FCC Radio Test Report

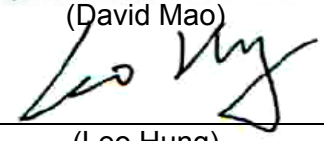
FCC ID: T58WF2151RT

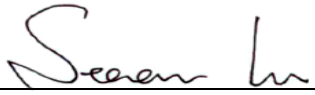
This report concerns (check one): ■ **Original Grant** □ **Class II Change**

Issued Date	:	Nov. 08, 2013
Project No.	:	1211C045A
Equipment	:	Wireless Dual Band USB Adapter
Model Name	:	WF2151
Applicant	:	NETIS SYSTEMS CO., LTD
Address	:	4F&5F R&D Building,Oriental Cyberport, High-Tech Industrial Park, Nanshan, Shenzhen, China.

Tested by: Neutron Engineering Inc. EMC Laboratory
Date of Receipt: Sep. 26, 2013
Date of Test: Sep. 26, 2013~ Nov. 07, 2013

Testing Engineer : 
(David Mao)

Technical Manager : 
(Leo Hung)

Authorized Signatory : 
(Steven Lu)

Neutron Engineering Inc.
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TEL: 0769-8318-3000
FAX: 0769-8319-6000

Declaration

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

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Limitation

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

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
NEI-FCCP-3-1211C045A	Original Issue.	Nov. 08, 2013

1. CERTIFICATION

Equipment	:	Wireless Dual Band USB Adapter
Brand Name	:	netis
Model Name	:	WF2151
Applicant	:	NETIS SYSTEMS CO., LTD
Manufacture	:	Shenzhen Netcore Industrial Ltd.
Address	:	4F&5F R&D Building,Oriental Cyberport, High-Tech Industrial Park, Nanshan, Shenzhen, China.
Factory Address	:	Dongguan City Netcore Network Technology Co.,Ltd. No.10-1,Sankeng Road,Qinghutou,Tangxia Town,Dongguan City
Date of Test	:	Sep. 26, 2013~ Nov. 07, 2013
Test Item	:	ENGINEERING SAMPLE
Standard(s)	:	FCC Part15, Subpart C(15.247) / ANSI C63.4-2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-3-1211C045A) 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).

Test result included in this report is only for the 5745~5825MHz part of the product.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

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

NOTE:

(1)" N/A" denotes test is not applicable in this test report.

(2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r01 (Measurement Guidelines of DTS)

2.1 TEST FACILITY

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

2.2 MEASUREMENT UNCERTAINTY

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

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %。

A. Conducted Measurement :

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

B. Radiated Measurement :

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>Wireless Dual Band USB Adapter</td></tr>
<tr><td>Brand Name</td><td>netis</td></tr>
<tr><td>Model Name</td><td>WF2151</td></tr>
<tr><td>Model Different</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>
<table>
<tr><td>Operation Frequency</td><td>5745~5825 MHz</td></tr>
<tr><td>Modulation Technology</td><td>802.11a/n:OFDM</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>900Mbps</td></tr>
<tr><td>Number of Channel</td><td>5 CH, Please see note 2.(Page 10)</td></tr>
<tr><td>Antenna Designation</td><td rowspan="2">Please see note 3.(Page 10)</td></tr>
<tr><td>Antenna Gain(Peak)</td></tr>
<tr><td>Peak Output Power (Max.)</td><td>802.11a: 20.68 dBm
802.11n (20M): 20.35 dBm
802.11n (40M): 20.53 dBm</td></tr>
<tr><td>AVG Output Power (Max.)</td><td>802.11a: 13.22 dBm
802.11n (20M): 12.29 dBm
802.11n (40M): 12.24 dBm</td></tr>
</table>
More details of EUT technical specification, please refer to the User's Manual.
</td></tr>
<tr><td>Power Source</td><td>Supplied from PC USB port.</td></tr>
<tr><td>Power Rating</td><td>AC 120V/60Hz</td></tr>
</table>

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

2.

802.11a / 802.11n 20M					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	**5745**	153	5765	**157**	**5785**
161	5805	**165**	**5825**		

802.11n 40M			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	**5755**	**159**	**5795**

3. Antenna Specification:

Ant.	Brand	M/N	Antenna Type	Connector	Gain (dBi)	Note
0		N/A	Internal Antenna	N/A	5.2	TX/RX
1		N/A	Internal Antenna	N/A	5.2	TX/RX

Note:
The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R). all transmit signals are completely uncorrelated, then,Direction gain = GANT, that is Directional gain=5.2dBi

4.

Operating Mode	1TX	2TX
802.11a	V (ANT 0 or ANT 1)	-
802.11n(20MHz)	-	V (ANT 0 + ANT 1)
802.11n(40MHz)	-	V (ANT 0 + ANT 1)

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 A Mode Channel 149/157/165
Mode 2	TX N20 Mode Channel 149/157/165
Mode 3	TX N40 Mode Channel 151/159
Mode 7	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 7	TX Mode

For Radiated Test	
Final Test Mode	Description
Mode 1	TX A Mode Channel 149/157/165
Mode 2	TX N20 Mode Channel 149/157/165
Mode 3	TX N40 Mode Channel 151/159

Note: For radiated below 1G test, the 802.11a mode is found to be the worst case and recorded.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

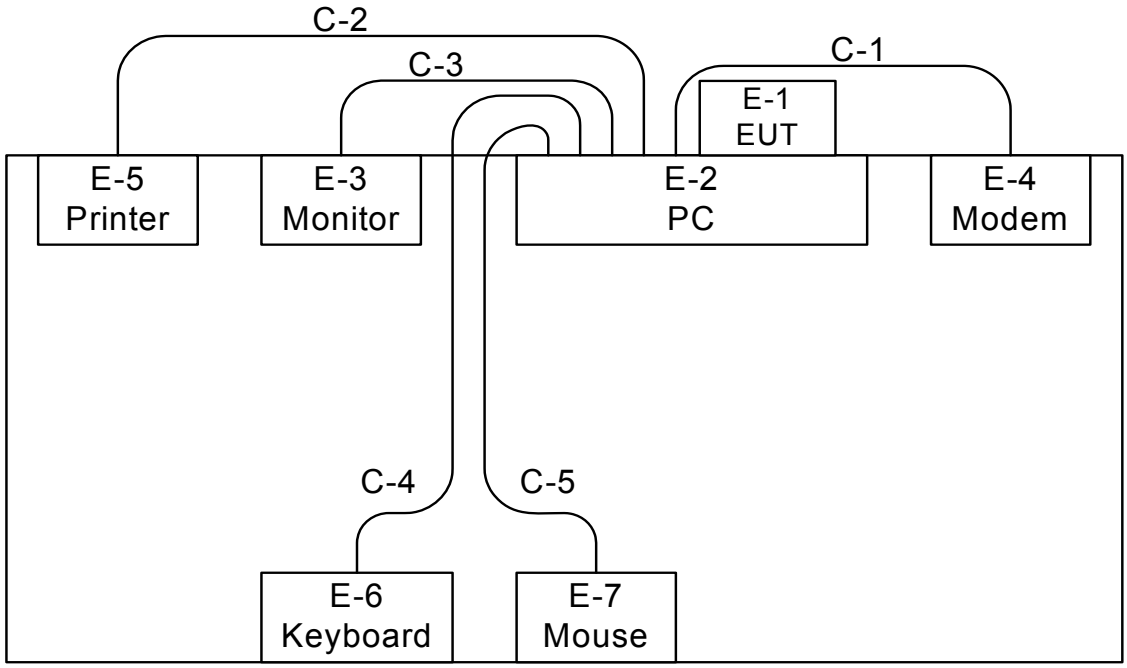
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

Test software version	Qatest		
Frequency	5745 MHz	5785 MHz	5825MHz
TX A Mode	15	17	17
TX N20 Mode	13	14	15

Test software version	Qatest	
Frequency	5755 MHz	5795MHz
TX N40 Mode	15	15

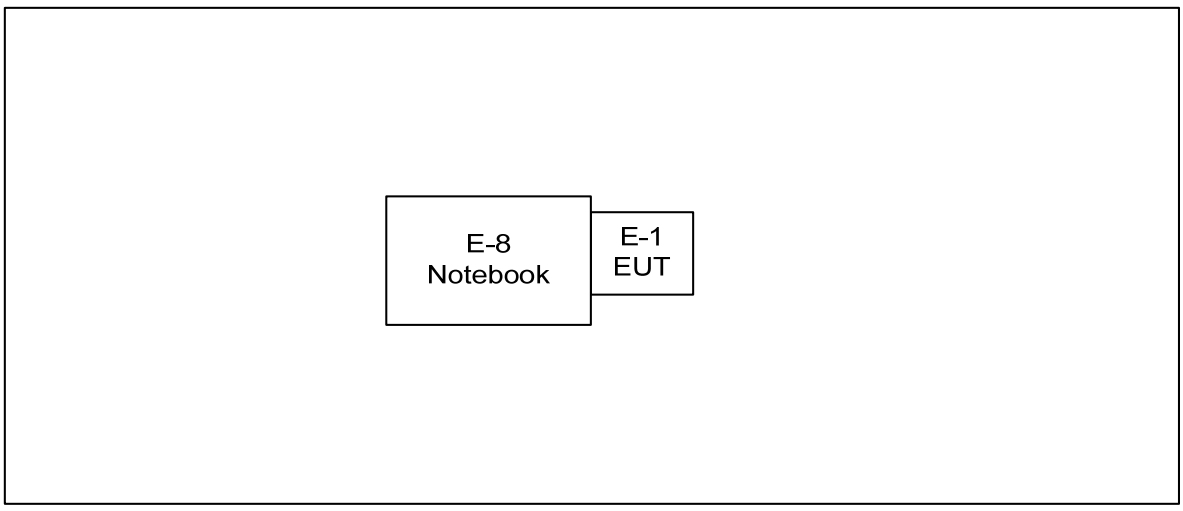
3.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted TX Mode:



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

Radiated TX Mode:



3.5 DESCRIPTION OF SUPPORT UNITS

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Wireless Dual Band USB Adapter	netis	WF2151	T58WF2151RT	N/A	EUT
E-2	PC	Dell 745	DCSM	DOC	G7K832X	
E-3	LCD monitor	Dell	E177FPc	DOC	CNOFJ179-64180-6AG-1WNS	
E-4	Modem	ACEEX	DM-1414V	IFAXDM1414	0603002131	
E-5	Printer	SII	DPU-414	DOC	3018507 B	
E-6	USB Keyboard	Lenovo	SK-8815(L)	DOC	00975811	
E-7	USB Mouse	Lenovo	MO28UOL	DOC	23-122591	
E-8	Notebook	HP	HSTNN-169C-3	DOC	CNU02203XG	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	YES	NO	1.5m	
C-2	YES	YES	1.5m	
C-3	YES	NO	0.9m	
C-4	NO	NO	1.5m	
C-5	NO	NO	1.5m	

Note:

(1) 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	79.0	66.0	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

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

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	Apr. 25, 2014
2	LISN	R&S	ENV216	100087	Nov.16, 2013
3	Test Cable	N/A	C_17	N/A	Mar.15, 2014
4	EMI TEST RECEIVER	R&S	ESCS30	826547/022	Apr. 25, 2014
5	50Ω Terminator	SHX	TF2-3G-A	08122902	Apr. 25, 2014

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

The following table is the setting of the receiver

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

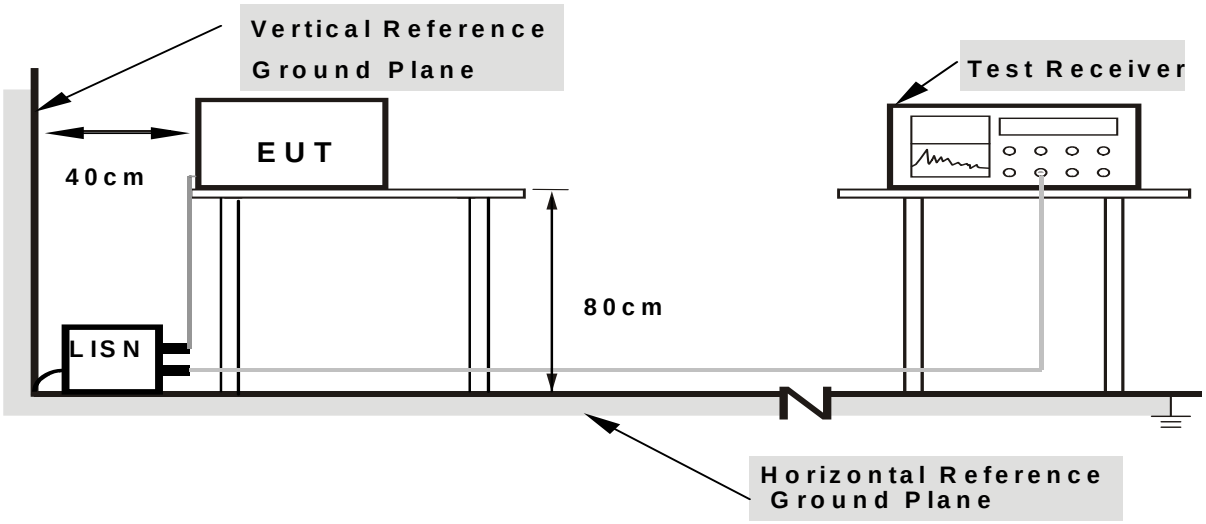
4.1.3 TEST PROCEDURE

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it).
The EUT was programmed to be in continuously transmitting/TX mode.

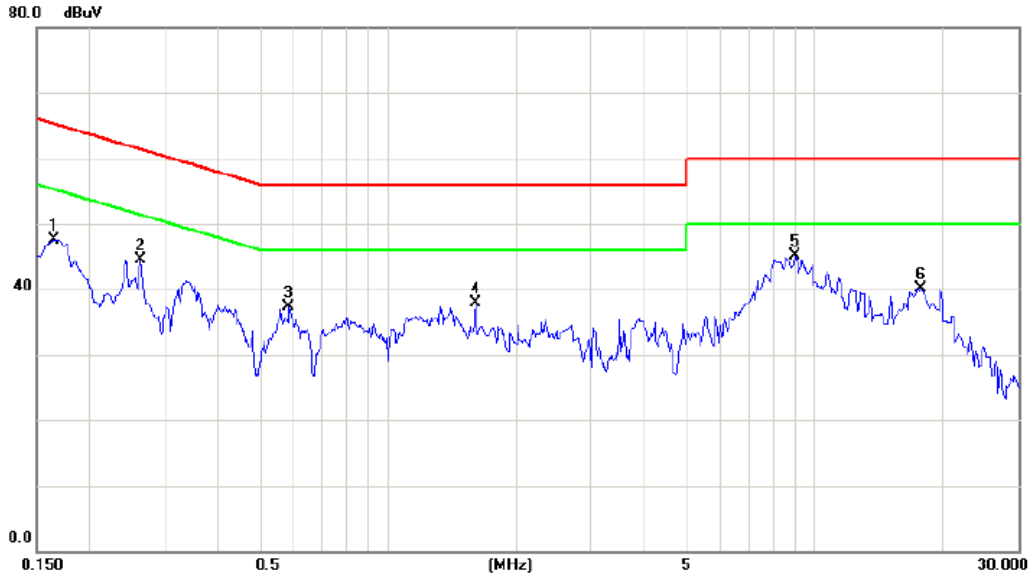
4.1.7 TEST RESULTS

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 ◦

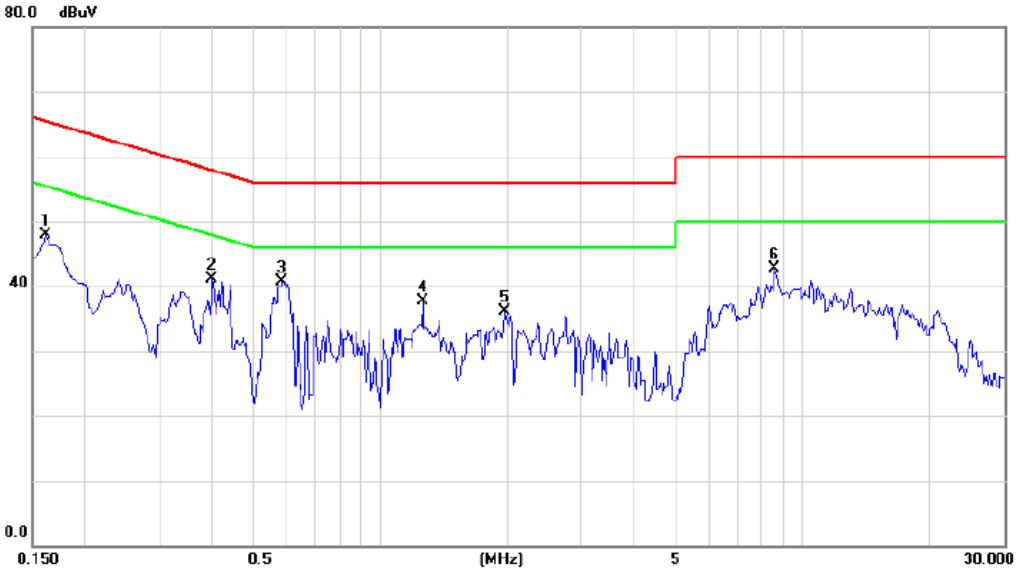
(2) Measuring frequency range from 150KHz to 30MHz ◦

EUT:	Wireless Dual Band USB Adapter	Model Name:	WF2151
Temperature:	24 ℃	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Line
Test Mode :	TX Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1650	37.84	9.72	47.56	65.21	-17.65	peak	
2		0.2631	34.86	9.71	44.57	61.33	-16.76	peak	
3		0.5862	27.62	9.71	37.33	56.00	-18.67	peak	
4		1.6053	28.08	9.77	37.85	56.00	-18.15	peak	
5	*	9.0004	35.06	9.98	45.04	60.00	-14.96	peak	
6		17.7454	29.90	10.14	40.04	60.00	-19.96	peak	

EUT:	Wireless Dual Band USB Adapter	Model Name:	WF2151
Temperature:	24 ℃	Relative Humidity:	55 %
Test Power:	AC 120V/60Hz	Phase:	Neutral
Test Mode :	TX Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1615	38.12	9.72	47.84	65.39	-17.55	peak	
2		0.4001	31.32	9.72	41.04	57.85	-16.81	peak	
3	*	0.5862	30.96	9.72	40.68	56.00	-15.32	peak	
4		1.2580	27.84	9.77	37.61	56.00	-18.39	peak	
5		1.9640	26.38	9.79	36.17	56.00	-19.83	peak	
6		8.5810	32.62	9.99	42.61	60.00	-17.39	peak	

4.2 RADIATED EMISSION MEASUREMENT

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

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

Frequency (MHz)	Field Strength (microvolts/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 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

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

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

4.2.2 MEASUREMENT INSTRUMENTS LIST ANS SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Apr. 25, 2014
2	Amplifier	HP	8447D	2944A09673	Apr. 25, 2014
3	Test Receiver	R&S	ESCI	100382	Apr. 25, 2014
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 02, 2014
5	Antenna	ETS	3115	00075789	Apr. 25, 2014
6	Amplifier	Agilent	8449B	3008A02274	Apr. 25, 2014
7	Spectrum	Agilent	E4408B	US39240143	Nov. 16, 2013
8	Test Cable	HUBER+SUHNER	C-45	N/A	Apr. 30, 2014
9	Controller	CT	SC100	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	Apr. 25, 2014
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Apr. 25, 2014
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Oct. 22, 2014

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

4.2.3 TEST PROCEDURE

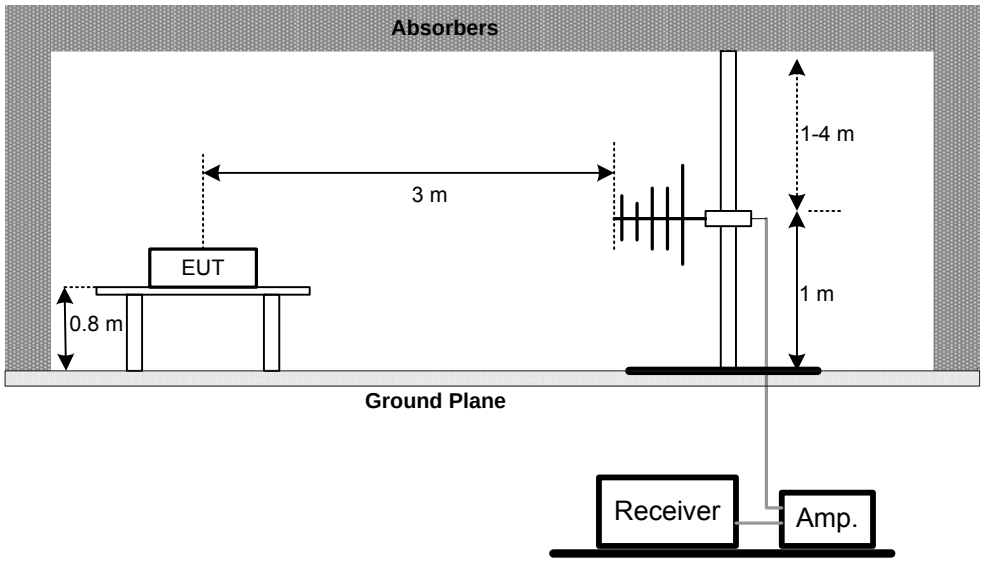
a. The measuring distance of at 1.5 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

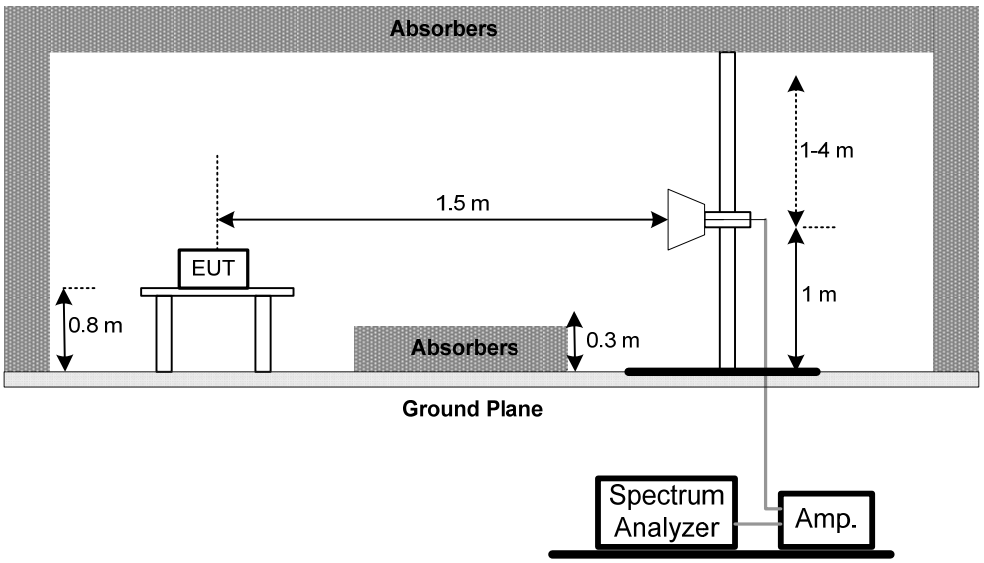
No deviation

4.2.5 TEST SETUP

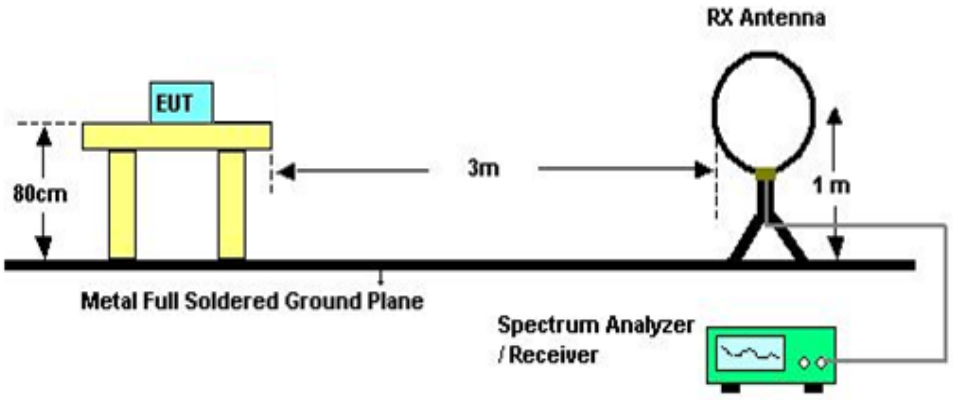
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



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



(C) For radiated emissions below 30MHz



4.2.6 EUT OPERATING CONDITIONS

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

4.2.7 TEST RESULTS (BELOW 30MHZ)

EUT:	Wireless Dual Band USB Adapter	Model Name:	WF2151
Temperature:	24 ℃	Relative Humidity:	55 %
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
0.0089	0°	26.32	24.30	50.62	128.62	-78.00	AVG
0.0089	0°	30.19	24.30	54.49	148.62	-94.13	PK
0.0256	0°	22.85	23.94	46.79	119.43	-72.64	AVG
0.0256	0°	25.37	23.94	49.31	139.43	-90.12	PK
0.0382	0°	20.92	23.15	44.07	115.96	-71.89	AVG
0.0382	0°	23.65	23.15	46.80	135.96	-89.16	PK
0.0652	0°	19.82	22.10	41.92	111.32	-69.40	AVG
0.0652	0°	24.27	22.10	46.37	131.32	-84.95	PK
0.2639	0°	20.38	20.37	40.75	99.18	-58.43	AVG
0.2639	0°	23.72	20.37	44.09	119.18	-75.09	PK
1.4864	0°	27.68	19.55	47.23	64.16	-16.93	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0099	90°	18.56	24.30	42.86	127.67	-84.81	AVG
0.0099	90°	21.34	24.30	45.64	147.67	-102.03	PK
0.0224	90°	14.37	24.15	38.52	120.59	-82.07	AVG
0.0224	90°	16.68	24.15	40.83	140.59	-99.76	PK
0.0463	90°	19.72	22.64	42.36	114.30	-71.94	AVG
0.0463	90°	22.39	22.64	45.03	134.30	-89.27	PK
0.0774	90°	20.61	21.85	42.46	109.83	-67.37	AVG
0.0774	90°	23.53	21.85	45.38	129.83	-84.45	PK
0.3756	90°	20.29	20.10	40.39	96.11	-55.72	AVG
0.3756	90°	23.75	20.10	43.85	116.11	-72.26	PK
1.6719	90°	24.92	19.53	44.45	63.14	-18.69	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:

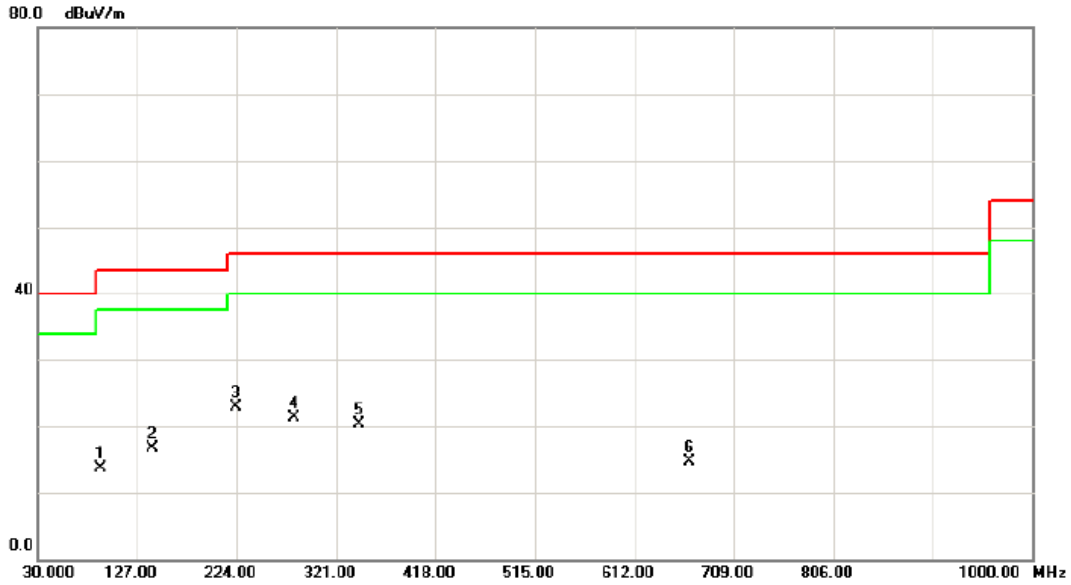
(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦

(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 ◦

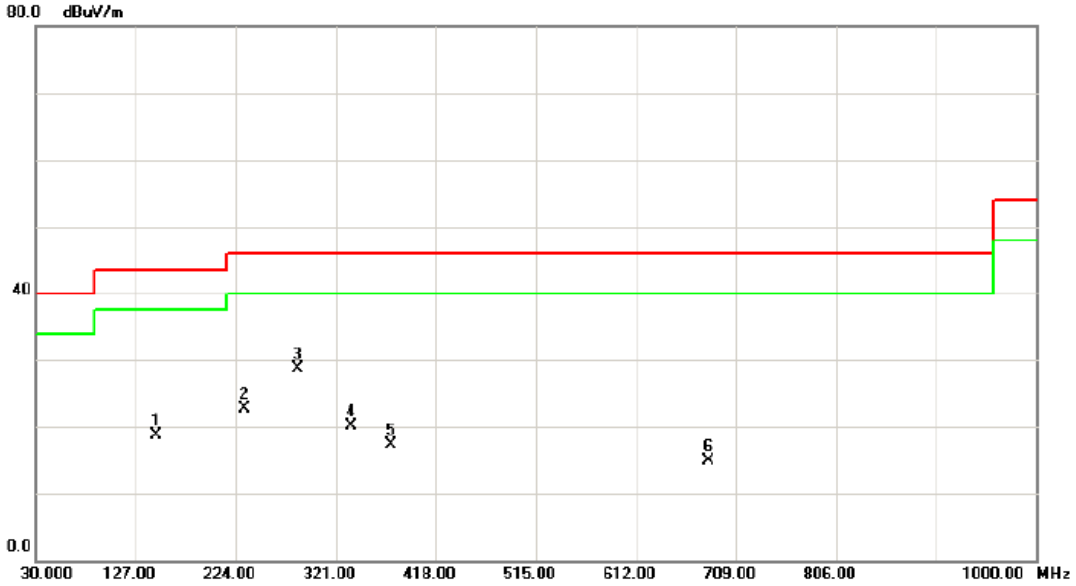
(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25℃	Relative Humidity:	58 %
Test Voltage :	AC 120V/60Hz	Phase:	Vertical
Test Mode :	TX A Mode 5745MHz		



