

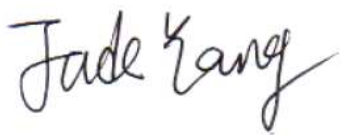

TEST REPORT

To:	Brookstone , Inc.
Address:	One Innovation Way, Merrimack, NH 03054 United States.

Manufacturer or Supplier	GUANGZHOU PANYU FANTASIA CREATION TOYS CO.,LTD.	
Location	Block 3 Taishi Industrial Park YuWouTou, Panyu,Guangzhou Guangdong, China	
Product	Rover	
Model	Rover	
Tested Sample	Engineering sample	
Date of tests	July. 15 ~ Aug.3 , 2011	

☒ **FCC Part 15, Subpart C (Section 15.247)**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Jade Yang Specialist / EMC Department	Approved by Sam Tung Manager / EMC Department
	 Date: Aug. 4, 2011

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Test Report No.: FD110708N001

FCC ID: ZRB719302

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Aug. 4, 2011

1. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	Conducted Emission Test	N/A	-
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -3.00dB at 4480.00MHz
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	External Antenna: Antenna connector is RSMA not a standard connector.

2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	30MHz~ 1GHz	3.58dB
	1GHz ~ 40GHz	3.58dB

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Rover
MODEL NO.	Rover
FCC ID	ZRB719302
NOMINAL VOLTAGE	DC 9V ("AAA" size battery x 6)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300Mbps
OPERATING FREQUENCY	2.4GHz: 2412.0 ~ 2462.0MHz
NUMBER OF CHANNEL	2.4GHz: 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
OUTPUT POWER	114.82 mW for 2412.0 ~ 2462.0MHz
ANTENNA TYPE	dipole antenna with 2dBi gain
DATA CABLE	N/A
I/O PORTS	N/A
ACCESSORY DEVICES	N/A

NOTE:

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

FREQUENCY BAND (MHz)	2412~2462
802.11b	√
802.11g	√
802.11n (20MHz)	√
802.11n (40MHz)	√

2. The EUT provides one completed transmitters.

MODULATION MODE	TX FUNCTION
802.11b	1TX 1RX
802.11g	1TX 1RX
802.11n (20MHz)	1TX 1RX
802.11n (40MHz)	1TX 1RX

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

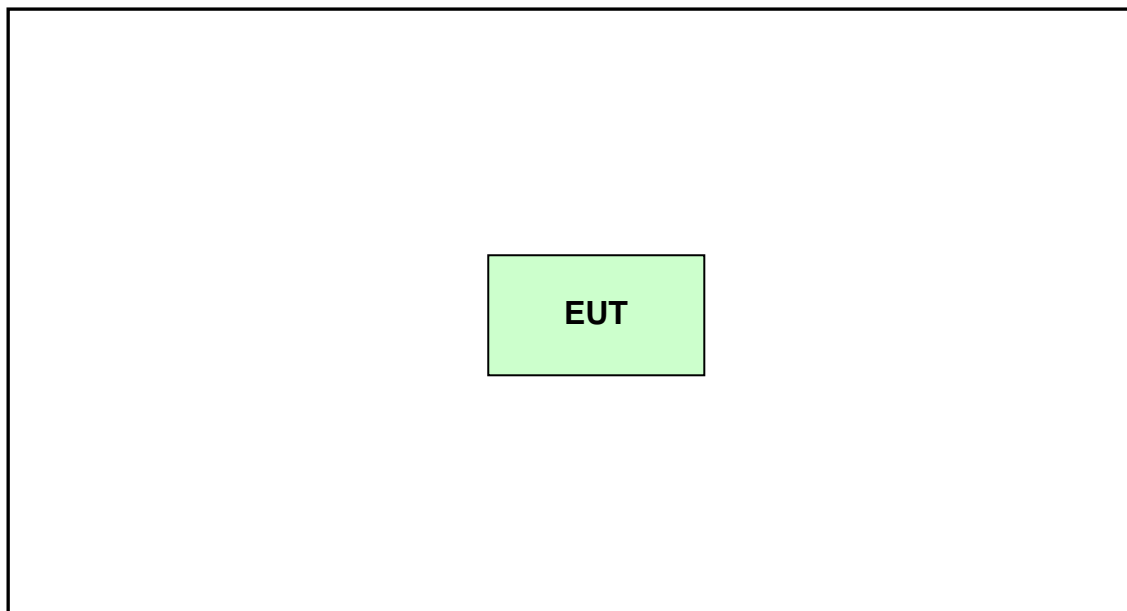
11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION	
	RE \geq 1G	RE<1G	PLC	APCM	ANTENNA	POWER SUPPLY
-	√	√	-	√	Exterior	DC 9V("AAA" size battery x 6)

Where **RE \geq 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: "-" means no effect.

RADIATED EMISSION TEST (ABOVE 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ Axis and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0	Z
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0	Z
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	Z
-	802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0	Z

RADIATED EMISSION TEST (BELOW 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ Axis and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)	AXIS
-	802.11g	1 to 11	6	OFDM	BPSK	6.0	Z

BANDEDGE MEASUREMENT:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 11	OFDM	BPSK	6.0
-	802.11n (20MHz)	1 to 11	1, 11	OFDM	BPSK	7.2
-	802.11n (40MHz)	1 to 7	1, 7	OFDM	BPSK	15.0

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
-	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
-	802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
-	802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE _≥ 1G	25deg. C, 65%RH, 1019 hPa	DC 9V	Madison Luo
RE _{<} 1G	23deg. C, 63%RH, 1024 hPa	DC 9V	Madison Luo
APCM	23deg. C, 62%RH, 1019 hPa	DC 9V	Madison Luo

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)

ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

N/A

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer Agilent	E4446A	MY46180622	Apr. 25, 2011	Apr. 24, 2012
BILOG Antenna Teseq	CBL 6111D	25758	Nov.22,2010	Nov.22,2011
HORN Antenna EMCO	3117	00085519	Nov.01,2010	Nov.01,2011
Signal Generator Rohde&Schwarz	SMF100A	101431	Jan. 12, 2011	Jan. 01, 2012
Preamplifier BURGEON	PEC-38-3018G-12 -SFF	NSEMC001	Oct.16,2010	Oct.16,2011
Preamplifier Agilent	8447D	2944A11174	May 2,2011	May 2,2012
Software ADT.	ADT_Radiated V7.5.14	NA	NA	NA
Temperature & Humidity chamber Giant Force	ITH-150-70-CP-AR	IAA0602-002	Apr. 18, 2011	Apr. 17, 2012

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.
 2. The test was performed in Chamber 10m.
 3. The horn antenna and preamplifier (model: PEC-38-3018G-12-SFF) are used only for the measurement of emission frequency above 1GHz if tested.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

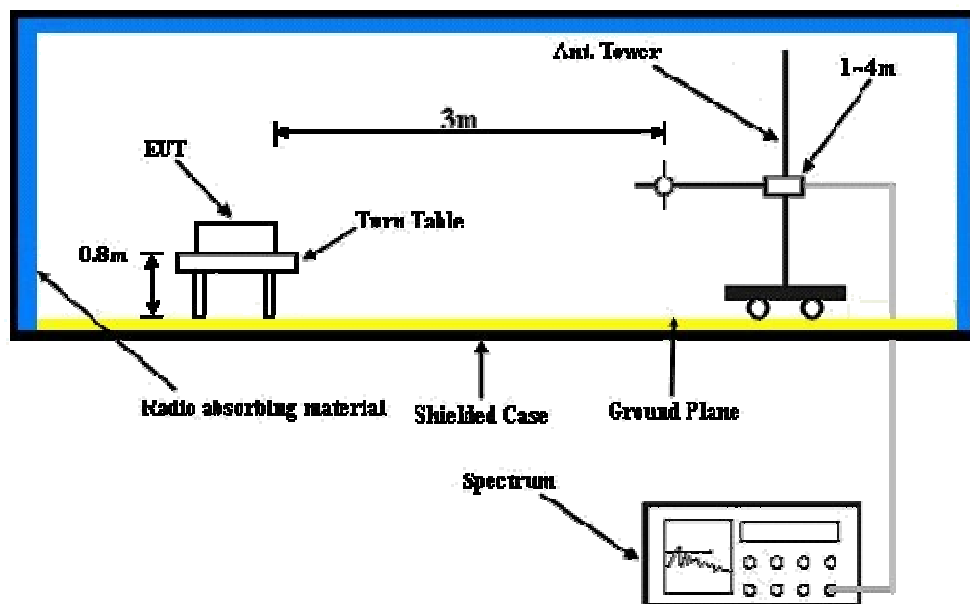
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

- Turned on the power of all equipment.
- EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.

4.1.7 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA : 802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4480.00	57.05PK	74.0	-16.95	225	344	9.01	48.04
2	4480.00	50.31 AV	54.0	-3.69	225	344	2.27	48.04
3	*2412.00	97.25 PK			112	201	61.13	36.12
4	*2412.00	91.21 AV			123	220	55.09	36.12
5	5560.00	57.04 PK	74.0	-16.96	121	42	7.96	49.08
6	5560.00	49.40 AV	54.0	-4.60	121	42	0.31	49.08
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4480.00	57.08 PK	74.0	-16.92	100	75	9.04	48.04
2	4480.00	50.35 AV	54.0	-3.65	100	75	2.31	48.04
3	*2412.00	98.02PK			150	10	61.90	36.12
4	*2412.00	92.01AV			150	10	55.89	36.12
5	5240.00	57.27 PK	74.0	-16.73	112	128	8.69	48.58
6	5240.00	50.12 AV	54.0	-3.88	112	128	1.54	48.58

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.40 PK			100	300	59.75	36.65
2	*2437.00	89.50 AV			100	300	52.85	36.65
3	4880.00	56.64 PK	74.0	-17.36	210	250	8.59	48.05
4	4880.00	45.37 AV	54.0	-8.63	210	250	-2.68	48.05
5	5520.00	56.17 PK	74.0	-17.83	200	142	6.95	49.22
6	5520.00	47.32 AV	54.0	-6.68	200	142	-1.90	49.22
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	93.86 PK			100	25	57.21	36.65
2	*2437.00	87.91 AV			100	25	51.26	36.65
3	4480.00	56.40 PK	74.0	-17.60	115	33	8.36	48.04
4	4480.00	49.37 AV	54.0	-4.63	115	33	1.33	48.04

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	97.82 PK			208	32	60.27	37.55
2	*2462.00	83.74 AV			208	32	46.19	37.55
3	4360.00	56.50 PK	74.0	-17.50	185	29	9.12	47.37
4	4360.00	49.21 AV	54.0	-4.79	185	29	1.84	47.37
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	107.03 PK			100	0	69.48	37.55
2	*2462.00	84.74 AV			100	0	47.19	37.55
3	4760.00	56.59 PK	74.0	-17.41	210	333	8.49	48.10
4	4760.00	49.37 AV	54.0	-4.63	210	333	1.27	48.10
5	5560.00	56.56 PK	74.0	-17.44	105	329	7.48	49.08
6	5560.00	49.32 AV	54.0	-4.68	105	329	0.24	49.08

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.

