



# FCC RADIO TEST REPORT

## FCC ID: 2AAIUR-326N4G

**Product :** Wireless router

**Trade Name :** Upvel

**Model Name :** UR-326N4G

**Serial Model :** N/A

**Report No. :** NTEK-2013NT0621623F

### Prepared for

upvel.LLC

13139 Ramona Blvd.13139 Ramona Blvd. #F Irwindale, CA 91706 USA

### Prepared by

Shenzhen NTEK Testing Technology Co., Ltd.

1/F, Building E, Fenda Science Park, Sanwei Community,Xixiang Street  
Bao'an District, Shenzhen P.R. China

Tel.: +86-0755-61156588 Fax.: +86-0755-61156599

Website:www.ntek.org.cn

## TEST RESULT CERTIFICATION

**Applicant's name** ..... : upvel.LLC  
**Address** ..... : 13139 Ramona Blvd.13139 Ramona Blvd. #F Irwindale, CA 91706  
USA

**Manufacture's Name**..... : Shenzhen Min Electronics Co.,Ltd.  
**Address** ..... : MTN Industrial Park, No.3, Fuhua Road, Pingxi Neighborhood,  
Longgang District, Shenzhen, China

### Product description

**Product name** ..... : Wireless router  
**Model and/or type reference** : UR-326N4G  
**Serial Model** ..... : N/A

**Standards** ..... : FCC Part15.247

**Test procedure** ..... ANSI C63.4-2003

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

This report shall not be reproduced except in full, without the written approval of NTEK, this document may be altered or revised by NTEK, personal only, and shall be noted in the revision of the document.

**Date of Test** ..... :

**Date (s) of performance of tests** ..... : 21 Jun. 2013 ~22 Jul. 2013

**Date of Issue**..... : 22 Jul. 2013

**Test Result**..... : **Pass**

**Testing Engineer** : Apple Huang  
(Apple Huang)

**Technical Manager** : Tom Zhang  
(Tom Zhang)

**Authorized Signatory** : Bovey Yang  
(Bovey Yang)

**Table of Contents**

	<b>Page</b>
<b>1 . SUMMARY OF TEST RESULTS</b>	<b>5</b>
1.1 TEST FACILITY	6
1.2 MEASUREMENT UNCERTAINTY	6
<b>2 . GENERAL INFORMATION</b>	<b>7</b>
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 DESCRIPTION OF TEST MODES	9
2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	10
2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)	11
2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS	12
<b>3 . EMC EMISSION TEST</b>	<b>13</b>
3.1 CONDUCTED EMISSION MEASUREMENT	13
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	13
3.1.2 TEST PROCEDURE	14
3.1.3 DEVIATION FROM TEST STANDARD	14
3.1.4 TEST SETUP	14
3.1.5 EUT OPERATING CONDITIONS	14
3.1.6 TEST RESULTS	15
3.2 RADIATED EMISSION MEASUREMENT	17
3.2.1 RADIATED EMISSION LIMITS	17
3.2.2 TEST PROCEDURE	18
3.2.3 DEVIATION FROM TEST STANDARD	18
3.2.4 TEST SETUP	19
3.2.5 EUT OPERATING CONDITIONS	20
3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)	21
3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)	22
3.2.8 TEST RESULTS (ABOVE 1000 MHZ)	24
<b>4 . POWER SPECTRAL DENSITY TEST</b>	<b>37</b>
4.1 APPLIED PROCEDURES / LIMIT	37
4.1.1 TEST PROCEDURE	37
4.1.2 DEVIATION FROM STANDARD	37
4.1.3 TEST SETUP	37
4.1.4 EUT OPERATION CONDITIONS	37
4.1.5 TEST RESULTS	38
<b>5 . BANDWIDTH TEST</b>	<b>46</b>
5.1 APPLIED PROCEDURES / LIMIT	46
5.1.1 TEST PROCEDURE	46

**Table of Contents**

	<b>Page</b>
5.1.2 DEVIATION FROM STANDARD	46
5.1.3 TEST SETUP	46
5.1.4 EUT OPERATION CONDITIONS	46
5.1.5 TEST RESULTS	47
<b>6 . PEAK OUTPUT POWER TEST</b>	<b>55</b>
6.1 APPLIED PROCEDURES / LIMIT	55
6.1.1 TEST PROCEDURE	55
6.1.2 DEVIATION FROM STANDARD	55
6.1.3 TEST SETUP	55
6.1.4 EUT OPERATION CONDITIONS	55
6.1.5 TEST RESULTS	56
<b>7 . 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE</b>	<b>57</b>
7.1 DEVIATION FROM STANDARD	57
7.2 TEST SETUP	57
7.3 EUT OPERATION CONDITIONS	57
7.4 TEST RESULTS	58
<b>8 . ANTENNA REQUIREMENT</b>	<b>64</b>
8.1 STANDARD REQUIREMENT	64
8.2 EUT ANTENNA	64
<b>9 . EUT TEST PHOTO</b>	<b>65</b>
<b>APPENDIX-PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS</b>	

### 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

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

**NOTE:**

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

### 1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd

Add.:1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China.

FCC Registration No.:238937; IC Registration No.:9270A-1

CNAS Registration No.:L5516

### 1.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	Wireless router	
Trade Name	Upvel	
Model Name	UR-326N4G	
Serial Model	N/A	
Model Difference	N/A	
Product Description	The EUT is a Wireless router	
	Operation Frequency:	802.11b/g/n20MHz:2412~2462 MHz 802.11b/g/n40MHz:2422~2452 MHz
	Modulation Type:	CCK/OFDM/DBPSK/DAPSK
	Bit Rate of Transmitter	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n(20MHz):150/144.44/130/117/115.56/104/86.67/78/52/6.5 Mbps 802.11n(40MHz):300/270/240/180/150/120/108/90/54 Mbps
	Number Of Channel	11 CH, Please see Note 2.
	Antenna Designation:	Please see Note 3.
	Output Power(Conducted):	802.11b: 21.91 dBm (Max.) 802.11g: 17.42 dBm (Max.) 802.11n(20M) : 16.94 dBm (Max.) 802.11n(40M) : 15.15 dBm (Max.)
	Antenna Gain (dBi)	2.0dbi
	EIRP	802.11b: 23.91 dBm (Max.) 802.11g: 19.42 dBm (Max.) 802.11n(20M) : 18.94 dBm (Max.) 802.11n(40M) : 17.15 dBm (Max.)
		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.
Channel List	Please refer to the Note 2.	
Ratings	DC 9V from adapter	
Adapter	Model No.: GP302U-090-100 Input: 100-240V~, 50/60Hz, 0.5A Output: 9V $\overline{\text{---}}$ , 1A	
Battery	N/A	

Note:

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

2.

Channel List for 802.11b/g/n(20MHz)							
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		

Channel List for 802.11n(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
03	2422	06	2437	09	2452		
04	2427	07	2442				
05	2432	08	2447				

3.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	external antenna	Reserve SMA-type	2.0	N/A
B	N/A	N/A	external antenna	Reserve SMA-type	2.0	N/A

The Control software(MP\_TEST.exe) can control antenna A and antenna B, two antennas simultaneously transmit. And the data is recorded for radiated spurious emission and band edge emission



## 2.2 DESCRIPTION OF TEST MODES

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

Pretest Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n(20) CH1/ CH6/ CH11
Mode 4	802.11n(40) CH3/ CH6/ CH9
Mode 5	Link Mode

For Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode

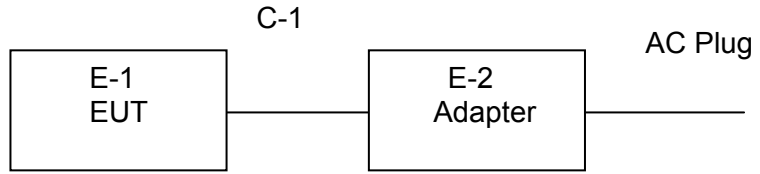
For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11b CH1/ CH6/ CH11
Mode 2	802.11g CH1/ CH6/ CH11
Mode 3	802.11n(20) CH1/ CH6/ CH11
Mode 4	802.11n(40) CH3/ CH6/ CH9

Note:

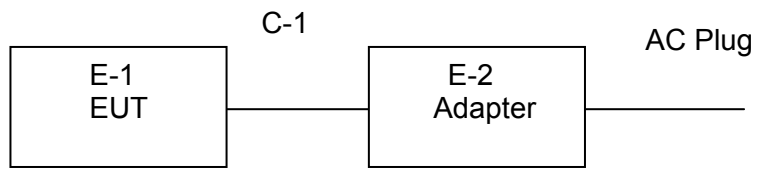
- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

### 2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission Test



Radiated Spurious Emission Test



**2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)**

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

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	Wireless router	Upvel	UR-326N4G	N/A	EUT
E-2	Adapter	N/A	GP302U-090-100	N/A	

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

Note:

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

## 2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

### Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2013.07.06	2014.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2013.06.07	2014.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2013.07.06	2014.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2013.06.07	2014.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2013.06.07	2014.06.06	1 year
6	Horn Antenna	EM	EM-AH-10180	2011071402	2013.07.06	2014.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2013.07.06	2014.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2012.12.22	2013.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2013.06.08	2014.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2013.07.06	2014.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2013.07.06	2014.07.05	1 year

### Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2013.06.06	2014.06.05	1 year
2	LISN	R&S	ENV216	101313	2012.08.24	2013.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2012.08.24	2013.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2013.06.07	2014.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2013.06.07	2014.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2013.06.08	2014.06.07	1 year

### 3. EMC EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

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

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

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

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

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

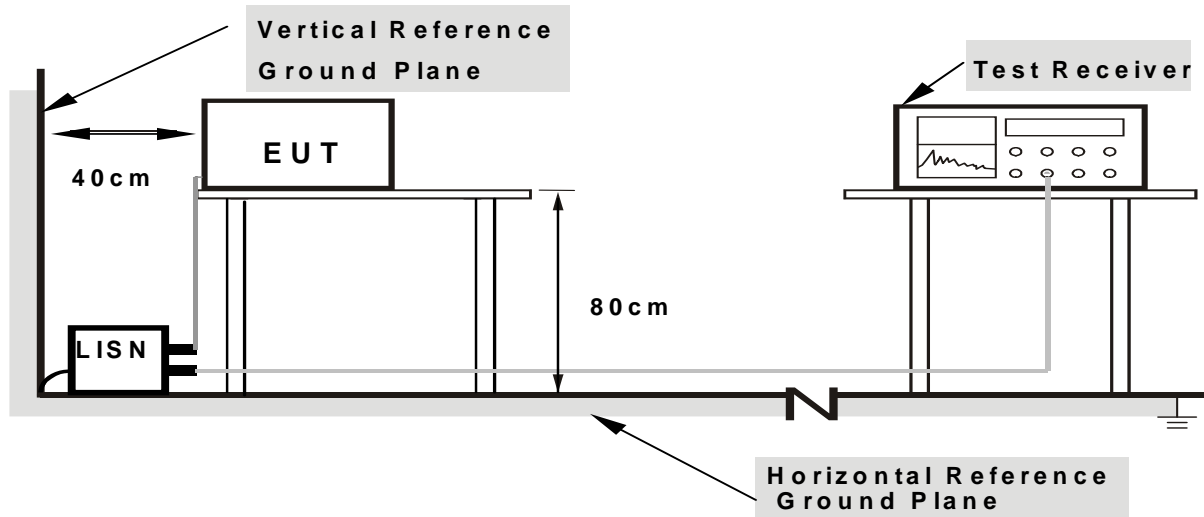
**3.1.2 TEST PROCEDURE**

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

**3.1.3 DEVIATION FROM TEST STANDARD**

No deviation

**3.1.4 TEST SETUP**



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

**3.1.5 EUT OPERATING CONDITIONS**

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

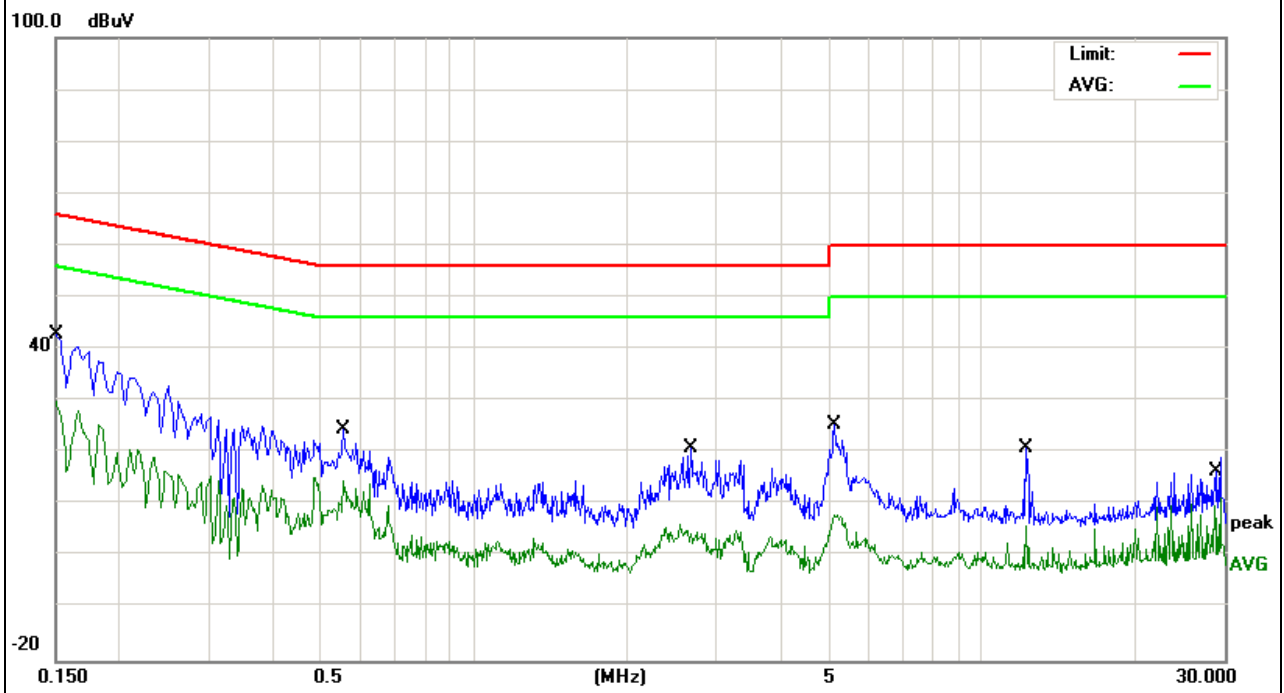
### 3.1.6 TEST RESULTS

EUT :	Wireless router	Model Name. :	UR-326N4G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	DC 9V from adapter	Test Mode :	Mode 5

Frequency (MHz)	Meter Reading (dB $\mu$ V)	Factor (dB)	Emission Level (dB $\mu$ V)	Limits (dB $\mu$ V)	Margin (dB)	Detector Type
0.1516	30.53	11.61	42.14	65.91	-23.77	QP
0.1516	18.20	11.61	29.81	55.91	-26.10	AVG
0.5540	13.92	10.56	24.48	56.00	-31.52	QP
0.5540	4.77	10.56	15.33	46.00	-30.67	AVG
2.6780	10.32	10.54	20.86	56.00	-35.14	QP
2.6780	-4.16	10.54	6.38	46.00	-39.62	AVG
5.1219	14.89	10.64	25.53	60.00	-34.47	QP
5.1219	-2.55	10.64	8.09	50.00	-41.91	AVG
12.2459	9.97	10.87	20.84	60.00	-39.16	QP
12.2459	-4.87	10.87	6.00	50.00	-44.00	AVG
29.0260	5.39	11.20	16.59	60.00	-43.41	QP
29.0260	0.19	11.20	11.39	50.00	-38.61	AVG

**Remark:**

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

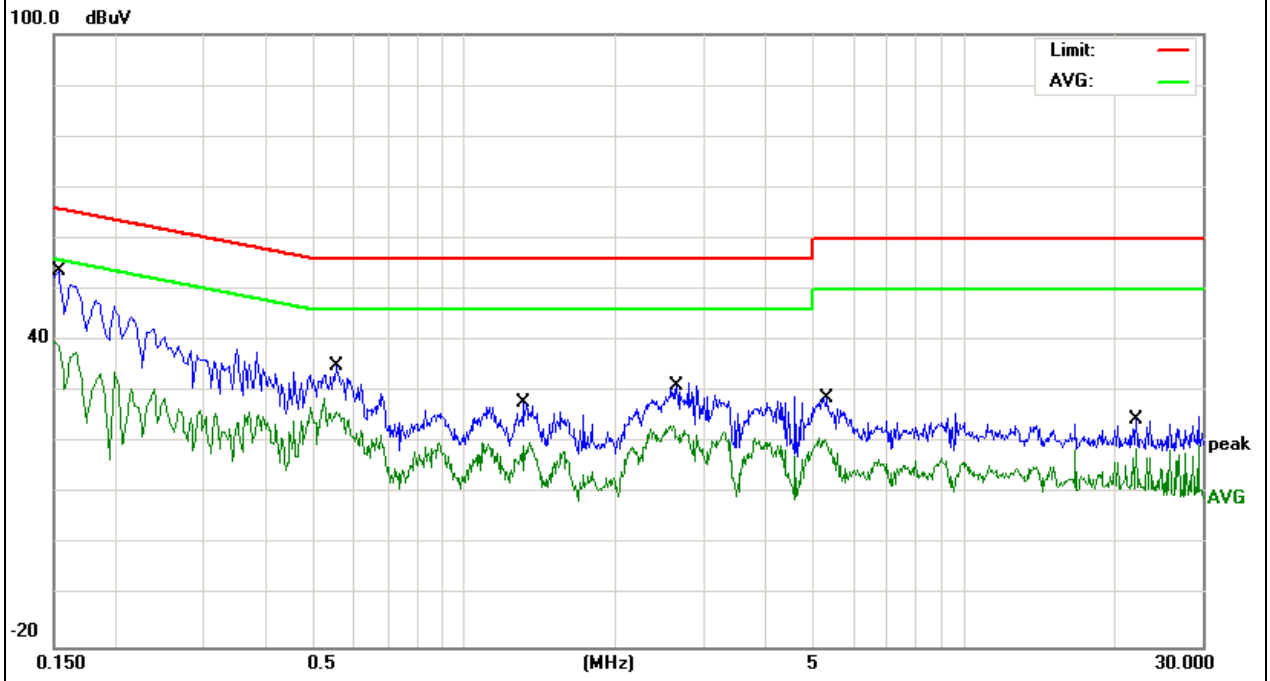


EUT :	Wireless router	Model Name. :	UR-326N4G
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	DC 9V from adapter	Test Mode :	Mode 5

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.1539	42.01	11.59	53.60	65.78	-12.18	QP
0.1539	27.88	11.59	39.47	55.78	-16.31	AVG
0.5540	24.59	10.56	35.15	56.00	-20.85	QP
0.5540	18.34	10.56	28.90	46.00	-17.10	AVG
1.3140	17.19	10.52	27.71	56.00	-28.29	QP
1.3140	12.89	10.52	23.41	46.00	-22.59	AVG
2.6540	12.87	10.54	23.41	46.00	-22.59	AVG
2.6540	20.56	10.54	31.10	56.00	-24.90	QP
5.3179	18.13	10.64	28.77	60.00	-31.23	QP
5.3179	10.38	10.64	21.02	50.00	-28.98	AVG
22.1340	13.47	11.12	24.59	60.00	-35.41	QP
22.1340	7.67	11.12	18.79	50.00	-31.21	AVG

**Remark:**

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.





### 3.2 RADIATED EMISSION MEASUREMENT

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

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

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

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

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

Notes:

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

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

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

### 3.2.2 TEST PROCEDURE

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

Note:

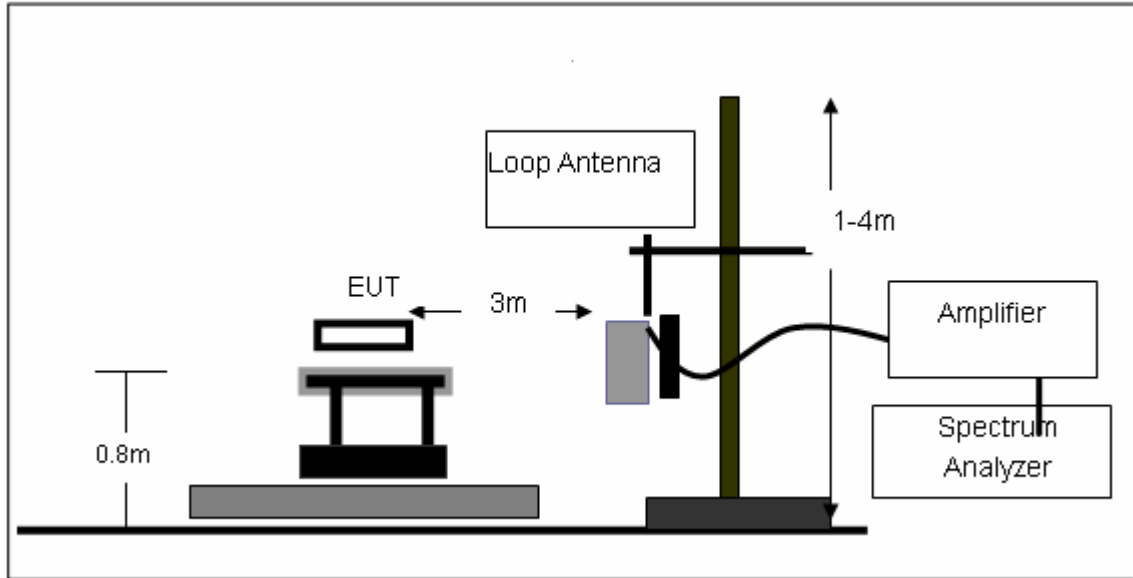
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

### 3.2.3 DEVIATION FROM TEST STANDARD

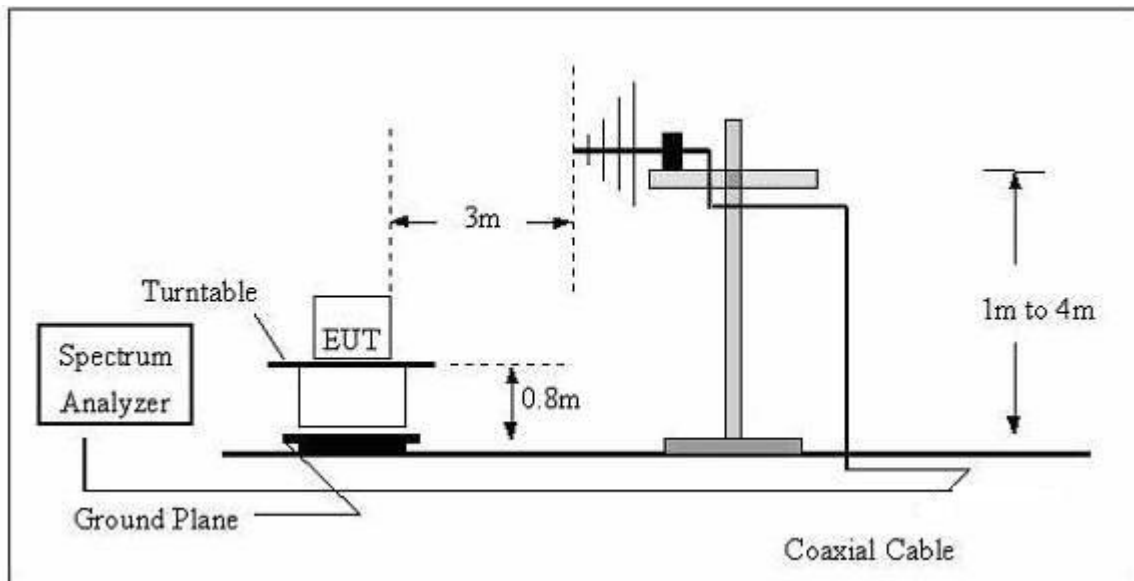
No deviation

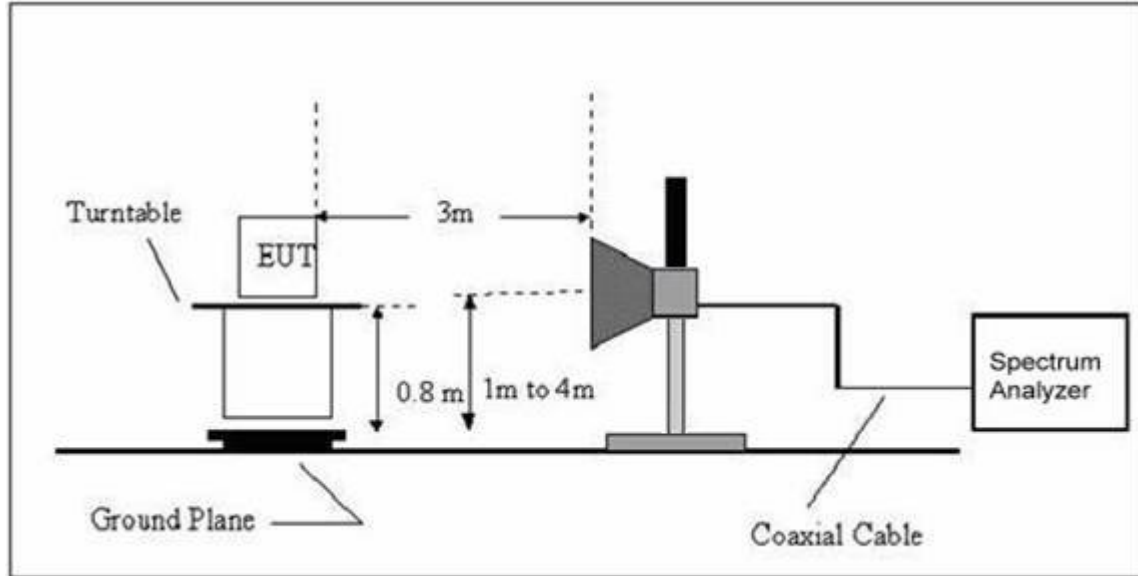
### 3.2.4 TEST SETUP

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



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



**(C) Radiated Emission Test-Up Frequency Above 1GHz****3.2.5 EUT OPERATING CONDITIONS**

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

**3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)**

EUT:	Wireless router	Model Name. :	UR-326N4G
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX	Polarization :	--

