark:	motorola
FCC ID:	VLJ-MBP483ABU
Canada IC:	4522A-MBP483ABU
HVIN:	MBP483ABU
Applicable standards:	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 RSS-247 Issue 2 February 2017 RSS-Gen Issue 5 April 2018 ICES-003 Issue 6 January 2016
Date of sample receipt:	12 June 2019
Date of Test:	12 June 2019 to 12 July 2019
Date of report issued:	12 July 2019
Test Result:	PASS*

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

Authorized Signature:

Bruce Zhang
Laboratory Manager

Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	12 July 2019	CCISE190707002	ALL	Initial Issue

Tested by: Casey Chen ***Date:*** *12 June 2019 - 12 July 2019*

Test Engineer

Reviewed by: Winner Zhang ***Date:*** *12 July 2019*

Project Engineer

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1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

KDB 558074 D01 DTS Meas Guidance v05

FCC Part 15, Subpart C RSS-247 Issue 2			
Standard Section	**Test Item**	**Judgment**	**Remark**
FCC Part 15.207(a) RSS-Gen Clause 8.8	Conducted Emission	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(a)	20dB Bandwidth	PASS	
RSS-Gen Clause 6.7	99% Bandwidth	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.4(b)	Output Power	PASS	
FCC Part 15.247(d) RSS-247 Clause 3.3	Radiated Spurious Emission	PASS	
FCC Part 15.247(d) RSS-247 Clause 5.5	Conducted Spurious & Band Edge Emission	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(b)	Hopping Channel Separation	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Number of Hopping Frequency	PASS	
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Dwell Time	PASS	
FCC Part 15.205	Restricted Band Edge Emission	PASS	
FCC Part 15.247(d) & 15.209(a) RSS-247 Clause 5.5	Band Edge Emission	PASS	
FCC Part 15.247(b)(4) & 15.203	Antenna Requirement	PASS	
RSS-Gen Clause 6.11	Frequency Stability	PASS	

FCC Part 15,Subpart B ICES-003 Issue 6			
StandardSection	**Test Item**	**Judgment**	**Remark**
FCC Part 15.107(a) ICES-003	Conducted Emission	PASS	Class B limit
FCC Part 15.109(a)) ICES-003	Radiated Emission	PASS	Class B limit

NOTE:

1) 'N/A' denotes test is not applicable in this test report
2) All tests were performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.

1.1 TEST FACTORY

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

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

- FCC - Designation No.: CN1211

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

- ISED – CAB identifier.: CN0021

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

- CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

A2LA - Registration No.: 4346.01

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

1.2 MEASUREMENT UNCERTAINTY

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±2.22 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±2.76 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.28 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.72 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±2.88 dB (k=2)

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name	Video Baby Monitor (Baby Unit)
Trade Name	motorola
Model Name	MBP481AXLBU
Series Model	MBP483BU
Model Difference	All models are fully identical except model model.
Product Description	The EUT is a Video Baby Monitor (Baby Unit) which supports 2.4GHz FHSS wireless technology. Operation Frequency: 2405 – 2475 MHz Modulation Type: FSK Bit Rate of Transmitter: 2MHz/2.5MHz/3MHz/4MHz/4.5MHz Number Of Channel: 32 channels (16 active channels) Antenna Designation: Please see Note 4 Antenna Gain (dBi): 0 dBi
Channel List	Please refer to the Note 2.
Adapter	Model: S003GU0600050 (Tenpao) Input: AC 100-240V~50/60Hz 150mA Output: DC 6.0V@0.5A
Battery	N/A
Hardware version	N/A
Software version	N/A
Radio Hardware version	N/A
Radio Software version	N/A
Test Software	SecureCRT
RF Power Setting TEST Software (power class)	1
Connecting I/O Port(s)	Please refer to the User's Manual

Note:

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

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RF Channel and Frequency			
RF Channel	**Freq.(MHz)**	**RF Channel**	**Freq.(MHz)**
01	**2405.00**	**17**	**2439.00**
02	2407.00	18	2441.00
03	2409.00	19	2444.00
04	2411.00	20	2446.00
05	2413.00	21	2450.00
06	2415.00	22	2452.00
07	2418.00	23	2454.00
08	2420.00	24	2456.00
09	2422.00	25	2458.50
10	2424.00	26	2460.50
11	2426.00	27	2462.50
12	2428.00	28	2467.00
13	2430.00	29	2469.00
14	2433.00	30	2471.00
15	2435.00	31	2473.00
16	2437.00	**32**	**2475.00**

3 Note:

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

2) Test frequencies are lowest channel: 2405 MHz, middle channel: 2439 MHz and highest channel: 2475 MHz

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Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	motorola	MBP481AXLBU	Integral Antenna	N/A	0	2.4G Antenna

2.2 DESCRIPTION OF TEST MODES

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

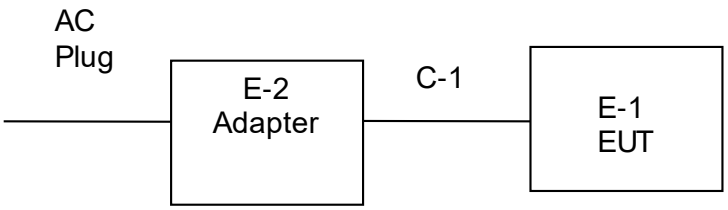
Worst Mode	Description	Data Rate
Mode 1	TX GFSK LOW CHANNEL	/
Mode 2	TX GFSK MID CHANNEL	/
Mode 3	TX GFSK HIGH CHANNEL	/
Mode 4	Transmitting mode	/
Mode 5	Charging mode	/

Note:

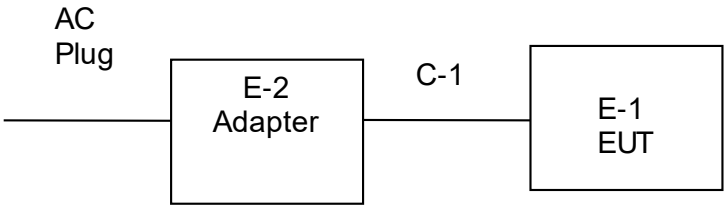
1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported
2) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/60Hz is shown in the report
3) Controlled using a bespoke application on the laptop PC supplied by the customer. The application was used to enable a continuous transmission mode and to select the test channels, data rates and modulation schemes as required.

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiation Test Set



Conduction Test Set



2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	Serial No.	Note
E-2	Adapter	Tenpao	S003GU0600050	N/A	Accessories Equipment

Item	Shielded Type	Ferrite Core	Length	Note
C-1	Adapter DC Cable	NO	270cm	N/A
/	USB Line	N/A	0.7m	N/A

Note:

1) The support equipment was authorized by Declaration of Confirmation.
2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".

2.5 EQUIPMENTS LIST

Radio Spectrum Testing				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
USB RF power sensor	DARE	RPR3006W	15I00041SNO09	05.03.2020
Spectrum analyzer	Agilent	N9020A	MY51110123	01.03.2020
Spurious Emission				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
Loop Antenna	Schwarzbeck	FMZB1519B	00044	14.03.2020
Bilog Antenna	Schwarzbeck	VULB9163	497	14.03.2020
Horn Antenna	Schwarzbeck	BBHA 9120D	1805	21.06.2020
SHF-EHF Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	20.11.2019
Pre-amplifier	HP	8447D	2944A09358	05.03.2020
Pre-amplifier	CD	PAP-1G18	11804	05.03.2020
EMI Test Receiver	R&S	ESRP7	101070	05.03.2020
Spectrum analyzer	R&S	FSP30	101454	05.03.2020
Spectrum analyzer	R&S	FSP40	100363	05.03.2020
Cable	ZDECL	Z108-NJ-NJ-81	1608458	05.03.2020
Cable	MICRO-COAX	MFR64639	K10742-5	05.03.2020
Cable	SUHNER	SUCOFLEX100	58193/4PE	05.03.2020
Conducted Emission on AC Mains				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Until**
EMI Test Receiver	R&S	ESCI	101189	05.03.2020
Pulse Limiter	Schwarzbeck	OSRAM 2306	9731	05.03.2020
LISN	CHASE	MN2050D	1447	17.03.2020
LISN	R&S	ESH3-Z5	8438621/010	20.07.2019

3 EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

operating frequency band. In case the emission fall within the restricted band specified on Part 15. 207(a), 107(a), RSS-Gen Table3 and ICES-003 Table2 limit in the table below has to be followed. This item was performed according to the procedures in ANSI C63.10: 2013 and ANSI C63.4: 2014.

FREQUENCY (MHz)	Conducted Emission limit (dBuV)	
	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

Note:

1) The tighter limit applies at the band edges.
2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

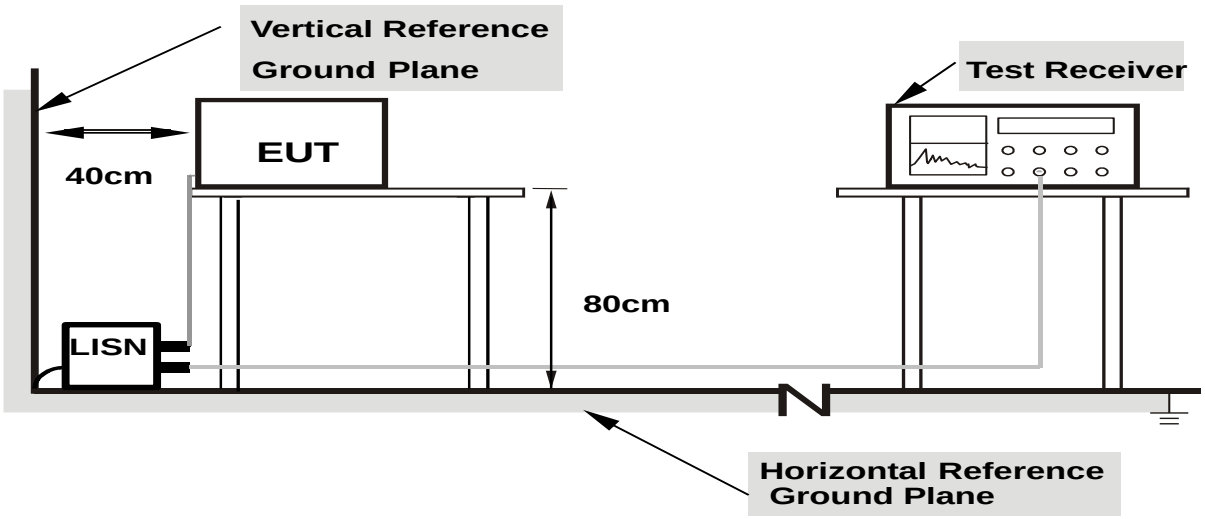
The following table is the setting of the receiver

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

3.1.2 TEST PROCEDURE

a. The EUT was 0.8 meters from the horizontal ground plane and 0.4 meters from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



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

3.1.4 EUT OPERATING CONDITIONS

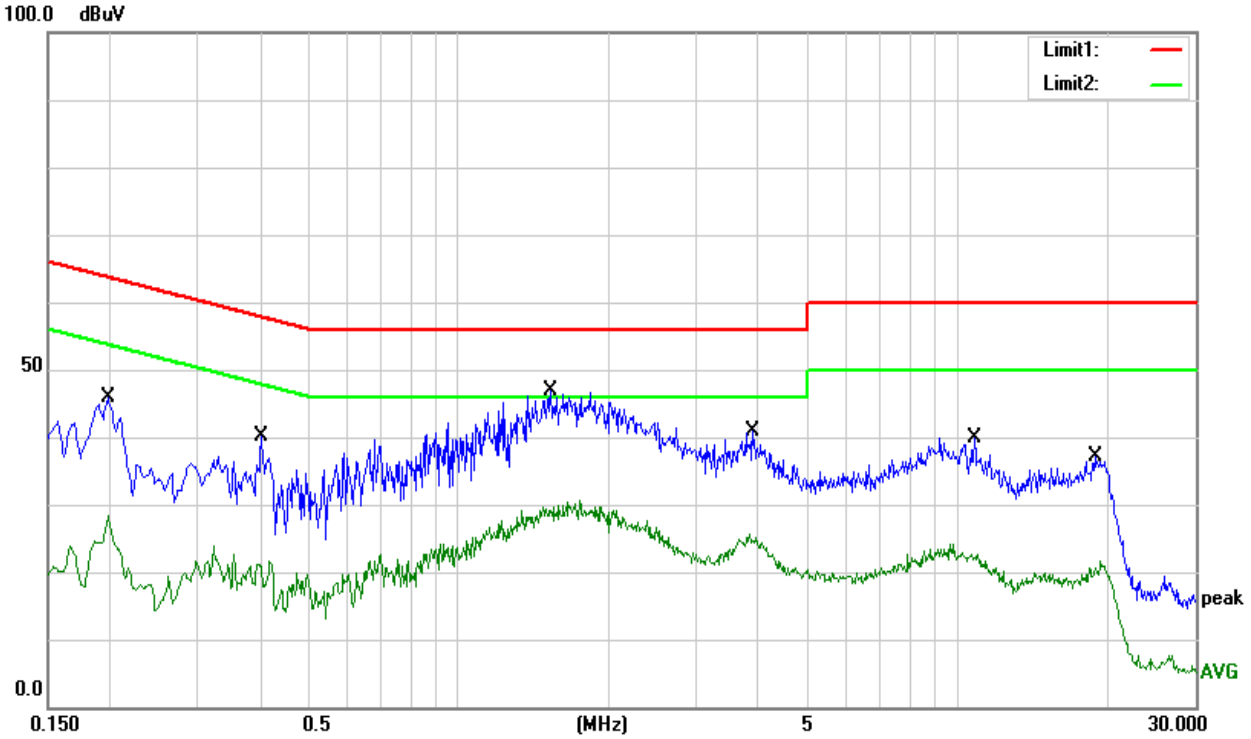
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.5 TEST RESULT

Temperature:	25.3 ℃	Relative Humidity:	62%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 4	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1980	35.66	10.32	45.98	63.69	-17.71	QP
0.1980	18.18	10.32	28.50	53.69	-25.19	AVG
0.4020	29.70	10.52	40.22	57.81	-17.59	QP
0.4020	11.10	10.52	21.62	47.81	-26.19	AVG
1.5300	36.63	10.16	46.79	56.00	-9.21	QP
1.5300	20.55	10.16	30.71	46.00	-15.29	AVG
3.8860	30.69	10.07	40.76	56.00	-15.24	QP
3.8860	15.06	10.07	25.13	46.00	-20.87	AVG
10.8020	30.06	9.85	39.91	60.00	-20.09	QP
10.8020	12.68	9.85	22.53	50.00	-27.47	AVG
18.8420	27.28	9.92	37.20	60.00	-22.80	QP
18.8420	11.65	9.92	21.57	50.00	-28.43	AVG