802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2412.00	98.08 PK			210	64	61.96	36.12
2	*2412.00	91.80AV			210	64	55.68	36.12
3	4720.00	57.10 PK	74.0	-16.90	220	79	9.05	48.05
4	4720.00	50.80AV	54.0	-3.20	220	79	2.75	48.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2412.00	104.80 PK			210	15	68.68	36.12
2	*2412.00	86.63 AV			210	15	50.51	36.12
3	4480.00	56.66 PK	74.0	-17.34	120	160	8.62	48.04
4	4480.00	50.26 AV	54.0	-3.74	120	160	2.22	48.04

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.6 PK			100	55	68.95	36.65
2	*2437.00	86.11AV			100	55	49.46	36.65
3	5560.00	56.38 PK	74.0	-17.62	114	55	7.30	49.08
4	5560.00	49.12 AV	54.0	-4.88	114	55	0.04	49.08
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	105.49 PK			105	27	68.84	36.65
2	*2437.00	87.62 AV			105	27	50.97	36.65
3	4480.00	58.21 PK	74.0	-15.79	100	358	10.17	48.04
4	4480.00	51.00 AV	54.0	-3.00	100	358	2.96	48.04

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.90 PK			103	66	62.35	37.55
2	*2462.00	86.57 AV			103	66	49.02	37.55
3	5640.00	56.44 PK	74.0	-17.56	322	62	7.62	48.82
4	5640.00	49.12 AV	54.0	-4.88	322	62	0.30	48.82
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.20 PK			120	0	62.65	37.55
2	*2462.00	87.25 AV			120	0	49.70	37.55
3	4480.00	56.46 PK	74.0	-17.54	100	80	8.42	48.04
4	4480.00	43.62 AV	54.0	-10.38	100	80	-4.42	48.04

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
3	*2412.00	95.64 PK			100	60	59.52	36.12
4	*2412.00	91.31 AV			100	60	55.19	36.12
5	5440.00	56.36 PK	74.0	-17.64	200	100	7.58	48.78
6	5440.00	48.92 AV	54.0	-5.08	200	100	0.14	48.78
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
3	*2412.00	98.10 PK			140	25	61.98	36.12
4	*2412.00	91.68 AV			140	25	55.56	36.12
5	5480.00	56.15 PK	74.0	-17.85	100	220	7.23	48.92
6	5480.00	48.99 AV	54.0	-5.01	100	220	0.07	48.92

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	97.56 PK			200	10	60.91	36.65
2	*2437.00	83.98 AV			200	10	47.33	36.65
3	5520.00	55.66 PK	74.0	-18.34	235	320	6.74	48.92
4	5520.00	49.52 AV	54.0	-4.48	235	320	0.60	48.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	98.83 PK			100	91	62.18	36.65
2	*2437.00	84.00 AV			100	91	47.35	36.65
3	5640.00	55.19 PK	74.0	-18.81	181	125	6.67	48.52
4	5640.00	47.98 AV	54.0	-6.02	181	125	-0.54	48.52

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	99.25 PK			100	50	61.70	37.55
2	*2462.00	85.25 AV			100	50	47.70	37.55
3	5600.00	56.64 PK	74.0	-17.36	111	110	8.00	48.64
4	5600.00	48.99 AV	54.0	-5.01	111	110	0.35	48.64
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	100.05 PK			123	10	62.5	37.55
2	*2462.00	86.44 AV			123	10	48.89	37.55
3	5560.00	55.71 PK	74.0	-18.29	100	100	6.93	48.78
4	5560.00	49.53 AV	54.0	-4.47	100	100	0.75	48.78

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2422.00	97.96 PK			110	60	61.70	36.26
2	*2422.00	82.60 AV			110	60	46.34	36.26
3	4800.00	56.23PK	74.00 PK	-17.77	228	334	8.41	47.82
4	4800.00	49.11 AV	54.00 AV	-4.89	228	334	1.29	47.82
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2422.00	96.25 PK			120	20	59.99	36.26
2	*2422.00	82.50 AV			120	20	46.24	36.26
3	5520.00	56.15 PK	74.00 PK	-17.85	110	50	7.23	48.92
4	5520.00	49.38 AV	54.00 AV	-4.62	110	50	0.46	48.92

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
3	*2437.00	93.75 PK			100	57	57.10	36.65
4	*2437.00	82.45 AV			100	57	45.80	36.65
5	5560.00	56.10 PK	74.0	-17.90	154	0	7.32	48.78
6	5560.00	49.01 AV	54.0	-4.99	154	0	0.23	48.78
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
3	*2437.00	97.20 PK			100	348	60.55	36.65
4	*2437.00	88.48 AV			100	348	51.83	36.65
5	5520.00	55.89 PK	74.0	-18.11	110	40	6.97	48.92
6	5520.00	49.37 AV	54.0	-4.63	110	40	0.45	48.92

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * ”: Fundamental frequency.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1019 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	96.10 PK			105	67	59.05	37.05
2	*2452.00	86.59 AV			105	67	49.54	37.05
3	5560.00	55.65 PK	74.0	-18.35	289	300	6.87	48.78
4	5560.00	48.99 AV	54.0	-5.01	289	300	0.21	48.78
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	96.73 PK			126	0	59.68	37.05
2	*2452.00	86.90 AV			126	0	49.85	37.05
3	4840.00	56.27 PK	74.0	-17.73	100	221	8.49	47.78
4	4840.00	49.31 AV	54.0	-4.69	100	221	1.53	47.78

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “ * “: Fundamental frequency.

BELOW 1GHz WORST-CASE DATA : 802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	DC 9V	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	23deg. C, 63%RH 1024 hPa	TESTED BY	Madison

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	242.87	31.93	46.00	-14.07	242	351	18.03	13.90
2	291.25	32.50	46.00	-13.50	195	354	17.14	15.36
3	322.69	33.94	46.00	-12.06	276	325	17.61	16.33
4	400.06	42.34	46.00	-3.66	300	195	23.30	19.04
5	484.76	39.44	46.00	-6.56	189	303	18.20	21.24
6	564.59	35.76	46.00	-10.24	337	280	12.95	22.81
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (cm)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	283.99	32.42	46.00	-13.58	123	233	17.21	15.21
2	402.52	35.10	46.00	-10.90	180	275	15.99	19.11
3	484.76	41.23	46.00	-4.77	130	120	19.99	21.24
4	521.05	33.31	46.00	-12.69	101	149	11.29	22.02
5	564.59	34.63	46.00	-11.37	192	141	11.82	22.81
6	644.41	35.36	46.00	-10.64	222	185	11.22	24.14

- 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).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. All emission levels was Quasi-Peak.

4.2 CONDUCTED EMISSION MEASUREMENT

The EUT'S power provide by battery. no data about this item test.

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSL3	101507	May 25,11	May 25,12

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA

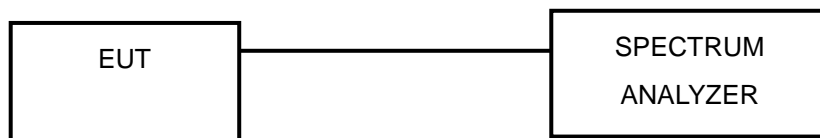
4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

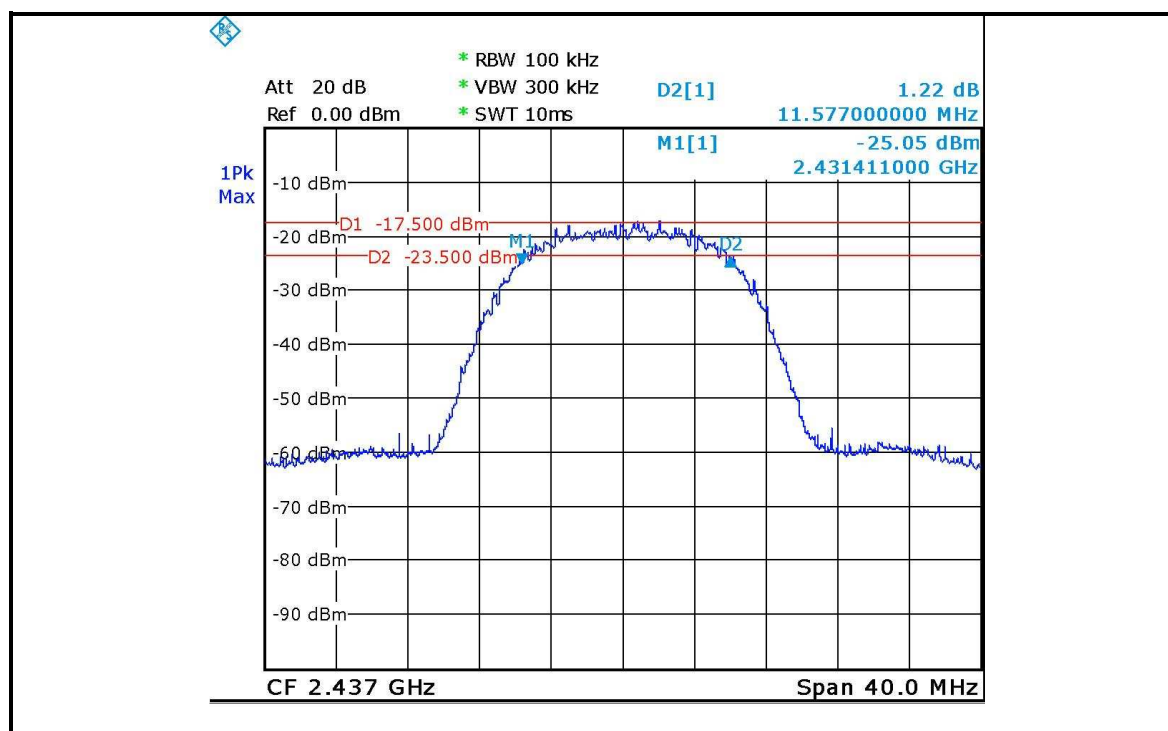
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	11.577	0.5	PASS
6	2437	11.577	0.5	PASS
11	2462	11.497	0.5	PASS

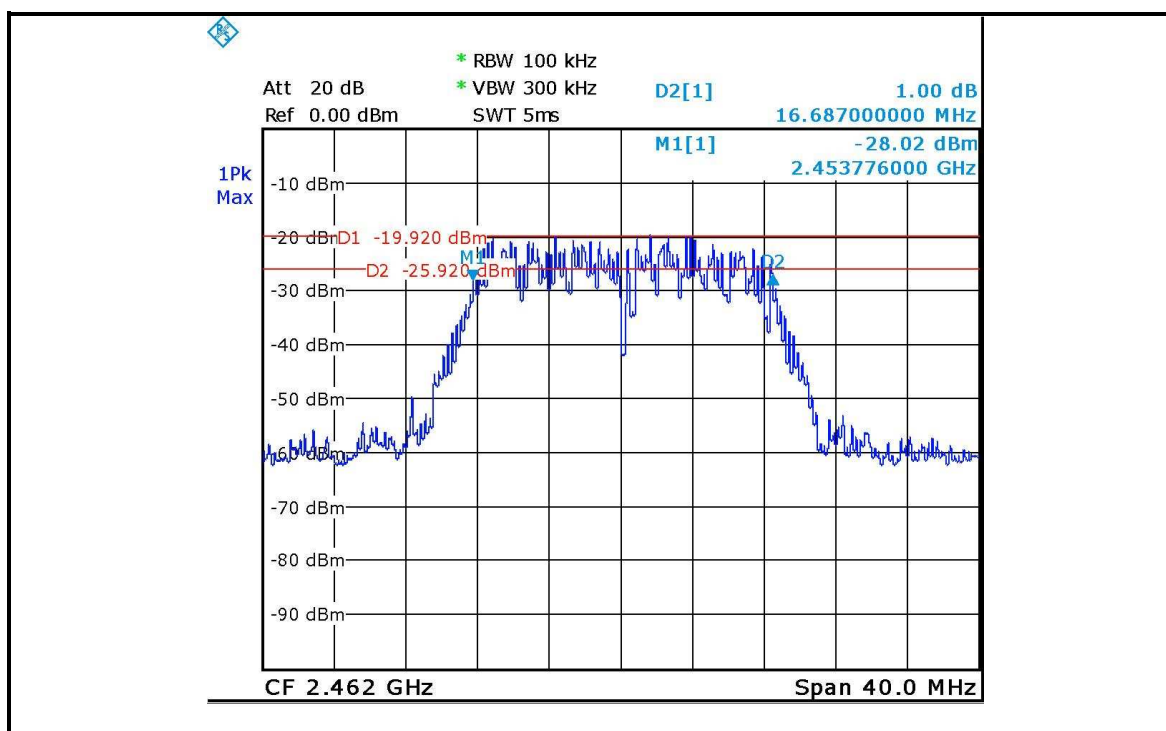
CHAIN 1: CH 6



802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 1		
1	2412	16.607	0.5	PASS
6	2437	16.527	0.5	PASS
11	2462	16.687	0.5	PASS

