

FCC RADIO TEST REPORT

Applicant's company	Proxim Wireless Corporation
Applicant Address	1561 Buckeye Drive, Milpitas, CA 95035, USA
FCC ID	HZB-MB83HP5
Manufacturer's company	Proxim Wireless Corporation
Manufacturer Address	1561 Buckeye Drive, Milpitas, CA 95035, USA

Product Name	802.11 a/b/g/n Mini-PCI module
Brand Name	Proxim
Model Name	MB82HP
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Jun. 14, 2012
Final Test Date	Aug. 10, 2012
Submission Type	Original Equipment
Operating Mode	Master Client (with radar detection function) Client (without radar detection function)



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 and KDB 789033 – 20120305.

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

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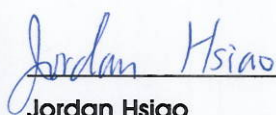
History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR062219-04	Rev. 01	Initial issue of report	Oct. 09, 2012

1. CERTIFICATE OF COMPLIANCE

Product Name : 802.11 a/b/g/n Mini-PCI module
Brand Name : Proxim
Model Name : MB82HP
Applicant : Proxim Wireless Corporation
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 Jun. 14, 2012 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.



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	7.87 dB
4.2	15.407(a)	26dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.06 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.03 dB
4.5	15.407(a)	Peak Excursion	Complies	2.50 dB
4.6	15.407(b)	Radiated Emissions	Complies	0.35 dB
4.7	15.407(b)	Band Edge Emissions	Complies	0.04 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

Note 1 : The module (Model number: MB82HP) is Limited Module Approval and only limited to install to the AP (Proxim / MP 8200.) So it tests AP only as a result for carrier sensing test and DFS test.

Note 2 : During operating, the different antenna is placed in different direction.

Therefore, it will not be affected by array gain.

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 ⁻⁸	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%

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n

Items	Description
Product Type	WLAN (2/3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From DC power supply
Modulation	see the below table for IEEE 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	12 for 20MHz bandwidth ; 5 for 40MHz bandwidth
Channel Band Width (99%)	Test Mode : Mode 1 Band 2 : MCS0 (20MHz): 18.88 MHz ; MCS0 (40MHz): 36.16 MHz Band 3 : MCS0 (20MHz): 18.72 MHz ; MCS0 (40MHz): 36.80 MHz Test Mode : Mode 2 Band 2 : MCS0 (20MHz): 19.04 MHz ; MCS0 (40MHz): 36.48 MHz Band 3 : MCS0 (20MHz): 18.88 MHz ; MCS0 (40MHz): 37.12 MHz Test Mode : Mode 3 Band 2 : MCS0 (20MHz): 18.88 MHz ; MCS0 (40MHz): 36.80 MHz Band 3 : MCS0 (20MHz): 18.88 MHz ; MCS0 (40MHz): 37.12 MHz Test Mode : Mode 4 Band 2 : MCS0 (20MHz): 18.56 MHz ; MCS0 (40MHz): 35.52 MHz Band 3 : MCS0 (20MHz): 18.72 MHz ; MCS0 (40MHz): 36.80 MHz Test Mode : Mode 5 Band 2 : MCS0 (20MHz): 18.56 MHz ; MCS0 (40MHz): 36.80 MHz Band 3 : MCS0 (20MHz): 18.72 MHz ; MCS0 (40MHz): 37.12 MHz
Conducted Output Power	Test Mode : Mode 1 Band 2: MCS0 (20MHz): 21.94 dBm ; MCS0 (40MHz): 21.78 dBm Band 3: MCS0 (20MHz): 21.85 dBm ; MCS0 (40MHz): 21.68 dBm Test Mode : Mode 2 Band 2: MCS0 (20MHz): 21.94 dBm ; MCS0 (40MHz): 21.78 dBm Band 3: MCS0 (20MHz): 21.76 dBm ; MCS0 (40MHz): 21.68 dBm Test Mode : Mode 3 Band 2: MCS0 (20MHz): 23.87 dBm ; MCS0 (40MHz): 23.80 dBm Band 3: MCS0 (20MHz): 23.74 dBm ; MCS0 (40MHz): 22.75 dBm

	Test Mode : Mode 4 Band 2: MCS0 (20MHz): 21.94 dBm ; MCS0 (40MHz): 21.78 dBm Band 3: MCS0 (20MHz): 21.76 dBm ; MCS0 (40MHz): 21.68 dBm Test Mode : Mode 5 Band 2: MCS0 (20MHz): 17.73 dBm ; MCS0 (40MHz): 17.78 dBm Band 3: MCS0 (20MHz): 17.75 dBm ; MCS0 (40MHz): 17.81 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a

Items	Description
Product Type	WLAN (2/3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From DC power supply
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	12
Channel Band Width (99%)	Test Mode : Mode 1 Band 2 : 16.80 MHz Band 3 : 16.80 MHz Test Mode : Mode 2 Band 2 : 16.80 MHz Band 3 : 17.12 MHz Test Mode : Mode 3 Band 2 : 17.12 MHz Band 3 : 17.60 MHz Test Mode : Mode 4 Band 2 : 16.64 MHz Band 3 : 17.12 MHz Test Mode : Mode 5 Band 2 : 17.12 MHz Band 3 : 17.28 MHz
Conducted Output Power	Test Mode : Mode 1 Band 2: 21.85 dBm Band 3: 21.85 dBm

	Test Mode : Mode 2 Band 2: 21.85 dBm Band 3: 21.71 dBm Test Mode : Mode 3 Band 2: 23.80 dBm Band 3: 23.93 dBm Test Mode : Mode 4 Band 2: 21.85 dBm Band 3: 21.62 dBm Test Mode : Mode 5 Band 2: 17.87 dBm Band 3: 17.50 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

Antenna	Two (TX)		Three (TX)	
Band width Mode	20 MHz	40 MHz	20 MHz	40 MHz
IEEE 802.11a	V	X	V	X
IEEE 802.11n	V	V	V	V

IEEE 802.11n spec

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Datarate(Mbps)			
									800nsGI		400nsGI	
					20MHz	40MHz	20MHz	40MHz	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
NBPSC	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

N/A

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Chain	Attenuator (dBi)	Connector	Antenna Gain	Cable loss	Test Ant Gain gain (dBi)
							5GHz	5GHz	5GHz
1	MARS	MA-WA55-30	Panel	1/2/3	20	N-Type, Female	30	2	8
2	MARS	MA-WB55-20	Sector	1/2/3	10	N-Type, Female	20	2	8
3	SmartAnt	USI05-220170	Dipole	1/2/3	-	RP SMA Plug	5	1	4
4	MARS	MA-WO55-10NH	Ommi	1/2/3	-	N-Type, Female / N-Type, Male (optional)	10	2	8
5	CommScope	PX3F-52-N7A	Dish	1/3	20	N Female	34	2	12
6	MARS	MA-WA56-DP25N	Panel	1/3	20	2 x N-Type, Female	23.5	2	1.5
7	MARS	MA-WD56-DP16	Sector	1/3	10	2 x N-Type, Female	16	2	4

Note:

1. There are 7 antennas in the antenna table list. Besides, only antenna 1 to 5 were selected to perform the test and written in this report due to the highest gain.

Table of TX/RX Function in each antenna:

Item			Module					
			Chain 1		Chain 2		Chain 3	
			TX	RX	TX	RX	TX	RX
Ant.1	5GHz	11a	V	V	V	V	V	V
		11n	V	V	V	V	V	V
Ant.2	5GHz	11a	V	V	V	V	V	V
		11n	V	V	V	V	V	V
Ant.3	5GHz	11a	V	V	V	V	V	V
		11n	V	V	V	V	V	V
Ant.4	5GHz	11a	V	V	V	V	V	V
		11n	V	V	V	V	V	V
Ant.5	5GHz	11a	V	V	X	X	V	V
		11n	V	V	X	X	V	V

Note : The EUT can support both 2TX and 3TX functions.

Ant. 1 ~ Ant. 4 for 3TX functions.

IEEE 802.11a/n mode (3TX, 3RX)

Chain 1, Chain 2 and Chain 3 can be used as transmitting/receiving antennas.

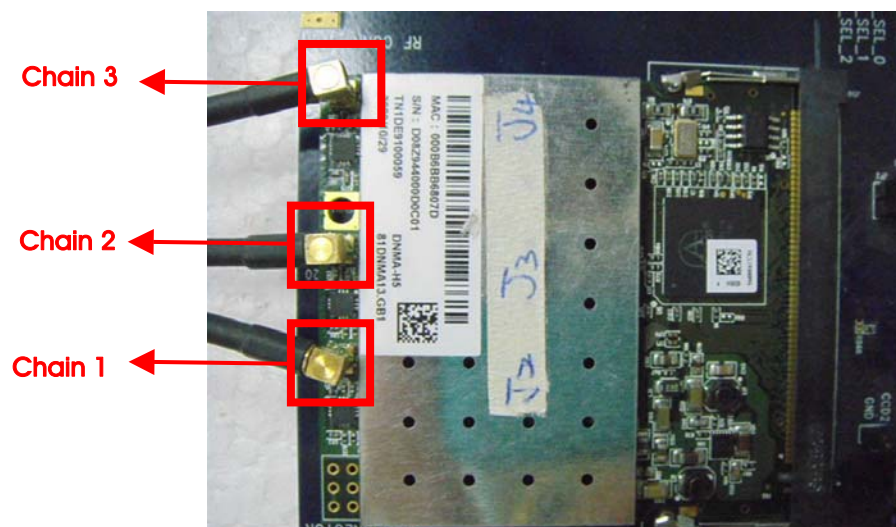
Chain 1, Chain 2 and Chain 3 could transmit/receive simultaneously.

Ant. 5 ~ Ant. 7 for 2TX functions.

IEEE 802.11a/n mode (2TX, 2RX)

Chain 1 and Chain 3 can be used as transmitting/receiving antennas.

Chain 1 and Chain 3 could transmit/receive simultaneously.



Module	Required 2TX Port
5G	Chain 1 and Chain 3

Module	Required 3TX Port
5G	Chain 1 and Chain 2 and Chain 3

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	5510 MHz	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	CTX		Auto	-	-
Max. Conducted Output Power Power Spectral Density	MCS0/20MHz	2TX: Band 2	7.2Mbps	52/60/64	1/3/1+3
		2TX: Band 3	7.2Mbps	100/116/140	1/3/1+3
		3TX: Band 2	7.2Mbps	52/60/64	1/2/3/1+2+3
		3TX: Band 3	7.2Mbps	100/116/140	1/2/3/1+2+3
	MCS0/40MHz	2TX: Band 2	14.4Mbps	54/62	1/3/1+3
		2TX: Band 3	14.4Mbps	102/110/134	1/3/1+3
		3TX: Band 2	14.4Mbps	54/62	1/2/3/1+2+3
		3TX: Band 3	14.4Mbps	102/110/134	1/2/3/1+2+3
	11a/BPSK	2TX: Band 2	6Mbps	52/60/64	1/3/1+3
		2TX: Band 3	6Mbps	100/116/140	1/3/1+3
		3TX: Band 2	6Mbps	52/60/64	1/2/3/1+2+3
		3TX: Band 3	6Mbps	100/116/140	1/2/3/1+2+3
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement Peak Excursion	MCS0/20MHz	2TX: Band 2	7.2Mbps	52/60/64	1+3
		2TX: Band 3	7.2Mbps	100/116/140	1+3
		3TX: Band 2	7.2Mbps	52/60/64	1+2+3
		3TX: Band 3	7.2Mbps	100/116/140	1+2+3
	MCS0/40MHz	2TX: Band 2	14.4Mbps	54/62	1+3
		2TX: Band 3	14.4Mbps	102/110/134	1+3
		3TX: Band 2	14.4Mbps	54/62	1+2+3
		3TX: Band 3	14.4Mbps	102/110/134	1+2+3
	11a/BPSK	2TX: Band 2	6Mbps	52/60/64	1+3
		2TX: Band 3	6Mbps	100/116/140	1+3
		3TX: Band 2	6Mbps	52/60/64	1+2+3
		3TX: Band 3	6Mbps	100/116/140	1+2+3

Radiated Emission Below 1 GHz	CTX		Auto	-	-
Radiated Emission Above 1 GHz	MCS0/20MHz	2TX: Band 2	7.2Mbps	52/60/64	1 + 3
		2TX: Band 3	7.2Mbps	100/116/140	1 + 3
		3TX: Band 2	7.2Mbps	52/60/64	1 + 2 + 3
		3TX: Band 3	7.2Mbps	100/116/140	1 + 2 + 3
	MCS0/40MHz	2TX: Band 2	14.4Mbps	54/62	1 + 3
		2TX: Band 3	14.4Mbps	102/110/134	1 + 3
		3TX: Band 2	14.4Mbps	54/62	1 + 2 + 3
		3TX: Band 3	14.4Mbps	102/110/134	1 + 2 + 3
	11a/BPSK	2TX: Band 2	6Mbps	52/60/64	1 + 3
		2TX: Band 3	6Mbps	100/116/140	1 + 3
		3TX: Band 2	6Mbps	52/60/64	1 + 2 + 3
		3TX: Band 3	6Mbps	100/116/140	1 + 2 + 3
Band Edge Emission	MCS0/20MHz	2TX: Band 2	7.2Mbps	52/60/64	1 + 3
		2TX: Band 3	7.2Mbps	100/116/140	1 + 3
		3TX: Band 2	7.2Mbps	52/60/64	1 + 2 + 3
		3TX: Band 3	7.2Mbps	100/116/140	1 + 2 + 3
	MCS0/40MHz	2TX: Band 2	14.4Mbps	54/62	1 + 3
		2TX: Band 3	14.4Mbps	102/110/134	1 + 3
		3TX: Band 2	14.4Mbps	54/62	1 + 2 + 3
		3TX: Band 3	14.4Mbps	102/110/134	1 + 2 + 3
	11a/BPSK	2TX: Band 2	6Mbps	52/60/64	1 + 3
		2TX: Band 3	6Mbps	100/116/140	1 + 3
		3TX: Band 2	6Mbps	52/60/64	1 + 2 + 3
		3TX: Band 3	6Mbps	100/116/140	1 + 2 + 3
Frequency Stability	Un-modulation		-	60	N/A

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1: Module + Ant. 1 (3TX)

Mode 2: Module + Ant. 5 (2TX)

All test results were recorded in the report.

For Radiated Emission test below 1GHz:

Mode 1: Module + Ant. 1 (3TX)

Mode 2: Module + Ant. 5 (2TX)

All test results were recorded in the report.

For Radiated Emission test above 1GHz:

Mode 1: Module + Ant. 1 (3TX)

Mode 2: Module + Ant. 2 (3TX)

Mode 3: Module + Ant. 3 (3TX)

Mode 4: Module + Ant. 4 (3TX)

Mode 5: Module + Ant. 5 (2TX)

All test results were recorded in the report.

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)

Please refer section 6 for Test Site Address.

3.7. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	PP20L	E2KWM3945ABG
Mouse	iCooky	AMS0706W	DoC
Earphone	SHYARO CHI	MIC-04	N/A
Notebook	DELL	1200	E2K4965AGNM
Notebook	DELL	D520	E2KWM3945ABG
Power Supply	Gwinstek	GPC-60300	N/A

3.8. Table for Parameters of Test 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 Mode : Mode 1

Power Parameters of IEEE 802.11n MCS0 20MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	16.00	15.50	15.50	16.50	16.50	16.50

Power Parameters of IEEE 802.11n MCS0 40MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n				
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 40MHz	15.50	15.50	14.00	16.00	16.00

Power Parameters of IEEE 802.11a

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	15.50	16.00	16.00	16.00	16.00	16.50

During the test, "Revision 0.9 BUILD #16 ART_11n" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

Test Mode : Mode 2
Power Parameters of IEEE 802.11n MCS0 20MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	16.00	15.50	15.50	15.50	16.50	15.00

Power Parameters of IEEE 802.11n MCS0 40MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n				
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 40MHz	15.50	12.00	9.00	16.00	15.50

Power Parameters of IEEE 802.11a

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	15.50	16.00	16.00	16.00	16.00	14.00

During the test, "Revision 0.9 BUILD #16 ART_11n" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

Test Mode : Mode 3
Power Parameters of IEEE 802.11n MCS0 20MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	18.00	18.00	16.00	14.50	18.00	12.50

Power Parameters of IEEE 802.11n MCS0 40MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n				
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 40MHz	17.50	8.50	7.50	17.00	14.50

Power Parameters of IEEE 802.11a

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	18.00	18.00	16.00	14.50	18.50	13.50

During the test, "Revision 0.9 BUILD #16 ART_11n" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

Test Mode : Mode 4
Power Parameters of IEEE 802.11n MCS0 20MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	16.00	15.50	15.00	13.00	16.50	13.50

Power Parameters of IEEE 802.11n MCS0 40MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n				
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 40MHz	15.50	9.00	6.00	16.00	15.00

Power Parameters of IEEE 802.11a

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	15.50	16.00	15.00	14.50	16.00	14.00

During the test, "Revision 0.9 BUILD #16 ART_11n" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

Test Mode : Mode 5
Power Parameters of IEEE 802.11n MCS0 20MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	14.00	14.00	14.00	14.50	14.00	14.00

Power Parameters of IEEE 802.11n MCS0 40MHz

Test Software Version	Revision 0.9 BUILD #16 ART_11n				
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 40MHz	13.50	13.50	13.00	13.50	13.50

Power Parameters of IEEE 802.11a

Test Software Version	Revision 0.9 BUILD #16 ART_11n					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	14.50	14.50	14.50	14.50	14.00	14.00

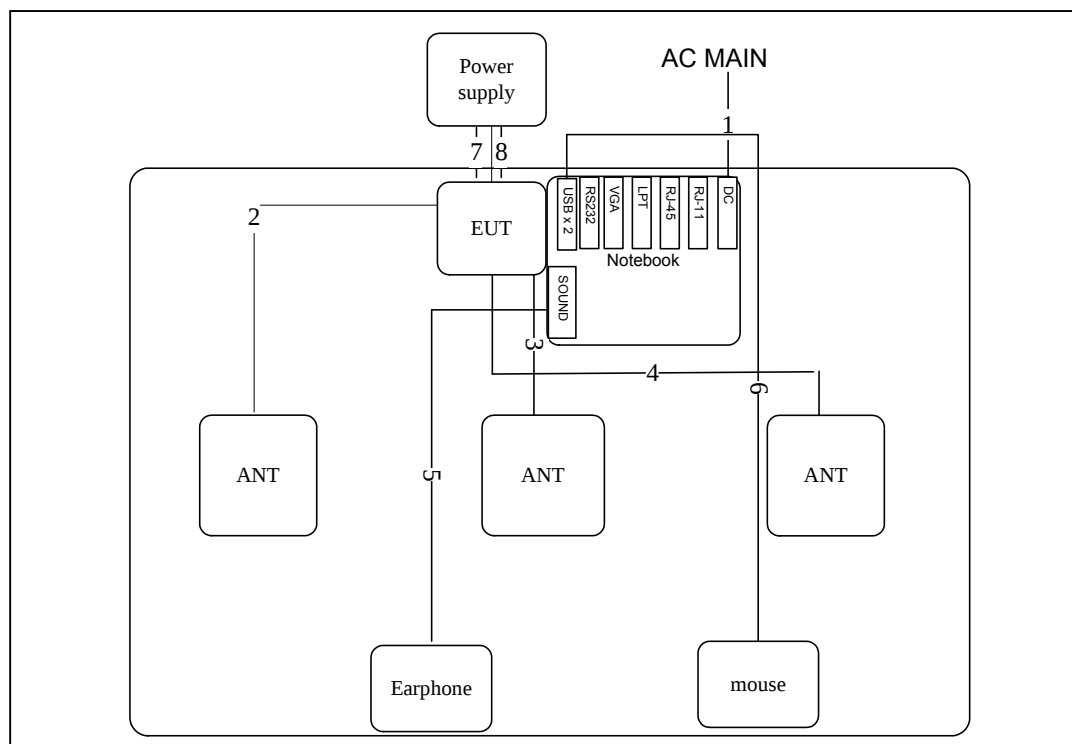
During the test, "Revision 0.9 BUILD #16 ART_11n" under WIN XP was executed the test program to control the EUT continuously transmit RF signal.

3.9. Test Configurations

3.9.1. Radiation Emissions Test Configuration

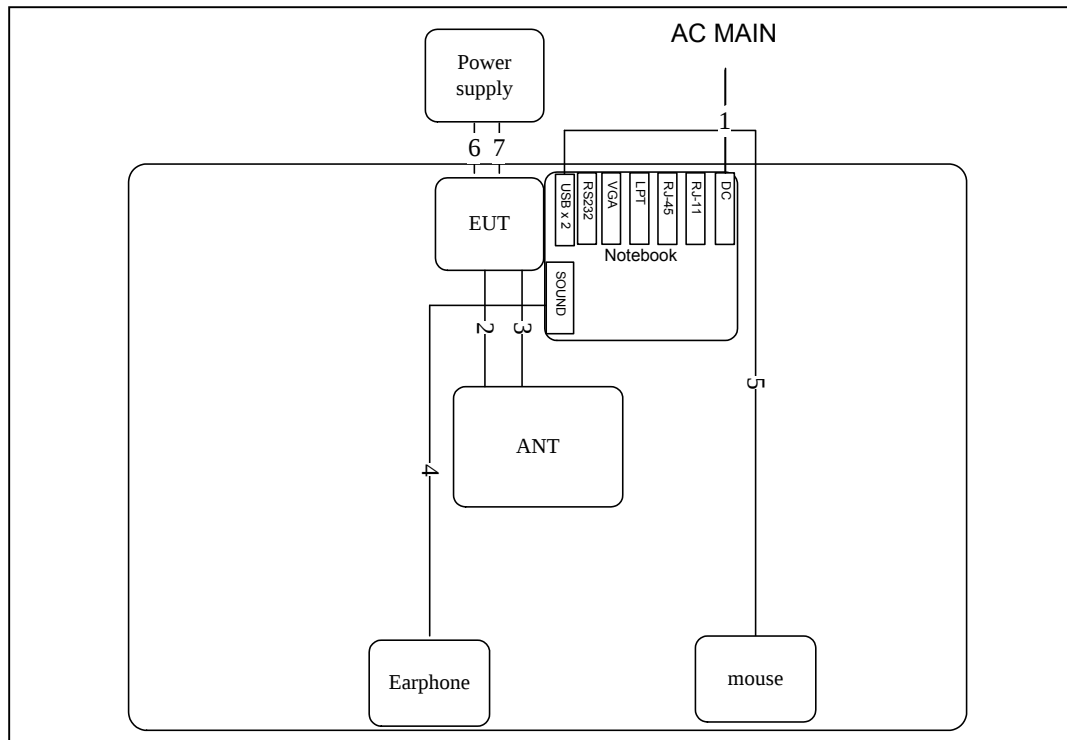
Test Configuration: 30MHz ~1GHz

Test Mode : Mode 1



Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	ANT cable	Yes	1M
5	USB cable	No	1.8M
6	Earphone cable	No	1.1M
7	Power cable	Yes	1M
8	Power cable	No	1M

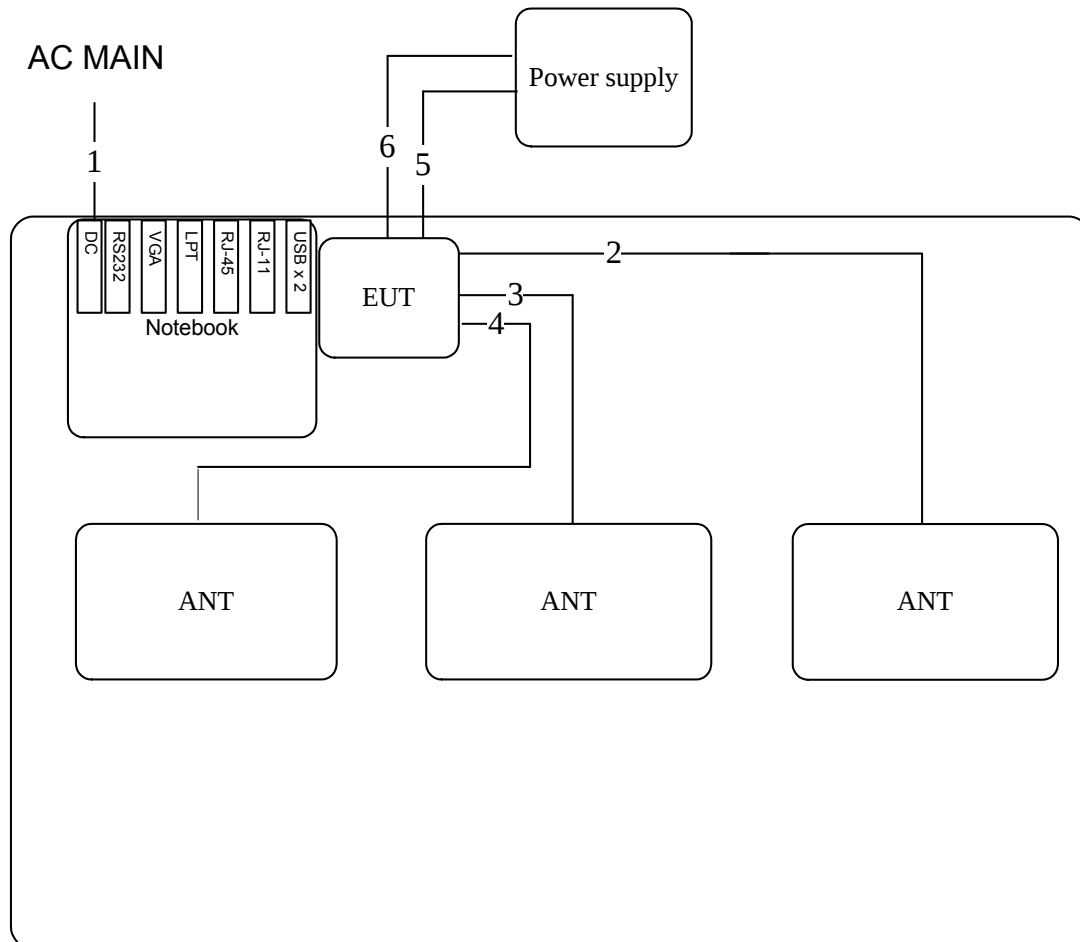
Test Mode : Mode 2



Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	USB cable	No	1.8M
5	Earphone cable	No	1.1M
6	Power cable	Yes	1M
7	Power cable	No	1M