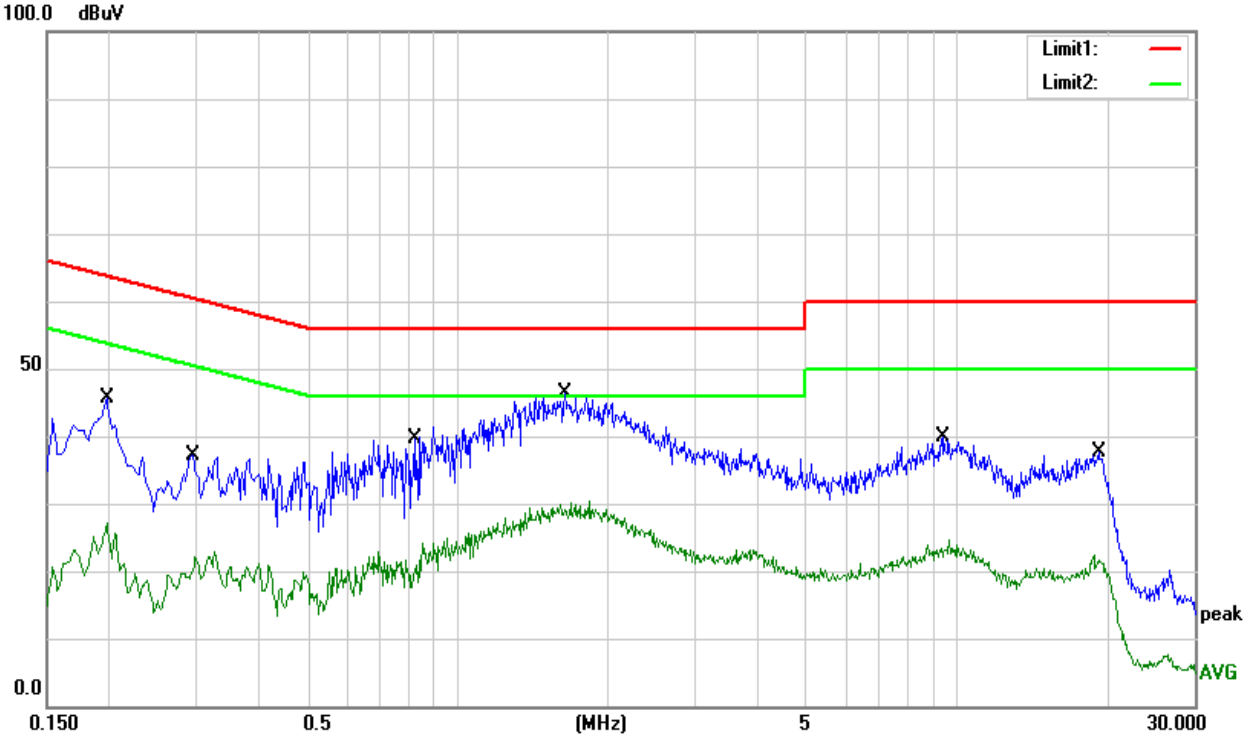
Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	25.3 ℃	Relative Humidity:	62%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 4	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1980	35.43	10.32	45.75	63.69	-17.94	QP
0.1980	16.73	10.32	27.05	53.69	-26.64	AVG
0.2940	26.36	10.74	37.10	60.41	-23.31	QP
0.2940	12.05	10.74	22.79	50.41	-27.62	AVG
0.8180	29.43	10.23	39.66	56.00	-16.34	QP
0.8180	16.31	10.23	26.54	46.00	-19.46	AVG
1.6380	36.14	10.15	46.29	56.00	-9.71	QP
1.6380	20.13	10.15	30.28	46.00	-15.72	AVG
9.4460	30.06	9.86	39.92	60.00	-20.08	QP
9.4460	14.78	9.86	24.64	50.00	-25.36	AVG
19.2540	27.66	9.93	37.59	60.00	-22.41	QP
19.2540	11.32	9.93	21.25	50.00	-28.75	AVG

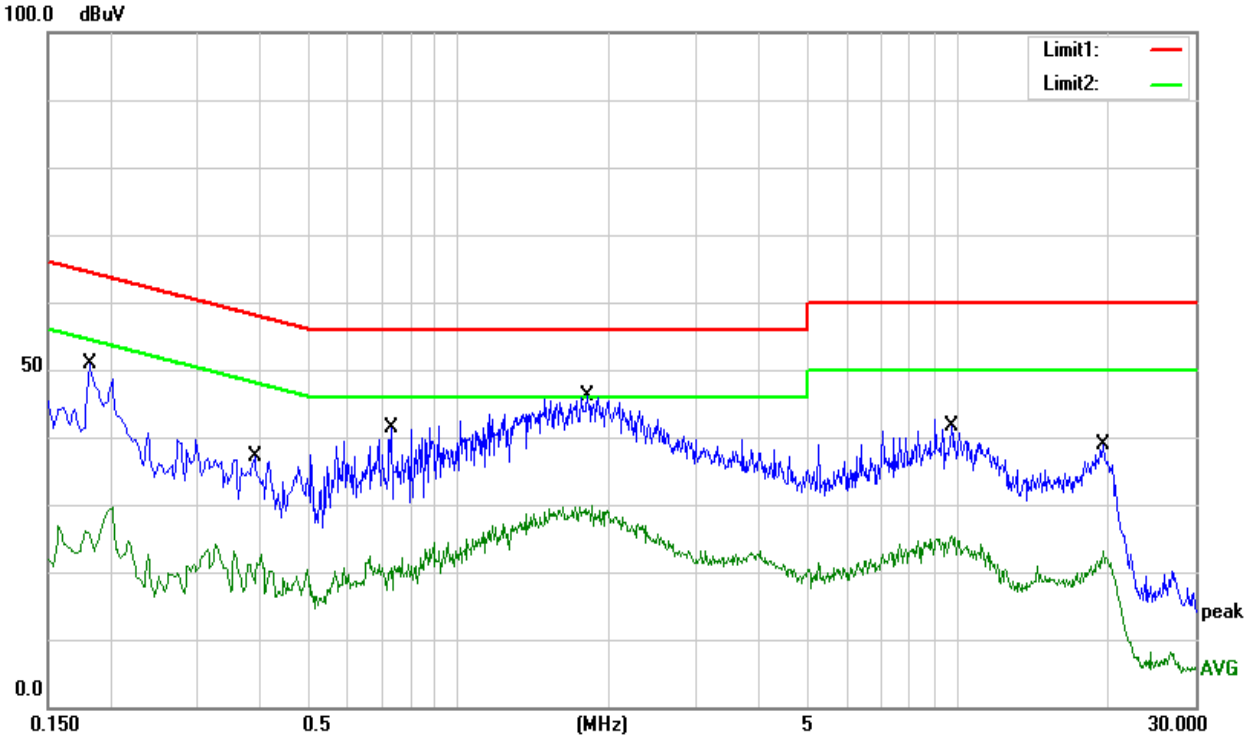
Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	25.3 ℃	Relative Humidity:	62%
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 5 (Part 15B & ICES-003)	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1820	40.51	10.28	50.79	64.39	-13.60	QP
0.1820	19.34	10.28	29.62	54.39	-24.77	AVG
0.3900	26.45	10.55	37.00	58.06	-21.06	QP
0.3900	12.04	10.55	22.59	48.06	-25.47	AVG
0.7340	31.01	10.26	41.27	56.00	-14.73	QP
0.7340	15.50	10.26	25.76	46.00	-20.24	AVG
1.8100	35.89	10.16	46.05	56.00	-9.95	QP
1.8100	19.64	10.16	29.80	46.00	-16.20	AVG
9.7180	31.66	9.86	41.52	60.00	-18.48	QP
9.7180	15.44	9.86	25.30	50.00	-24.70	AVG
19.6300	29.00	9.94	38.94	60.00	-21.06	QP
19.6300	13.11	9.94	23.05	50.00	-26.95	AVG

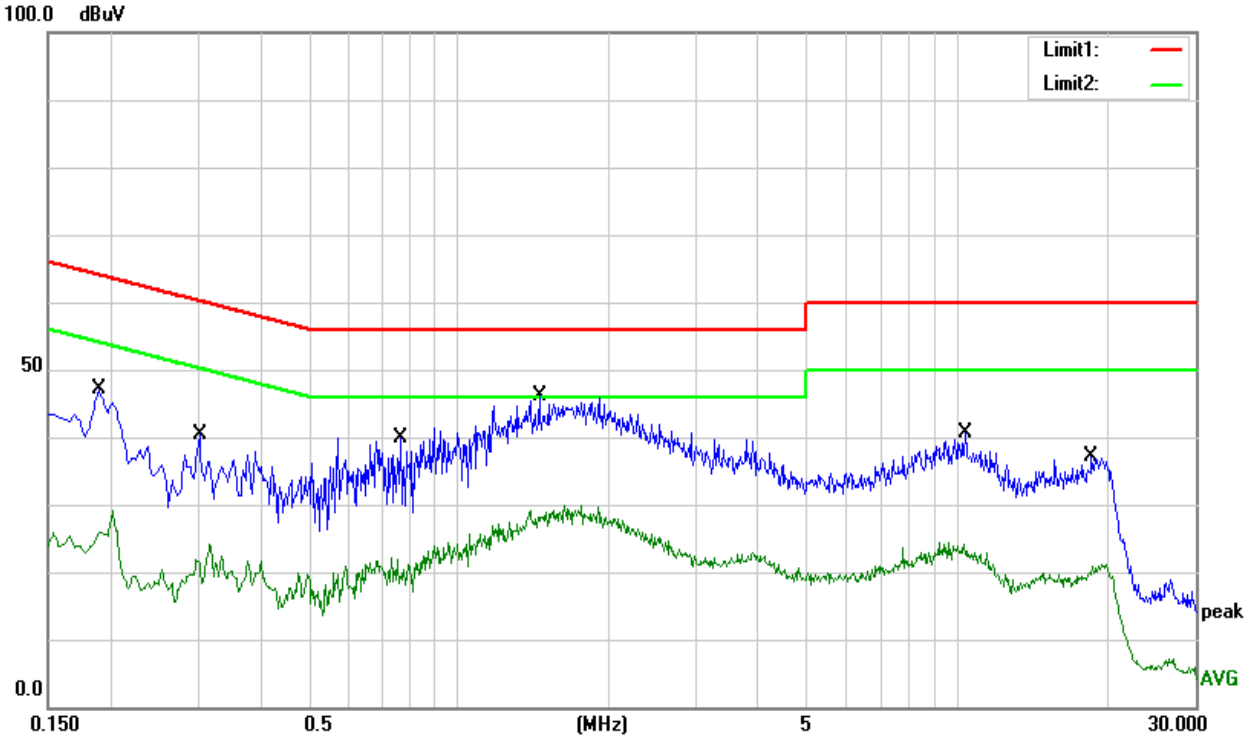
Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	25.3 ℃	Relative Humidity:	62%
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 5 (Part 15B & ICES-003)	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		

Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
0.1900	36.75	10.30	47.05	64.04	-16.99	QP
0.1900	18.89	10.30	29.19	54.04	-24.85	AVG
0.3020	29.55	10.76	40.31	60.19	-19.88	QP
0.3020	13.38	10.76	24.14	50.19	-26.05	AVG
0.7660	29.74	10.25	39.99	56.00	-16.01	QP
0.7660	15.32	10.25	25.57	46.00	-20.43	AVG
1.4540	36.04	10.15	46.19	56.00	-9.81	QP
1.4540	19.83	10.15	29.98	46.00	-16.02	AVG
10.3860	30.68	9.85	40.53	60.00	-19.47	QP
10.3860	12.92	9.85	22.77	50.00	-27.23	AVG
18.5380	27.32	9.91	37.23	60.00	-22.77	QP
18.5380	11.13	9.91	21.04	50.00	-28.96	AVG

Remark:
1. All readings are Quasi-Peak and Average values.
2. Margin = Result (Result =Reading + Factor)–Limit



3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

Frequencies (MHz)	Class A (at 10m) dBuV/m	Class B (at 3m) dBuV/m
30~88	39.0	40.0
88~216	43.5	43.5
216~960	46.5	46.0
Above 960	49.5	54.0

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Note:
1) The tighter limit applies at the band edges.
2) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

a) The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

b) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

c) The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 0.8 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

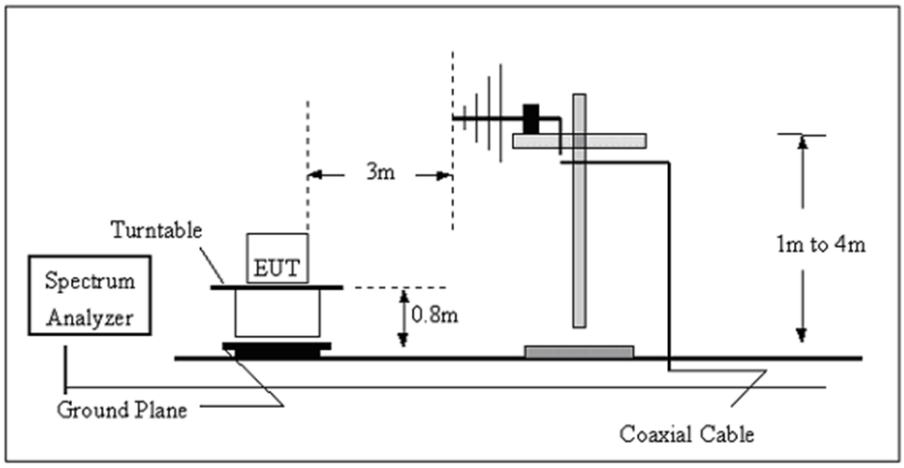
e) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.

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

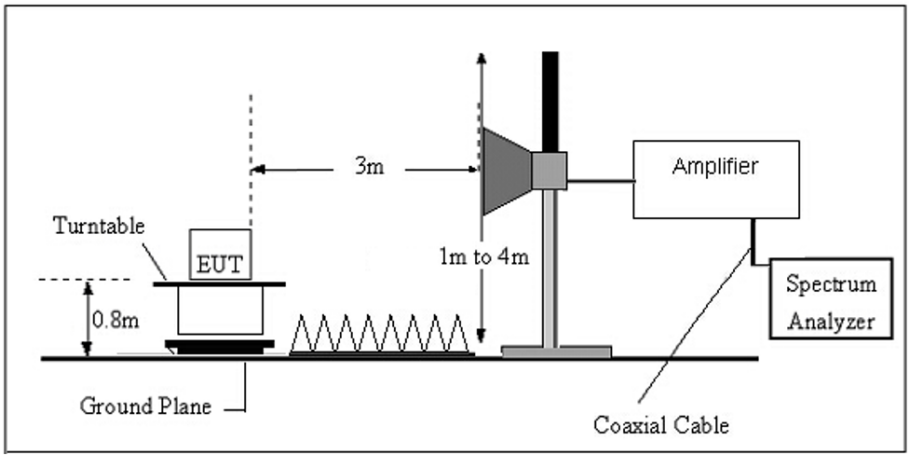
Note: Both horizontal and vertical antenna polarities were testedand performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 TEST SETUP

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



b) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

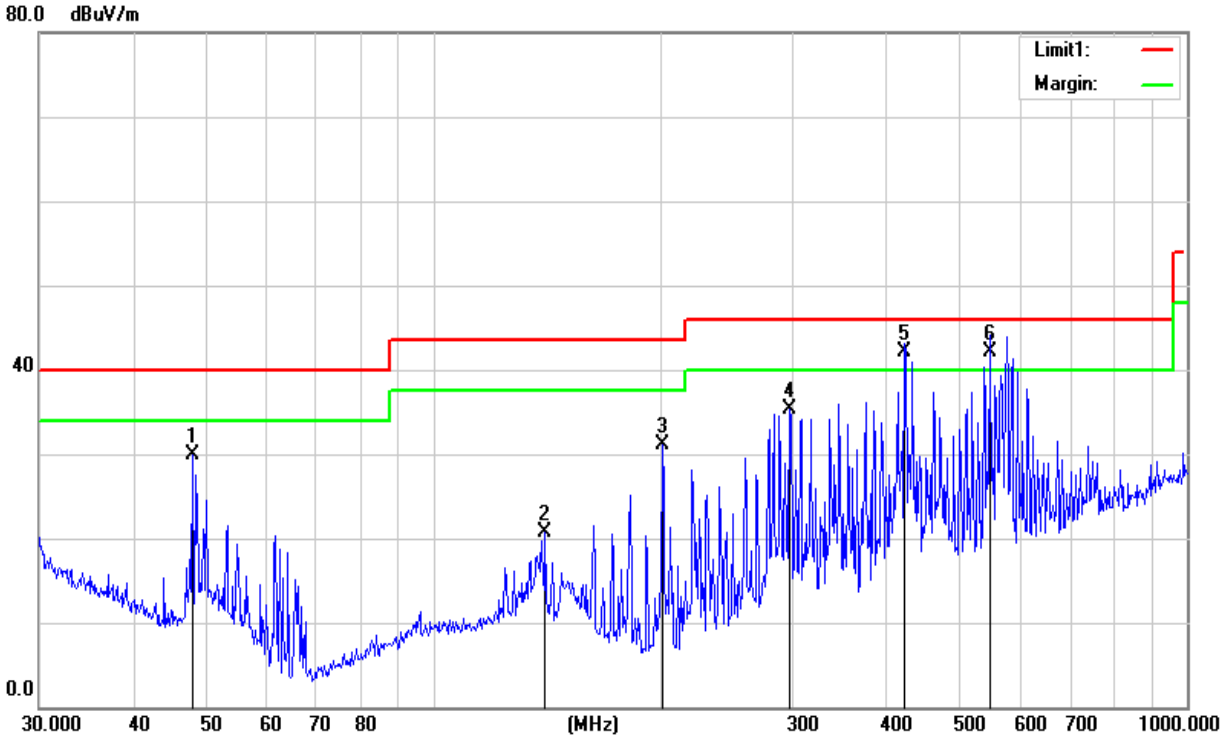
3.2.5 TEST RESULTS

Between 30-1000MHz:

Temperature:	26.2 ℃	Relative Humidity:	70%
Pressure:	1010hPa	Phase:	Horizontal
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	Adapter(Tenpao)	Test Date:	2019-07-11

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	49.46	-19.55	29.91	40.00	-10.09	QP
2	140.8351	37.90	-17.27	20.63	43.50	-22.87	QP
3	201.3930	50.77	-19.68	31.09	43.50	-12.41	QP
4	297.2241	49.93	-14.68	35.25	46.00	-10.75	QP
5	422.0577	52.60	-10.57	42.03	46.00	-3.97	QP
6	547.0977	48.80	-6.76	42.04	46.00	-3.96	QP

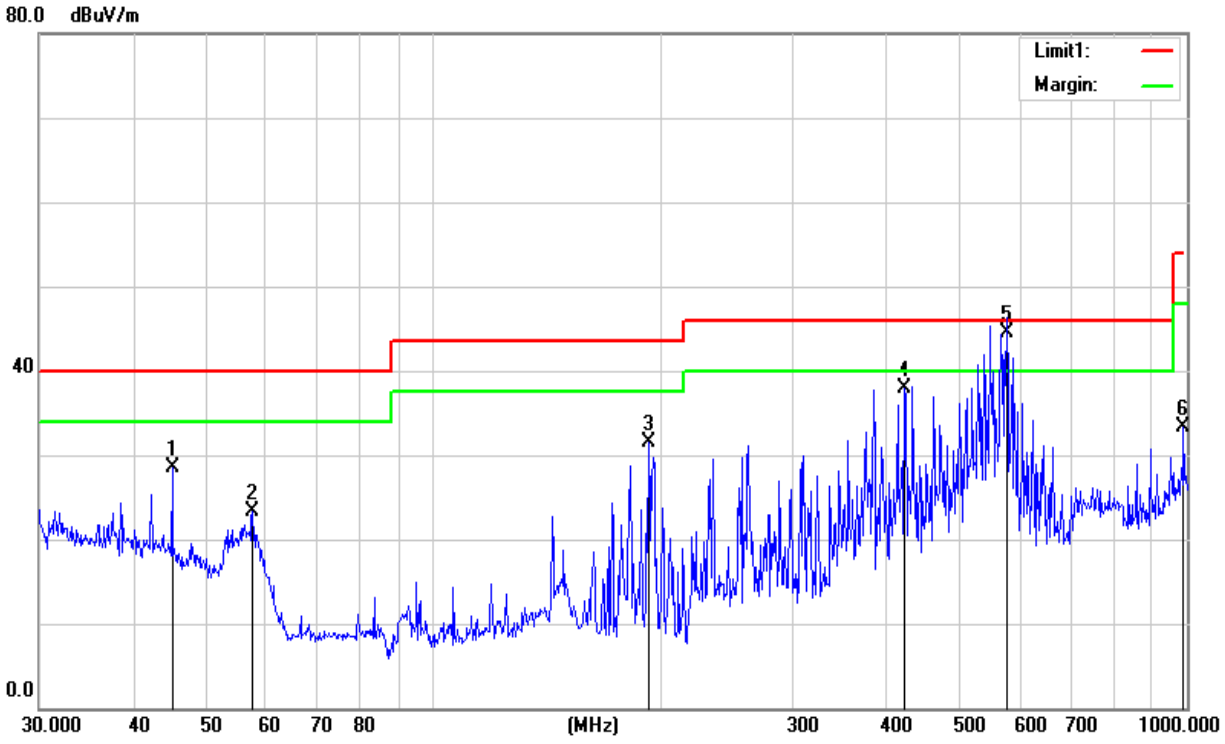
Remark:
1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	26.2 ℃	Relative Humidity:	70%
Pressure:	1010hPa	Phase:	Vertical
Test Voltage:	AC 120V/60Hz	Test Mode:	Mode 5 (Part 15B & ICES-003)
Note:	Adapter(Tenpao)	Test Date:	2019-07-11

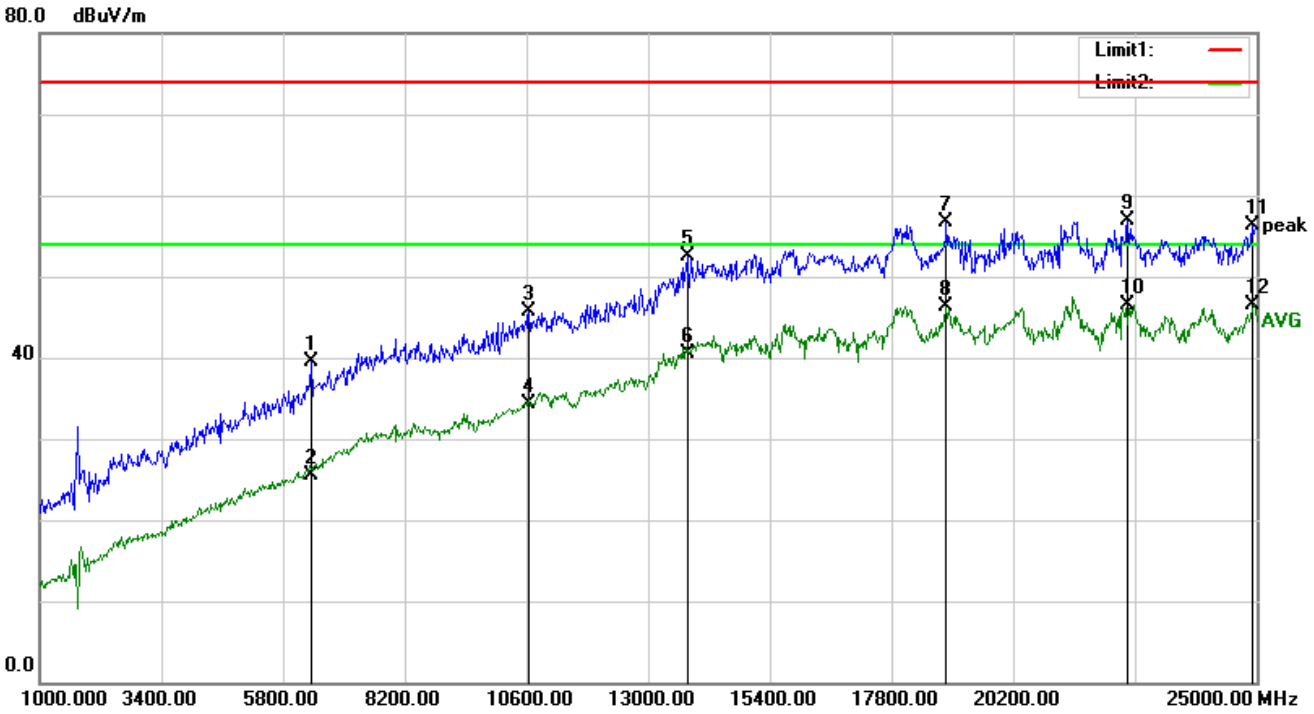
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Results (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	45.0583	47.52	-18.93	28.59	40.00	-11.41	QP
2	57.5938	47.00	-23.65	23.35	40.00	-16.65	QP
3	193.0945	51.63	-20.22	31.41	43.50	-12.09	QP
4	422.0577	48.75	-10.90	37.85	46.00	-8.15	QP
5	576.6443	51.12	-6.69	44.43	46.00	-1.57	QP
6	989.5353	33.38	-0.11	33.27	54.00	-20.73	QP

Remark:
1. All readings are Quasi-Peak .
2. Margin = Result (Result =Reading + Factor)–Limit



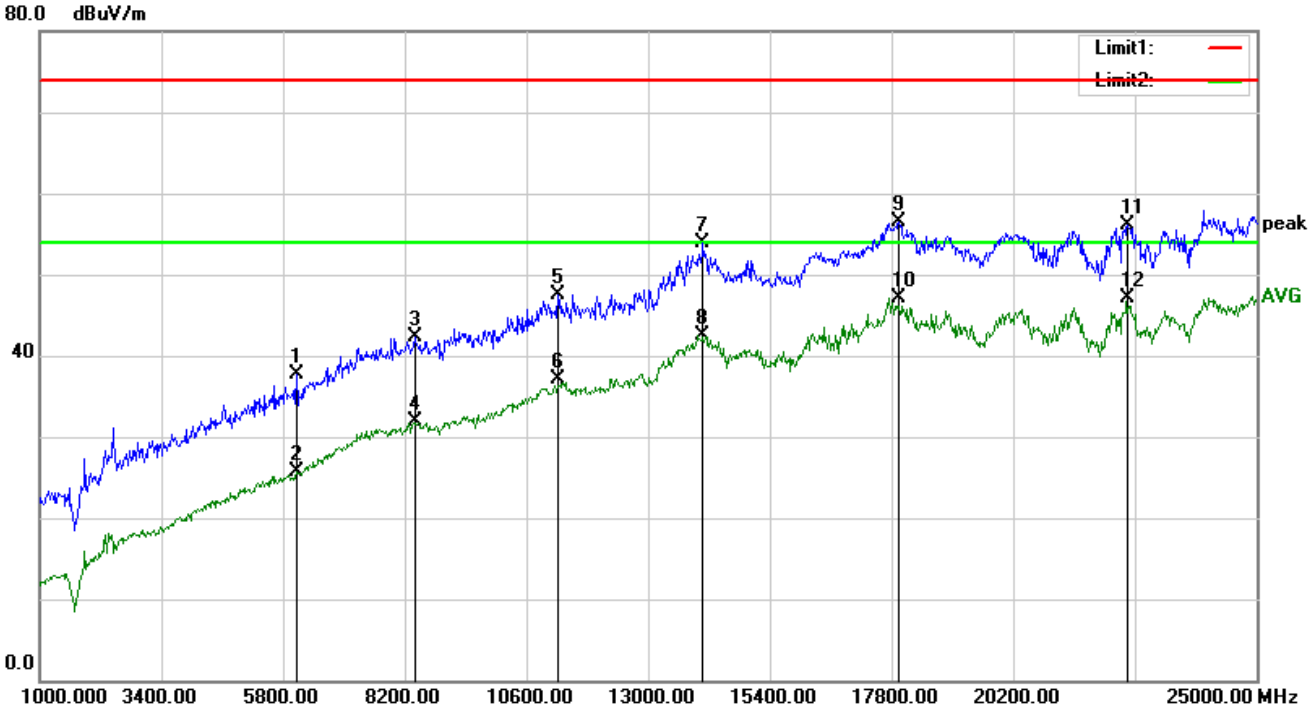
Above 1GHz:

Temperature:	22.4 ℃	Relative Humidity:	68%
Pressure:	1010hPa	Phase:	Horizontal
Test Mode:	Mode 5 (Part 15B & ICES-003)	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	6352.000	41.87	-2.33	39.54	74.00	-34.46	peak
2	6352.000	27.75	-2.33	25.42	54.00	-28.58	AVG
3	10648.000	40.30	5.36	45.66	74.00	-28.34	peak
4	10648.000	29.00	5.36	34.36	54.00	-19.64	AVG
5	13768.000	41.38	11.06	52.44	74.00	-21.56	peak
6	13768.000	29.42	11.06	40.48	54.00	-13.52	AVG
7	18880.000	33.15	23.55	56.70	74.00	-17.30	peak
8	18880.000	22.79	23.55	46.34	54.00	-7.66	AVG
9	22456.000	33.25	23.73	56.98	74.00	-17.02	peak
10	22456.000	22.68	23.73	46.41	54.00	-7.59	AVG
11	24904.000	27.48	28.90	56.38	74.00	-17.62	peak
12	24904.000	17.61	28.90	46.51	54.00	-7.49	AVG

Temperature:	22.4 ℃	Relative Humidity:	68%
Pressure:	1010hPa	Phase:	Vertical
Test Mode:	Mode 5 (Part 15B & ICES-003)	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	6064.000	41.36	-3.60	37.76	74.00	-36.24	peak
2	6064.000	29.21	-3.60	25.61	54.00	-28.39	AVG
3	8392.000	39.76	2.60	42.36	74.00	-31.64	peak
4	8392.000	29.38	2.60	31.98	54.00	-22.02	AVG
5	11224.000	41.06	6.35	47.41	74.00	-26.59	peak
6	11224.000	30.74	6.35	37.09	54.00	-16.91	AVG
7	14080.000	41.69	12.18	53.87	74.00	-20.13	peak
8	14080.000	30.29	12.18	42.47	54.00	-11.53	AVG
9	17944.000	33.18	23.23	56.41	74.00	-17.59	peak
10	17944.000	23.83	23.23	47.06	54.00	-6.94	AVG
11	22456.000	32.34	23.73	56.07	74.00	-17.93	peak
12	22456.000	23.43	23.73	47.16	54.00	-6.84	AVG

3.3 RADIATED SPURIOUS EMISSION MEASUREMENT

3.3.1 RADIATED EMISSION LIMITS

in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) and RSS-247 Issue 2 limit in the table and according to ANSI C63.10-2013 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

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

LIMITS OF RADIATED EMISSION MEASUREMENT (1000MHz-25GHz)

FREQUENCY (MHz)	(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).

For Radiated Emission

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

For Band edge

Spectrum Parameter	Setting
Detector	Peak/AV
Start/Stop Frequency	Lower Band Edge: 2300 to 2422 MHz Upper Band Edge: 2452 to 2500 MHz
RB / VB (emission in restricted band)	1 MHz /3MHz

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

3.3.2 TEST PROCEDURE

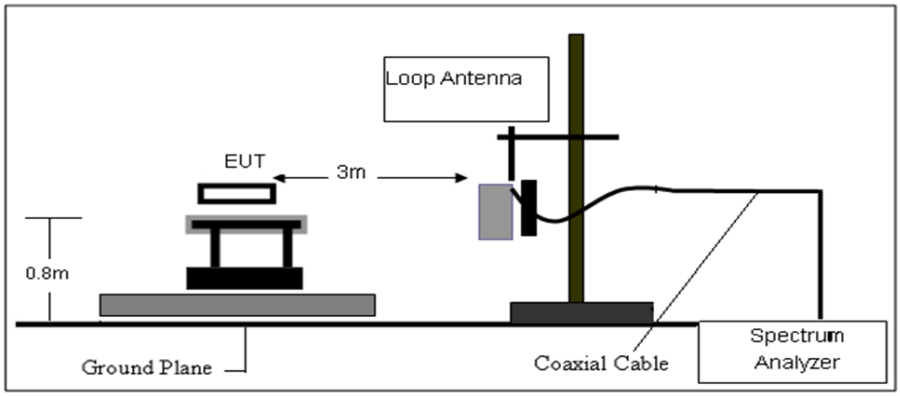
a) The measuring distance of at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b) The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz is 1.5 m) above the ground at a 3 meter anechoic chamber.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

Note:

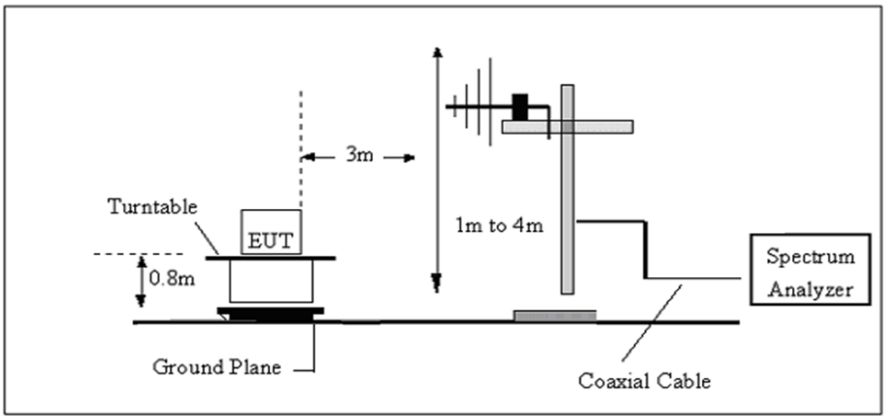
Both horizontal and vertical antenna polarities were tested and performed test to three orthogonal axis. The worst case emissions were reported

