



# SPORTON International Inc.

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## FCC RADIO TEST REPORT

Applicant's company	Motorola Solutions, Inc.
Applicant Address	One Motorola Plaza Holtsville, NY 11742 USA
FCC ID	UZ7AP0622
Manufacturer's company	Joy Technology (ShenZhen) Corporation
Manufacturer Address	HengKeng Ind., Shangpai, Shangwu,Aiqun Rd., Shiyan Town,Shenzhen 518108 China

Product Name	Wireless Dual Band AP
Brand Name	MOTOROLA
Model Name	AP-0622
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Sep. 22, 2011
Final Test Date	Feb. 13, 2012
Submission Type	Class II Change



### Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a (5250 ~ 5350MHz / 5470 ~ 5725MHz) of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in ANSI C63.10-2009 and 47 CFR FCC Part 15 Subpart E.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.



Testing Laboratory  
1190



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## History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR192220-01	Rev. 01	Initial issue of report	Mar. 07, 2012



## 1. CERTIFICATE OF COMPLIANCE

**Product Name** : Wireless Dual Band AP  
**Brand Name** : MOTOROLA  
**Model Name** : AP-0622  
**Applicant** : Motorola Solutions, Inc.  
**Test Rule Part(s)** : 47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Sep. 22, 2011 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

A handwritten signature in blue ink that reads 'Jordan Hsiao'.

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**Jordan Hsiao**  
**SPORTON INTERNATIONAL INC.**

## 2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	Rule Section	Description of Test	Result	Under Limit
4.1	15.207	AC Power Line Conducted Emissions	Complies	11.54 dB
4.2	15.407(a)	26dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	3.01 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.19 dB
4.5	15.407(a)	Peak Excursion	Complies	6.38 dB
4.6	15.407(b)	Radiated Emissions	Complies	6.07 dB
4.7	15.407(b)	Band Edge Emissions	Complies	1.00 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Conducted Output Power	±0.5dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
Peak Excursion	±0.5dB	Confidence levels of 95%
26dB Spectrum Bandwidth / Frequency Stability	±8.5×10 <sup>-8</sup>	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7°C	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%



	<p>Band 2: MCS8 (20MHz): 17.96 dBm ; MCS8 (40MHz): 17.62 dBm          Band 3: MCS8 (20MHz): 17.82 dBm ; MCS8 (40MHz): 17.91 dBm</p> <p><b>For Patch (ML-5299-PTA1-01R) antenna:</b></p> <p>&lt;Mode 9&gt; (2TX, 2RX)</p> <p>Band 2: MCS0 (20MHz): 19.27 dBm ; MCS0 (40MHz): 19.35 dBm          Band 3: MCS0 (20MHz): 19.29 dBm ; MCS0 (40MHz): 19.31 dBm</p> <p><b>For Panel (ML-5299-WPNA1-01R) antenna:</b></p> <p>&lt;Mode 12&gt;</p> <p>(1TX, 2RX)</p> <p>Band 2: MCS0 (20MHz): 14.39 dBm ; MCS0 (40MHz): 14.48 dBm          Band 3: MCS0 (20MHz): 14.28 dBm ; MCS0 (40MHz): 14.33 dBm</p> <p><b>For Yagi (ML-5299-BYGA15-012) antenna:</b></p> <p>&lt;Mode 15&gt;</p> <p>(1TX, 2RX)</p> <p>Band 2: MCS0 (20MHz): 15.98 dBm ; MCS0 (40MHz): 15.54 dBm          Band 3: MCS0 (20MHz): 15.81 dBm ; MCS0 (40MHz): 15.99 dBm</p>
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3
TPC Function	This device does not exceed 27dBm eirp, so no transmit power control is implemented.





	<b>For Yagi (ML-5299-BYGA15-012) antenna:</b> <Mode 15> (1TX, 2RX) Band 2: 15.99 dBm ; Band 3: 15.91 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3
TPC Function	This device does not exceed 27dBm eirp, so no transmit power control is implemented.

**IEEE 802.11n spec**

MCS Index	Nss	Modulation	R	NBPS	NCBPS		NDBPS		Datarate(Mbps)			
					20MHz	40MHz	20MHz	40MHz	800nsGI		400nsGI	
									20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.200	15
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.400	30
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.700	45
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.900	60
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.300	90
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.800	120
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.000	135
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.200	150
8	2	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.444	30
9	2	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.889	60
10	2	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.333	90
11	2	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.778	120
12	2	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.667	180
13	2	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.556	240
14	2	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.000	270
15	2	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.444	300

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPS	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	guard interval

### 3.2. Accessories

Power	Brand	Model	Rating
Adapter	HIPRO	HP-A0502R3D	Input: 100-240VAC, 50-60Hz, 2.4A Output: 12VDC, 4.16A
<b>Remark:</b> The EUT has POE Function, test with IEEE 802.3 af / at compliance PoE device.			

### 3.3. Table for Filed Antenna

Ant.	Model Name	Antenna Type	Chip/Radio	Gain (dBi)	
				2.4GHz	5GHz
1	120G00000000A	Embedded	Radio1-CH1	3.92	-
	120G00000001A	Embedded	Radio1-CH2	3.77	-
2	120G00000002A	Embedded	Radio2-CH1	4.08	7.5
	120G00000003A	Embedded	Radio2-CH2	4.44	5.52
3	ML-2499-FHPA9-01R	Dipole	Radio1/2-CH1/2	8.5	-
4	ML-2499-SD3-01R	Patch	Radio1/2-CH1/2	3.5	-
5	ML-2499-BPNA3-01R	Panel	Radio1/2-CH1/2	10.9	-
6	ML-2499-BYGA2-01R	Yagi	Radio1/2-CH1/2	11.1	-
7	ML-5299-FHPA10-01R	Dipole	Radio1/2-CH1/2	-	9
8	ML-5299-PTA1-01R	Patch	Radio1/2-CH1/2	-	4.6
9	ML-5299-WPNA1-01R	Panel	Radio1/2-CH1/2	-	12.5
10	ML-5299-BYGA15-012	Yagi	Radio1/2-CH1/2	-	11
11	ML-2499-5PNL-72-N	Panel	Radio1/2-CH1/2	5	-
12	ML-2499-APA2-01	Dipole	Radio1/2-CH1/2	2	-
13	ML-2499-HPA3-01R	Dipole	Radio1/2-CH1/2	4.7	-
14	ML-5299-APA1-01R	Dipole	Radio1/2-CH1/2	-	2
15	ML-5299-HPA1-01R	Dipole	Radio1/2-CH1/2	-	5
16	ML-2452-APA2-01	Dipole	Radio1/2-CH1/2	3	5
17	ML-2452-PNA5-01R	Panel	Radio1/2-CH1/2	4.5	5
18	ML-2452-PNA7-01R	Panel	Radio1/2-CH1/2	7	9
19	ML-2452-HPA5-036	Dipole	Radio1/2-CH1/2	3	5

Antenna	Antenna Gain		Cable loss		Test Antenna Gain	
	2.4GHz	5GHz	2.4GHz	5GHz	2.4GHz	5GHz
1	3.92	-	0.0	-	3.92	-
	3.77	-	0.0		3.77	
2	4.08	7.5	0.0	0.0	4.08	7.5
	4.44	5.52	0.0	0.0	4.44	5.52
3	9	-	0.5	-	8.5	-
4	3.5	-	0.0	-	3.5	-
5	10.9	-	0.0	-	10.9	-
6	11.1	-	0.0	-	11.1	-
7	-	10	-	1	-	9
8	-	4.6	-	-	-	4.6
9	-	12.5	-	-	-	12.5
10	-	12	-	1	-	11
11	5	-	0.0		5	-
12	2	-	0.0		2	-
13	4.7	-	0.0		4.7	-
14	-	2	-	0.0	-	2
15	-	5	-	0.0	-	5
16	3	5	0.0	0.0	3	5
17	4.5	5	0.0	0.0	4.5	5
18	7	9	0.0	0.0	7	9
19	3	5	0.0	0.0	3	5

Note:

1. There are two chips, Radio 1 and Radio 2 respectively. Radio 1 support Chain 2.4GHz function and Radio 2 support Chain 2.4GHz+5GHz function. Radio 1 is hardware configured as 2.4GHz only and Radio 2 is software restricted to 5GHz only.

There are 19 antennas in the antenna table list, antenna 1 to 10 are the highest gain antennas. They were selected to perform the test and recorded in this report.

2. Rx function is always 2Rx for 2Tx, but may be either 1Rx or 2Rx for 1Tx.

Table of TX/RX Function in each antenna:

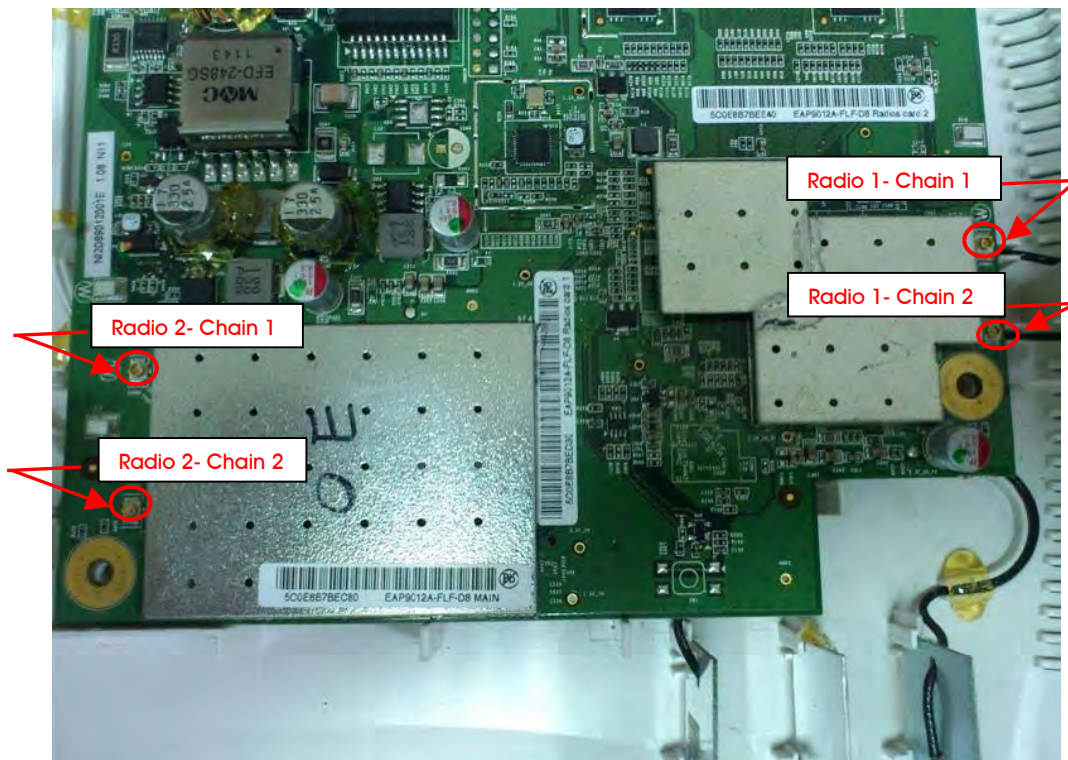
Item			Radio 1				Radio 2			
			Chain 1		Chain 2		Chain 1		Chain 2	
			TX	RX	TX	RX	TX	RX	TX	RX
Ant. 1	2.4GHz	*11b	-	V	V	V	-	-	-	-
		11g	V	V	V	V	-	-	-	-
		11n	V	V	V	V	-	-	-	-
Ant. 2	2.4GHz	*11b	-	-	-	-	V	V	-	V
		11g	-	-	-	-	V	V	V	V
		11n	-	-	-	-	V	V	V	V
	5GHz	11a	-	-	-	-	V	V	V	V
		11n	-	-	-	-	V	V	V	V
Ant. 3	2.4GHz	*11b	-	V	V	V	V	V	-	V
		*11g	-	-	-	-	V	V	-	V
		11g	V	V	V	V	V	V	V	V
		*11n	-	-	-	-	V	V	-	V
		11n	V	V	V	V	V	V	V	V
Ant. 4	2.4GHz	*11b	-	V	V	V	V	V	-	V
		*11g	-	V	V	V	V	V	-	V
		11g	V	V	V	V	V	V	V	V
		*11n	-	V	V	V	V	V	-	V
		11n	V	V	V	V	V	V	V	V
Ant. 5	2.4GHz	*11b	-	V	V	V	V	V	-	V
		*11g	-	V	V	V	V	V	-	V
		*11n	-	V	V	V	V	V	-	V
Ant. 6	2.4GHz	*11b	-	V	V	V	V	V	-	V
		*11g	-	V	V	V	V	V	-	V
		*11n	-	V	-	V	V	V	-	V
Ant. 7	5GHz	*11a	-	V	V	V	V	V	-	V
		11a	V	V	V	V	V	V	V	V
		*11n	-	V	V	V	V	V	-	V
		11n	V	V	V	V	V	V	V	V
Ant. 8	5GHz	11a	V	V	V	V	V	V	V	V
		11n	V	V	V	V	V	V	V	V
Ant. 9	5GHz	*11a	-	V	V	V	V	V	-	V
		*11n	-	V	V	V	V	V	-	V
Ant. 10	5GHz	*11a	-	V	V	V	V	V	-	V
		*11n	-	V	V	V	V	V	-	V

Note: Marked "-" on behalf of no function.

Marked "\*" Rx function may be either 1Rx or 2Rx for 1Tx.

Radio 1 support Chain 2 and Radio 2 support Chain 1 when perform the 1TX function.

Chip/Radio	Required 1TX Port
Radio 1-2.4G	Chain 2
Radio 2-2.4G	Chain 1
Radio 2-5G	Chain 1



### 3.4. Table for Carrier Frequencies

For IEEE 802.11a, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140.

There are two bandwidth systems for IEEE 802.11n.

For both 20MHz bandwidth systems, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140.

For both 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 134.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	116	5580 MHz
	102	5510MHz	132	5660 MHz
	104	5520 MHz	134	5670 MHz
	108	5540 MHz	136	5680 MHz
	110	5550 MHz	140	5700 MHz
	112	5560 MHz	-	-

### 3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	Chain	
AC Power Conducted Emission	Normal Link	Auto	-	-	
Max. Conducted Output Power Power Spectral Density	MCS0/20MHz	Band 2	6.5Mbps	52/60/64	1/2/1+2
		Band 3	6.5Mbps	100/116/140	1/2/1+2
	MCS0/40MHz	Band 2	13.5Mbps	54/62	1/2/1+2
		Band 3	13.5Mbps	102/134	1/2/1+2
	MCS8/20MHz	Band 2	13Mbps	52/60/64	1/2/1+2
		Band 3	13Mbps	100/116/140	1/2/1+2
	MCS8/40MHz	Band 2	27Mbps	54/62	1/2/1+2
		Band 3	27Mbps	102/134	1/2/1+2
	11a/BPSK	Band 2	6Mbps	52/60/64	1/2/1+2
		Band 3	6Mbps	100/116/140	1/2/1+2

26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement Peak Excursion	MCS0/20MHz	Band 2	6.5Mbps	36/40/48/52/60/64	1+2
		Band 3	6.5Mbps	100/116/140	1+2
	MCS0/40MHz	Band 2	13.5Mbps	54/62	1+2
		Band 3	13.5Mbps	102/134	1+2
	MCS8/20MHz	Band 2	13Mbps	36/40/48/52/60/64	1/2/1+2
		Band 3	13Mbps	100/116/140	1/2/1+2
	MCS8/40MHz	Band 2	27Mbps	54/62	1/2/1+2
		Band 3	27Mbps	102/134	1/2/1+2
11a/BPSK	Band 2	6Mbps	52/60/64	1+2	
	Band 3	6Mbps	100/116/140	1+2	
Radiated Emission Below 1GHz	Normal Link		Auto	-	-
Radiated Emission Above 1GHz	MCS0/20MHz	Band 2	6.5Mbps	52/60/64	1+2
		Band 3	6.5Mbps	100/116/140	1+2
	MCS0/40MHz	Band 2	13.5Mbps	54/62	1+2
		Band 3	13.5Mbps	102/134	1+2
	MCS8/20MHz	Band 2	13Mbps	52/60/64	1/2/1+2
		Band 3	13Mbps	100/116/140	1/2/1+2
	MCS8/40MHz	Band 2	27Mbps	54/62	1/2/1+2
		Band 3	27Mbps	102/134	1/2/1+2
11a/BPSK	Band 2	6Mbps	52/60/64	1/2/1+2	
	Band 3	6Mbps	100/116/140	1/2/1+2	
Band Edge Emission	MCS0/20MHz	Band 2	6.5Mbps	52/60/64	1+2
		Band 3	6.5Mbps	100/116/140	1+2
	MCS0/40MHz	Band 2	13.5Mbps	54/62	1+2
		Band 3	13.5Mbps	102/134	1+2
	MCS8/20MHz	Band 2	13Mbps	52/60/64	1/2/1+2
		Band 3	13Mbps	100/116/140	1/2/1+2
	MCS8/40MHz	Band 2	27Mbps	54/62	1/2/1+2
		Band 3	27Mbps	102/134	1/2/1+2
11a/BPSK	Band 2	6Mbps	52/60/64	1/2/1+2	
	Band 3	6Mbps	100/116/140	1/2/1+2	
Frequency Stability	Un-modulation		-	40	N/A

Note: The CPU of the product is operated at either 560MHz or 600MHz and it does not affect the test result of emissions.

The following test modes were performed for all tests:

**<Conducted Emissions test>**

Mode 1. EUT (Plastic case) + Adapter

Mode 2. EUT (Iron case) + Adapter

**<Radiated emissions test>**

**For radiated emission 30MHz~ 1GHz:**

Mode 1. EUT 1 (Iron case) + Dipole antenna <Ant. 3 (2.4GHz antenna) / Ant. 7 (5GHz antenna)> + POE

Mode 2. EUT 1 (Iron case) + Panel antenna <Ant. 5 (2.4GHz antenna) / Ant. 9 (5GHz antenna)> + POE

Mode 3. EUT 1 (Iron case) + Patch antenna <Ant. 4 (2.4GHz antenna) / Ant. 8 (5GHz antenna)> + POE

Mode 4. EUT 1 (Iron case) + Yagi antenna <Ant. 6 (2.4GHz antenna) / Ant. 10 (5GHz antenna)> + POE

Mode 3 generated the worst test result when this device operates among mode 1 ~ mode 4, thus measurement under mode 5 base on this setting with adapter mode.

Mode 5. EUT 1 (Iron case) + Patch antenna <Ant. 4 (2.4GHz antenna) / Ant. 8 (5GHz antenna)> + Adapter

Mode 6. EUT 2 (Plastic case) + Embedded antenna (Ant. 1/2) + POE

Mode 7. EUT 2 (Plastic case) + Embedded antenna (Ant. 1/2) + Adapter

Due to Mode 3 and Mode 6 generated the worst test results, both of them were recorded in the report.

**For radiated emission above 1GHz:**

Antenna/Radio Mode		11b 1TX	11a/g 1TX	11a/g 2TX	HT20 1TX (MCS0)	H20 2TX (MCS0)	HT40 1TX (MCS0)	H40 2TX (MCS0)	HT20 2TX (MCS8)	H40 2TX (MCS8)
Mode 1	Internal-R1-2G, Antenna 1	v	-	v	-	v	-	v	-	-
Mode 2	Internal-R2-2G, Antenna 2	v	-	v	-	v	-	v	-	-
Mode 3	Internal-R2-5G, Antenna 2	-	-	v	-	v	-	v	-	-
Mode 4	Dipole-R1-2G, Antenna 3	v	-	v	-	v	-	v	v	v
Mode 5	Dipole-R2-2G, Antenna 3	v	v	v	v	v	v	v	v	v
Mode 6	Dipole-R2-5G, Antenna 7		v	v	v	v	v	v	v	v
Mode 7	Patch-R1-2.4G, Antenna 4	v	v	v	v	v	v	v	-	-



Mode 8	Patch-R2-2.4G, Antenna 4	v	v	v	v	v	v	v	-	-
Mode 9	Patch-R2-5G, Antenna 8		-	v	-	v		v	-	-
Mode 10	Panel-R1-2.4G, Antenna 5	v	v	-	v	-	v	-	-	-
Mode 11	Panel-R2-2.4G, Antenna 5	v	v	-	v	-	v	-	-	-
Mode 12	Panel-R2-5G, Antenna 9	-	v	-	v	-	v	-	-	-
Mode 13	Yagi-R1-2.4G, Antenna 6	v	v	-	v	-	v	-	-	-
Mode 14	Yagi-R2-2.4G, Antenna 6	v	v	-	v	-	v	-	-	-
Mode 15	Yagi-R2-5G, Antenna 10	-	v	-	v	-	v	-	-	-

Note:

1. For HT20/40 2TX, MCS8 (2-stream) limit are higher than MCS0 (1-stream) limits due to no array gain reduction on conducted limits. MCS8 signals on 2TX are completely uncorrelated when the direct mapping is configured. If antenna gain is greater than 5 dBi, this mode should be included to realize higher conducted testing limits.
2. EUT has two modules, R1 is regard to Radio 1 module (2.4GHz), R2 is regard to Radio 2 module (2.4GHz + 5GHz).

### 3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D	-
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D	-
TH01-CB	OVEN Room	Hsin Chu	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

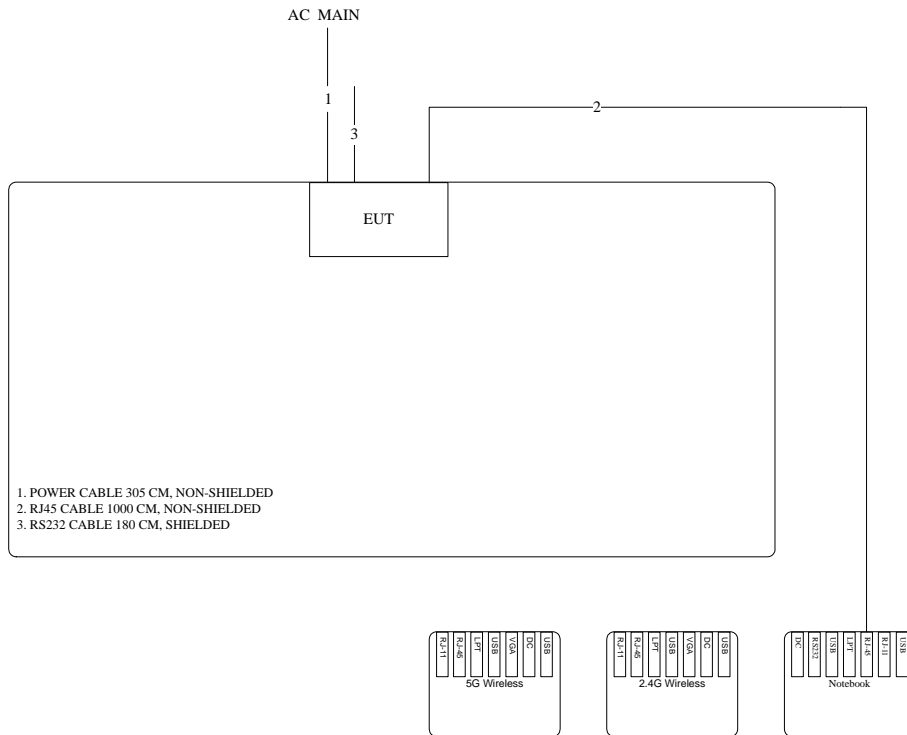
### 3.7. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	D400	E2K24GBRL

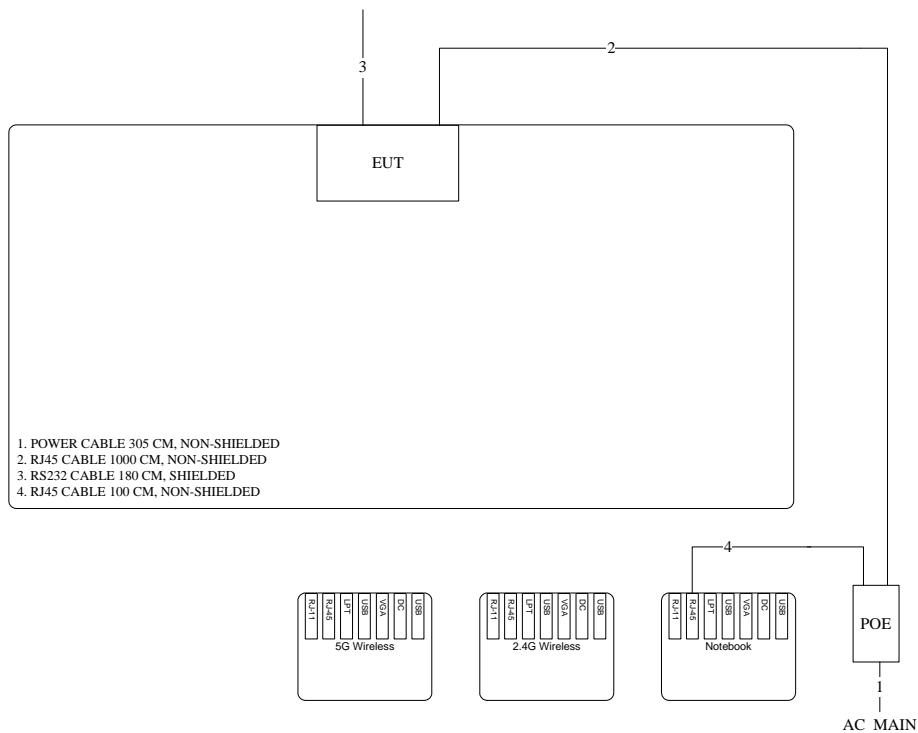
### 3.8. Test Configurations

#### 3.8.1. Radiation Emissions Test Configuration

##### Power from Adapter

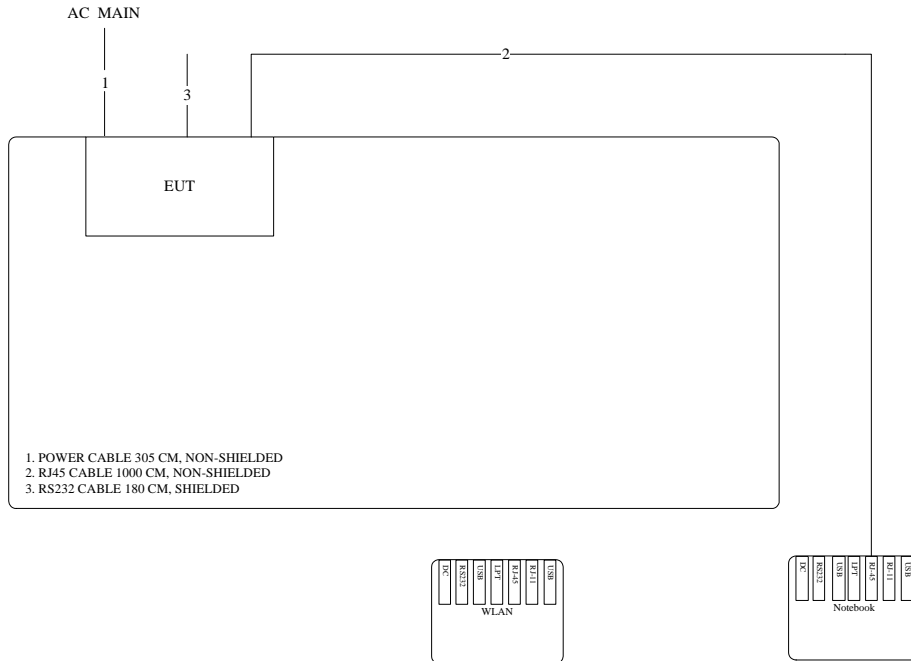


##### Power from POE:

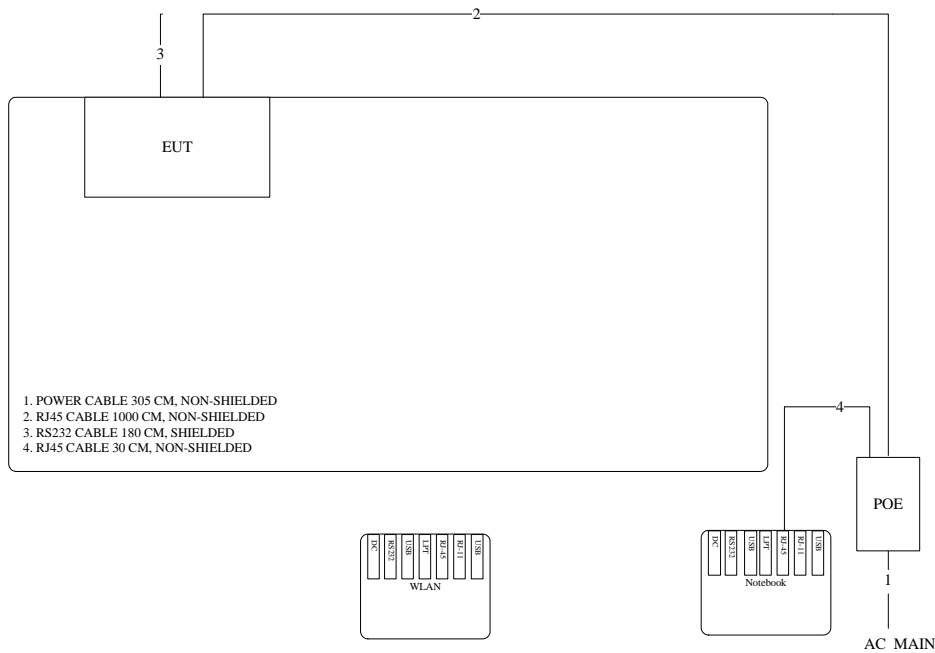


### 3.8.2. AC Power Line Conduction Emissions Test Configuration

Power from Adapter:



Power from POE:



## 4. TEST RESULT

### 4.1. AC Power Line Conducted Emissions Measurement

#### 4.1.1. Limit

For this product that is designed to connect to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

#### 4.1.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

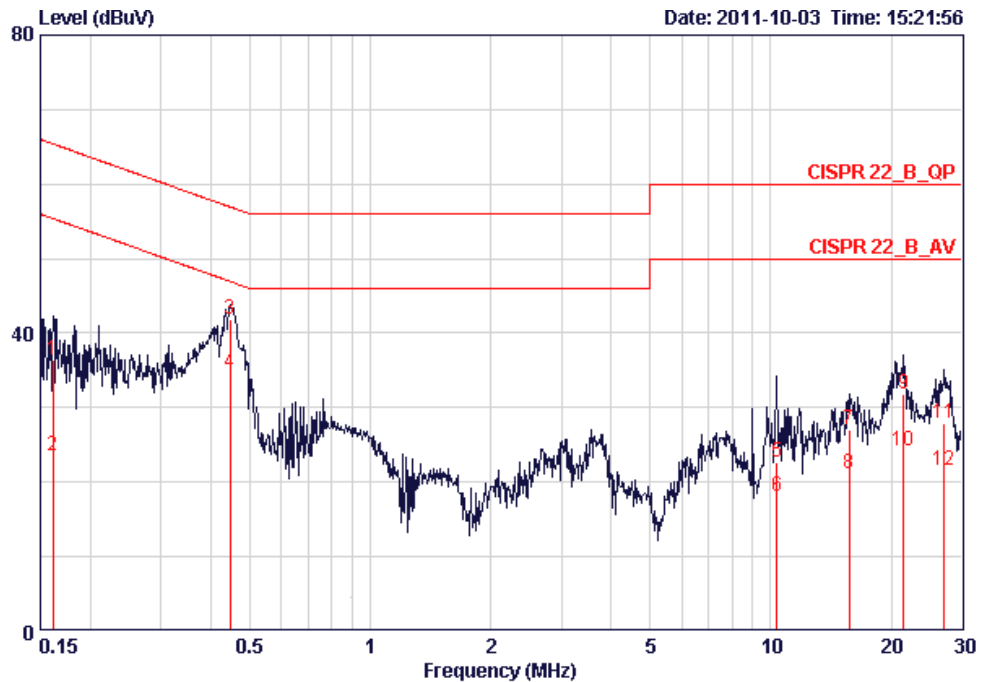
#### 4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.



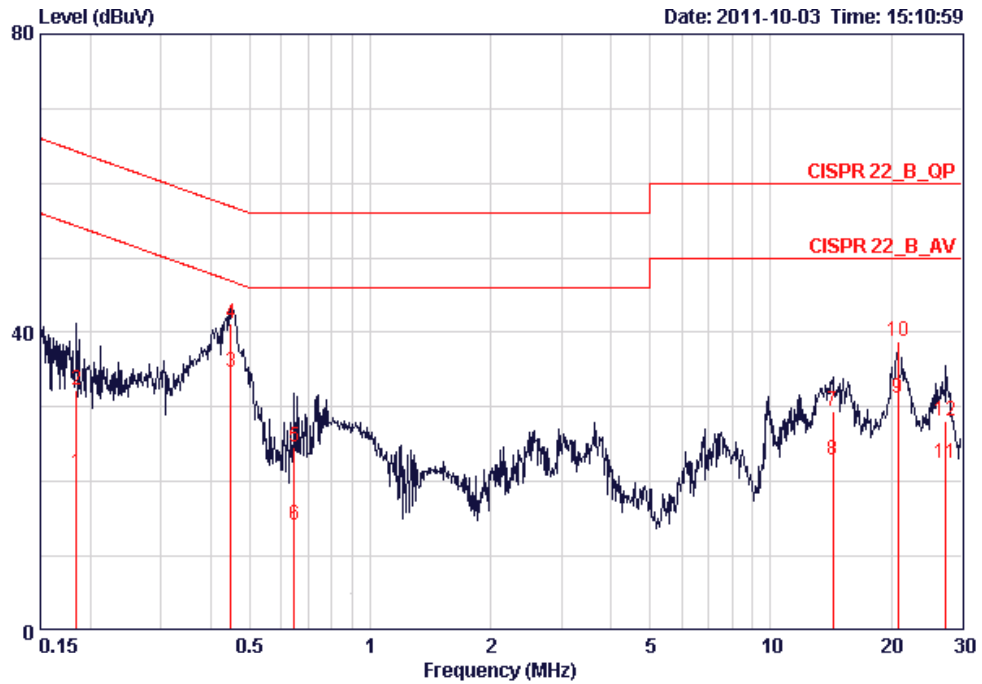
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	21°C	Humidity	59%
Test Engineer	Simon Yang	Phase	Line
Configuration	Normal Link / Mode 1		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.16155	36.39	-29.00	65.38	36.12	0.07	0.20	QP
2	0.16155	23.50	-31.89	55.38	23.23	0.07	0.20	AVERAGE
3	0.44679	41.78	-15.15	56.93	41.55	0.03	0.20	QP
4	0.44679	34.65	-12.28	46.93	34.42	0.03	0.20	AVERAGE
5	10.342	22.66	-37.34	60.00	21.93	0.37	0.37	QP
6	10.342	18.15	-31.85	50.00	17.42	0.37	0.37	AVERAGE
7	15.718	26.94	-33.07	60.00	25.94	0.60	0.40	QP
8	15.718	21.21	-28.80	50.00	20.21	0.60	0.40	AVERAGE
9	21.486	31.78	-28.22	60.00	30.36	0.92	0.50	QP
10	21.486	24.28	-25.72	50.00	22.86	0.92	0.50	AVERAGE
11	27.127	27.79	-32.21	60.00	25.93	1.26	0.60	QP
12	27.127	21.65	-28.35	50.00	19.79	1.26	0.60	AVERAGE

Temperature	21°C	Humidity	59%
Test Engineer	Simon Yang	Phase	Neutral
Configuration	Normal Link / Mode 1		



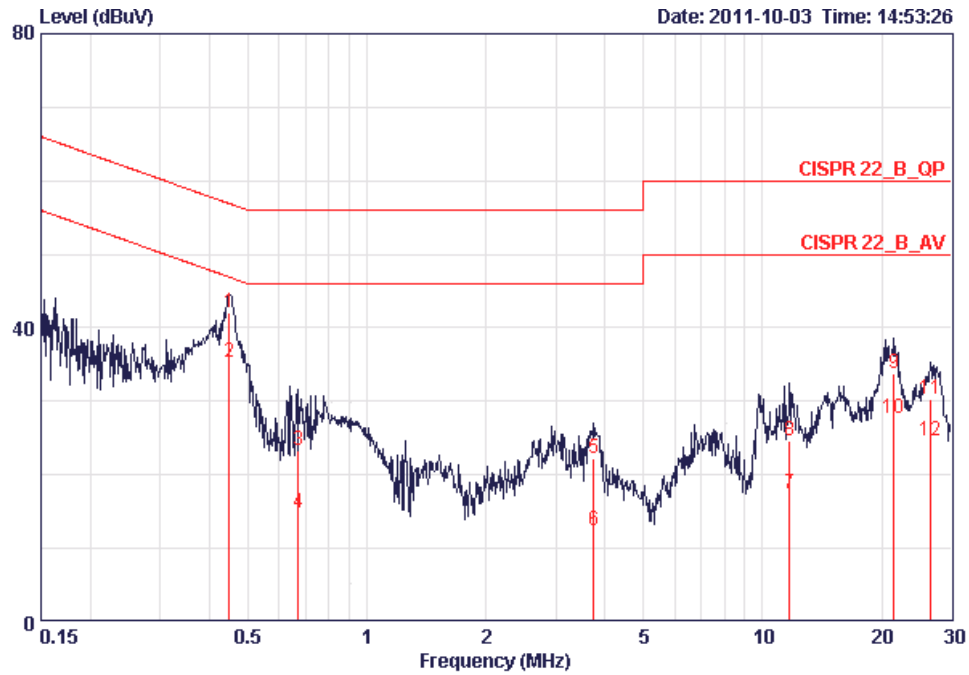
	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.18443	21.17	-33.12	54.28	20.88	0.09	0.20	AVERAGE
2	0.18443	32.32	-31.97	64.28	32.03	0.09	0.20	QP
3	0.44966	34.65	-12.23	46.88	34.38	0.07	0.20	AVERAGE
4	0.44966	41.28	-15.60	56.88	41.01	0.07	0.20	QP
5	0.64740	24.69	-31.31	56.00	24.42	0.07	0.20	QP
6	0.64740	14.18	-31.82	46.00	13.91	0.07	0.20	AVERAGE
7	14.288	29.48	-30.52	60.00	28.53	0.55	0.40	QP
8	14.288	22.91	-27.09	50.00	21.96	0.55	0.40	AVERAGE
9	20.814	31.10	-18.90	50.00	29.73	0.87	0.50	AVERAGE
10	20.814	38.78	-21.22	60.00	37.41	0.87	0.50	QP
11	27.416	22.43	-27.57	50.00	20.50	1.33	0.60	AVERAGE
12	27.416	28.05	-31.95	60.00	26.12	1.33	0.60	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

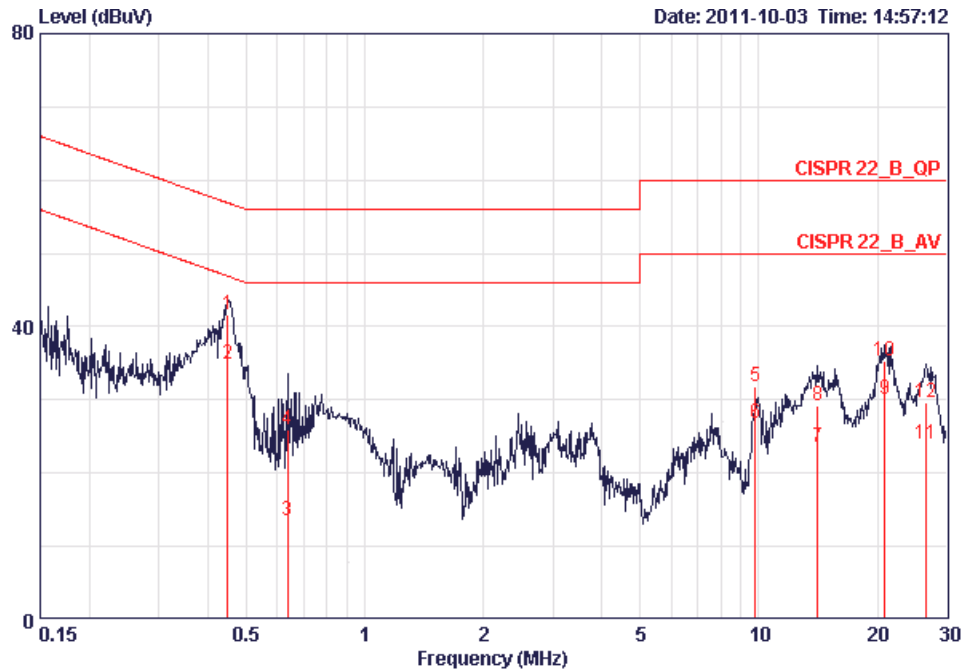


Temperature	21°C	Humidity	59%
Test Engineer	Simon Yang	Phase	Line
Configuration	Normal Link / Mode 2		



	Freq	Level	Limit	Line	Read	LISN	Cable	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.44916	42.08	-14.81	56.89	41.85	0.03	0.20	QP
2	0.44916	35.35	-11.54	46.89	35.12	0.03	0.20	AVERAGE
3	0.67187	23.31	-32.69	56.00	23.08	0.03	0.20	QP
4	0.67187	14.84	-31.16	46.00	14.61	0.03	0.20	AVERAGE
5	3.740	22.33	-33.67	56.00	21.93	0.10	0.30	QP
6	3.740	12.39	-33.61	46.00	11.99	0.10	0.30	AVERAGE
7	11.683	17.53	-32.47	50.00	16.70	0.43	0.40	AVERAGE
8	11.683	24.72	-35.28	60.00	23.89	0.43	0.40	QP
9	21.486	33.76	-26.24	60.00	32.34	0.92	0.50	QP
10	21.486	27.66	-22.34	50.00	26.24	0.92	0.50	AVERAGE
11	26.558	30.33	-29.67	60.00	28.59	1.24	0.50	QP
12	26.558	24.70	-25.30	50.00	22.96	1.24	0.50	AVERAGE

Temperature	21°C	Humidity	59%
Test Engineer	Simon Yang	Phase	Neutral
Configuration	Normal Link / Mode 2		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.44916	41.58	-15.31	56.89	41.31	0.07	0.20	QP
2	0.44916	34.98	-11.91	46.89	34.71	0.07	0.20	AVERAGE
3	0.63798	13.54	-32.46	46.00	13.27	0.07	0.20	AVERAGE
4	0.63798	26.01	-29.99	56.00	25.74	0.07	0.20	QP
5	9.809	31.82	-28.18	60.00	31.14	0.38	0.30	QP
6	9.809	26.76	-23.24	50.00	26.08	0.38	0.30	AVERAGE
7	14.138	23.45	-26.55	50.00	22.51	0.54	0.40	AVERAGE
8	14.138	29.22	-30.78	60.00	28.28	0.54	0.40	QP
9	20.924	30.11	-19.89	50.00	28.73	0.88	0.50	AVERAGE
10	20.924	35.42	-24.58	60.00	34.04	0.88	0.50	QP
11	26.558	23.99	-26.01	50.00	22.21	1.28	0.50	AVERAGE
12	26.558	29.64	-30.36	60.00	27.86	1.28	0.50	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

## 4.2. 99% Occupied Bandwidth Measurement

### 4.2.1. Limit

No restriction limits. But resolution bandwidth within band edge measurement is 1% of the 99% occupied bandwidth.

### 4.2.2. Measuring Instruments and Setting

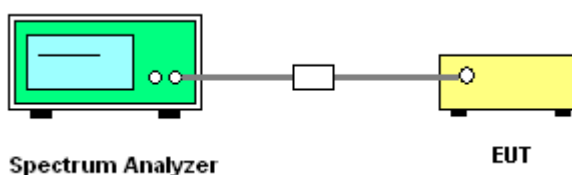
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	300 kHz
VB	1MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

### 4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. The resolution bandwidth of 300 kHz and the video bandwidth of 1000 kHz were used.
3. Measured the spectrum width with power higher than 26dB below carrier.

### 4.2.4. Test Setup Layout



### 4.2.5. Test Deviation

There is no deviation with the original standard.

### 4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.2.7. Test Result of 99% Occupied Bandwidth

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Allen Liu	<b>Configurations</b>	IEEE 802.11n / Mode 3

##### Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 (2TX, 2RX)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	25.60	19.20
60	5300 MHz	22.24	16.48
64	5320 MHz	26.08	19.20
100	5500 MHz	21.76	16.80
116	5580 MHz	25.28	19.04
140	5700 MHz	21.92	17.28

##### Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 (2TX, 2RX)

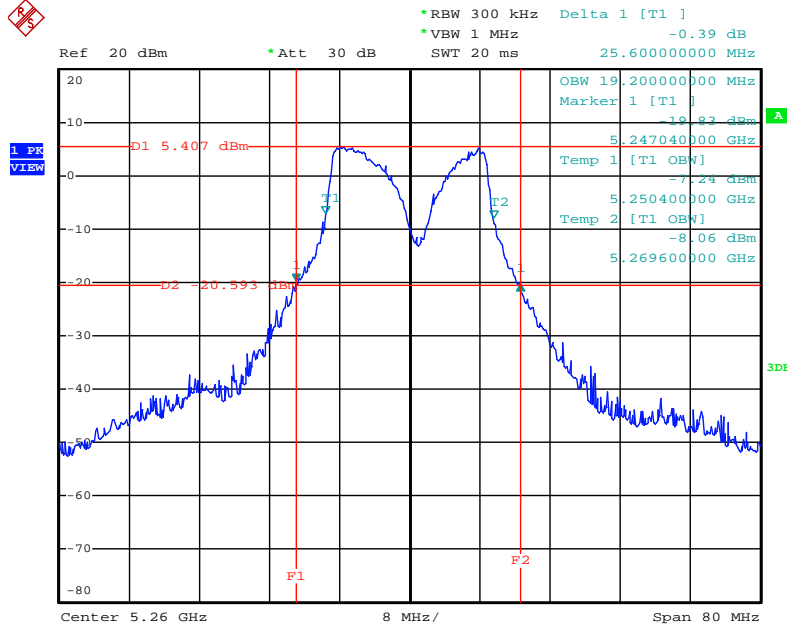
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	47.68	37.44
62	5310 MHz	47.36	37.76
102	5510MHz	48.64	37.44
110	5550 MHz	43.84	34.88
134	5670 MHz	42.24	34.24

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Allen Liu	<b>Configurations</b>	IEEE 802.11a / Mode 3

**Configuration IEEE 802.11a / Port 1 + Port 2 (2TX, 2RX)**

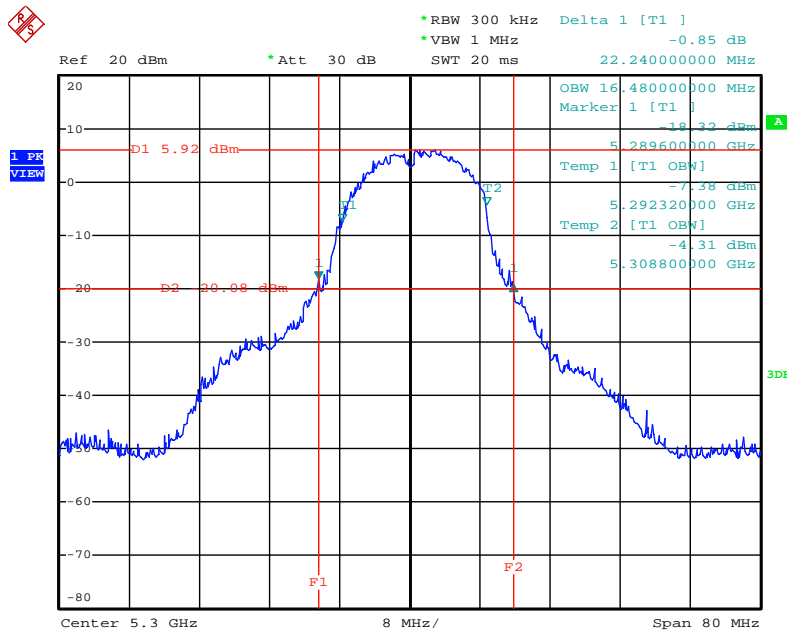
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	21.76	17.76
60	5300 MHz	23.52	17.60
64	5320 MHz	16.48	16.48
100	5500 MHz	23.68	17.76
116	5580 MHz	22.08	16.48
140	5700 MHz	22.40	16.80

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5260 MHz / Mode 3 (2TX, 2RX)**



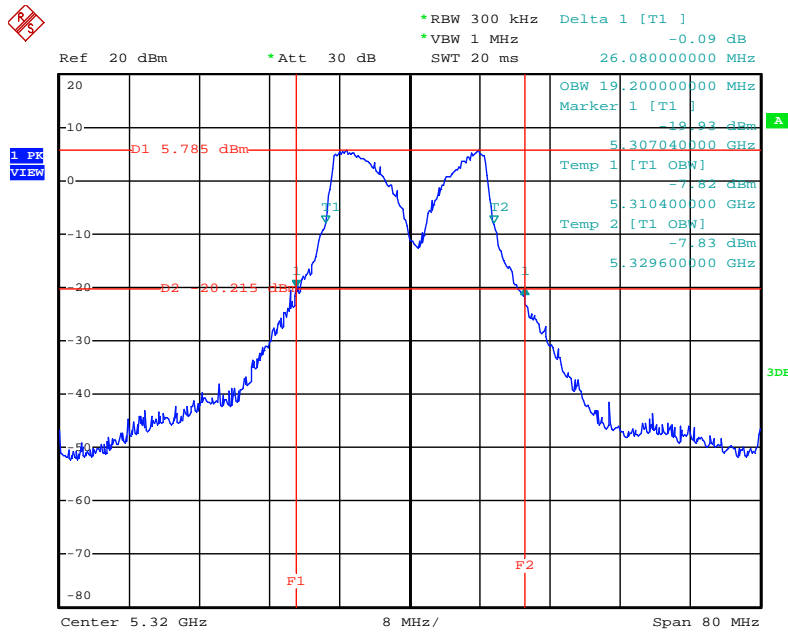
Date: 13.FEB.2012 17:40:54

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5300 MHz / Mode 3 (2TX, 2RX)**



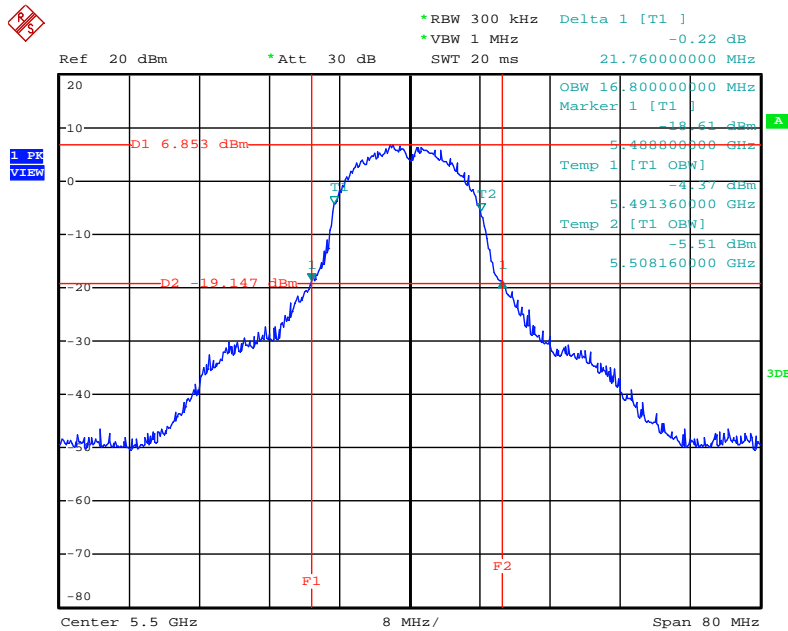
Date: 13.FEB.2012 17:40:36

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5320 MHz / Mode 3 (2TX, 2RX)**



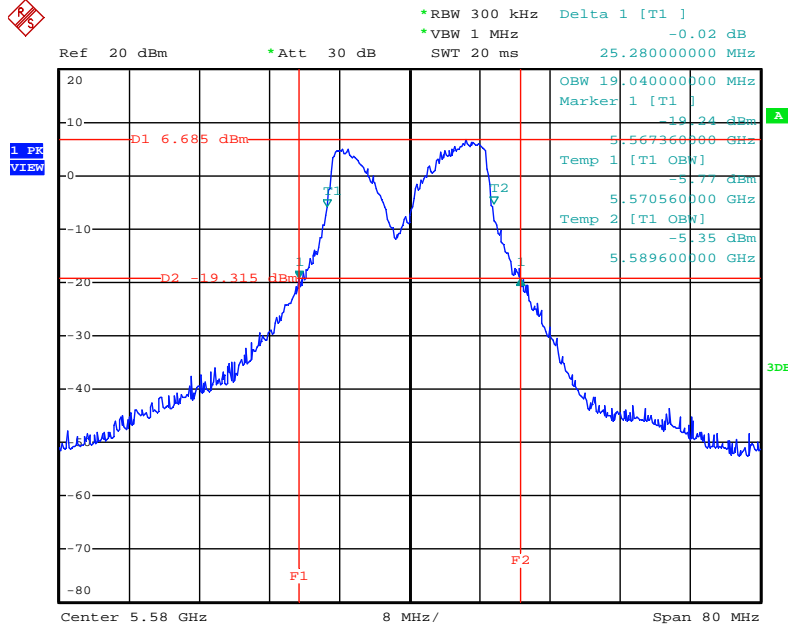
Date: 13.FEB.2012 17:40:19

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5500 MHz / Mode 3 (2TX, 2RX)**



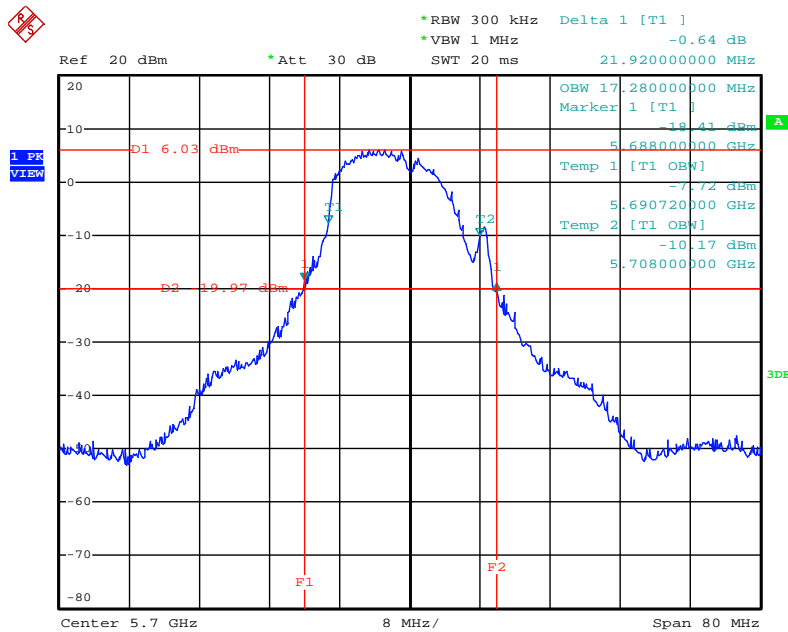
Date: 13.FEB.2012 17:40:00

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5580 MHz / Mode 3 (2TX, 2RX)**