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

**NOTE:**

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})(\text{dB})$ ;

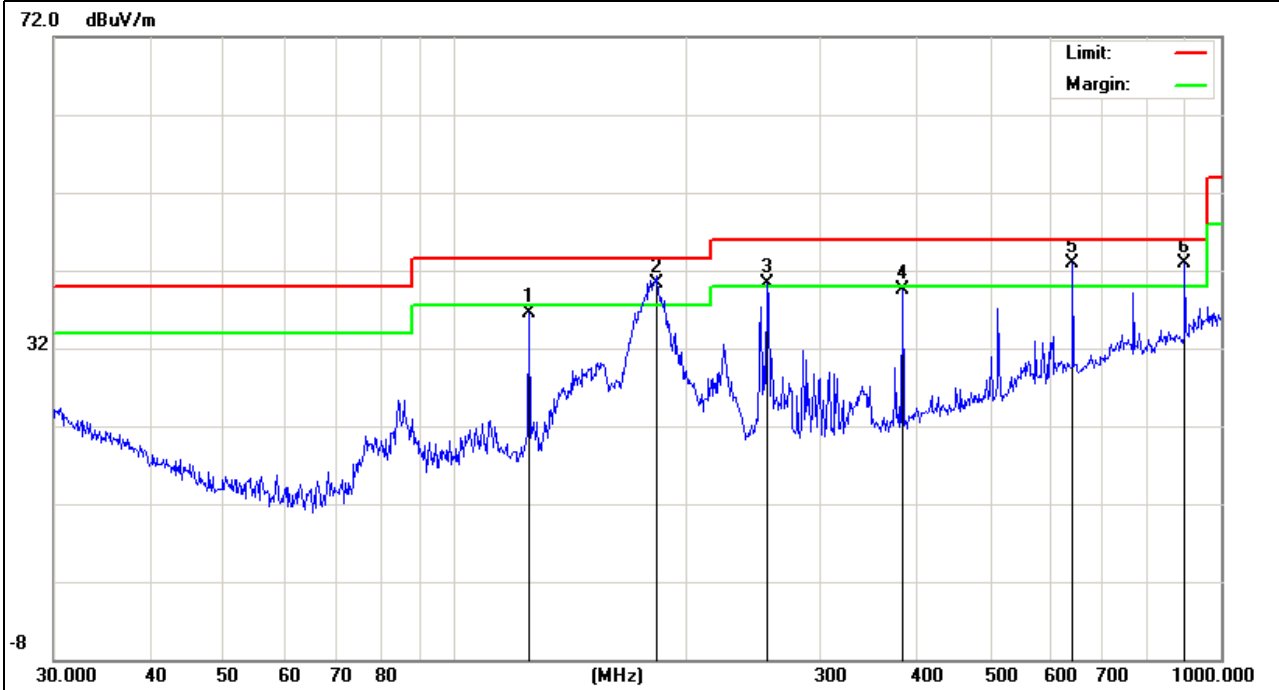
Limit line = specific limits(dBuv) + distance extrapolation factor.

### 3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)

EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX	Polarization :	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
125.0066	24.28	12.21	36.49	43.50	-7.01	QP
183.2005	30.50	9.82	40.32	43.50	-3.18	QP
255.6228	25.95	14.35	40.30	46.00	-5.70	QP
383.9318	22.03	17.38	39.41	46.00	-6.59	QP
640.6109	19.37	23.45	42.82	46.00	-3.18	QP
896.9963	15.24	27.75	42.99	46.00	-3.01	QP

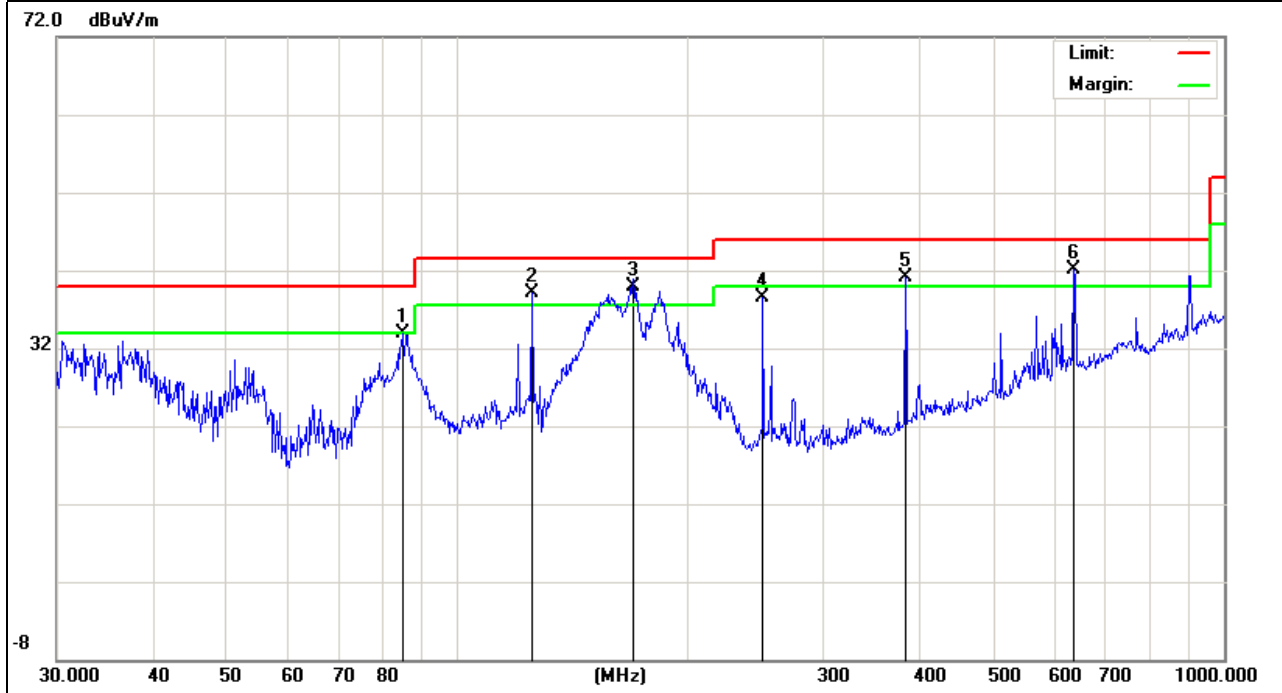
Remark:  
 Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX	Polarization :	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
84.7018	25.16	8.65	33.81	40.00	-6.19	QP
125.0066	26.95	12.21	39.16	43.50	-4.34	QP
169.5988	29.52	10.44	39.96	43.50	-3.54	QP
250.3010	24.91	13.54	38.45	46.00	-7.55	QP
383.9318	23.75	17.38	41.13	46.00	-4.87	QP
636.1340	18.60	23.50	42.10	46.00	-3.90	QP

Remark:  
Factor = Antenna Factor + Cable Loss – Pre-amplifier.



### 3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

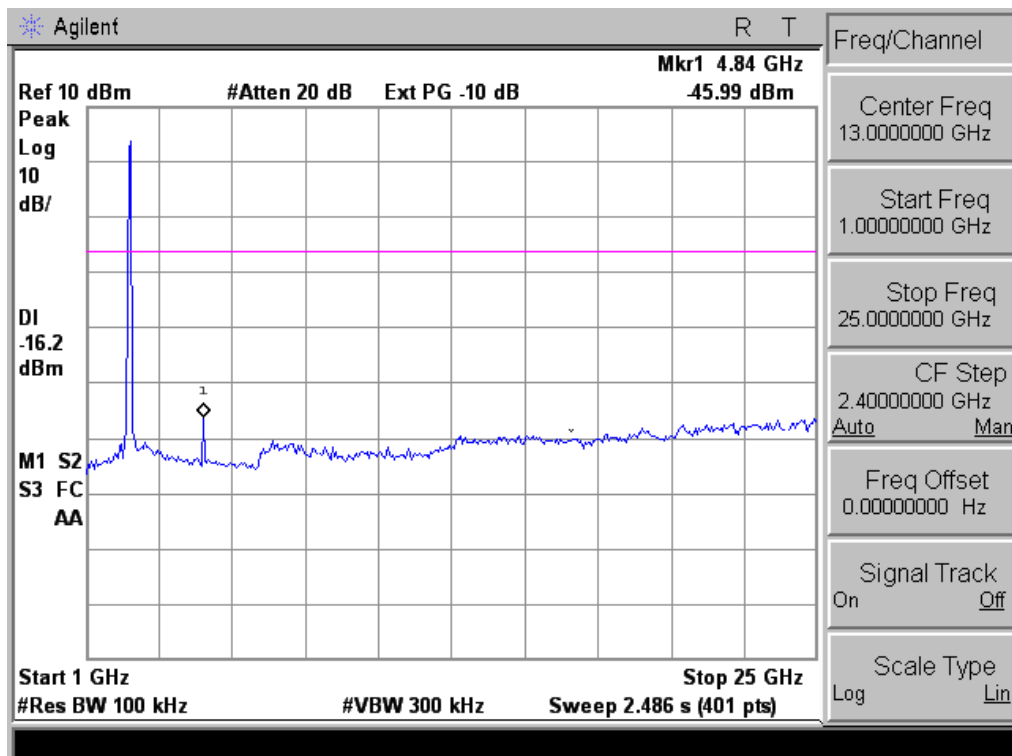
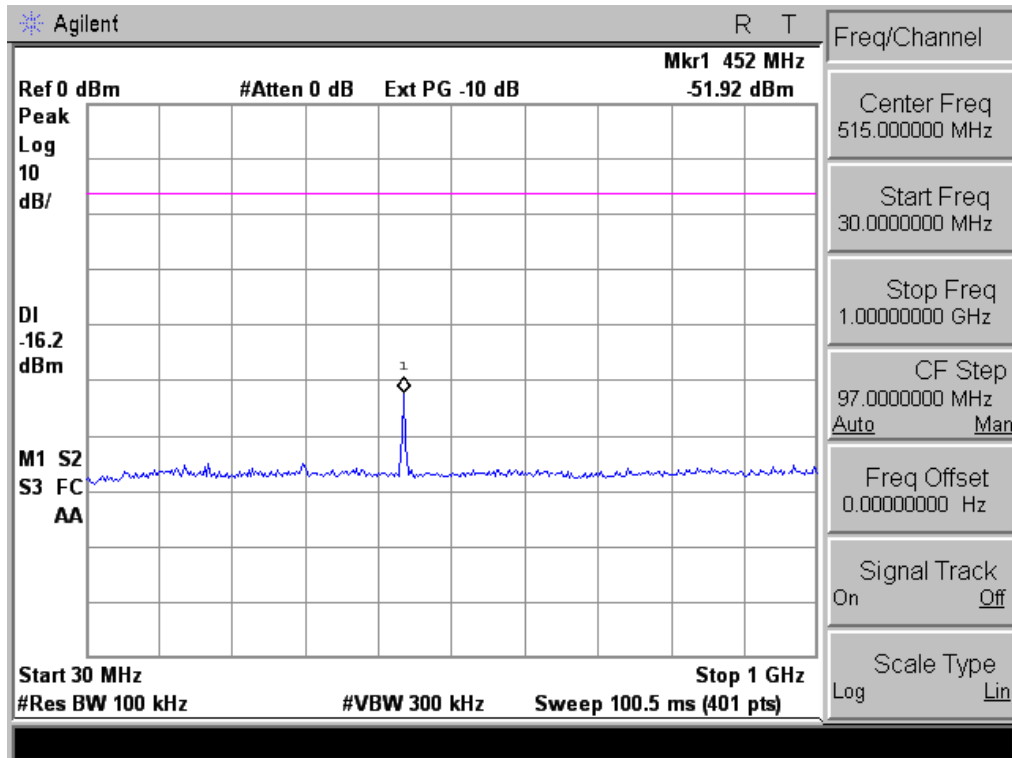
EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	20 °C	Relative Humidity :	48%
Pressure :	1010 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX 802.11B	Polarization :	Horizontal

Mid Channel (2412 MHz)-Above 1G							
4824.000	58.83	-3.6	55.23	74	-18.77	Pk	Horizontal
4824.156	33.31	10.44	43.75	54.00	-10.25	AVG	Horizontal
7236.143	45.23	12.39	57.62	74.00	-16.38	peak	Horizontal
7236.143	26.98	12.39	39.37	54.00	-14.63	AVG	Horizontal
4824.128	54.78	10.44	65.22	74.00	-8.78	peak	Vertical
4824.128	36.31	10.44	46.75	54.00	-7.25	AVG	Vertical
7311.138	43.53	12.75	56.28	74.00	-17.72	peak	Vertical
7311.138	27.49	12.75	40.24	54.00	-13.76	AVG	Vertical
1829.098	68.45	-14.78	53.67	74	-20.33	peak	Vertical
1329.615	71.12	-17.59	53.53	74	-20.47	peak	Vertical
1663.393	67.49	-15.86	51.63	74	-22.37	peak	Horizontal
1993.371	65.77	-13.42	52.35	74	-21.65	peak	Horizontal
Mid Channel (2437 MHz)-Above 1G							
4874.158	51.21	10.40	61.61	74.00	-12.39	peak	Horizontal
4874.158	32.12	10.40	42.52	54.00	-11.48	AVG	Horizontal
4874.144	52.65	10.40	63.05	74.00	-10.95	peak	Vertical
4874.144	33.51	10.40	43.91	54.00	-10.09	AVG	Vertical
7311.147	42.41	12.75	55.16	74.00	-18.84	peak	Vertical
7311.147	28.32	12.75	41.07	54.00	-12.93	AVG	Vertical
1993.371	59.3	-13.42	45.88	74	-28.12	peak	Vertical
1329.615	68.63	-17.59	51.04	74	-22.96	peak	Horizontal
1501.898	70.59	-17.15	53.44	74	-20.56	peak	Horizontal
1663.393	69.55	-15.86	53.69	74	-20.31	peak	Horizontal
Mid Channel (2462 MHz)- Above 1G							
4924.123	52.96	10.39	63.35	74.00	-10.65	peak	Horizontal
4924.123	33.05	10.39	43.44	54.00	-10.56	AVG	Horizontal
7386.145	41.85	12.68	54.53	74.00	-19.47	peak	Horizontal
7386.145	29.08	12.68	41.76	54.00	-12.24	AVG	Horizontal
4924.147	51.57	10.39	61.96	74.00	-12.04	peak	Vertical
4924.147	33.43	10.39	43.82	54.00	-10.18	AVG	Vertical
7386.142	42.36	12.68	55.04	74.00	-18.96	peak	Vertical
7386.142	28.98	12.68	41.66	54.00	-12.34	AVG	Vertical
1464.692	70.60	-17.01	53.59	74	-20.41	peak	Vertical
2004.115	58.05	-13.21	44.84	74	-29.16	peak	Vertical
1336.782	70.15	-17.51	52.64	74	-21.36	peak	Horizontal
1651.514	68.94	-15.93	53.01	74	-20.99	peak	Horizontal

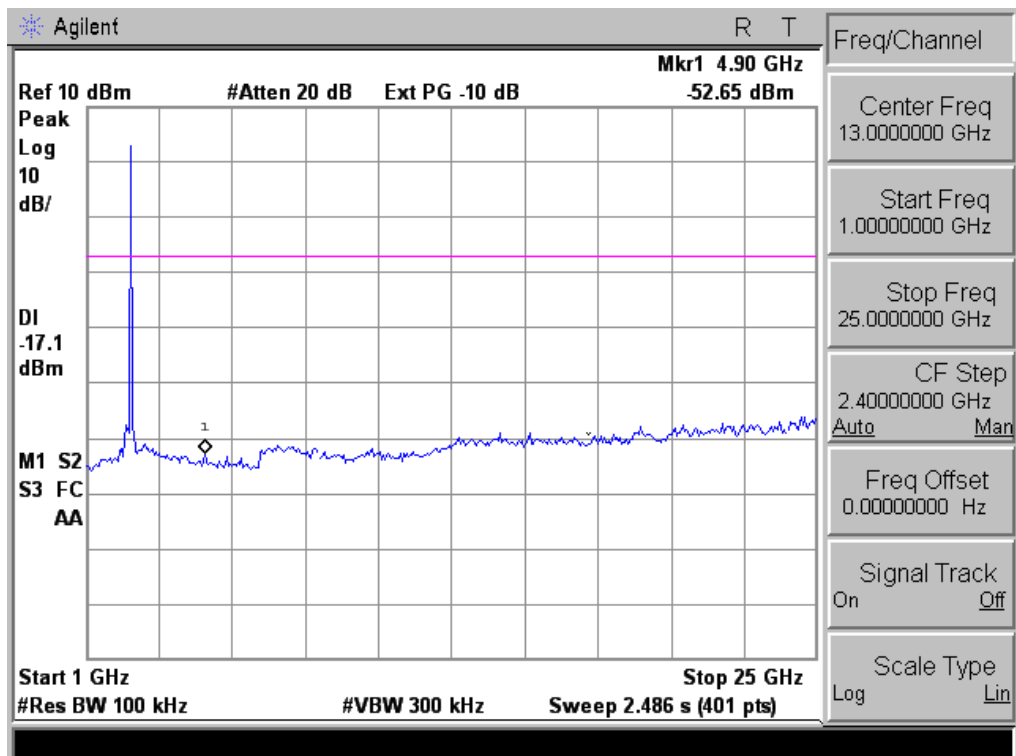
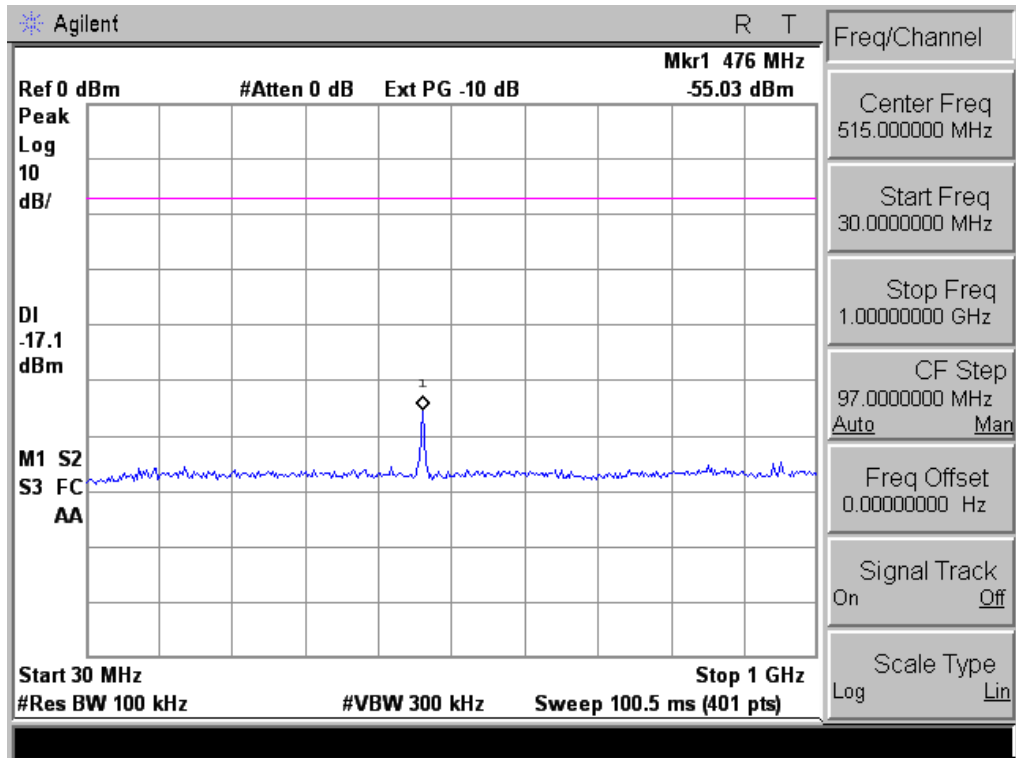
Note: (Scan with 802.11b, 802.11g, 802.11n), the worst case is 802.11b.



