ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Tablet

Model No.: MINION TAB

Trade Mark: Minion Tab

FCC ID: 2ADP4-MINIONTAB

Report No.: KAD141128097E1

Issue Date: December 10, 2014

Prepared for

Inco Electronics Co, S.A. de C.V.
Av. Nuevo Leon 54, of. 302, Col. Condesa Cuauhtemoc Mexico

Prepared by

DONGGUAN EMTEK CO., LTD.

No.281, Guantai Road, Nancheng District,
Dongguan, Guangdong, China
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VERIFICATION OF COMPLIANCE

Applicant:	Inco Electronics Co, S.A. de C.V. Av. Nuevo Leon 54, of. 302, Col. Condesa Cuauhtemoc Mexico
Manufacturer:	DAZA INTERNATIONAL (HK) CO., LIMITED Building G, Xinmusheng Low Carbon Industrial Park, #6 Xinmu Road, Pinghu Town, Longgang District, Shenzhen, China.
Product Description:	Tablet
Trade Mark:	Minion Tab
Model Number:	MINION TAB
File Number:	KAD141128097E1
Date of Test:	November 28, 2014 to December 10, 2014

We hereby certify that:

The above equipment was tested by DONGGUAN EMTEK CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247(2014).

Approved By

Sam.Lv / Q.A. Manager
DONGGUAN EMTEK CO., LTD.

Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Report	/	KAD141128097E1

Table of Contents

1. GENERAL INFORMATION

1.1 Product Description

The Inco Electronics Co, S.A. de C.V., Model: MINION TAB (referred to as the EUT in this report) The EUT is an short range, lower power transmitter. It is designed by way of utilizing the following modulation achieves the system operating.

Technical Specifications	Bluetooth 4.0	Bluetooth 2.1+EDR	WIFI
Operation Frequency	2402-2480MHz	2402-2480MHz	2412-2462MHz
Modulation	GFSK	GFSK, π/4-DQPSK, 8DPSK	OFDM, DSSS
Channel Number	40	79	11
Channel space	2 MHz	1 MHz	5MHz
Rated RF Output Power	7.17dBm	-3.02dBm	16.73dBm
Antenna Type	Internal PCB antenna		
Antenna GAIN	0dBi		
Remark: This report only considers Bluetooth 4.0.			

Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	**2402**	14	2430	28	2458
01	2404	15	2432	29	2460
02	2406	16	2434	30	2462
03	2408	17	2436	31	2464
04	2410	18	2438	32	2466
05	2412	19	**2440**	33	2468
06	2414	20	2442	34	2470
07	2416	21	2444	35	2472
08	2418	22	2446	36	2474
09	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	**2480**
12	2426	26	2454		
13	2428	27	2456		

Note:

1. Test of channel was included the lowest 2402MHz, middle 2440MHz and highest frequency 2480MHz in highest data rate and to perform the test, then record on this report.

1.2 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2009). Radiated testing was performed at an antenna to EUT distance 3 meters.

Tested in accordance with FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r02 for compliance to FCC 47CFR 15.247 requirements.

1.3 Special Accessories

Not available for this EUT intended for grant.

1.4 Equipment Modifications

Not available for this EUT intended for grant.

1.5 Test Facility

Site Description

EMC Lab.	:	Accredited by FCC, June 18, 2014 The Certificate Number is 247565 Accredited by Industry Canada, February 19, 2014 The Certificate Number is 9444A.
Name of Firm	:	DONGGUAN EMTEK CO., LTD
Site Location	:	No.281, Guantai Road, Nancheng District, Dongguan, Guangdong, China

2. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous transmission application.

2.2 EUT Exercise

The Transmitter was operated in the transmission operating mode. the Tx frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2009. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. Emission was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.

2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

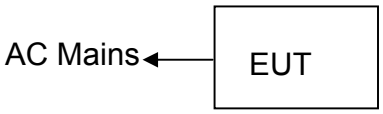


Table 2-1 Equipment Used in Tested System

Item	Equipment	Trade Mark	Model No.	FCC ID	Note
1.	Tablet	Minion Tab	MINION TAB	2ADP4-MINIONTAB	***EUT***
2	Adapter	N/A	YSV6-0501000	N/A	***Support Equipment***

Note:

(1) Unless otherwise denoted as EUT in『Remark』column , device(s) used in tested system is a support equipment.

(2) All cases of EUT are tested, only the result of the worst case was recorded in the report.

3. Description of test modes

This is Digital Transmission system(DTS) and have one type of modulation GFSK.

The 3 channels of lower, middle and higher were chosen for test.

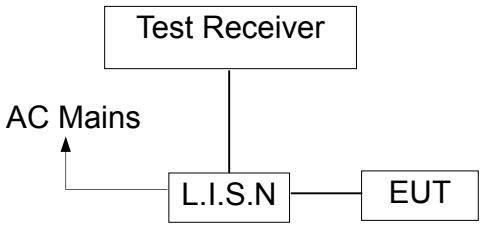
1. For lowest channel : 2402MHz(Channel 00)
2. For middle channel : 2440MHz(Channel 19)
3. For highest channel: 2480MHz(Channel 39)

4. Conducted Emissions Test

4.1 Measurement Procedure:

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

4.2 Test SET-UP (Block Diagram of Configuration)



4.3 Measurement Equipment Used:

Conducted Emission Test Site # 4					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**Last Cal.**	**Due date**
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/16/2014	05/15/2015
L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	05/16/2014	05/15/2015
L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	05/16/2014	05/15/2015
50ΩCoaxial Switch	Anritsu	MP59B	M20531	05/16/2014	05/15/2015

4.4 Conducted Emission Limit

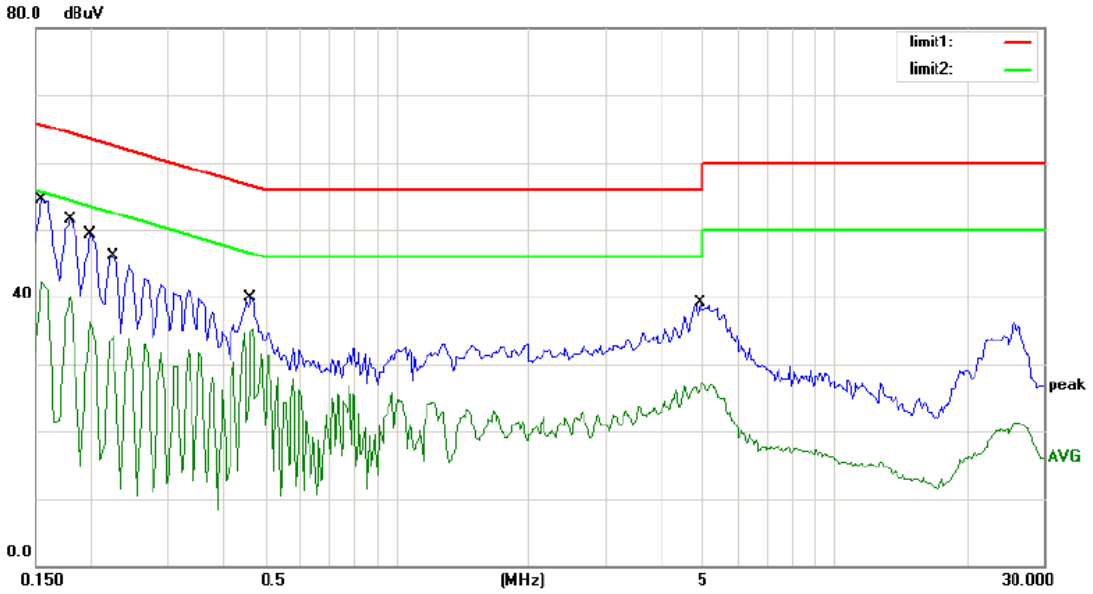
(7) Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

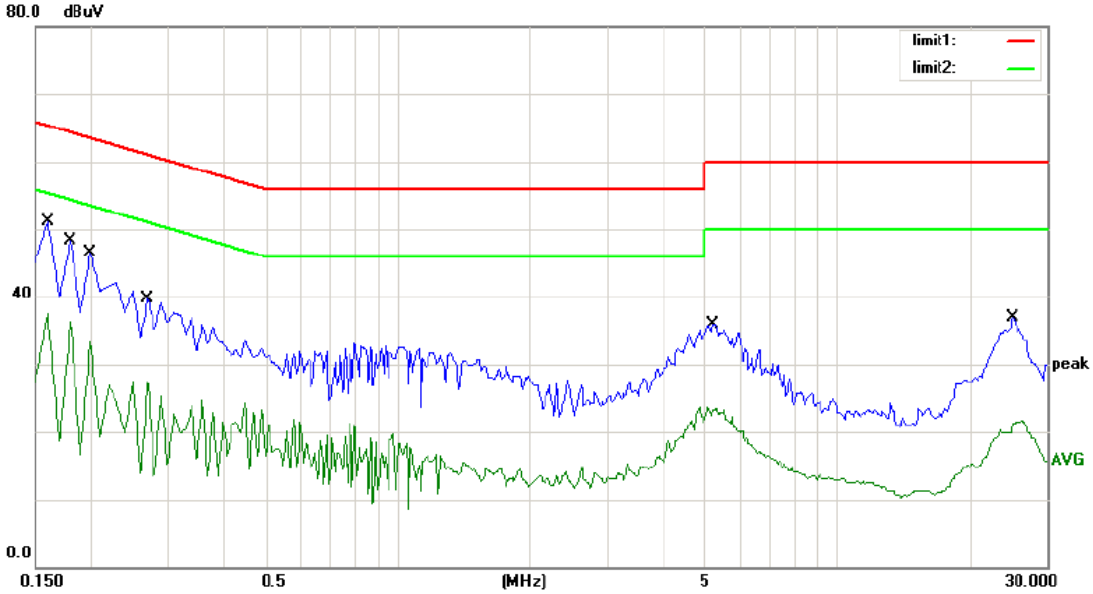
4.5 Measurement Result:



Site site #1 Phase: L1 Temperature: 24
Limit: (CE)FCC PART 15 class C_QP Power: AC 120V/60Hz Humidity: 55 %
Mode: BT Link
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1550	54.53	0.00	54.53	65.73	-11.20	QP	
2		0.1550	42.20	0.00	42.20	55.73	-13.53	AVG	
3		0.1800	51.44	0.00	51.44	64.49	-13.05	QP	
4		0.1800	40.03	0.00	40.03	54.49	-14.46	AVG	
5		0.2000	49.29	0.00	49.29	63.61	-14.32	QP	
6		0.2000	36.35	0.00	36.35	53.61	-17.26	AVG	
7		0.2250	46.17	0.00	46.17	62.63	-16.46	QP	
8		0.2250	34.24	0.00	34.24	52.63	-18.39	AVG	
9		0.4650	39.89	0.00	39.89	56.60	-16.71	QP	
10		0.4650	35.33	0.00	35.33	46.60	-11.27	AVG	
11		4.9500	39.18	0.00	39.18	56.00	-16.82	QP	
12		4.9500	27.09	0.00	27.09	46.00	-18.91	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver.



Site site #1 Phase: N Temperature: 24

Limit: (CE)FCC PART 15 class C_QP Power: AC 120V/60Hz Humidity: 55 %

Mode: BT Link

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1600	51.09	0.00	51.09	65.46	-14.37	QP	
2		0.1600	37.41	0.00	37.41	55.46	-18.05	AVG	
3		0.1800	48.22	0.00	48.22	64.49	-16.27	QP	
4		0.1800	36.34	0.00	36.34	54.49	-18.15	AVG	
5		0.2000	46.44	0.00	46.44	63.61	-17.17	QP	
6		0.2000	33.21	0.00	33.21	53.61	-20.40	AVG	
7		0.2700	39.62	0.00	39.62	61.12	-21.50	QP	
8		0.2700	27.29	0.00	27.29	51.12	-23.83	AVG	
9		5.2400	35.99	0.00	35.99	60.00	-24.01	QP	
10		5.2400	23.68	0.00	23.68	50.00	-26.32	AVG	
11		25.1500	36.83	0.00	36.83	60.00	-23.17	QP	
12		25.1500	21.62	0.00	21.62	50.00	-28.38	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver.

