FCC Radio Test Report FCC ID: T58WF2403R

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

Issued Date : Aug. 10, 2011 **Project No.** : 1107C212

Equipment: Portable 300Mbps Wireless-N Router/AP

Model Name: WF-2403

Applicant: NETIS SYSTEMS CO., LTD.

Address: 9F,B Block, Tsinghua Information Park, High-tech

Industrial Park, Nanshan, Shenzhen, China

Manufacturer: Shenzhen Netcore Industrial Ltd.

Address: 9F,B Block, Tsinghua Information Park, High-tech

Industrial Park, Nanshan, Shenzhen, China

Tested by:

Neutron Engineering Inc. EMC Laboratory

Date of Receipt: Jul. 26, 2011

Date of Test:

Jul. 26, 2011 ~ Aug. 09, 2011

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Declaration

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1. CERTIFICATION

Equipment: Portable 300Mbps Wireless-N Router/AP

Brand Name: netis Model Name: WF-2403

Applicant: NETIS SYSTEMS CO., LTD.

F a c t o r y: Dongguan City Netcore Network Technology Co.,Ltd.

A d d r e s s: No.10-1, Sankeng Road, Qinghutou, Tangxia Town, Dongguan City

Date of Test: Jul. 26, 2011 ~ Aug. 09, 2011 Test Item: ENGINEERING SAMPLE

Standards: FCC Part15, Subpart C(15.247) / ANSI C63.4: 2003

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-1-1107C212) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).

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2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

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

NOTE:

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

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2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-CB03/DG-C01** 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 expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 % \circ

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
DG-C01	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)	NOTE
		30MHz ~ 200MHz	V	3.82	
DG-CB03	CISPR	30MHz ~ 200MHz	Н	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	Н	3.94	

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3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Portable 300Mbps Wireless-N Router/AP				
Brand Name	netis				
Model Name	WF-2403				
OEM Brand/Model Name	N/A	N/A			
Model Difference	N/A				
	The EUT is a Portable 3 Operation Frequency: Modulation Type:	00Mbps Wireless-N Router/AP. 2412~2462 MHz 802.11b:CCK, DQPSK, DBPSK			
	Woddianon Type.	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 Draft 802.11n:up to 300Mbps			
Product Description	Number of Channel	11 CH, Please see Note 2. (please see page 9)			
	Antenna Designation:	Please see Note 3.			
	Antenna Gain(Peak)	(please see page 9)			
	Output Power:	802.11b: 15.30dBm			
		802.11g: 11.55dBm			
		802.11n(20MHz): 10.34 dBm 802.11n(40MHz): 10.65 dBm			
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.				
Power Source	DC Voltage supplied from AC/DC adapter Brand name: Mass Power; Model name:ECF0500100A1WU				
Power Rating	I/P 100-240VAC~ 50/60Hz, 0.18A O/P 5.0V, 1.0A				
Connecting I/O Port(s)	Please refer to the User'	s Manual			
Products Covered	N/A				
Products Covered	N/A				

Note:

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

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

Channel List

	Official List						
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Gortec	NB0191-A	PIFA Antenna	N/A	2.0

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

Operating Mode TX Mode	1TX	2TX
802.11b	V (ANT1 or ANT2)	-
802.11g	V (ANT1 or ANT2)	-
802.11n(20MHz)	-	V (ANT1 & ANT2)
802.11n(40MHz)	-	V (ANT1 & ANT2)

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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	Normal Link

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

For Conducted Test		
Final Test Mode	Description	
Mode 5	Normal Link	

For Radiated Test				
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 highest, middle, lowest available channels.
- (2) During the output power test, all data rates have been investigated and the highest output powers were recorded are as follows:

802.11b mode: DBPSK (1Mbps) 802.11g mode: OFDM (6Mbps)

802.11n HT20/HT40 mode: MCS8 (6Mbps)

For radiated emission tests, the highest output powers were set for final test.

(3) Worst-case mode and channel used for 30-1000 MHz radiated and power line conducted emissions was the mode and channel with the highest output power, that was determined to be 11B Channel 01

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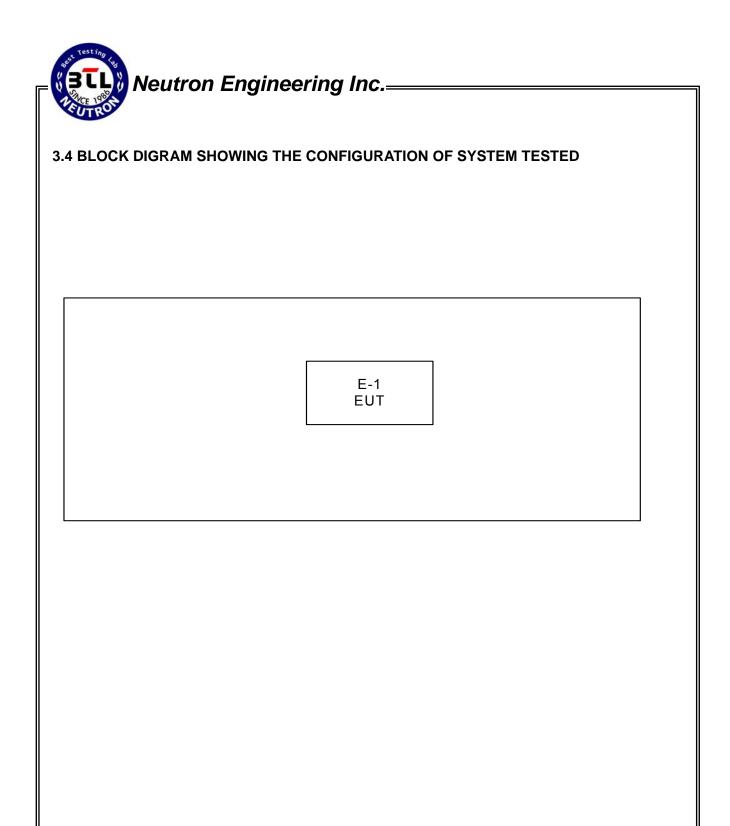
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

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	Test Program: MP_TEST			
Frequency	2412 MHz	2437 MHz	2462 MHz	
IEEE 802.11b DSSS	45	43	41	
IEEE 802.11g OFDM	38	38	38	

Test software Version	Test Program: MP_TEST				
Frequency (MHz)	2412 MHz	2437 MHz	2462 MHz		
IEEE 802.11n (20MHz)	30(ANT1)	30(ANT1)	30(ANT1)		
	30(ANT2)	30(ANT2)	30(ANT2)		
Frequency (MHz)	2422 MHz	2437 MHz	2452 MHz		
IEEE 802.11n (40MHz)	30(ANT1)	30(ANT1)	30(ANT1)		
1LLL 002.1111 (40W1112)	30(ANT2)	30(ANT2)	30(ANT2)		

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3.5 DESCRIPTION OF SUPPORT UNITS (RADIATED MODE)

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Portable 300Mbps Wireless-N Router/AP	netis	WF-2403	T58WF2403R	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in <code>[Length]</code> column.

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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	Class A (dBuV)		Class B (dBuV)		
TREQUENCT (MITZ)	Quasi-peak	Average	Quasi-peak	Average	Standard	
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	3816/2SH	00052766	May.26.2012
2	LISN	R&S	ENV216	100526	May.26.2012
3	Test Cable	N/A	RG400 12m	N/A	Mar.18.2012
4	EMI TEST RECEIVER	R&S	ESCI	100895	May.26.2012
5	50Ω Terminator	SHX	TF2-3G-A	08122901	May.26.2012

Remark: "N/A" denotes No Model Name., Serial No. or No Calibration specified.

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

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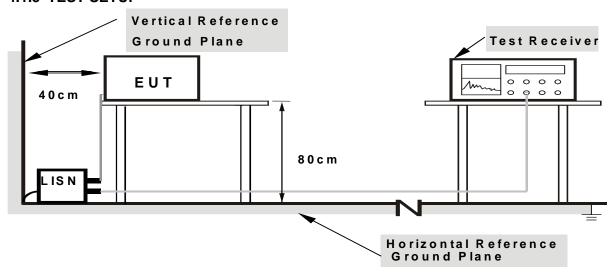
4.1.3 TEST PROCEDURE

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

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.

The EUT was programmed to be in continuously transmitting mode.

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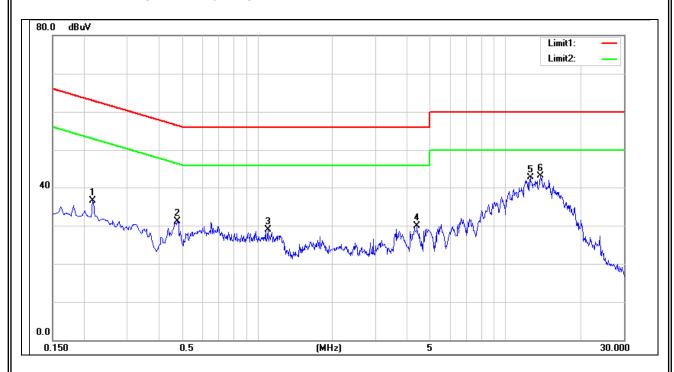
4.1.7 TEST RESULTS

EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	55%
Pressure:	1010hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal Link		

Freq.	Terminal	Measured(dBuV)		Limits (dBuV)		Margin	Note
(MHz)	L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dB)	NOTE
0.22	Line	36.46	*	62.90	52.90	-26.44	(QP)
0.48	Line	31.05	*	56.37	46.37	-25.32	(QP)
1.10	Line	28.95	*	56.00	46.00	-27.05	(QP)
4.39	Line	29.90	*	56.00	46.00	-26.10	(QP)
12.60	Line	42.73	*	60.00	50.00	-17.27	(QP)
13.87	Line	43.10	*	60.00	50.00	-16.90	(QP)

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 o



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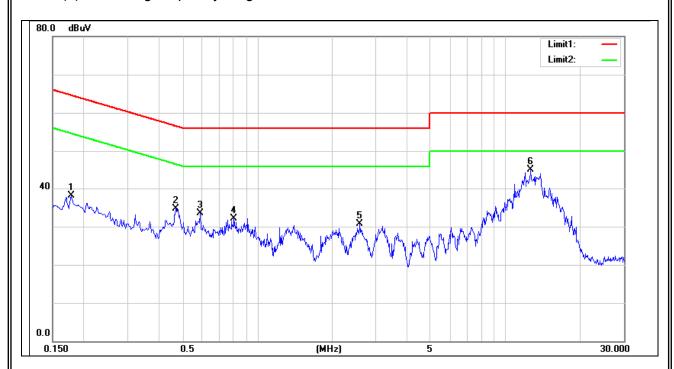


EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	55%
Pressure:	1010hPa	Test Power :	AC 120V/60Hz
Test Mode :	Normal Link		

Freq.	Terminal	Measured(dBuV)		Limits (dBuV)		Margin	Note
(MHz)	L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dB)	NOTE
0.18	Neutral	38.18	*	64.58	54.58	-26.40	(QP)
0.47	Neutral	34.67	*	56.51	46.51	-21.84	(QP)
0.59	Neutral	33.46	*	56.00	46.00	-22.54	(QP)
0.81	Neutral	32.14	*	56.00	46.00	-23.86	(QP)
2.59	Neutral	30.61	*	56.00	46.00	-25.39	(QP)
12.71	Neutral	45.03	*	60.00	50.00	-14.97	(QP)

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 o



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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBuV/m) (at 3m)		
FREQUENCT (IVITIZ)	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).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

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4.2.2 MEASUREMENT INSTRUMENTS LIST ANS SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Horn Antenna	ETS	3115	00075789	May.11.2012
2	Amplifier	Agilent	8449B	3008A02274	May.25.2012
3	Spectrum	Agilent	E4408B	US39240143	Nov.15.2011
4	Test Cable	HUBER+SUHNER	CB03 High Fre	N/A	May.02.2012
5	Bi-log Antenna	Schwarbeck	VULB9160	9160-3232	May.25.2012
6	Amplifier	HP	8447D	2944A09673	May.25.2012
7	Test Receiver	R&S	ESCI	100895	May.25.2012
8	Test Cable	N/A	C-01_CB03	N/A	Jul.04.2012
9	Controller	СТ	SC100	N/A	N/A
10	Triple Loop Antenna	R&S	HFH2-Z2	830749/020	May.26.2012
11	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	May.11.2012

Remark: "N/A" denotes No Model Name / Serial No. and No Calibration specified.

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

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

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4.2.3 TEST PROCEDURE

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

4.2.4	DEVIATION	FROM	TEST	STANDARD
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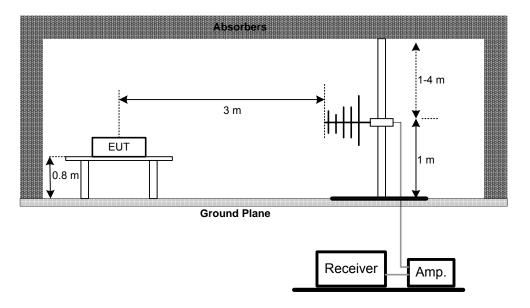
No deviation

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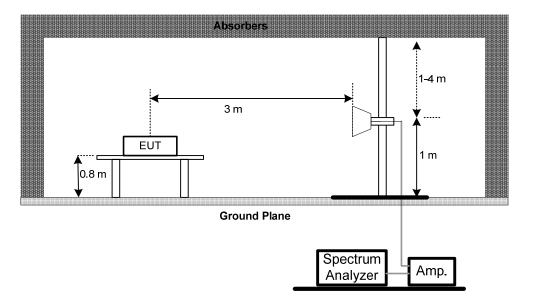


4.2.5 TEST SETUP

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



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



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.

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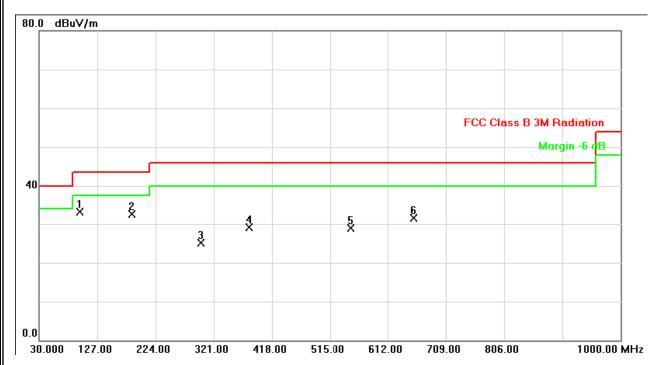
4.2.7 TEST RESULTS (BETWEEN 30 - 1000 MHZ)

EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 01		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
97.60	V	51.36	-18.19	33.17	43.50	- 10.33	
184.40	V	46.58	-14.16	32.42	43.50	- 11.08	
300.20	V	36.28	-11.17	25.11	46.00	- 20.89	
379.90	V	39.06	-9.97	29.09	46.00	- 16.91	
551.20	V	35.14	-6.17	28.97	46.00	- 17.03	
654.90	V	36.87	-5.30	31.57	46.00	- 14.43	

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 \circ
- (2) All readings are Peak unless otherwise stated QP in column of \lceil Note \rceil . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform \circ
- (3) Measuring frequency range from 30MHz to 1000MHz \circ
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table \circ



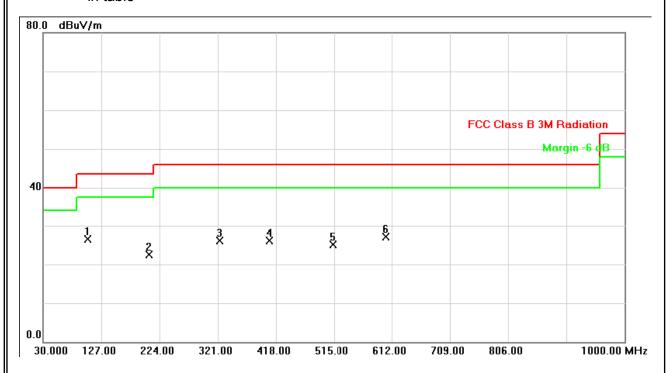
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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE CHANNEL 01		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
104.80	Н	43.21	-16.72	26.49	43.50	- 17.01	
206.10	Н	36.52	-13.99	22.53	43.50	- 20.97	
324.40	Н	36.87	-10.77	26.10	46.00	- 19.90	
406.40	Н	35.74	-9.60	26.14	46.00	- 19.86	
512.60	Н	32.21	-7.14	25.07	46.00	- 20.93	
601.90	Н	32.63	-5.47	27.16	46.00	- 18.84	

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 $^{\circ}$
- (2) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (3) Measuring frequency range from 30MHz to 1000MHz o
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table \circ



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4.2.8 TEST RESULTS (ABOVE 1000 MHZ)

EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

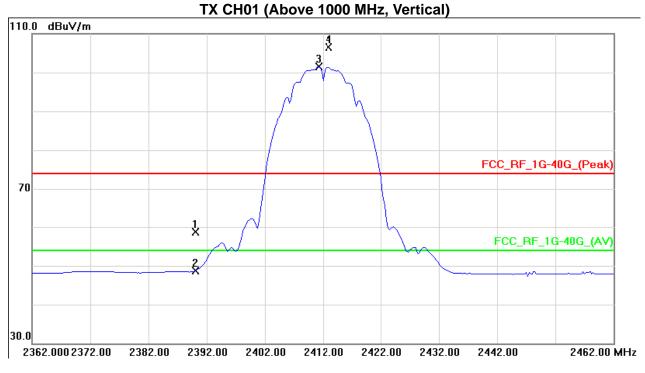
Freg.	Ant.Pol.	Reading		Ant./CF	Act		Limit		
1164.	All.i Oi.	Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	26.87	16.84	31.91	58.78	48.75	74.00	54.00	X/E
2411.25	V	74.54	69.68	31.89	106.42	101.57			X/F
4825.75	V	46.98	34.12	6.25	53.23	40.37	74.00	54.00	X/H

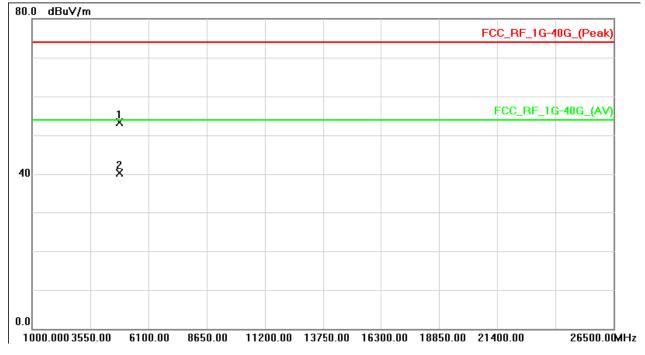
Remark:

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

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Neutron Engineering Inc.= TX CH01 (Above 1000





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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