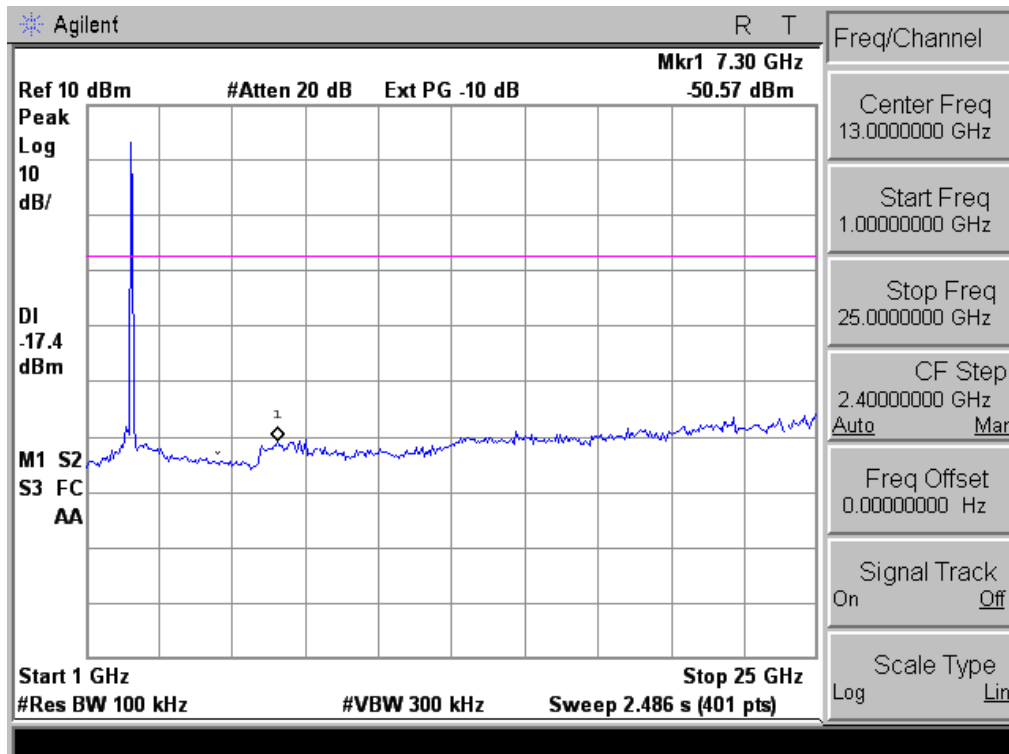
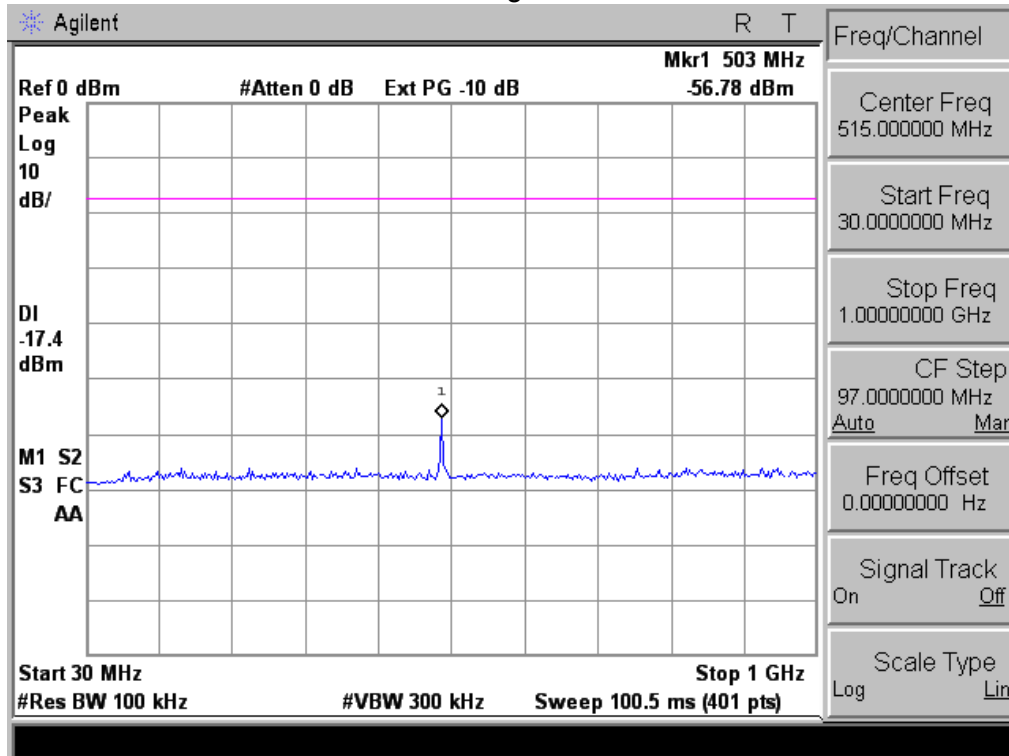
Conducted Spurious Emissions at Antenna Port:  
802.11b Low Channel



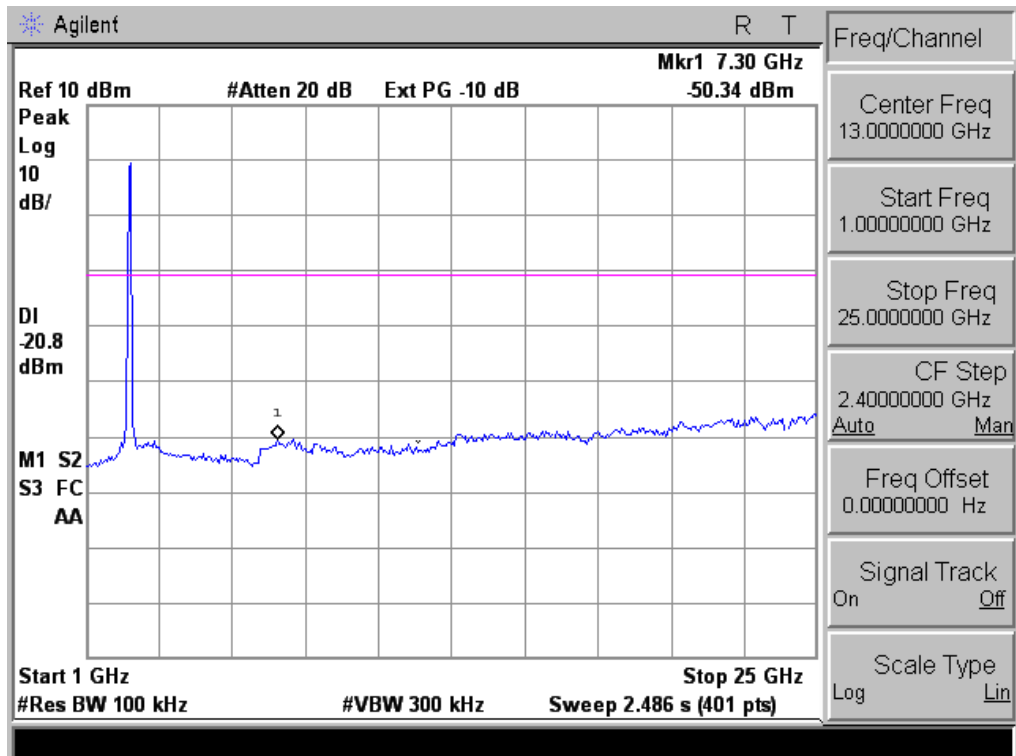
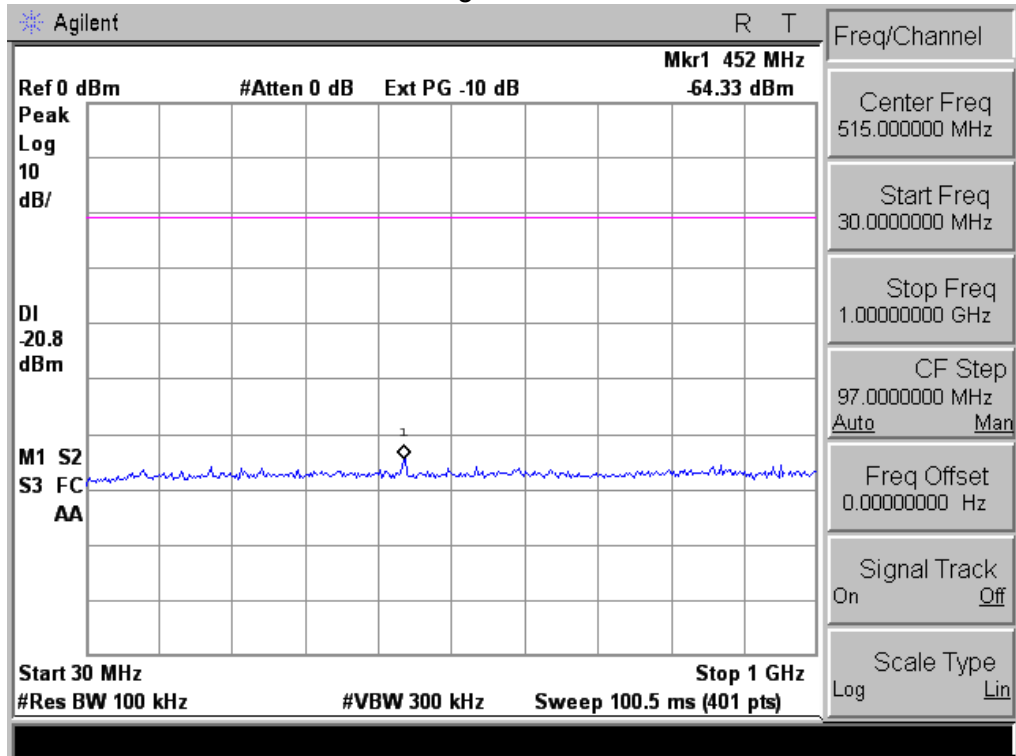
### 802.11b Middle Channel



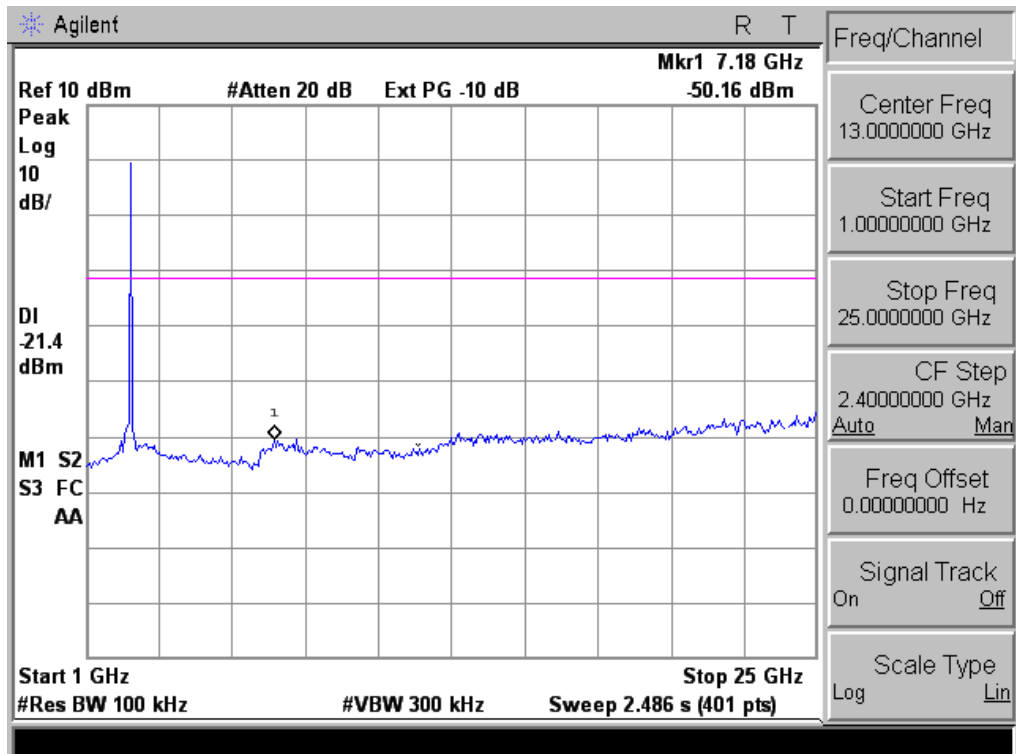
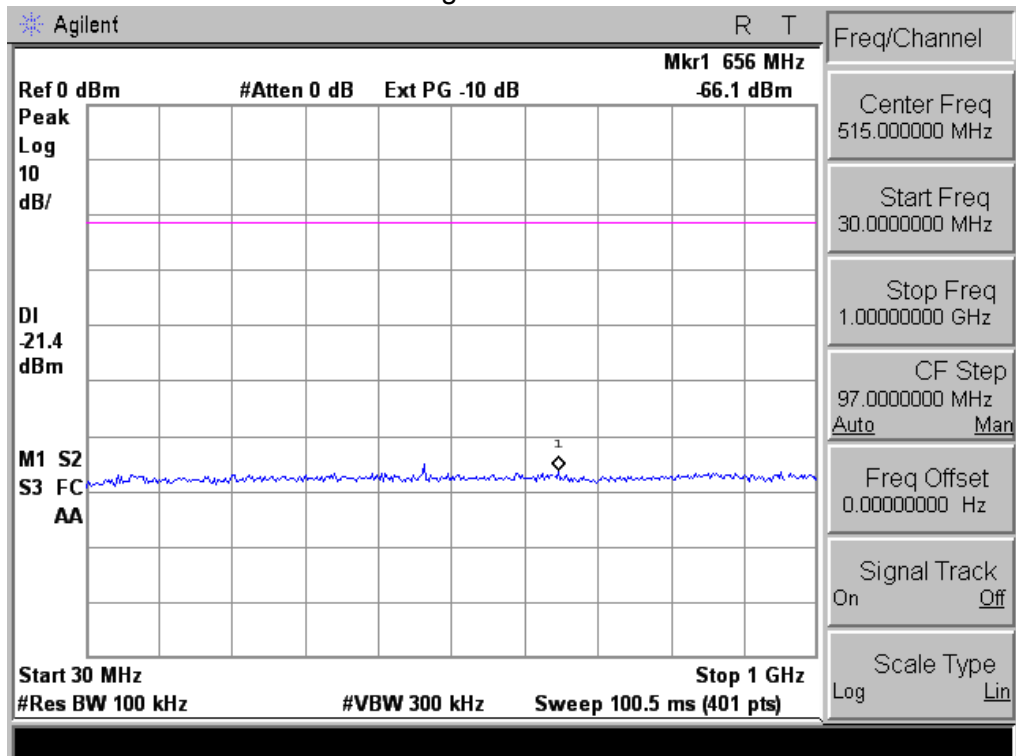
### 802.11b High Channel



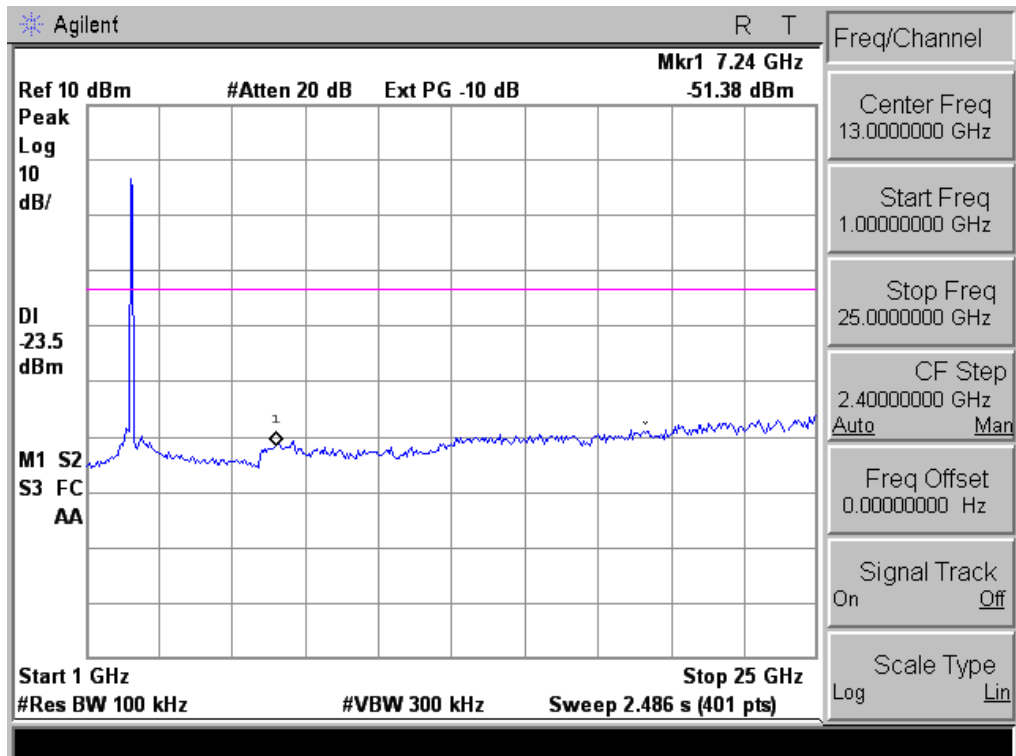
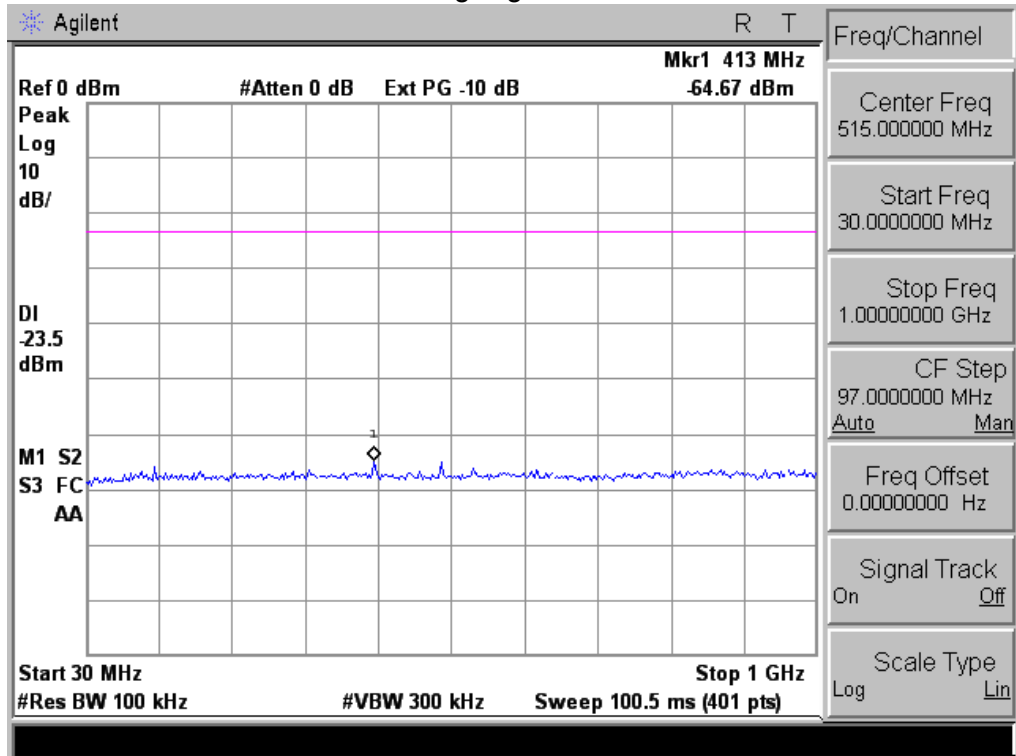
### 802.11g Low Channel



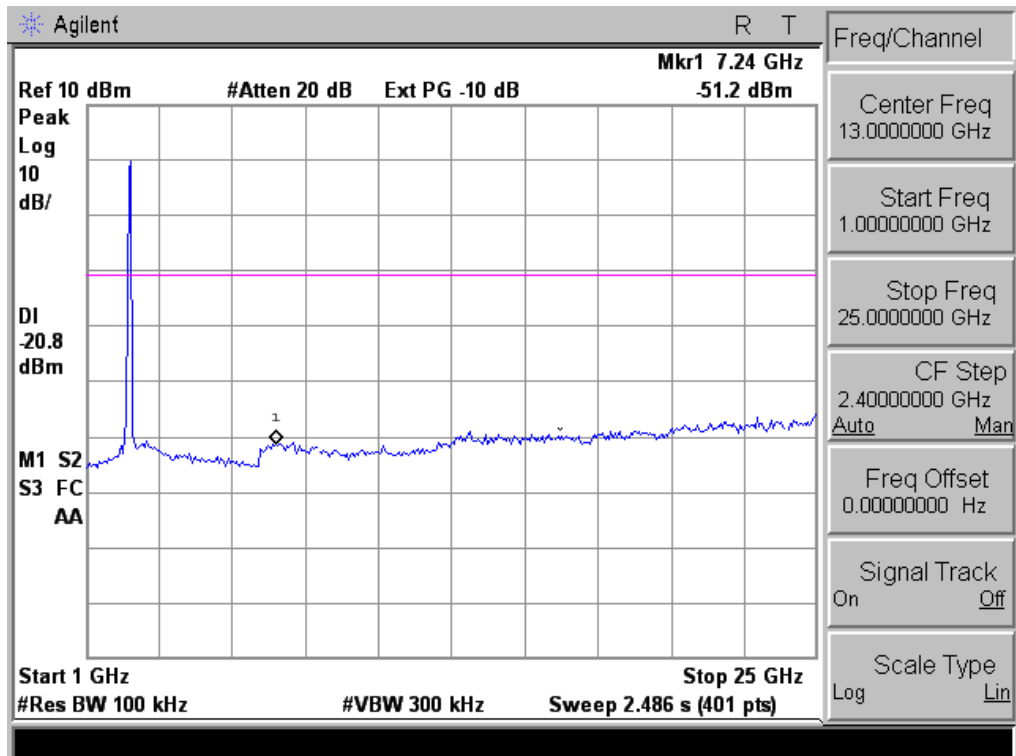
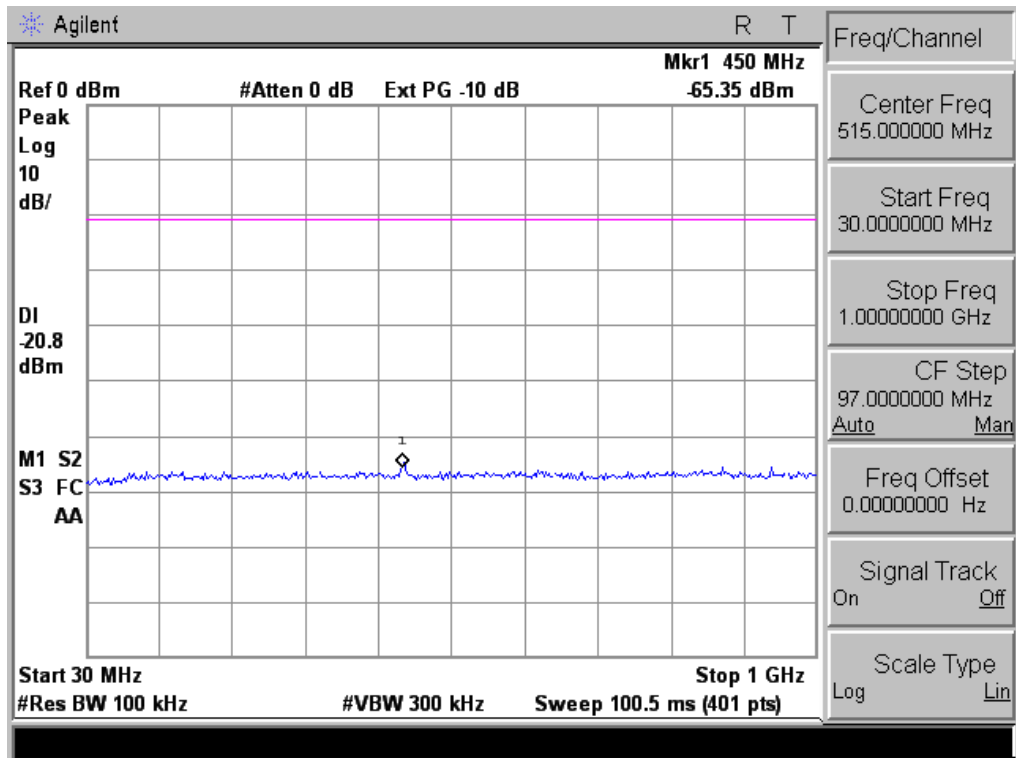
### 802.11g Middle Channel



