



# FCC Radio Test Report

## FCC ID: QIS-WS331B

This report concerns (check one):  Original Grant  Class II Change

**Issued Date** : Dec. 31, 2013  
**Project No.** : 1312C139  
**Equipment** : 300Mbps Mini Wireless Router  
**Model Name** : WS331b; WS333b  
**Applicant** : Huawei Technologies Co., Ltd.  
**Address** : Administration Building, Headquarters of  
Huawei Technologies Co., Ltd., Bantian,  
Longgang District, Shenzhen, 518129, P.R.C

**Tested by:** Neutron Engineering Inc. EMC Laboratory

**Date of Receipt:** Dec. 16, 2013

**Date of Test:** Dec. 16, 2013~Dec. 30, 2013

**Testing Engineer** : David Mao  
( David Mao)

**Technical Manager** : Leo Hung  
(Leo Hung)

**Authorized Signatory** : Steven Lu  
(Steven Lu)

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**Declaration**

**Neutron** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
NEI-FCCP-1-1312C139	Original Issue.	Dec. 31, 2013



## 1. CERTIFICATION

Equipment : 300Mbps Mini Wireless Router  
Brand Name : HUAWEI  
Model Name : WS331b; WS333b  
Applicant : Huawei Technologies Co., Ltd.  
Manufacture : Huawei Technologies Co., Ltd.  
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd.,  
Bantian, Longgang District, Shenzhen, 518129, P.R.C  
Factory : SHENZHEN ZOWEE TECHNOLOGY CO.,LTD. BAOAN SUBSIDIARY CO.  
Address : ZOWEE Factory, Tongfuyu Industrial Zone, Songgang, Baoan District,  
Shenzhen 518105 P.R. China  
Date of Test : Dec. 16, 2013~Dec. 30, 2013  
Test Item : ENGINEERING SAMPLE  
Standard(s) : FCC Part15(2012), Subpart C(15.247) / ANSI C63.4-2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1312C139) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).



**2. SUMMARY OF TEST RESULTS**

Test procedures according to the technical standard(s):

<b>FCC Part15 (15.247) , Subpart C</b>				
<b>Standard(s)</b>	<b>Section</b>	<b>Test Item</b>	<b>Judgment</b>	<b>Remark</b>
15.207		Conducted Emission	PASS	
15.247(d)		Antenna conducted Spurious Emission	PASS	
15.247(a)(2)		6dB Bandwidth	PASS	
15.247(b)(3)		Peak Output Power	PASS	
15.247(e)		Power Spectral Density	PASS	
15.203		Antenna Requirement	PASS	
15.209/15.205		Transmitter Radiated Emissions	PASS	

**NOTE:**

- (1) " N/A" denotes test is not applicable in this test report.
- (2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r01 (Measurement Guidelines of DTS)



**2.1 TEST FACILITY**

The test facilities used to collect the test data in this report is **DG-C02/DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792  
Neutron's test firm number is 319330

**2.2 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:

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

**A. Conducted Measurement :**

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

**B. Radiated Measurement :**

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	



**3. GENERAL INFORMATION**

**3.1 GENERAL DESCRIPTION OF EUT**

Equipment	300Mbps Mini Wireless Router																				
Brand Name	HUAWEI																				
Model Name	WS331b; WS333b																				
Model Difference	Only differ in model name.																				
Product Description	<table border="1"> <tr> <td>Operation Frequency</td> <td>2412~2462 MHz</td> </tr> <tr> <td rowspan="3">Modulation Technology</td> <td>802.11b:DSSS</td> </tr> <tr> <td>802.11g:OFDM</td> </tr> <tr> <td>802.11n:OFDM</td> </tr> <tr> <td rowspan="3">Bit Rate of Transmitter</td> <td>802.11b: 11/5.5/2/1 Mbps</td> </tr> <tr> <td>802.11g: 54/48/36/24/18/12/9/6 Mbps</td> </tr> <tr> <td>802.11n up to 300 Mbps</td> </tr> <tr> <td>Number Of Channel</td> <td>11 CH, Please see note 2.(Page 10)</td> </tr> <tr> <td>Antenna Designation</td> <td rowspan="2">Please see note 3.(Page 10)</td> </tr> <tr> <td>Antenna Gain(Peak)</td> </tr> <tr> <td rowspan="4">Output Power (Max.)</td> <td>802.11b: 22.36dBm</td> </tr> <tr> <td>802.11g: 28.18dBm</td> </tr> <tr> <td>802.11n(20MHz):27.17dBm</td> </tr> <tr> <td>802.11n(40MHz):27.19dBm</td> </tr> </table>	Operation Frequency	2412~2462 MHz	Modulation Technology	802.11b:DSSS	802.11g:OFDM	802.11n:OFDM	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps	802.11g: 54/48/36/24/18/12/9/6 Mbps	802.11n up to 300 Mbps	Number Of Channel	11 CH, Please see note 2.(Page 10)	Antenna Designation	Please see note 3.(Page 10)	Antenna Gain(Peak)	Output Power (Max.)	802.11b: 22.36dBm	802.11g: 28.18dBm	802.11n(20MHz):27.17dBm	802.11n(40MHz):27.19dBm
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	802.11n(40MHz):27.19dBm																				
More details of EUT technical specification, please refer to the User's Manual.																					
Power Source	#1 AC mains. #2 Supplied from host system. Internal Power 1: UE Internal Power 2: HUNTKEY																				
Power Rating	#1 I/P: AC 100-240V~50/60Hz 0.2A #2 DC 5V/1A																				
Connecting I/O Port(s)	Please refer to the User's Manual																				

**Note:**

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



2. CH 01 – CH 11 for 802.11b, 802.11g, 802.11n(20MHz)  
 CH 03 – CH 09 for 802.11n(40MHz)

**Channel List**

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
1	N/A	N/A	Monopole	N/A	1	TX/RX
2	N/A	N/A	Monopole	N/A	1	TX/RX

Note:

(1)The EUT incorporates a MIMO function. Physically, the EUT provides two completed two transmitters and two receivers (2T2R).

- 4.

Operating Mode	1TX	2TX
TX Mode		
802.11b	V (ANT 1 or ANT 2)	-
802.11g	-	V (ANT 1 + ANT 2)
802.11n(20MHz)	-	V (ANT 1 + ANT 2)
802.11n(40MHz)	-	V (ANT 1 + ANT 2)



**3.2 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	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09
Mode 5	TX Mode

The EUT system operated these modes were found to be the worst case during the pre-scanning test as following:

<b>For Conducted Test</b>	
Final Test Mode	Description
Mode 5	TX Mode

<b>For Radiated Test</b>	
Final Test Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09

Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)  
 802.11g mode: OFDM (6Mbps)  
 802.11n HT20 mode : BPSK (13Mbps)  
 802.11n HT40 mode : BPSK (27Mbps)  
 For radiated emission tests, the highest output powers were set for final test.
- (3) The EUT was pre-tested on positioned of each 3 axis. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.
- (4) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.
- (5) For radiated below 1G test, AC mains is found to be the worst case and recorded.



**3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING**

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

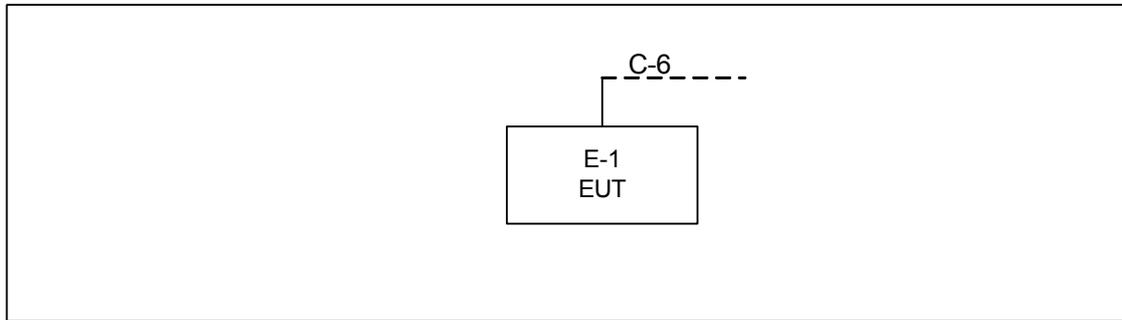
Test software version	SmartTools		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b DSSS	46	45	46
IEEE 802.11g OFDM	37	37	37

Test software version	SmartTools		
Frequency (MHz)	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11n (20MHz)	37	37	37
Frequency (MHz)	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n (40MHz)	39	39	39

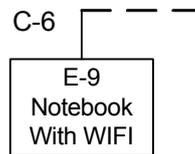


**3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**

**Radiated TX Mode:**



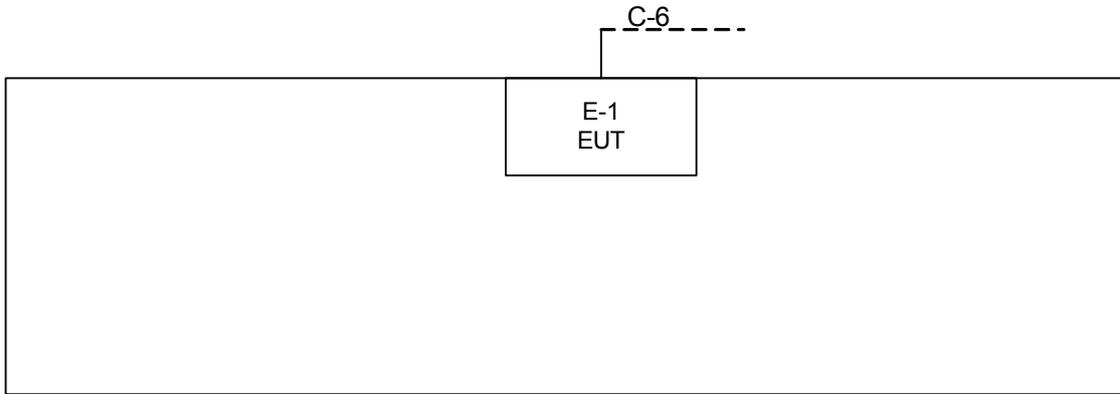
Control Room



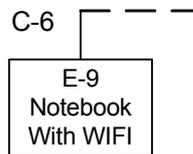


**Conducted TX Mode:**

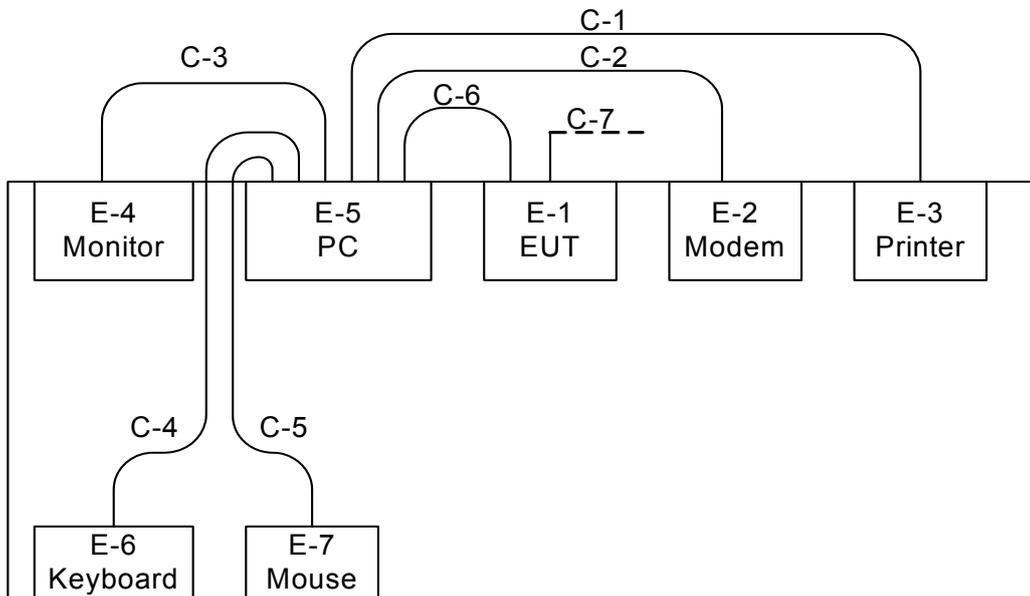
For AC Mains



Control Room

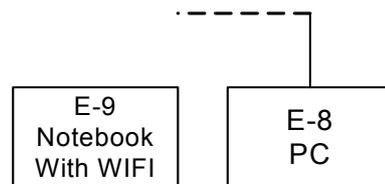


For Host System



Control Room

- C-1: Parallel Cable
- C-2: RS232 Cable
- C-3: D-Sub Cable
- C-4: USB Cable
- C-5: USB Cable
- C-6: USB Cable
- C-7: RJ45 Cable





**3.5 DESCRIPTION OF SUPPORT UNITS**

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	300Mbps Mini Wireless Router	HUAWEI	WS331b	QIS-WS331B	N/A	EUT
E-2	Modem	ACEEX	DM-1414V	DOC	8041708	
E-3	Printer	SII	DPU-414	DOC	1045105A	
E-4	24" LCD Monitor	DELL	2408WFPb	DOC	071863-11	
E-5	PC	DELL	DCTA	DOC	5HJ3S1S	
E-6	USB K/B	DELL	SK-8115	DOC	MY-0DJ325-7161 9-77N-1526	
E-7	USB Mouse	Dell	M-UVDEL1	DOC	LNA44366861	
E-8	PC	IBM	8422-KVA	DOC	L3D0137	
E-9	Notebook PC	DELL	PP18L	DOC	PF329 A01	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	NO	1.5m	
C-2	YES	NO	1.5m	
C-3	YES	YES	1.5m	
C-4	YES	YES	1.8m	
C-5	YES	NO	1.8m	
C-6	NO	NO	1.2m	
C-7	NO	NO	10m	

Note:

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



**4. EMC EMISSION TEST**

**4.1 CONDUCTED EMISSION MEASUREMENT**

**4.1.1 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.

**4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Apr. 25, 2014
2	LISN	R&S	ENV216	100087	Nov. 09, 2014
3	Test Cable	N/A	C_17	N/A	Mar.15, 2014
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	Apr. 25, 2014
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Apr. 25, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.  
All calibration period of equipment list is one year.

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

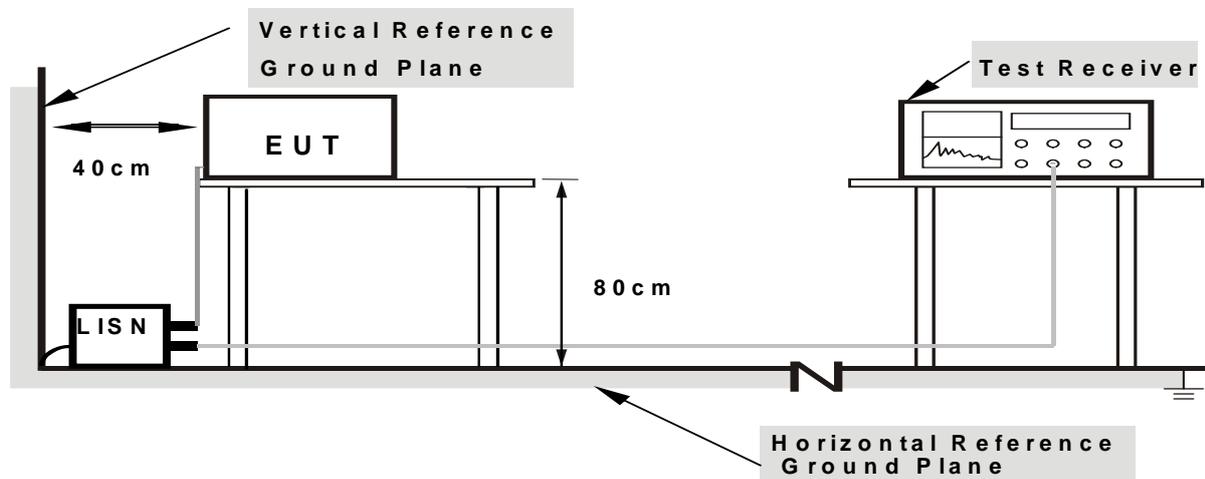
#### 4.1.3 TEST PROCEDURE

- 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.
- 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.
- 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.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 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**

#### 4.1.6 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.



#### 4.1.7 TEST RESULTS

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150KHz to 30MHz.



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode / For AC Mains / Internal Power 1		

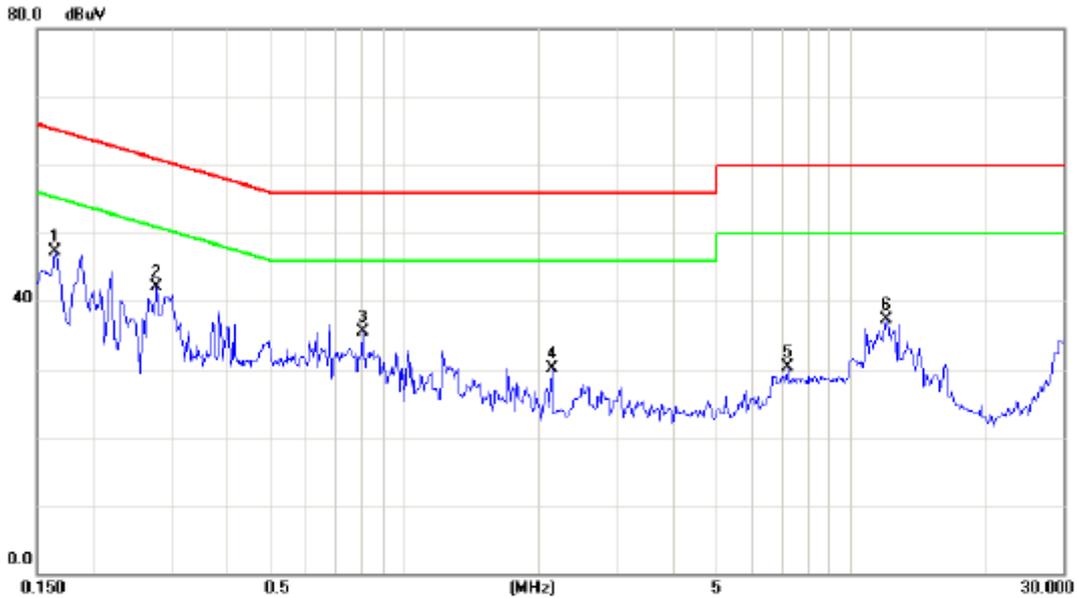


No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1730	35.37	9.61	44.98	64.82	-19.84	peak	
2	0.6347	27.36	9.69	37.05	56.00	-18.95	peak	
3 *	0.7520	27.49	9.70	37.19	56.00	-18.81	peak	
4	1.2380	24.38	9.73	34.11	56.00	-21.89	peak	
5	2.4937	20.96	9.79	30.75	56.00	-25.25	peak	
6	11.7332	26.46	10.22	36.68	60.00	-23.32	peak	



# Neutron Engineering Inc.

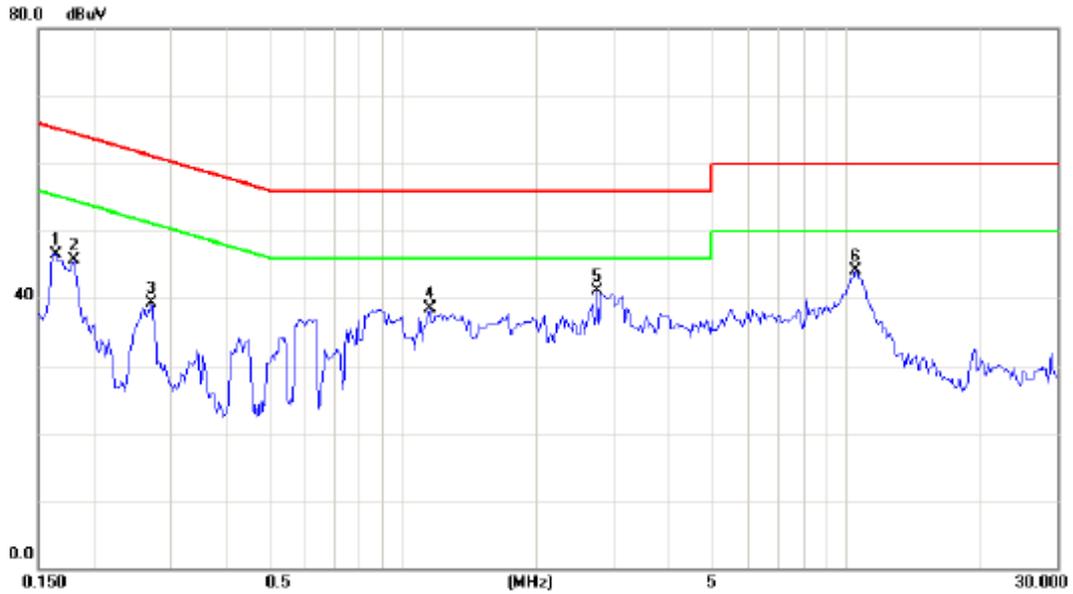
EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode / For AC Mains / Internal Power 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1650	37.63	9.60	47.23	65.21	-17.98	peak	
2		0.2790	32.51	9.61	42.12	60.85	-18.73	peak	
3		0.8101	25.72	9.70	35.42	56.00	-20.58	peak	
4		2.1381	20.36	9.78	30.14	56.00	-25.86	peak	
5		7.2031	20.12	10.10	30.22	60.00	-29.78	peak	
6		11.9850	26.81	10.44	37.25	60.00	-22.75	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode / For Host System / Internal Power 1		

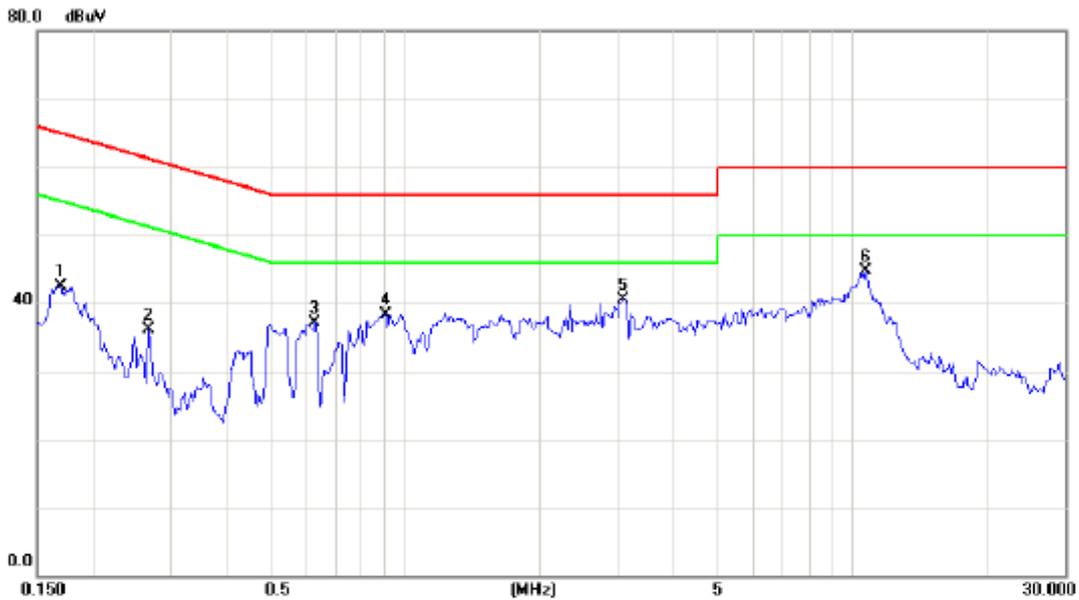


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1655	36.89	9.63	46.52	65.18	-18.66	peak	
2		0.1811	36.09	9.65	45.74	64.44	-18.70	peak	
3		0.2710	29.57	9.66	39.23	61.09	-21.86	peak	
4		1.1500	28.84	9.75	38.59	56.00	-17.41	peak	
5	*	2.7515	31.21	9.86	41.07	56.00	-14.93	peak	
6		10.5153	34.02	10.10	44.12	60.00	-15.88	peak	



# Neutron Engineering Inc.

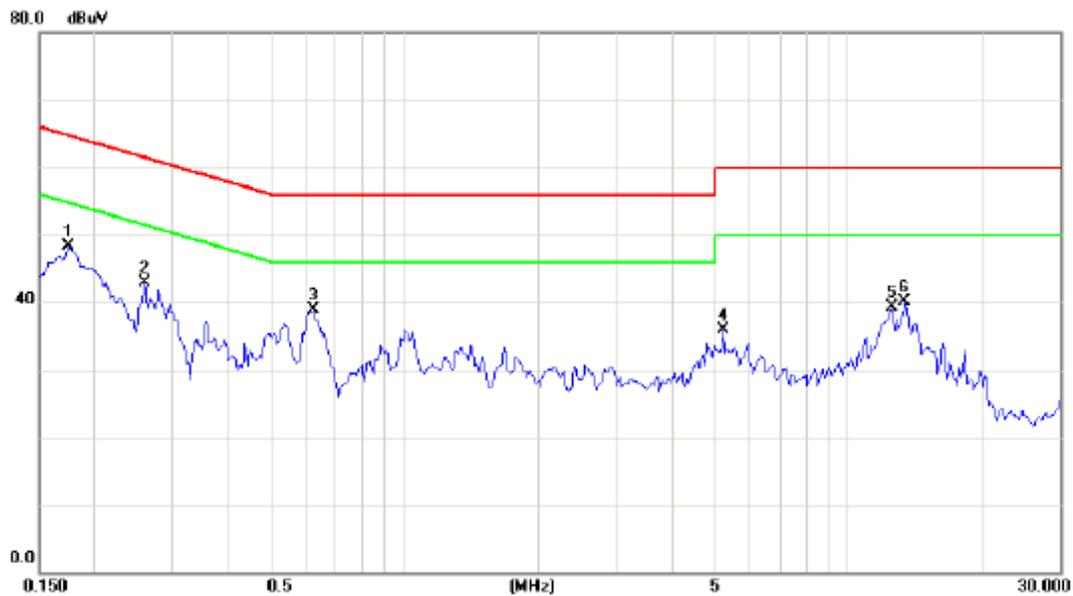
EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode / For Host System / Internal Power 1		



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1695	32.86	9.70	42.56	64.98	-22.42	peak	
2	0.2671	26.37	9.72	36.09	61.21	-25.12	peak	
3	0.6301	27.30	9.75	37.05	56.00	-18.95	peak	
4	0.9040	28.50	9.77	38.27	56.00	-17.73	peak	
5	3.0741	30.67	9.89	40.56	56.00	-15.44	peak	
6 *	10.7695	34.40	10.23	44.63	60.00	-15.37	peak	



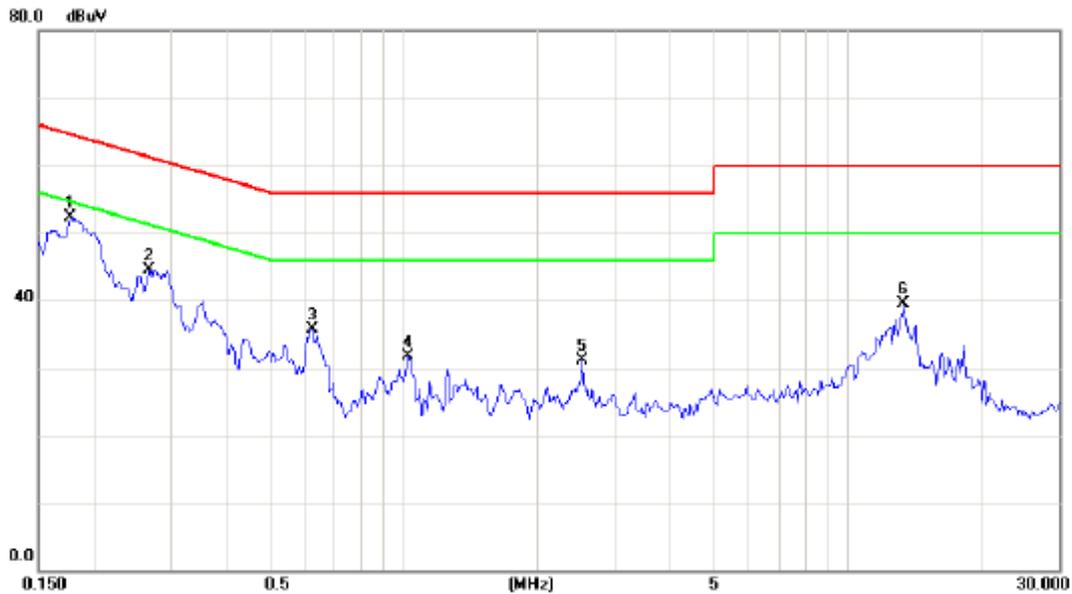
EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1750	38.76	9.61	48.37	64.72	-16.35	peak	
2		0.2590	33.29	9.62	42.91	61.46	-18.55	peak	
3		0.6247	29.12	9.69	38.81	56.00	-17.19	peak	
4		5.2122	25.95	9.91	35.86	60.00	-24.14	peak	
5		12.5045	29.08	10.26	39.34	60.00	-20.66	peak	
6		13.3971	29.79	10.28	40.07	60.00	-19.93	peak	



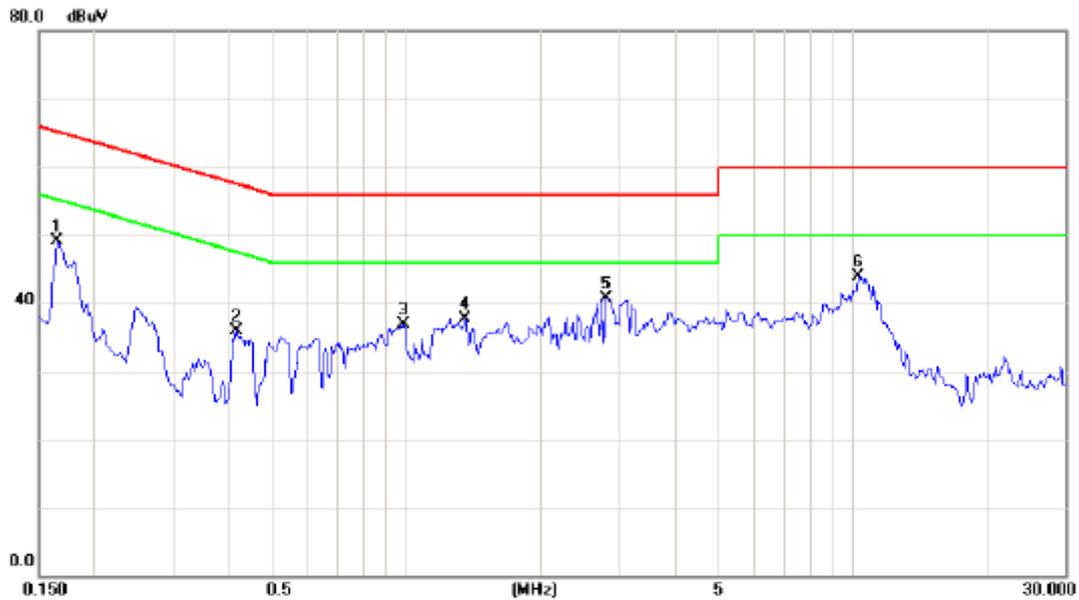
EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1768	42.72	9.60	52.32	64.63	-12.31	peak	
2		0.2660	34.90	9.60	44.50	61.24	-16.74	peak	
3		0.6212	26.07	9.69	35.76	56.00	-20.24	peak	
4		1.0230	22.00	9.73	31.73	56.00	-24.27	peak	
5		2.5202	21.22	9.81	31.03	56.00	-24.97	peak	
6		13.3971	28.91	10.54	39.45	60.00	-20.55	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode / For Host System / Internal Power 2		



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1655	39.53	9.63	49.16	65.18	-16.02	peak	
2	0.4156	26.23	9.68	35.91	57.54	-21.63	peak	
3	0.9860	27.15	9.74	36.89	56.00	-19.11	peak	
4	1.3570	27.97	9.78	37.75	56.00	-18.25	peak	
5 *	2.8140	30.89	9.86	40.75	56.00	-15.25	peak	
6	10.3201	33.85	10.08	43.93	60.00	-16.07	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode / For Host System / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1655	32.68	9.70	42.38	65.18	-22.80	peak	
2		0.2590	23.07	9.72	32.79	61.46	-28.67	peak	
3		0.5403	26.44	9.74	36.18	56.00	-19.82	peak	
4		1.3411	28.28	9.80	38.08	56.00	-17.92	peak	
5		3.0781	31.26	9.89	41.15	56.00	-14.85	peak	
6	*	10.8360	35.03	10.23	45.26	60.00	-14.74	peak	



**4.2 RADIATED EMISSION MEASUREMENT**

**4.2.1 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
960~1000	500	3

**LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)**

FREQUENCY (MHz)	(dBuV/m) (at 3m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

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

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz for PK/AVG detector
Start ~ Stop Frequency	90kHz~110kHz for QP detector
Start ~ Stop Frequency	110kHz~490kHz for PK/AVG detector
Start ~ Stop Frequency	490kHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector



**4.2.2 MEASUREMENT INSTRUMENTS LIST AND SETTING**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Apr. 25, 2014
2	Amplifier	HP	8447D	2944A09673	Apr. 25, 2014
3	Test Receiver	R&S	ESCI	100382	Apr. 25, 2014
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 02, 2014
5	Antenna	ETS	3115	00075789	Apr. 25, 2014
6	Amplifier	Agilent	8449B	3008A02274	Apr. 25, 2014
7	Spectrum	Agilent	E4408B	US39240143	Nov. 09, 2014
8	Test Cable	HUBER+SUHNER	C-45	N/A	Apr. 30, 2014
9	Controller	CT	SC100	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	Apr. 25, 2014
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Apr. 25, 2014
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Oct. 22, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

**4.2.3 TEST PROCEDURE**

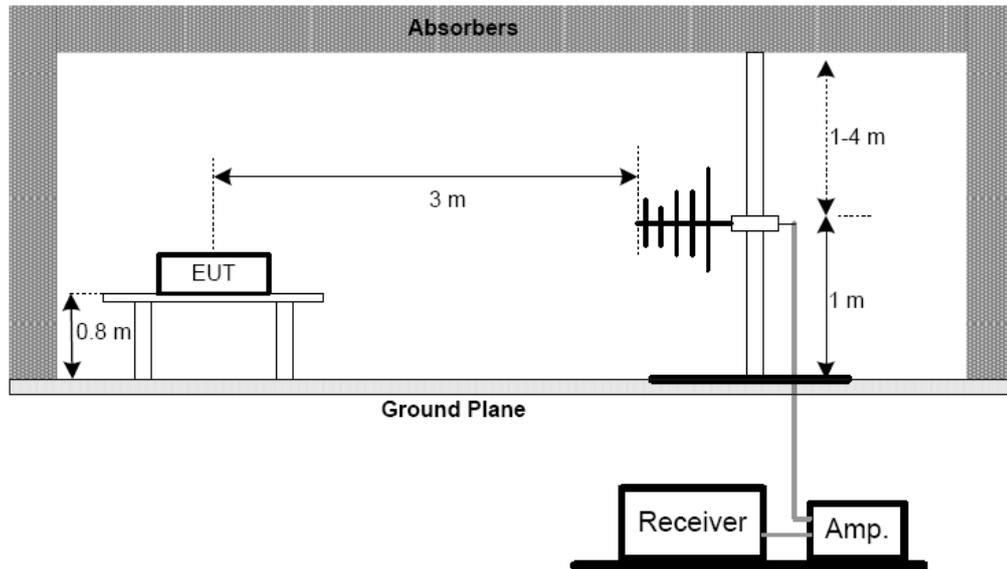
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- 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.

**4.2.4 DEVIATION FROM TEST STANDARD**

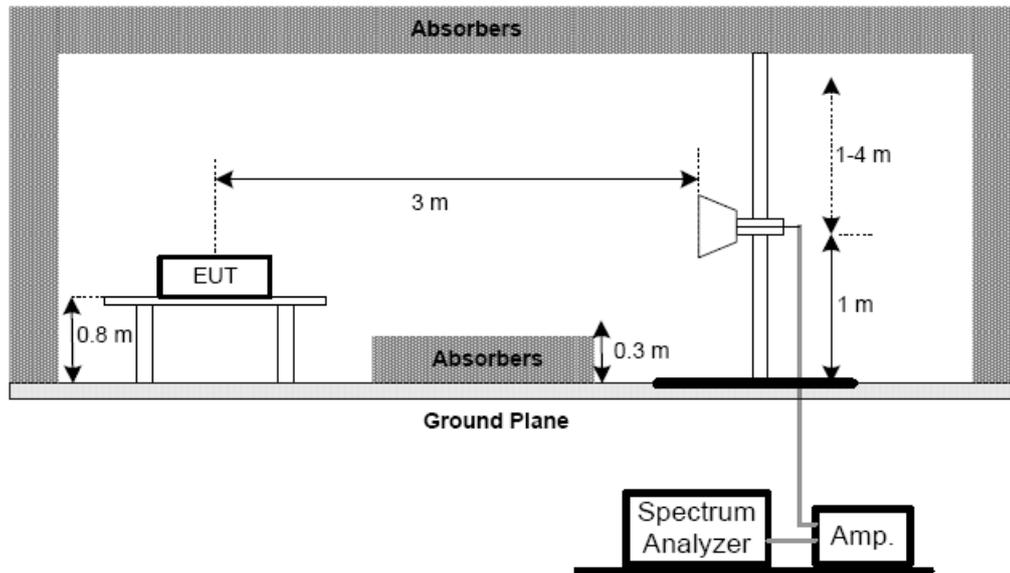
No deviation

**4.2.5 TEST SETUP**

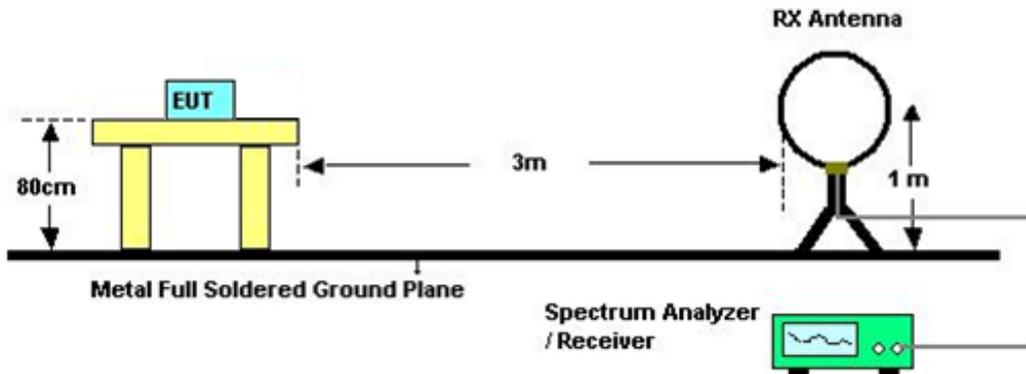
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For radiated emissions below 30MHz



#### 4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



**4.2.7 TEST RESULTS (BELOW 30MHZ)**

EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX B MODE CHANNEL 01 / For AC Mains / Internal Power 1		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0095	0°	25.11	24.30	49.41	128.05	-78.64	AVG
0.0095	0°	29.09	24.30	53.39	148.05	-94.66	PK
0.0254	0°	21.22	23.96	45.18	119.50	-74.32	AVG
0.0254	0°	24.31	23.96	48.27	139.50	-91.23	PK
0.0385	0°	21.23	23.13	44.36	115.89	-71.53	AVG
0.0385	0°	24.01	23.13	47.14	135.89	-88.75	PK
0.0665	0°	18.32	22.07	40.39	111.15	-70.76	AVG
0.0665	0°	23.14	22.07	45.21	131.15	-85.94	PK
0.2659	0°	20.45	20.36	40.81	99.11	-58.30	AVG
0.2659	0°	22.75	20.36	43.11	119.11	-76.00	PK
1.4837	0°	27.22	19.55	46.77	64.18	-17.41	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0097	90°	19.01	24.30	43.31	127.91	-84.60	AVG
0.0097	90°	20.90	24.30	45.20	147.91	-102.71	PK
0.0224	90°	15.11	24.15	39.26	120.60	-81.34	AVG
0.0224	90°	17.25	24.15	41.40	140.60	-99.20	PK
0.0466	90°	18.33	22.61	40.94	114.23	-73.29	AVG
0.0466	90°	21.54	22.61	44.15	134.23	-90.08	PK
0.0776	90°	21.21	21.85	43.06	109.81	-66.75	AVG
0.0776	90°	22.91	21.85	44.76	129.81	-85.05	PK
0.3753	90°	21.05	20.10	41.15	96.12	-54.97	AVG
0.3753	90°	24.01	20.10	44.11	116.12	-72.01	PK
1.6963	90°	25.21	19.53	44.74	63.01	-18.27	QP

Remark :

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor =  $40 \log(\text{specific distance} / \text{test distance})$  (dB);.
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	55 %
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX B MODE CHANNEL 01 / For AC Mains / Internal Power 2		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0099	0°	24.57	24.30	48.87	127.69	-78.82	AVG
0.0099	0°	30.12	24.30	54.42	147.69	-93.27	PK
0.0256	0°	21.05	23.95	45.00	119.45	-74.46	AVG
0.0256	0°	25.13	23.95	49.08	139.45	-90.38	PK
0.0412	0°	21.23	22.96	44.19	115.31	-71.12	AVG
0.0412	0°	24.01	22.96	46.97	135.31	-88.34	PK
0.0665	0°	17.68	22.07	39.75	111.15	-71.40	AVG
0.0665	0°	24.35	22.07	46.42	131.15	-84.73	PK
0.2667	0°	20.15	20.36	40.51	99.08	-58.57	AVG
0.2667	0°	23.25	20.36	43.61	119.08	-75.47	PK
1.4837	0°	27.22	19.55	46.77	64.18	-17.41	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0099	90°	19.35	24.30	43.65	127.69	-84.04	AVG
0.0099	90°	21.25	24.30	45.55	147.69	-102.14	PK
0.0256	90°	16.57	23.95	40.52	119.45	-78.94	AVG
0.0256	90°	18.55	23.95	42.50	139.45	-96.96	PK
0.0412	90°	19.35	22.96	42.31	115.31	-73.00	AVG
0.0412	90°	22.36	22.96	45.32	135.31	-89.99	PK
0.0665	90°	21.21	22.07	43.28	111.15	-67.87	AVG
0.0665	90°	23.05	22.07	45.12	131.15	-86.03	PK
0.2667	90°	21.05	20.36	41.41	99.08	-57.67	AVG
0.2667	90°	25.36	20.36	45.72	119.08	-73.36	PK
1.4837	90°	25.55	19.55	45.10	64.18	-19.08	QP

Remark :

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



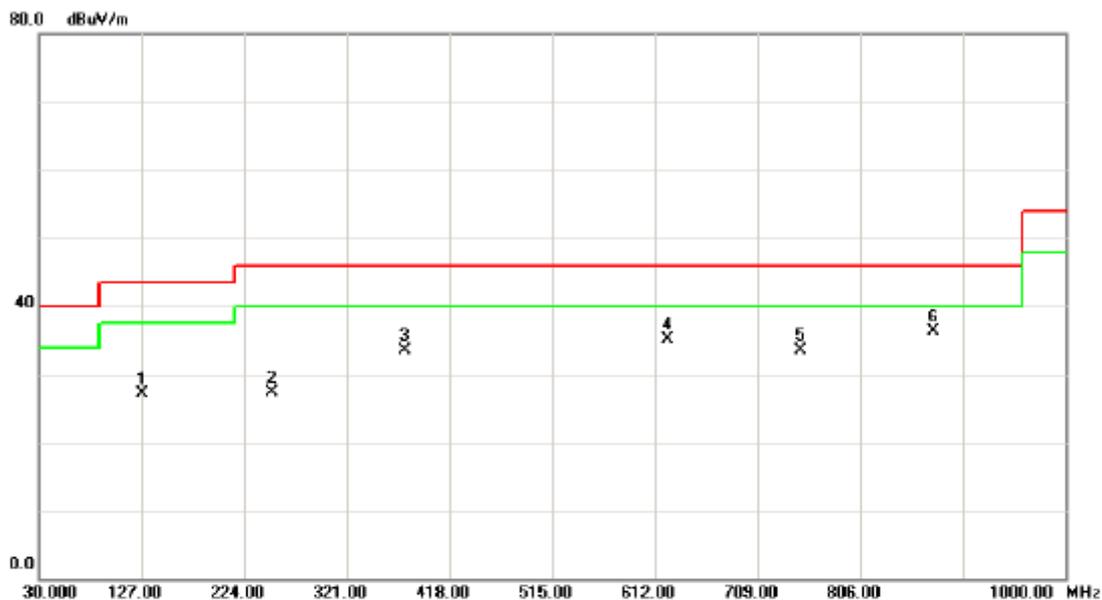
#### **4.2.8 TEST RESULTS (BETWEEN 30 – 1000 MHZ)**

Remark:

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 1000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 01 / For AC Mains / Internal Power 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		127.9700	40.65	-13.45	27.20	43.50	-16.30	peak	
2		250.1900	42.23	-14.97	27.26	46.00	-18.74	peak	
3		375.3200	44.08	-10.66	33.42	46.00	-12.58	peak	
4		624.6100	42.04	-6.86	35.18	46.00	-10.82	peak	
5		749.7400	38.33	-4.91	33.42	46.00	-12.58	peak	
6	*	874.8700	38.88	-2.48	36.40	46.00	-9.60	peak	



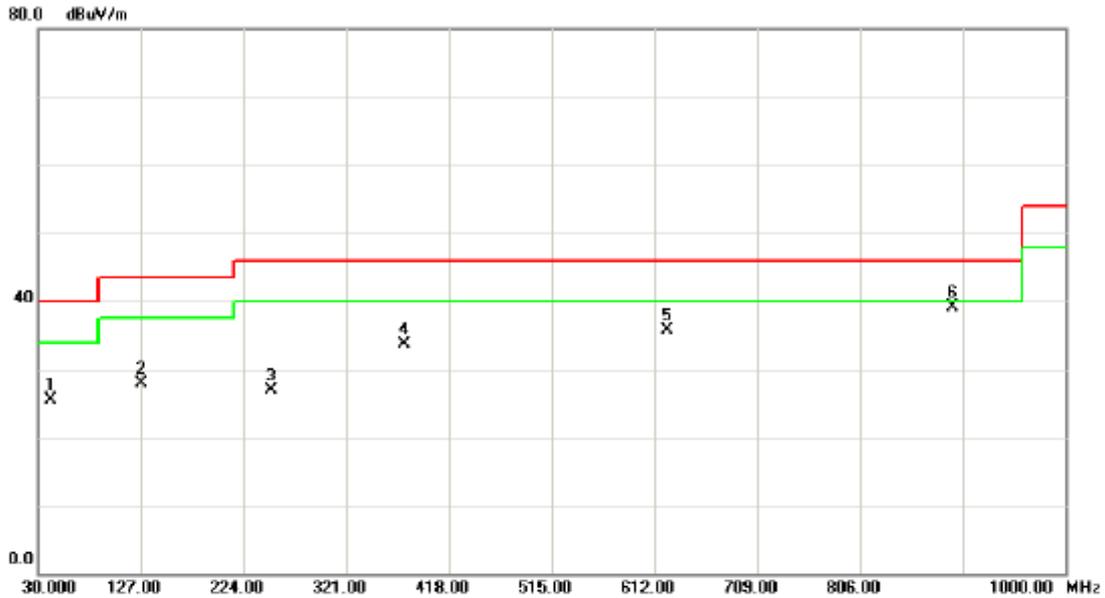
EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 01 / For AC Mains / Internal Power 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		256.0100	43.91	-14.84	29.07	46.00	-16.93	peak	
2		375.3200	49.51	-10.66	38.85	46.00	-7.15	peak	
3		624.6100	41.74	-6.86	34.88	46.00	-11.12	peak	
4		704.1500	43.00	-4.81	38.19	46.00	-7.81	peak	
5	*	749.7400	44.04	-4.91	39.13	46.00	-6.87	peak	
6		874.8700	38.97	-2.48	36.49	46.00	-9.51	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 06 / For AC Mains / Internal Power 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		42.6100	39.82	-14.39	25.43	40.00	-14.57	peak	
2		127.9700	41.29	-13.45	27.84	43.50	-15.66	peak	
3		250.1900	41.94	-14.97	26.97	46.00	-19.03	peak	
4		375.3200	44.28	-10.66	33.62	46.00	-12.38	peak	
5		624.6100	42.47	-6.86	35.61	46.00	-10.39	peak	
6	*	893.3000	40.60	-1.59	39.01	46.00	-6.99	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 06 / For AC Mains / Internal Power 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		195.8700	42.14	-14.84	27.30	43.50	-16.20	peak	
2		256.0100	44.48	-14.84	29.64	46.00	-16.36	peak	
3		380.1700	48.22	-10.50	37.72	46.00	-8.28	peak	
4	*	749.7400	43.30	-4.91	38.39	46.00	-7.61	peak	
5		874.8700	38.06	-2.48	35.58	46.00	-10.42	peak	
6		1000.0000	43.98	0.26	44.24	54.00	-9.76	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 11 / For AC Mains / Internal Power 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		39.7000	39.87	-14.66	25.21	40.00	-14.79	peak	
2		384.0500	44.14	-10.38	33.76	46.00	-12.24	peak	
3		500.4500	40.19	-10.31	29.88	46.00	-16.12	peak	
4		624.6100	42.46	-6.86	35.60	46.00	-10.40	peak	
5		874.8700	39.77	-2.48	37.29	46.00	-8.71	peak	
6	*	1000.000	45.64	0.26	45.90	54.00	-8.10	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 11 / For AC Mains / Internal Power 1		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		256.0100	44.51	-14.84	29.67	46.00	-16.33	peak	
2		384.0500	47.78	-10.38	37.40	46.00	-8.60	peak	
3		704.1500	41.90	-4.81	37.09	46.00	-8.91	peak	
4	*	749.7400	43.70	-4.91	38.79	46.00	-7.21	peak	
5		874.8700	39.37	-2.48	36.89	46.00	-9.11	peak	
6		1000.0000	43.51	0.26	43.77	54.00	-10.23	peak	



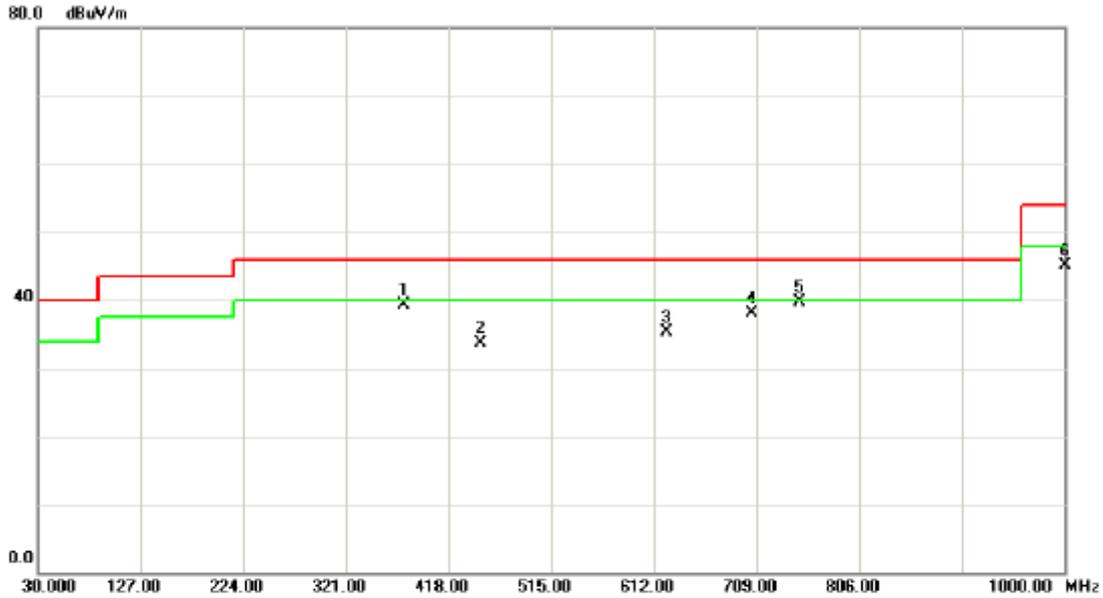
EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 01 / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		127.9700	41.65	-13.45	28.20	43.50	-15.30	peak	
2		375.3200	44.58	-10.66	33.92	46.00	-12.08	peak	
3		576.1100	42.16	-7.89	34.27	46.00	-11.73	peak	
4		624.6100	42.54	-6.86	35.68	46.00	-10.32	peak	
5		874.8700	38.88	-2.48	36.40	46.00	-9.60	peak	
6	*	1000.000	45.98	0.26	46.24	54.00	-7.76	peak	



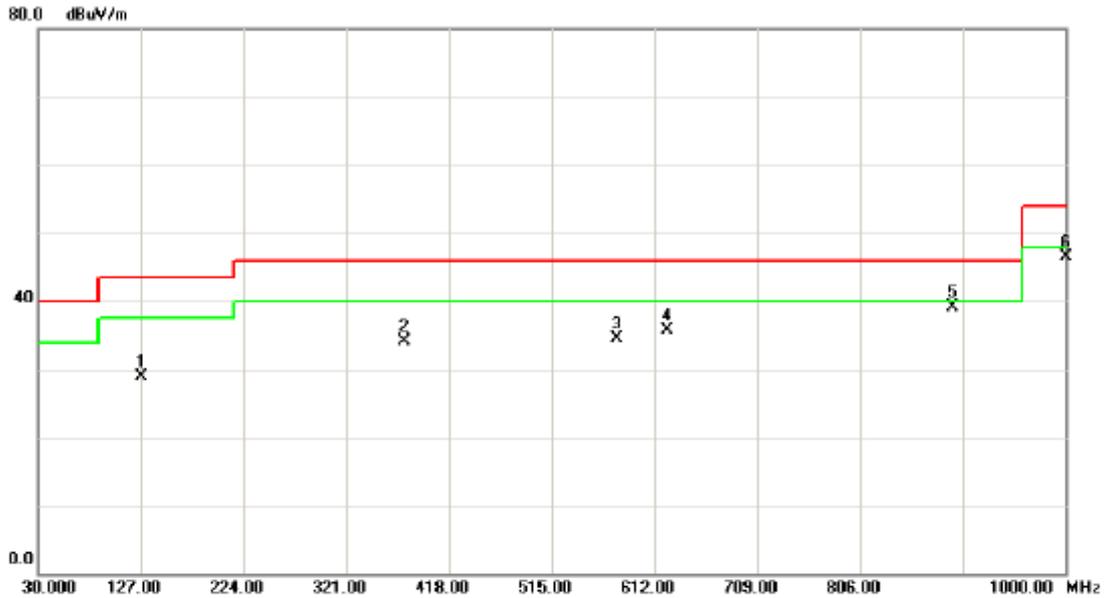
EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 01 / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		375.3200	50.01	-10.66	39.35	46.00	-6.65	peak	
2		448.0700	42.66	-8.94	33.72	46.00	-12.28	peak	
3		624.6100	42.24	-6.86	35.38	46.00	-10.62	peak	
4		704.1500	43.00	-4.81	38.19	46.00	-7.81	peak	
5	*	749.7400	44.54	-4.91	39.63	46.00	-6.37	peak	
6		1000.000	44.85	0.26	45.11	54.00	-8.89	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 06 / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		127.9700	42.29	-13.45	28.84	43.50	-14.66	peak	
2		375.3200	44.78	-10.66	34.12	46.00	-11.88	peak	
3		576.1100	42.40	-7.89	34.51	46.00	-11.49	peak	
4		624.6100	42.47	-6.86	35.61	46.00	-10.39	peak	
5	*	893.3000	40.60	-1.59	39.01	46.00	-6.99	peak	
6		1000.000	46.18	0.26	46.44	54.00	-7.56	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 06 / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		375.3200	49.76	-10.66	39.10	46.00	-6.90	peak	
2		624.6100	43.32	-6.86	36.46	46.00	-9.54	peak	
3		704.1500	42.49	-4.81	37.68	46.00	-8.32	peak	
4	*	749.7400	44.30	-4.91	39.39	46.00	-6.61	peak	
5		874.8700	38.56	-2.48	36.08	46.00	-9.92	peak	
6		1000.000	44.48	0.26	44.74	54.00	-9.26	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 11 / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		384.0500	44.63	-10.38	34.25	46.00	-11.75	peak	
2		576.1100	41.33	-7.89	33.44	46.00	-12.56	peak	
3		624.6100	42.96	-6.86	36.10	46.00	-9.90	peak	
4		749.7400	38.86	-4.91	33.95	46.00	-12.05	peak	
5		874.8700	39.77	-2.48	37.29	46.00	-8.71	peak	
6	*	1000.000	46.14	0.26	46.40	54.00	-7.60	peak	



EUT:	300Mbps Mini Wireless Router	Model Name:	WS331b
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 11 / For AC Mains / Internal Power 2		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		375.3200	49.87	-10.66	39.21	46.00	-6.79	peak	
2		624.6100	42.17	-6.86	35.31	46.00	-10.69	peak	
3		704.1500	42.40	-4.81	37.59	46.00	-8.41	peak	
4	*	749.7400	44.70	-4.91	39.79	46.00	-6.21	peak	
5		874.8700	39.37	-2.48	36.89	46.00	-9.11	peak	
6		1000.000	44.51	0.26	44.77	54.00	-9.23	peak	