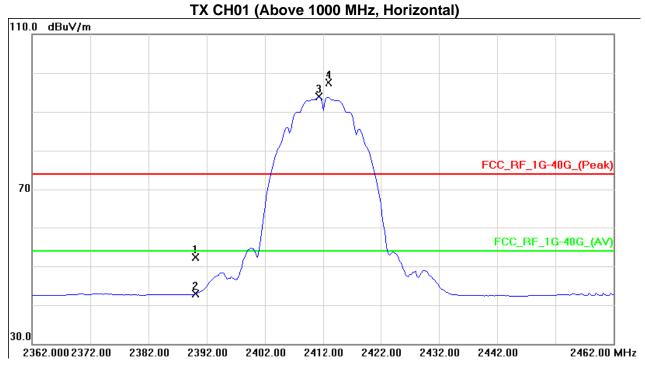
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		
1104.	Alici Oi.	Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	Н	20.37	10.91	31.91	52.28	42.82	74.00	54.00	X/Ε
2411.25	Н	65.70	62.02	31.89	97.58	93.91			X/F
4825.75	Н	49.87	37.22	6.25	56.12	43.47	74.00	54.00	X/H

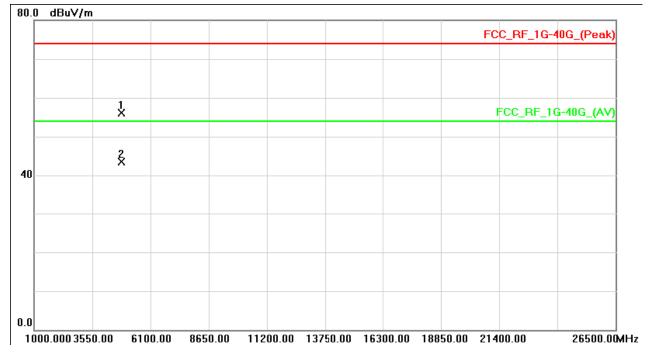
Remark:

- (1) All readings are Peak unless otherwise stated QP in column of ${}^{\mathbb{F}}$ Note ${}_{\mathbb{J}}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ${}^{\circ}$
- (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

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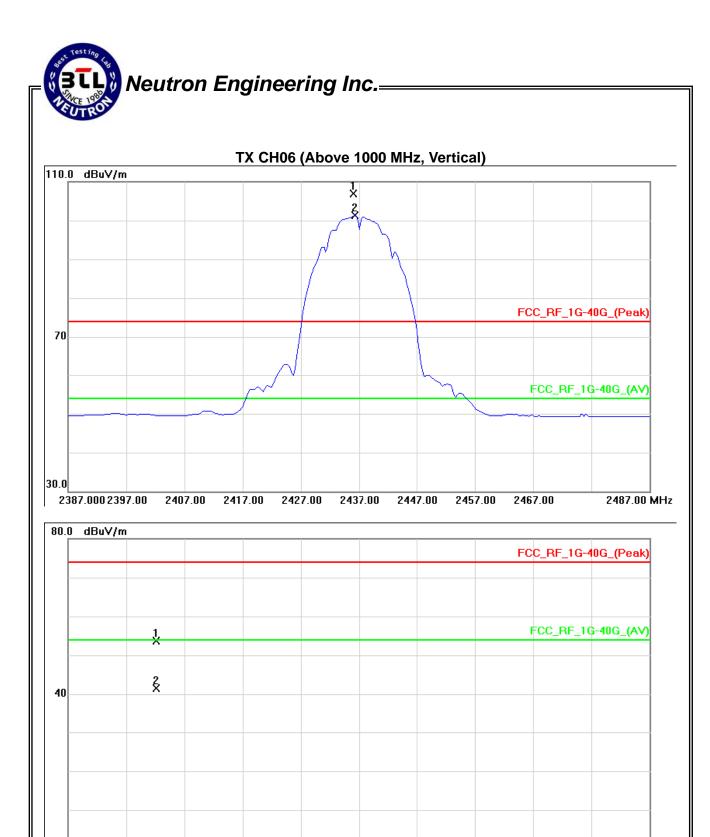
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

Freg.	Ant.Pol.	Reading		Ant./CF	A	Act.		Limit	
1164.	All.i Oi.	Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2436.00	V	75.12	69.48	31.86	106.98	101.34			Χ/F
4874.85	V	47.26	35.05	6.43	53.69	41.48	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

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6100.00 8650.00 11200.00 13750.00 16300.00 18850.00 21400.00

1000.000 3550.00

26500.00MHz

EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

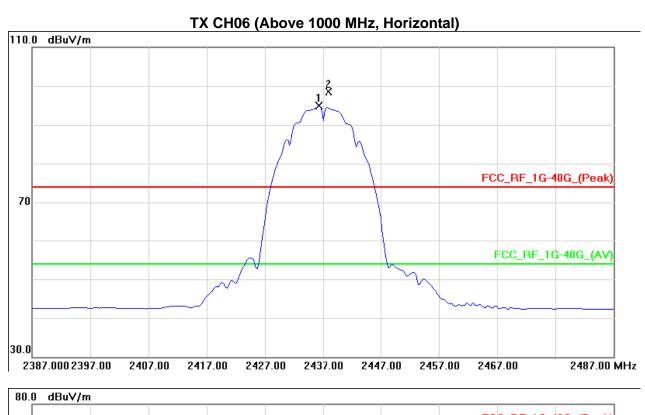
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit			
L	rreq.	Ant.Pol.	Peak	AV		Peak	AV	Peak	AV	Note
I	(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
I	2436.25	Н	66.63	62.98	31.86	98.48	94.84			X/F
I	4874.85	Н	49.62	37.25	6.43	56.05	43.68	74.00	54.00	X/H

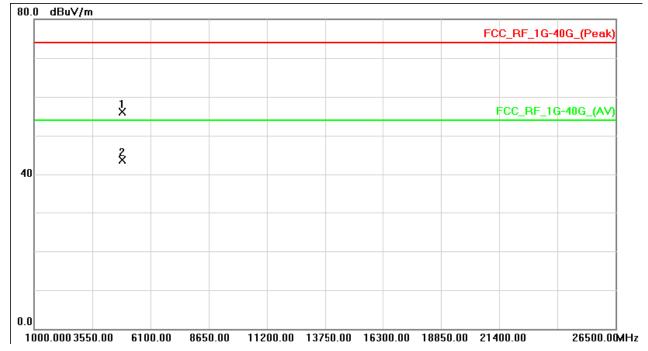
Remark:

- (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 \circ
- (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

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Neutron Engineering Inc.





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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

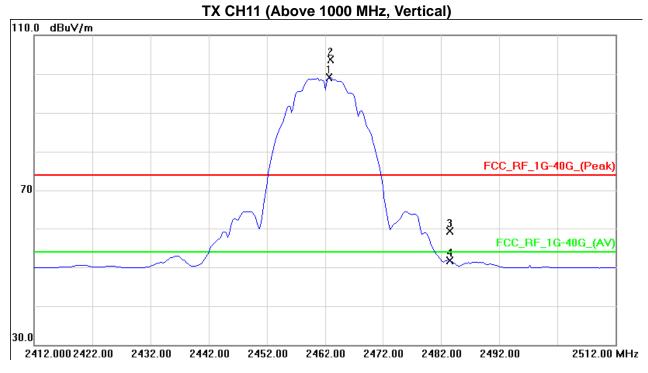
Freq.	Ant.Pol.	Rea	ding	Ant./CF	A	ct.	Lir	nit	
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2462.75	V	71.87	67.37	31.82	103.69	99.19			X/F
2483.50	V	27.52	19.81	31.80	59.32	51.61	74.00	54.00	X/E
4925.25	V	47.63	35.29	6.61	54.24	41.90	74.00	54.00	X/H

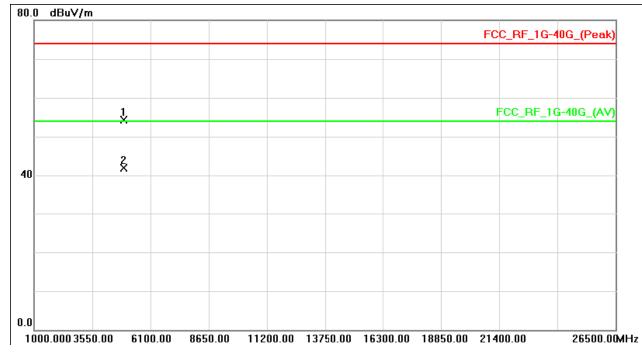
Remark:

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

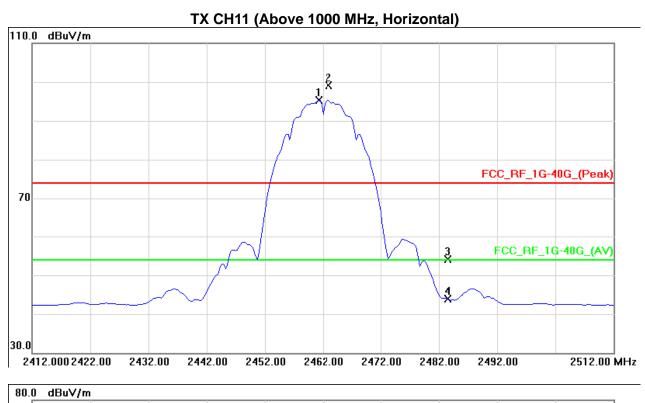
Freq.	Ant.Pol.	Reading		Ant./CF	Ant./CF Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2461.25	Н	67.28	63.53	31.82	99.10	95.36			X/F
2483.50	Н	22.30	12.15	31.80	54.10	43.95	74.00	54.00	X/E
4925.25	Н	49.87	37.52	6.61	56.48	44.13	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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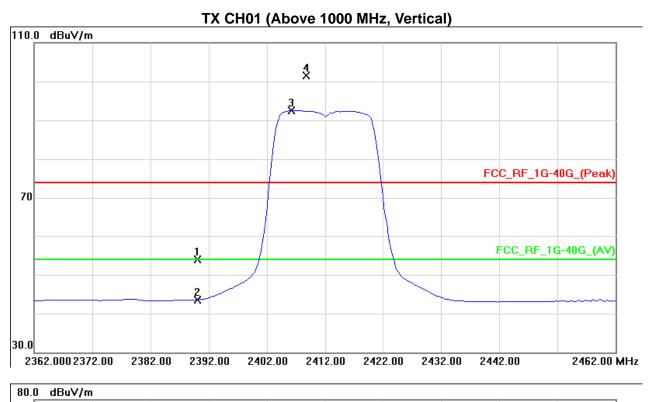
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

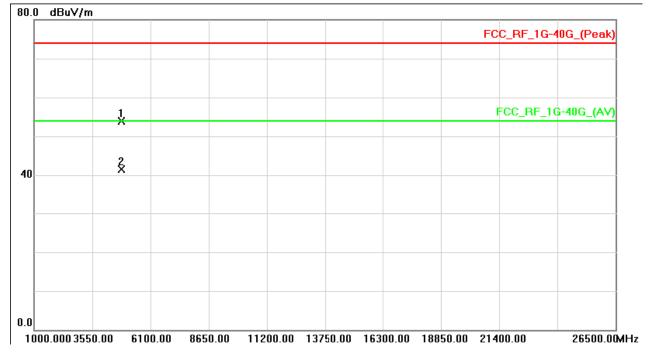
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		
		Peak	ΑV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	21.91	11.67	31.91	53.82	43.58	74.00	54.00	X/E
2406.25	٧	69.57	60.62	31.90	101.46	92.52			X/F
4825.65	V	47.63	35.16	6.25	53.88	41.41	74.00	54.00	X/H

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

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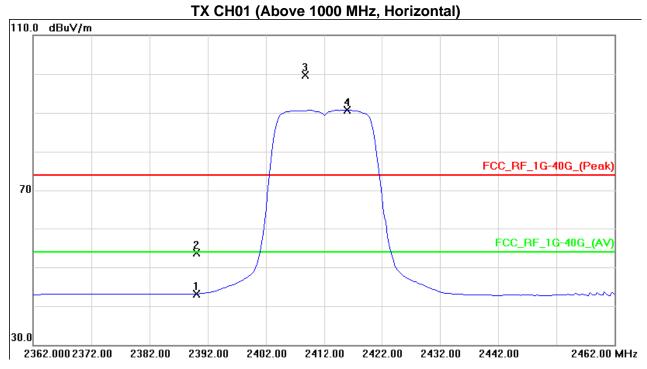
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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	Н	21.82	11.24	31.91	53.73	43.15	74.00	54.00	X/E
2408.75	Н	67.77	58.84	31.89	99.66	90.72			X/F
4825.65	Н	45.16	33.87	6.25	51.41	40.12	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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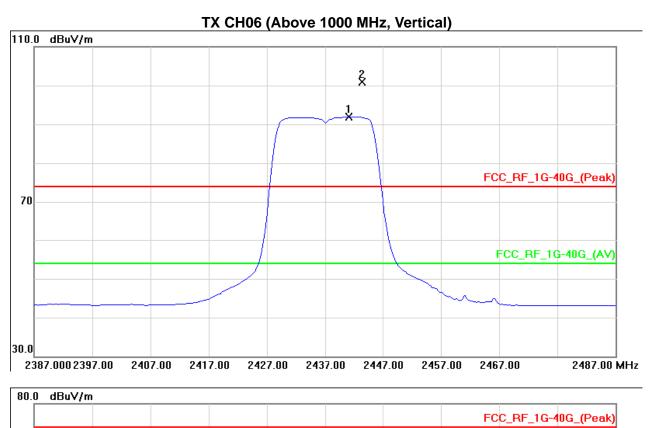
Report No.: NEI-FCCP-1-1107C212 Page 39 of 140

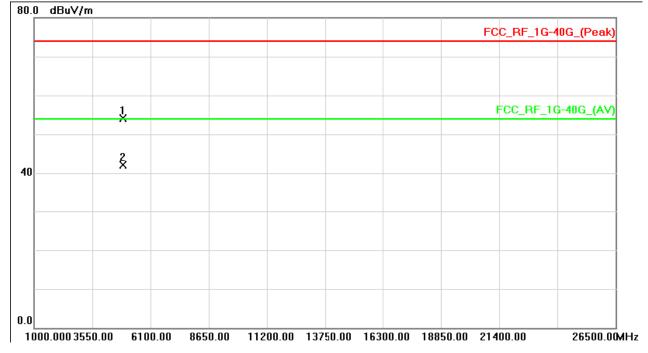
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

Freq. Ant.Pol	Ant.Pol.	Reading		Ant./CF	A	Act.		Limit		
TTEQ.	Ant.r oi.	Peak	AV		Peak	AV	Peak	AV	Note	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)		
2441.25	V	69.04	60.14	31.85	100.89	91.99			X/F	
4876.25	V	47.73	35.62	6.43	54.16	42.05	74.00	54.00	X/H	

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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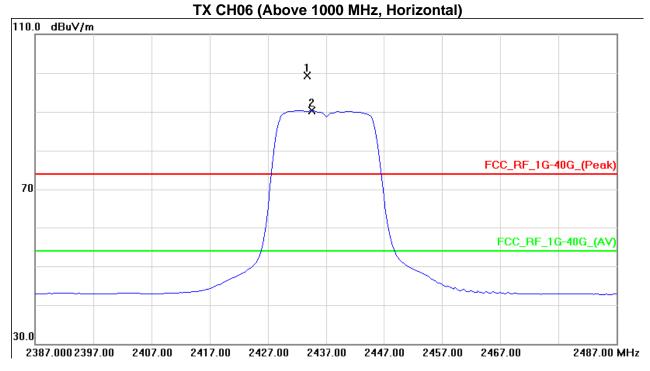
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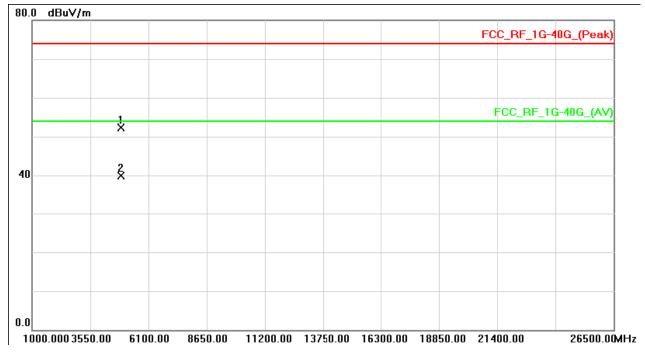
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

Freq. Ant.Pol.	Ant Pol	Reading		Ant./CF	A	Act.		Limit	
TTEQ.	Ant.i Oi.	Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2433.75	Н	67.51	58.41	31.86	99.37	90.27			X/F
4876.25	Н	45.81	33.54	6.43	52.24	39.97	74.00	54.00	X/H

- (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 \circ
- (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

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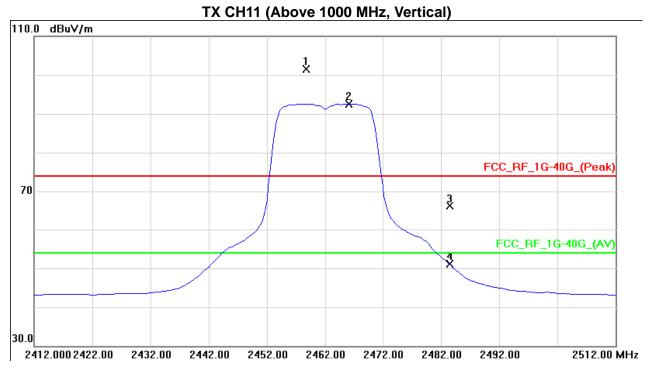
Report No.: NEI-FCCP-1-1107C212 Page 43 of 140

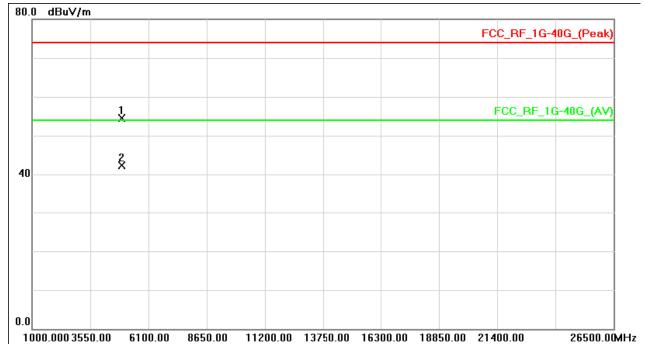
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2458.75	V	69.74	60.75	31.82	101.57	92.57			X/F
2483.50	V	34.39	19.22	31.80	66.19	51.02	74.00	54.00	X/E
4926.50	V	47.92	35.74	6.61	54.53	42.35	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