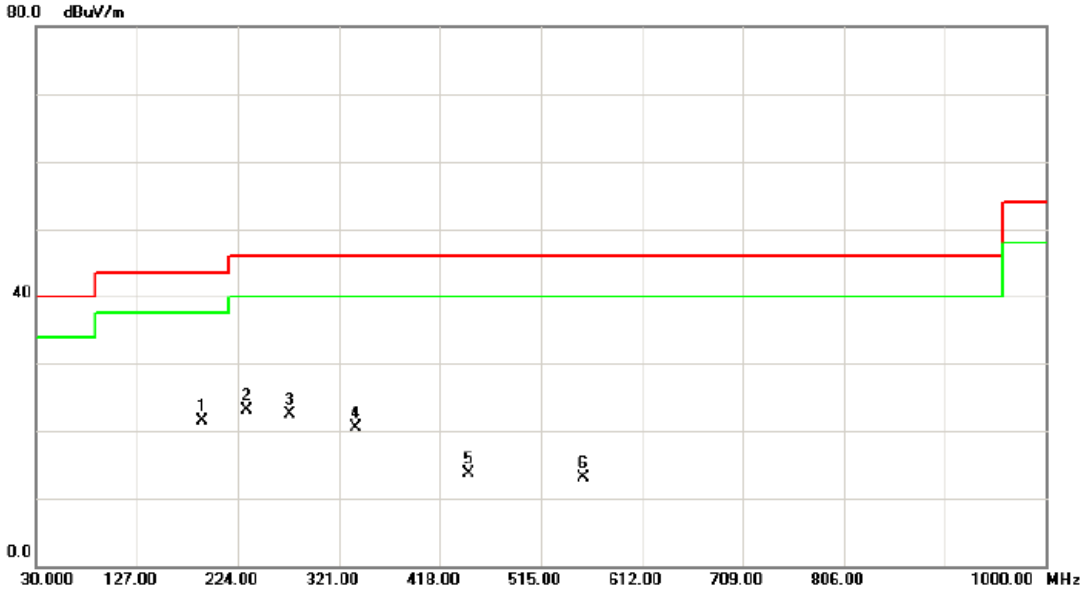
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		91.1100	31.57	-17.93	13.64	43.50	-29.86	peak	
2		141.5500	30.46	-13.78	16.68	43.50	-26.82	peak	
3	*	223.0300	37.83	-14.86	22.97	46.00	-23.03	peak	
4		280.2600	33.89	-12.52	21.37	46.00	-24.63	peak	
5		343.3100	31.70	-11.44	20.26	46.00	-25.74	peak	
6		665.3500	19.99	-5.34	14.65	46.00	-31.35	peak	

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25℃	Relative Humidity:	58 %
Test Voltage :	AC 120V/60Hz	Phase:	Horizontal
Test Mode :	TX A Mode 5745MHz		



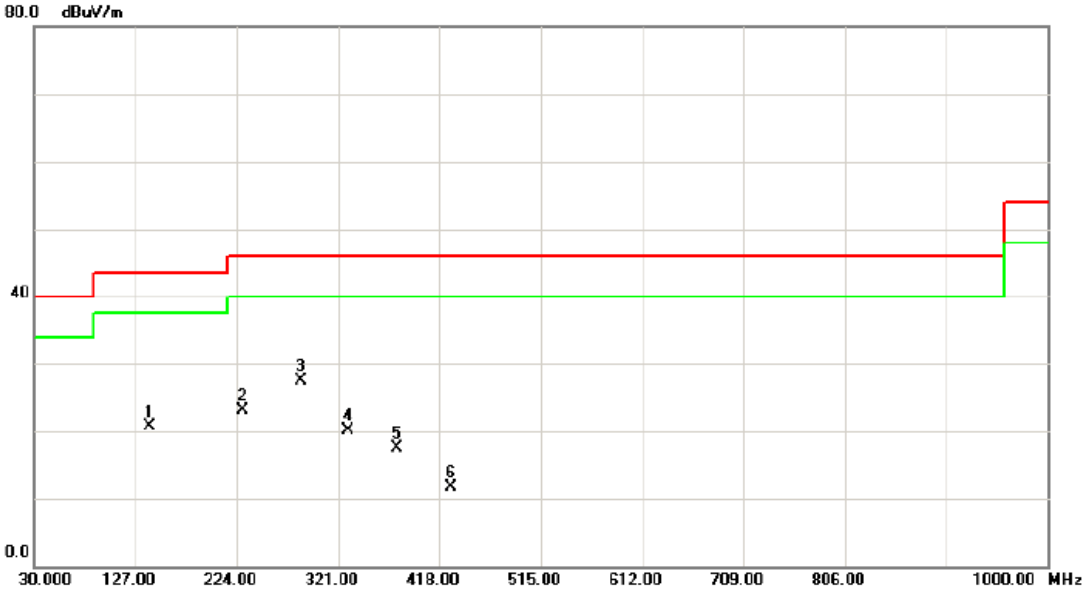
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		146.4000	32.40	-13.75	18.65	43.50	-24.85	peak	
2		231.7600	37.23	-14.53	22.70	46.00	-23.30	peak	
3	*	284.1400	40.92	-12.24	28.68	46.00	-17.32	peak	
4		335.5500	31.57	-11.40	20.17	46.00	-25.83	peak	
5		374.3500	27.91	-10.69	17.22	46.00	-28.78	peak	
6		682.8100	20.04	-5.06	14.98	46.00	-31.02	peak	

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25℃	Relative Humidity:	58 %
Test Voltage :	AC 120V/60Hz	Phase:	Vertical
Test Mode :	TX A Mode 5785MHz		



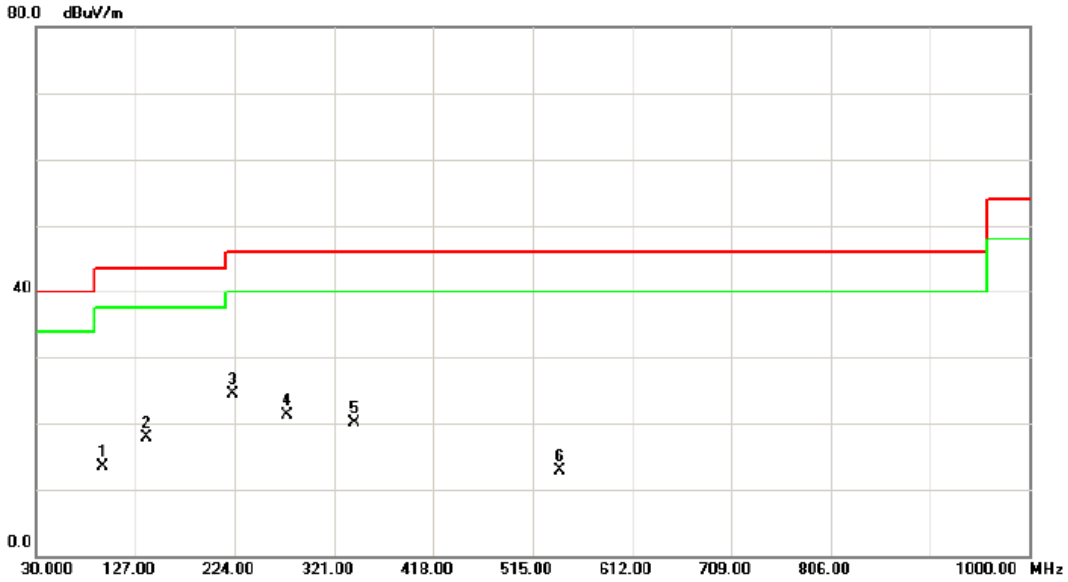
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	190.0500	35.87	-14.31	21.56	43.50	-21.94	peak	
2		231.7600	37.65	-14.53	23.12	46.00	-22.88	peak	
3		273.4700	35.86	-13.42	22.44	46.00	-23.56	peak	
4		336.5200	31.86	-11.40	20.46	46.00	-25.54	peak	
5		445.1600	22.75	-9.01	13.74	46.00	-32.26	peak	
6		555.7400	20.86	-7.70	13.16	46.00	-32.84	peak	

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25℃	Relative Humidity:	58 %
Test Voltage :	AC 120V/60Hz	Phase:	Horizontal
Test Mode :	TX A Mode 5785MHz		



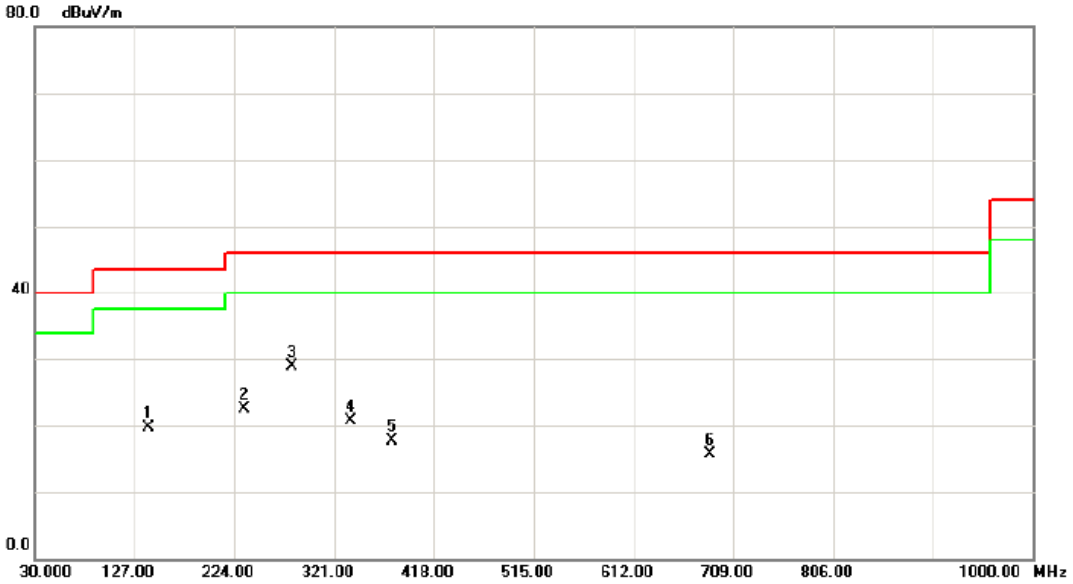
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		140.5800	34.57	-13.78	20.79	43.50	-22.71	peak	
2		229.8200	37.54	-14.49	23.05	46.00	-22.95	peak	
3	*	285.1100	39.66	-12.16	27.50	46.00	-18.50	peak	
4		330.7000	31.55	-11.37	20.18	46.00	-25.82	peak	
5		377.2600	28.13	-10.60	17.53	46.00	-28.47	peak	
6		428.6700	21.12	-9.32	11.80	46.00	-34.20	peak	

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25℃	Relative Humidity:	58 %
Test Voltage :	AC 120V/60Hz	Phase:	Vertical
Test Mode :	TX A Mode 5825MHz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		94.9900	30.84	-17.27	13.57	43.50	-29.93	peak	
2		137.6700	31.52	-13.67	17.85	43.50	-25.65	peak	
3	*	222.0600	39.37	-14.91	24.46	46.00	-21.54	peak	
4		274.4400	34.53	-13.29	21.24	46.00	-24.76	peak	
5		341.3700	31.48	-11.42	20.06	46.00	-25.94	peak	
6		541.1900	21.03	-8.12	12.91	46.00	-33.09	peak	

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25℃	Relative Humidity:	58 %
Test Voltage :	AC 120V/60Hz	Phase:	Horizontal
Test Mode :	TX A Mode 5825MHz		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		140.5800	33.50	-13.78	19.72	43.50	-23.78	peak	
2		233.7000	37.12	-14.61	22.51	46.00	-23.49	peak	
3	*	280.2600	41.38	-12.52	28.86	46.00	-17.14	peak	
4		337.4900	32.12	-11.41	20.71	46.00	-25.29	peak	
5		377.2600	28.38	-10.60	17.78	46.00	-28.22	peak	
6		686.6900	20.66	-5.00	15.66	46.00	-30.34	peak	

4.2.9 TEST RESULTS (ABOVE 1000 MHZ)

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode 5745MHz		

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)	
#5725.00	V	31.83	17.53	44.34	76.17	61.87	88.47	79.72	X/E
5740.45	**V**	**64.07**	**55.32**	**44.40**	**108.47**	**99.72**			**X/F**
11490.00	V	37.73	29.44	18.47	56.20	47.91	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

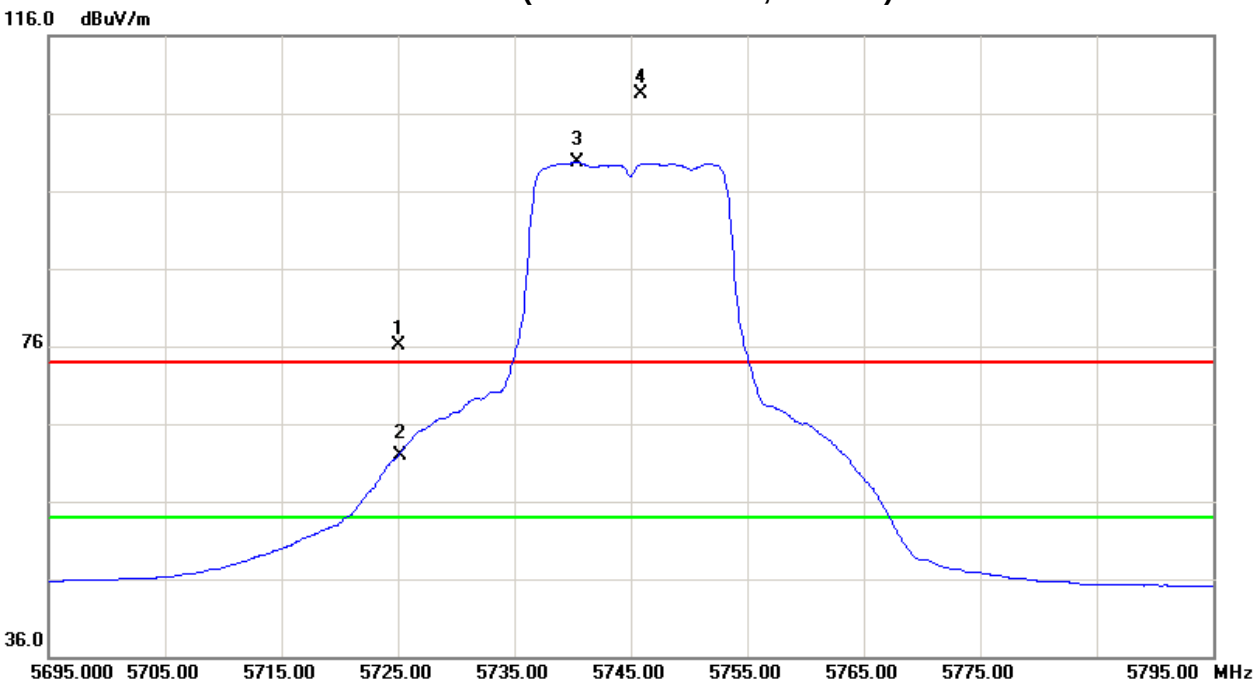
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

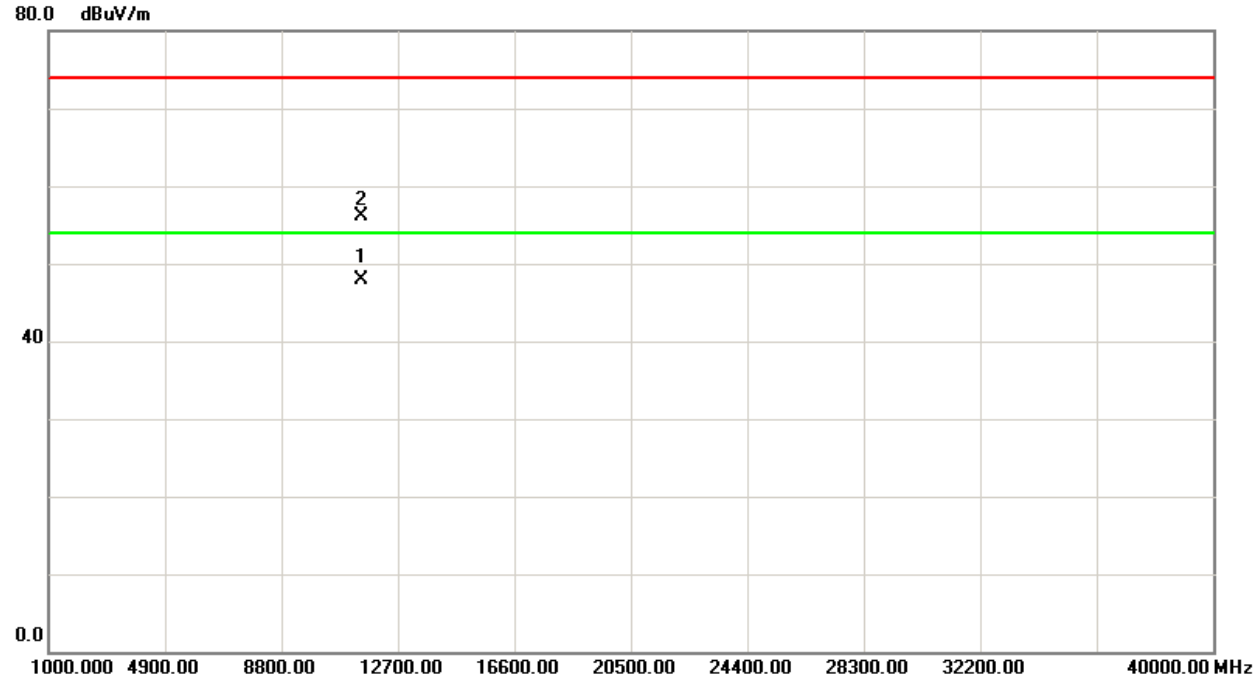
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH149 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode 5745MHz		

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)	
# 5725.00	H	16.78	2.67	44.34	61.12	47.01	75.37	60.91	X/E
5739.70	**H**	**50.97**	**36.51**	**44.40**	**95.37**	**80.91**			**X/F**
11487.90	H	37.16	29.09	18.47	55.63	47.56	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.

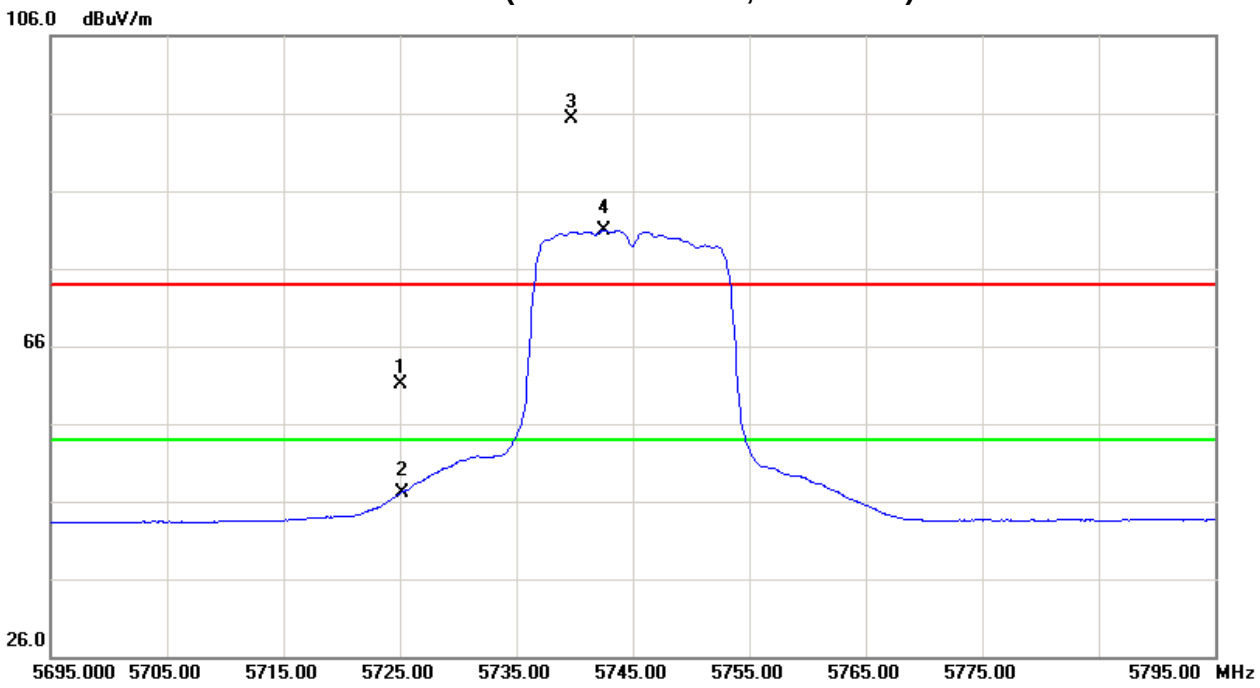
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

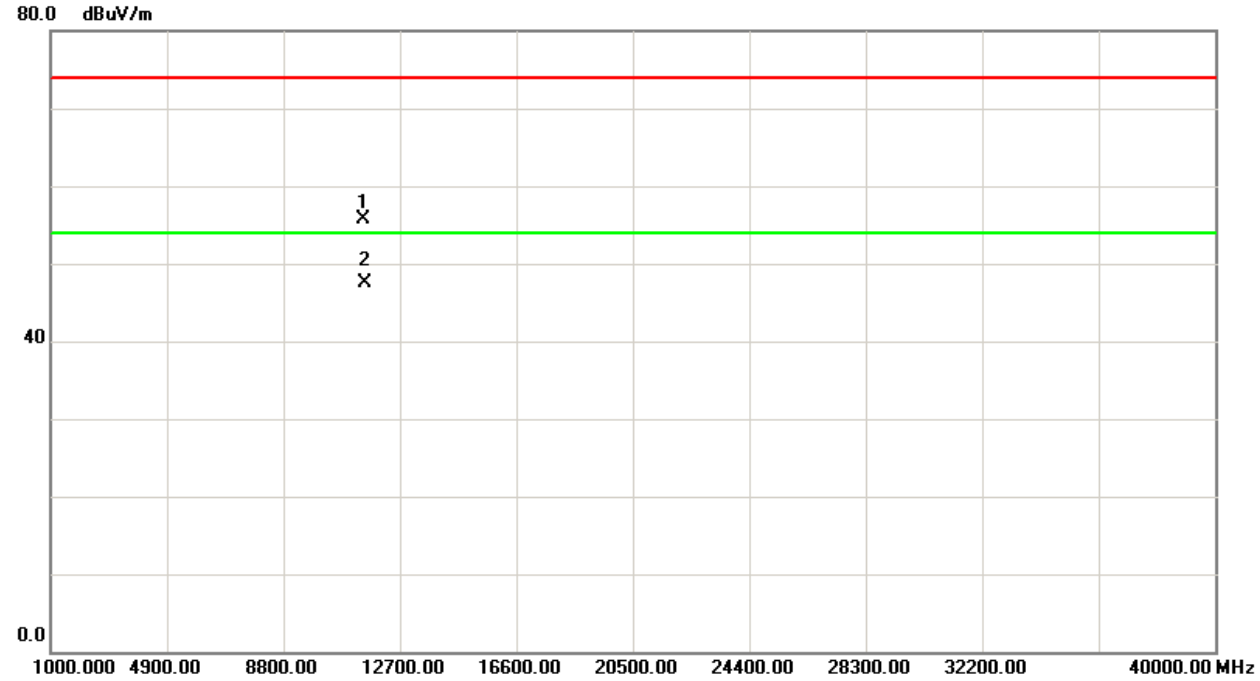
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH149 (Above 1000 MHz, Horizontal)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode 5785MHz		

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)	
5788.20	**V**	**63.68**	**54.59**	**44.54**	**108.22**	**99.13**			**X/F**
11572.90	V	36.89	28.78	18.67	55.56	47.45	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 。

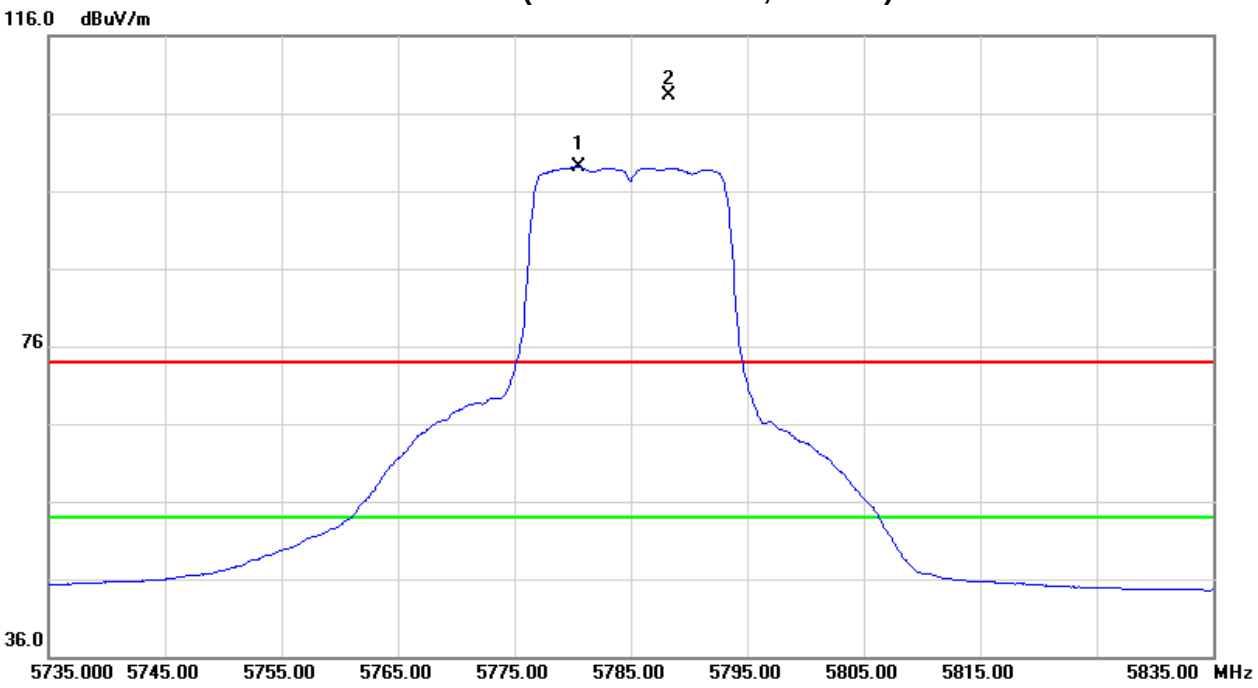
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

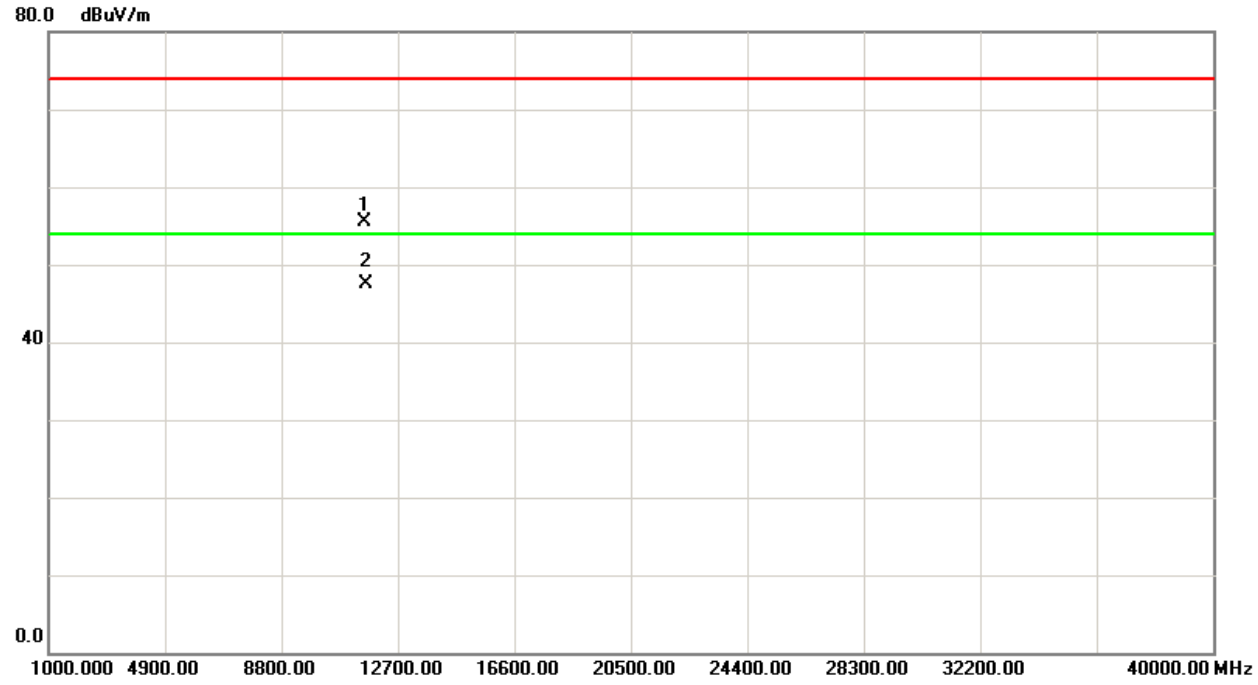
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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 CH157 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode 5785MHz		

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)	
5788.20	**H**	**48.87**	**40.36**	**44.55**	**93.42**	**84.91**			**X/F**
11572.20	H	36.05	28.12	18.67	54.72	46.79	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 。

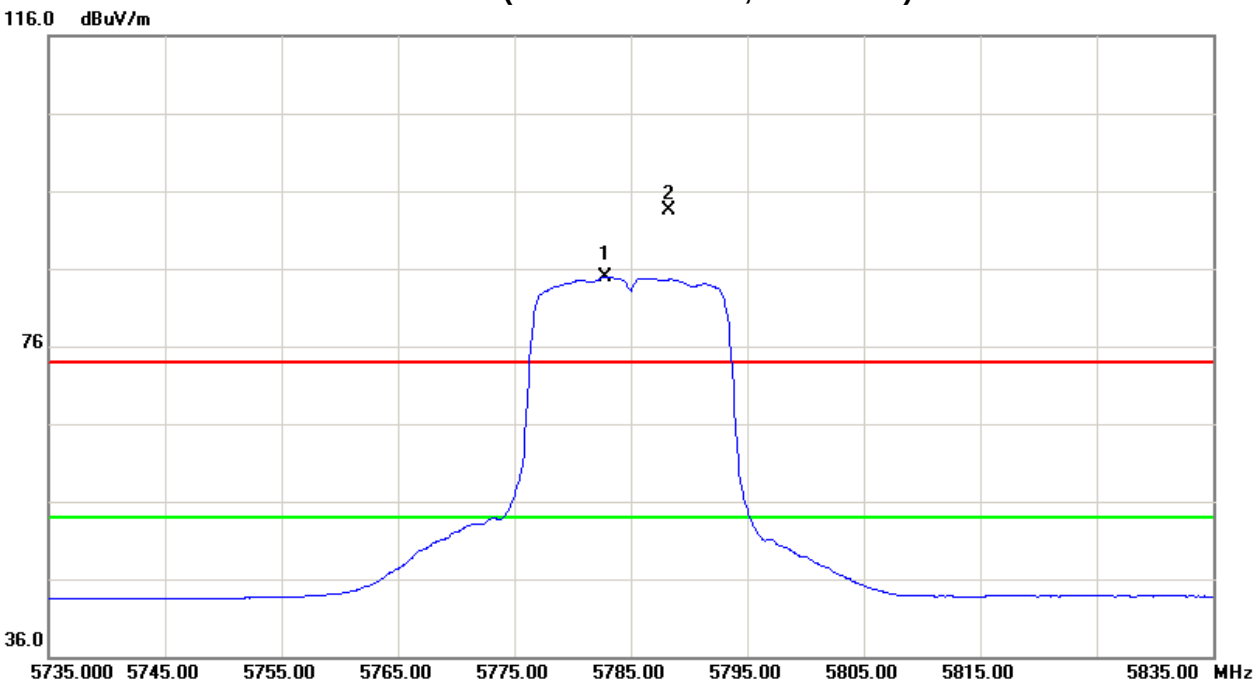
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

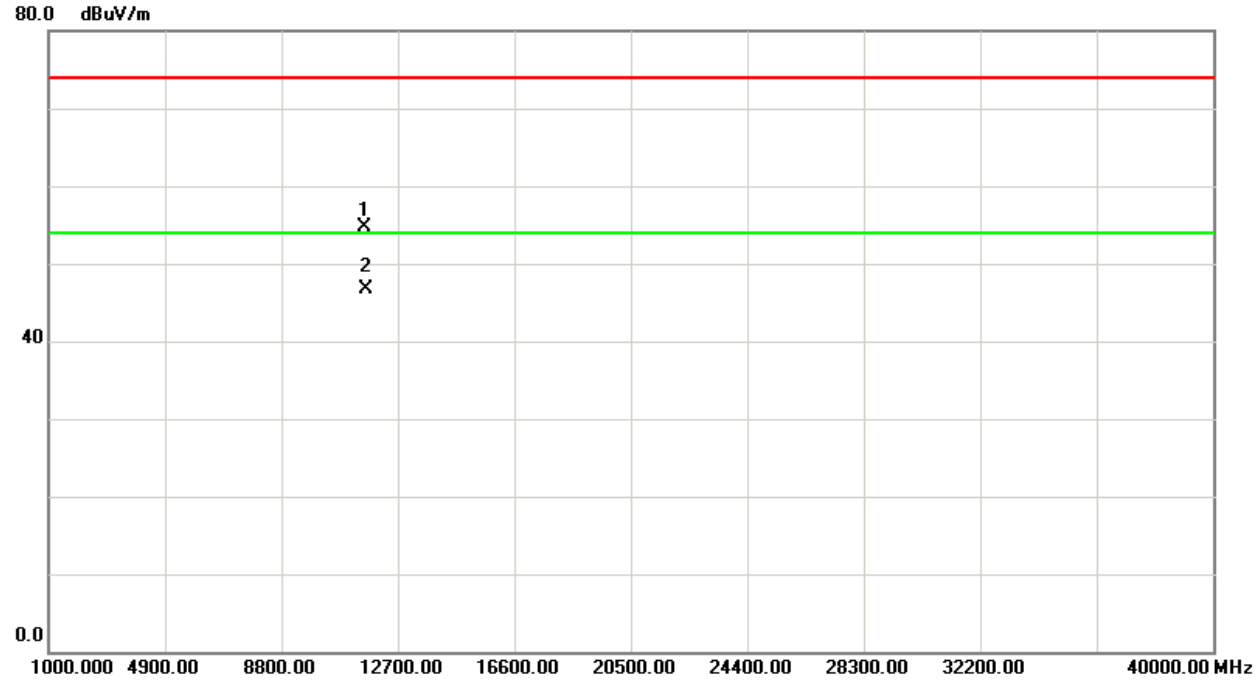
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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 CH157 (Above 1000 MHz, Horizontal)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode 5825MHz		

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)	
5825.60	**V**	**62.33**	**53.88**	**44.67**	**107.00**	**98.55**			**X/F**
#5850.00	V	10.18	1.81	44.78	54.96	46.59	87.00	78.55	X/E
11653.20	V	36.05	28.10	18.87	54.92	46.97	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.