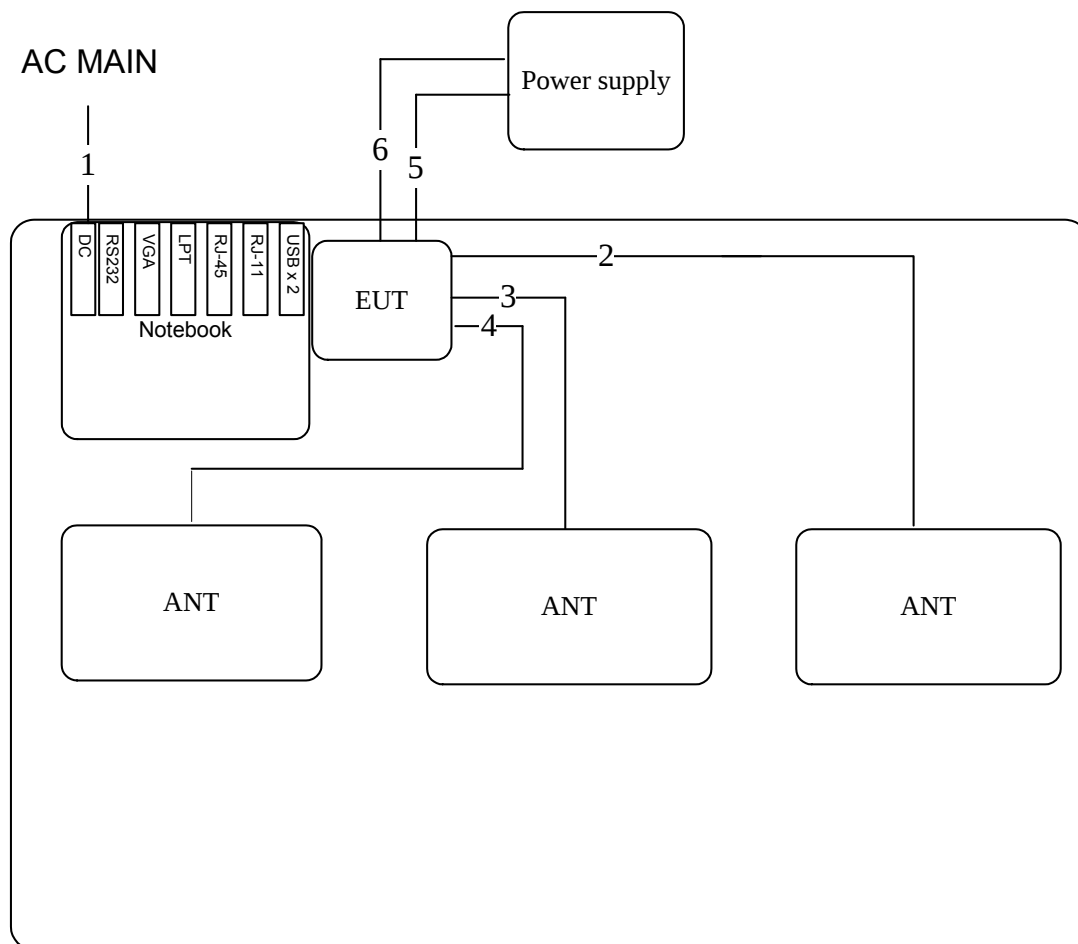
Test Configuration: above 1GHz

Test Mode : Mode 1



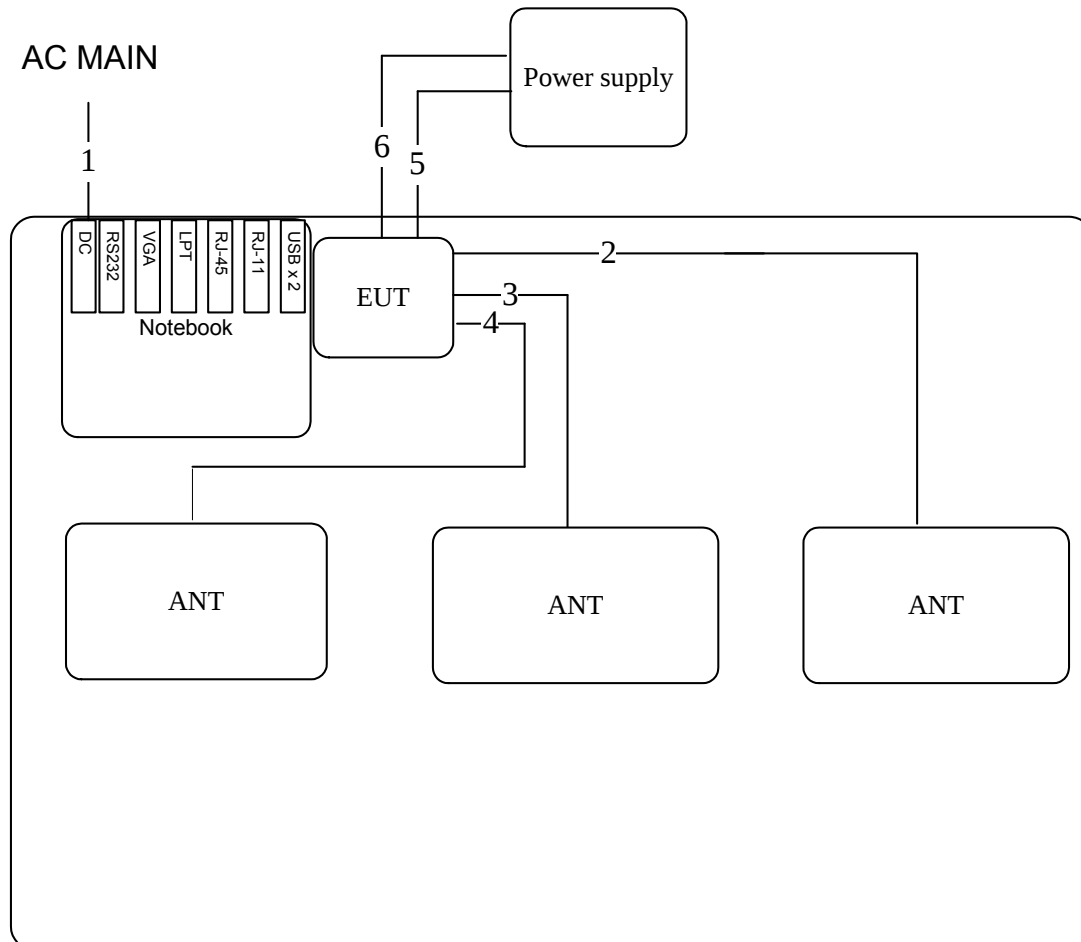
Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	ANT cable	Yes	1M
5	Power cable	No	1M
6	Power cable	No	1M

Test Mode : Mode 2



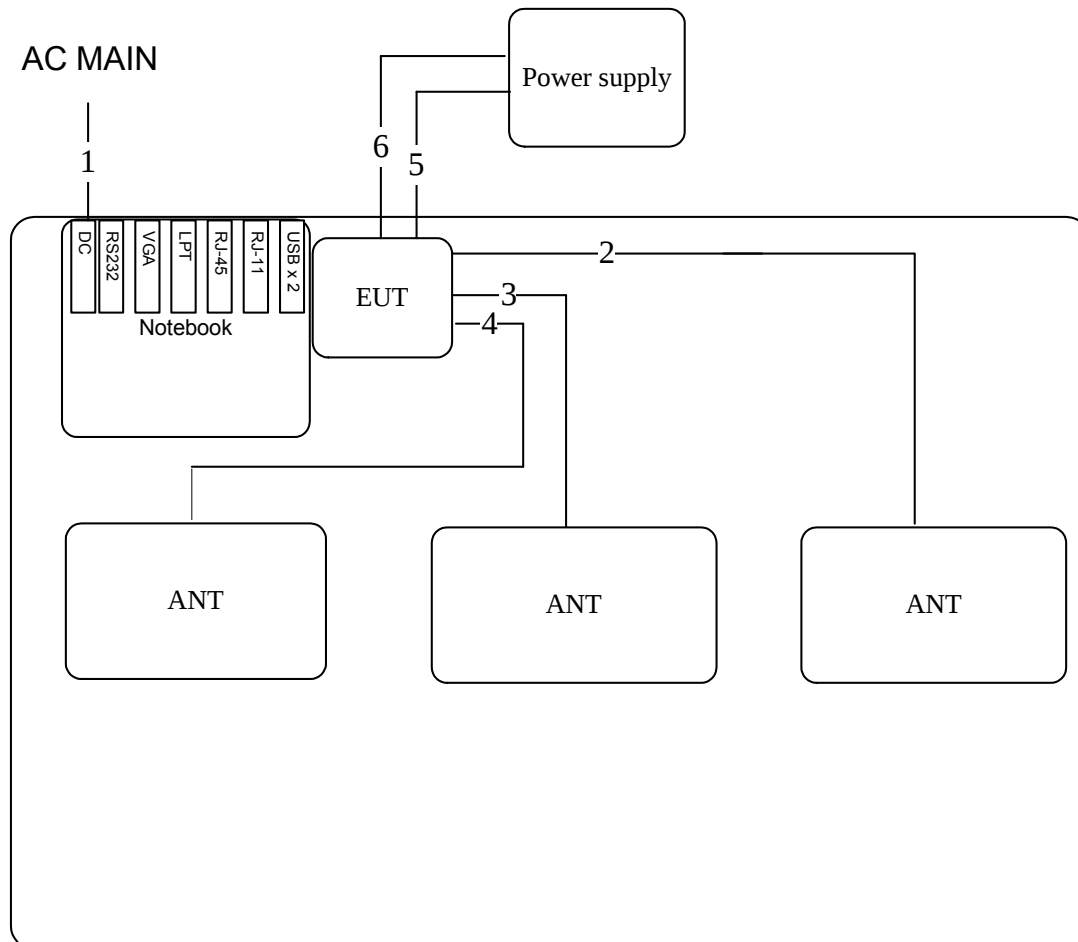
Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	ANT cable	Yes	1M
5	Power cable	No	1M
6	Power cable	No	1M

Test Mode : Mode 3



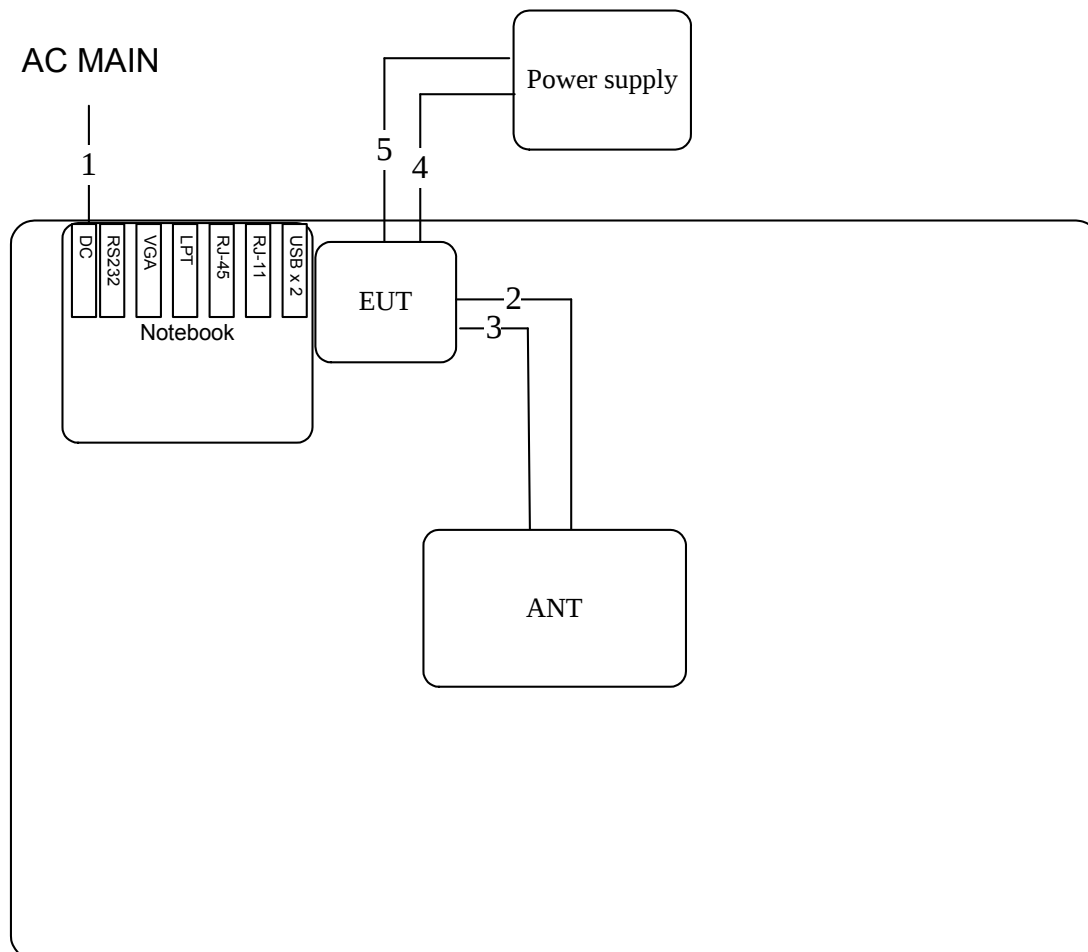
Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	ANT cable	Yes	1M
5	Power cable	No	1M
6	Power cable	No	1M

Test Mode : Mode 4



Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	ANT cable	Yes	1M
5	Power cable	No	1M
6	Power cable	No	1M

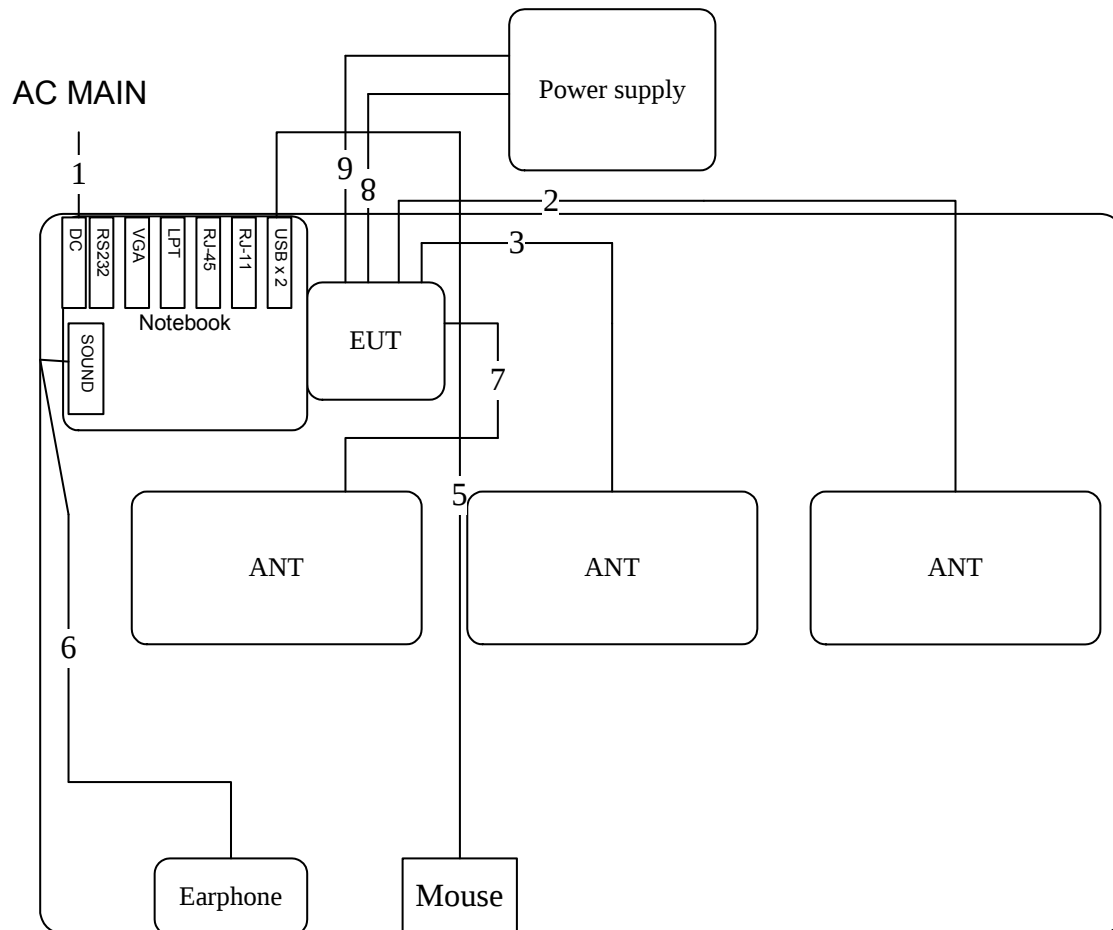
Test Mode : Mode 5



Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	Power cable	No	1M
5	Power cable	No	1M

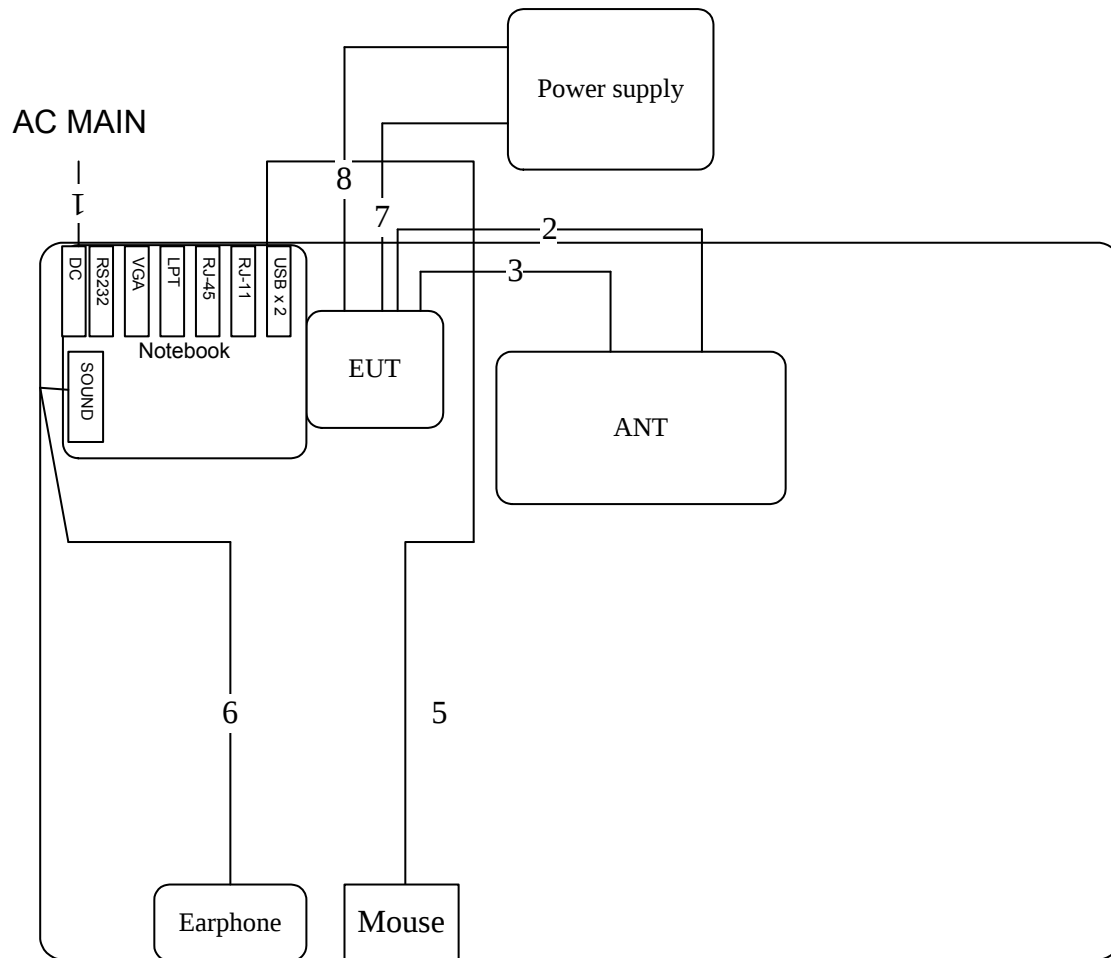
3.9.2. AC Power Line Conduction Emissions Test Configuration

Test Mode: Mode1



Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	RJ-45 cable	No	10M
5	USB cable	No	1.8M
6	Earphone cable	No	1.1M
7	ANT cable	Yes	1M
8	Power cable	No	1M
9	Power cable	No	1M

Test Mode: Mode 2



Item	Connection	Shield	Length
1	Power cable	No	2.6M
2	ANT cable	Yes	1M
3	ANT cable	Yes	1M
4	RJ-45 cable	No	10M
5	USB cable	No	1.8M
6	Earphone cable	No	1.1M
7	Power cable	Yes	1M
8	Power cable	No	1M

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

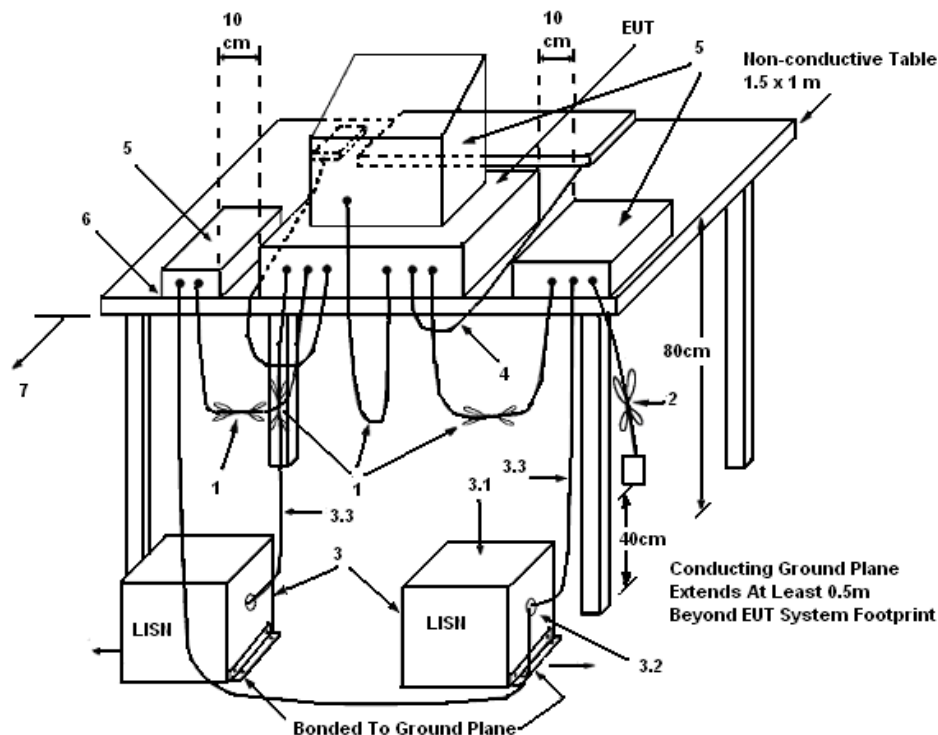
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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.

4.1.4. Test Setup Layout



LEGEND:

- (1) 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.
- (2) 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.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω . LISN can be placed on top of, or immediately beneath, reference ground plane.
- (3.1) All other equipment powered from additional LISN(s).
- (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
- (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

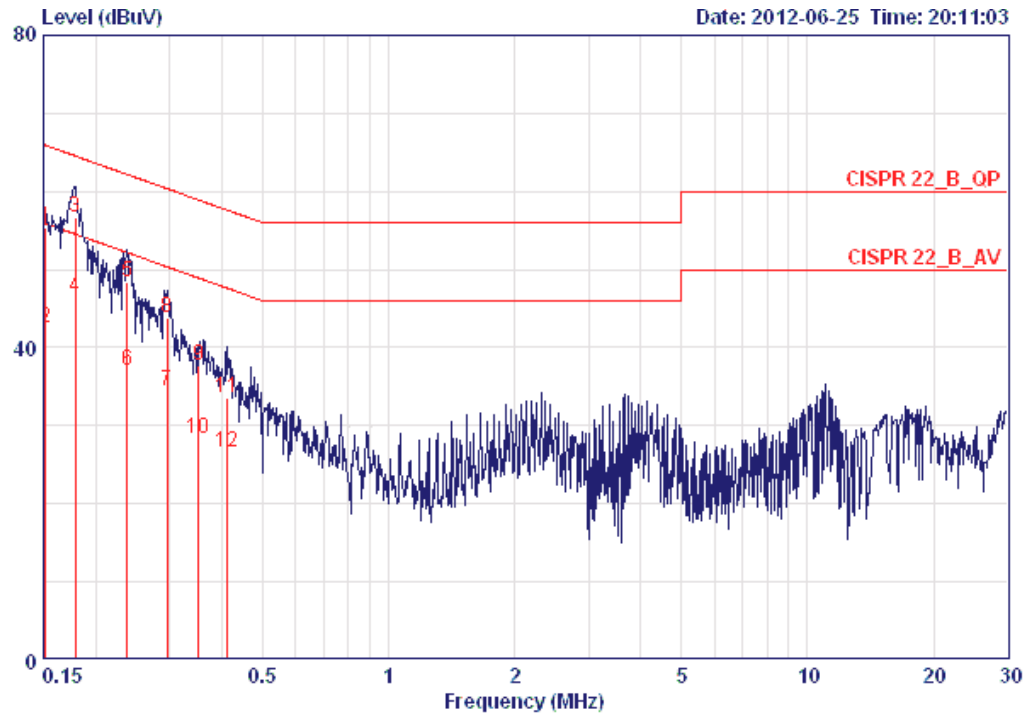
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

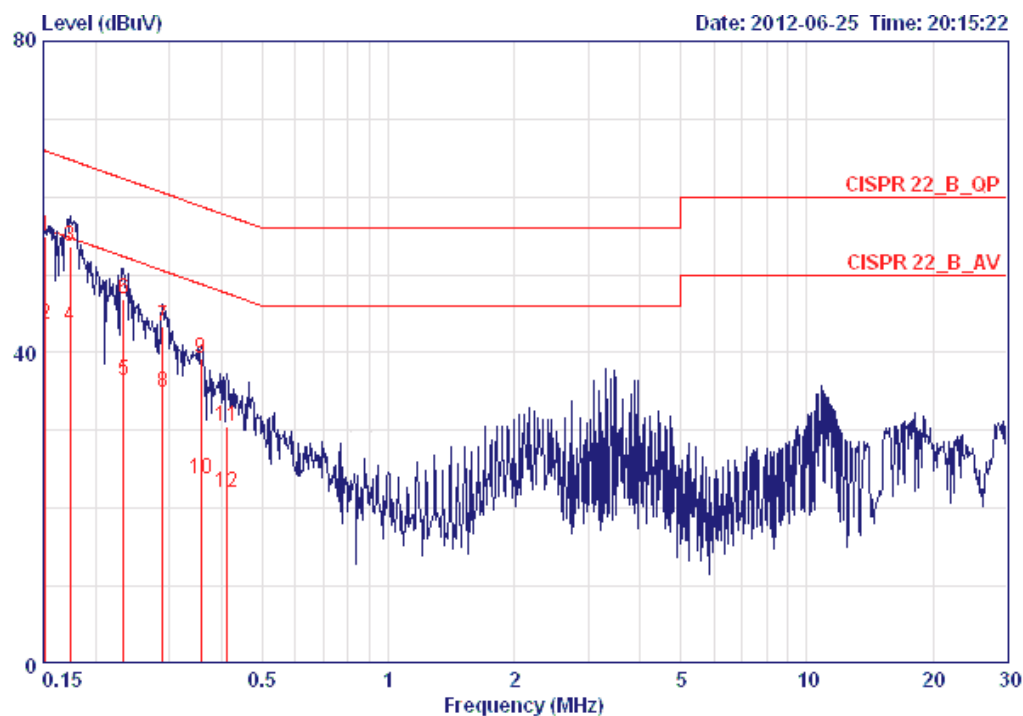
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	26°C	Humidity	58%
Test Engineer	Kane Liu	Phase	Line
Configuration	CTX	Test Mode	Mode 1



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15160	55.42	-10.49	65.91	55.16	0.06	0.20	QP
2	0.15160	42.55	-13.36	55.91	42.29	0.06	0.20	AVERAGE
3	0.17866	56.67	-7.87	64.55	56.42	0.05	0.20	QP
4	0.17866	46.35	-8.19	54.55	46.10	0.05	0.20	AVERAGE
5	0.23784	48.32	-13.85	62.17	48.08	0.04	0.20	QP
6	0.23784	37.15	-15.02	52.17	36.91	0.04	0.20	AVERAGE
7	0.29555	34.51	-15.86	50.37	34.28	0.03	0.20	AVERAGE
8	0.29555	43.83	-16.54	60.37	43.60	0.03	0.20	QP
9	0.35201	37.76	-21.16	58.91	37.54	0.02	0.20	QP
10	0.35201	28.32	-20.60	48.91	28.10	0.02	0.20	AVERAGE
11	0.41048	33.60	-24.04	57.64	33.39	0.01	0.20	QP
12	0.41048	26.54	-21.10	47.64	26.33	0.01	0.20	AVERAGE

Temperature	26°C	Humidity	60%
Test Engineer	Kane Liu	Phase	Neutral
Configuration	CTX	Test Mode	Mode 1