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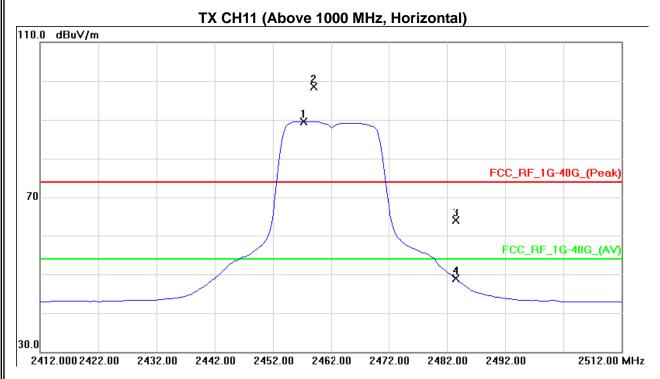
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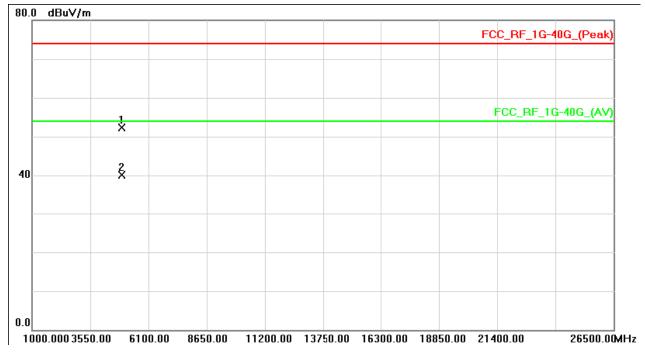
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

Freq.	Ant.Pol.	Rea	Reading Ant./		Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2459.00	Н	66.74	57.73	31.84	98.57	89.57			X/F
2483.50	Н	32.09	17.08	31.80	63.89	48.88	74.00	54.00	X/E
4926.50	Н	45.62	33.48	6.61	52.23	40.09	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency of 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

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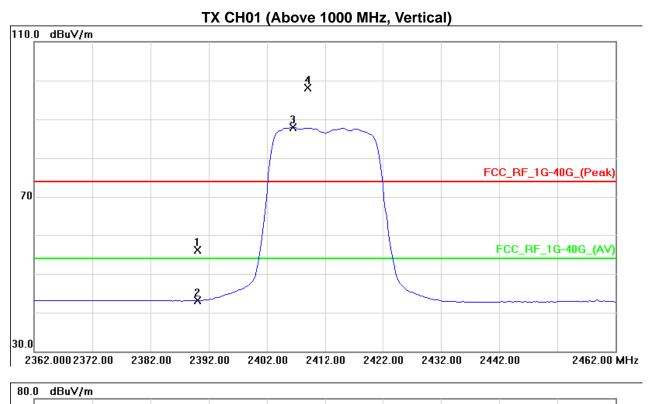
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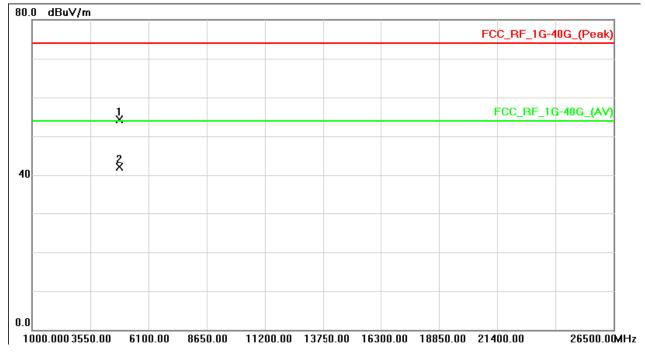
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

Freq.	Ant.Pol.	Reading Ant.		Ant./CF	Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	24.14	11.18	31.91	56.05	43.09	74.00	54.00	X/E
2406.50	٧	66.14	56.04	31.90	98.03	87.94			X/F
4825.65	V	48.02	35.87	6.25	54.27	42.12	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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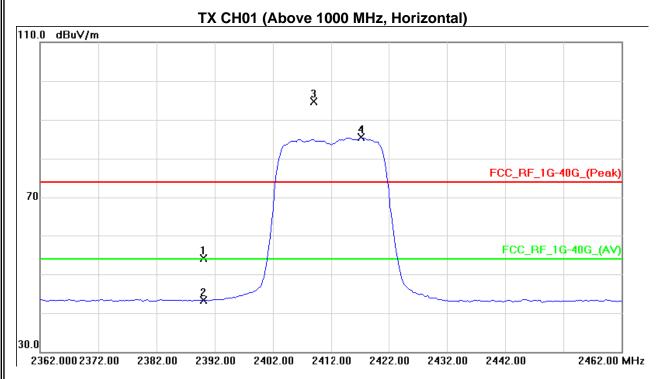
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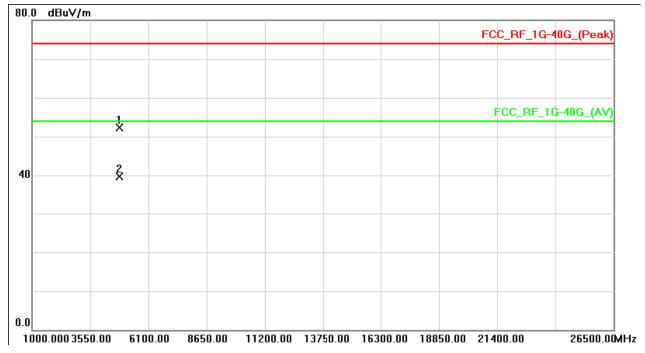
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	Н	22.12	11.49	31.91	54.03	43.40	74.00	54.00	X/E
2409.00	Н	62.86	53.52	31.89	94.75	85.41			X/F
4825.65	Н	45.98	33.41	6.25	52.23	39.66	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

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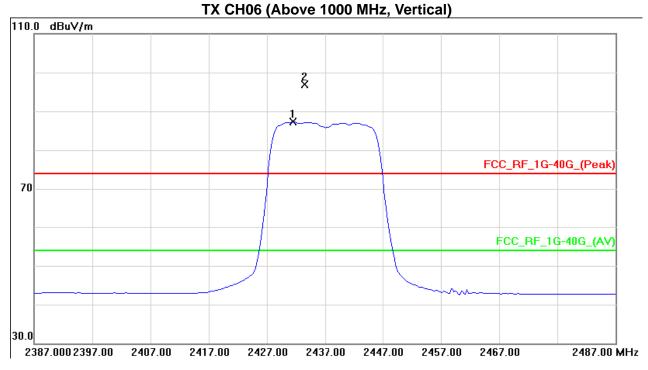
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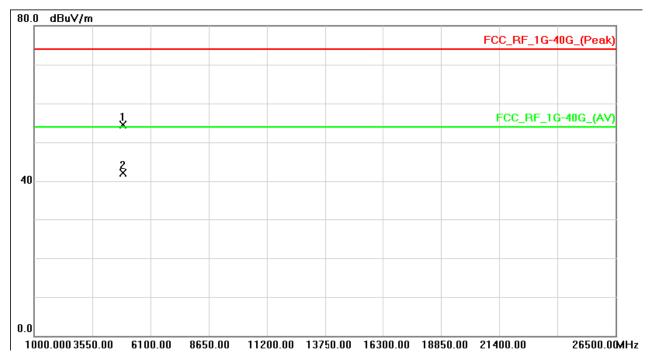
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

Freg. Ant.Po	Ant Pol	Ant.Pol. Reading A		Ant./CF	Act.		Lir		
1164.	Ant.i Oi.	Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2431.50	V	64.99	55.40	31.87	96.85	87.27			X/F
4876.50	V	48.02	35.65	6.43	54.45	42.08	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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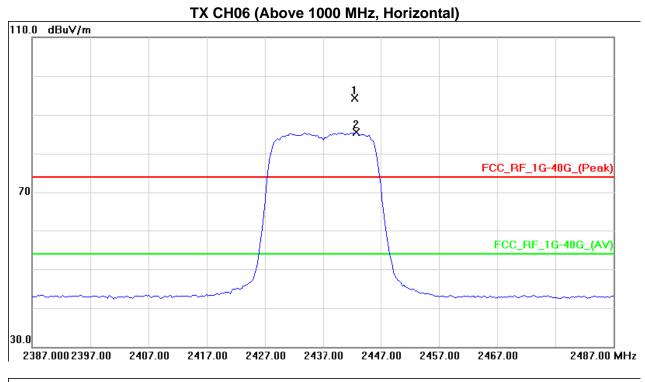
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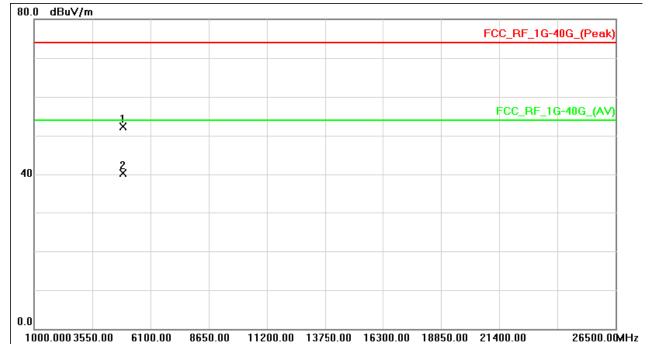
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

Freq. Ant.Po	Ant.Pol.	nt Pol Reading		Ant./CF	Act.		Limit		
TTEQ.	Ant.i Oi.	Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2442.50	Н	62.48	53.73	31.85	94.33	85.58			X/F
4876.50	Н	45.91	33.82	6.43	52.34	40.25	74.00	54.00	X/H

- (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 \circ
- (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

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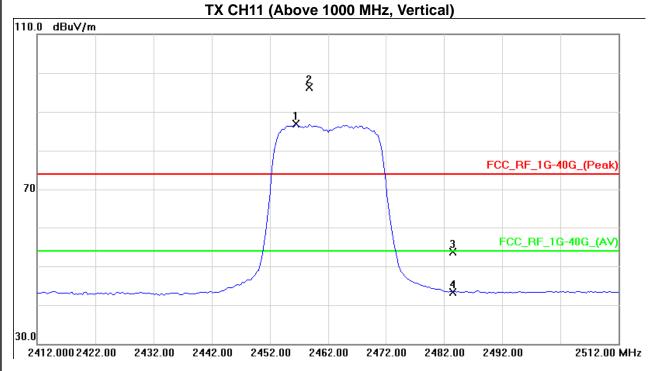
Report No.: NEI-FCCP-1-1107C212 Page 55 of 140

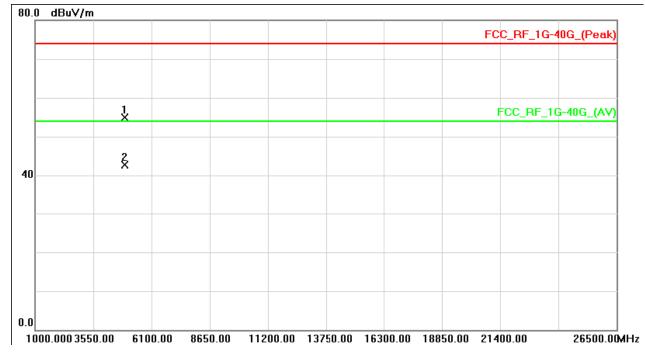
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2456.50	V	64.46	54.98	31.84	96.29	86.82			X/F
2483.50	V	21.83	11.55	31.80	53.63	43.35	74.00	54.00	X/E
4926.25	V	48.20	36.01	6.61	54.81	42.62	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

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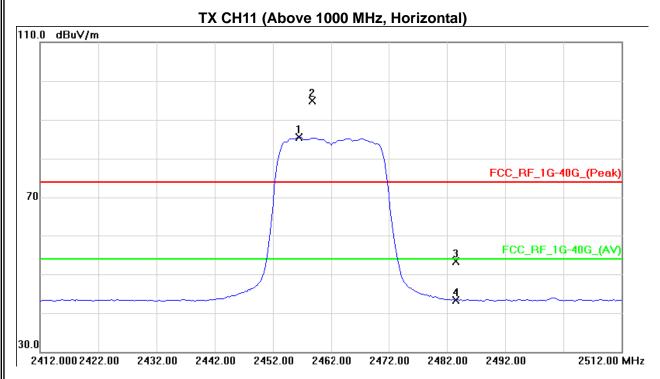
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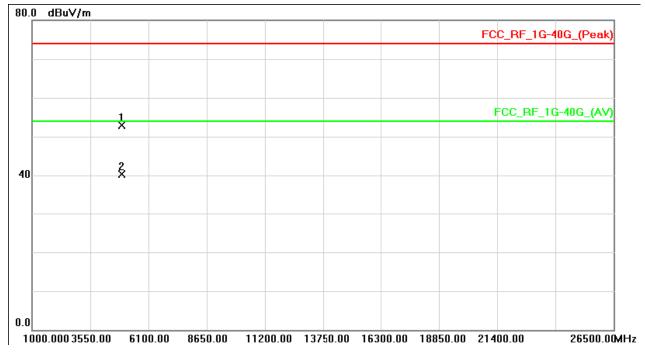
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

Freq.	Ant.Pol.	Rea	ding Ant./Cf		A	ct.	Limit		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2456.50	Н	63.12	53.66	31.84	94.95	85.50			X/F
2483.50	Н	21.56	11.56	31.80	53.36	43.36	74.00	54.00	X/E
4926.25	Н	46.21	33.68	6.61	52.82	40.29	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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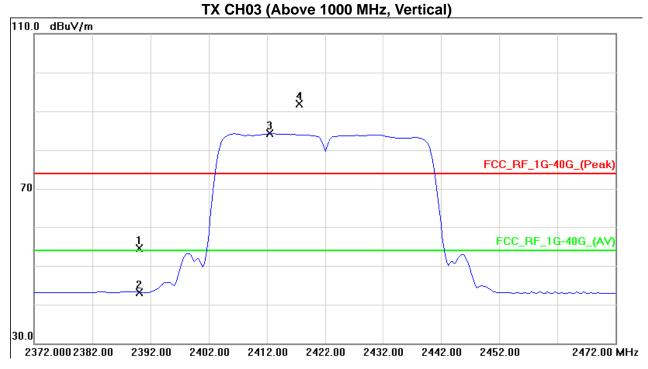
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

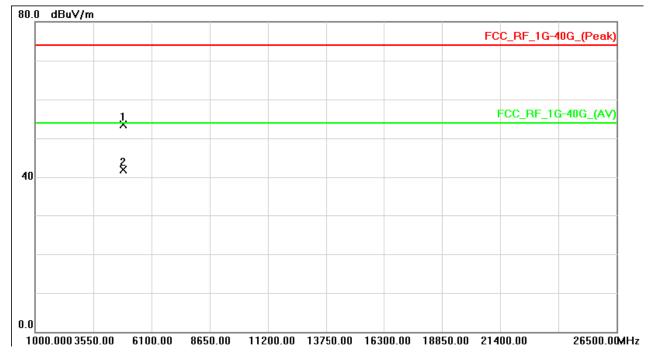
Freq.	Ant.Pol.	Reading Ar		Ant./CF	Act.		Lir		
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	22.53	11.27	31.91	54.44	43.18	74.00	54.00	X/E
2412.50	٧	59.99	52.42	31.89	91.88	84.31			X/F
4846.85	V	47.25	35.54	6.32	53.57	41.86	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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Neutron Engineering Inc.= TX CH03 (Above 1000





EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

Freq.	Ant.Pol.	Rea	ding	Ant./CF	A	ct.	Lir	nit	
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	Н	22.23	11.04	31.91	54.14	42.95	74.00	54.00	X/E
2431.50	Н	60.63	50.11	31.89	92.52	81.98			X/F
4846.85	Н	45.73	33.62	6.32	52.05	39.94	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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

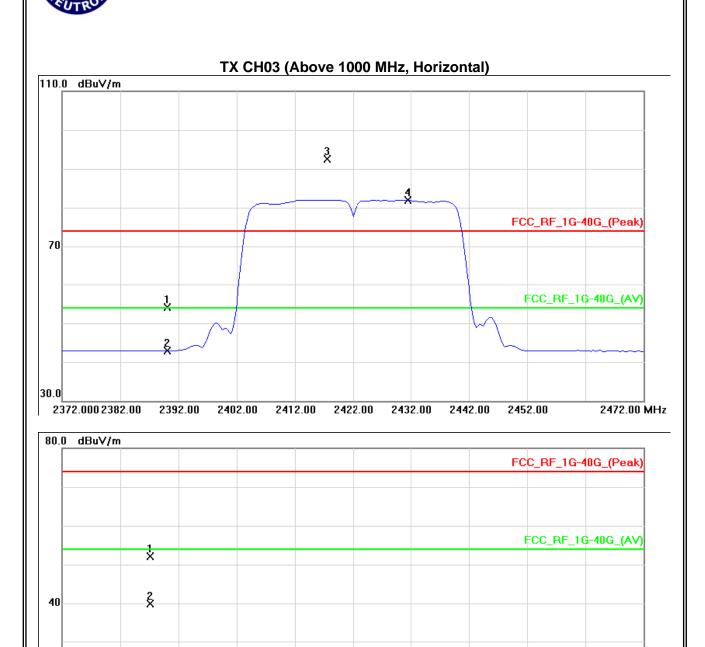
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0.0

1000.000 3550.00

6100.00

8650.00



11200.00 13750.00 16300.00 18850.00 21400.00

26500.00MHz

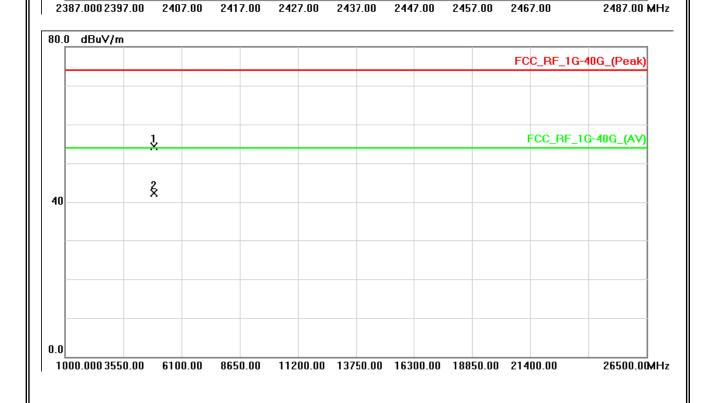
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

Freq.	Ant.Pol.	Rea	ding	Ant./CF	Ad	ot.	Lir	nit	
1164.	Ant.i Oi.	Peak	ΑV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2432.50	٧	60.65	52.62	31.87	92.52	84.47			X/F
4876.50	V	47.96	35.82	6.43	54.39	42.25	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (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 \circ
- (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

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Neutron Engineering Inc. TX CH06 (Above 1000 MHz, Vertical) 10.0 dBuV/m 1 x FCC_RF_1G-40G_(Peak) 70 FCC_RF_1G-40G_(AV)