4.6 Conducted Measurement Photos:

5. Radiated Emission Test

5.1 Measurement Procedure

1 The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

When spectrum scanned from 30MHz to 1GHz setting resolution bandwidth 120KHz and video bandwidth 300KHz:

EMI Test Receiver	Setting
Attenuation	Auto
RB	120KHz
VB	300KHz
Detector	QP
Trace	Max hold

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 3MHz:

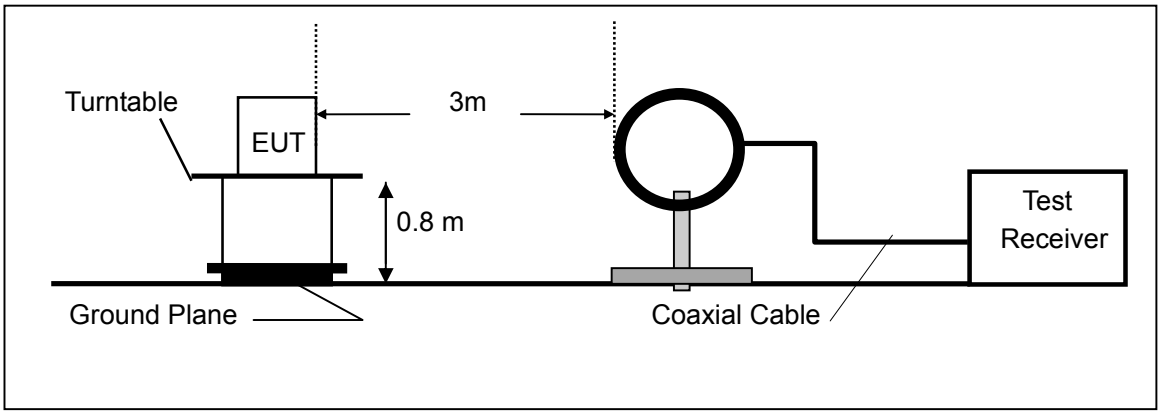
EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	3MHz
Detector	Peak
Trace	Max hold

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 10Hz:

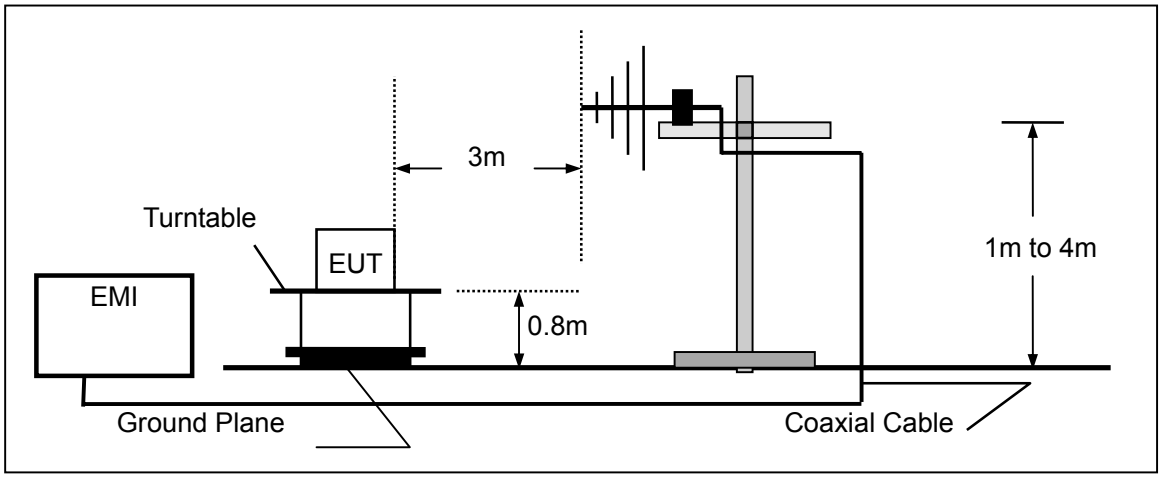
EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	10Hz
Detector	Peak
Trace	Max hold

5.2 Test SET-UP (Block Diagram of Configuration)

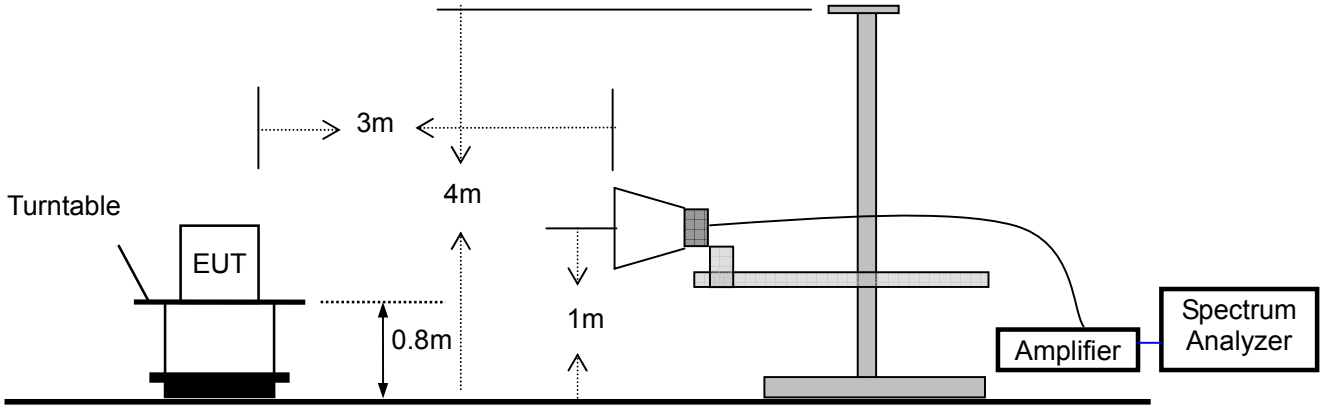
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



5.3 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	05/16/2014	05/15/2015
Pre-Amplifier	HP	8447D	2944A07999	05/16/2014	05/15/2015
Bilog Antenna	SCHWARZBECK	VULB9163	142	05/16/2014	05/15/2015
Loop Antenna	ARA	PLA-1030/B	1029	05/16/2014	05/15/2015
Horn Antenna	Schwarzbeck	BBHA9170	BBHA9170399	05/16/2014	05/15/2015
Horn Antenna	Schwarzbeck	BBHA 9120	D143	05/16/2014	05/15/2015
Cable	Schwarzbeck	AK9513	ACRX1	05/19/2014	05/18/2015
Cable	Schwarzbeck	N/A	FP2RX2	05/19/2014	05/18/2015
Cable	Schwarzbeck	AK9513	CRPX1	05/19/2014	05/18/2015
Cable	Schwarzbeck	AK9513	CRRX2	05/19/2014	05/18/2015

5.4 Radiated emission limit

Frequency MHz	Distance Meter	Field Strength uV/m	Field Strength dBuV/m
0.009 – 0.490	300	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	30	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	100* 30	20log 30 + 40
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
Above 960	3	500	54.0

Note: The frequencies above 1000MHz, as measured using instrumentation with a peak detector function was corresponding to 20dB above maximum permitted average limit.

5.5 Measurement Result

Below 30MHz:

Operation Mode:	TX	Test Date :	December 05, 2014
Frequency Range:	9KHz~30MHz	Temperature :	28℃
Test Result:	PASS	Humidity :	65 %
Measured Distance:	3m	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
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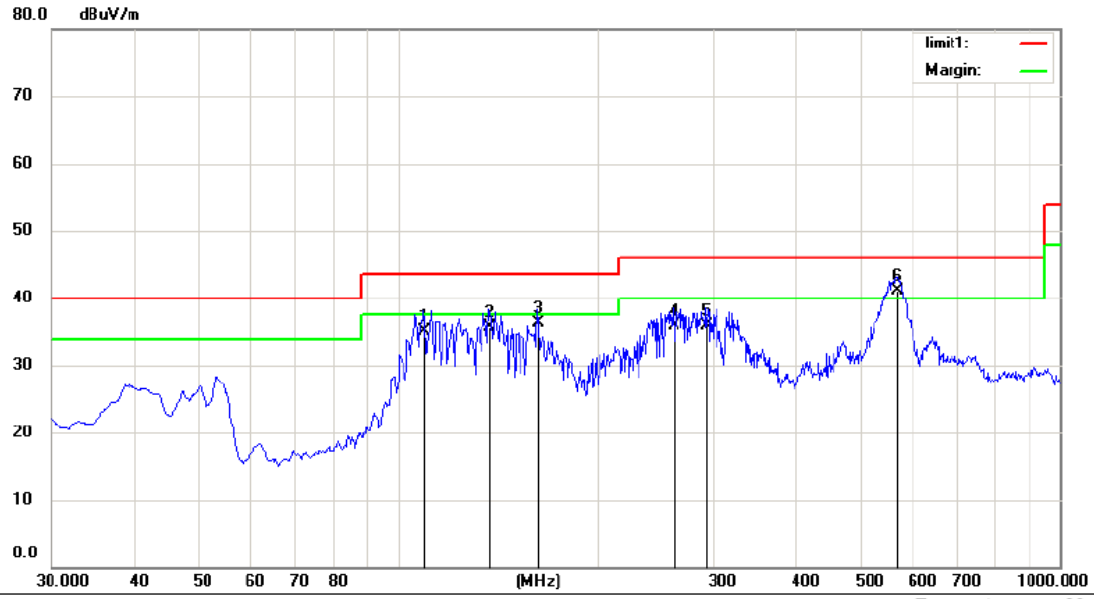
Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Below 1000MHz:

Pass.

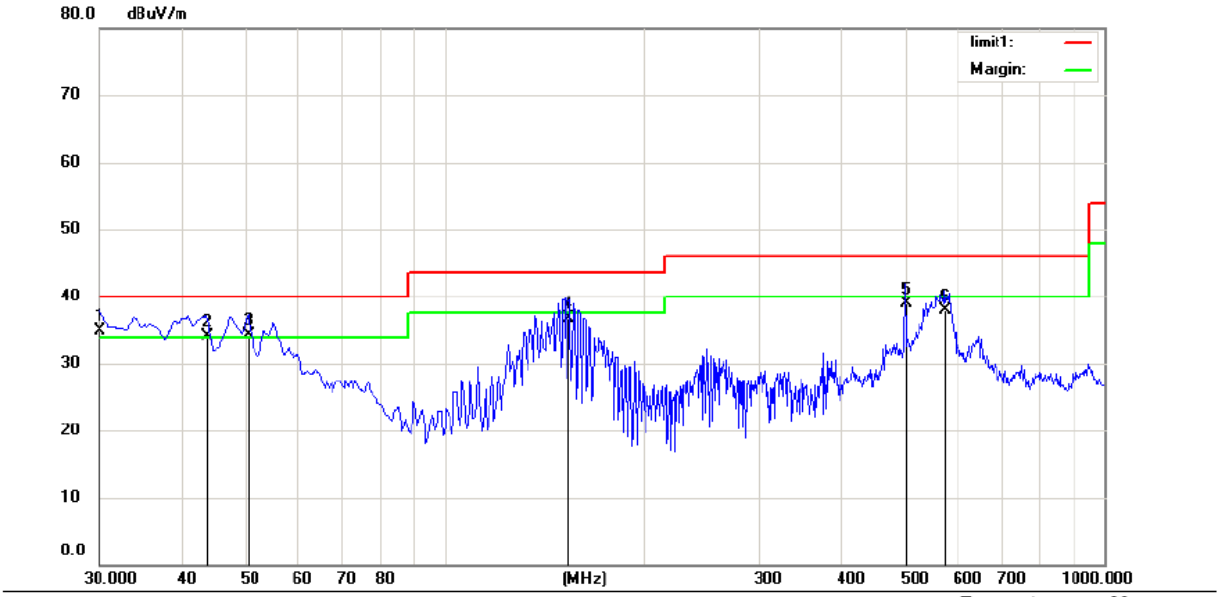
Please refer to the following data.



Site Chamber #1 Polarization: **Horizontal** Temperature: 26
Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %
Mode:BT4.0(TX2402)
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		109.5400	52.75	-17.62	35.13	43.50	-8.37	QP			
2		137.6700	52.51	-16.79	35.72	43.50	-7.78	QP			
3		162.8900	54.65	-18.41	36.24	43.50	-7.26	QP			
4		261.8300	51.35	-15.36	35.99	46.00	-10.01	QP			
5		292.8700	50.66	-14.69	35.97	46.00	-10.03	QP			
6	*	568.3500	49.89	-8.79	41.10	46.00	-4.90	QP			

*:Maximum data x:Over limit !:over margin Operator: Snake



Site Chamber #1 Polarization: **Vertical** Temperature: 26

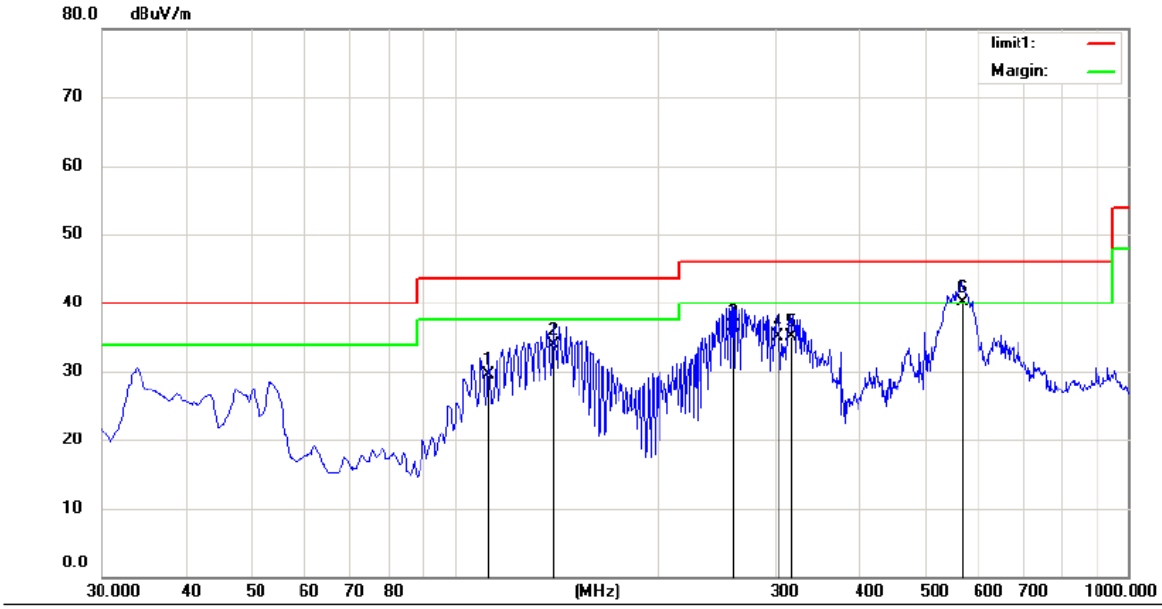
Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %