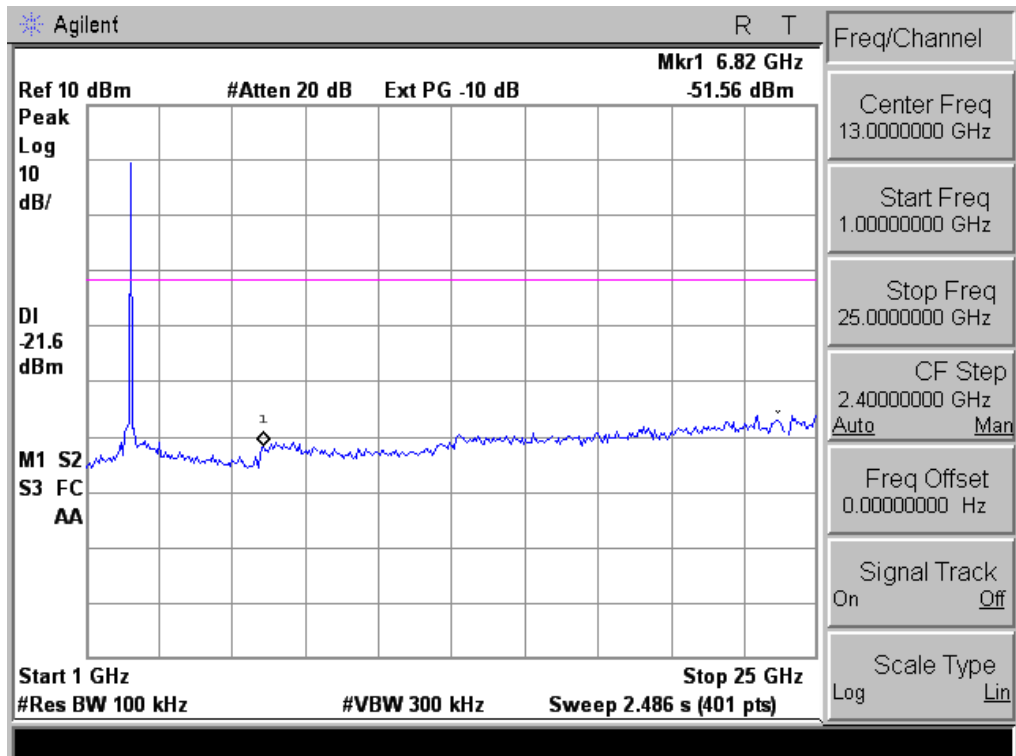
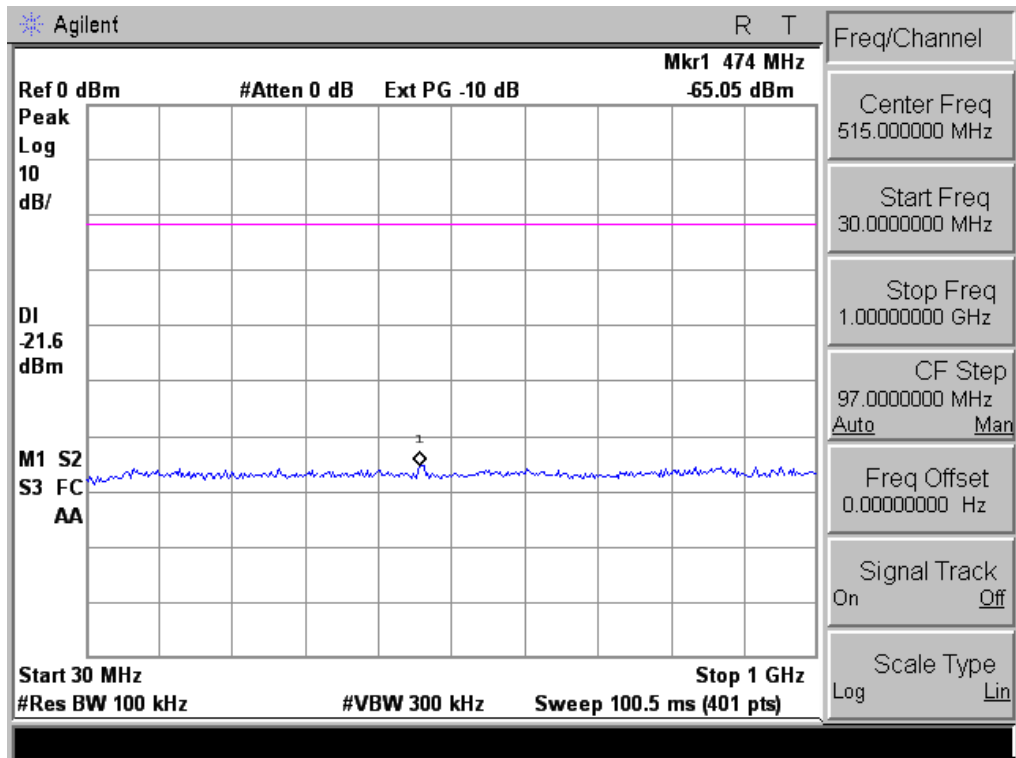
### 802.11g High Channel



802.11n/20MHz Low Channel

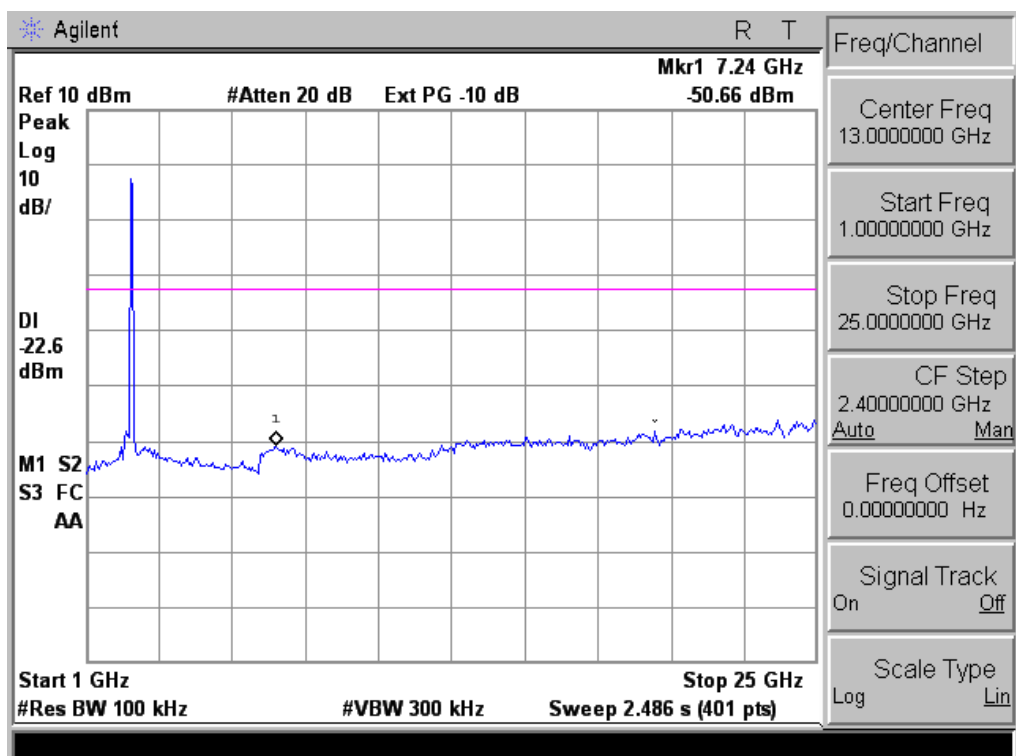
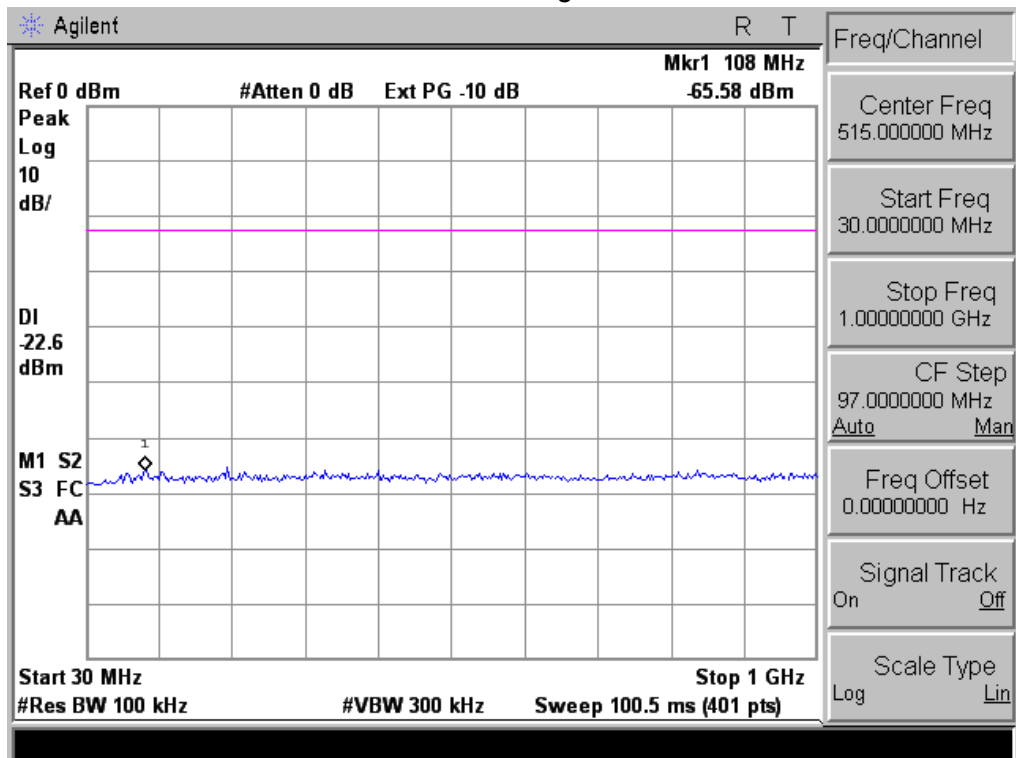


802.11n/20MHz Middle Channel

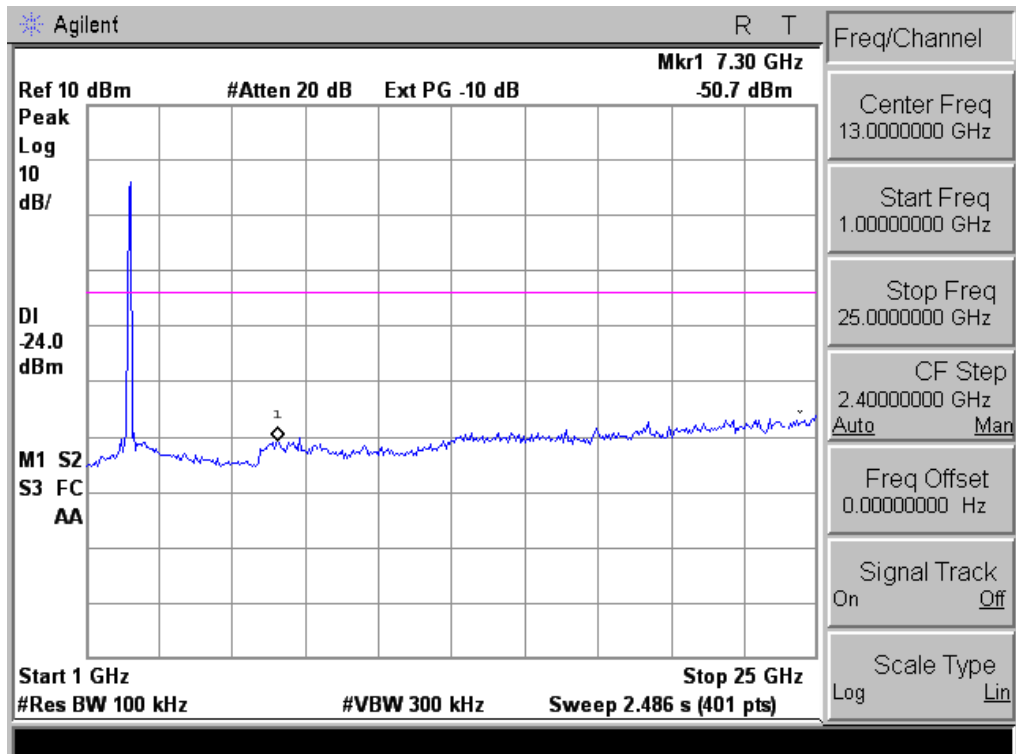
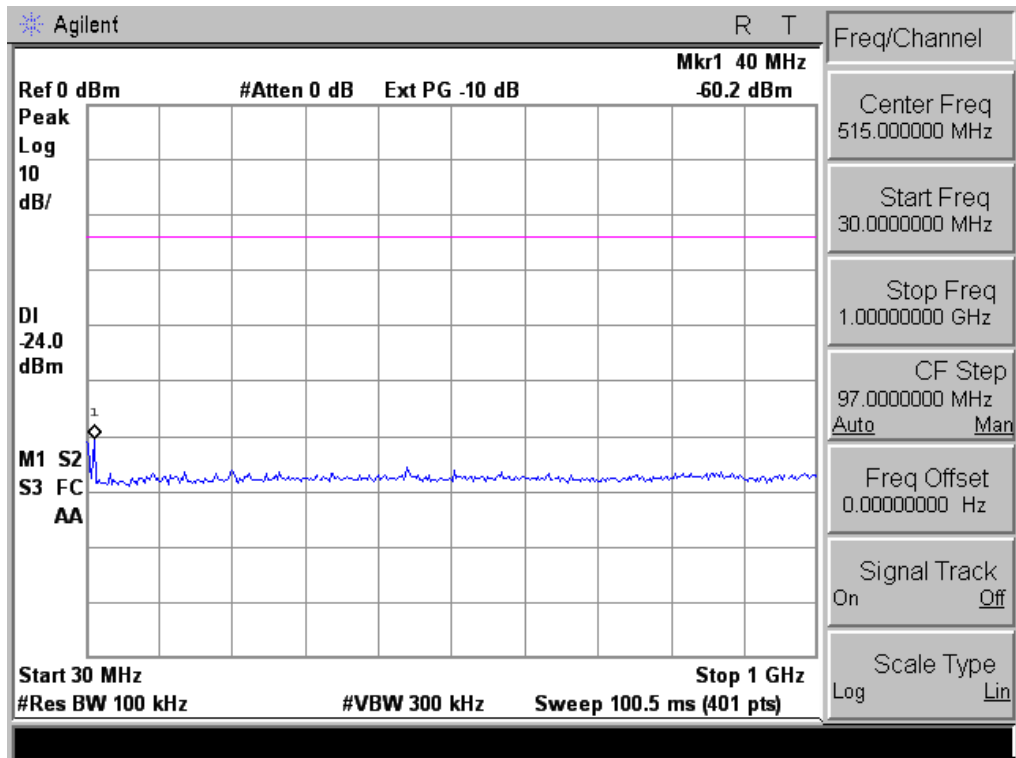




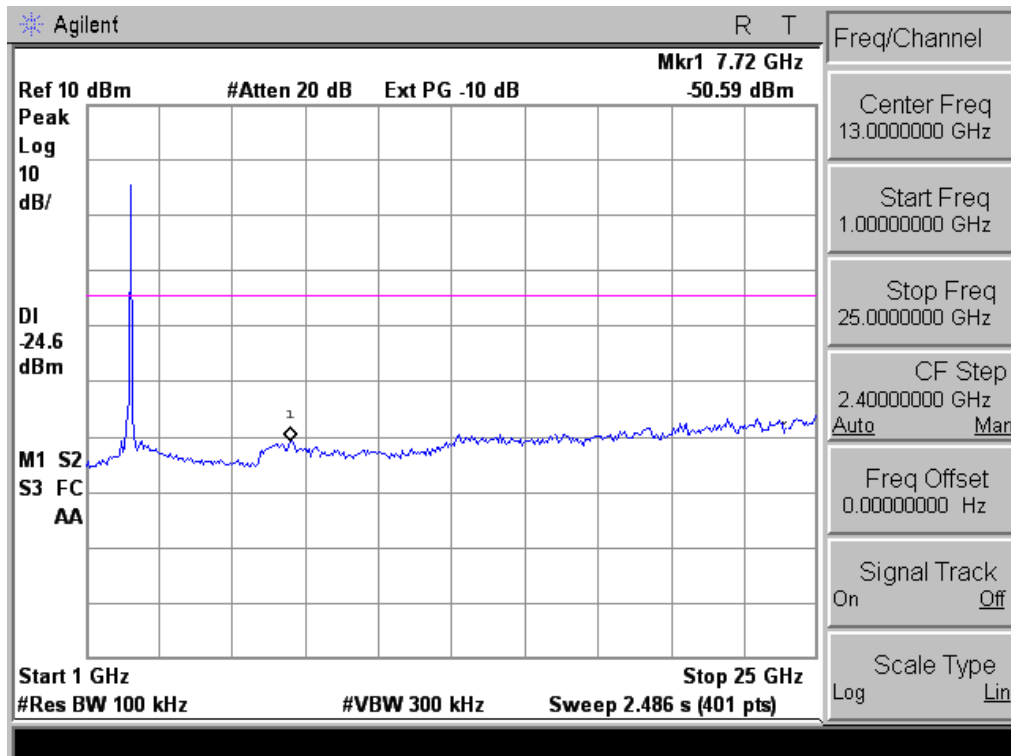
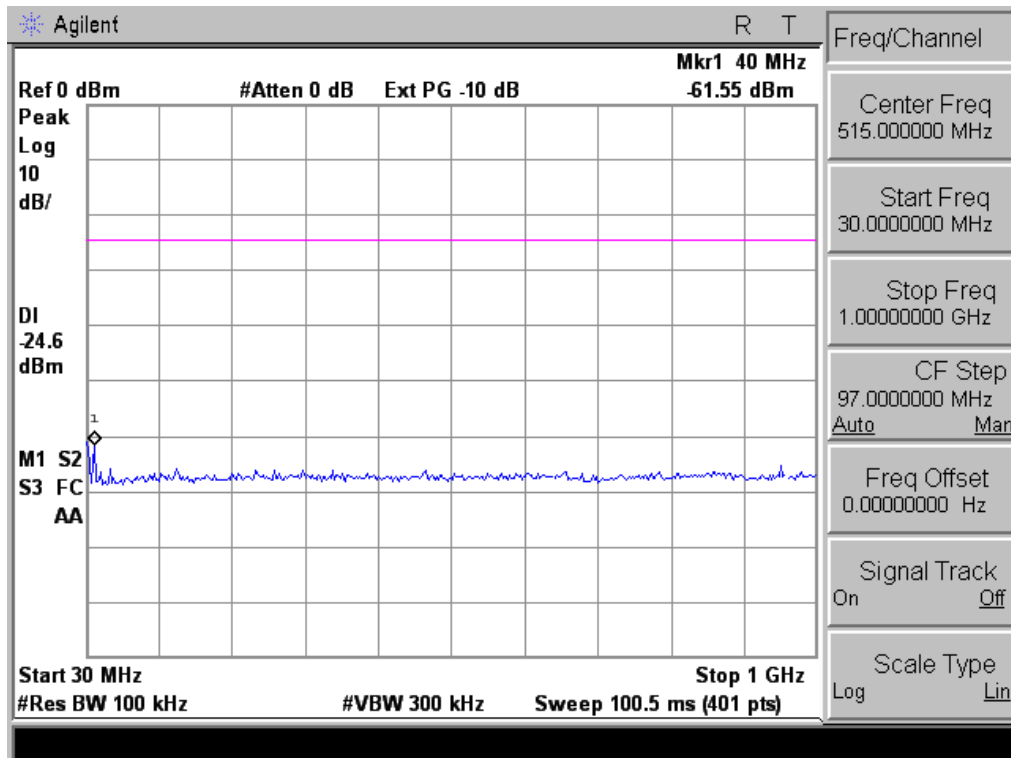
### 802.11n/20MHz High Channel



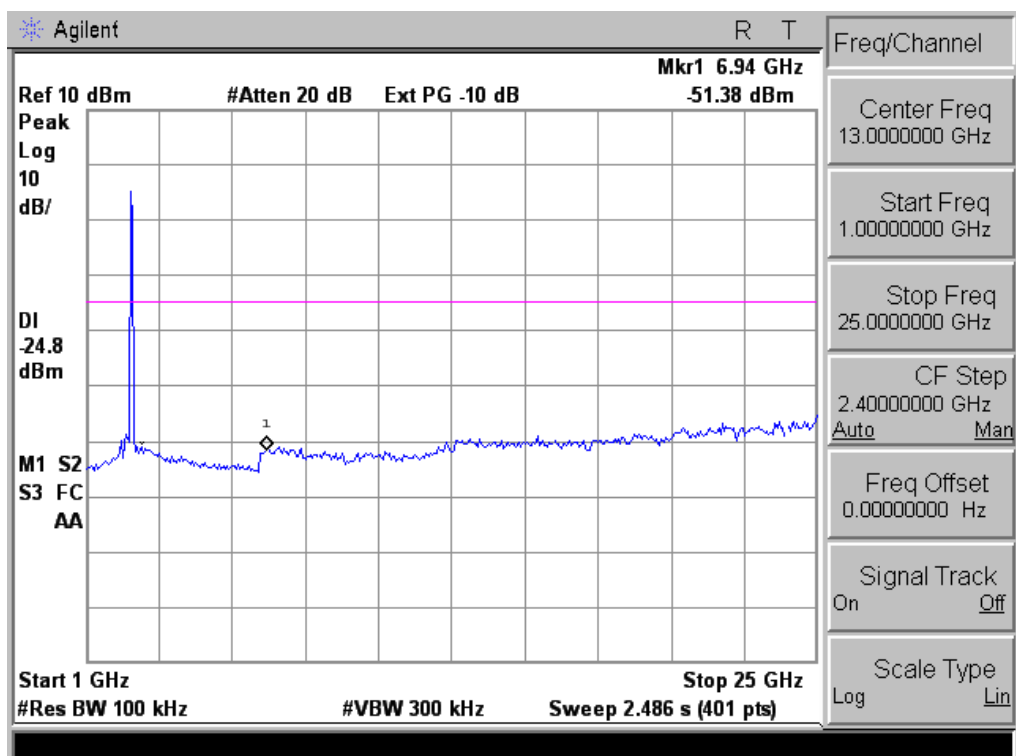
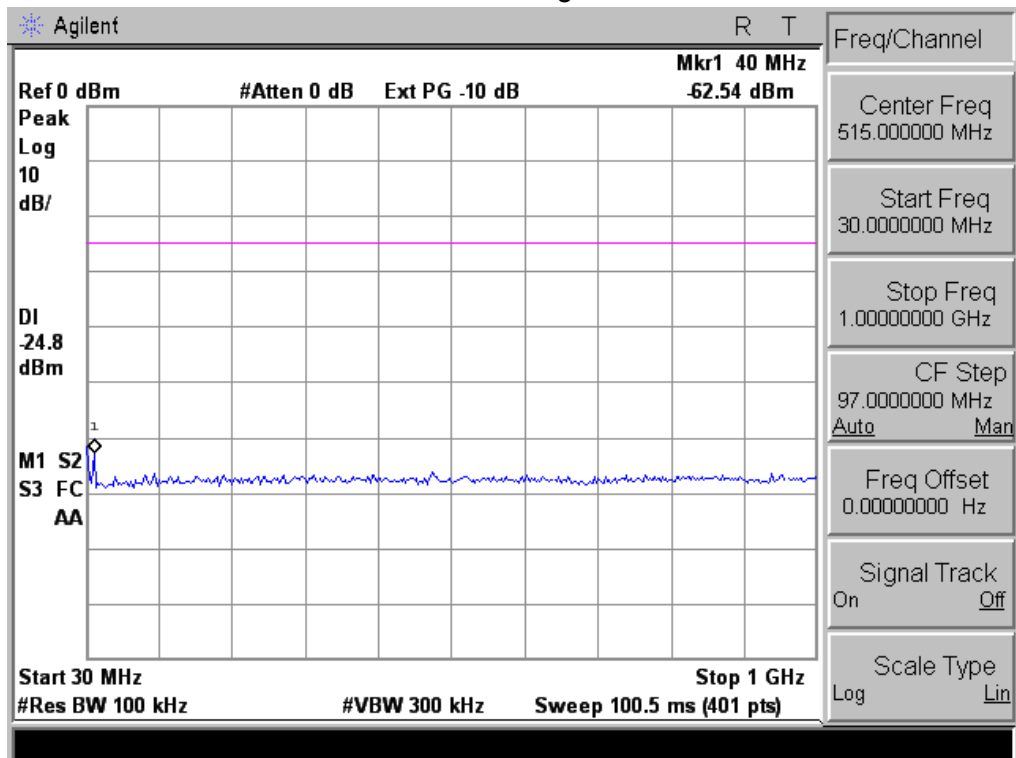
### 802.11n/40MHz Low Channel



802.11n/40MHz Middle Channel



### 802.11n/40MHz High Channel



#### 4. POWER SPECTRAL DENSITY TEST

##### 4.1 APPLIED PROCEDURES / LIMIT

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

##### 4.1.1 TEST PROCEDURE

1. The testing follows Measurement Procedure PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Record the measurement data derived from spectrum analyzer.

##### 4.1.2 DEVIATION FROM STANDARD

No deviation.

