FCC RADIO TEST REPORT
FCC ID:2ACTW801

Product：	IP CAMERA
Trade Name：	N/A
Model Name：	801
Serial Model：	802,803,805,806,808,809,812,815,816,818

Prepared for

SHENZHEN HUIZHONGDA ELECTRONICE CO., LTD

5/F,Building B4,Yingtian Industry XiXiang Road BaoAn Distict ShenZhen,China

Prepared by

Shenzhen STONE Testing Technology Co.,Ltd.

F/6, Bldg.12, Zhongxing Industrial City, Chuangye Rd., Nanshan District
Shenzhen P.R. China

TEST RESULT CERTIFICATION

Applicant's name	SHENZHEN HUIZHONGDA ELECTRONICE CO., LTD
Address	5/F,Building B4,Yingtian Industry XiXiang Road BaoAn Distict ShenZhen,China
Manufacture's Name	SHENZHEN HUIZHONGDA ELECTRONICE CO., LTD
Address	5/F,Building B4,Yingtian Industry XiXiang Road BaoAn Distict ShenZhen,China
Product description	
Product name	IP CAMERA
Model and/or type reference	801
Serial Model	802,803,805,806,808,809,812,815,816,818
Standards	FCC Part15.247
Test procedure	ANSI C63.4-2003

This device described above has been tested by STT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test	
Date (s) of performance of tests	08 Jul. 2014 ~21 Jul. 2014
Date of Issue	21 Jul. 2014
Test Result	**Pass**

Testing Engineer : (Eric Wang)

Technical Manager : (Jerry You)

Authorized Signatory : (Jack yu)

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)	Peak Output Power	PASS	
15.247 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

1.1 TEST FACILITY

Shenzhen STONE Testing Technology Co.,Ltd.
Add.: F/6, Bldg.12, Zhongxing Industrial City, Chuangye Rd., Nanshan District Shenzhen P.R. China
FCC Registration No.: 323508; IC Registration No.: 11043A

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**,where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**,providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>IP CAMERA</td></tr>
<tr><td>Model Name</td><td>801</td></tr>
<tr><td>Serial Model</td><td>802,803,805,806,808,809,812,815,816,818</td></tr>
<tr><td>Model Difference</td><td>All the models are the same circuit and RF module, except model name.</td></tr>
<tr><td>Product Description</td><td>The EUT is a IP CAMERA
<table>
<tr><td>Operation Frequency:</td><td>802.11b/g/n(20MHz): 2412~2462MHz</td></tr>
<tr><td>Modulation Type:</td><td>CCK/OFDM/DBPSK/DAPSK</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>802.11b:11/5.5/2/1 Mbps
802.11g:54/48/36/24/18/12/9/6Mbps
802.11n(20MHz): 65/52/6.5Mbps</td></tr>
<tr><td>Number Of Channel</td><td>802.11b/g/n20MHz:11CH</td></tr>
<tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr>
<tr><td>Output Power(Conducted):</td><td>802.11b: 13.97 dBm (Max.pk)
802.11g: 13.65dBm (Max.pk)
802.11n(20M): 12.98 dBm (Max.pk)</td></tr>
<tr><td>Antenna Gain (dBi)</td><td>0dbi</td></tr>
</table>
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</td></tr>
<tr><td>Channel List</td><td>Please refer to the Note 2.</td></tr>
<tr><td>Ratings</td><td>DC 5.0V, 1A</td></tr>
<tr><td>Adapter</td><td>N/A</td></tr>
<tr><td>Battery</td><td>N/A</td></tr>
</table>

Note:

1. For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.
2.

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

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	PCB	N/A	0	Wifi Antenna

2.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n/20MHz CH1/ CH6/ CH11
Mode 4	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 4	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n/20MHz CH1/ CH6/ CH11

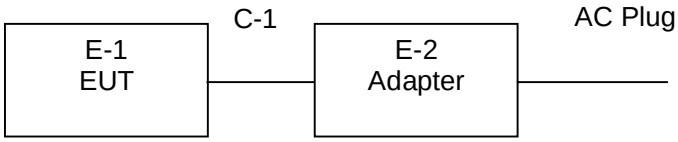
Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

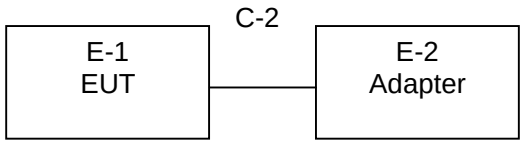
(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Spurious Emission Test



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	IP CAMERA	N/A	801	N/A	EUT
E-2	Adapter	N/A	FY0502000	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.2m	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2014.07.06	2015.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2014.06.07	2015.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2014.07.06	2015.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2014.06.07	2015.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2014.06.07	2015.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2014.07.06	2015.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2013.12.22	2014.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2014.07.06	2015.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2014.07.06	2015.07.05	1 year
12	Power Meter	Anristu	ML2495A	1145054	2013.08.16	2014.08.16	1 year
13	Power Sensor	Anristu	MA2411B	1126096	2013.08.16	2014.08.16	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2014.06.06	2015.06.05	1 year
2	LISN	R&S	ENV216	101313	2013.08.24	2014.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2013.08.24	2014.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2014.06.07	2015.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2014.06.07	2015.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2014.06.08	2015.06.07	1 year

1	Attenuation	MCE	24-10-34	BN9258	2014.06.08	2015.06.07	1 year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

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

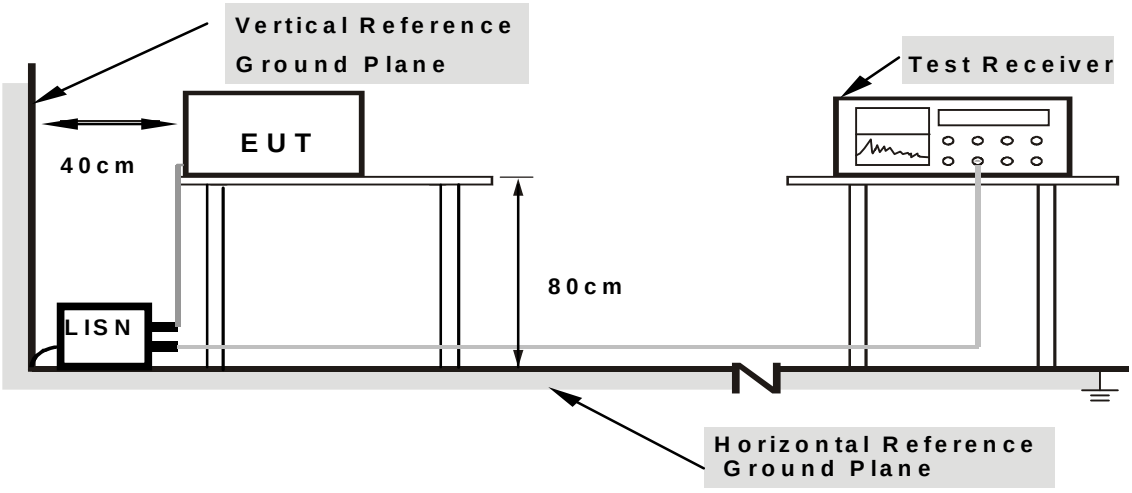
3.1.2 TEST PROCEDURE

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

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80
from other units and other metal planes

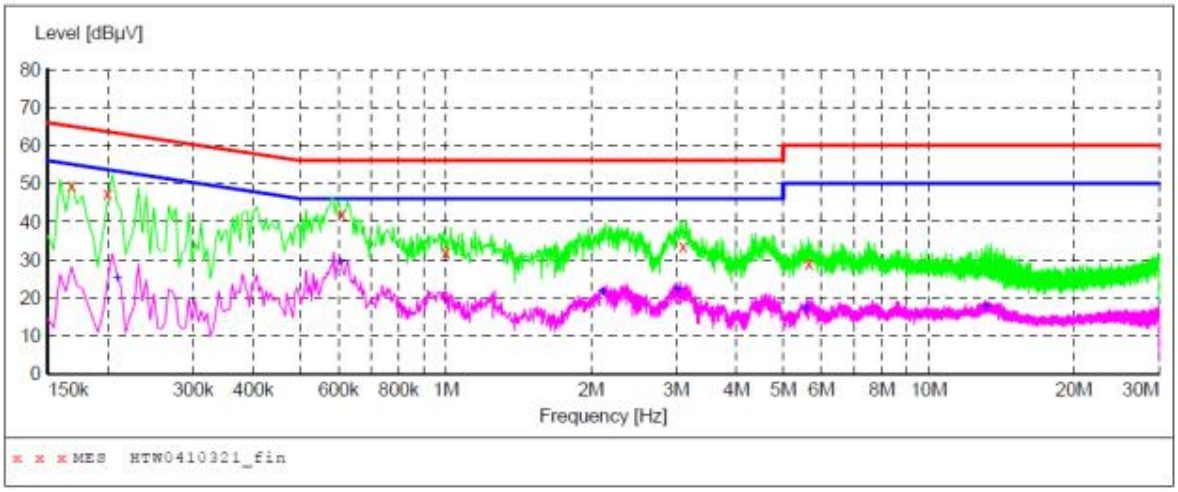
3.1.5 EUT OPERATING CONDITIONS

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

3.1.6 TEST RESULTS

EUT：	IP CAMERA	Model Name. ：	801
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	N
Test Voltage ：	DC 5V form PC AC 120V/60Hz	Test Mode：	Mode 4

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



MEASUREMENT RESULT:

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.168000	49.50	10.3	65.1	15.6	QP	N	GND
0.199500	47.30	10.4	63.6	16.3	QP	N	GND
0.609000	41.80	10.3	56.0	14.2	QP	N	GND
1.000500	32.10	10.3	56.0	23.9	QP	N	GND
3.102000	33.60	10.3	56.0	22.4	QP	N	GND
5.653500	29.00	10.3	60.0	31.0	QP	N	GND

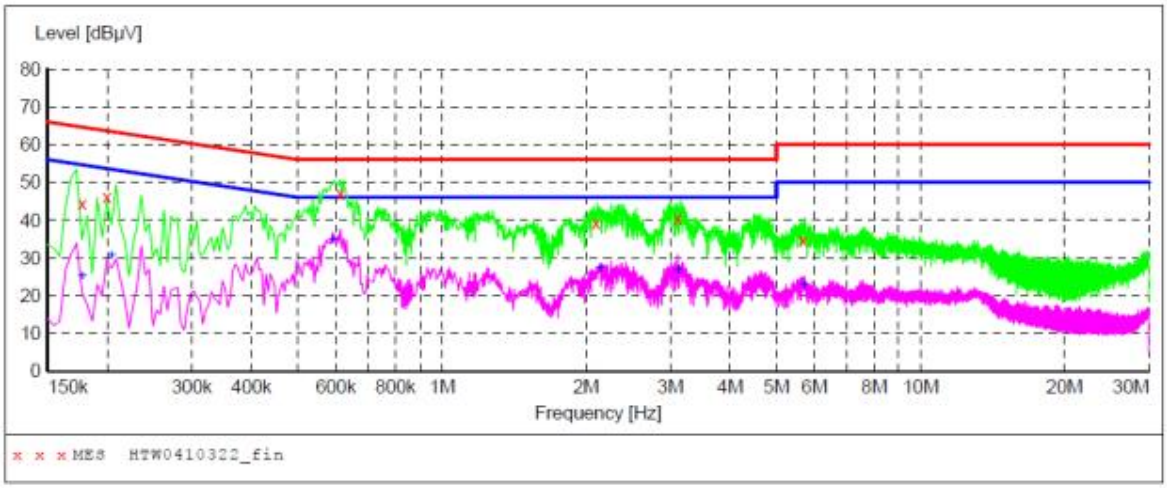
MEASUREMENT RESULT:

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.208500	25.20	10.4	53.3	28.1	AV	N	GND
0.604500	29.20	10.3	46.0	16.8	AV	N	GND
2.112000	21.40	10.3	46.0	24.6	AV	N	GND
3.016500	22.00	10.3	46.0	24.0	AV	N	GND
5.568000	17.10	10.3	50.0	32.9	AV	N	GND
13.114500	17.50	10.7	50.0	32.5	AV	N	GND

EUT：	IP CAMERA	Model Name. ：	801
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V form PC AC 120V/60Hz	Test Mode：	Mode 4

SCAN TABLE: "Voltage (9K-30M) FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT:

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	44.30	10.3	64.6	20.3	QP	L1	GND
0.199500	46.20	10.4	63.6	17.4	QP	L1	GND
0.613500	47.20	10.3	56.0	8.8	QP	L1	GND
2.098500	39.10	10.3	56.0	16.9	QP	L1	GND
3.115500	40.40	10.3	56.0	15.6	QP	L1	GND
5.694000	34.90	10.3	60.0	25.1	QP	L1	GND

MEASUREMENT RESULT:

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.177000	25.00	10.3	54.6	29.6	AV	L1	GND
0.204000	30.50	10.4	53.4	22.9	AV	L1	GND
0.591000	34.70	10.3	46.0	11.3	AV	L1	GND
2.139000	27.10	10.3	46.0	18.9	AV	L1	GND
3.111000	26.60	10.3	46.0	19.4	AV	L1	GND
5.712000	22.80	10.3	50.0	27.2	AV	L1	GND

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

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

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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

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

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / *10Hz* for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

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

Note:

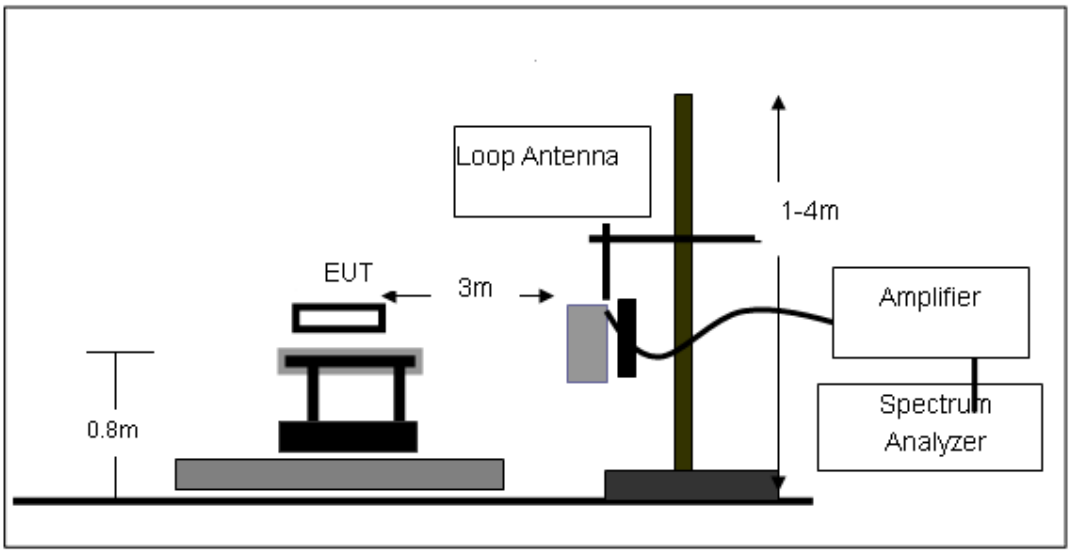
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

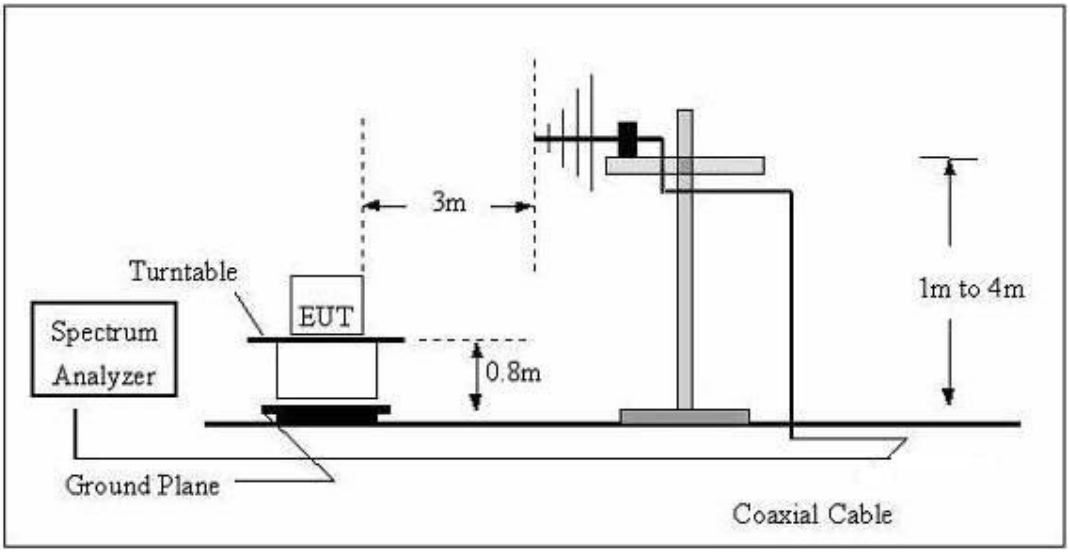
No deviation

3.2.4 TEST SETUP

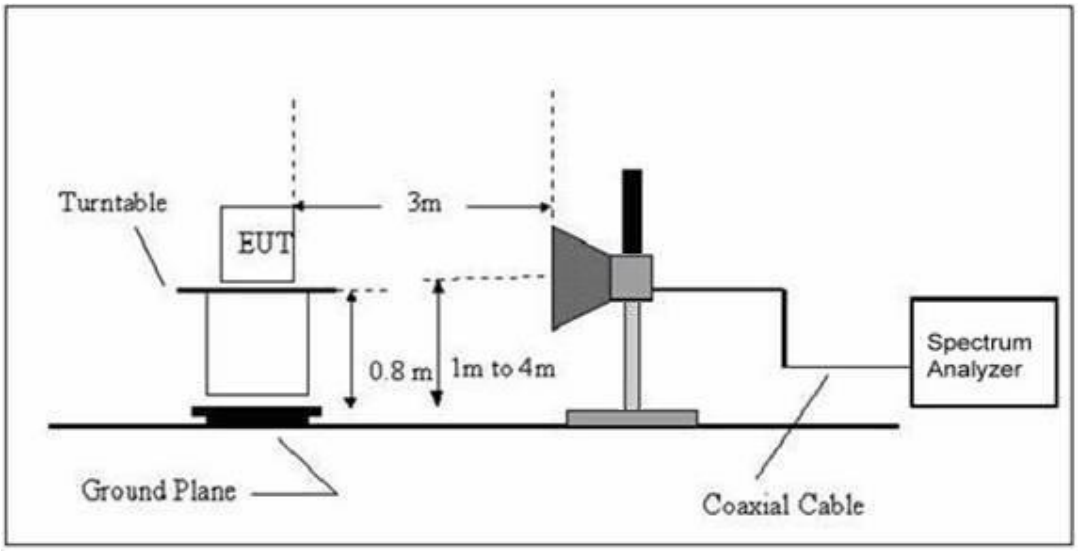
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 EUT OPERATING CONDITIONS

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

3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)

EUT：	IP CAMERA	Model Name. ：	801
Temperature：	26 ℃	Relative Humidity：	56%
Pressure：	1010hPa	Phase：	L
Test Voltage ：	DC 5V	Test Mode：	TX

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

NOTE:

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

NOTE:

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

3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT：	IP CAMERA	Model Name ：	801
Temperature：	20 ℃	Relative Humidity：	48%
Pressure：	1010 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Below 1G							
36.1272	21.29	15.31	36.6	40	-3.4	QP	36.1272
50.4089	28.81	8.07	36.88	40	-3.12	QP	50.4089
61.1315	30.8	5.31	36.11	40	-3.89	QP	61.1315
161.474	28.55	10.95	39.5	43.5	-4	QP	161.474
252.9482	22.83	13.94	36.77	46	-9.23	QP	252.9482
379.9141	17.18	17.14	34.32	46	-11.68	QP	379.9141
30	18.27	18.33	36.6	40	-3.4	QP	30
56.3947	29.79	5.91	35.7	40	-4.3	QP	56.3947
144.3348	25.27	12.04	37.31	43.5	-6.19	QP	144.3348
256.521	24.77	14.47	39.24	46	-6.76	QP	256.521
303.5437	24.63	14.85	39.48	46	-6.52	QP	303.5437
774.1584	13.75	26.16	39.91	46	-6.09	QP	774.1584

3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

802.11b Mode(above 1GHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b--2412MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4824.00	54.91	PK	74.00	19.09	1.00 H	39	52.81	31.60	7.00	36.5	2.10
1	4824.00	46.32	AV	54.00	7.68	1.00 H	39	44.22	31.60	7.00	36.5	2.10
2	7236.00	58.47	PK	74.00	15.53	1.00 H	131	47.54	37.33	8.90	35.3	10.93
2	7236.00	42.25	AV	54.00	11.75	1.00 H	131	31.32	37.33	8.90	35.3	10.93

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b--2412MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4824.00	62.91	PK	74.00	11.09	1.00 H	301	60.81	31.60	7.00	36.5	2.10
1	4824.00	50.72	AV	54.00	3.28	1.00 H	301	48.62	31.60	7.00	36.5	2.10
2	7236.00	60.63	PK	74.00	13.37	1.00 H	157	49.7	37.33	8.90	35.3	10.93
2	7236.00	50.65	AV	54.00	3.35	1.00 H	157	39.72	37.33	8.90	35.3	10.93

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b--2437MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4874.00	59.26	PK	74.00	14.74	1.00 H	215	57.14	31.02	7.60	36.5	2.12
1	4874.00	48.16	AV	54.00	5.84	1.00 H	215	46.04	31.02	7.60	36.5	2.12
2	7311.00	62.13	PK	74.00	11.87	1.00 H	193	51.05	37.28	8.60	34.8	11.08
2	7311.00	49.22	AV	54.00	4.78	1.00 H	193	38.14	37.28	8.60	34.8	11.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b--2437MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4874.00	59.26	PK	74.00	14.74	1.00 H	131	57.14	31.02	7.60	36.5	2.12
1	4874.00	48.17	AV	54.00	5.83	1.00 H	131	46.05	31.02	7.60	36.5	2.12
2	7311.00	58.22	PK	74.00	15.78	1.00 H	39	47.14	37.28	8.60	34.8	11.08
2	7311.00	48.13	AV	54.00	5.87	1.00 H	39	37.05	37.28	8.60	34.8	11.08

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11b--2462MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4924.00	59.61	PK	74.00	14.39	1.00 H	319	57.23	31.58	7.00	36.2	2.38
1	4924.00	49.70	AV	54.00	4.30	1.00 H	319	47.32	31.58	7.00	36.2	2.38
2	7386.00	61.95	PK	74.00	12.05	1.00 H	127	50.24	38.51	8.50	35.3	11.71
2	7386.00	48.95	AV	54.00	5.05	1.00 H	127	37.24	38.51	8.50	35.3	11.71

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11b--2462MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4924.00	62.8	PK	74.00	11.2	1.00 H	312	60.42	31.58	7.00	36.2	2.38
1	4924.00	49.23	AV	54.00	4.77	1.00 H	312	46.85	31.58	7.00	36.2	2.38

2	7386.00	64.00	PK	74.00	10.00	1.00 H	207	52.29	38.51	8.50	35.3	11.71
2	7386.00	48.94	AV	54.00	5.06	1.00 H	207	37.23	38.51	8.50	35.3	11.71

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. For Wireless 802.11b mode at 1Mbps.