Mode:BT4.0(TX2402)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	30.0000	50.08	-15.15	34.93	40.00	-5.07	QP			
2	!	43.5800	47.52	-13.37	34.15	40.00	-5.85	QP			
3	!	50.4090	49.97	-15.59	34.38	40.00	-5.62	QP			
4		154.1600	54.91	-18.11	36.80	43.50	-6.70	QP			
5		500.4500	49.22	-10.35	38.87	46.00	-7.13	QP			
6		573.2000	46.77	-8.84	37.93	46.00	-8.07	QP			

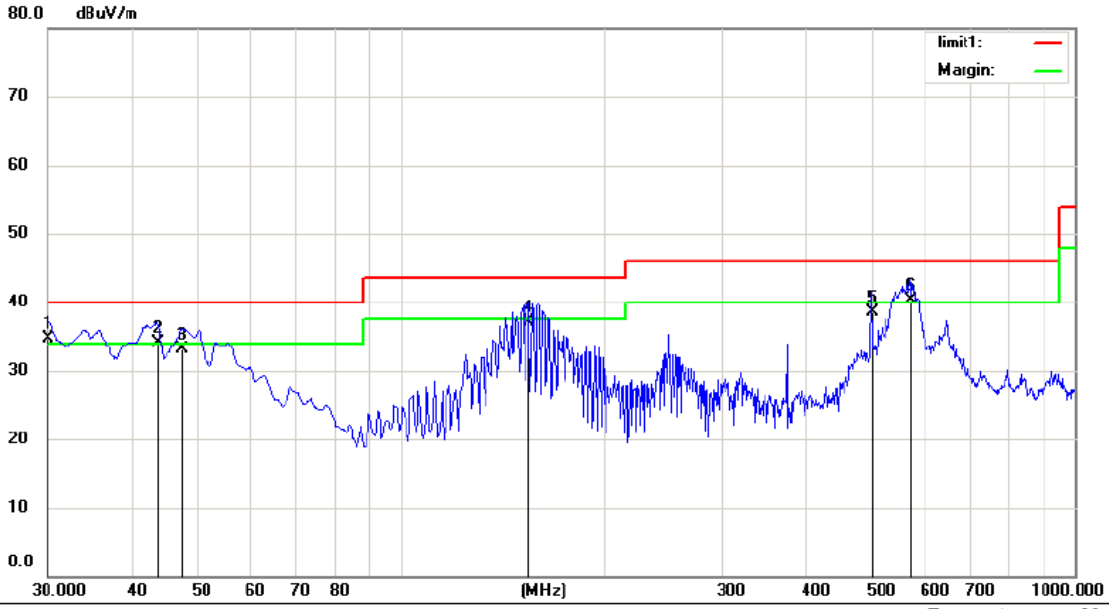
*:Maximum data x:Over limit !:over margin Operator: Snake



Site Chamber #1 Polarization: **Horizontal** Temperature: 26
Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %
Mode:BT4.0(TX2440)
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		112.4500	46.98	-17.43	29.55	43.50	-13.95	QP			
2		140.5800	50.92	-17.09	33.83	43.50	-9.67	QP			
3		258.9200	51.91	-15.43	36.48	46.00	-9.52	QP			
4		301.6000	49.27	-14.22	35.05	46.00	-10.95	QP			
5		316.1500	48.41	-13.30	35.11	46.00	-10.89	QP			
6	*	567.3800	48.97	-8.80	40.17	46.00	-5.83	QP			

*:Maximum data x:Over limit !:over margin Operator: Snake



Site Chamber #1 Polarization: **Vertical** Temperature: 26

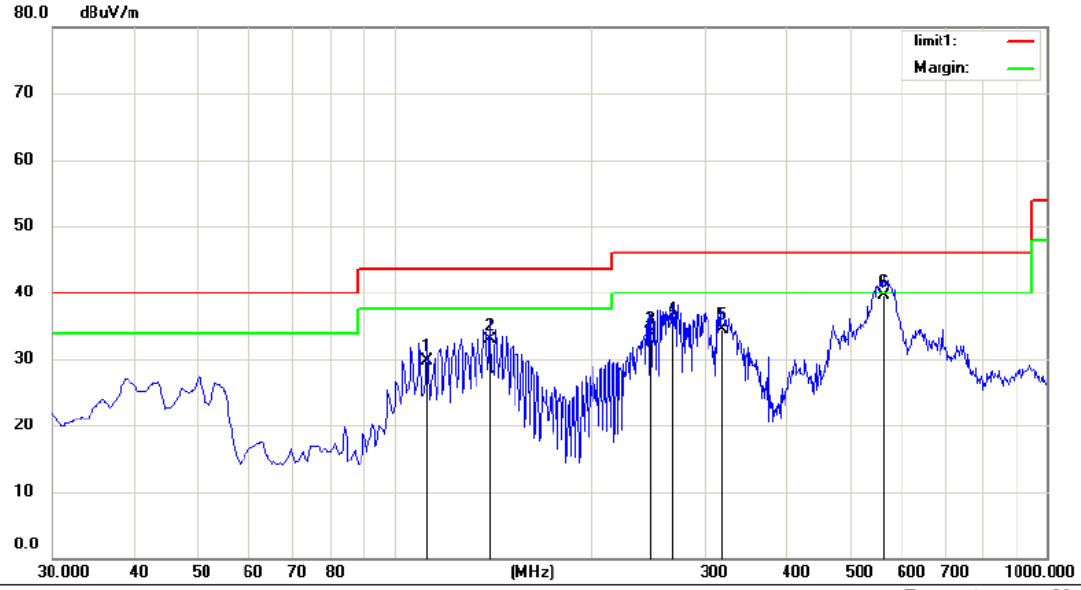
Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %

Mode:BT4.0(TX2440)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	30.0000	49.89	-15.15	34.74	40.00	-5.26	QP			
2	!	43.5800	47.38	-13.37	34.01	40.00	-5.99	QP			
3		47.4600	47.52	-14.38	33.14	40.00	-6.86	QP			
4		155.1300	55.30	-18.20	37.10	43.50	-6.40	QP			
5		500.4500	48.82	-10.35	38.47	46.00	-7.53	QP			
6	!	569.3200	49.27	-8.92	40.35	46.00	-5.65	QP			

*:Maximum data x:Over limit !:over margin Operator: Snake



Site Chamber #1 Polarization: **Horizontal** Temperature: 26

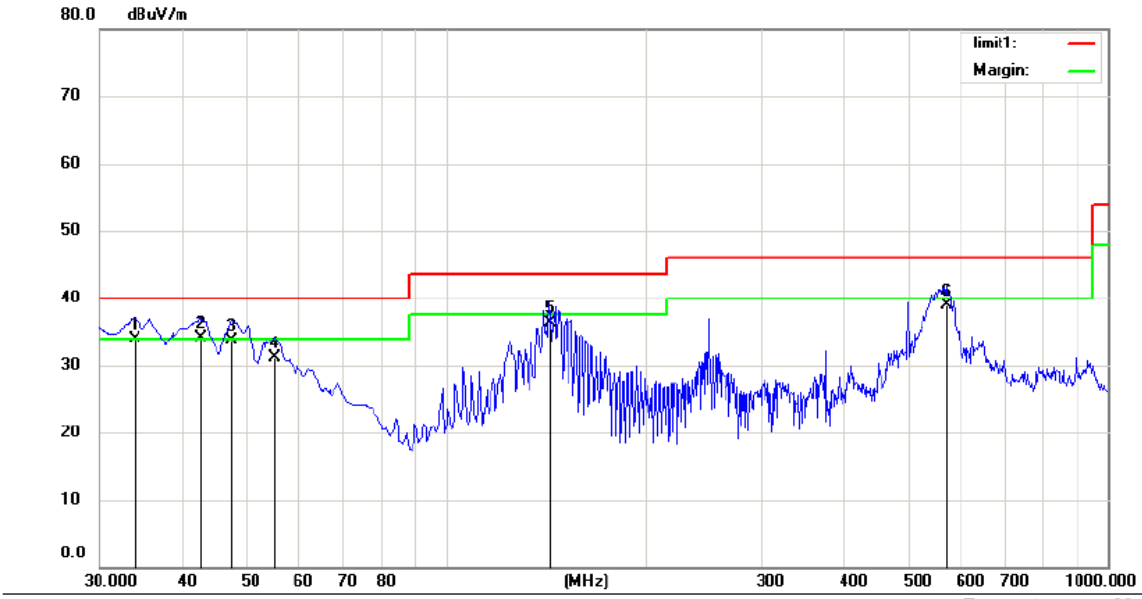
Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %

Mode:BT4.0(TX2480)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		112.4500	47.12	-17.43	29.69	43.50	-13.81	QP			
2		140.5800	49.91	-17.09	32.82	43.50	-10.68	QP			
3		247.2800	49.46	-15.54	33.92	46.00	-12.08	QP			
4		267.6500	50.54	-15.26	35.28	46.00	-10.72	QP			
5		318.0900	47.63	-13.17	34.46	46.00	-11.54	QP			
6	*	563.5000	48.41	-8.84	39.57	46.00	-6.43	QP			

*:Maximum data x:Over limit !:over margin Operator: Snake



Site Chamber #1 Polarization: **Vertical** Temperature: 26

Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %

Mode:BT4.0(TX2480)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		33.8800	48.23	-14.31	33.92	40.00	-6.08	QP			
2	*	42.6100	47.66	-13.49	34.17	40.00	-5.83	QP			
3		47.4917	48.05	-14.39	33.66	40.00	-6.34	QP			
4		55.2200	48.57	-17.46	31.11	40.00	-8.89	QP			
5		143.4900	53.53	-17.29	36.24	43.50	-7.26	QP			
6		572.2300	47.85	-8.86	38.99	46.00	-7.01	QP			

*:Maximum data x:Over limit !:over margin Operator: Snake

Above 1000MHz

Operation Mode:	TX Mode (CH00: 2402MHz)	Test Date :	December 05, 2014
Frequency Range:	1-25GHz	Temperature :	25 ℃
Test Result:	PASS	Humidity :	50 %
Measured Distance:	3m	Test By:	Andy

Freq. (MHz)	Ant. Pol. H/V	Emission Level(dBuV/m		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
4804	V	65.13	45.11	74	54	-8.87	-8.89
7206	V	64.05	44.02	74	54	-9.95	-9.98
9608	V	63.55	43.32	74	54	-10.45	-10.68
12010	V	62.71	42.85	74	54	-11.29	-11.15
14412	V	61.82	41.95	74	54	-12.18	-12.05
16814	V	60.79	40.22	74	54	-13.21	-13.78
4804	H	66.22	46.35	74	54	-7.78	-7.65
7206	H	65.78	45.18	74	54	-8.22	-8.82
9608	H	64.13	44.02	74	54	-9.87	-9.98
12010	H	63.95	43.95	74	54	-10.05	-10.05
14412	H	62.05	42.18	74	54	-11.95	-11.82
16814	H	61.42	40.85	74	54	-12.58	-13.15

Other harmonics emissions are lower than 20dB below the allowable limit.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+ Probe Factor +Cable Loss.
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode:	TX Mode (CH19: 2440MHz)	Test Date :	December 05, 2014
Frequency Range:	1-25GHz	Temperature :	25 ℃
Test Result:	PASS	Humidity :	50 %
Measured Distance:	3m	Test By:	Andy

Freq. (MHz)	Ant. Pol. H/V	Emission Level(dBuV/m		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
4880	V	66.33	46.32	74	54	-7.67	-7.68
7320	V	65.10	45.18	74	54	-8.90	-8.82
9760	V	64.32	44.85	74	54	-9.68	-9.15
12200	V	63.85	43.69	74	54	-10.15	-10.31
14640	V	62.18	42.13	74	54	-11.82	-11.87
17080	V	61.72	41.02	74	54	-12.28	-12.98
4880	H	60.65	45.95	74	54	-13.35	-8.05
7320	H	65.79	44.72	74	54	-8.21	-9.28
9760	H	64.13	43.65	74	54	-9.87	-10.35
12200	H	63.56	42.72	74	54	-10.44	-11.28
14640	H	62.07	41.03	74	54	-11.93	-12.97
17080	H	61.72	40.38	74	54	-12.28	-13.62

Other harmonics emissions are lower than 20dB below the allowable limit.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+ Probe Factor +Cable Loss.
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

