



Neutron Engineering Inc.

FCC&IC Radio Test Report

FCC ID: KA2IR615S1

IC: 4216A-IR615S1

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

Issued Date : Apr. 23, 2013
Project No. : 1304C019
Equipment : Wireless router
Model Name : DIR-617; GO-RT-N300; DIR-615S1
Applicant : D-LINK Corporation
Address : No.289, Sinhu 3rd Rd., Neihu District Taipei City
114, Taiwan, R.O.C
Manufacturer : D-LINK Corporation
Address : No.289, Sinhu 3rd Rd., Neihu District Taipei City
114, Taiwan, R.O.C

Tested by:
Neutron Engineering Inc. EMC Laboratory
Date of Receipt: Apr. 01, 2013
Date of Test:
Apr. 01, 2013 ~ Apr. 22, 2013

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Declaration

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

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1. CERTIFICATION

Equipment : Wireless router
Brand Name : D-Link
Model Name : DIR-617; GO-RT-N300; DIR-615S1
Applicant : D-Link Technologies Co., Ltd.
Factory : 1) Shenzhen Gongjin Electronics Co., Ltd.
 2) TAICANG T&W Electronics Co., Ltd.
Address : 1) No 2&3 Buildings, Mingwei Factory Area, Songgang Road West, No. A
 Building, 1#Songgang Road Songgang Sub-District, Shenzhen, Guangdong,
 518105, P.R. China
 2) Jiangnan Road 89, Ludu Town, Taicang, Jiangsu, 215412, P.R. China
Date of Test : Apr. 01, 2013 ~ Apr. 22, 2013
Test Item : ENGINEERING SAMPLE
Standards : FCC Part15, Subpart C(15.247) / ANSI C63.4-2009
 Canada RSS-210:2010

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-FICP-1-1304C019) 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 standards:

FCC Part15 (15.247) , Subpart C RSS-210: 2010				
Standard	Section	Test Item	Judgment	Remark
15.207	RSS-GEN 7.2.2	Conducted Emission	PASS	
15.247(d)	RSS-210 A8.5	Antenna conducted Spurious Emission	PASS	
15.247(a)(2)	RSS-210 A8.2(a)	6dB Bandwidth	PASS	
15.247(b)(3)	RSS-210 A8.4(4)	Peak Output Power	PASS	
15.247(e)	RSS-210 A8.2(b)	Power Spectral Density	PASS	
15.203	-	Antenna Requirement	PASS	
15.209/15.205	RSS-210 Annex 8 (A8.5)	Transmitter Radiated Emissions	PASS	
-	RSS-Gen 7.2.3	Receiver 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 v02 (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

Neutron's test firm number is 4428B-1

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	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	Wireless router	
Brand Name	D-Link	
Model Name	DIR-617; GO-RT-N300; DIR-615S1	
Model Difference	Only difference is software language.	
Product Description	The EUT is a Wireless router.	
	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 (2T2R)
	Number Of Channel	11 CH, Please see note 2.(Page 9)
	Antenna Designation	Please see note 3.(Page 9)
	Antenna Gain(Peak)	
Output Power (Max.)	802.11b: 17.03 dBm	
	802.11g: 14.73 dBm	
	802.11n(20MHz): 14.11 dBm	
	802.11n(40MHz): 14.23 dBm	
More details of EUT technical specification, please refer to the User's Manual.		
Power Source	DC voltage supplied from AC/DC adapter. 1# Brand/Model:Gongjin/S06A22-120A050-PB 2# Brand/Model:Frecom/F05W-120050SPAU	
Power Rating	1# I/P: AC 100-240V~50/60Hz Max 0.3A O/P: DC 12V 500mA 2# I/P: AC 100-240V~50/60Hz 190mA O/P: DC 12V 0.5A	
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.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	GONGJIN	800000000 106	Integral Antenna	N/A	2.5	TX/RX
2	GONGJIN	800000000 106	Integral Antenna	N/A	2.5	TX/RX

Note:

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

- 4.

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



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:

For Conducted Test	
Final Test Mode	Description
Mode 5	TX Mode

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

Note:

- (1) The measurements are performed at the high, middle, low available channels.
- (2) 802.11b mode: DBPSK (1Mbps)
 802.11g mode: OFDM (6Mbps)
 802.11n HT20 mode : BPSK (6.5Mbps)
 802.11n HT40 mode : BPSK (13.5Mbps)
 For radiated emission tests, the highest output powers were set for final test.



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

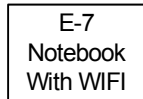
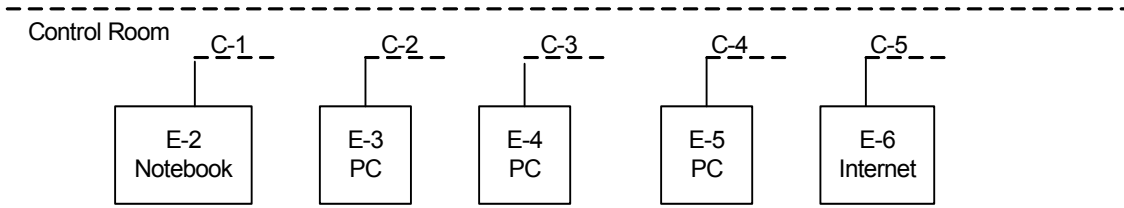
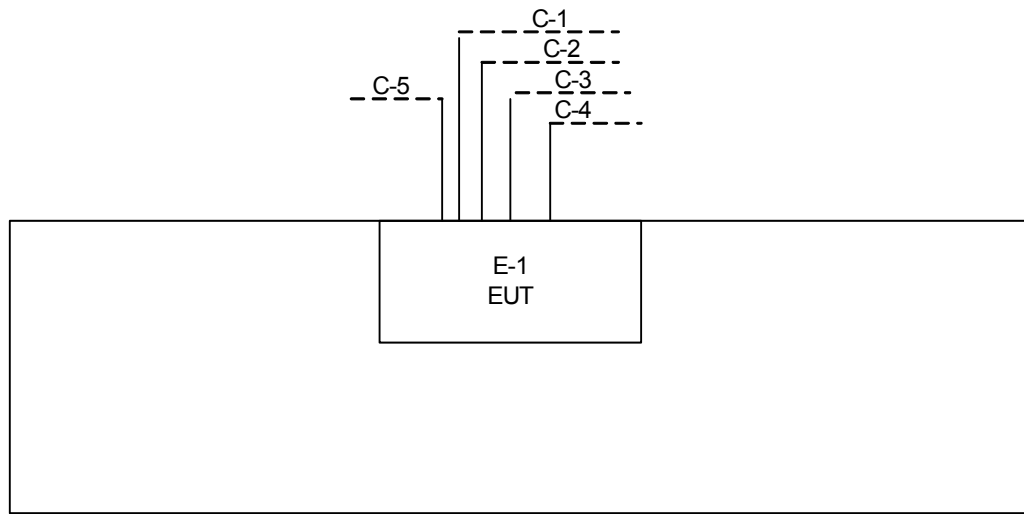
Test software version	RT3x7xQA		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b DSSS	16	17	19
IEEE 802.11g OFDM	17	17	17

Test software version	RT3x7xQA		
Frequency (MHz)	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11n (20MHz)	10	10	11
Frequency (MHz)	2422 MHz	2437 MHz	2452 MHz
IEEE 802.11n (40MHz)	10	11	11



3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

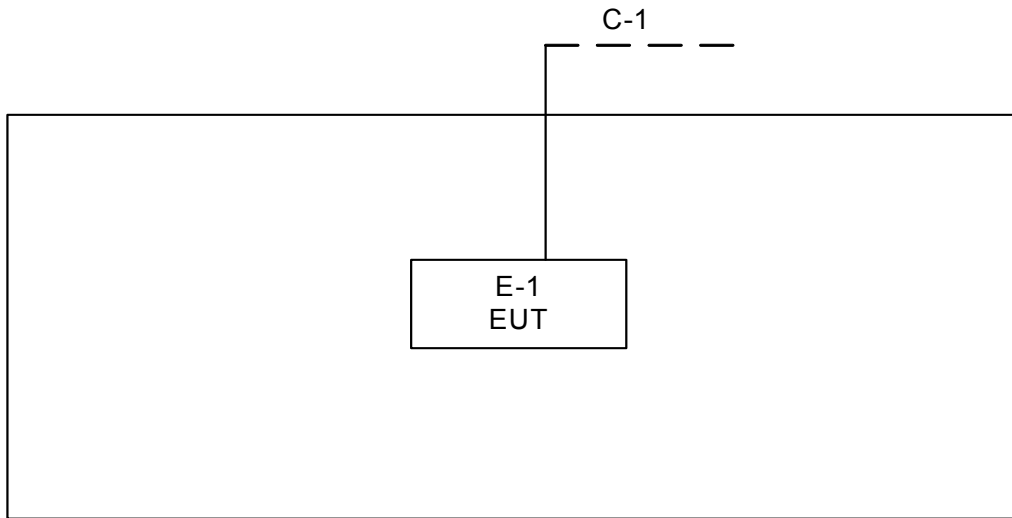
Conducted Mode:



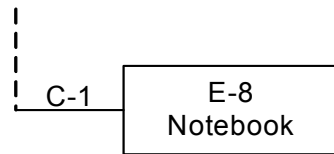
- C-1: RJ45 Cable
- C-2: RJ45 Cable
- C-3: RJ45 Cable
- C-4: RJ45 Cable
- C-5: RJ45 Cable



Radiated Mode:



Control Room





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/IC	Series No.	Note
E-1	Wireless router	D-Link	DIR-617	KA2IR615S1 4216A-IR615S1	N/A	EUT
E-2	NOTEBOOK	DELL	INSPIRON 1420	DOC	JX193A01SDC2	
E-3	PC	HP	Dx7200MT	DOC	CNG60601DV	
E-4	PC	HP	Dx7208	DOC	CNG7050PF6	
E-5	PC	HP	Dx7208	DOC	CNG7050PB7	
E-6	Internet	NA	NA	NA	NA	
E-7	NOTEBOOK	ASUS	F9Eseries	N/A	7AN0AS301331	
E-8	NOTEBOOK	ASUS	F9Eseries	N/A	7AN0AS301331	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	10m	
C-2	NO	NO	10m	
C-3	NO	NO	10m	
C-4	NO	NO	10m	
C-5	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.	Last Calibration	Next Calibration
1	LISN	EMCO	3816/2	00052765	May.26.2012	May.04.2013
2	LISN	R&S	ENV216	100087	May.26.2012	May.04.2013
3	Test Cable	N/A	C_17	N/A	Mar.18.2012	Mar.27.2014
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	May.26.2012	May.04.2013
5	50Ω Terminator	SHX	TF2-3G-A	08122902	May.26.2012	May.04.2013

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

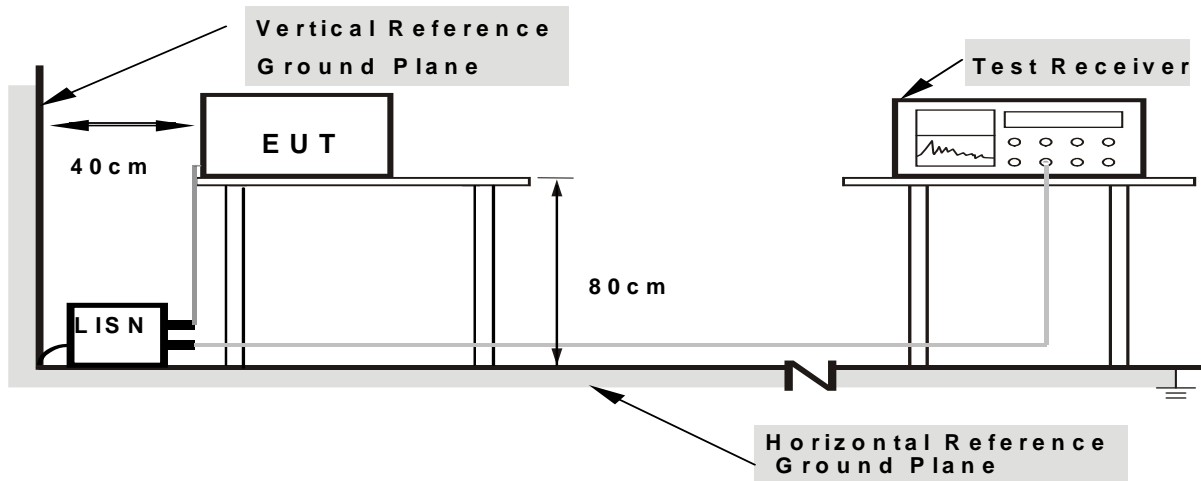
4.1.3 TEST PROCEDURE

- 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.

The EUT was programmed to be in continuously transmitting mode.



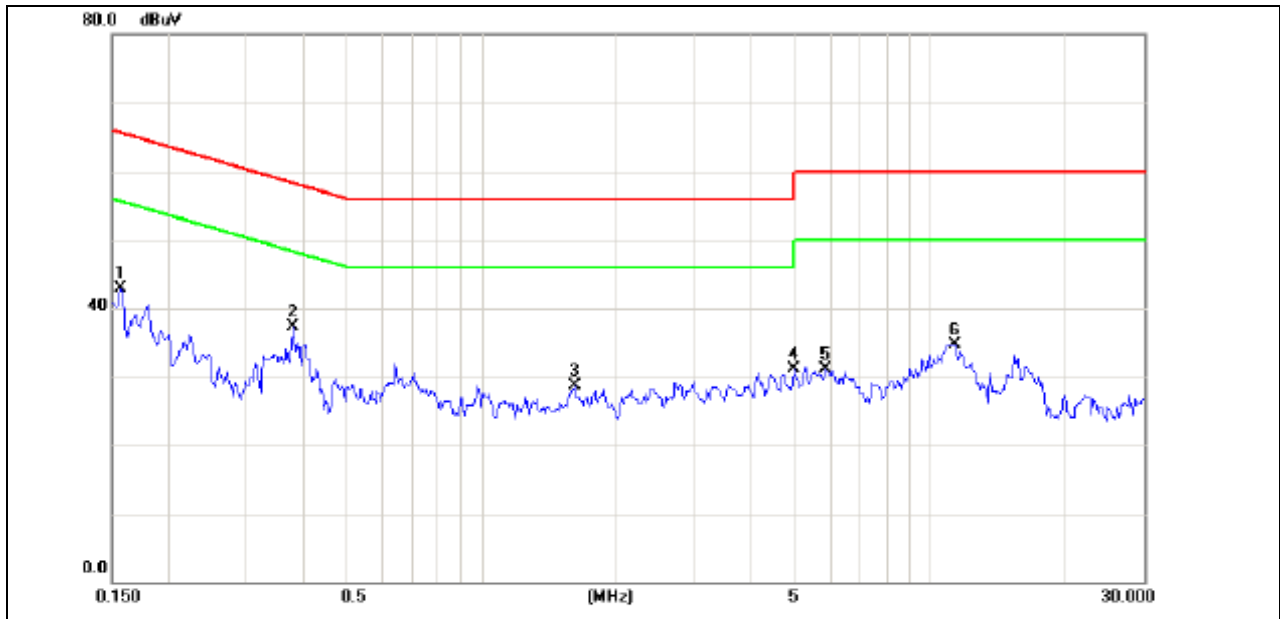
4.1.7 TEST RESULTS

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 ◦



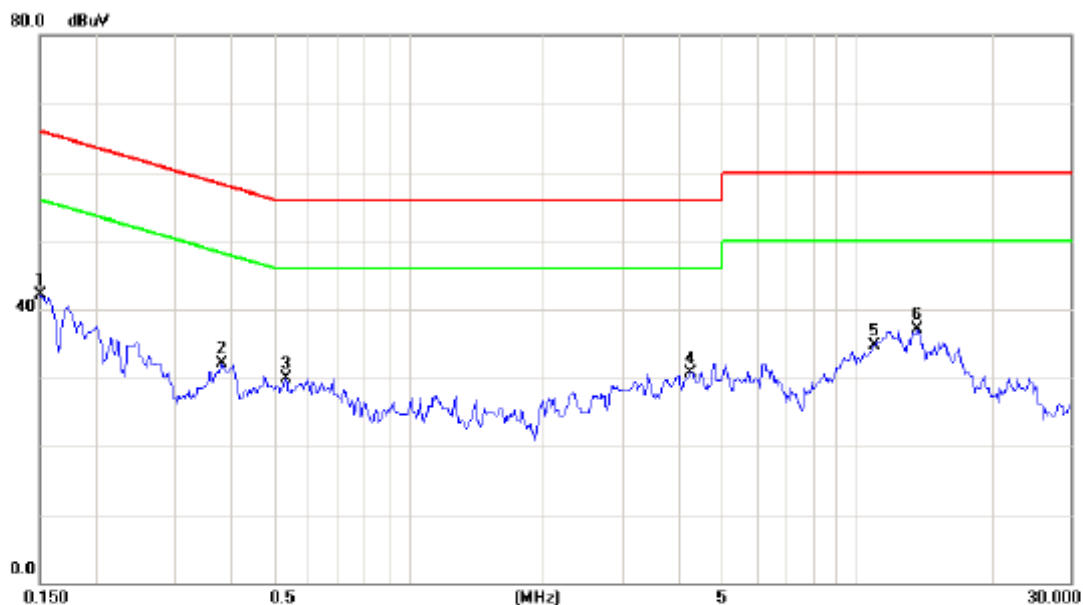
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1572	33.27	9.57	42.84	65.61	-22.77	peak	
2	*	0.3790	27.74	9.58	37.32	58.30	-20.98	peak	
3		1.6104	19.16	9.61	28.77	56.00	-27.23	peak	
4		4.9518	21.43	9.64	31.07	56.00	-24.93	peak	
5		5.8357	21.44	9.66	31.10	60.00	-28.90	peak	
6		11.3170	24.89	9.81	34.70	60.00	-25.30	peak	



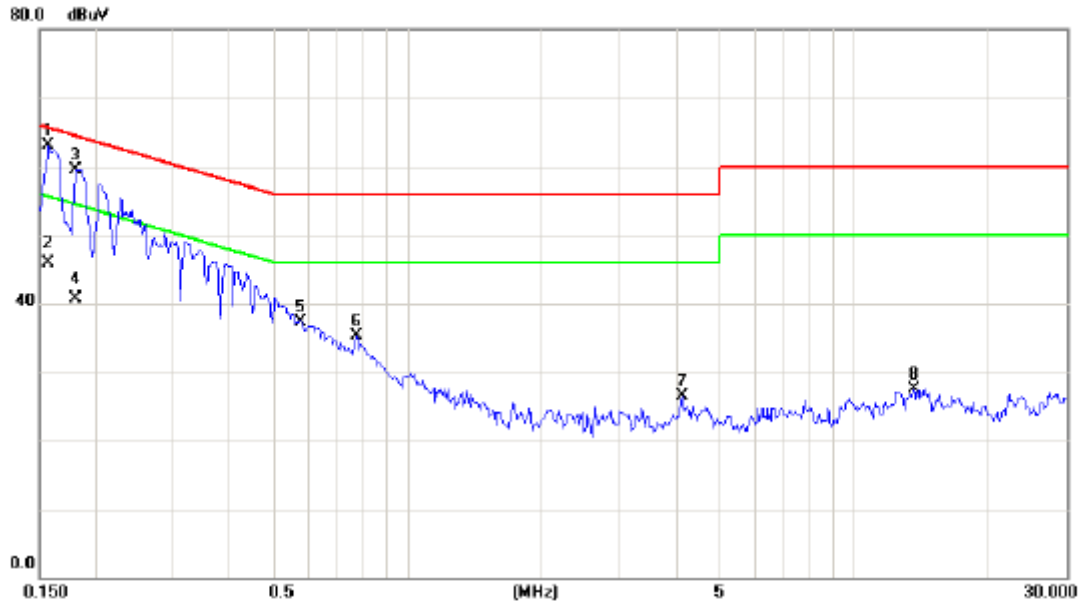
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode	Adapter:	S06A22-120A050-PB



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1500	32.45	9.57	42.02	66.00	-23.98	peak	
2	0.3810	22.48	9.58	32.06	58.26	-26.20	peak	
3	0.5321	20.38	9.58	29.96	56.00	-26.04	peak	
4	4.2465	21.07	9.63	30.70	56.00	-25.30	peak	
5	10.9050	24.82	9.80	34.62	60.00	-25.38	peak	
6 *	13.6227	27.24	9.87	37.11	60.00	-22.89	peak	



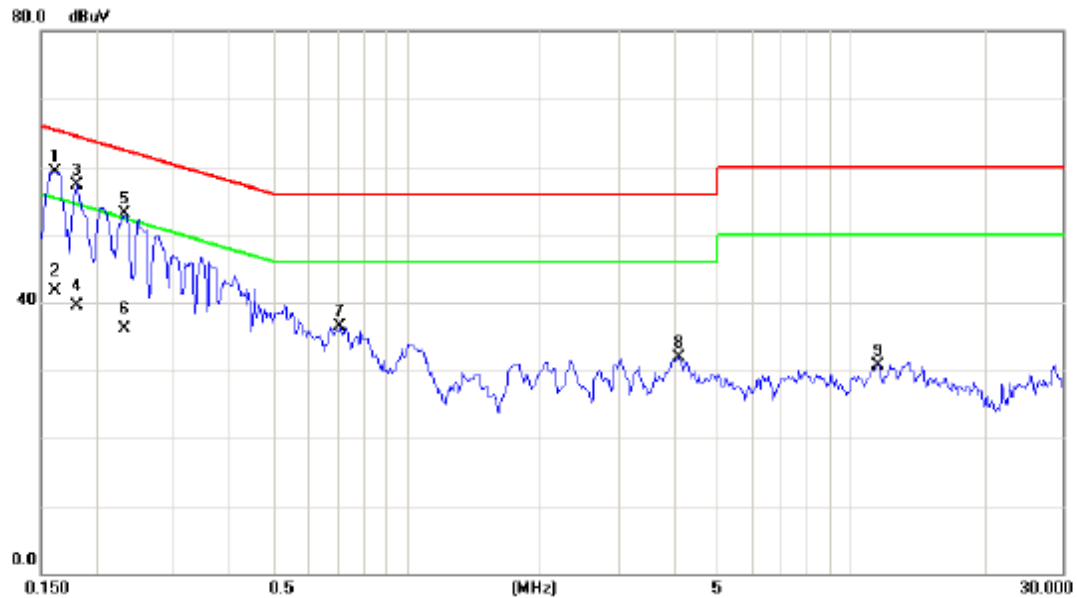
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode	Adapter:	F05W-120050SPAU



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1572	53.48	9.57	63.05	65.61	-2.56	peak	
2		0.1572	36.29	9.57	45.86	55.61	-9.75	AVG	
3		0.1804	50.01	9.57	59.58	64.47	-4.89	peak	
4		0.1804	31.15	9.57	40.72	54.47	-13.75	AVG	
5		0.5792	27.63	9.59	37.22	56.00	-18.78	peak	
6		0.7670	25.76	9.60	35.36	56.00	-20.64	peak	
7		4.1354	16.85	9.63	26.48	56.00	-29.52	peak	
8		13.6227	17.62	9.87	27.49	60.00	-32.51	peak	



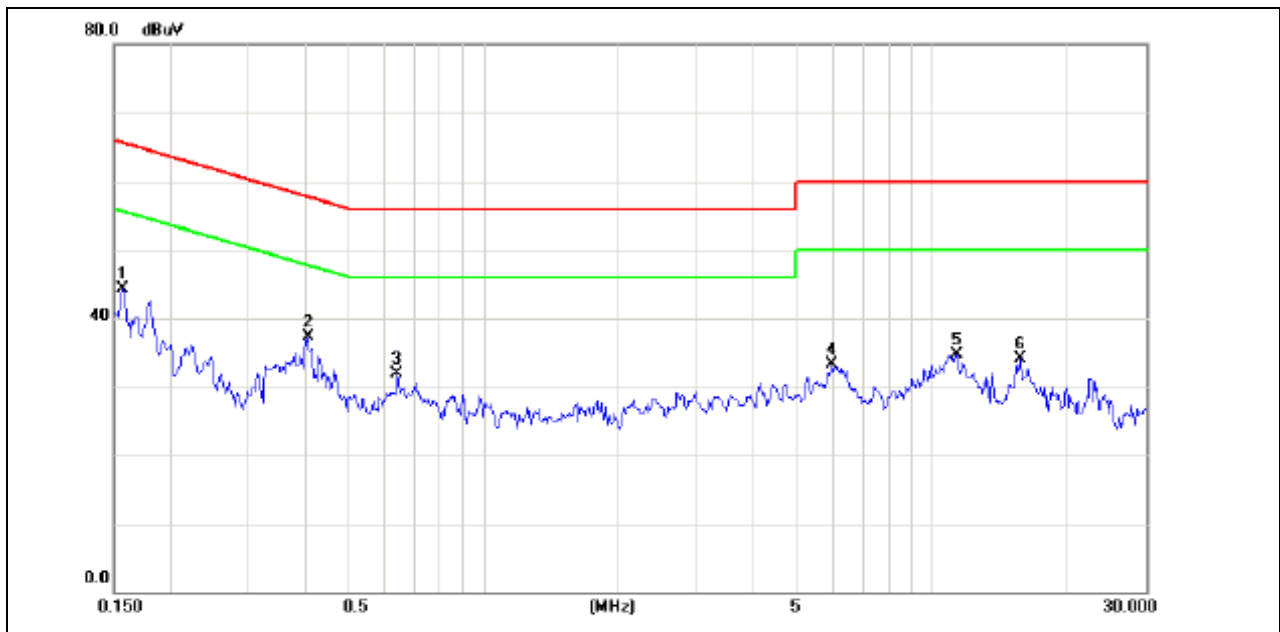
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode	Adapter:	F05W-120050SPAU



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1615	49.64	9.57	59.21	65.39	-6.18	peak	
2		0.1615	32.08	9.57	41.65	55.39	-13.74	AVG	
3		0.1804	47.80	9.57	57.37	64.47	-7.10	peak	
4		0.1804	29.87	9.57	39.44	54.47	-15.03	AVG	
5		0.2316	43.45	9.57	53.02	62.39	-9.37	peak	
6		0.2316	26.60	9.57	36.17	52.39	-16.22	AVG	
7		0.7084	26.86	9.60	36.46	56.00	-19.54	peak	
8		4.1136	22.32	9.63	31.95	56.00	-24.05	peak	
9		11.4983	20.97	9.81	30.78	60.00	-29.22	peak	



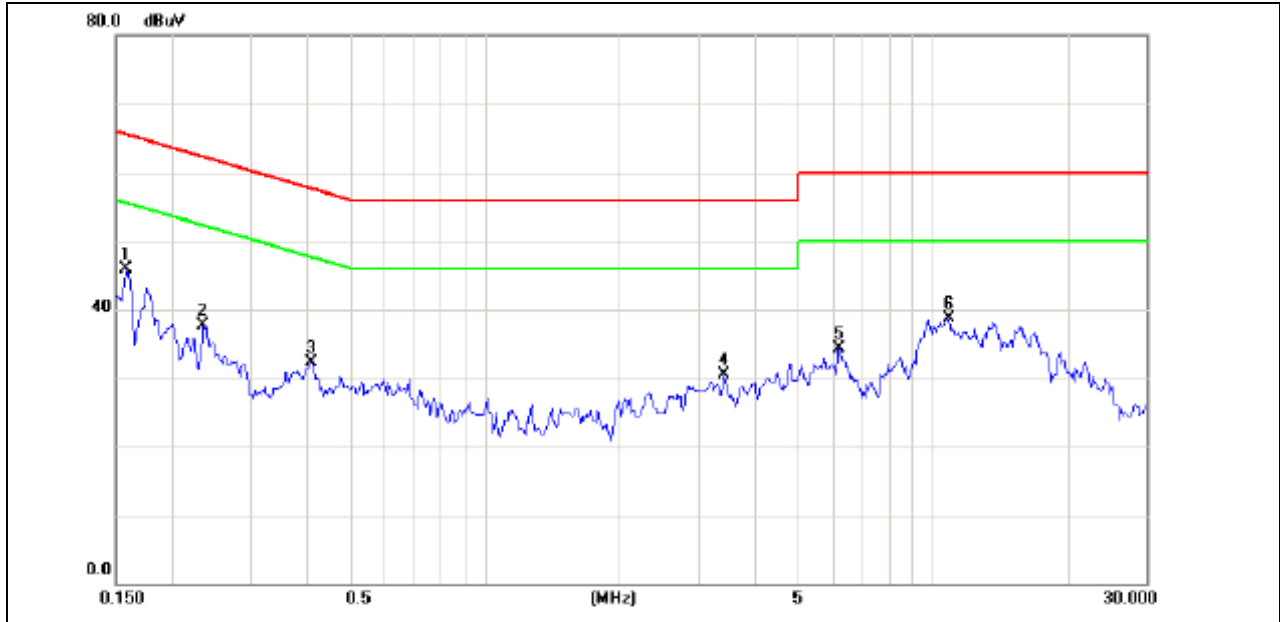
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	RX Mode	Adapter:	S06A22-120A050-PB



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1572	34.77	9.57	44.34	65.61	-21.27	peak	
2 *	0.4061	27.63	9.58	37.21	57.73	-20.52	peak	
3	0.6404	22.23	9.59	31.82	56.00	-24.18	peak	
4	5.9607	23.70	9.66	33.36	60.00	-26.64	peak	
5	11.3170	24.89	9.81	34.70	60.00	-25.30	peak	
6	15.7180	24.20	9.93	34.13	60.00	-25.87	peak	



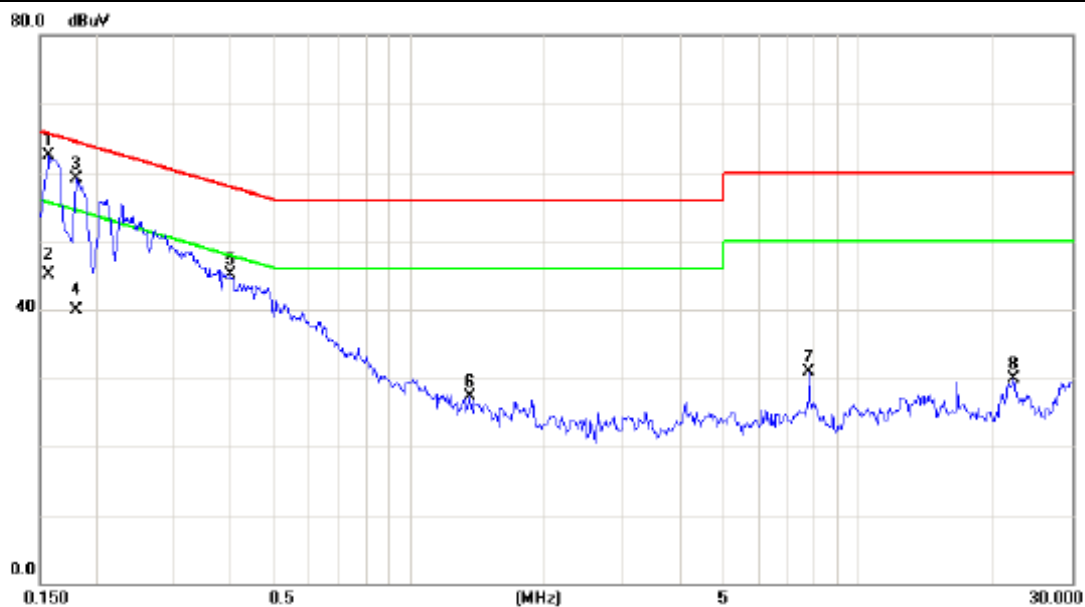
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	RX Mode	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1580	36.36	9.57	45.93	65.57	-19.64	peak	
2		0.2353	28.17	9.57	37.74	62.26	-24.52	peak	
3		0.4103	22.81	9.58	32.39	57.64	-25.25	peak	
4		3.4174	20.93	9.63	30.56	56.00	-25.44	peak	
5		6.1860	24.67	9.67	34.34	60.00	-25.66	peak	
6		10.9050	28.82	9.80	38.62	60.00	-21.38	peak	



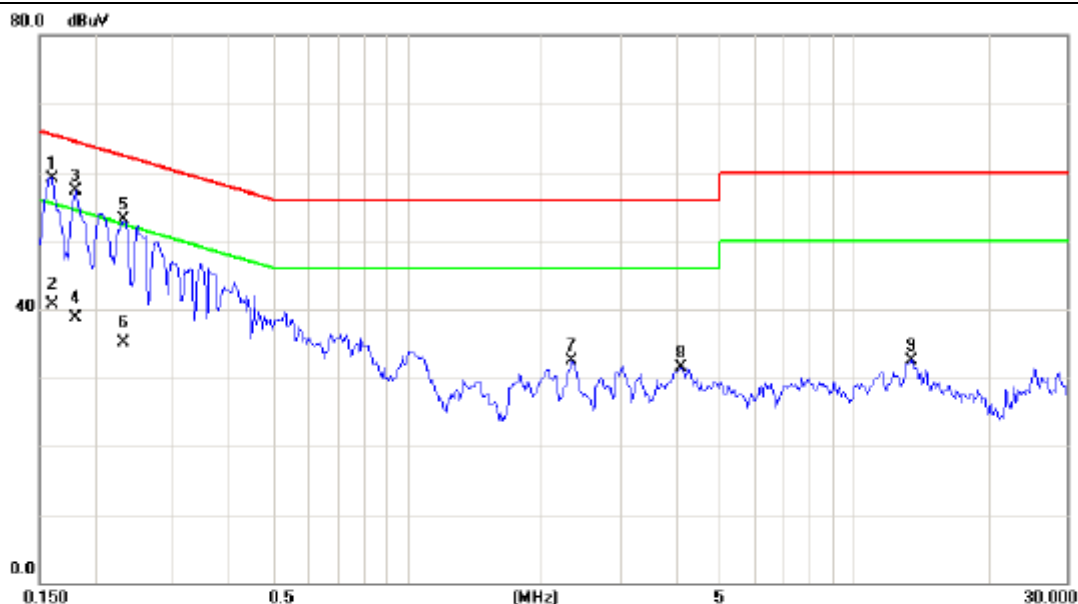
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	RX Mode	Adapter:	F05W-120050SPAU



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1572	52.98	9.57	62.55	65.61	-3.06	peak	
2		0.1572	35.54	9.57	45.11	55.61	-10.50	AVG	
3		0.1804	49.51	9.57	59.08	64.47	-5.39	peak	
4		0.1804	30.26	9.57	39.83	54.47	-14.64	AVG	
5		0.3976	35.50	9.58	45.08	57.90	-12.82	peak	
6		1.3592	17.61	9.60	27.21	56.00	-28.79	peak	
7		7.7687	21.23	9.71	30.94	60.00	-29.06	peak	
8		22.1800	19.66	10.25	29.91	60.00	-30.09	peak	



EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	RX Mode	Adapter:	F05W-120050SPAU



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1604	49.63	9.57	59.20	65.44	-6.24	peak	
2		0.1615	31.12	9.57	40.69	55.39	-14.70	AVG	
3		0.1804	47.80	9.57	57.37	64.47	-7.10	peak	
4		0.1804	29.23	9.57	38.80	54.47	-15.67	AVG	
5		0.2316	43.45	9.57	53.02	62.39	-9.37	peak	
6		0.2316	25.61	9.57	35.18	52.39	-17.21	AVG	
7		2.3334	22.86	9.62	32.48	56.00	-23.52	peak	
8		4.1136	21.82	9.63	31.45	56.00	-24.55	peak	
9		13.4792	22.73	9.87	32.60	60.00	-27.40	peak	



4.2 RADIATED EMISSION MEASUREMENT

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

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a) & RSS-210 section 2.2&A8.5, then the 15.209(a)& RSS-Gen 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).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

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



4.2.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Next Calibration
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Jun .04.2012	May.25.2013
2	Amplifier	HP	8447D	2944A09673	May.26.2012	May.04.2013
3	Test Receiver	R&S	ESCI	100382	May.26.2012	May.04.2013
4	Test Cable	N/A	C-01_CB03	N/A	Jul.01.2012	Jul.01.2013
5	Antenna	ETS	3115	00075789	May.25.2012	May.25.2013
6	Amplifier	Agilent	8449B	3008A02274	May.25.2012	May.04.2013
7	Spectrum	Agilent	E4408B	US39240143	Nov.24.2012	Nov.24.2013
8	Test Cable	HUBER+SUHNER	C-45	N/A	May.04.2012	May.02.2013
9	Controller	CT	SC100	N/A	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	May.26.2012	May.25.2013
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Oct.13.2012	May.04.2013
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Oct.13.2012	Oct.12.2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.
 All calibration period of Equipment List is One Year.

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



4.2.3 TEST PROCEDURE

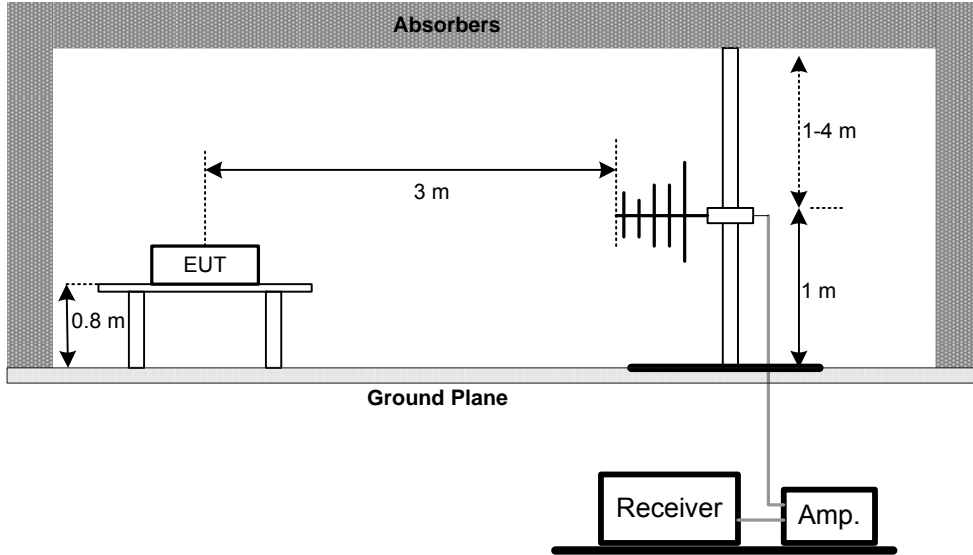
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at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

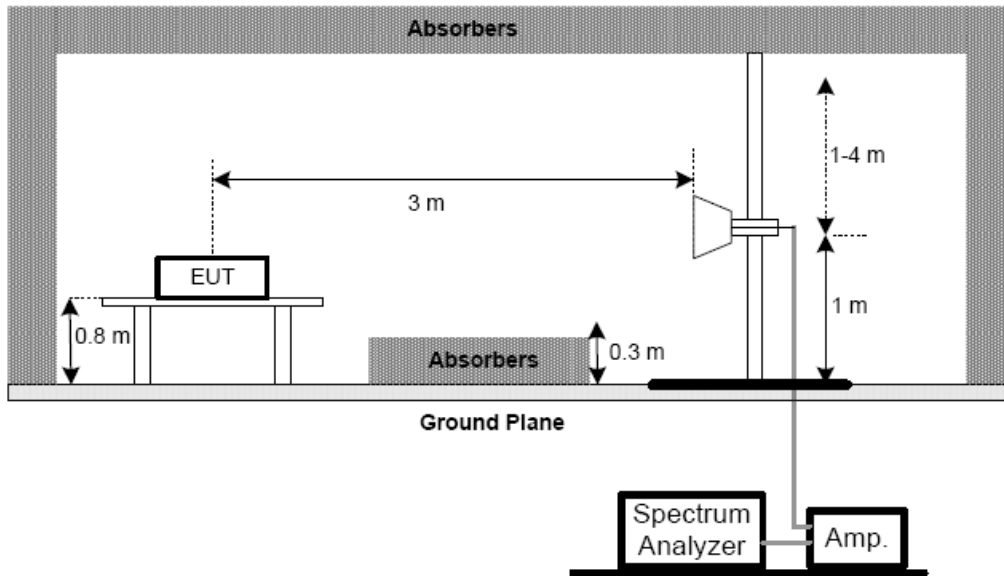
No deviation

4.2.5 TEST SETUP

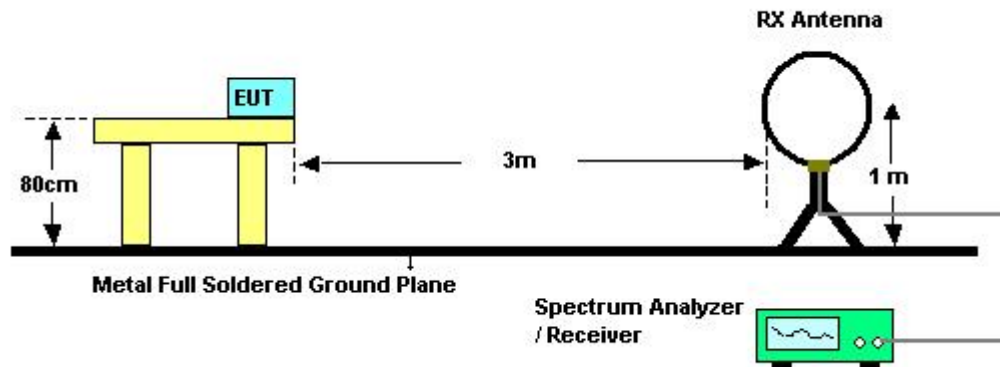
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(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 (9K~ 30MHZ)

EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	54 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX Mode		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.085	0°	23.67	21.71	45.38	109.06	-63.68	AV
0.085	0°	35.75	23.76	59.51	129.06	-69.55	PK
0.247	0°	19.88	20.41	40.29	99.74	-59.46	AV
0.247	0°	34.58	21.90	56.48	119.74	-63.27	PK
0.455	0°	22.69	19.91	42.60	94.45	-51.85	AV
0.455	0°	32.41	20.14	52.55	114.45	-61.89	PK
1.027	0°	27.87	19.60	47.47	67.37	-19.90	QP
1.352	0°	26.89	19.56	46.45	64.99	-18.53	QP
2.455	0°	29.98	19.23	49.21	69.54	-20.33	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.079	90°	18.89	21.83	40.72	109.68	-68.97	AV
0.079	90°	26.32	22.25	48.57	129.68	-81.12	PK
0.456	90°	20.39	19.91	40.30	94.43	-54.13	AV
0.456	90°	33.25	21.19	54.44	114.43	-59.99	PK
0.785	90°	27.73	20.46	48.19	69.71	-21.52	QP
1.806	90°	28.89	19.52	48.41	69.54	-21.13	QP
2.474	90°	25.54	19.22	44.76	69.54	-24.78	QP
4.172	90°	28.06	18.86	46.92	69.54	-22.62	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..



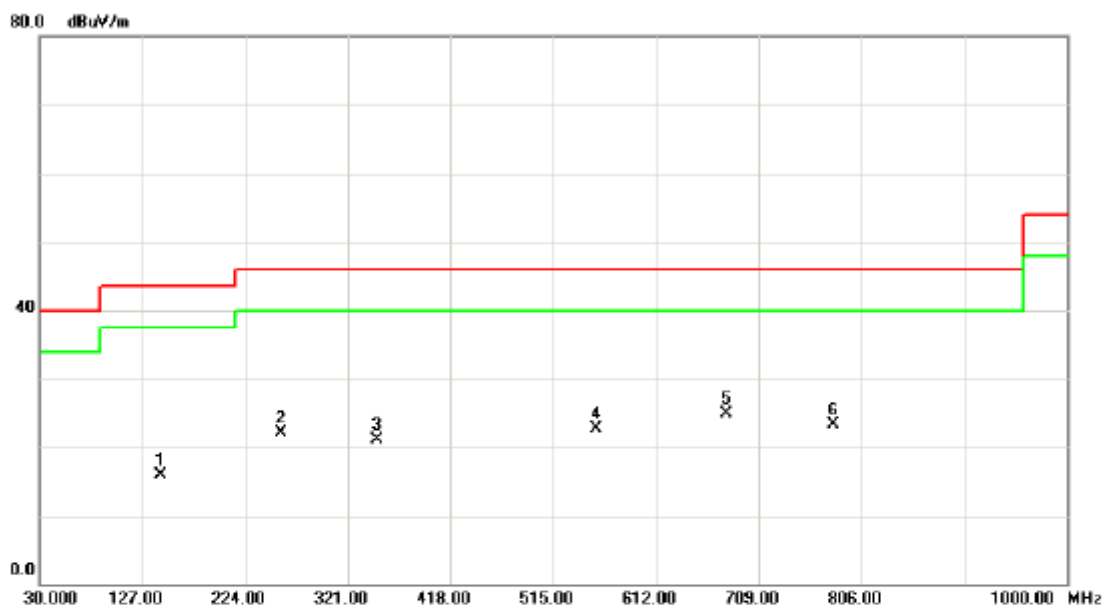
4.2.8 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

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 ◦



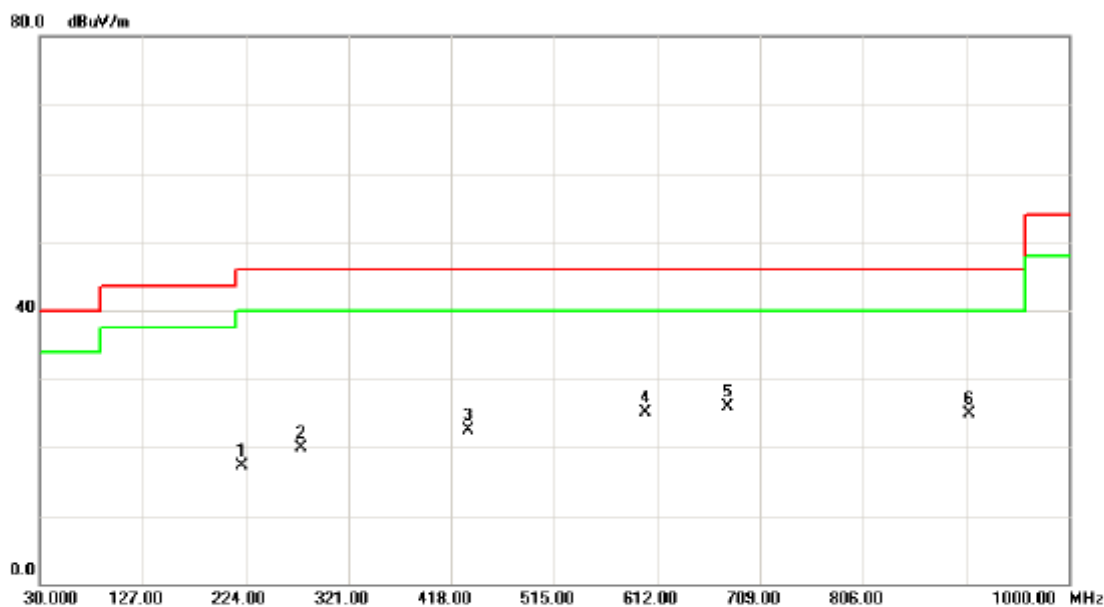
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 01	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		144.4600	33.88	-17.93	15.95	43.50	-27.55	peak	
2		257.9500	36.70	-14.51	22.19	46.00	-23.81	peak	
3		348.1600	32.65	-11.57	21.08	46.00	-24.92	peak	
4		555.7400	29.27	-6.47	22.80	46.00	-23.20	peak	
5	*	677.9600	29.48	-4.66	24.82	46.00	-21.18	peak	
6		779.8100	27.19	-3.87	23.32	46.00	-22.68	peak	



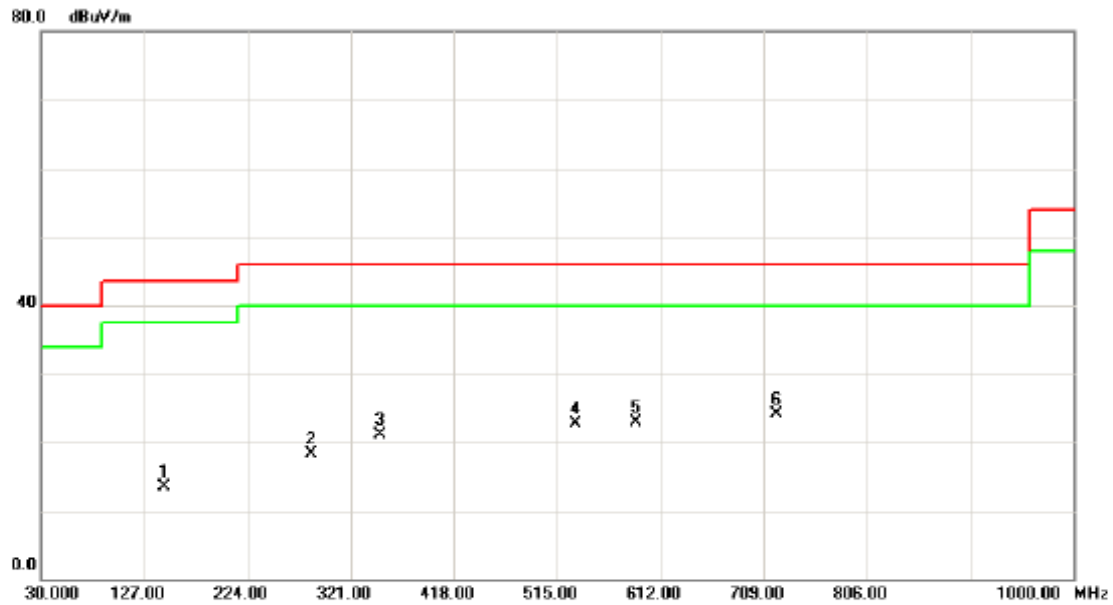
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 01	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		221.0900	33.60	-16.29	17.31	46.00	-28.69	peak	
2		276.3800	33.27	-13.41	19.86	46.00	-26.14	peak	
3		434.4900	31.82	-9.26	22.56	46.00	-23.44	peak	
4		600.3600	30.65	-5.49	25.16	46.00	-20.84	peak	
5	*	678.9300	30.61	-4.66	25.95	46.00	-20.05	peak	
6		905.9100	26.78	-1.85	24.93	46.00	-21.07	peak	



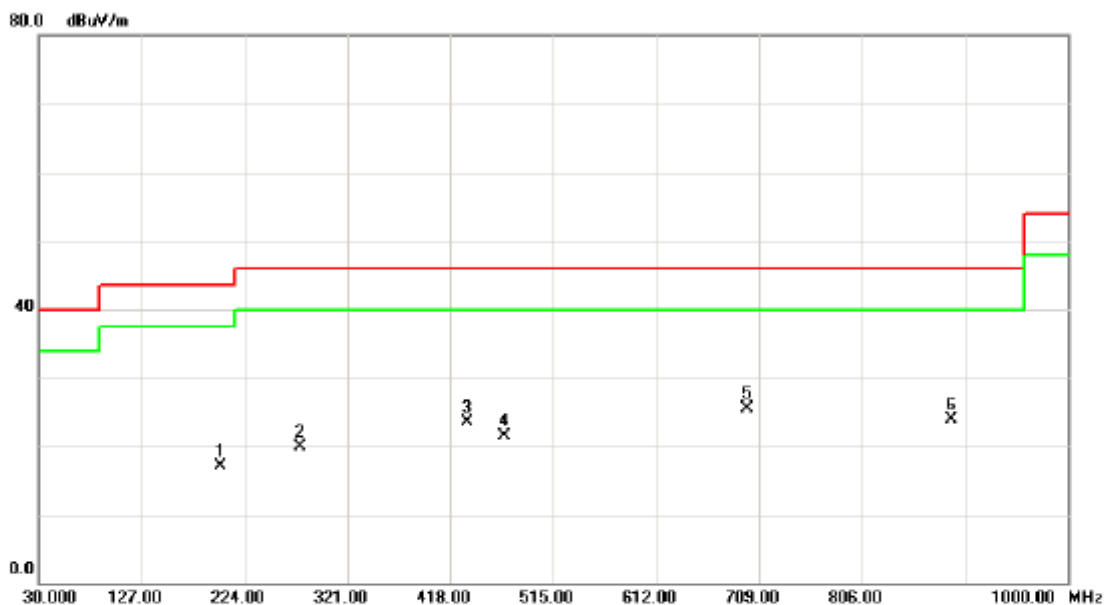
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 06	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		145.4300	31.45	-17.92	13.53	43.50	-29.97	peak	
2		284.1400	31.30	-12.93	18.37	46.00	-27.63	peak	
3		348.1600	32.65	-11.57	21.08	46.00	-24.92	peak	
4		532.4600	29.86	-7.23	22.63	46.00	-23.37	peak	
5		589.6900	28.63	-5.72	22.91	46.00	-23.09	peak	
6	*	720.6400	28.56	-4.48	24.08	46.00	-21.92	peak	



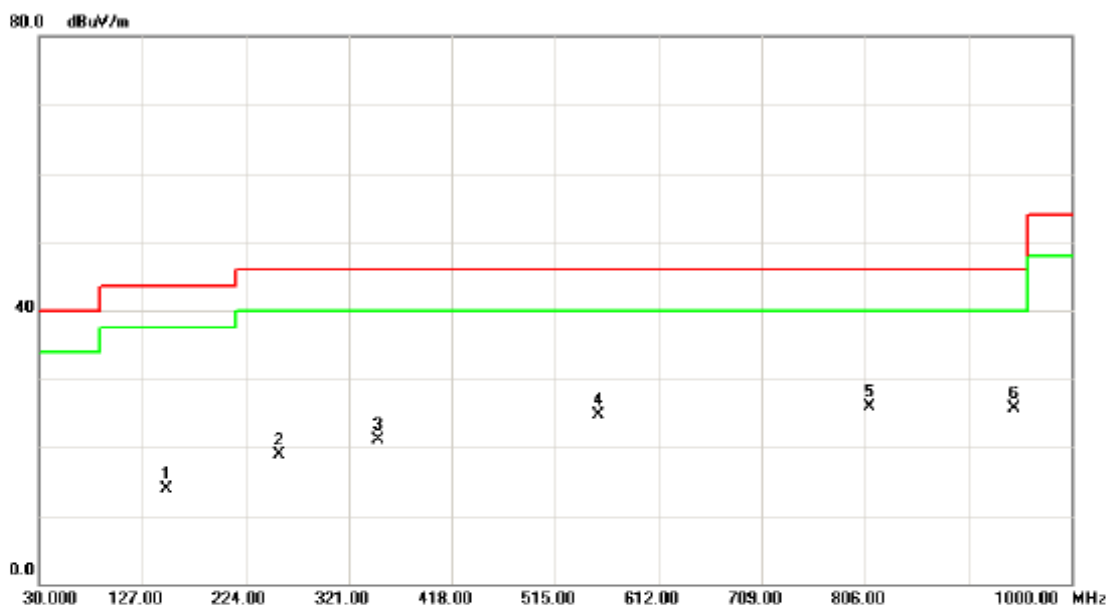
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 06	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		201.6900	34.07	-16.90	17.17	43.50	-26.33	peak	
2		276.3800	33.27	-13.41	19.86	46.00	-26.14	peak	
3		434.4900	32.82	-9.26	23.56	46.00	-22.44	peak	
4		469.4100	30.17	-8.76	21.41	46.00	-24.59	peak	
5	*	697.3600	30.24	-4.67	25.57	46.00	-20.43	peak	
6		890.3900	25.98	-2.08	23.90	46.00	-22.10	peak	



