FCC Radio Test Report

FCC ID: T58WF2190R

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

Issued Date	:	Nov. 13, 2013
Project No.	:	1307C140A
Equipment	:	AC1200 Wireless Dual Band USB Adapter
Model Name	:	WF2190
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. 25, 2013
Date of Test: Sep. 25, 2013~ Nov. 12, 2013

Testing Engineer : David Mao
(David Mao)

Technical Manager : Leo Hung
(Leo Hung)

Authorized Signatory : Steven Lu
(Steven Lu)

Neutron Engineering Inc.
No.3,Jinshagang 1st Road, ShiXia,
Dalang Town, Dong Guan, China.
TEL: 0769-8318-3000
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Declaration

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

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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-2-1307C140A	Original Issue.	Nov. 13, 2013

1. CERTIFICATION

Equipment	:	AC1200 Wireless Dual Band USB Adapter
Brand Name	:	netis
Model Name	:	WF2190
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. 25, 2013~ Nov. 12, 2013
Test Item	:	ENGINEERING SAMPLE
Standard(s)	:	FCC Part15, Subpart E(15.407) / ANSI C63.4 : 2009; FCC KDB 789033 D01 General UNII Test Procedures v01r03 .

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-2-1307C140A) 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 5150MHz~5250MHz Mode part of the product.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part15, Subpart E			
Standard(s) Section	Test Item	Judgment	Remark
15.207	AC Power Line Conducted Emissions	PASS	
15.407(a)	26dB Spectrum Bandwidth	PASS	
15.407(a)	Maximum Conducted Output Power	PASS	
15.407(a)	Power Spectral Density	PASS	
15.407(a)	Peak Excursion	PASS	
15.407(a)	Radiated Emissions	PASS	
15.407(b)	Band Edge Emissions	PASS	
15.407(g)	Frequency Stability	PASS	
15.203	Antenna Requirements	PASS	

NOTE:

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

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

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 Range	U，(dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

<table>
<tr><td>Equipment</td><td>AC1200 Wireless Dual Band USB Adapter</td></tr>
<tr><td>Brand Name</td><td>netis</td></tr>
<tr><td>Model Name</td><td>WF2190</td></tr>
<tr><td>Mode Different</td><td>N/A</td></tr>
<tr><td>Product Description</td><td>
<table>
<tr><td>Operation Frequency</td><td>Band 1:5150MHz~5250MHz</td></tr>
<tr><td>Modulation Type</td><td>OFDM</td></tr>
<tr><td>Bit Rate of Transmitter</td><td>867Mbps</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>Output Power (Max.)-</td><td>802.11a: 15.14dBm
802.11n (20M): 14.01dBm
802.11n (40M): 14.08dBm
802.11ac (20M): 14.04dBm
802.11ac (40M): 14.12dBm
802.11ac (80M): 14.13dBm</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 host system.</td></tr>
<tr><td>Power Rating</td><td>I/P: AC 120V/60Hz O/P: DC 5V</td></tr>
<tr><td>Connecting I/O Port(s)</td><td>Please refer to the User's Manual.</td></tr>
</table>

Note:

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

2. Channel List:

802.11a / 802.11n 20MHz/802.11ac 20MHz		802.11n 40M/802.11ac 40MHz		802.11ac 80MHz	
Band 1		Band 1		Band 1	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

3. Antenna Specification:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
0		N/A	Dipole Antenna	N/A	5.2	TX/RX
1		N/A	Dipole 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 = G_{ANT}**, 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)
802.11ac(20MHz)	-	V (ANT 0 + ANT 1)
802.11ac(40MHz)	-	V (ANT 0 + ANT 1)
802.11ac(80MHz)	-	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 Test Mode	Description
Mode 1	TX A Mode / CH36, CH40, CH48(Band 1)
Mode 2	TX N20 Mode / CH36, CH40, CH48(Band 1)
Mode 3	TX N40 Mode / CH38, CH46 (Band 1)
Mode 4	TX AC N20 Mode / CH36, CH40, CH48(Band 1)
Mode 5	TX AC N40 Mode / CH38, CH46 (Band 1)
Mode 6	TX AC N80 Mode / CH42 (Band 1)
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 / CH36, CH40, CH48(Band 1)
Mode 2	TX N20 Mode / CH36, CH40, CH48(Band 1)
Mode 3	TX N40 Mode / CH38, CH46 (Band 1)
Mode 4	TX AC N20 Mode / CH36, CH40, CH48(Band 1)
Mode 5	TX AC N40 Mode / CH38, CH46 (Band 1)
Mode 6	TX AC N80 Mode / CH42 (Band 1)

Note: For radiated below 1G test, the 802.11a and 802.11ac N20 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

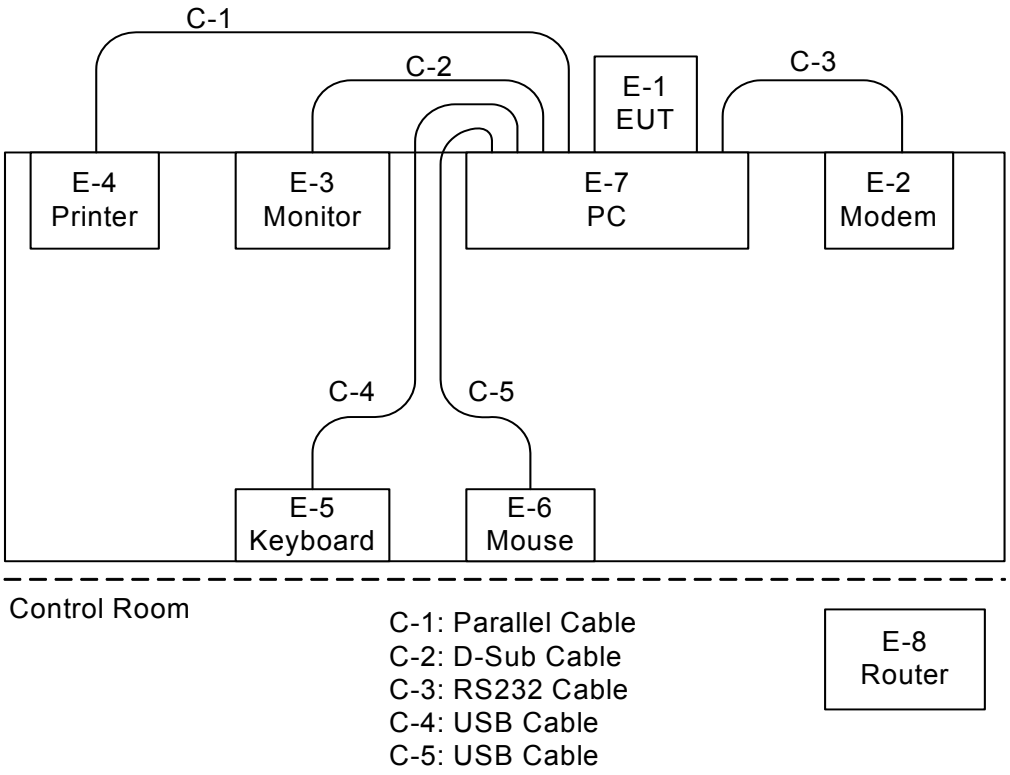
Test software version	MPTool		
Frequency	5180 MHz	5200MHz	5240 MHz
A Mode	48	49	49
N20 Mode	43	43	44
AC N20 Mode	43	46	46

Test software version	MPTool		
Frequency	5190 MHz	5230MHz	
N40 Mode	43	44	
AC N40 Mode	43	43	

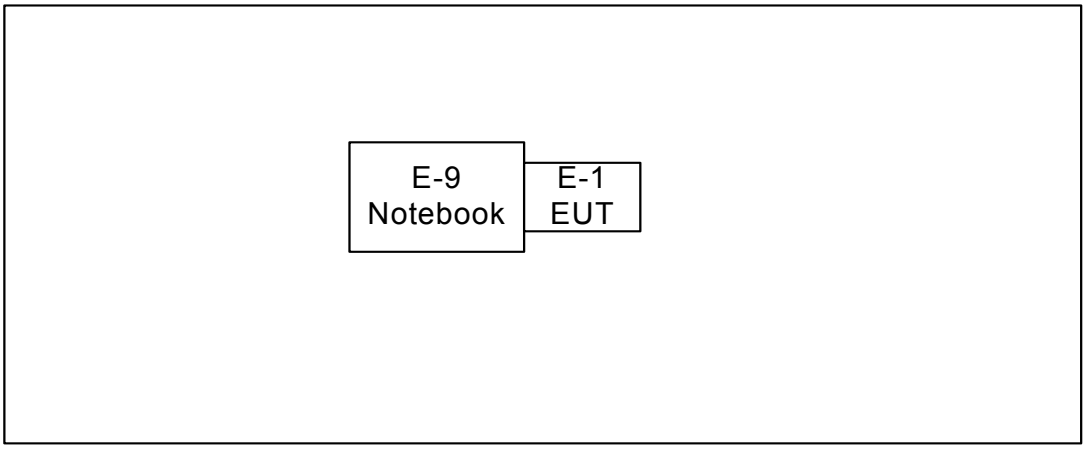
Test software version	MPTool		
Frequency	5210 MHz		
AC N80 Mode	48		

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted TX Mode:



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	AC1200 Wireless Dual Band USB Adapter	netis	WF2190	T58WF2190R	N/A	EUT
E-2	Modem	ACEEX	DM-1414V	IFAXDM1414	0603002131	
E-3	LCD monitor	DELL	E177FPc	DOC	CNOFJ179-64180-6AG-1WNS	
E-4	Printer	SII	DPU-414	DOC	3018507 B	
E-5	USB Keyboard	DELL	SK-8115	DOC	MY-0DJ325-71619-77N-1526	
E-6	USB Mouse	DELL	MO56UC	DOC	G0R000XN	
E-7	PC	DELL	745	DOC	G7K832X	
E-8	Router	Net.Core	NW705S	DOC	NA	
E-9	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	1.5m	
C-4	YES	YES	1.8m	
C-5	YES	NO	1.8m	

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

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

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

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

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.

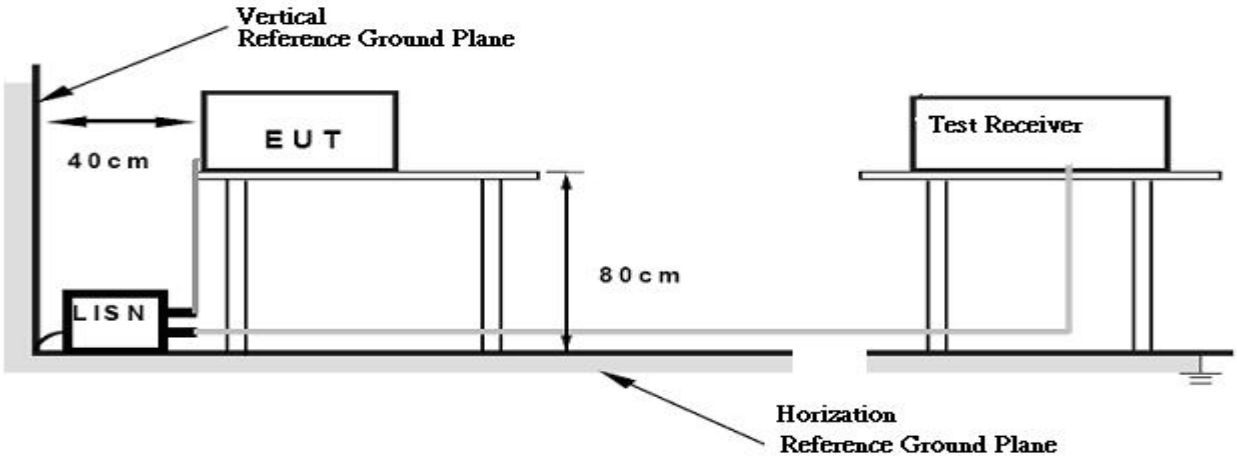
4.1.3 TEST PROCEDURE

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



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 mode.

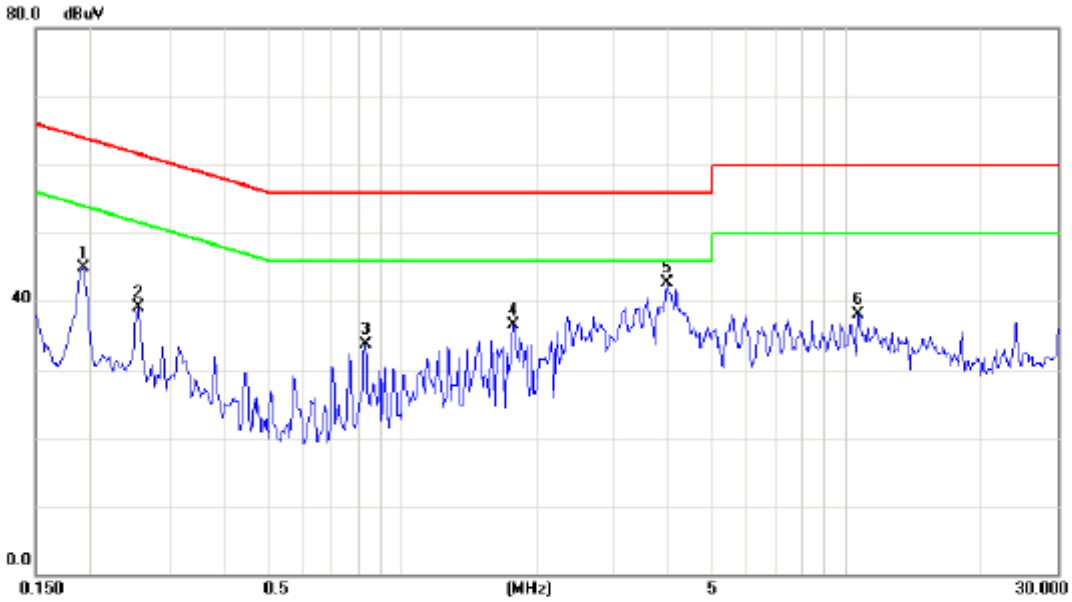
4.1.7 TEST RESULTS

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 ◦

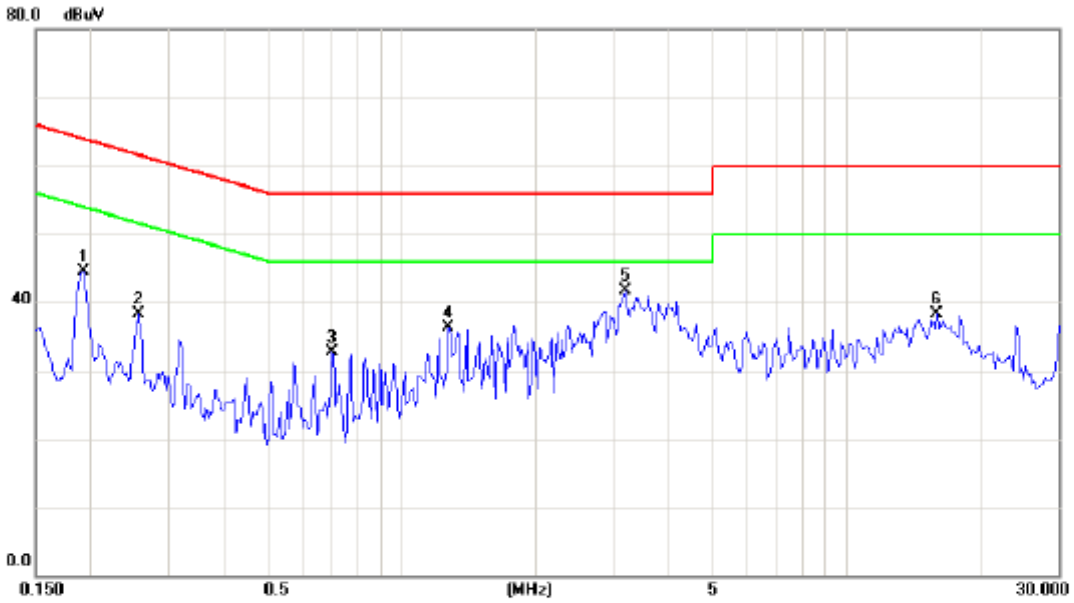
(2) Measuring frequency range from 150KHz to 30MHz ◦

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name:	WF2190
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		0.1922	35.11	9.76	44.87	63.94	-19.07	peak	
2		0.2550	29.28	9.74	39.02	61.59	-22.57	peak	
3		0.8316	23.90	9.71	33.61	56.00	-22.39	peak	
4		1.7854	26.75	9.69	36.44	56.00	-19.56	peak	
5	*	3.9560	33.02	9.76	42.78	56.00	-13.22	peak	
6		10.6651	28.37	9.82	38.19	60.00	-21.81	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name:	WF2190
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		0.1922	34.76	9.75	44.51	63.94	-19.43	peak	
2		0.2550	28.64	9.73	38.37	61.59	-23.22	peak	
3		0.6982	22.99	9.69	32.68	56.00	-23.32	peak	
4		1.2715	26.66	9.69	36.35	56.00	-19.65	peak	
5	*	3.1827	31.93	9.71	41.64	56.00	-14.36	peak	
6		15.9596	28.55	9.85	38.40	60.00	-21.60	peak	

4.2 RADIATED EMISSION MEASUREMENT

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

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

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

Notes

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

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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27	68.3
	-17	78.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

4.2.2 MEASUREMENT INSTRUMENTS LIST

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

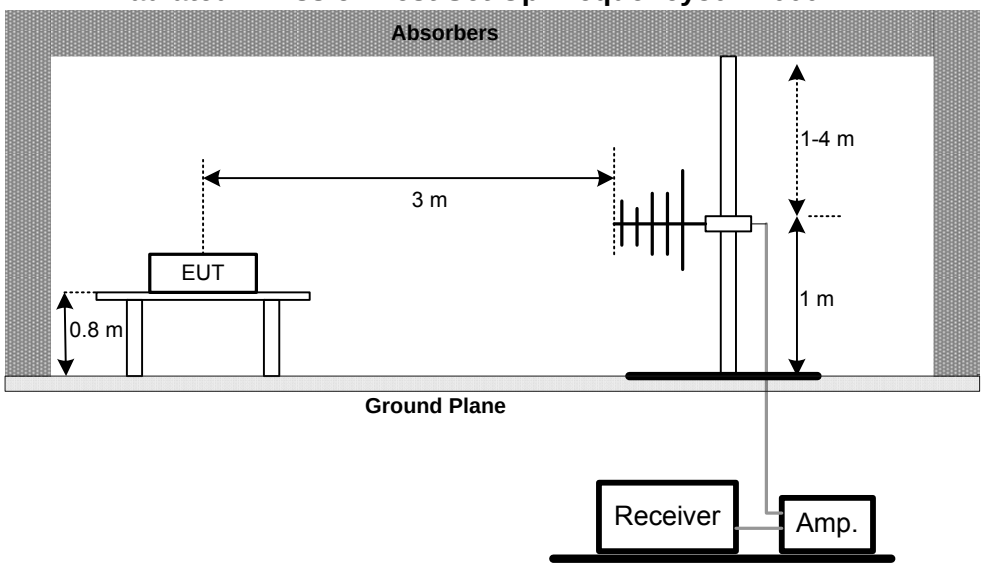
a. The measuring distance of at 1.5m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 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

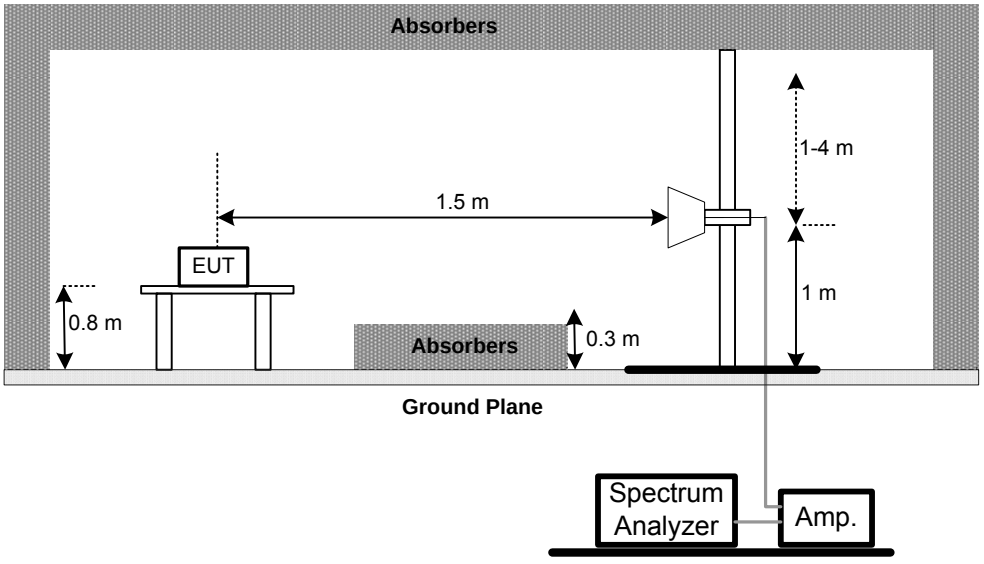
No deviation

4.2.5 TEST SETUP

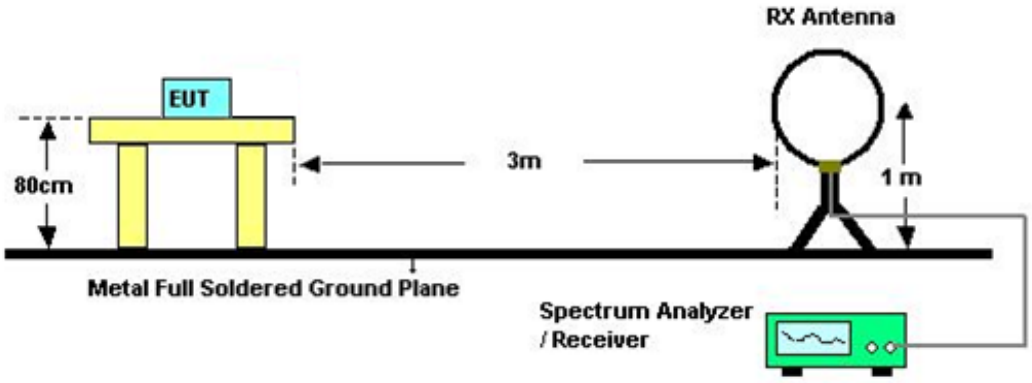
Radiated Emission Test Set-Up Frequency30 - 1000MHz



Radiated Emission Test Set-Up Frequency Above 1 GHz



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:	AC1200 Wireless Dual Band USB Adapter	Model Name:	WF2190
Temperature:	24 ℃	Relative Humidity:	55 %
Test Voltage:	AC 120V/60Hz		
Test Mode:	TX B MODE CHANNEL 01		

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0096	0°	25.16	24.30	49.46	127.96	-78.00	AVG
0.0096	0°	27.35	24.30	51.65	147.96	-94.13	PK
0.0352	0°	21.46	23.34	44.80	116.67	-72.64	AVG
0.0352	0°	23.05	23.34	46.39	136.67	-90.12	PK
0.0391	0°	22.85	23.09	45.94	115.76	-71.89	AVG
0.0391	0°	24.56	23.09	47.65	135.76	-89.16	PK
0.0475	0°	20.13	22.56	42.69	114.07	-69.40	AVG
0.0475	0°	22.85	22.56	45.41	134.07	-84.95	PK
0.4265	0°	19.65	19.98	39.63	95.01	-58.43	AVG
0.4265	0°	22.03	19.98	42.01	115.01	-75.09	PK
1.9560	0°	28.46	19.50	47.96	69.54	-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
0.0097	90°	20.54	24.30	44.84	127.87	-84.81	AVG
0.0097	90°	23.56	24.30	47.86	147.87	-102.03	PK
0.0251	90°	19.58	23.98	43.56	119.61	-82.07	AVG
0.0251	90°	22.14	23.98	46.12	139.61	-99.76	PK
0.0463	90°	19.53	22.63	42.16	114.29	-71.94	AVG
0.0463	90°	22.05	22.63	44.68	134.29	-89.27	PK
0.0589	90°	21.74	22.22	43.96	112.20	-67.37	AVG
0.0589	90°	23.12	22.22	45.34	132.20	-84.45	PK
0.2875	90°	23.51	20.31	43.82	98.43	-55.72	AVG
0.2875	90°	25.69	20.31	46.00	118.43	-72.26	PK
1.6540	90°	24.75	19.53	44.28	63.23	-18.69	QP

Remark：

(1) The amplitude of spurious emissions which are attenuated by more than 20 dB belc 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 30MHZ - 1000MHZ

Remark:

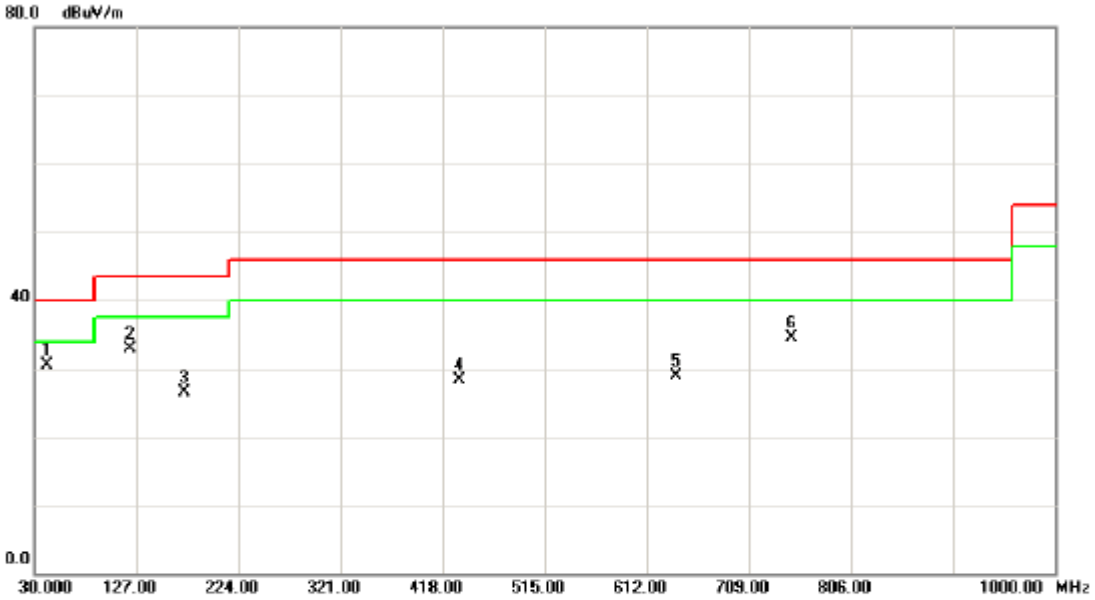
(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz ◦

(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 ◦

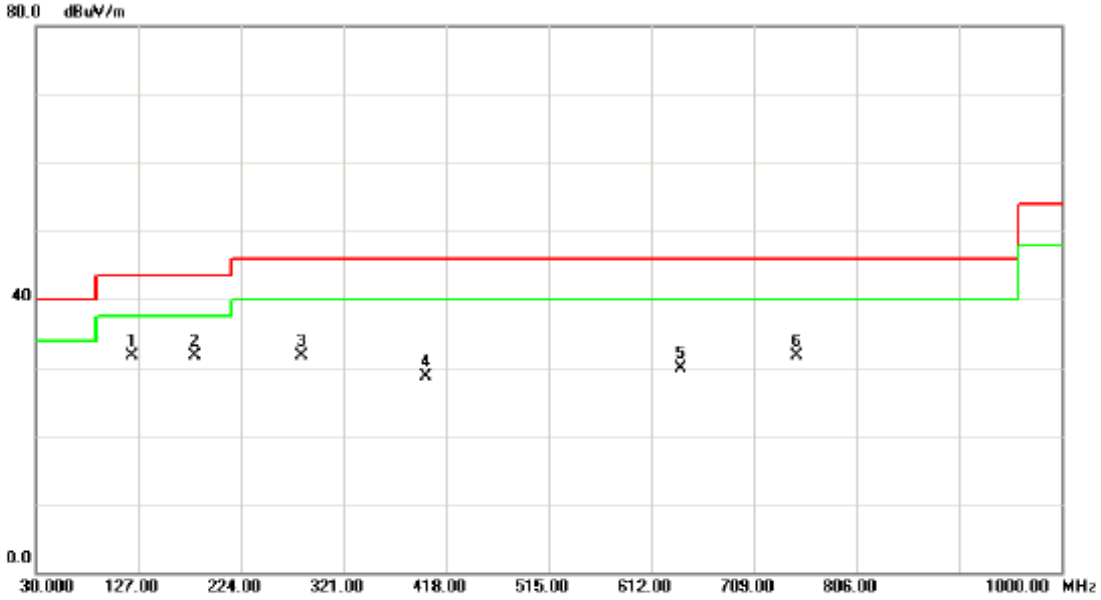
(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table ◦

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX A Mode 5180MHz		
Phase:	Vertical		



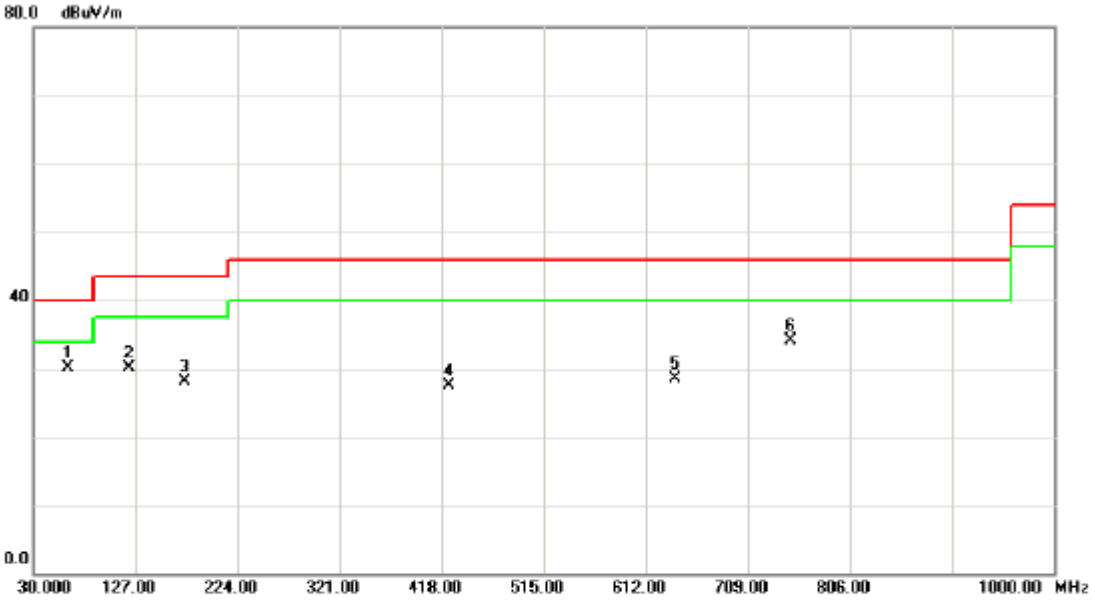
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	42.6100	44.84	-14.39	30.45	40.00	-9.55	peak	
2		121.1800	46.83	-13.83	33.00	43.50	-10.50	peak	
3		172.5900	39.18	-12.75	26.43	43.50	-17.07	peak	
4		433.5200	37.52	-9.23	28.29	46.00	-17.71	peak	
5		640.1300	34.92	-6.06	28.86	46.00	-17.14	peak	
6		749.7400	39.49	-4.91	34.58	46.00	-11.42	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX A Mode 5180MHz		
Phase:	Horizontal		



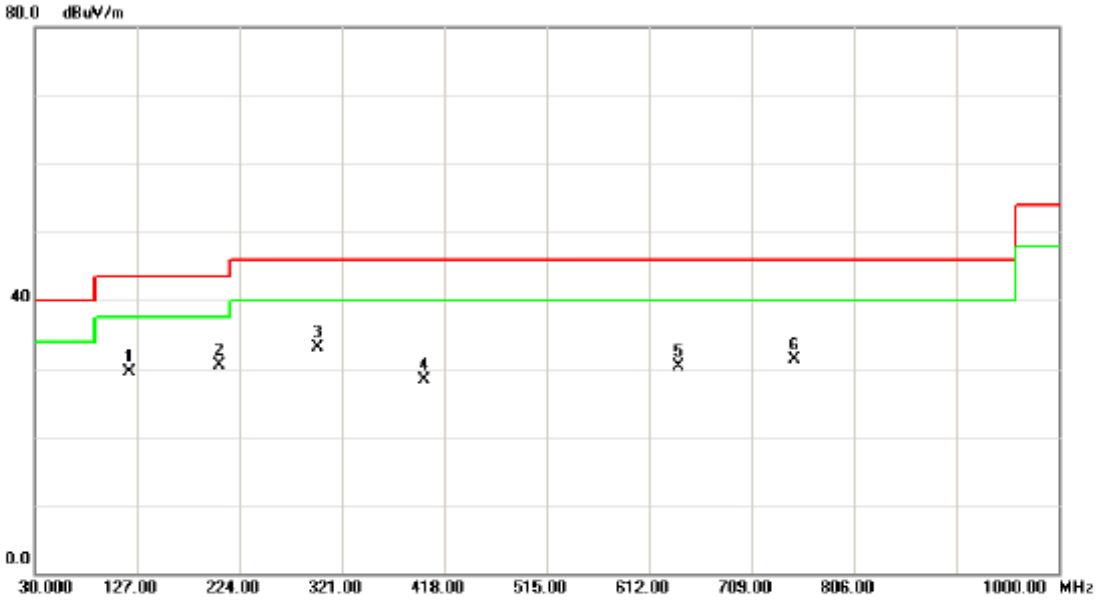
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		121.1800	45.44	-13.83	31.61	43.50	-11.89	peak	
2	*	180.3500	44.68	-12.89	31.79	43.50	-11.71	peak	
3		281.2300	44.13	-12.45	31.68	46.00	-14.32	peak	
4		399.5700	38.63	-9.89	28.74	46.00	-17.26	peak	
5		640.1300	35.97	-6.06	29.91	46.00	-16.09	peak	
6		749.7400	36.57	-4.91	31.66	46.00	-14.34	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX A Mode 5200MHz		
Phase:	Vertical		



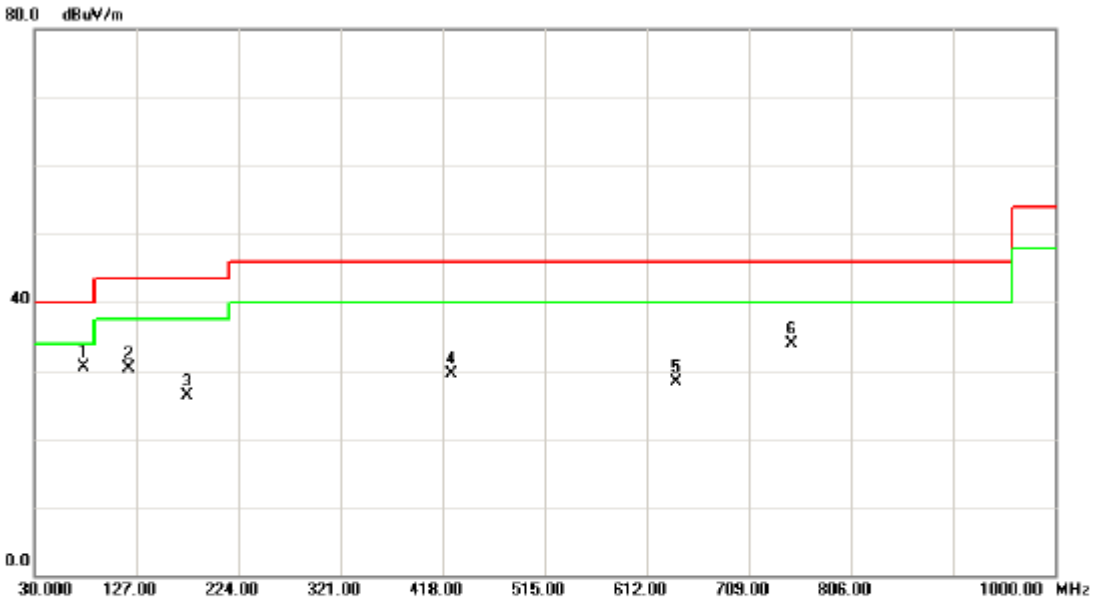
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	62.9800	45.51	-15.50	30.01	40.00	-9.99	peak	
2		121.1800	43.96	-13.83	30.13	43.50	-13.37	peak	
3		173.5600	40.94	-12.77	28.17	43.50	-15.33	peak	
4		424.7900	36.97	-9.39	27.58	46.00	-18.42	peak	
5		640.1300	34.48	-6.06	28.42	46.00	-17.58	peak	
6		749.7400	39.00	-4.91	34.09	46.00	-11.91	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX A Mode 5200MHz		
Phase:	Horizontal		



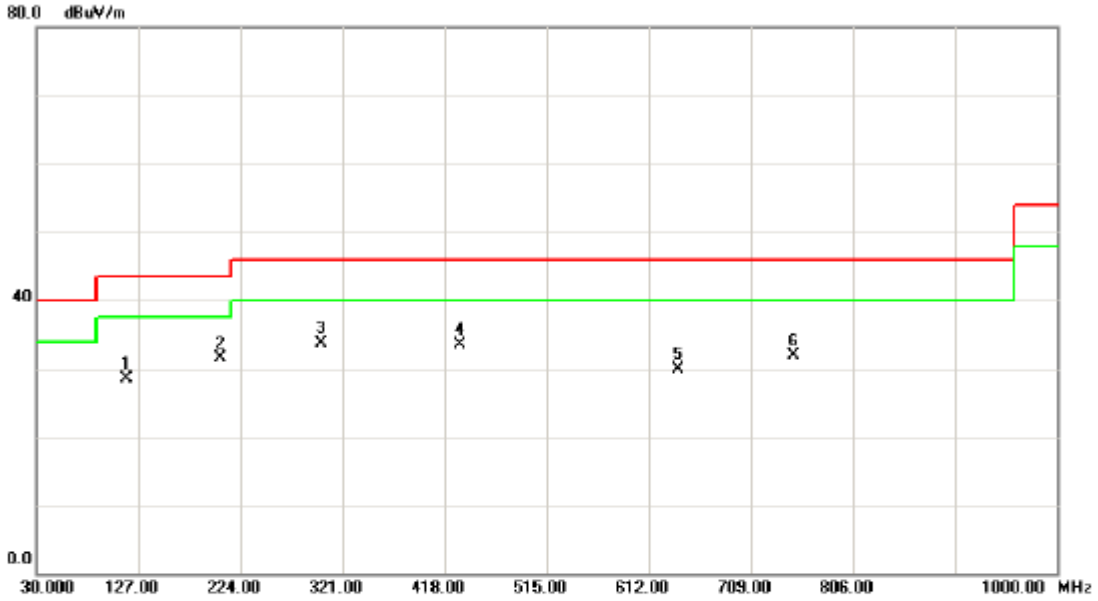
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		119.2400	43.41	-13.95	29.46	43.50	-14.04	peak	
2		205.5700	45.65	-15.23	30.42	43.50	-13.08	peak	
3	*	297.7200	44.38	-11.37	33.01	46.00	-12.99	peak	
4		399.5700	38.26	-9.89	28.37	46.00	-17.63	peak	
5		640.1300	36.30	-6.06	30.24	46.00	-15.76	peak	
6		749.7400	36.26	-4.91	31.35	46.00	-14.65	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX A Mode 5240MHz		
Phase:	Vertical		



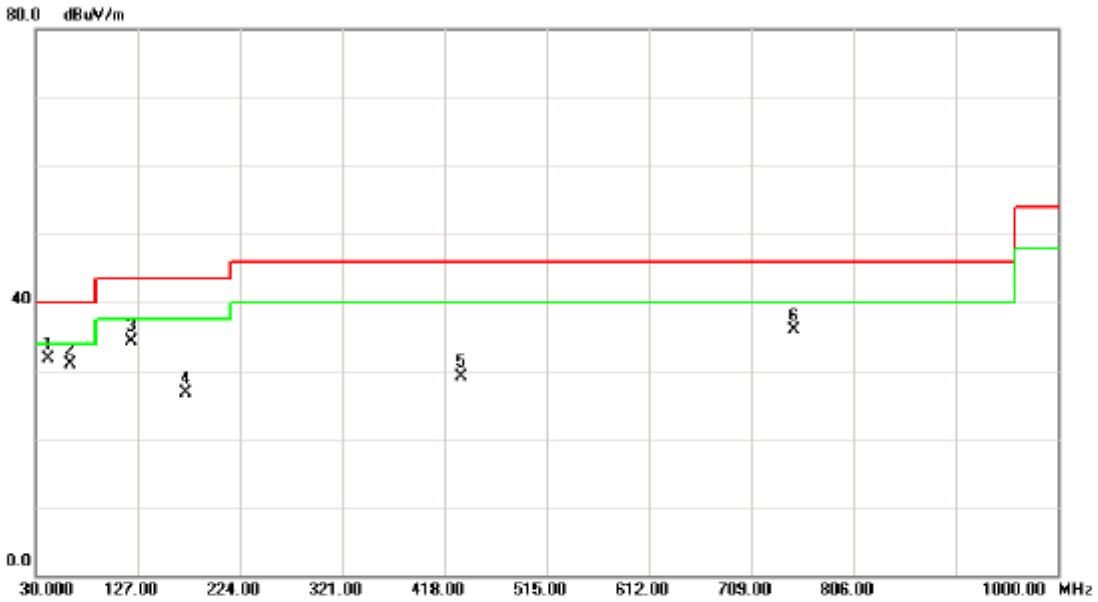
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	77.5300	47.67	-17.13	30.54	40.00	-9.46	peak	
2		119.2400	44.24	-13.95	30.29	43.50	-13.21	peak	
3		175.5000	39.06	-12.79	26.27	43.50	-17.23	peak	
4		425.7600	38.90	-9.38	29.52	46.00	-16.48	peak	
5		640.1300	34.40	-6.06	28.34	46.00	-17.66	peak	
6		749.7400	38.78	-4.91	33.87	46.00	-12.13	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX A Mode 5240MHz		
Phase:	Horizontal		



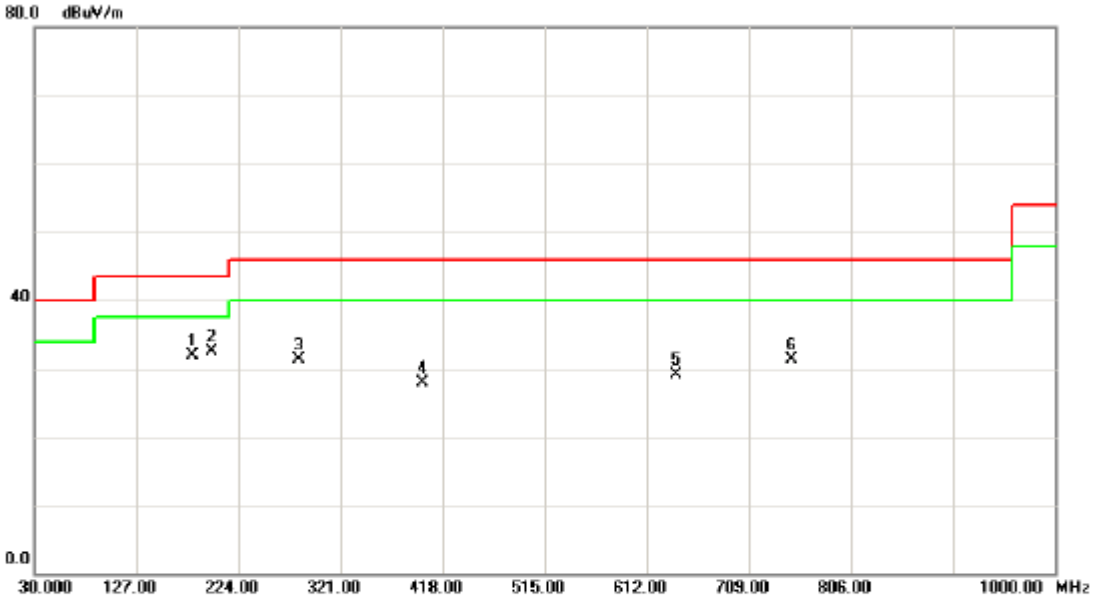
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		116.3300	42.73	-14.20	28.53	43.50	-14.97	peak	
2	*	205.5700	46.80	-15.23	31.57	43.50	-11.93	peak	
3		300.6300	44.92	-11.25	33.67	46.00	-12.33	peak	
4		432.5500	42.79	-9.24	33.55	46.00	-12.45	peak	
5		640.1300	35.89	-6.06	29.83	46.00	-16.17	peak	
6		749.7400	36.79	-4.91	31.88	46.00	-14.12	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX AC N20 Mode 5180MHz		
Phase:	Vertical		



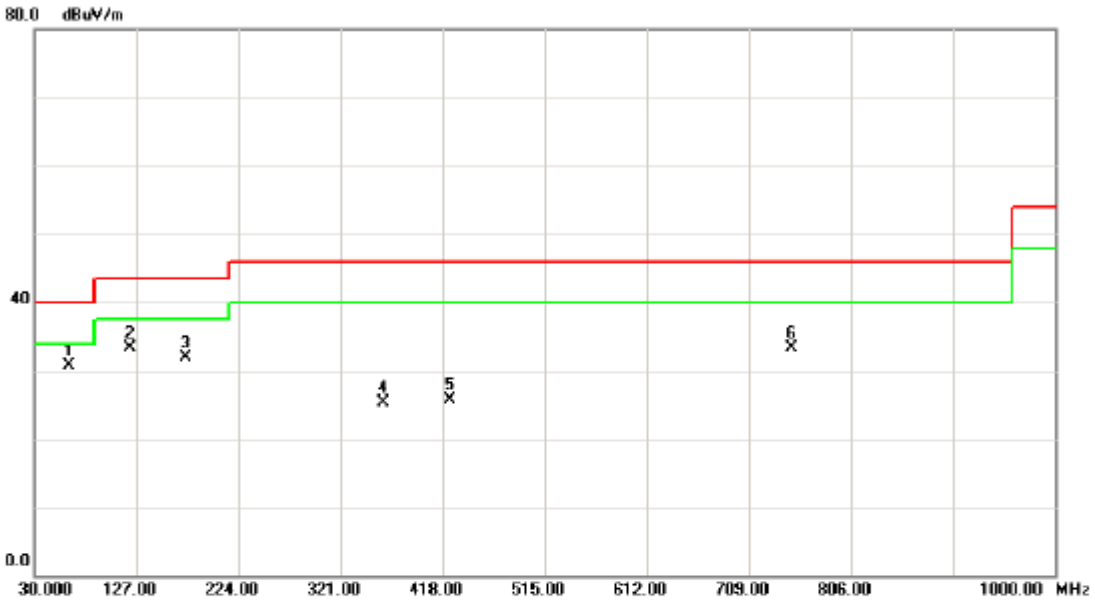
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	42.6100	46.14	-14.39	31.75	40.00	-8.25	peak	
2		62.9800	46.35	-15.50	30.85	40.00	-9.15	peak	
3		121.1800	48.13	-13.83	34.30	43.50	-9.20	peak	
4		172.5900	39.48	-12.75	26.73	43.50	-16.77	peak	
5		433.5200	38.32	-9.23	29.09	46.00	-16.91	peak	
6		749.7400	40.79	-4.91	35.88	46.00	-10.12	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX AC N20 Mode 5180MHz		
Phase:	Horizontal		



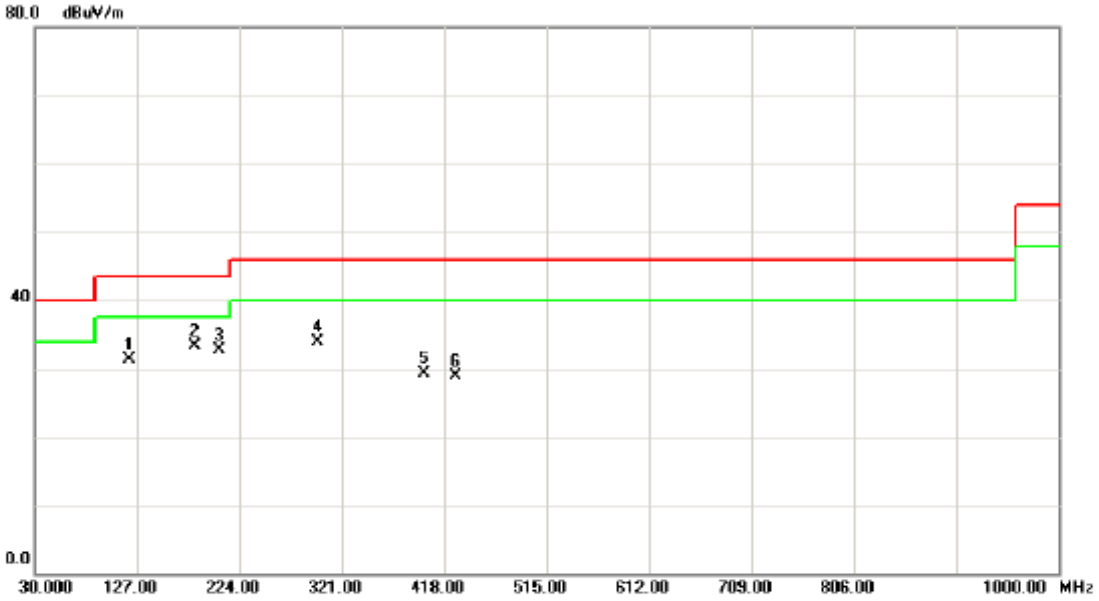
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		180.3500	44.89	-12.89	32.00	43.50	-11.50	peak	
2	*	198.7800	47.56	-15.09	32.47	43.50	-11.03	peak	
3		281.2300	43.84	-12.45	31.39	46.00	-14.61	peak	
4		399.5700	37.84	-9.89	27.95	46.00	-18.05	peak	
5		640.1300	35.17	-6.06	29.11	46.00	-16.89	peak	
6		749.7400	36.28	-4.91	31.37	46.00	-14.63	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX AC N20 Mode 5200MHz		
Phase:	Vertical		



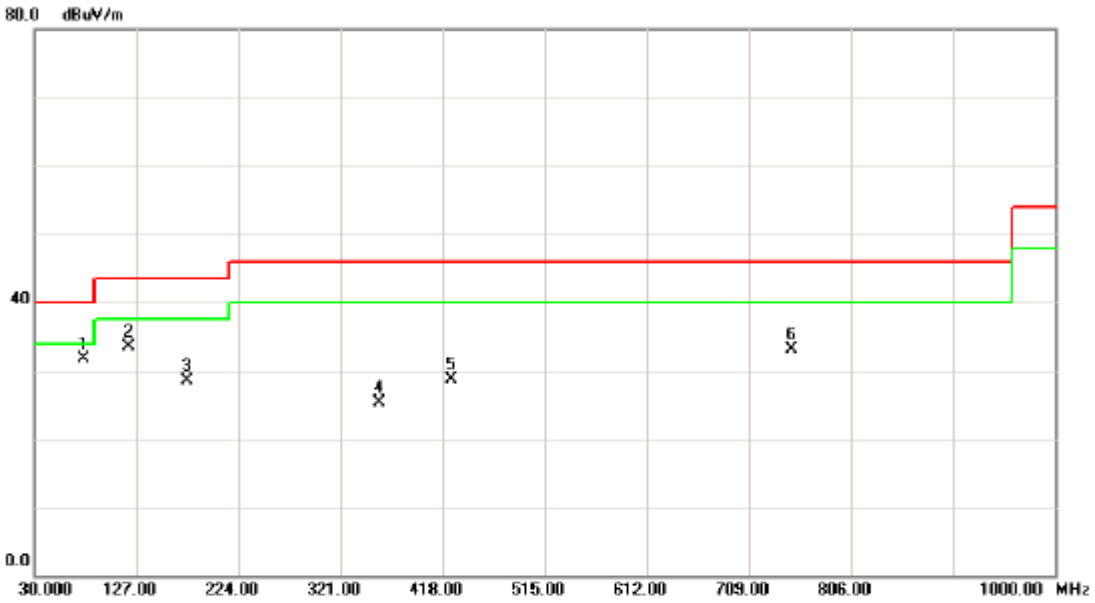
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	62.9800	46.23	-15.50	30.73	40.00	-9.27	peak	
2		121.1800	47.18	-13.83	33.35	43.50	-10.15	peak	
3		173.5600	44.66	-12.77	31.89	43.50	-11.61	peak	
4		361.7400	36.37	-11.09	25.28	46.00	-20.72	peak	
5		424.7900	35.19	-9.39	25.80	46.00	-20.20	peak	
6		749.7400	38.22	-4.91	33.31	46.00	-12.69	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX AC N20 Mode 5200MHz		
Phase:	Horizontal		



