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FCC PART 15 SUBPART C TEST REPORT

FCC Part 15.247

Report Reference No..... :	**CTL120223097-WW**
Compiled by (position+printed name+signature). :	File administrators Andy Zhang
Name of the organization performing the tests (position+printed name+signature). :	Test Engineer Kendy Wang
Approved by (position+printed name+signature). :	Manager Tracy Qi
Date of issue..... :	April 2, 2012
Representative Laboratory Name :	**Shenzhen CTL Electromagnetic Technology Co., Ltd.**
Address..... :	Zone B, 4/F, Block 20, Guangqian Industrial Park, Longzhu Road, Nanshan, Shenzhen 518055 China.
Test Firm..... :	**Bontek Compliance Testing Laboratory Ltd**
Address..... :	1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China
Applicant's name..... :	**Shenzhen iNet Mobile Internet Technology Co.,LTD.**
Address..... :	Room B, 9F, Jiajiahao Building, No.10168, Shennan Road, Nanshan Dist, Shenzhen, China.
Test specification:	
Standard ..... :	FCC Part 15.247: Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
TRF Originator..... :	Shenzhen CTL Electromagnetic Technology Co., Ltd.
Master TRF ..... :	Dated 2011-01

Test item description..... :	Tablet PC
Trade Mark..... :	N/A
Model/Type reference..... :	TSXD-SA7
Modulation ..... :	DSSS, OFDM
Work Frequency Range……..:	2412~2462MHz
Antenna Type……:	Internal
FCC ID……..:	FKO-TSXD-SA7
Result..... :	**Positive**

TEST REPORT

Test Report No. :	CTL120223097-WW	April 2, 2012 Date of issue

Equipment under Test	:	Tablet PC
Model /Type	:	TSXD-SA7
Listed Models	:	TSXD-SA8, TSXD-SA97, TSXD-SA10, TSXD-ZA7, TSXD-ZA8, TSXD-ZA97, TSXD-ZA10, TSXD-AX7, TSXD-AX8, TSXD-AX97, TSXD-AX10, TSXD-AP7, TSXD-AP8, TSXD-AP97, TSXD-AP10, TSXD-JD7, TSXD-JD8, TSXD-JD97, TSXD-JD10, TSXD-JY7, TSXD-JY8, TSXD-JY97, TSXD-JY10, TSXD-RK7, TSXD-RK8, TSXD-RK97, TSXD-RK10, TSXD-NL7, TSXD-NL8, TSXD-NL97, TSXD-NL10, TSXD-WV7, TSXD-WV8, TSXD-WV97, TSXD-WV10, TSXD-TC7, TSXD-TC8, TSXD-TC97, TSXD-TC10, TSXD-YA7, TSXD-YA8, TSXD-YA10, TSXD-XD7, TSXD-XD8, TSXD-XD97, TSXD-XD10, TSXD-IS97, TSXD-IS10, TSXD-ZXC1, TSXD-ZXC2, TSXD-ZXC3, TSXD-ZXC4, TSXD-ZXC5, TSXD-ZXC6
Applicant	:	SHENZHEN TSXD TECHNOLOGY CO.,LTD
Address	:	606R, No.1 Building, B Area Hua Mei Ju, Xinhu Road, Baoan Center Region, Shenzhen, China.
Manufacturer		SHENZHEN TSXD TECHNOLOGY CO.,LTD
Address		606R, No.1 Building, B Area Hua Mei Ju, Xinhu Road, Baoan Center Region, Shenzhen, China.

Test Result according to the standards on page 4:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

ANSI C63.4-2003

KDB Publication No. 558074 Guidance on Measurements for Digital Transmission Systems

ANSI C63.10-2009: American National Standard for Testing Unlicensed Wireless Devices.

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample : Feb. 24, 2012

Testing commenced on : Feb. 25, 2012

Testing concluded on : Mar. 15, 2012

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage : ● 120V / 60 Hz o 115V / 60Hz
o 12 V DC o 24 V DC
o Other (specified in blank below)

2.3. Short description of the Equipment under Test (EUT)

The device is a Tablet PC, work frequency at 2.4~2.4835GHz, support 802.11bg.

For more details, refer to the user's manual of the EUT.

Serial number: Prototype

2.4. EUT operation mode

Test Mode:

1. The EUT has been tested under normal operating condition.
2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed. Channel low (2412MHz), mid (2437MHz) and high (2462MHz) with highest data rate are chosen for full testing.

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

o - supplied by the manufacturer

● - supplied by the lab

● U-disk	Manufacturer :	KINGSTON
	Model No. :	4047412
● Ear-phone	Manufacturer :	Philip
	Model No. :	KY21-05
● USB Mouse	Manufacturer :	DELL
	Model No. :	MS111-L

2.6. NOTE

1. The EUT is an 802.11b/g Tablet PC,The functions of the EUT listed as below:

	Test Standards	Reference Report
WLAN 802.11b/g	FCC Part 15 Subpart C (Section15.247)	CTL120223097-WW
WLAN 802.11b/g	FCC Per 47 CFR 2.1091(b)	CTL120223097-WW

2. The frequency bands used in this EUT are listed as follows:

Frequency Band(MHz)	2400-2483.5	5150-5350	5470-5725	5725-5850
802.11b	√	—	—	—
802.11g	√	—	—	—
802.11n(20MHz)	—	—	—	—
802.11n(40MHz)	—	—	—	—

3. The EUT incorporates a SISO function,Physically,the EUT provides one completed transmitter and receivers.

Modulation Mode	TX Function
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	/
802.11n (40MHz)	/

2.7. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **FKO-TSXD-SA7** filing to comply with of the FCC Part 15.247 Rules.

2.8. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Bontek Compliance Testing Laboratory Ltd
1/F, Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2003) and CISPR Publication 22.

3.2. Test Facility

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

IC Registration No.: 7631A

The 3m alternate test site of Bontek Compliance Testing Laboratory Ltd EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 7631A on March, 2011.

FCC-Registration No.: 338263

Bontek Compliance Testing Laboratory Ltd EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 338263, March 24, 2008.

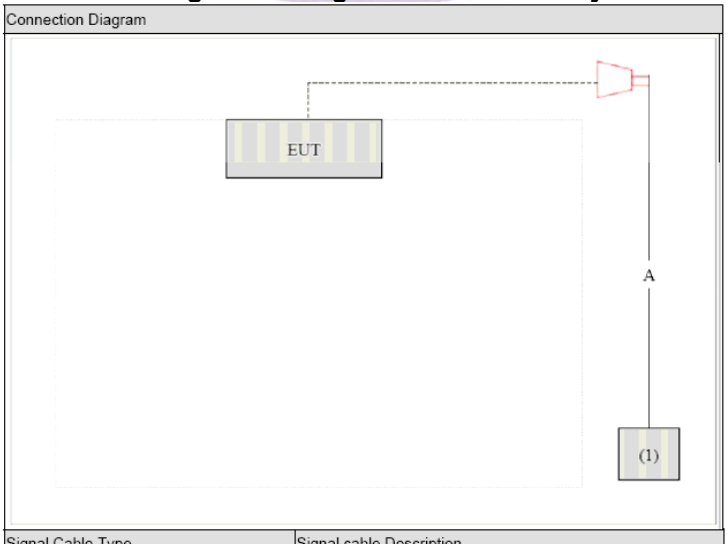
3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System



Signal Cable Type		Signal cable Description
A	Coaxial Cable	Shielded, >5m

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Bontek Compliance Testing Laboratory Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Bontek laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	1~12.75GHz	4.32dB	(1)
Conducted Disturbance	0.15~30MHz	3.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6. Equipments Used during the Test

Item	Test Equipment	Manufacturer	Model No.	Last Cal.	Due. Date
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	2011/04/14	2012/04/13
2	Radio Communication Tester	ROHDE & SCHWARZ	CMU200	2011/04/14	2012/04/13
3	Dual Directional Coupler	Agilent	778D	2011/04/14	2012/04/13
4	10dB attenuator	SCHWARZBECK	MTAIMP-136	2011/04/14	2012/04/13
5	Tunable Bandreject filter	K&L	3TNF-800	2011/04/14	2012/04/13
6	Tunable Bandreject filter	K&L	5TNF-1700	2011/04/14	2012/04/13
7	High-Pass Filter	K&L	9SH10-2700/X12750-O/O	2011/04/14	2012/04/13
8	High-Pass Filter	K&L	41H10-1375/U12750-O/O	2011/04/14	2012/04/13
9	Coaxial Cable	Huber+Suhner	AC4-RF-H	2011/04/14	2012/04/13
10	AC Power Supply	IDRC	CF-500TP	2011/04/14	2012/04/13
11	DC Power Supply	IDRC	CD-035-020PR	2011/04/14	2012/04/13
12	RF Current Probe	FCC	F-33-4	2011/04/14	2012/04/13
13	Temperature /Humidity Meter	zhicheng	ZC1-2	2011/04/14	2012/04/13
14	MICROWAVE AMPLIFIER	HP	8349B	2011/04/14	2012/04/13
15	Amplifier	HP	8447D	2011/04/14	2012/04/13
16	SIGNAL GENERATOR	HP	8647A	2011/04/14	2012/04/13
17	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	2011/04/14	2012/04/13
18	Horn Antenna	Schwarzbeck	BBHA9120A	2011/04/14	2012/04/13
19	EMI Test Receiver	R&S	ESPI	2011/04/14	2012/04/13

3.7. Summary of Test Result

FCC PART 15		
FCC Part 15.207	AC Power Conducted Emission	PASS
FCC Part 15.247(a)(2)	6dB Bandwidth	PASS
FCC Part 15.247(d)	Spurious RF conducted emissions	PASS
FCC Part 15.247(b)	Maximum Peak Output Power	PASS
FCC Part 15.247(e)	Power Spectral Density	PASS
FCC Part 15.109/ 15.205/ 15.209	Radiated Emissions	PASS
FCC Part 15.247(d)	Band edge compliance of RF emissions	PASS

Remark: The measurement uncertainty is not included in the test result.

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

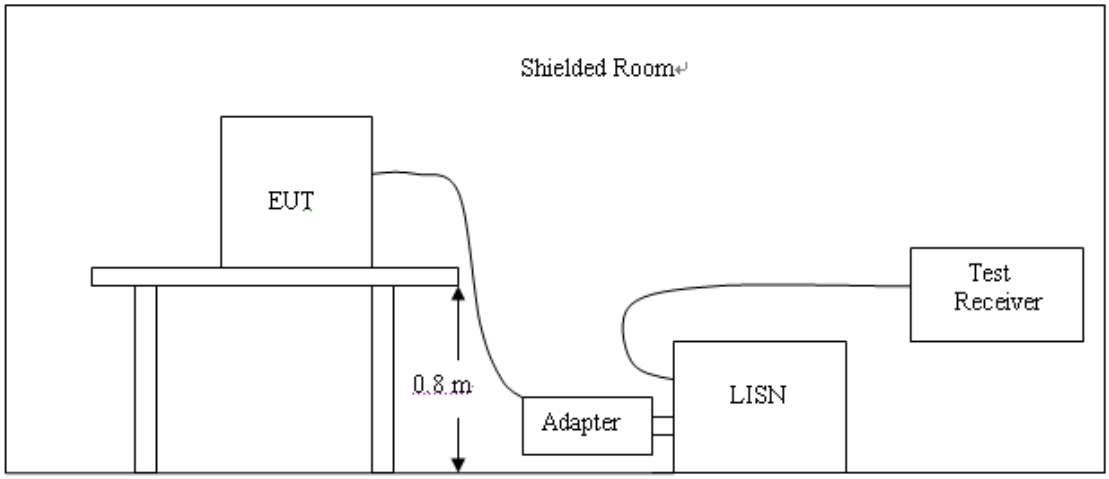
Test Items	Mode	Data Rate	Channel
AC Power Conducted Emission	Normal Link	11 Mbps	1
Maximum Peak Conducted Output Power Power Spectral Density 6dB Bandwidth Spurious RF conducted emission	11b/DSSS	11 Mbps	1/6/11
	11g/OFDM	54 Mbps	1/6/11
	11n(20MHz)/OFDM	/	/
	11n(40MHz)/OFDM	/	/
Radiated Emission 30MHz~1GHz	11b/DSSS	11 Mbps	1/6/11
	11g/OFDM	54 Mbps	1/6/11
	11n(20MHz)/OFDM	/	/
	11n(40MHz)/OFDM	/	/
Radiated Emission 1GHz~10th Harmonic	11b/DSSS	11 Mbps	1/6/11
	11g/OFDM	54 Mbps	1/6/11
	11n(20MHz)/OFDM	/	/
	11n(40MHz)/OFDM	/	/
Band Edge Compliance of RF Emission	11b/DSSS	11 Mbps	1/11
	11g/OFDM	54 Mbps	1/11
	11n(20MHz)/OFDM	/	/
	11n(40MHz)/OFDM	/	/

Note1: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

4. TEST CONDITIONS AND RESULTS

4.1. Conducted Emissions Test

TEST CONFIGURATION



TEST PROCEDURE

For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following：

Frequency (MHz)	Maximum RF Line Voltage (dBμv)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

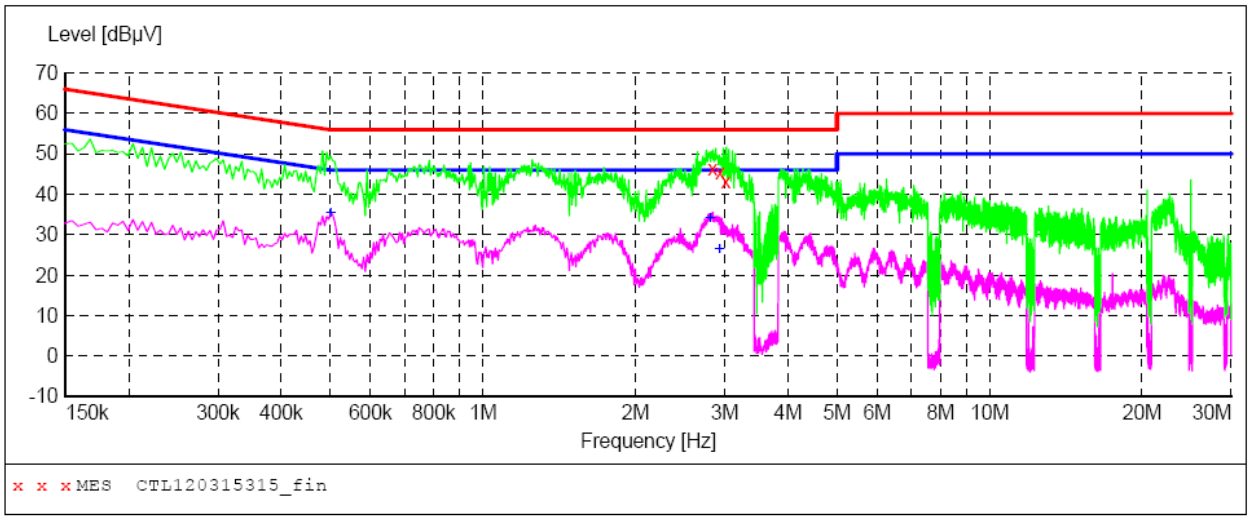
1. Please follow the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 kHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

The RBW/VBW for 150KHz to 30MHz: 9KHz

TEST RESULTS

See the following plots:

SCAN TABLE: "Vol (9K-30M)FIN NEW"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CTL120315315_fin"

3/15/2012 9:18AM

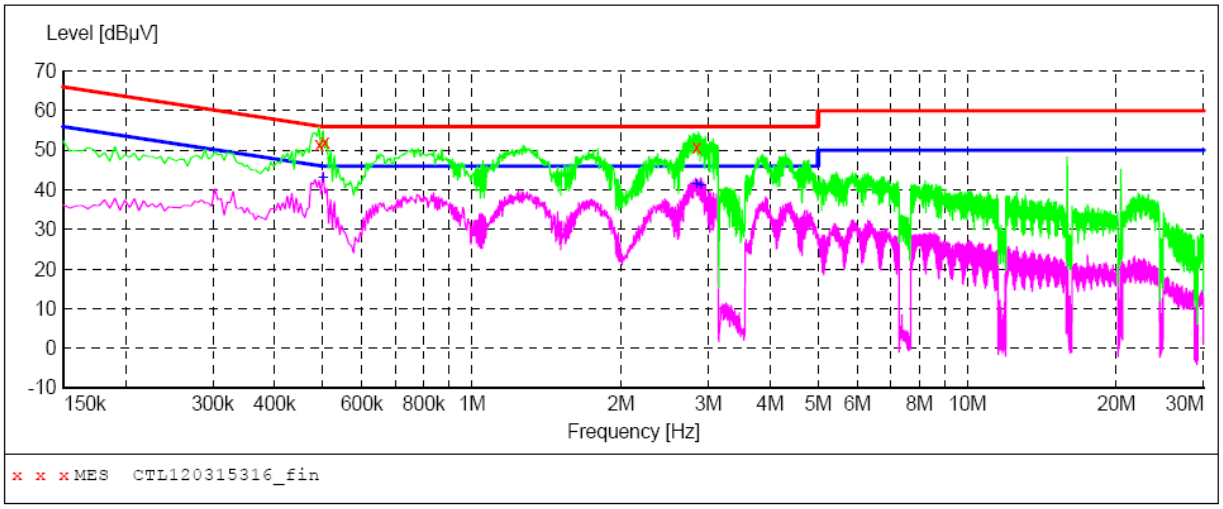
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
2.841000	46.30	10.5	56	9.7	QP	N	GND
2.940000	45.40	10.5	56	10.6	QP	N	GND
3.016500	43.00	10.5	56	13.0	QP	N	GND