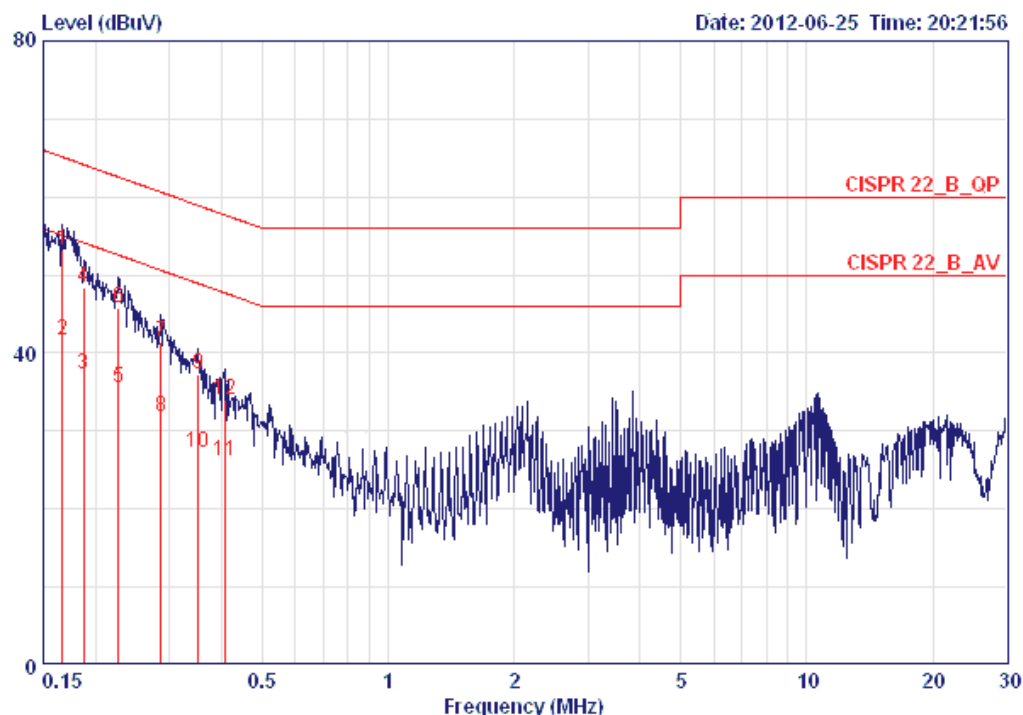


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15160	54.98	-10.93	65.91	54.72	0.06	0.20	QP
2	0.15160	43.57	-12.34	55.91	43.31	0.06	0.20	AVERAGE
3	0.17399	53.52	-11.24	64.77	53.27	0.05	0.20	QP
4	0.17399	43.30	-11.46	54.77	43.05	0.05	0.20	AVERAGE
5	0.23285	36.37	-15.98	52.35	36.12	0.05	0.20	AVERAGE
6	0.23285	46.85	-15.50	62.35	46.60	0.05	0.20	QP
7	0.28935	43.35	-17.19	60.54	43.10	0.05	0.20	QP
8	0.28935	34.77	-15.77	50.54	34.52	0.05	0.20	AVERAGE
9	0.35765	39.32	-19.46	58.78	39.07	0.05	0.20	QP
10	0.35765	23.79	-24.99	48.78	23.54	0.05	0.20	AVERAGE
11	0.41266	30.46	-27.13	57.59	30.21	0.05	0.20	QP
12	0.41266	21.96	-25.63	47.59	21.71	0.05	0.20	AVERAGE

Note:

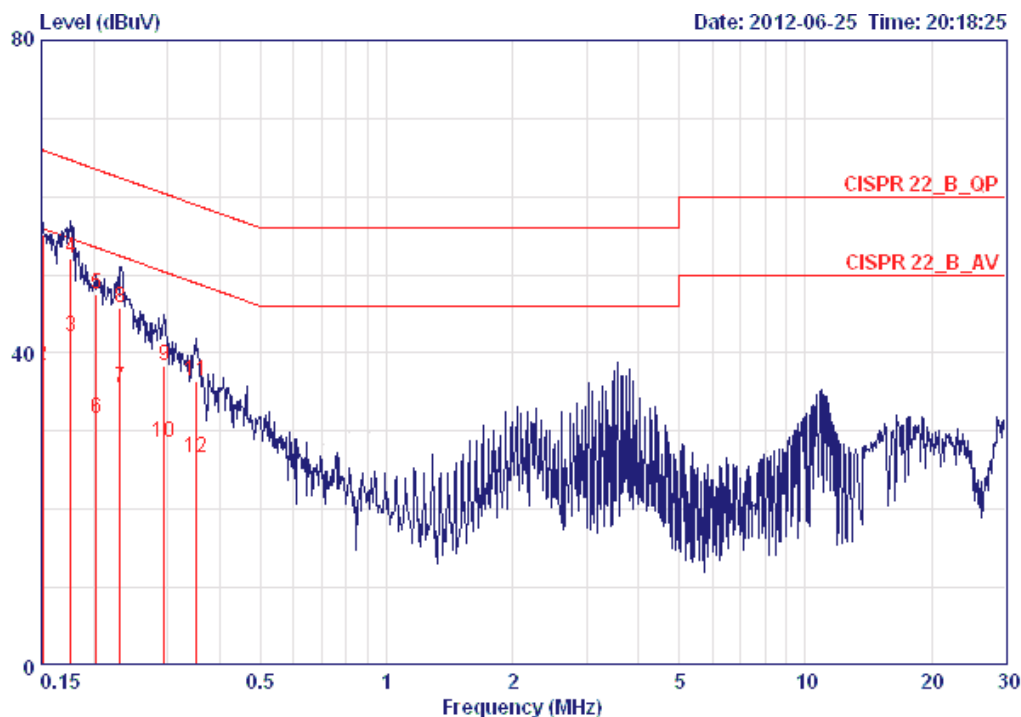
Level = Read Level + LISN Factor + Cable Loss

Temperature	26°C	Humidity	58%
Test Engineer	Kane Liu	Phase	Line
Configuration	CTX	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 @	0.16677	53.22	-11.90	65.12	52.96	0.06	0.20	QP
2	0.16677	41.71	-13.41	55.12	41.45	0.06	0.20	AVERAGE
3	0.18739	37.24	-16.91	54.15	36.99	0.05	0.20	AVERAGE
4	0.18739	48.34	-15.81	64.15	48.09	0.05	0.20	QP
5	0.22676	35.60	-16.96	52.57	35.36	0.04	0.20	AVERAGE
6	0.22676	45.86	-16.70	62.57	45.62	0.04	0.20	QP
7	0.28630	41.39	-19.24	60.63	41.16	0.03	0.20	QP
8	0.28630	31.76	-18.87	50.63	31.53	0.03	0.20	AVERAGE
9	0.35201	37.32	-21.60	58.91	37.10	0.02	0.20	QP
10	0.35201	27.18	-21.74	48.91	26.96	0.02	0.20	AVERAGE
11	0.40615	26.14	-21.59	47.73	25.93	0.01	0.20	AVERAGE
12	0.40615	34.05	-23.68	57.73	33.84	0.01	0.20	QP

Temperature	26°C	Humidity	60%
Test Engineer	Kane Liu	Phase	Neutral
Configuration	CTX	Test Mode	Mode 2



	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15080	55.22	-10.74	65.96	54.96	0.06	0.20	QP
2	0.15080	38.35	-17.61	55.96	38.09	0.06	0.20	AVERAGE
3	0.17584	42.15	-12.53	54.68	41.90	0.05	0.20	AVERAGE
4	0.17584	52.06	-12.62	64.68	51.81	0.05	0.20	QP
5	0.20289	47.43	-16.06	63.49	47.18	0.05	0.20	QP
6	0.20289	31.50	-21.99	53.49	31.25	0.05	0.20	AVERAGE
7	0.23162	35.57	-16.82	52.39	35.32	0.05	0.20	AVERAGE
8	0.23162	45.80	-16.59	62.39	45.55	0.05	0.20	QP
9	0.29398	38.39	-22.02	60.41	38.14	0.05	0.20	QP
10	0.29398	28.65	-21.76	50.41	28.40	0.05	0.20	AVERAGE
11	0.35015	36.36	-22.60	58.96	36.11	0.05	0.20	QP
12	0.35015	26.57	-22.39	48.96	26.32	0.05	0.20	AVERAGE

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

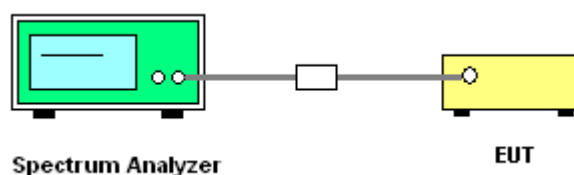
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	300 kHz
VB	1000 kHz
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

Temperature	23°C	Humidity	60%
Test Engineer	Robert Chang	Configurations	IEEE 802.11n / a

Test Mode : Mode 1

Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	24.16	18.56
60	5300 MHz	24.32	18.56
64	5320 MHz	23.36	18.88
100	5500 MHz	24.80	17.60
116	5580 MHz	25.44	18.72
140	5700 MHz	24.48	17.92

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	41.92	35.52
62	5310 MHz	44.16	36.16
102	5510 MHz	40.00	35.52
110	5550 MHz	43.52	36.80
134	5670 MHz	48.32	36.48

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	21.76	16.64
60	5300 MHz	21.44	16.48
64	5320 MHz	21.92	16.80
100	5500 MHz	21.28	16.48
116	5580 MHz	22.72	16.48
140	5700 MHz	21.44	16.80

Test Mode : Mode 2
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	24.16	18.56
60	5300 MHz	24.32	18.56
64	5320 MHz	24.64	19.04
100	5500 MHz	24.16	18.88
116	5580 MHz	25.44	18.72
140	5700 MHz	23.84	18.88

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	41.92	35.52
62	5310 MHz	42.88	36.48
102	5510 MHz	44.16	36.48
110	5550 MHz	43.52	36.80
134	5670 MHz	42.88	37.12

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	21.76	16.64
60	5300 MHz	21.44	16.48
64	5320 MHz	21.92	16.80
100	5500 MHz	21.28	16.48
116	5580 MHz	22.72	16.48
140	5700 MHz	21.44	17.12

Test Mode : Mode 3
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	24.96	18.88
60	5300 MHz	24.80	18.88
64	5320 MHz	24.80	18.72
100	5500 MHz	24.64	17.92
116	5580 MHz	26.56	18.88
140	5700 MHz	24.64	17.92

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	46.40	36.80
62	5310 MHz	43.84	36.48
102	5510 MHz	44.48	36.48
110	5550 MHz	46.72	37.12
134	5670 MHz	43.52	37.12

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	23.84	17.12
60	5300 MHz	21.28	17.12
64	5320 MHz	21.60	17.12
100	5500 MHz	23.84	17.12
116	5580 MHz	24.96	17.60
140	5700 MHz	23.20	17.12

Test Mode : Mode 4
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	24.16	18.56
60	5300 MHz	24.32	18.56
64	5320 MHz	23.52	18.56
100	5500 MHz	24.48	18.72
116	5580 MHz	25.44	18.72
140	5700 MHz	24.48	18.56

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	41.92	35.52
62	5310 MHz	41.92	34.88
102	5510 MHz	41.60	35.52
110	5550 MHz	43.52	36.80
134	5670 MHz	43.20	35.84

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	21.76	16.64
60	5300 MHz	21.44	16.48
64	5320 MHz	21.92	16.48
100	5500 MHz	21.44	16.96
116	5580 MHz	22.72	16.48
140	5700 MHz	21.44	17.12

Test Mode : Mode 5
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	24.80	18.24
60	5300 MHz	24.16	18.40
64	5320 MHz	24.64	18.56
100	5500 MHz	25.12	18.56
116	5580 MHz	24.80	18.72
140	5700 MHz	23.84	18.56

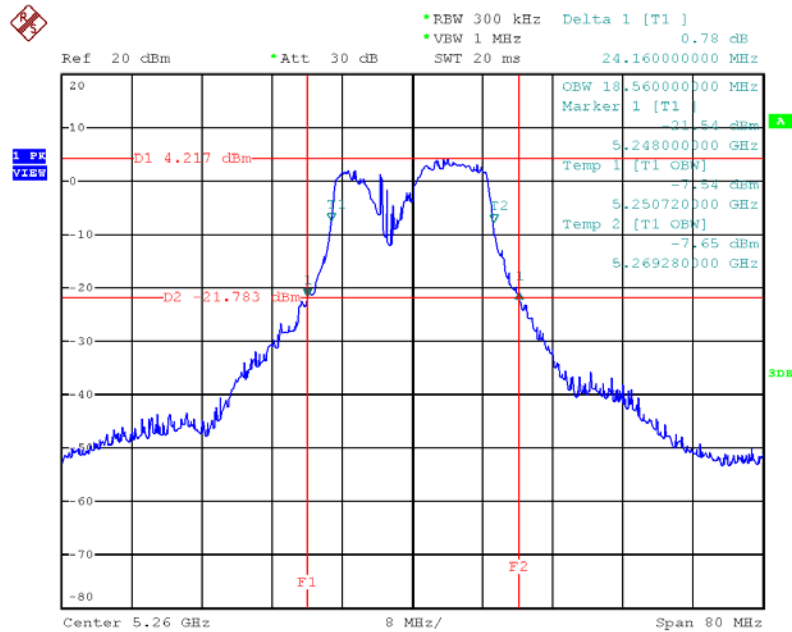
Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	44.80	36.80
62	5310 MHz	45.76	36.80
102	5510 MHz	44.16	36.80
110	5550 MHz	44.80	37.12
134	5670 MHz	43.52	36.80

Configuration IEEE 802.11a / Chain 1 + Chain 3

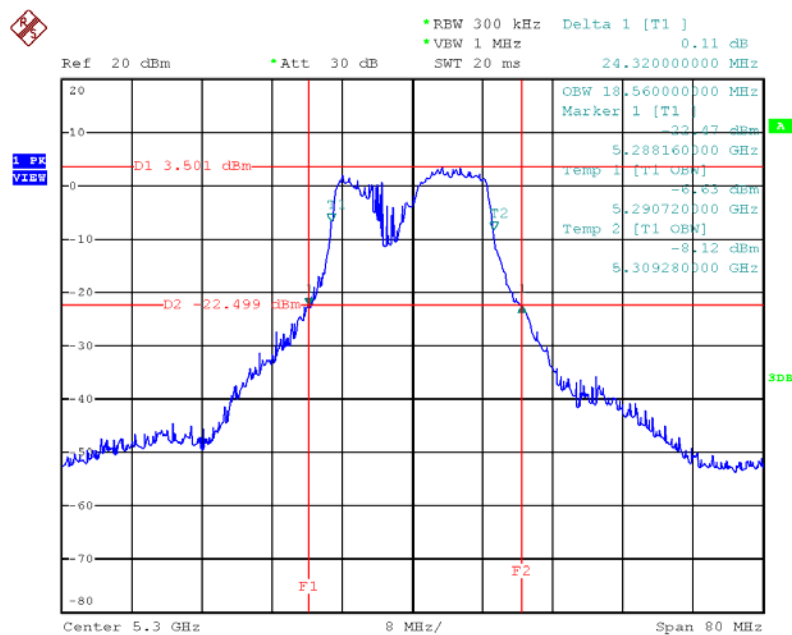
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	23.53	17.12
60	5300 MHz	23.20	16.96
64	5320 MHz	22.88	17.12
100	5500 MHz	23.20	17.12
116	5580 MHz	22.72	17.28
140	5700 MHz	22.88	16.96

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 1



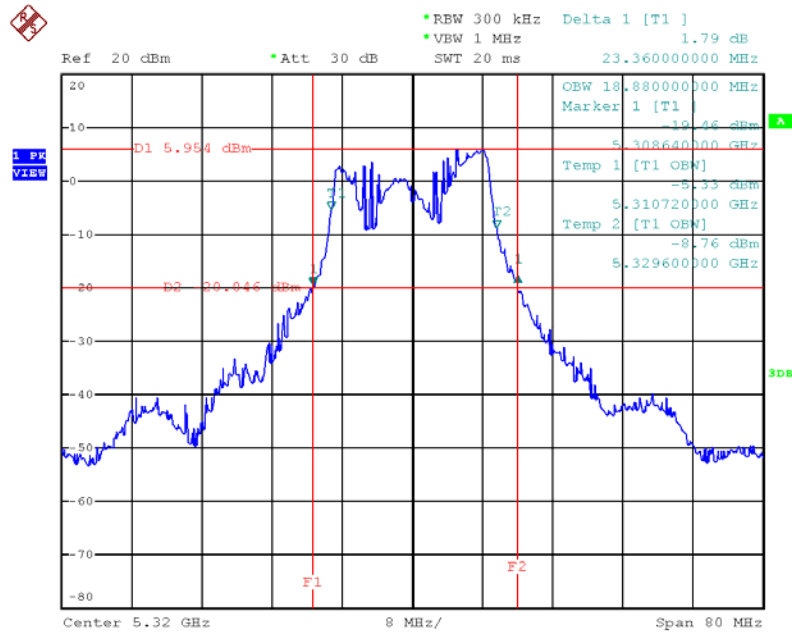
Date: 21.JUL.2012 10:18:41

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 1



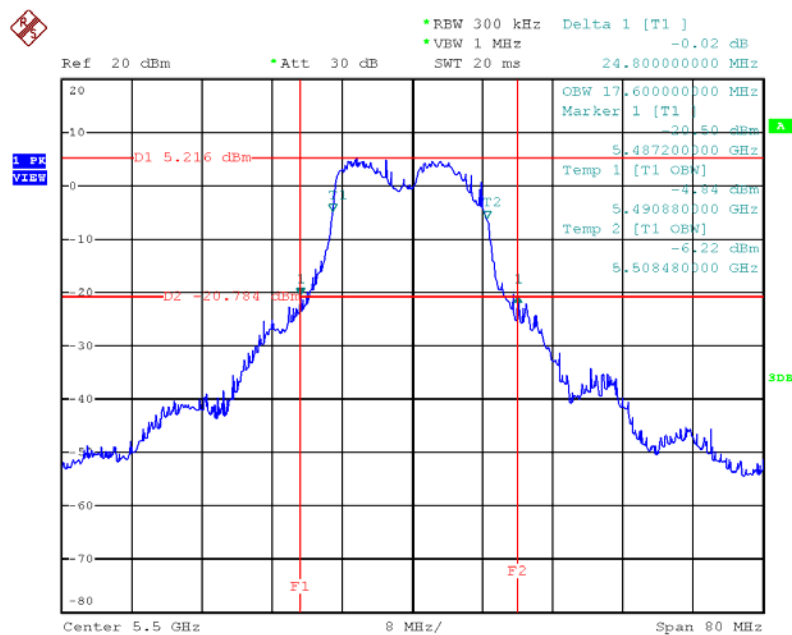
Date: 21.JUL.2012 10:19:32

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 1



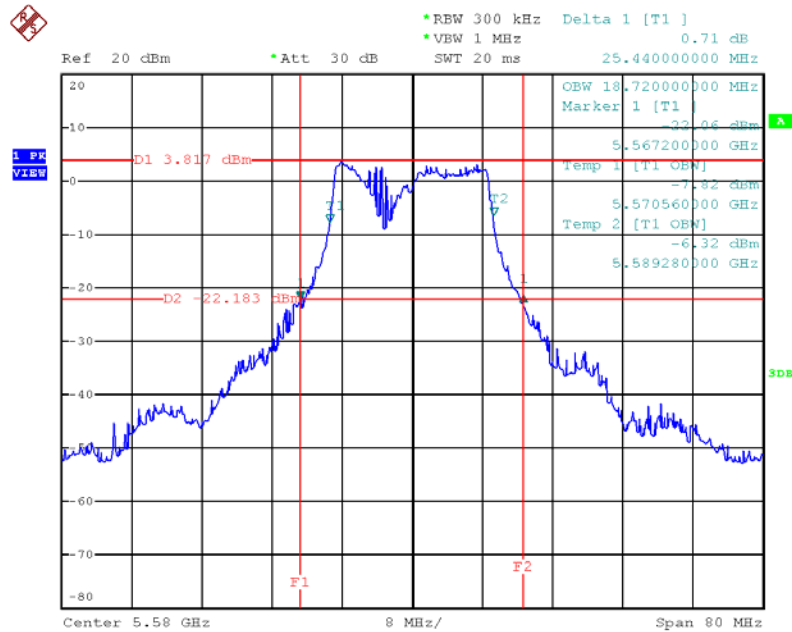
Date: 22.JUL.2012 14:16:21

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 1



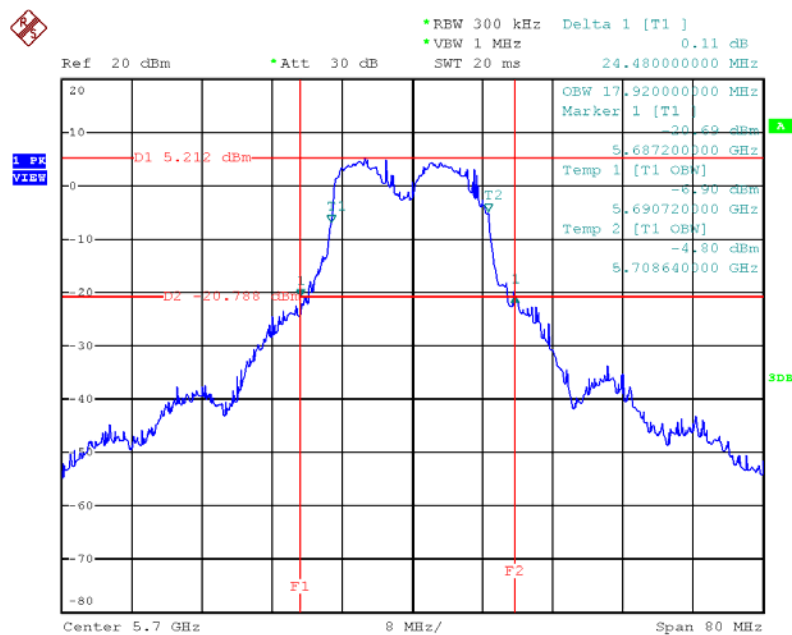
Date: 22.JUL.2012 14:15:28

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 1



Date: 21.JUL.2012 10:24:14

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 1



Date: 22.JUL.2012 14:14:18



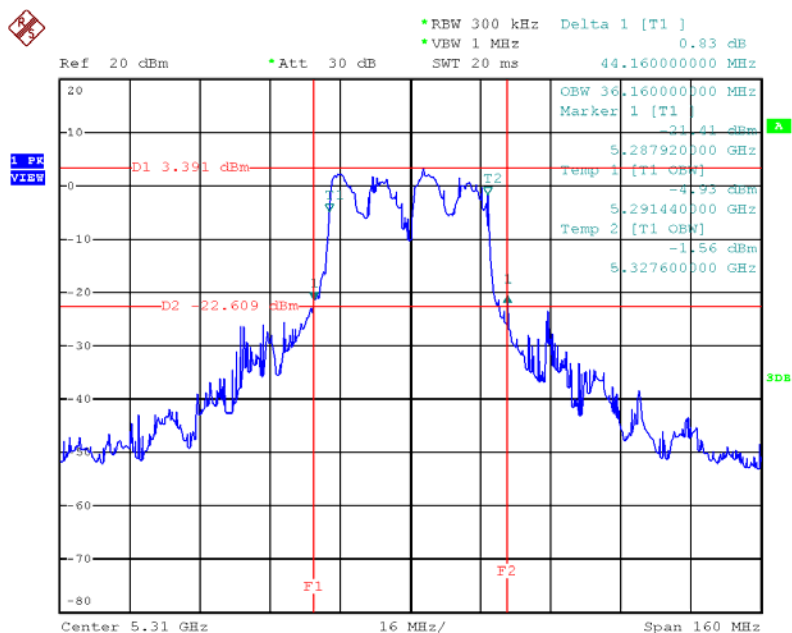
*RBW 300 kHz Delta 1 [T1]
 *VBW 1 MHz 1.72 dB
 Ref 20 dBm *Att 30 dB SWT 20 ms 41.920000000 MHz

OBW 35.520000000 MHz
 Marker 1 [T1] -23.47 dBm
 5.247280000 GHz
 Temp 1 [T1 OBW] -7.09 dBm
 5.251440000 GHz
 Temp 2 [T1 OBW] -6.94 dBm
 5.286960000 GHz

D1 1.452 dBm
 D2 -24.548 dBm
 F1 F2

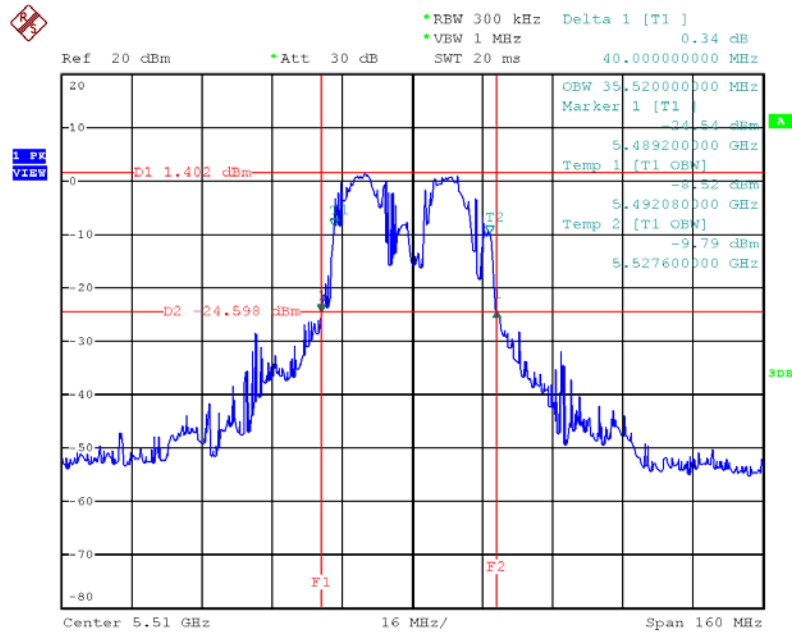
Center 5.27 GHz 16 MHz/
 Span 160 MHz

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5310 MHz / Mode 1



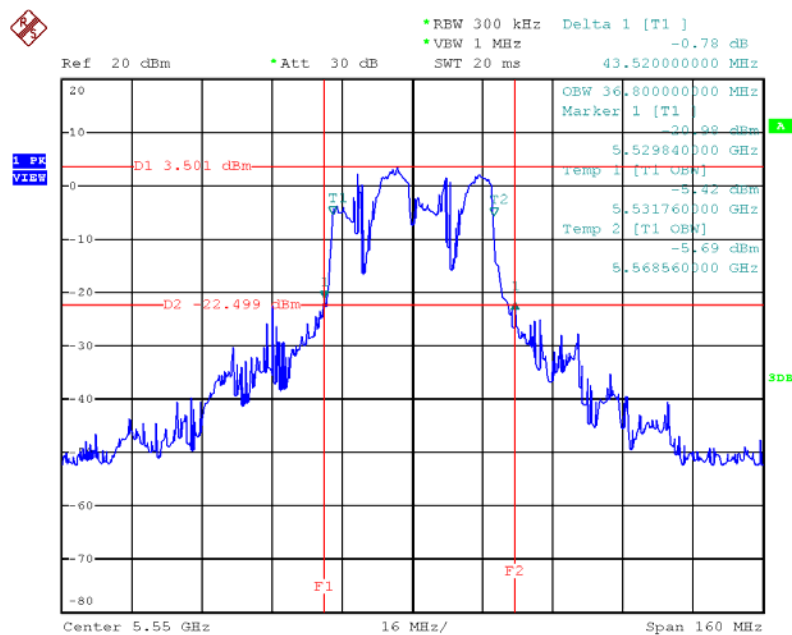
Date: 22.JUL.2012 14:11:25

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5510 MHz / Mode 1



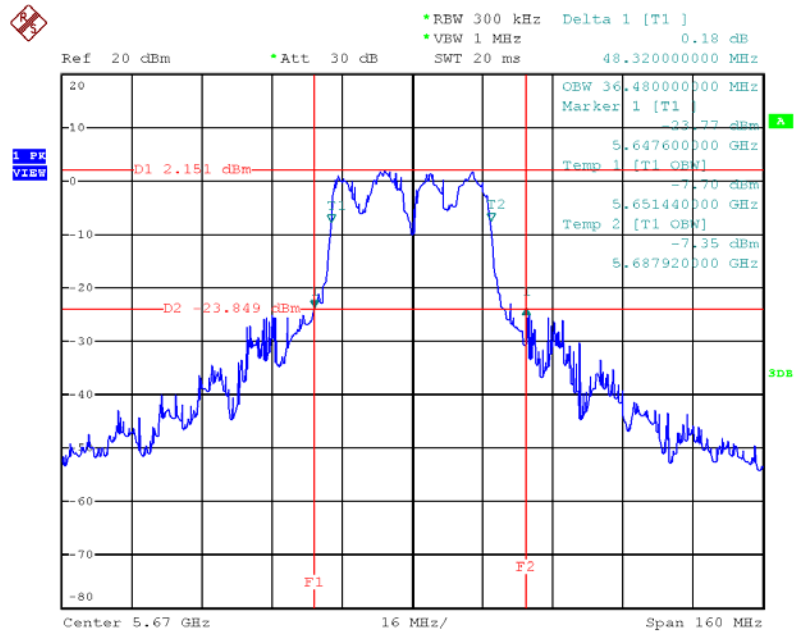
Date: 22.JUL.2012 14:12:25

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5550 MHz / Mode 1



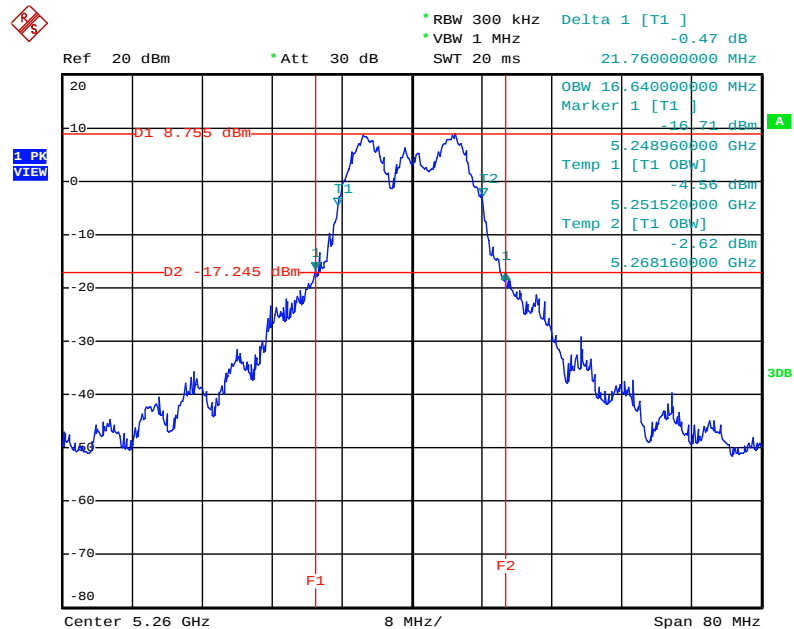
Date: 21.JUL.2012 10:31:37

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5670 MHz / Mode 1



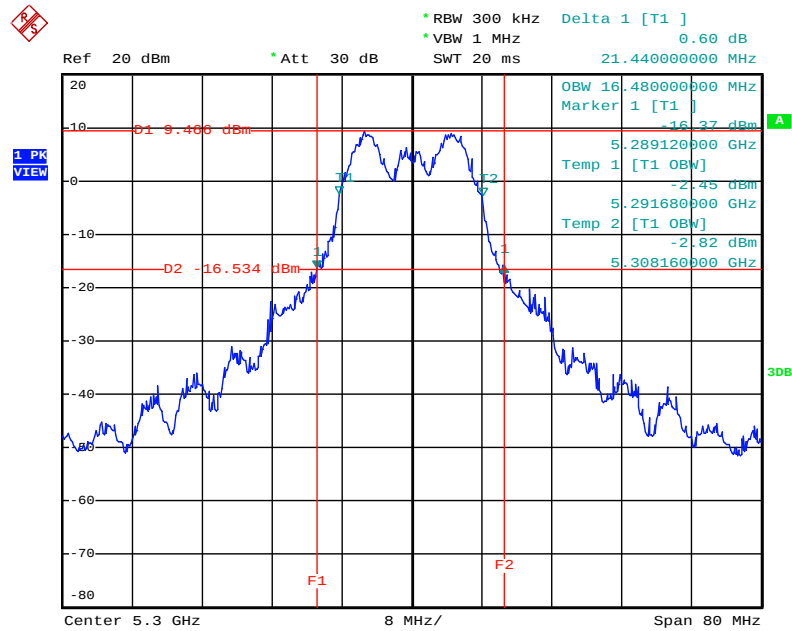
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26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 1