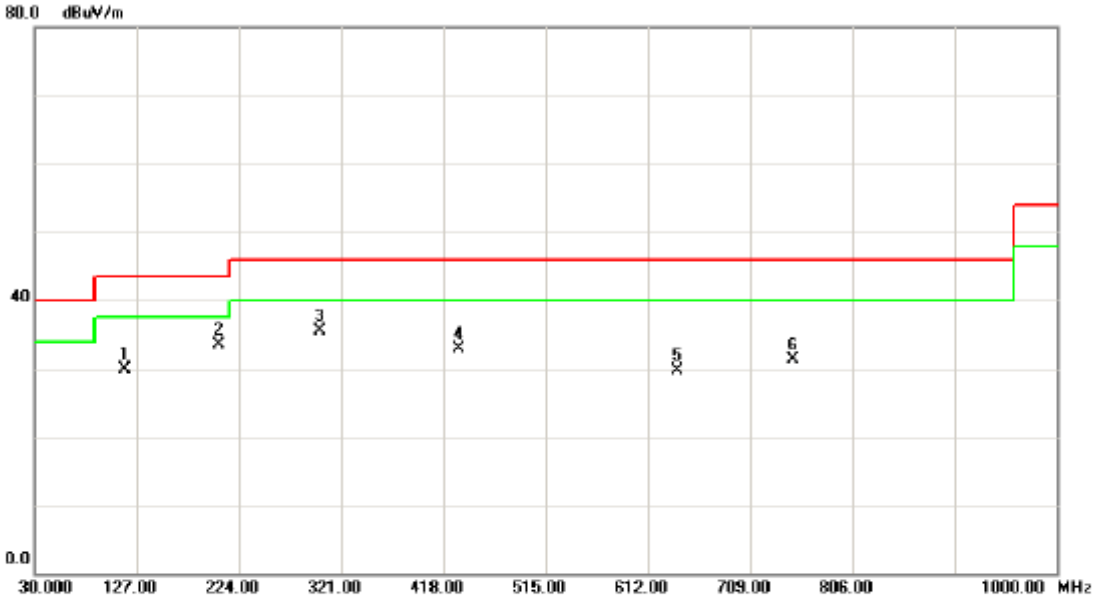
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		119.2400	45.26	-13.95	31.31	43.50	-12.19	peak	
2	*	181.3200	46.37	-13.04	33.33	43.50	-10.17	peak	
3		205.5700	48.00	-15.23	32.77	43.50	-10.73	peak	
4		297.7200	45.23	-11.37	33.86	46.00	-12.14	peak	
5		399.5700	39.11	-9.89	29.22	46.00	-16.78	peak	
6		428.6700	38.31	-9.32	28.99	46.00	-17.01	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX AC N20 Mode 5240MHz		
Phase:	Vertical		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	77.5300	48.85	-17.13	31.72	40.00	-8.28	peak	
2		119.2400	47.42	-13.95	33.47	43.50	-10.03	peak	
3		175.5000	41.24	-12.79	28.45	43.50	-15.05	peak	
4		357.8600	36.46	-11.21	25.25	46.00	-20.75	peak	
5		425.7600	38.08	-9.38	28.70	46.00	-17.30	peak	
6		749.7400	37.96	-4.91	33.05	46.00	-12.95	peak	

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25℃	Relative Humidity:	58 %
Pressure:	1010 hPa	Test Voltage :	AC 120V/60Hz
Test Mode :	Band 1/TX AC N20 Mode 5240MHz		
Phase:	Horizontal		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		116.3300	44.14	-14.20	29.94	43.50	-13.56	peak	
2	*	205.5700	48.71	-15.23	33.48	43.50	-10.02	peak	
3		300.6300	46.83	-11.25	35.58	46.00	-10.42	peak	
4		432.5500	42.20	-9.24	32.96	46.00	-13.04	peak	
5		640.1300	35.80	-6.06	29.74	46.00	-16.26	peak	
6		749.7400	36.20	-4.91	31.29	46.00	-14.71	peak	

4.2.9 TEST RESULTS - ABOVE 1000MHZ

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX A Mode 5180MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	V	14.28	1.12	42.72	57.00	43.84	-47.77	-60.93	68.30	54.00	-27.00	-41.30	X/E
5173.60	V	61.87	54.12	42.78	104.65	96.90	-0.12	-7.87					X/F
10360.35	V	42.15	30.92	16.03	58.18	46.95	-46.59	-57.82	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

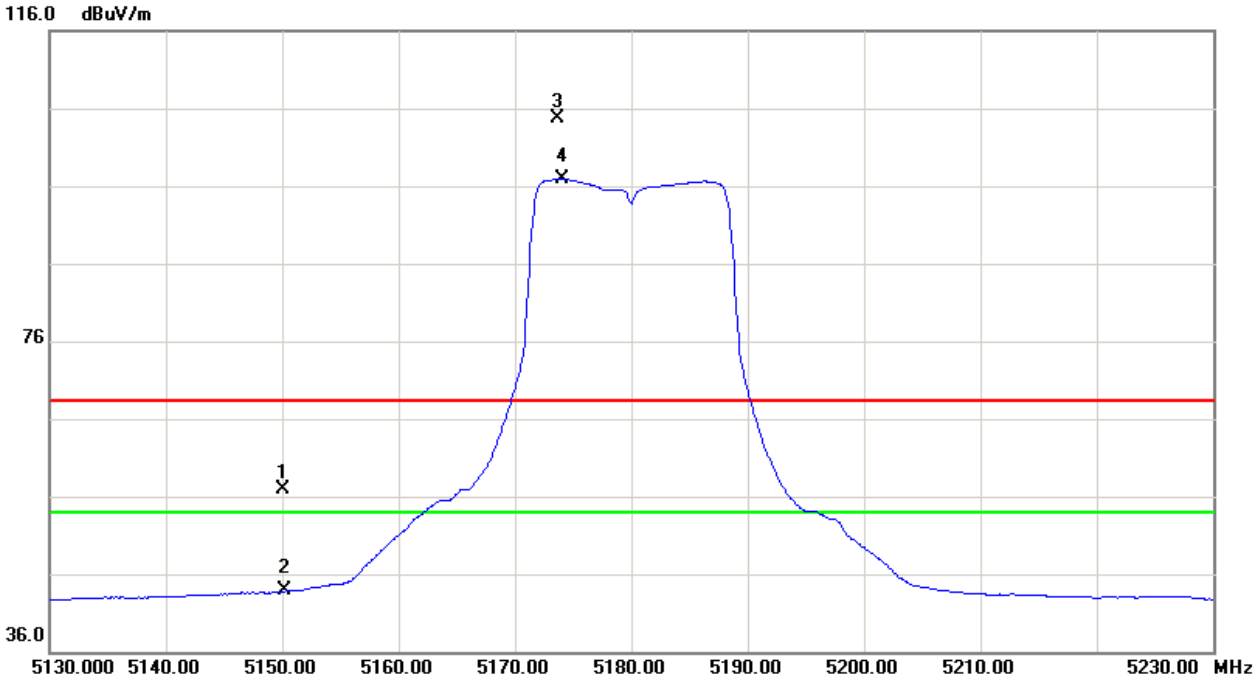
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

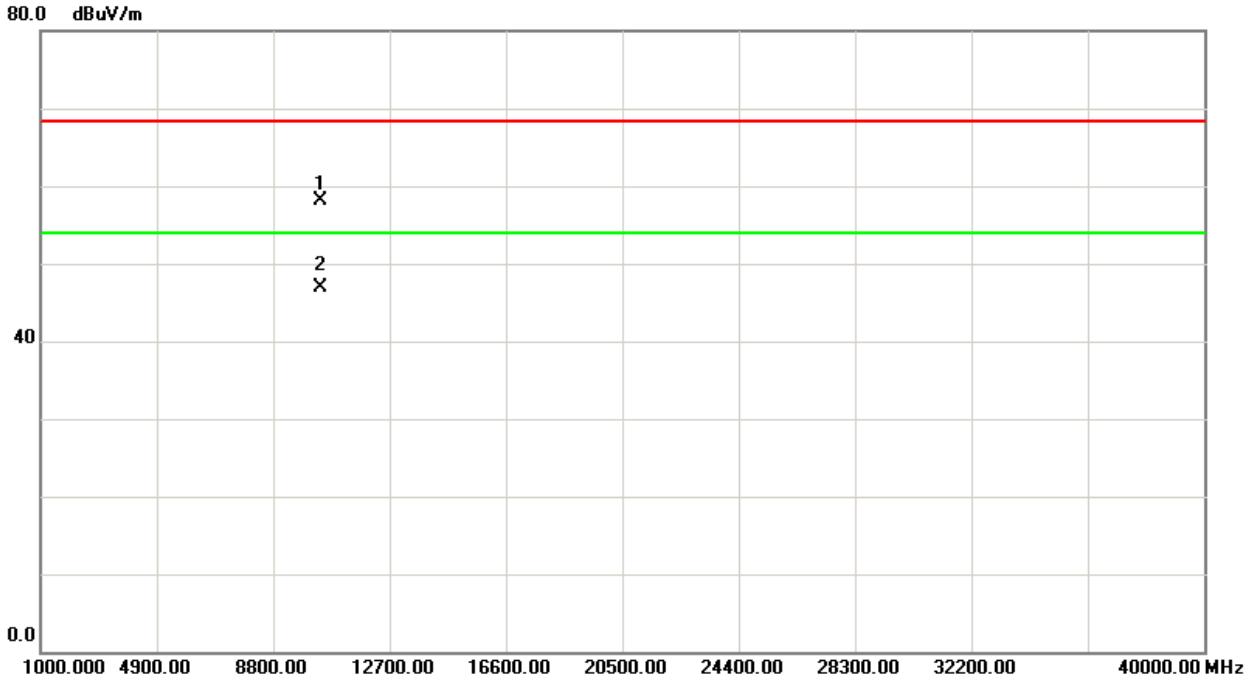
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH36(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX A Mode 5180MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	H	17.56	3.82	42.72	60.28	46.54	-44.49	-58.23	68.30	54.00	-27.00	-41.30	X/E
5174.40	H	65.80	56.99	42.78	108.58	99.77	3.81	-5.00					X/F
10360.32	H	42.89	32.16	16.03	58.92	48.19	-45.85	-56.58	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

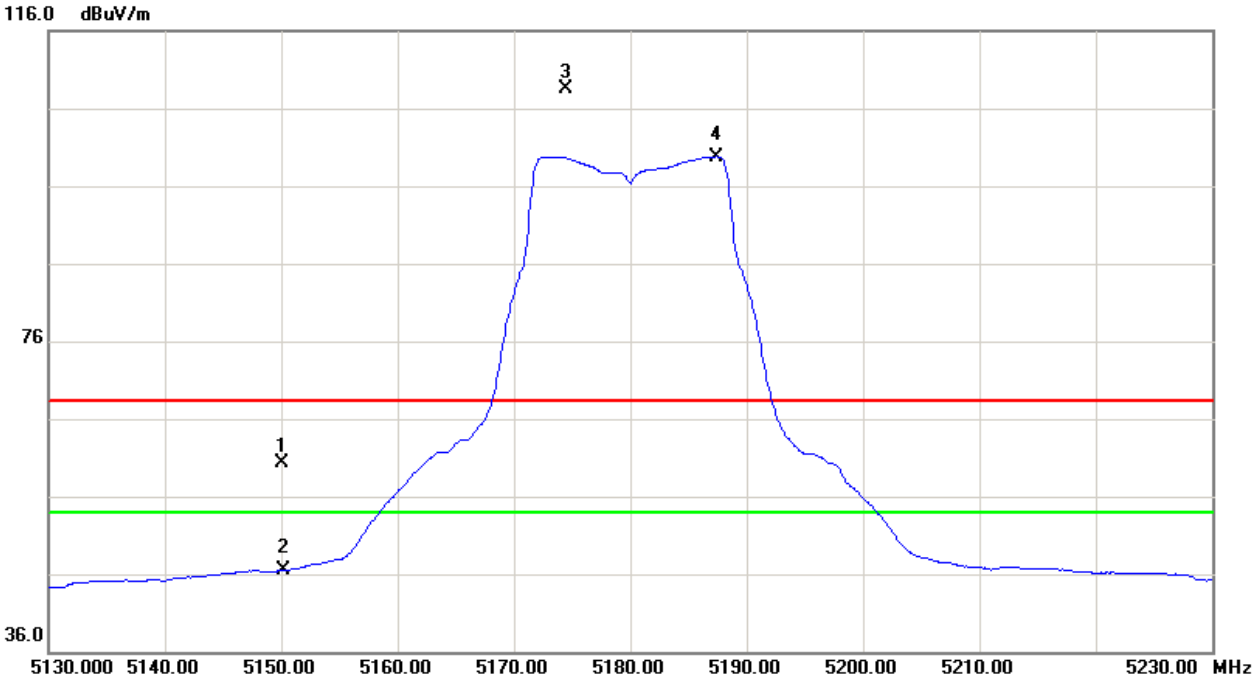
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

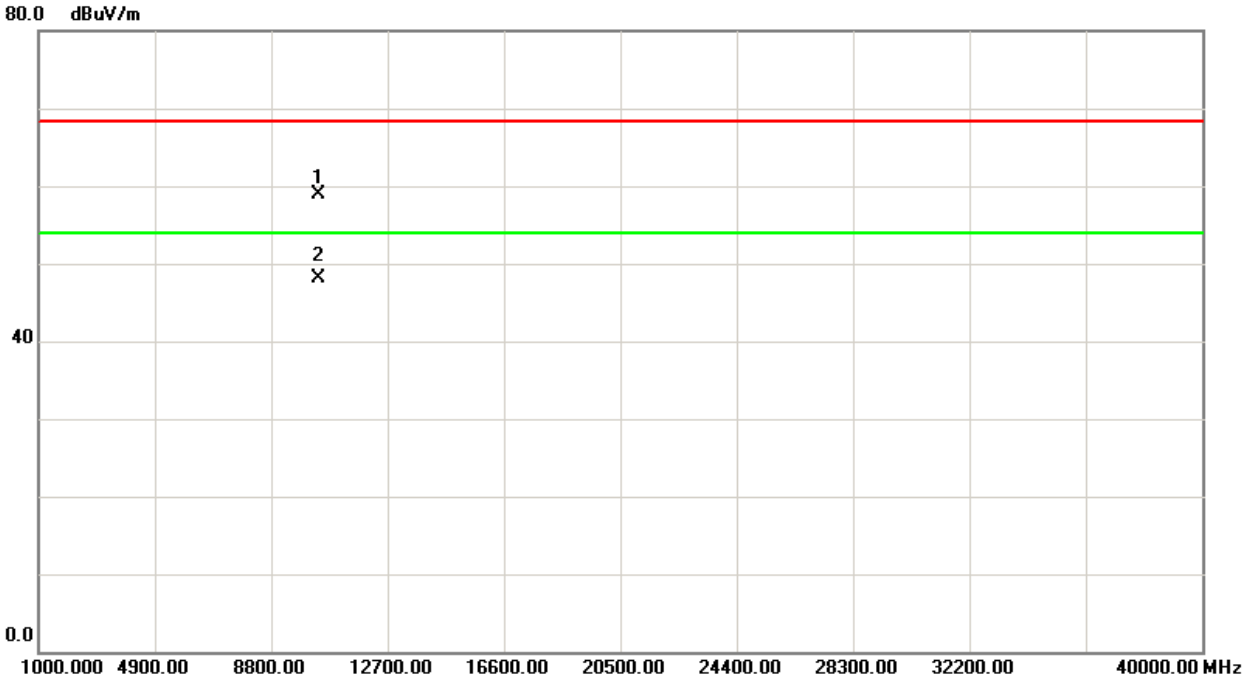
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH36(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX A Mode 5200MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5206.30	V	61.36	54.69	42.86	104.22	97.55	-0.55	-7.22					X/F
10400.23	V	41.03	28.97	15.97	57.00	44.94	-47.77	-59.83	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

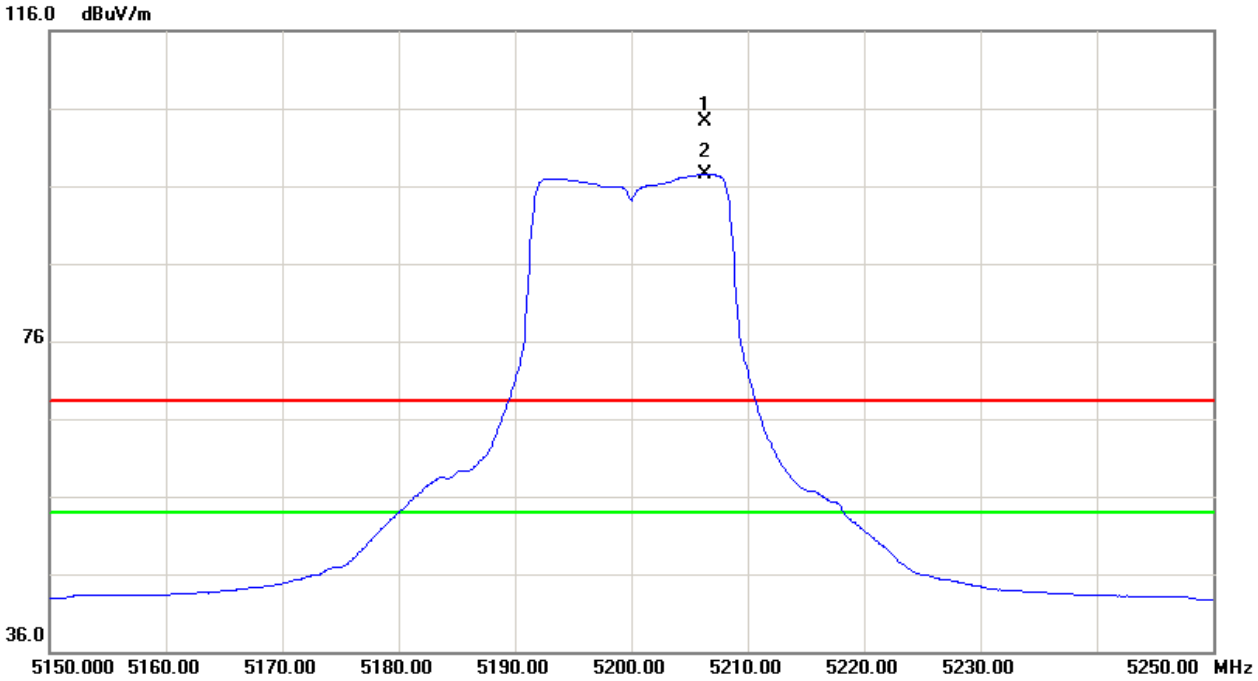
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

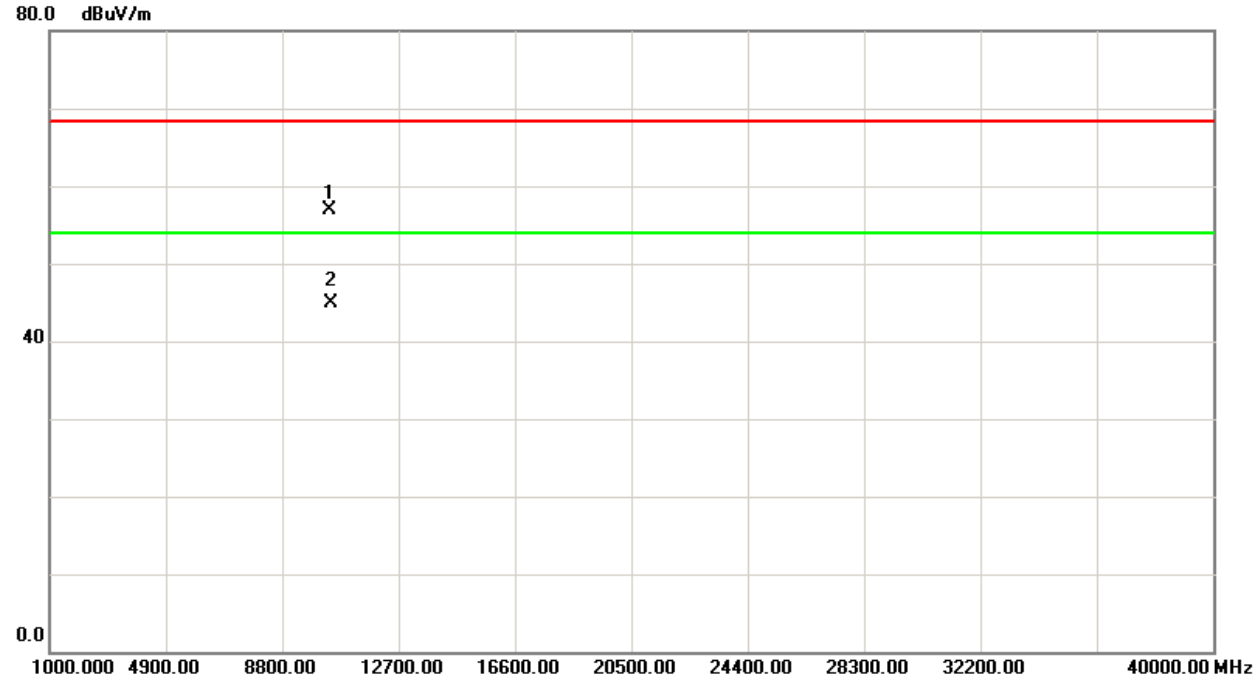
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH40(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX A Mode 5200MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5206.40	H	64.81	56.89	42.86	107.67	99.75	2.90	-5.02					X/F
10400.69	H	41.85	29.46	15.96	57.81	45.42	-46.96	-59.35	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

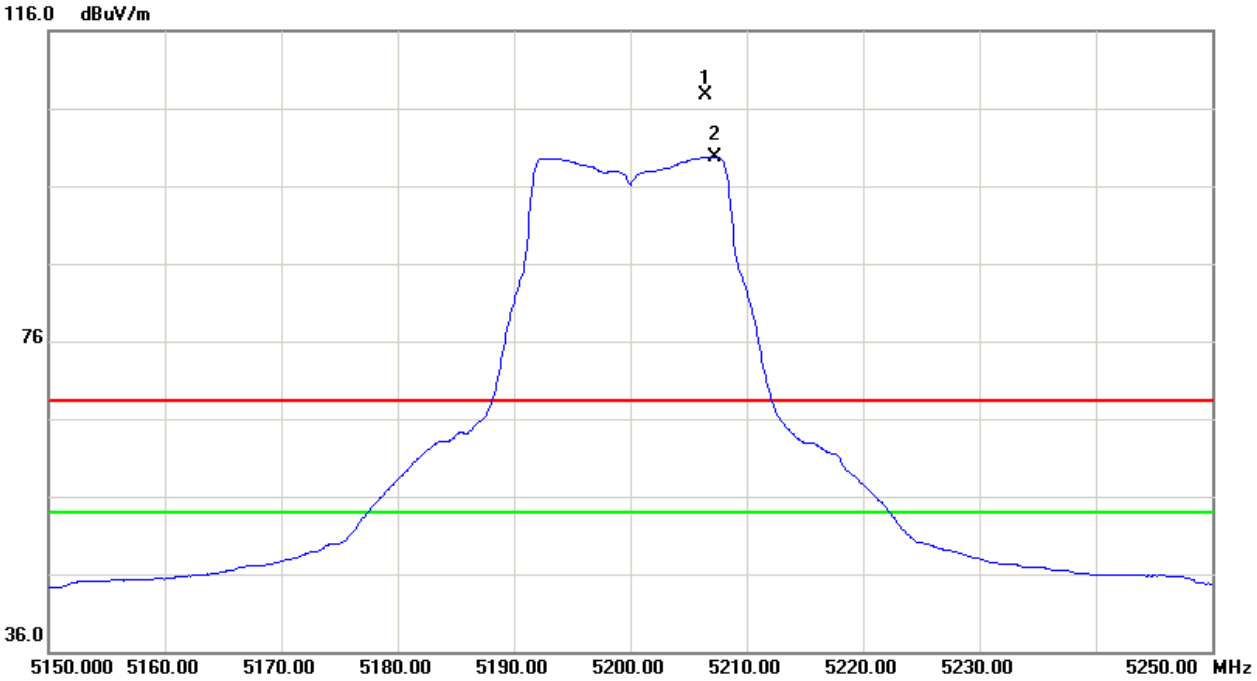
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

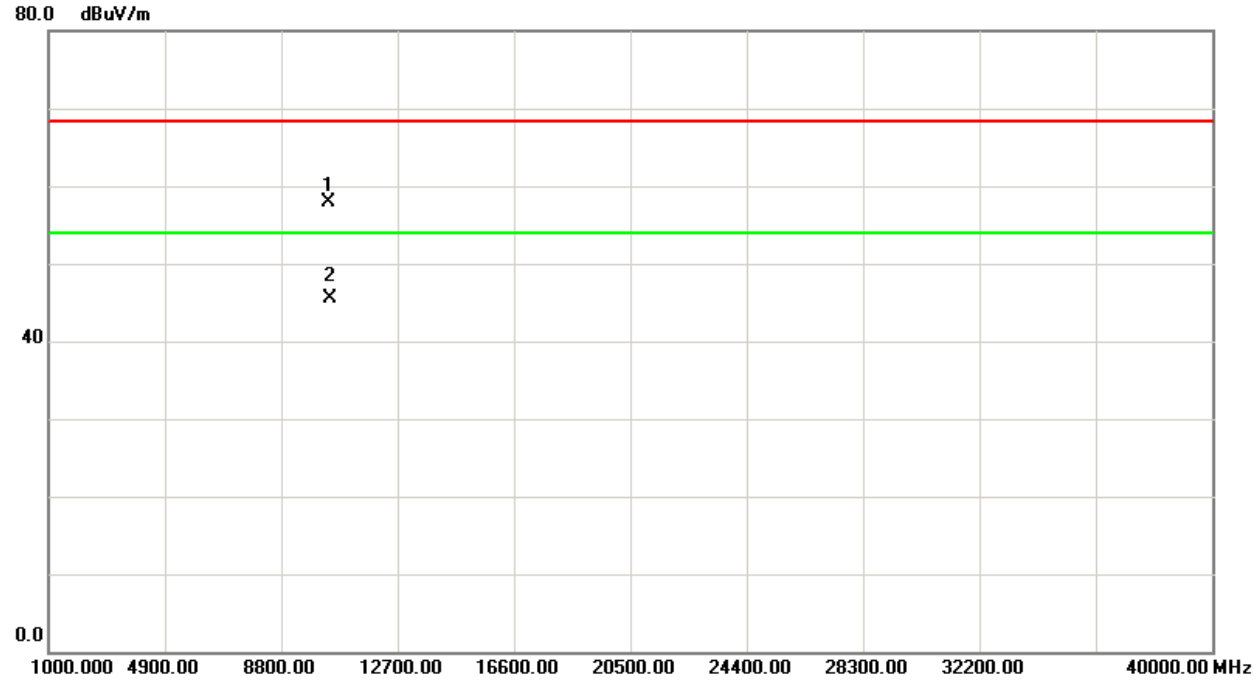
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH40(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	52 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX A Mode 5240MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5235.60	V	61.29	54.18	42.93	104.22	97.11	-0.55	-7.66					X/F
10479.85	V	41.68	29.56	15.86	57.54	45.42	-47.23	-59.35	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

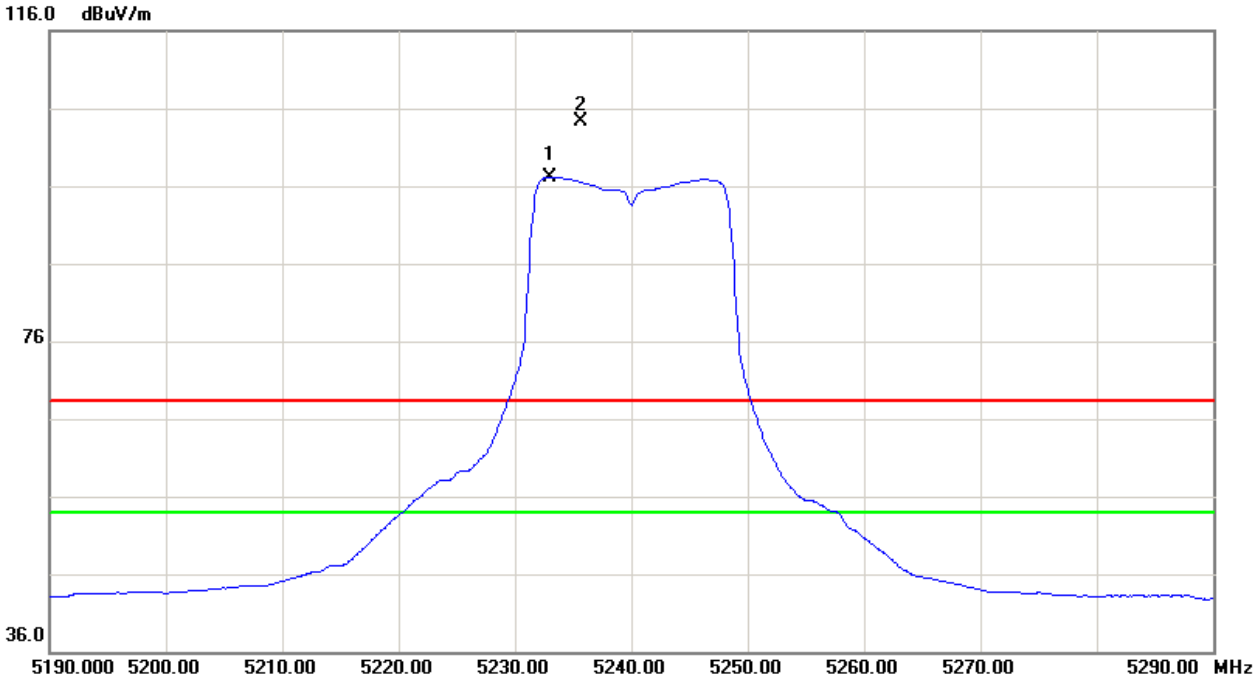
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

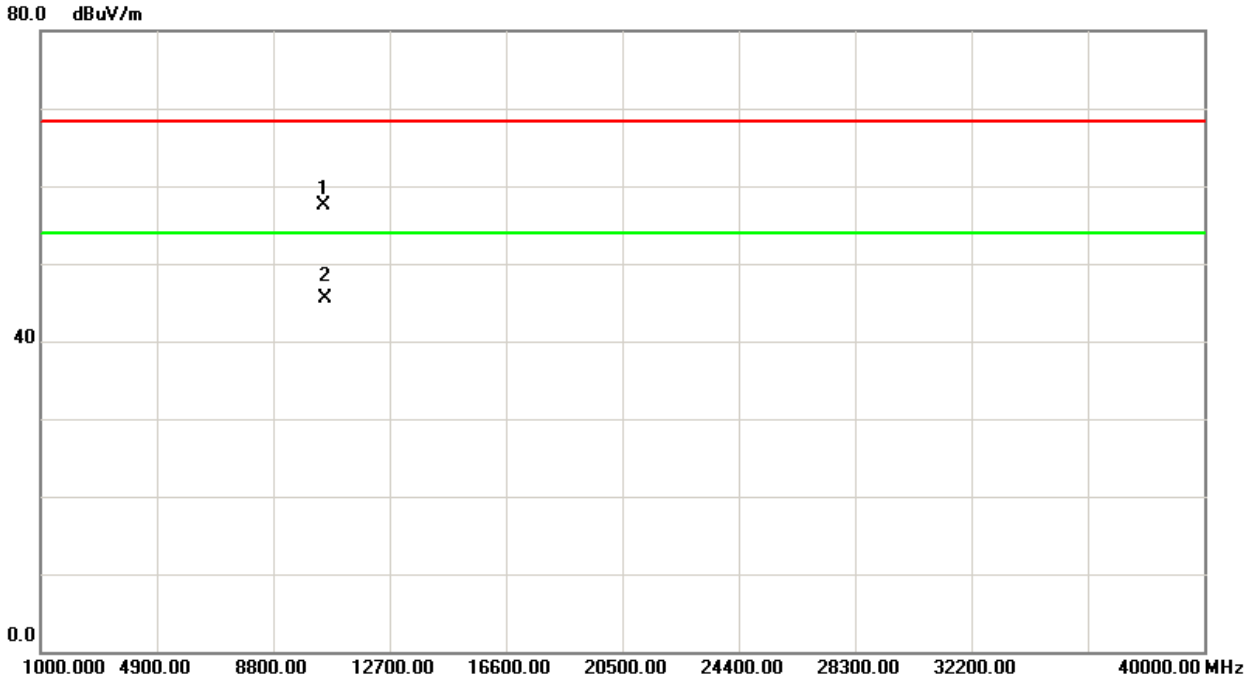
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH48(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	52 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX A Mode 5240MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5232.20	H	64.98	57.09	42.92	107.90	100.01	3.13	-4.76					X/F
10480.65	H	42.16	30.99	15.85	58.01	46.84	-46.76	-57.93	87.90	80.01	-7.40	-15.29	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

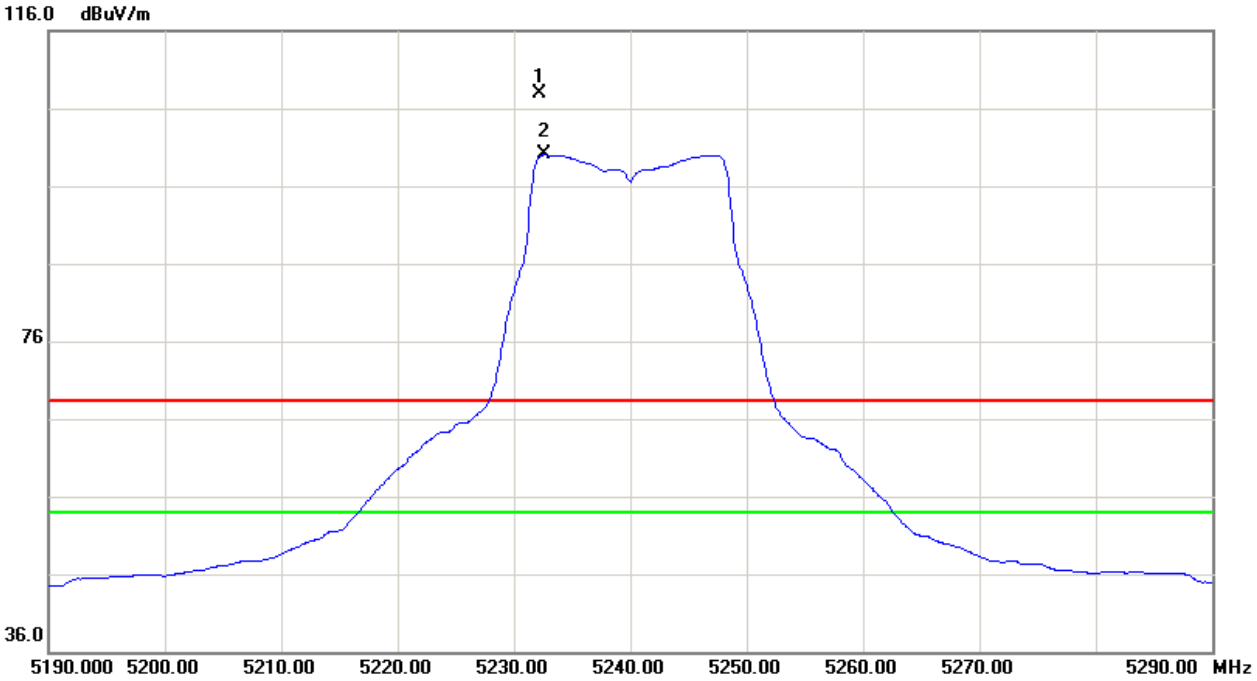
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

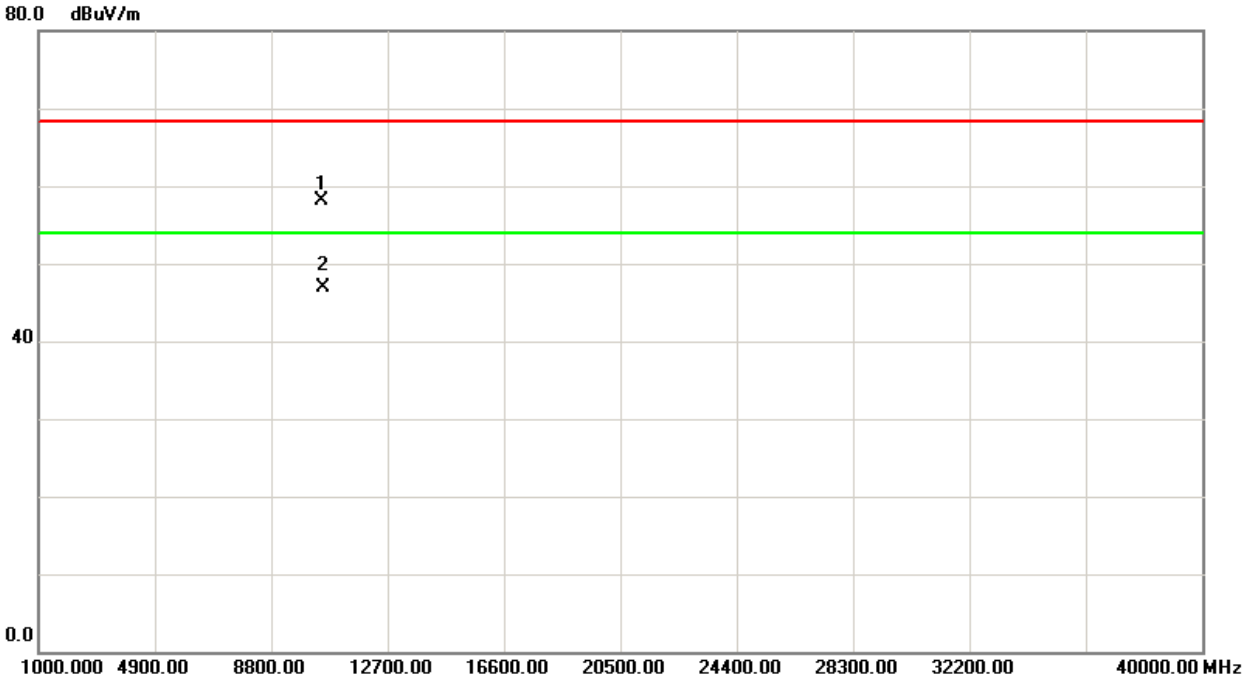
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH48(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N20 Mode 5180MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	V	11.75	1.38	42.72	54.47	44.10	-50.30	-60.67	68.30	54.00	-27.00	-41.30	X/E
5175.60	V	63.04	54.38	42.78	105.82	97.16	1.05	-7.61					X/F
10361.05	V	42.01	28.75	16.02	58.03	44.77	-46.74	-60.00	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

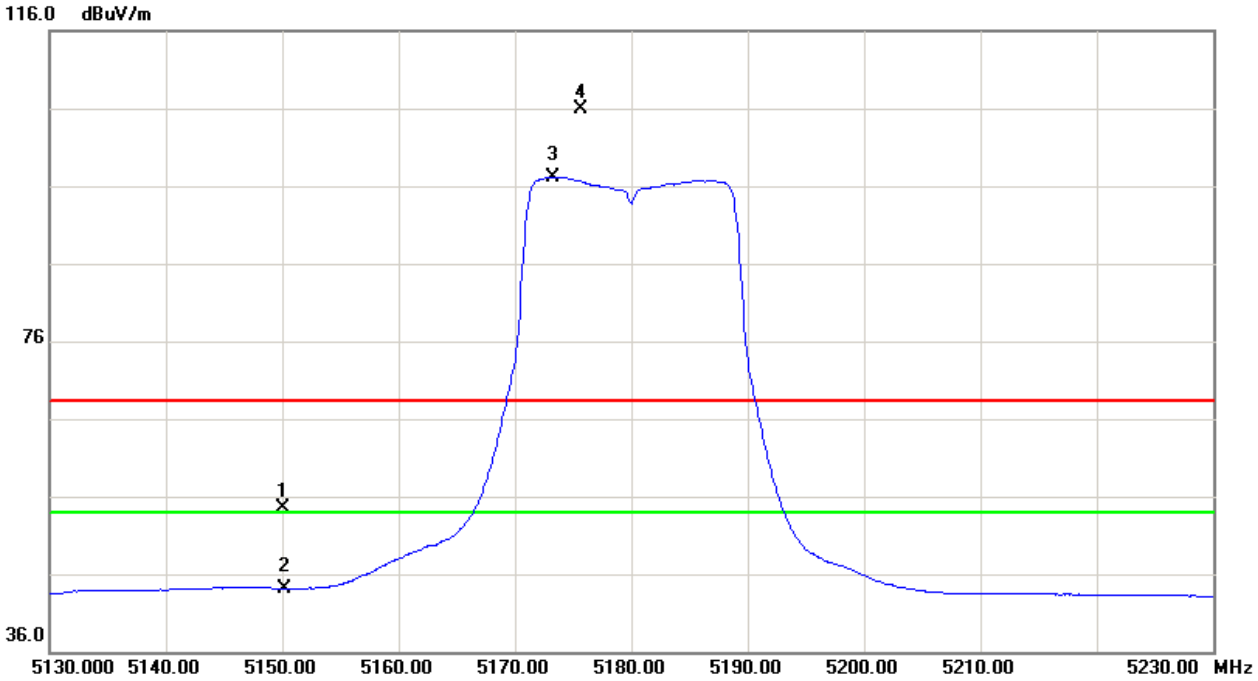
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

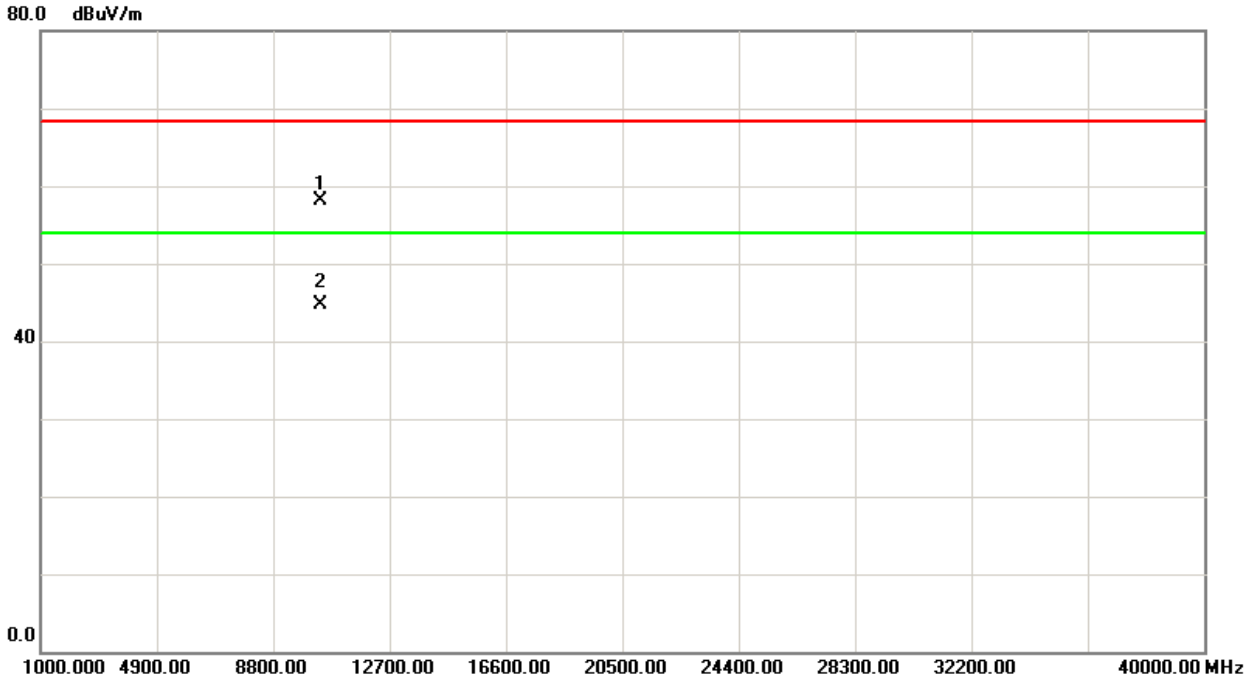
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH36(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N20 Mode 5180MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	H	11.96	2.11	42.72	54.68	44.83	-50.09	-59.94	68.30	54.00	-27.00	-41.30	X/E
5174.40	H	65.05	55.53	42.78	107.83	98.31	3.06	-6.46					X/F
10359.55	H	42.05	28.41	16.03	58.08	44.44	-46.69	-60.33	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

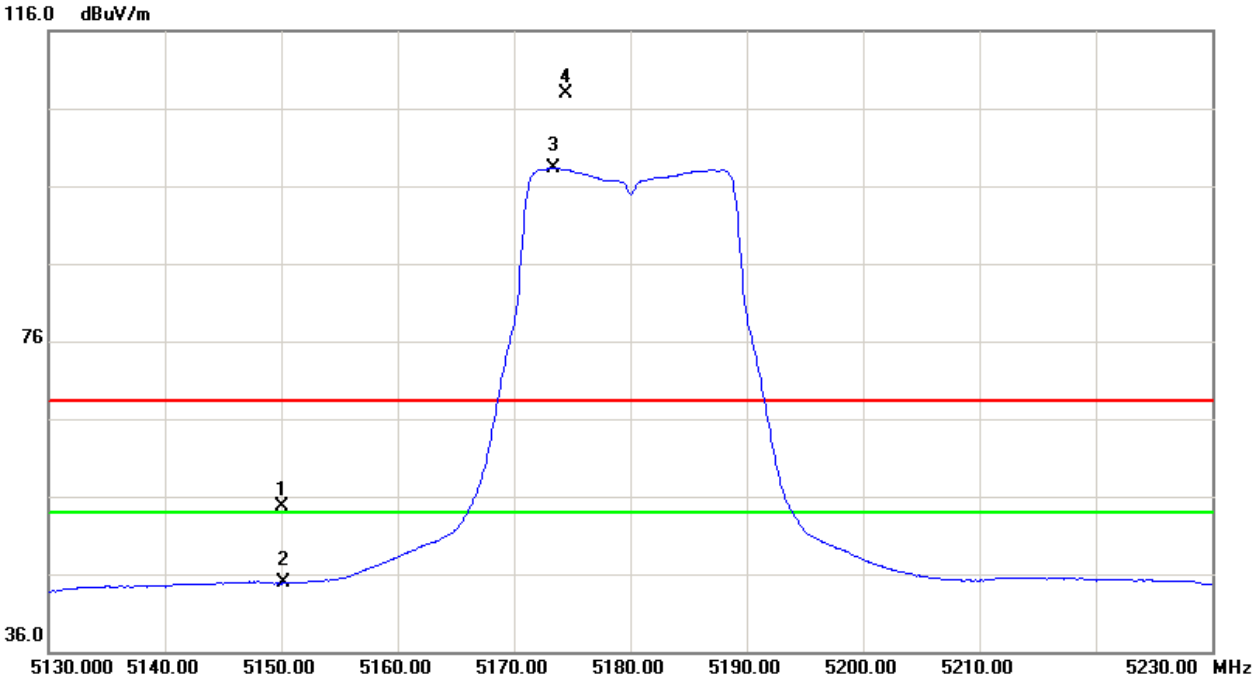
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

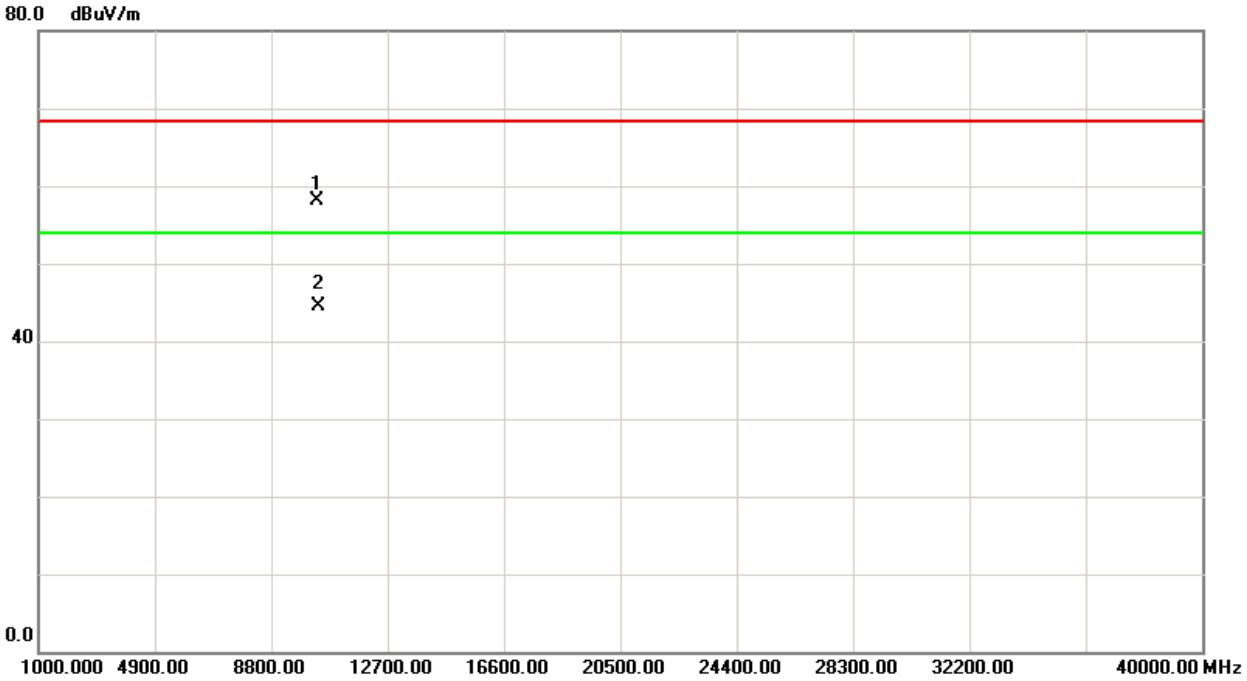
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH36(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N20 Mode 5200MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5195.80	V	61.84	53.58	42.83	104.67	96.41	-0.10	-8.36					X/F
10401.05	V	41.86	28.07	15.96	57.82	44.03	-46.95	-60.74	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

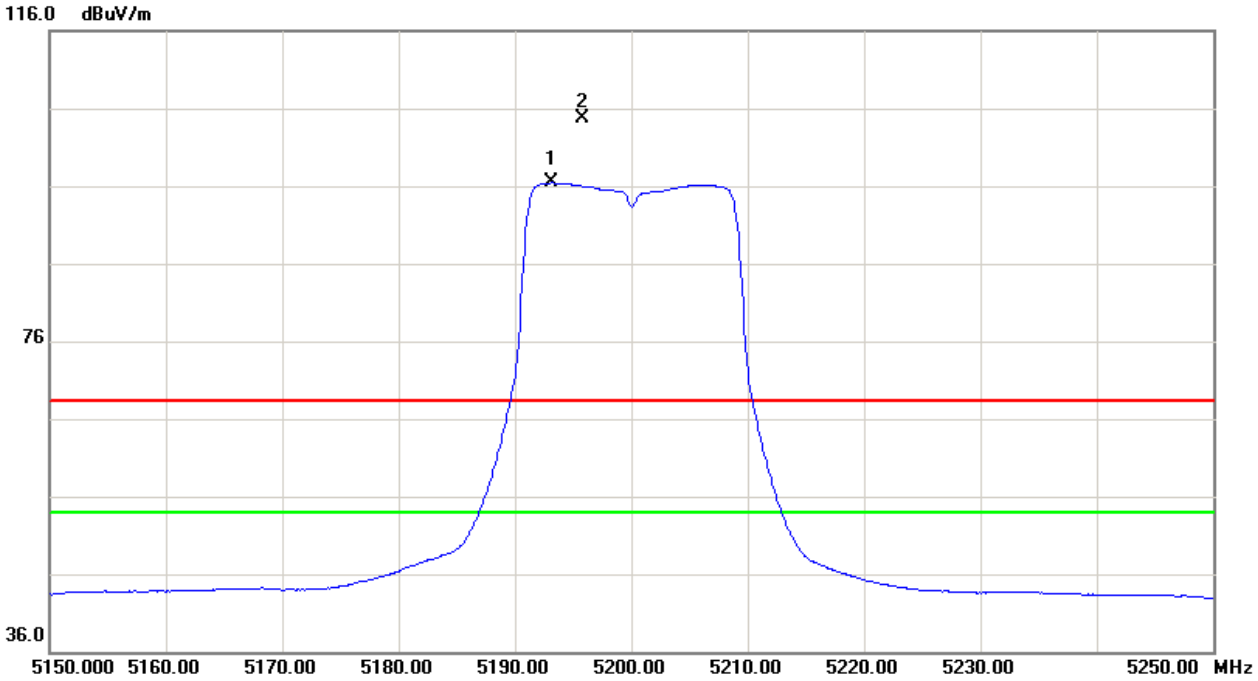
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