3.3.3 TEST SETUP

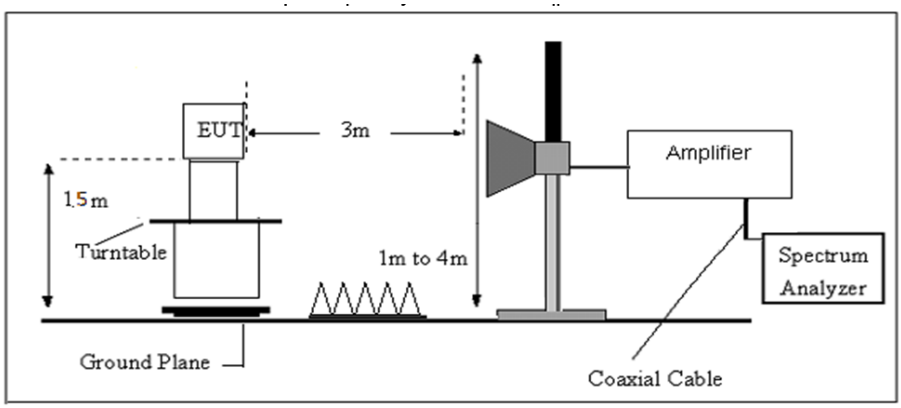
a) Radiated Emission Test-Up Frequency Below 30MHz



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



c) Radiated Emission Test-Up Frequency Above 1GHz



3.3.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.3.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:
FS = RA + AF + CL - AG
Where
FS = Field Strength
CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude
AG = Amplifier Gain
AF = Antenna Factor
For example

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

Factor=AF+CL-AG

3.3.6 TEST RESULT

9KHz-30MHz

Temperature:	24.9 ℃	Relative Humidtity:	68%
Test Voltage:	AC 120V/60Hz	Polarization:	--
Test Mode:	TX Mode		

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

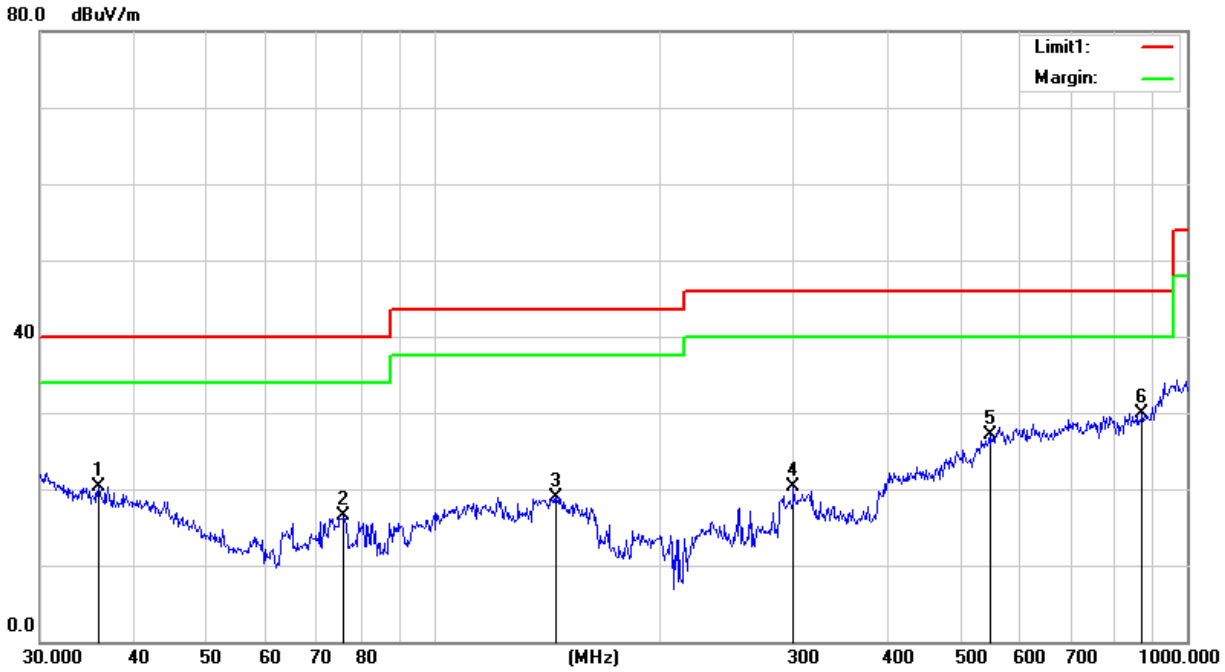
Note:
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

(30MHz - 1000MHz)

Temperature:	24.9 ℃	Relative Humidtity:	68%
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
35.8746	34.49	-14.20	20.29	40.00	-19.71	QP
75.9770	39.74	-23.26	16.48	40.00	-23.52	QP
145.3505	36.71	-17.75	18.96	43.50	-24.54	QP
300.3672	35.02	-14.81	20.21	46.00	-25.79	QP
547.0977	34.03	-6.85	27.18	46.00	-18.82	QP
872.1832	32.40	-2.59	29.81	46.00	-16.19	QP

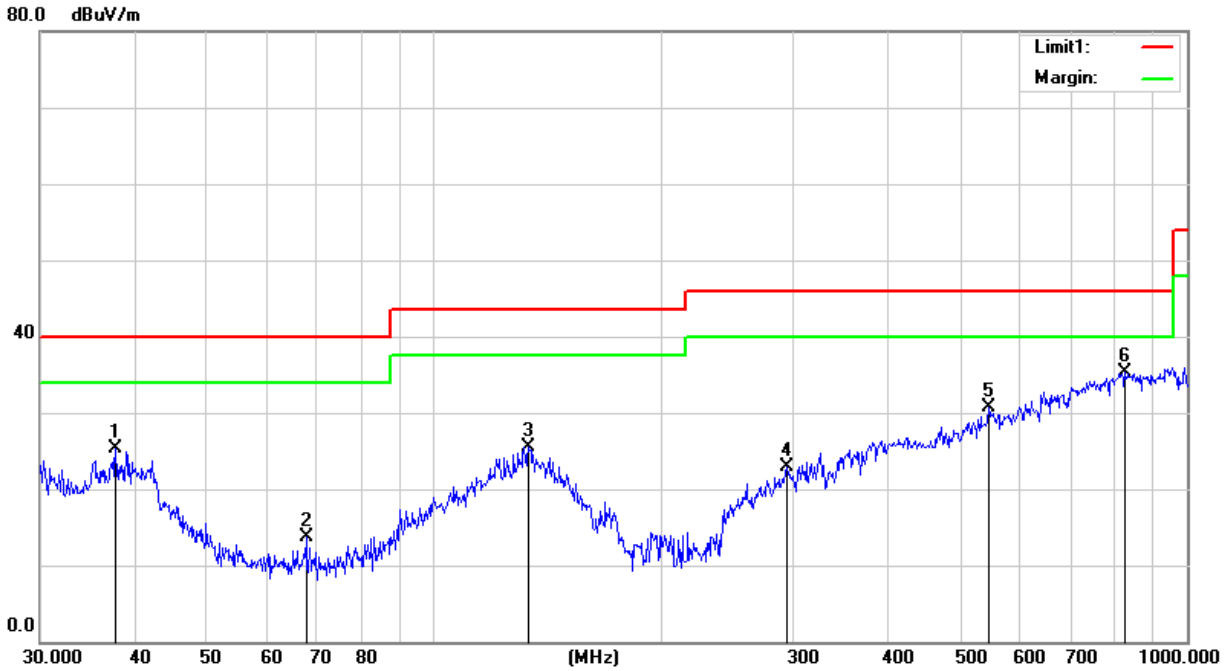
Remark:
1. Margin = Result (Result =Reading + Factor)–Limit



Temperature:	24.9 ℃	Relative Humidtity:	68%
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)	Test Date:	2019-07-11
Note:	Adapter(Tenpao)		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
37.8121	40.42	-15.20	25.22	40.00	-14.78	QP
67.6751	37.93	-24.16	13.77	40.00	-26.23	QP
133.6184	43.09	-17.54	25.55	43.50	-17.95	QP
294.1136	38.14	-15.16	22.98	46.00	-23.02	QP
545.1825	37.54	-6.89	30.65	46.00	-15.35	QP
827.4932	38.52	-3.23	35.29	46.00	-10.71	QP

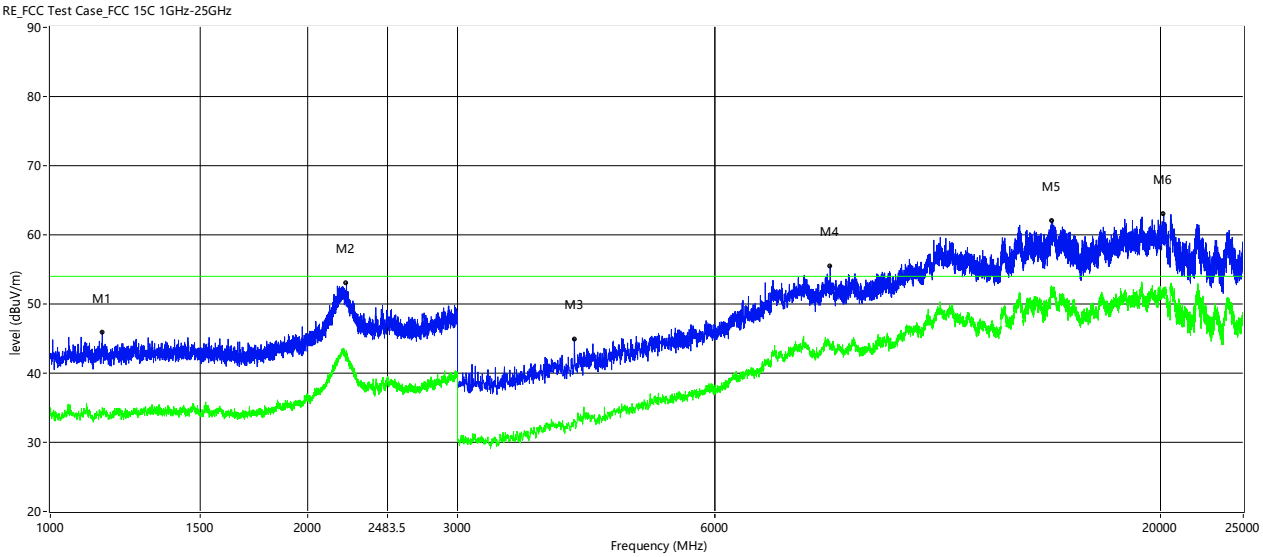
Remark:.
1. Margin = Result (Result =Reading + Factor)–Limit



(1000MHz-25GHz) Restricted band and Spurious emission Requirements

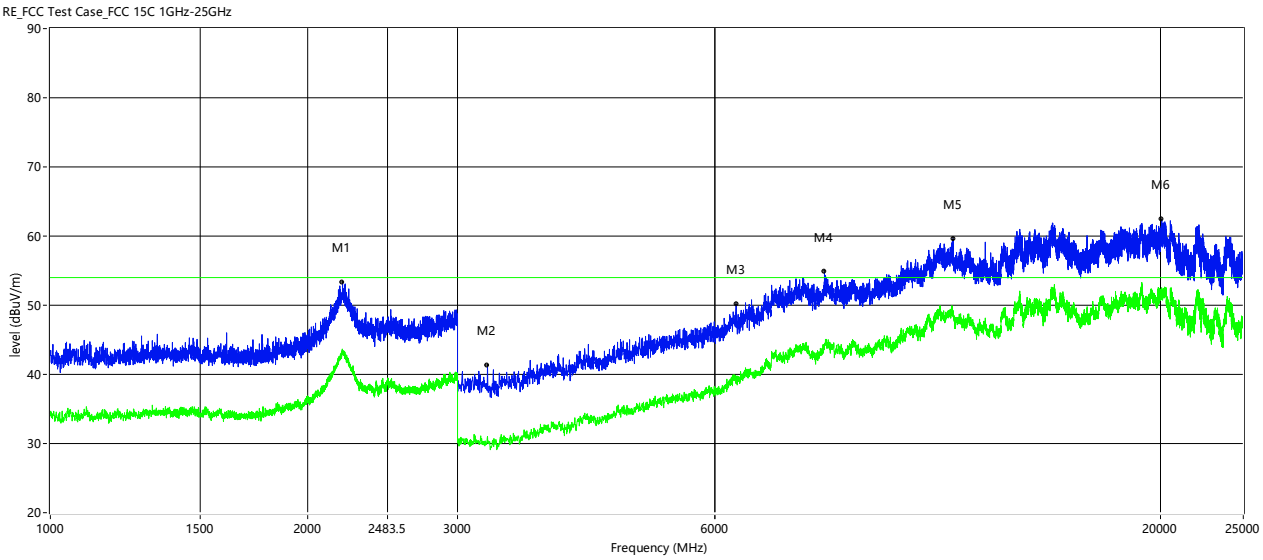
CH Low

vertical



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1150.500	45.91	--	35.02	-4.10	74.0	--	54.0	-18.98	Vertical	Pass
2223.500	53.04	--	42.73	4.96	74.0	--	54.0	-11.27	Vertical	Pass
4112.500	44.85	--	33.25	-7.50	74.0	--	54.0	-20.75	Vertical	Pass
8200.000	55.43	--	44.15	4.03	74.0	--	54.0	-9.85	Vertical	Pass
14902.500	62.02	--	52.07	12.38	74.0	--	54.0	-1.93	Vertical	Pass
20170.000	63.00	--	52.22	12.69	74.0	--	54.0	-1.78	Vertical	Pass

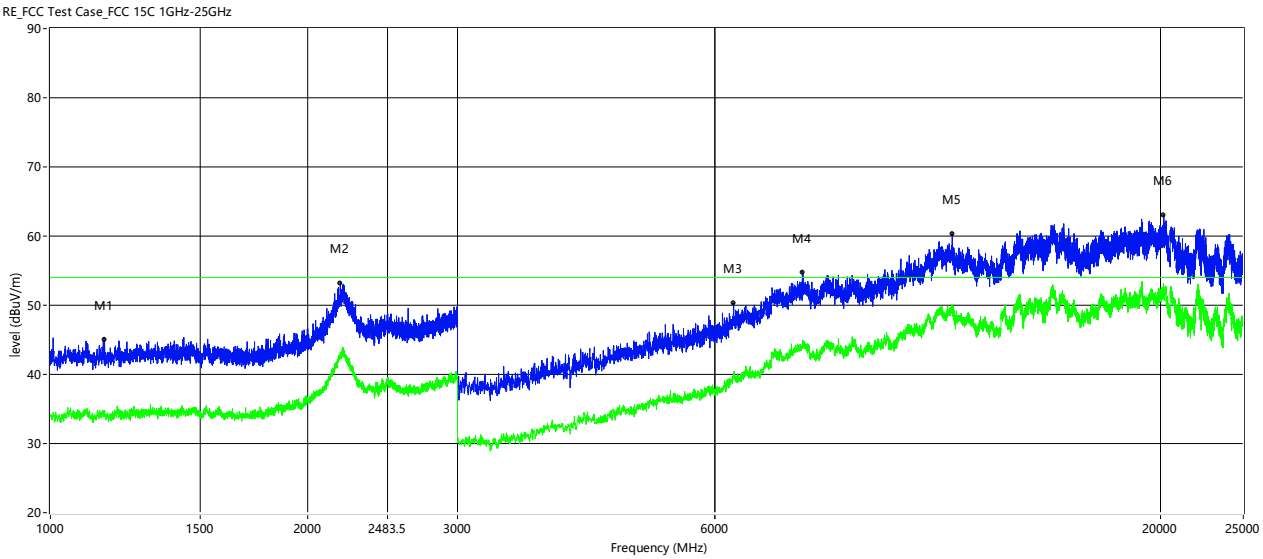
Horizontal



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2200.000	53.25	--	43.15	6.04	74.0	--	54.0	-10.85	Horizontal	Pass
3252.500	41.31	--	31.03	-10.78	74.0	--	54.0	-22.97	Horizontal	Pass
6362.500	50.16	--	39.71	-0.09	74.0	--	54.0	-14.29	Horizontal	Pass
8075.000	54.82	--	44.41	4.92	74.0	--	54.0	-9.59	Horizontal	Pass
11422.500	59.63	--	49.26	9.71	74.0	--	54.0	-4.74	Horizontal	Pass
20064.999	62.38	--	52.02	14.16	74.0	--	54.0	-1.98	Horizontal	Pass