802.11g Mode(above 1GHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g--2412MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4824.00	57.34	PK	74.00	16.66	1.00 H	30	55.24	31.6	7.00	36.5	2.10
1	4824.00	49.44	AV	54.00	4.56	1.00 H	30	47.34	31.6	7.00	36.5	2.10
2	7236.00	61.91	PK	74.00	12.09	1.00 H	242	50.98	37.33	8.90	35.3	10.93
2	7236.00	49.13	AV	54.00	4.87	1.00 H	242	38.2	37.33	8.90	35.3	10.93

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g--2412MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4824.00	63.33	PK	74.00	10.67	1.00 H	49	61.23	31.60	7.00	36.5	2.10
1	4824.00	49.44	AV	54.00	4.56	1.00 H	49	47.34	31.60	7.00	36.5	2.10
2	7236.00	61.09	PK	74.00	12.91	1.00 H	290	50.16	37.33	8.90	35.3	10.93
2	7236.00	48.35	AV	54.00	5.65	1.00 H	290	37.42	37.33	8.90	35.3	10.93

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g--2437MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4874.00	62.60	PK	74.00	11.40	1.00 H	110	60.48	31.02	7.60	36.5	2.12
1	4874.00	49.27	AV	54.00	4.73	1.00 H	110	47.15	31.02	7.60	36.5	2.12
2	7311.00	60.34	PK	74.00	13.66	1.00 H	57	49.26	37.28	8.60	34.8	11.08
2	7311.00	48.21	AV	54.00	5.79	1.00 H	57	37.13	37.28	8.60	34.8	11.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g--2437MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4874.00	63.67	PK	74.00	10.33	1.00 H	135	61.55	31.02	7.60	36.5	2.12
1	4874.00	49.64	AV	54.00	4.36	1.00 H	135	47.52	31.02	7.60	36.5	2.12
2	7311.00	62.36	PK	74.00	11.64	1.00 H	279	51.28	37.28	8.60	34.8	11.08
2	7311.00	47.62	AV	54.00	6.38	1.00 H	279	36.54	37.28	8.60	34.8	11.08

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11g--2462MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4924.00	59.85	PK	74.00	14.15	1.00 H	324	57.47	31.58	7.00	36.2	2.38
1	4924.00	47.71	AV	54.00	6.29	1.00 H	324	45.33	31.58	7.00	36.2	2.38
2	7311.00	62.34	PK	74.00	11.66	1.00 H	216	50.63	38.51	8.50	35.3	11.71

2	7311.00	49.05	AV	54.00	4.95	1.00 H	216	37.34	38.51	8.50	35.3	11.71

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11g--2462MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4924.00	61.58	PK	74.00	12.42	1.00 H	149	59.2	31.58	7.00	36.2	2.38
1	4924.00	48.62	AV	54.00	5.38	1.00 H	149	46.24	31.58	7.00	36.2	2.38
2	7386.00	63.94	PK	74.00	10.06	1.00 H	21	52.23	38.51	8.50	35.3	11.71
2	7386.00	48.95	AV	54.00	5.05	1.00 H	21	37.24	38.51	8.50	35.3	11.71

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. For Wireless 802.11g mode at 6Mbps.

802.11n(20MHz) Mode(above 1GHz)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20--2412MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4824.00	63.80	PK	74.00	10.20	1.00 H	78	61.7	31.60	7.00	36.5	2.10
1	4824.00	48.44	AV	54.00	5.56	1.00 H	78	46.34	31.60	7.00	36.5	2.10
2	7236.00	62.16	PK	74.00	11.84	1.00 H	180	51.23	37.33	8.90	35.3	10.93
2	7236.00	48.47	AV	54.00	5.53	1.00 H	180	37.54	37.33	8.90	35.3	10.93

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20--2412MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4824.00	63.66	PK	74.00	10.34	1.00 H	47	61.56	31.60	7.00	36.5	2.10
1	4824.00	49.23	AV	54.00	4.77	1.00 H	47	47.13	31.60	7.00	36.5	2.10
2	7236.00	63.27	PK	74.00	10.73	1.00 H	180	52.34	37.33	8.90	35.3	10.93
2	7236.00	49.61	AV	54.00	4.39	1.00 H	180	38.68	37.33	8.90	35.3	10.93

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20--2437MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4874.00	59.74	PK	74.00	14.26	1.00 H	210	57.62	31.02	7.60	36.5	2.12
1	4874.00	49.36	AV	54.00	4.64	1.00 H	210	47.24	31.02	7.60	36.5	2.12
2	7311.00	62.43	PK	74.00	11.57	1.00 H	181	51.35	37.28	8.60	34.8	11.08
2	7311.00	49.37	AV	54.00	4.63	1.00 H	181	38.29	37.28	8.60	34.8	11.08

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20--2437MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4874.00	60.36	PK	74.00	13.64	1.00 H	241	58.24	31.02	7.60	36.5	2.12
1	4874.00	49.47	AV	54.00	4.53	1.00 H	241	47.35	31.02	7.60	36.5	2.12
2	7311.00	61.70	PK	74.00	12.30	1.00 H	215	50.62	37.28	8.60	34.8	11.08
2	7311.00	49.73	AV	54.00	4.27	1.00 H	215	38.65	37.28	8.60	34.8	11.08

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (802.11n20--2462MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4924.00	58.81	PK	74.00	15.19	1.00 H	139	56.43	31.58	7.00	36.2	2.38
1	4924.00	45.92	AV	54.00	8.08	1.00 H	139	43.54	31.58	7.00	36.2	2.38
2	7386.00	60.95	PK	74.00	13.05	1.00 H	220	49.24	38.51	8.50	35.3	11.71
2	7386.00	49.07	AV	54.00	4.93	1.00 H	220	37.36	38.51	8.50	35.3	11.71

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (802.11n20--2462MHz)												
No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor	Cable Factor (dB)	Pre-amplifier	Correction Factor (dB/m)
1	4924.00	59.75	PK	74.00	14.25	1.00 H	158	57.37	31.58	7.00	36.2	2.38
1	4924.00	48.62	AV	54.00	5.38	1.00 H	158	46.24	31.58	7.00	36.2	2.38
2	7386.00	61.97	PK	74.00	12.03	1.00 H	270	50.26	38.51	8.50	35.3	11.71
2	7386.00	49.03	AV	54.00	4.97	1.00 H	270	37.32	38.51	8.50	35.3	11.71

REMARKS: 1. Emission level (dBuV/m) =Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m)+CableFactor (dB)-Pre-amplifier Factor
3. The other emission levels were very low against the limit.
4. Margin value = Limit value- Emission level.
5. For Wireless 802.11n (20MHz) mode at 6.5Mbps.

Radiated band edge

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
802.11b							
2390	30.76	1.25	32.01	54	-21.99	peak	Vertical
2390	28.65	1.25	29.9	54	-24.1	peak	Horizontal
2483.5	28.66	1.66	30.32	54	-23.68	peak	Vertical
2483.5	28.16	1.66	29.82	54	-24.18	peak	Horizontal
802.11g							
2390	29.54	1.25	30.79	54	-23.21	peak	Vertical
2390	27.87	1.25	29.12	54	-24.88	peak	Horizontal
2483.5	28.91	1.66	30.57	54	-23.43	peak	Vertical
2483.5	28.54	1.66	30.2	54	-23.8	peak	Horizontal
802.11n20							
2390	27.82	1.25	29.07	54	-24.93	peak	Vertical
2390	27.97	1.25	29.22	54	-24.78	peak	Horizontal
2483.5	27.49	1.66	29.15	54	-24.85	peak	Vertical
2483.5	28.91	1.66	30.57	54	-23.43	peak	Horizontal

Note: Test method to see chapter 3.2 . When PK value is lower than the Average value limit, average not record.

802.11b Test Mode

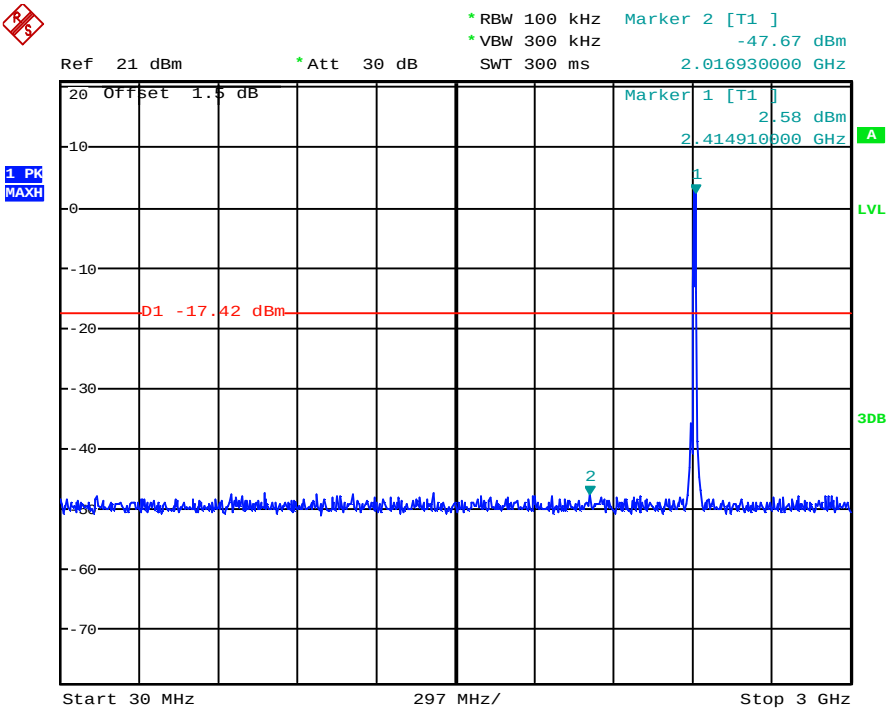
A. Test Verdict

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
1	2412	Plot 4.6.1 A1	-20	PASS
		Plot 4.6.1 A2	-20	PASS
		Plot 4.6.1 A3	-20	PASS
6	2437	Plot 4.6.1 B1	-20	PASS
		Plot 4.6.1 B2	-20	PASS
		Plot 4.6.1 B3	-20	PASS
11	2462	Plot 4.6.1 C1	-20	PASS
		Plot 4.6.1 C2	-20	PASS
		Plot 4.6.1 C3	-20	PASS

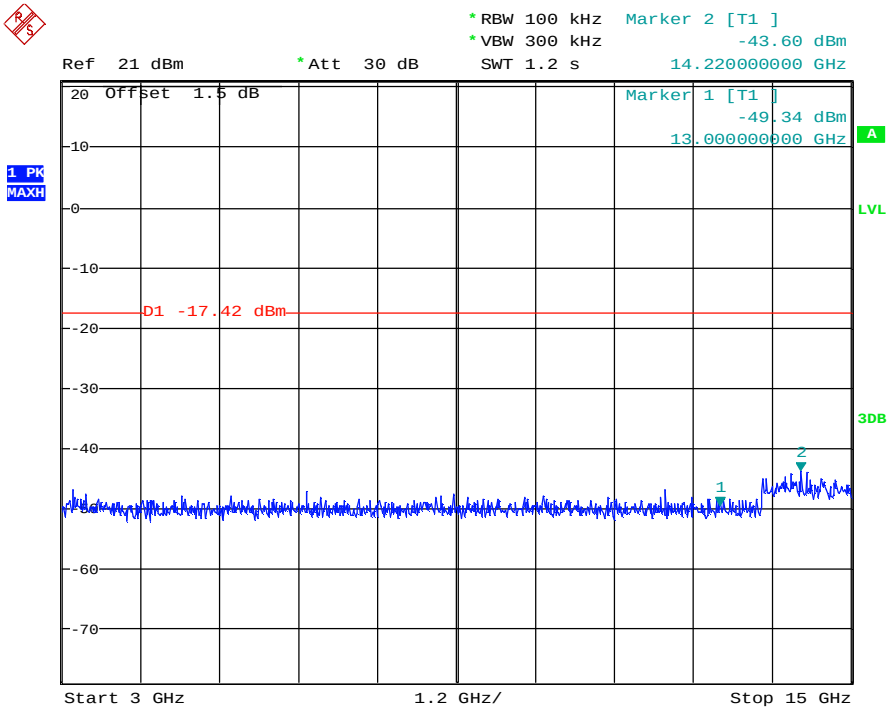
Frequency (MHz)	Delta Peak to Band emission (dBc)	Detector	Limit (dBc)	Refer to Plot	Verdict
2400.00	-39.62	Peak	-20	Plot 4.6.1 D	PASS
2483.50	-44.63	Peak	-20	Plot 4.6.1 E	PASS

Note: 1. For 802.11b mode at finial test to get the worst-case emission at 1Mbps.
2.The test results including the cable lose.

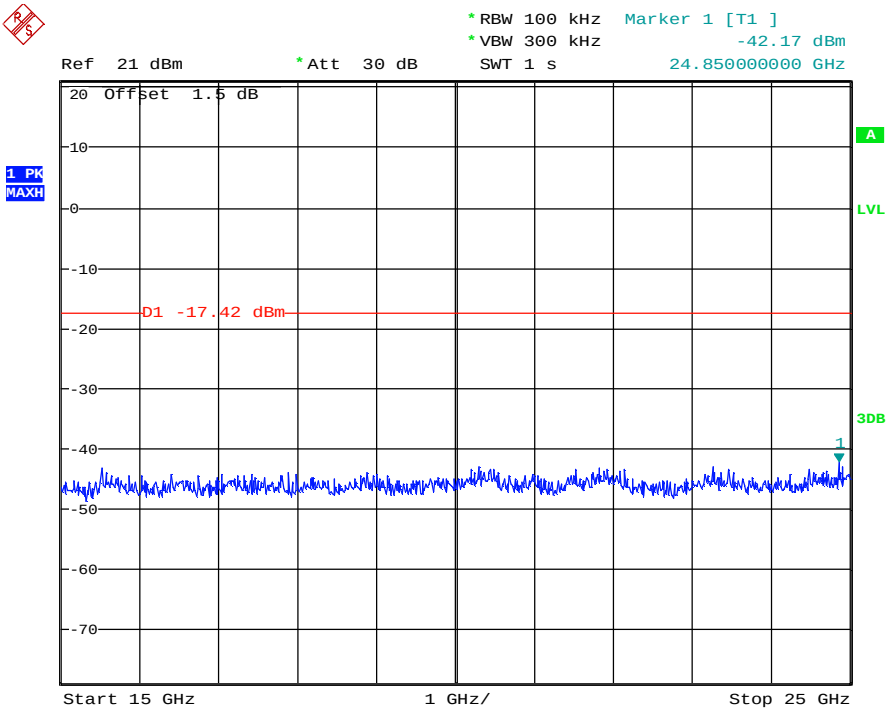
B. Test Plots



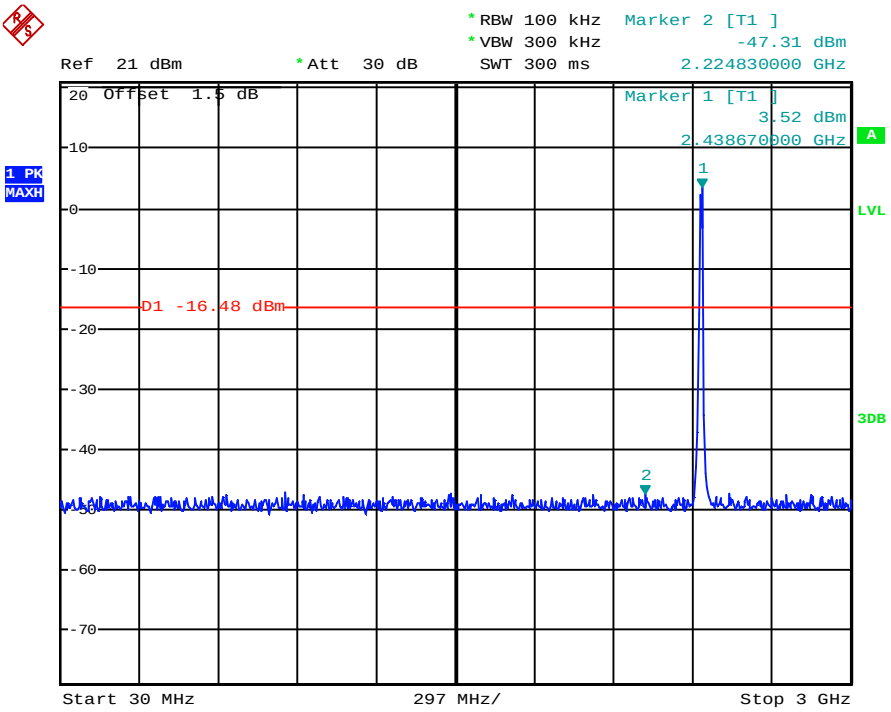
(Plot 4.6.1 A1: Channel 1: 2412MHz @ 802.11b)



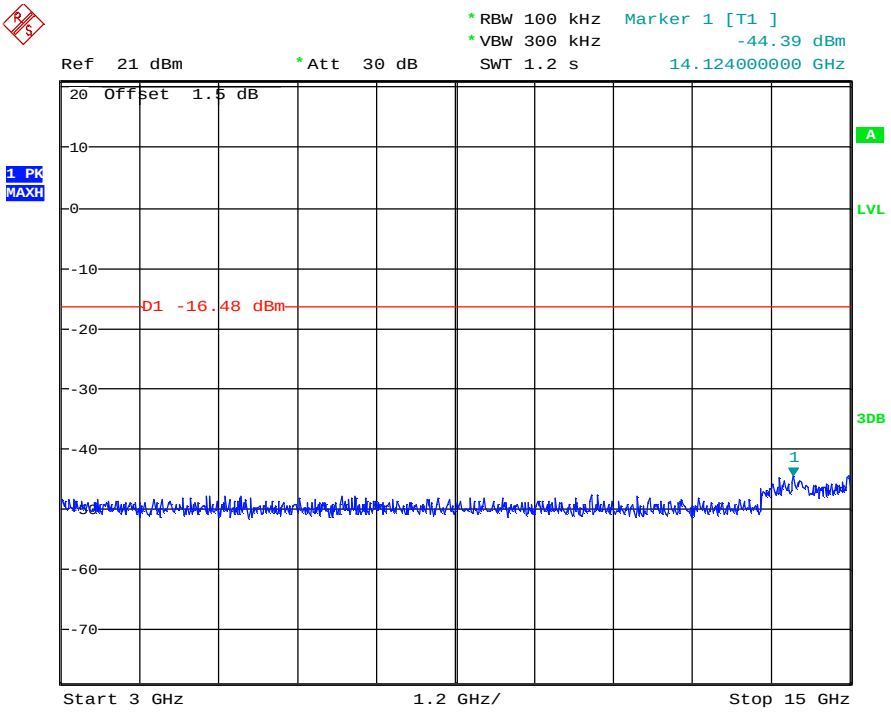
(Plot 4.6.1 A2: Channel 1: 2412MHz @ 802.11b)