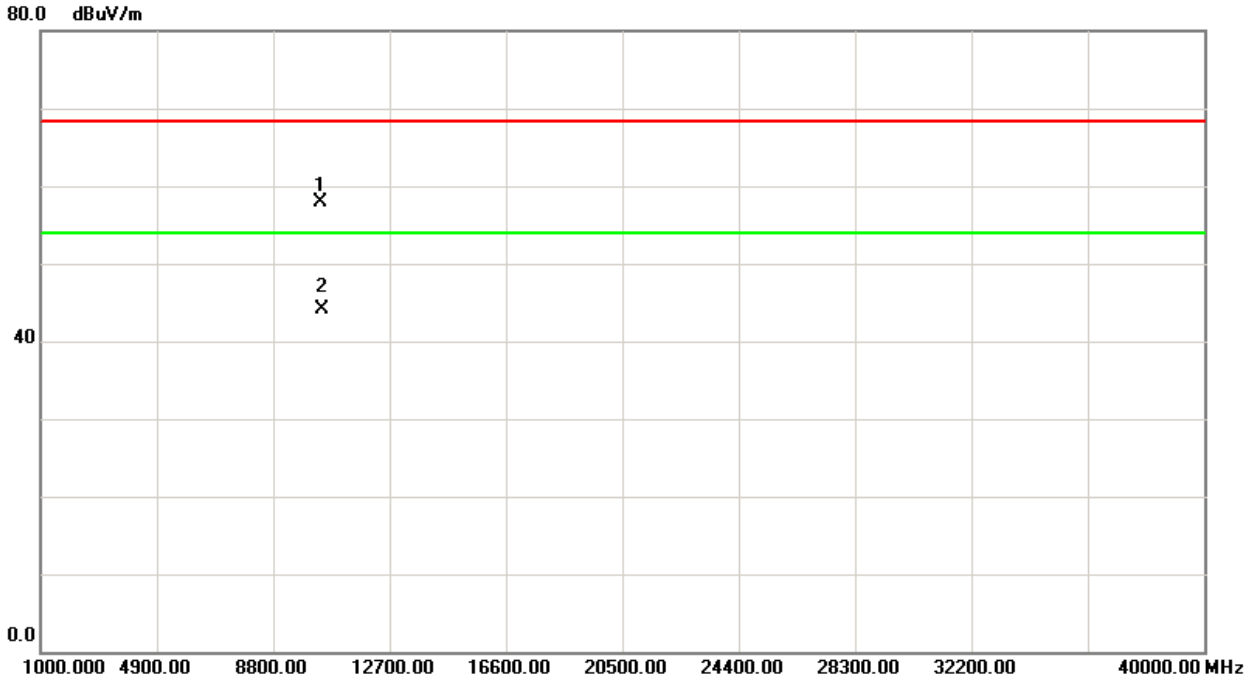
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH40(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N20 Mode 5200MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5205.20	H	63.84	55.72	42.86	106.70	98.58	1.93	-6.19					X/F
10400.68	H	41.52	27.98	15.96	57.48	43.94	-47.29	-60.83	86.70	78.58	-8.60	-16.72	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

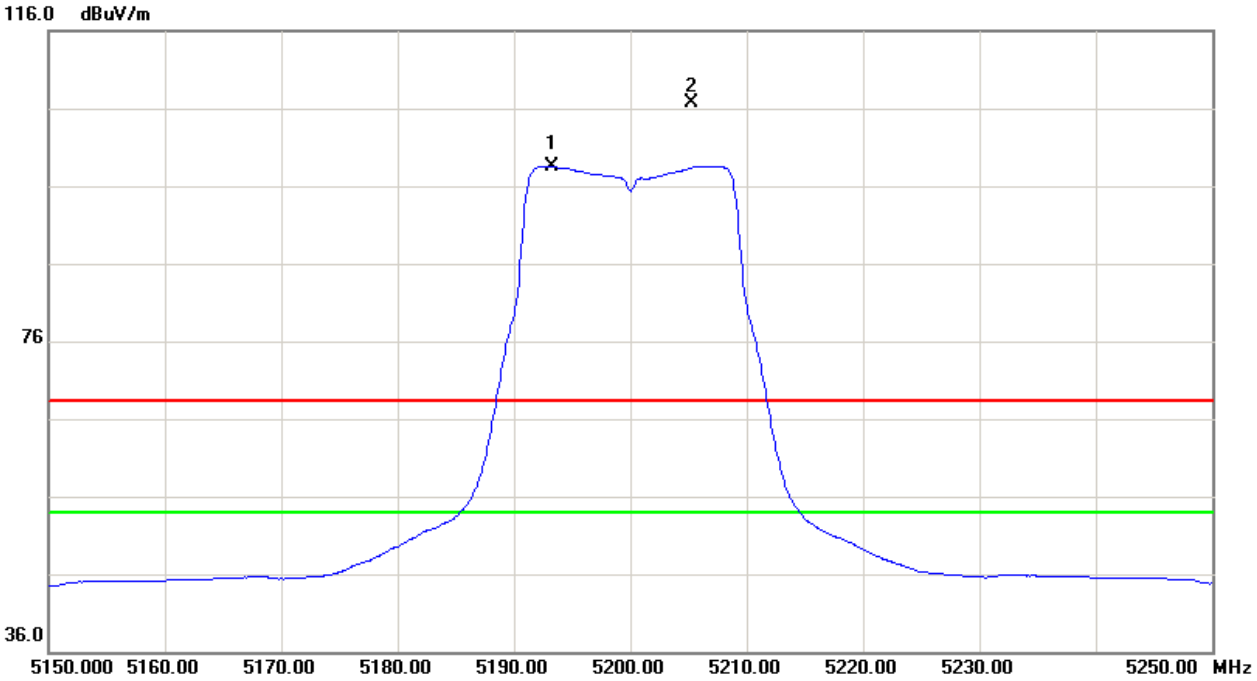
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

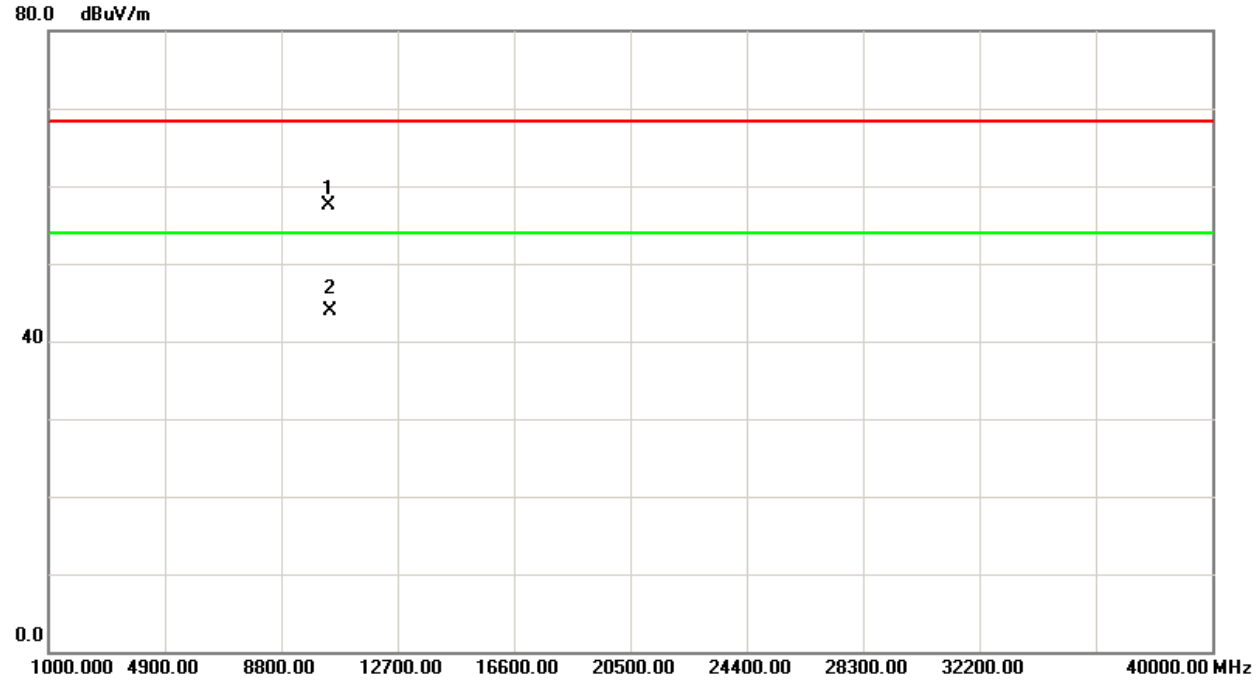
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH40(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	52 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N20 Mode 5240MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5232.70	V	61.04	53.67	42.92	103.96	96.59	-0.81	-8.18					X/F
10480.65	V	41.58	28.46	15.85	57.43	44.31	-47.34	-60.46	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

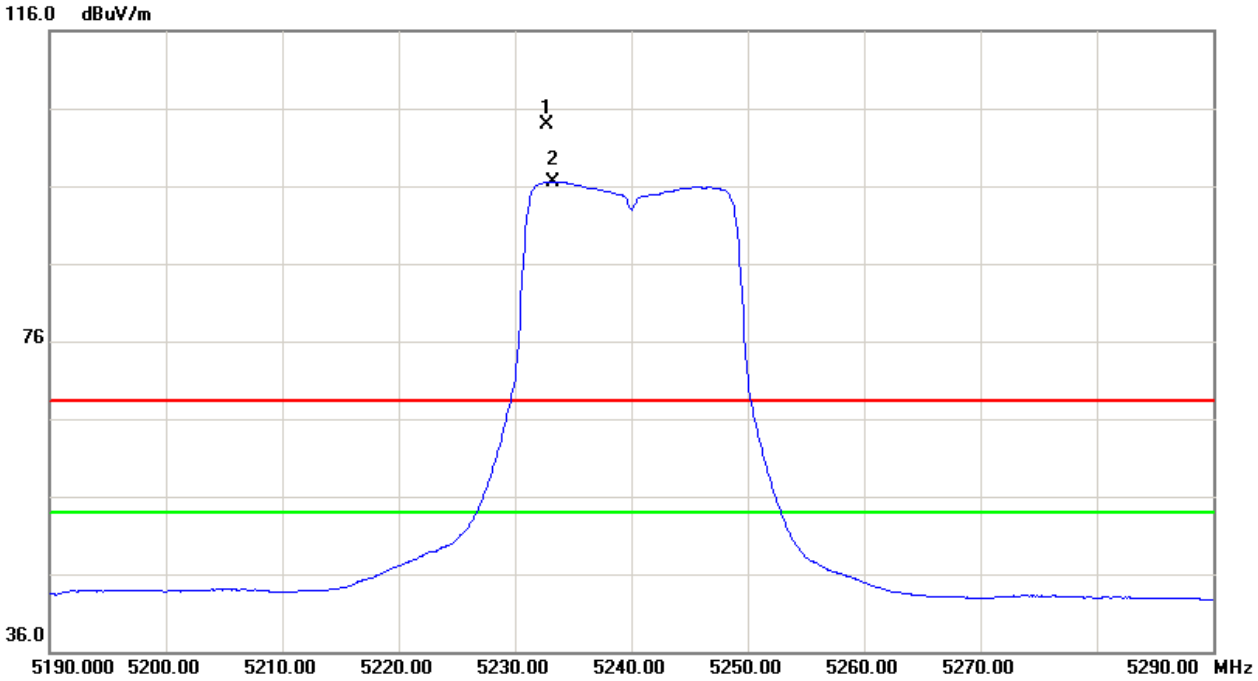
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

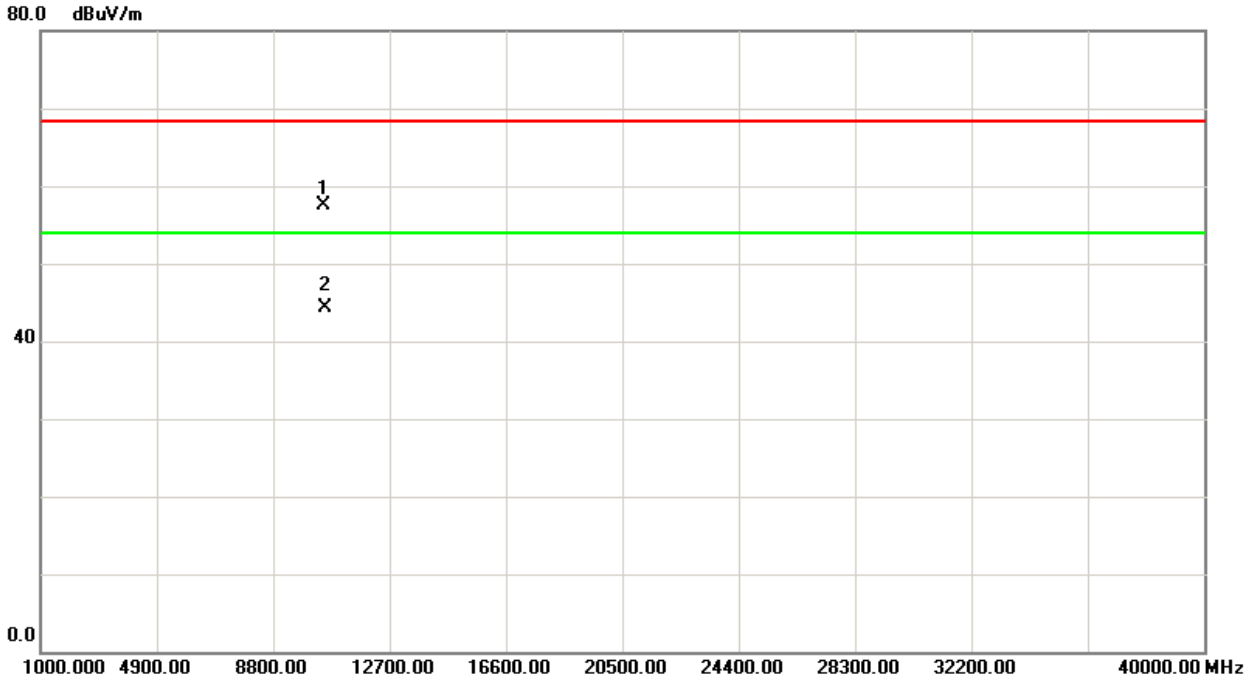
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH48(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	52 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N20 Mode 5240MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5237.00	H	64.12	55.63	42.93	107.05	98.56	2.28	-6.21					X/F
10480.59	H	42.31	28.85	15.85	58.16	44.70	-46.61	-60.07	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

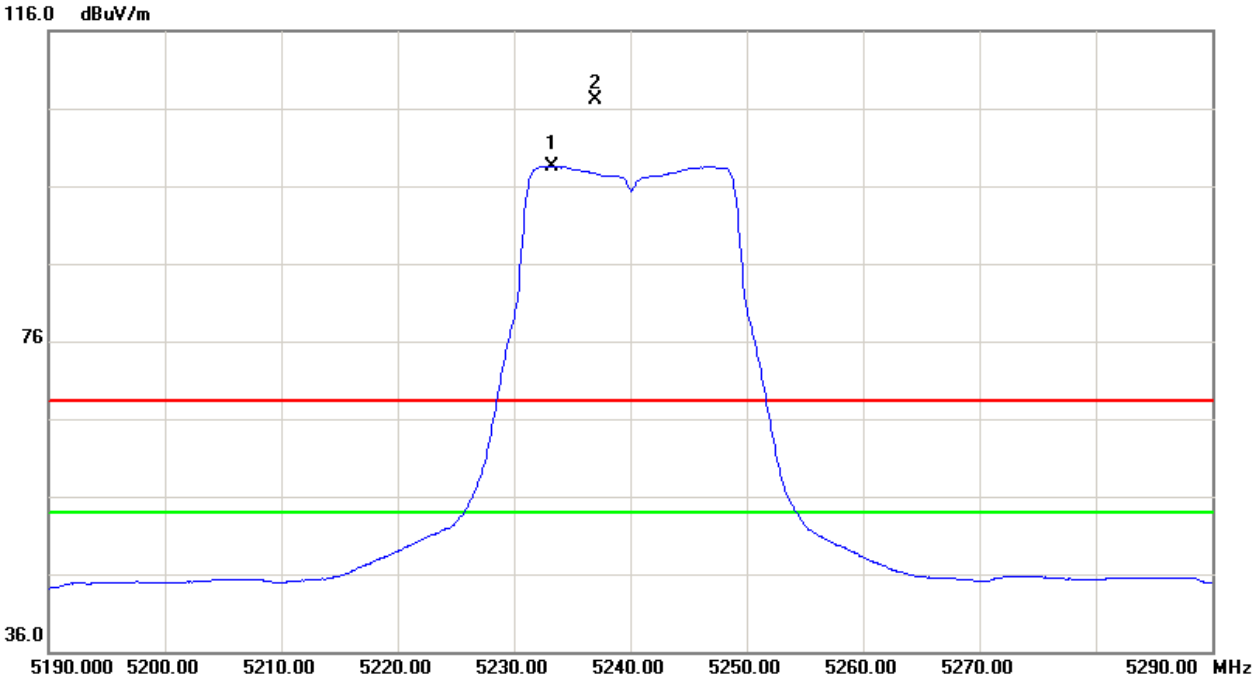
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

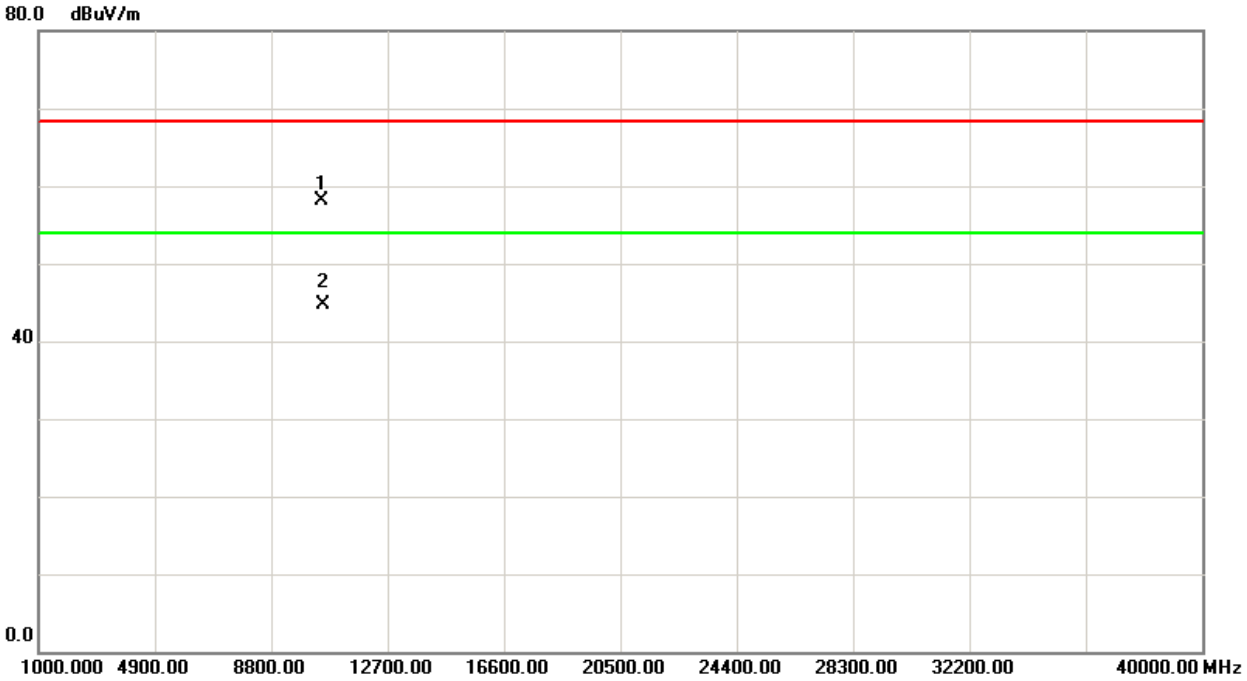
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH48(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N40 Mode 5190MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	V	13.28	2.17	42.72	56.00	44.89	-48.77	-59.88	68.30	54.00	-27.00	-41.30	X/E
5179.20	V	59.55	50.75	42.79	102.34	93.54	-2.43	-11.23					X/F
10381.26	V	41.58	28.67	15.99	57.57	44.66	-47.20	-60.11	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

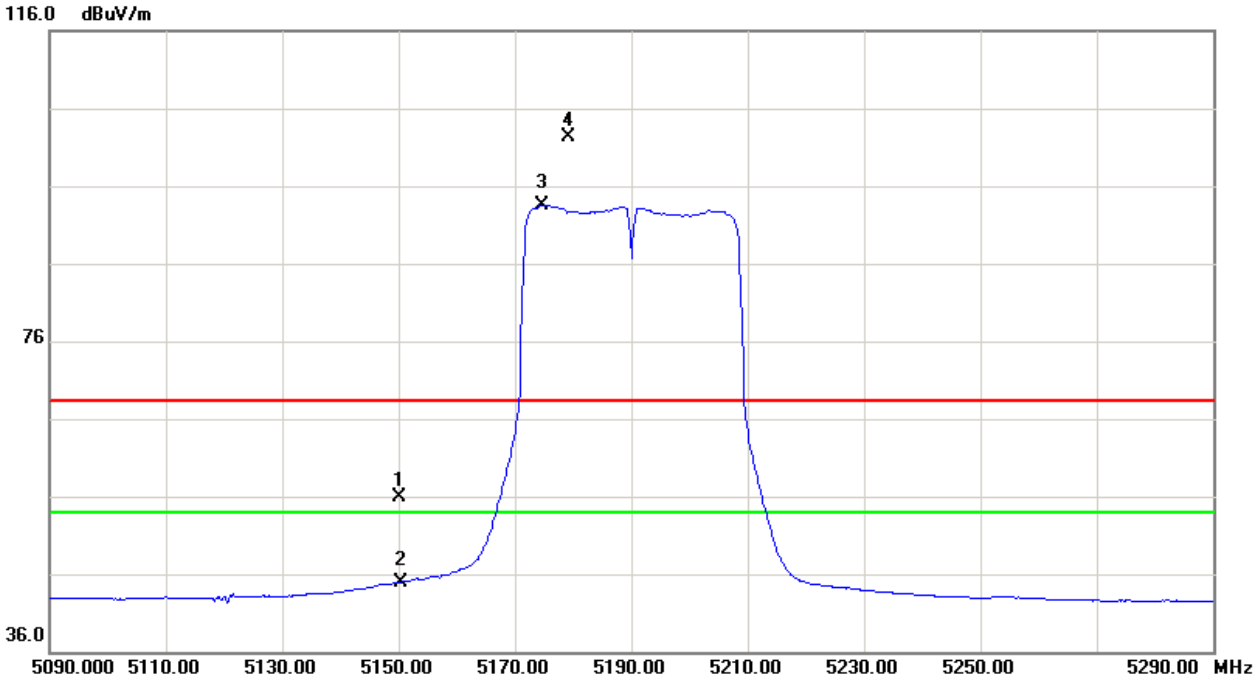
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

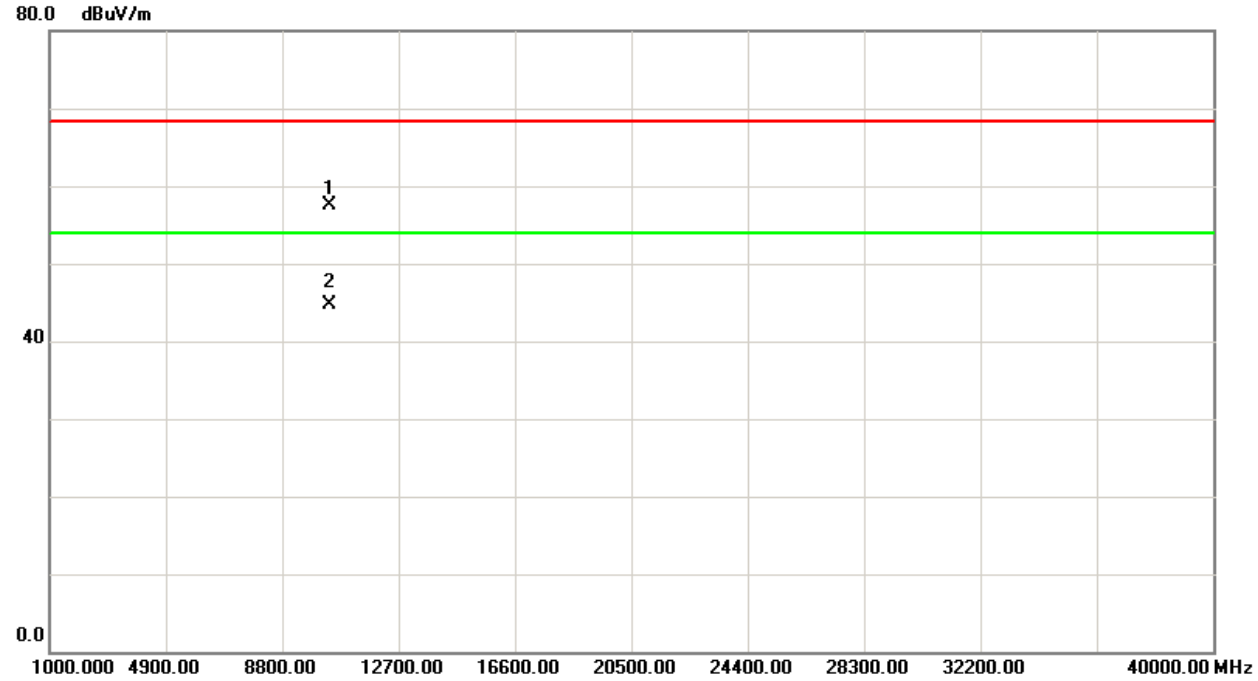
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH38(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N40 Mode 5190MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	H	15.31	5.12	42.72	58.03	47.84	-46.74	-56.93	68.30	54.00	-27.00	-41.30	X/E
5175.40	H	61.88	54.64	42.78	104.66	97.42	-0.11	-7.35					X/F
10381.57	H	40.99	27.58	15.99	56.98	43.57	-47.79	-61.20	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

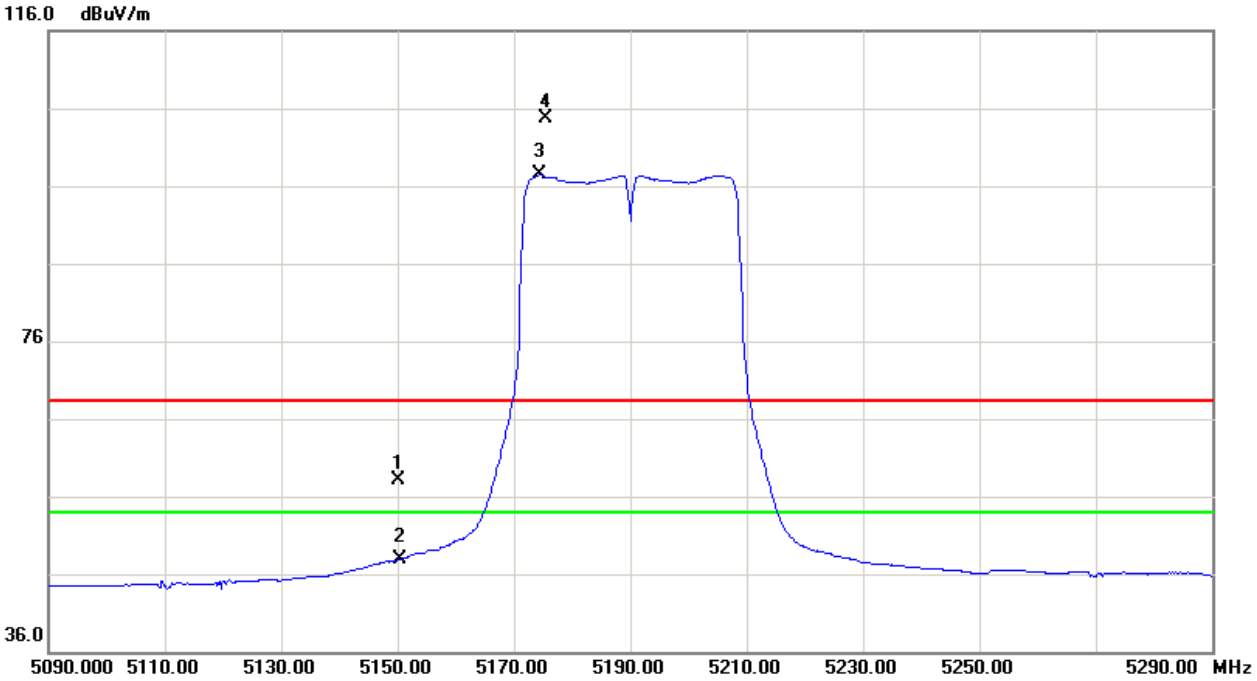
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

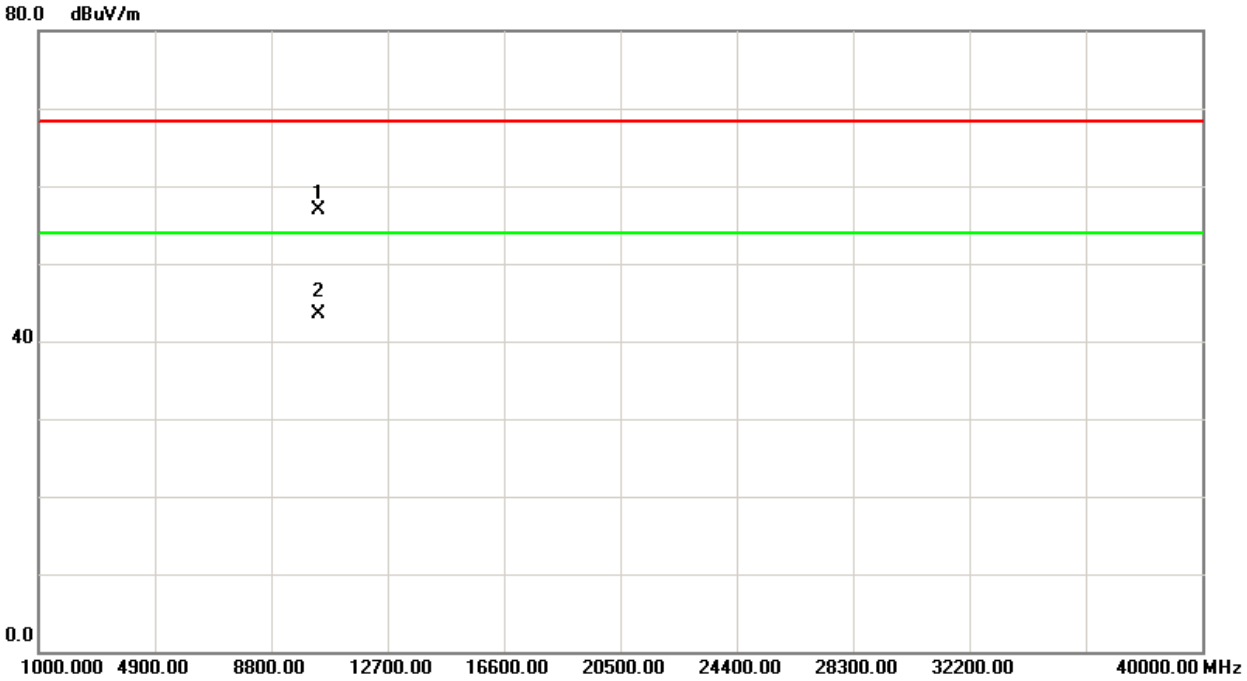
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH38(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N40 Mode 5230MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5227.00	V	58.02	49.84	42.91	100.93	92.75	-3.84	-12.02					X/F
10460.02	V	41.58	28.41	15.88	57.46	44.29	-47.31	-60.48	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

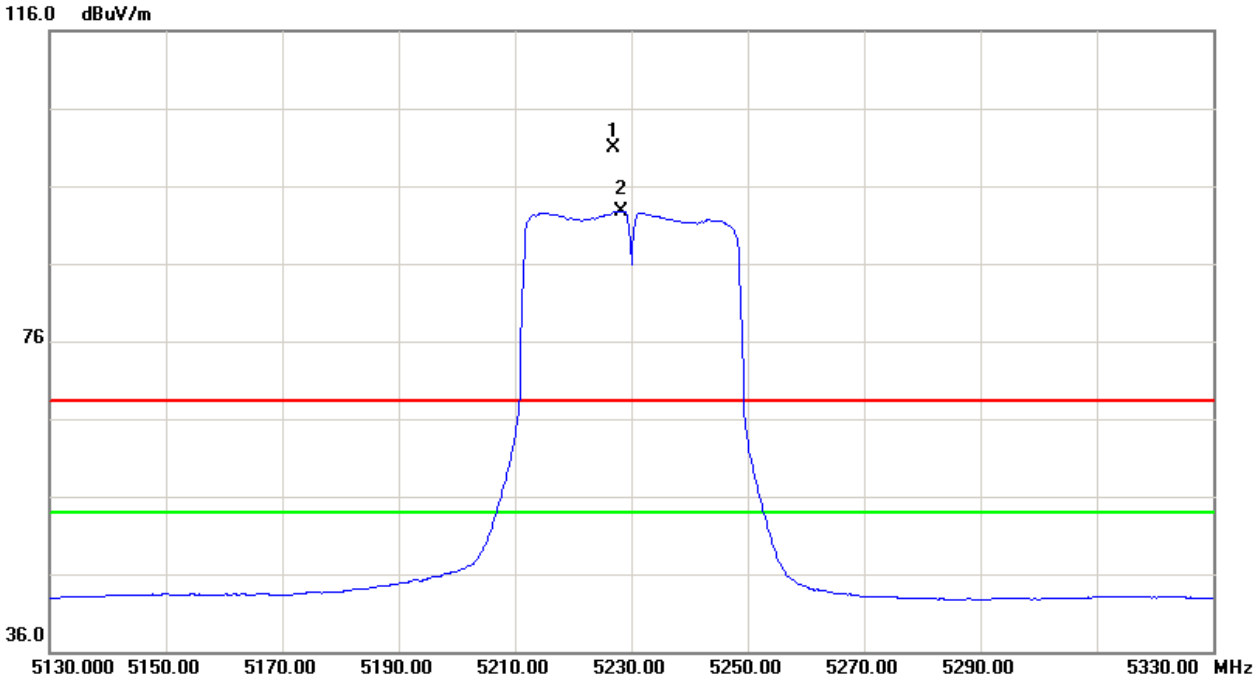
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

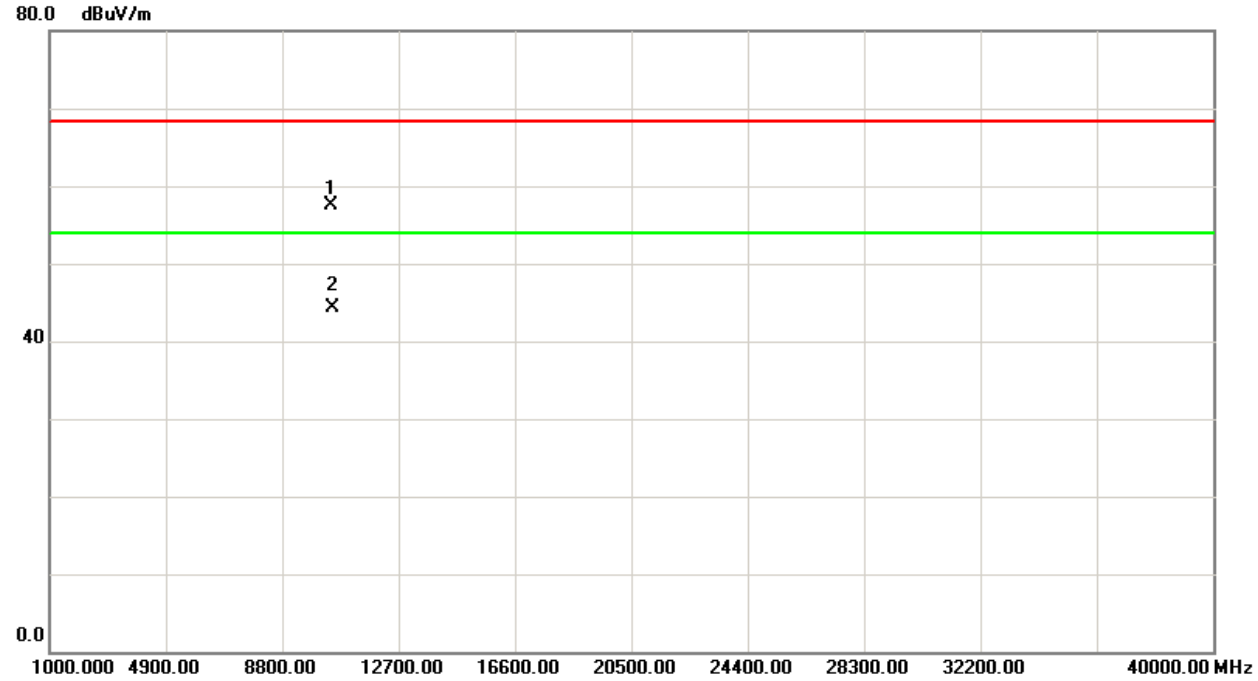
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH46(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX N40 Mode 5230MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5246.60	H	61.08	53.01	42.95	104.03	95.96	-0.74	-8.81					X/F
10460.41	H	41.35	28.40	15.88	57.23	44.28	-47.54	-60.49	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

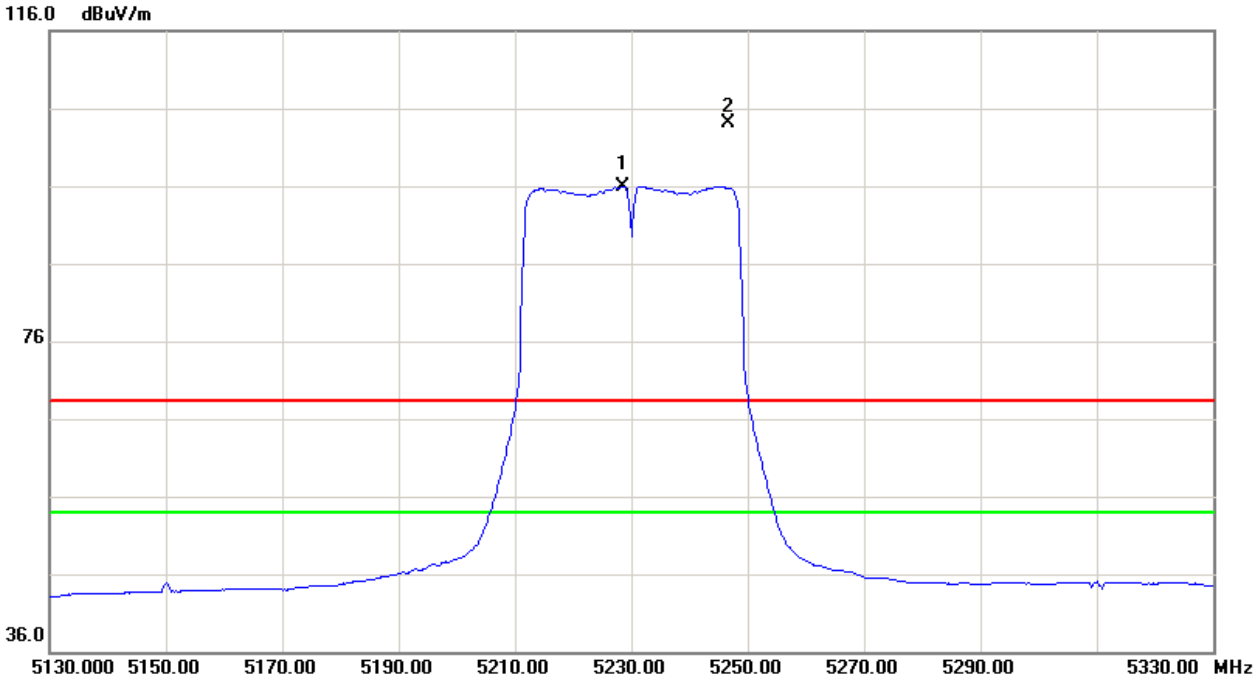
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

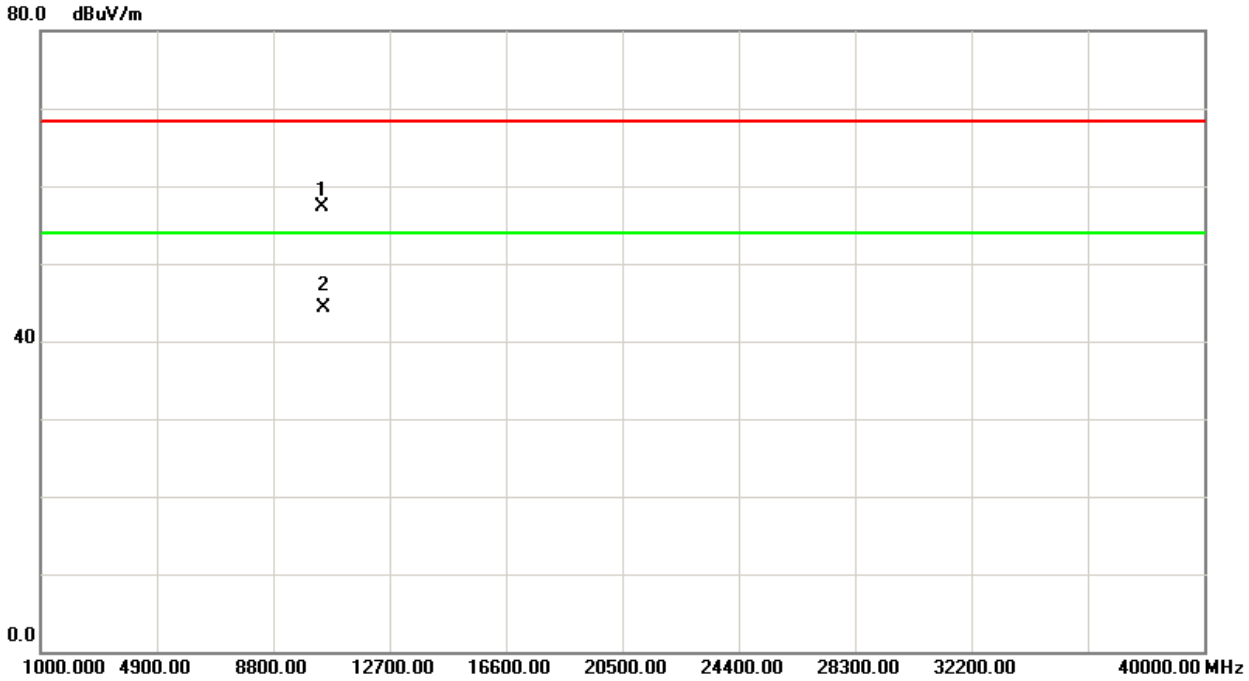
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH46(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N20 Mode 5180MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	V	11.68	0.18	42.72	54.40	42.90	-50.37	-61.87	68.30	54.00	-27.00	-41.30	X/E
5173.90	V	59.41	51.31	42.78	102.19	94.09	-2.58	-10.68					X/F
10360.56	V	42.54	28.96	16.03	58.57	44.99	-46.20	-59.78	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

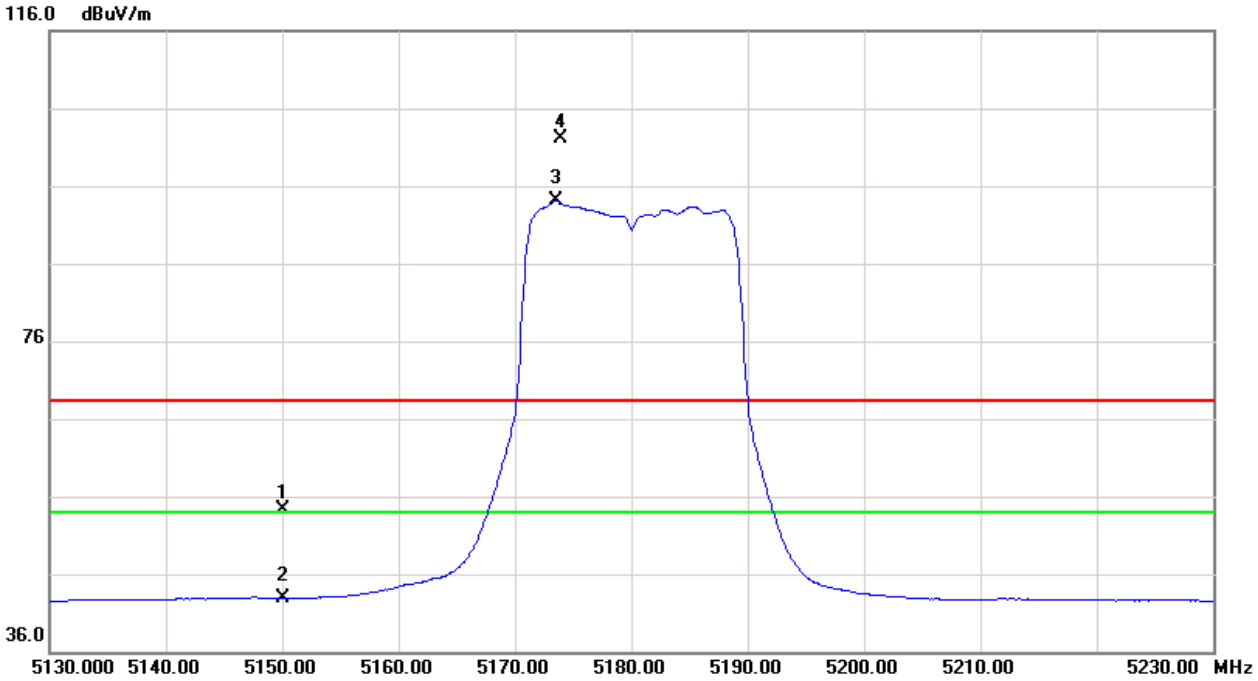
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

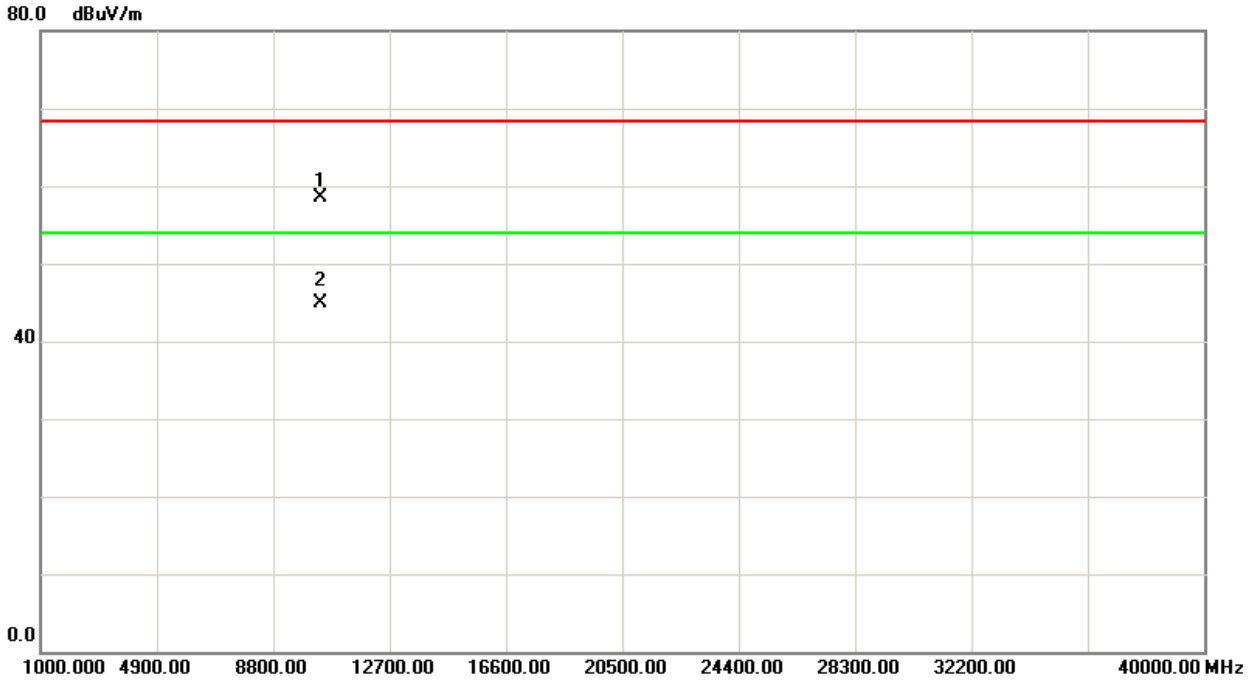
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH36(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N20 Mode 5180MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	H	12.53	2.22	42.72	55.25	44.94	-49.52	-59.83	68.30	54.00	-27.00	-41.30	X/E
5185.90	H	65.26	55.77	42.81	108.07	98.58	3.30	-6.19					X/F
10360.25	H	41.01	29.78	16.03	57.04	45.81	-47.73	-58.96	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

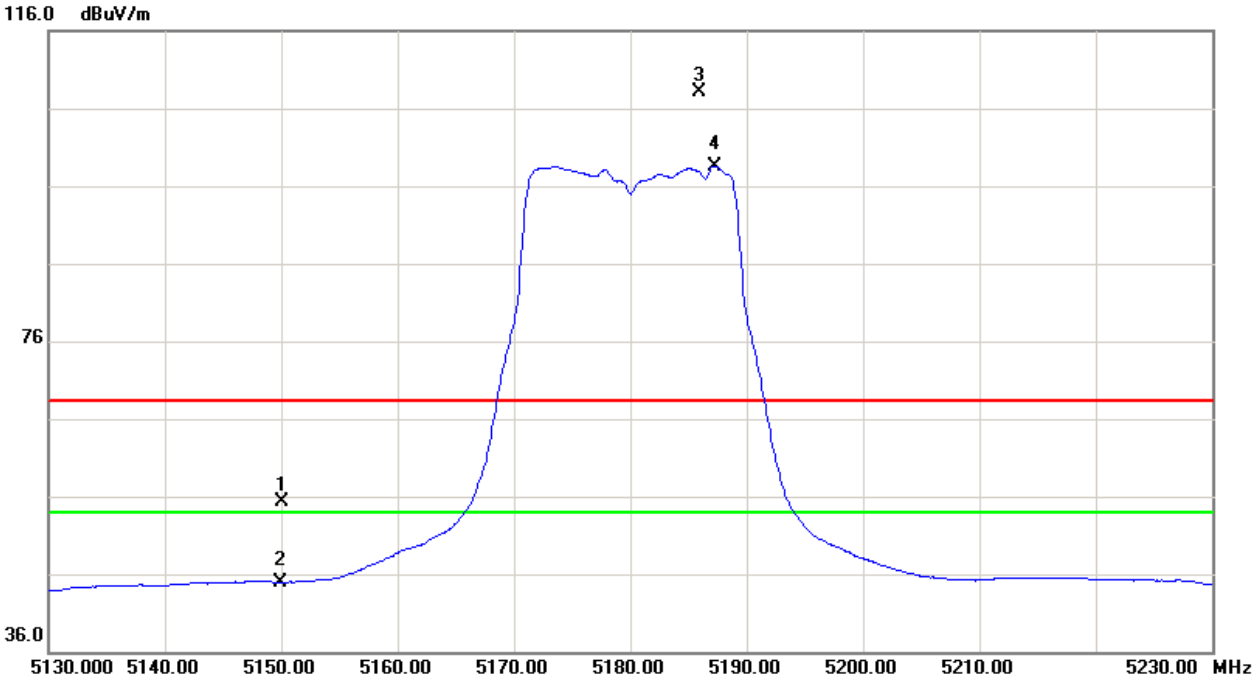
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