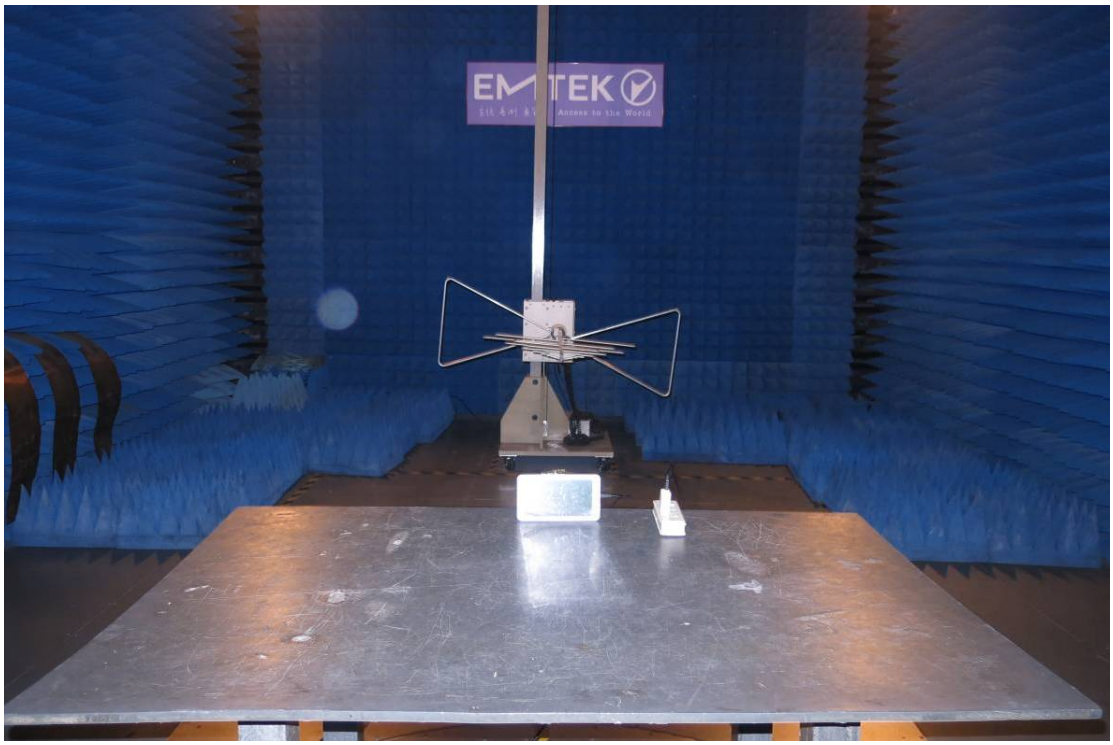
Operation Mode:	TX Mode (CH39: 2480MHz)	Test Date :	December 05, 2014
Frequency Range:	1-25GHz	Temperature :	25 ℃
Test Result:	PASS	Humidity :	50 %
Measured Distance:	3m	Test By:	Andy

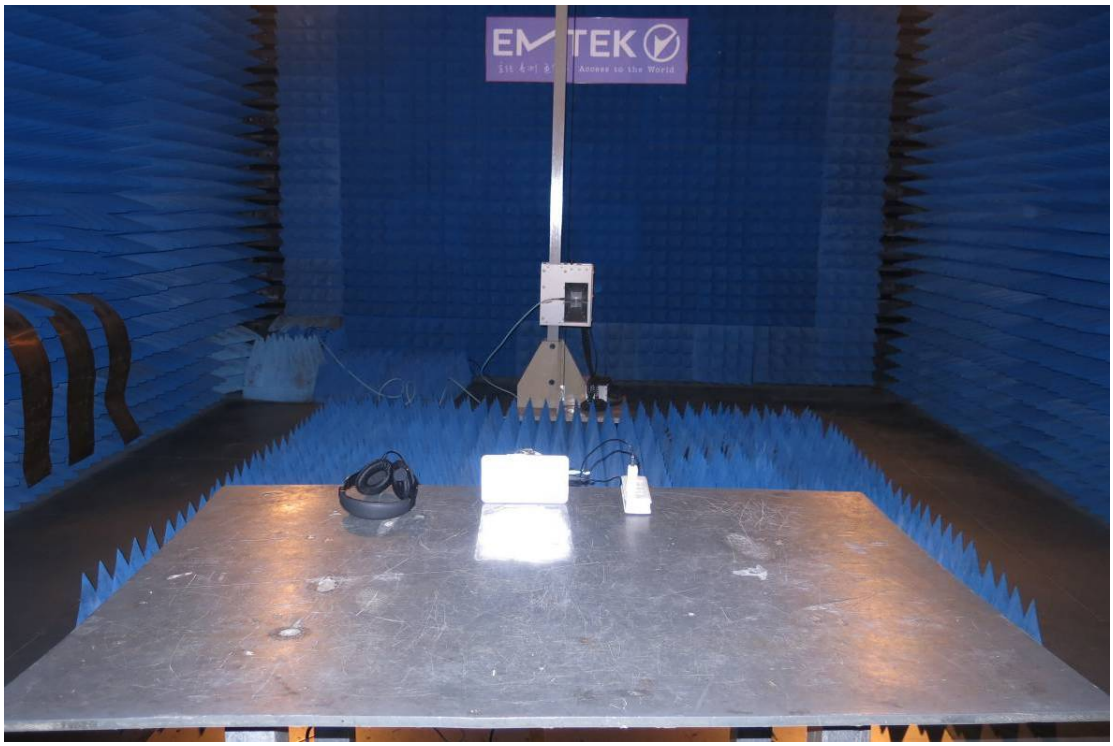
Freq. (MHz)	Ant. Pol. H/V	Emission Level(dBuV/m		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
4960	V	67.22	45.32	74	54	-6.78	-8.68
7440	V	66.32	44.12	74	54	-7.68	-9.88
9920	V	65.12	43.95	74	54	-8.88	-10.05
12400	V	64.08	42.05	74	54	-9.92	-11.95
14880	V	63.23	41.37	74	54	-10.77	-12.63
17360	V	62.84	40.22	74	54	-11.16	-13.78
4960	H	66.53	46.87	74	54	-7.47	-7.13
7440	H	65.95	45.65	74	54	-8.05	-8.35
9920	H	64.13	44.95	74	54	-9.87	-9.05
12400	H	63.85	43.16	74	54	-10.15	-10.84
14880	H	62.78	42.09	74	54	-11.22	-11.91
17360	H	61.04	41.13	74	54	-12.96	-12.87

Other harmonics emissions are lower than 20dB below the allowable limit.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+ Probe Factor +Cable Loss.
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

5.6 Radiated Measurement Photos:



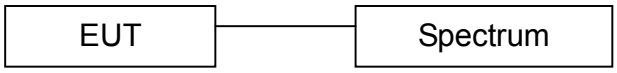


6. 6dB Bandwidth Measurement

6.1 Measurement Procedure

The EUT was operating in Bluetooth mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

6.2 Test SET-UP (Block Diagram of Configuration)



6.3 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	FSV30	1321.3008K	05/16/2014	05/15/2015

6.4 Limit

The minimum 6dB bandwidth shall be at least 500kHz.

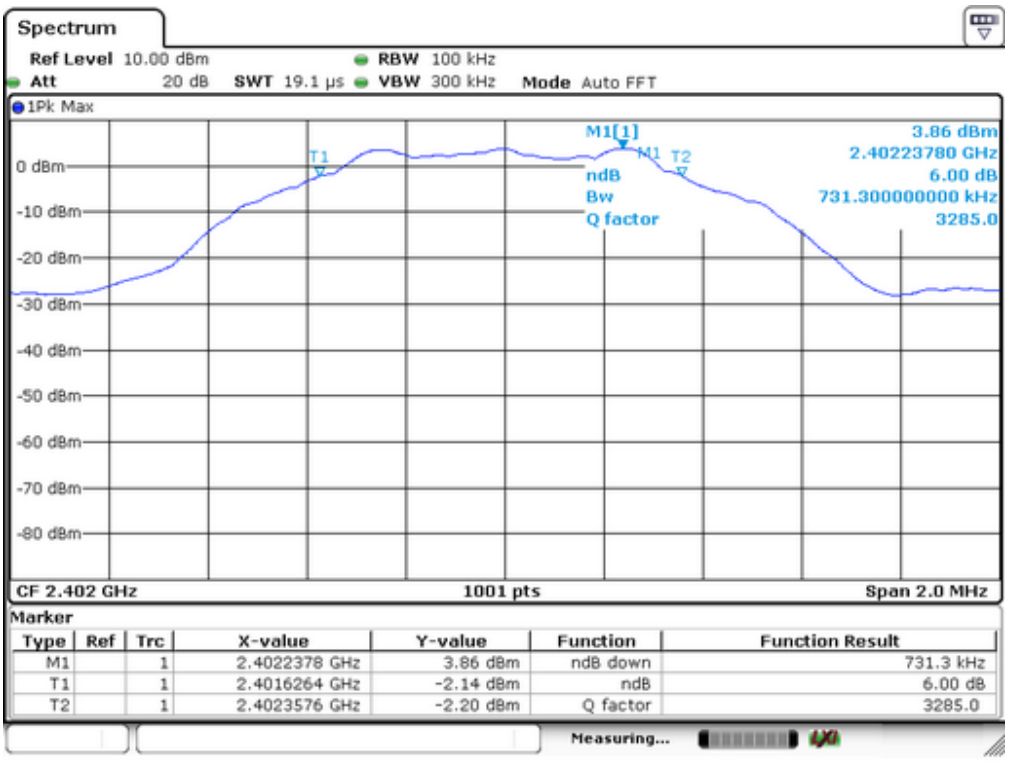
6.5 Measurement Results:

Refer to attached data chart.

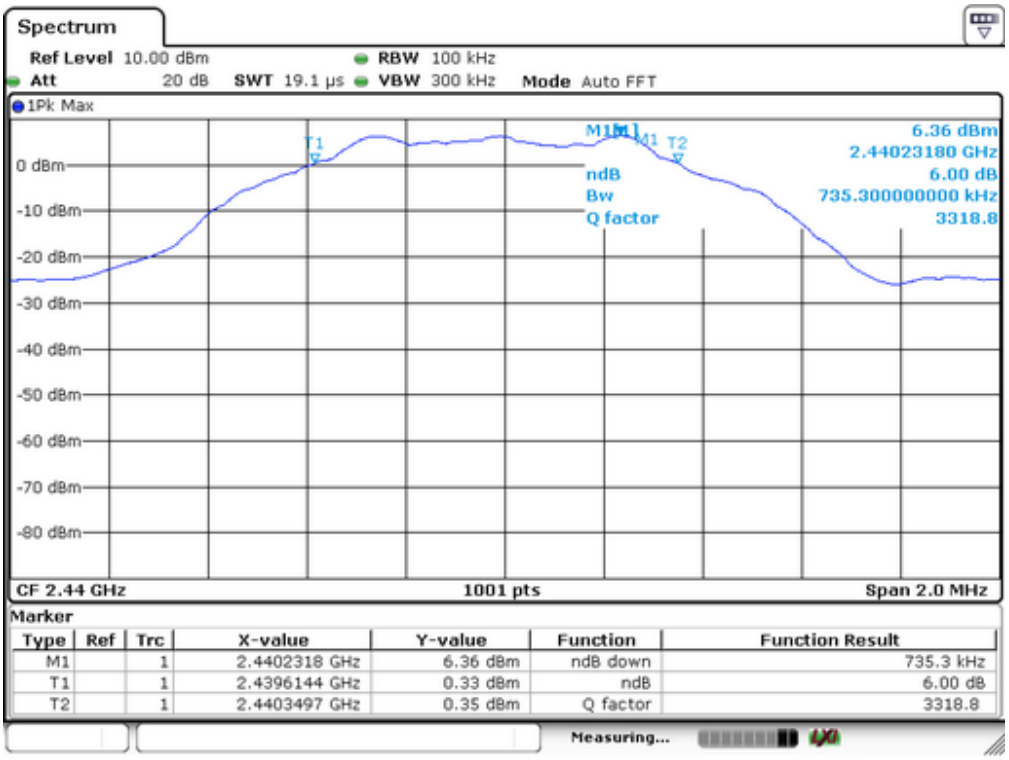
Spectrum Detector:	PK	Test Date :	December 05, 2014
Test By:	Andy	Temperature :	25 ℃
Test Result:	PASS	Humidity :	50 %

Channel number	Channel frequency (MHz)	Measurement level (KHz)	Required Limit (KHz)
00	2402	731	>500
19	2440	735	>500
39	2480	733	>500

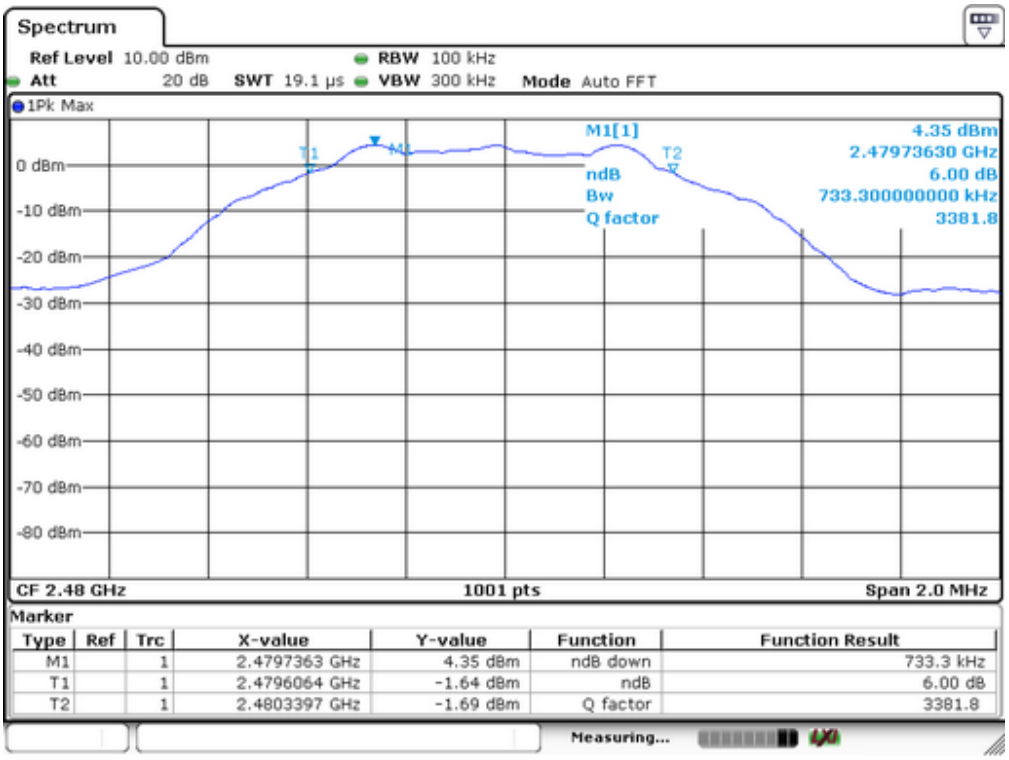
Channel 00:



Channel 19:



Channel 39:

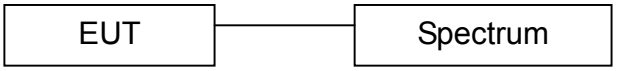

Spectrum
Ref Level 10.00 dBm
RBW 100 kHz
Att 20 dB
SWT 19.1 µs
VBW 300 kHz
Mode Auto FFT
1Pk Max
M1[1]
4.35 dBm
2.47973630 GHz
ndB
6.00 dB
Bw
733.300000000 kHz
Q factor
3381.8
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
T1
T2
CF 2.48 GHz
1001 pts
Span 2.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.4797363 GHz 4.35 dBm ndB down 733.3 kHz
T1 1 2.4796064 GHz -1.64 dBm ndB 6.00 dB
T2 1 2.4803397 GHz -1.69 dBm Q factor 3381.8
Measuring...