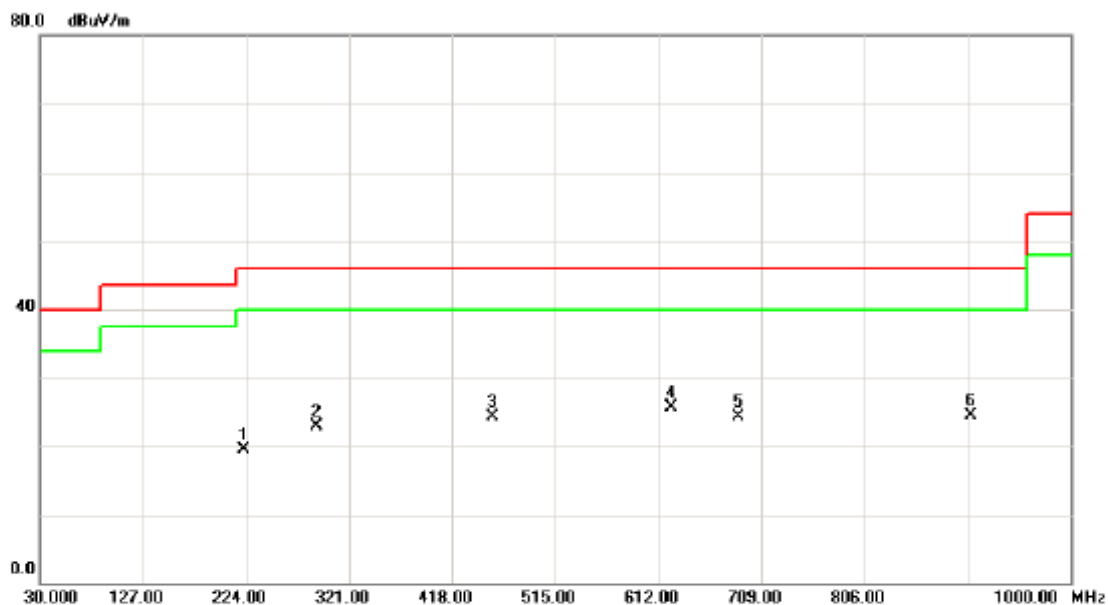
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 11	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		149.3100	31.84	-17.85	13.99	43.50	-29.51	peak	
2		256.0100	33.48	-14.65	18.83	46.00	-27.17	peak	
3		348.1600	32.65	-11.57	21.08	46.00	-24.92	peak	
4		555.7400	31.27	-6.47	24.80	46.00	-21.20	peak	
5	*	810.8500	29.27	-3.43	25.84	46.00	-20.16	peak	
6		945.6800	27.07	-1.36	25.71	46.00	-20.29	peak	



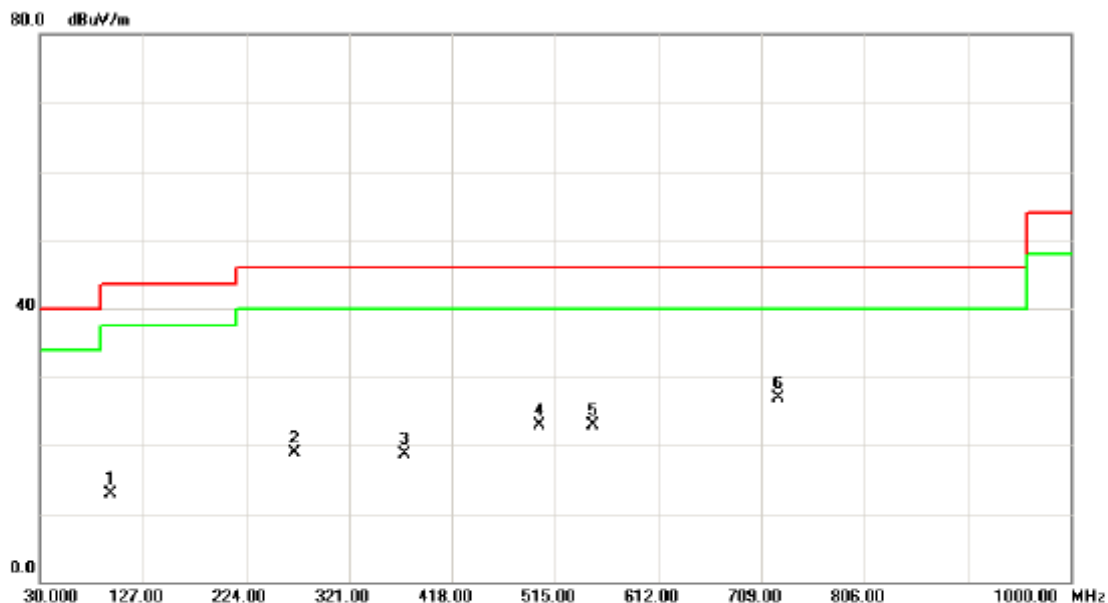
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 11	Adapter:	S06A22-120A050-PB



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		222.0600	35.81	-16.27	19.54	46.00	-26.46	peak	
2		290.9300	35.56	-12.61	22.95	46.00	-23.05	peak	
3		455.8300	33.17	-8.92	24.25	46.00	-21.75	peak	
4	*	623.6400	30.77	-5.10	25.67	46.00	-20.33	peak	
5		687.6600	28.91	-4.65	24.26	46.00	-21.74	peak	
6		905.9100	26.28	-1.85	24.43	46.00	-21.57	peak	



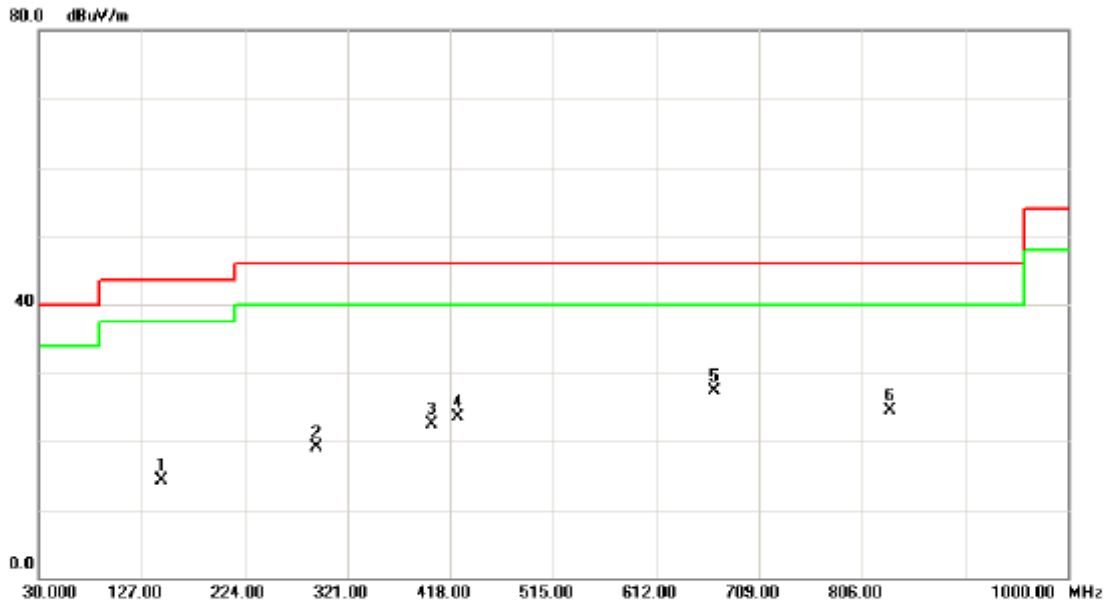
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 01	Adapter:	F05W-120050SPAU



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		95.9600	31.58	-18.70	12.88	43.50	-30.62	peak	
2		269.5900	32.79	-13.84	18.95	46.00	-27.05	peak	
3		373.3800	29.37	-10.72	18.65	46.00	-27.35	peak	
4		500.4500	31.37	-8.37	23.00	46.00	-23.00	peak	
5		549.9200	29.57	-6.59	22.98	46.00	-23.02	peak	
6	*	725.4900	31.33	-4.45	26.88	46.00	-19.12	peak	



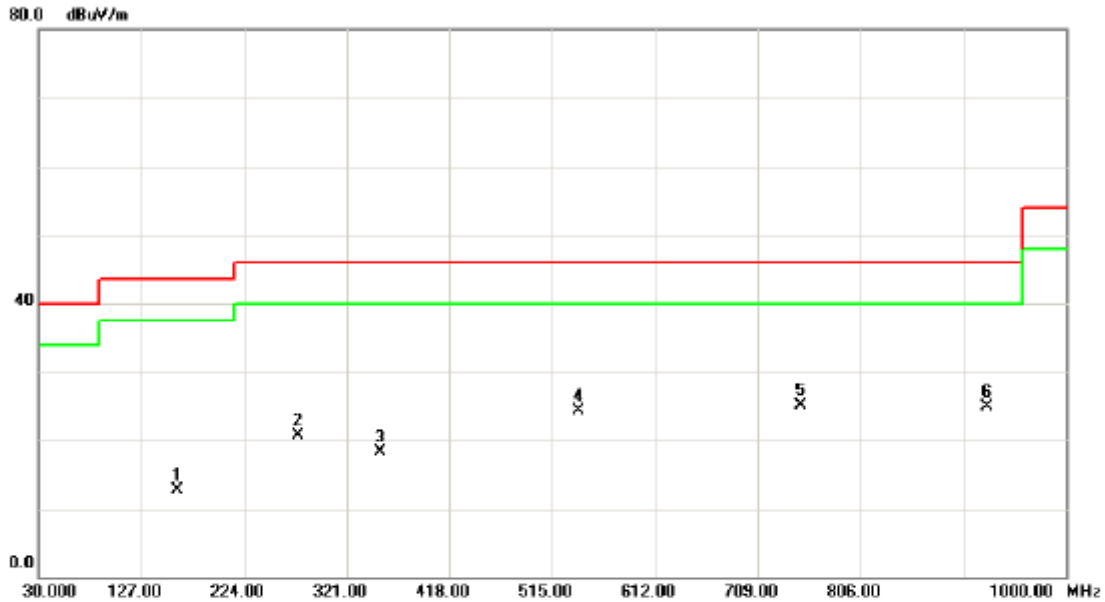
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 01	Adapter:	F05W-120050SPAU



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	145.4300	32.28	-17.92	14.36	43.50	-29.14	peak	
2	291.9000	31.76	-12.62	19.14	46.00	-26.86	peak	
3	400.5400	32.27	-9.80	22.47	46.00	-23.53	peak	
4	424.7900	32.93	-9.41	23.52	46.00	-22.48	peak	
5 *	666.3200	32.05	-4.67	27.38	46.00	-18.62	peak	
6	832.1900	27.46	-3.05	24.41	46.00	-21.59	peak	



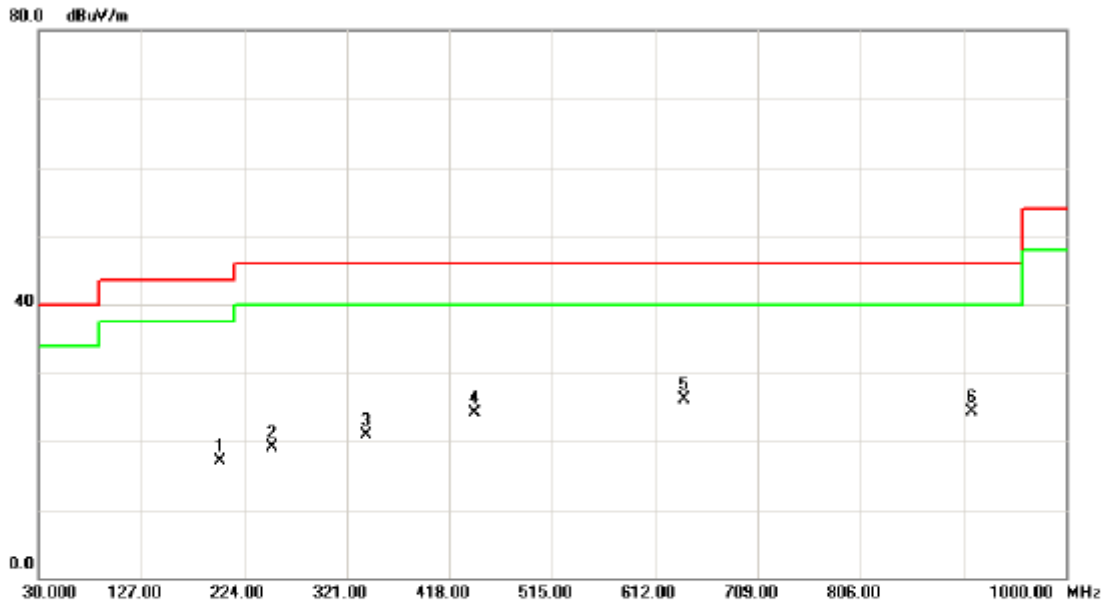
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 06	Adapter:	F05W-120050SPAU



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		160.9500	30.61	-17.94	12.67	43.50	-30.83	peak	
2		274.4400	34.30	-13.52	20.78	46.00	-25.22	peak	
3		352.0400	29.84	-11.45	18.39	46.00	-27.61	peak	
4		540.2200	31.29	-6.95	24.34	46.00	-21.66	peak	
5	*	749.7400	29.44	-4.24	25.20	46.00	-20.80	peak	
6		925.3100	26.54	-1.61	24.93	46.00	-21.07	peak	



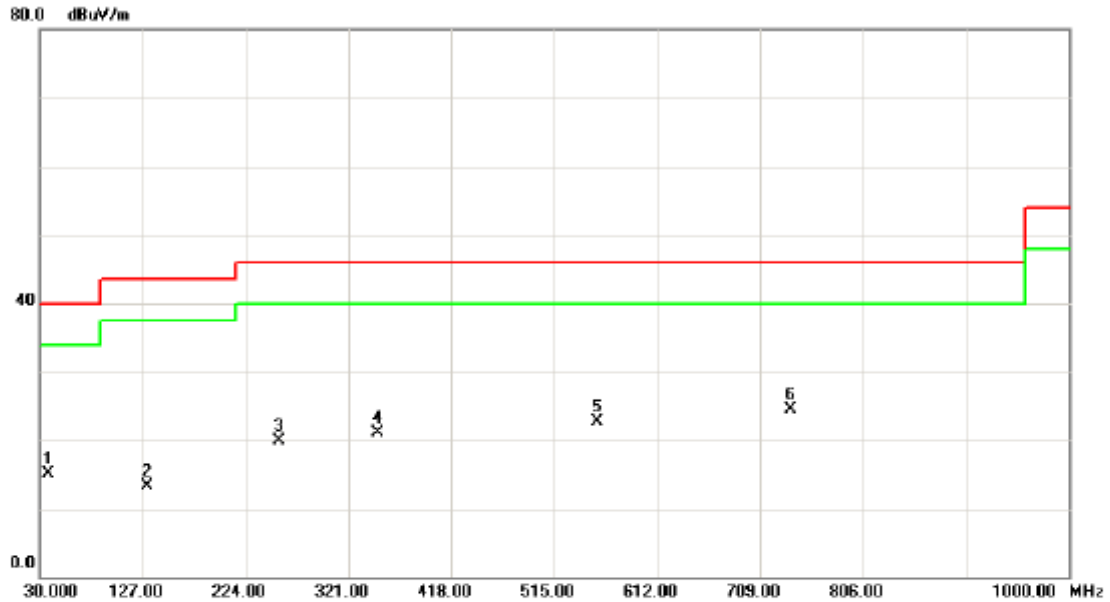
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 06	Adapter:	F05W-120050SPAU



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	201.6900	34.07	-16.90	17.17	43.50	-26.33	peak	
2	250.1900	34.20	-15.02	19.18	46.00	-26.82	peak	
3	339.4300	32.72	-11.75	20.97	46.00	-25.03	peak	
4	441.2800	33.23	-9.15	24.08	46.00	-21.92	peak	
5 *	640.1300	31.01	-4.83	26.18	46.00	-19.82	peak	
6	910.7600	26.18	-1.78	24.40	46.00	-21.60	peak	



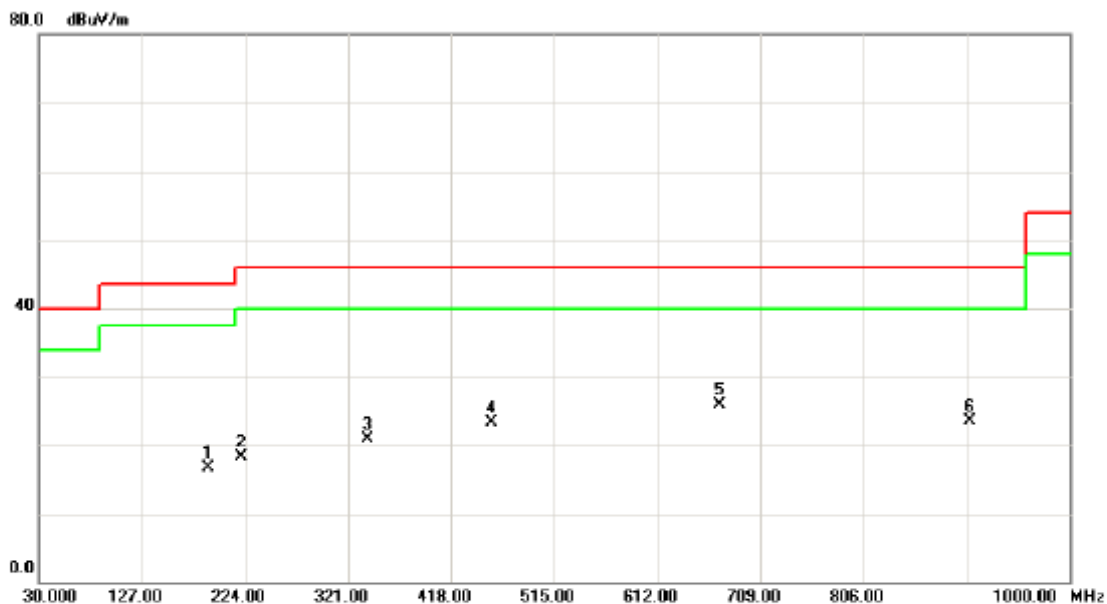
EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical
Test Mode:	TX B MODE CHANNEL 11	Adapter:	F05W-120050SPAU



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		38.7300	32.11	-17.01	15.10	40.00	-24.90	peak	
2		131.8500	31.59	-18.28	13.31	43.50	-30.19	peak	
3		256.0100	34.48	-14.65	19.83	46.00	-26.17	peak	
4		348.1600	32.65	-11.57	21.08	46.00	-24.92	peak	
5		555.7400	29.27	-6.47	22.80	46.00	-23.20	peak	
6	*	738.1000	28.85	-4.34	24.51	46.00	-21.49	peak	



EUT:	Wireless router	Model Name:	DIR-617
Temperature:	24 °C	Relative Humidity:	54 %
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal
Test Mode:	TX B MODE CHANNEL 11	Adapter:	F05W-120050SPAU



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	189.0800	33.81	-17.11	16.70	43.50	-26.80	peak	
2	221.0900	34.60	-16.29	18.31	46.00	-27.69	peak	
3	339.4300	32.72	-11.75	20.97	46.00	-25.03	peak	
4	455.8300	32.17	-8.92	23.25	46.00	-22.75	peak	
5 *	670.2000	30.61	-4.68	25.93	46.00	-20.07	peak	
6	905.9100	25.28	-1.85	23.43	46.00	-22.57	peak	



4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

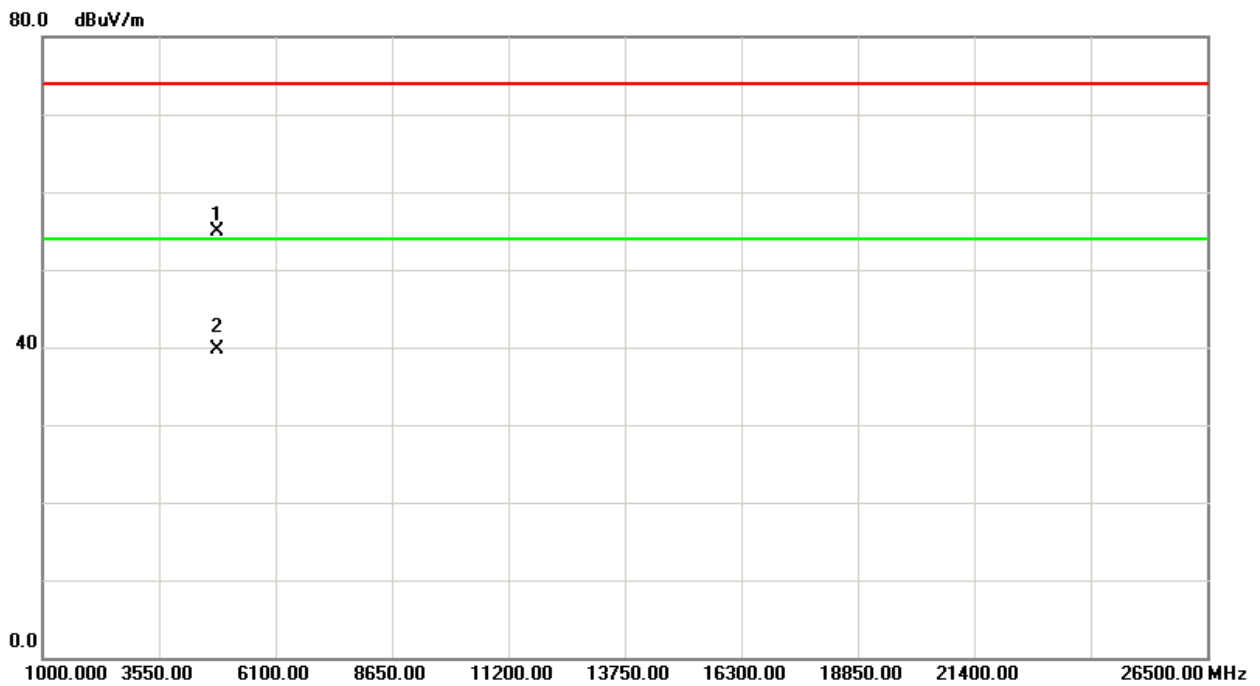
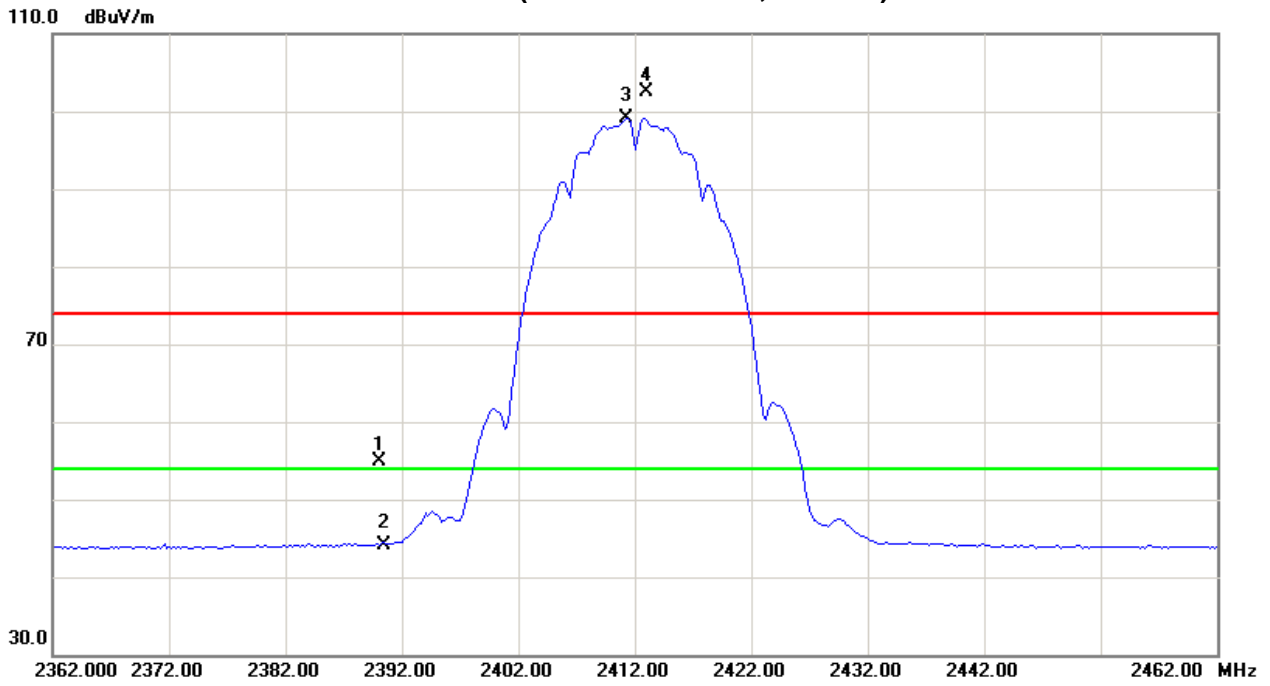
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	22.62	11.92	32.28	54.90	44.20	74.00	54.00	X/E
2411.20	V	70.23	66.82	32.26	102.49	99.08			X/F
4823.98	V	49.71	34.35	5.29	55.00	39.64	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2412MHz		

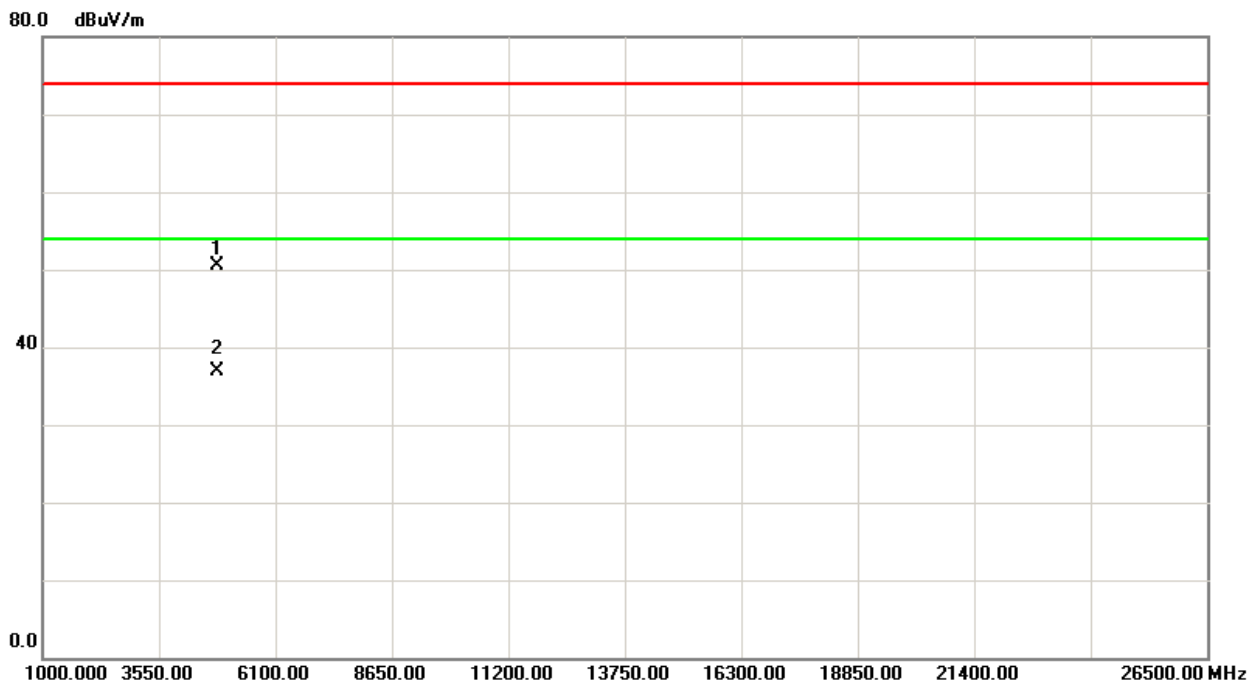
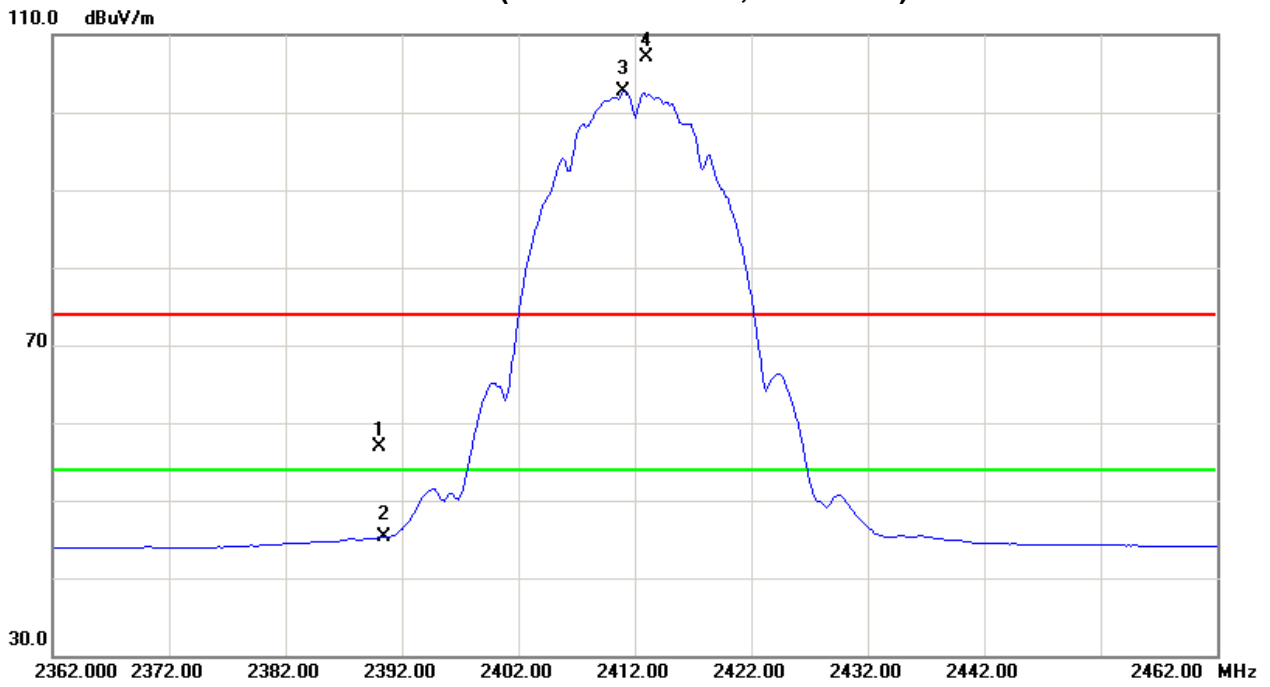
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	24.71	12.94	32.28	56.99	45.22	74.00	54.00	X/E
2411.20	H	74.89	70.50	32.25	107.14	102.75			X/F
4823.97	H	45.27	31.58	5.29	50.56	36.87	74.00	54.00	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 :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

Freq. (MHz)	Ant.Pol.	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2436.40	V	70.38	66.59	32.23	102.61	98.82			X/F
4873.98	V	48.74	34.96	5.47	54.21	40.43	74.00	54.00	X/H

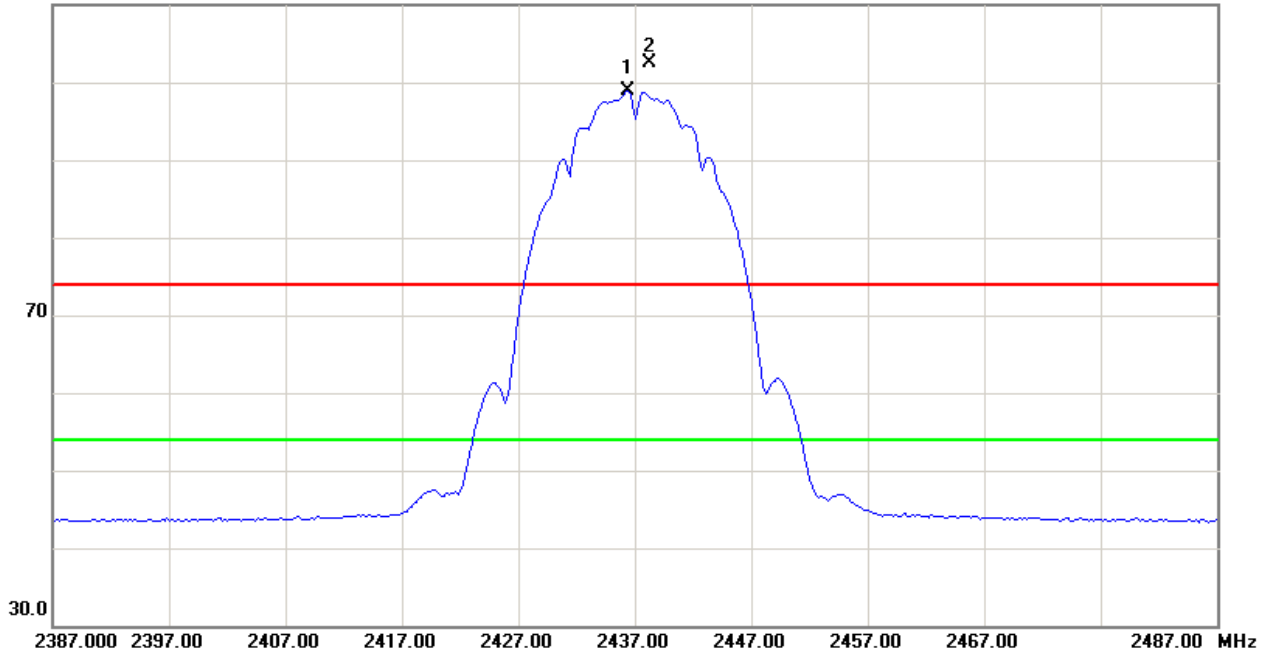
Remark :

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

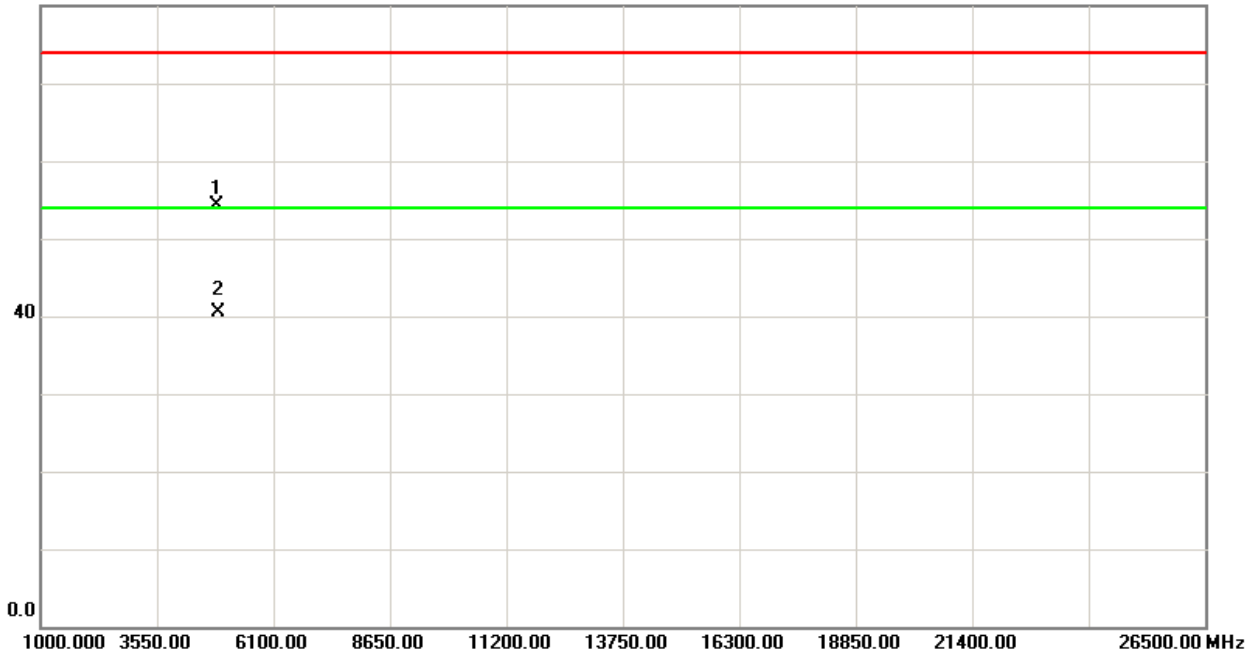


TX CH06 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2437MHz		

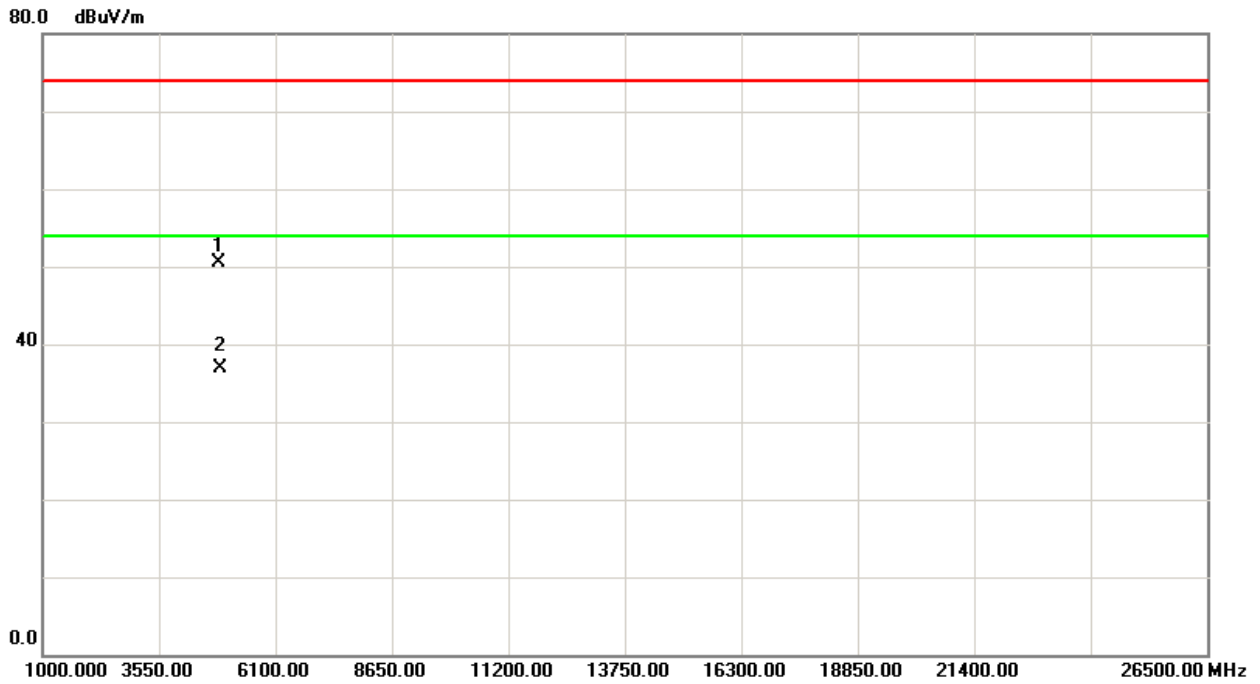
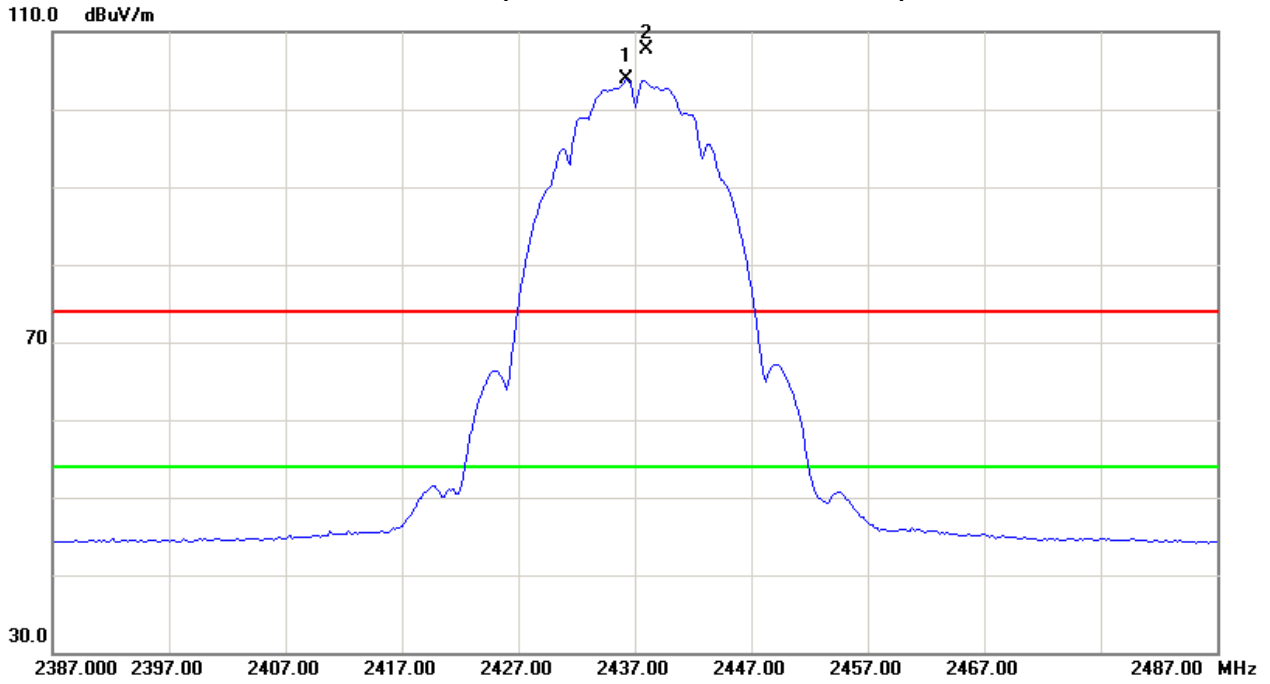
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2436.20	H	75.46	71.58	32.23	107.69	103.81			X/F
4874.01	H	45.13	31.43	5.47	50.60	36.90	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
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)	
2462.80	V	70.11	66.49	32.20	102.31	98.69			X/F
2483.50	V	23.51	11.94	32.17	55.68	44.11	74.00	54.00	X/E
4924.01	V	48.56	33.61	5.65	54.21	39.26	74.00	54.00	X/H

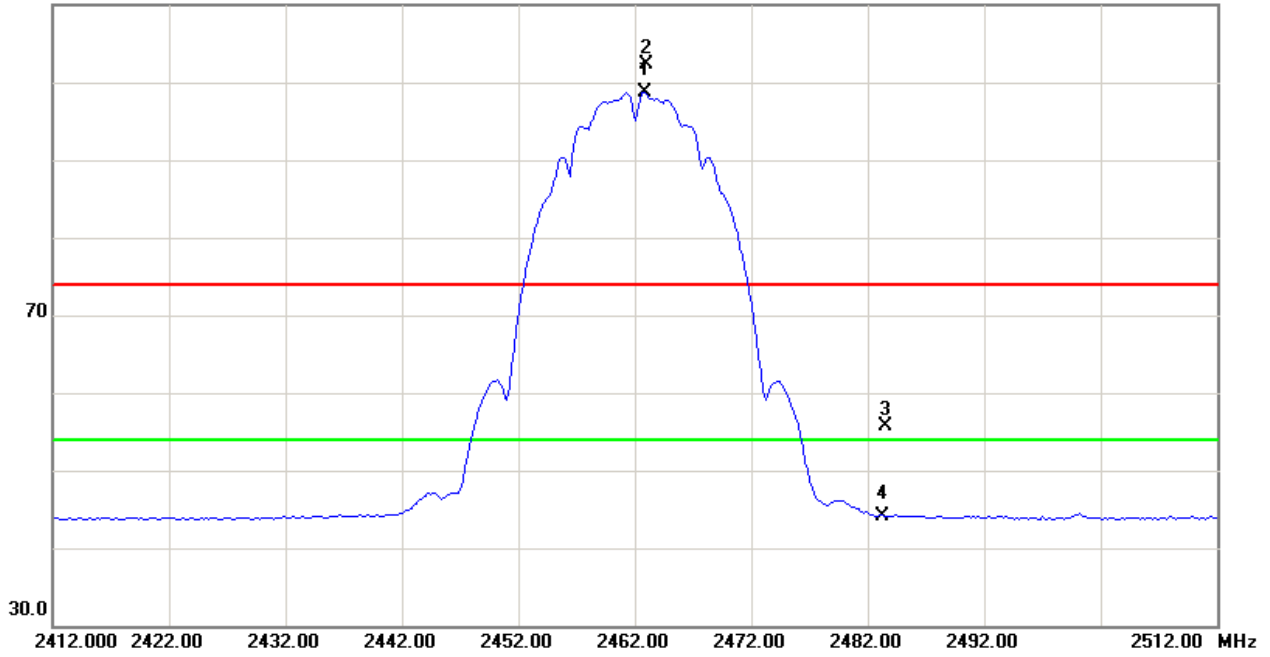
Remark :

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

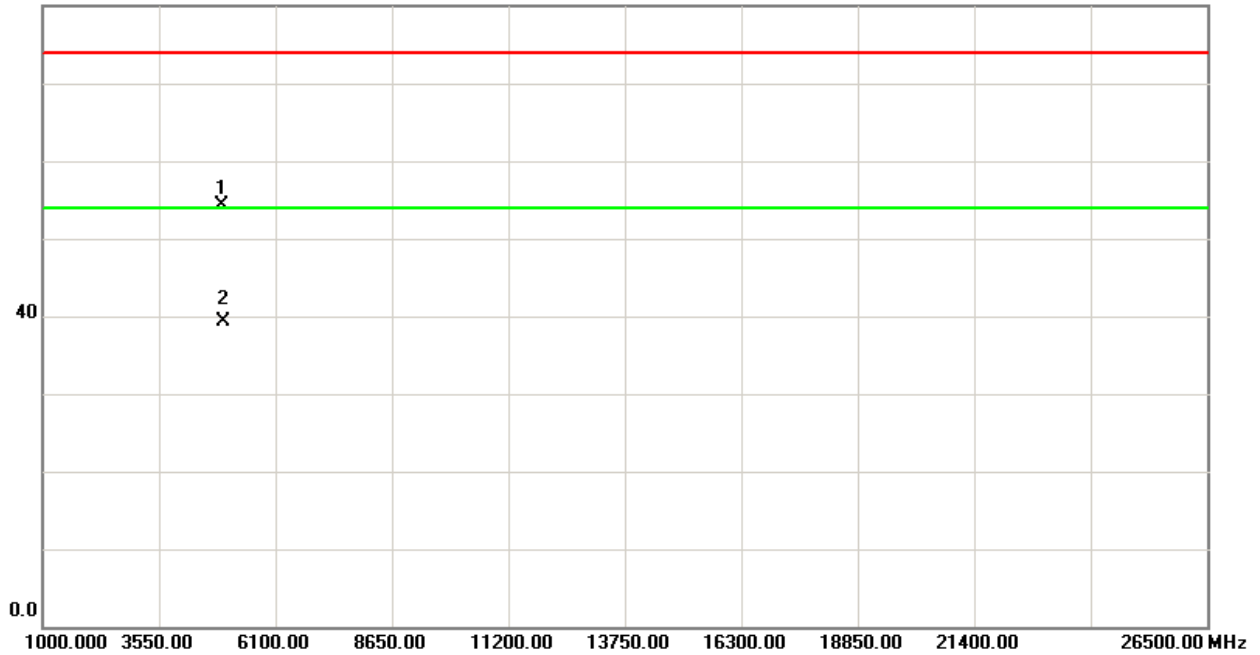


TX CH11 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE 2462MHz		

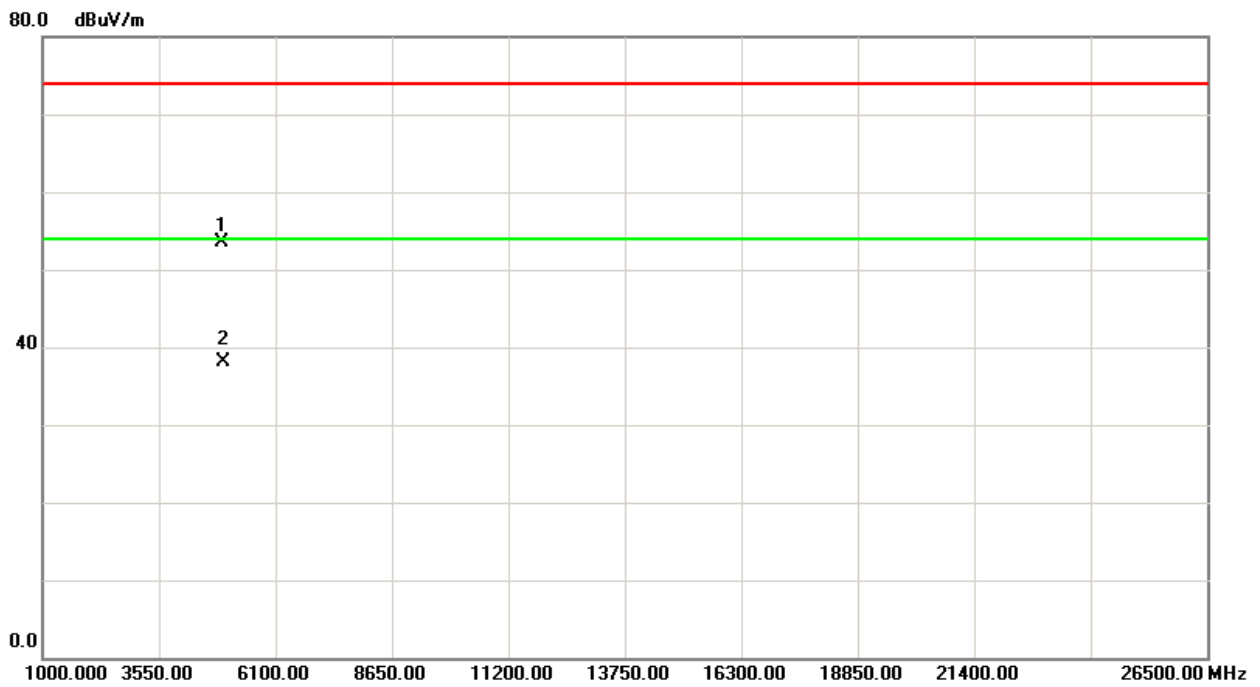
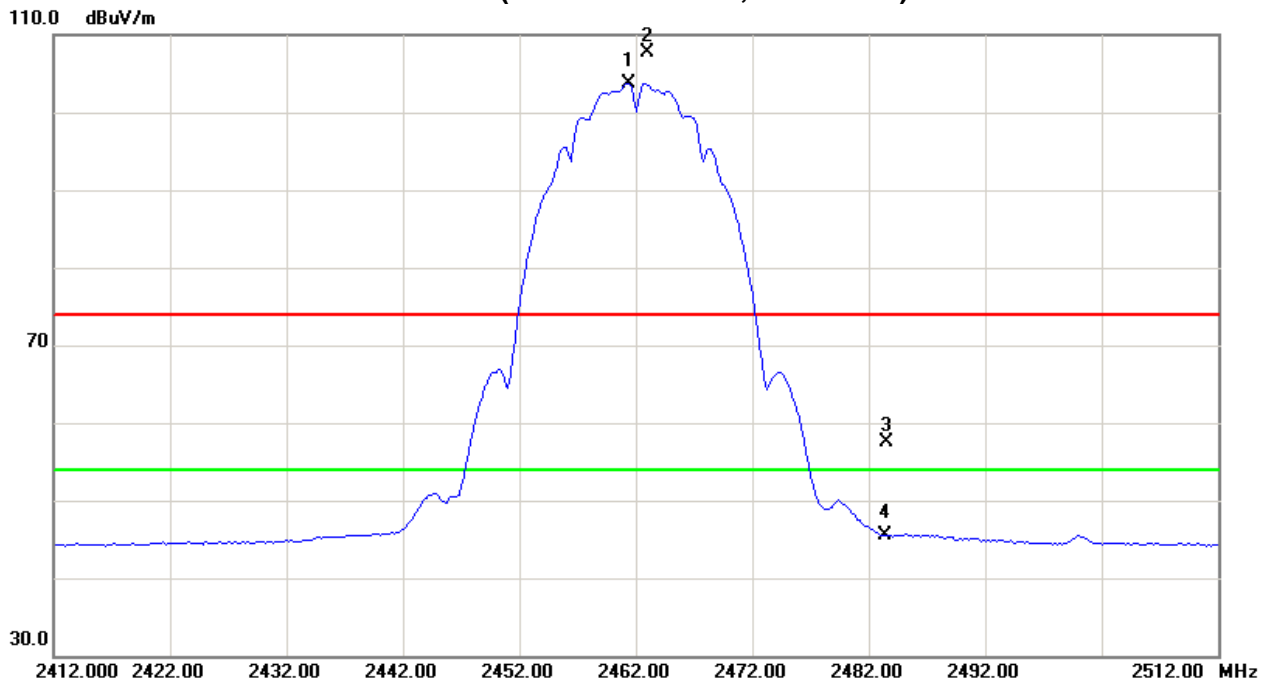
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2461.40	H	75.45	71.48	32.20	107.65	103.68			X/F
2483.50	H	25.40	13.28	32.17	57.57	45.45	74.00	54.00	X/E
4923.98	H	47.92	32.36	5.65	53.57	38.01	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
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	21.50	11.23	32.28	53.78	43.51	74.00	54.00	X/E
2414.40	V	64.10	53.61	32.25	96.35	85.86			X/F
4812.10	V	48.35	35.49	5.29	53.64	40.78	74.00	54.00	X/H