MEASUREMENT RESULT: "CTL120315315_fin2"

3/15/2012 9:18AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.501000	35.40	10.4	46	10.6	AV	N	GND
2.809500	34.20	10.5	46	11.8	AV	N	GND
2.931000	26.70	10.5	46	19.3	AV	N	GND

SCAN TABLE: "Vol (9K-30M)FIN NEW"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "CTL120315316_fin"

3/15/2012 9:21AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.492000	51.60	10.4	56	4.5	QP	L1	GND
0.505500	52.00	10.4	56	4.0	QP	L1	GND
2.845500	50.70	10.5	56	5.3	QP	L1	GND

MEASUREMENT RESULT: "CTL120315316_fin2"

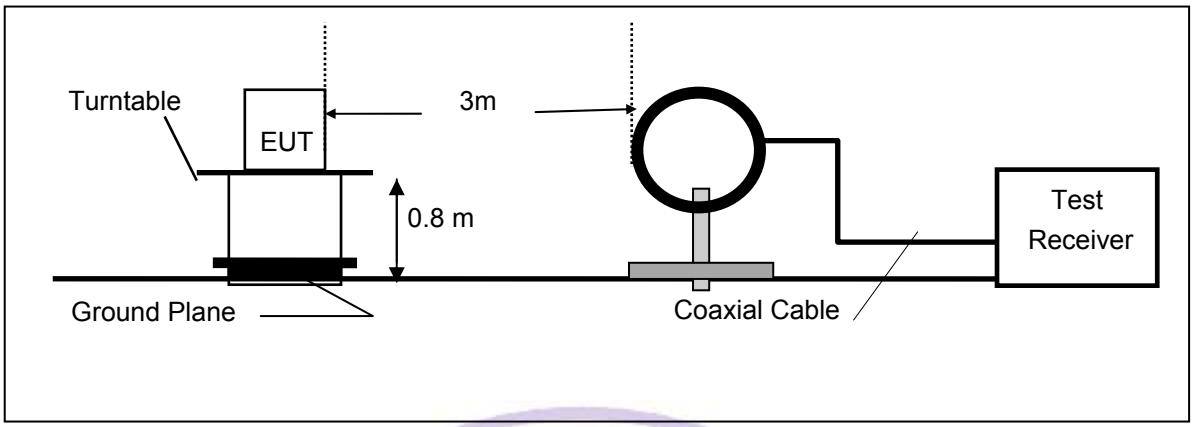
3/15/2012 9:21AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.501000	43.10	10.4	46	2.9	AV	L1	GND
2.841000	41.50	10.5	46	4.5	AV	L1	GND
2.904000	41.10	10.5	46	4.9	AV	L1	GND

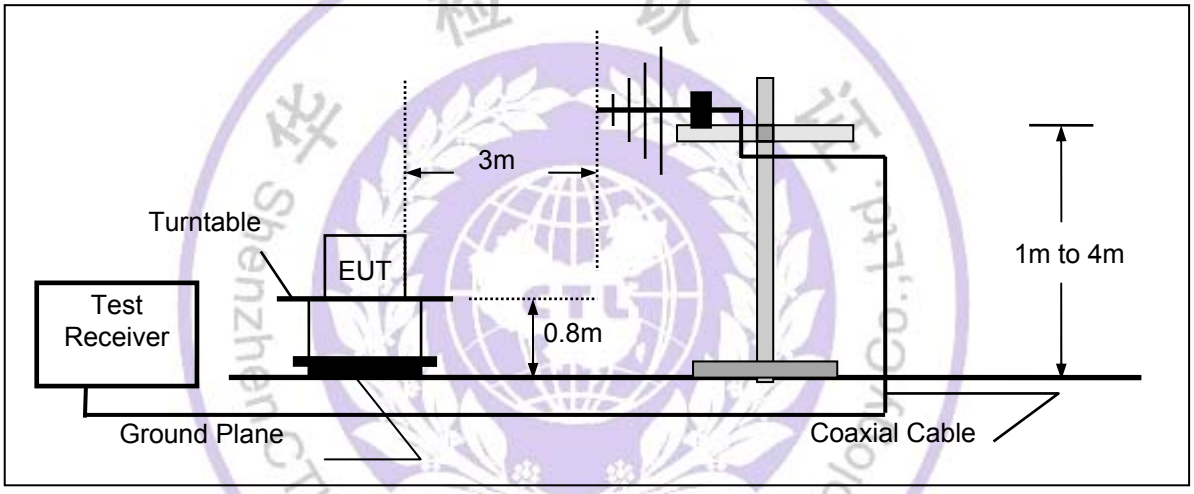
4.2. Radiated Emission Test

TEST CONFIGURATION

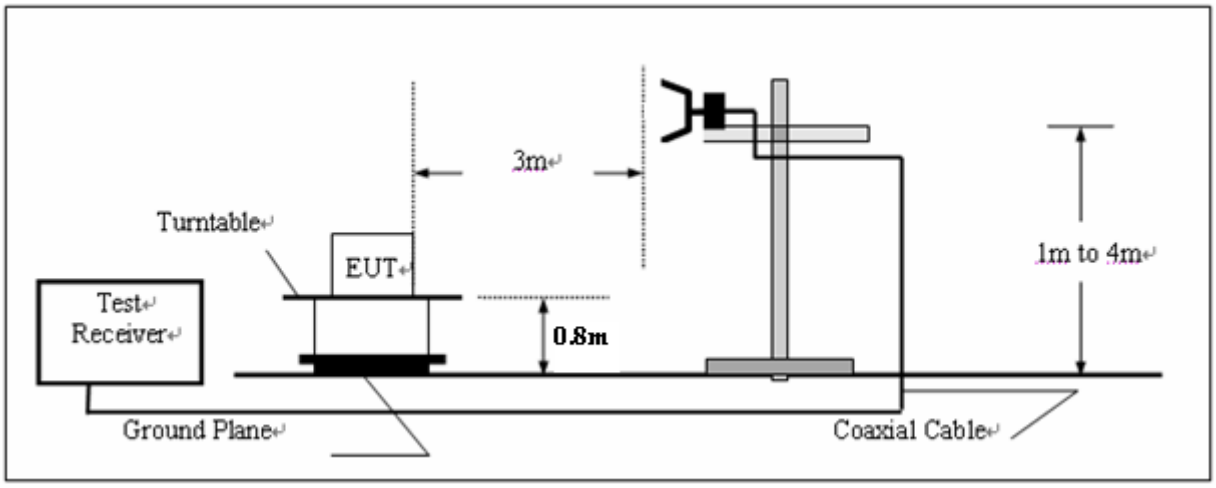
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



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



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



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	

TEST PROCEDURE

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The EUT was placed on a turn table which is 0.8m above ground plane.
3. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Span = wide enough to fully capture the emission being measured; RBW = 1 MHz for f > 1 GHz, 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold.
6. Repeat above procedures until all frequency measurements have been completed.

Note:

Three axes are chosen for pretest, the Z axis is the worst mode for final test.
For battery operated equipment, the equipment tests shall be performed using a new battery.

LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

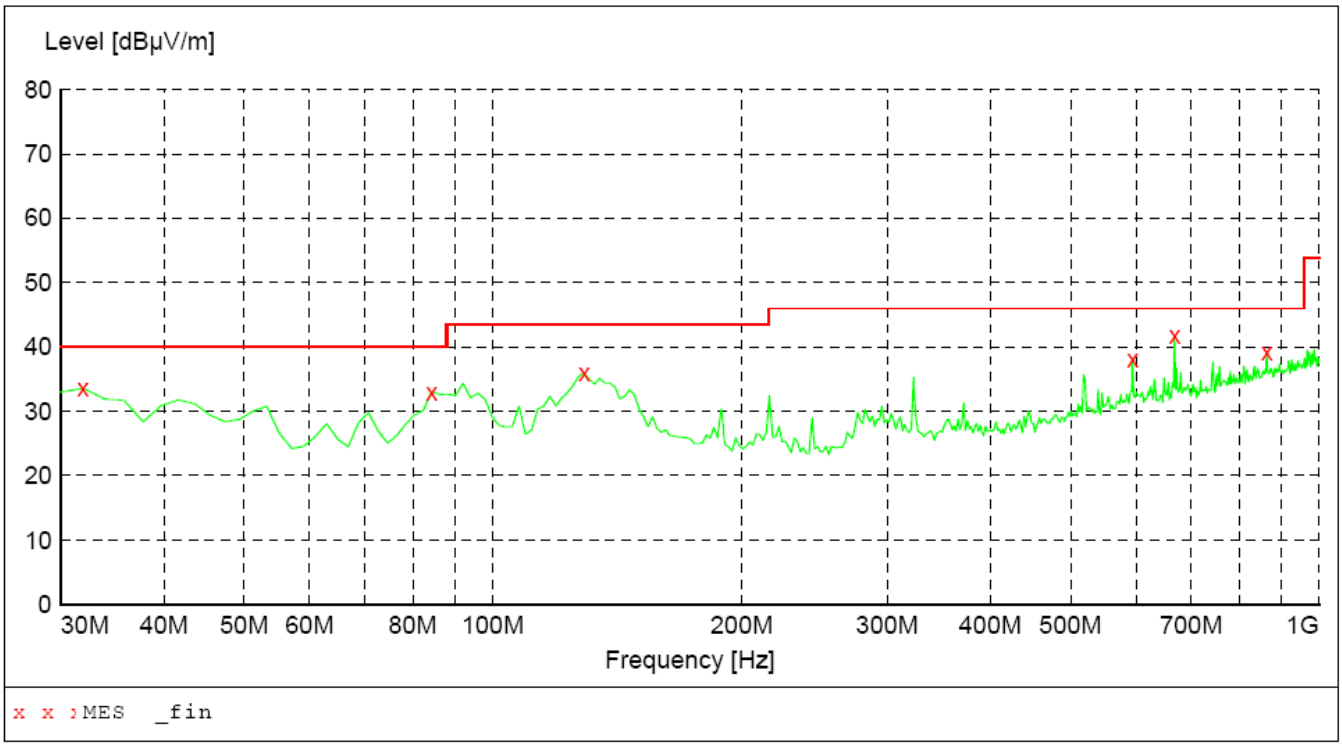
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table. According to § 15.247(d), in any 100kHz bandwidth outside the frequency band in which the EUT is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the100kHz bandwidth within the band that contains the highest level of desired power.

TEST RESULTS

Below 1GHz:

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	QP	Coupled	100 kHz	VULB9163 NEW

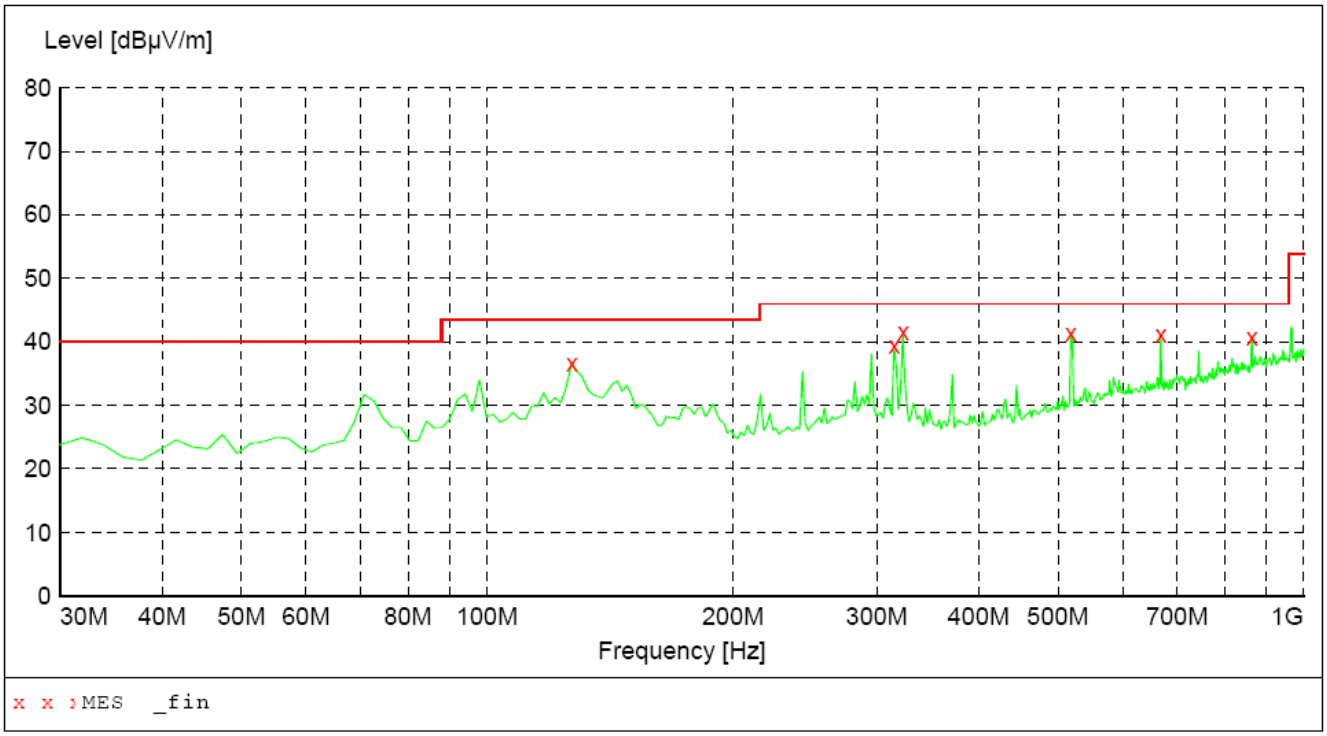


MEASUREMENT RESULT:

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
31.940000	33.60	14.4	40.0	6.4	QP	100.0	15.00	VERTICAL
84.320000	33.00	14.1	40.0	7.0	QP	100.0	124.00	VERTICAL
128.940000	36.00	13.9	43.5	7.5	QP	100.0	60.00	VERTICAL
594.540000	38.20	26.3	46.0	7.8	QP	100.0	238.00	VERTICAL
668.260000	41.80	27.2	46.0	4.2	QP	100.0	325.00	VERTICAL
864.200000	39.30	30.6	46.0	6.7	QP	100.0	75.00	VERTICAL

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	QP	Coupled	100 kHz	VULB9163 NEW



MEASUREMENT RESULT:

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
127.000000	36.60	14.1	43.5	6.9	QP	300.0	25.00	HORIZONTAL
315.180000	39.40	19.1	46.0	6.6	QP	100.0	30.00	HORIZONTAL
322.940000	41.50	19.3	46.0	4.5	QP	100.0	125.00	HORIZONTAL
518.880000	41.30	24.4	46.0	4.7	QP	100.0	350.00	HORIZONTAL
668.260000	41.20	27.2	46.0	4.8	QP	100.0	272.00	HORIZONTAL
864.200000	40.80	30.6	46.0	5.2	QP	100.0	105.00	HORIZONTAL

REMARKS :

1. ＊Undetectable
2. Measuring frequencies from 9KHz to the 1GHz。
3. The IF bandwidth of EMI Test Receiver was 10KHz for below 30MHz, 120KHz for measuring from 30 MHz to 1 GHz and 1 MHz for measuring above 1 GHz

Above 1GHz:
802.11b CH1

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	2390.00	51.90	PK	74.00	22.10	55.30	28.3	4.90	-36.6	-3.40
1	2390.00	43.77	AV	54.00	10.23	47.17	28.3	4.90	-36.6	-3.40
2	*2412.00	106.99	PK			110.39	28.3	4.90	-36.5	-3.40
2	*2412.00	90.90	AV			94.30	28.3	4.90	-36.5	-3.40
3	4824.00	55.50	PK	74.00	18.50	52.30	32.7	7.00	-35.3	3.20
3	4824.00	45.51	AV	54.00	8.49	42.31	32.7	7.00	-35.3	3.20
4	7236.00	59.40	PK	74.00	14.60	50.00	35.8	8.90	-34.8	9.40
4	7236.00	47.76	AV	54.00	6.24	38.36	35.8	8.90	-34.8	9.40
5	9648.00	55.80	PK	74.00	18.20	43.20	37.2	10.20	-36.6	12.60
5	9648.00	49.97	AV	54.00	4.03	37.37	37.2	10.20	-36.6	12.60

ANTENNA POLARITY & TEST DISTANCE:VERTICAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	2390.00	48.93	PK	74.00	25.07	52.33	28.3	4.90	-36.6	-3.40
1	2390.00	44.90	AV	54.00	9.10	48.30	28.3	4.90	-36.6	-3.40
2	*2412.00	105.41	PK			108.81	28.3	4.90	-36.5	-3.40
2	*2412.00	88.81	AV			92.21	28.3	4.90	-36.5	-3.40
3	4824.00	52.07	PK	74.00	21.93	48.87	32.7	7.00	-35.3	3.20
3	4824.00	41.22	AV	54.00	12.78	38.02	32.7	7.00	-35.3	3.20
4	7236.00	53.70	PK	74.00	20.30	44.30	35.8	8.90	-34.8	9.40
4	7236.00	48.78	AV	54.00	5.22	39.38	35.8	8.90	-34.8	9.40
5	9648.00	58.46	PK	74.00	15.54	45.86	37.2	10.20	-36.6	12.60
5	9648.00	50.24	AV	54.00	3.76	37.64	37.2	10.20	-36.6	12.60

REMARKS:
1. Emission level (dBuV/m) =Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) -Pre-amplifier Factor
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.
5. The limit value is defined as per 15.247
6. “* “: Fundamental frequency
7. For Wireless 802.11b mode at 11Mbps.