7. MAXIMUM PEAK OUTPUT POWER TEST

7.1 Measurement Procedure

a. The Transmitter output (antenna port) was connected to the spectrum Analyzer.
b. Turn on the EUT and then record the peak power value.
c. Repeat above procedures on all channels needed to be tested.

7.2 Test SET-UP (Block Diagram of Configuration)



7.3 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	FSV30	1321.3008K	05/16/2014	05/15/2015

7.4 Peak Power output limit

The maximum peak power shall be less 1Watt.

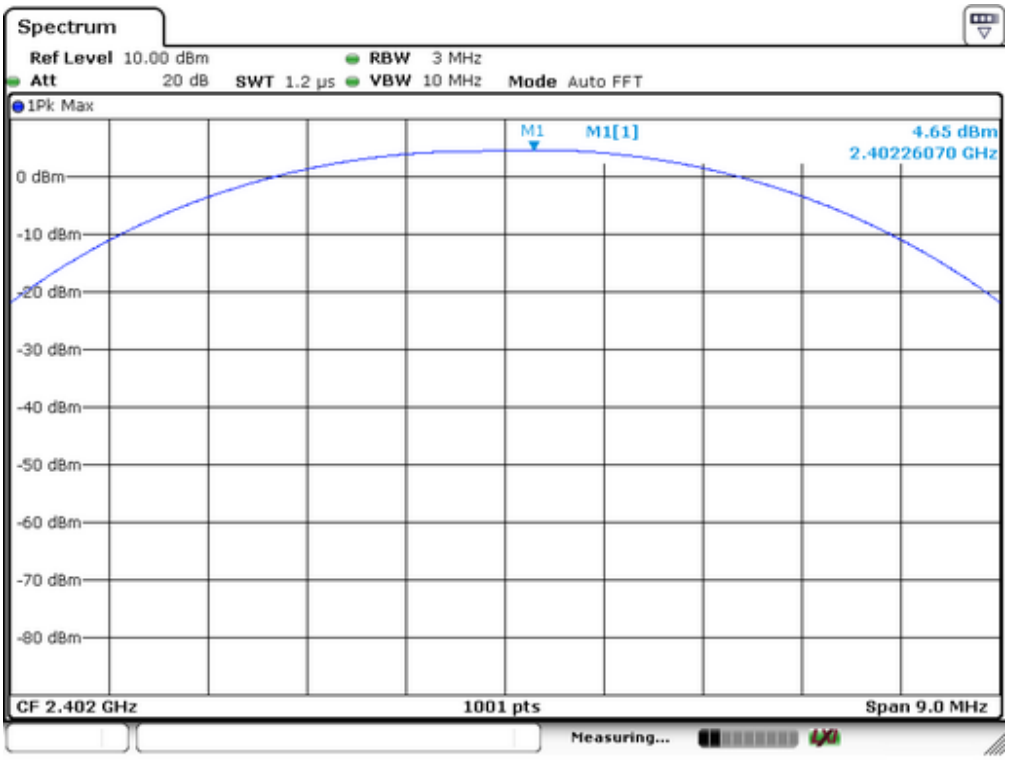
7.5 Measurement Results:

Refer to attached data chart.

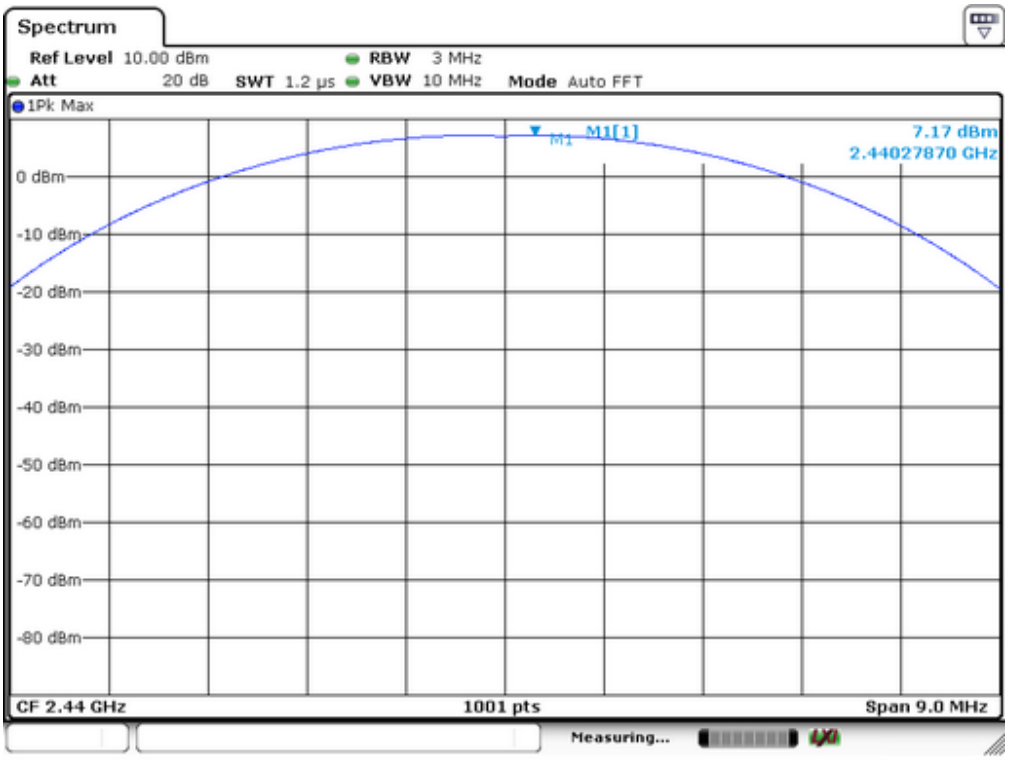
Spectrum Detector:	PK	Test Date :	December 05, 2014
Test By:	Andy	Temperature :	25 ℃
Test Result:	PASS	Humidity :	50 %

Channel number	Channel Frequency (MHz)	Peak Power output(dBm)	Peak Power output(mW)	Peak Power Limit(W)	Pass/Fail
00	2402	4.65	2.917	1W(30dBm)	PASS
19	2440	**7.17**	**5.212**	1W(30dBm)	PASS
3.9	2480	5.18	3.296	1W(30dBm)	PASS

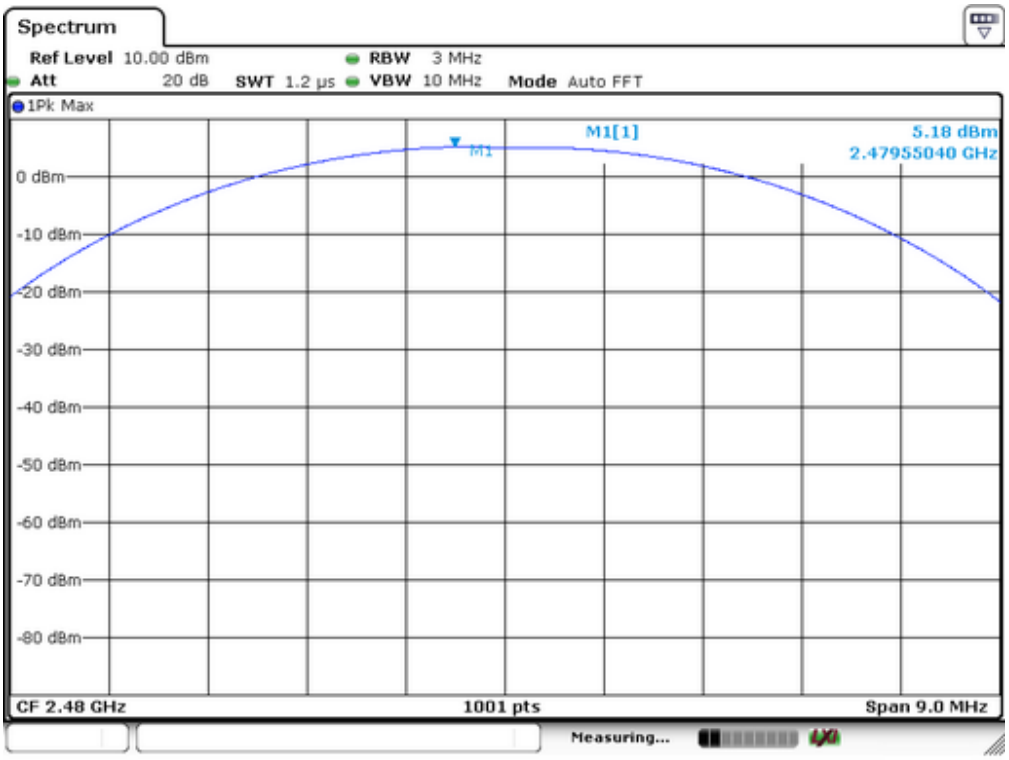
Channel 00:



Channel 19:



Channel 39:

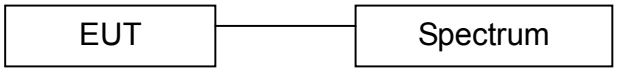

Spectrum
Ref Level 10.00 dBm
RBW 3 MHz
Att 20 dB
SWT 1.2 µs
VBW 10 MHz
Mode Auto FFT
1Pk Max
M1[1]
5.18 dBm
2.47955040 GHz
M1
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
CF 2.48 GHz
1001 pts
Span 9.0 MHz
Measuring...

8. Power Spectral Density Measurement

Measurement Procedure

The EUT was operating in Bluetooth mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

Test SET-UP (Block Diagram of Configuration)



Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	FSV30	1321.3008K	05/16/2014	05/15/2015

Measurement Procedure

8.4.1 The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

8.4.2. Set to the maximum power setting and enable the EUT transmit continuously.

8.4.3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)

8.4.4. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.

8.4.5. Measure and record the results in the test report.

8.4.6. The Measured power density (dBm)/ 100KHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

8.5 Measurement Results:

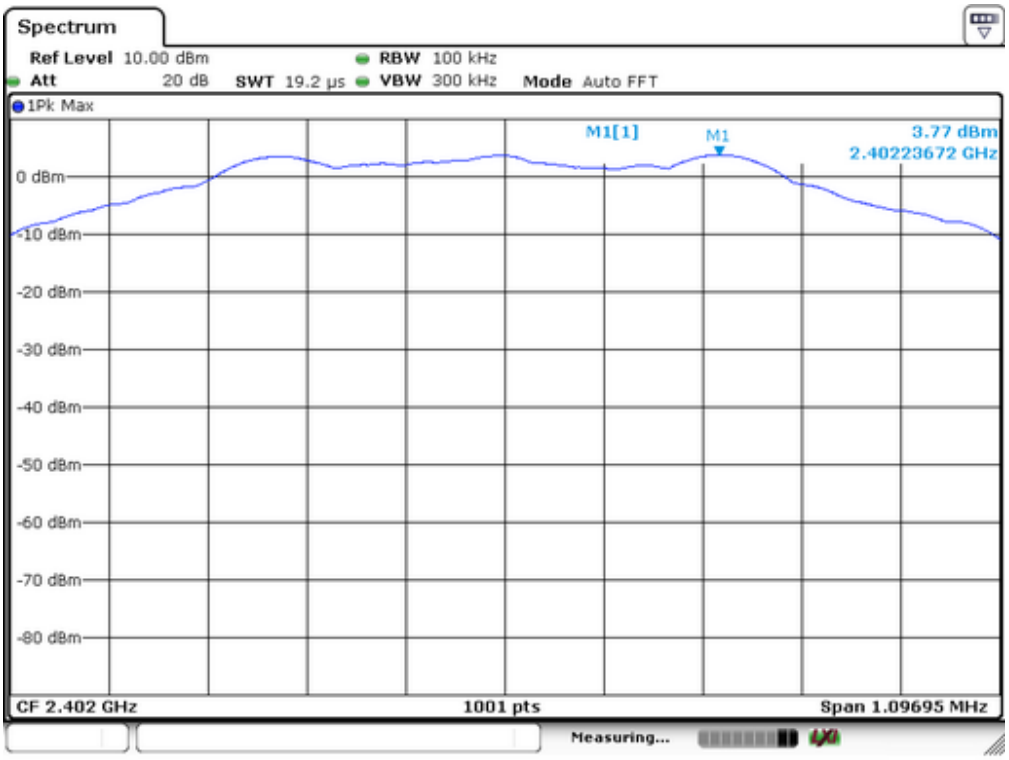
Refer to attached data chart.