Date: 13.FEB.2012 17:39:39

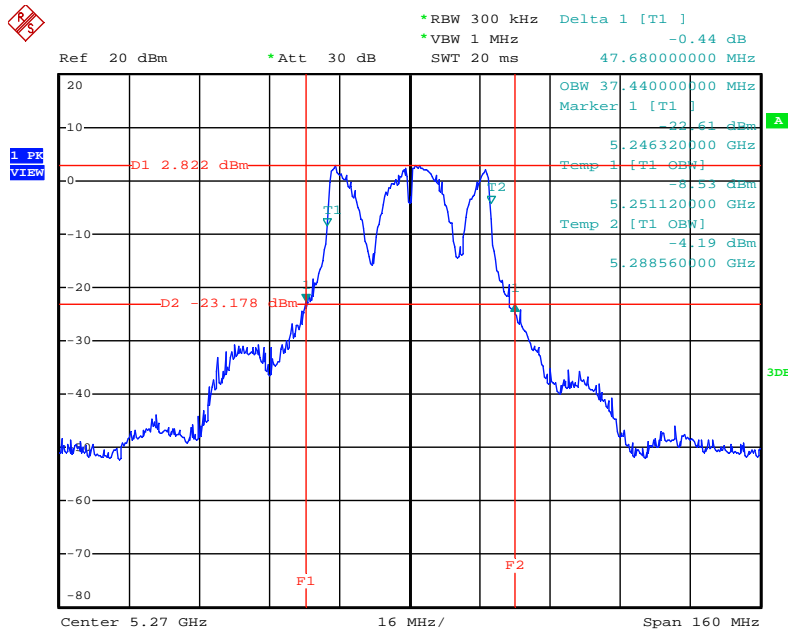
**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5700 MHz / Mode 3 (2TX, 2RX)**



Date: 13.FEB.2012 17:39:20

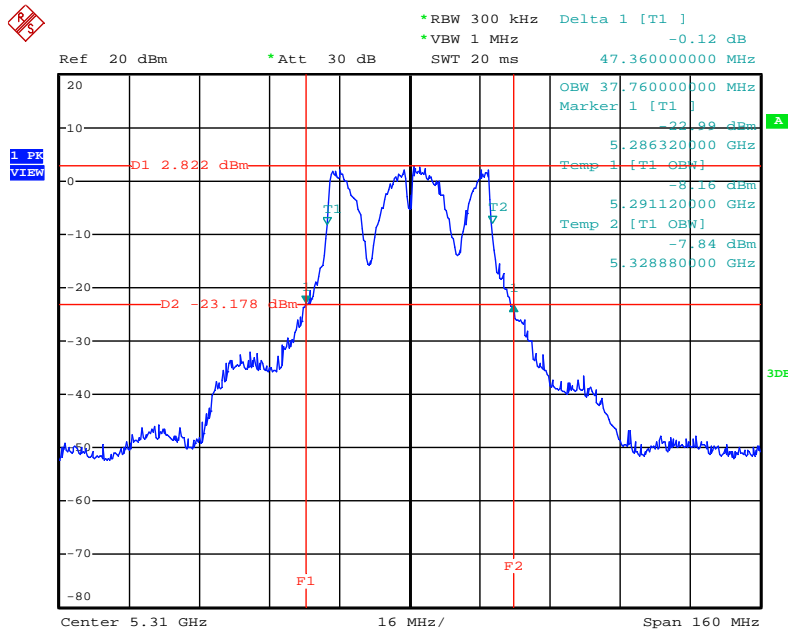


**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5270 MHz / Mode 3 (2TX, 2RX)**



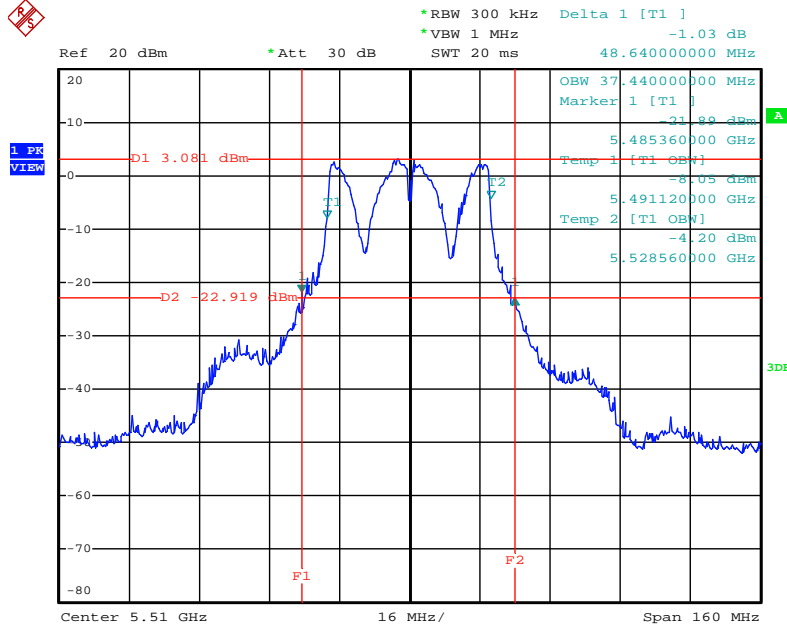
Date: 13.FEB.2012 17:41:30

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5310 MHz / Mode 3 (2TX, 2RX)**



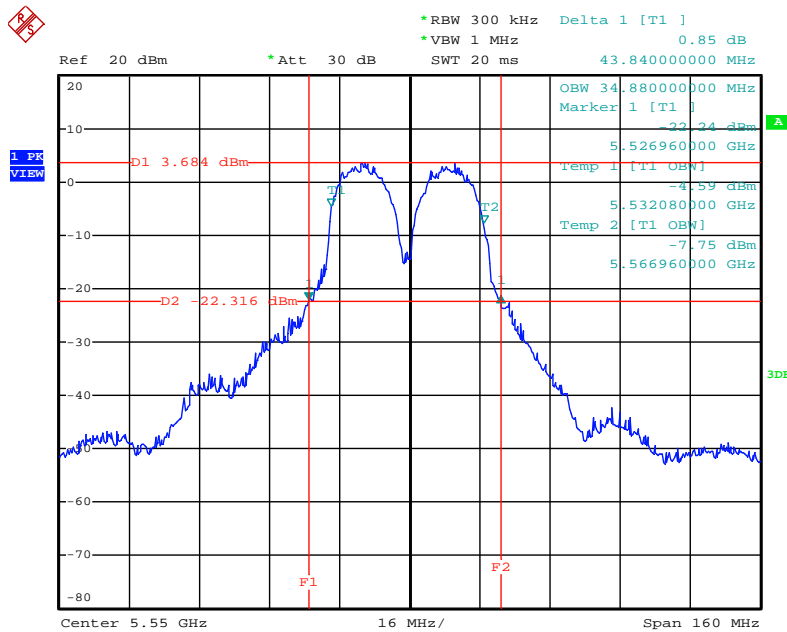
Date: 13.FEB.2012 17:42:26

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5510MHz / Mode 3 (2TX, 2RX)**



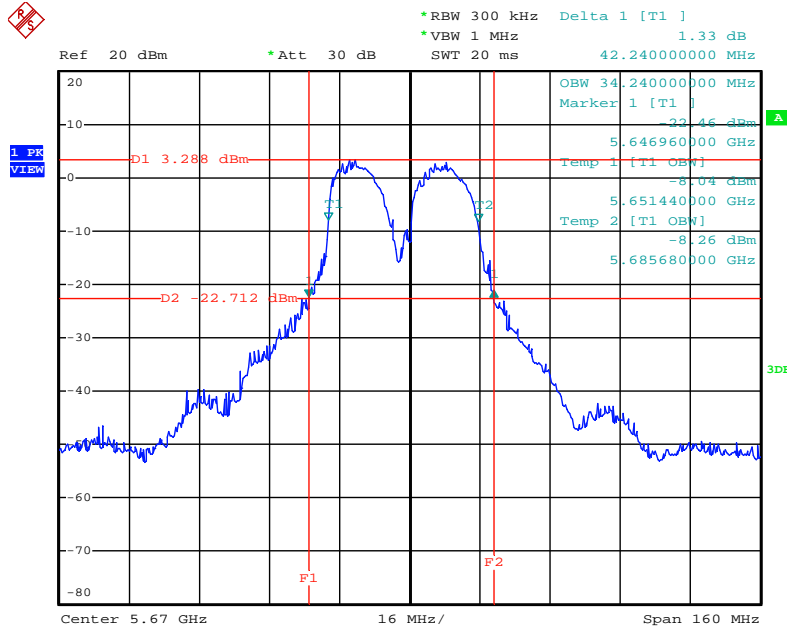
Date: 13.FEB.2012 17:42:51

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5550 MHz / Mode 3 (2TX, 2RX)**



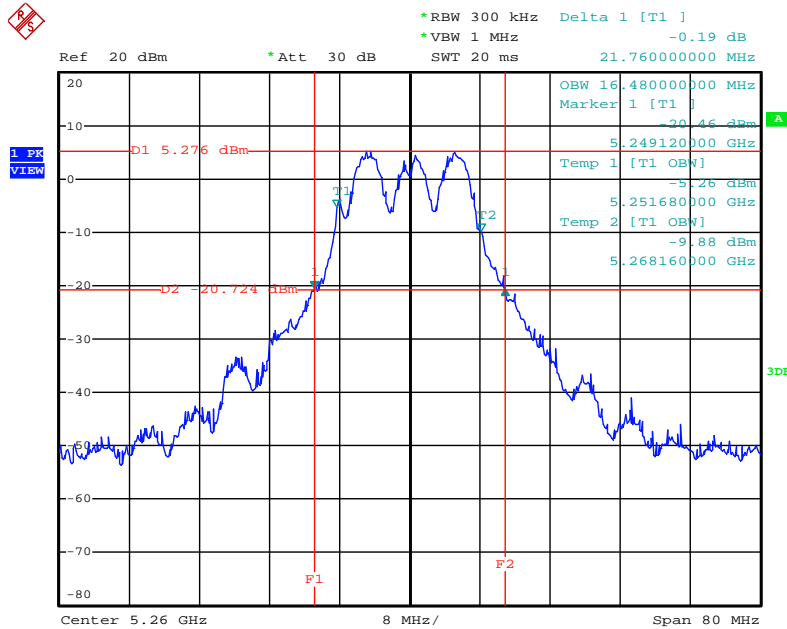
Date: 13.FEB.2012 17:43:09

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5670 MHz / Mode 3 (2TX, 2RX)**



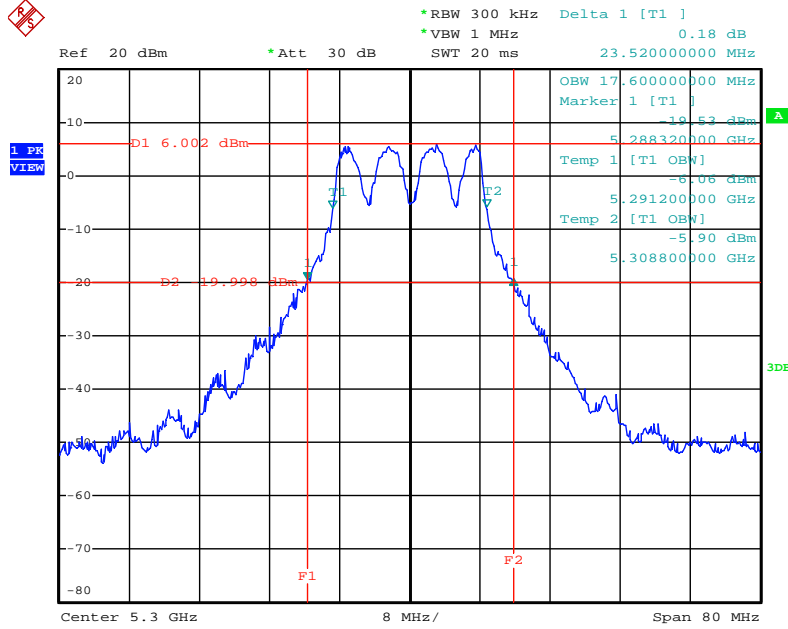
Date: 13.FEB.2012 17:43:24

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5260 MHz / Mode 3 (2TX, 2RX)**



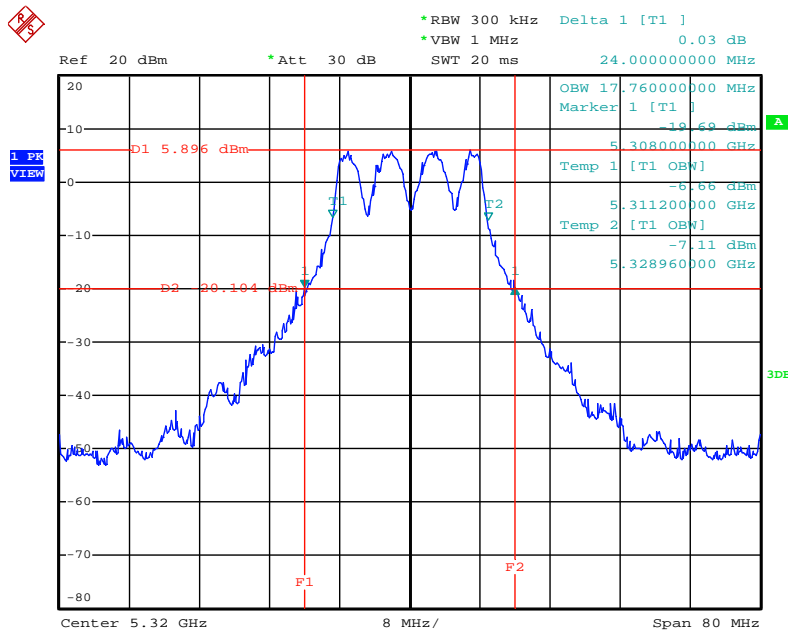
Date: 13.FEB.2012 17:36:51

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5300 MHz / Mode 3 (2TX, 2RX)**



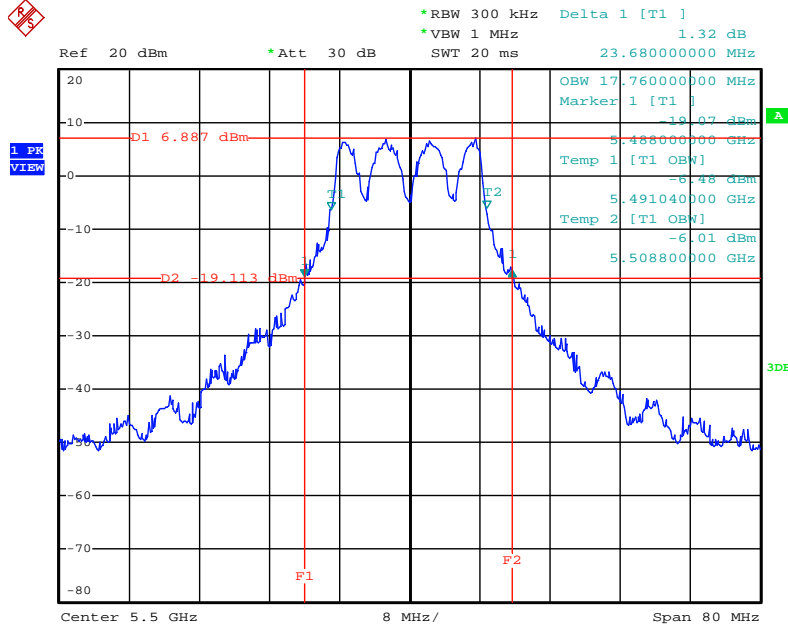
Date: 13.FEB.2012 17:37:29

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5320 MHz / Mode 3 (2TX, 2RX)**



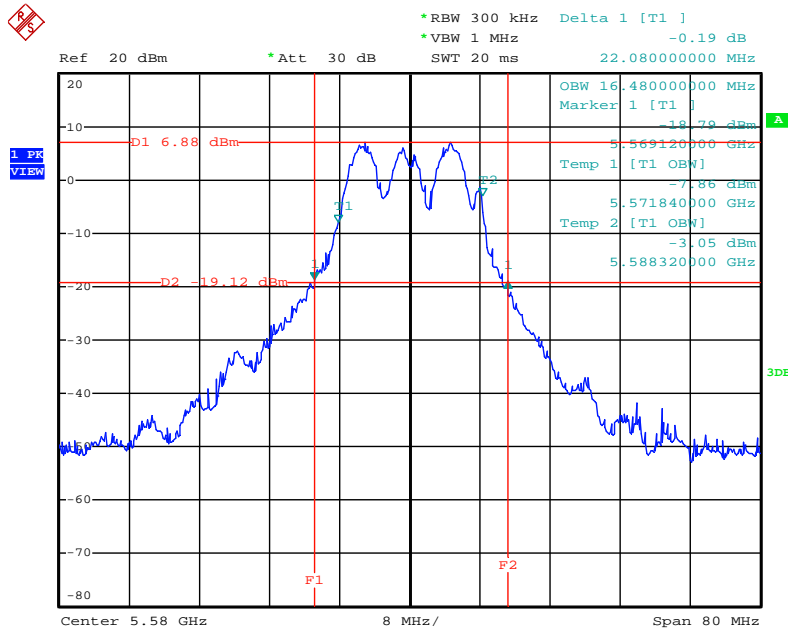
Date: 13.FEB.2012 17:37:50

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5500 MHz / Mode 3 (2TX, 2RX)**



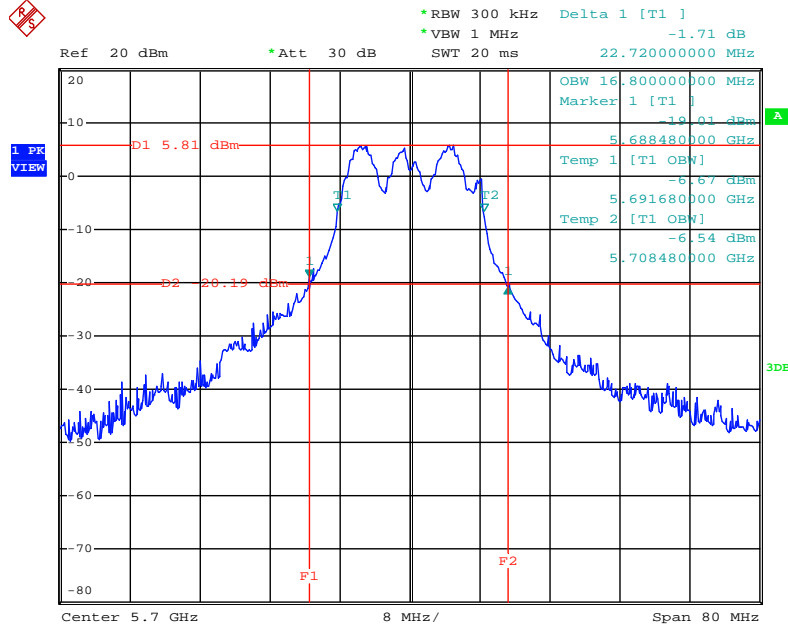
Date: 13.FEB.2012 17:38:10

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5580 MHz / Mode 3 (2TX, 2RX)**



Date: 13.FEB.2012 17:38:28

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5700 MHz / Mode 3 (2TX, 2RX)



Date: 10.JAN.2012 14:23:34

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Satoshi Yang	<b>Configurations</b>	IEEE 802.11n / Mode 6

**Configuration IEEE 802.11n MCS0 20MHz / Chain 1 (1TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	26.40	18.56
60	5300 MHz	25.44	18.56
64	5320 MHz	25.28	18.40
100	5500 MHz	24.48	18.24
116	5580 MHz	25.76	18.56
140	5700 MHz	26.08	18.56

**Configuration IEEE 802.11n MCS0 40MHz / Chain 1 (1TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	48.96	36.80
62	5310 MHz	47.04	36.80
102	5510MHz	50.56	37.12
110	5550 MHz	47.68	37.12
134	5670 MHz	47.04	37.12

**Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 (2TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	22.40	16.32
60	5300 MHz	21.28	15.84
64	5320 MHz	24.32	18.88
100	5500 MHz	24.16	19.04
116	5580 MHz	24.96	19.20
140	5700 MHz	21.92	16.64

**Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 (2TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	46.72	37.12
62	5310 MHz	45.76	37.12
102	5510MHz	36.08	37.44
110	5550 MHz	44.16	35.52
134	5670 MHz	47.36	37.12

**Configuration IEEE 802.11n MCS8 20MHz / Port 1 + Port 2 (2TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	24.96	18.08
60	5300 MHz	24.16	18.24
64	5320 MHz	24.00	18.24
100	5500 MHz	23.36	18.24
116	5580 MHz	25.28	18.24
140	5700 MHz	24.32	18.08

**Configuration IEEE 802.11n MCS8 40MHz / Port 1 + Port 2 (2TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	46.40	36.80
62	5310 MHz	47.36	36.80
102	5510MHz	48.00	36.80
110	5550 MHz	46.08	36.80
134	5670 MHz	47.36	36.48



<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Satoshi Yang	<b>Configurations</b>	IEEE 802.11a / Mode 6

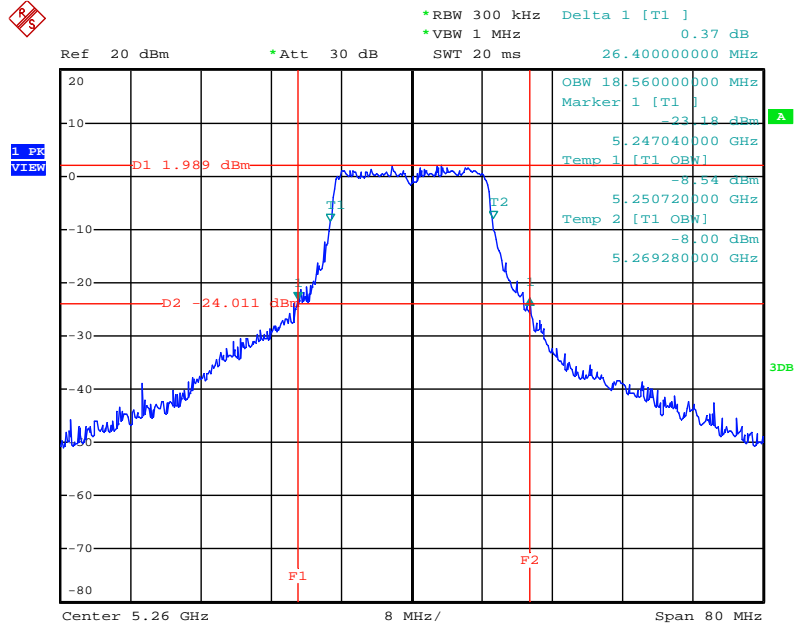
**Configuration IEEE 802.11a / Chain 1 (1TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	25.28	17.44
60	5300 MHz	23.84	17.44
64	5320 MHz	24.80	17.28
100	5500 MHz	24.64	17.44
116	5580 MHz	24.48	17.28
140	5700 MHz	24.64	17.44

**Configuration IEEE 802.11a / Chain 1+ Chain 2 (2TX, 2RX)**

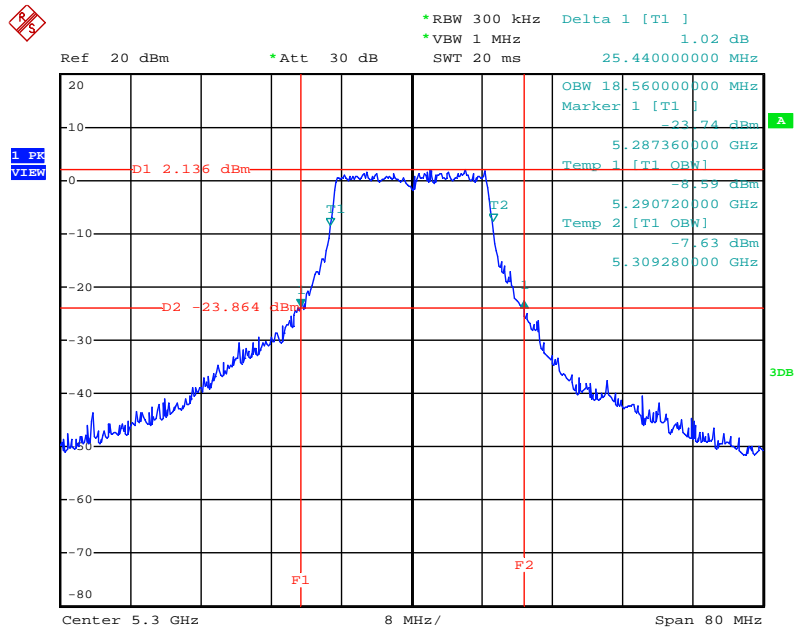
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	21.12	16.48
60	5300 MHz	21.28	16.32
64	5320 MHz	23.04	17.44
100	5500 MHz	21.76	16.32
116	5580 MHz	20.96	16.48
140	5700 MHz	23.36	17.60

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5260 MHz / Mode 6 (1TX, 2RX)**



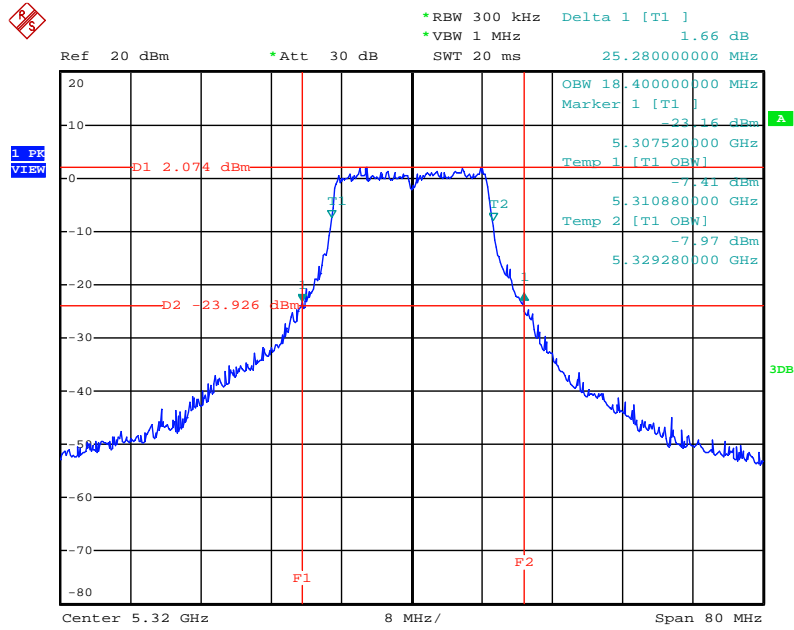
Date: 10.FEB.2012 17:48:26

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5300 MHz / Mode 6 (1TX, 2RX)**



