



**Neutron Engineering Inc.**

# FCC Radio Test Report

## FCC ID: T58DL4322R

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

**Issued Date** : Dec. 25, 2013  
**Project No.** : 1310C138  
**Equipment** : 300Mbps Wireless N ADSL2+ Modem Router  
**Model Name** : DL4322D; DL4322  
**Applicant** : NETIS SYSTEMS CO., LTD  
**Address** : 4F&5F R&D Building, Oriental Cyberport,  
High-Tech Industrial Park, Nanshan,  
Shenzhen, China.

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

**Date of Receipt:** Oct. 23, 2013

**Date of Test:** Oct. 23, 2013~ Dec. 24, 2013

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

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

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

### Neutron Engineering Inc.

No.3,Jinshagang 1st Road, ShiXia,

Dalang Town, Dong Guan, China.

TEL: 0769-8318-3000

FAX: 0769-8319-6000



**Declaration**

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

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**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.



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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
NEI-FCCP-1-1310C138	Original Issue.	Dec. 25, 2013



## 1. CERTIFICATION

Equipment : 300Mbps Wireless N ADSL2+ Modem Router  
Brand Name : netis  
Model Name : DL4322D; DL4322  
Applicant : NETIS SYSTEMS CO., LTD  
Manufacture : Shenzhen Netcore Industrial Ltd.  
Address : 4F&5F R&D Building, Oriental Cyberport, High-Tech Industrial Park, Nanshan, Shenzhen, China.  
Factory : Dongguan City Netcore Network Technology Co., Ltd.  
Address : No.10-1, Sankeng Road, Qinghutou, Tangxia Town, Dongguan City  
Date of Test : Oct. 23, 2013~ Dec. 24, 2013  
Test Item : ENGINEERING SAMPLE  
Standard(s) : FCC Part15(2012), Subpart C(15.247) / ANSI C63.4-2009

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

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-1310C138) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).



## 2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

<b>FCC Part15 (15.247) , Subpart C</b>				
Standard(s)	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	
	15.247(e)	Power Spectral Density	PASS	
	15.203	Antenna Requirement	PASS	
	15.209/15.205	Transmitter Radiated Emissions	PASS	

**NOTE:**

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



**2.1 TEST FACILITY**

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

**2.2 MEASUREMENT UNCERTAINTY**

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

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

**A. Conducted Measurement :**

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

**B. Radiated Measurement :**

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





**3. GENERAL INFORMATION**

**3.1 GENERAL DESCRIPTION OF EUT**

Equipment	300Mbps Wireless N ADSL2+ Modem Router	
Brand Name	netis	
Model Name	DL4322D; DL4322	
Model Difference	DL4322D with detachable antenna, DL4322 with non-detachable antenna, the rest are the same.	
Product Description	Operation Frequency	2412~2462 MHz
	Modulation Technology	802.11b:DSSS
		802.11g:OFDM
		802.11n:OFDM
	Bit Rate of Transmitter	802.11b: 11/5.5/2/1 Mbps
		802.11g: 54/48/36/24/18/12/9/6 Mbps
		802.11n up to 300 Mbps
	Number Of Channel	11 CH, Please see note 2.(Page 10)
Antenna Designation	Please see note 3.(Page 10)	
Antenna Gain(Peak)		
Output Power (Max.)	802.11b: 17.98dBm 802.11g: 23.59dBm 802.11n(20MHz):25.95dBm 802.11n(40MHz):25.04dBm	
More details of EUT technical specification, please refer to the User's Manual.		
Power Source	DC voltage supplied from AC/DC adapter. Manufacturer: DongGuan tenpao Power CO., LTD Model: NT12V1AUL	
Power Rating	I/P: AC 100-240V~0.3A 50/60Hz O/P: DC 12V 1A	
Connecting I/O Port(s)	Please refer to the User's Manual	

**Note:**

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



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

**Channel List**

Channel	Frequency (MHz)	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	P/N	Antenna Type	Connector	Gain (dBi)	Note
1	<i>RF link</i>	RF21S00006A	Dipole	SMA	5.08	Detachable antenna for model DL4322D
2	<i>RF link</i>	RF21S00006A	Dipole	SMA	5.08	

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)	Note
1	<i>RF link</i>	RF21C00152A	Dipole	N/A	5.05	Non-detachable antenna for model DL4322
2	<i>RF link</i>	RF21C00152A	Dipole	N/A	5.05	

Note:

(1)The EUT incorporates a MIMO function. Physically, the EUT provides two completed two transmitters and two receivers (2T2R). All transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=5.08dBi.

- 4.

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



**3.2 DESCRIPTION OF TEST MODES**

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

Pretest Mode	Description
Mode 1	TX B MODE CHANNEL 01/06/11
Mode 2	TX G MODE CHANNEL 01/06/11
Mode 3	TX N-20MHZ MODE CHANNEL 01/06/11
Mode 4	TX N-40MHZ MODE CHANNEL 03/06/09
Mode 5	TX Mode

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

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

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

Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)  
 802.11g mode: OFDM (6Mbps)  
 802.11n HT20 mode : BPSK (13Mbps)  
 802.11n HT40 mode : BPSK (27Mbps)  
 For radiated emission tests, the highest output powers were set for final test.
- (3) The EUT was pre-tested on positioned of each 3 axis. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.
- (4) For radiated below 1G test, the 802.11b is found to be the worst case and recorded.
- (5) DL4322D with detachable antenna is the worst case and include in the test report.



**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

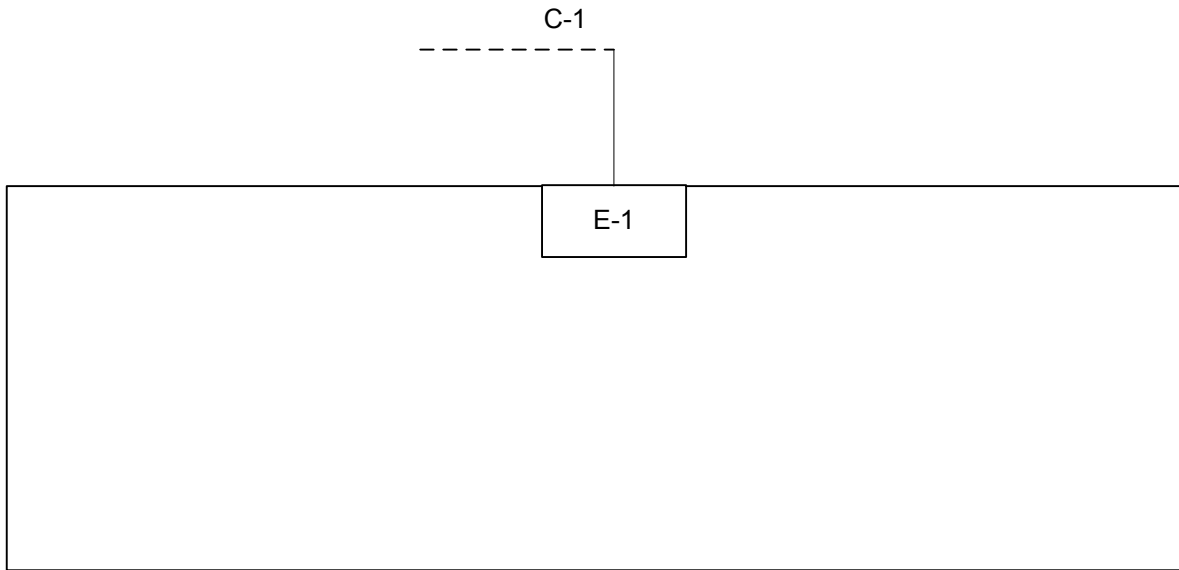
Test software version	MT7620QA		
<b>Frequency</b>	<b>2412 MHz</b>	<b>2437 MHz</b>	<b>2462 MHz</b>
IEEE 802.11b DSSS	46	49	45
IEEE 802.11g OFDM	50	48	45

Test software version	MT7620QA		
<b>Frequency (MHz)</b>	<b>2412 MHz</b>	<b>2437 MHz</b>	<b>2462 MHz</b>
IEEE 802.11n (20MHz)	49	47	44
<b>Frequency (MHz)</b>	<b>2422 MHz</b>	<b>2437 MHz</b>	<b>2452 MHz</b>
IEEE 802.11n (40MHz)	49	47	45

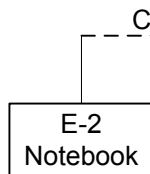


**3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED**

**Conducted TX Mode:**

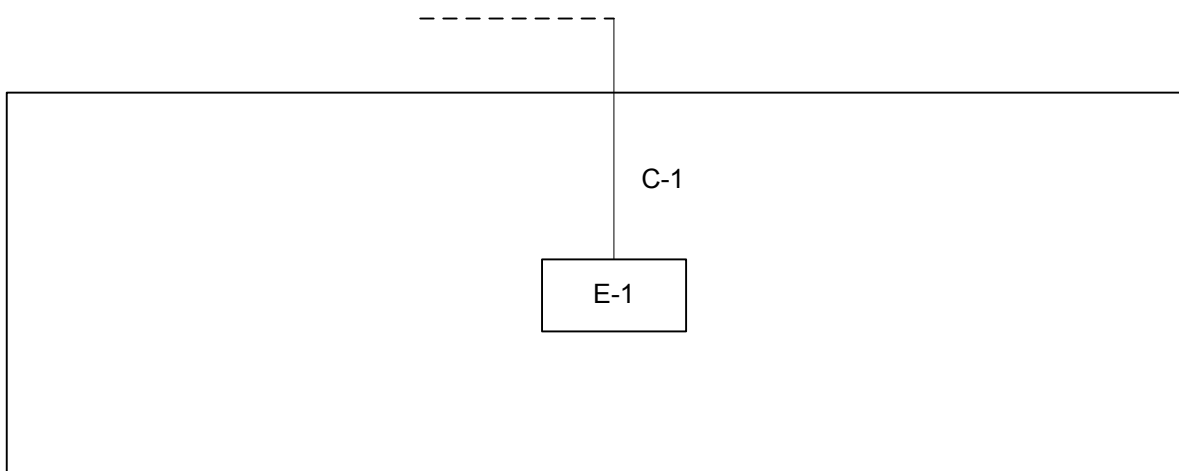


Control Room

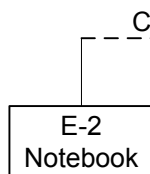


C-1: RJ45 Cable

**Radiated TX Mode:**



Control Room



C-1: RJ45 Cable



### 3.5 DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	300Mbps Wireless N ADSL2+ Modem Router	netis	DL4322D	T58DL4322R	N/A	EUT
E-2	Notebook	hp	HP520	DOC	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	10m	

Note:

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



**4. EMC EMISSION TEST**

**4.1 CONDUCTED EMISSION MEASUREMENT**

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

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

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

Note:

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

**4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING**

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

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

The following table is the setting of the receiver

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

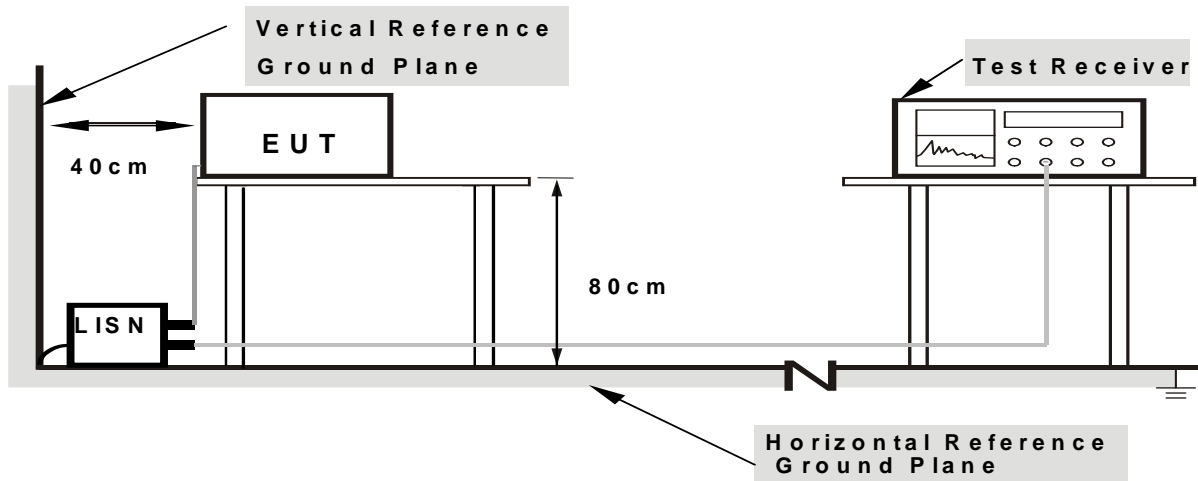
#### 4.1.3 TEST PROCEDURE

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

#### 4.1.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.1.5 TEST SETUP



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

#### 4.1.6 EUT OPERATING CONDITIONS

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





#### **4.1.7 TEST RESULTS**

**Remark:**

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



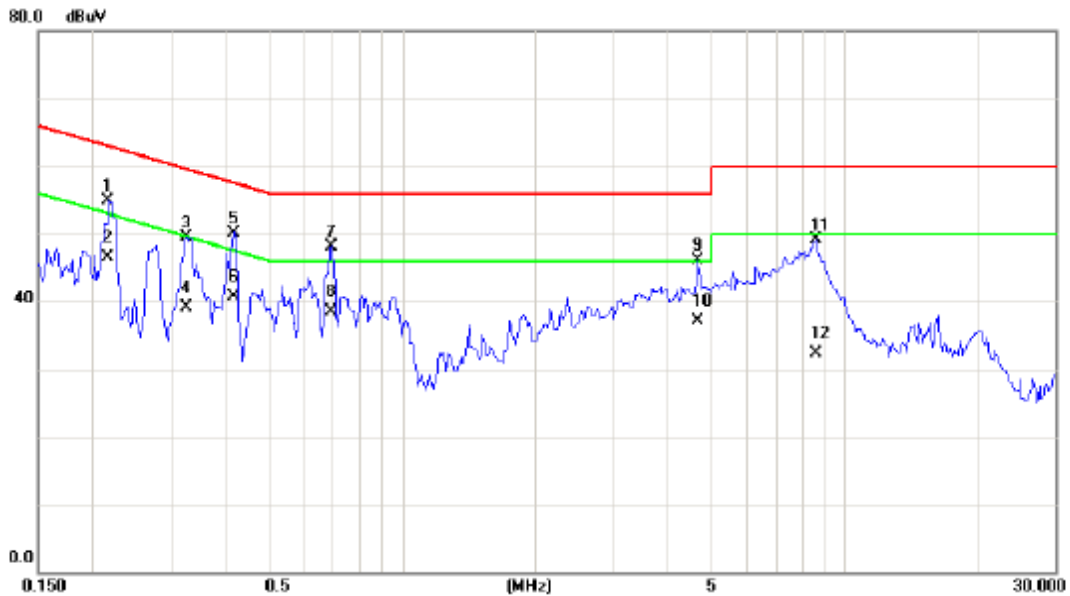
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode		



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.2006	43.29	9.65	52.94	63.59	-10.65	peak	
2	0.2006	34.07	9.65	43.72	53.59	-9.87	AVG	
3 *	0.3256	42.66	9.67	52.33	59.56	-7.23	peak	
4	0.3256	32.15	9.67	41.82	49.56	-7.74	AVG	
5	0.4126	39.31	9.68	48.99	57.60	-8.61	peak	
6	0.4126	29.73	9.68	39.41	47.60	-8.19	AVG	
7	0.6030	38.27	9.71	47.98	56.00	-8.02	peak	
8	0.6030	29.03	9.71	38.74	46.00	-7.26	AVG	
9	4.1131	32.02	9.90	41.92	56.00	-14.08	peak	
10	8.5076	38.45	10.02	48.47	60.00	-11.53	peak	
11	8.5076	29.13	10.02	39.15	50.00	-10.85	AVG	



EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2164	45.24	9.71	54.95	62.96	-8.01	peak	
2	*	0.2164	36.74	9.71	46.45	52.96	-6.51	AVG	
3		0.3256	39.81	9.72	49.53	59.56	-10.03	peak	
4		0.3256	29.36	9.72	39.08	49.56	-10.48	AVG	
5		0.4148	40.47	9.73	50.20	57.55	-7.35	peak	
6		0.4148	31.07	9.73	40.80	47.55	-6.75	AVG	
7		0.6930	38.45	9.75	48.20	56.00	-7.80	peak	
8		0.6930	28.71	9.75	38.46	46.00	-7.54	AVG	
9		4.6482	36.08	9.94	46.02	56.00	-9.98	peak	
10		4.6482	27.13	9.94	37.07	46.00	-8.93	AVG	
11		8.6171	39.05	10.10	49.15	60.00	-10.85	peak	
12		8.6171	22.26	10.10	32.36	50.00	-17.64	AVG	



**4.2 RADIATED EMISSION MEASUREMENT**

**4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz-1000MHz)**

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

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

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

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

**Notes:**

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

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

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



**4.2.2 MEASUREMENT INSTRUMENTS LIST AND SETTING**

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

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

All calibration period of equipment list is one year.

**4.2.3 TEST PROCEDURE**

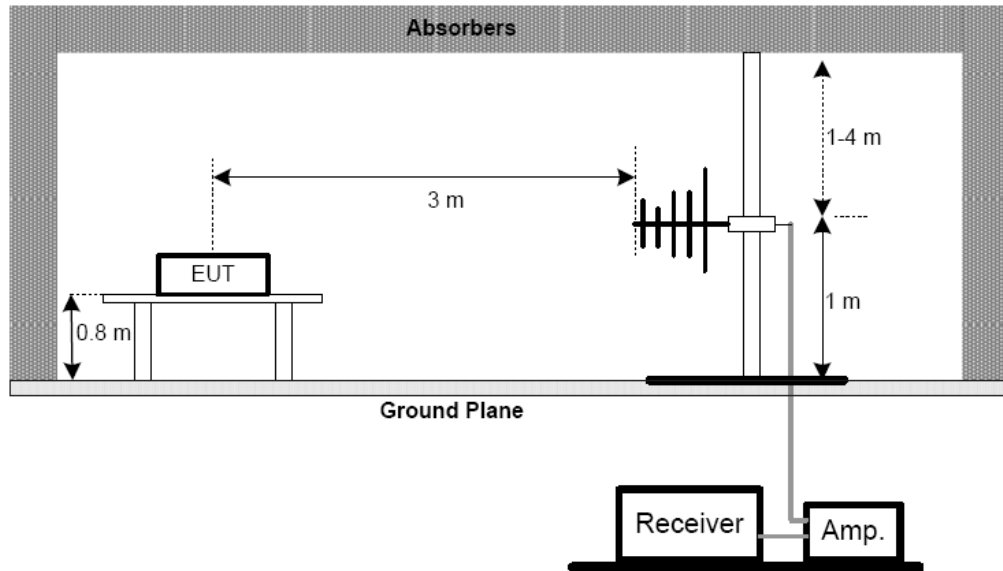
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at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

**4.2.4 DEVIATION FROM TEST STANDARD**

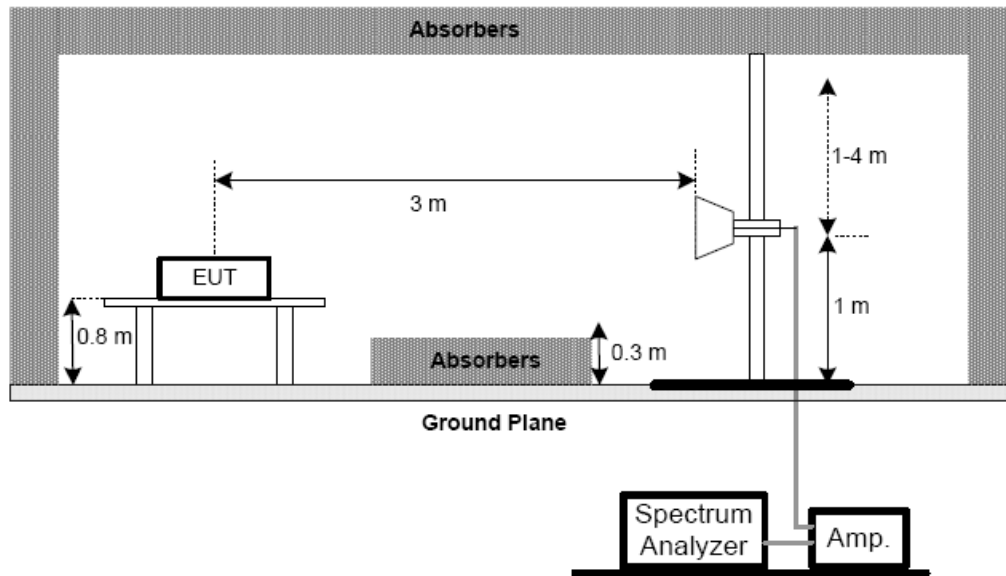
No deviation

**4.2.5 TEST SETUP**

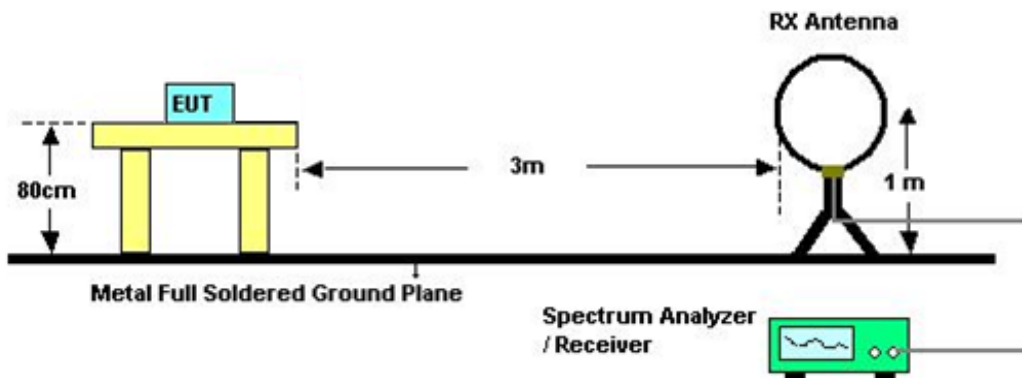
**(A) Radiated Emission Test Set-Up Frequency Below 1 GHz**



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



(C) For radiated emissions below 30MHz



#### 4.2.6 EUT OPERATING CONDITIONS

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



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

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	55 %
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX B MODE CHANNEL 01		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0094	0°	17.86	23.27	41.13	128.19	-79.10	AVG
0.0094	0°	19.51	23.27	42.78	148.19	-94.86	PK
0.0137	0°	16.39	23.27	39.66	124.87	-74.29	AVG
0.0137	0°	20.24	23.27	43.51	144.87	-91.21	PK
0.0245	0°	18.19	24.02	42.21	119.82	-71.55	AVG
0.0245	0°	22.75	24.02	46.77	139.82	-88.06	PK
0.0328	0°	18.37	23.49	41.86	117.29	-70.23	AVG
0.0328	0°	20.49	23.49	43.98	137.29	-85.54	PK
0.4260	0°	19.62	19.98	39.60	95.02	-58.03	AVG
0.4260	0°	21.73	19.98	41.71	115.02	-76.07	PK
1.5250	0°	18.82	19.55	38.37	63.94	-17.34	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0093	90°	18.63	24.30	42.93	128.28	-84.88	AVG
0.0093	90°	21.16	24.30	45.46	148.28	-103.55	PK
0.0237	90°	19.25	24.07	43.32	120.11	-81.10	AVG
0.0237	90°	23.37	24.07	47.44	140.11	-98.38	PK
0.0318	90°	16.13	23.55	39.68	117.56	-72.90	AVG
0.0318	90°	20.39	23.55	43.94	137.56	-90.01	PK
0.0429	90°	18.73	22.85	41.58	114.96	-66.60	AVG
0.0429	90°	20.84	22.85	43.69	134.96	-85.44	PK
0.2390	90°	17.94	20.42	38.36	100.04	-54.44	AVG
0.2390	90°	20.32	20.42	40.74	120.04	-71.13	PK
1.6750	90°	18.63	19.53	38.16	63.12	-18.06	QP

Remark :

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





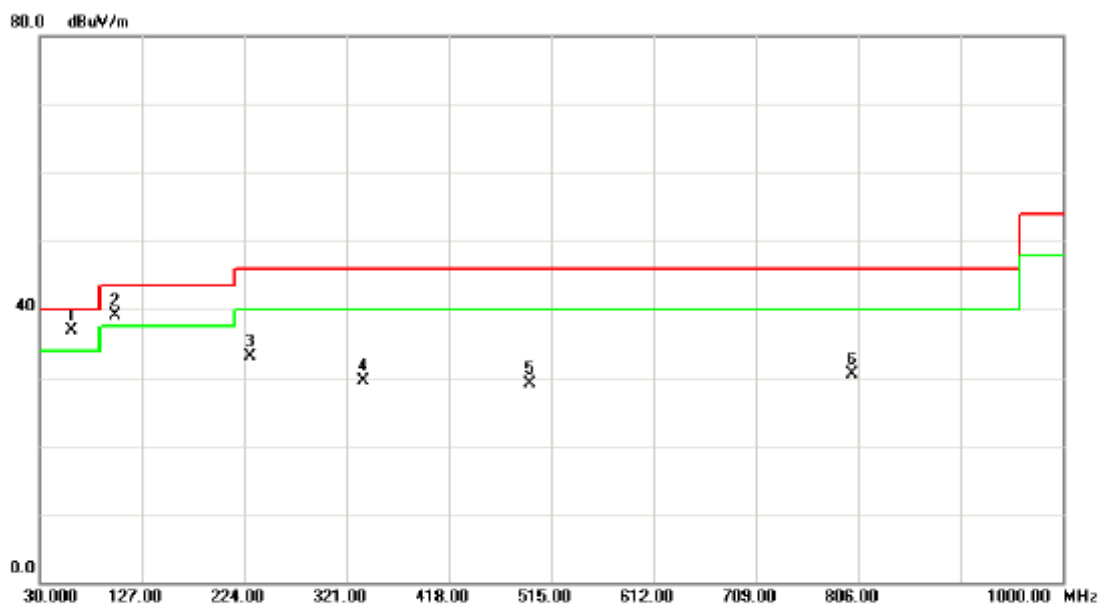
**4.2.8 TEST RESULTS (BETWEEN 30 – 1000 MHZ)**

Remark:

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



EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 01		

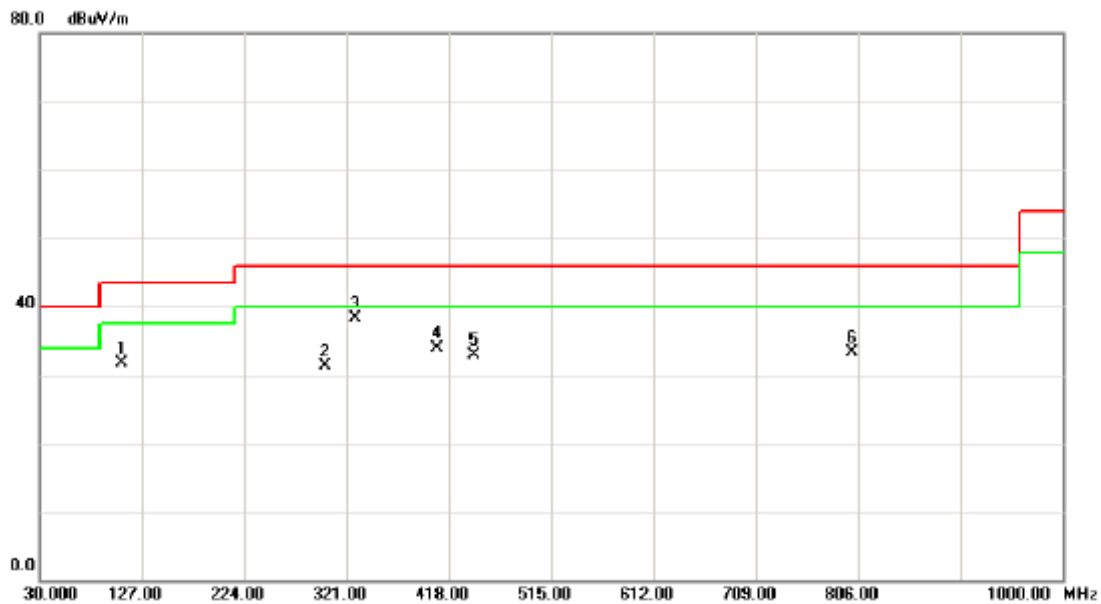


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	60.0700	52.27	-15.29	36.98	40.00	-3.02	peak	
2	!	101.7800	55.03	-15.96	39.07	43.50	-4.43	peak	
3		229.8200	47.69	-14.49	33.20	46.00	-12.80	peak	
4		337.4900	40.96	-11.41	29.55	46.00	-16.45	peak	
5		494.6300	39.25	-10.18	29.07	46.00	-16.93	peak	
6		800.1800	33.56	-3.11	30.45	46.00	-15.55	peak	



# Neutron Engineering Inc.

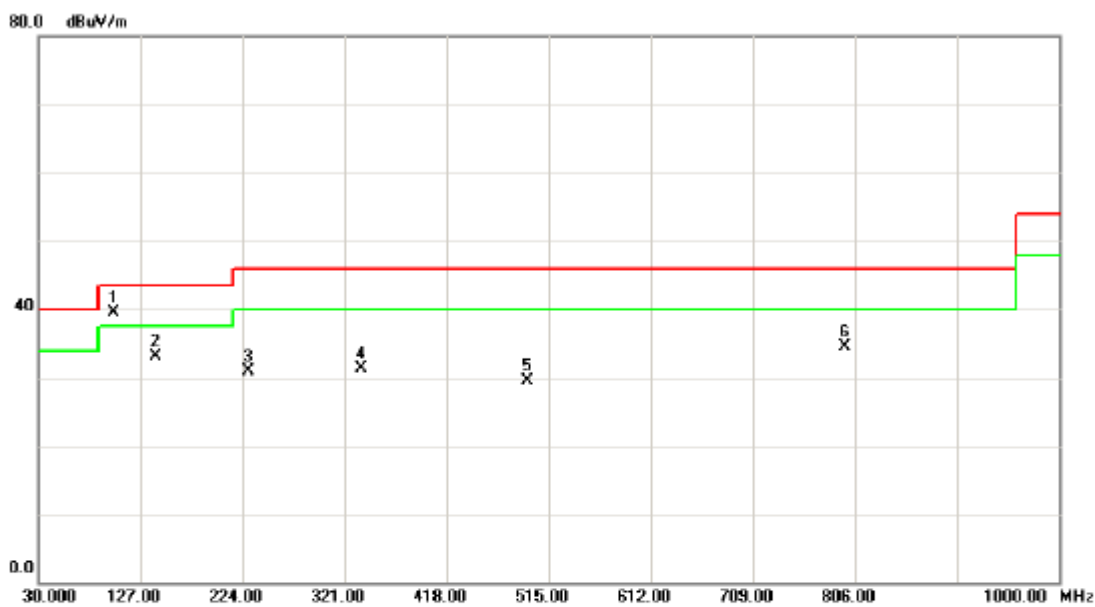
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 01		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		108.5700	46.63	-14.95	31.68	43.50	-11.82	peak	
2		300.6300	42.52	-11.25	31.27	46.00	-14.73	peak	
3	*	329.7300	49.65	-11.38	38.27	46.00	-7.73	peak	
4		406.3600	43.59	-9.75	33.84	46.00	-12.16	peak	
5		441.2800	42.07	-9.08	32.99	46.00	-13.01	peak	
6		800.1800	36.50	-3.11	33.39	46.00	-12.61	peak	



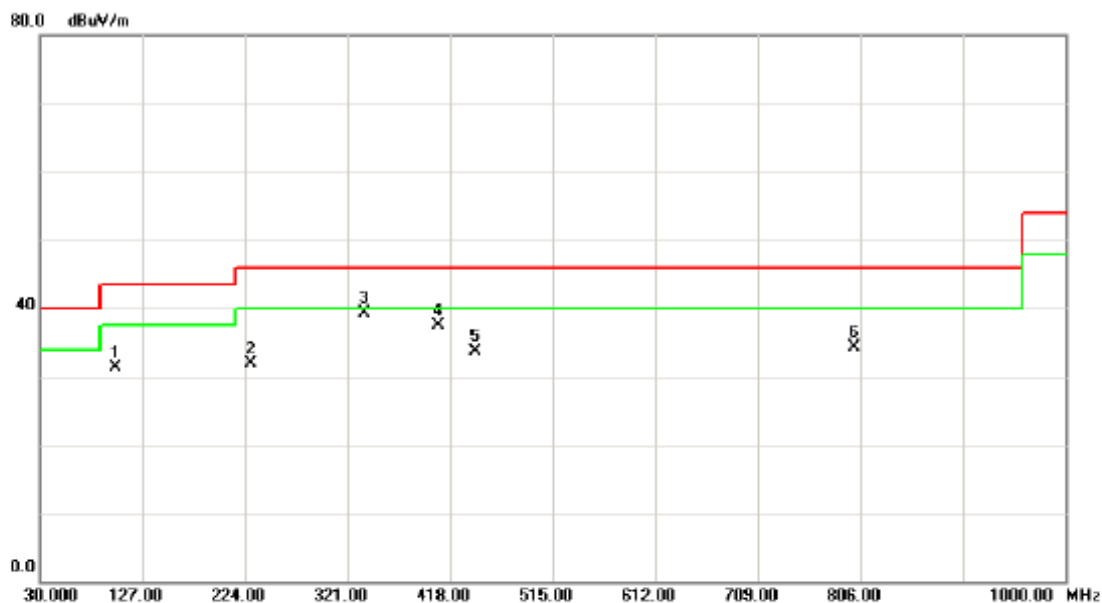
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 06		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	101.7800	55.38	-15.96	39.42	43.50	-4.08	peak	
2		141.5500	46.90	-13.78	33.12	43.50	-10.38	peak	
3		229.8200	45.32	-14.49	30.83	46.00	-15.17	peak	
4		337.4900	42.80	-11.41	31.39	46.00	-14.61	peak	
5		494.6300	39.73	-10.18	29.55	46.00	-16.45	peak	
6		796.3000	37.72	-3.25	34.47	46.00	-11.53	peak	



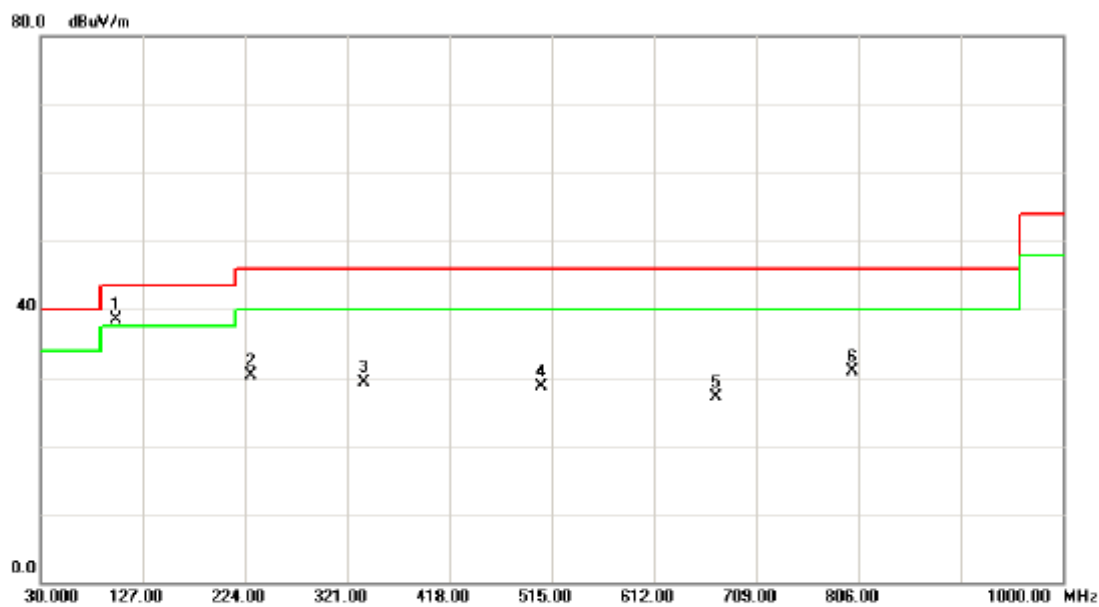
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 06		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		101.7800	47.20	-15.96	31.24	43.50	-12.26	peak	
2		229.8200	46.47	-14.49	31.98	46.00	-14.02	peak	
3	*	337.4900	50.71	-11.41	39.30	46.00	-6.70	peak	
4		406.3600	47.33	-9.75	37.58	46.00	-8.42	peak	
5		441.2800	42.82	-9.08	33.74	46.00	-12.26	peak	
6		800.1800	37.48	-3.11	34.37	46.00	-11.63	peak	



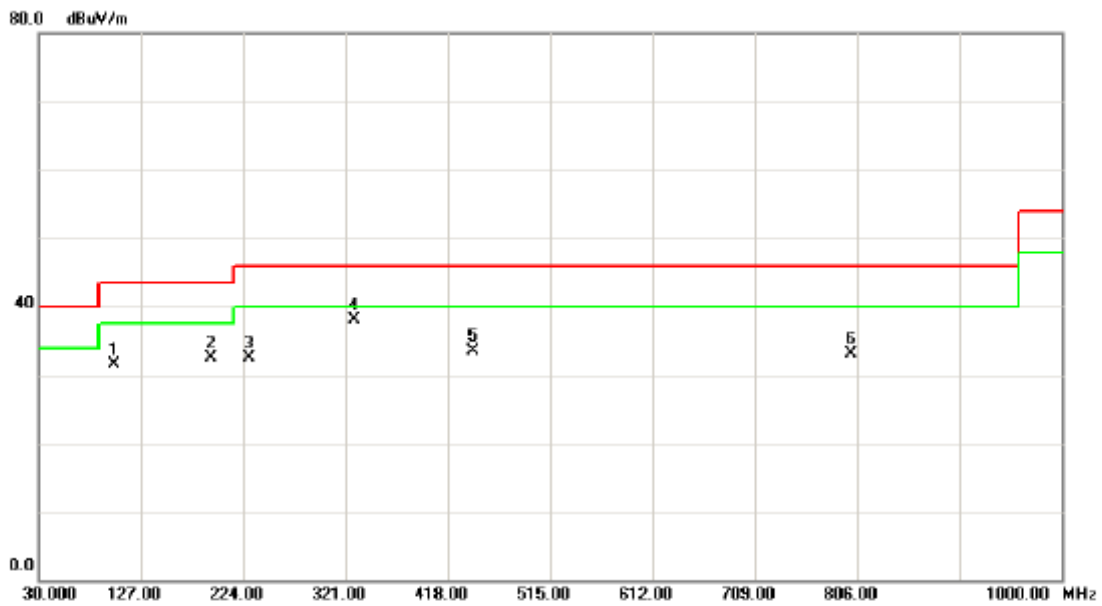
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 11		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	101.7800	54.48	-15.96	38.52	43.50	-4.98	peak	
2		229.8200	44.78	-14.49	30.29	46.00	-15.71	peak	
3		337.4900	40.77	-11.41	29.36	46.00	-16.64	peak	
4		505.3000	38.85	-10.06	28.79	46.00	-17.21	peak	
5		671.1700	32.35	-5.24	27.11	46.00	-18.89	peak	
6		800.1800	33.93	-3.11	30.82	46.00	-15.18	peak	



EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name:	DL4322D
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 11		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		101.7800	47.55	-15.96	31.59	43.50	-11.91	peak	
2		193.9300	47.19	-14.66	32.53	43.50	-10.97	peak	
3		229.8200	46.96	-14.49	32.47	46.00	-13.53	peak	
4	*	329.7300	49.56	-11.38	38.18	46.00	-7.82	peak	
5		441.2800	42.50	-9.08	33.42	46.00	-12.58	peak	
6		800.1800	36.29	-3.11	33.18	46.00	-12.82	peak	



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

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2386.20	V	27.10	16.80	34.08	61.18	50.88	74.00	54.00	X/E
2390.00	V	24.75	14.44	34.09	58.84	48.53	74.00	54.00	X/E
<b>2412.90</b>	<b>V</b>	<b>77.23</b>	<b>75.30</b>	<b>34.16</b>	<b>111.39</b>	<b>109.46</b>			<b>X/F</b>
4824.02	V	37.83	28.66	6.43	44.26	35.09	74.00	54.00	X/H

Remark:

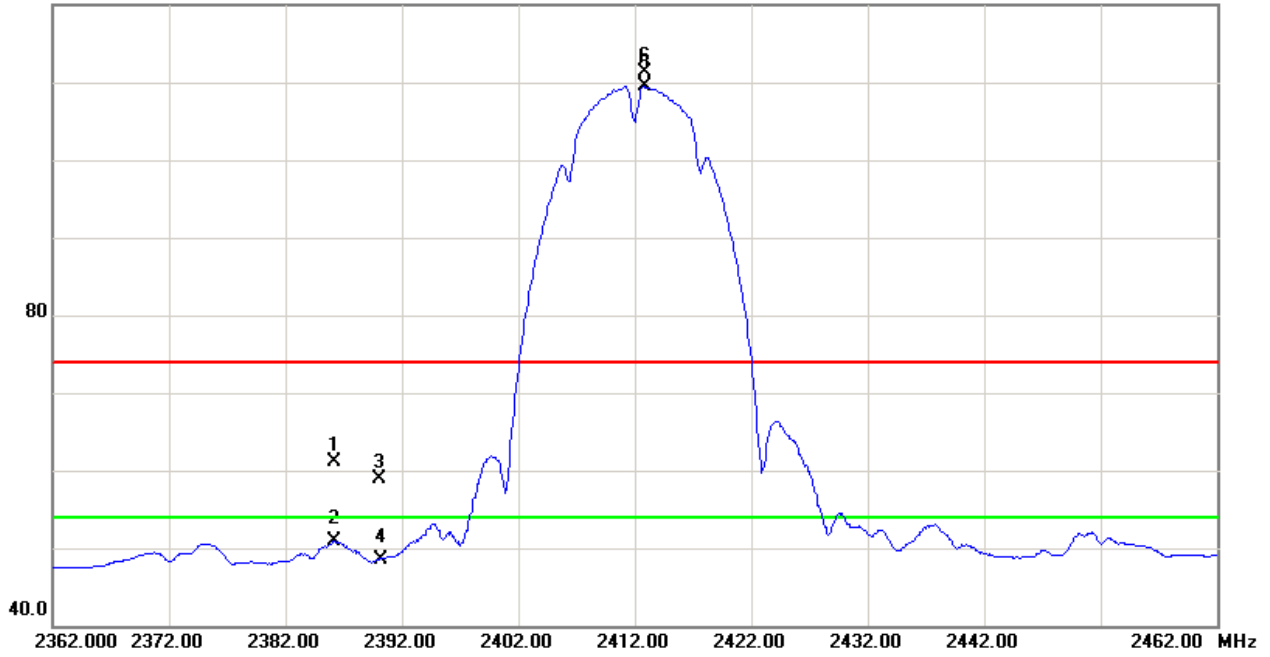
- (1) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes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



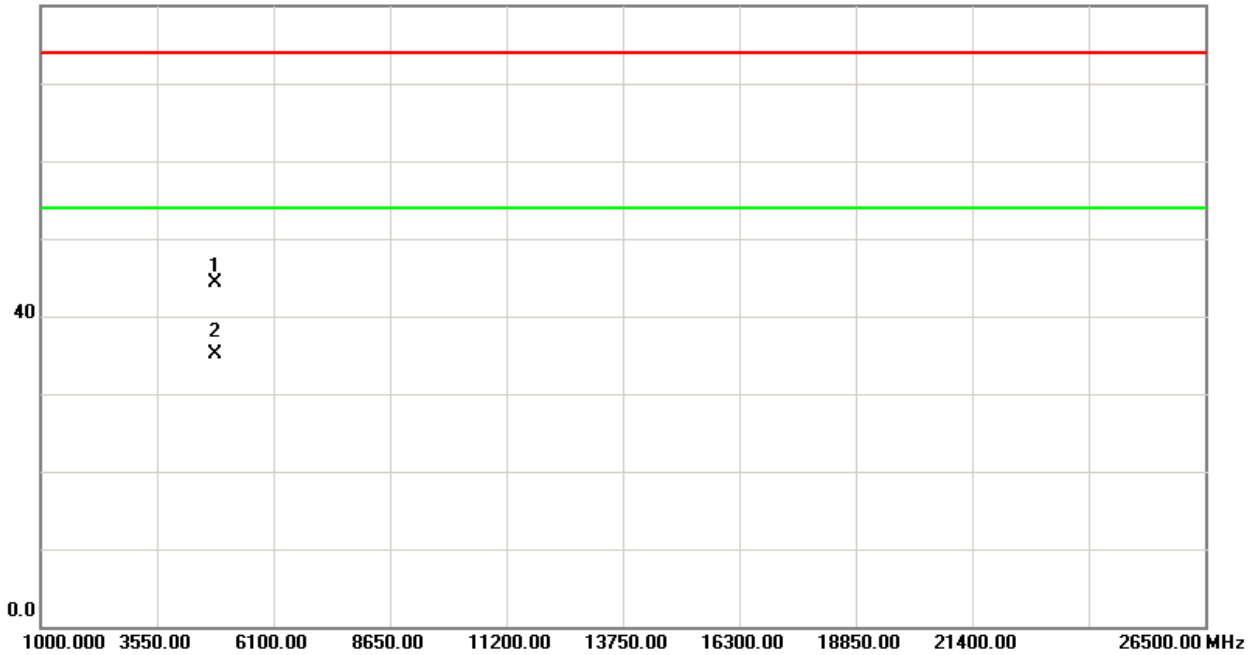


TX CH01 (Above 1000 MHz, Vertical)

120.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

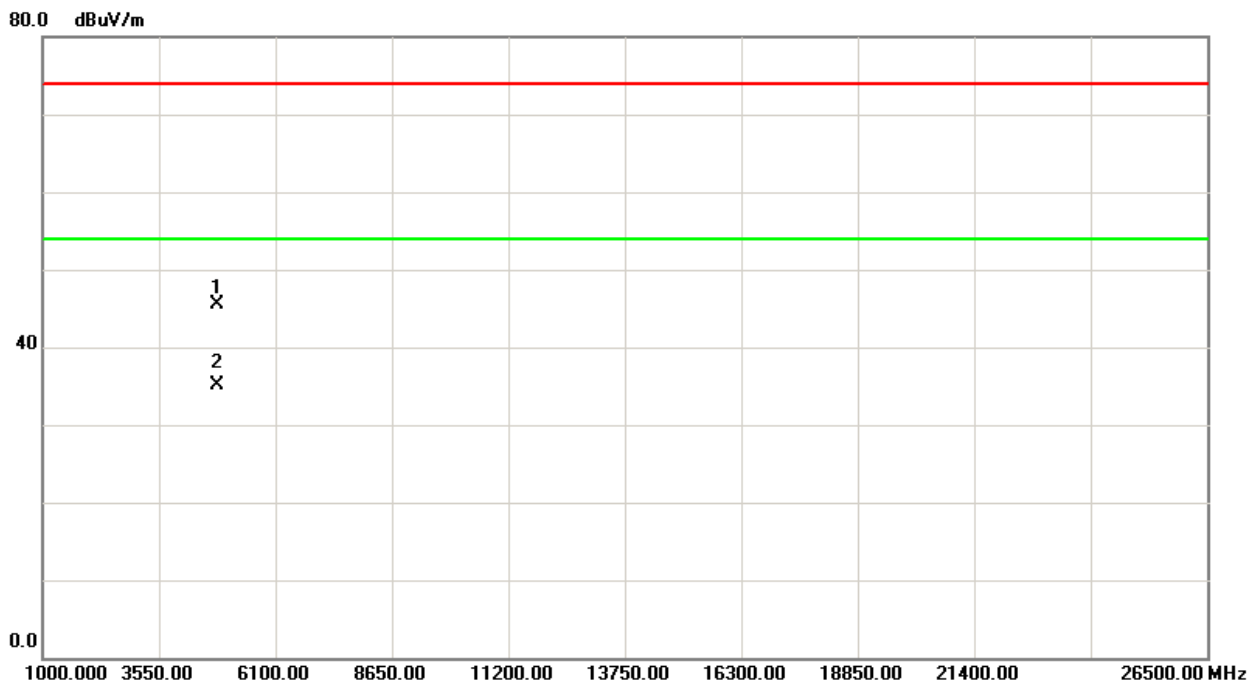
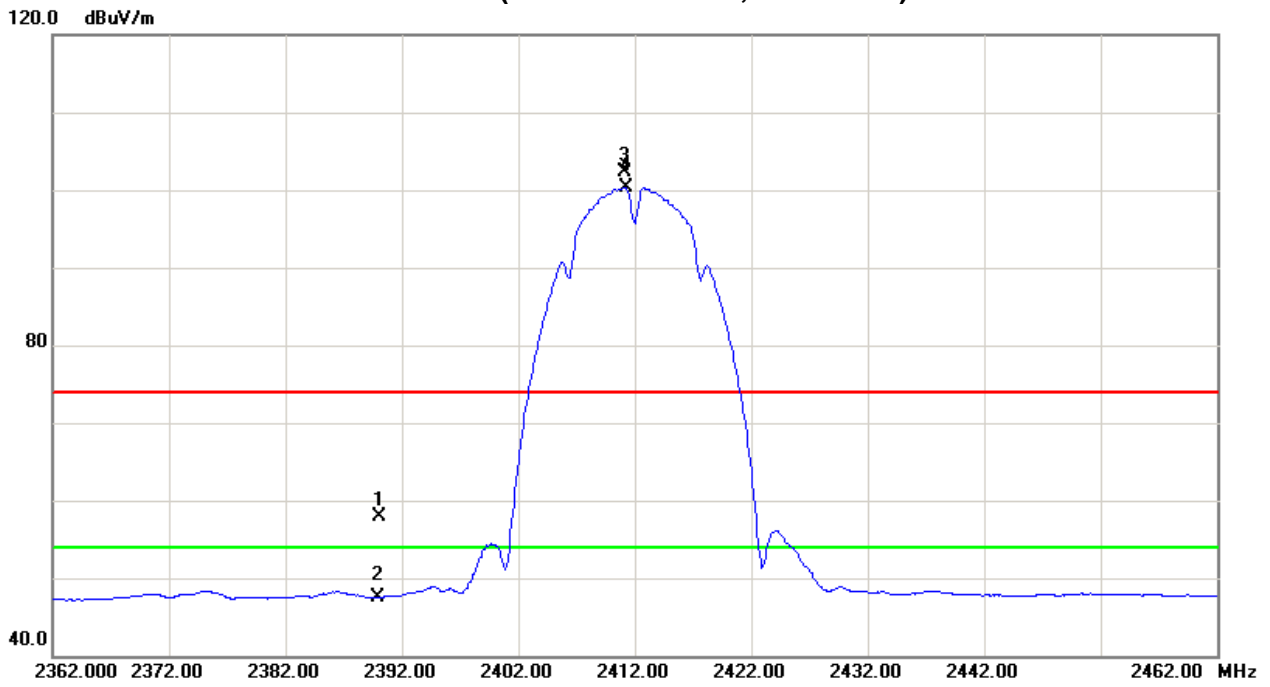
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	23.86	13.48	34.09	57.95	47.57	74.00	54.00	X/E
<b>2411.10</b>	<b>H</b>	<b>68.16</b>	<b>66.21</b>	<b>34.16</b>	<b>102.32</b>	<b>100.37</b>			<b>X/F</b>
4823.98	H	39.05	28.70	6.43	45.48	35.13	74.00	54.00	X/H

Remark:

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



TX CH01 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

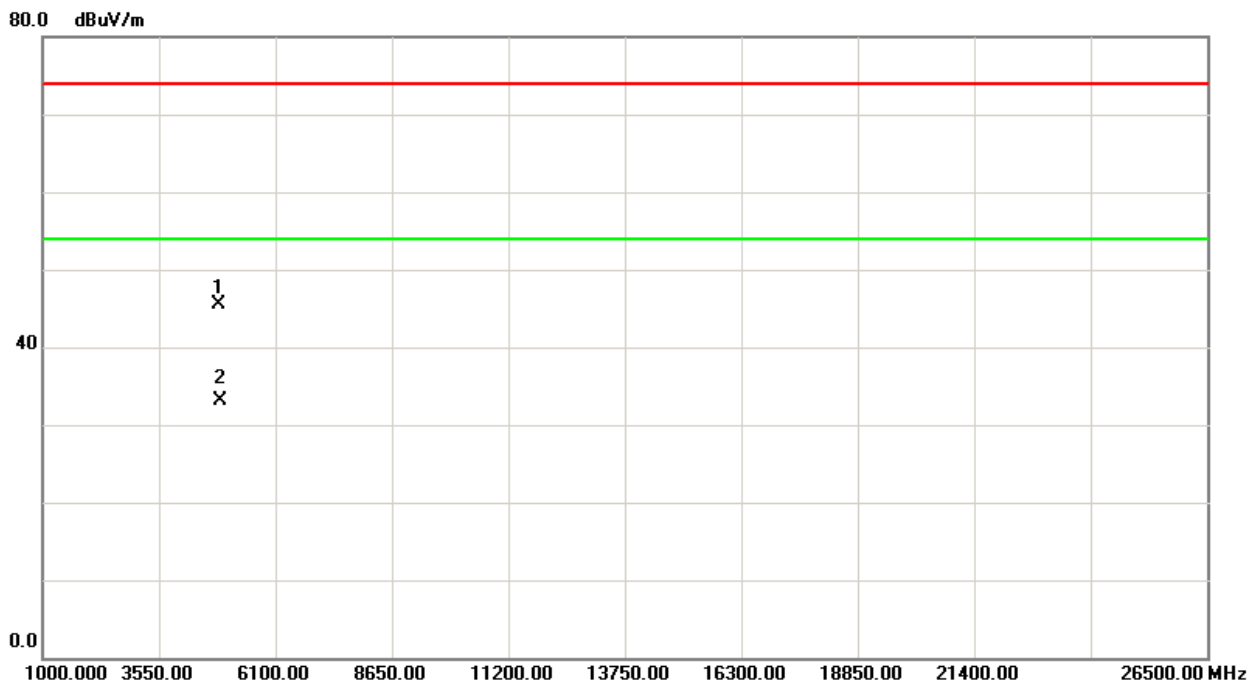
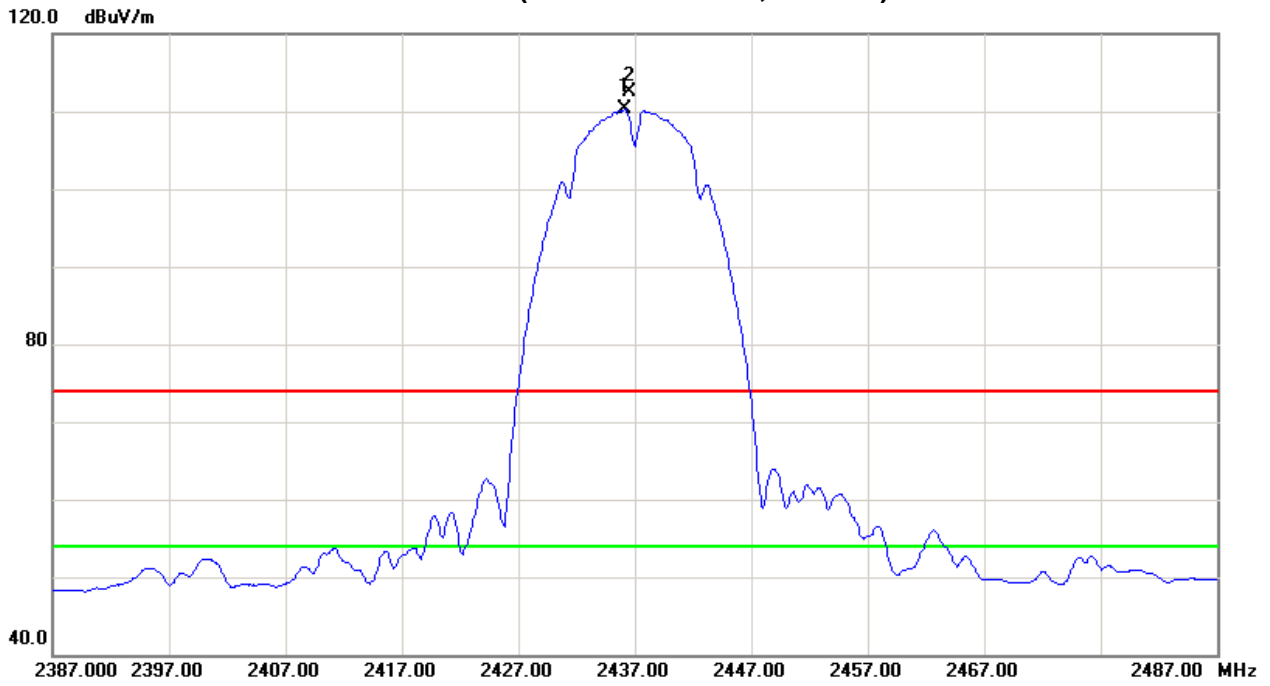
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2436.50</b>	<b>V</b>	<b>78.25</b>	<b>76.10</b>	<b>34.23</b>	<b>112.48</b>	<b>110.33</b>			<b>X/F</b>
4874.03	V	38.88	26.61	6.58	45.46	33.19	74.00	54.00	X/H

Remark:

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



TX CH06 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

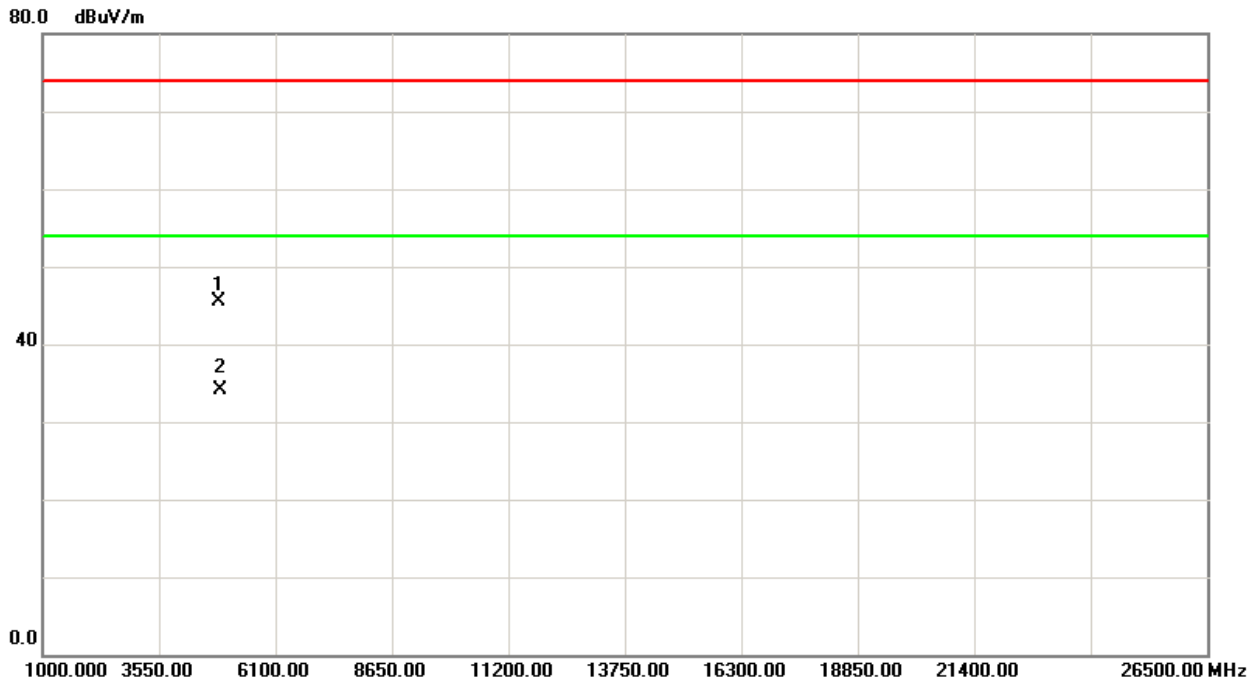
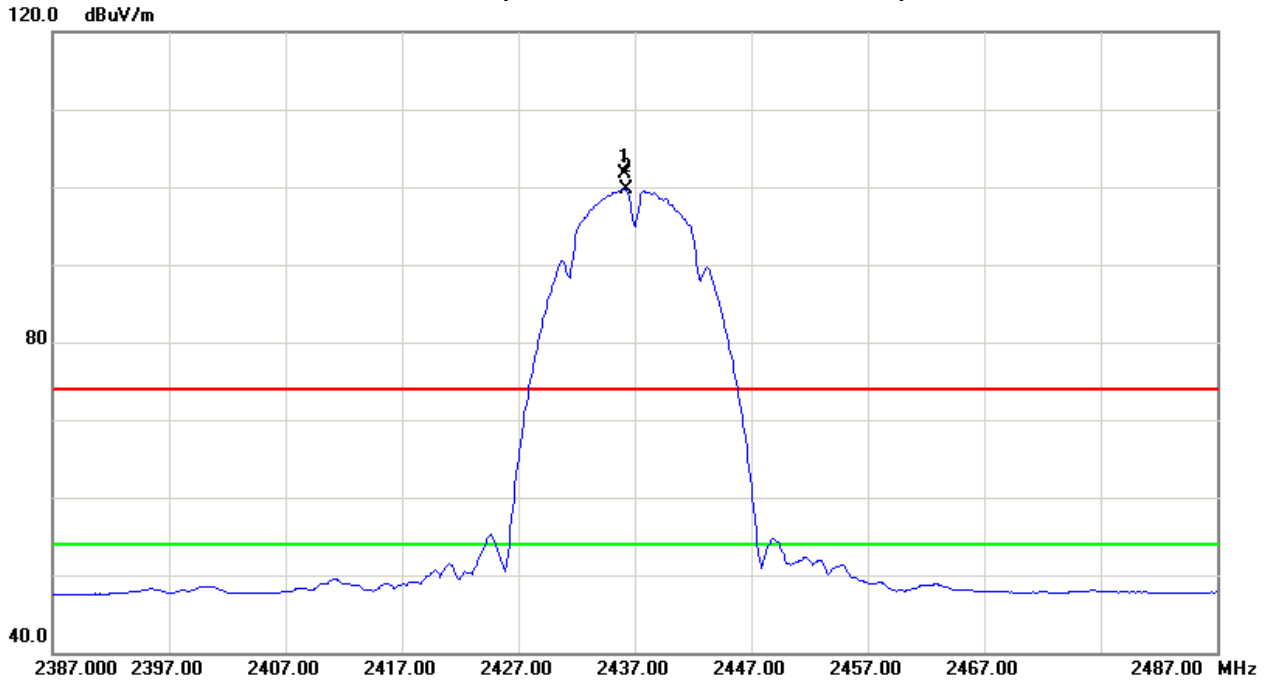
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2436.10</b>	<b>H</b>	<b>67.54</b>	<b>65.51</b>	<b>34.23</b>	<b>101.77</b>	<b>99.74</b>			<b>X/F</b>
4873.97	H	38.98	27.55	6.58	45.56	34.13	74.00	54.00	X/H

Remark:

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



TX CH06 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2461.20</b>	<b>V</b>	<b>75.93</b>	<b>73.96</b>	<b>34.31</b>	<b>110.24</b>	<b>108.27</b>			<b>X/F</b>
2483.50	V	26.32	17.83	34.37	60.69	52.20	74.00	54.00	X/E
4924.02	V	38.04	28.58	6.72	44.76	35.30	74.00	54.00	X/H

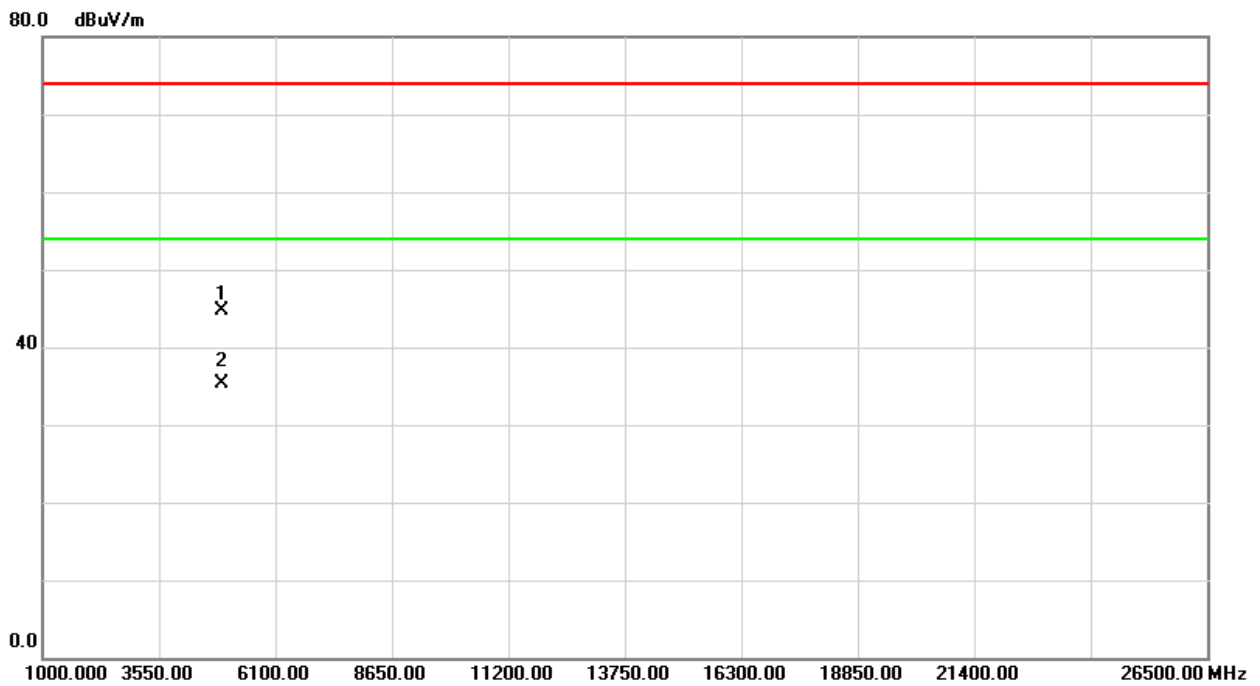
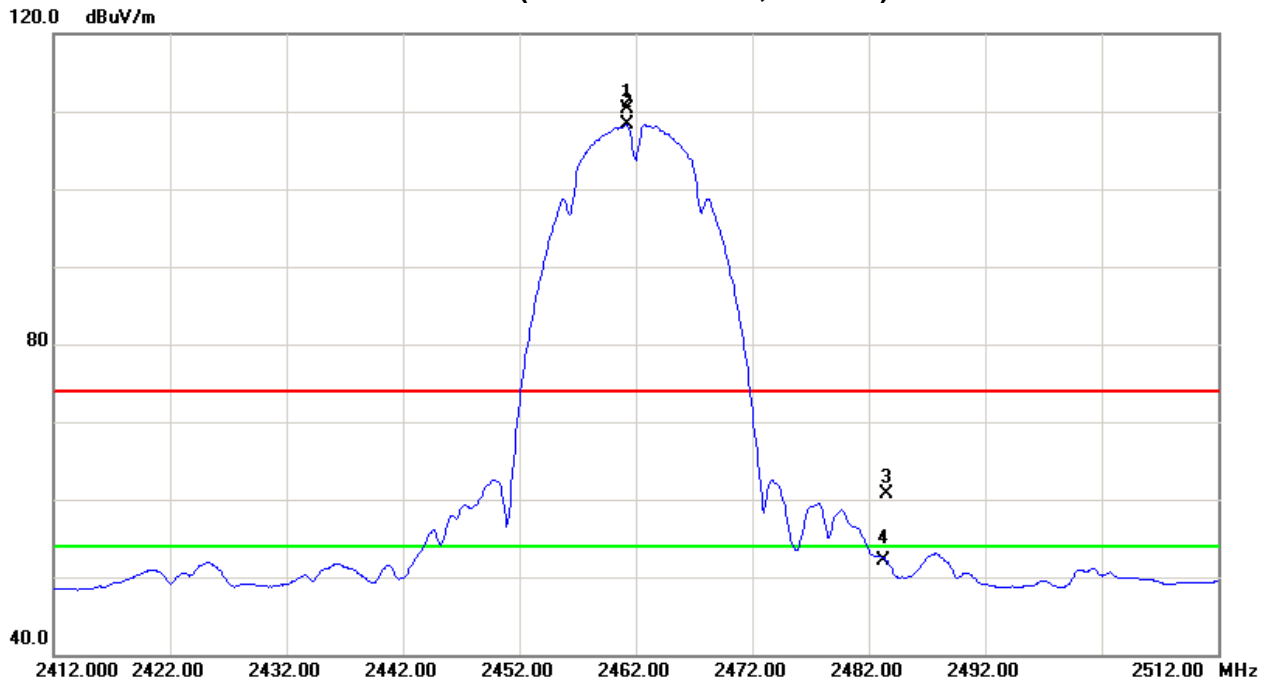
Remark:

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





TX CH11 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

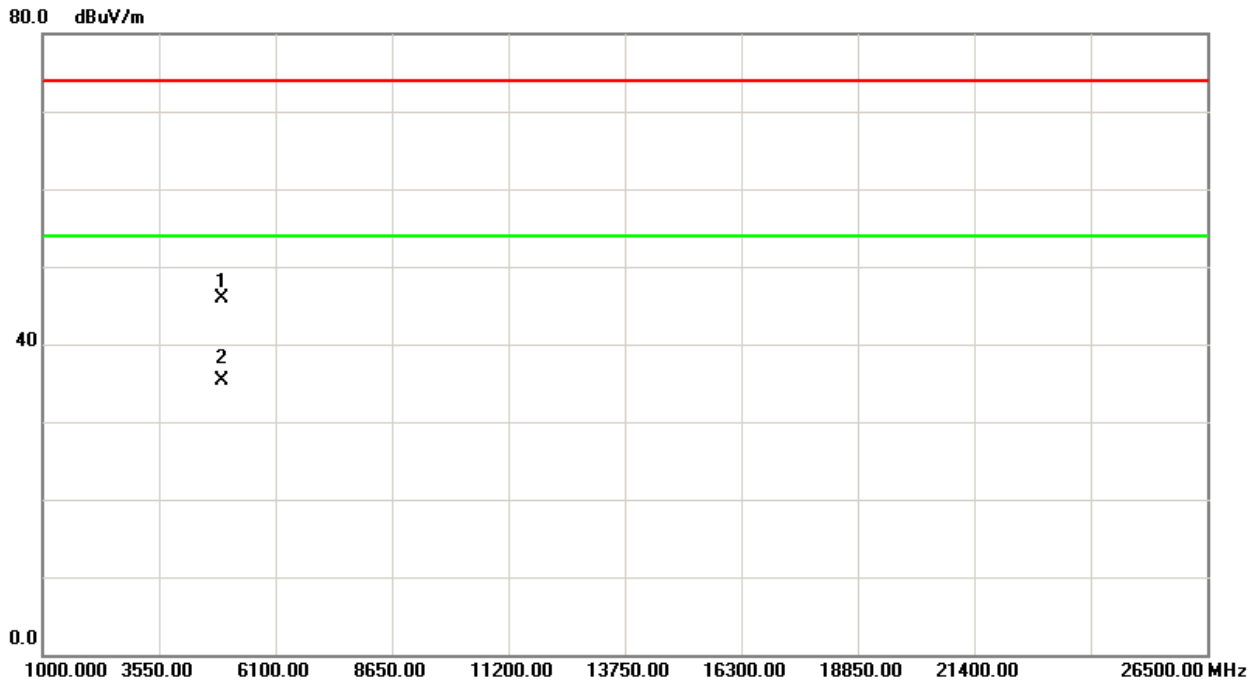
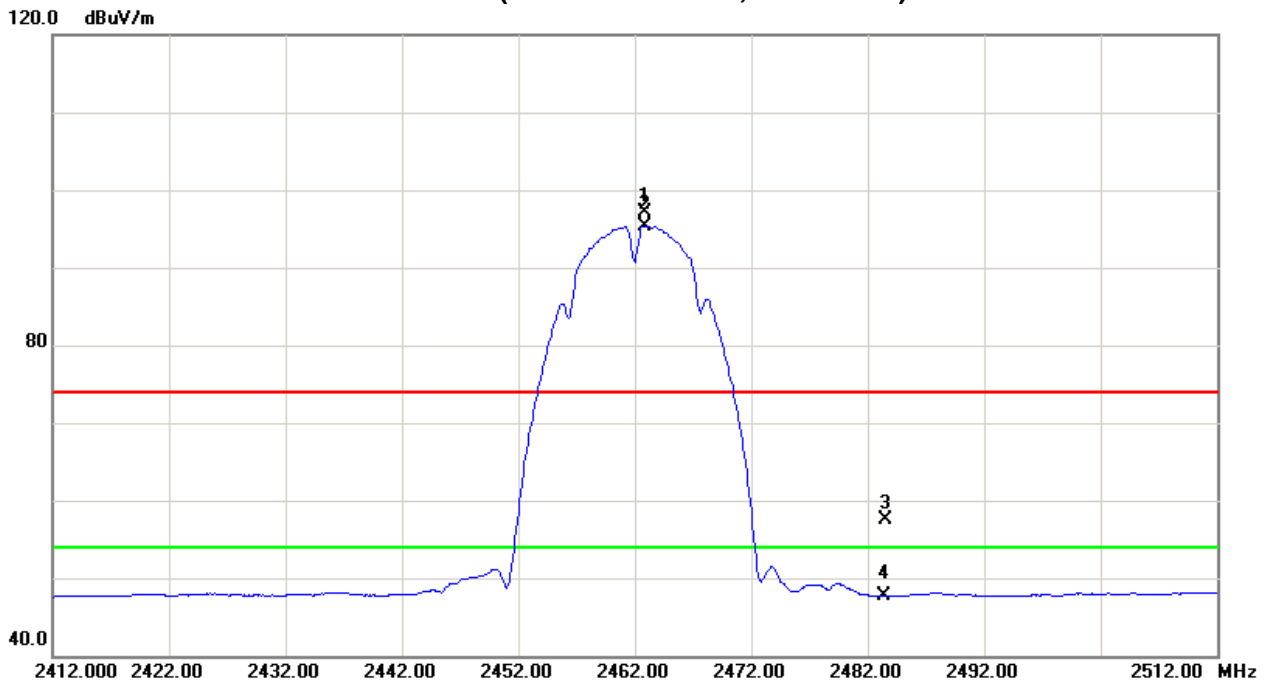
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2462.80</b>	<b>H</b>	<b>62.87</b>	<b>61.08</b>	<b>34.31</b>	<b>97.18</b>	<b>95.39</b>			<b>X/F</b>
2483.50	H	23.20	13.36	34.37	57.57	47.73	74.00	54.00	X/E
4923.99	H	39.16	28.57	6.72	45.88	35.29	74.00	54.00	X/H

**Remark:**

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



TX CH11 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

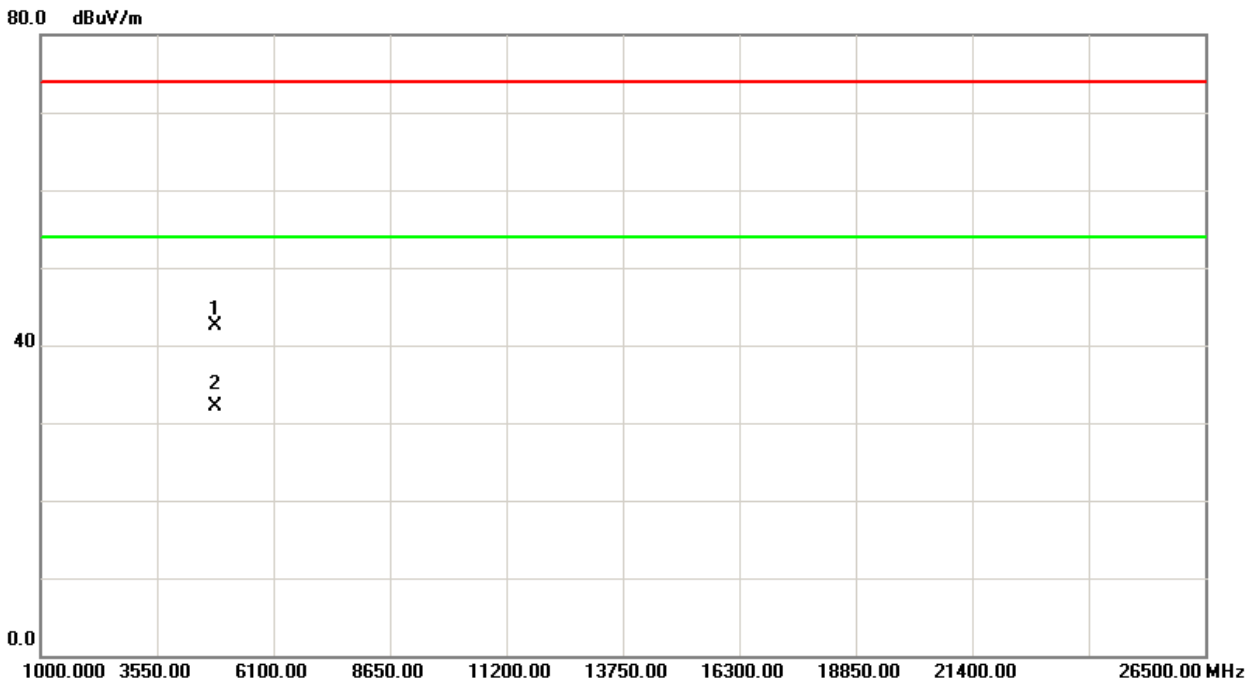
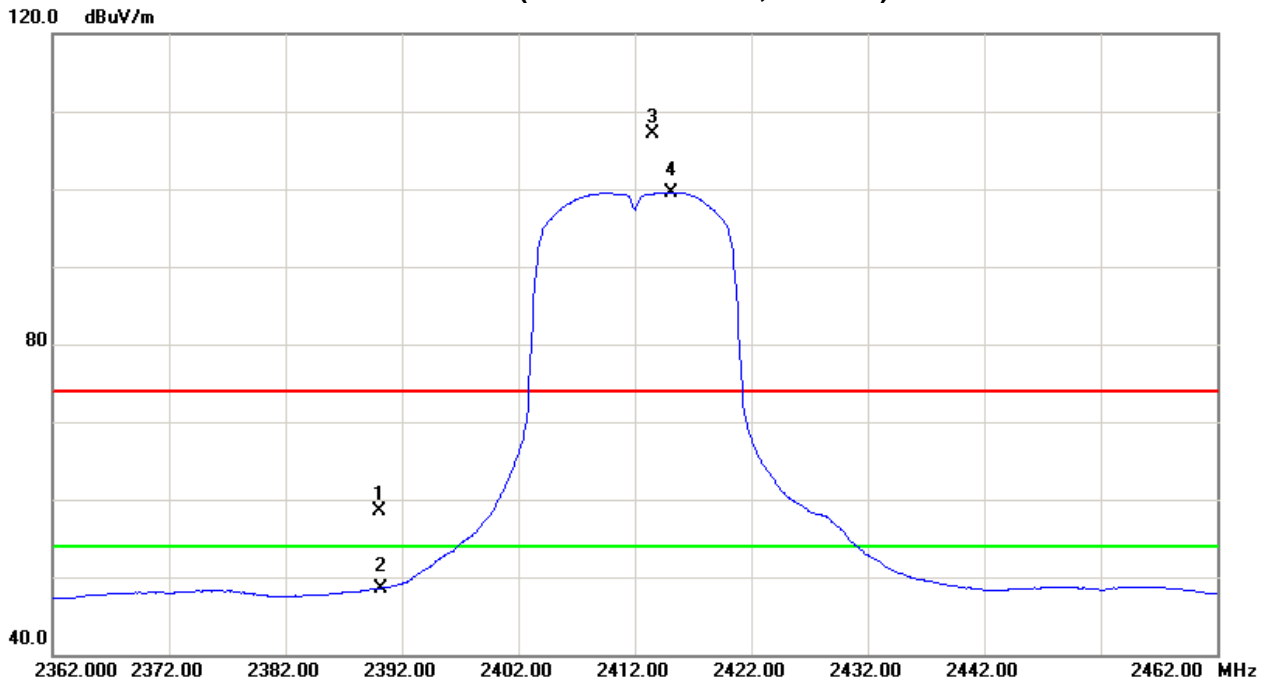
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	24.36	14.44	34.09	58.45	48.53	74.00	54.00	X/E
<b>2413.50</b>	<b>V</b>	<b>72.91</b>	<b>62.37</b>	<b>34.16</b>	<b>107.07</b>	<b>96.53</b>			<b>X/F</b>
4824.04	V	36.13	25.76	6.43	42.56	32.19	74.00	54.00	X/H

Remark:

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



TX CH01 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

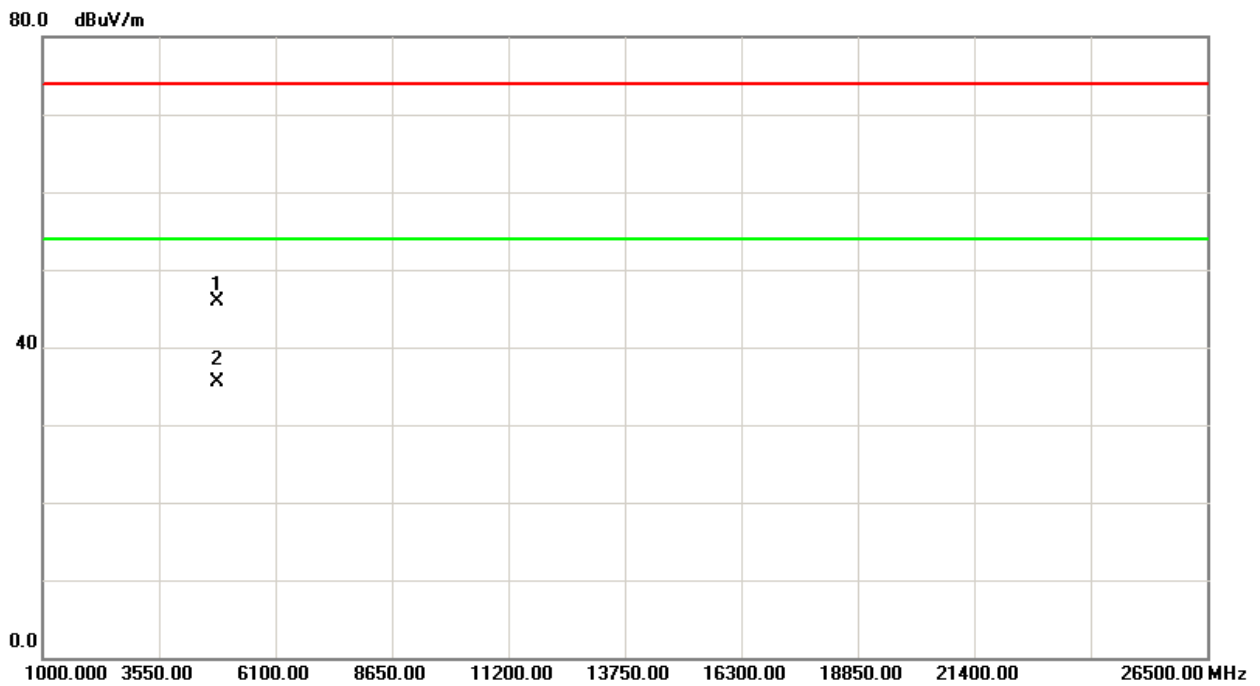
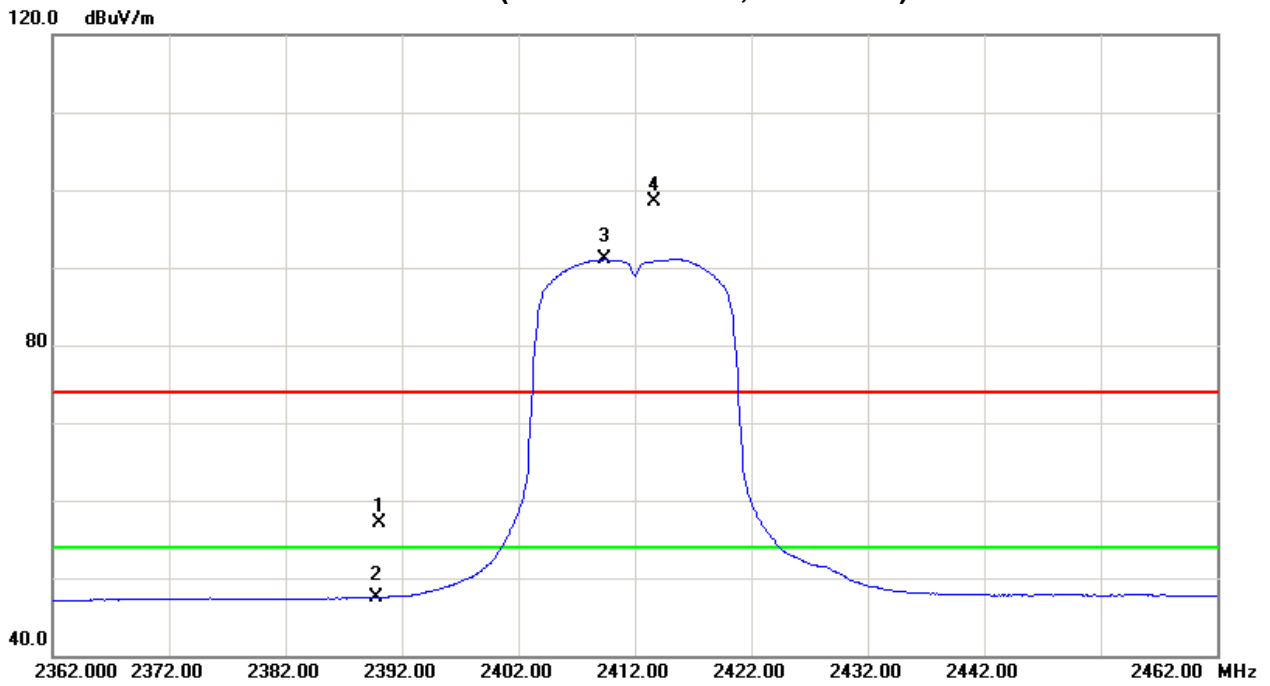
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	23.03	13.38	34.09	57.12	47.47	74.00	54.00	X/E
<b>2413.60</b>	<b>H</b>	<b>64.38</b>	<b>56.87</b>	<b>34.16</b>	<b>98.54</b>	<b>91.03</b>			<b>X/F</b>
4823.99	H	39.45	29.03	6.43	45.88	35.46	74.00	54.00	X/H

Remark:

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



TX CH01 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2438.50</b>	<b>V</b>	<b>73.21</b>	<b>65.65</b>	<b>34.23</b>	<b>107.44</b>	<b>99.88</b>			<b>X/F</b>
4874.03	V	38.26	27.93	6.58	44.84	34.51	74.00	54.00	X/H

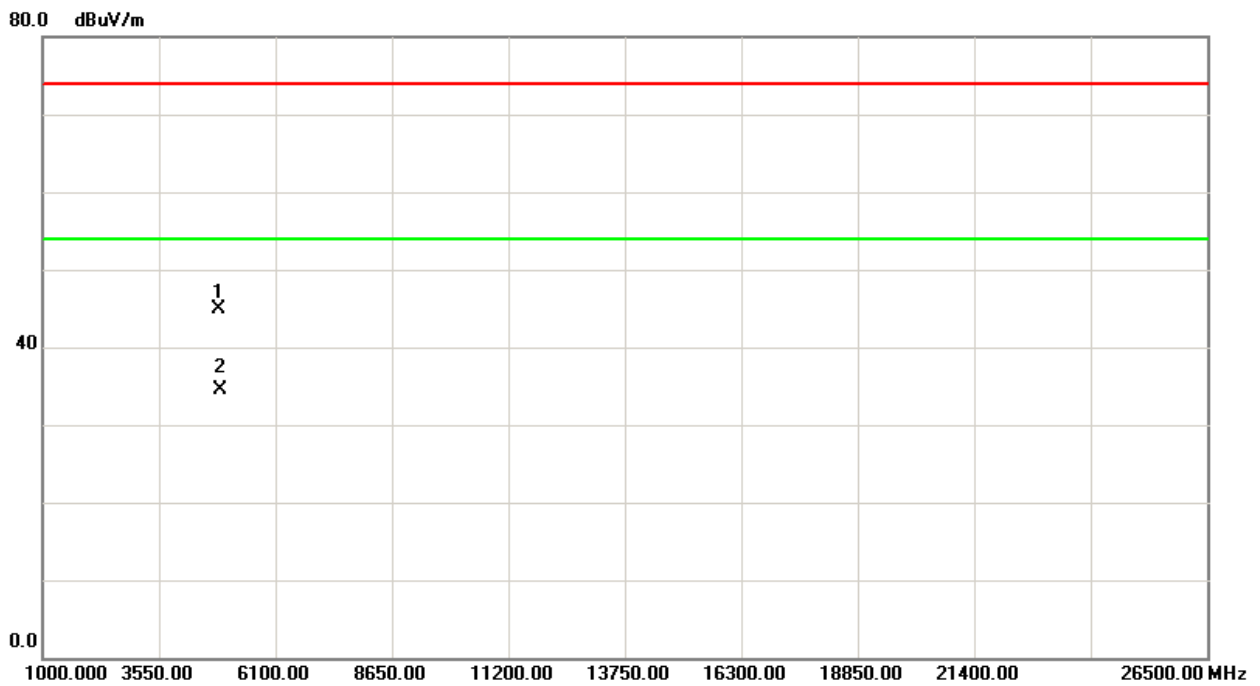
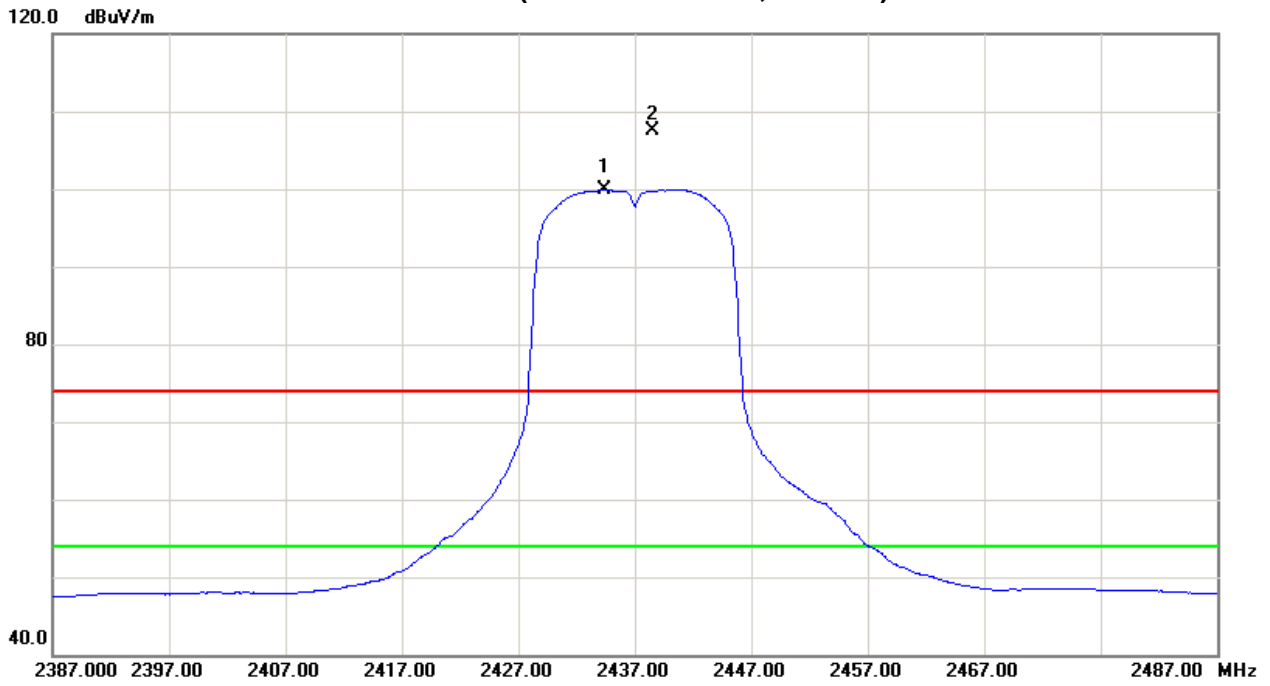
Remark:

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





TX CH06 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

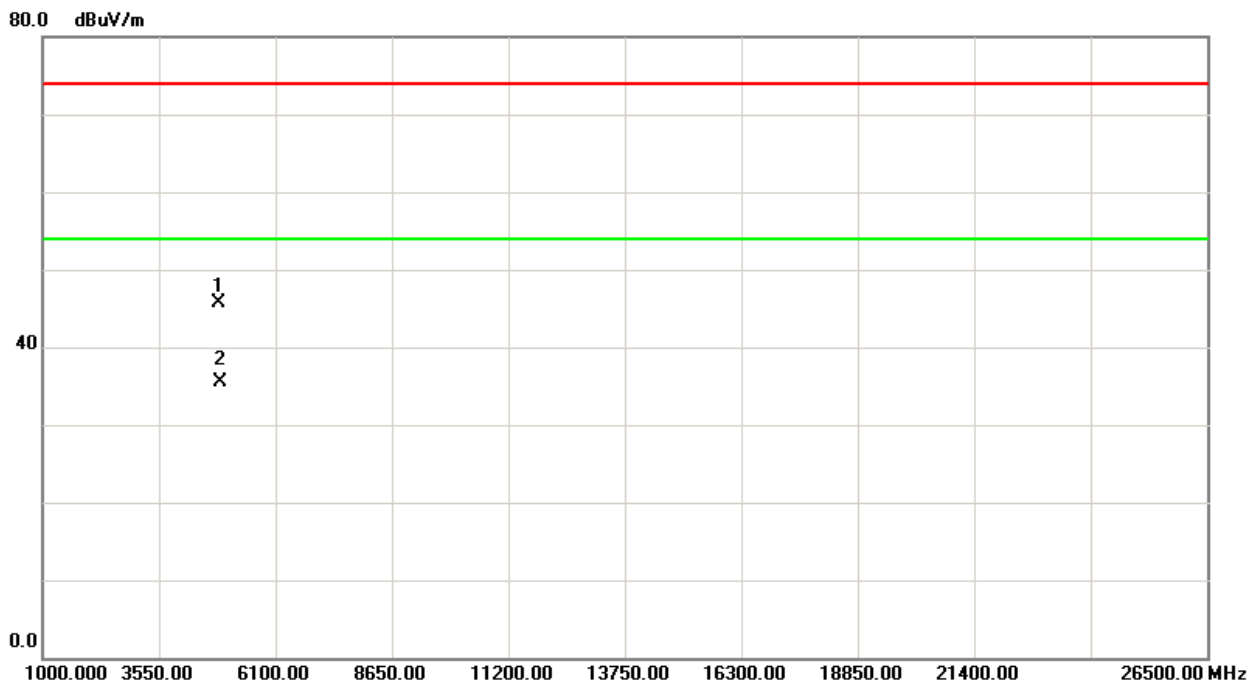
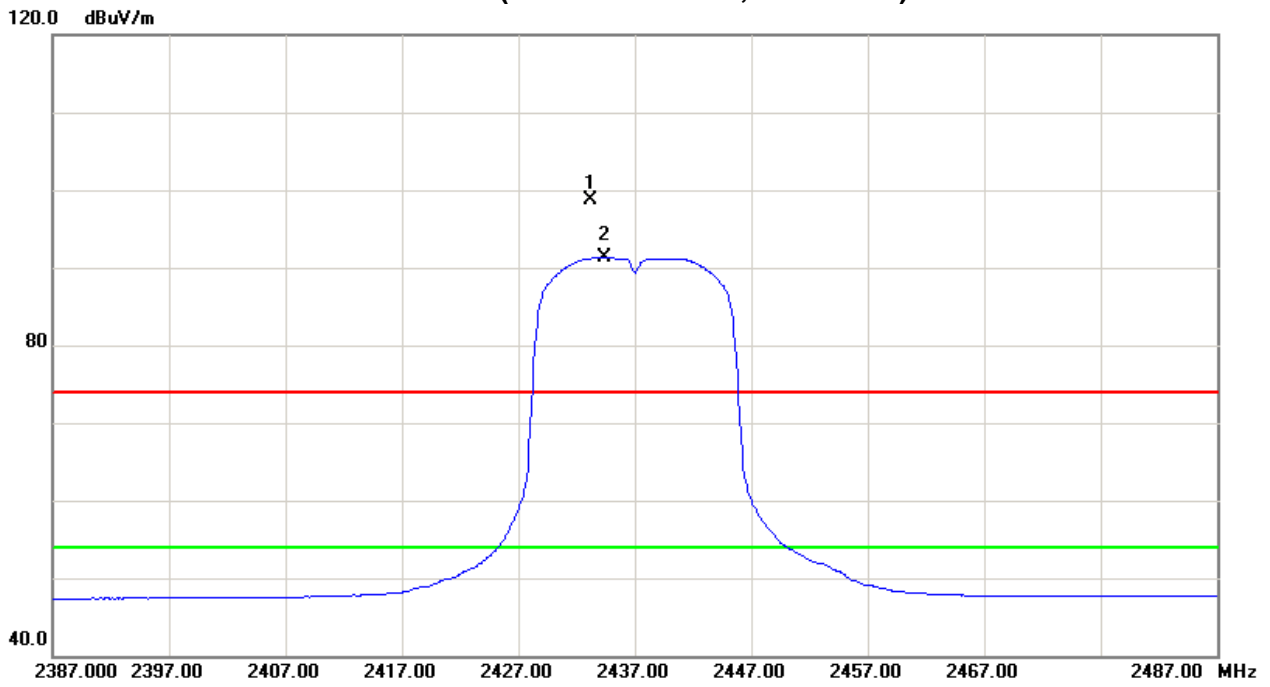
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2433.20</b>	<b>H</b>	<b>64.40</b>	<b>57.15</b>	<b>34.22</b>	<b>98.62</b>	<b>91.37</b>			<b>X/F</b>
4873.98	H	39.10	28.87	6.58	45.68	35.45	74.00	54.00	X/H

Remark:

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



TX CH06 (Above 1000 MHz, Horizontal)





## Neutron Engineering Inc.

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

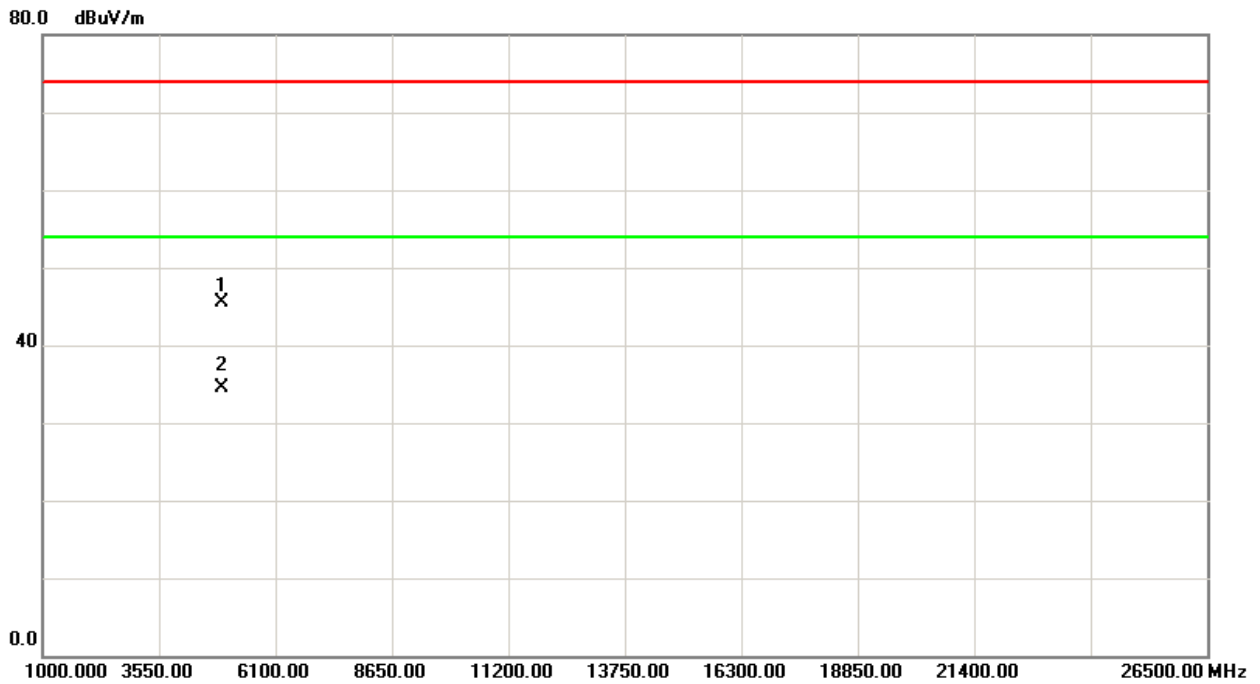
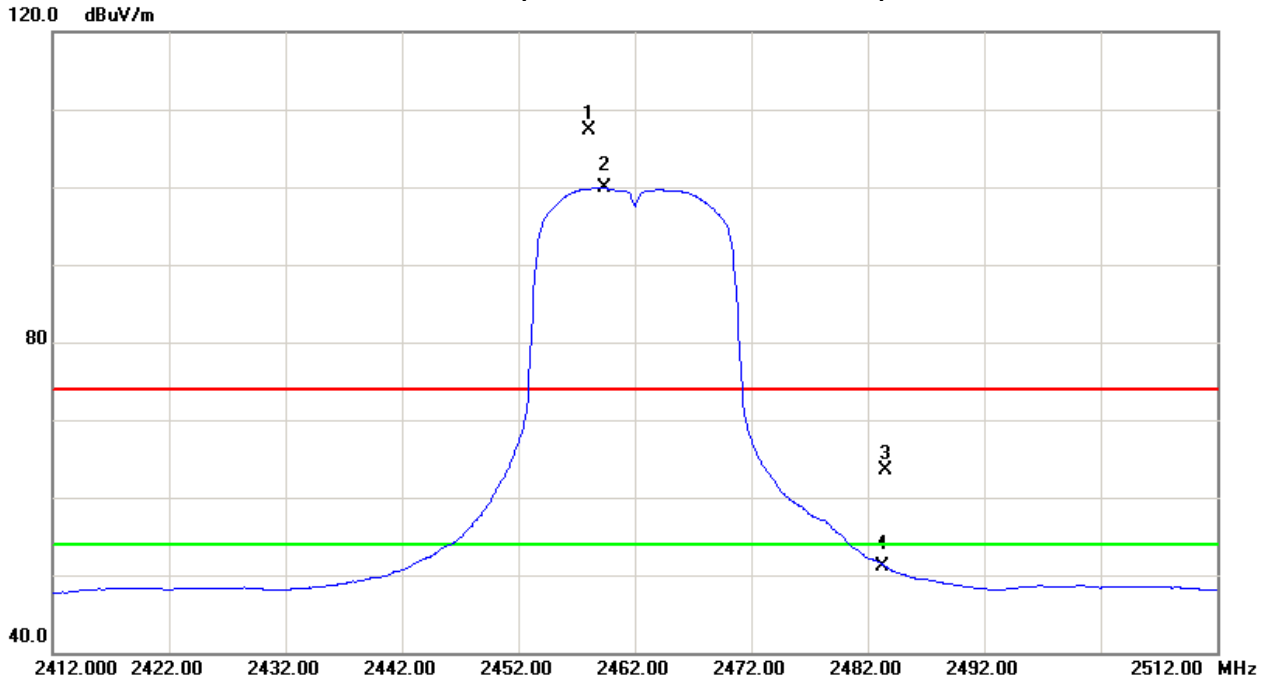
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2458.10</b>	<b>V</b>	<b>72.95</b>	<b>65.54</b>	<b>34.29</b>	<b>107.24</b>	<b>99.83</b>			<b>X/F</b>
2483.50	V	29.19	16.76	34.37	63.56	51.13	74.00	54.00	X/E
4924.06	V	38.74	27.86	6.72	45.46	34.58	74.00	54.00	X/H