Spectrum Detector:	PK	Test Date :	December 05, 2014
Test By:	Andy	Temperature :	25 ℃
Test Result:	PASS	Humidity :	50 %

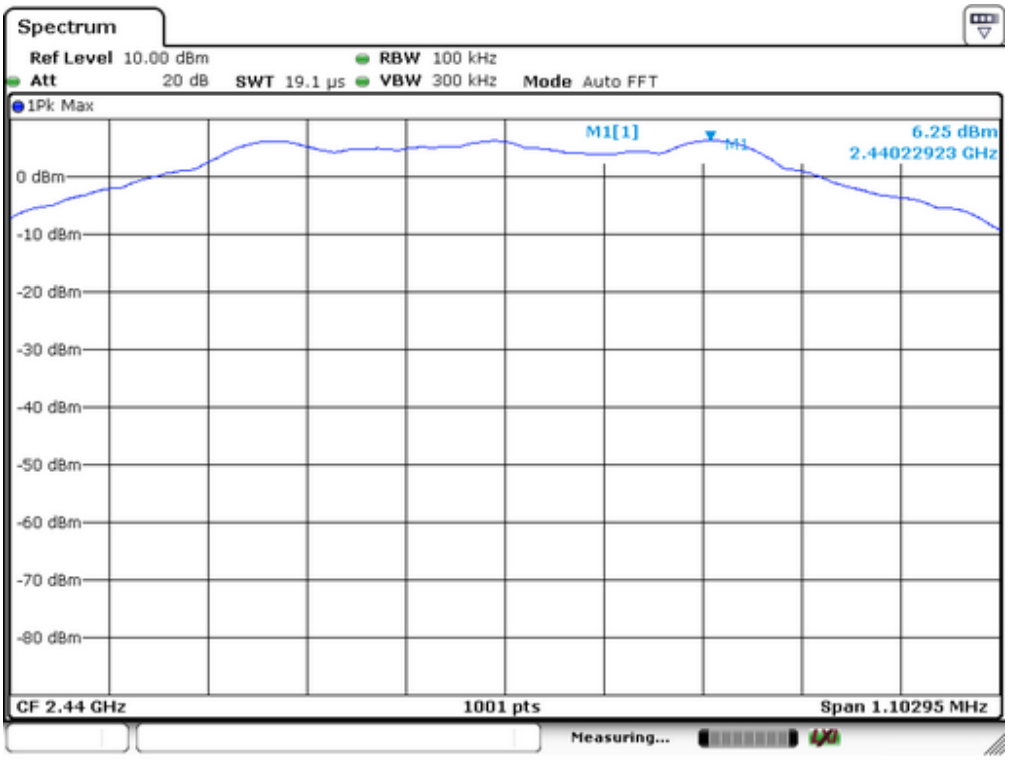
Channel number	Channel frequency (MHz)	Measurement level (dBm)		Required Limit (dBm/3kHz)	Pass/Fail
		PSD/100kHz	PSD/3kHz		
00	2402	3.77	-10.15	8	PASS
19	2440	6.25	-7.65	8	PASS
39	2480	4.20	-9.71	8	PASS

Note:
1. Measured power density(dBm) has offset with cable loss.
2. The measured power density(dBm)/100KHz is reference level and used as 20dBc down for Conducted Band Edges and Conducted Spurious Emission limit line.

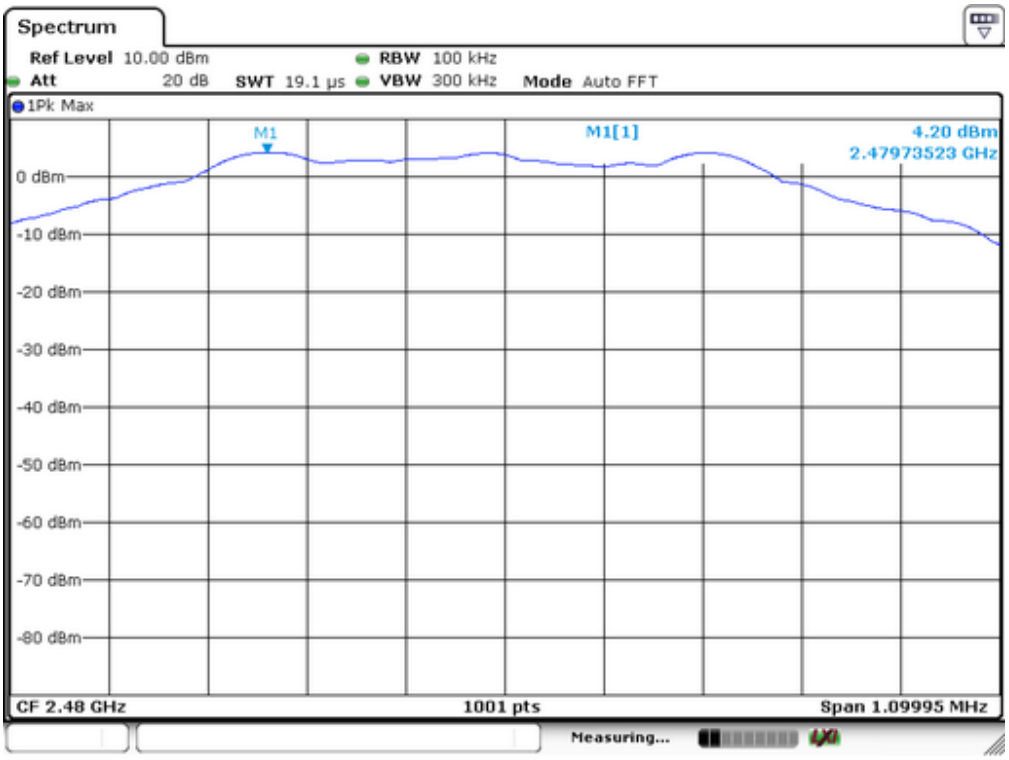
PSD 100kHz Plot:
Channel 00



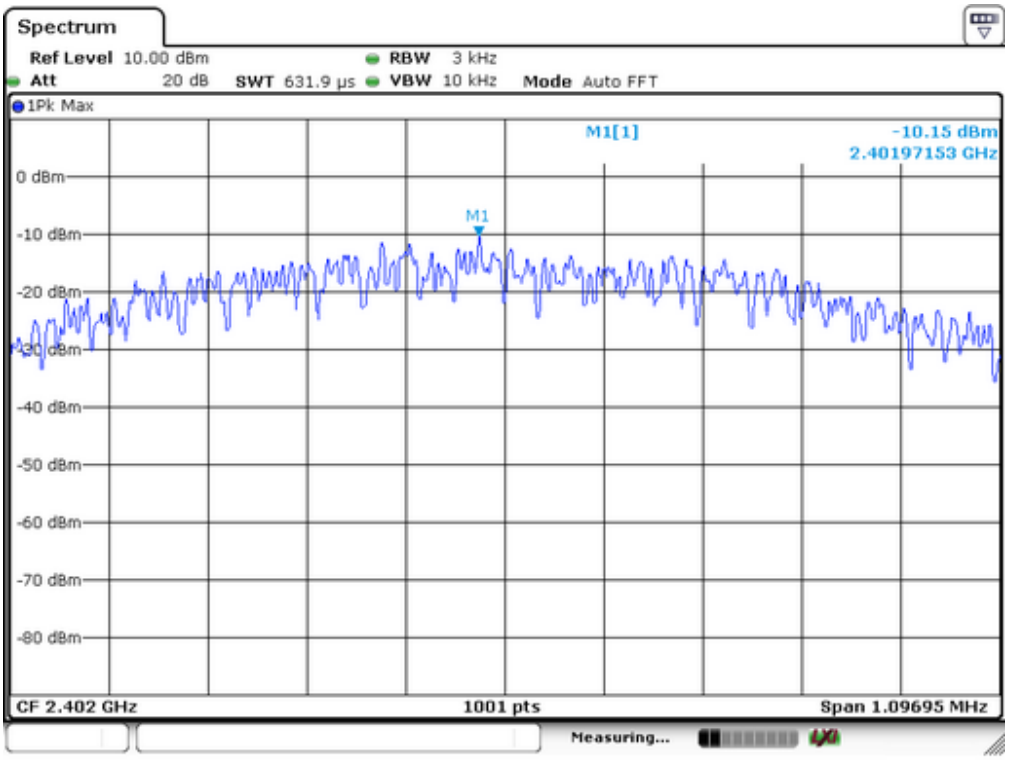
Channel 19



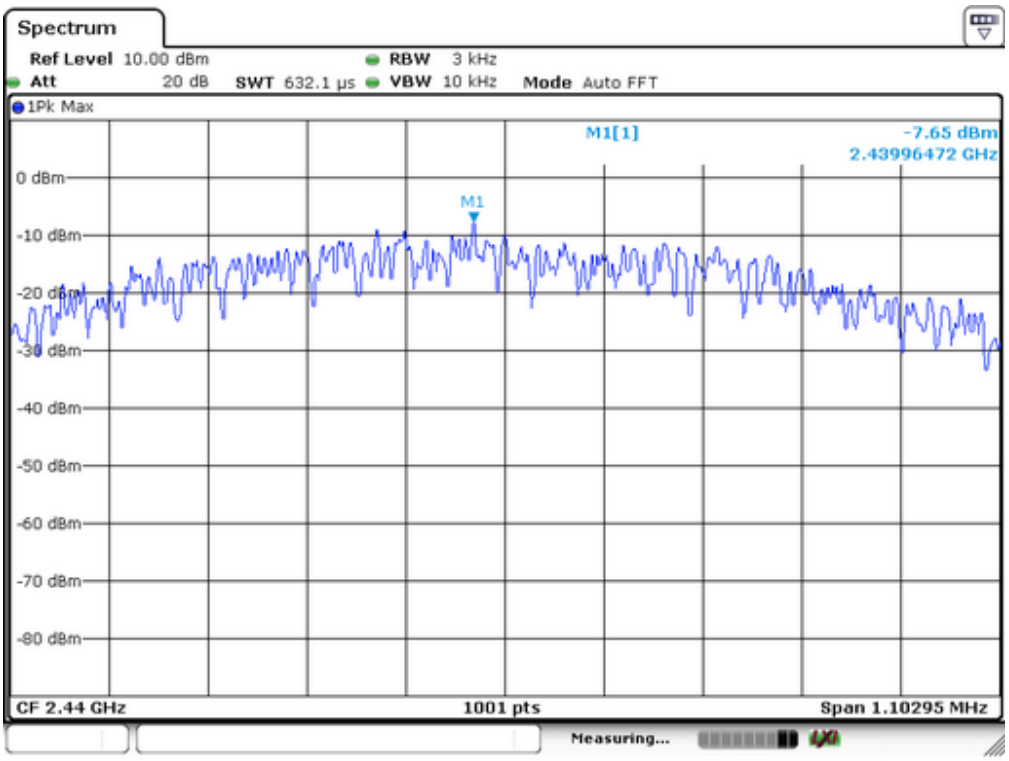
Channel 39:



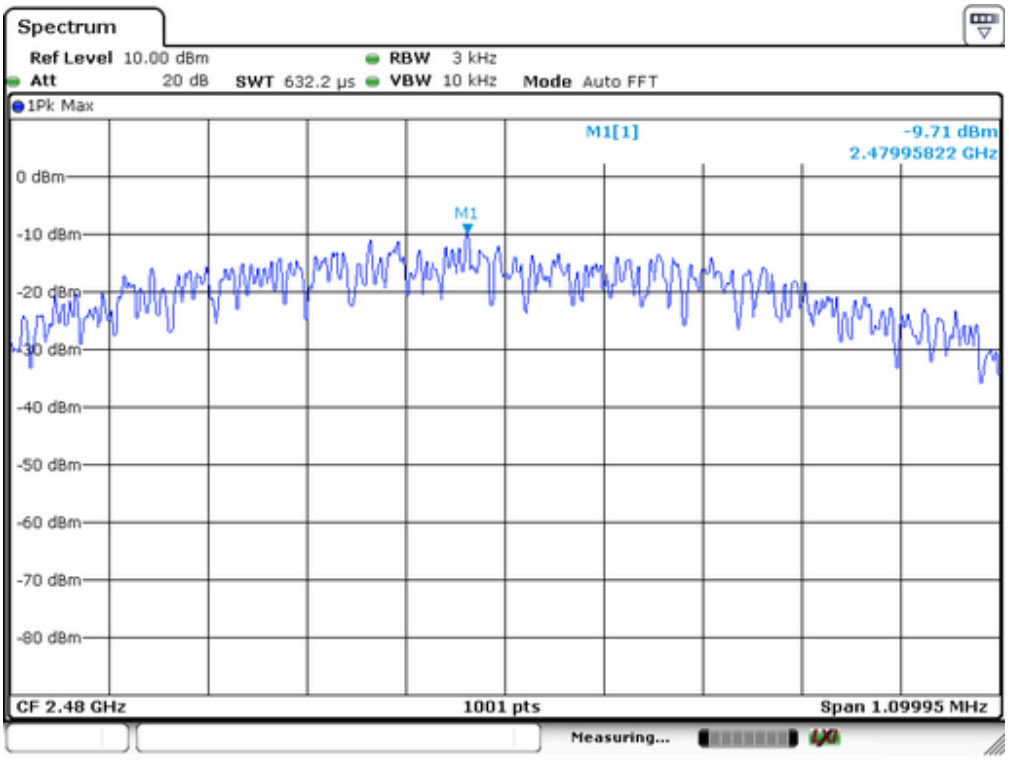
PSD 3KHz Plot:
Channel 00



Channel 19



Channel 39



9. Band EDGE test

9.1 Measurement Procedure

For Conducted Test

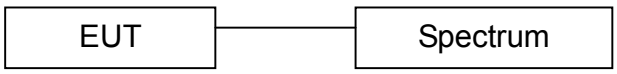
1. The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100KHz. The video bandwidth is set to 300KHz.
2. The spectrum from 30MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.
3. Preliminary tests on individual chains, and on all chains with a combiner, were performed. The worst-case configuration was with a combiner, therefore final test were preformed with all chains feeding a combiner.