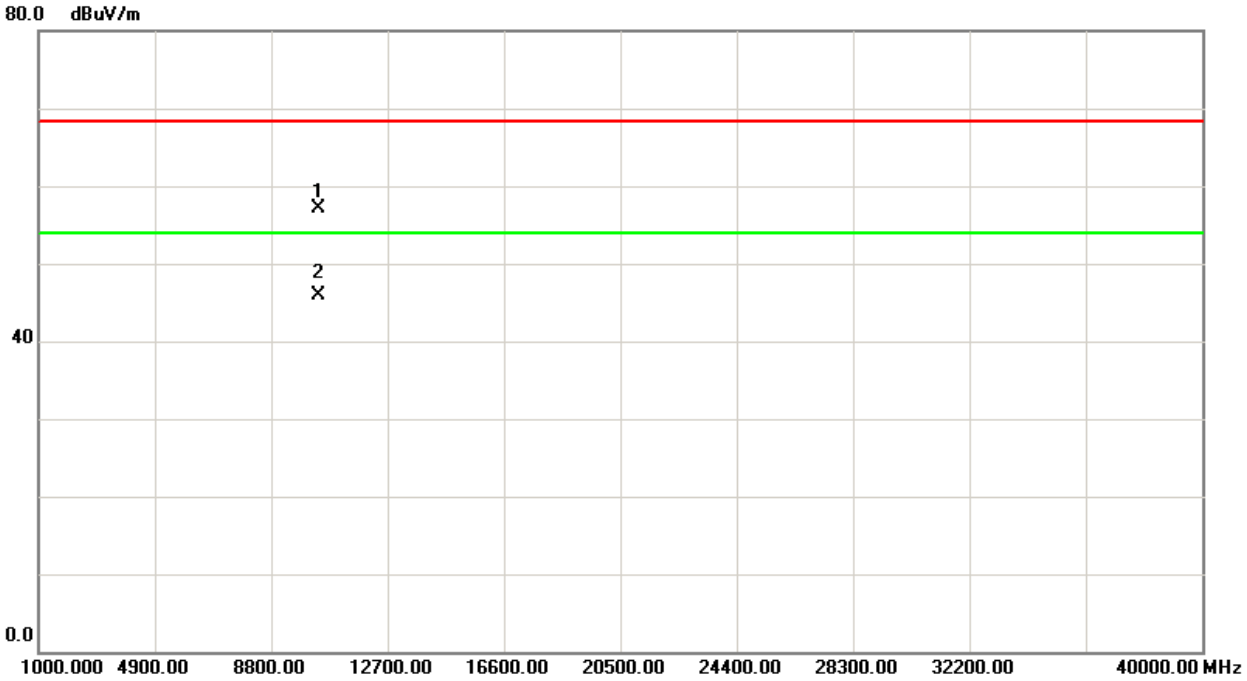
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH36(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N20 Mode 5200MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5205.00	V	60.79	52.72	42.86	103.65	95.58	-1.12	-9.19					X/F
10400.43	V	41.72	29.41	15.97	57.69	45.38	-47.08	-59.39	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

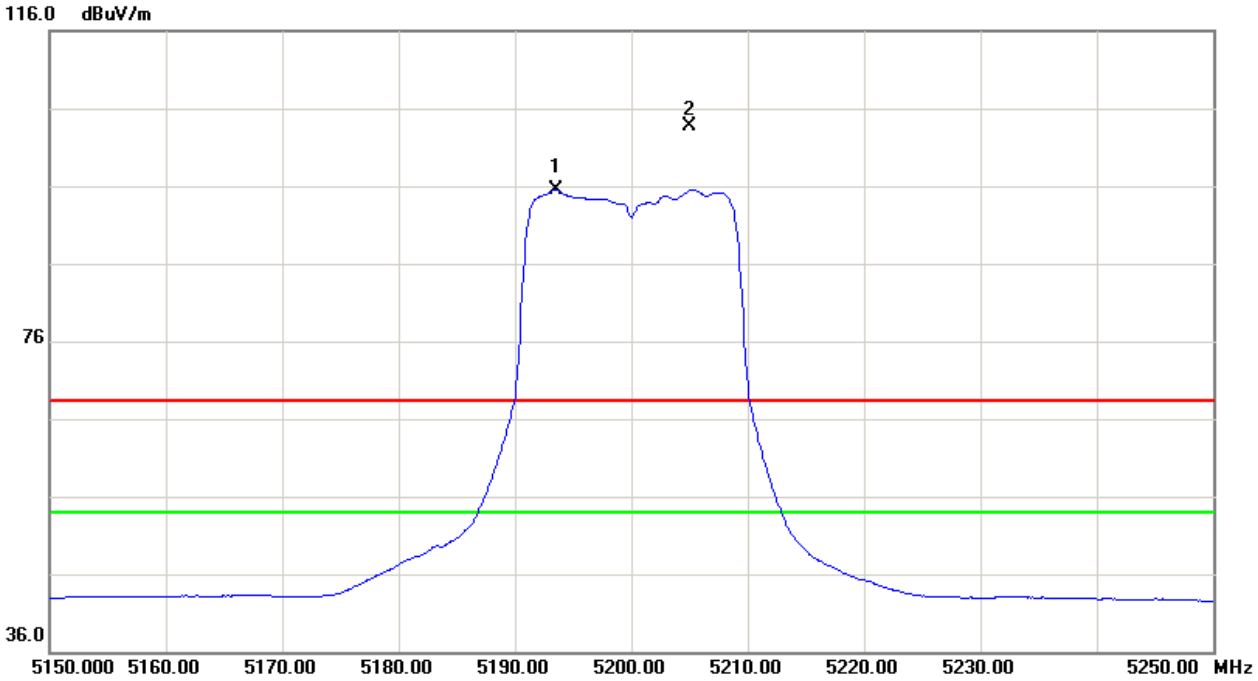
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

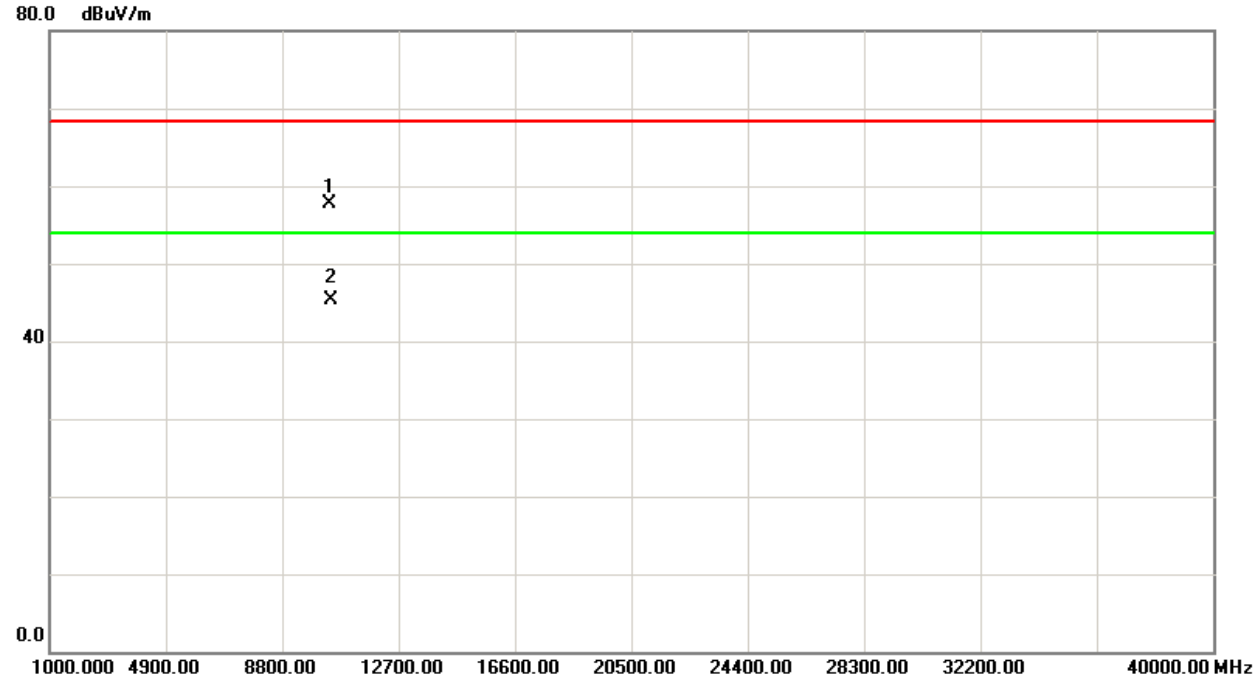
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH40(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N20 Mode 5200MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5206.00	H	64.06	56.14	42.86	106.92	99.00	2.15	-5.77					X/F
10400.58	H	41.85	29.36	15.96	57.81	45.32	-46.96	-59.45	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

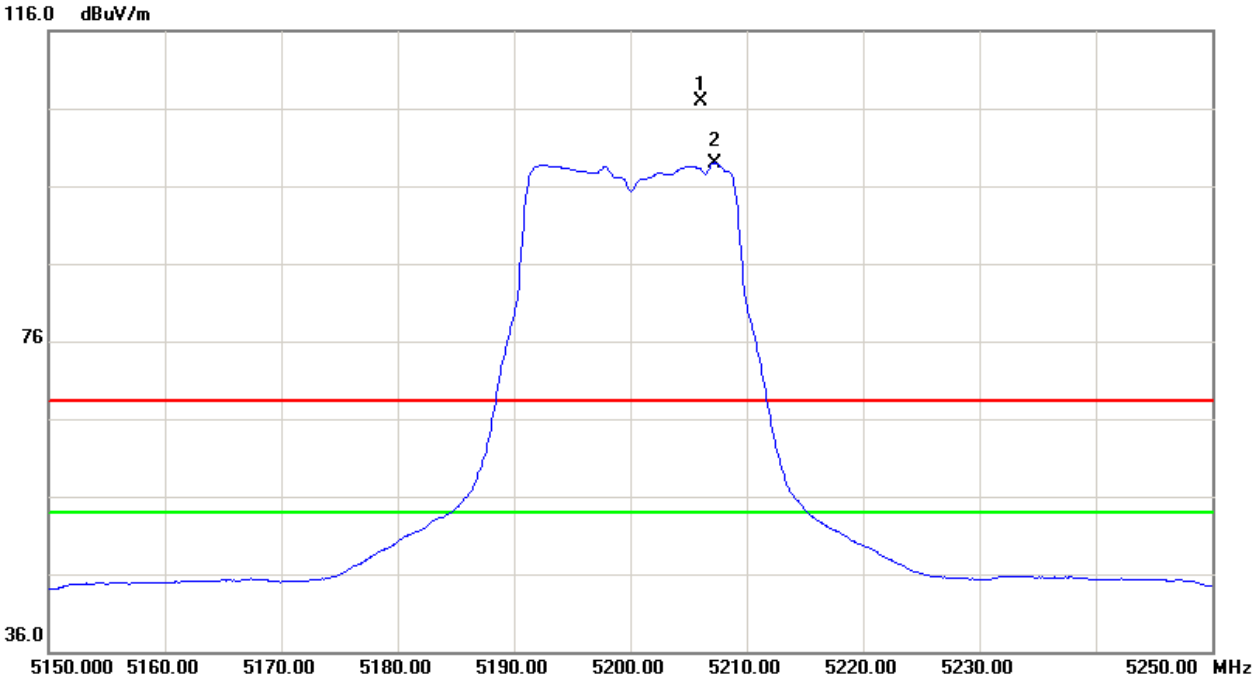
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

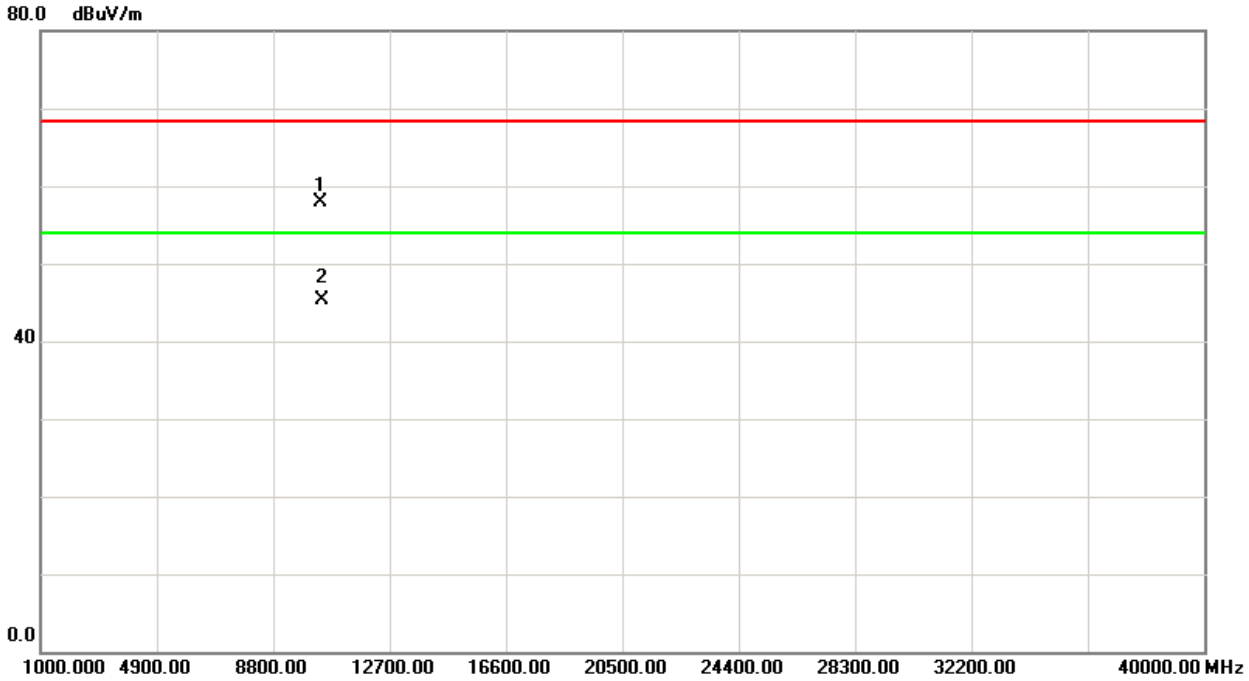
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH40(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	52 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N20 Mode 5240MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5245.80	V	60.09	52.01	42.95	103.04	94.96	-1.73	-9.81					X/F
10480.69	V	42.10	29.41	15.85	57.95	45.26	-46.82	-59.51	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

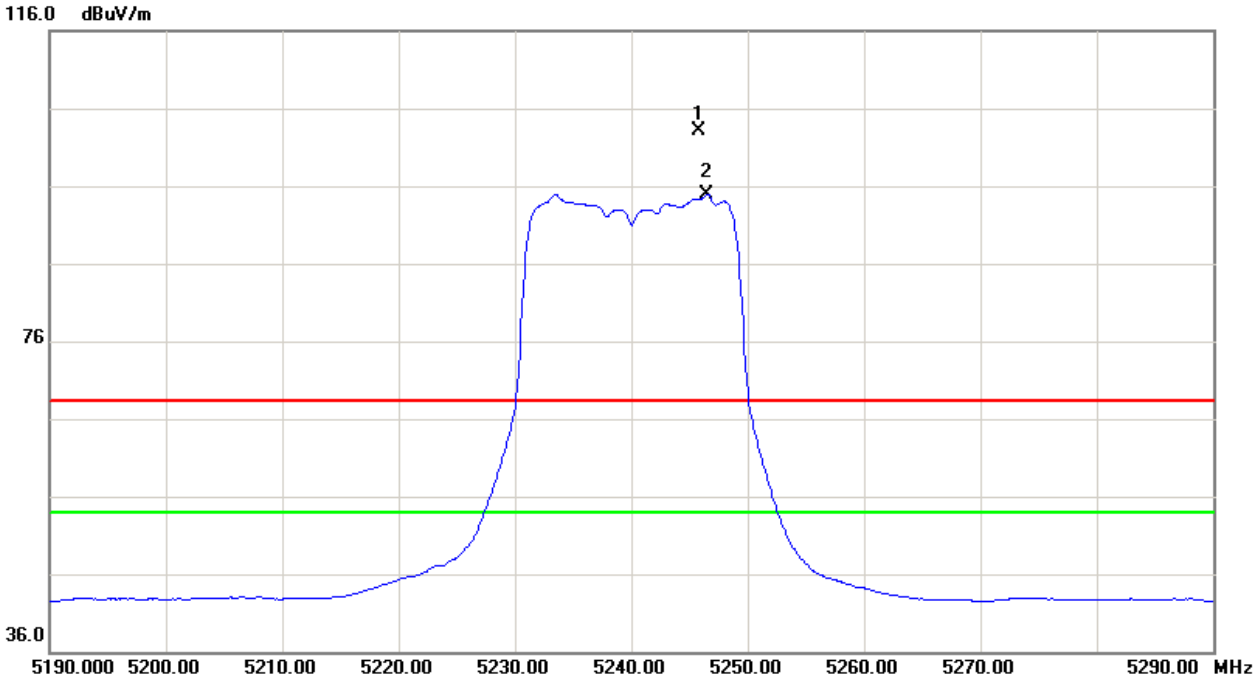
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

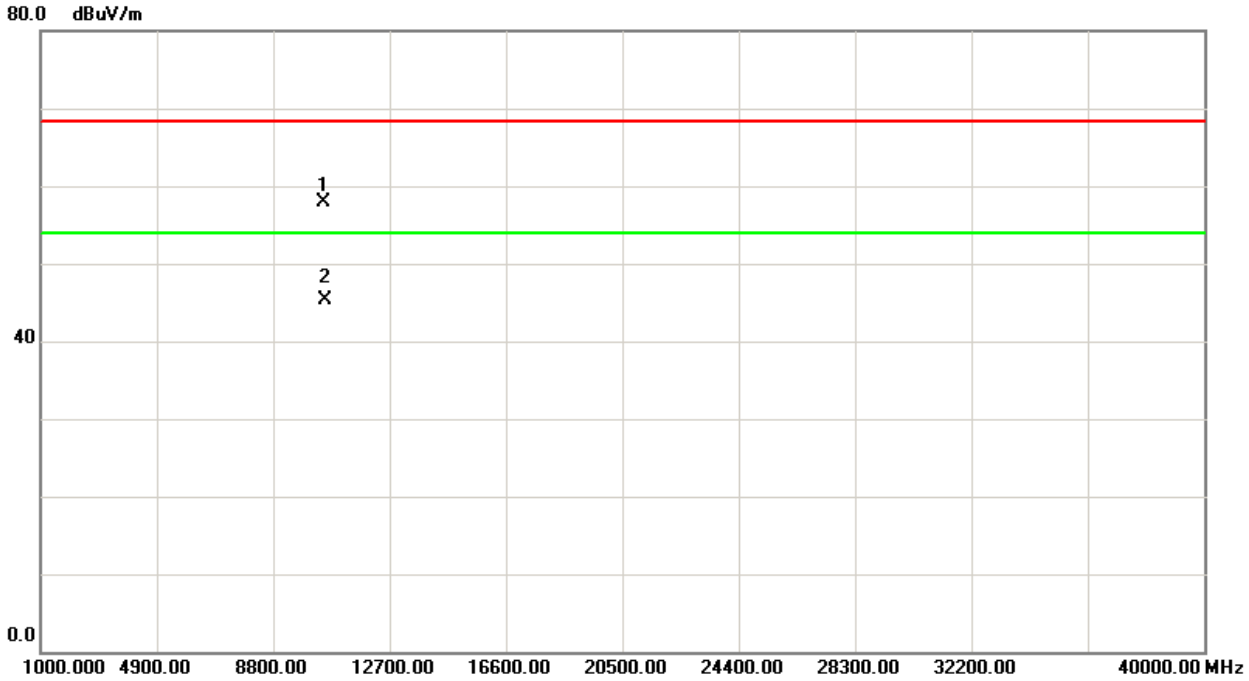
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH48(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	52 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N20 Mode 5240MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5246.00	H	65.01	56.58	42.95	107.96	99.53	3.19	-5.24					X/F
10480.78	H	41.85	28.79	15.85	57.70	44.64	-47.07	-60.13	87.96	79.53	-7.34	-15.77	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

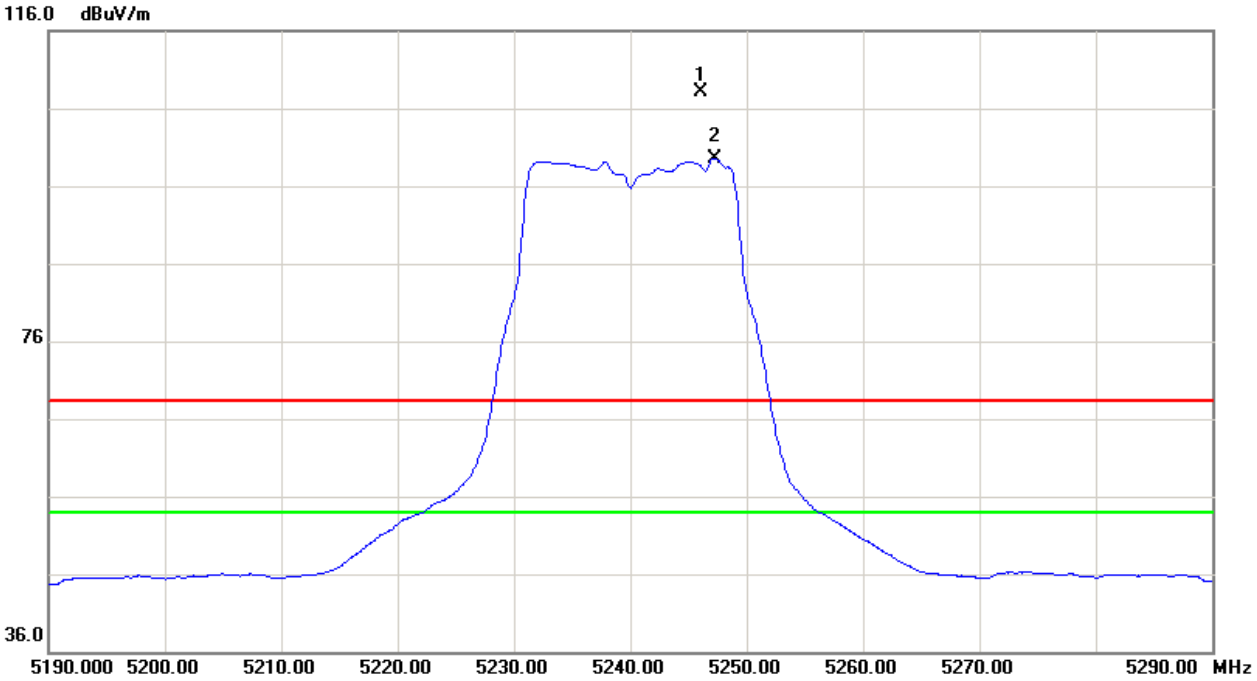
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

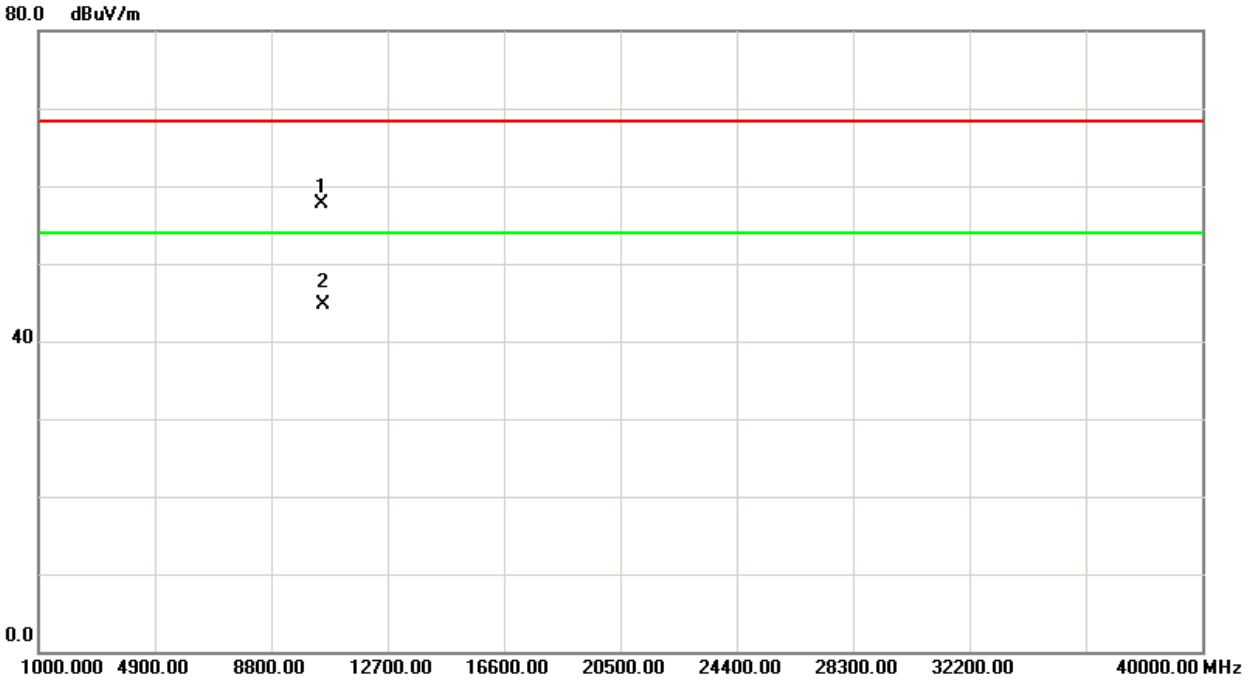
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH48(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N40 Mode 5190MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	V	11.95	2.64	42.72	54.67	45.36	-50.10	-59.41	68.30	54.00	-27.00	-41.30	X/E
5176.60	V	57.66	50.02	42.78	100.44	92.80	-4.33	-11.97					X/F
10380.88	V	42.17	29.58	16.00	58.17	45.58	-46.60	-59.19	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

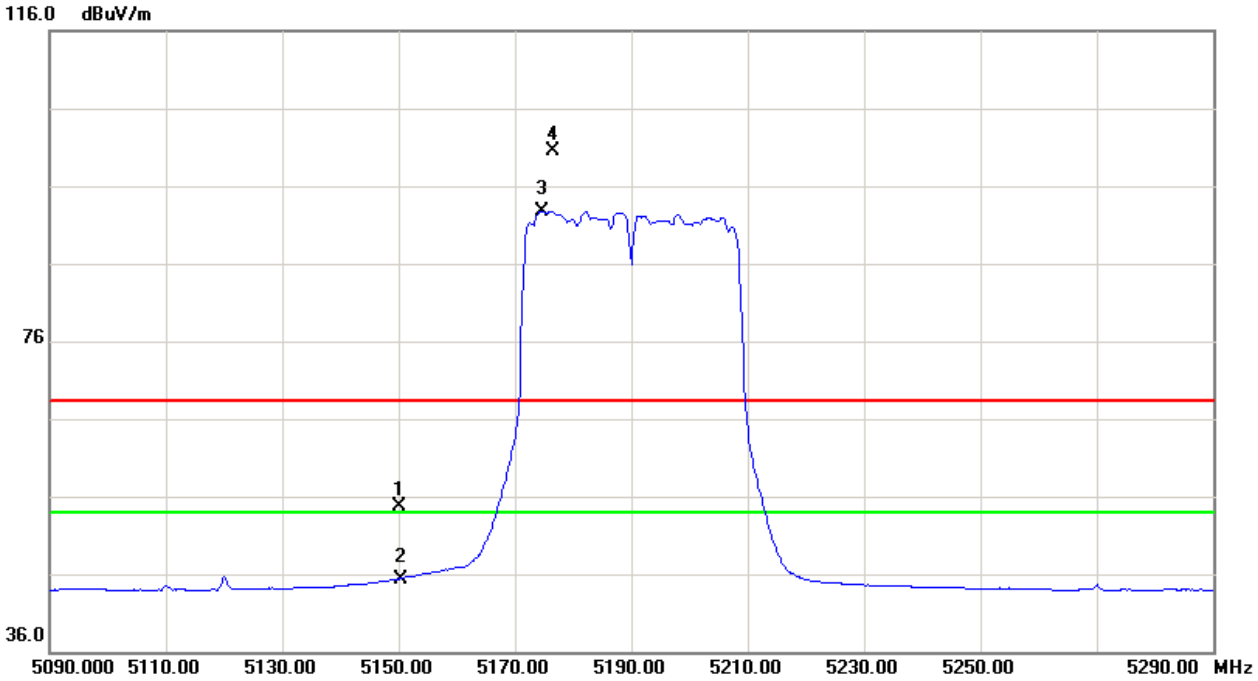
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

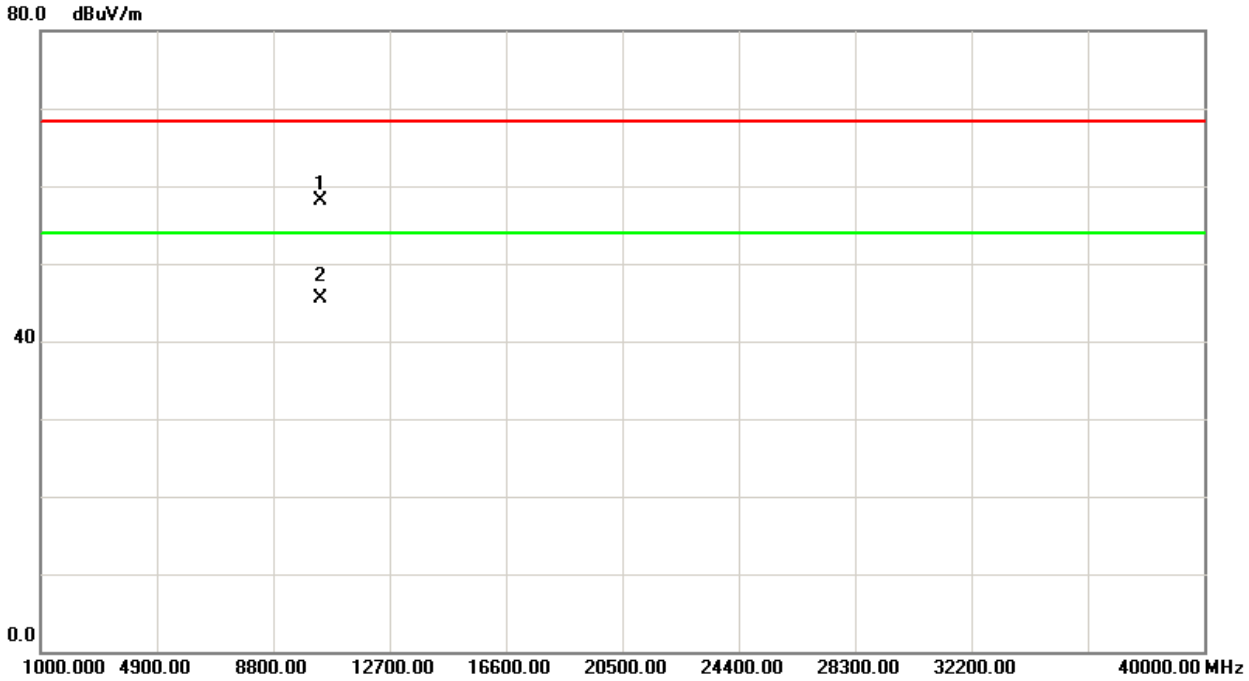
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH38(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N40 Mode 5190MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	H	12.45	3.01	42.72	55.17	45.73	-49.60	-59.04	68.30	54.00	-27.00	-41.30	X/E
5191.00	H	61.47	53.73	42.82	104.29	96.55	-0.48	-8.22					X/F
10380.54	H	41.52	28.67	16.00	57.52	44.67	-47.25	-60.10	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

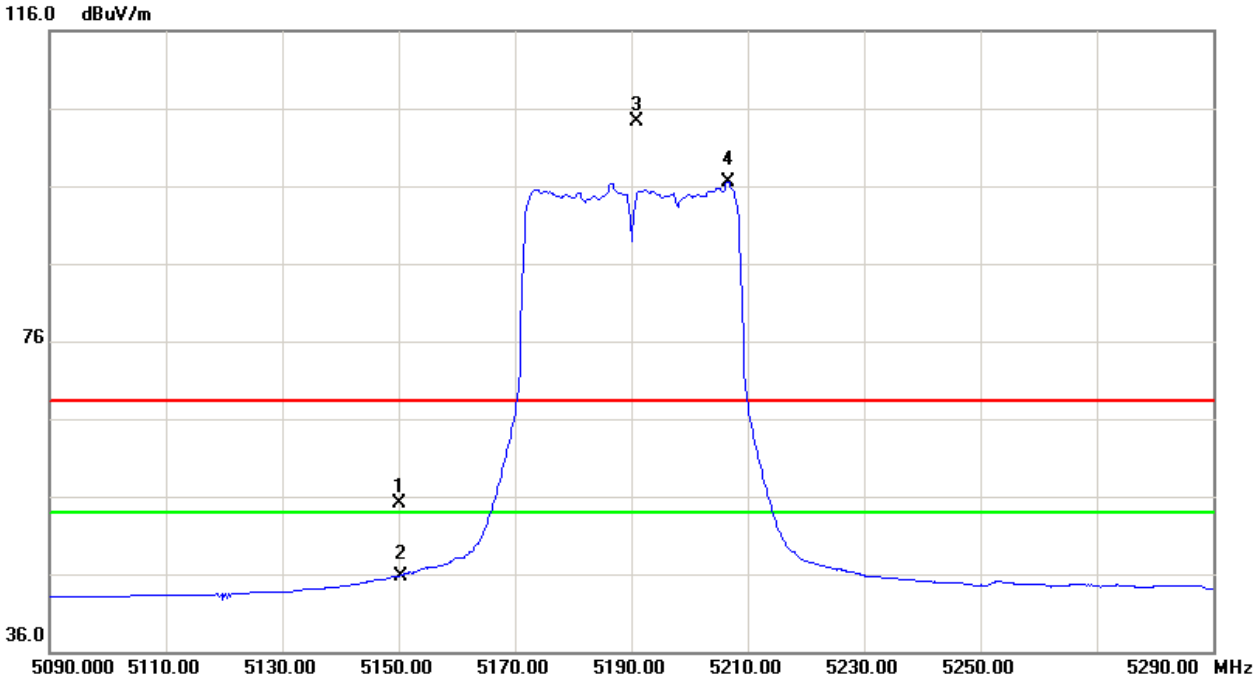
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

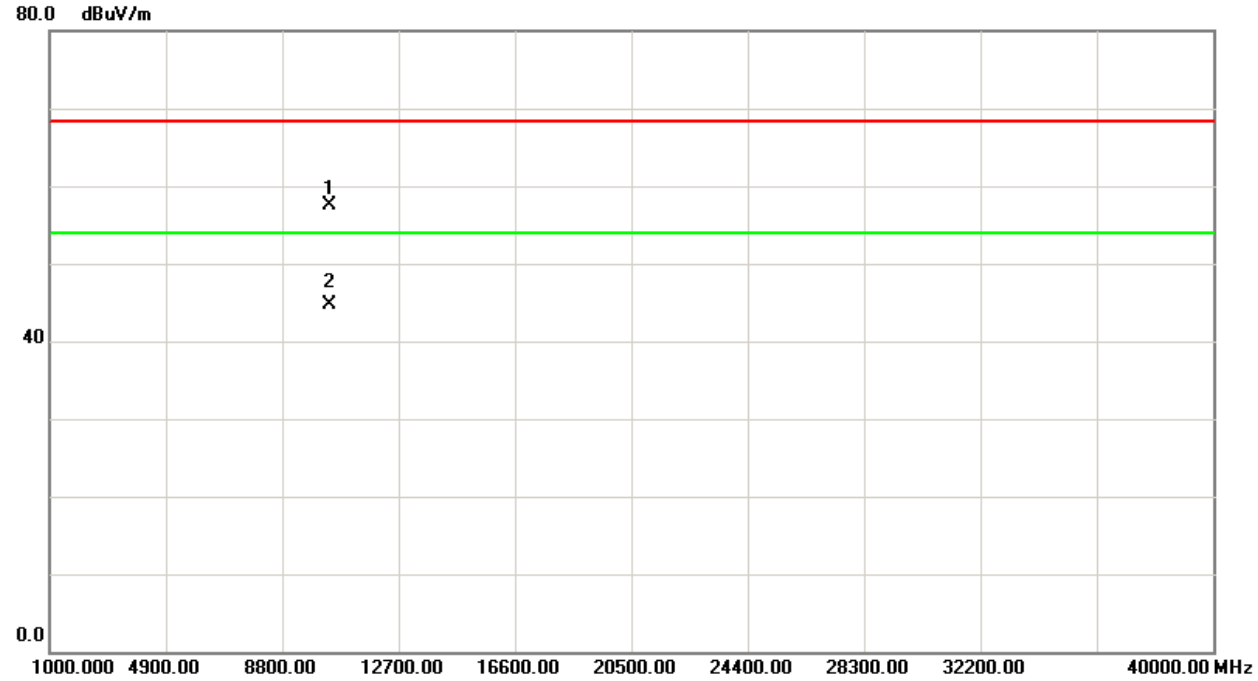
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH38(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N40 Mode 5230MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5225.60	V	56.59	49.29	42.90	99.49	92.19	-5.28	-12.58					X/F
10460.58	V	41.86	28.53	15.88	57.74	44.41	-47.03	-60.36	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

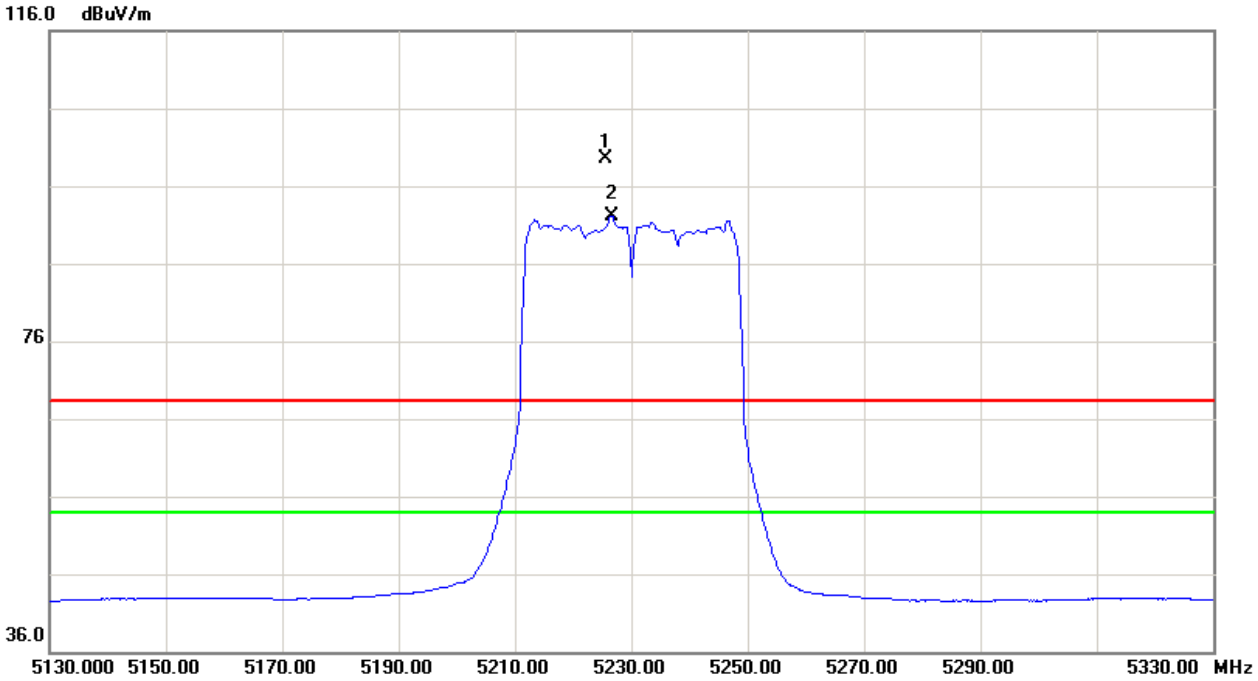
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

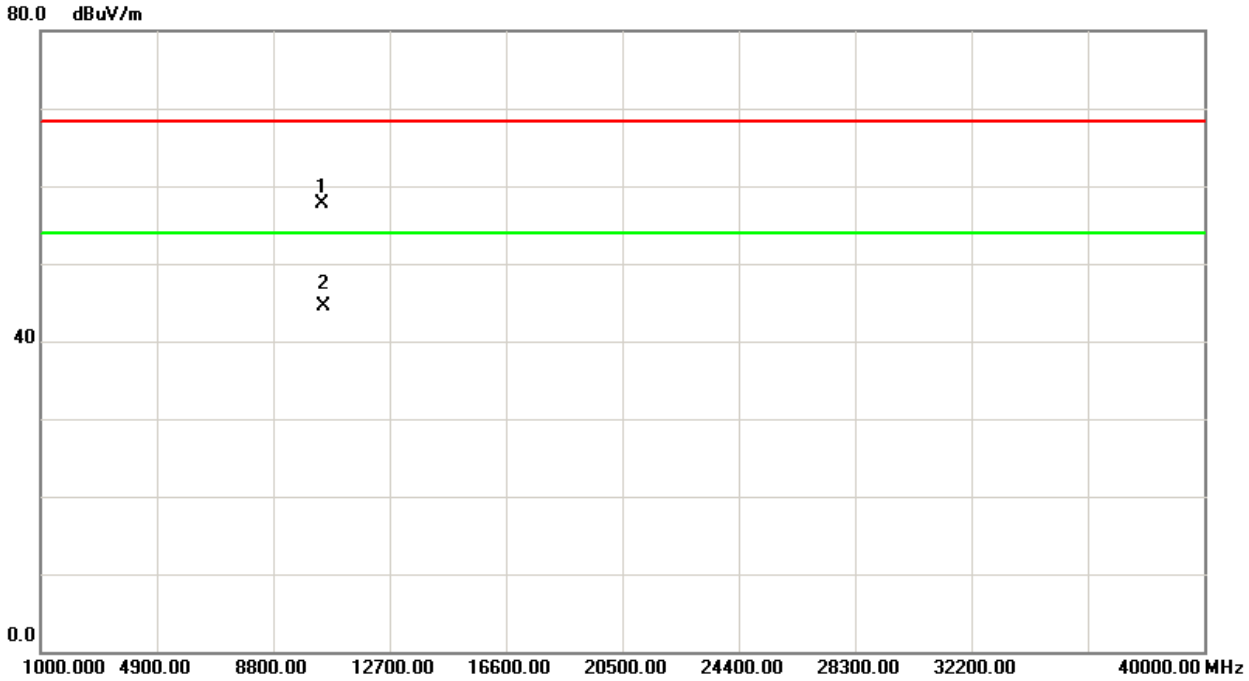
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH46(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N40 Mode 5230MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5243.20	H	61.75	54.15	42.85	104.60	97.00	-0.17	-7.77					X/F
10460.42	H	41.98	29.07	15.88	57.86	44.95	-46.91	-59.82	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

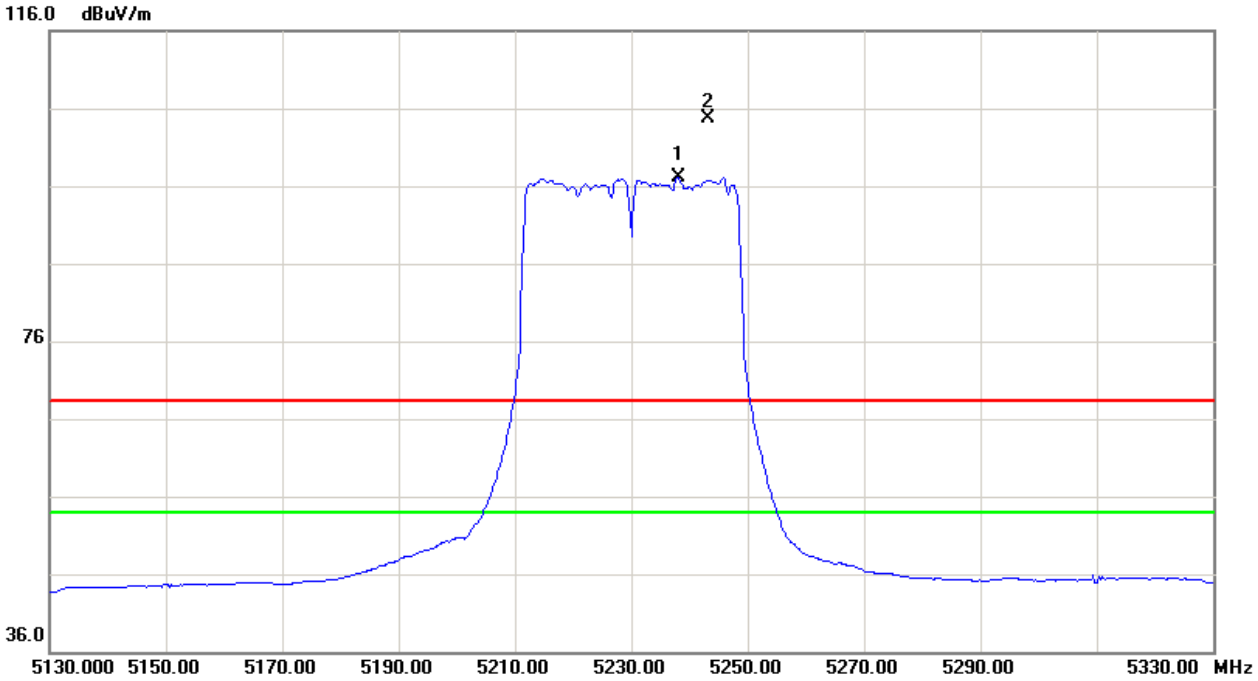
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

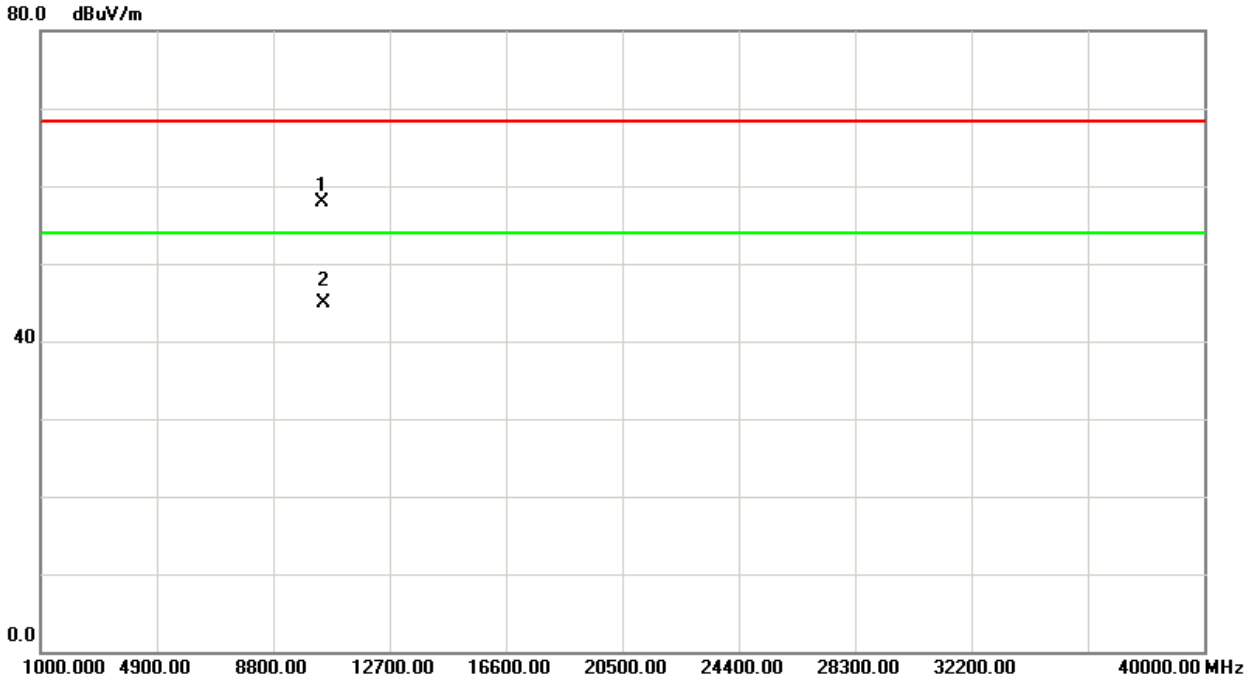
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH46(Above 1000 MHz, Horizontal)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N80 Mode 5210MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	V	11.45	4.91	42.72	54.17	47.63	-50.60	-57.14	68.30	54.00	-27.00	-41.30	X/E
5212.00	V	55.21	48.16	42.87	98.08	91.03	-6.69	-13.74					X/F
10421.53	V	42.65	29.10	15.93	58.58	45.03	-46.19	-59.74	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

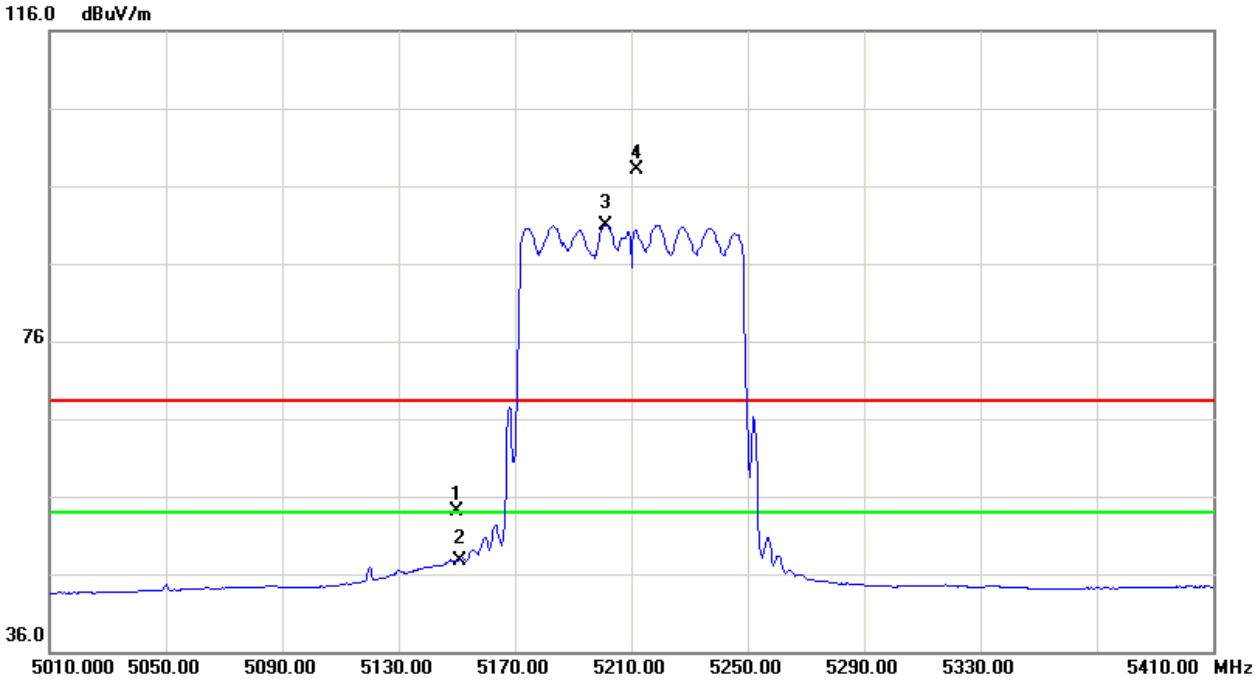
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

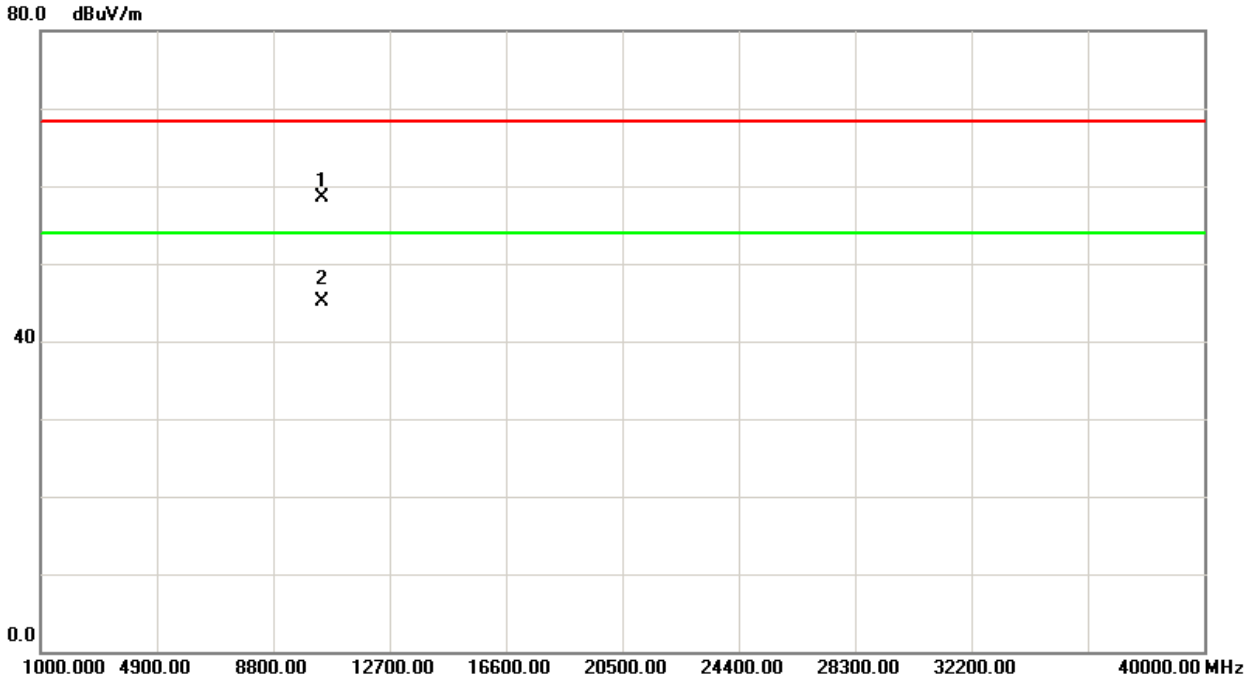
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH42(Above 1000 MHz, Vertical)





EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/ TX AC N80 Mode 5210MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.(dBuV/m)		Act.(dBm)		Limit(dBuV/m)		Limit(dBm)		Note
		Peak	AV		Peak	AV	Peak	AV	Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)									
5150.00	H	13.24	5.04	42.72	55.96	47.76	-48.81	-57.01	68.30	54.00	-27.00	-41.30	X/E
5236.40	H	60.43	51.63	42.93	103.36	94.56	-1.41	-10.21					X/F
10422.41	H	42.15	28.46	15.93	58.08	44.39	-46.69	-60.38	68.30	54.00	-27.00	-41.30	X/H

Remark:

(1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = Auto

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

(3) 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.)