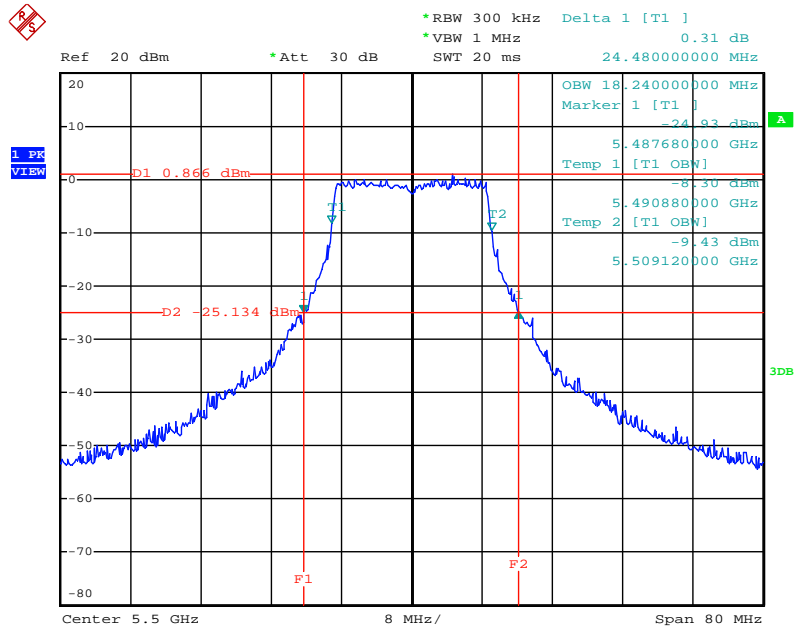
Date: 10.FEB.2012 17:46:52

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5320 MHz / Mode 6 (1TX, 2RX)**



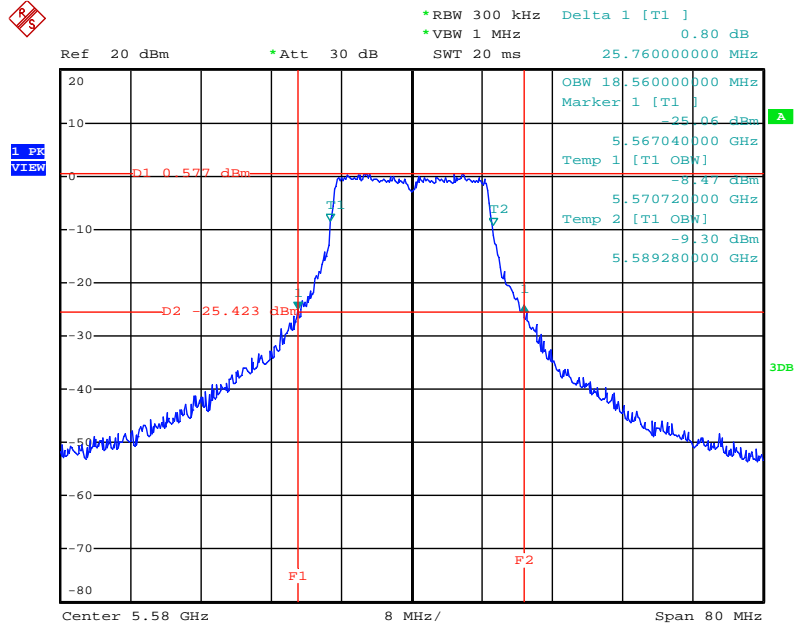
Date: 10.FEB.2012 17:46:14

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5500 MHz / Mode 6 (1TX, 2RX)**



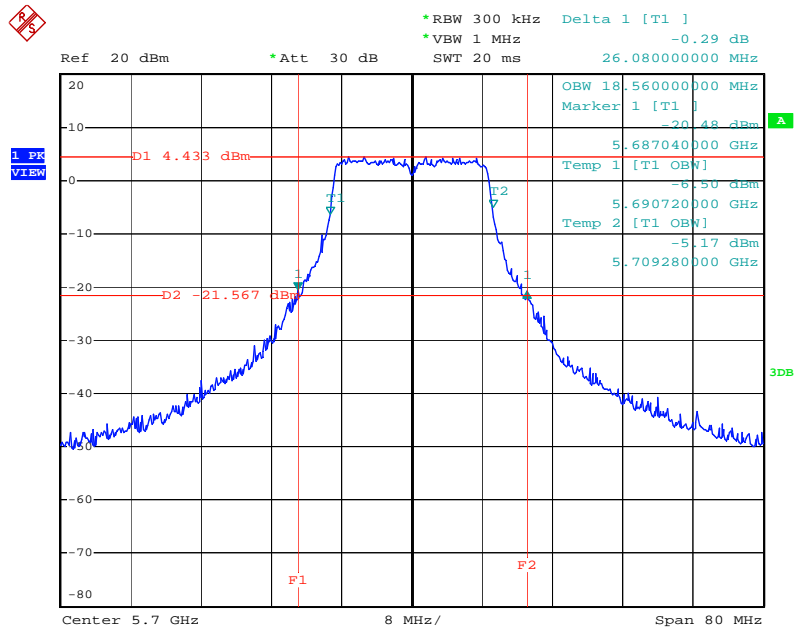
Date: 10.FEB.2012 17:44:08

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5580 MHz / Mode 6 (1TX, 2RX)**



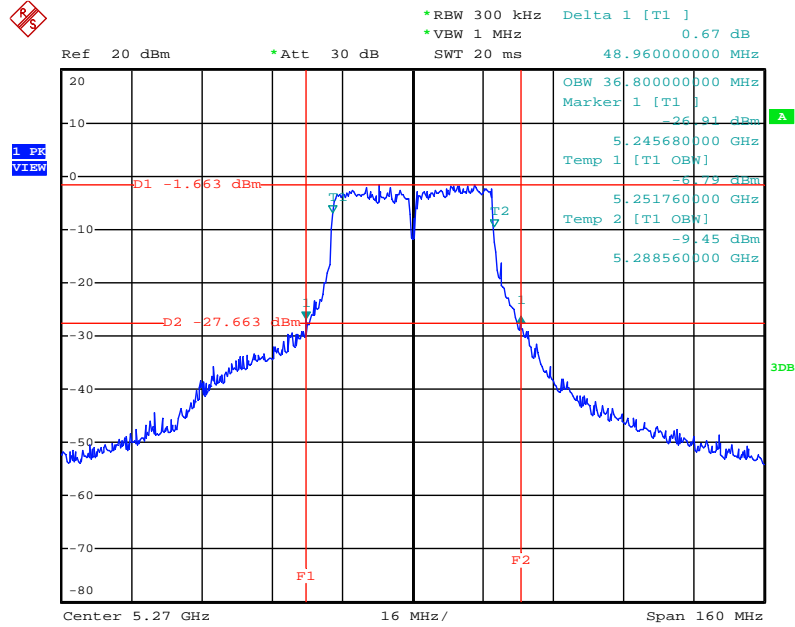
Date: 10.FEB.2012 17:43:10

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5700 MHz / Mode 6 (1TX, 2RX)**



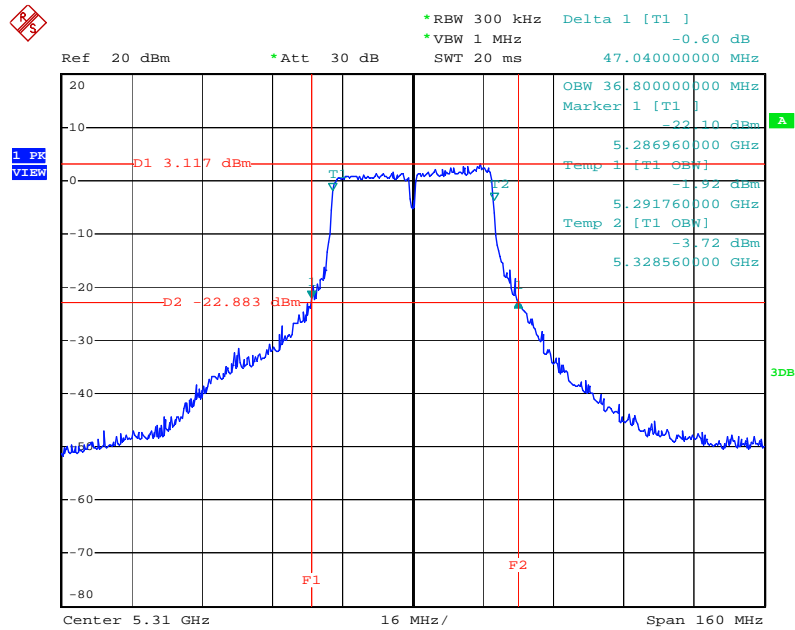
Date: 15.DEC.2011 17:47:15

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5270 MHz / Mode 6 (1TX, 2RX)**



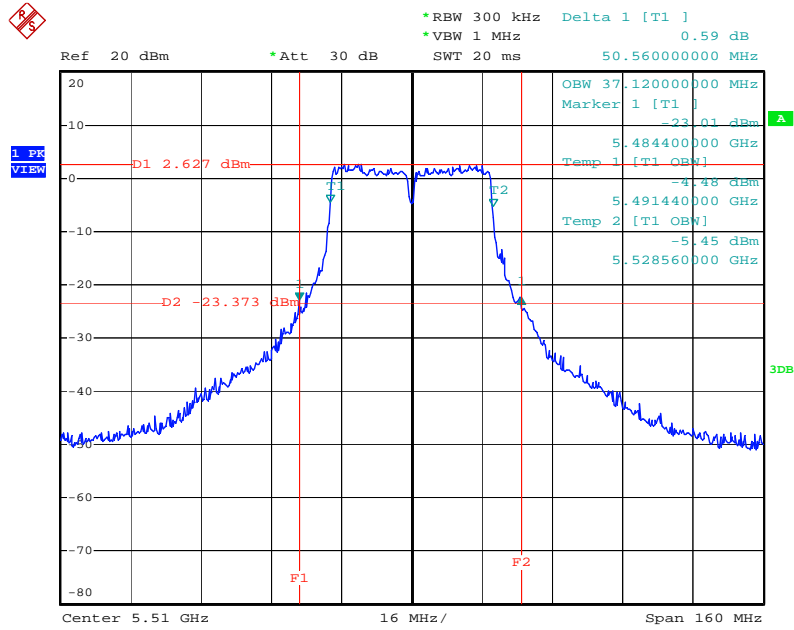
Date: 10.FEB.2012 17:49:18

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5310 MHz / Mode 6 (1TX, 2RX)**



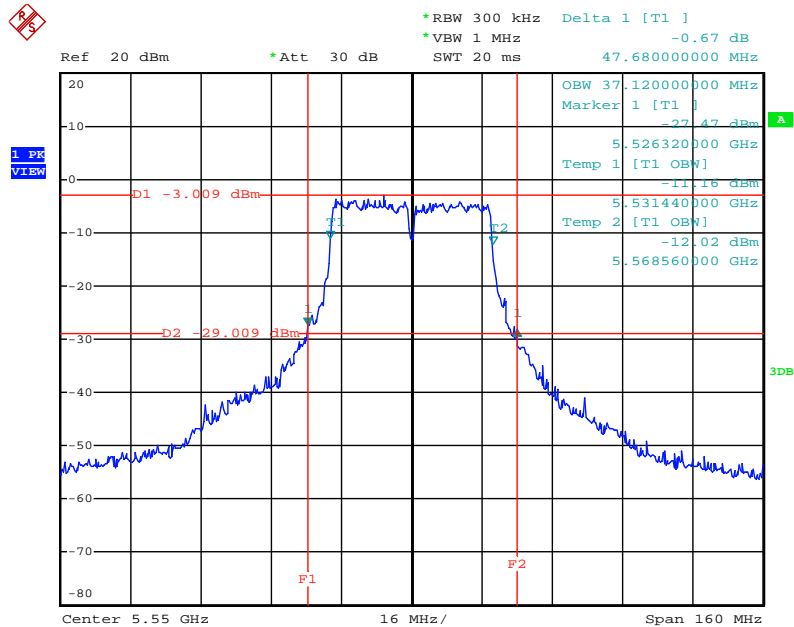
Date: 15.DEC.2011 17:44:17

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5510MHz / Mode 6 (1TX, 2RX)**



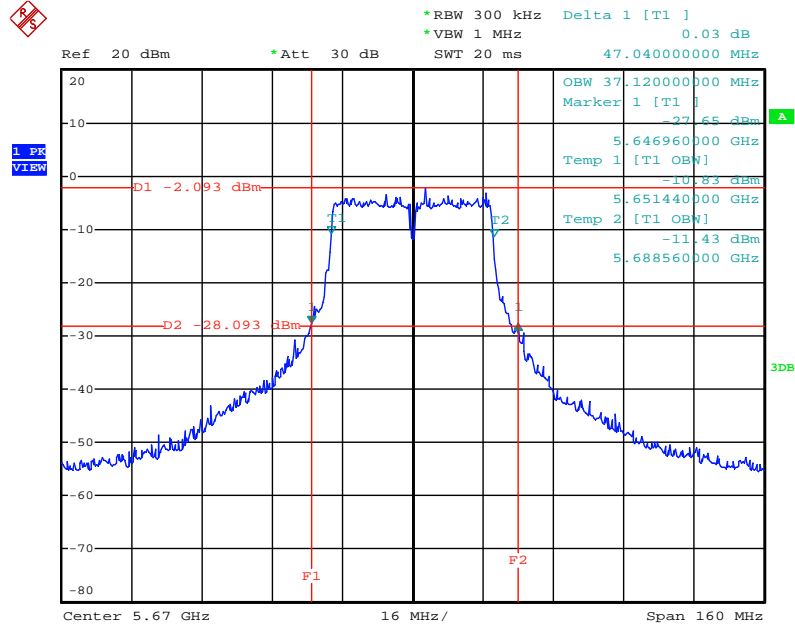
Date: 15.DEC.2011 17:44:47

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5550 MHz / Mode 6 (1TX, 2RX)**



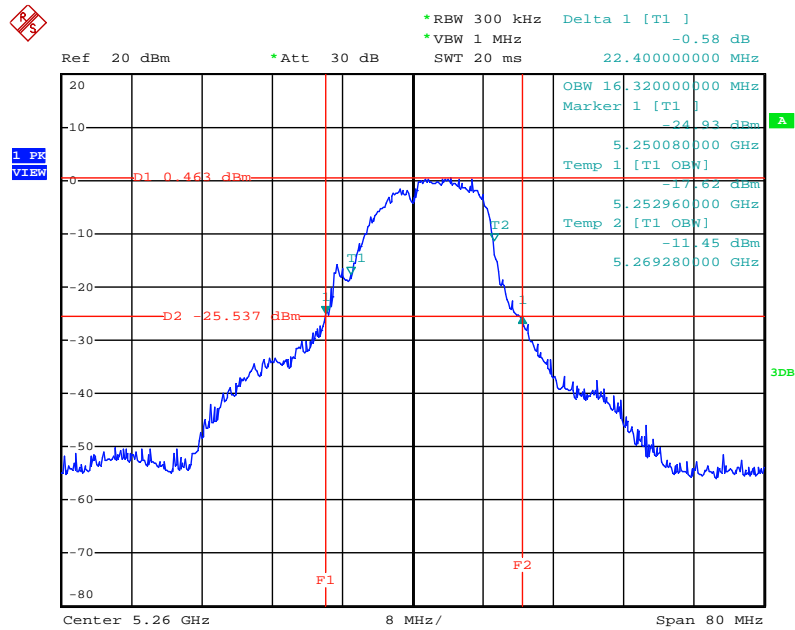
Date: 10.FEB.2012 17:50:04

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5670 MHz / Mode 6 (1TX, 2RX)**



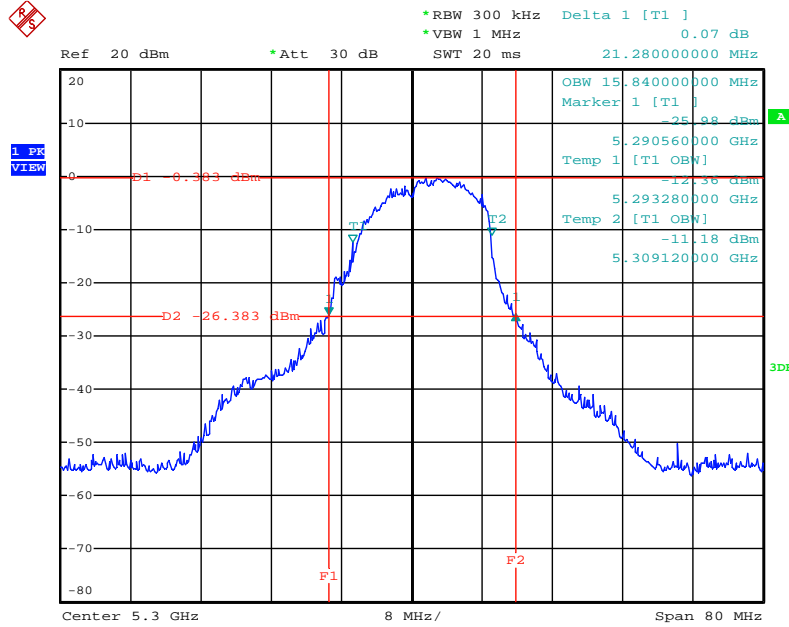
Date: 10.FEB.2012 17:50:34

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5260 MHz / Mode 6 (2TX, 2RX)**



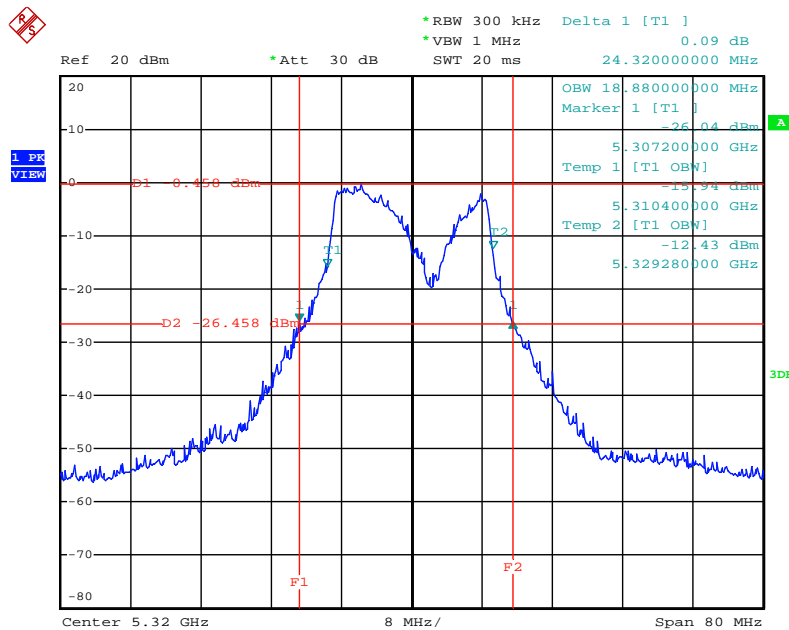
Date: 10.FEB.2012 14:42:23

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5300 MHz / Mode 6 (2TX, 2RX)**



Date: 10.FEB.2012 14:43:12

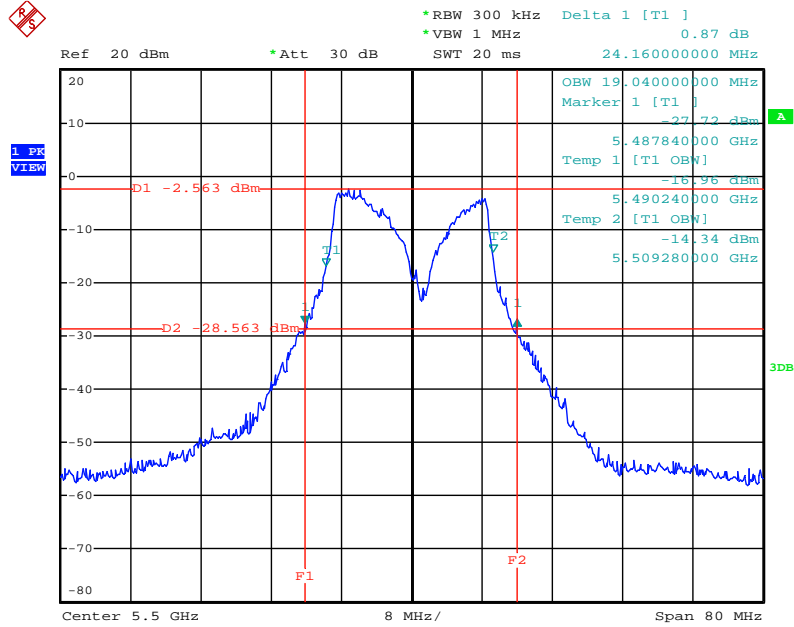
**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5320 MHz / Mode 6 (2TX, 2RX)**



Date: 10.FEB.2012 14:43:50

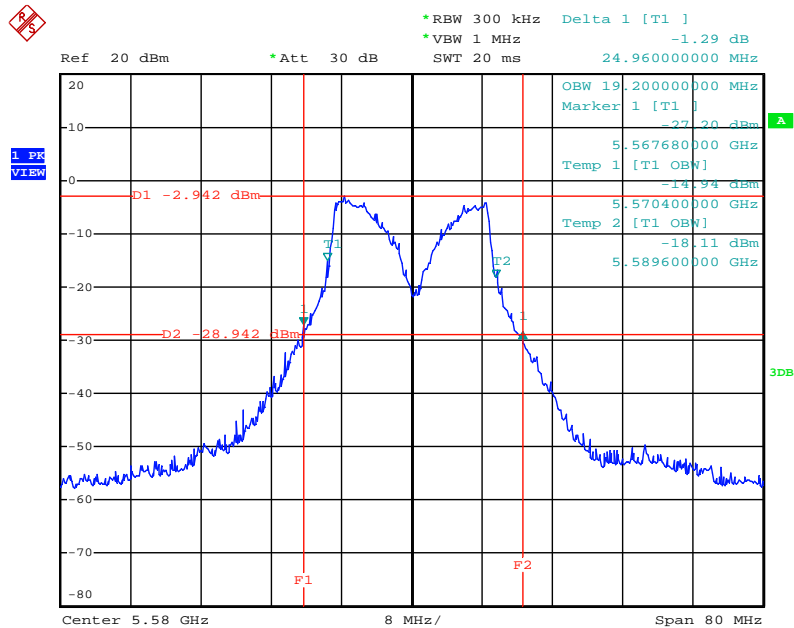


**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5500 MHz / Mode 6 (2TX, 2RX)**



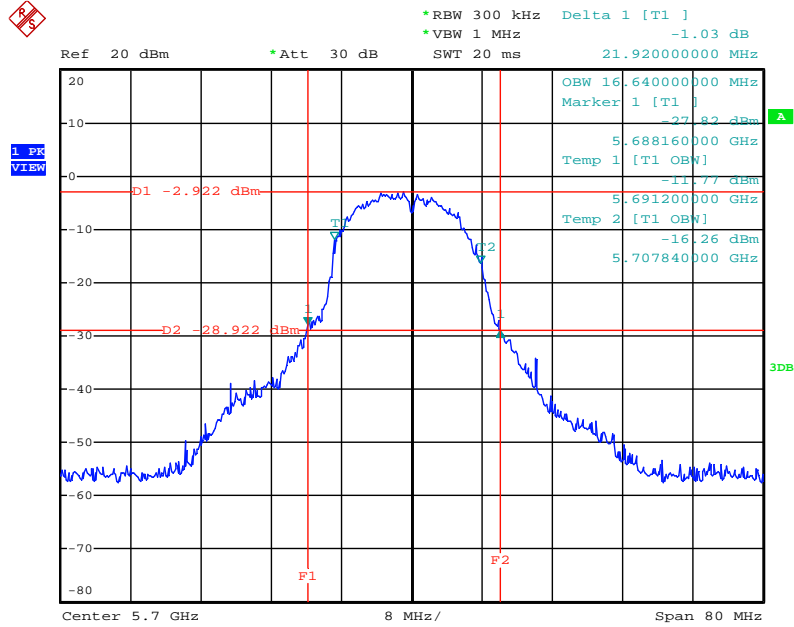
Date: 10.FEB.2012 14:45:58

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5580 MHz / Mode 6 (2TX, 2RX)**



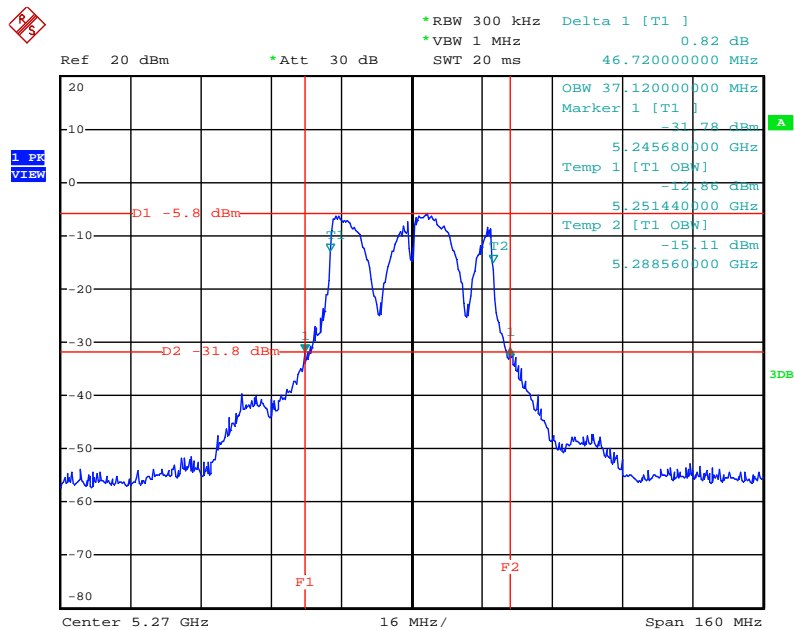
Date: 10.FEB.2012 14:46:31

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5700 MHz / Mode 6 (2TX, 2RX)**



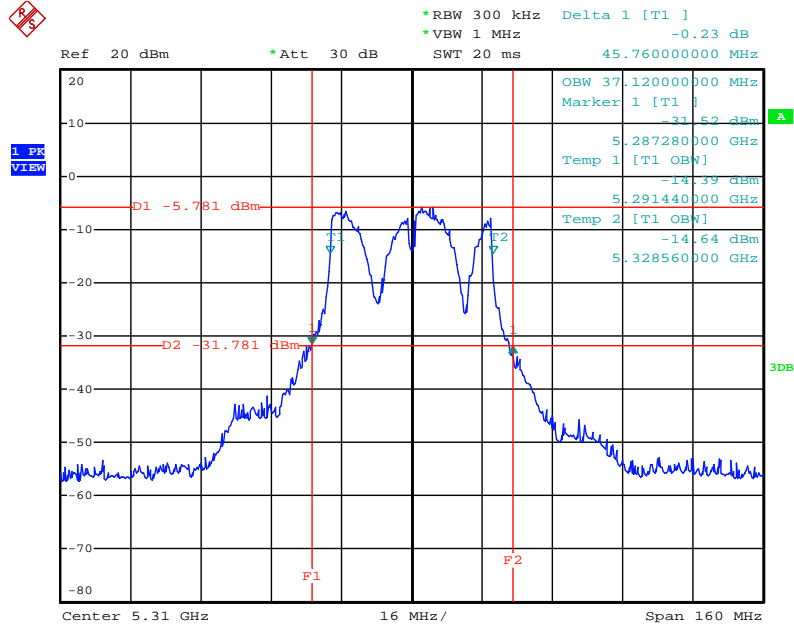
Date: 10.FEB.2012 14:47:06

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5270 MHz / Mode 6 (2TX, 2RX)**