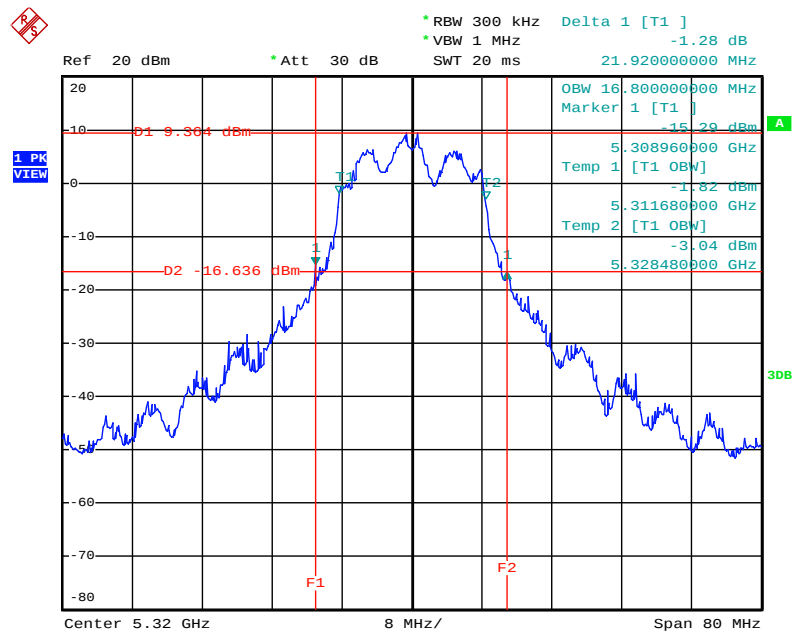
Date: 9.AUG.2012 21:18:10

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 1



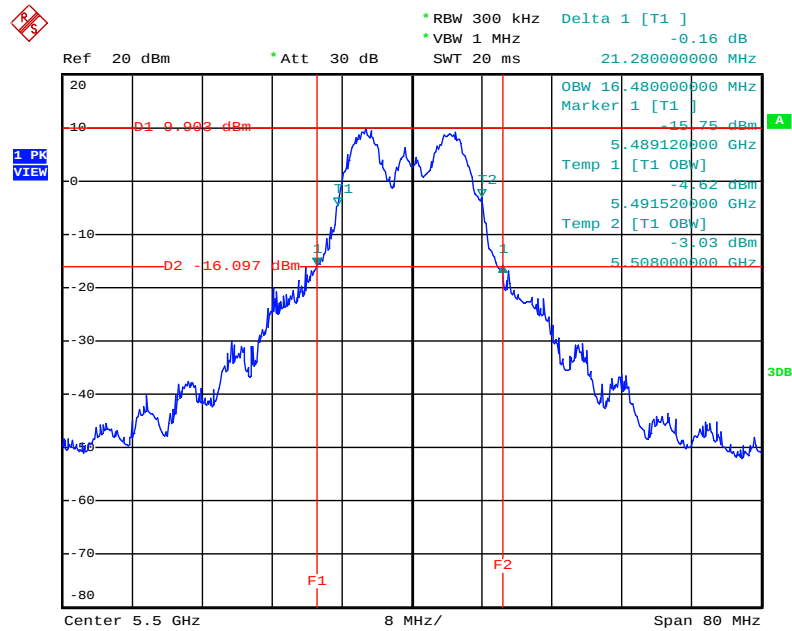
Date: 9.AUG.2012 21:18:41

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 1



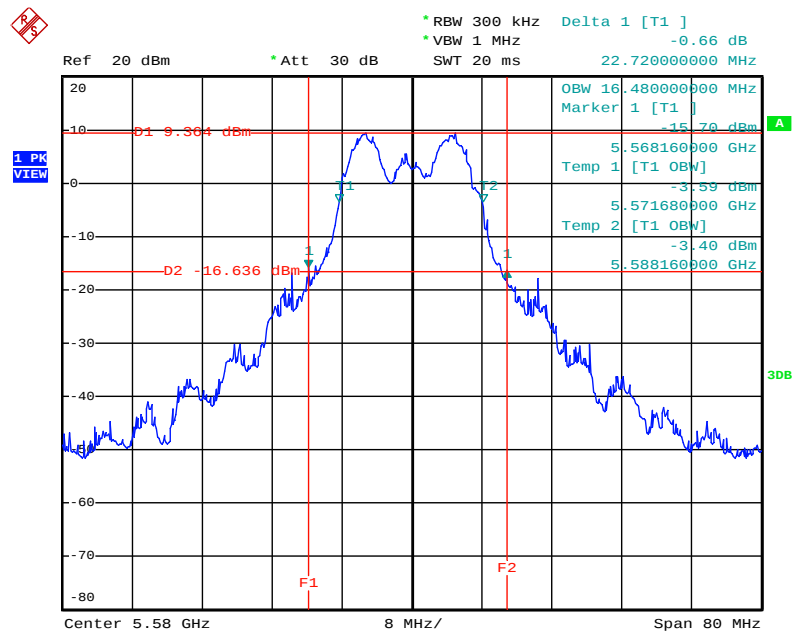
Date: 9.AUG.2012 21:19:04

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 1



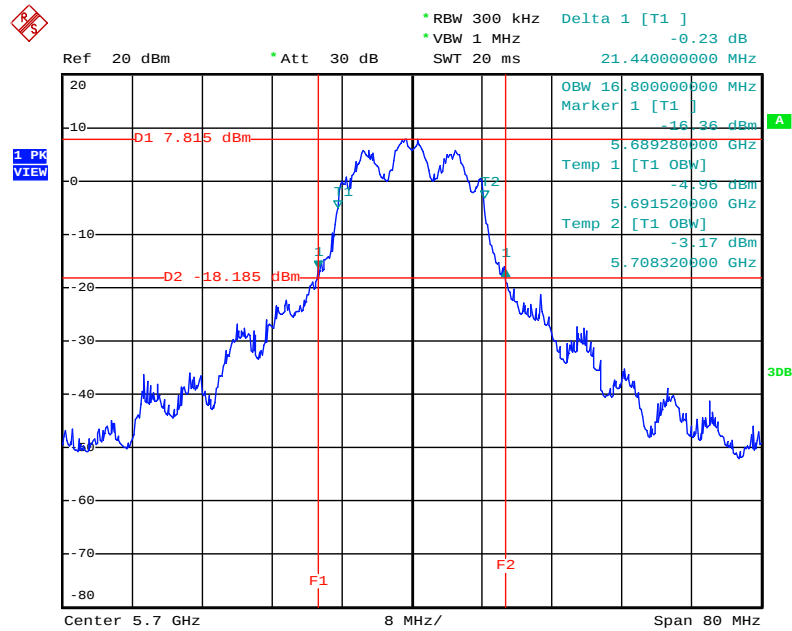
Date: 9.AUG.2012 21:20:32

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 1



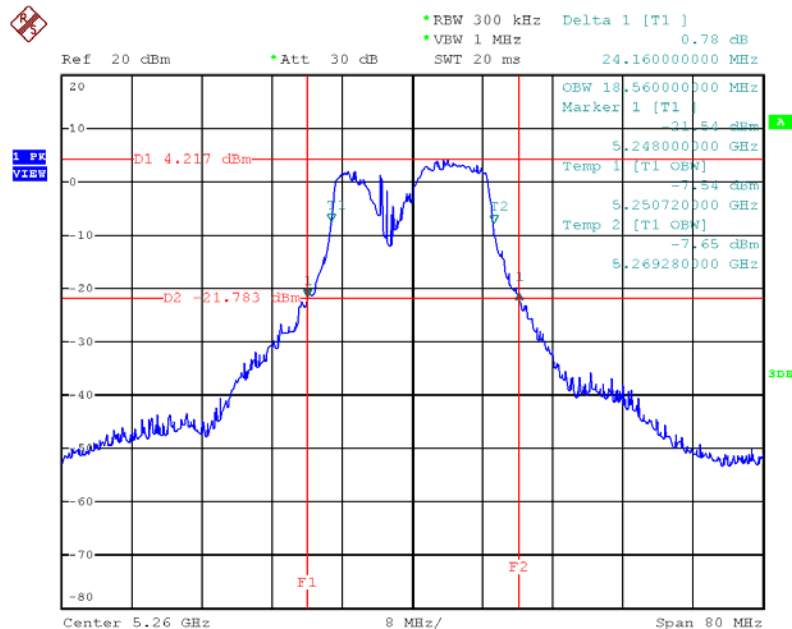
Date: 9.AUG.2012 21:21:24

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 1



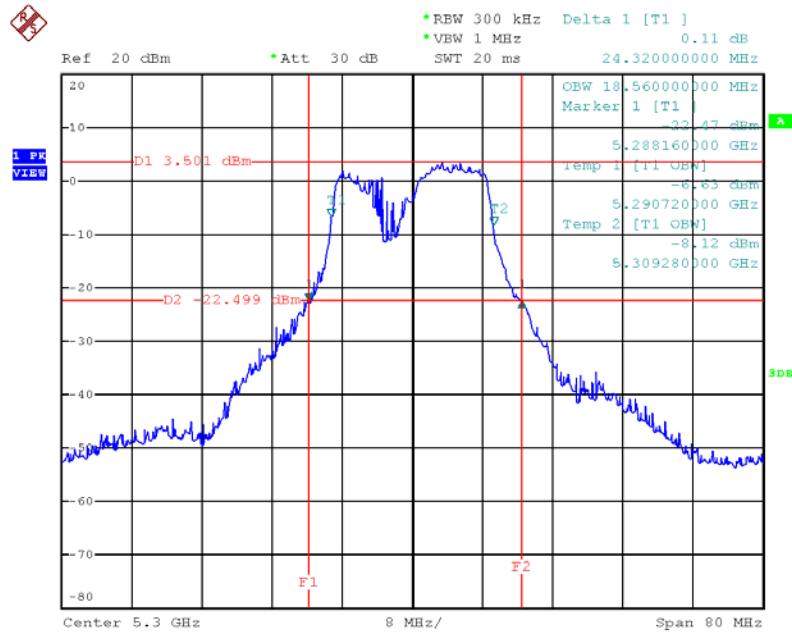
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 2



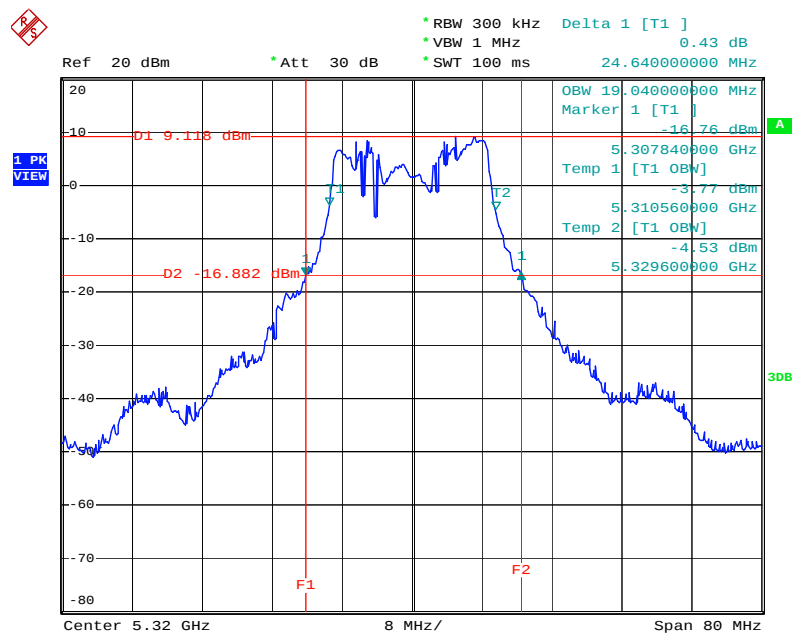
Date: 21.JUL.2012 10:18:41

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 2



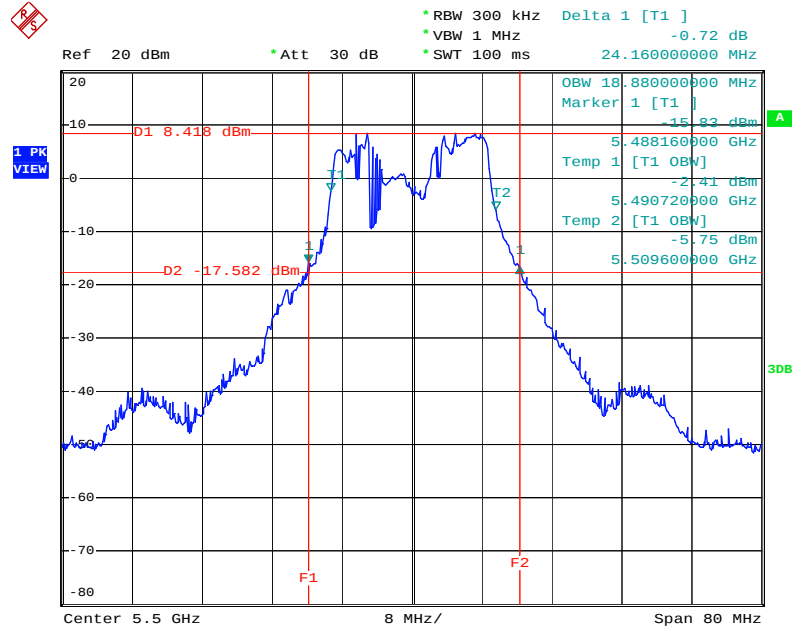
Date: 21.JUL.2012 10:19:32

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 2



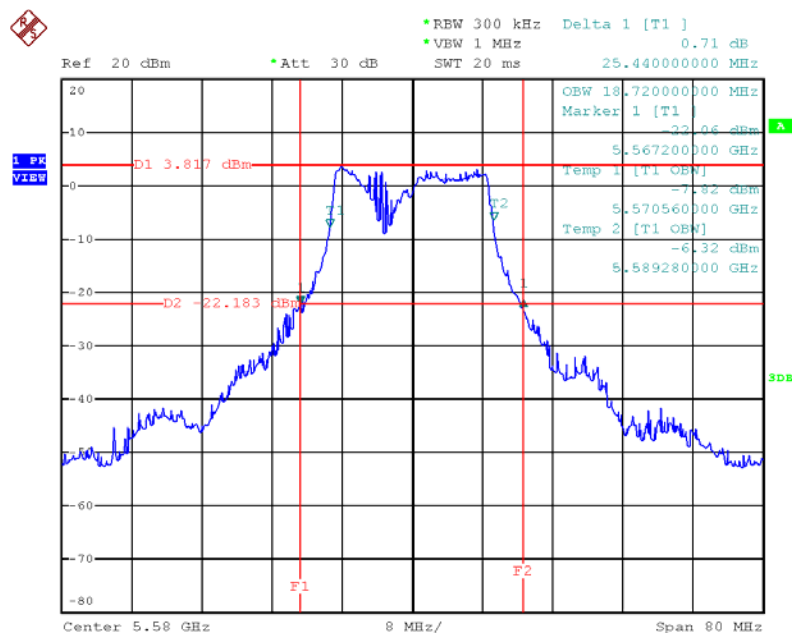
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 2



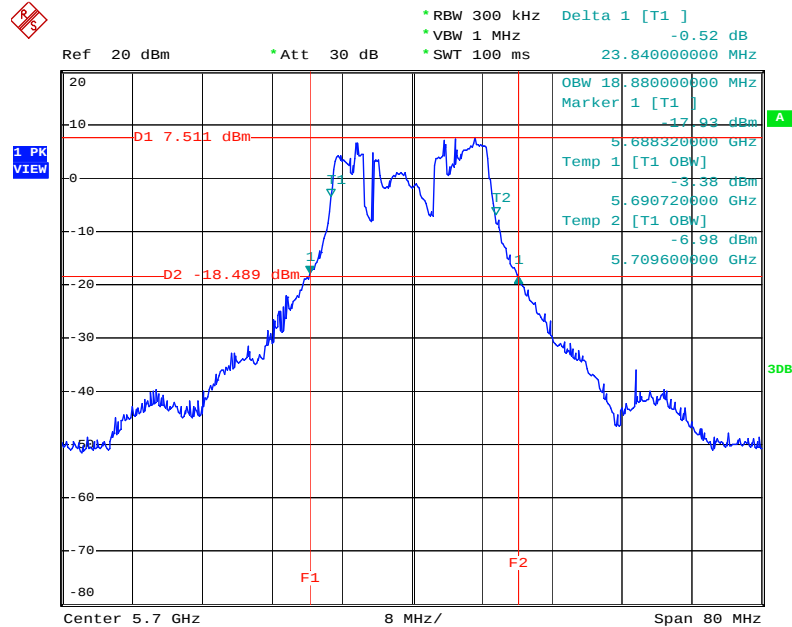
Date: 23.JUL.2012 13:12:45

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 2



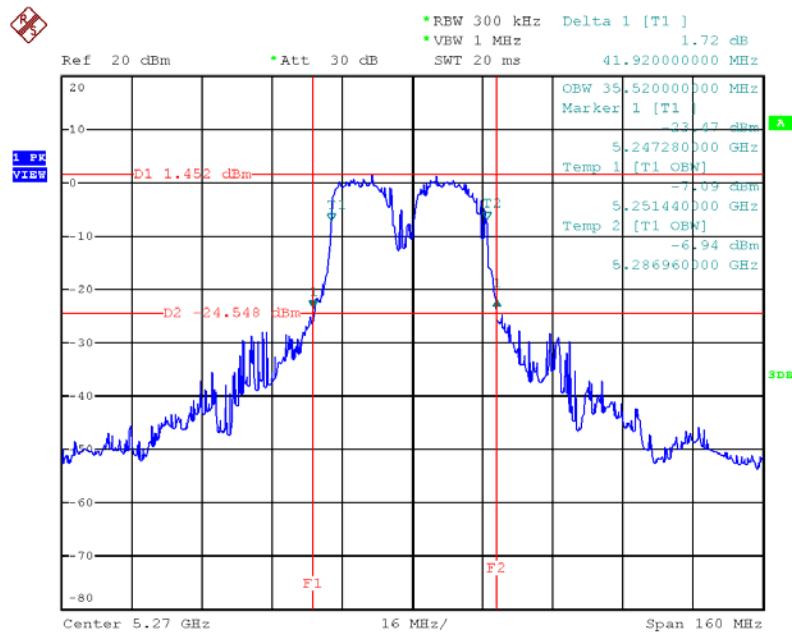
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 2



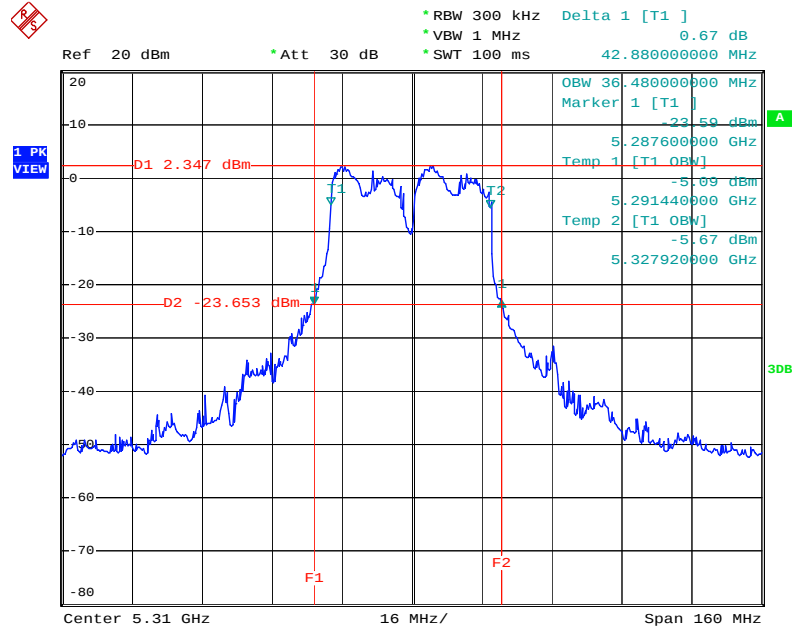
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5270 MHz / Mode 2



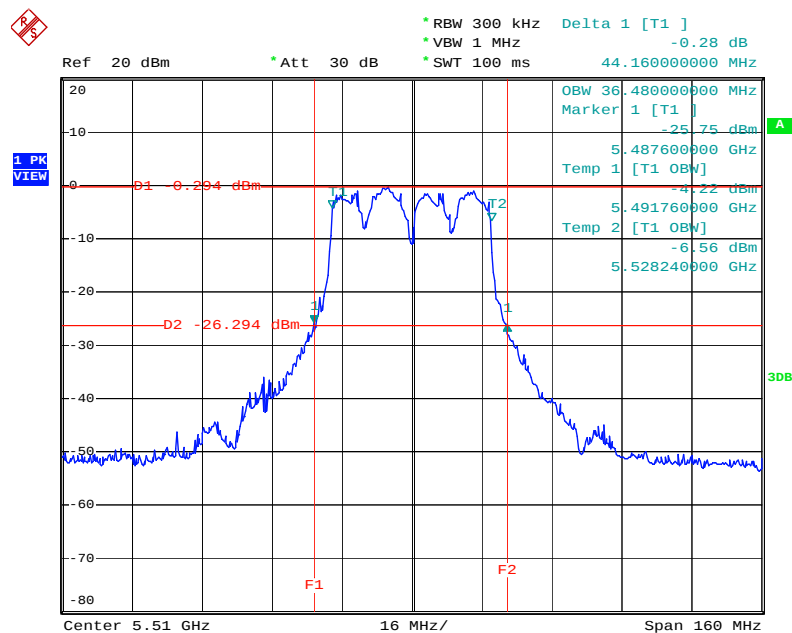
Date: 21.JUL.2012 10:36:19

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5310 MHz / Mode 2



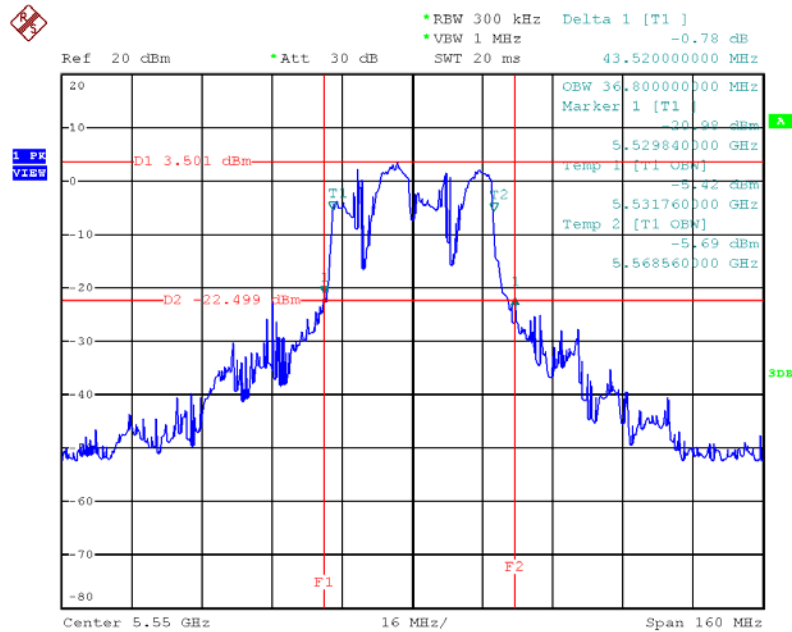
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5510 MHz / Mode 2



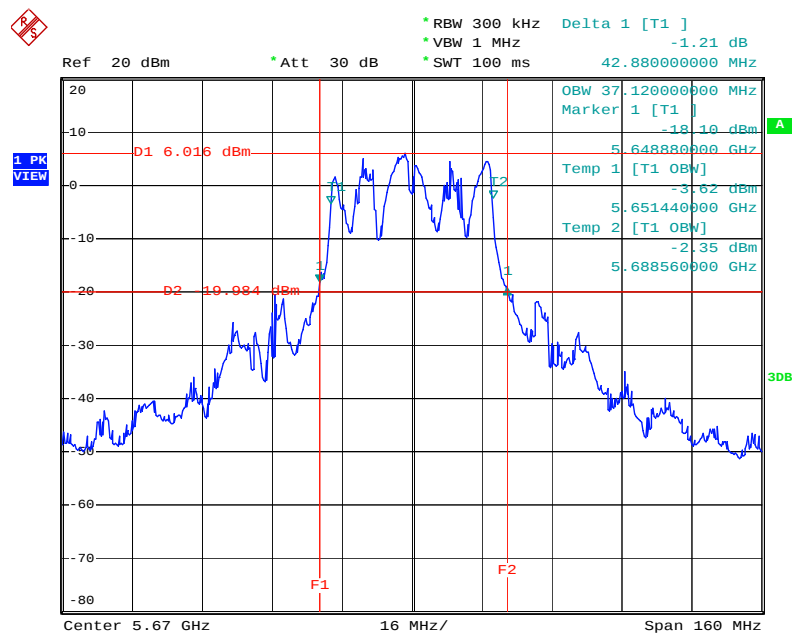
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5550 MHz / Mode 2