802.11b CH6

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2437.00	108.19	PK			111.39	28.3	5.10	-36.6	-3.20
1	*2437.00	89.11	AV			92.31	28.3	5.10	-36.6	-3.20
2	4874.00	51.72	PK	74.00	22.28	48.32	32.3	7.60	-36.5	3.40
2	4874.00	40.53	AV	54.00	13.47	37.13	32.3	7.60	-36.5	3.40
3	7311.00	51.79	PK	74.00	22.21	42.39	36.1	8.60	-35.3	9.40
3	7311.00	49.29	AV	54.00	4.71	39.89	36.1	8.60	-35.3	9.40
4	9748.00	57.80	PK	74.00	16.20	45.20	37.2	10.20	-34.8	12.60
4	9748.00	48.89	AV	54.00	5.11	36.29	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2437.00	105.15	PK			108.35	28.3	5.10	-36.6	-3.20
1	*2437.00	87.16	AV			90.36	28.3	5.10	-36.6	-3.20
2	4874.00	52.71	PK	74.00	21.29	49.31	32.3	7.60	-36.5	3.40
2	4874.00	42.23	AV	54.00	11.77	38.83	32.3	7.60	-36.5	3.40
3	7311.00	56.22	PK	74.00	17.78	46.82	36.1	8.60	-35.3	9.40
3	7311.00	46.73	AV	54.00	7.27	37.33	36.1	8.60	-35.3	9.40
4	9748.00	57.81	PK	74.00	16.19	45.21	37.2	10.20	-34.8	12.60
4	9748.00	49.90	AV	54.00	4.10	37.30	37.2	10.20	-34.8	12.60

REMARKS:
1. Emission level (dBuV/m) =Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) -Pre-amplifier Factor
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.
5. The limit value is defined as per 15.247
6. “* “: Fundamental frequency
7. For Wireless 802.11b mode at 11Mbps.

802.11b CH11

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2462.00	107.03	PK			110.33	28.6	4.70	-36.6	-3.30
1	*2462.00	90.52	AV			93.82	28.6	4.70	-36.6	-3.30
2	2483.50	43.02	PK	74.00	30.98	46.32	28.6	4.70	-36.6	-3.30
2	2483.50	39.09	AV	54.00	14.91	42.39	28.6	4.70	-36.6	-3.30
3	4022.04	51.22	PK	74.00	22.78	49.32	32.2	6.20	-36.5	1.90
3	4022.04	38.80	AV	54.00	15.20	36.90	32.2	6.20	-36.5	1.90
4	4924.00	51.98	PK	74.00	22.02	48.18	33.0	7.00	-36.2	3.80
4	4924.00	40.16	AV	54.00	13.84	36.36	33.0	7.00	-36.2	3.80
5	7386.00	57.60	PK	74.00	16.40	48.20	36.2	8.50	-35.3	9.40
5	7386.00	45.70	AV	54.00	8.30	36.30	36.2	8.50	-35.3	9.40
6	9848.00	57.63	PK	74.00	16.37	45.03	37.2	10.20	-34.8	12.60
6	9848.00	49.93	AV	54.00	4.07	37.33	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2462.00	105.28	PK			108.58	28.6	4.70	-36.6	-3.30
1	*2462.00	88.03	AV			91.33	28.6	4.70	-36.6	-3.30
2	2483.50	42.98	PK	74.00	31.02	46.28	28.6	4.70	-36.6	-3.30
2	2483.50	36.91	AV	54.00	17.09	40.21	28.6	4.70	-36.6	-3.30
3	4022.04	51.28	PK	74.00	22.72	49.38	32.2	6.20	-36.5	1.90
3	4022.04	47.12	AV	54.00	6.88	45.22	32.2	6.20	-36.5	1.90
4	4924.00	48.10	PK	74.00	25.90	44.30	33.0	7.00	-36.2	3.80
4	4924.00	45.83	AV	54.00	8.17	42.03	33.0	7.00	-36.2	3.80
5	7386.00	57.78	PK	74.00	16.22	48.38	36.2	8.50	-35.3	9.40
5	7386.00	47.75	AV	54.00	6.25	38.35	36.2	8.50	-35.3	9.40
6	9848.00	55.99	PK	74.00	18.01	43.39	37.2	10.20	-34.8	12.60
6	9848.00	48.28	AV	54.00	5.72	35.68	37.2	10.20	-34.8	12.60

REMARKS:
1. Emission level (dBuV/m) =Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB) -Pre-amplifier Factor
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.
5. The limit value is defined as per 15.247
6. “* “: Fundamental frequency
7. For Wireless 802.11b mode at 11Mbps.

802.11g CH1

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	2390.00	50.42	PK	74.00	23.58	53.82	28.3	4.90	-36.60	-3.40
1	2390.00	44.90	AV	54.00	9.10	48.30	28.3	4.90	-36.60	-3.40
2	*2412.00	107.64	PK			111.04	28.3	4.90	-36.60	-3.40
2	*2412.00	87.90	AV			91.30	28.3	4.90	-36.60	-3.40
3	4824.00	54.84	PK	74.00	19.16	51.34	32.7	7.00	-36.20	3.50
3	4824.00	45.85	AV	54.00	8.15	42.35	32.7	7.00	-36.20	3.50
4	7236.00	54.57	PK	74.00	19.43	45.17	35.8	8.90	-35.30	9.40
4	7236.00	51.50	AV	54.00	2.50	42.10	35.8	8.90	-35.30	9.40
5	9648.00	54.90	PK	74.00	19.10	42.30	37.2	10.20	-34.80	12.60
5	9648.00	49.04	AV	54.00	4.96	36.44	37.2	10.20	-34.80	12.60

ANTENNA POLARITY & TEST DISTANCE:VERTICAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	2390.00	50.74	PK	74.00	23.26	54.14	28.3	4.90	-36.60	-3.40
1	2390.00	45.15	AV	54.00	8.85	48.55	28.3	4.90	-36.60	-3.40
2	*2412.00	104.92	PK			108.32	28.3	4.90	-36.60	-3.40
2	*2412.00	86.75	AV			90.15	28.3	4.90	-36.60	-3.40
3	4824.00	48.81	PK	74.00	25.19	45.31	32.7	7.00	-36.20	3.50
3	4824.00	43.13	AV	54.00	10.87	39.63	32.7	7.00	-36.20	3.50
4	7236.00	55.70	PK	74.00	18.30	46.30	35.8	8.90	-35.30	9.40
4	7236.00	47.07	AV	54.00	6.93	37.67	35.8	8.90	-35.30	9.40
5	9648.00	57.90	PK	74.00	16.10	45.30	37.2	10.20	-34.80	12.60
5	9648.00	48.91	AV	54.00	5.09	36.31	37.2	10.20	-34.80	12.60

REMARKS:
1. Emission level (dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB))+ Pre-amplifier Factor
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.
5. The limit value is defined as per 15.247
6. “* “: Fundamental frequency
7. For Wireless 802.11g mode at 54Mbps.

802.11g CH6

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2437.00	104.14	PK			107.34	28.3	5.10	-36.6	-3.20
1	*2437.00	87.03	AV			90.23	28.3	5.10	-36.6	-3.20
2	4874.00	52.56	PK	74.00	21.44	49.16	32.3	7.60	-36.5	3.40
2	4874.00	38.70	AV	54.00	15.30	35.30	32.3	7.60	-36.5	3.40
3	7311.00	54.71	PK	74.00	19.29	45.31	36.1	8.60	-35.3	9.40
3	7311.00	45.75	AV	54.00	8.25	36.35	36.1	8.60	-35.3	9.40
4	9748.00	58.99	PK	74.00	15.01	46.39	37.2	10.20	-34.8	12.60
4	9748.00	47.99	AV	54.00	6.01	35.39	37.2	10.20	-34.8	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2437.00	104.70	PK			107.90	28.3	5.10	-36.6	-3.20
1	*2437.00	87.15	AV			90.35	28.3	5.10	-36.6	-3.20
2	4874.00	49.79	PK	74.00	24.21	46.39	32.3	7.60	-36.5	3.40
2	4874.00	38.83	AV	54.00	15.17	35.43	32.3	7.60	-36.5	3.40
3	7311.00	55.79	PK	74.00	18.21	46.39	36.1	8.60	-35.3	9.40
3	7311.00	46.15	AV	54.00	7.85	36.75	36.1	8.60	-35.3	9.40
4	9748.00	58.09	PK	74.00	15.91	45.49	37.2	10.20	-34.8	12.60
4	9748.00	48.97	AV	54.00	5.03	36.37	37.2	10.20	-34.8	12.60

REMARKS:
1. Emission level (dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB))+ Pre-amplifier Factor
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.
5. The limit value is defined as per 15.247
6. "* ": Fundamental frequency
7. For Wireless 802.11g mode at 54Mbps.

802.11g CH11

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2462.00	104.15	PK			107.45	28.20	5.10	-36.60	-3.30
1	*2462.00	87.03	AV			90.33	28.20	5.10	-36.60	-3.30
2	2483.50	47.25	PK	74.00	26.75	50.55	28.20	5.10	-36.60	-3.30
2	2483.50	39.11	AV	54.00	14.89	42.41	28.20	5.10	-36.60	-3.30
3	4924.00	53.14	PK	74.00	20.86	49.34	33.00	7.00	-36.20	3.80
3	4924.00	45.23	AV	54.00	8.77	41.43	33.00	7.00	-36.20	3.80
4	7386.00	58.96	PK	74.00	15.04	49.56	36.20	8.50	-35.30	9.40
4	7386.00	47.17	AV	54.00	6.83	37.77	36.20	8.50	-35.30	9.40
5	9848.00	58.94	PK	74.00	15.06	46.34	37.30	10.10	-34.80	12.60
5	9848.00	49.92	AV	54.00	4.08	37.32	37.30	10.10	-34.80	12.60

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre- amplifier (dB)	Correction Factor (dB/m)
1	*2462.00	103.80	PK			107.10	28.20	5.10	-36.60	-3.30
1	*2462.00	87.04	AV			90.34	28.20	5.10	-36.60	-3.30
2	2483.50	49.84	PK	74.00	24.16	53.14	28.20	5.10	-36.60	-3.30
2	2483.50	43.00	AV	54.00	11.00	46.30	28.20	5.10	-36.60	-3.30
3	4924.00	49.68	PK	74.00	24.32	45.88	33.00	7.00	-36.20	3.80
3	4924.00	46.14	AV	54.00	7.86	42.34	33.00	7.00	-36.20	3.80
4	7386.00	58.27	PK	74.00	15.73	48.87	36.20	8.50	-35.30	9.40
4	7386.00	47.73	AV	54.00	6.27	38.33	36.20	8.50	-35.30	9.40
5	9848.00	52.95	PK	74.00	21.05	40.35	37.30	10.10	-34.80	12.60
5	9848.00	48.04	AV	54.00	5.96	35.44	37.30	10.10	-34.80	12.60

REMARKS:
1. Emission level (dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB))+ Pre-amplifier Factor
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.
5. The limit value is defined as per 15.247
6. “* “: Fundamental frequency
7. For Wireless 802.11g mode at 54Mbps.

The field strength is calculated by adding the Antenna Factor. Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Preamplifier Factor.

Remark: No any other emissions level which are attenuated less than 20dB below the limit

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

According to 15.31(o), The amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part.

Hence there no other emissions have been reported.

Remark:

1). As shown in Section, for frequencies above 1000 MHz. the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

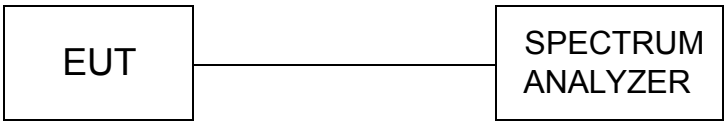
2). The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.

3) Pre-Scan has been conducted to determine the worst-case mode from all possible Combinations between available modulations, data rates and antenna ports, and found the EUT worse case mode: 802.11b (11MHz), 802.11g (54MHz)

4）For this intentional radiator operates below 25 GHz. The spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the 4th harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 4th harmonic.

4.3. 6dB Bandwidth Measurement

TEST CONFIGURATION



TEST PROCEDURE

1. The testing follows FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. 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. The 6 dB bandwidth must be greater than 500 kHz.
4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

LIMIT

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

TEST RESULTS

1. The EUT communicationg with 802.11b Mode

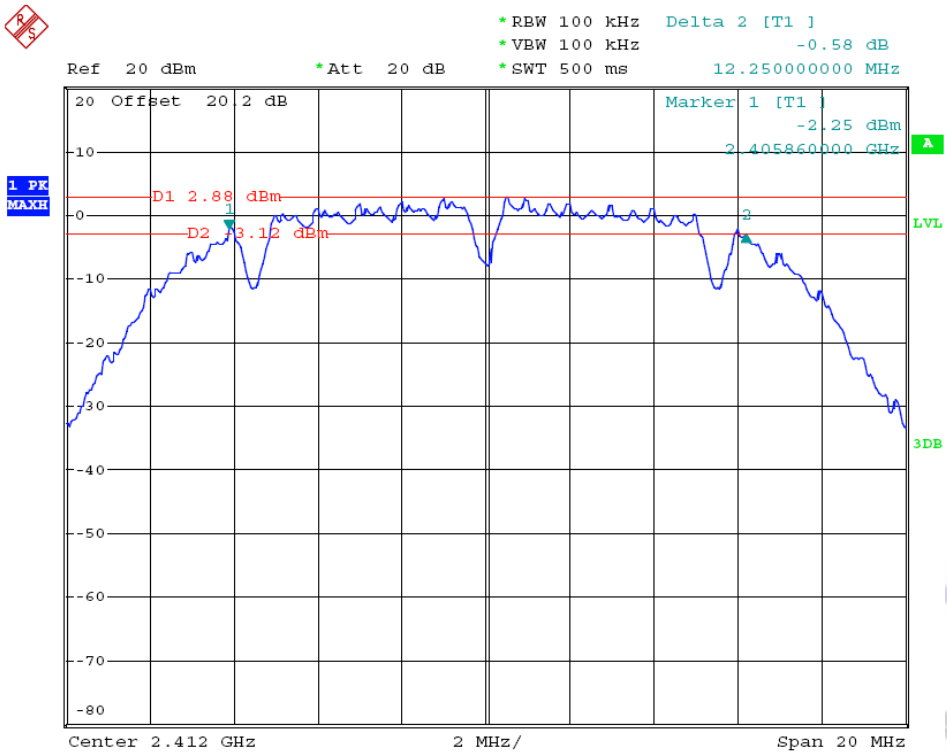
CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
2412	12.25	0.5	PASS
2437	12.26	0.5	PASS
2462	12.30	0.5	PASS

2. The EUT communicationg with 802.11g Mode

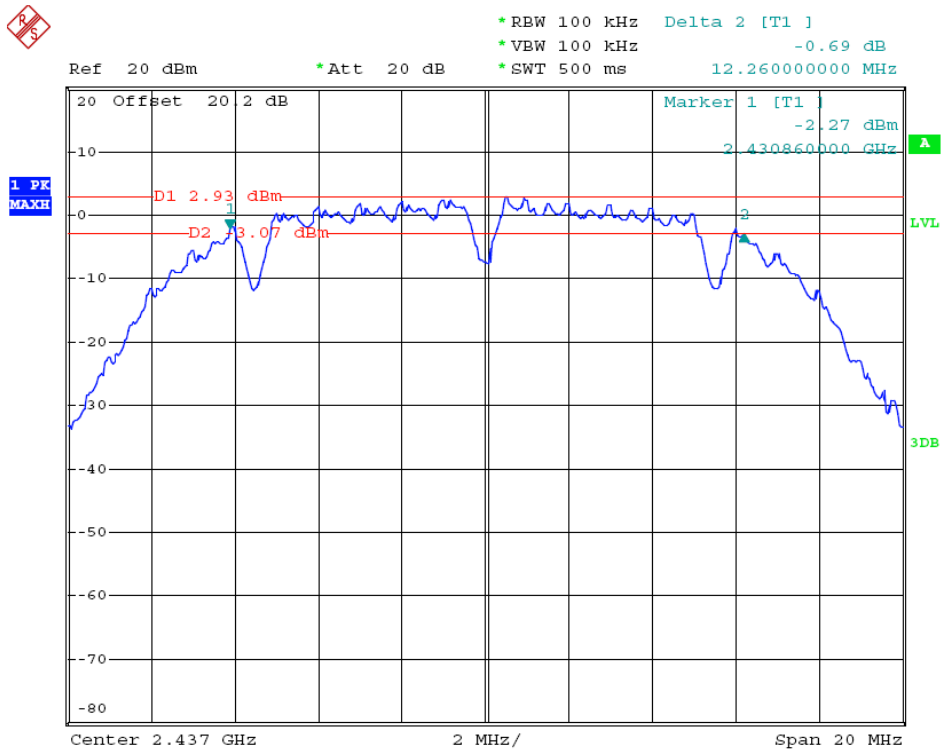
CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
2412	16.32	0.5	PASS
2437	16.34	0.5	PASS
2462	16.36	0.5	PASS

Conclusion: The unit does meet the FCC requirements.