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

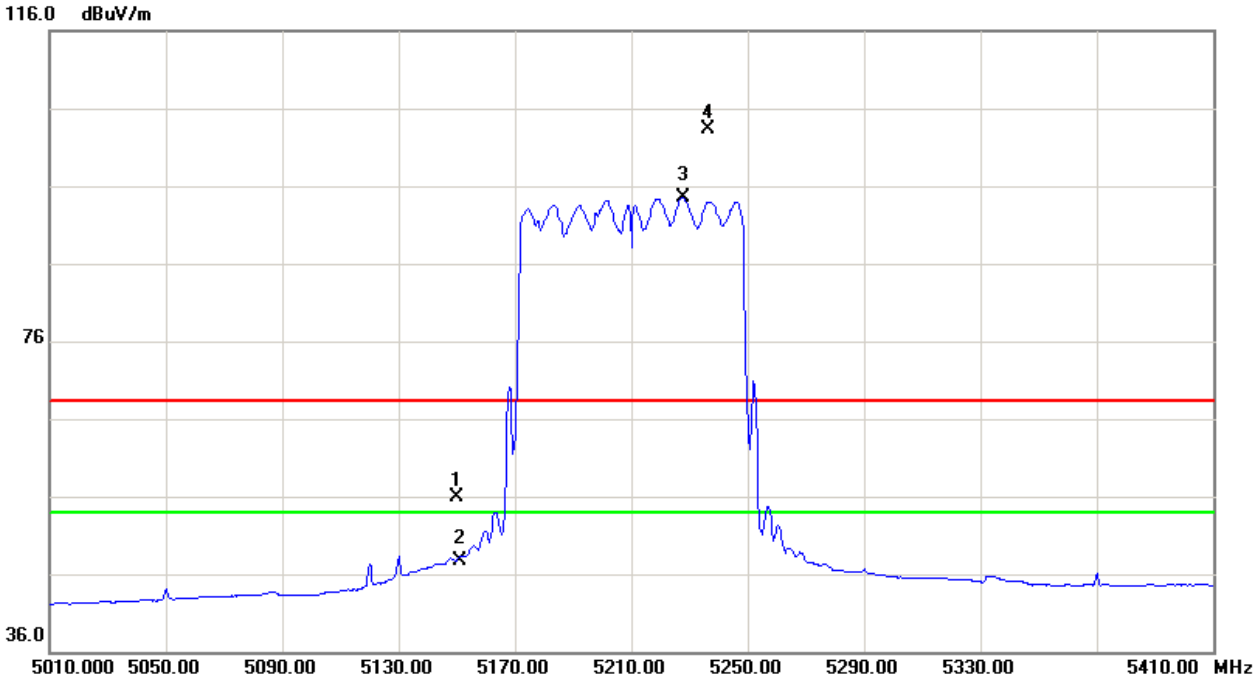
(5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

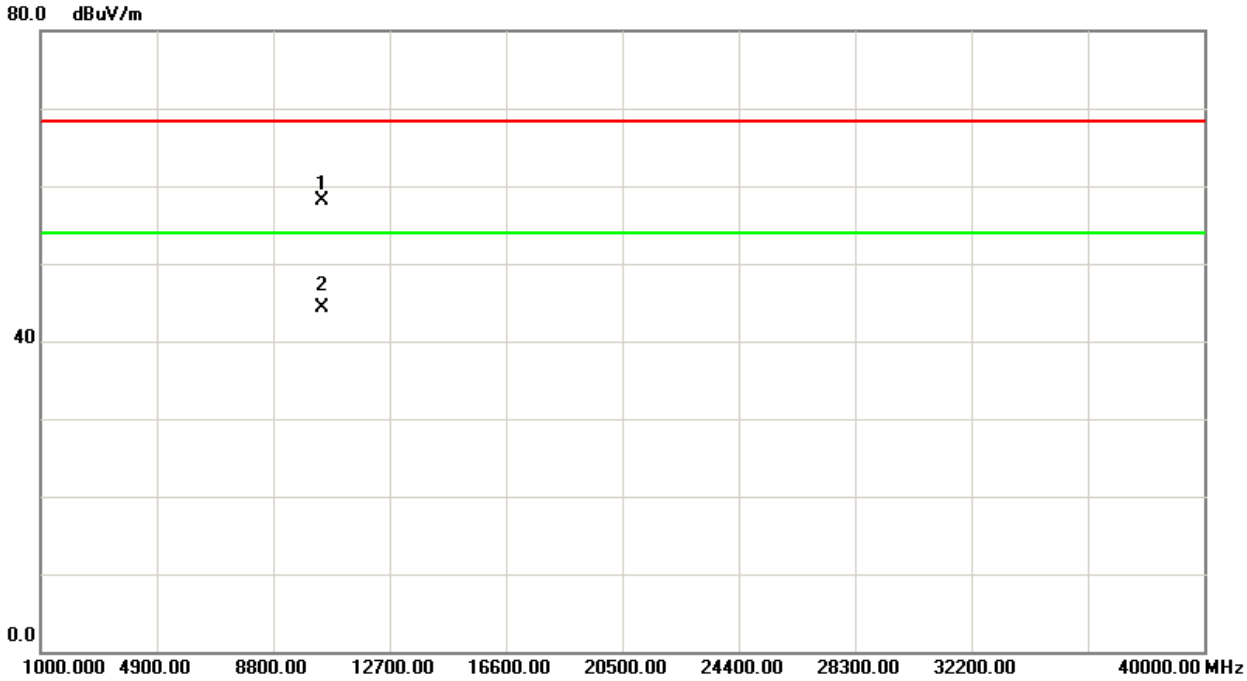
(6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

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

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

Orthogonal Axis:X
Band 1/CH42(Above 1000 MHz, Horizontal)





5. 26dB SPECTRUM BANDWIDTH

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
26 dB Bandwidth	------	5150MHz~5250	PASS

5.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2013

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.

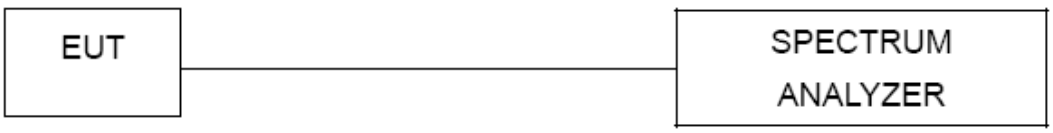
Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	300 kHz
VB	1000 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

c. Measured the spectrum width with power higher than 26dB below carrier

5.1.3 DEVIATION FROM STANDARD

No deviation.

5.1.4 TEST SETUP



5.1.5 EUT OPERATION CONDITIONS

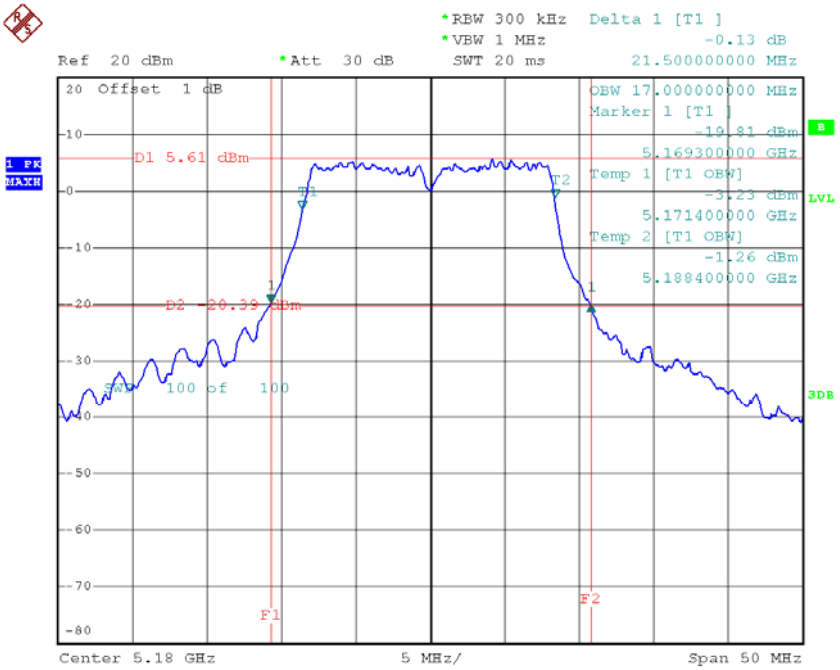
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.6 TEST RESULTS

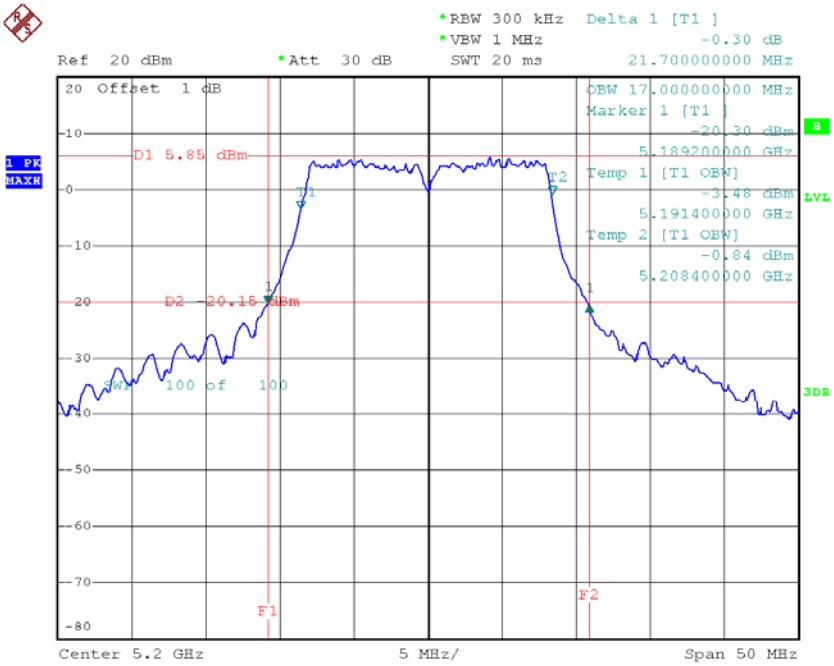
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode /CH36, CH40, CH48		

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CH36	5180	21.50	17.00
CH40	5200	21.70	17.00
CH48	5240	21.70	17.00

CH36

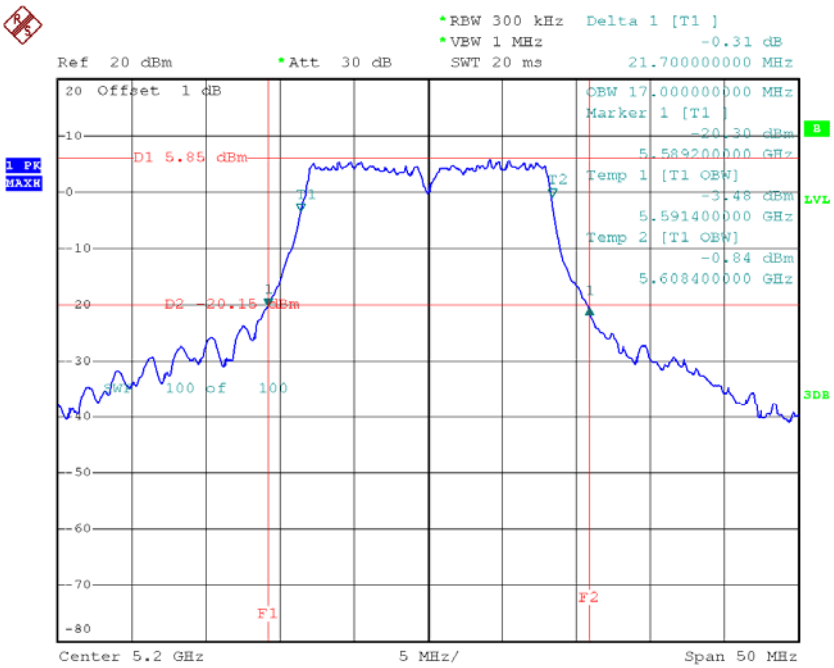


CH40



Date: 12.NOV.2013 08:09:36

CH48

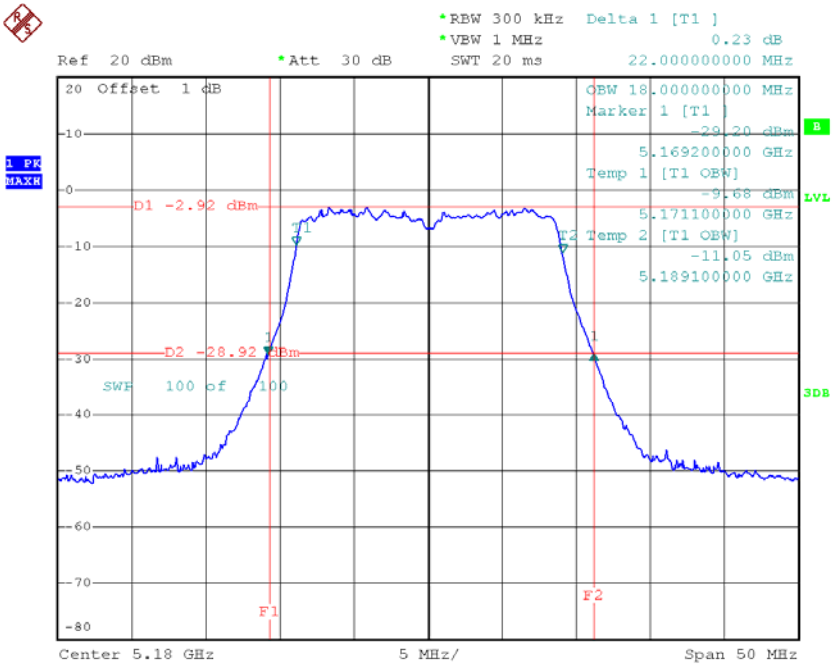


Date: 12.NOV.2013 08:19:33

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode /CH36, CH40, CH48		

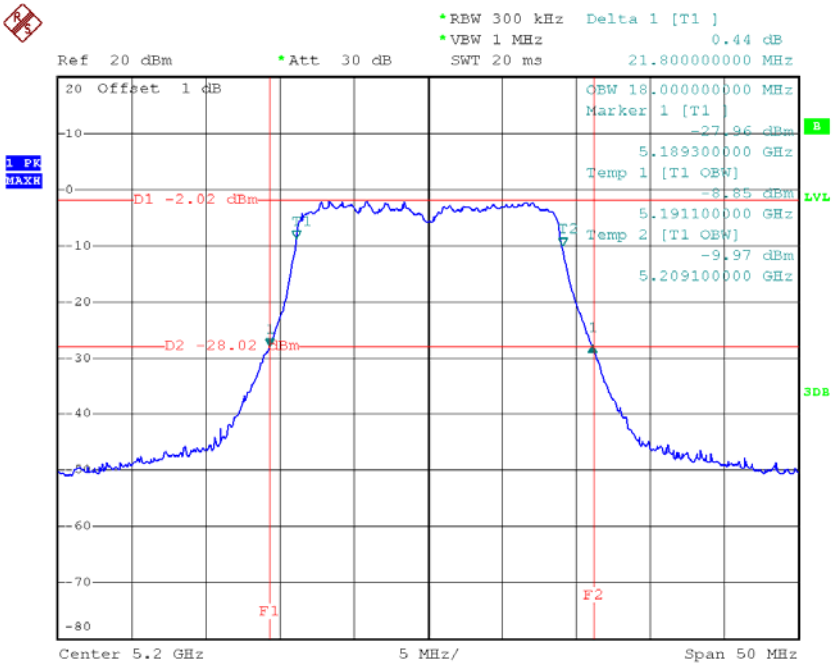
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CH36	5180	22.00	18.00
CH40	5200	21.80	18.00
CH48	5240	22.10	18.00

CH36



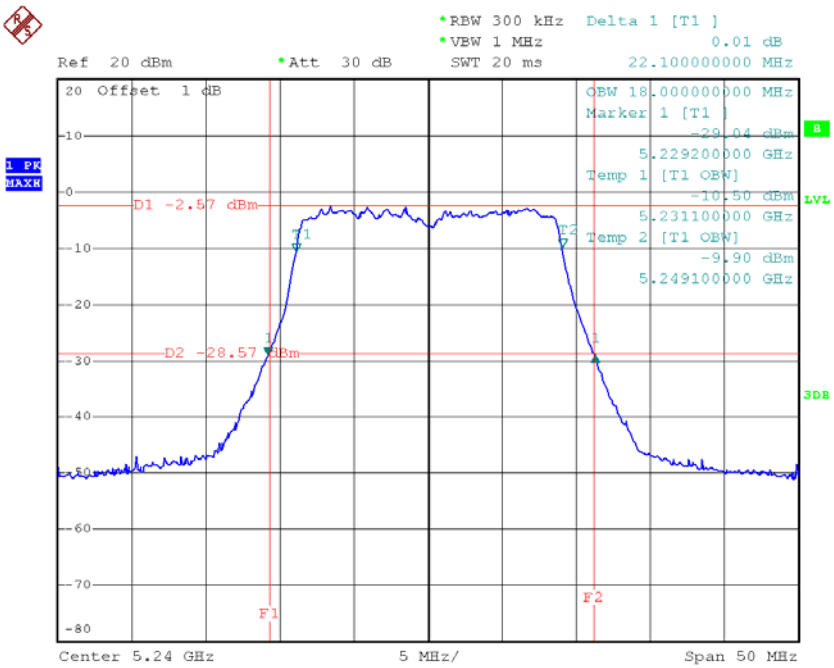
Date: 12.NOV.2013 08:39:01

CH40



Date: 12.NOV.2013 08:59:06

CH48

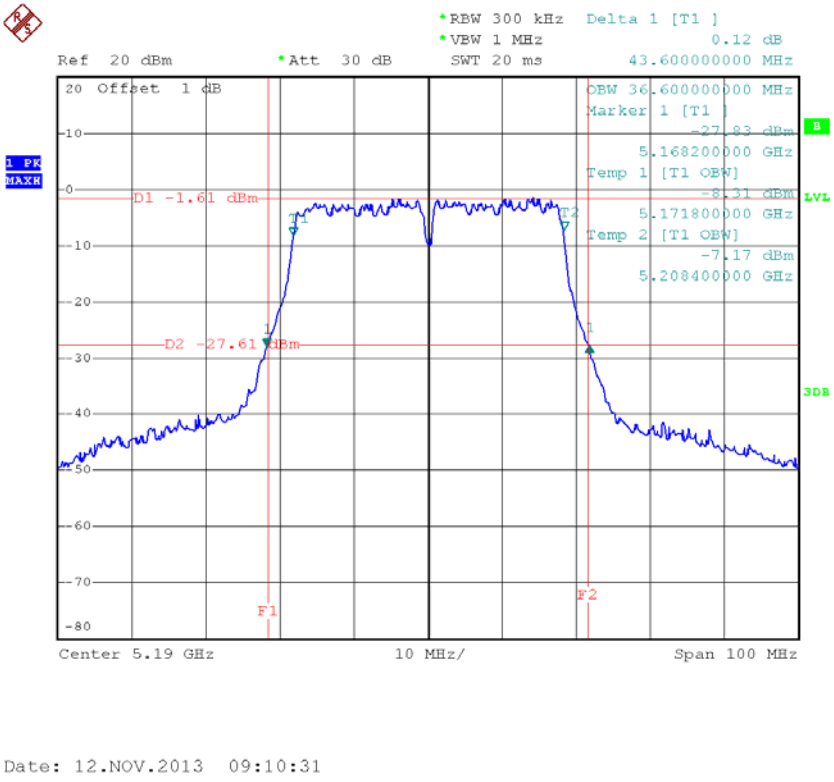


Date: 12.NOV.2013 08:51:57

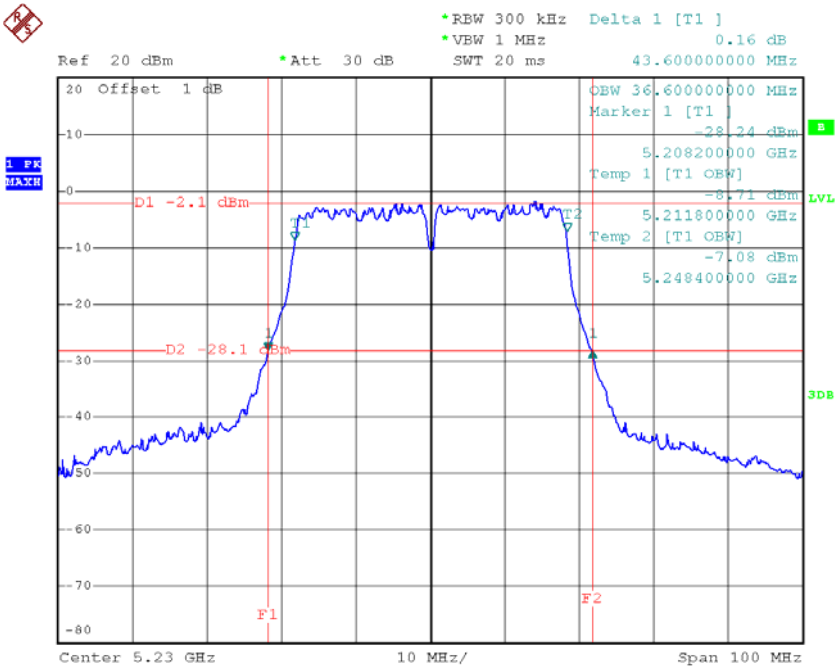
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode /CH38, CH46		

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CH38	5190	43.60	36.60
CH46	5230	43.60	36.60

CH38



CH46

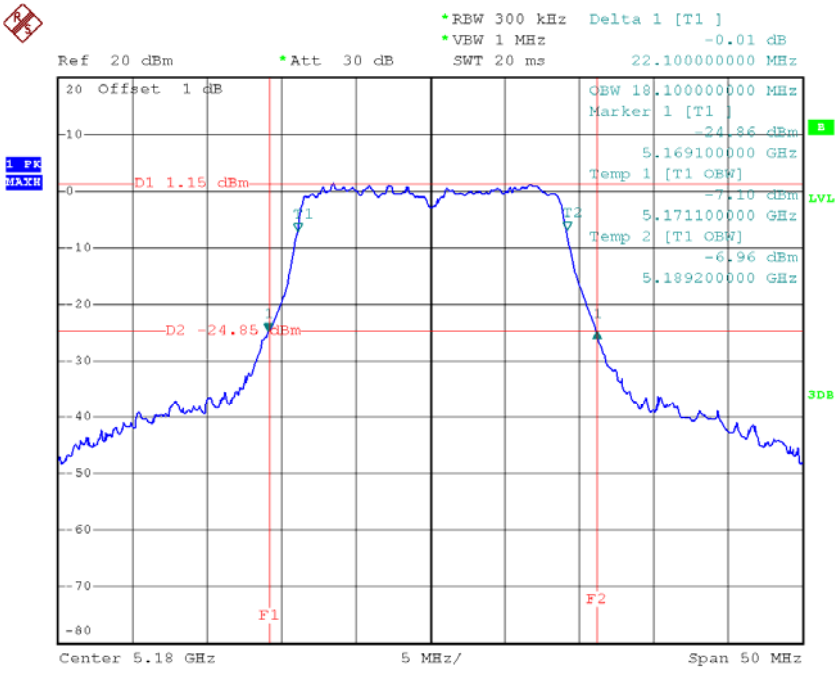


Date: 12.NOV.2013 09:22:56

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25˚C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode /CH36, CH40, CH48		

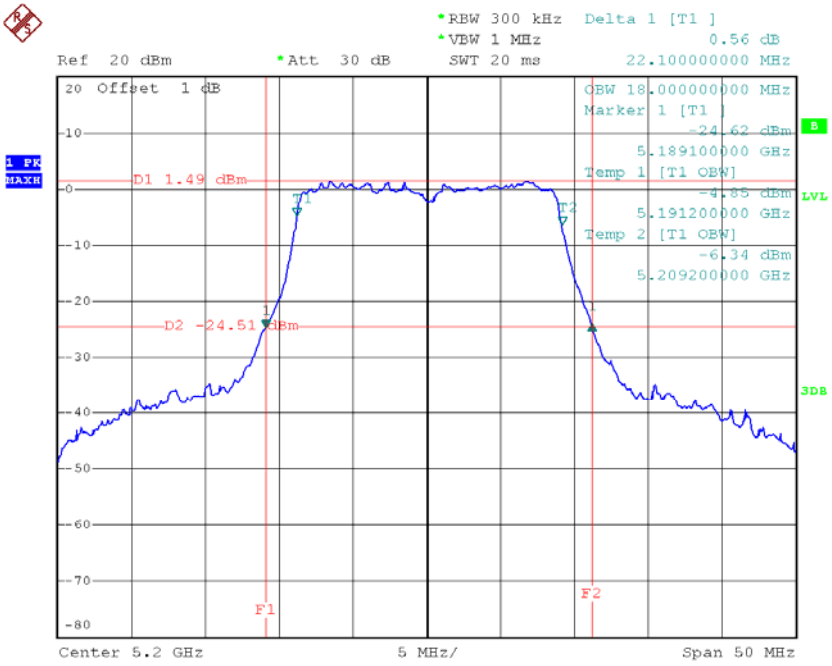
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CH36	5180	22.10	18.10
CH40	5200	22.10	18.00
CH48	5240	22.10	18.00

CH36



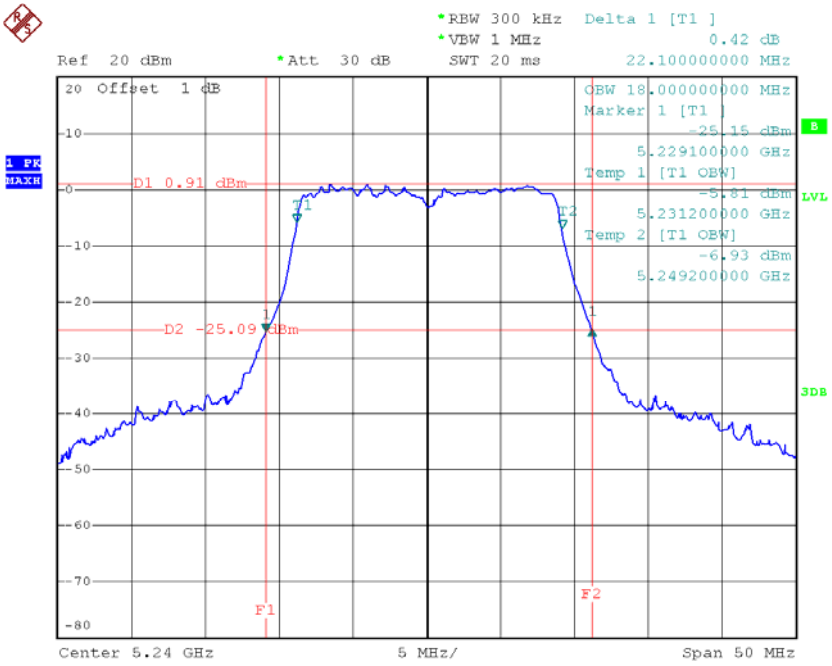
Date: 12.NOV.2013 09:32:03

CH40



Date: 12.NOV.2013 09:58:37

CH48

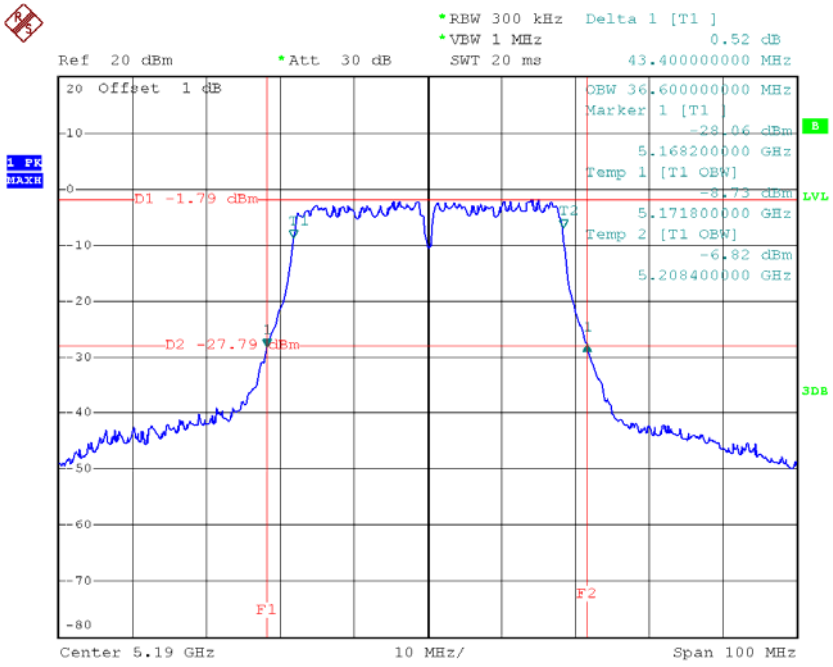


Date: 12.NOV.2013 10:04:18

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode /CH38, CH46		

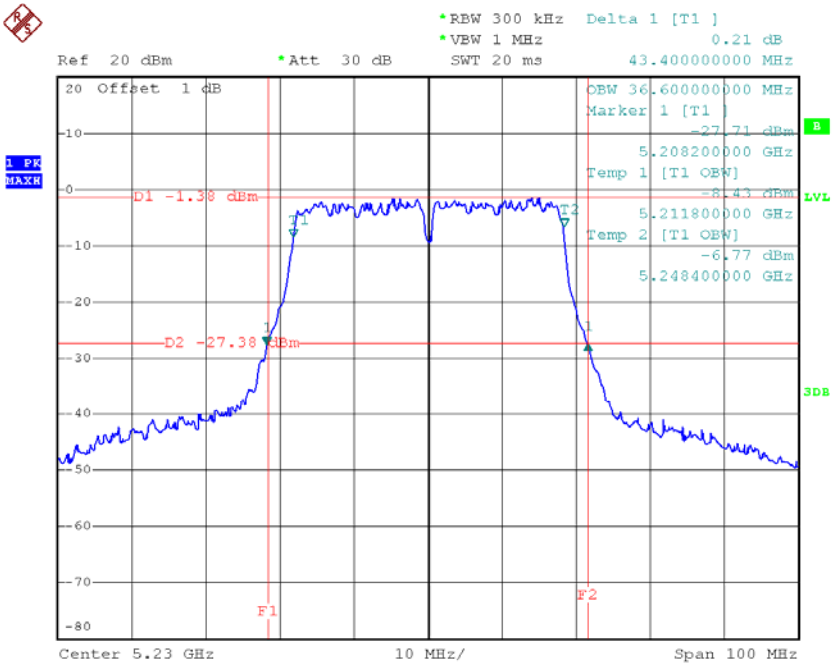
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CH38	5190	43.40	36.60
CH46	5230	43.40	36.60

CH38



Date: 12.NOV.2013 10:21:03

CH46

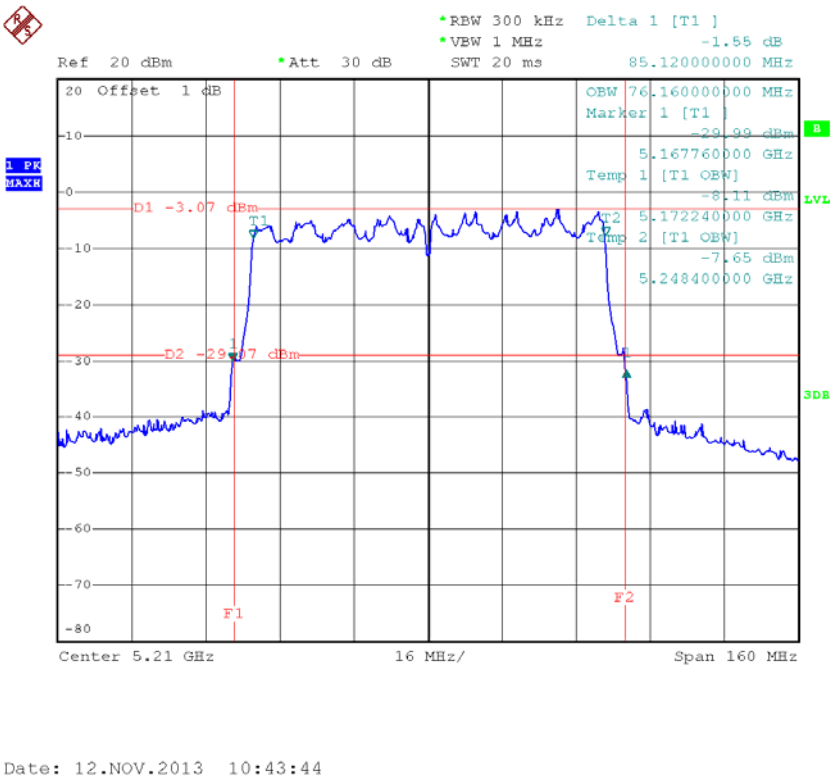


Date: 12.NOV.2013 10:22:28

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode /CH42		

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CH42	5210	85.12	76.16

CH42



Date: 12.NOV.2013 10:43:44

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Frequency Range (MHz)	Limit	Result
Conducted Output Power	5150 - 5250	not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B,	PASS

Note: where "B" is the 26 dB emissions bandwidth in MHz.

6.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2013

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

6.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b.

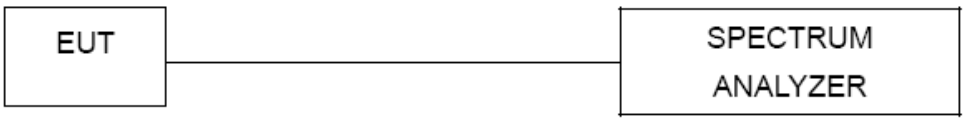
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	= 1 MHz.
VBW	≥ 3 MHz.
Detector	RMS
Trace	Max Hold
Sweep Time	auto

b. Test was performed in accordance with method of KDB 789033 D01.

6.1.3 DEVIATION FROM STANDARD

No deviation.

6.1.4 TEST SETUP



6.1.5 EUT OPERATION CONDITIONS

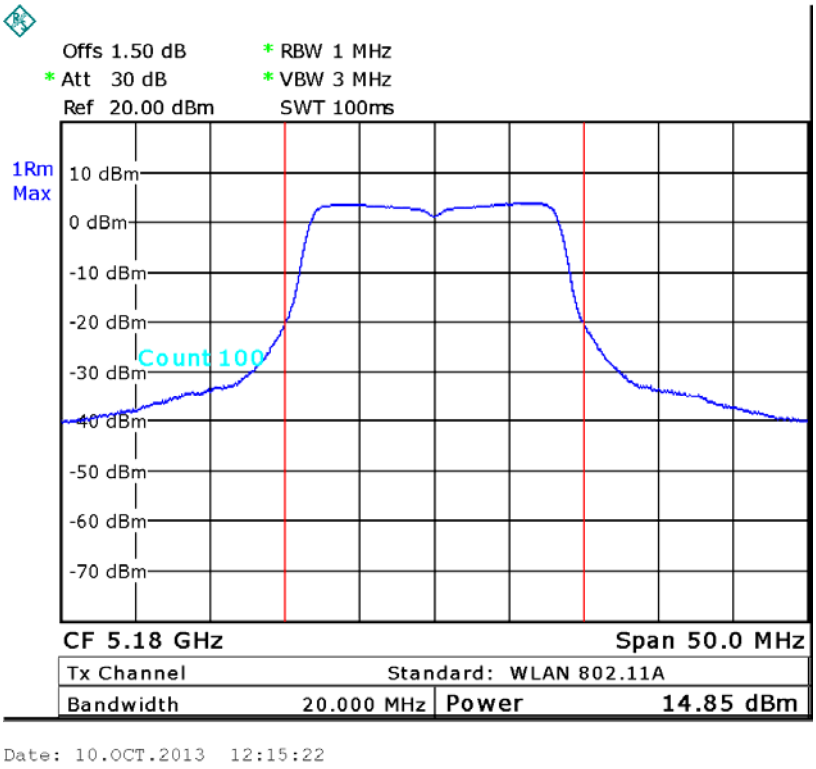
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.6 TEST RESULTS

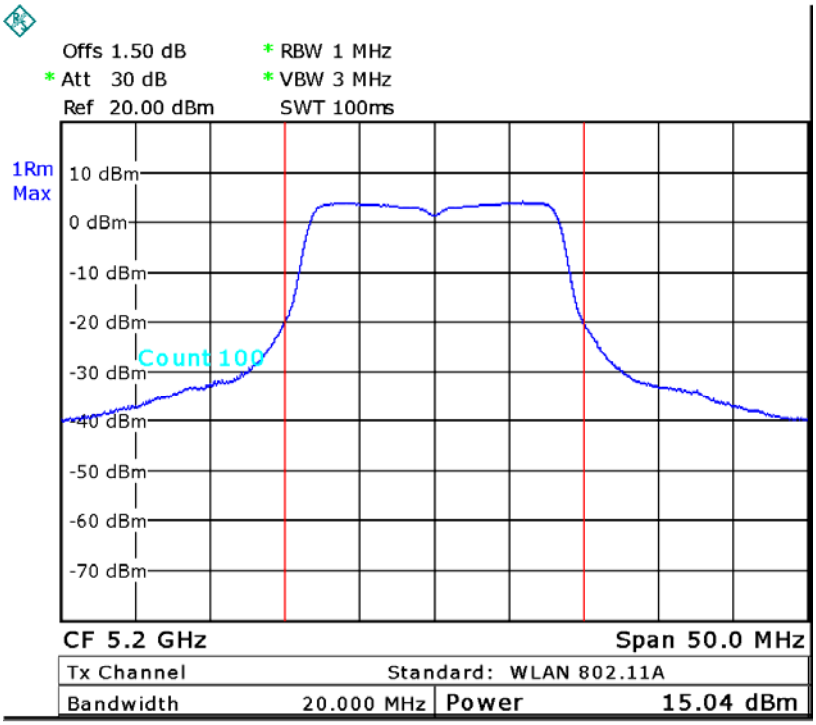
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode/CH36, CH40, CH48		

Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH36	5180	14.85	17.00	0.0501
CH40	5200	15.04	17.00	0.0501
CH48	5240	15.14	17.00	0.0501

CH36

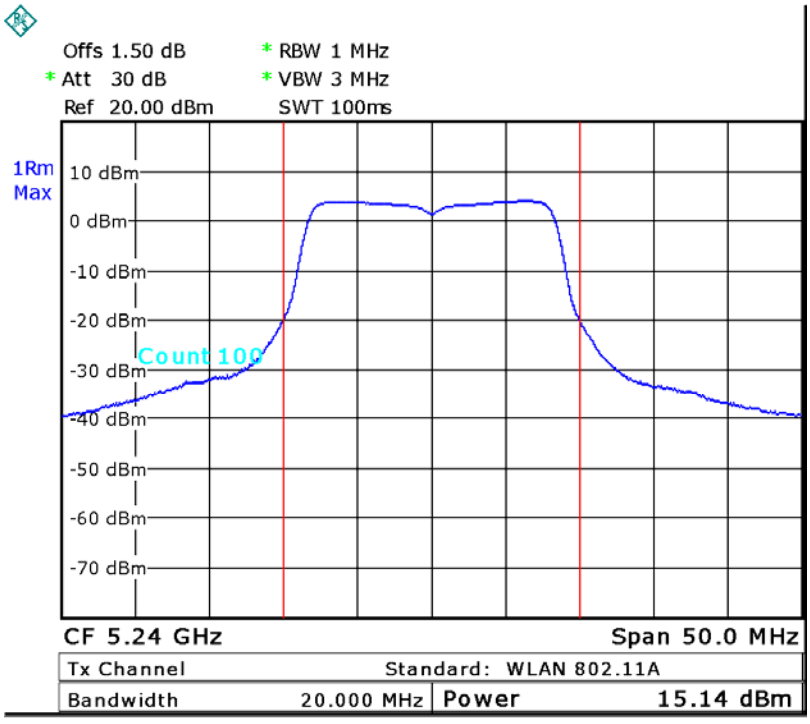


CH40



Date: 10.OCT.2013 12:22:55

CH48

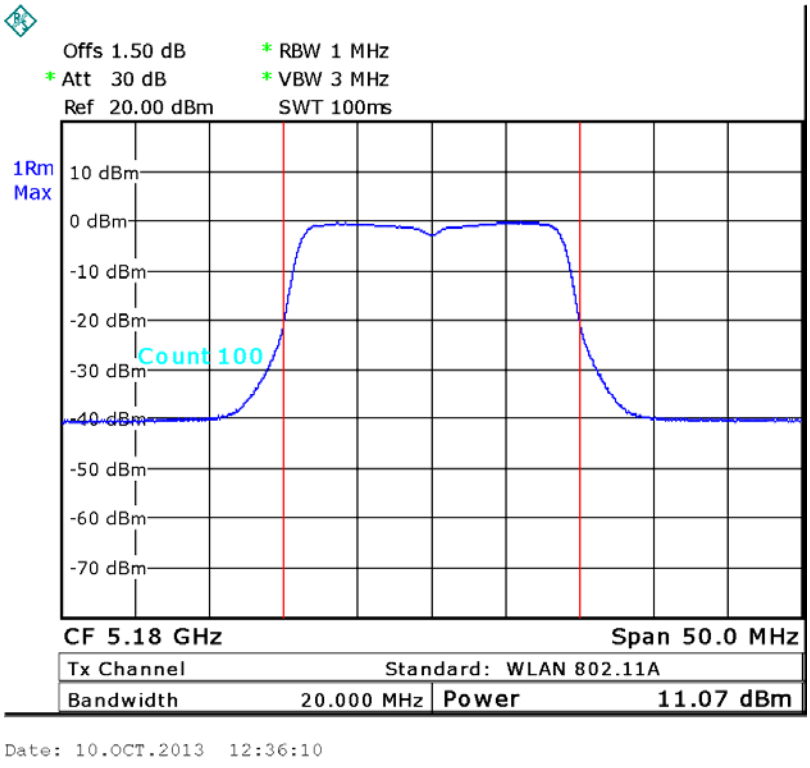


Date: 10.OCT.2013 12:34:49

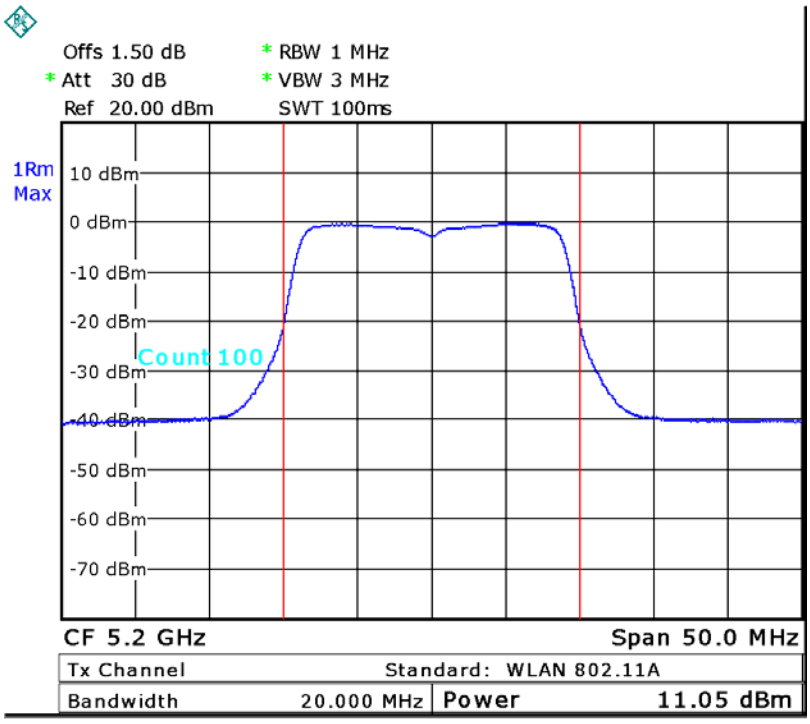
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

ANT 0				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH36	5180	11.07	17.00	0.0501
CH40	5200	11.05	17.00	0.0501
CH48	5240	10.95	17.00	0.0501

CH36

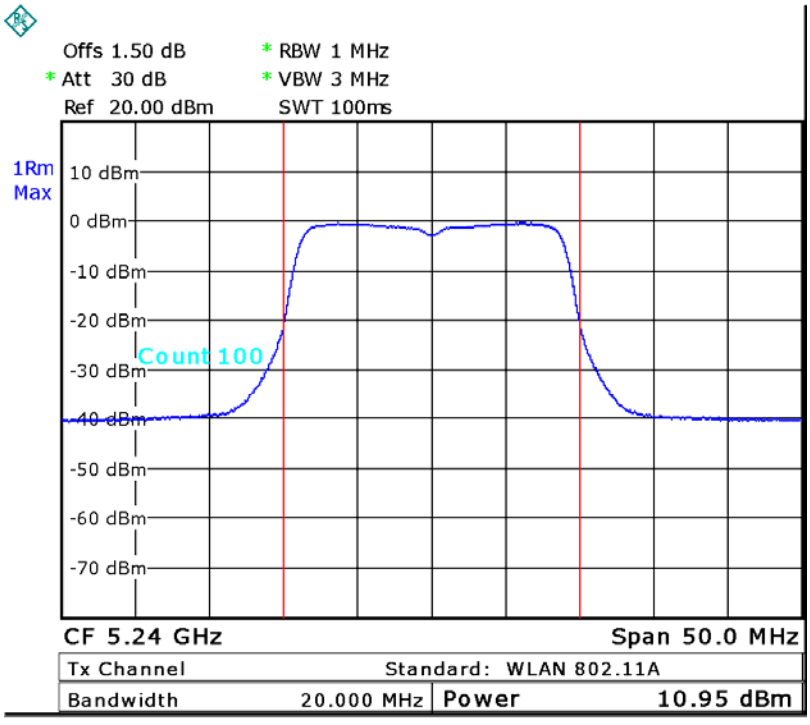


CH40



Date: 10.OCT.2013 12:37:10

CH48

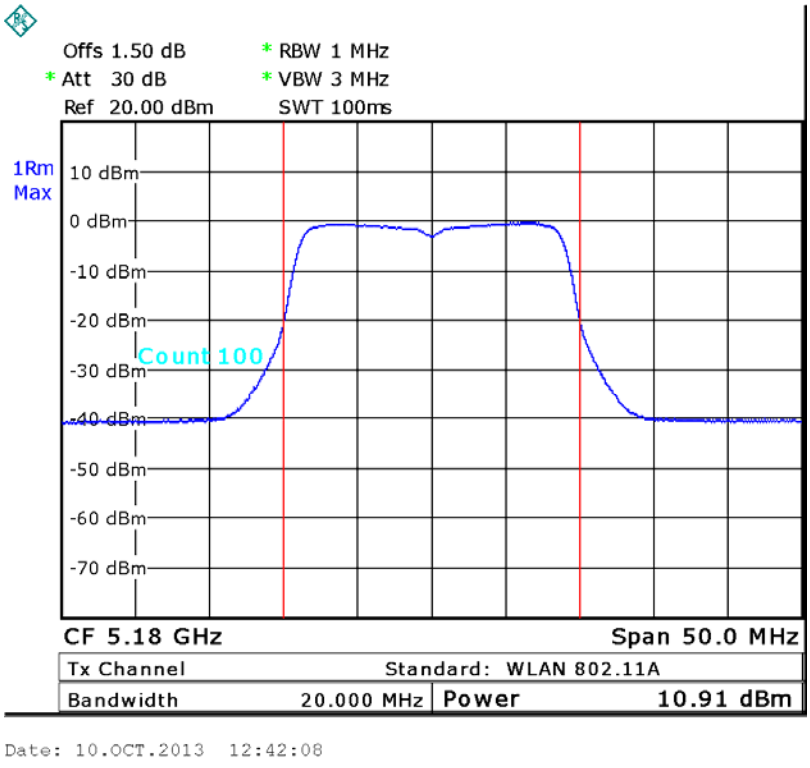


Date: 10.OCT.2013 12:37:59

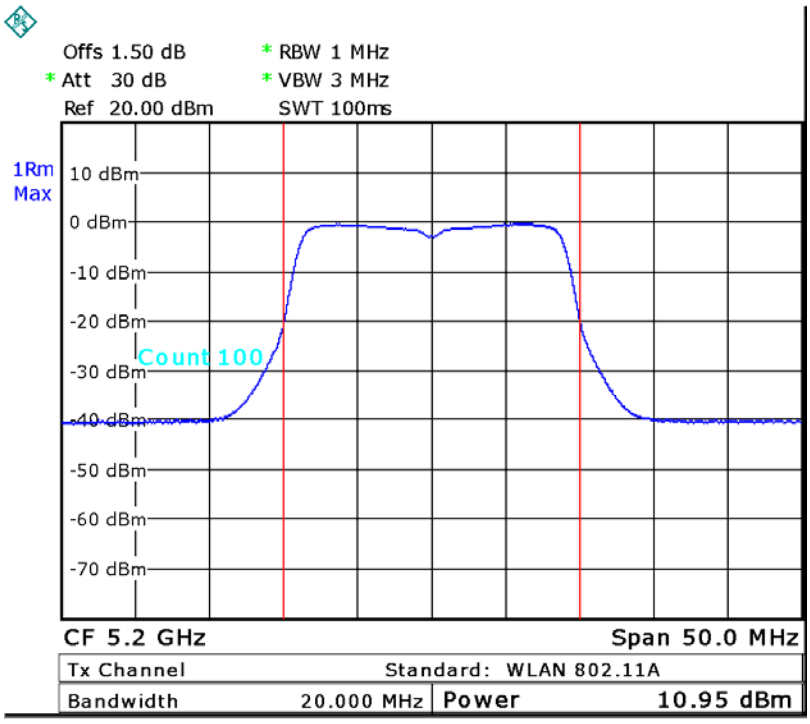
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH36	5180	10.91	17.00	0.0501
CH40	5200	10.95	17.00	0.0501
CH48	5240	10.84	17.00	0.0501