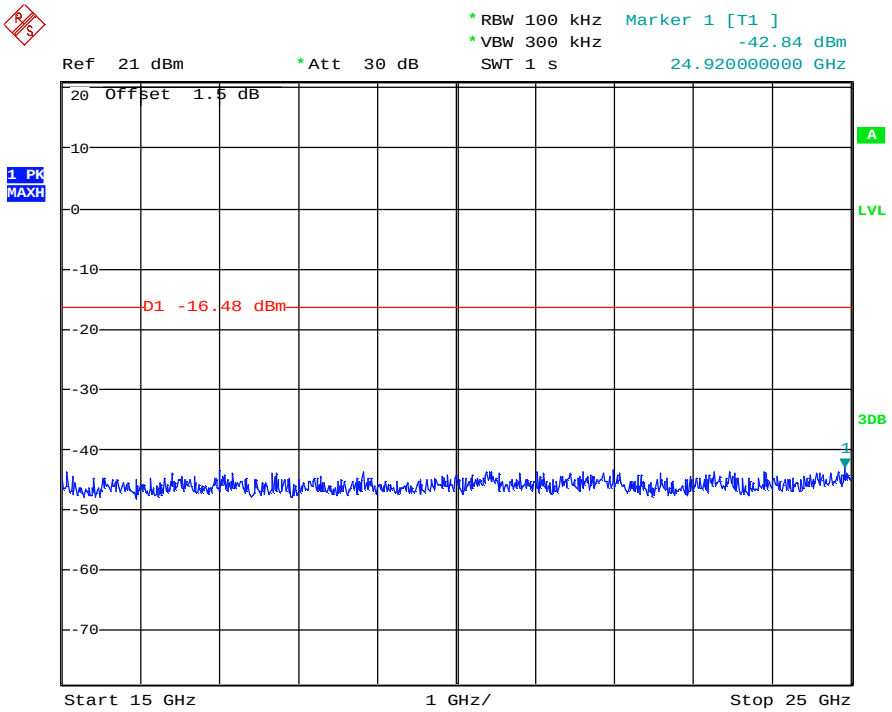
(Plot 4.6.1 A3: Channel 1: 2412MHz @ 802.11b)



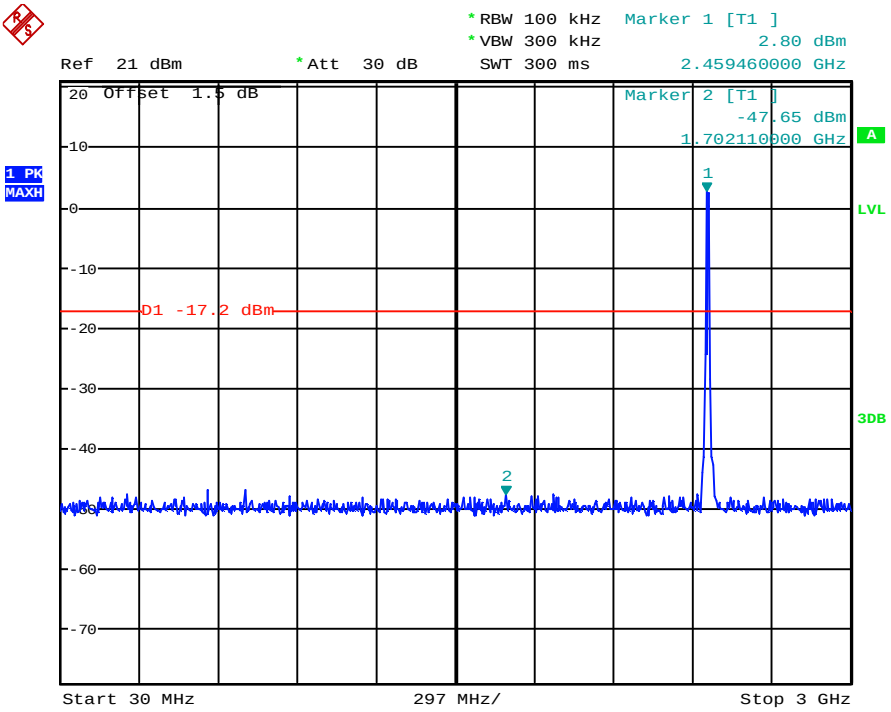
(Plot 4.6.1 B1: Channel 6: 2437MHz @ 802.11b)



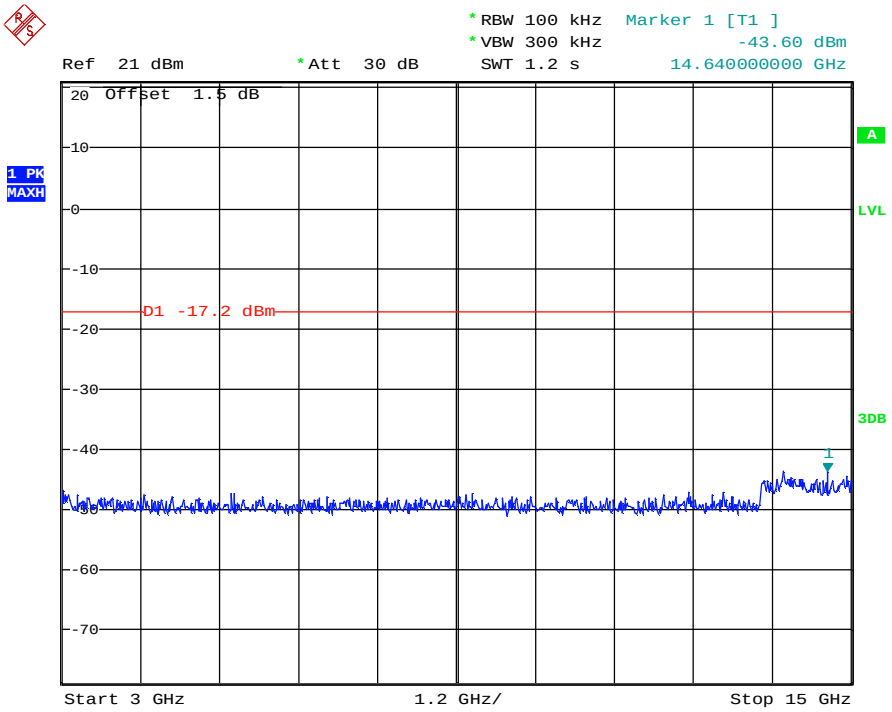
(Plot 4.6.1 B2: Channel 6: 2437MHz @ 802.11b)



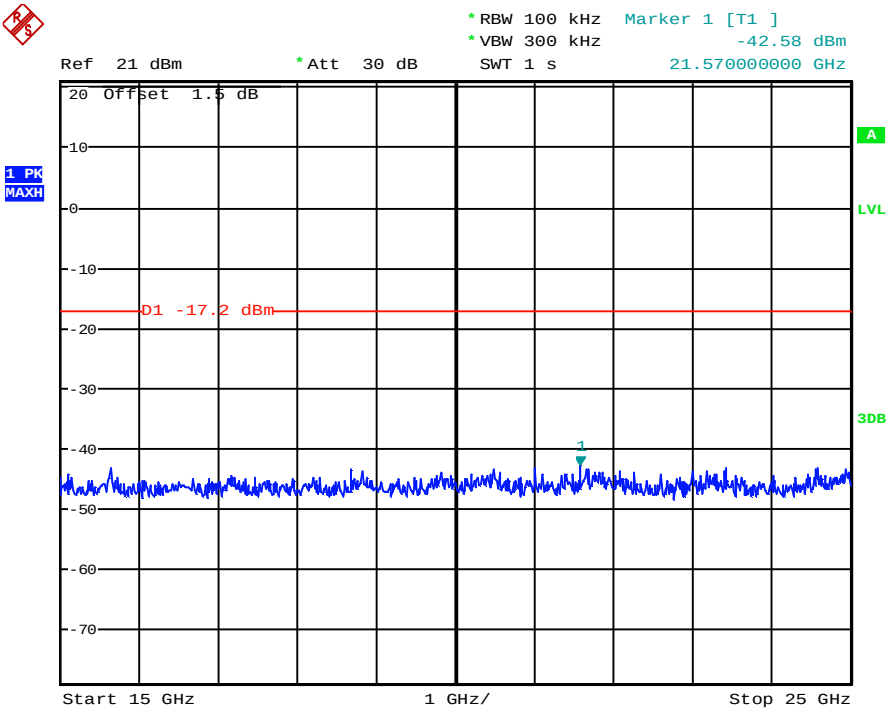
(Plot 4.6.1 B3: Channel 6: 2437MHz @ 802.11b)



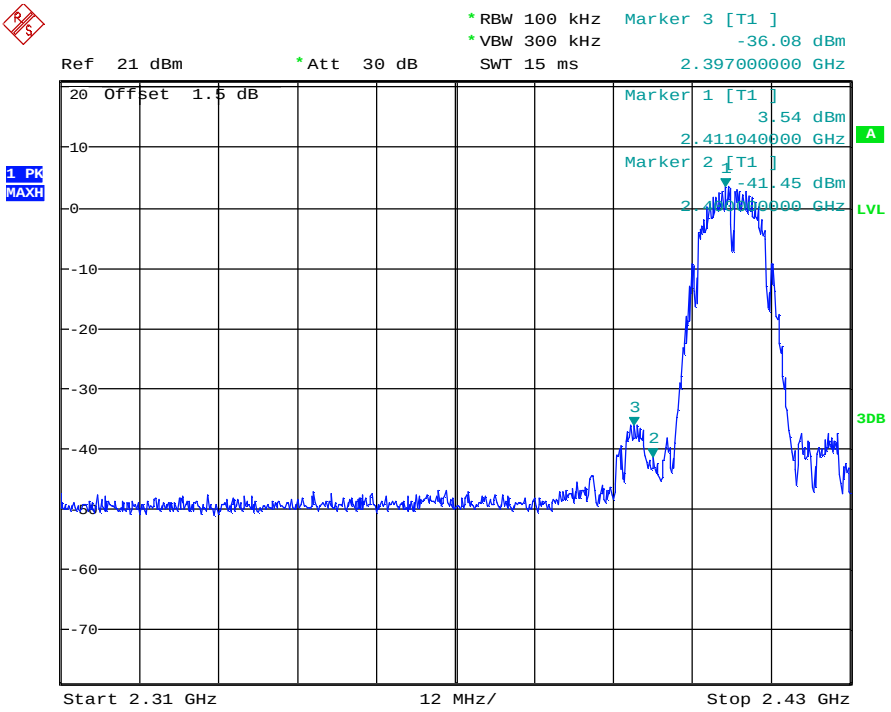
(Plot 4.6.1 C1: Channel 11: 2462MHz @ 802.11b)



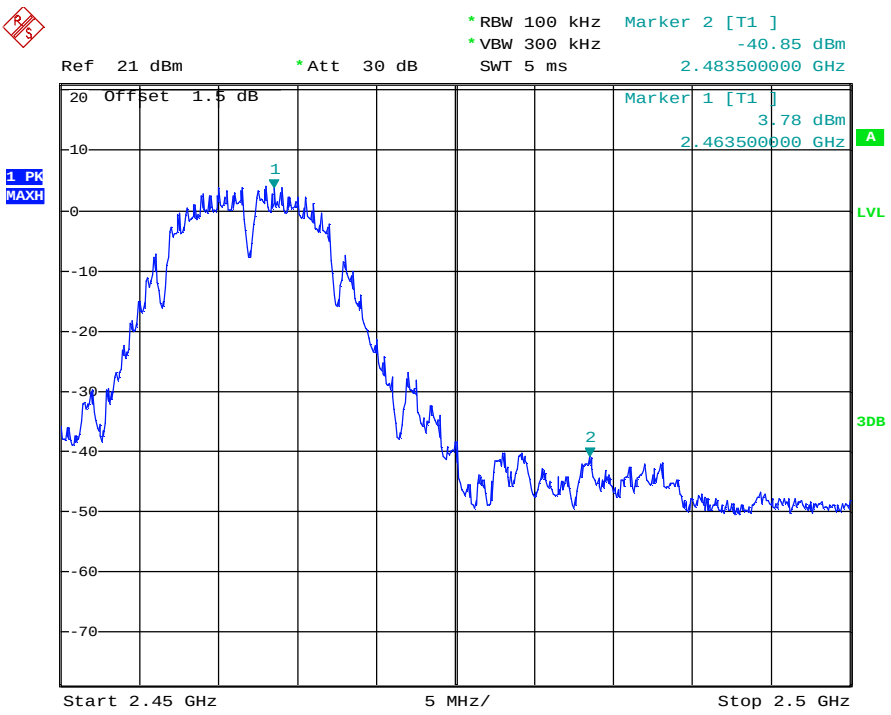
(Plot 4.6.1 C2: Channel 11: 2462MHz @ 802.11b)



(Plot 4.6.1 C3: Channel 11: 2462MHz @ 802.11b)



(Plot 4.6.1 D: Channel 1: 2412MHz @ 802.11b)



(Plot 4.6.1 E: Channel 11: 2462MHz @ 802.11b)

802.11g Test Mode

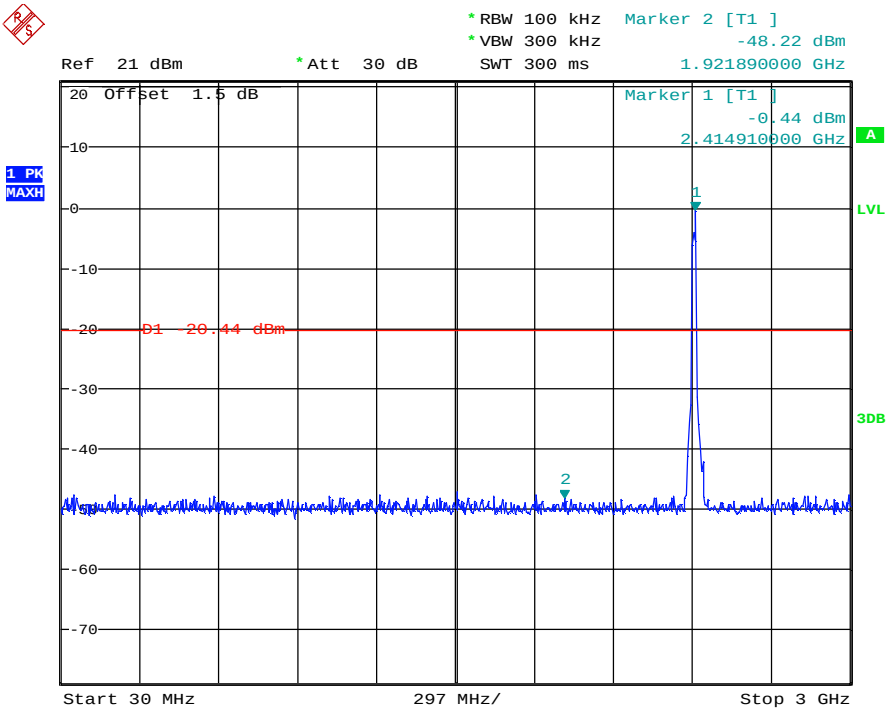
A. Test Verdict

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
1	2412	Plot 4.6.2 A1	-20	PASS
		Plot 4.6.2 A2	-20	PASS
		Plot 4.6.2 A3	-20	PASS
6	2437	Plot 4.6.2 B1	-20	PASS
		Plot 4.6.2 B2	-20	PASS
		Plot 4.6.2 B3	-20	PASS
11	2462	Plot 4.6.2 C1	-20	PASS
		Plot 4.6.2 C2	-20	PASS
		Plot 4.6.2 C3	-20	PASS

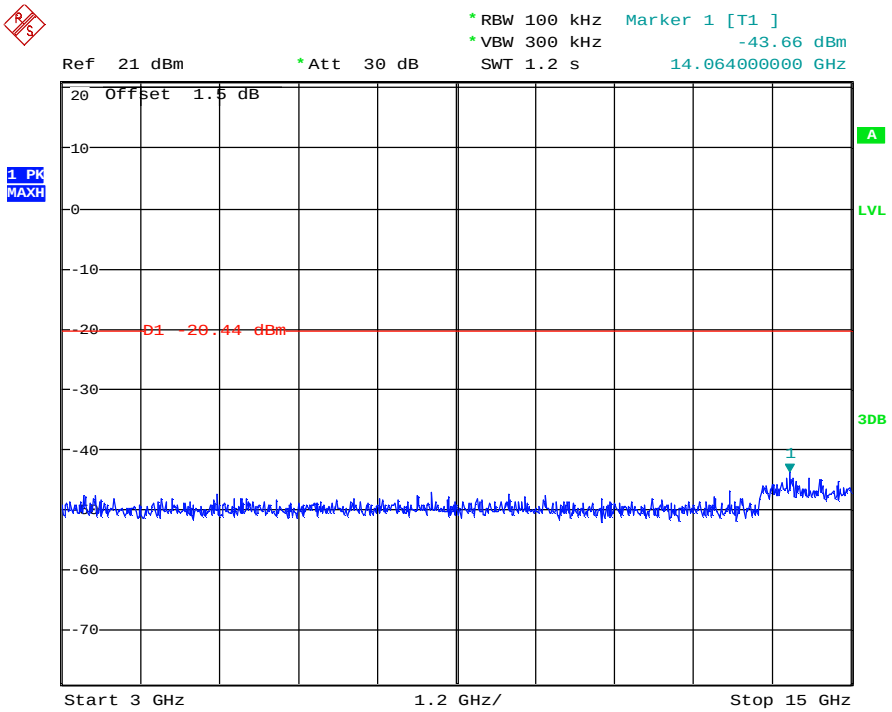
Frequency (MHz)	Delta Peak to Band emission (dBc)	Detector	Limit (dBc)	Refer to Plot	Verdict
2400.00	-28.70	Peak	-20	Plot 4.6.2 D	PASS
2483.50	-34.04	Peak	-20	Plot 4.6.2 E	PASS

Note: 1. For 802.11g mode at finial test to get the worst-case emission at 6Mbps.
2.The test results including the cable lose.

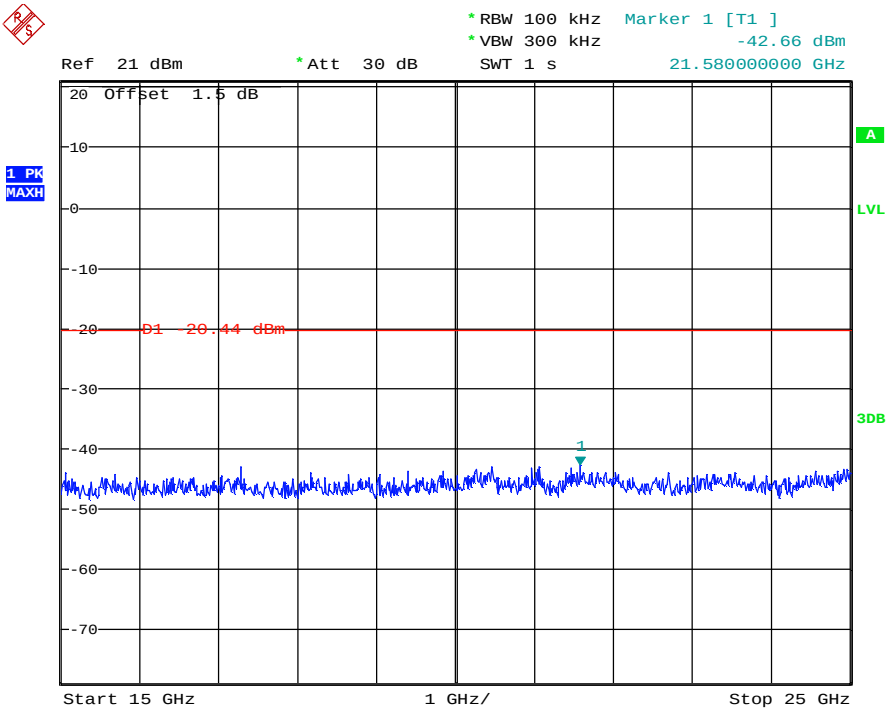
B. Test Plots



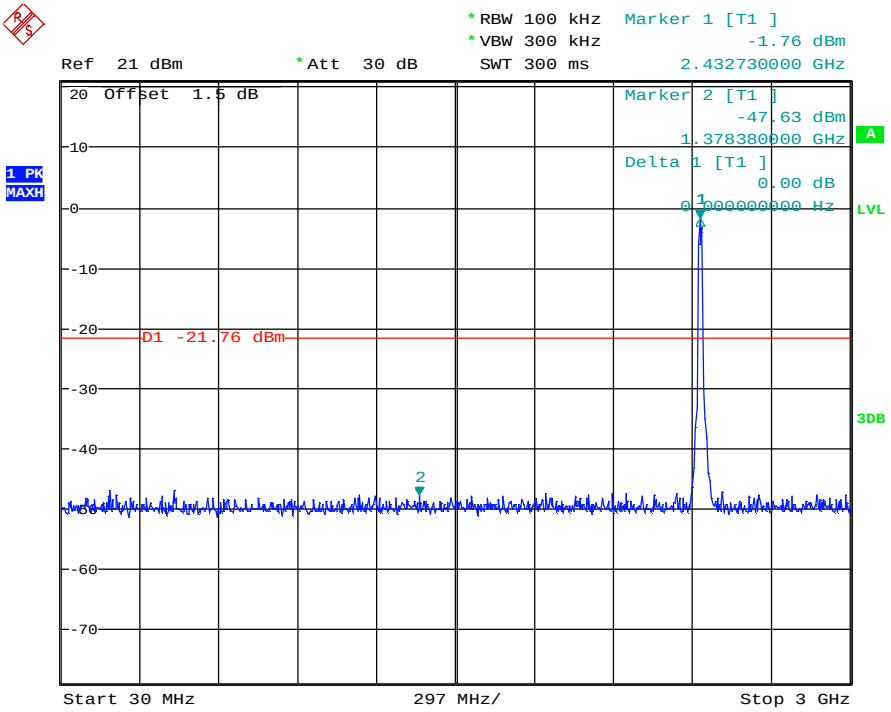
(Plot 4.6.2 A1: Channel 1: 2412MHz @ 802.11g)