### Remark:

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



TX CH11 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

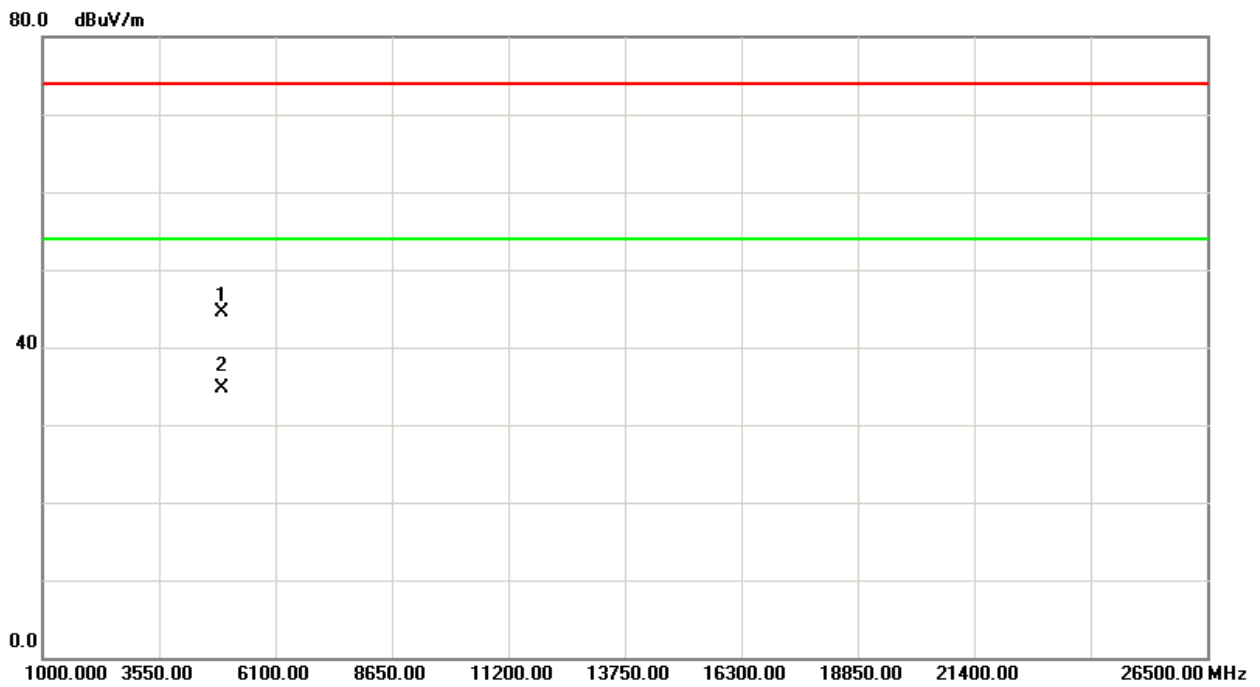
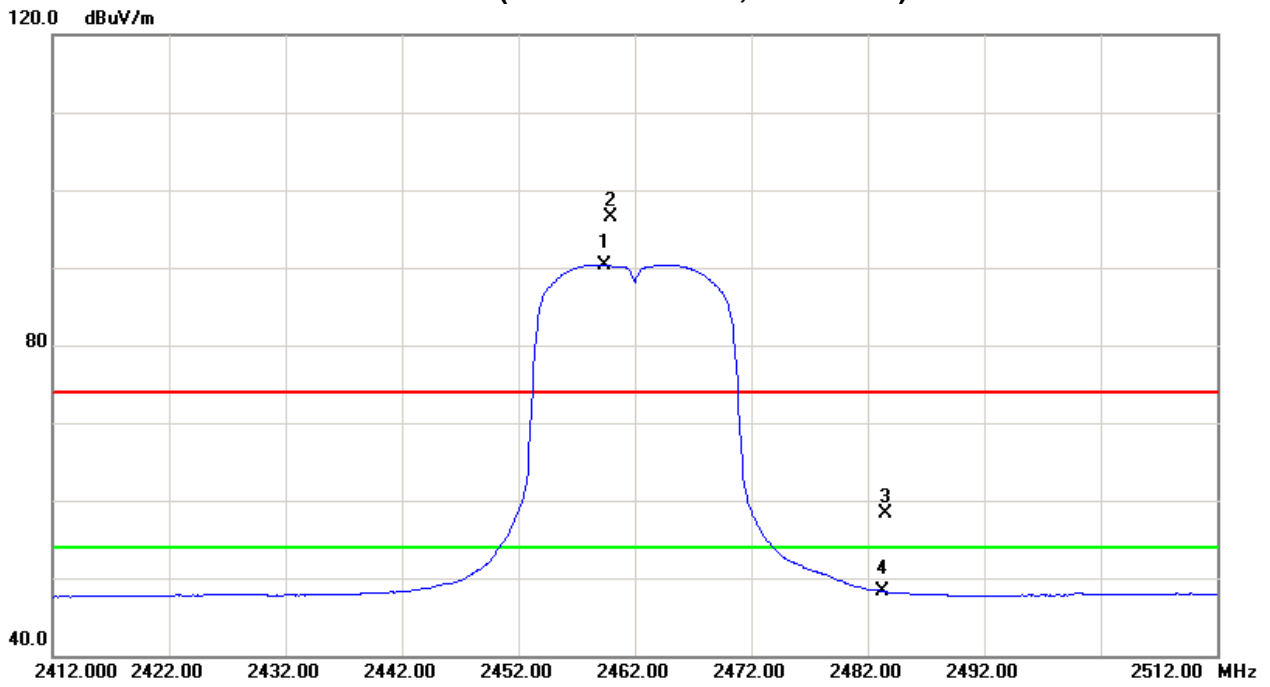
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2459.90</b>	<b>H</b>	<b>62.14</b>	<b>56.04</b>	<b>34.30</b>	<b>96.44</b>	<b>90.34</b>			<b>X/F</b>
2483.50	H	23.90	13.89	34.37	58.27	48.26	74.00	54.00	X/E
4923.97	H	37.70	28.04	6.72	44.42	34.76	74.00	54.00	X/H

Remark:

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



TX CH11 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	25.65	14.88	34.09	59.74	48.97	74.00	54.00	X/E
<b>2409.10</b>	<b>V</b>	<b>77.64</b>	<b>67.78</b>	<b>34.14</b>	<b>111.78</b>	<b>101.92</b>			<b>X/F</b>
4824.04	V	39.03	28.87	6.43	45.46	35.30	74.00	54.00	X/H

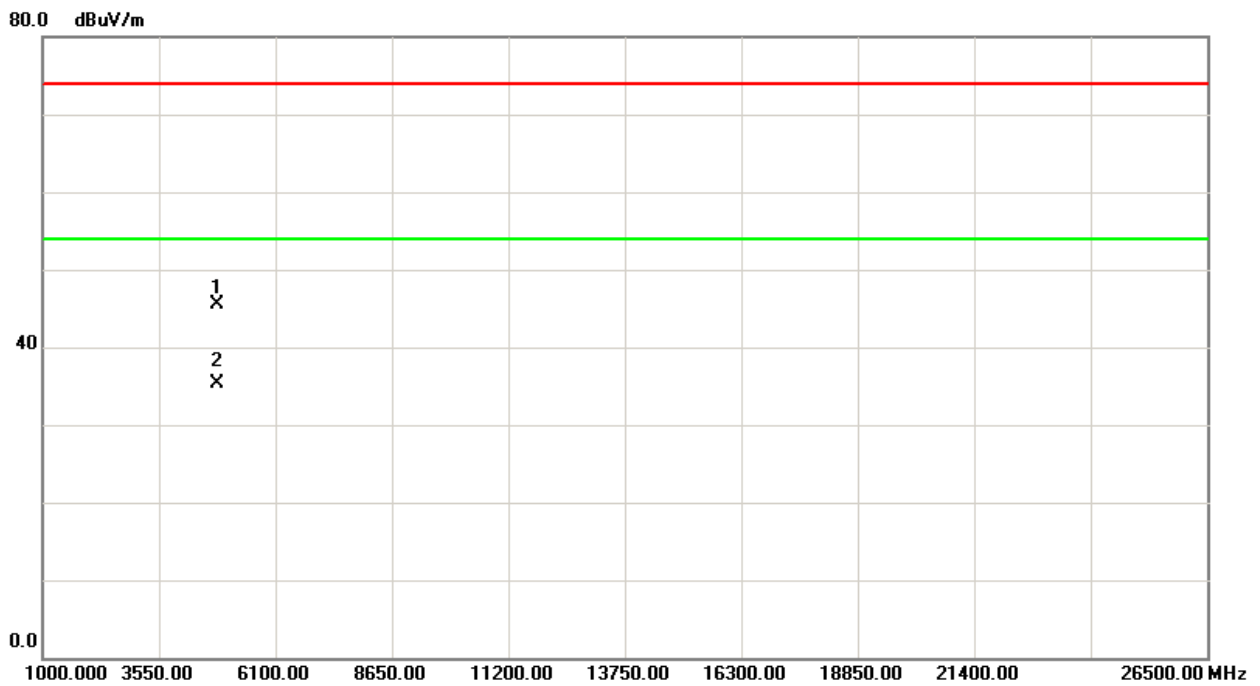
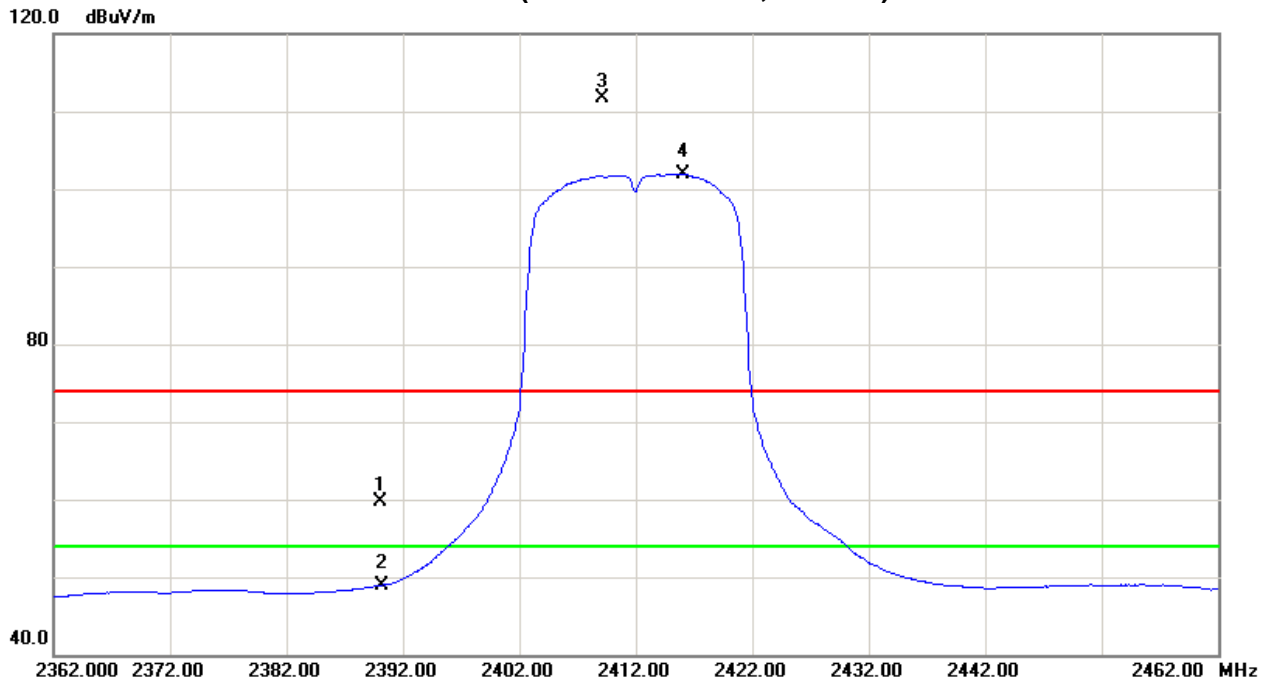
Remark:

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





TX CH01 (Above 1000 MHz, Vertical)





## Neutron Engineering Inc.

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

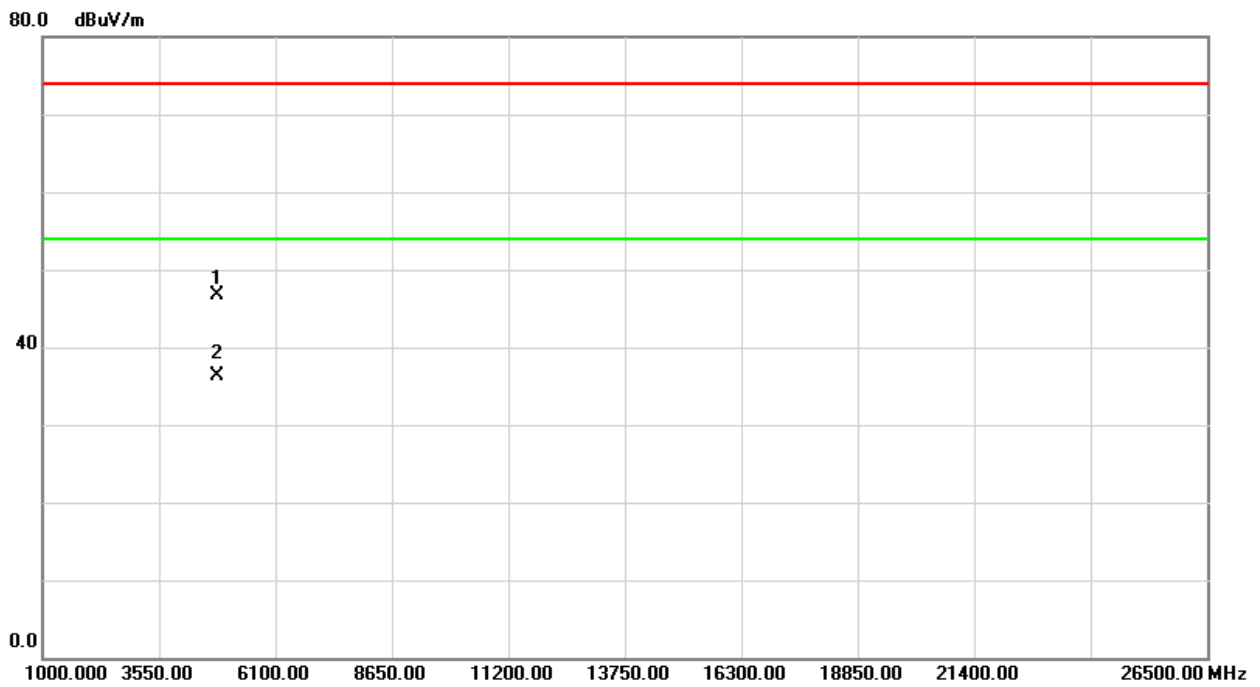
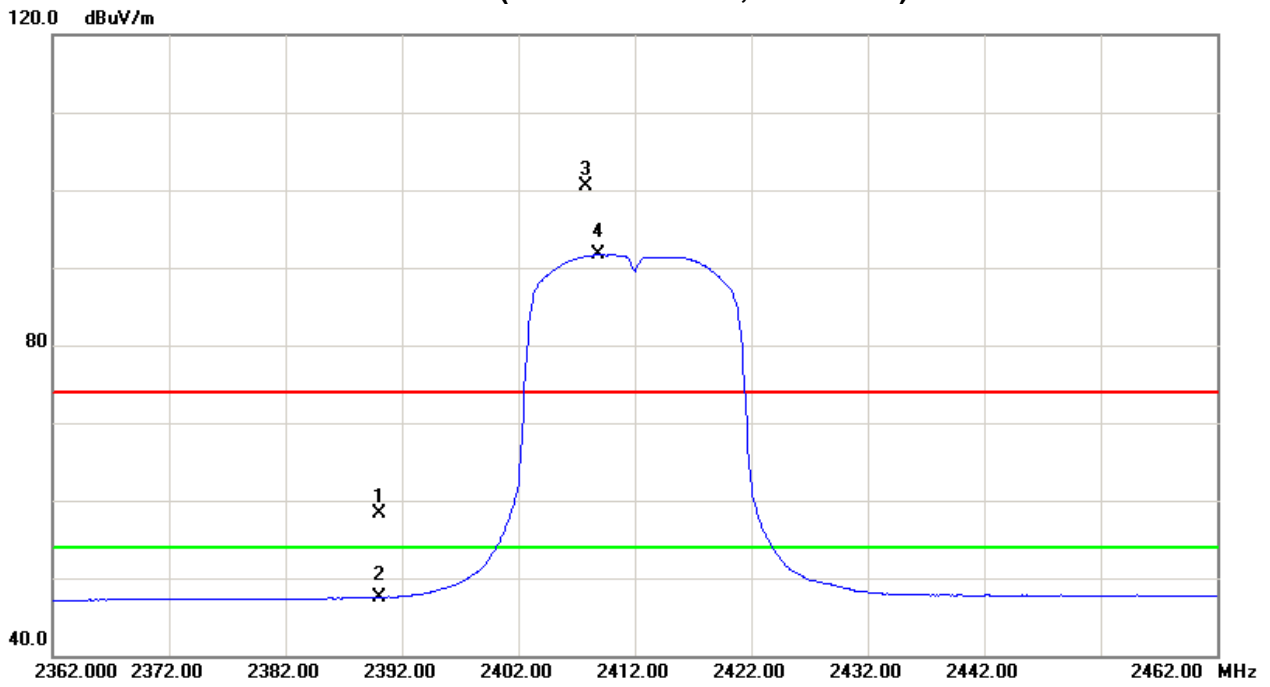
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	24.30	13.48	34.09	58.39	47.57	74.00	54.00	X/E
<b>2407.80</b>	<b>H</b>	<b>66.42</b>	<b>57.51</b>	<b>34.14</b>	<b>100.56</b>	<b>91.65</b>			<b>X/F</b>
4823.98	H	40.25	29.78	6.43	46.68	36.21	74.00	54.00	X/H

### Remark:

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



TX CH01 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2434.10</b>	<b>V</b>	<b>76.02</b>	<b>66.18</b>	<b>34.22</b>	<b>110.24</b>	<b>100.40</b>			<b>X/F</b>
4874.01	V	39.12	28.76	6.58	45.70	35.34	74.00	54.00	X/H

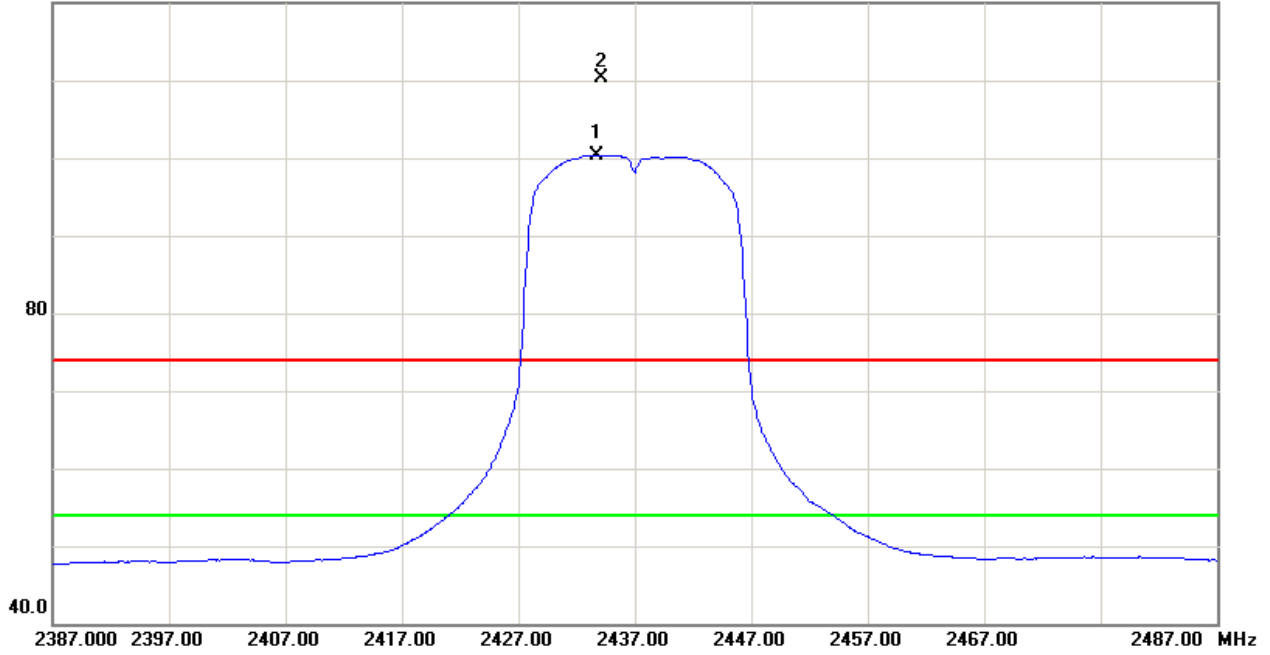
Remark:

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

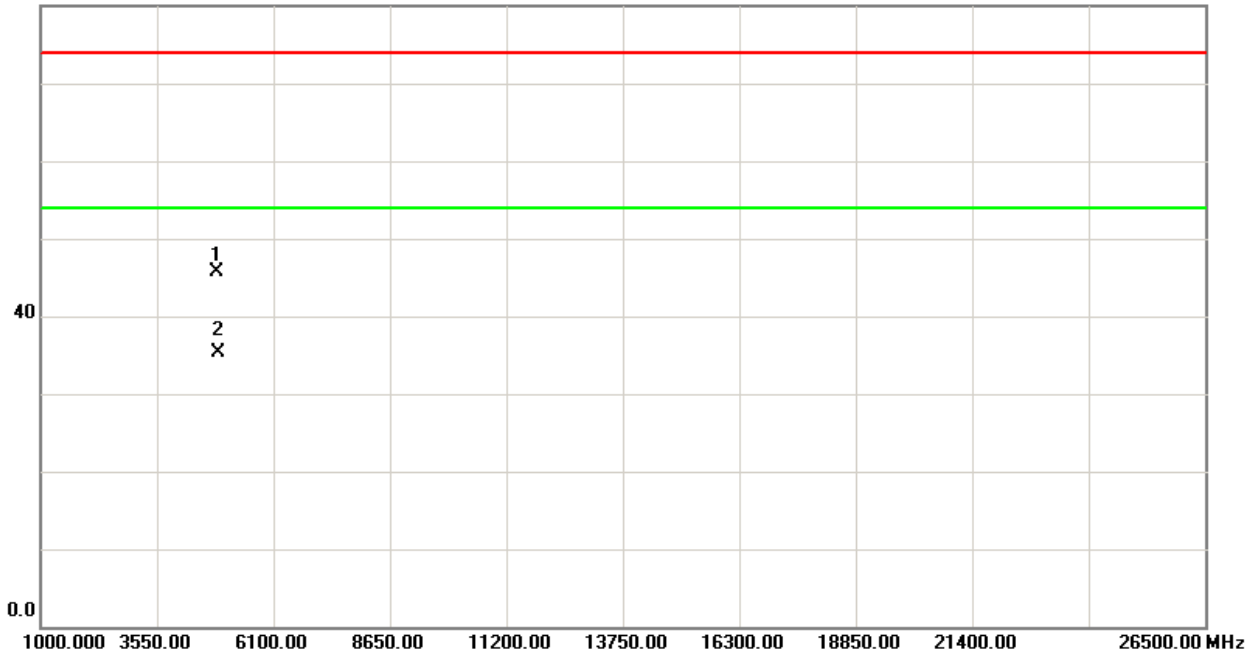


TX CH06 (Above 1000 MHz, Vertical)

120.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHZ		

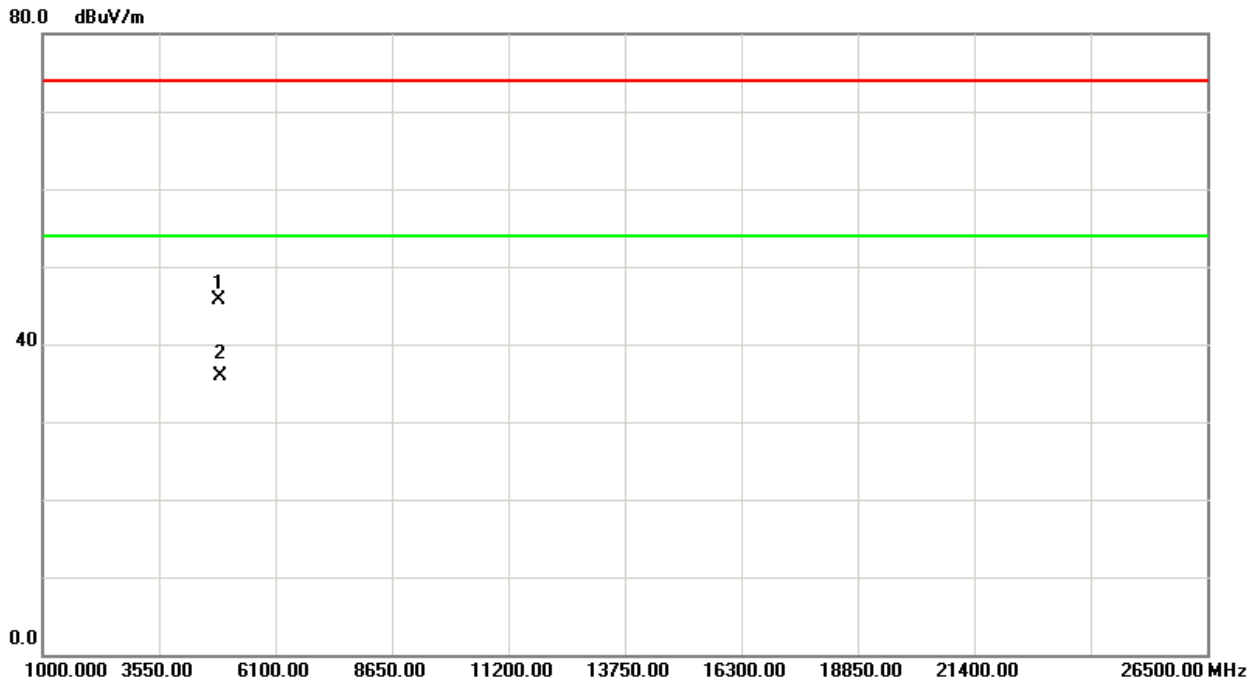
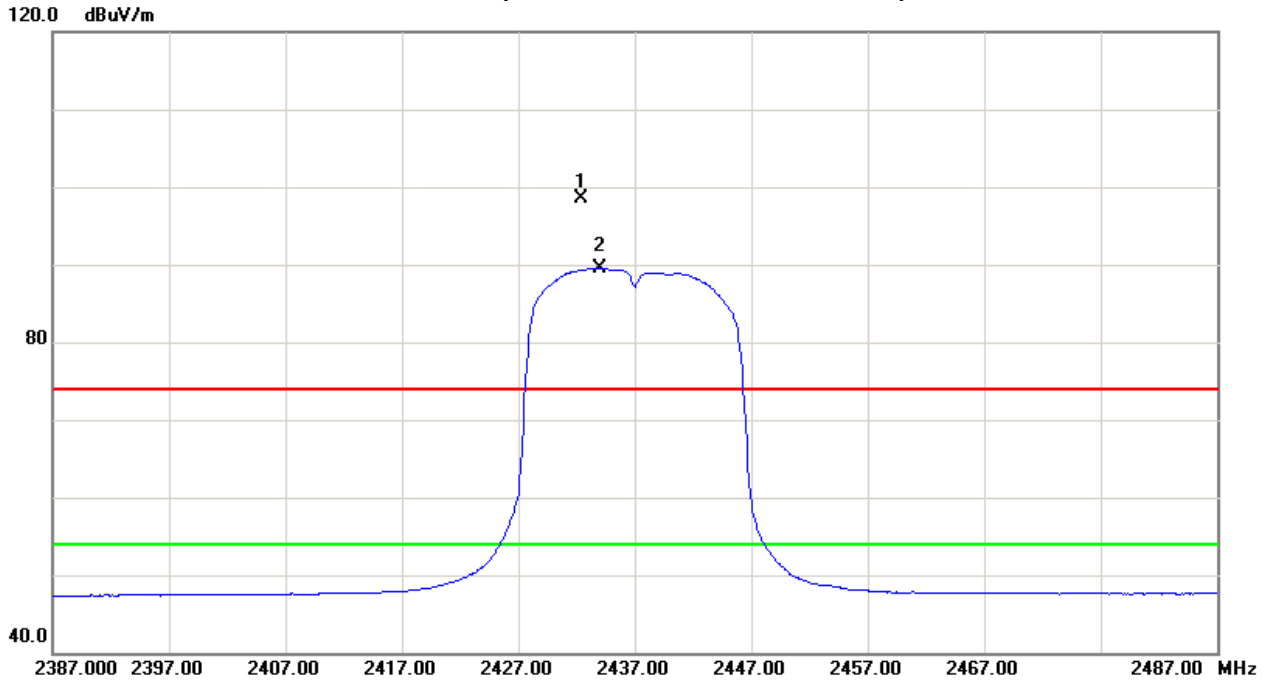
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2432.40</b>	<b>H</b>	<b>64.31</b>	<b>55.27</b>	<b>34.22</b>	<b>98.53</b>	<b>89.49</b>			<b>X/F</b>
4873.98	H	39.19	29.42	6.58	45.77	36.00	74.00	54.00	X/H

Remark:

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



TX CH06 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2459.10</b>	<b>V</b>	<b>74.43</b>	<b>65.29</b>	<b>34.29</b>	<b>108.72</b>	<b>99.58</b>			<b>X/F</b>
2483.50	V	26.86	15.24	34.37	61.23	49.61	74.00	54.00	X/E
4924.02	V	38.74	28.85	6.72	45.46	35.57	74.00	54.00	X/H

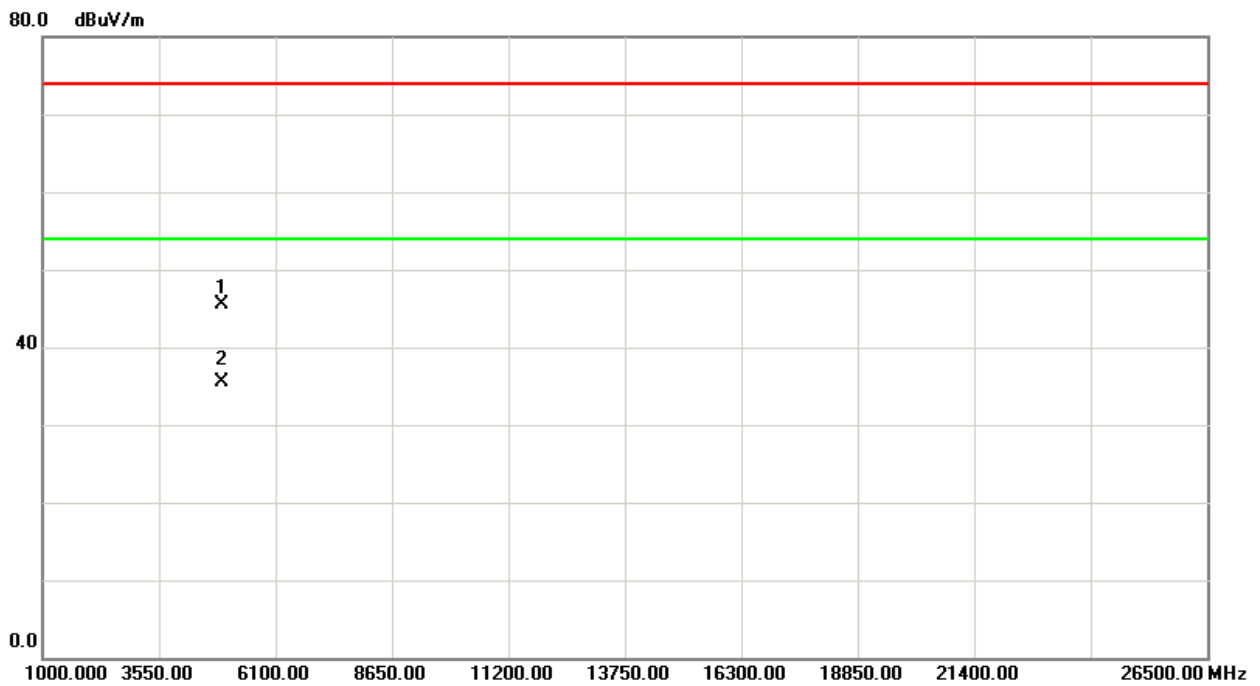
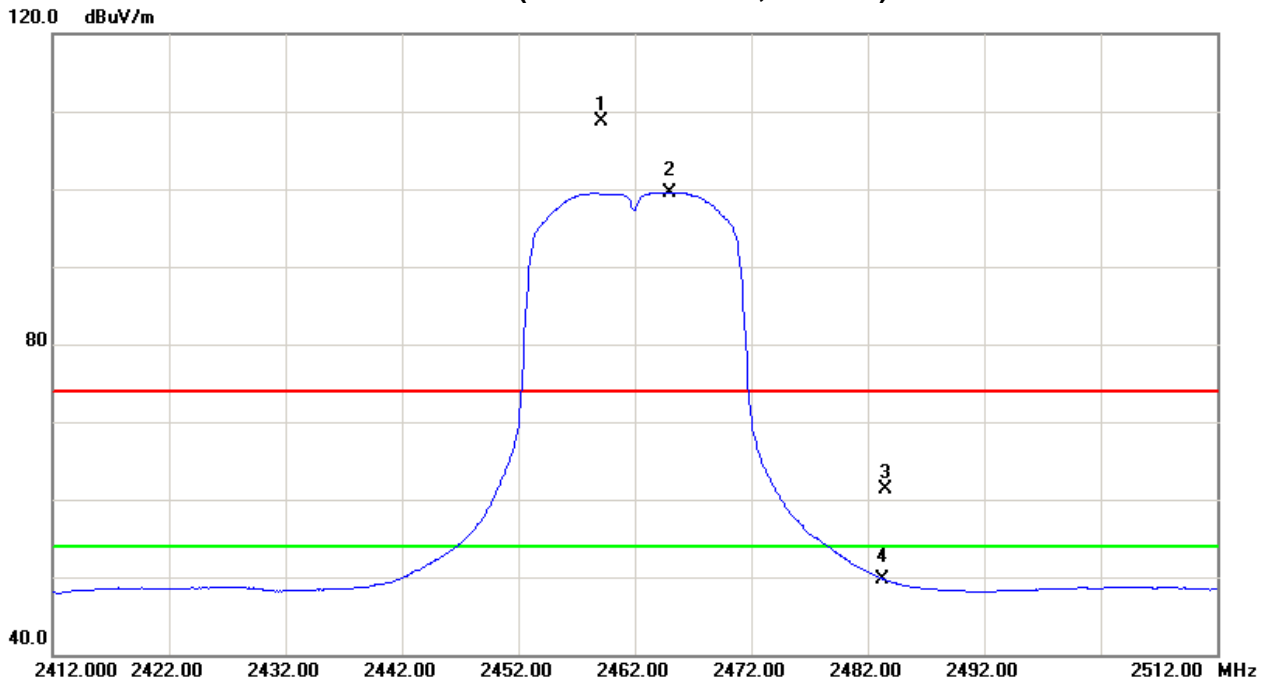
**Remark:**

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





TX CH11 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

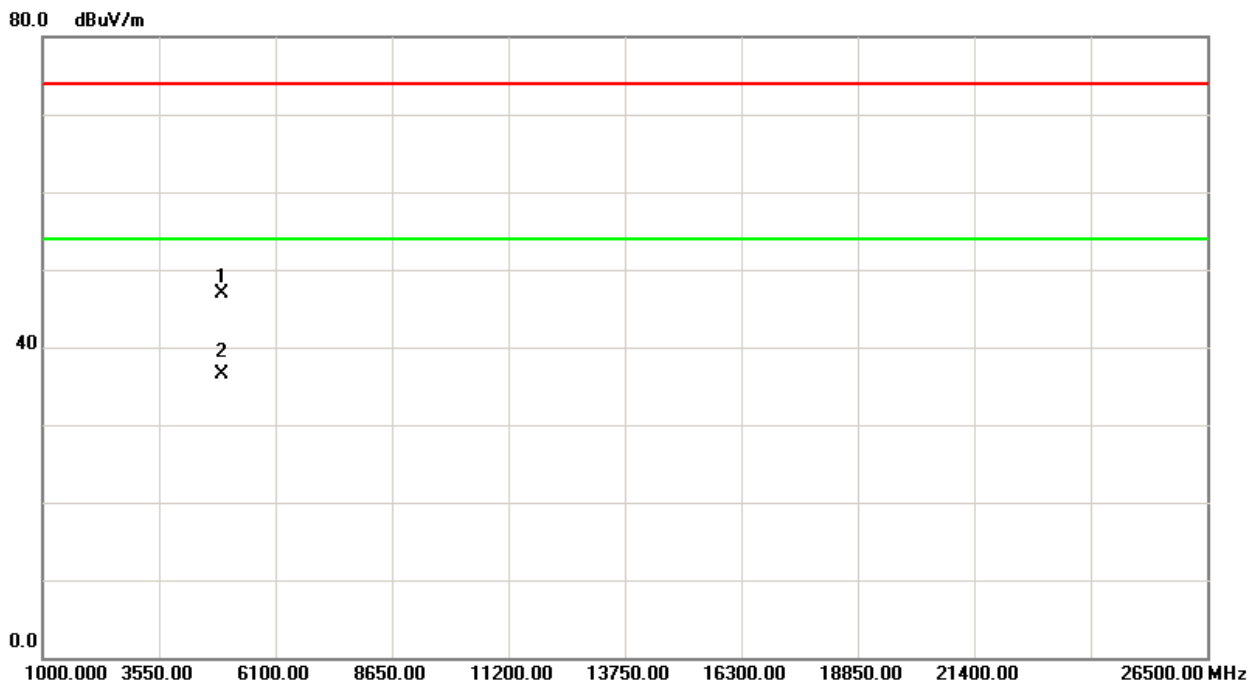
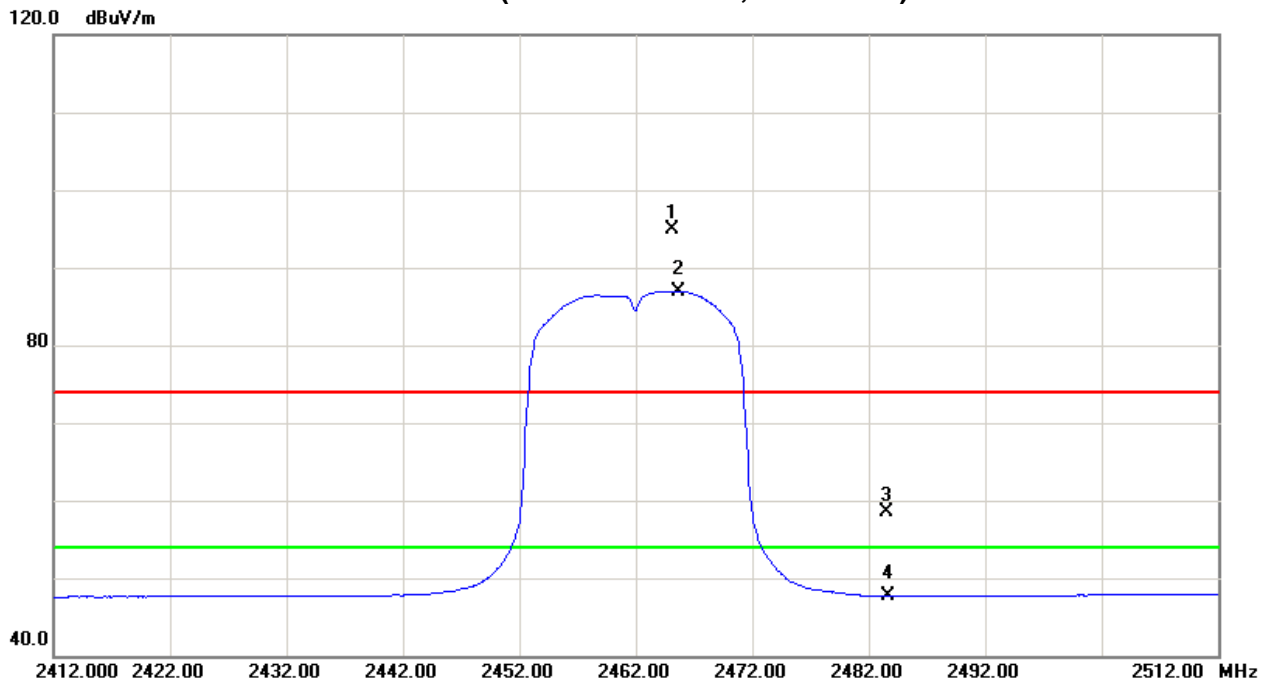
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2465.10</b>	<b>H</b>	<b>60.51</b>	<b>52.66</b>	<b>34.31</b>	<b>94.82</b>	<b>86.97</b>			<b>X/F</b>
2483.50	H	24.04	13.32	34.37	58.41	47.69	74.00	54.00	X/E
4923.99	H	40.26	29.86	6.72	46.98	36.58	74.00	54.00	X/H

**Remark:**

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



TX CH11 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

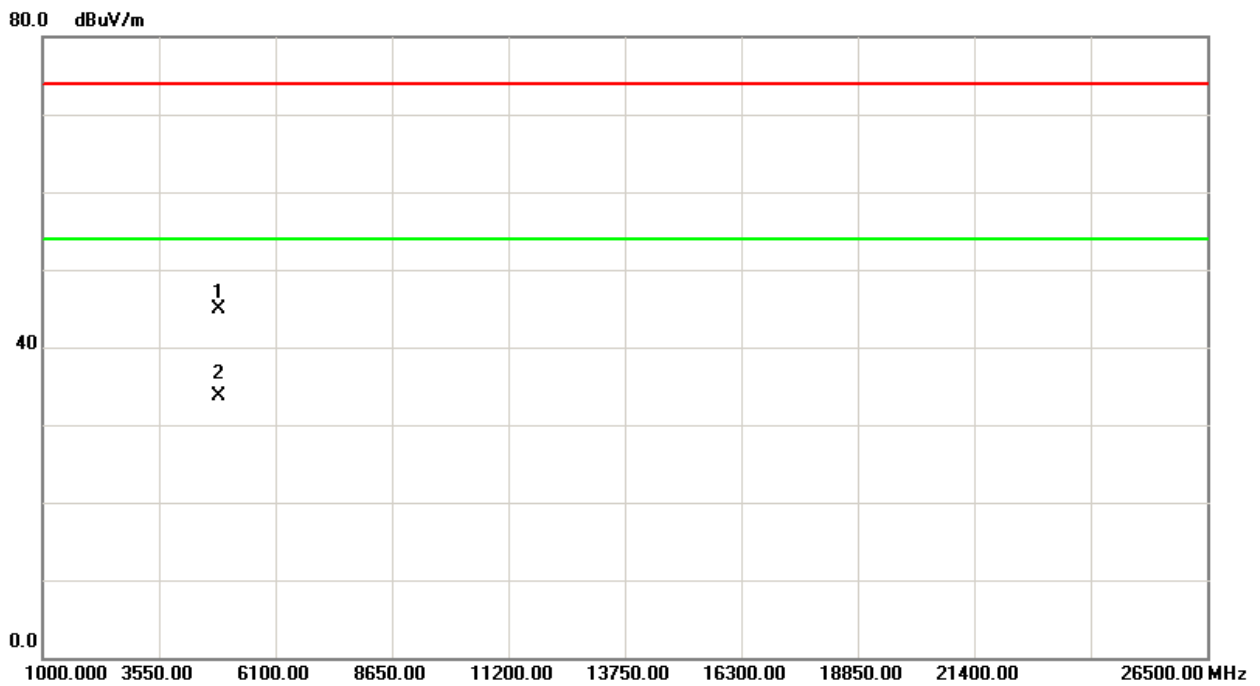
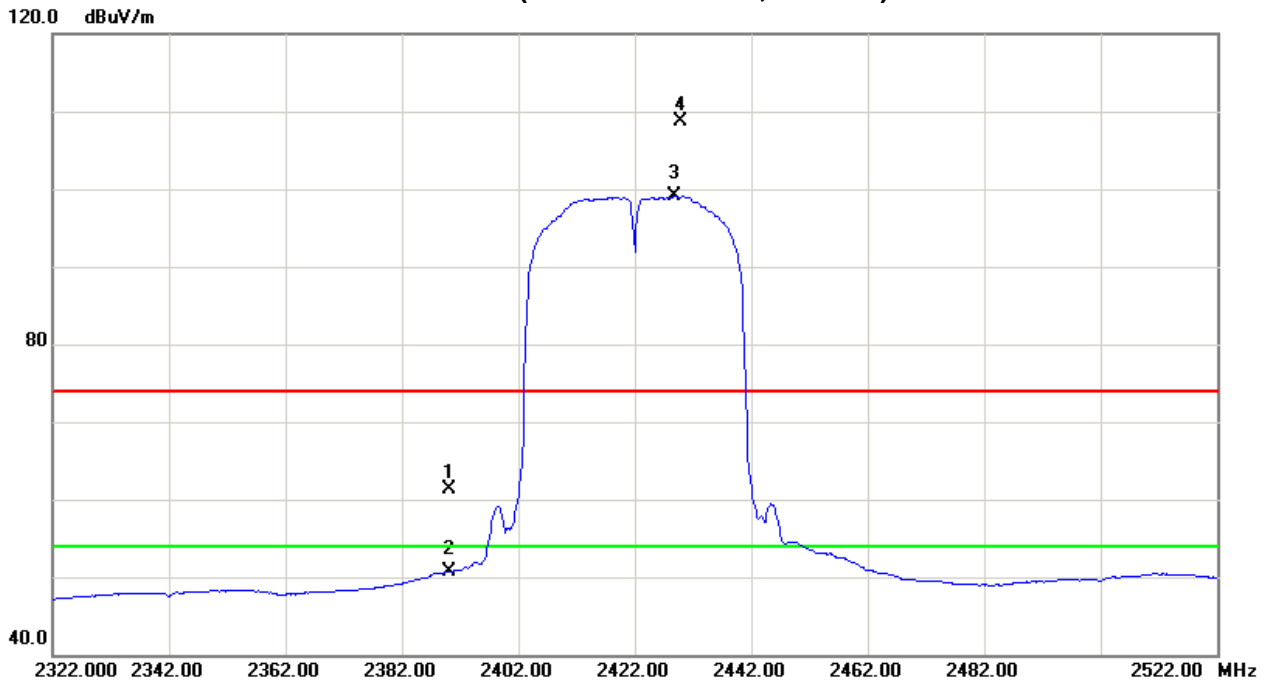
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	27.13	16.59	34.09	61.22	50.68	74.00	54.00	X/E
<b>2429.80</b>	<b>V</b>	<b>74.50</b>	<b>64.84</b>	<b>34.21</b>	<b>108.71</b>	<b>99.05</b>			<b>X/F</b>
4844.01	V	38.48	27.19	6.50	44.98	33.69	74.00	54.00	X/H

Remark:

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



TX CH03 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

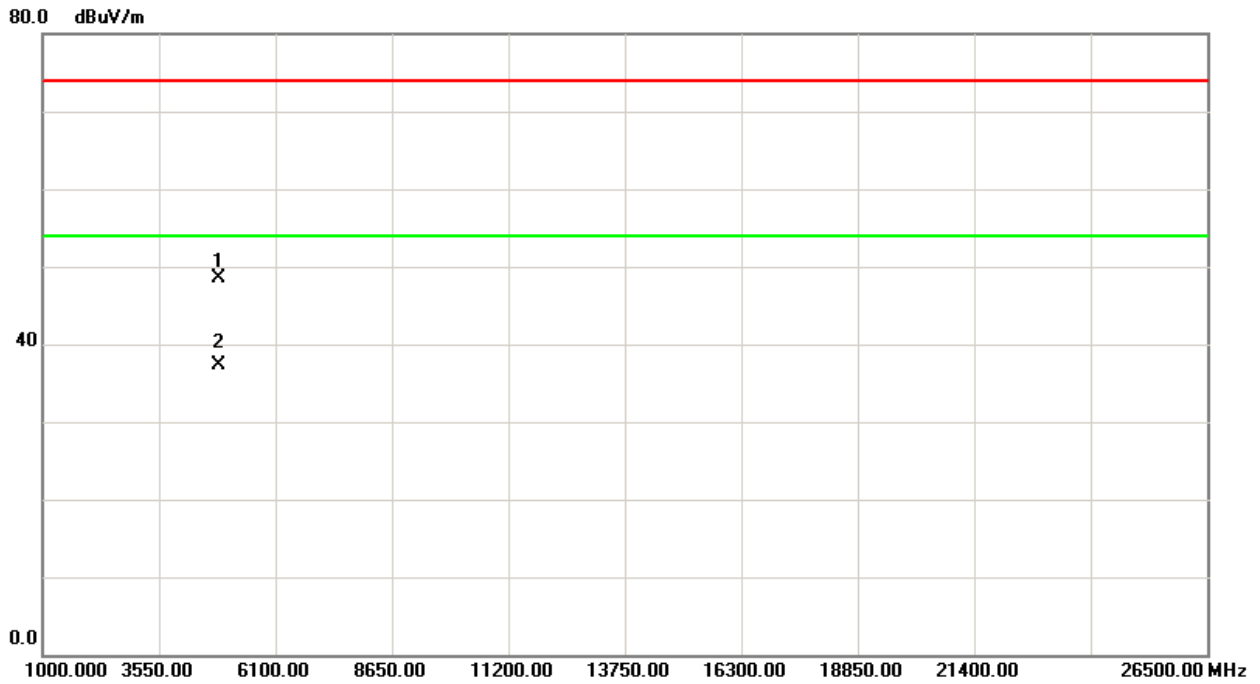
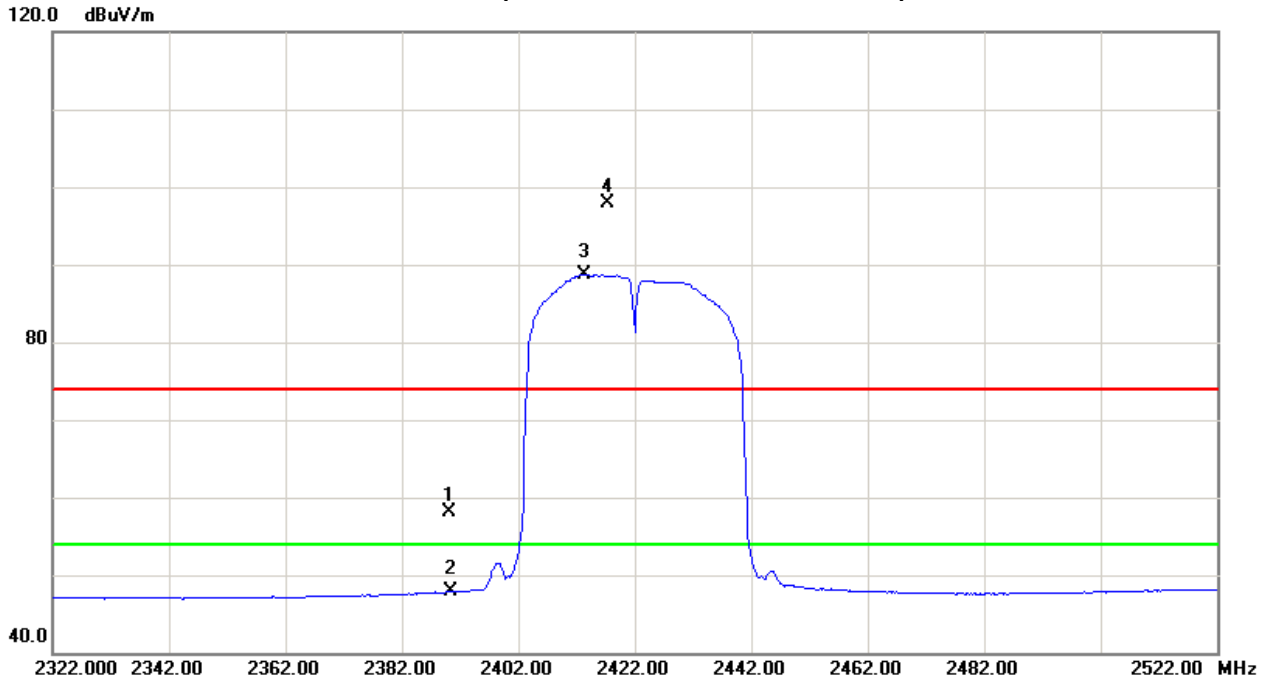
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	23.98	13.75	34.09	58.07	47.84	74.00	54.00	X/E
<b>2417.40</b>	<b>H</b>	<b>63.64</b>	<b>54.54</b>	<b>34.17</b>	<b>97.81</b>	<b>88.71</b>			<b>X/F</b>
4844.01	H	41.98	30.79	6.50	48.48	37.29	74.00	54.00	X/H

Remark:

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



TX CH03 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2432.40</b>	<b>V</b>	<b>72.39</b>	<b>63.97</b>	<b>34.22</b>	<b>106.61</b>	<b>98.19</b>			<b>X/F</b>
4874.04	V	41.27	29.82	6.58	47.85	36.40	74.00	54.00	X/H