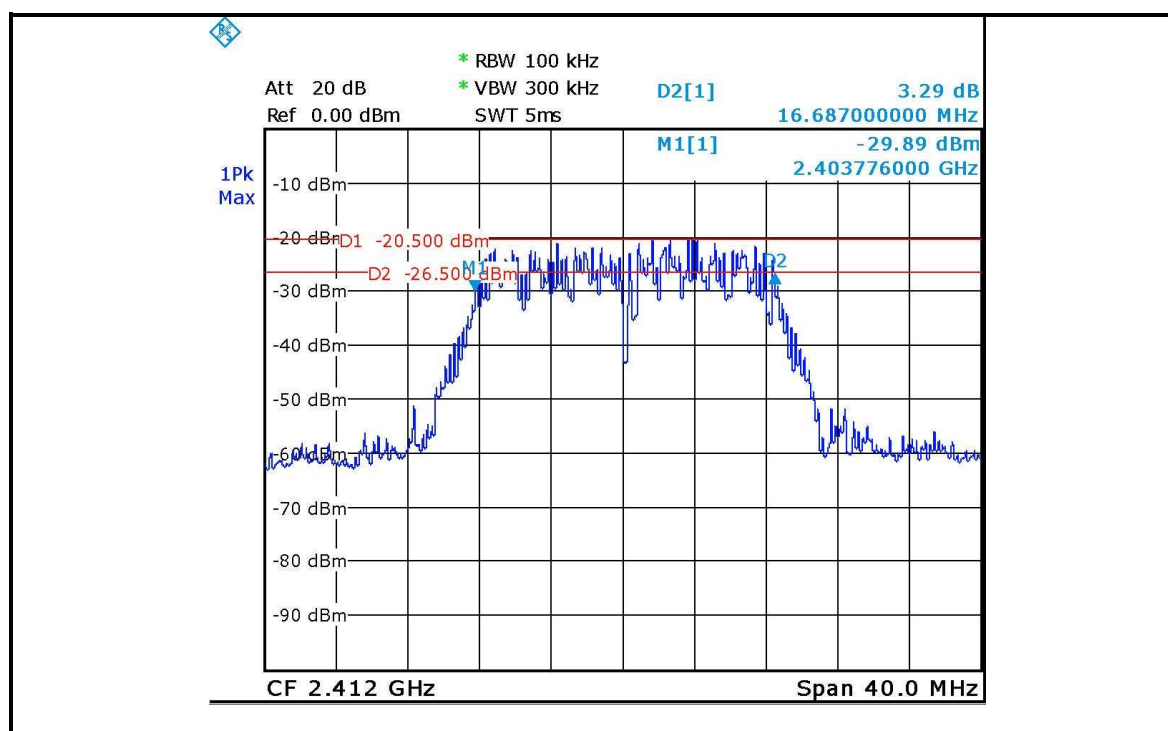
CHAIN 0: CH 11



802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 1		
1	2412	16.687	0.5	PASS
6	2437	16.527	0.5	PASS
11	2462	16.607	0.5	PASS

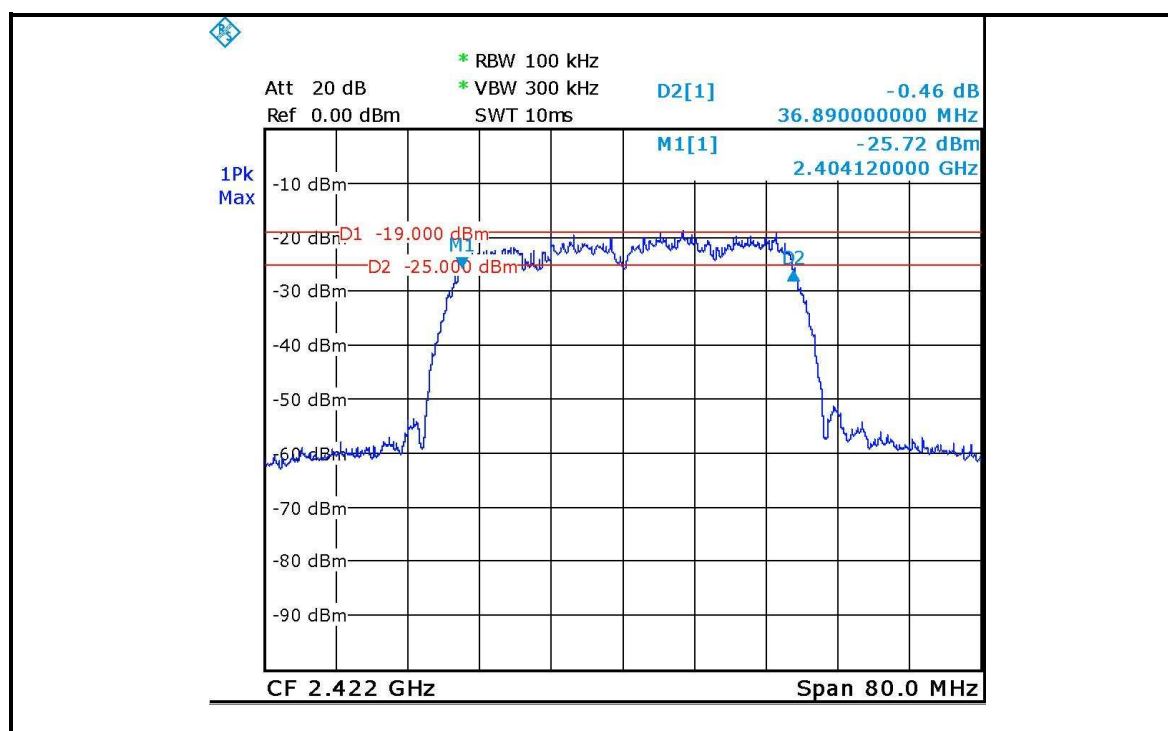
FOR CHAIN 0: CH 1



802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 1		
1	2422	36.89	0.5	PASS
4	2437	36.74	0.5	PASS
7	2452	36.27	0.5	PASS

FOR CHAIN 0: CH 1



4.4 MAXIMUM OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM OUTPUT POWER MEASUREMENT

The Maximum Output Power Measurement is 30dBm.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Power Meter	ML2495A	0842159	MAY 21, 2011	MAY 21, 2012
Power Sensor	MA2411B	0738365	MAY 21, 2011	MAY 21, 2012

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA

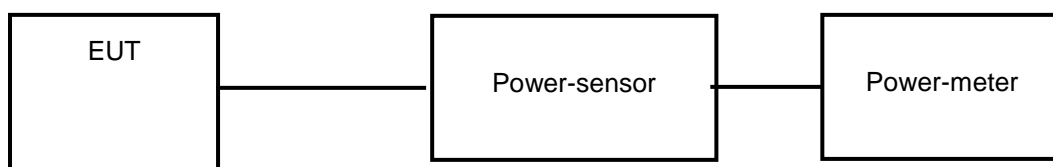
4.4.3 TEST PROCEDURES

Connect EUT's power output port and power-sense. Record the power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6.

4.4.7 TEST RESULTS

802.11b

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)	POWER (mW)	POWER LIMIT (dBm)	PASS / FAIL
1	2412	18.38	68.87	30.0	PASS
6	2437	17.43	55.34	30.0	PASS
11	2462	19.45	88.11	30.0	PASS

802.11g

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)	POWER (mW)	POWER LIMIT (dBm)	PASS / FAIL
1	2412	20.32	107.65	30.0	PASS
6	2437	19.81	95.72	30.0	PASS
11	2462	20.60	114.82	30.0	PASS

802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)	POWER (mW)	POWER LIMIT (dBm)	PASS / FAIL
1	2412	17.99	62.95	30.0	PASS
6	2437	17.15	51.88	30.0	PASS
11	2462	18.98	79.07	30.0	PASS

802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	POWER OUTPUT (dBm)	POWER (mW)	POWER LIMIT (dBm)	PASS / FAIL
1	2422	17.11	51.40	30.0	PASS
6	2437	17.00	50.12	30.0	PASS
11	2452	18.23	66.53	30.0	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
SPECTRUM ANALYZER R&S	FSL3	101507	May 25,11	May 25,12

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA

4.5.3 TEST PROCEDURE

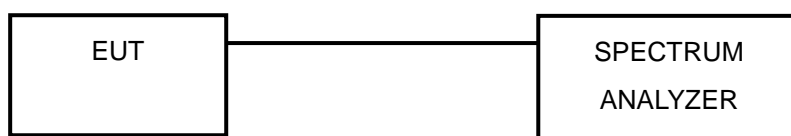
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time = span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation.

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

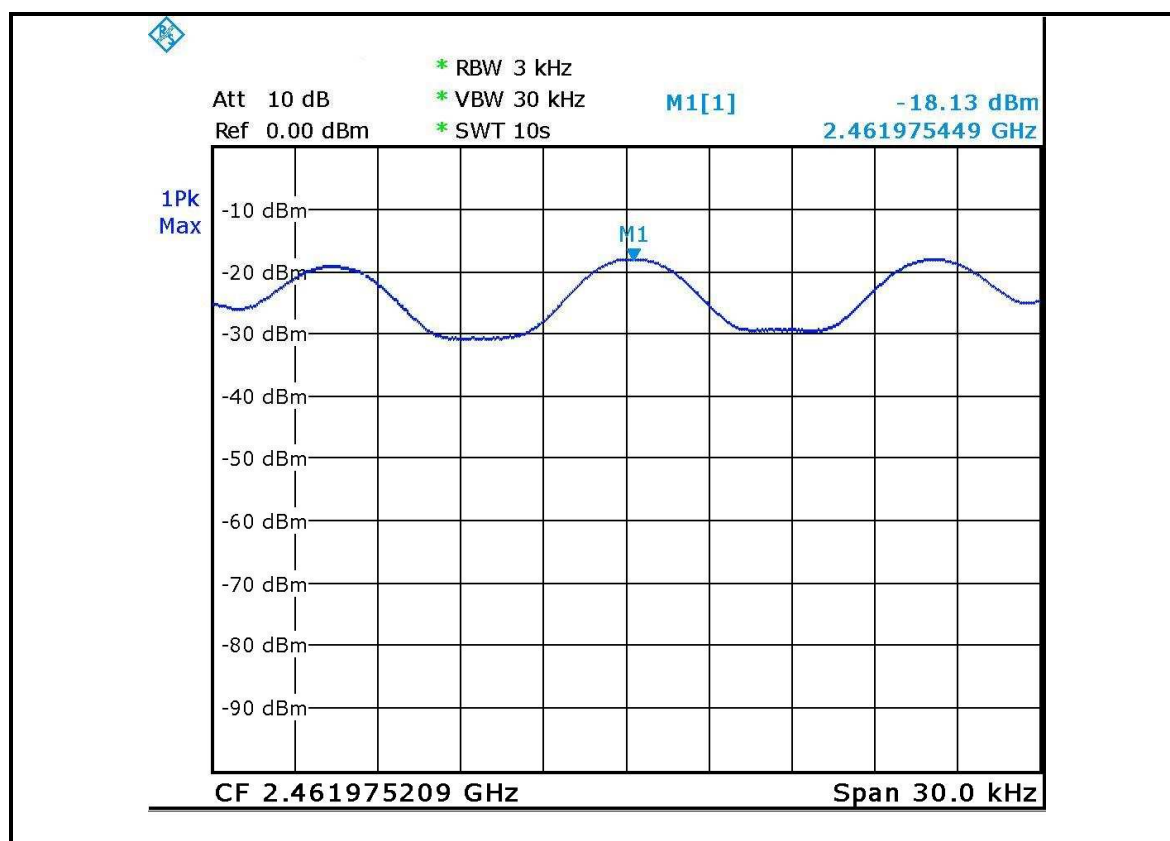
Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b