##### 4.1.3 TEST SETUP



##### 4.1.4 EUT OPERATION CONDITIONS

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

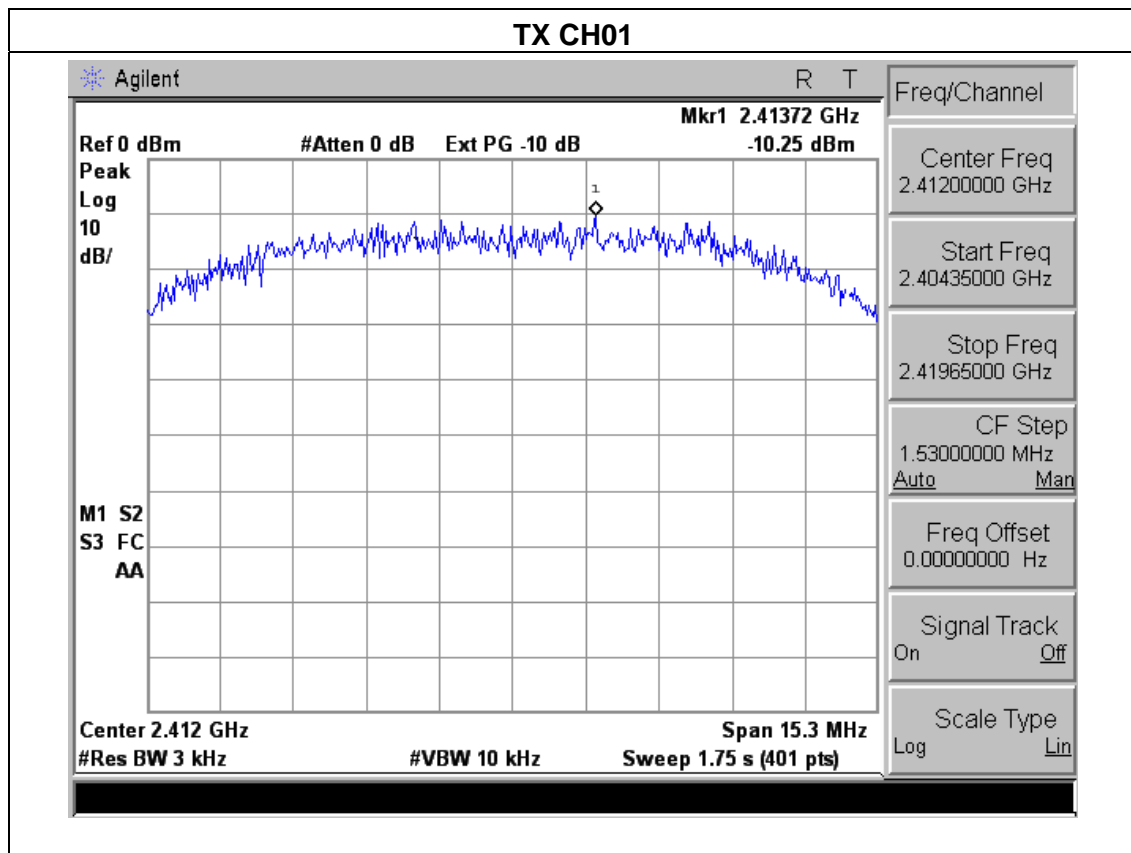
### 4.1.5 TEST RESULTS

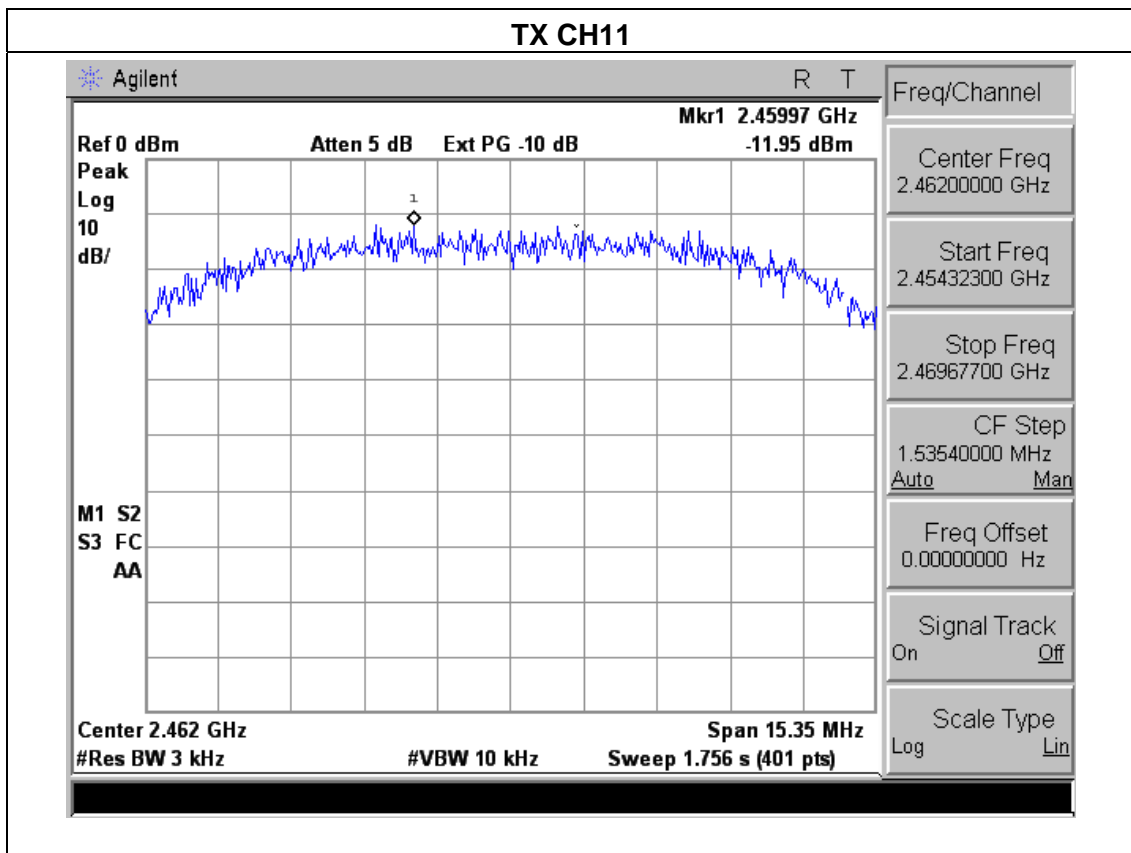
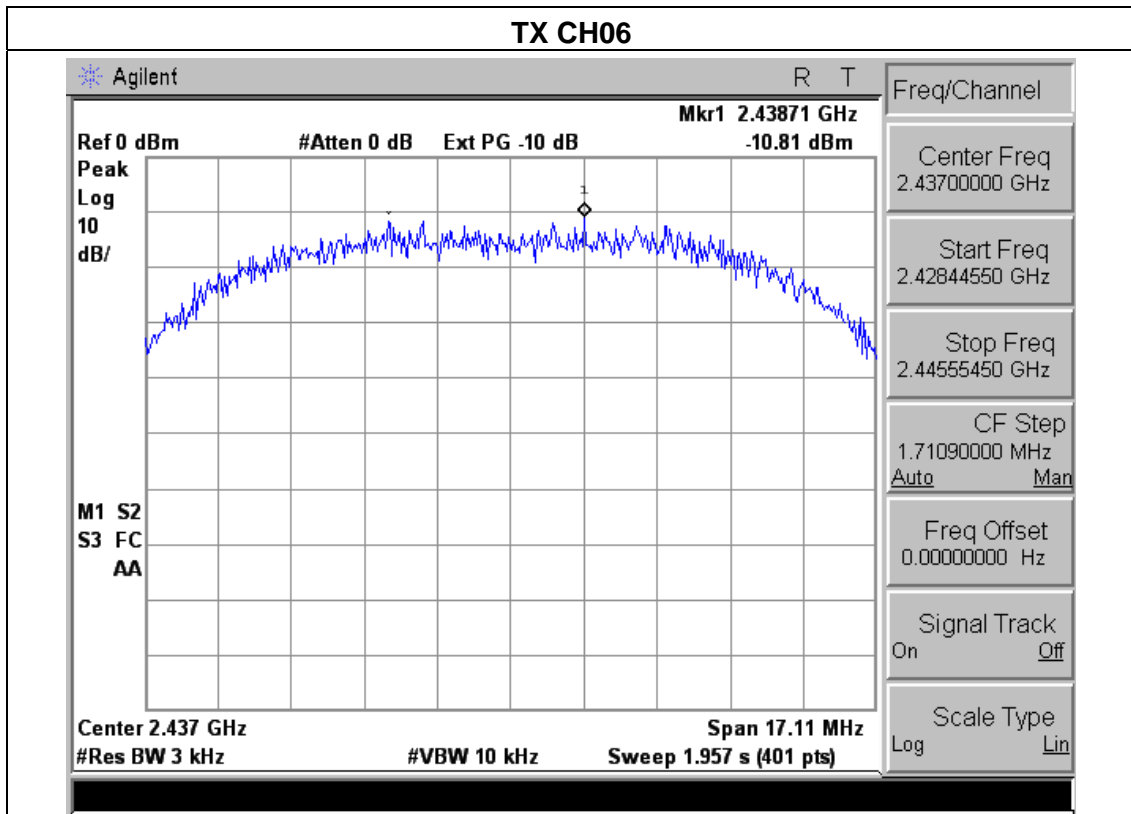
EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX b Mode /CH01, CH06, CH11		

Frequency	Power Density A (dBm/3KHz)	Power Density B (dBm/3KHz)	Total Power Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
2412 MHz	-10.25	-12.33	--	8	<b>PASS</b>
2437 MHz	-10.81	-12.47	--	8	<b>PASS</b>
2462 MHz	-11.95	-12.31	--	8	<b>PASS</b>

**Note:**

1. A(B) Represent the value of antennaA and B,The worst data is A Antenna a ,only shown Antenna A Plot.



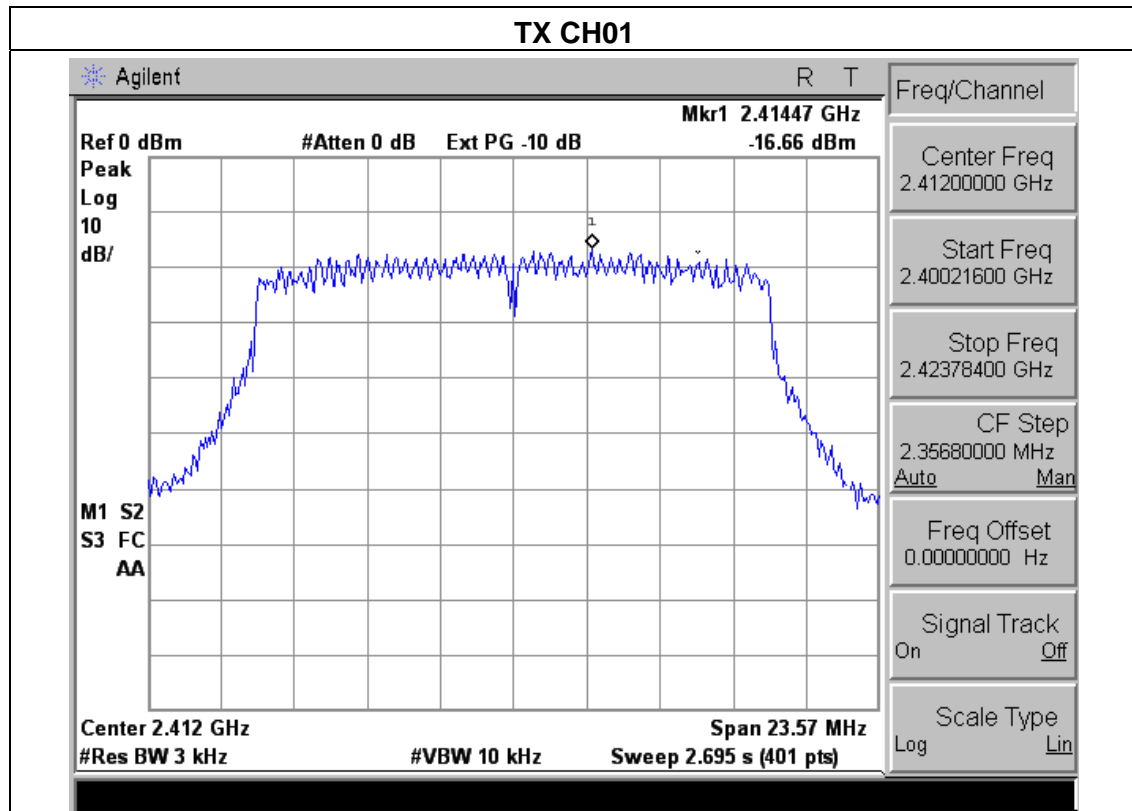


EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX g Mode /CH01, CH06, CH11		

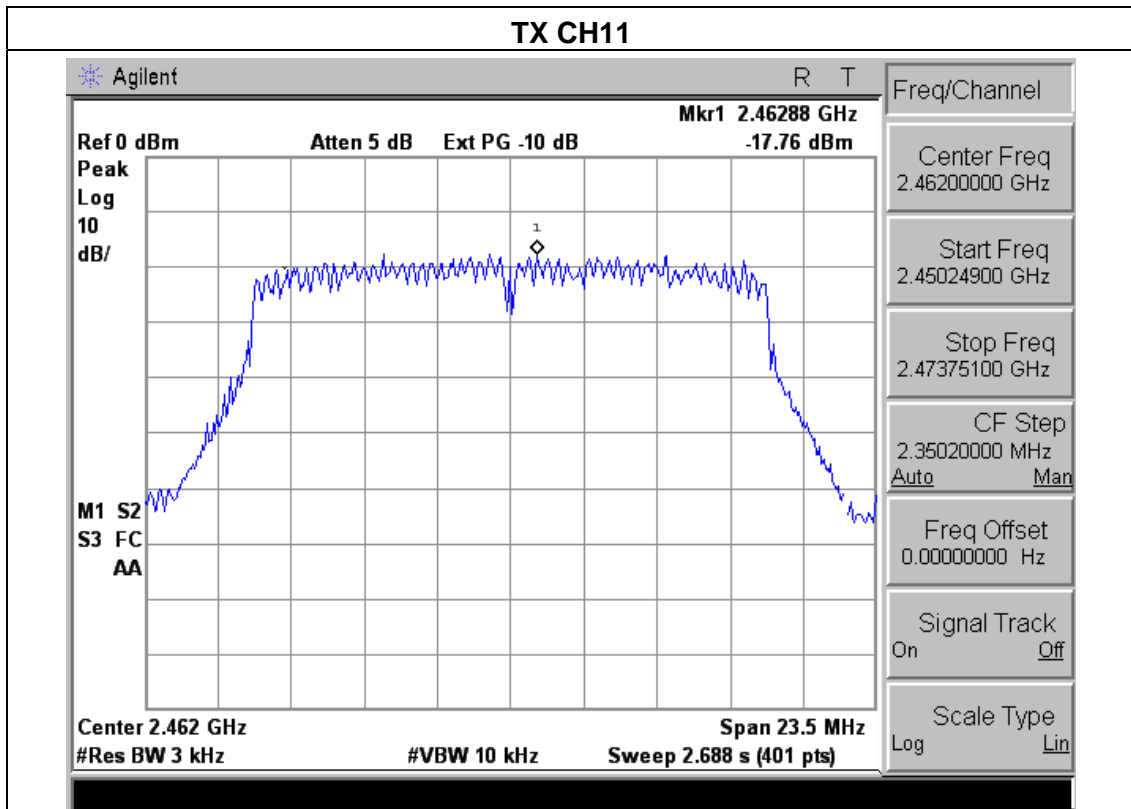
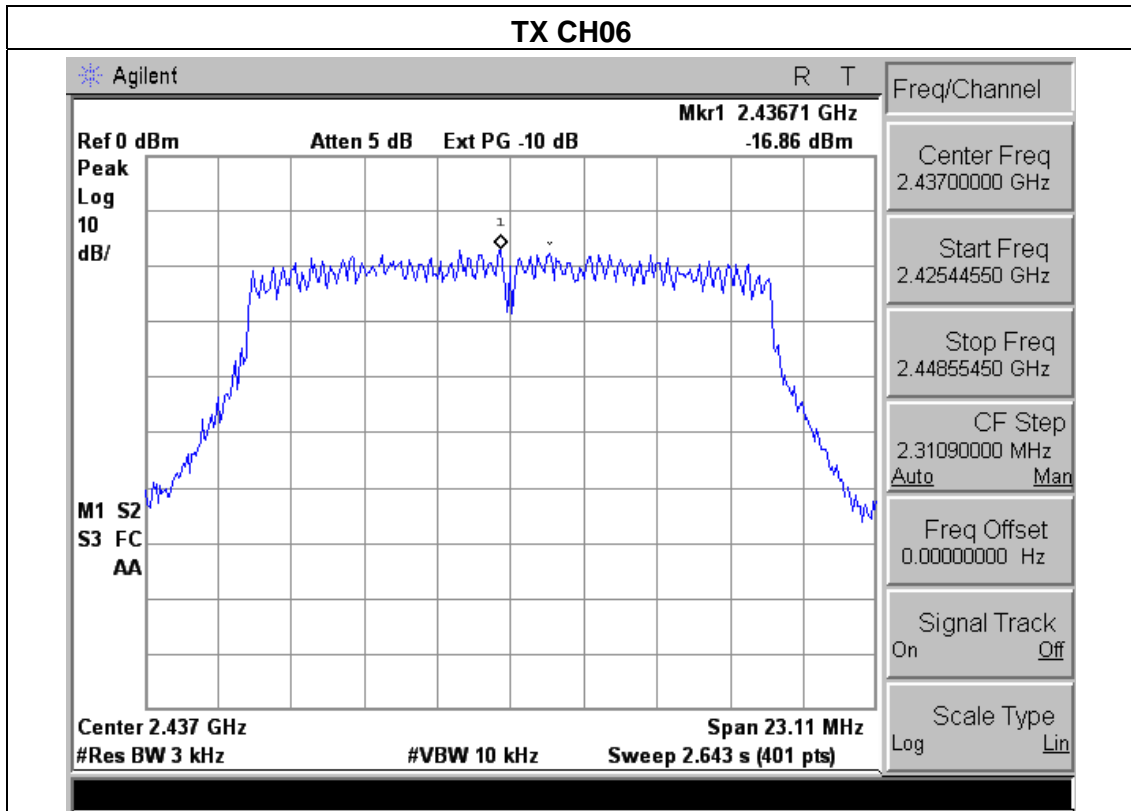
Frequency	Power Density A (dBm/3KHz)	Power Density B (dBm/3KHz)	Total Power Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
2412 MHz	-16.66	-17.45	--	8	<b>PASS</b>
2437 MHz	-16.86	-17.66	--	8	<b>PASS</b>
2462 MHz	-17.76	-17.37	--	8	<b>PASS</b>