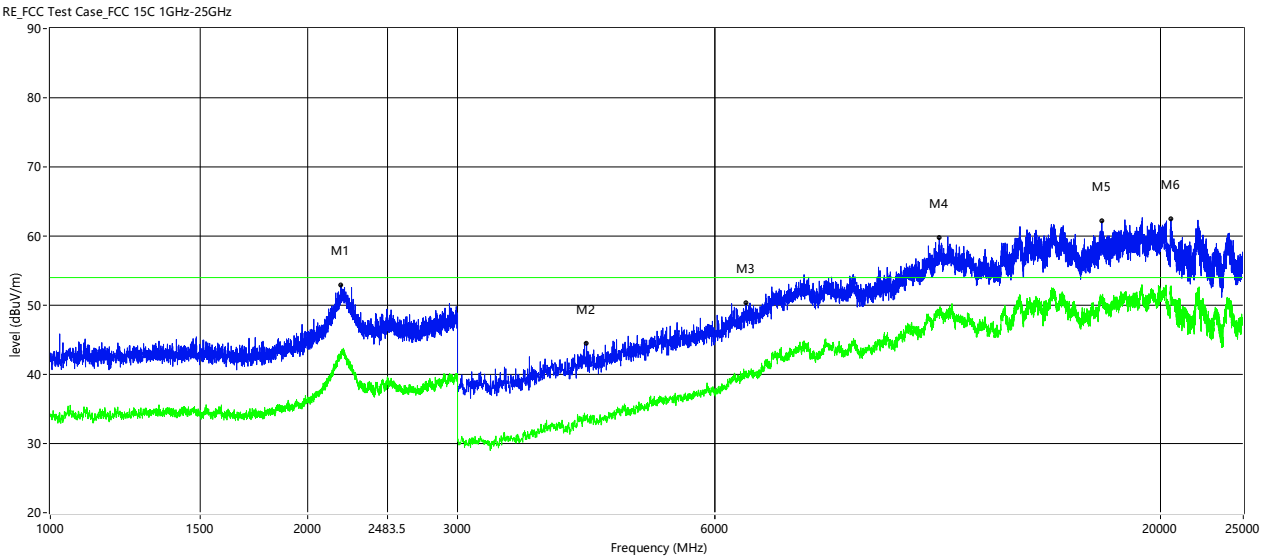
CH Middle

vertical



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
1157.500	44.99	--	34.38	-4.11	74.0	--	54.0	-19.62	Vertical	Pass
2186.500	53.16	--	42.87	5.33	74.0	--	54.0	-11.13	Vertical	Pass
6320.000	50.33	--	39.65	-0.14	74.0	--	54.0	-14.35	Vertical	Pass
7617.500	54.70	--	44.96	4.31	74.0	--	54.0	-9.04	Vertical	Pass
11399.999	60.32	--	49.83	9.73	74.0	--	54.0	-4.17	Vertical	Pass
20175.249	62.94	--	52.28	12.62	74.0	--	54.0	-1.72	Vertical	Pass

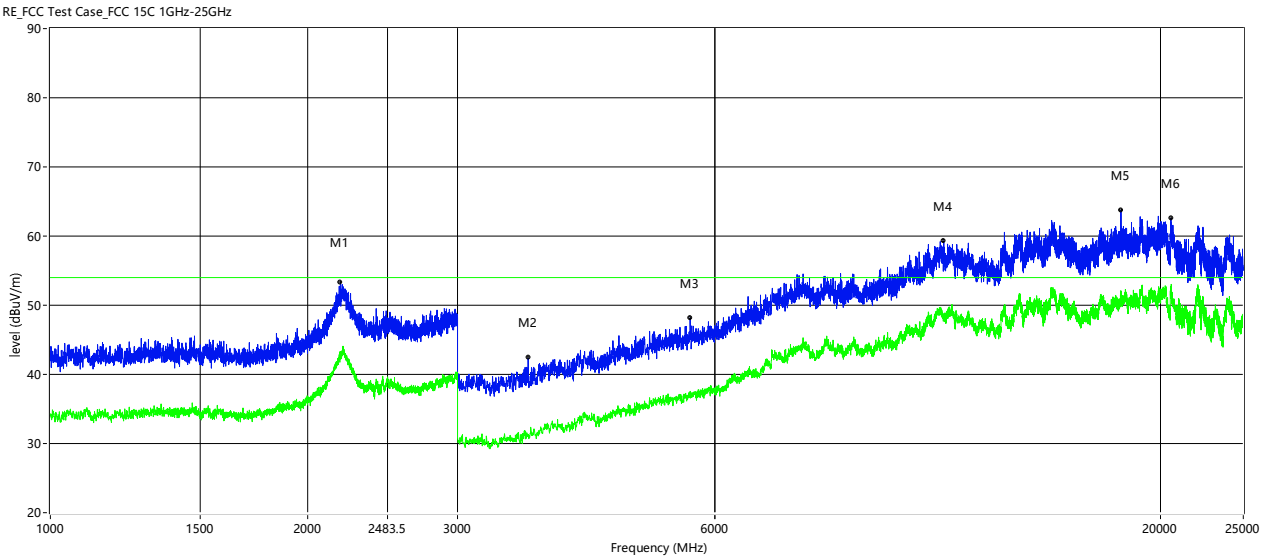
Horizontal



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2190.500	52.93	--	42.74	5.54	74.0	--	54.0	-11.26	Horizontal	Pass
4250.000	44.47	--	33.53	-6.79	74.0	--	54.0	-20.47	Horizontal	Pass
6535.000	50.29	--	40.47	0.73	74.0	--	54.0	-13.53	Horizontal	Pass
11007.500	59.74	--	48.78	10.28	74.0	--	54.0	-5.22	Horizontal	Pass
17067.500	62.09	--	50.44	11.50	74.0	--	54.0	-3.56	Horizontal	Pass
20565.500	63.38	--	52.24	14.12	74.0	--	54.0	-1.76	Horizontal	Pass

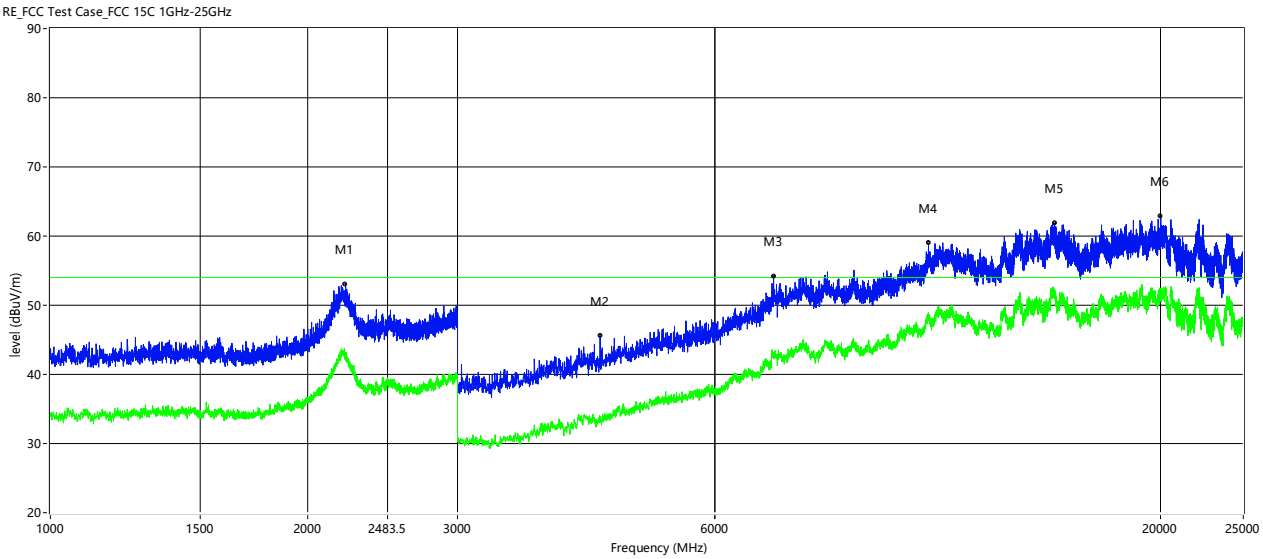
CH High

vertical



Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2187.000	53.33	--	42.88	5.35	74.0	--	54.0	-11.12	Vertical	Pass
3630.000	42.36	--	31.33	-9.70	74.0	--	54.0	-22.67	Vertical	Pass
5620.000	48.18	--	37.56	-2.61	74.0	--	54.0	-16.44	Vertical	Pass
11142.500	59.33	--	48.52	9.74	74.0	--	54.0	-5.48	Vertical	Pass
17972.500	63.74	--	51.80	12.79	74.0	--	54.0	-2.20	Vertical	Pass
20565.500	63.56	--	52.20	14.12	74.0	--	54.0	-1.80	Vertical	Pass

Horizontal

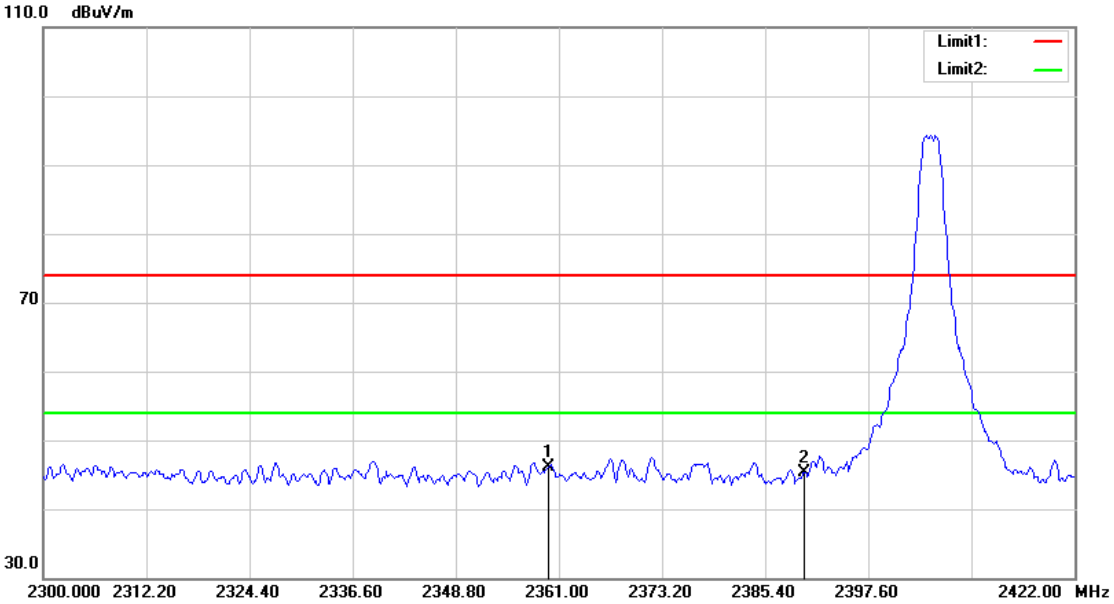


Frequency (MHz)	Peak Level (dBuV/m)	Q-peak Level (dBuV/m)	Average Level (dBuV/m)	Factor (dB)	PK Limit (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	Over Limit (dB)	ANT	Verdict
2218.000	52.97	--	42.52	5.22	74.0	--	54.0	-11.48	Horizontal	Pass
4407.500	45.62	--	33.93	-6.82	74.0	--	54.0	-20.07	Horizontal	Pass
7040.000	54.18	--	43.06	2.80	74.0	--	54.0	-10.94	Horizontal	Pass
10692.500	58.98	--	48.19	8.37	74.0	--	54.0	-5.81	Horizontal	Pass
15021.250	61.83	--	51.90	12.03	74.0	--	54.0	-2.10	Horizontal	Pass
20009.001	62.92	--	51.88	14.94	74.0	--	54.0	-2.12	Horizontal	Pass

3.3.7 TEST RESULTS (RESTRICTED BAND)

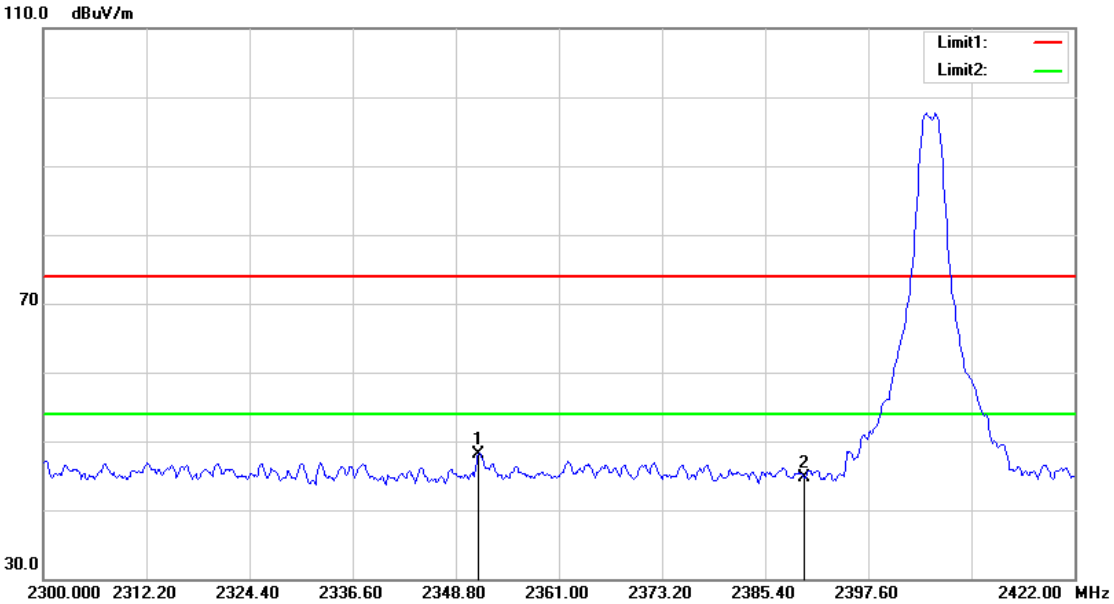
CH Low

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2359.780	19.07	27.12	46.19	74.00	-27.81	peak
2	2390.000	18.12	27.23	45.35	74.00	-28.65	peak

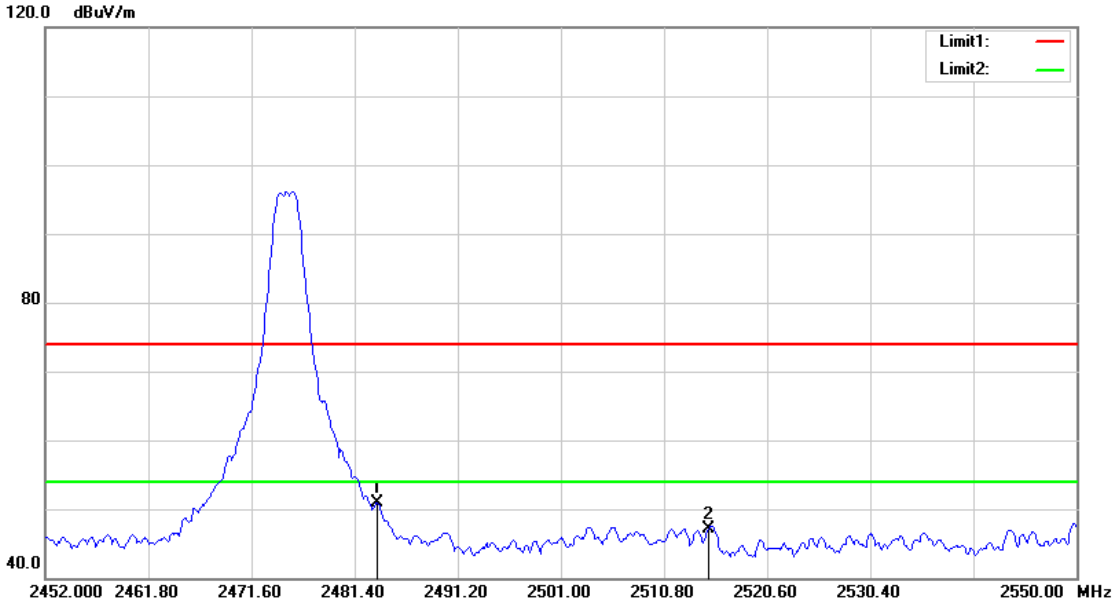
Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2351.484	20.92	27.10	48.02	74.00	-25.98	peak
2	2390.000	17.42	27.23	44.65	74.00	-29.35	peak