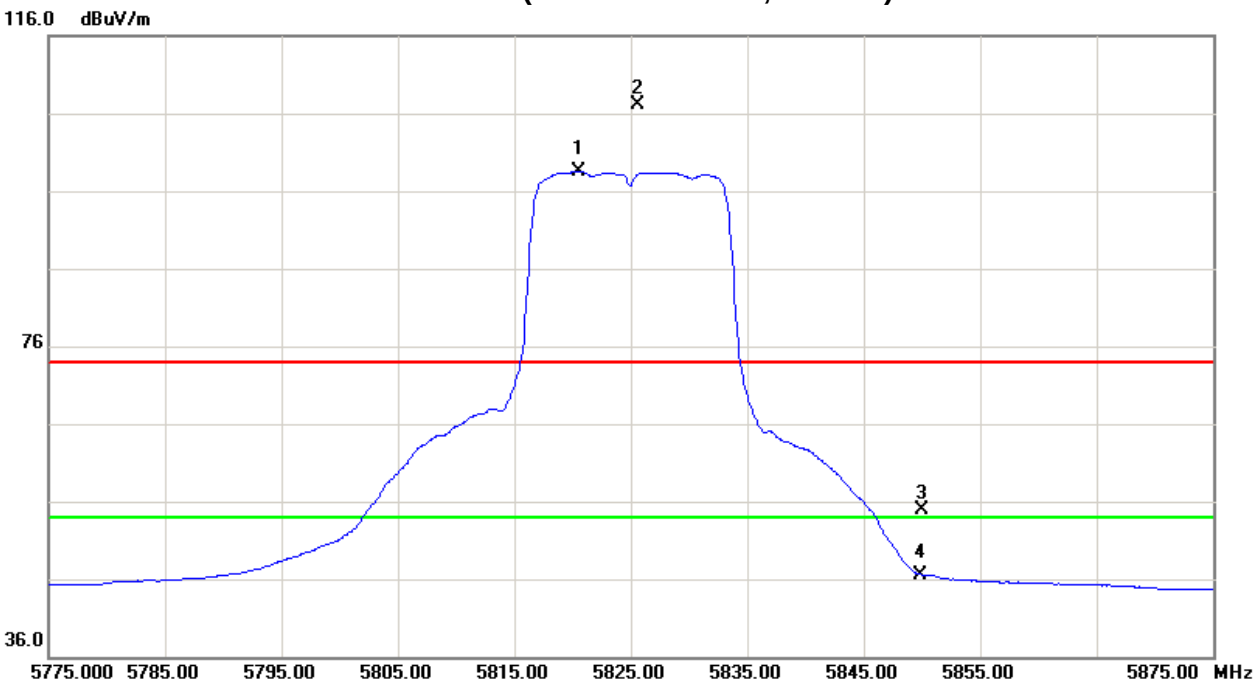
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

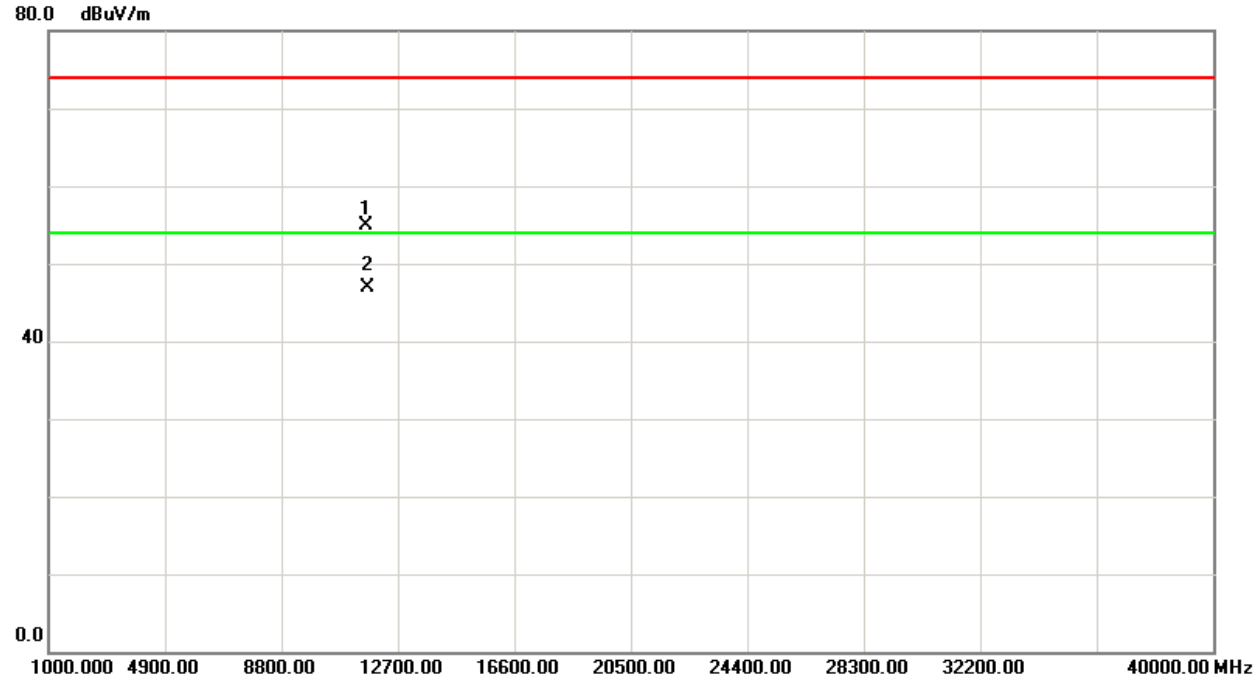
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH165 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode 5825MHz		

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)	
5825.80	**H**	**48.69**	**40.18**	**44.69**	**93.38**	**84.87**			**X/F**
#5850.00	H	7.89	-0.82	44.78	52.67	43.96	73.38	64.87	X/E
11652.80	H	35.20	27.46	18.87	54.07	46.33	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.

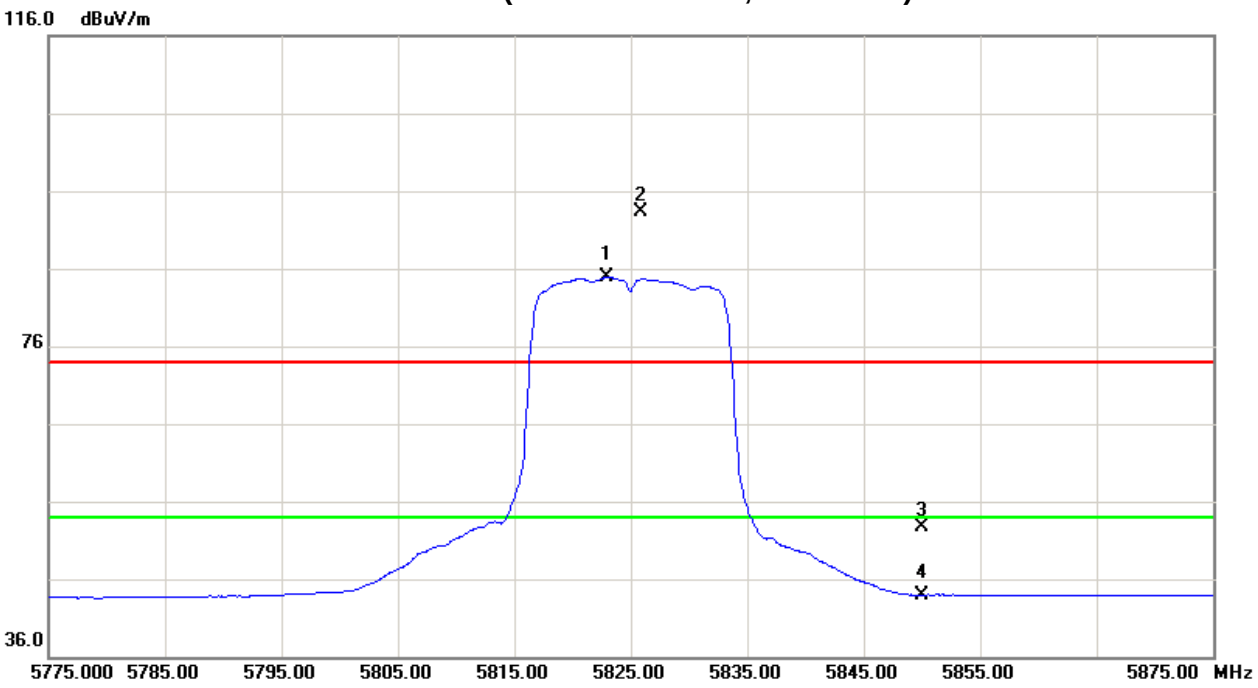
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

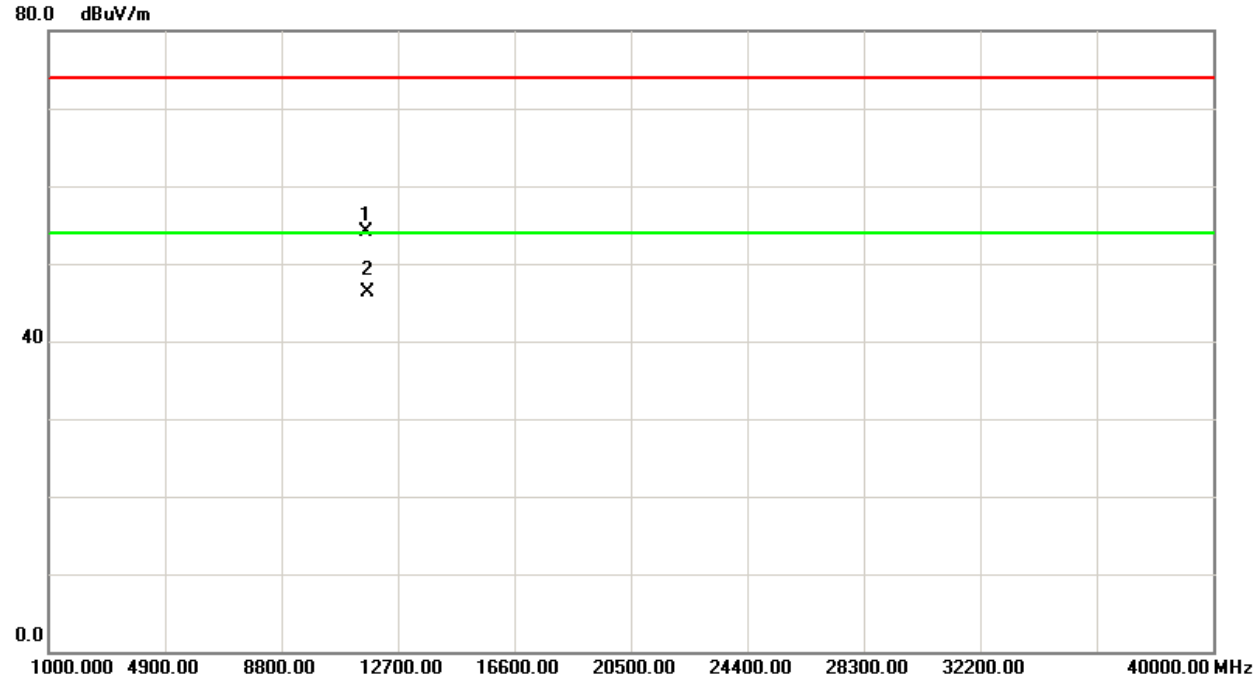
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH165 (Above 1000 MHz, Horizontal)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode 5745MHz		

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)	
# 5725.00	V	6.00	9.78	44.34	50.34	54.12	86.02	76.82	X/E
5747.80	**V**	**61.62**	**52.42**	**44.40**	**106.02**	**96.82**			**X/F**
11493.60	V	36.74	28.30	18.47	55.21	46.77	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.

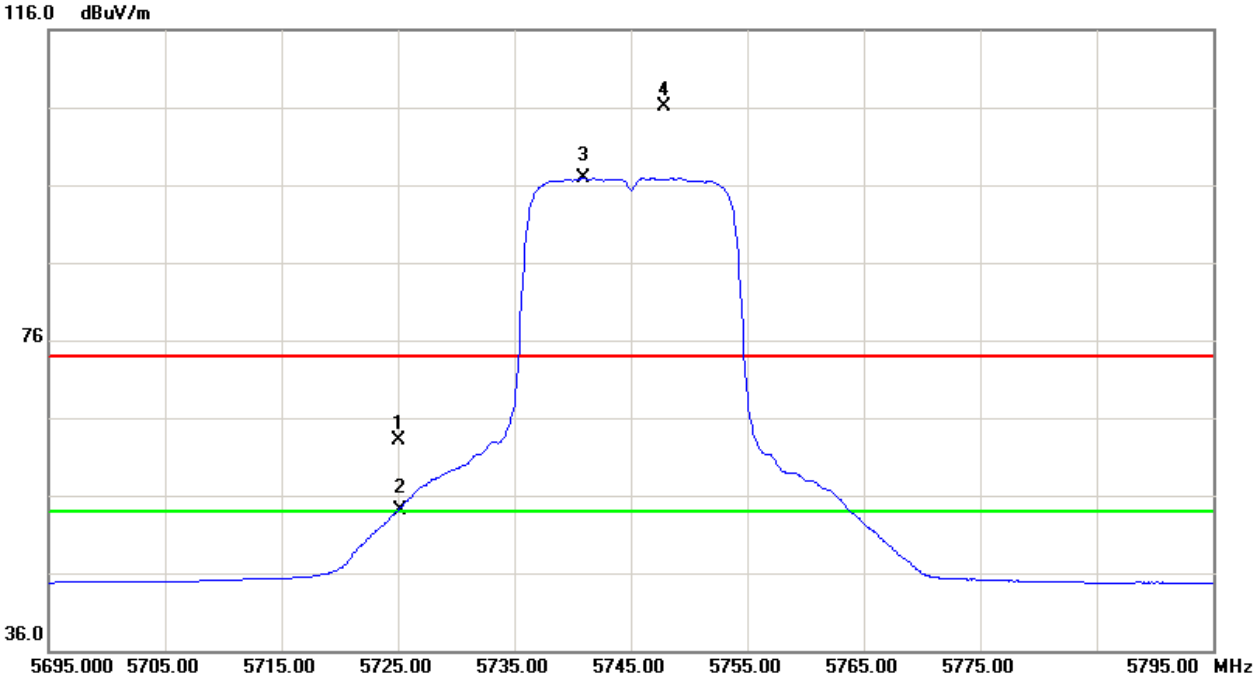
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

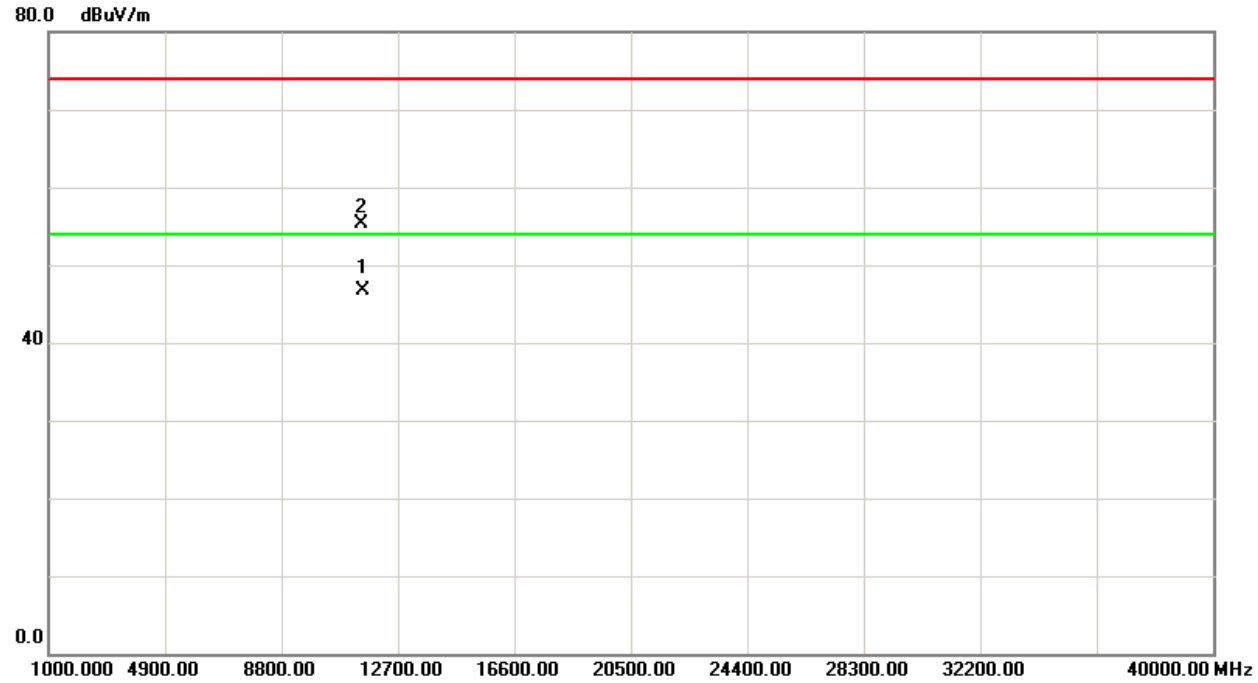
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH149 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode 5745MHz		

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)	
# 5725.00	H	8.49	-0.27	44.34	52.83	44.07	68.77	59.63	X/E
5739.50	**H**	**44.36**	**35.22**	**44.41**	**88.77**	**79.63**			**X/F**
11489.50	H	36.24	28.00	18.47	54.71	46.47	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.

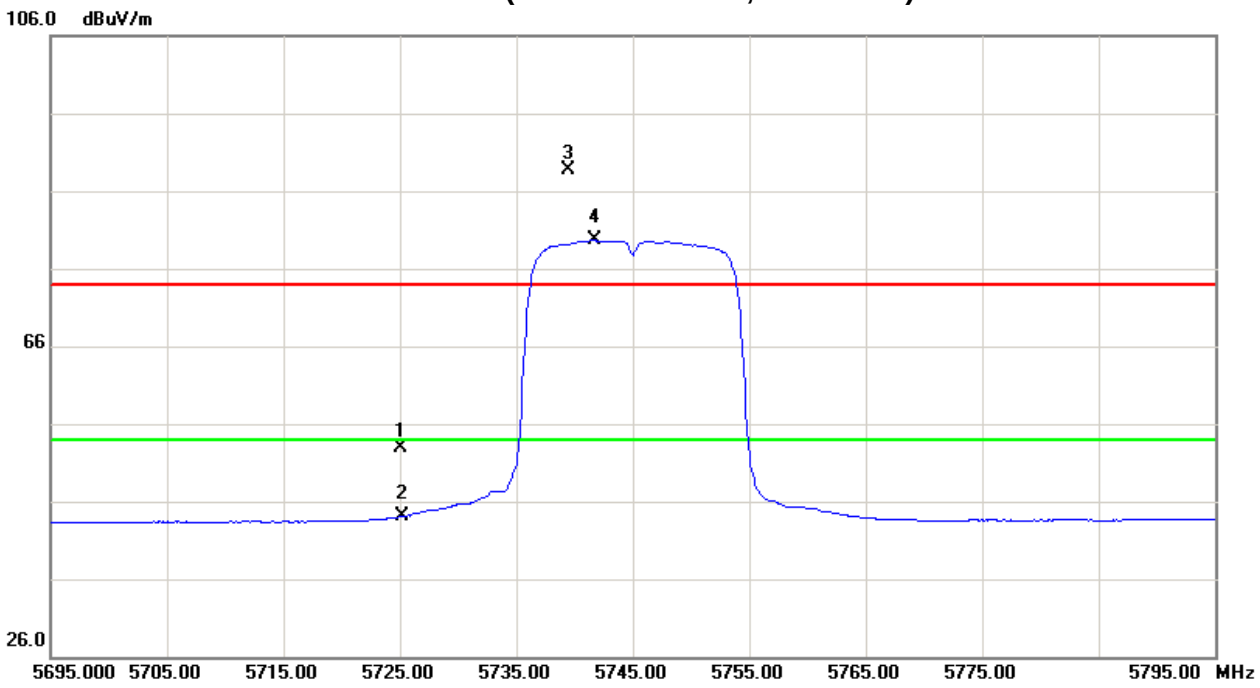
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

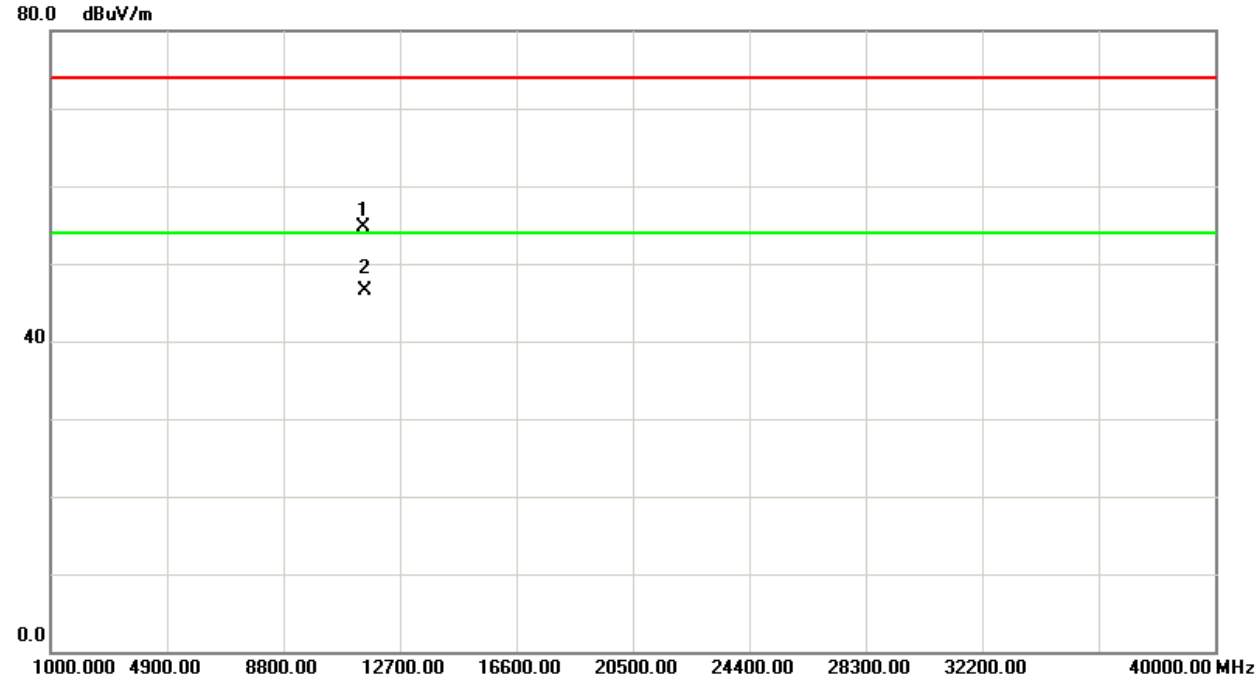
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH149 (Above 1000 MHz, Horizontal)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode 5785MHz		

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)	
5780.60	**V**	**60.78**	**51.95**	**44.54**	**105.32**	**96.49**			**X/F**
11573.20	V	35.45	27.68	18.67	54.12	46.35	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 。

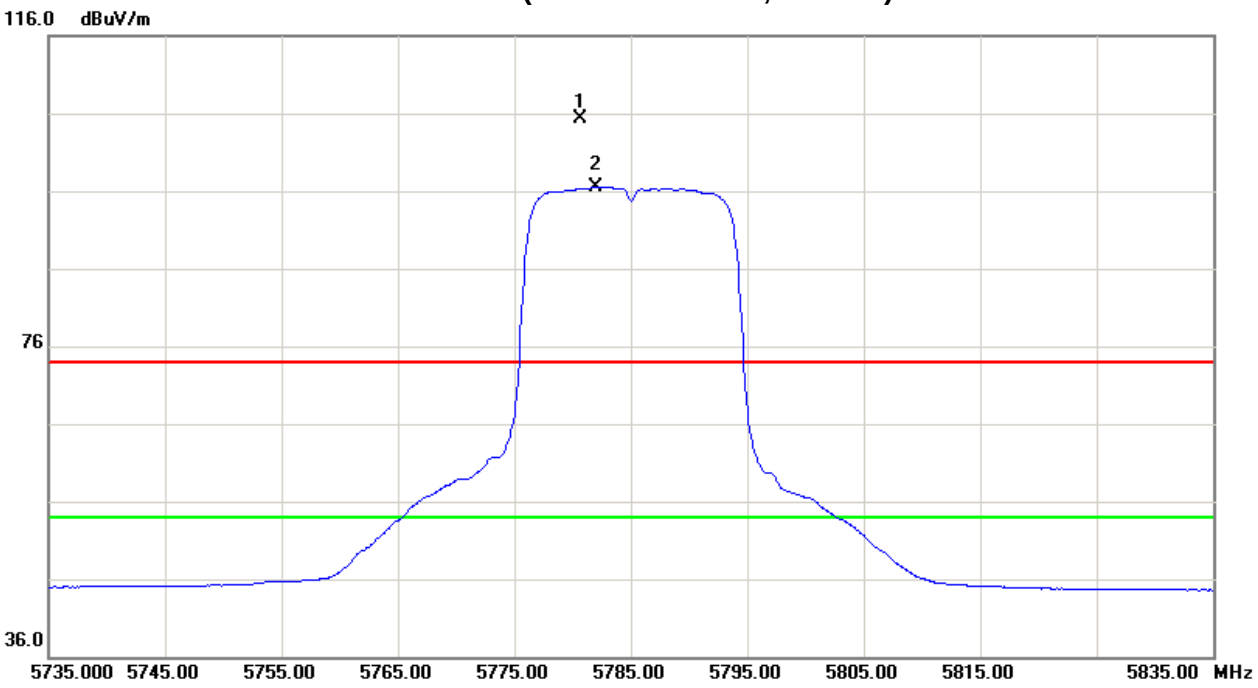
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

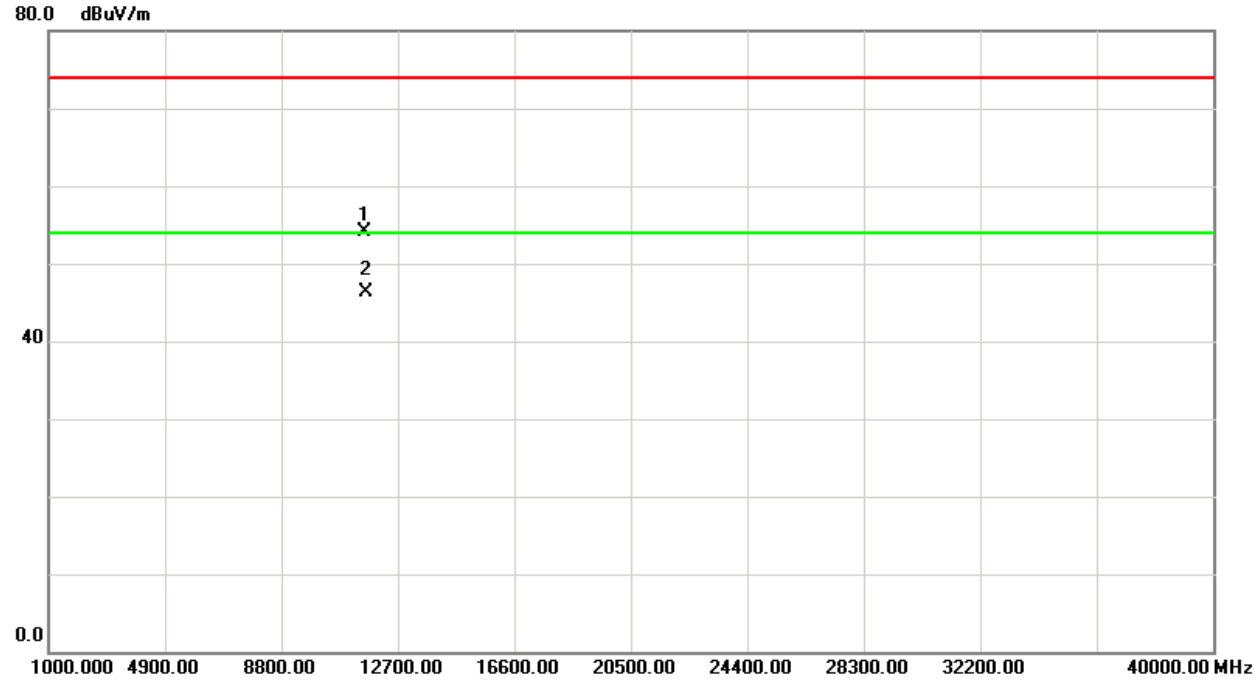
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(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 CH157 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode 5785MHz		

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)	
5786.00	**H**	**44.04**	**36.10**	**44.55**	**88.59**	**80.65**			**X/F**
11574.40	H	35.16	27.06	18.67	53.83	45.73	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