CH36

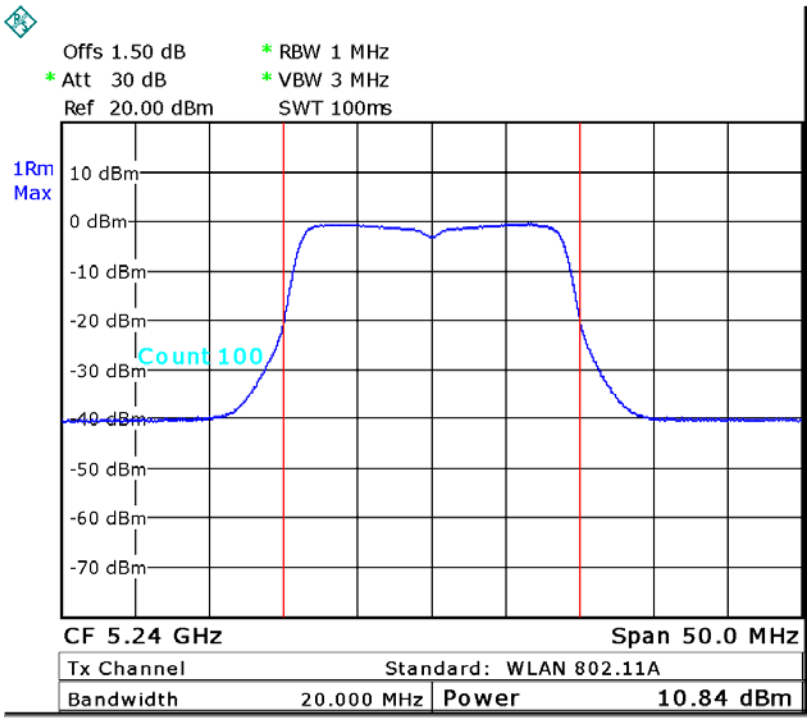


CH40



Date: 10.OCT.2013 12:42:42

CH48



Date: 10.OCT.2013 12:43:34

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

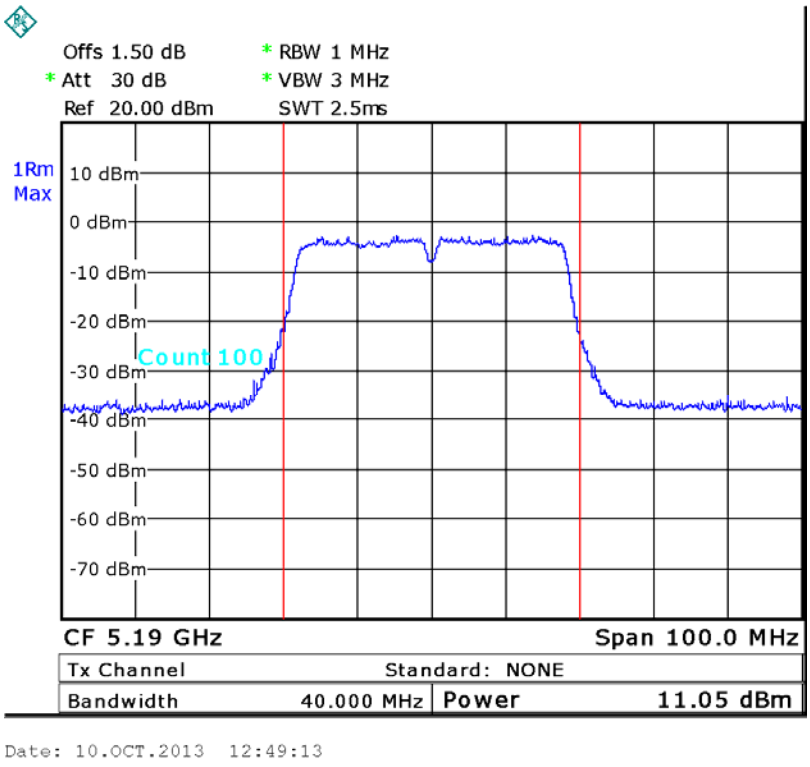
ANT 0+ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH36	5180	14.00	17.00	0.0501
CH40	5200	14.01	17.00	0.0501
CH48	5240	13.91	17.00	0.0501

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

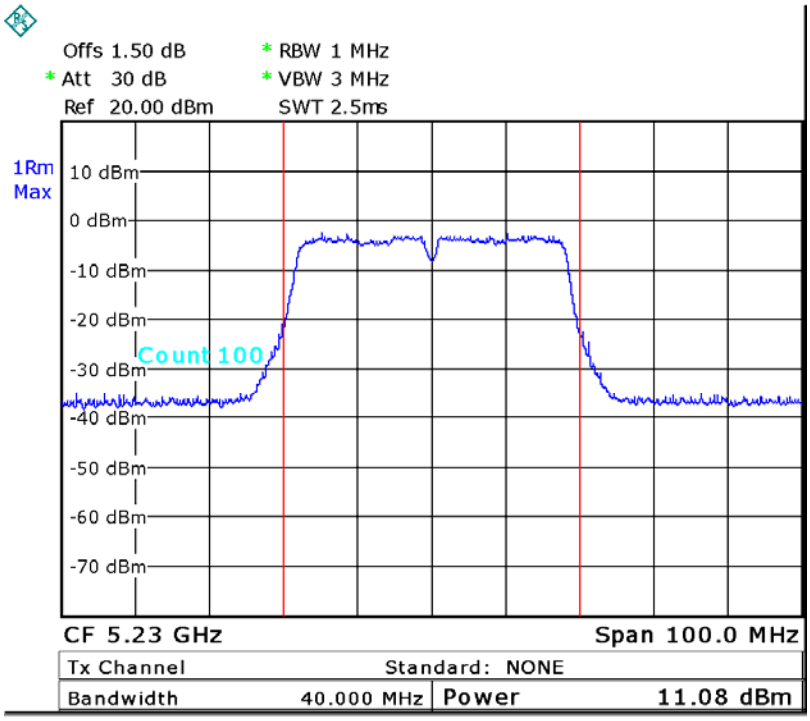
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

ANT 0				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH38	5190	11.05	17.00	0.0501
CH46	5230	11.08	17.00	0.0501

CH38



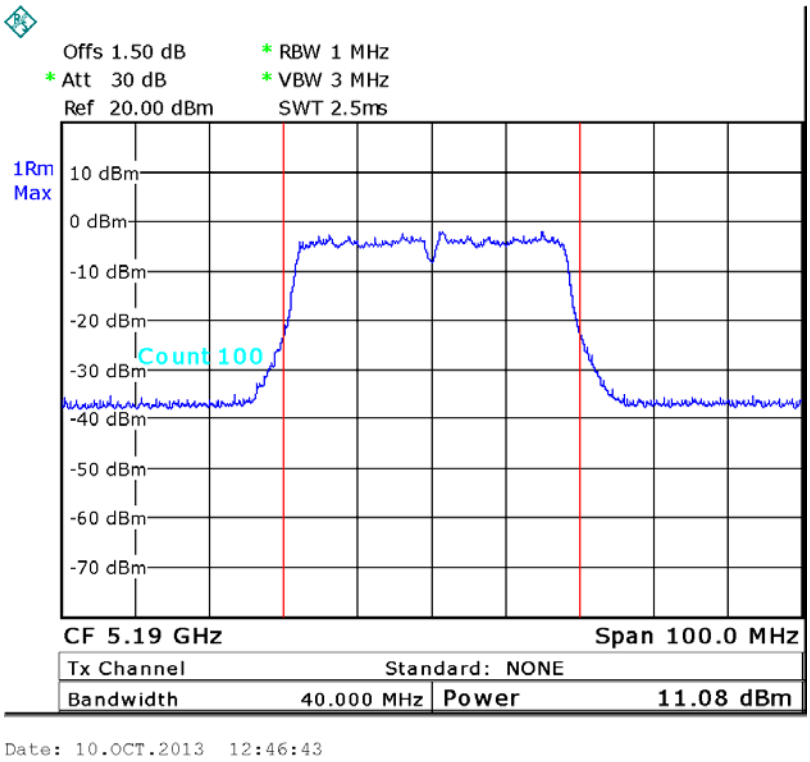
CH46


Offs 1.50 dB
* RBW 1 MHz
* Att 30 dB
* VBW 3 MHz
Ref 20.00 dBm
SWT 2.5ms
1Rm
Max
10 dBm
0 dBm
-10 dBm
-20 dBm
Count 100
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 5.23 GHz
Span 100.0 MHz
Tx Channel
Standard: NONE
Bandwidth
40.000 MHz
Power
11.08 dBm
Date: 10.OCT.2013 12:50:36

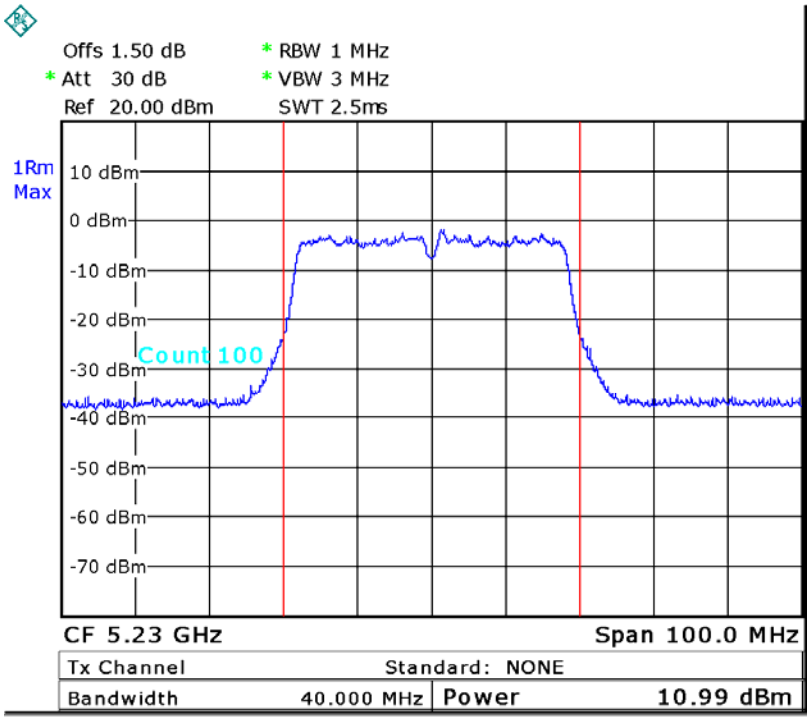
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH38	5190	11.08	17.00	0.0501
CH46	5230	10.99	17.00	0.0501

CH38



CH46



Date: 10.OCT.2013 12:47:27

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

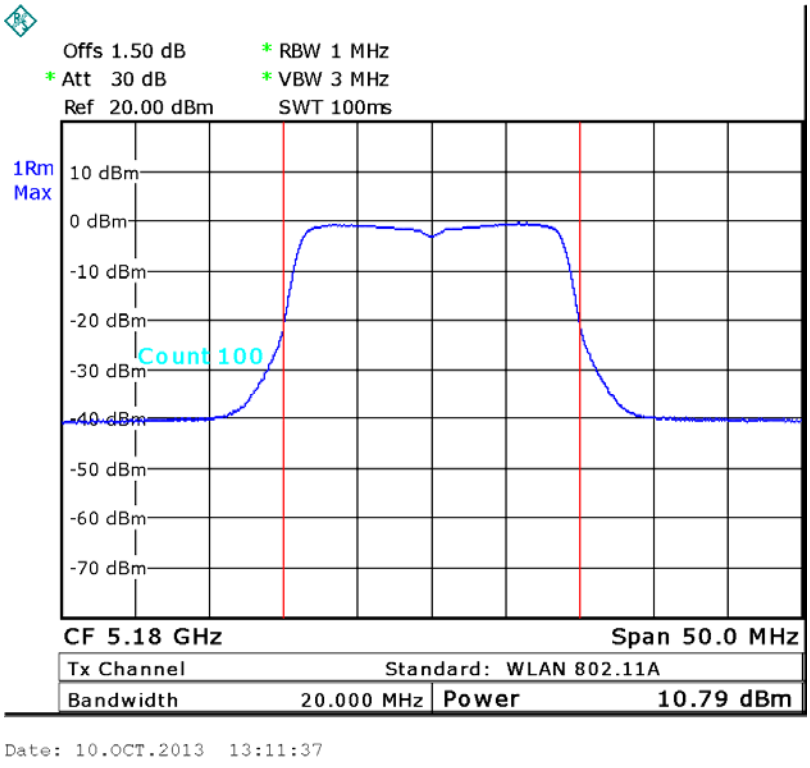
ANT 0+ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH38	5190	14.08	17.00	0.0501
CH46	5230	14.05	17.00	0.0501

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

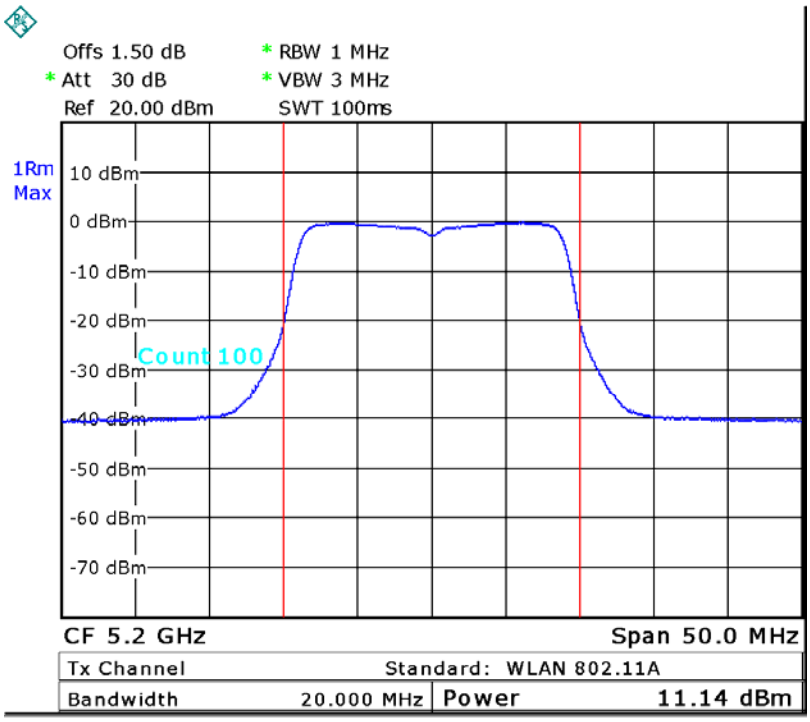
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/CH36, CH40, CH48		

ANT 0				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH36	5180	10.79	17.00	0.0501
CH40	5200	11.14	17.00	0.0501
CH48	5240	11.04	17.00	0.0501

CH36

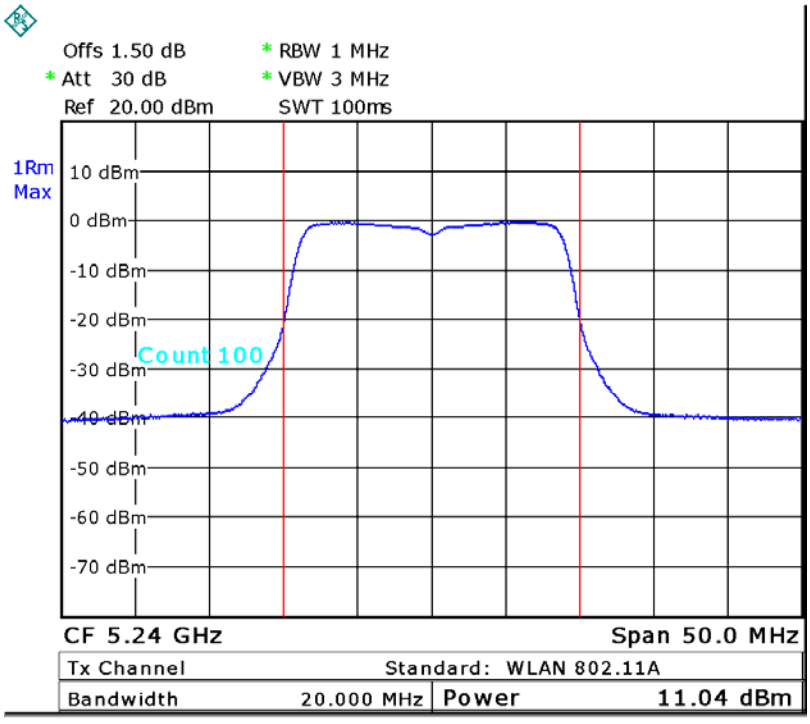


CH40



Date: 10.OCT.2013 13:13:08

CH48

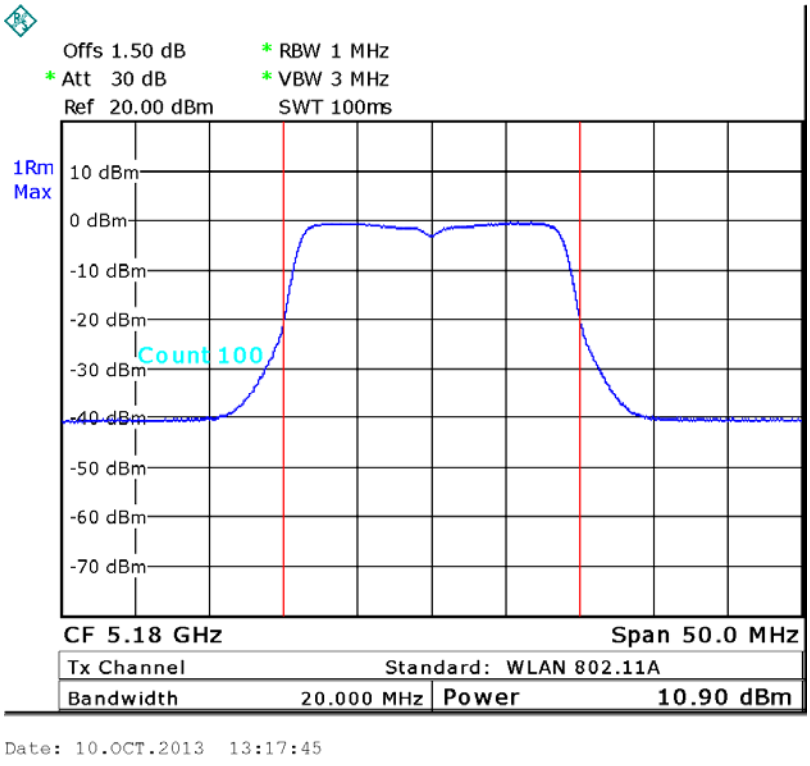


Date: 10.OCT.2013 13:13:58

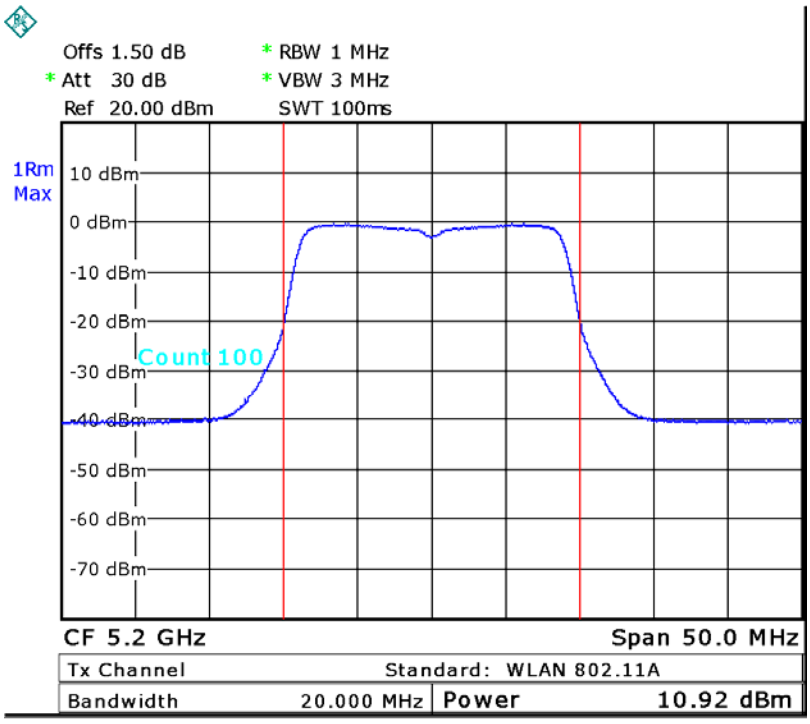
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/CH36, CH40, CH48		

ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH36	5180	10.90	17.00	0.0501
CH40	5200	10.92	17.00	0.0501
CH48	5240	10.93	17.00	0.0501

CH36

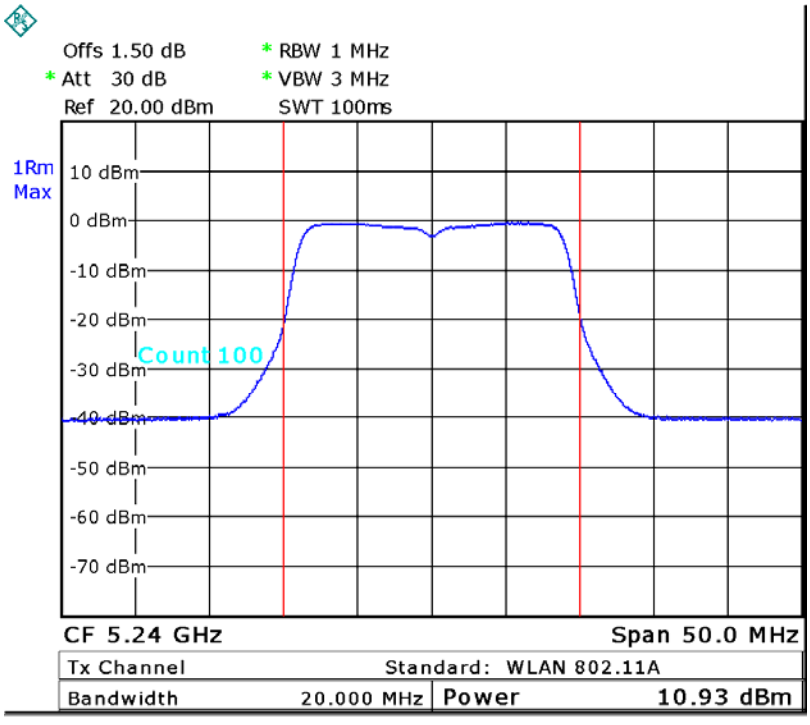


CH40



Date: 10.OCT.2013 13:18:25

CH48



Date: 10.OCT.2013 13:20:38

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/CH36, CH40, CH48		

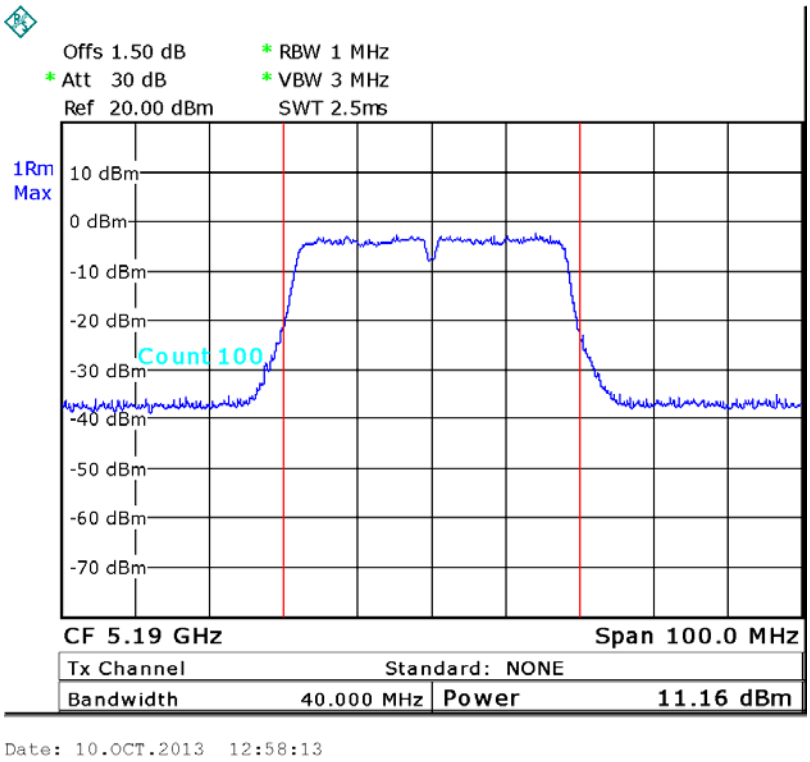
ANT 0+ ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH36	5180	13.86	17.00	0.0501
CH40	5200	14.04	17.00	0.0501
CH48	5240	14.00	17.00	0.0501

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

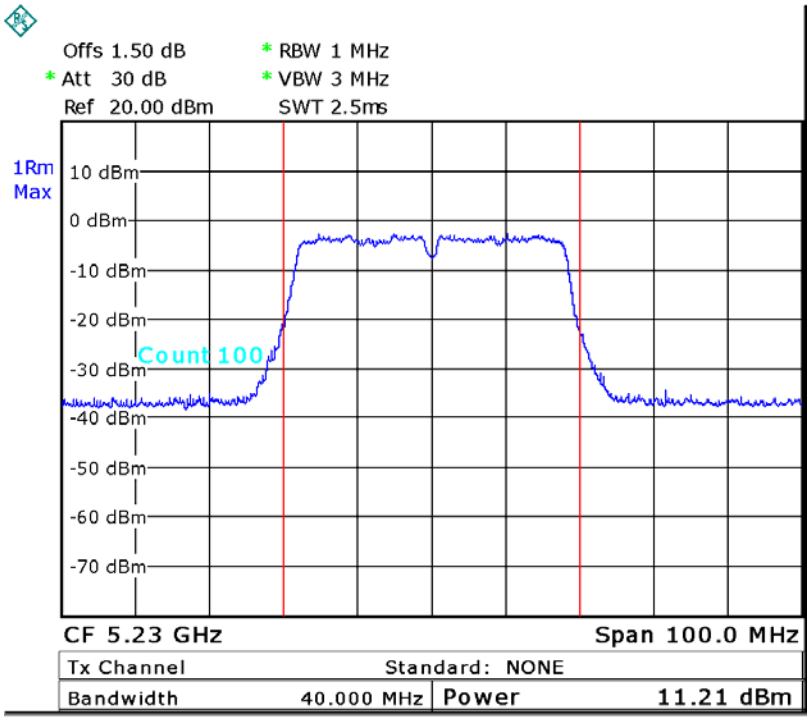
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/CH38, CH46		

ANT 0				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH38	5190	11.16	17.00	0.0501
CH46	5230	11.21	17.00	0.0501

CH38



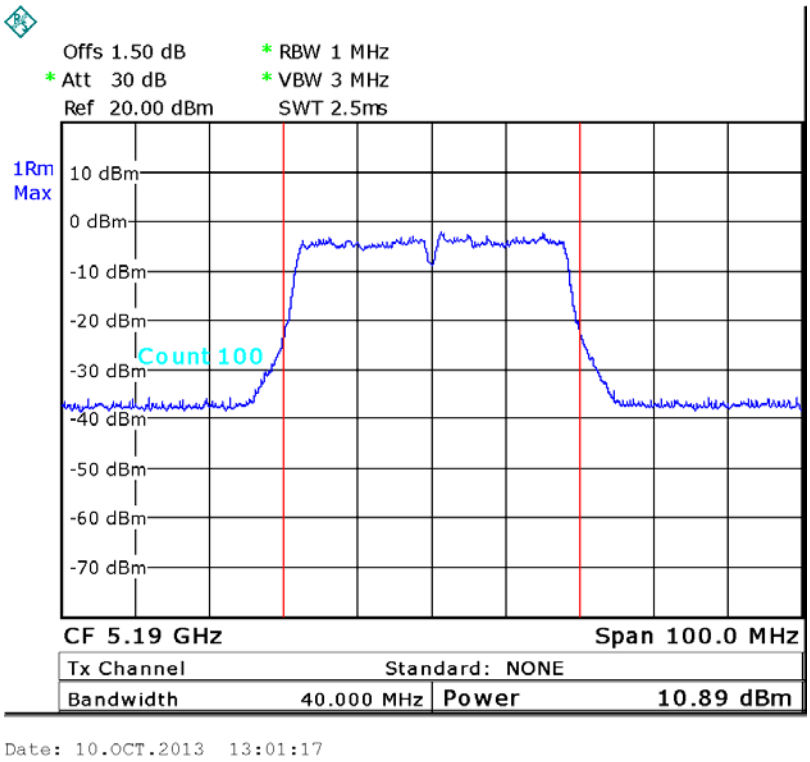
CH46


Offs 1.50 dB
* RBW 1 MHz
* Att 30 dB
* VBW 3 MHz
Ref 20.00 dBm
SWT 2.5ms
1Rm
Max
10 dBm
0 dBm
-10 dBm
-20 dBm
Count 100
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 5.23 GHz
Span 100.0 MHz
Tx Channel
Standard: NONE
Bandwidth
40.000 MHz
Power
11.21 dBm
Date: 10.OCT.2013 12:59:07

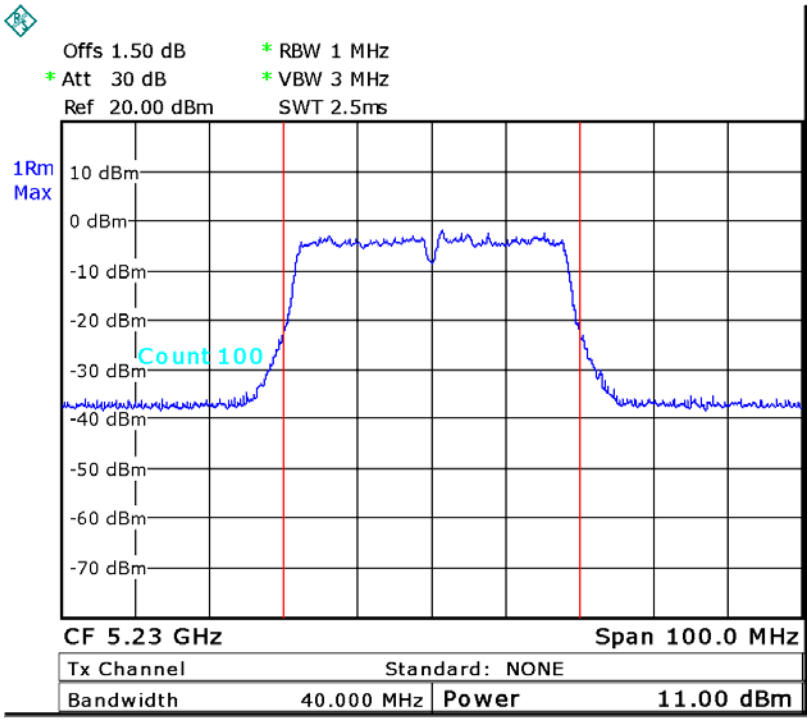
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/CH38, CH46		

ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH38	5190	10.89	17.00	0.0501
CH46	5230	11.00	17.00	0.0501

CH38



CH46


Offs 1.50 dB
* RBW 1 MHz
* Att 30 dB
* VBW 3 MHz
Ref 20.00 dBm
SWT 2.5ms
1Rm
Max
10 dBm
0 dBm
-10 dBm
-20 dBm
Count 100
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 5.23 GHz
Span 100.0 MHz
Tx Channel
Standard: NONE
Bandwidth
40.000 MHz
Power
11.00 dBm
Date: 10.OCT.2013 13:01:55

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

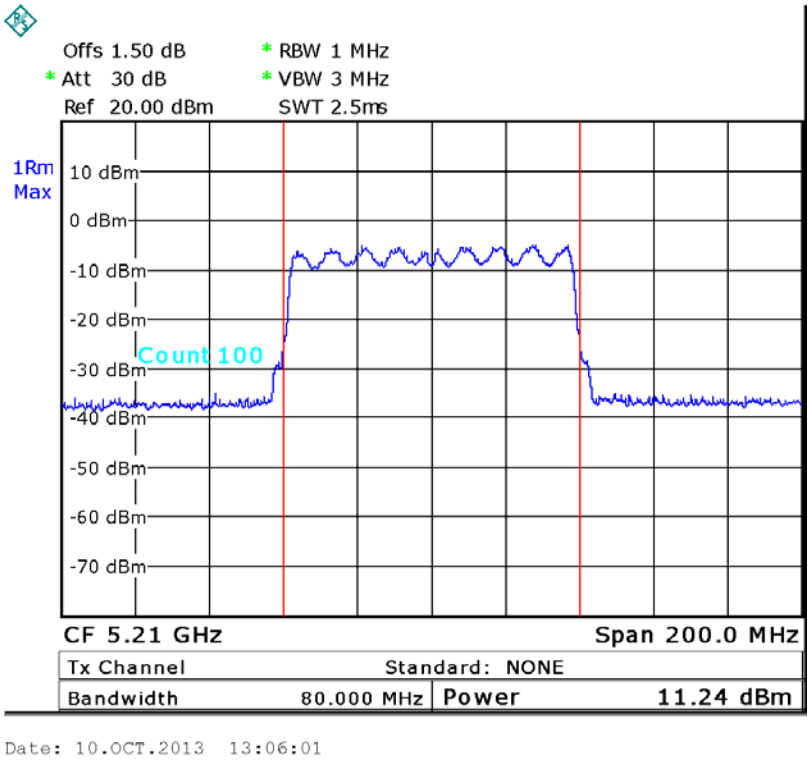
ANT 0+ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH38	5190	14.04	17.00	0.0501
CH46	5230	14.12	17.00	0.0501

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:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/CH42		

ANT 0				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH42	5210	11.24	17.00	0.0501

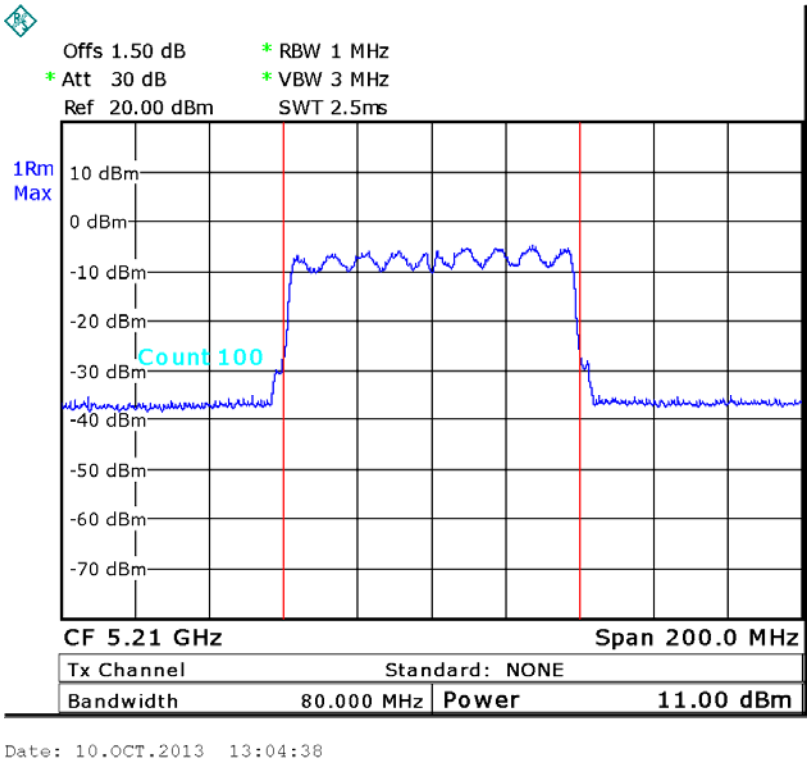
CH42



EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/CH42		

ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH42	5210	11.00	17.00	0.0501

CH42



EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/CH42		

ANT 0+ANT 1				
Test Channel	Frequency (MHz)	Conducted Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH42	5210	14.13	17.00	0.0501

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

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Antenna conducted Spurious Emission	-27 dBm/1MHz	5150 – 5250	PASS

7.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2013

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 Parameter	Setting
Attenuation	Auto
RB	1000 kHz
VB	1000 kHz
Trace	Max Hold
Sweep Time	Auto

7.1.3 DEVIATION FROM STANDARD

No deviation.

7.1.4 TEST SETUP

7.1.5 EUT OPERATION CONDITIONS

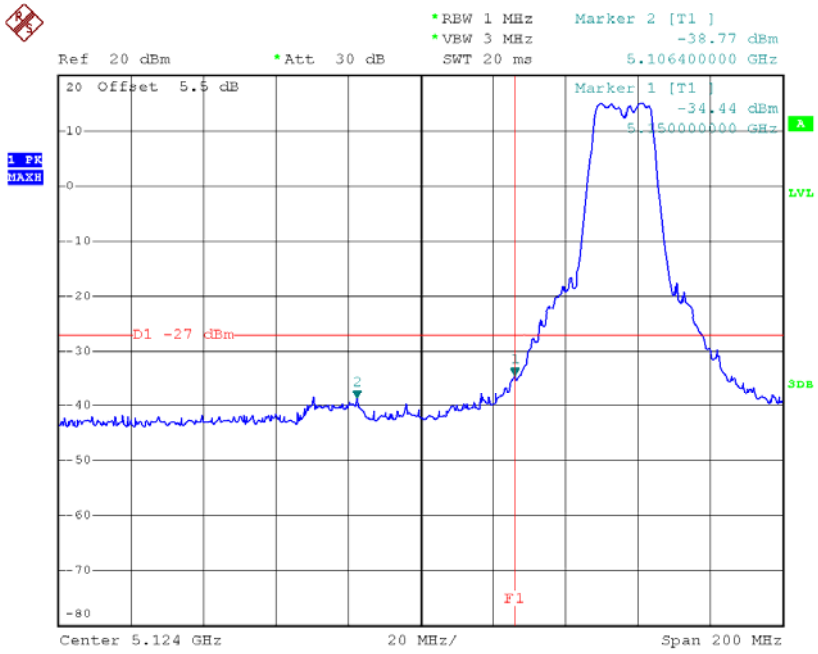
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.6 TEST RESULTS

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode/ CH36, CH40, CH48		

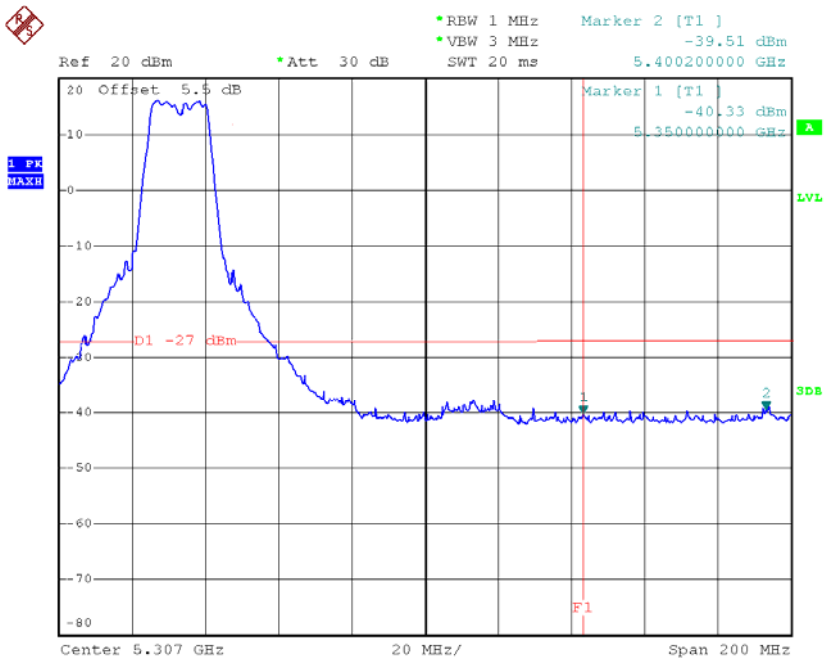
Channel of Worst Data: CH36			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5150.00	-34.44	5400.20	-39.51
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH36



Date: 12.NOV.2013 08:31:48

TX mode CH48

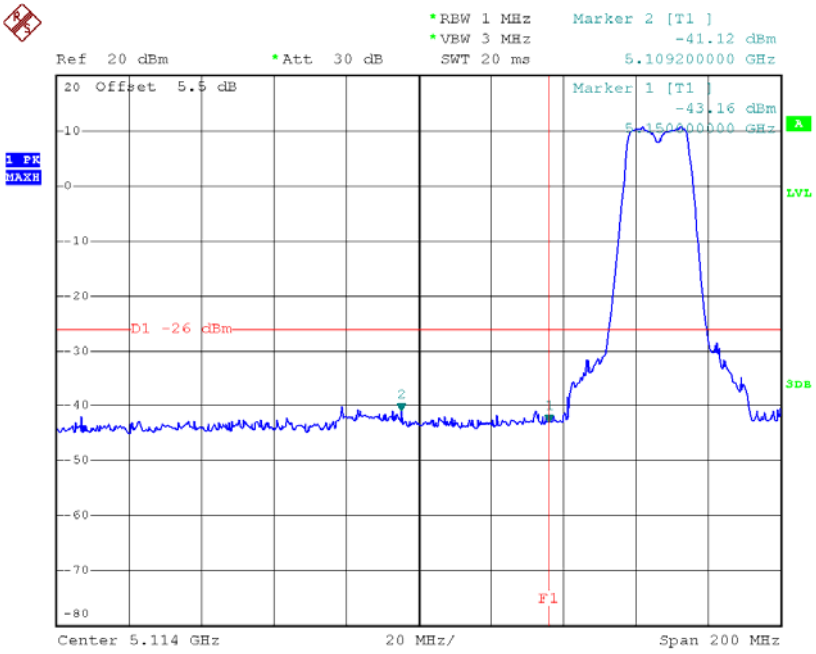


Date: 12.NOV.2013 08:30:36

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/ CH36, CH40 , CH48/ANT 0		

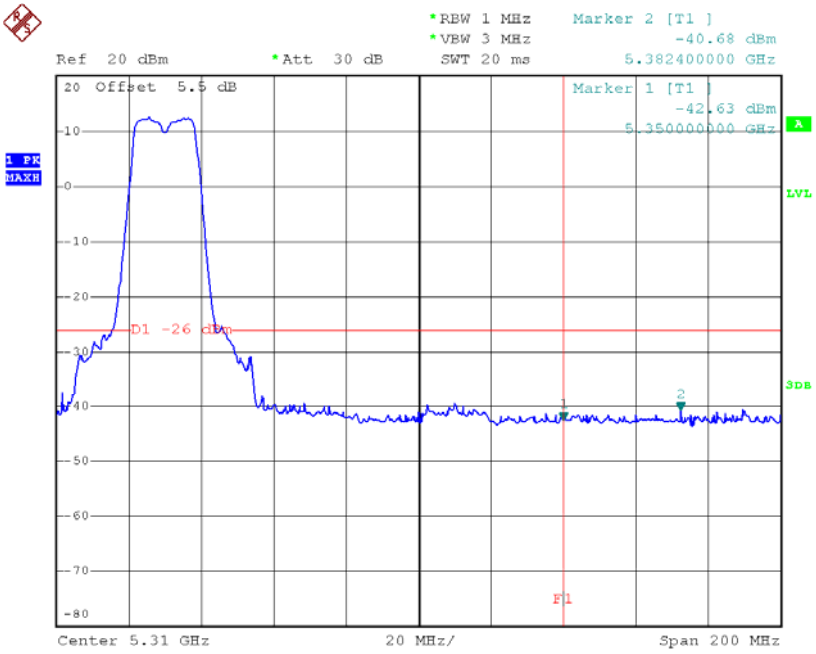
Channel of Worst Data: CH48			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5109.20	-41.12	5382.40	-40.68
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH36



Date: 12.NOV.2013 09:02:53

TX mode CH48

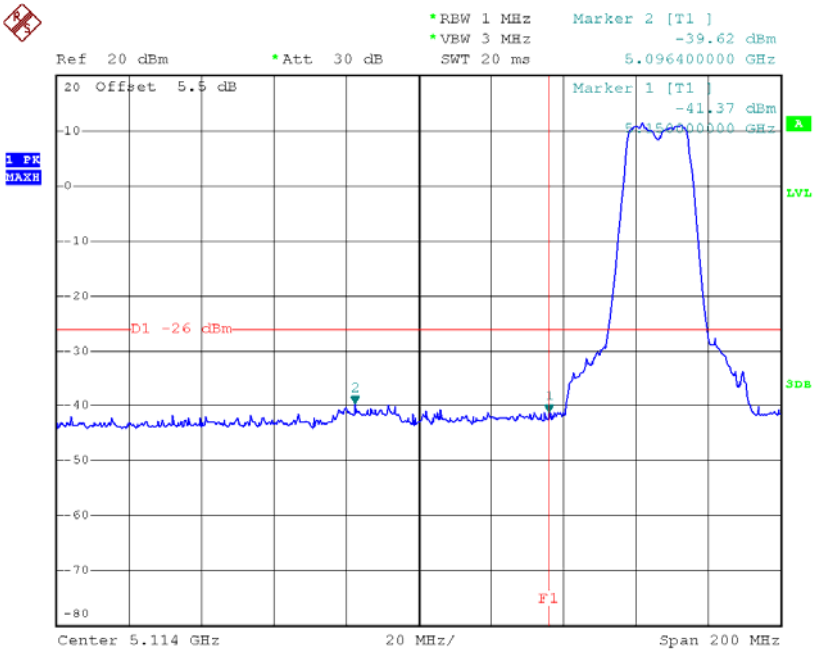


Date: 12.NOV.2013 09:03:38

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/ CH36, CH40 , CH48/ANT 1		

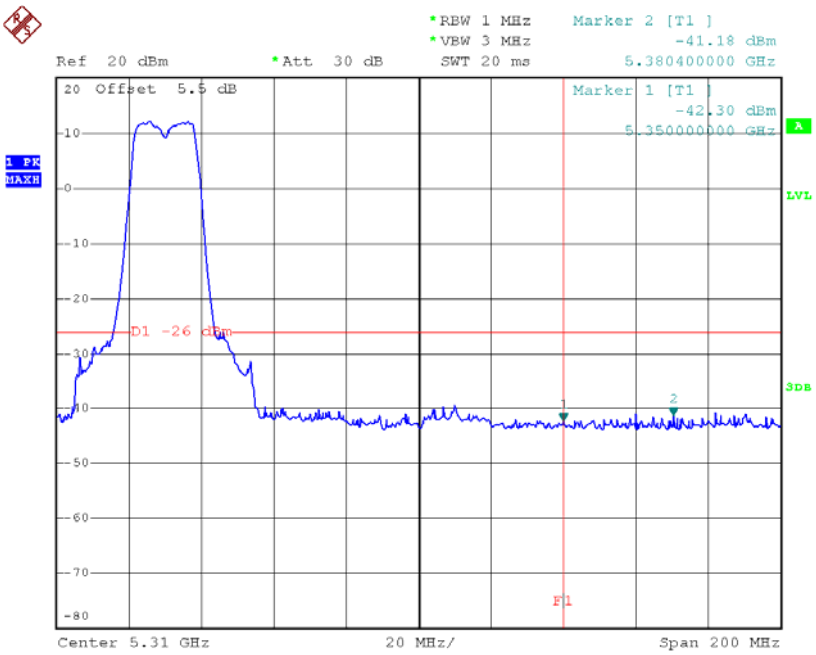
Channel of Worst Data: CH36			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5096.40	-39.62	5380.40	-41.18
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH36



Date: 12.NOV.2013 09:02:40

TX mode CH48

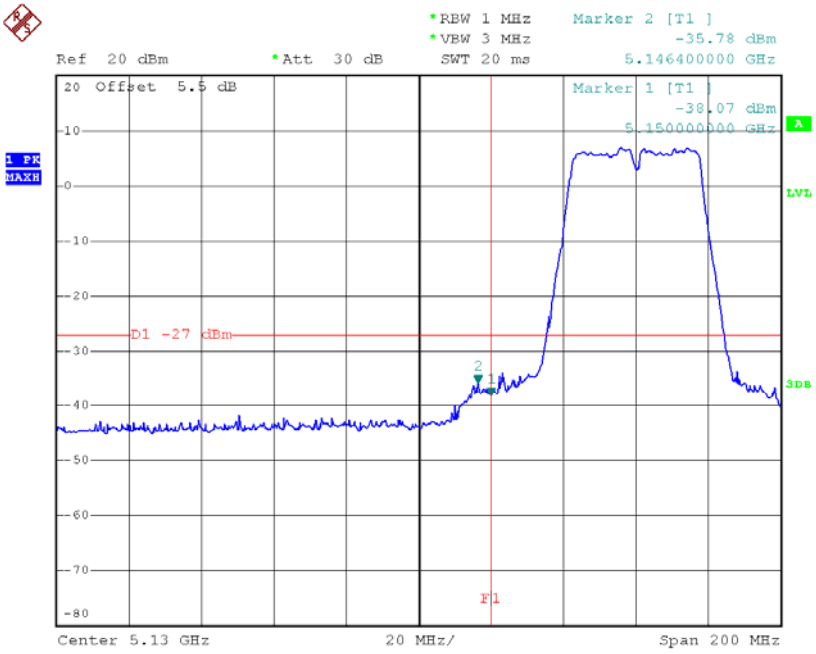


Date: 12.NOV.2013 09:03:55

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/ CH38, CH46/ANT 0		

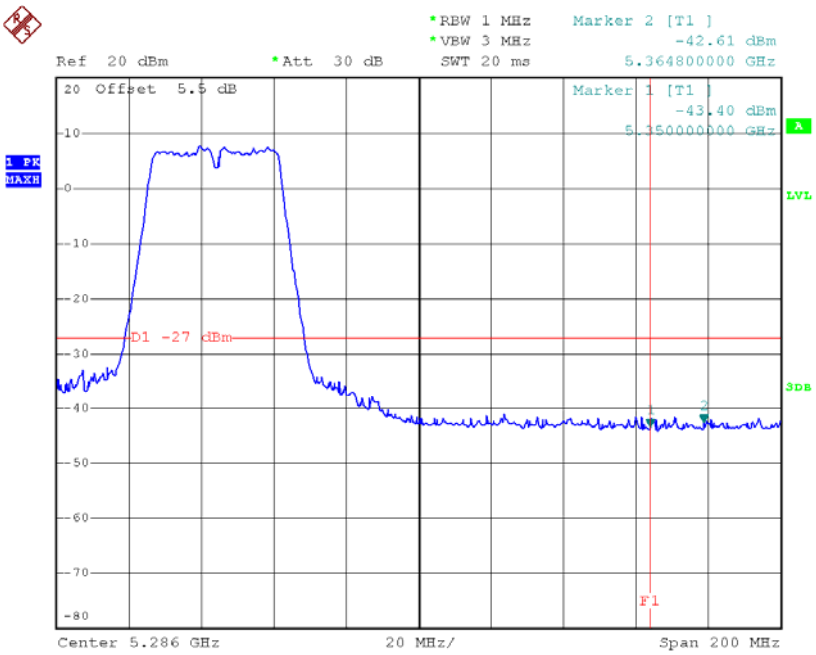
Channel of Worst Data: CH38			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5146.40	-35.78	5364.80	-42.61
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH38