For Radiated emission Test

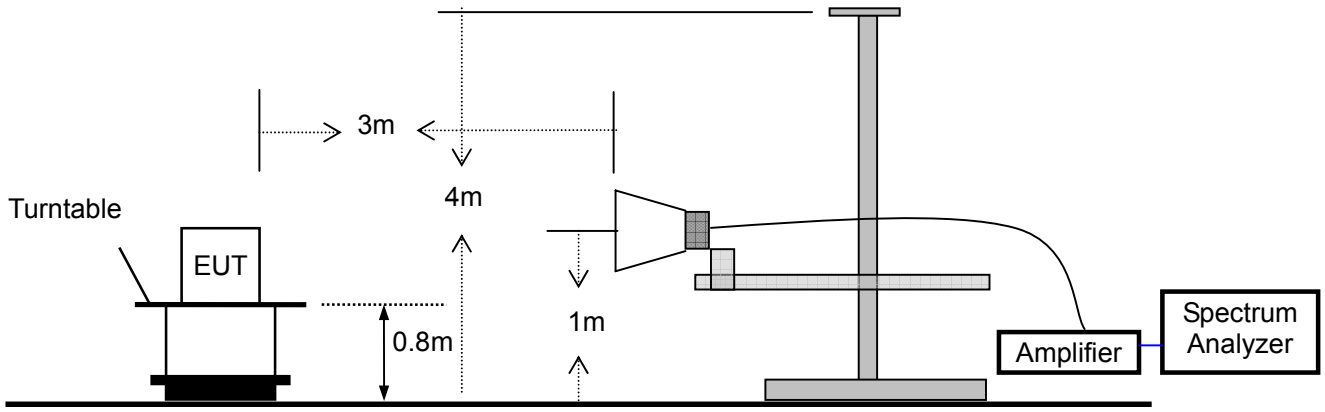
1. The EUT was Operating in hopping mode or could be controlled its channel. Printed out test result from the spectrum by hard copy function.
2. The EUT was placed on a turn table which is 0.8m above ground plane.
3. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Repeat above procedures until all frequency measured were complete.

9.2 Test SET-UP (Block Diagram of Configuration)

For Conducted Test



For Radiated emission Test



9.3 Measurement Results:

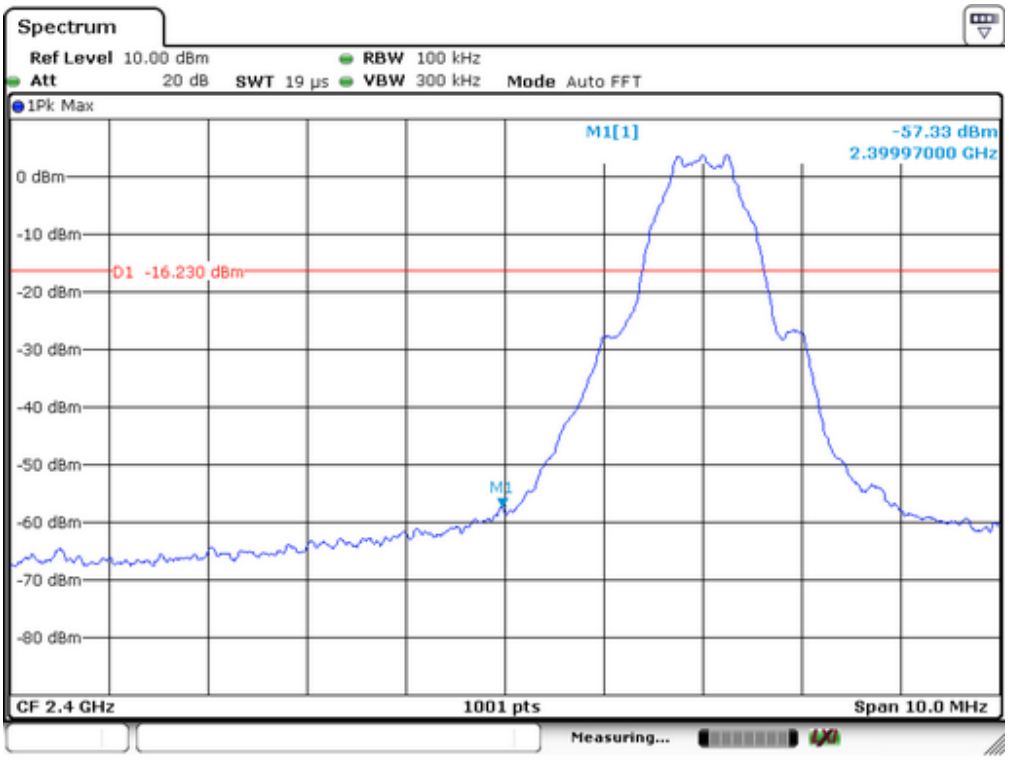
Refer to attached data chart.

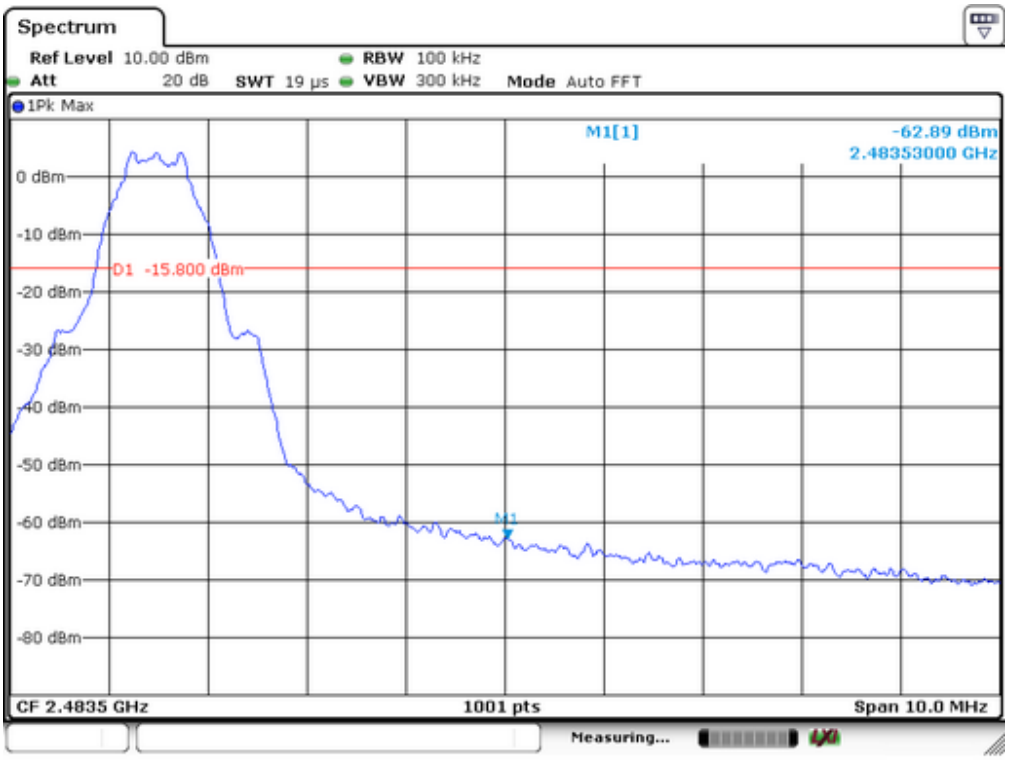
Spectrum Detector:	PK	Test Date :	December 05, 2014
Test By:	Andy	Temperature :	25 ℃
Test Result:	PASS	Humidity :	50 %

1. Conducted Test

Frequency (MHz)	Peak Power Output(dBm)	Emission read Value(dBm)	Result of Band edge(dBc)	Band edge Limit(dBc)
<2400	4.65	-57.33	61.98	>20dBc
>2483.5	5.18	-62.89	68.07	>20dBc

Test Plot:


Spectrum
Ref Level 10.00 dBm
RBW 100 kHz
Att 20 dB
SWT 19 µs
VBW 300 kHz
Mode Auto FFT
1Pk Max
M1[1]
-57.33 dBm
2.39997000 GHz
D1 -16.230 dBm
M1
CF 2.4 GHz
1001 pts
Span 10.0 MHz
Measuring...


Spectrum
Ref Level 10.00 dBm
RBW 100 kHz
Att 20 dB
SWT 19 µs
VBW 300 kHz
Mode Auto FFT
1Pk Max
M1[1]
-62.89 dBm
2.48353000 GHz
D1 -15.800 dBm
M1
CF 2.4835 GHz
1001 pts
Span 10.0 MHz
Measuring...

2. Radiated emission Test

Frequency (MHz)	Antenna polarization (H/V)	Emission (dBuV/m)		Band edge Limit (dBuV/m)	
		PK	AV	PK	AV
<2400	H	63.21	46.22	74.00	54.00
<2400	V	59.04	40.85	74.00	54.00
>2483.5	H	65.42	45.13	74.00	54.00
>2483.5	V	60.38	39.08	74.00	54.00

10 Antenna Application

10.1 Antenna requirement

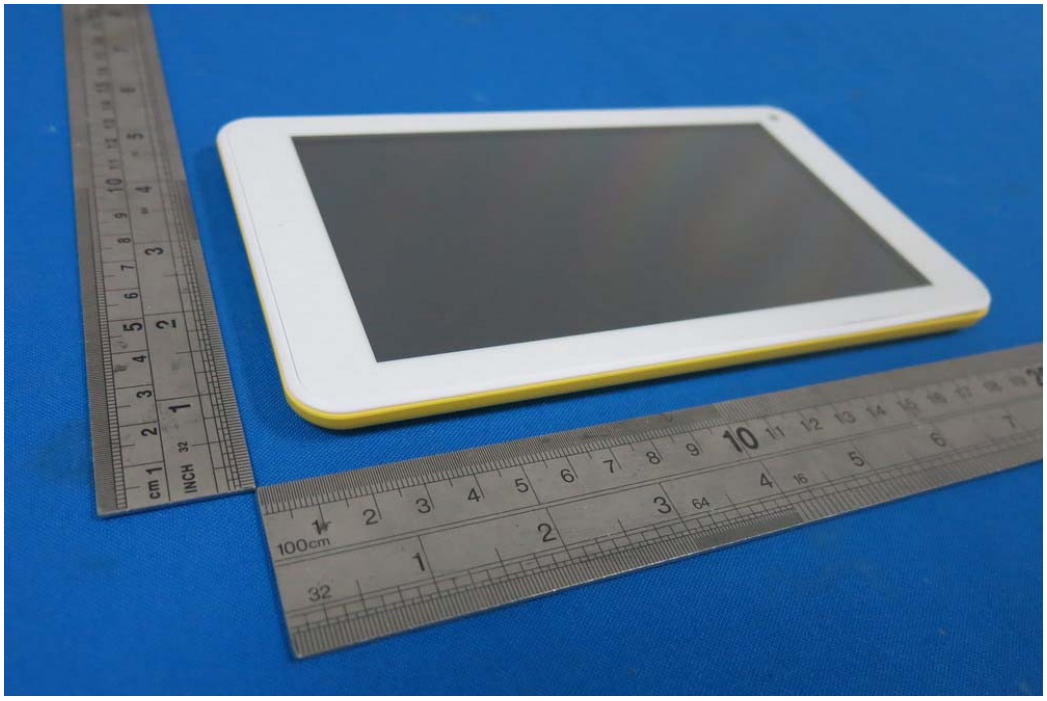
The EUT'S antenna is met the requirement of FCC part 15C section 15.203 and 15.247.