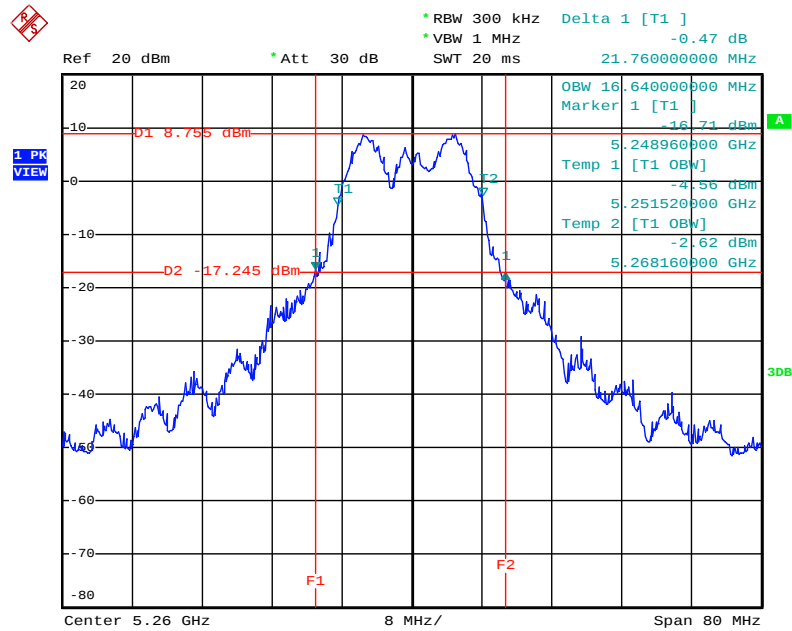
Date: 21.JUL.2012 10:31:37

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5670 MHz / Mode 2



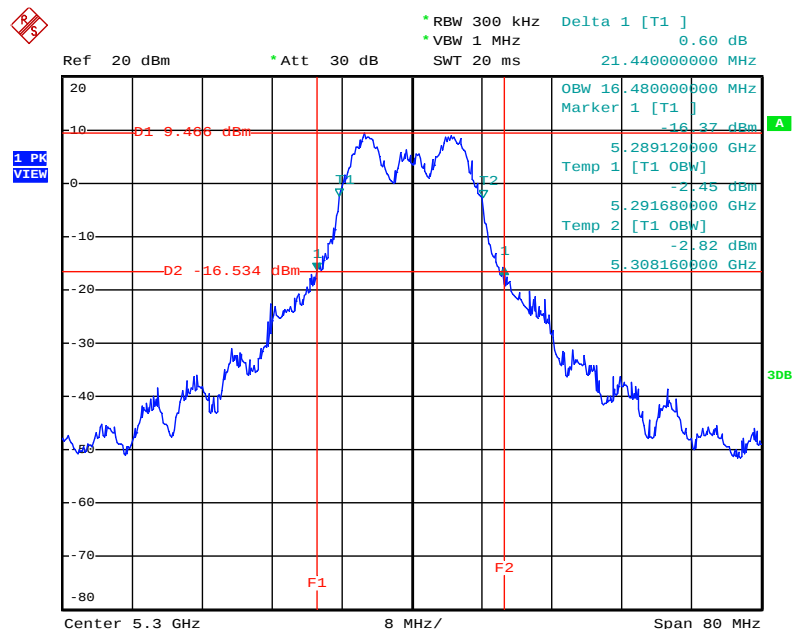
Date: 23.JUL.2012 13:15:25

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 2



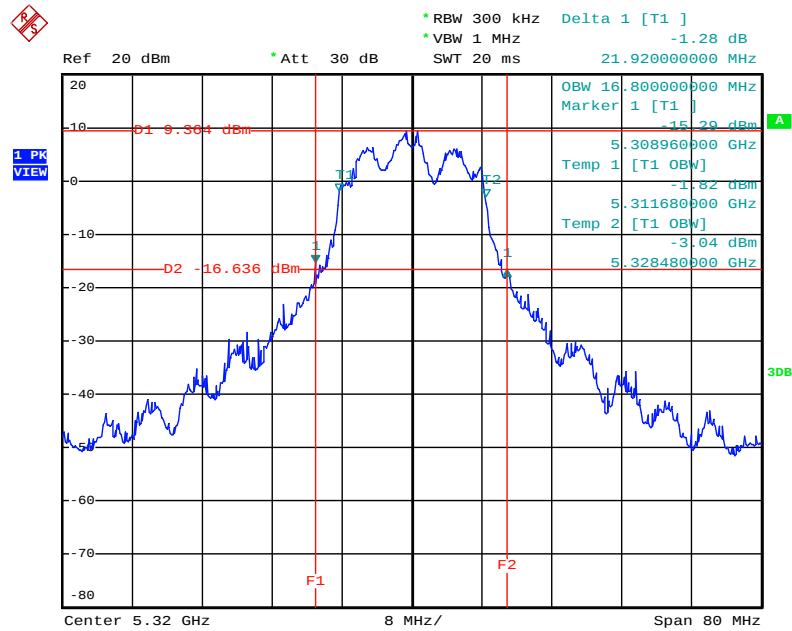
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26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 2



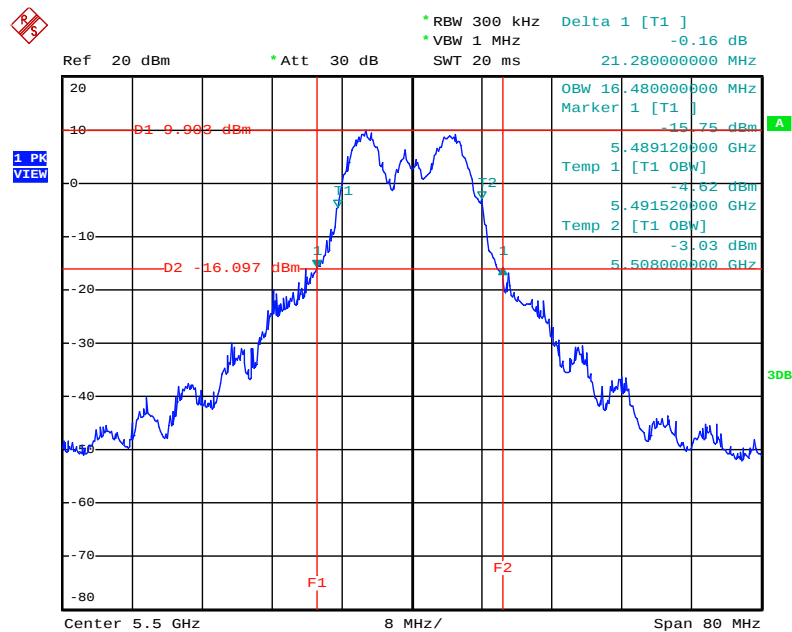
Date: 9.AUG.2012 21:18:41

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 2



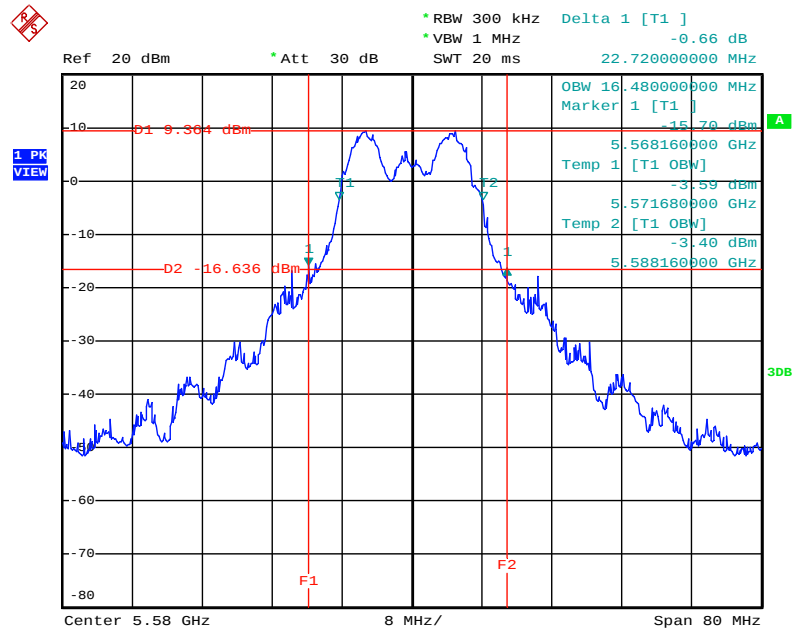
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26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 2



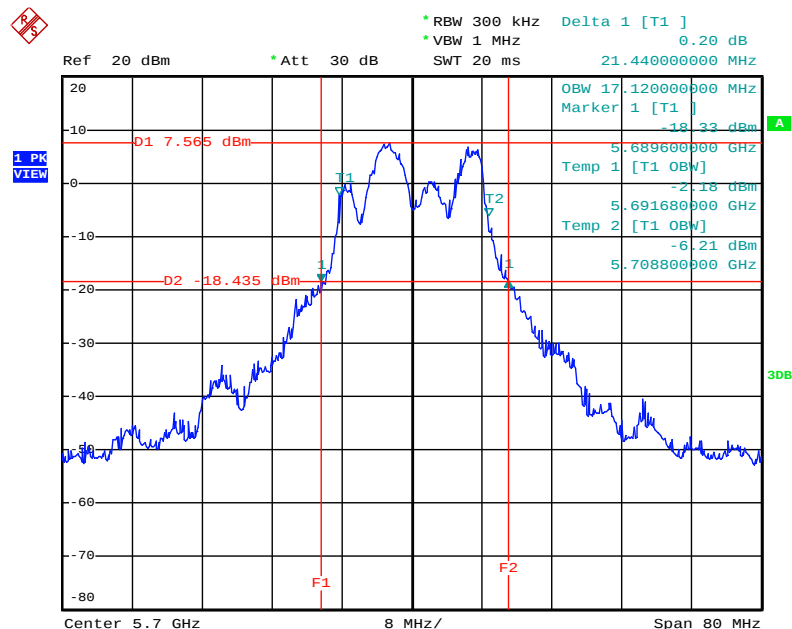
Date: 9.AUG.2012 21:20:32

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 2



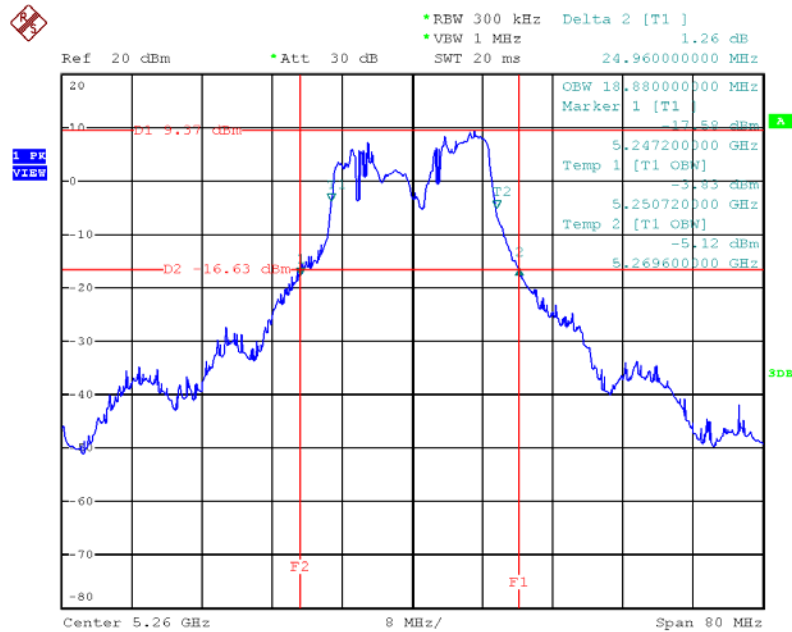
Date: 9.AUG.2012 21:21:24

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 2



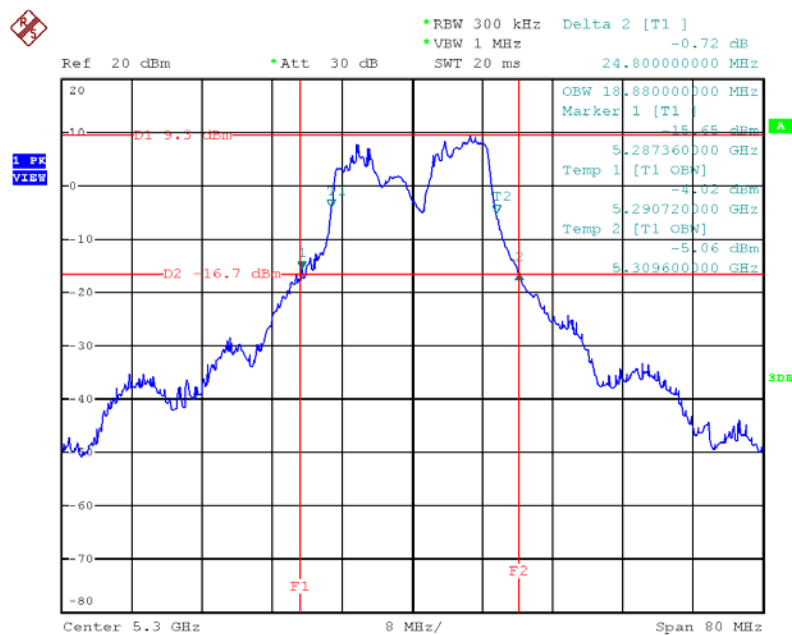
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 3



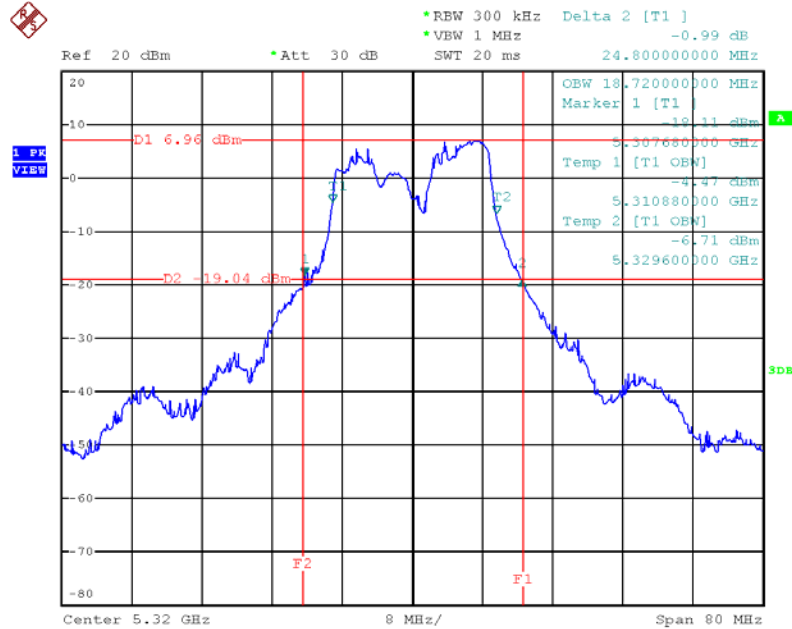
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 3



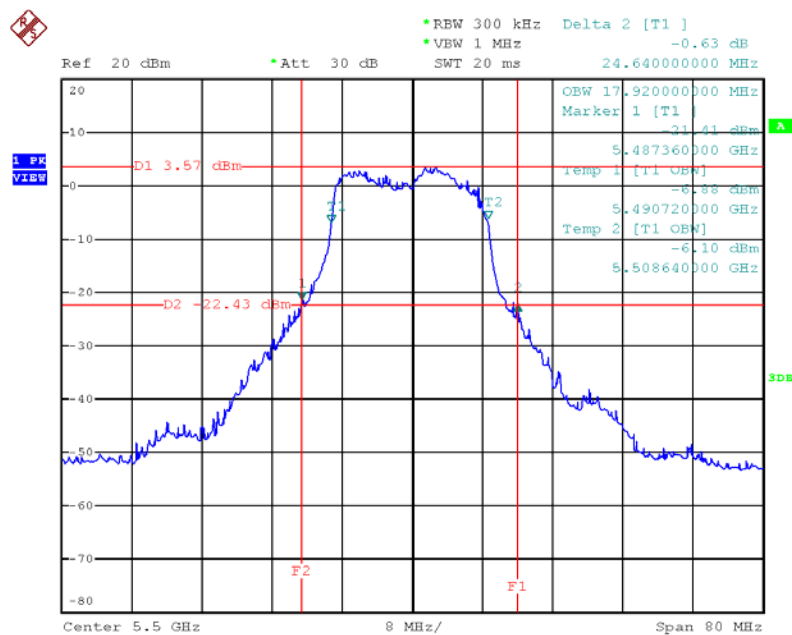
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 3



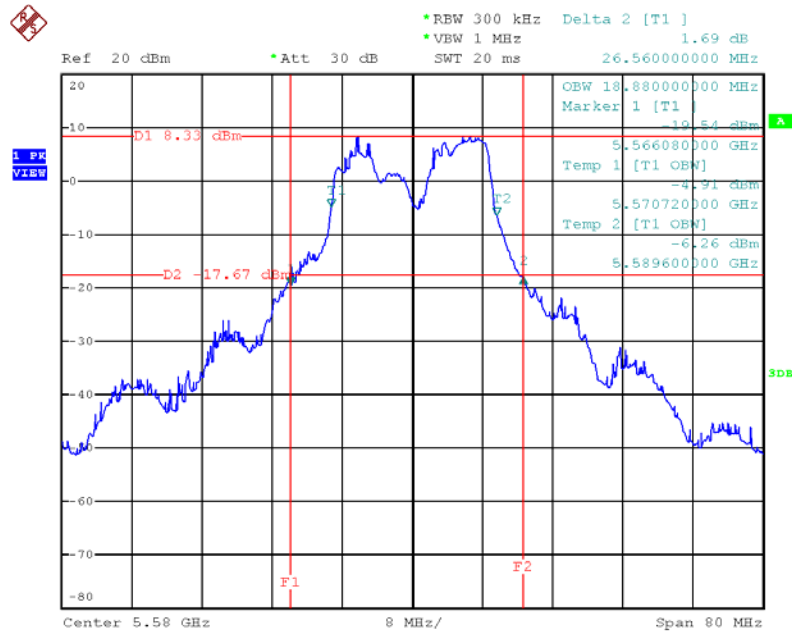
Date: 20.JUL.2012 10:42:22

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 3



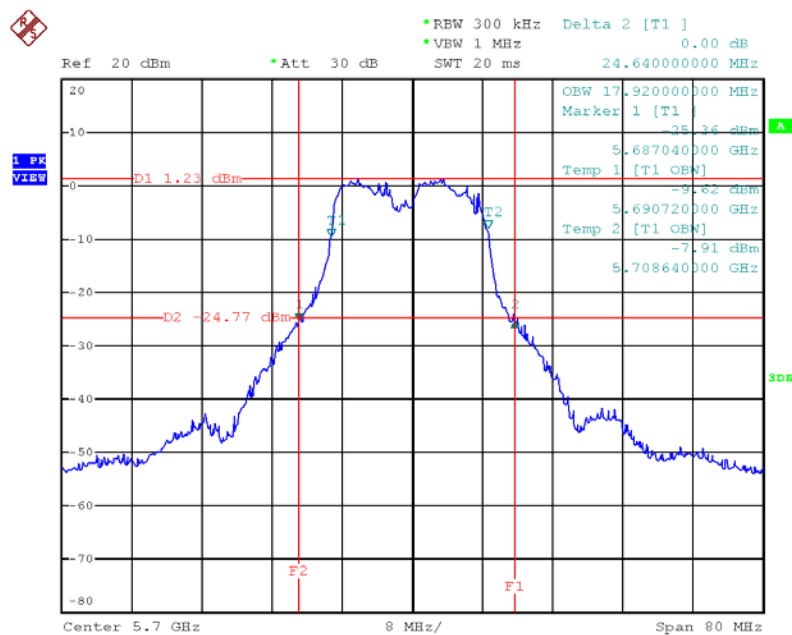
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 3



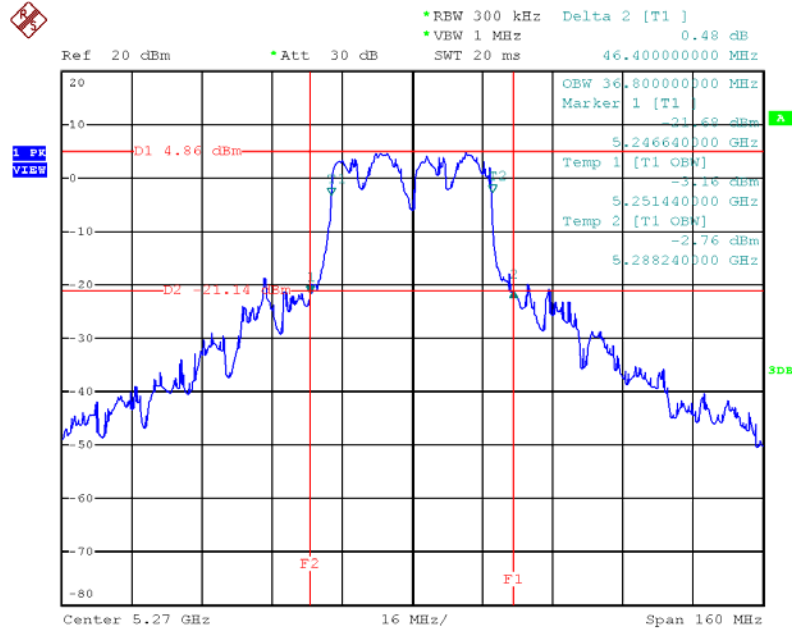
Date: 20.JUL.2012 10:36:00

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 3



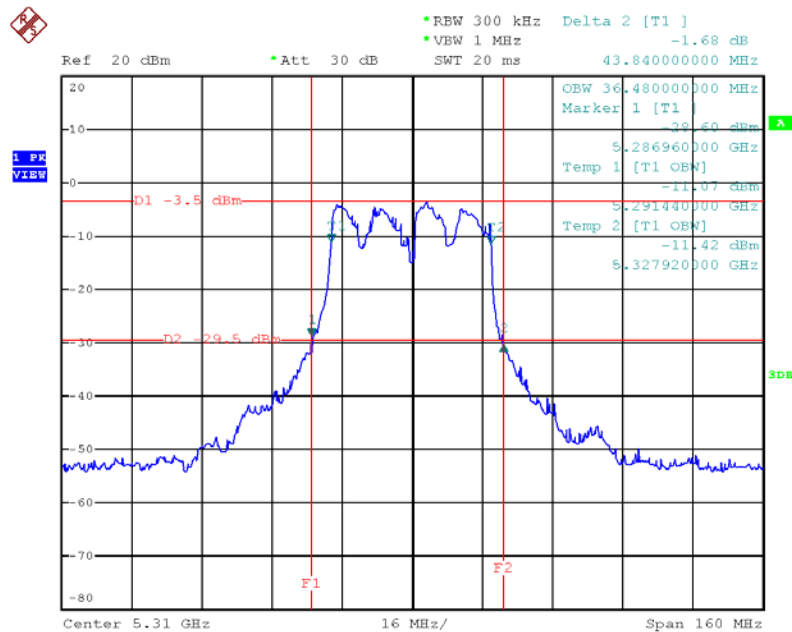
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5270 MHz / Mode 3



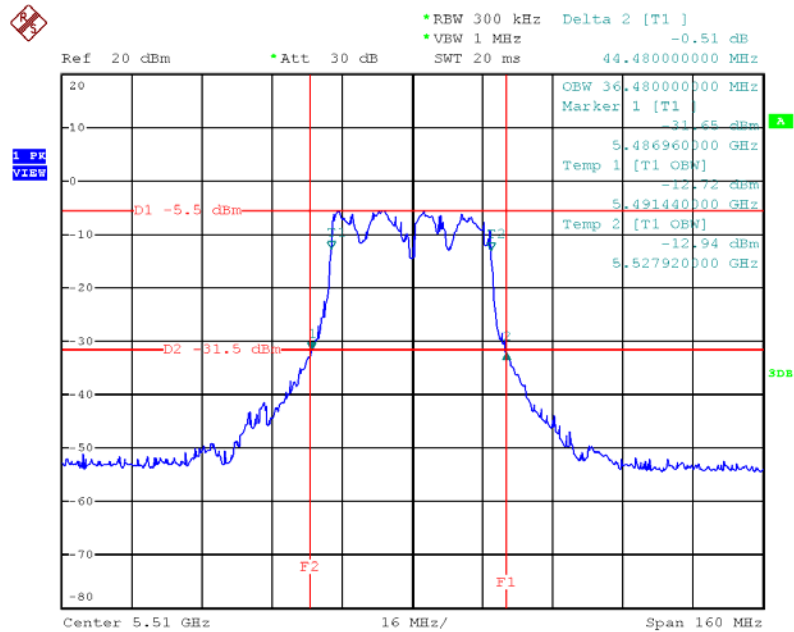
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5310 MHz / Mode 3