**4.2.9 TEST RESULTS (ABOVE 1000 MHZ)**

EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

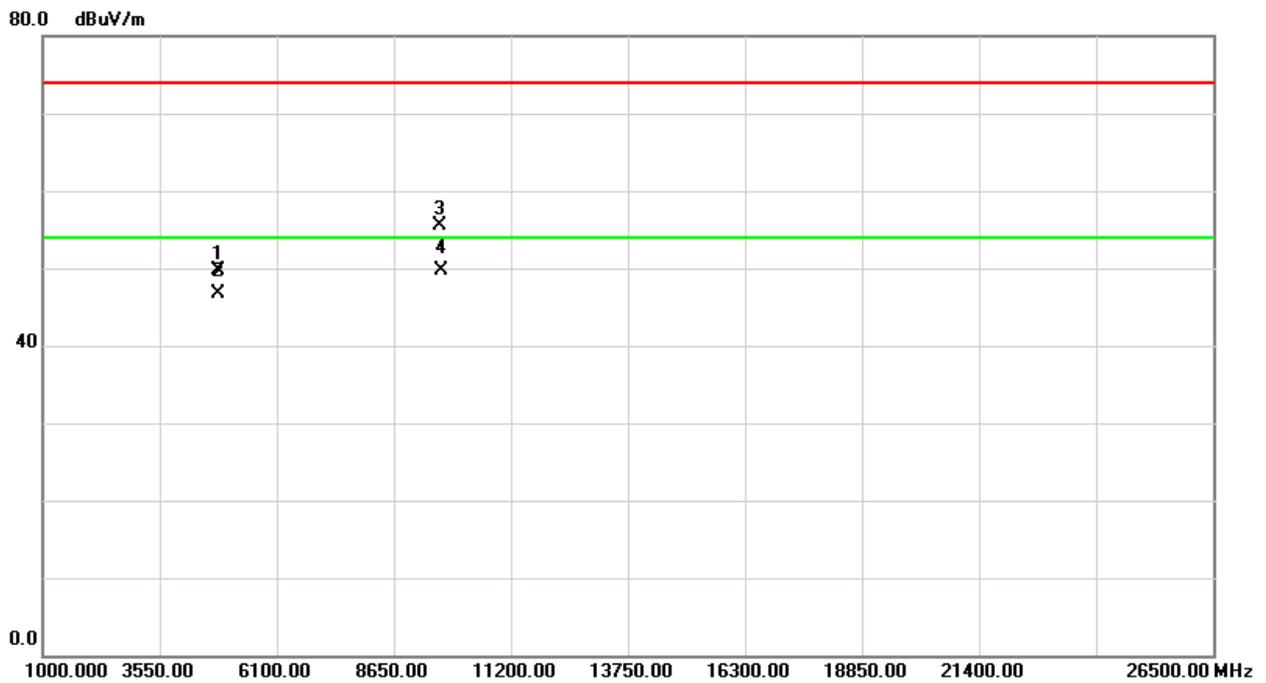
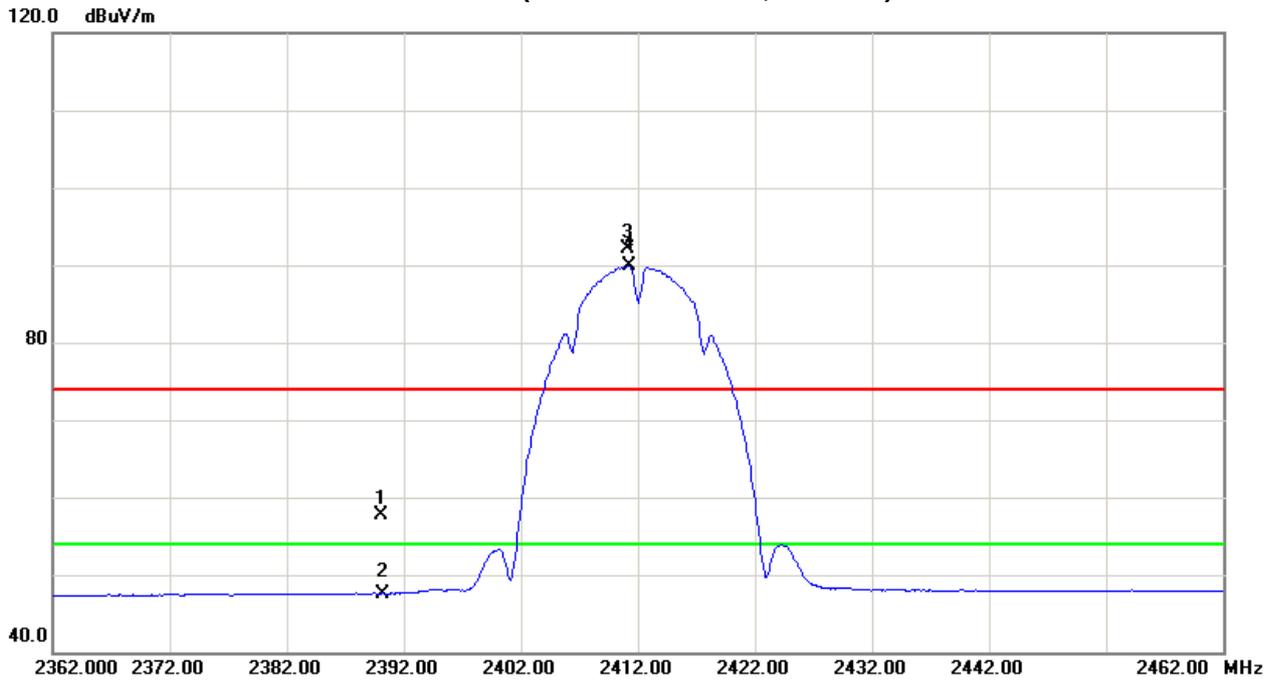
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	23.71	13.49	34.09	57.80	47.58	74.00	54.00	X/E
<b>2411.10</b>	<b>V</b>	<b>58.00</b>	<b>55.82</b>	<b>34.16</b>	<b>92.16</b>	<b>89.98</b>			<b>X/F</b>
4824.04	V	43.35	40.26	6.43	49.78	46.69	74.00	54.00	X/H
648.00	V	40.18	34.34	15.29	55.47	49.63	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Vertical)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

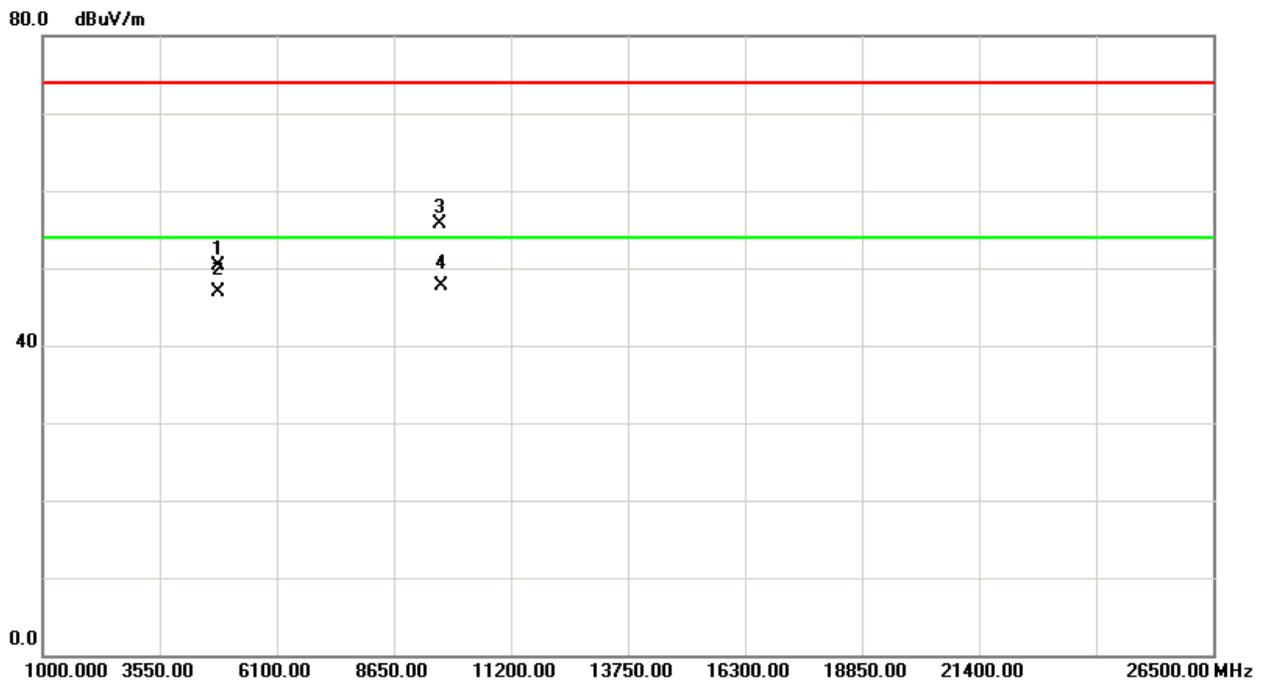
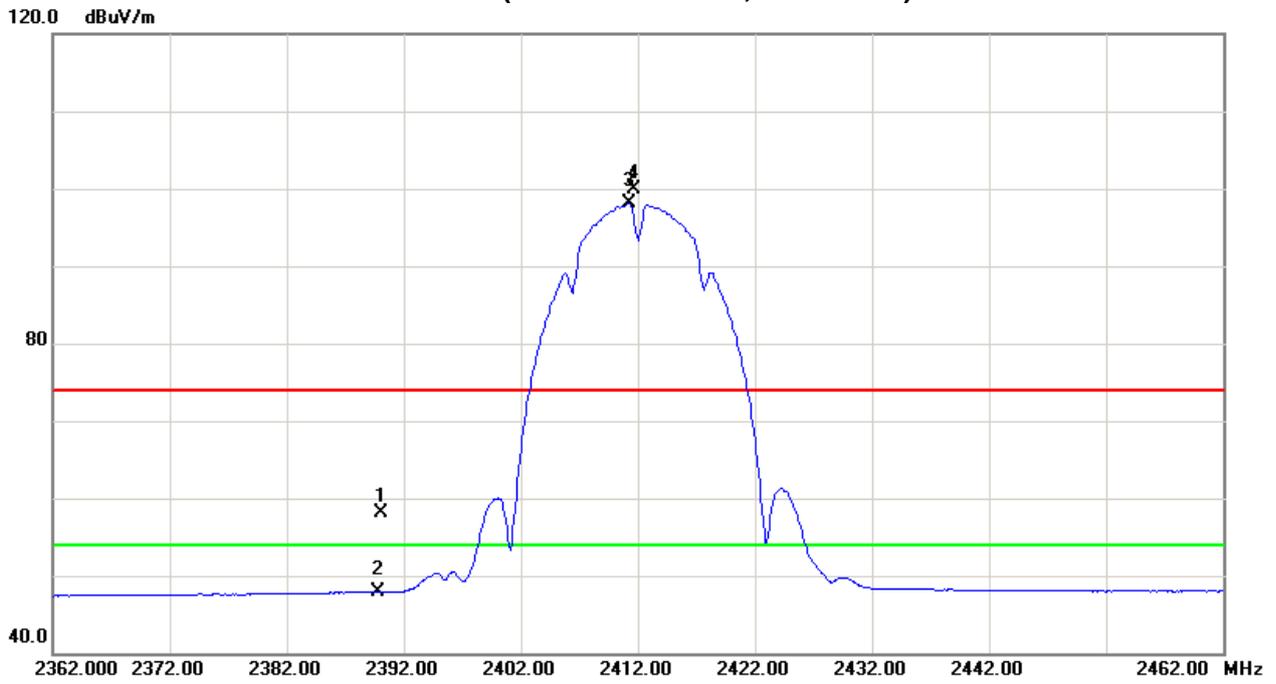
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	23.99	13.77	34.09	58.08	47.86	74.00	54.00	X/E
<b>2411.60</b>	<b>H</b>	<b>65.77</b>	<b>63.93</b>	<b>34.16</b>	<b>99.93</b>	<b>98.09</b>			<b>X/F</b>
4824.01	H	43.96	40.54	6.43	50.39	46.97	74.00	54.00	X/H
9648.04	H	40.37	32.37	15.29	55.66	47.66	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

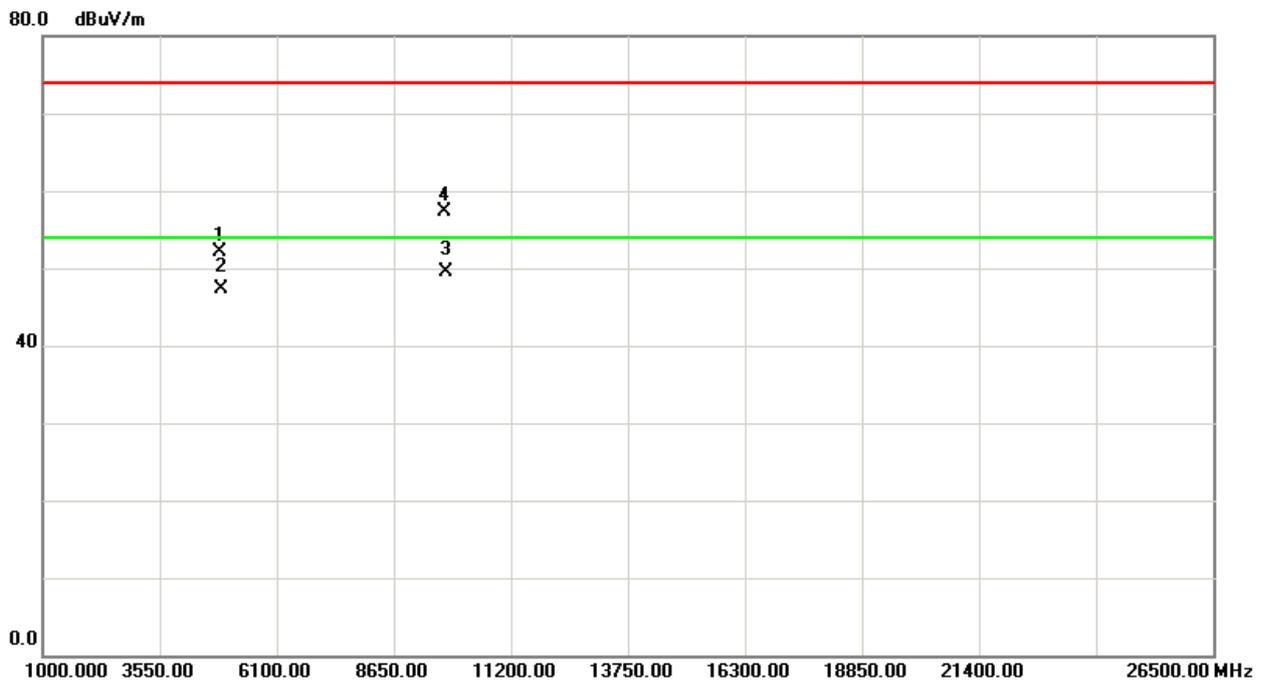
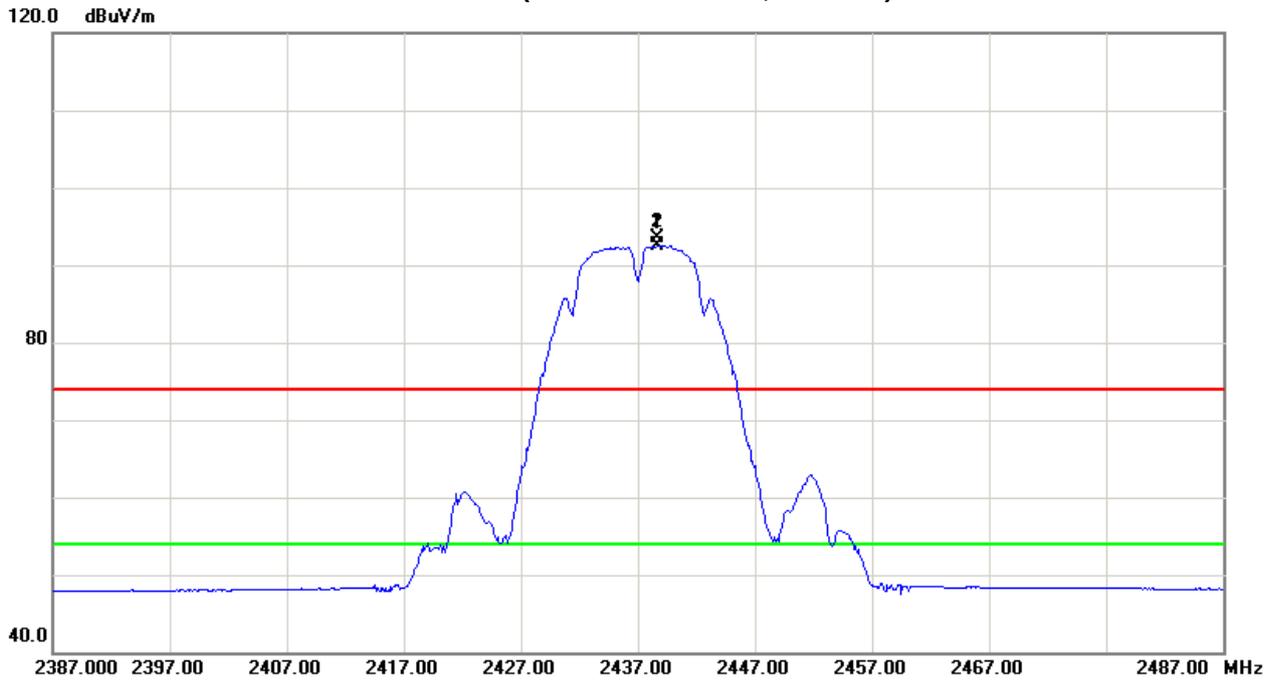
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2438.70</b>	<b>V</b>	<b>59.31</b>	<b>58.36</b>	<b>34.23</b>	<b>93.54</b>	<b>92.59</b>			<b>X/F</b>
4874.01	V	45.56	40.82	6.58	52.14	47.40	74.00	54.00	X/H
9748.12	V	41.56	33.78	15.65	57.21	49.43	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Vertical)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

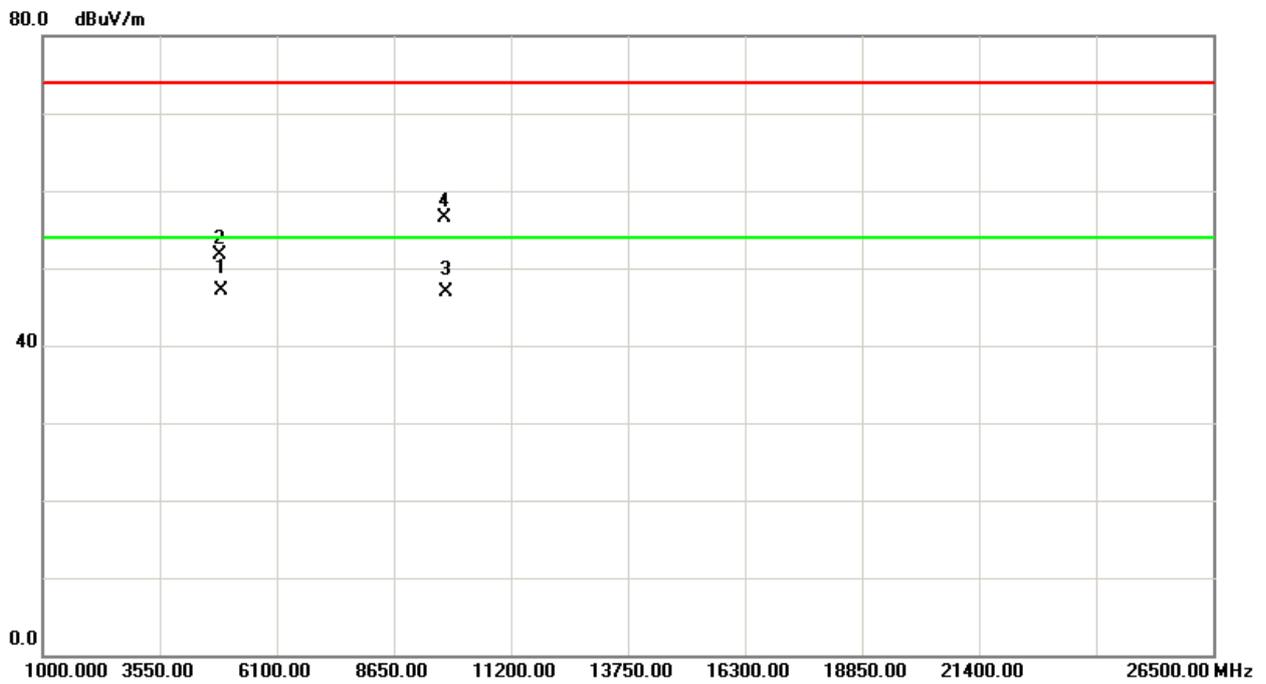
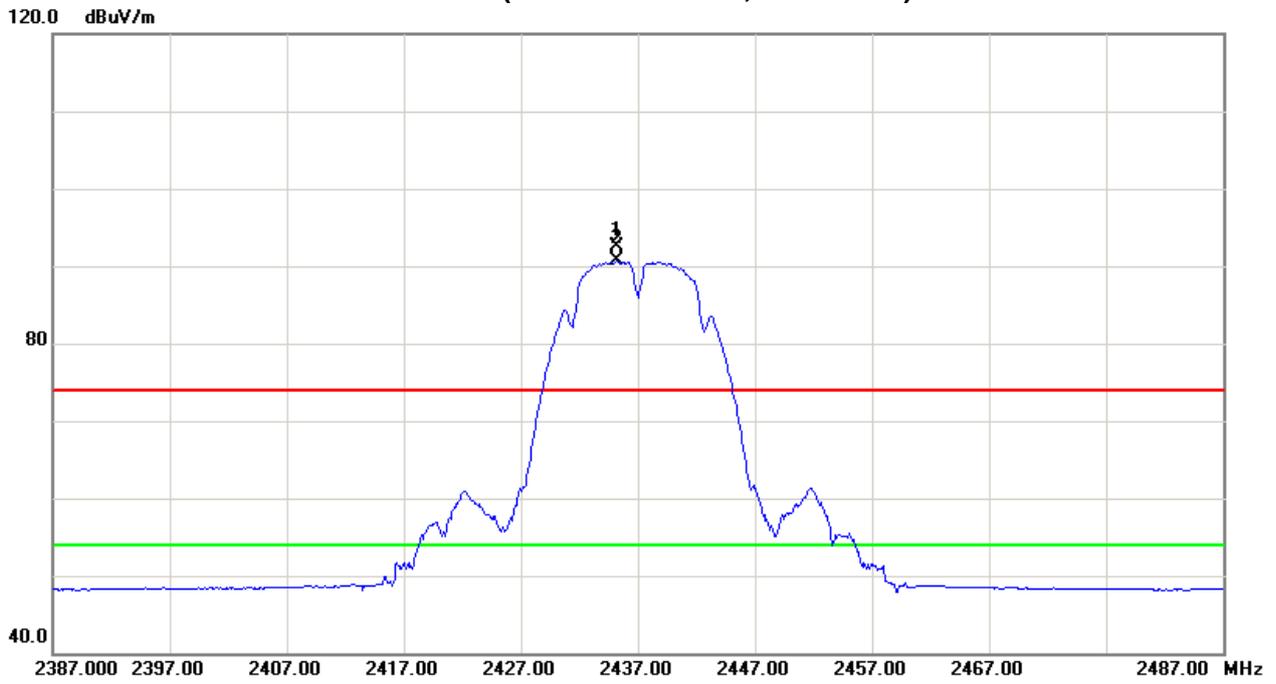
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2435.20</b>	<b>H</b>	<b>58.35</b>	<b>56.39</b>	<b>34.23</b>	<b>92.58</b>	<b>90.62</b>			<b>X/F</b>
4874.10	H	45.15	40.59	6.58	51.73	47.17	74.00	54.00	X/H
9748.05	H	40.82	31.26	15.65	56.47	46.91	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2461.60</b>	<b>V</b>	<b>60.41</b>	<b>58.47</b>	<b>34.31</b>	<b>94.72</b>	<b>92.78</b>			<b>X/F</b>
2483.50	V	24.31	13.56	34.37	58.68	47.93	74.00	54.00	X/E
4923.97	V	45.21	40.84	6.72	51.93	47.56	74.00	54.00	X/H
9848.01	V	41.13	32.60	16.00	57.13	48.60	74.00	54.00	X/H

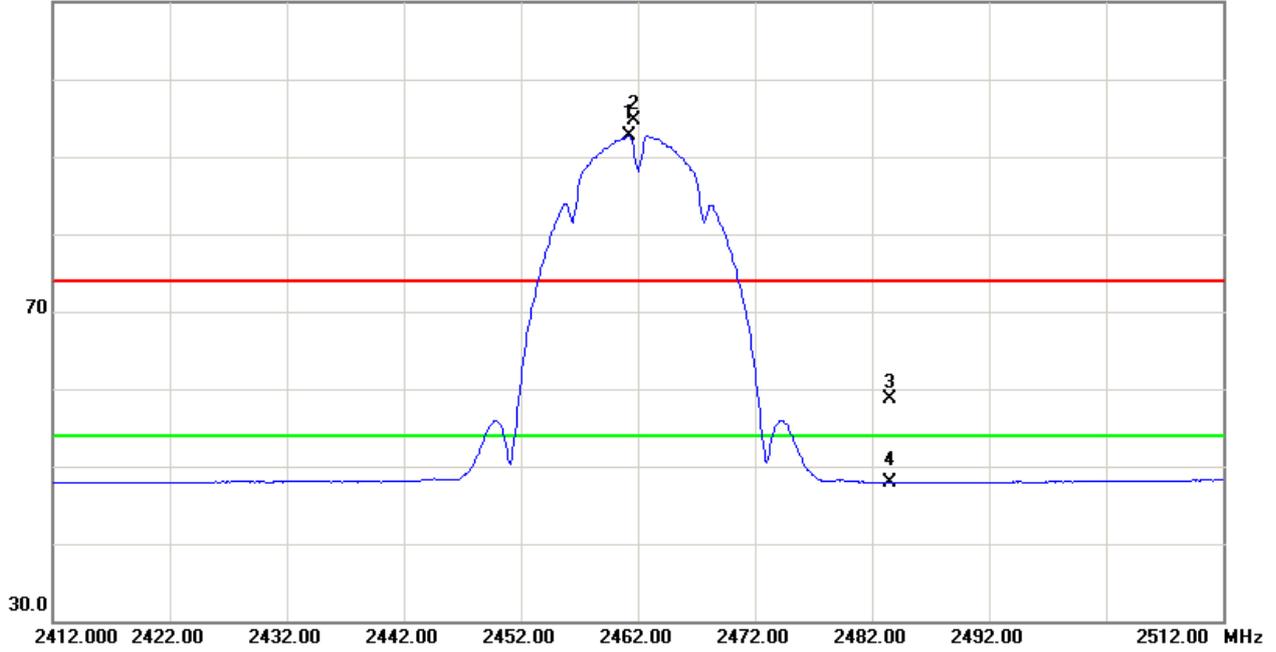
**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

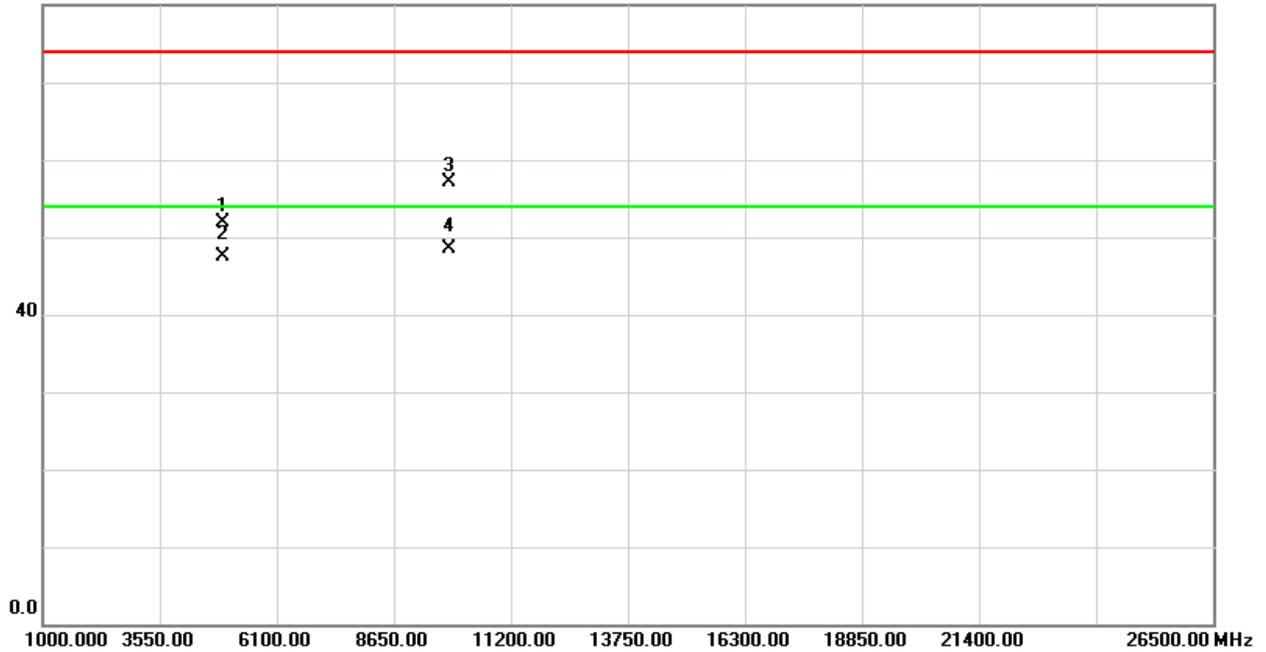


TX CH11 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

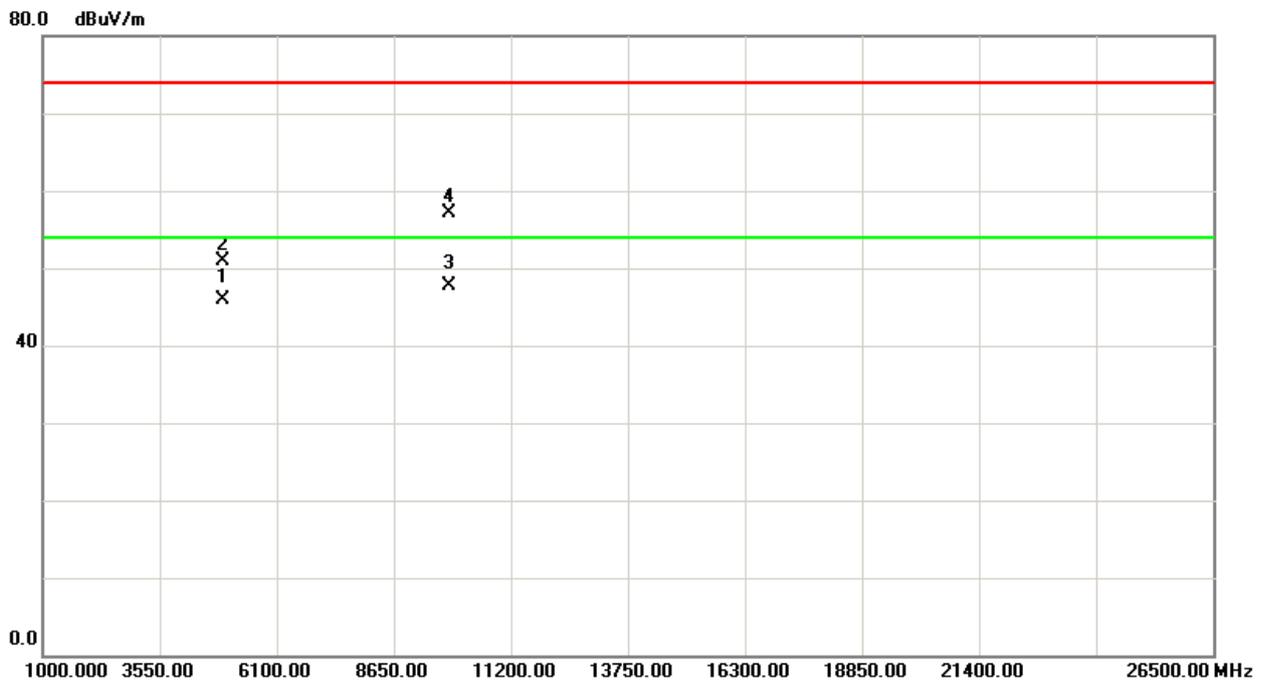
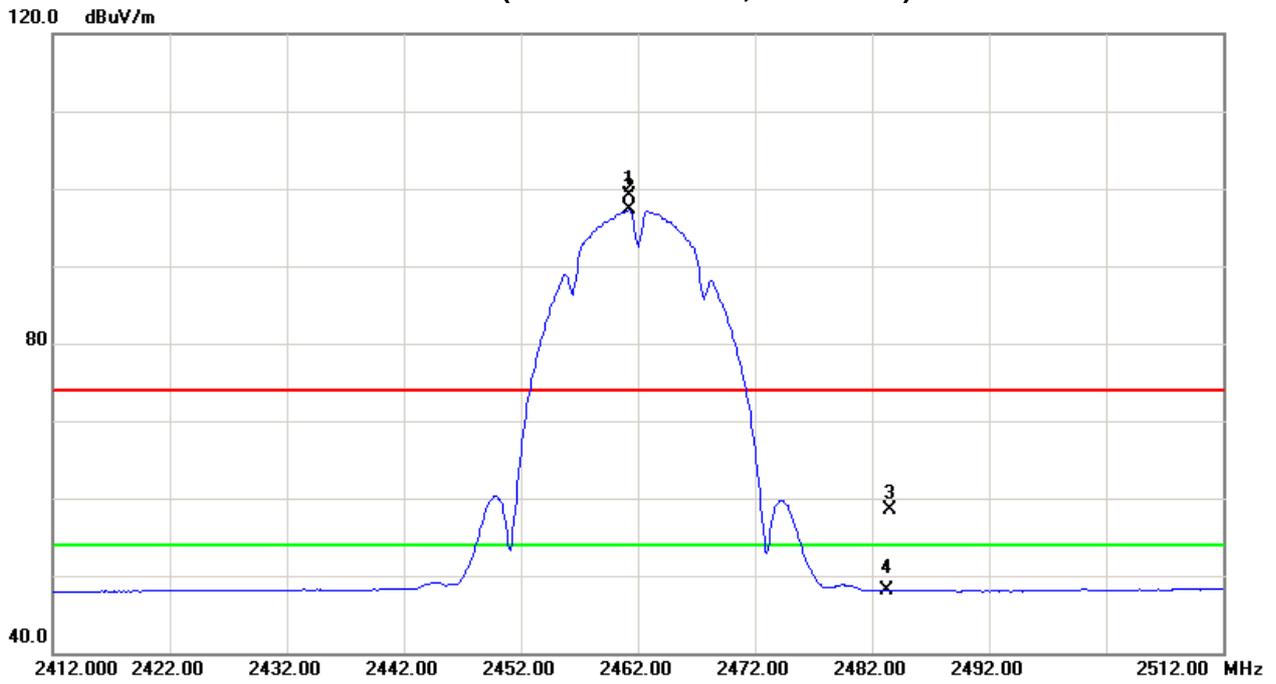
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2461.20</b>	<b>H</b>	<b>64.84</b>	<b>62.93</b>	<b>34.31</b>	<b>99.15</b>	<b>97.24</b>			<b>X/F</b>
2483.50	H	24.22	13.69	34.37	58.59	48.06	74.00	54.00	X/E
4924.05	H	44.28	39.18	6.72	51.00	45.90	74.00	54.00	X/H
9848.09	H	41.07	31.70	16.00	57.07	47.70	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	25.84	15.03	34.09	59.93	49.12	74.00	54.00	X/E
<b>2405.70</b>	<b>V</b>	<b>66.79</b>	<b>59.49</b>	<b>34.14</b>	<b>100.93</b>	<b>93.63</b>			<b>X/F</b>
4824.51	V	43.31	31.18	6.43	49.74	37.61	74.00	54.00	X/H
9648.05	V	40.83	33.36	15.29	56.12	48.65	74.00	54.00	X/H

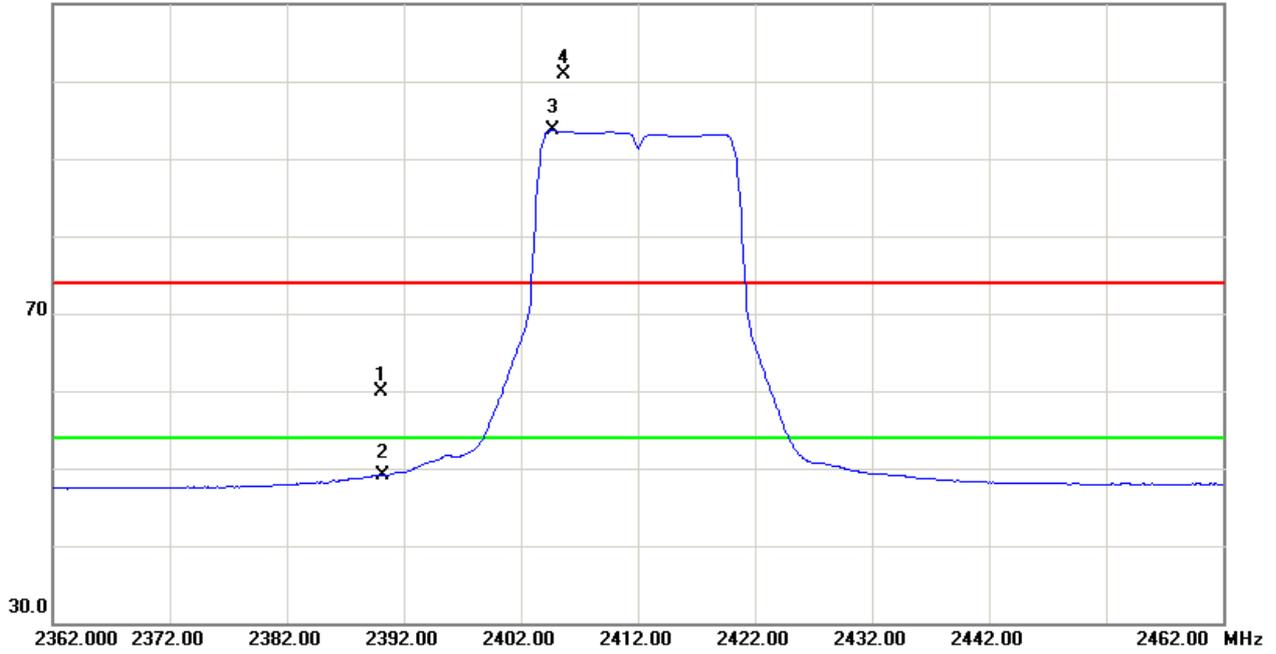
Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

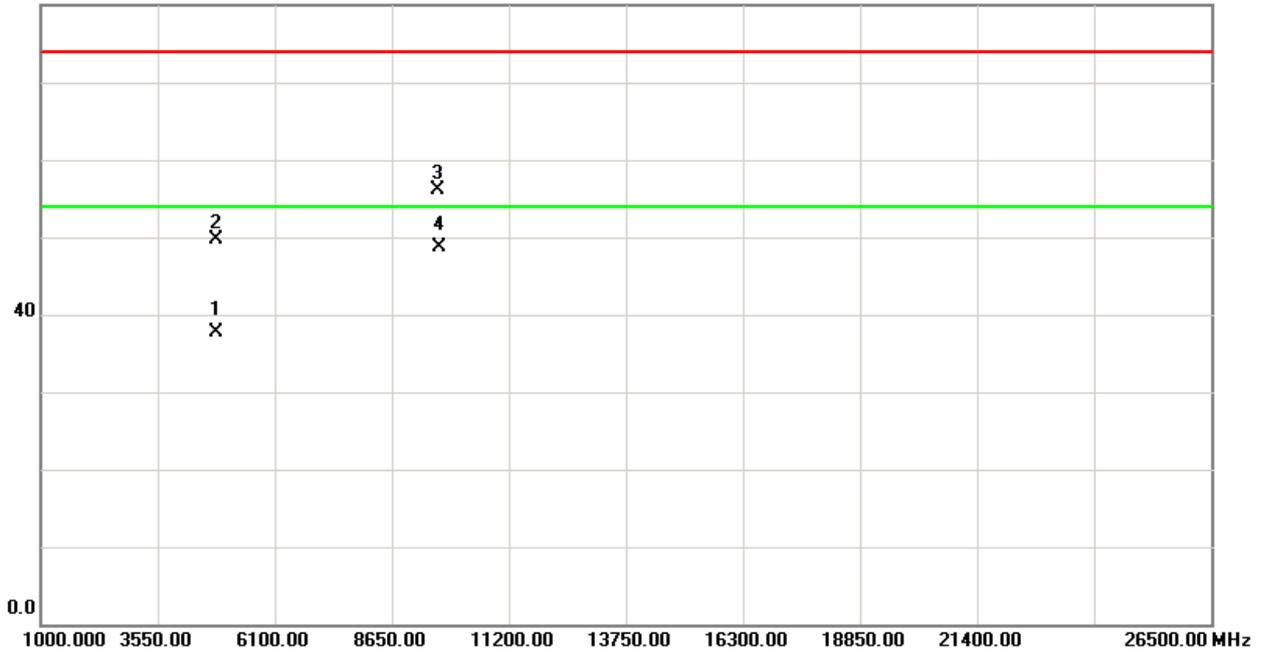


TX CH01 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

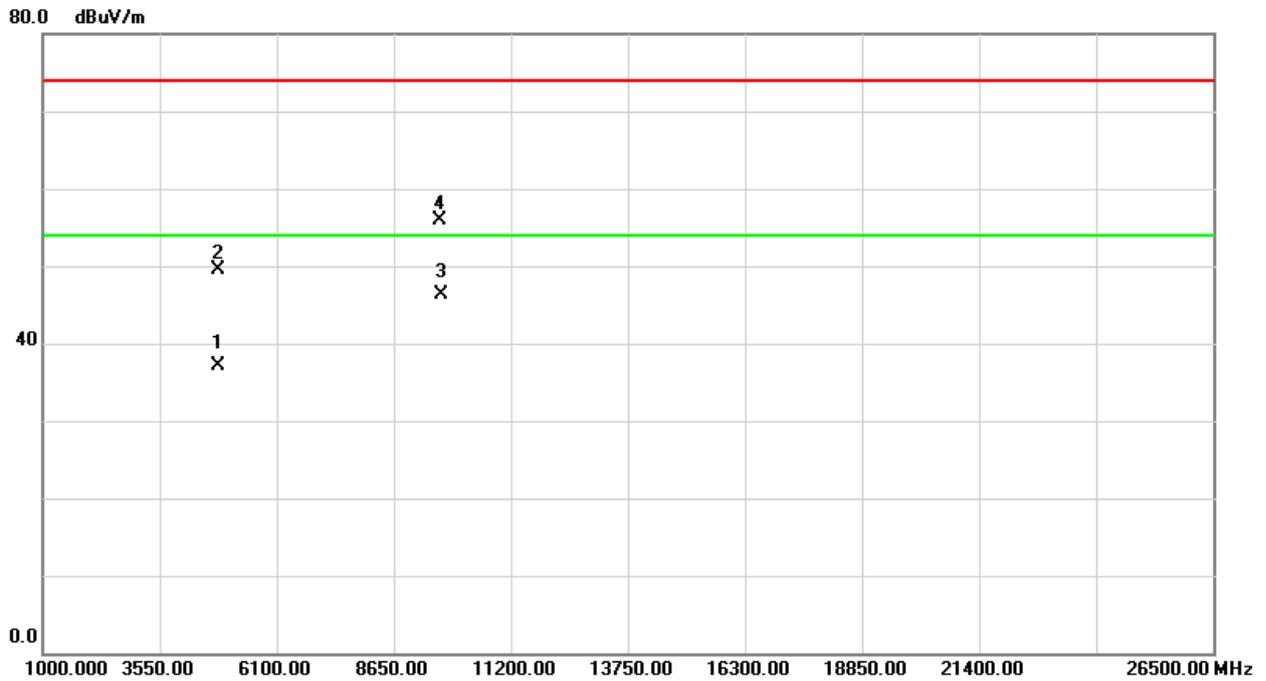
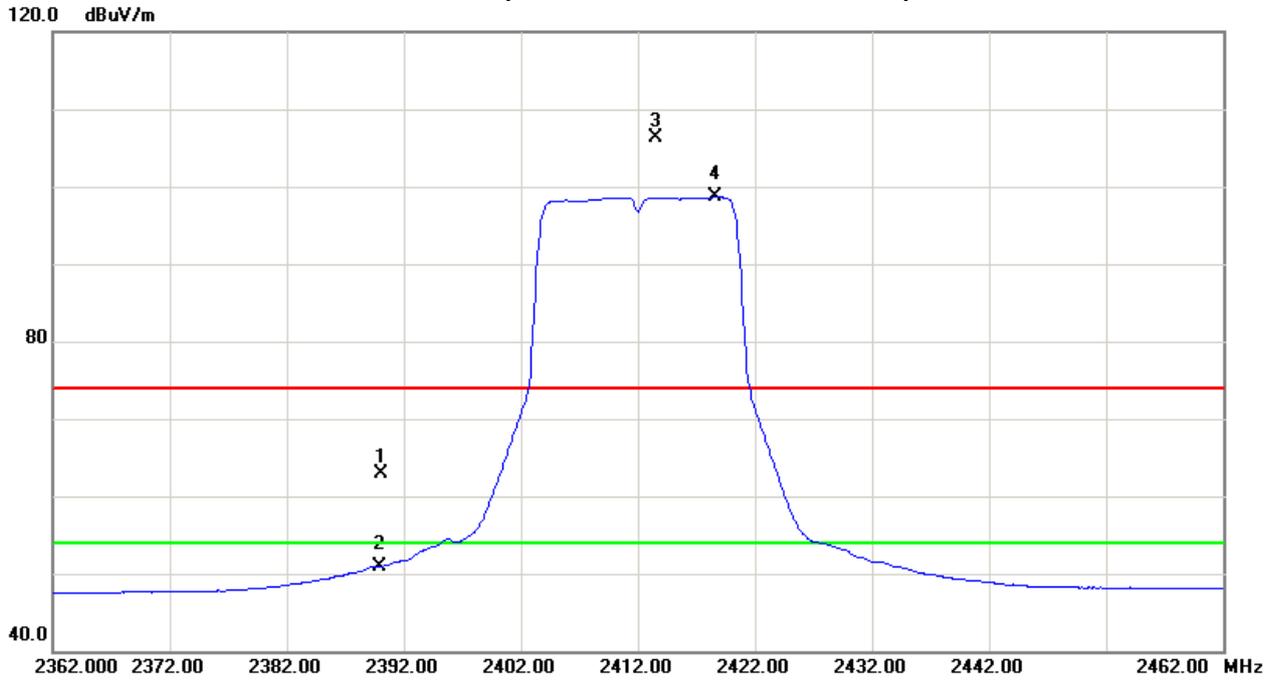
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	28.86	16.90	34.09	62.95	50.99	74.00	54.00	X/E
<b>2413.50</b>	<b>H</b>	<b>72.10</b>	<b>64.46</b>	<b>34.16</b>	<b>106.26</b>	<b>98.62</b>			<b>X/F</b>
4824.60	H	43.09	30.66	6.43	49.52	37.09	74.00	54.00	X/H
9648.10	H	40.52	30.92	15.29	55.81	46.21	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

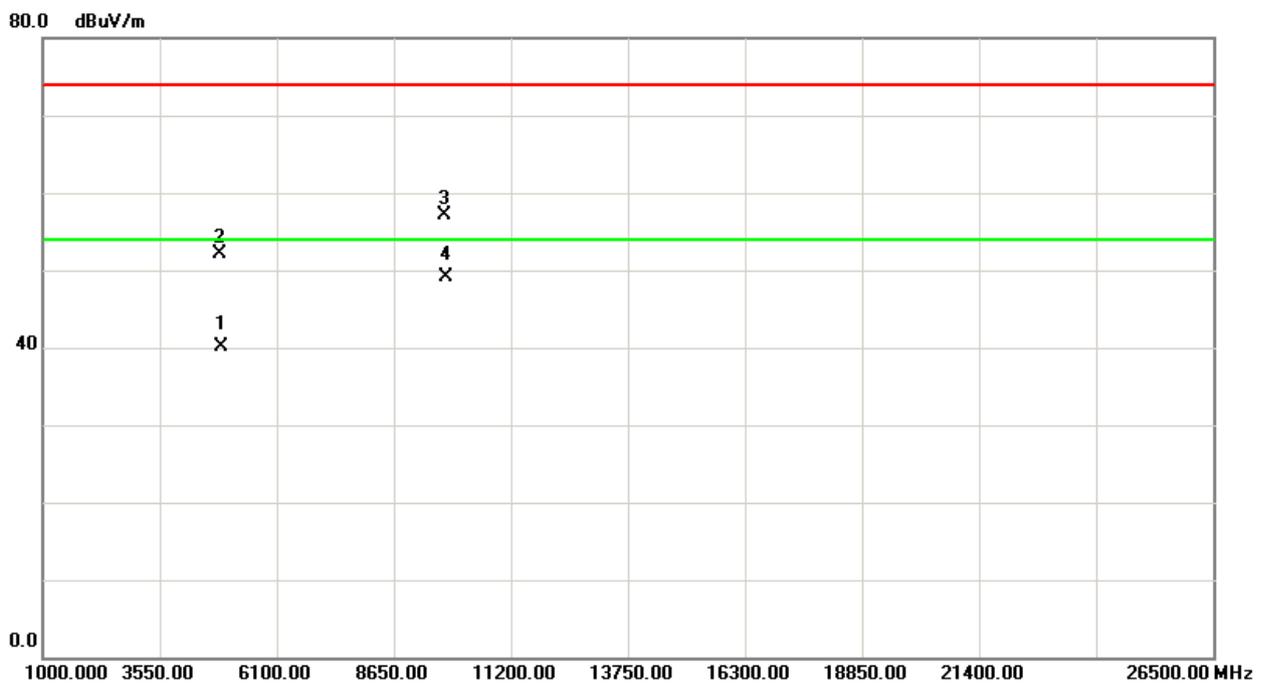
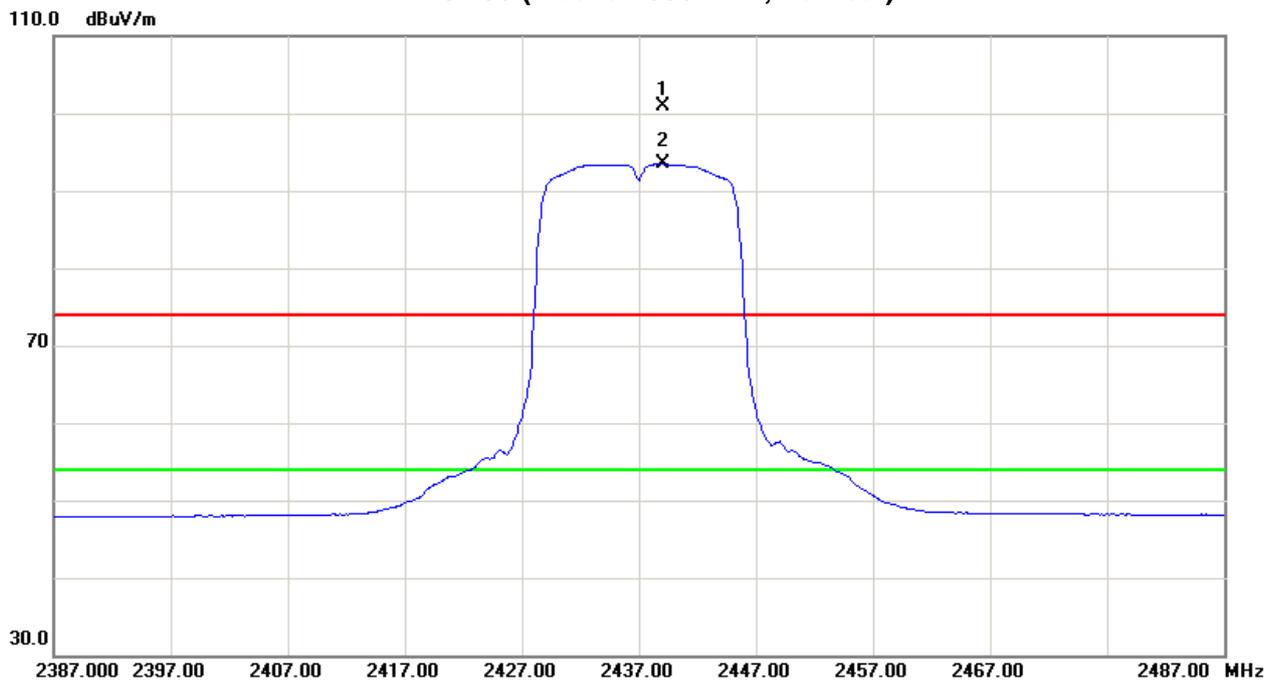
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2439.10</b>	<b>V</b>	<b>66.63</b>	<b>59.19</b>	<b>34.23</b>	<b>100.86</b>	<b>93.42</b>			<b>X/F</b>
4874.72	V	45.44	33.50	6.58	52.02	40.08	74.00	54.00	X/H
9748.03	V	41.45	33.43	15.65	57.10	49.08	75.00	55.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Vertical)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

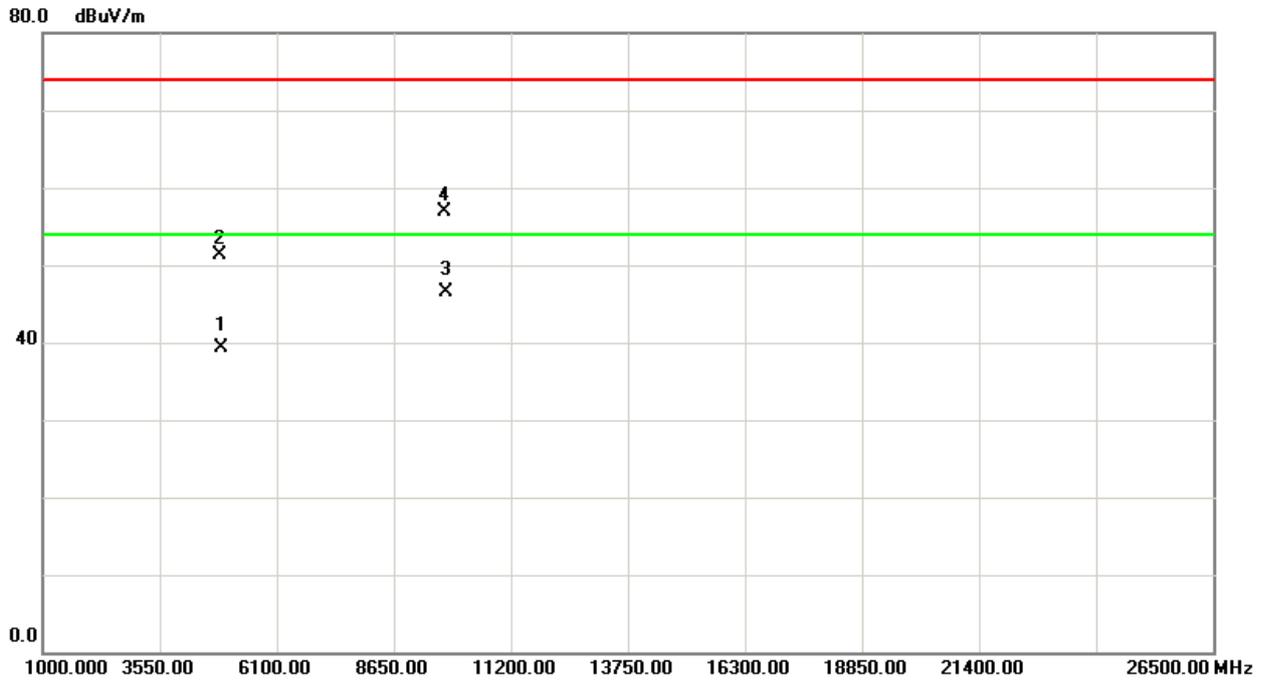
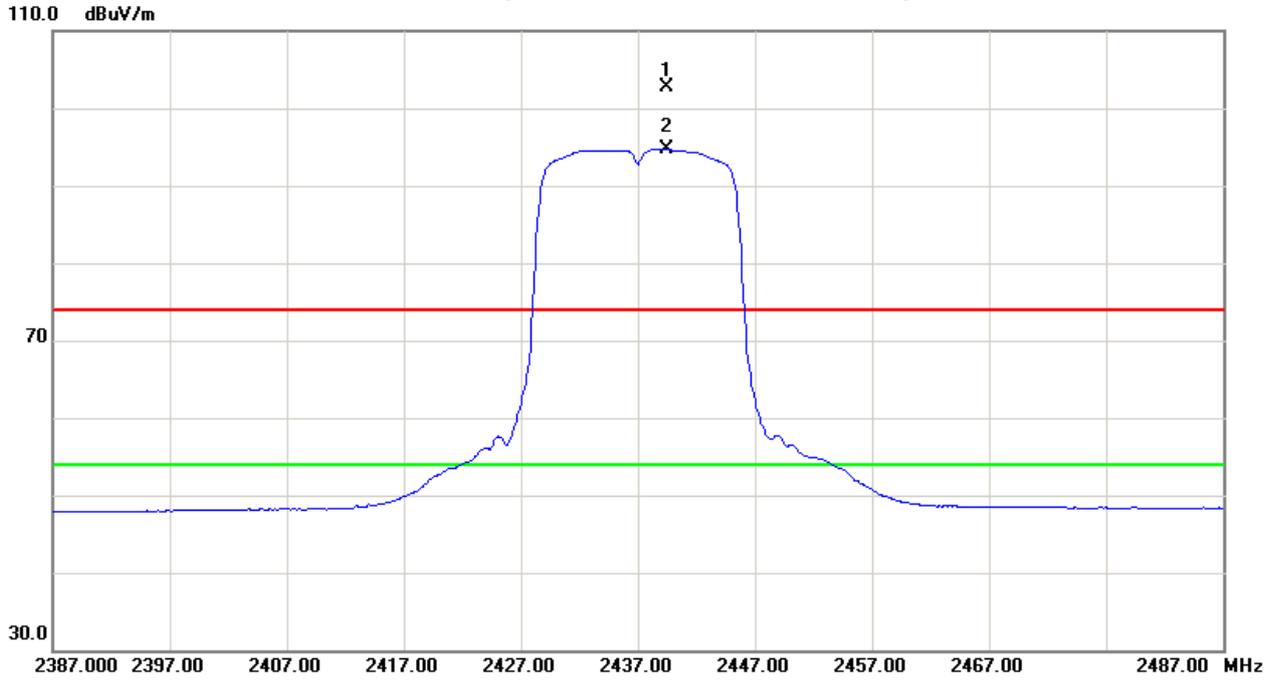
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2439.50</b>	<b>H</b>	<b>68.37</b>	<b>60.43</b>	<b>34.24</b>	<b>102.61</b>	<b>94.67</b>			<b>X/F</b>
4874.69	H	44.70	32.71	6.58	51.28	39.29	74.00	54.00	X/H
9748.12	H	41.23	30.76	15.65	56.88	46.41	75.00	55.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