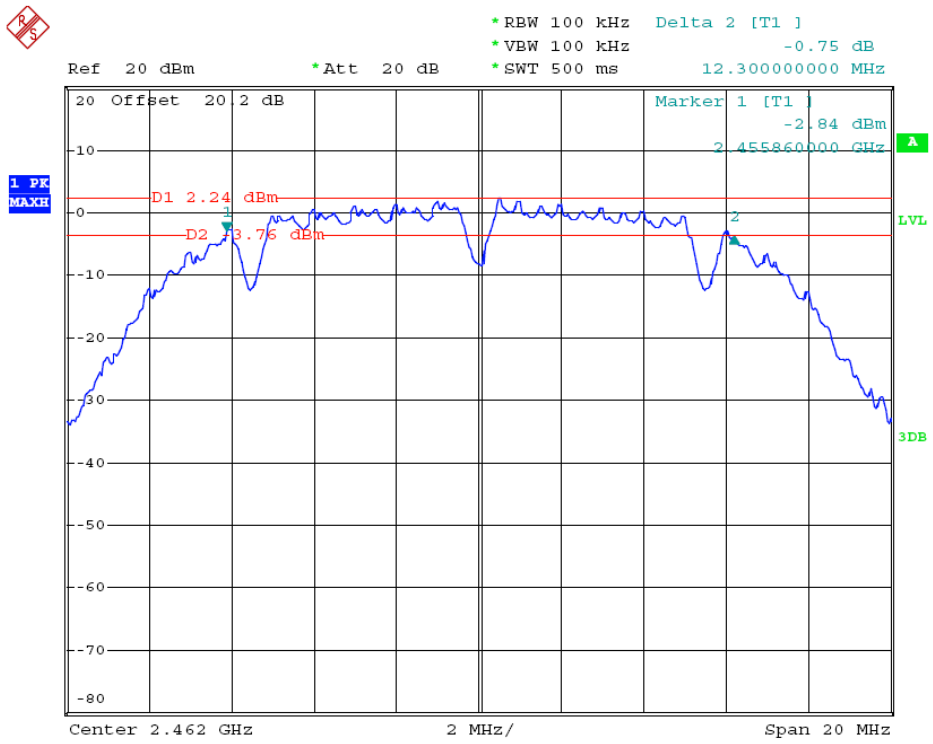
802.11b-CH1



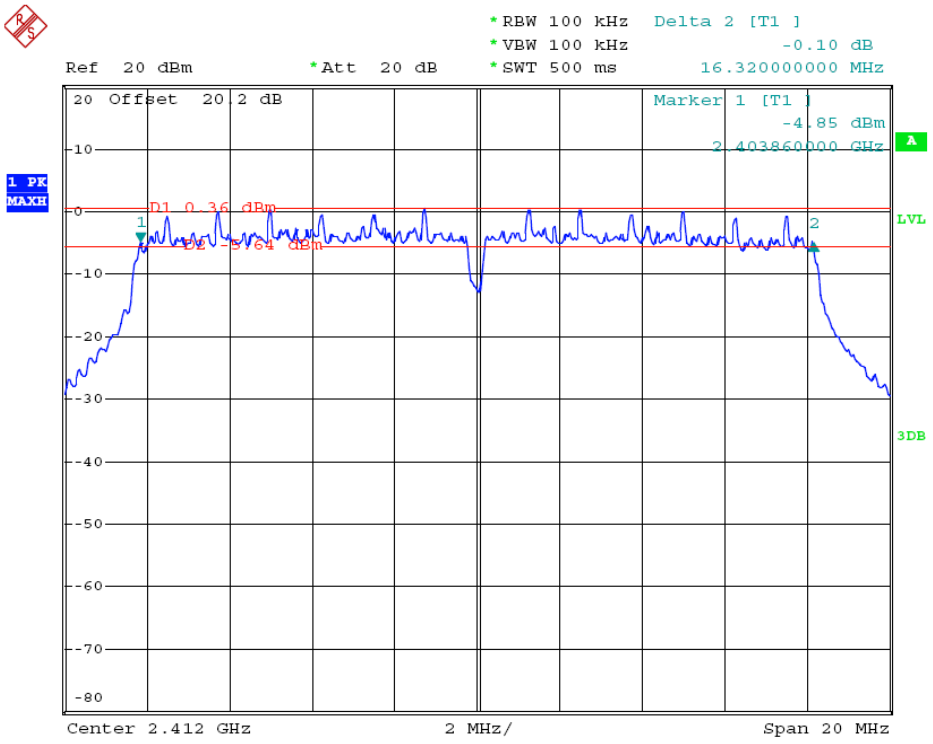
802.11b-CH6



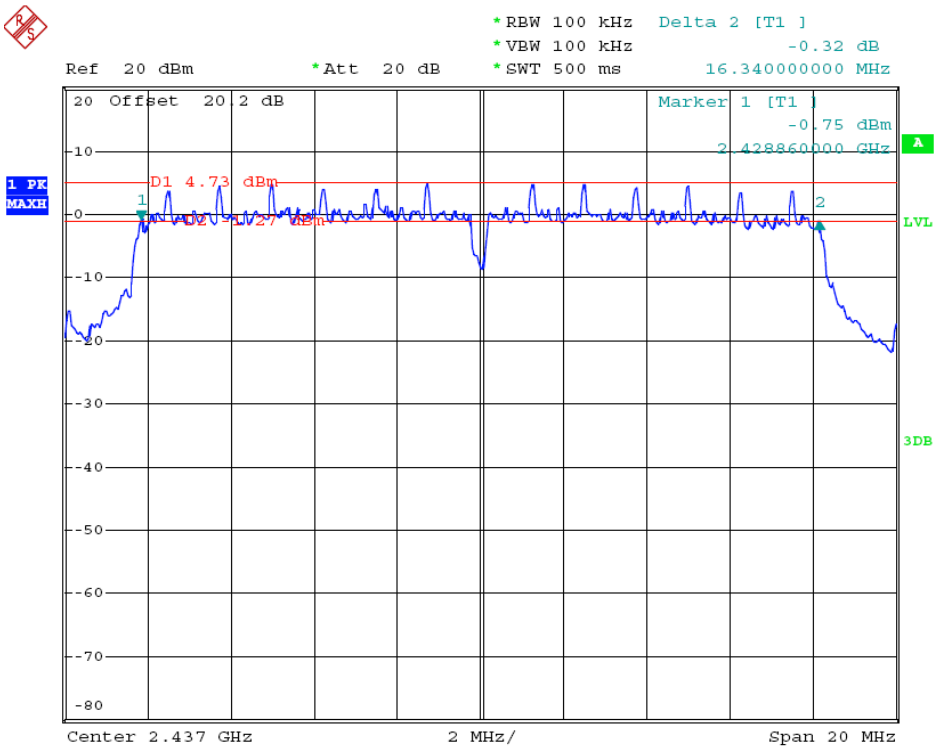
802.11b-CH11



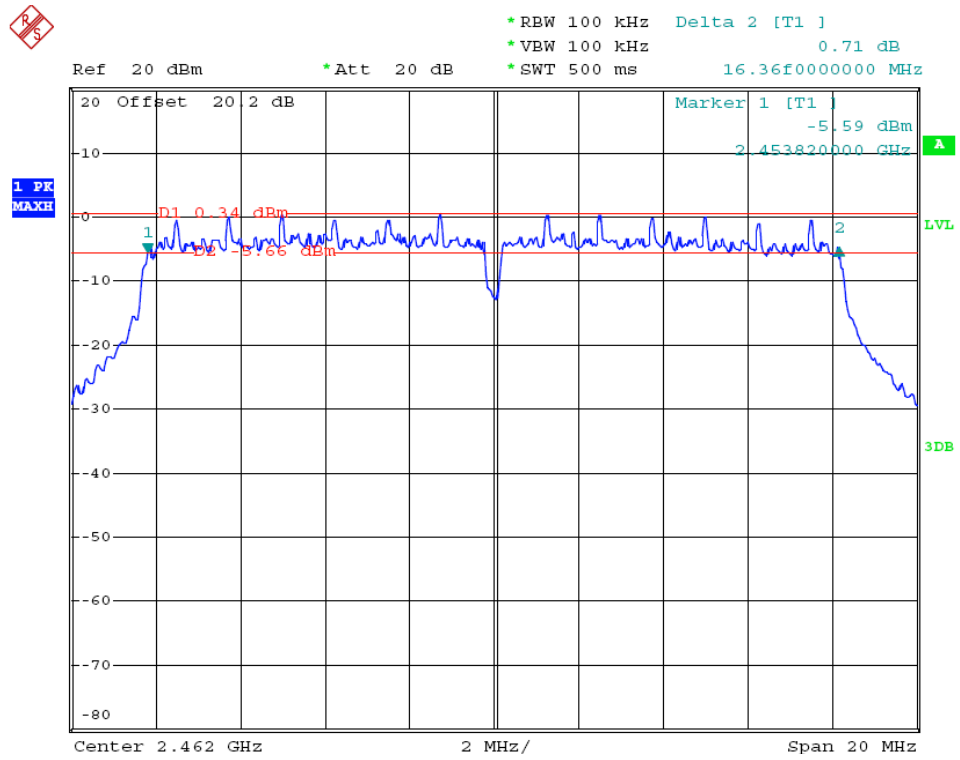
802.11g-CH1



802.11g-CH6

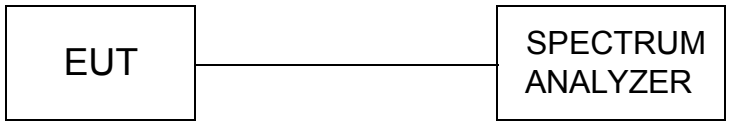


802.11g-CH11



4.4. Maximum Peak Output Power

TEST CONFIGURATION



TEST PROCEDURE

According to C63.10 -2009,The EUT was directly connected to the power meter / spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

For IEEE 802.11b/g and IEEE802.11n HT20 mode, use a PK power meter which's bandwidth is above 26dB bandwidth of signal to measure out each test modes' PK output power.

LIMIT

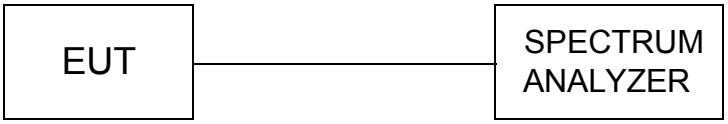
The Peak Output Power Measurement limits are 30dBm.

TEST RESULTS

Mode	Channel	Peak Power Output (dBm)	Peak Power Limit (dBm)	PASS / FAIL
802.11b	1	13.60	30	PASS
	6	12.35	30	PASS
	11	12.17	30	PASS
802.11g	1	9.97	30	PASS
	6	9.56	30	PASS
	11	9.31	30	PASS

4.5. Band Edge Measurement

TEST CONFIGURATION



TEST PROCEDURE

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.4 and FCC KDB Publication No. 558074 (Measurement Guidelines of DTS) with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBM= 300KHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength.

The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW and VBW to 100 kHz, to measure the conducted peak band edge.

LIMIT

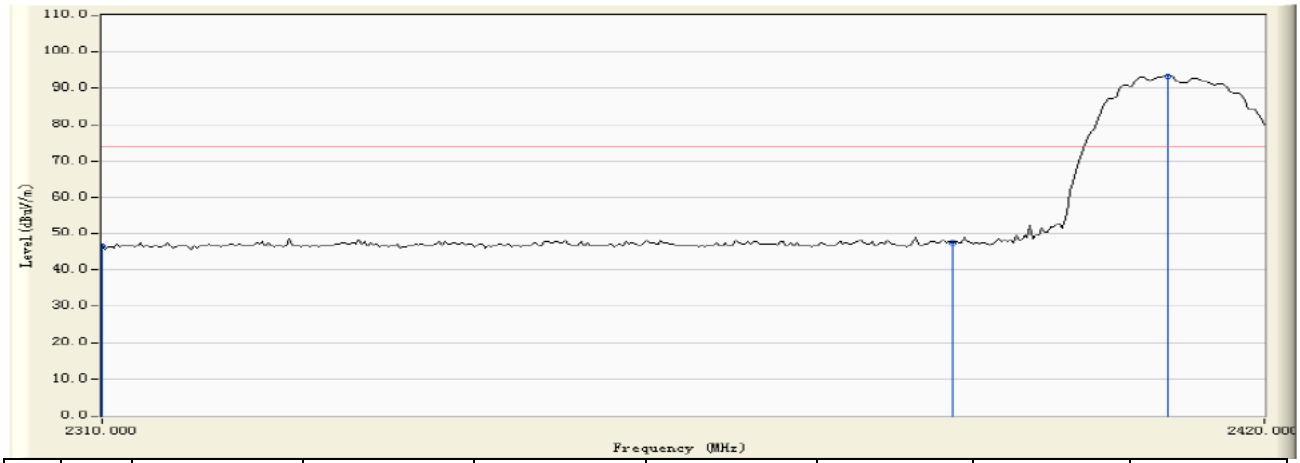
1. Below -20dB of the highest emission level in operating band.

2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209(see Section 15.205(c)).