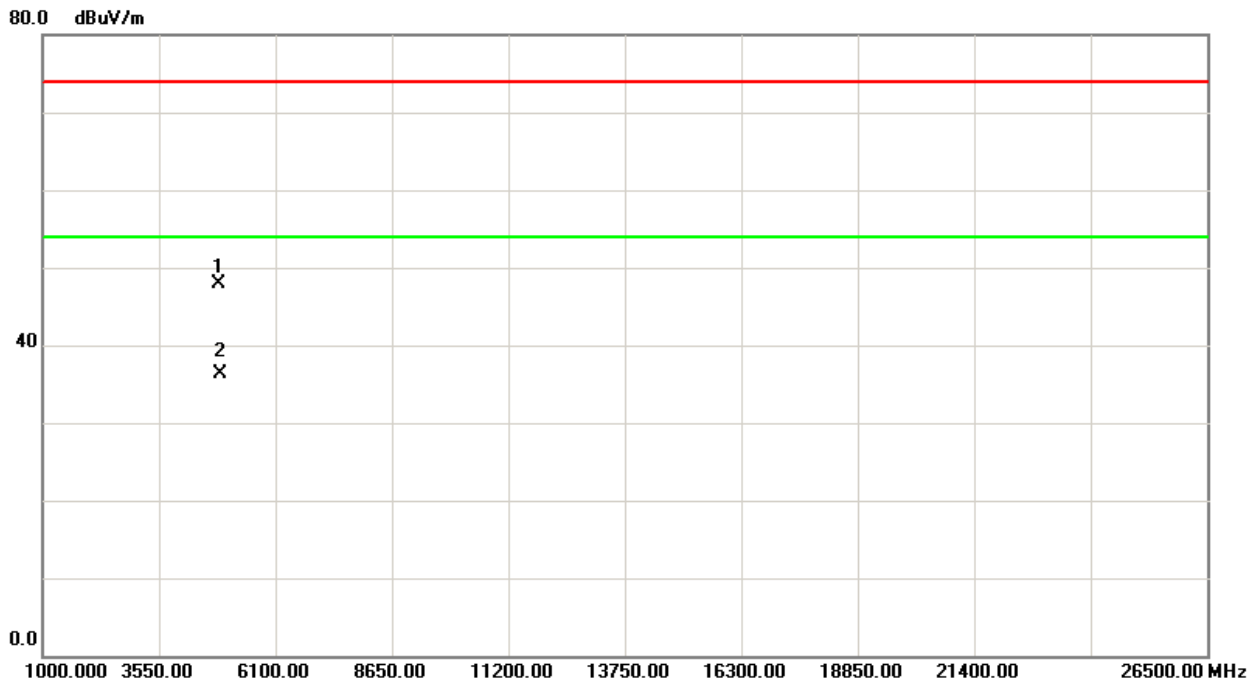
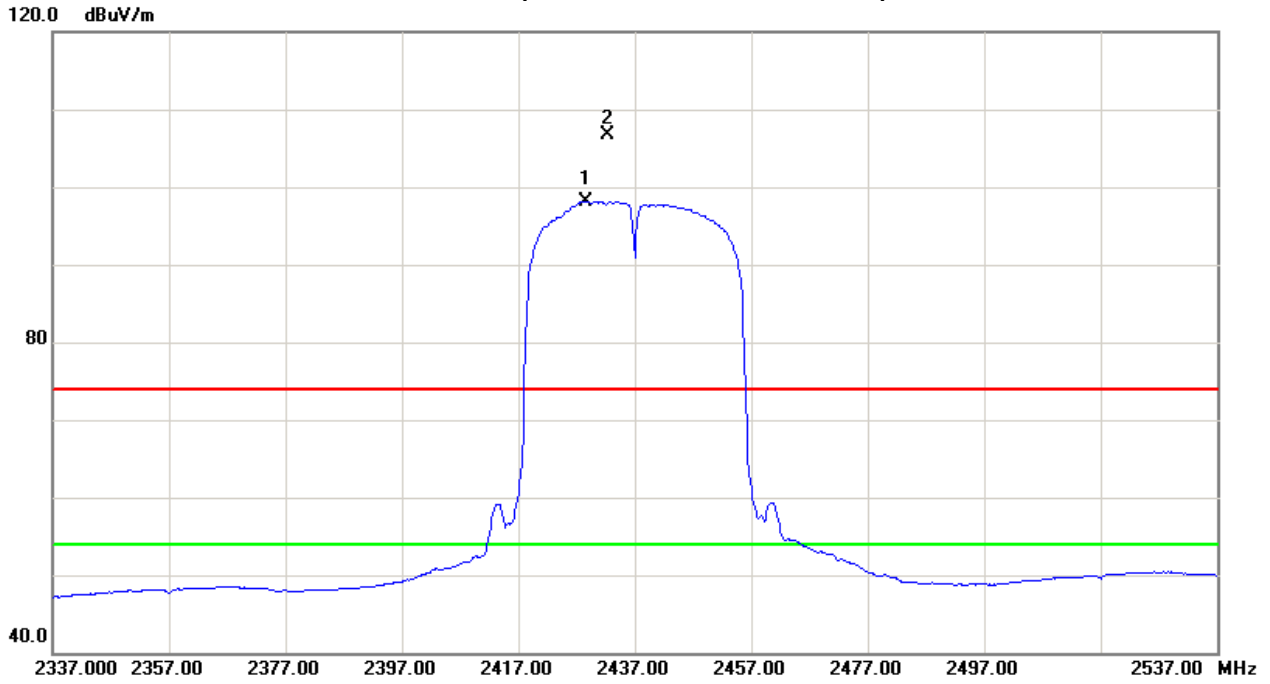
Remark:

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





TX CH06 (Above 1000 MHz, Vertical)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

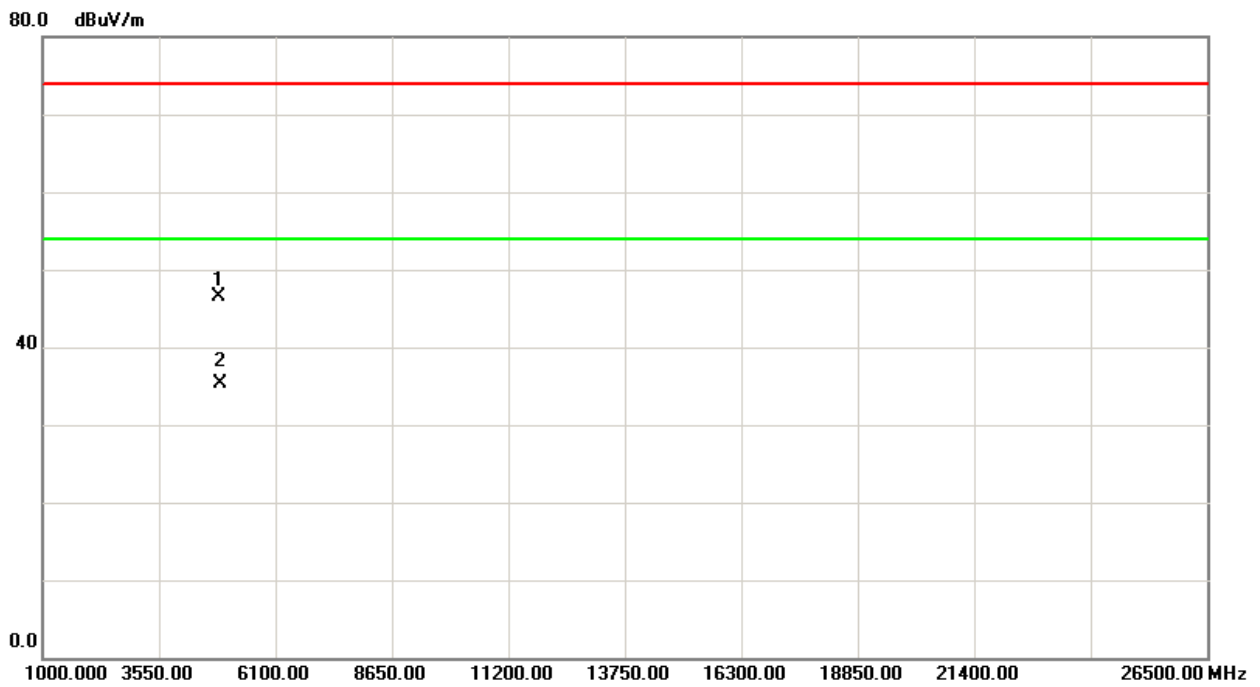
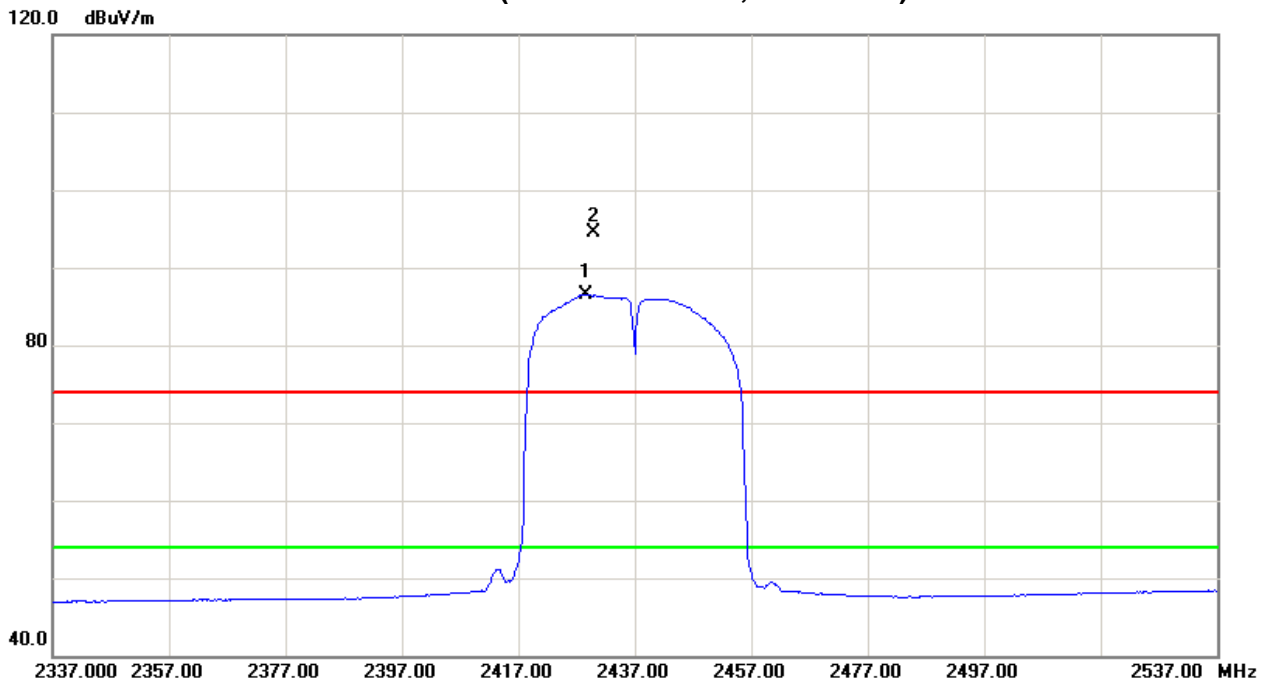
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2430.00</b>	<b>H</b>	<b>60.38</b>	<b>52.35</b>	<b>34.21</b>	<b>94.59</b>	<b>86.56</b>			<b>X/F</b>
4874.02	H	39.90	28.67	6.58	46.48	35.25	74.00	54.00	X/H

Remark:

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



TX CH06 (Above 1000 MHz, Horizontal)





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
<b>2459.80</b>	<b>V</b>	<b>71.66</b>	<b>62.20</b>	<b>34.30</b>	<b>105.96</b>	<b>96.50</b>			<b>X/F</b>
2483.50	V	29.02	17.90	34.37	63.39	52.27	74.00	54.00	X/E
4904.00	V	39.23	28.75	6.67	45.90	35.42	74.00	54.00	X/H

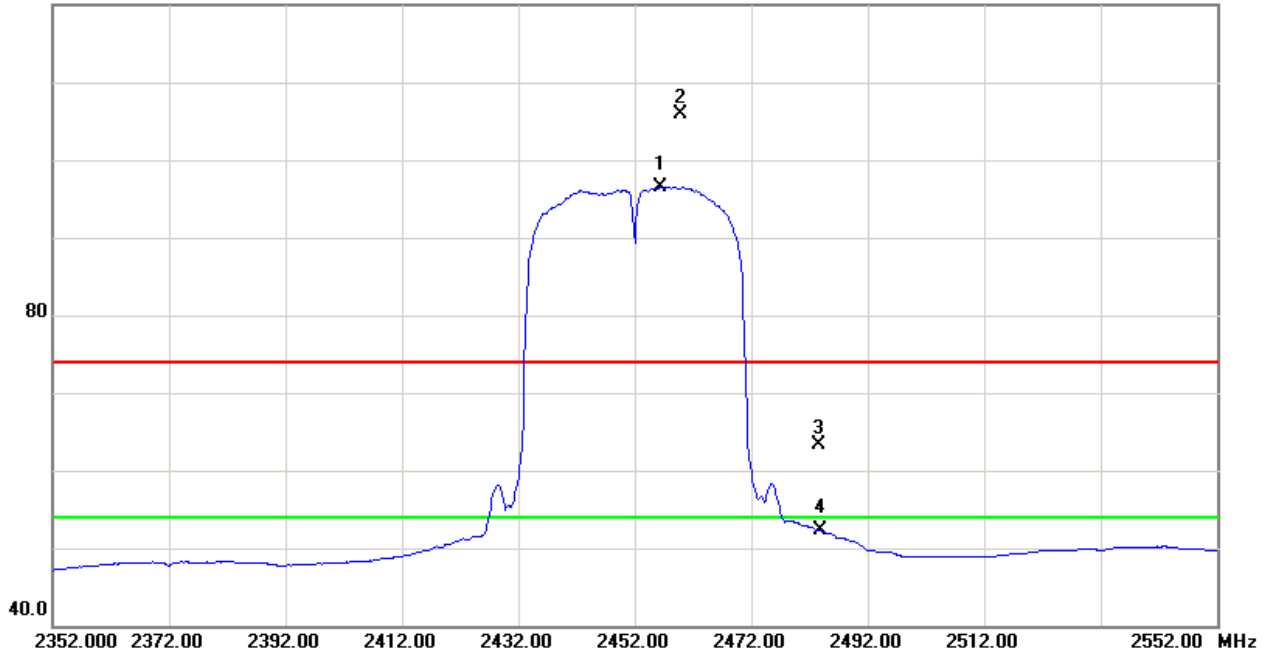
Remark:

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

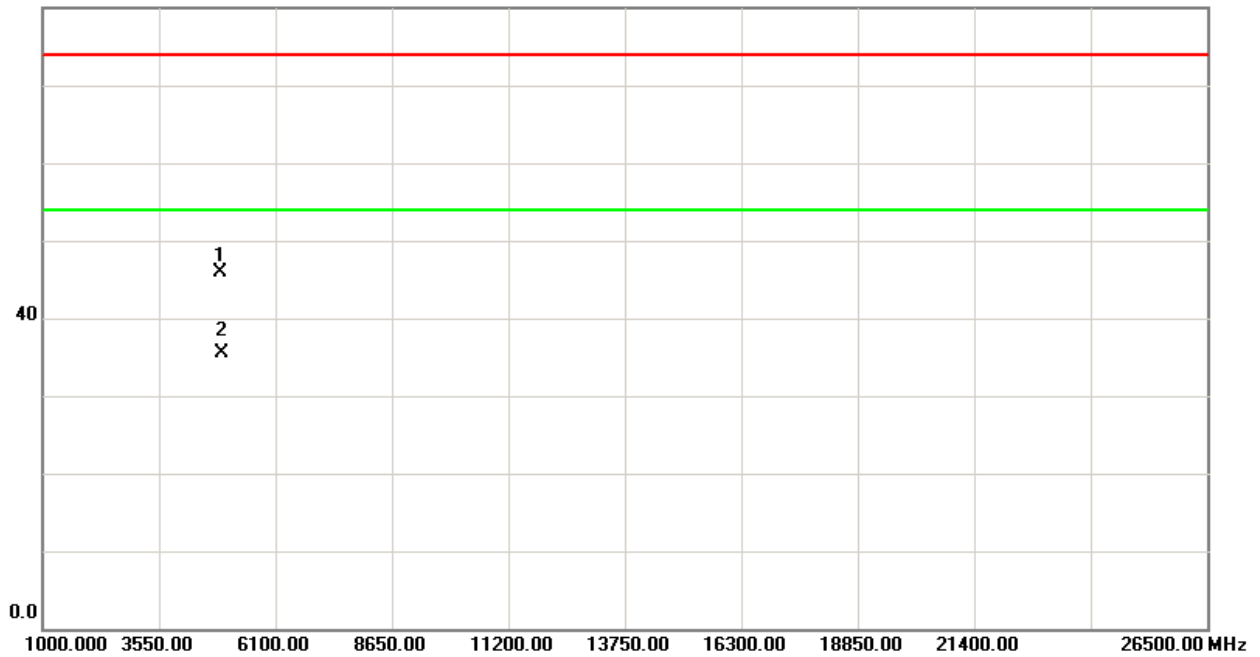


TX CH09 (Above 1000 MHz, Vertical)

120.0 dBuV/m



80.0 dBuV/m





EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2452MHz		

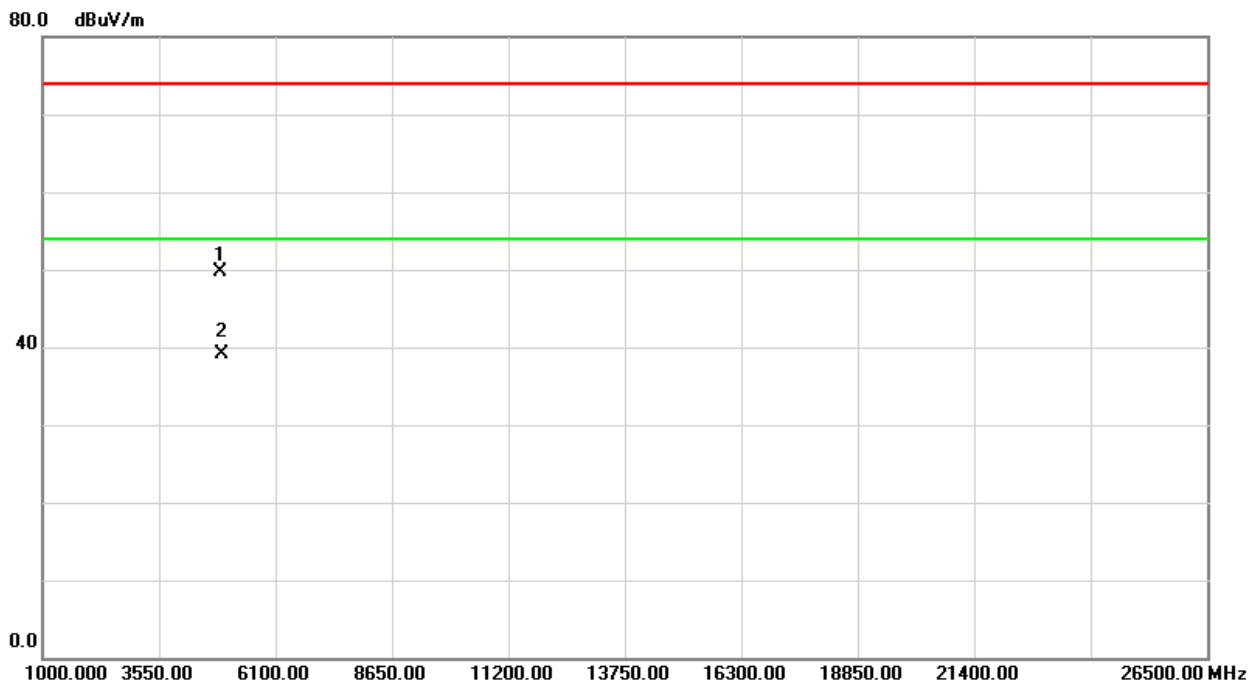
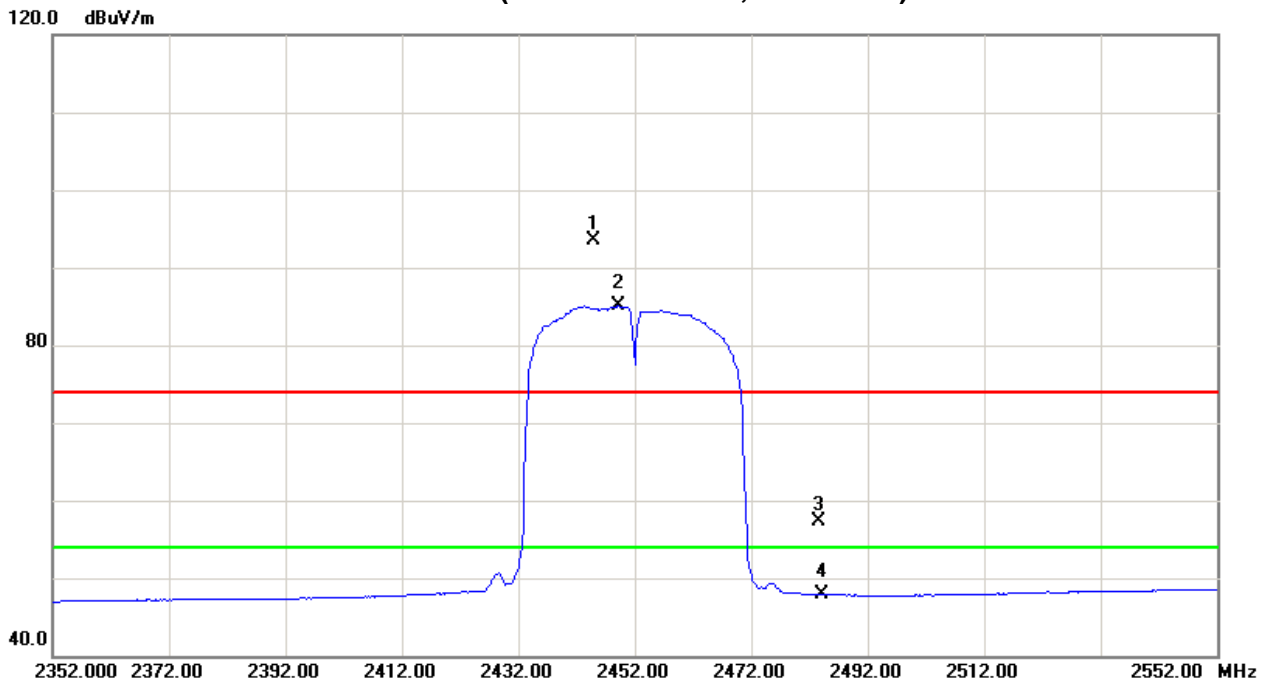
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
<b>2445.00</b>	<b>H</b>	<b>59.16</b>	<b>50.76</b>	<b>34.27</b>	<b>93.43</b>	<b>85.03</b>			<b>X/F</b>
2483.50	H	22.94	13.51	34.37	57.31	47.88	74.00	54.00	X/E
4904.02	H	43.01	32.46	6.67	49.68	39.13	74.00	54.00	X/H

**Remark:**

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



TX CH09 (Above 1000 MHz, Horizontal)





**5. BANDWIDTH TEST**

**5.1 Applied procedures / limit**

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

**5.1.1 MEASUREMENT INSTRUMENTS LIST**

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

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

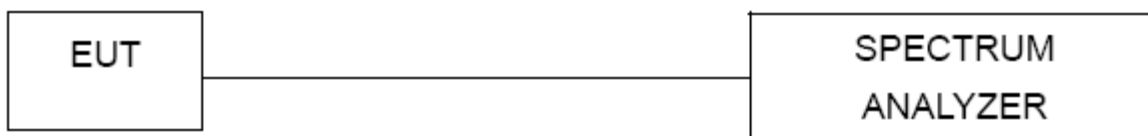
**5.1.2 TEST PROCEDURE**

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

**5.1.3 DEVIATION FROM STANDARD**

No deviation.

**5.1.4 TEST SETUP**



**5.1.5 EUT OPERATION CONDITIONS**

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

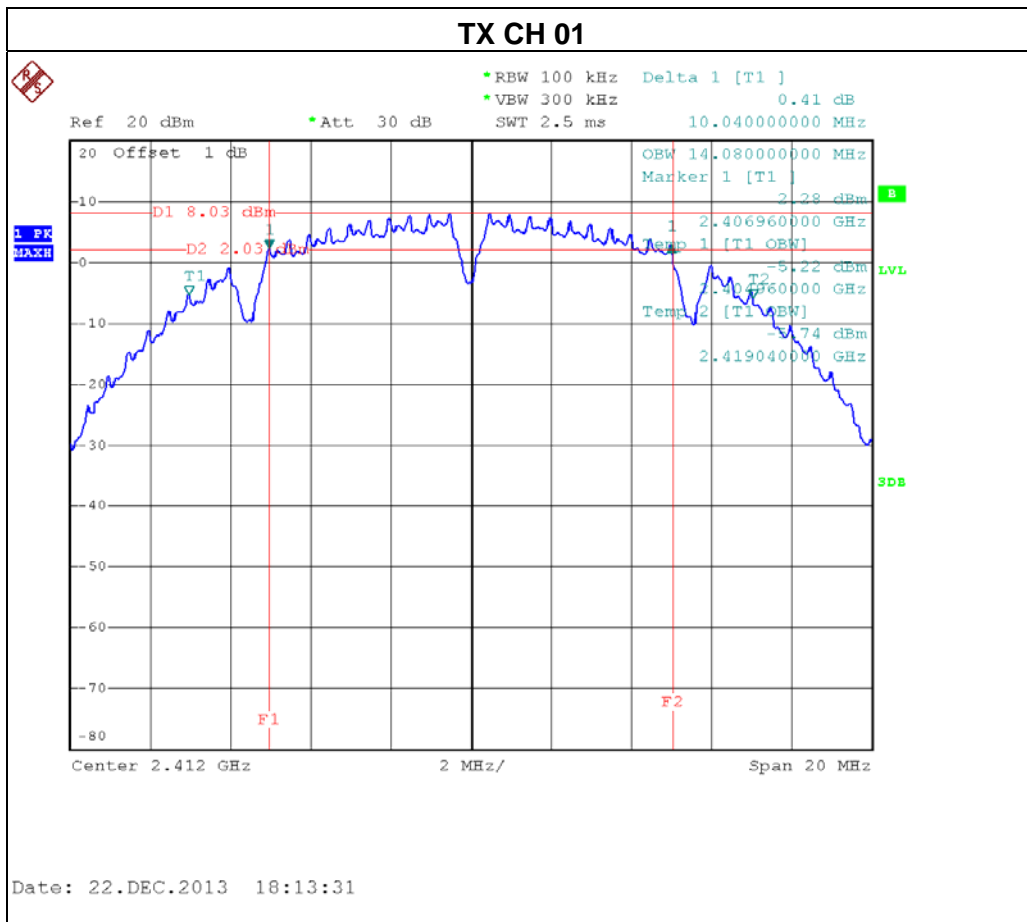


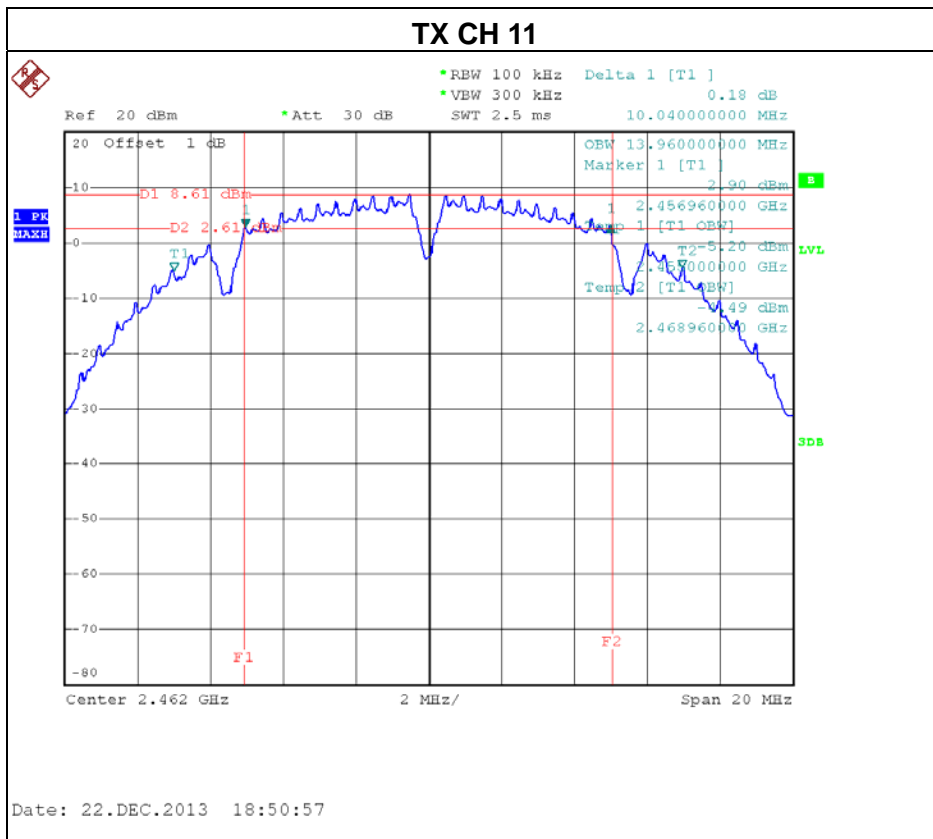
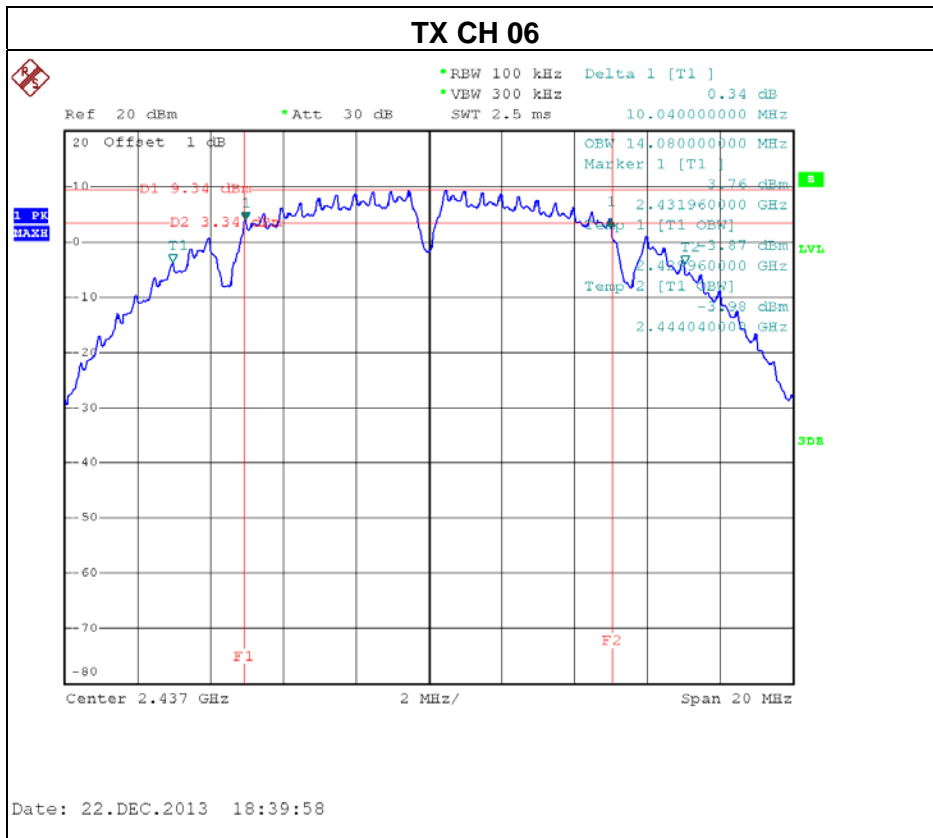


**5.1.6 TEST RESULTS**

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name. :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	10.04	PASS
CH06	2437	10.04	PASS
CH11	2462	10.04	PASS

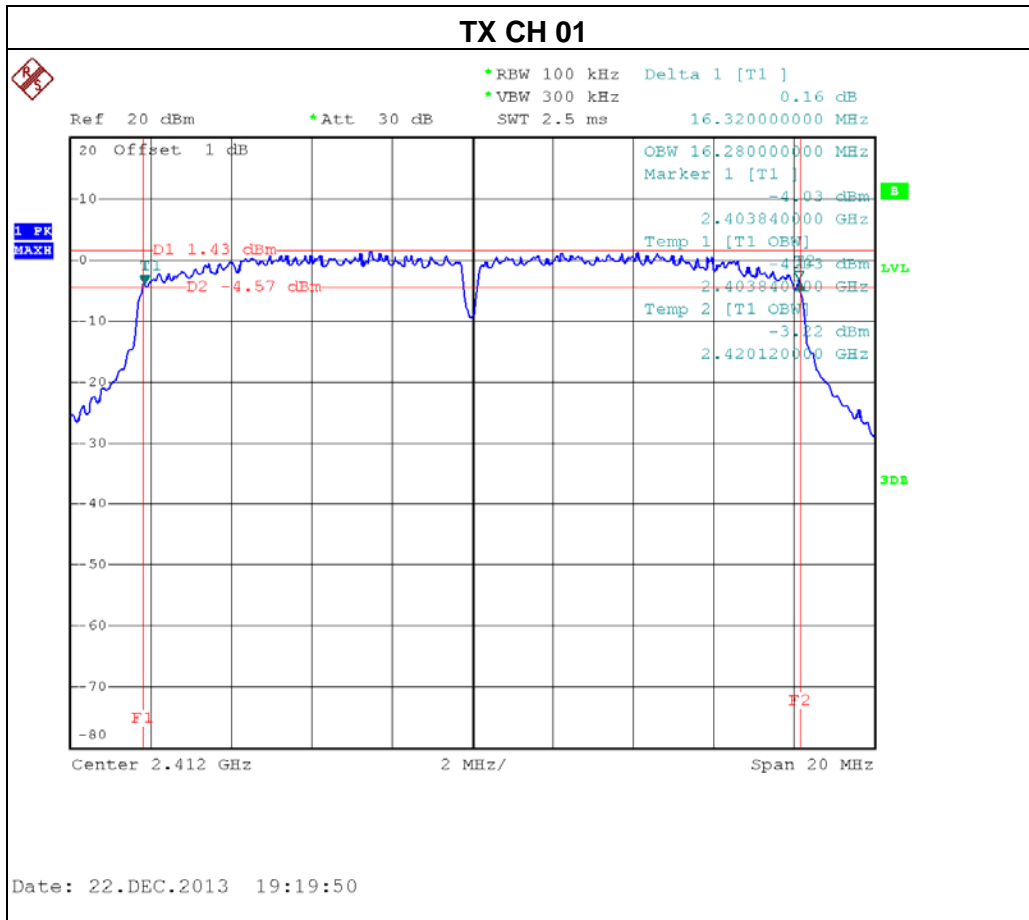


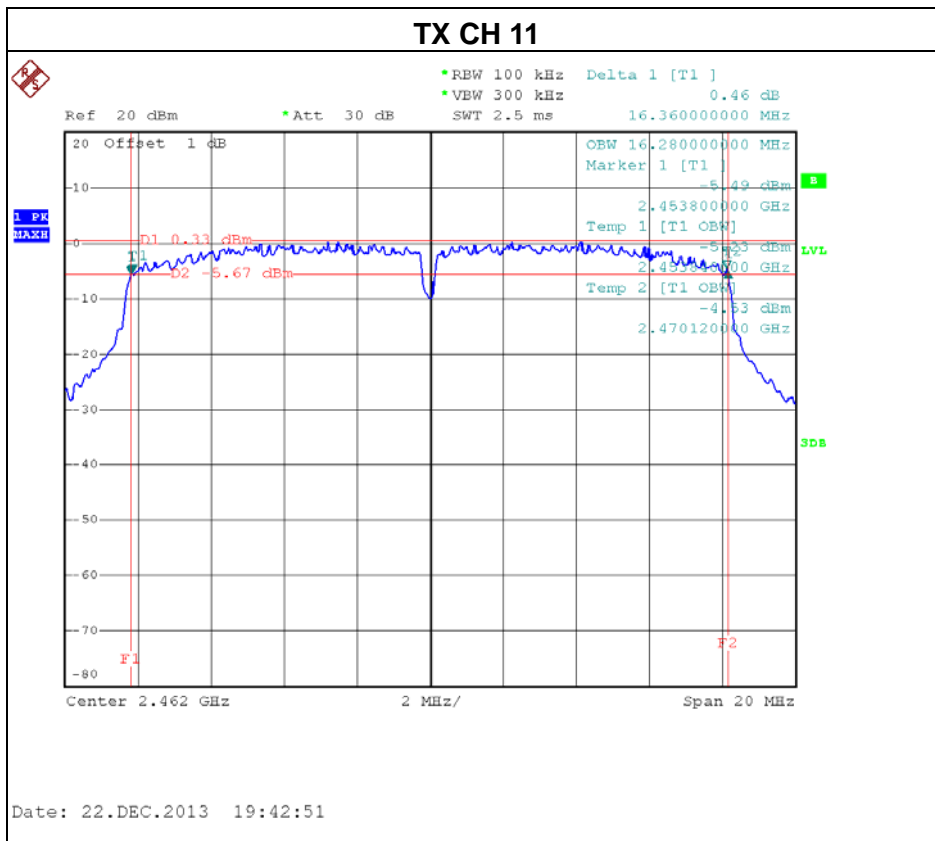
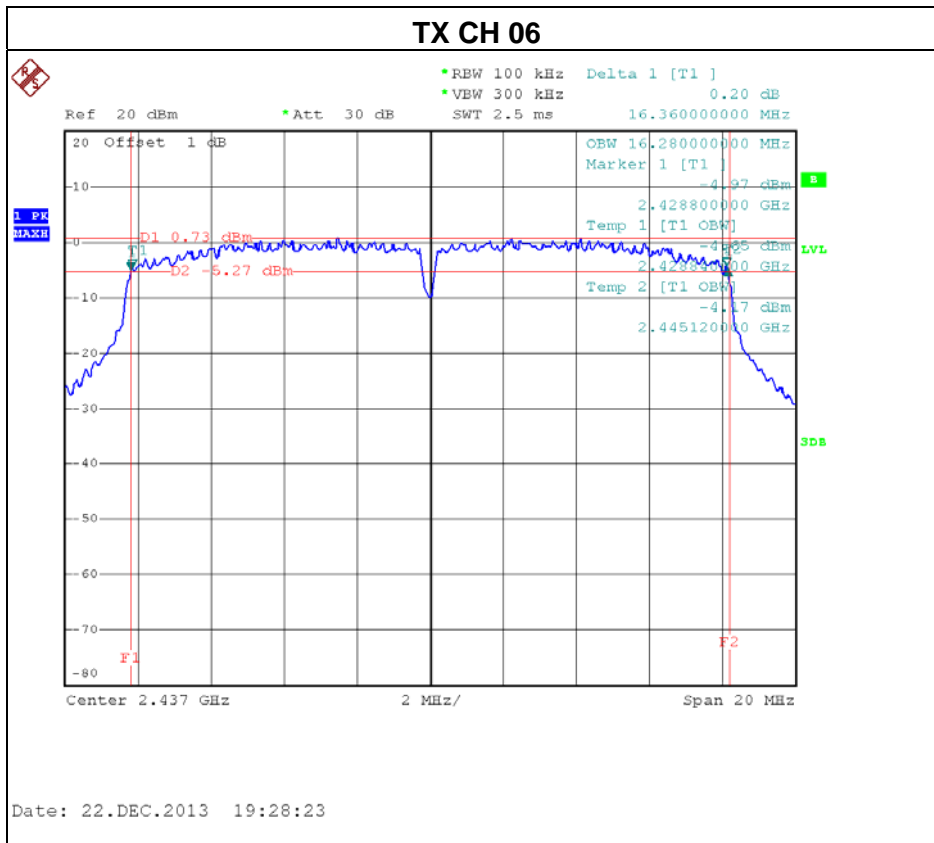




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name. :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	16.32	PASS
CH06	2437	16.36	PASS
CH11	2462	16.36	PASS

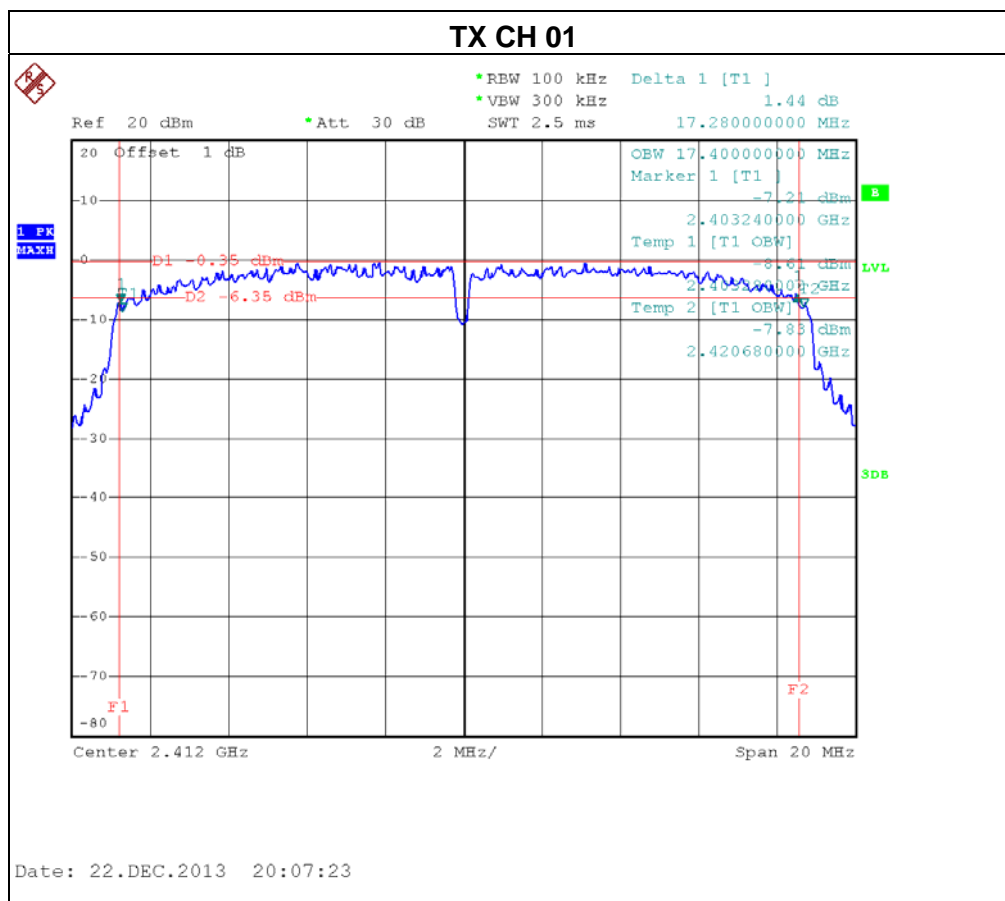


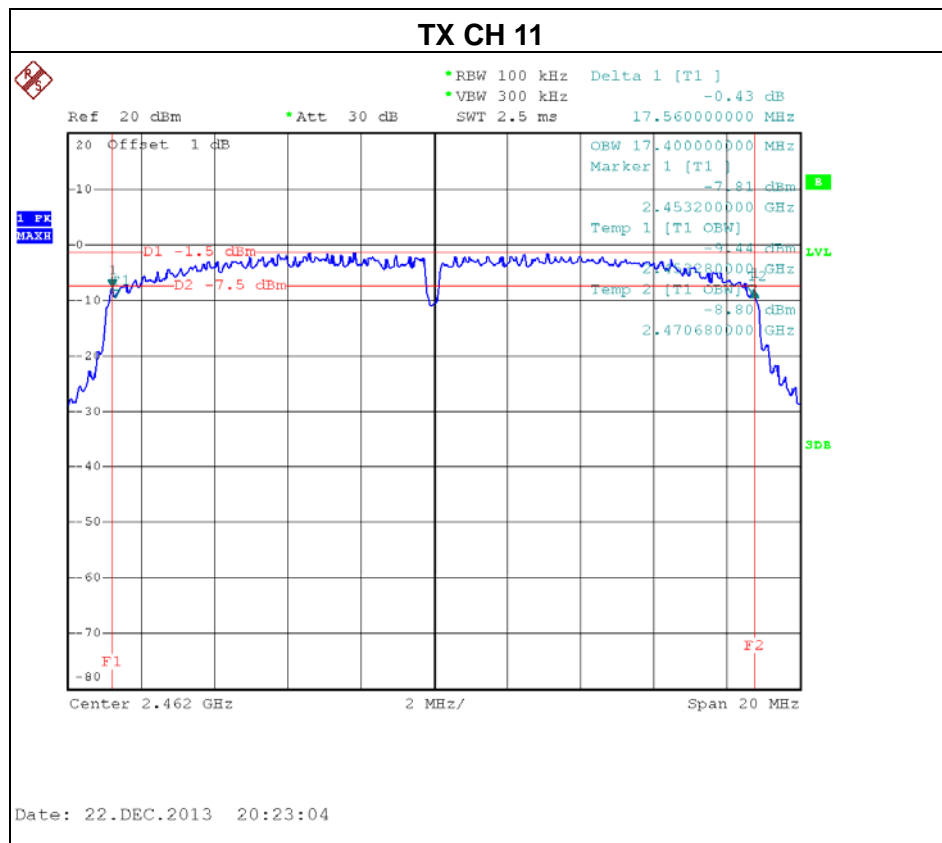
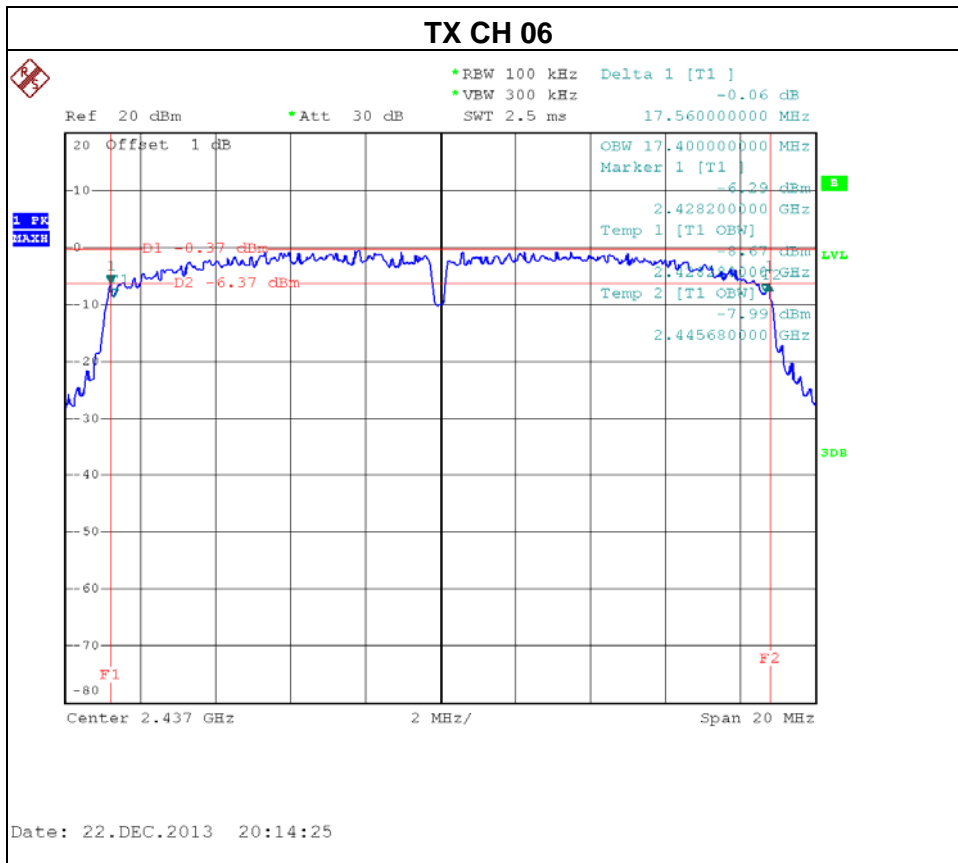




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name. :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	17.28	PASS
CH06	2437	17.56	PASS
CH11	2462	17.56	PASS

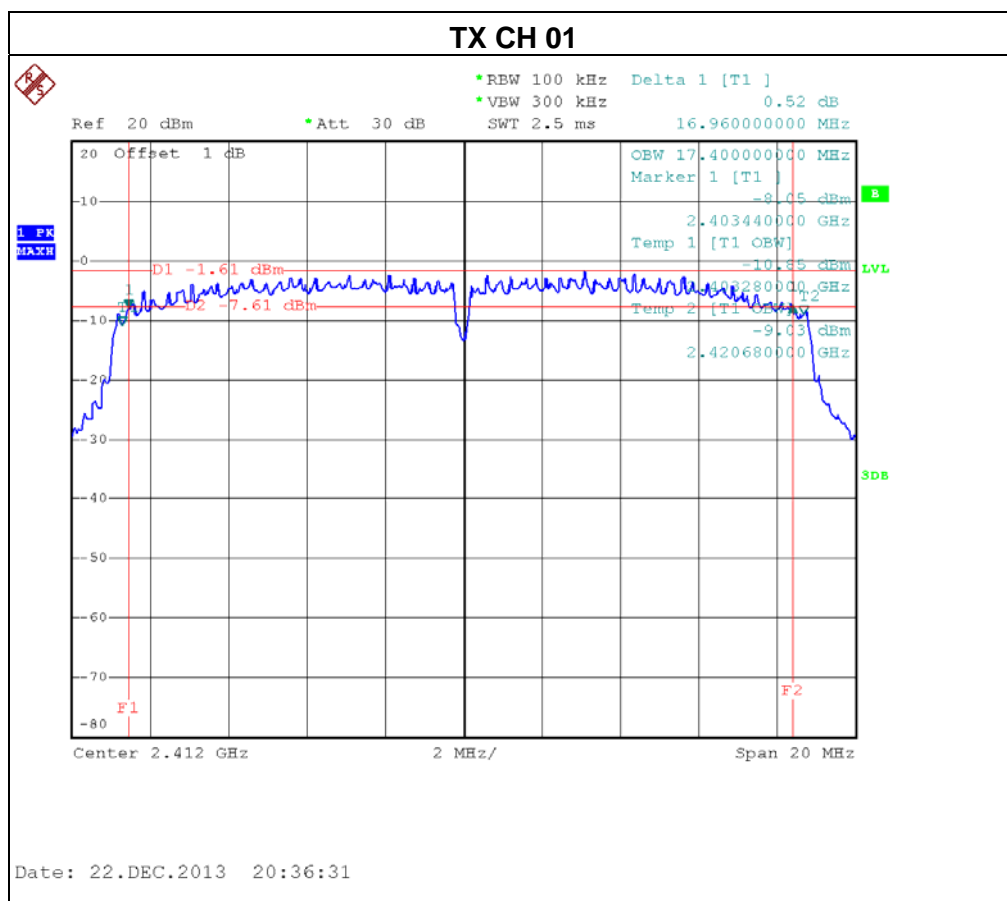


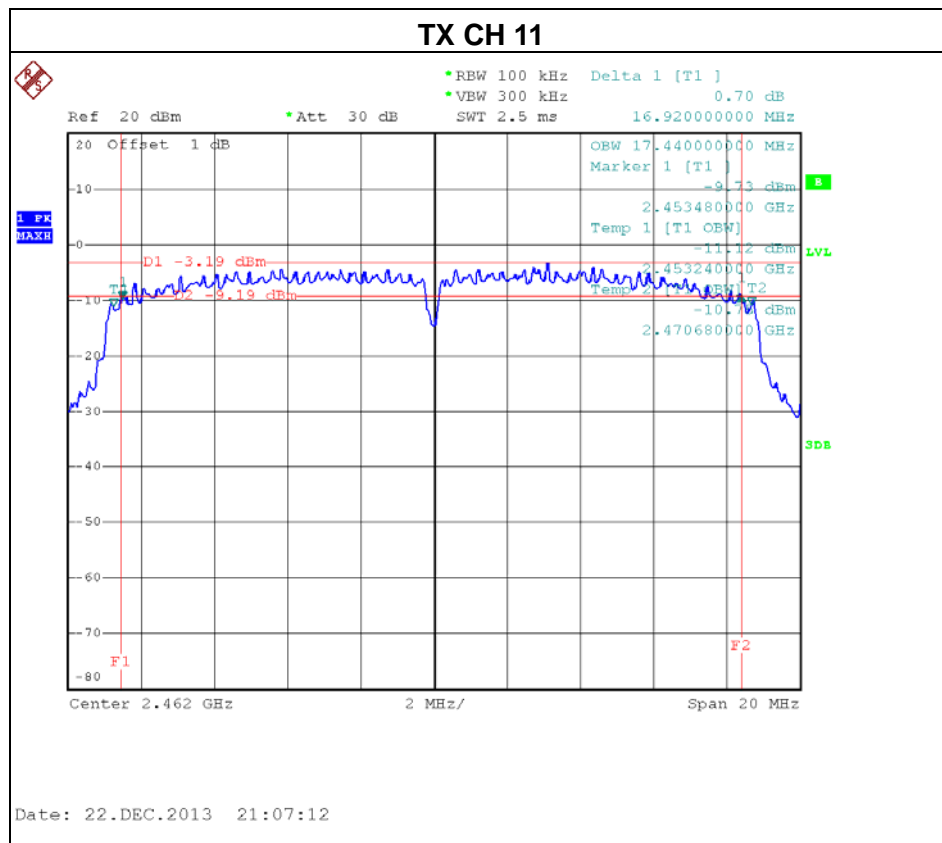
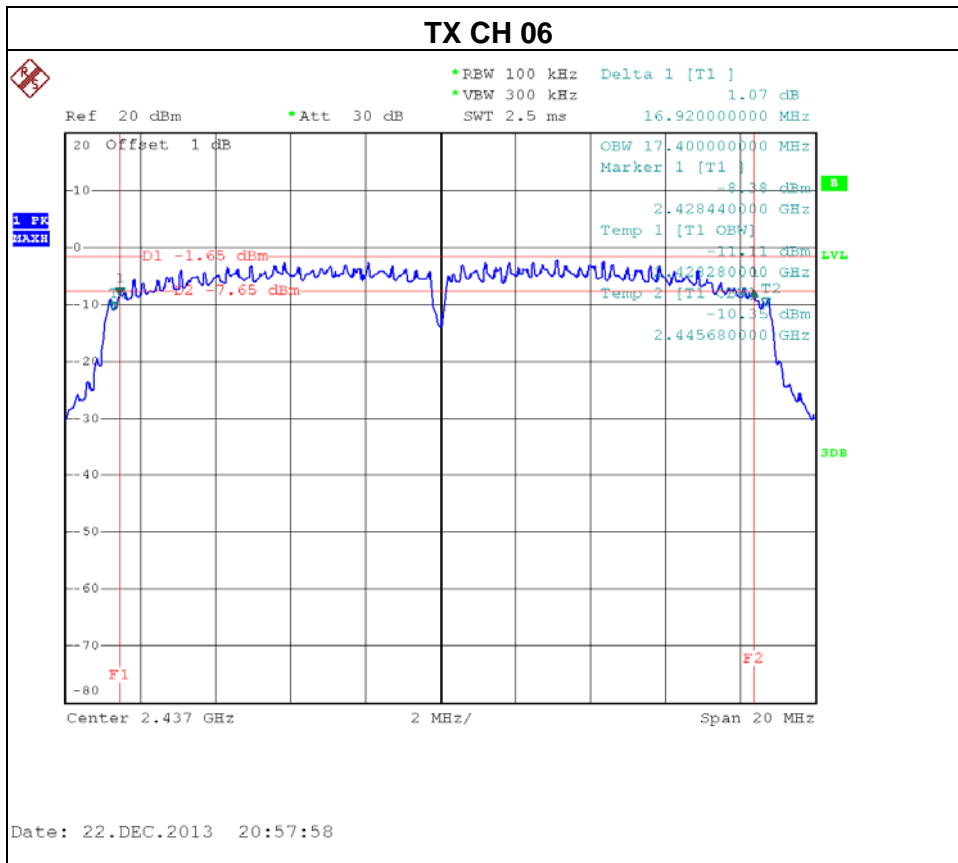