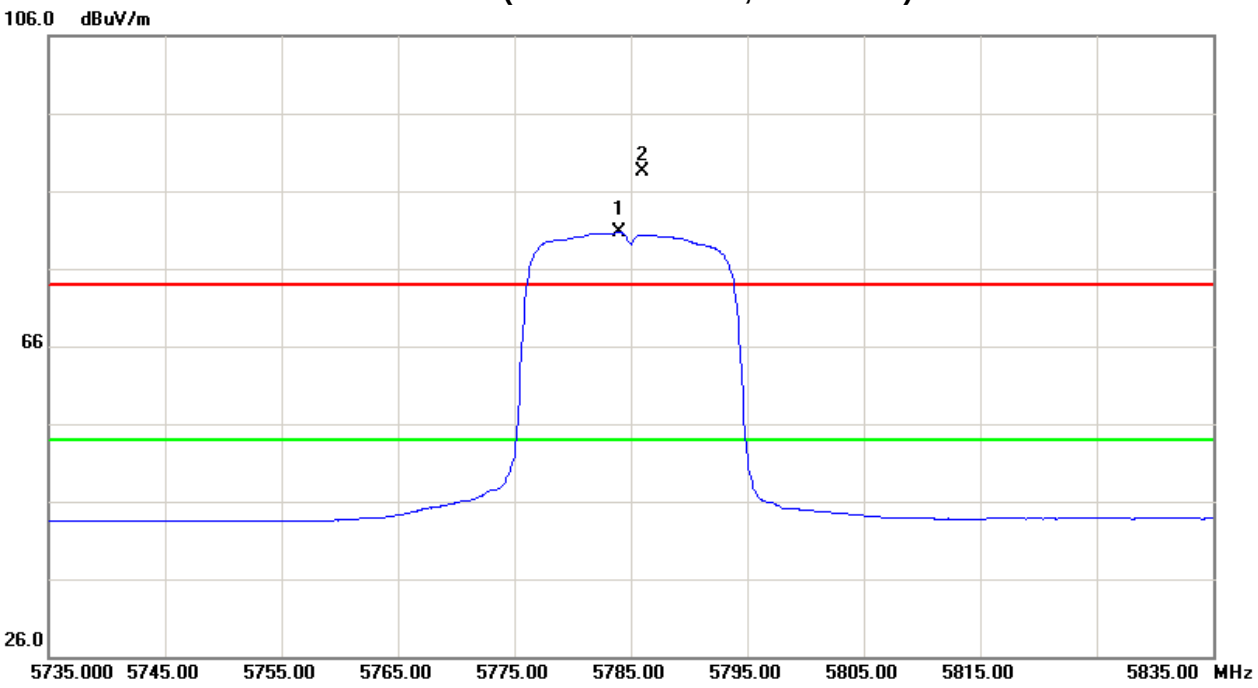
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

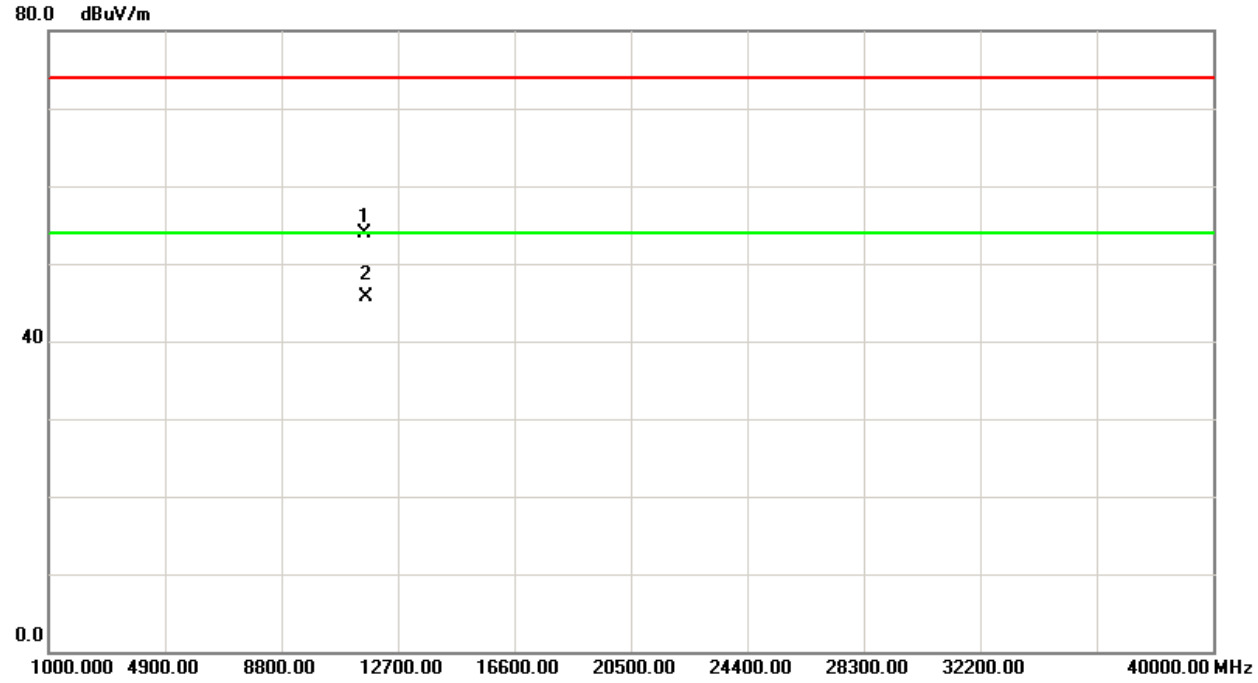
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH157 (Above 1000 MHz, Horizontal)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode 5825MHz		

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)	
5821.70	**V**	**60.97**	**51.89**	**44.69**	**105.66**	**96.58**			**X/F**
#5850.00	V	9.24	1.13	44.78	54.02	45.91	85.66	76.58	X/E
11652.50	V	35.46	27.62	18.87	54.33	46.49	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.

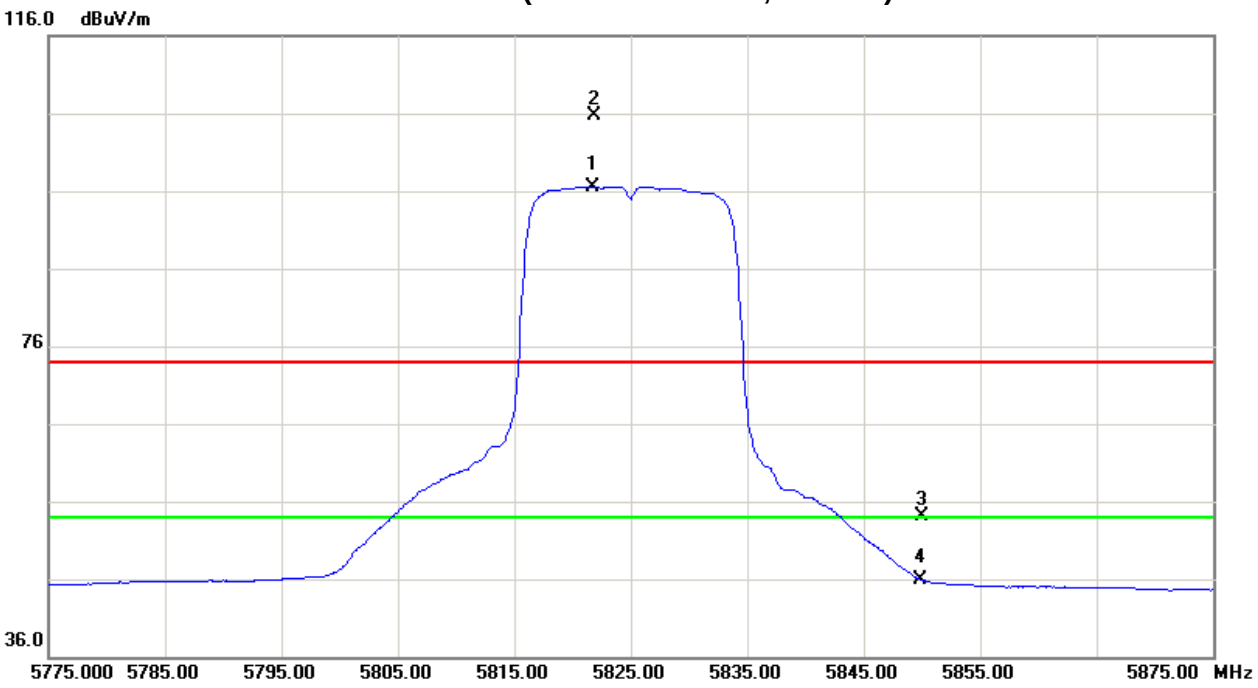
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

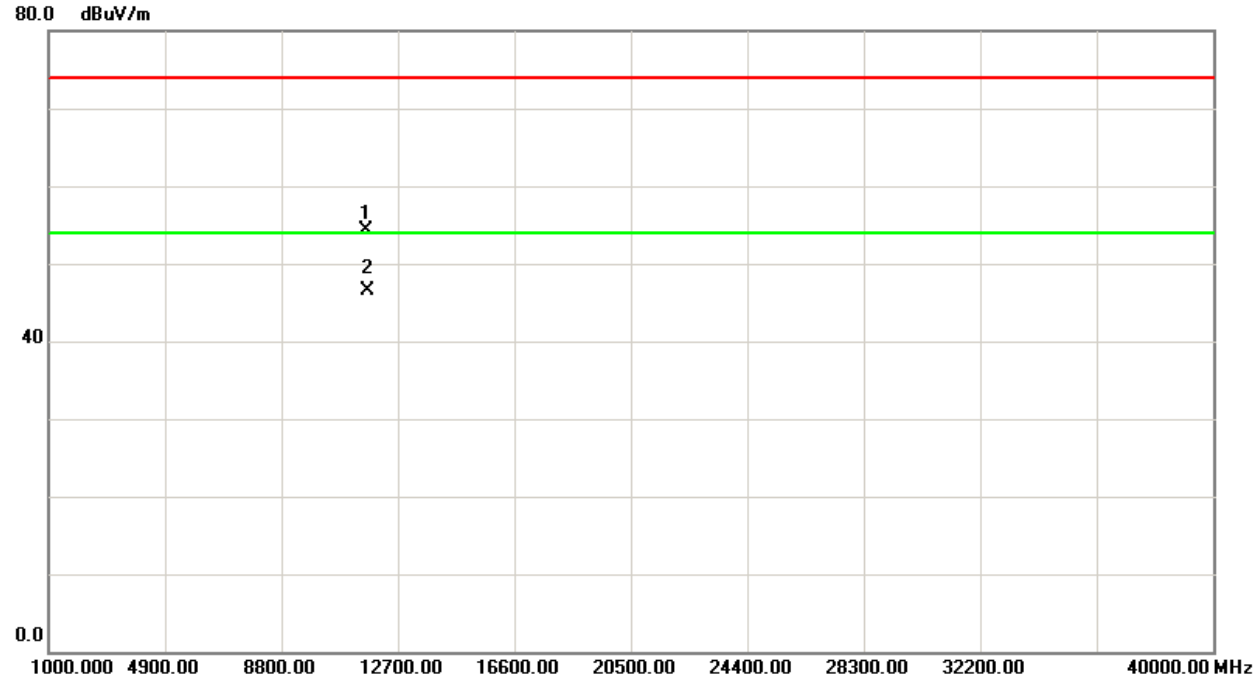
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH165 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode 5825MHz		

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)	
5827.20	**H**	**43.78**	**35.46**	**44.70**	**88.48**	**80.16**			**X/F**
#5850.00	H	8.57	-0.85	44.78	53.35	43.93	68.48	60.16	X/E
11648.50	H	34.26	26.38	18.86	53.12	45.24	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.

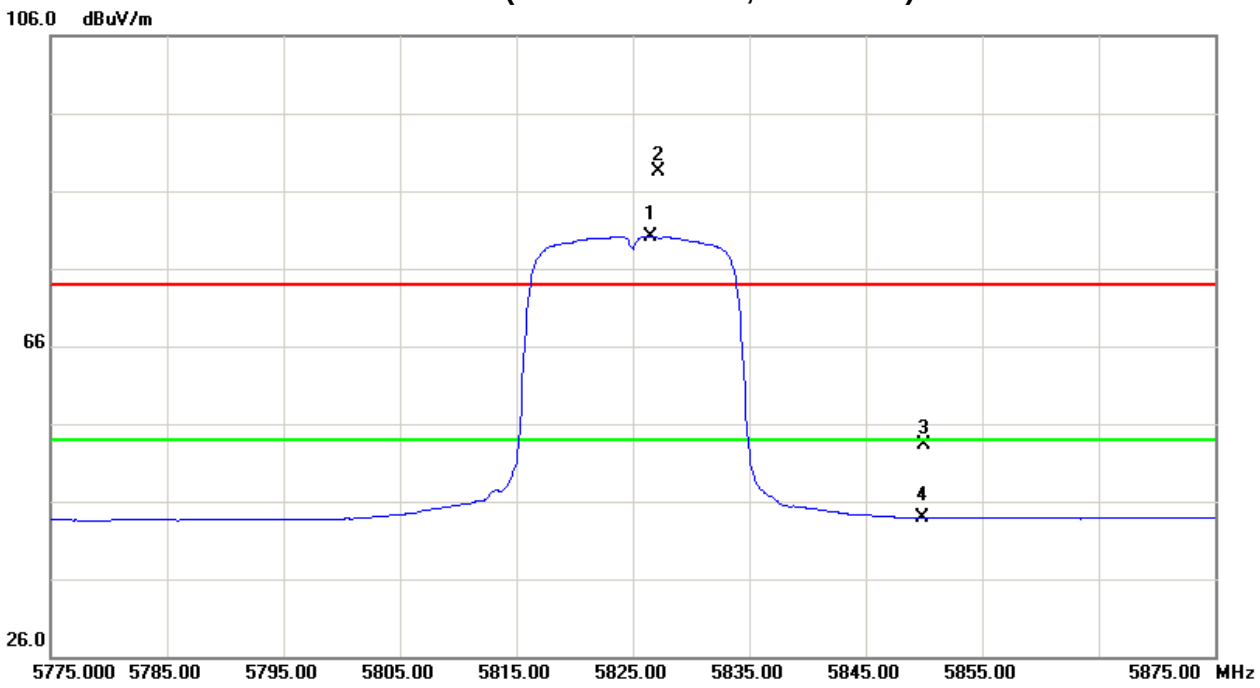
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

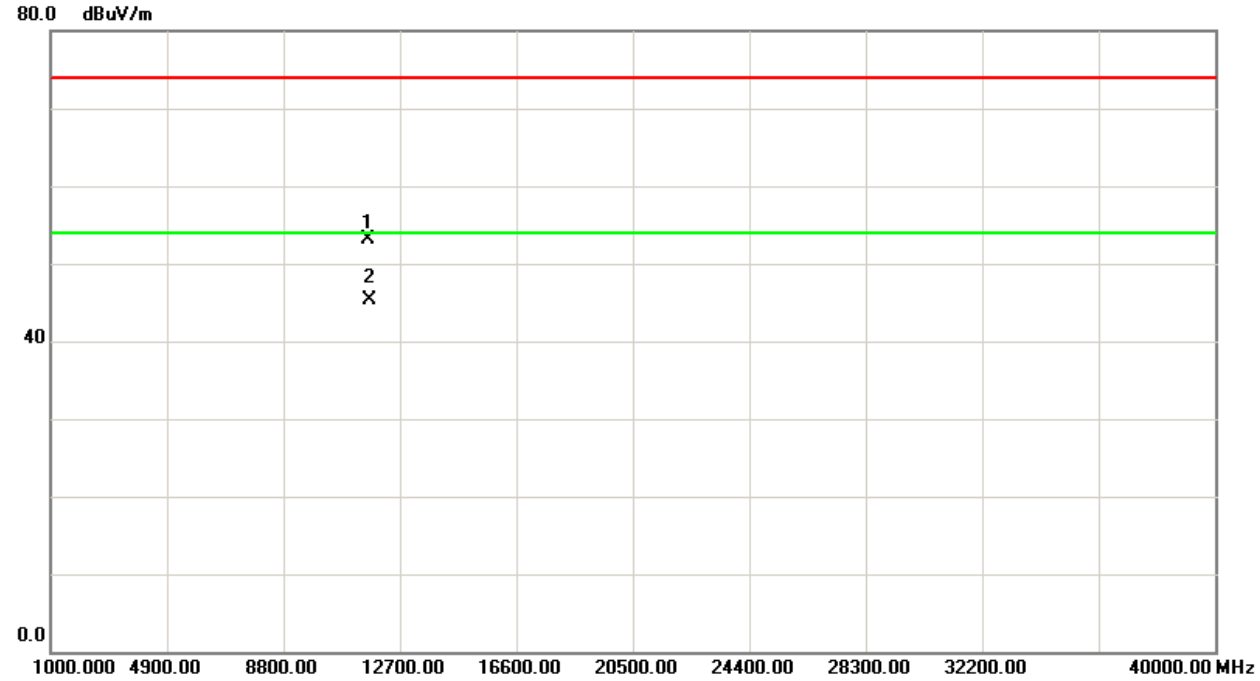
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH165 (Above 1000 MHz, Horizontal)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode 5755MHz		

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)	
# 5725.00	V	20.82	12.37	44.34	65.16	56.71	82.58	73.22	X/E
5743.80	**V**	**58.47**	**49.11**	**44.11**	**102.58**	**93.22**			**X/F**
11513.80	V	34.26	26.17	18.53	52.79	44.70	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

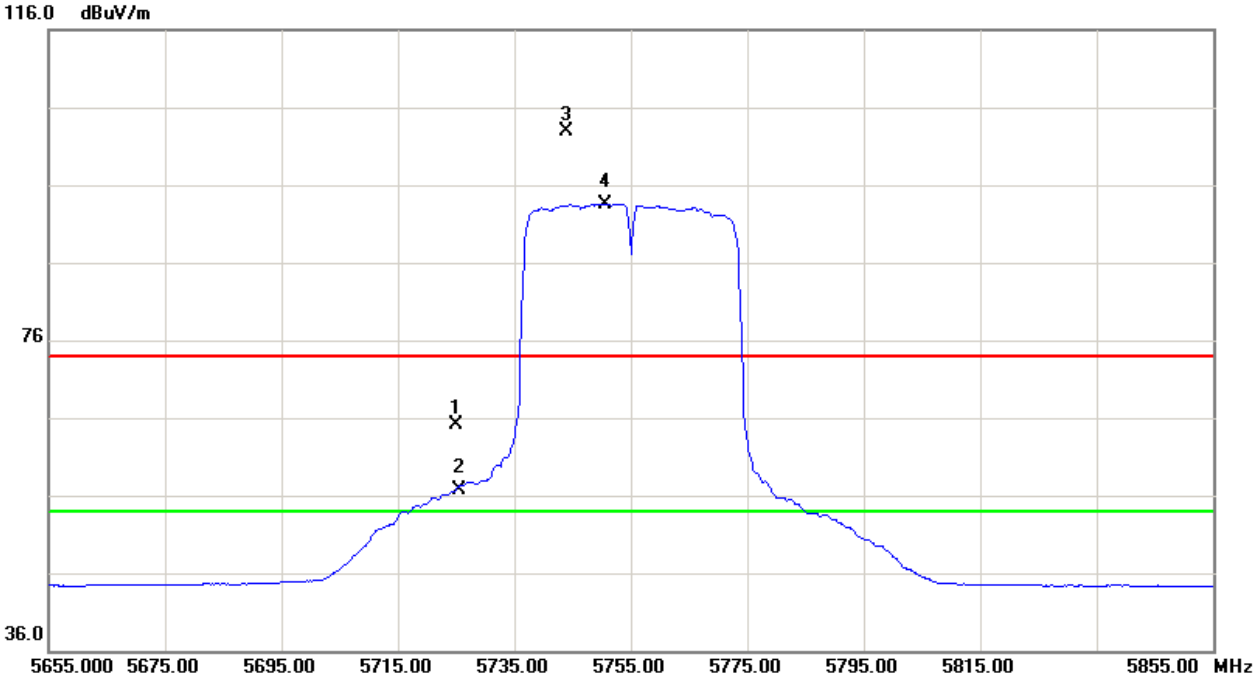
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

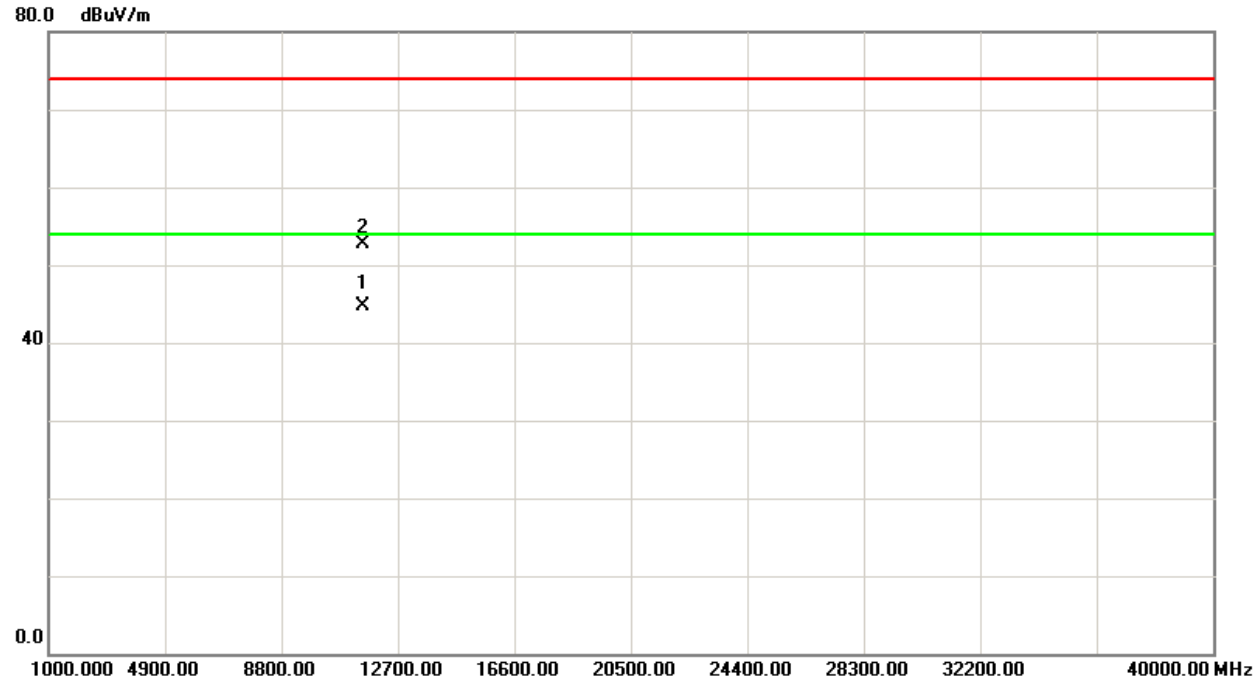
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH151 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode 5755MHz		

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)	
# 5725.00	H	9.34	0.76	44.34	53.68	45.10	66.01	56.97	X/E
5759.00	**H**	**41.60**	**32.56**	**44.41**	**86.01**	**76.97**			**X/F**
11512.50	H	34.20	25.48	18.52	52.72	44.00	74.00	54.00	X/H

Remark:

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

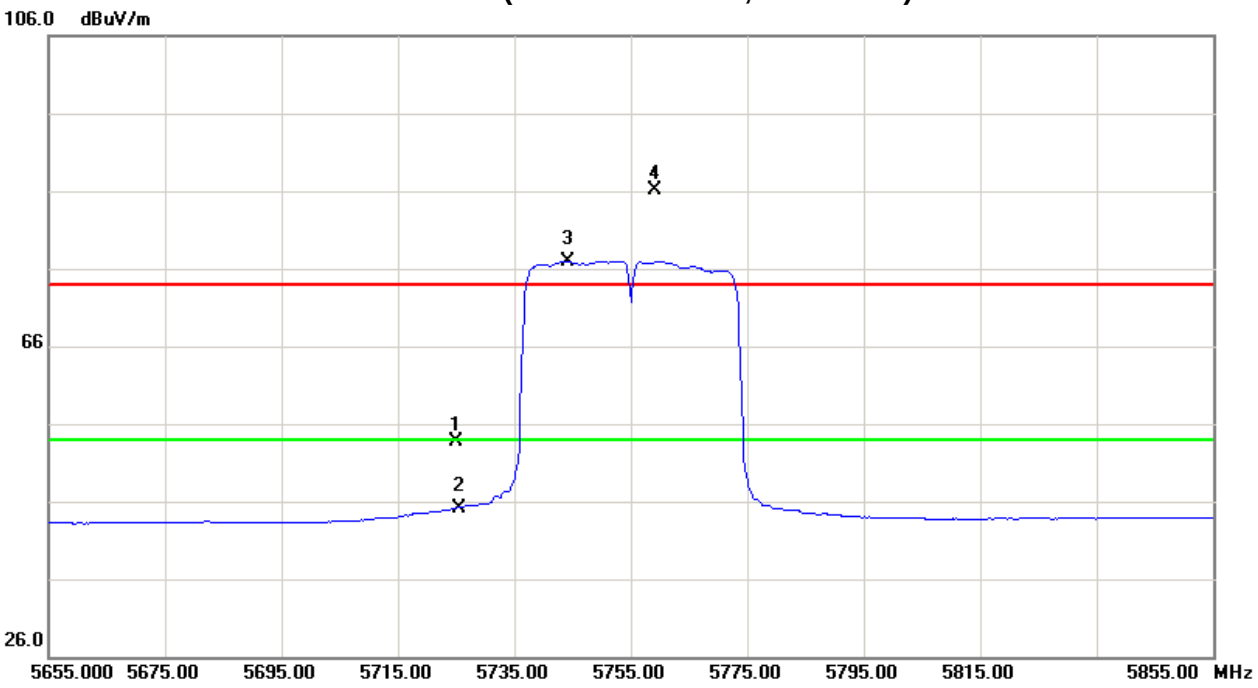
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

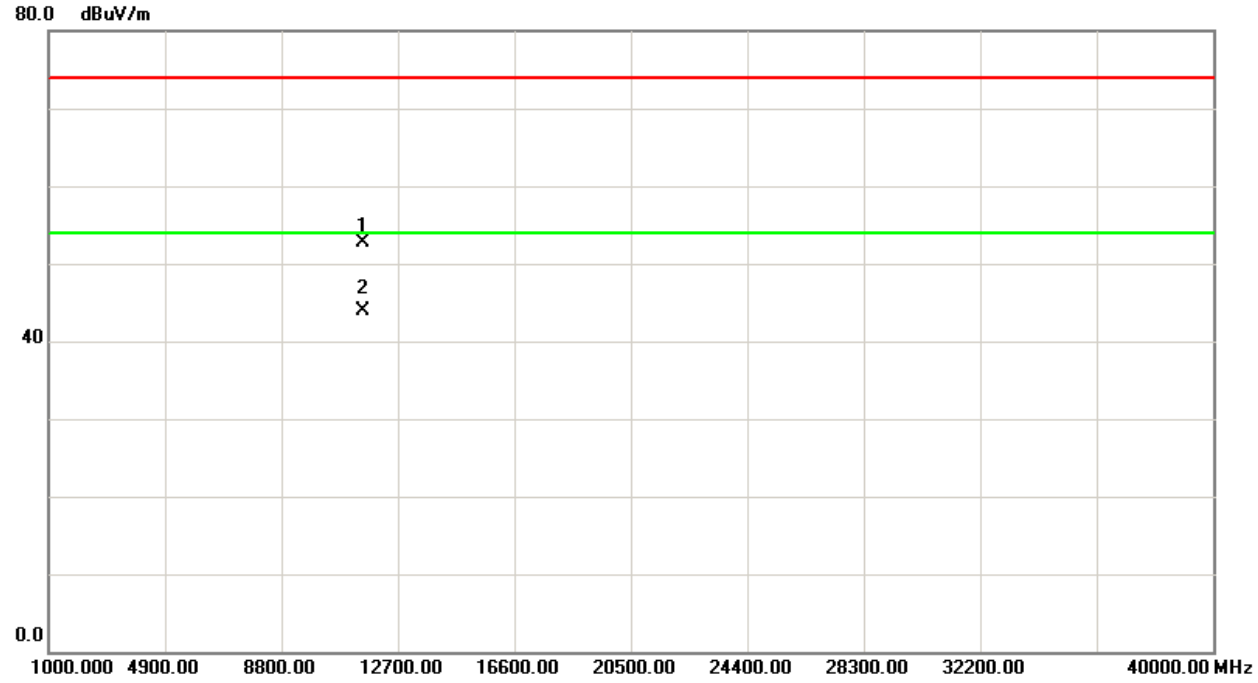
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH151 (Above 1000 MHz, Horizontal)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode 5795MHz		

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)	
5802.60	**V**	**56.87**	**48.50**	**44.55**	**101.42**	**93.05**			**X/F**
#5850.00	V	7.75	-0.17	44.78	44.78	44.61	81.42	73.05	X/E
11576.50	V	33.75	25.19	18.68	52.43	43.87	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.