CHAN.	CHAN. FREQ. (MHz)	POWER DENSITY IN 3kHz BW (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
1	2412	-19.41	8.0	PASS
6	2437	-20.01	8.0	PASS
11	2462	-18.13	8.0	PASS

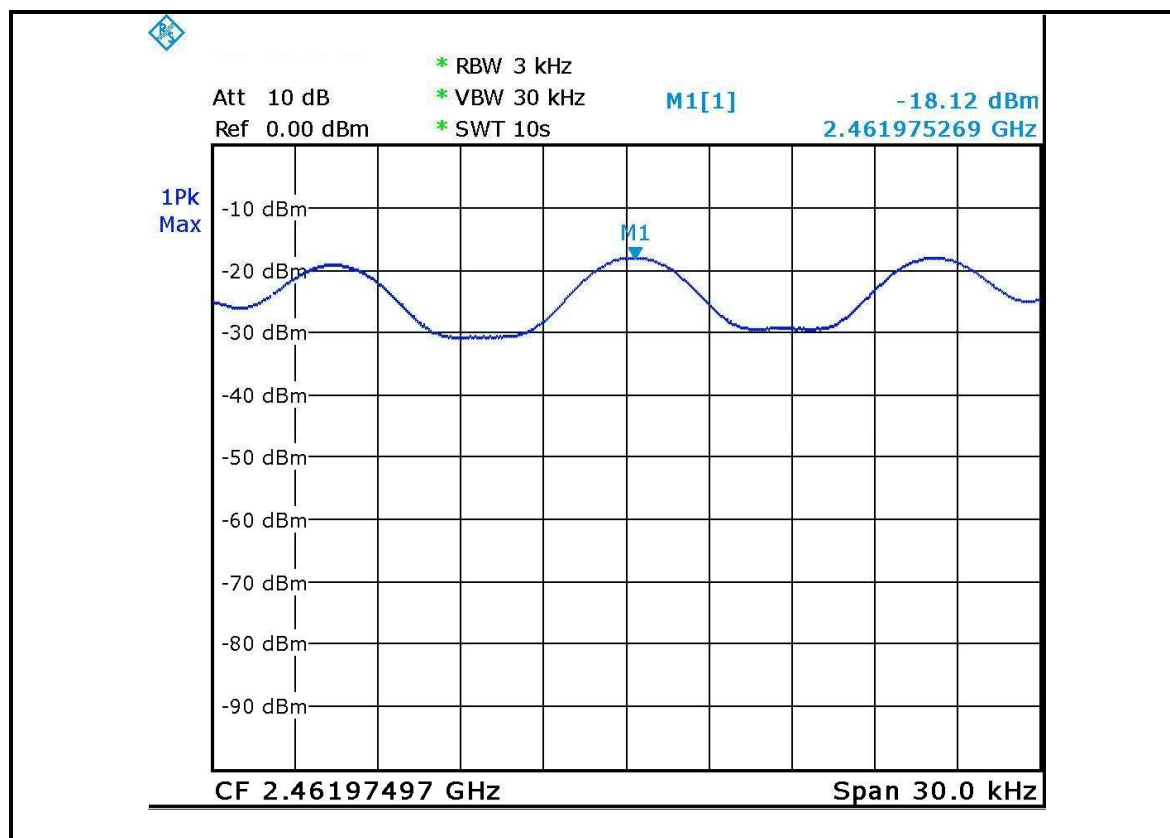
FOR CHAIN 1: CH 11



802.11g

CHAN.	CHAN. FREQ. (MHz)	POWER DENSITY IN 3kHz BW (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
1	2412	-19.47	8.0	PASS
6	2437	-19.78	8.0	PASS
11	2462	-18.12	8.0	PASS

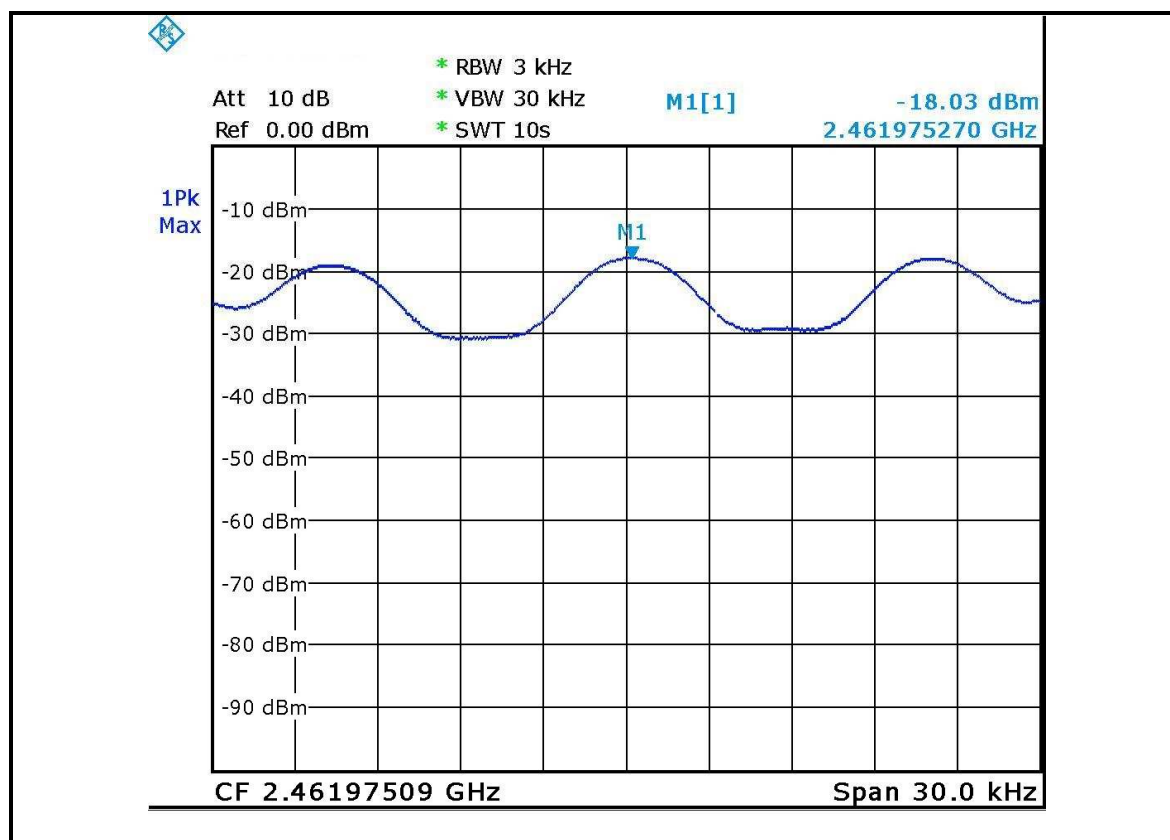
FOR CHAIN 1: CH 11



802.11n (20MHz)

CHAN.	CHAN. FREQ. (MHz)	POWER DENSITY IN 3kHz BW (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
1	2412	-19.45	8.0	PASS
6	2437	-19.78	8.0	PASS
11	2462	-18.03	8.0	PASS

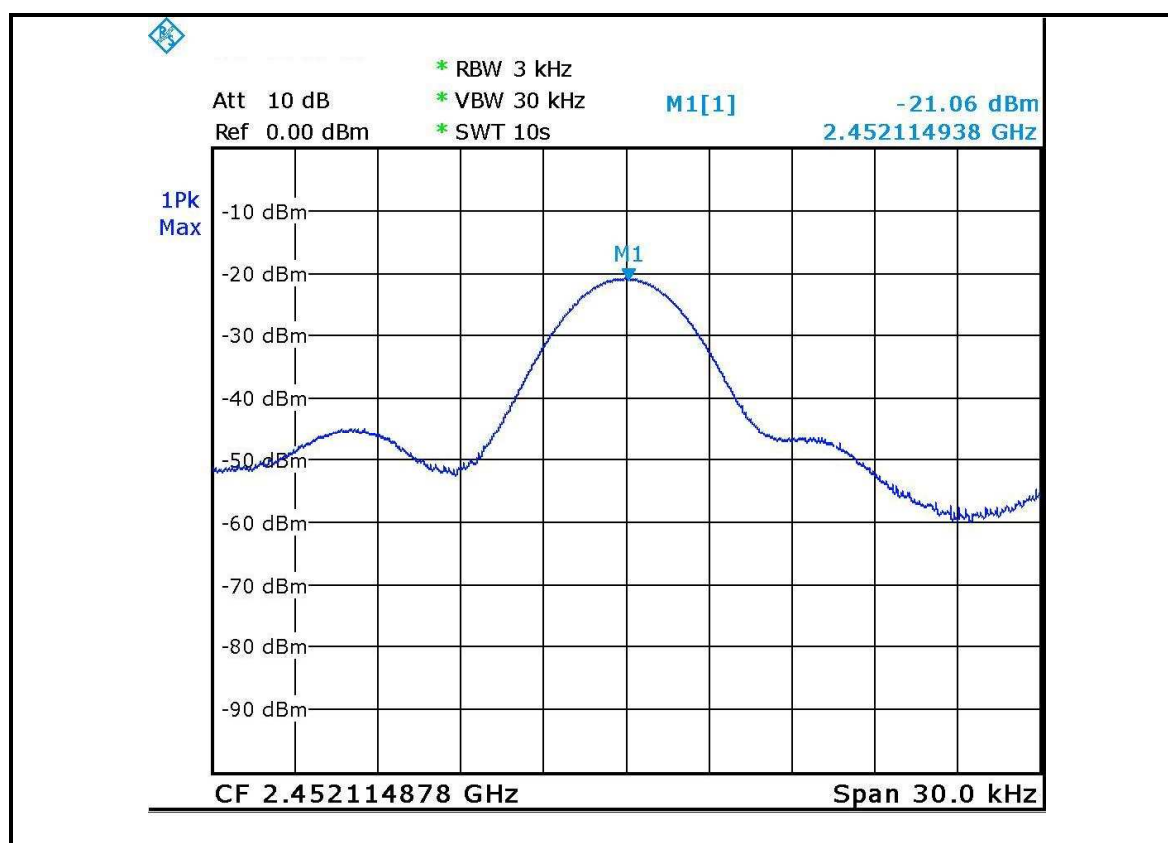
FOR CHAIN 1: CH 11



802.11n (40MHz)

CHAN.	CHAN. FREQ. (MHz)	POWER DENSITY IN 3kHz BW (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
1	2422	-23.58	8.0	PASS
4	2437	-23.38	8.0	PASS
7	2452	-21.06	8.0	PASS

FOR CHAIN 0: CH 7



4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Spectrum Analyzer ROHDE & SCHWARZ	FSL3	101507	May 25,11	May 25,12
Spectrum Analyzer Agilent	E4446A	MY46180622	Apr. 25, 2011	Apr. 24, 2012
BILOG Antenna Teseq	CBL 6111D	25758	Nov.22,2010	Nov.22,2011
HORN Antenna EMCO	3117	00085519	Nov.01,2010	Nov.01,2011
Signal Generator Rohde&Schwarz	SMF100A	101431	Jan. 12, 2011	Jan. 01, 2012
Preamplifier BURGEON	PEC-38-3018G-12-SFF	NSEMC001	Oct.16,2010	Oct.16,2011
Preamplifier Agilent	8447D	2944A11174	May 2,2011	May 2,2012
Software ADT.	ADT_Radiated V7.5.14	NA	NA	NA
Temperature & Humidity chamber Giant Force	ITH-150-70-CP-AR	IAA0602-002	Apr. 18, 2011	Apr. 17, 2012

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA

4.6.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. Set both RBW and VBW of spectrum analyzer to 1MHz and 3MHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = 1MHz, VBW = 3MHz) are attached on the following pages.