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name. :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 2		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH01	2412	16.96	PASS
CH06	2437	16.92	PASS
CH11	2462	16.92	PASS



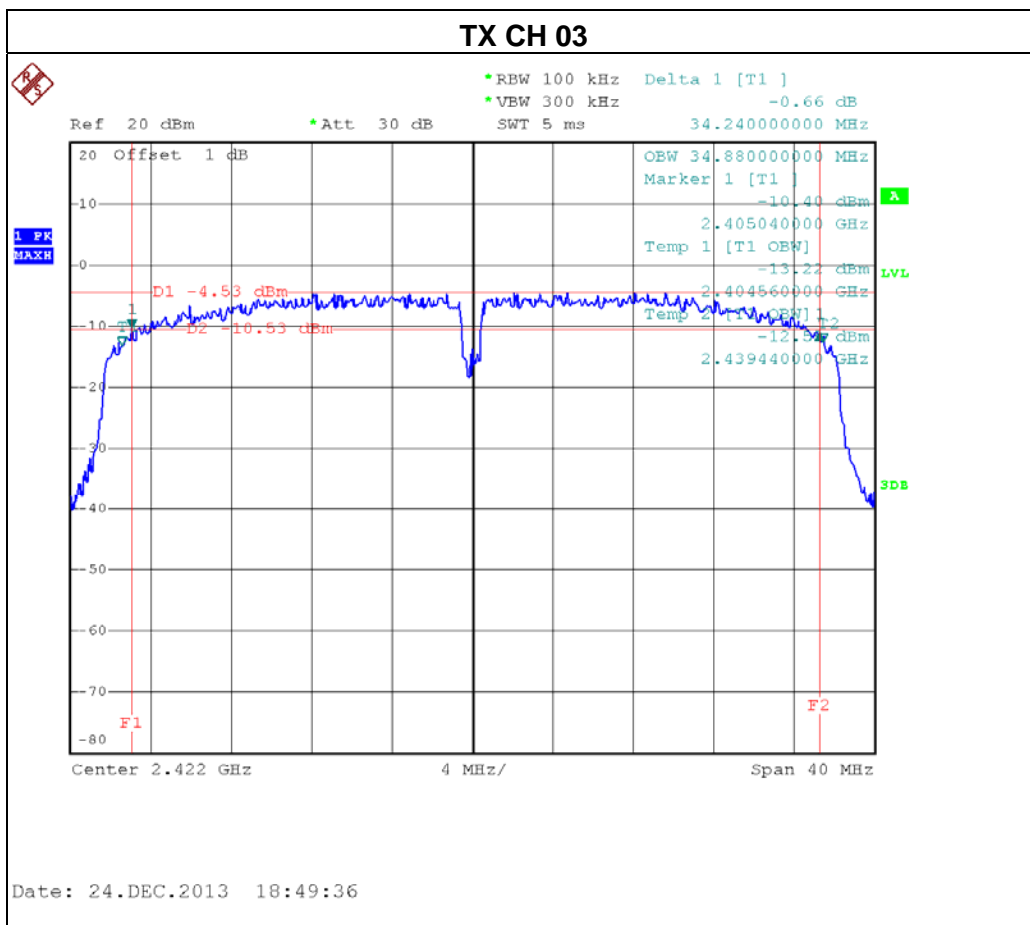


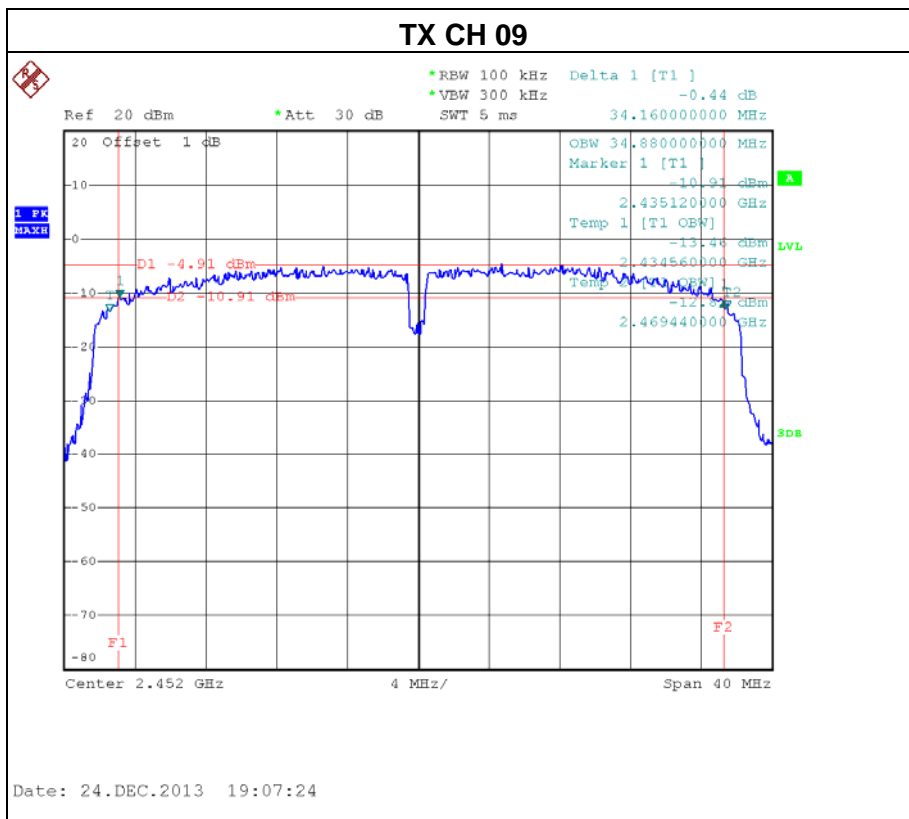
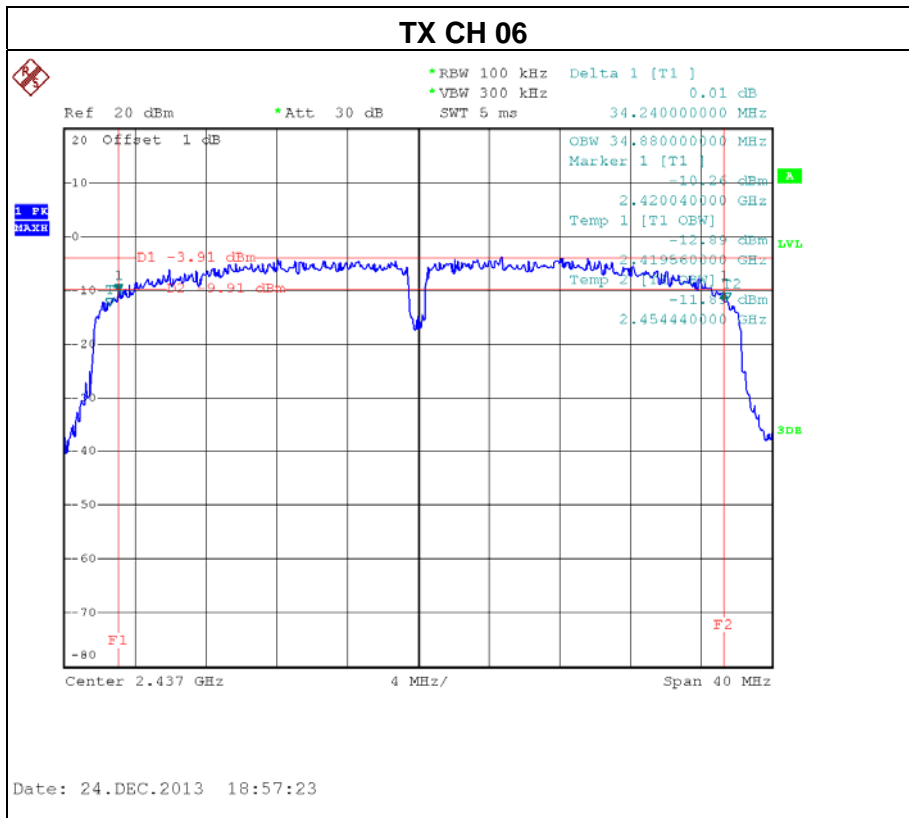




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name. :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH03	2422	34.24	PASS
CH06	2437	34.24	PASS
CH09	2452	34.16	PASS

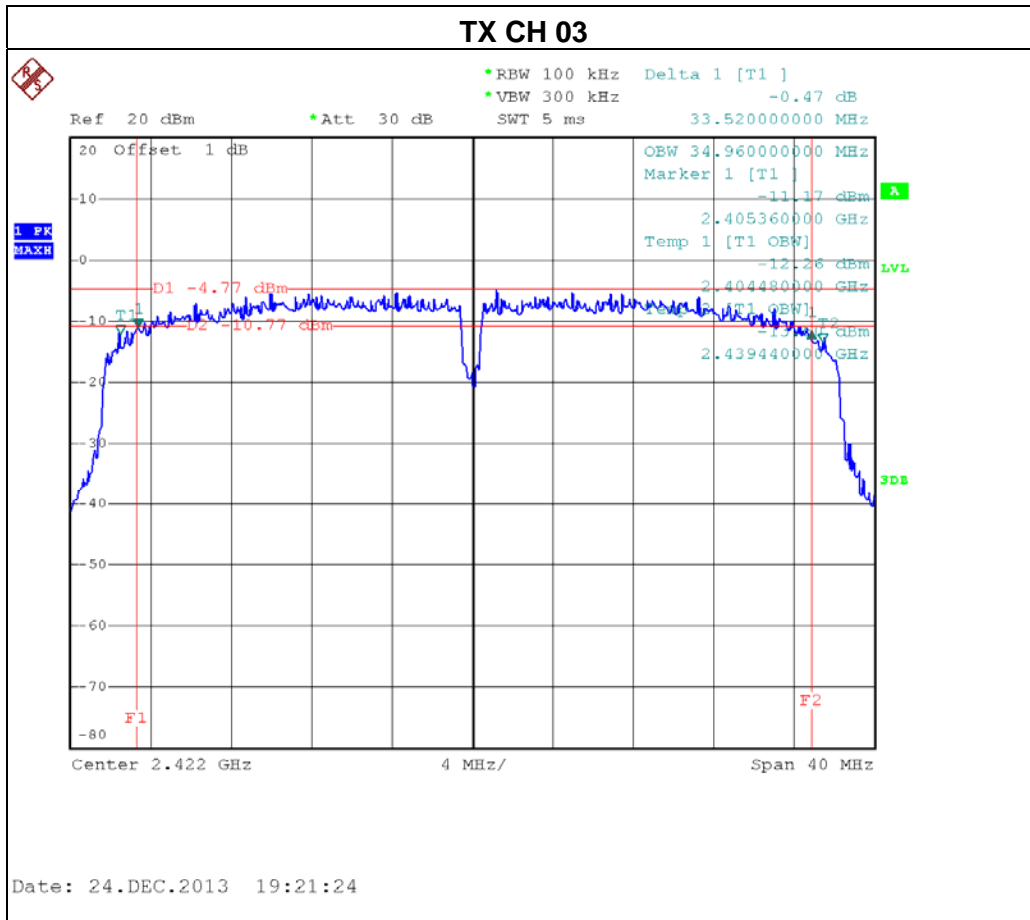


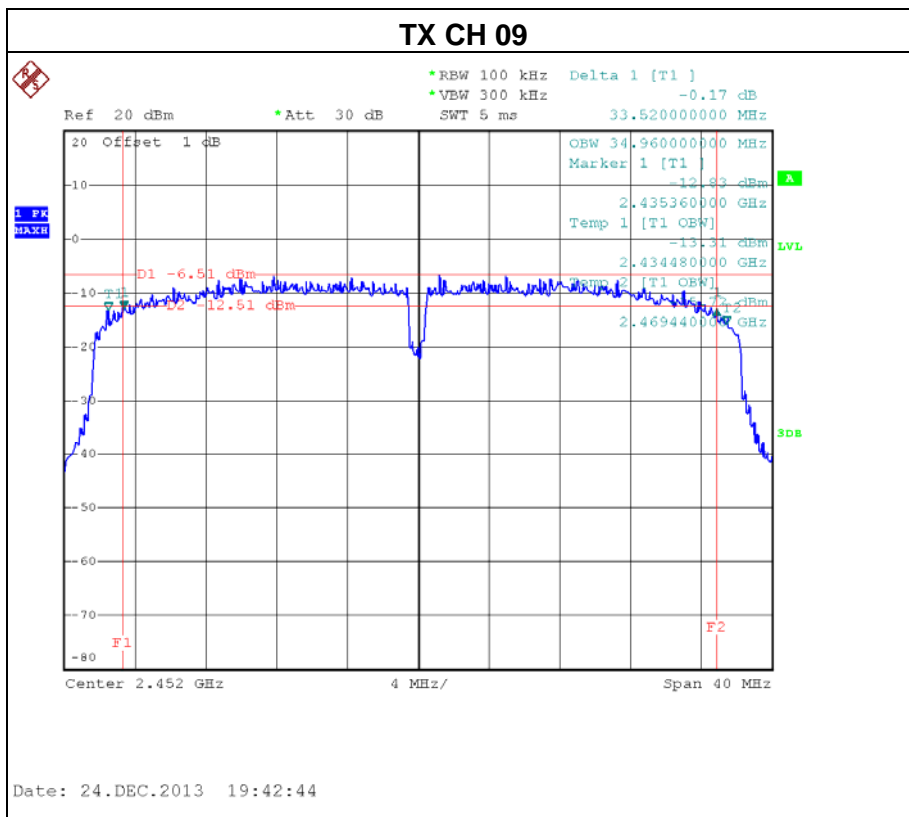
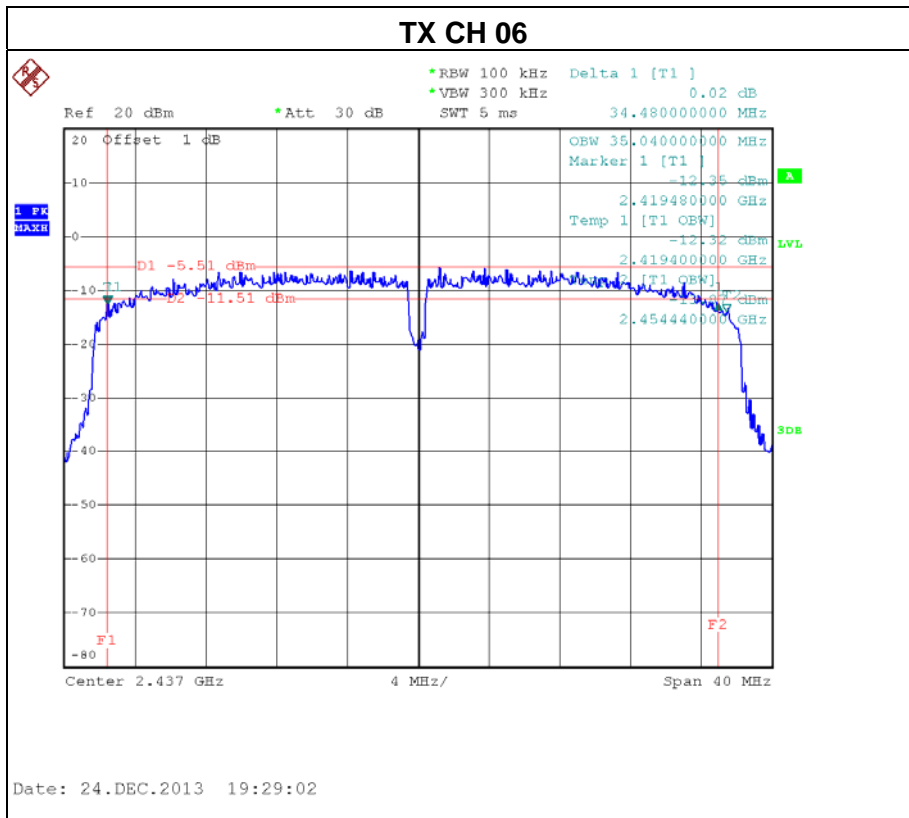




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name. :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 2		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	Result
CH03	2422	33.52	PASS
CH06	2437	34.48	PASS
CH09	2452	33.52	PASS







**6. MAXIMUM OUTPUT POWER TEST**

**6.1 Applied procedures / limit**

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

**6.1.1 MEASUREMENT INSTRUMENTS LIST**

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

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

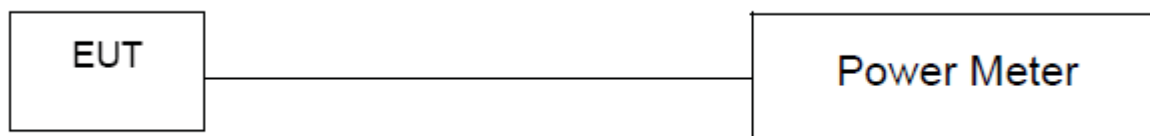
**6.1.2 TEST PROCEDURE**

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

**6.1.3 DEVIATION FROM STANDARD**

No deviation.

**6.1.4 TEST SETUP**



**6.1.5 EUT OPERATION CONDITIONS**

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



**6.1.6 TEST RESULTS**

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	17.52	30	1
2437	17.98	30	1
2462	17.48	30	1

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	23.28	30	1
2437	23.59	30	1
2462	23.28	30	1



EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11		

ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	22.30	30	1
2437	22.90	30	1
2462	22.73	30	1

ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	22.29	30	1
2437	22.98	30	1
2462	22.67	30	1

ANT 1 + ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2412	25.31	30	1
2437	25.95	30	1
2462	25.71	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).all transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=5.08dBi



EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09		

ANT 1			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2422	21.89	30	1
2437	21.90	30	1
2452	22.00	30	1

ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2422	21.80	30	1
2437	21.87	30	1
2452	22.06	30	1

ANT 1 + ANT 2			
Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
2422	24.86	30	1
2437	24.90	30	1
2452	25.04	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).all transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=5.08dBi





**7. ANTENNA CONDUCTED SPURIOUS EMISSION**

**7.1 Applied procedures / limit**

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

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

**7.1.1 MEASUREMENT INSTRUMENTS LIST**

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

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

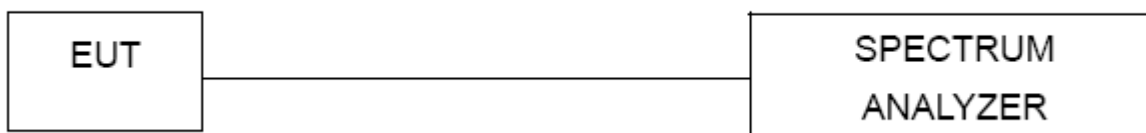
**7.1.2 TEST PROCEDURE**

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

**7.1.3 DEVIATION FROM STANDARD**

No deviation.

**7.1.4 TEST SETUP**



**7.1.5 EUT OPERATION CONDITIONS**

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



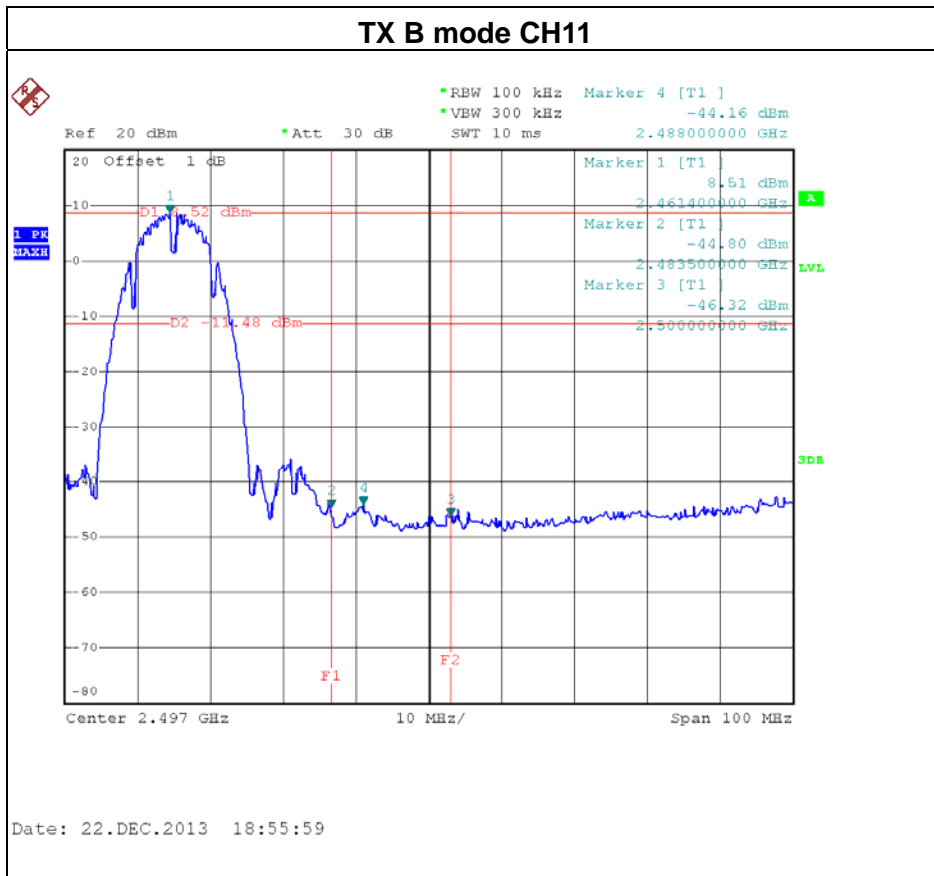
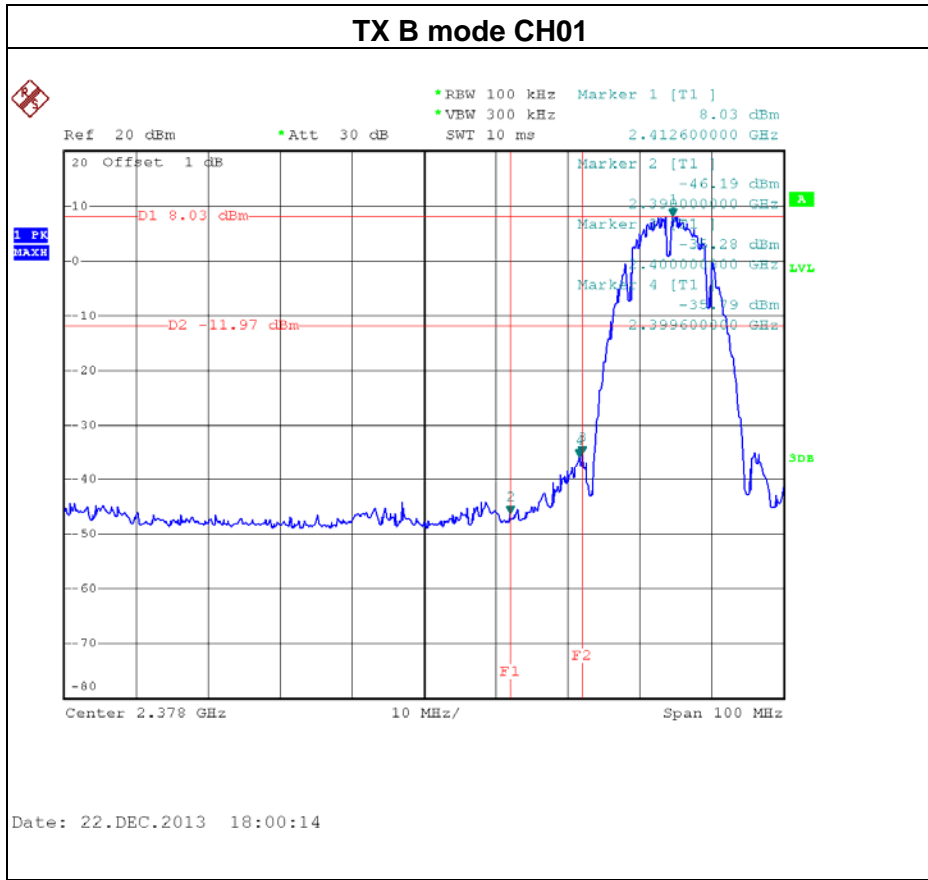
**7.1.6 TEST RESULTS**

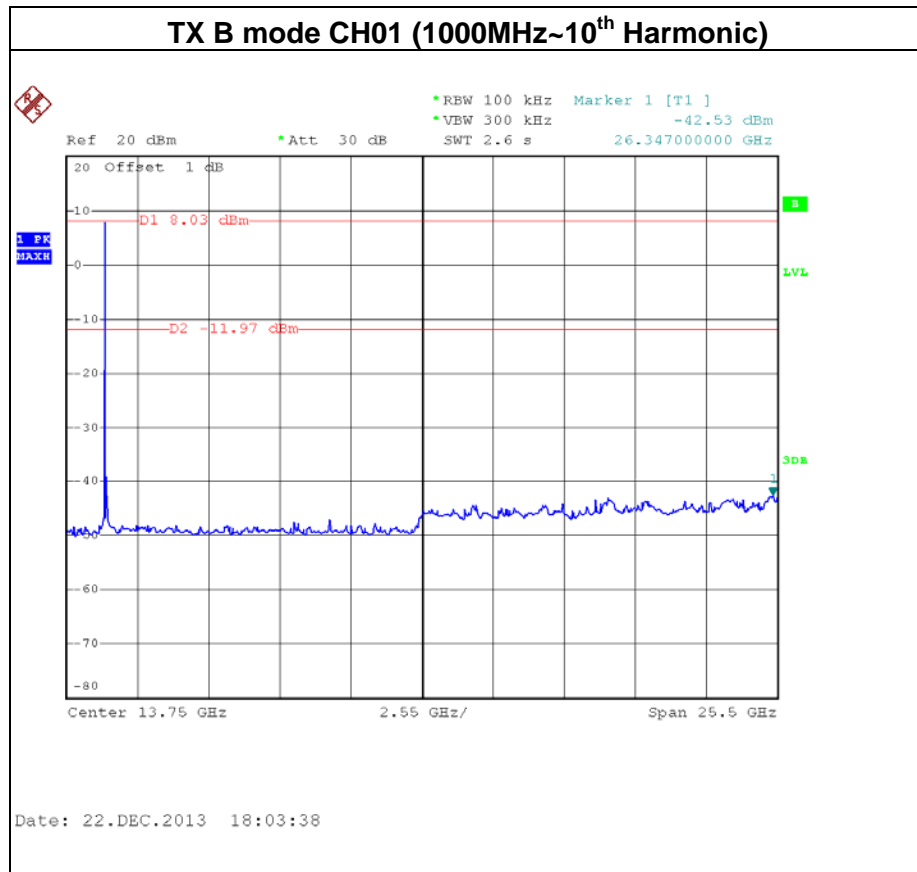
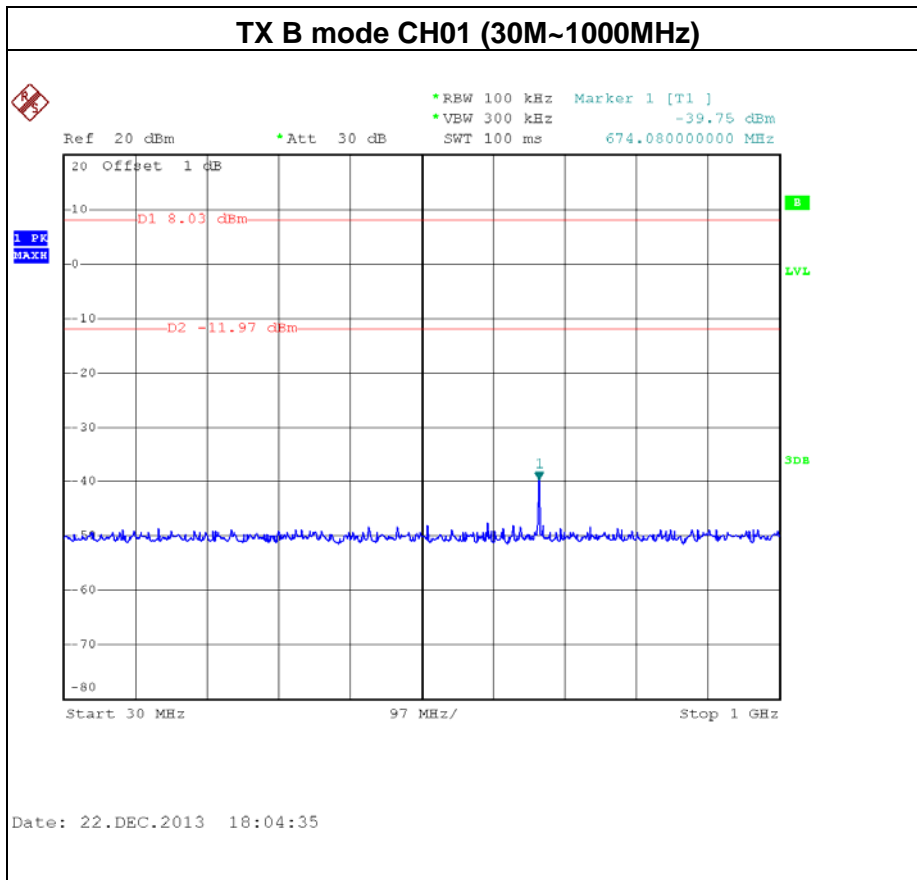
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06 , CH11		

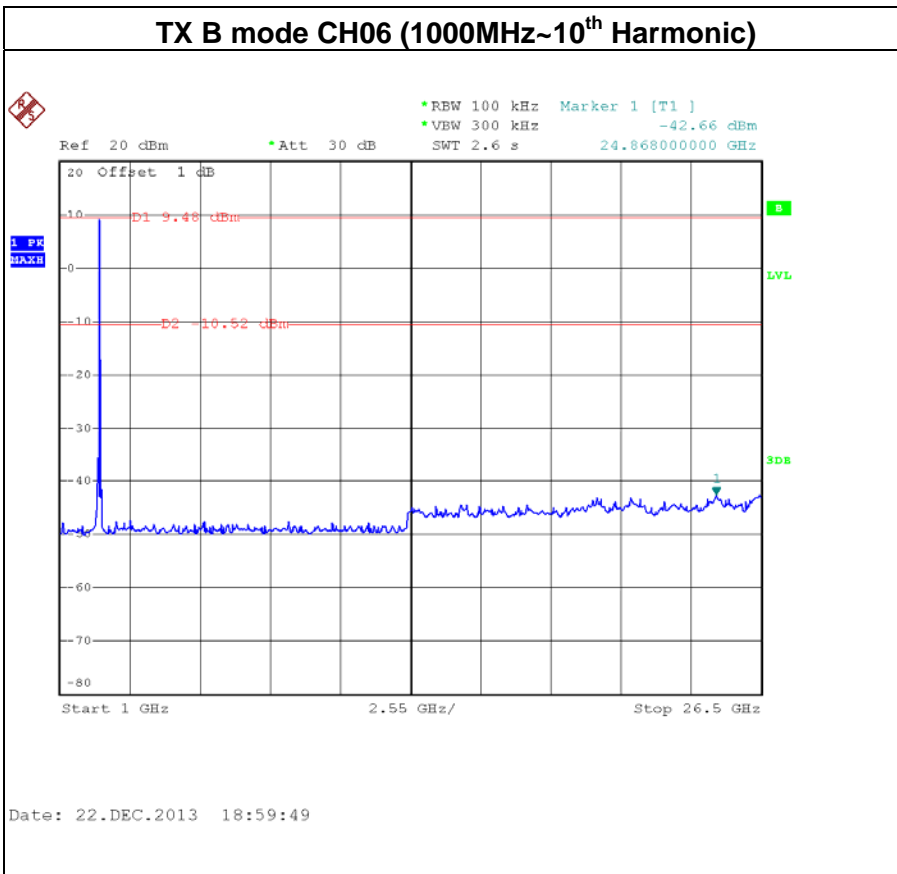
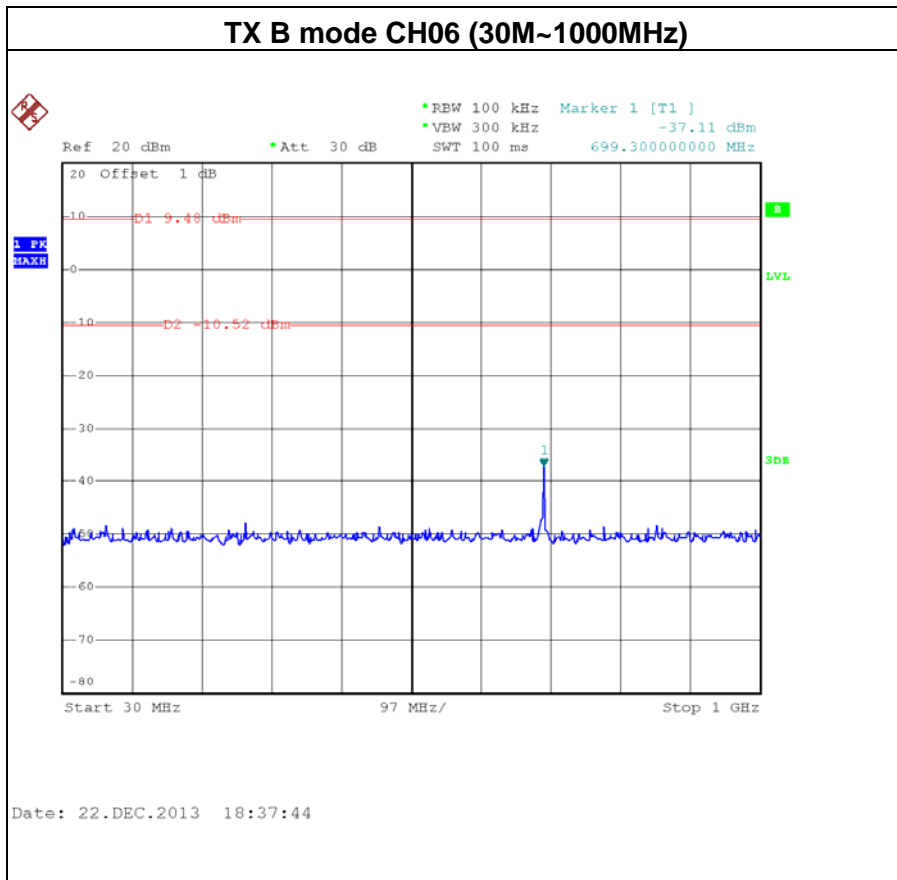
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-35.28	2488.00	-44.16

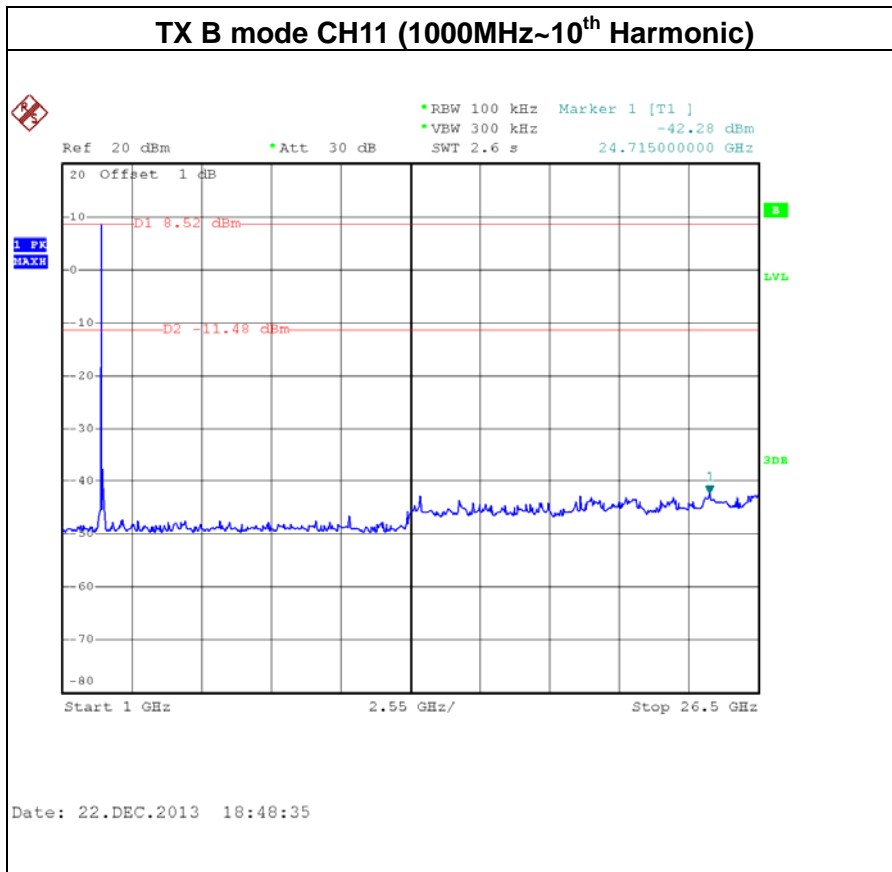
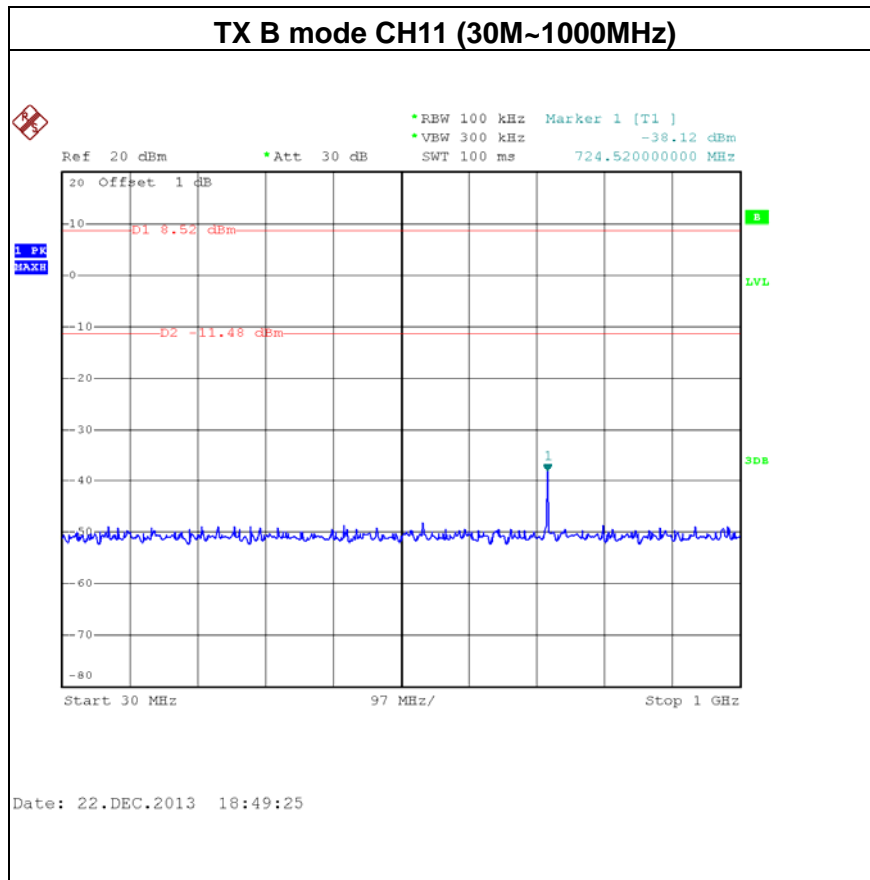
**Result**

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





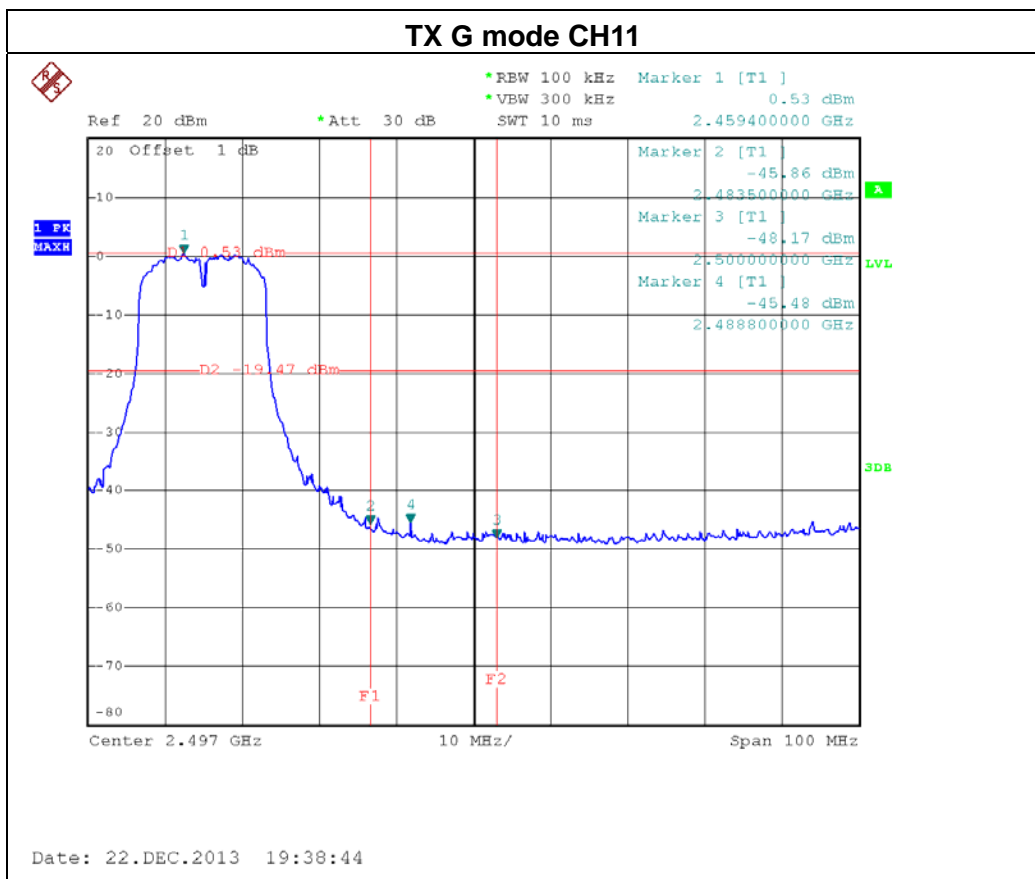
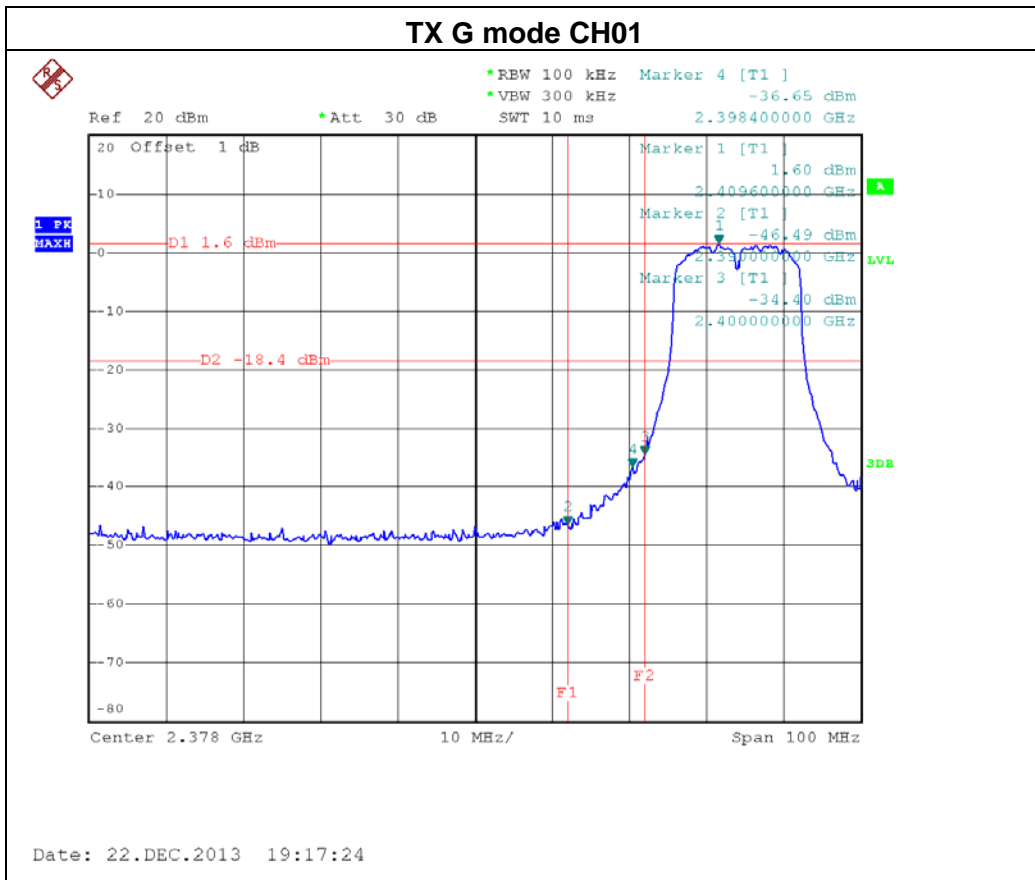




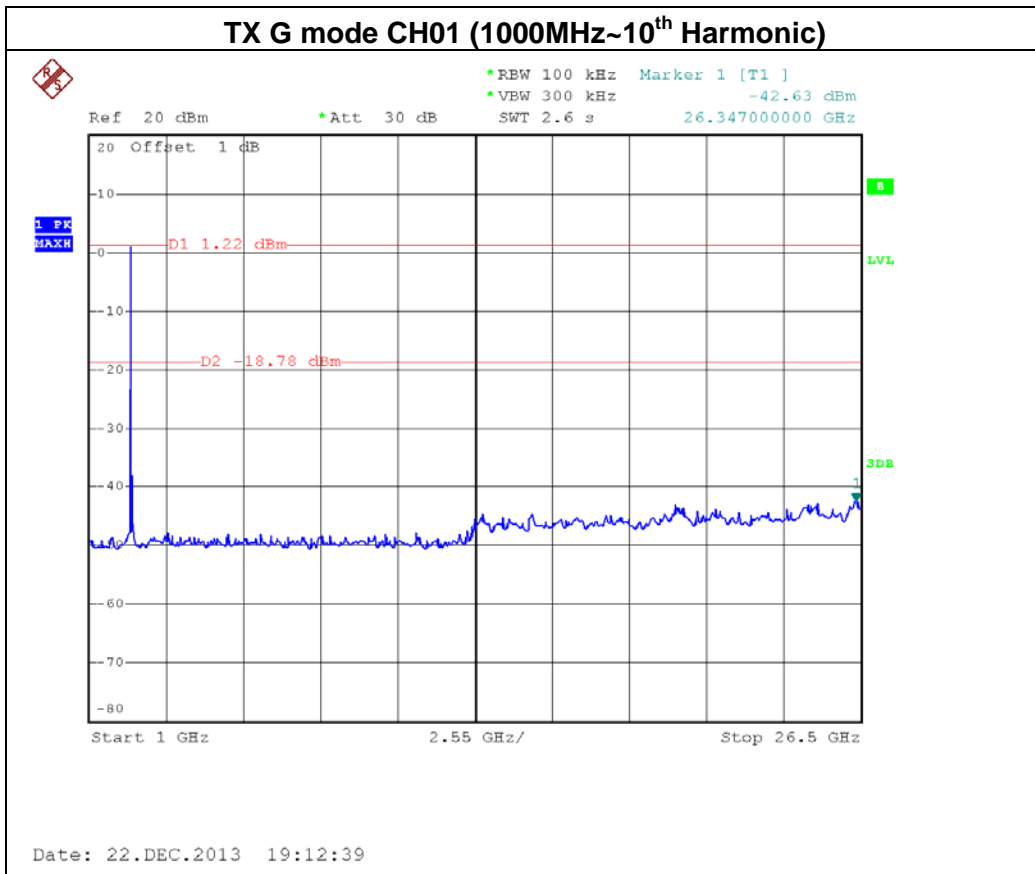
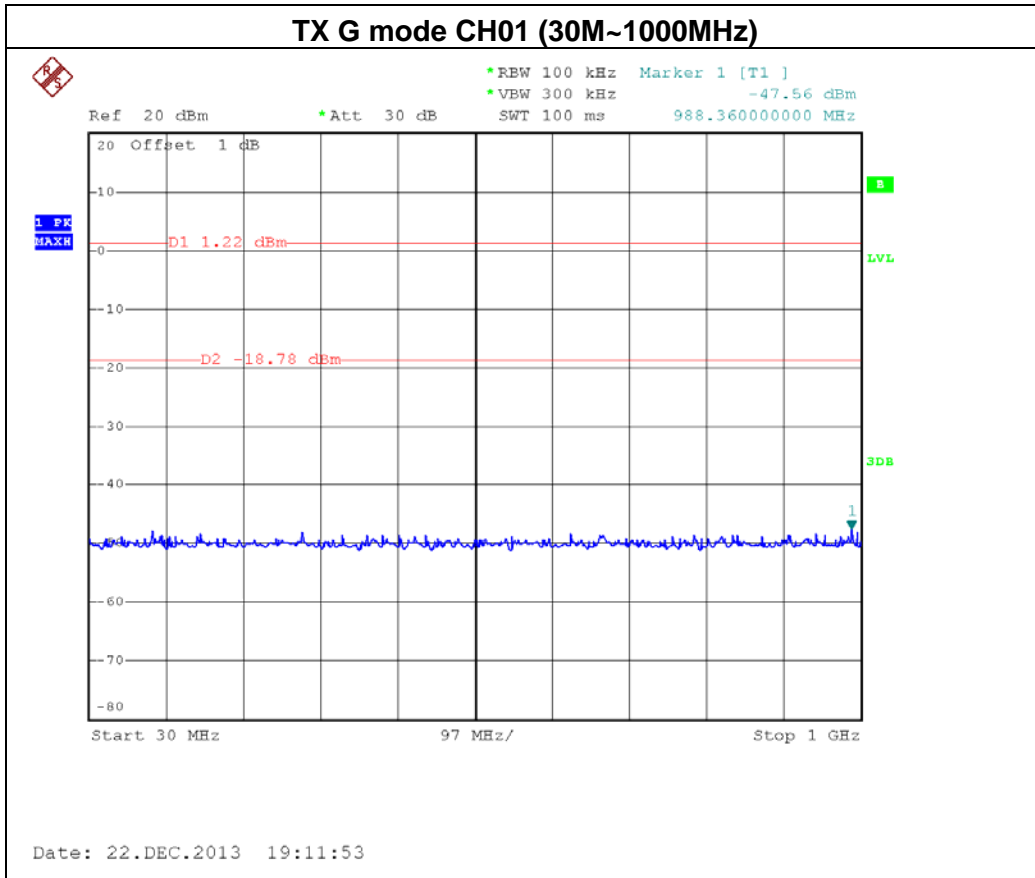