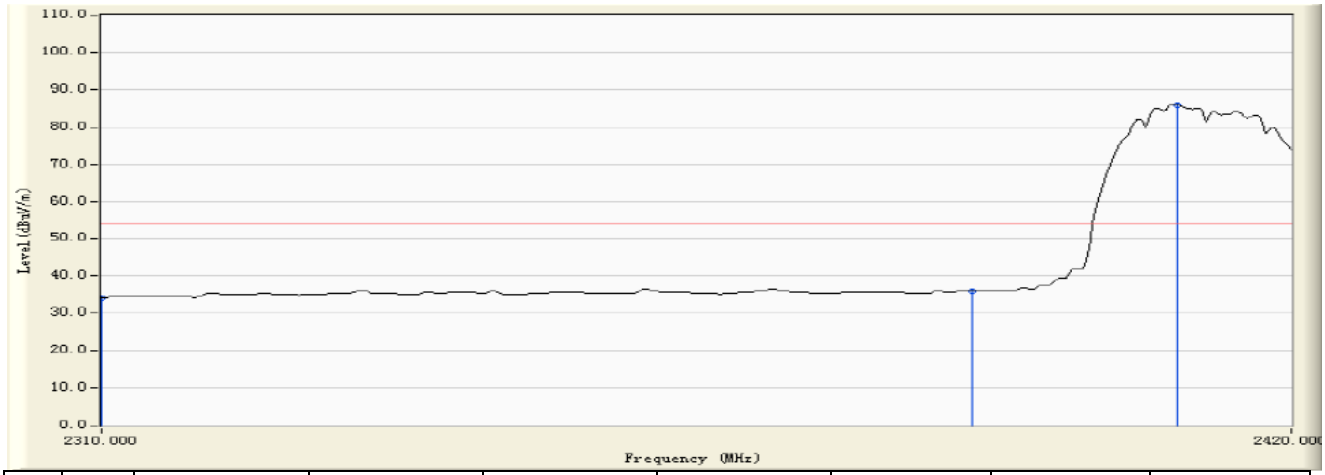
Frequency (MHz)	Limit Average (dBuv/m)	Limit Peak (dBuv/m)
Below 2390 or Above 2483.5	54	74

TEST RESULTS

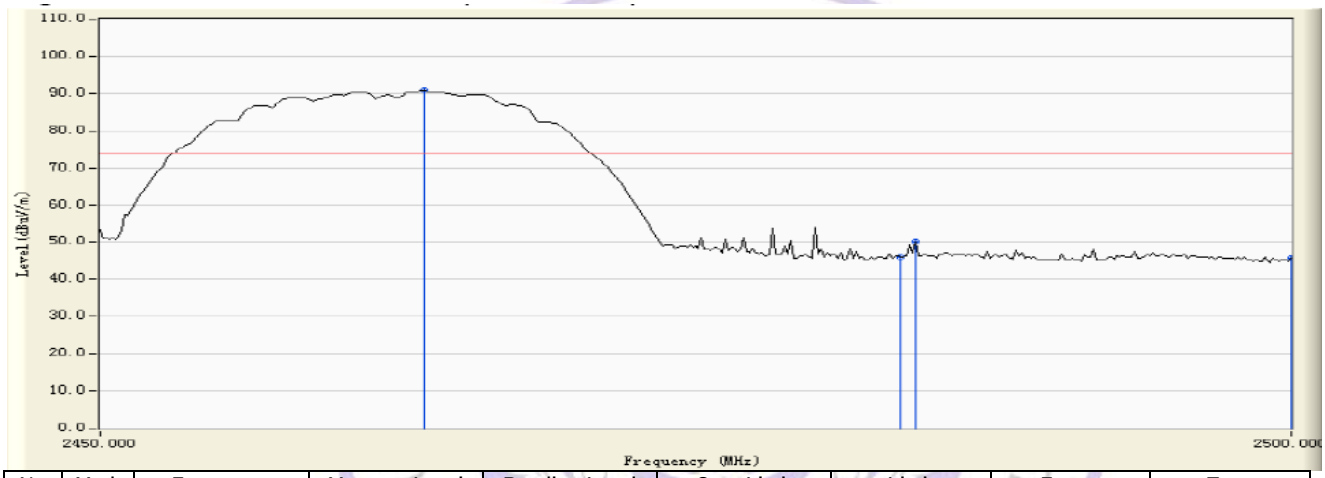
Transmitting mode: 802.11b
ANT Polarity: Horizontal



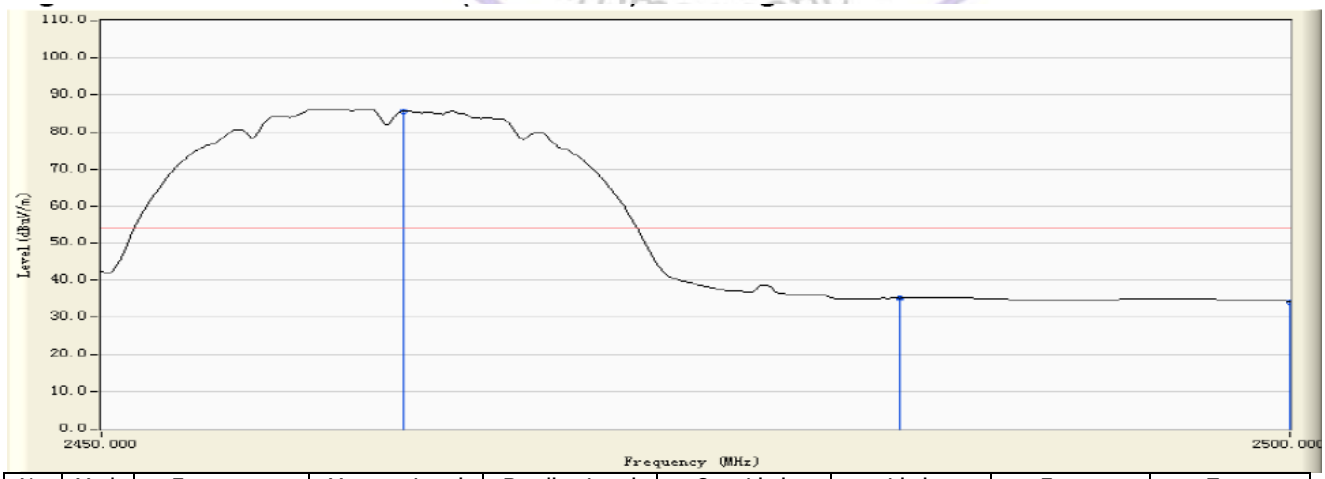
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2312.000	47.22	16.22	-26.78	74.00	31.0	PK
2		2390.000	48.15	37.15	-25.85	74.00	31.0	PK
3	*	2410.550	96.35	85.35	N/A	N/A	31.0	PK



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2312.000	34.26	23.26	-19.74	54.00	31.0	AV
2		2390.000	36.08	25.08	-17.92	54.00	31.0	AV
3	*	2410.100	84.88	73.88	N/A	N/A	31.0	AV

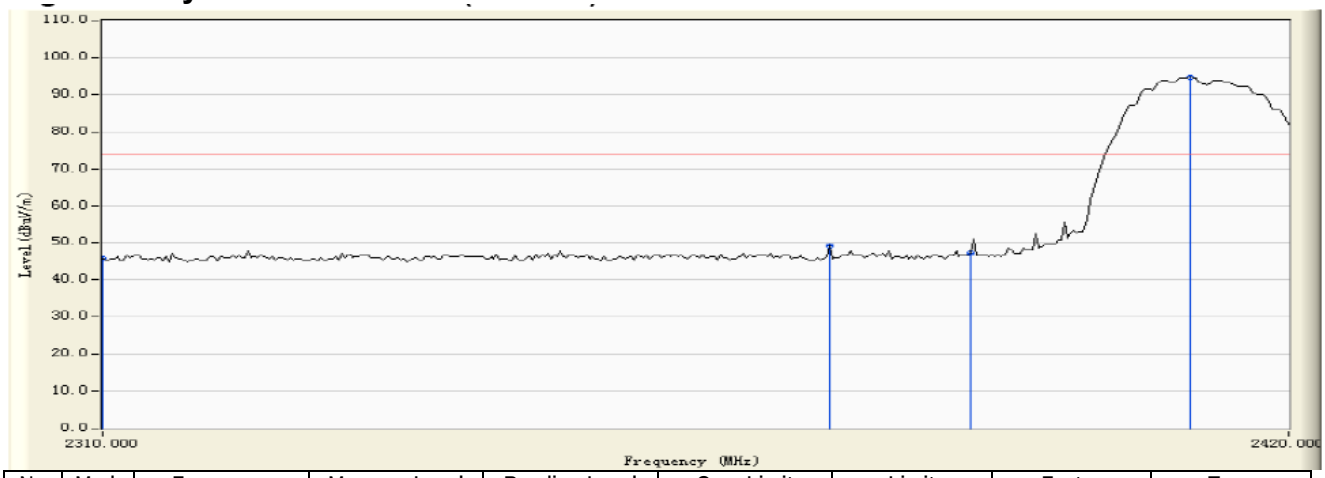


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2463.000	90.75	60.75	N/A	N/A	30.0	PK
2		2483.500	46.10	16.10	-27.90	74.00	30.0	PK
3		2484.100	51.32	21.32	-22.68	74.00	30.0	PK
4		2500.000	45.49	15.49	-28.51	74.00	30.0	PK

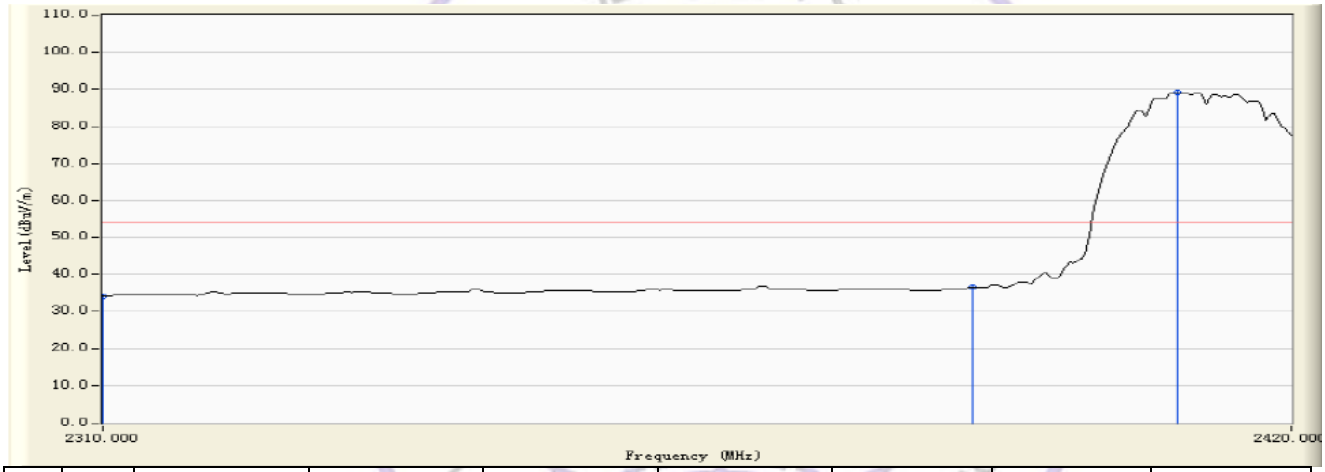


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.600	86.12	56.12	N/A	N/A	30.0	AV
2		2483.500	34.90	4.90	-19.10	54.00	30.0	AV
3		2500.000	34.20	4.20	-19.80	54.00	30.0	AV

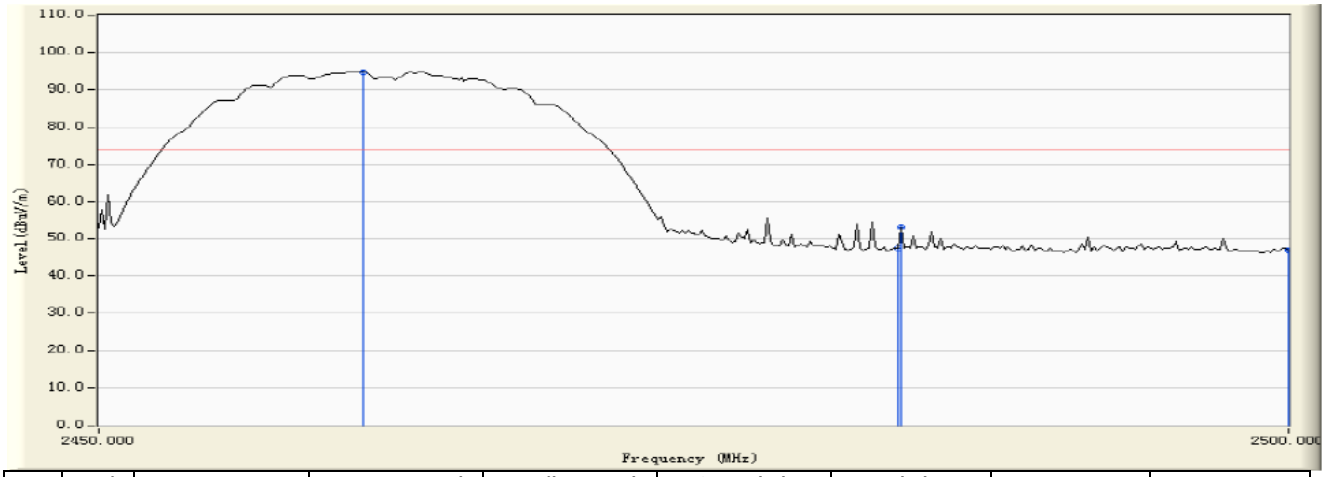
ANT Polarity: Vertical



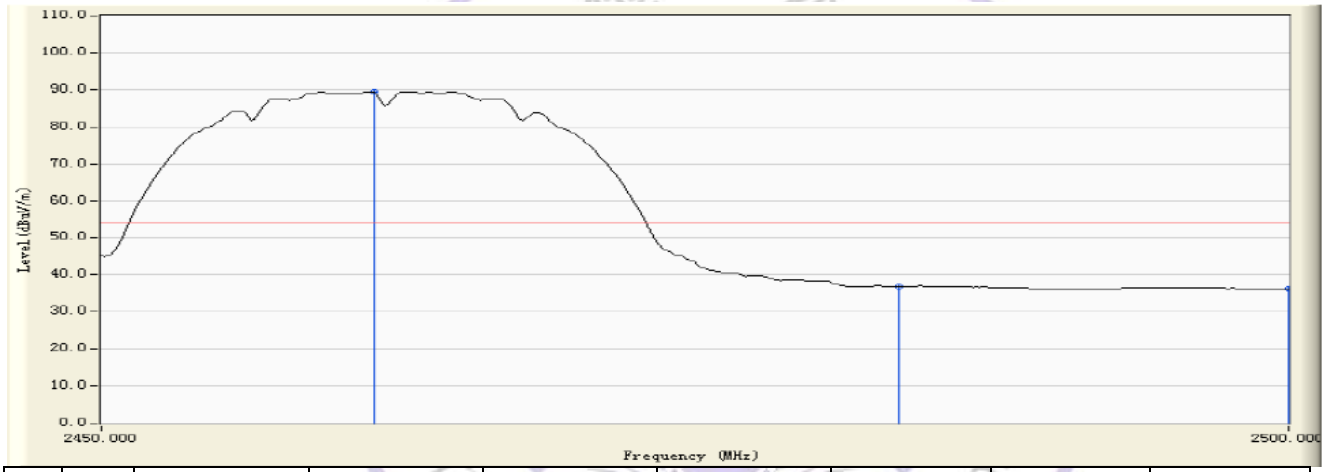
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2310.000	45.30	34.30	-28.70	74.00	31.0	PK
2		2376.750	48.60	37.60	-25.40	74.00	31.0	PK
3		2390.000	47.11	36.11	-26.89	74.00	31.0	PK
4	*	2410.700	95.63	84.63	N/A	N/A	31.0	PK



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2310.000	34.80	3.80	-19.20	54.00	31.0	AV
2		2390.000	35.20	4.20	-18.80	54.00	31.0	AV
3	*	2410.000	89.30	58.30	N/A	N/A	31.0	AV

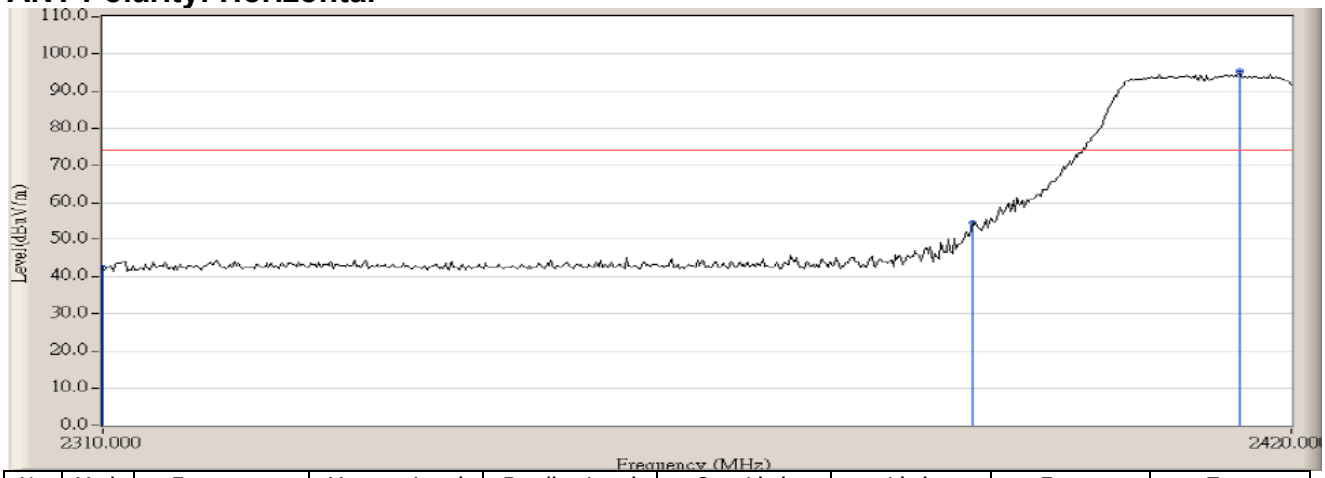


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.000	94.30	64.30	N/A	N/A	30.0	PK
2		2483.500	47.50	17.50	-26.50	74.00	30.0	PK
3		2483.620	53.10	43.10	-20.90	74.00	30.0	PK
4		2500.000	47.30	37.30	-26.70	74.00	30.0	PK