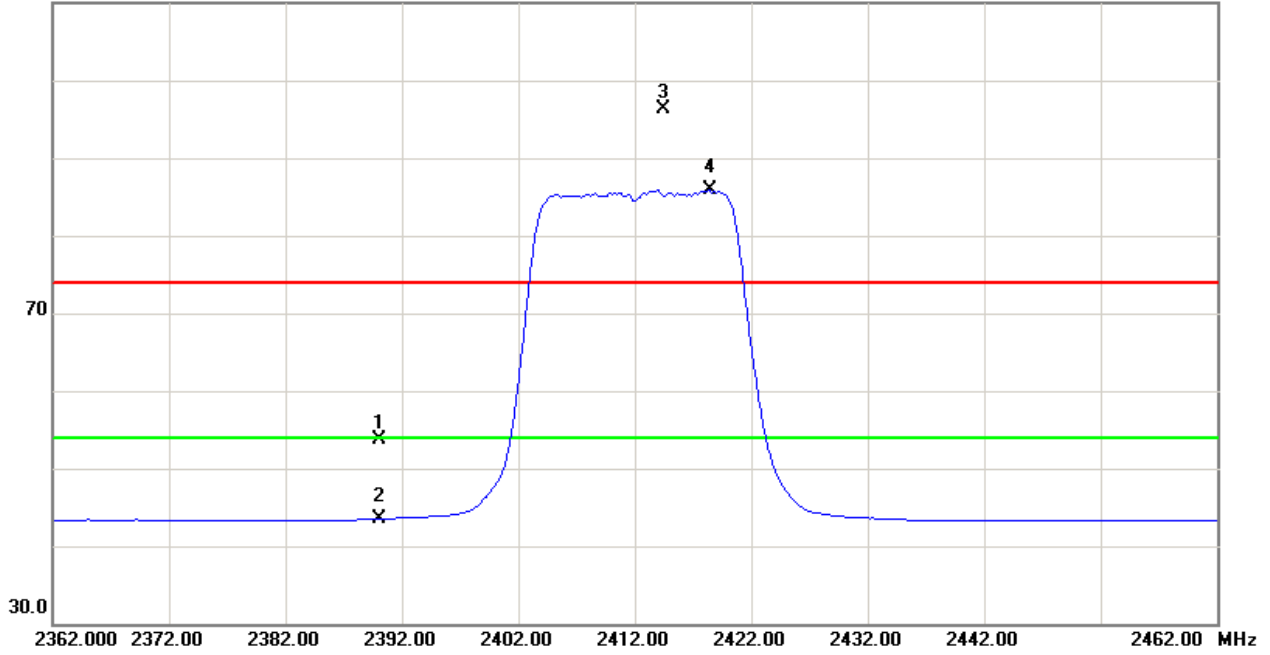
Remark :

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

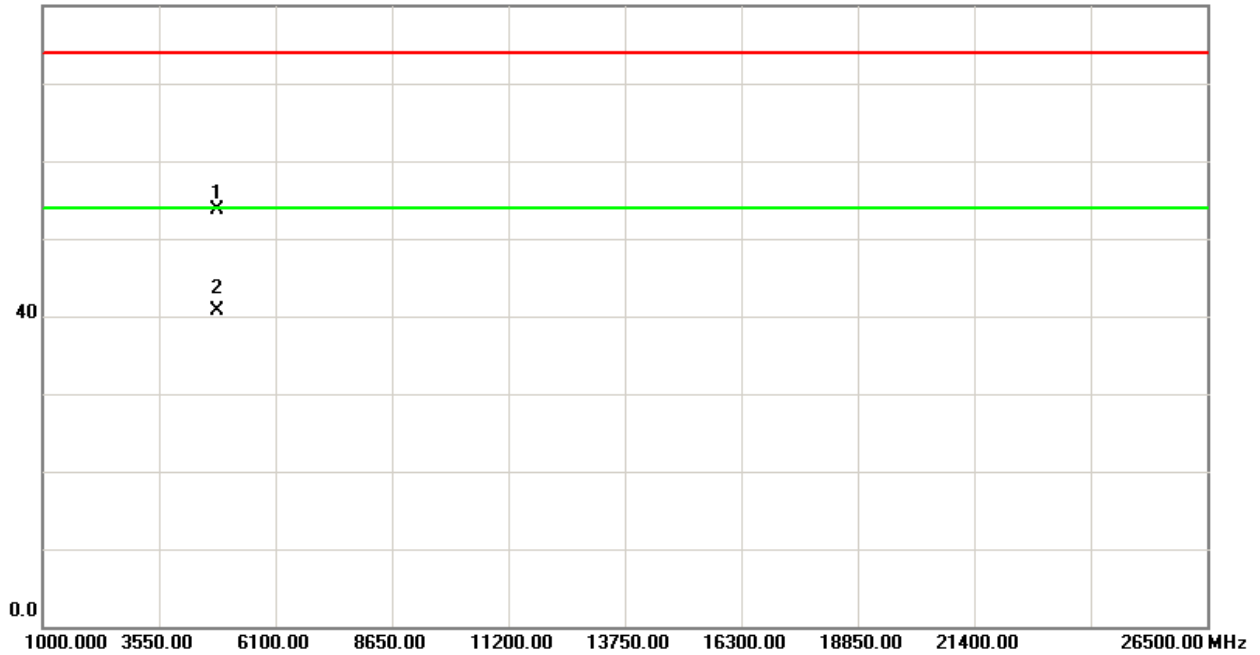


TX CH01 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2412MHz		

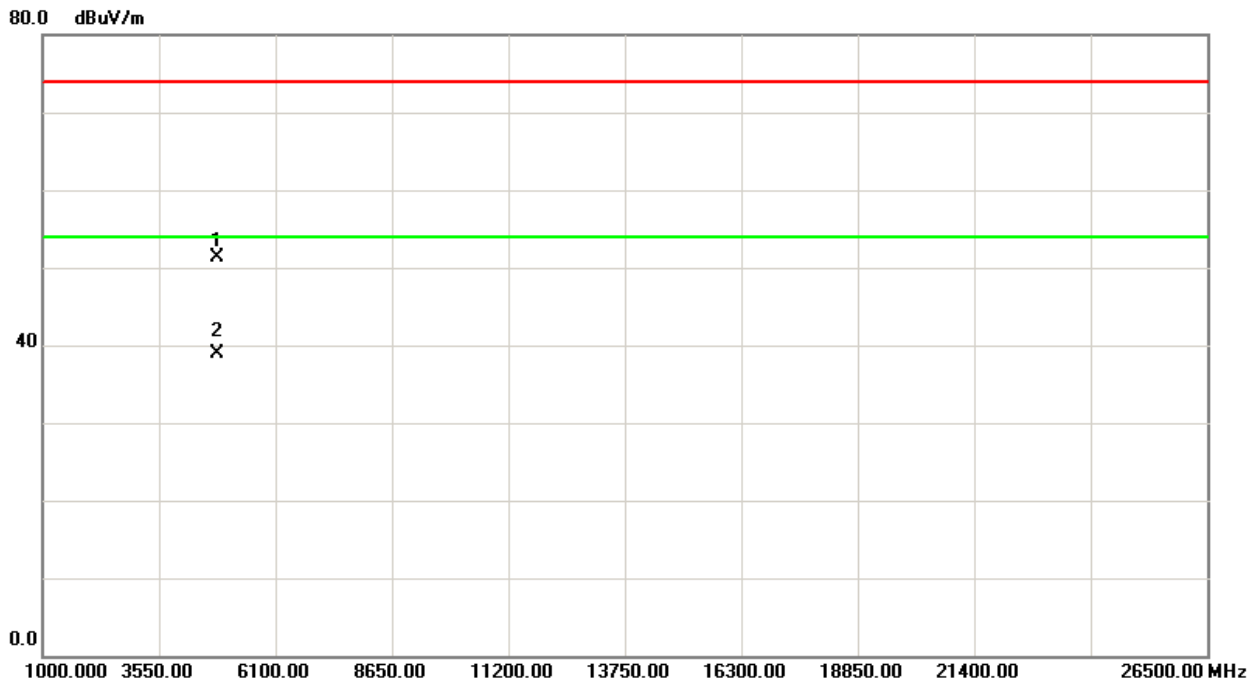
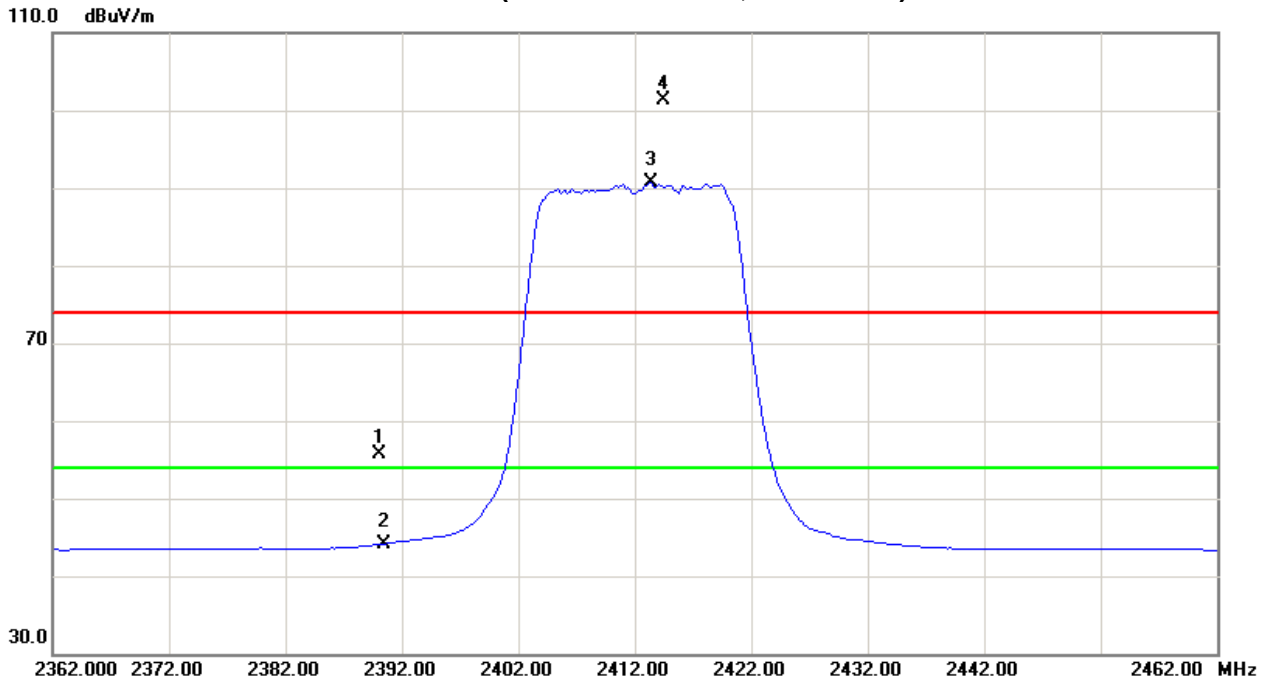
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	23.39	11.77	32.28	55.67	44.05	74.00	54.00	X/E
2413.40	H	69.01	58.37	32.25	101.26	90.62			X/F
4823.98	H	45.98	33.65	5.29	51.27	38.94	74.00	54.00	X/H

Remark :

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



TX CH01 (Above 1000 MHz, Horizontal)





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

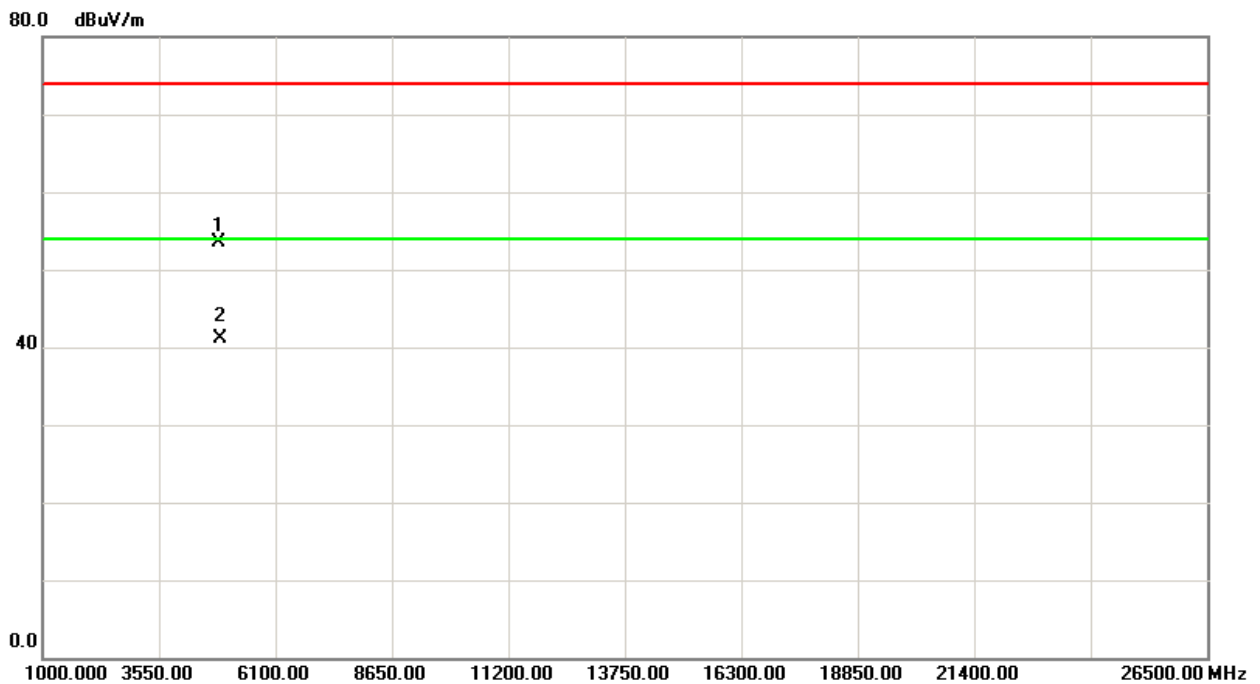
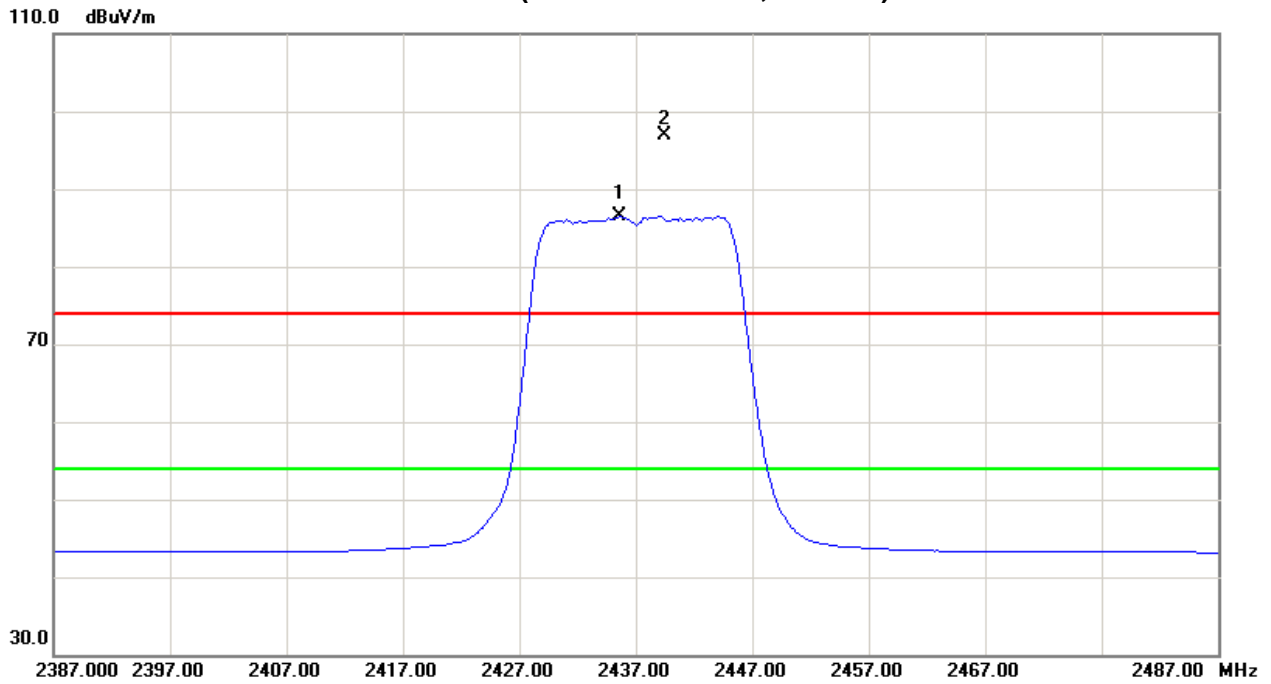
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2435.60	V	64.62	54.24	32.23	96.85	86.47			X/F
4873.99	V	47.98	35.65	5.47	53.45	41.12	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2437MHz		

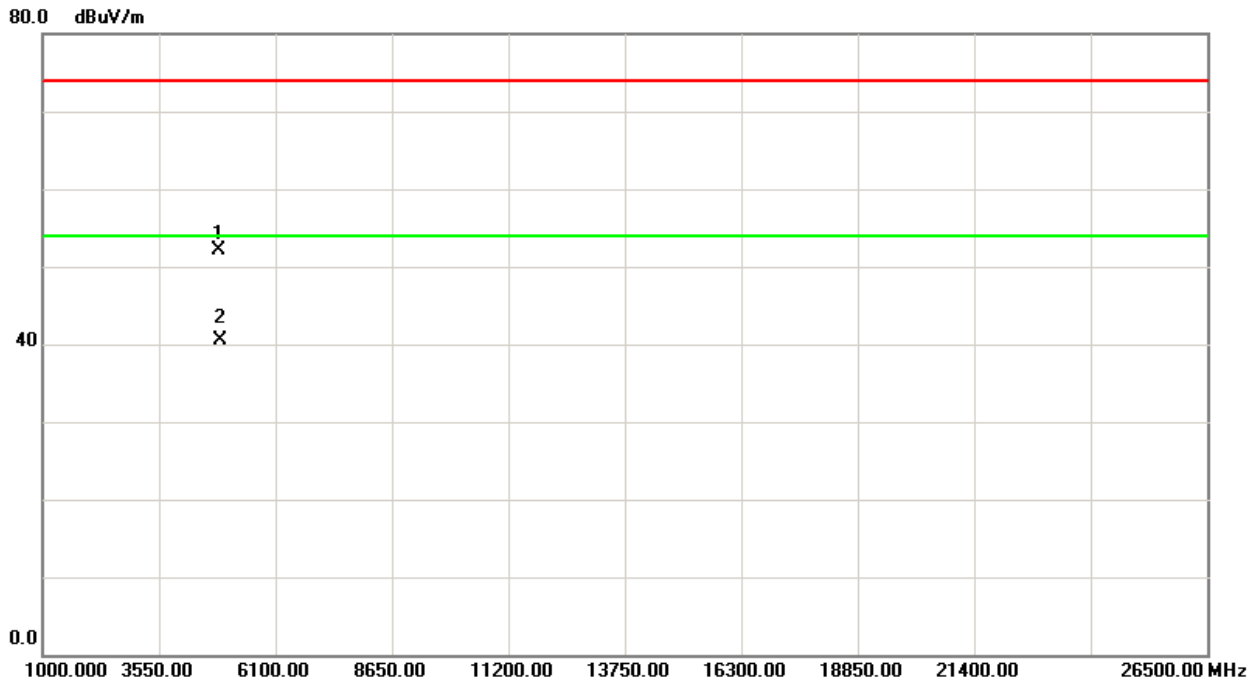
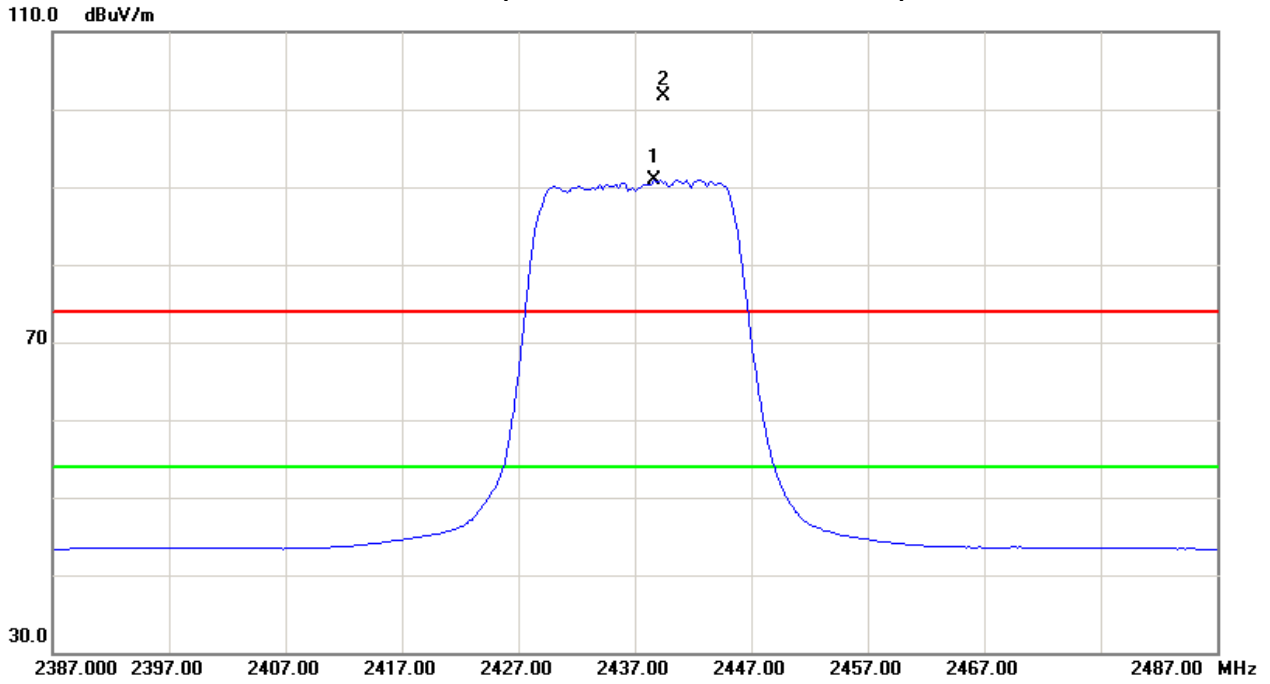
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2438.60	H	69.56	58.71	32.22	101.78	90.93			X/F
4873.98	H	46.72	35.03	5.47	52.19	40.50	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

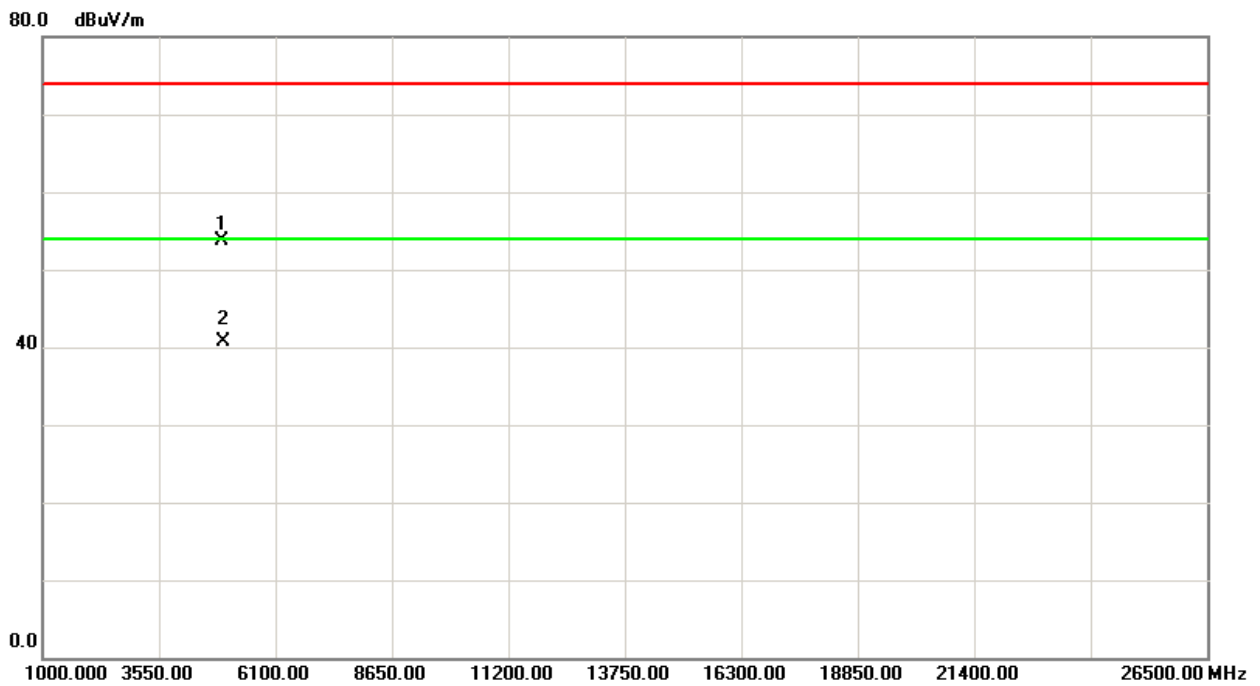
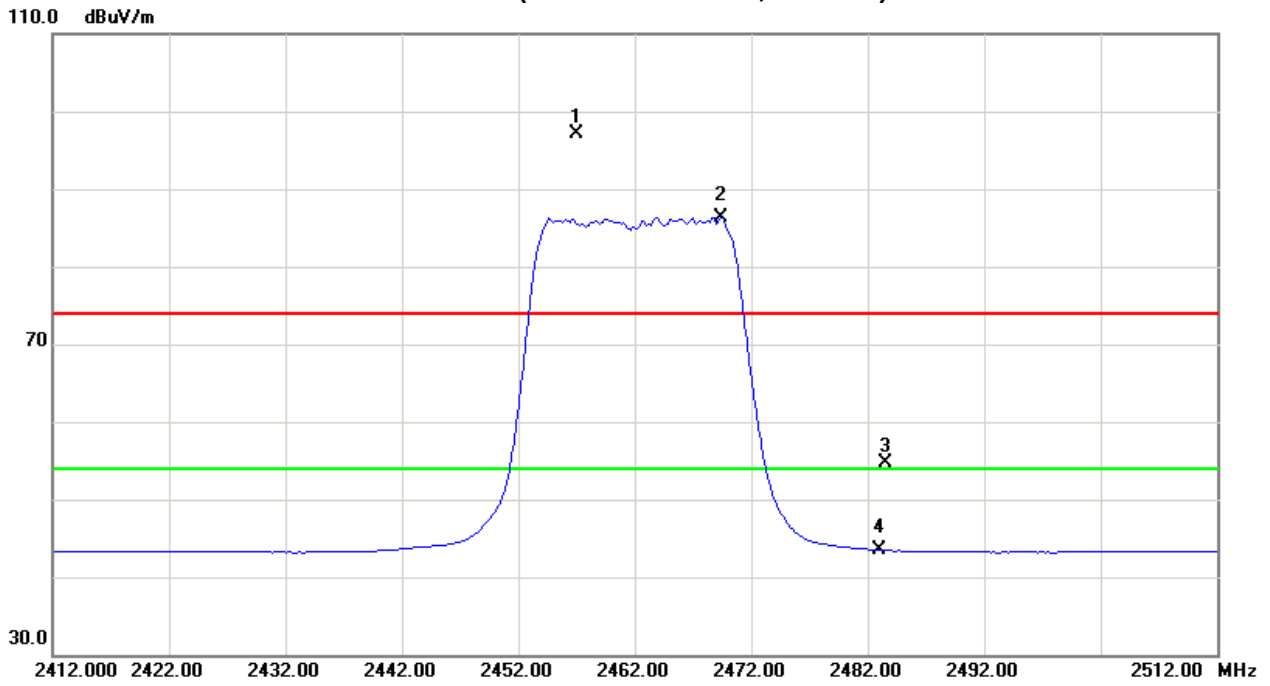
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2457.00	V	64.83	54.14	32.21	97.04	86.35			X/F
2483.50	V	22.46	11.30	32.17	54.63	43.47	74.00	54.00	X/E
4923.98	V	48.01	34.98	5.65	53.66	40.63	74.00	54.00	X/H

Remark :

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



TX CH11 (Above 1000 MHz, Vertical)





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE 2462MHz		

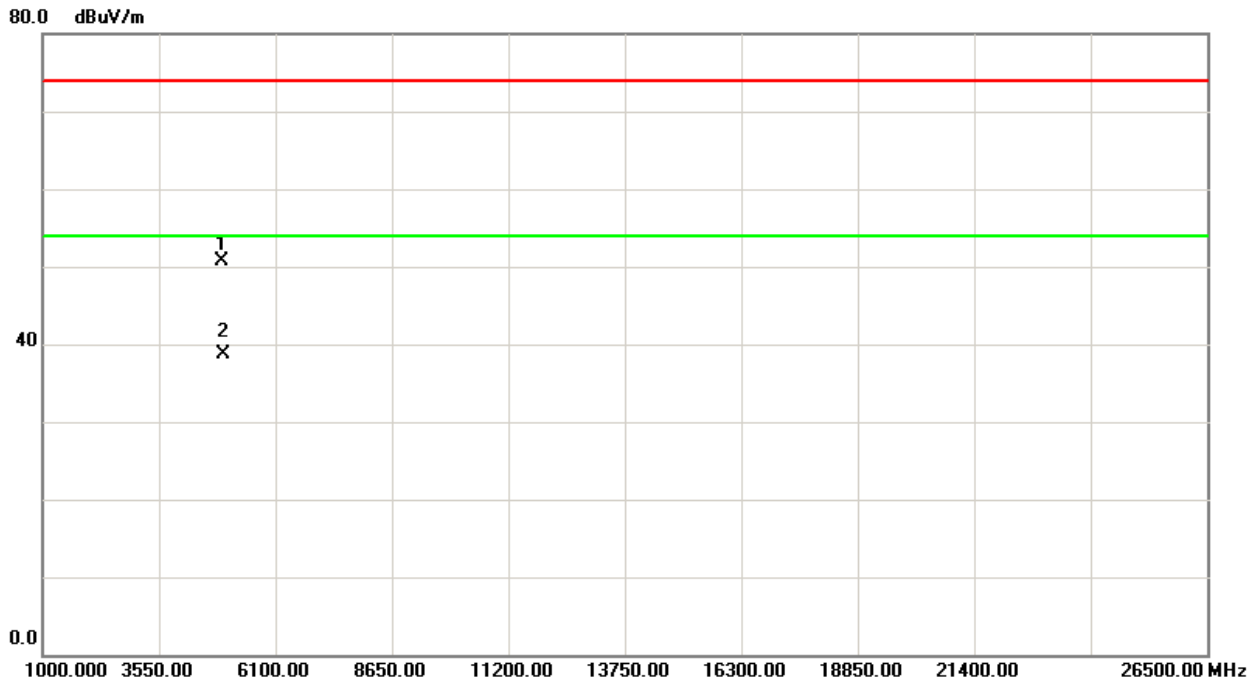
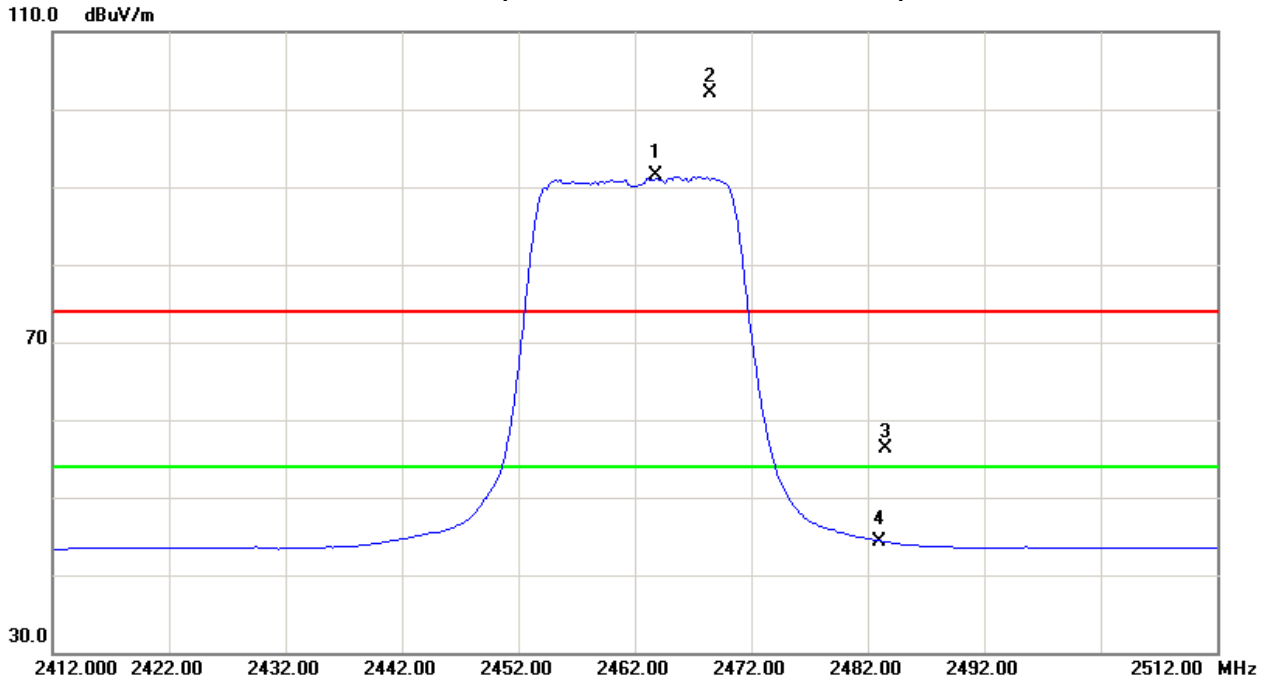
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2463.40	H	66.85	59.33	32.19	99.04	91.52			X/F
2483.50	H	24.18	12.12	32.17	56.35	44.29	74.00	54.00	X/E
4924.12	H	44.98	33.06	5.65	50.63	38.71	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
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	V	26.27	14.15	32.28	58.55	46.43	74.00	54.00	X/E
2405.80	V	71.98	59.79	32.25	104.23	92.04			X/F
4823.98	V	47.96	34.96	5.28	53.24	40.24	74.00	54.00	X/H

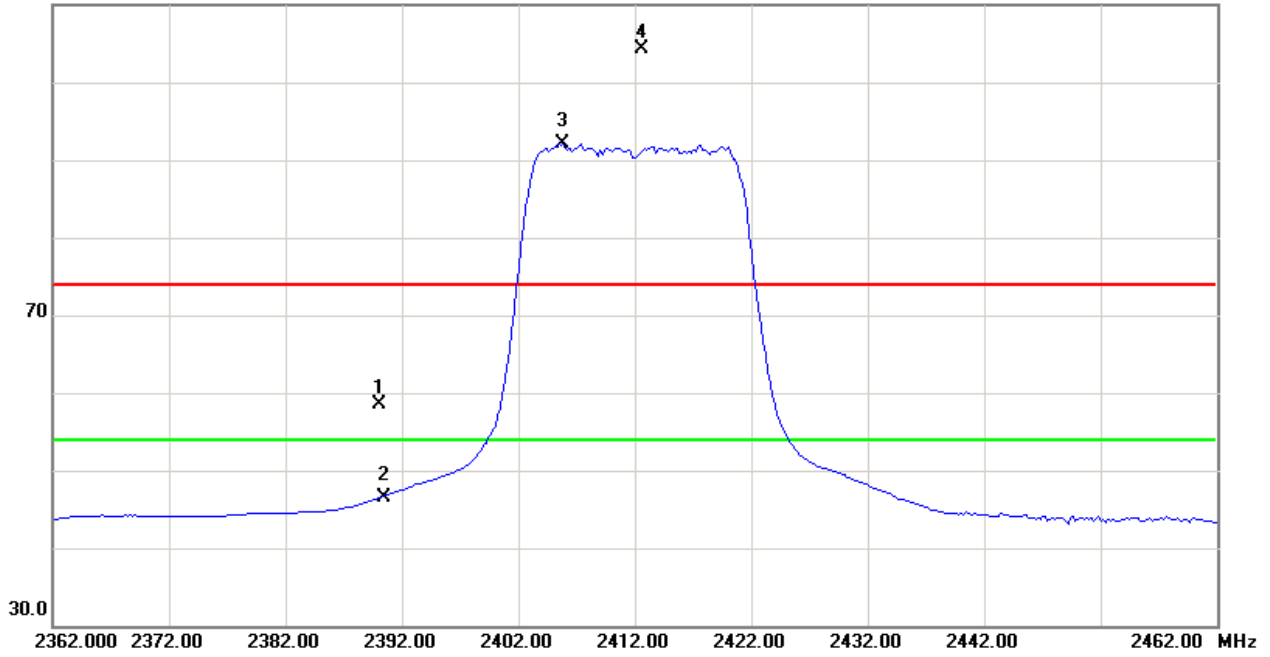
Remark :

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

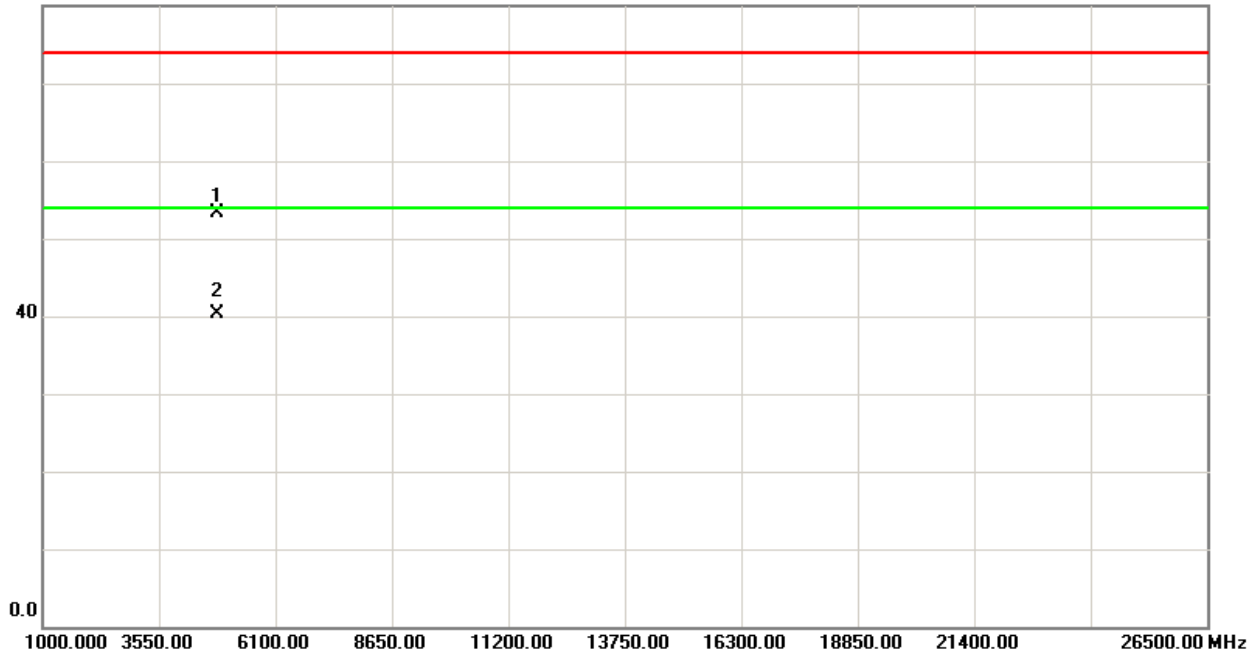


TX CH01 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2412MHz		

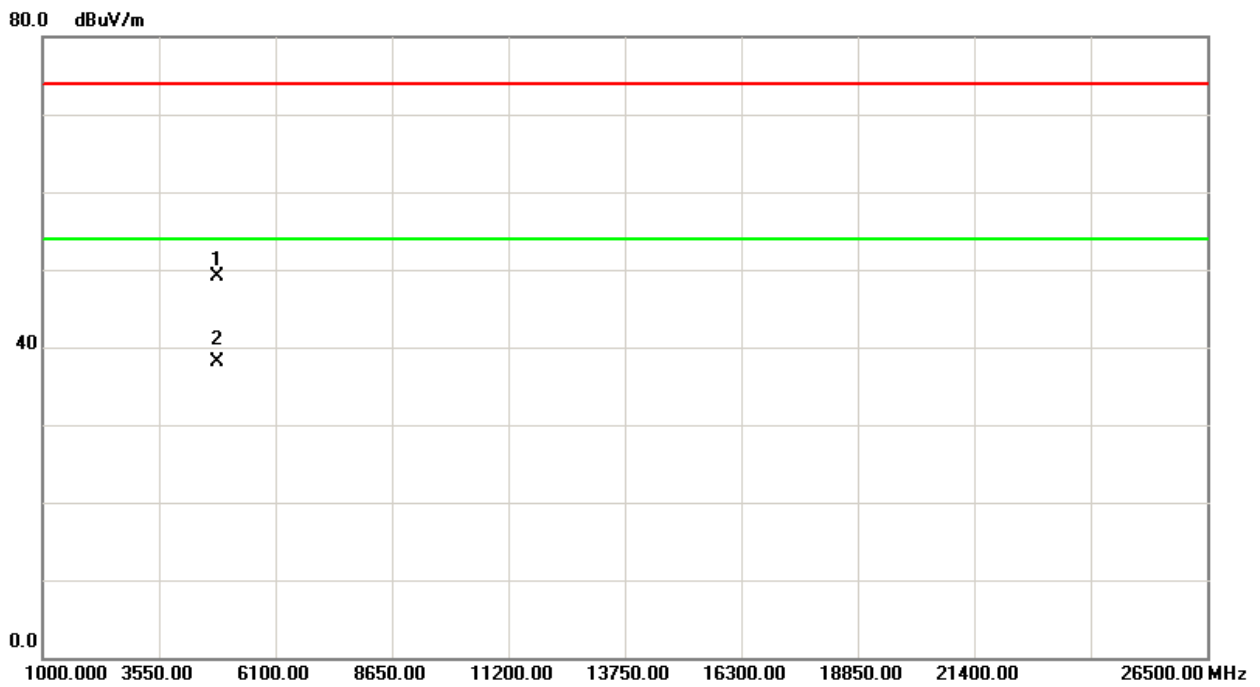
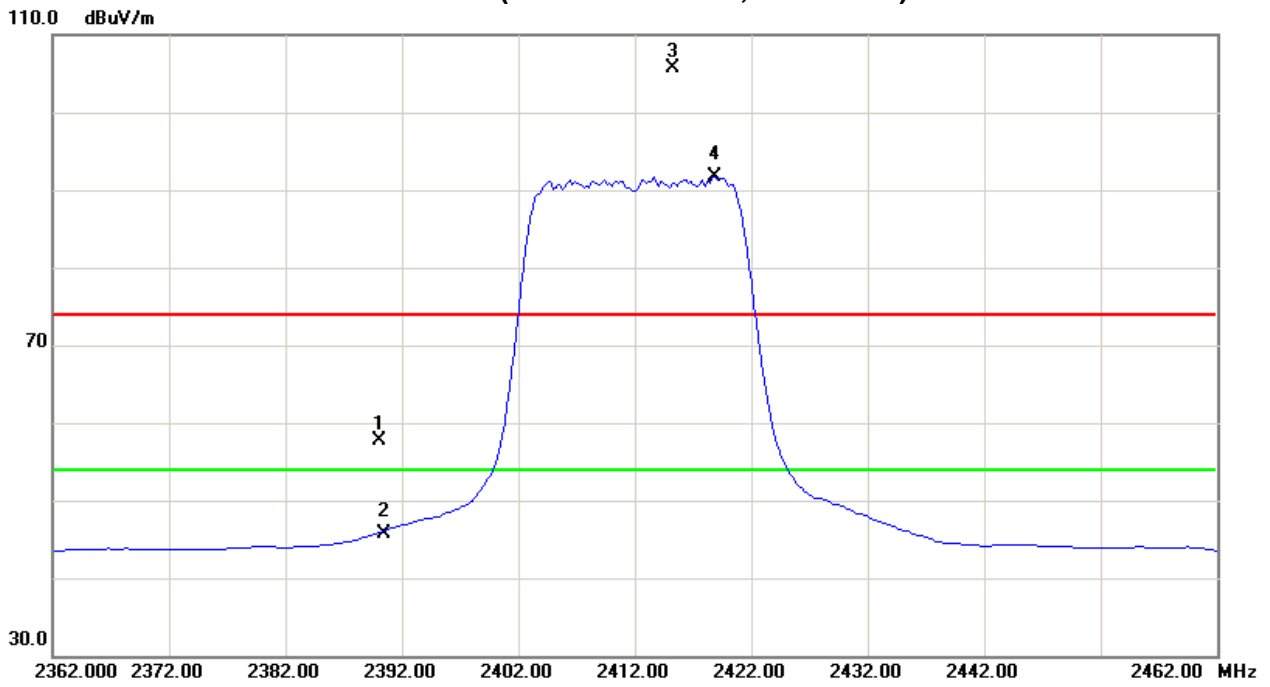
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	25.34	13.51	32.28	57.62	45.79	74.00	54.00	X/E
2415.20	H	73.46	59.54	32.25	105.71	91.79			X/F
4823.97	H	43.76	32.73	5.29	49.05	38.02	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
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)	
2430.80	V	71.95	59.52	32.22	104.17	91.74			X/F
4874.01	V	47.75	35.02	5.47	53.22	40.49	74.00	54.00	X/H

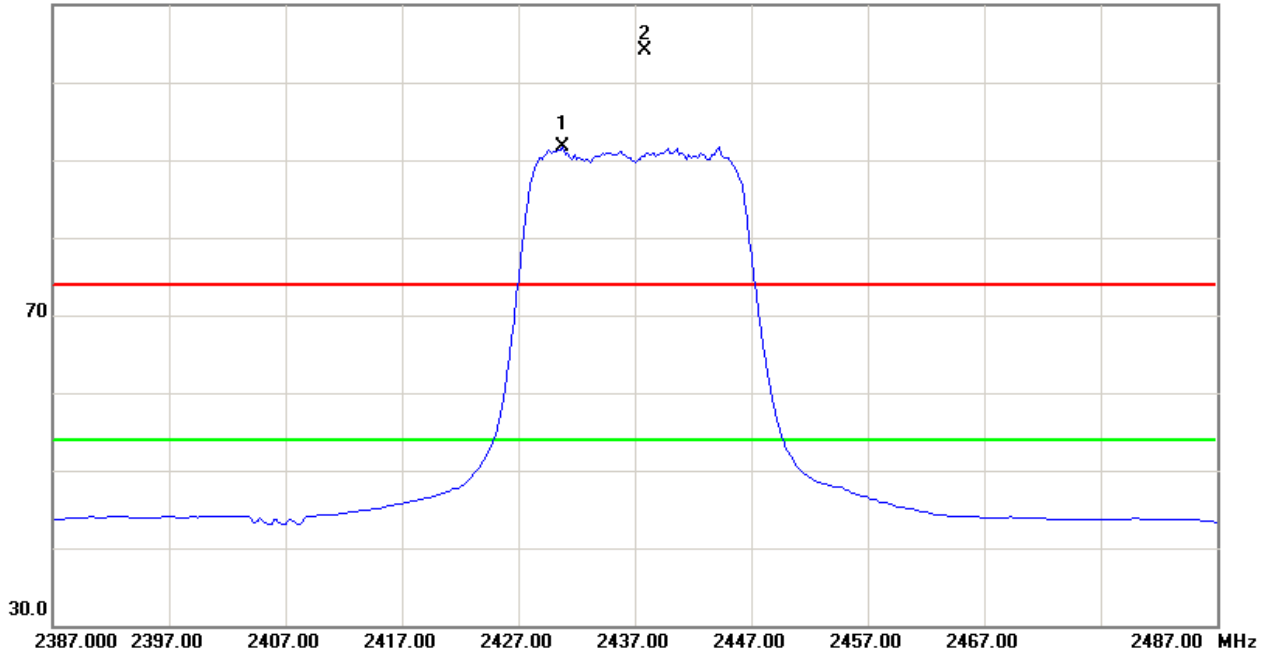
Remark :

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

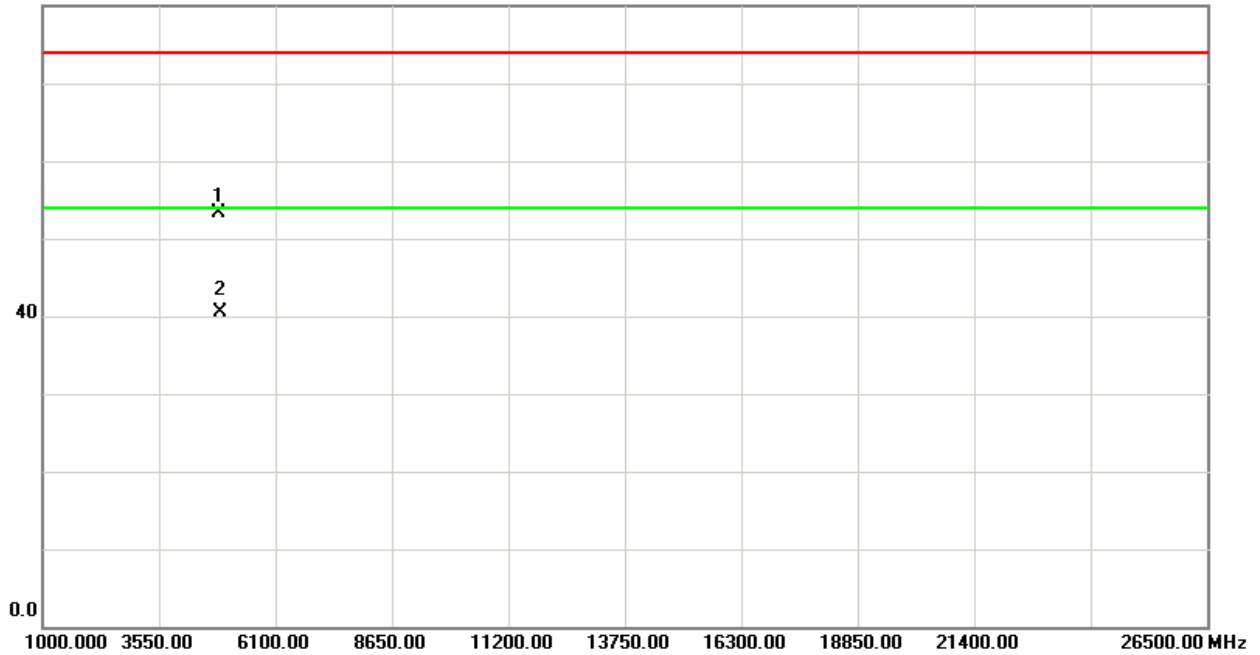


TX CH06 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2437MHz		

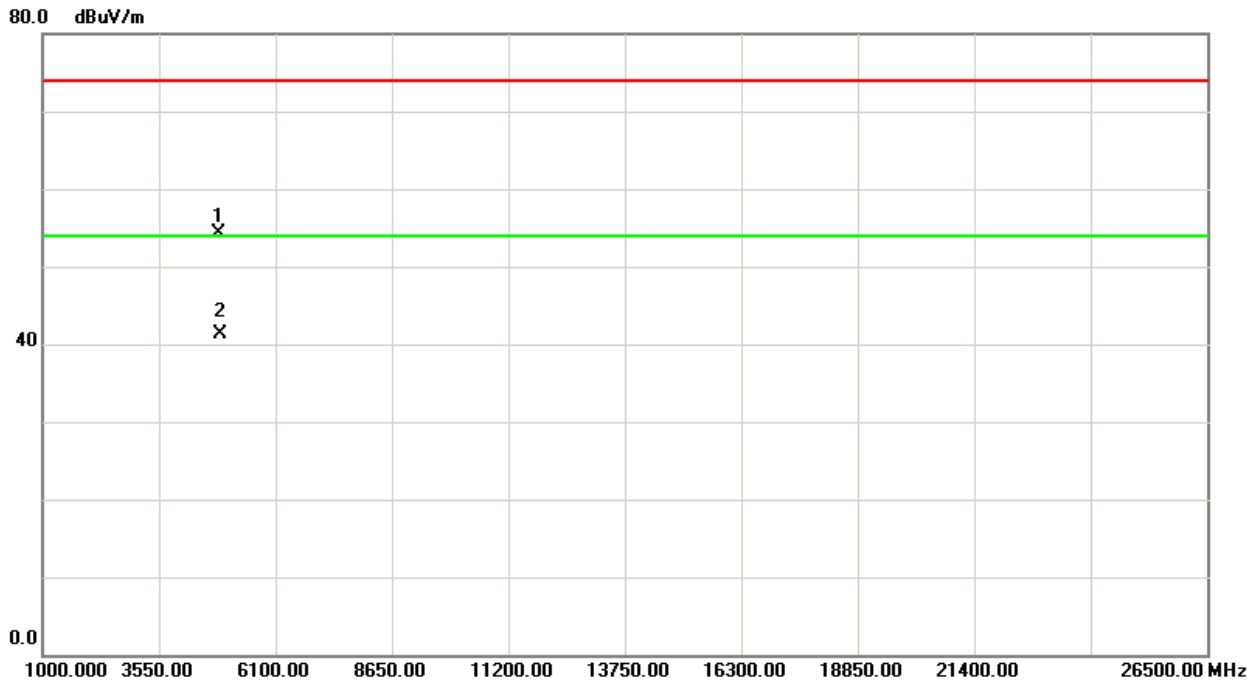
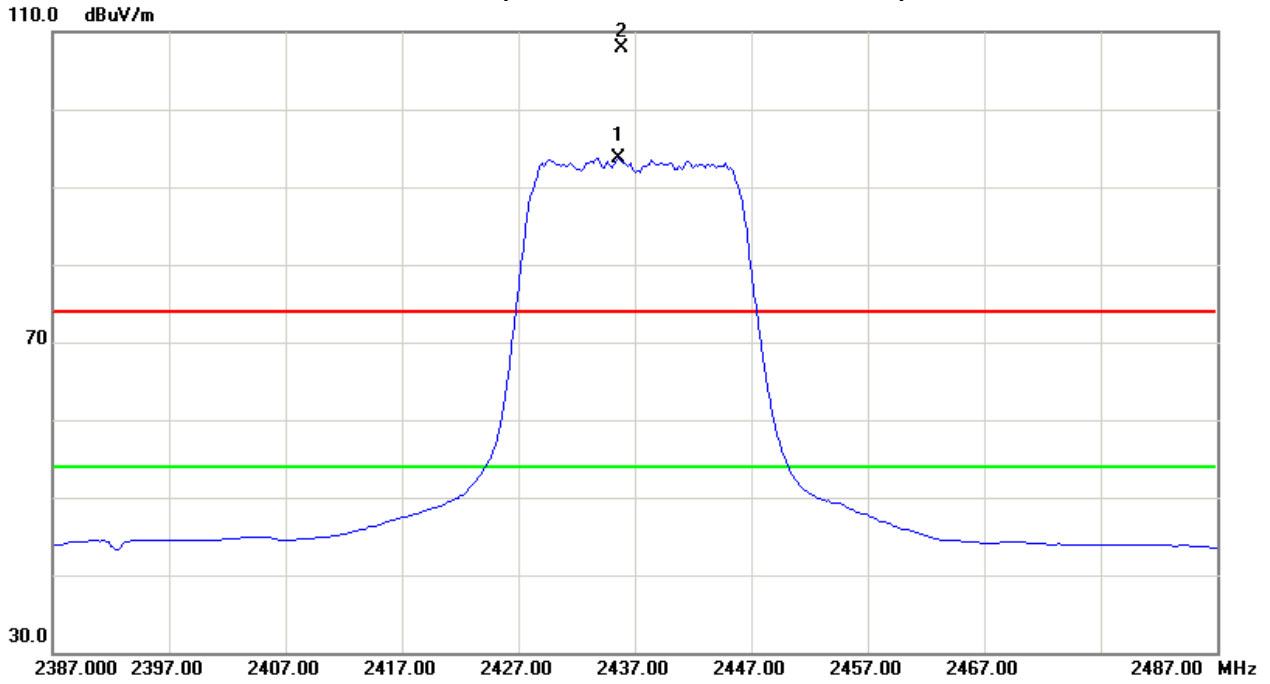
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2435.60	H	75.74	61.51	32.23	107.97	93.74			X/F
4873.95	H	48.89	35.89	5.47	54.36	41.36	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
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)	
2456.00	V	72.06	59.19	32.21	104.27	91.40			X/F
2483.50	V	25.34	13.30	32.17	57.51	45.47	74.00	54.00	X/E
4924.10	V	47.52	35.80	5.65	53.17	41.45	74.00	54.00	X/H