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.

The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation.

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6.

4.6.6 TEST RESULTS

The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

802.11b

RESTRICT BAND (2310 ~ 2390 MHz)

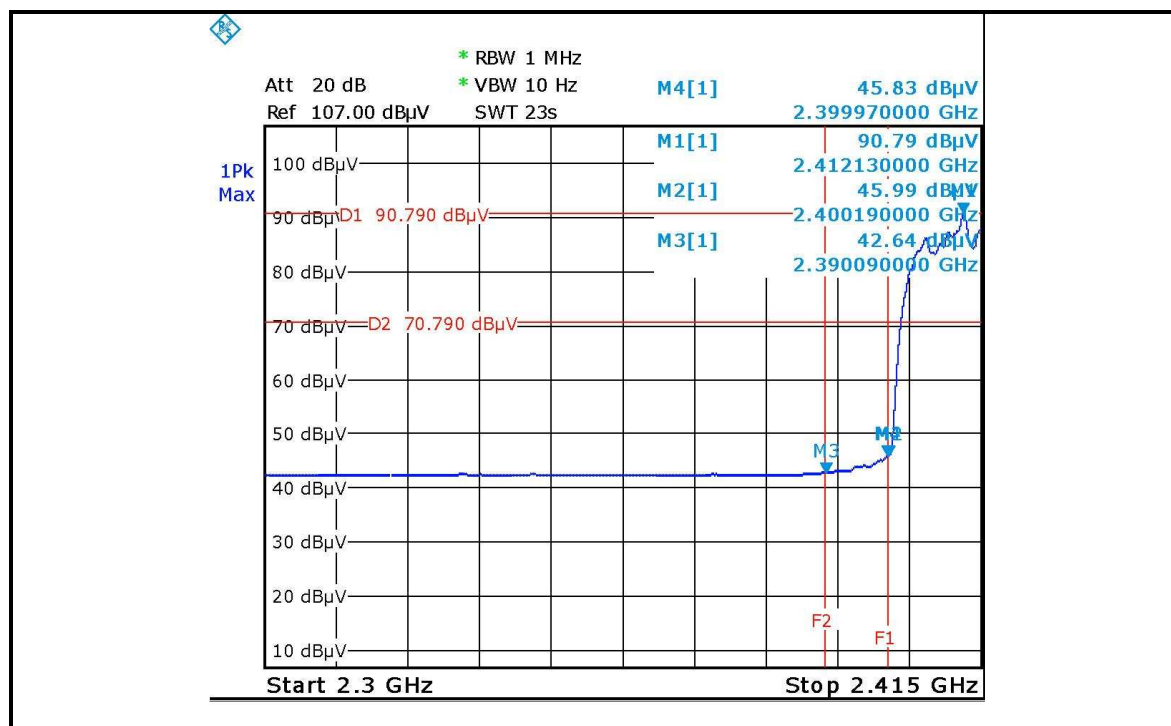
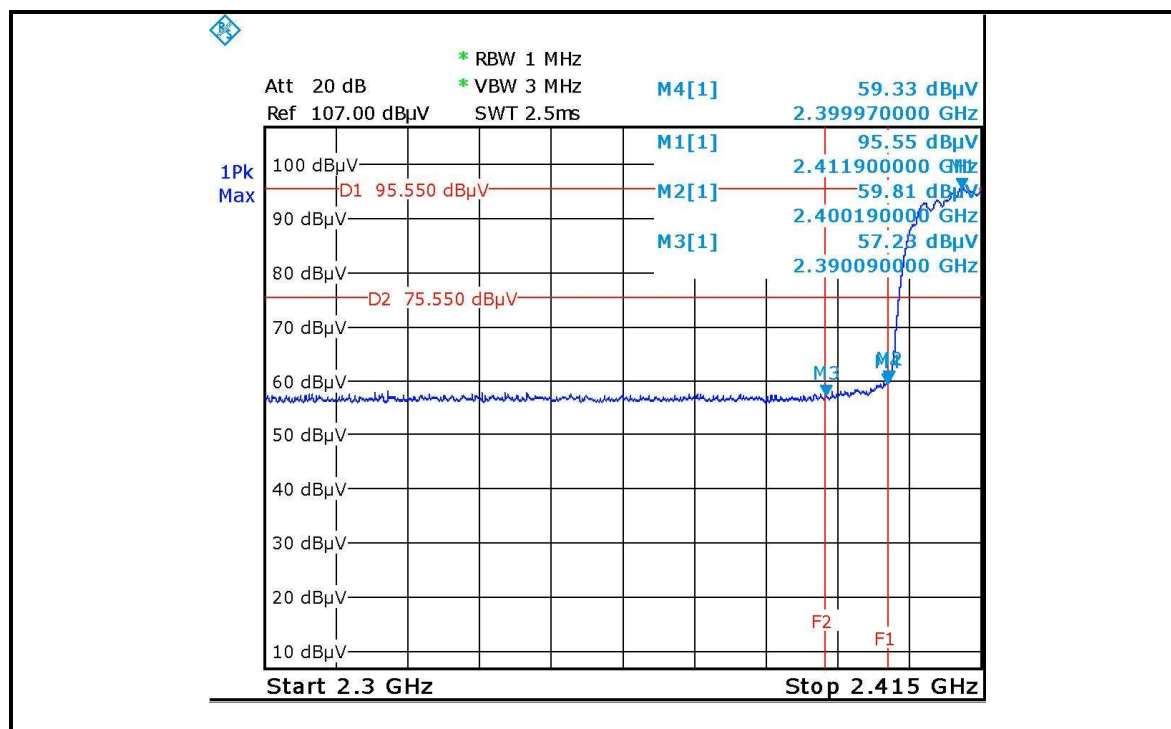
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2412.00 (PK)	98.02	59.33	38.69	74.00
2412.00 (AV)	92.01	45.83	46.18	54.00

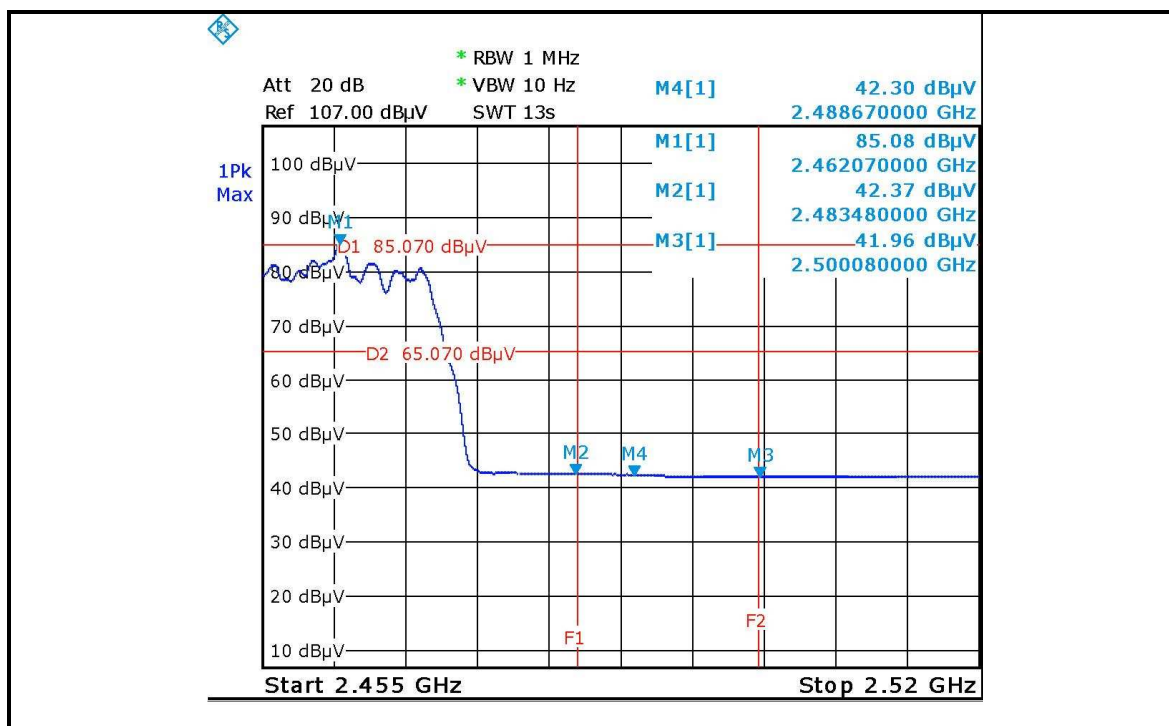
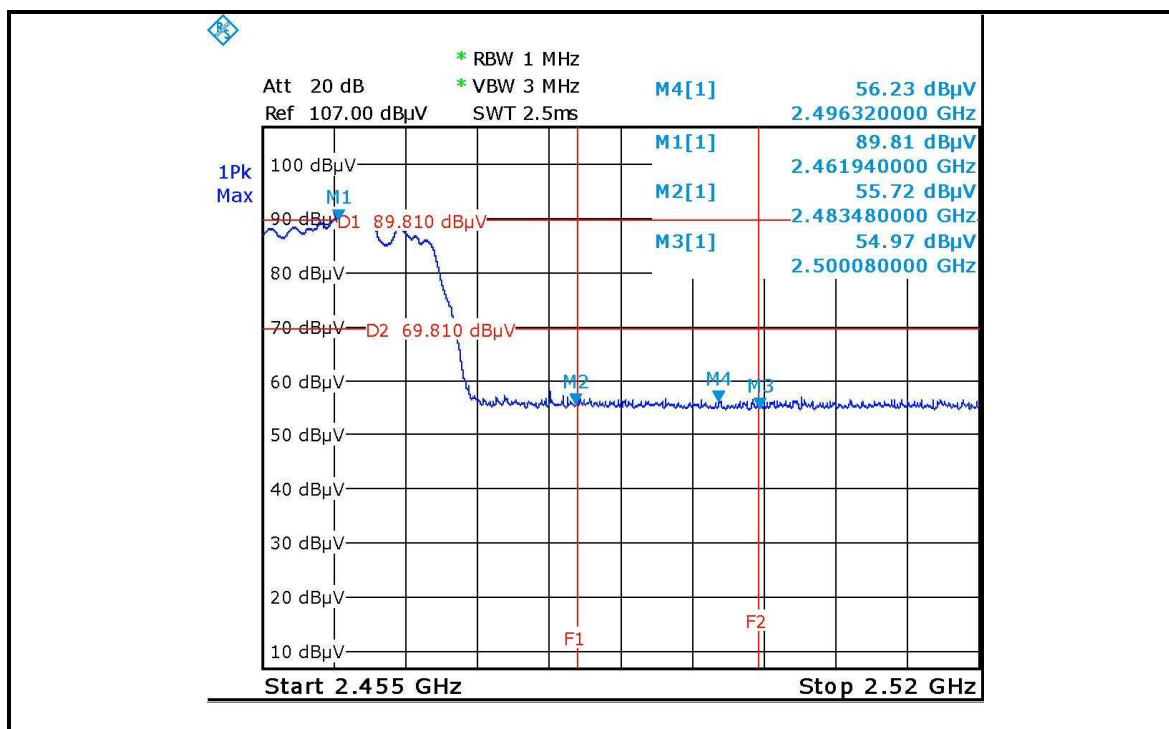
RESTRICT BAND (2483.5 ~ 2500 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2462.00 (PK)	107.03	56.23	50.80	74.00
2462.00 (AV)	84.74	42.30	42.44	54.00

NOTE:

- Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission. Please check following 2 pages.
- Maximum field strength in restrict band = Fundamental emission – Delta.