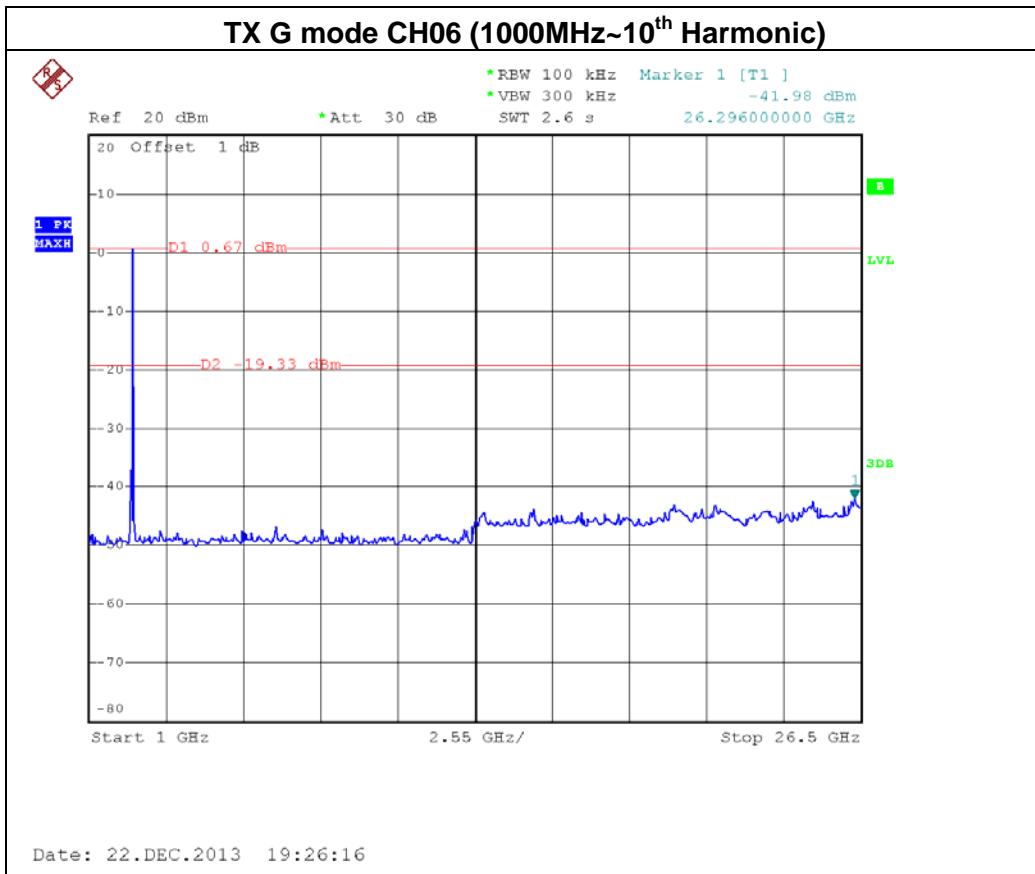
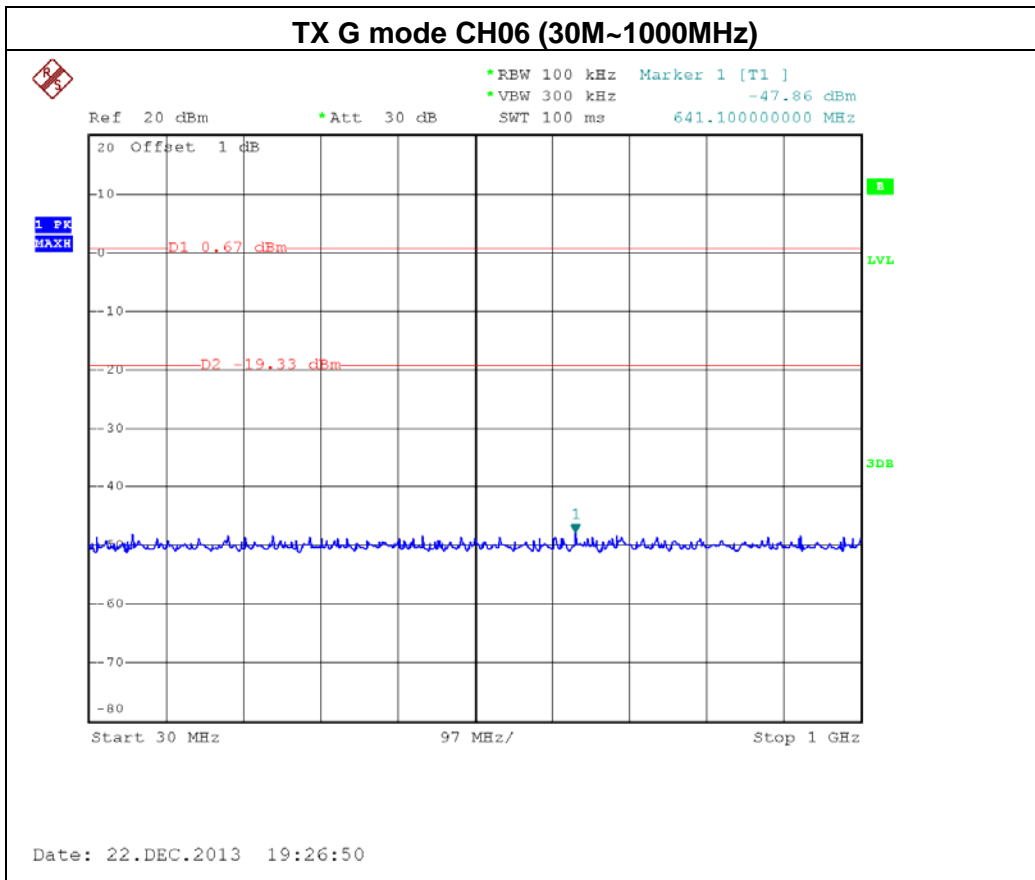
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE / CH01, CH06 , CH11		

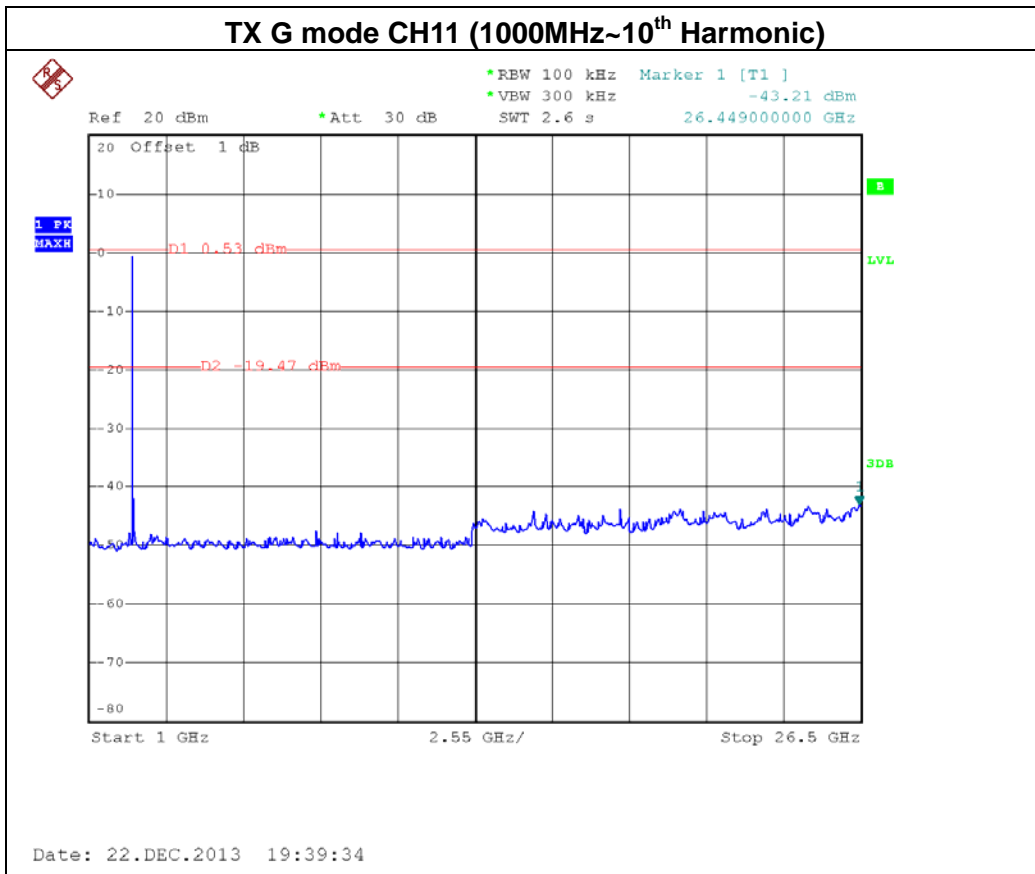
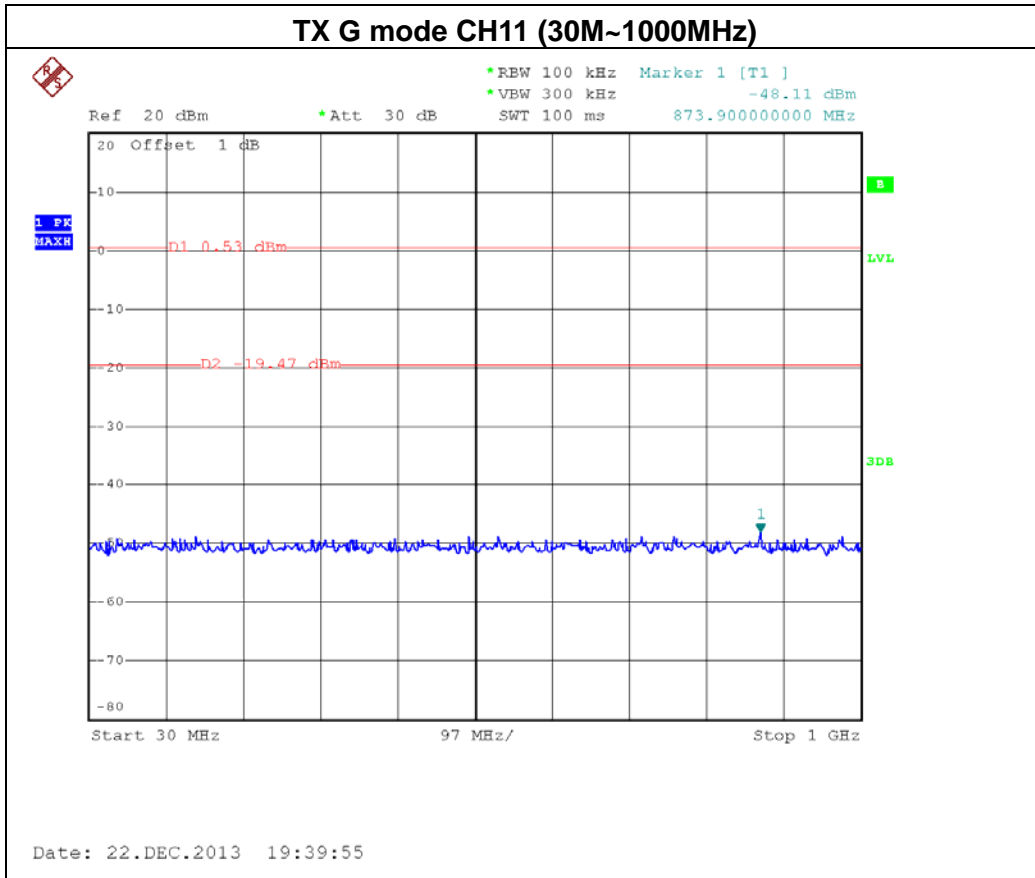
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-34.40	2488.80	-45.48
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			











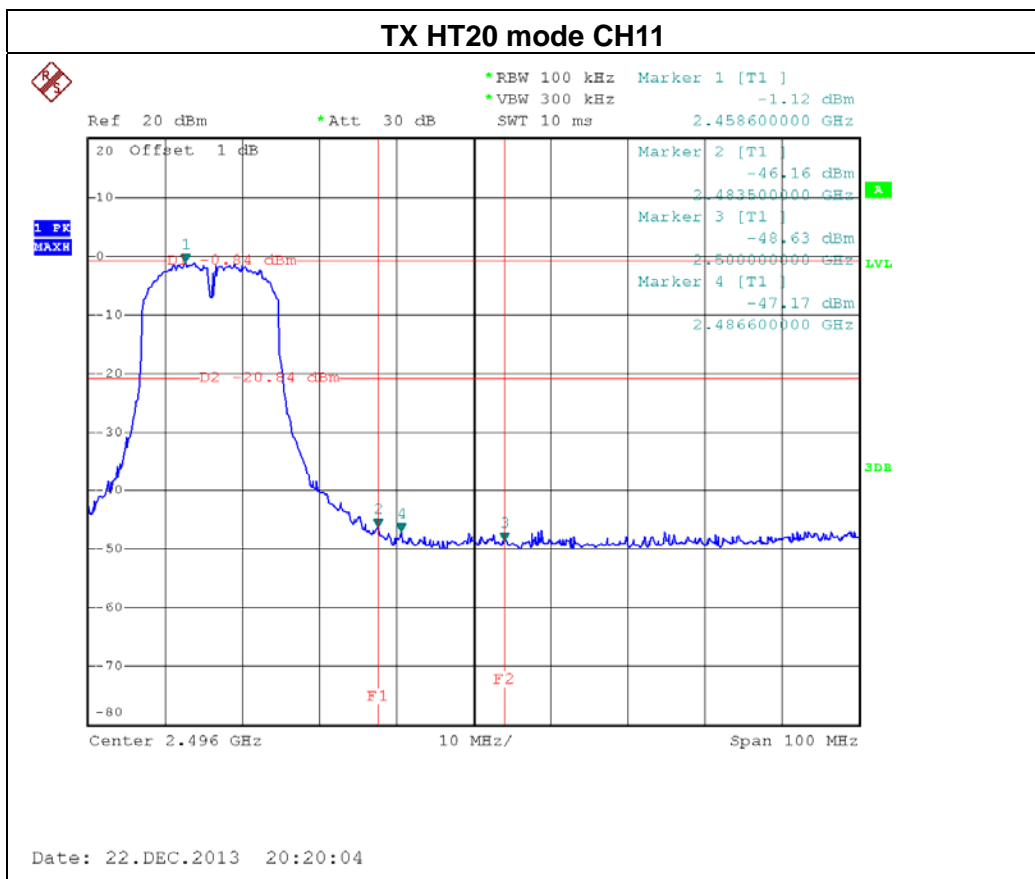
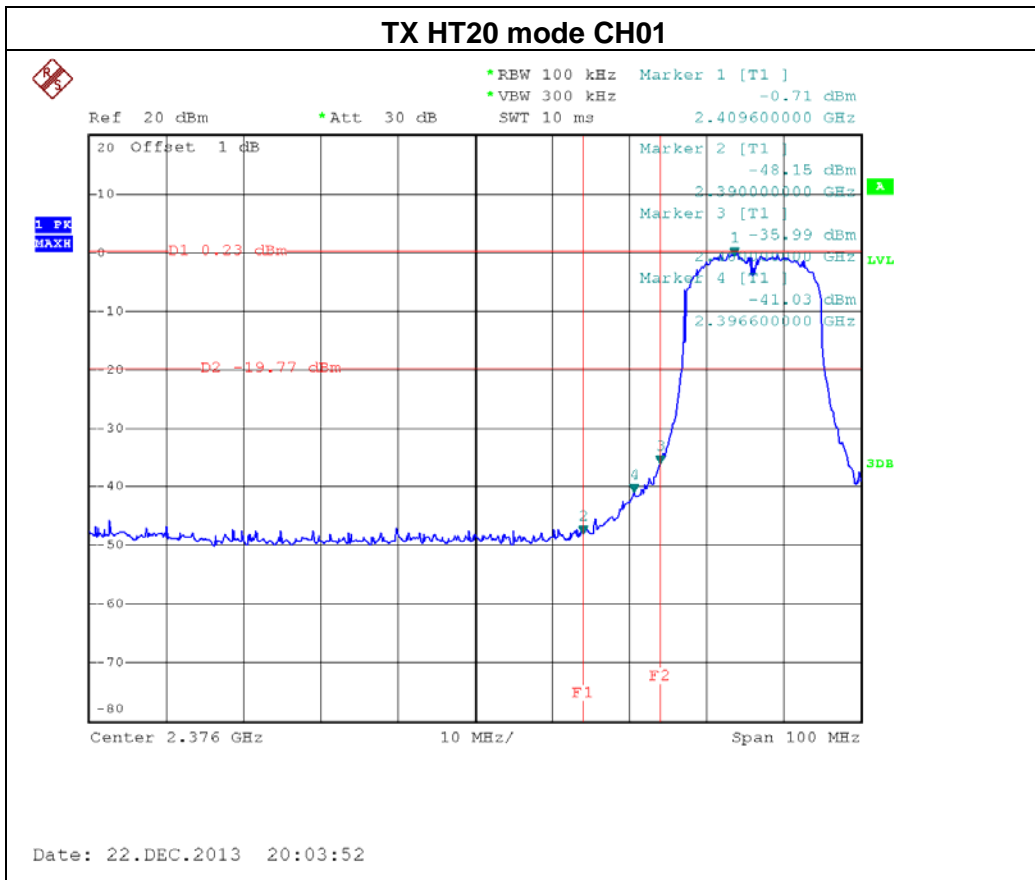


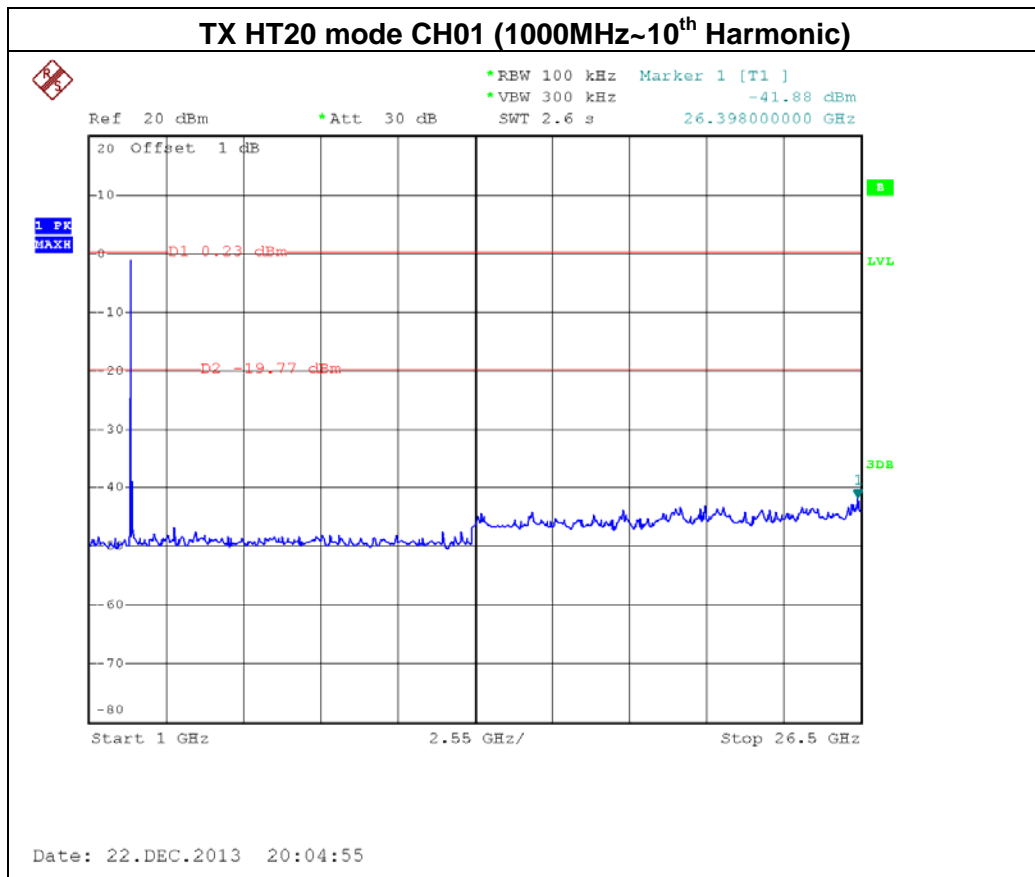
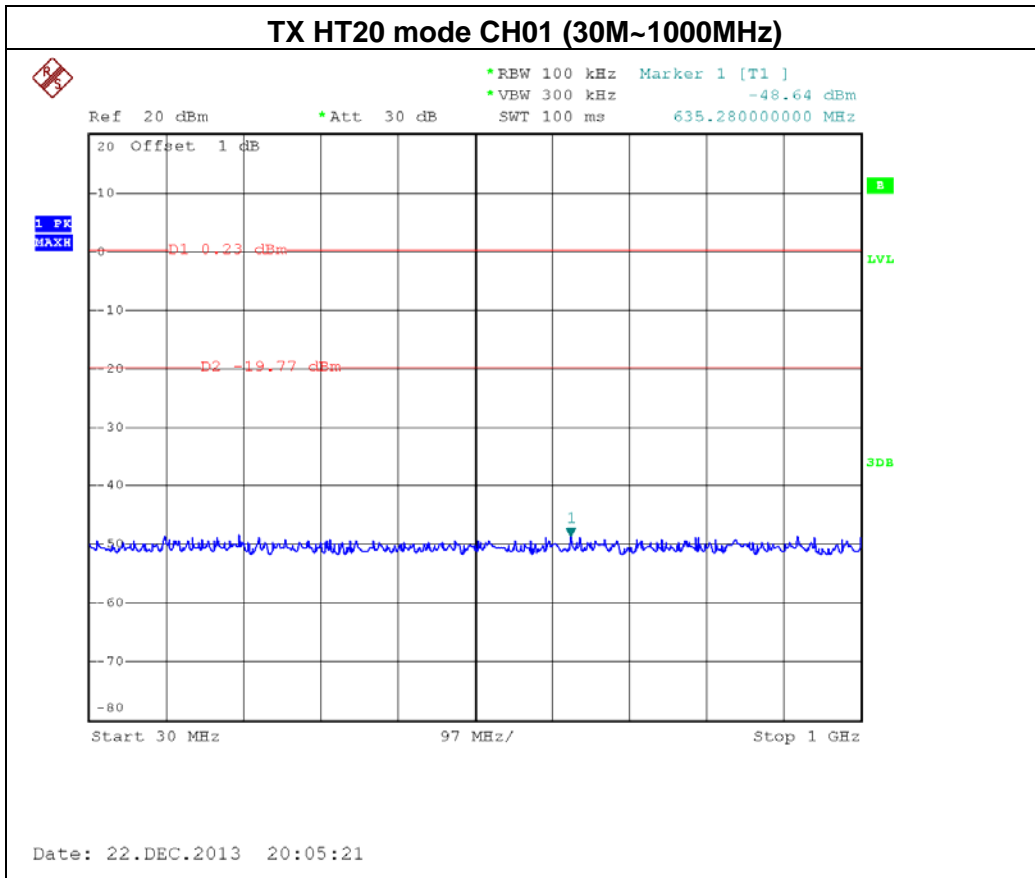
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11-ANT 1		

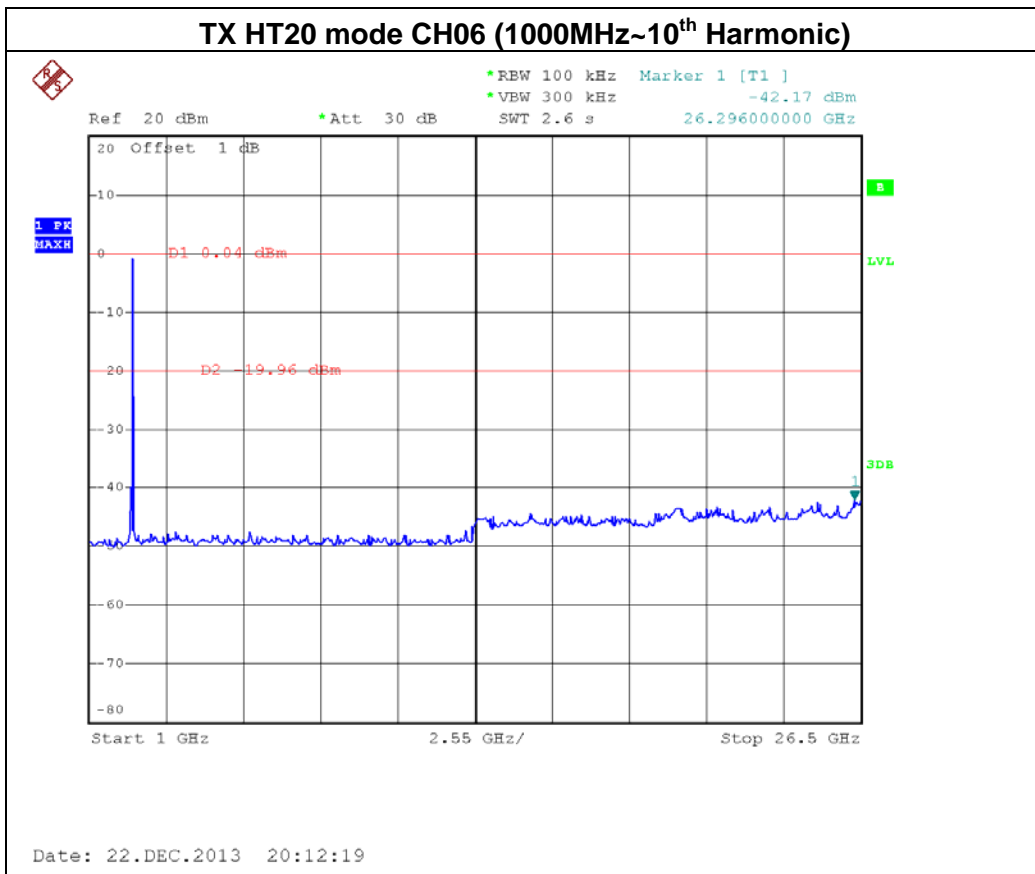
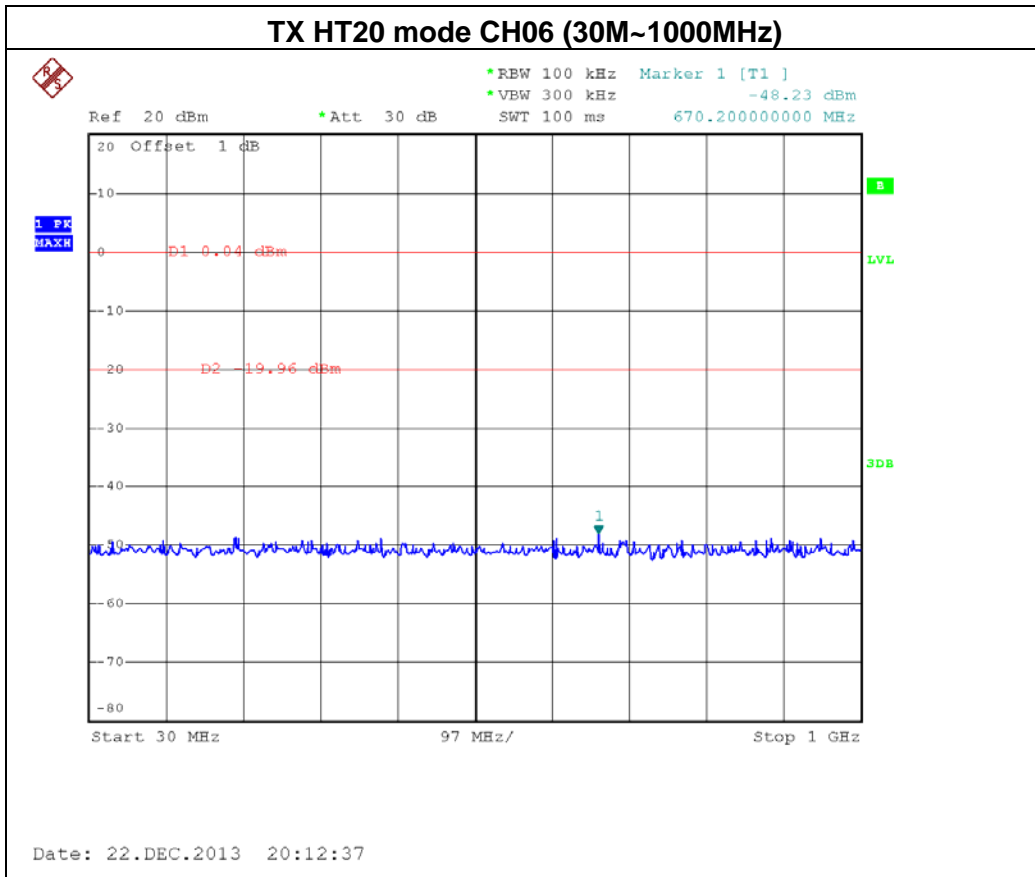
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-35.99	2483.50	-46.16

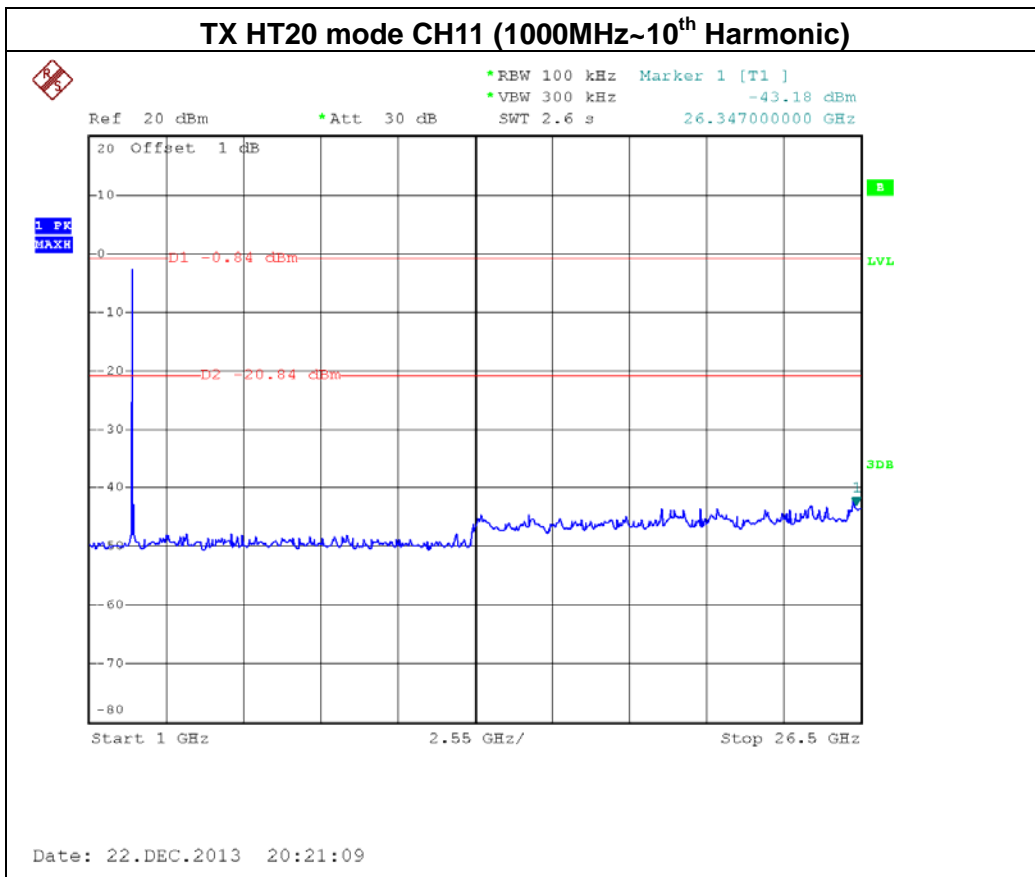
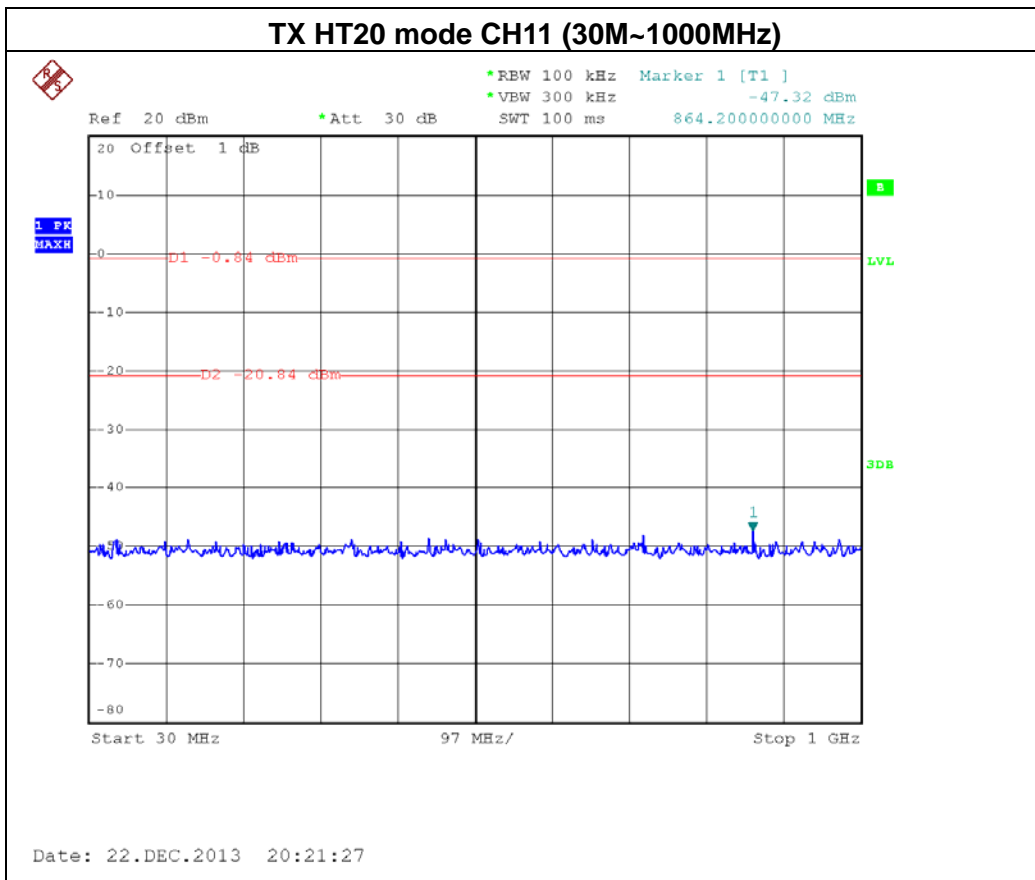
**Result**

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











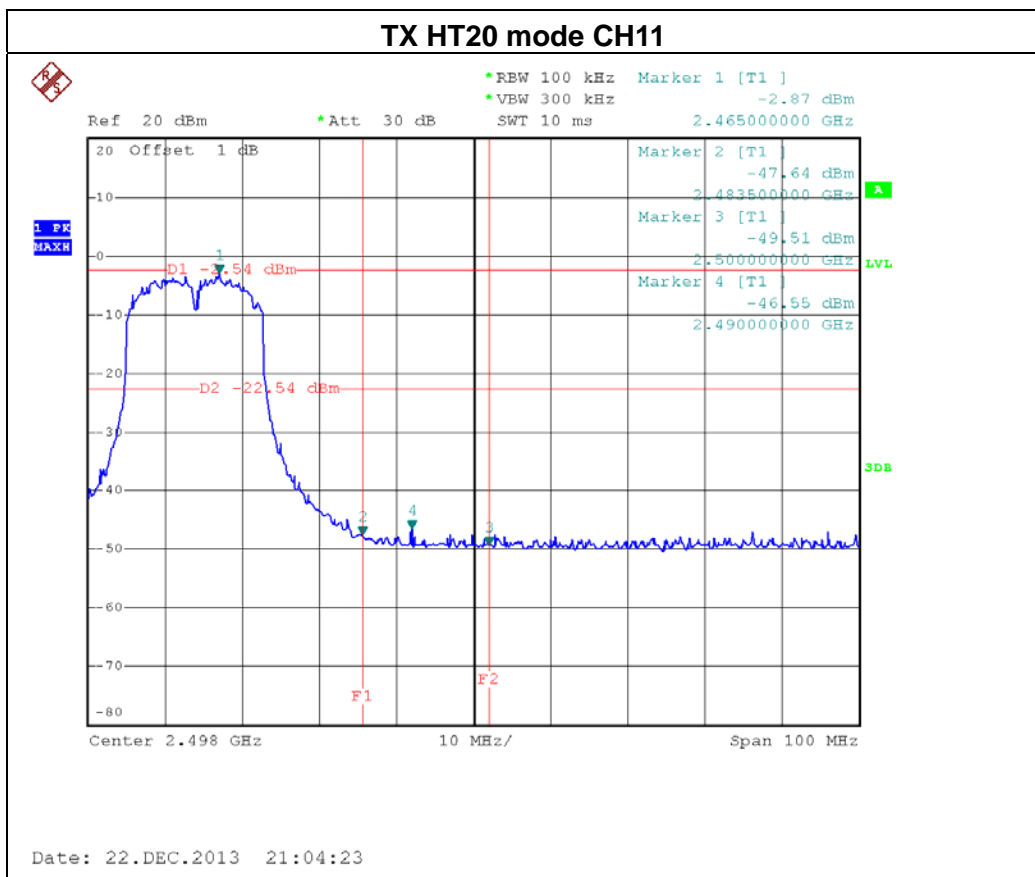
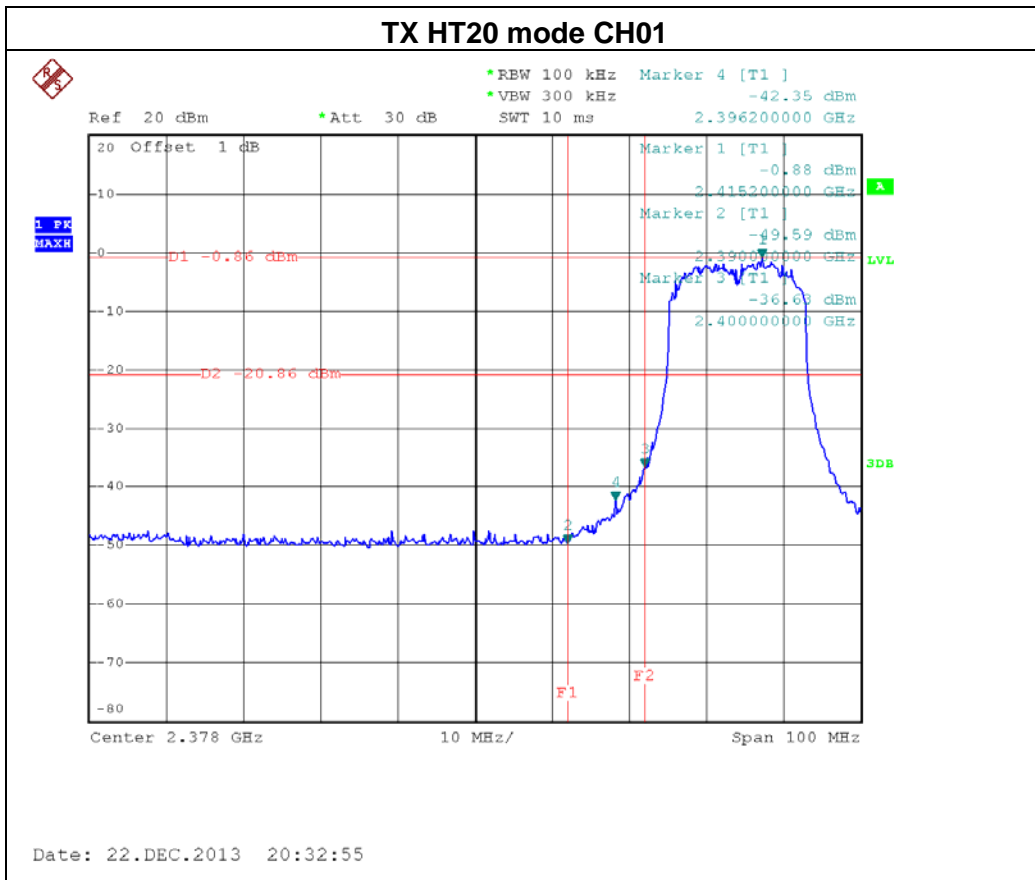


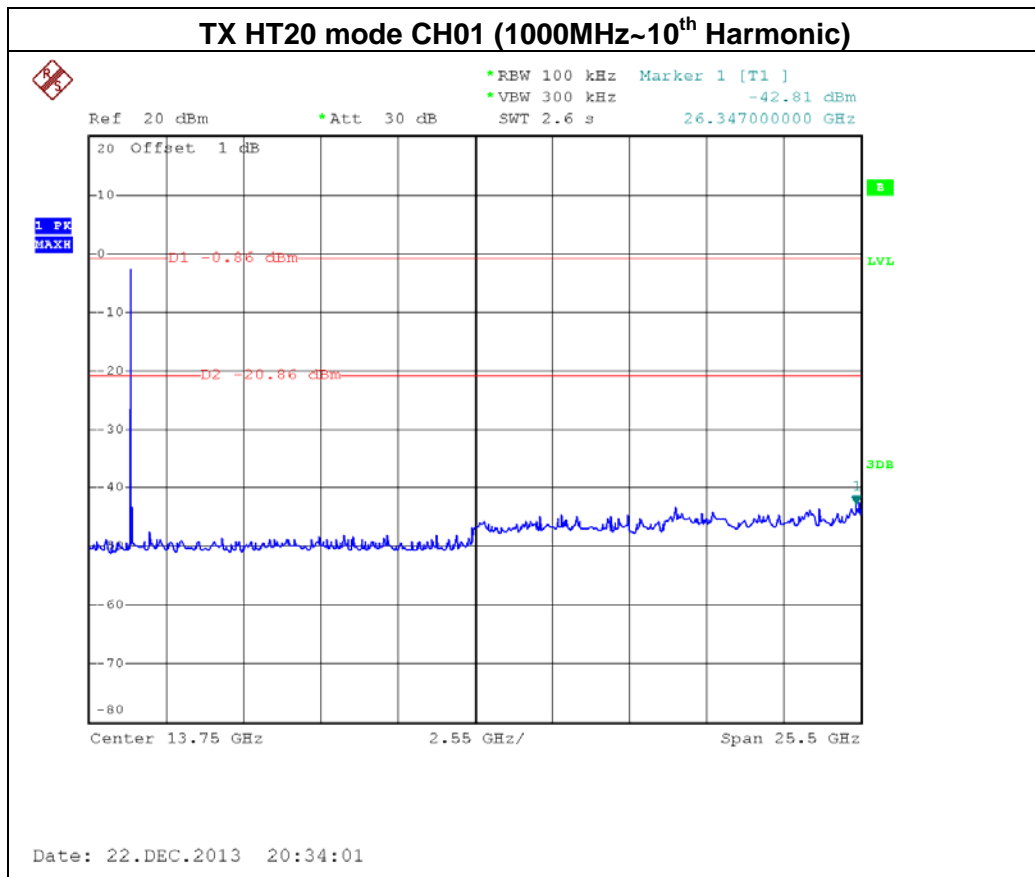
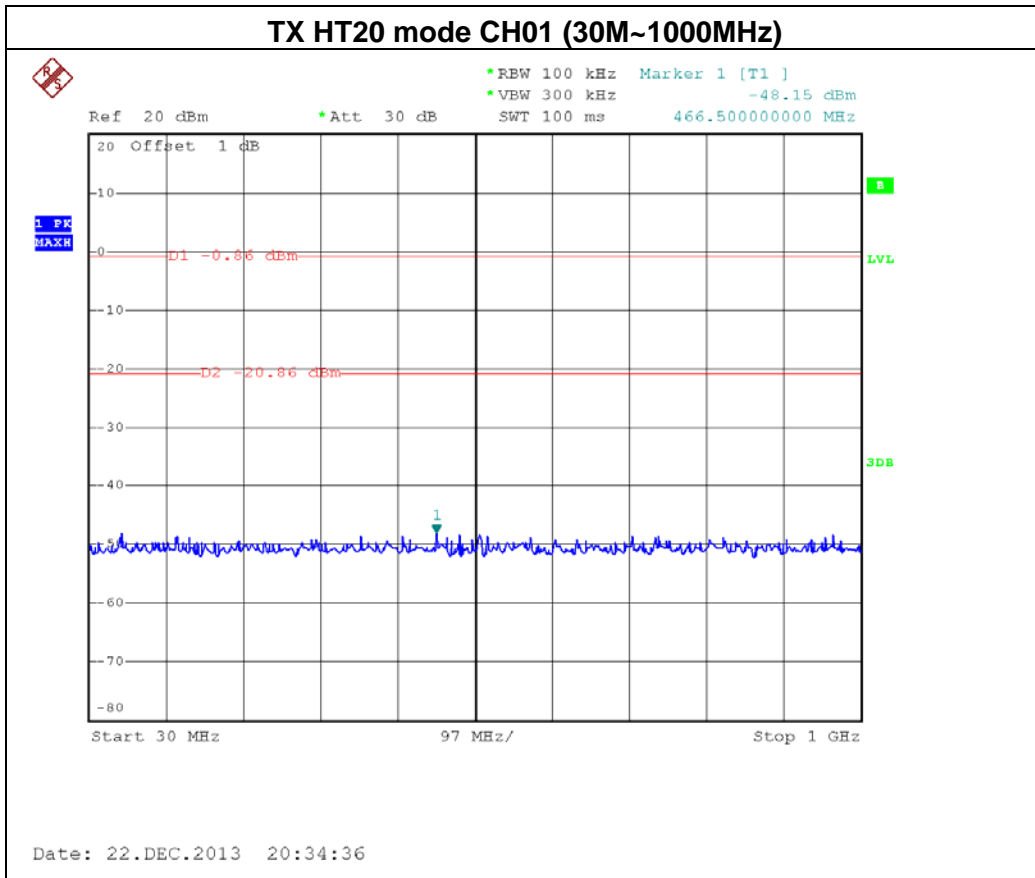
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11-ANT 2		

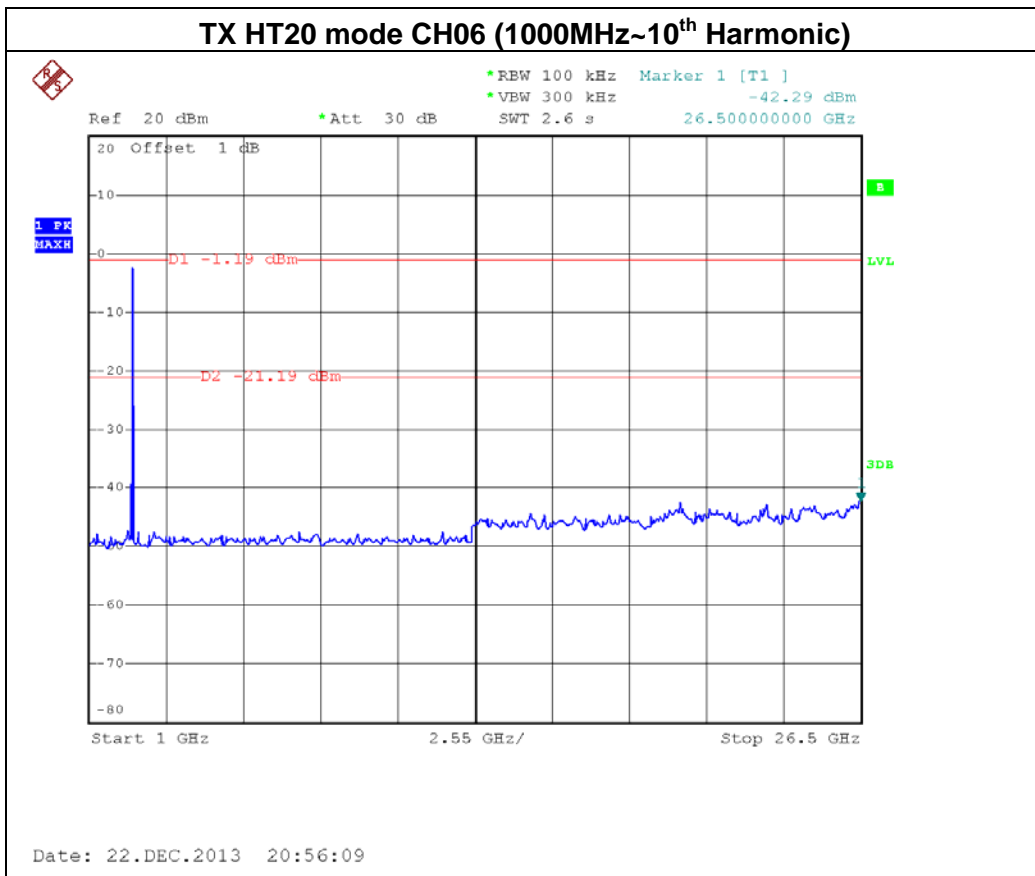
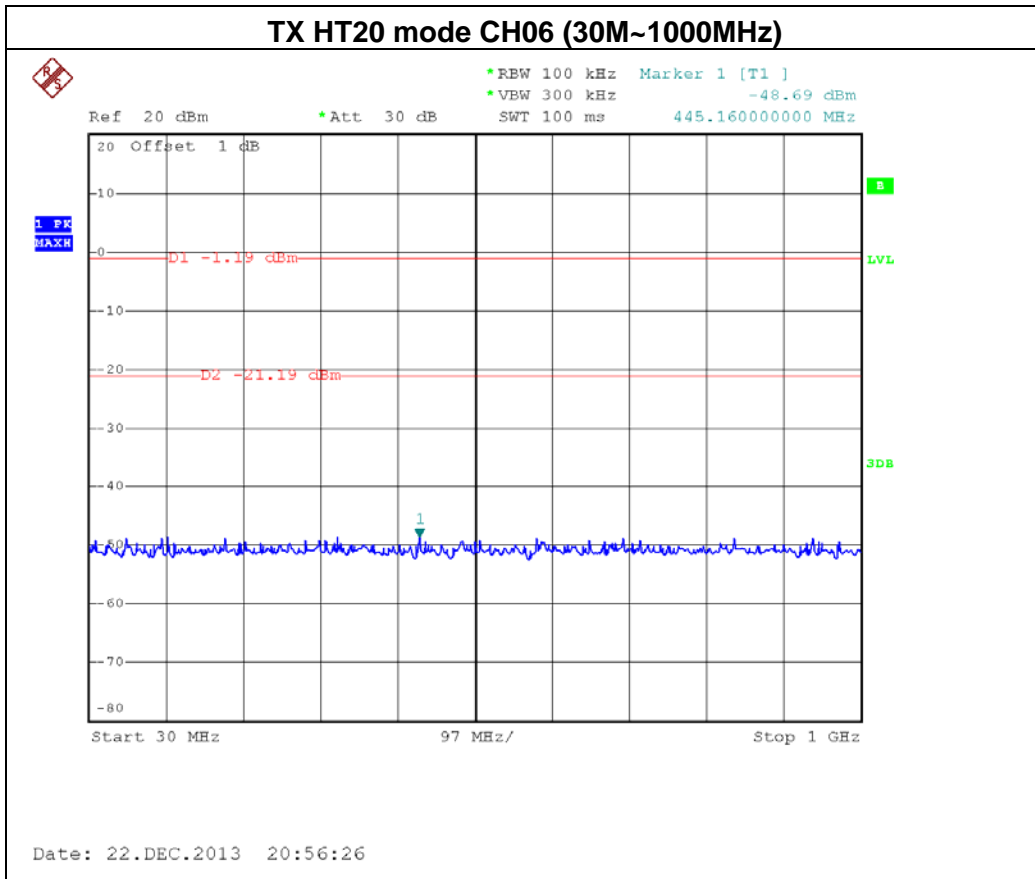
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-36.63	2490.00	-46.55