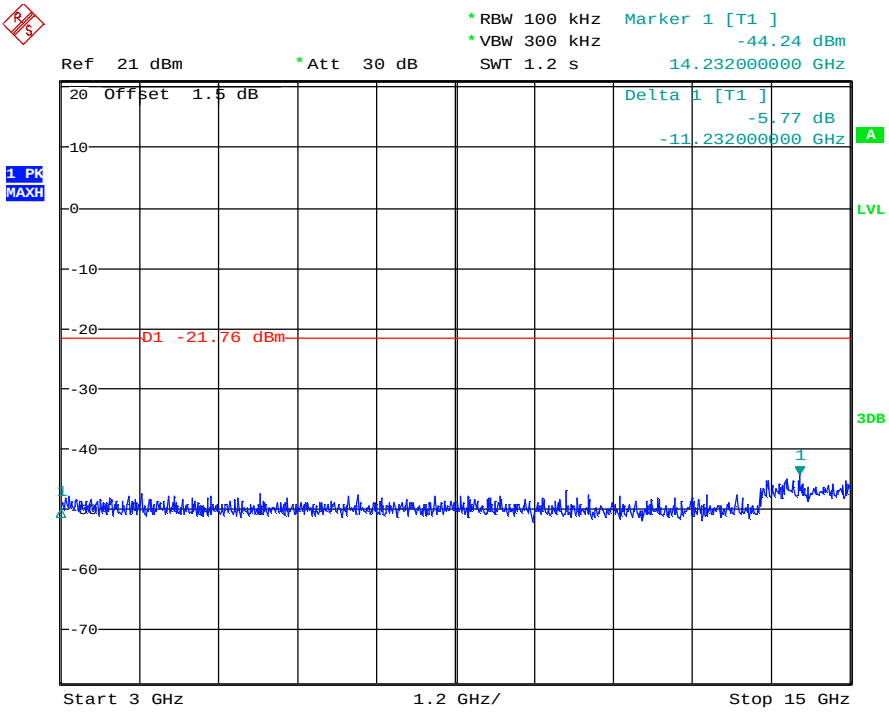
(Plot 4.6.2 A2: Channel 1: 2412MHz @ 802.11g)



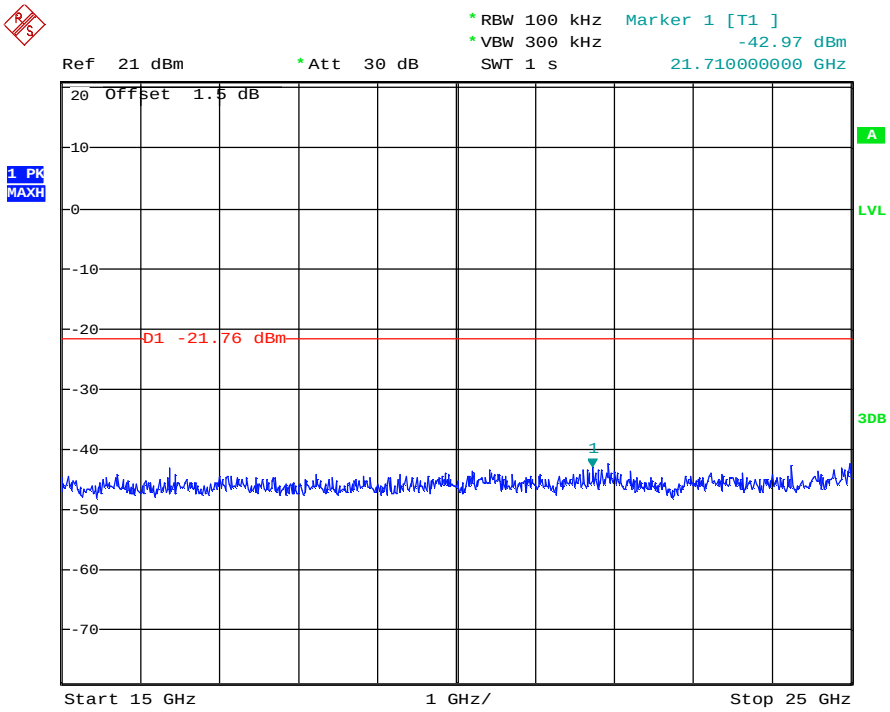
(Plot 4.6.2 A3: Channel 1: 2412MHz @ 802.11g)



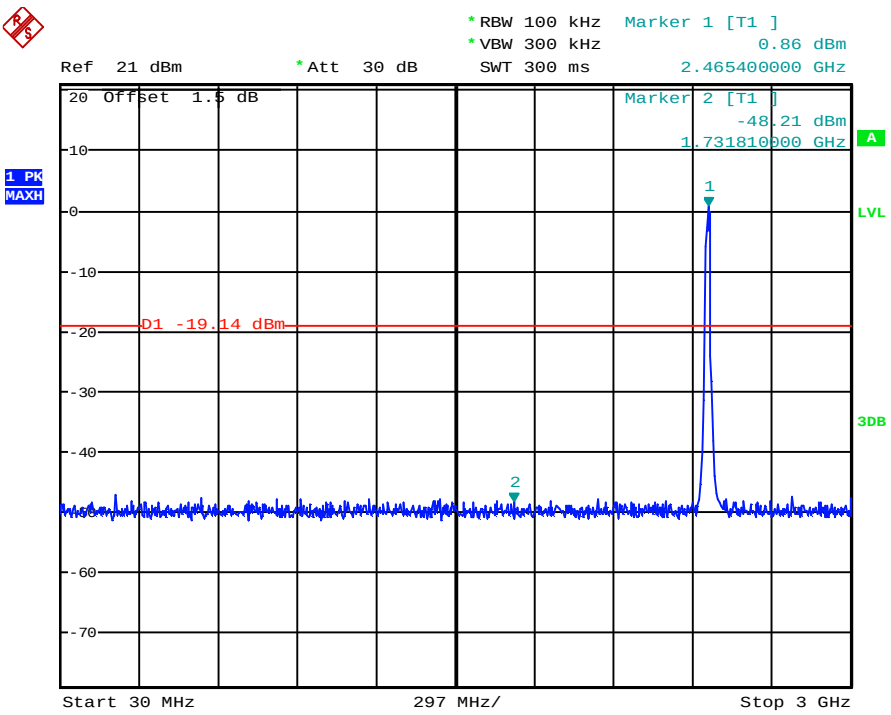
(Plot 4.6.2 B1: Channel 6: 2437MHz @ 802.11g)



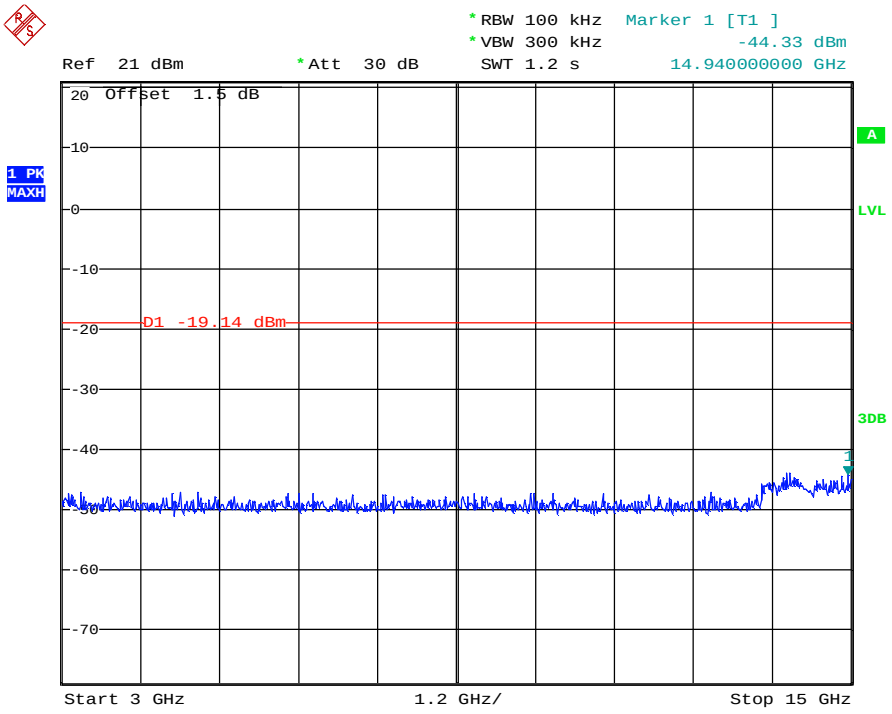
(Plot 4.6.2 B2: Channel 6: 2437MHz @ 802.11g)



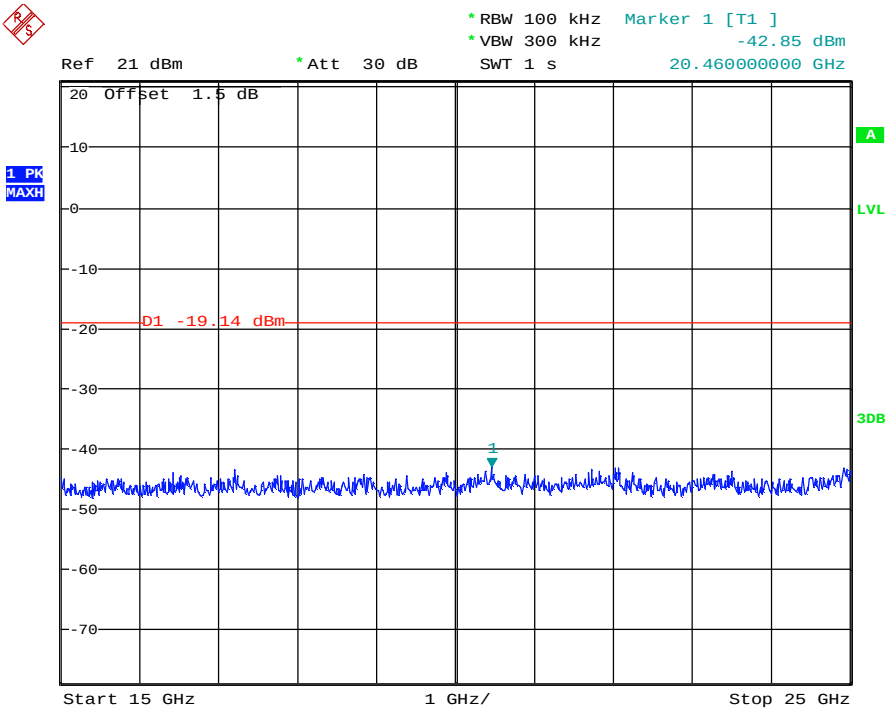
(Plot 4.6.2 B3: Channel 6: 2437MHz @ 802.11g)



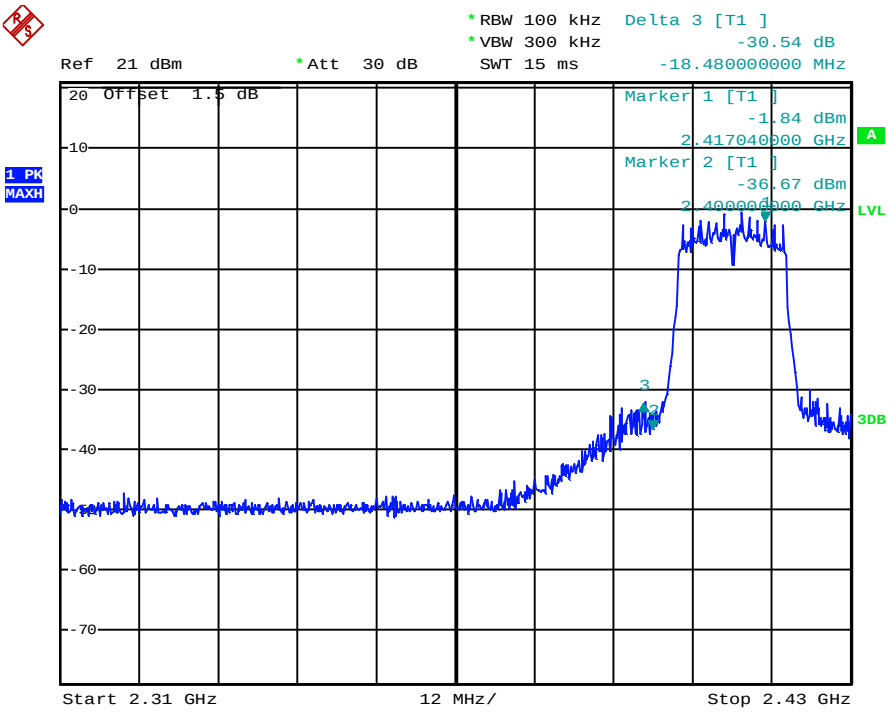
(Plot 4.6.2 C1: Channel 11: 2462MHz @ 802.11g)



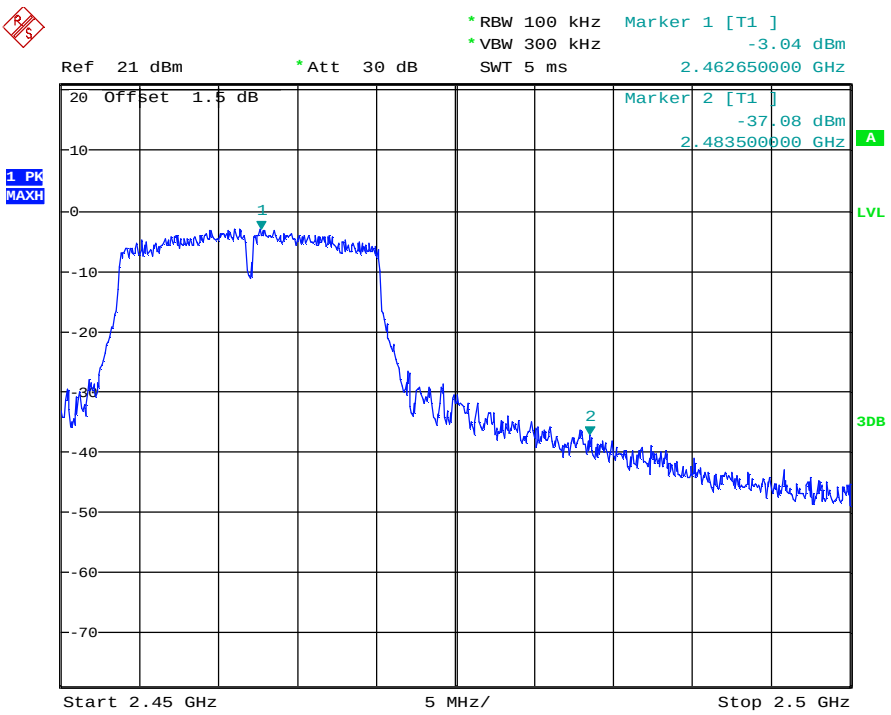
(Plot 4.6.2 C2: Channel 11: 2462MHz @ 802.11g)



(Plot 4.6.2 C3: Channel 11: 2462MHz @ 802.11g)



(Plot 4.6.2 D: Channel 1: 2412MHz @ 802.11g)



(Plot 4.6.2 E: Channel 11: 2462MHz @ 802.11g)

802.11n(20MHz) Test Mode

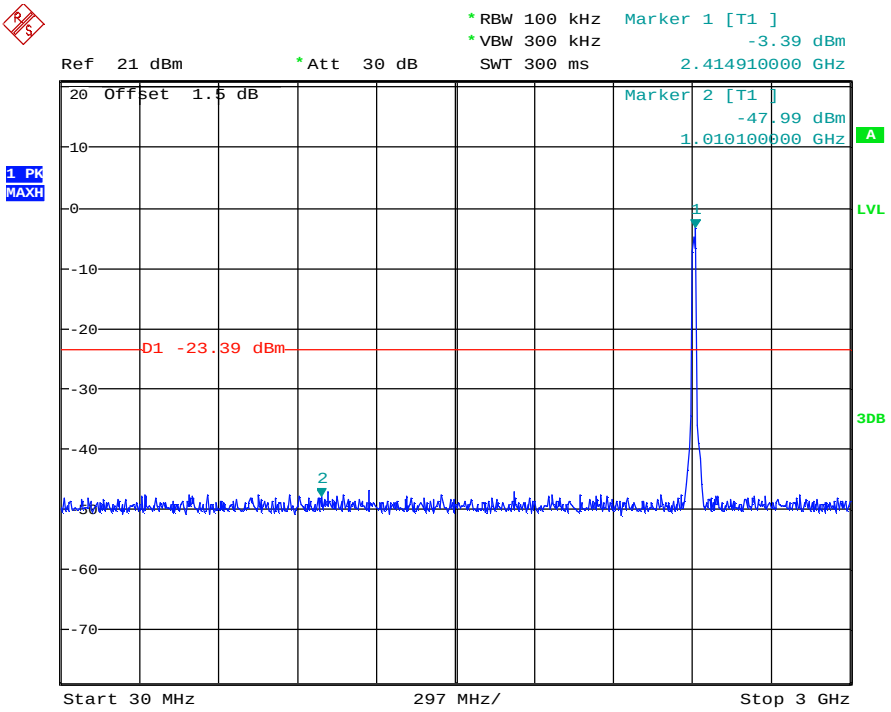
A. Test Verdict

Channel	Frequency (MHz)	Refer to Plot	Limit (dBc)	Verdict
1	2412	Plot 4.6.3 A1	-20	PASS
		Plot 4.6.3 A2	-20	PASS
		Plot 4.6.3 A3	-20	PASS
6	2437	Plot 4.6.3 B1	-20	PASS
		Plot 4.6.3 B2	-20	PASS
		Plot 4.6.3 B3	-20	PASS
11	2462	Plot 4.6.3 C1	-20	PASS
		Plot 4.6.3 C2	-20	PASS
		Plot 4.6.3 C3	-20	PASS

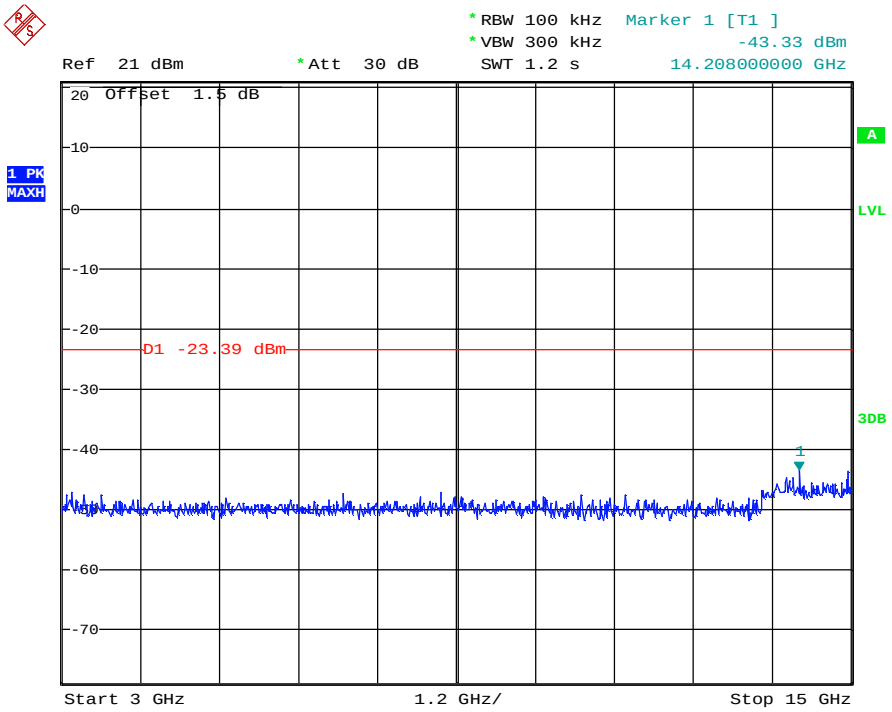
Frequency (MHz)	Delta Peak to Band emission (dBc)	Detector	Limit (dBc)	Refer to Plot	Verdict
2400.00	-39.31	Peak	-20	Plot 4.6.3 D	PASS
2483.50	-38.30	Peak	-20	Plot 4.6.3 E	PASS

Note: 1. For 802.11n(20MHz) mode at finial test to get the worst-case emission at 6.5Mbps.
2.The test results including the cable lose.