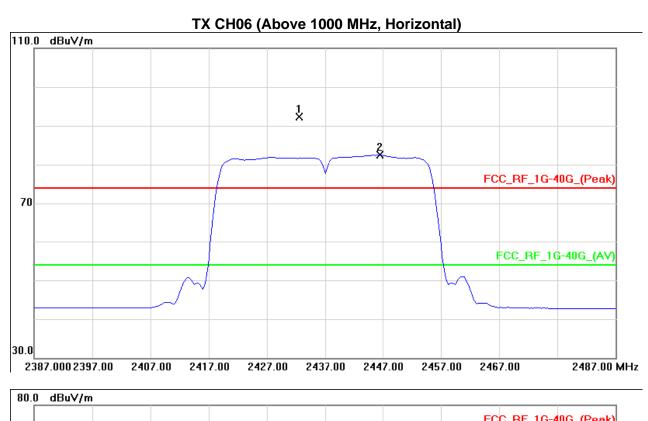
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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

Freq. Ant.Po		Rea	ding	Ant./CF	A	ct.	Lir	mit	
1164.	Ant.i Oi.	Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2446.50	Н	60.45	50.65	31.87	92.32	82.50			X/F
4876.50	Н	45.87	33.29	6.43	52.30	39.72	74.00	54.00	X/H

- (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 \circ
- (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

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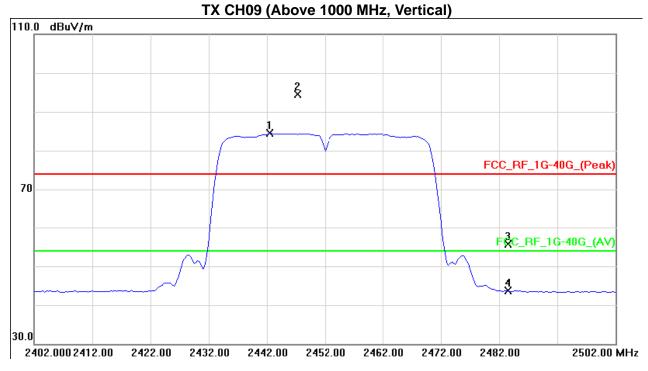
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

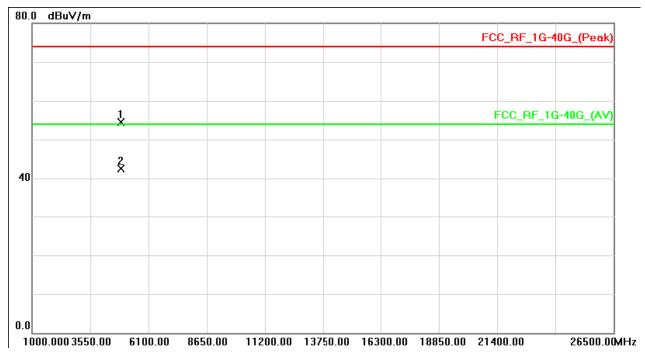
Freq.	Ant.Pol.	Rea	ding	Ant./CF	A	ct.	Lir	nit	
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2442.50	V	62.62	52.59	31.85	94.47	84.44			X/F
2483.50	V	23.82	11.82	31.80	55.62	43.62	74.00	54.00	X/E
4906.50	V	48.02	35.91	6.55	54.57	42.46	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency of 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 \circ
- (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

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Neutron Engineering Inc.= TX CH09 (Above 1000)





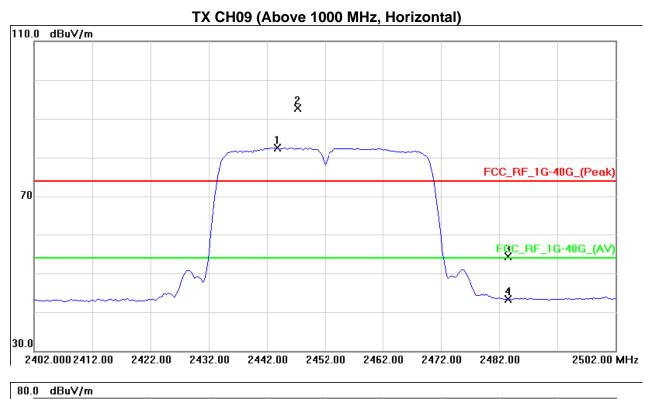
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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

Freq.	Ant.Pol.	Rea	ding	Ant./CF	A	ct.	Lir	nit	
		Peak	AV		Peak	AV	Peak	AV	Note
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2443.75	Н	60.95	50.74	31.85	92.80	82.59			X/F
2483.50	Н	22.46	11.50	31.80	54.26	43.30	74.00	54.00	X/E
4906.50	Н	45.23	33.17	6.55	51.78	39.72	74.00	54.00	X/H

- (1) All readings are Peak unless otherwise stated QP in column of \lceil Note $_{
 m J}$. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform $_{
 m O}$
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency of 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 \circ
- (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

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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	>= 500KHz (6dB 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	Jan. 04, 2012

Remark: "N/A" denotes No Model Name., Serial No. or No Calibration specified.

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=100KHz, Sweep time = 5 ms.

5.1.3 DEVIATION FROM STANDARD

No deviation.

5.1.4 TEST SETUP



5.1.5 EUT OPERATION CONDITIONS

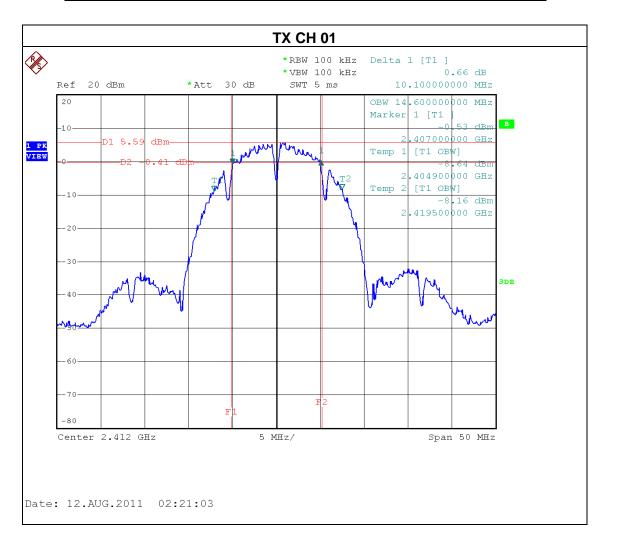
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

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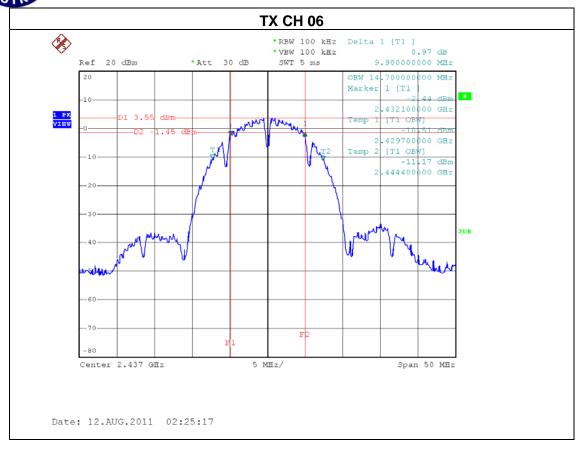
5.1.6 TEST RESULTS

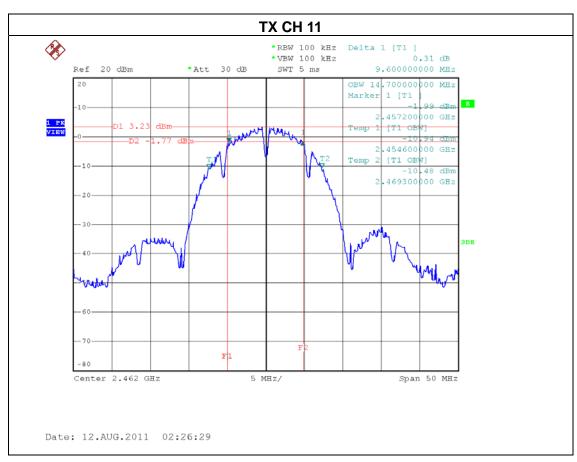
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name. :	WF-2403	
Temperature:	24 ℃	Relative Humidity:	60 %	
Pressure:	Test Voltage : AC 120V/60Hz			
Test Mode :	TX B MODE /CH01, CH06, CH11			

Test Channel	Frequency (MHz)	Bandwidth (MHz)	LIMIT (MHz)
CH01	2412	10.10	>=500KHz
CH06	2437	9.90	>=500KHz
CH11	2462	9.60	>=500KHz



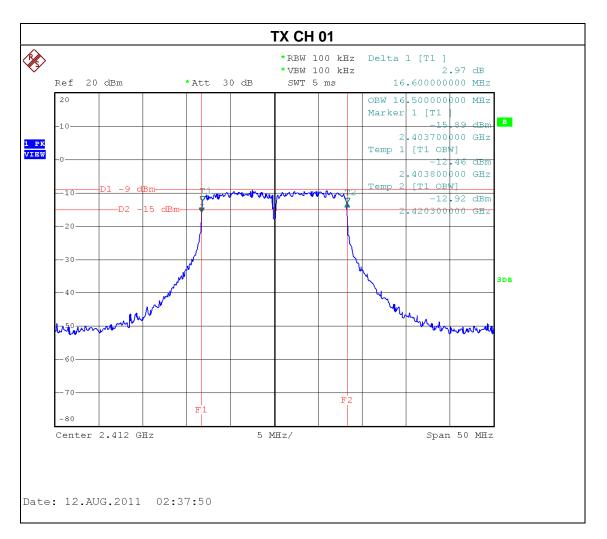
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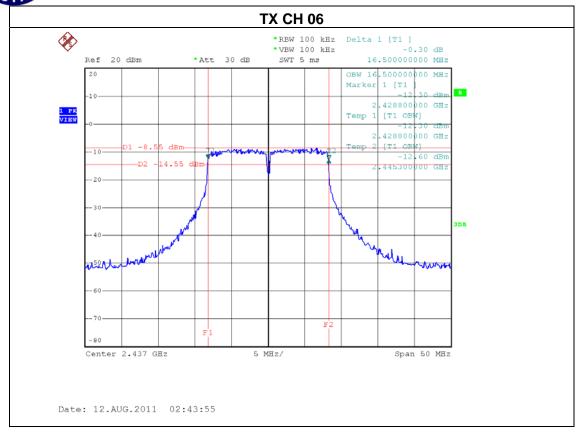


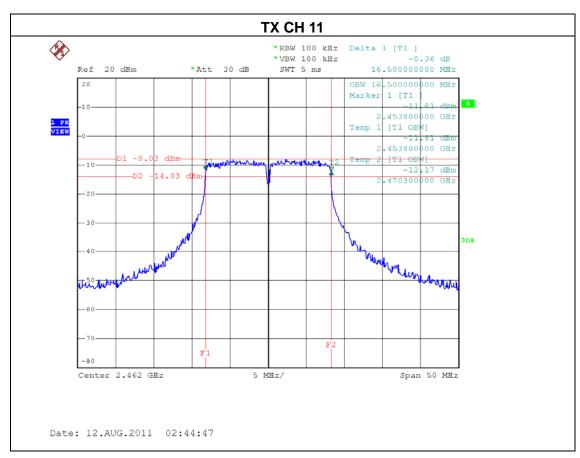
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name. :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	LIMIT (MHz)
CH01	2412	16.60	>=500KHz
CH06	2437	16.50	>=500KHz
CH11	2462	16.50	>=500KHz



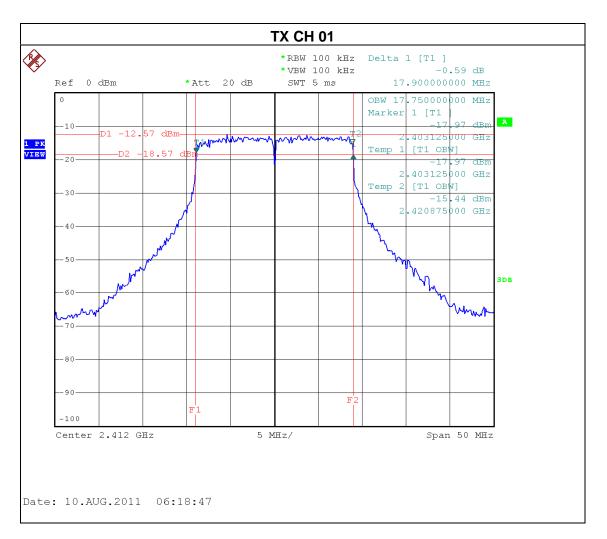
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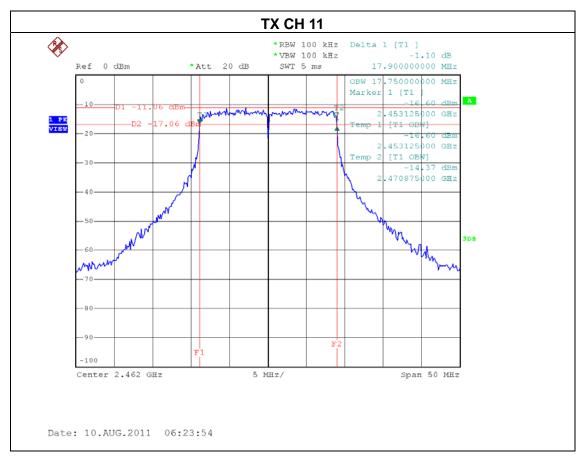
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name. :	WF-2403	
Temperature:	24 ℃	Relative Humidity:	60 %	
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz	
Test Mode :	: TX N MODE -20MHz/ CH01, CH06, CH11			

Test Channel	Frequency	Bandwidth	LIMIT
	(MHz)	(MHz)	(MHz)
CH01	2412	17.90	>=500KHz
CH06	2437	17.80	>=500KHz
CH11	2462	17.90	>=500KHz



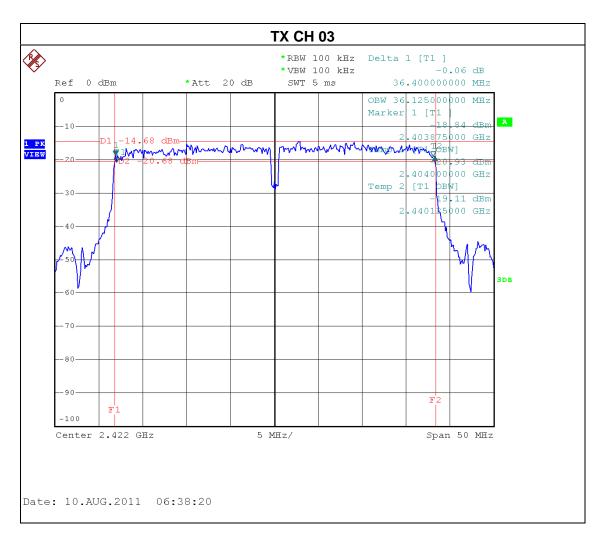
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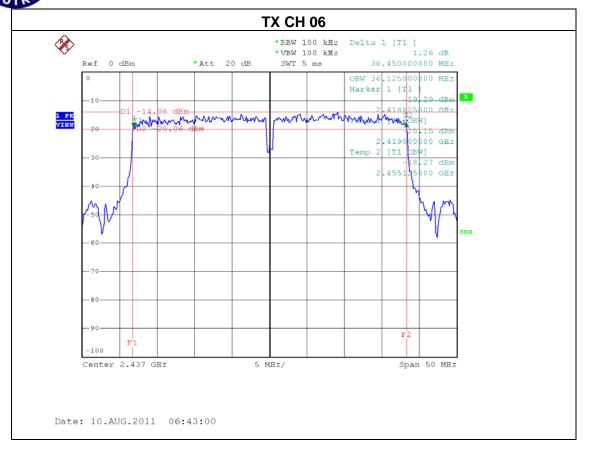


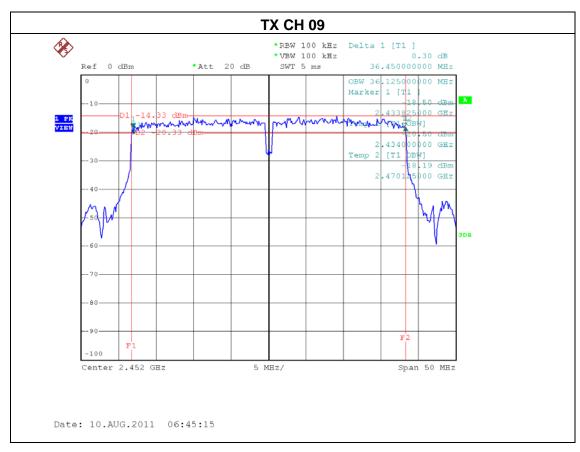
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Temperature:	24 ℃	Relative Humidity:	60 %	
Pressure:	016 hPa Test Voltage : AC 120V/60Hz			
Test Mode : TX N MODE -40MHz/ CH03, CH06, CH09				

Test Channel	Frequency	Bandwidth	LIMIT
	(MHz)	(MHz)	(MHz)
CH03	2422	36.40	>=500KHz
CH06	2437	36.45	>=500KHz
CH09	2452	36.45	>=500KHz



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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.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 04, 2012

Remark: "N/A" denotes No Model Name., Serial No. or No Calibration specified.

6.1.2 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= 1MHz, VBW=3MHz, Sample detector, Sweep time = 5 ms.

6.1.3 DEVIATION FROM STANDARD

No deviation.

6.1.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

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.