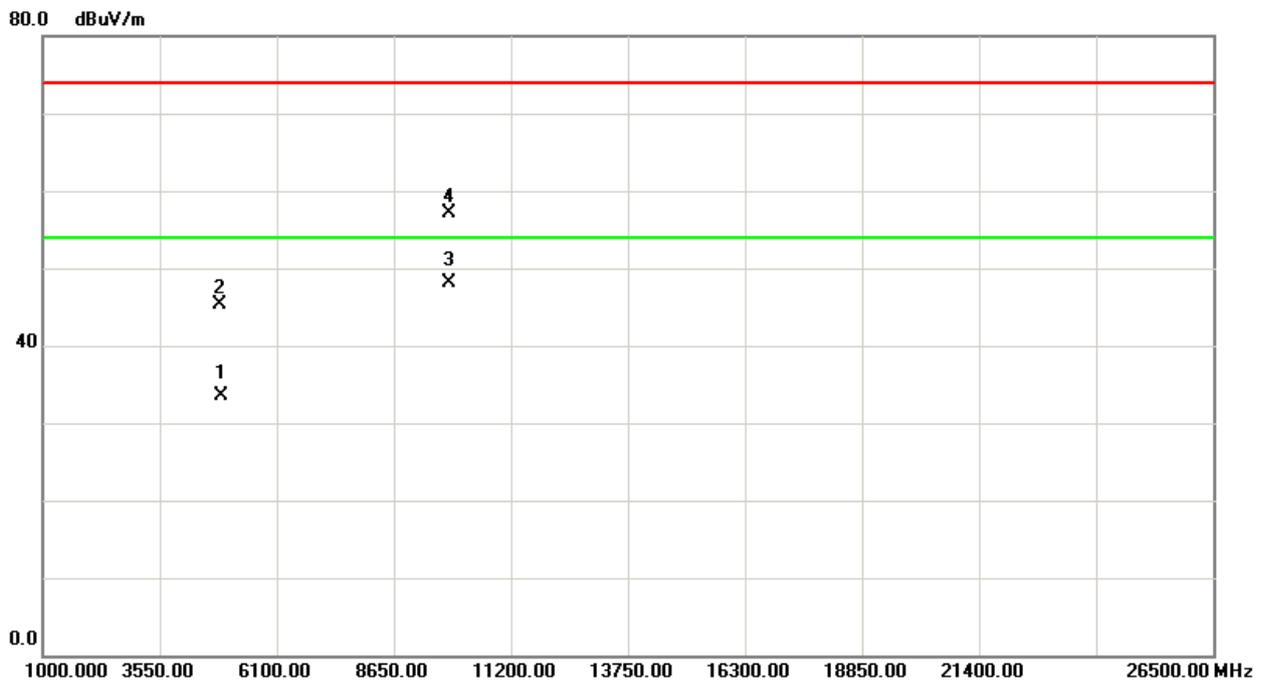
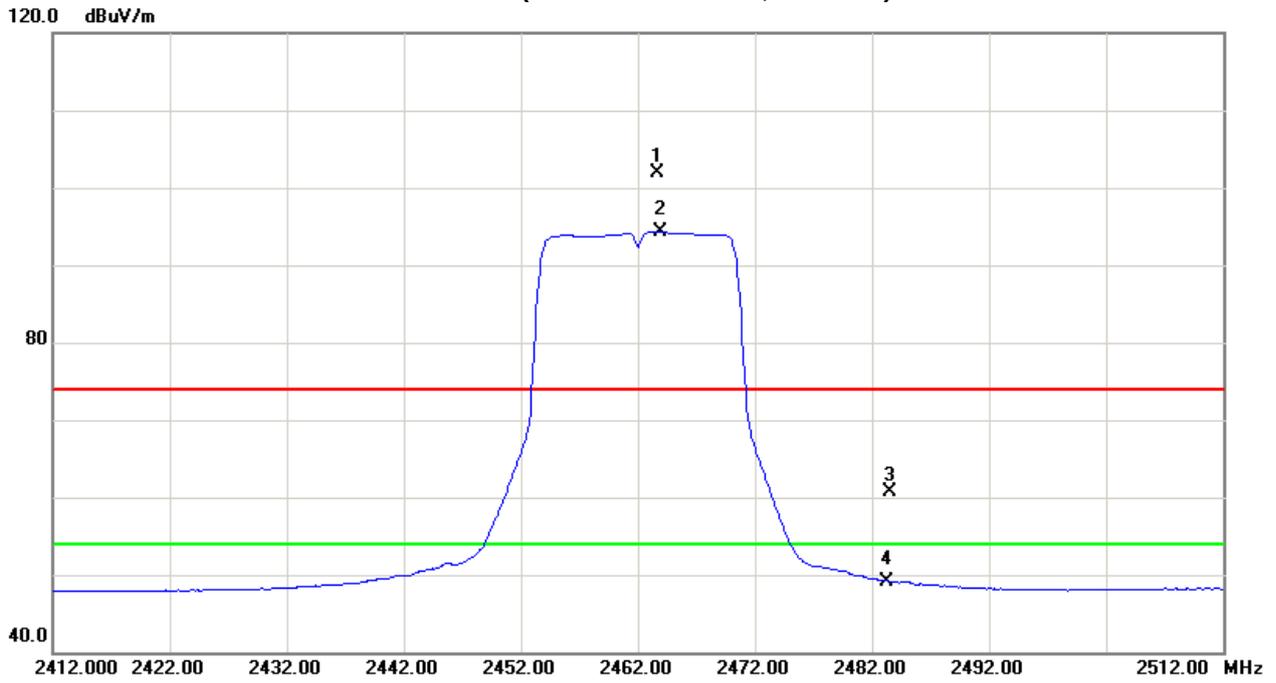
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2463.60</b>	<b>V</b>	<b>67.64</b>	<b>60.02</b>	<b>34.31</b>	<b>101.95</b>	<b>94.33</b>			<b>X/F</b>
2483.50	V	26.29	14.80	34.37	60.66	49.17	74.00	54.00	X/E
4874.05	V	38.66	27.02	6.58	45.24	33.60	74.00	54.00	X/H
9848.28	V	41.02	32.18	16.00	57.02	48.18	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Vertical)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

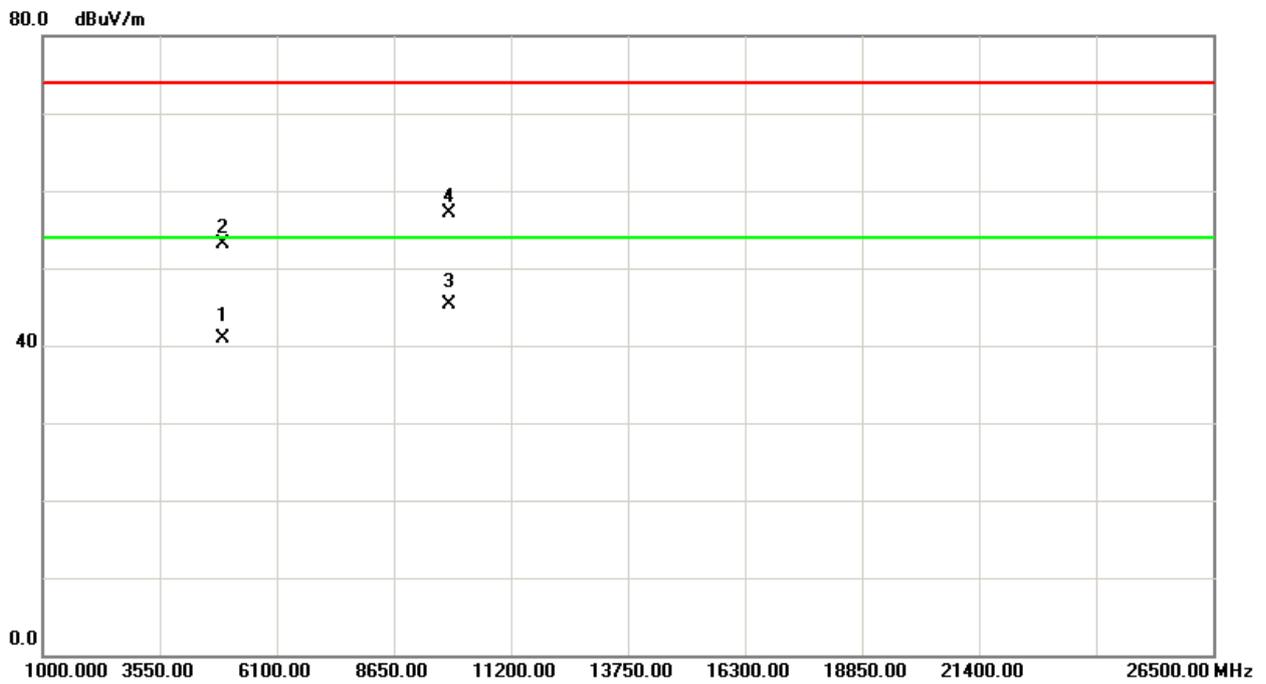
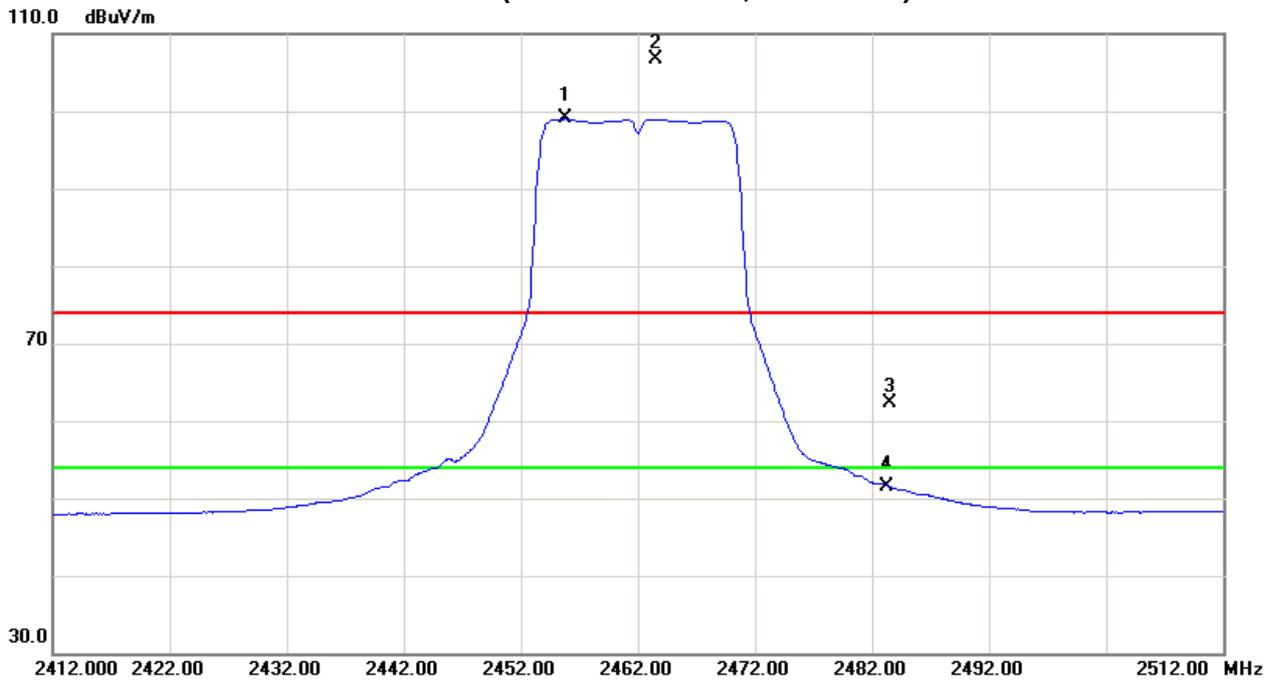
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2463.50</b>	<b>H</b>	<b>72.35</b>	<b>64.72</b>	<b>34.31</b>	<b>106.66</b>	<b>99.03</b>			<b>X/F</b>
2483.50	H	27.89	17.14	34.37	62.26	51.51	74.00	54.00	X/E
4924.90	H	46.44	34.20	6.72	53.16	40.92	74.00	54.00	X/H
9848.23	H	41.12	29.25	16.00	57.12	45.25	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

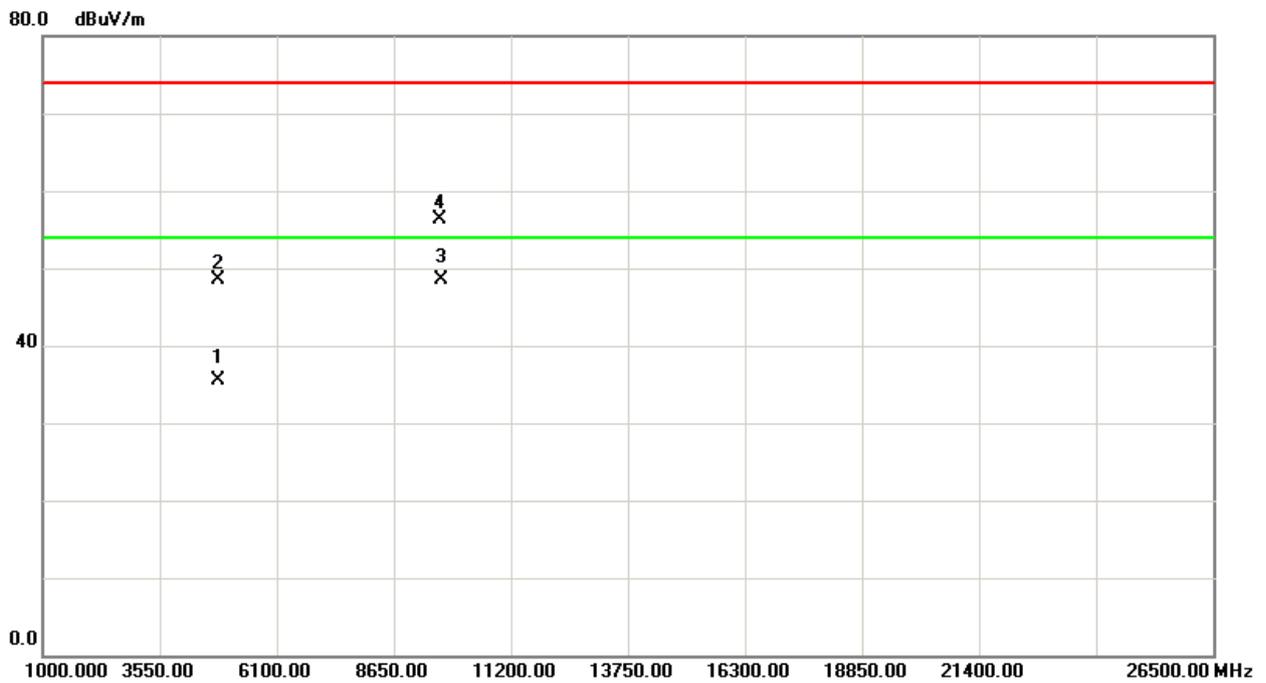
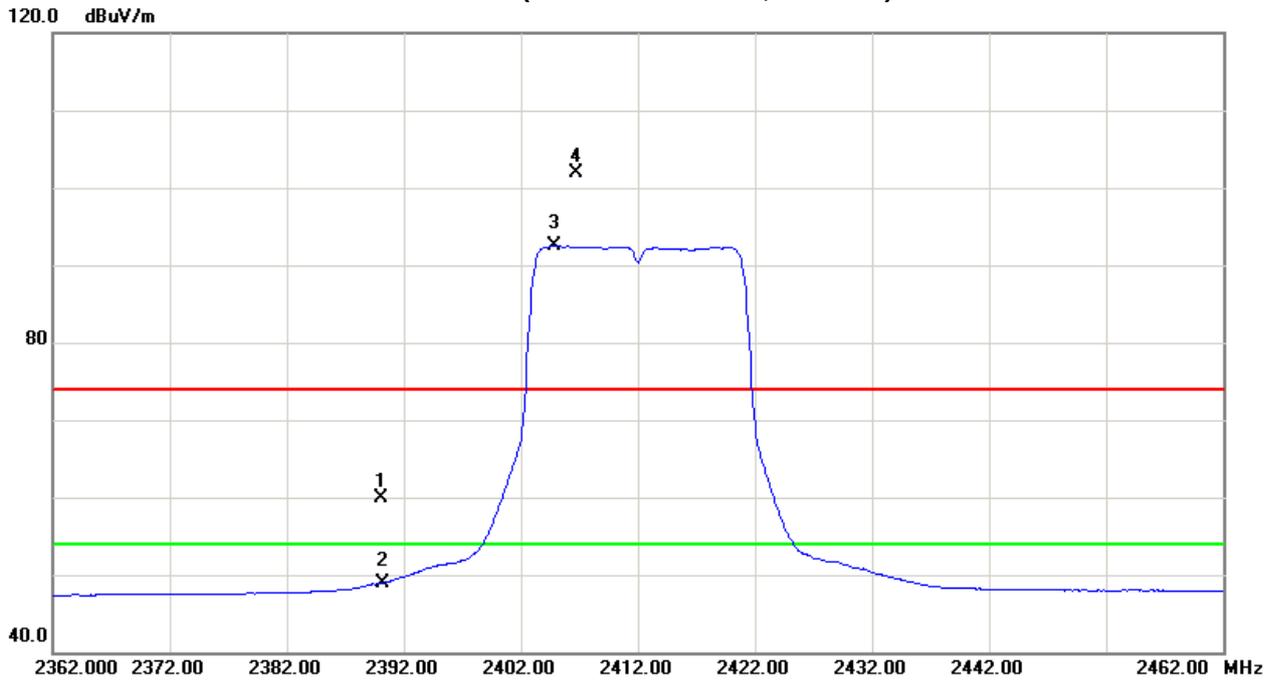
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	25.73	14.85	34.09	59.82	48.94	74.00	54.00	X/E
<b>2406.70</b>	<b>V</b>	<b>67.77</b>	<b>58.38</b>	<b>34.14</b>	<b>101.91</b>	<b>92.52</b>			<b>X/F</b>
4824.68	V	42.17	29.12	6.43	48.60	35.55	74.00	54.00	X/H
9648.23	V	40.97	33.24	15.29	56.26	48.53	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Vertical)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

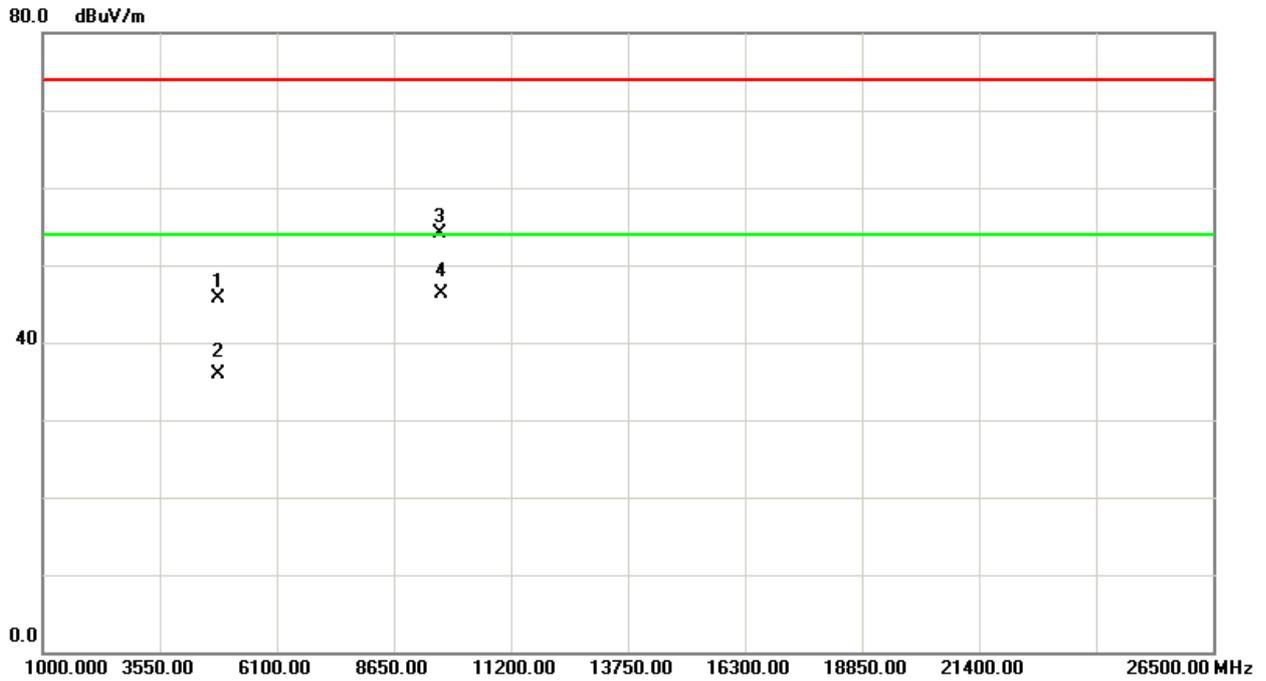
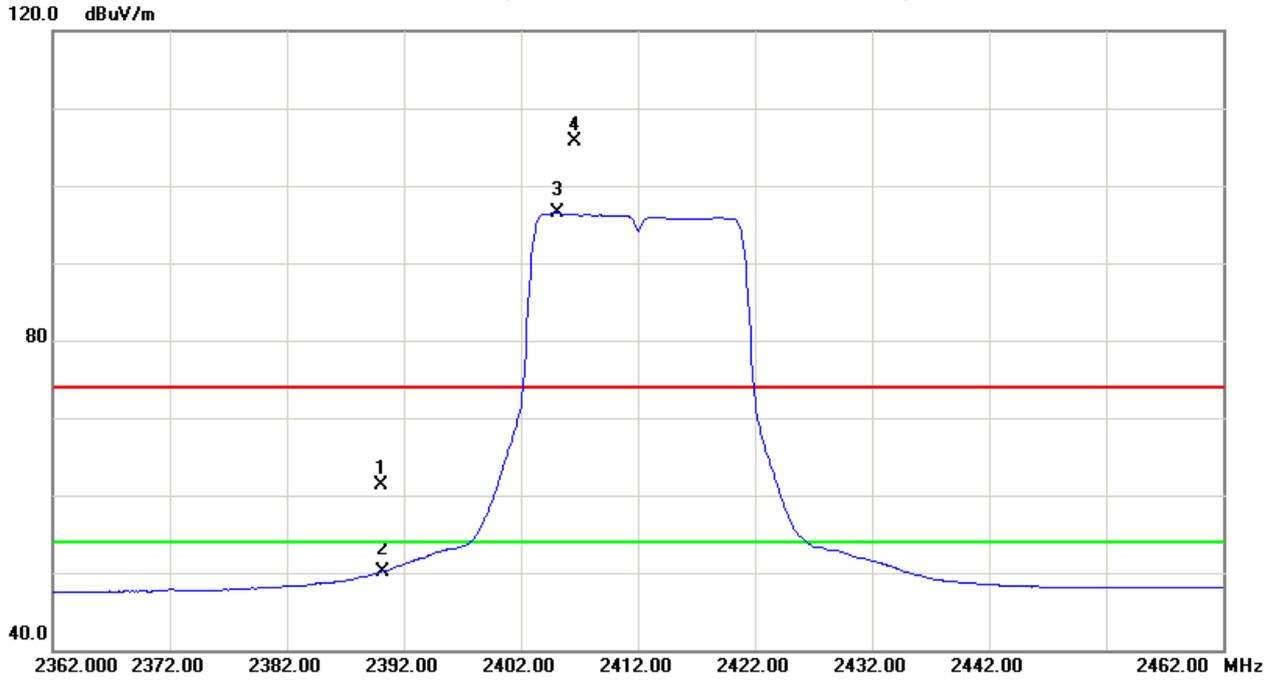
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	27.12	16.05	34.09	61.21	50.14	74.00	54.00	X/E
<b>2406.60</b>	<b>H</b>	<b>71.53</b>	<b>62.32</b>	<b>34.14</b>	<b>105.67</b>	<b>96.46</b>			<b>X/F</b>
4824.12	H	39.33	29.56	6.43	45.76	35.99	74.00	54.00	X/H
9648.22	H	38.84	31.05	15.29	54.13	46.34	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH01 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHZ		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2440.10</b>	<b>V</b>	<b>57.17</b>	<b>48.69</b>	<b>34.24</b>	<b>91.41</b>	<b>82.93</b>			<b>X/F</b>
4874.09	V	39.28	29.52	6.58	45.86	36.10	74.00	54.00	X/H
9748.25	V	39.85	33.24	15.65	55.50	48.89	74.00	54.00	X/H

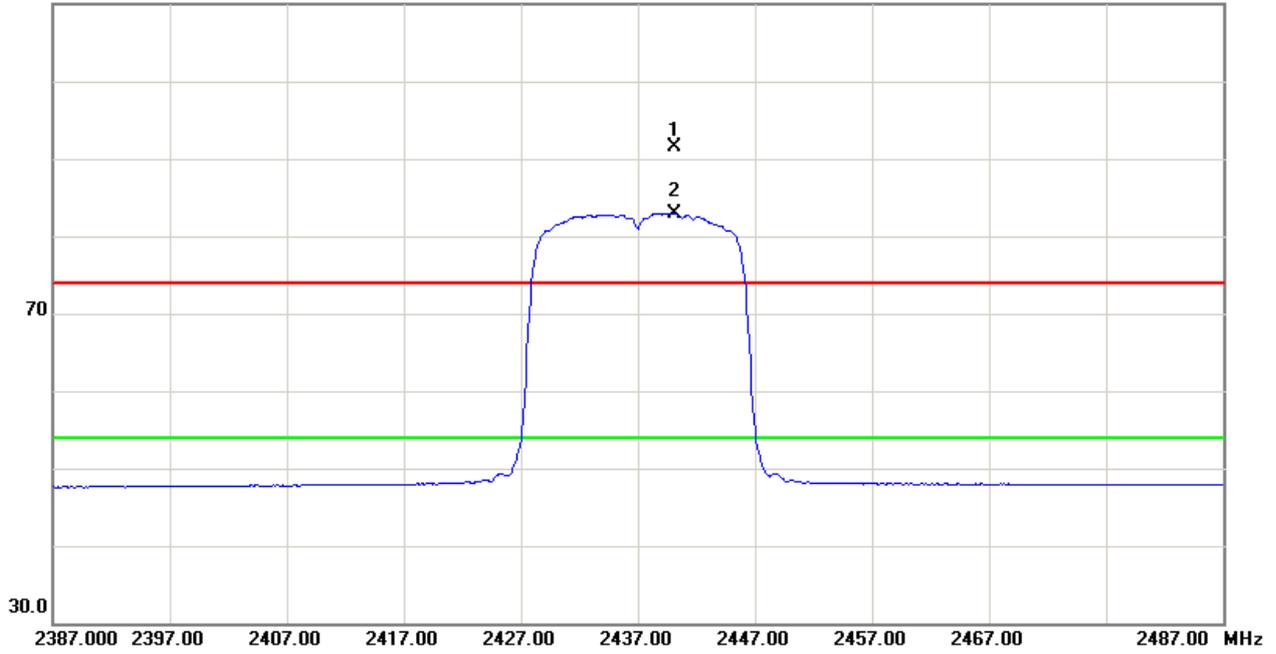
Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

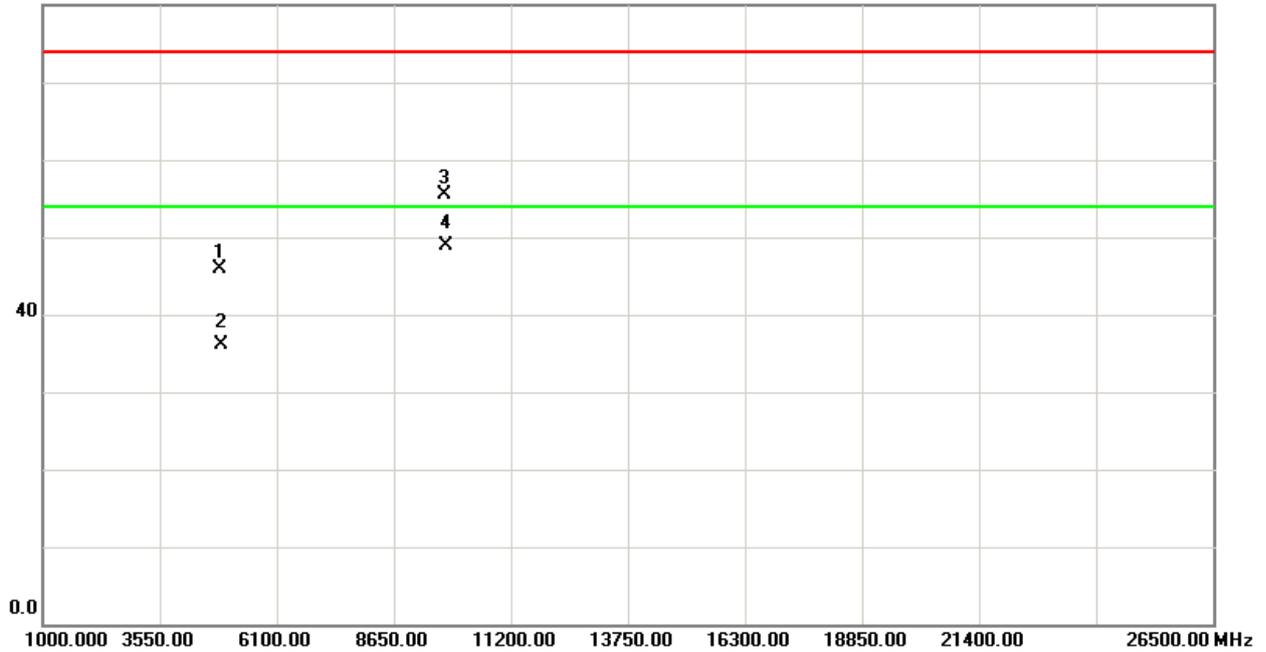


TX CH06 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

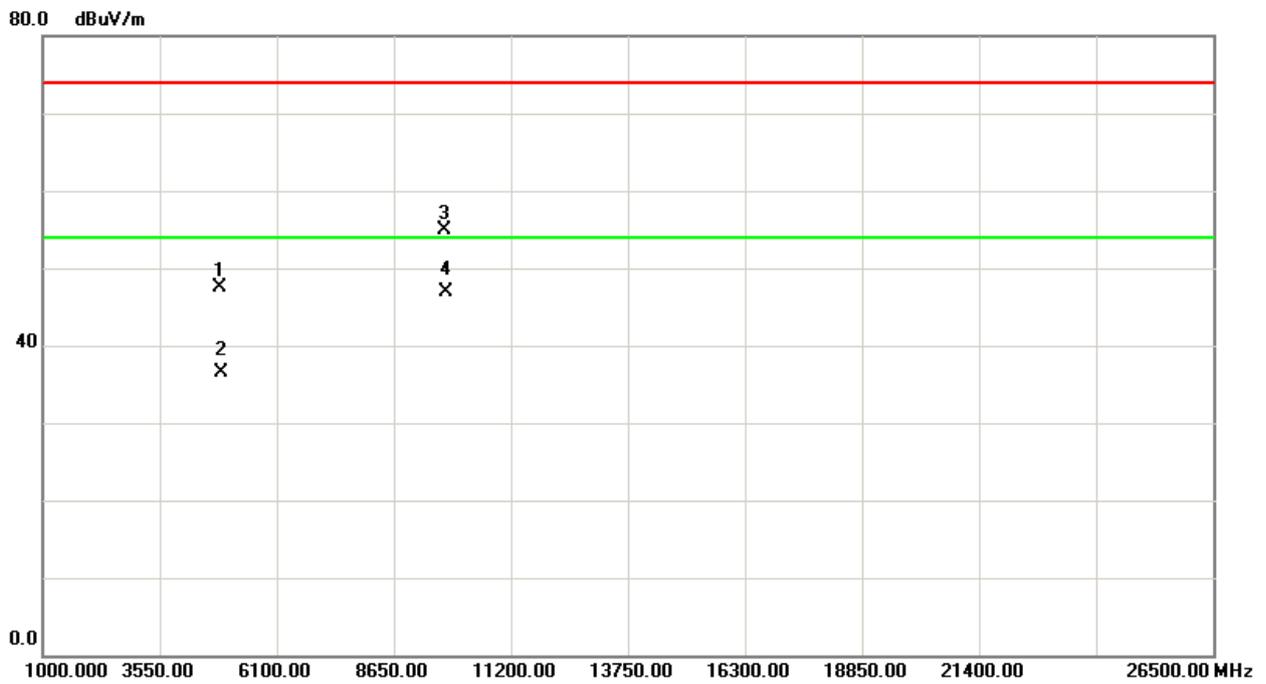
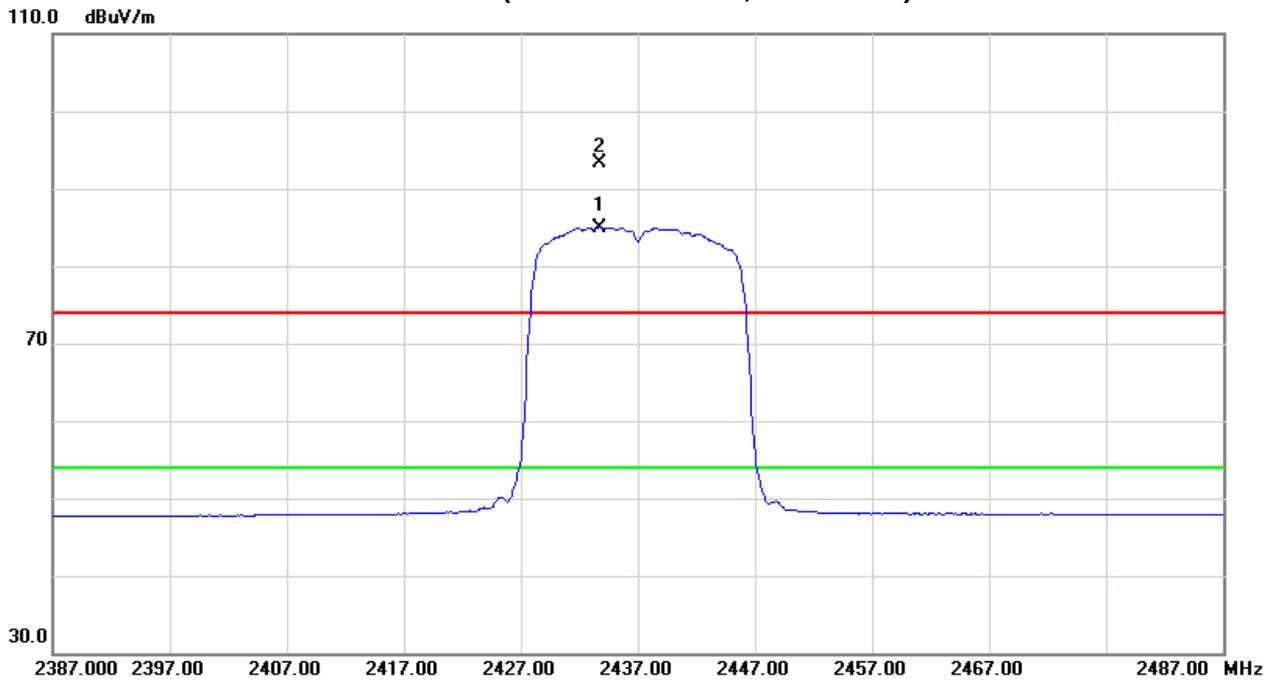
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2433.70</b>	<b>H</b>	<b>59.02</b>	<b>50.78</b>	<b>34.22</b>	<b>93.24</b>	<b>85.00</b>			<b>X/F</b>
4874.07	H	40.96	30.02	6.58	47.54	36.60	74.00	54.00	X/H
9748.23	H	39.25	31.18	15.65	54.90	46.83	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

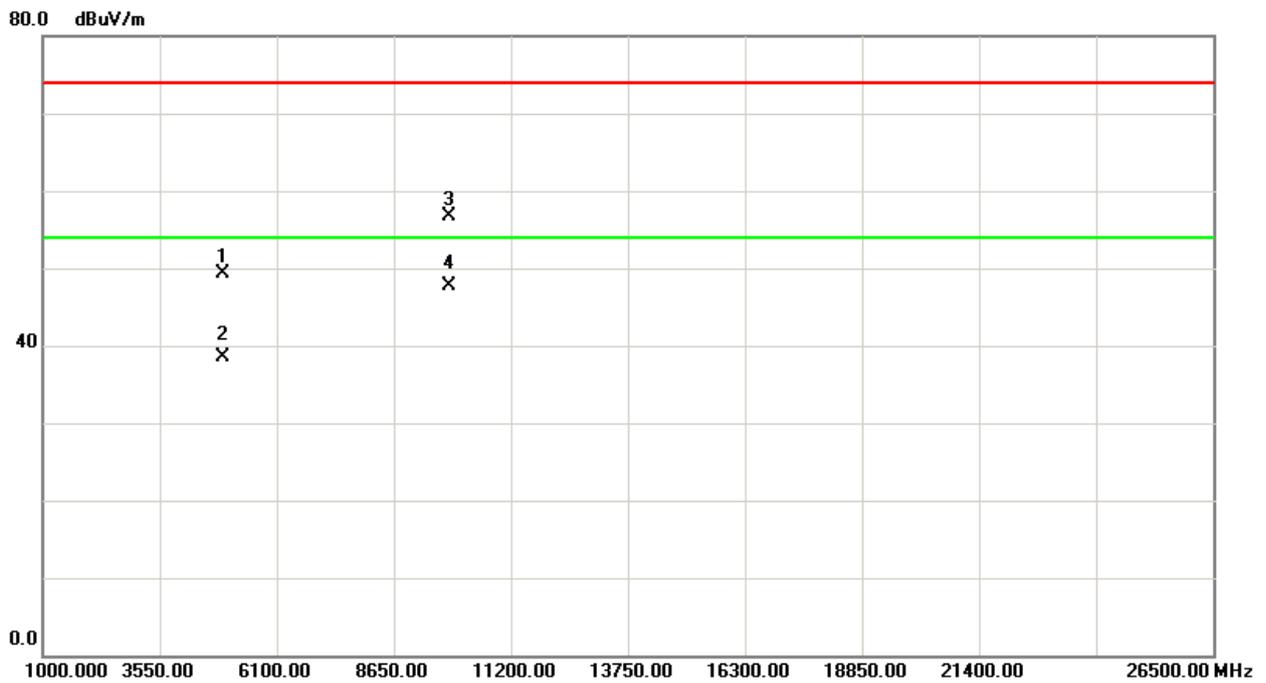
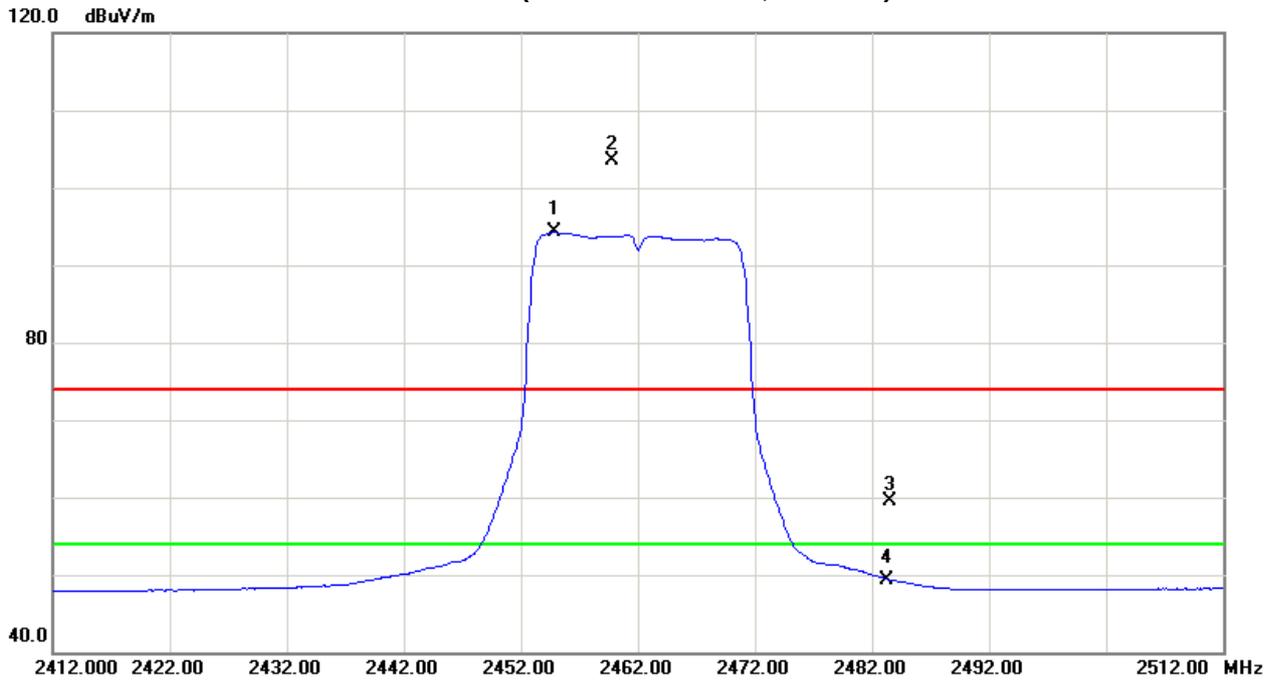
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2459.80</b>	<b>V</b>	<b>69.13</b>	<b>59.92</b>	<b>34.30</b>	<b>103.43</b>	<b>94.22</b>			<b>X/F</b>
2483.50	V	25.16	14.97	34.37	59.53	49.34	74.00	54.00	X/E
4924.22	V	42.52	31.70	6.72	49.24	38.42	74.00	54.00	X/H
9848.07	V	40.61	31.80	16.00	56.61	47.80	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Vertical)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

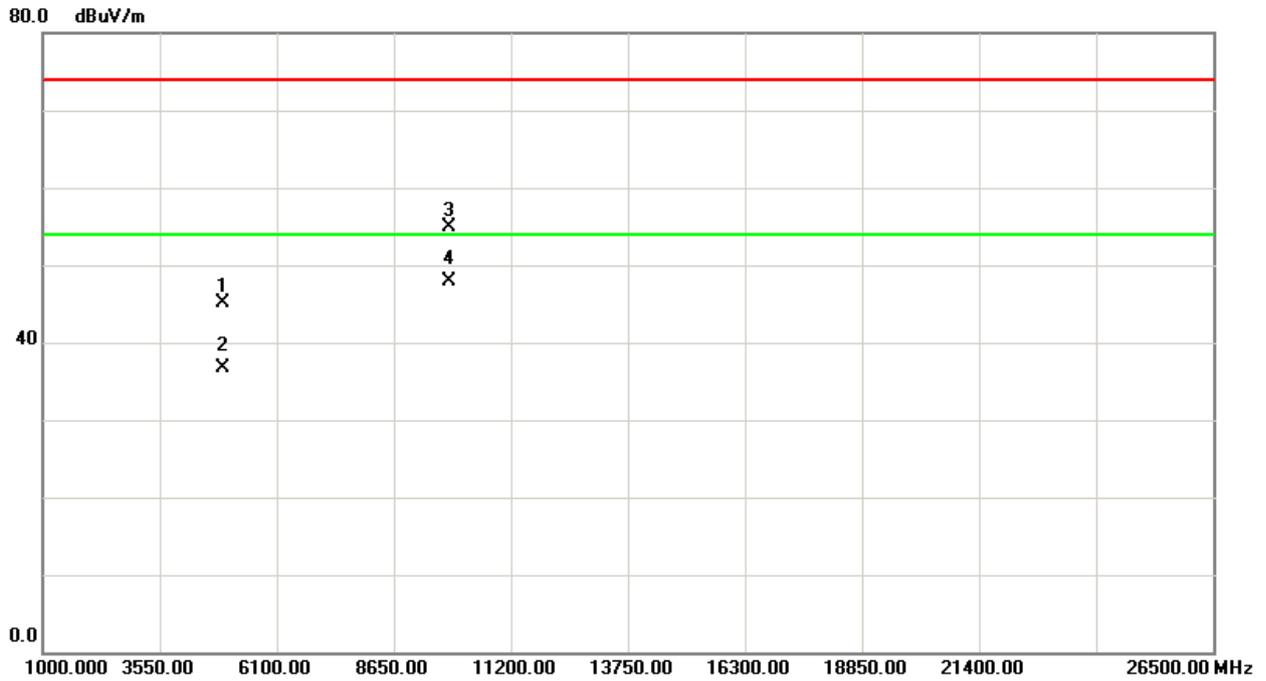
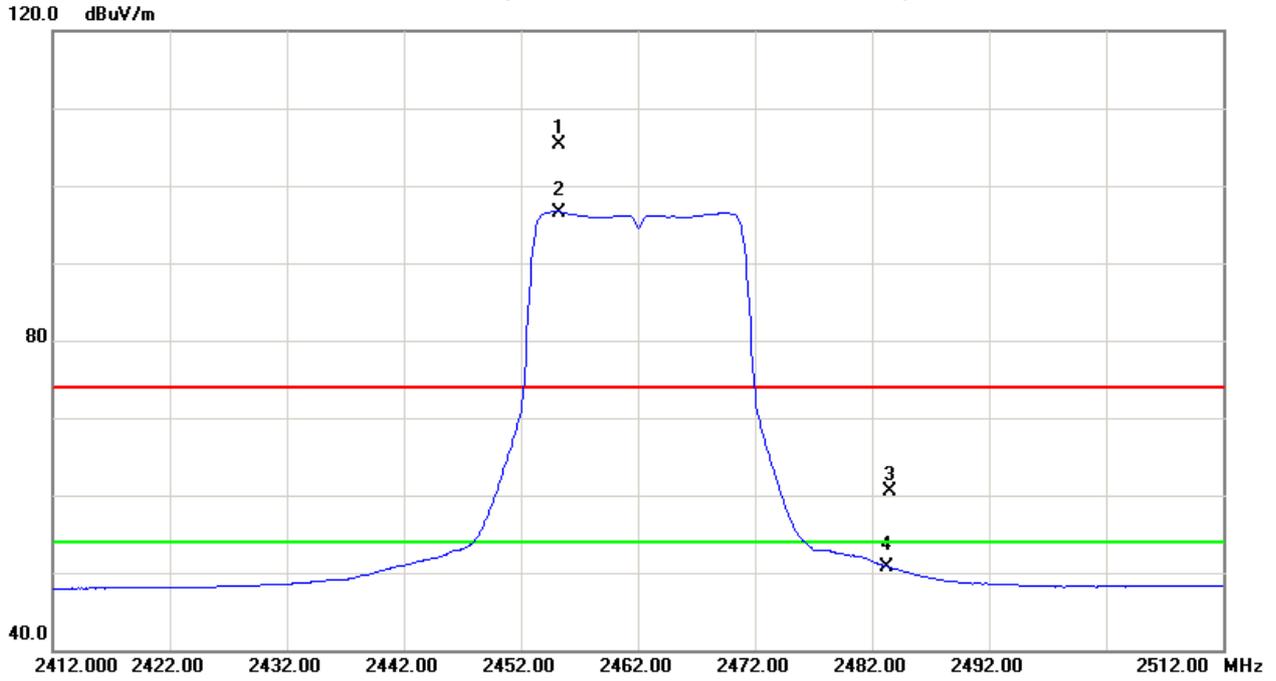
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2455.30</b>	<b>H</b>	<b>70.98</b>	<b>62.31</b>	<b>34.29</b>	<b>105.27</b>	<b>96.60</b>			<b>X/F</b>
2483.50	H	26.17	16.31	34.37	60.54	50.68	74.00	54.00	X/E
4924.08	H	38.42	30.06	6.72	45.14	36.78	74.00	54.00	X/H
9848.24	H	38.88	31.86	16.00	54.88	47.86	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH11 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	25.44	15.19	34.09	59.53	49.28	74.00	54.00	X/E
<b>2411.80</b>	<b>V</b>	<b>61.99</b>	<b>51.60</b>	<b>34.16</b>	<b>96.15</b>	<b>85.76</b>			<b>X/F</b>
4844.19	V	36.12	27.00	6.50	42.62	33.50	74.00	54.00	X/H
9688.20	V	39.43	34.45	15.43	54.86	49.88	74.00	54.00	X/H

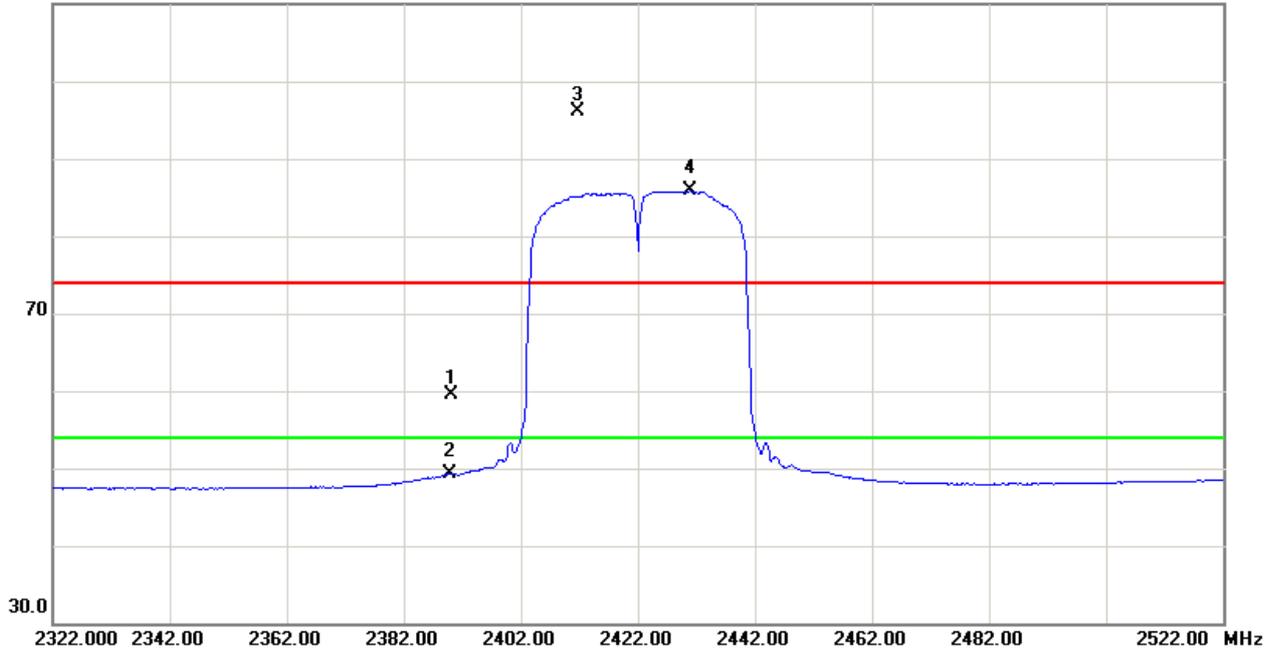
Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

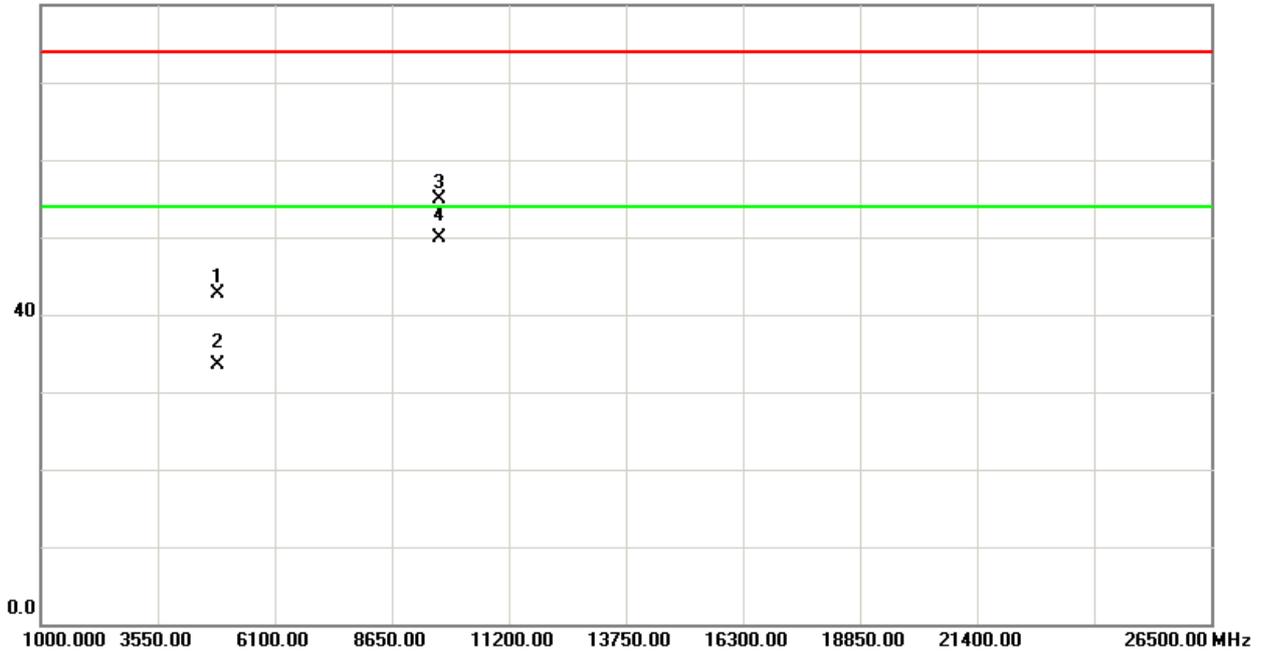


TX CH03 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

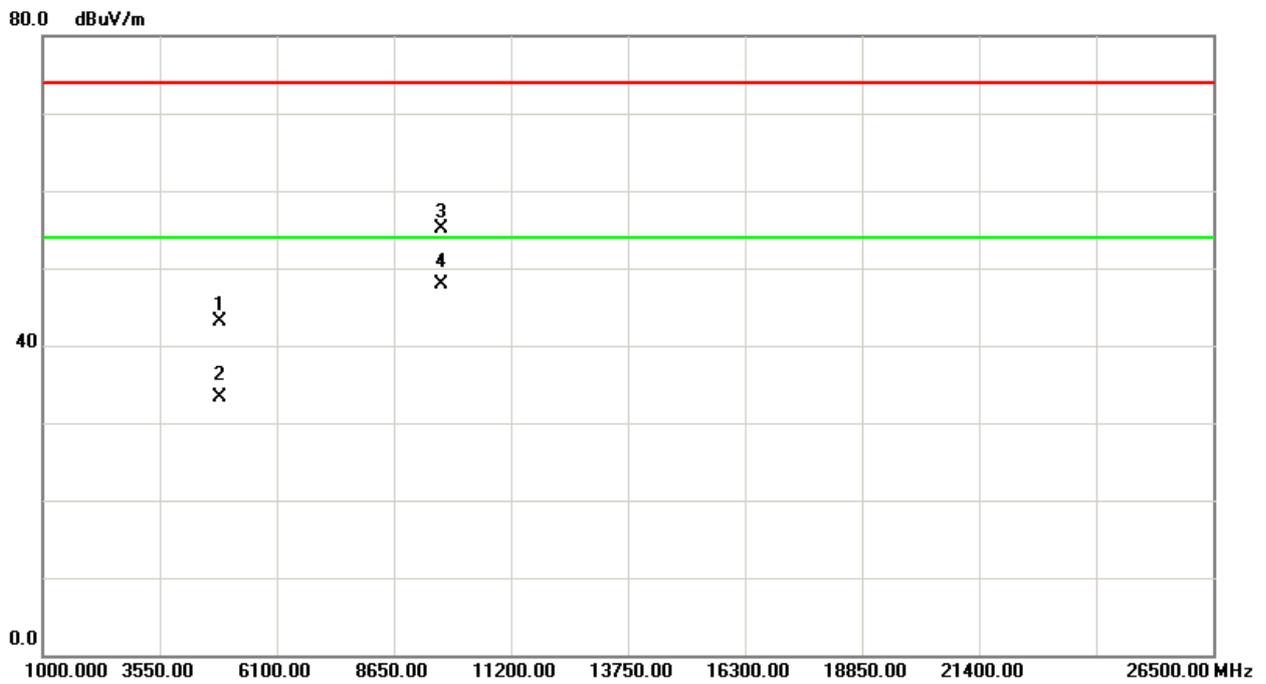
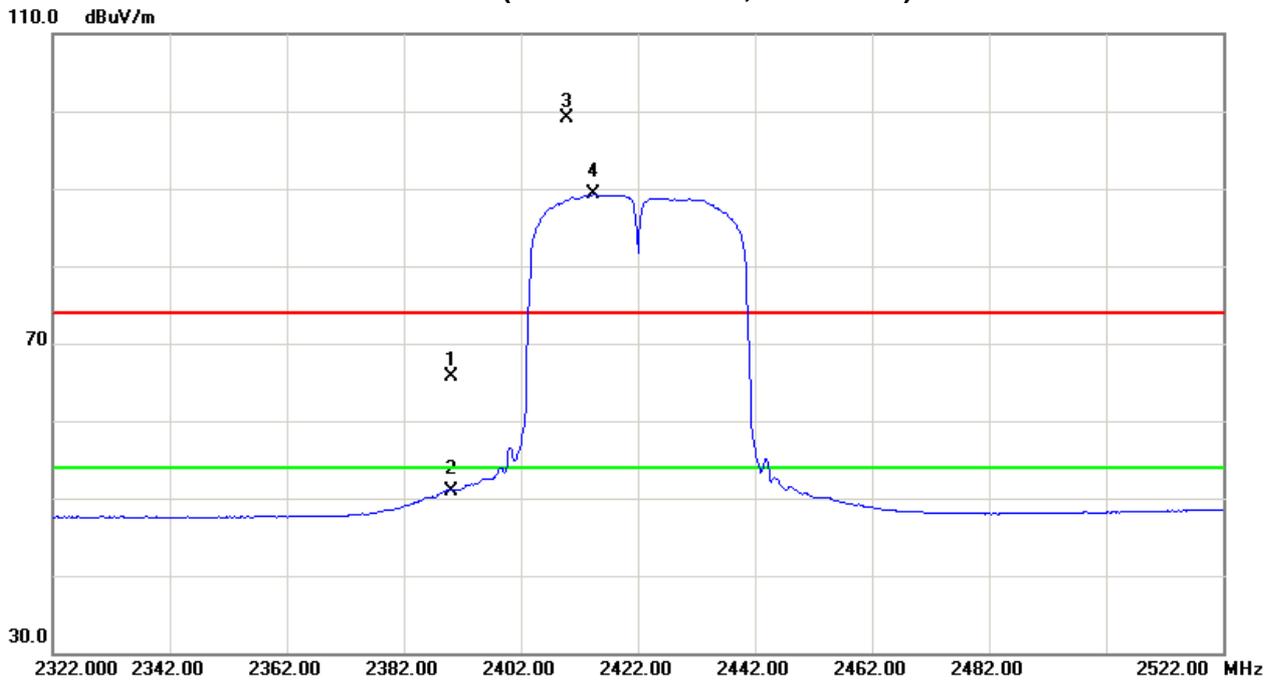
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	31.54	16.90	34.09	65.63	50.99	74.00	54.00	X/E
<b>2409.80</b>	<b>H</b>	<b>64.92</b>	<b>55.07</b>	<b>34.15</b>	<b>99.07</b>	<b>89.22</b>			<b>X/F</b>
4844.17	H	36.60	26.86	6.50	43.10	33.36	74.00	54.00	X/H
9688.19	H	39.72	32.55	15.43	55.15	47.98	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH03 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHZ		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2428.20</b>	<b>V</b>	<b>60.94</b>	<b>52.20</b>	<b>34.21</b>	<b>95.15</b>	<b>86.41</b>			<b>X/F</b>
4874.12	V	34.42	26.84	6.58	41.00	33.42	74.00	54.00	X/H
9748.24	V	39.67	33.29	15.65	55.32	48.94	74.00	54.00	X/H