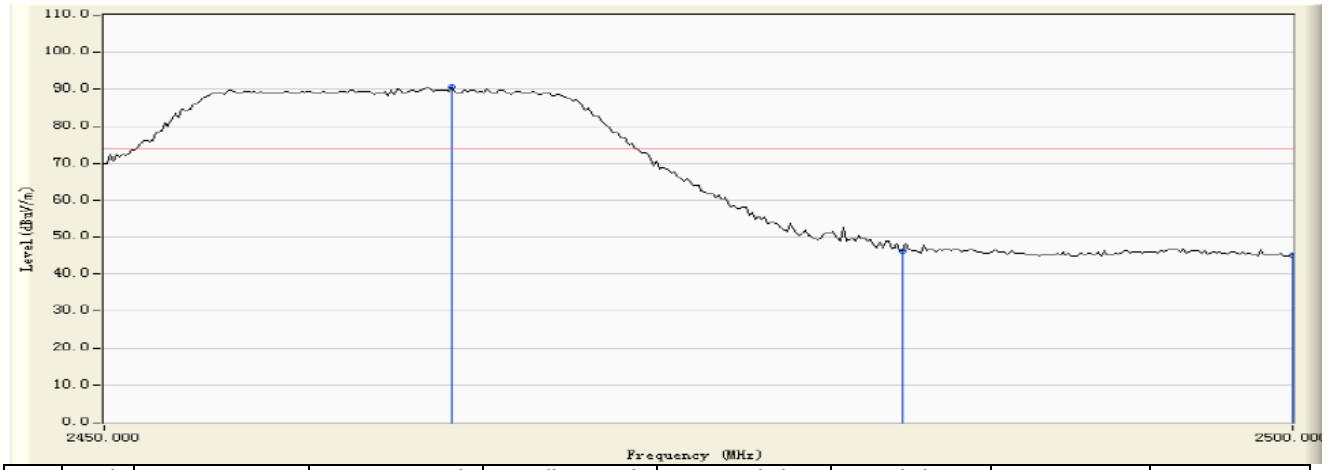
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.250	89.20	59.20	N/A	N/A	30.0	AV
2		2483.500	37.10	7.10	-16.90	54.00	30.0	AV
3		2500.000	36.90	6.90	-17.10	54.00	30.0	AV

Transmitting mode: 802.11g
ANT Polarity: Horizontal

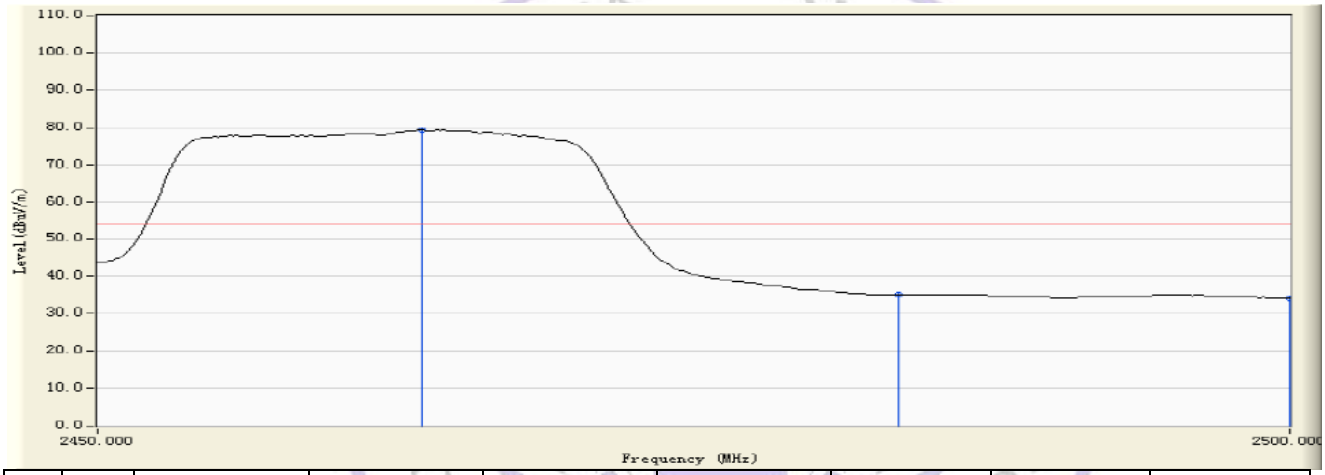


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2310.000	42.40	11.40	-31.6	74.00	31.0	PK
2		2390.000	55.10	24.10	-18.9	74.00	31.0	PK
3	*	2414.960	95.20	64.20	N/A	N/A	31.0	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2310.000	31.10	0.10	-22.9	54.00	31.0	AV
2		2390.000	34.10	3.10	-19.9	54.00	31.0	AV
3	*	2414.915	83.20	52.20	N/A	N/A	31.0	AV

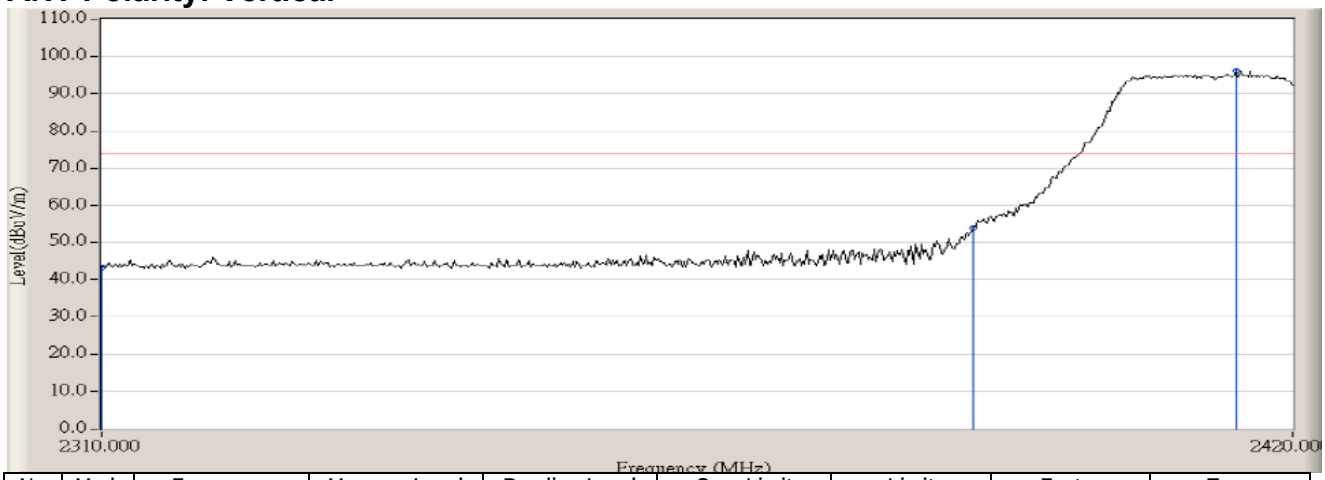


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.500	90.30	60.30	N/A	N/A	30.0	PK
2		2483.500	46.20	16.20	-27.8	74.00	30.0	PK
3		2500.000	45.00	15.00	-29.00	74.00	30.0	PK

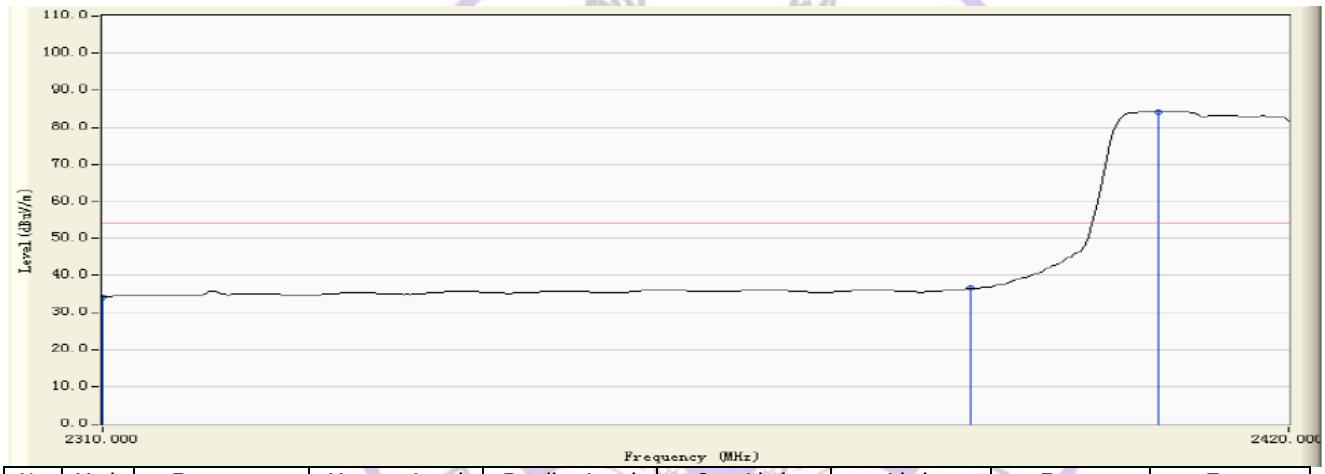


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2464.300	79.50	49.50	N/A	N/A	30.0	AV
2		2483.500	35.10	5.10	-18.90	54.00	30.0	AV
3		2500.000	34.50	4.50	-19.50	54.00	30.0	AV

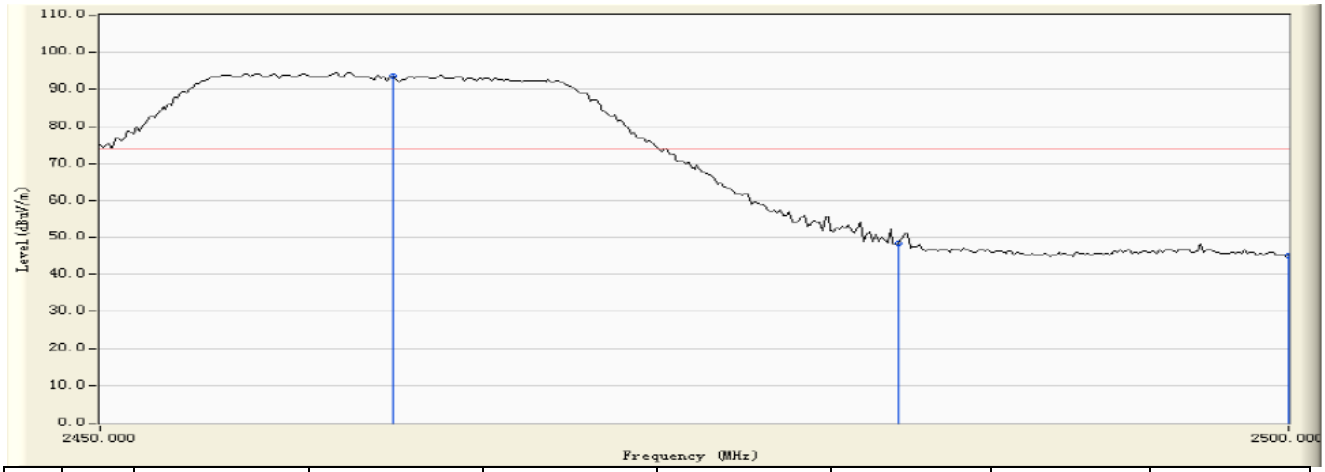
ANT Polarity: Vertical



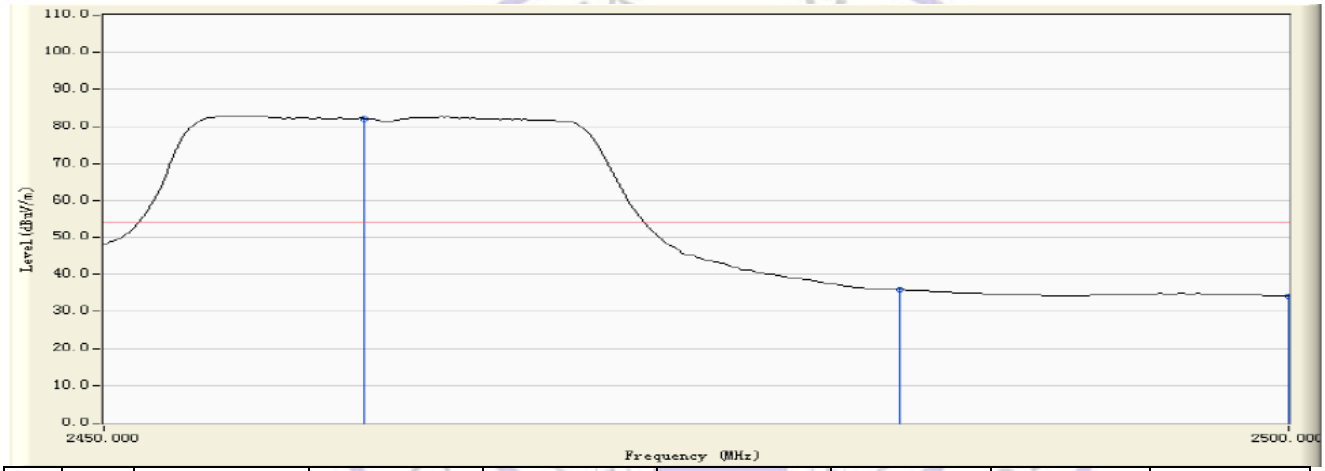
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2310.000	43.30	12.30	-30.70	74.00	31.0	PK
2		2390.000	54.10	43.10	-19.90	74.00	31.0	PK
3	*	2414.620	96.00	65.00	N/A	N/A	31.0	PK



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		2310.000	34.20	3.20	-19.80	54.00	31.0	AV
2		2390.000	36.20	5.20	-17.80	54.00	31.0	AV
3	*	2407.865	84.20	53.20	N/A	N/A	31.0	AV



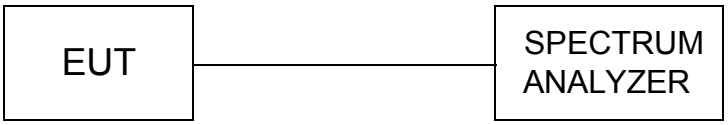
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2462.200	94.30	64.30	N/A	N/A	30.0	PK
2		2483.500	48.30	18.30	-25.70	74.00	30.0	PK
3		2500.000	45.15	15.15	-28.85	74.00	30.0	PK



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2461.000	82.30	52.30	N/A	N/A	30.0	AV
2		2483.500	36.10	6.10	-17.90	54.00	30.0	AV
3		2500.000	35.20	5.20	-18.80	54.00	30.0	AV

4.6. Power Spectral Density Measurement

TEST CONFIGURATION



TEST PROCEDURE

1. The testing follows the FCC KDB Publication No. 558074 (Measurement Guidelines of DTS).
2. The transmitter output (antenna port) was connected to the spectrum analyser.
3. Set RBW of spectrum analyzer to 3kHz and VBW to 10kHz. Set Detector to Peak, Trace to Max Hold.
4. Mark the frequency with maximum peak power as the center of the display of the spectrum.
5. Set the span to 1.5MHz and the sweep time to 100s and record the maximum peak value.