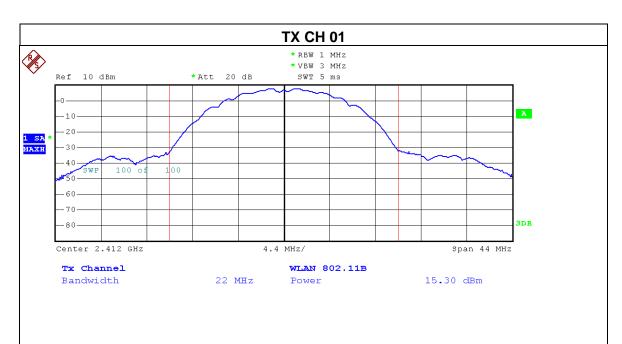
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6.1.6 TEST RESULTS

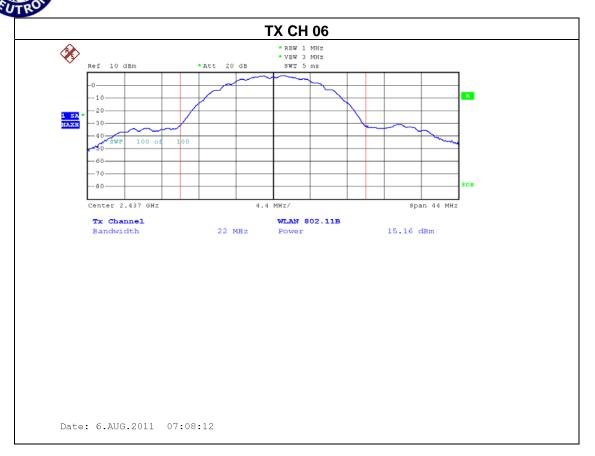
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403	
Temperature:	24 °C	Relative Humidity:	60 %	
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz	
Test Mode :	TX B MODE /CH01, CH06, CH11			

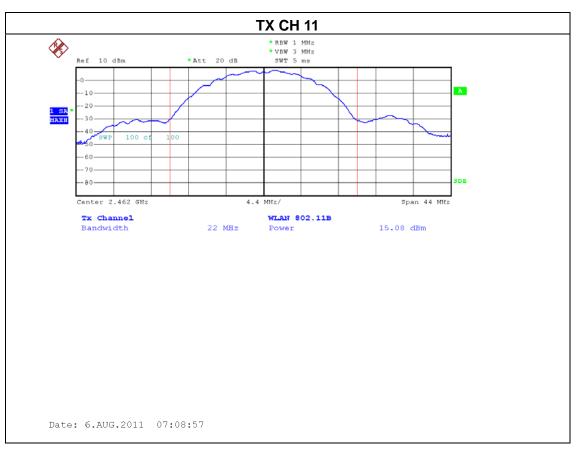
Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	15.30	30	1
CH06	2437 MHz	15.16	30	1
CH11	2462 MHz	15.09	30	1



Date: 6.AUG.2011 07:07:15



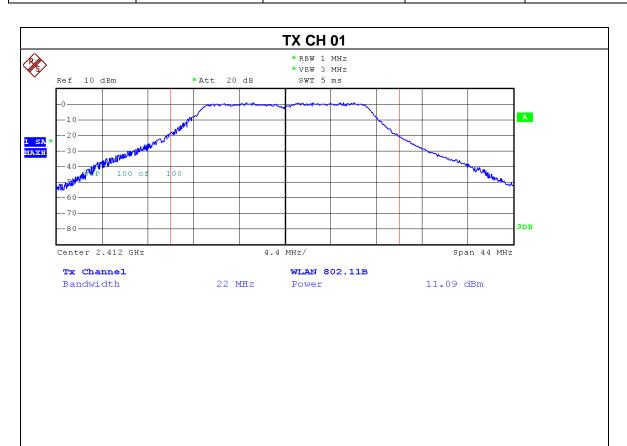




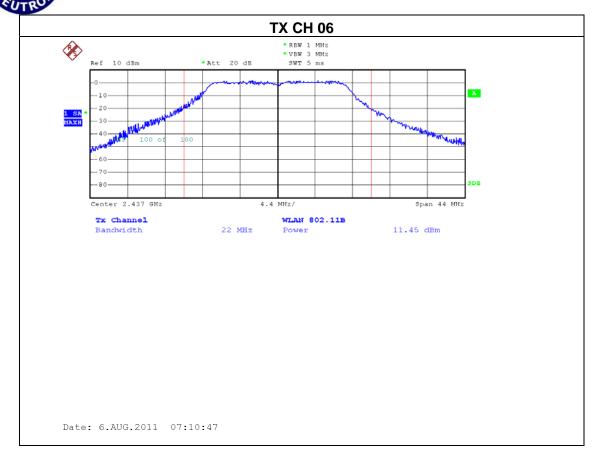
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

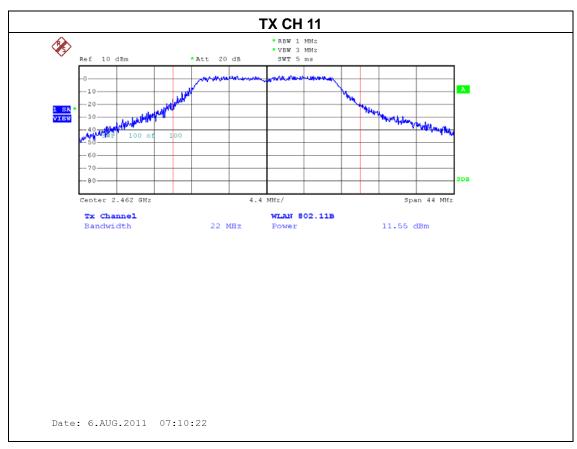
Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	11.09	30	1
CH06	2437 MHz	11.45	30	1
CH11	2462 MHz	11.55	30	1



Date: 6.AUG.2011 07:12:16

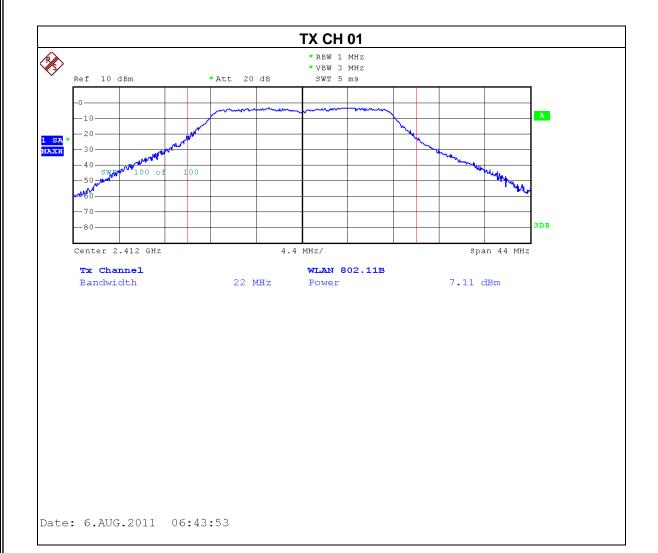




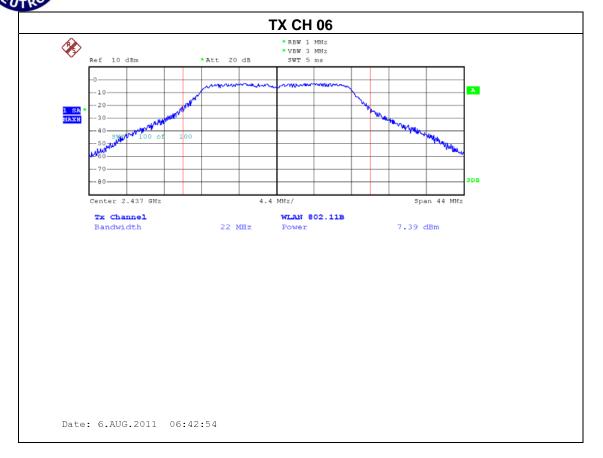
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Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	st Mode : TX N-20M MODE /CH01, CH06, CH11-ANT1		

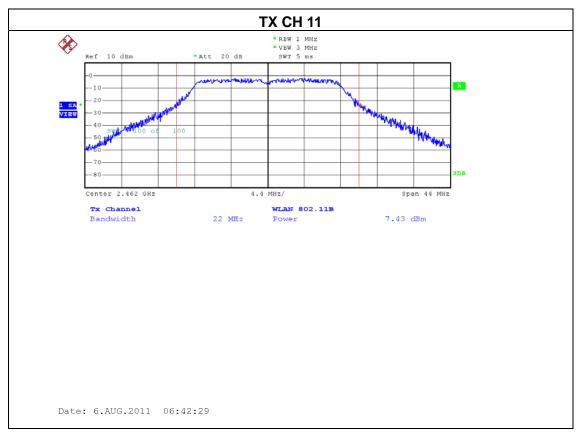
Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	7.11	30	1
CH06	2437 MHz	7.39	30	1
CH11	2462 MHz	7.43	30	1



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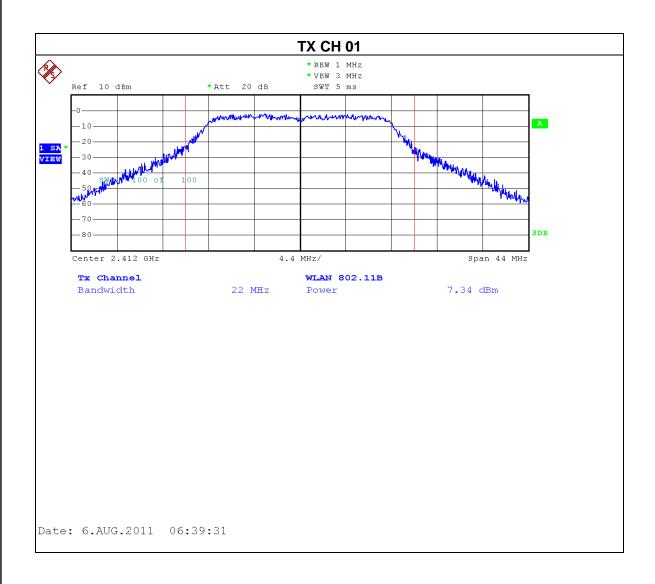




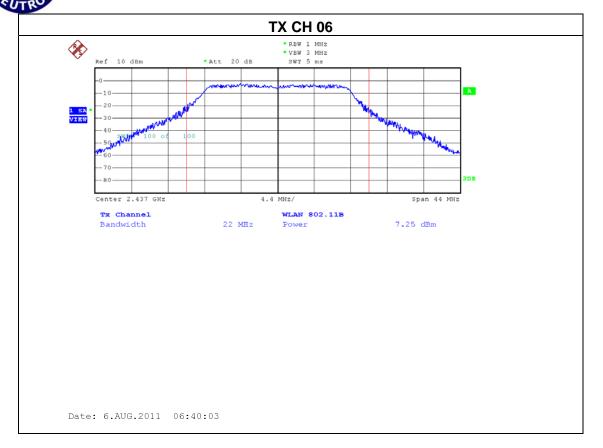
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Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	ode : TX N-20M MODE /CH01, CH06, CH11-ANT2		

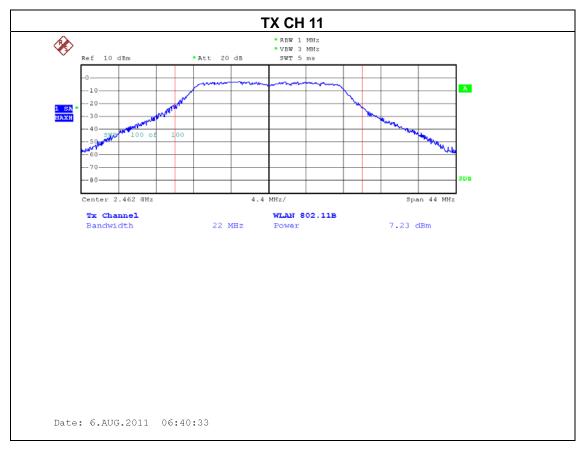
Maximum Output Power

Test Channel	Frequency	Output Power	LIMIT	LIMIT
rest orialine	(MHz)	(dBm)	(dBm)	(W)
CH01	2412 MHz	7.34	30	1
CH06	2437 MHz	7.25	30	1
CH11	2462 MHz	7.23	30	1



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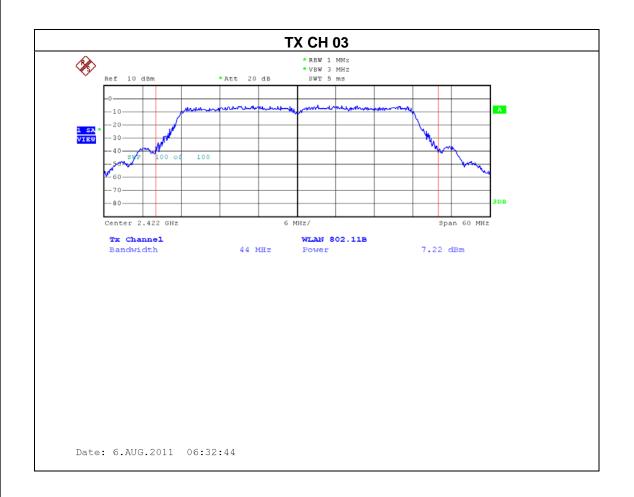




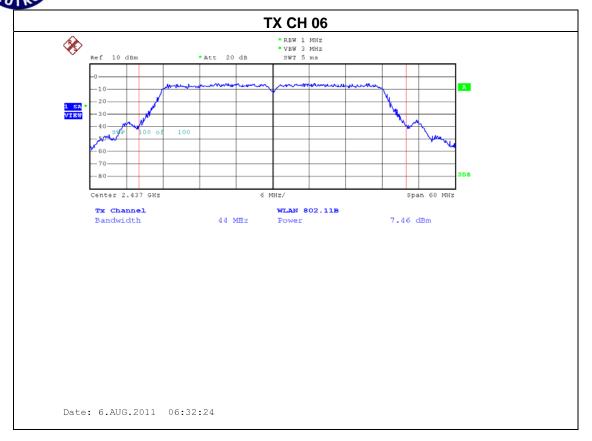
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Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode : TX N-40M MODE /CH03, CH06, CH09 - ANT 1			

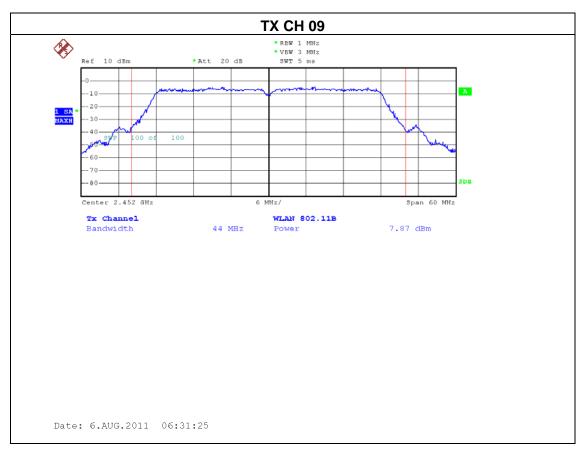
Maximum Output Power

Test Channel	Frequency (MHz)	AV Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH03	2422 MHz	7.22	30	1
CH06	2437 MHz	7.46	30	1
CH09	2452 MHz	7.87	30	1



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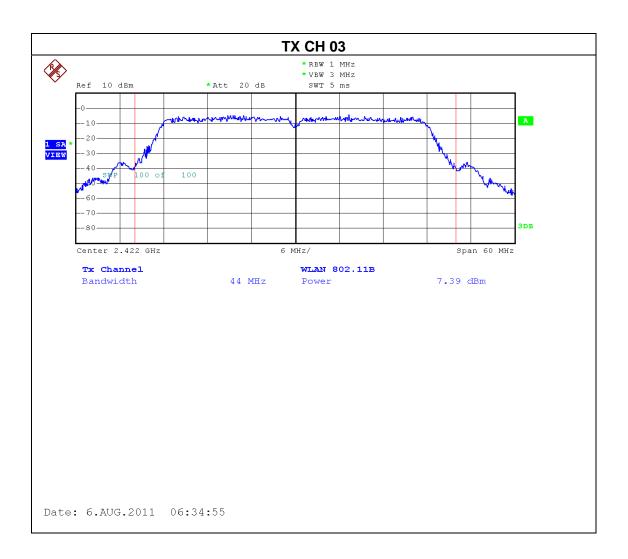


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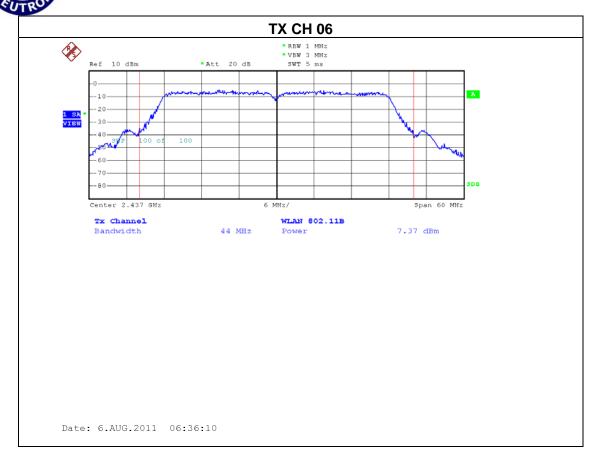
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode : TX N-40M MODE /CH03, CH06, CH09 - ANT 2			

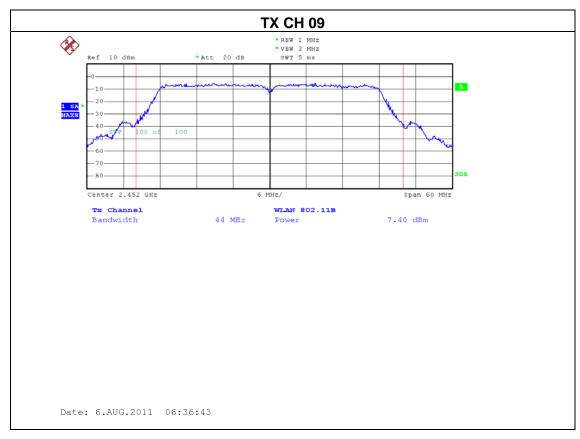
Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH03	2422 MHz	7.39	30	1
CH06	2437 MHz	7.37	30	1
CH09	2452 MHz	7.40	30	1



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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11 - ANT 1+ ANT 2		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	10.24	30	1
CH06	2437 MHz	10.33	30	1
CH11	2462 MHz	10.34	30	1

EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 - ANT 1+ ANT 2		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH03	2422 MHz	10.32	30	1
CH06	2437 MHz	10.43	30	1
CH09	2452 MHz	10.65	30	1

Note: Each antenna port was measured individually, and the aggregated power was summed up mathematically.

Remark:

- (1) The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.

 And after obtain each individual transmitter chain power, then sum the output power by using the following formula:
 - ((dBm/Chain 1)/10^Log) + ((dBm/Chain 2)/10^log) + ((dBm/ChainN)/10^log) = Combined peak output power in mW.
- (2) Antenna Gain=2 dBi.

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7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 Applied procedures / limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

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	Jan. 04, 2012

Remark: " N/A" denotes No Model Name. , Serial No. or No Calibration specified.

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=100KHz, Sweep time = 10 ms.

7.1.3 DEVIATION FROM STANDARD

No deviation.

7.1.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

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.