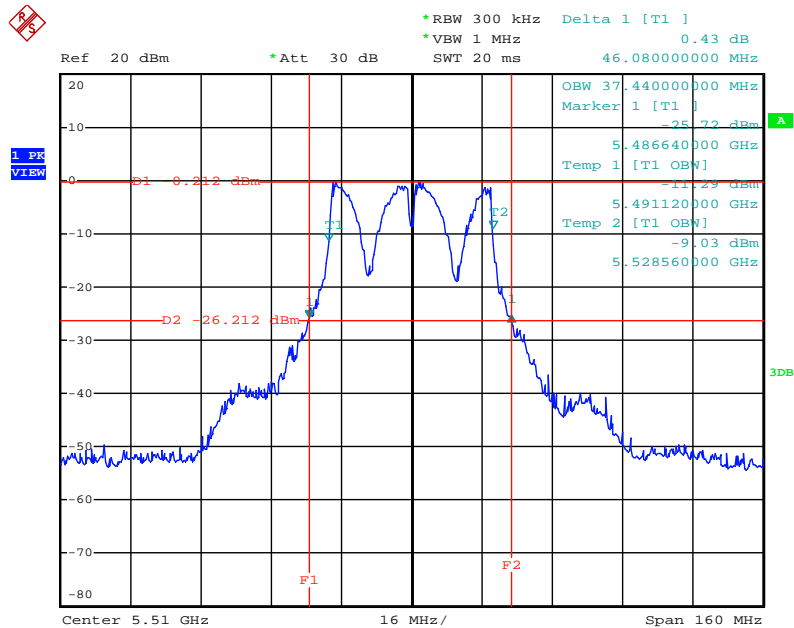
Date: 10.FEB.2012 14:51:30

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5310 MHz / Mode 6 (2TX, 2RX)**



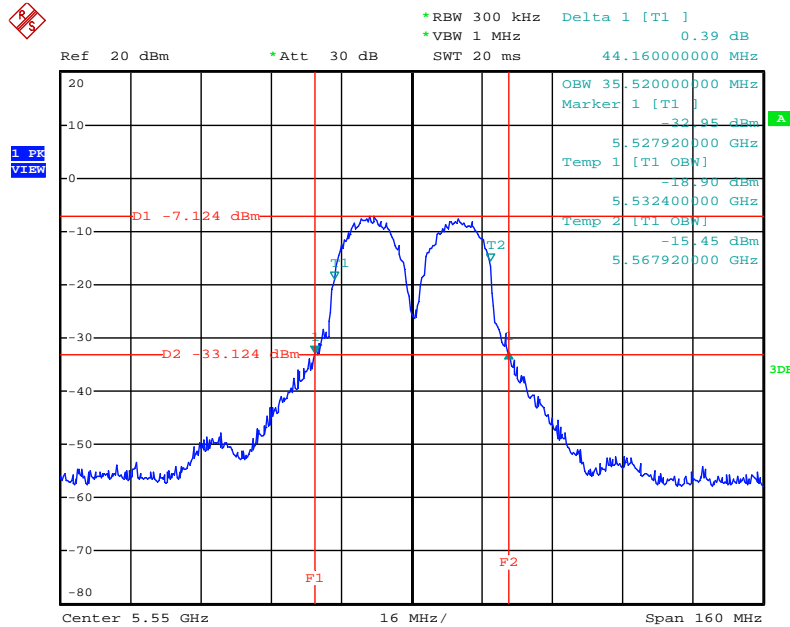
Date: 10.FEB.2012 14:50:05

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5510MHz / Mode 6 (2TX, 2RX)**



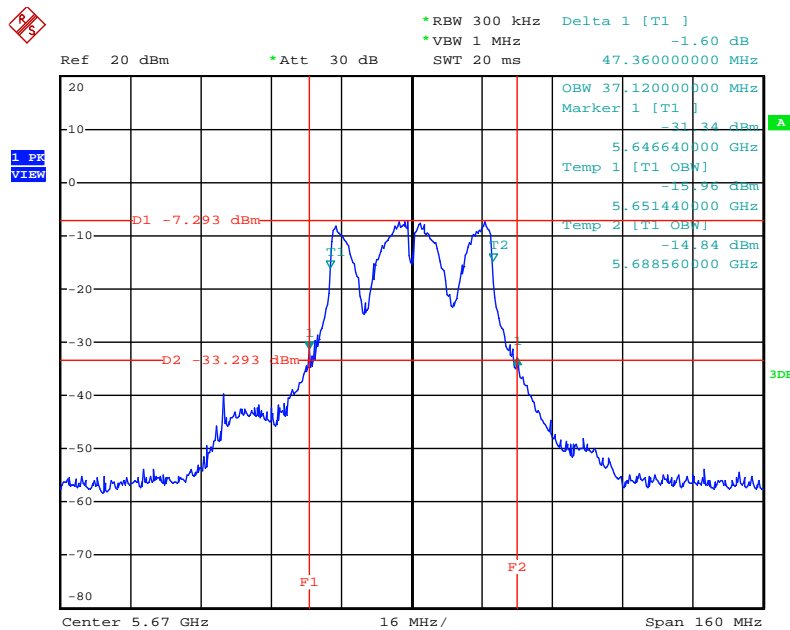
Date: 1.FEB.2012 16:52:38

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5550 MHz / Mode 6 (2TX, 2RX)**



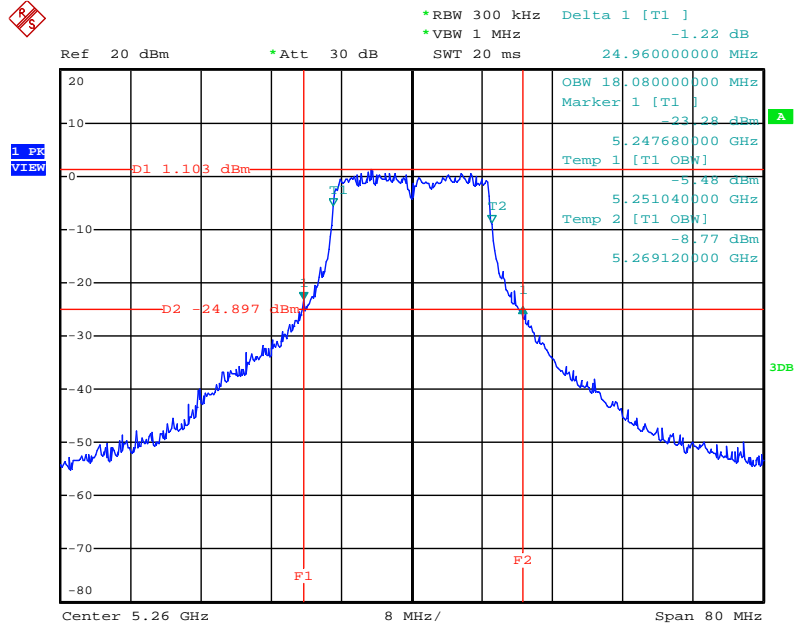
Date: 10.FEB.2012 14:49:11

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5670 MHz / Mode 6 (2TX, 2RX)**



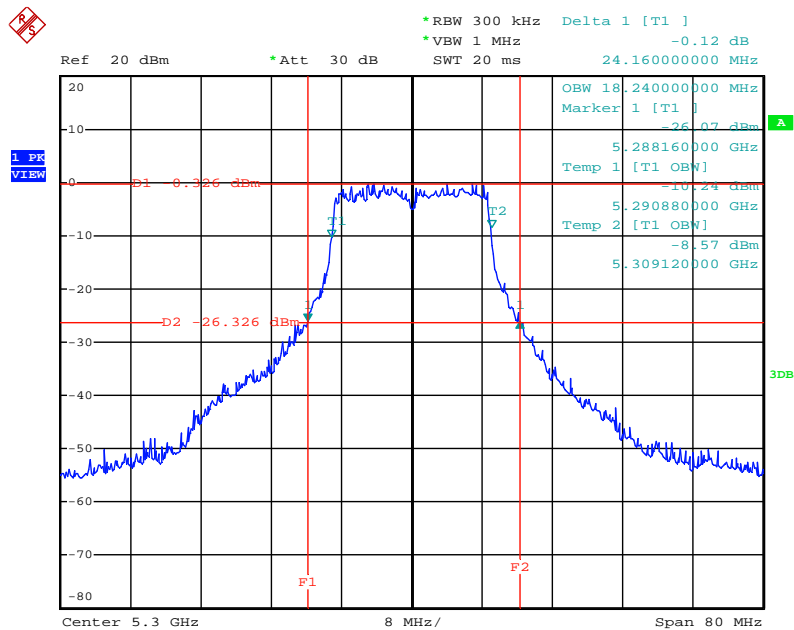
Date: 10.FEB.2012 14:48:23

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Port 1 + Port 2 / 5260 MHz / Mode 6 (2TX, 2RX)**



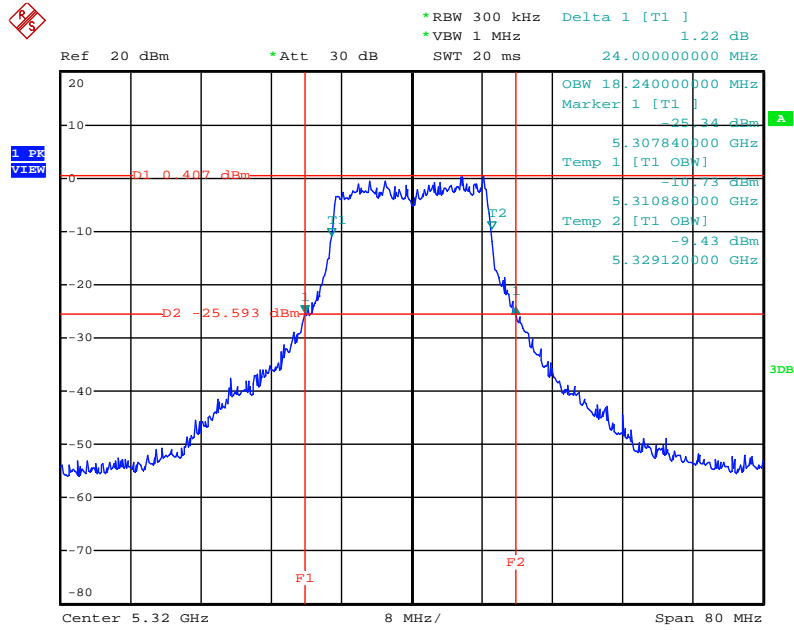
Date: 10.FEB.2012 15:13:34

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Port 1 + Port 2 / 5300 MHz / Mode 6 (2TX, 2RX)**



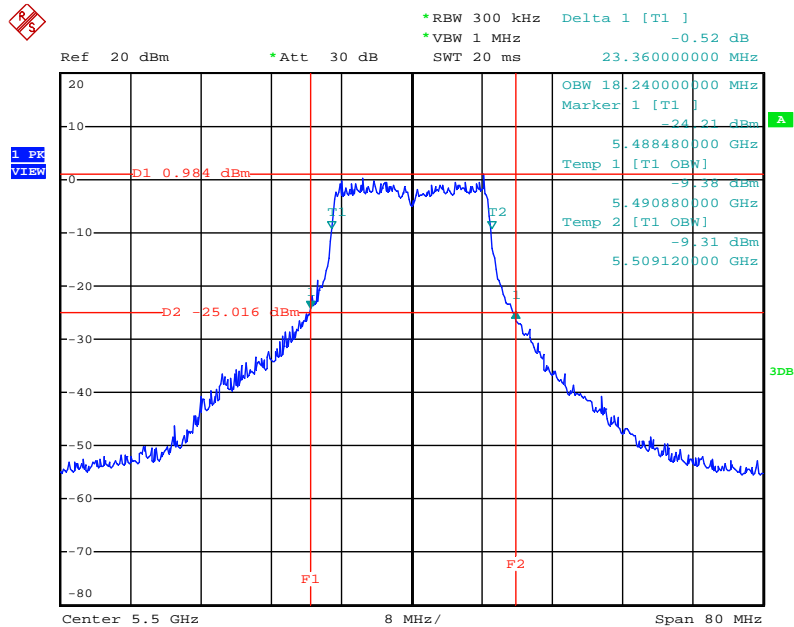
Date: 10.FEB.2012 15:14:38

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Port 1 + Port 2 / 5320 MHz / Mode 6 (2TX, 2RX)



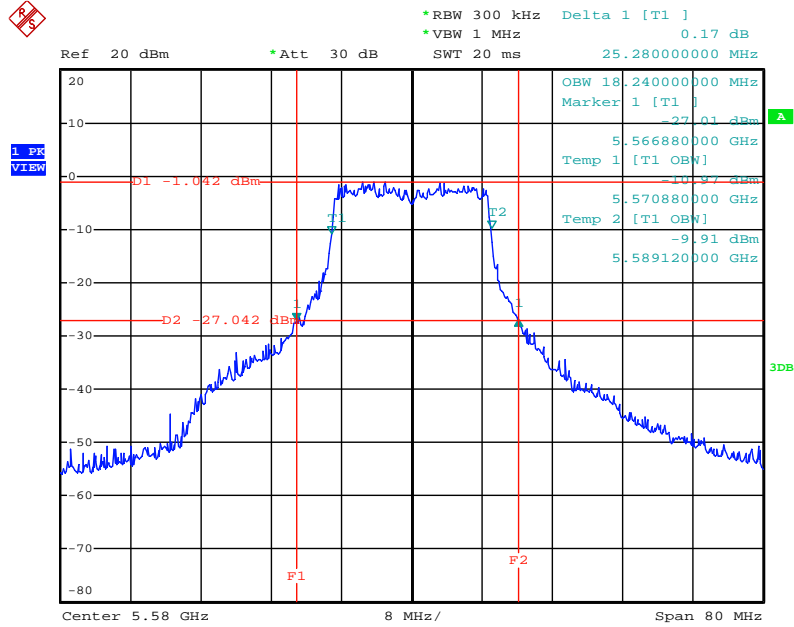
Date: 10.FEB.2012 15:15:42

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Port 1 + Port 2 / 5500 MHz / Mode 6 (2TX, 2RX)



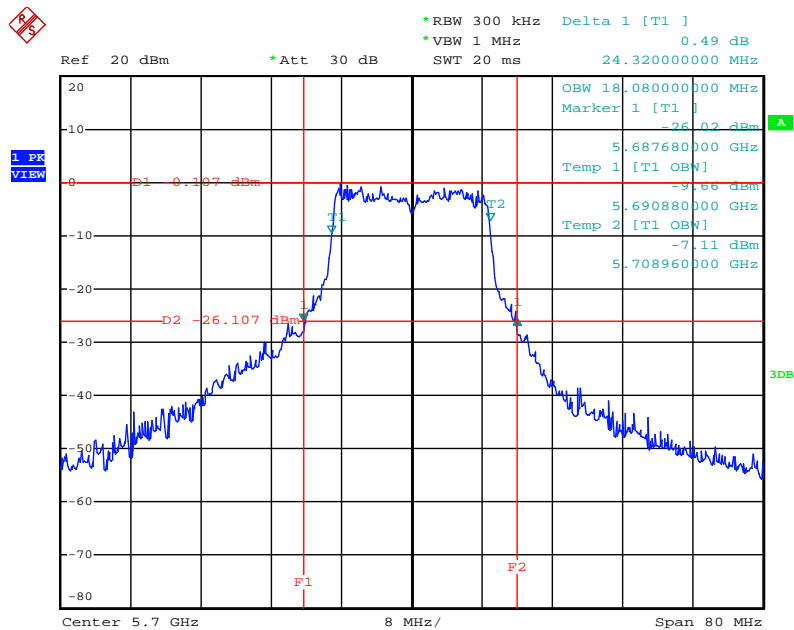
Date: 10.FEB.2012 17:23:59

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Port 1 + Port 2 / 5580 MHz / Mode 6 (2TX, 2RX)**



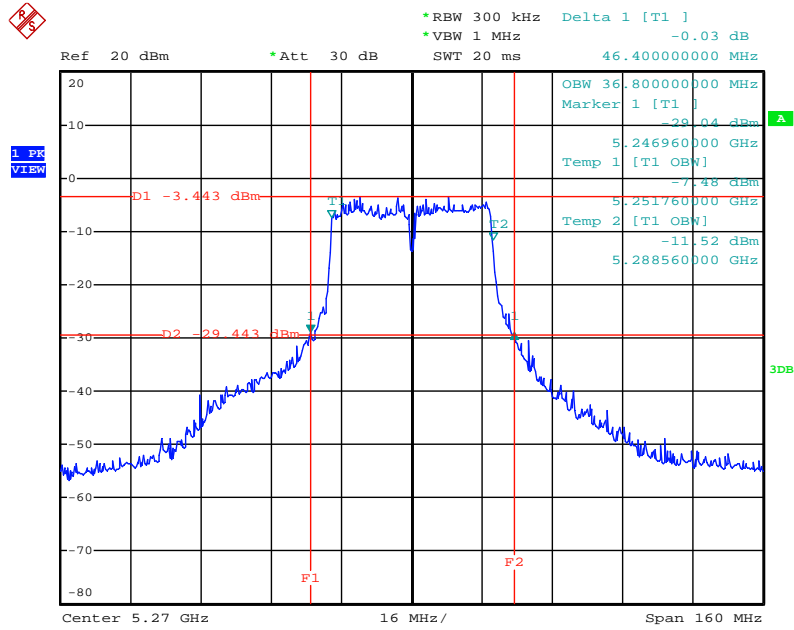
Date: 10.FEB.2012 17:24:48

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Port 1 + Port 2 / 5700 MHz / Mode 6 (2TX, 2RX)**



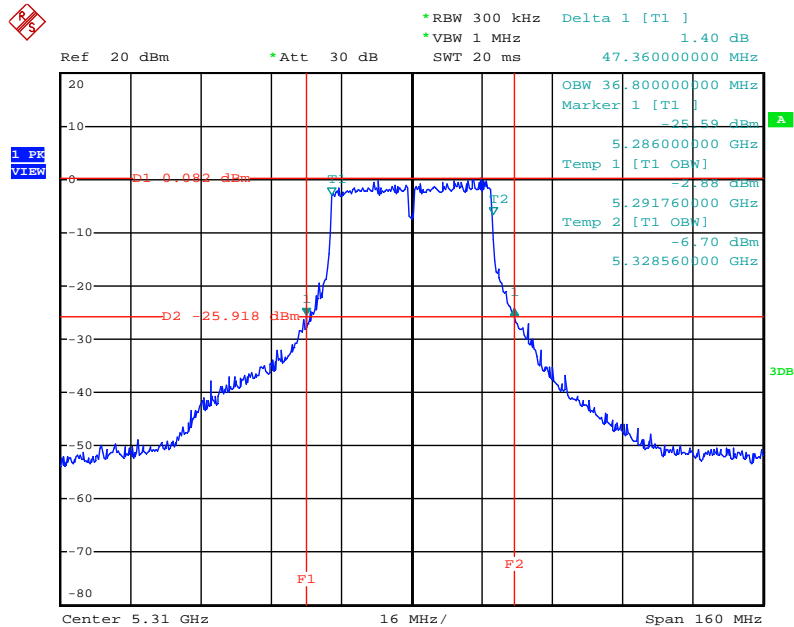
Date: 10.FEB.2012 17:25:21

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Port 1 + Port 2 / 5270 MHz / Mode 6 (2TX, 2RX)**



Date: 10.FEB.2012 17:31:17

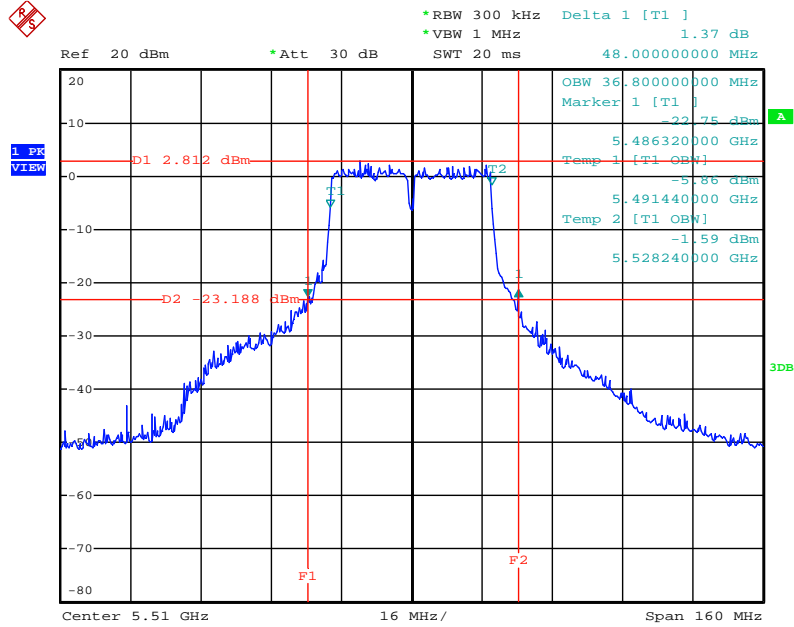
**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Port 1 + Port 2 / 5310 MHz / Mode 6 (2TX, 2RX)**



Date: 16.DEC.2011 15:48:00

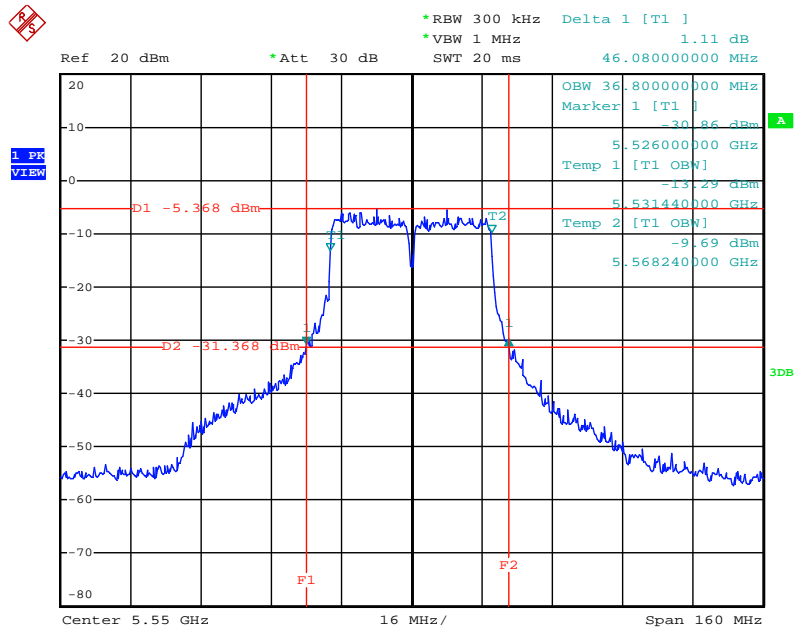


**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Port 1 + Port 2 / 5510MHz / Mode 6 (2TX, 2RX)**



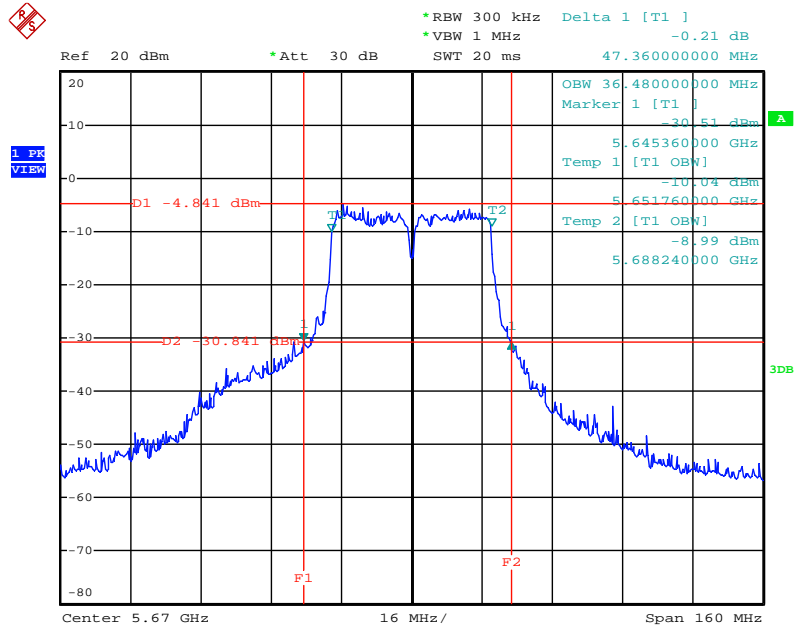
Date: 16.DEC.2011 15:48:22

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Port 1 + Port 2 / 5550 MHz / Mode 6 (2TX, 2RX)**



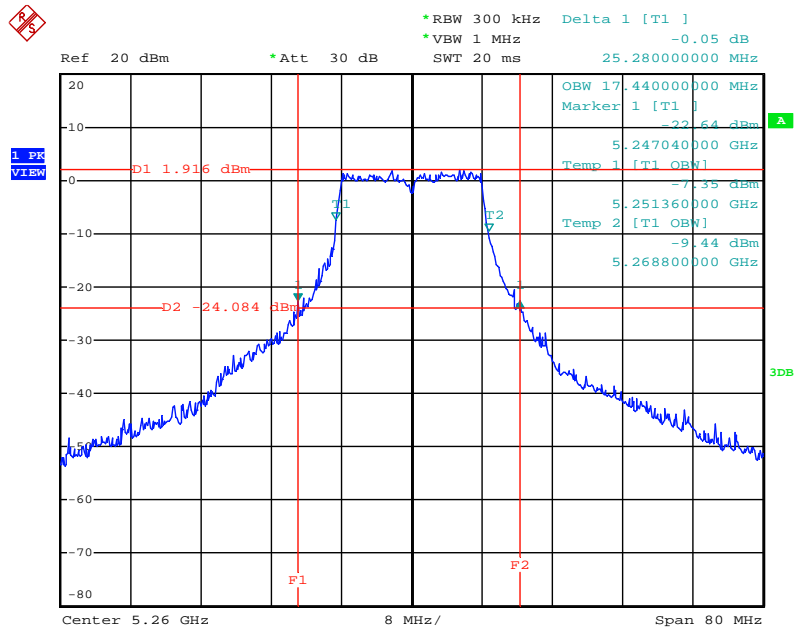
Date: 10.FEB.2012 17:30:34

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Port 1 + Port 2 / 5670 MHz / Mode 6 (2TX, 2RX)**