802.11g

RESTRICT BAND (2310 ~ 2390 MHz)

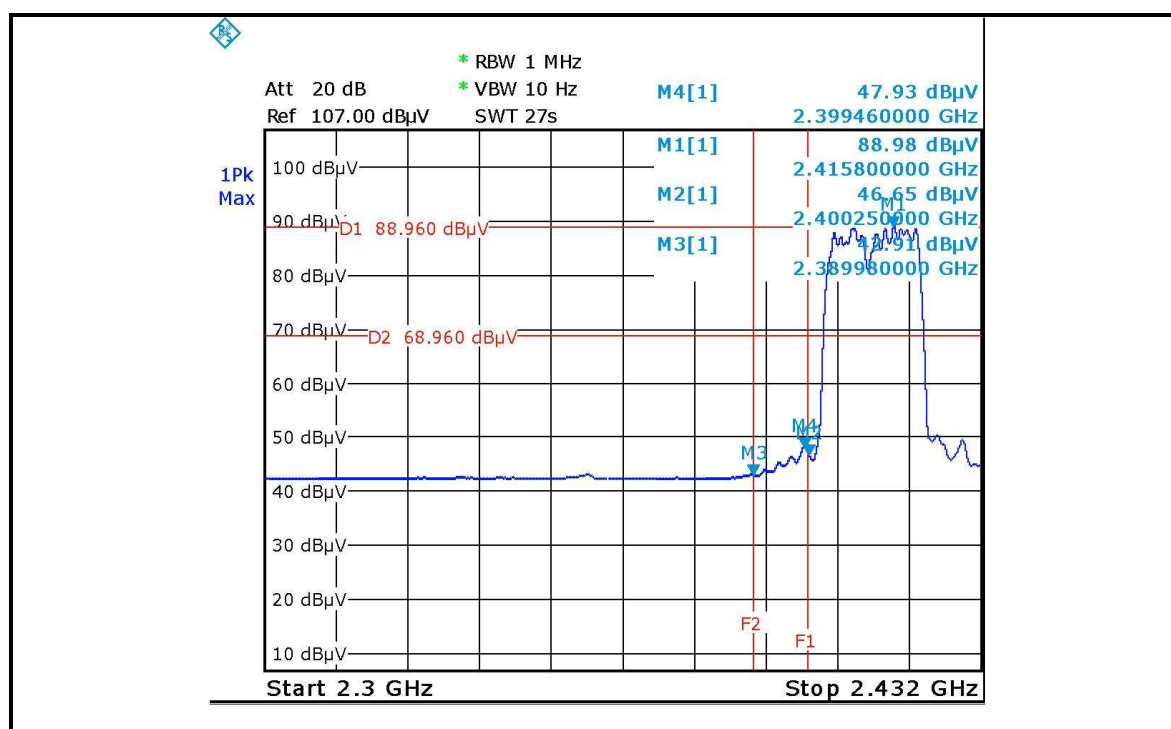
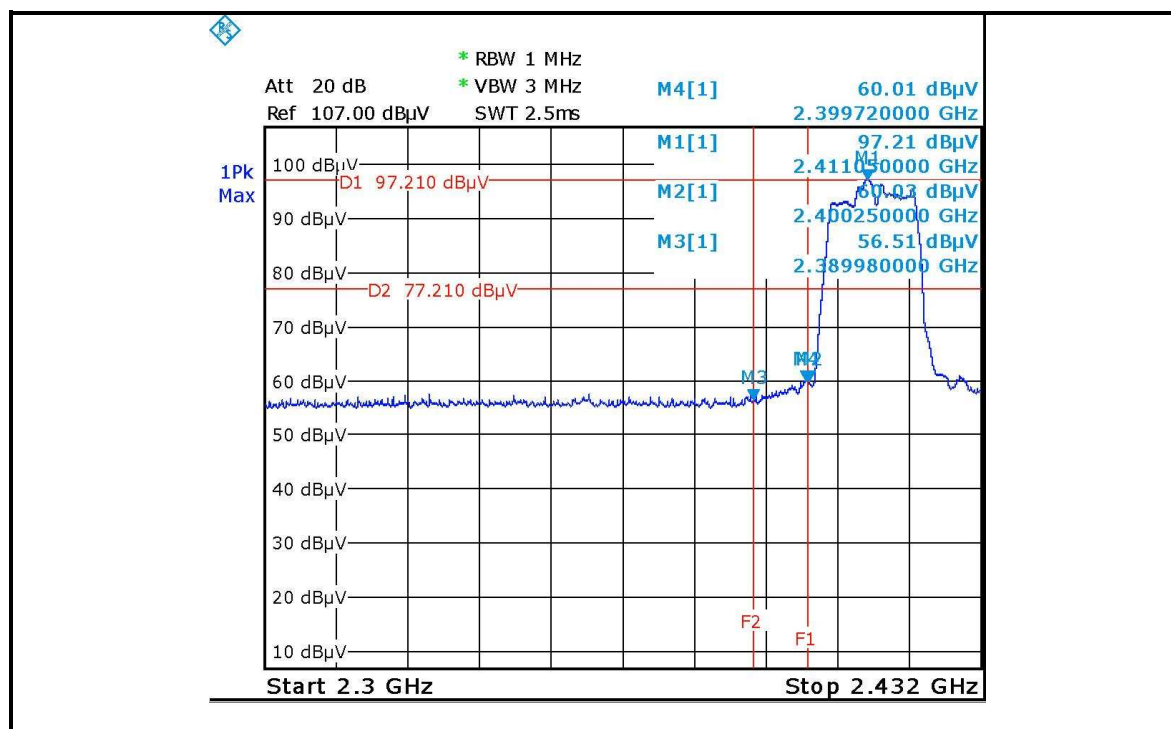
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2412.00 (PK)	104.80	60.01	44.79	74.00
2412.00 (AV)	91.80	47.93	43.87	54.00

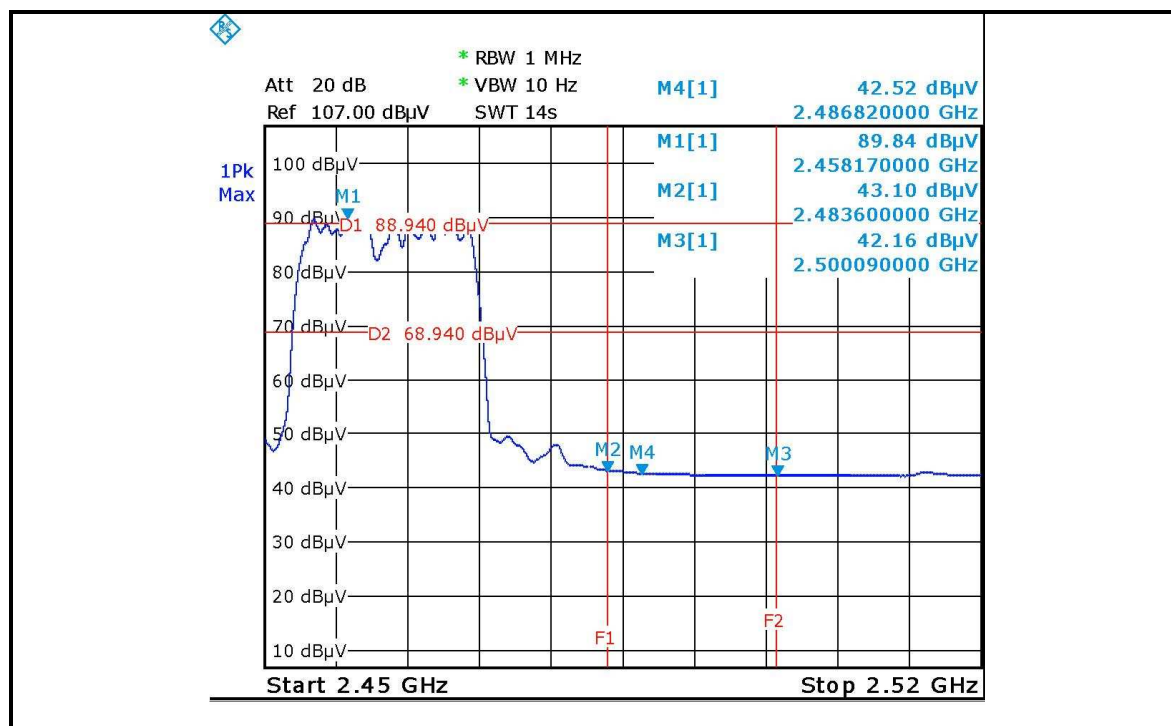
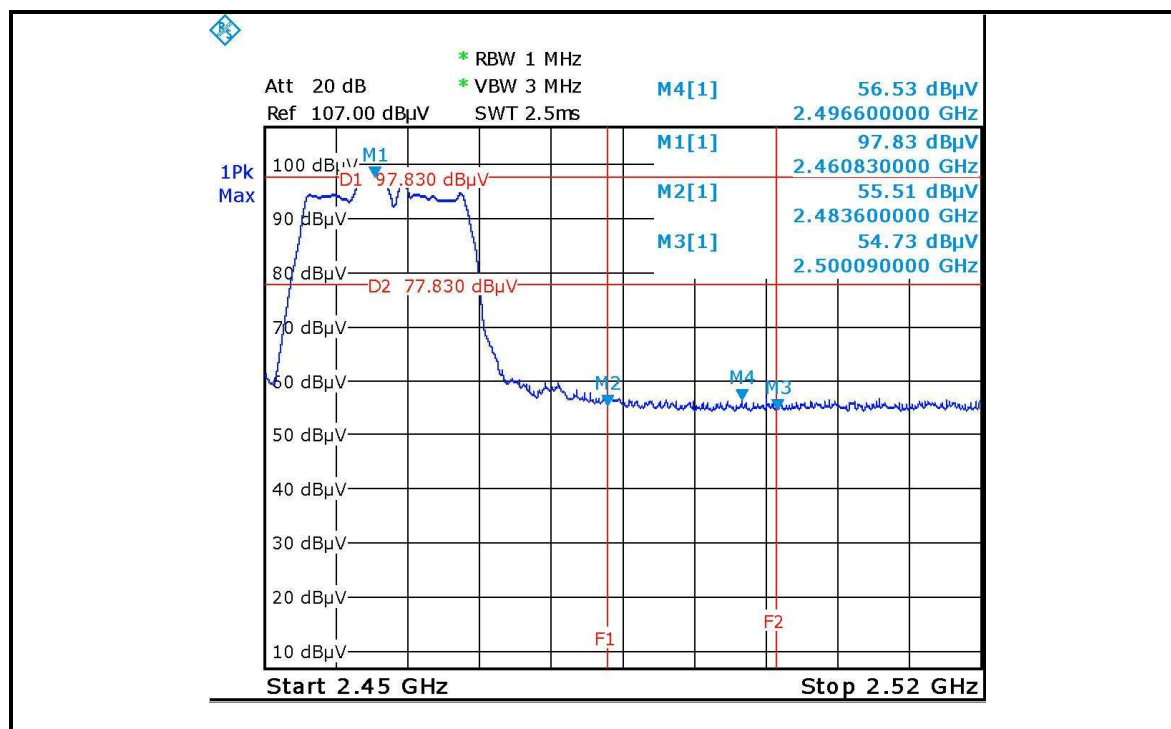
RESTRICT BAND (2483.5 ~ 2500 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2462.00 (PK)	100.20	56.53	43.67	74.00
2462.00 (AV)	87.25	43.10	44.15	54.00

NOTE:

1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission.
Please check following 2 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.