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7.1.6 TEST RESULTS

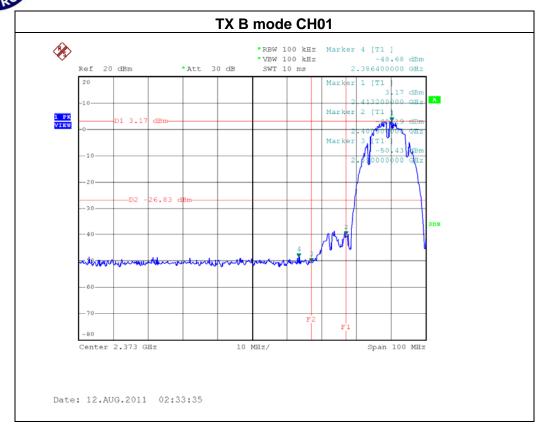
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

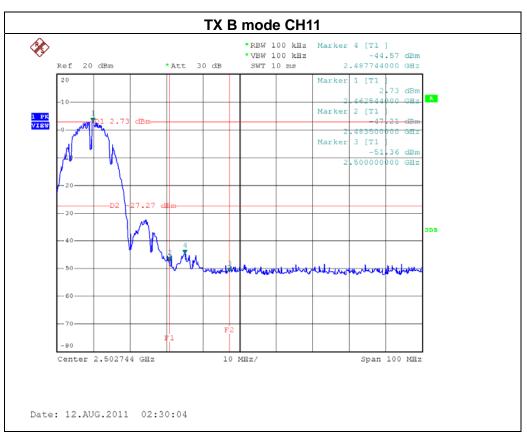
Channel of Worst Data: CH11					
	cy power in any 100kHz the frequency band	The max. radio frequence bandwidth within the	cy power in any 100 kHz ne frequency band.		
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)		
2386.40 -48.68 2487.74 -44.57					
	Docult				

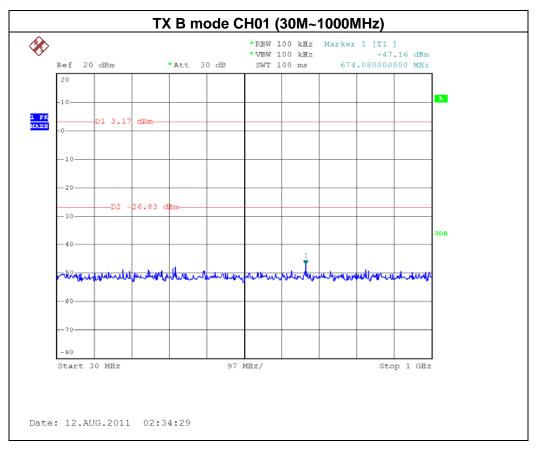
Result

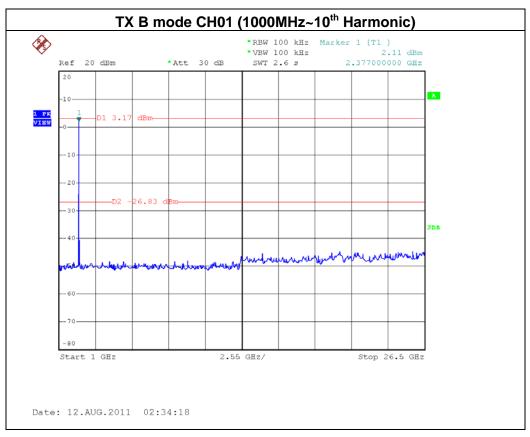
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 30dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

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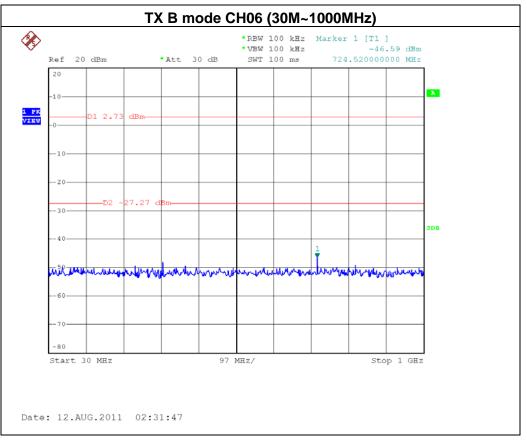


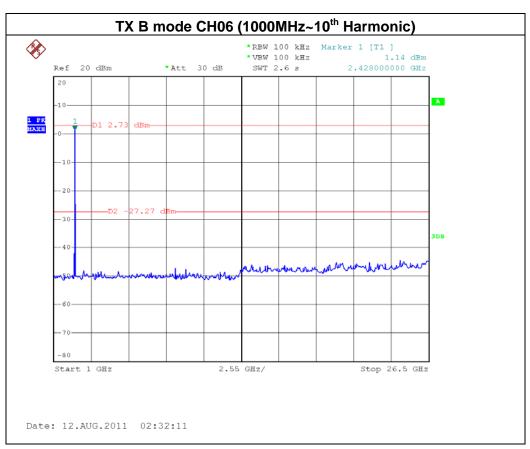


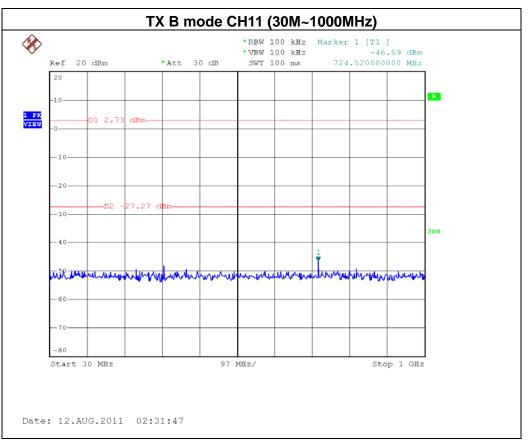


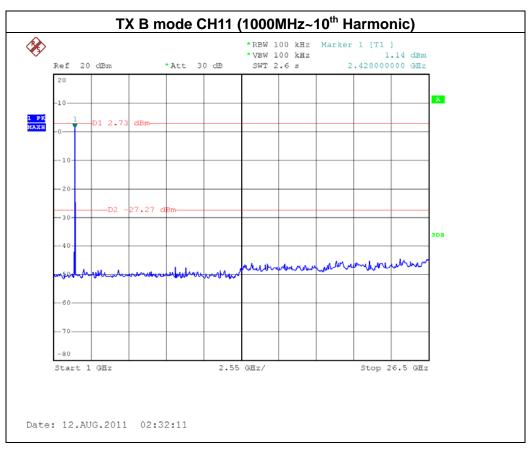


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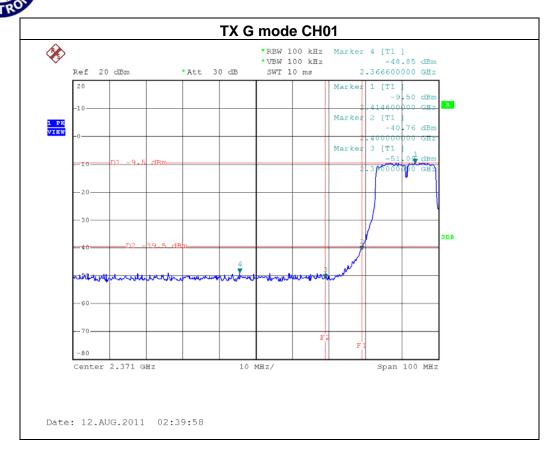
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Mode: TX G MODE / CH01, CH06, CH11		

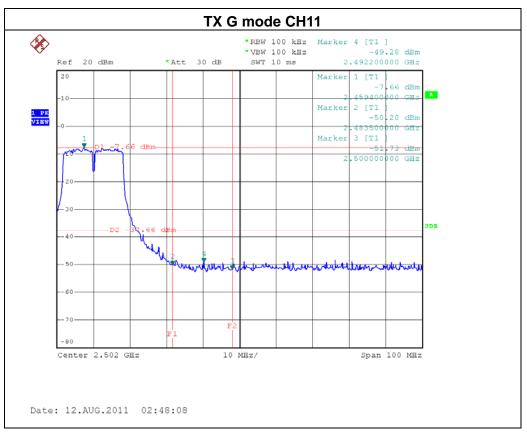
Channel of Worst Data: CH01					
	cy power in any 100kHz the frequency band	The max. radio frequence bandwidth within the	cy power in any 100 kHz ne frequency band.		
FREQUENCY(MHz) POWER(dBm) FREQUENCY(MHz) POWER(dBm)			POWER(dBm)		
2366.60 -48.85 2492.20 -49.28					
Pasult					

Result

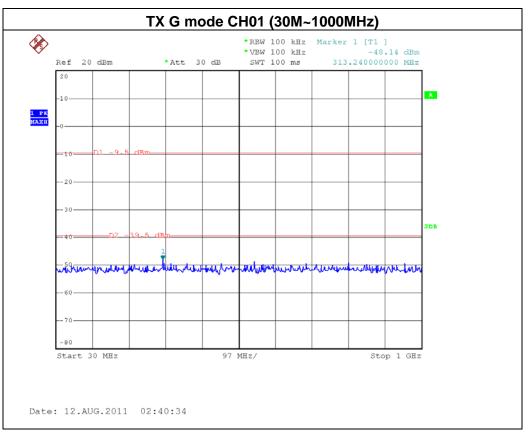
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 30dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

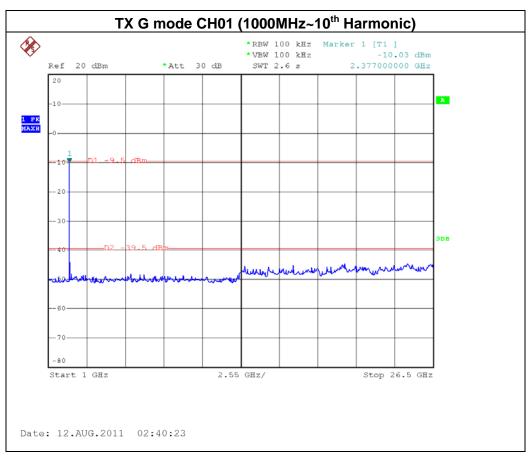
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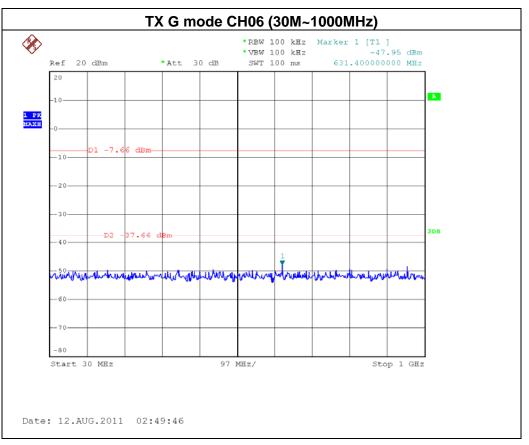


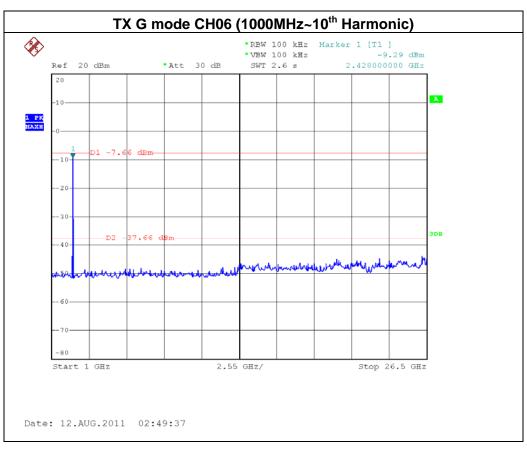
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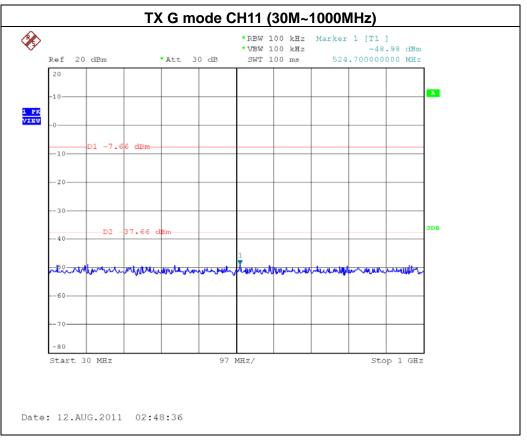


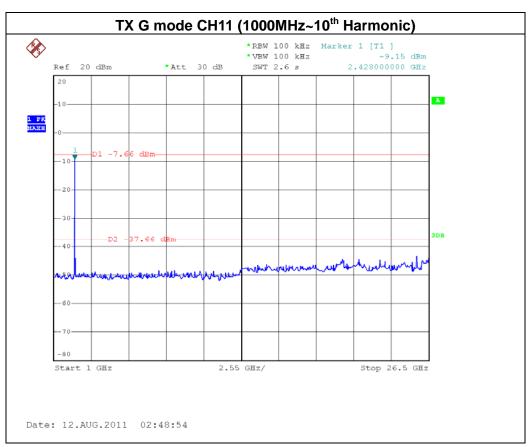
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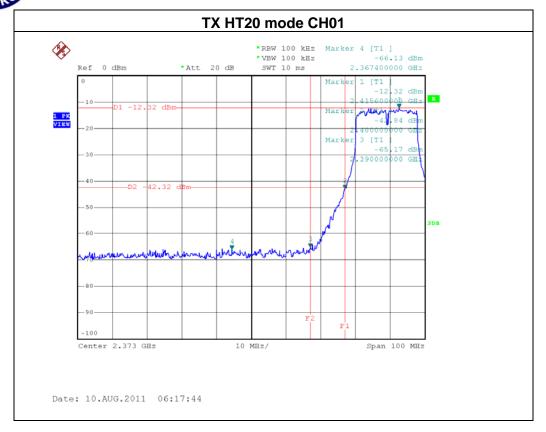
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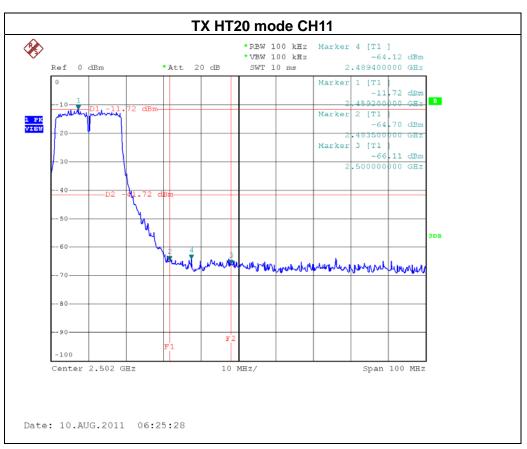
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode : TX N-20M MODE / CH01, CH06 , CH11 ANT1			

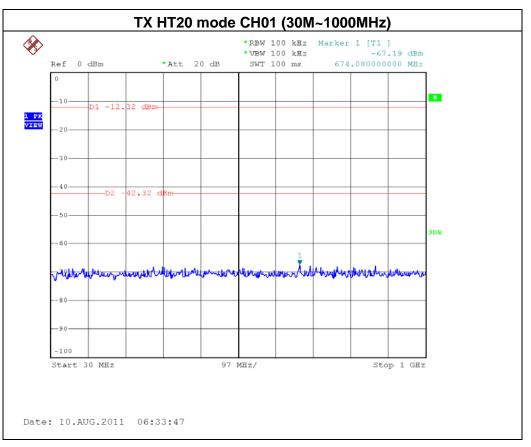
Channel of Worst Data: CH11					
The max. radio frequency power in any 100kHz bandwidth outside the frequency band bandwidth within the frequency band.					
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)		
2390.00 -65.17 2489.40 -64.12					
Result					

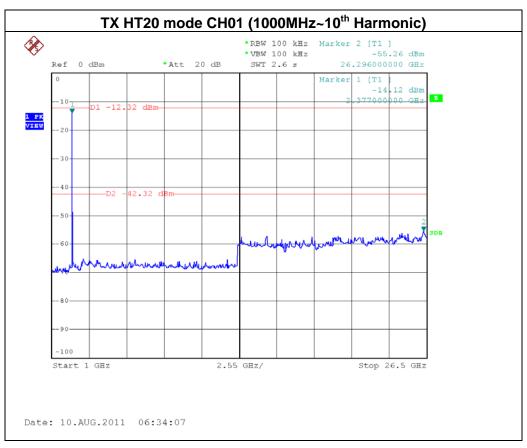
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 30dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

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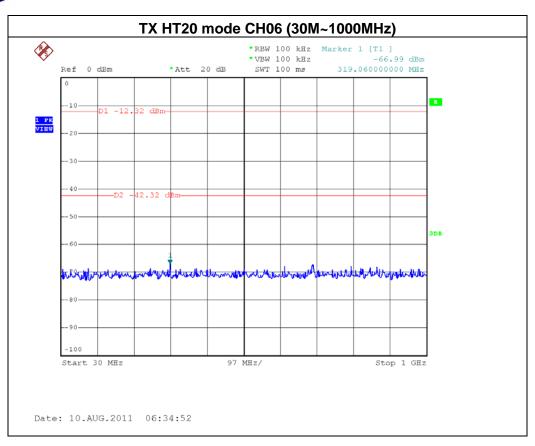


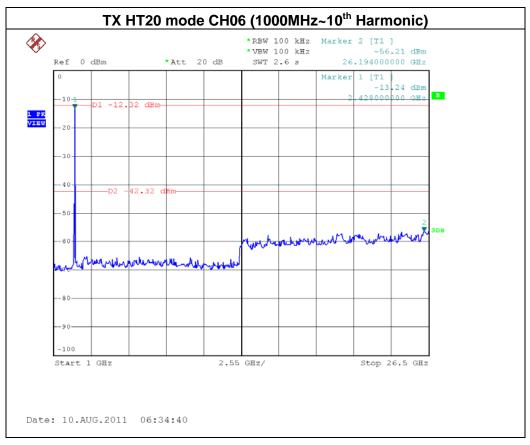




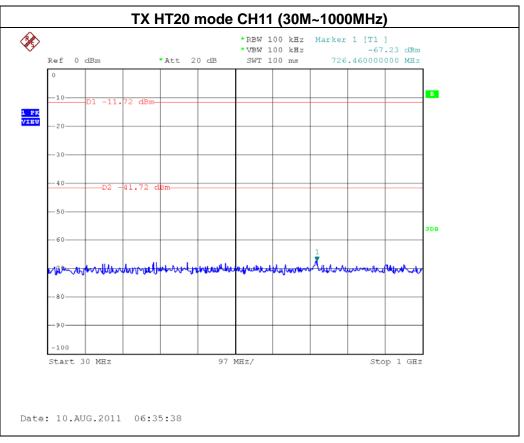
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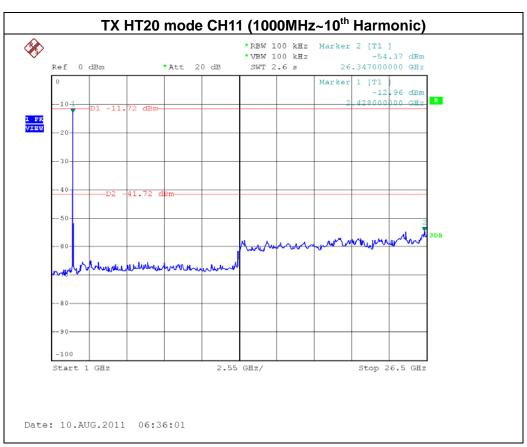