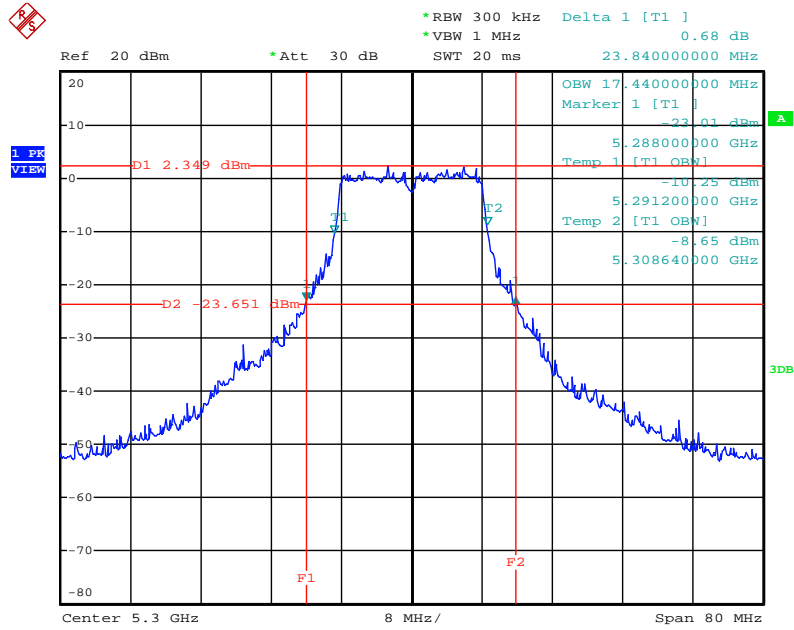
Date: 10.FEB.2012 17:29:25

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5260 MHz / Mode 6 (1TX, 2RX)**



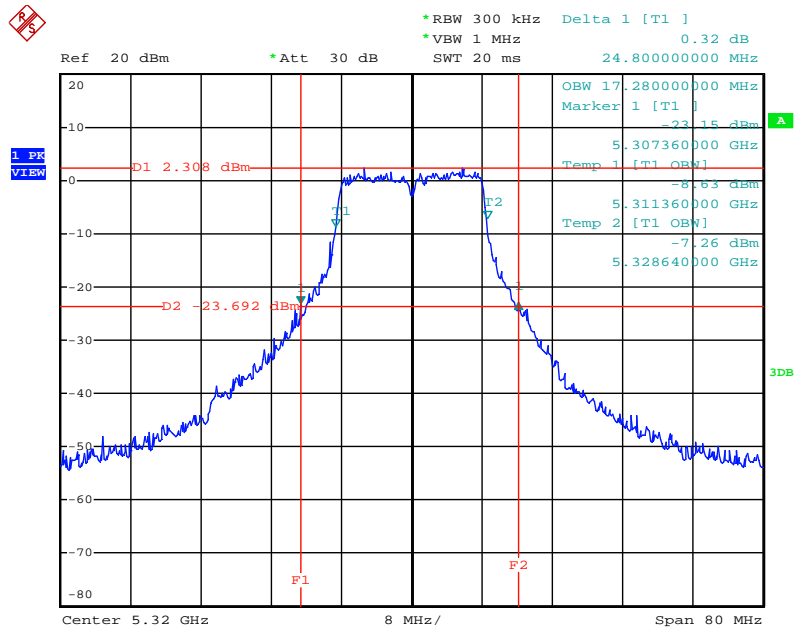
Date: 10.FEB.2012 17:35:42

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5300 MHz / Mode 6 (1TX, 2RX)



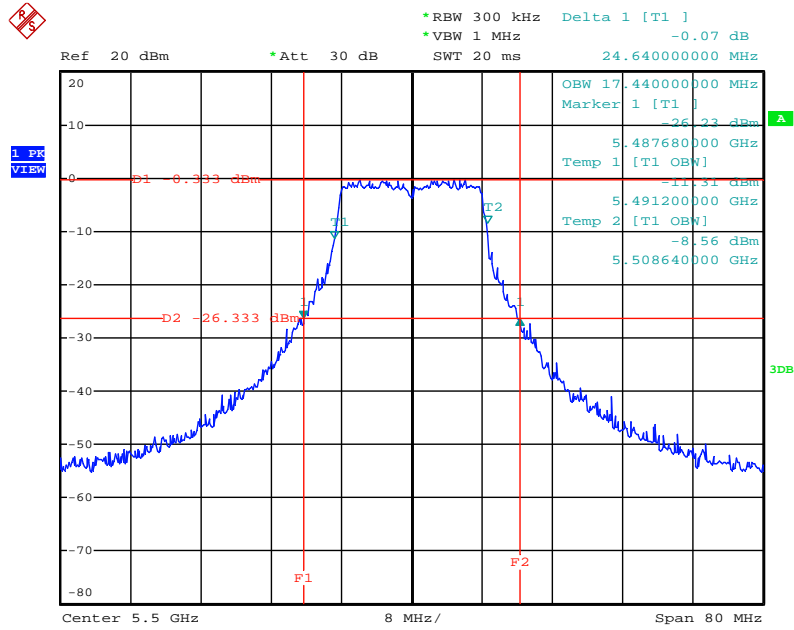
Date: 10.FEB.2012 17:36:27

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5320 MHz / Mode 6 (1TX, 2RX)



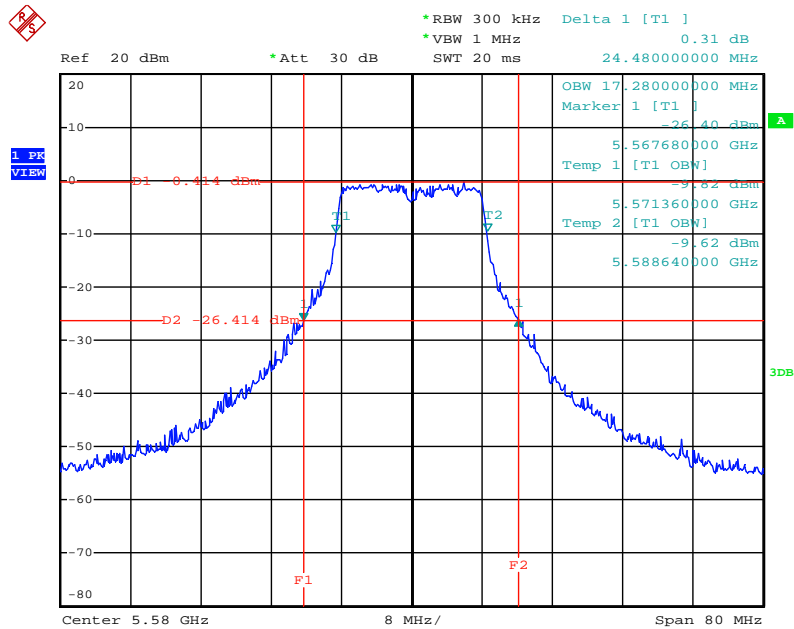
Date: 10.FEB.2012 17:36:54

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5500 MHz / Mode 6 (1TX, 2RX)



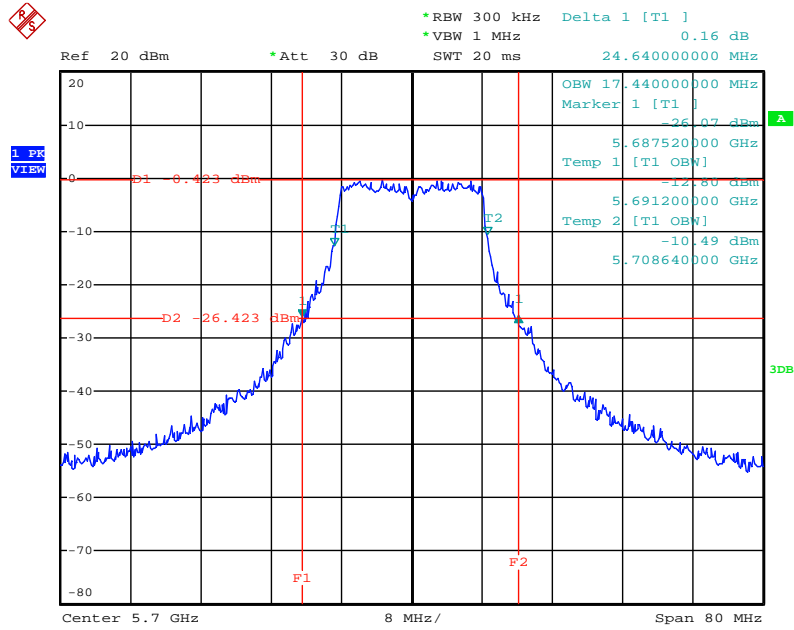
Date: 10.FEB.2012 17:37:43

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5580 MHz / Mode 6 (1TX, 2RX)



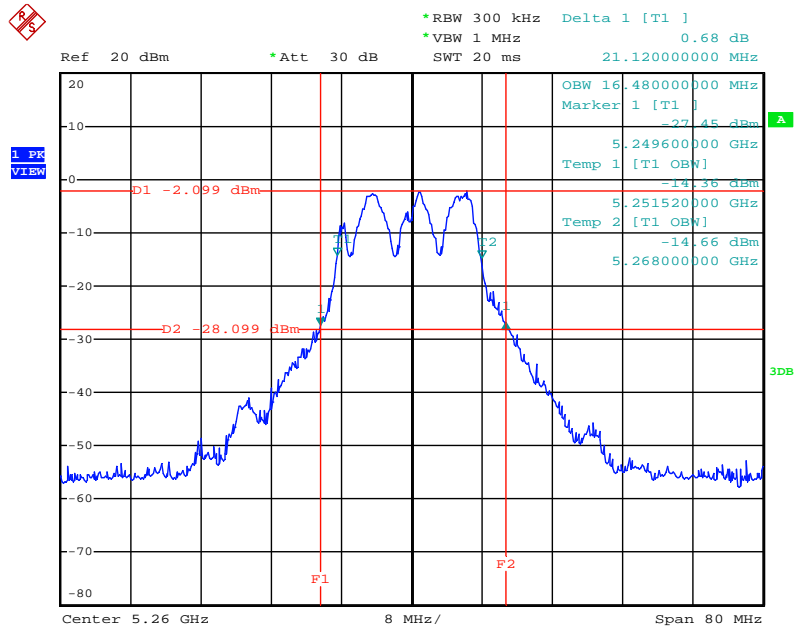
Date: 10.FEB.2012 17:38:12

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5700 MHz / Mode 6 (1TX, 2RX)



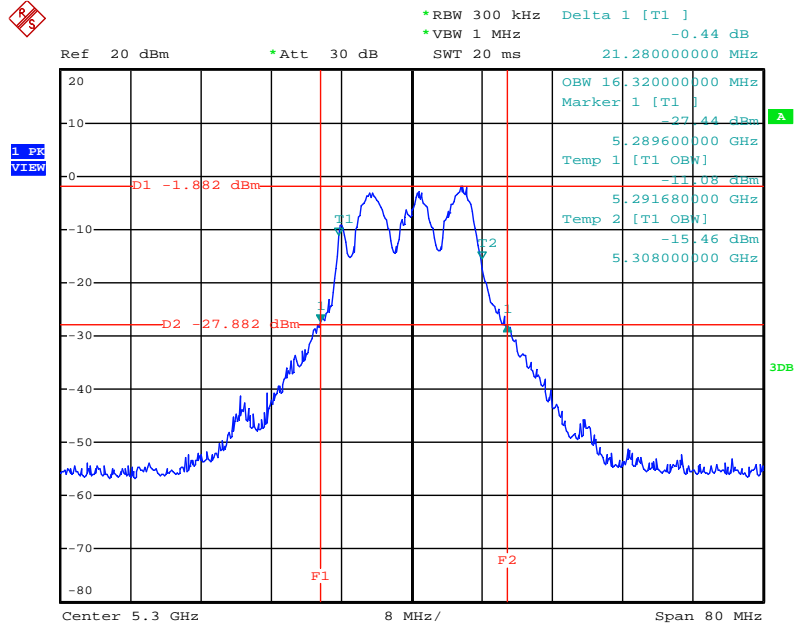
Date: 10.FEB.2012 17:38:40

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5260 MHz / Mode 6 (2TX, 2RX)



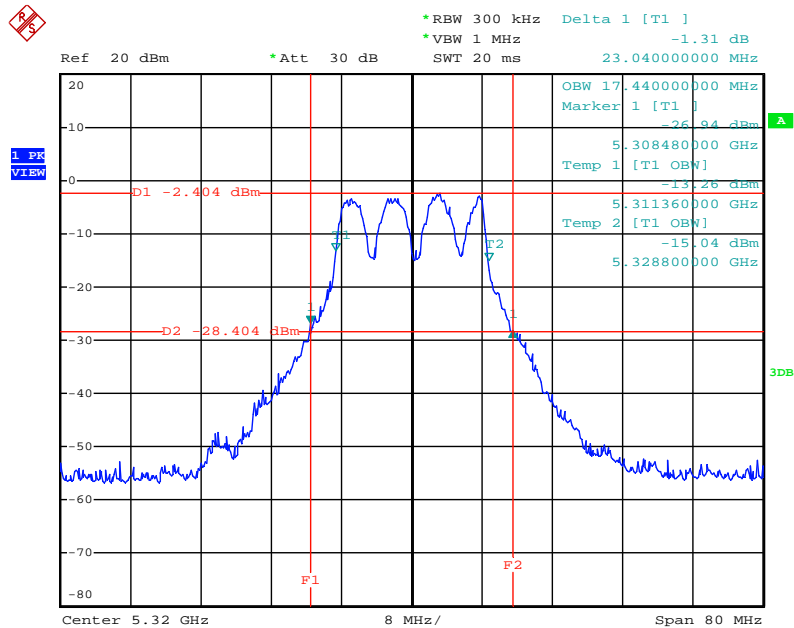
Date: 10.FEB.2012 13:06:30

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5300 MHz / Mode 6 (2TX, 2RX)**



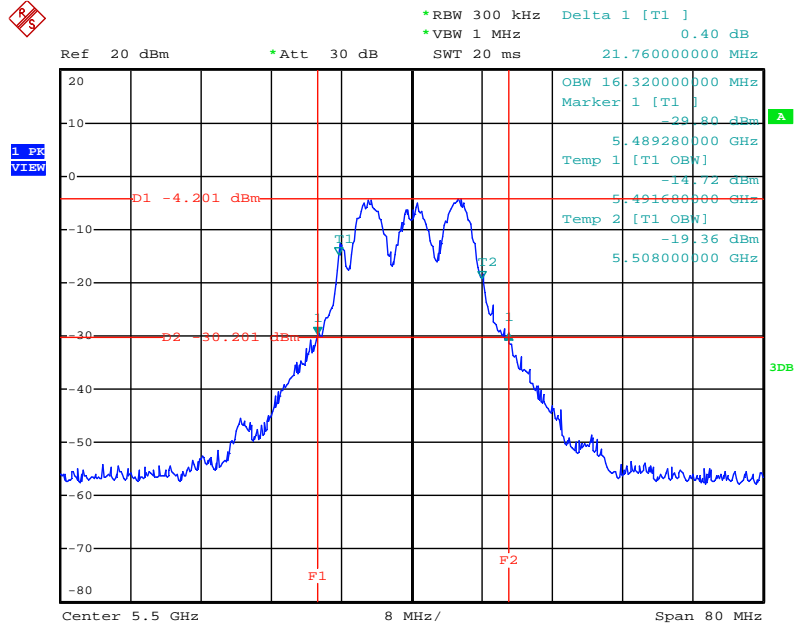
Date: 10.FEB.2012 13:06:00

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5320 MHz / Mode 6 (2TX, 2RX)**



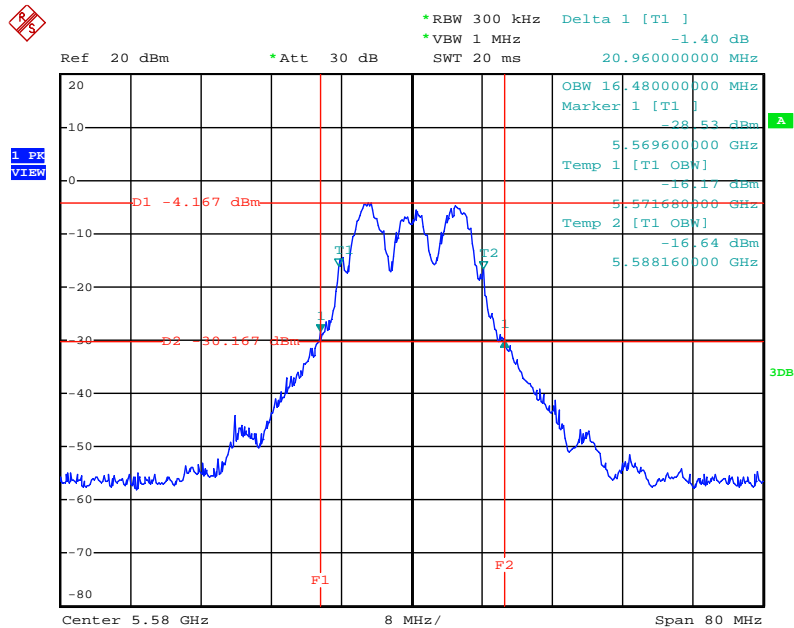
Date: 10.FEB.2012 13:04:49

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5500 MHz / Mode 6 (2TX, 2RX)**



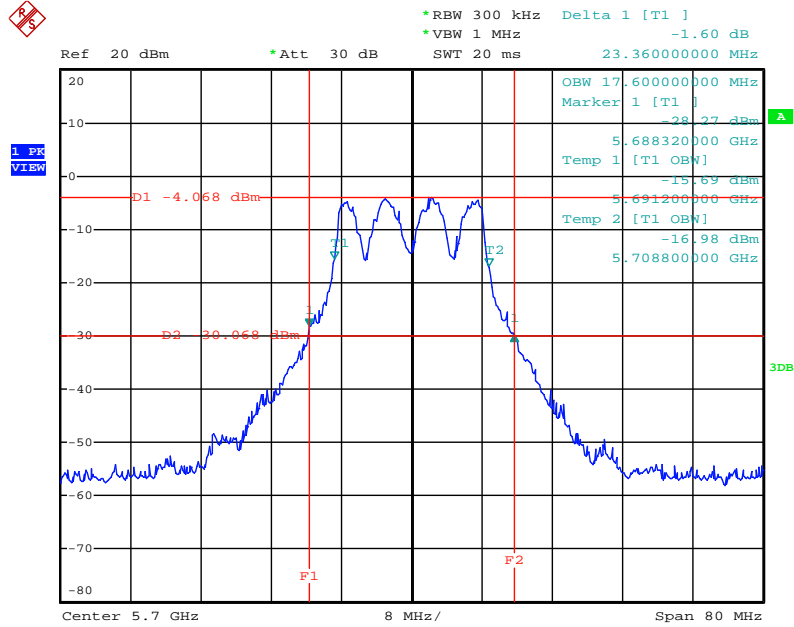
Date: 10.FEB.2012 13:02:39

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5580 MHz / Mode 6 (2TX, 2RX)**



Date: 10.FEB.2012 13:03:27

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5700 MHz / Mode 6 (2TX, 2RX)**



Date: 10.FEB.2012 13:04:00



<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Benson Peng	<b>Configurations</b>	IEEE 802.11n / Mode 9

**Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 (2TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	21.76	16.96
60	5300 MHz	21.28	15.84
64	5320 MHz	24.64	18.88
100	5500 MHz	25.28	19.36
116	5580 MHz	25.92	19.20
140	5700 MHz	21.60	16.00

**Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 (2TX, 2RX)**

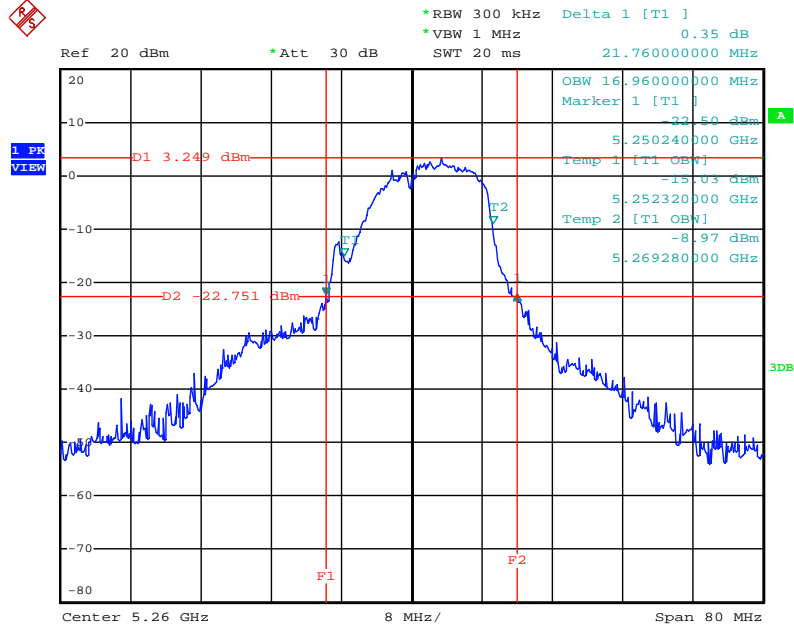
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	46.72	37.44
62	5310 MHz	46.72	37.12
102	5510MHz	45.12	37.44
110	5550 MHz	43.84	35.84
134	5670 MHz	46.72	37.44

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Benson Peng	<b>Configurations</b>	IEEE 802.11a / Mode 9

**Configuration IEEE 802.11a / Port 1 + Port 2 (2TX, 2RX)**

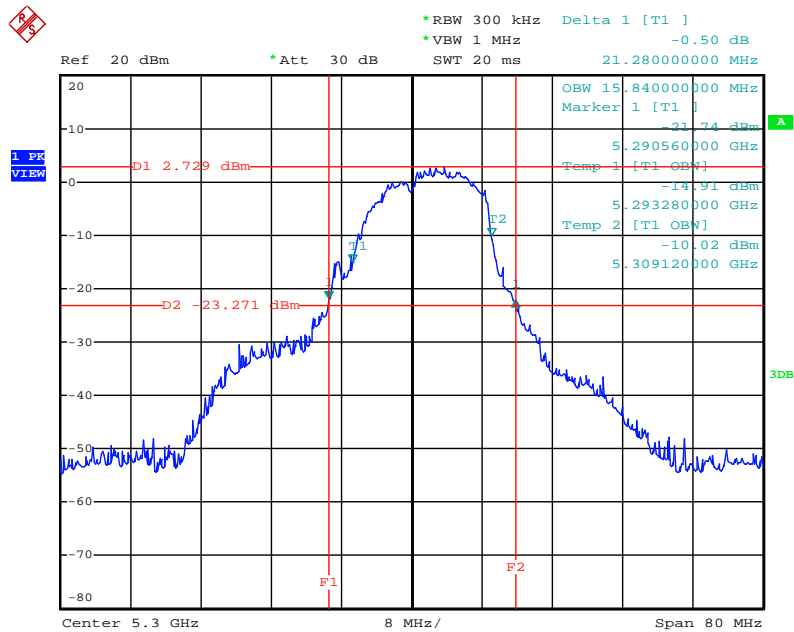
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	22.08	16.64
60	5300 MHz	21.44	16.64
64	5320 MHz	21.28	16.64
100	5500 MHz	23.52	17.60
116	5580 MHz	25.28	17.76
140	5700 MHz	22.56	16.48

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5260 MHz / Mode 9 (2TX, 2RX)**



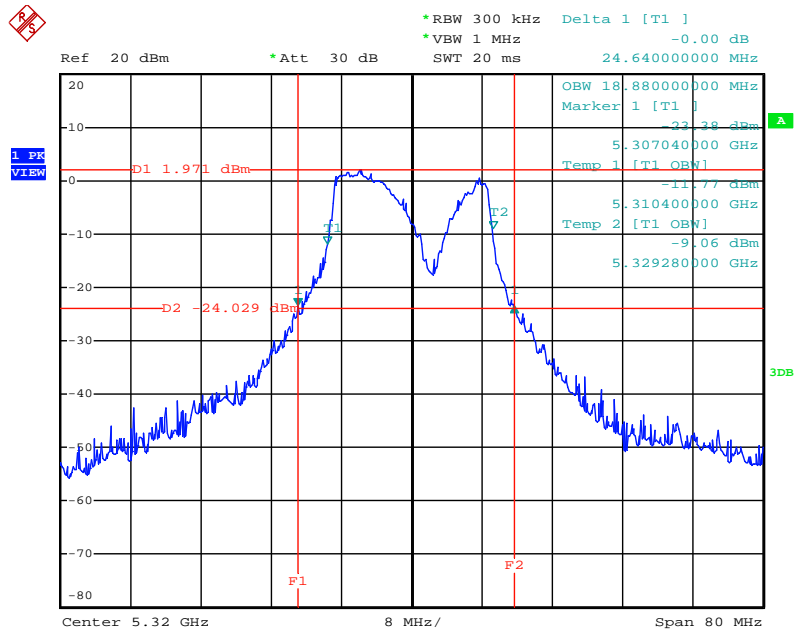
Date: 10.FEB.2012 12:28:52

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5300 MHz / Mode 9 (2TX, 2RX)**



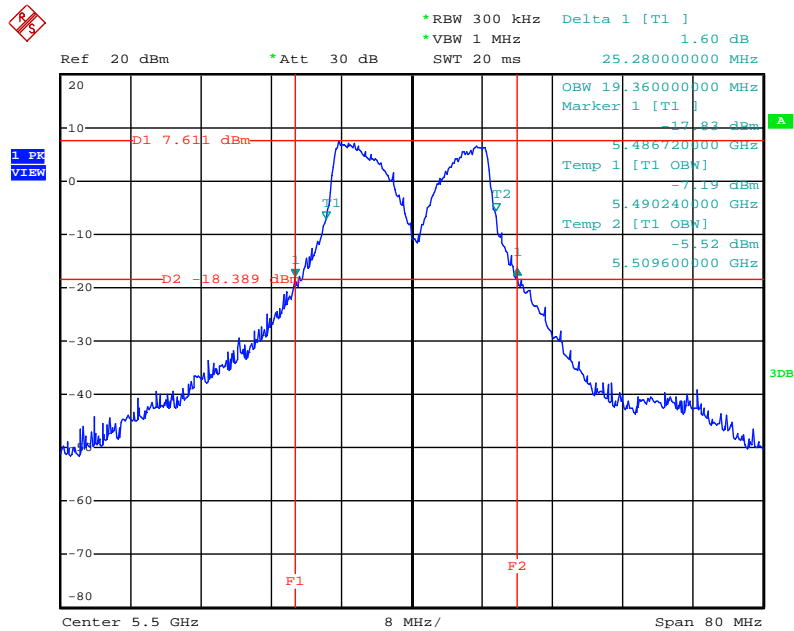
Date: 10.FEB.2012 12:29:26

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5320 MHz / Mode 9 (2TX, 2RX)



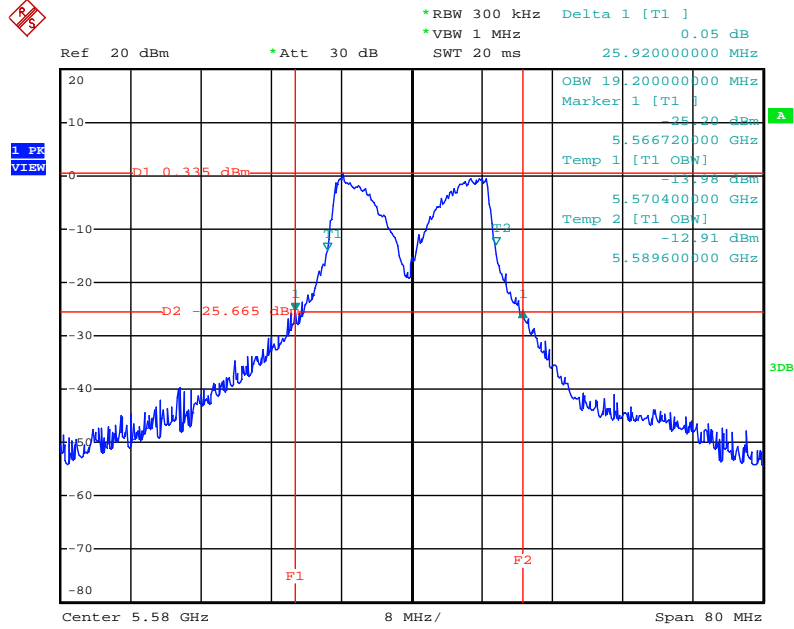
Date: 10.FEB.2012 12:29:56

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5500 MHz / Mode 9 (2TX, 2RX)