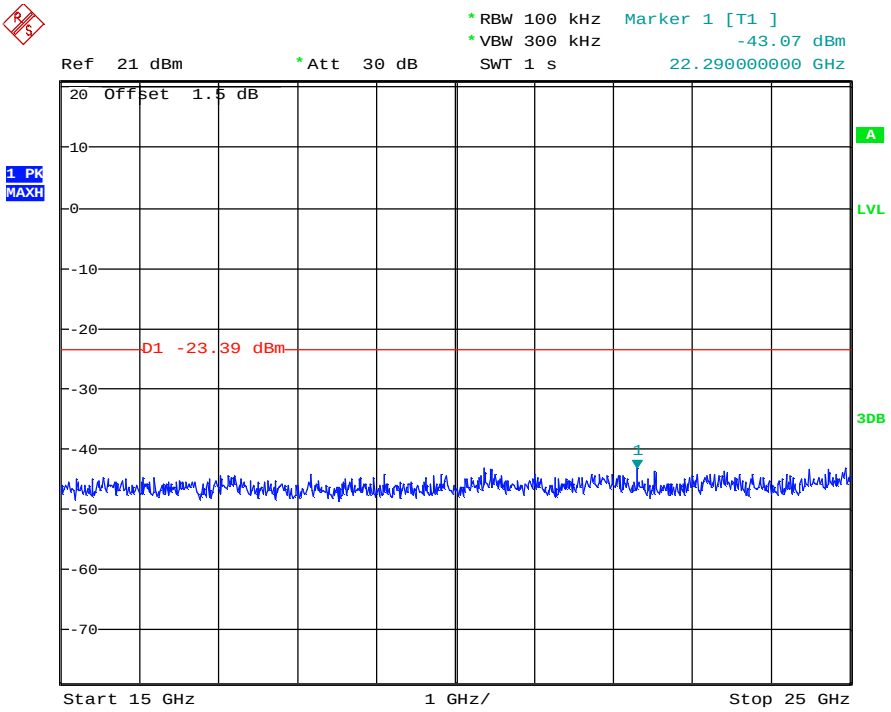
B. Test Plots



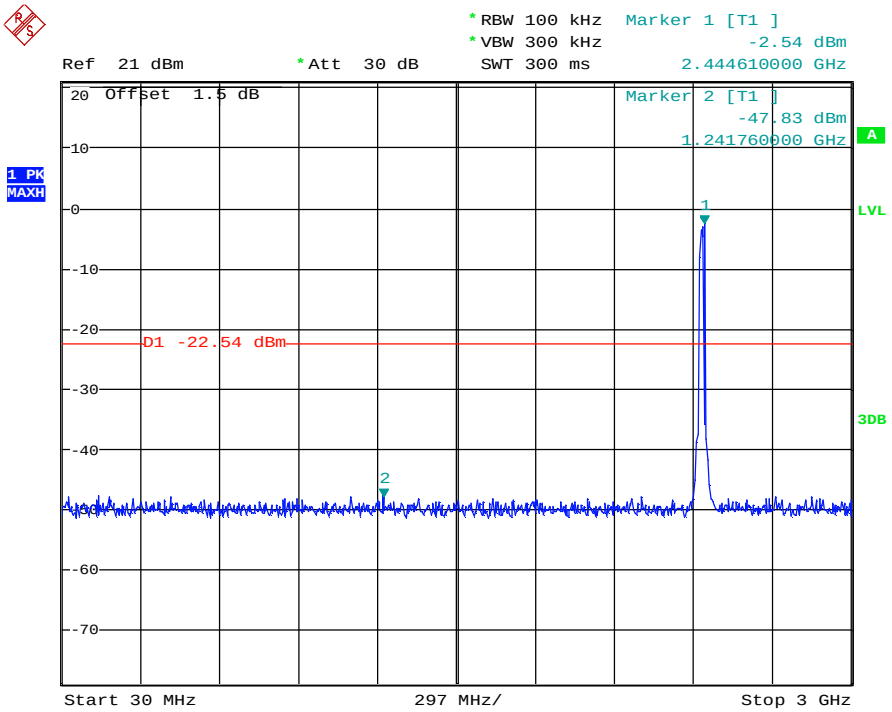
(Plot 4.6.3 A1: Channel 1: 2412MHz @ 802.11n(20MHz))



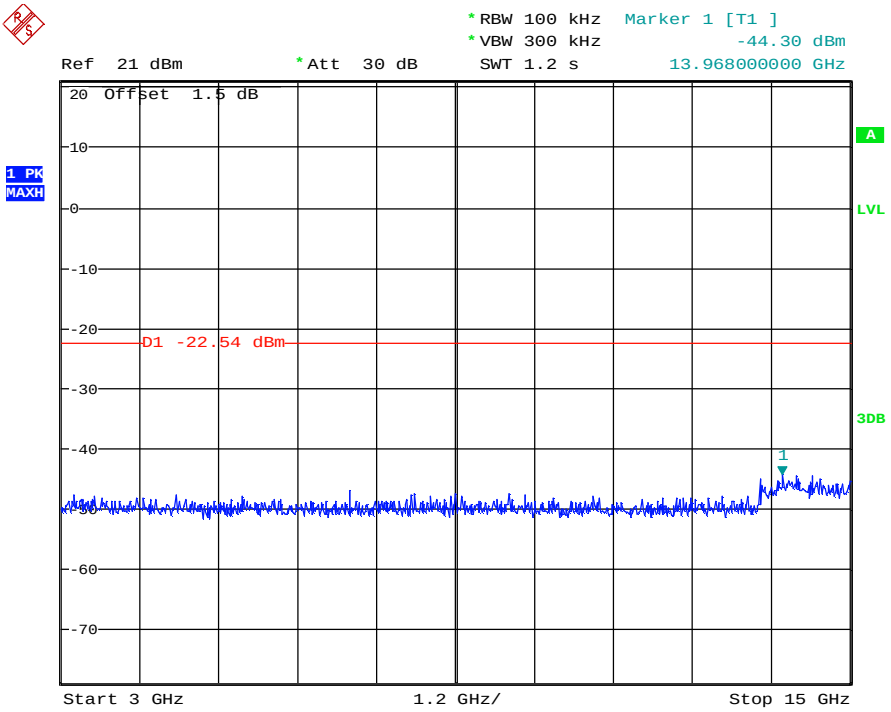
(Plot 4.6.3 A2: Channel 1: 2412MHz @ 802.11n(20MHz))



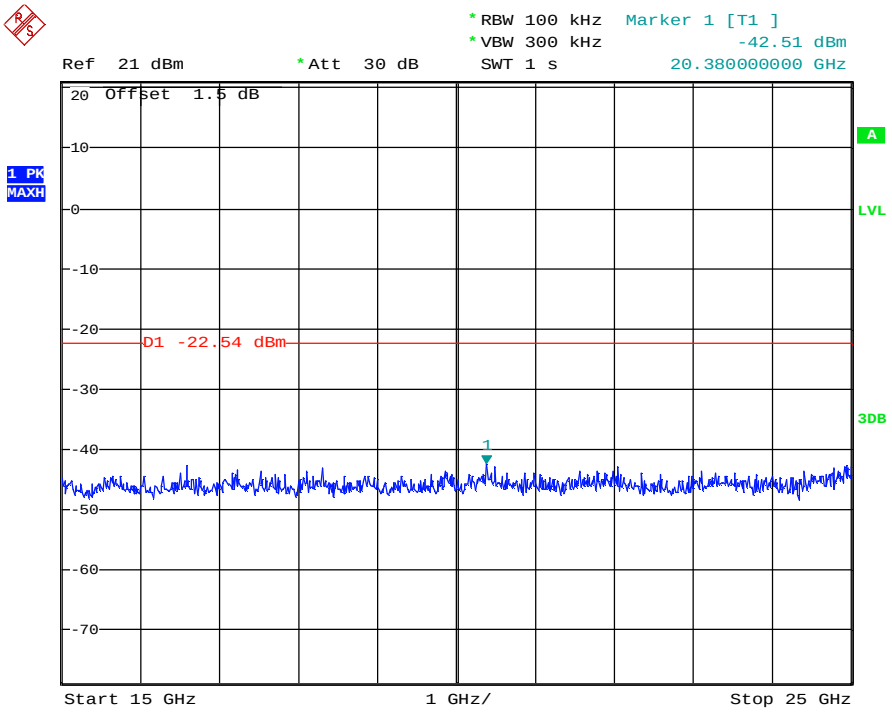
(Plot 4.6.3 A3: Channel 1: 2412MHz @ 802.11n(20MHz))



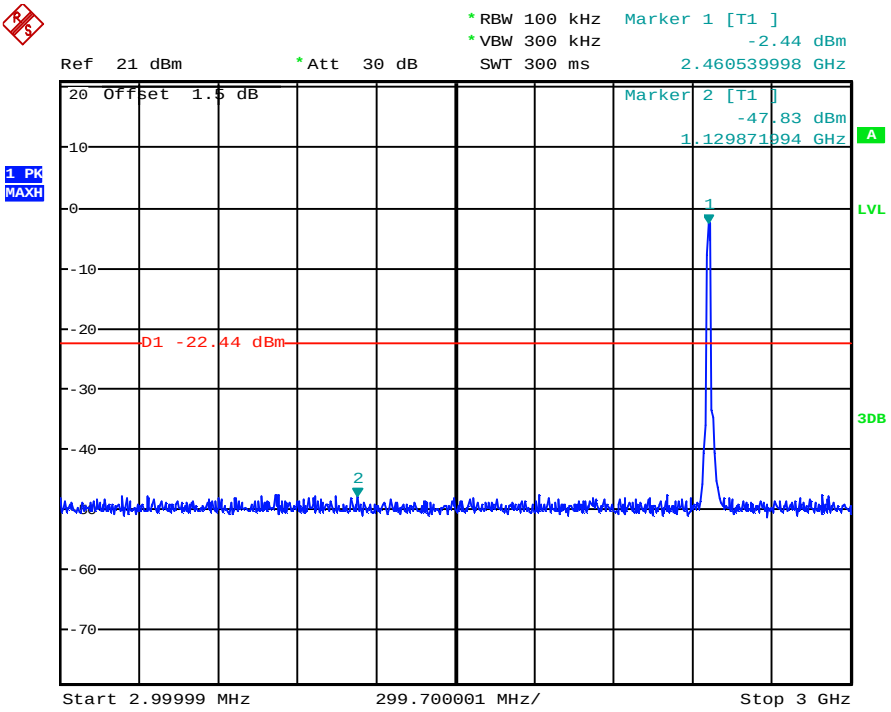
(Plot 4.6.3 B1: Channel 6: 2437MHz @ 802.11n(20MHz))



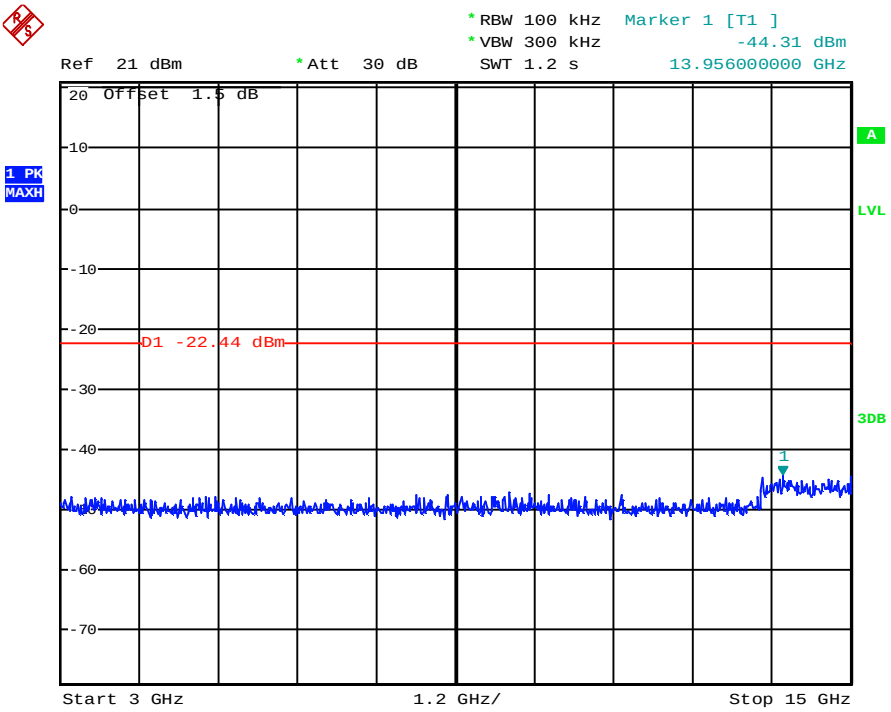
(Plot 4.6.3 B2: Channel 6: 2437MHz @ 802.11n(20MHz))



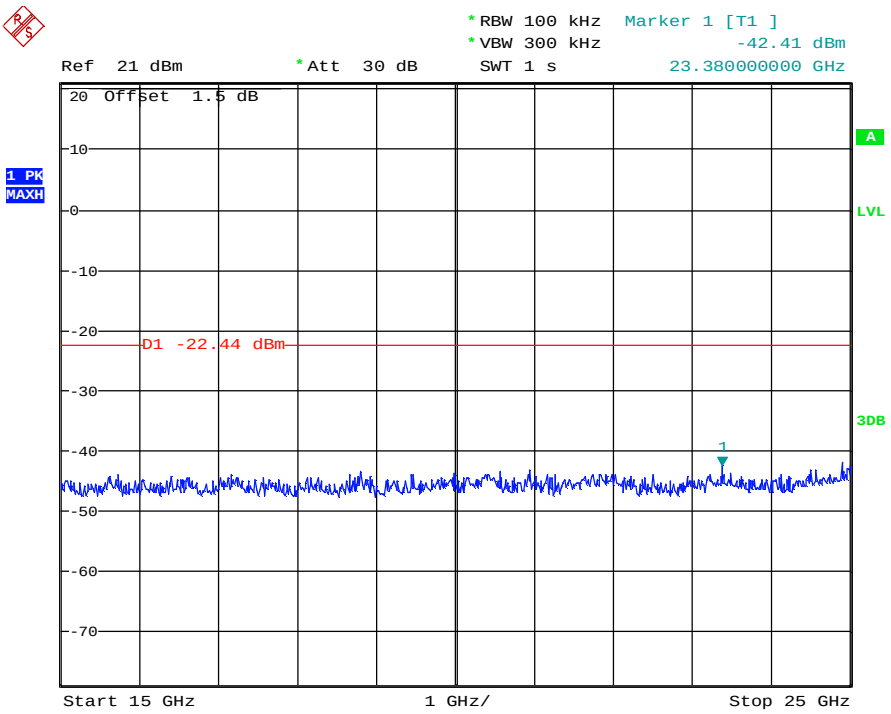
(Plot 4.6.3 B3: Channel 6: 2437MHz @ 802.11n(20MHz))



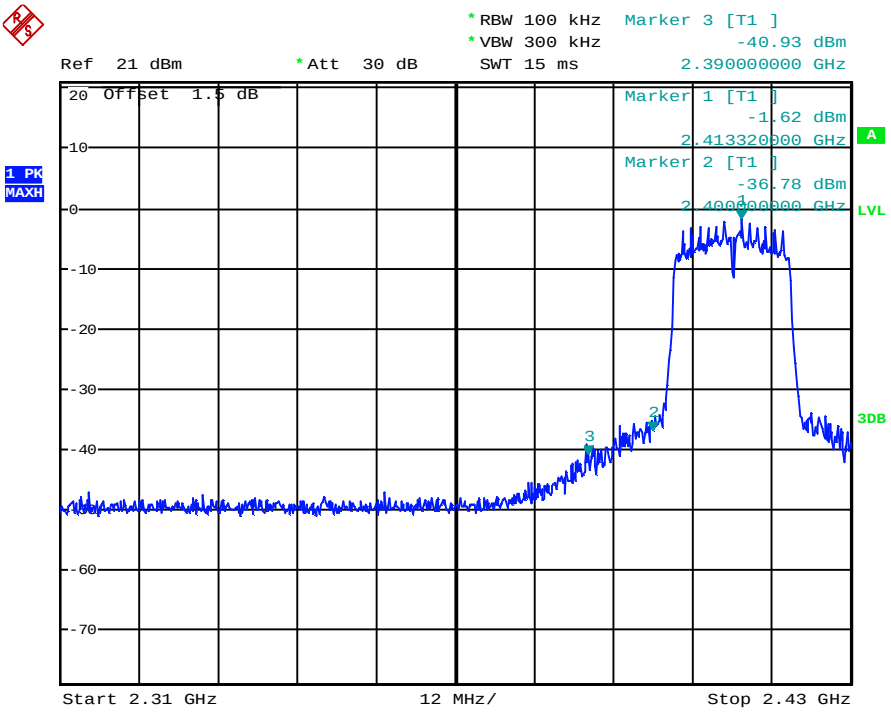
(Plot 4.6.3 C1: Channel 11: 2462MHz @ 802.11n(20MHz))



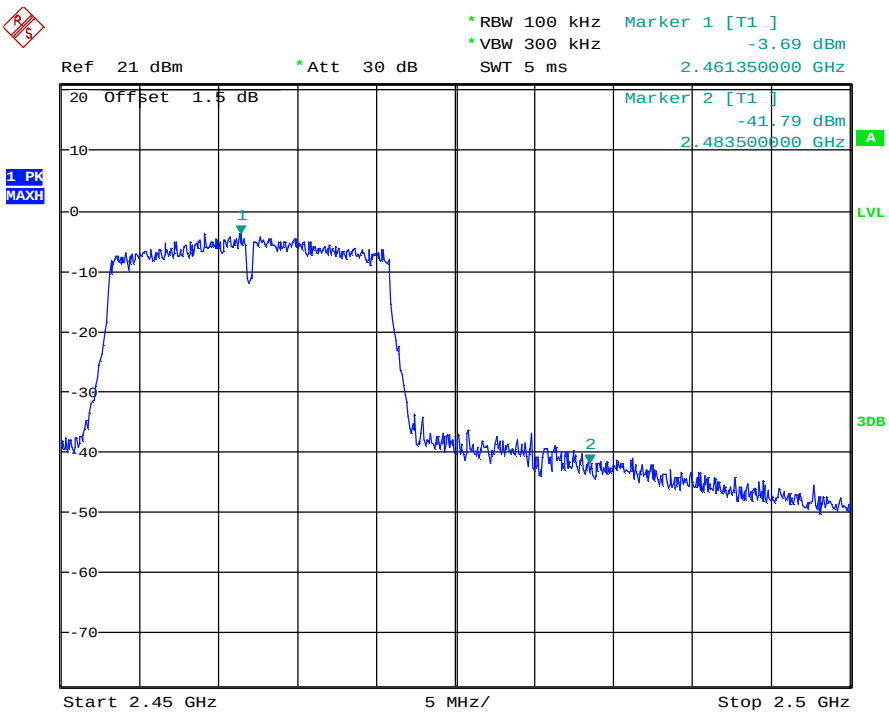
(Plot 4.6.3 C2: Channel 11: 2462MHz @ 802.11n(20MHz))



(Plot 4.6.3 C3: Channel 11: 2462MHz @ 802.11n(20MHz))



(Plot 4.6.3 D: Channel 1: 2412MHz @ 802.11n(20MHz))



(Plot 4.6.3 E: Channel 11: 2462MHz @ 802.11n(20MHz))

4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

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

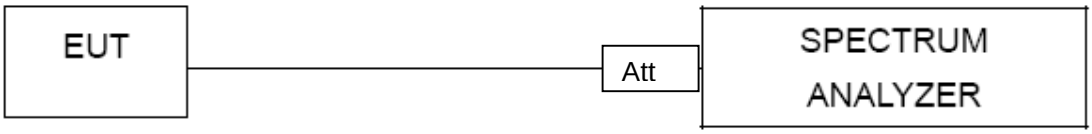
4.1.1 TEST PROCEDURE

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

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

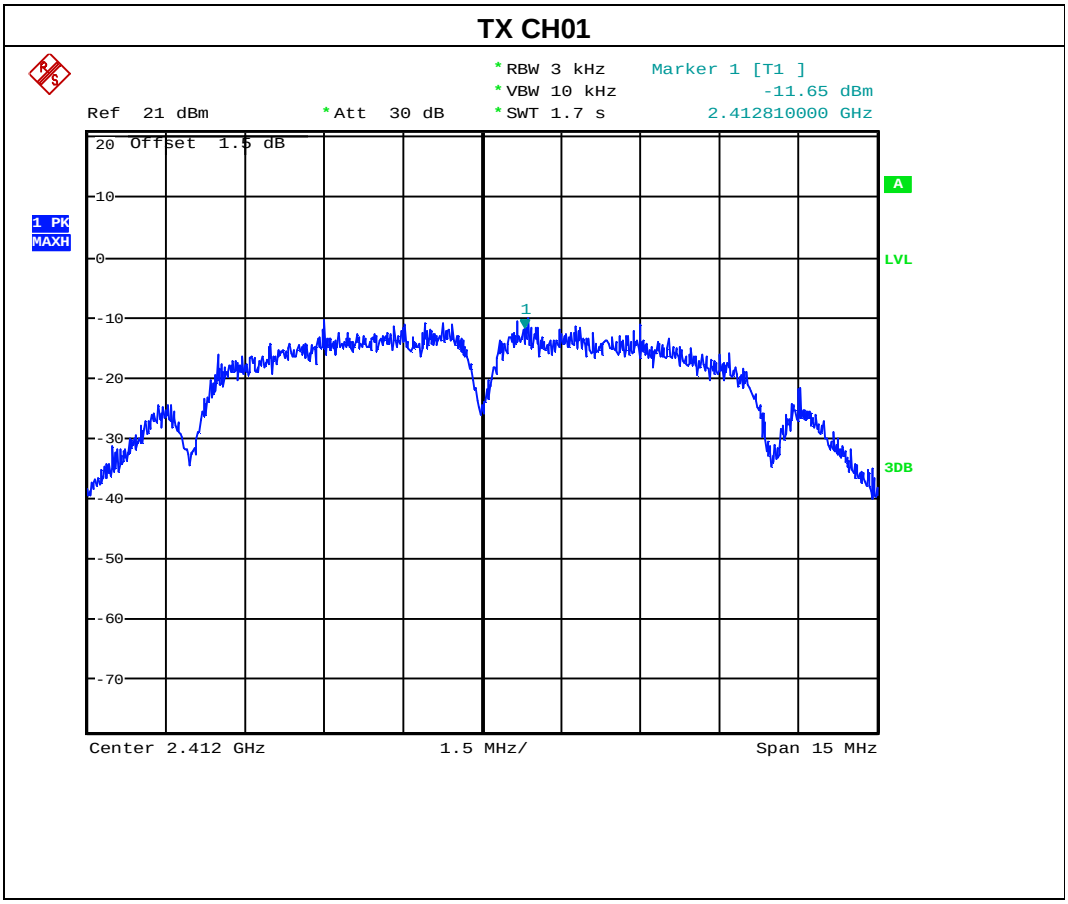
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5 TEST RESULTS