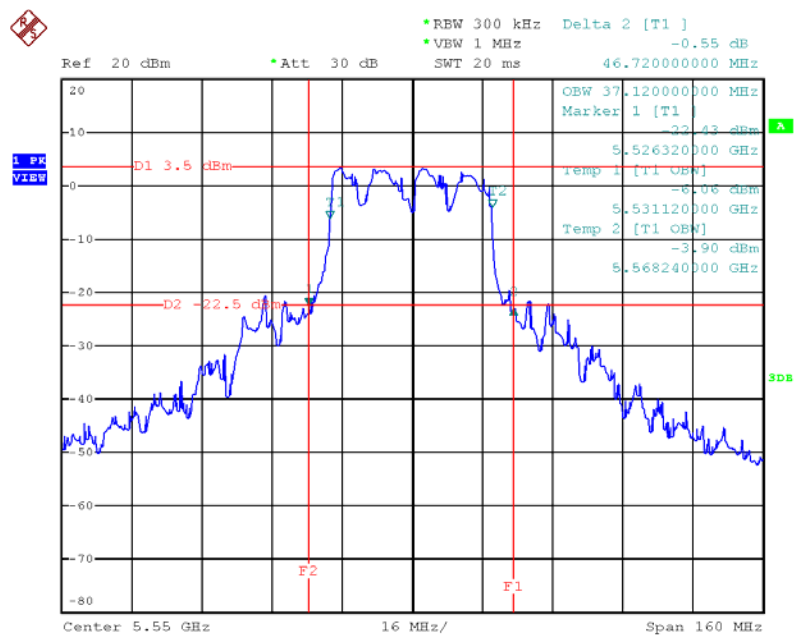
Date: 20.JUL.2012 10:15:34

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5510 MHz / Mode 3



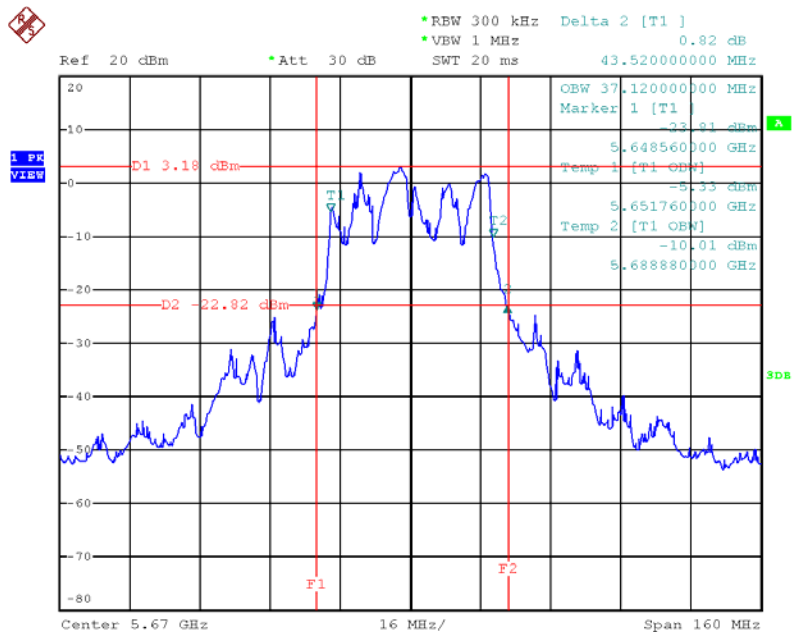
Date: 20.JUL.2012 10:19:12

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5550 MHz / Mode 3



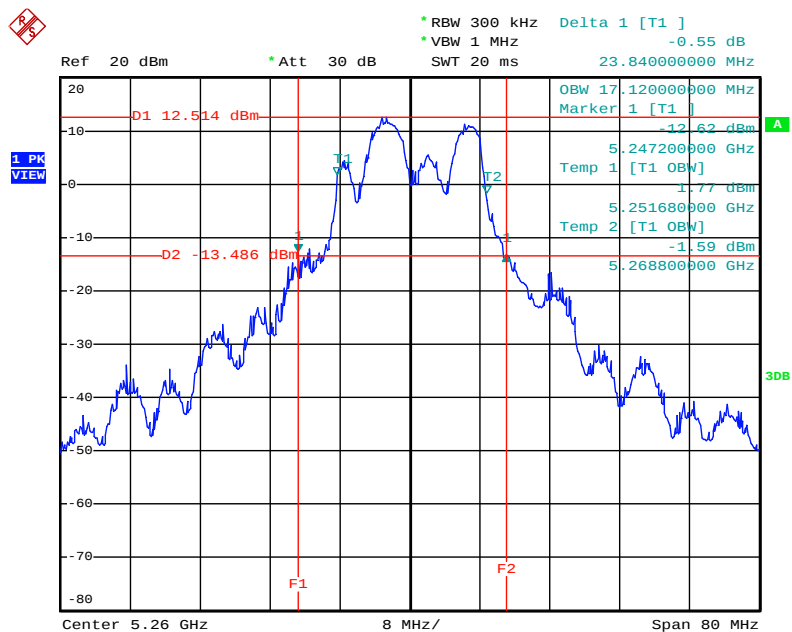
Date: 20.JUL.2012 10:22:38

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5670 MHz / Mode 3



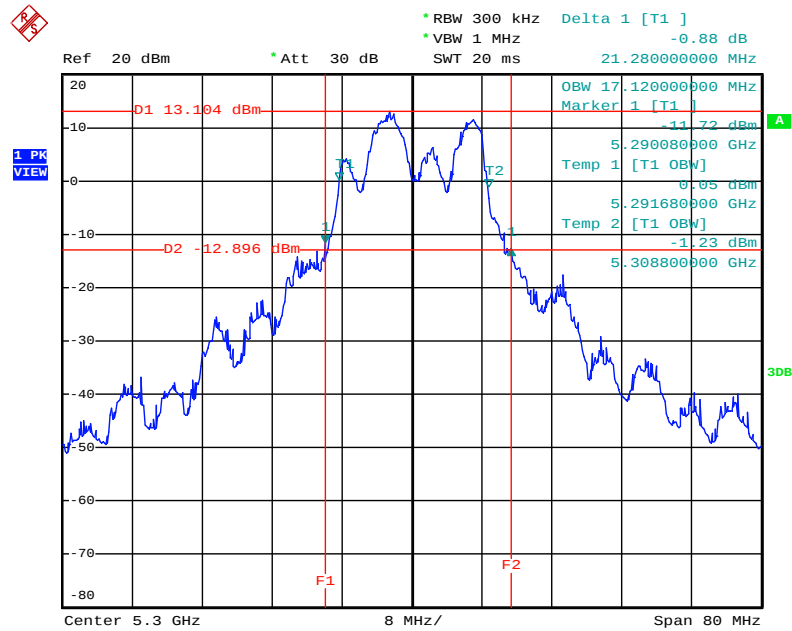
Date: 20.JUL.2012 10:25:14

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 3



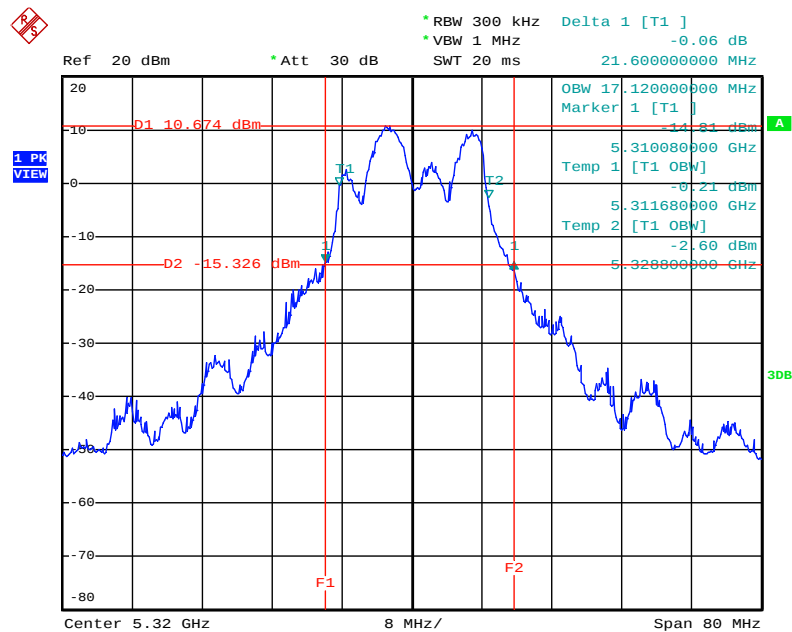
Date: 9.AUG.2012 21:41:19

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 3



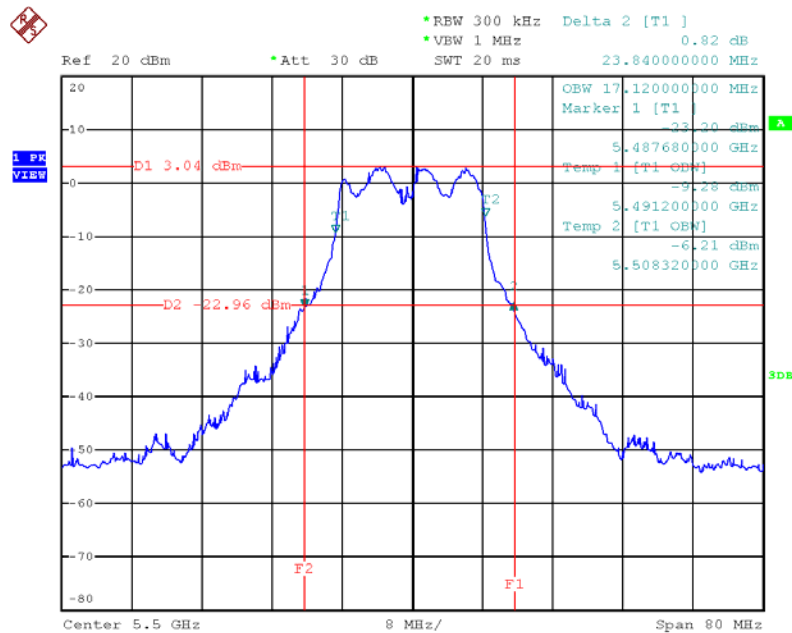
Date: 9.AUG.2012 21:42:20

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 3



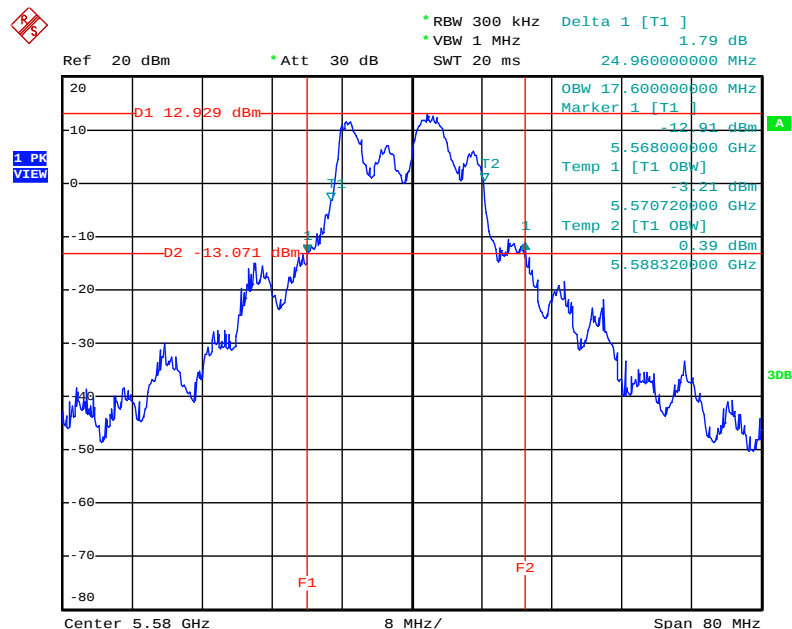
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26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 3



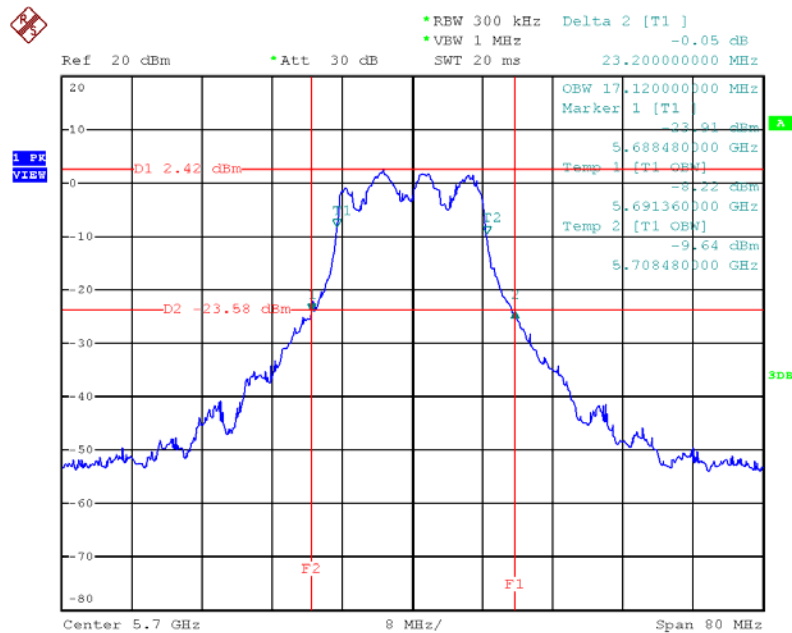
Date: 20.JUL.2012 11:22:41

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 3



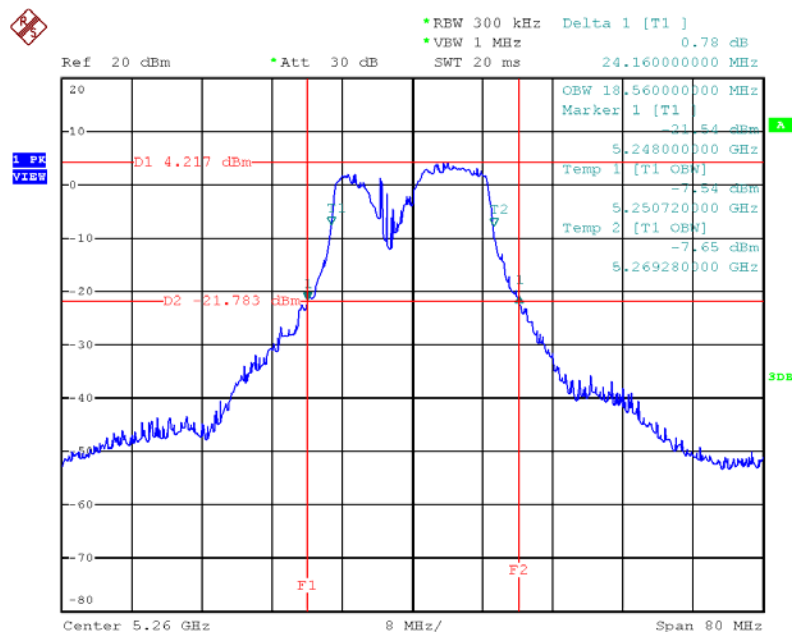
Date: 9.AUG.2012 21:43:39

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 3



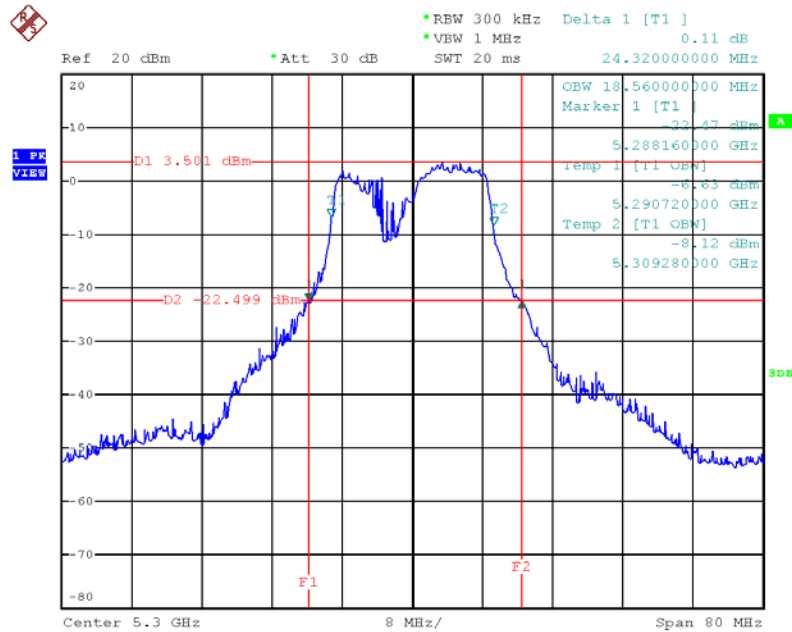
Date: 20.JUL.2012 11:27:06

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 4



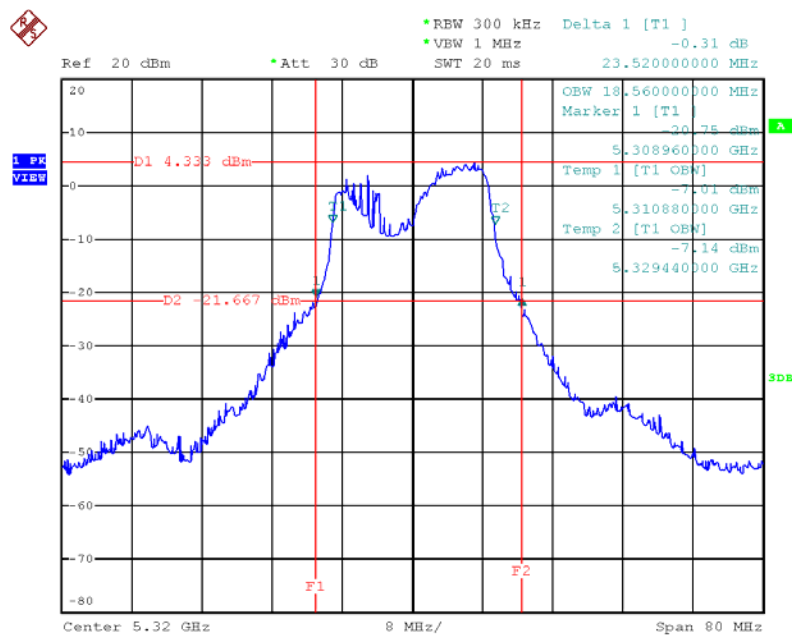
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 4



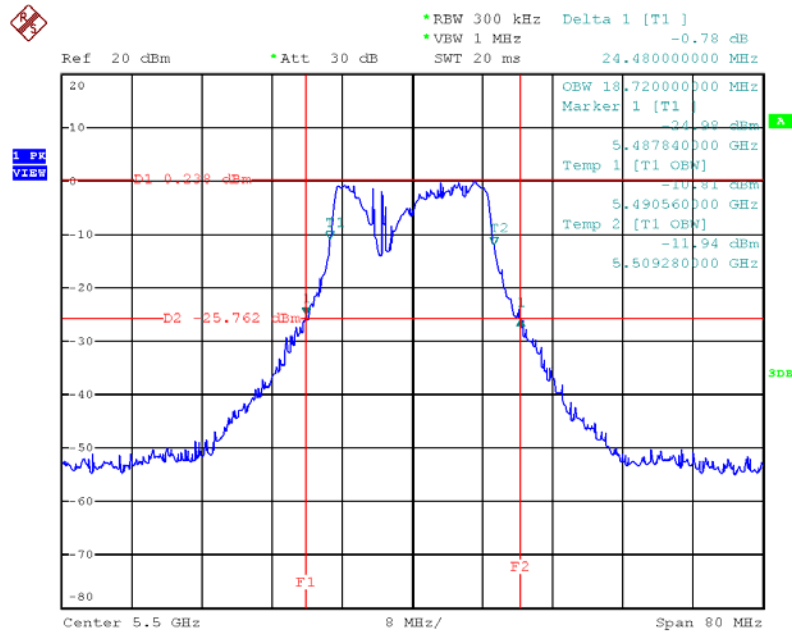
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 4



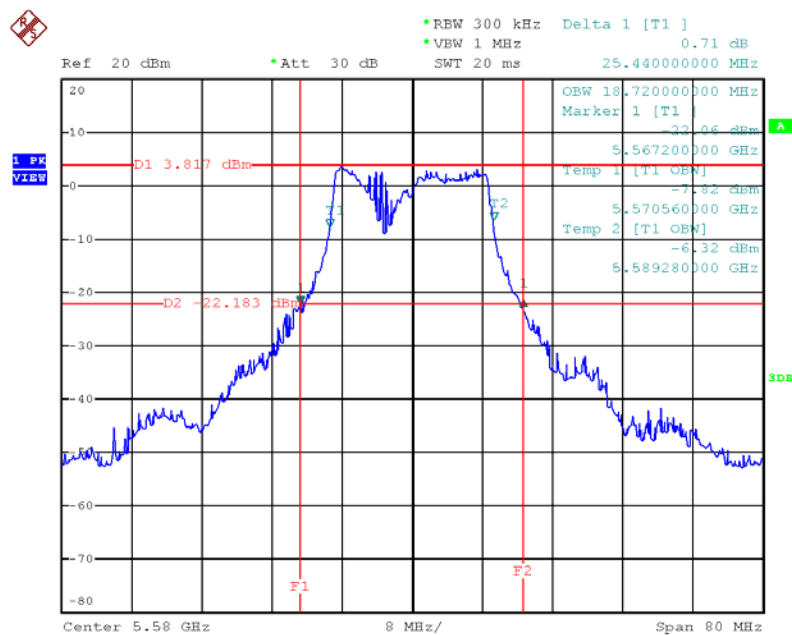
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 4



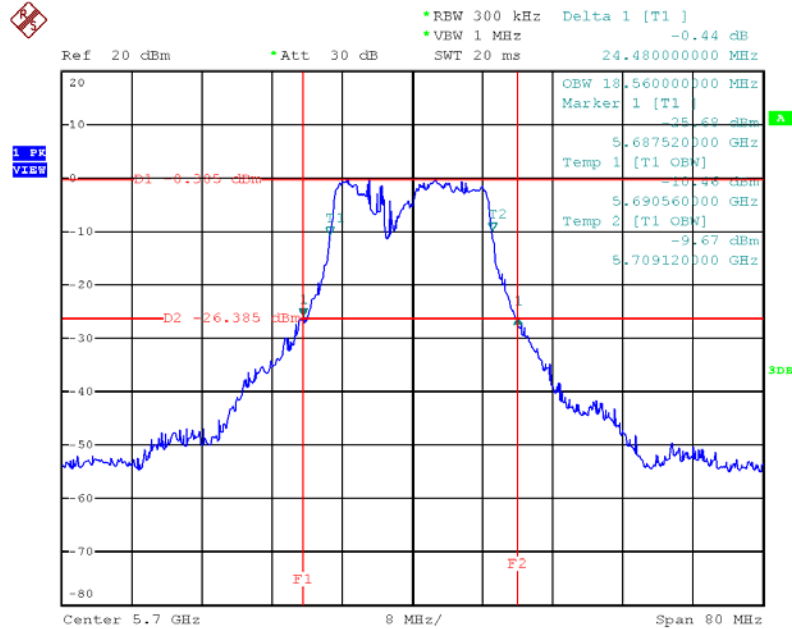
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 4



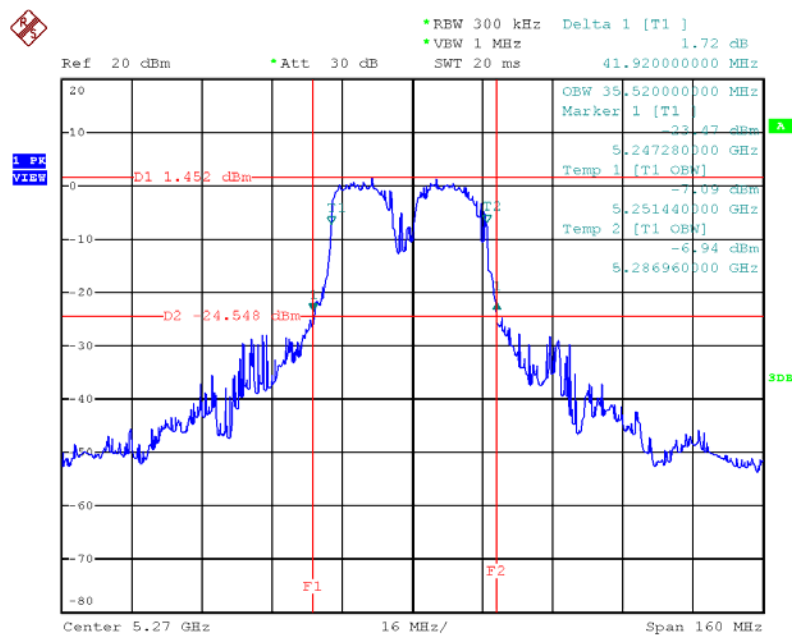
Date: 21.JUL.2012 10:24:14

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 4



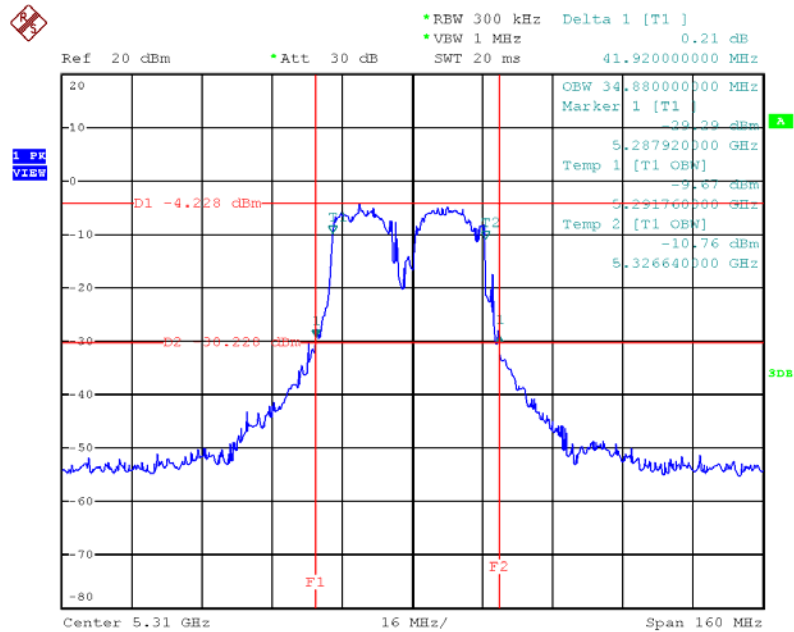
Date: 21.JUL.2012 10:25:53

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5270 MHz / Mode 4



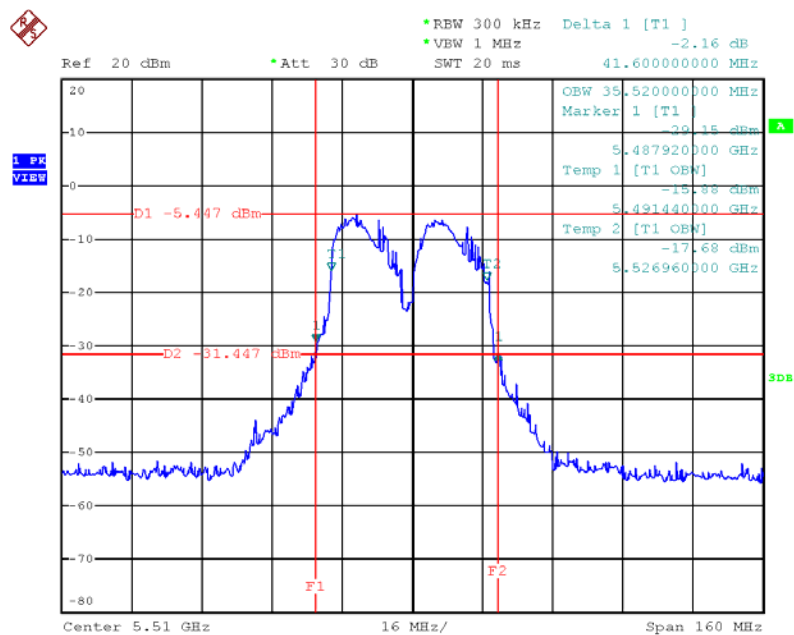
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5310 MHz / Mode 4



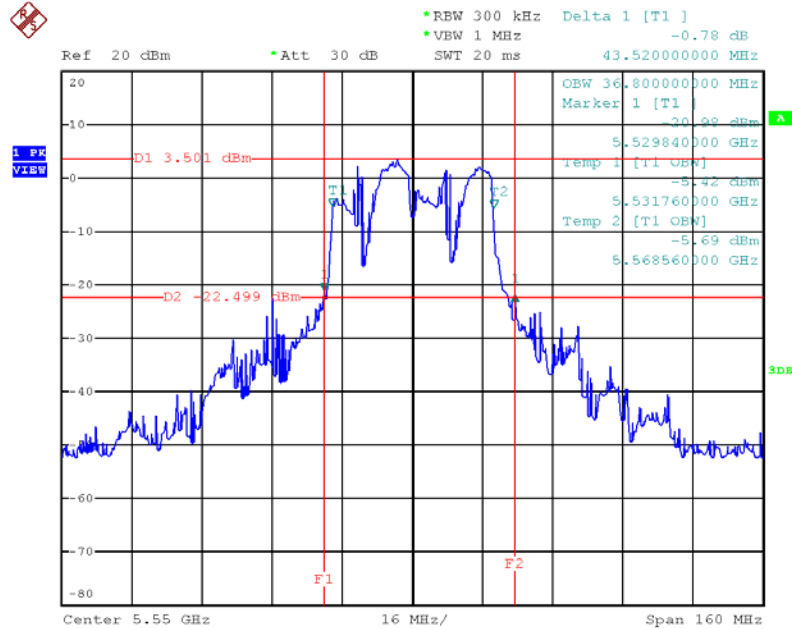
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5510 MHz / Mode 4



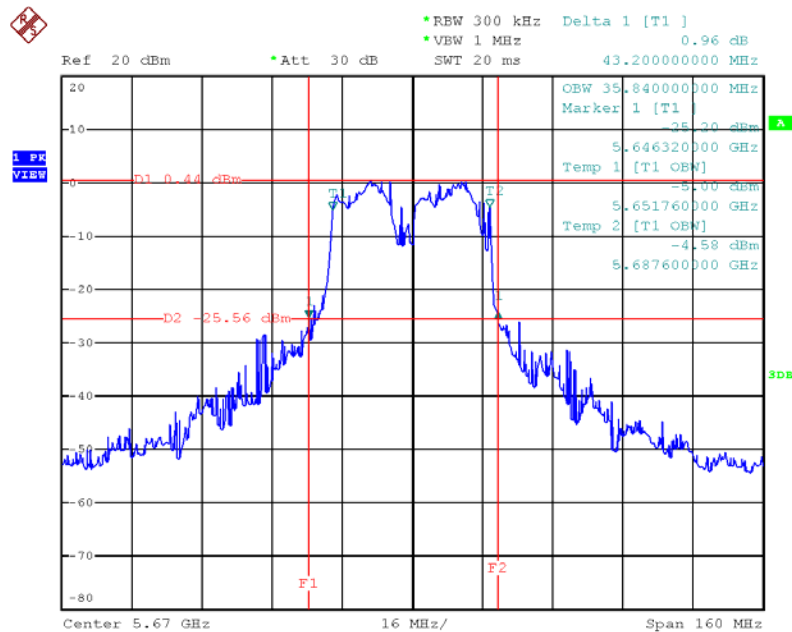
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5550 MHz / Mode 4