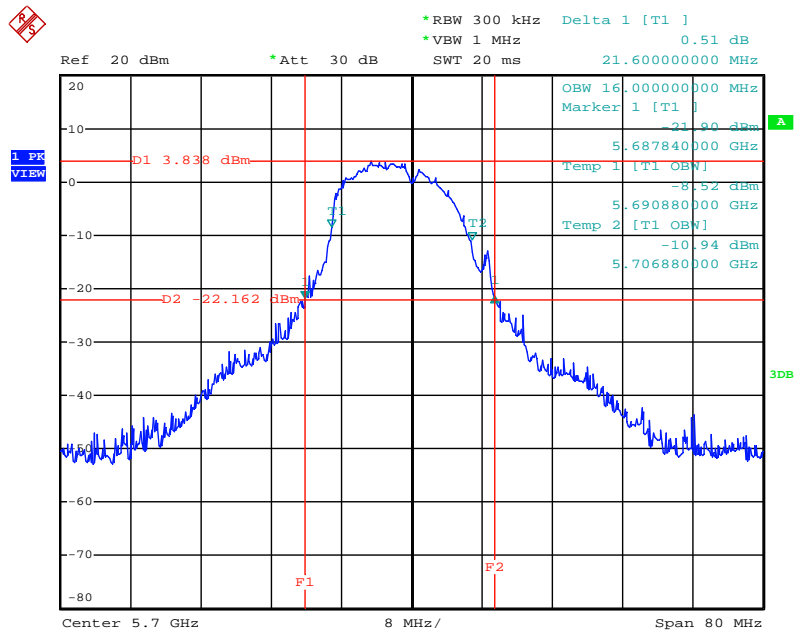
Date: 2.FEB.2012 11:48:09

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5580 MHz / Mode 9 (2TX, 2RX)**



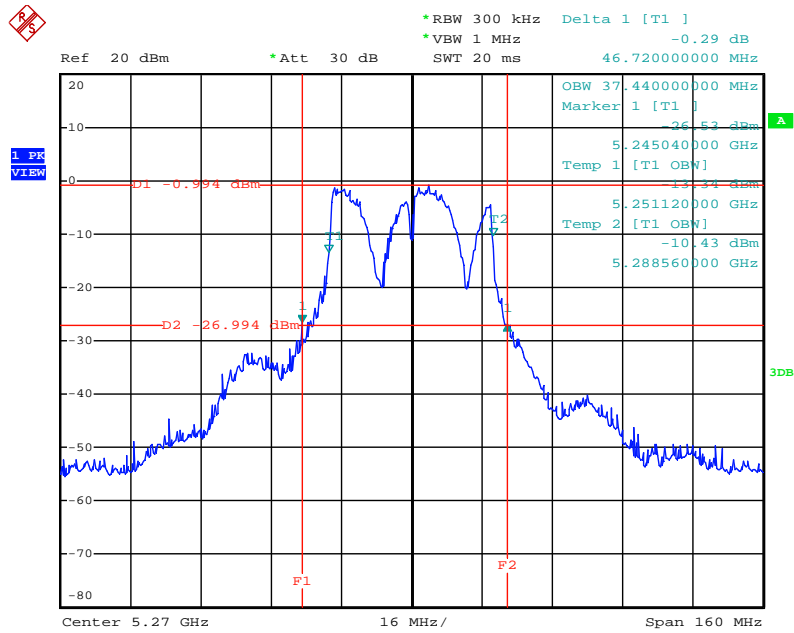
Date: 10.FEB.2012 12:30:47

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Port 1 + Port 2 / 5700 MHz / Mode 9 (2TX, 2RX)**



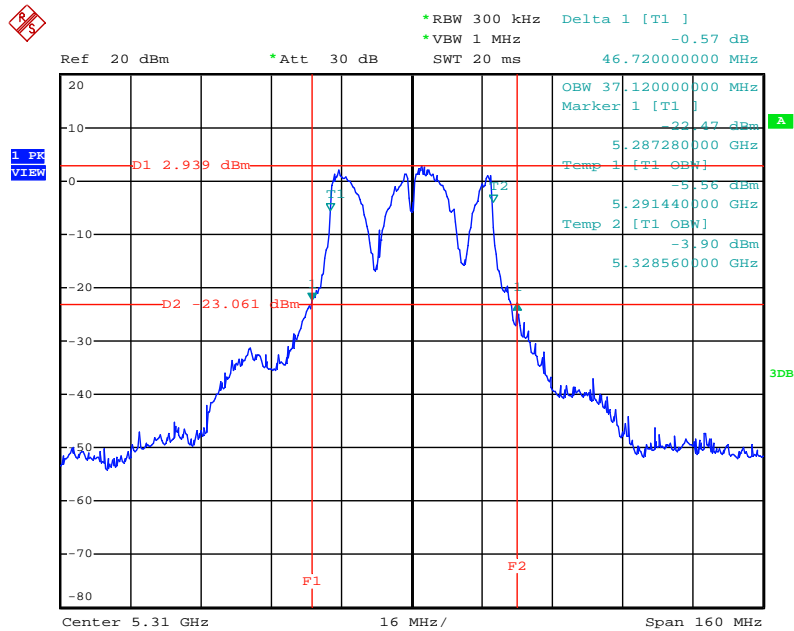
Date: 2.FEB.2012 11:46:35

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5270 MHz / Mode 9 (2TX, 2RX)**



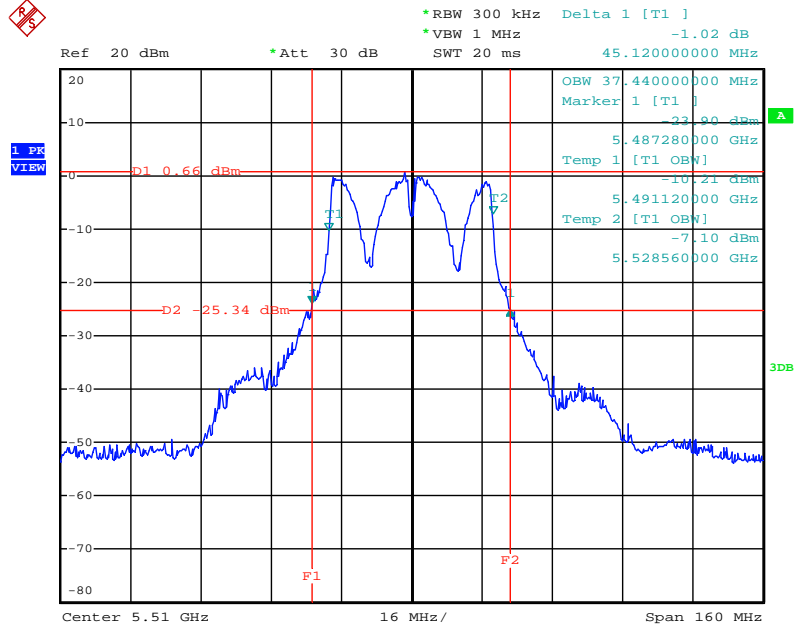
Date: 10.FEB.2012 12:28:01

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5310 MHz / Mode 9 (2TX, 2RX)**



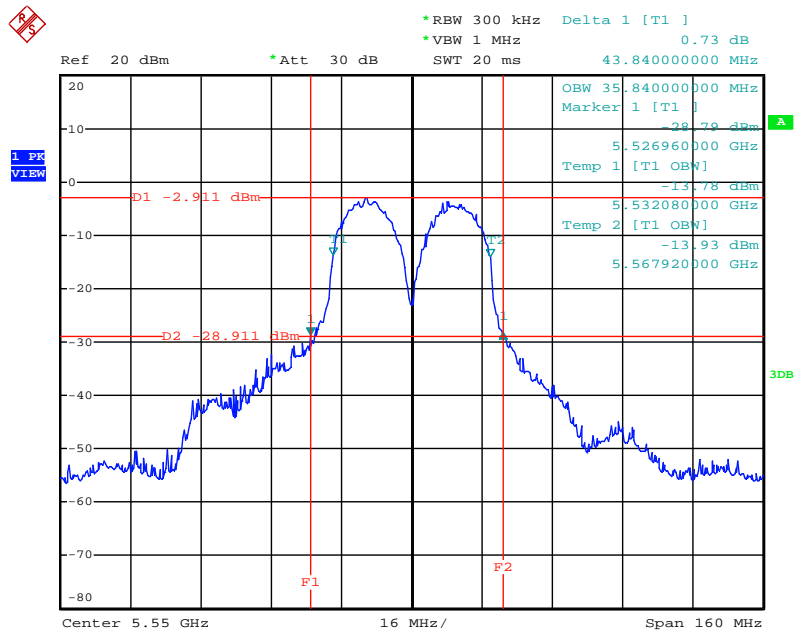
Date: 2.FEB.2012 11:58:44

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5510MHz / Mode 9 (2TX, 2RX)**



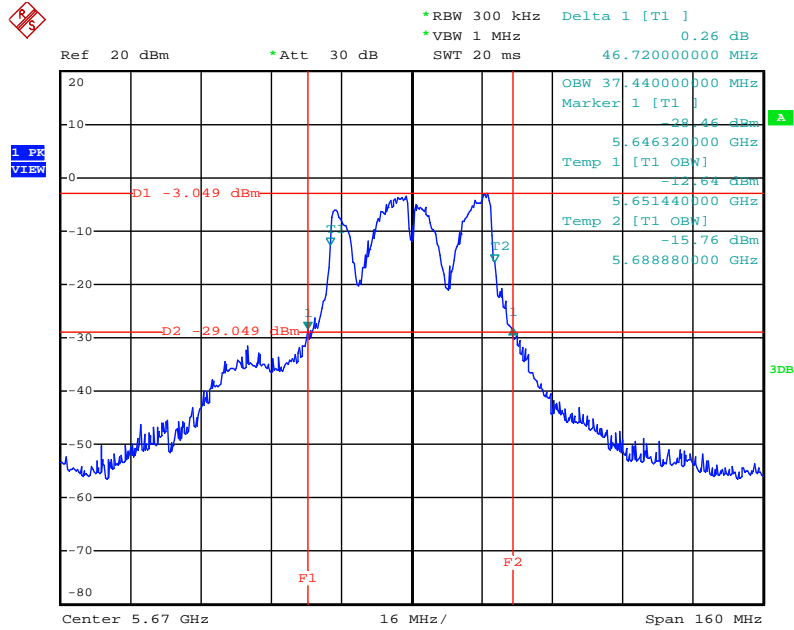
Date: 2.FEB.2012 11:59:20

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5550 MHz / Mode 9 (2TX, 2RX)**



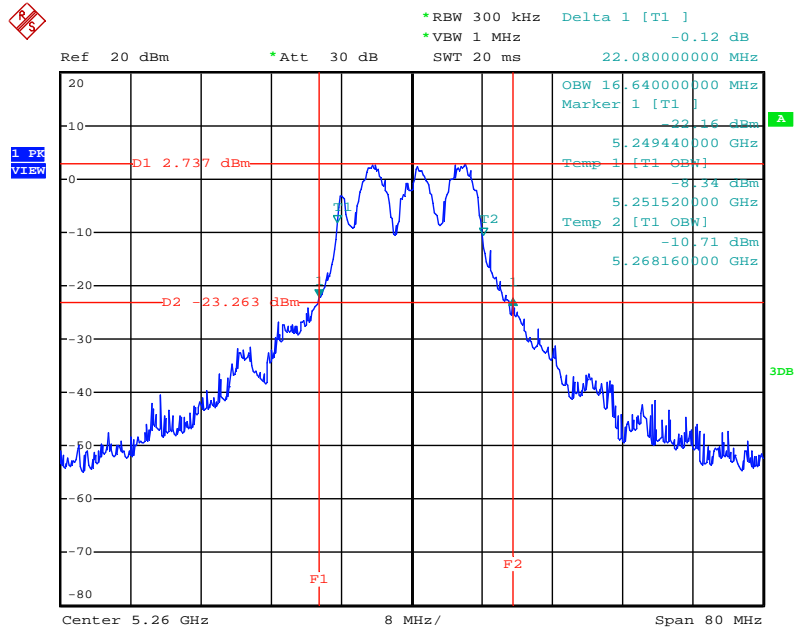
Date: 10.FEB.2012 12:27:11

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Port 1 + Port 2 / 5670 MHz / Mode 9 (2TX, 2RX)**



Date: 10.FEB.2012 12:26:07

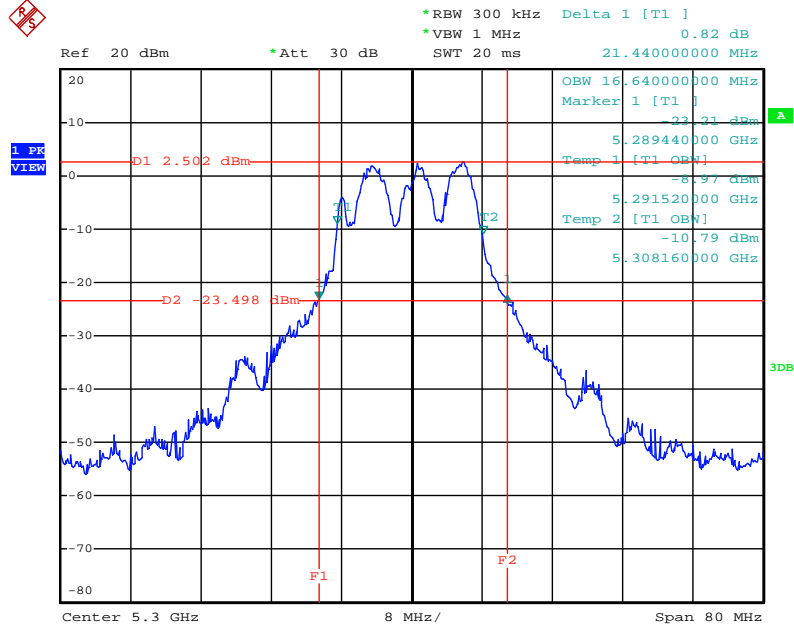
**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5260 MHz / Mode 9 (2TX, 2RX)**



Date: 10.FEB.2012 12:34:36

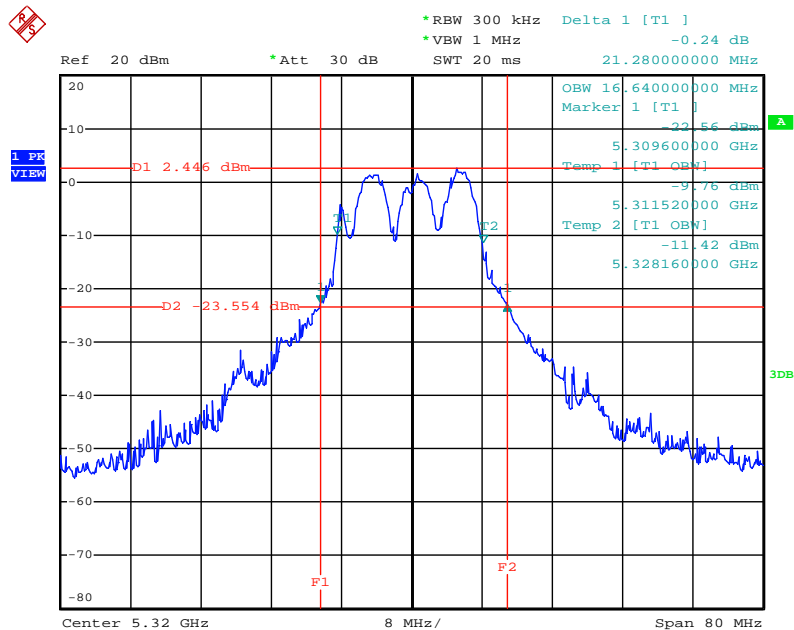


**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5300 MHz / Mode 9 (2TX, 2RX)**



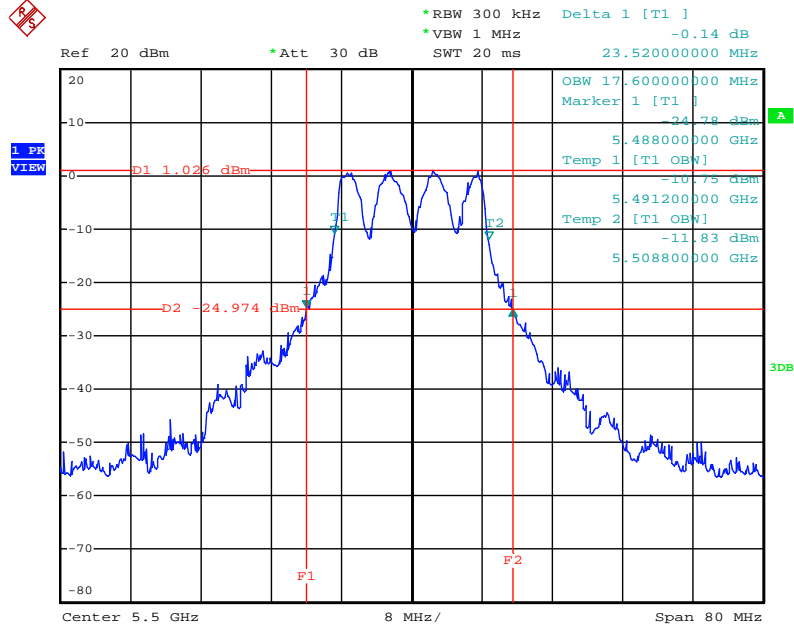
Date: 10.FEB.2012 12:33:39

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5320 MHz / Mode 9 (2TX, 2RX)**



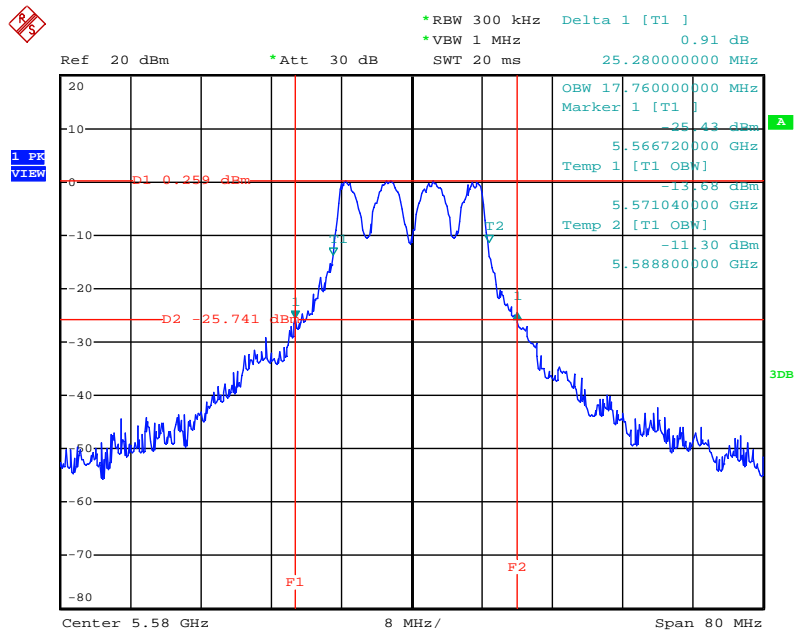
Date: 10.FEB.2012 12:33:12

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5500 MHz / Mode 9 (2TX, 2RX)**



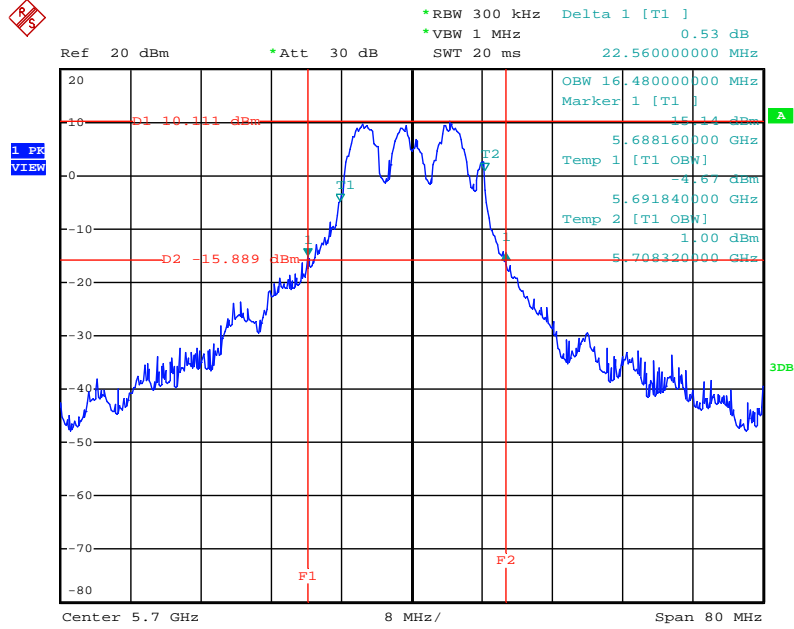
Date: 10.FEB.2012 12:32:31

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5580 MHz / Mode 9 (2TX, 2RX)**



Date: 10.FEB.2012 12:31:56

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Port 1 + Port 2 / 5700 MHz / Mode 9 (2TX, 2RX)



Date: 11.JAN.2012 16:57:33

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Benson Peng	<b>Configurations</b>	IEEE 802.11n / Mode 12

**Configuration IEEE 802.11n MCS0 20MHz / Chain 1 (2TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	26.40	18.72
60	5300 MHz	25.76	18.40
64	5320 MHz	25.60	18.56
100	5500 MHz	25.60	18.56
116	5580 MHz	26.08	18.56
140	5700 MHz	25.28	18.56

**Configuration IEEE 802.11n MCS0 40MHz / Chain 1 (2TX, 2RX)**

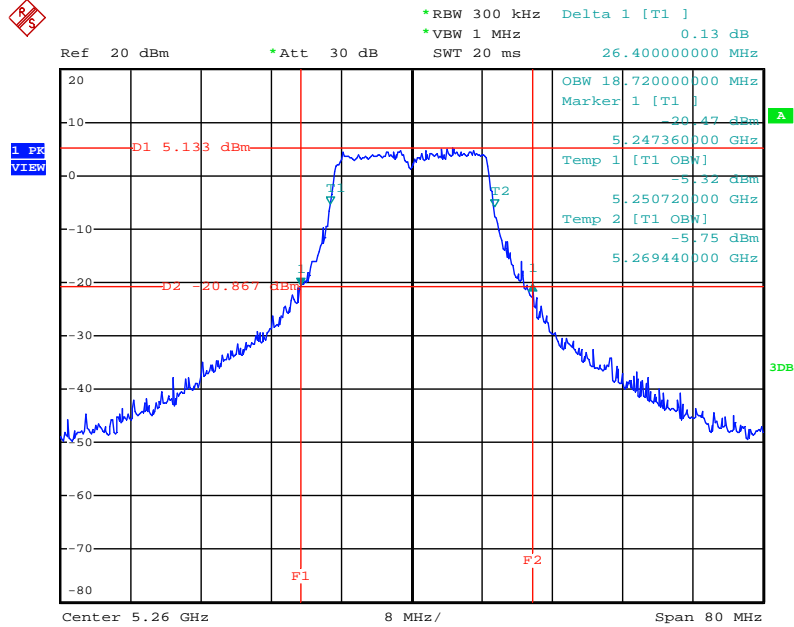
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	50.24	36.80
62	5310 MHz	48.00	36.80
102	5510MHz	48.96	37.12
110	5550 MHz	50.24	37.12
134	5670 MHz	48.64	37.12

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Benson Peng	<b>Configurations</b>	IEEE 802.11a / Mode 12

**Configuration IEEE 802.11a / Chain 1 (2TX, 2RX)**

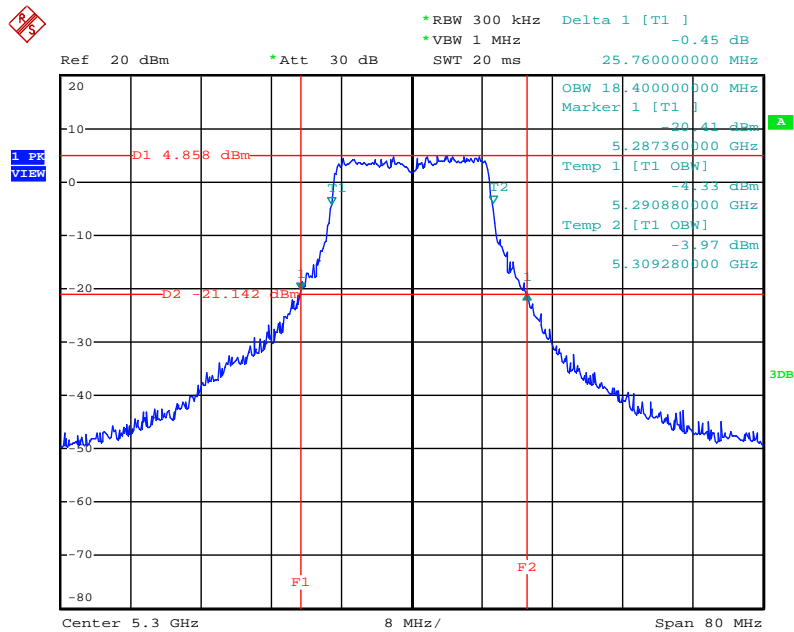
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	25.12	17.76
60	5300 MHz	24.96	17.44
64	5320 MHz	24.48	17.44
100	5500 MHz	24.96	17.60
116	5580 MHz	25.76	17.44
140	5700 MHz	25.60	17.76

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5260 MHz / Mode 12 (1TX, 2RX)**



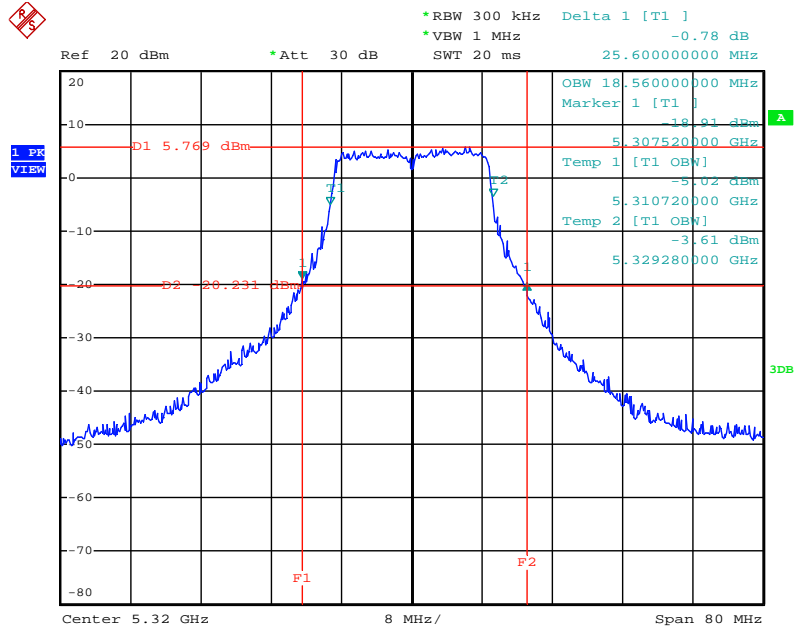
Date: 9.FEB.2012 22:23:09

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5300 MHz / Mode 12 (1TX, 2RX)**