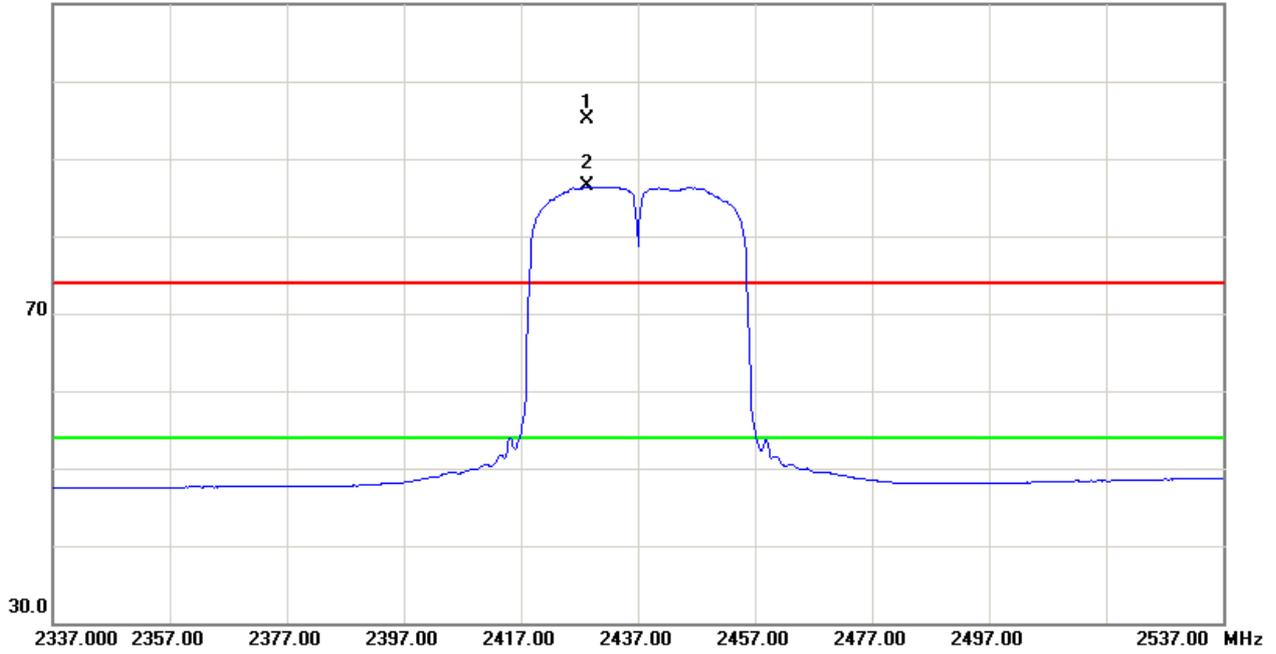
**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

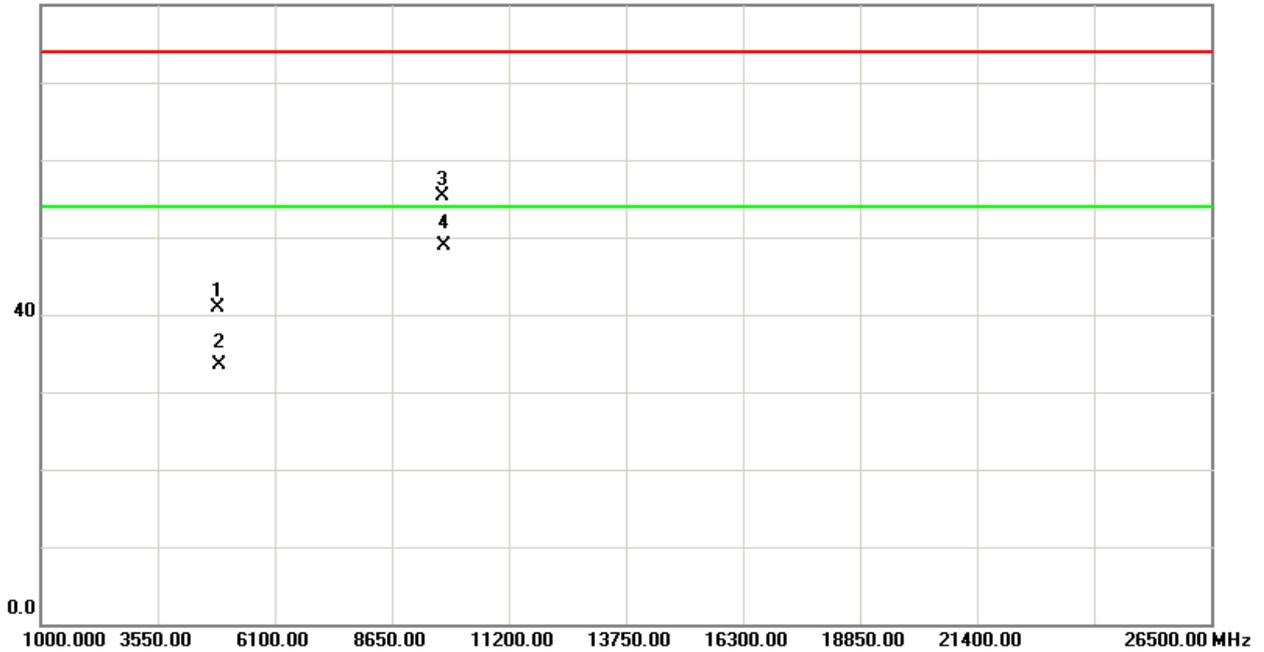


TX CH06 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHZ		

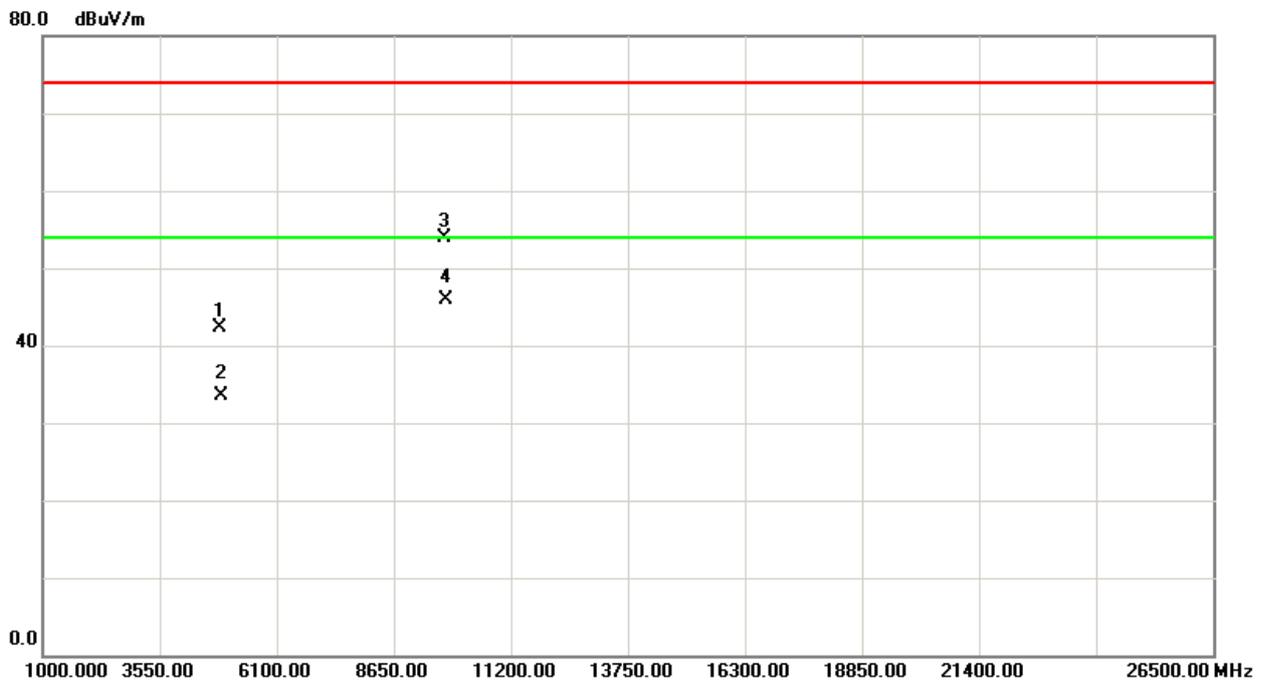
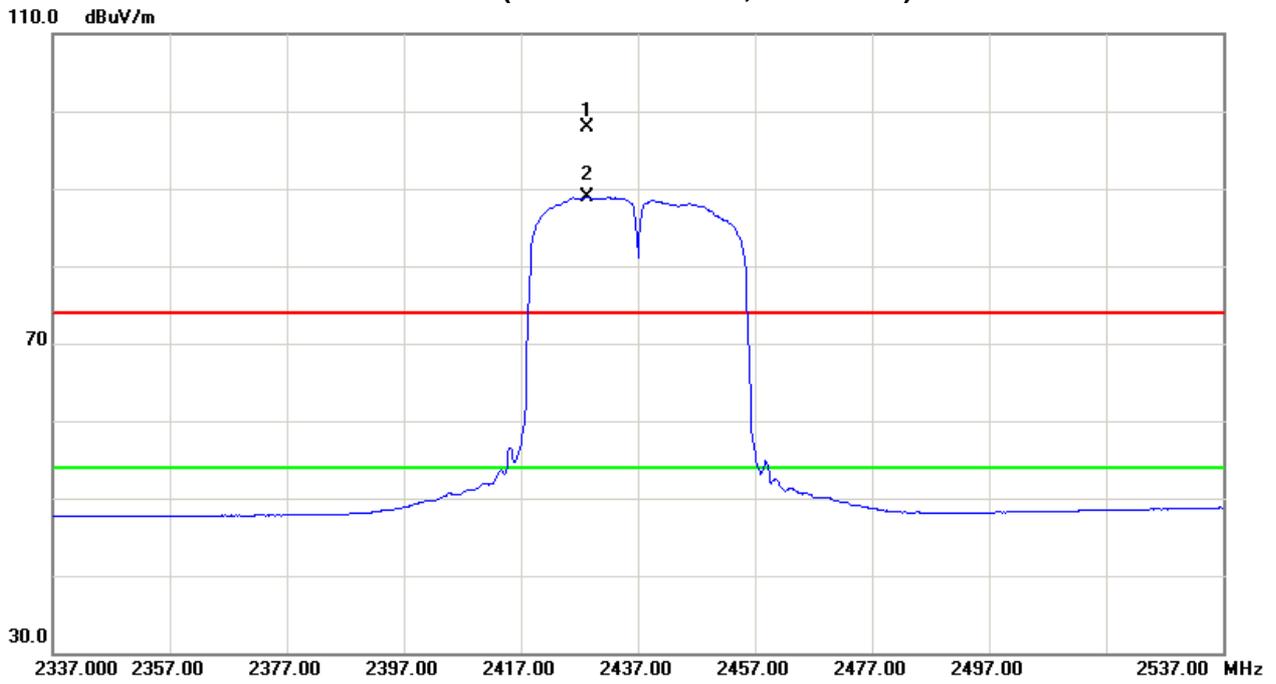
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2428.20</b>	<b>H</b>	<b>63.63</b>	<b>54.66</b>	<b>34.21</b>	<b>97.84</b>	<b>88.87</b>			<b>X/F</b>
4874.03	H	35.77	26.97	6.58	42.35	33.55	74.00	54.00	X/H
9748.23	H	38.17	30.21	15.65	53.82	45.86	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH06 (Above 1000 MHz, Horizontal)





## Neutron Engineering Inc.

EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2446.60</b>	<b>V</b>	<b>63.23</b>	<b>52.84</b>	<b>34.26</b>	<b>97.49</b>	<b>87.10</b>			<b>X/F</b>
2483.50	V	27.39	15.43	34.37	61.76	49.80	74.00	54.00	X/E
4904.18	V	36.32	27.45	6.67	42.99	34.12	74.00	54.00	X/H
9808.22	V	39.63	32.87	15.86	55.49	48.73	74.00	54.00	X/H

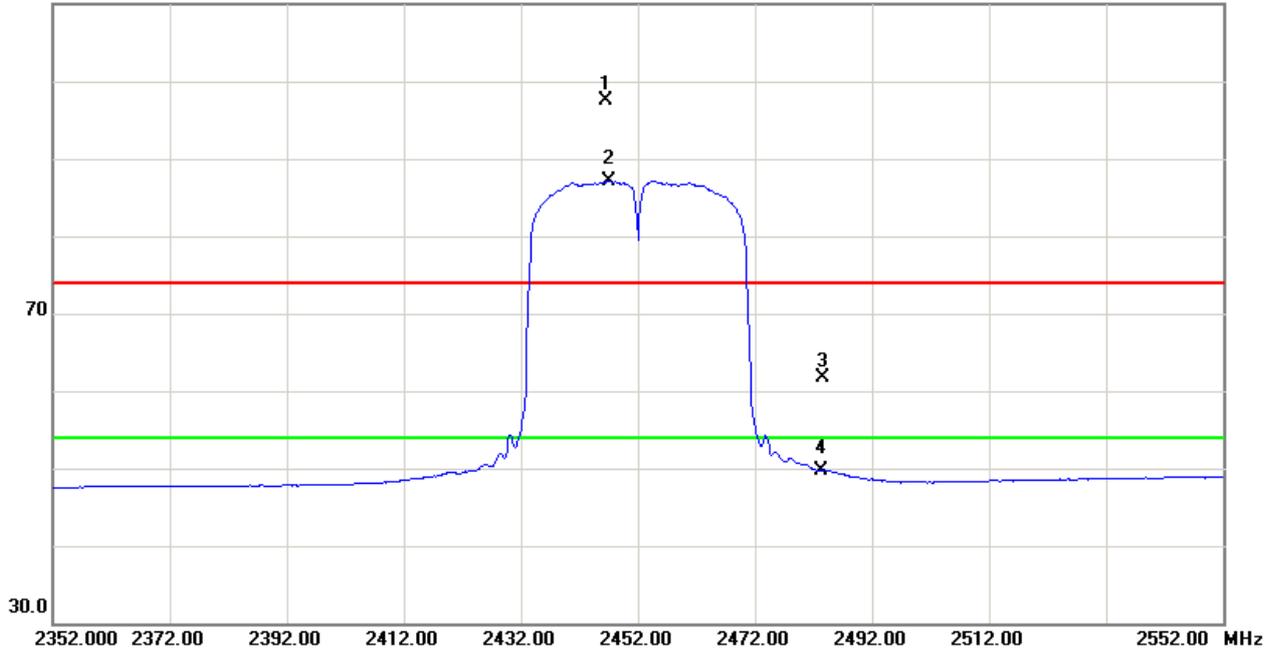
### Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

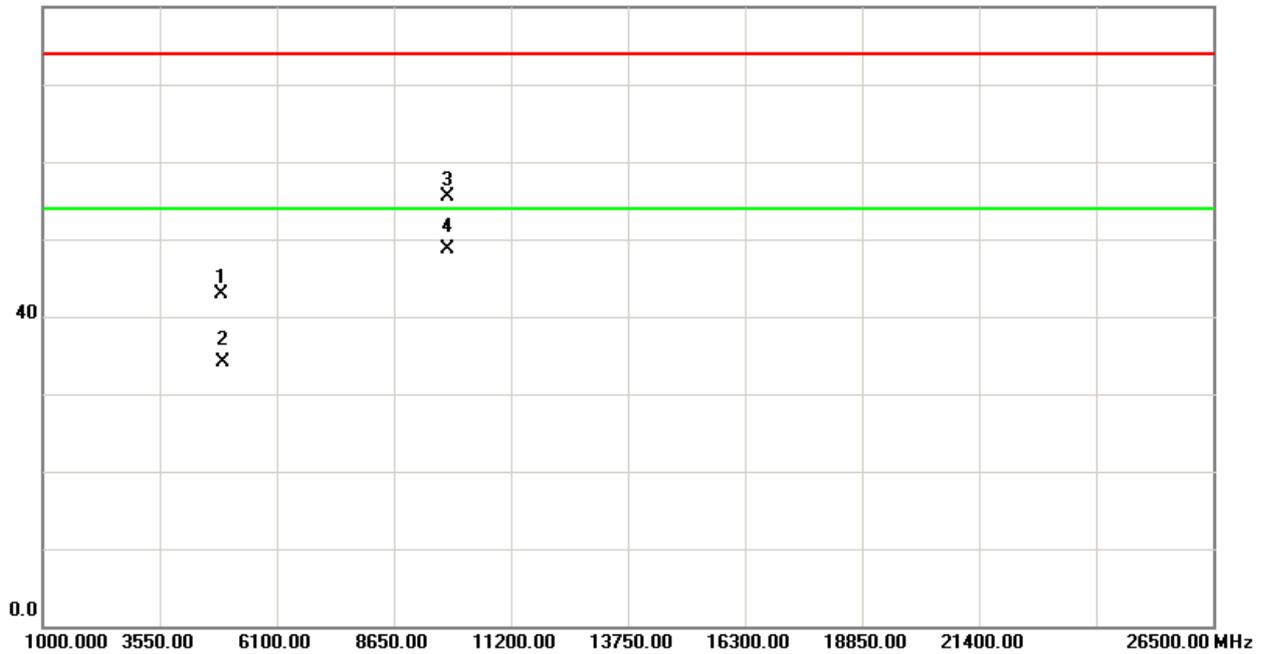


TX CH09 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

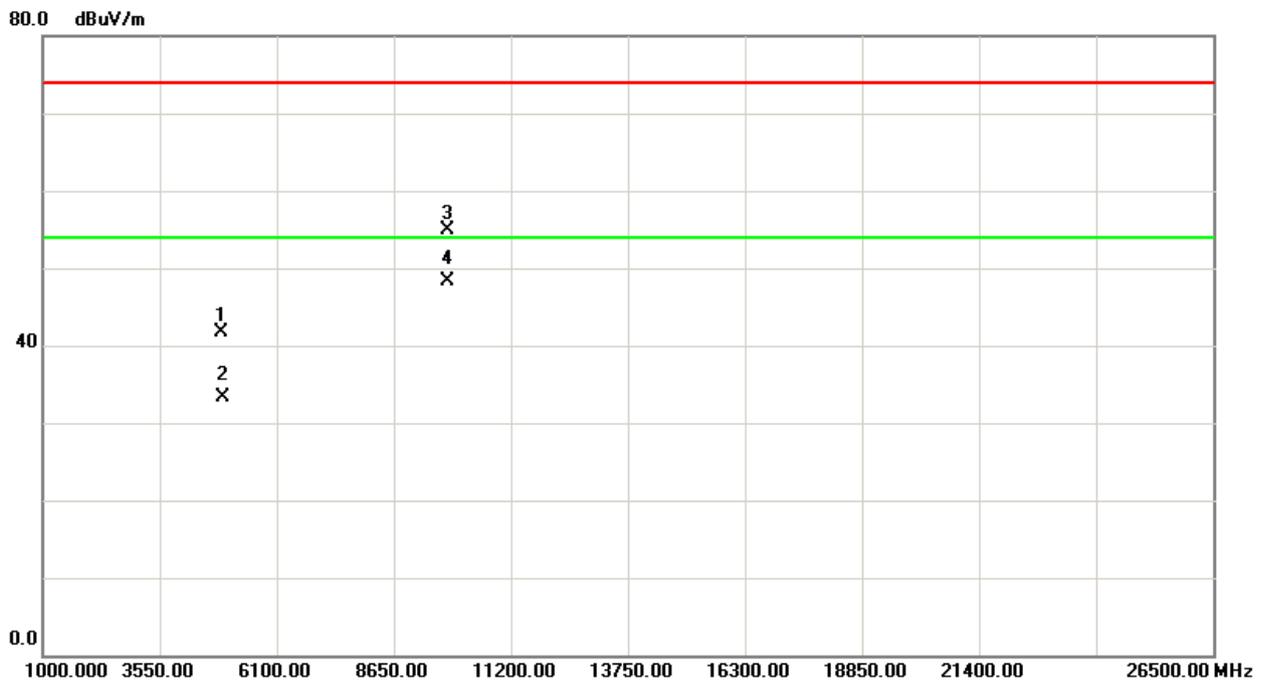
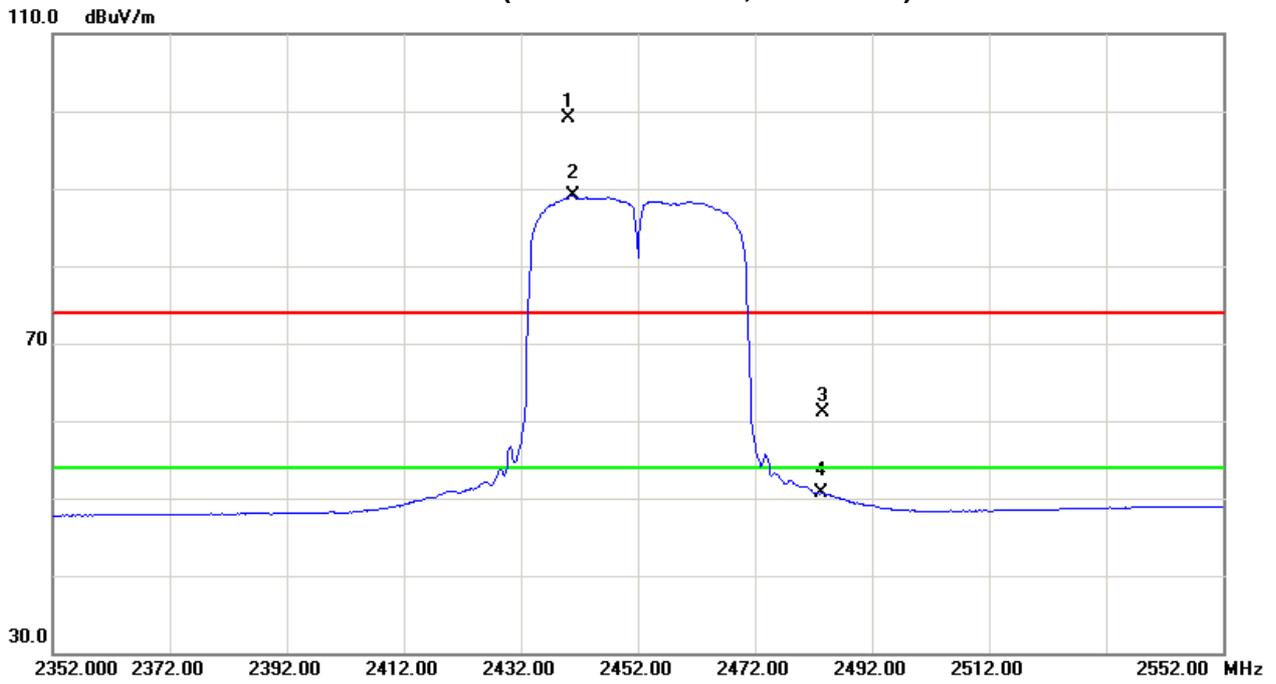
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2440.00</b>	<b>H</b>	<b>64.85</b>	<b>54.83</b>	<b>34.24</b>	<b>99.09</b>	<b>89.07</b>			<b>X/F</b>
2483.50	H	26.69	16.27	34.37	61.06	50.64	74.00	54.00	X/E
4904.06	H	35.01	26.59	6.67	41.68	33.26	74.00	54.00	X/H
9808.19	H	39.08	32.53	15.86	54.94	48.39	74.00	54.00	X/H

**Remark:**

- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency."F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (4) Data of measurement within this frequency range shown " \* " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:  
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna



TX CH09 (Above 1000 MHz, Horizontal)





**5. BANDWIDTH TEST**

**5.1 Applied procedures / limit**

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	2400-2483.5	PASS

**5.1.1 MEASUREMENT INSTRUMENTS LIST**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov. 09, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.  
 All calibration period of equipment list is one year.

**5.1.2 TEST PROCEDURE**

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = 2.5 ms.

**5.1.3 DEVIATION FROM STANDARD**

No deviation.

**5.1.4 TEST SETUP**



**5.1.5 EUT OPERATION CONDITIONS**

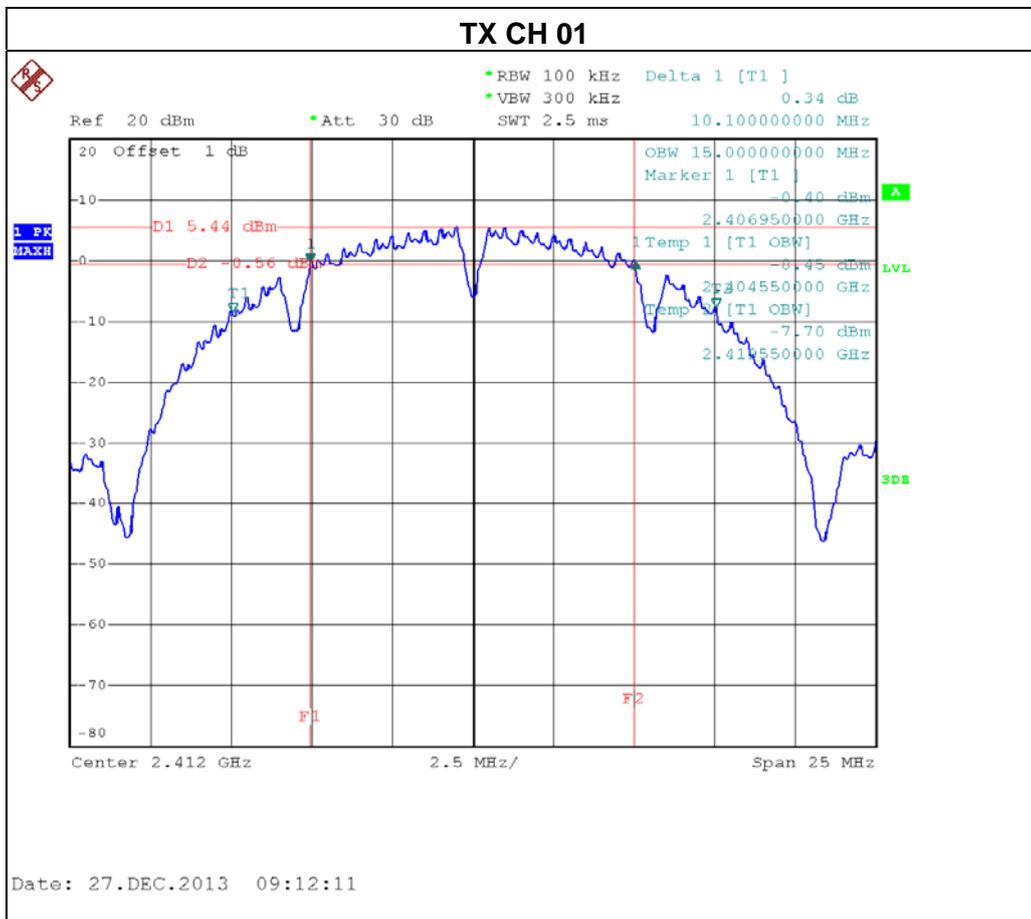
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

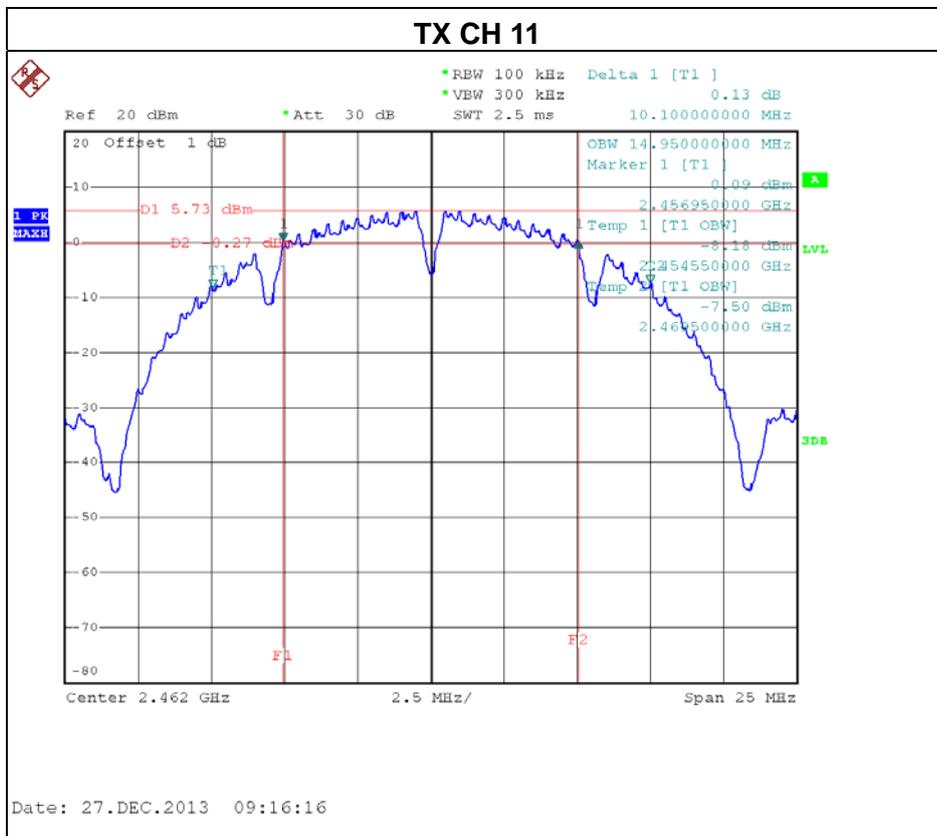
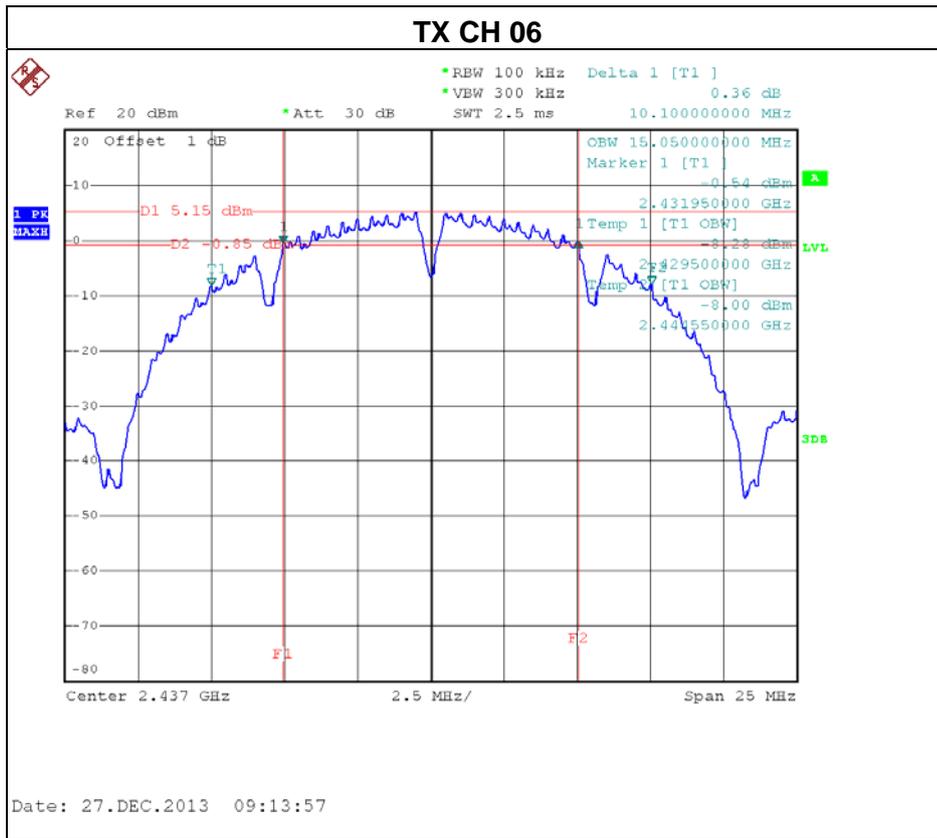


**5.1.6 TEST RESULTS**

EUT:	300Mbps Mini Wireless Router	Model Name. :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	10.10	PASS
CH06	2437	10.10	PASS
CH11	2462	10.10	PASS

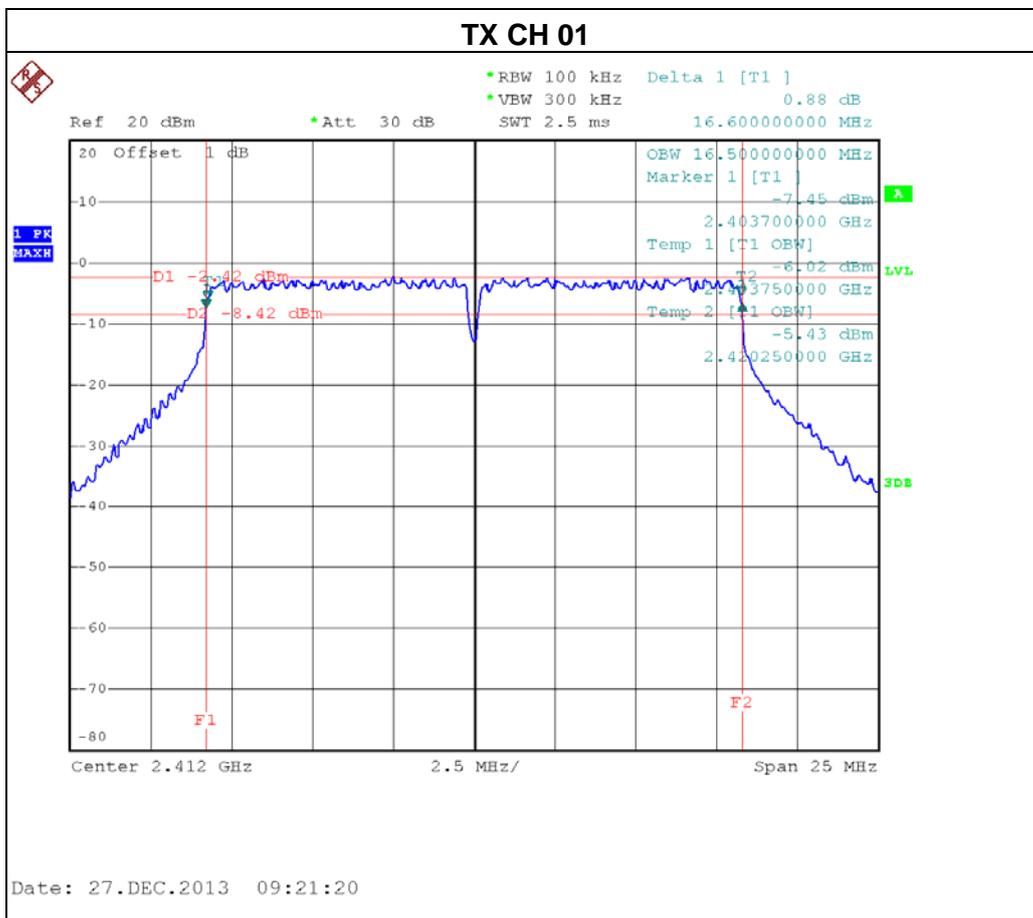


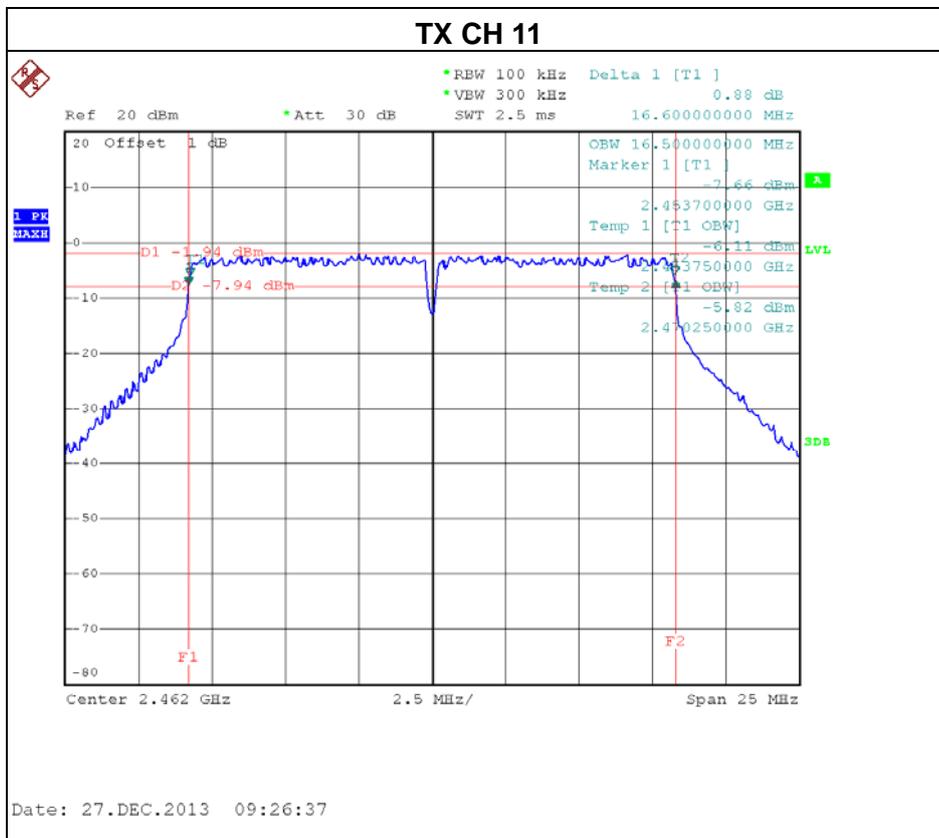
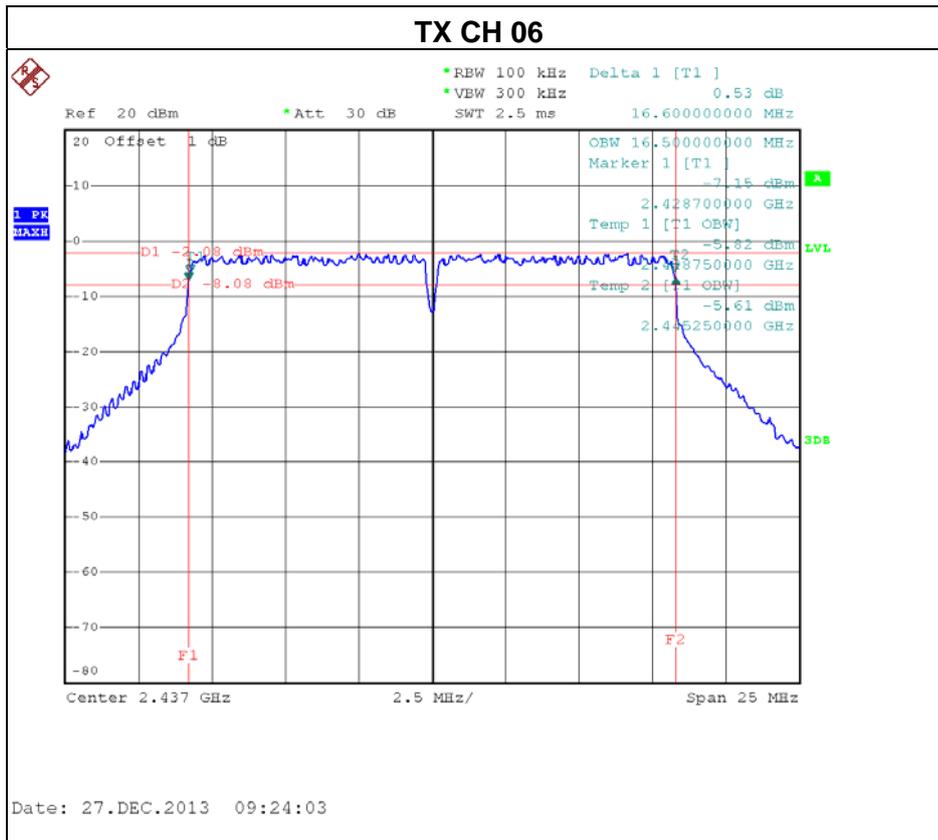




EUT:	300Mbps Mini Wireless Router	Model Name. :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	16.60	PASS
CH06	2437	16.60	PASS
CH11	2462	16.60	PASS

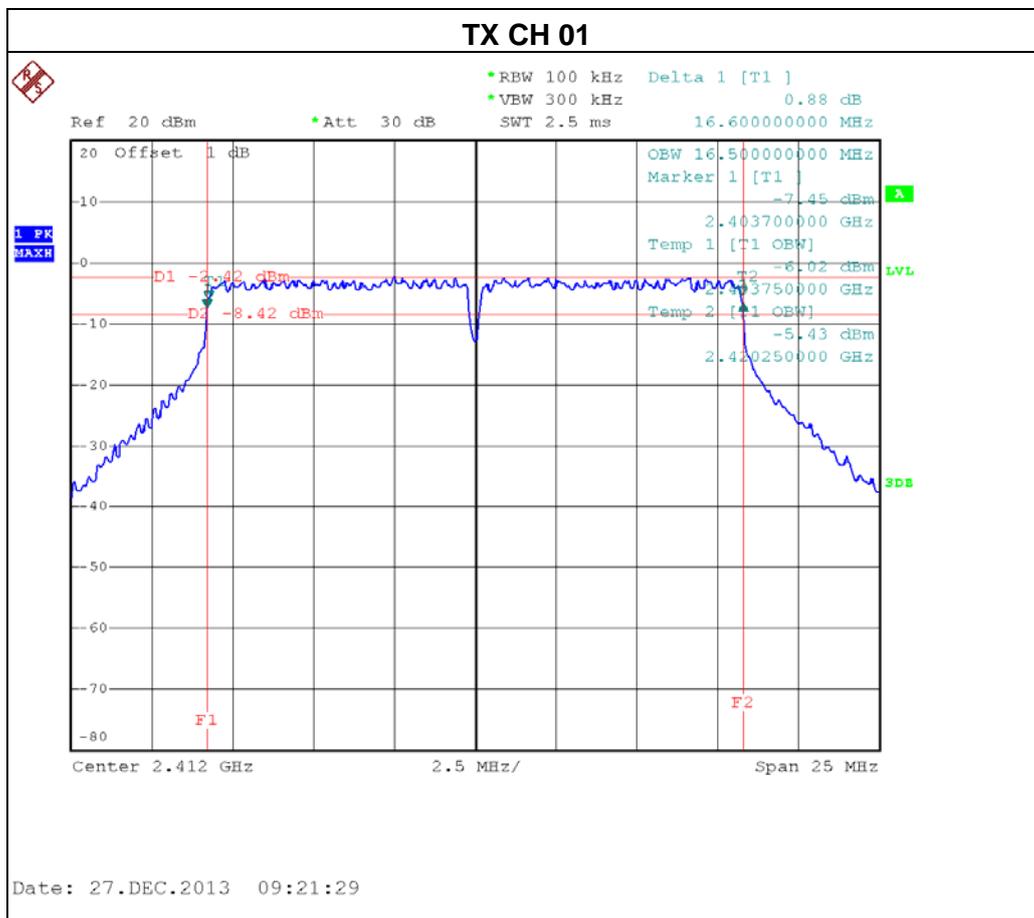


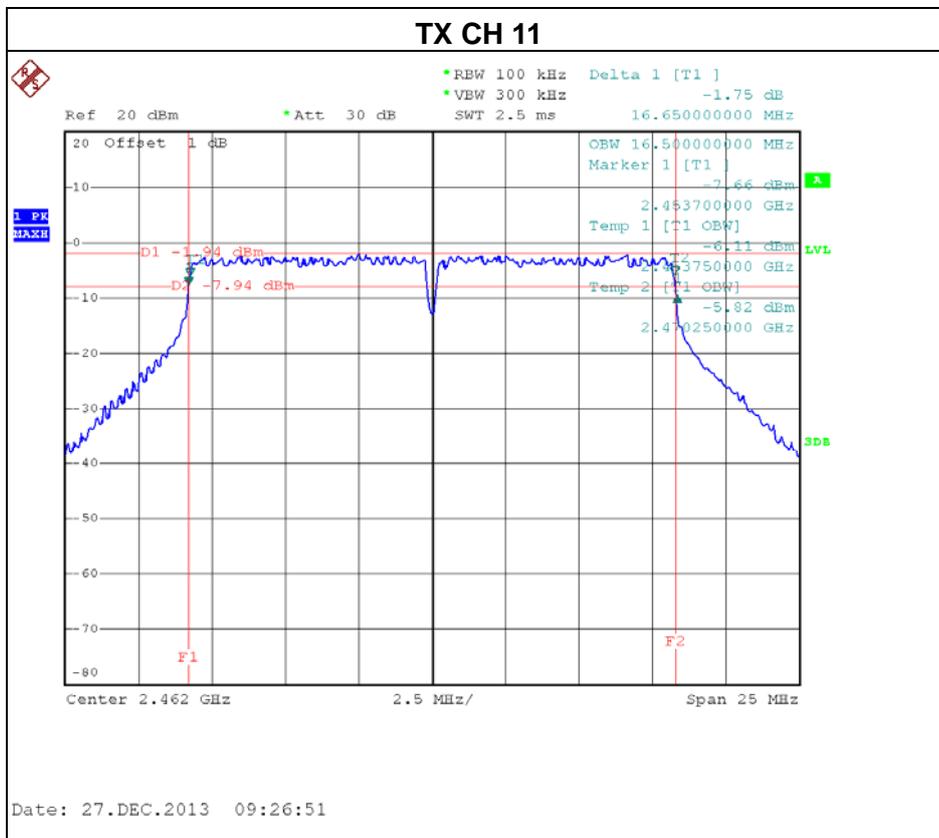
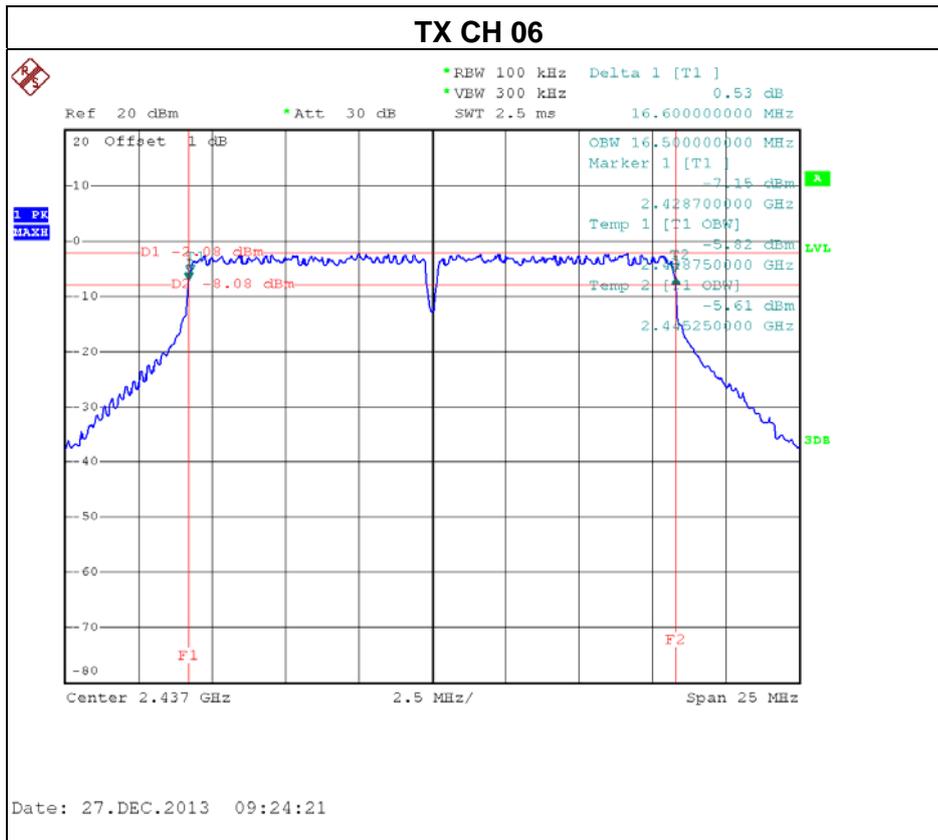




EUT:	300Mbps Mini Wireless Router	Model Name. :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11-ANT 2		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	16.60	PASS
CH06	2437	16.60	PASS
CH11	2462	16.65	PASS

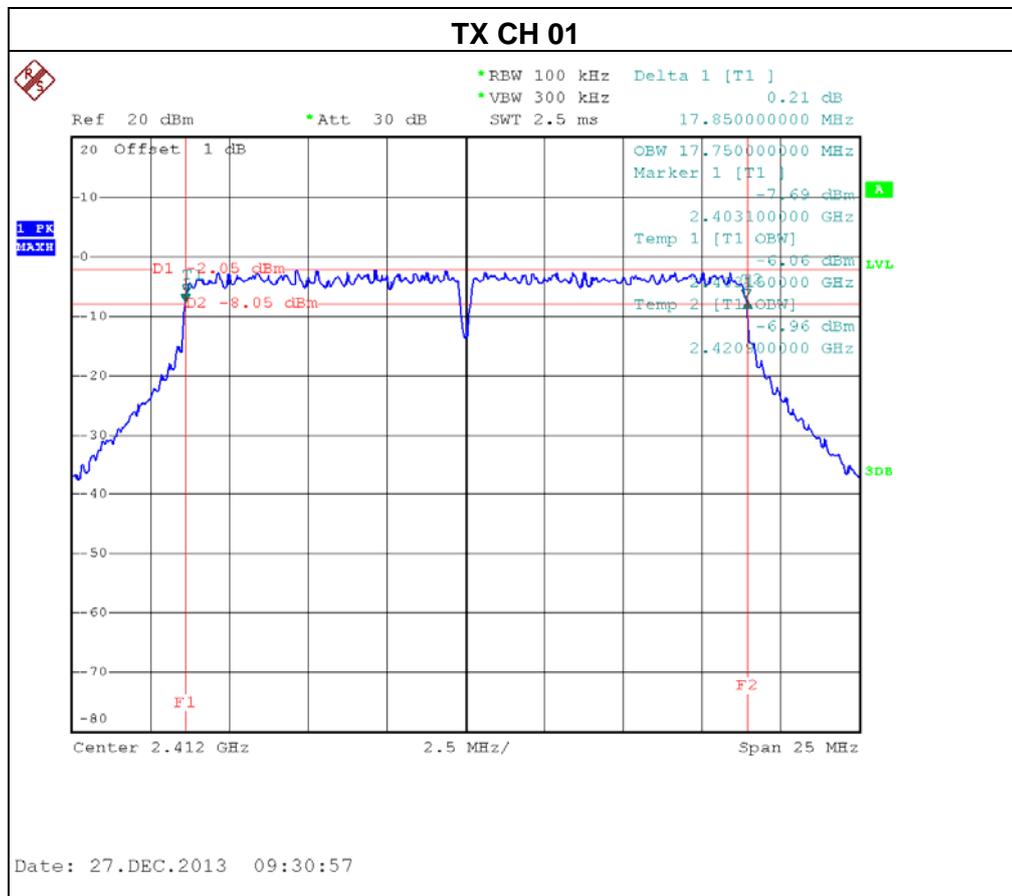


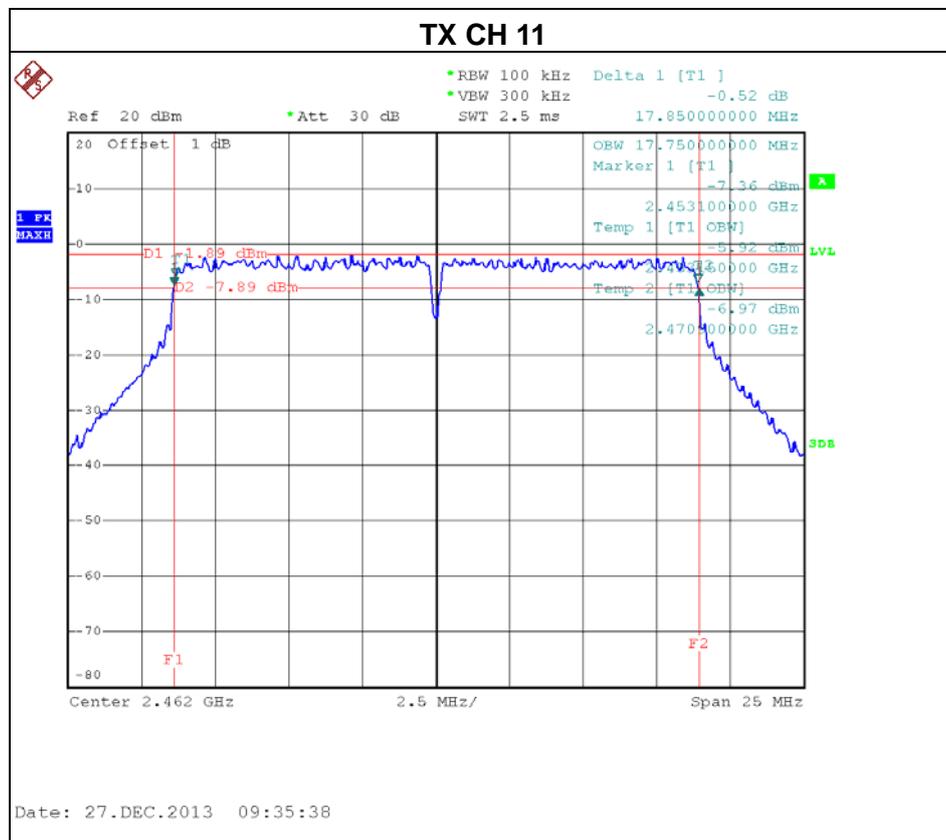
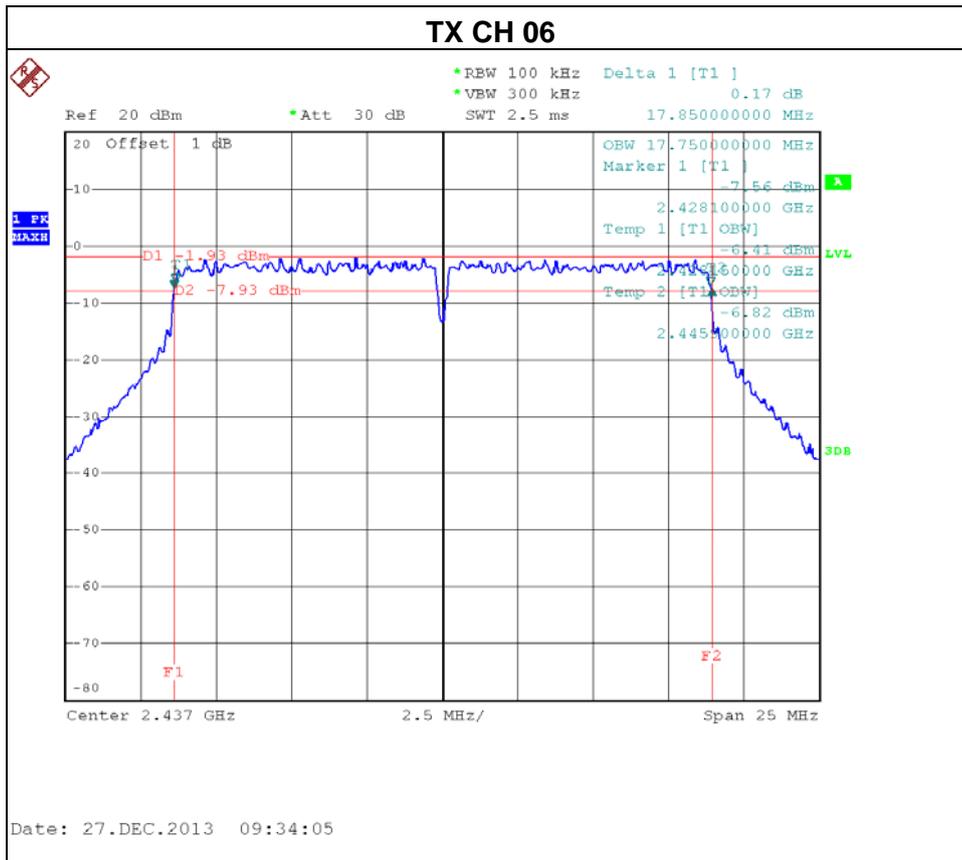




EUT:	300Mbps Mini Wireless Router	Model Name. :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	17.85	PASS
CH06	2437	17.85	PASS
CH11	2462	17.85	PASS