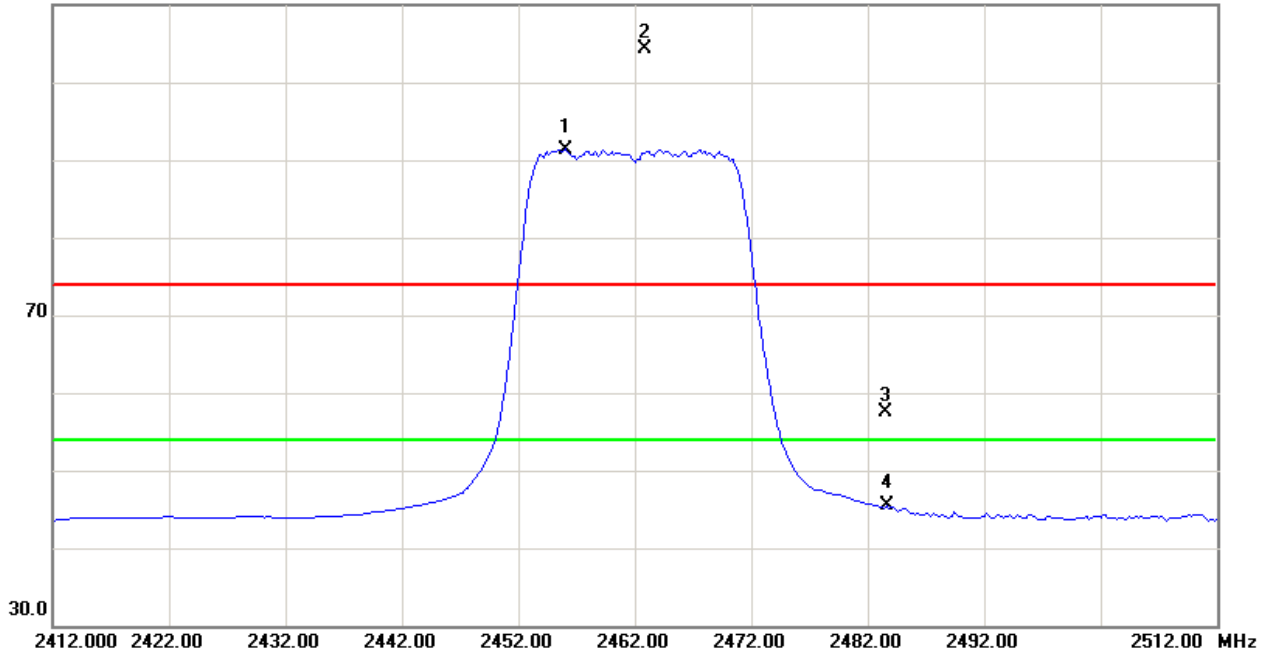
Remark :

- (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

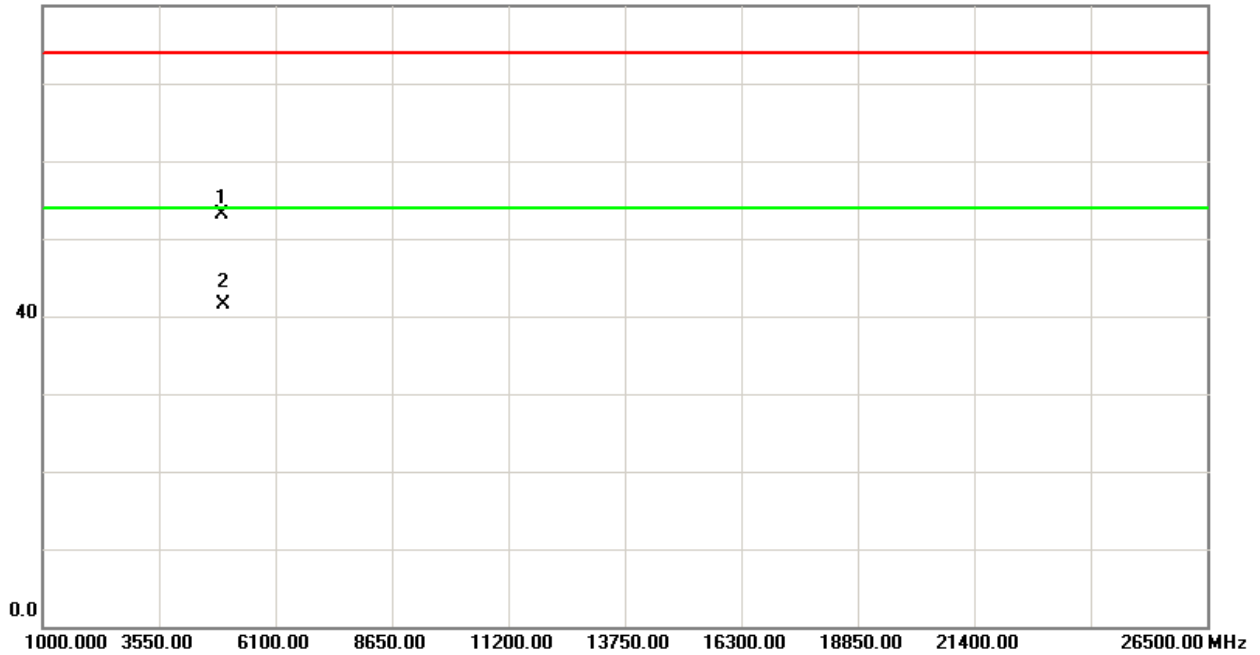


TX CH11 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE 2462MHz		

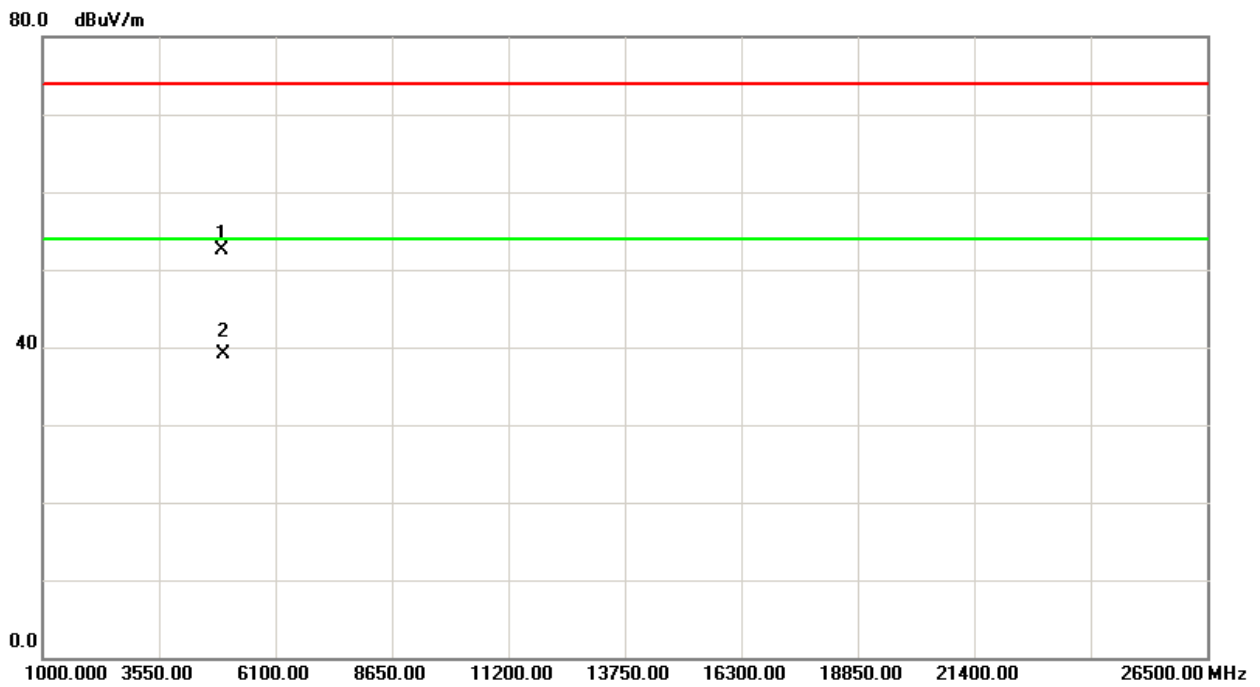
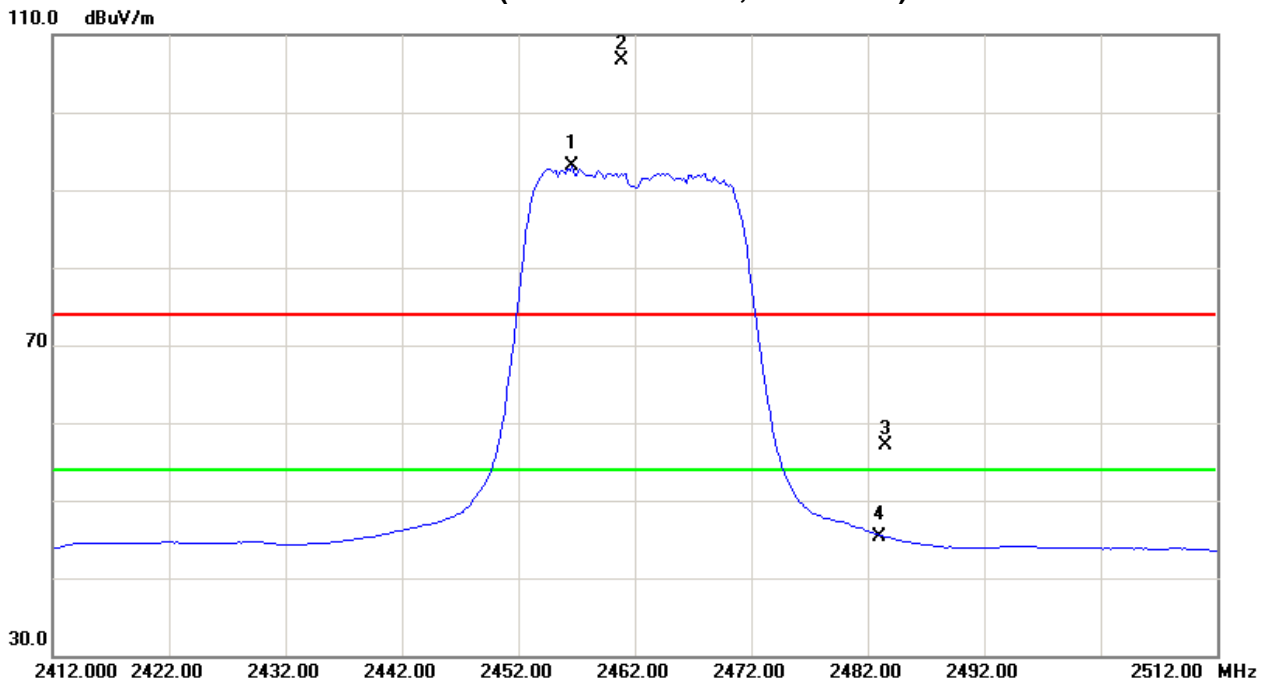
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2456.60	H	75.54	60.82	32.20	107.74	93.02			X/F
2483.50	H	24.98	13.11	32.17	57.15	45.28	74.00	54.00	X/E
4924.03	H	46.86	33.45	5.65	52.51	39.10	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

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	28.13	14.82	32.28	60.41	47.10	74.00	54.00	X/E
2413.80	V	68.65	55.39	32.24	100.89	87.63			X/F
4844.10	V	47.72	34.79	5.36	53.08	40.15	74.00	54.00	X/H

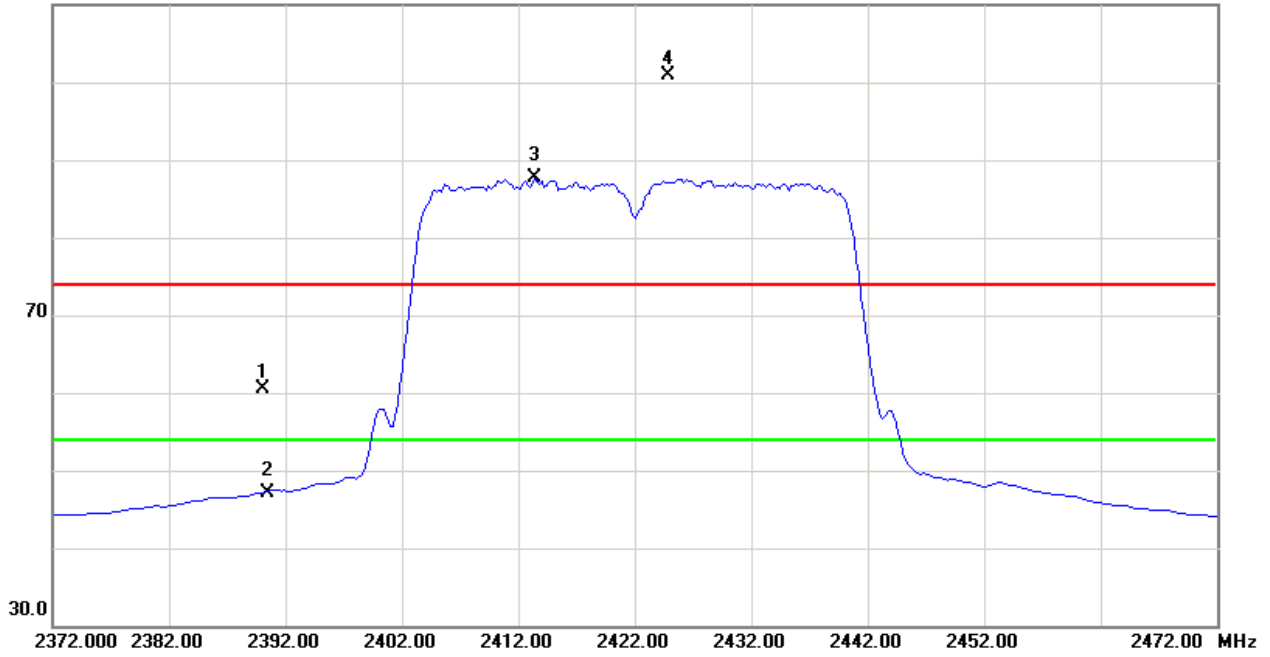
Remark :

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

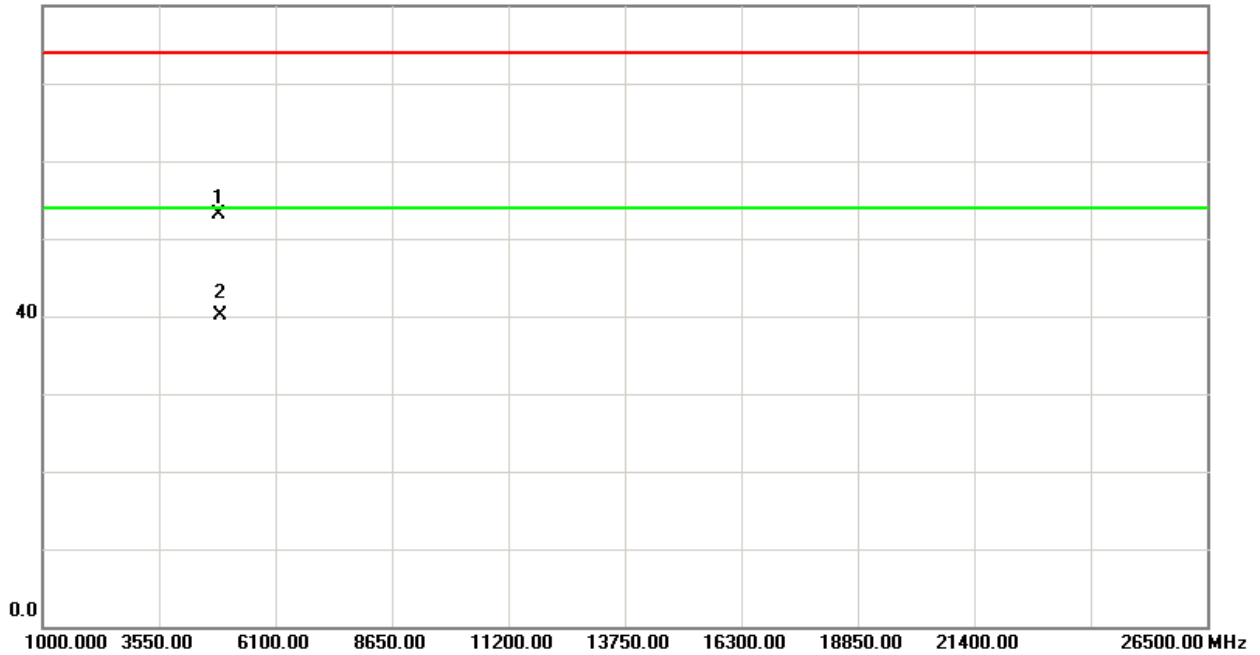


TX CH03 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2422MHz		

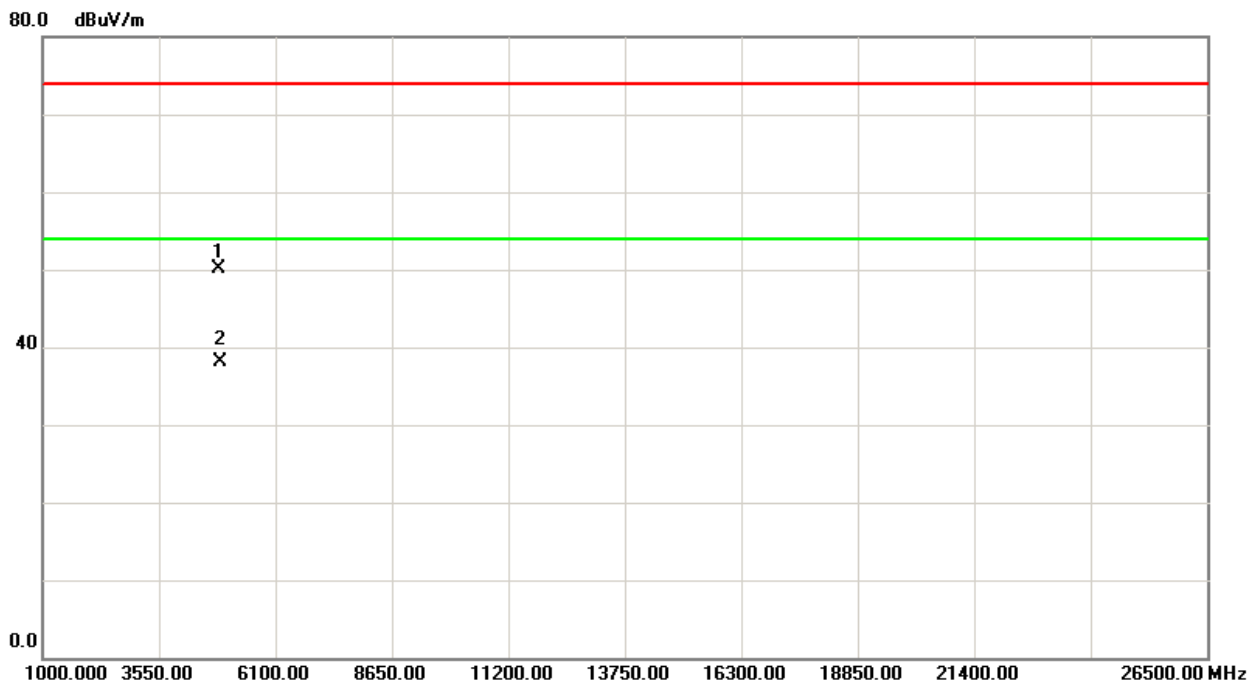
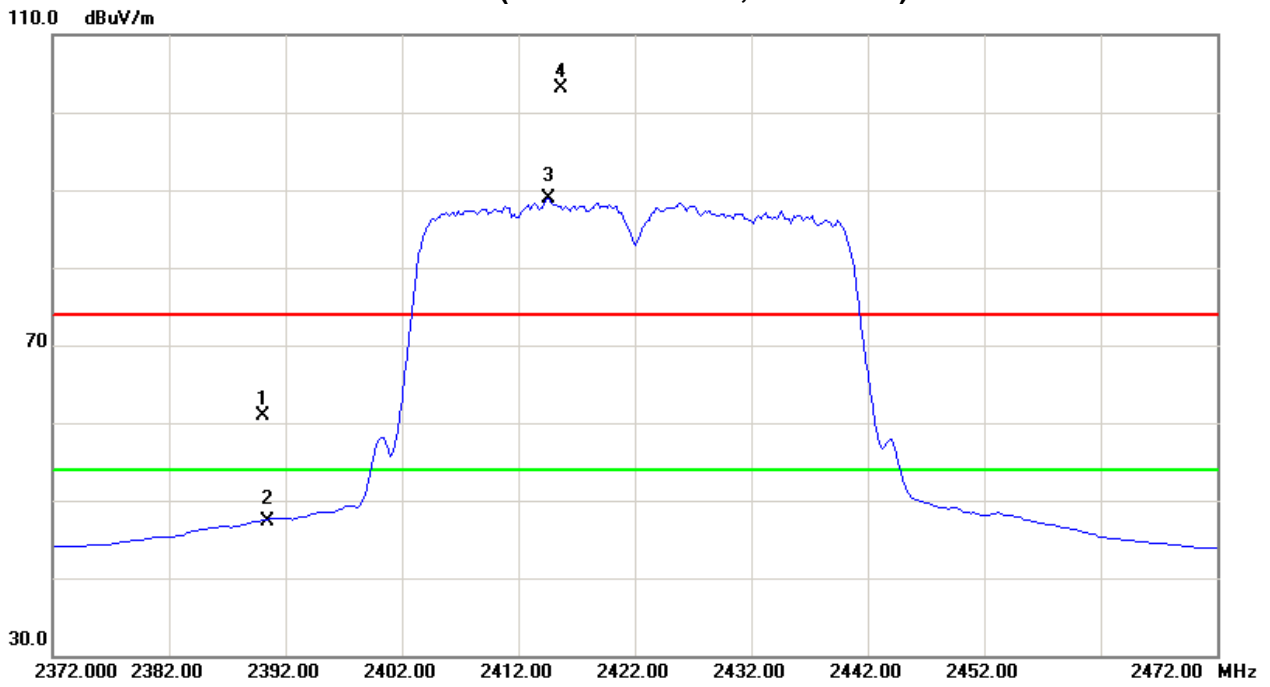
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	H	28.54	15.10	32.28	60.82	47.38	74.00	54.00	X/E
2415.60	H	70.80	56.66	32.25	103.05	88.91			X/F
4844.10	H	44.72	32.68	5.36	50.08	38.04	74.00	54.00	X/H

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 :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2426.00	V	68.96	55.18	32.24	101.20	87.42			X/F
4873.99	V	47.98	34.29	5.47	53.45	39.76	74.00	54.00	X/H

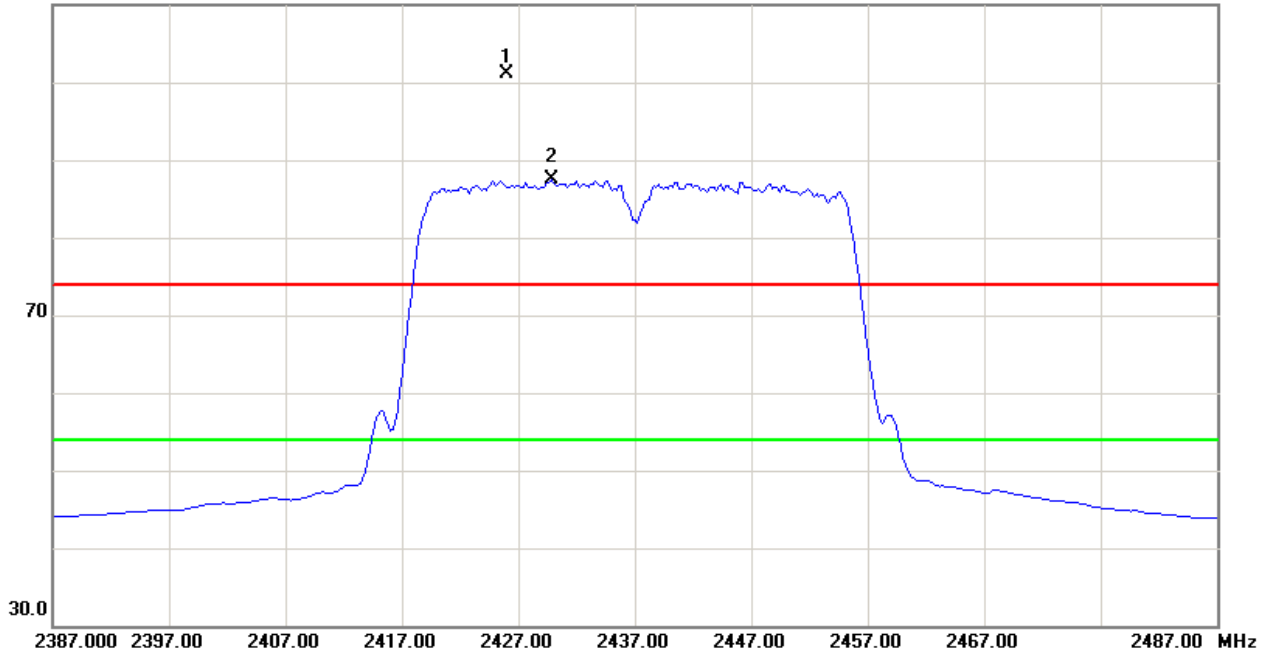
Remark :

- (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

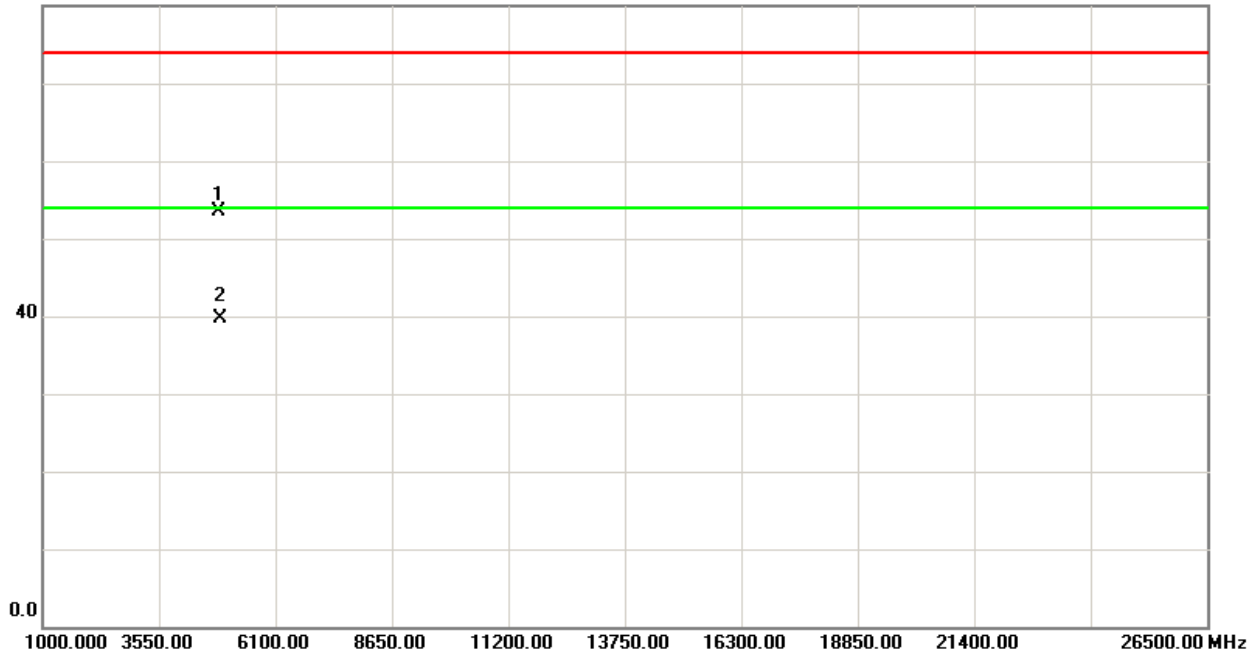


TX CH06 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	51 %
Pressure :	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE 2437MHz		

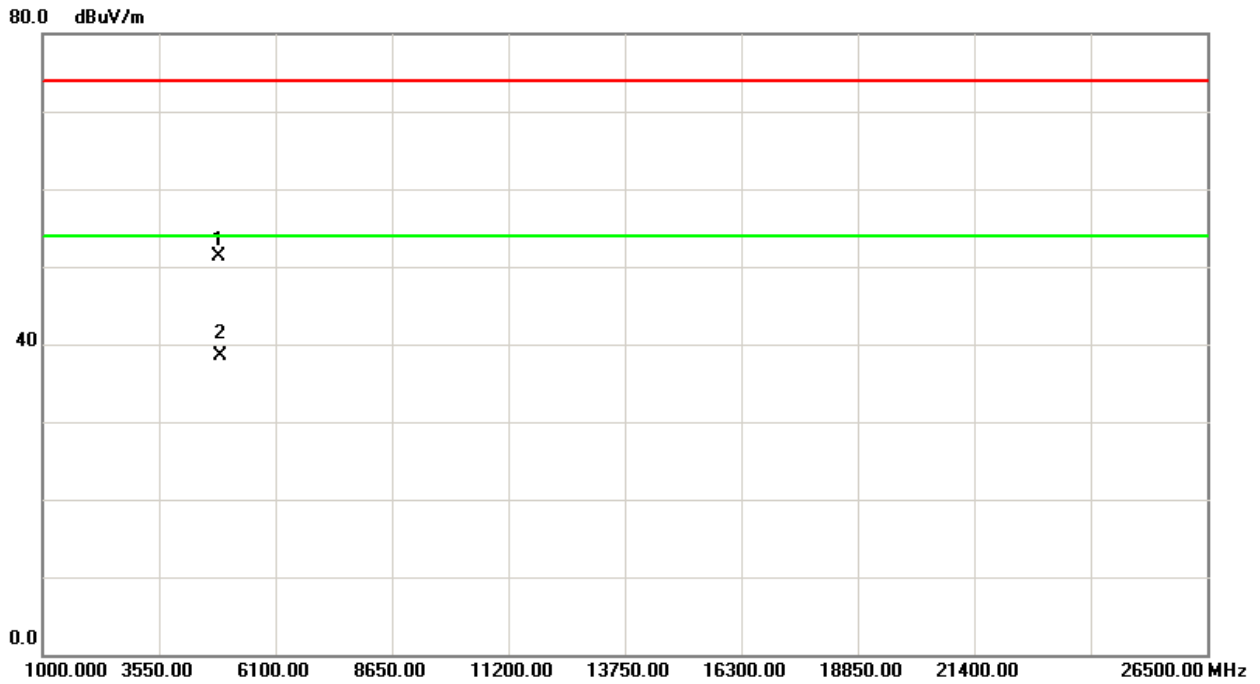
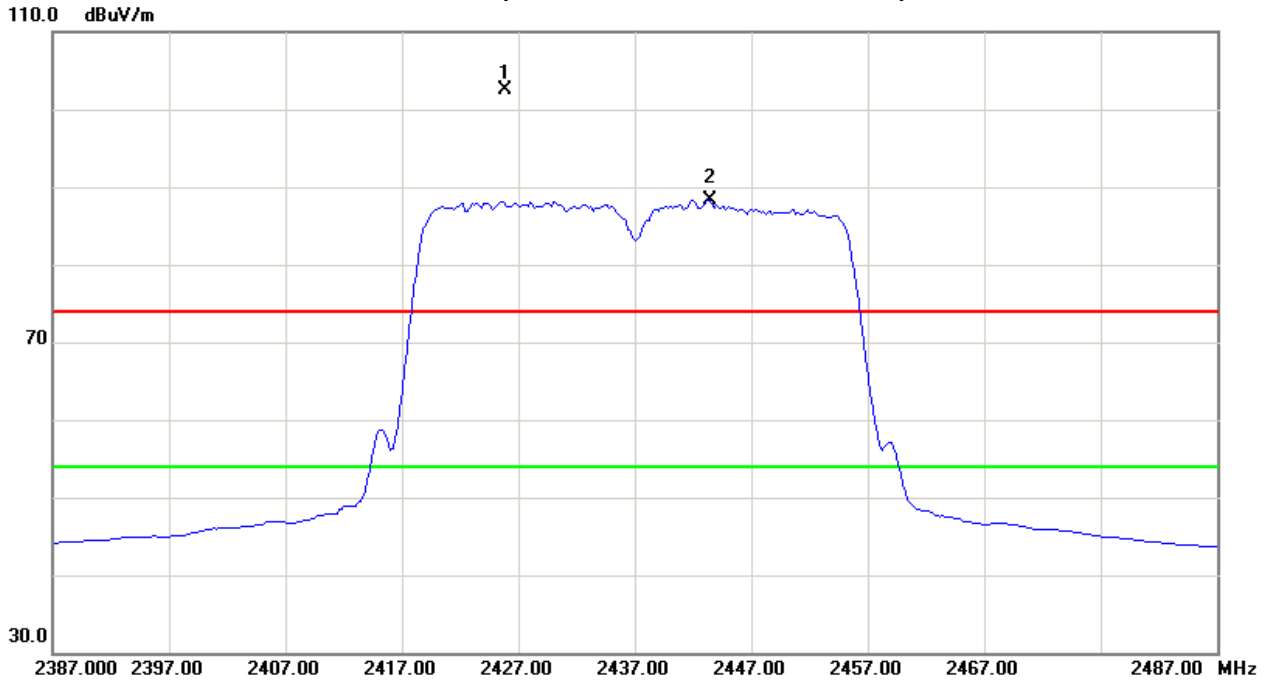
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2425.80	H	70.24	56.15	32.24	102.48	88.39			X/F
4873.96	H	45.86	33.11	5.47	51.33	38.58	74.00	54.00	X/H

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 CH06 (Above 1000 MHz, Horizontal)





EUT :	Wireless router	Model Name :	DIR-617
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)	
2445.60	V	68.93	56.07	32.22	101.15	88.29			X/F
2483.50	V	26.08	14.35	32.17	58.25	46.52	74.00	54.00	X/E
4904.10	V	46.53	32.86	5.58	52.11	38.44	74.00	54.00	X/H

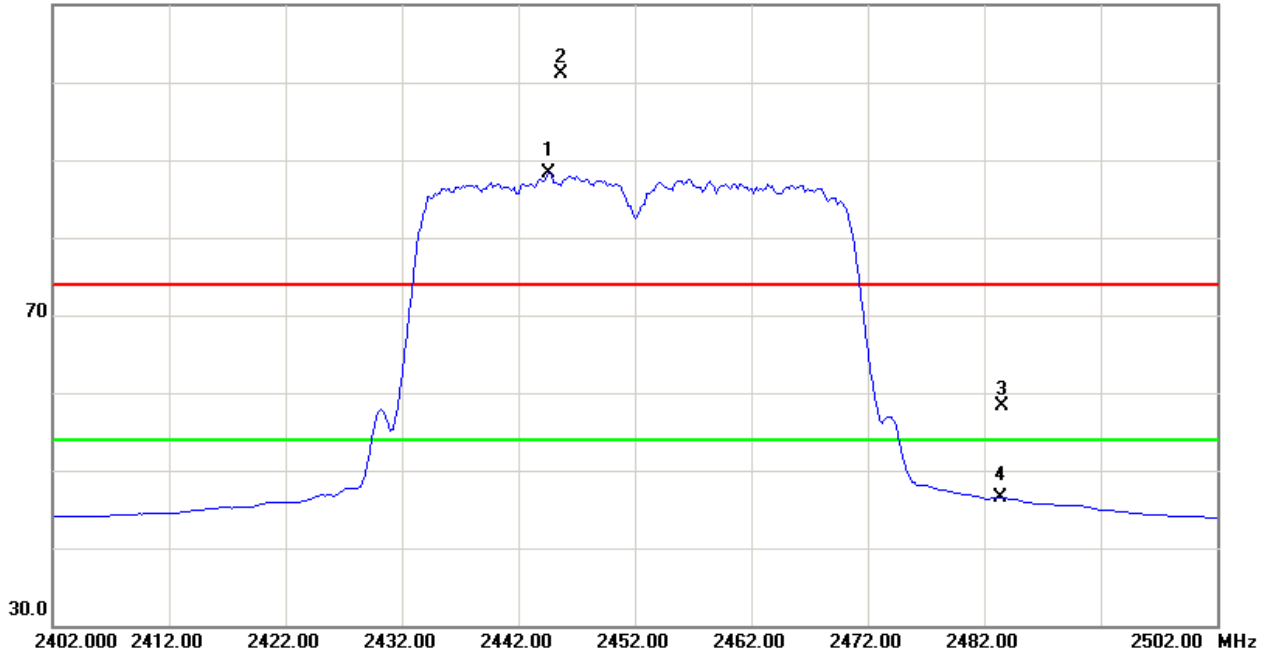
Remark :

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

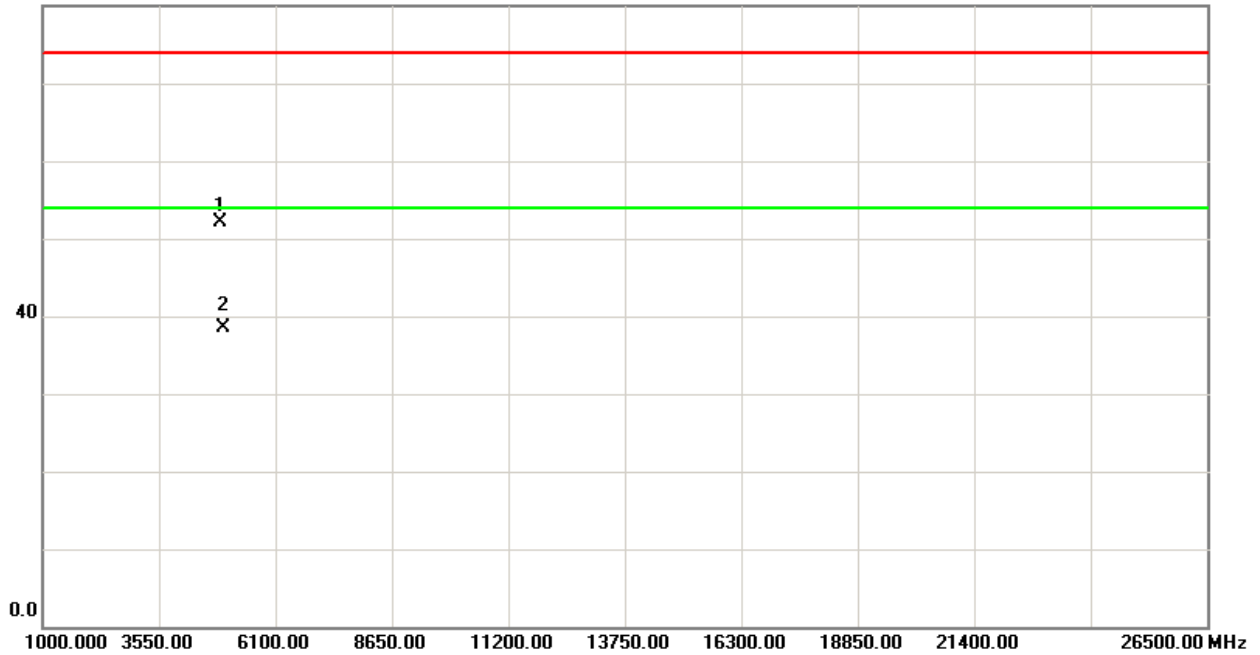


TX CH09 (Above 1000 MHz, Vertical)

110.0 dBuV/m



80.0 dBuV/m





EUT :	Wireless router	Model Name :	DIR-617
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)	
2447.80	H	72.09	56.37	32.21	104.30	88.58			X/F
2483.50	H	28.11	14.89	32.17	60.28	47.06	74.00	54.00	X/E
4903.84	H	42.24	30.32	5.58	47.82	35.90	74.00	54.00	X/H

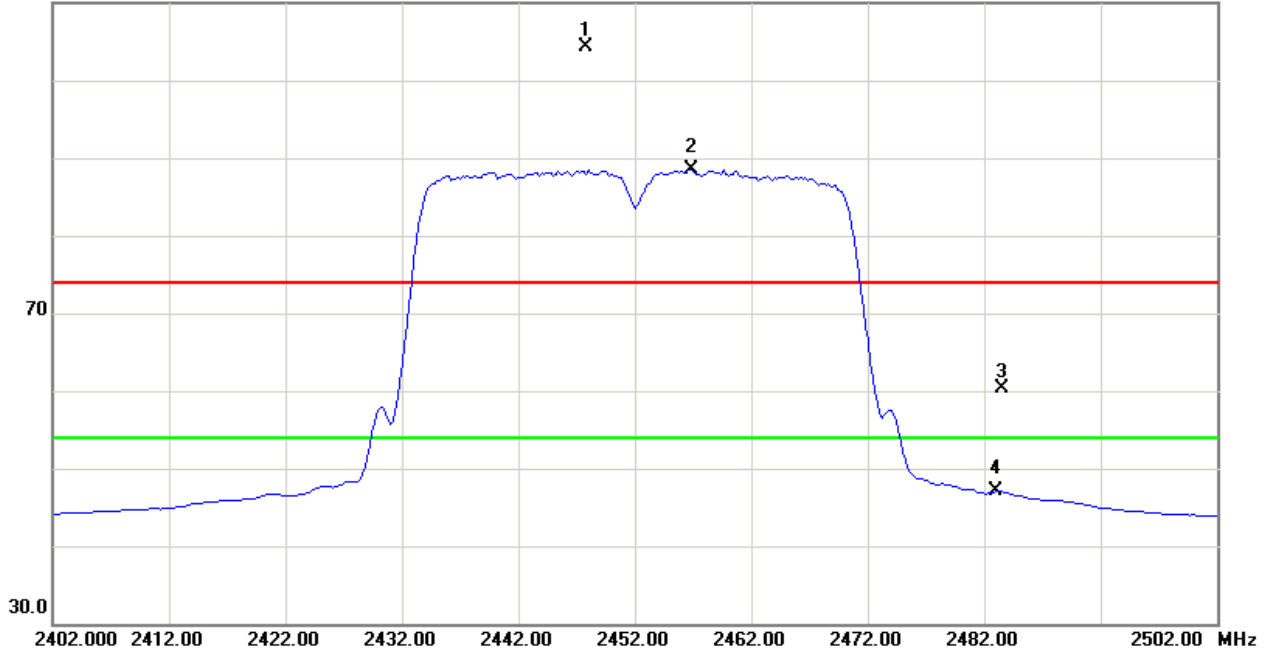
Remark :

- (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

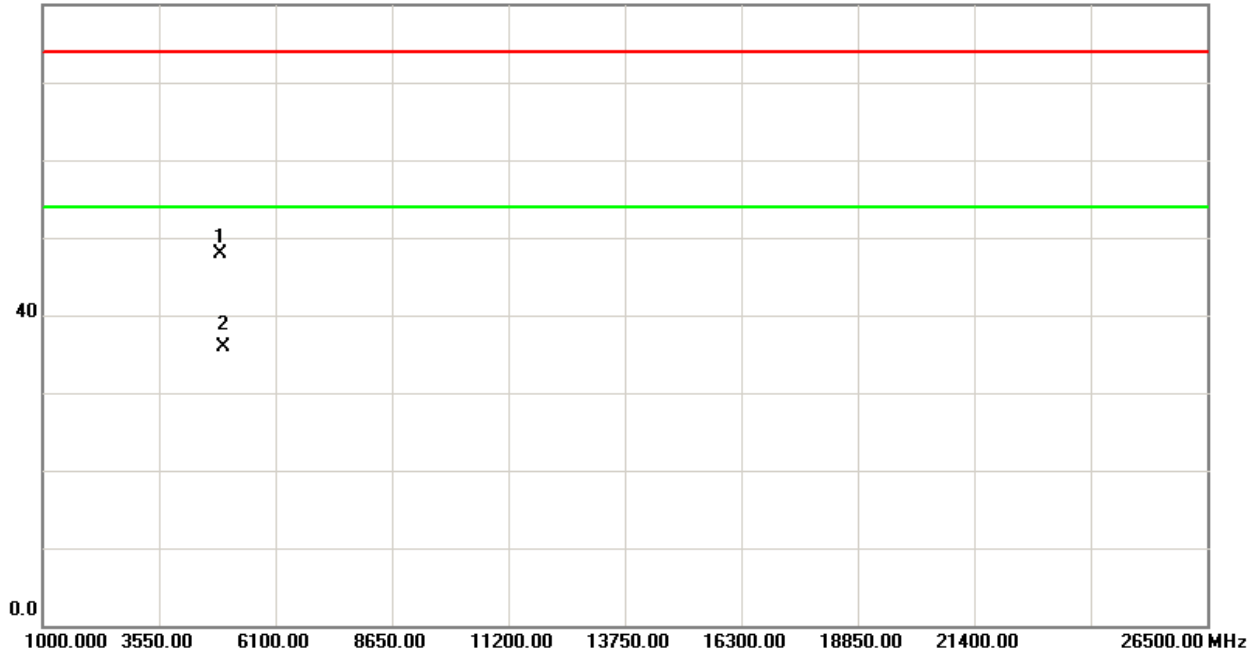


TX CH09 (Above 1000 MHz, Horizontal)

110.0 dBuV/m



80.0 dBuV/m





5. BANDWIDTH TEST

5.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C/ RSS-GEN and RSS-210			
Section	Test Item	Frequency Range (MHz)	Result
15.247(a)(2) RSS-GEN section 4.6.1 RSS-210 section A8.2	Bandwidth	2400-2483.5	PASS

5.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Next Calibration
1	Spectrum Analyzer	R&S	FSP_40	100185	Nov. 16.2012	Nov. 16.2013

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

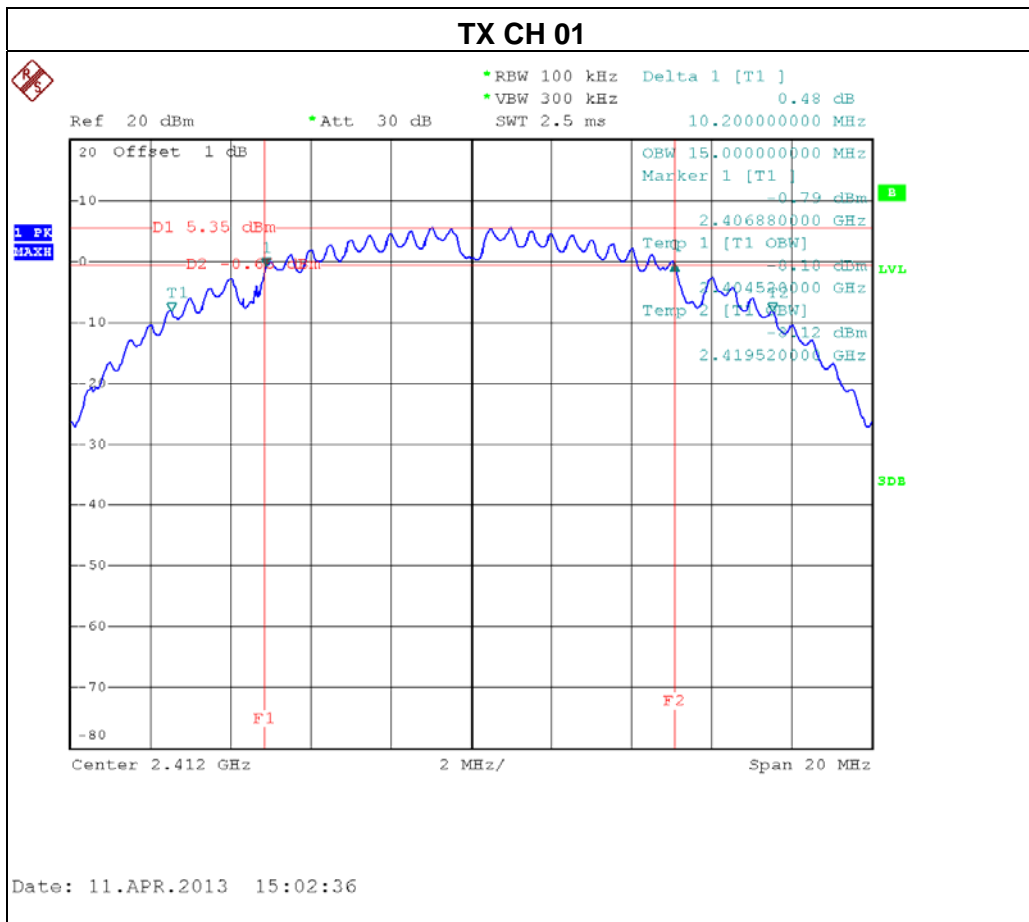
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

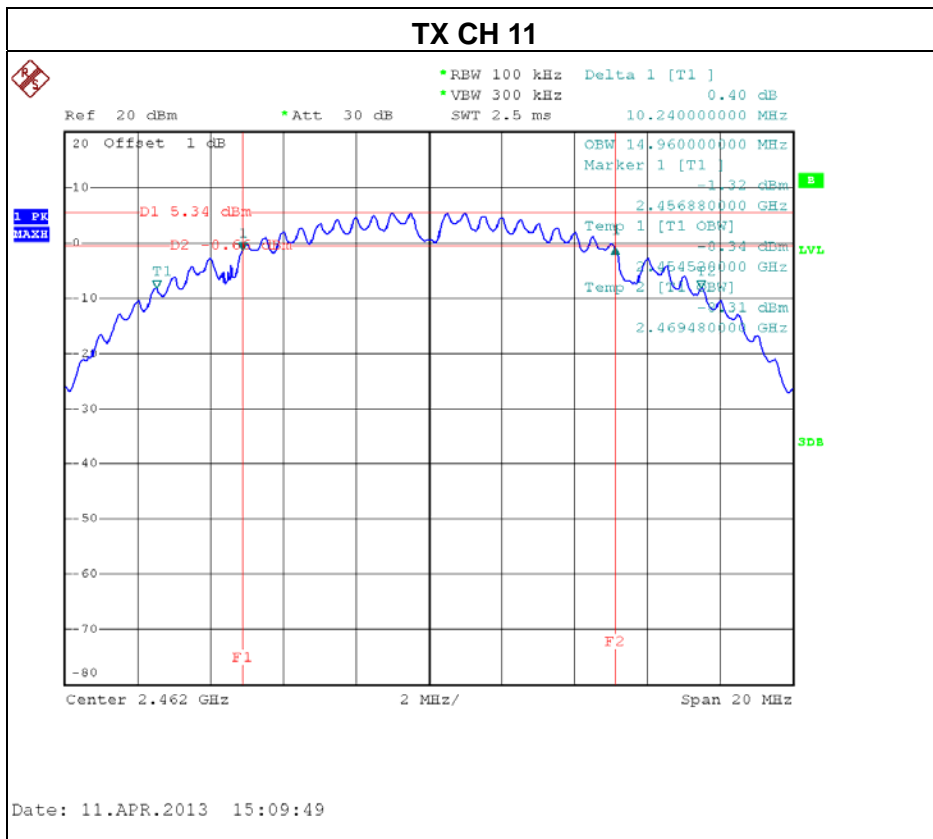
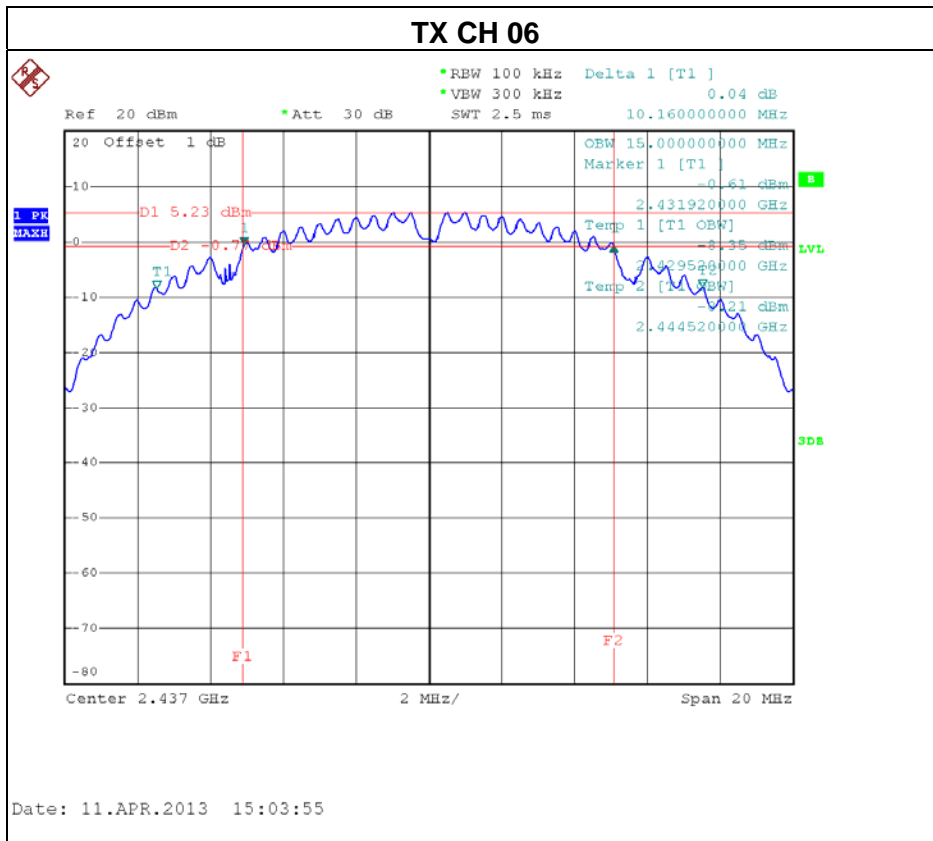


5.1.6 TEST RESULTS

EUT :	Wireless router	Model Name. :	DIR-617
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)	99% Occupied BW (MHz)	Result
CH01	2412	10.20	15.00	PASS
CH06	2437	10.16	15.00	PASS
CH11	2462	10.24	15.00	PASS