802.11n (20MHz)

RESTRICT BAND (2310 ~ 2390 MHz)

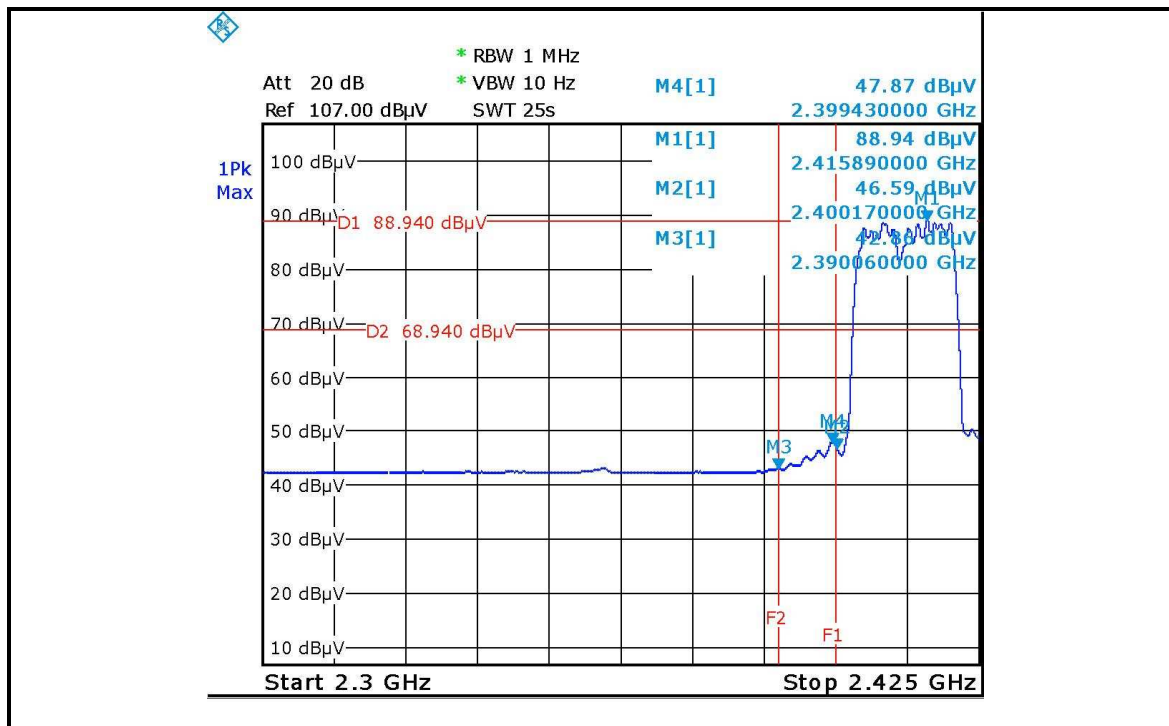
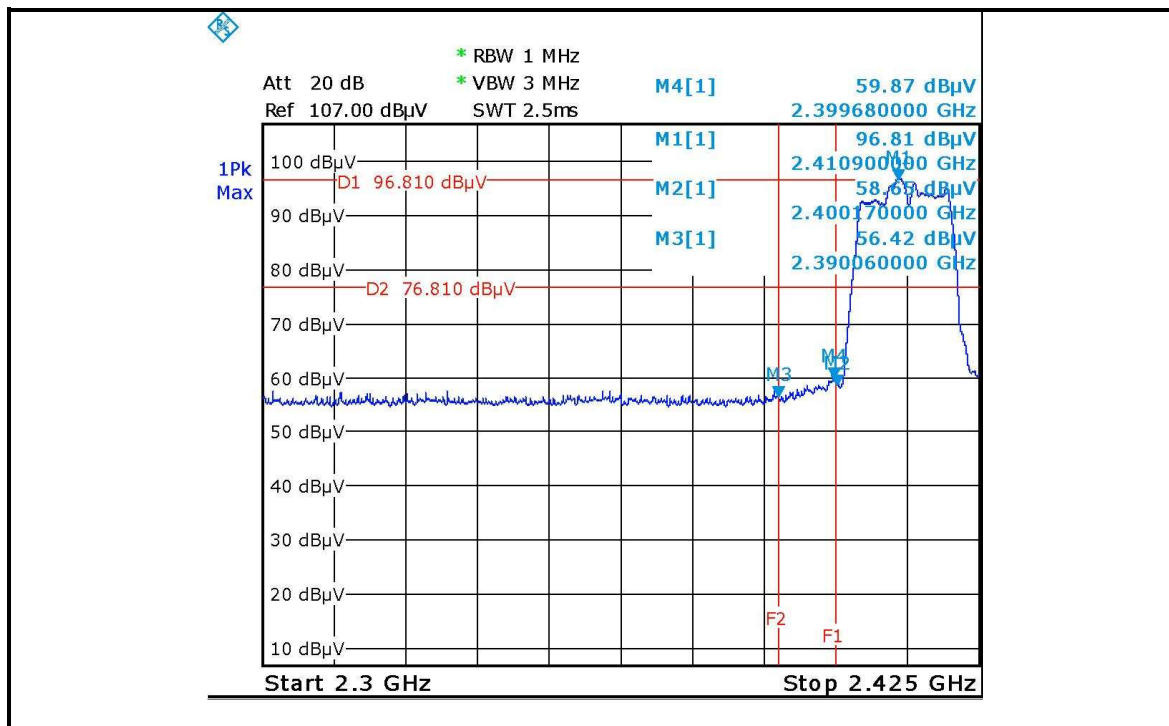
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2412.00 (PK)	98.10	59.87	38.23	74.00
2412.00 (AV)	91.68	47.87	43.81	54.00

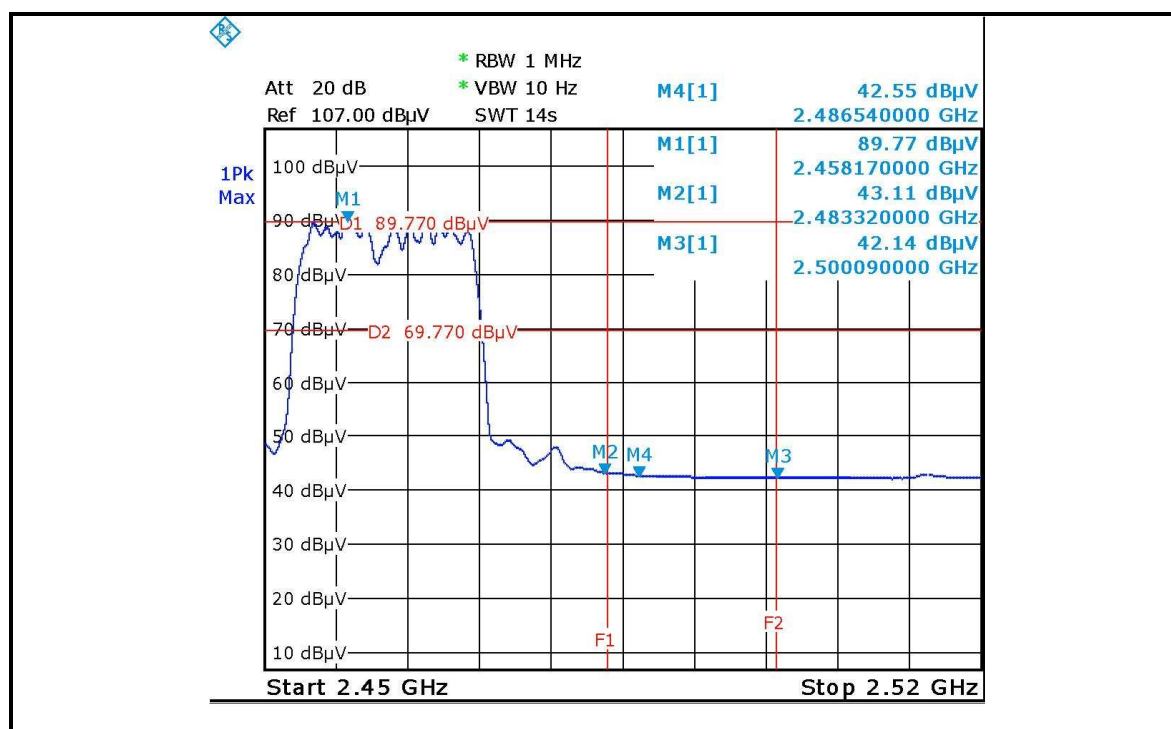
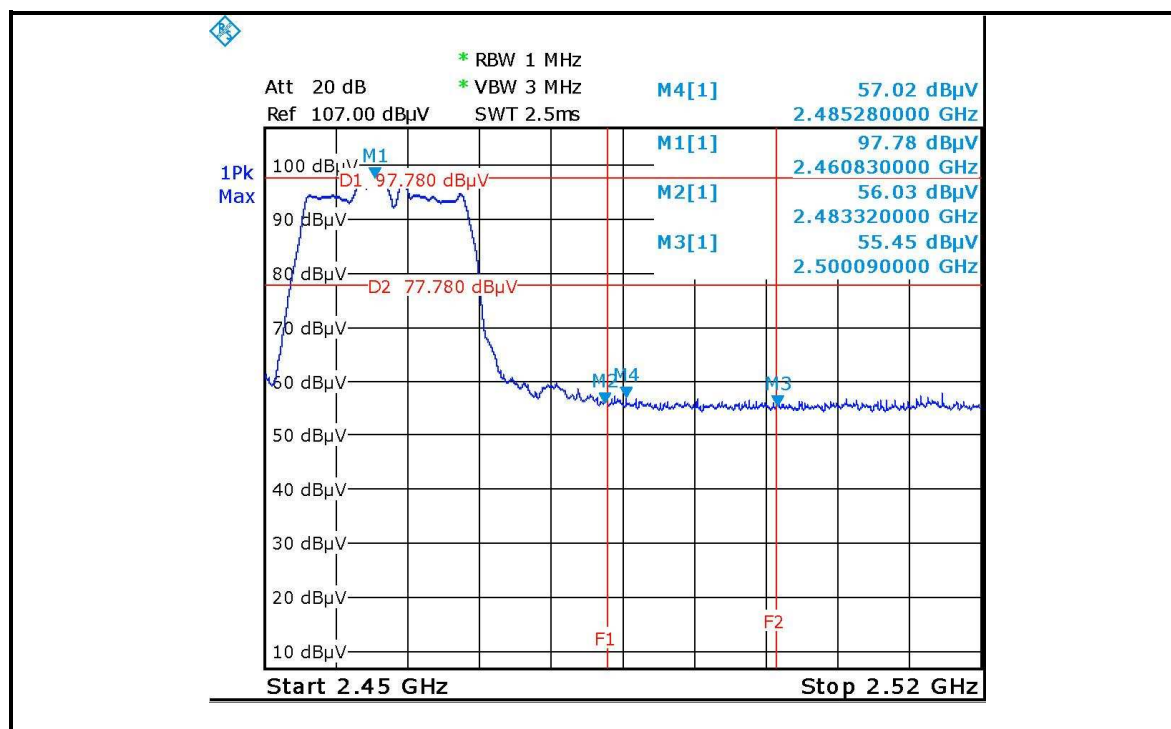
RESTRICT BAND (2483.5 ~ 2500 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2462.00 (PK)	100.05	57.02	43.03	74.00
2462.00 (AV)	86.44	42.55	43.89	54.00

NOTE:

- Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission.
Please check following 2 pages.
- Maximum field strength in restrict band = Fundamental emission – Delta.