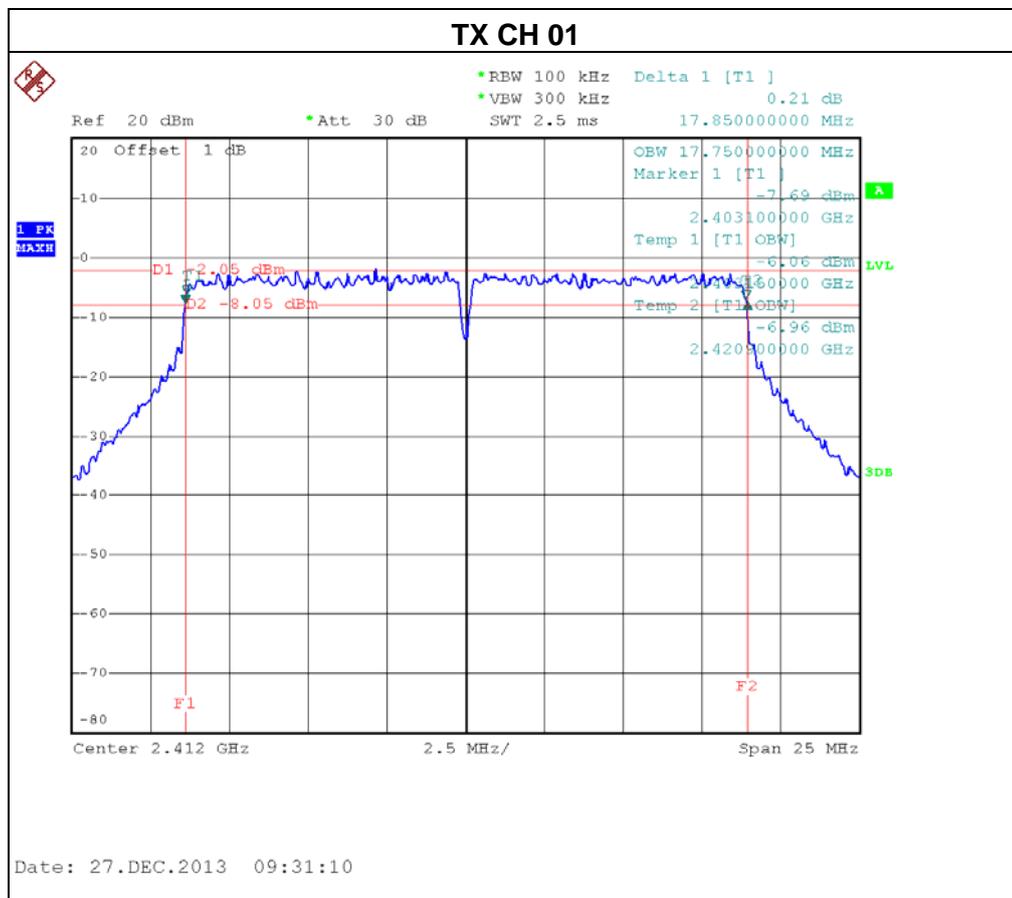


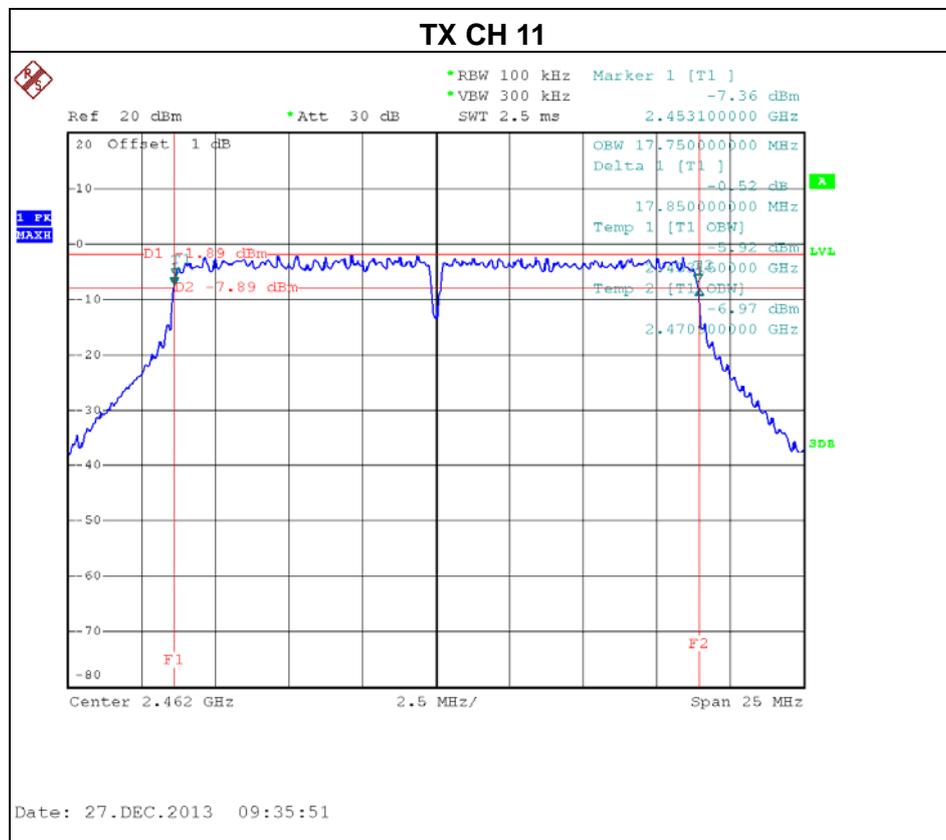
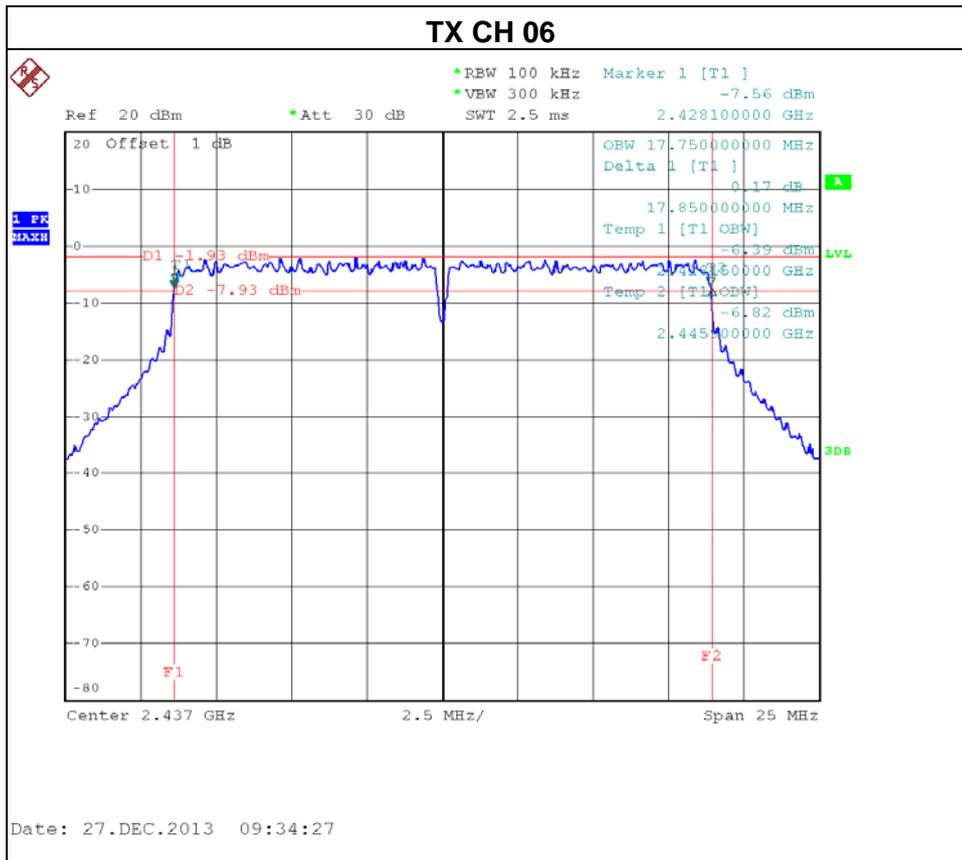




EUT:	300Mbps Mini Wireless Router	Model Name. :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 2		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	17.85	PASS
CH06	2437	17.85	PASS
CH11	2462	17.85	PASS

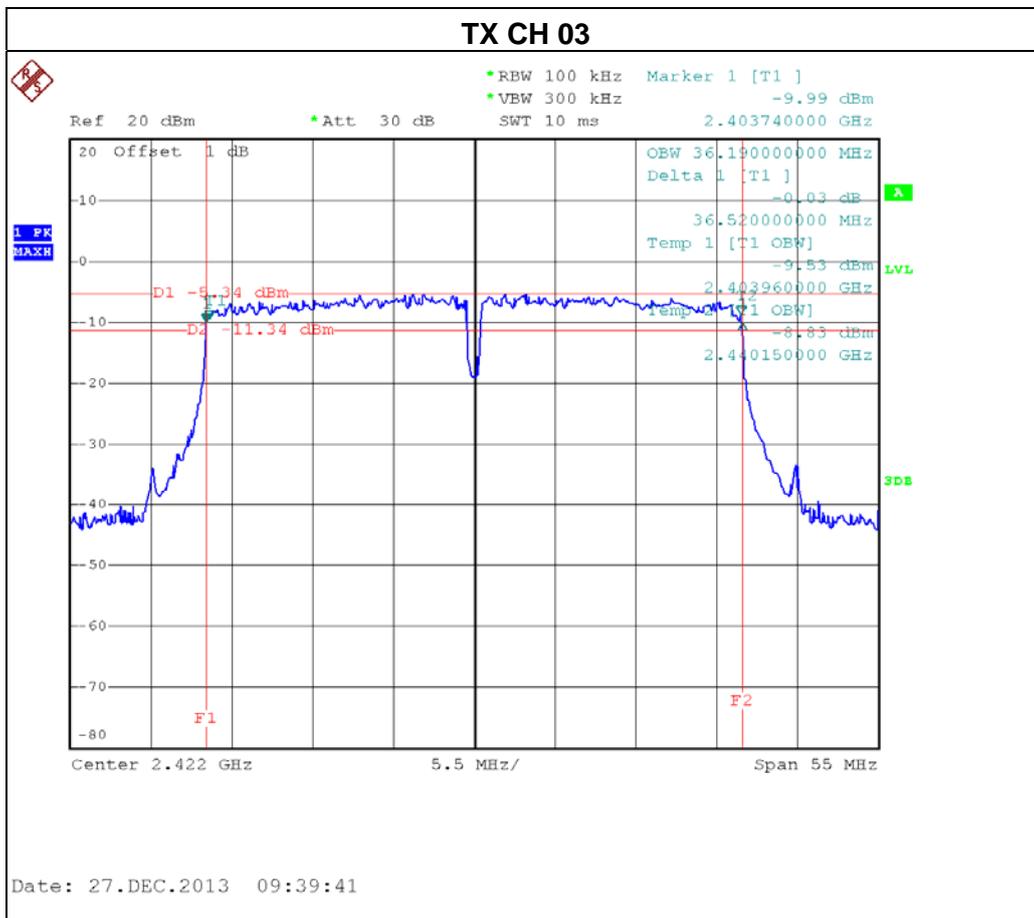


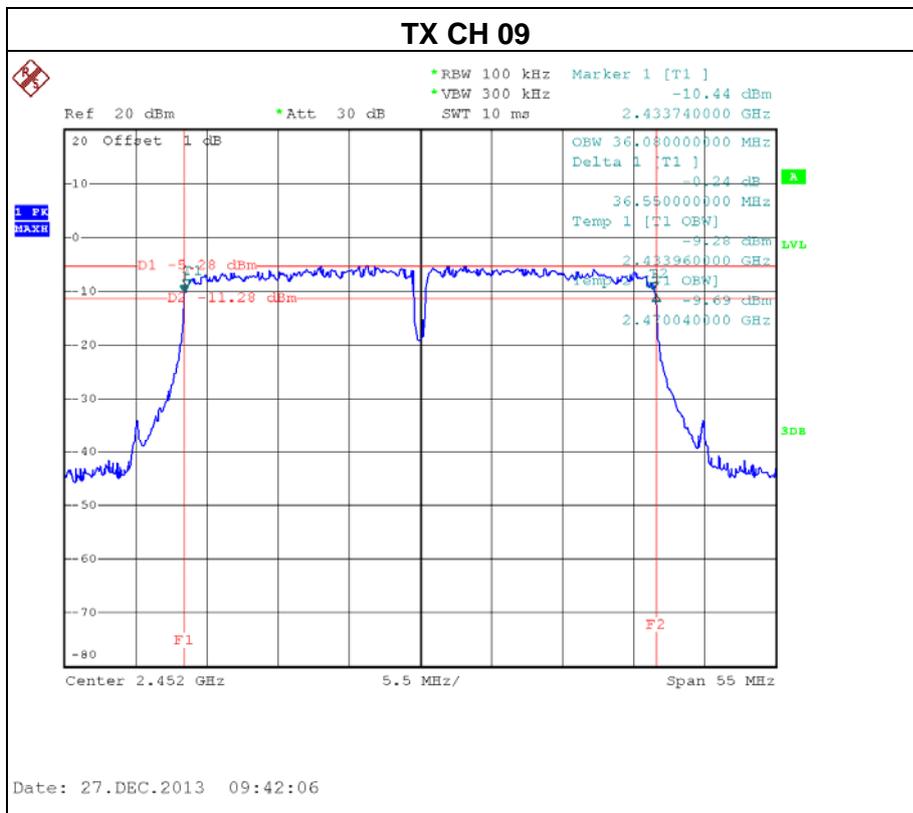
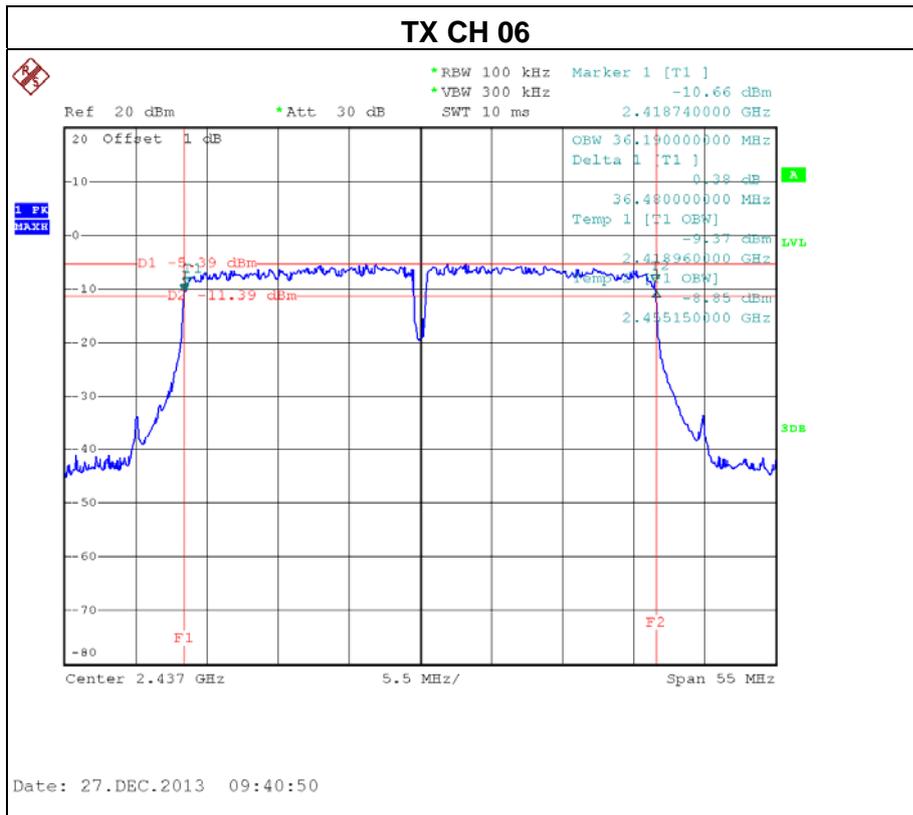




EUT:	300Mbps Mini Wireless Router	Model Name. :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH03	2422	36.52	PASS
CH06	2437	36.48	PASS
CH09	2452	36.55	PASS

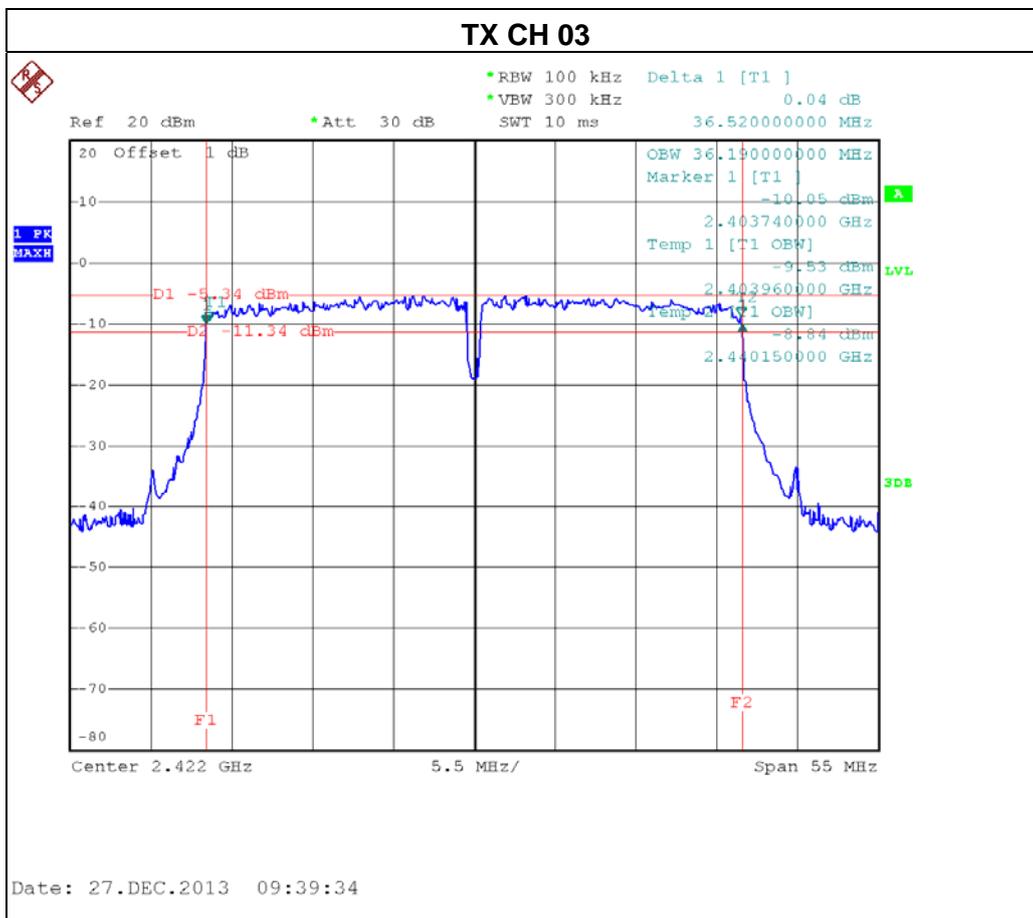


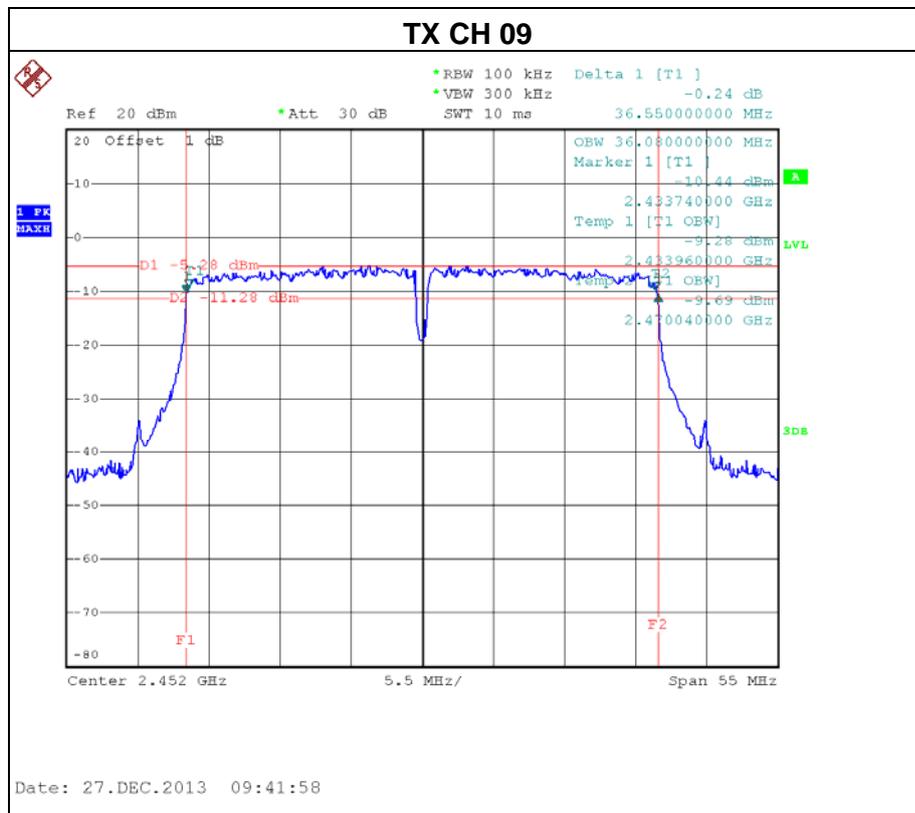
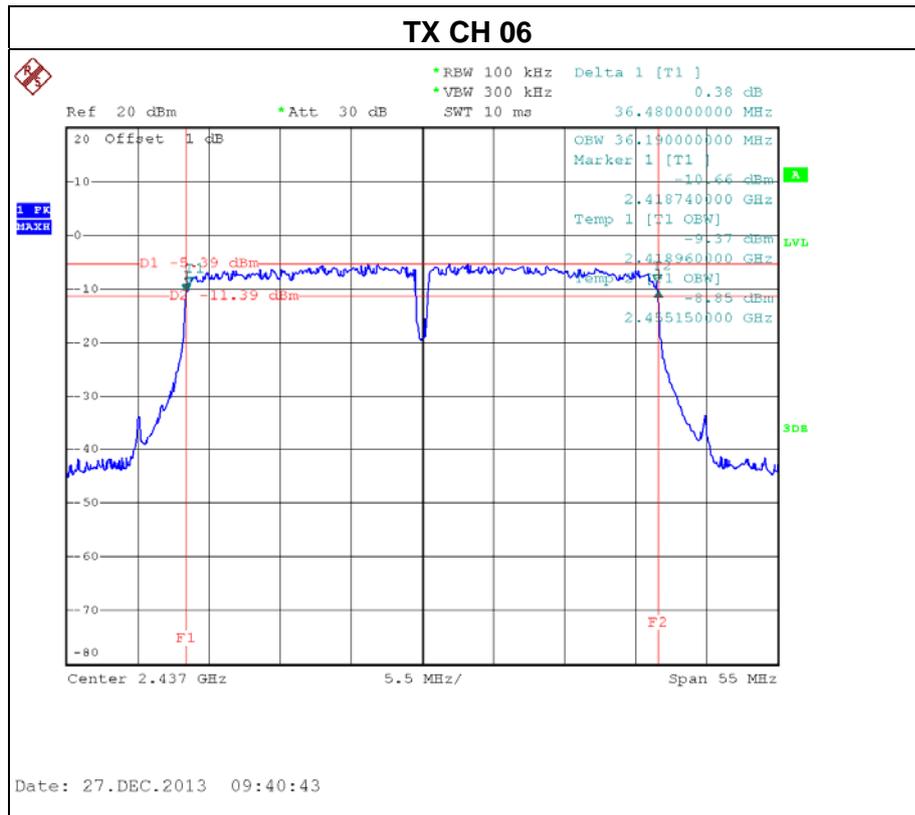




EUT:	300Mbps Mini Wireless Router	Model Name. :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 2		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH03	2422	36.52	PASS
CH06	2437	36.48	PASS
CH09	2452	36.55	PASS







**6. MAXIMUM 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)	Maximum Output Power	1 watt or 30dBm	2400-2483.5	PASS

**6.1.1 MEASUREMENT INSTRUMENTS LIST**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Next Calibration
1	P-series Power meter	Agilent	N1911A	MY45100473	Apr.25.2014
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Apr.25.2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.  
All calibration period of equipment list is one year.

**6.1.2 TEST PROCEDURE**

- a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
- b. The maximum peak conducted output power was performed in accordance with method 9.1.3 of FCC KDB 558074

**6.1.3 DEVIATION FROM STANDARD**

No deviation.

**6.1.4 TEST SETUP**



**6.1.5 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing. Transmit output power was measured while the host equipment supply voltage was varied from 85 % to 115 % of the nominal rated supply voltage. No change in transmit output power was observed.



**6.1.6 TEST RESULTS**

EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	22.35	30	1
2437	22.31	30	1
2462	22.36	30	1



EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	25.25	30	1
2437	25.12	30	1
2462	25.13	30	1

ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	25.08	30	1
2437	25.11	30	1
2462	25.10	30	1

ANT 1 + ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	28.18	30	1
2437	28.13	30	1
2462	28.13	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).



EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11		

ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	24.13	30	1
2437	24.12	30	1
2462	24.16	30	1

ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	24.13	30	1
2437	24.12	30	1
2462	24.15	30	1

ANT 1 + ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	27.14	30	1
2437	27.13	30	1
2462	27.17	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).



EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09		

ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2422	24.16	30	1
2437	24.12	30	1
2452	24.13	30	1

ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2422	24.20	30	1
2437	24.12	30	1
2452	24.21	30	1

ANT 1 + ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2422	27.19	30	1
2437	27.13	30	1
2452	27.18	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).



## 7. ANTENNA CONDUCTED SPURIOUS EMISSION

### 7.1 Applied procedures / limit

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

#### 7.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov. 09, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.  
All calibration period of equipment list is one year.

#### 7.1.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

#### 7.1.3 DEVIATION FROM STANDARD

No deviation.

#### 7.1.4 TEST SETUP



#### 7.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



**7.1.6 TEST RESULTS**

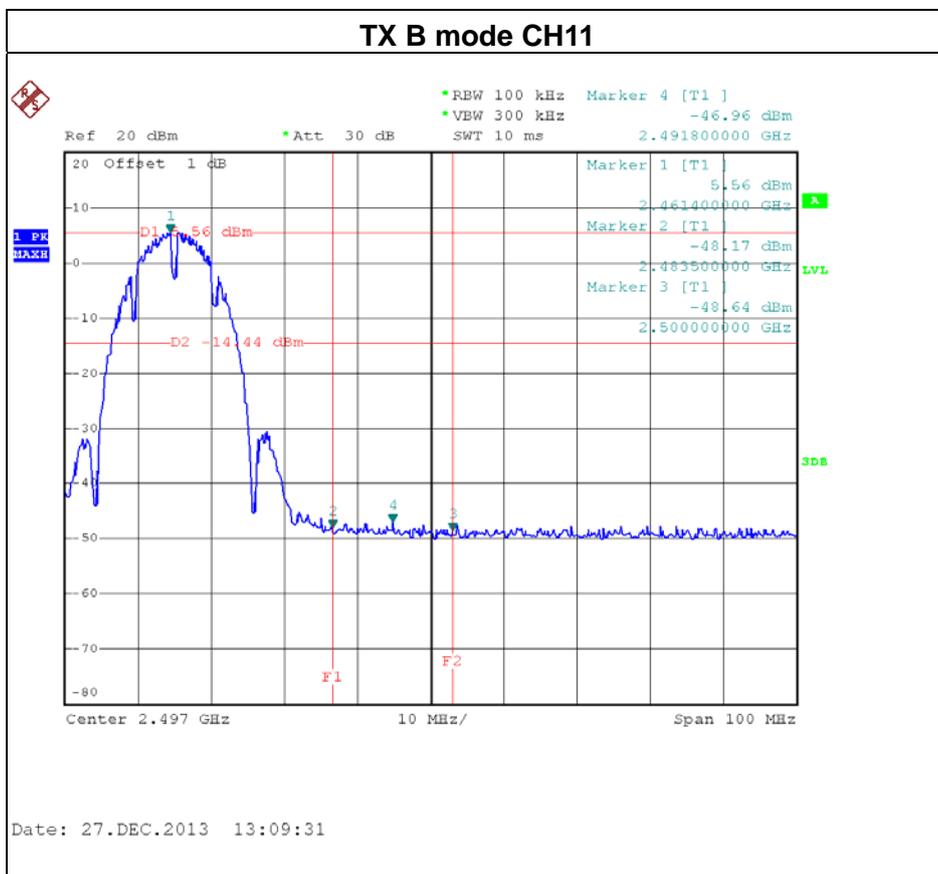
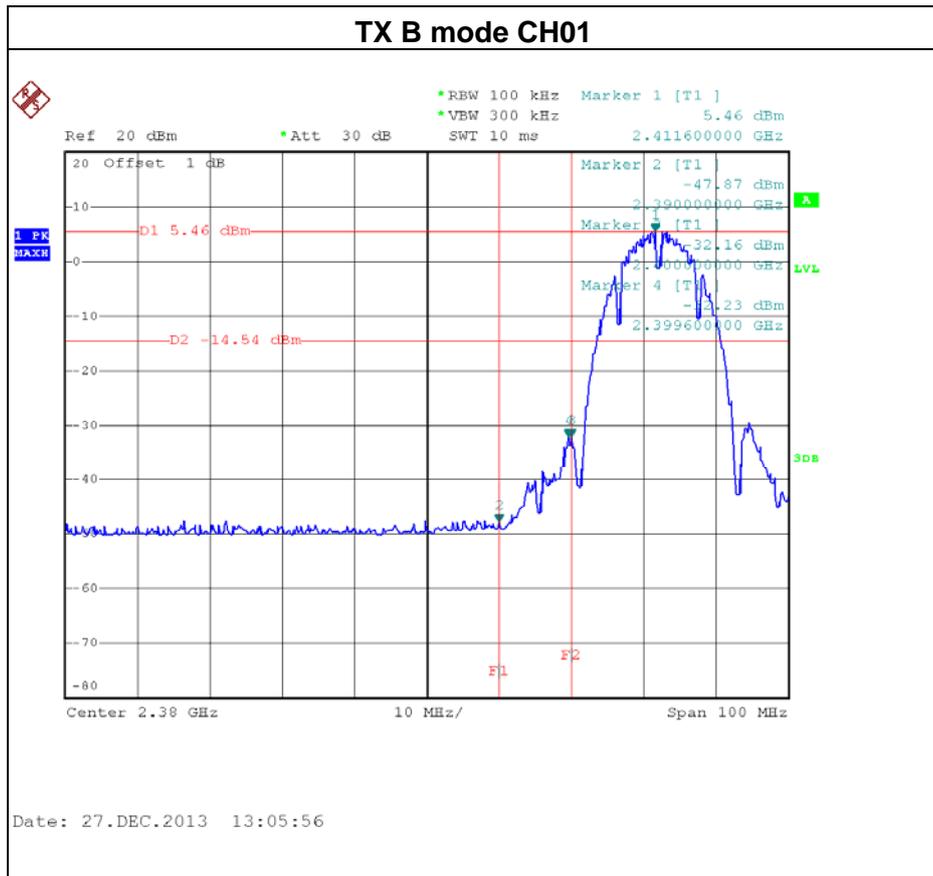
EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06 , CH11		

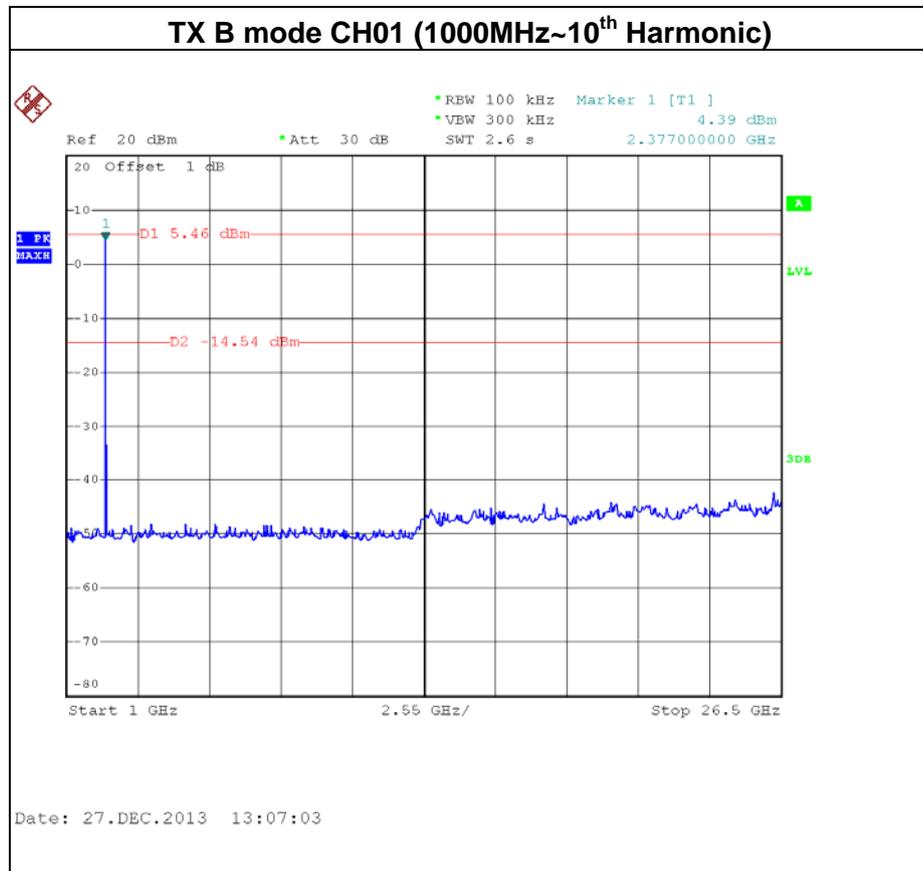
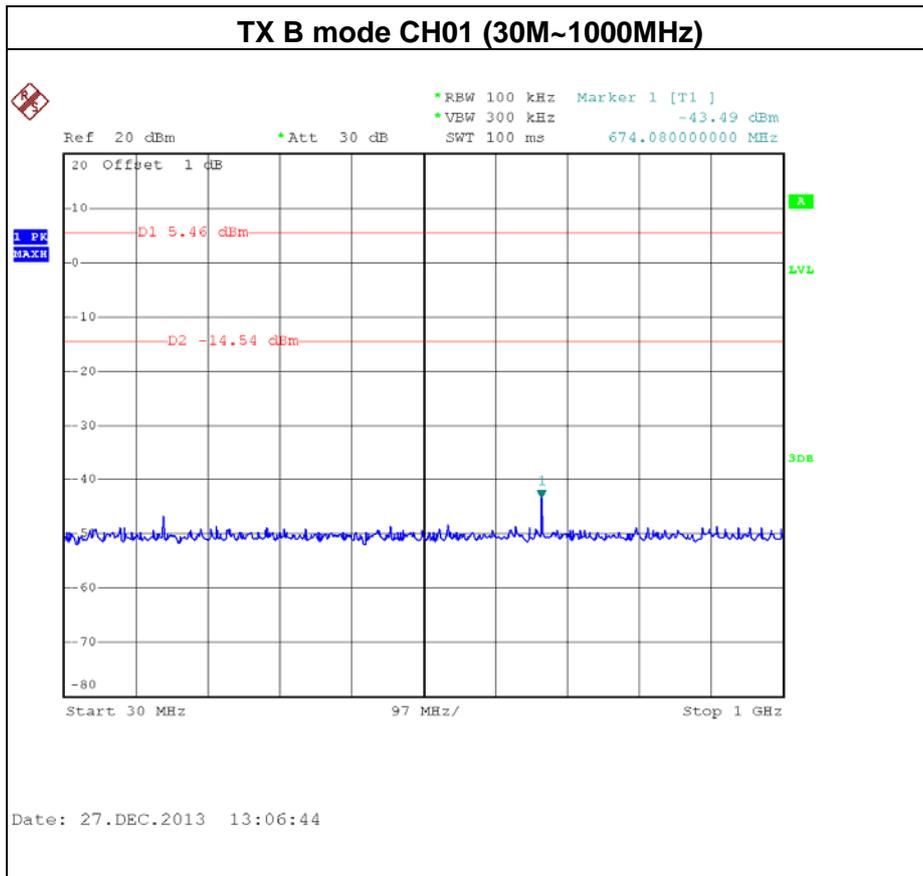
Channel of Worst Data: CH01

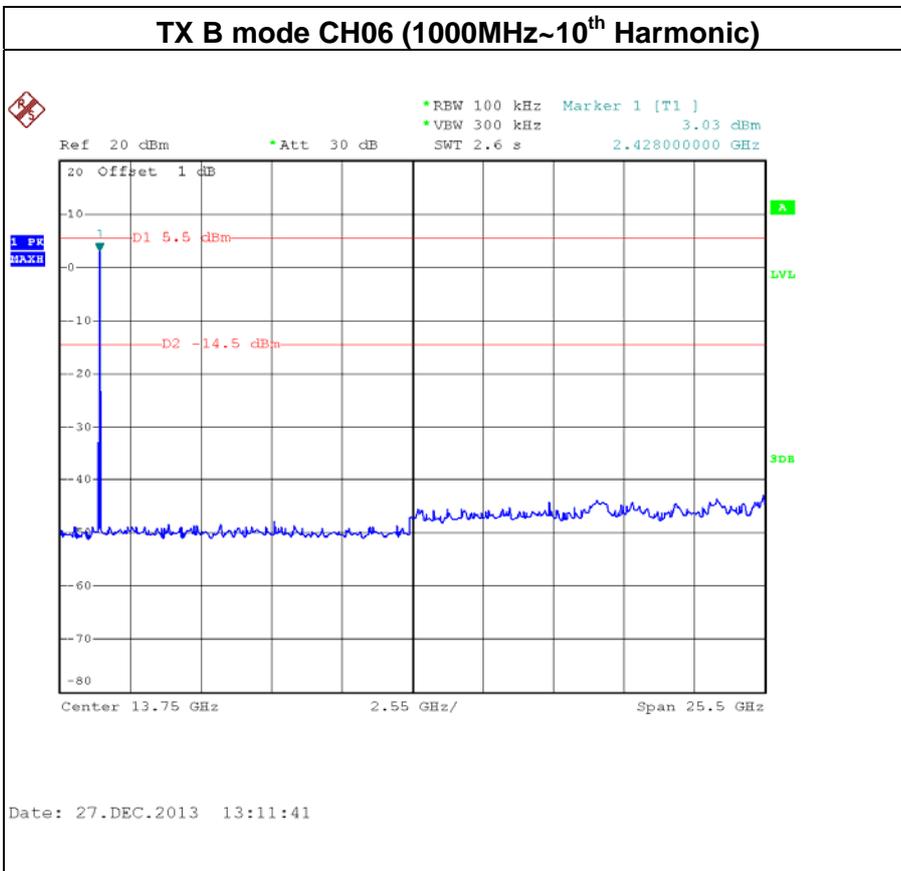
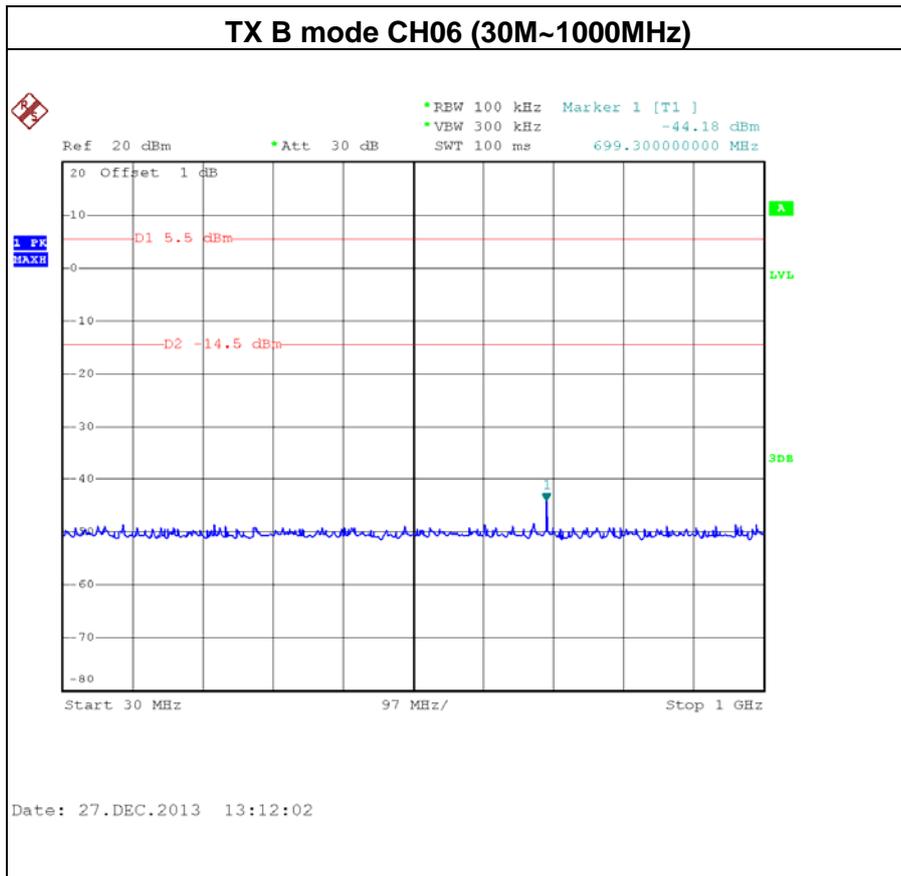
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-32.16	2491.80	-46.96

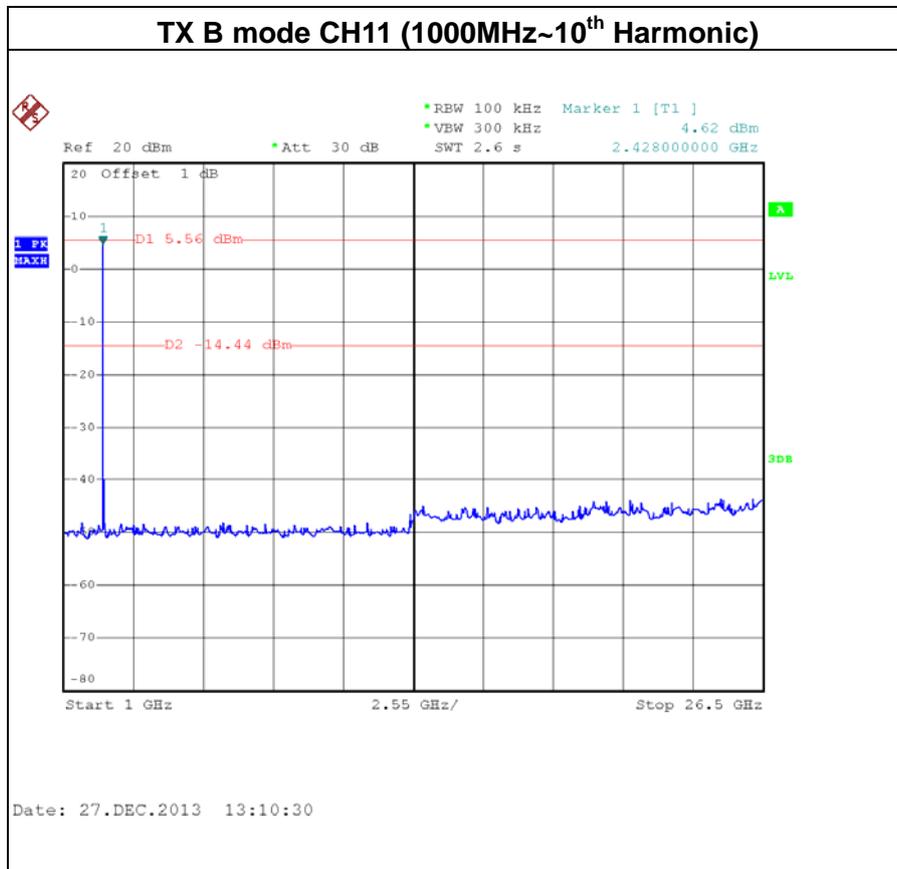
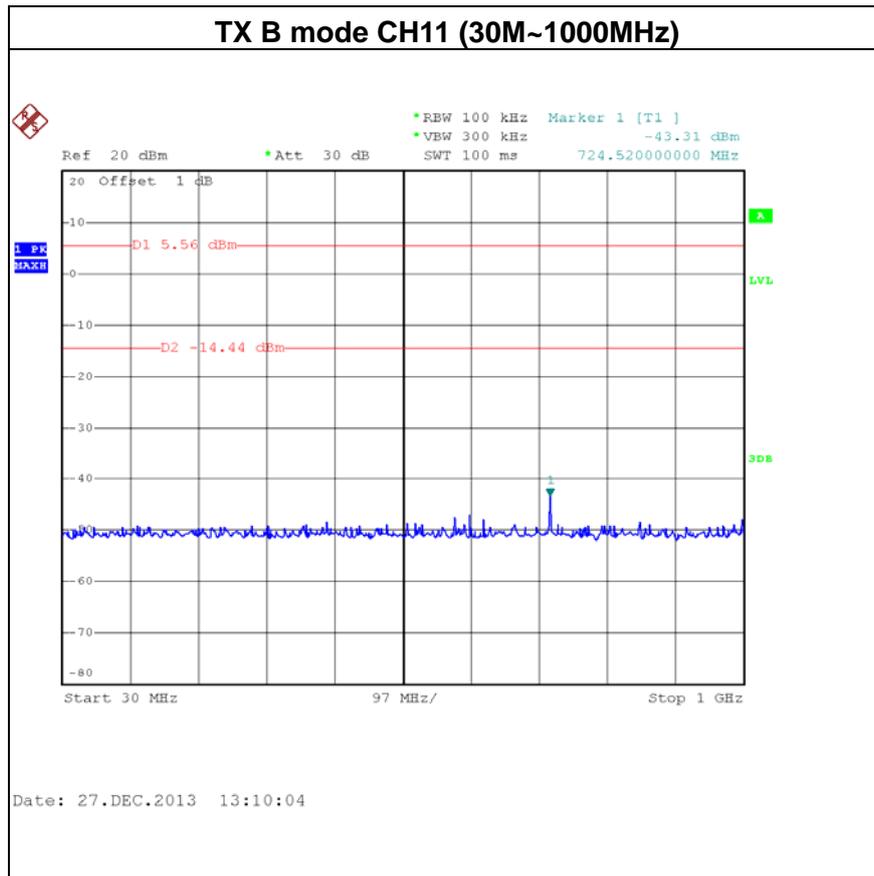
Result

In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.





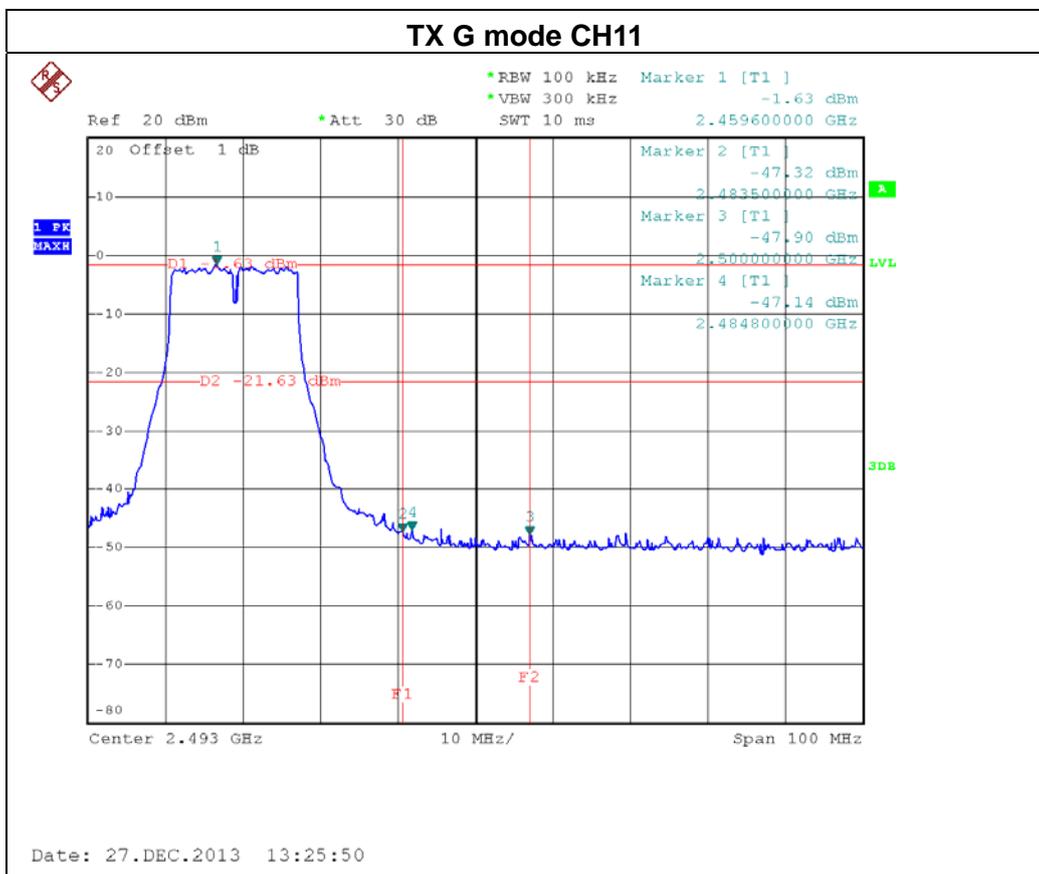
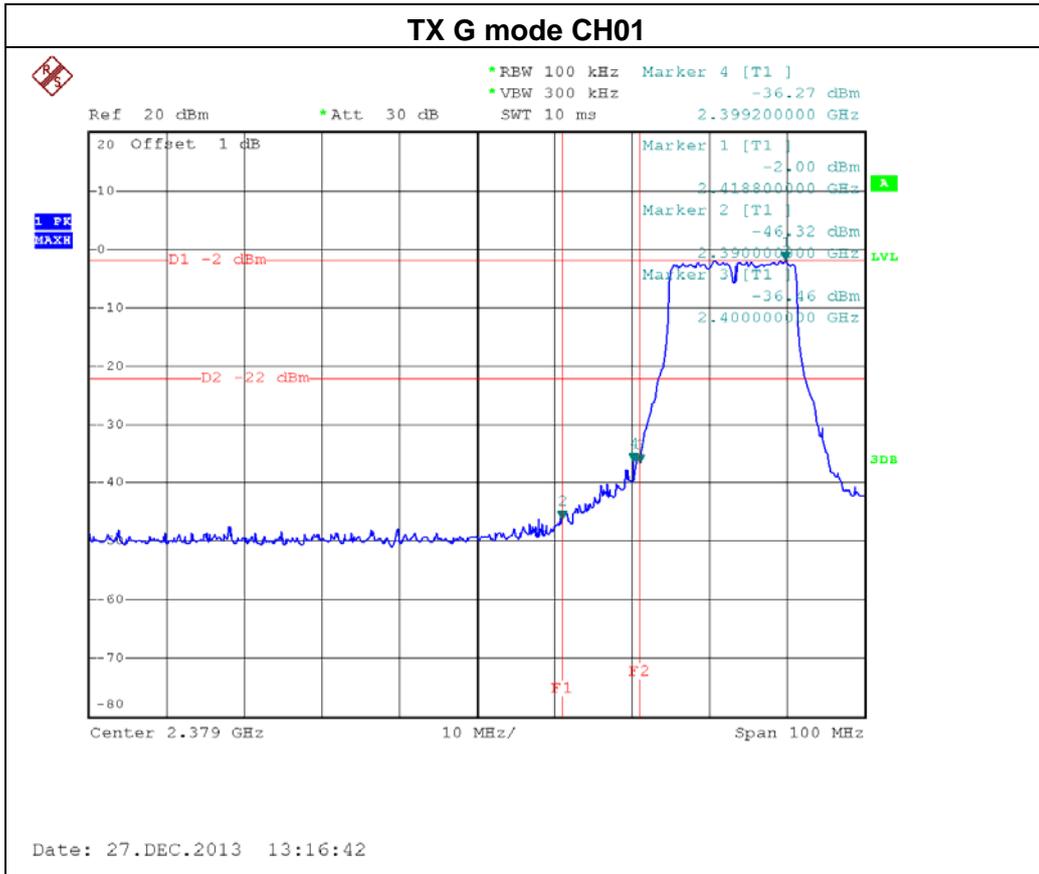


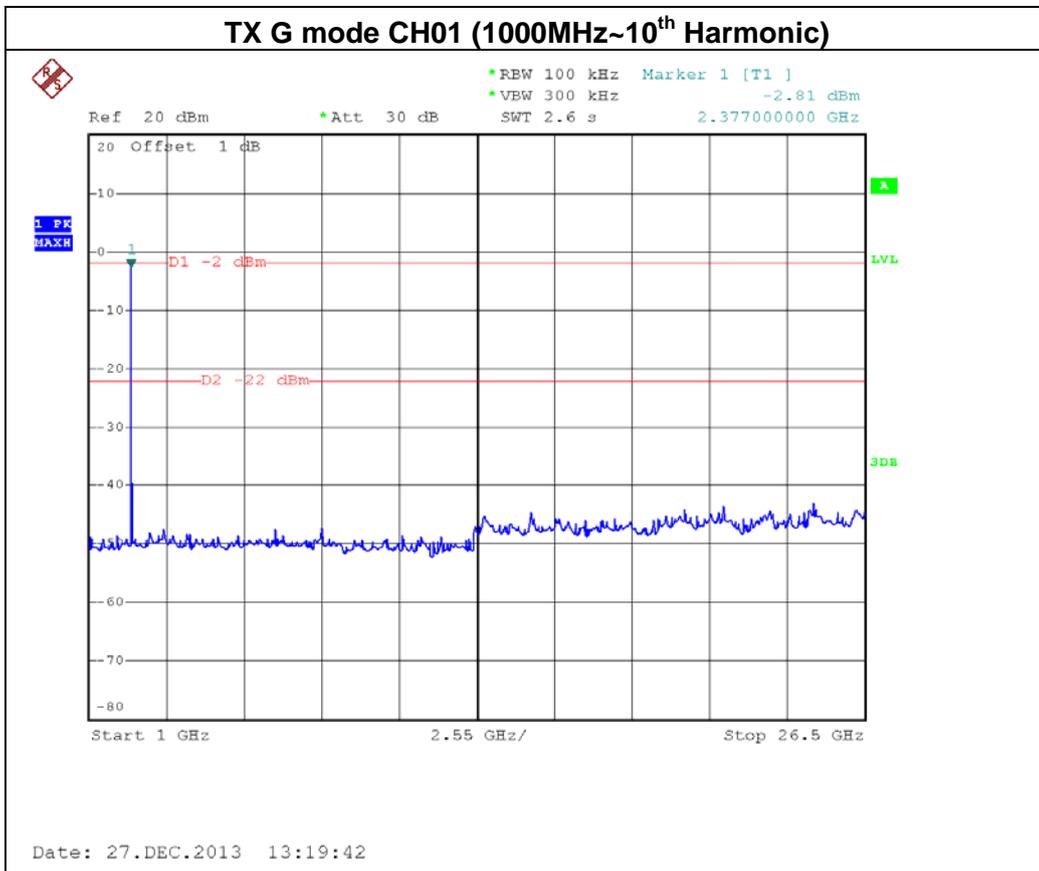
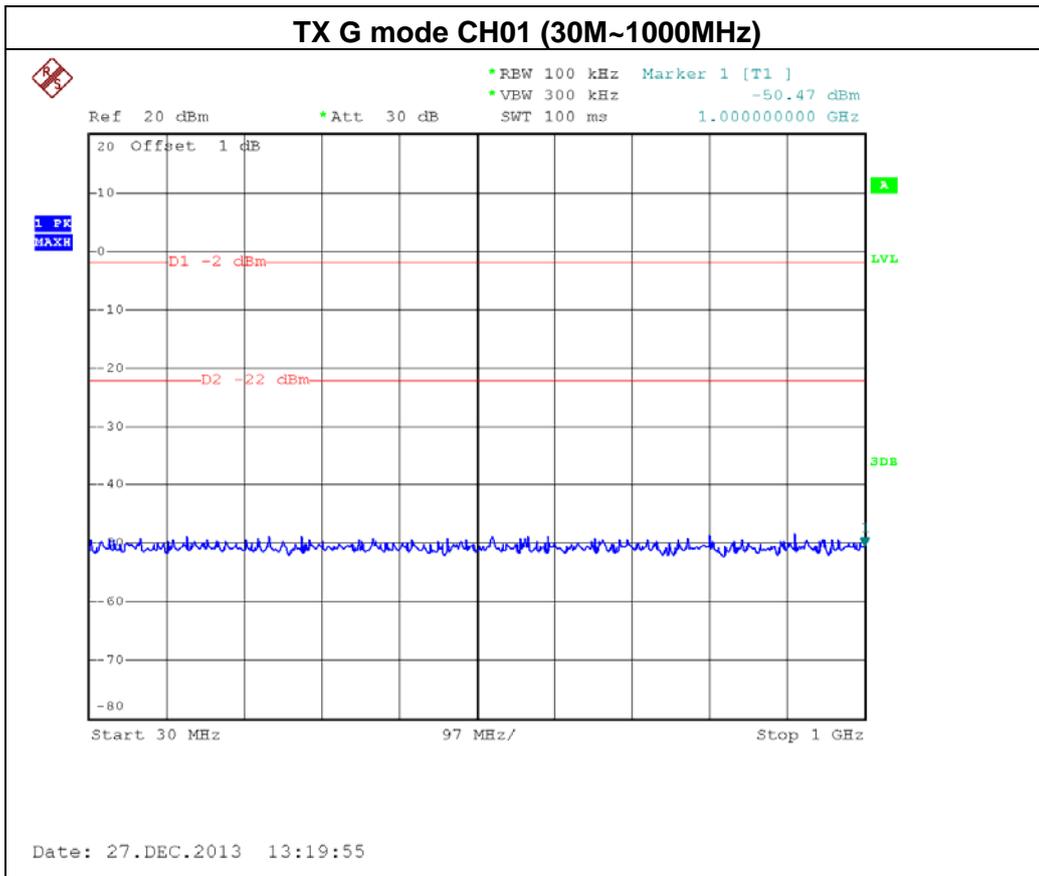