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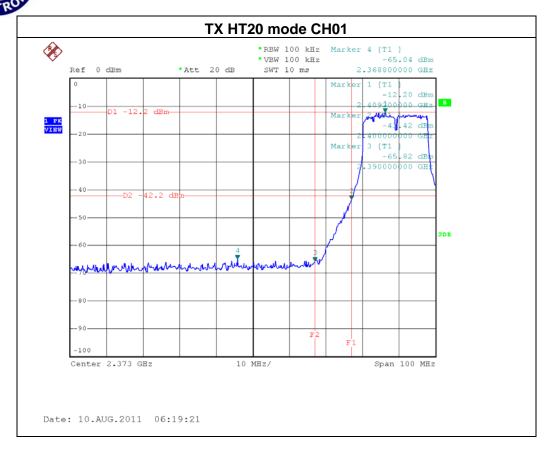


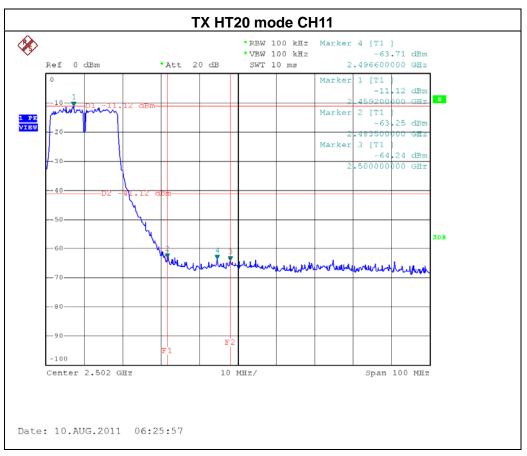
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06, CH11 ANT2 (Worst Case)		

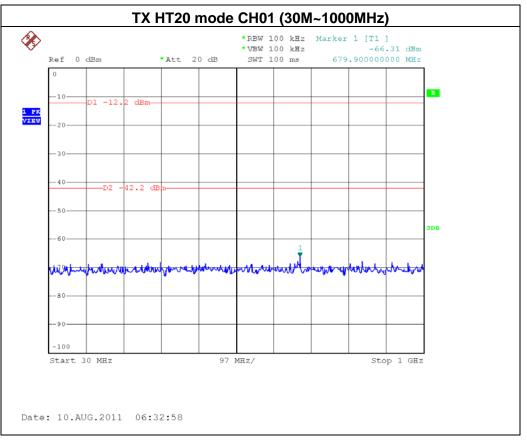
Channel of Worst Data: CH11				
	cy power in any 100kHz the frequency band	The max. radio frequence bandwidth within the		
FREQUENCY(MHz) POWER(dBm) FREQUENCY(MHz) POW			POWER(dBm)	
2368.80 -65.04 2483.50 -63.25				
	Result			

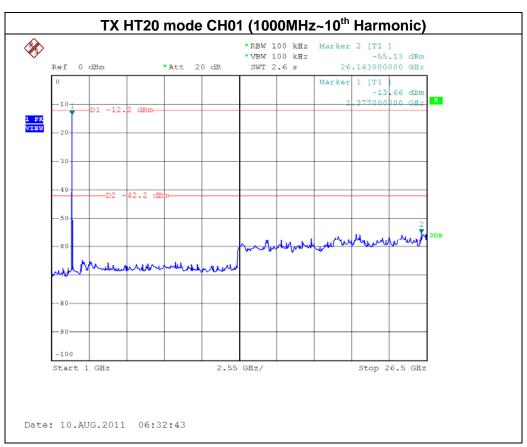
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 30dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

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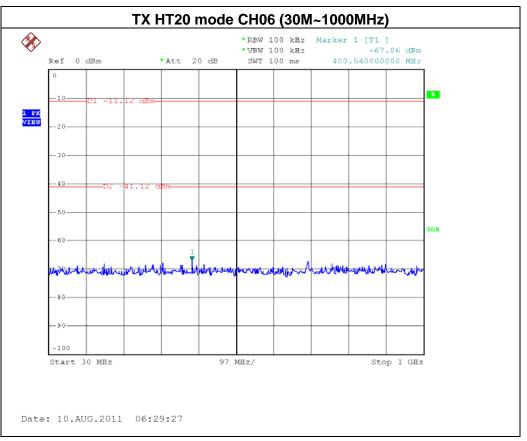


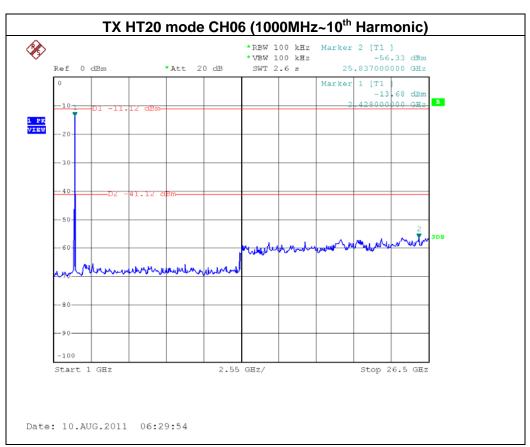




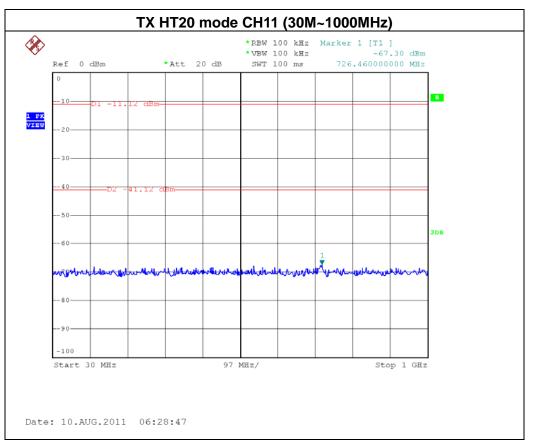


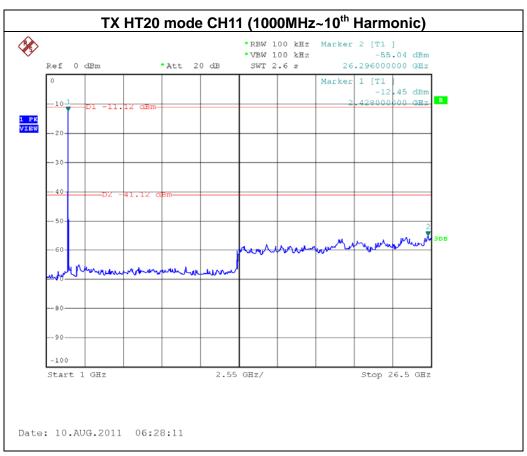
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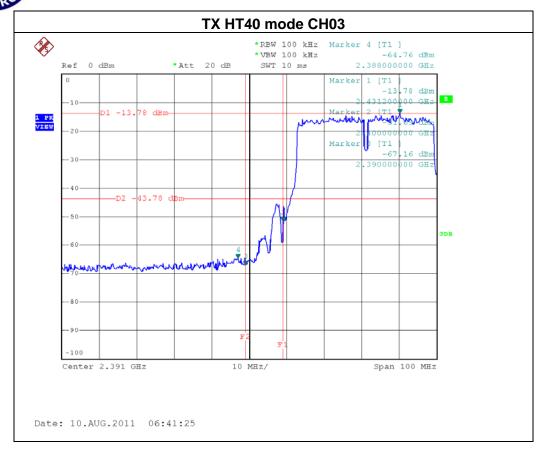


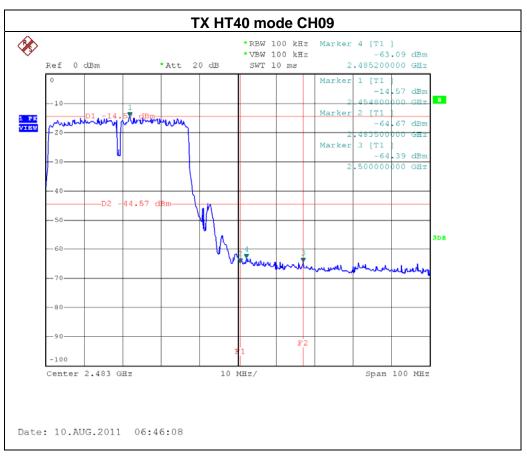
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 ANT1		

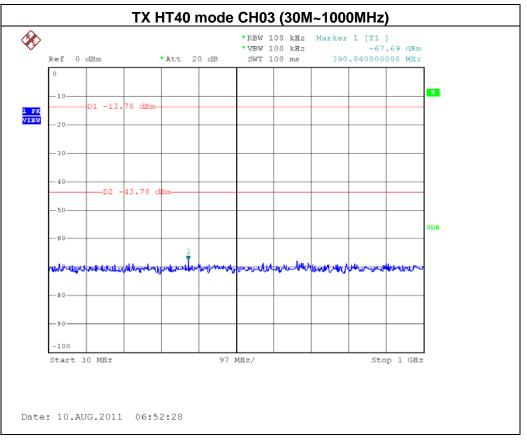
Channel of Worst Data: CH09				
The max. radio frequent bandwidth outside t		The max. radio frequence bandwidth within the		
FREQUENCY(MHz) POWER(dBm)		FREQUENCY(MHz)	POWER(dBm)	
2388.00 -64.76 2485.20 -63.09				
Result				

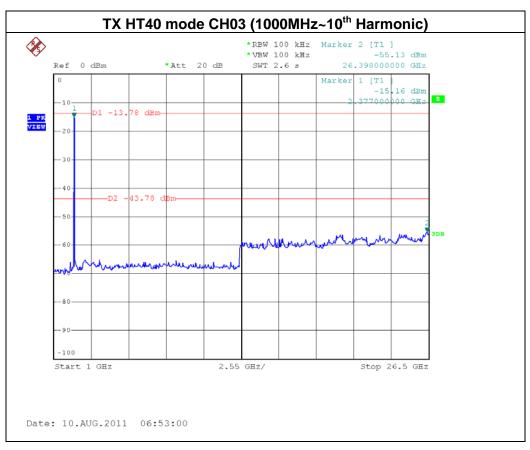
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 30dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

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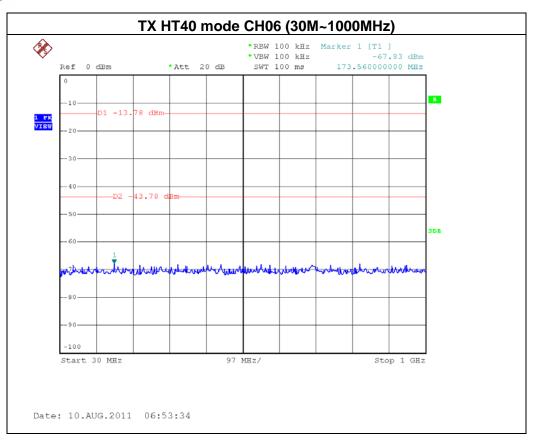


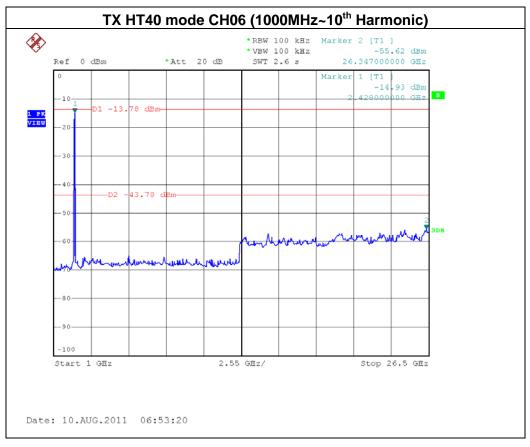




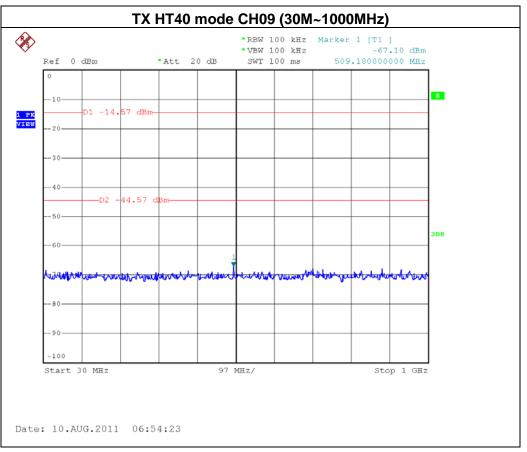


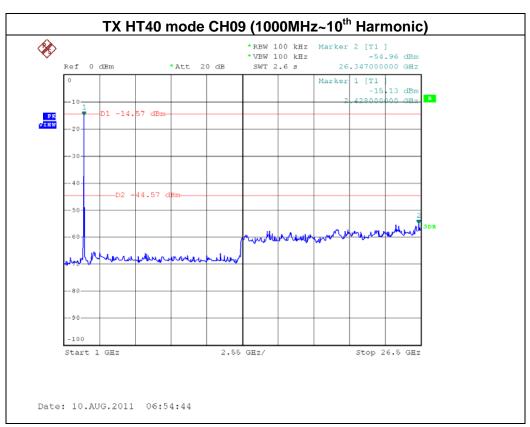
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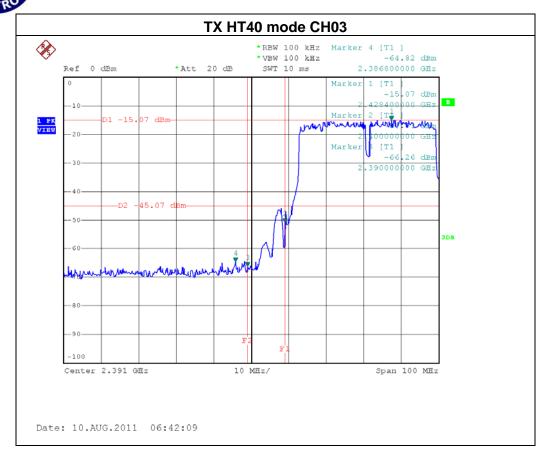


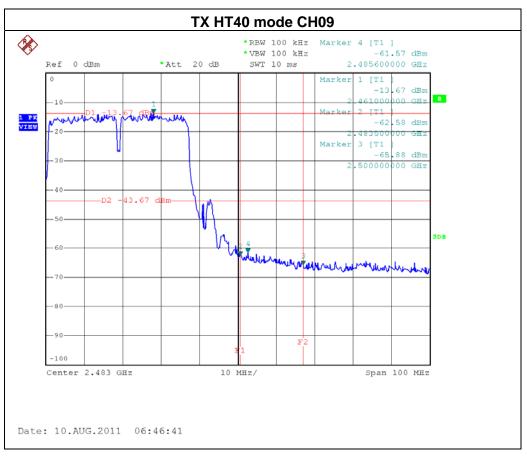
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 ANT2 (Worst Case)		

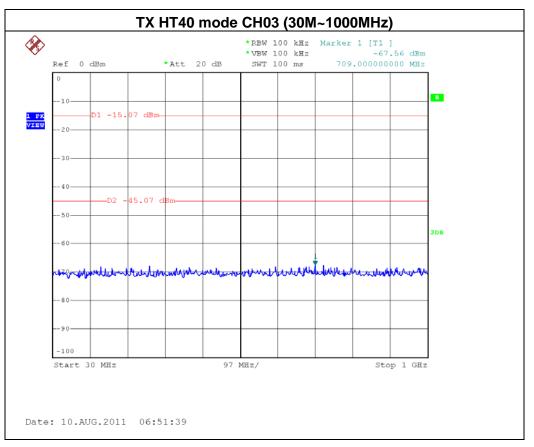
Channel of Worst Data: CH09				
The max. radio frequent bandwidth outside t		The max. radio frequence bandwidth within the		
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)	
2386.80 -64.82 2485.60 -61.57				
Result				

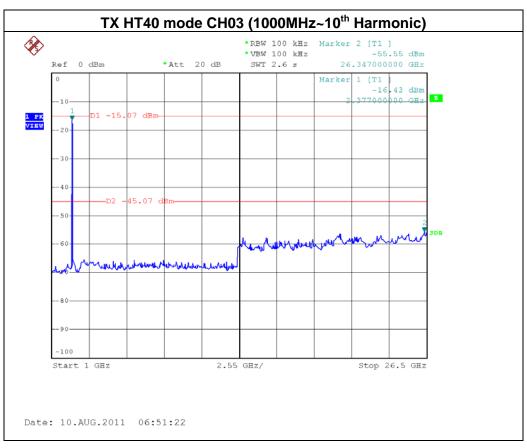
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 30dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.

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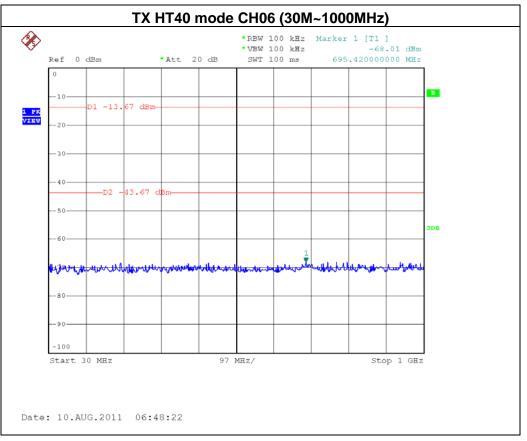


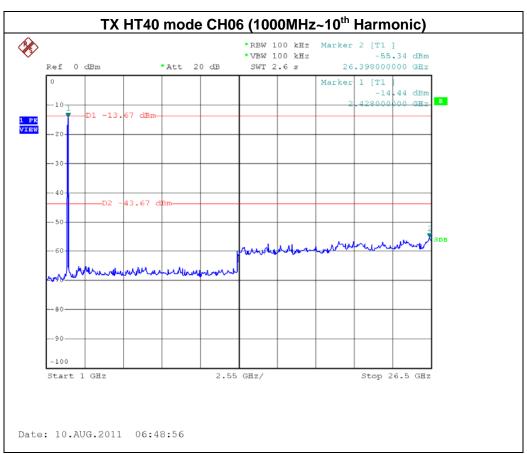




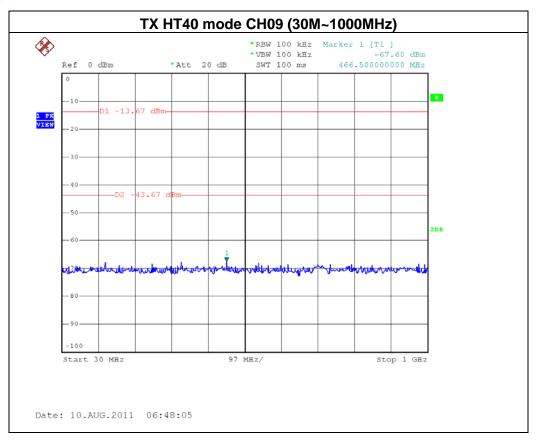


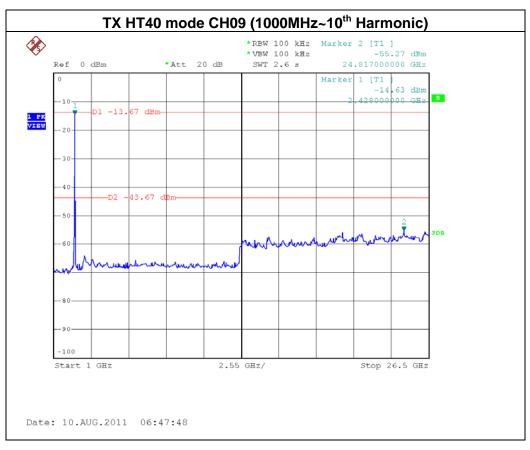
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8. POWER SPECTRAL DENSITY TEST

8.1 Applied procedures / limit

	FCC Part15 (15.247) , Subpart C					
Section Test Item Limit Frequency Range (MHz) Result				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	Jan. 04, 2012

Remark: "N/A" denotes No Model Name., Serial No. or No Calibration specified.