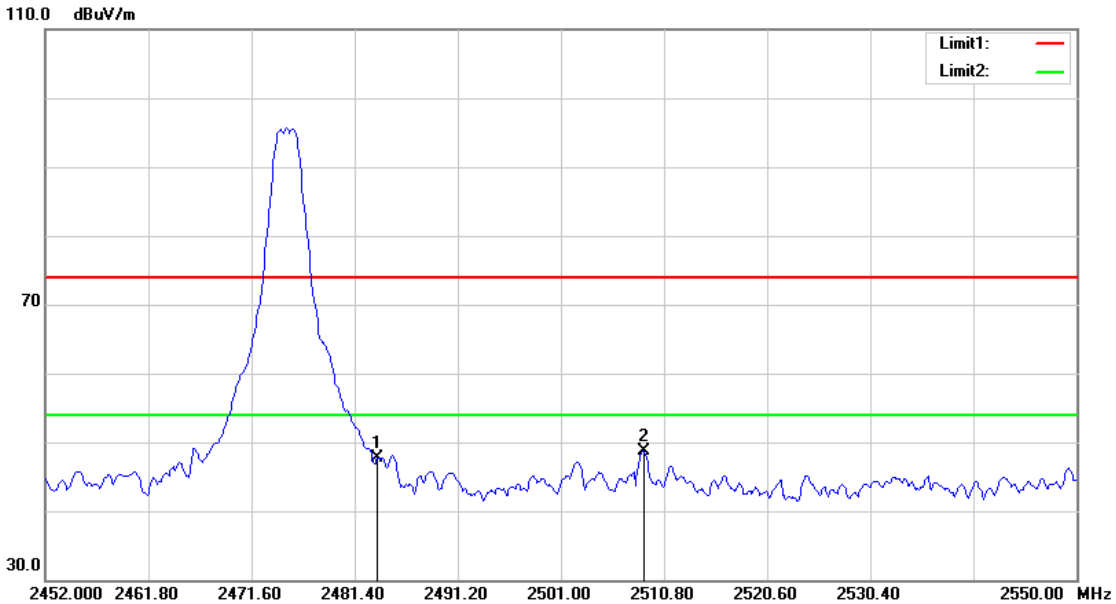
CH High

Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	23.34	27.54	50.88	74.00	-23.12	peak
2	2515.014	19.51	27.62	47.13	74.00	-26.87	peak

Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	20.22	27.54	47.76	74.00	-26.24	peak
2	2508.840	21.04	27.61	48.65	74.00	-25.35	peak

4 CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 APPLIED PROCEDURES / LIMIT

According to FCC Part 15.247(d) and RSS-247 Clause 5.5, in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

4.2 TEST PROCEDURE

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

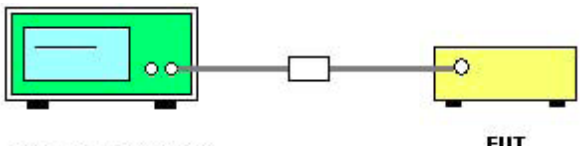
For Band edge

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	Lower Band Edge: 2300 to 2422 MHz Upper Band Edge: 2452 to 2500 MHz
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.
Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

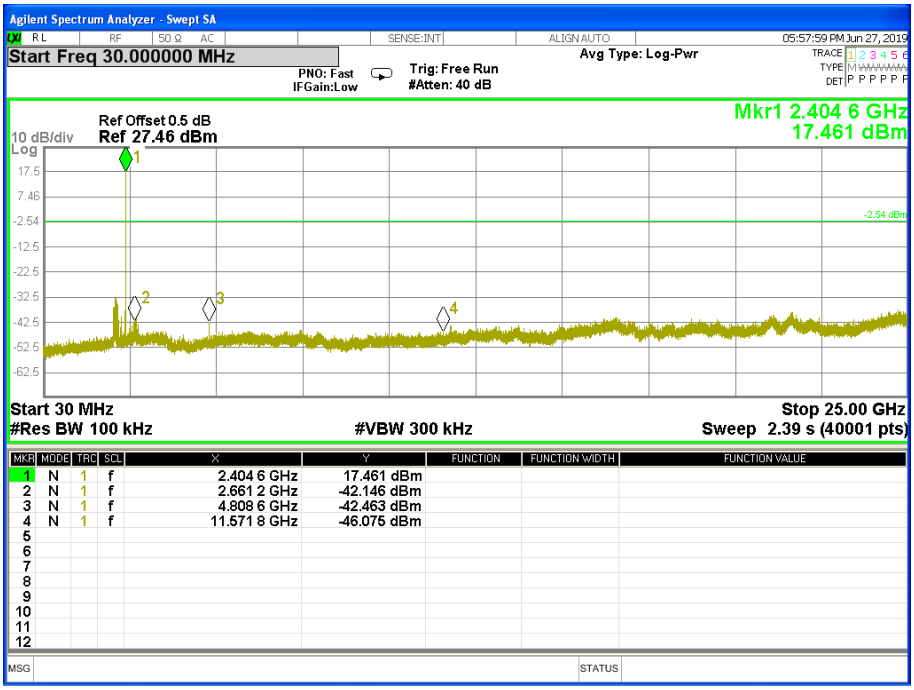
4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

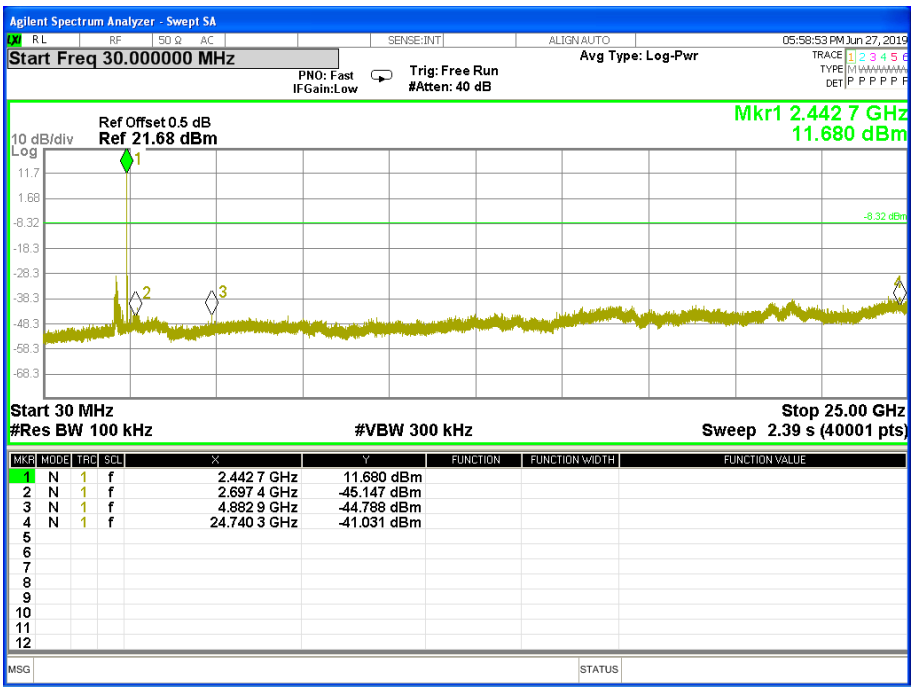
4.6 TEST RESULTS

Temperature :	25 ℃	Relative Humidity :	60%
Test Voltage :	AC 120V/60Hz	Test Mode :	TX Mode

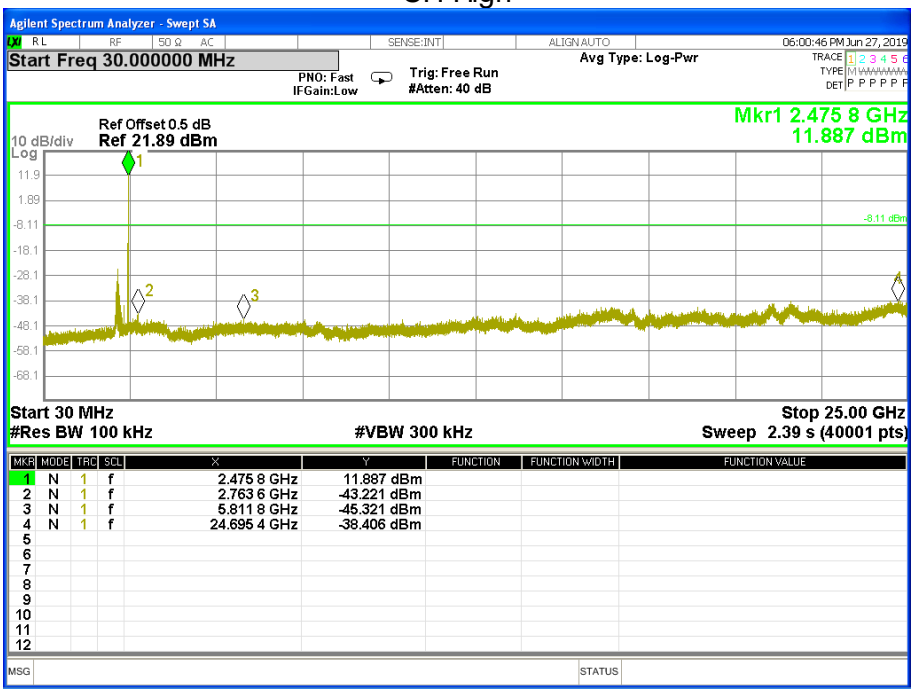
CH Low



CH Middle

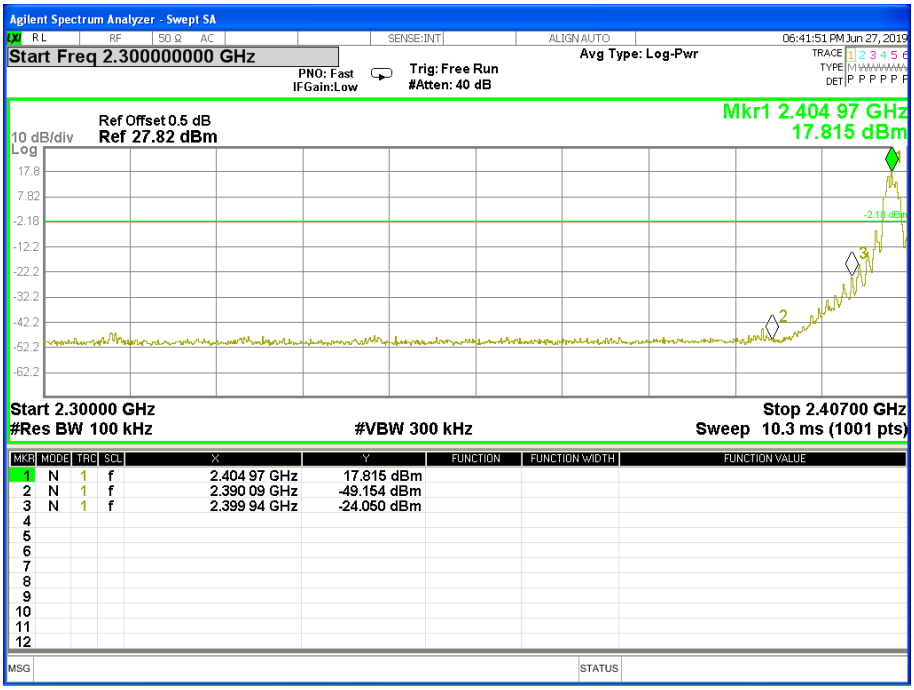


CH High

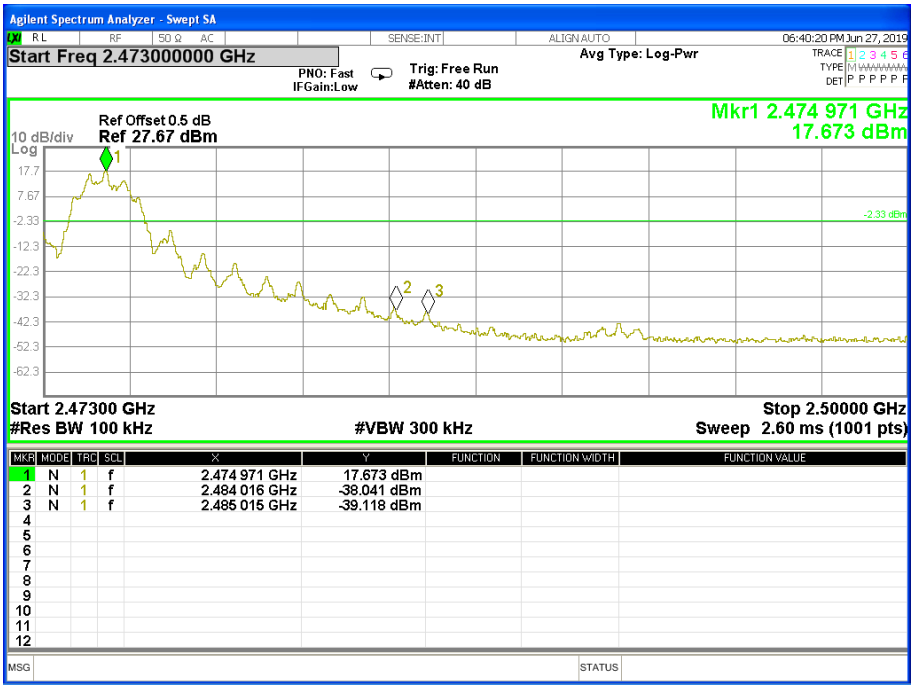

Agilent Spectrum Analyzer - Swept SA
Start Freq 30.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: Log-Pwr
06:00:46 PM Jun 27, 2019
Ref Offset 0.5 dB
10 dB/div
Log
Ref 21.89 dBm
Mkr1 2.475 8 GHz
11.887 dBm
-8.11 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.39 s (40001 pts)
1 N 1 f 2.475 8 GHz 11.887 dBm
2 N 1 f 2.763 6 GHz -43.221 dBm
3 N 1 f 5.811 8 GHz -45.321 dBm
4 N 1 f 24.695 4 GHz -38.406 dBm