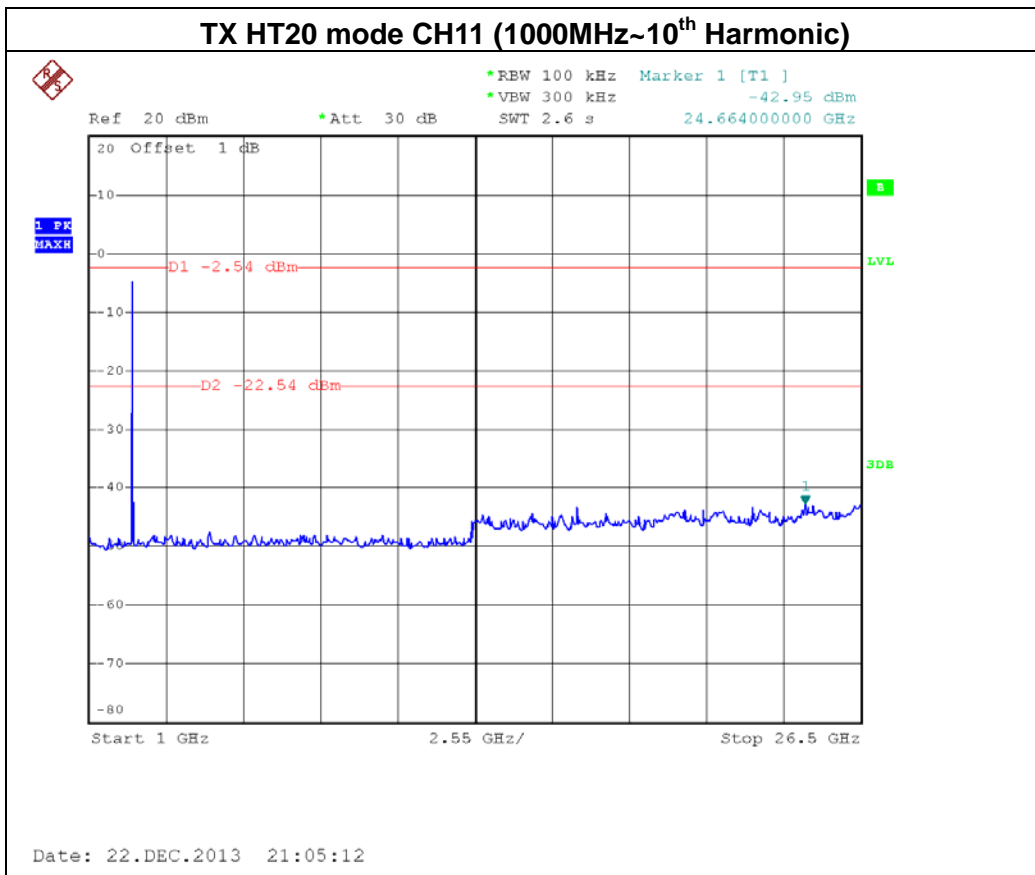
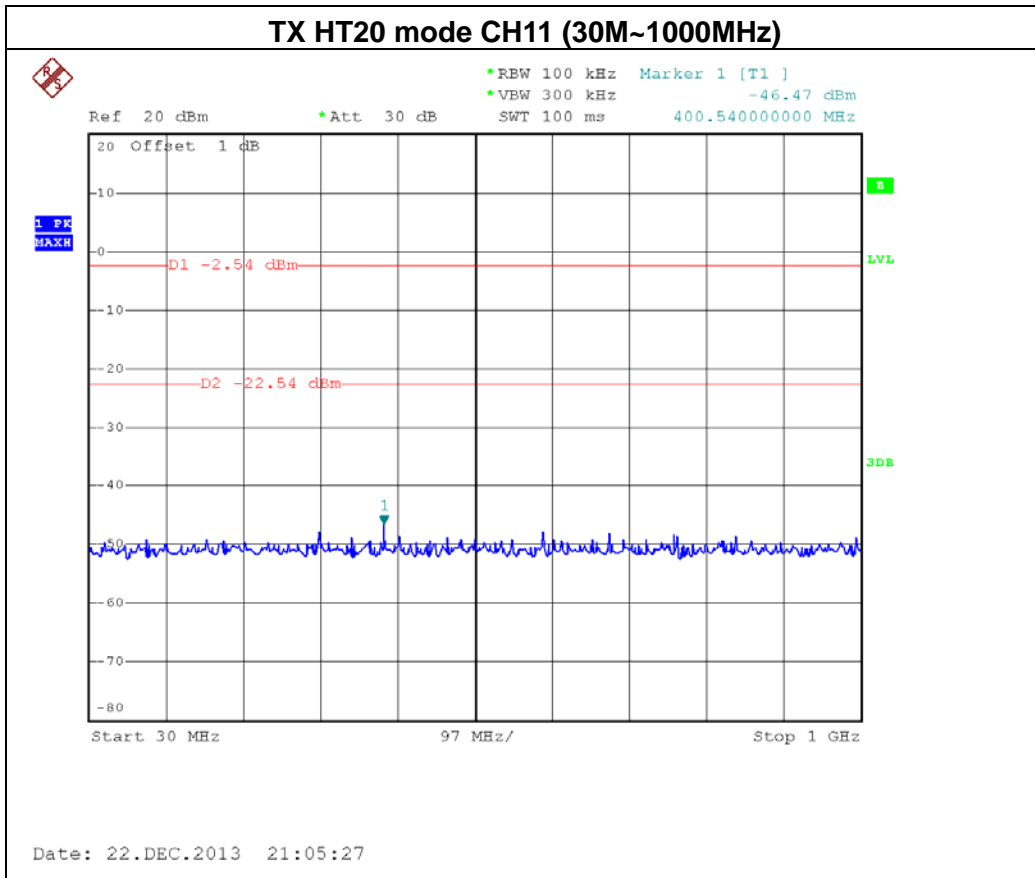
**Result**

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











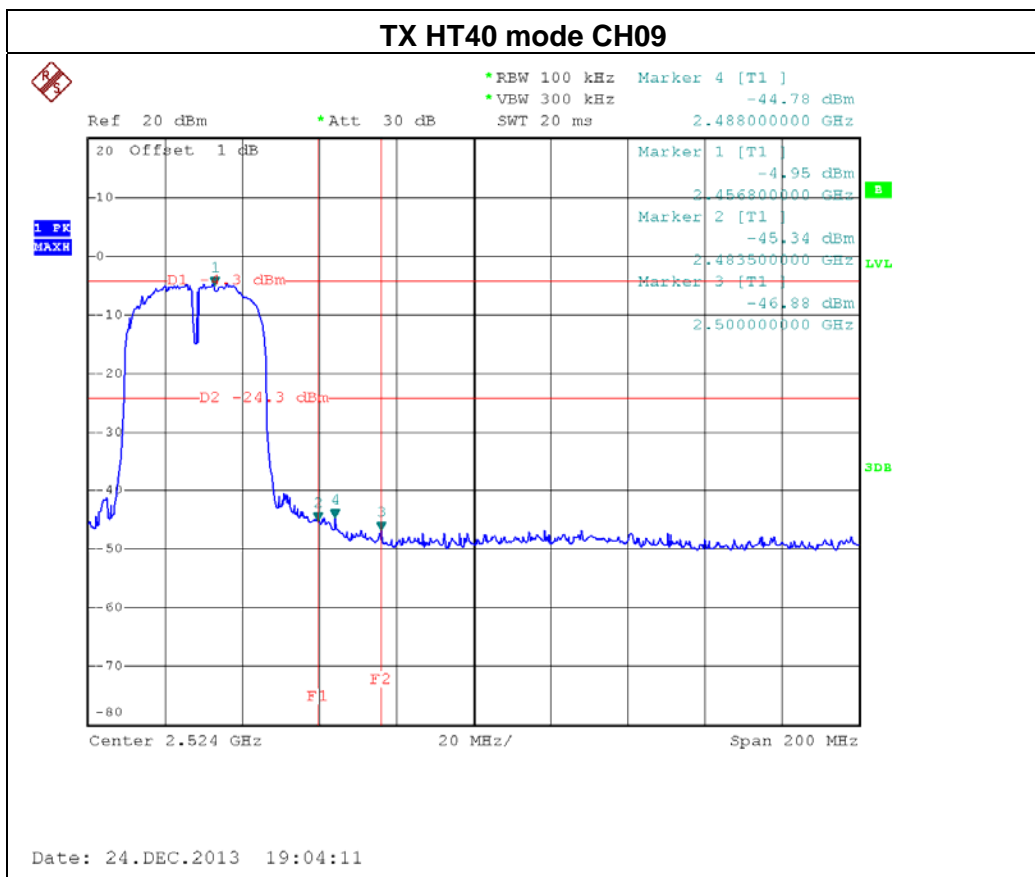
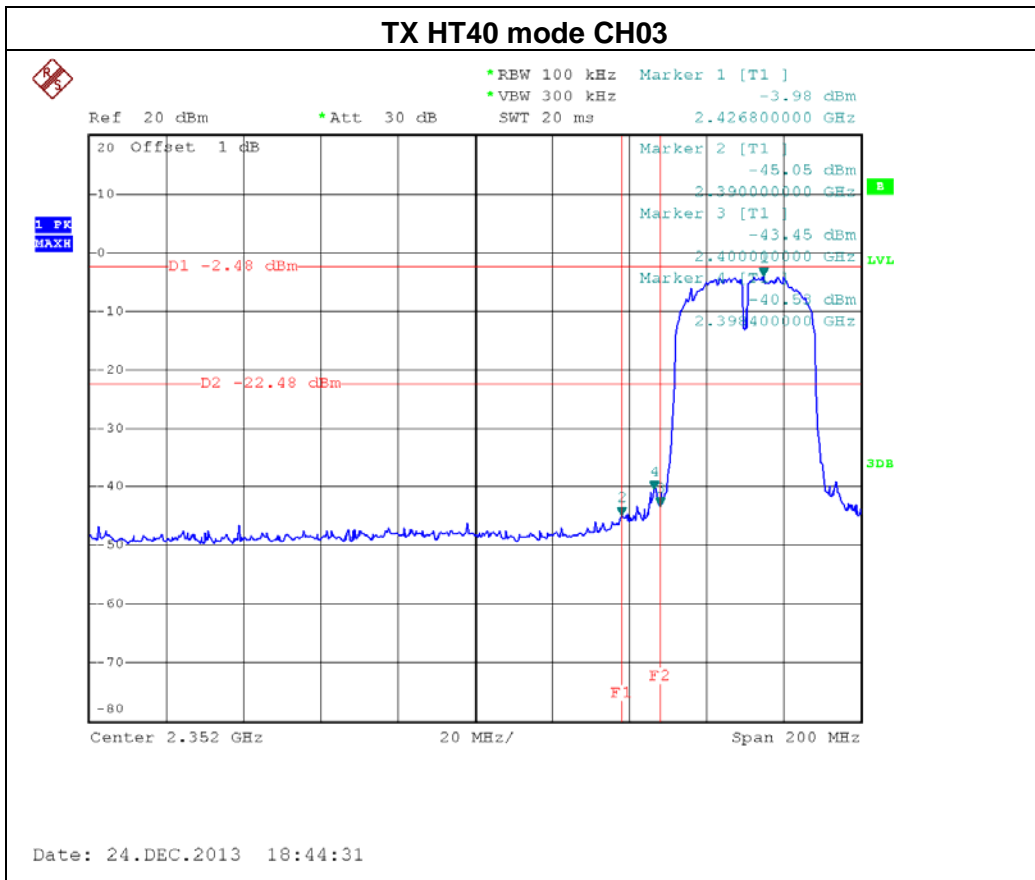
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09-ANT 1		

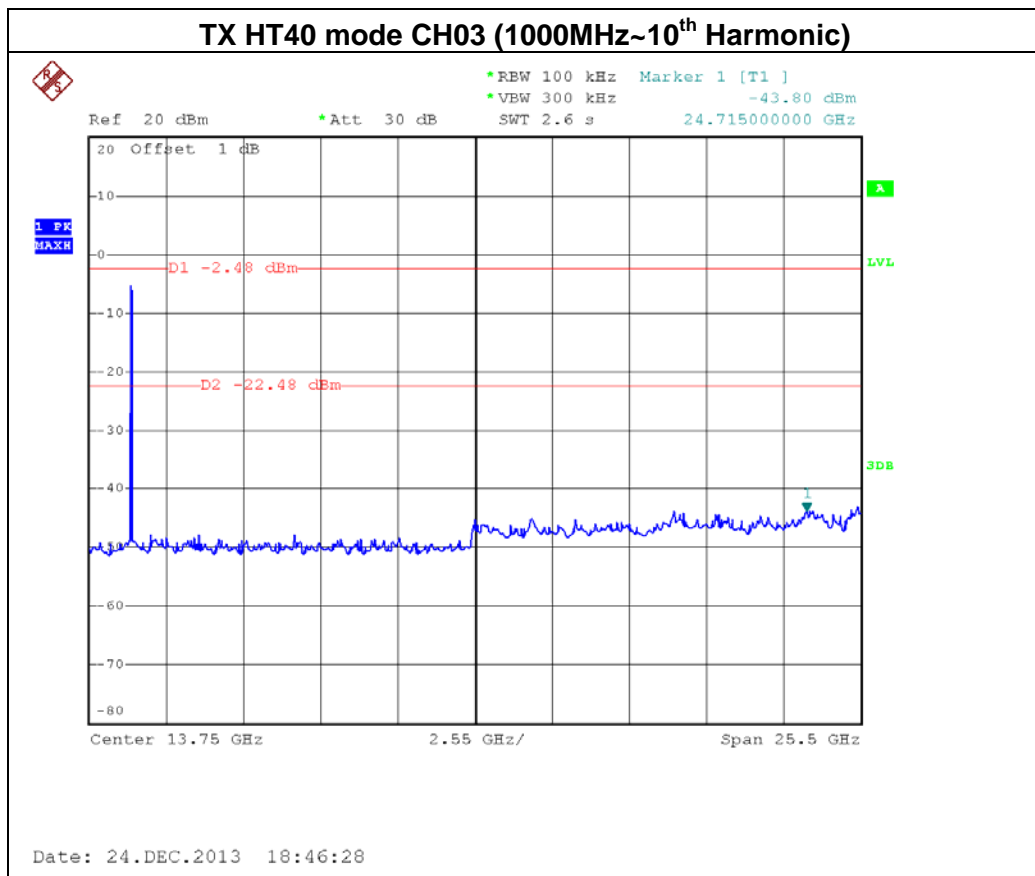
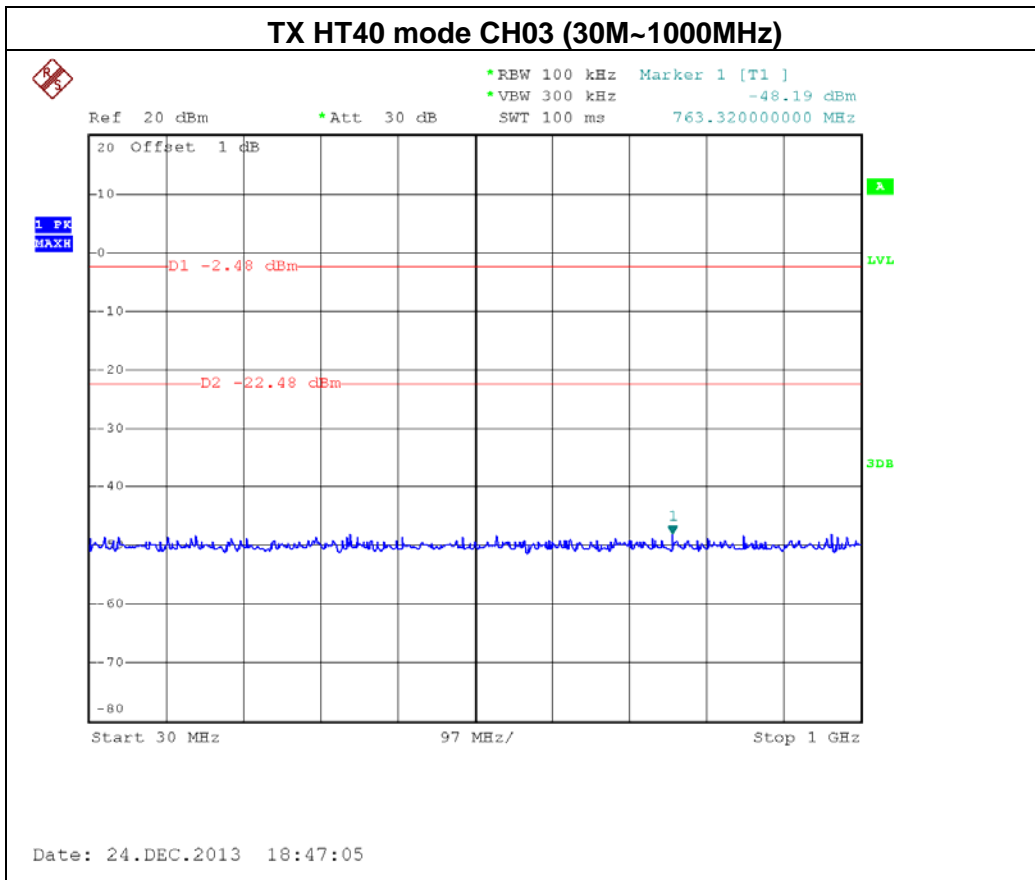
Channel of Worst Data: CH03

The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.40	-40.53	2488.00	-44.78

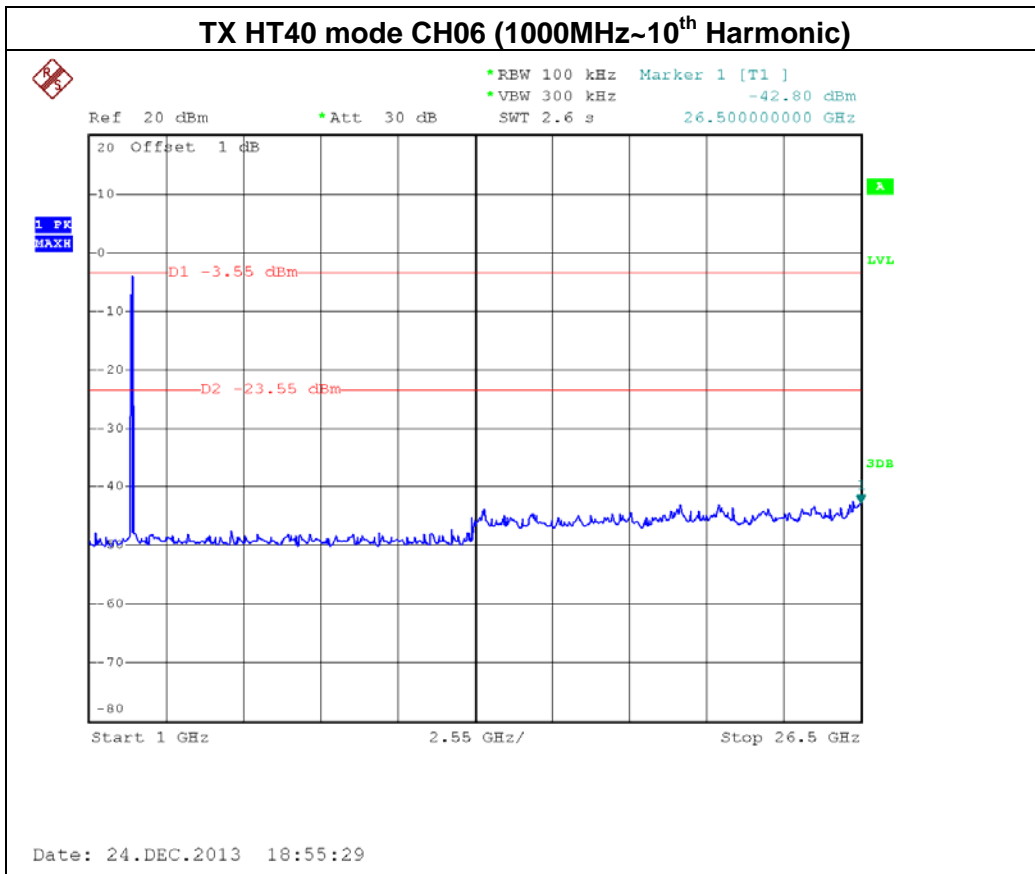
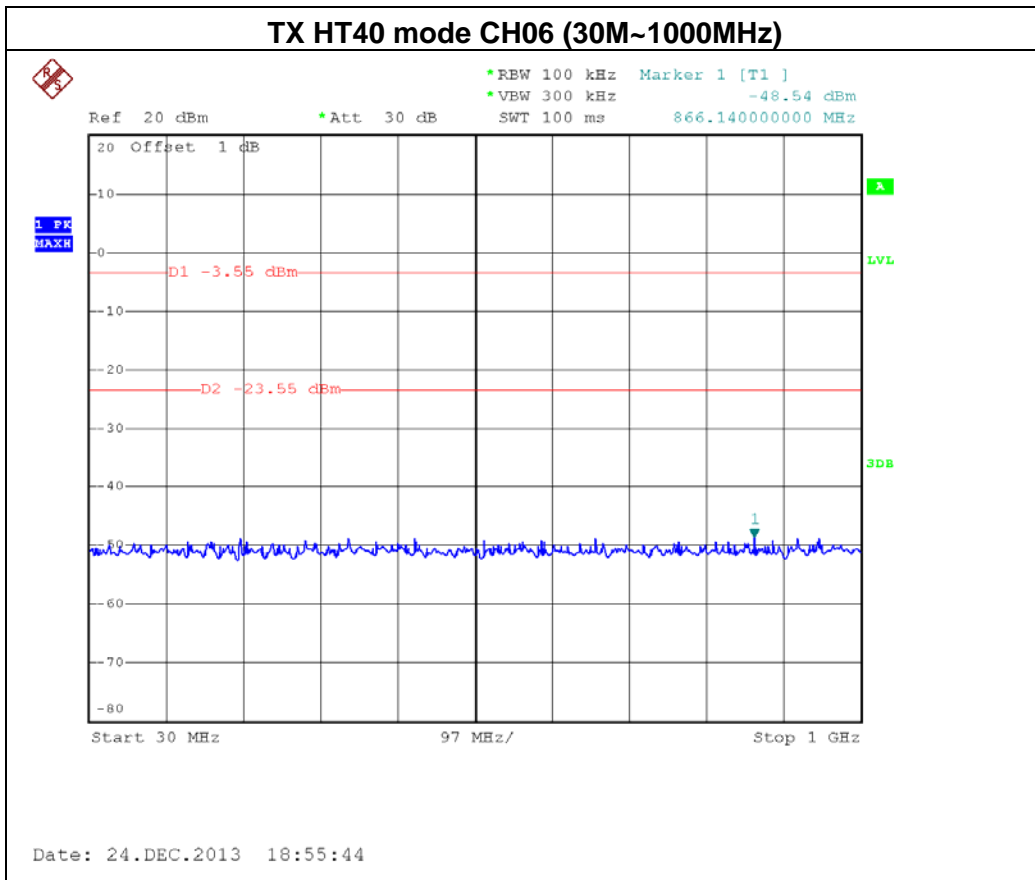
Result

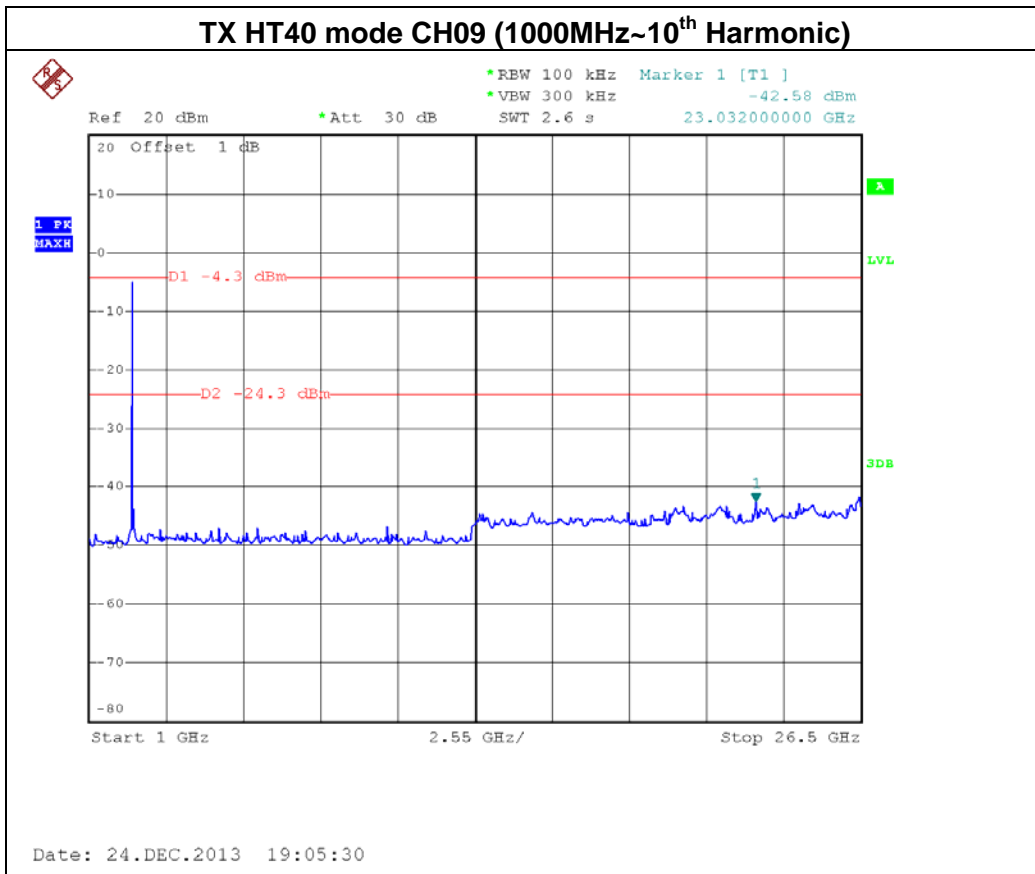
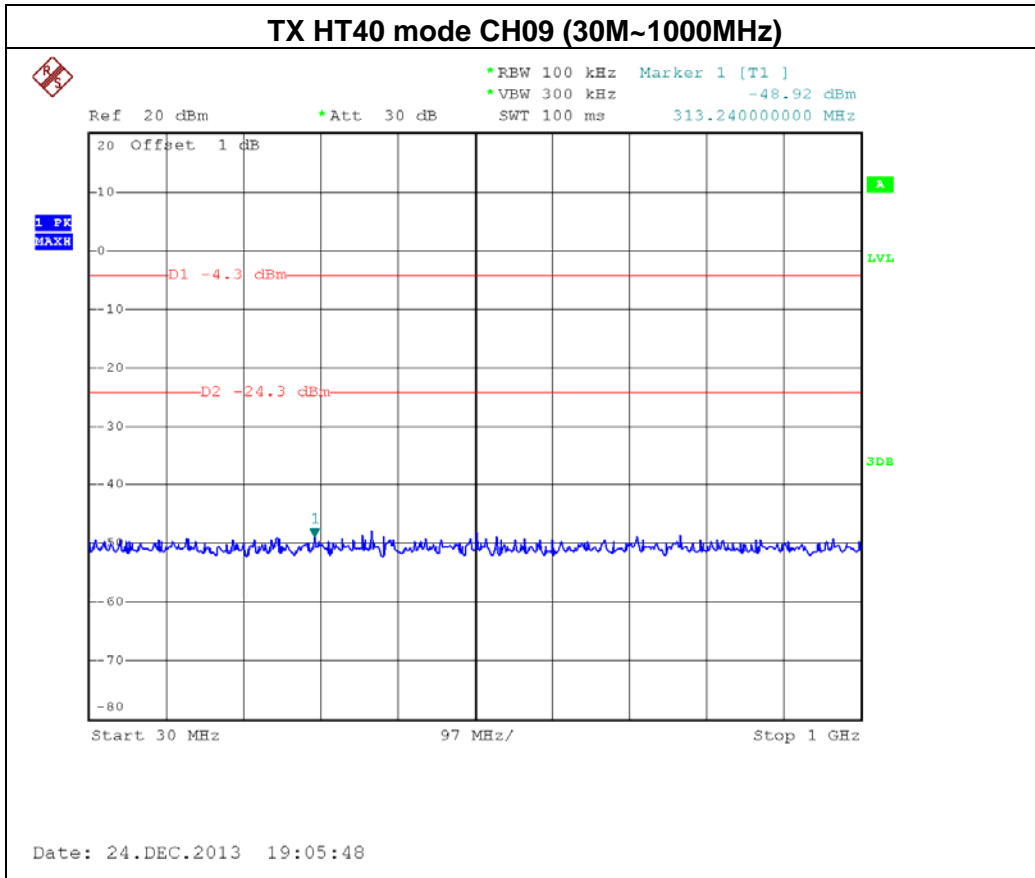
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.









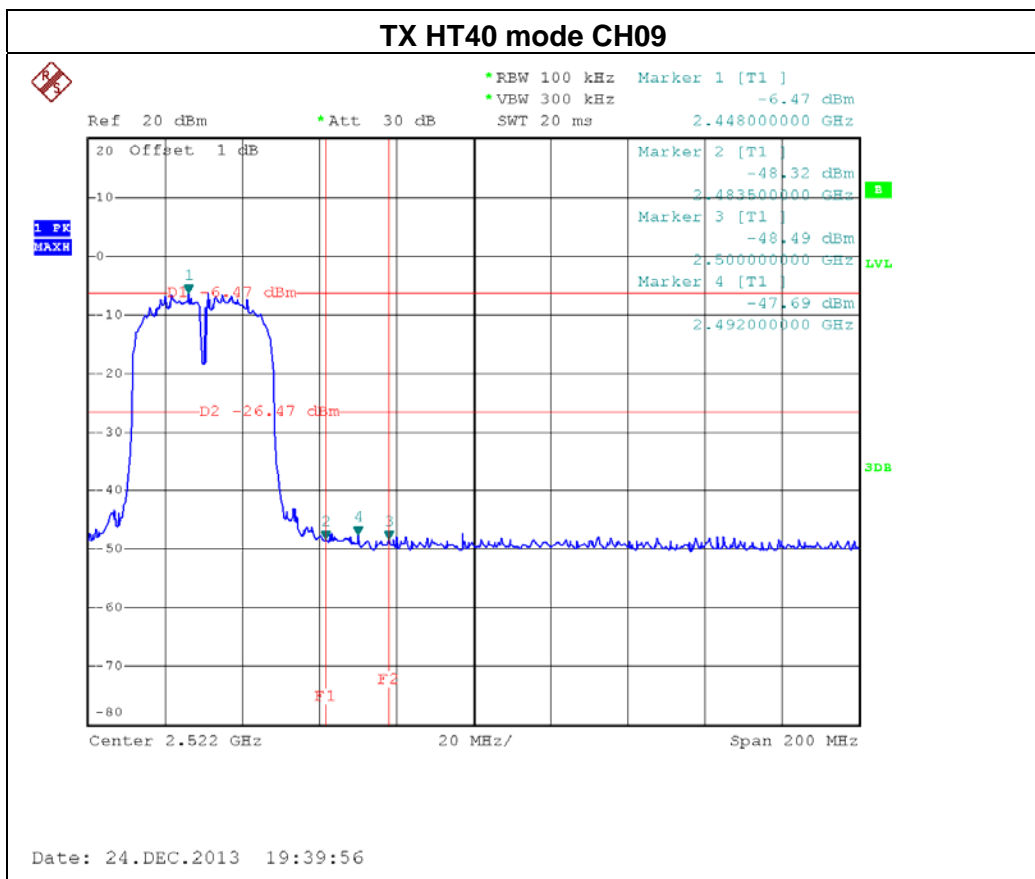
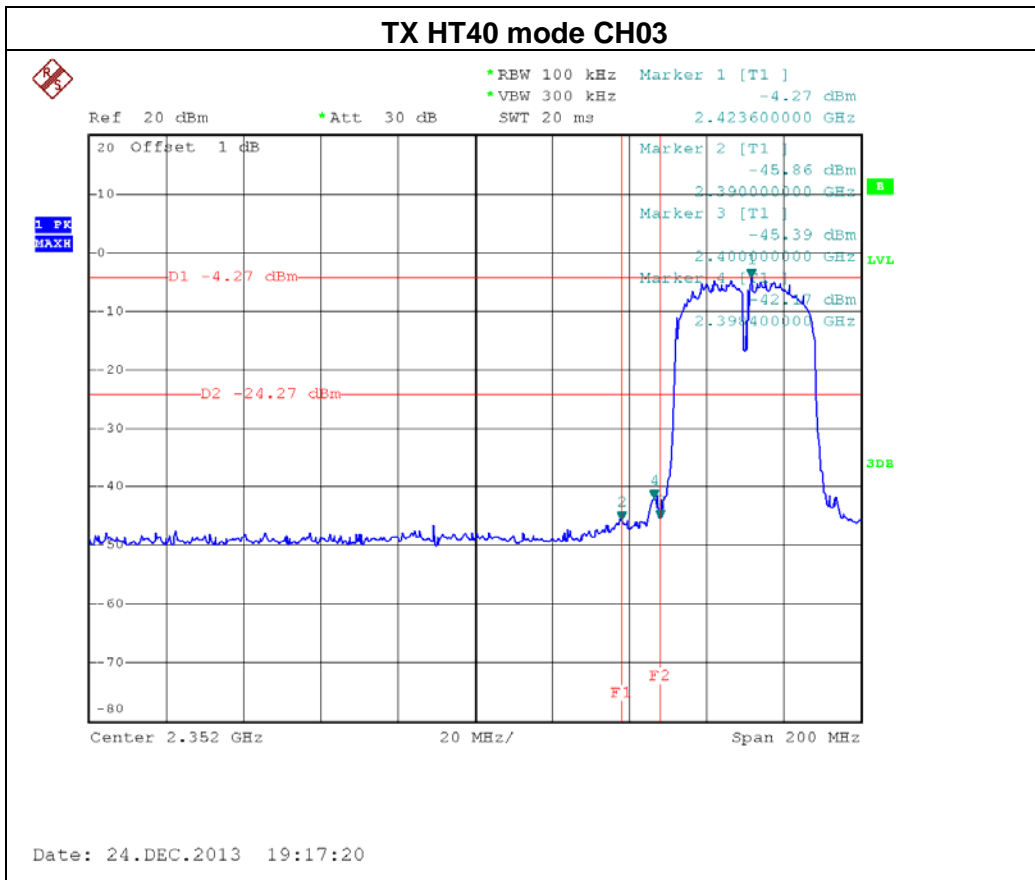


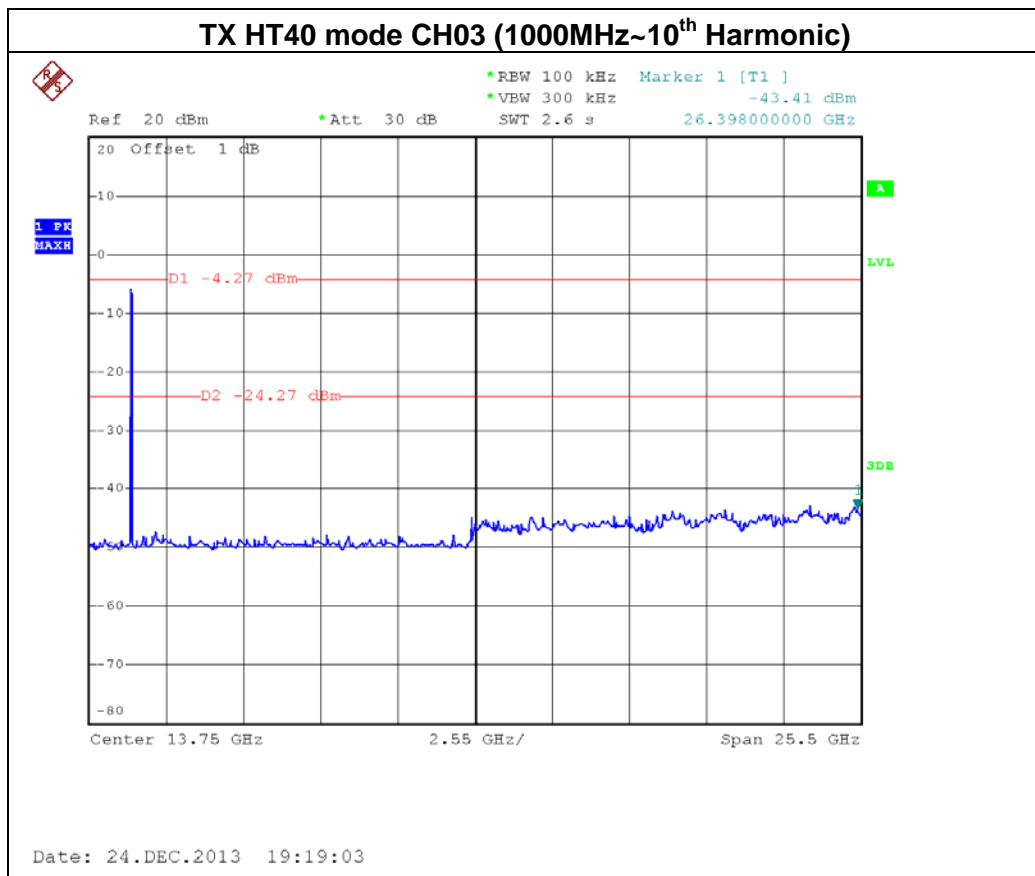
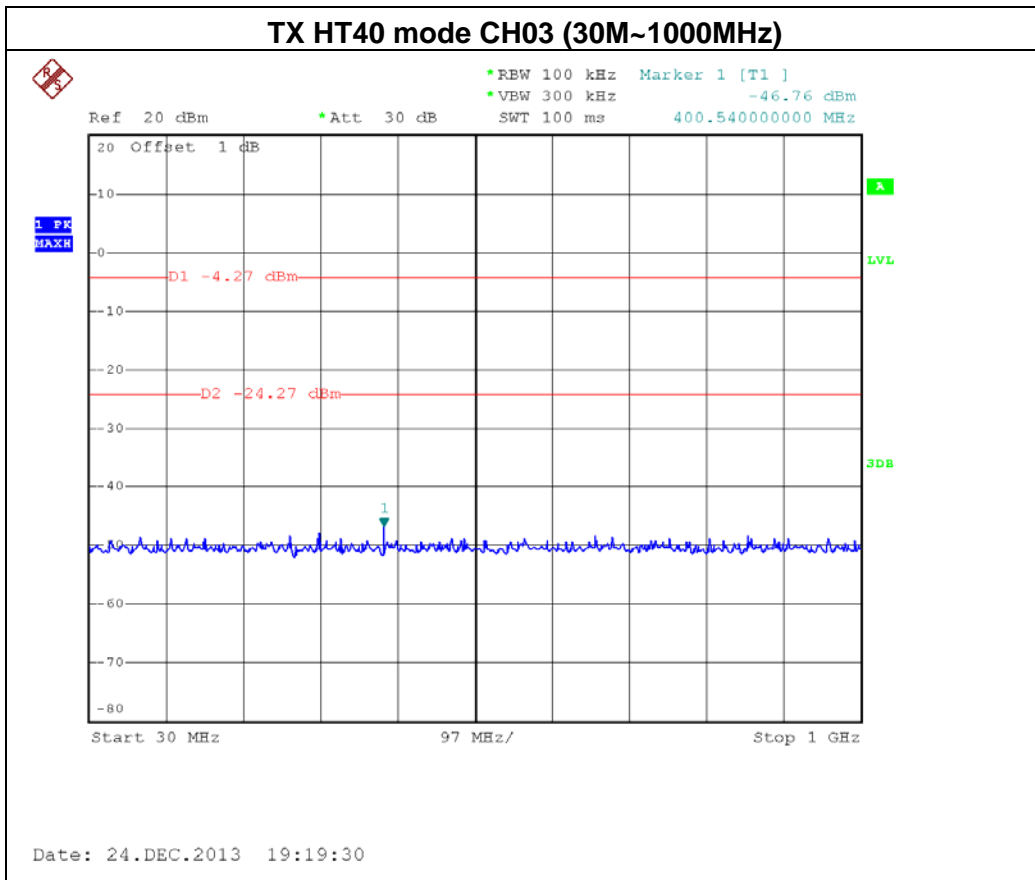


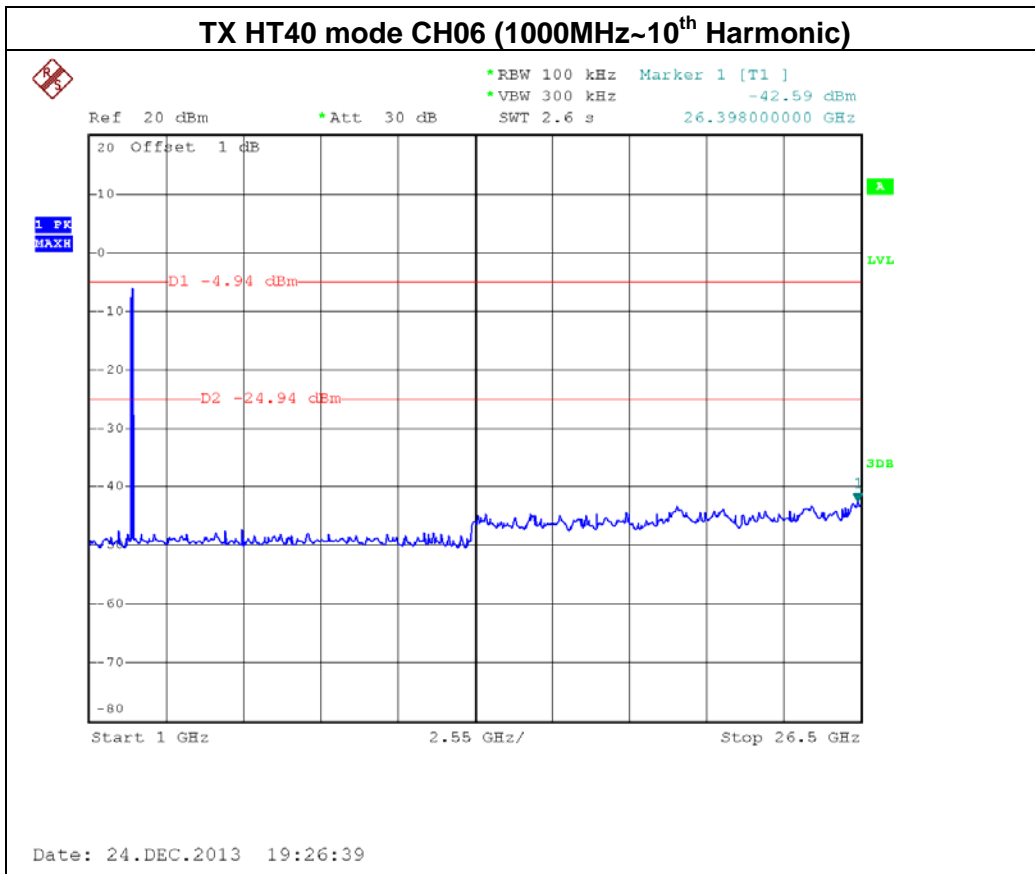
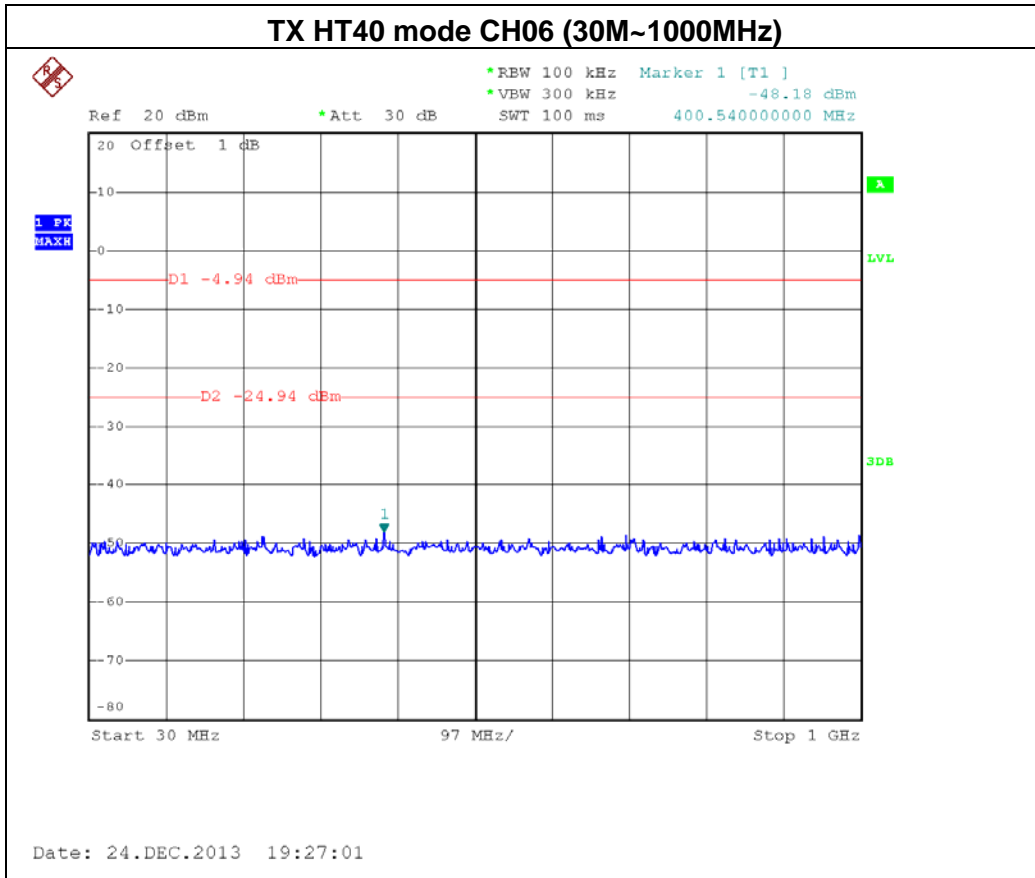
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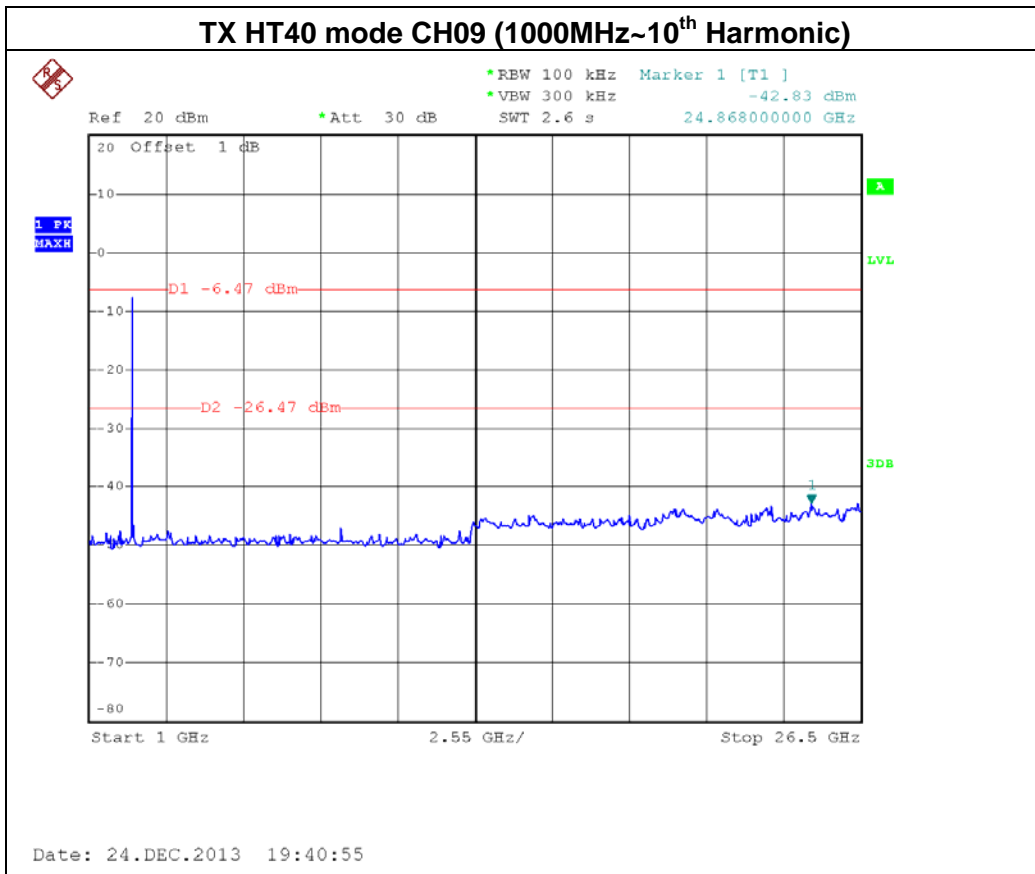
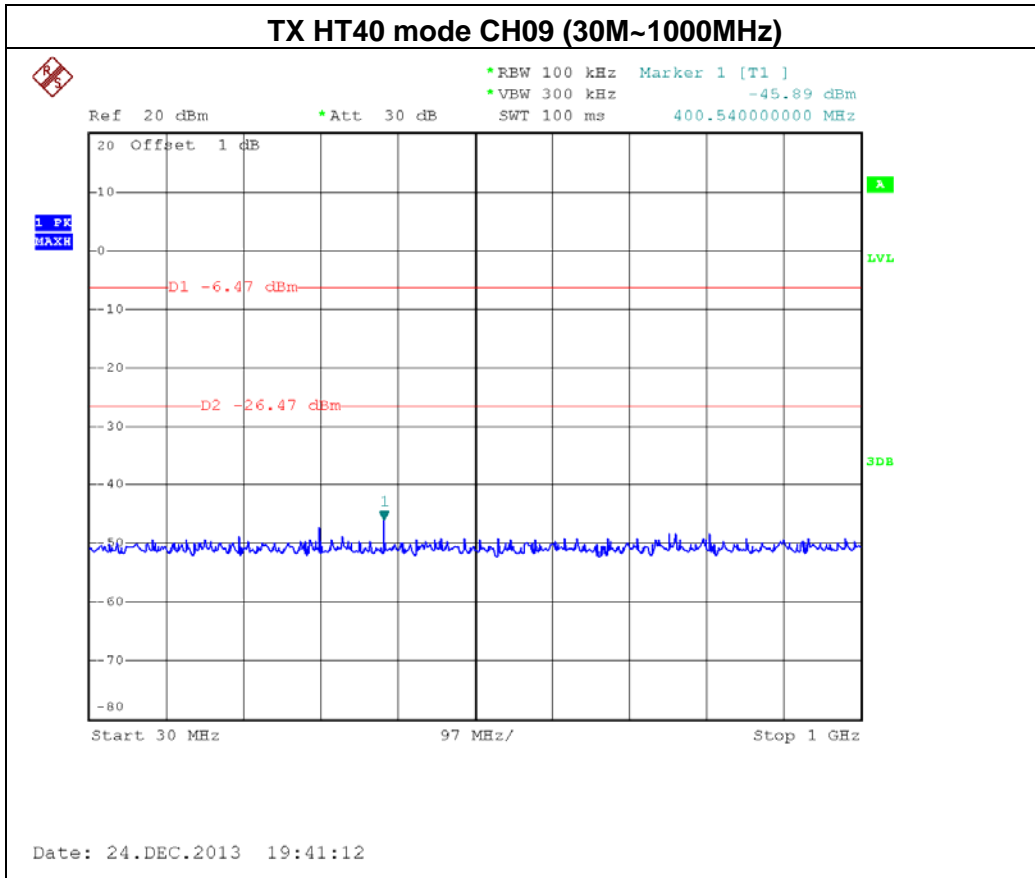
EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09-ANT 2		

Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2398.40	-42.17	2492.00	-47.69
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.			











**8. POWER SPECTRAL DENSITY TEST**

**8.1 Applied procedures / limit**

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

**8.1.1 MEASUREMENT INSTRUMENTS LIST**

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

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

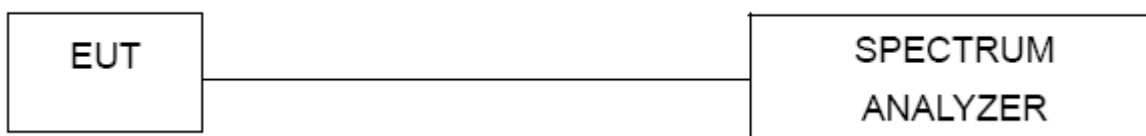
**8.1.2 TEST PROCEDURE**

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

**8.1.3 DEVIATION FROM STANDARD**

No deviation.