LIMIT

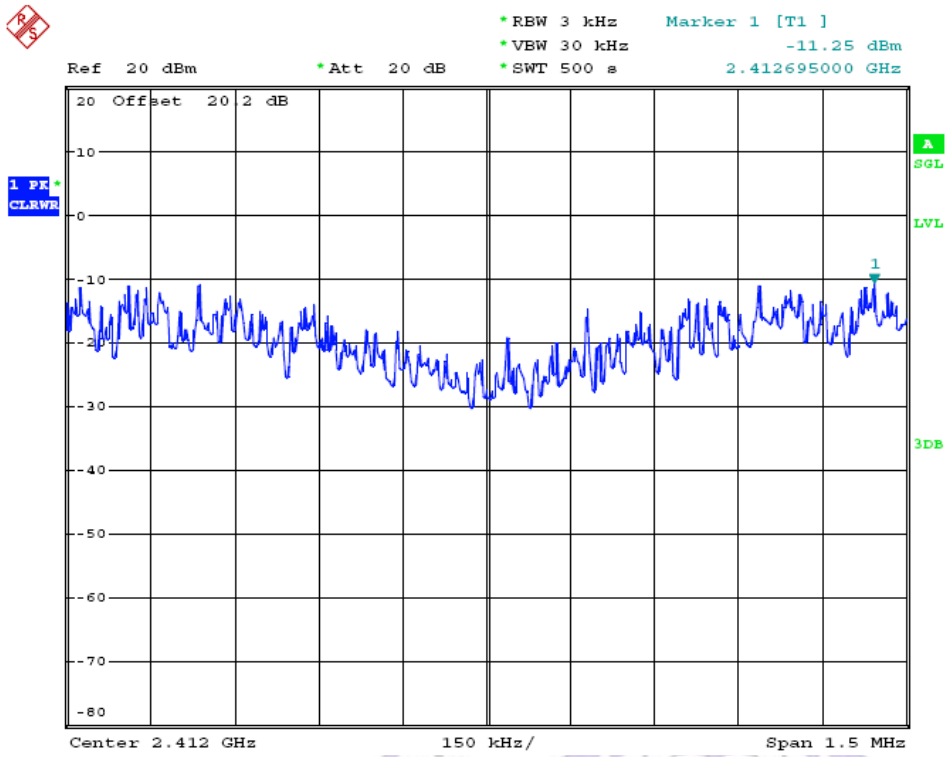
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST RESULTS

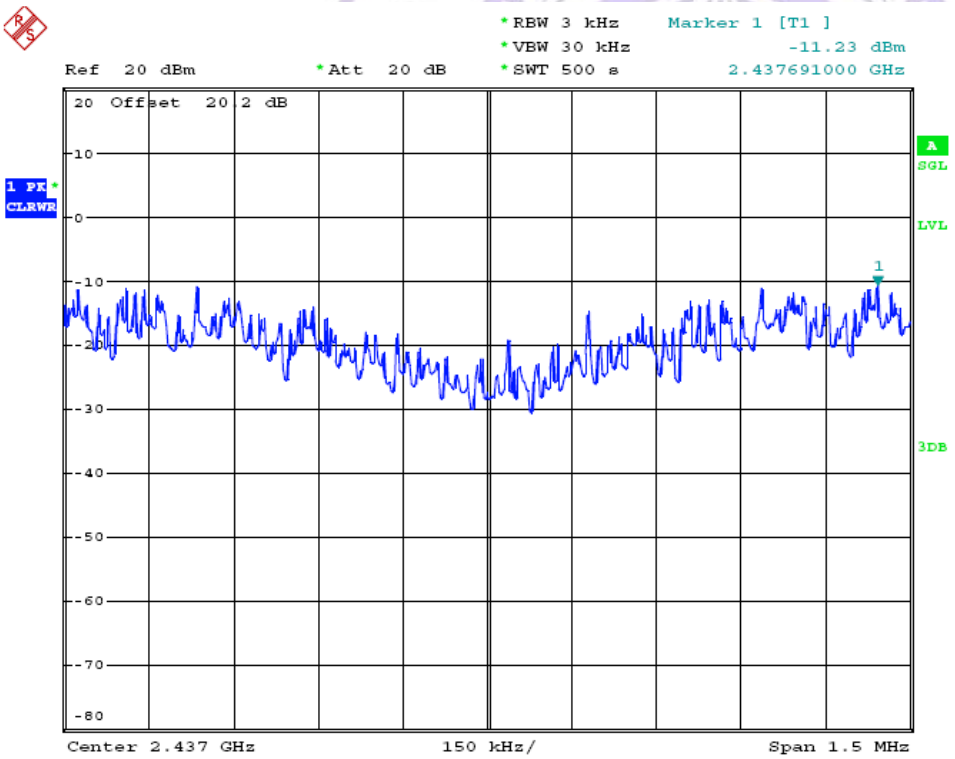
(Result=Read+cable loss)

Channel	Read (dBm)	Cable Loss (dB)	RF power level in 3 KHz BW (dBm)	Maximum limit (dBm)	PASS / FAIL
802.11b CH1	-11.25	3	-8.25	8	PASS
802.11b CH 6	-11.23	3	-8.23	8	PASS
802.11b CH 11	-12.05	3	-9.05	8	PASS
802.11g CH1	-17.06	3	-14.06	8	PASS
802.11g CH6	-13.22	3	-10.22	8	PASS
802.11g CH11	-17.11	3	-14.11	8	PASS

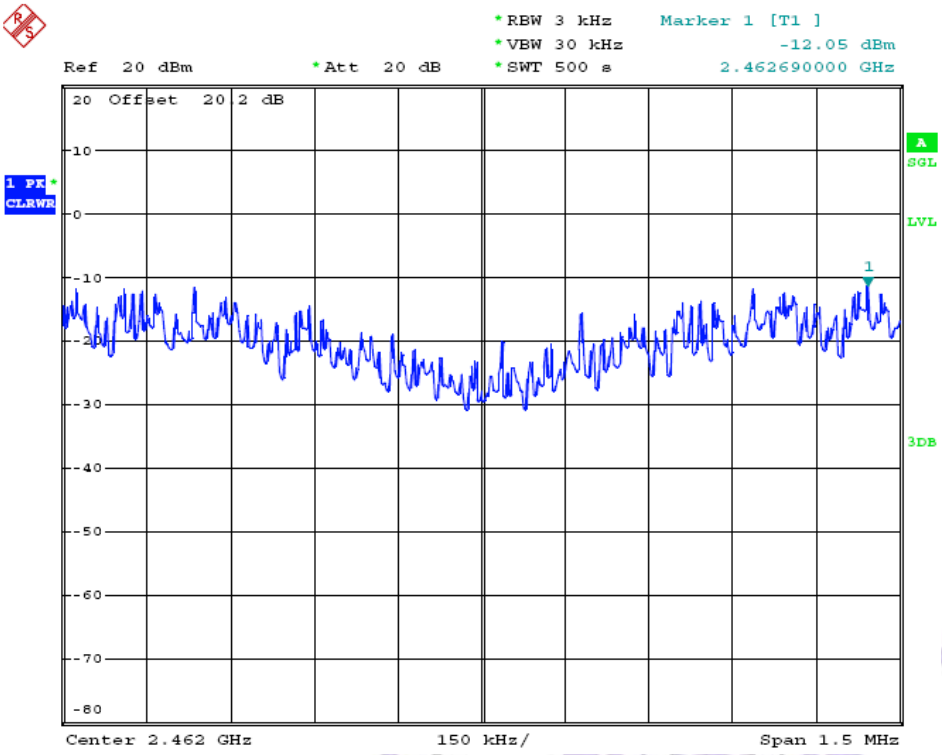
802.11b-CH1



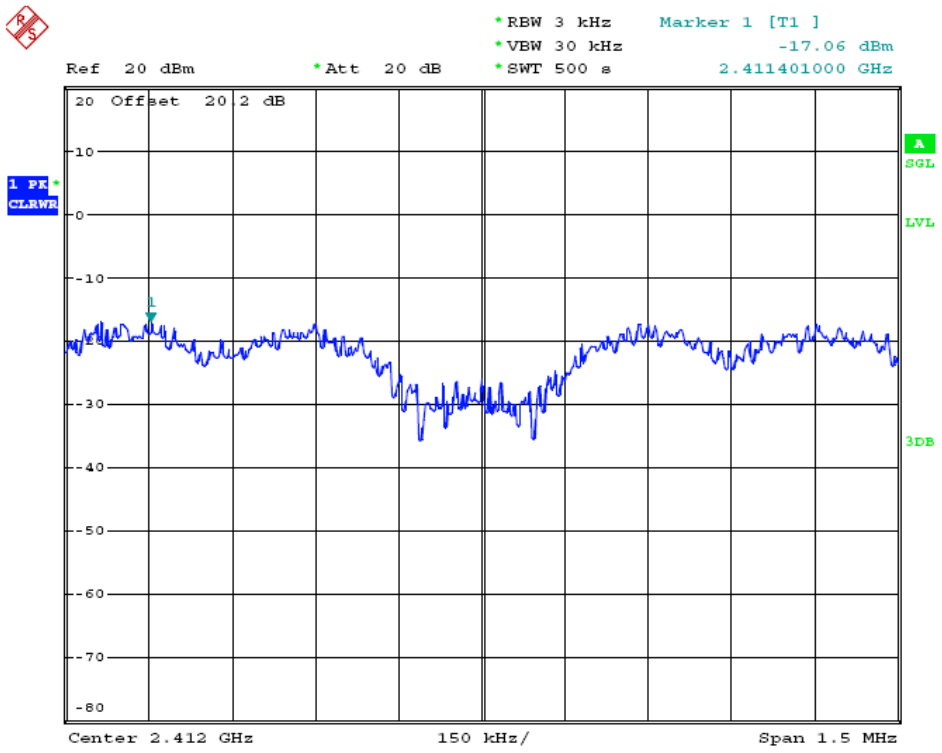
802.11b-CH6



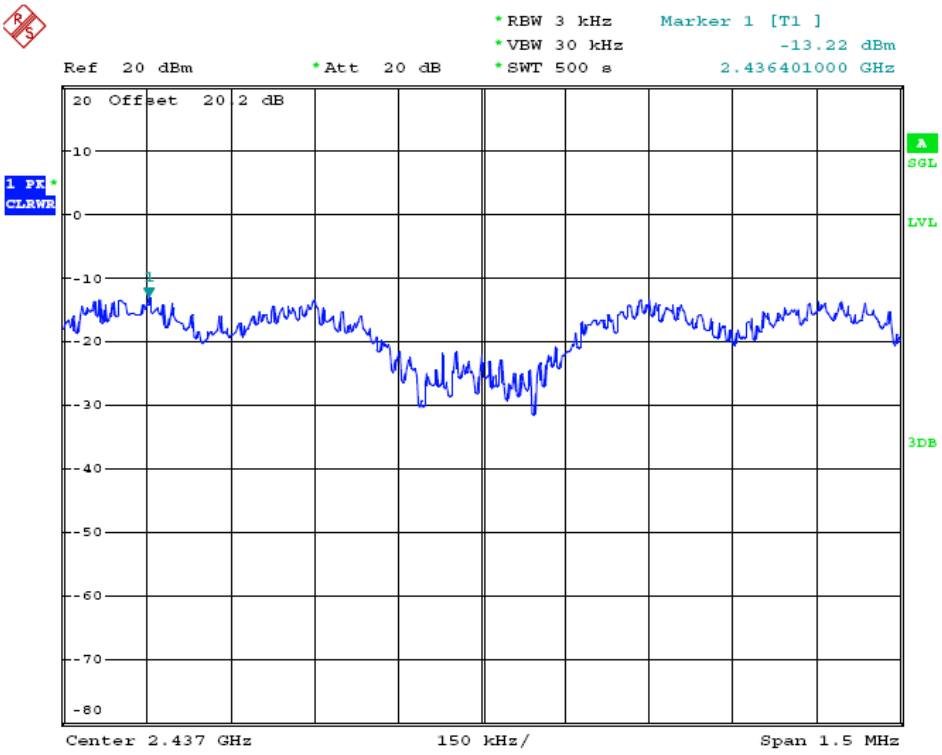
802.11b-CH11



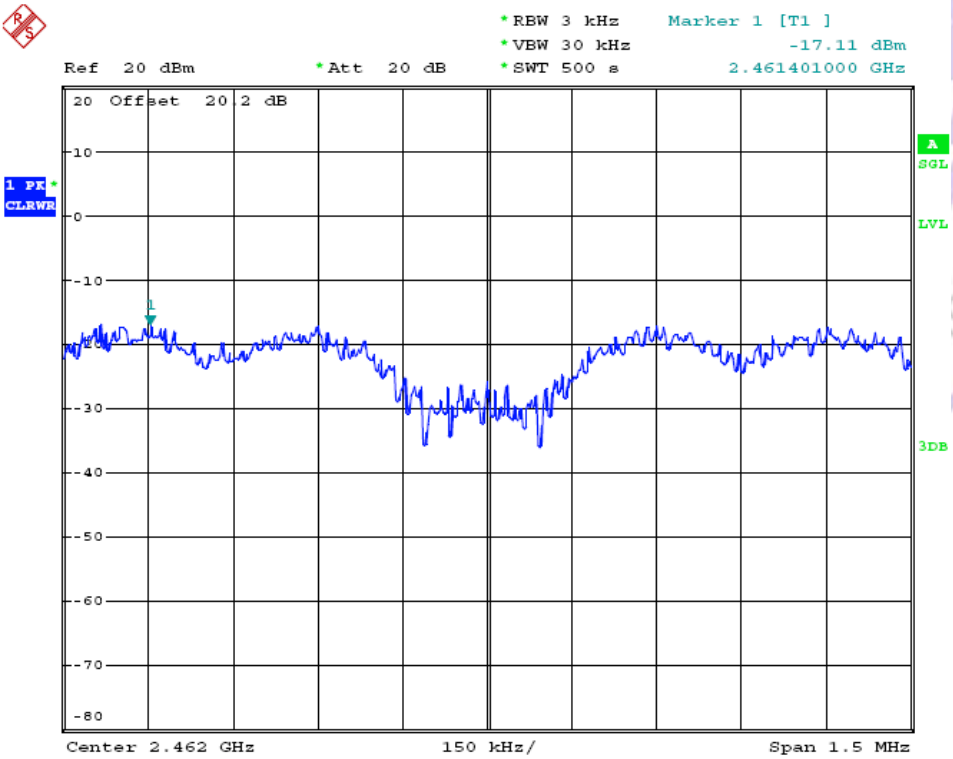
802.11g-CH1



802.11g-CH6

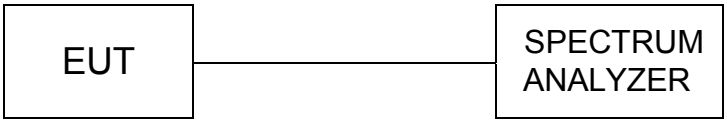


802.11g-CH11



4.7. Spurious RF Conducted Emission

TEST CONFIGURATION



TEST PROCEDURE

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2009 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBM= 300KHz to measure the peak field strength , and measure frequeny range from 30MHz to 26.5GHz.

LIMIT

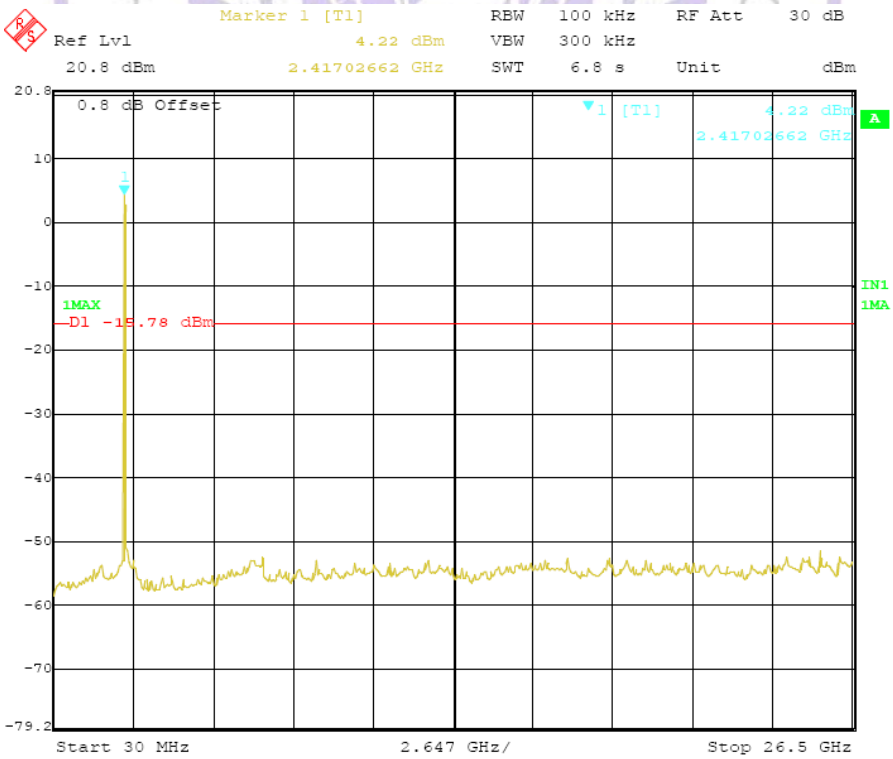
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.