**Note:**

1. A(B) Represent the value of antennaA and B,The worst data is A Antenna a ,only shown Antenna A Plot.





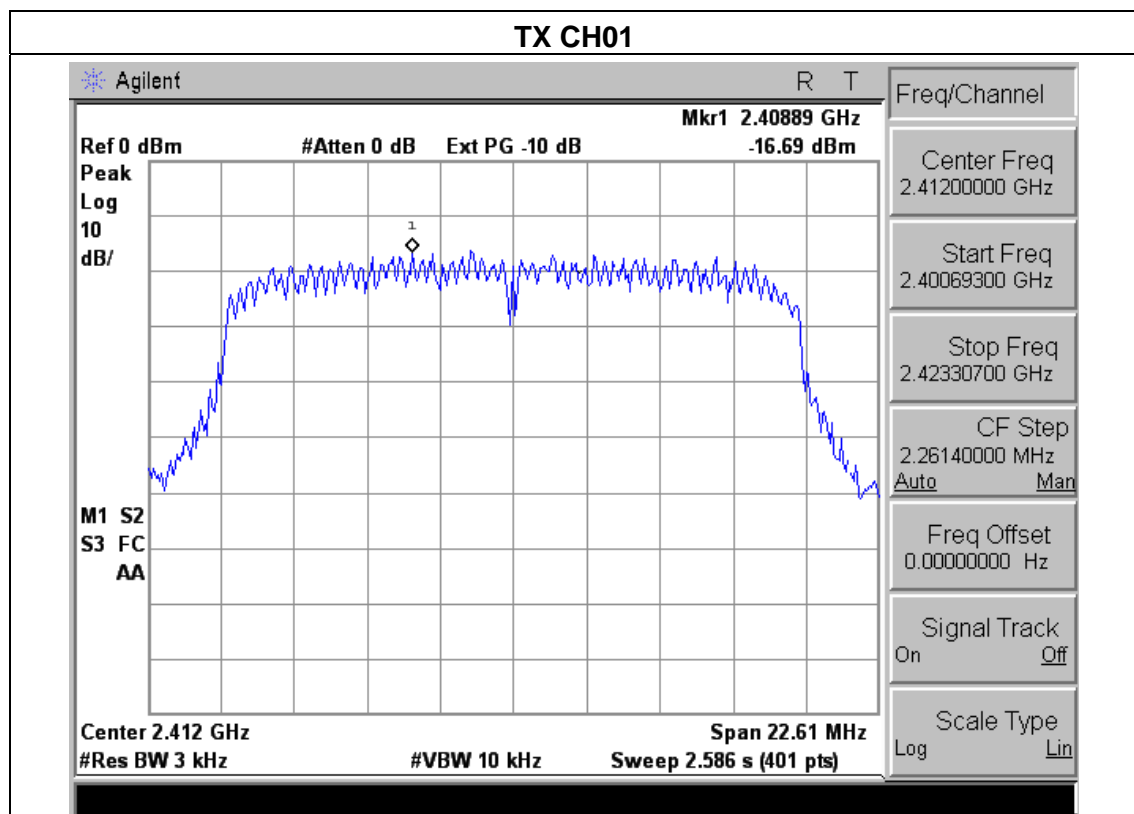


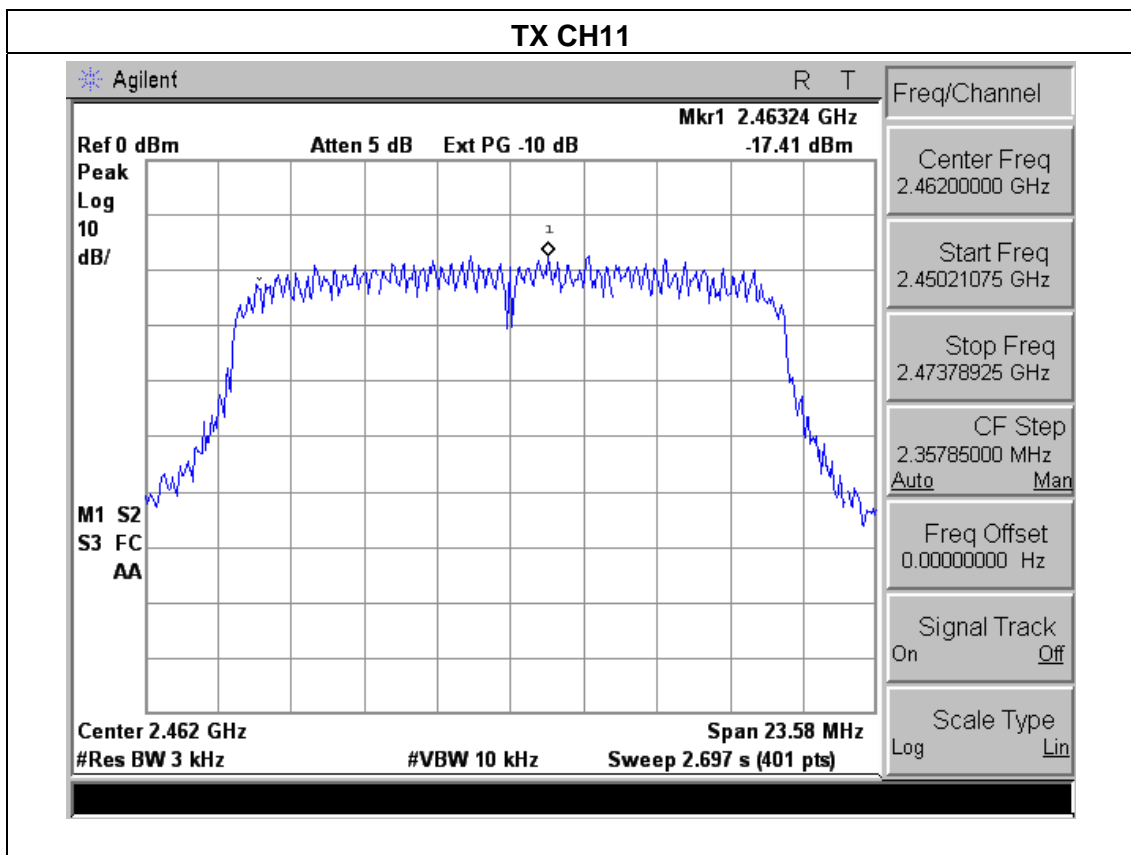
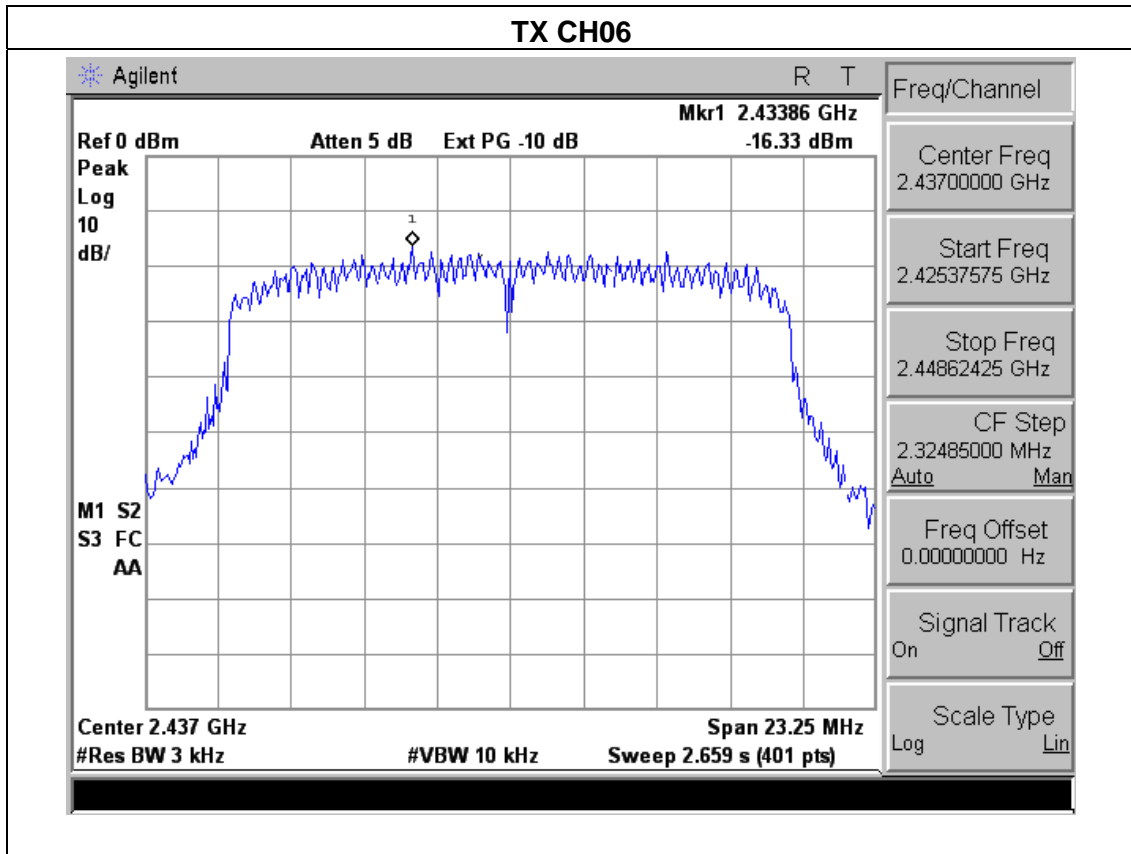
EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX n Mode(20M) /CH01, CH06, CH11		

Frequency	Power Density A (dBm/3KHz)	Power Density B (dBm/3KHz)	Total Power Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
2412 MHz	-16.69	-17.46	-14.05	8	<b>PASS</b>
2437 MHz	-16.33	-17.38	-13.81	8	<b>PASS</b>
2462 MHz	-17.41	-18.52	-14.92	8	<b>PASS</b>

**Note:**

1. A(B) Represent the value of antennaA and B,The worst data is A Antenna a ,only shown Antenna A Plot.



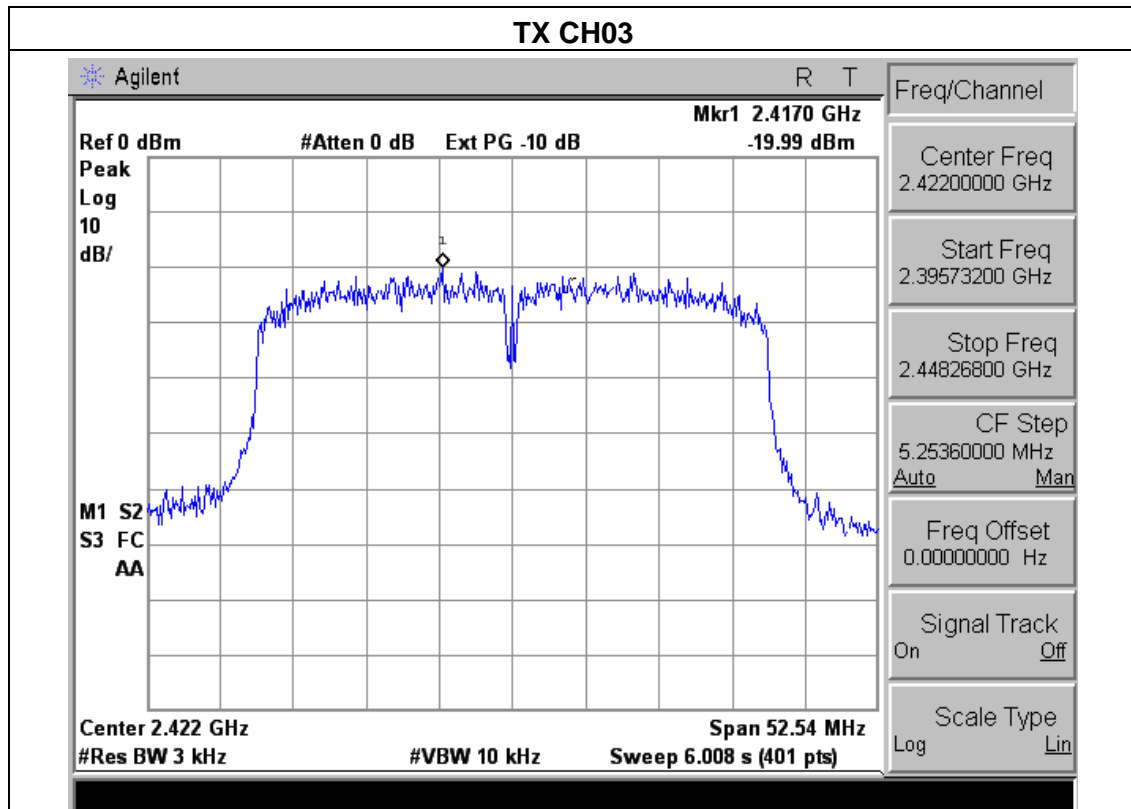


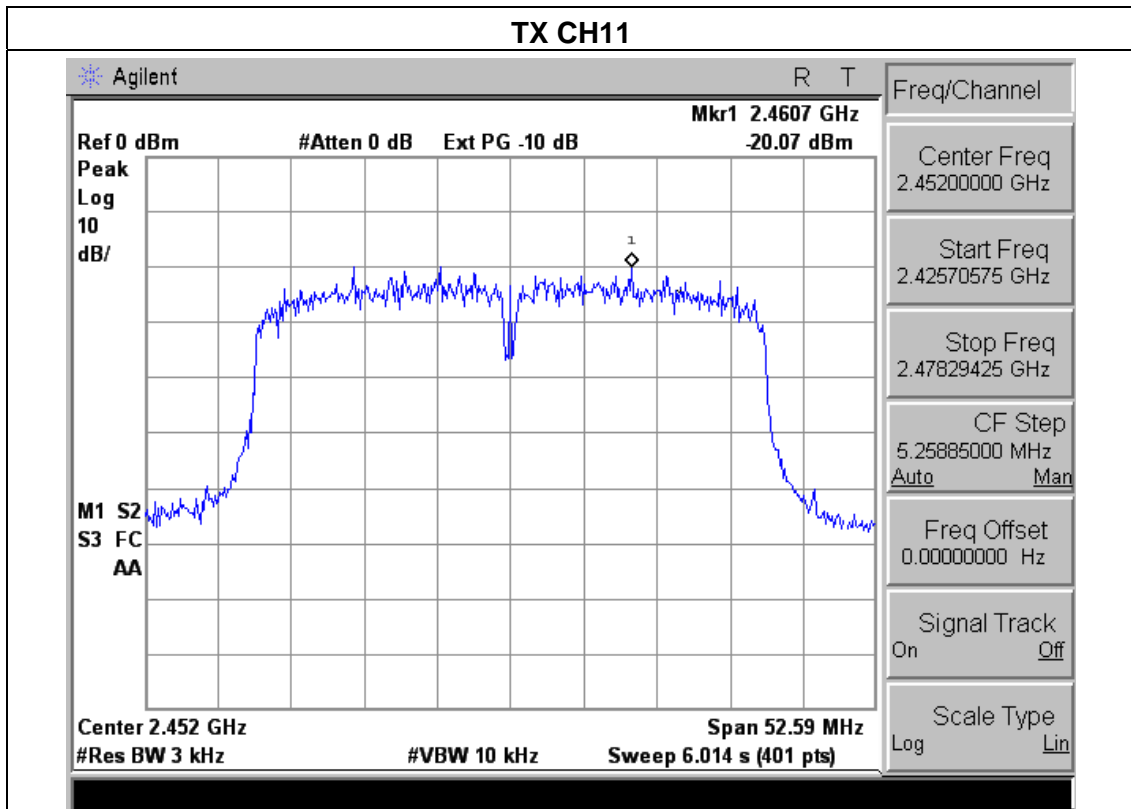
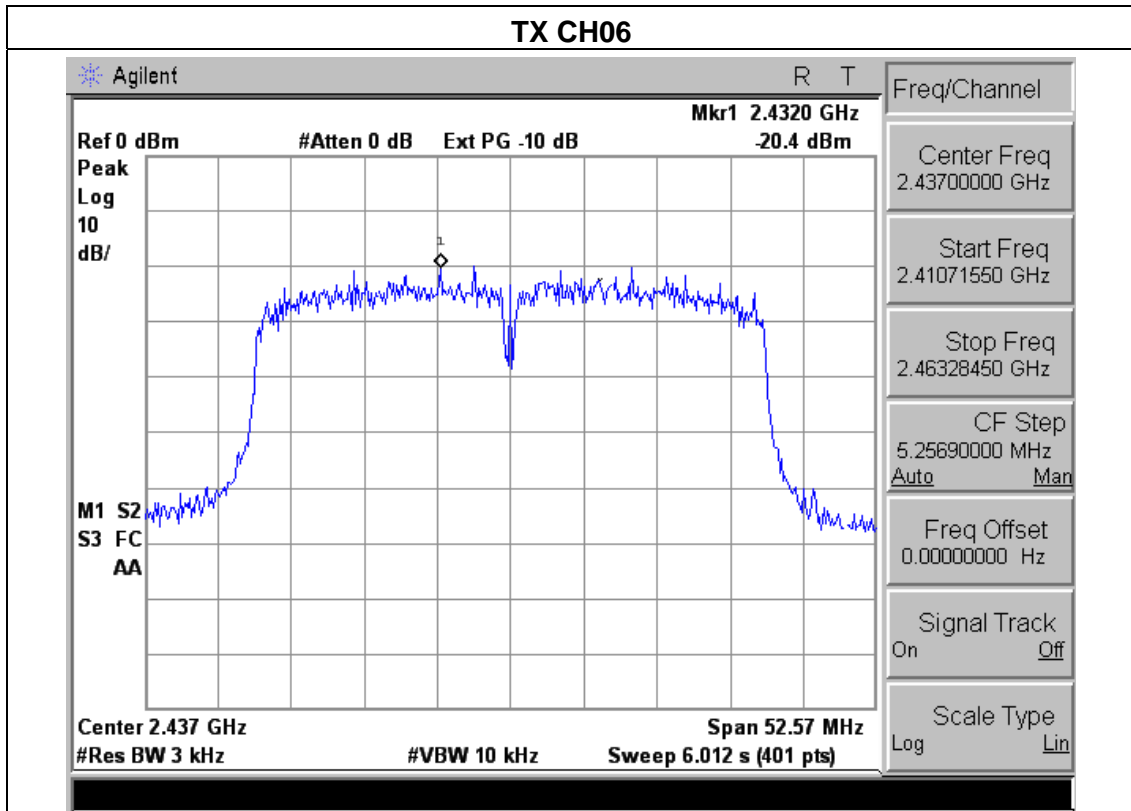
EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX n Mode(40M) /CH03, CH06, CH09		

Frequency	Power Density A (dBm/3KHz)	Power Density B (dBm/3KHz)	Total Power Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
2422 MHz	-19.99	-20.34	-17.15	8	<b>PASS</b>
2437 MHz	-20.40	-21.25	-17.79	8	<b>PASS</b>
2452 MHz	-20.07	-21.39	-17.67	8	<b>PASS</b>

**Note:**

1. A(B) Represent the value of antenna A and B,The worst data is A Antenna a ,only shown Antenna A Plot.





## 5. BANDWIDTH TEST

### 5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

#### 5.1.1 TEST PROCEDURE

- a.
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r01.
  2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
  3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 1-5% of the emission bandwidth (EBW). Set the Video bandwidth (VBW)  $\geq 3 * \text{RBW}$ . In order to make an accurate measurement. The 6 dB bandwidth must be greater than 100 KHz.
  4. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

#### 5.1.2 DEVIATION FROM STANDARD

No deviation.

#### 5.1.3 TEST SETUP



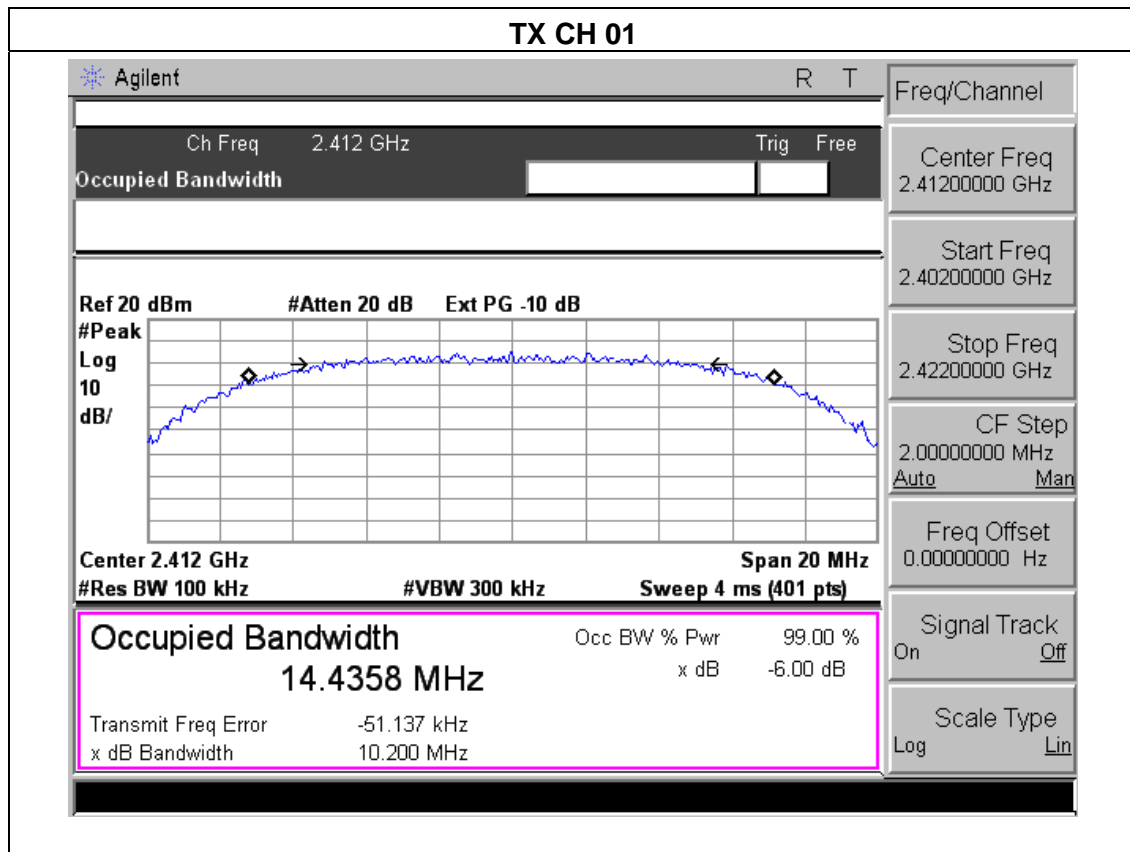
#### 5.1.4 EUT OPERATION CONDITIONS

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

### 5.1.5 TEST RESULTS

EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX b Mode /CH01, CH06, CH11		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2412 MHz	10.20	>=500KHz	<b>PASS</b>
2437 MHz	11.41	>=500KHz	<b>PASS</b>
2462 MHz	10.24	>=500KHz	<b>PASS</b>



### TX CH 06

Agilent
R T

---

Ch Freq 2.437 GHz
Trig Free

---

Occupied Bandwidth

---

Ref 20 dBm
#Atten 20 dB
Ext PG -10 dB

#Peak

Log

10

dB/

Freq/Channel

Center Freq 2.43700000 GHz

Start Freq 2.42700000 GHz

Stop Freq 2.44700000 GHz

CF Step 2.00000000 MHz

Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

Scale Type Log Lin

---

Center 2.437 GHz
Span 20 MHz

#Res BW 100 kHz
#VBW 300 kHz
Sweep 4 ms (401 pts)

**Occupied Bandwidth**      Occ BW % Pwr      99.00 %

**14.5836 MHz**

x dB      -6.00 dB

Transmit Freq Error      -100.228 kHz

x dB Bandwidth      11.406 MHz

### TX CH 11

Agilent
R T

---

Ch Freq 2.462 GHz
Trig Free

---

Occupied Bandwidth

---

Ref 20 dBm
#Atten 20 dB
Ext PG -10 dB

#Peak

Log

10

dB/

Freq/Channel

Center Freq 2.46200000 GHz

Start Freq 2.45200000 GHz

Stop Freq 2.47200000 GHz

CF Step 2.00000000 MHz

Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

Scale Type Log Lin

---

Center 2.462 GHz
Span 20 MHz

#Res BW 100 kHz
#VBW 300 kHz
Sweep 4 ms (401 pts)

**Occupied Bandwidth**      Occ BW % Pwr      99.00 %

**14.3669 MHz**

x dB      -6.00 dB

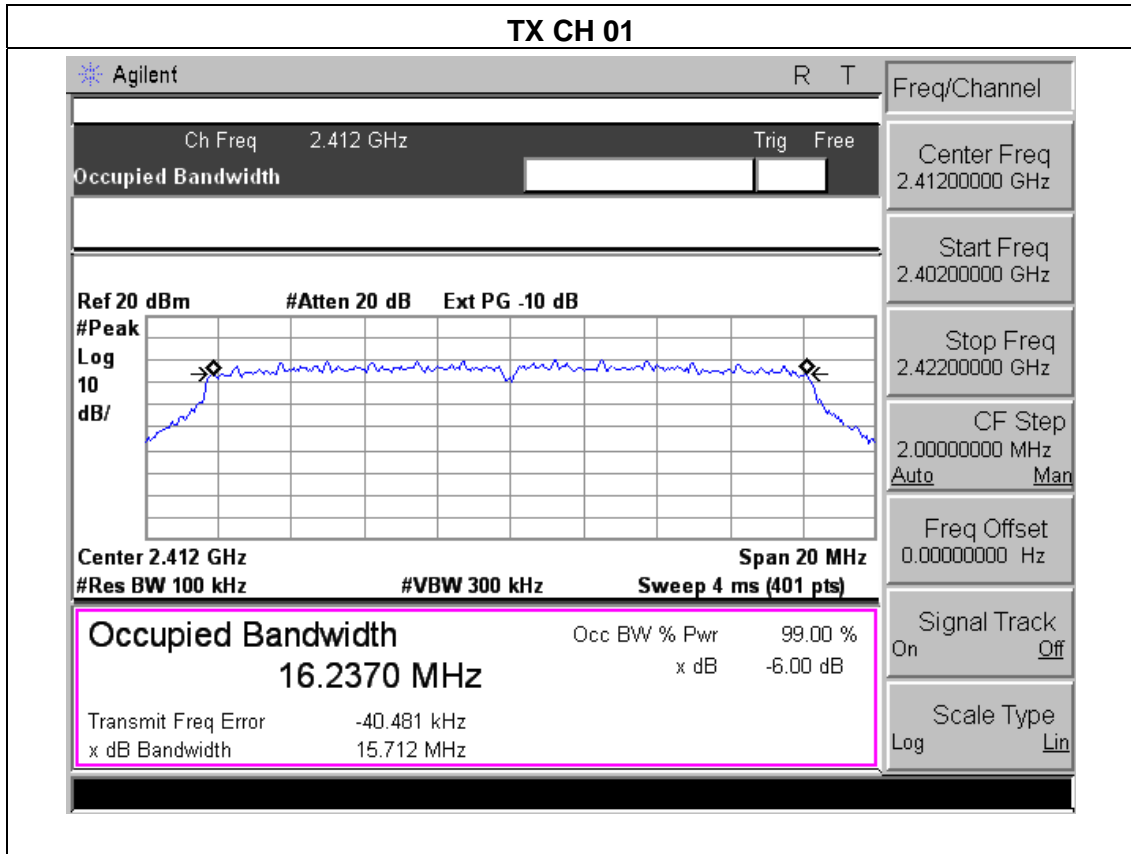
Transmit Freq Error      -52.997 kHz

x dB Bandwidth      10.236 MHz



EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX g Mode /CH01, CH06, CH11		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2412 MHz	15.71	>=500KHz	<b>PASS</b>
2437 MHz	15.41	>=500KHz	<b>PASS</b>
2462 MHz	15.67	>=500KHz	<b>PASS</b>



### TX CH 06

Agilent
R T

---

Ch Freq 2.437 GHz
Trig Free

**Occupied Bandwidth**

---

Ref 20 dBm
#Atten 20 dB
Ext PG -10 dB

#Peak  
Log  
10  
dB/

Freq/Channel

Center Freq 2.43700000 GHz

Start Freq 2.42700000 GHz

Stop Freq 2.44700000 GHz

CF Step 2.00000000 MHz  
Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

Scale Type Log Lin

---

Center 2.437 GHz
Span 20 MHz

#Res BW 100 kHz
#VBW 300 kHz
Sweep 4 ms (401 pts)

<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %
<b>16.2180 MHz</b>	x dB	-6.00 dB
Transmit Freq Error	-34.132 kHz	
x dB Bandwidth	15.406 MHz	