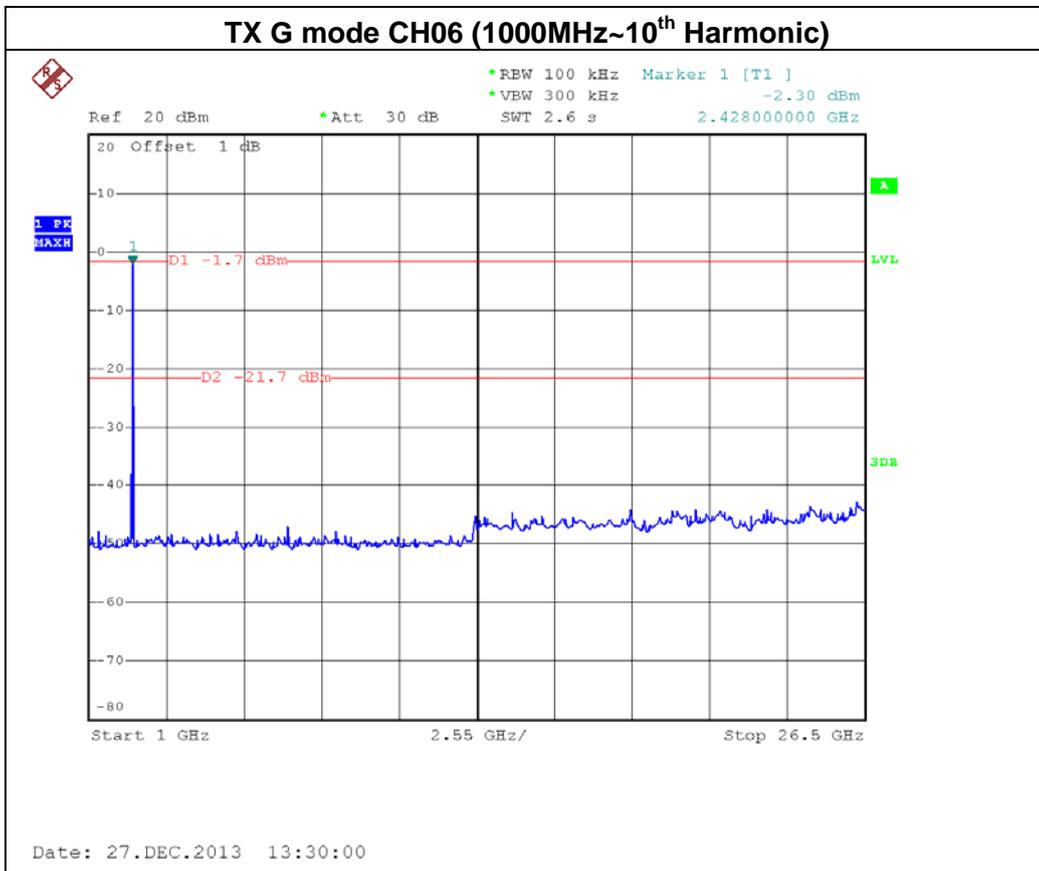
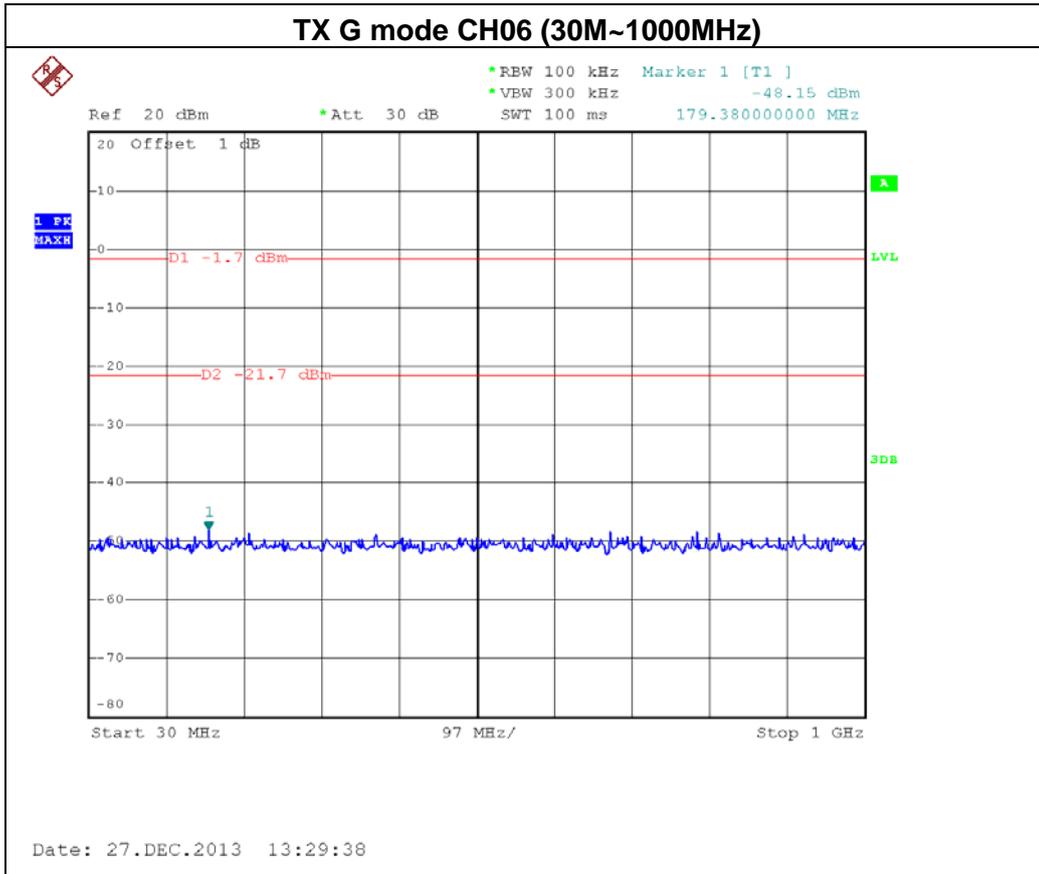


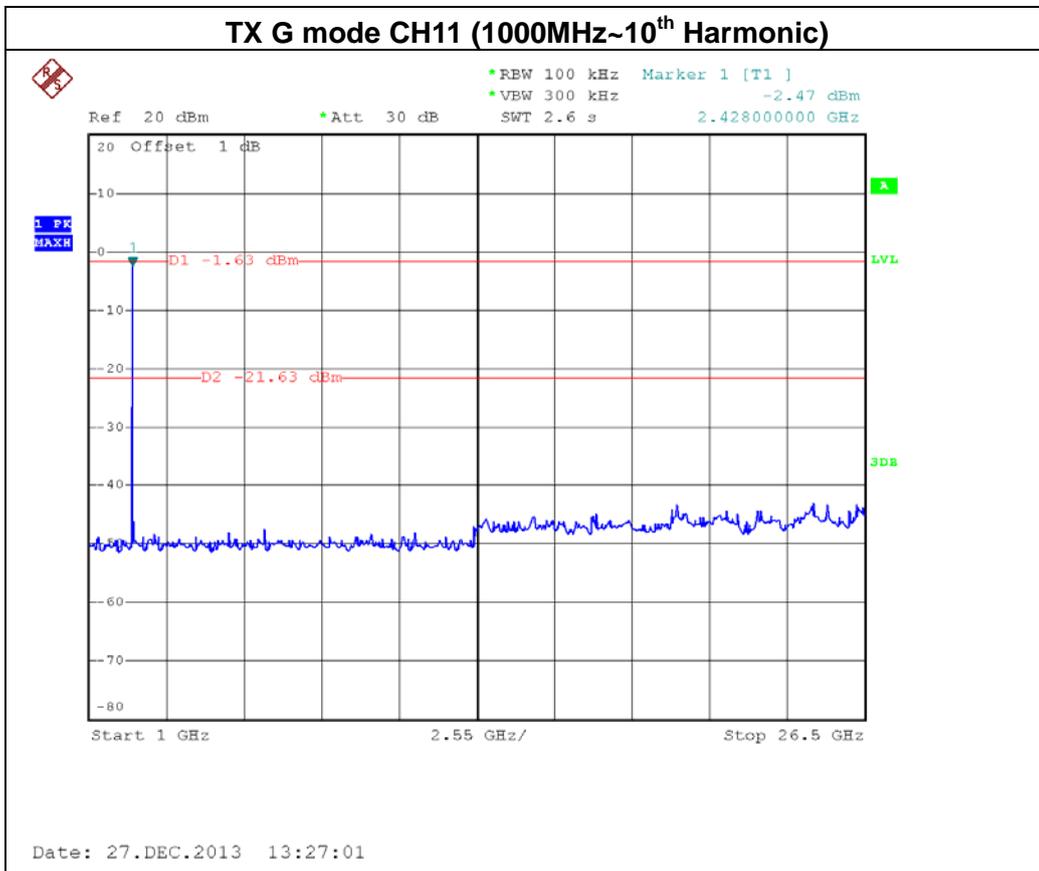
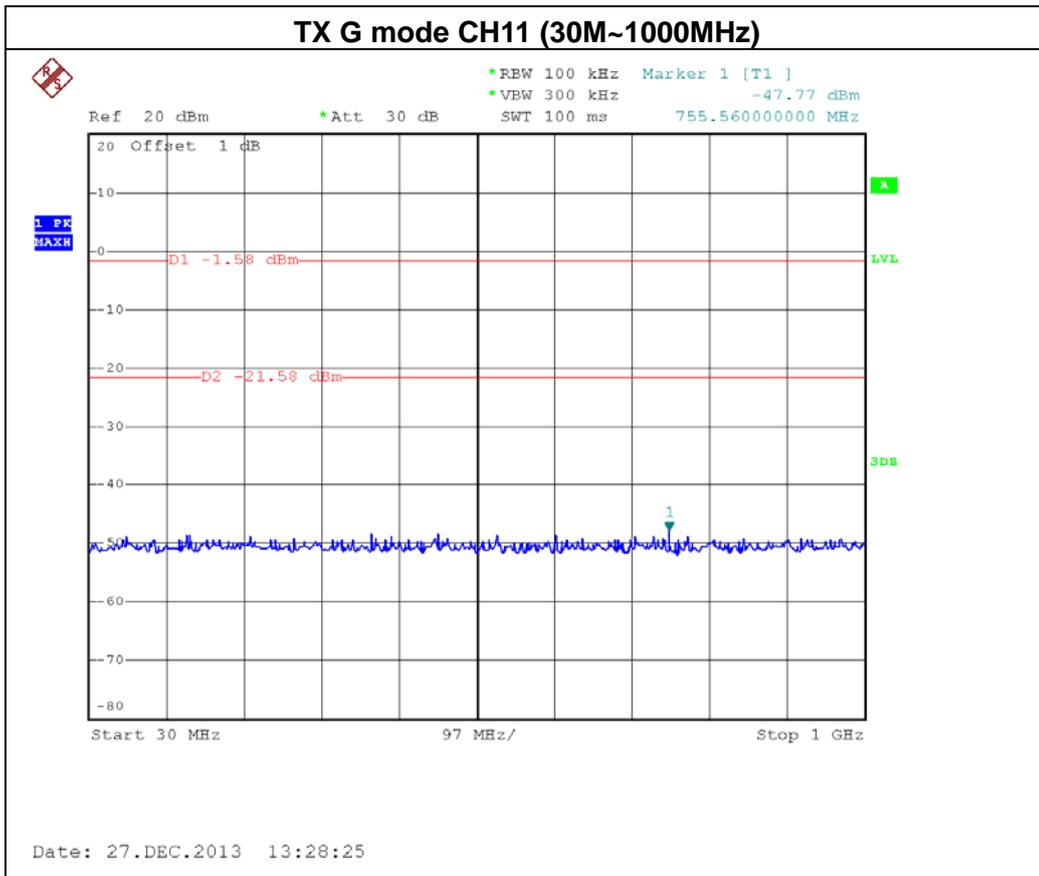
EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE / CH01, CH06 , CH11-ANT 1		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-36.46	2484.80	-47.14
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			





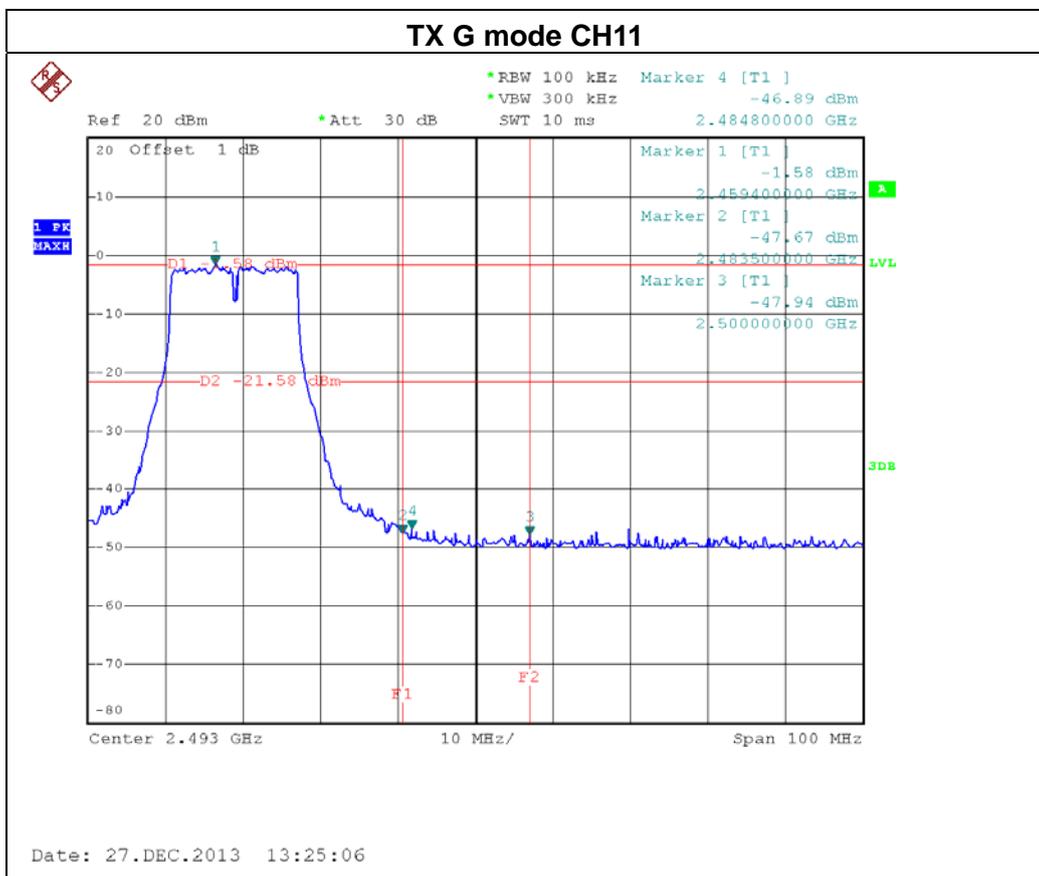
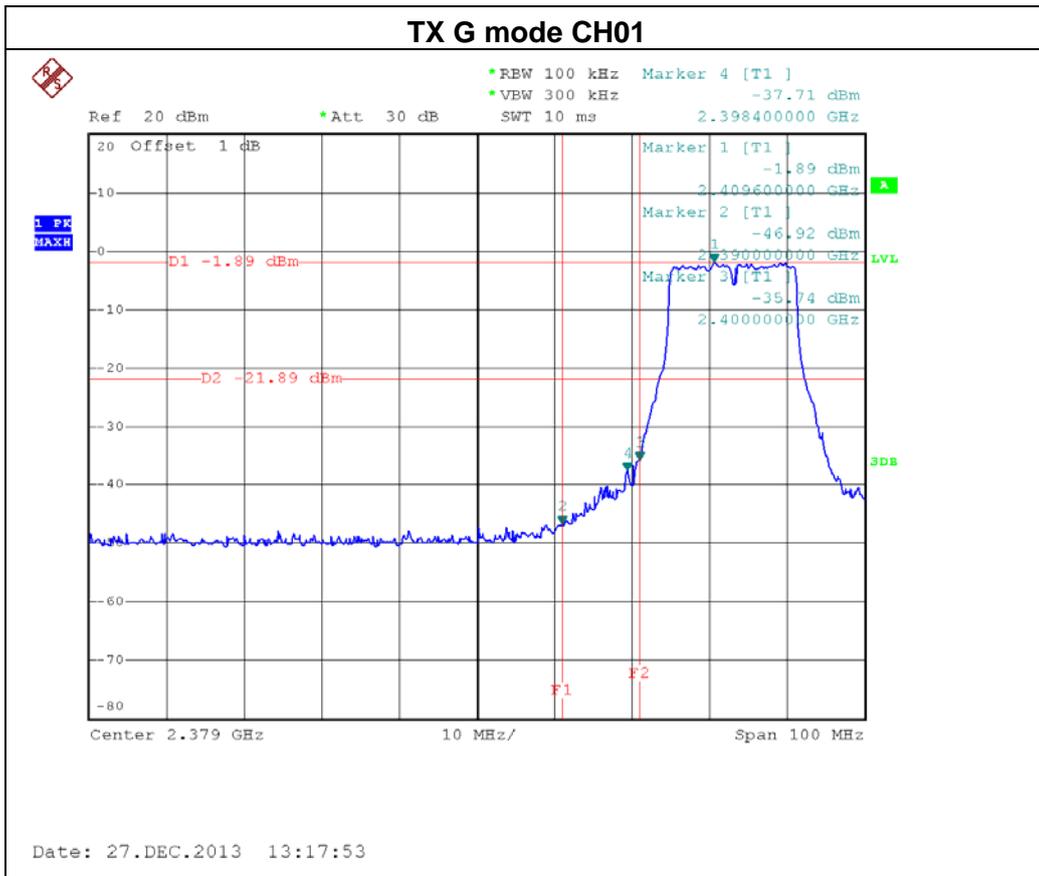


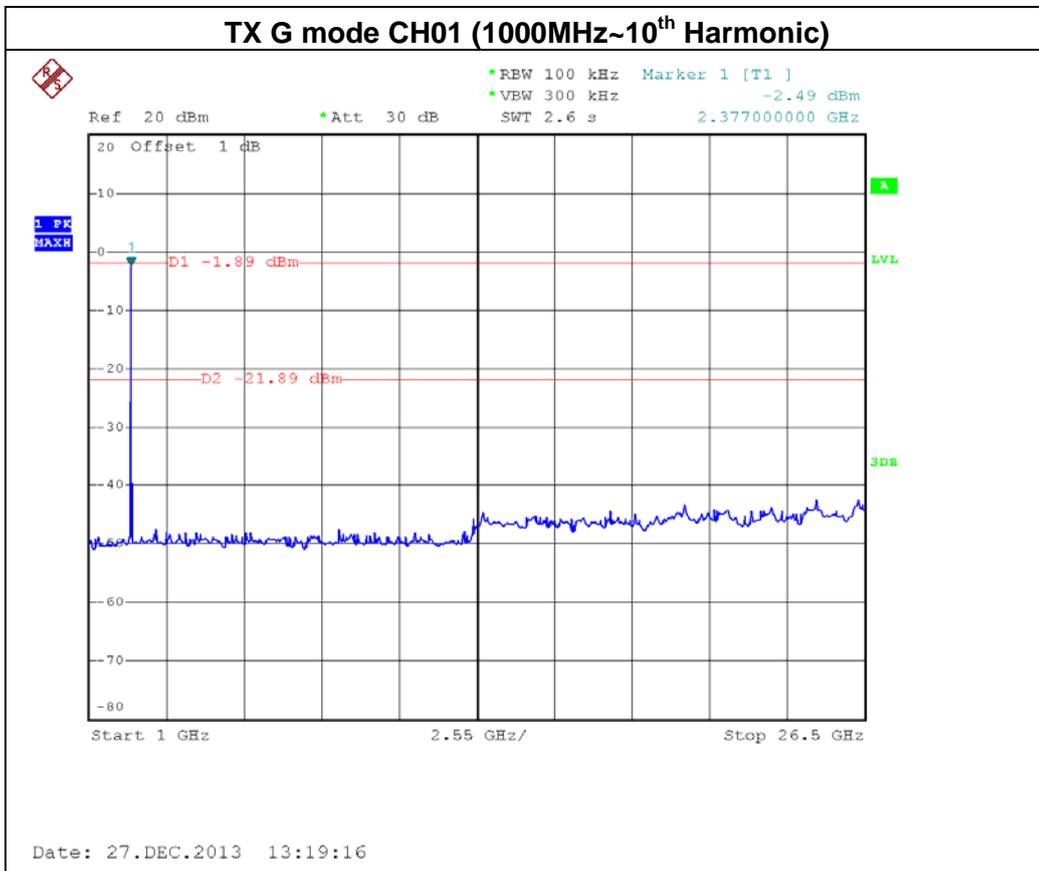
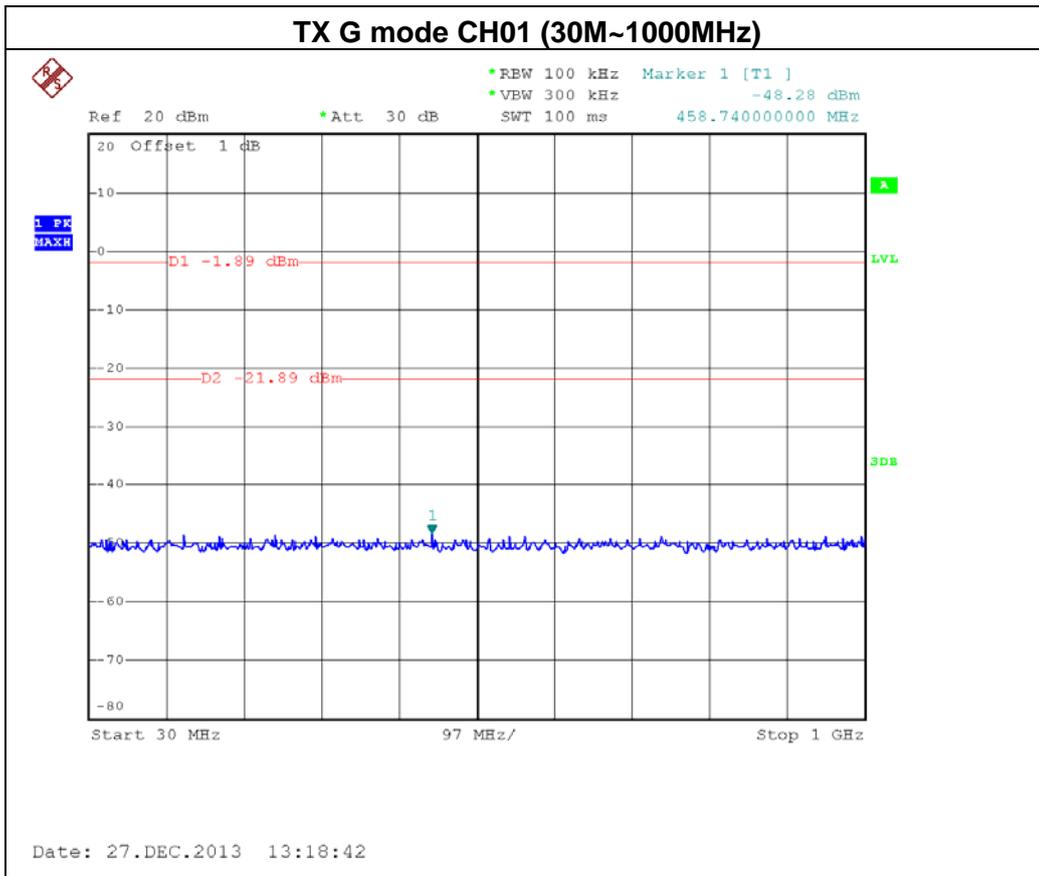


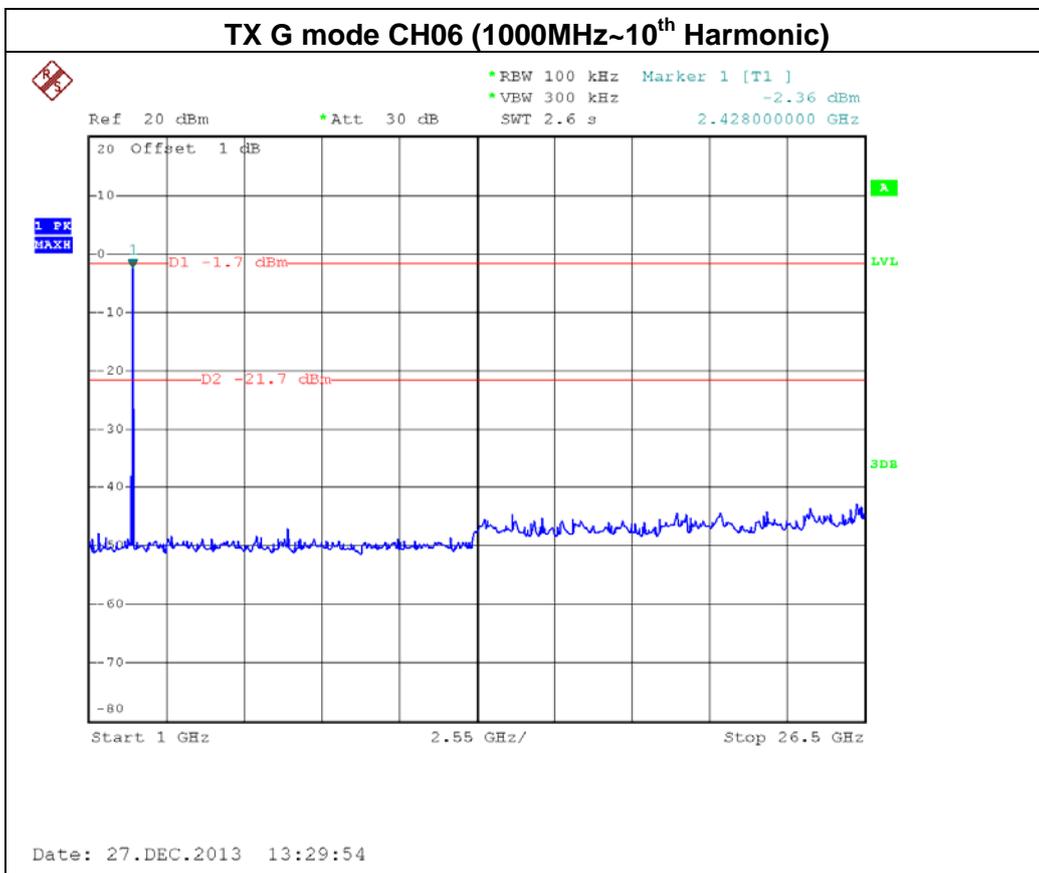
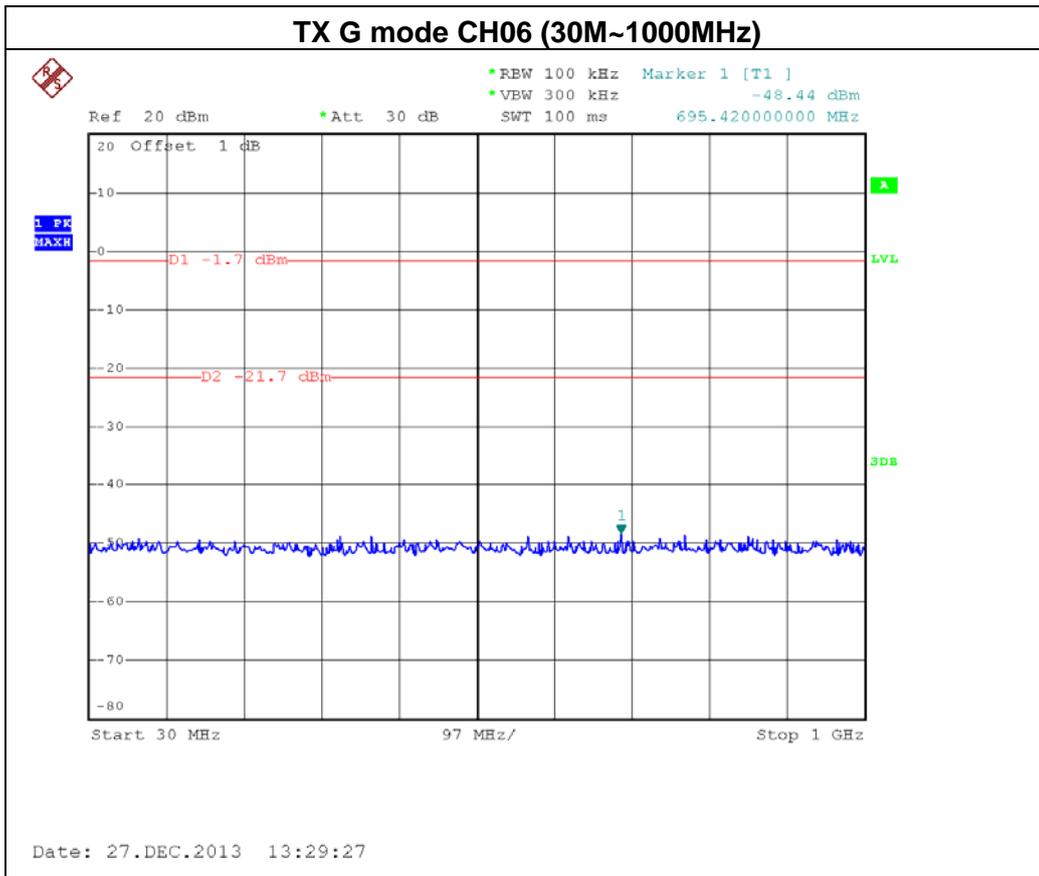


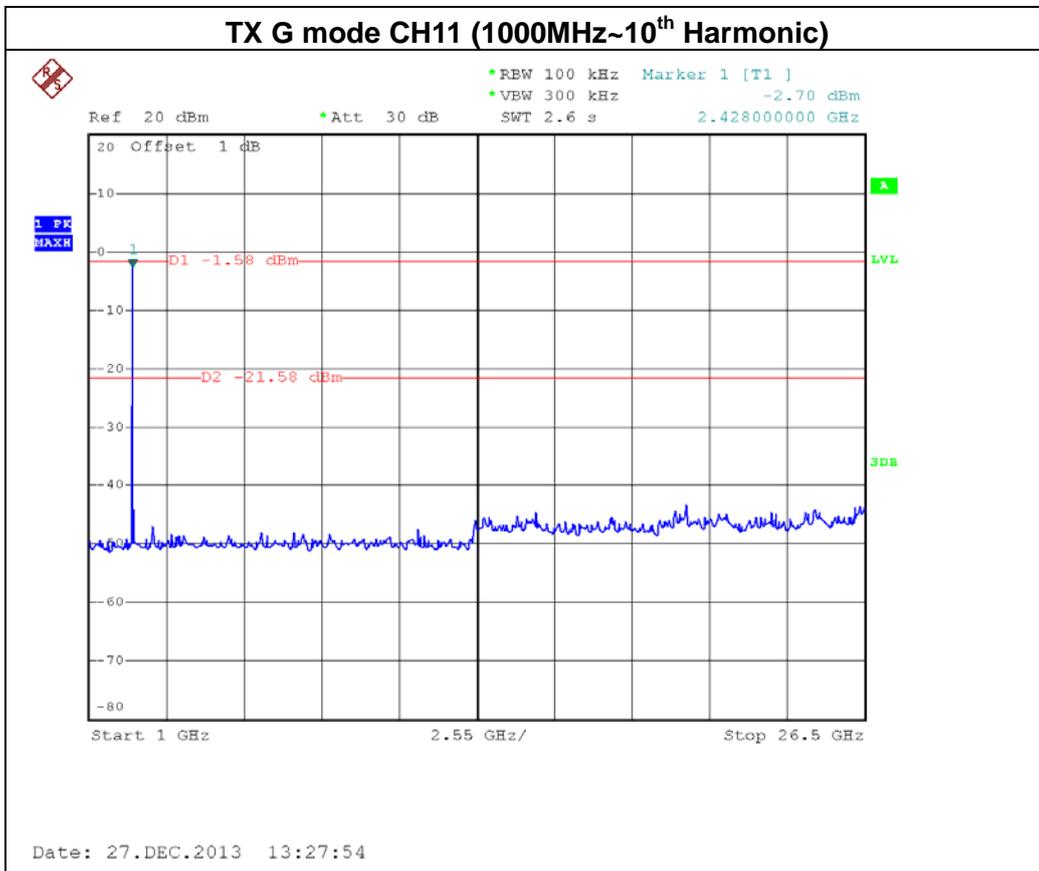
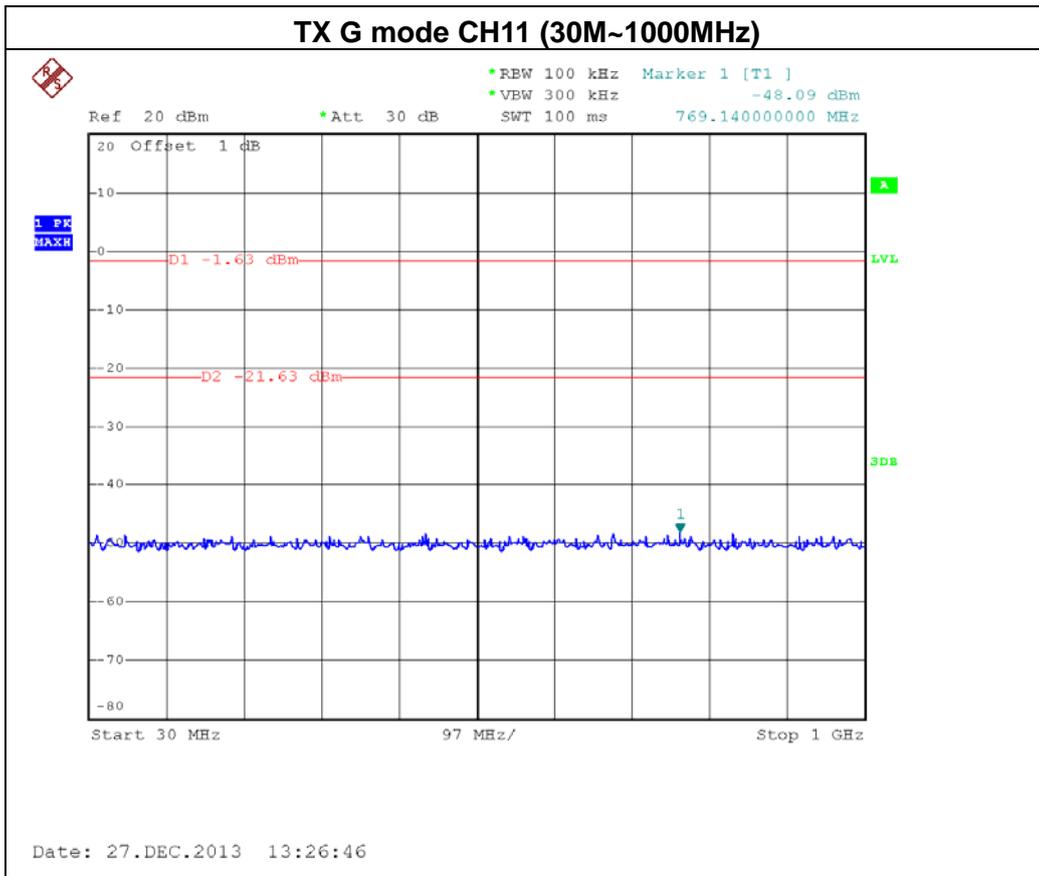
EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE / CH01, CH06 , CH11-ANT 2		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-35.74	2484.80	-46.89
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			





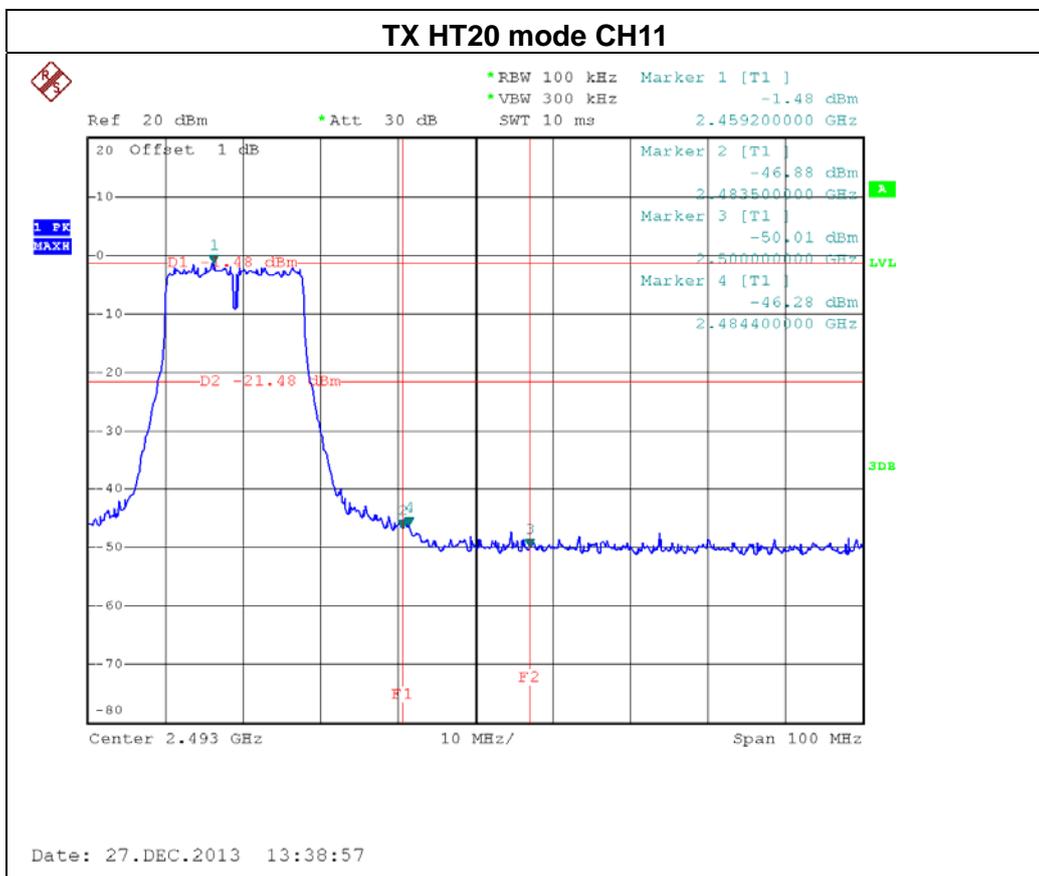
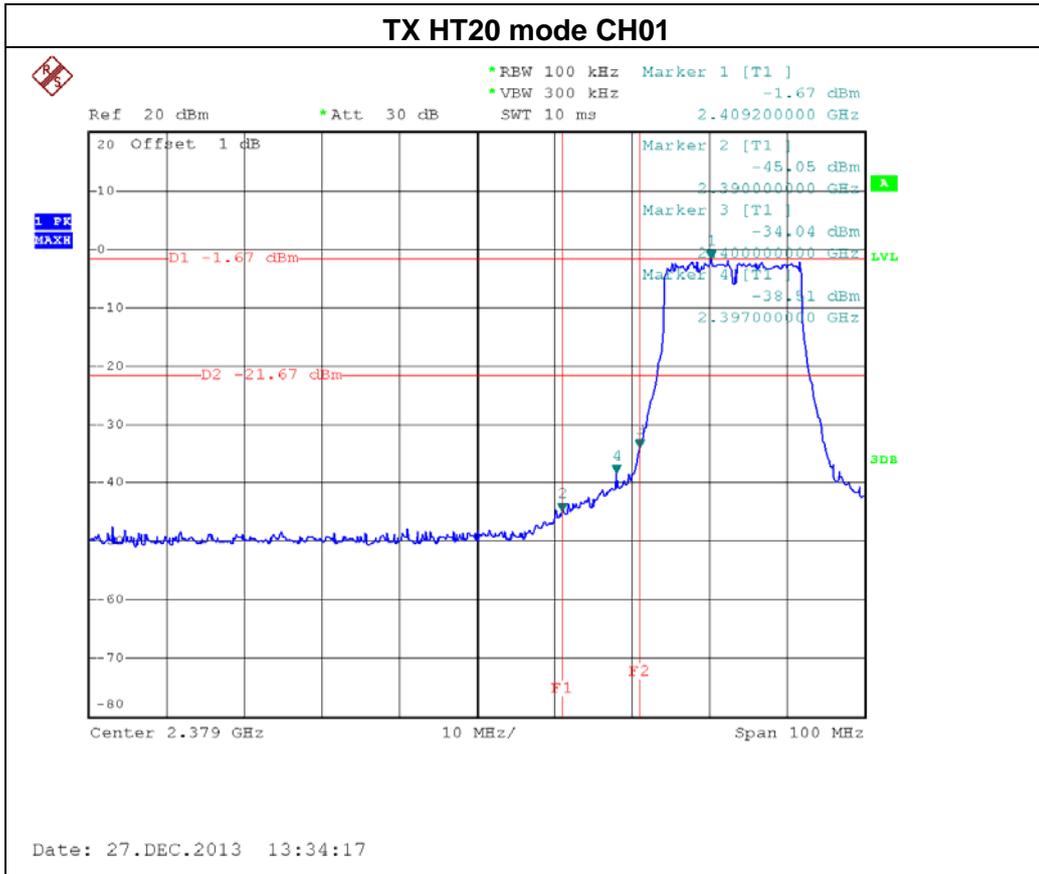


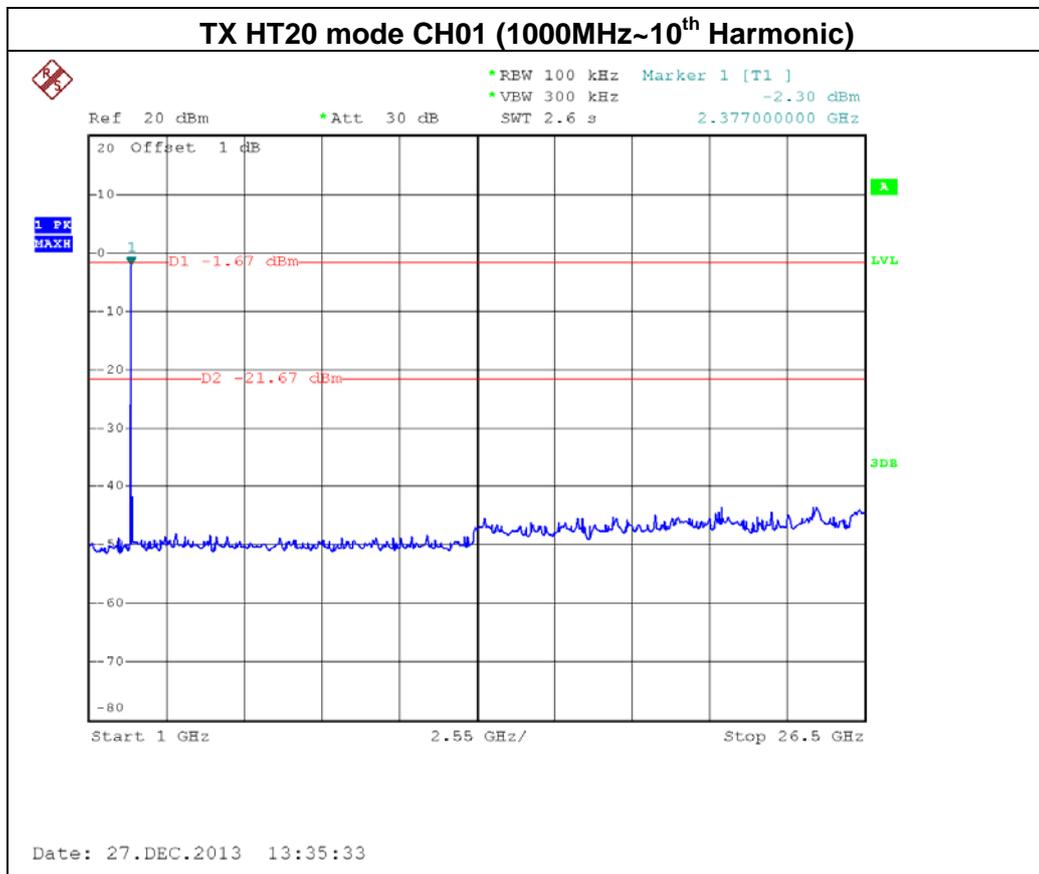
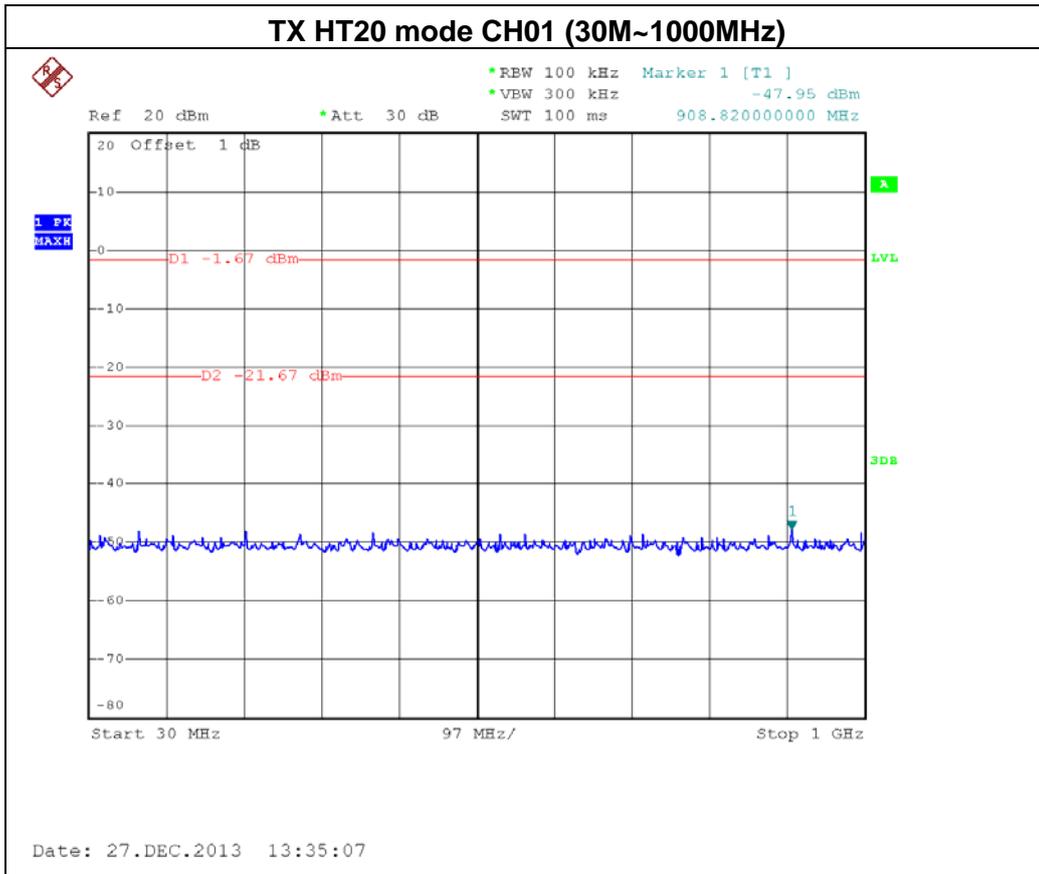


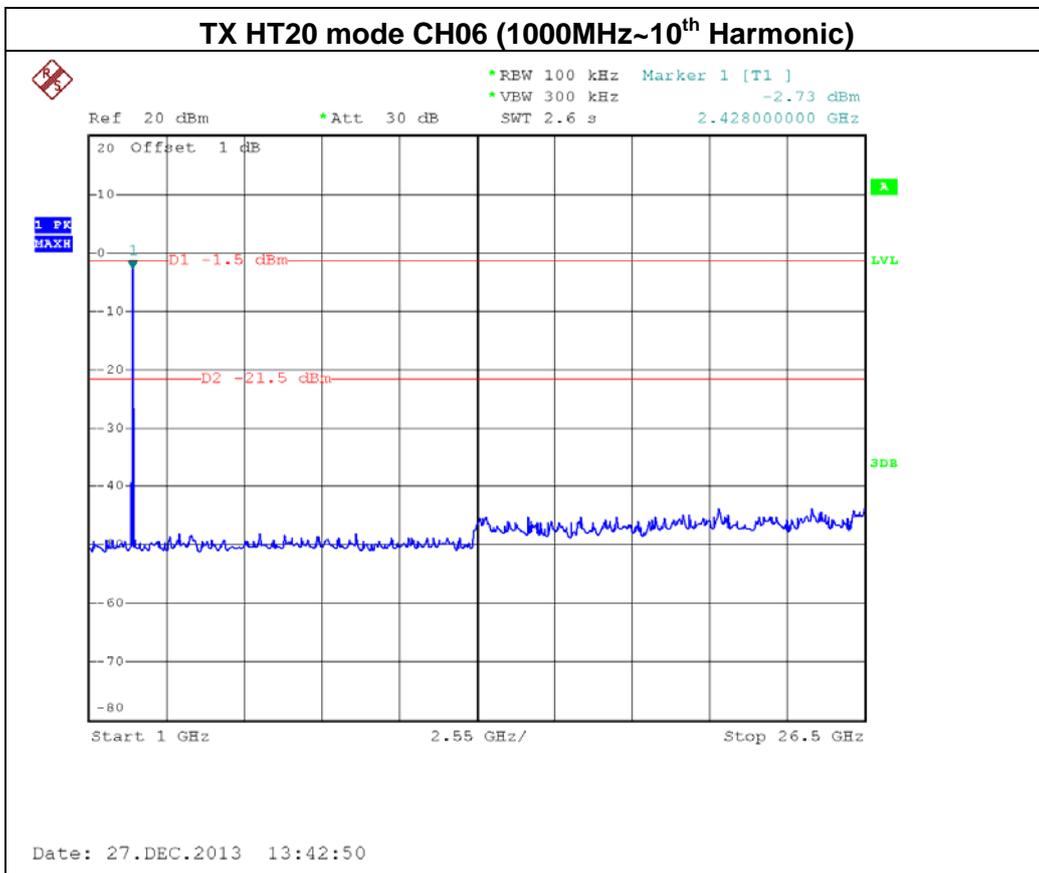
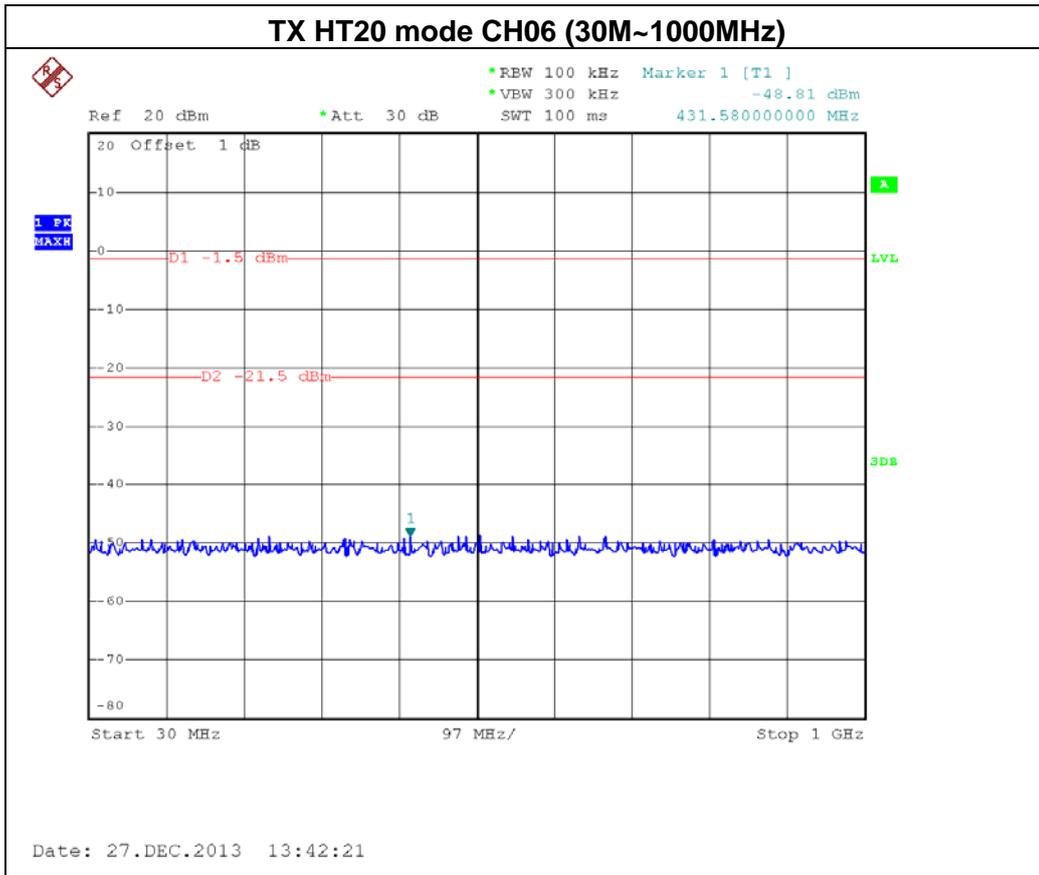


EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11-ANT 1		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-34.04	2484.40	-46.28
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			





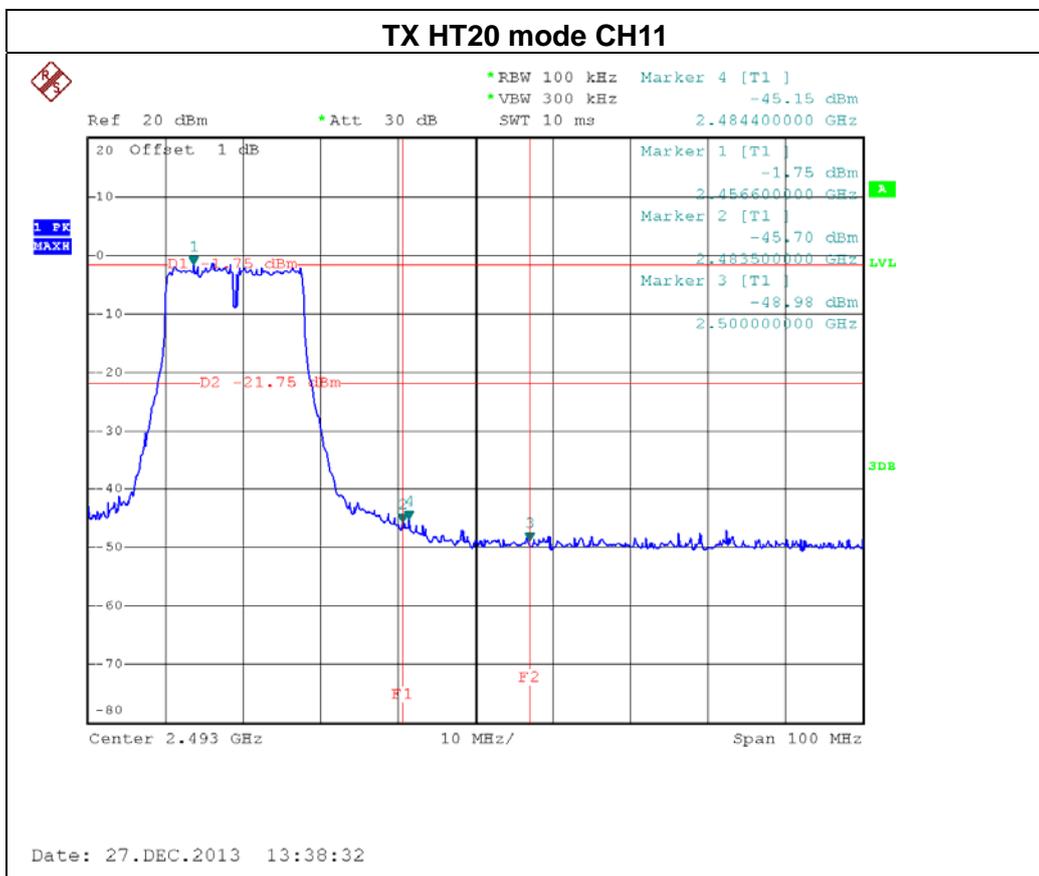
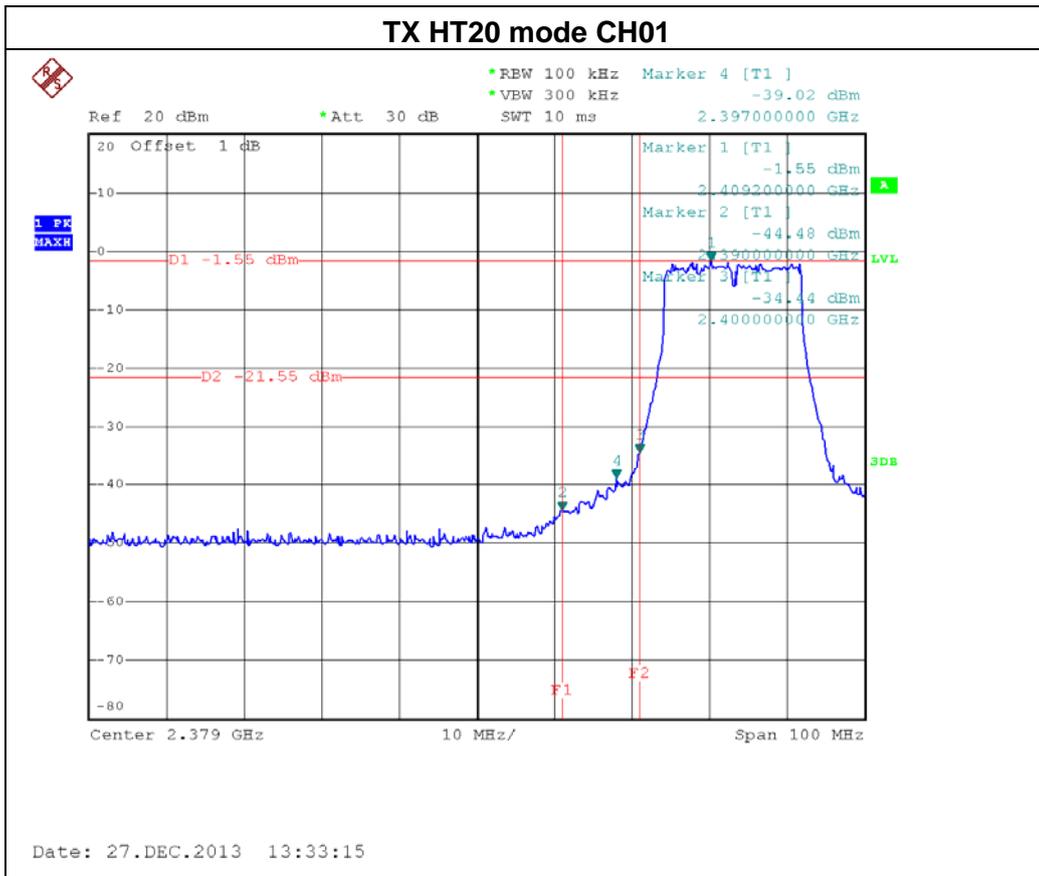