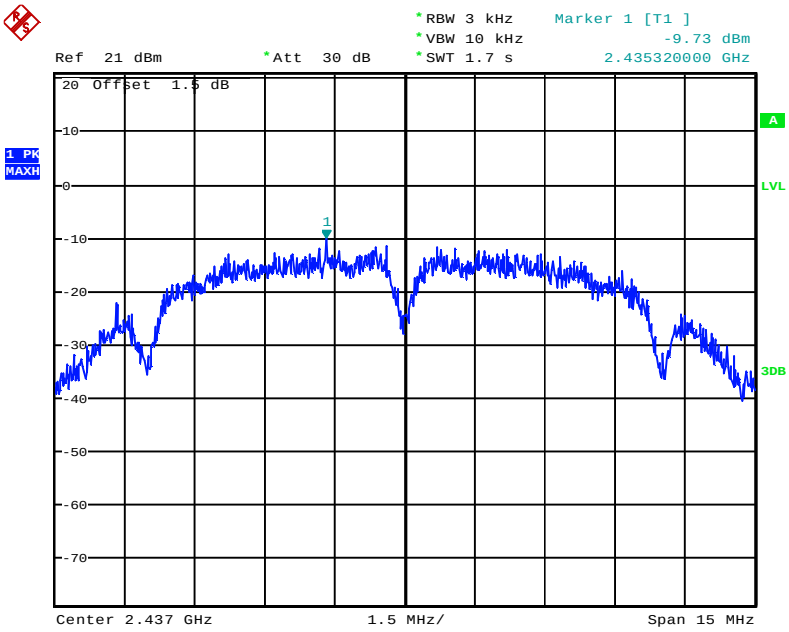
EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-11.65	8	PASS
2437 MHz	-9.73	8	PASS
2462 MHz	-11.51	8	PASS

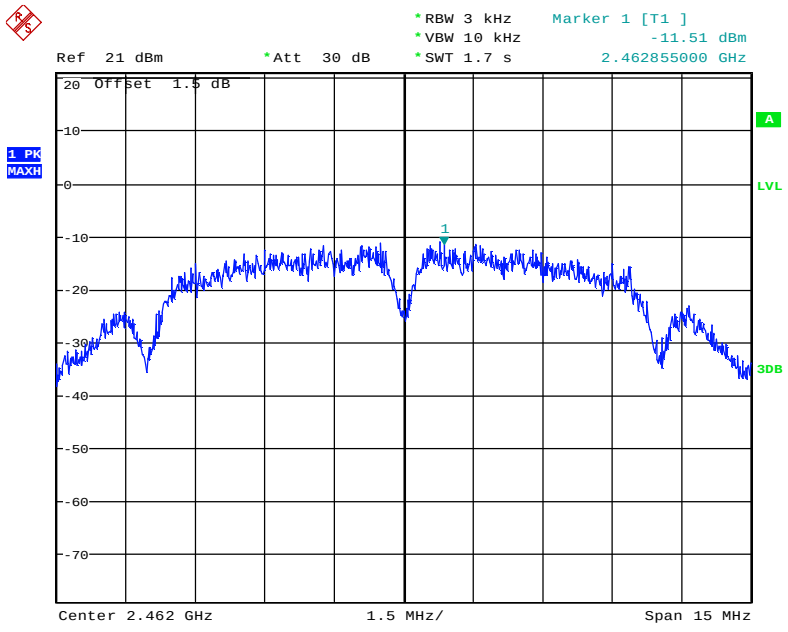
TX CH01



TX CH06



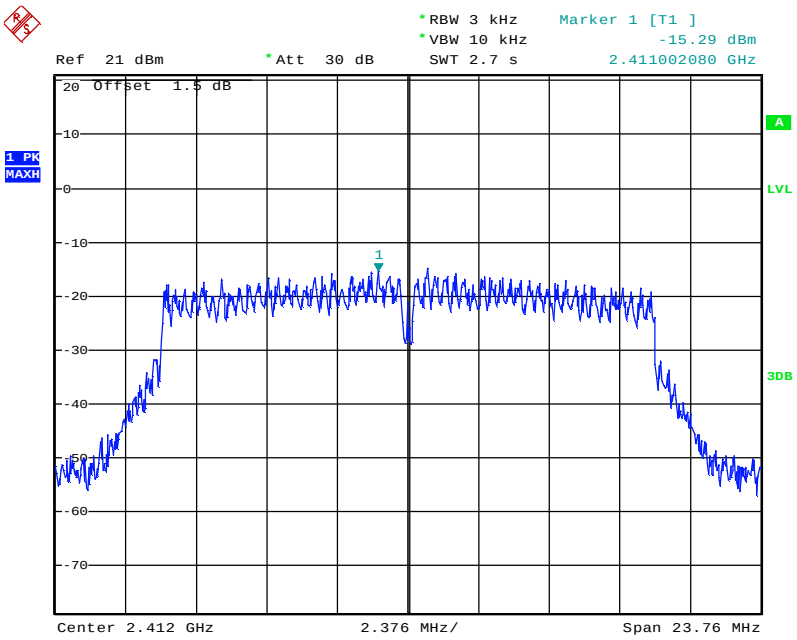
TX CH11



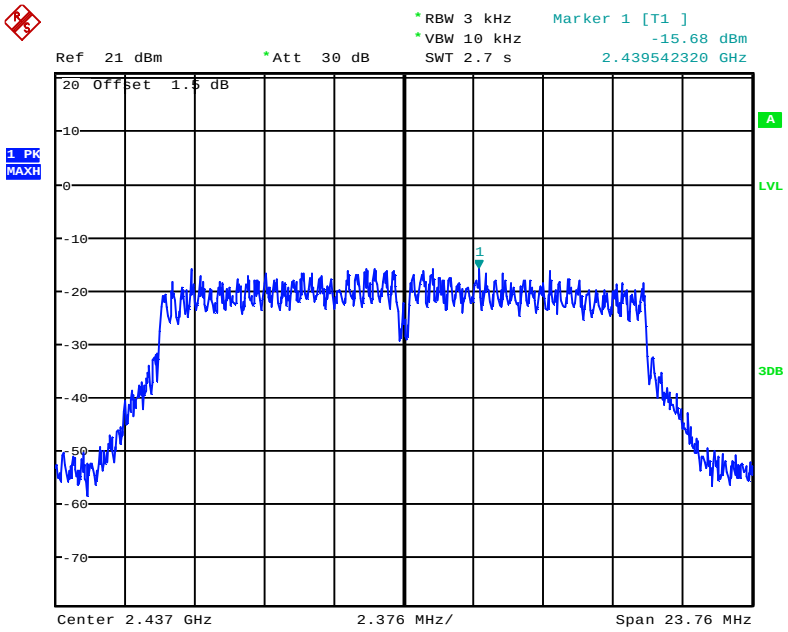
EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-15.29	8	PASS
2437 MHz	-15.68	8	PASS
2462 MHz	-15.58	8	PASS

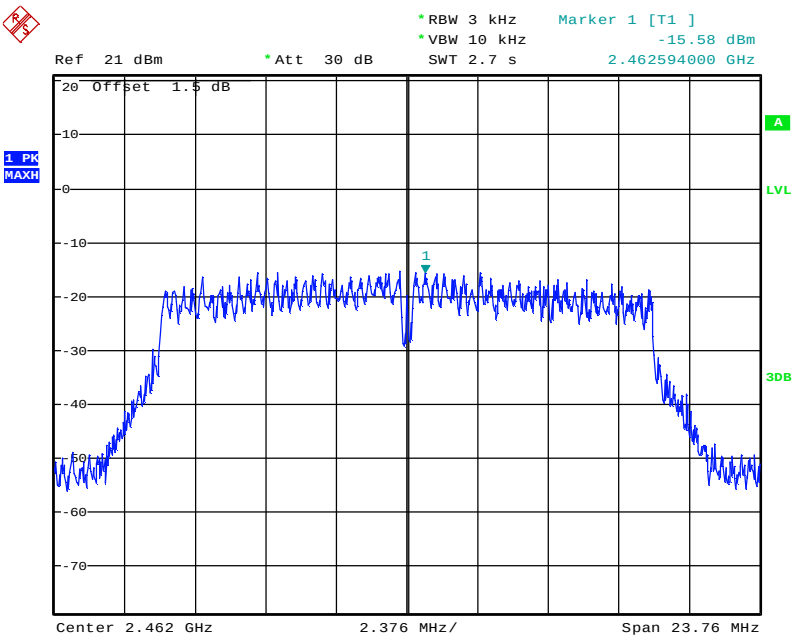
TX CH01



TX CH06



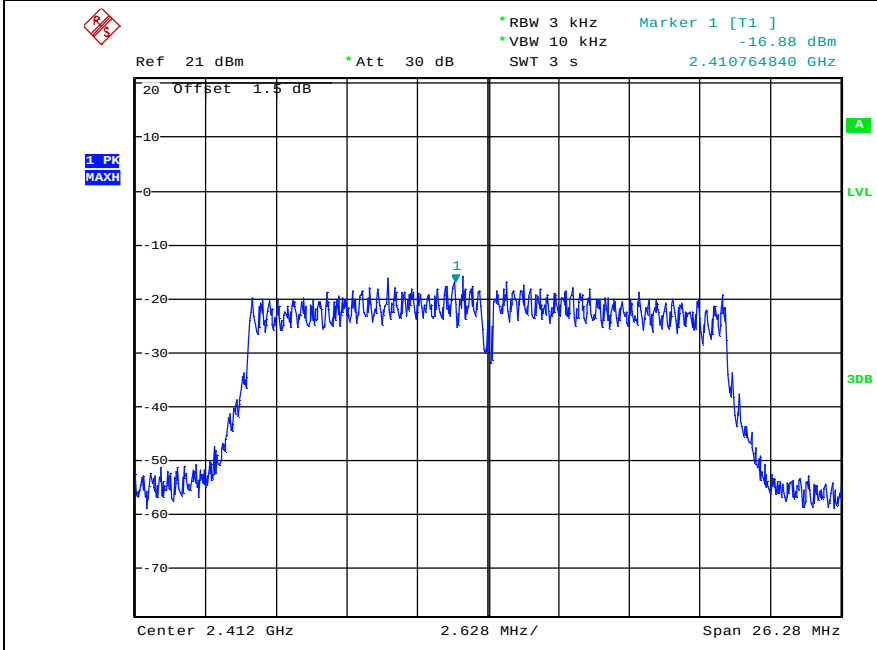
TX CH11



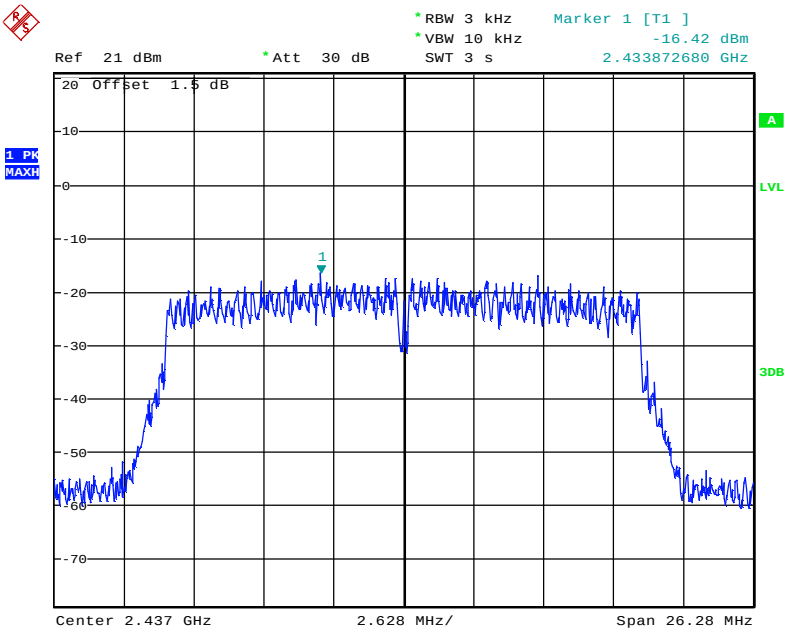
EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1015 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX n Mode(20M) /CH01, CH06, CH11		

Frequency	Power Density (dBm)	Limit (dBm)	Result
2412 MHz	-16.88	8	PASS
2437 MHz	-16.42	8	PASS
2462 MHz	-16.27	8	PASS

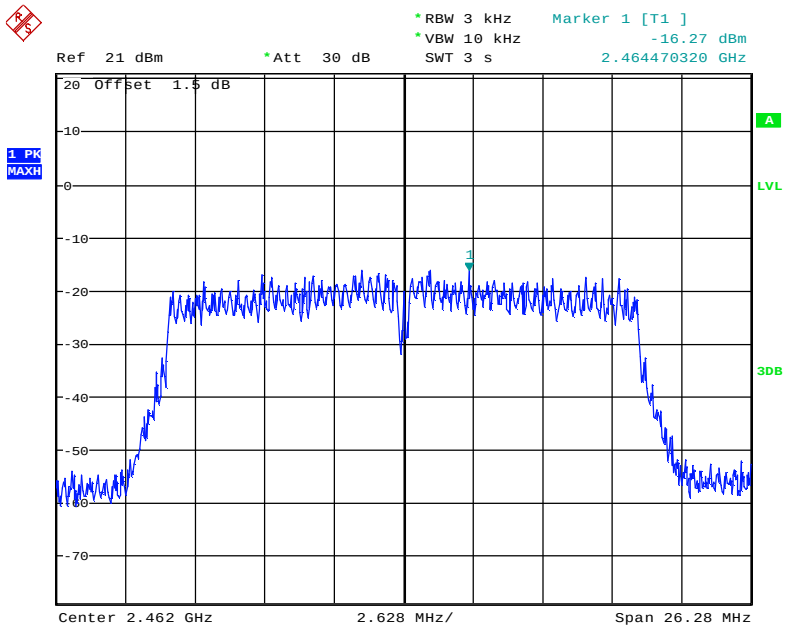
TX CH01



TX CH06



TX CH11



5. BANDWIDTH TEST

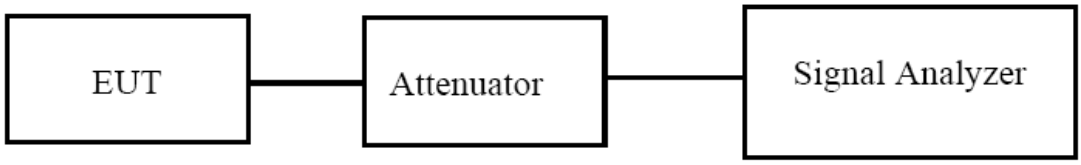
5.1 APPLIED PROCEDURES / LIMIT

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

5.1.1 TEST PROCEDURE

According to KDB 558074 D01 DTS Meas Guidance v03r01

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



5.1.2 EUT OPERATION CONDITIONS

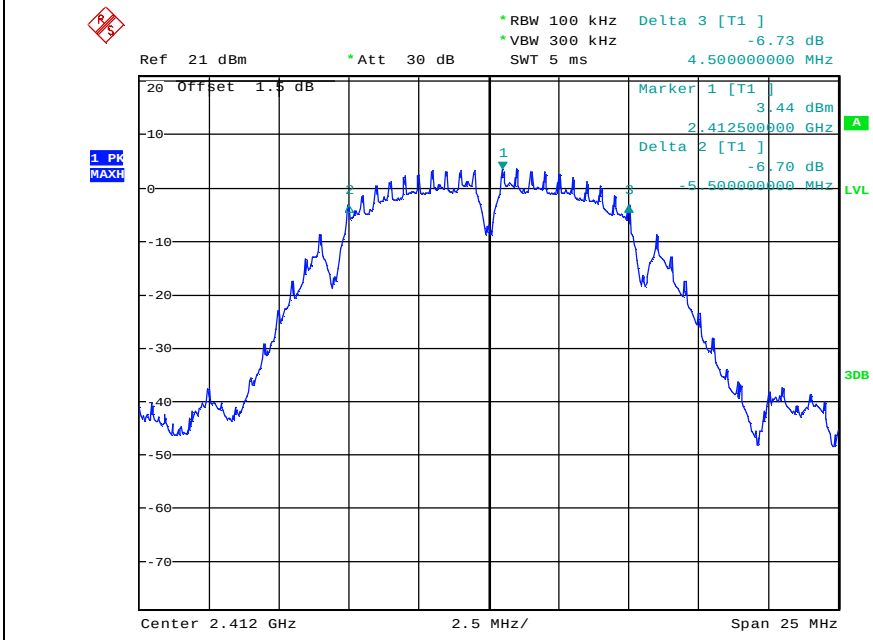
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.3 TEST RESULTS

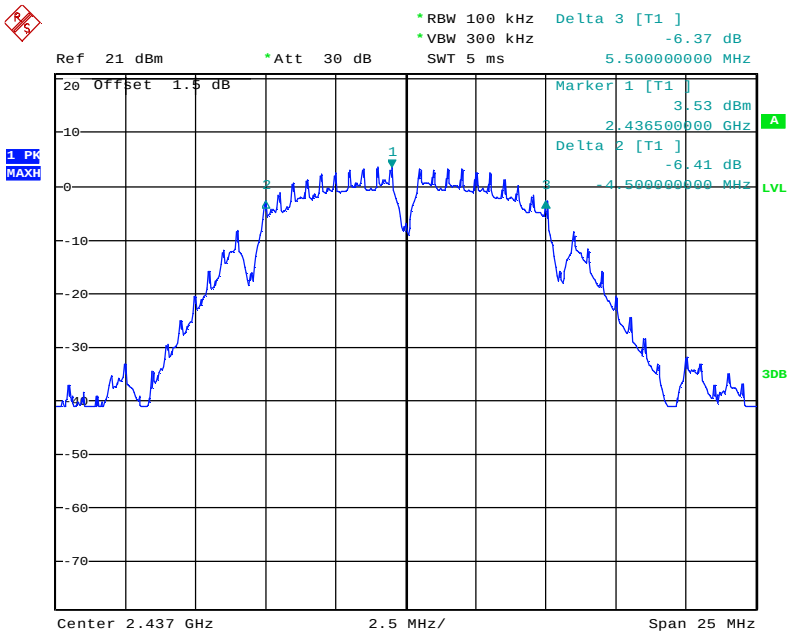
EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX b Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	10.00	500	Pass
Middle	2437	10.00	500	Pass
High	2462	10.00	500	Pass

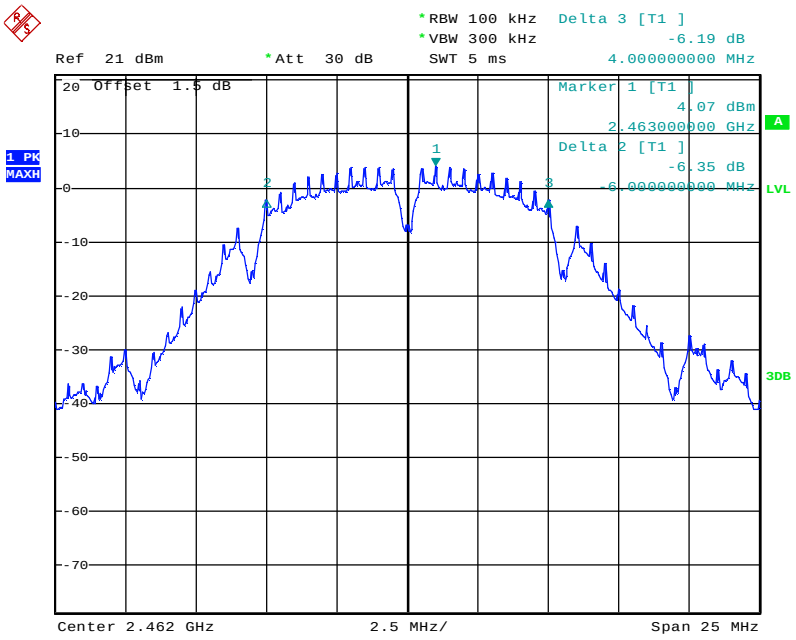
TX CH 01



TX CH 06



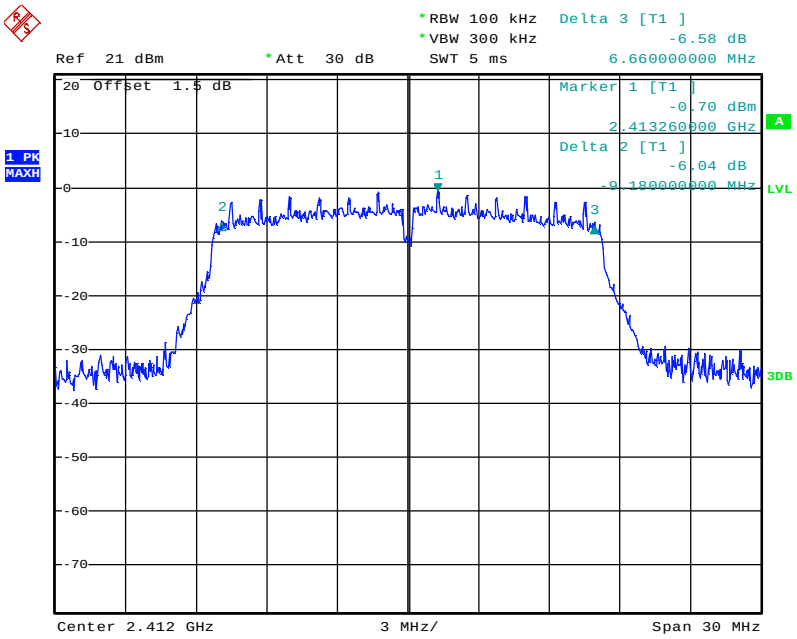
TX CH 11



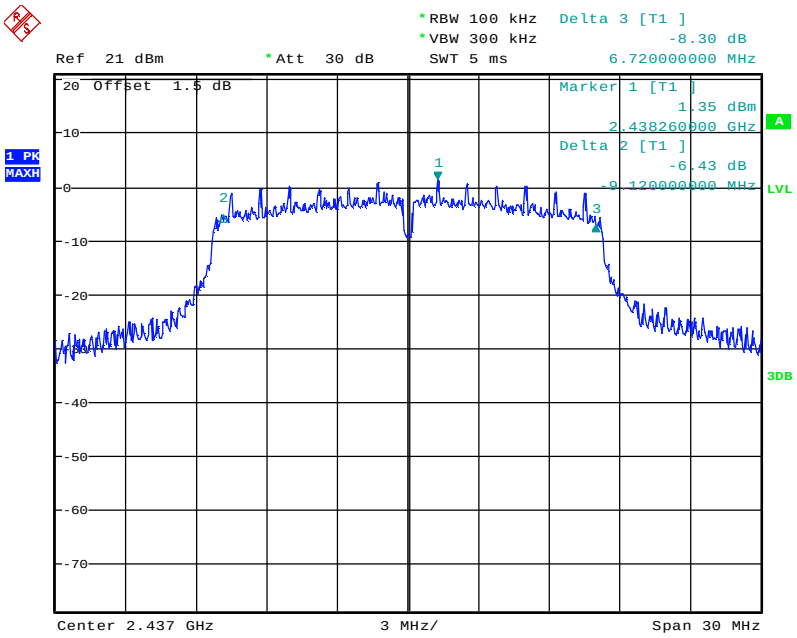
EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX g Mode /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	15.84	500	Pass
Middle	2437	15.84	500	Pass
High	2462	15.84	500	Pass