Band edge

CH Low

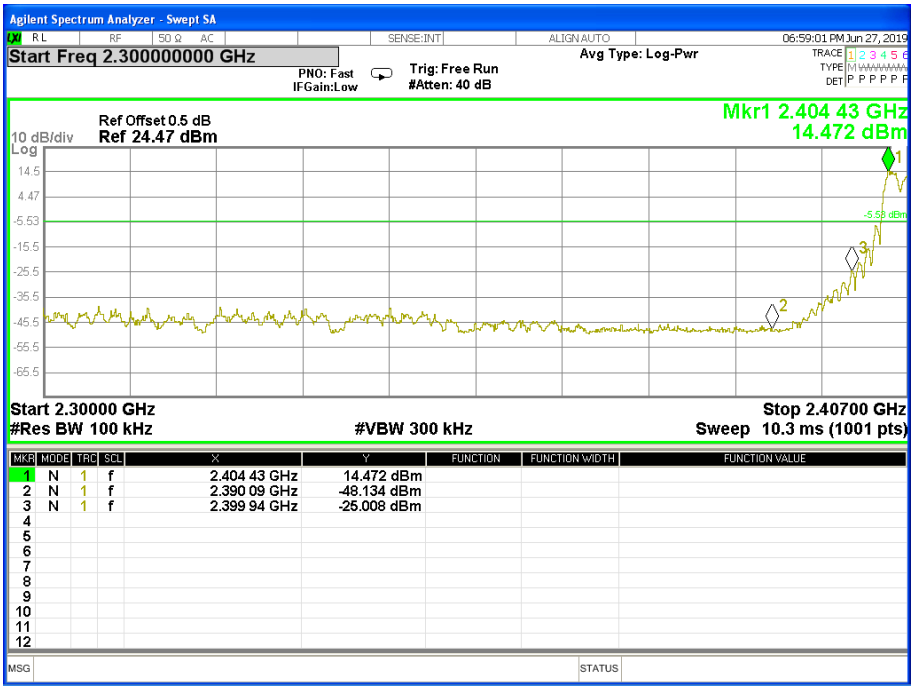


CH High

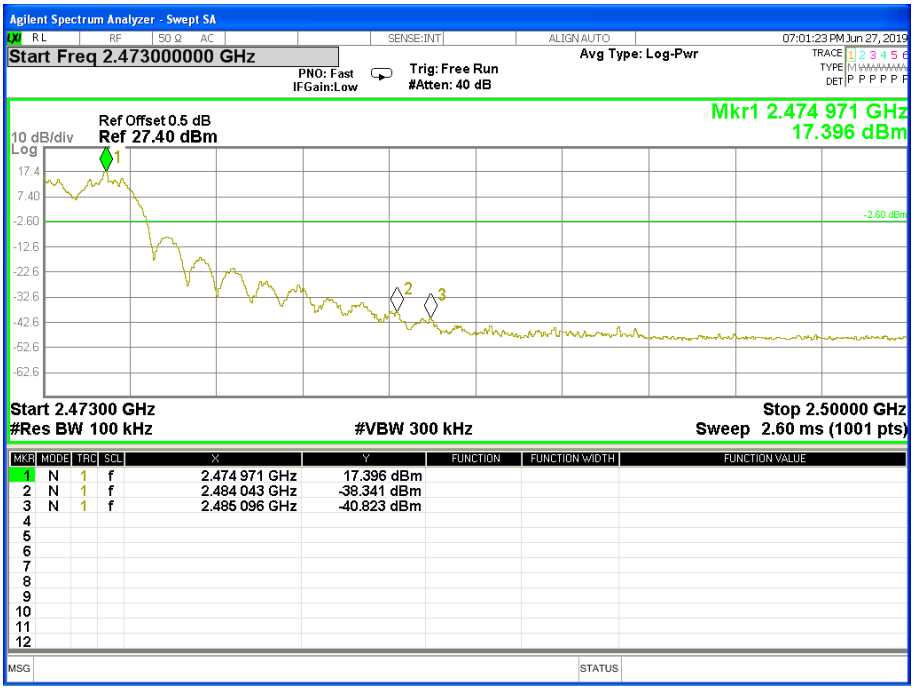


Hopping Band edge

CH Low



CH High



5 NUMBER OF HOPPING CHANNEL

5.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C RSS-247 Issue 2				
Section	Test Item	Limit	Frequency Range (MHz)	Result
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Number of Hopping Channel	≥15	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating FrequencyRange
RB	1MHz
VB	1MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

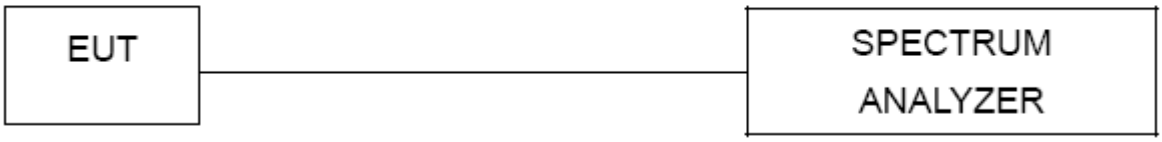
5.2 TEST PROCEDURE

1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below
2) Spectrum Setting : RBW= 1MHz, VBW=1MHz, Sweep time = Auto.

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

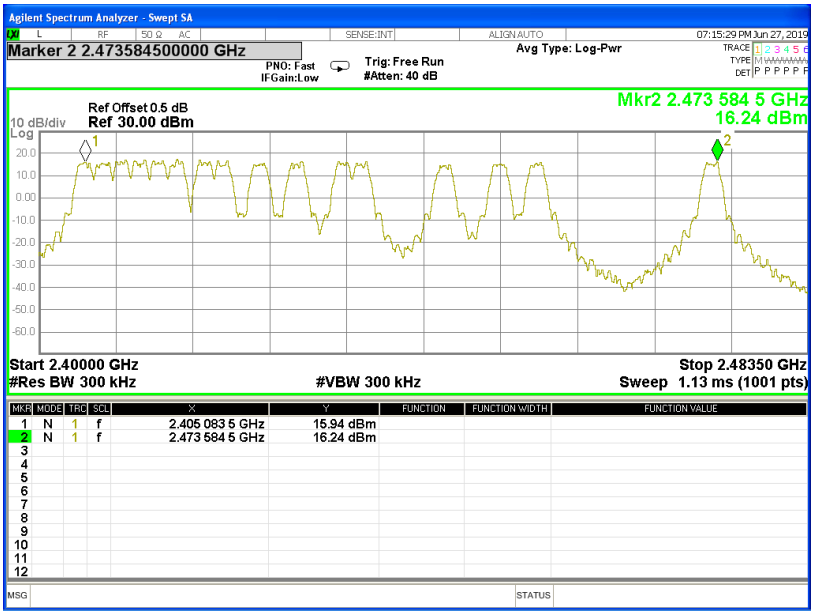
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

5.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	Hopping mode

Number of Hopping Channel 16

Hopping channel



6 AVERAGE TIME OF OCCUPANCY

6.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C RSS-247 Issue 2				
Section	Test Item	Limit	Frequency Range (MHz)	Result
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(d)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

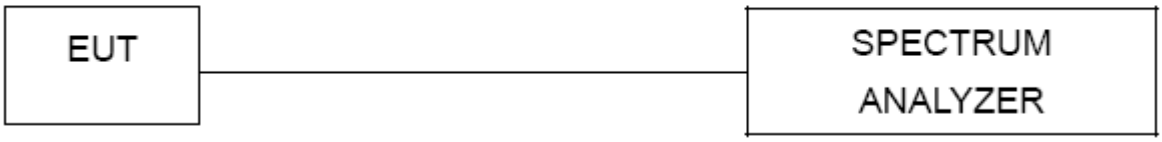
6.2 TEST PROCEDURE

1) The transmitter output (antenna port) was connected to the spectrum analyzer
2) Set RBW =1MHz/VBW =3MHz.
3) Use a video trigger with the trigger level set to enable triggering only on full pulses.
4) Sweep Time is more than once pulse time.
5) Set the center frequency on any frequency would be measure and set the frequency span to zero span.
6) Measure the maximum time duration of one single pulse.
7) Measure the maximum burst number of one hopping period.
8) A Period Time = 16*0.4=6.4 S

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

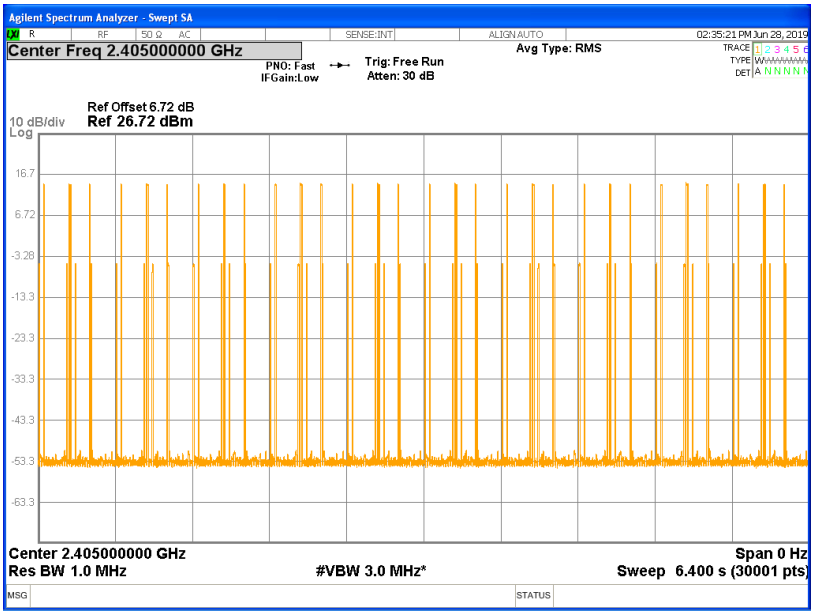
6.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	Hopping mode

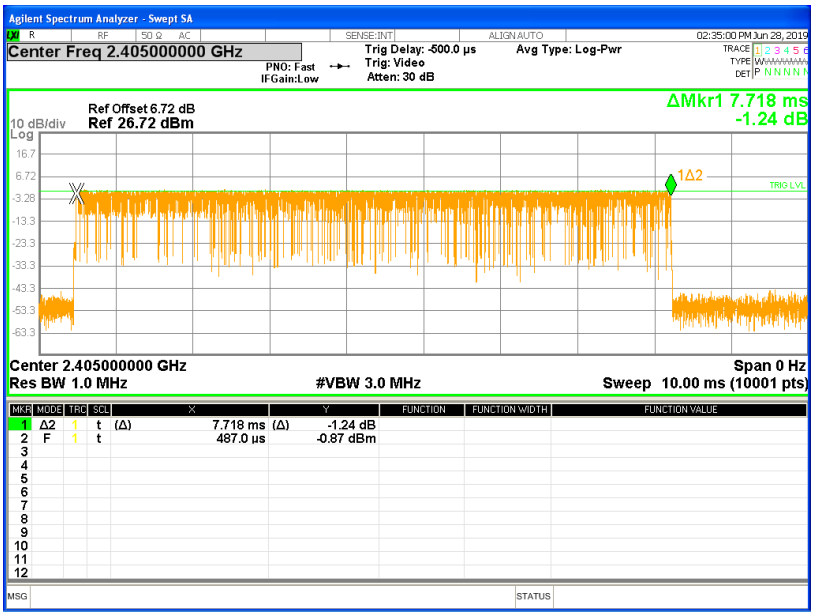
Frequency (MHz)	Pulse Duration(ms)	Pulse number	Dwell Time(s)	Limits(s)
CH Low	7.72	40.00	308.7200	0.4
CH Middle	7.72	40.00	308.6800	0.4
CH High	7.76	40.00	310.2800	0.4

CH Low

Dwell Time

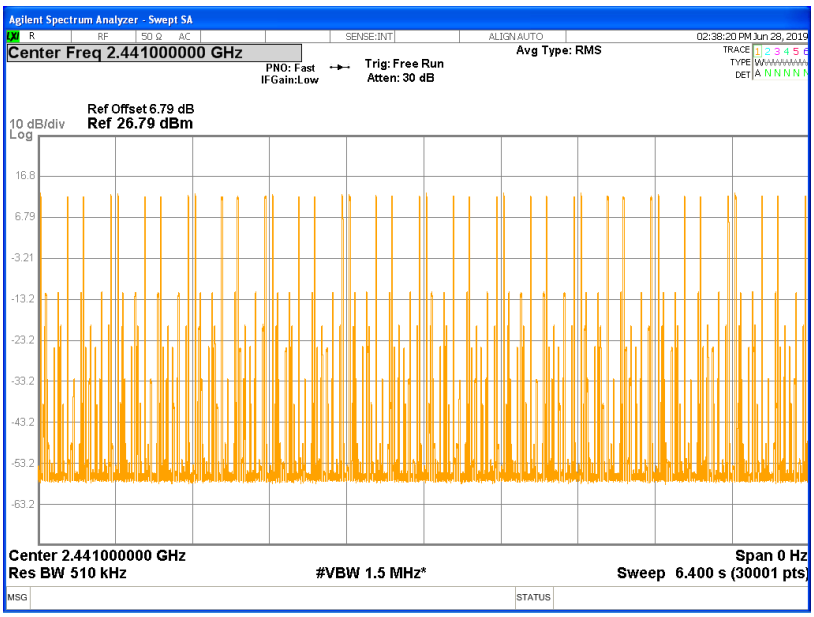


One Pulse

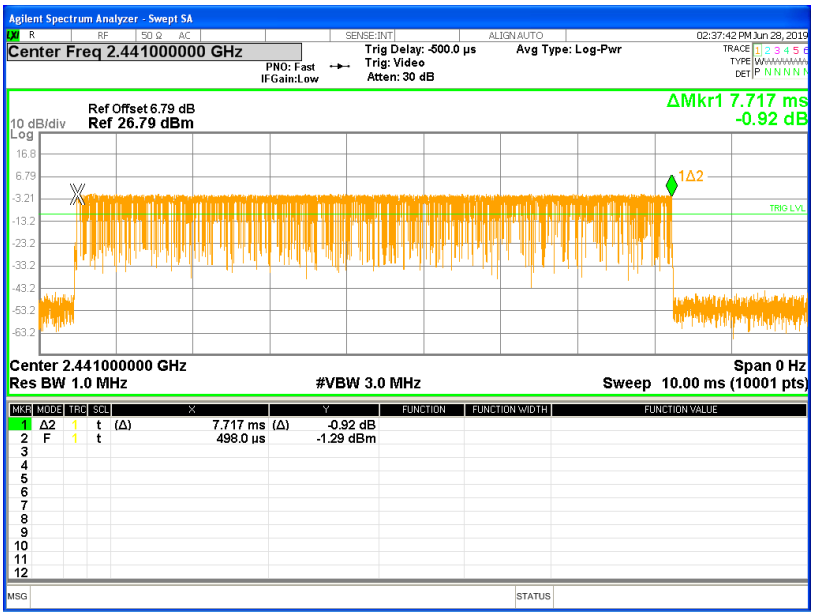


CH Middle

Dwell Time

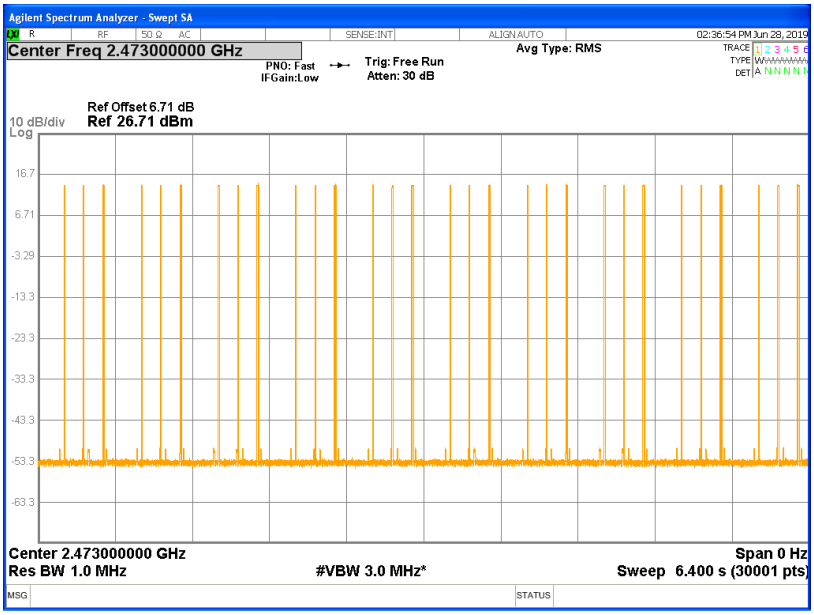


One Pulse

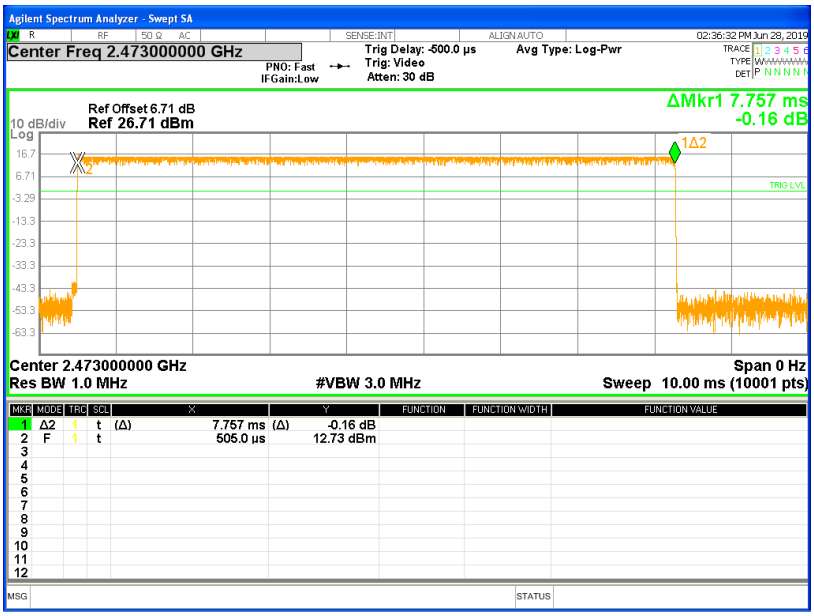


CH High

Dwell Time



One Pulse



7 HOPPING CHANNEL SEPARATION MEASUREMEN

7.1 APPLIED PROCEDURES / LIMIT

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> 20 dB Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 30 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

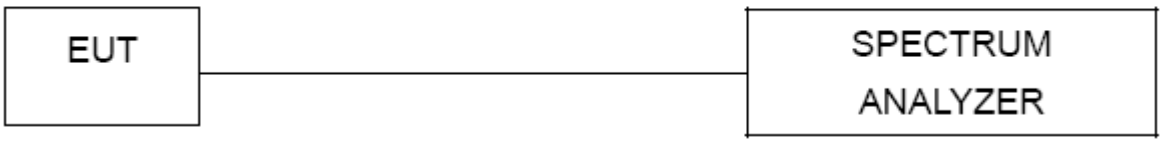
7.2 TEST PROCEDURE

1) The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2) The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
3) The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for channel separation measurement.