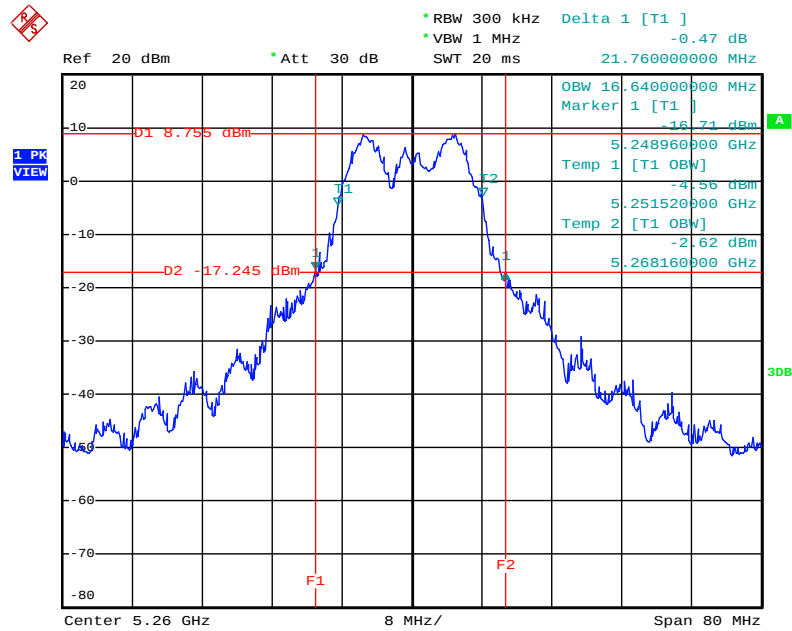
Date: 21.JUL.2012 10:31:37

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 2 + Chain 3 / 5670 MHz / Mode 4



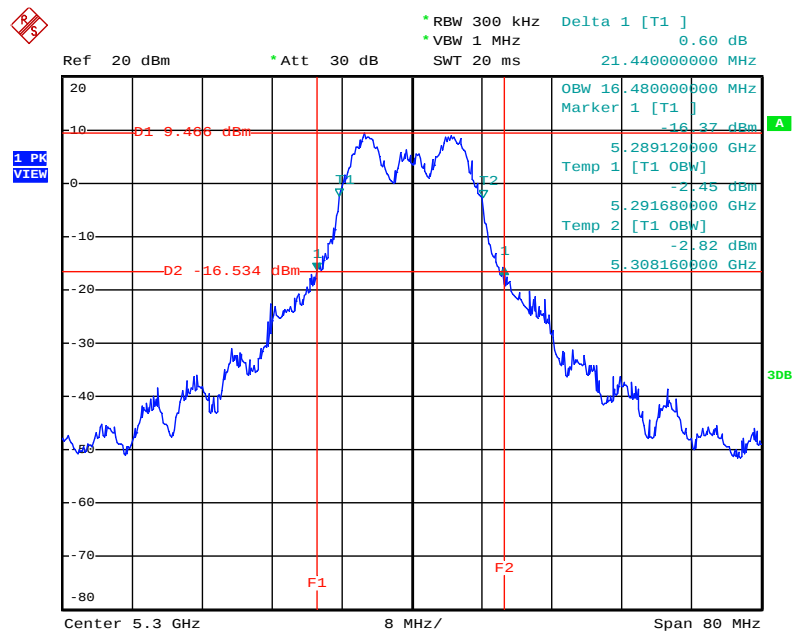
Date: 21.JUL.2012 10:28:27

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5260 MHz / Mode 4



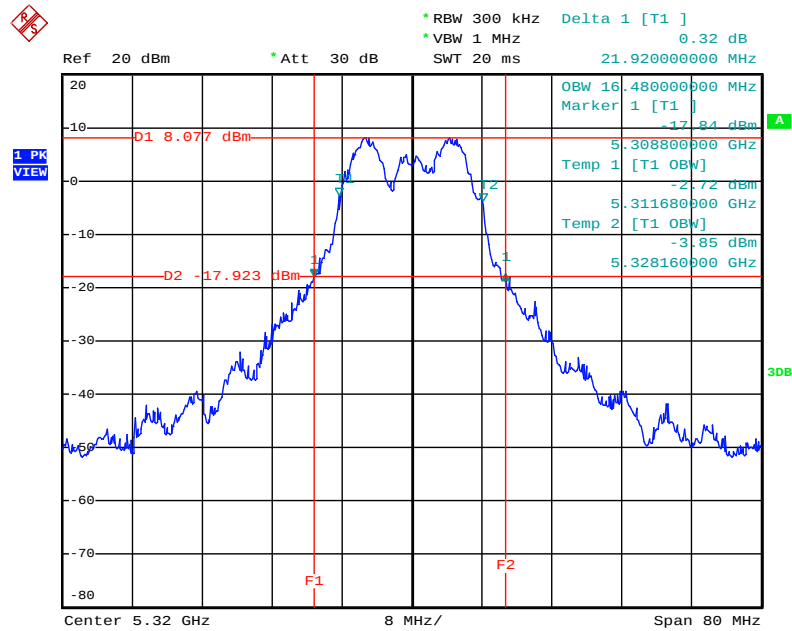
Date: 9.AUG.2012 21:18:10

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5300 MHz / Mode 4



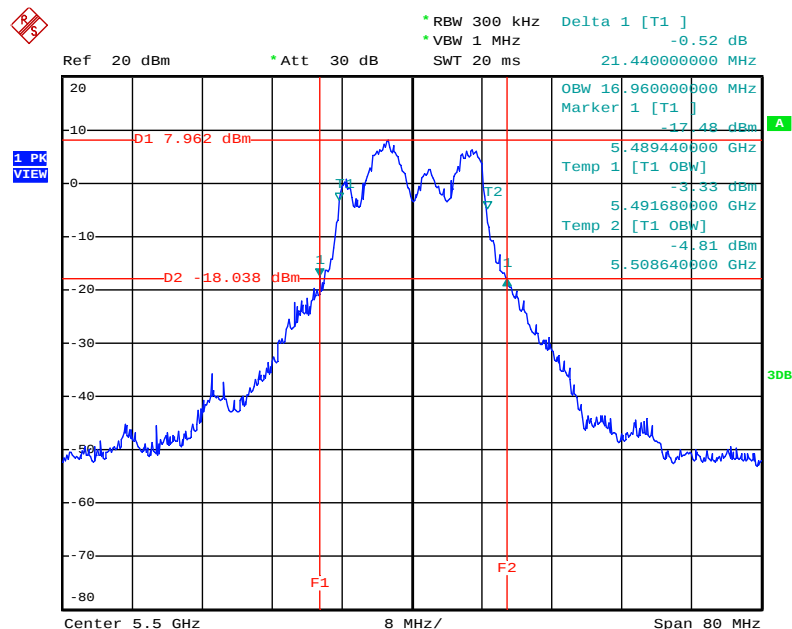
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26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5320 MHz / Mode 4



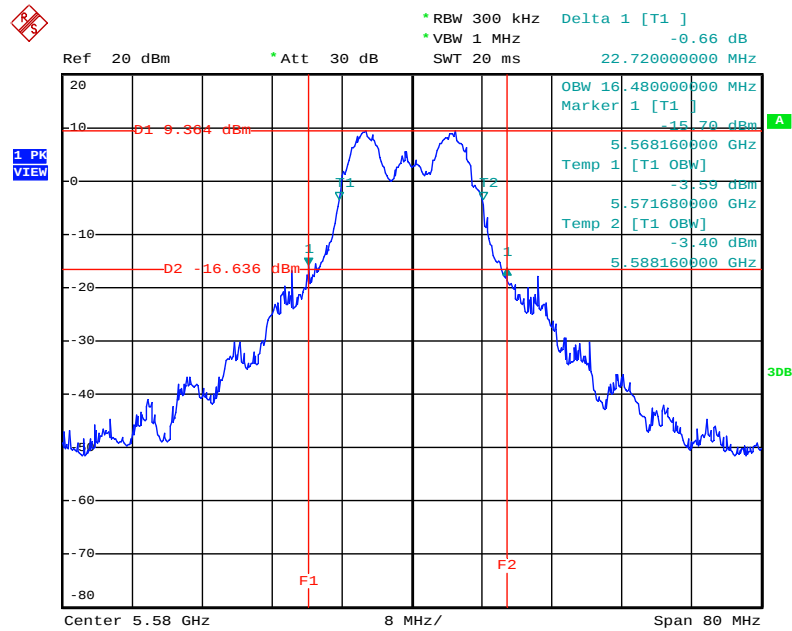
Date: 10.AUG.2012 00:59:55

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5500 MHz / Mode 4



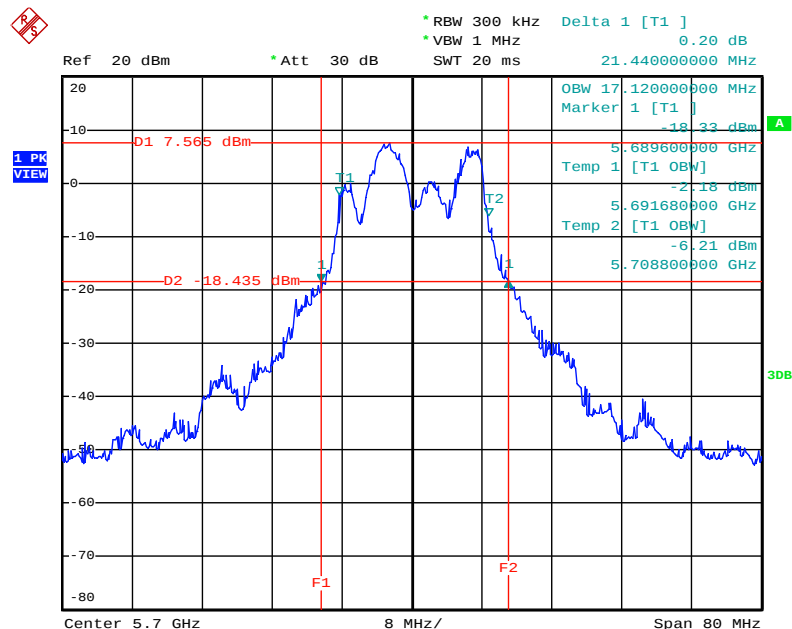
Date: 10.AUG.2012 01:01:53

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5580 MHz / Mode 4



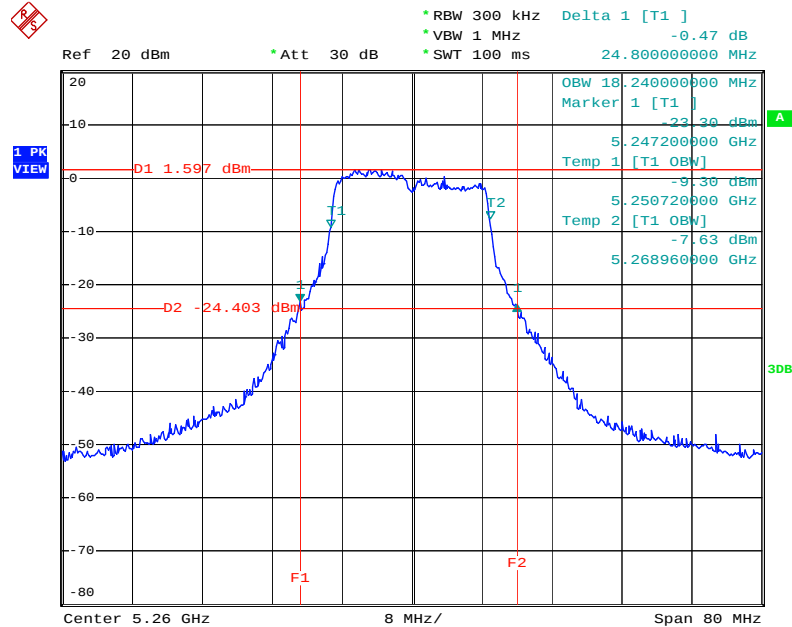
Date: 9.AUG.2012 21:21:24

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 2 + Chain 3 / 5700 MHz / Mode 4



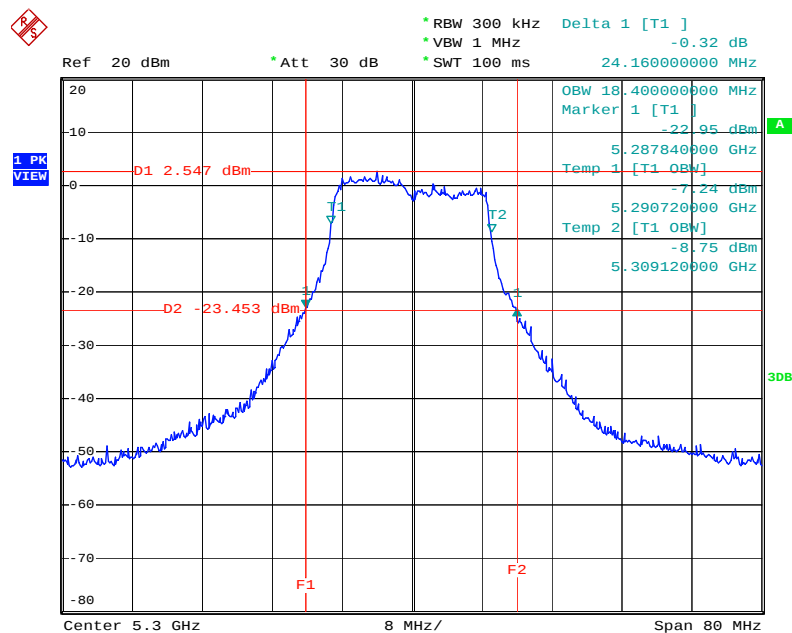
Date: 10.AUG.2012 01:02:22

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 3 / 5260 MHz / Mode 5



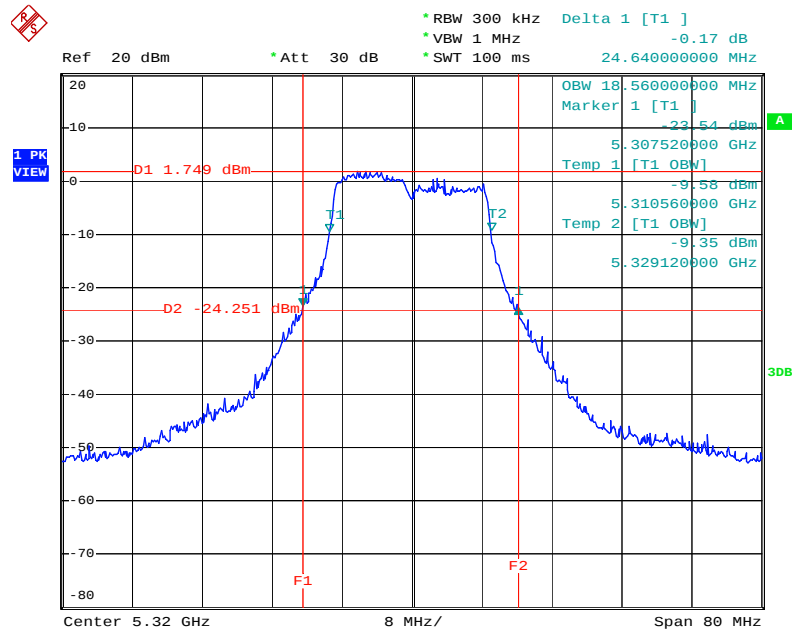
Date: 23.JUL.2012 19:33:56

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 3 / 5300 MHz / Mode 5



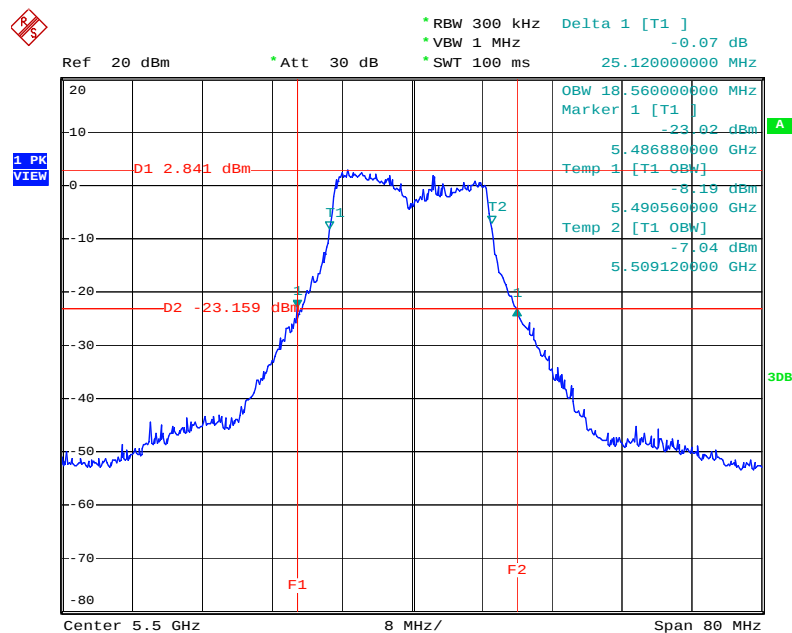
Date: 23.JUL.2012 19:33:13

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 3 / 5320 MHz / Mode 5



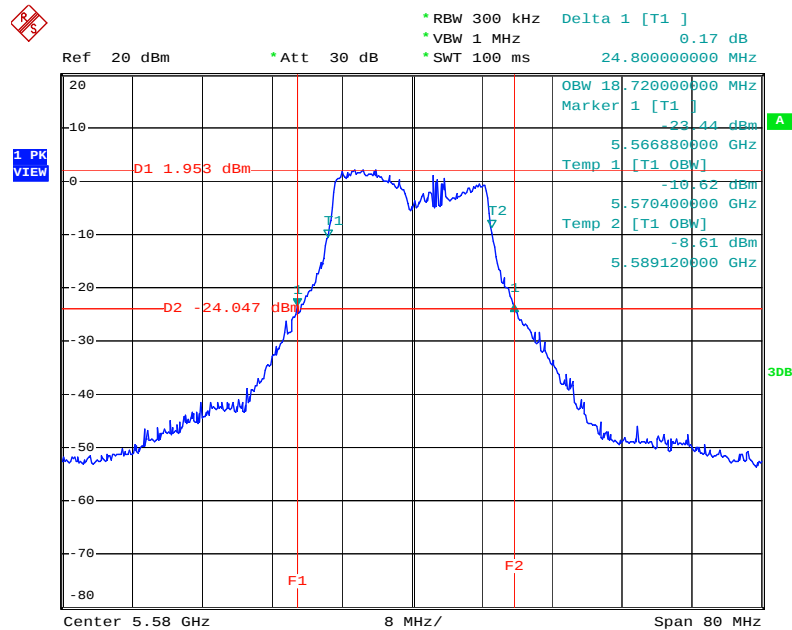
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 3 / 5500 MHz / Mode 5



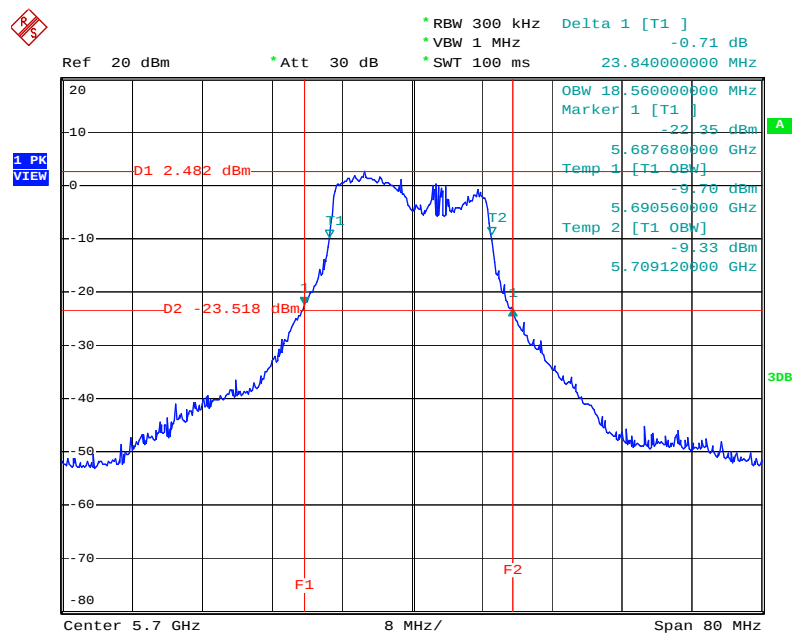
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 3 / 5580 MHz / Mode 5



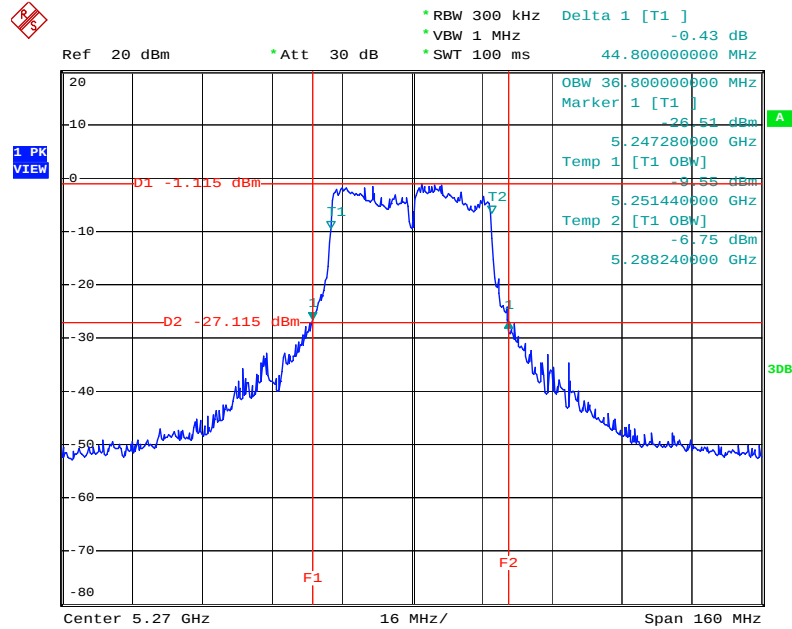
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26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain1 + Chain 3 / 5700 MHz / Mode 5



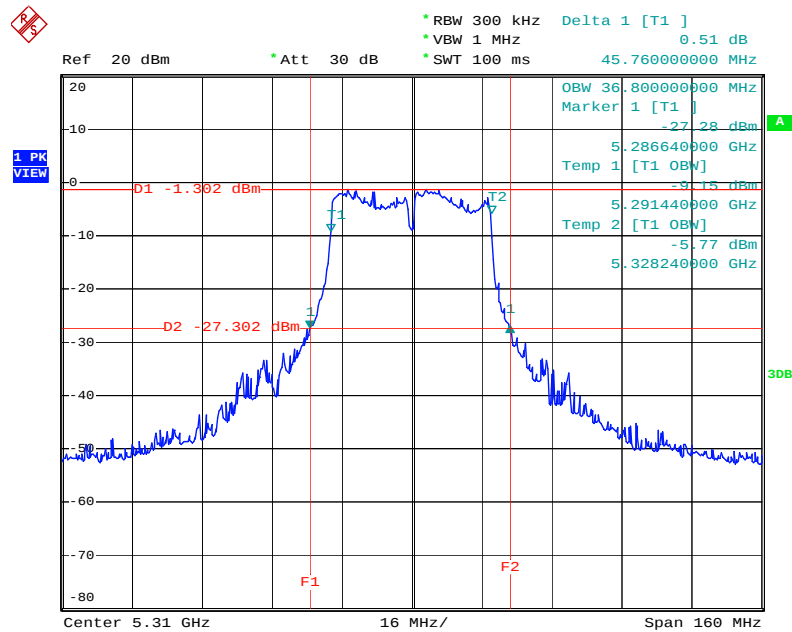
Date: 23.JUL.2012 19:29:15

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 3 / 5270 MHz / Mode 5



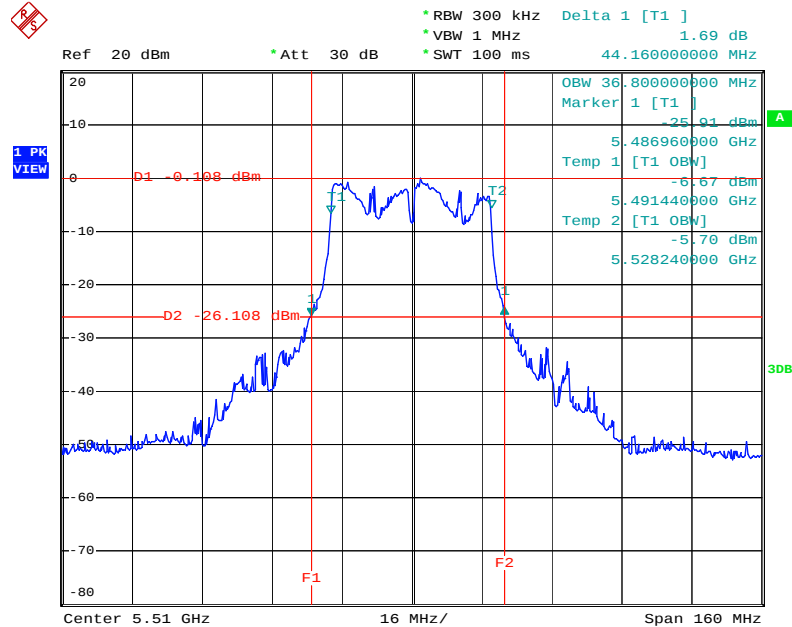
Date: 23.JUL.2012 19:36:30

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 3 / 5310 MHz / Mode 5



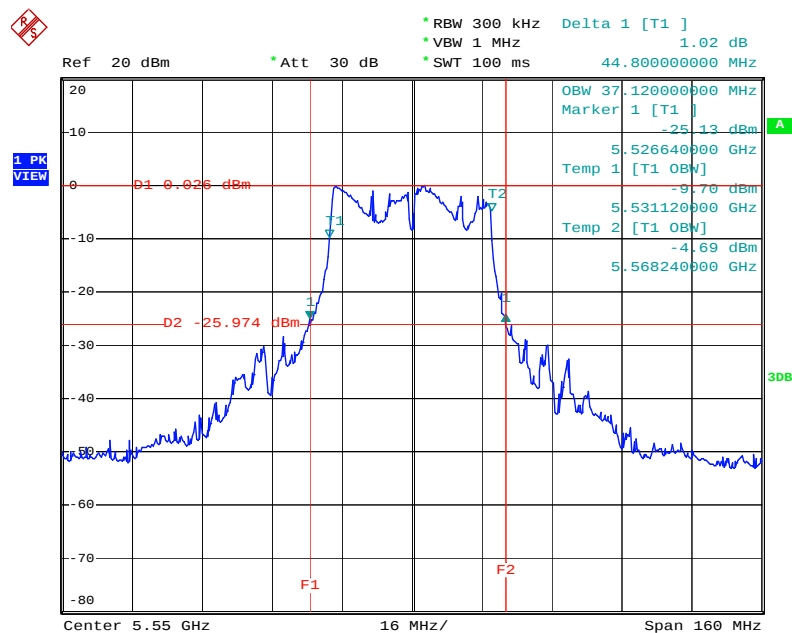
Date: 23.JUL.2012 19:37:20

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 3 / 5510 MHz / Mode 5



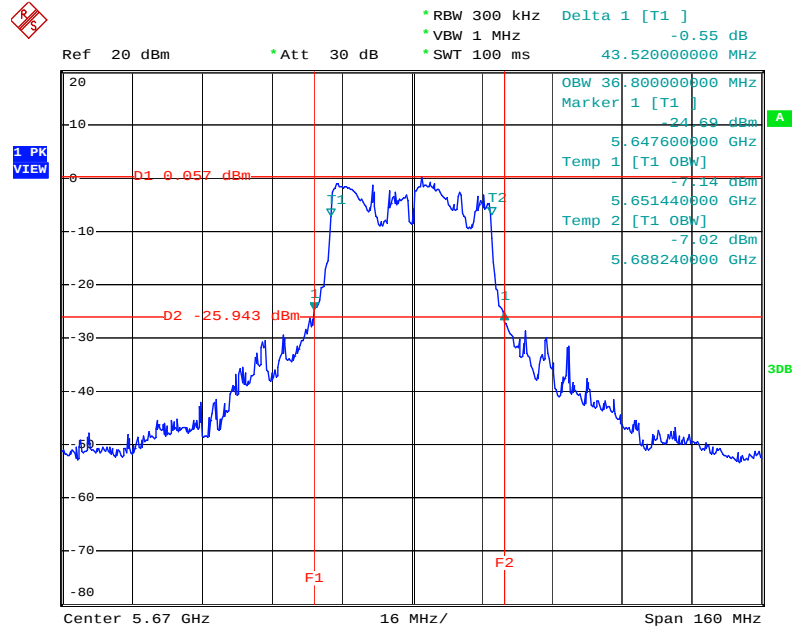
Date: 23.JUL.2012 19:38:33

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 3 / 5550 MHz / Mode 5



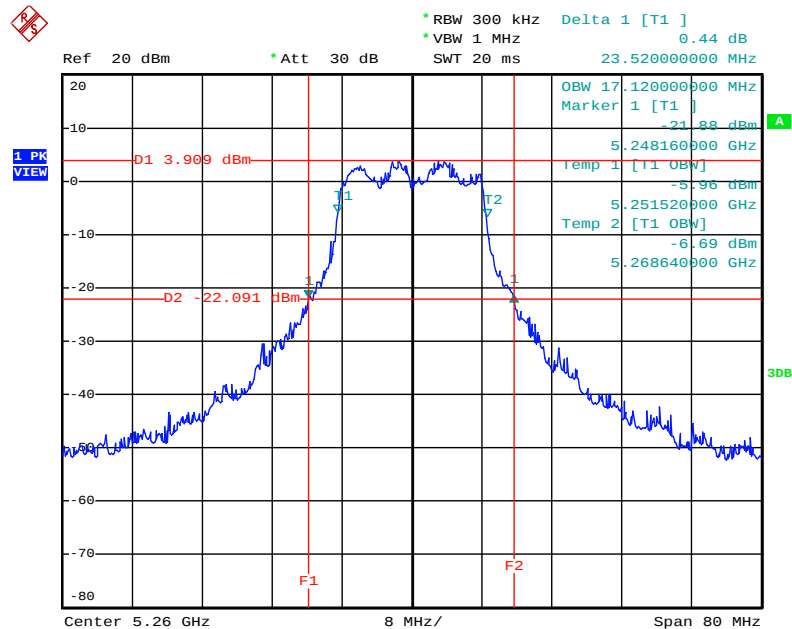
Date: 23.JUL.2012 19:39:27

26 dB Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain1 + Chain 3 / 5670 MHz / Mode 5