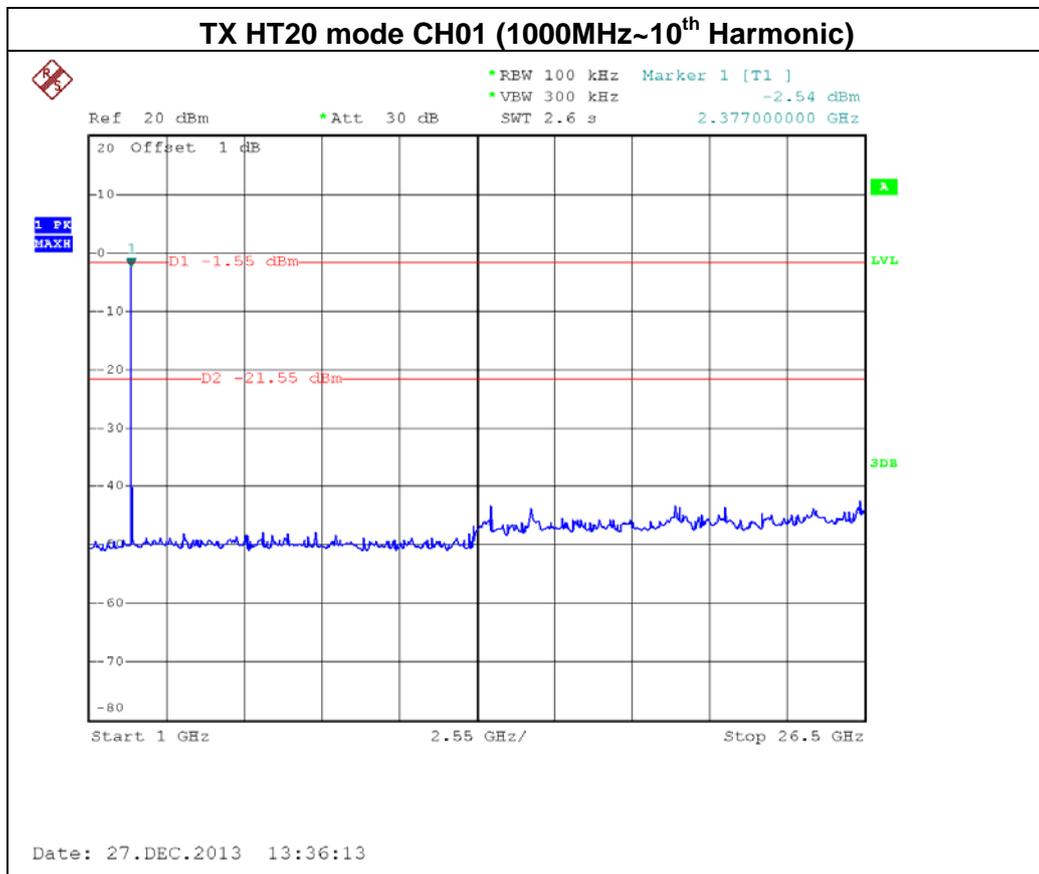
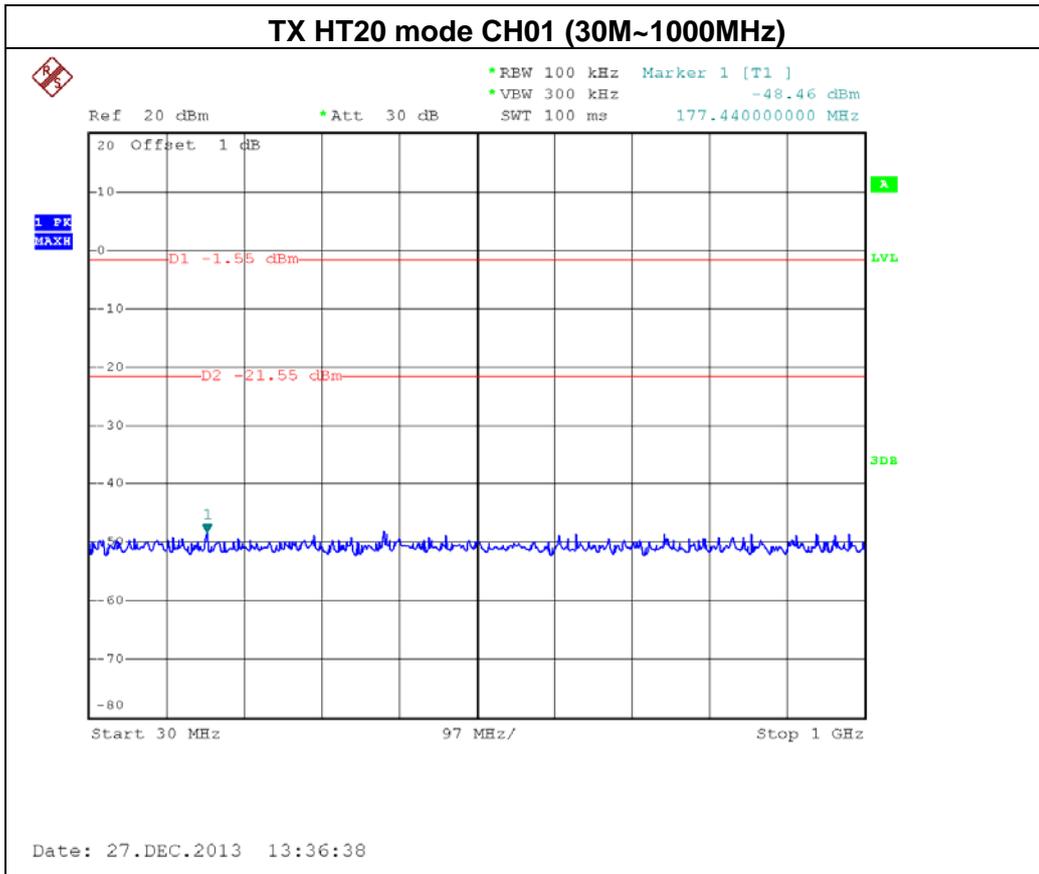




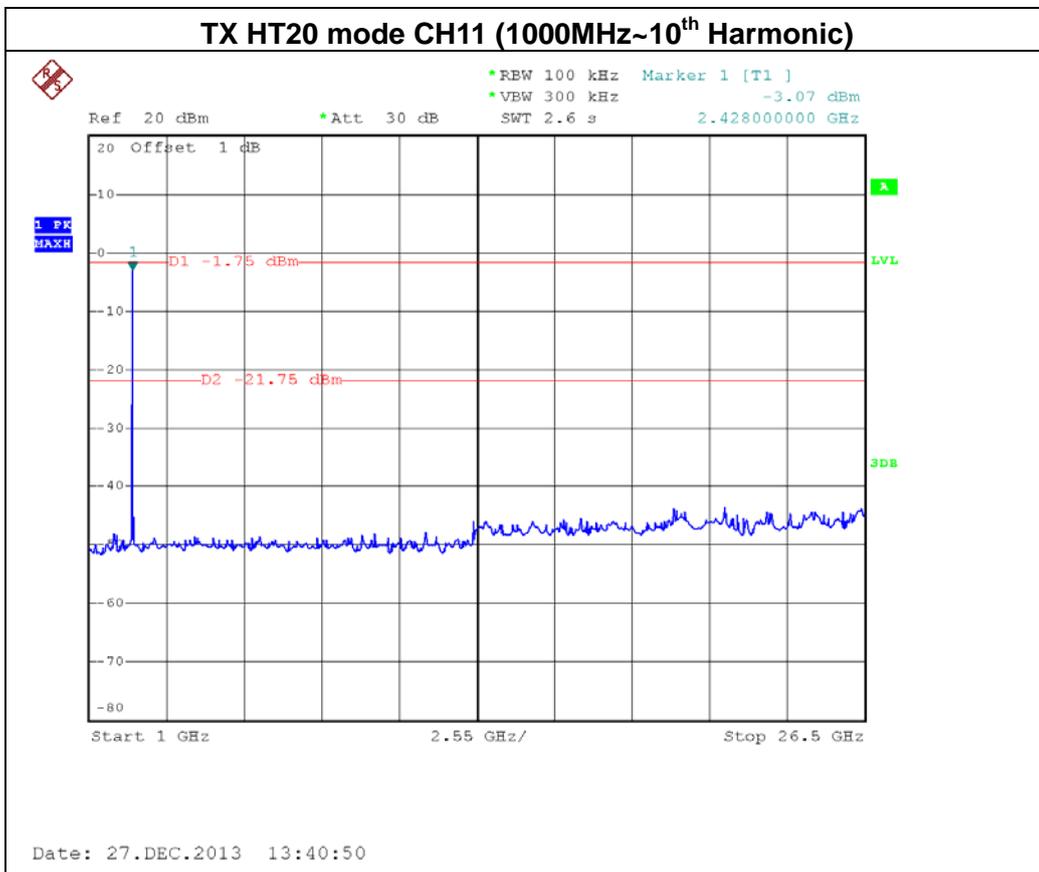
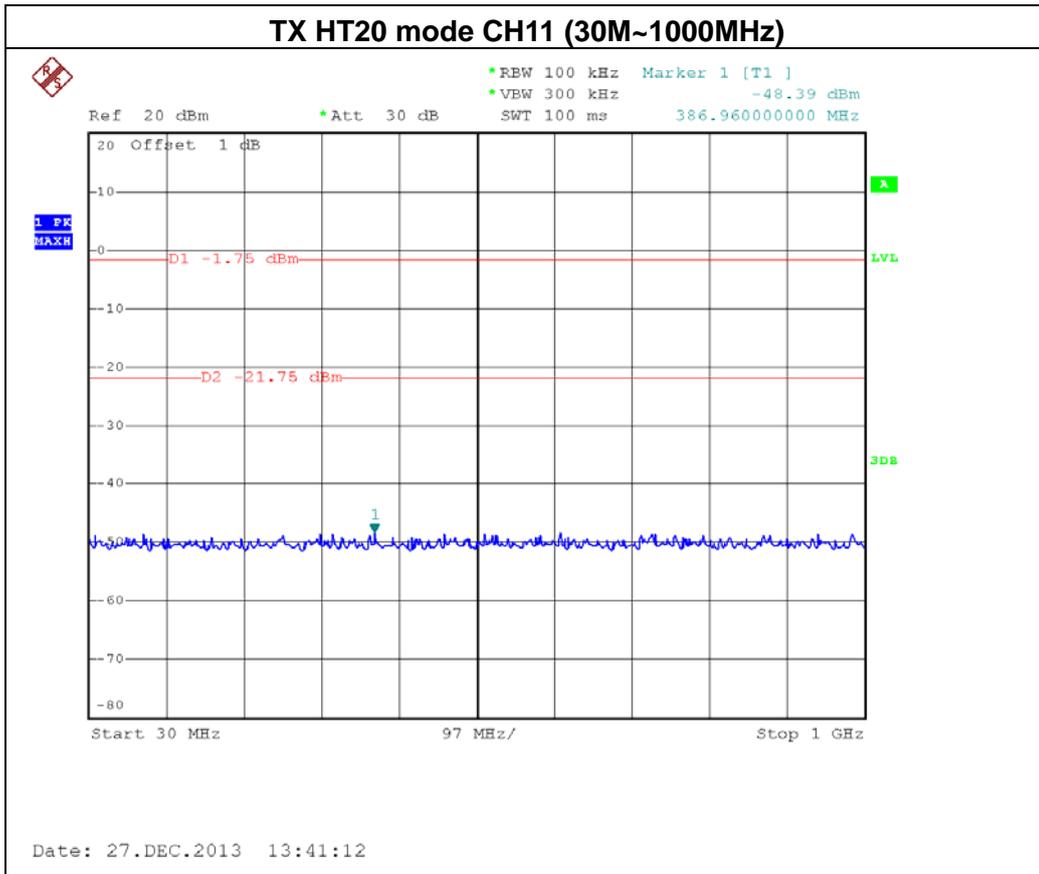
EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11-ANT 2		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-34.44	2484.40	-45.15
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			









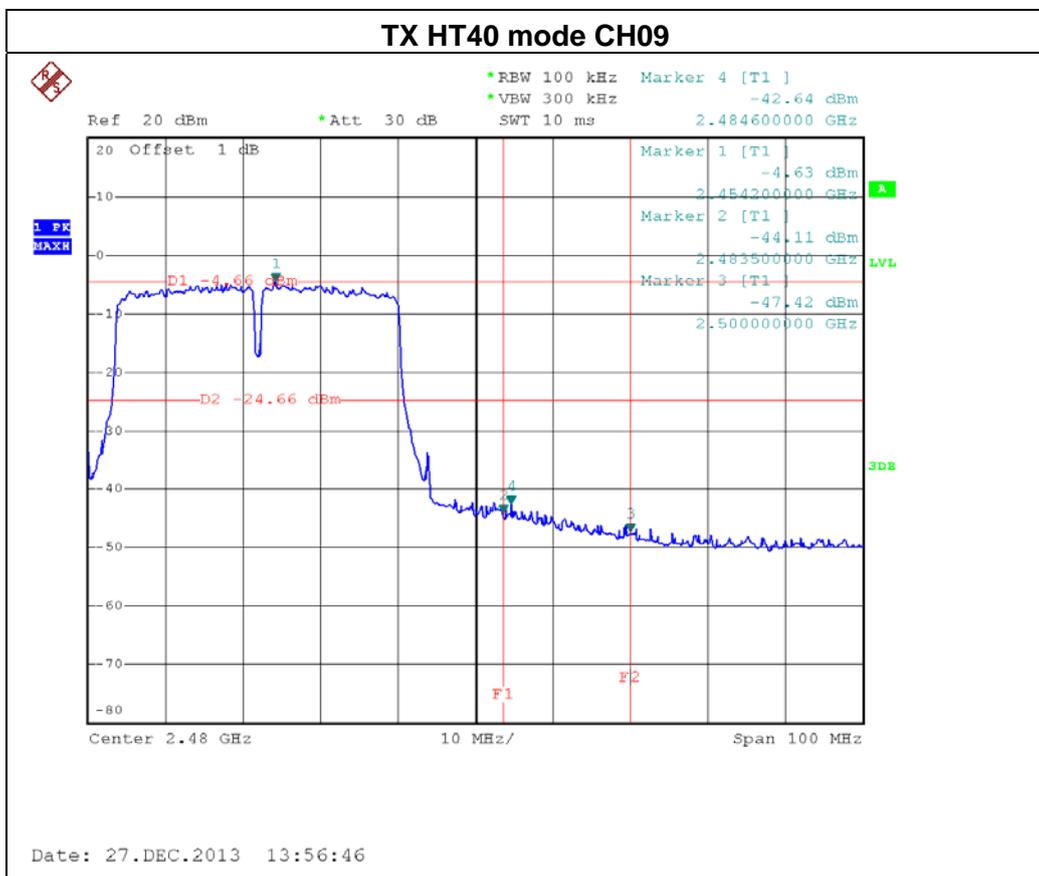
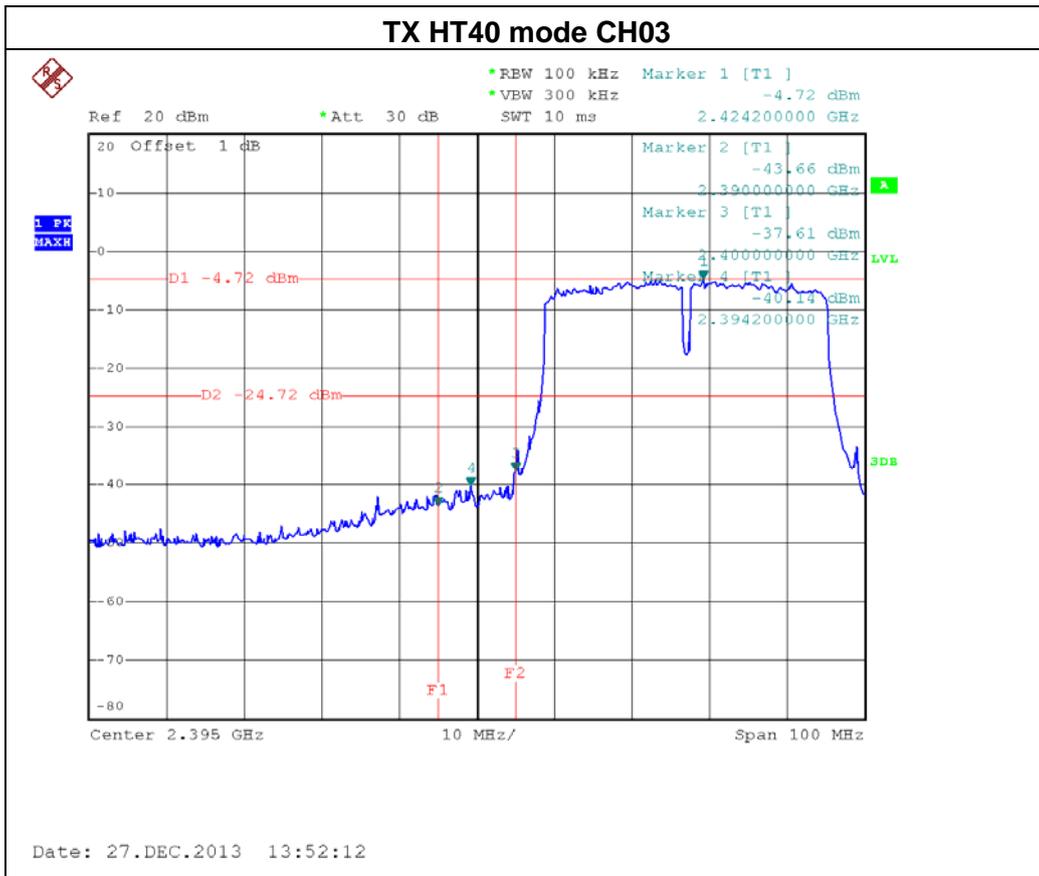


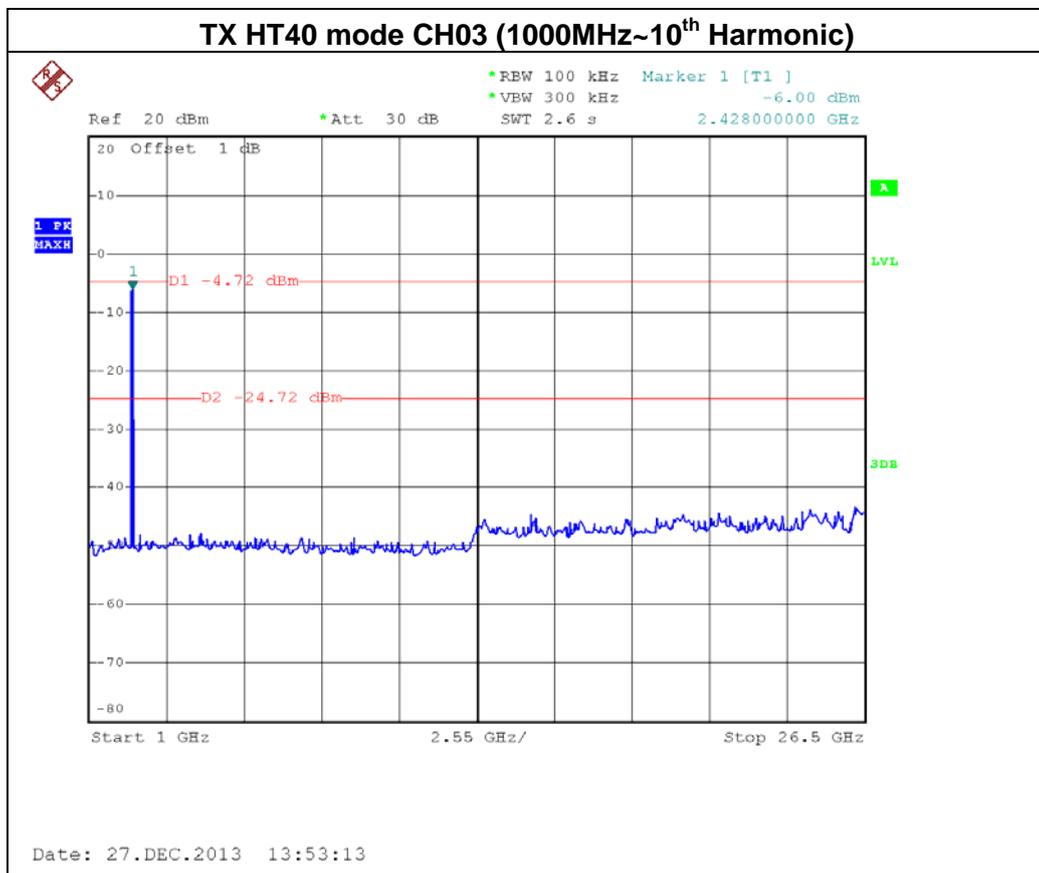
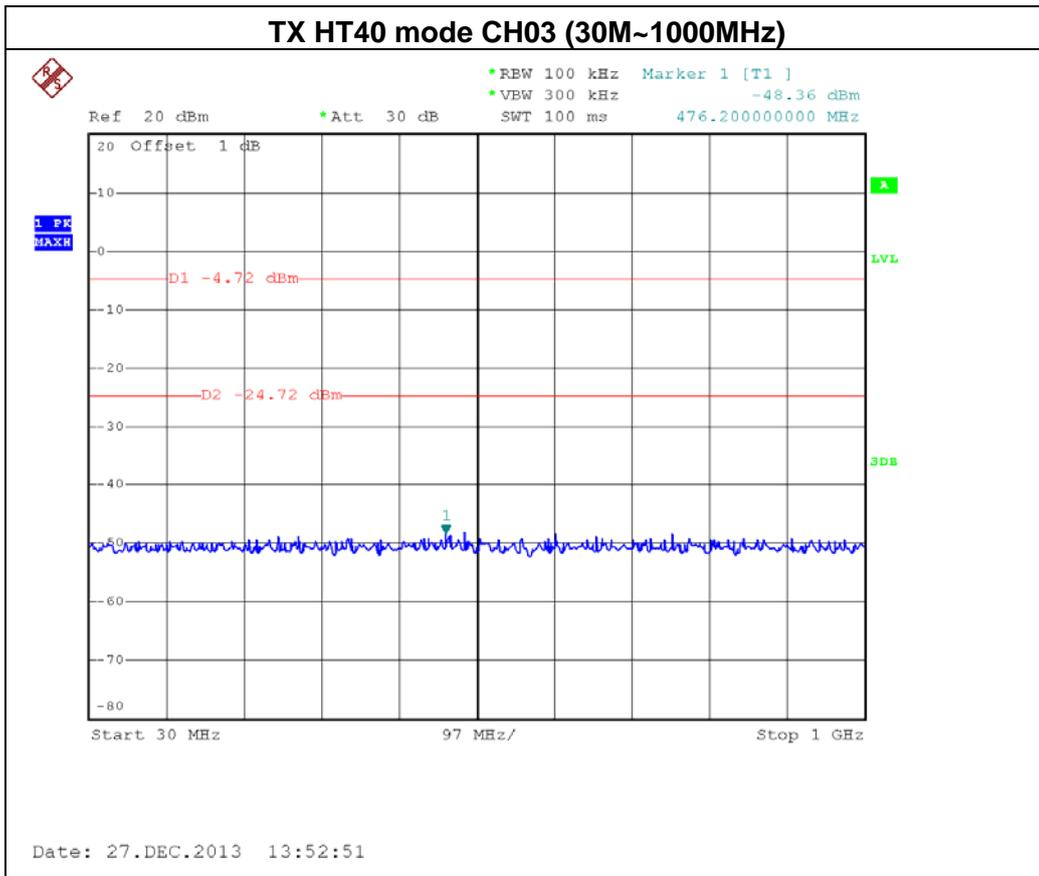
EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09-ANT 1		

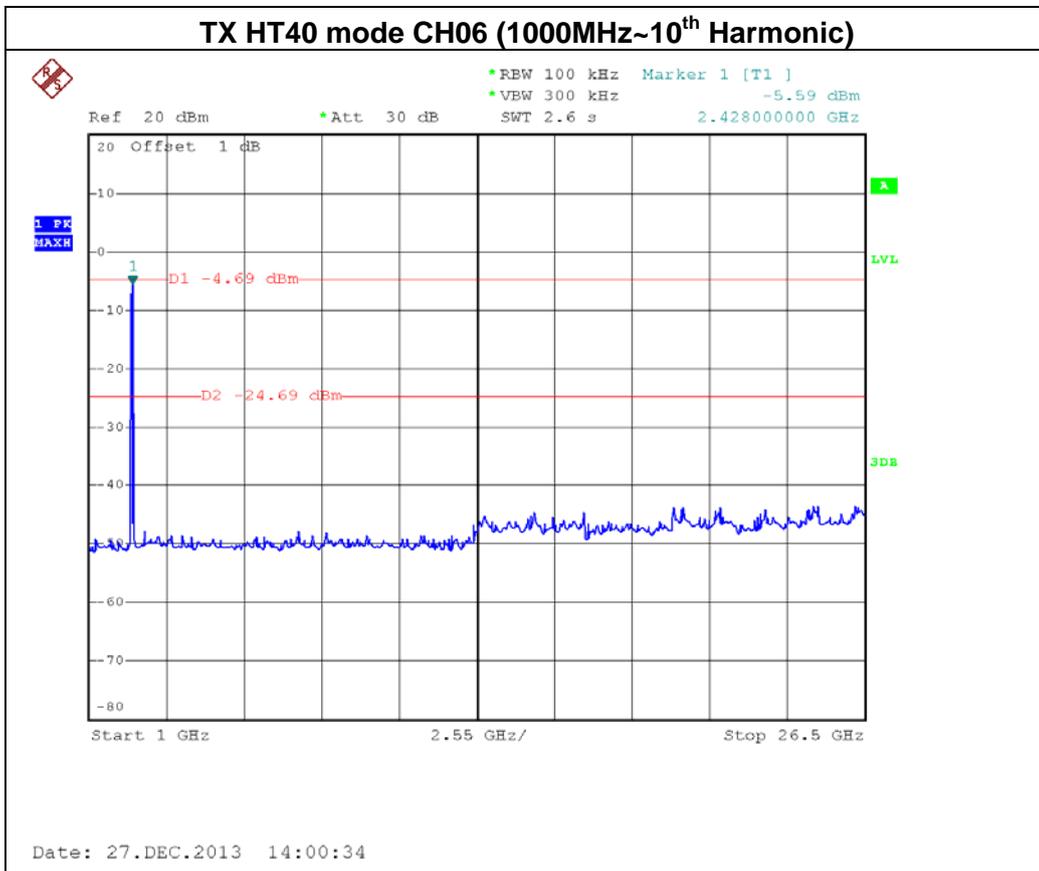
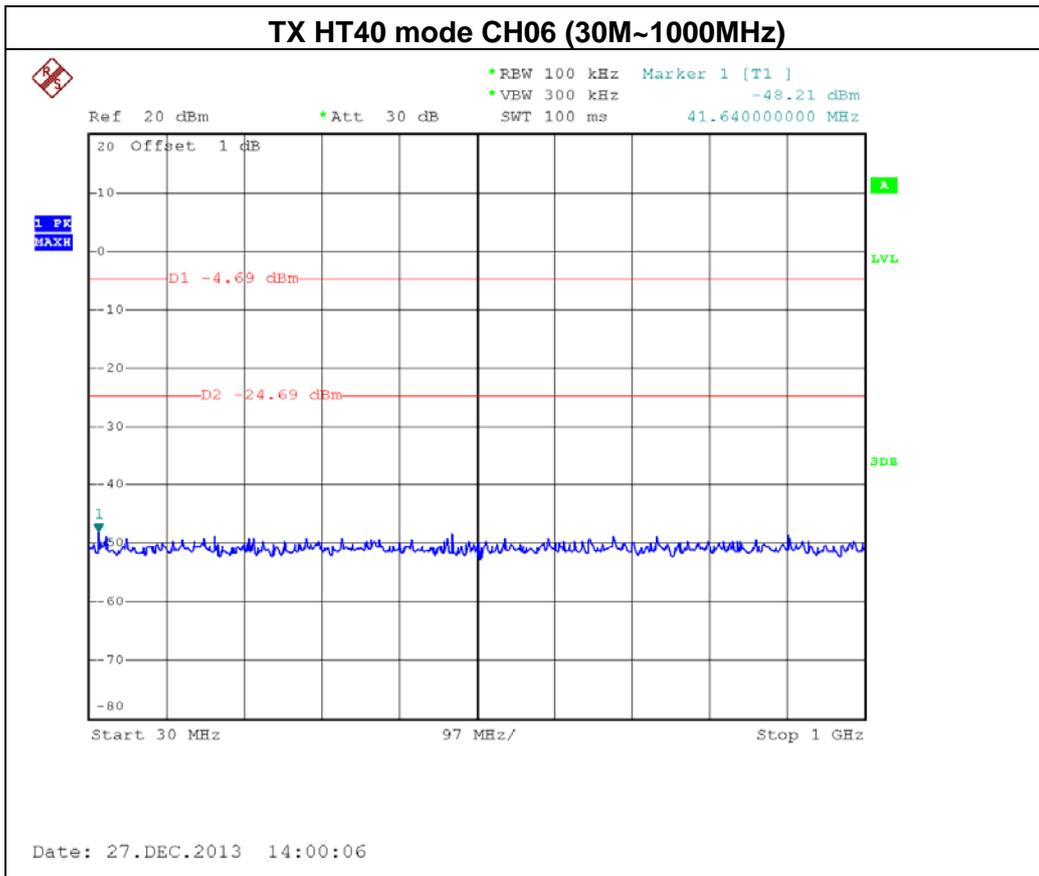
Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-37.61	2484.60	-42.64

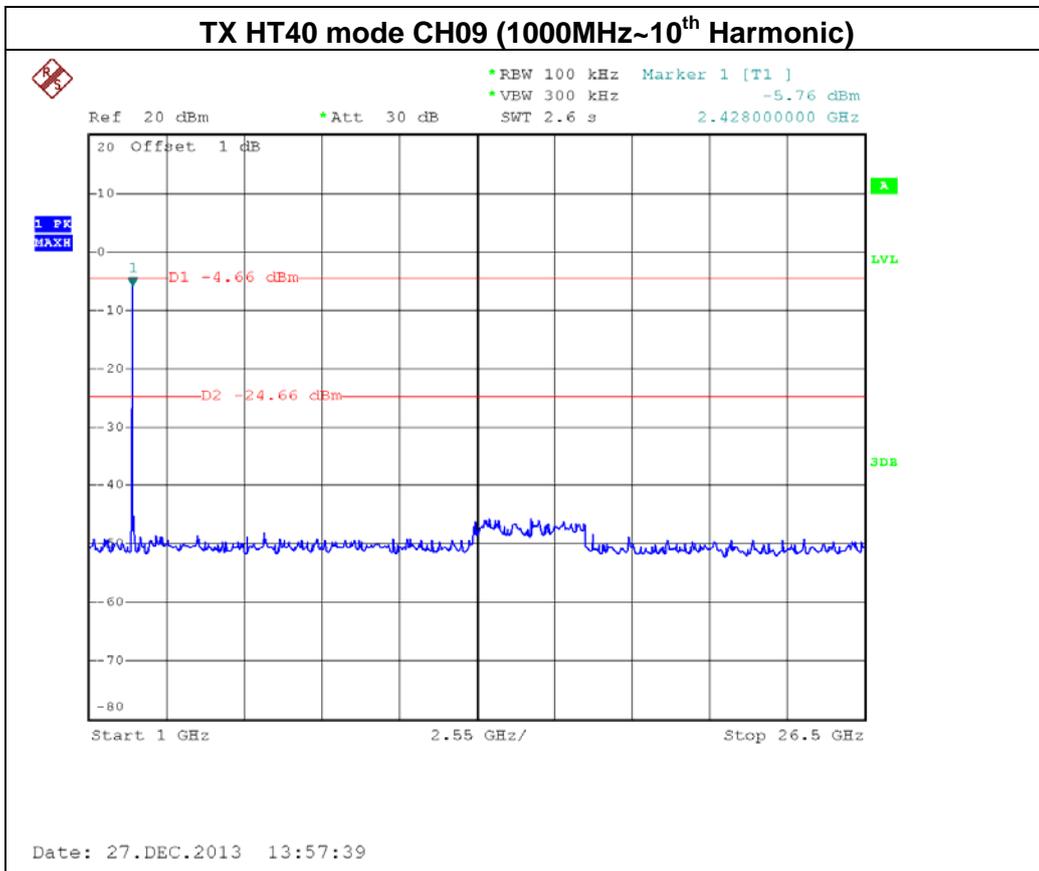
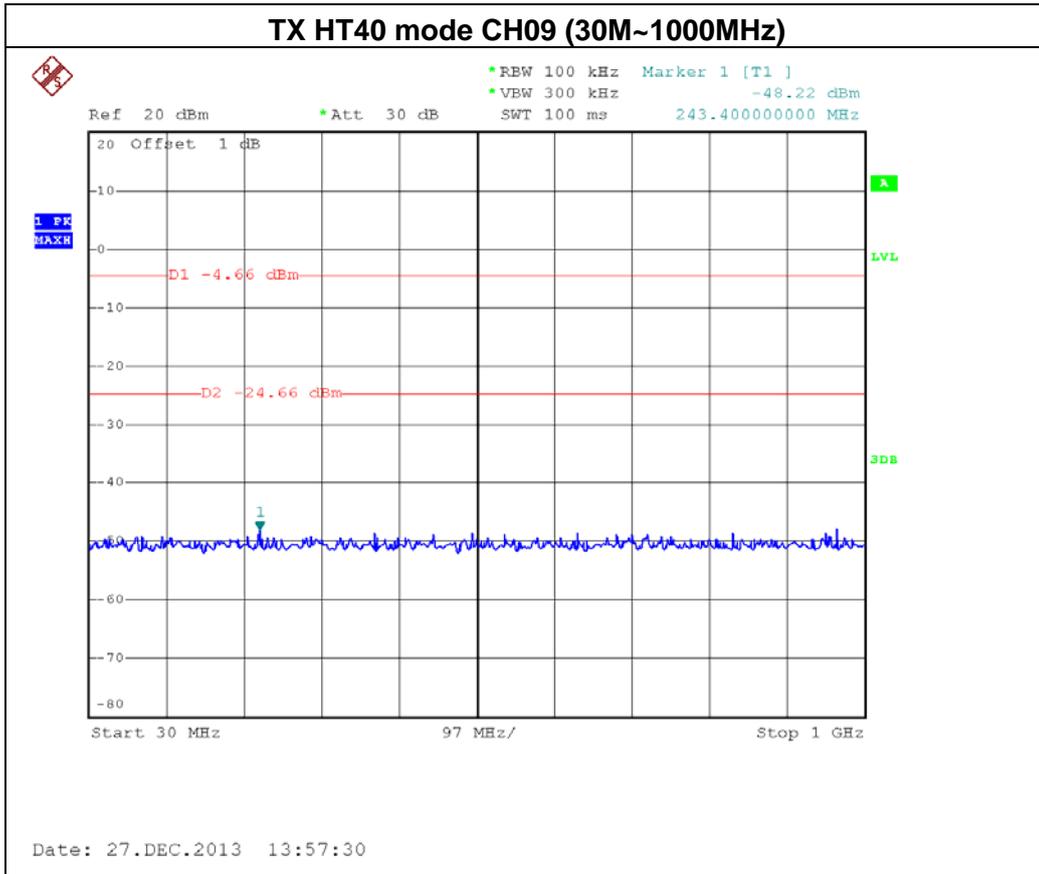
**Result**

In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.







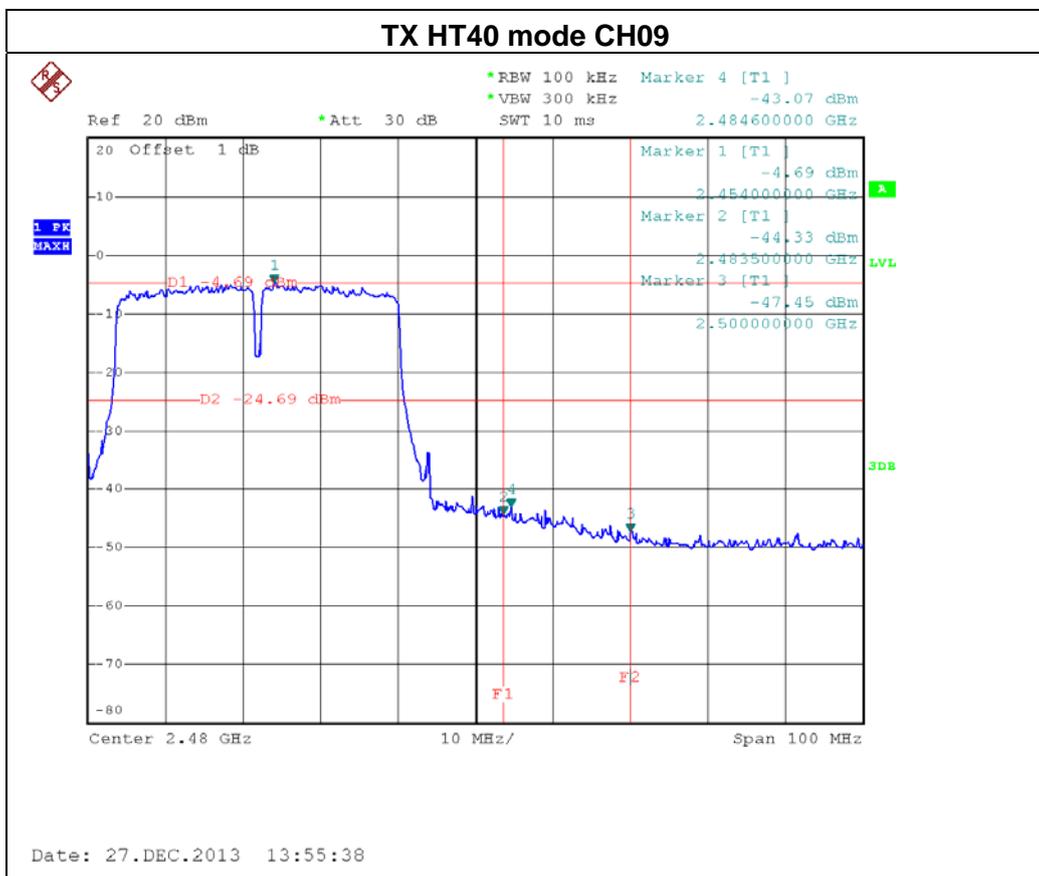
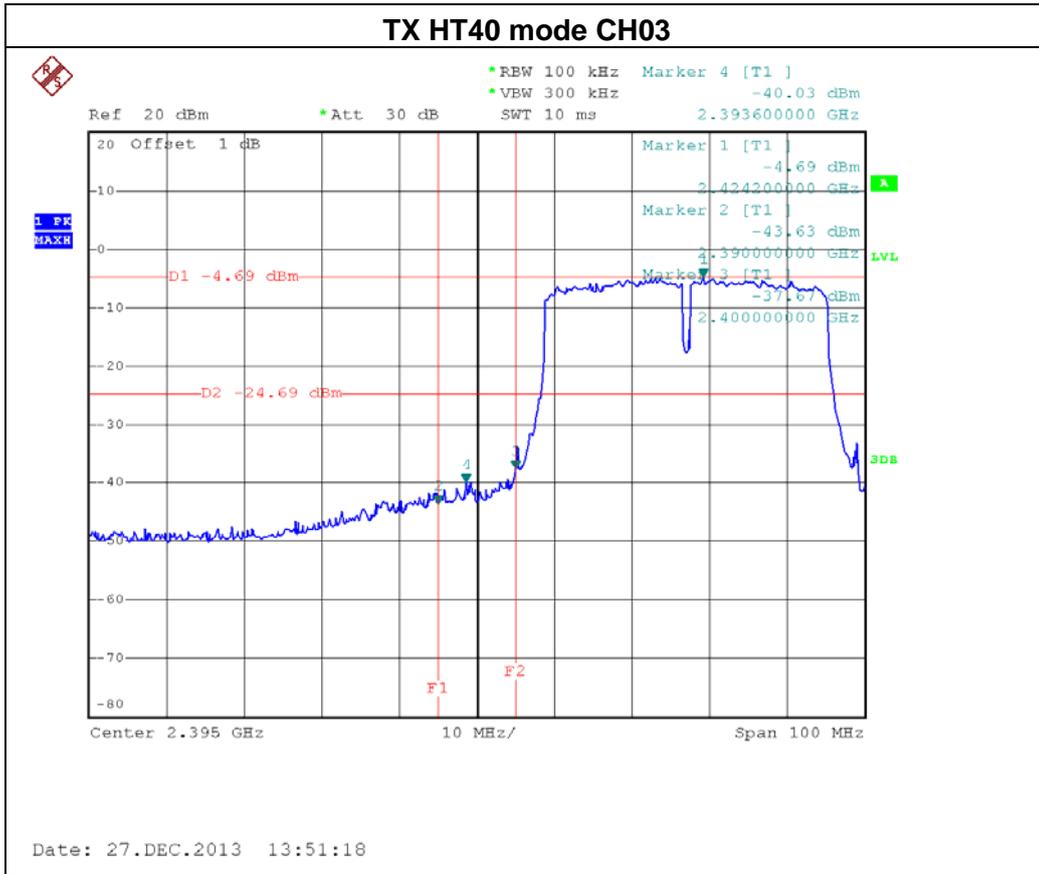


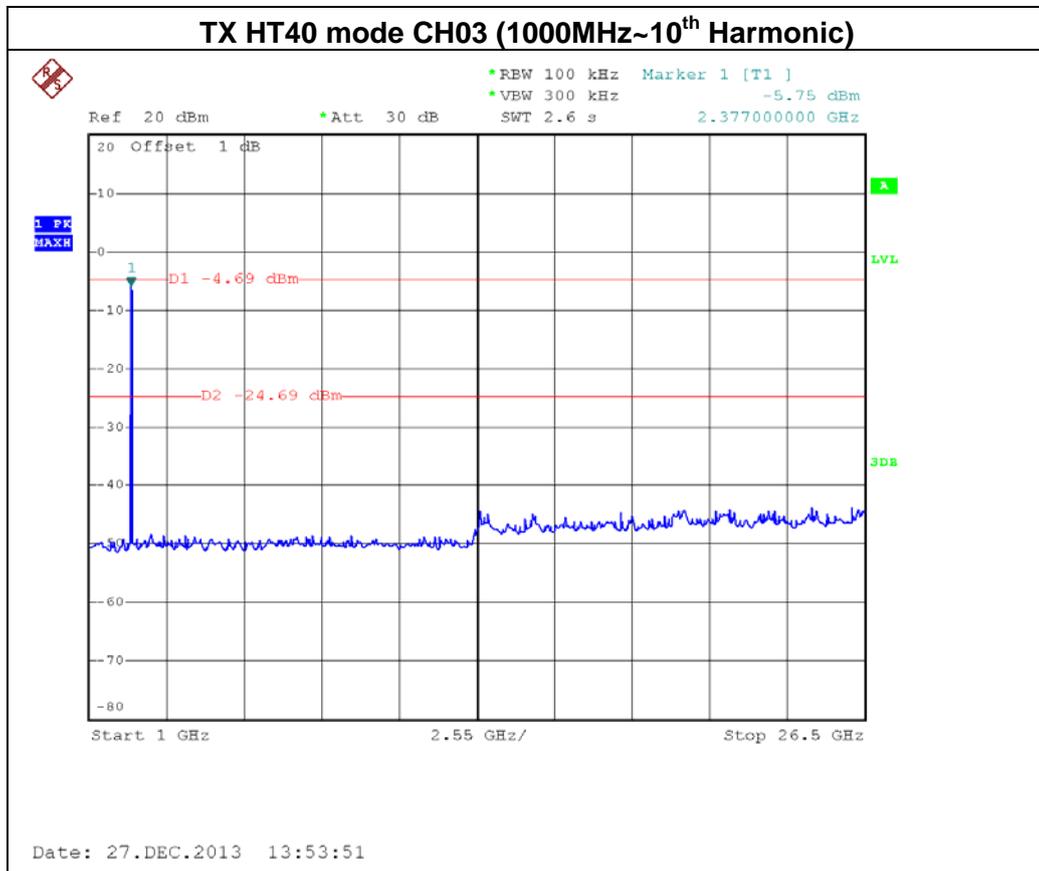
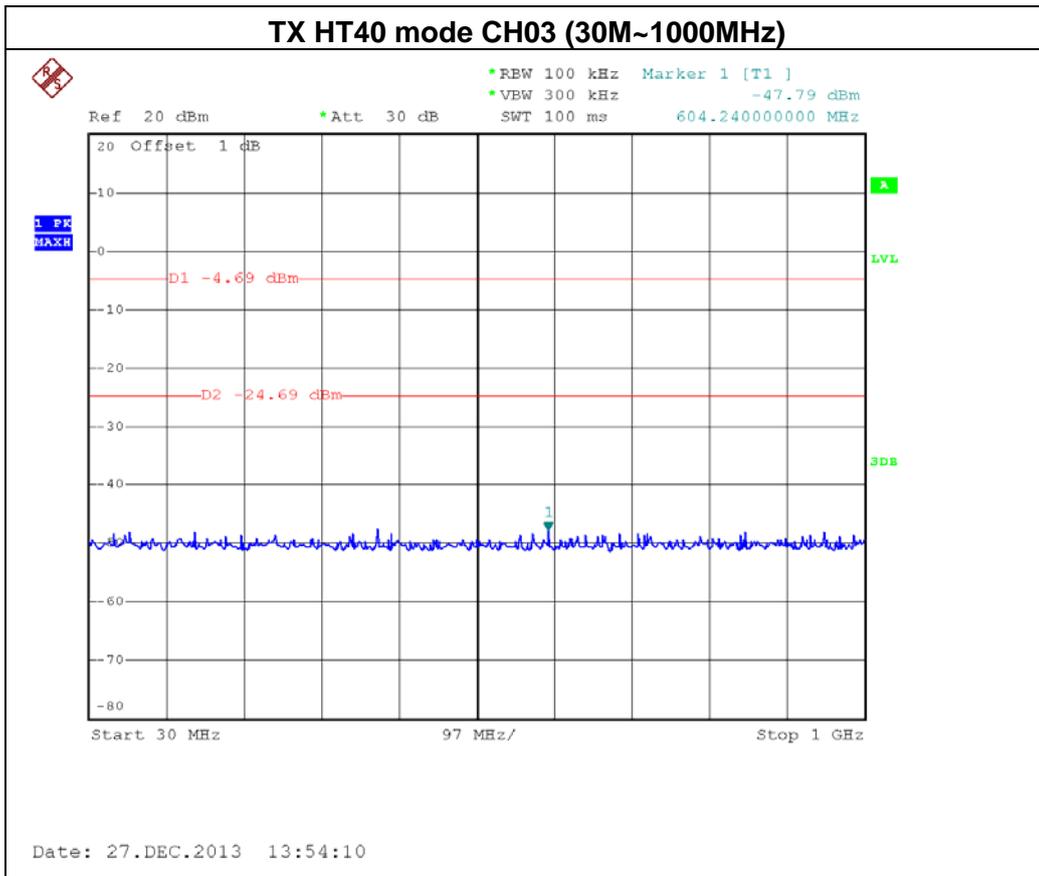


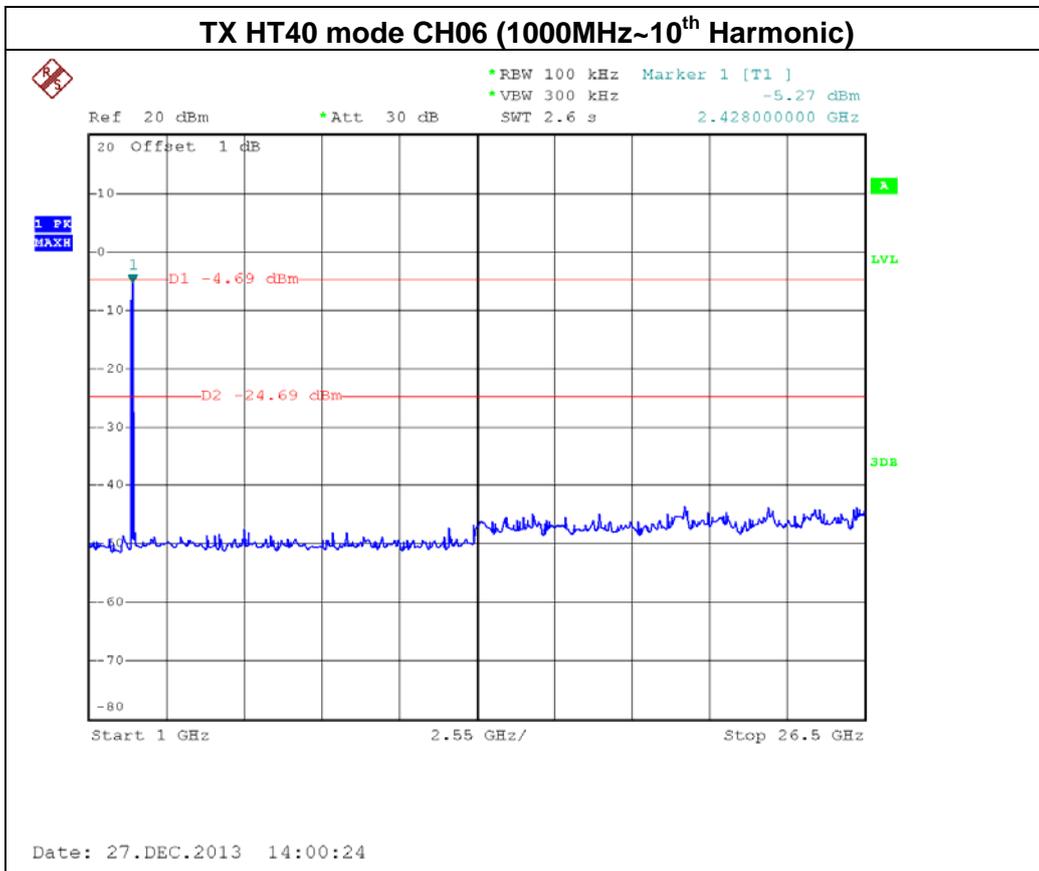
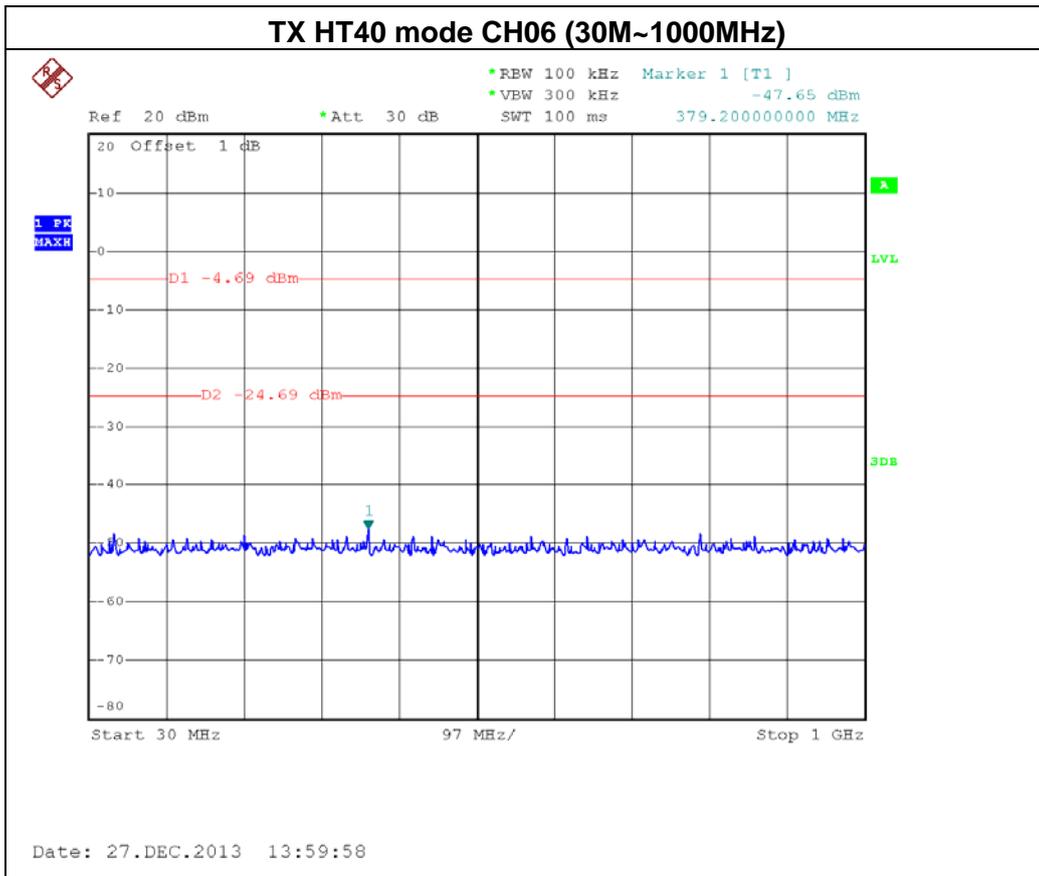
## Neutron Engineering Inc.

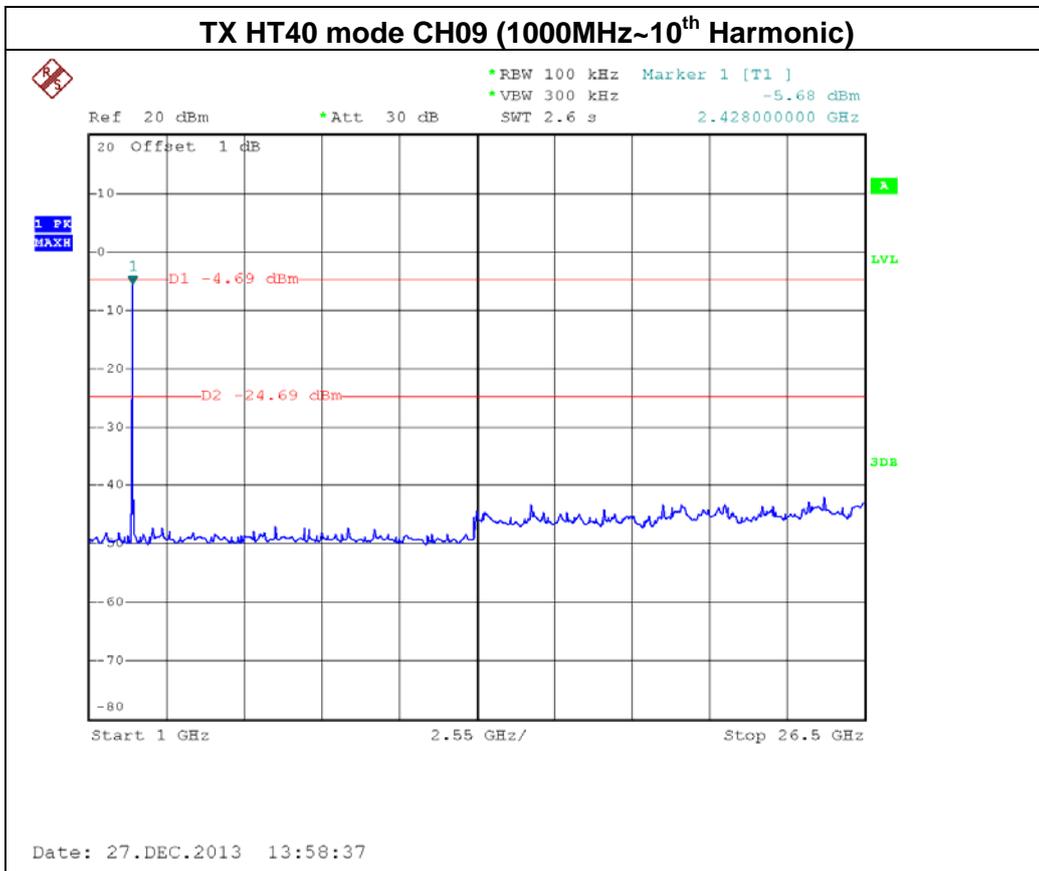
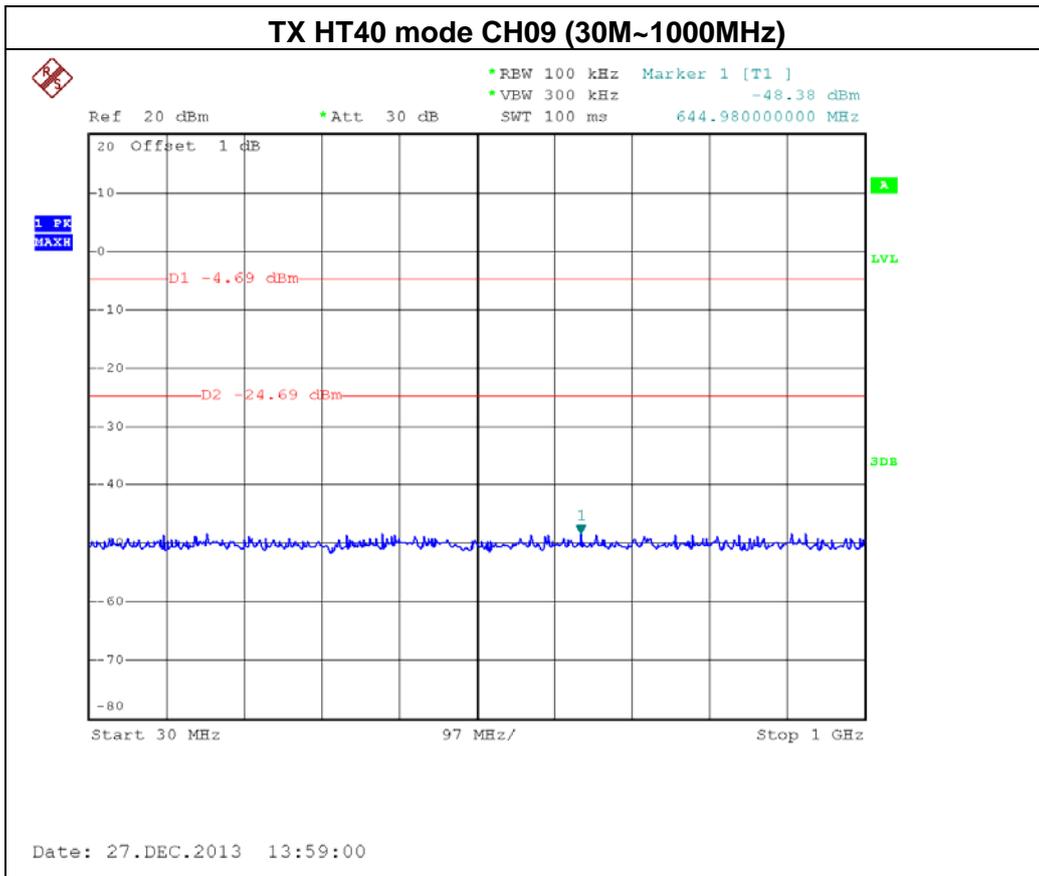
EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09-ANT 2		

Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-37.67	2484.60	-43.07
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			











**8. POWER SPECTRAL DENSITY TEST**

**8.1 Applied procedures / limit**

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

**8.1.1 MEASUREMENT INSTRUMENTS LIST**

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov. 09, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.  
 All calibration period of equipment list is one year.

**8.1.2 TEST PROCEDURE**

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW=3KHz, VBW=10 KHz, Sweep time = Auto.

**8.1.3 DEVIATION FROM STANDARD**

No deviation.