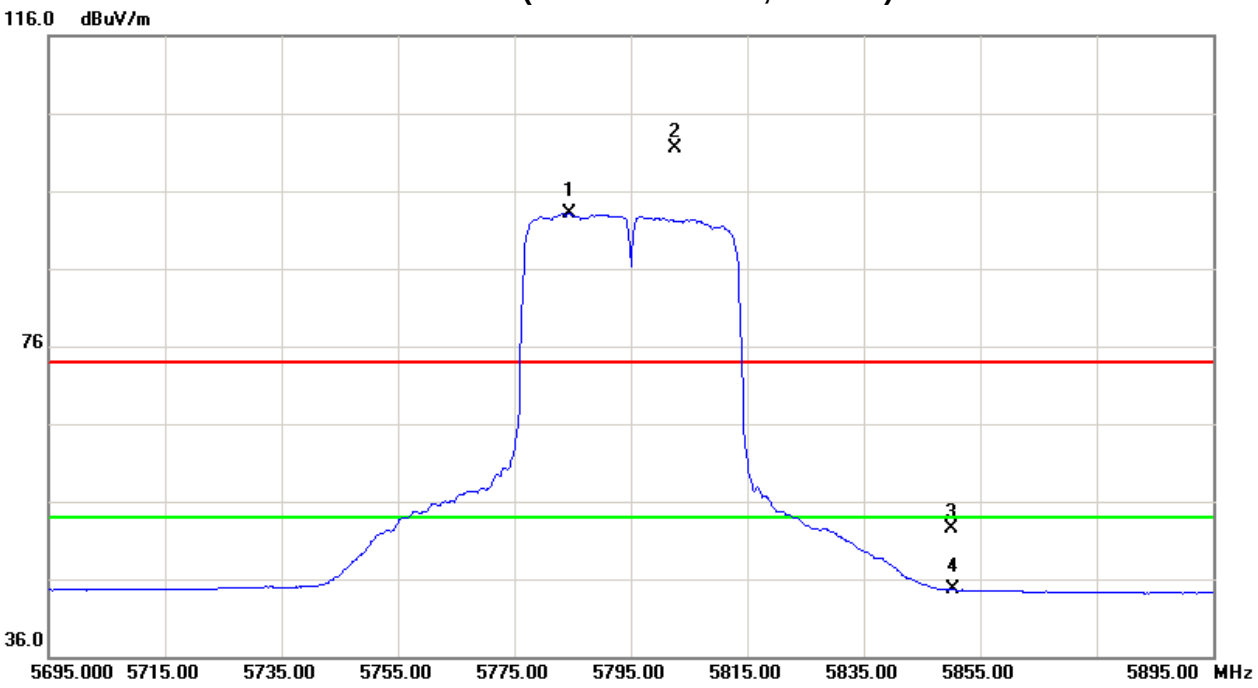
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

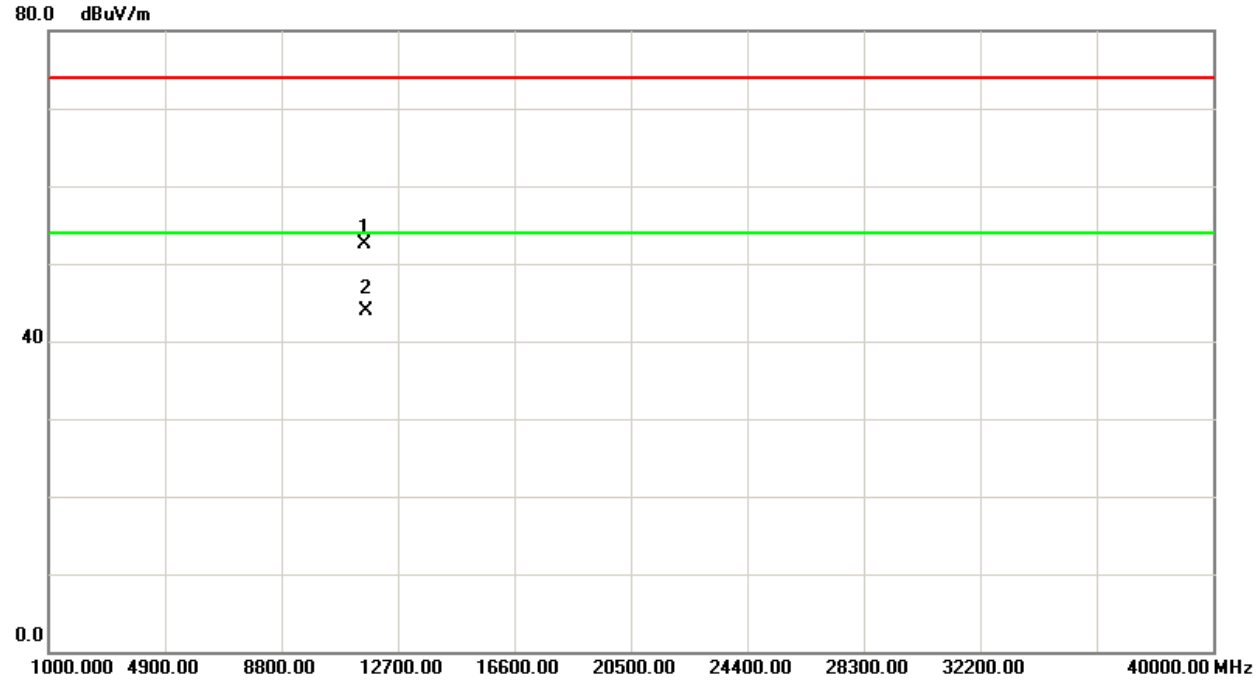
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH159 (Above 1000 MHz, Vertical)





EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode 5795MHz		

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)	
5806.80	**H**	**36.61**	**31.18**	**44.55**	**81.16**	**75.73**			**X/F**
#5850.00	H	7.66	-0.91	44.78	52.44	43.87	61.16	55.73	X/E
11592.50	H	33.48	25.12	18.72	52.20	43.84	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.

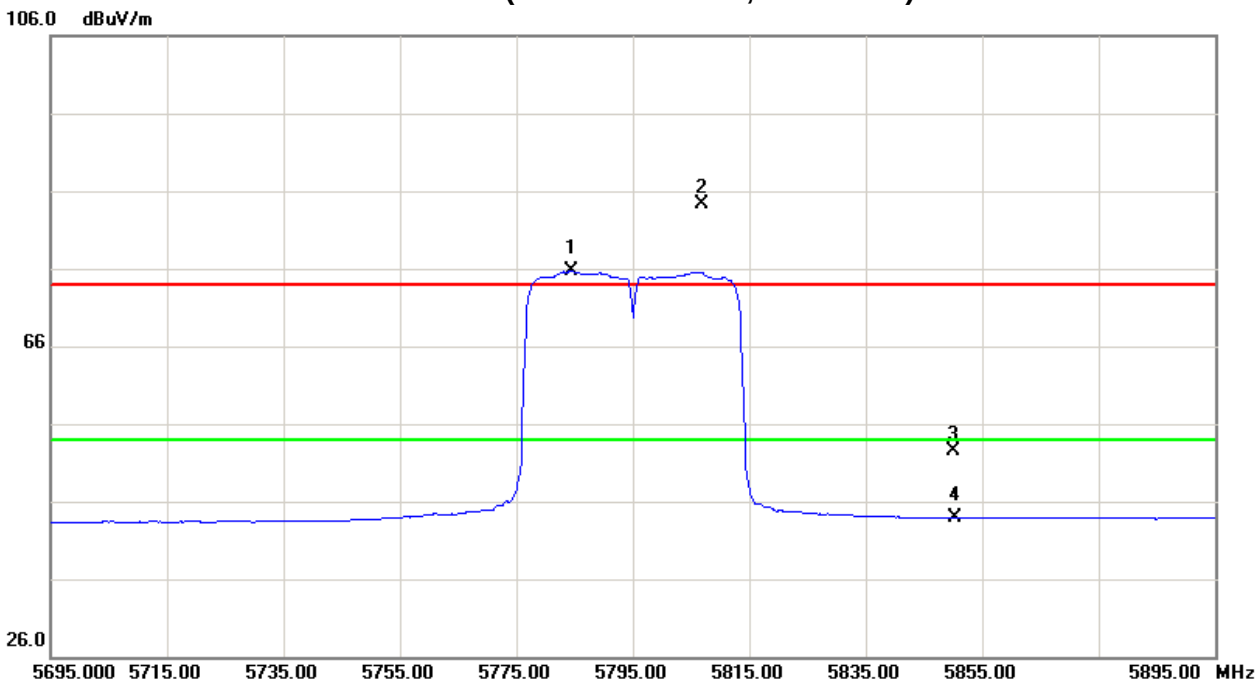
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

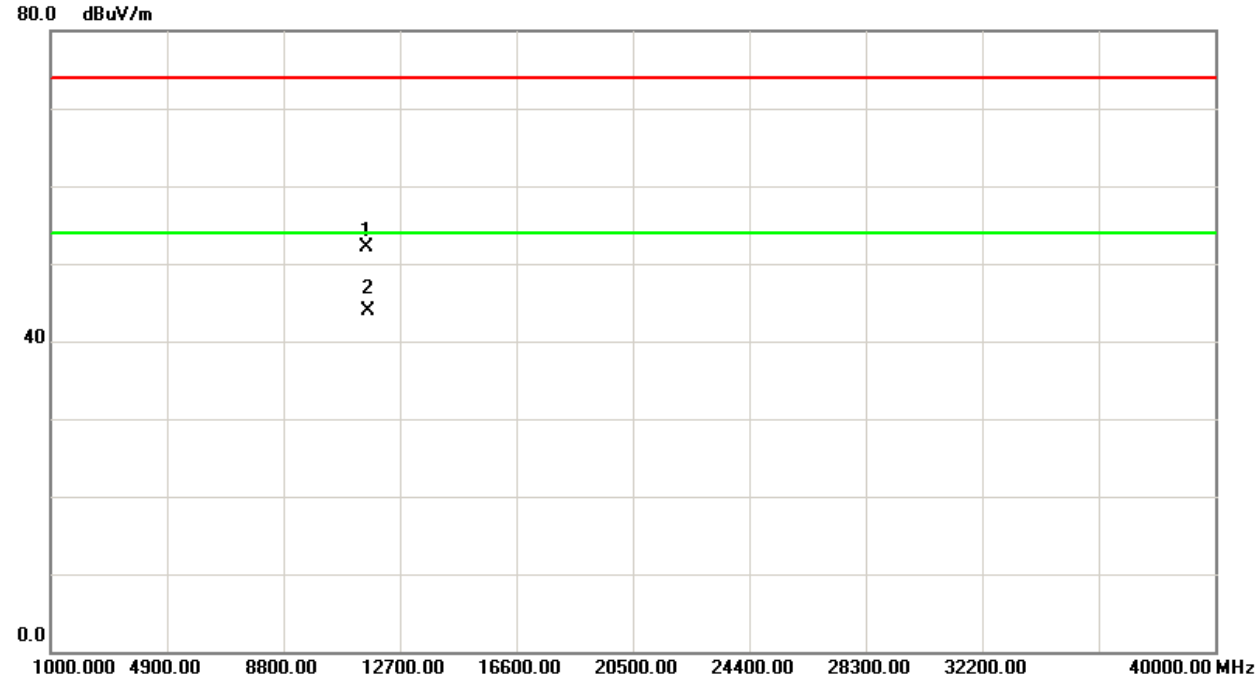
(6) EUT Orthogonal Axis:
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(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

(8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB

TX CH159 (Above 1000 MHz, Horizontal)





5. BANDWIDTH TEST

5.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	N/A	5725 - 5825	PASS

5.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 16, 2013

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

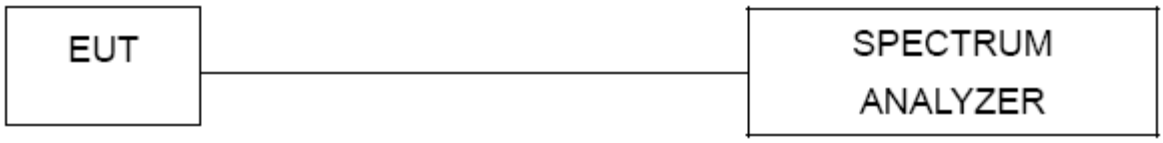
5.1.2 TEST PROCEDURE

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 = Auto

5.1.3 DEVIATION FROM STANDARD

No deviation.

5.1.4 TEST SETUP



5.1.5 EUT OPERATION CONDITIONS

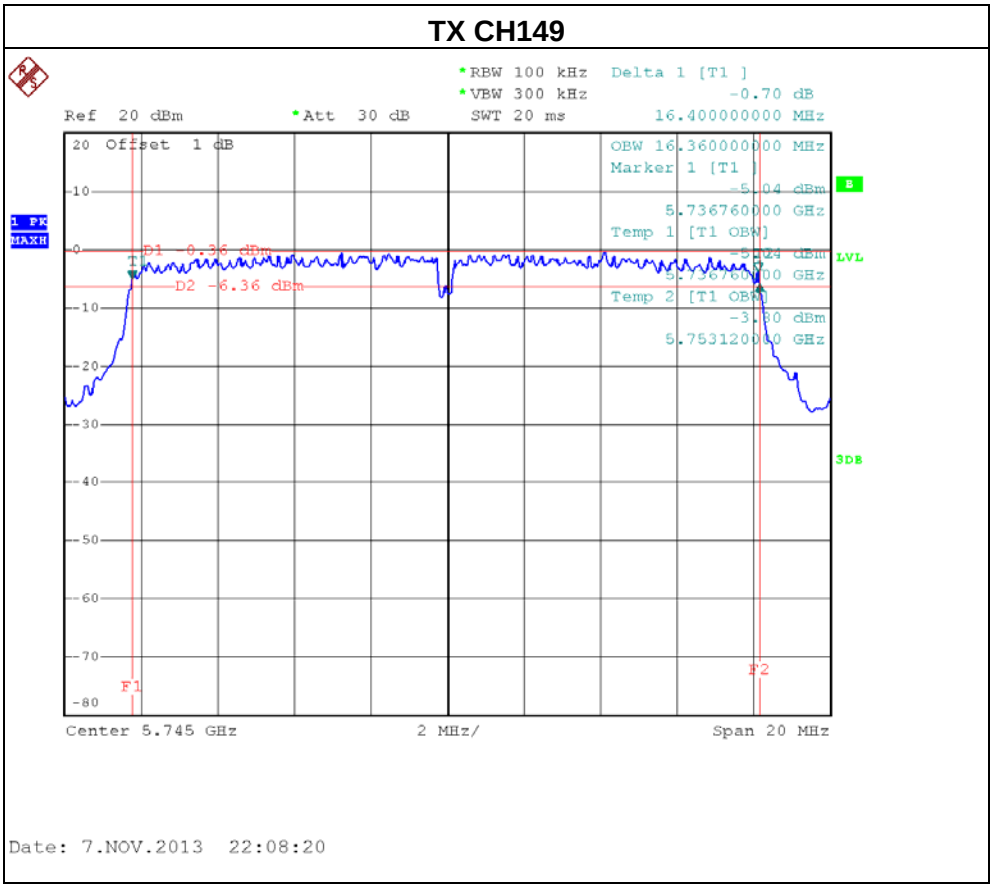
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.6 TEST RESULTS

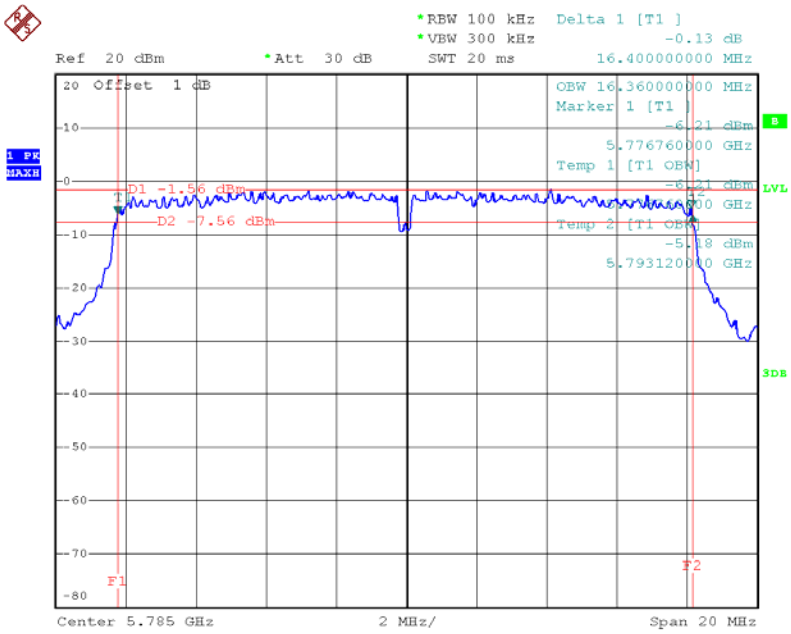
EUT:	Wireless Dual Band USB Adapter	Model Name. :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode /CH149, CH157, CH165		

Test Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Test Result
CH149	5745	16.40	16.36	PASS
CH157	5785	16.40	16.36	PASS
CH165	5825	16.44	16.36	PASS

TX CH149

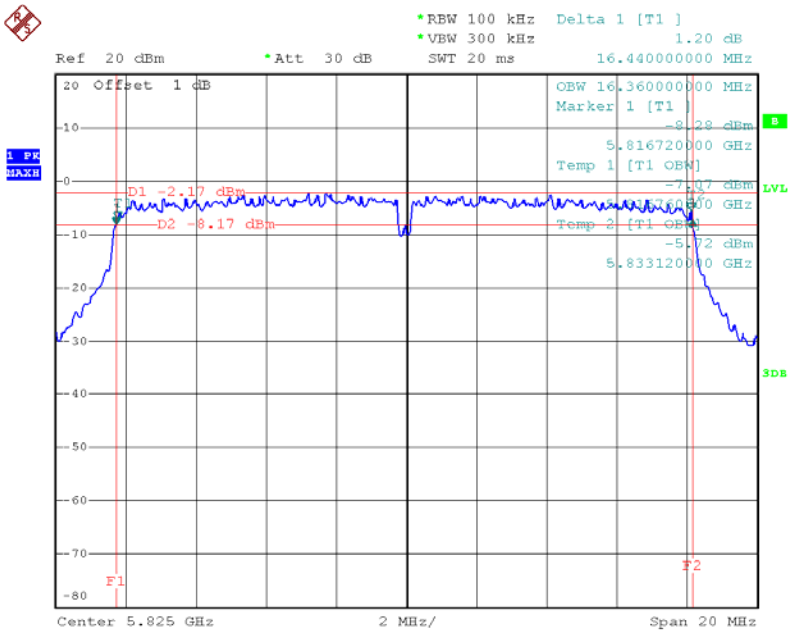


TX CH157



Date: 7.NOV.2013 22:13:38

TX CH165

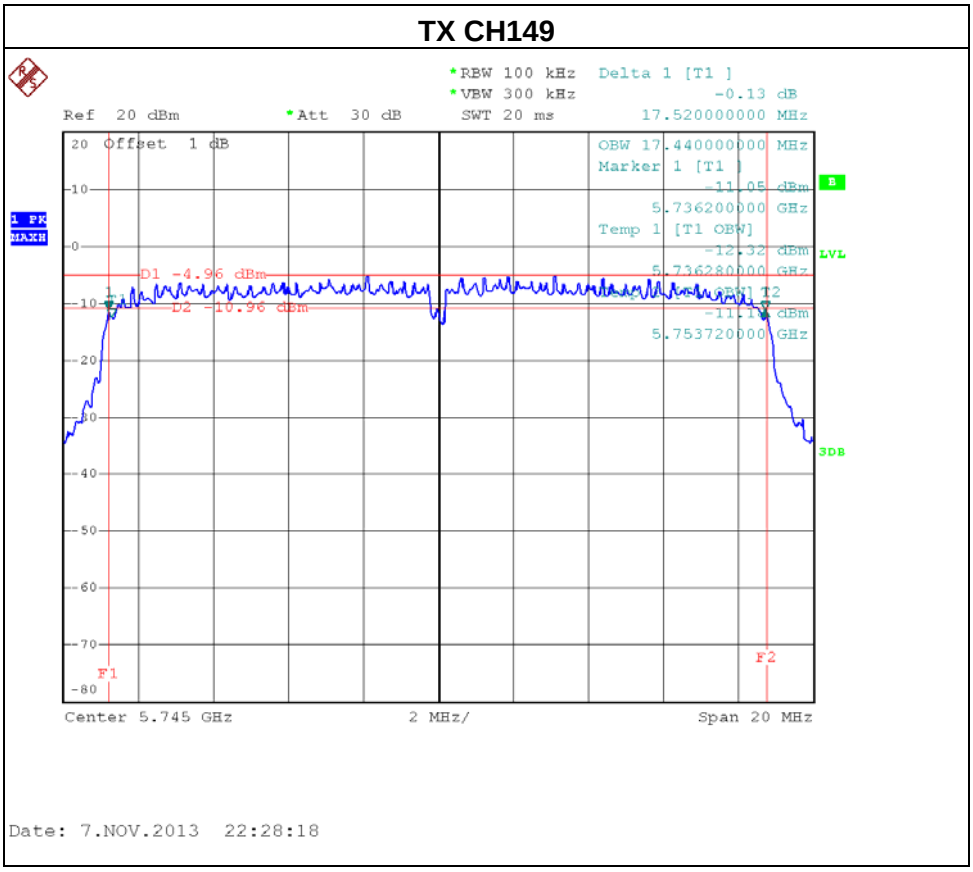


Date: 7.NOV.2013 22:15:39

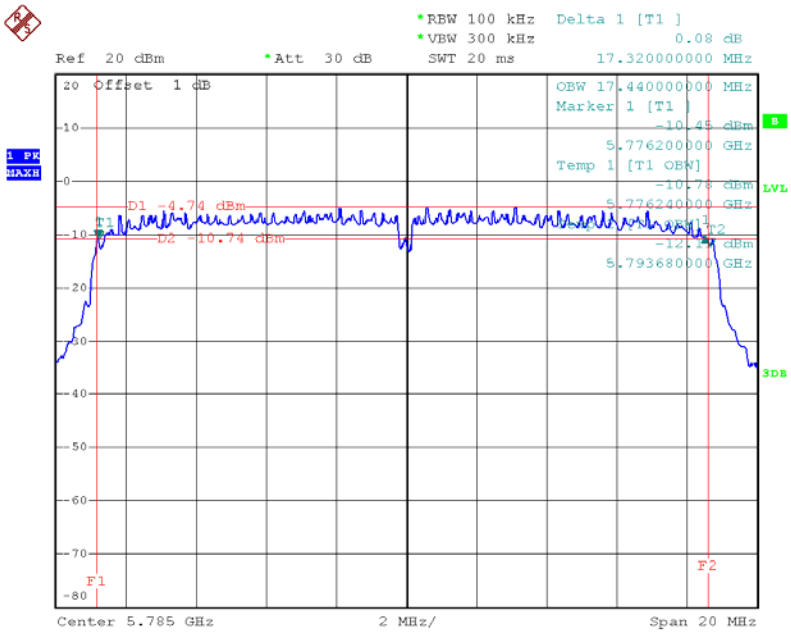
EUT:	Wireless Dual Band USB Adapter	Model Name. :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode /CH149, CH157, CH165		

Test Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Test Result
CH149	5745	17.52	17.44	PASS
CH157	5785	17.32	17.44	PASS
CH165	5825	17.56	17.44	PASS

TX CH149

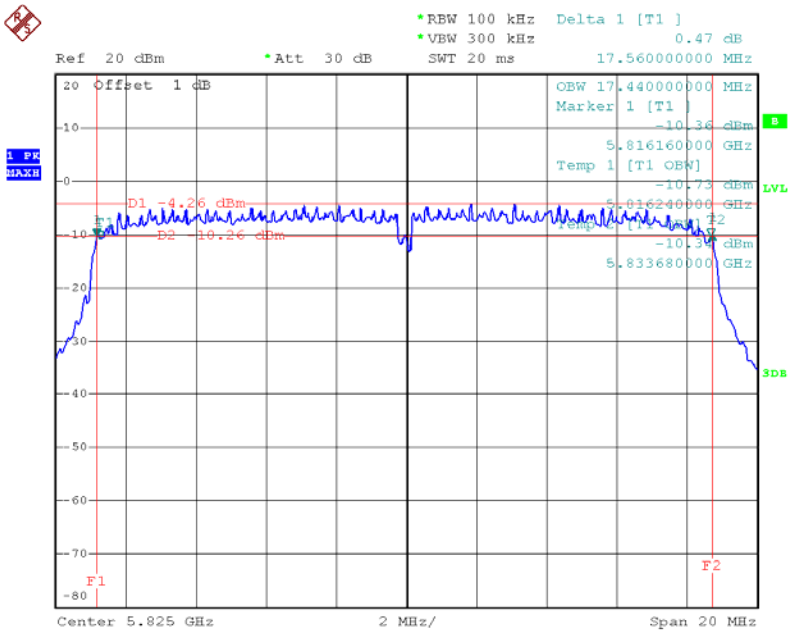


TX CH157



Date: 7.NOV.2013 22:25:48

TX CH165

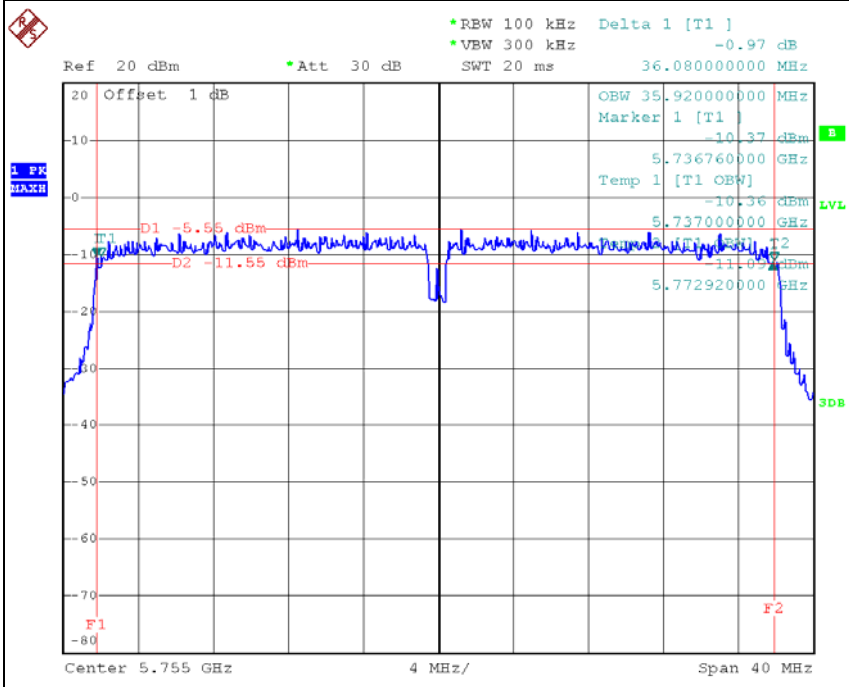


Date: 7.NOV.2013 22:19:38

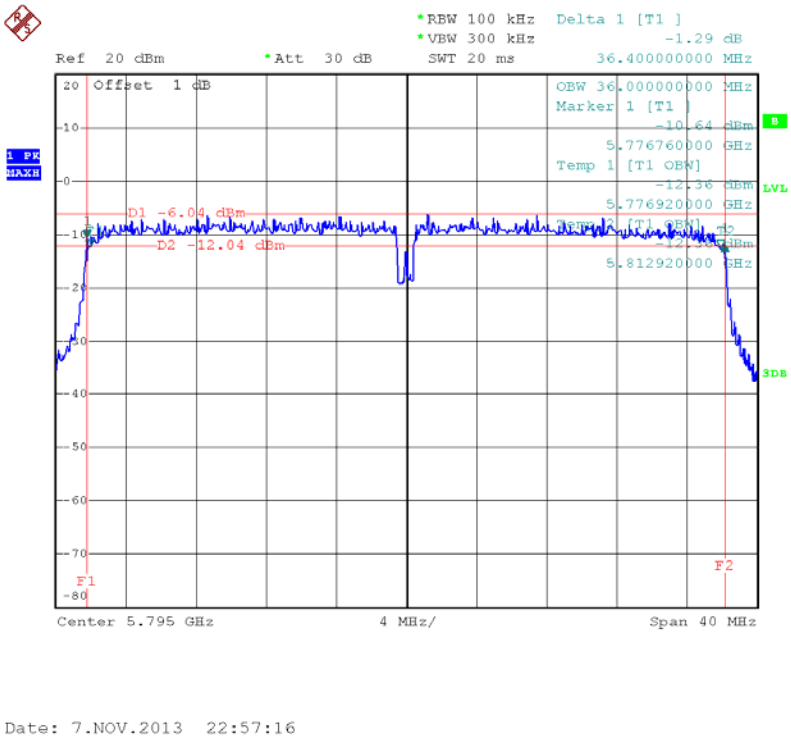
EUT:	Wireless Dual Band USB Adapter	Model Name. :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode /CH151, CH159		

Test Channel	Frequency (MHz)	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Test Result
CH151	5755	36.08	35.92	PASS
CH159	5795	36.40	36.00	PASS

TX CH151



TX CH159



Date: 7.NOV.2013 22:57:16

6. MAXIMUM OUTPUT POWER TEST

6.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Maximum Output Power	1 watt or 30dBm	5725 - 5825	PASS

6.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	P-series Power meter	Agilent	N1911A	MY45100473	Apr. 25, 2014
2	Wireband Power sensor	Agilent	N1921A	MY51100041	Apr. 25, 2014

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

6.1.2 TEST PROCEDURE

a. The EUT was directly connected to the power meter and antenna output port as show in the block diagram below,
b. The maximum peak conducted output power was performed in accordance with method 9.1.3 of FCC KDB 558074 D01 DTS Meas Guidance v03r01(A,N20,N40 mode) and 662911 D01 Multiple Transmitter Output v01r02(N20,N40 mode)

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.

6.1.6 TEST RESULTS

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode /CH149, CH157, CH165		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	20.68	30	1
CH157	5785 MHz	20.45	30	1
CH165	5825 MHz	20.68	30	1

Test Channel	Frequency (MHz)	AVG Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	13.14	30	1
CH157	5785 MHz	13.14	30	1
CH165	5825 MHz	13.22	30	1

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode /CH149, CH157, CH165		

ANT 0				
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	17.45	30	1
CH157	5785 MHz	17.34	30	1
CH165	5825 MHz	17.52	30	1

ANT 1				
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	17.11	30	1
CH157	5785 MHz	17.21	30	1
CH165	5825 MHz	17.16	30	1

ANT 0 + ANT 1				
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	20.29	30	1
CH157	5785 MHz	20.29	30	1
CH165	5825 MHz	20.35	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain = GANT, that is Directional gain=5.2dBi.

ANT 0				
Test Channel	Frequency (MHz)	AVG Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	9.24	30	1
CH157	5785 MHz	9.14	30	1
CH165	5825 MHz	9.21	30	1

ANT 1				
Test Channel	Frequency (MHz)	AVG Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	9.22	30	1
CH157	5785 MHz	9.15	30	1
CH165	5825 MHz	9.35	30	1

ANT 0 + ANT 1				
Test Channel	Frequency (MHz)	AVG Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH149	5745 MHz	12.24	30	1
CH157	5785 MHz	12.15	30	1
CH165	5825 MHz	12.29	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain = GANT, that is Directional gain=5.2dBi.

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode /CH151, CH159		

ANT 0				
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH151	5755 MHz	17.56	30	1
CH159	5795 MHz	17.62	30	1

ANT 1				
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH151	5755 MHz	17.38	30	1
CH159	5795 MHz	17.42	30	1

ANT 0 + ANT 1				
Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH151	5755 MHz	20.48	30	1
CH159	5795 MHz	20.53	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain = G_{ANT}, that is Directional gain=5.2dBi..

ANT 0				
Test Channel	Frequency (MHz)	AVG Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH151	5755 MHz	9.15	30	1
CH159	5795 MHz	9.24	30	1

ANT 1				
Test Channel	Frequency (MHz)	AVG Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH151	5755 MHz	9.25	30	1
CH159	5795 MHz	9.23	30	1

ANT 0 + ANT 1				
Test Channel	Frequency (MHz)	AVG Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH151	5755 MHz	12.21	30	1
CH159	5795 MHz	12.24	30	1

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R), all transmit signals are completely uncorrelated, then, Direction gain = G_{ANT}, that is Directional gain=5.2dBi..

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 Applied procedures / limit

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

Frequency (MHz)	Field Strength (microvolts/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 3 meters)	
	Peak	Average
Above 1000	74	54

7.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	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 =20 ms.

7.1.3 DEVIATION FROM STANDARD

No deviation.