Date: 12.NOV.2013 09:25:52

TX mode CH46

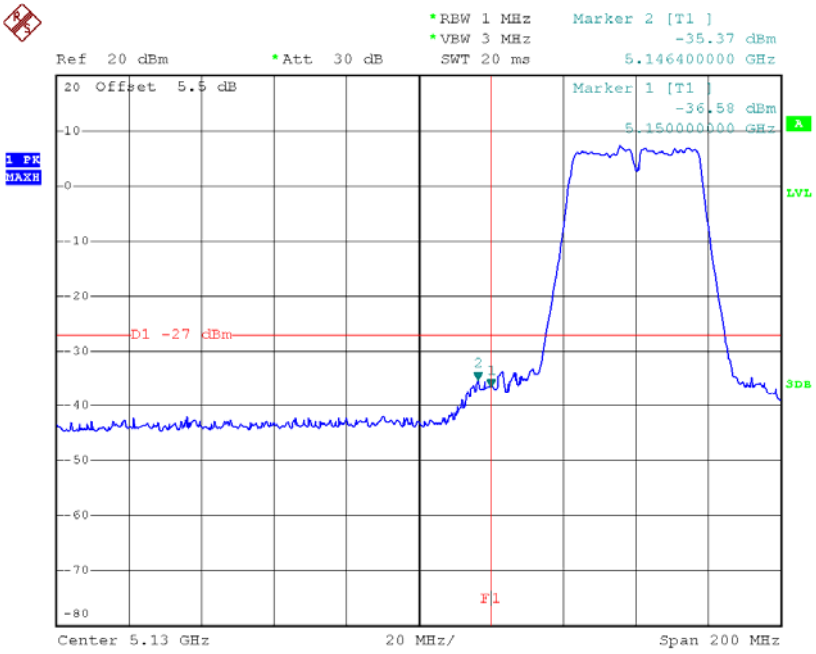


Date: 12.NOV.2013 09:27:19

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/ CH38, CH46/ANT 1		

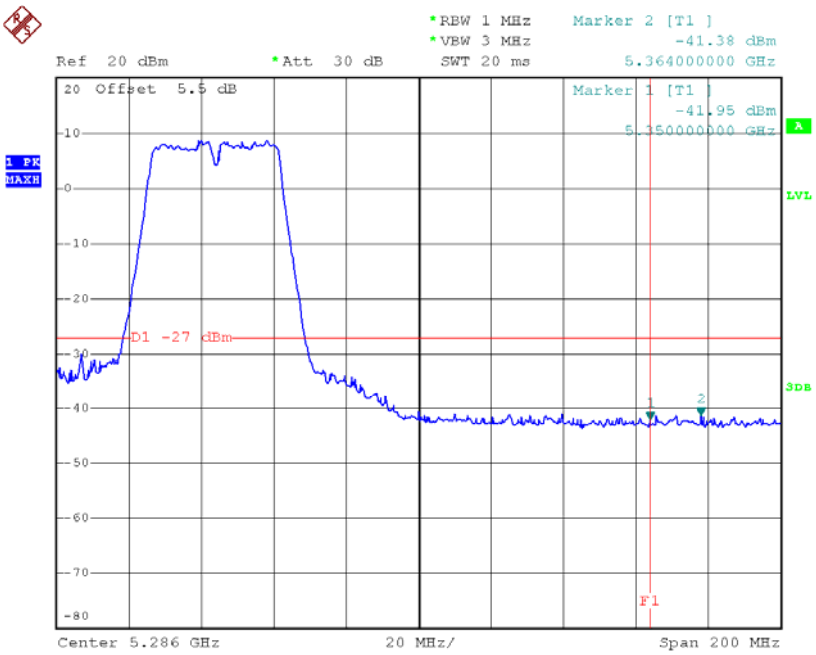
Channel of Worst Data: CH38			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5146.40	-35.37	5364.00	-41.38
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH38



Date: 12.NOV.2013 09:25:38

TX mode CH46

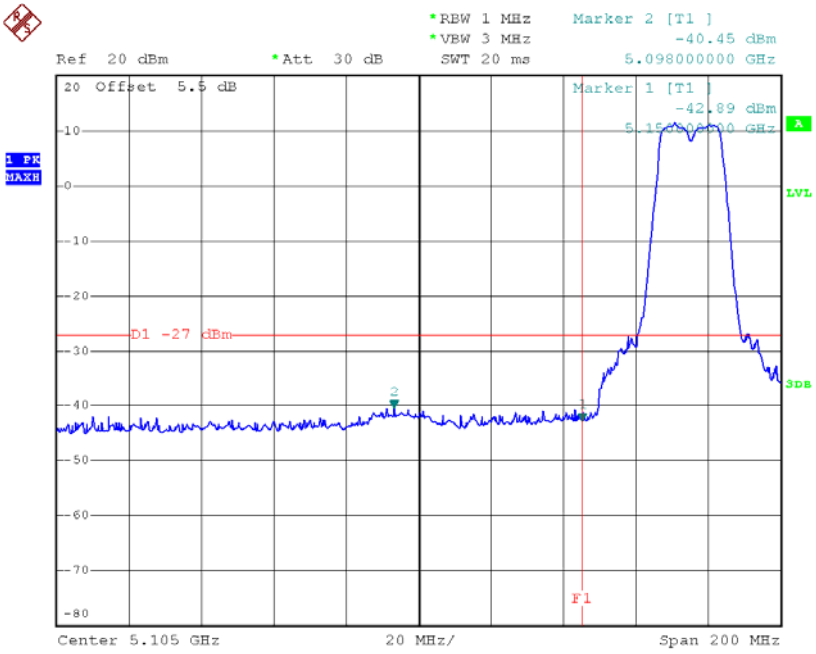


Date: 12.NOV.2013 09:27:00

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/ CH36, CH40 , CH48/ANT 0		

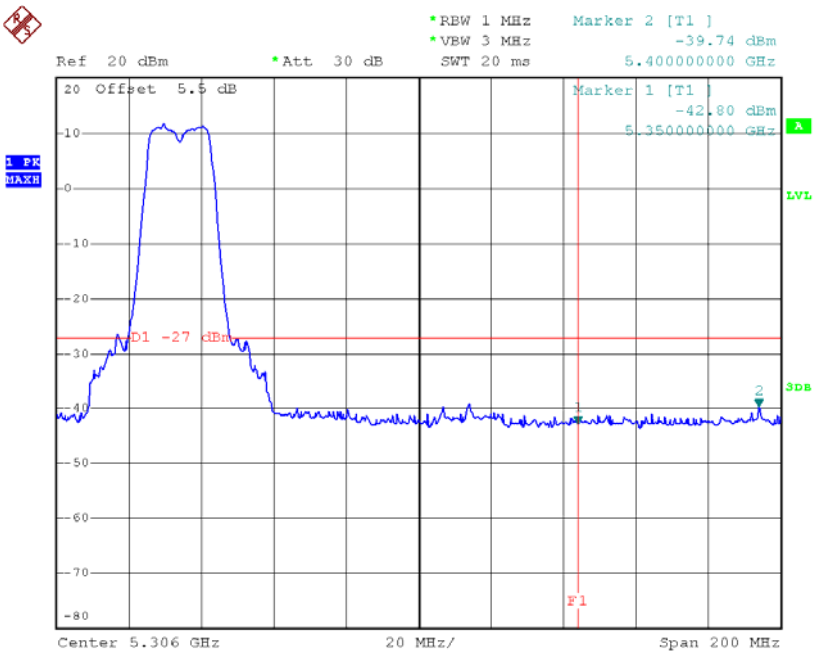
Channel of Worst Data: CH48			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5098.00	-40.45	5400.00	-39.74
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH36



Date: 12.NOV.2013 09:46:56

TX mode CH48

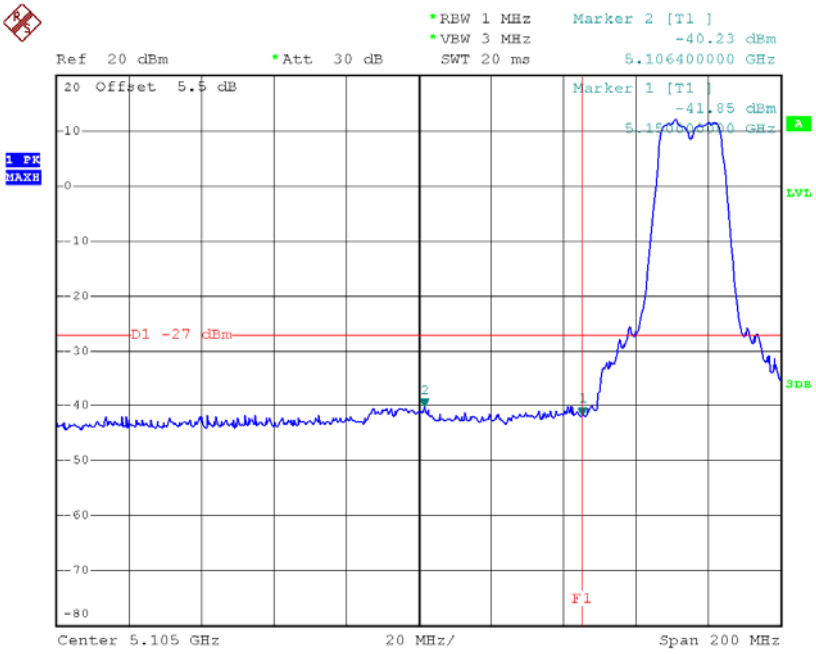


Date: 12.NOV.2013 10:05:41

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/ CH36, CH40 , CH48/ANT 1		

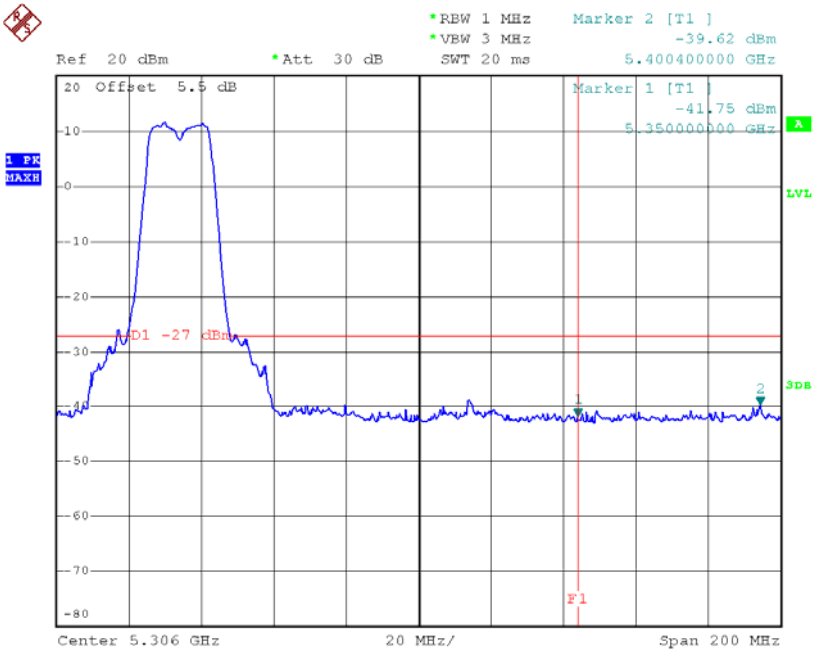
Channel of Worst Data: CH48			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5106.40	-40.23	5400.40	-39.62
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH36



Date: 12.NOV.2013 09:45:06

TX mode CH48

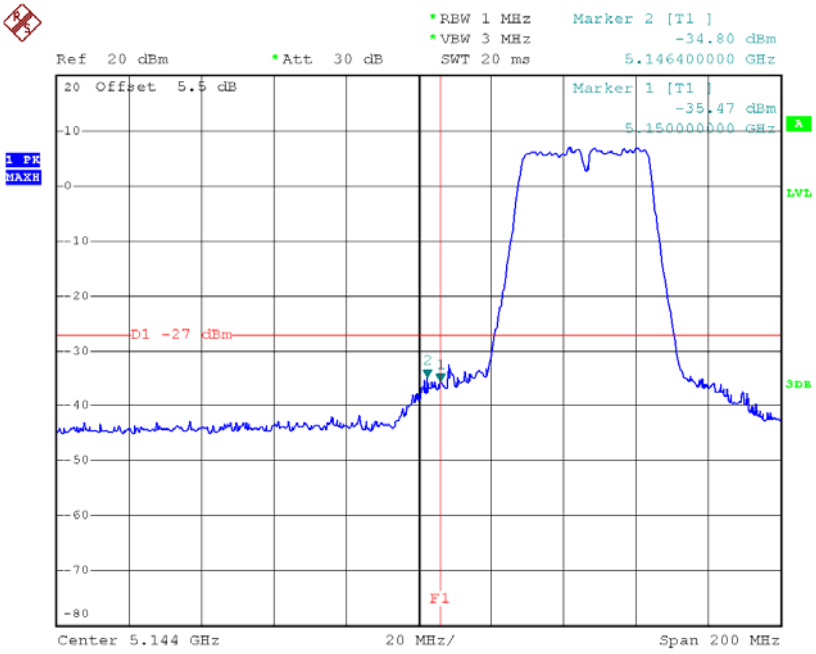


Date: 12.NOV.2013 10:05:30

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/ CH38, CH46/ANT 0		

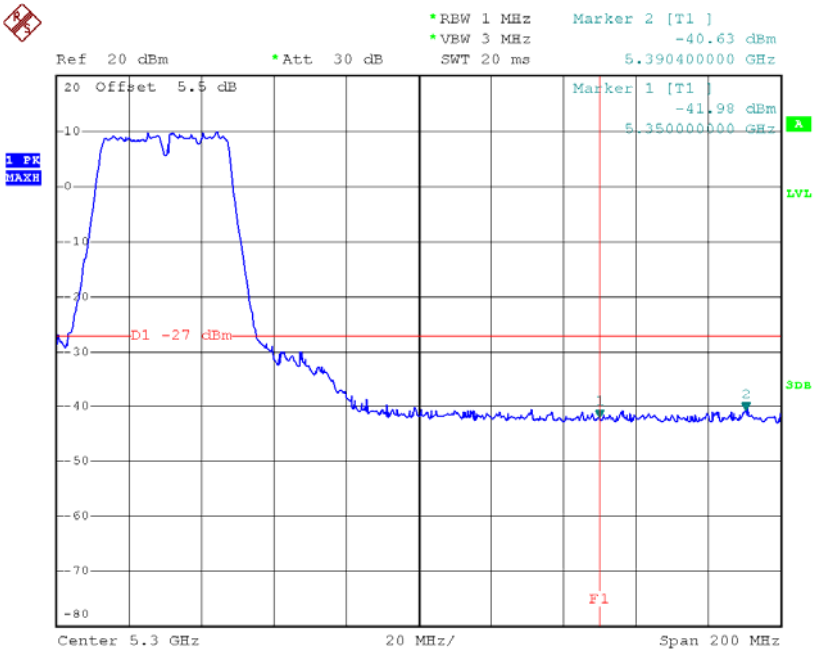
Channel of Worst Data: CH38			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5146.40	-34.80	5390.40	-40.63
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH38



Date: 12.NOV.2013 10:31:47

TX mode CH46

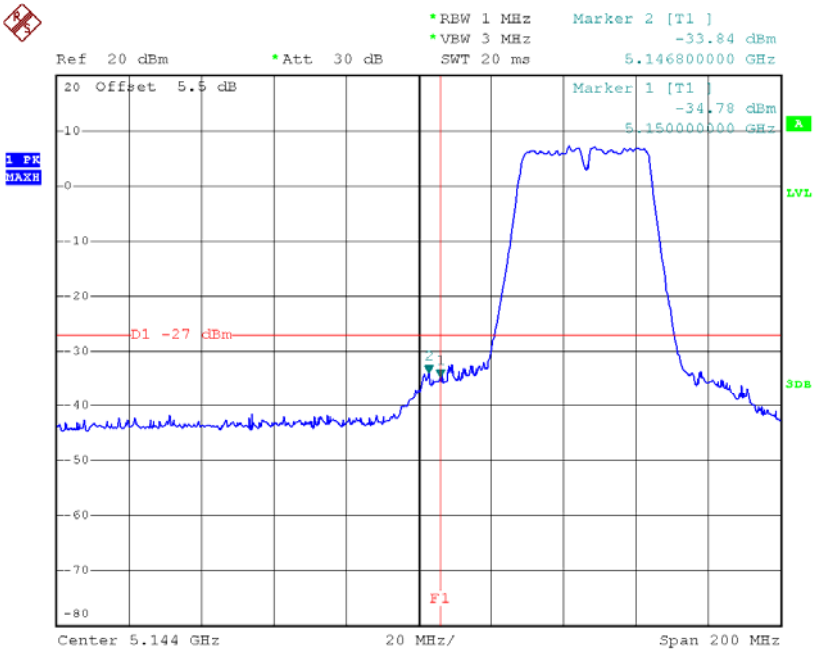


Date: 12.NOV.2013 10:25:47

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/ CH38, CH46/ANT 1		

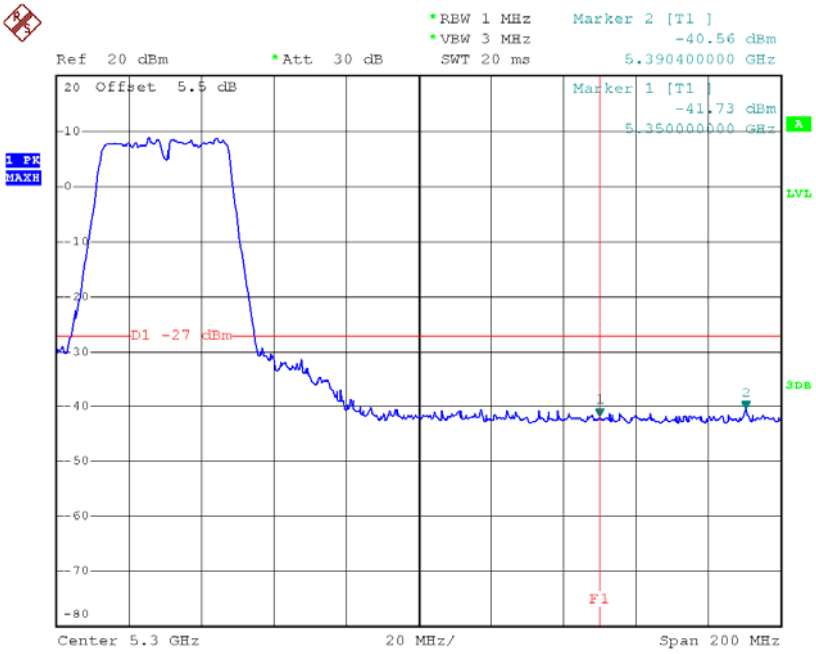
Channel of Worst Data: CH38			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5146.80	-33.84	5390.40	-40.56
Limit: -27 dBm/1MHz Result:PASS			
Measurement method: S.A Read value+Ant gain+cable loss			

TX mode CH38



Date: 12.NOV.2013 10:31:32

TX mode CH46

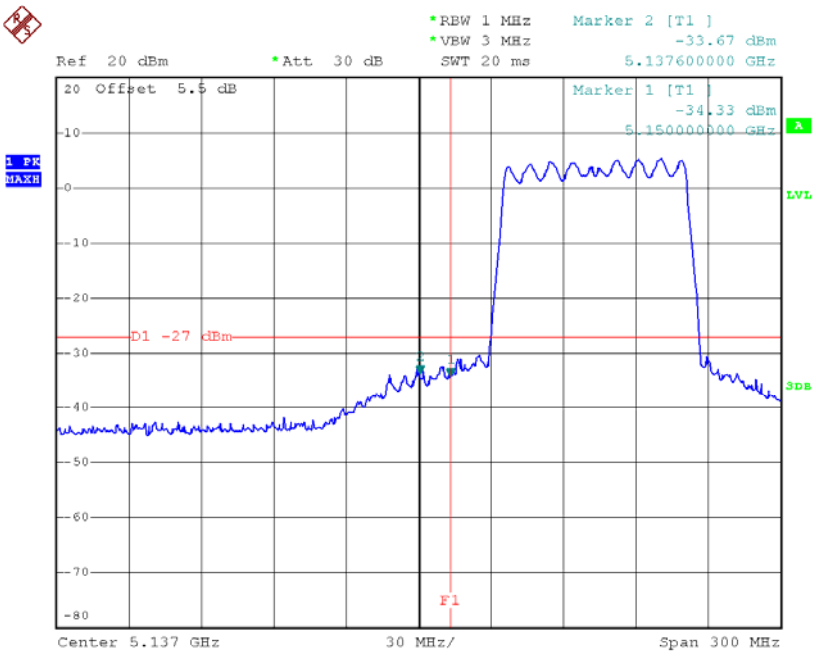


Date: 12.NOV.2013 10:25:08

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/ CH42/ANT 0		

Channel of Worst Data: CH42	
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band	
FREQUENCY(MHz)	POWER(dBm)
5137.60	-33.67
Limit: -27 dBm/1MHz	Result:PASS
Measurement method: S.A Read value+Ant gain+cable loss	

TX mode CH42

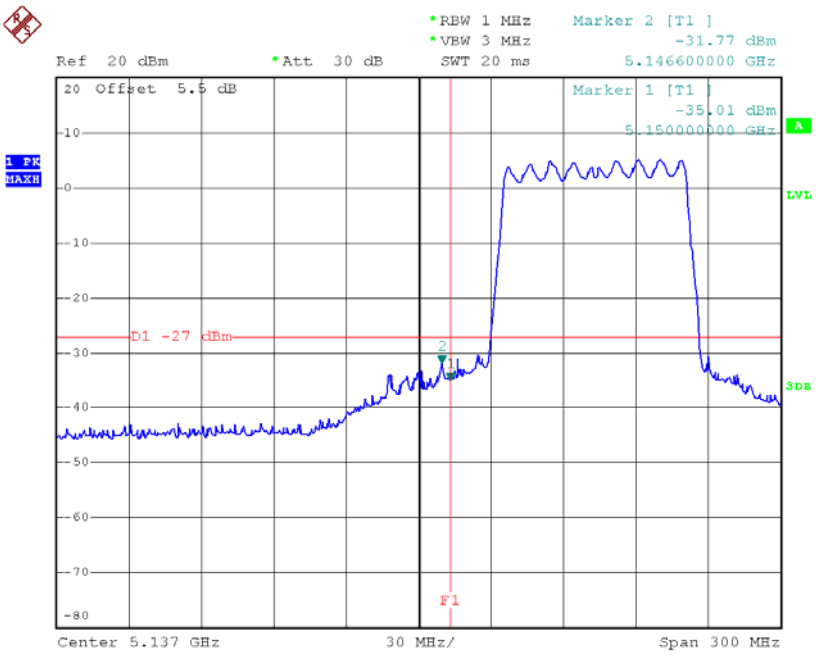


Date: 12.NOV.2013 10:54:34

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/ CH42/ANT 1		

Channel of Worst Data: CH42	
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band	
FREQUENCY(MHz)	POWER(dBm)
5146.60	-31.77
Limit: -27 dBm/1MHz	Result:PASS
Measurement method: S.A Read value+Ant gain+cable loss	

TX mode CH42



Date: 12.NOV.2013 10:54:42

8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Power Spectral Density	4 dBm	5150 - 5250	PASS

8.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2013

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

8.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

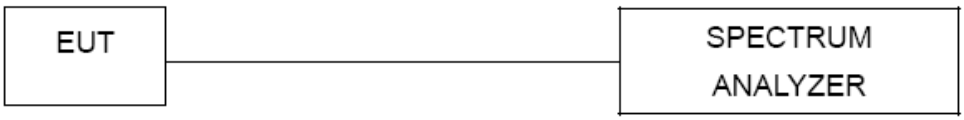
b.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	= 1 MHz.
VB	≥ 3 MHz.
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP



8.1.5 EUT OPERATION CONDITIONS

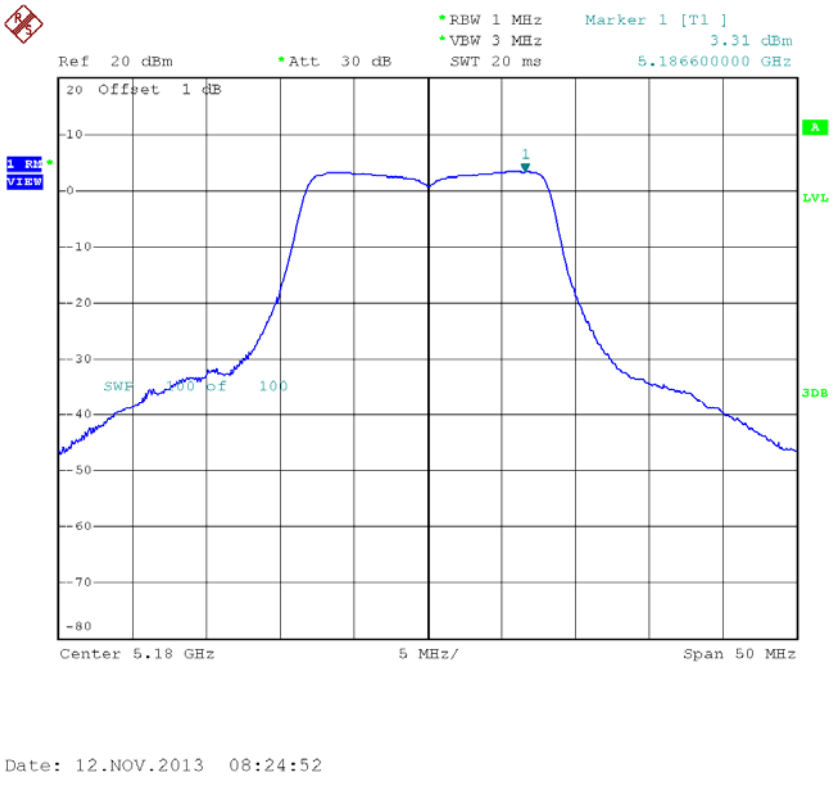
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.6 TEST RESULTS

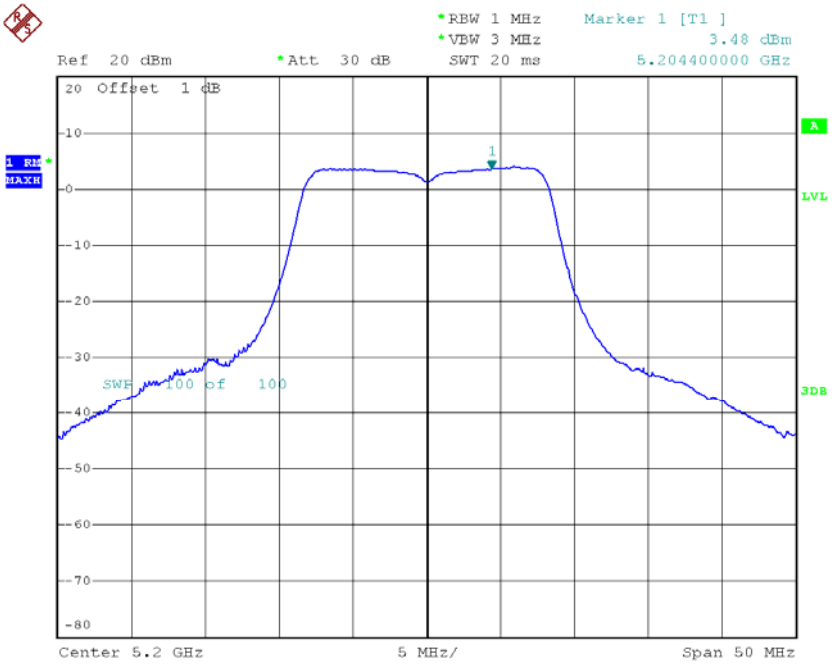
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode/CH36, CH40, CH48		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	3.31	4.00
CH40	5200	3.48	4.00
CH48	5240	3.44	4.00

CH36

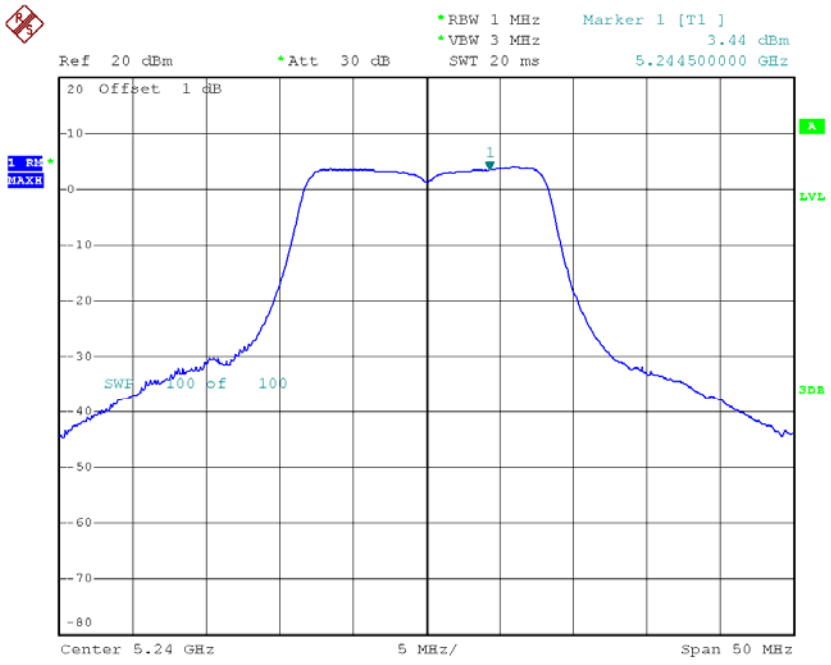


CH40



Date: 12.NOV.2013 08:22:53

CH48

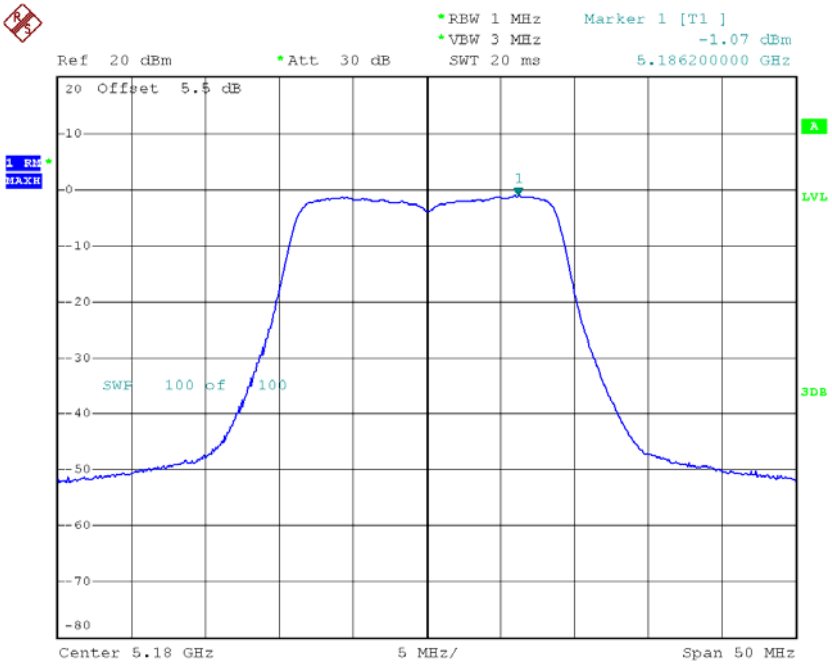


Date: 12.NOV.2013 08:15:55

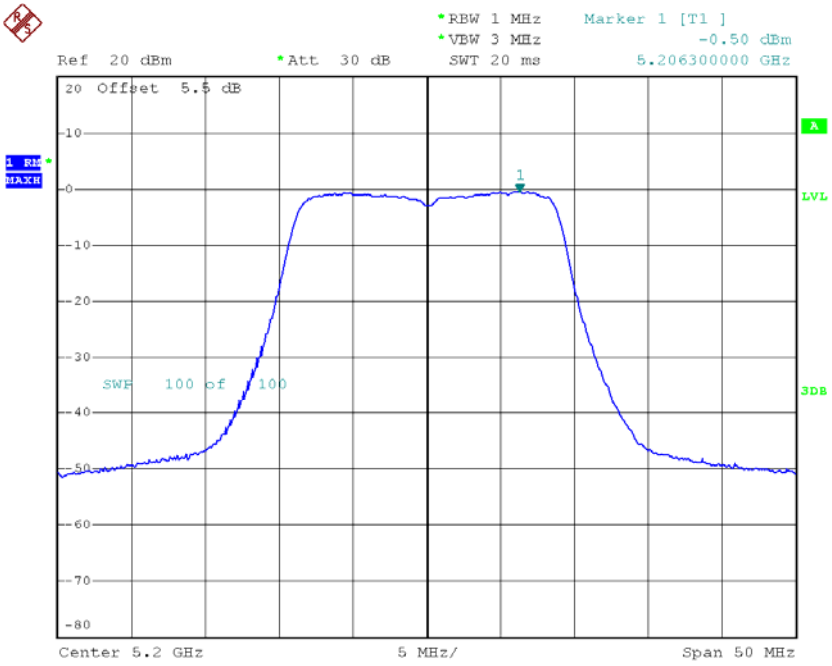
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

ANT 0			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	-1.07	4.00
CH40	5200	-0.50	4.00
CH48	5240	-0.17	4.00

CH36

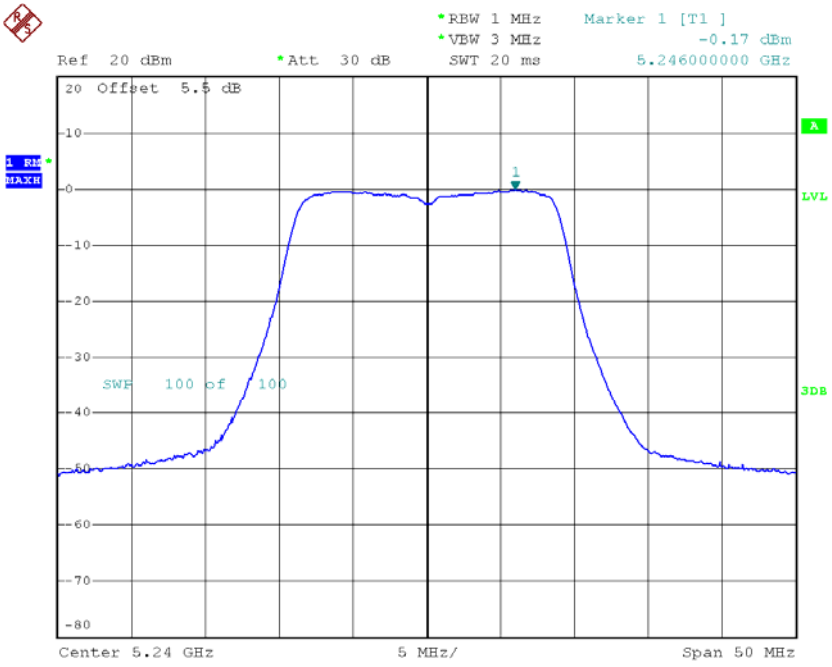


CH40



Date: 12.NOV.2013 08:43:21

CH48

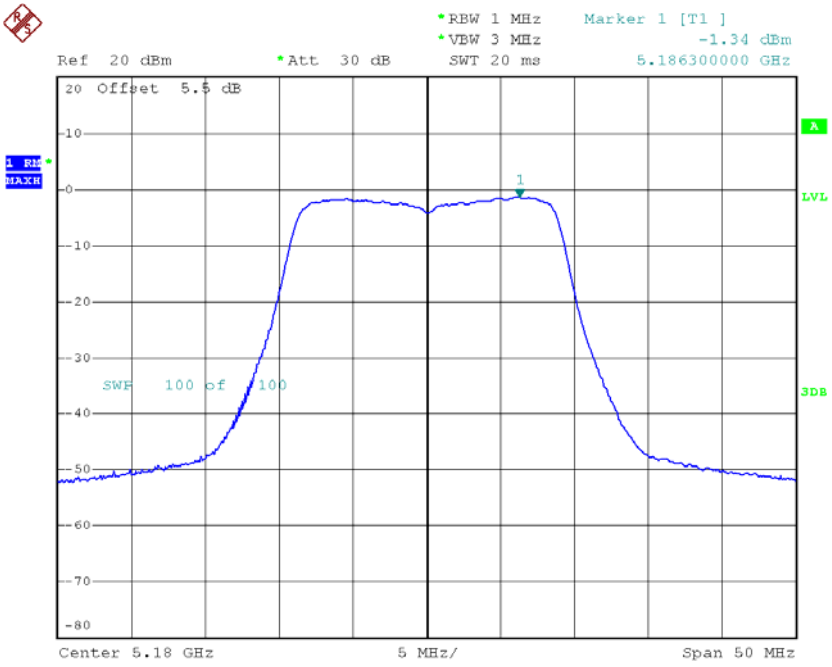


Date: 12.NOV.2013 08:53:09

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

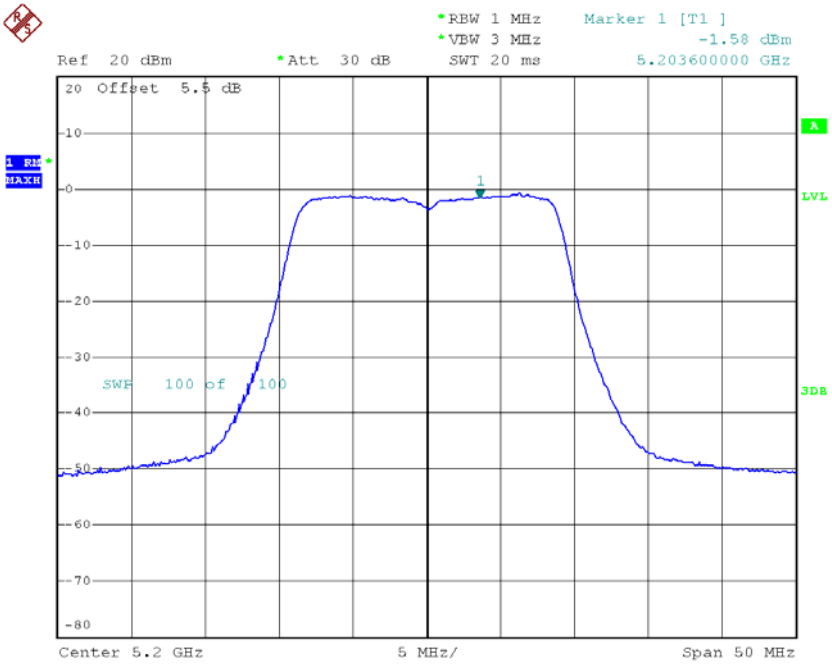
ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	-1.34	4.00
CH40	5200	-1.58	4.00
CH48	5240	-0.51	4.00

CH36



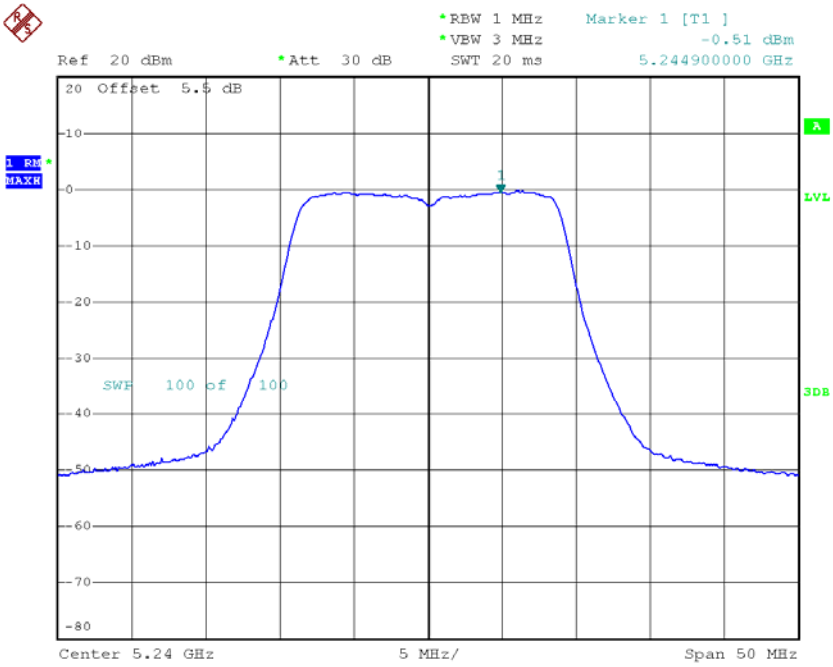
Date: 12.NOV.2013 08:41:48

CH40



Date: 12.NOV.2013 08:44:48

CH48



Date: 12.NOV.2013 08:53:58

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

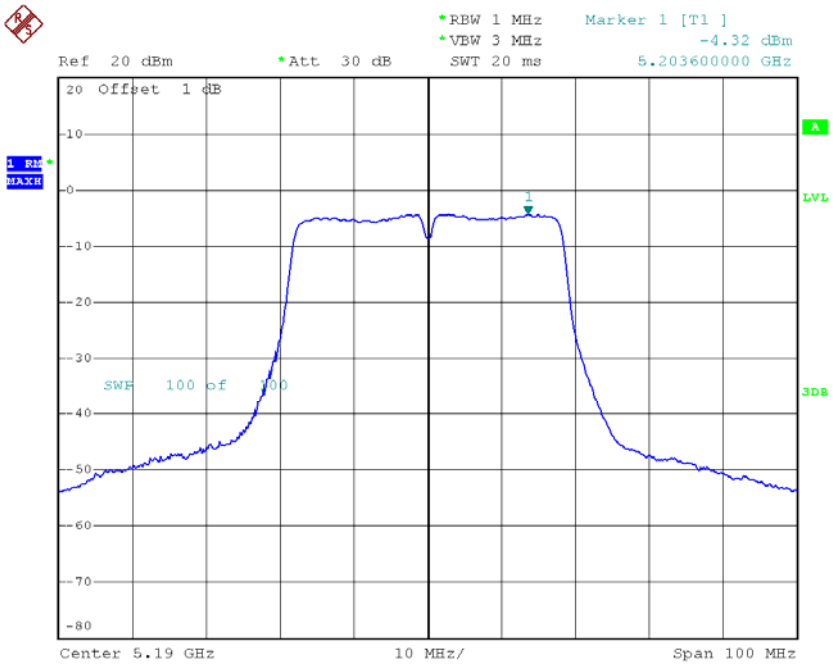
ANT 0+ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	1.81	4.00
CH40	5200	2.00	4.00
CH48	5240	2.67	4.00

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:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

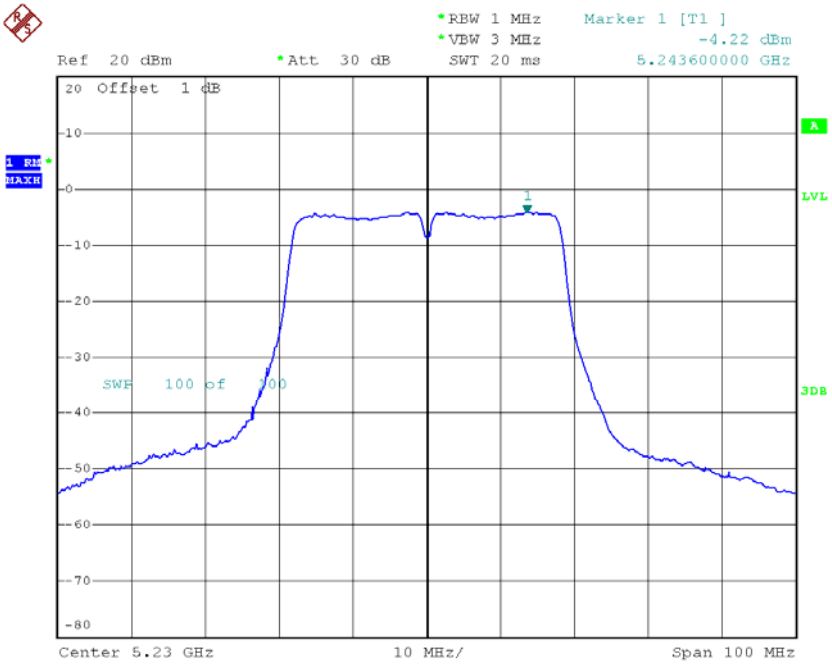
ANT 0			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-4.32	4.00
CH46	5230	-4.22	4.00

CH38



Date: 12.NOV.2013 09:13:24

CH46

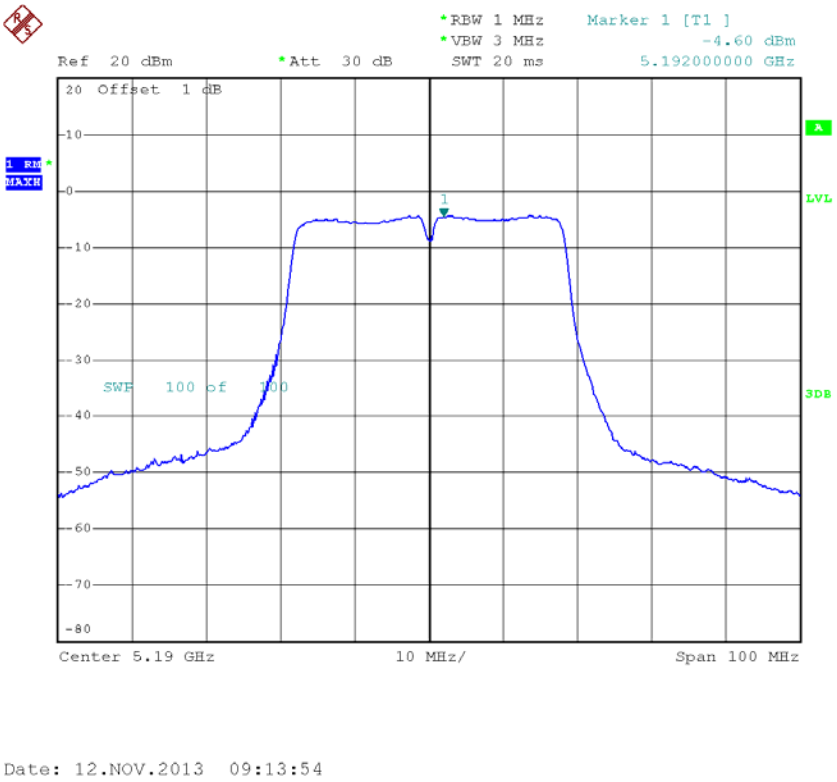


Date: 12.NOV.2013 09:19:16

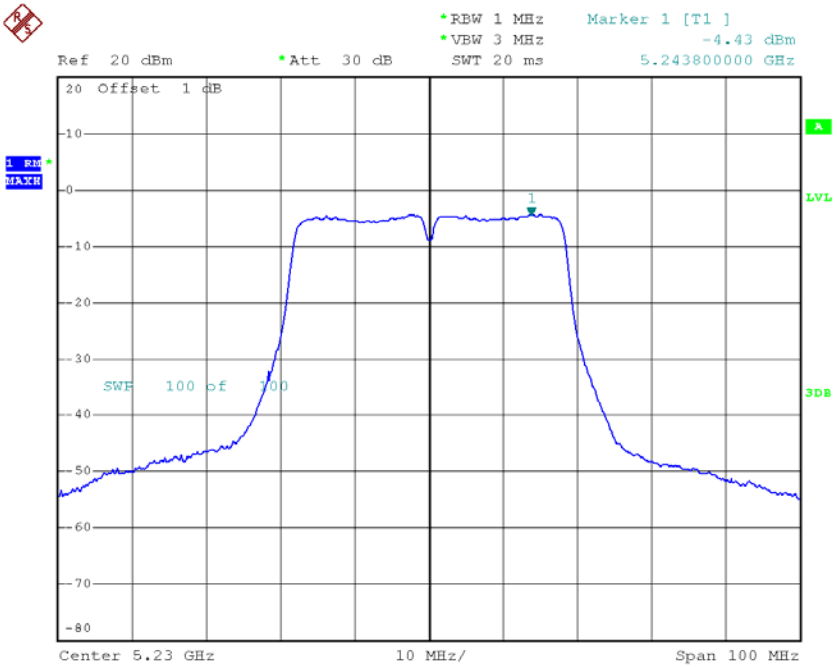
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-4.60	4.00
CH46	5230	-4.43	4.00

CH38



CH46



Date: 12.NOV.2013 09:20:00

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

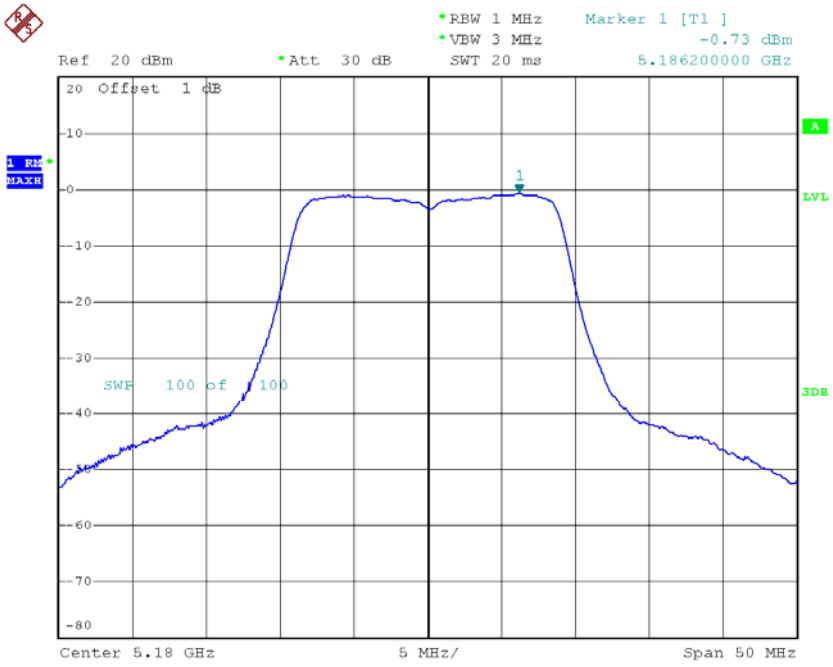
ANT 0+ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-1.45	4.00
CH46	5230	-1.31	4.00

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:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25 °C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/CH36, CH40, CH48		

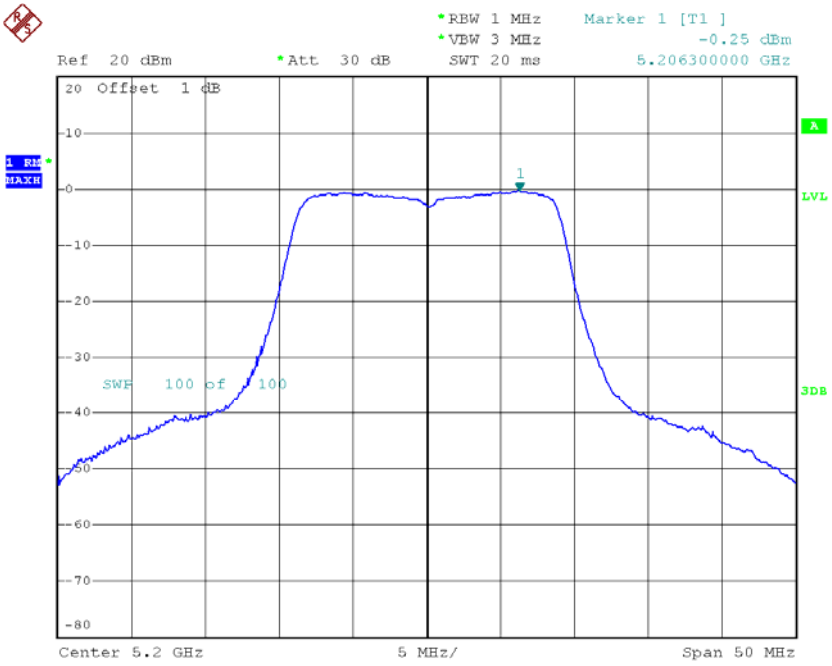
ANT 0			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	-0.73	4.00
CH40	5200	-0.25	4.00
CH48	5240	-0.85	4.00