**8.1.4 TEST SETUP**



**8.1.5 EUT OPERATION CONDITIONS**

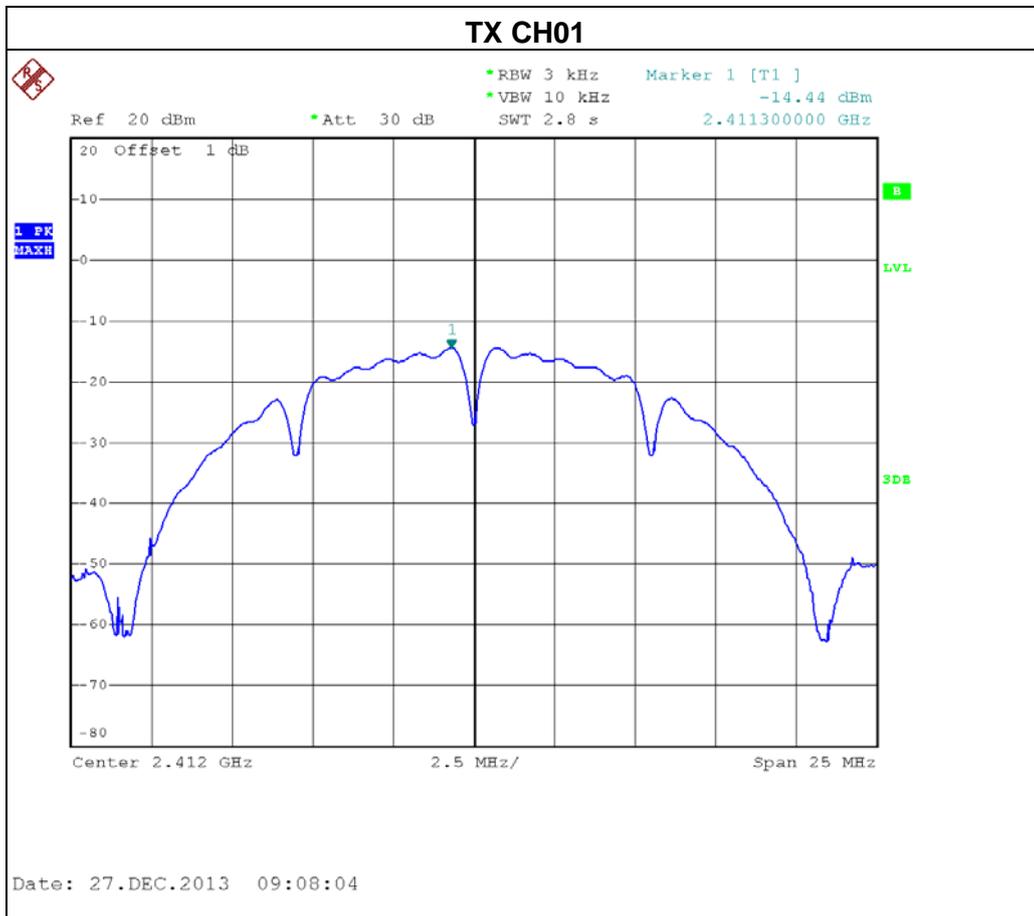
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

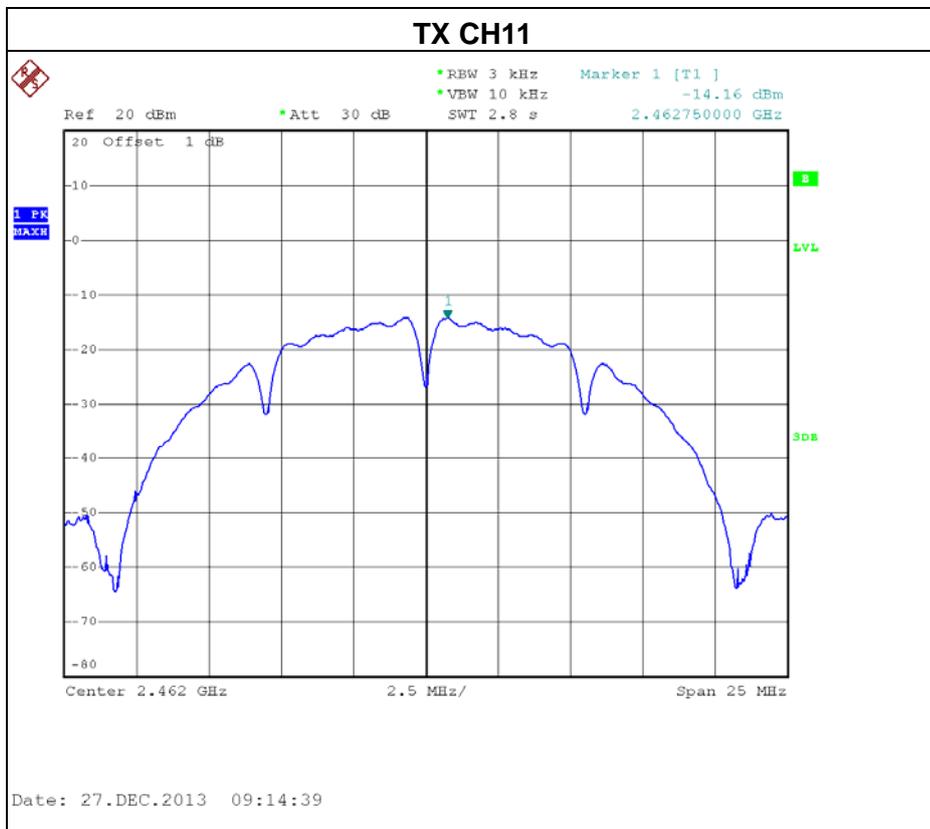
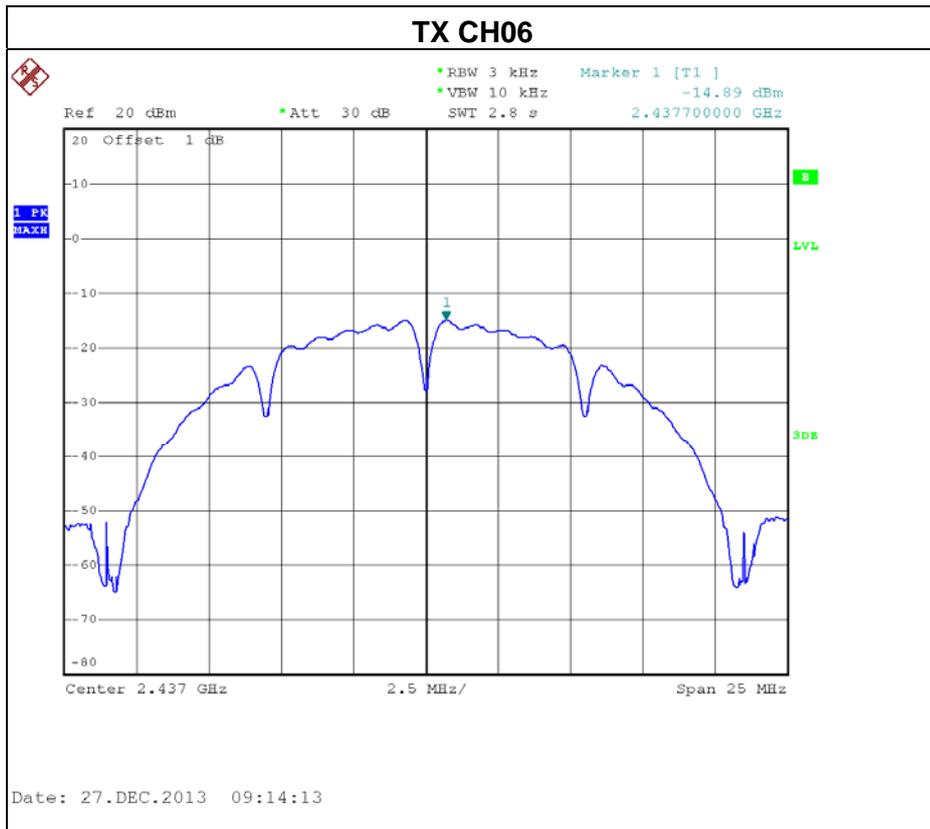


**8.1.6 TEST RESULTS**

EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-14.44	8
CH06	2437	-14.89	8
CH11	2462	-14.16	8

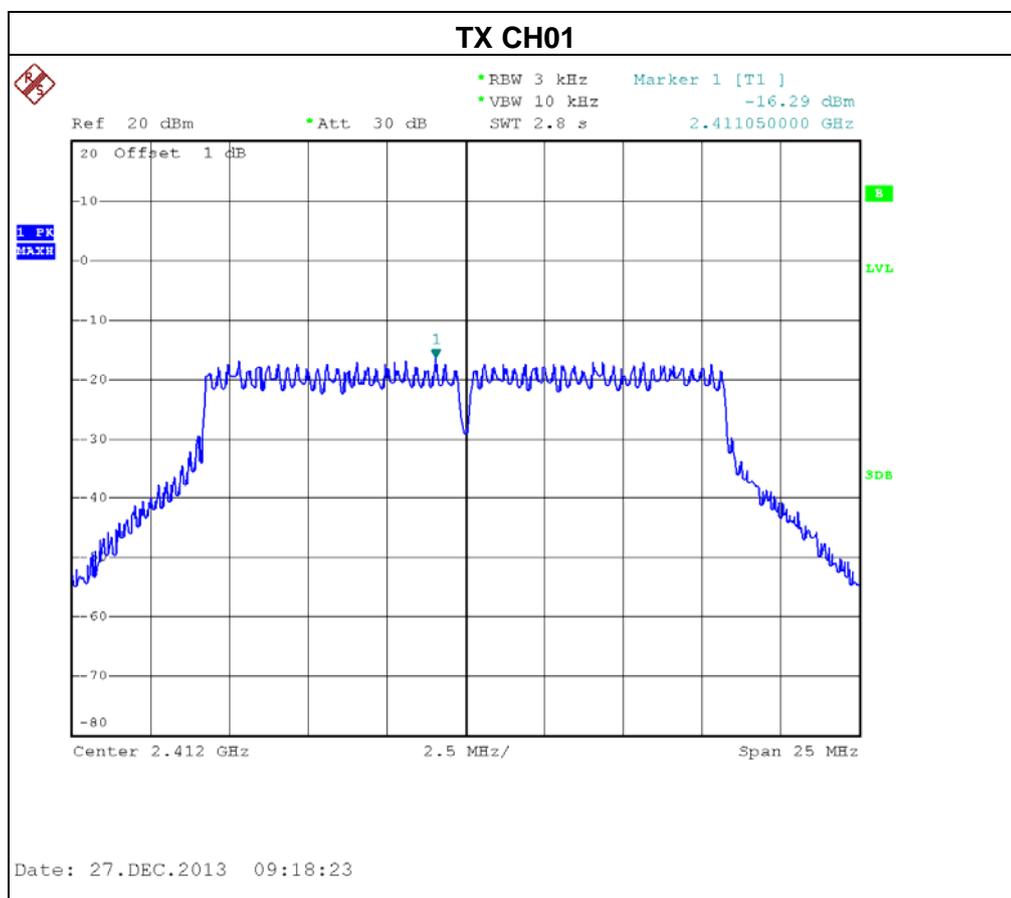


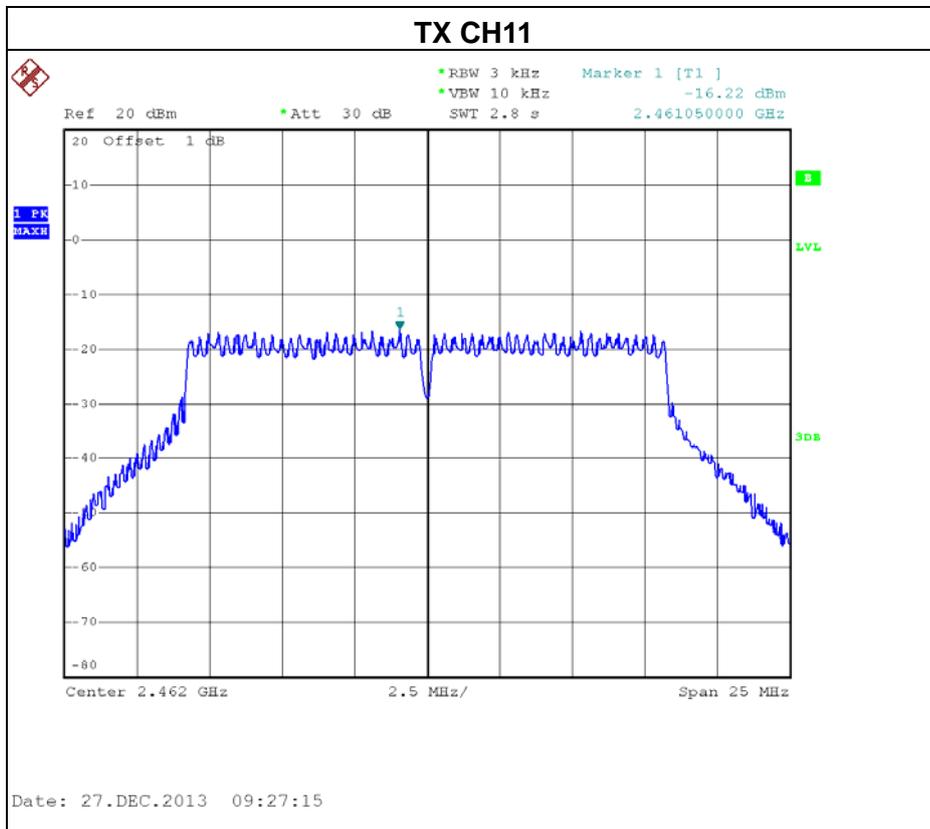
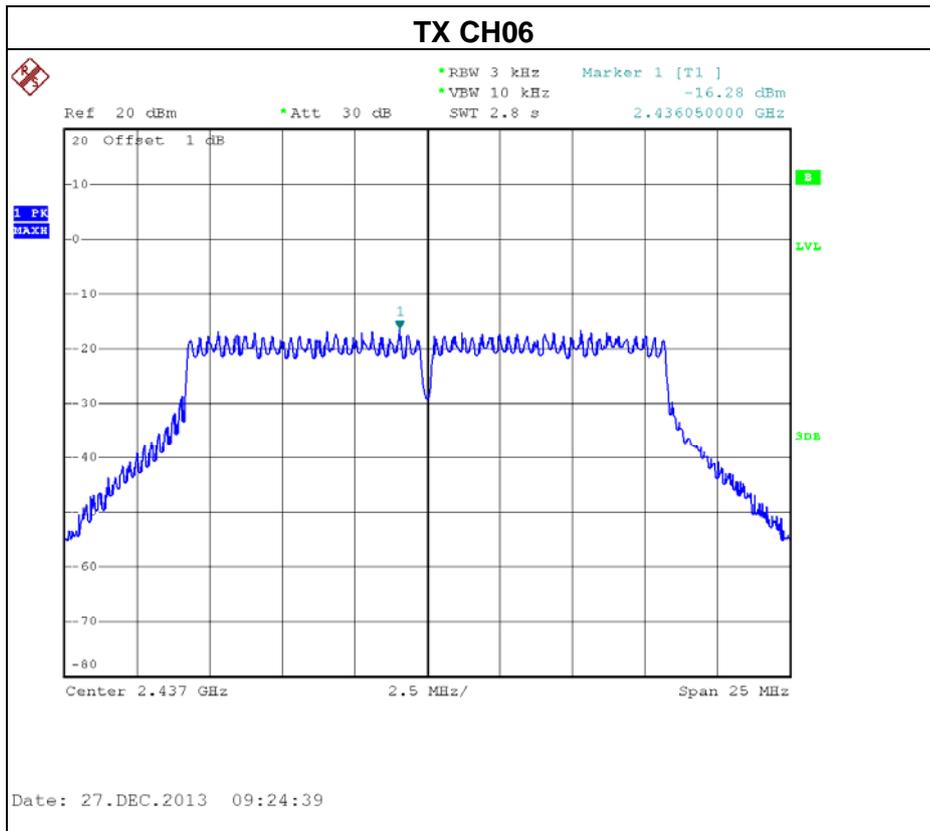




EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-16.29	8
CH06	2437	-16.28	8
CH11	2462	-16.22	8

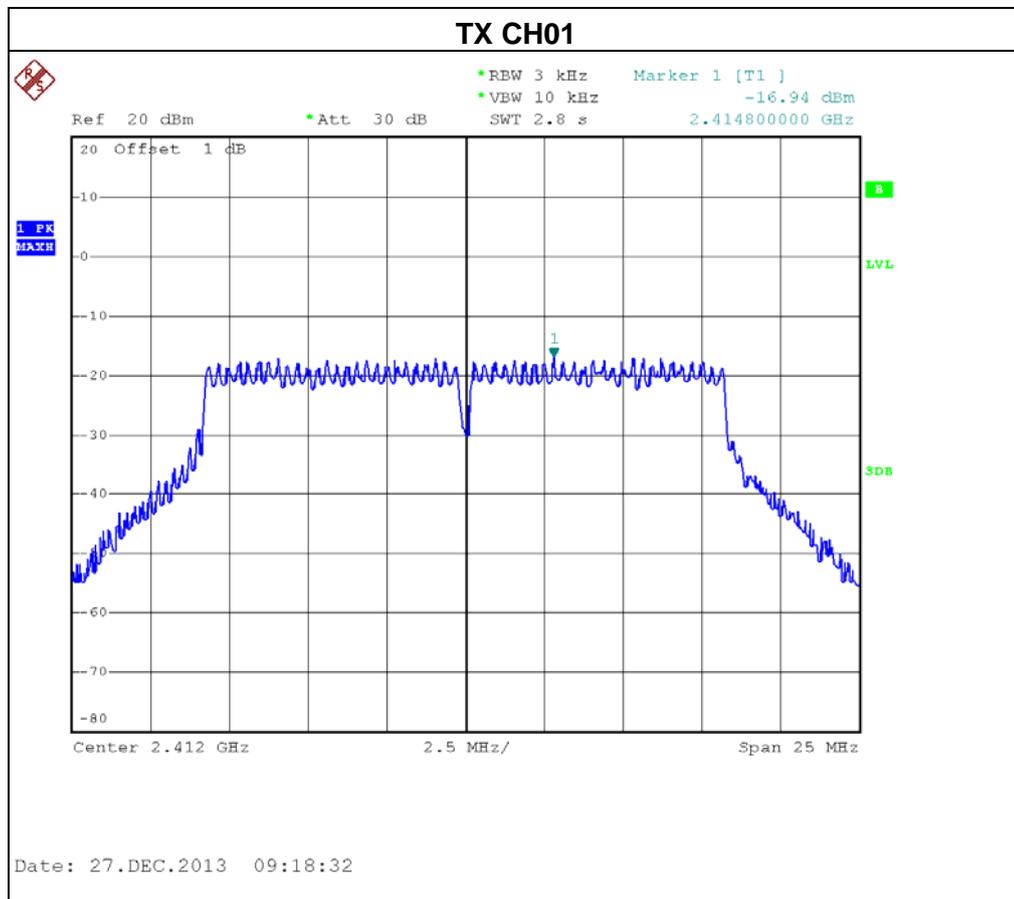


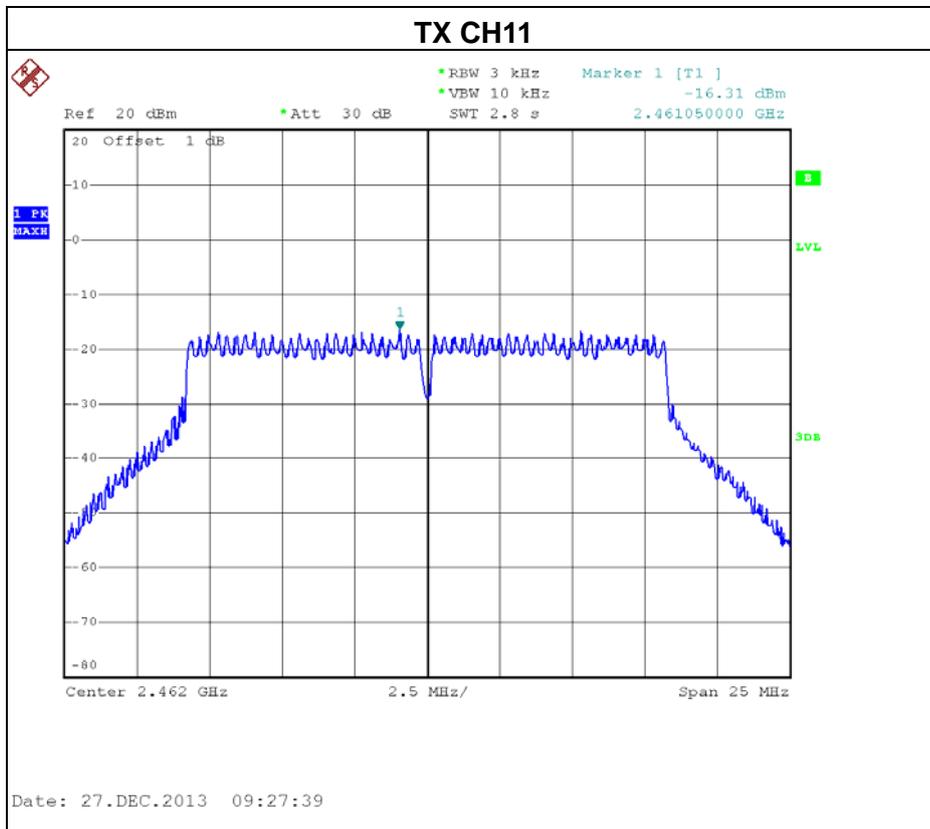
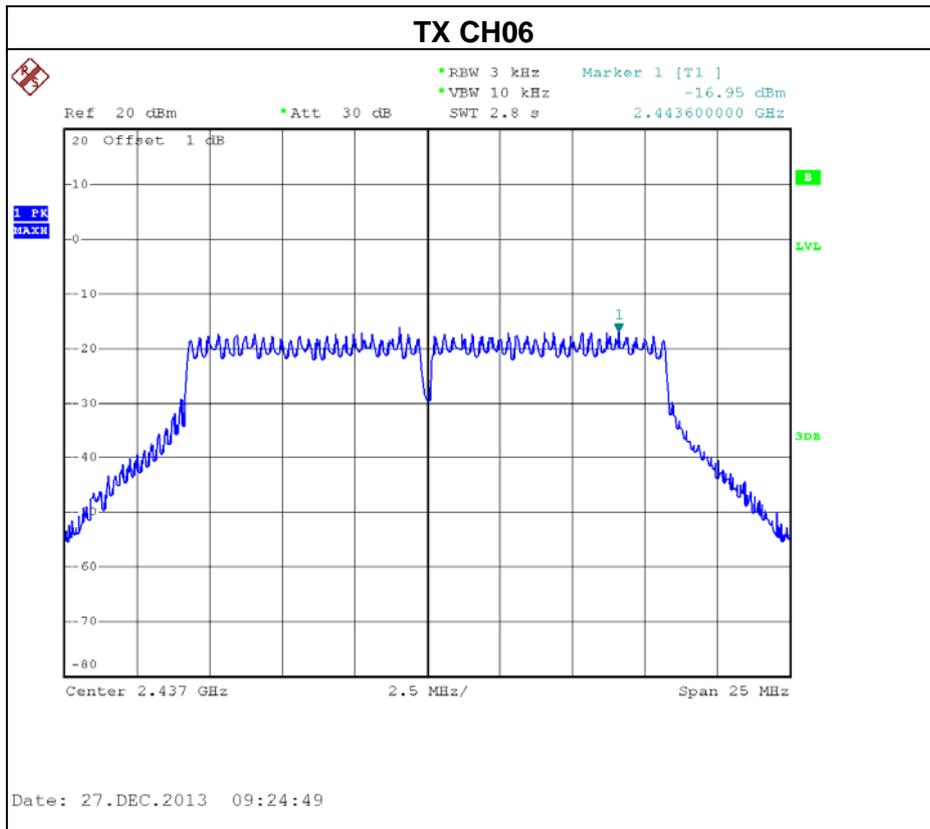




EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11-ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-16.94	8
CH06	2437	-16.95	8
CH11	2462	-16.31	8





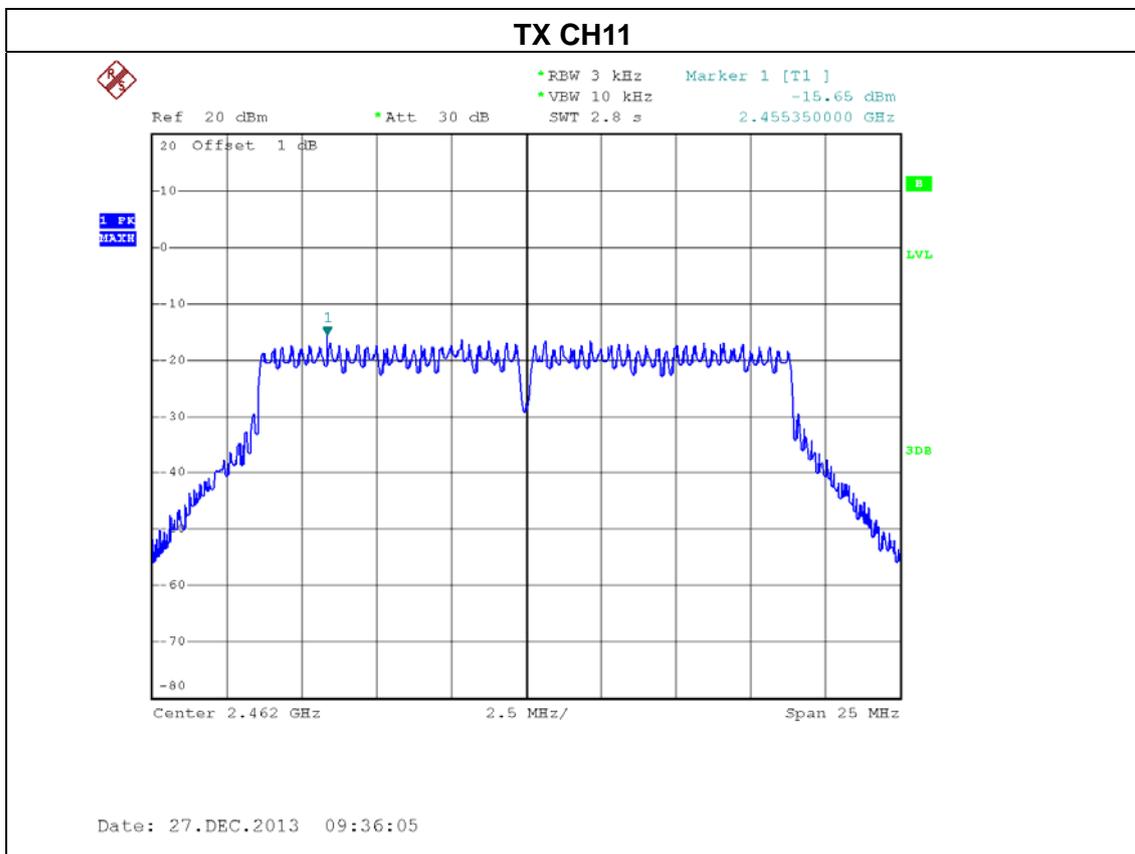
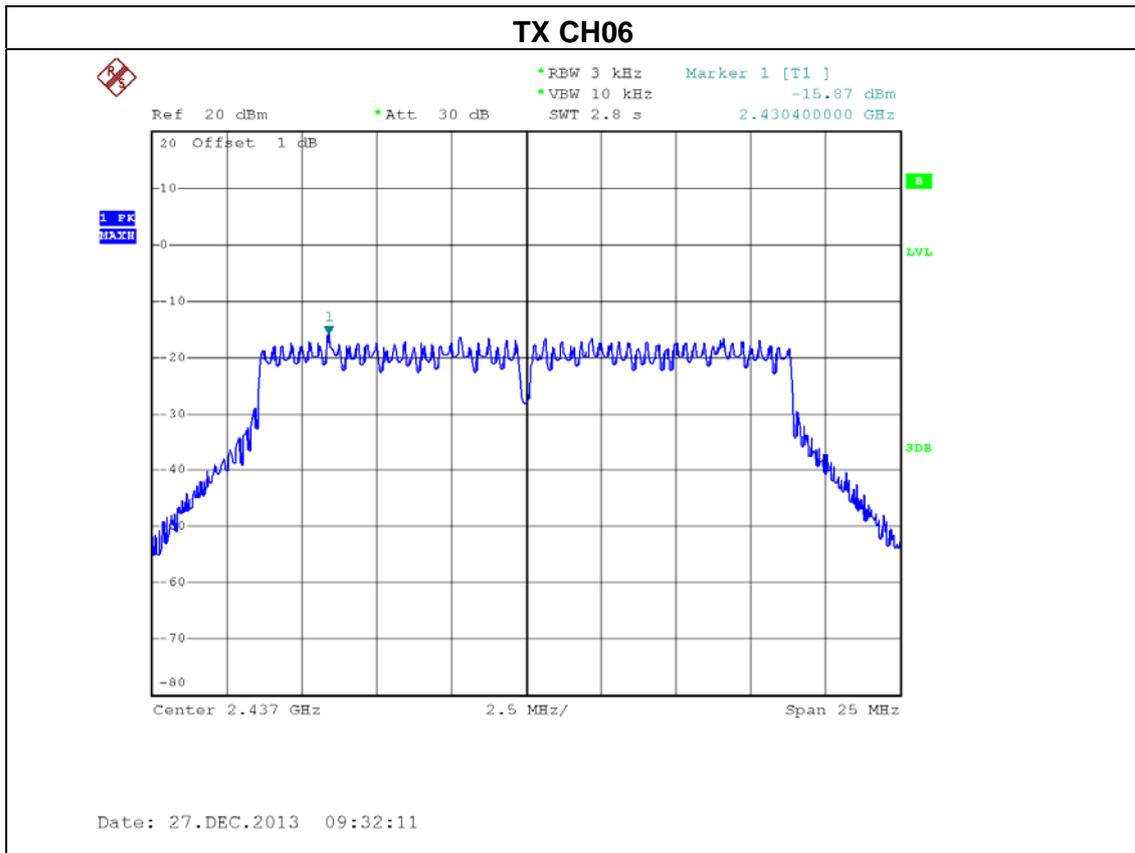


EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11-ANT 1+ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-13.59	8
CH06	2437	-13.59	8
CH11	2462	-13.25	8

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).

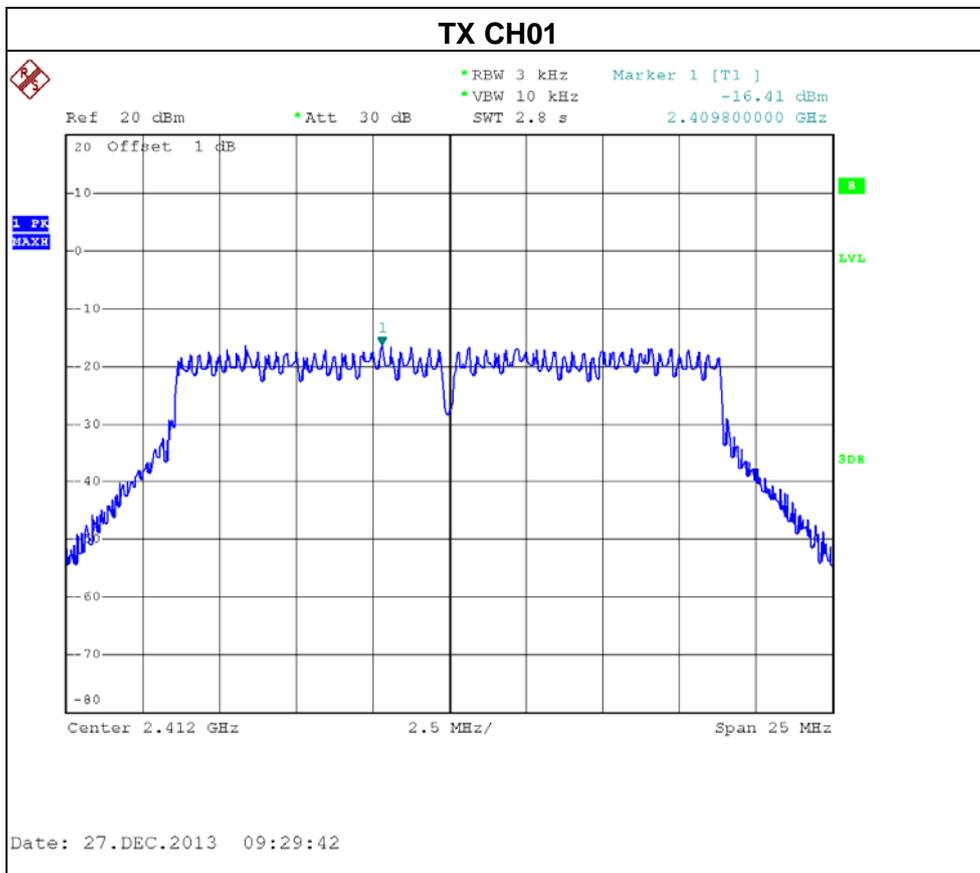


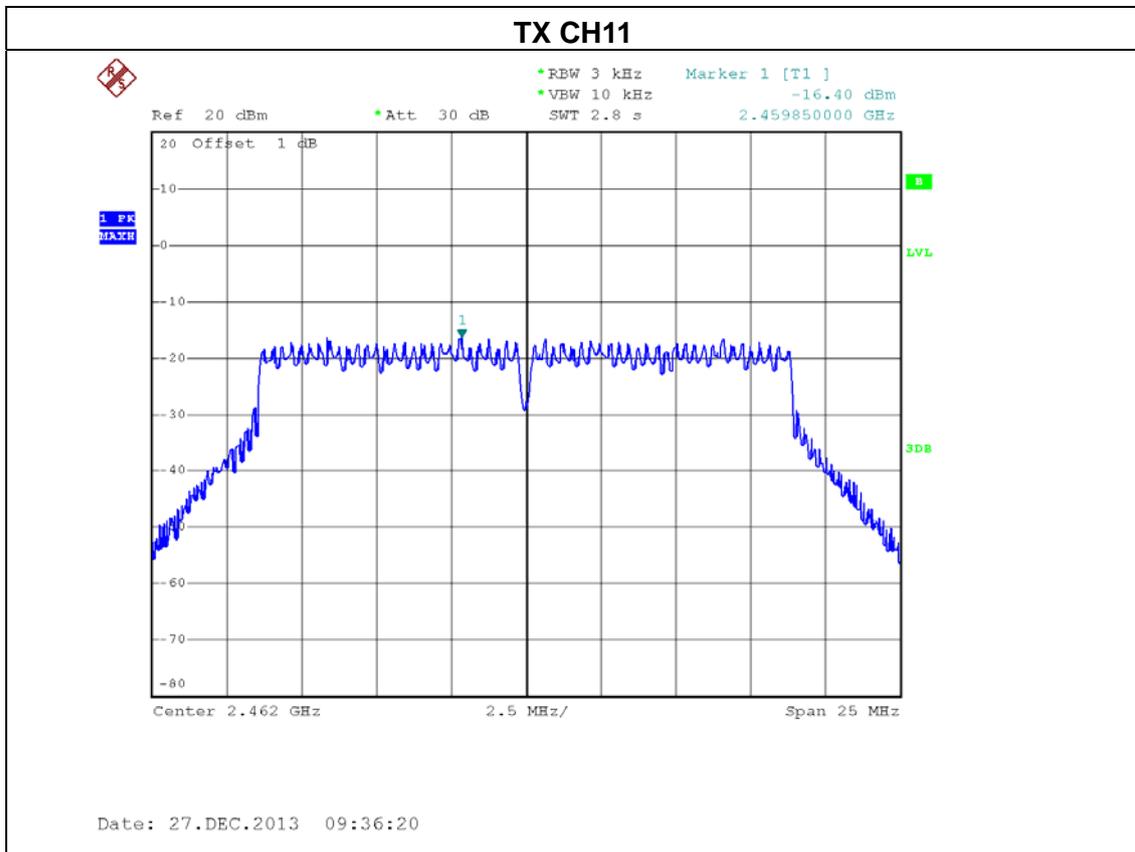
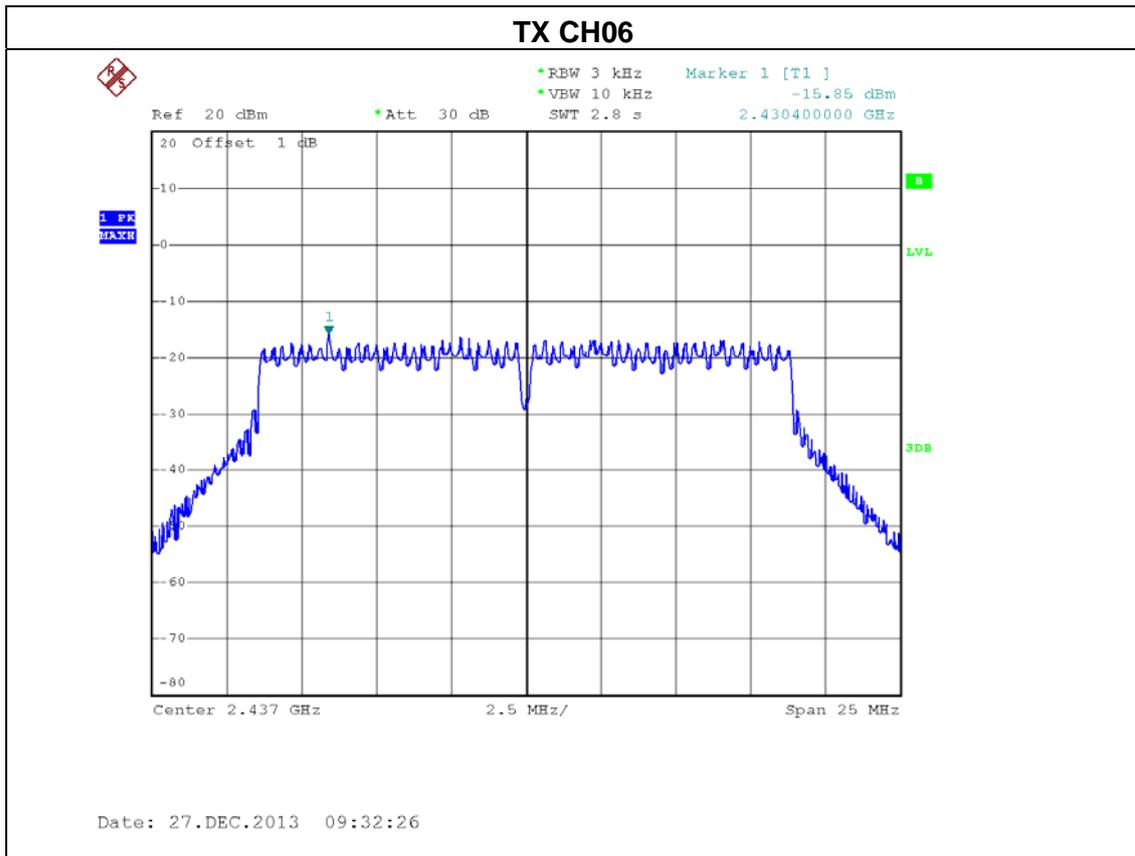




EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-16.41	8
CH06	2437	-15.85	8
CH11	2462	-16.40	8







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EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 1+ANT 2		

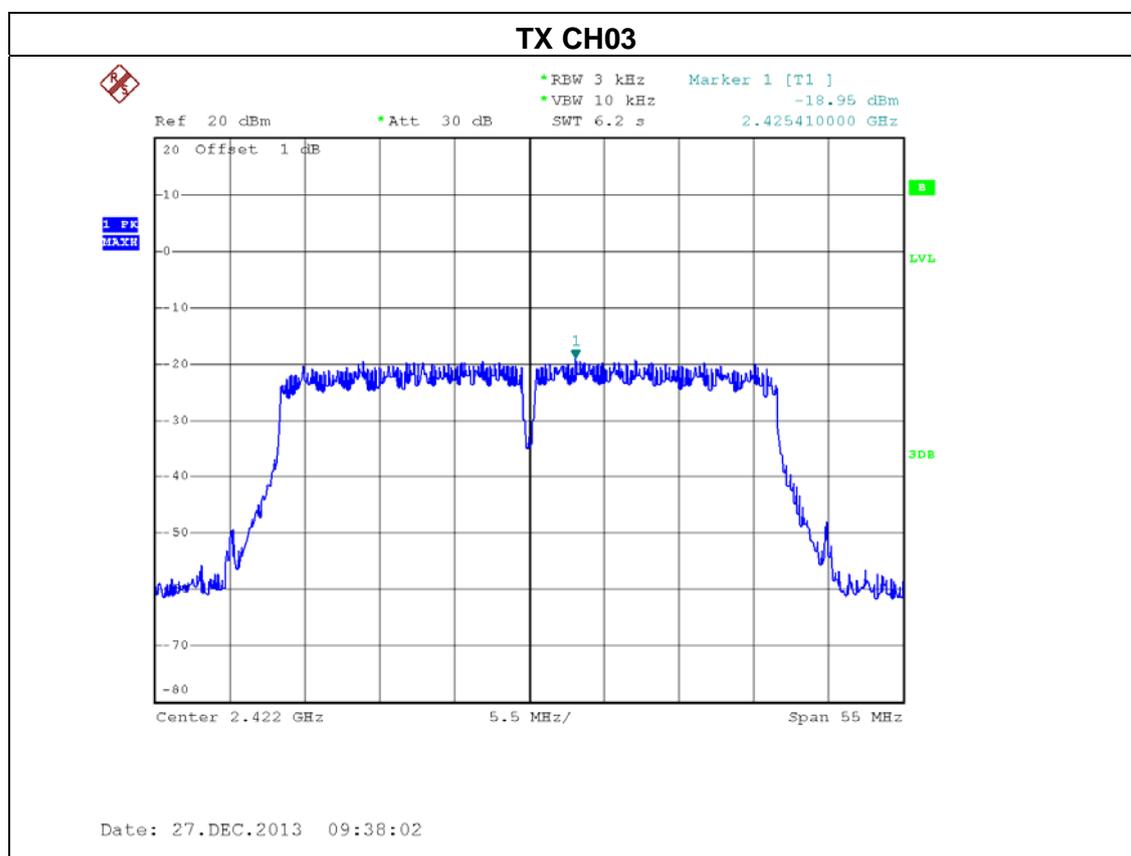
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-13.49	8
CH06	2437	-12.85	8
CH11	2462	-13.00	8

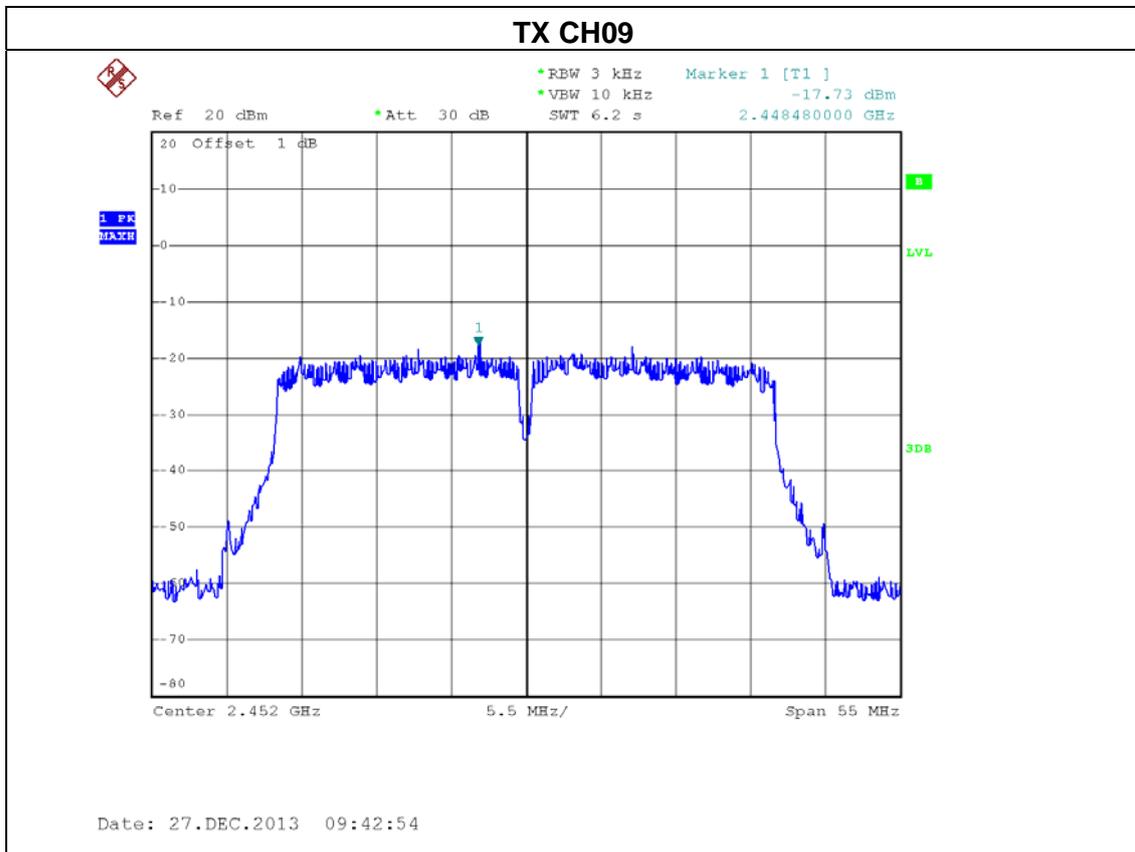
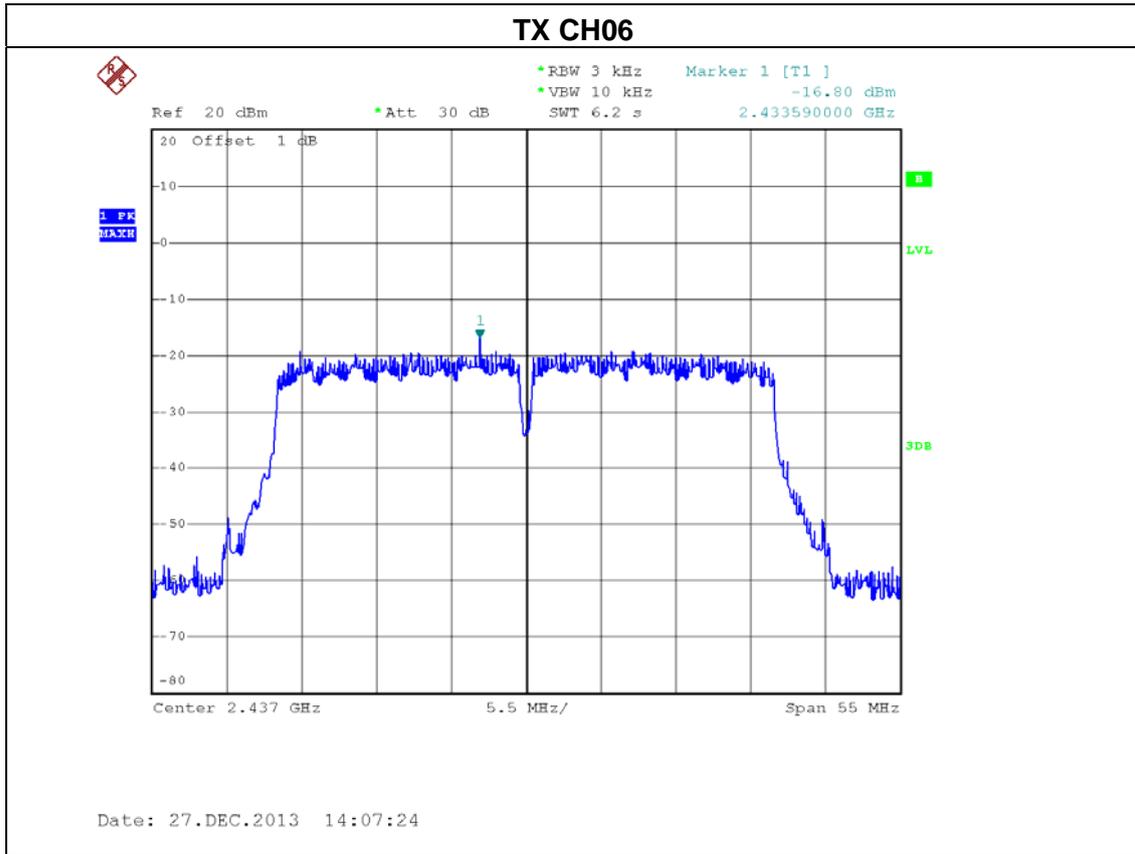
Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).



EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-18.59	8
CH06	2437	-16.80	8
CH09	2452	-17.73	8

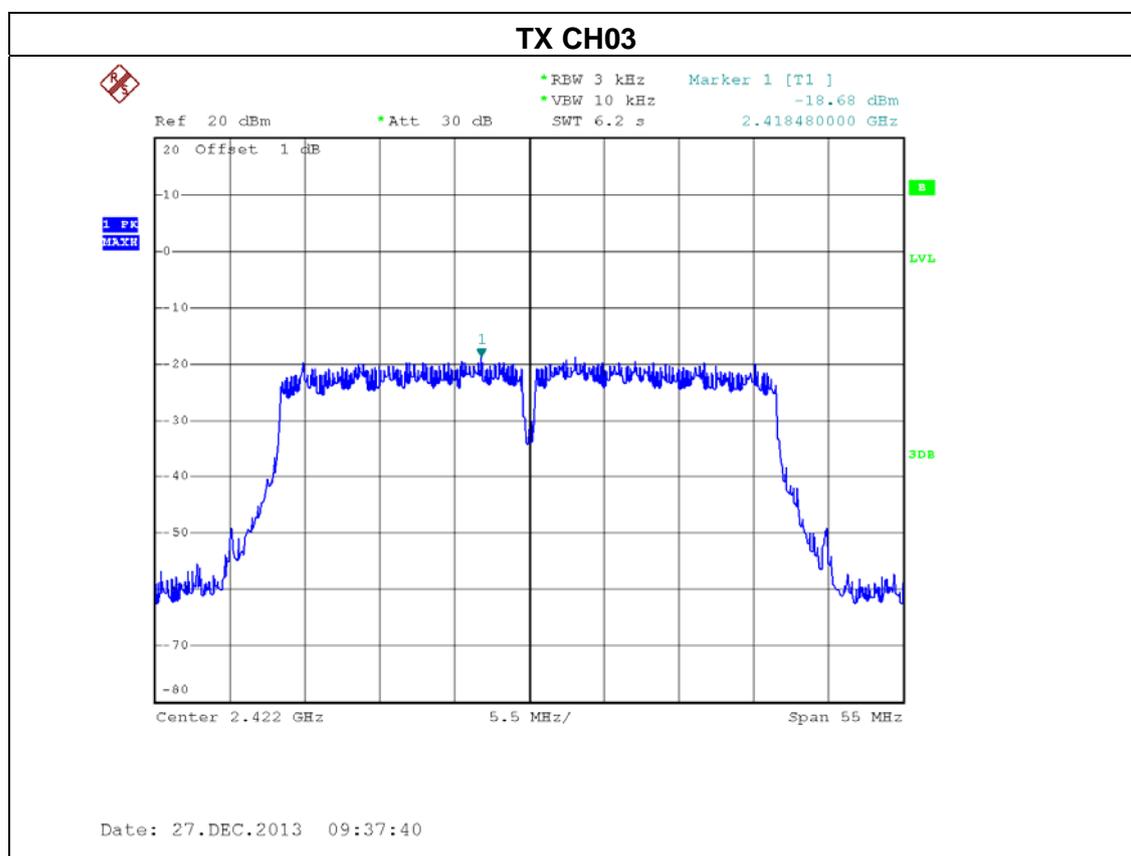


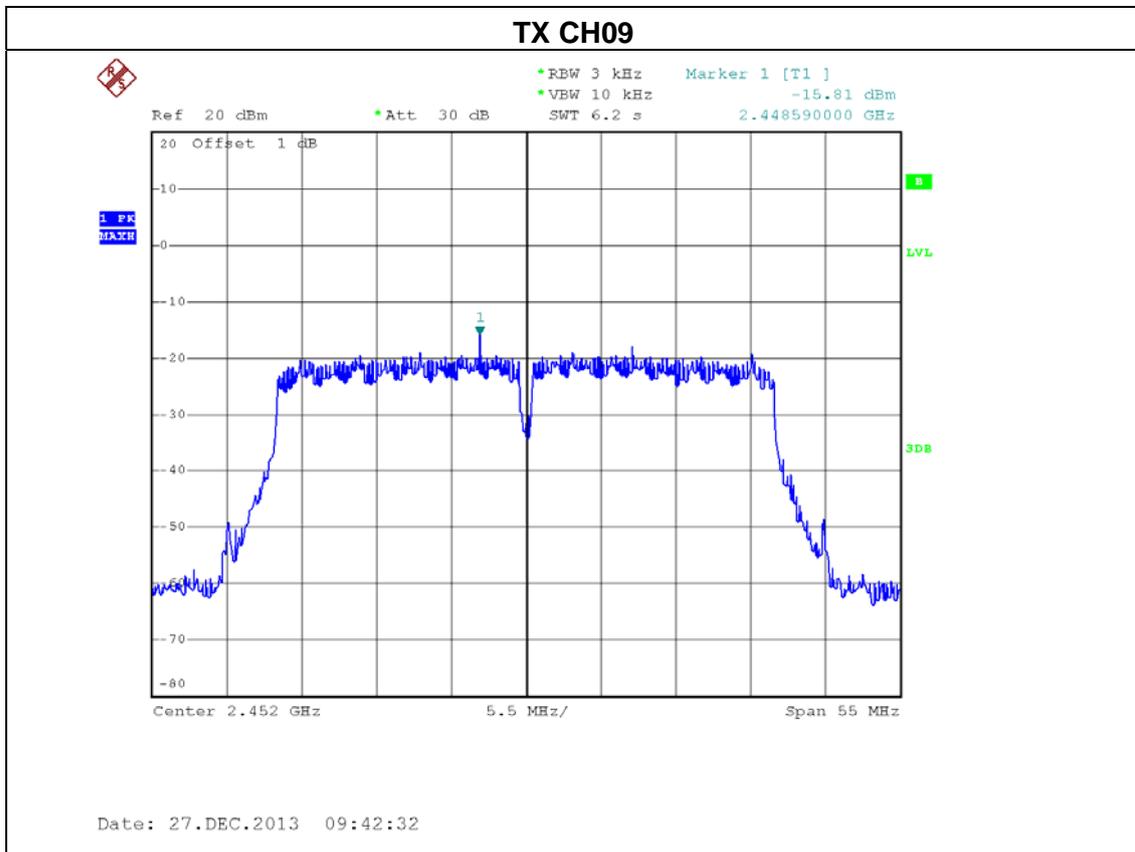
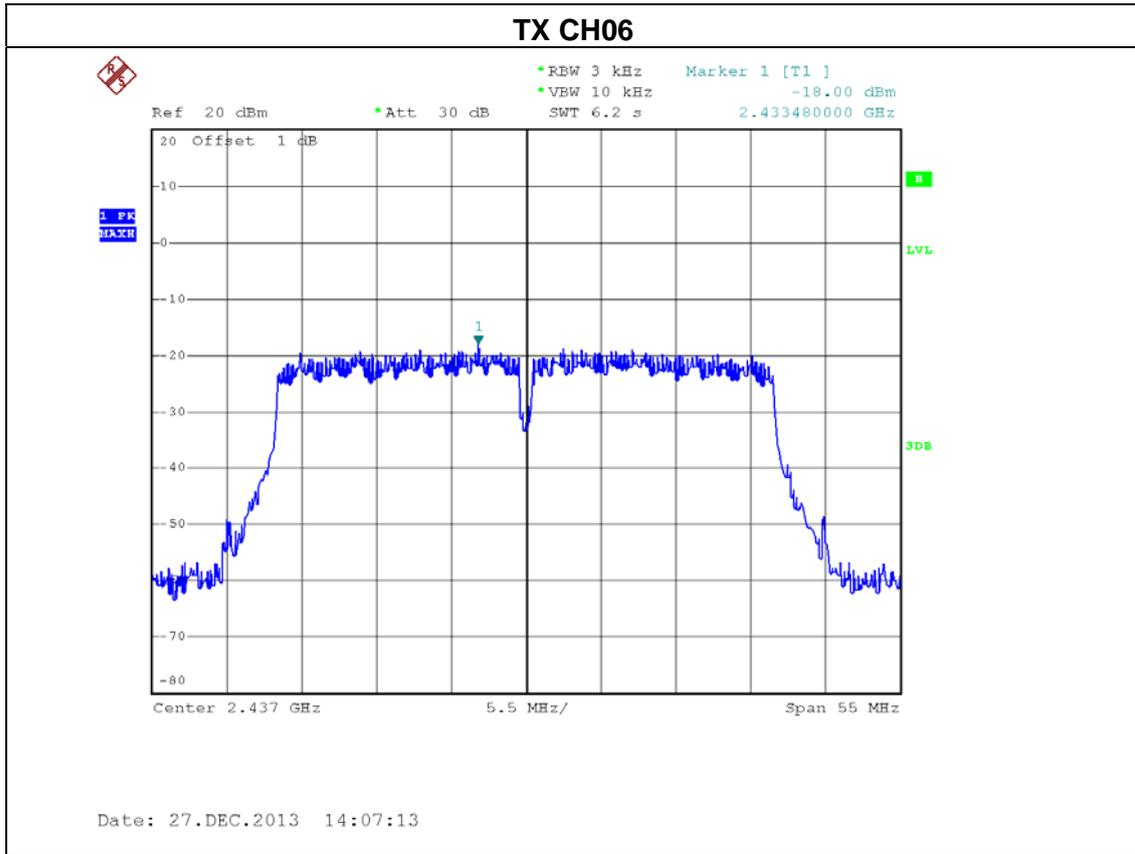




EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-18.68	8
CH06	2437	-18.00	8
CH09	2452	-15.81	8







## Neutron Engineering Inc.

EUT:	300Mbps Mini Wireless Router	Model Name :	WS331b
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 1+ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-15.62	8
CH06	2437	-14.35	8
CH09	2452	-13.65	8

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).



**9. EUT TEST PHOTO**

**Conducted Measurement Photos  
For AC Mains**





**Conducted Measurement Photos  
For Host System**



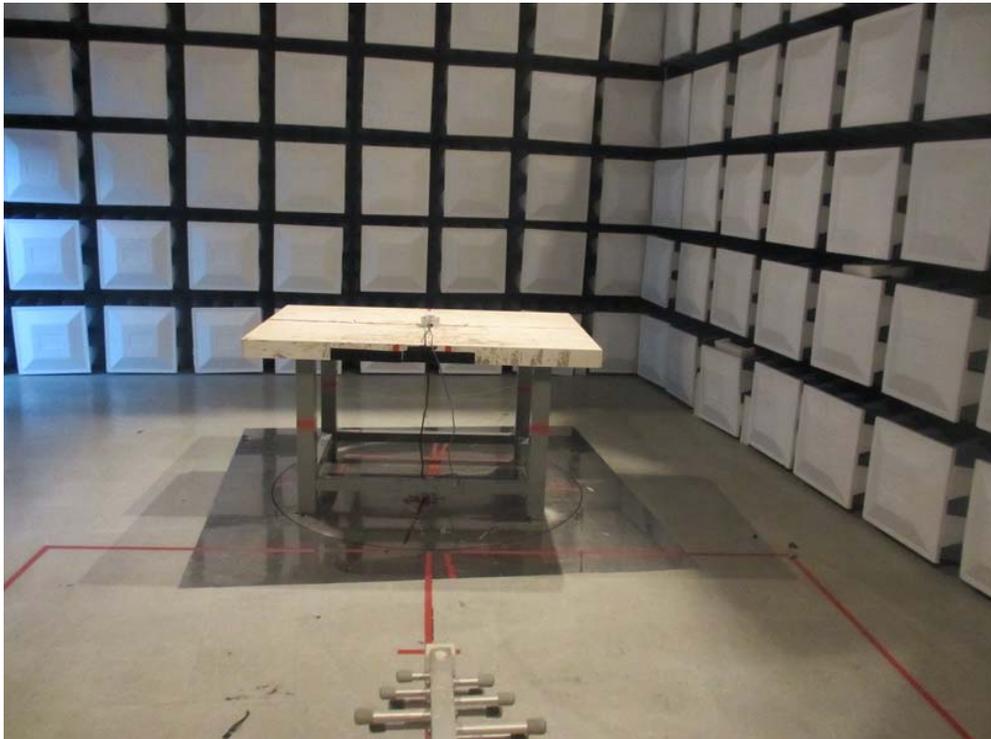


**Radiated Measurement Photos  
9KHz~30MHz**





**Radiated Measurement Photos  
300MHz~1000MHz**





**Radiated Measurement Photos  
Above 1000MHz**