### TX CH 11

Agilent
R T

---

Ch Freq 2.462 GHz
Trig Free

**Occupied Bandwidth**

---

Ref 20 dBm
#Atten 20 dB
Ext PG -10 dB

#Peak  
Log  
10  
dB/

Freq/Channel

Center Freq 2.46200000 GHz

Start Freq 2.45200000 GHz

Stop Freq 2.47200000 GHz

CF Step 2.00000000 MHz  
Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

Scale Type Log Lin

---

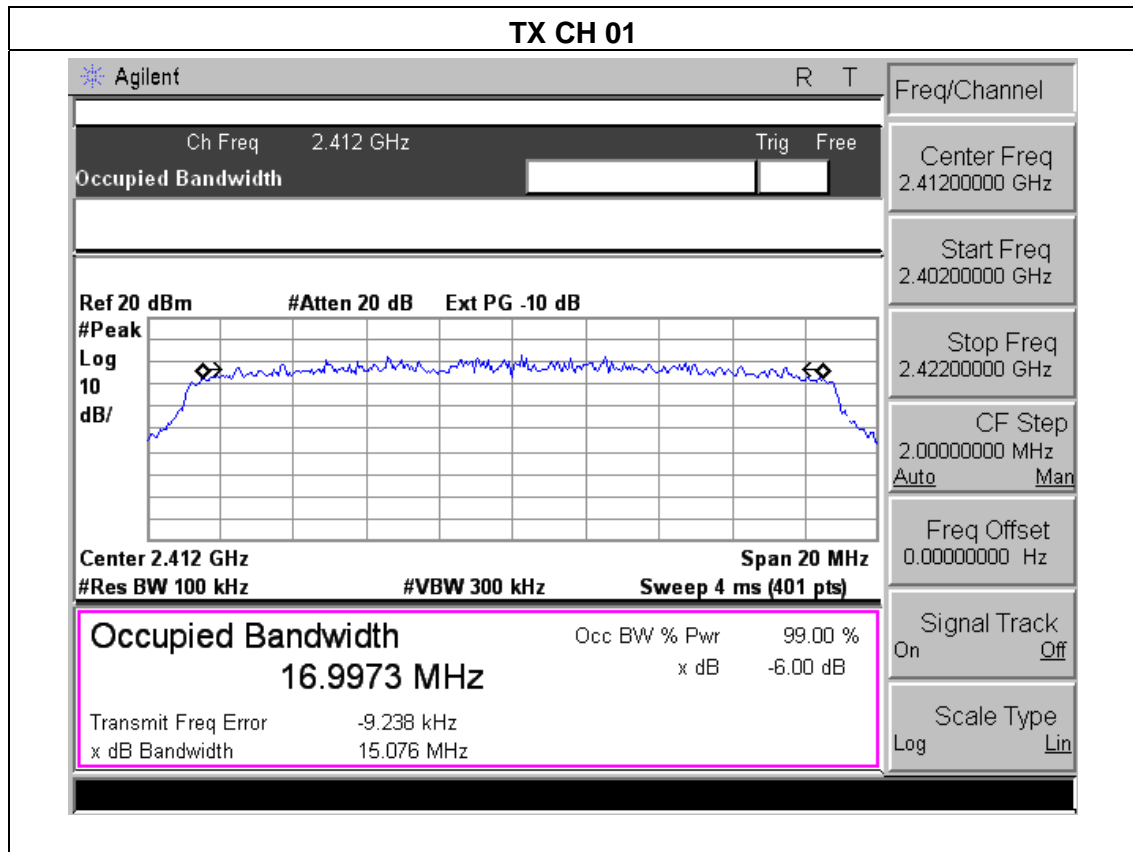
Center 2.462 GHz
Span 20 MHz

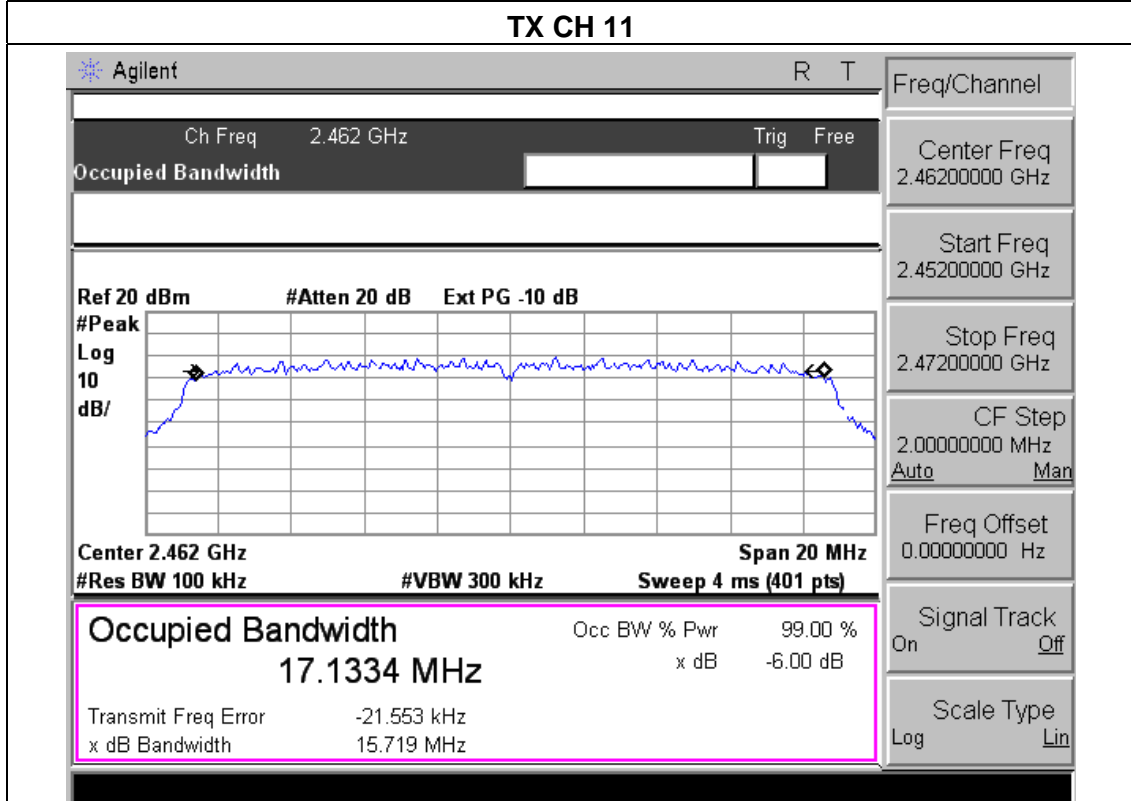
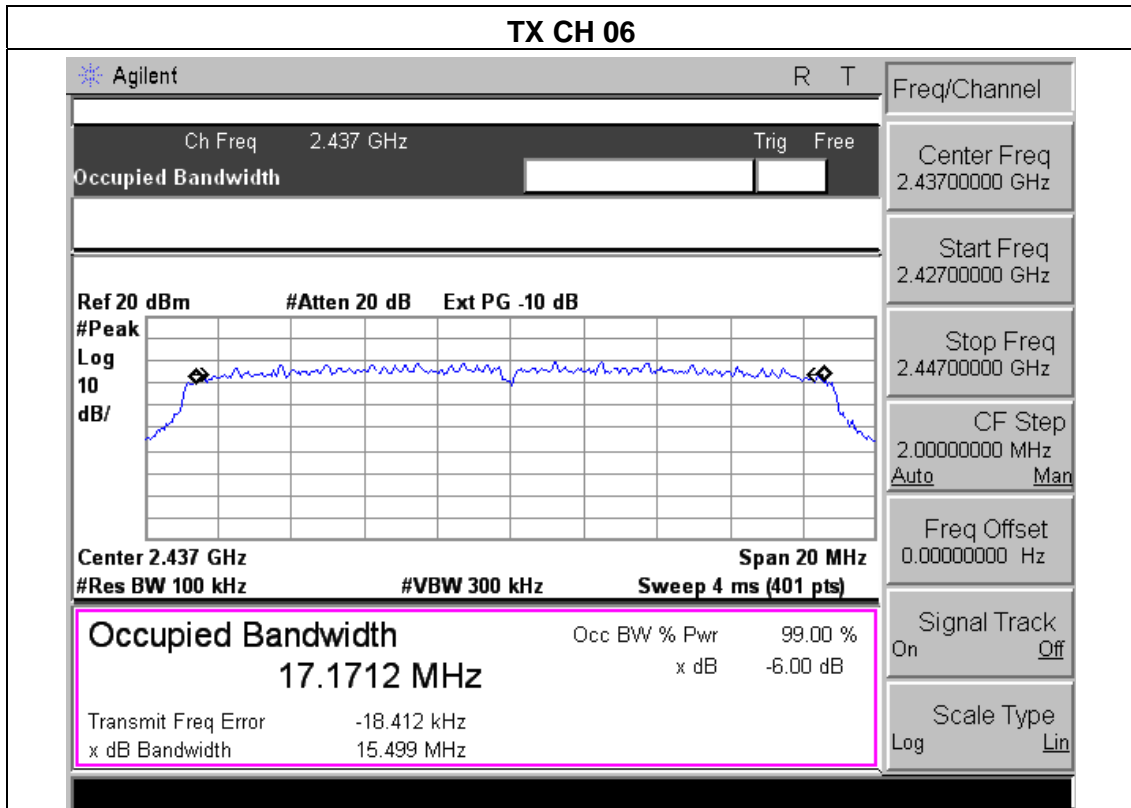
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4 ms (401 pts)

<b>Occupied Bandwidth</b>	Occ BW % Pwr	99.00 %
<b>16.2112 MHz</b>	x dB	-6.00 dB
Transmit Freq Error	-34.841 kHz	
x dB Bandwidth	15.668 MHz	

EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX n Mode(20M) /CH01, CH06, CH11		

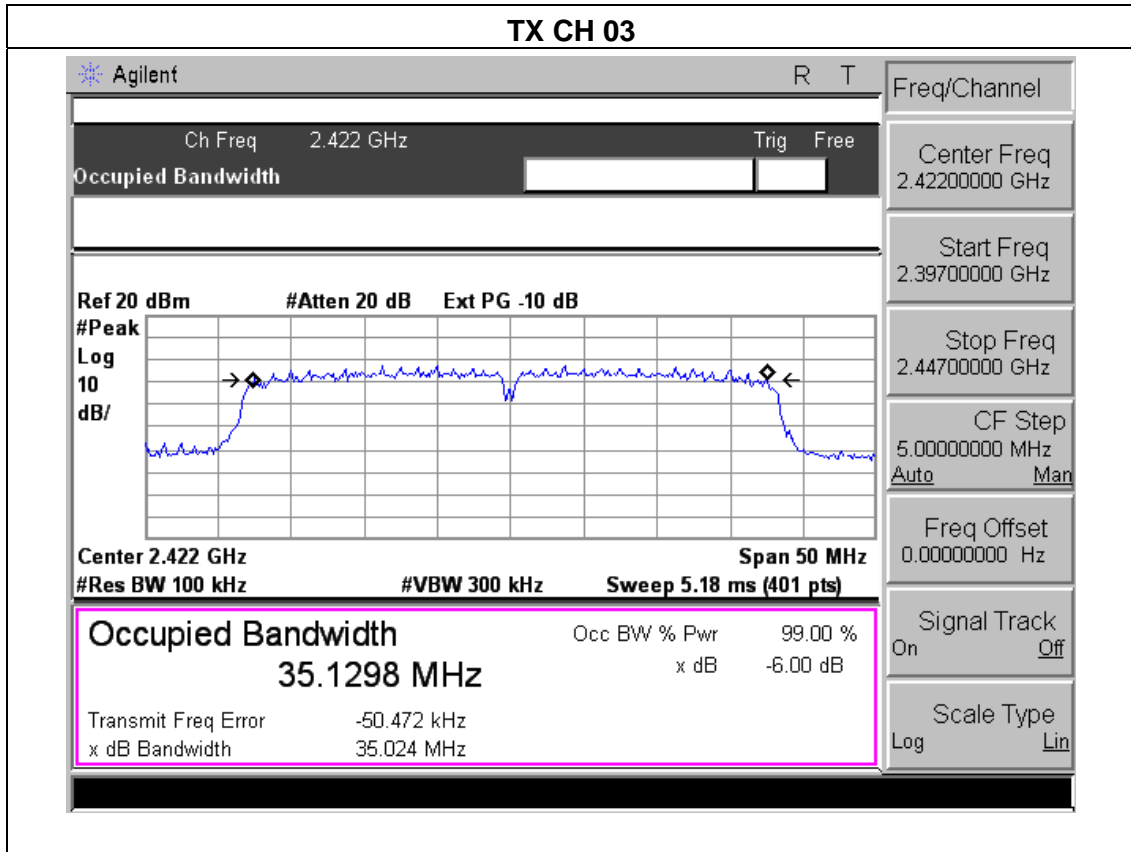
Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2412 MHz	15.08	>=500KHz	<b>PASS</b>
2437 MHz	15.50	>=500KHz	<b>PASS</b>
2462 MHz	15.72	>=500KHz	<b>PASS</b>

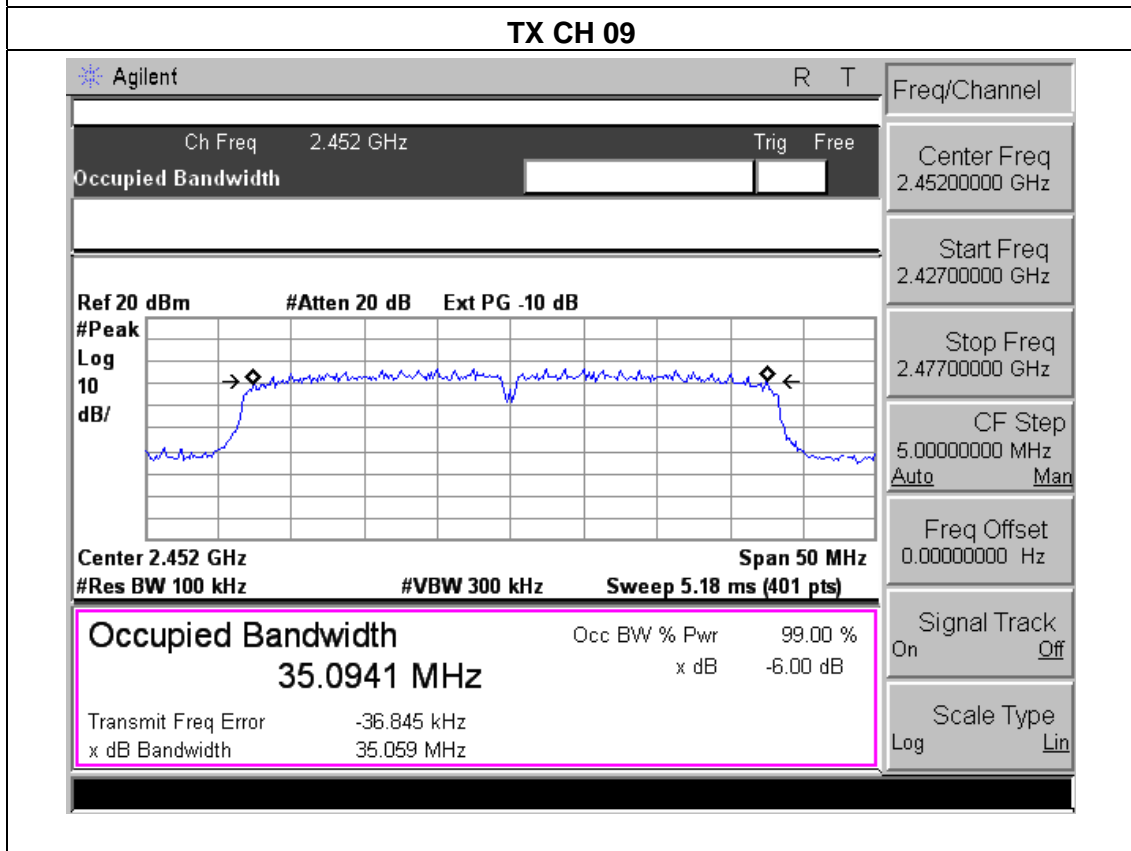
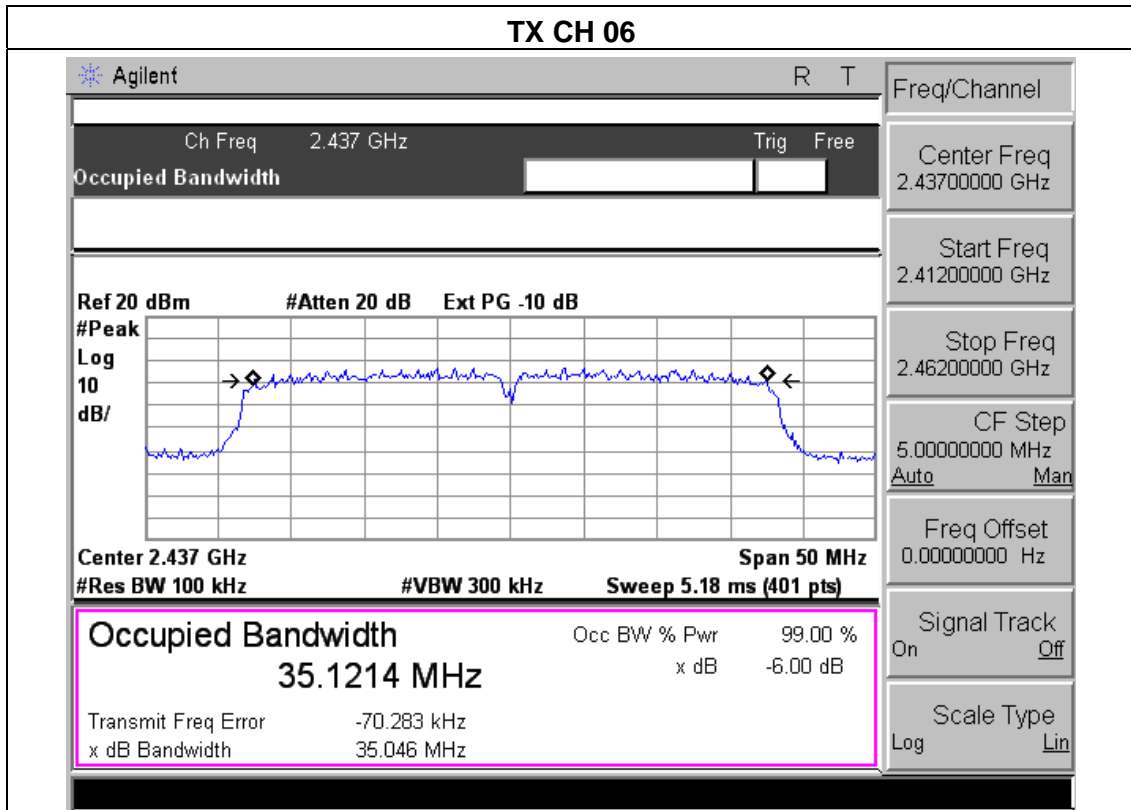




EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX n Mode(40M) /CH03, CH06, CH09		

Frequency	6dB Bandwidth (MHz)	Channel Separation (MHz)	Result
2422 MHz	35.02	>=500KHz	<b>PASS</b>
2437 MHz	35.05	>=500KHz	<b>PASS</b>
2452 MHz	35.06	>=500KHz	<b>PASS</b>





**6. PEAK OUTPUT POWER TEST**

**6.1 APPLIED PROCEDURES / LIMIT**

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

**6.1.1 TEST PROCEDURE**

- a. The EUT was directly connected to the Power meter

**6.1.2 DEVIATION FROM STANDARD**

No deviation.

**6.1.3 TEST SETUP**



**6.1.4 EUT OPERATION CONDITIONS**

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

**6.1.5 TEST RESULTS**

EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V from adapter
Test Mode :	TX b/g/n(20M,40M) Mode /CH01, CH03, CH06, CH09, CH11		

TX 802.11b Mode						
Test Channel	Frequency	Peak output power. Antenna A(B) port	Antenna Gain A(B)	EIRP A(B)	Total Power	LIMIT
	(MHz)	(dBm)	dBi	dBm	dBm	dBm
CH01	2412	21.91(15.03)	2.0	23.91(17.03)	--	30
CH06	2437	21.47(14.81)	2.0	23.47(16.81)	--	30
CH11	2462	20.65(13.90)	2.0	22.65(15.90)	--	30
TX 802.11g Mode						
CH01	2412	17.42(10.48)	2.0	19.42(12.48)	--	30
CH06	2437	16.23(10.21)	2.0	18.23(12.21)	--	30
CH11	2462	15.94(9.53)	2.0	17.94(11.53)	--	30
TX 802.11n/20M Mode						
CH01	2412	16.94(9.94)	2.0	18.94(11.94)	19.73	30
CH06	2437	16.06(9.22)	2.0	18.06(11.22)	18.88	30
CH11	2462	15.32(8.85)	2.0	17.32(10.85)	18.20	30
TX 802.11n/40M Mode						
CH03	2422	15.15(8.46)	2.0	17.15(10.46)	17.99	30
CH06	2437	14.74(8.12)	2.0	16.74(10.12)	17.60	30
CH09	2452	14.29(8.10)	2.0	16.29(10.10)	17.23	30

**Note:** A(B) Represent the value of antennaA and B



## 7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

### APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### TEST PROCEDURE

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

### 7.1 DEVIATION FROM STANDARD

No deviation.