7.1.4 TEST SETUP

7.1.5 EUT OPERATION CONDITIONS

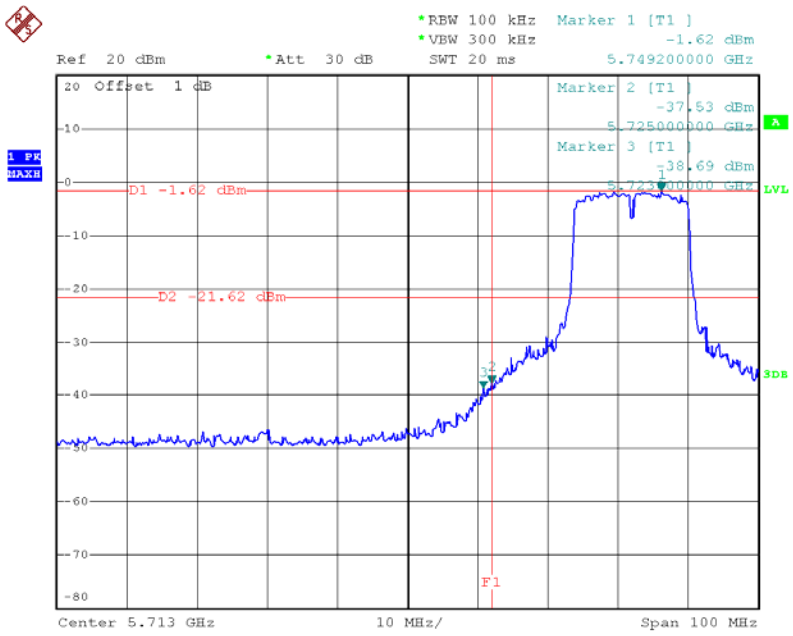
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.6 TEST RESULTS

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode /CH149, CH157, CH165		

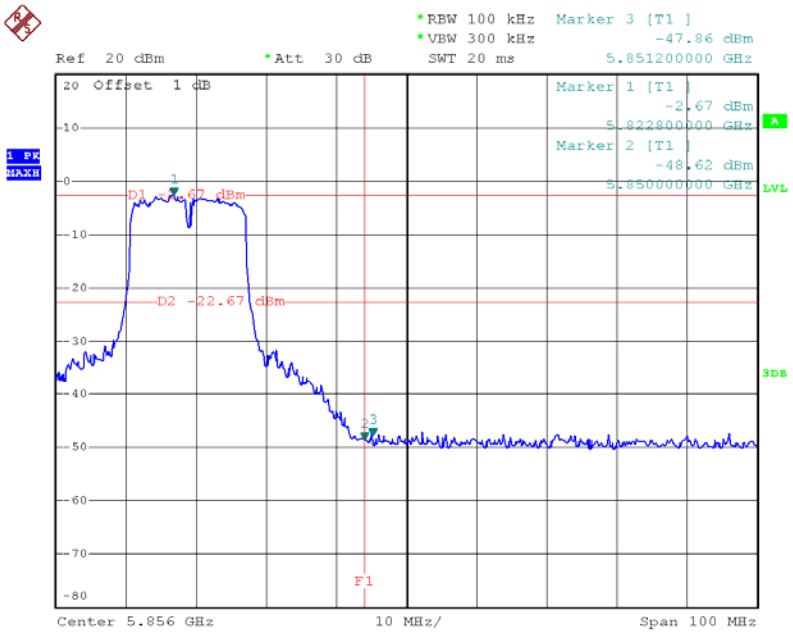
Channel of Worst Data: CH149			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5725.00	-37.53	5851.20	-47.86
Result			
In any 100kHz 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 lever of the desired power.			

TX mode CH149



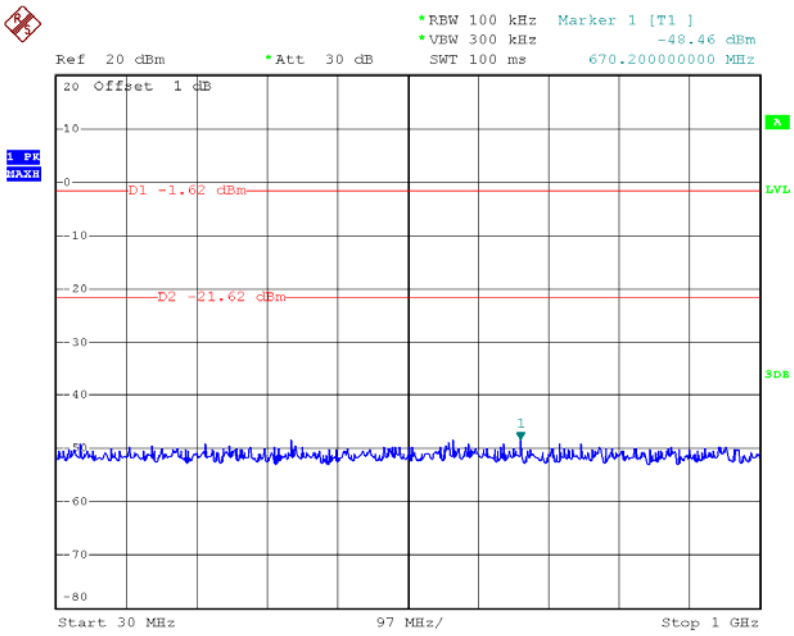
Date: 7.NOV.2013 22:11:39

TX mode CH165



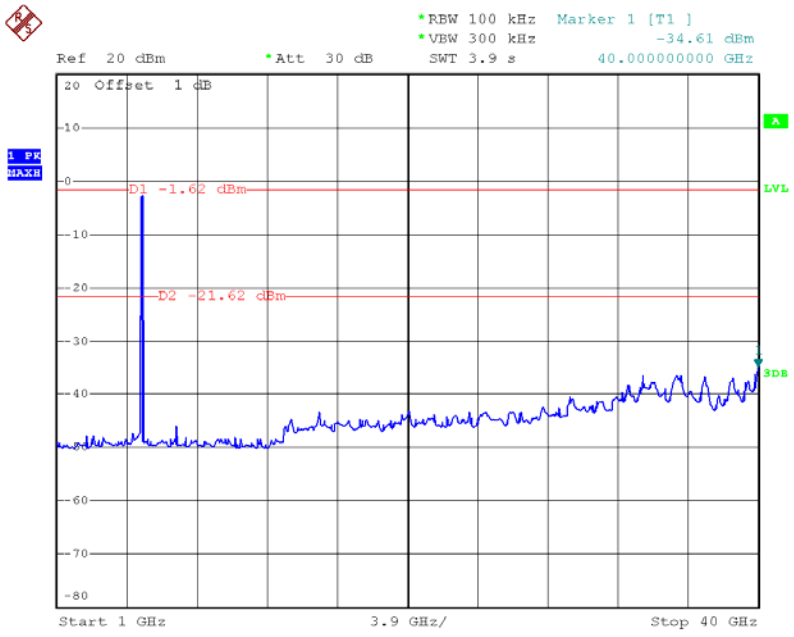
Date: 7.NOV.2013 22:16:59

TX mode CH149 (30M~1000MHz)



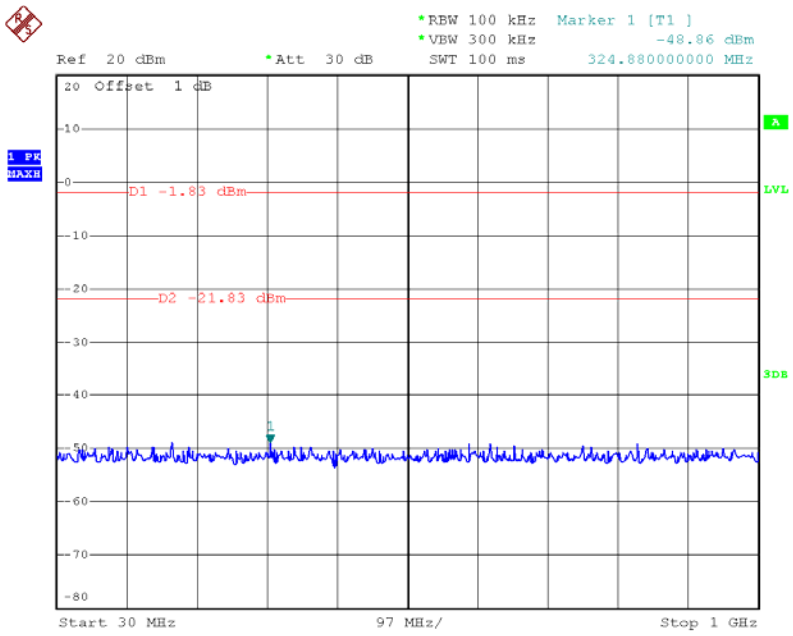
Date: 7.NOV.2013 22:11:54

TX mode CH149 (1000MHz~10th Harmonic)



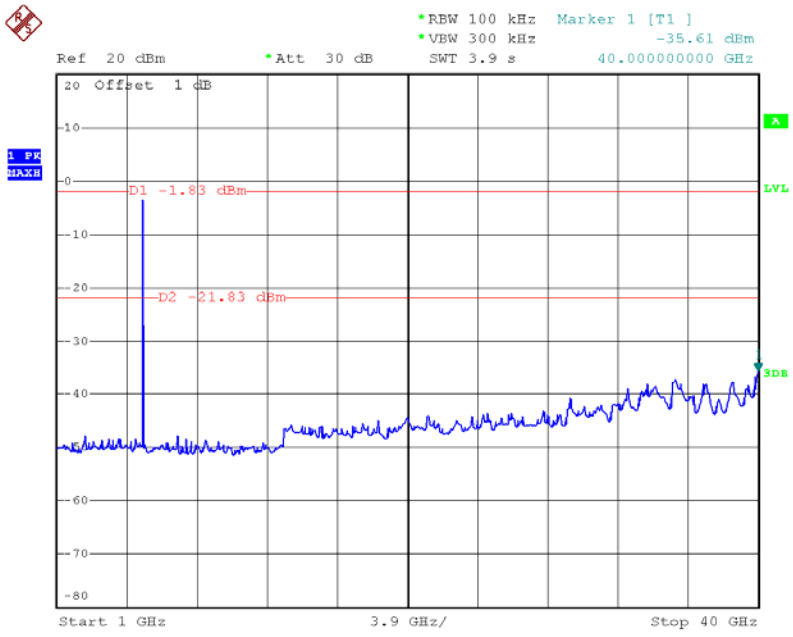
Date: 7.NOV.2013 22:12:38

TX mode CH157 (30M~1000MHz)



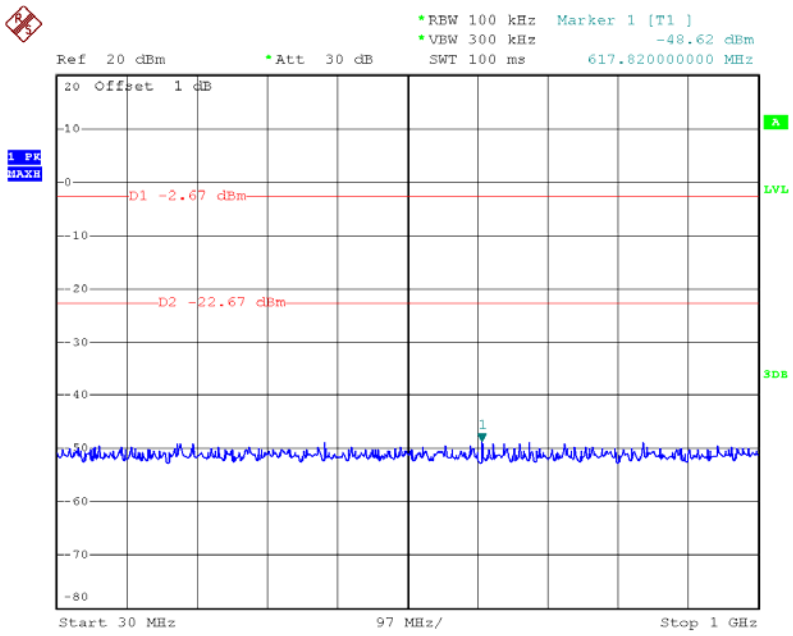
Date: 7.NOV.2013 22:14:30

TX mode CH157 (1000MHz~10th Harmonic)



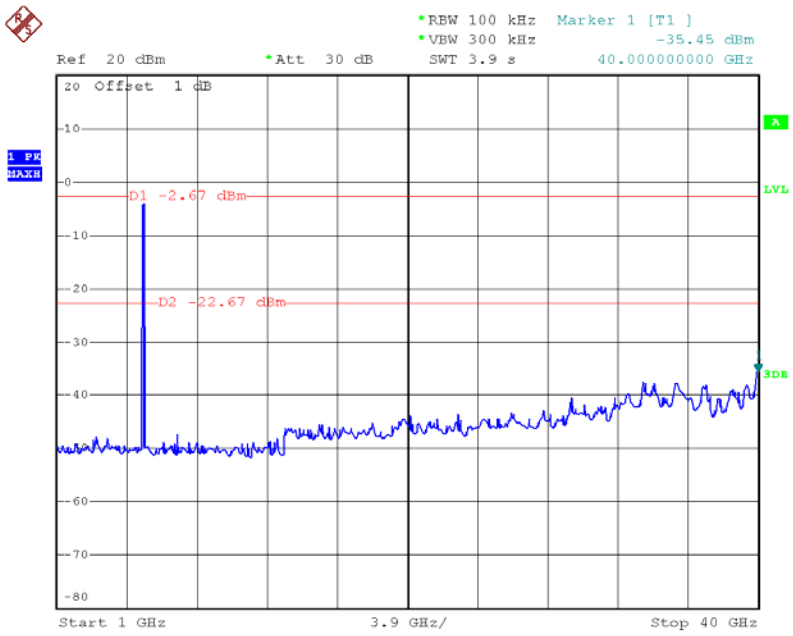
Date: 7.NOV.2013 22:14:41

TX mode CH165 (30M~1000MHz)



Date: 7.NOV.2013 22:17:28

TX mode CH165 (1000MHz~10th Harmonic)

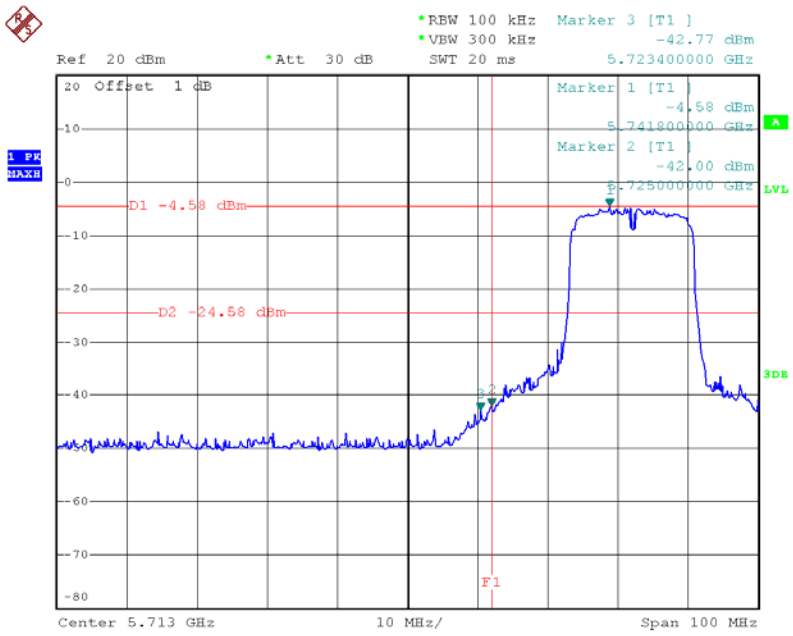


Date: 7.NOV.2013 22:17:39

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20Mode /CH149, CH157, CH165 / ANT 0		

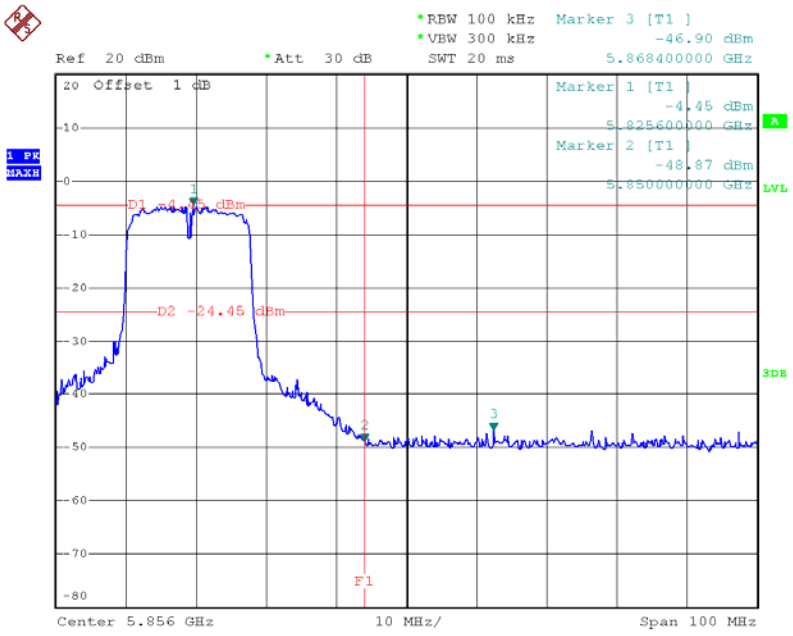
Channel of Worst Data: CH149			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5725.00	-42.00	5868.40	-46.90
Result			
In any 100kHz 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 lever of the desired power.			

TX mode CH149



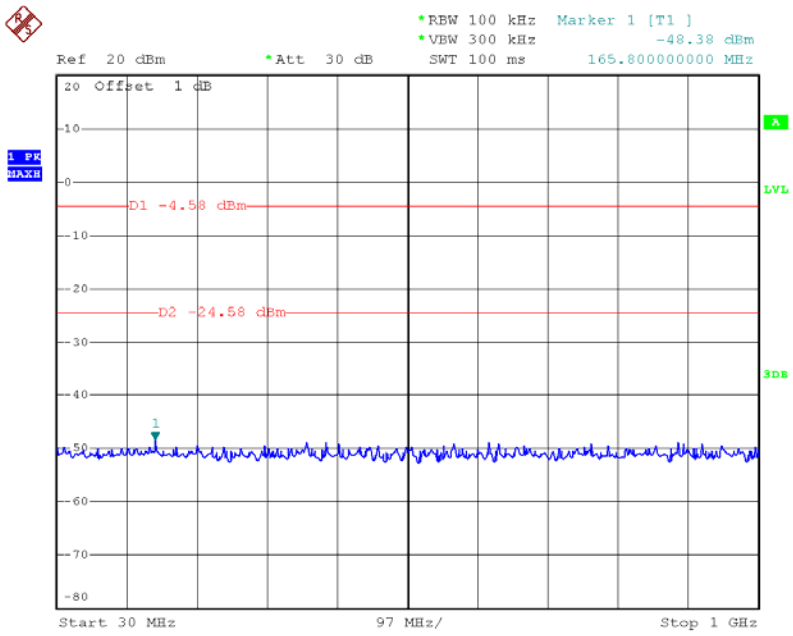
Date: 7.NOV.2013 22:32:52

TX mode CH165



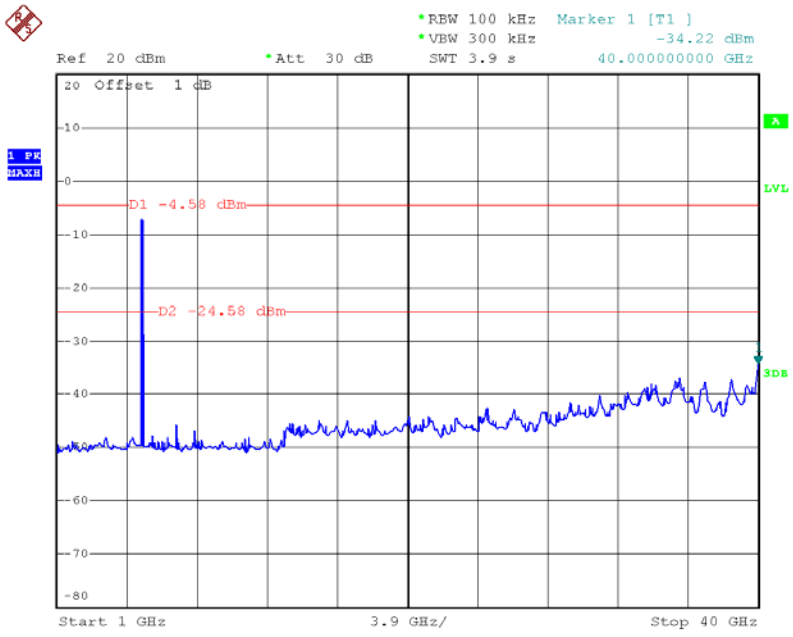
Date: 7.NOV.2013 22:39:22

TX mode CH149 (30M~1000MHz)



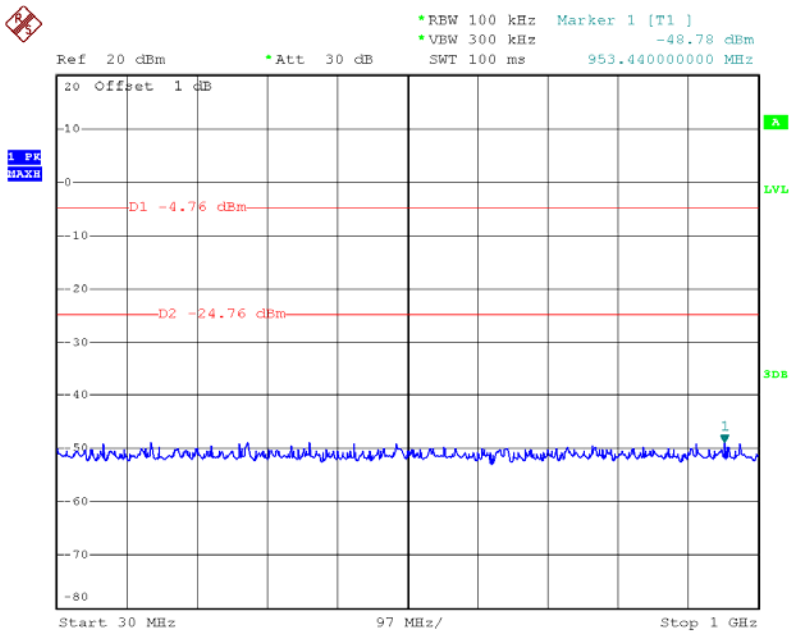
Date: 7.NOV.2013 22:33:05

TX mode CH149 (1000MHz~10th Harmonic)



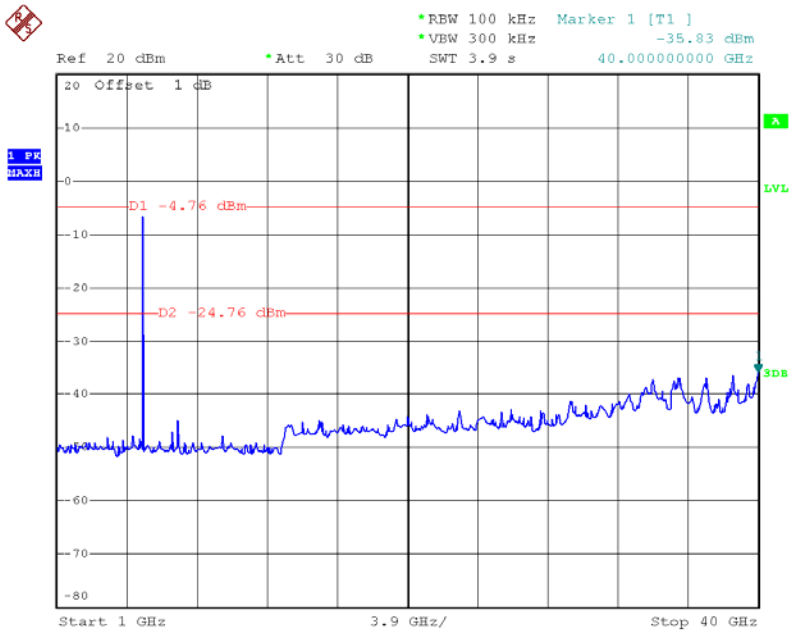
Date: 7.NOV.2013 22:33:26

TX mode CH157 (30M~1000MHz)



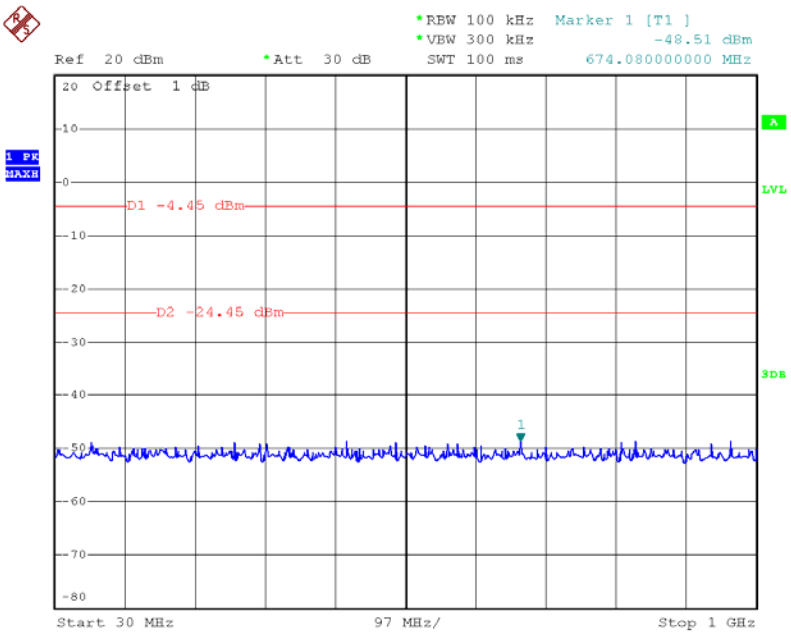
Date: 7.NOV.2013 22:35:34

TX mode CH157 (1000MHz~10th Harmonic)



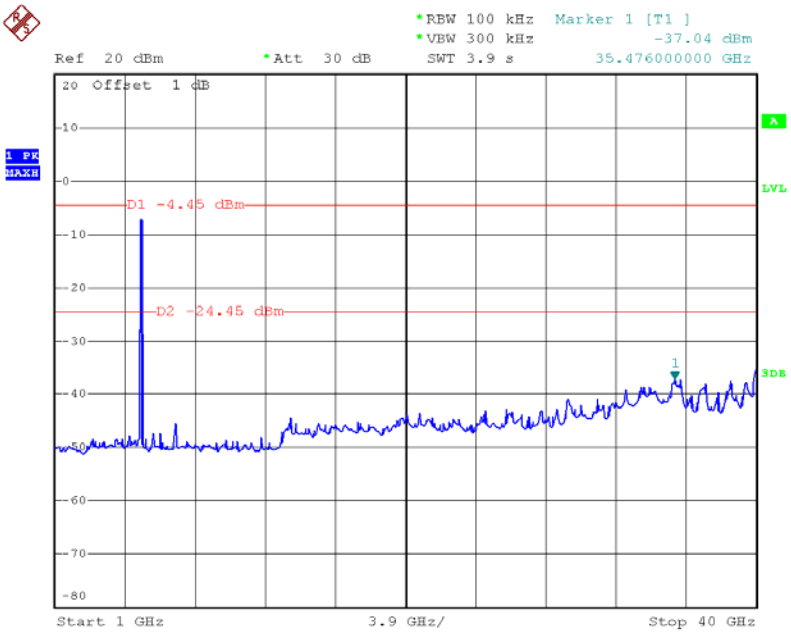
Date: 7.NOV.2013 22:35:49

TX mode CH165 (30M~1000MHz)



Date: 7.NOV.2013 22:39:35

TX mode CH165 (1000MHz~10th Harmonic)

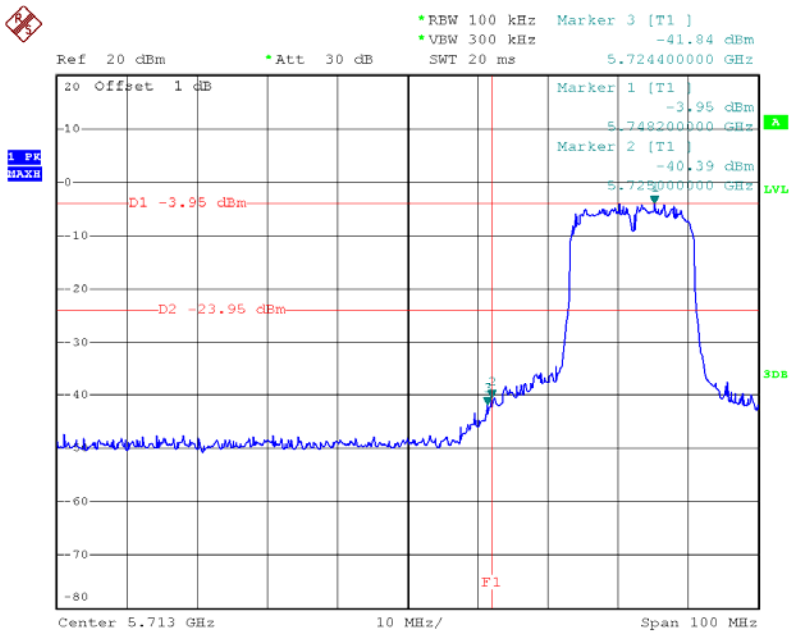


Date: 7.NOV.2013 22:39:49

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode /CH149, CH157, CH165 / ANT 1		

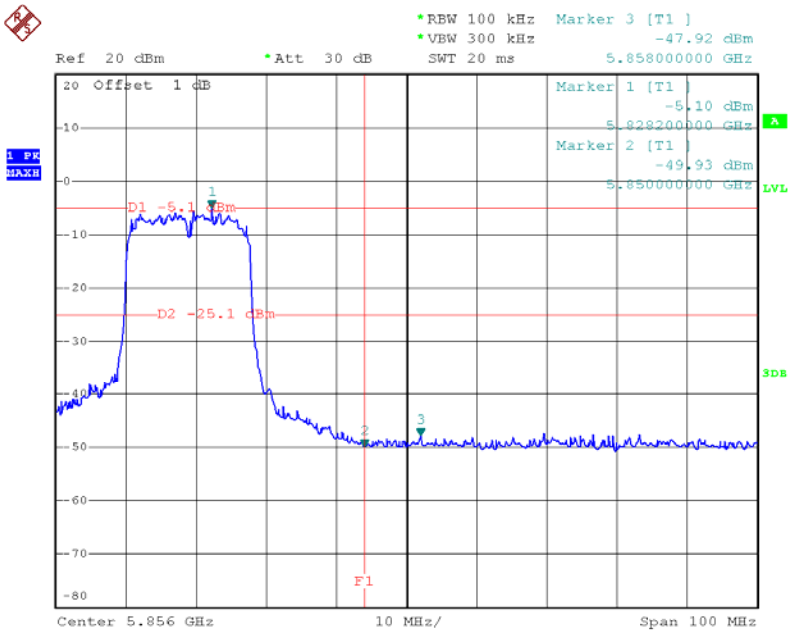
Channel of Worst Data: CH149			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5725.00	-40.39	5858.00	-47.92
Result			
In any 100kHz 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 lever of the desired power.			