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

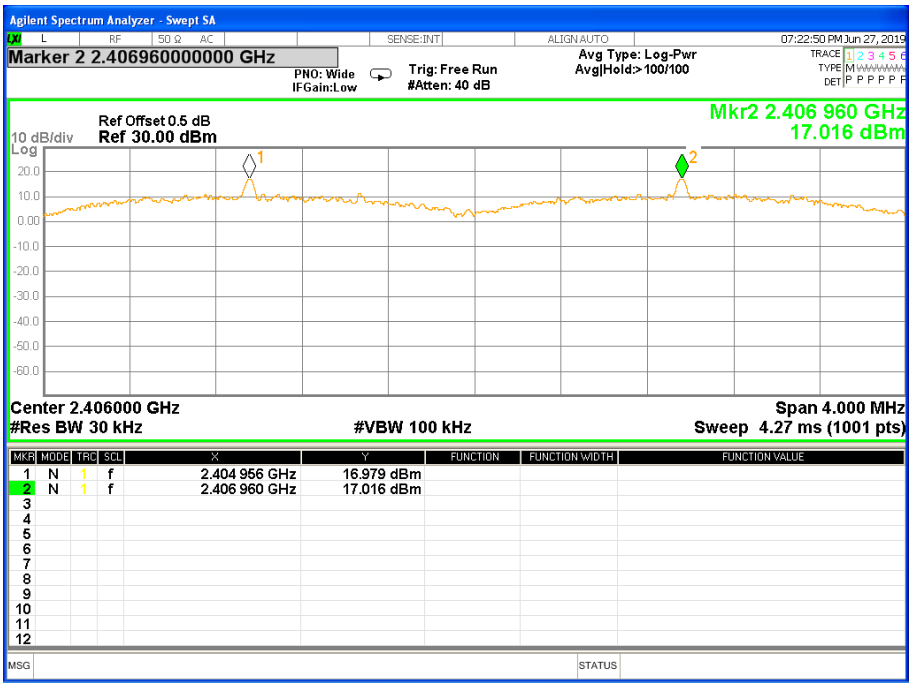
7.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	Hopping mode

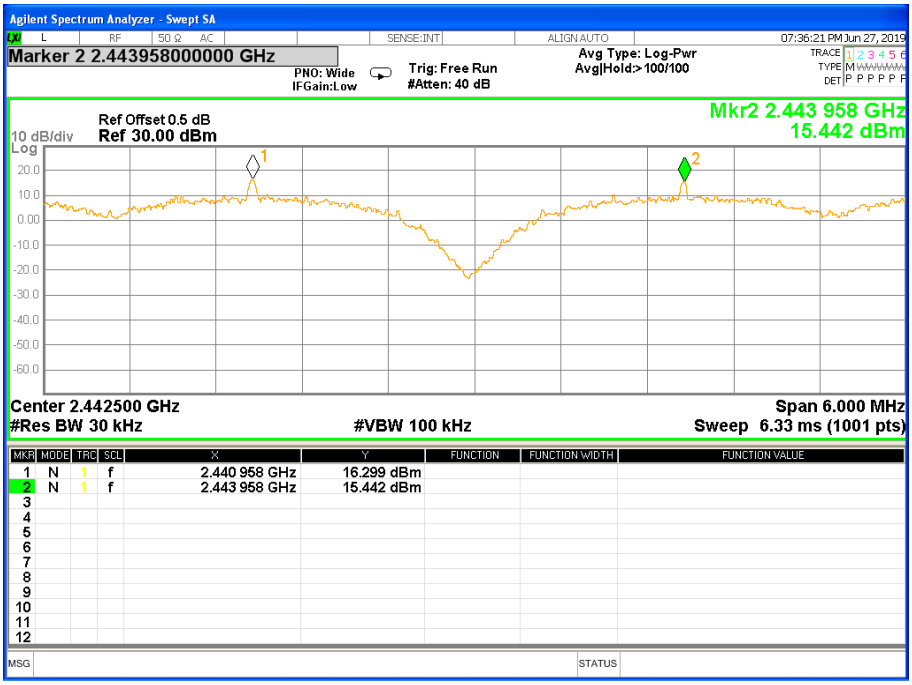
Test Mode	Frequency	Ch. Separation (MHz)	Limit	Result
TX	CH Low	2.004	1.423	Complies
	CH Middle	3.000	1.415	Complies
	CH High	1.988	1.417	Complies

Ch. Separation Limits: > two-thirds 20dB bandwidth

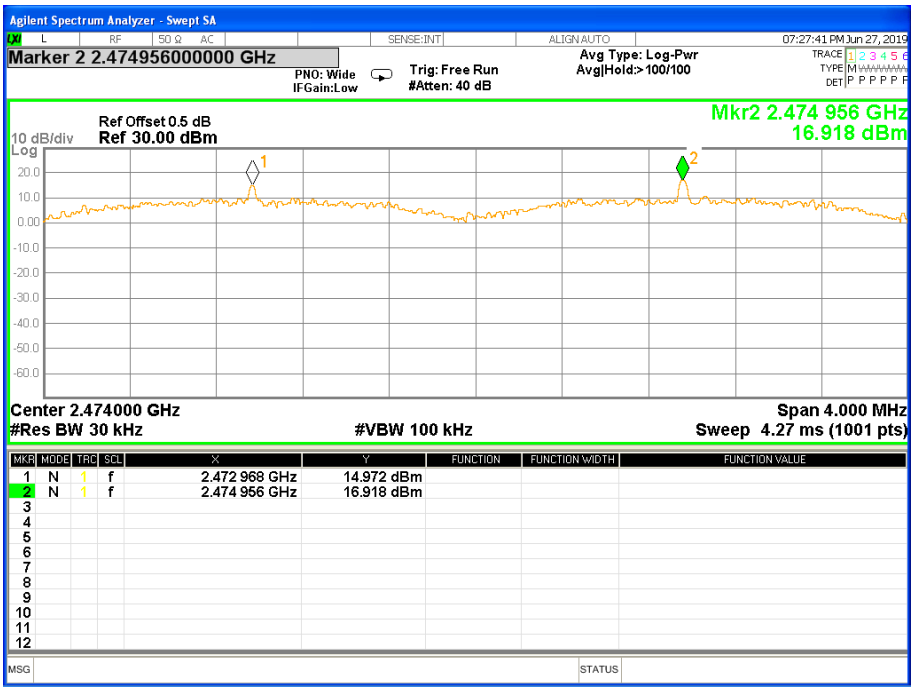
CH Low



CH Middle



CH High



8 BANDWIDTH TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C RSS-247 Issue 2 & RSS-Gen Issue 5				
Section	**Test Item**	**Limit**	**Frequency Range (MHz)**	**Result**
FCC Part 15.247(a)(1) RSS-247 Clause 5.1(a)	Bandwidth	(20dB Bandwidth)	2400-2483.5	PASS
RSS-Gen Clause 6.7	99% Bandwidth	-	2400-2483.5	PASS

8.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 1% - 5% OBW, VBW≥3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be≥6 dB.

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP

8.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

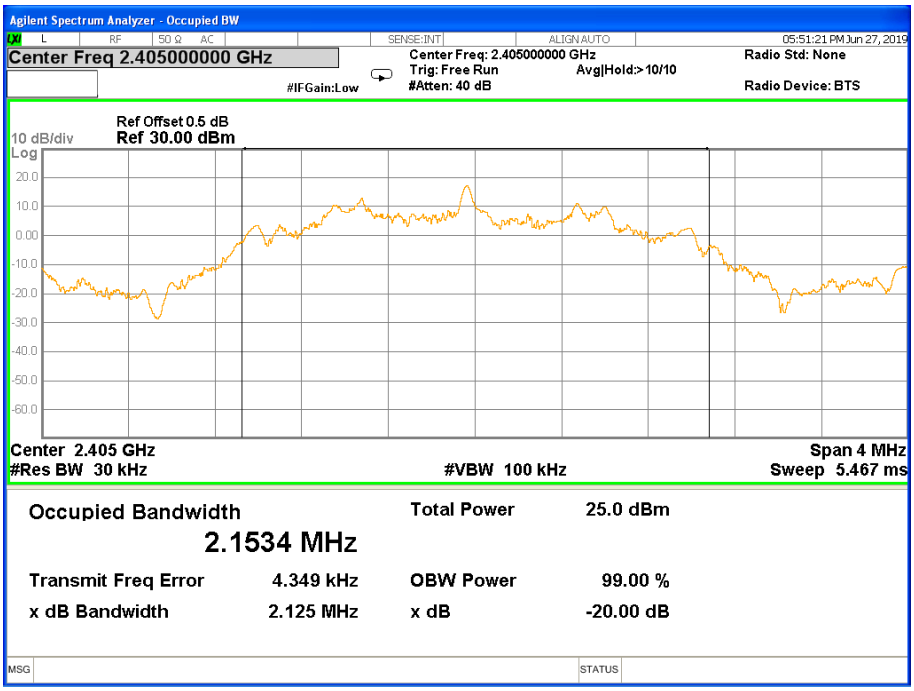
8.6 TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Test Voltage:	AC 120V/60Hz	Test Mode:	TX Mode

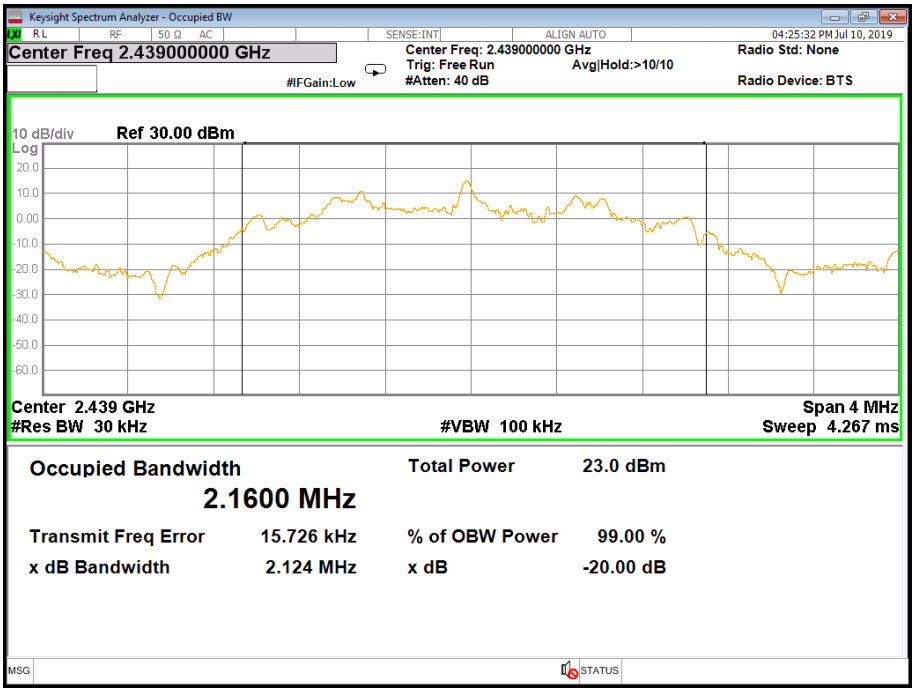
Remark: PEAK DETECTOR IS USED

Test Mode	Frequency (MHz)	20dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit of 20dB Bandwidth (MHz)	Result
TX	CH Low	2.135	2.1534	N/A	PASS
	CH Middle	2.124	2.1600	N/A	PASS
	CH High	2.125	2.1458	N/A	PASS

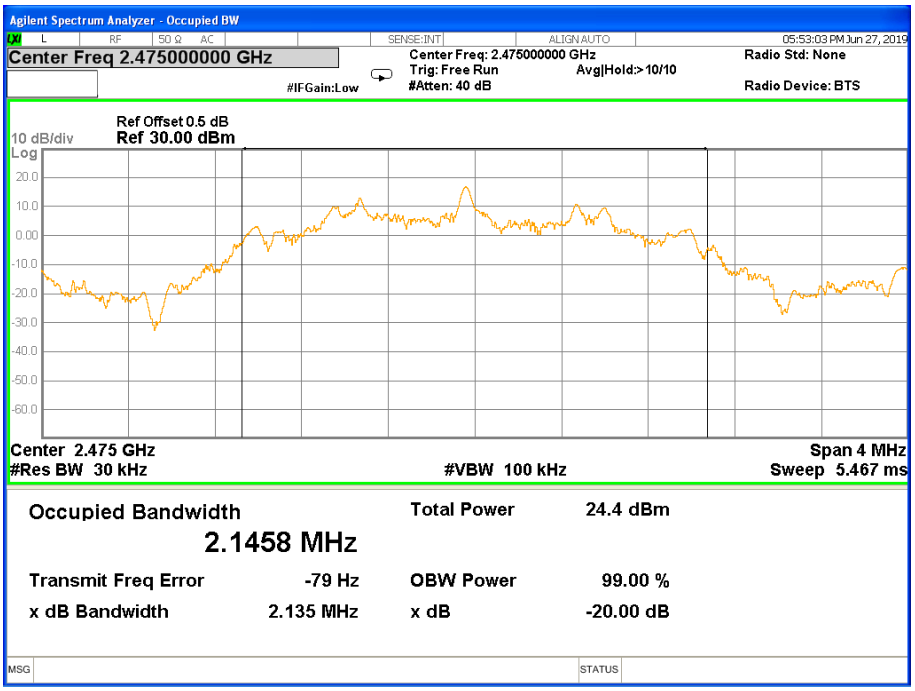
CH Low



CH Middle



CH High



9 PEAK OUTPUT POWER TEST

9.1 APPLIED PROCEDURES / LIMIT

FCC Part 15.247,Subpart C RSS-247 Issue 2				
Section	Test Item	Limit	Frequency Range (MHz)	Result
FCC Part 15.247(a)(1) RSS-247 Clause 5.4(b)	Output Power	1 W or 0.125W if channel separation > 2/3 bandwidthprovided thesystems operatewith an output power no greater than125 mW(20.97dBm)	2400-2483.5	PASS

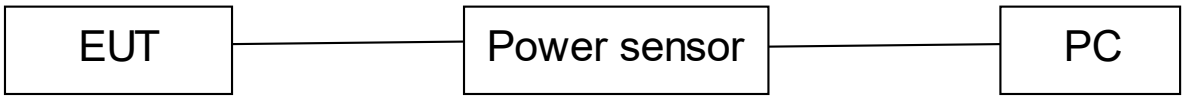
9.2 TEST PROCEDURE

a. The EUT was directly connected to the Power Sensor&PC

9.3 DEVIATION FROM STANDARD

No deviation.

9.4 TEST SETUP



9.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

9.6 TEST RESULTS

Temperature：	25℃	Relative Humidity：	60%
Test Voltage ：	AC 120V/60Hz		

Test Channel	Frequency (MHz)	Conducted Output Power		Limit (dBm)
		Peak(dBm)	AVG(dBm)	
Low	2405	19.20	17.14	20.97
Middle	2439	18.69	17.25	20.97
High	2475	18.37	16.98	20.97

Note:

1) The cable loss and antenna gain are taken into account in results.
2) Antenna gain(G): 0 dBi
3) The max e.i.r.p = conducted power + antenna gain = 19.20 dBm

10 ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

15.203 and RSS-Gen Issue 5 requirement: For intentional device, according to 15.203 and RSS-Gen Issue 5: 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.

10.2 EUT ANTENNA

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