### 7.2 TEST SETUP



### 7.3 EUT OPERATION CONDITIONS

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

### 7.4 TEST RESULTS

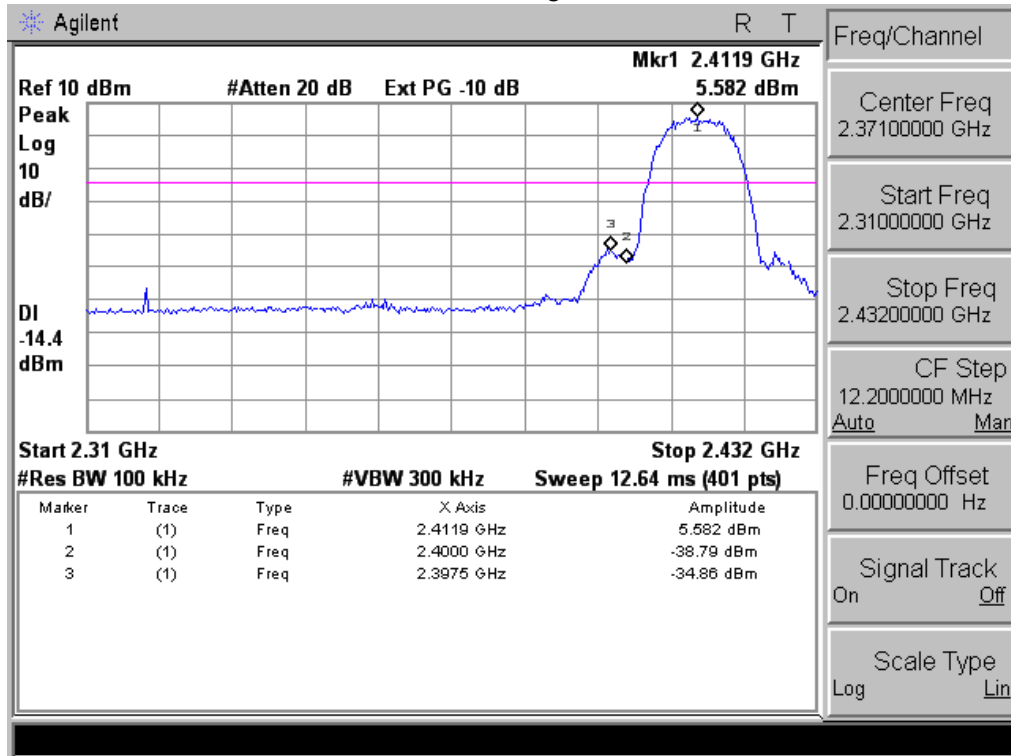
EUT :	Wireless router	Model Name :	UR-326N4G
Temperature :	25 °C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 9V from adapter

Frequency Band	Delta Peak to band emission (dBc)	> Limit (dBc)	Result
802.11b mode			
Left-band	44.37	20	Pass
Right-band	57.41	20	Pass
802.11g mode			
Left-band	36.95	20	Pass
Right-band	52.49	20	Pass
802.11n/20MHz mode			
Left-band	37.85	20	Pass
Right-band	47.88	20	Pass
802.11n/40MHz mode			
Left-band	35.76	20	Pass
Right-band	42.99	20	Pass

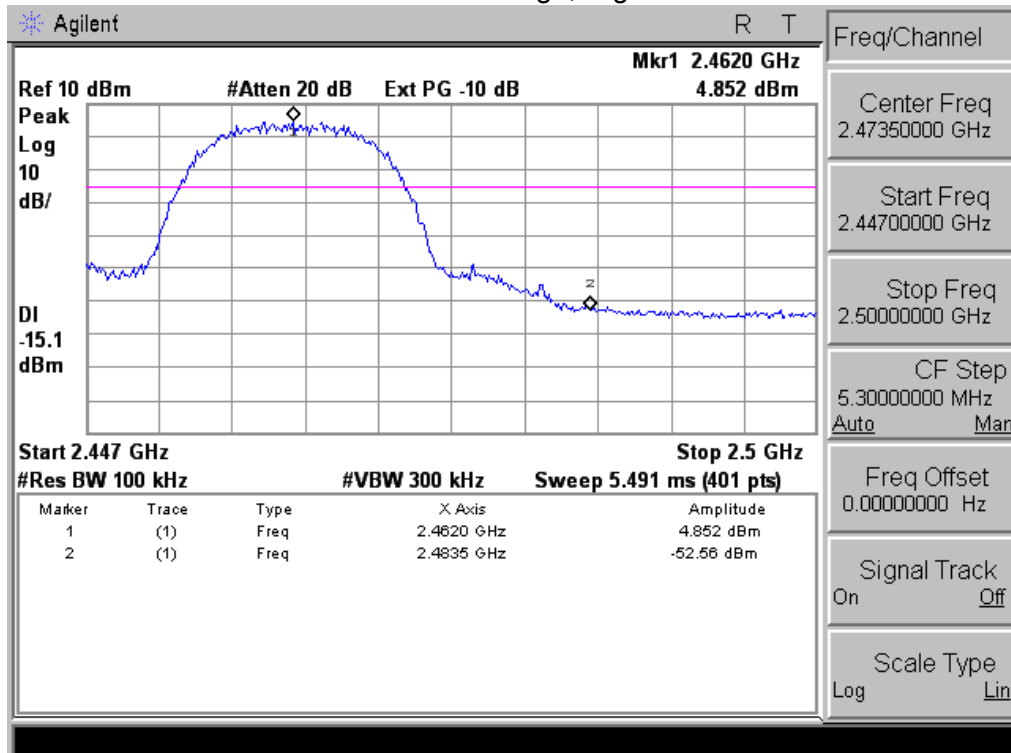
Frequency (MHz)	Meter Reading (dBµV)	Factor (dB)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector Type	Comment
<b>802.11b</b>							
2390	59.84	-13.06	46.78	74	-27.22	peak	Vertical
2390	59.62	-13.06	46.56	74	-27.44	peak	Horizontal
2483.5	59.44	-12.78	46.66	74	-27.34	peak	Vertical
2483.5	58.37	-12.78	48.59	74	-28.41	peak	Horizontal
<b>802.11g</b>							
2390	58.65	-13.06	45.59	74	-28.41	peak	Vertical
2390	56.16	-13.06	43.10	74	-30.90	peak	Horizontal
2483.5	58.46	-12.78	45.68	74	-28.32	peak	Vertical
2483.5	56.37	-12.78	43.59	74	-30.41	peak	Horizontal
<b>802.11n/20MHz</b>							
2390	57.42	-13.06	44.36	74	-29.64	peak	Vertical
2390	56.31	-13.06	43.25	74	-30.75	peak	Horizontal
2483.5	57.64	-12.78	44.86	74	-29.14	peak	Vertical
2483.5	56.41	-12.78	43.63	74	-30.37	peak	Horizontal
<b>802.11n/40MHz</b>							
2390	54.42	-13.06	41.36	74	-32.64	peak	Vertical
2390	53.31	-13.06	40.25	74	-33.75	peak	Horizontal
2483.5	53.64	-12.78	40.86	74	-33.14	peak	Vertical
2483.5	52.41	-12.78	39.63	74	-34.37	peak	Horizontal

Note: Test method to see chapter 3.2 .

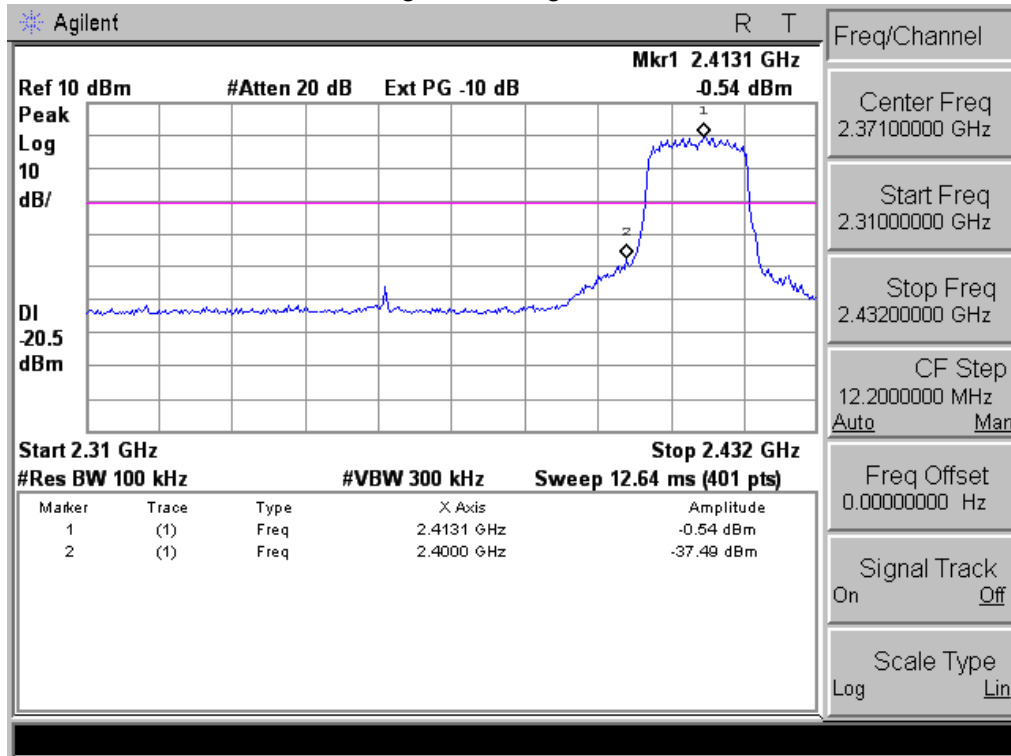
### 802.11b: Band Edge, Left Side



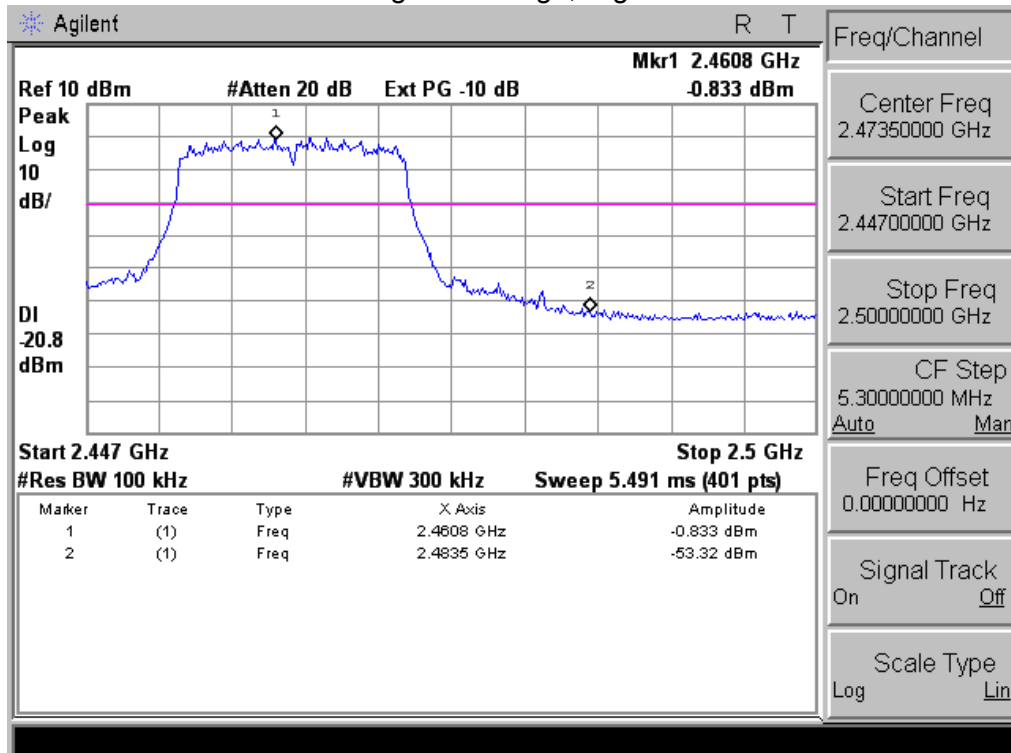
### 802.11b: Band Edge, Right Side



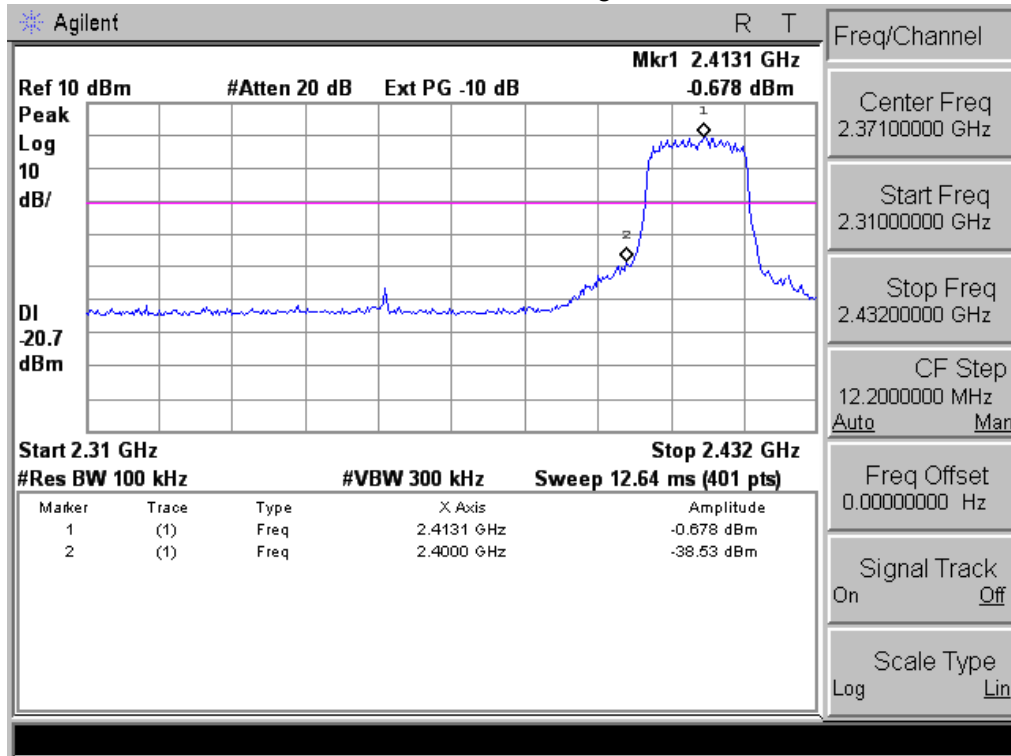
802.11g: Band Edge, Left Side



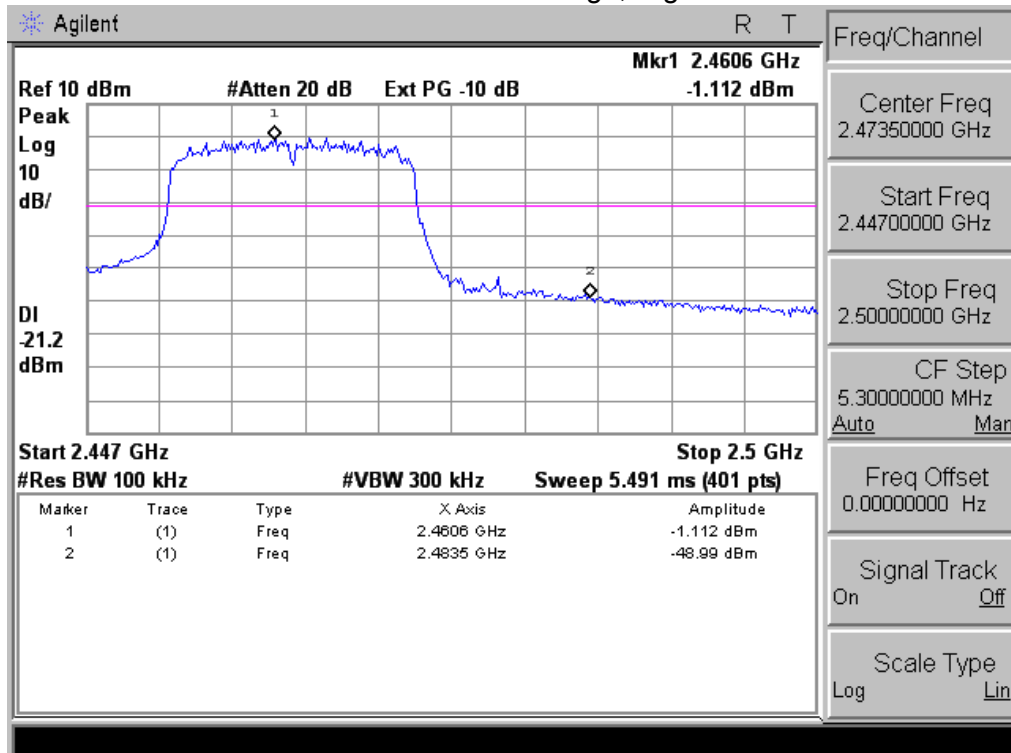
802.11g: Band Edge, Right Side



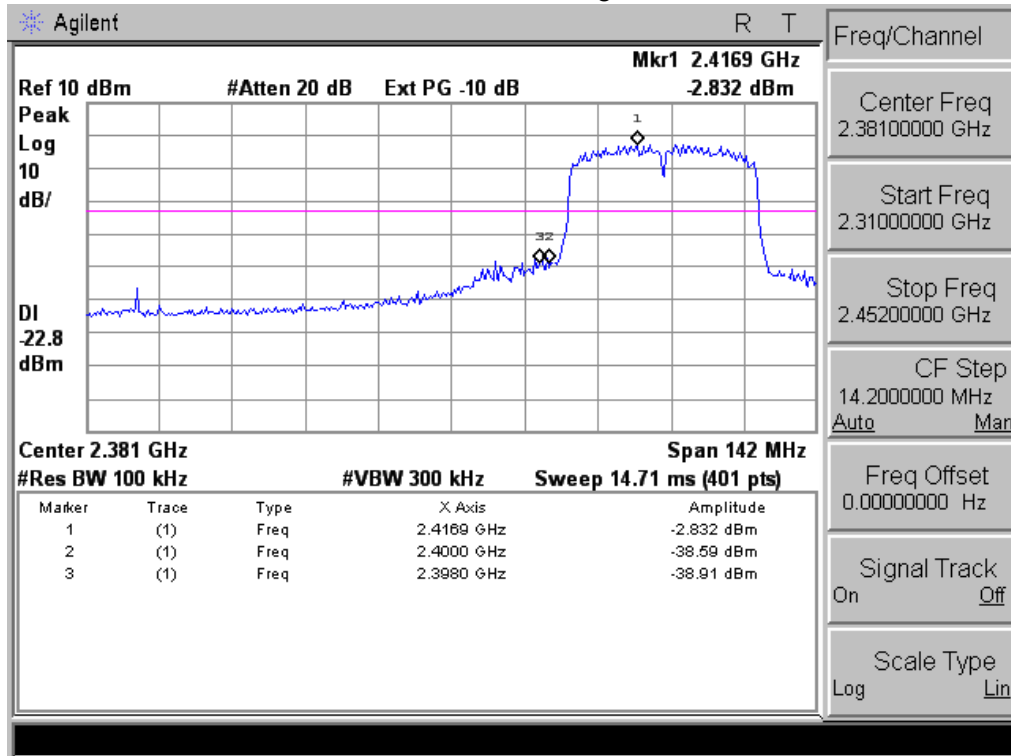
802.11n/20MHz: Band Edge, Left Side



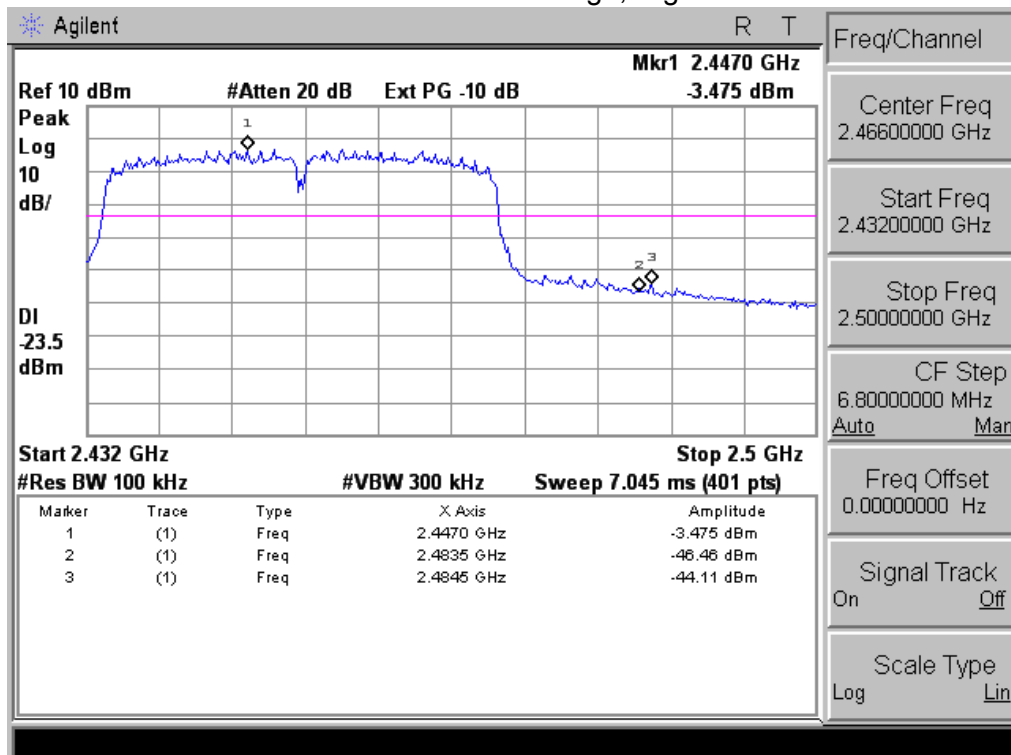
802.11n/20MHz: Band Edge, Right Side



802.11n/40MHz: Band Edge, Left Side



802.11n/40MHz: Band Edge, Right Side



## **8. ANTENNA REQUIREMENT**

### **8.1 STANDARD REQUIREMENT**

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

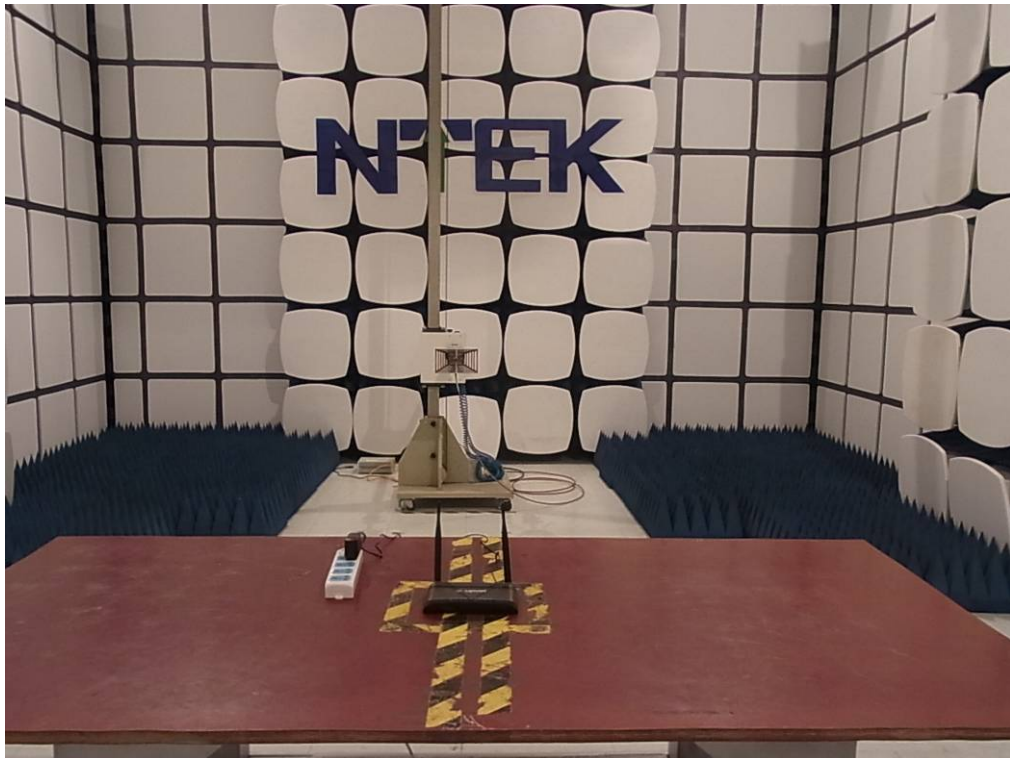
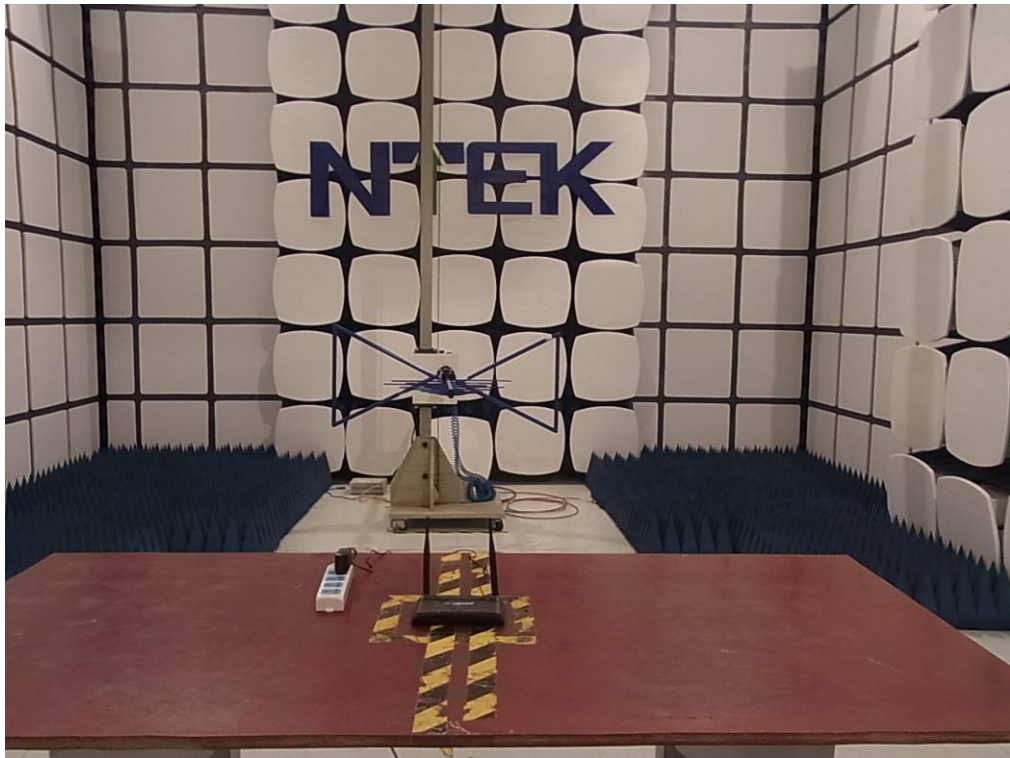
### **8.2 EUT ANTENNA**

The EUT antenna is external antenna(Reserve SMA-type). It comply with the standard requirement.



### 9. EUT TEST PHOTO

Radiated Measurement Photos



**Conducted Measurement Photos**