802.11n (40MHz)

RESTRICT BAND (2310 ~ 2390 MHz)

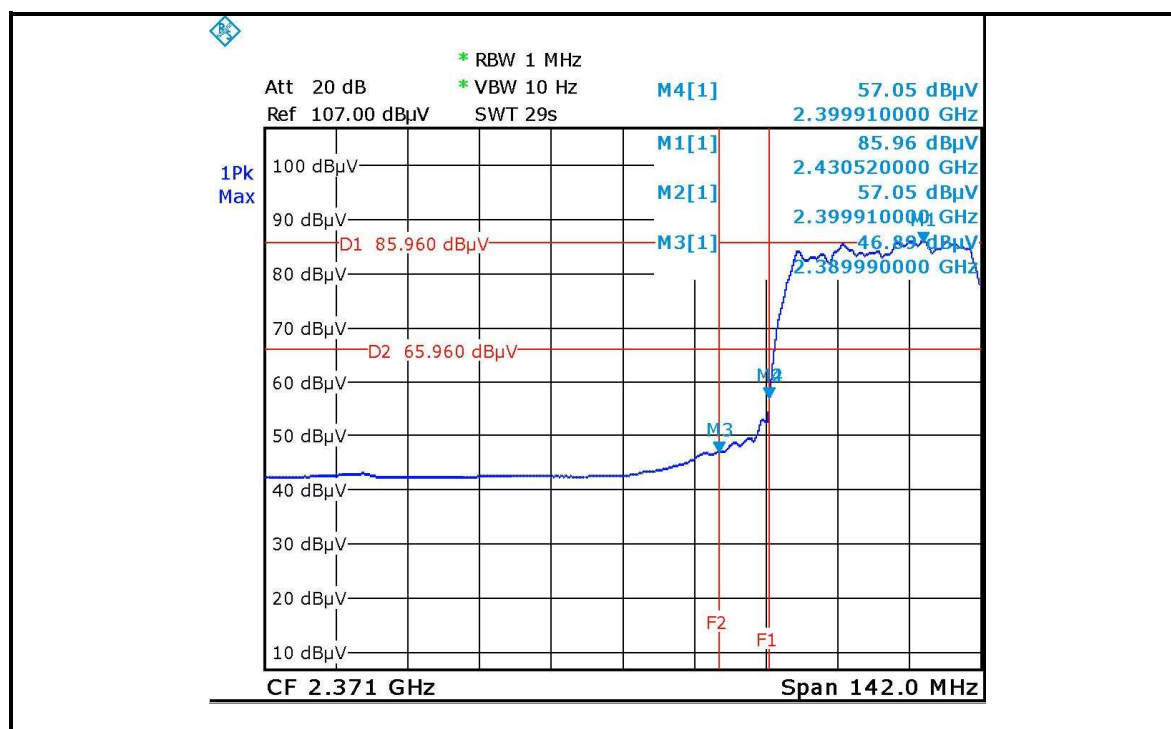
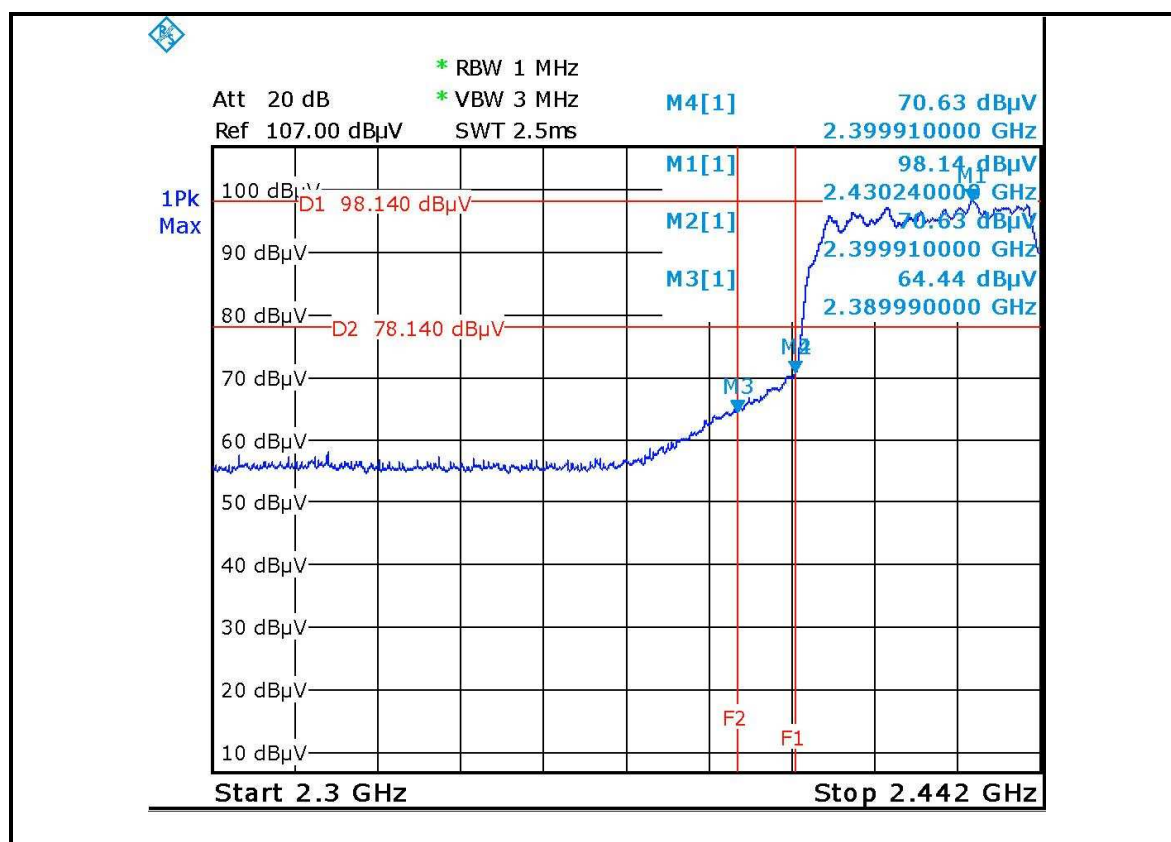
FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2422.00 (PK)	97.96	70.63	27.33	74.00
2422.00 (AV)	82.60	57.05	25.55	54.00

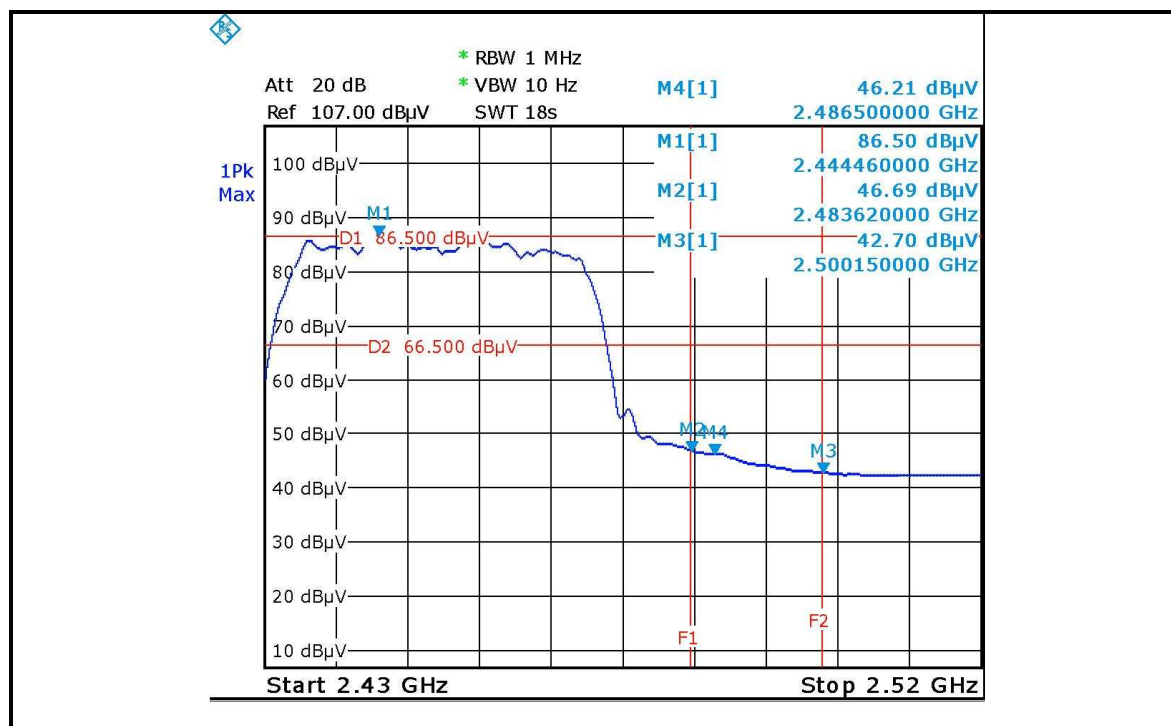
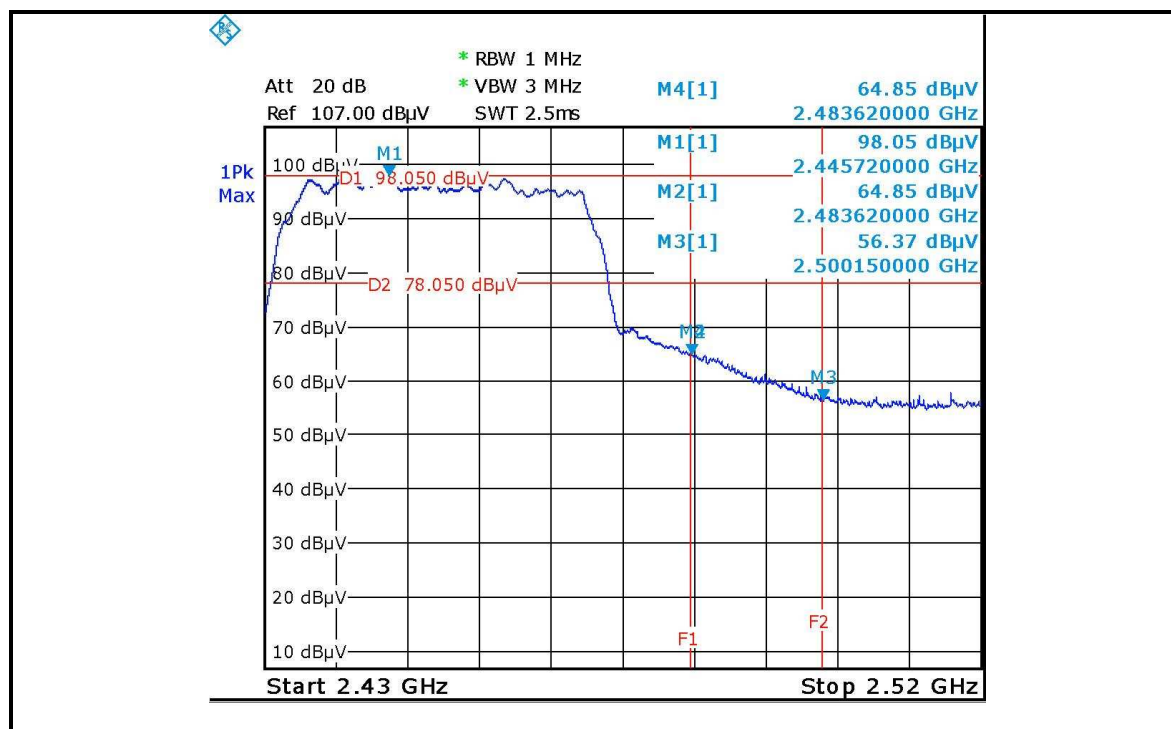
RESTRICT BAND (2483.5 ~ 2500 MHz)

FREQUENCY (MHz)	FUNDAMENTAL EMISSION (dBuV/m)	DELTA (dB)	MAXIMUM FIELD STRENGTH IN RESTRICT BAND (dBuV/m)	LIMIT (dBuV/m)
2452.00 (PK)	96.73	64.85	31.88	74.00
2452.00 (AV)	86.90	46.21	40.69	54.00

NOTE:

1. Delta = Amplitude between the peak of the fundamental and the peak of the band edge emission.
Please check following 2 pages.
2. Maximum field strength in restrict band = Fundamental emission – Delta.





5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).

6. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---