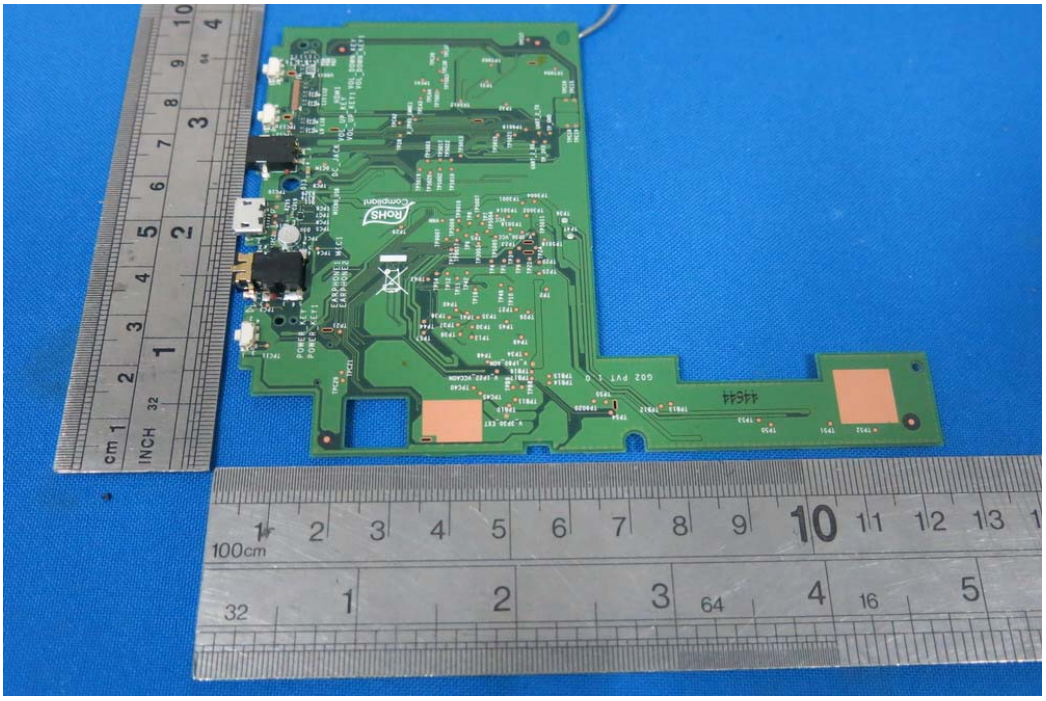
FCC part 15C section 15.247 requirements:
Systems operating in the 2402-2480MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

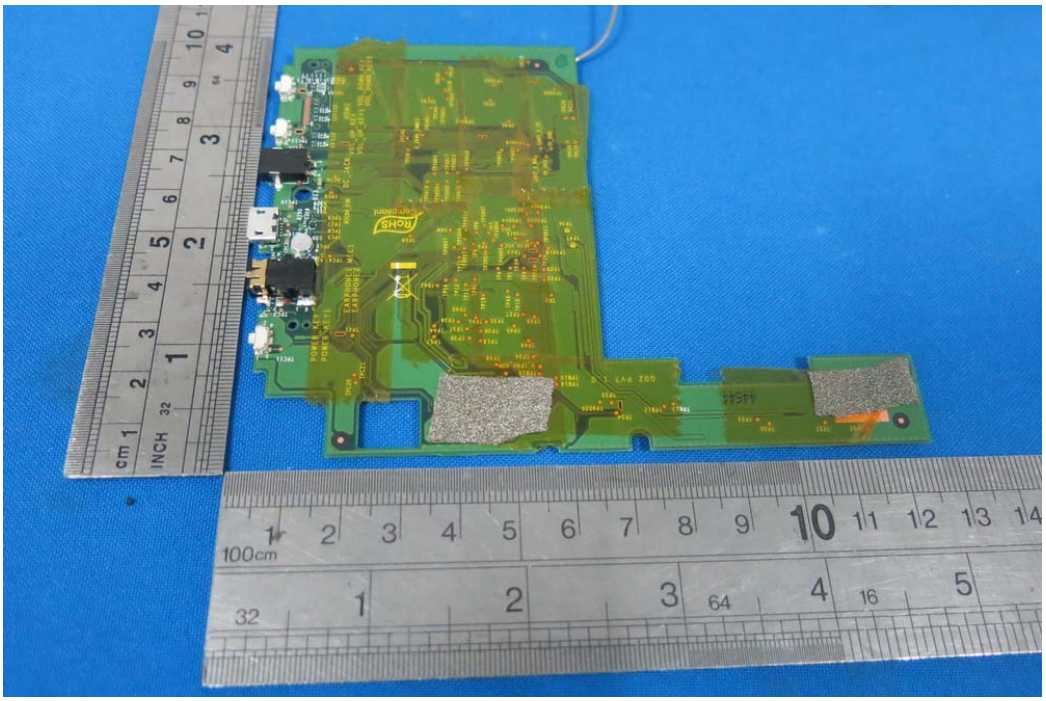
10.2 Result

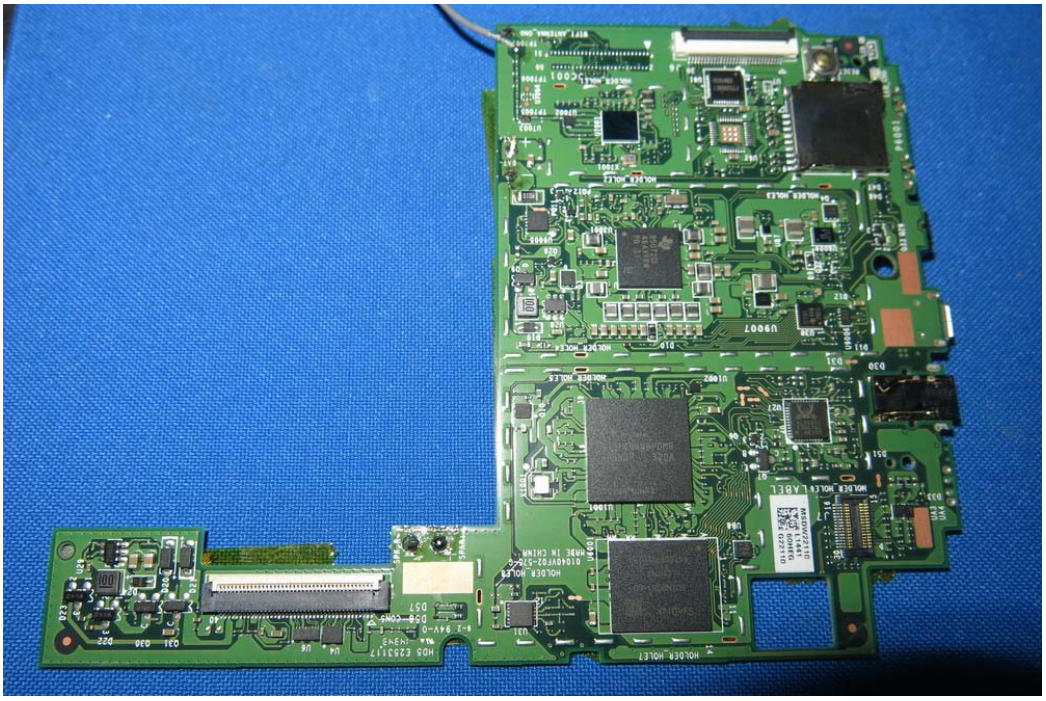
The EUT's antenna used a PCB antenna and integrated on PCB, The antenna's gain is 0 dBi and meets the requirement.

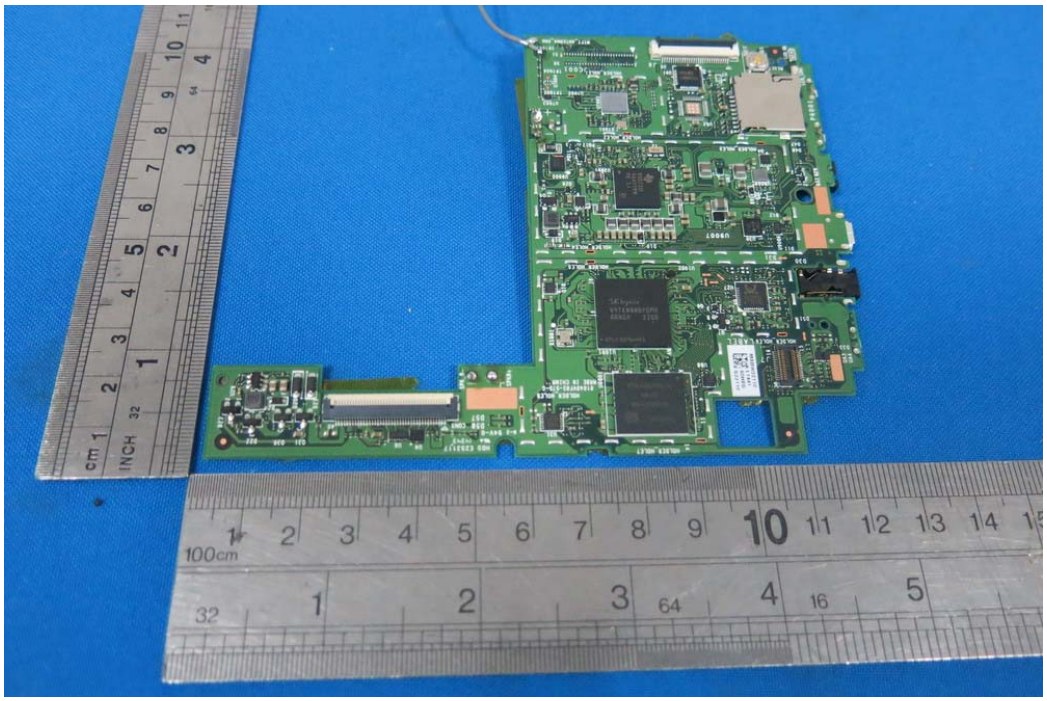
APPENDIX I
(PHOTOS OF EUT)

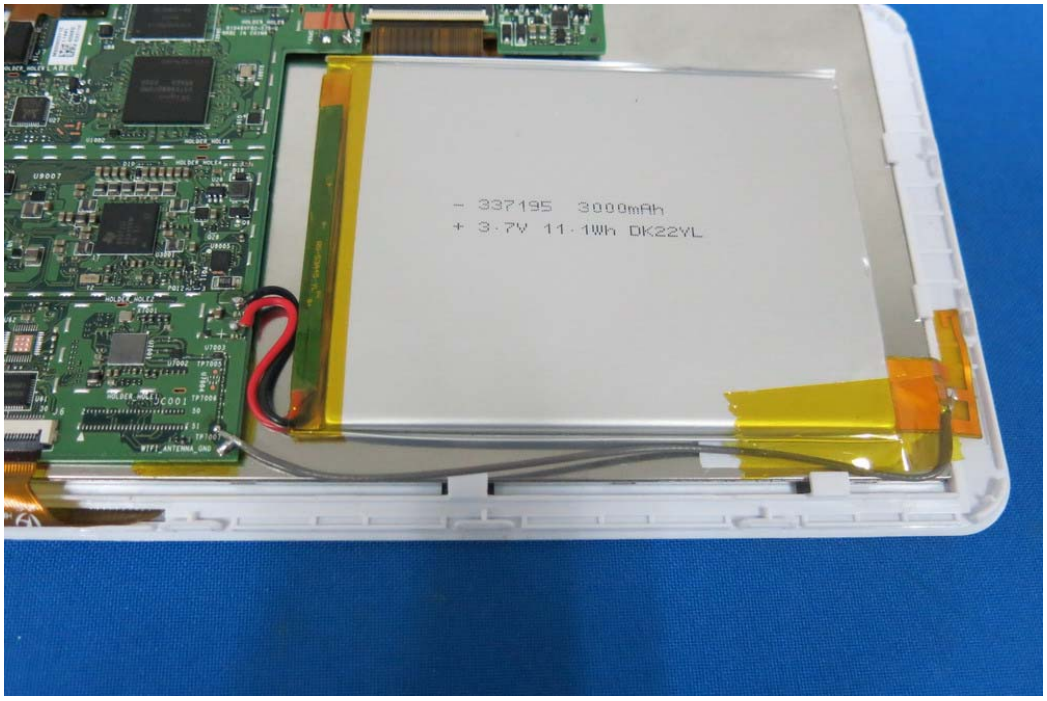


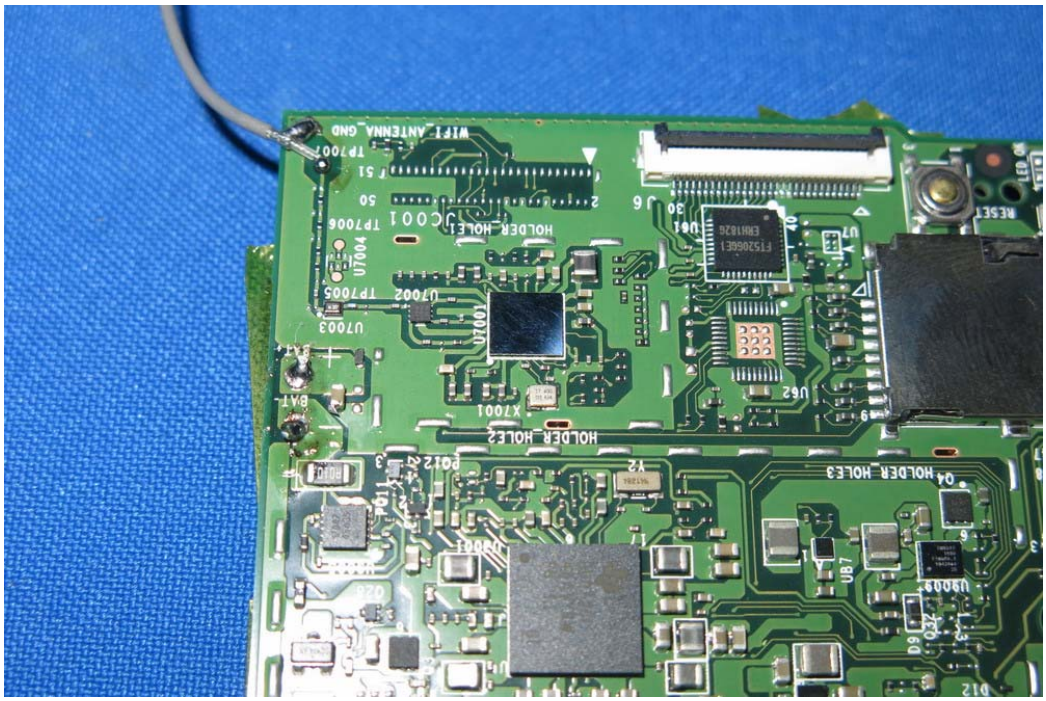



cm 1
INCH 32
100cm
10






- 337195 3000mAh
+ 3.7V 11.1Wh DK22VL


WIFI_ANTENNA_GND
HOLDER_HOLE1
HOLDER_HOLE2
HOLDER_HOLE3