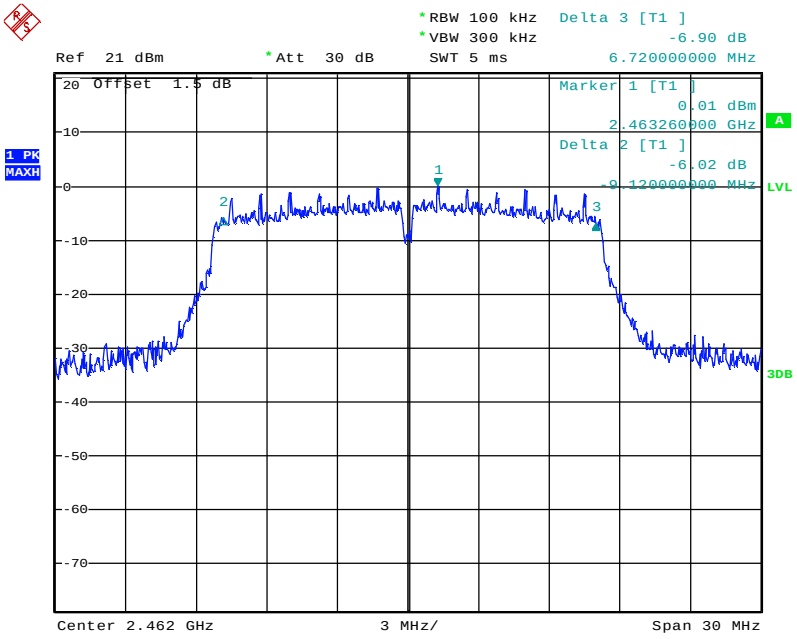
TX CH 01



TX CH 06



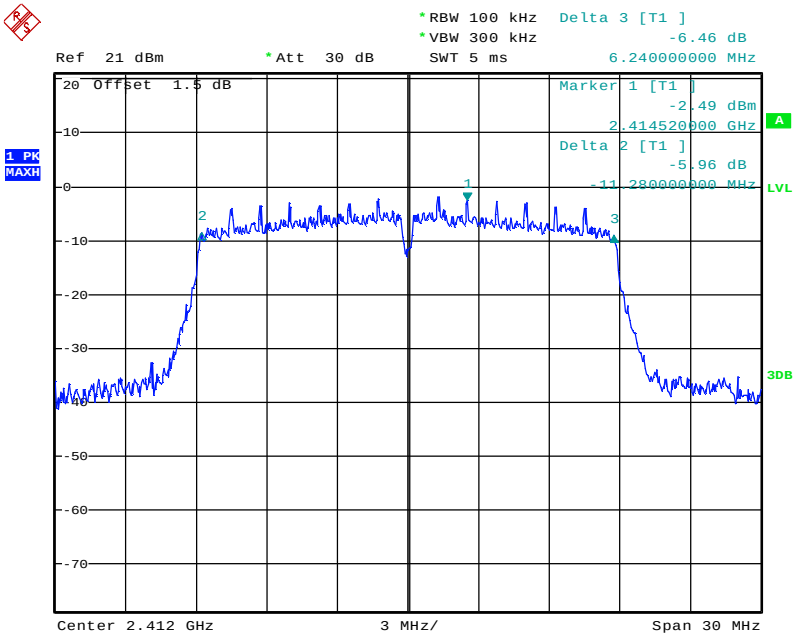
TX CH 11



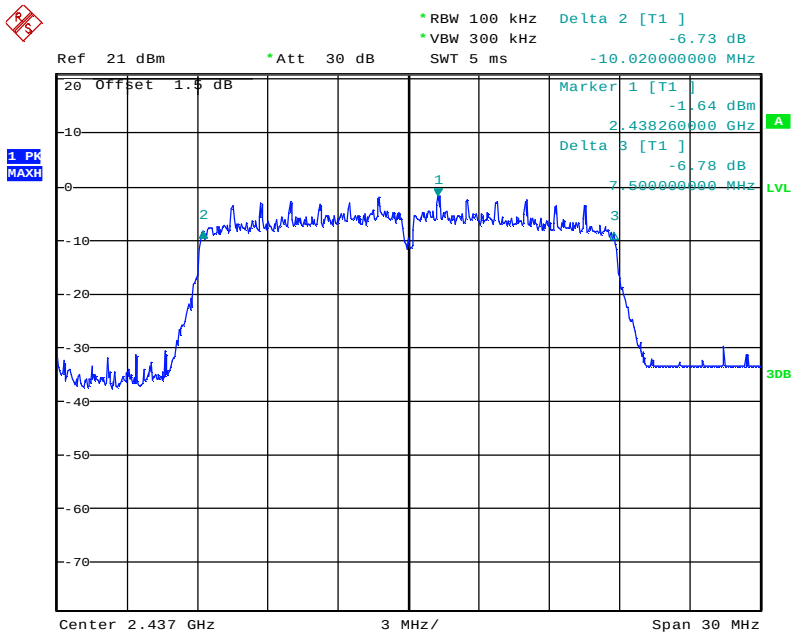
EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX n Mode(20M) /CH01, CH06, CH11		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.52	500	Pass
Middle	2437	17.52	500	Pass
High	2462	17.52	500	Pass

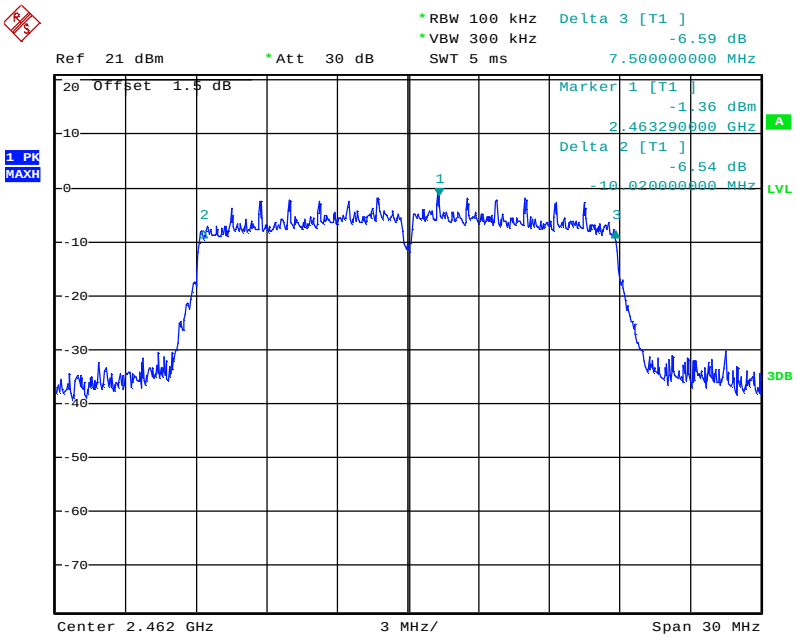
TX CH 01



TX CH 06



TX CH 11



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

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

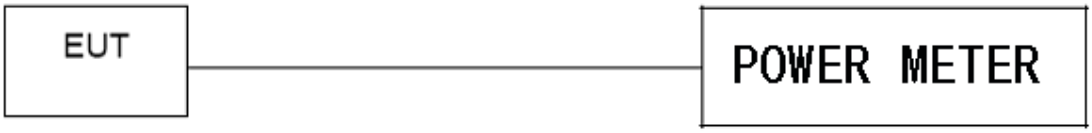
6.1.1 TEST PROCEDURE

a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

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

6.1.5 TEST RESULTS

EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	60%
Pressure：	1012 hPa	Test Voltage ：	DC 5V
Test Mode ：	TX b/g/n20/n40 Mode		

TX 802.11b Mode				
Test Channe	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(MHz)	(dBm)	(dBm)	(dBm)
CH01	2412	13.58	13.25	30
CH06	2437	13.97	13.74	30
CH11	2462	13.57	13.24	30
TX 802.11g Mode				
CH01	2412	13.54	13.36	30
CH06	2437	13.26	13.11	30
CH11	2462	13.65	13.41	30
TX 802.11n-HT20 Mode				
CH01	2412	12.98	12.24	30
CH06	2437	12.57	12.12	30
CH11	2462	12.65	12.14	30

Note： the highest AVG powers for：

802.11b：1Mbps

802.11g：2Mbps

802.11n(20M)：5Mbps

Note： the highest PK powers for：

802.11b：5Mbps

802.11g：8Mbps

802.11n(20M)：6.5Mbps

7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

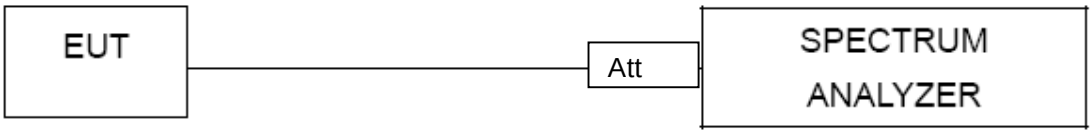
TEST PROCEDURE

a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
e) Repeat above procedures until all measured frequencies were complete.

7.1 DEVIATION FROM STANDARD

No deviation.

7.2 TEST SETUP



7.3 EUT OPERATION CONDITIONS

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

7.4 TEST RESULTS

EUT：	IP CAMERA	Model Name ：	801
Temperature：	25 ℃	Relative Humidity：	56%
Pressure：	1012 hPa	Test Voltage ：	DC 5V

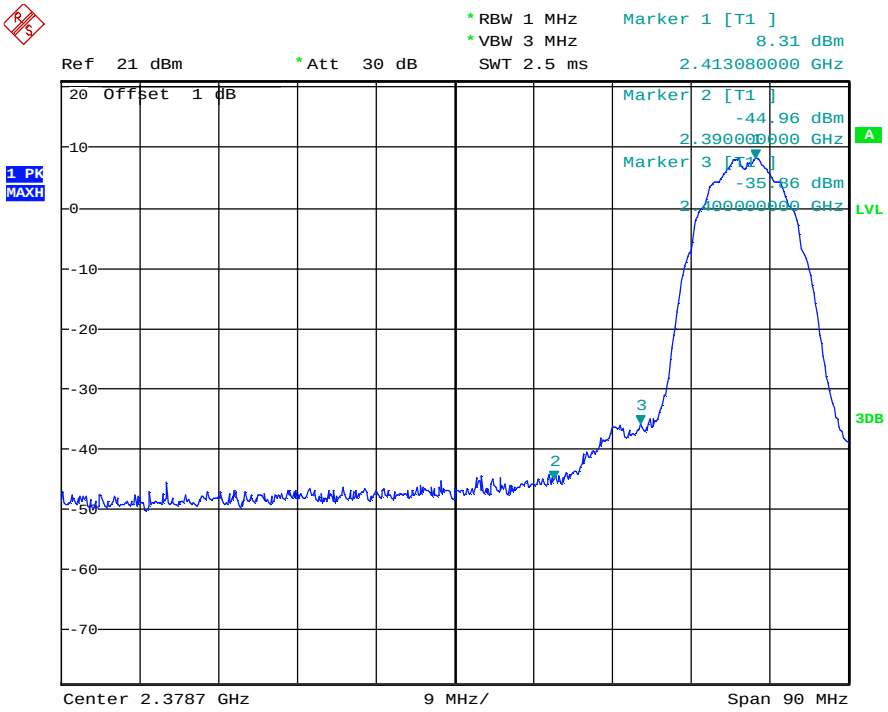
802.11b Test Mode

A. Test Verdict

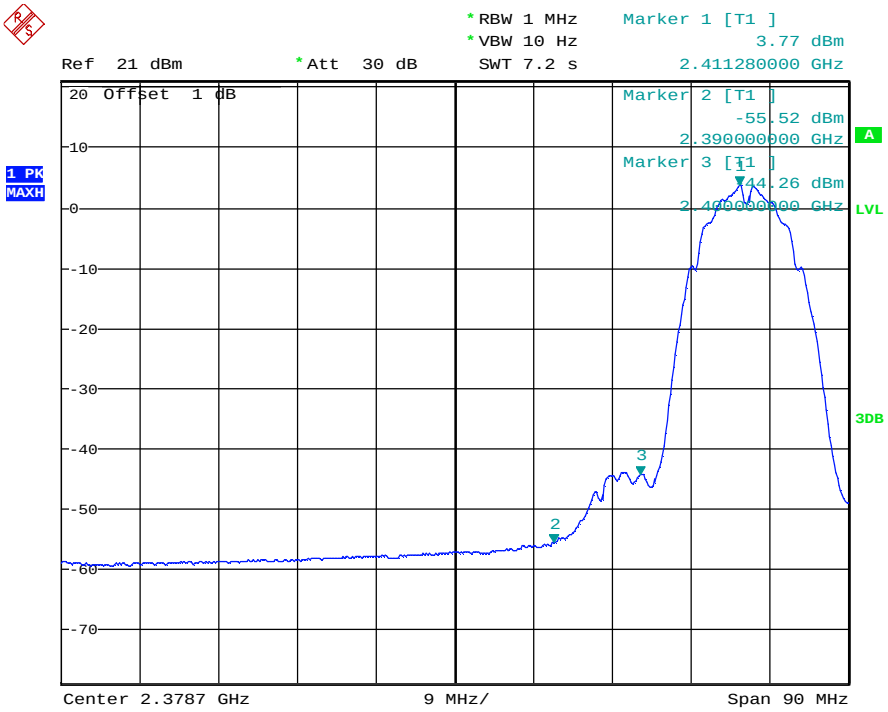
Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Refer to Plot
2390.00	-44.96	2.00	0.00	52.30	Peak	74.00	Plot 4.5.1 A1
2390.00	-55.52	2.00	0.00	41.74	AV	54.00	Plot 4.5.1 A2
2413.08	8.31	2.00	0.00	105.57	Peak	---	Plot 4.5.1 A1
2411.28	3.77	2.00	0.00	101.03	AV	---	Plot 4.5.1 A2
2463.08	7.79	2.00	0.00	105.05	Peak	---	Plot 4.5.1 A3
2461.28	3.15	2.00	0.00	100.41	AV	---	Plot 4.5.1 A4
2483.50	-45.26	2.00	0.00	52.00	Peak	74.00	Plot 4.5.1 A3
2483.50	-57.21	2.00	0.00	40.05	AV	54.00	Plot 4.5.1 A4

Note: 1. For 802.11b mode at finial test to get the worst-case emission at 1Mbps.
2.The test results including the cable lose.
3. “---“ means that the fundamental frequency not for 15.209 limits requirement.

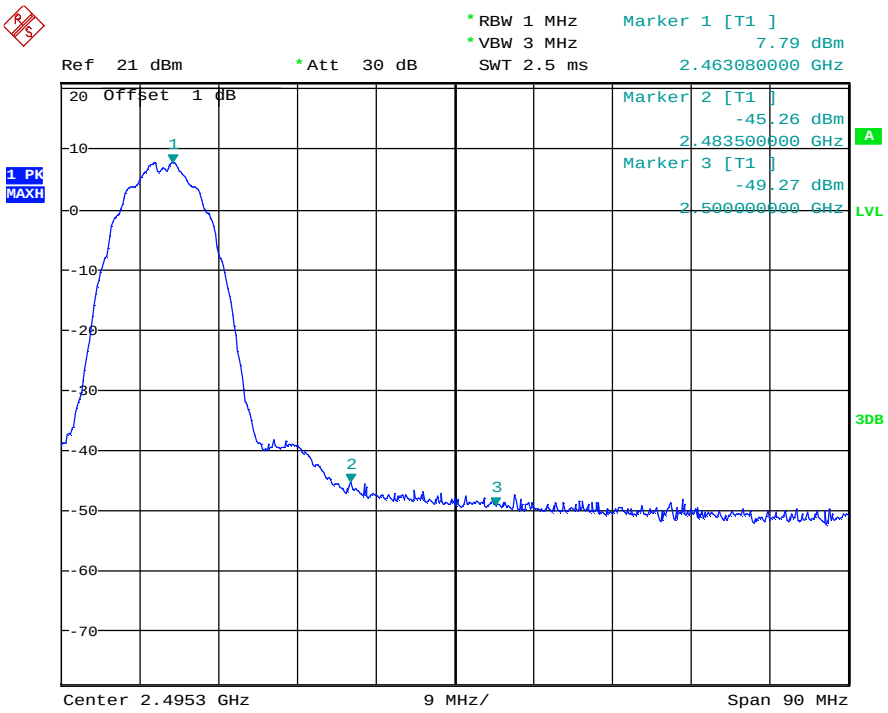
B. Test Plots



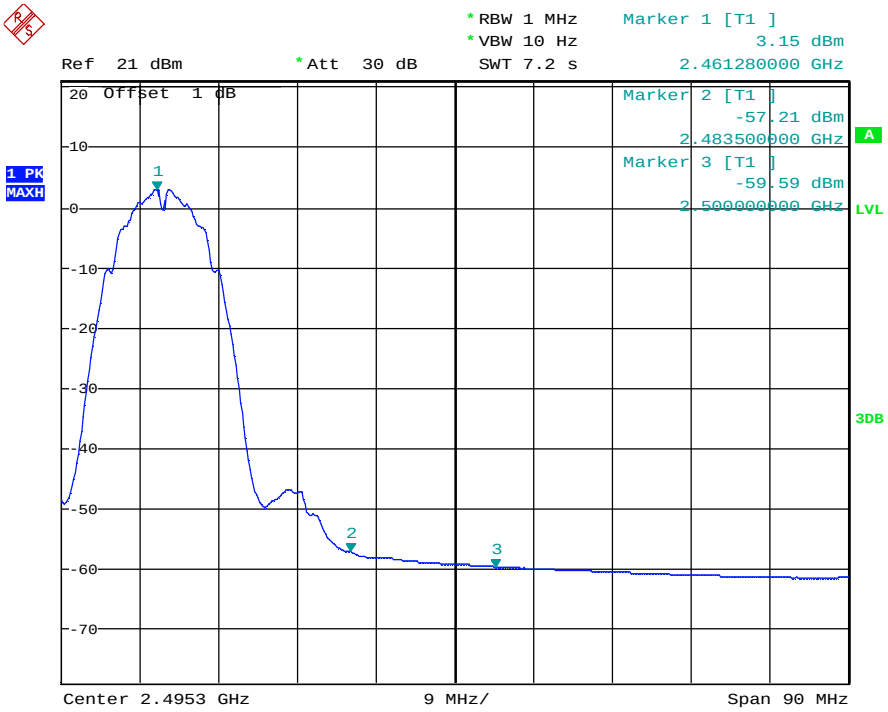
(Plot 4.5.1 A1: Channel 1: 2412MHz @ 802.11b)



(Plot 4.5.1 A2: Channel 1: 2412MHz @ 802.11b)



(Plot 4.5.1 A3: Channel 11: 2462MHz @ 802.11b)



(Plot 4.5.1 A4: Channel 11: 2462MHz @ 802.11b)