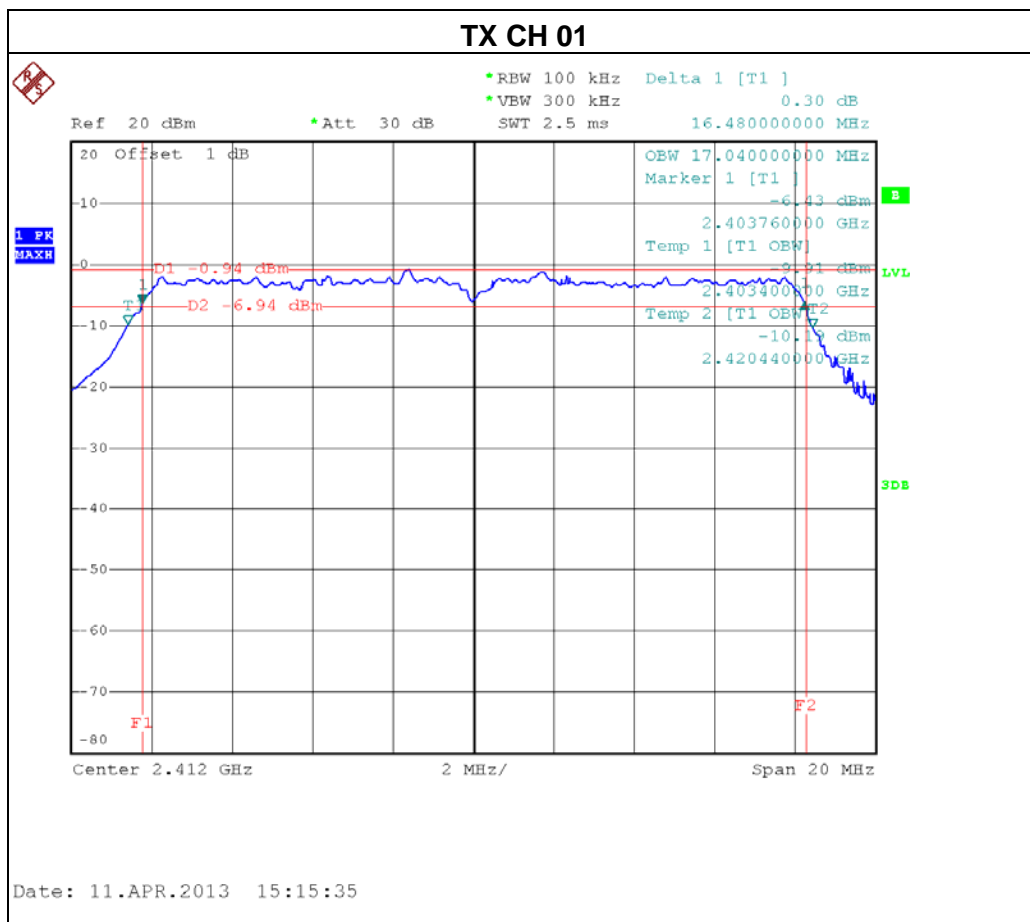


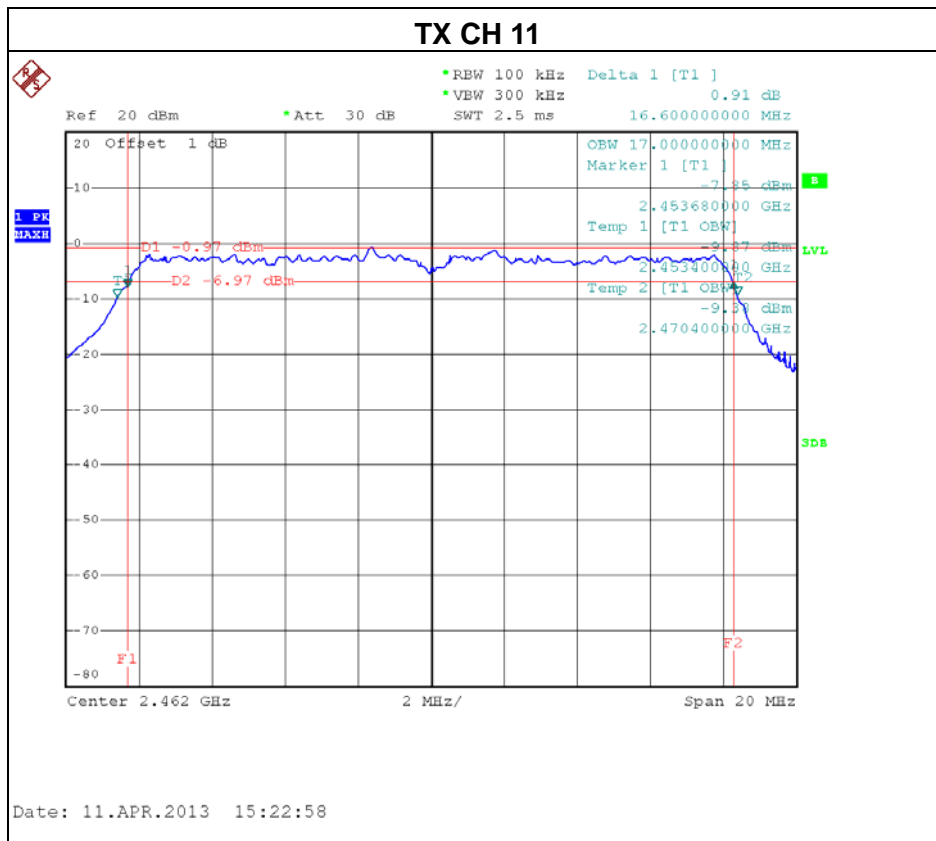
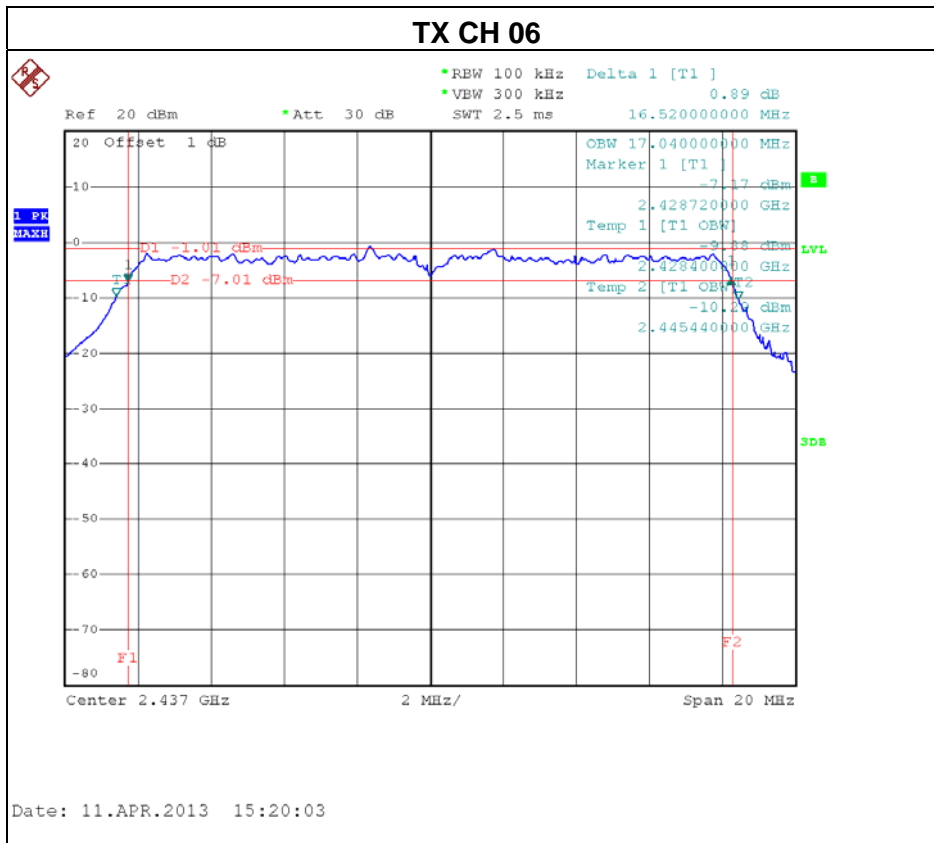




EUT :	Wireless router	Model Name. :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% Occupied BW (MHz)	Result
CH01	2412	16.48	17.04	PASS
CH06	2437	16.52	17.04	PASS
CH11	2462	16.60	17.00	PASS

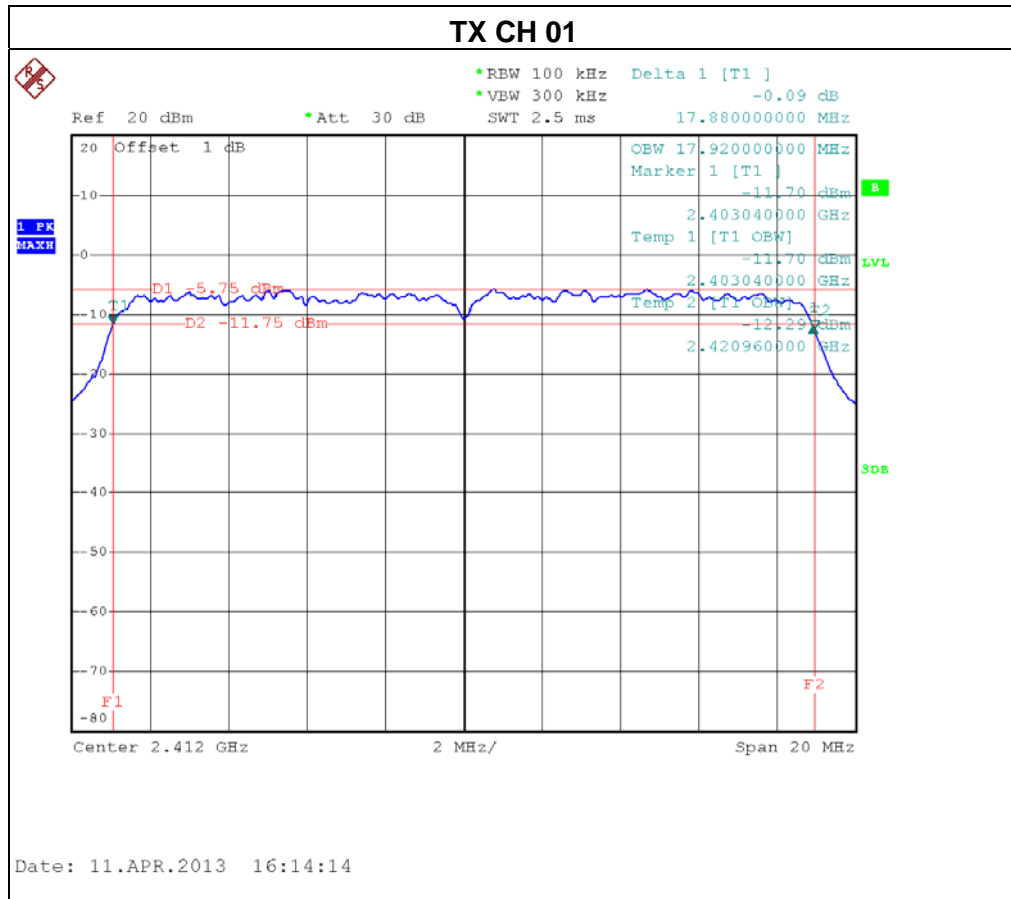


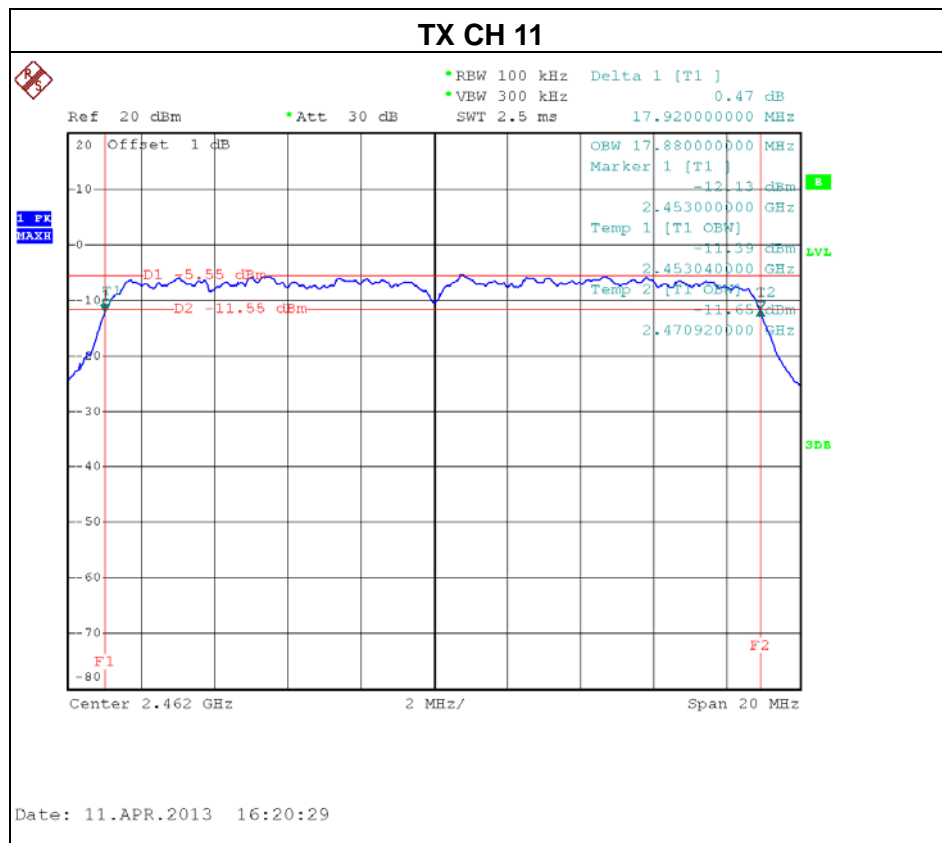
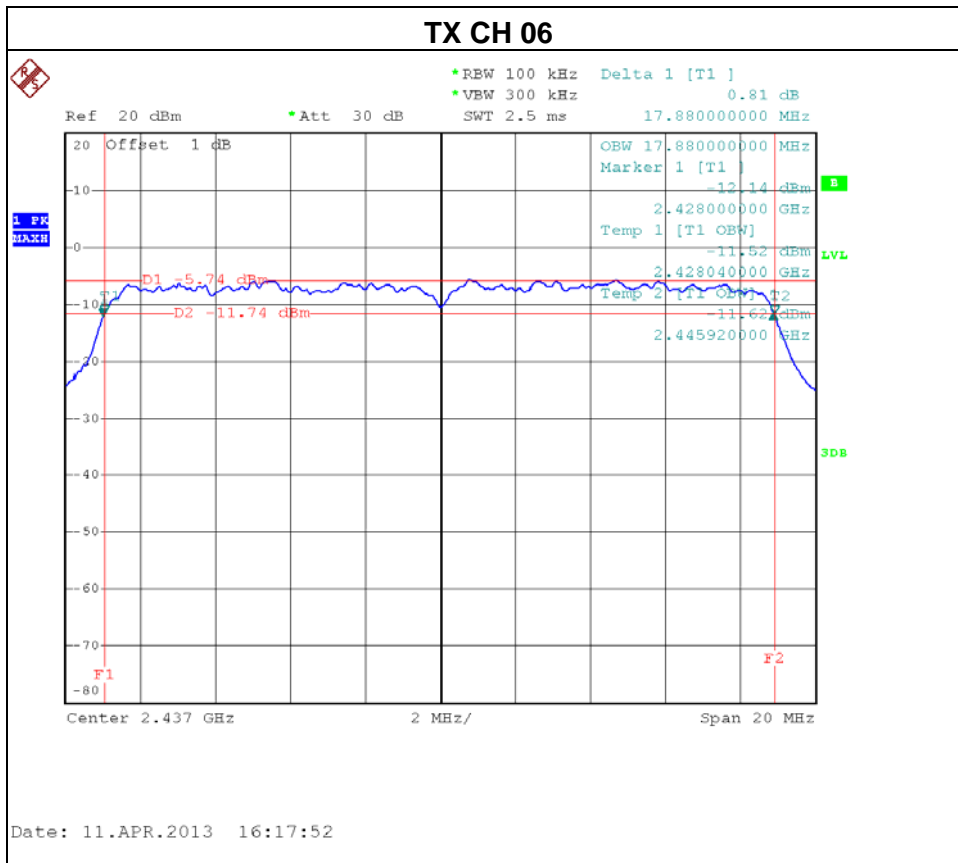




EUT :	Wireless router	Model Name. :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% Occupied BW (MHz)	Result
CH01	2412	17.88	17.92	PASS
CH06	2437	17.88	17.88	PASS
CH11	2462	17.92	17.88	PASS

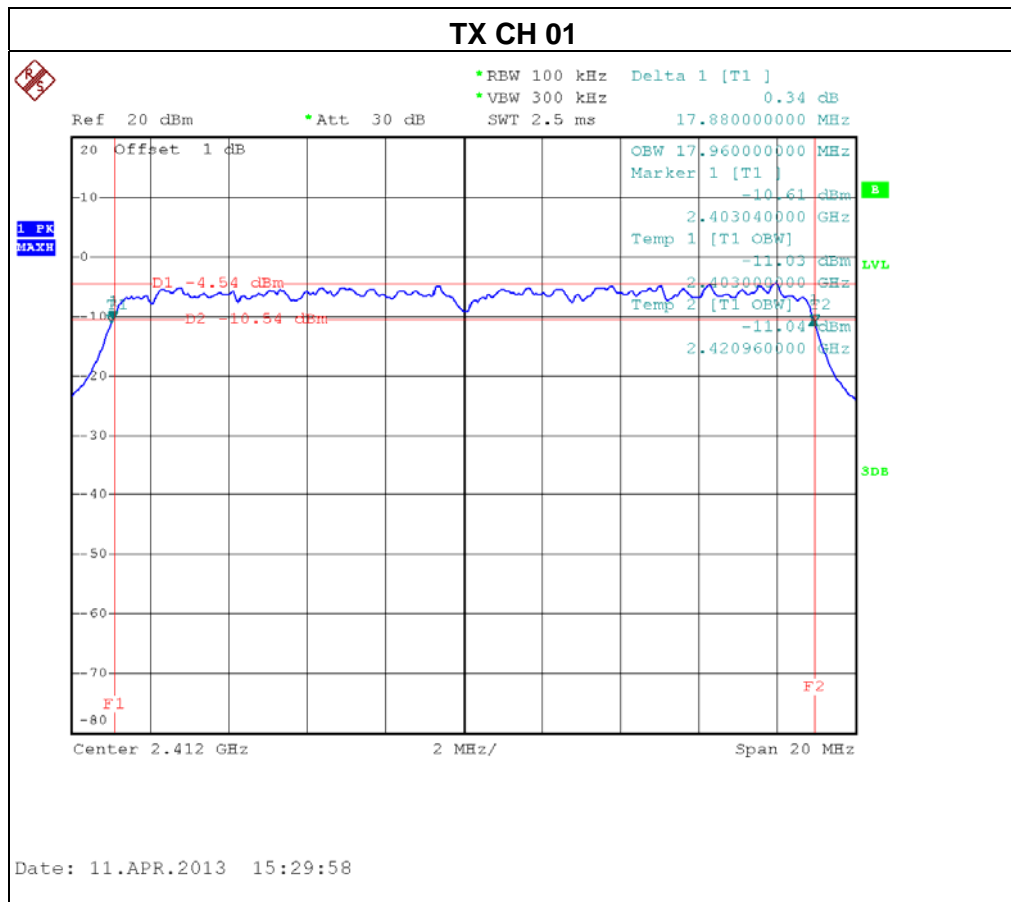


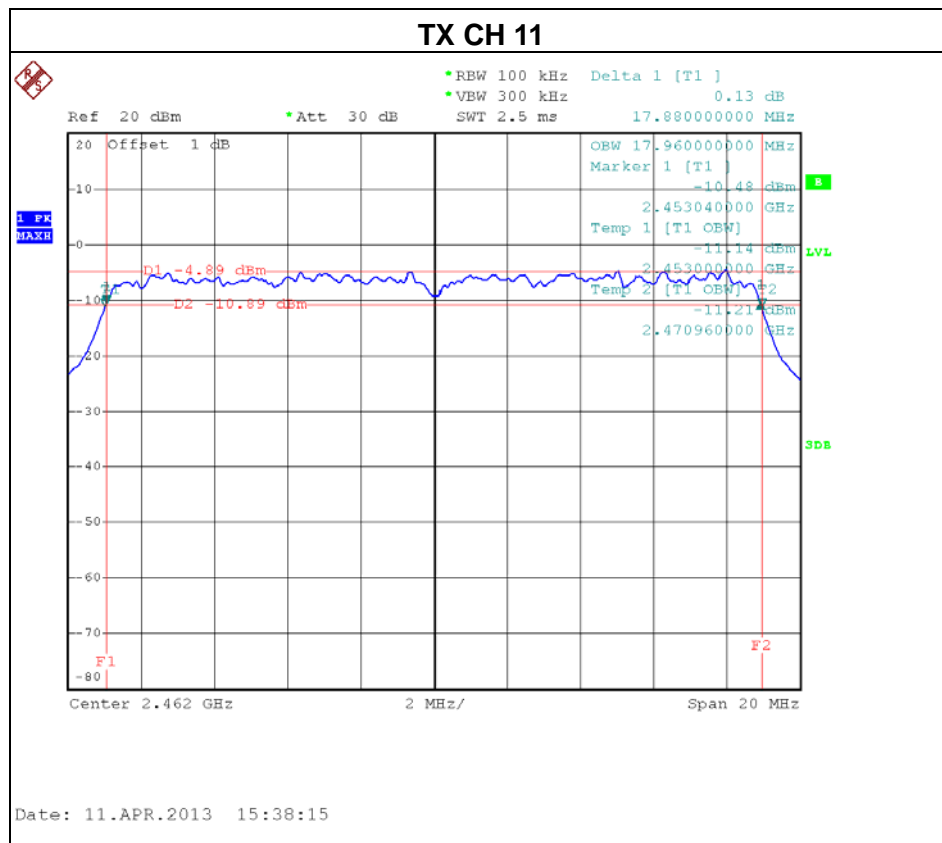
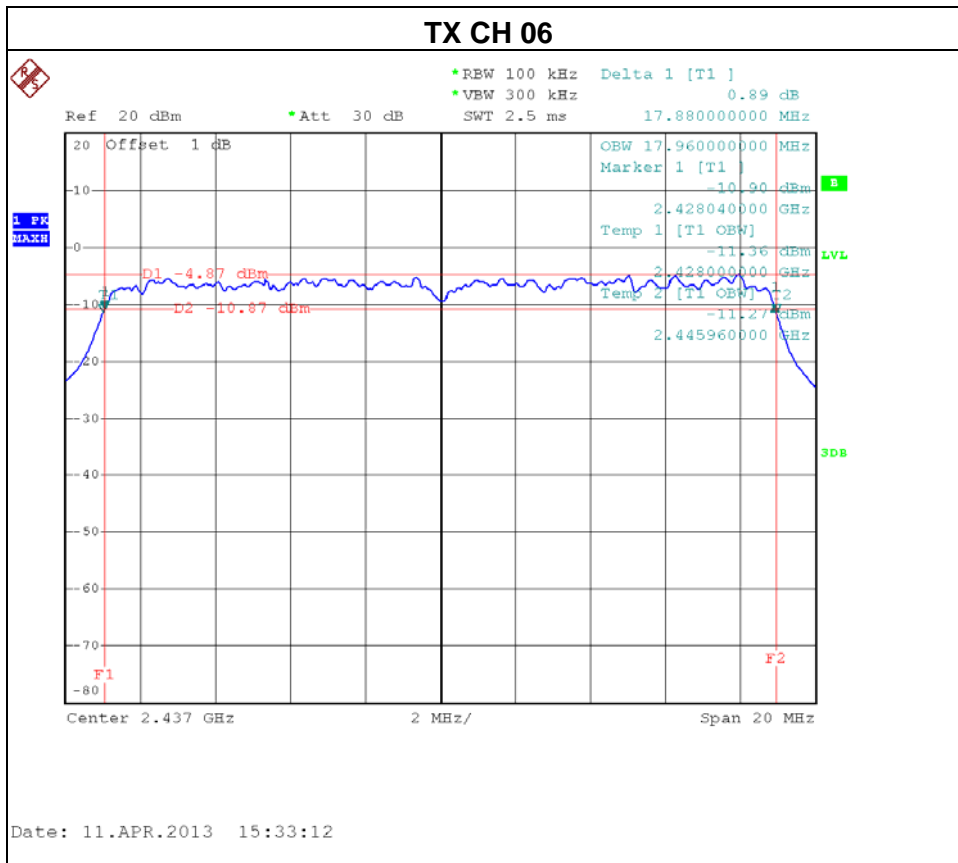




EUT :	Wireless router	Model Name. :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -20MHz/ CH01, CH06, CH11-ANT 2		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% Occupied BW (MHz)	Result
CH01	2412	17.88	17.96	PASS
CH06	2437	17.88	17.96	PASS
CH11	2462	17.88	17.96	PASS

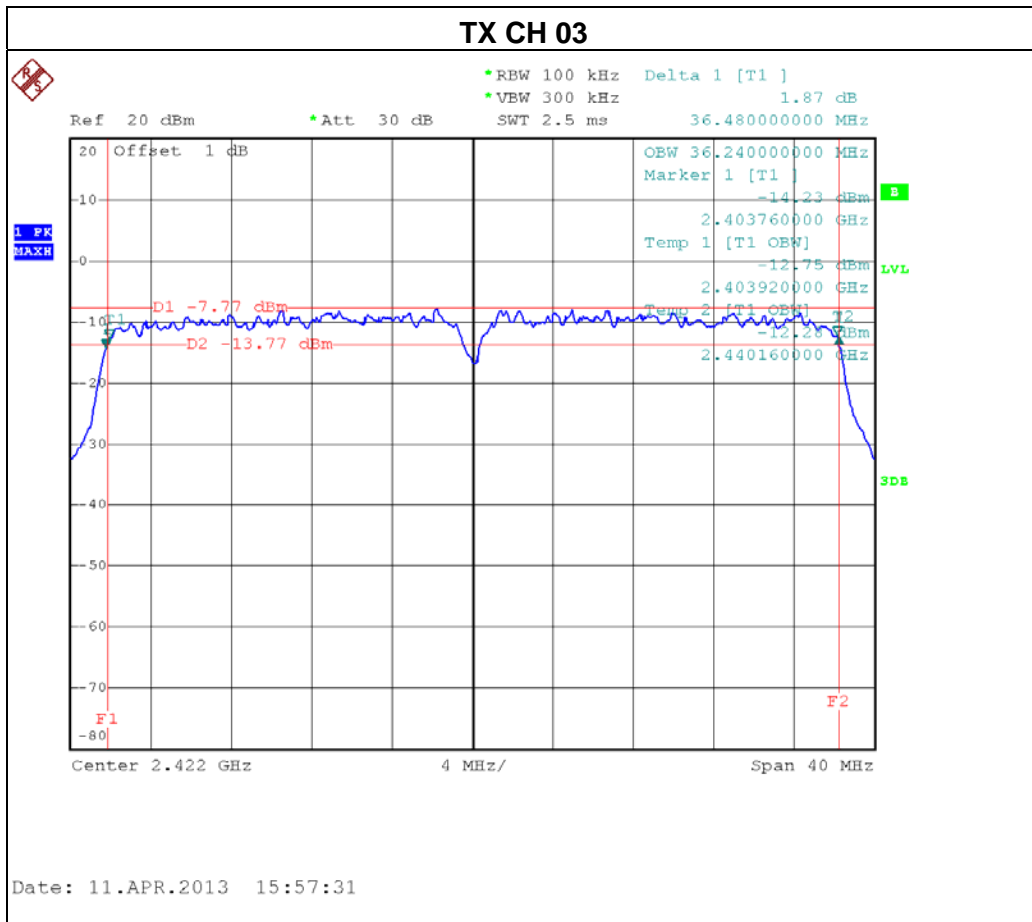


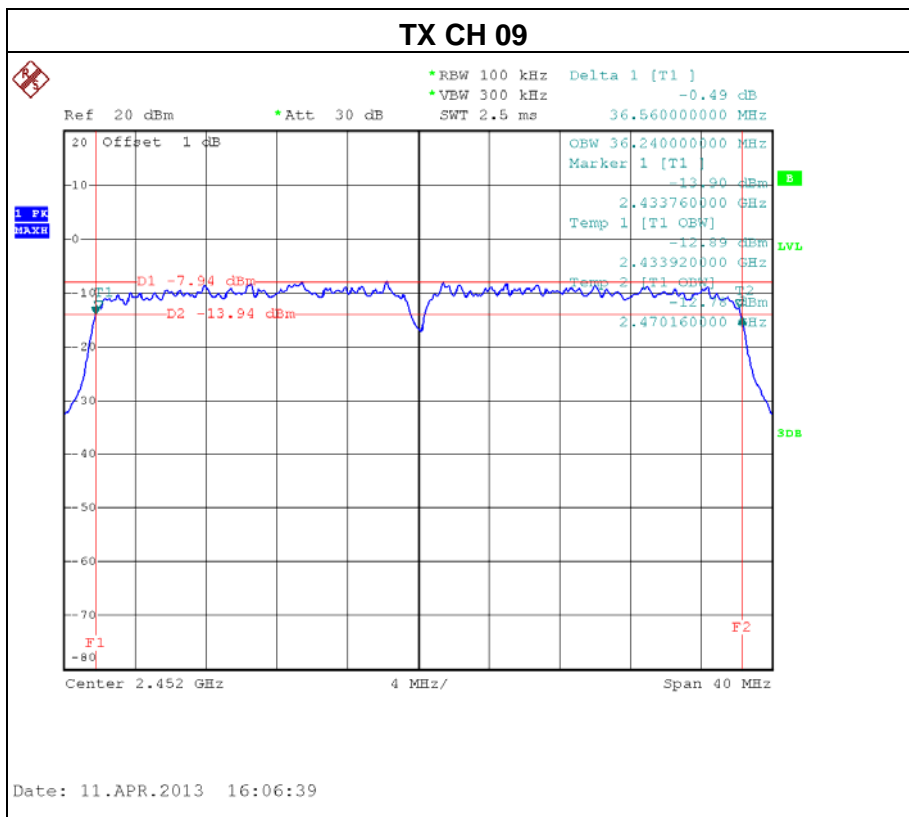
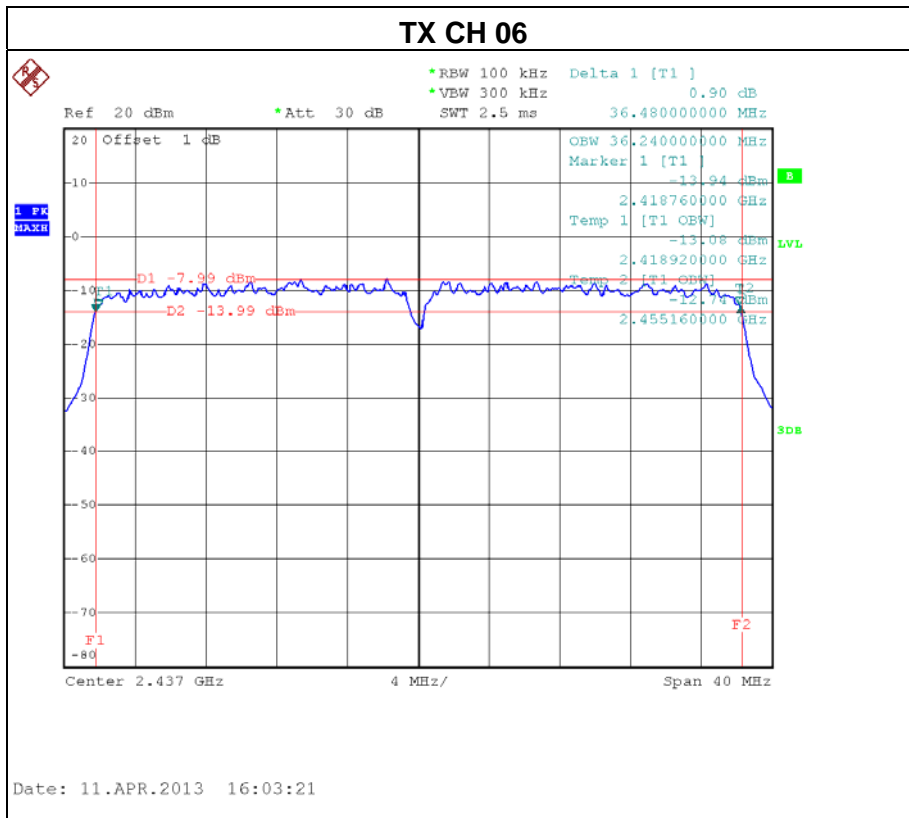




EUT :	Wireless router	Model Name. :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 1		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% Occupied BW (MHz)	Result
CH03	2422	36.48	36.24	PASS
CH06	2437	36.48	35.24	PASS
CH09	2452	36.56	35.24	PASS

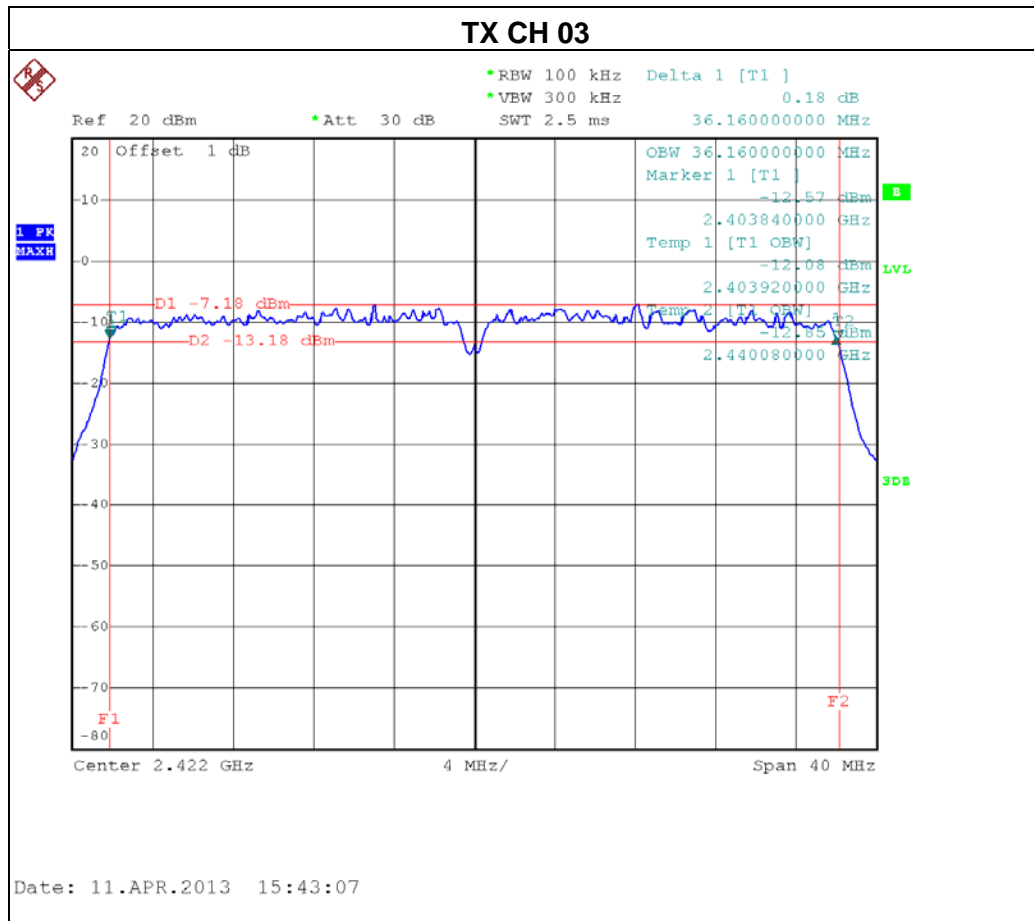


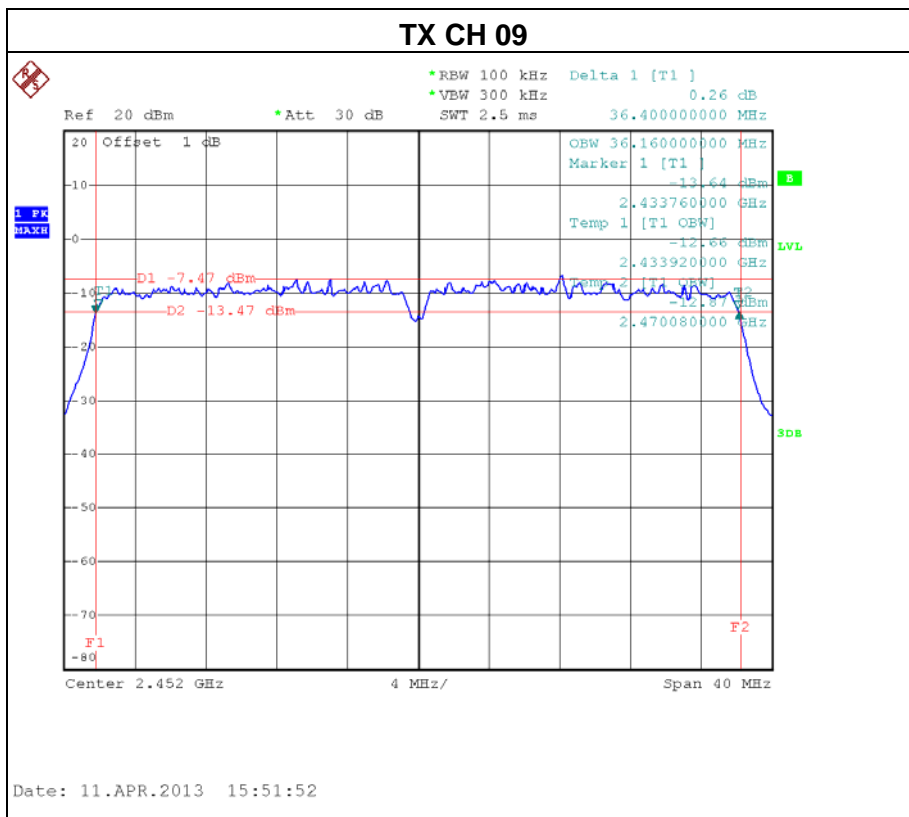
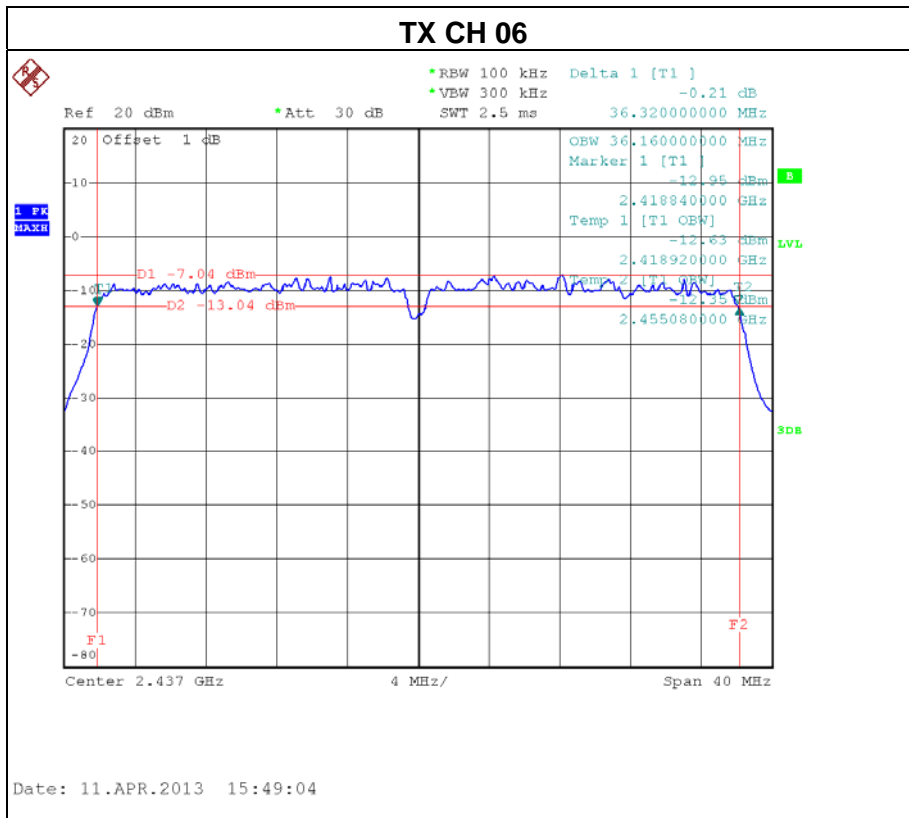




EUT :	Wireless router	Model Name. :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE -40MHz/ CH03, CH06, CH09-ANT 2		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% Occupied BW (MHz)	Result
CH03	2422	36.16	35.16	PASS
CH06	2437	36.32	35.16	PASS
CH09	2452	36.40	35.16	PASS







6. MAXIMUM OUTPUT POWER TEST

6.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C/ RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3) RSS-210 section 8.4	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.	Last Calibration	Next Calibration
1	P-series Power meter	Agilent	N1911A	MY45100473	May.04.2012	May.04.2013
2	Wireband Power sensor	Agilent	N1921A	MY51100041	May.04.2012	May.04.2013

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 8.1.3 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 :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06, CH11		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	17.01	30	1
CH06	2437 MHz	16.85	30	1
CH11	2462 MHz	17.03	30	1

EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	14.73	30	1
CH06	2437 MHz	14.67	30	1
CH11	2462 MHz	14.68	30	1

EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11 - ANT1		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	10.60	30	1
CH06	2437 MHz	11.06	30	1
CH11	2462 MHz	10.84	30	1



EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11 - ANT2		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	11.31	30	1
CH06	2437 MHz	11.04	30	1
CH11	2462 MHz	11.02	30	1

EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 - ANT1		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH03	2422 MHz	11.14	30	1
CH06	2437 MHz	10.88	30	1
CH09	2452 MHz	10.96	30	1

EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 - ANT2		

Maximum Output Power

Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH03	2422 MHz	10.98	30	1
CH06	2437 MHz	11.08	30	1
CH09	2452 MHz	11.46	30	1



EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE /CH01, CH06, CH11		

Maximum Output Power

ANT1 + ANT2				
Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	13.98	30	1
CH06	2437 MHz	14.11	30	1
CH11	2452 MHz	13.94	30	1

EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09		

Maximum Output Power

ANT1 + ANT2				
Test Channel	Frequency (MHz)	Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH03	2422 MHz	14.07	30	1
CH06	2437 MHz	13.99	30	1
CH09	2452 MHz	14.23	30	1



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) & RSS-210 section 2.2&A8.5, then the 15.209(a) & RSS-GEN limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micровolts/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.	Last Calibration	Next Calibration
1	Spectrum Analyzer	R&S	FSP_40	100185	Nov. 16.2012	Nov. 16.2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of Equipment List is One Year.

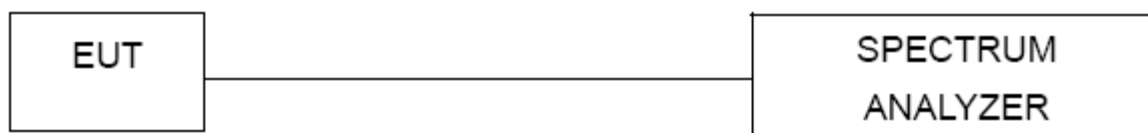
7.1.2 TEST PROCEDURE

- 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

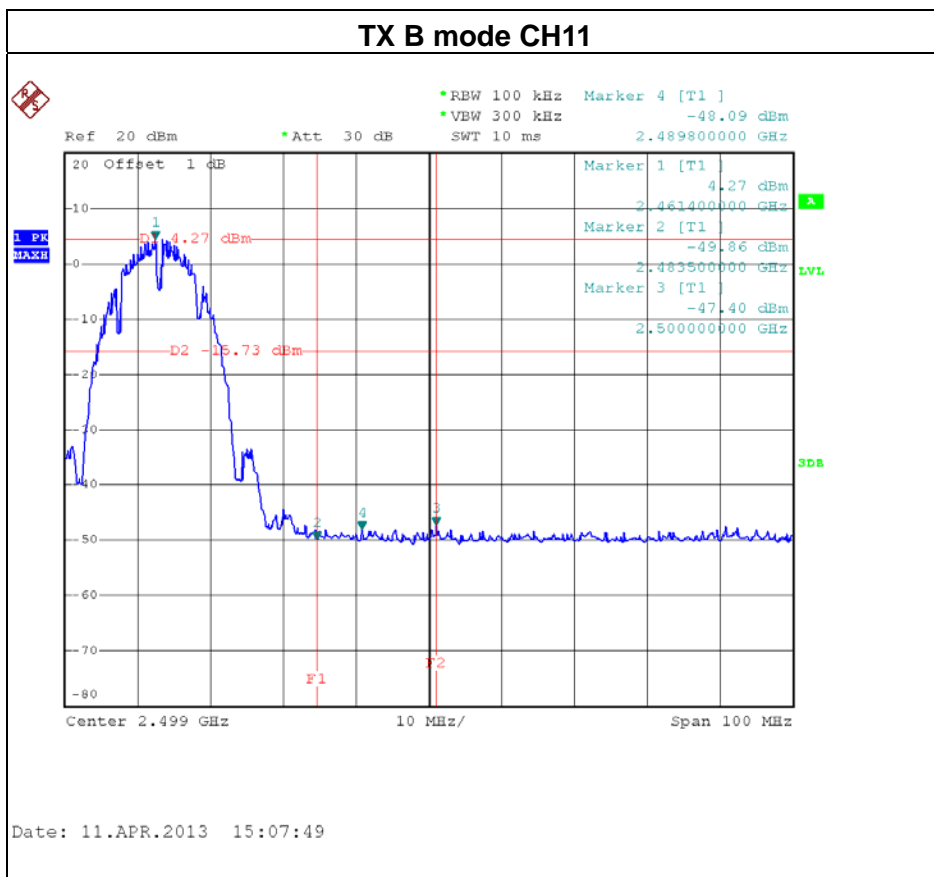
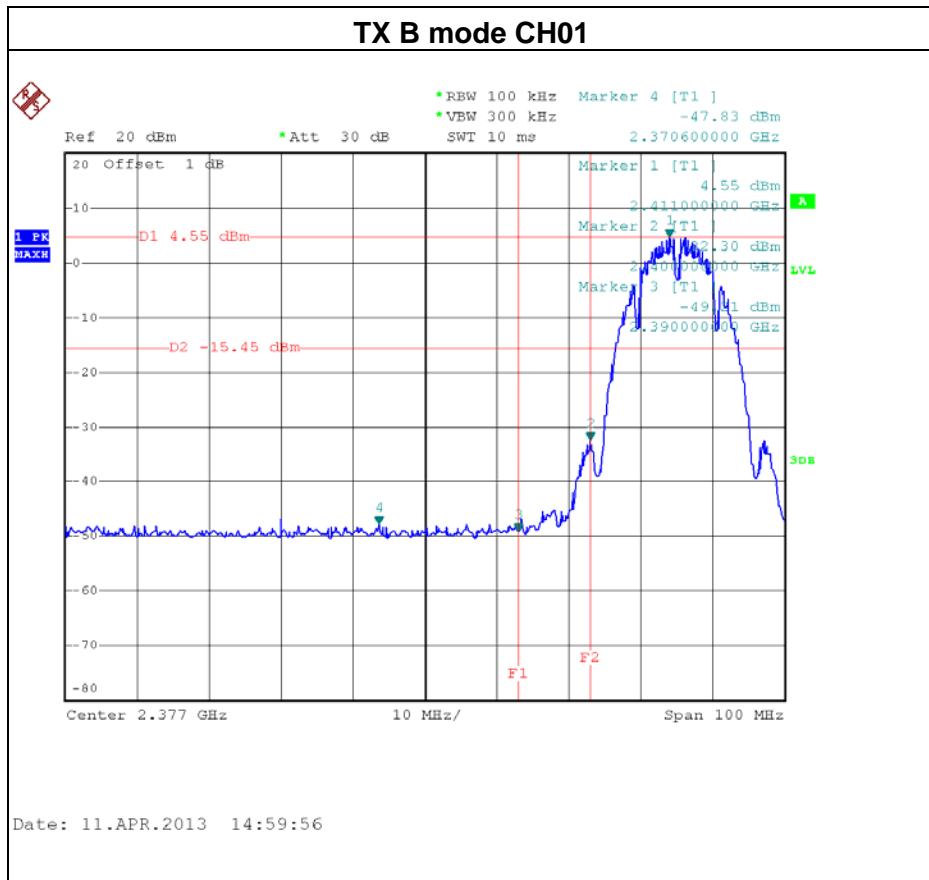
EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX B MODE /CH01, CH06 , CH11		

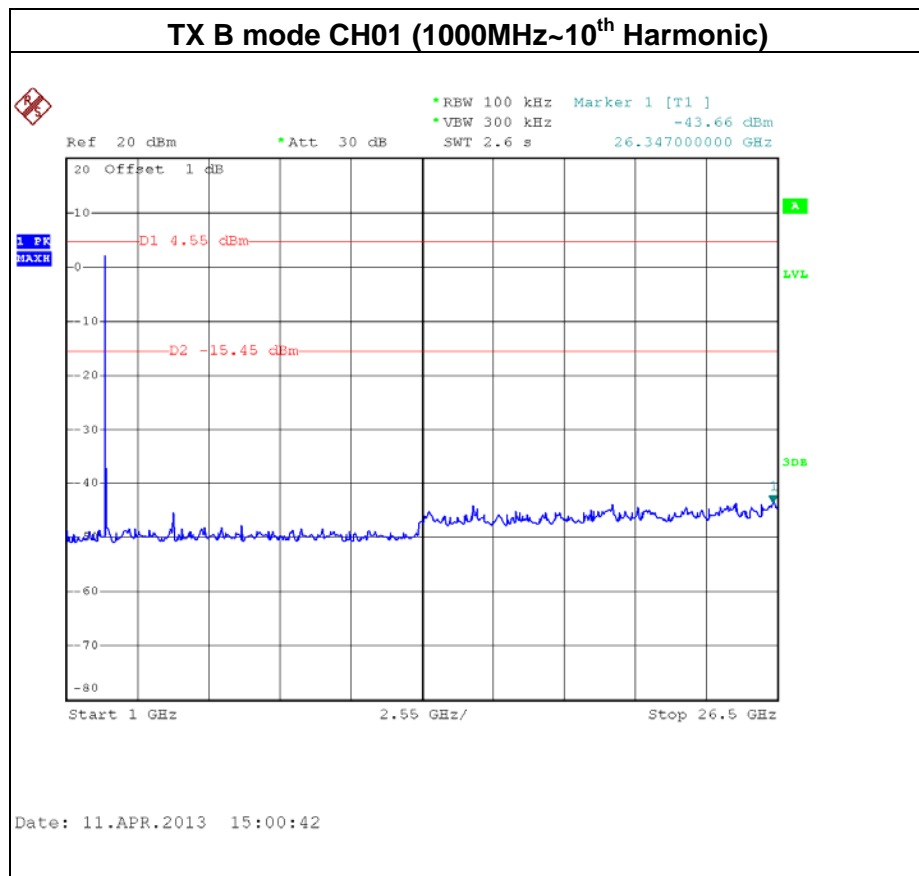
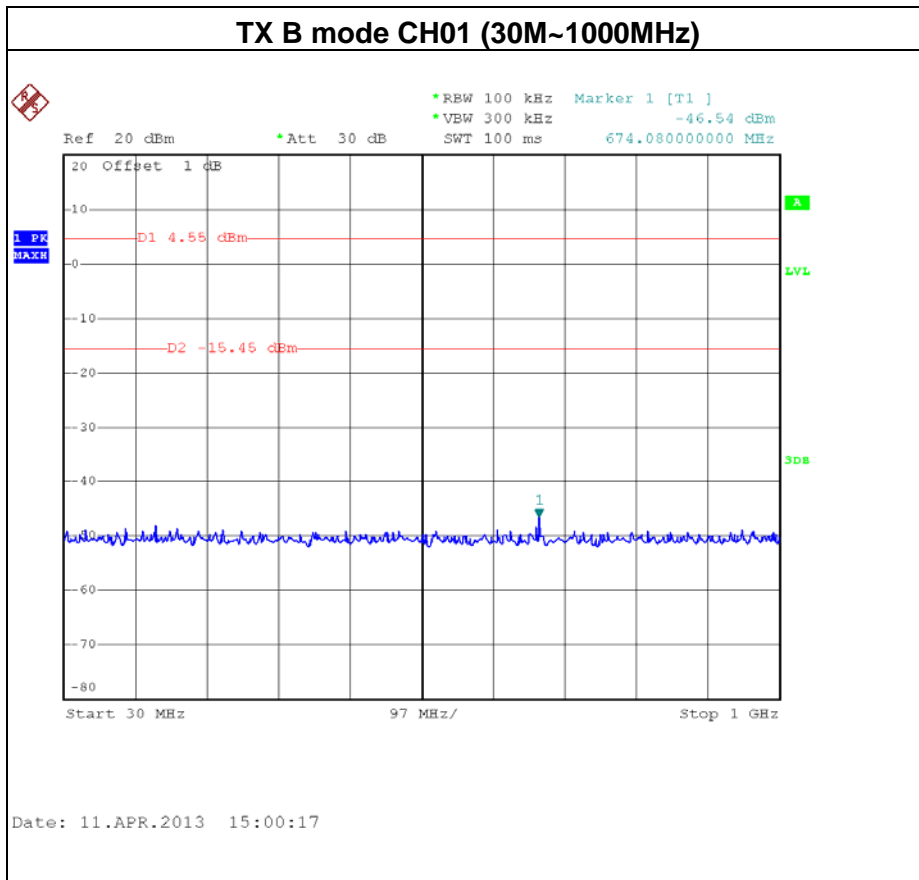
Channel of Worst Data: CH01

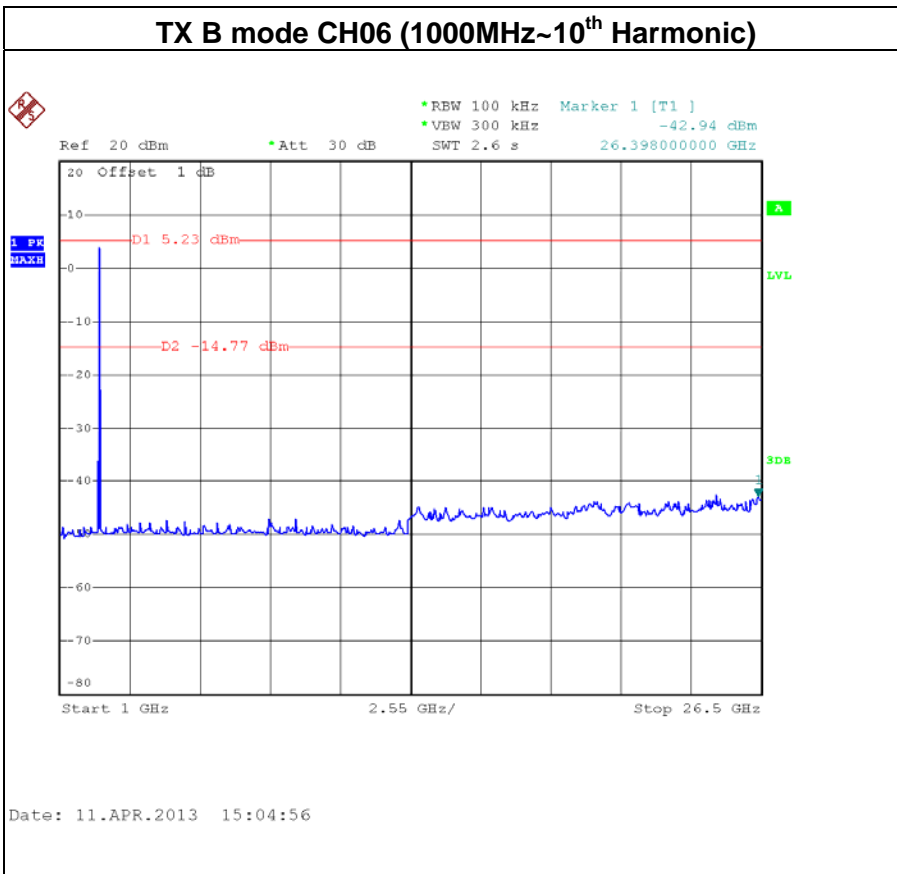
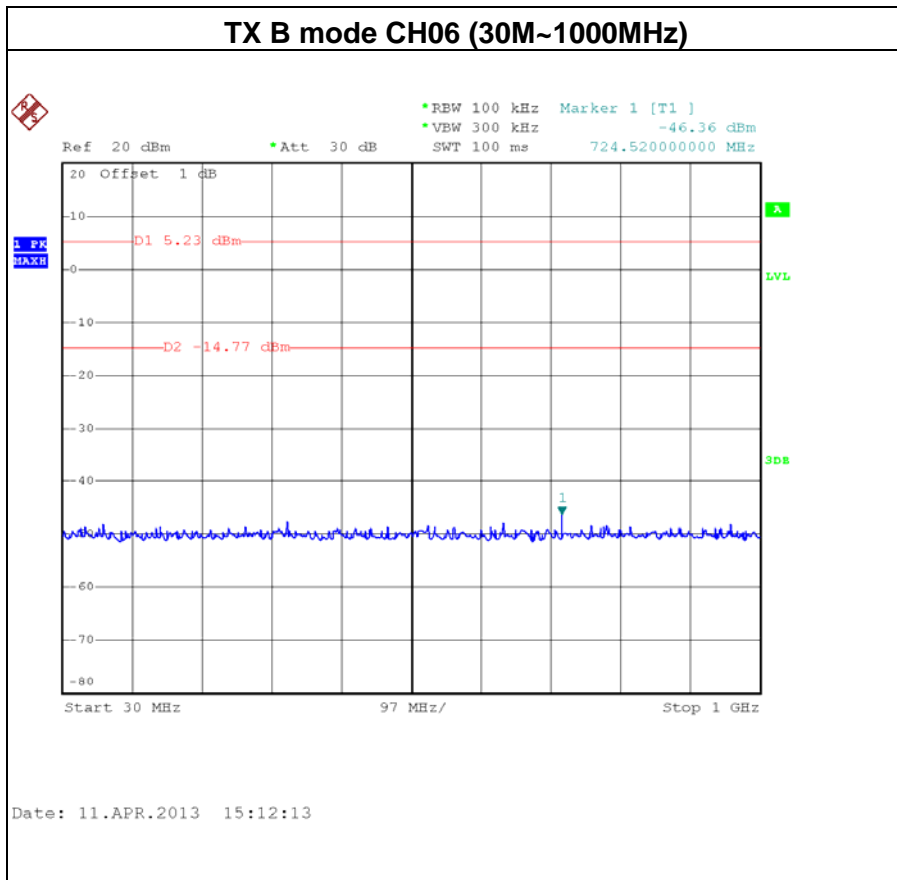
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-32.30	2500.00	-47.40

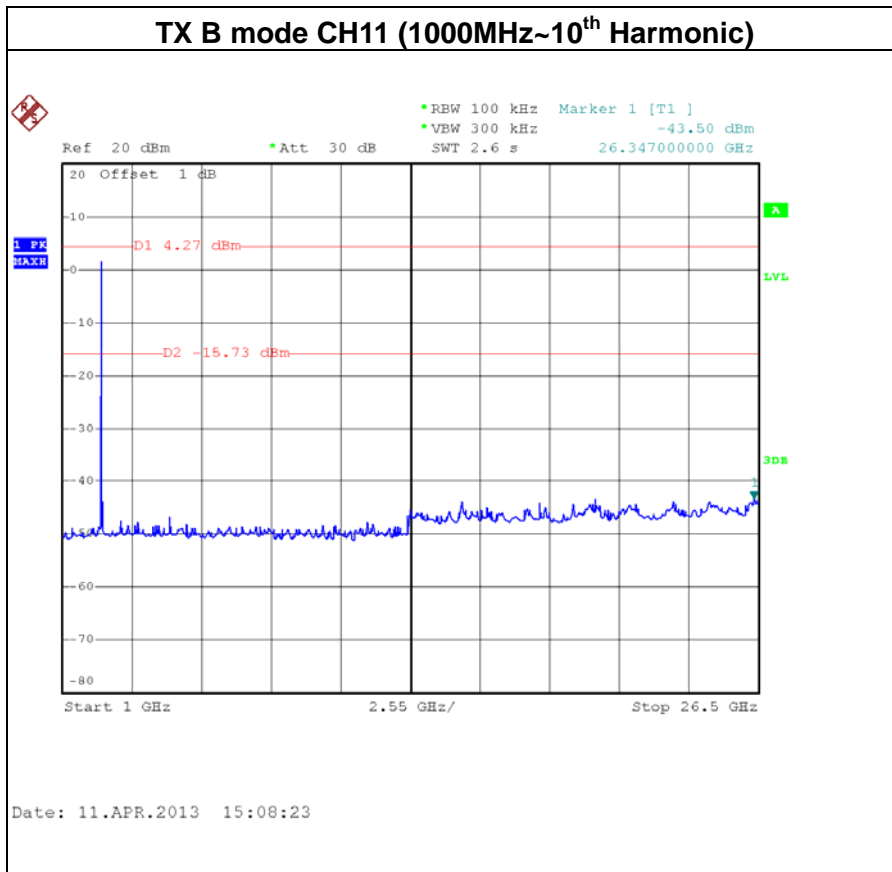
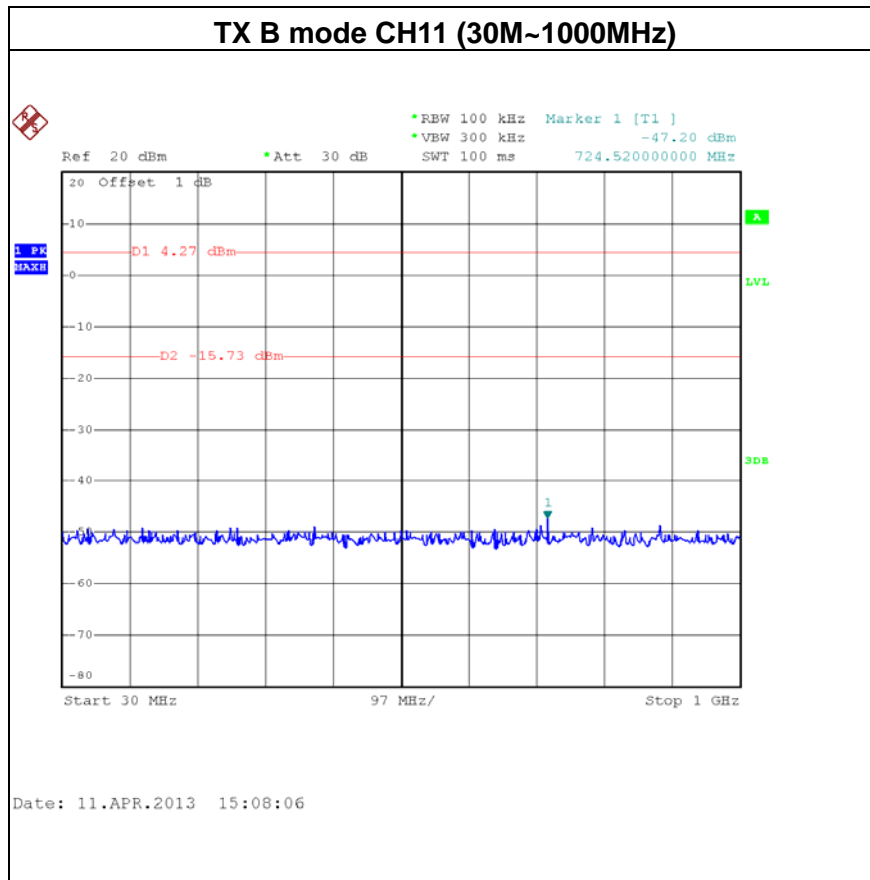
Result

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.