TX mode CH149



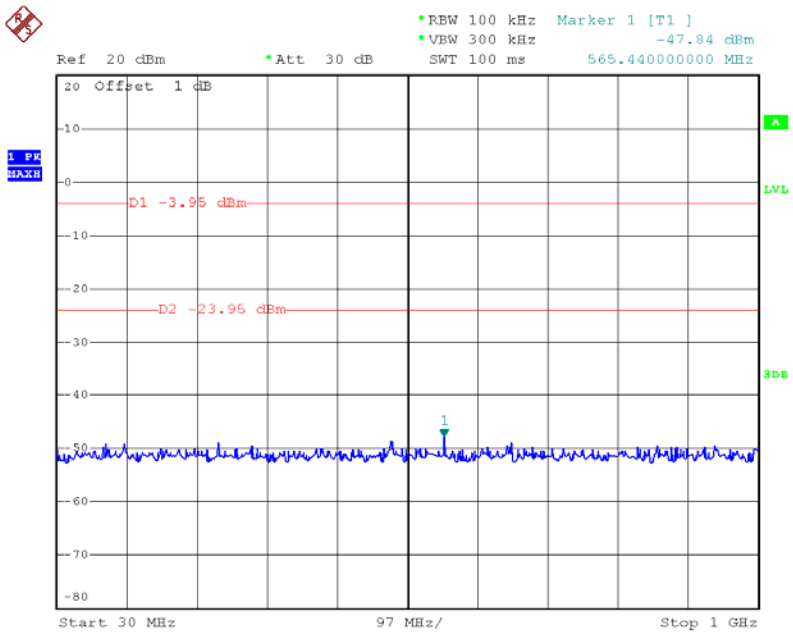
Date: 7.NOV.2013 22:29:43

TX mode CH165

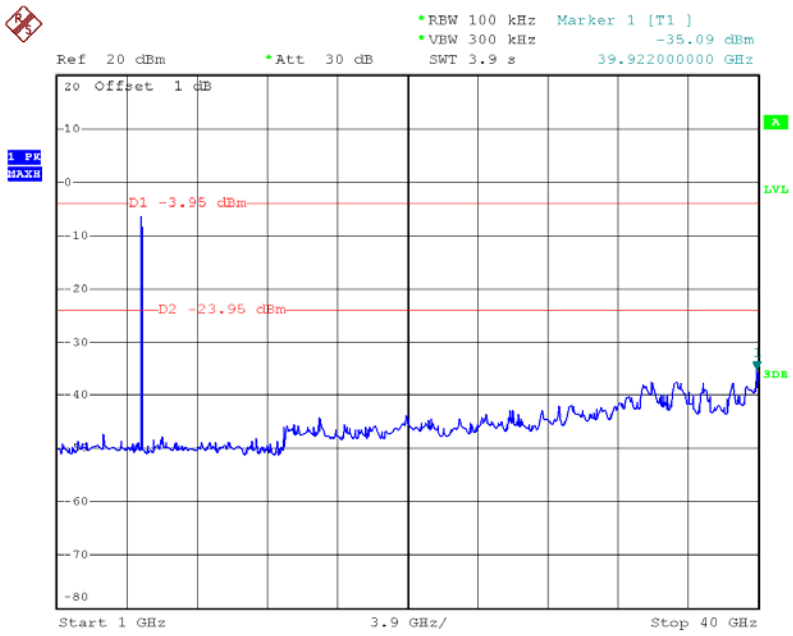


Date: 7.NOV.2013 22:23:52

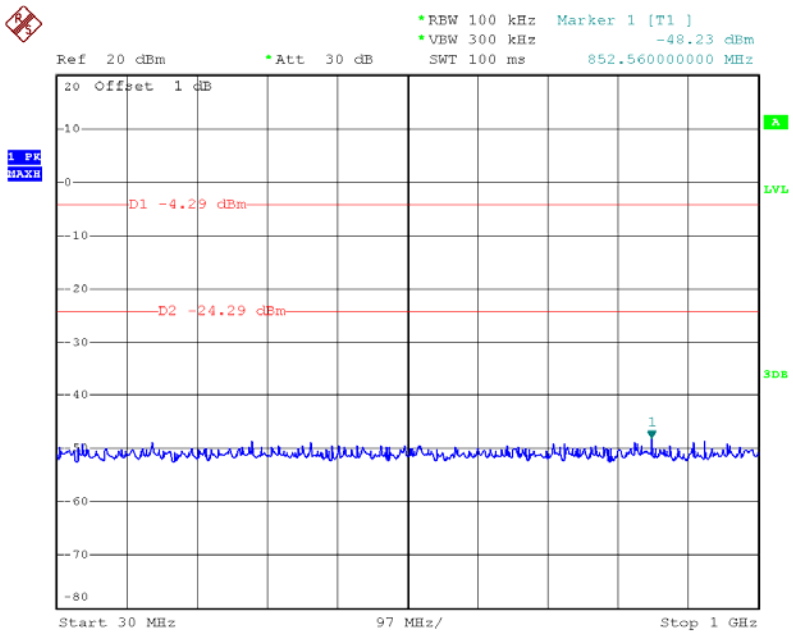
TX mode CH149 (30M~1000MHz)



TX mode CH149 (1000MHz~10th Harmonic)

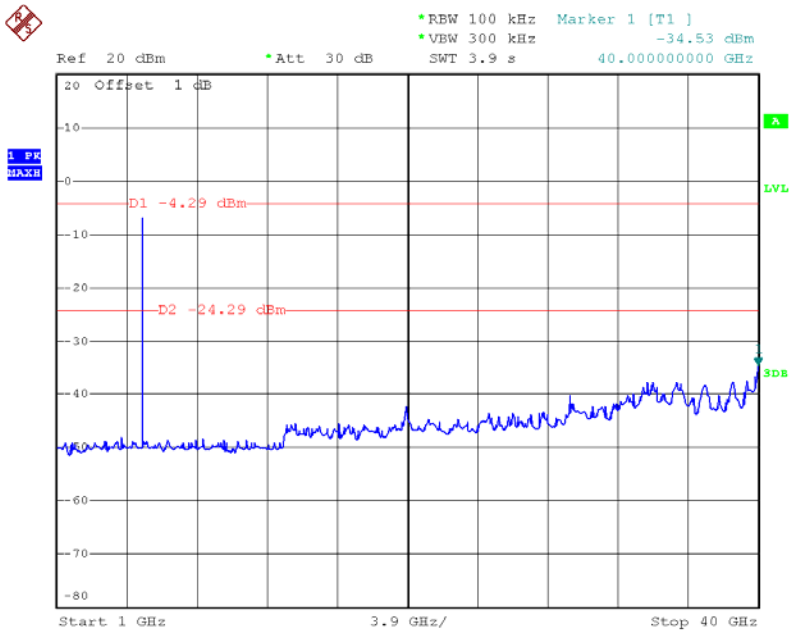


TX mode CH157 (30M~1000MHz)



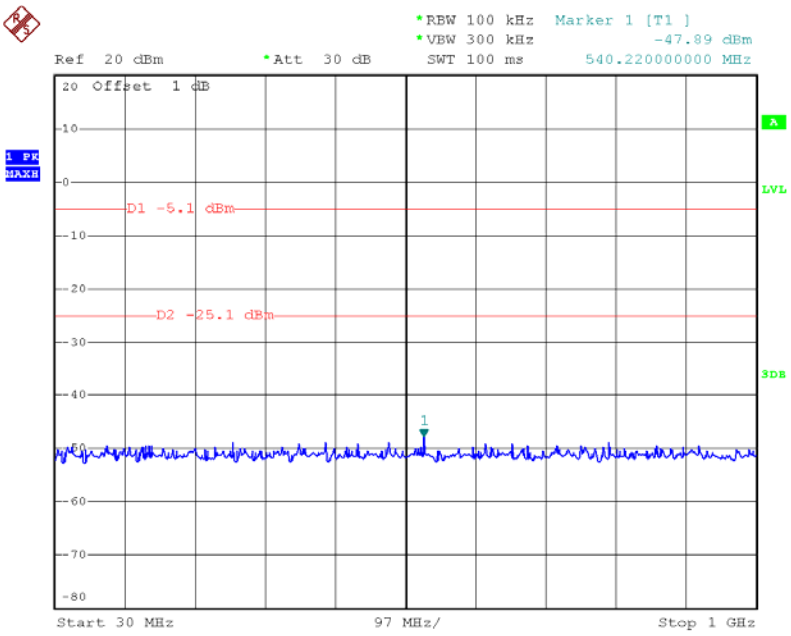
Date: 7.NOV.2013 22:27:03

TX mode CH157 (1000MHz~10th Harmonic)



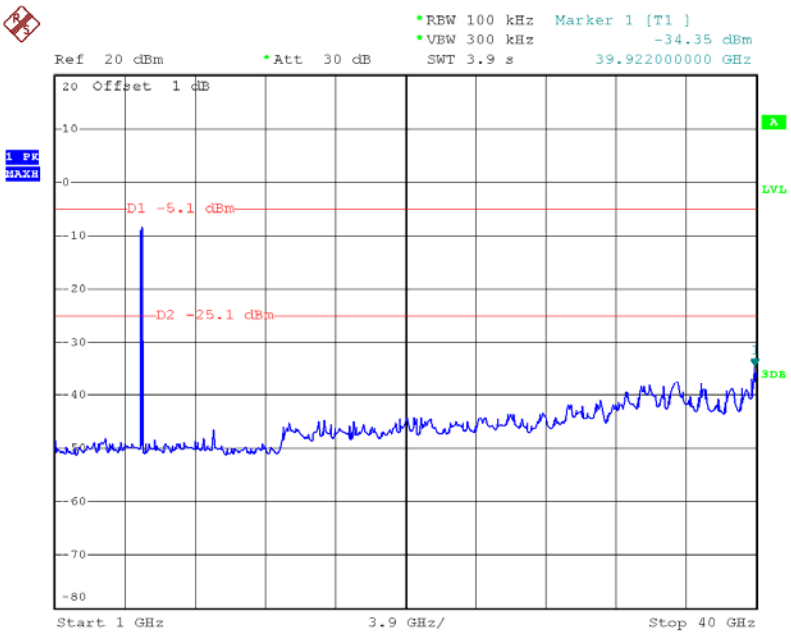
Date: 7.NOV.2013 22:27:17

TX mode CH165 (30M~1000MHz)



Date: 7.NOV.2013 22:24:04

TX mode CH165 (1000MHz~10th Harmonic)

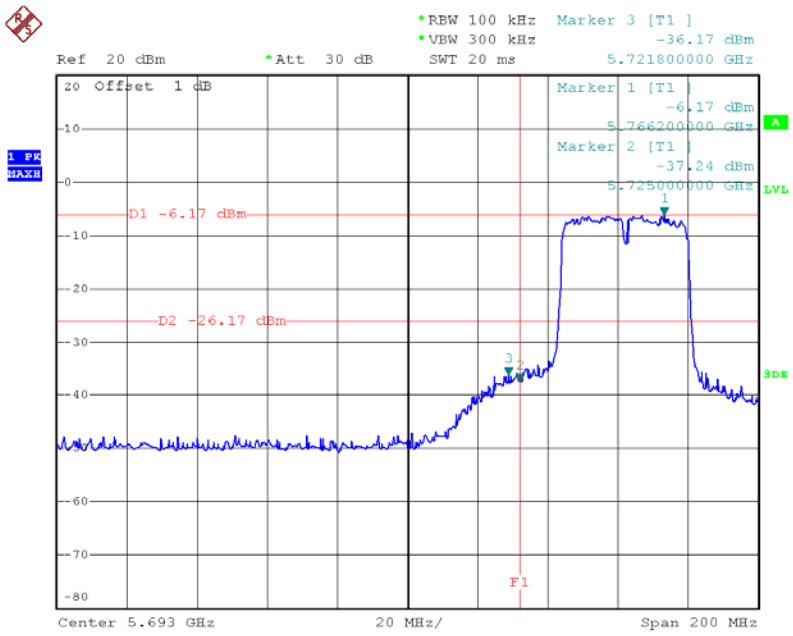


Date: 7.NOV.2013 22:24:19

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode /CH151, CH159 / ANT 0		

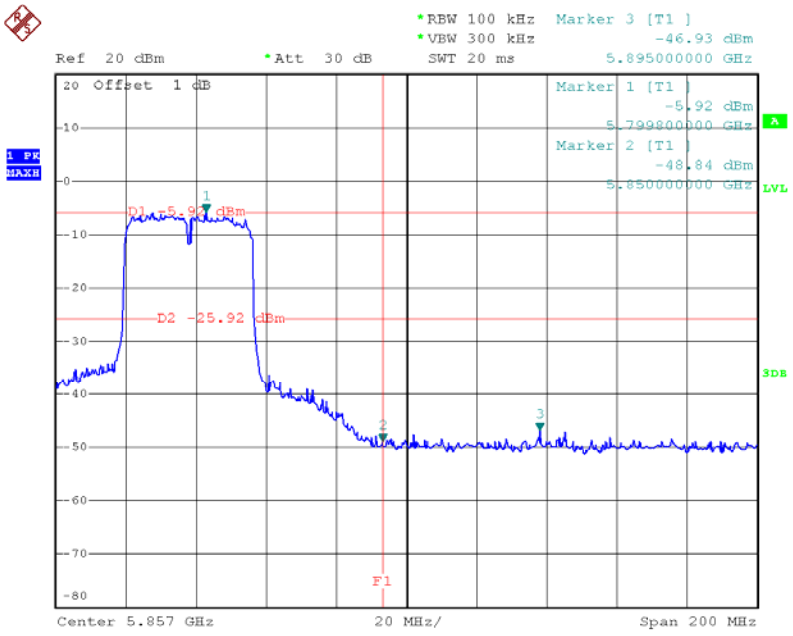
Channel of Worst Data: CH151			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5721.80	-36.17	5895.00	-46.93
Result			
In any 100kHz 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 lever of the desired power.			

TX mode CH151



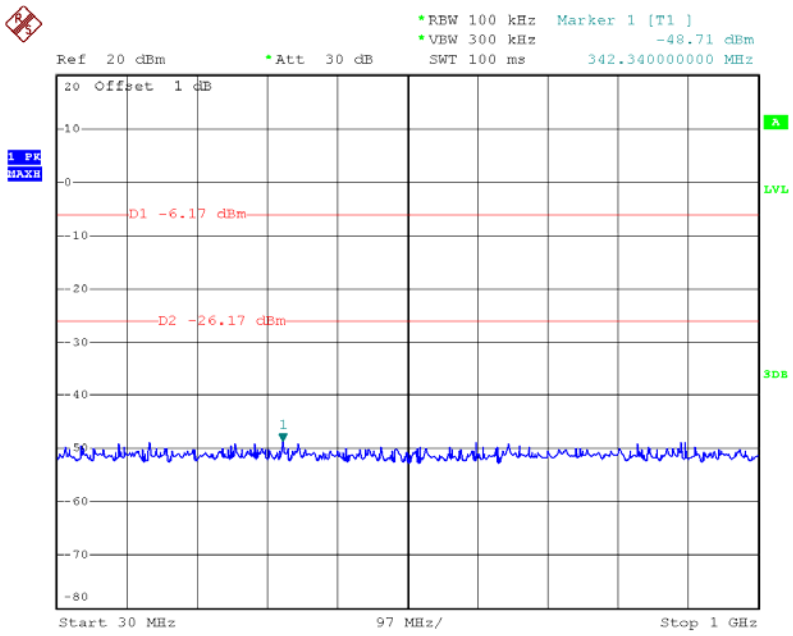
Date: 7.NOV.2013 22:43:22

TX mode CH159



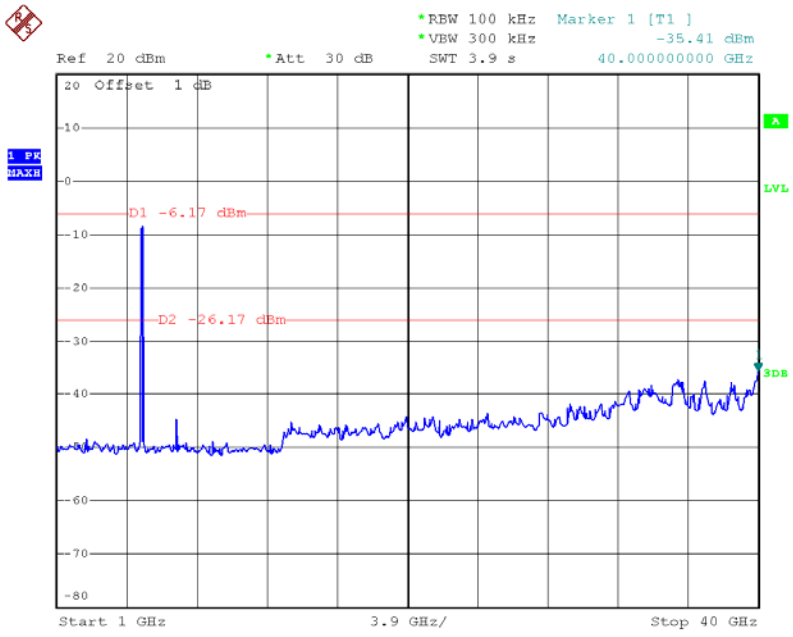
Date: 7.NOV.2013 22:47:12

TX mode CH151(30M~1000MHz)



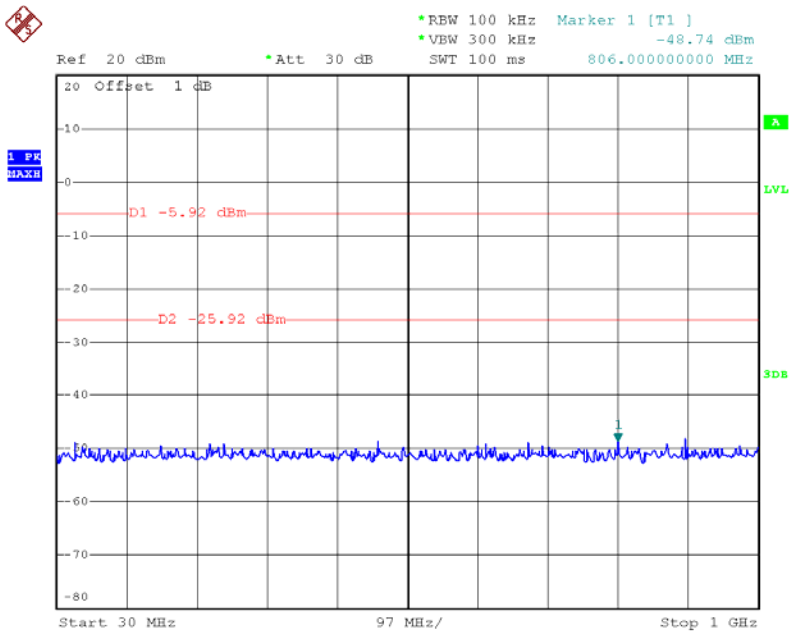
Date: 7.NOV.2013 22:43:33

TX mode CH151 (1000MHz~10th Harmonic)



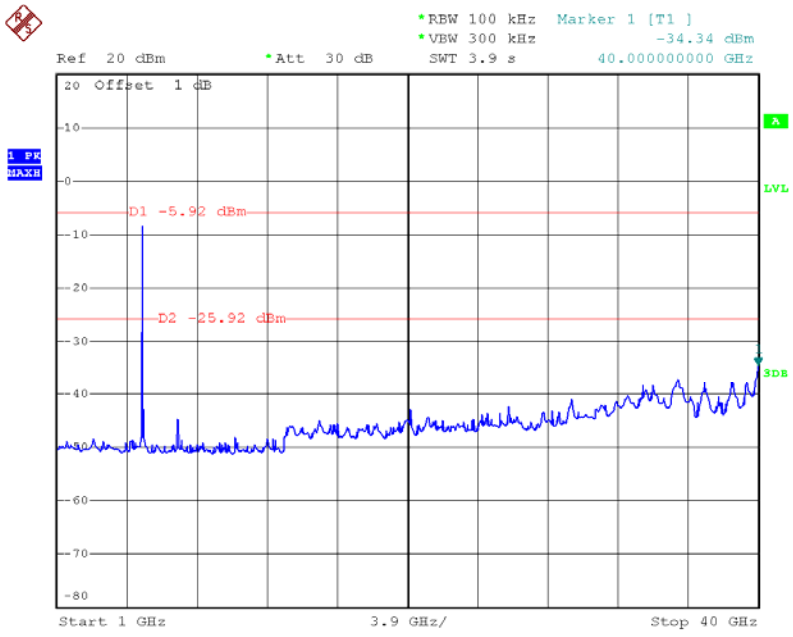
Date: 7.NOV.2013 22:43:44

TX mode CH159 (30M~1000MHz)



Date: 7.NOV.2013 22:47:26

TX mode CH159 (1000MHz~10th Harmonic)

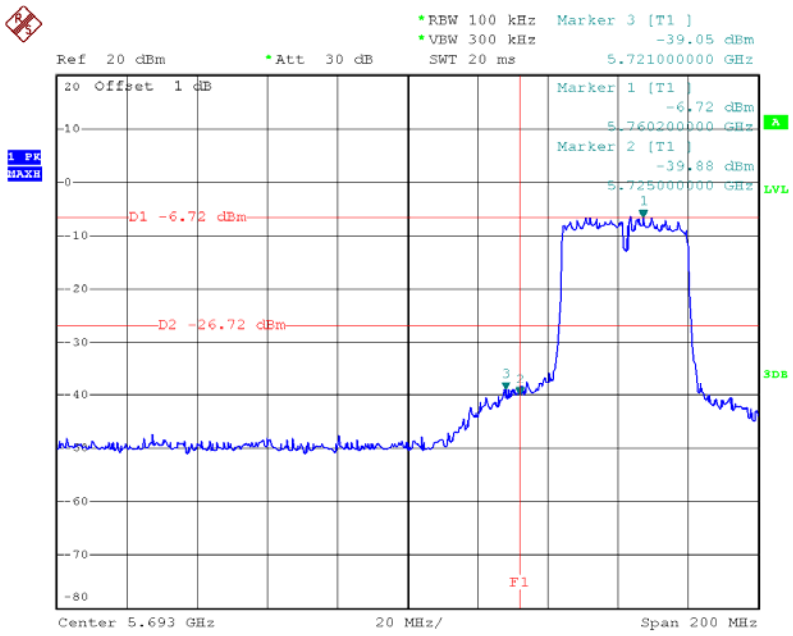


Date: 7.NOV.2013 22:47:43

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	25 ℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode /CH151, CH159 / ANT 1		

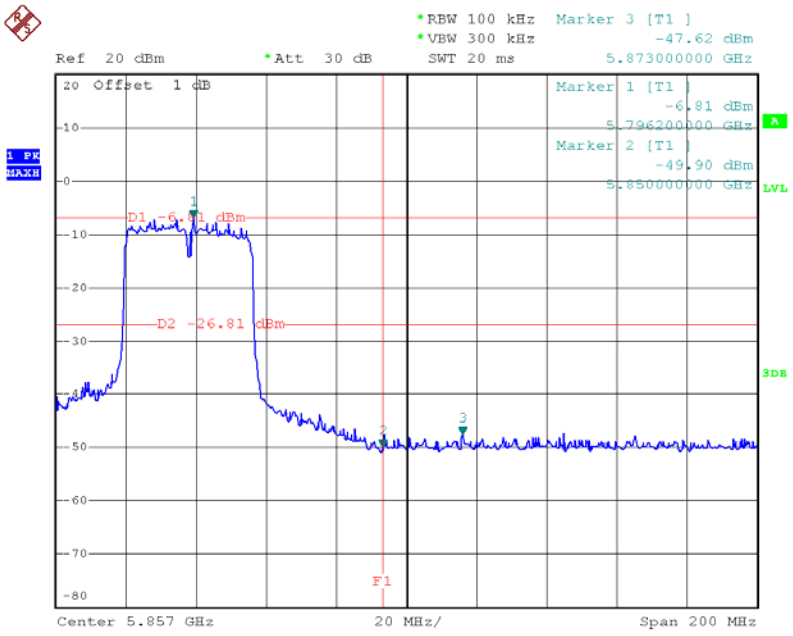
Channel of Worst Data: CH151			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5721.00	-39.05	5873.00	-47.62
Result			
In any 100kHz 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 lever of the desired power.			

TX mode CH151



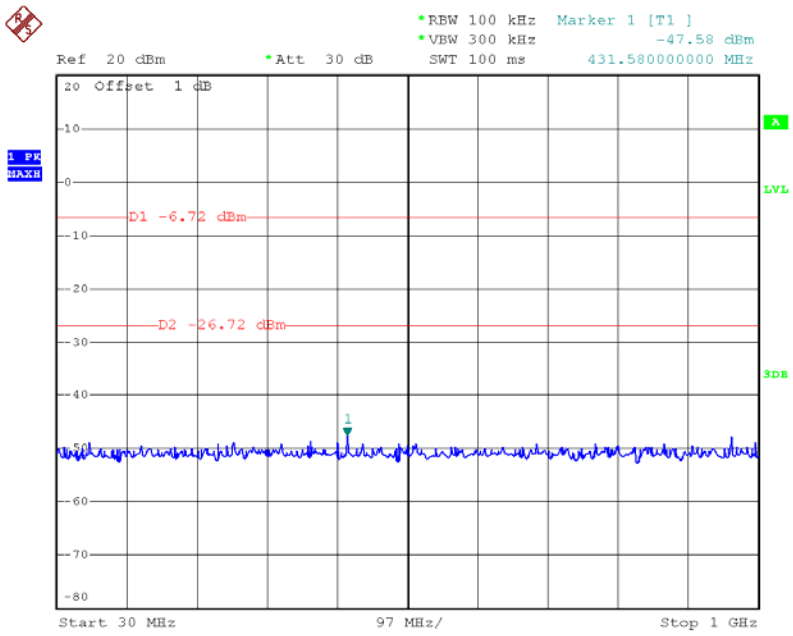
Date: 7.NOV.2013 23:04:19

TX mode CH159



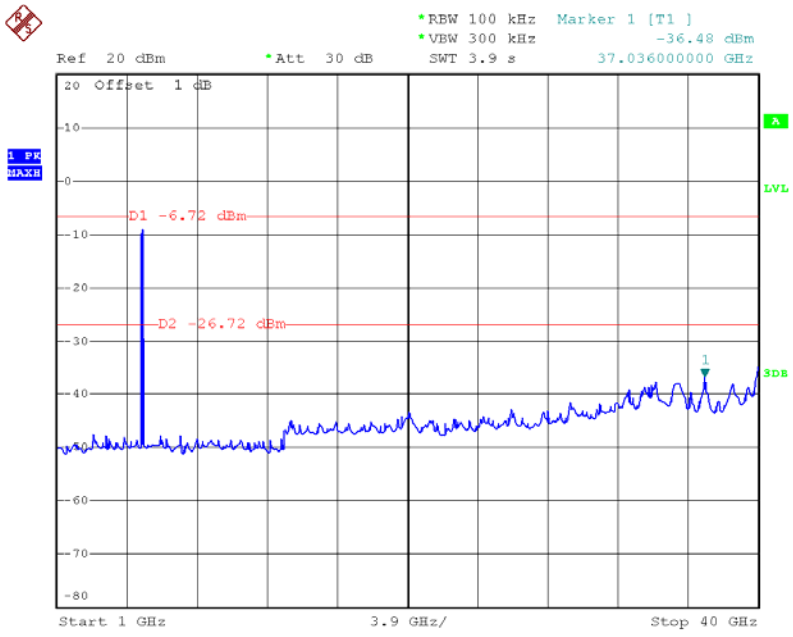
Date: 7.NOV.2013 23:00:40

TX mode CH151(30M~1000MHz)



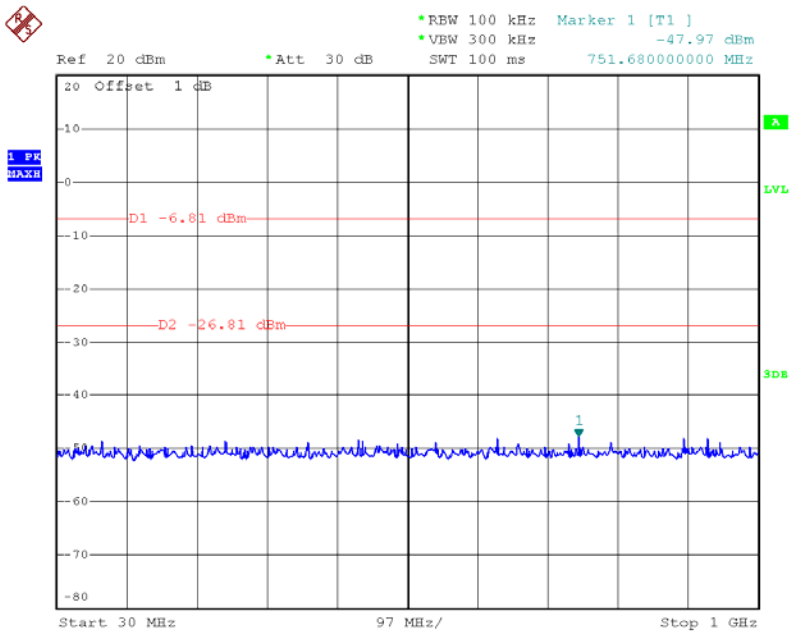
Date: 7.NOV.2013 23:04:36

TX mode CH151 (1000MHz~10th Harmonic)



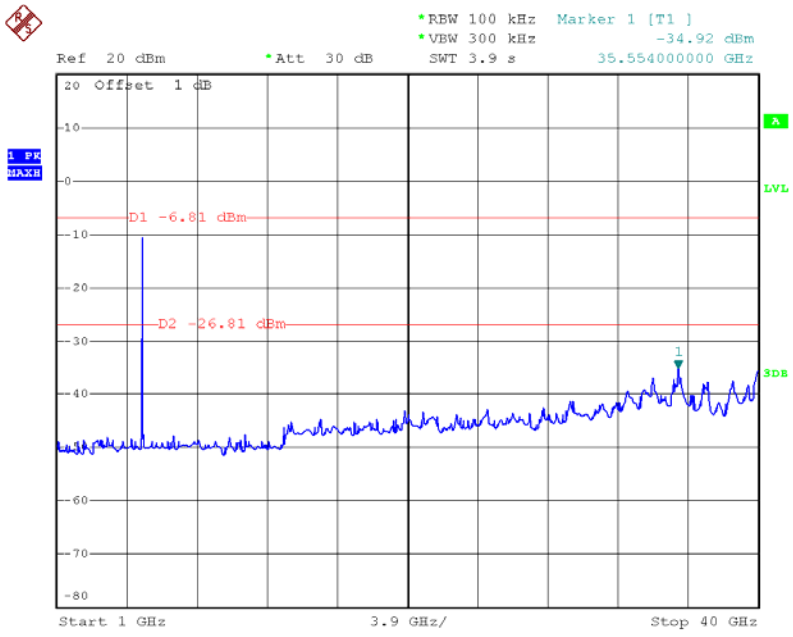
Date: 7.NOV.2013 23:04:51

TX mode CH159 (30M~1000MHz)



Date: 7.NOV.2013 23:00:57

TX mode CH159 (1000MHz~10th Harmonic)



Date: 7.NOV.2013 23:01:27

8. POWER SPECTRAL DENSITY TEST

8.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	5745 - 5825	PASS

8.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP 40	100185	Nov. 16, 2013

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

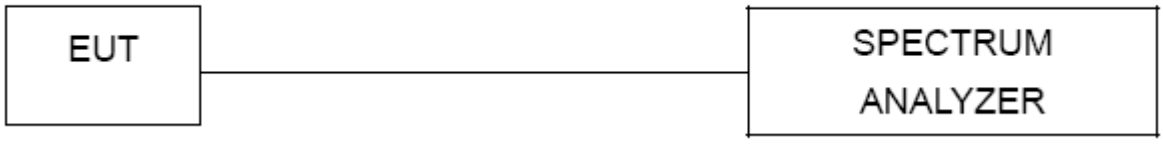
8.1.2 TEST PROCEDURE

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=10KHz, Sweep time = auto.
c. The power spectral density was performed in accordance with method 10.2 of FCC KDB 558074 D01 DTS Meas Guidance v03r01 (A, N20, N40 mode) and 662911 D01 Multiple Transmitter Output v01r02. (N20,N40 mode)

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP



8.1.5 EUT OPERATION CONDITIONS

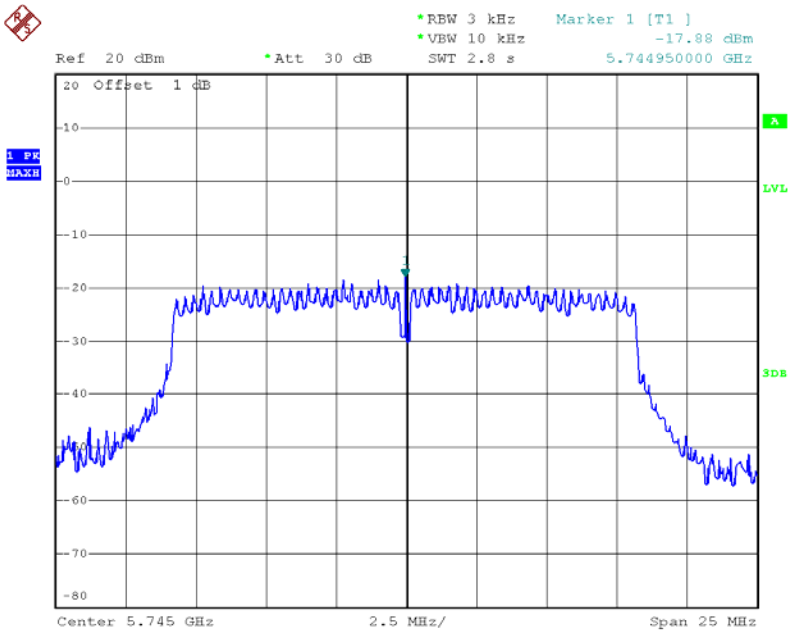
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.6 TEST RESULTS