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=30 KHz, Sweep time = 500s.

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP

EUT	SPECTRUM
	ANALYZER

8.1.5 EUT OPERATION CONDITIONS

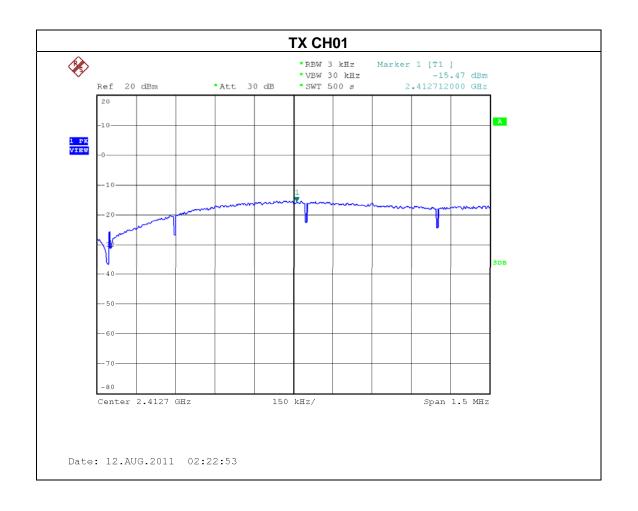
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

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8.1.6 TEST RESULTS

EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	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 MHz	-15.47	(dBIII) 8
CH06	2437 MHz	-15.90	8
CH11	2462 MHz	-16.41	8



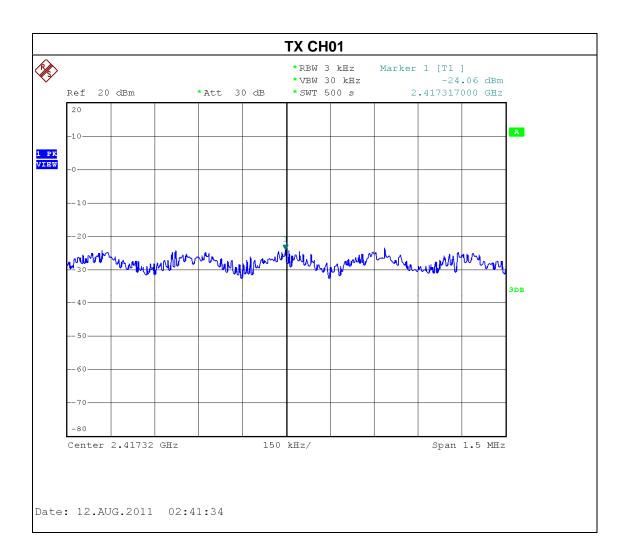
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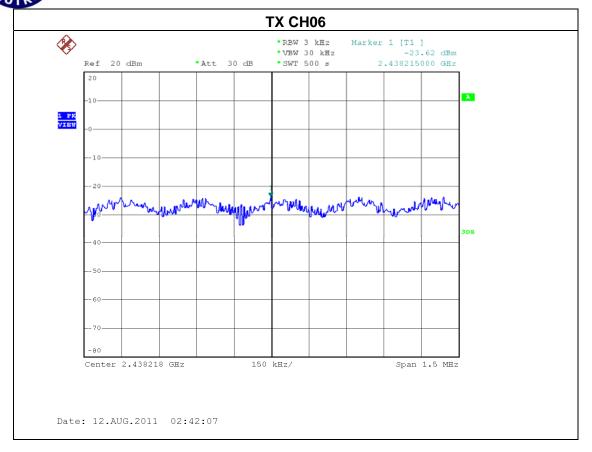


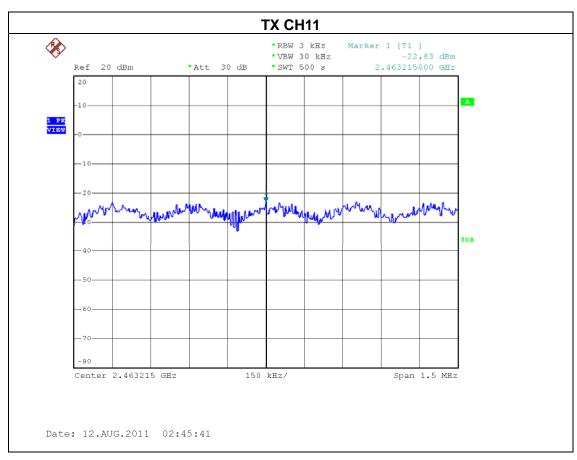
EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403
Temperature:	24 ℃	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-24.06	8
CH06	2437 MHz	-23.62	8
CH11	2462 MHz	-22.83	8



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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403	
Temperature:	24 ℃	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)	Power (dBm)	density (mW)	LIMIT (dBm)	PASS/FAIL	
CH01	2412	-26.91	0.002037	8	PASS	
CH06	2437	-26.49	0.002244	8	PASS	
CH11	2462	-26.04	0.002489	8	PASS	

Ant 2						
Test Channel	Frequency Power density (MHz) (dBm) (mW)			LIMIT (dBm)	PASS/FAIL	
CH01	2412	-27.39	0.001824	8	PASS	
CH06	2437	-26.42	0.002280	8	PASS	
CH11	2462	-26.28	0.002355	8	PASS	

Total (Ant 1 + Ant 2)							
Test Channel	Frequency (MHz)	Power (dBm)	density (mW)	LIMIT (dBm)	PASS/FAIL		
CH01	2412	-24.13	0.003861	8	PASS		
CH06	2437	-23.44	0.004524	8	PASS		
CH11	2462	-23.15	0.004844	8	PASS		

Remark:

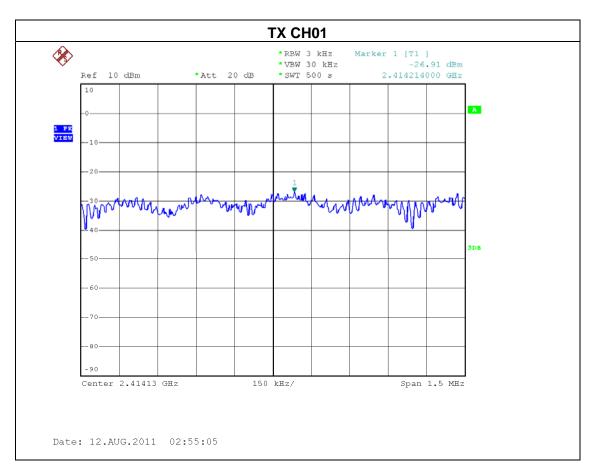
- (1) The MIMO test requirement, RF power density shall measure each transmitter chain by using channel power density method.

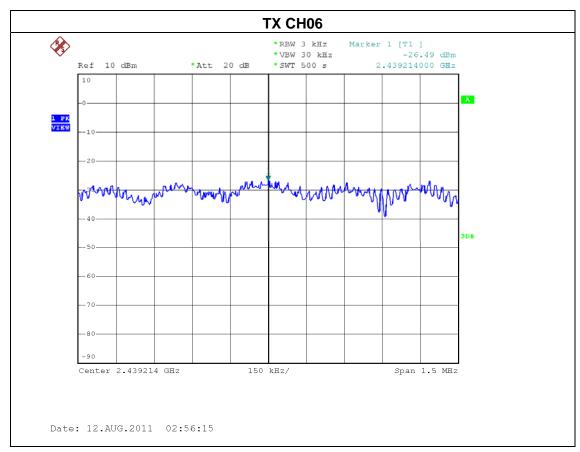
 And after obtain each individual transmitter chain power density, then sum the power density by using the following formula:

 ((dBm/Chain 1)/10^Log) + ((dBm/Chain 2)/10^log) + ((dBm/ChainN)/10^log) = Combined power density in mW.
- (2) Antenna Gain=2 dBi.

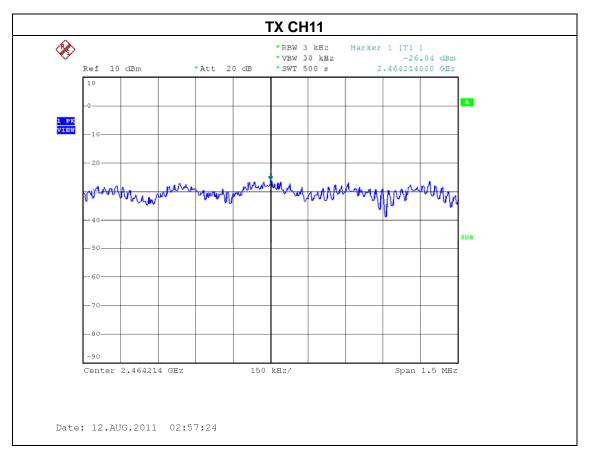
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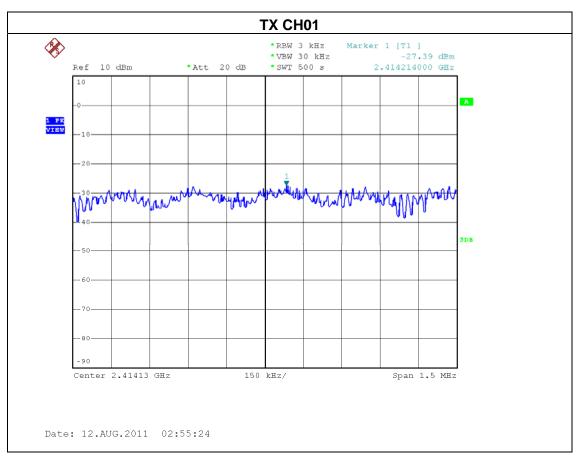






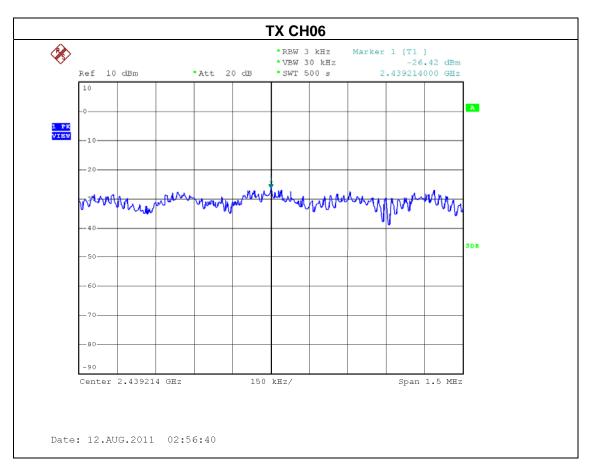


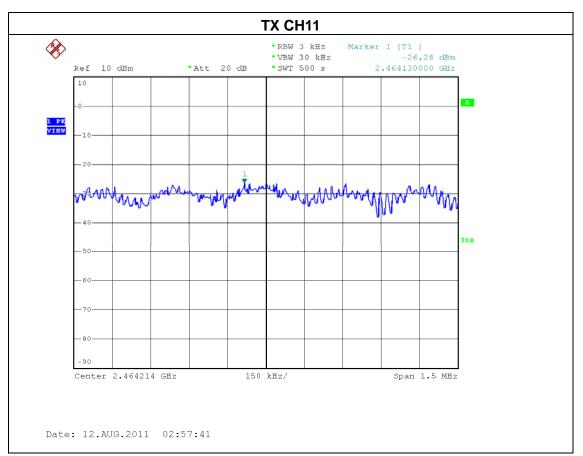




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EUT:	Portable 300Mbps Wireless-N Router/AP	Model Name :	WF-2403	
Temperature:	24 ℃	Relative Humidity:	60 %	
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz	
Test Mode : TX N MODE-40MHz /CH03, CH06, CH09				

Ant 1						
Test Channel	Test Channel Frequency Power density (MHz) (dBm) (mW)				PASS/FAIL	
CH03	2422	-27.65	0.00172	8	PASS	
CH06	2437	-27.45	0.00180	8	PASS	
CH09	2452	-27.16	0.00192	8	PASS	

Ant 2						
Test Channel	Frequency (MHz)	Power (dBm)	density (mW)	LIMIT (dBm)	PASS/FAIL	
CH03	2422	-27.65	0.00172	8	PASS	
CH06	2437	-27.35	0.00184	8	PASS	
CH09	2452	-27.45	0.00180	8	PASS	

Total (Ant 1 + Ant 2)							
Test Channel	Frequency (MHz)	• •			PASS/FAIL		
CH03	2422	-24.64	0.003436	8	PASS		
CH06	2437	-24.39	0.003640	8	PASS		
CH09	2452	-24.29	0.003722	8	PASS		

Remark:

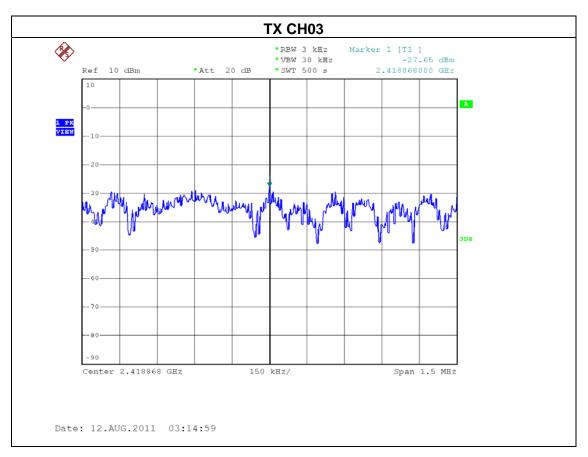
- (1) The MIMO test requirement, RF power density shall measure each transmitter chain by using channel power density method.

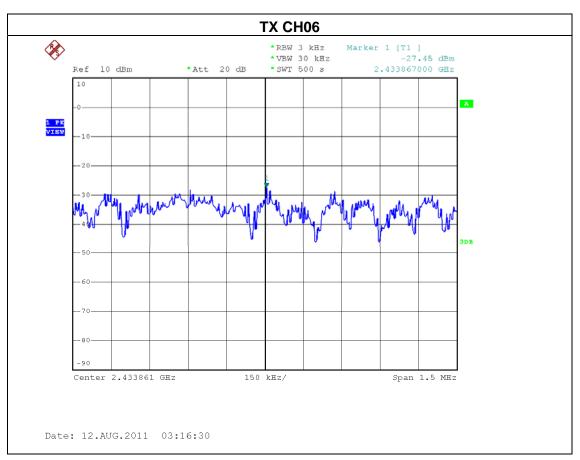
 And after obtain each individual transmitter chain power density, then sum the power density by using the following formula:

 ((dBm/Chain 1)/10^Log) + ((dBm/Chain 2)/10^log) + ((dBm/ChainN)/10^log) = Combined power density in mW.
- (2) Antenna Gain=2 dBi.

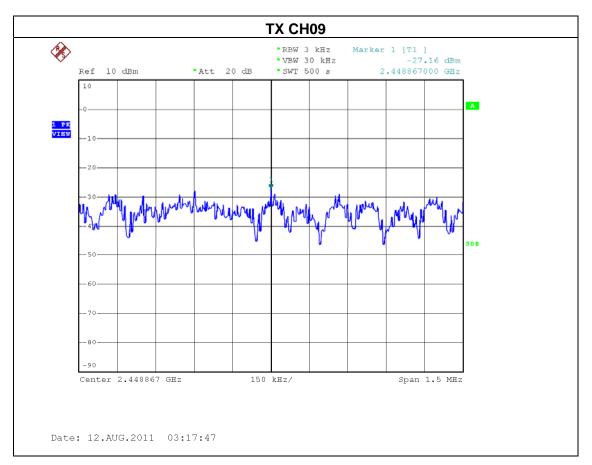
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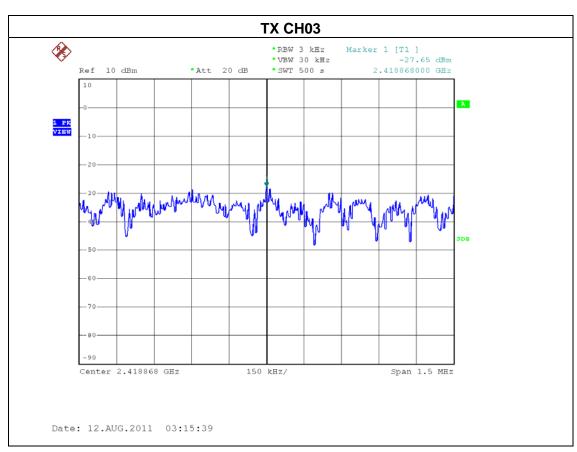






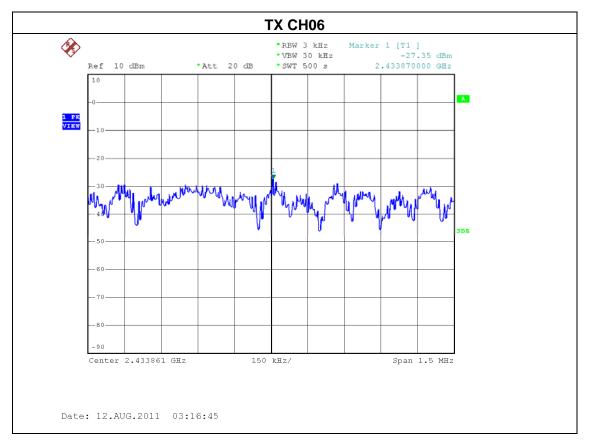


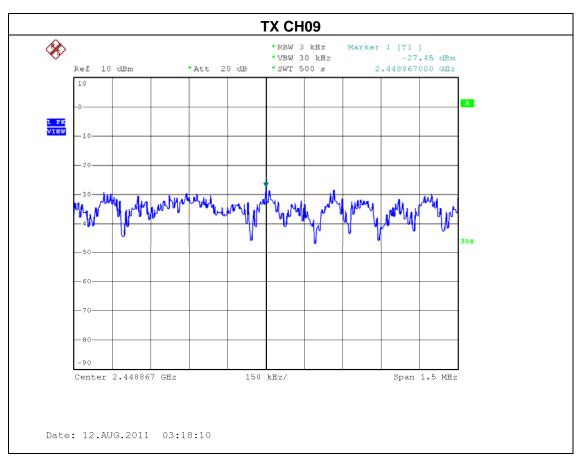




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9. EUT TEST PHOTO

Conducted Measurement Photos





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Radiated Measurement Photos





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