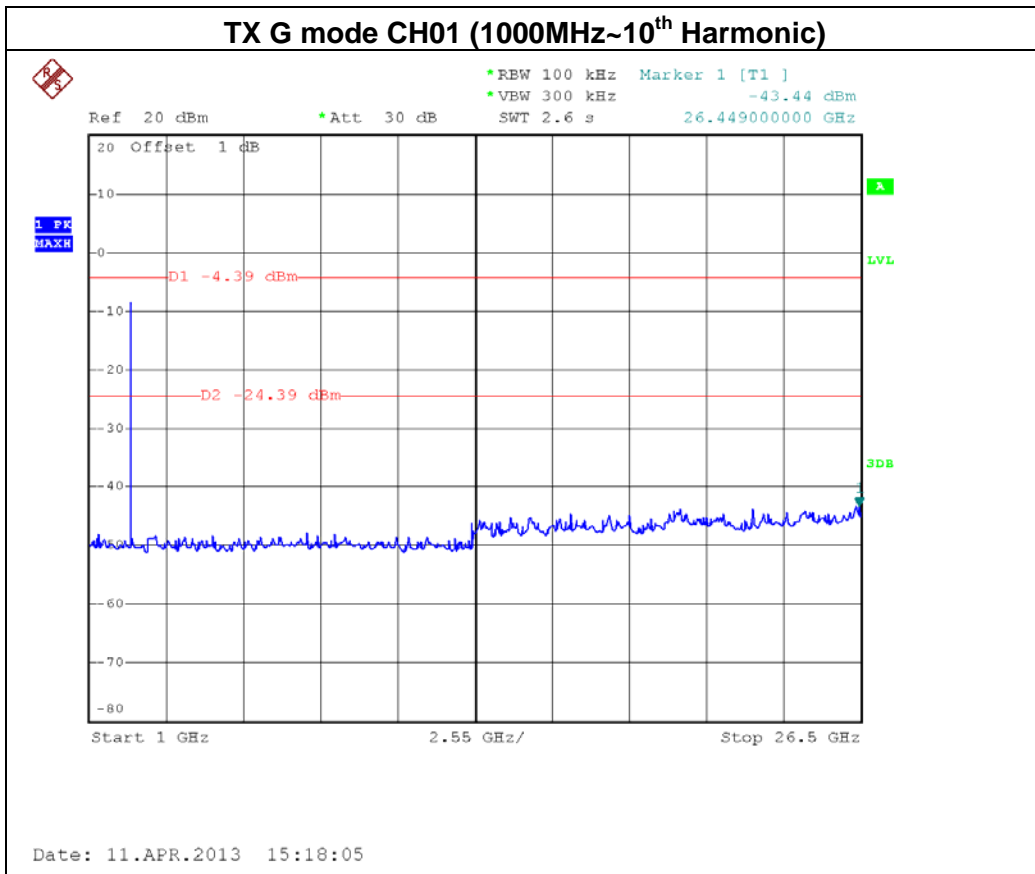
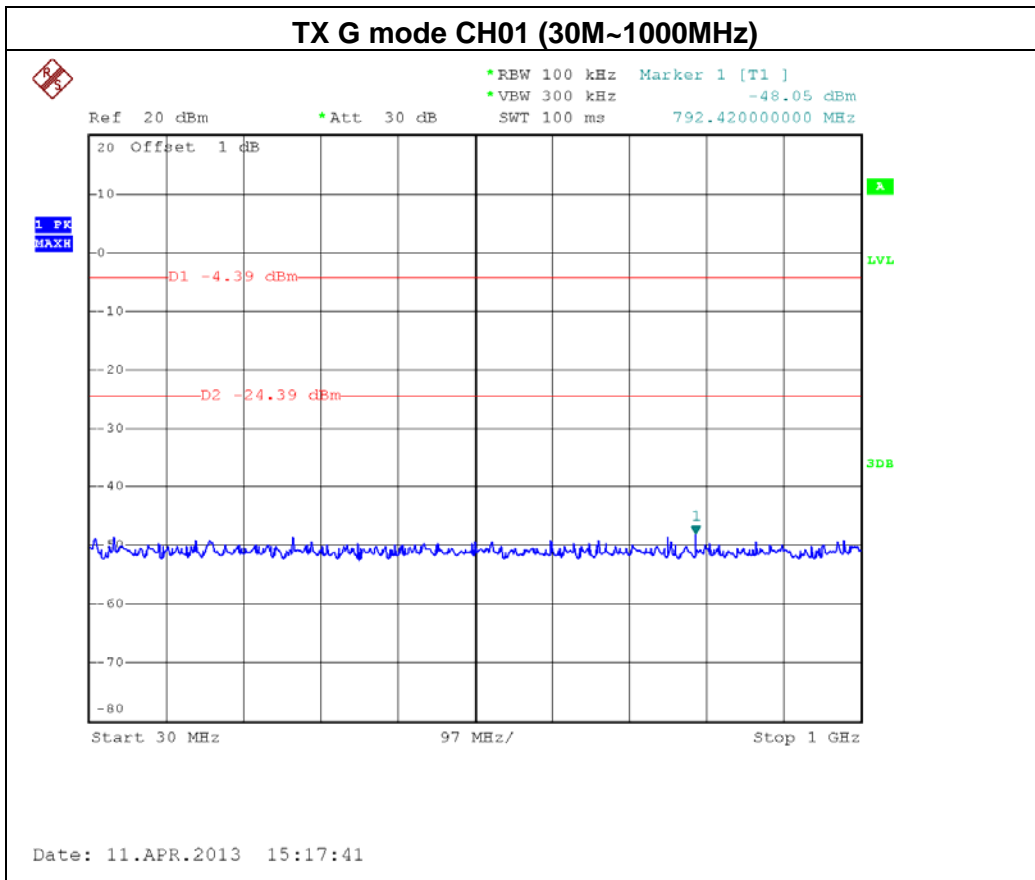


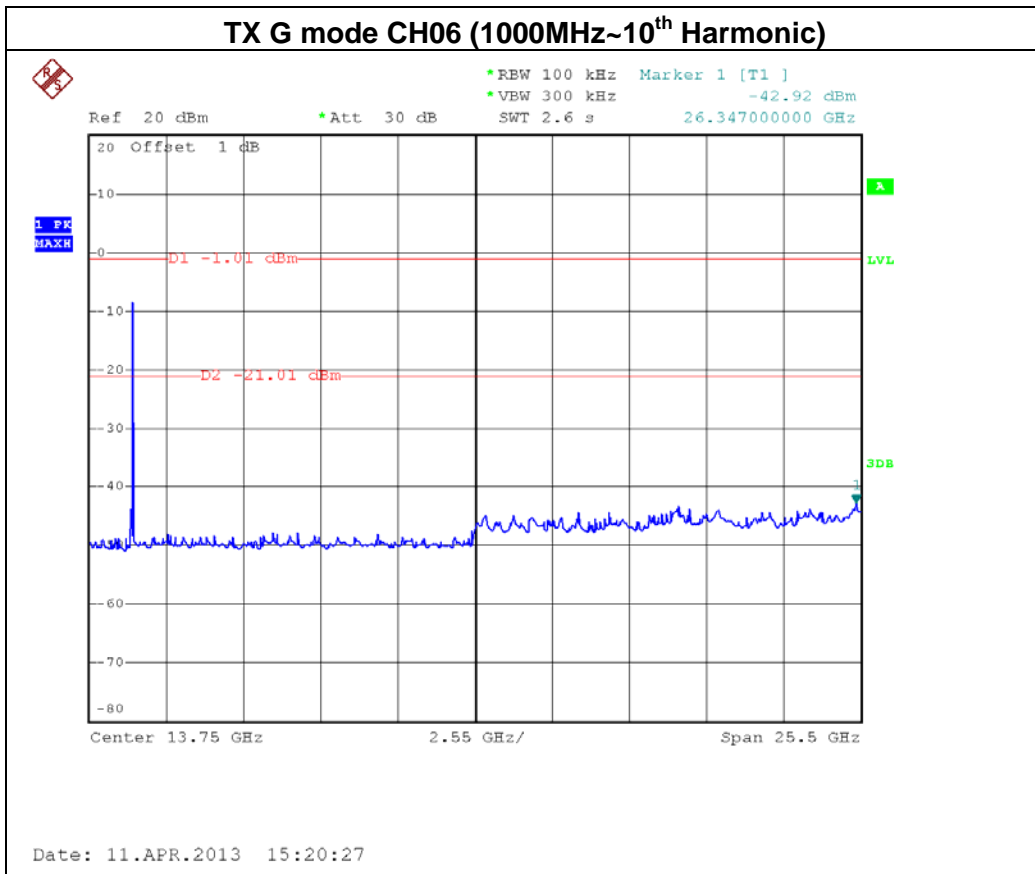
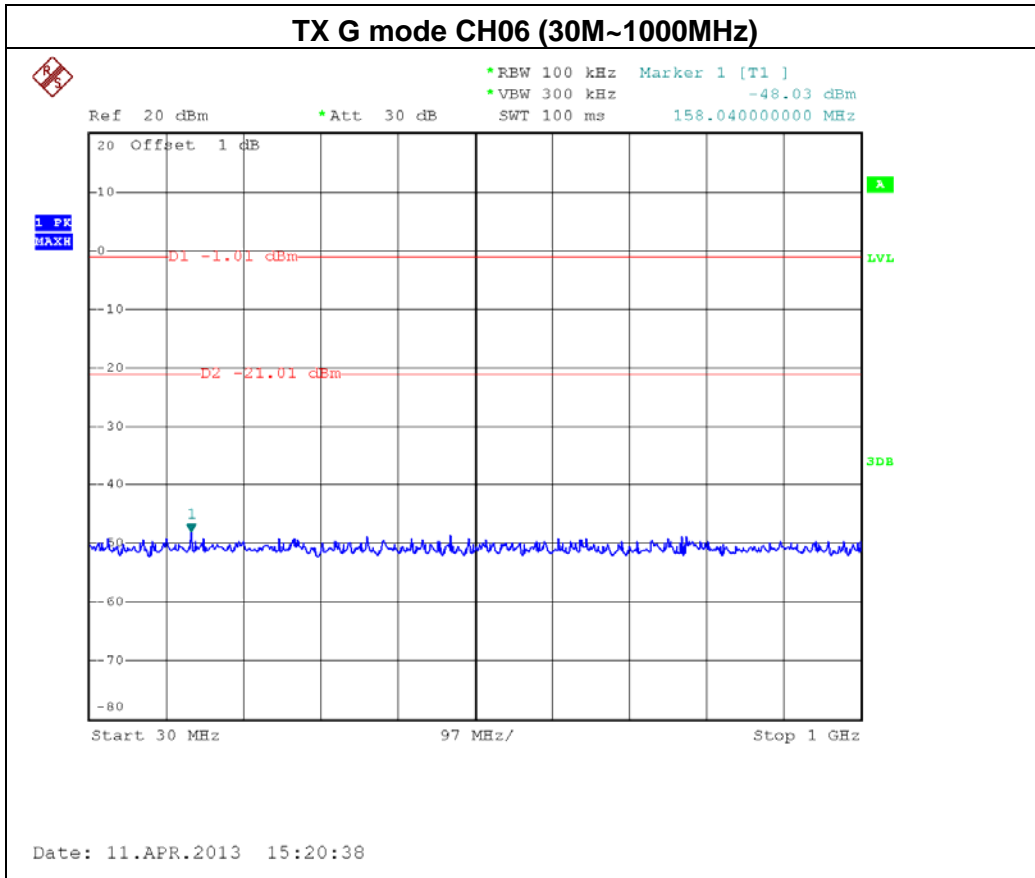


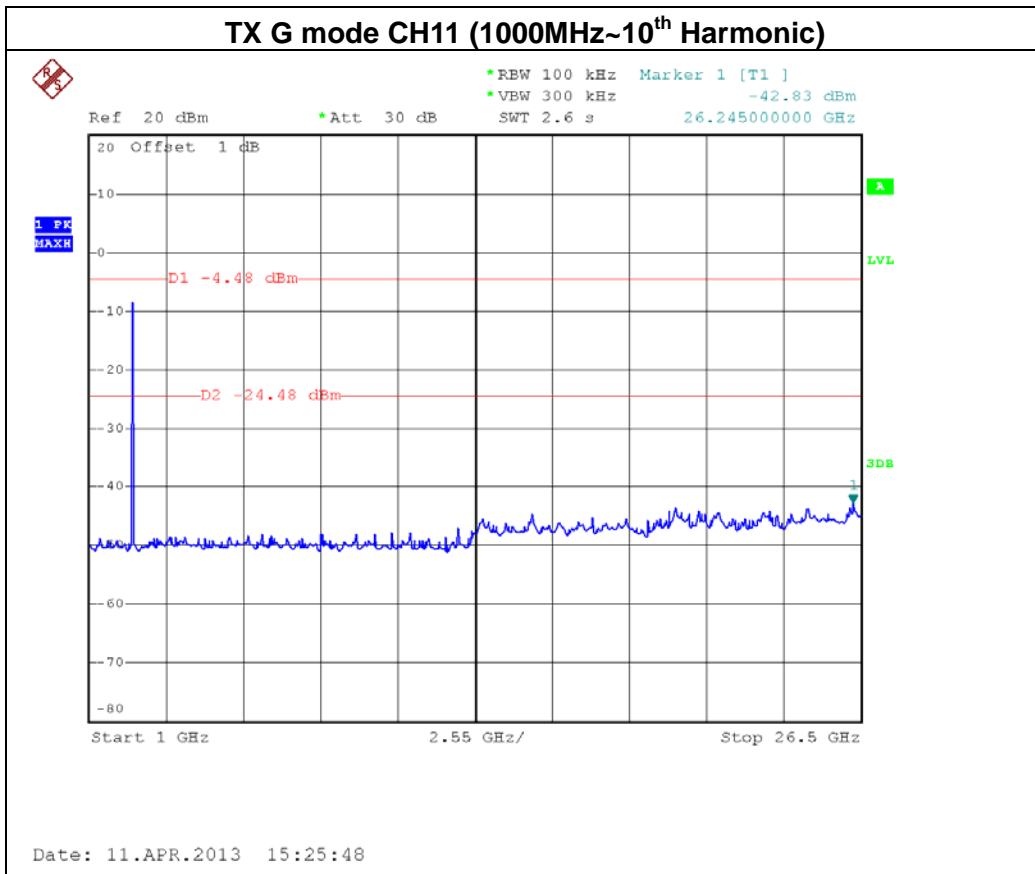
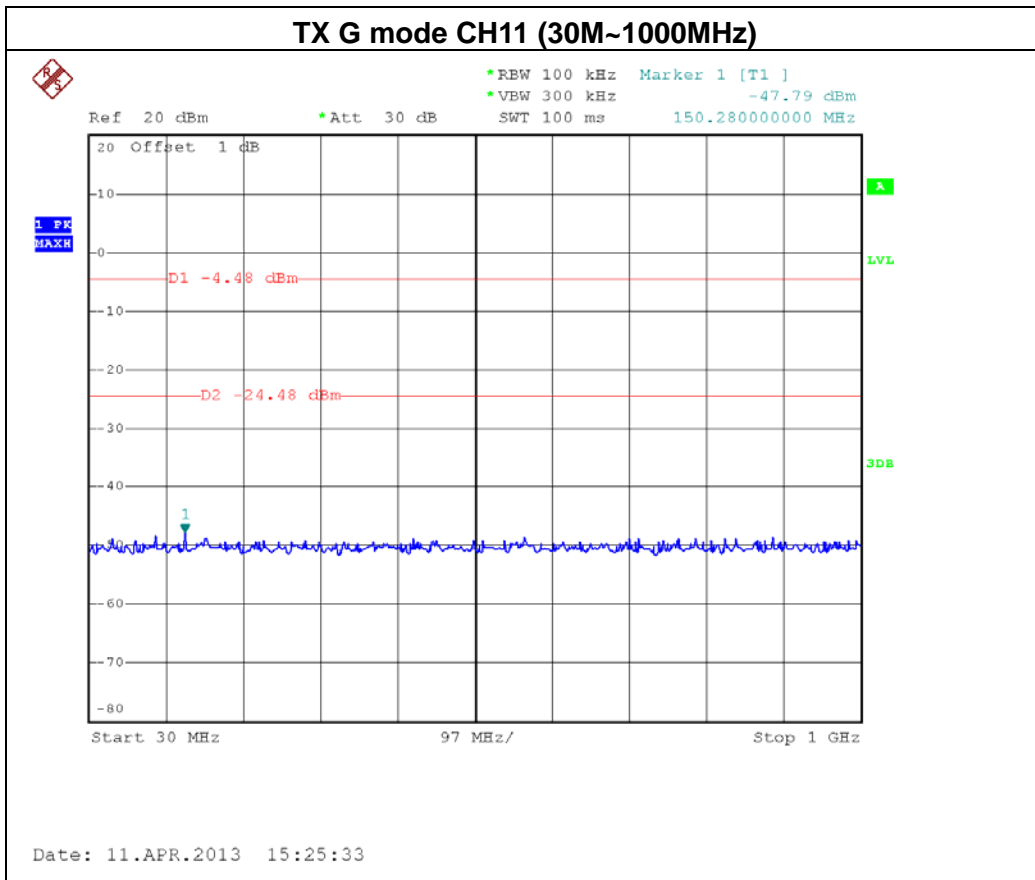


EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE / CH01, CH06 , CH11		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth within the frequency band		The max. radio frequency power in any 100 kHz bandwidth outside the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-41.26	2487.92	-47.67
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.			



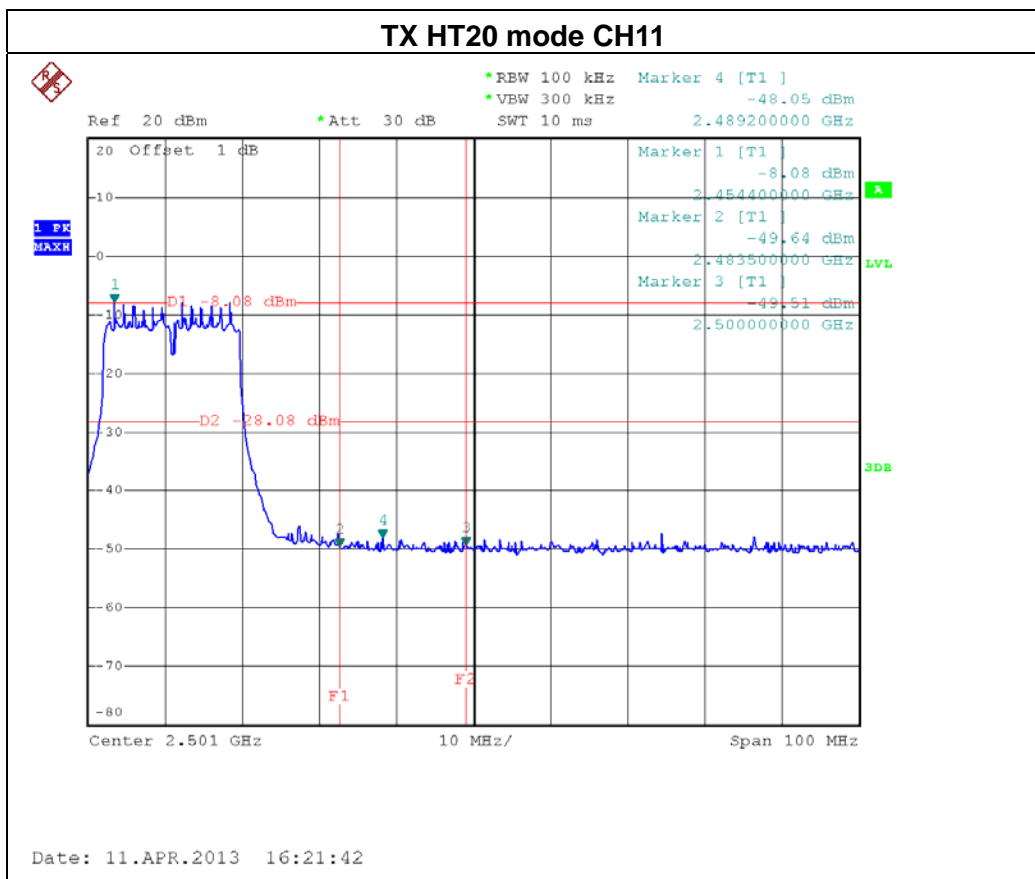
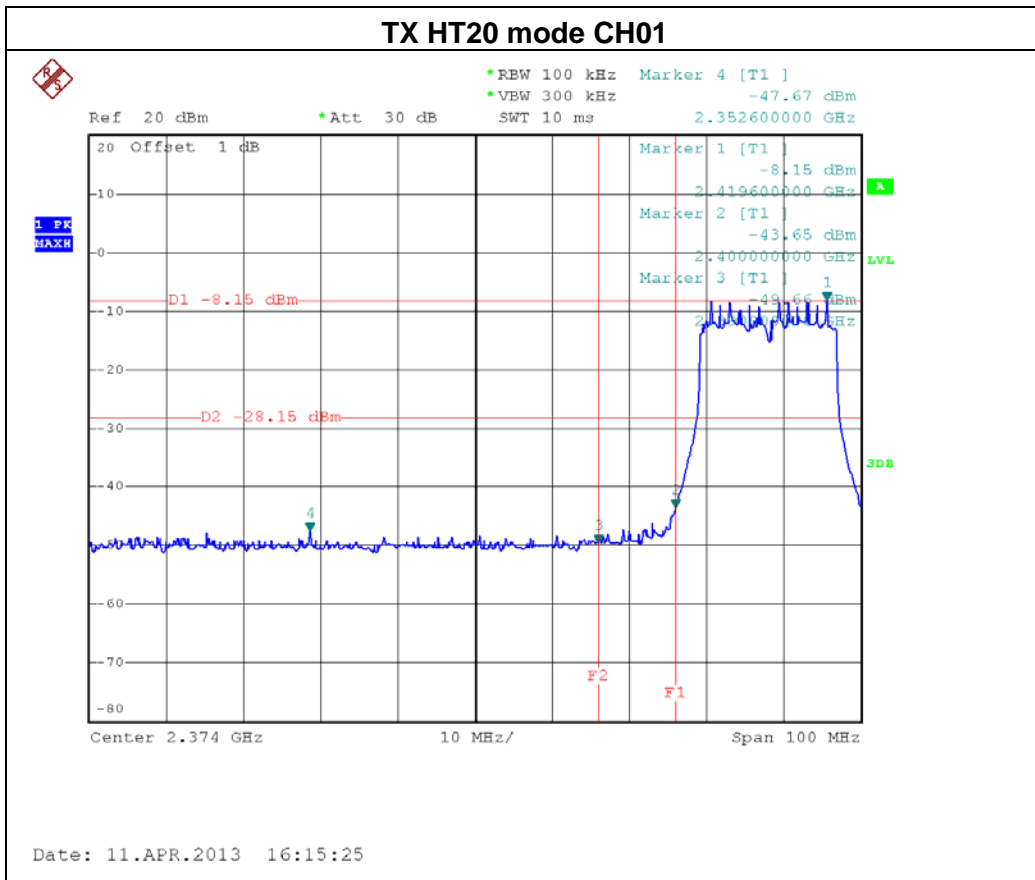


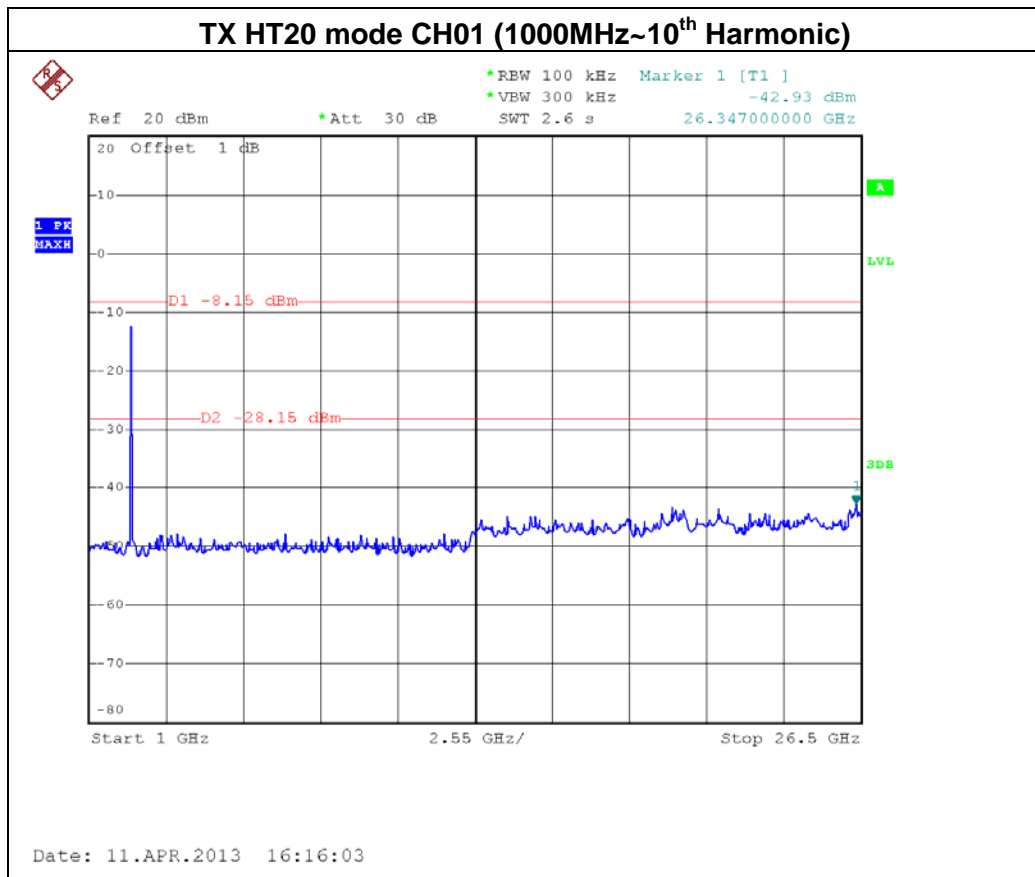
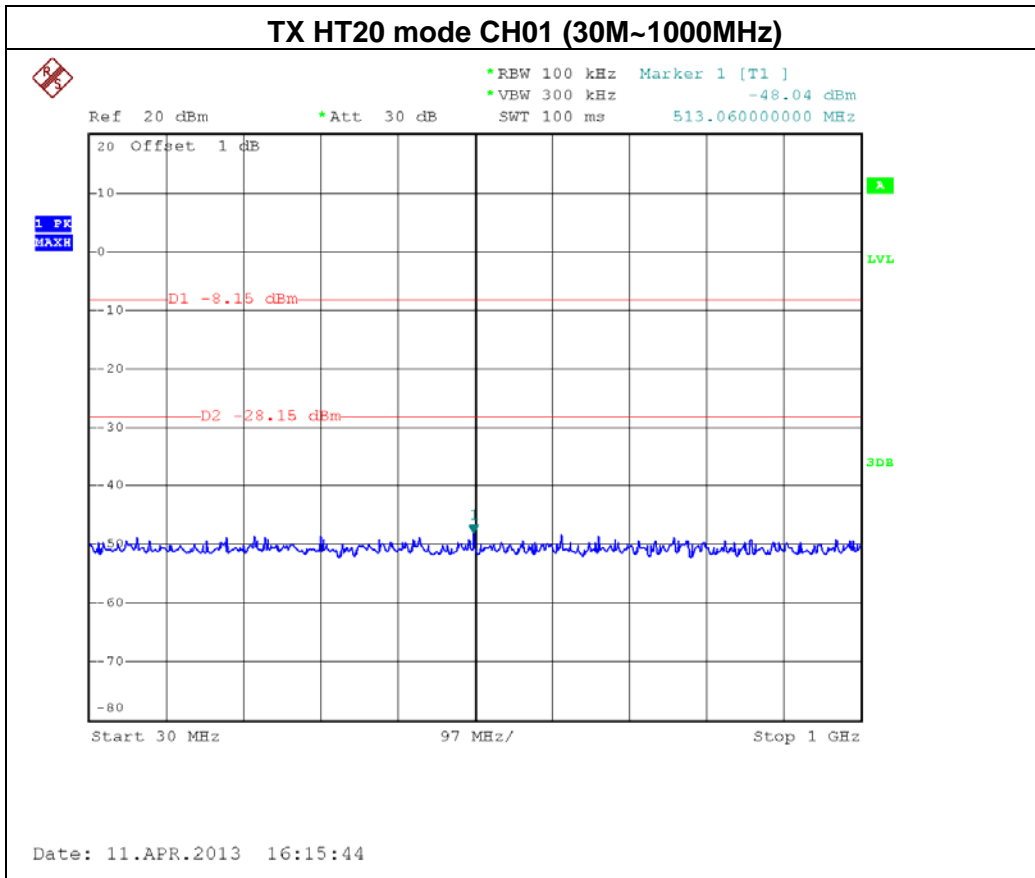


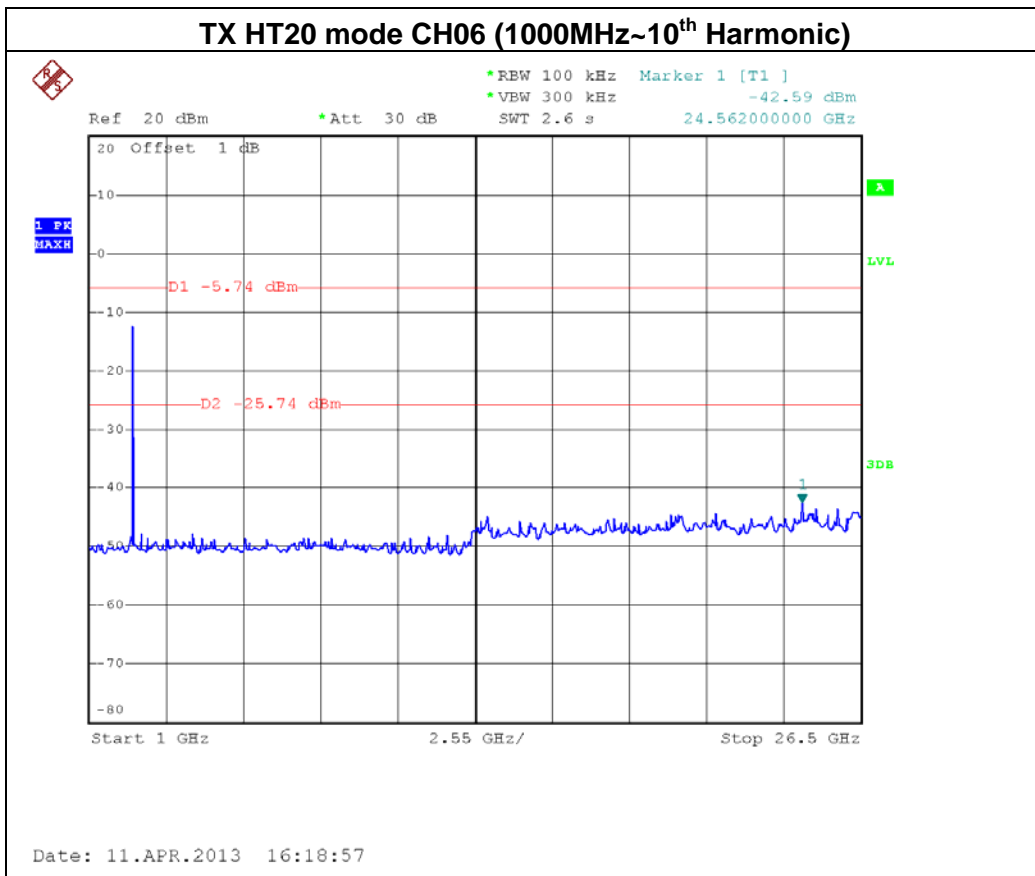
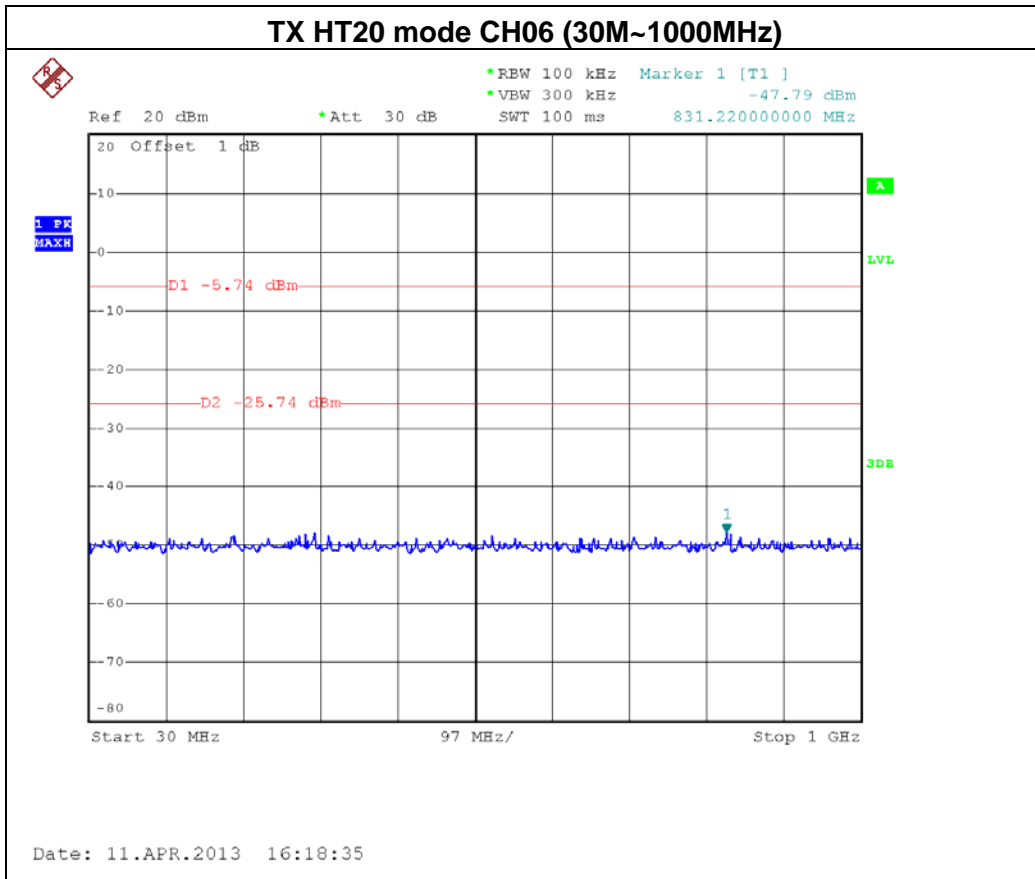


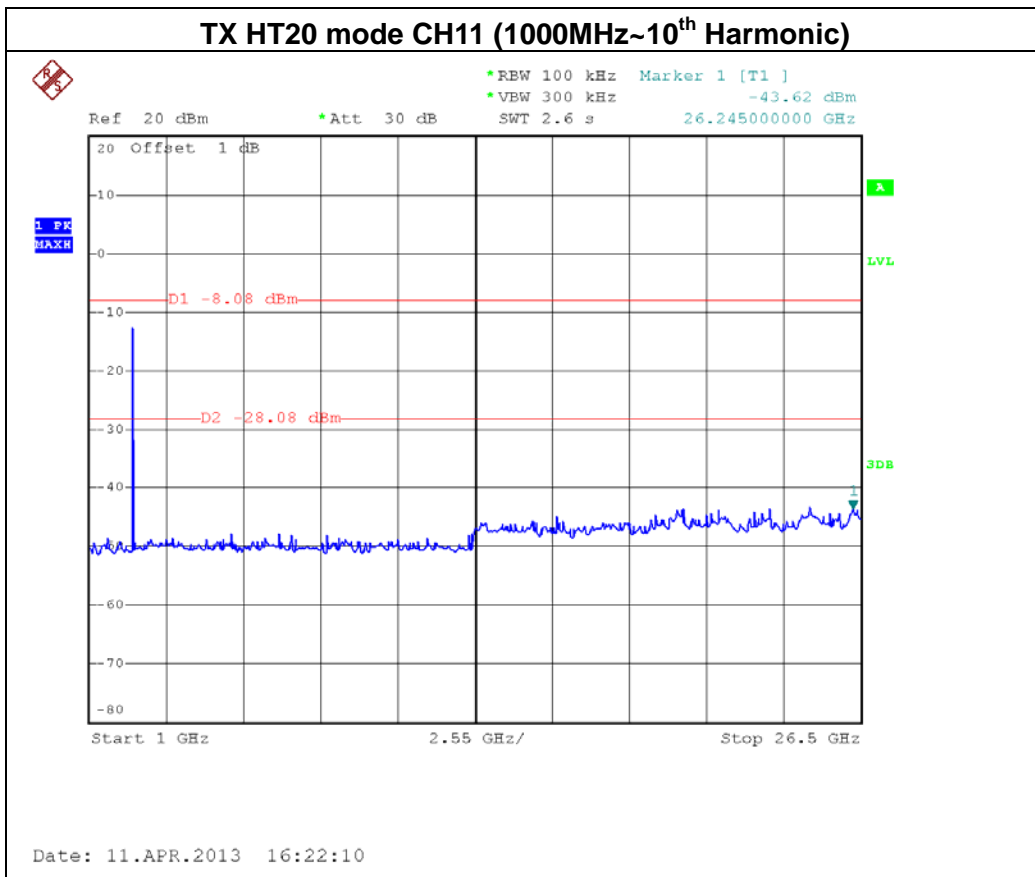
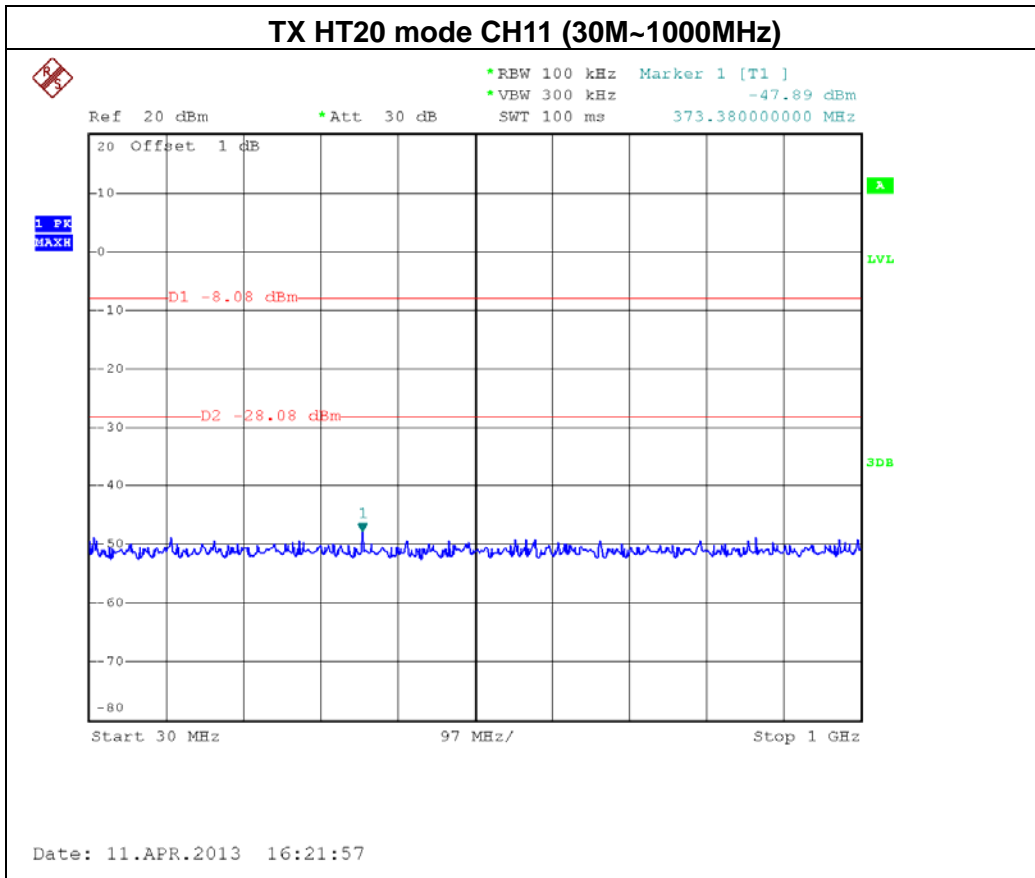
EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11 - ANT1		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth within 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	-43.65	2489.20	-48.05
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.			