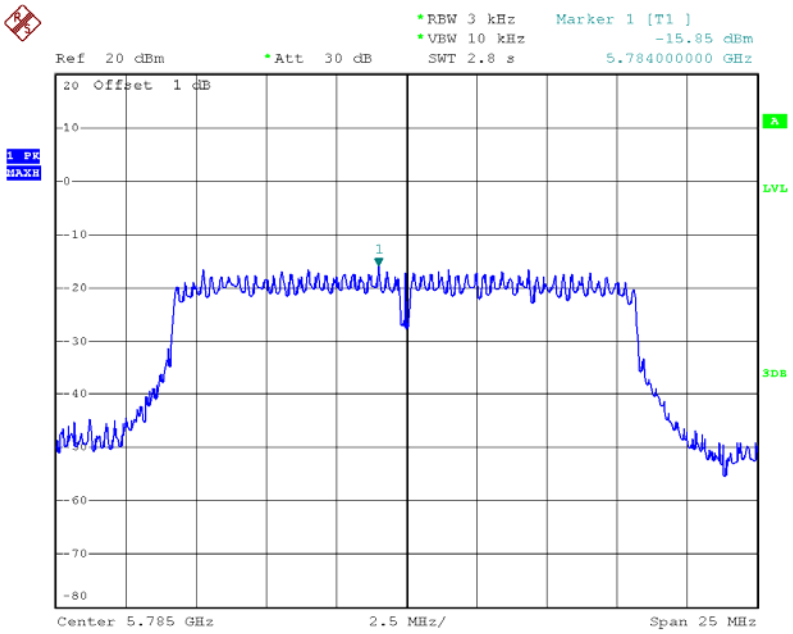
EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	23 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX A Mode /CH149, CH157, CH165		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH149	5745 MHz	-17.88	8
CH157	5785 MHz	-15.85	8
CH165	5825 MHz	-16.89	8

TX CH149

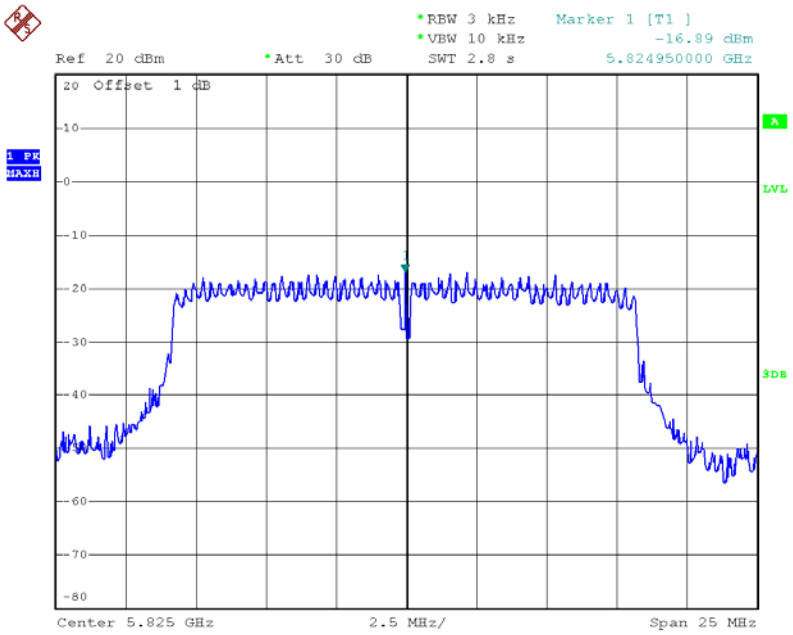


TX CH157



Date: 7.NOV.2013 22:14:01

TX CH165

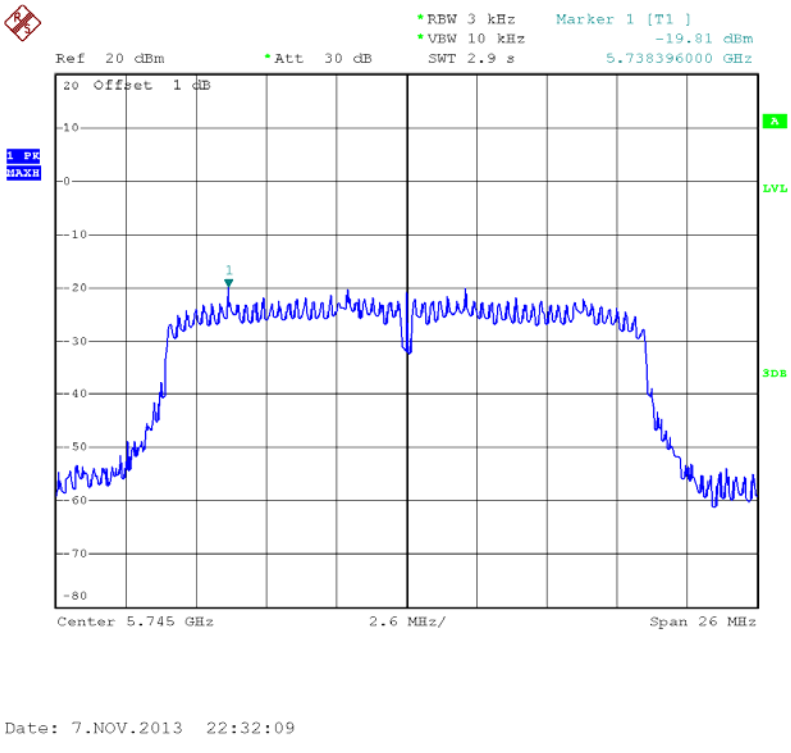


Date: 7.NOV.2013 22:15:55

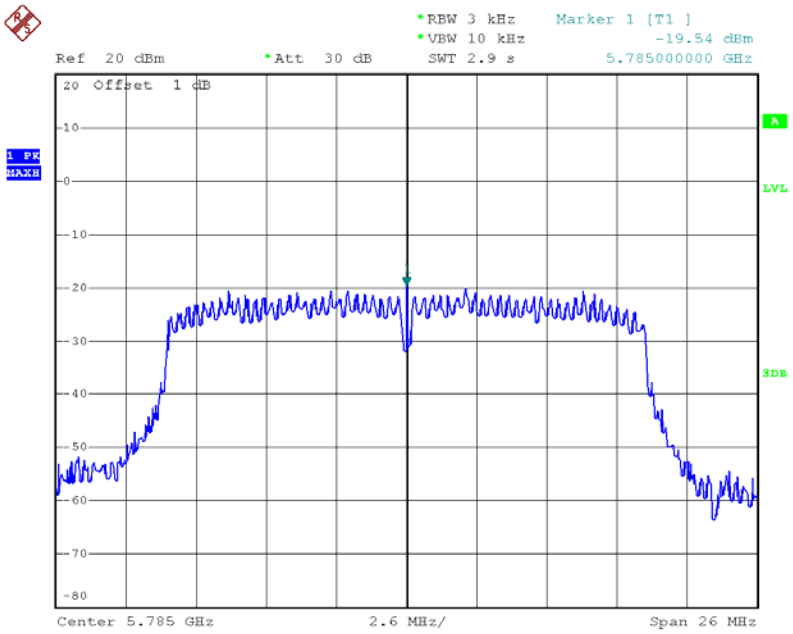
EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	23 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode /CH149, CH157, CH165 / ANT 0		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH149	5745 MHz	-19.81	8
CH157	5785 MHz	-19.54	8
CH165	5825 MHz	-19.26	8

TX CH149

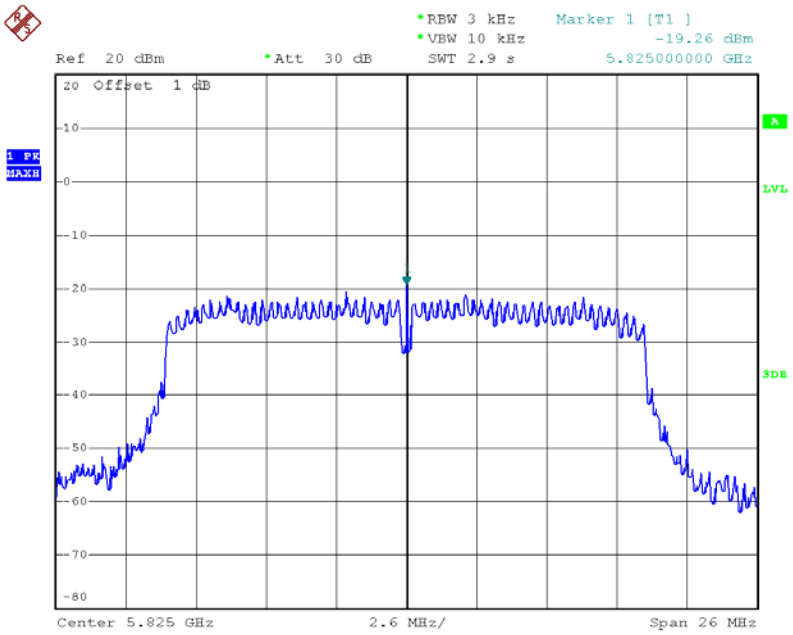


TX CH157



Date: 7.NOV.2013 22:35:01

TX CH165-

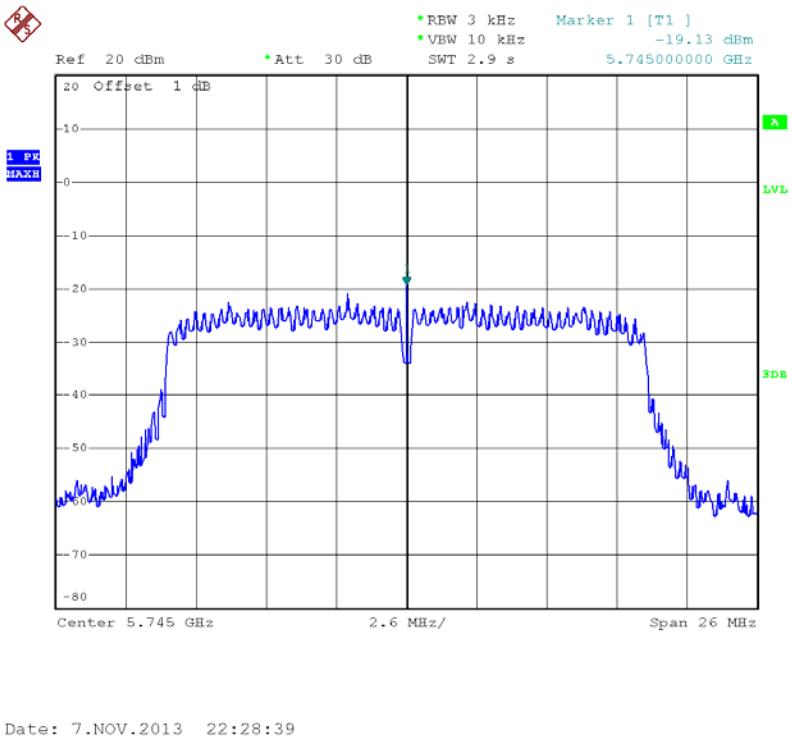


Date: 7.NOV.2013 22:38:33

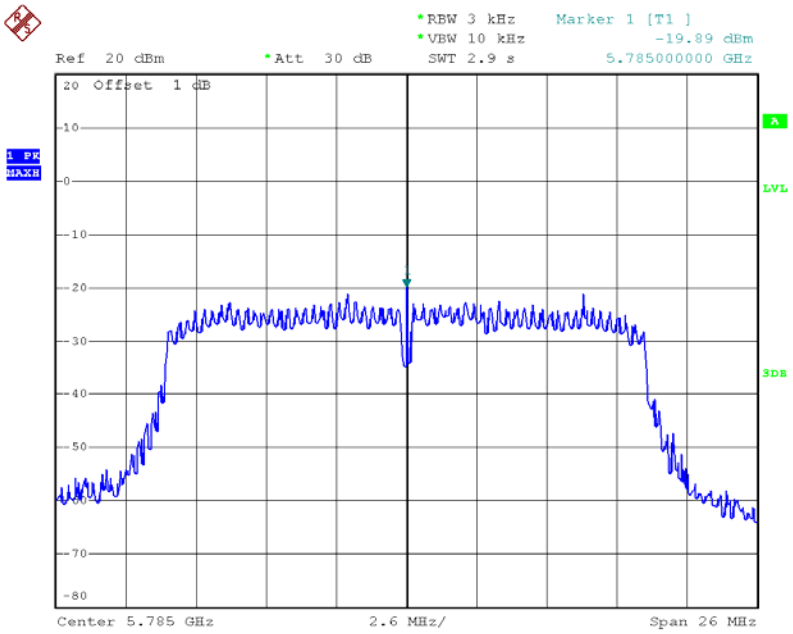
EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	23 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode /CH149, CH157, CH165 / ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH149	5745 MHz	-19.13	8
CH157	5785 MHz	-19.89	8
CH165	5825 MHz	-18.81	8

TX CH149

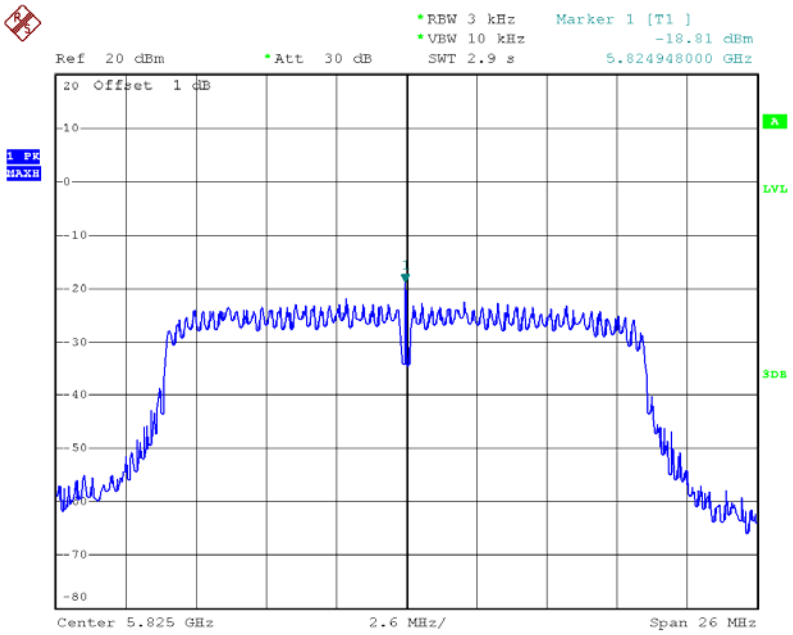


TX CH157



Date: 7.NOV.2013 22:26:07

TX CH165-



Date: 7.NOV.2013 22:20:01

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	23 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N20 Mode /CH149, CH157, CH165 / ANT 0 + ANT 1		

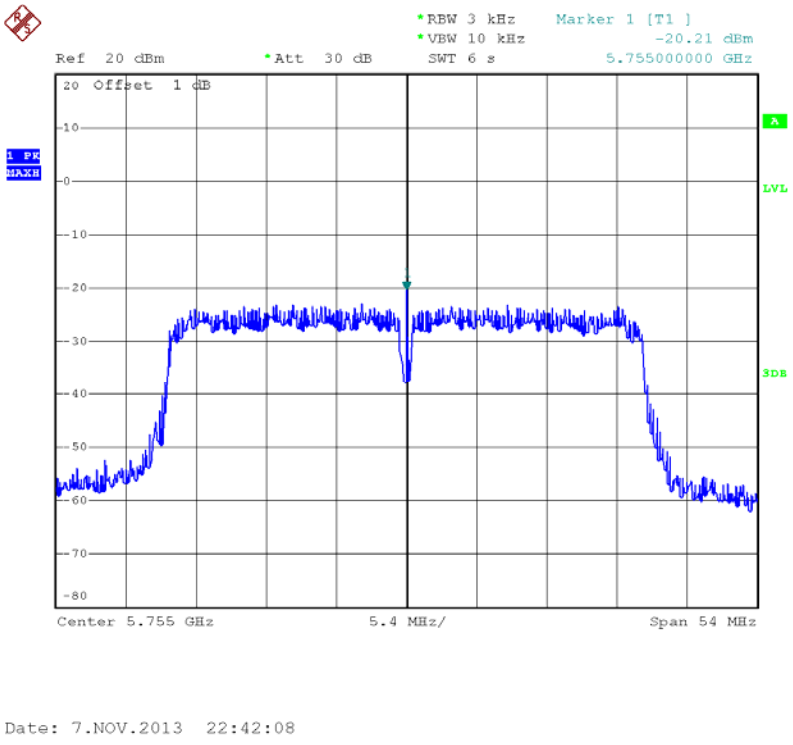
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH149	5745 MHz	-16.45	8
CH157	5785 MHz	-16.70	8
CH165	5825 MHz	-16.02	8

Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R) , all transmit signals are completely uncorrelated, then,**Direction gain = G_{ANT}**, that is Directional gain=5.2dBi.

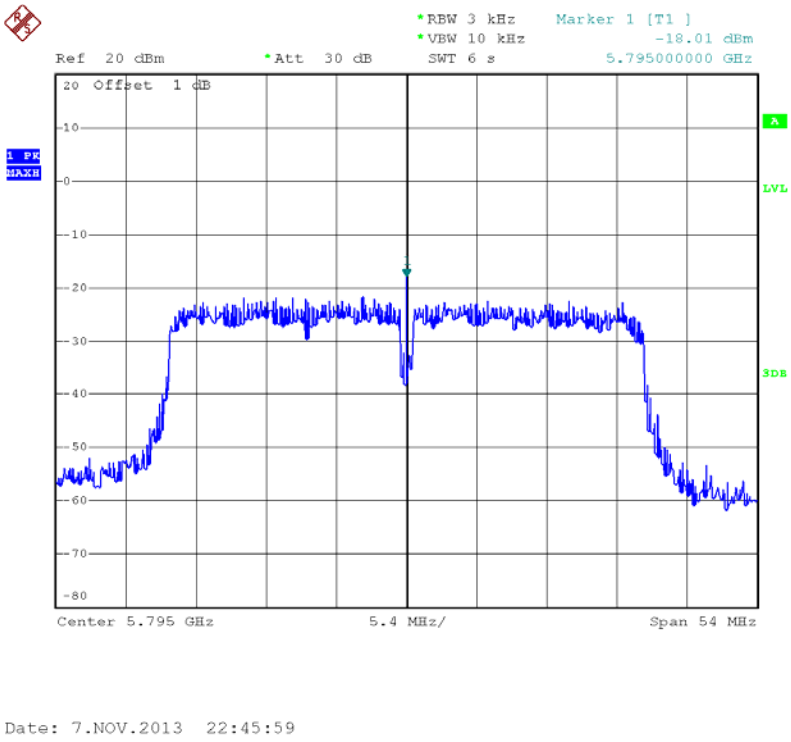
EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	23 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode /CH151, CH159 / ANT 0		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH151	5755 MHz	-20.21	8
CH159	5795 MHz	-18.01	8

TX CH151



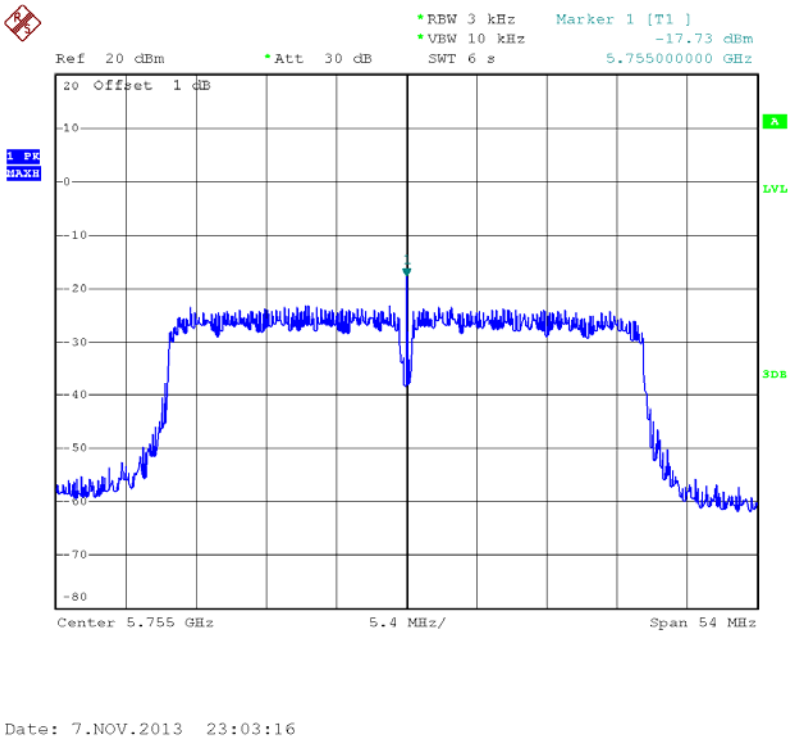
TX CH159


*RBW 3 kHz
*VBW 10 kHz
SWT 6 s
Marker 1 [T1]
-18.01 dBm
5.795000000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Center 5.795 GHz
5.4 MHz/
Span 54 MHz
Date: 7.NOV.2013 22:45:59

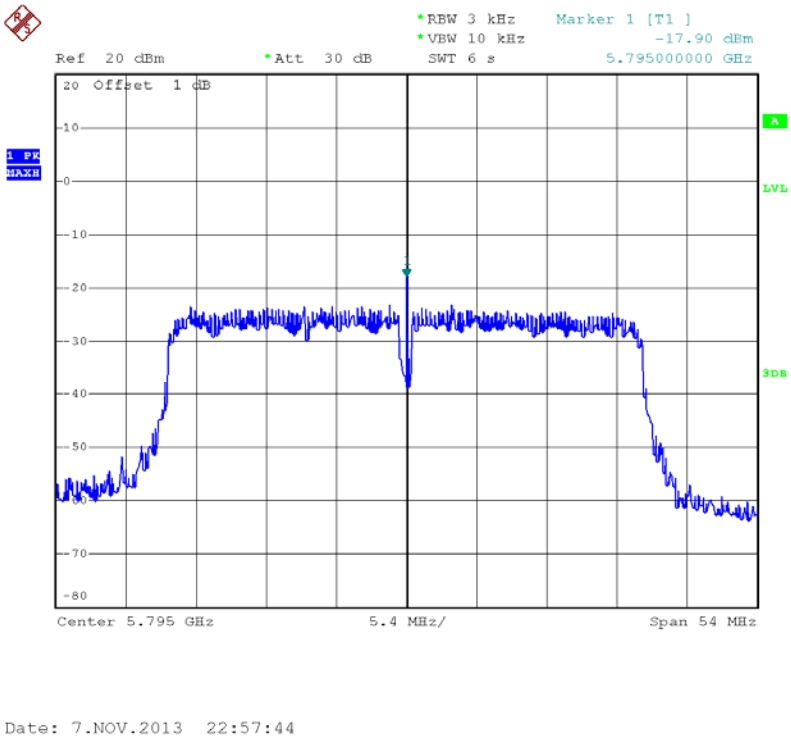
EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	23 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode /CH151, CH159 / ANT 1		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH151	5755 MHz	-17.73	8
CH159	5795 MHz	-17.90	8

TX CH151



TX CH159


*RBW 3 kHz
*VBW 10 kHz
SWT 6 s
Marker 1 [T1]
-17.90 dBm
5.795000000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 1 dB
1 PK
MAXH
A
LVL
3DB
Center 5.795 GHz
5.4 MHz/
Span 54 MHz
Date: 7.NOV.2013 22:57:44

EUT:	Wireless Dual Band USB Adapter	Model Name :	WF2151
Temperature:	23 ℃	Relative Humidity:	51 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	TX N40 Mode /CH151, CH159 / ANT 0+ANT 1		

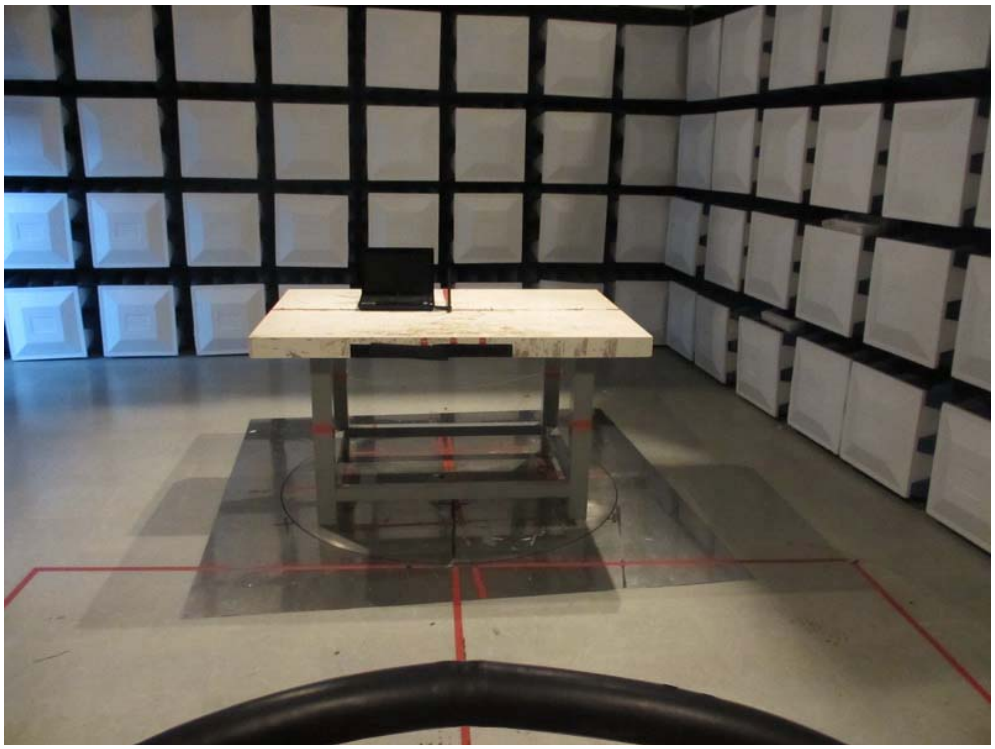
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH151	5755 MHz	-15.79	8
CH159	5795 MHz	-14.94	8

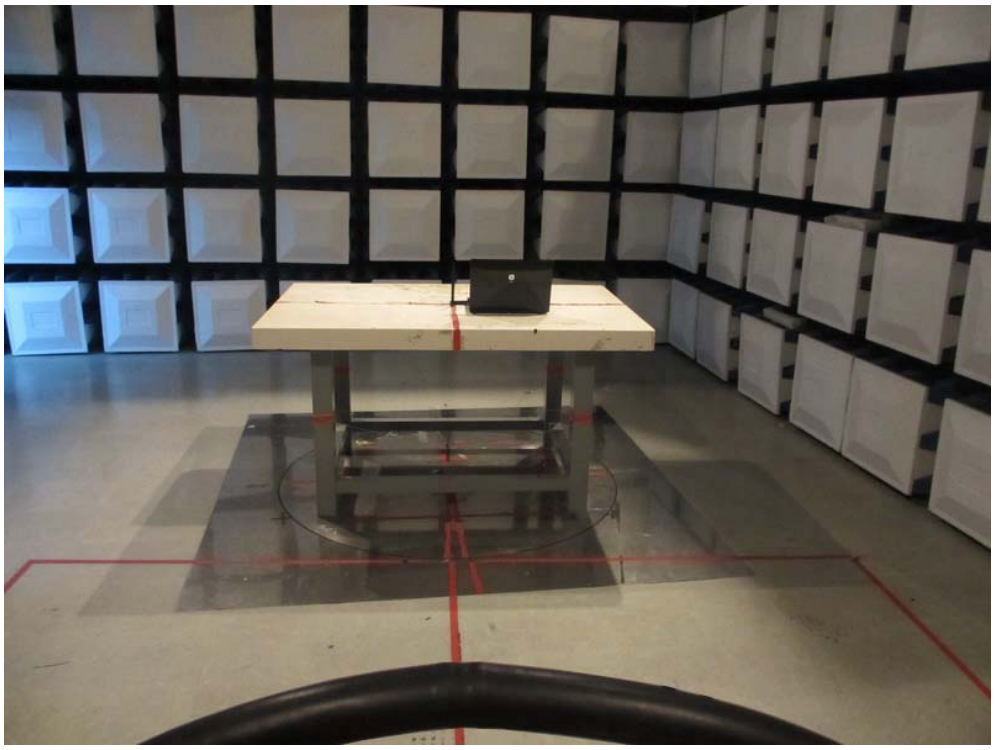
Note: The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers (2T2R) , all transmit signals are completely uncorrelated, then,**Direction gain = G_{ANT}**, that is Directional gain=5.2dBi..

9. EUT TEST PHOTO

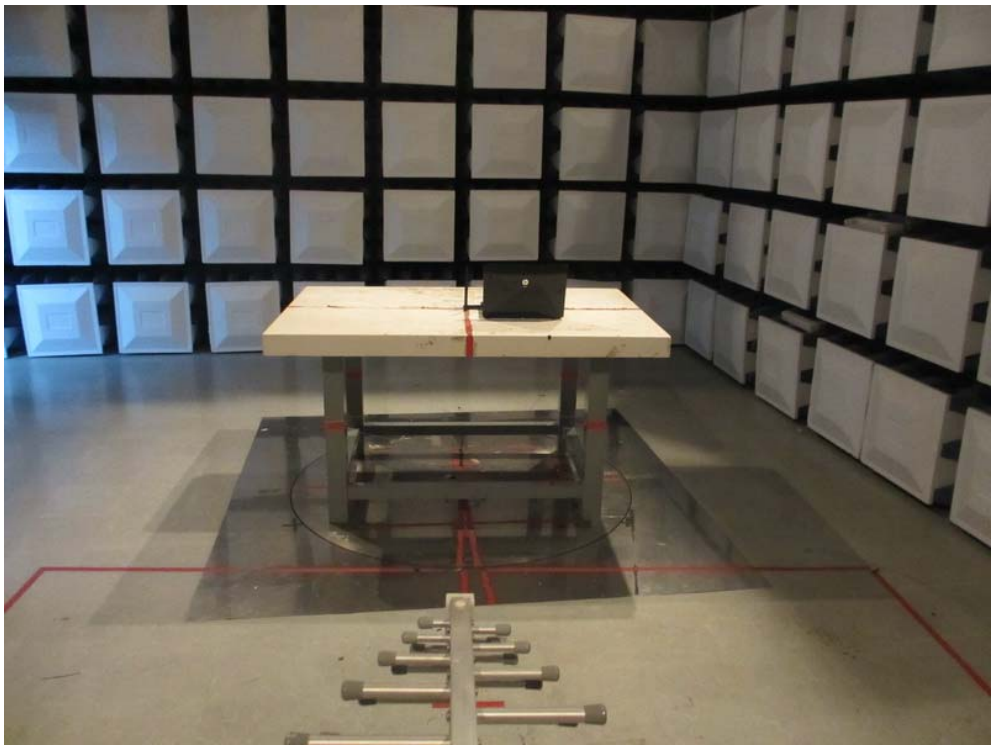
Conducted Measurement Photos

Radiated Measurement Photos
9KHz~30MHz





Radiated Measurement Photos
30M~1000MHz



Radiated Measurement Photos
Above 1000MHz