**8.1.4 TEST SETUP**



**8.1.5 EUT OPERATION CONDITIONS**

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

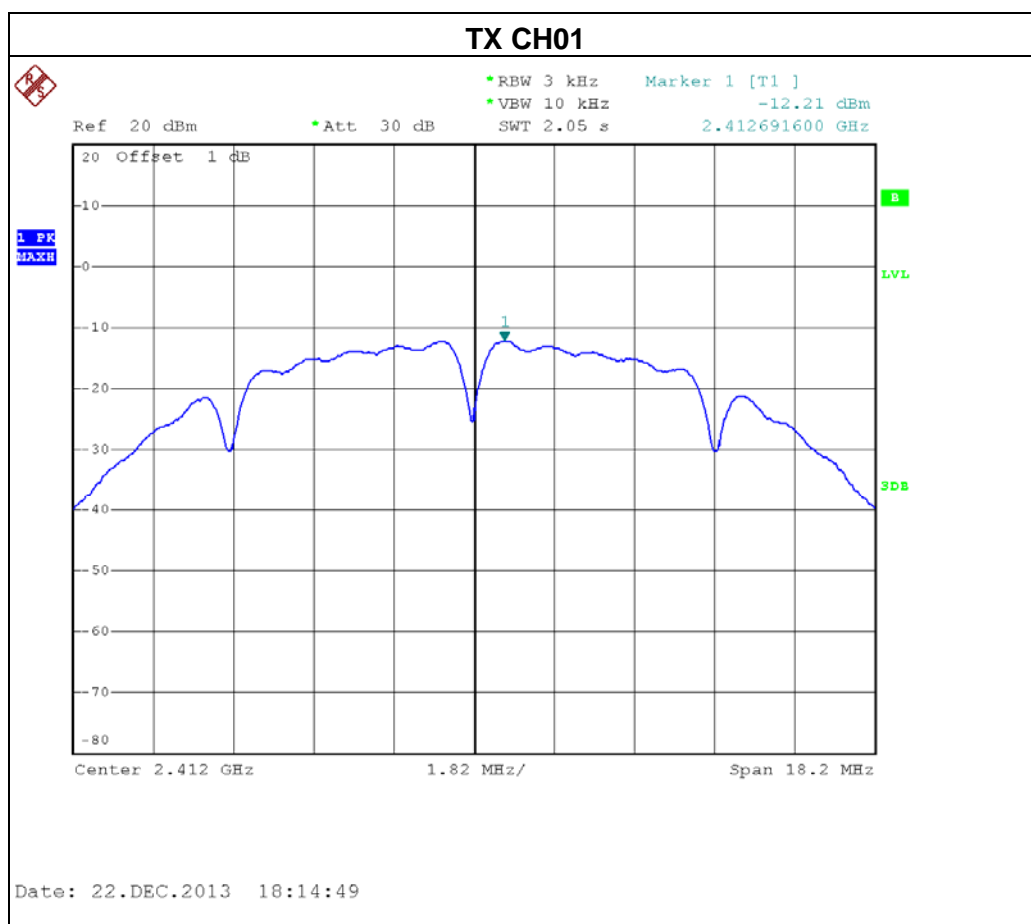


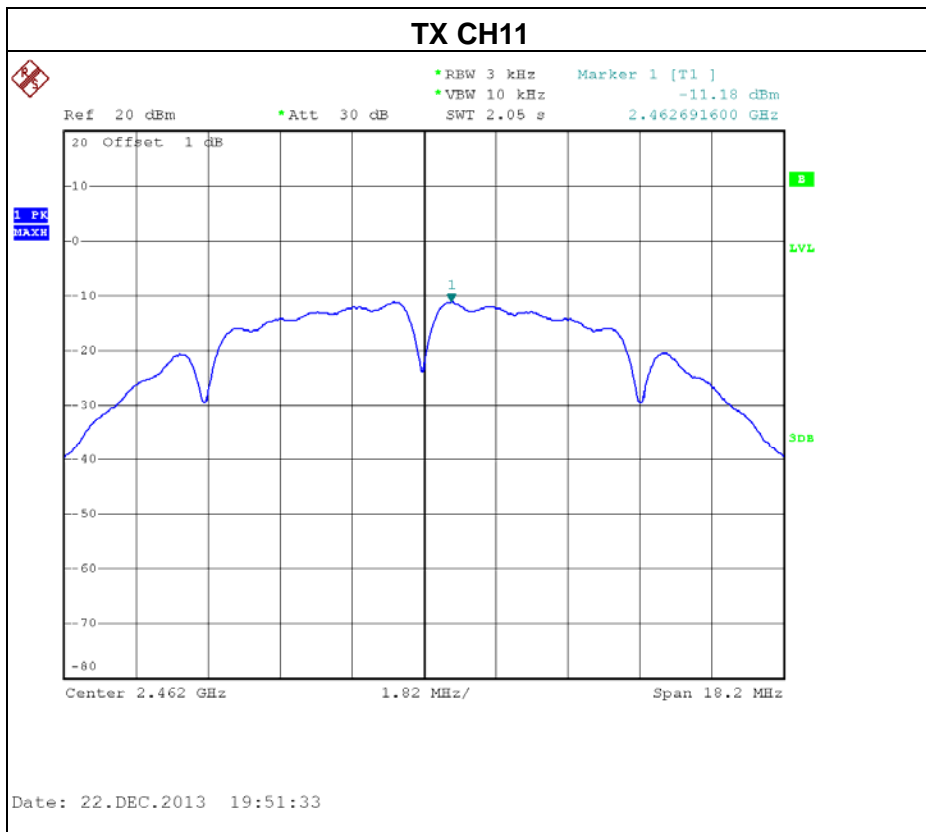
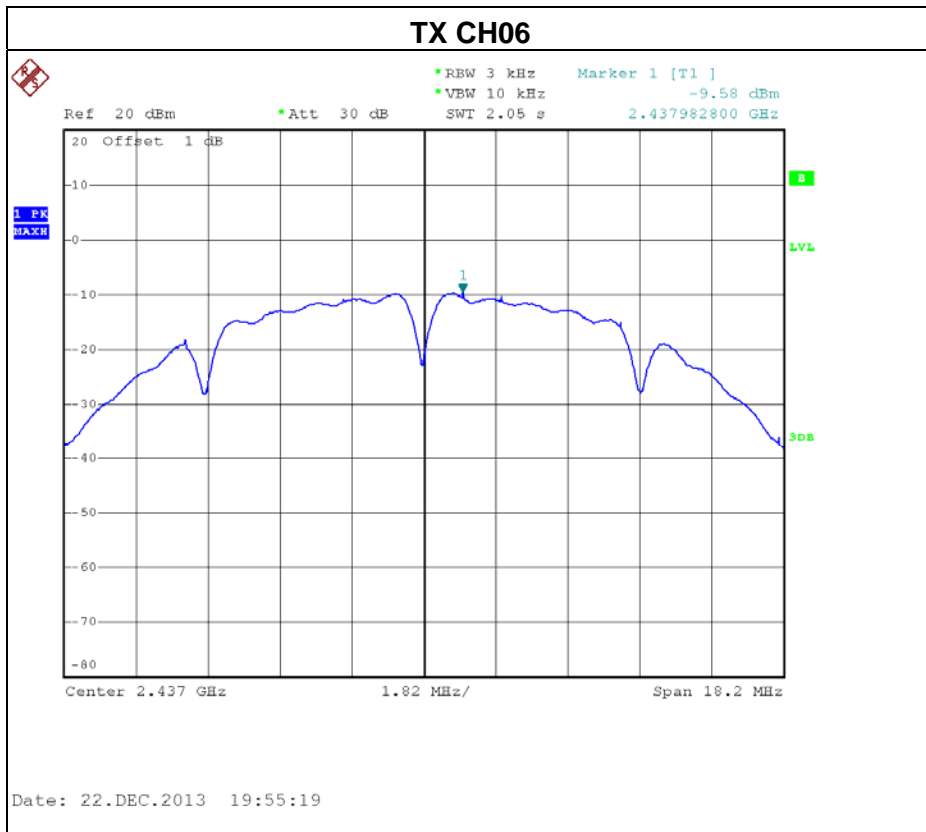


**8.1.6 TEST RESULTS**

EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-12.21	8
CH06	2437	-9.58	8
CH11	2462	-11.18	8

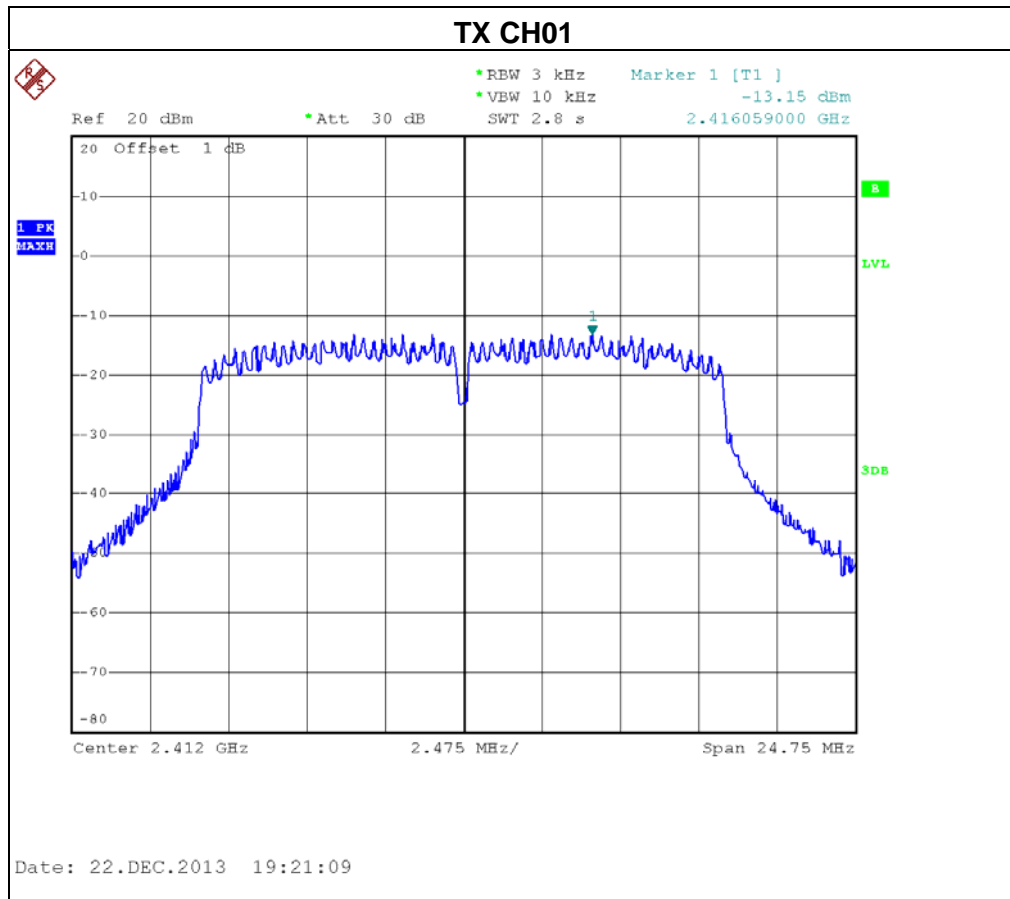


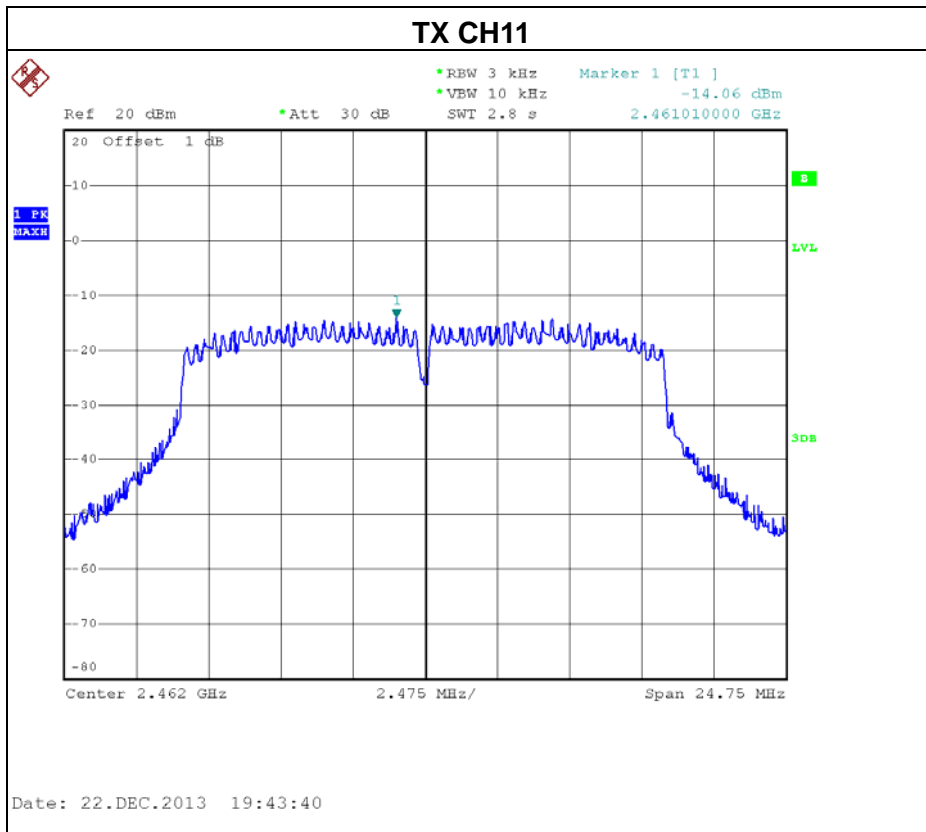
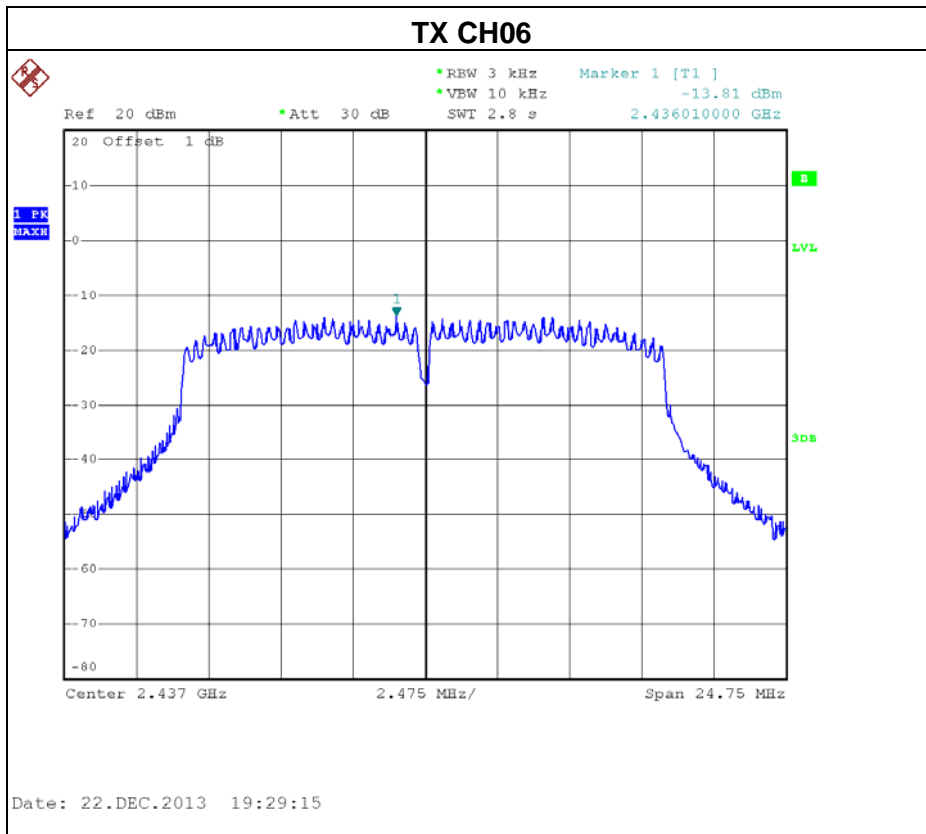




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-13.15	8
CH06	2437	-13.81	8
CH11	2462	-14.06	8

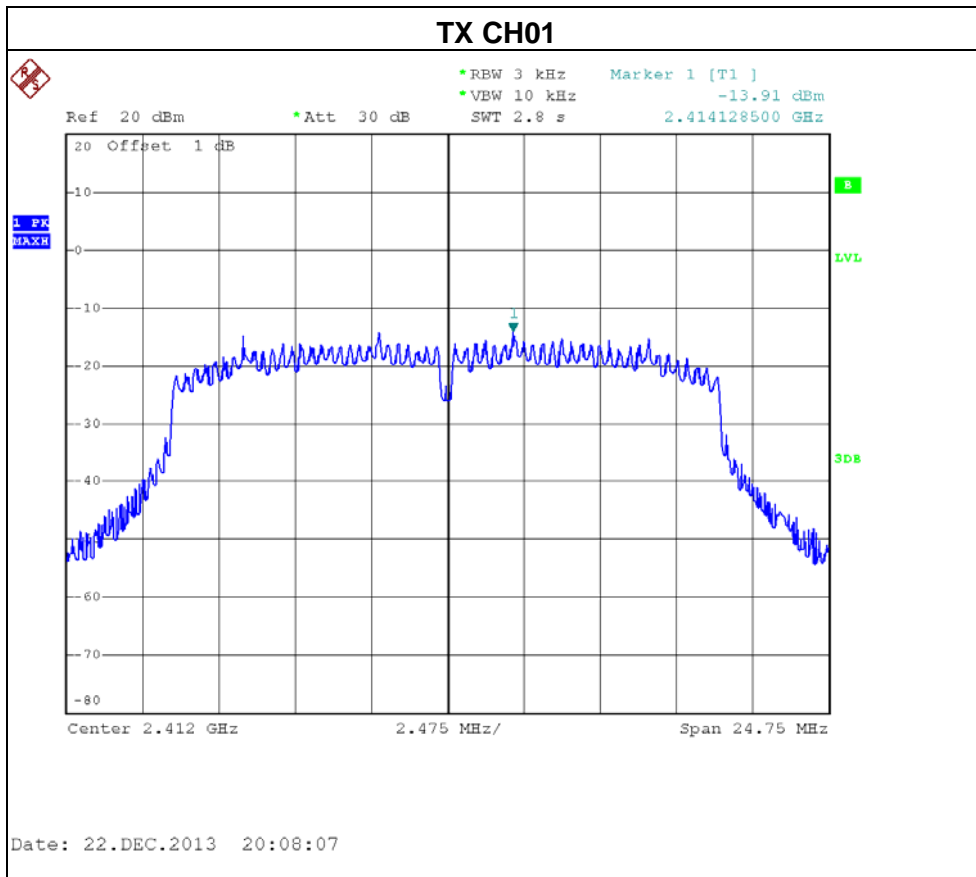


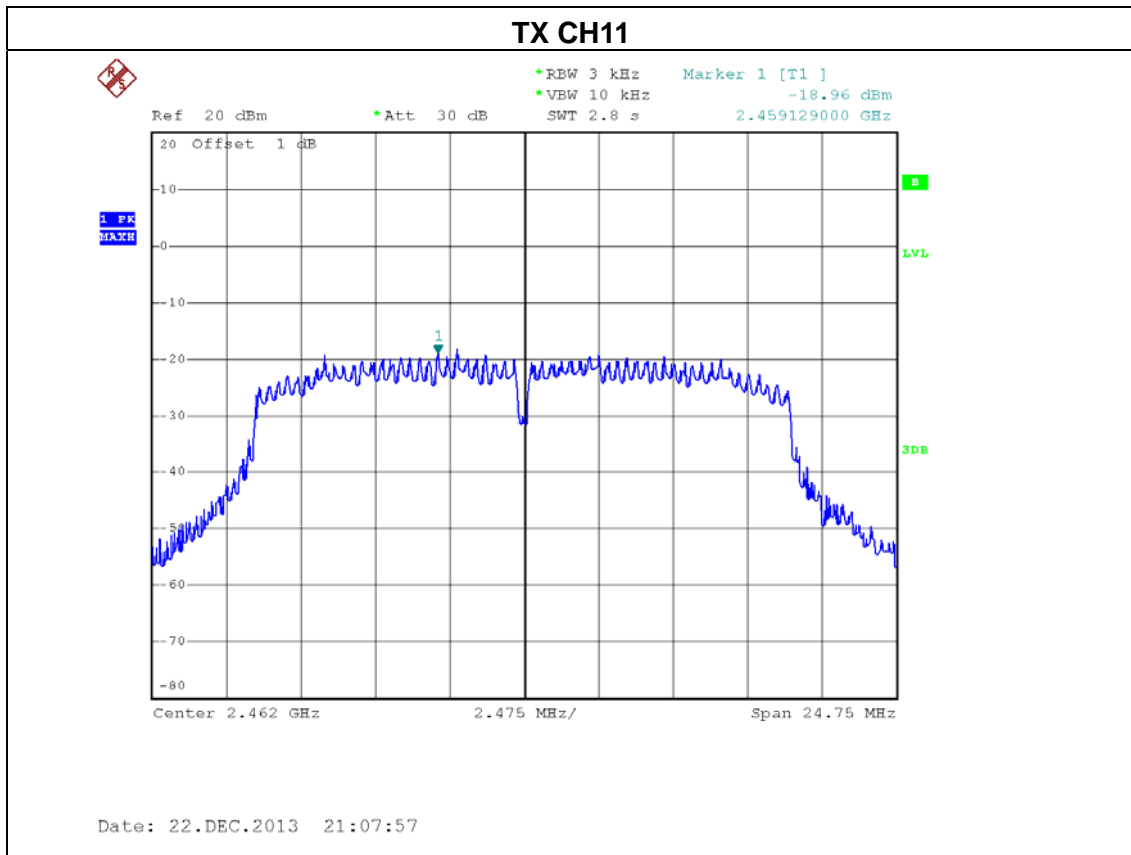
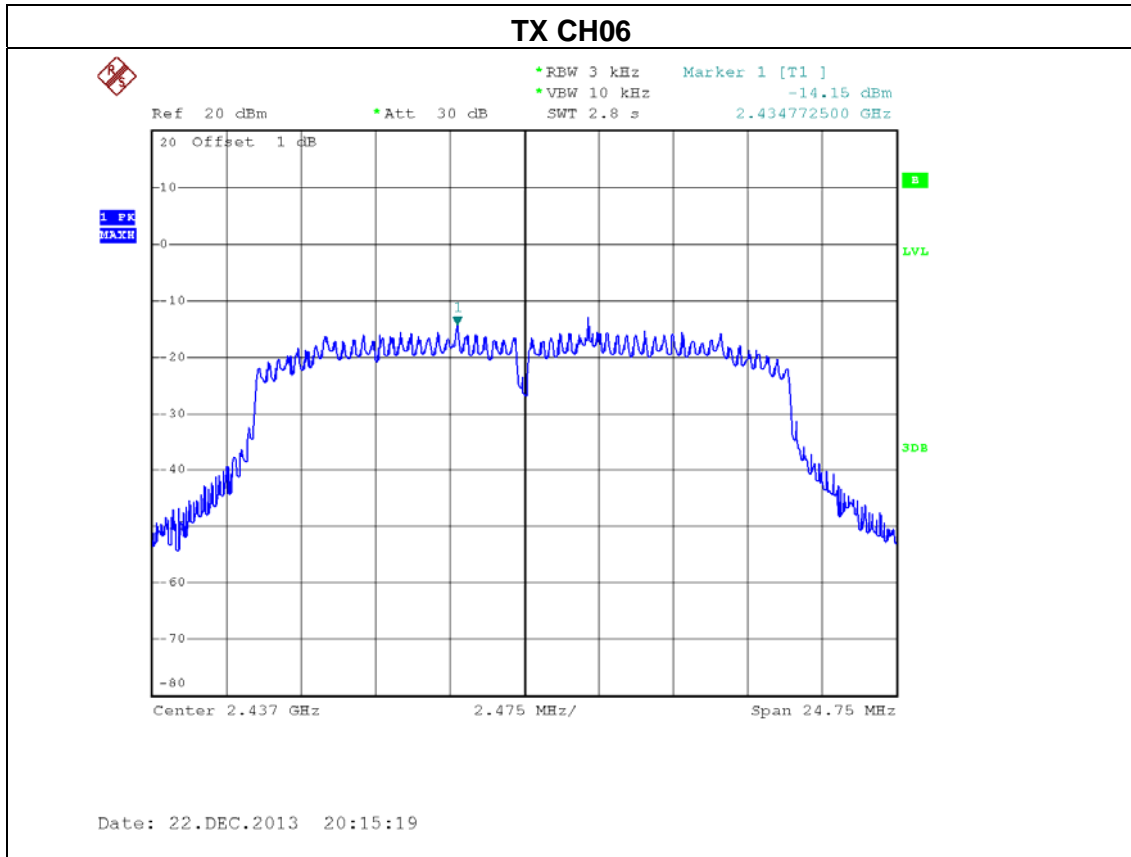




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-13.91	8
CH06	2437	-14.15	8
CH11	2462	-18.96	8

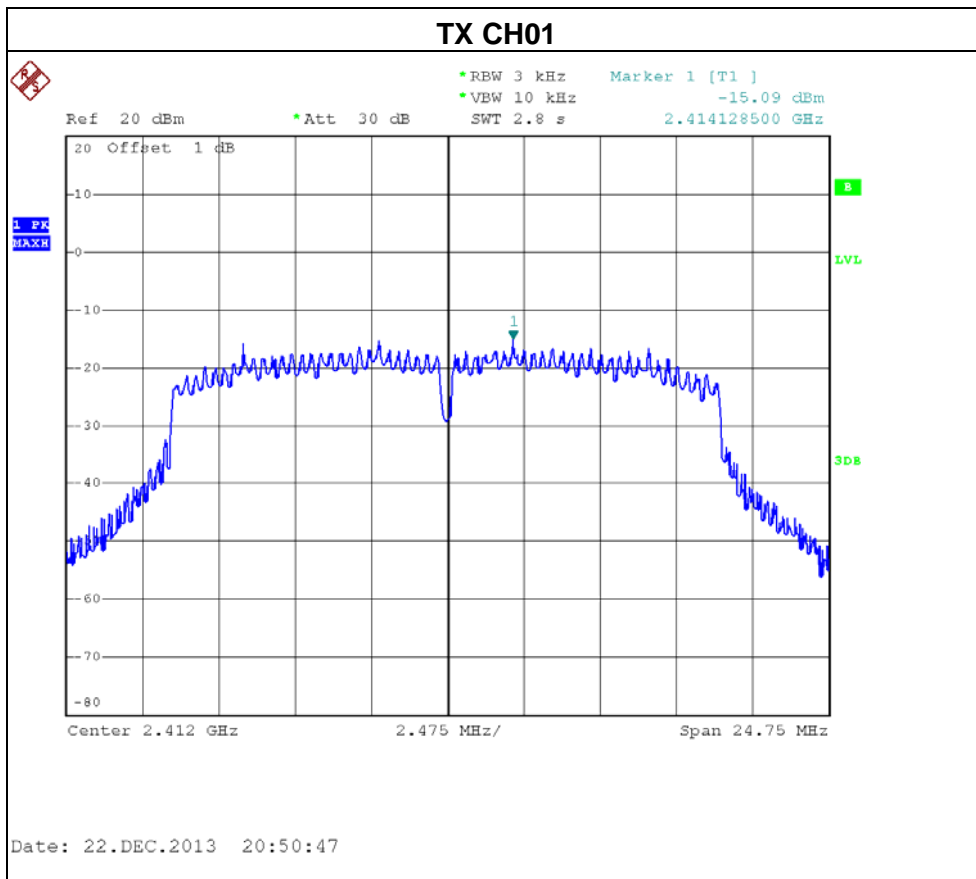


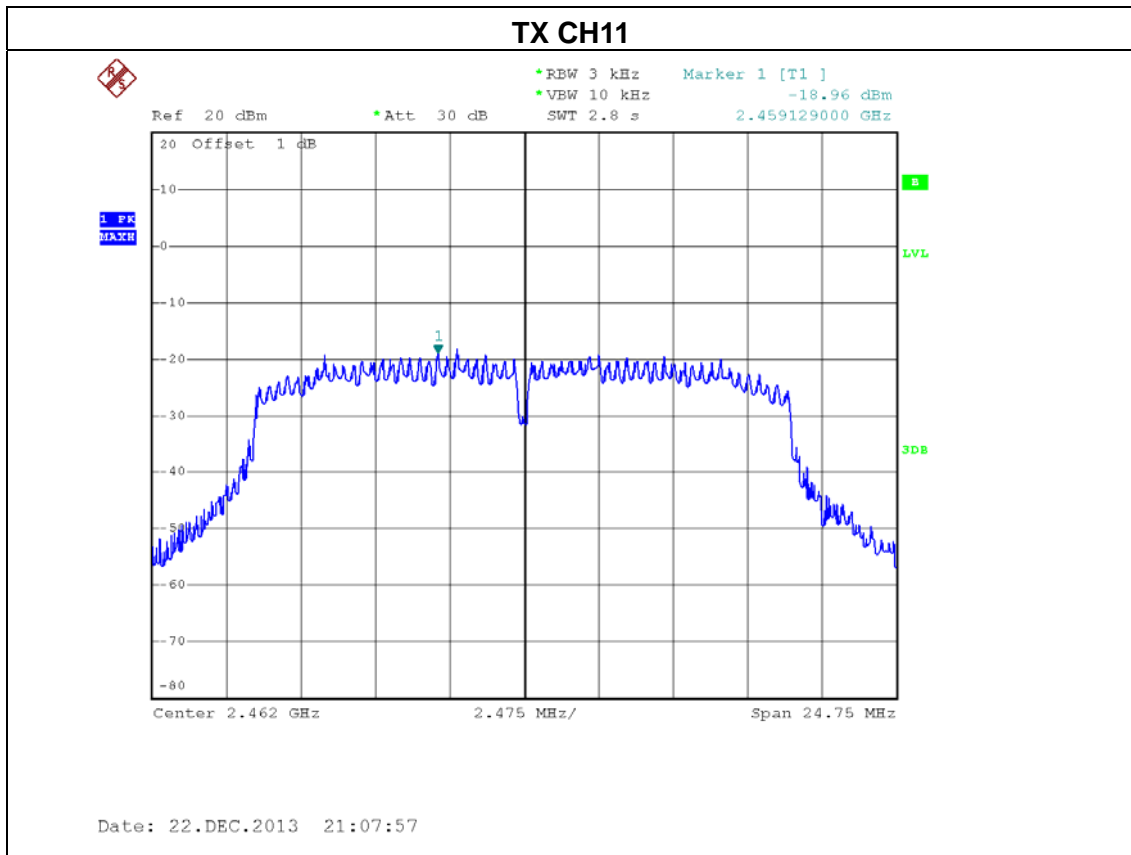
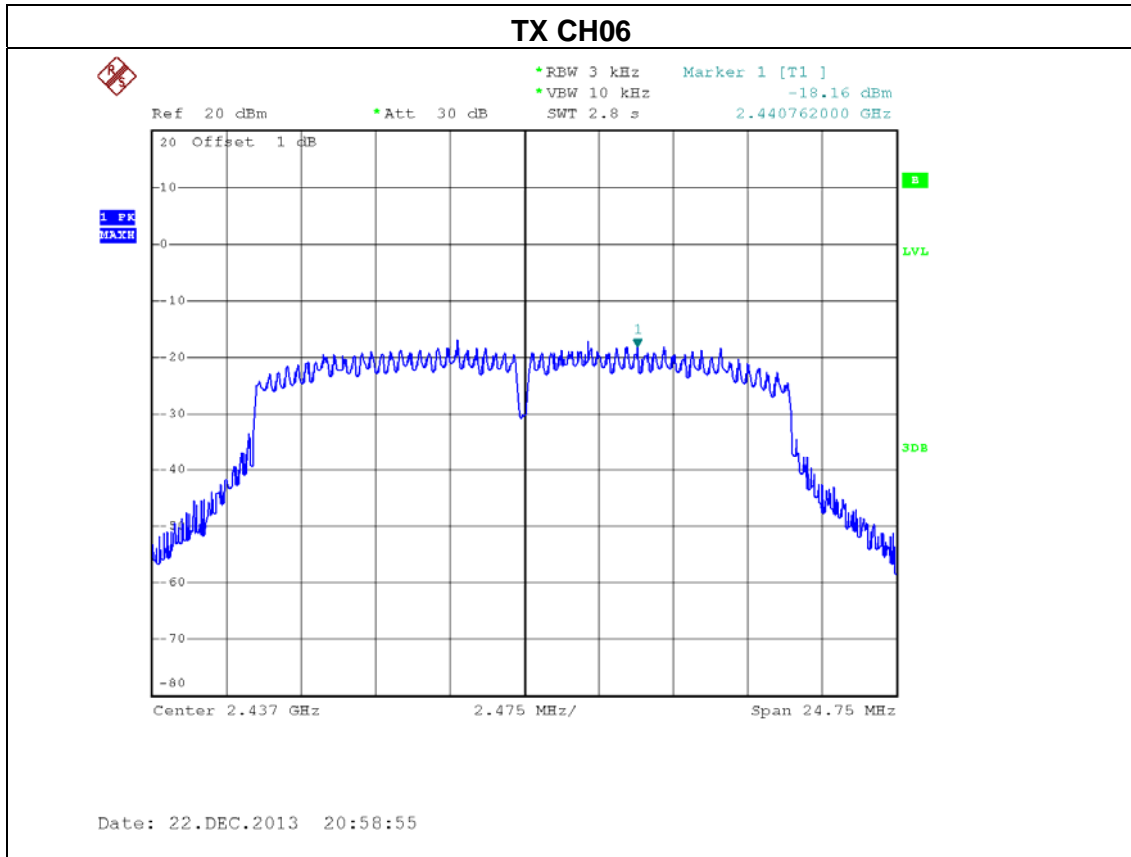




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-15.09	8
CH06	2437	-18.16	8
CH11	2462	-18.96	8









EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11-ANT 1+ANT 2		

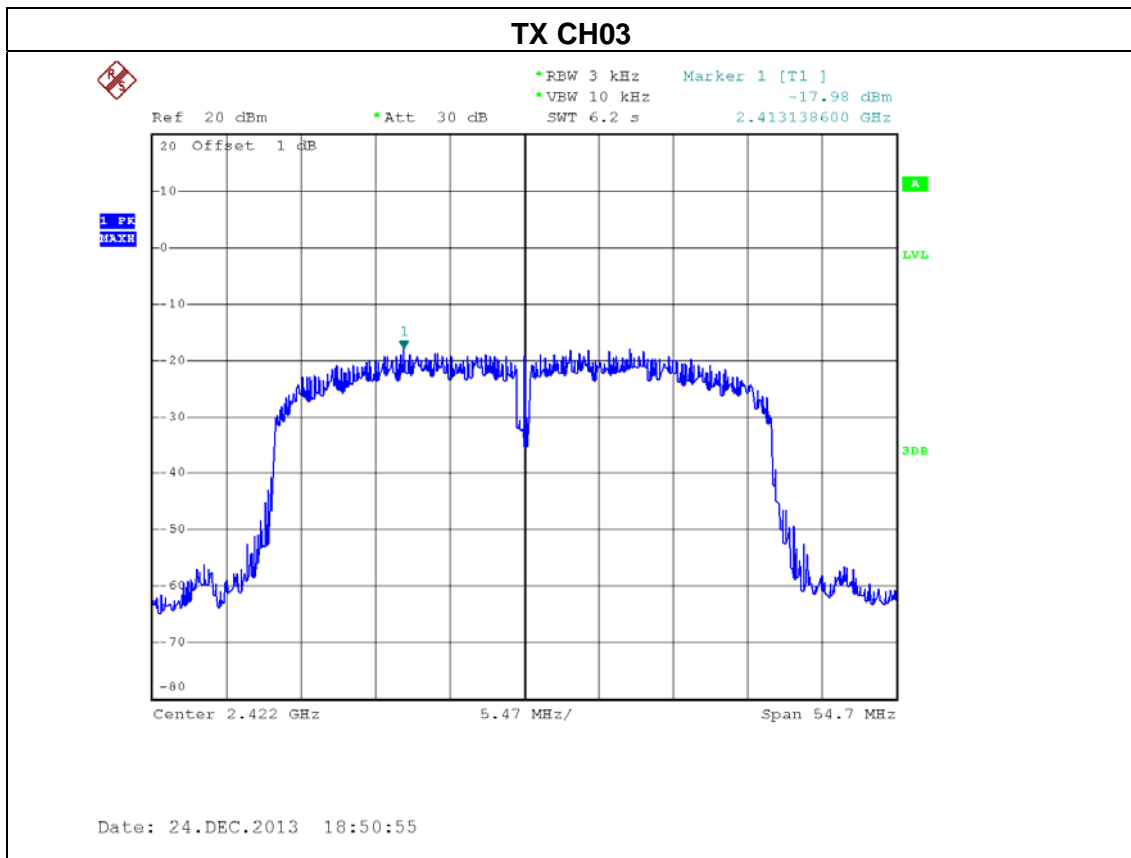
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412	-11.45	8
CH06	2437	-12.70	8
CH11	2462	-15.95	8

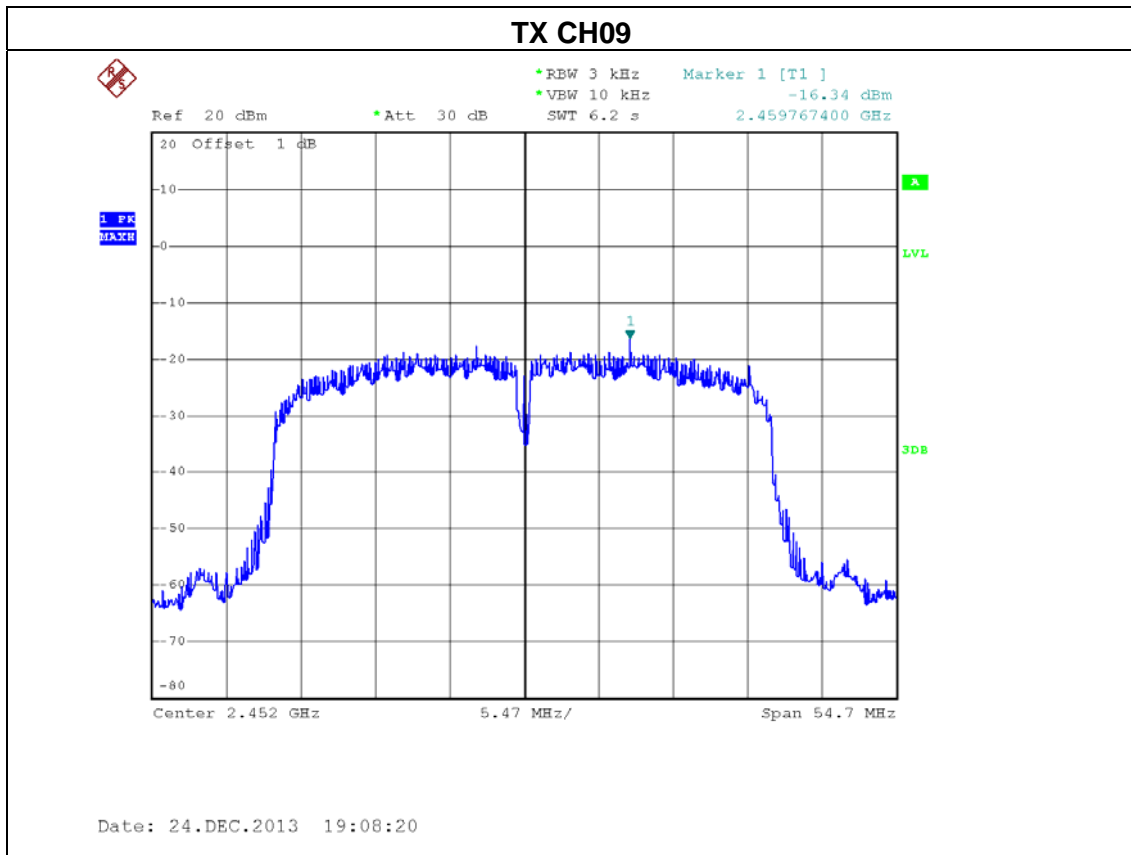
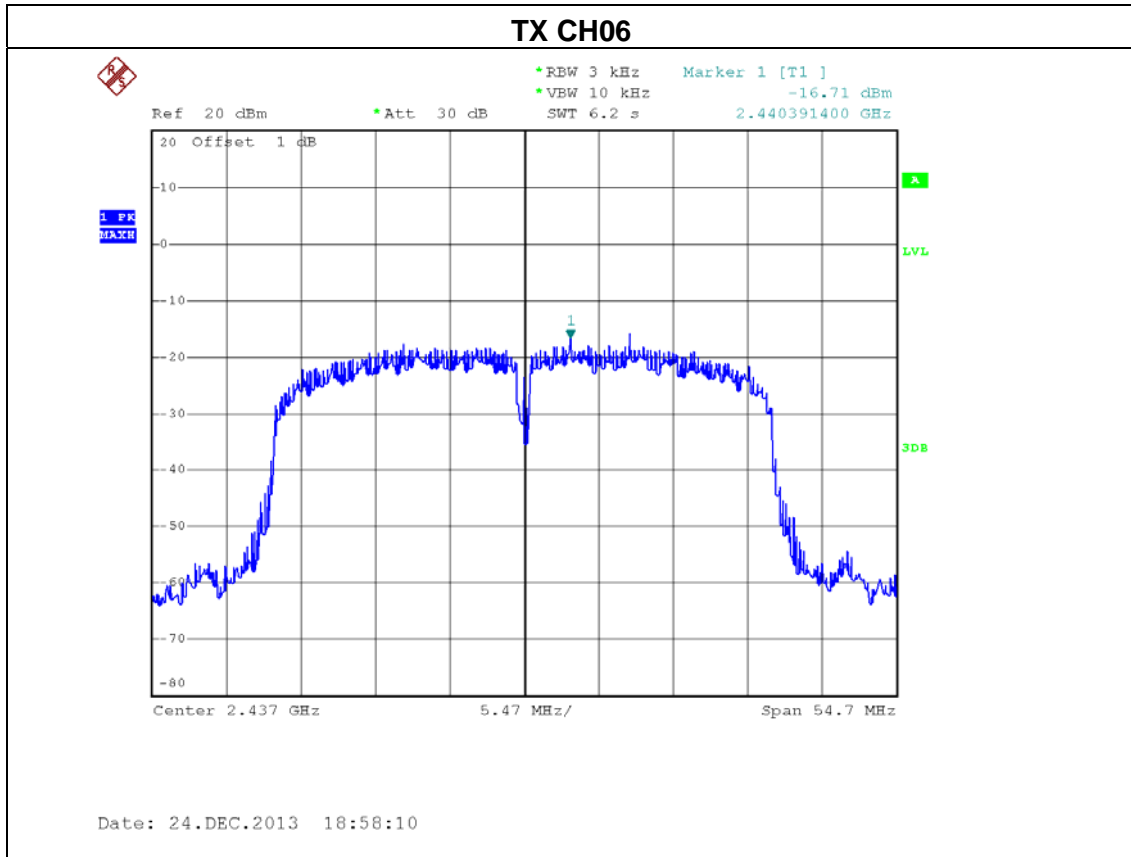
Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).all transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=5.08dBi



EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-17.98	8
CH06	2437	-16.71	8
CH09	2452	-16.34	8

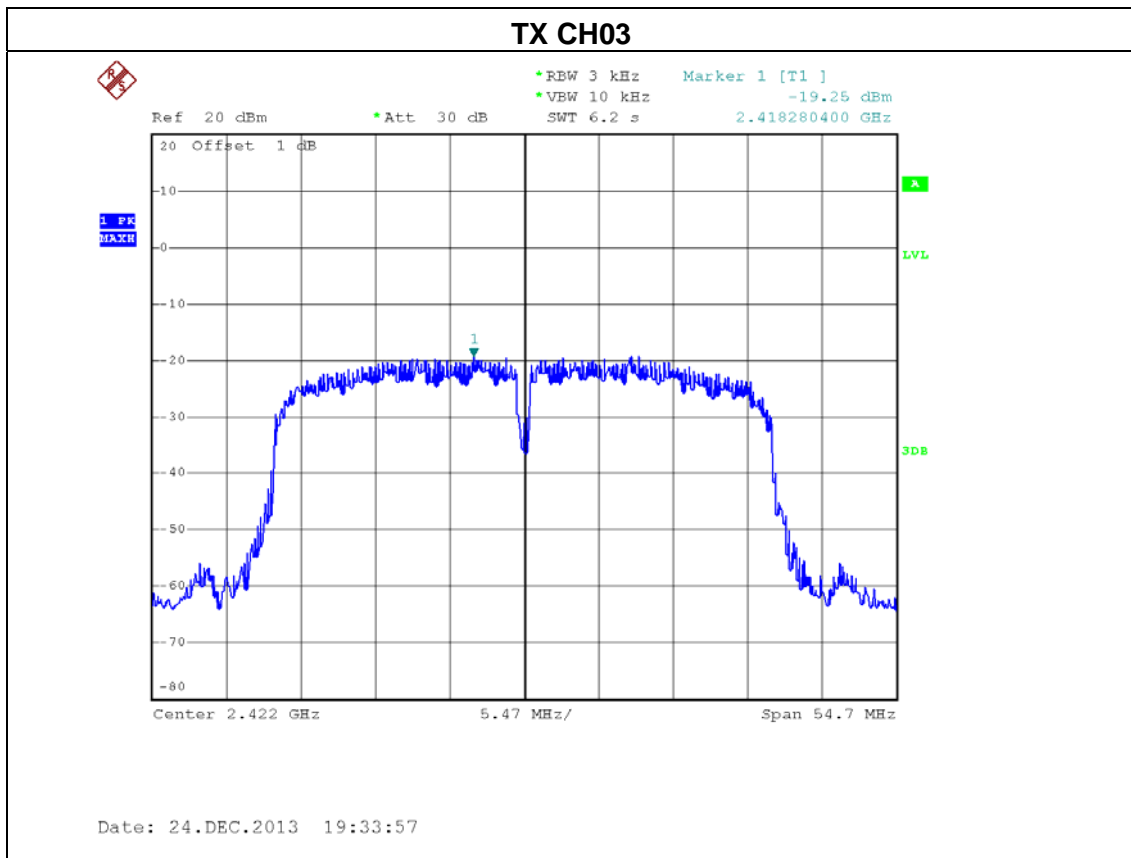


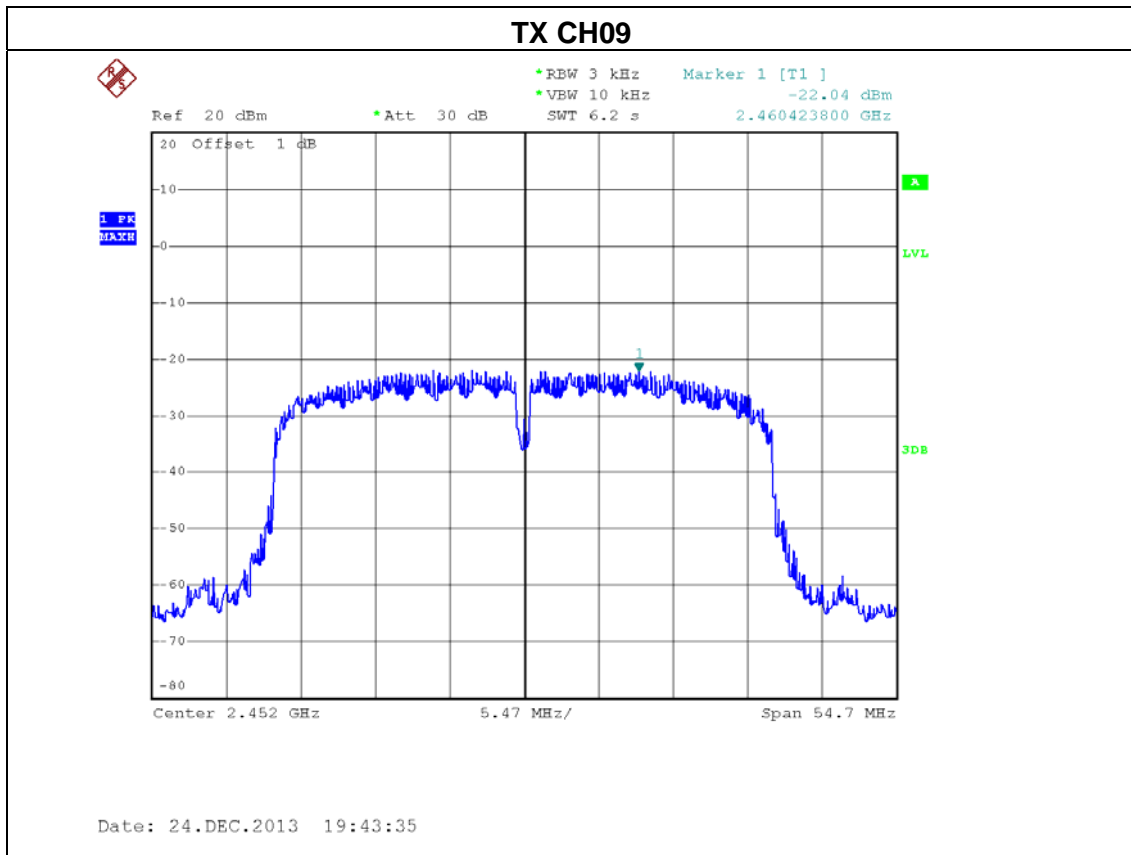
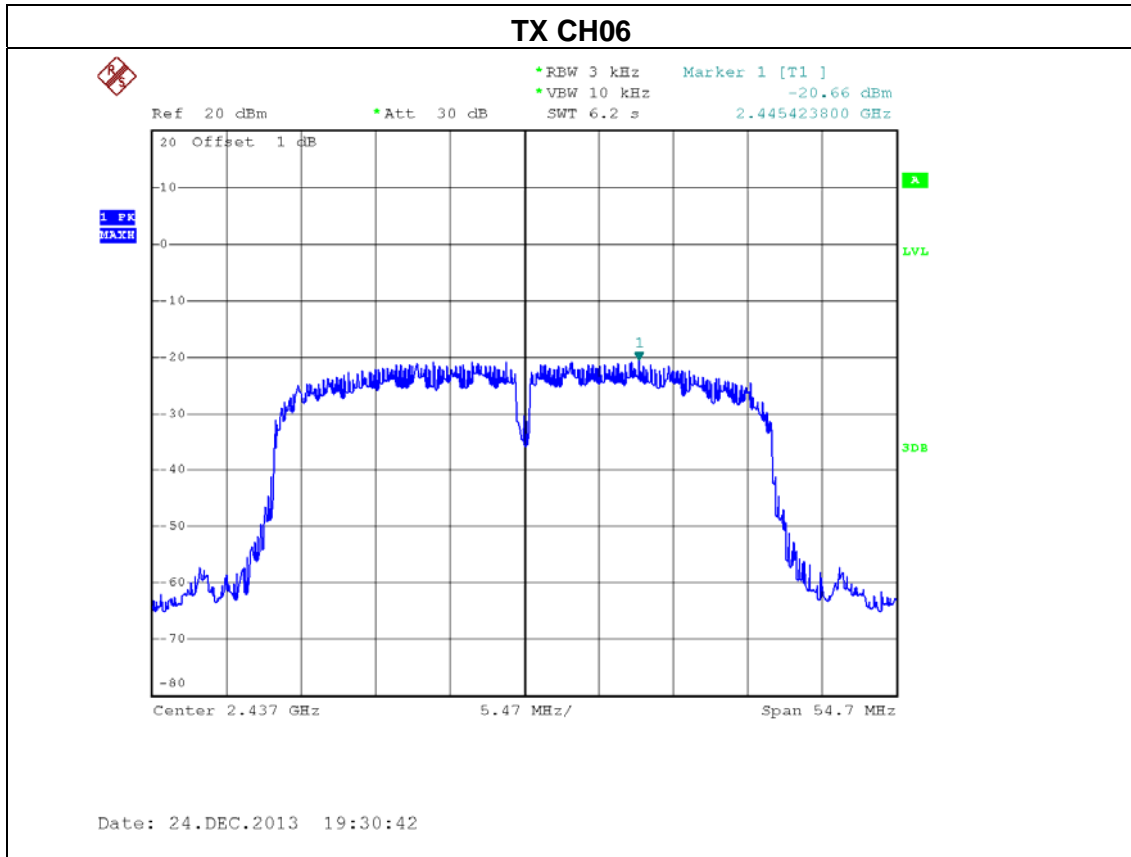




EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-19.25	8
CH06	2437	-20.66	8
CH09	2452	-22.04	8







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EUT:	300Mbps Wireless N ADSL2+ Modem Router	Model Name :	DL4322D
Temperature:	24 °C	Relative Humidity:	60 %
Pressure:	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09-ANT 1+ANT 2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422	-15.56	8
CH06	2437	-15.24	8
CH09	2452	-15.30	8

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R).all transmit signals are completely uncorrelated, then, Direction gain =  $G_{ANT}$ , that is Directional gain=5.08dBi



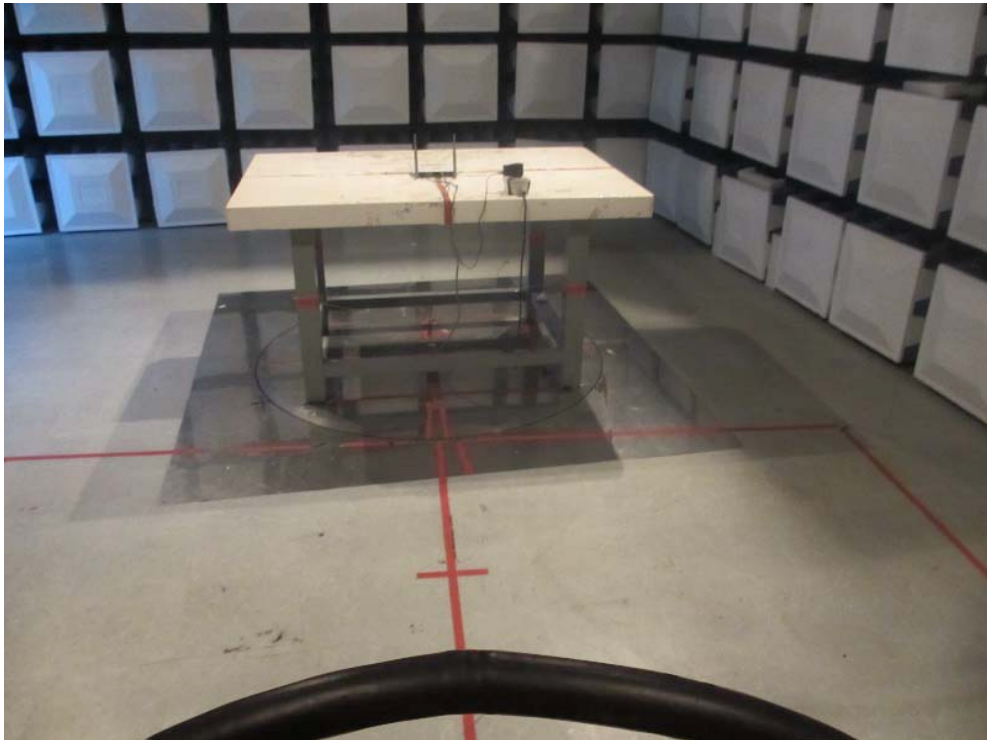
**9. EUT TEST PHOTO**

**Conducted Measurement Photos**





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





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



**Radiated Measurement Photos  
Above 1000MHz**