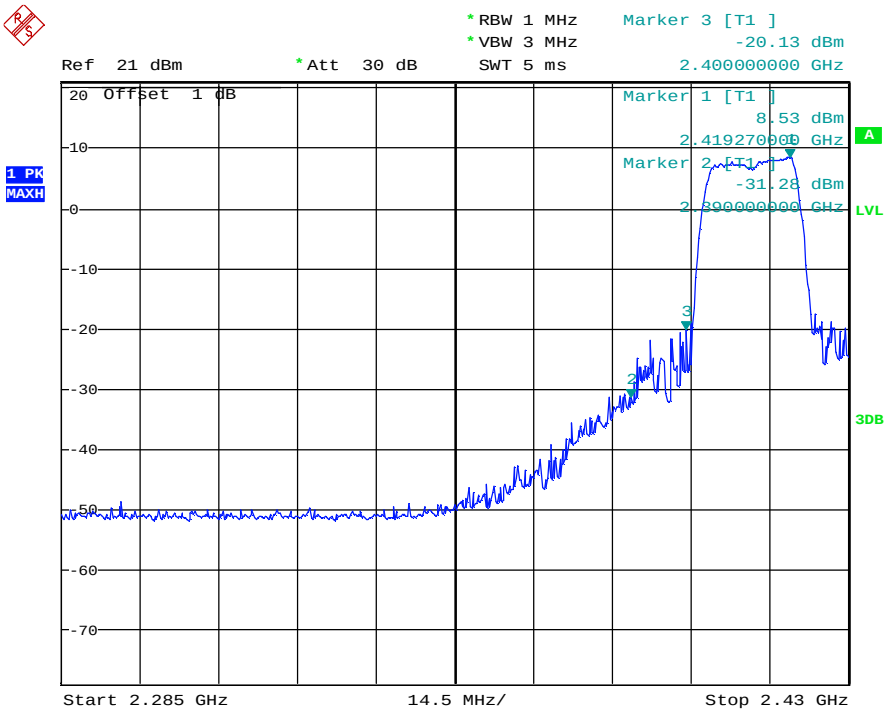
802.11g Test Mode

A. Test Verdict

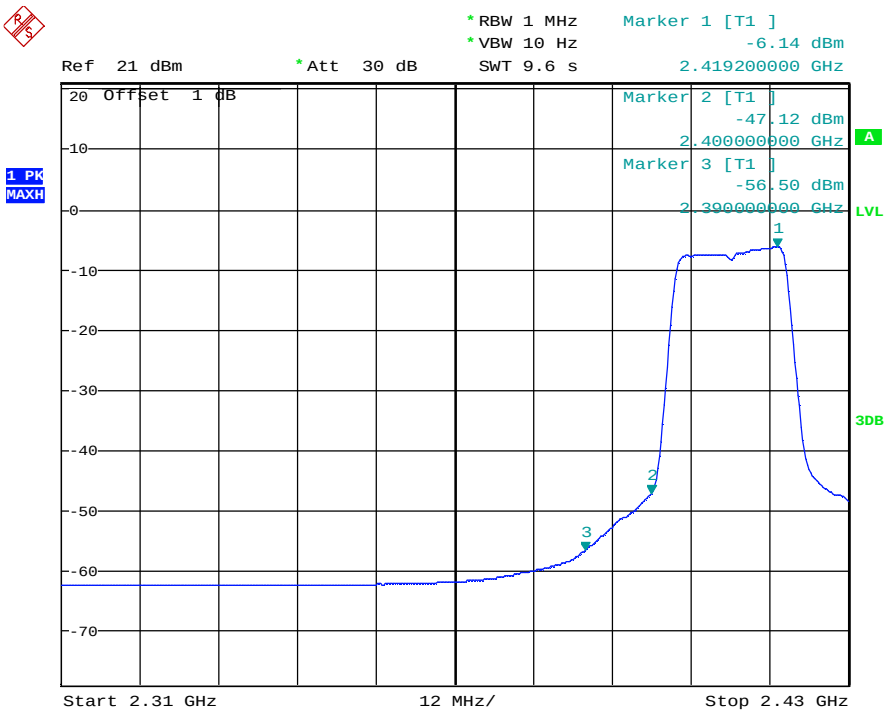
Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Refer to Plot
2390.00	-31.28	2.00	0.00	65.98	Peak	74.00	Plot 4.5.2 A1
2390.00	-56.50	2.00	0.00	40.76	AV	54.00	Plot 4.5.2 A2
2419.27	8.53	2.00	0.00	105.79	Peak	---	Plot 4.5.2 A1
2419.20	-6.14	2.00	0.00	91.12	AV	---	Plot 4.5.2 A2
2455.00	6.50	2.00	0.00	103.76	Peak	---	Plot 4.5.2 A3
2455.20	-8.06	2.00	0.00	89.20	AV	---	Plot 4.5.2 A4
2483.50	-35.92	2.00	0.00	61.34	Peak	74.00	Plot 4.5.2 A3
2483.50	-55.36	2.00	0.00	41.90	AV	54.00	Plot 4.5.2 A4

Note: 1. For 802.11g mode at finial test to get the worst-case emission at 6Mbps.
2.The test results including the cable lose.
3. “---“ means that the fundamental frequency not for 15.209 limits requirement.

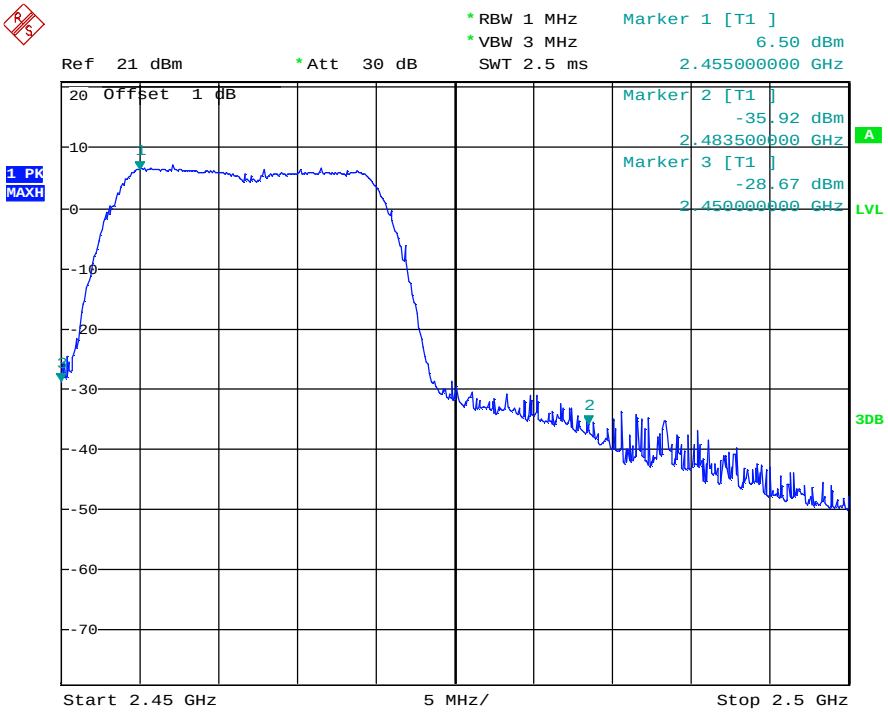
B. Test Plots



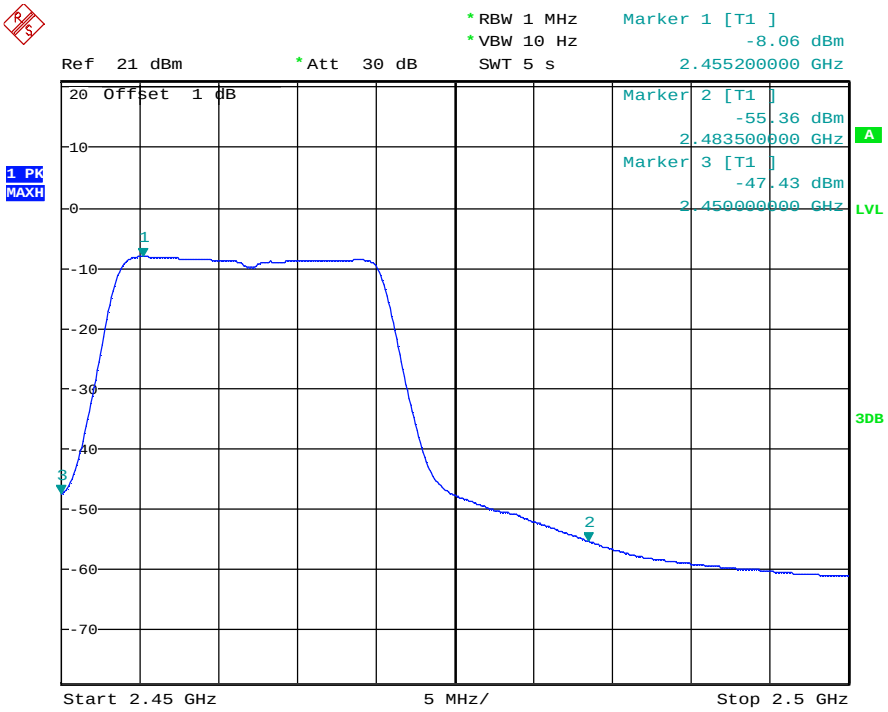
(Plot 4.5.2 A1: Channel 1: 2412MHz @ 802.11g)



(Plot 4.5.2 A2: Channel 1: 2412MHz @ 802.11g)



(Plot 4.5.2 A3: Channel 11: 2462MHz @ 802.11g)



(Plot 4.5.2 A4: Channel 11: 2462MHz @ 802.11g)

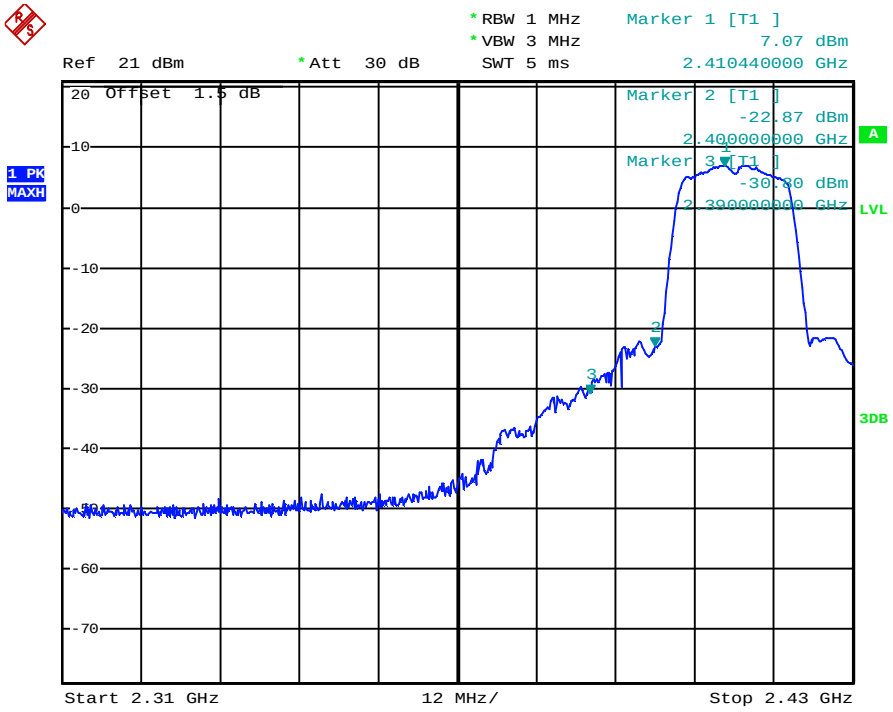
802.11n(20MHz) Test Mode

A. Test Verdict

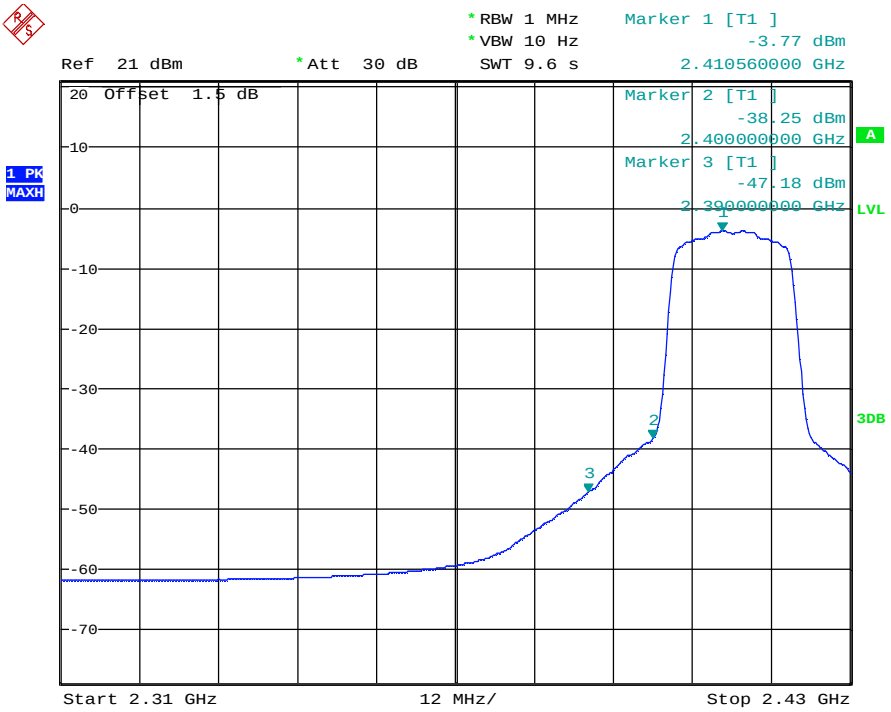
Frequency (MHz)	Conducted Power (dBm)	Antenna Gain (dBi)	Ground Reflection Factor (dB)	Covert Radiated E Level At 3m (dBuV/m)	Detector	Limit (dBuV/m)	Refer to Plot
2390.00	-30.80	2.00	0.00	66.46	Peak	74.00	Plot 4.5.3 A1
2390.00	-47.18	2.00	0.00	50.08	AV	54.00	Plot 4.5.3 A2
2410.44	7.07	2.00	0.00	104.33	Peak	---	Plot 4.5.3 A1
2410.56	-3.77	2.00	0.00	93.49	AV	---	Plot 4.5.3 A2
2463.80	7.45	2.00	0.00	104.71	Peak	---	Plot 4.5.3 A3
2463.55	-3.51	2.00	0.00	93.75	AV	---	Plot 4.5.3 A4
2483.50	-24.84	2.00	0.00	72.42	Peak	74.00	Plot 4.5.3 A3
2483.50	-47.39	2.00	0.00	49.87	AV	54.00	Plot 4.5.3 A4

Note: 1. For 802.11n(20MHz) mode at finial test to get the worst-case emission at 6.5Mbps.
2.The test results including the cable lose.
3. “---“ means that the fundamental frequency not for 15.209 limits requirement.

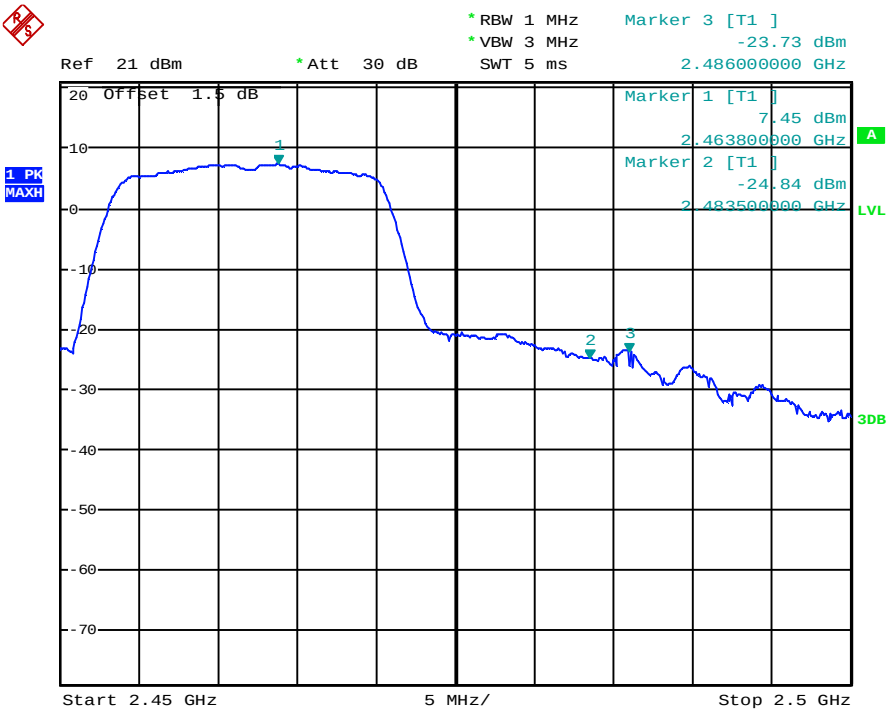
B. Test Plots



(Plot 4.5.3 A1: Channel 1: 2412MHz @ 802.11n(20MHz))



(Plot 4.5.3 A2: Channel 1: 2412MHz @ 802.11n(20MHz))



(Plot 4.5.3 A3: Channel 11: 2462MHz @ 802.11n(20MHz))

8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

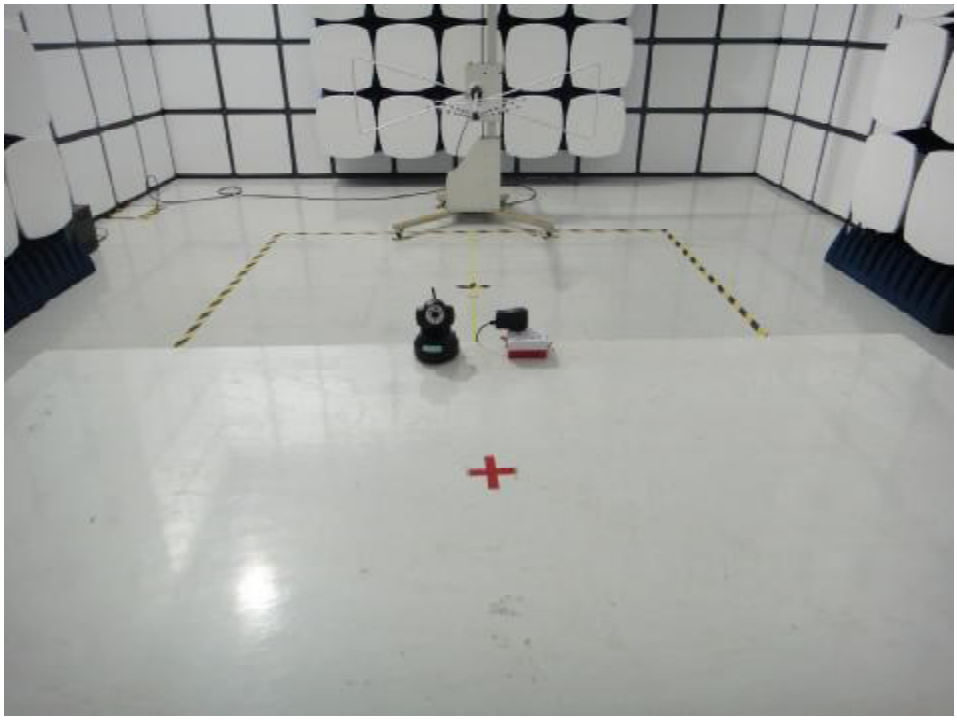
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

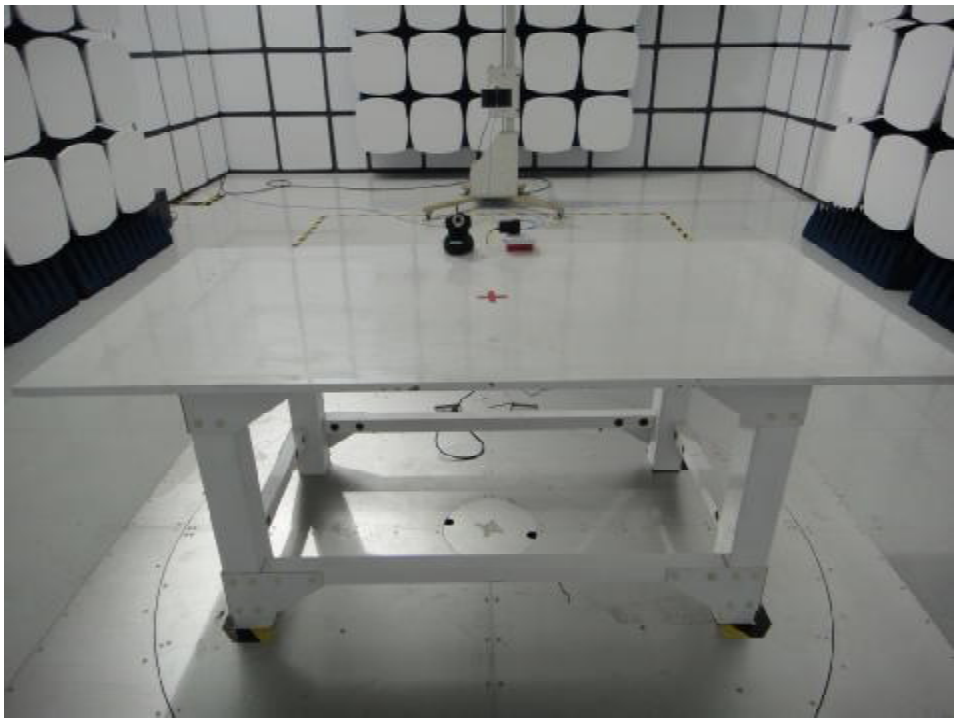
8.2 EUT ANTENNA

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

9. EUT TEST PHOTO

Radiated Measurement Photos





Conducted Measurement Photos