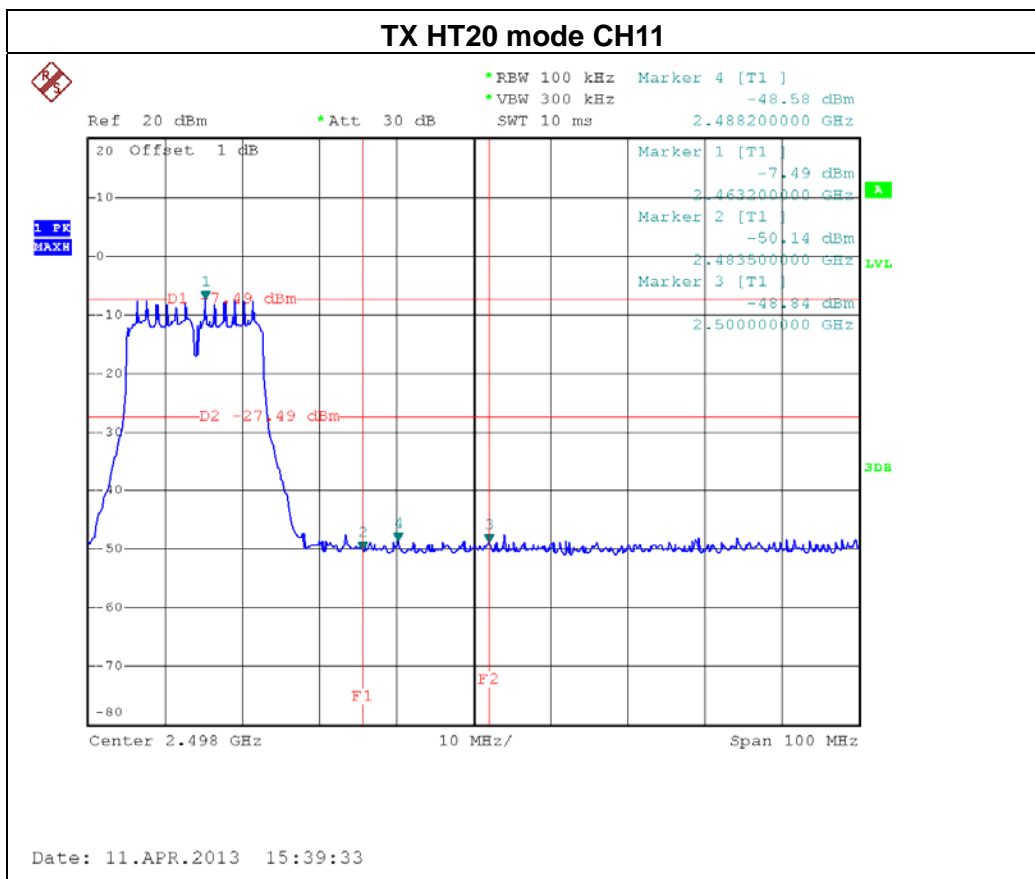
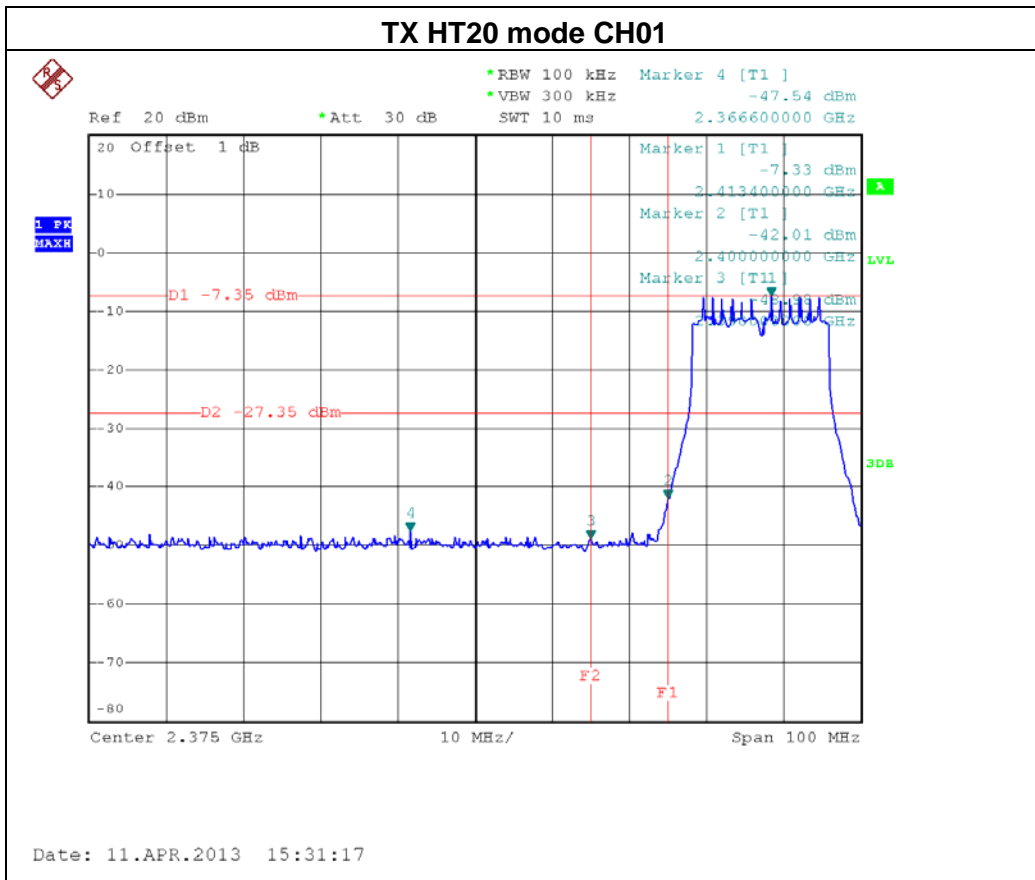


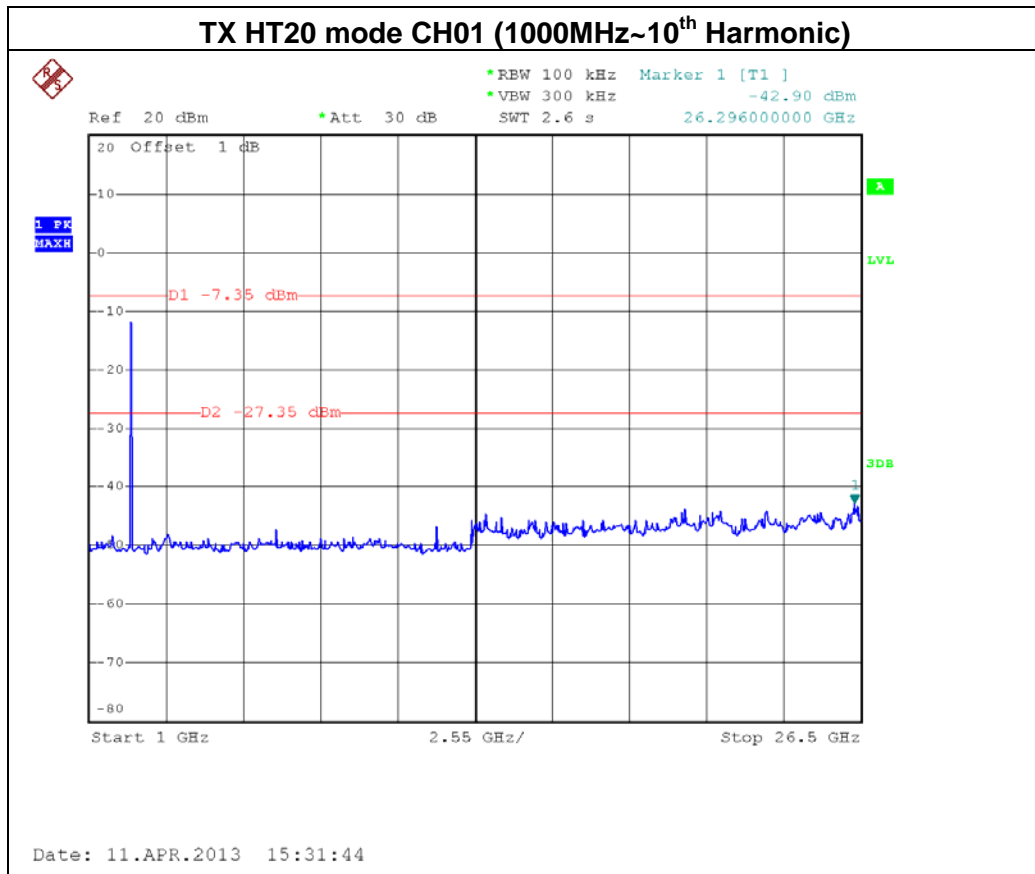
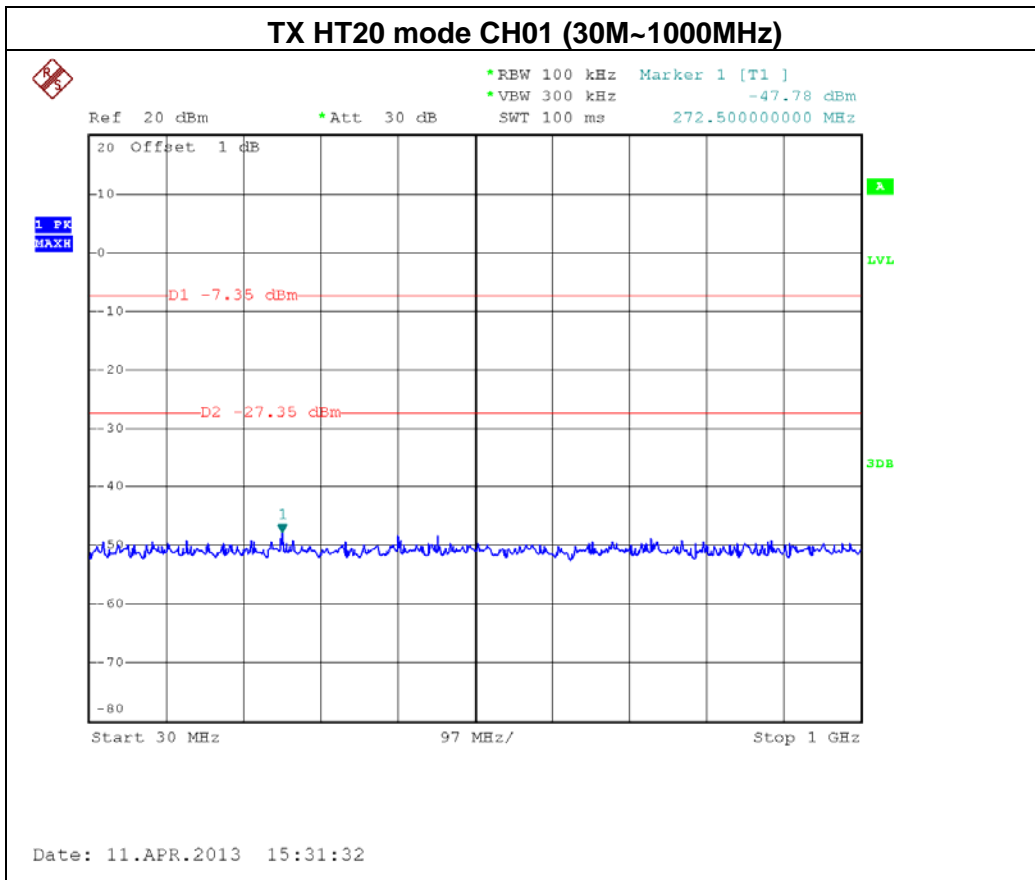


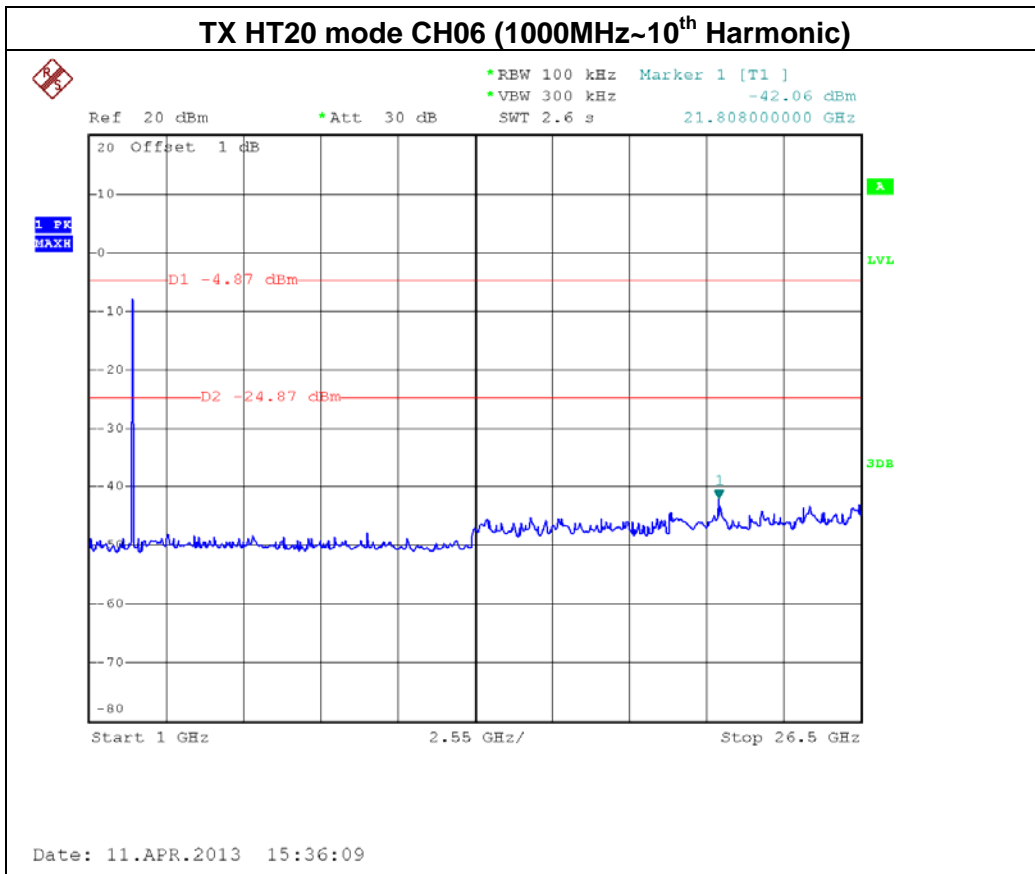
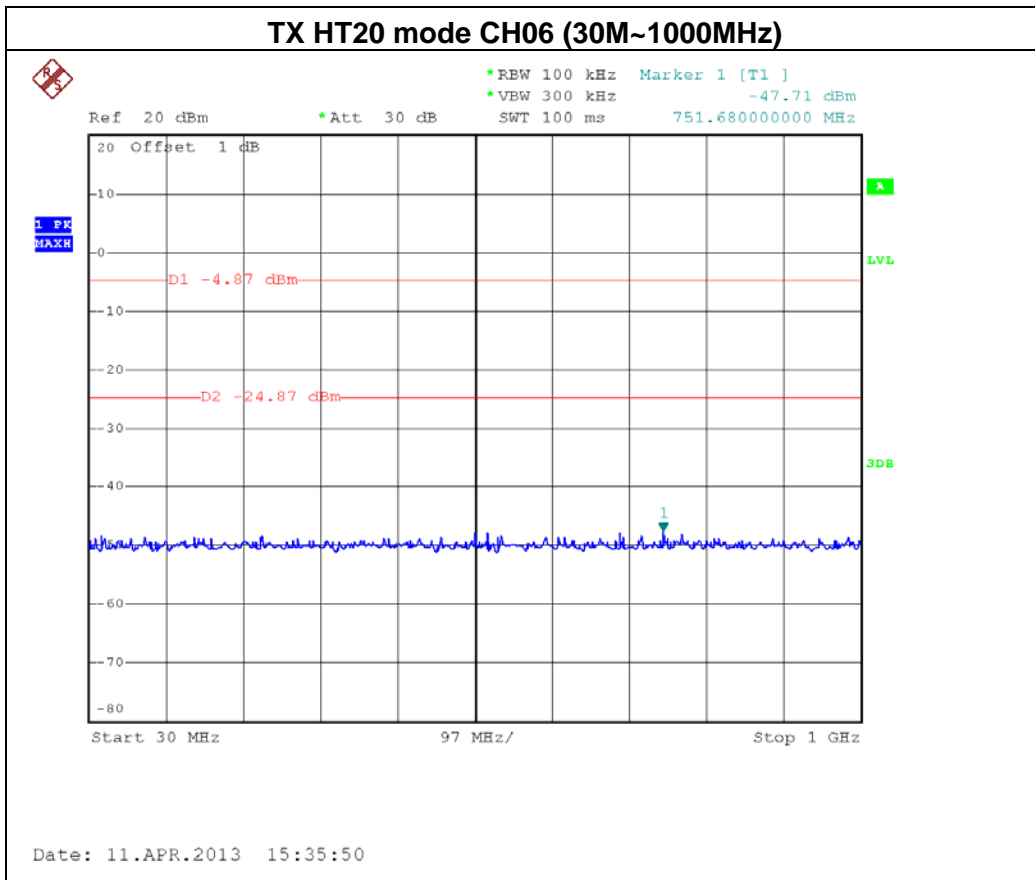


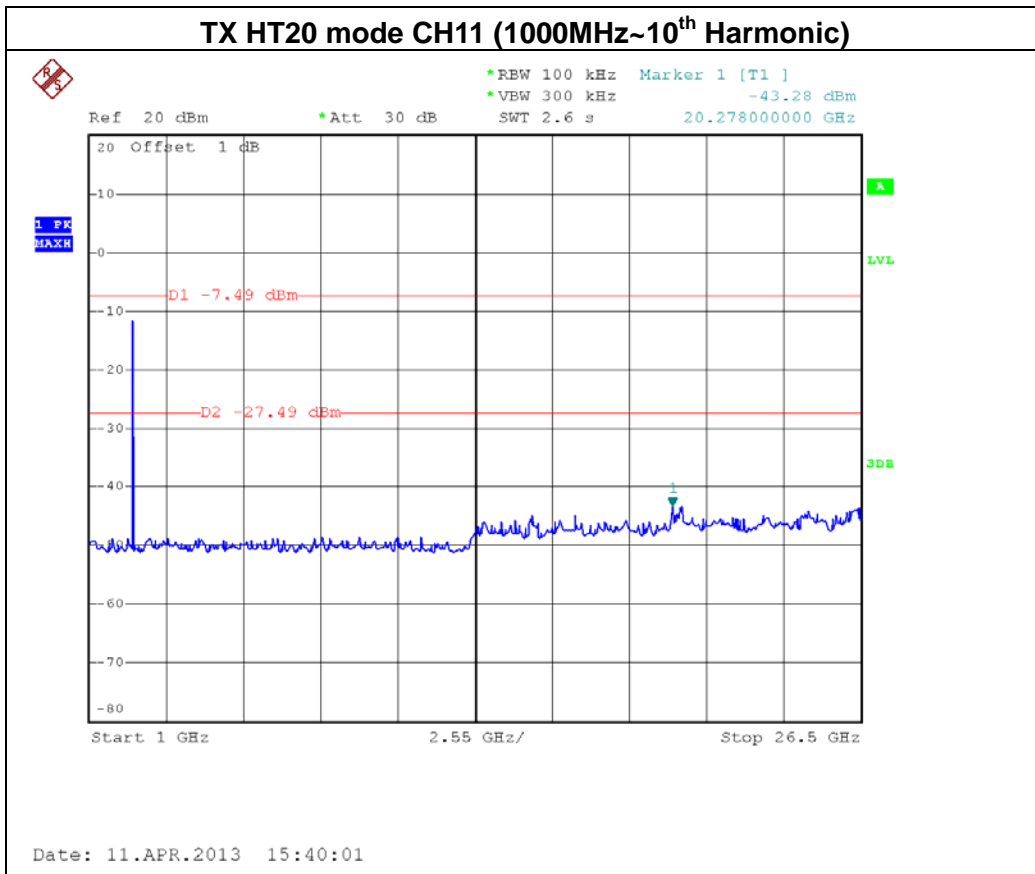
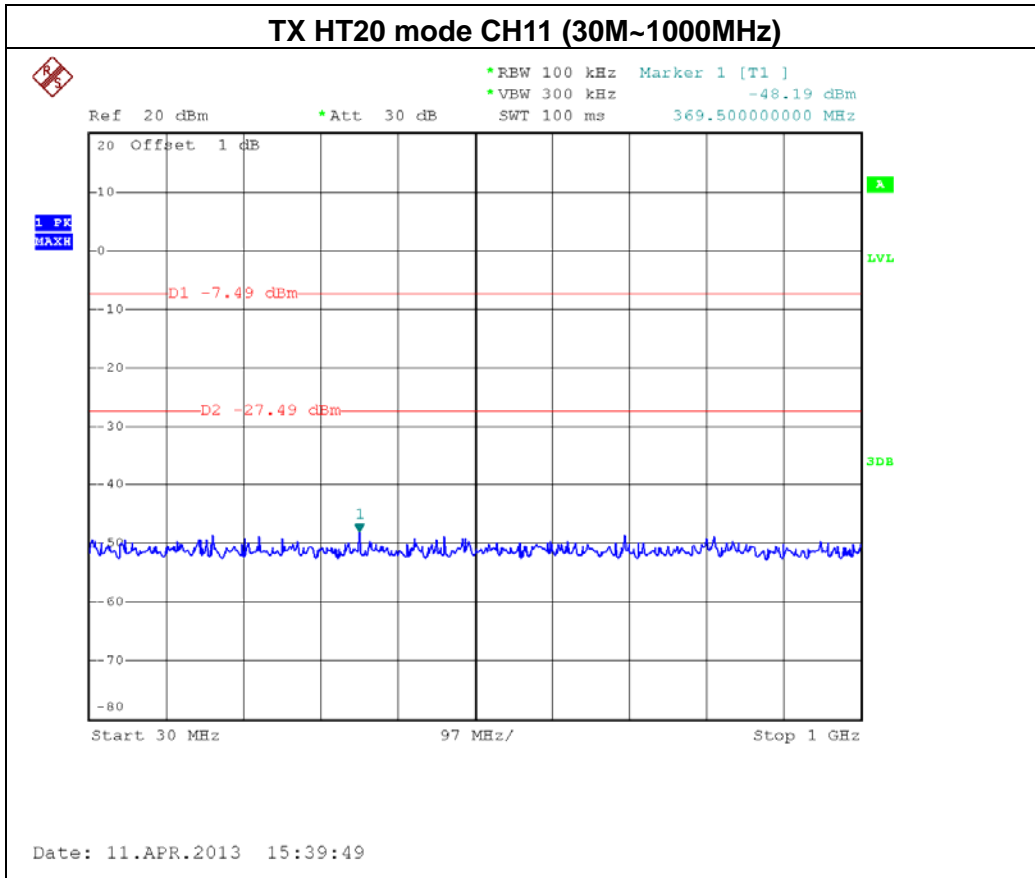
EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-20M MODE / CH01, CH06 , CH11 - ANT2		

Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth within 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	-42.01	2488.20	-48.58
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.			





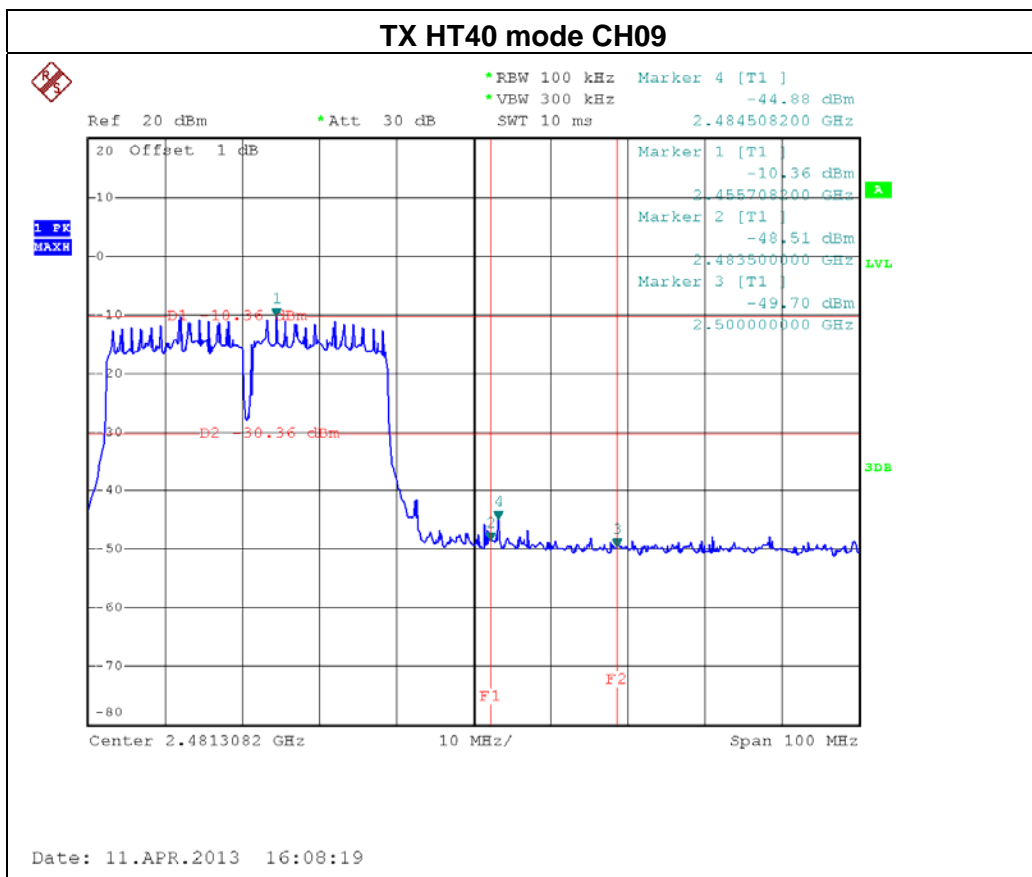
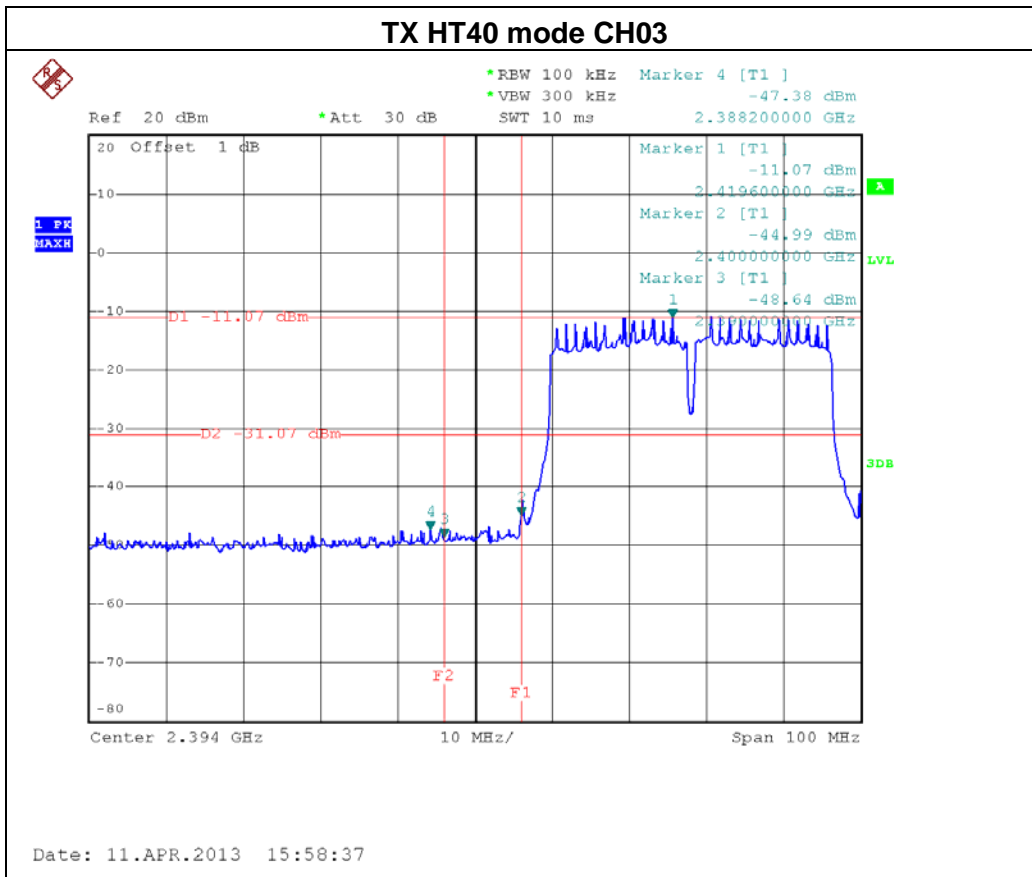


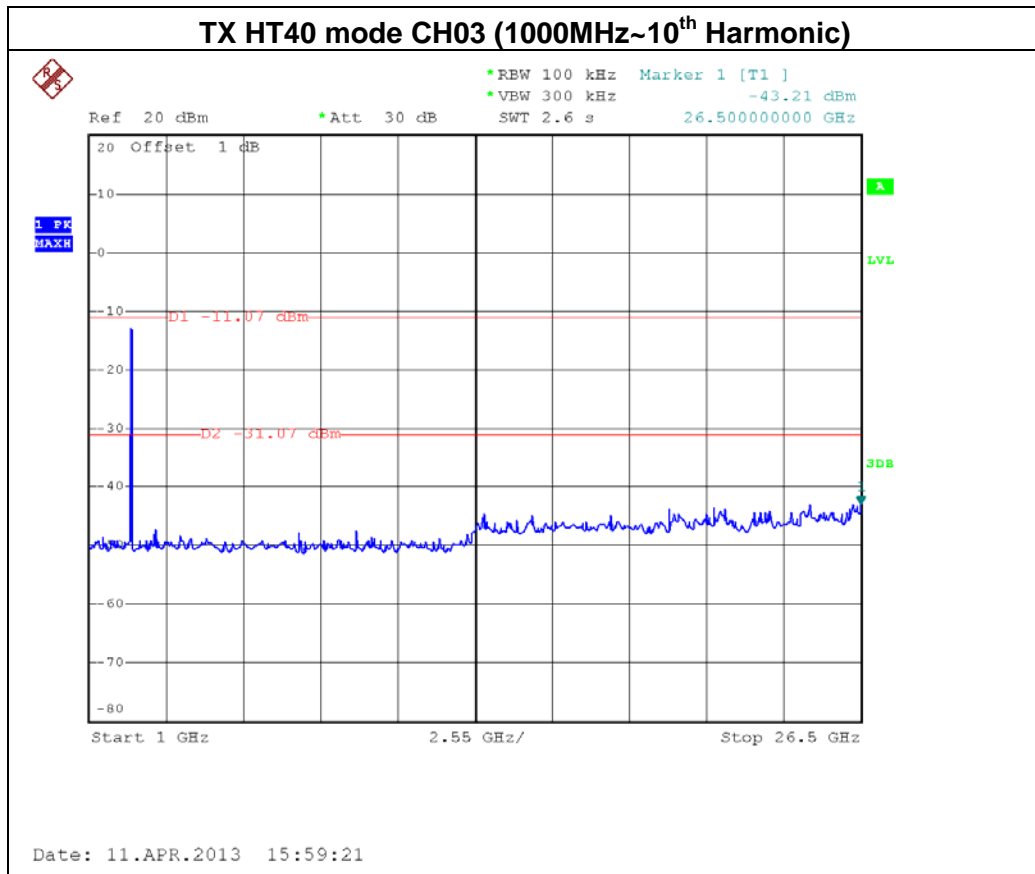
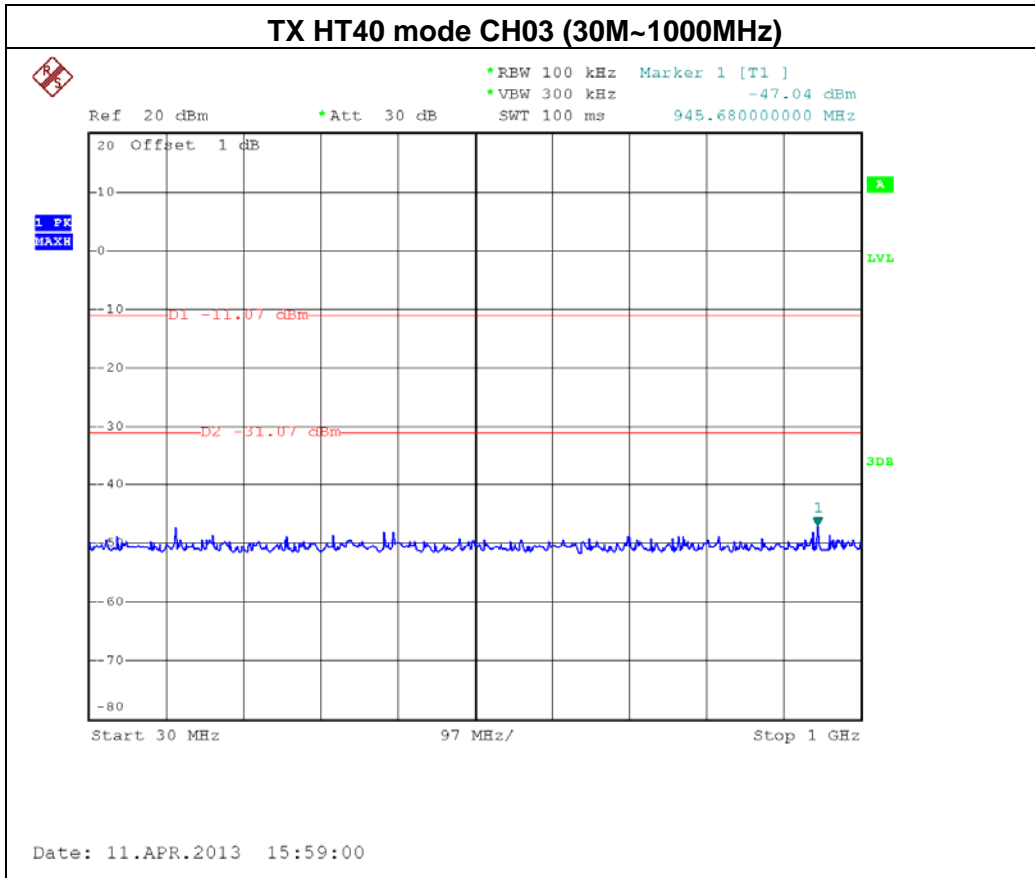


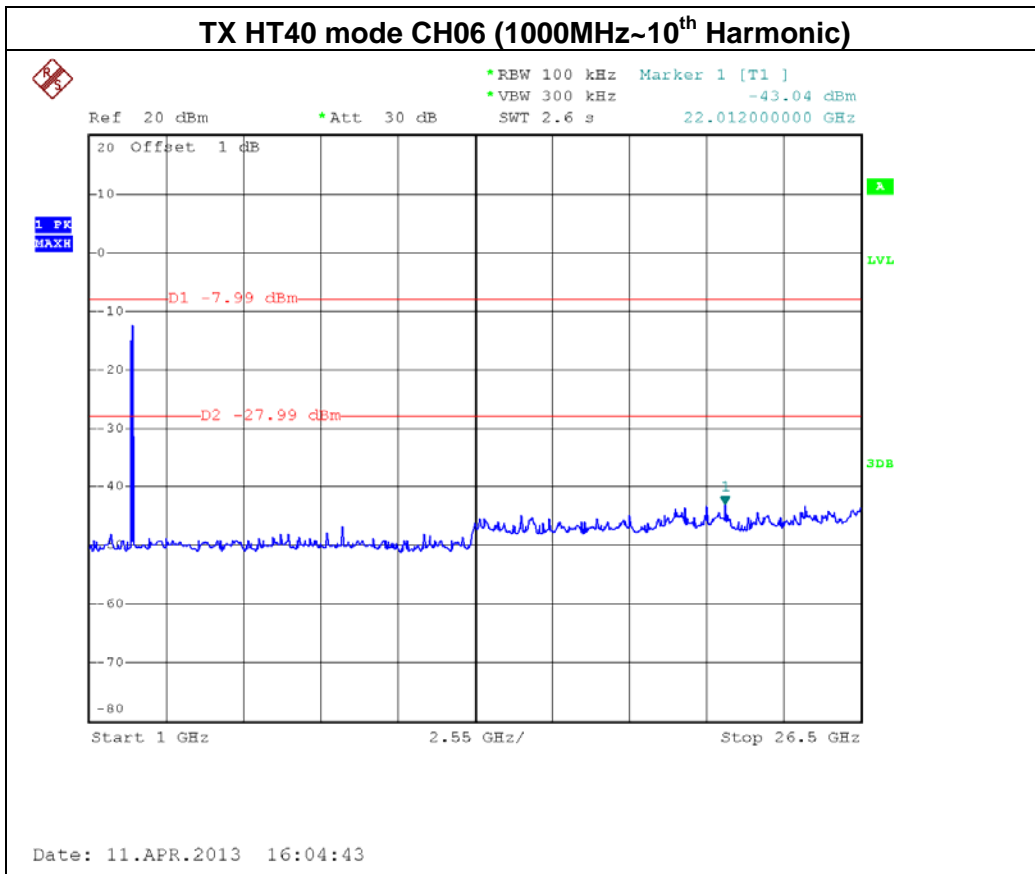
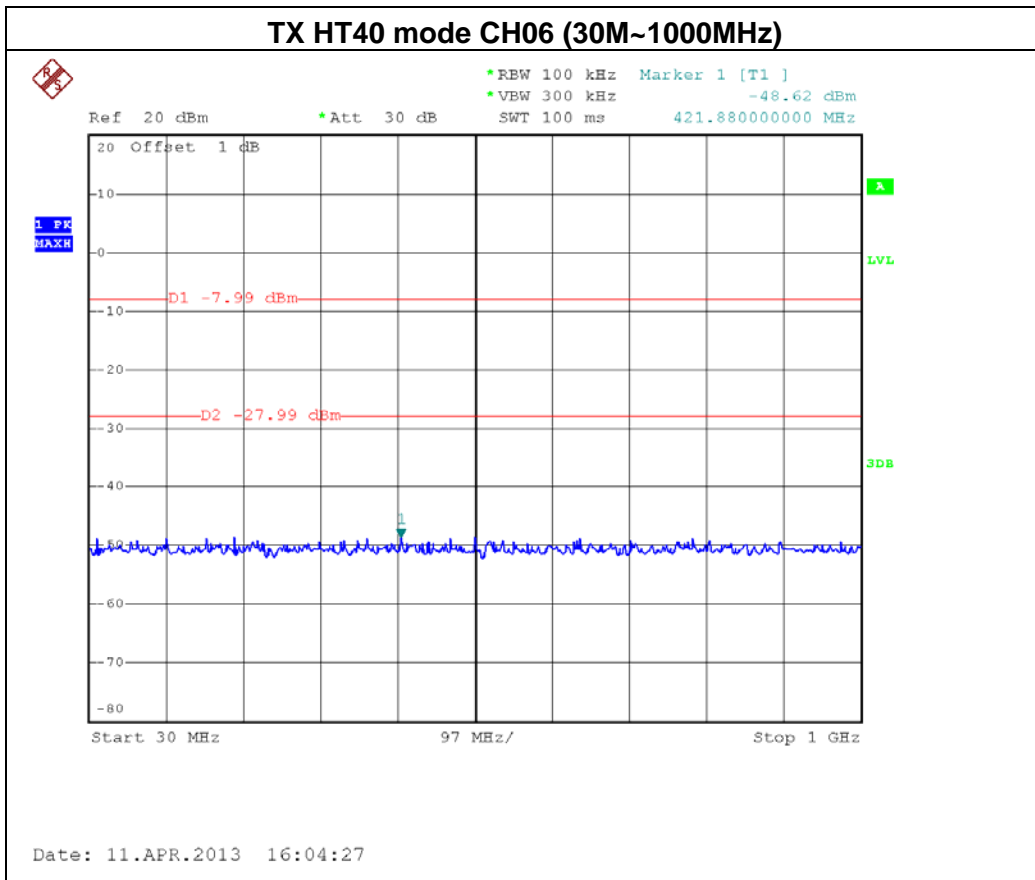


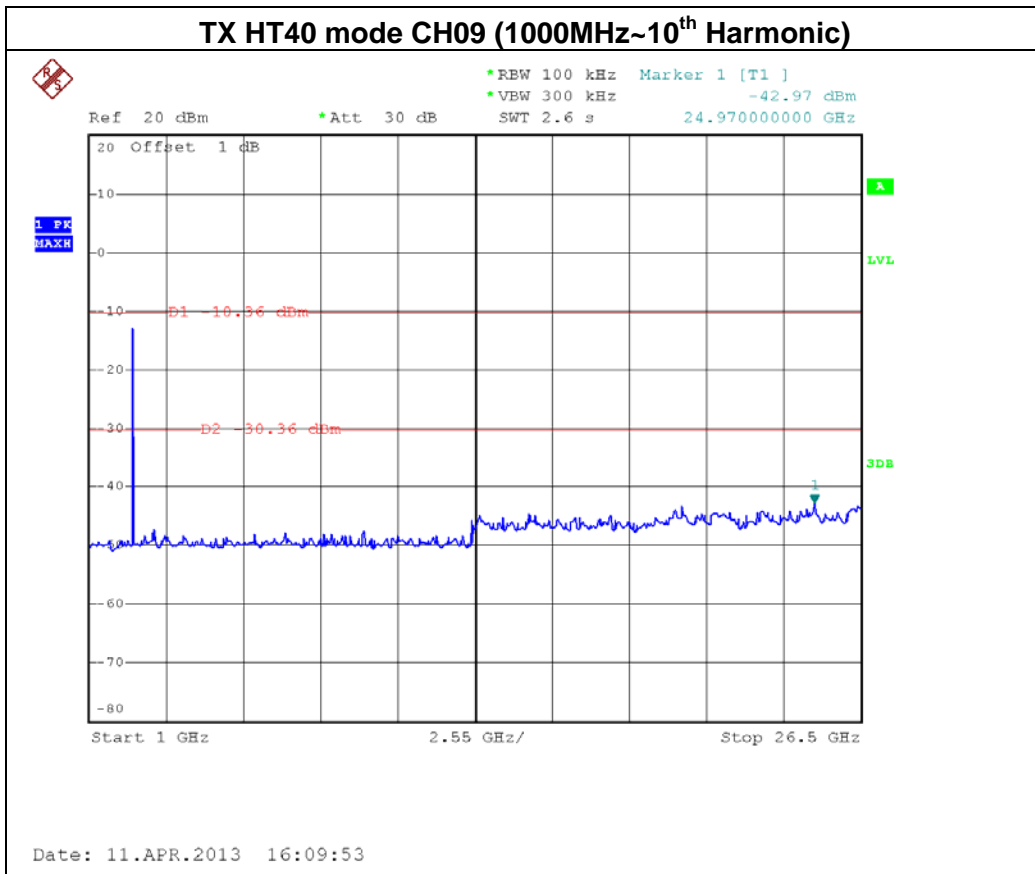
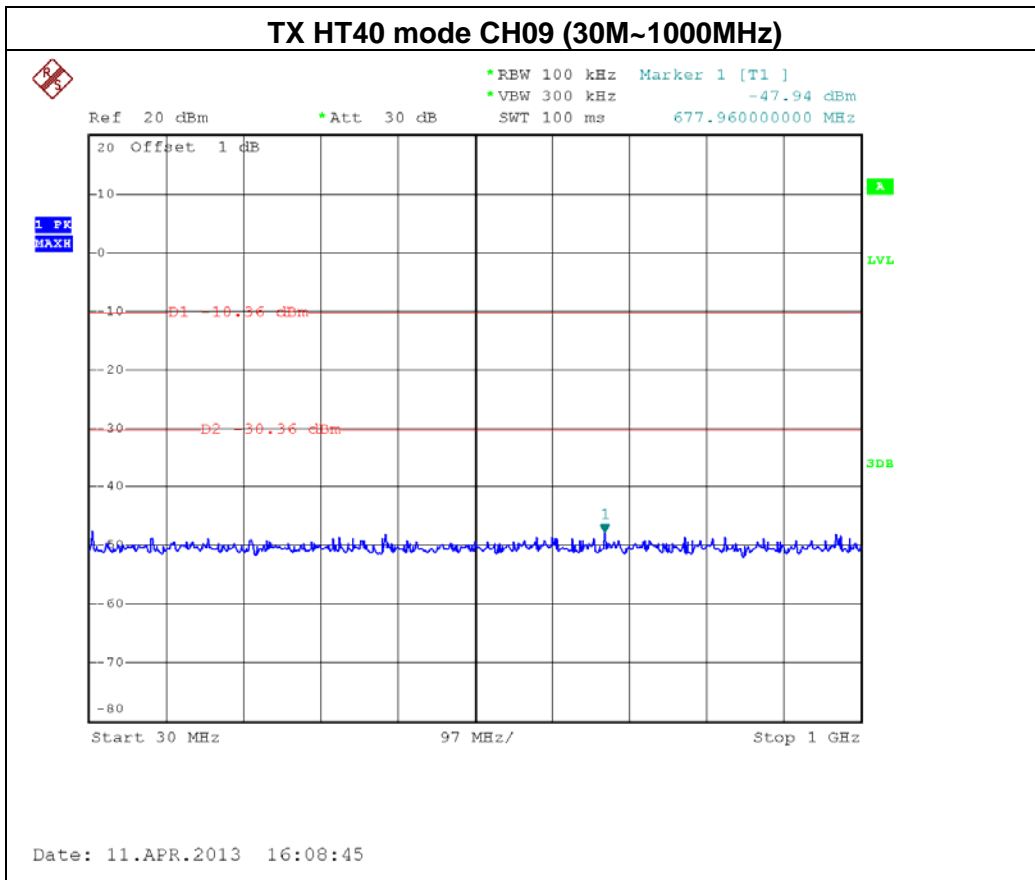
EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE / CH03, CH06 , CH09 - ANT1		

Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth within 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	-44.99	2484.50	-44.88
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.			





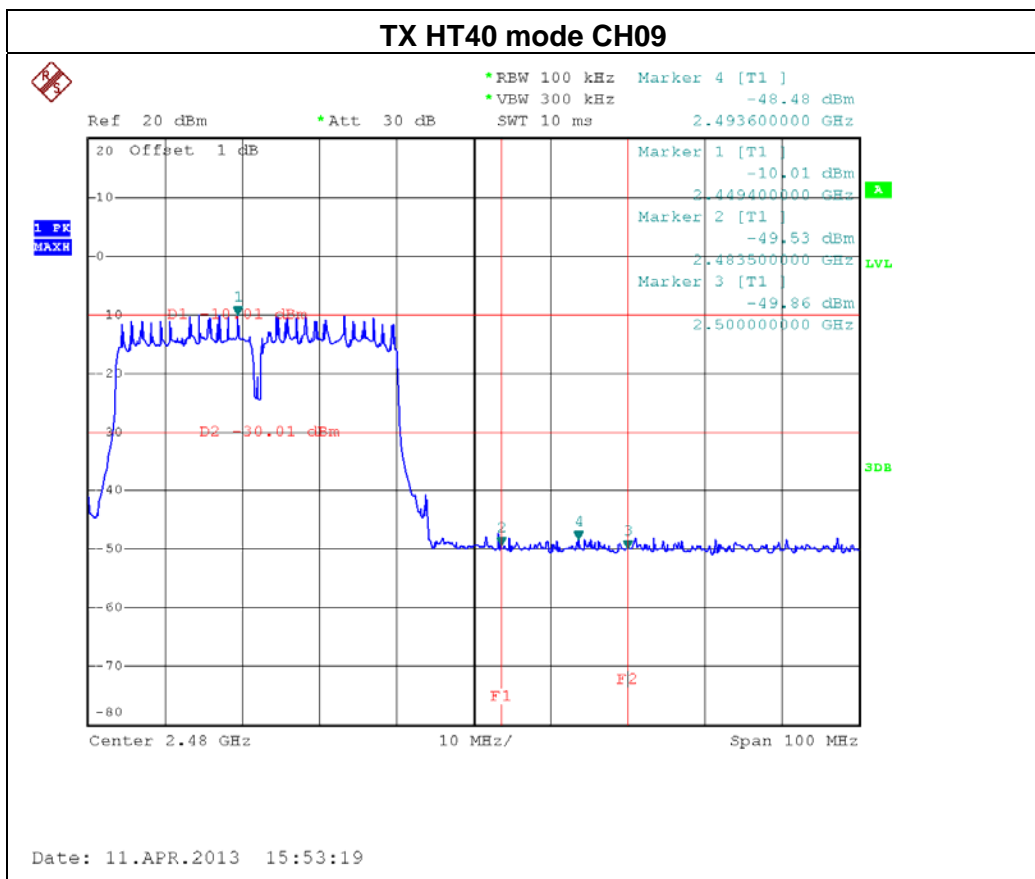
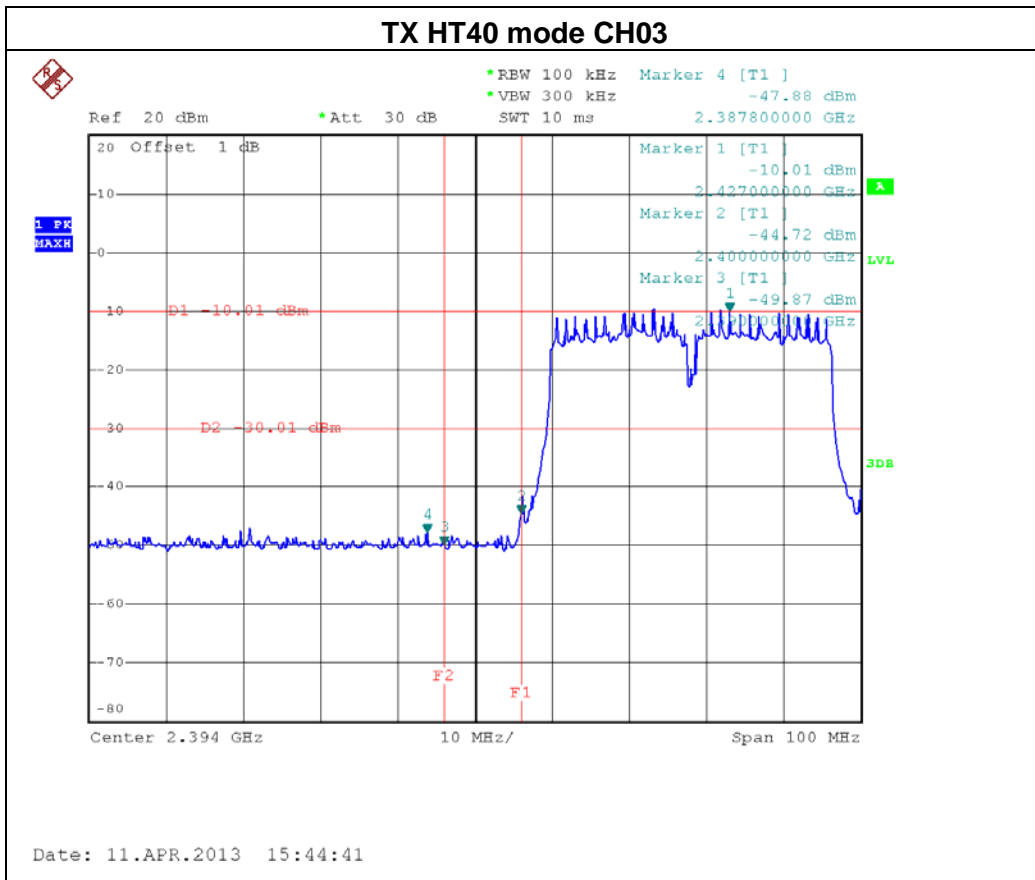


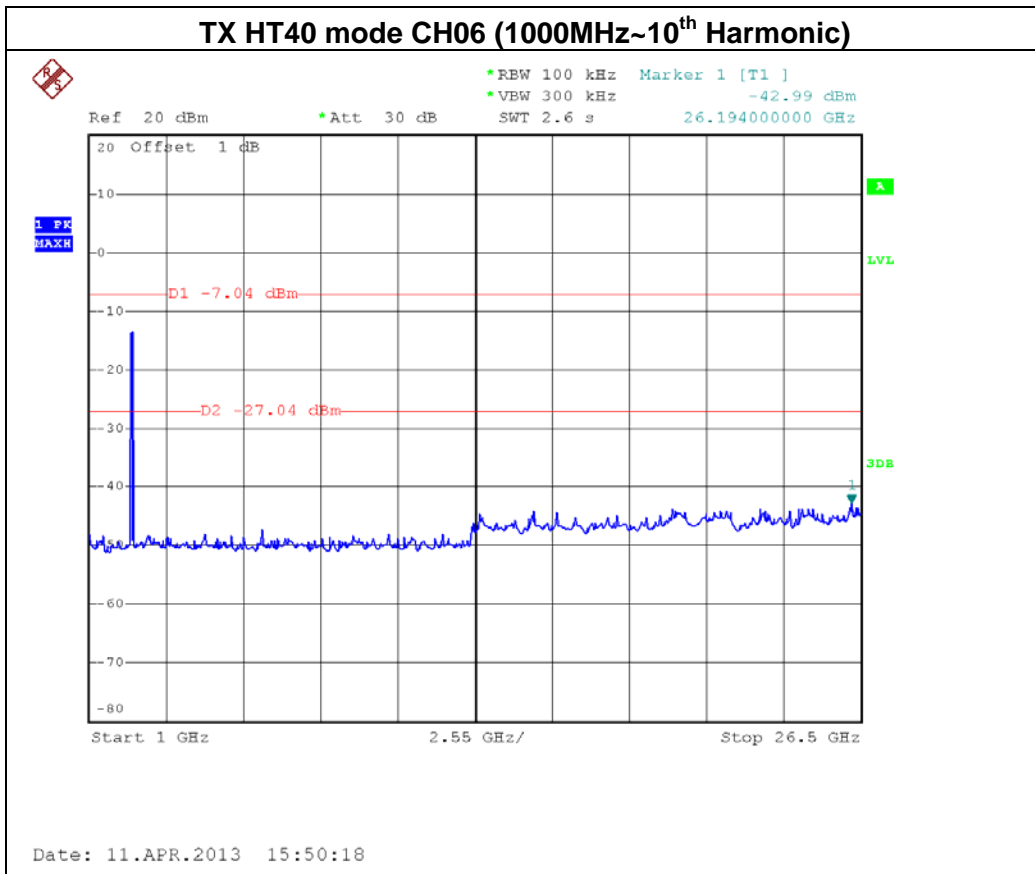
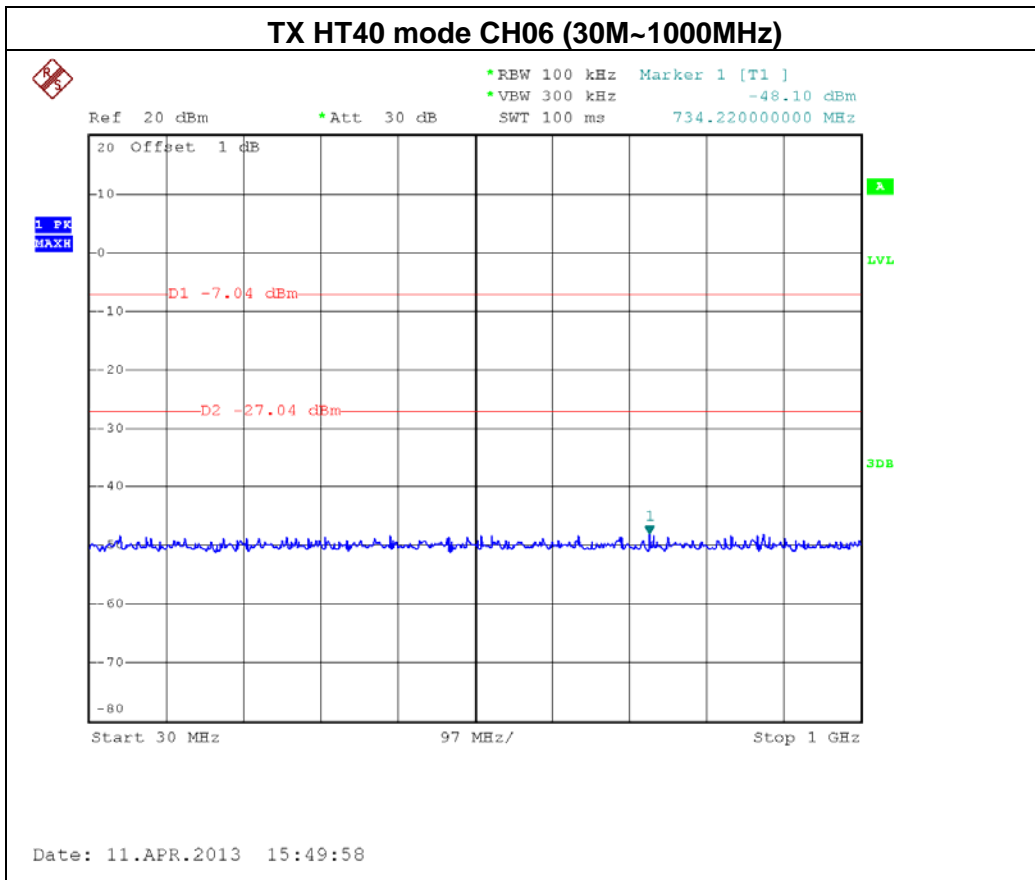


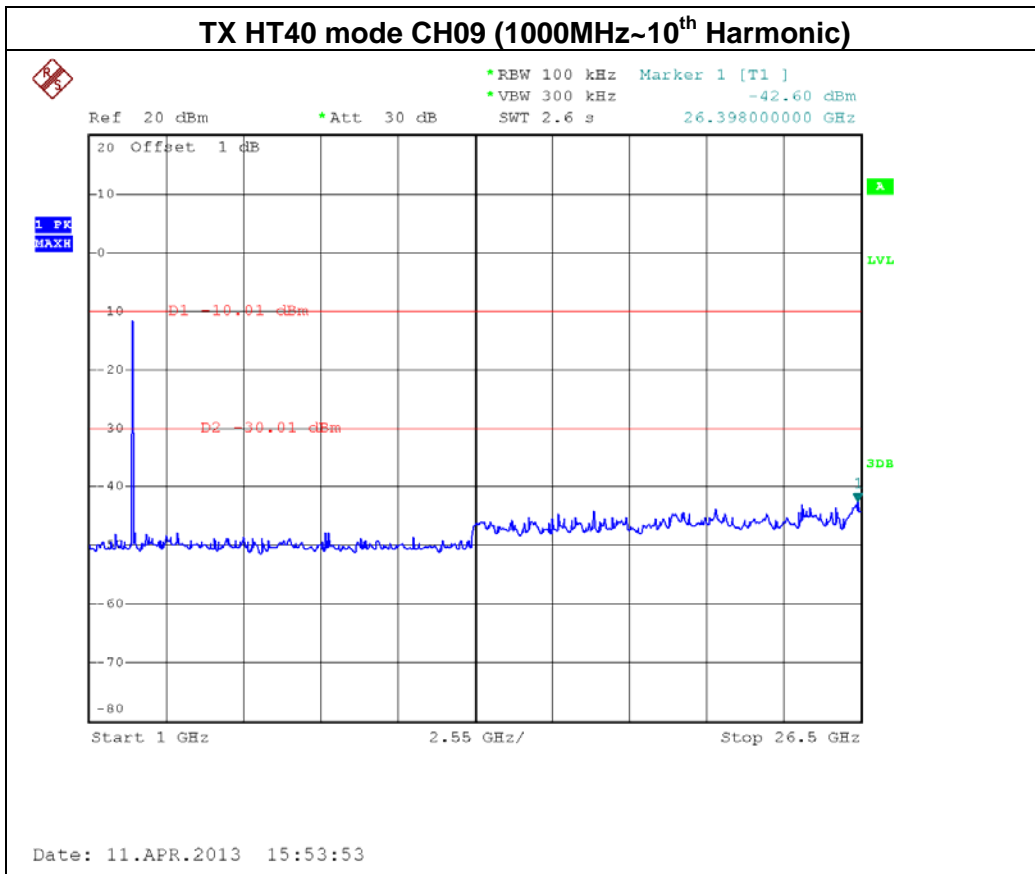
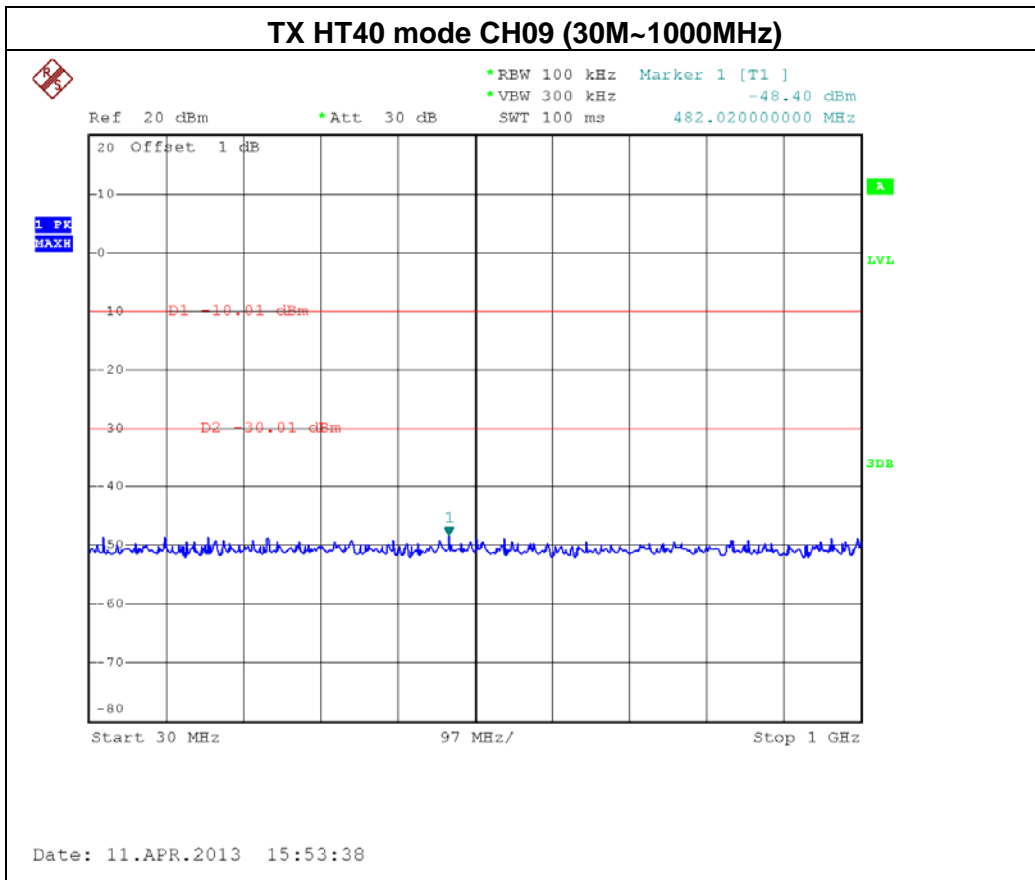


EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N-40M MODE /CH03, CH06, CH09 - ANT2		

Channel of Worst Data: CH03			
The max. radio frequency power in any 100kHz bandwidth within the frequency band		The max. radio frequency power in any 100 kHz bandwidth outside the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2400.00	-44.72	2493.60	-48.48
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.			