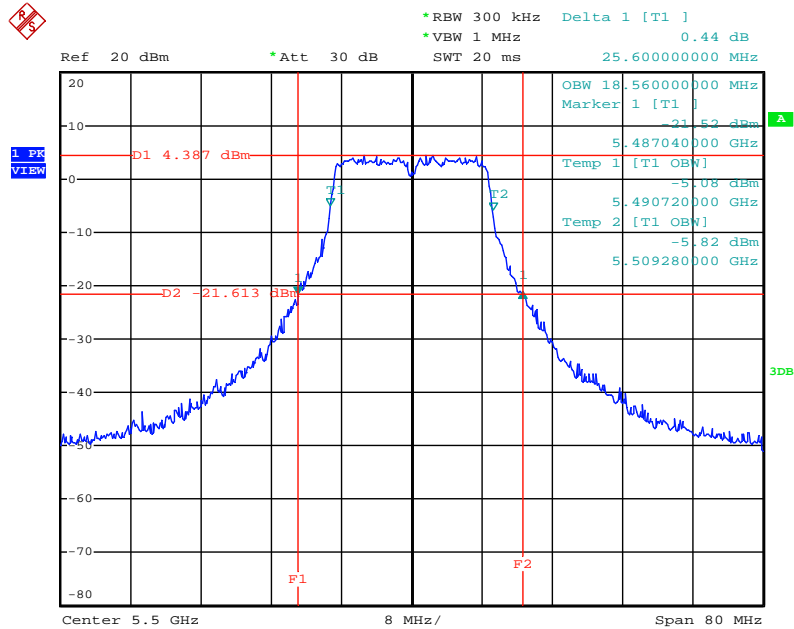
Date: 9.FEB.2012 22:23:36

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5320 MHz / Mode 12 (1TX, 2RX)**



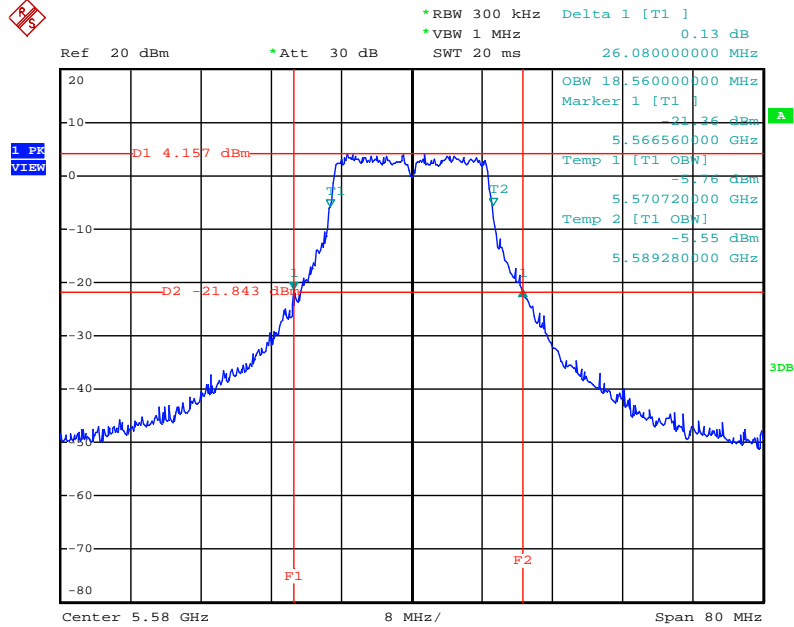
Date: 9.FEB.2012 22:24:04

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5500 MHz / Mode 12 (1TX, 2RX)**



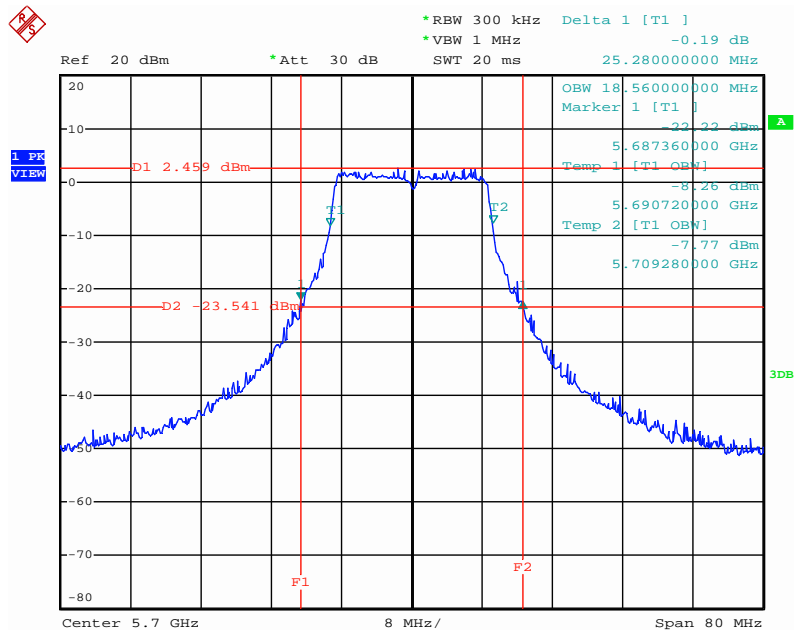
Date: 9.FEB.2012 22:24:59

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5580 MHz / Mode 12 (1TX, 2RX)**



Date: 9.FEB.2012 22:25:38

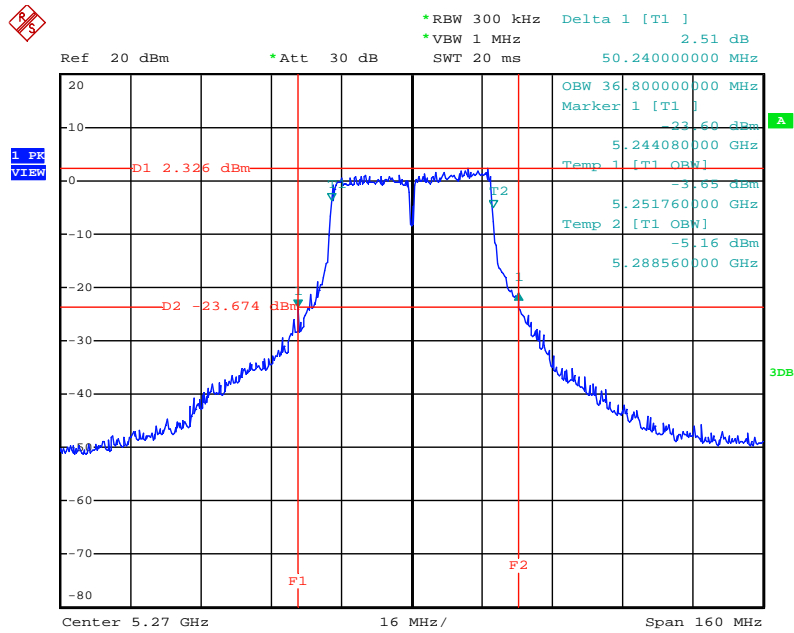
**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5700 MHz / Mode 12 (1TX, 2RX)**



Date: 9.FEB.2012 22:26:15

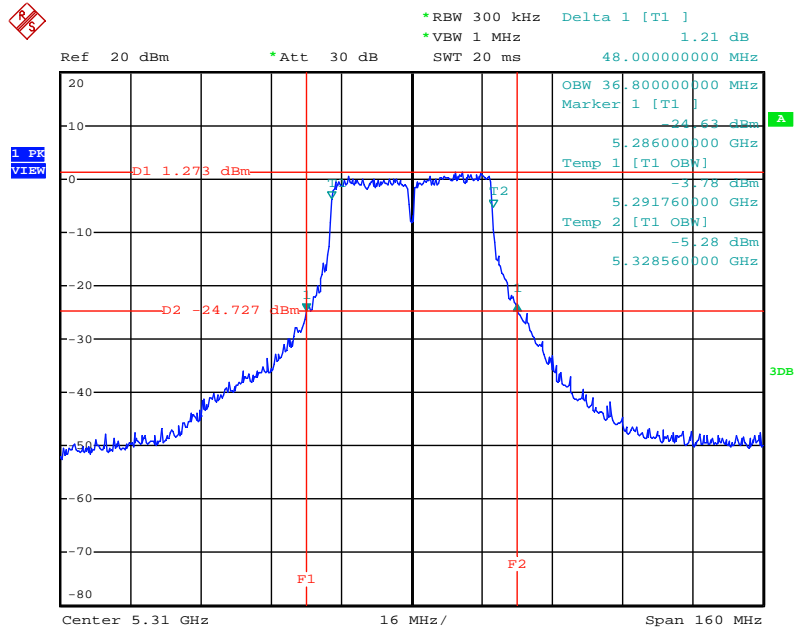


**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5270 MHz / Mode 12 (1TX, 2RX)**



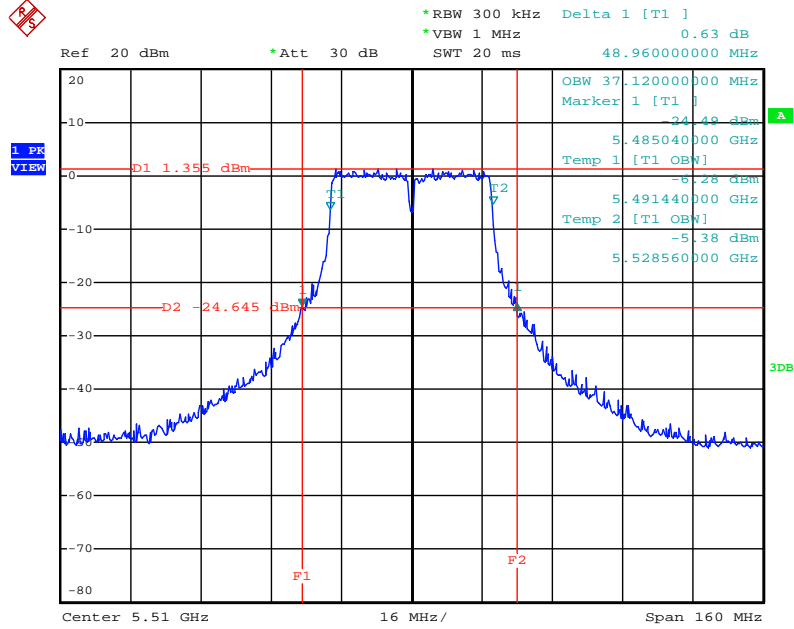
Date: 9.FEB.2012 22:27:12

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5310 MHz / Mode 12 (1TX, 2RX)**



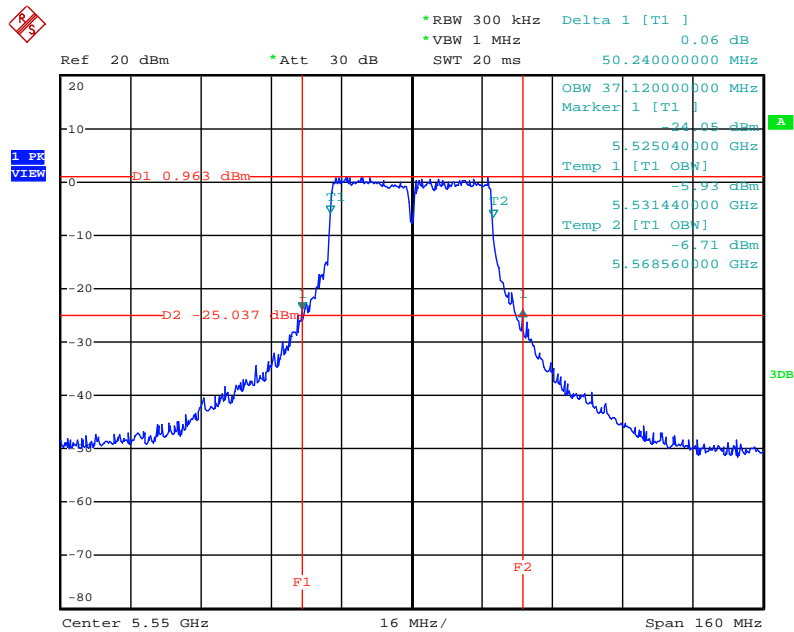
Date: 9.FEB.2012 22:27:38

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5510MHz / Mode 12 (1TX, 2RX)**



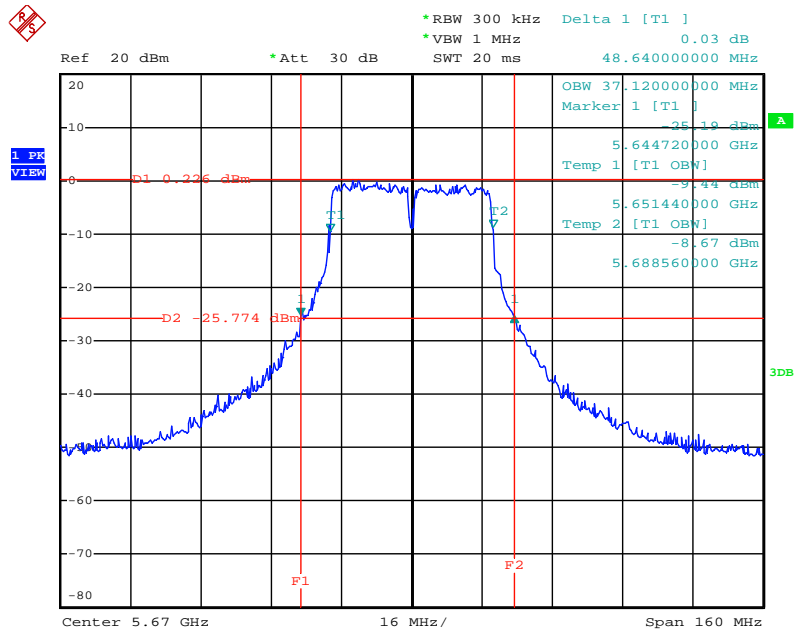
Date: 9.FEB.2012 22:28:08

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5550 MHz / Mode 12 (1TX, 2RX)**



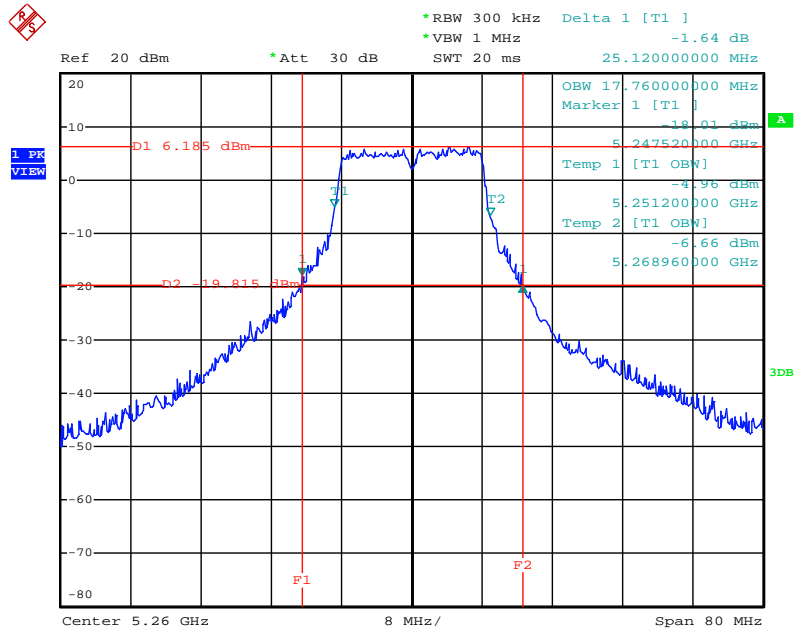
Date: 9.FEB.2012 22:28:32

**26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 / 5670 MHz / Mode 12 (1TX, 2RX)**



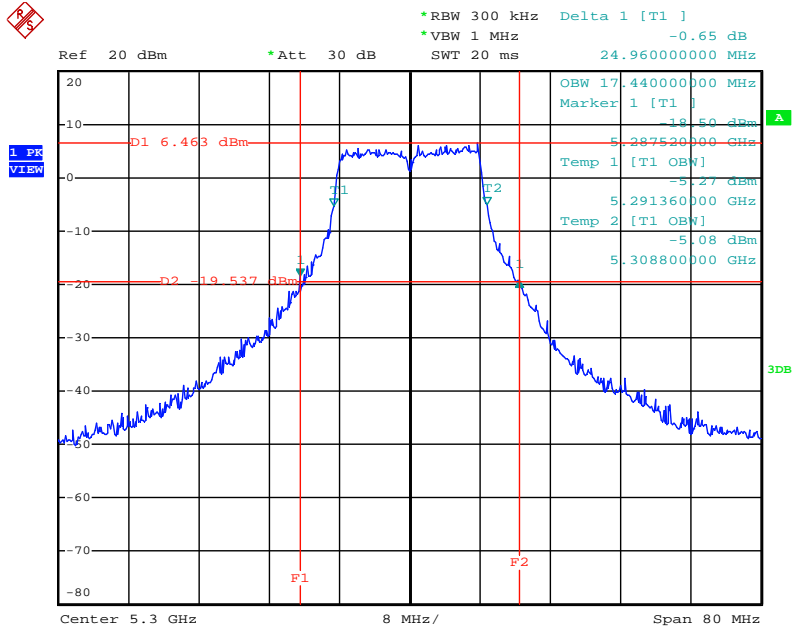
Date: 9.FEB.2012 22:29:00

**26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5260 MHz / Mode 12 (1TX, 2RX)**



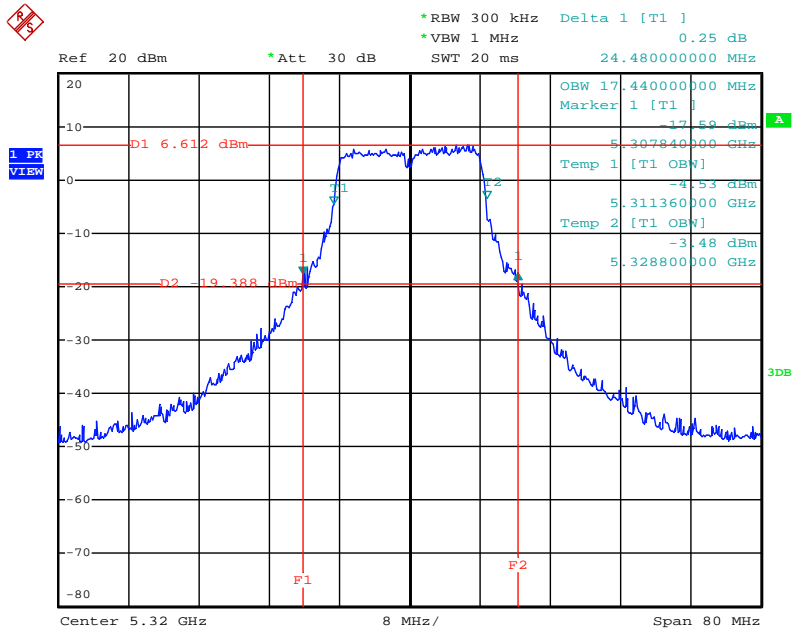
Date: 9.FEB.2012 22:19:07

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5300 MHz / Mode 12 (1TX, 2RX)



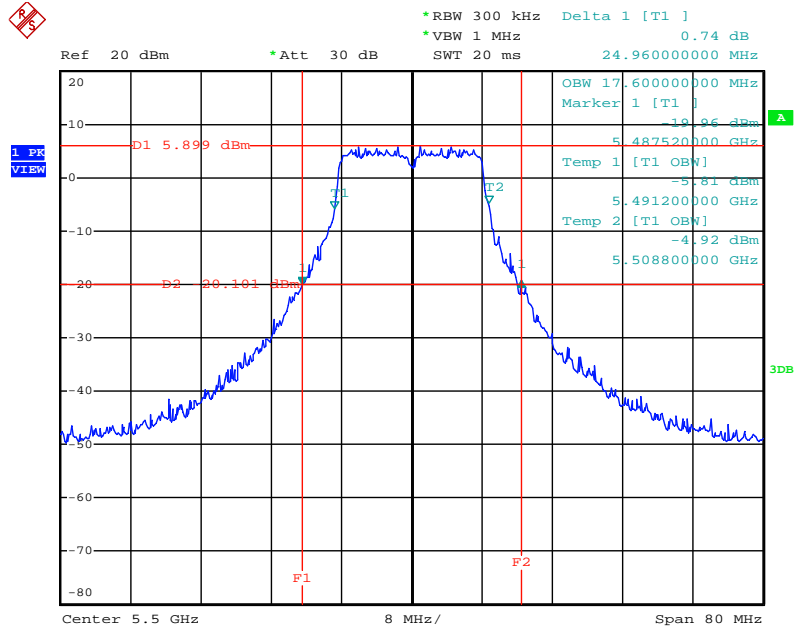
Date: 9.FEB.2012 22:19:42

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5320 MHz / Mode 12 (1TX, 2RX)



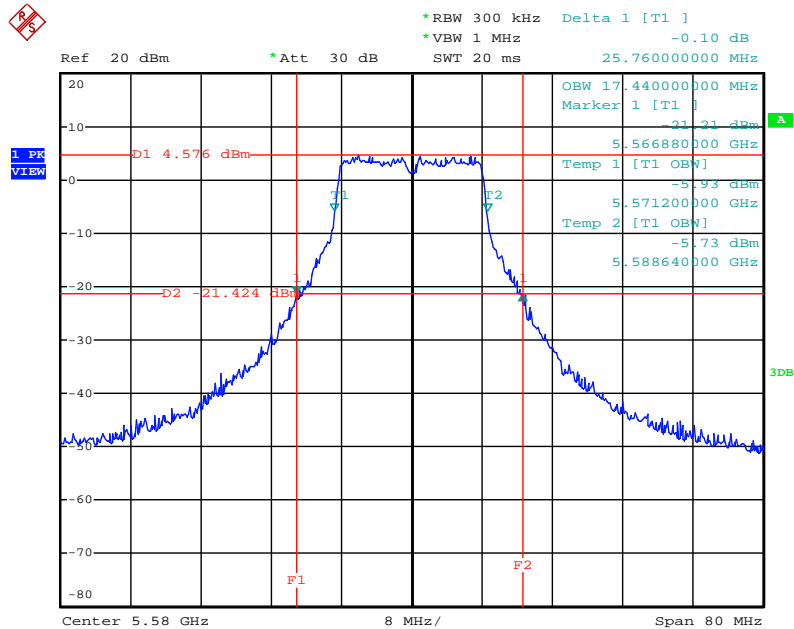
Date: 9.FEB.2012 22:20:11

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5500 MHz / Mode 12 (1TX, 2RX)



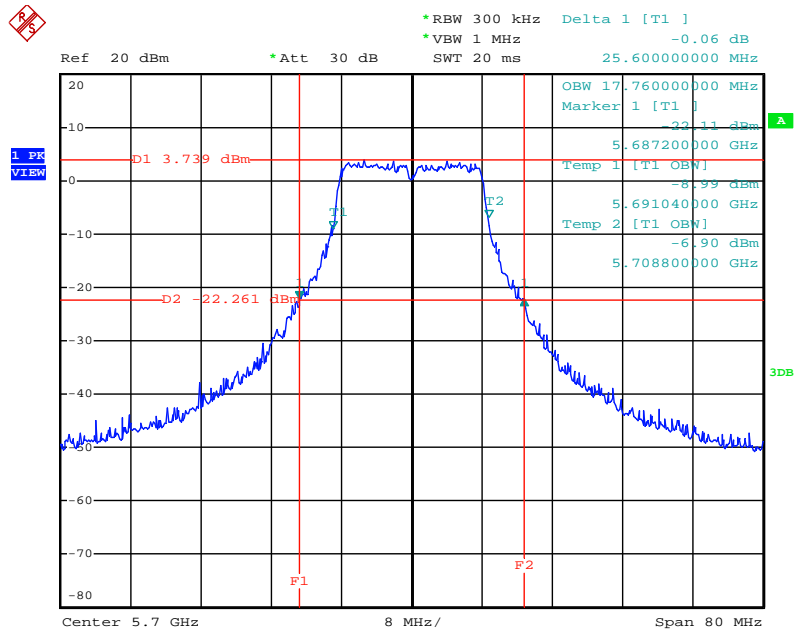
Date: 9.FEB.2012 22:20:41

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5580 MHz / Mode 12 (1TX, 2RX)



Date: 9.FEB.2012 22:21:28

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain 1 / 5700 MHz / Mode 12 (1TX, 2RX)



Date: 9.FEB.2012 22:21:53

<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Benson Peng	<b>Configurations</b>	IEEE 802.11n / Mode 15

**Configuration IEEE 802.11n MCS0 20MHz / Chain 1 (1TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	26.40	18.72
60	5300 MHz	25.76	18.40
64	5320 MHz	25.60	18.56
100	5500 MHz	25.60	18.56
116	5580 MHz	26.08	18.56
140	5700 MHz	25.28	18.56

**Configuration IEEE 802.11n MCS0 40MHz / Chain 1 (1TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	50.24	36.80
62	5310 MHz	48.00	36.80
102	5510MHz	48.96	37.12
110	5550 MHz	50.24	37.12
134	5670 MHz	48.64	37.12

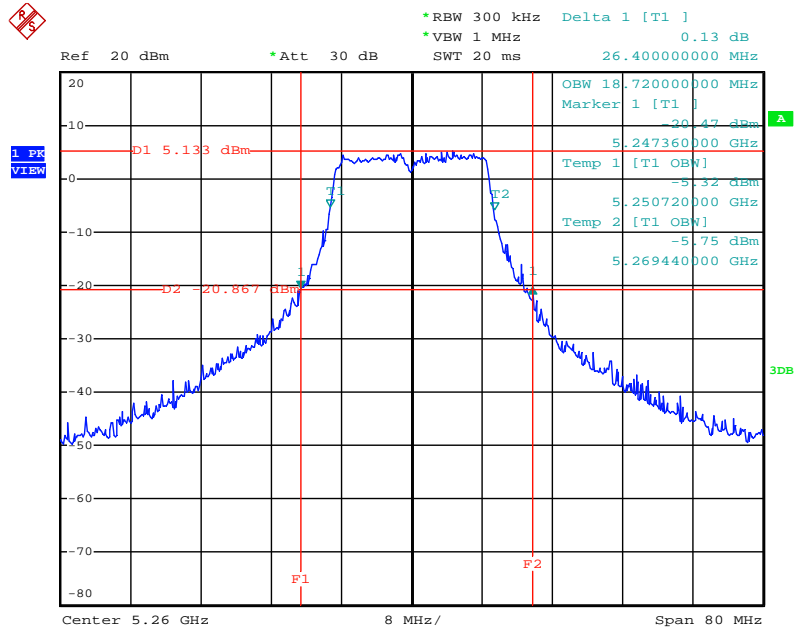
<b>Temperature</b>	25°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Benson Peng	<b>Configurations</b>	IEEE 802.11a / Mode 15

**Configuration IEEE 802.11a / Chain 1 (1TX, 2RX)**

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	25.12	17.76
60	5300 MHz	24.96	17.44
64	5320 MHz	24.48	17.44
100	5500 MHz	24.96	17.60
116	5580 MHz	25.76	17.44
140	5700 MHz	25.60	17.76



26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 / 5260 MHz /  
 Mode 15  
 (1TX, 2RX)



Date: 9.FEB.2012 22:23:09