TEST RESULTS

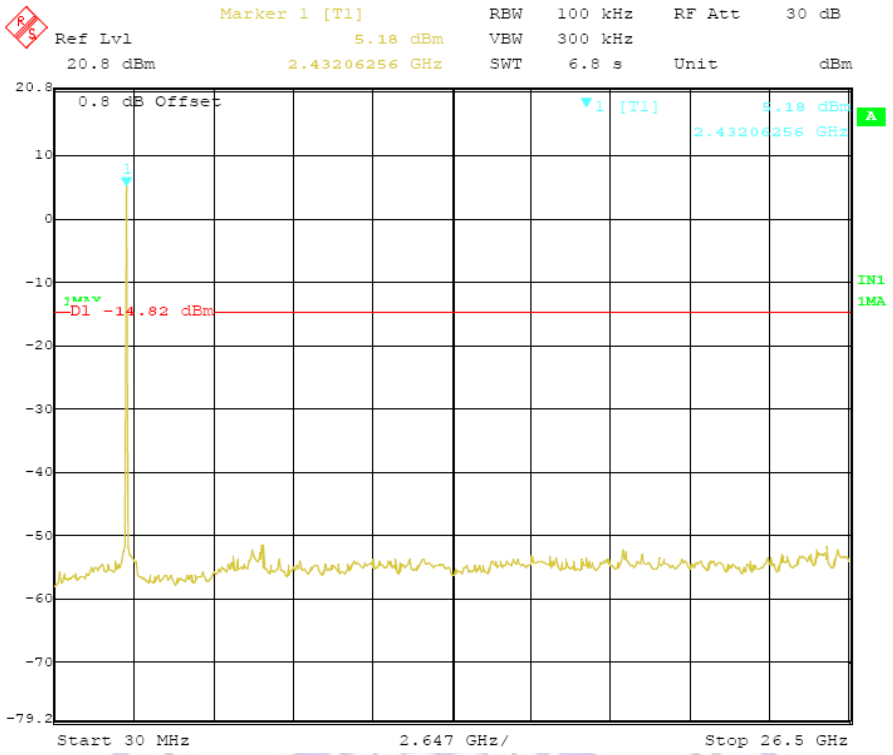
Photos of Spurious RF Conducted Emission Measurement

For 802.11b Mode:

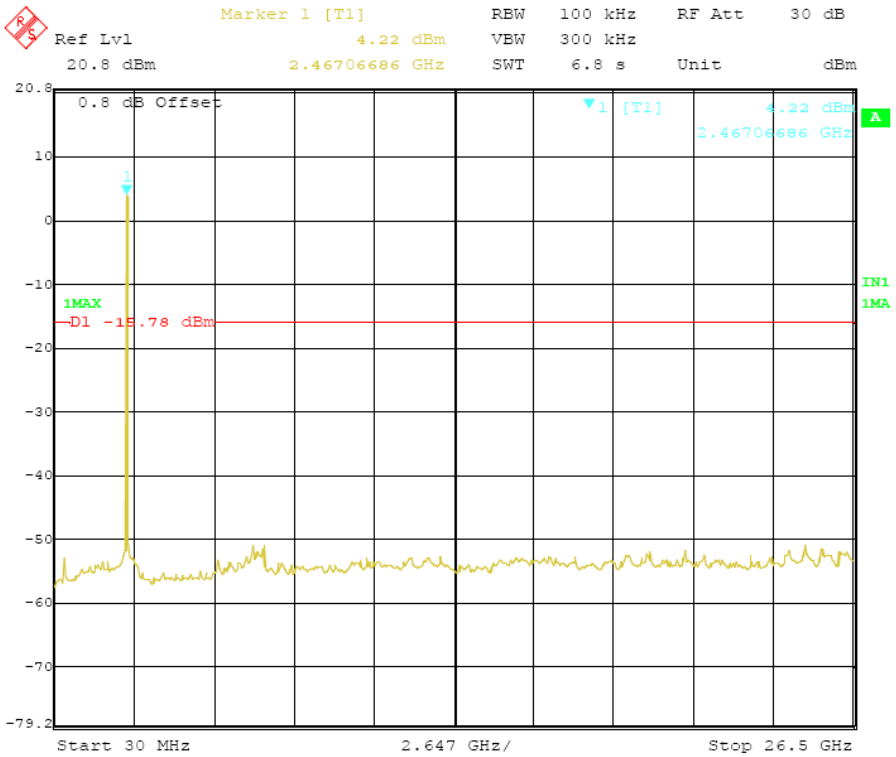
CH1



CH6

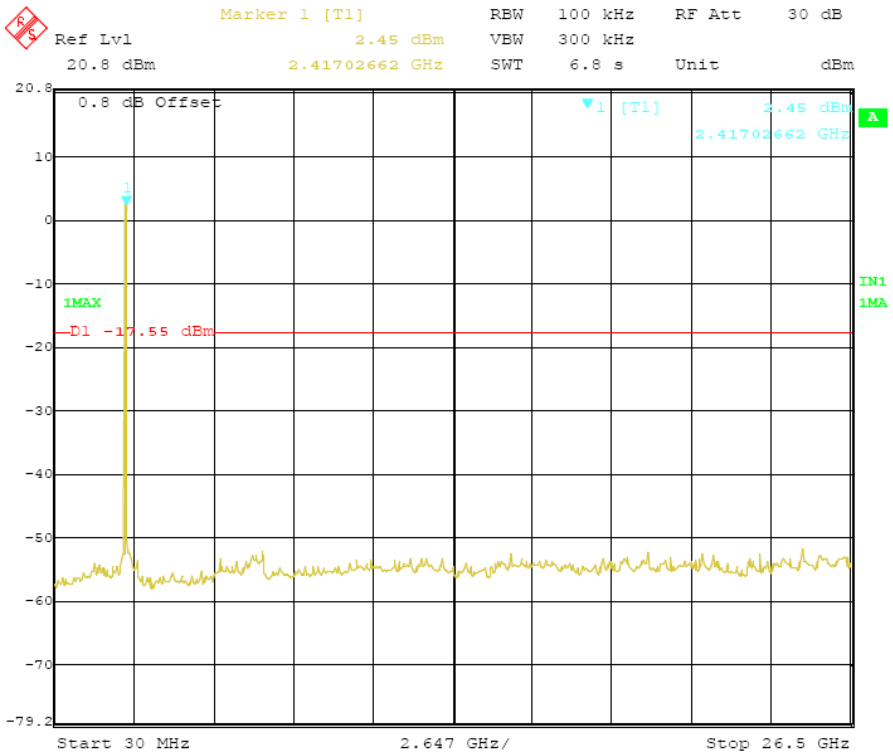

Marker 1 [T1]
RBW 100 kHz
RF Att 30 dB
Ref Lvl
5.18 dBm
VBW 300 kHz
20.8 dBm
2.43206256 GHz
SWT 6.8 s
Unit dBm
0.8 dB Offset
1 [T1]
5.18 dBm
2.43206256 GHz
A
IN1
1MA
1MAX
D1 -14.82 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Start 30 MHz
2.647 GHz/
Stop 26.5 GHz

CH11

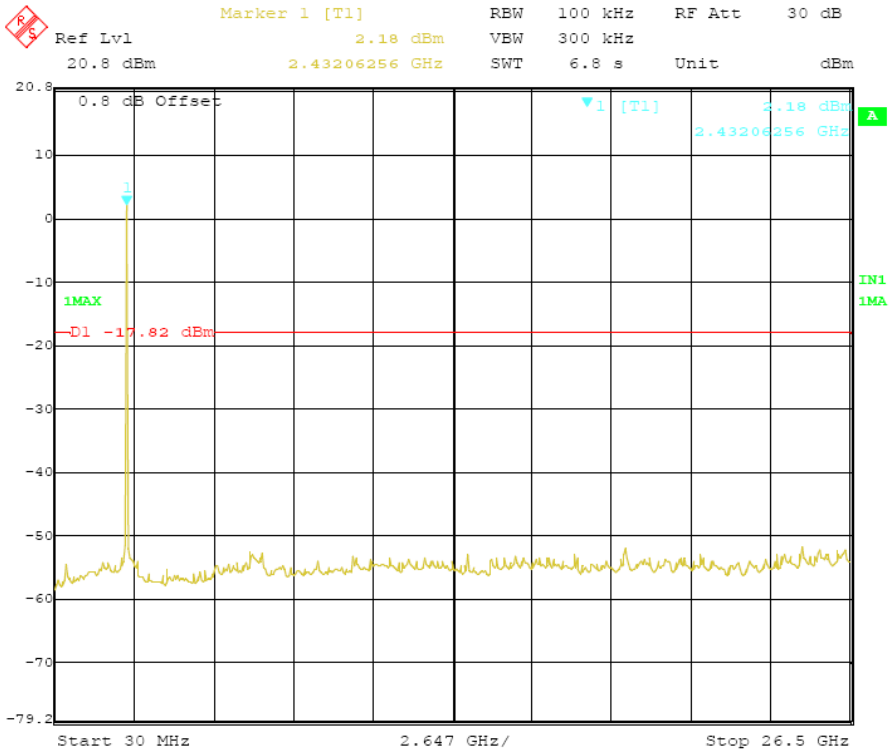

Marker 1 [T1]
RBW 100 kHz
RF Att 30 dB
Ref Lvl
4.22 dBm
VBW 300 kHz
20.8 dBm
2.46706686 GHz
SWT 6.8 s
Unit dBm
0.8 dB Offset
1 [T1]
4.22 dBm
2.46706686 GHz
A
IN1
1MA
1MAX
D1 -15.78 dBm
20.8
10
0
-10
-20
-30
-40
-50
-60
-70
-79.2
Start 30 MHz
2.647 GHz/
Stop 26.5 GHz

For 802.11g Mode:

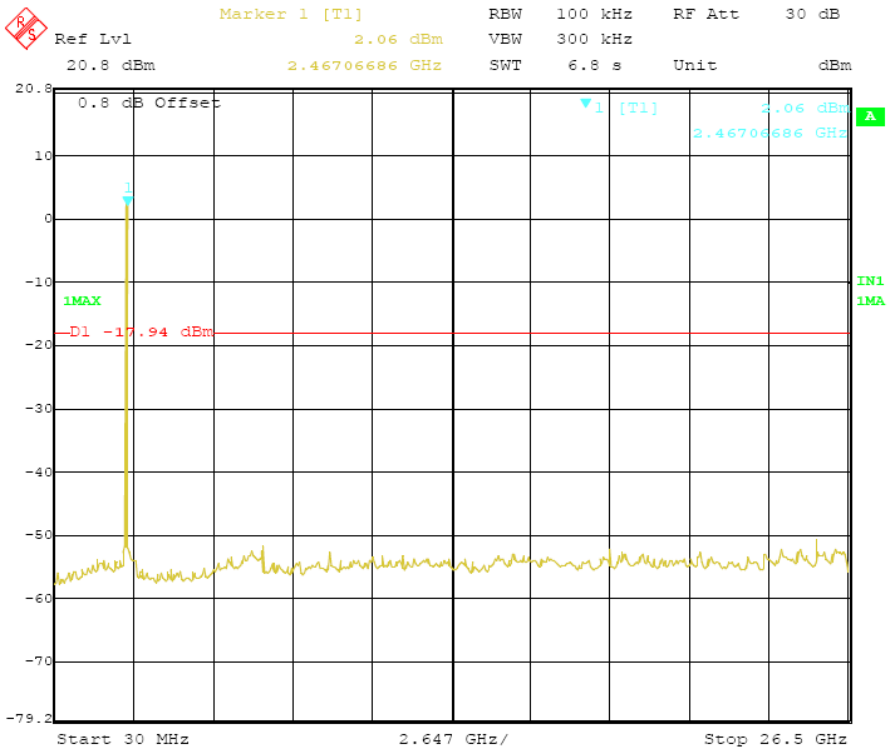
CH1



CH6



CH11



4.8. Antenna Requirement

STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 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.

And according to FCC 47 CFR Section 15.247 (c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

ANTENNA CONNECTED CONSTRUCTION

The directional gains of antenna used for transmitting is -1.0 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

4.9. RF Exposure

STANDARD APPLICABLE

According to §1.1307 (b)(1), system operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

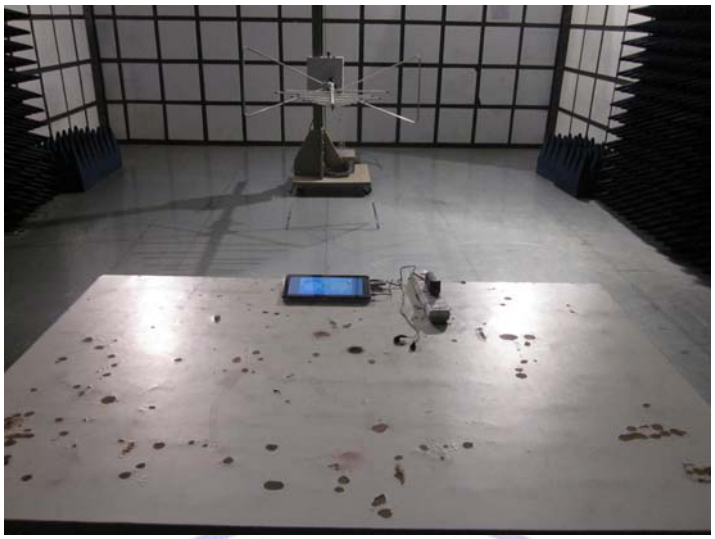
This is a Portable device.

MEASUREMENT RESULTS

This is a portable device and the Max peak output power is 13.60dBm (23.00 mW) lower than low threshold 60/fGHz mW (24.48 mW), d＜2.5cm in general population category.

The SAR measurement is not necessary.

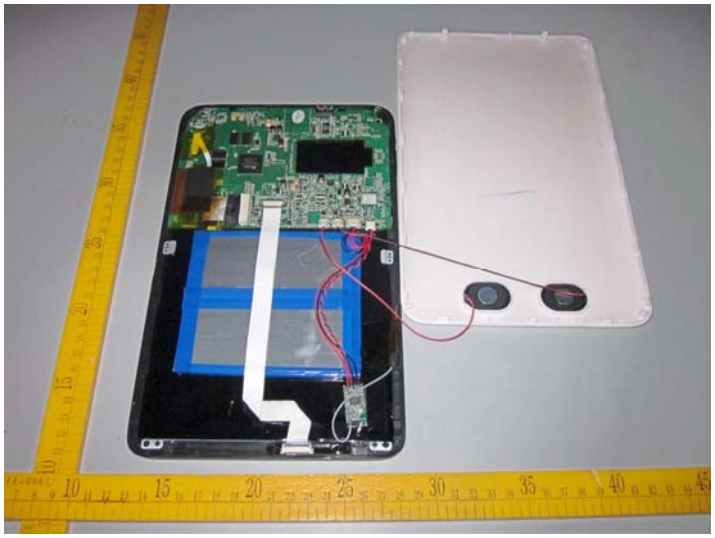
5. Test Setup Photos of the EUT

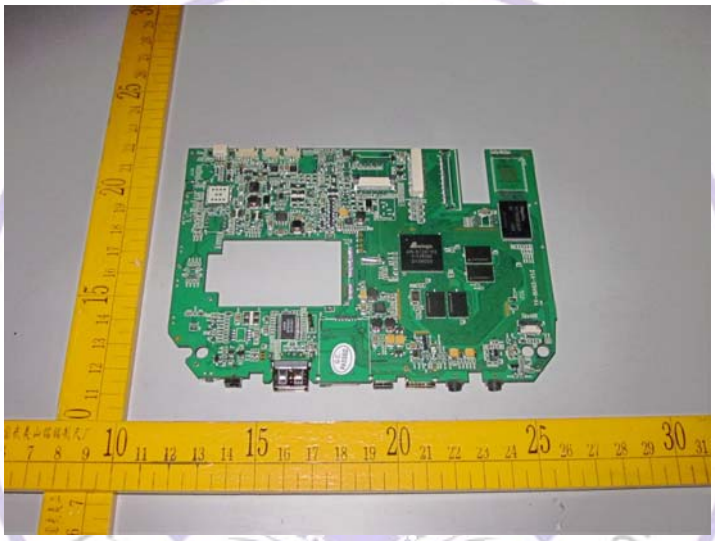


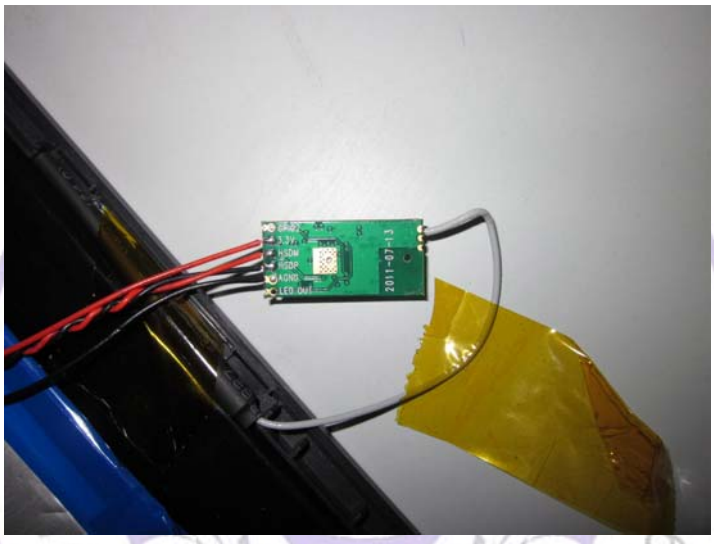
6. External and Internal Photos of the EUT

External Photos

Internal Photos







.....End of Report.....