CH36



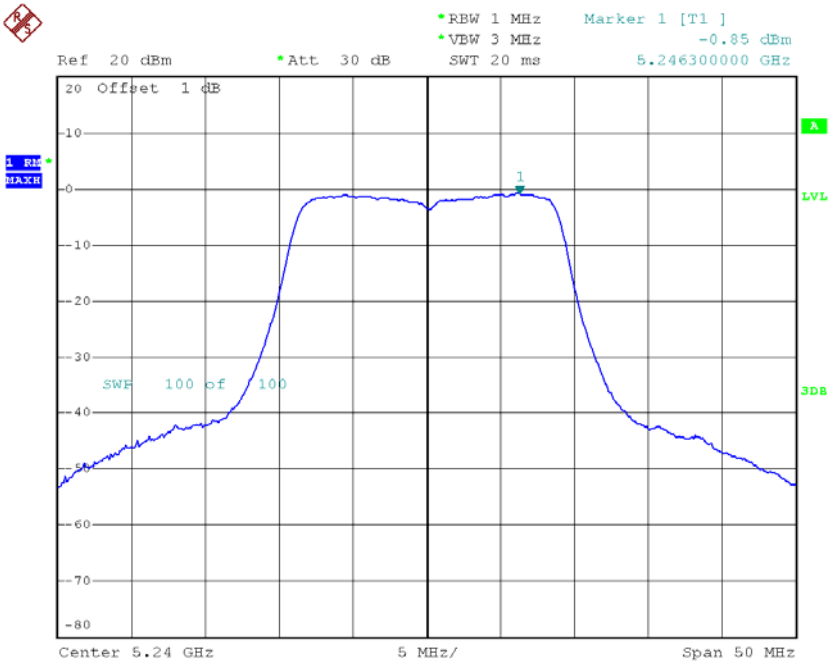
Date: 12.NOV.2013 09:33:33

CH40



Date: 12.NOV.2013 09:56:40

CH48

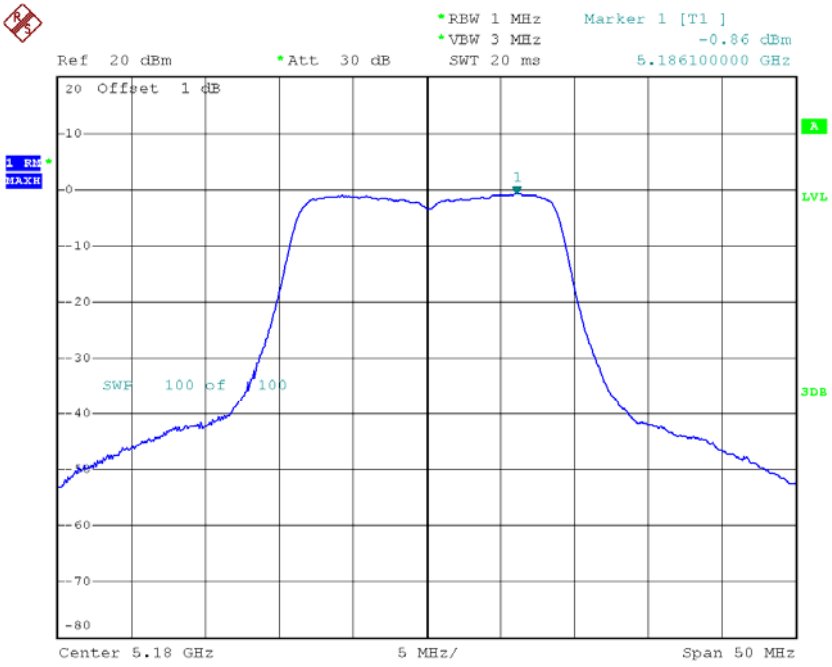


Date: 12.NOV.2013 10:00:16

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/CH36, CH40, CH48		

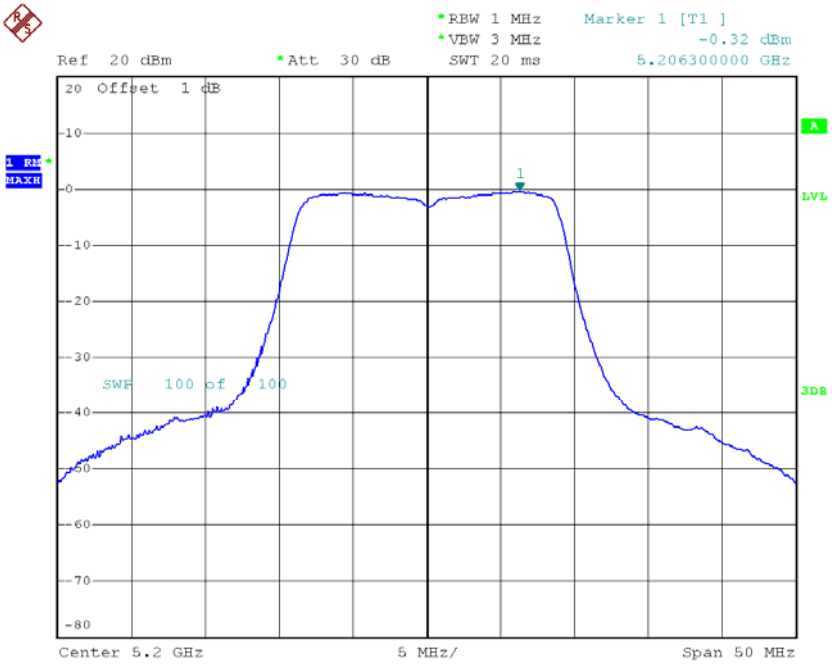
ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	-0.86	4.00
CH40	5200	-0.32	4.00
CH48	5240	-1.02	4.00

CH36



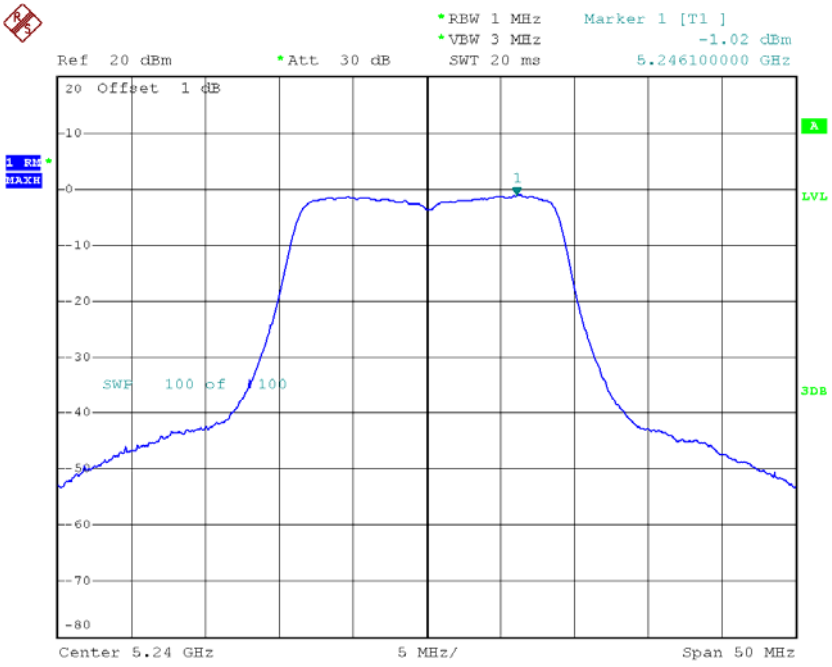
Date: 12.NOV.2013 09:33:26

CH40



Date: 12.NOV.2013 09:57:25

CH48



Date: 12.NOV.2013 10:03:01

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/CH36, CH40, CH48		

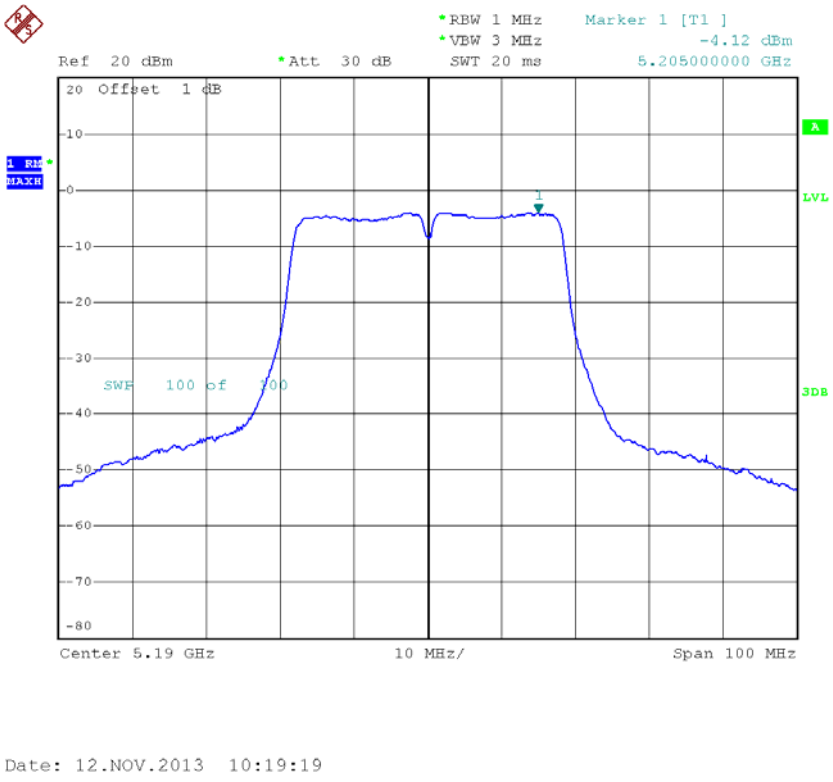
ANT 0+ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	2.22	4.00
CH40	5200	2.73	4.00
CH48	5240	2.08	4.00

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

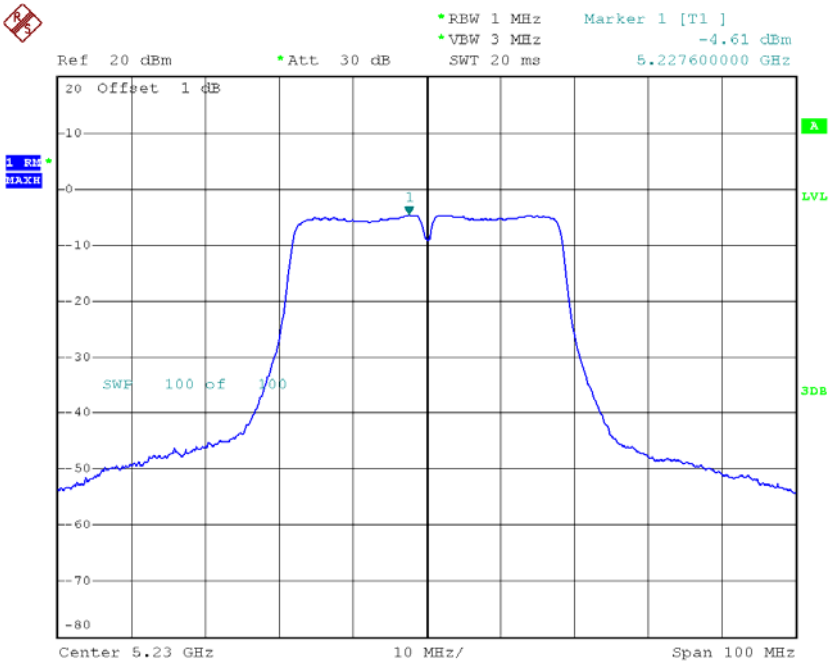
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/CH38, CH46		

ANT 0			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-4.12	4.00
CH46	5230	-4.61	4.00

CH38



CH46

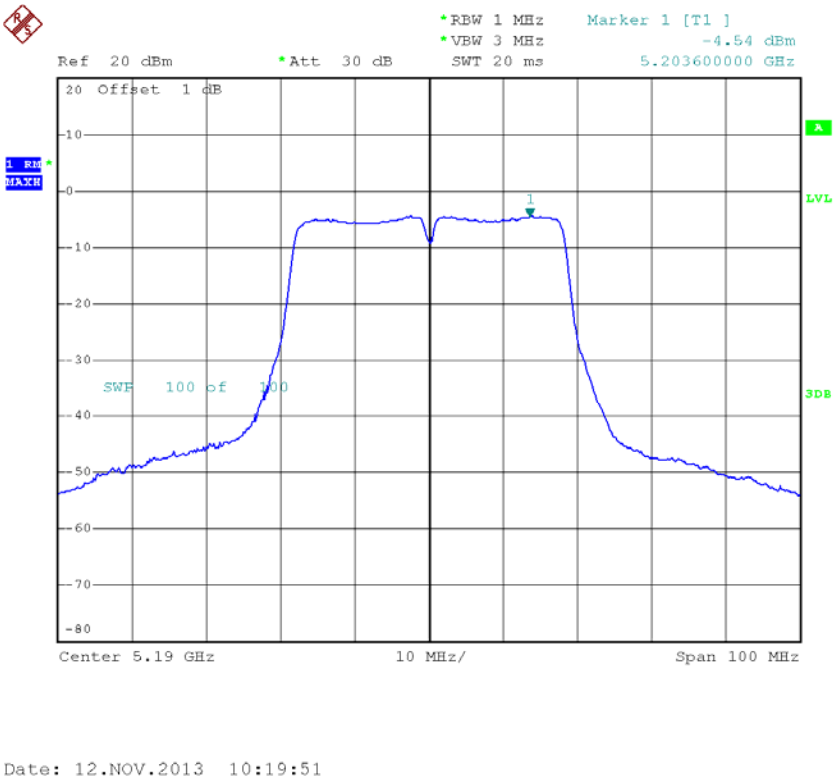


Date: 12.NOV.2013 10:22:47

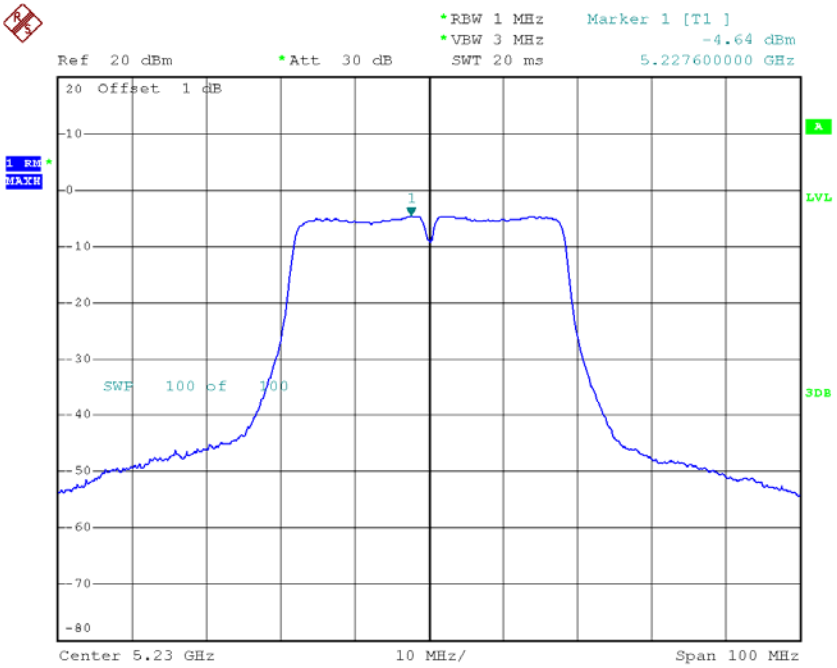
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/CH38, CH46		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-4.54	4.00
CH46	5230	-4.64	4.00

CH38



CH46



Date: 12.NOV.2013 10:20:10

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/CH38, CH46		

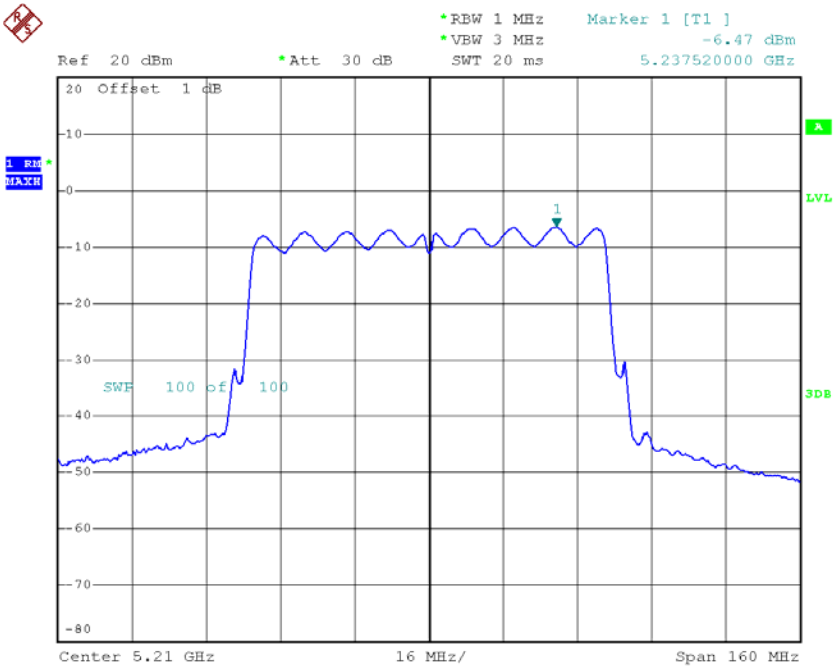
ANT 0+ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-1.31	4.00
CH46	5230	-1.61	4.00

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:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/CH42		

ANT 0			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH42	5210	-6.47	4.00

CH42

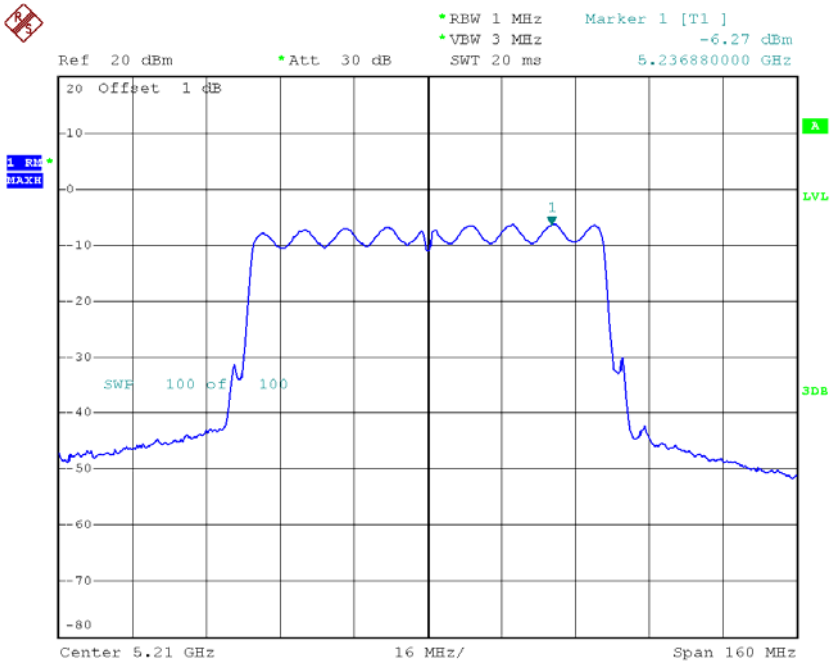


Date: 12.NOV.2013 10:42:16

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/CH42		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH42	5210	-6.27	4.00

CH42



Date: 12.NOV.2013 10:41:29

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/CH42		

ANT 0+ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH42	5210	-3.36	4.00

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. PEAK EXCURSION MEASUREMENT

9.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Peak Excursion Measurement	13 dB	5150 - 5250	PASS

9.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2013

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

9.1.2 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 Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz (Peak Trace) / 1000 kHz (Average Trace)
VB	3000 kHz (Peak Trace) / 3000 kHz (Average Trace)
Detector	Peak (Peak Trace) / RMS (Average Trace)
Trace	Max Hold
Sweep Time	60s

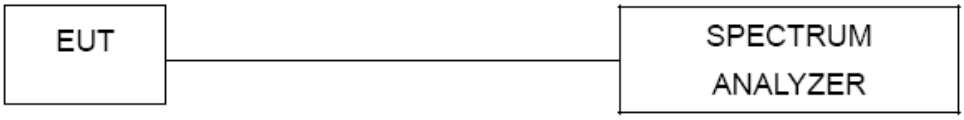
c. Peak Trace: Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and maxhold settings.

d. Average Trace: set RBW = 1 MHz, VBW = 3 MHz with RMS detector and trace average across 100 traces in power averaging mode.

9.1.3 DEVIATION FROM STANDARD

No deviation.

9.1.4 TEST SETUP



9.1.5 EUT OPERATION CONDITIONS

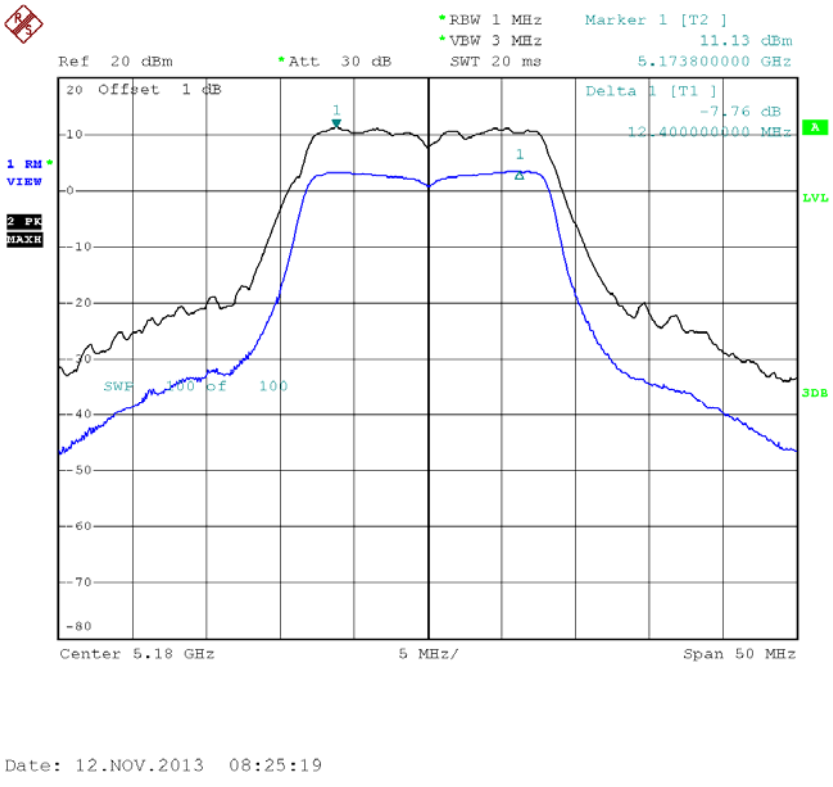
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

9.1.6 TEST RESULTS

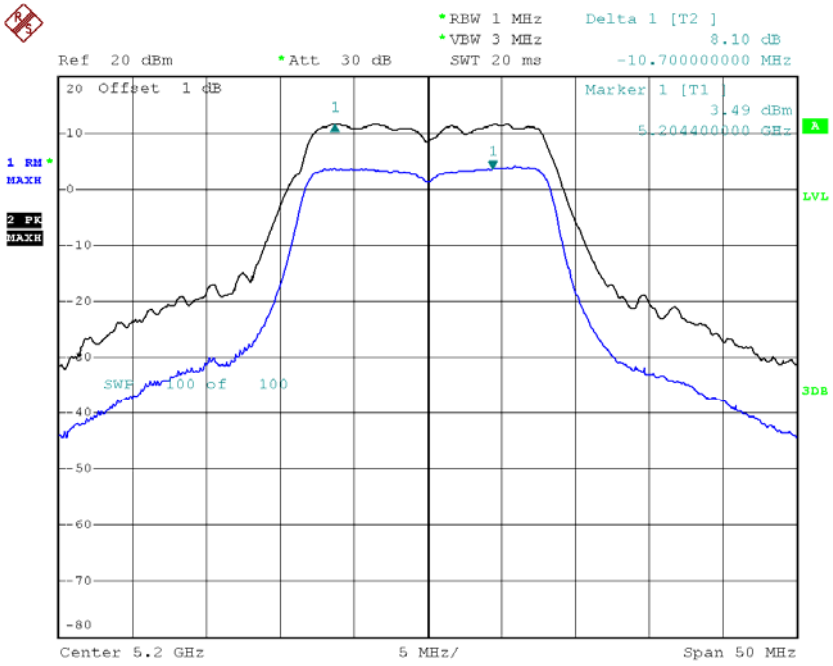
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode/CH36, CH40, CH48		

Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH36	5180	7.76	13
CH40	5200	8.10	13
CH48	5240	7.59	13

CH36

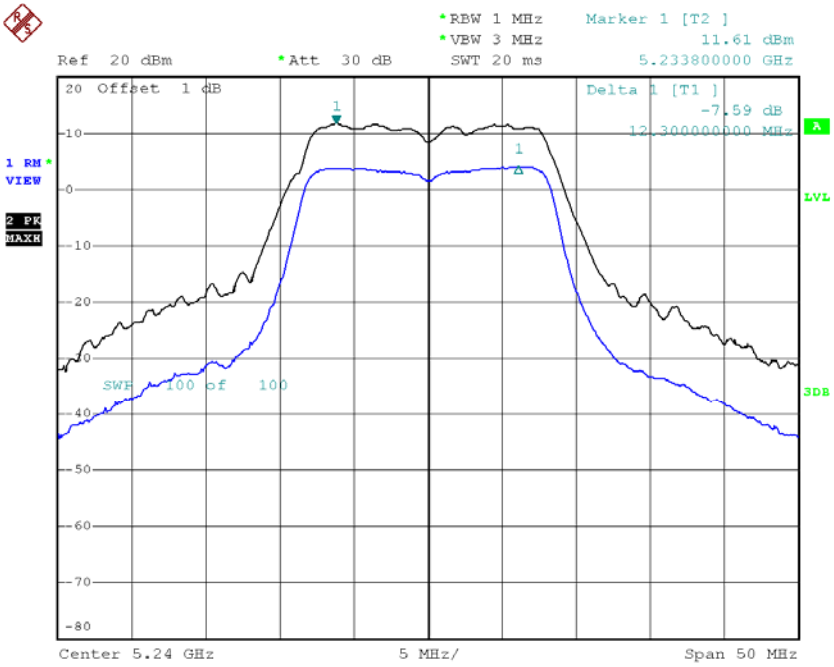


CH40



Date: 12.NOV.2013 08:23:10

CH48

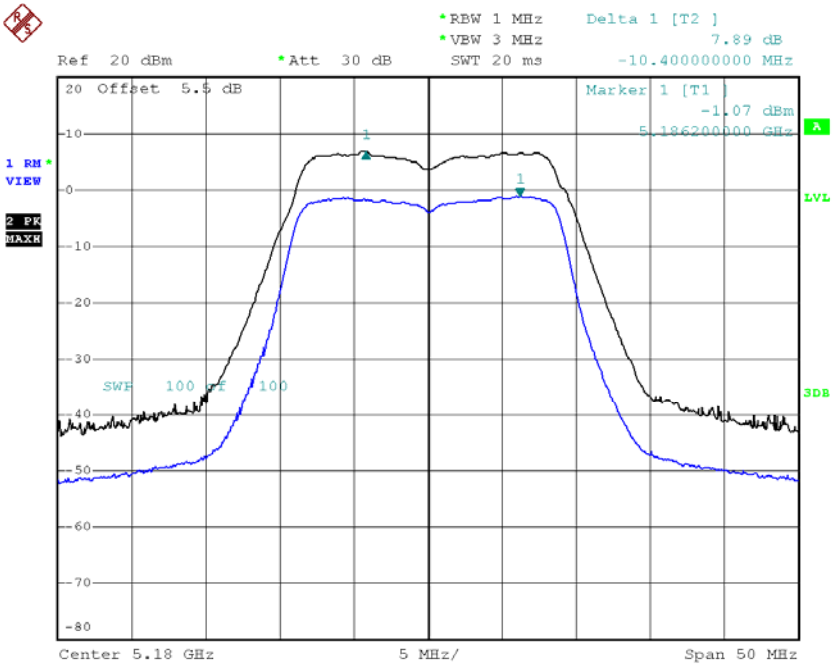


Date: 12.NOV.2013 08:28:10

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

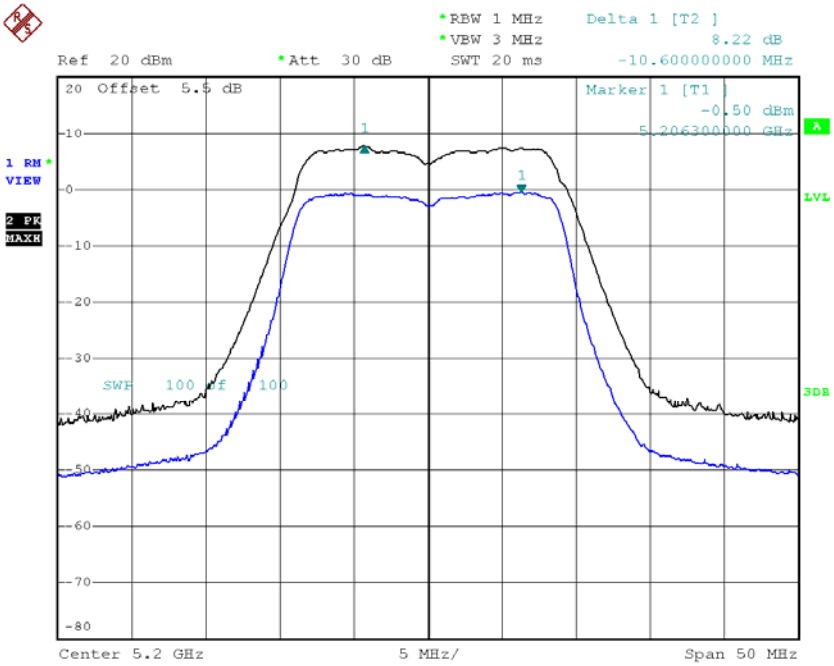
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH36	5180	7.89	13
CH40	5200	8.22	13
CH48	5240	8.25	13

CH36



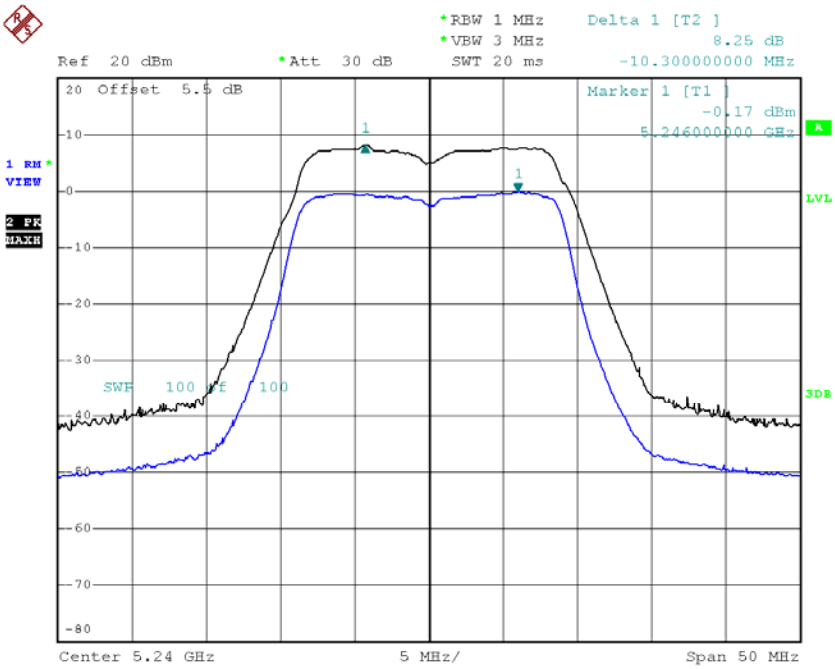
Date: 12.NOV.2013 08:41:19

CH40



Date: 12.NOV.2013 08:43:55

CH48

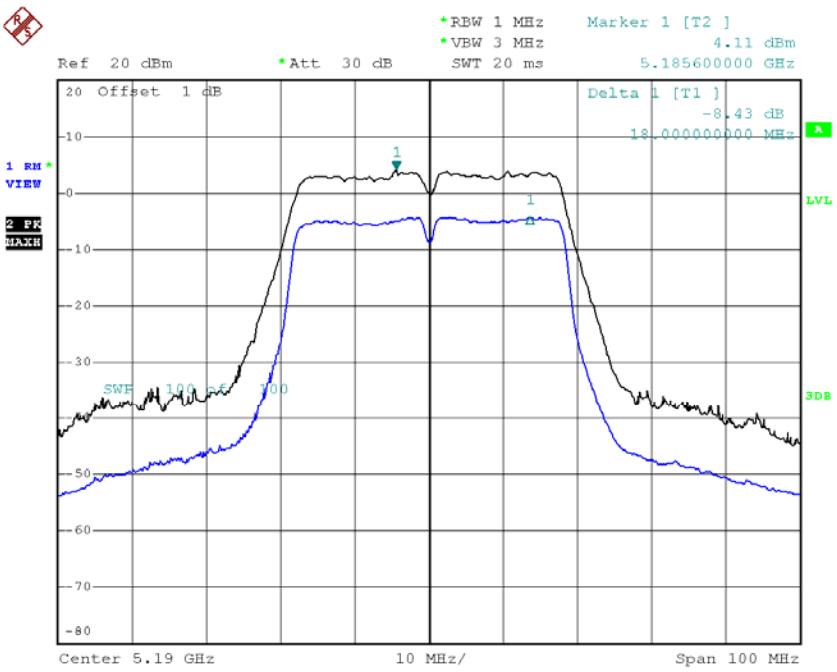


Date: 12.NOV.2013 08:53:24

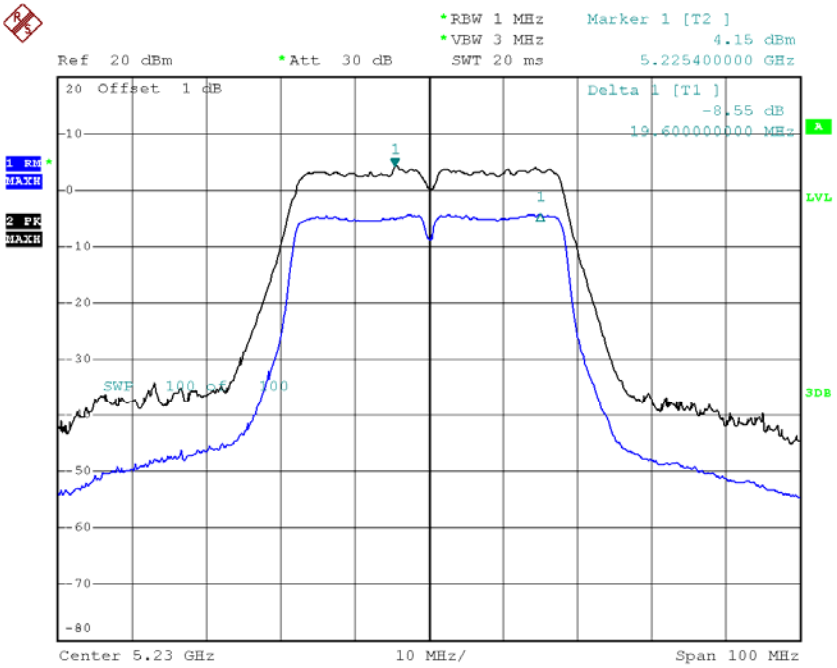
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH38	5190	8.43	13
CH46	5230	8.55	13

CH38



CH46

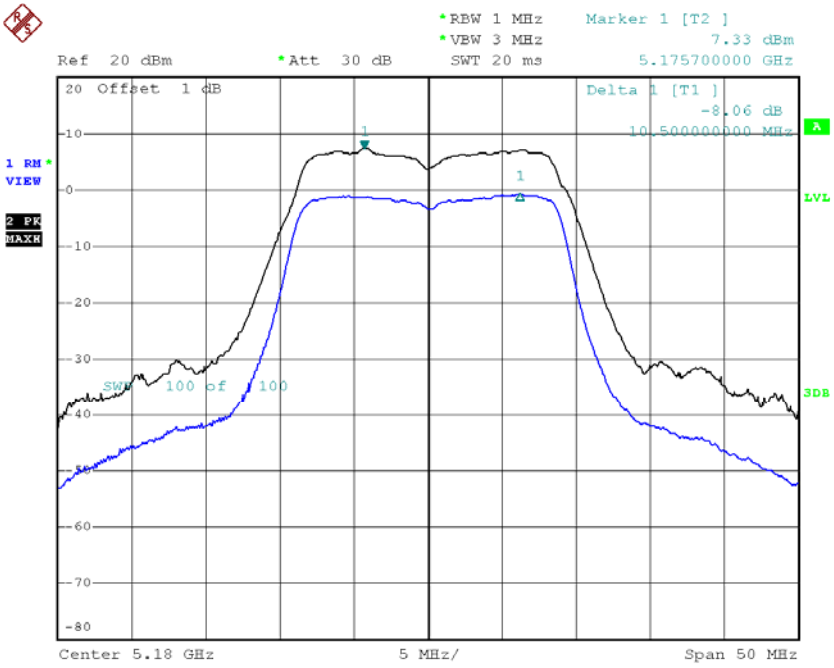


Date: 12.NOV.2013 09:19:46

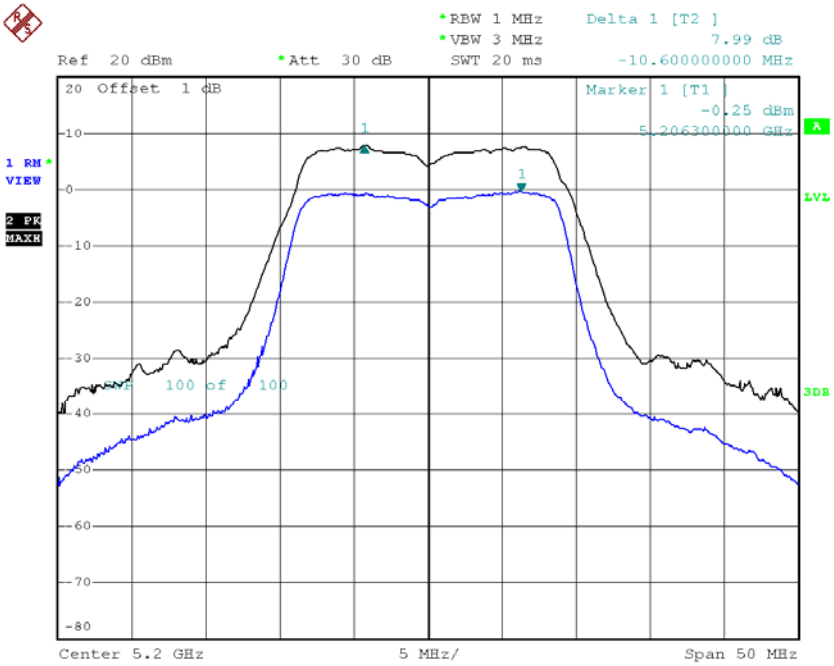
EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode/CH36, CH40, CH48		

Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH36	5180	8.06	13
CH40	5200	7.99	13
CH48	5240	8.15	13

CH36

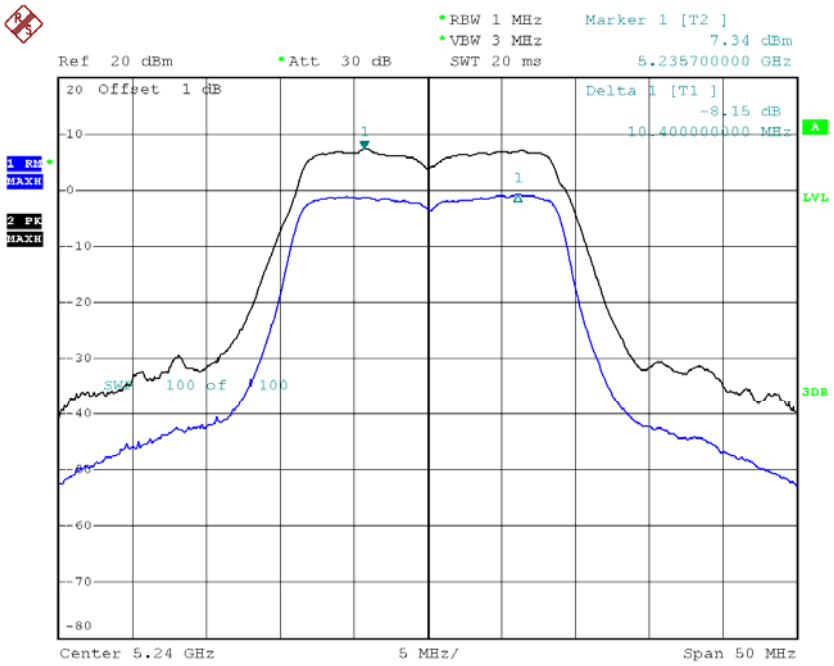


CH40



Date: 12.NOV.2013 09:56:54

CH48

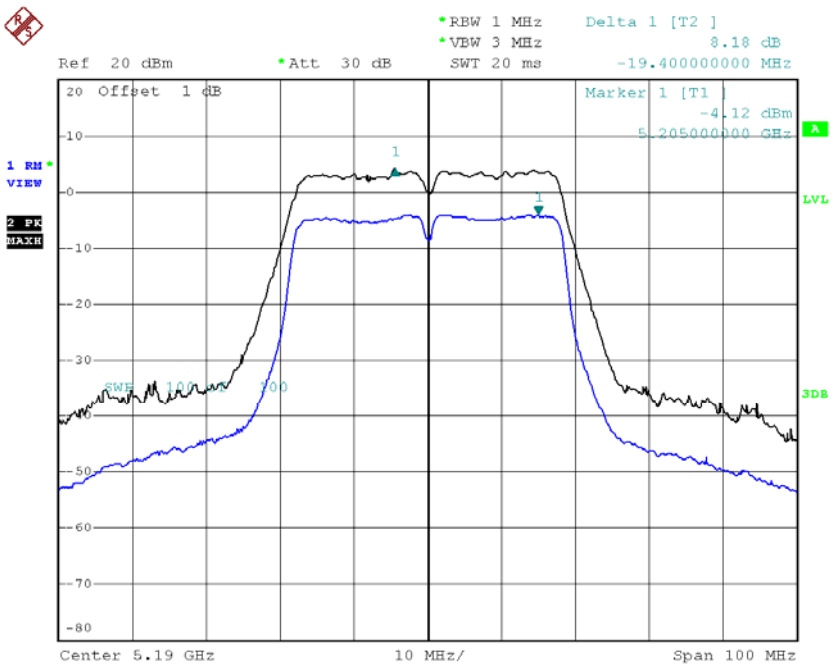


Date: 12.NOV.2013 10:02:26

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N40 Mode/CH38, CH46		

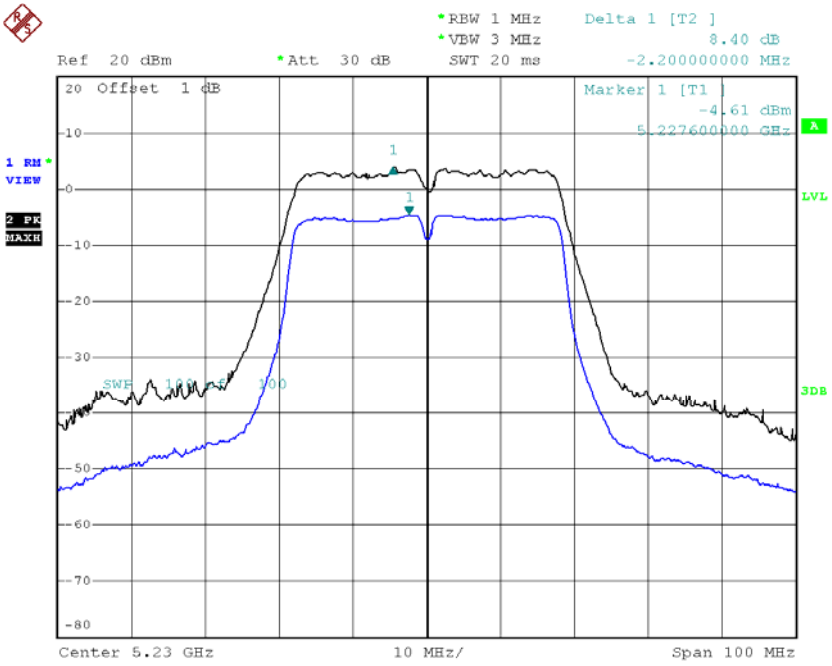
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH38	5190	8.18	13
CH46	5230	8.40	13

CH38



Date: 12.NOV.2013 10:19:33

CH46

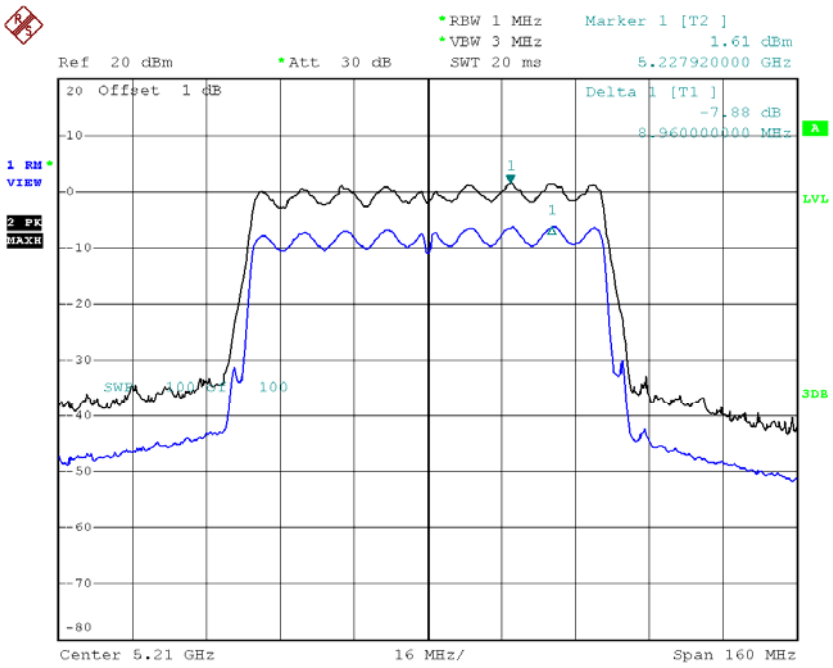


Date: 12.NOV.2013 10:23:05

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N80 Mode/CH38, CH46		

Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH42	5210	7.88	13

CH42



Date: 12.NOV.2013 10:41:48

10. FREQUENCY STABILITY MEASUREMENT

10.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E 15.407(g)			
Test Item	Limit	Frequency Range (MHz)	Result
Frequency Stability	specified in the user's manual	5150 – 5250	PASS

10.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov. 26.2013
2	Precision Oven Tester	HOLINK	H-T-1F-D	BA03101701	May.25.2014

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

10.1.2 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 Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	10 kHz
VB	10 kHz
Sweep Time	Auto

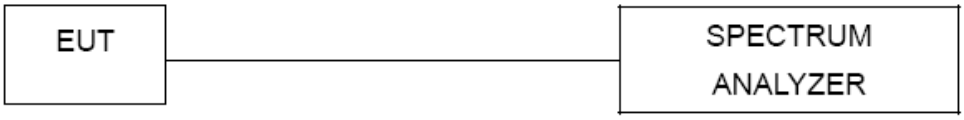
c. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

d. user manual temperature is 0°C~45°C.

10.1.3 DEVIATION FROM STANDARD

No deviation.

10.1.4 TEST SETUP



10.1.5 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.

10.1.6 TEST RESULTS

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	5180
138	5180.004360
120	5180.007220
102	5179.969450
Max. Deviation (MHz)	0.030550
Max. Deviation (ppm)	5.90

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(℃)	5180
0	5180.00236
10	5180.00215
20	5180.00101
30	5179.99871
40	5179.99852
Max. Deviation (MHz)	0.002360
Max. Deviation (ppm)	0.46

EUT:	AC1200 Wireless Dual Band USB Adapter	Model Name :	WF2190
Temperature:	25°C	Relative Humidity:	58 %
Test Voltage:	AC 120V/60Hz		
Test Mode :	Band 1/TX AC N20 Mode		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	5180
138	5180.004360
120	5180.007220
102	5179.969450
Max. Deviation (MHz)	0.030550
Max. Deviation (ppm)	5.90

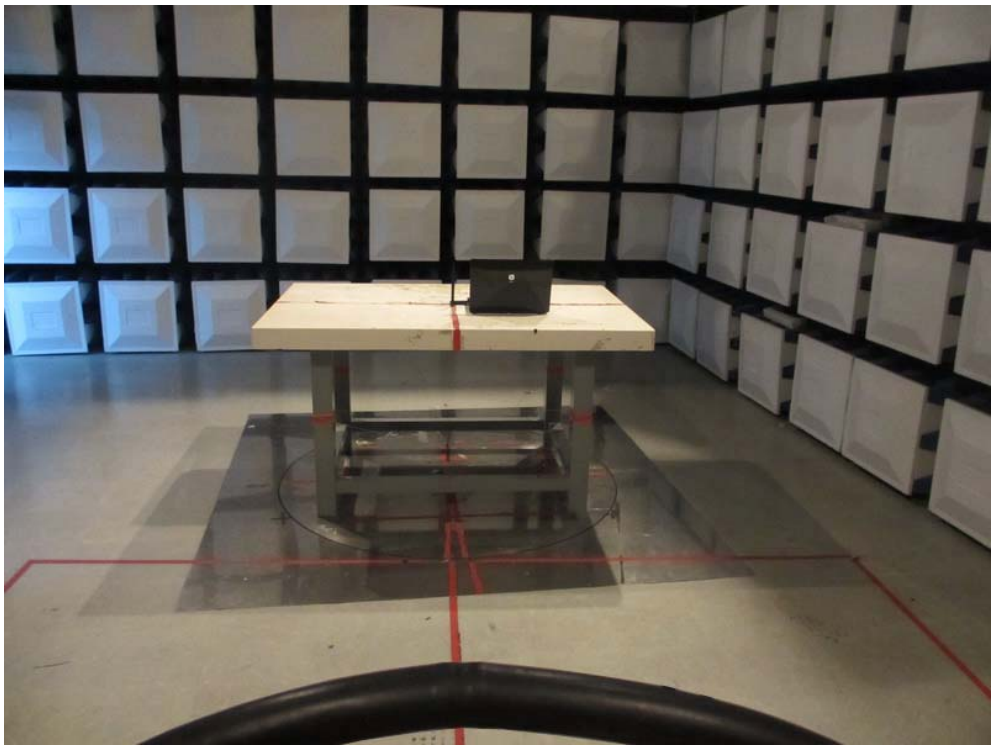
Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(℃)	5180
0	5180.00236
10	5180.00215
20	5180.00101
30	5179.99871
40	5179.99852
Max. Deviation (MHz)	0.002360
Max. Deviation (ppm)	0.46

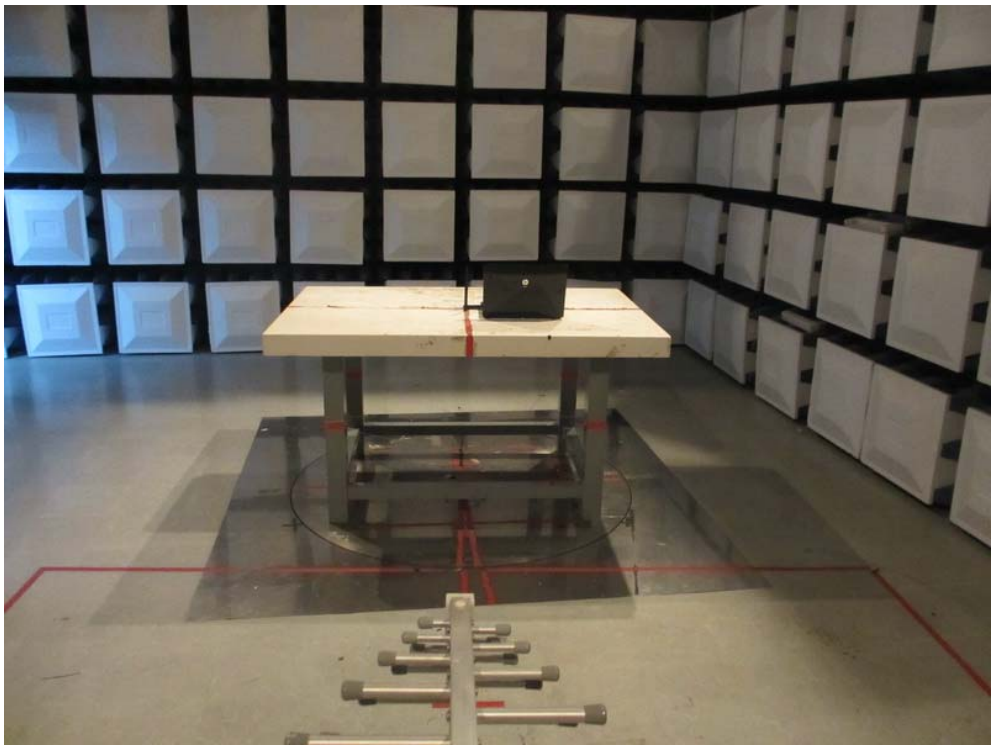
11. EUT TEST PHOTO

Conducted Measurement Photos

Radiated Measurement Photos
9KHz~30MHz



Radiated Measurement Photos
300MHz~1000MHz



Radiated Measurement Photos
Above 1000MHz