8. POWER SPECTRAL DENSITY TEST

8.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C / RSS-210				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e) RSS-210 A8.2(b)	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.	Last Calibration	Next Calibration
1	Spectrum Analyzer	R&S	FSP_40	100185	Nov. 16.2012	Nov. 16.2013

Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of Equipment List is One Year.

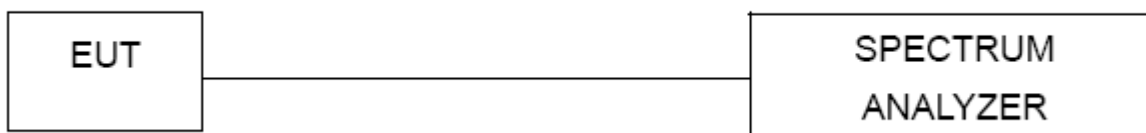
8.1.2 TEST PROCEDURE

- 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

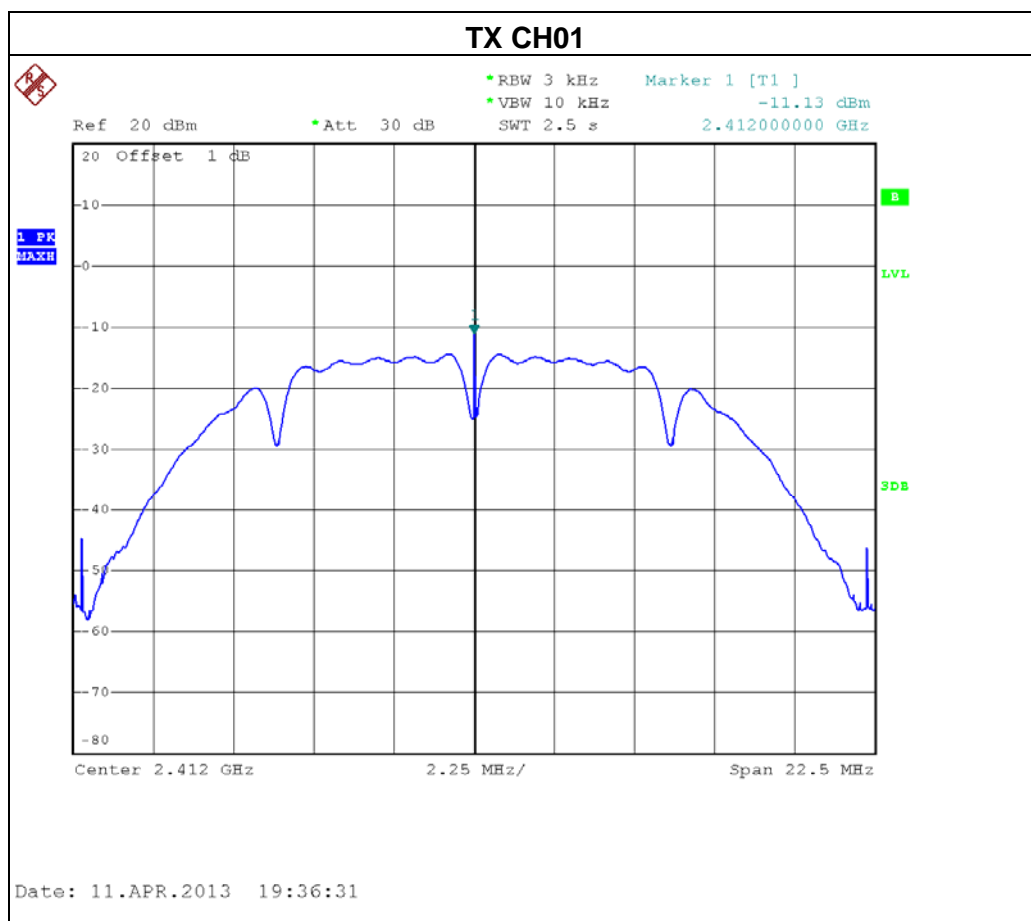
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

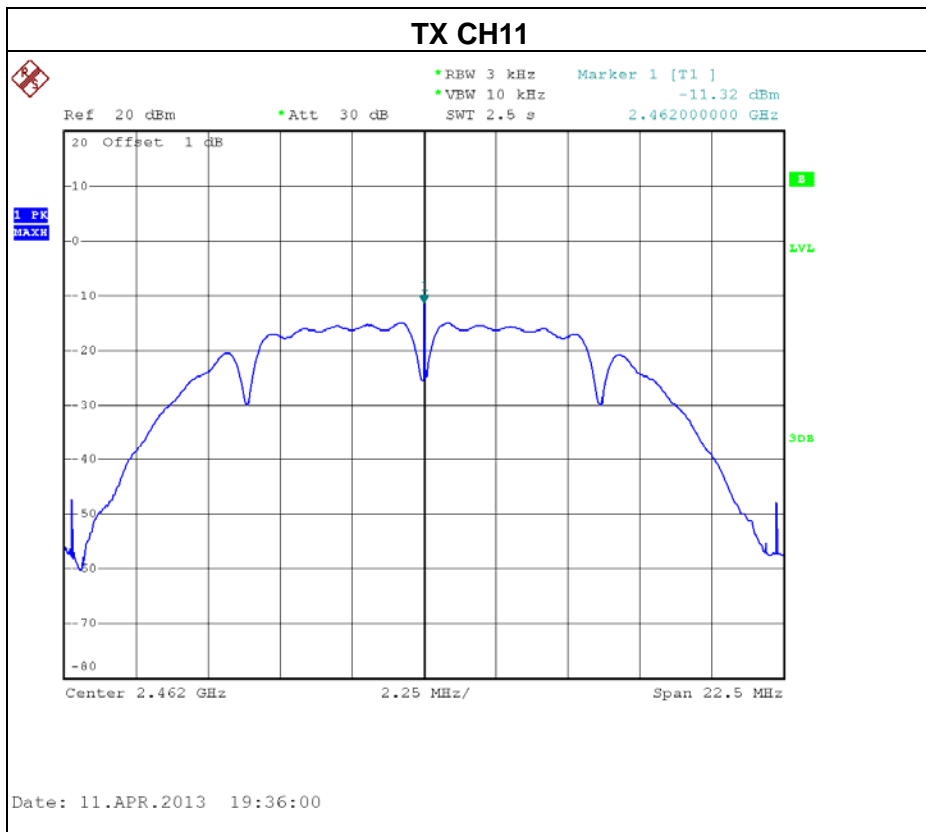
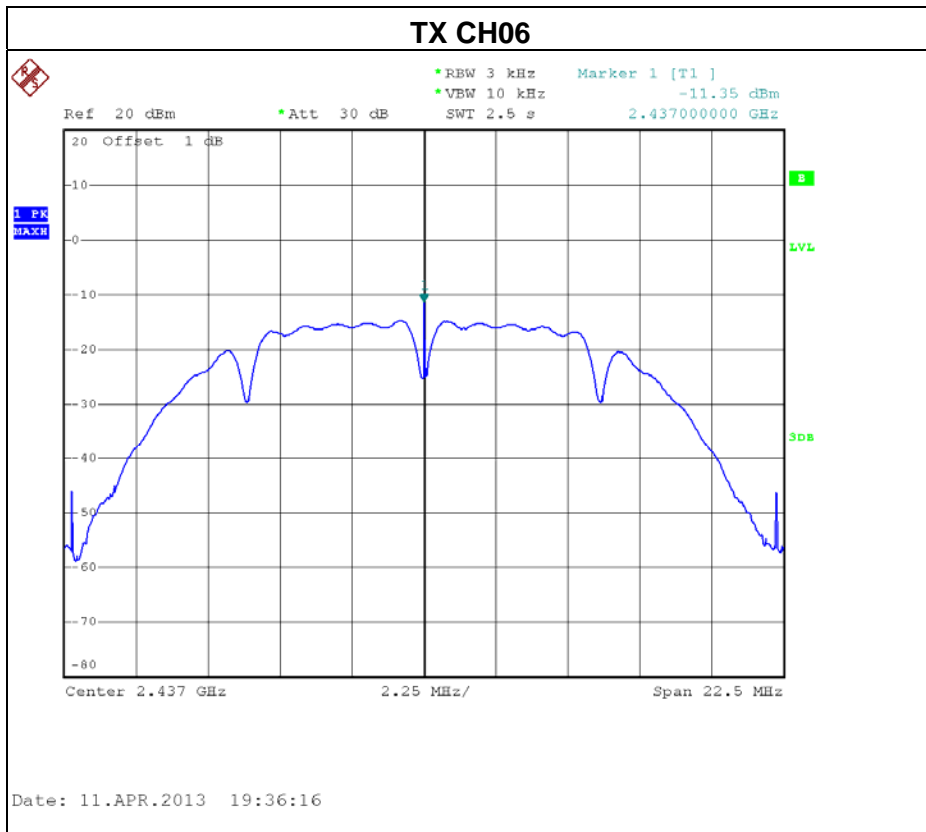


8.1.6 TEST RESULTS

EUT :	Wireless router	Model Name :	DIR-617
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 MHz	-11.13	8
CH06	2437 MHz	-13.35	8
CH11	2462 MHz	-13.32	8

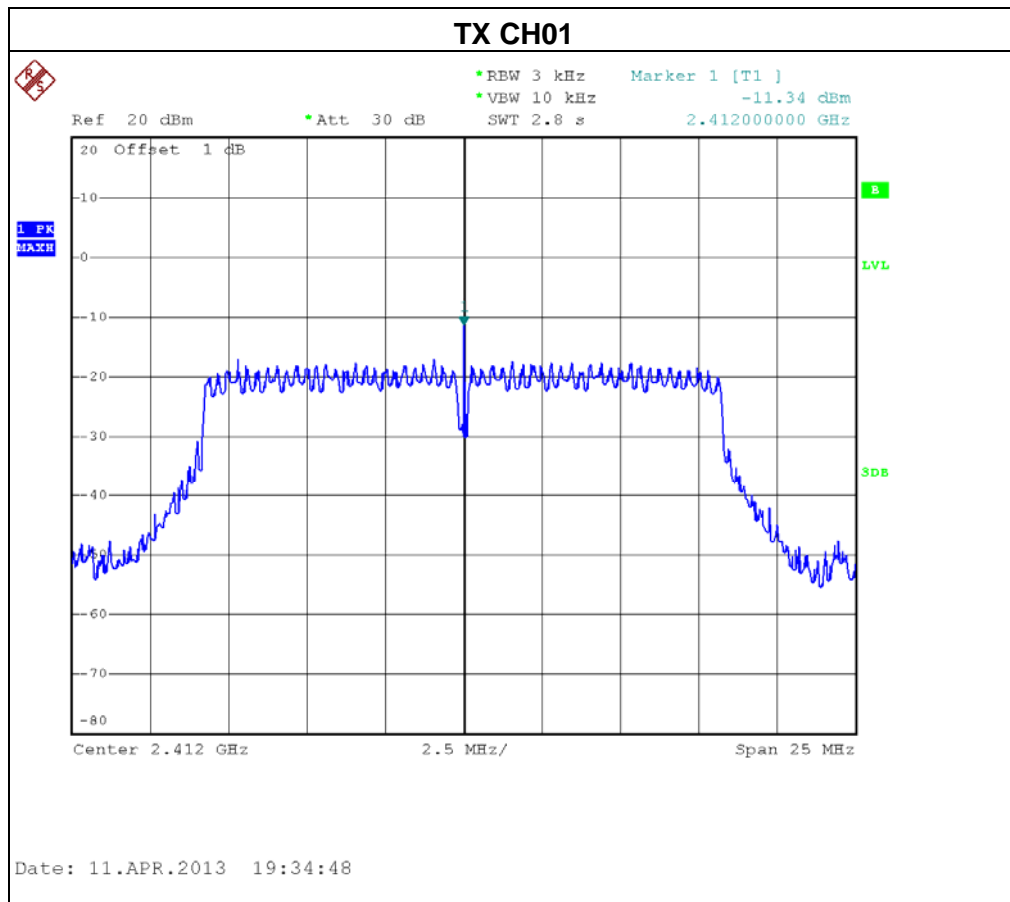


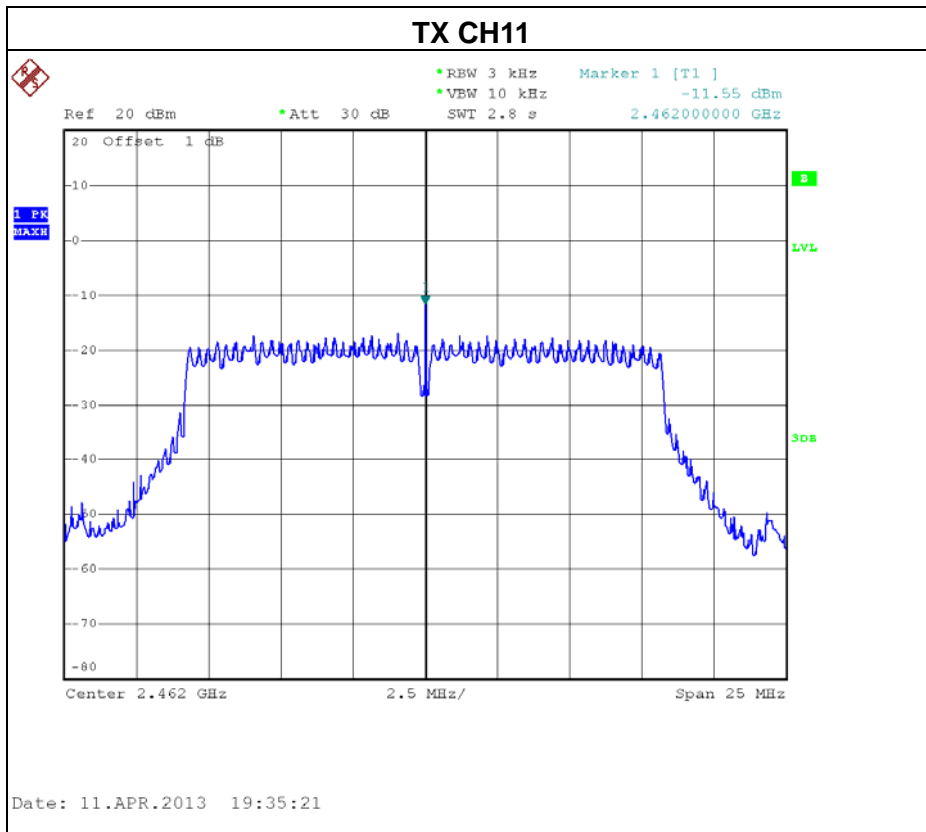
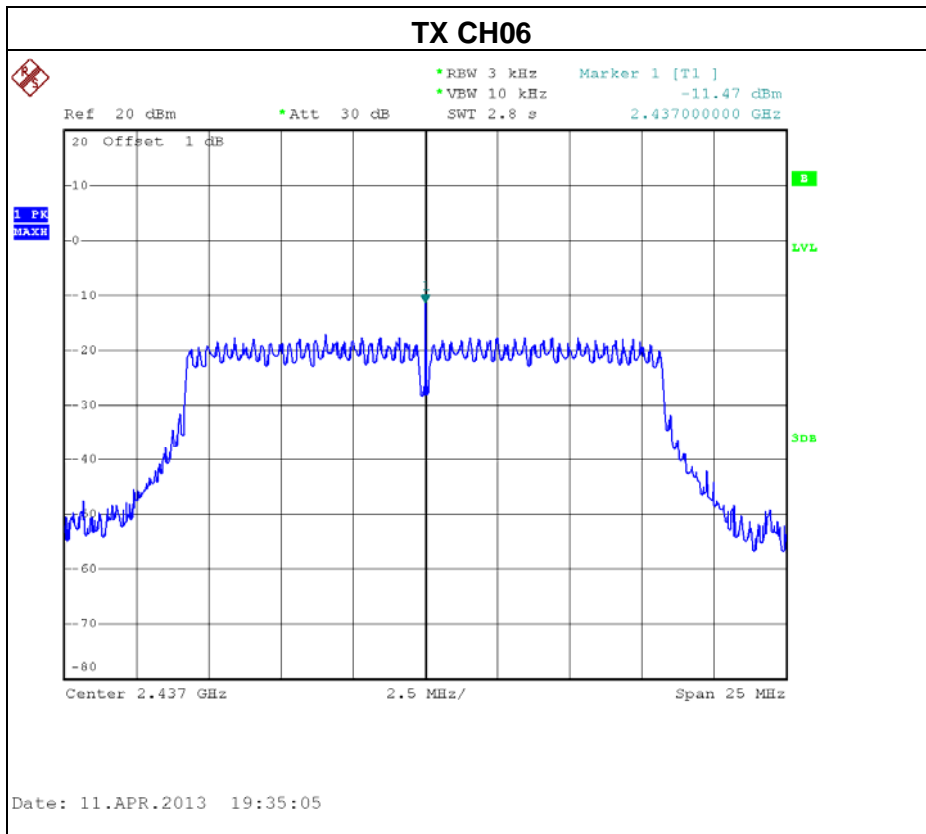


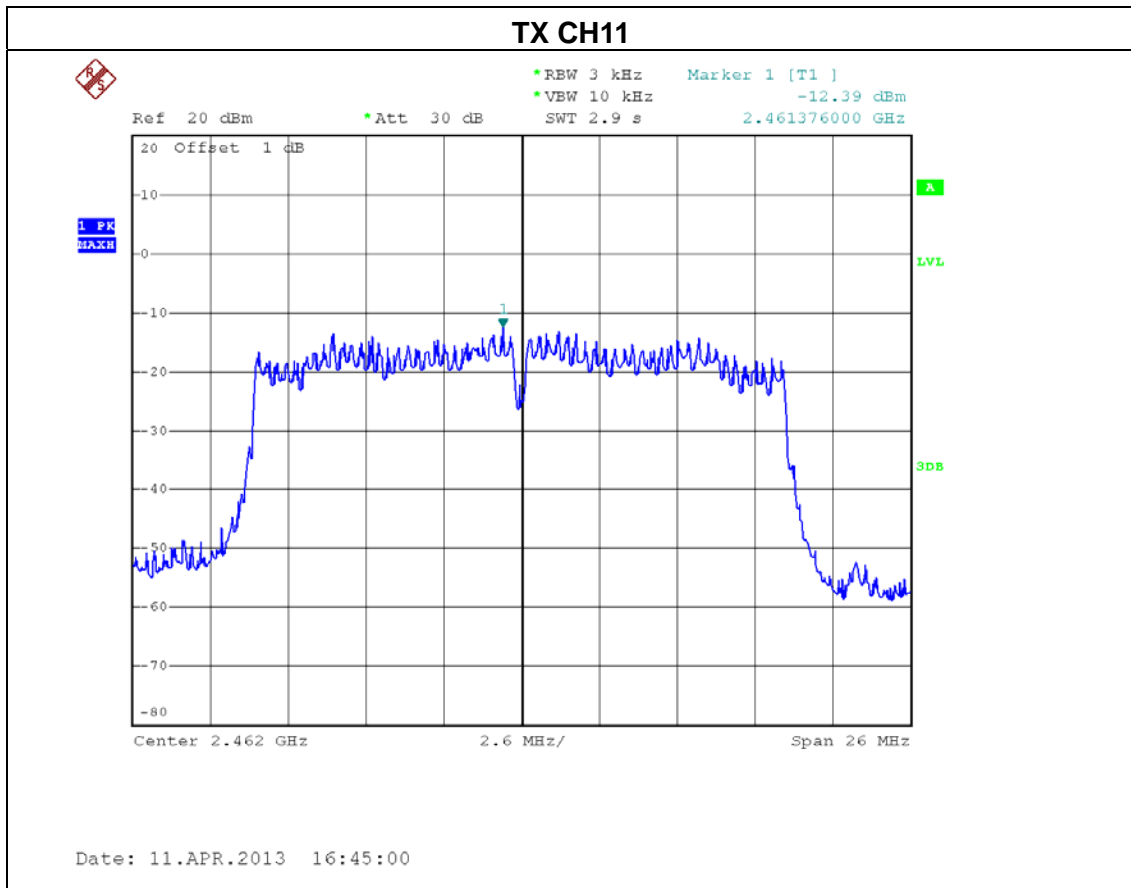
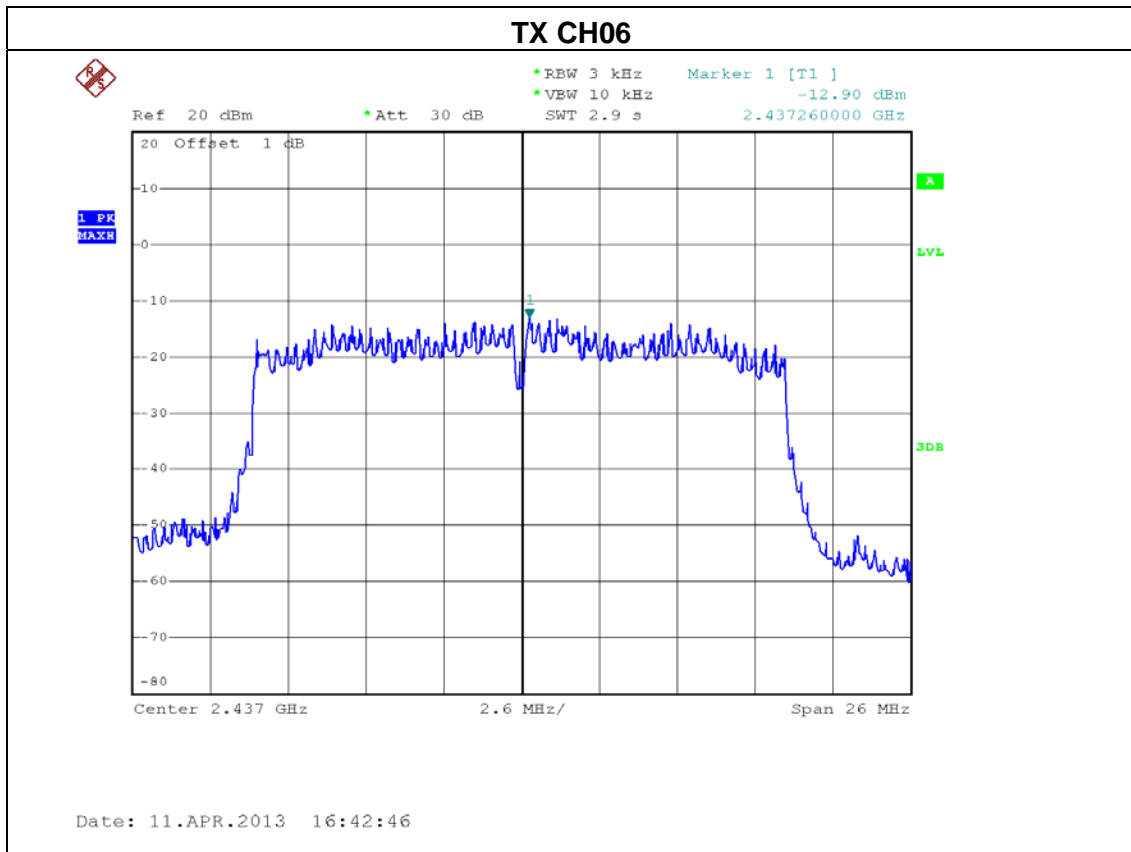


EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX G MODE /CH01, CH06, CH11		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-11.34	8
CH06	2437 MHz	-11.47	8
CH11	2462 MHz	-11.55	8



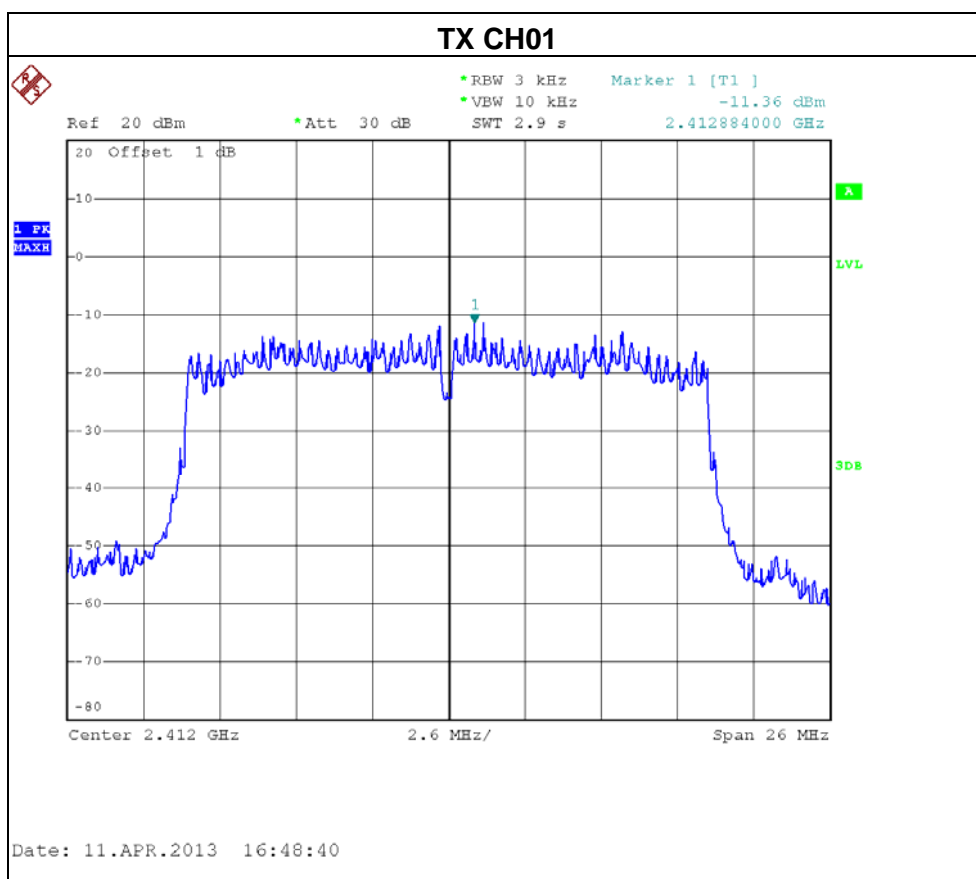


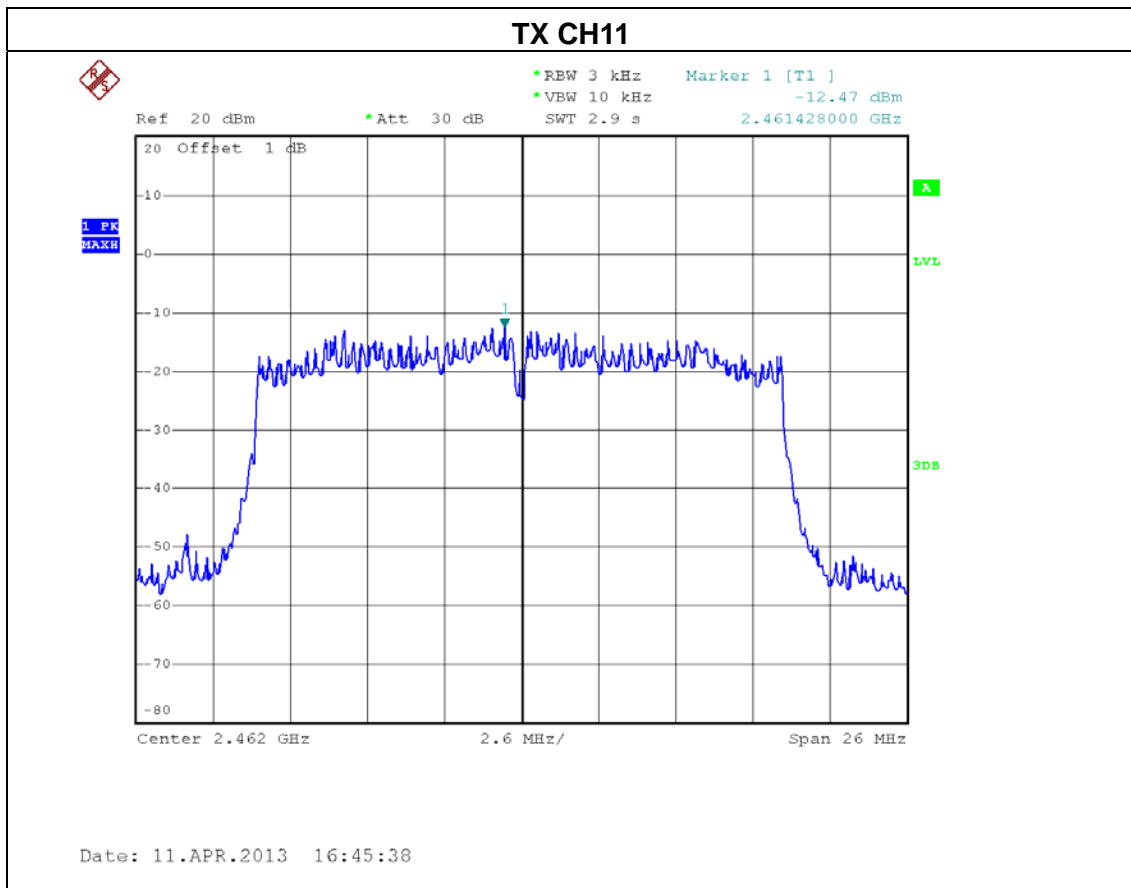
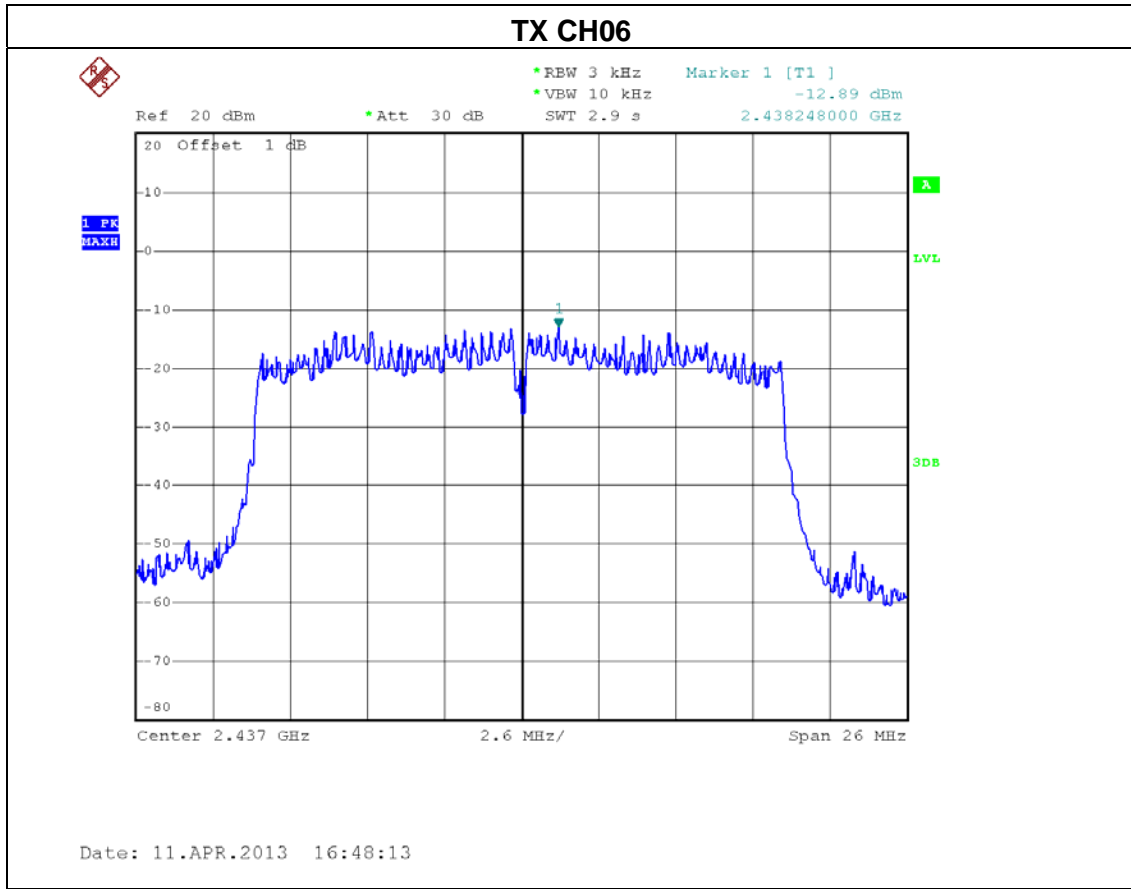




EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 - ANT2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-11.36	8
CH06	2437 MHz	-12.89	8
CH11	2462 MHz	-12.47	8







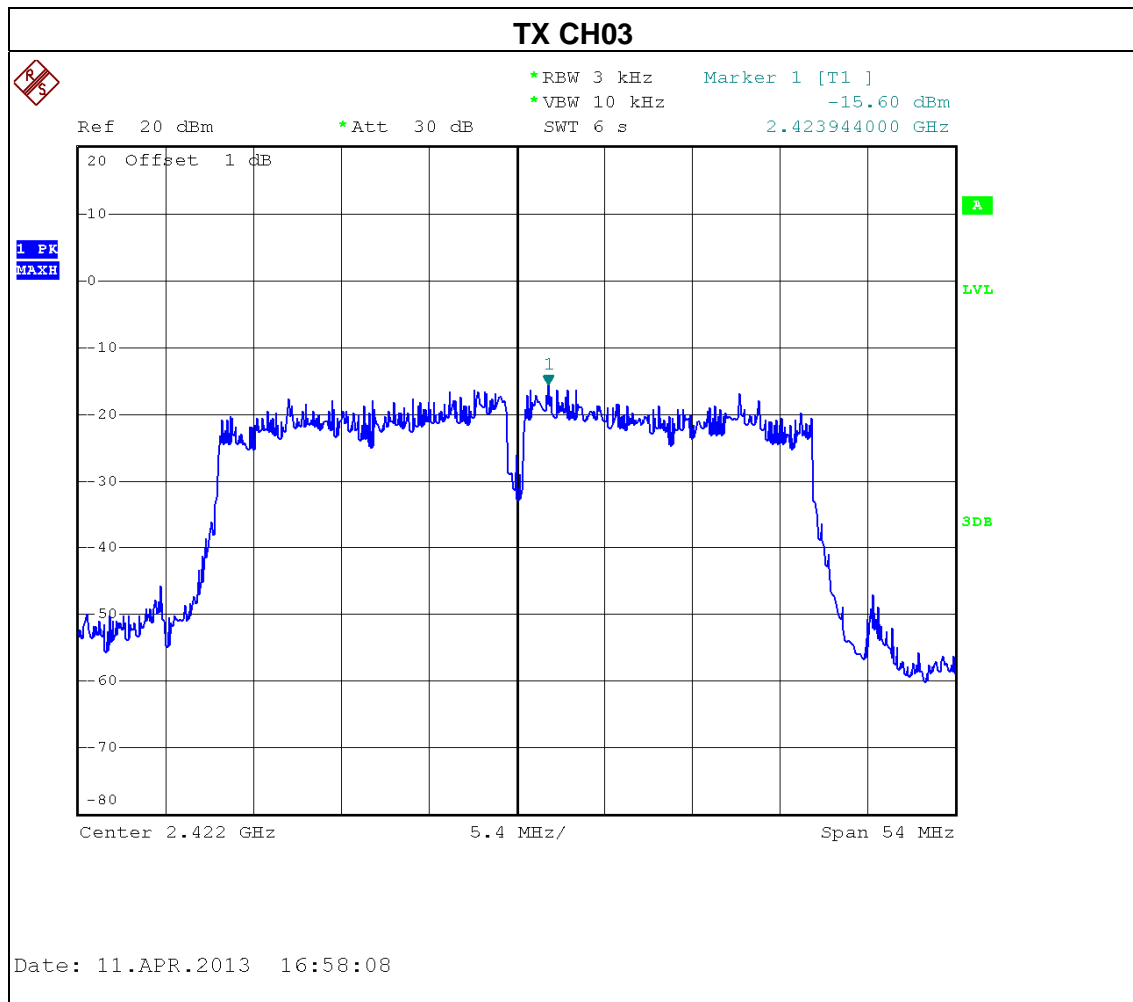
EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-20MHz /CH01, CH06, CH11 - ANT1+ANT2		

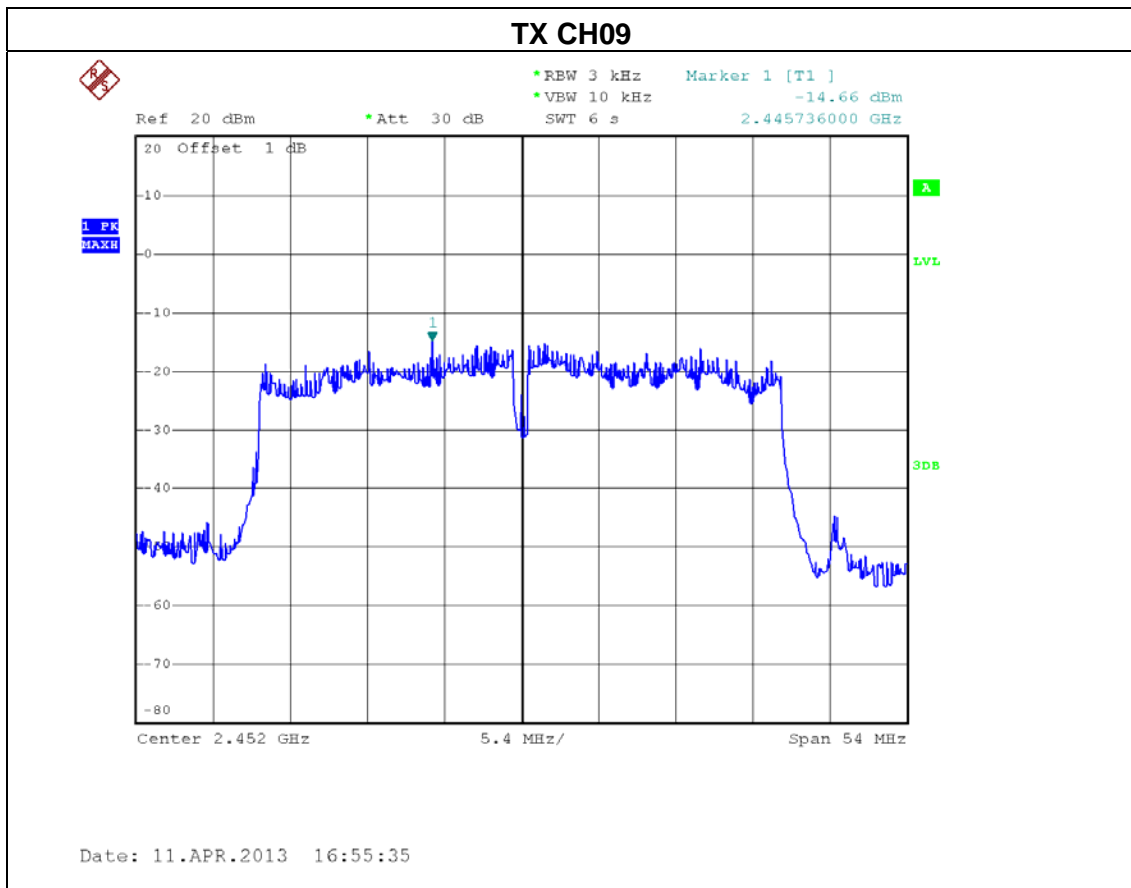
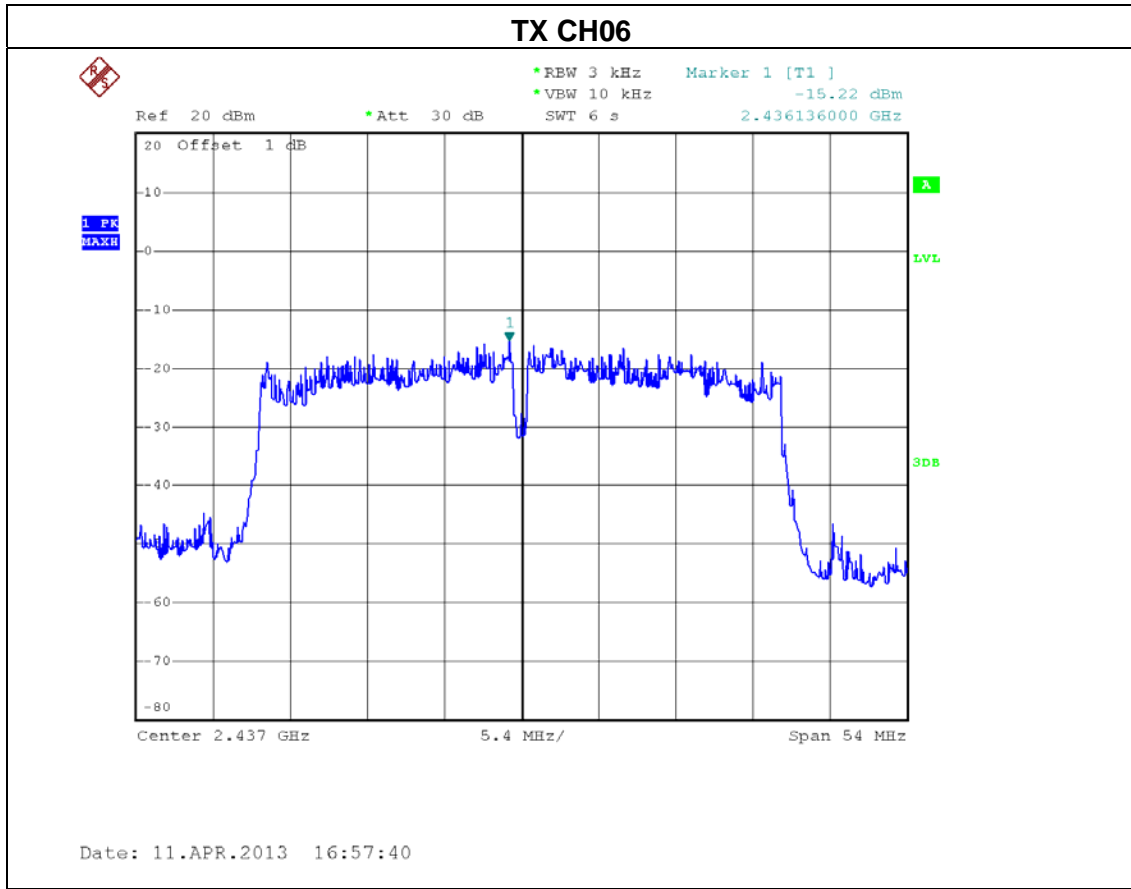
Total (Ant 0 + Ant 1)					
Test Channel	Frequency (MHz)	Power density (dBm) (mW)		LIMIT (dBm)	PASS/FAIL
CH01	2412	-8.74	0.13	8	PASS
CH06	2437	-9.88	0.10	8	PASS
CH11	2462	-9.42	0.11	8	PASS



EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09 - ANT1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422 MHz	-15.60	8
CH06	2437 MHz	-15.22	8
CH09	2462 MHz	-14.66	8

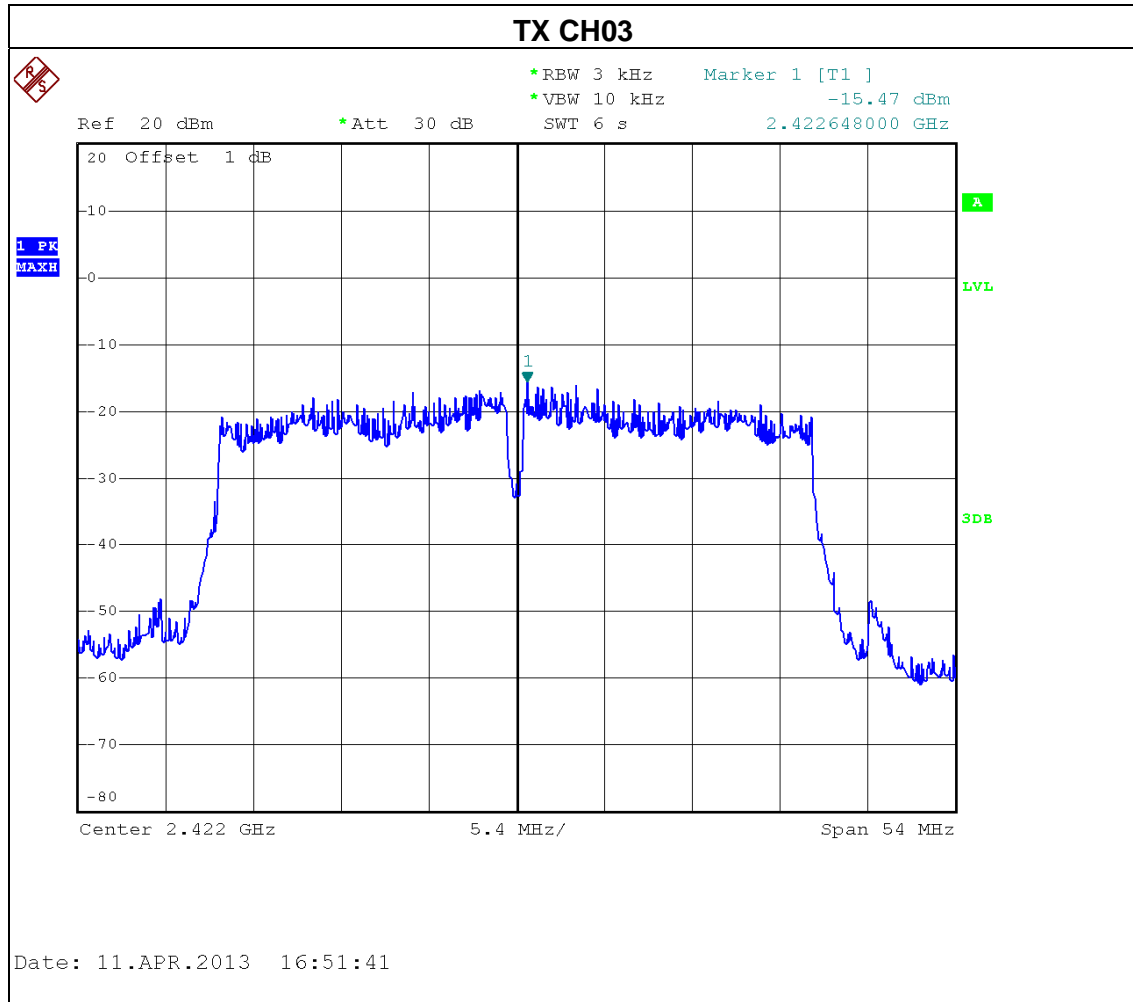


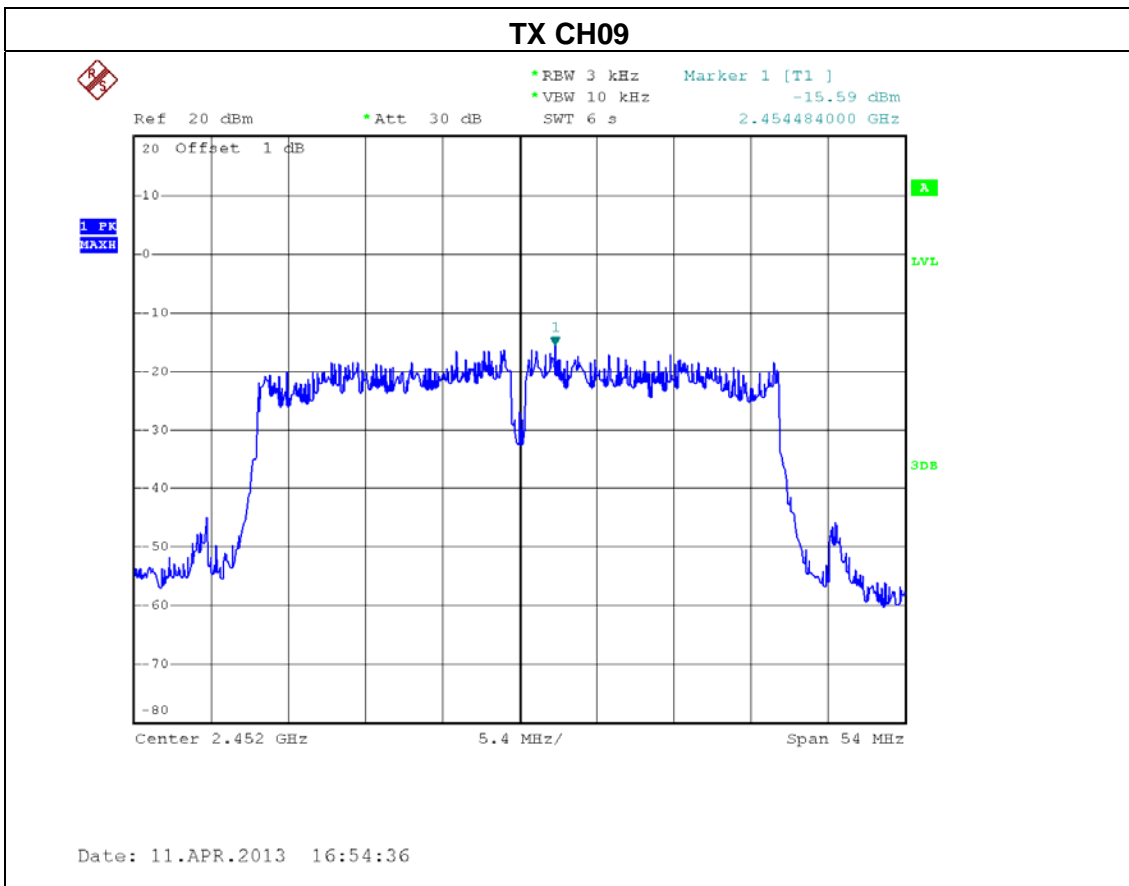
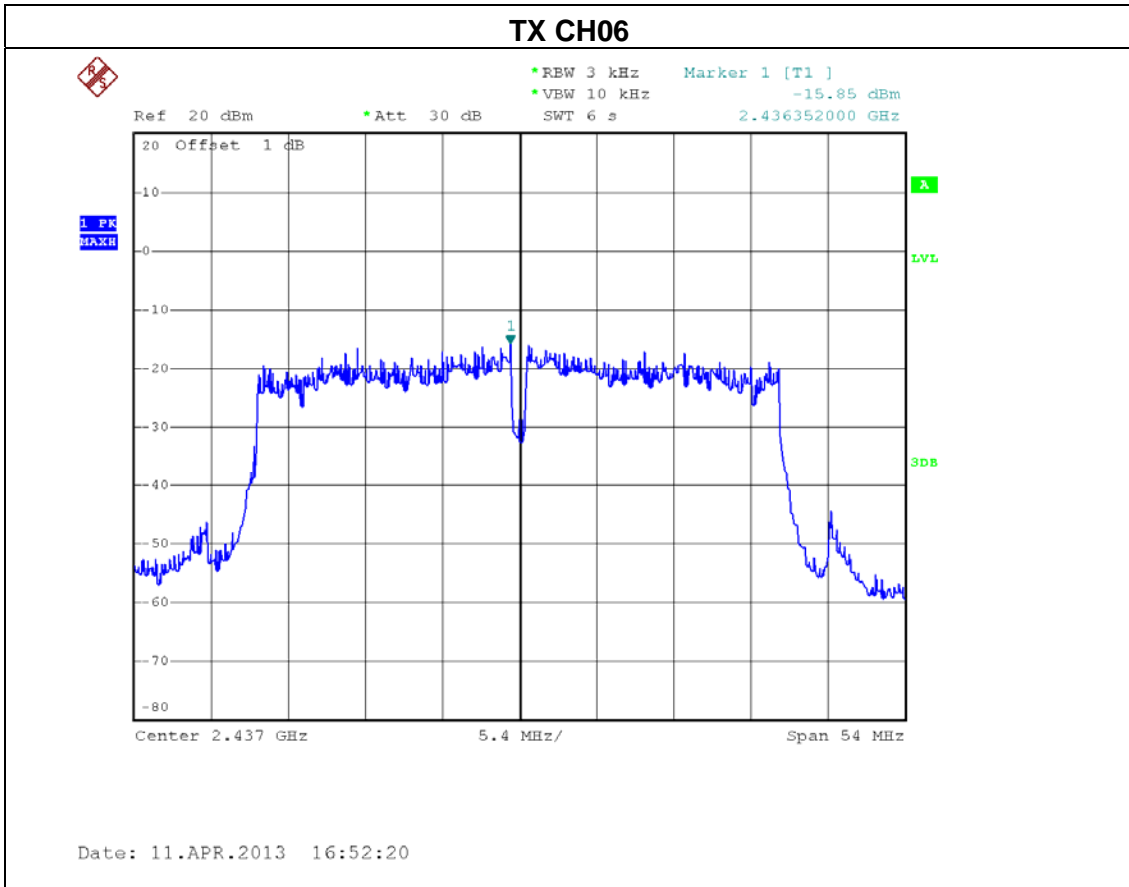




EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09 - ANT2		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH03	2422 MHz	-15.47	8
CH06	2437 MHz	-15.85	8
CH09	2462 MHz	-15.59	8







EUT :	Wireless router	Model Name :	DIR-617
Temperature :	24 °C	Relative Humidity :	60 %
Pressure :	1016 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N MODE-40MHz /CH03, CH06, CH09 - ANT1+ANT2		

Total (Ant 1 + Ant 2)					
Test Channel	Frequency (MHz)	Power density		LIMIT (dBm)	PASS/FAIL
		(dBm)	(mW)		
CH03	2422	-12.52	0.06	8	PASS
CH06	2437	-12.51	0.06	8	PASS
CH09	2452	-12.09	0.06	8	PASS



9. EUT TEST PHOTO

**Conducted Measurement Photos
Adapter: S06A22-120A050-PB**





**Conducted Measurement Photos
Adapter: F05W-120050SPAU**





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





**Radiated Measurement Photos
30~1000MHz**



**Radiated Measurement Photos
Above 1000MHz**