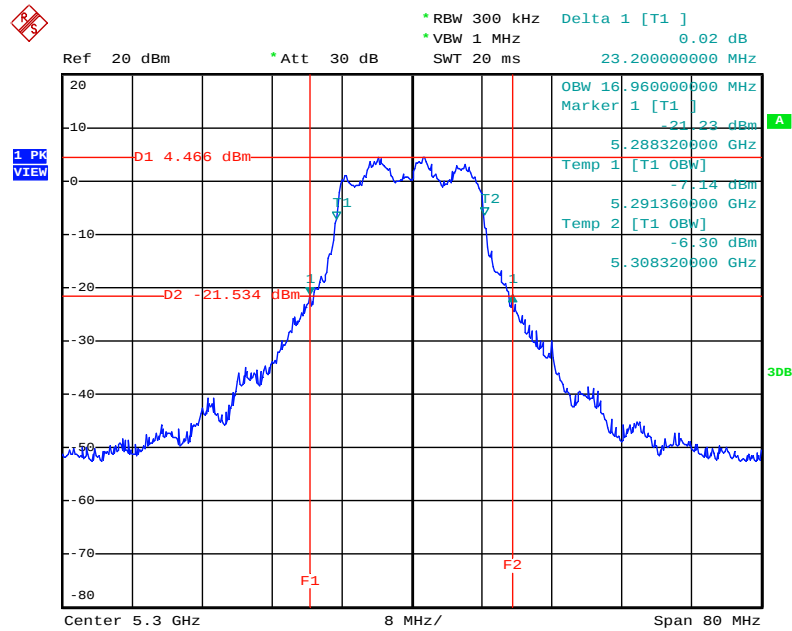
Date: 23.JUL.2012 19:40:08

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 3 / 5260 MHz / Mode 5



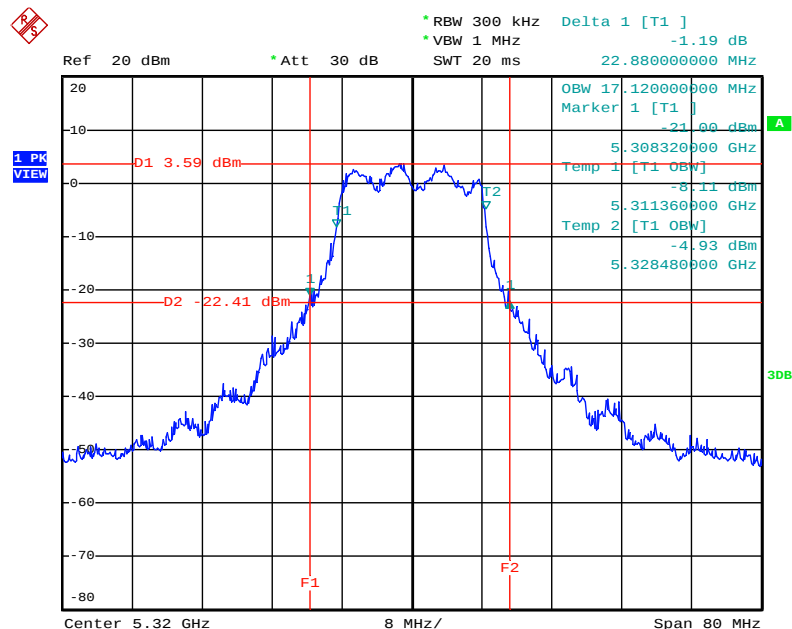
Date: 9.AUG.2012 21:52:22

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 3 / 5300 MHz / Mode 5



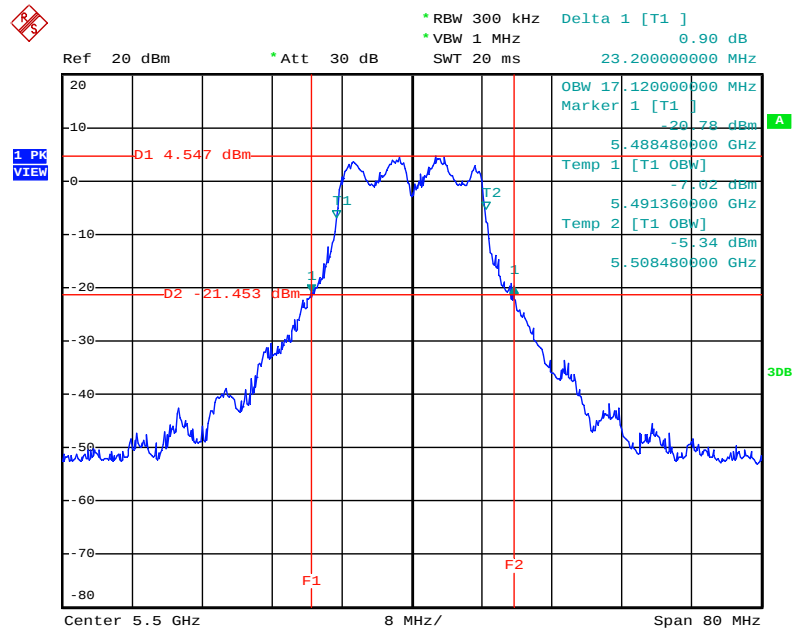
Date: 9.AUG.2012 21:52:51

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 3 / 5320 MHz / Mode 5



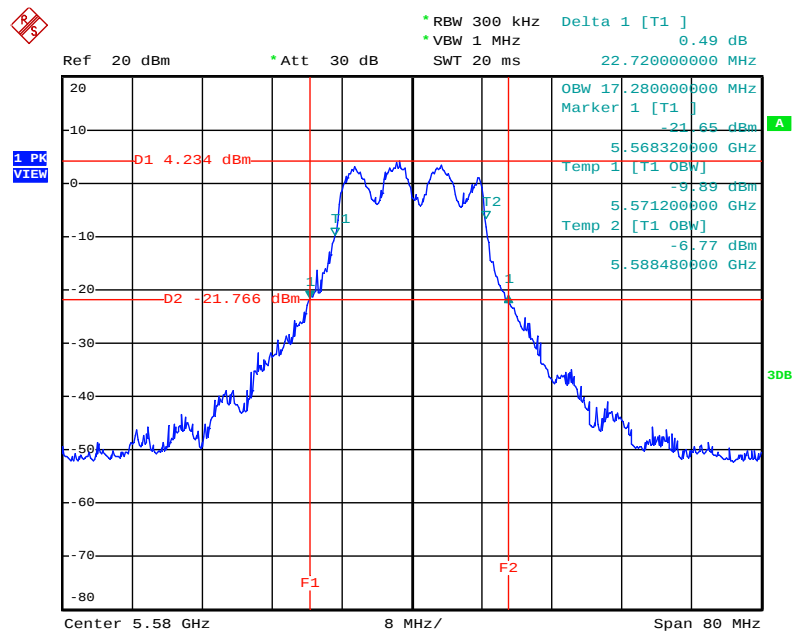
Date: 9.AUG.2012 21:53:09

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 3 / 5500 MHz / Mode 5



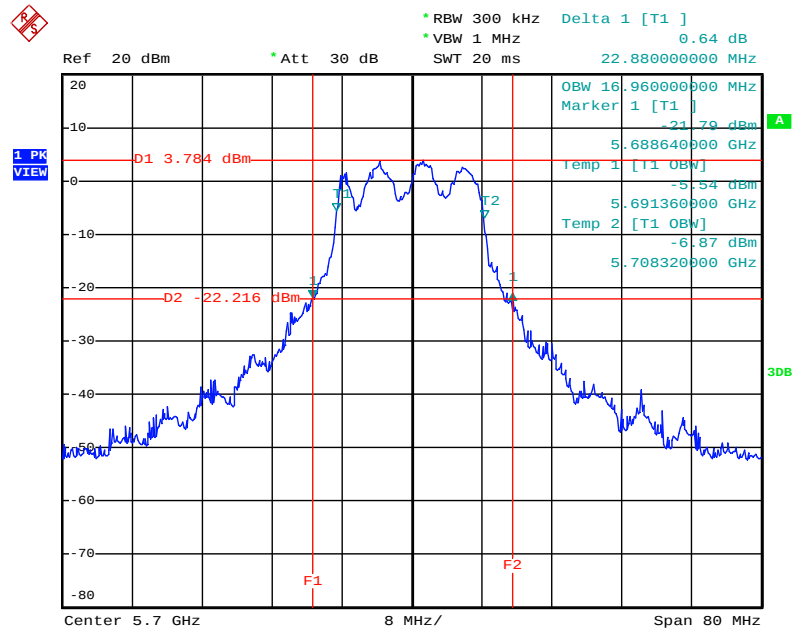
Date: 9.AUG.2012 21:53:44

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 3 / 5580 MHz / Mode 5



Date: 9.AUG.2012 21:54:15

26 dB Bandwidth Plot on Configuration IEEE 802.11a / Chain1 + Chain 3 / 5700 MHz / Mode 5



Date: 9.AUG.2012 21:54:40

4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

For the 5.25-5.35 GHz and 5.470-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or $11 \text{ dBm} + 10\log B$, where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725~5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or $17 \text{ dBm} + 10 \log B$, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 17 dBm in any 1 MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain up to 23 dBi without any corresponding reduction in the transmitter peak output power or peak power spectral density. For fixed, point-to-point U-NII transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in peak transmitter power and peak power spectral density for each 1 dB of antenna gain in excess of 23 dBi would be required.

4.3.2. Measuring Instruments and Setting

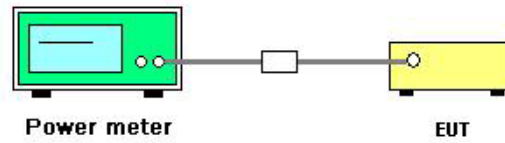
The following table is the setting of the peak power meter.

Power Meter Parameter	Setting
Bandwidth	50MHz bandwidth is greater than the EUT emission bandwidth
Detector	AVERAGE

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB 789033 Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, section (C) Maximum conducted output power => (4) Method PM (Measurement using an RF average power meter) Multiple antenna systems was performed in accordance with KDB 662911 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
3. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Maximum Conducted Output Power

Temperature	23°C	Humidity	60%
Test Engineer	Robert Chang	Configurations	IEEE 802.11n / a
Test Date	Jul. 22, 2012		

Test Mode : Mode 1

Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	18.13	15.99	17.12	21.94	22.00	Complies
60	5300 MHz	17.79	15.52	16.66	21.53	22.00	Complies
64	5320 MHz	17.88	15.45	16.95	21.64	22.00	Complies
100	5500 MHz	17.68	16.82	16.68	21.85	22.00	Complies
116	5580 MHz	17.62	16.41	16.85	21.76	22.00	Complies
140	5700 MHz	17.23	16.27	17.36	21.75	22.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
54	5270 MHz	17.93	15.88	16.98	21.78	22.00	Complies
62	5310 MHz	17.24	15.52	17.21	21.50	22.00	Complies
102	5510 MHz	15.66	14.50	14.48	19.69	22.00	Complies
110	5550 MHz	17.55	16.29	16.78	21.68	22.00	Complies
134	5670 MHz	17.10	16.02	17.25	21.59	22.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	17.82	15.73	16.74	21.62	22.00	Complies
60	5300 MHz	17.90	16.00	17.13	21.85	22.00	Complies
64	5320 MHz	17.97	15.95	16.91	21.79	22.00	Complies
100	5500 MHz	17.56	16.12	17.02	21.71	22.00	Complies
116	5580 MHz	17.32	16.30	16.86	21.62	22.00	Complies
140	5700 MHz	17.23	16.68	17.31	21.85	22.00	Complies

Test Mode : Mode 2
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	18.13	15.99	17.12	21.94	22.00	Complies
60	5300 MHz	17.79	15.52	16.66	21.53	22.00	Complies
64	5320 MHz	17.72	15.49	17.00	21.60	22.00	Complies
100	5500 MHz	16.86	15.84	15.75	20.95	22.00	Complies
116	5580 MHz	17.62	16.41	16.85	21.76	22.00	Complies
140	5700 MHz	15.71	14.85	15.65	20.19	22.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
54	5270 MHz	17.93	15.88	16.98	21.78	22.00	Complies
62	5310 MHz	14.48	11.75	12.67	17.89	22.00	Complies
102	5510 MHz	11.11	10.42	10.26	15.38	22.00	Complies
110	5550 MHz	17.55	16.29	16.78	21.68	22.00	Complies
134	5670 MHz	16.45	15.33	16.68	20.96	22.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	17.82	15.73	16.74	21.62	22.00	Complies
60	5300 MHz	17.90	16.00	17.13	21.85	22.00	Complies
64	5320 MHz	17.97	15.95	16.91	21.79	22.00	Complies
100	5500 MHz	17.56	16.12	17.02	21.71	22.00	Complies
116	5580 MHz	17.32	16.30	16.86	21.62	22.00	Complies
140	5700 MHz	14.72	13.81	14.02	18.97	22.00	Complies

Test Mode : Mode 3
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	19.91	17.95	19.18	23.86	24.00	Complies
60	5300 MHz	19.82	18.12	19.20	23.87	24.00	Complies
64	5320 MHz	18.57	16.48	17.64	22.42	24.00	Complies
100	5500 MHz	15.18	13.16	13.63	18.85	24.00	Complies
116	5580 MHz	19.68	18.20	18.89	23.74	24.00	Complies
140	5700 MHz	13.03	12.46	12.79	17.54	24.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
54	5270 MHz	19.80	18.14	19.00	23.80	24.00	Complies
62	5310 MHz	11.35	9.74	10.85	15.47	24.00	Complies
102	5510 MHz	9.91	8.83	9.00	14.04	24.00	Complies
110	5550 MHz	18.72	16.81	18.20	22.75	24.00	Complies
134	5670 MHz	15.77	14.98	15.68	20.26	24.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	19.79	18.06	19.06	23.80	24.00	Complies
60	5300 MHz	19.61	17.73	18.65	23.50	24.00	Complies
64	5320 MHz	17.90	15.96	16.93	21.77	24.00	Complies
100	5500 MHz	15.42	13.19	13.60	18.95	24.00	Complies
116	5580 MHz	19.70	18.50	19.18	23.93	24.00	Complies
140	5700 MHz	14.04	12.51	13.45	18.15	24.00	Complies

Test Mode : Mode 4
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	18.13	15.99	17.12	21.94	22.00	Complies
60	5300 MHz	17.79	15.52	16.66	21.53	22.00	Complies
64	5320 MHz	17.52	15.21	16.57	21.31	22.00	Complies
100	5500 MHz	14.11	11.98	12.71	17.80	22.00	Complies
116	5580 MHz	17.62	16.41	16.85	21.76	22.00	Complies
140	5700 MHz	14.15	12.64	13.48	18.24	22.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
54	5270 MHz	17.93	15.88	16.98	21.78	22.00	Complies
62	5310 MHz	11.95	9.99	10.70	15.73	22.00	Complies
102	5510 MHz	8.74	7.75	7.18	12.71	22.00	Complies
110	5550 MHz	17.55	16.29	16.78	21.68	22.00	Complies
134	5670 MHz	16.23	15.22	16.18	20.67	22.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)			Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3			
52	5260 MHz	17.82	15.73	16.74	21.62	22.00	Complies
60	5300 MHz	17.90	16.00	17.13	21.85	22.00	Complies
64	5320 MHz	16.97	15.06	16.04	20.86	22.00	Complies
100	5500 MHz	14.46	13.92	14.00	18.90	22.00	Complies
116	5580 MHz	17.32	16.30	16.86	21.62	22.00	Complies
140	5700 MHz	14.72	13.81	14.02	18.97	22.00	Complies

Test Mode : Mode 5
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 3			
52	5260 MHz	15.57	13.62	17.71	18.00	Complies
60	5300 MHz	15.57	13.65	17.73	18.00	Complies
64	5320 MHz	15.60	13.50	17.69	18.00	Complies
100	5500 MHz	15.34	13.62	17.57	18.00	Complies
116	5580 MHz	14.82	13.97	17.43	18.00	Complies
140	5700 MHz	14.99	14.48	17.75	18.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 3			
54	5270 MHz	15.35	13.98	17.73	18.00	Complies
62	5310 MHz	15.30	14.17	17.78	18.00	Complies
102	5510 MHz	14.64	13.52	17.13	18.00	Complies
110	5550 MHz	15.15	14.10	17.67	18.00	Complies
134	5670 MHz	15.00	14.60	17.81	18.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 3

Channel	Frequency	Conducted Output Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 1	Chain 3			
52	5260 MHz	15.42	14.21	17.87	18.00	Complies
60	5300 MHz	15.12	14.12	17.66	18.00	Complies
64	5320 MHz	14.74	13.92	17.36	18.00	Complies
100	5500 MHz	15.10	13.77	17.50	18.00	Complies
116	5580 MHz	14.24	13.33	16.82	18.00	Complies
140	5700 MHz	14.35	13.81	17.10	18.00	Complies

4.4. Power Spectral Density Measurement

4.4.1. Limit

The power spectral density is defined as the highest level of power in dBm per MHz generated by the transmitter within the power envelope. The following table is power spectral density limits and decrease power density limit rule refer to section 4.3.1.

Frequency Range	Power Spectral Density limit (dBm/MHz)
5.25-5.35 GHz	11
5470-5725	11

4.4.2. Measuring Instruments and Setting

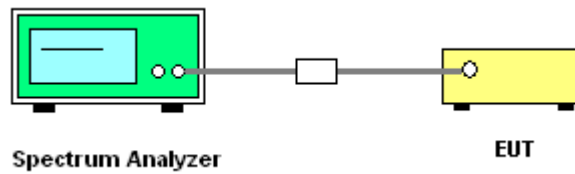
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz
VB	3000 kHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB 789033 Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E, section (C) Maximum conducted output power => (d) Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).
3. Multiple antenna systems was performed in accordance with KDB 662911 in-Band Power Spectral Density (PSD) Measurements (1) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. the summed spectrum value for each of the other frequency bins is computed in the same way.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Power Spectral Density

Temperature	23°C	Humidity	60%
Test Engineer	Robert Chang	Configurations	IEEE 802.11n / a
Test Date	Jul. 22, 2012		

Test Mode : Mode 1

Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.76	9.00	Complies
60	5300 MHz	8.32	9.00	Complies
64	5320 MHz	7.38	9.00	Complies
100	5500 MHz	7.34	9.00	Complies
116	5580 MHz	8.82	9.00	Complies
140	5700 MHz	6.40	9.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	5.30	9.00	Complies
62	5310 MHz	3.90	9.00	Complies
102	5510 MHz	1.42	9.00	Complies
110	5550 MHz	5.17	9.00	Complies
134	5670 MHz	3.41	9.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.89	9.00	Complies
60	5300 MHz	8.66	9.00	Complies
64	5320 MHz	8.85	9.00	Complies
100	5500 MHz	8.65	9.00	Complies
116	5580 MHz	8.73	9.00	Complies
140	5700 MHz	8.69	9.00	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 2
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.76	9.00	Complies
60	5300 MHz	8.32	9.00	Complies
64	5320 MHz	8.37	9.00	Complies
100	5500 MHz	7.62	9.00	Complies
116	5580 MHz	8.82	9.00	Complies
140	5700 MHz	6.76	9.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	5.30	9.00	Complies
62	5310 MHz	1.29	9.00	Complies
102	5510 MHz	-0.85	9.00	Complies
110	5550 MHz	5.17	9.00	Complies
134	5670 MHz	4.10	9.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.89	9.00	Complies
60	5300 MHz	8.66	9.00	Complies
64	5320 MHz	8.85	9.00	Complies
100	5500 MHz	8.65	9.00	Complies
116	5580 MHz	8.73	9.00	Complies
140	5700 MHz	6.47	9.00	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 3
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.26	11.00	Complies
60	5300 MHz	8.00	11.00	Complies
64	5320 MHz	6.58	11.00	Complies
100	5500 MHz	3.23	11.00	Complies
116	5580 MHz	7.87	11.00	Complies
140	5700 MHz	1.86	11.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	4.96	11.00	Complies
62	5310 MHz	5.36	11.00	Complies
102	5510 MHz	-4.87	11.00	Complies
110	5550 MHz	3.89	11.00	Complies
134	5670 MHz	1.26	11.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	10.92	11.00	Complies
60	5300 MHz	10.97	11.00	Complies
64	5320 MHz	9.36	11.00	Complies
100	5500 MHz	3.89	11.00	Complies
116	5580 MHz	10.74	11.00	Complies
140	5700 MHz	2.83	11.00	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 4
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.76	9.00	Complies
60	5300 MHz	8.32	9.00	Complies
64	5320 MHz	7.97	9.00	Complies
100	5500 MHz	4.83	9.00	Complies
116	5580 MHz	8.82	9.00	Complies
140	5700 MHz	4.77	9.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	5.30	9.00	Complies
62	5310 MHz	-0.74	9.00	Complies
102	5510 MHz	-3.81	9.00	Complies
110	5550 MHz	5.17	9.00	Complies
134	5670 MHz	4.05	9.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	8.89	9.00	Complies
60	5300 MHz	8.66	9.00	Complies
64	5320 MHz	7.83	9.00	Complies
100	5500 MHz	6.10	9.00	Complies
116	5580 MHz	8.73	9.00	Complies
140	5700 MHz	6.47	9.00	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 5
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	4.42	5.00	Complies
60	5300 MHz	4.53	5.00	Complies
64	5320 MHz	4.41	5.00	Complies
100	5500 MHz	4.50	5.00	Complies
116	5580 MHz	4.51	5.00	Complies
140	5700 MHz	4.25	5.00	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
54	5270 MHz	-0.66	5.00	Complies
62	5310 MHz	1.06	5.00	Complies
102	5510 MHz	0.98	5.00	Complies
110	5550 MHz	1.46	5.00	Complies
134	5670 MHz	1.01	5.00	Complies

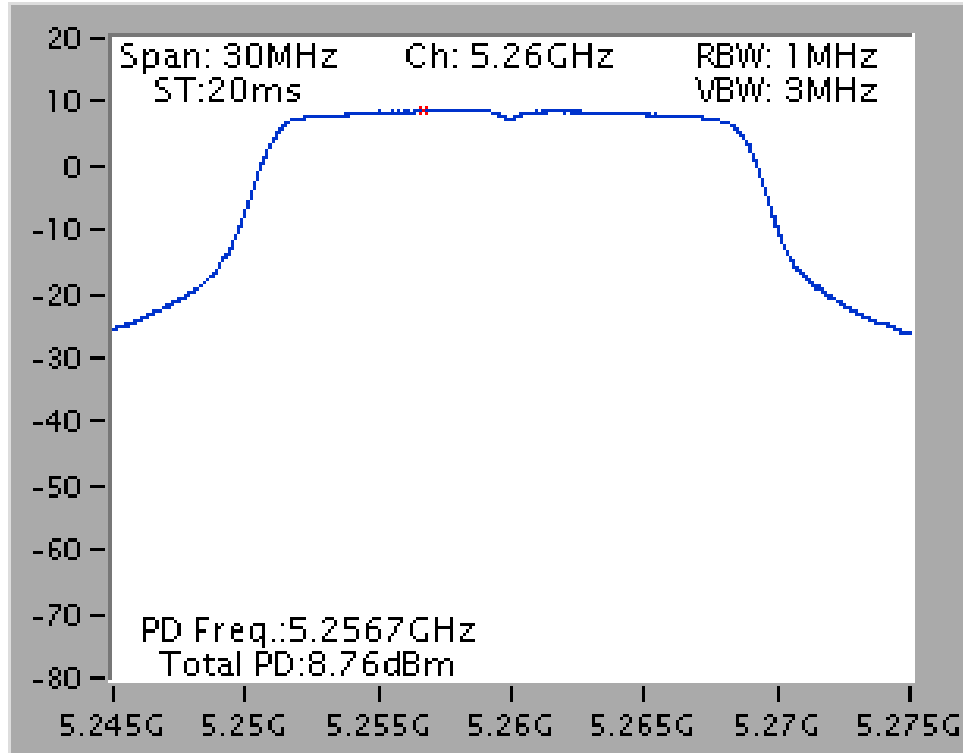
Configuration IEEE 802.11a / Chain 1 + Chain 3

Channel	Frequency	Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
52	5260 MHz	4.53	5.00	Complies
60	5300 MHz	4.80	5.00	Complies
64	5320 MHz	4.68	5.00	Complies
100	5500 MHz	4.92	5.00	Complies
116	5580 MHz	4.85	5.00	Complies
140	5700 MHz	4.47	5.00	Complies

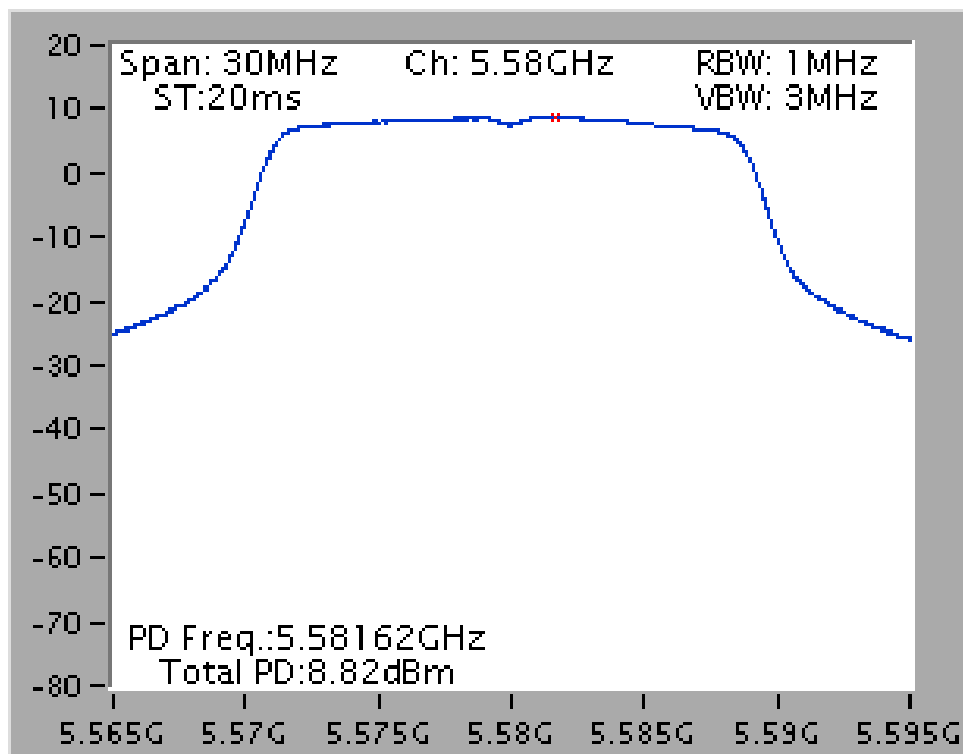
Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

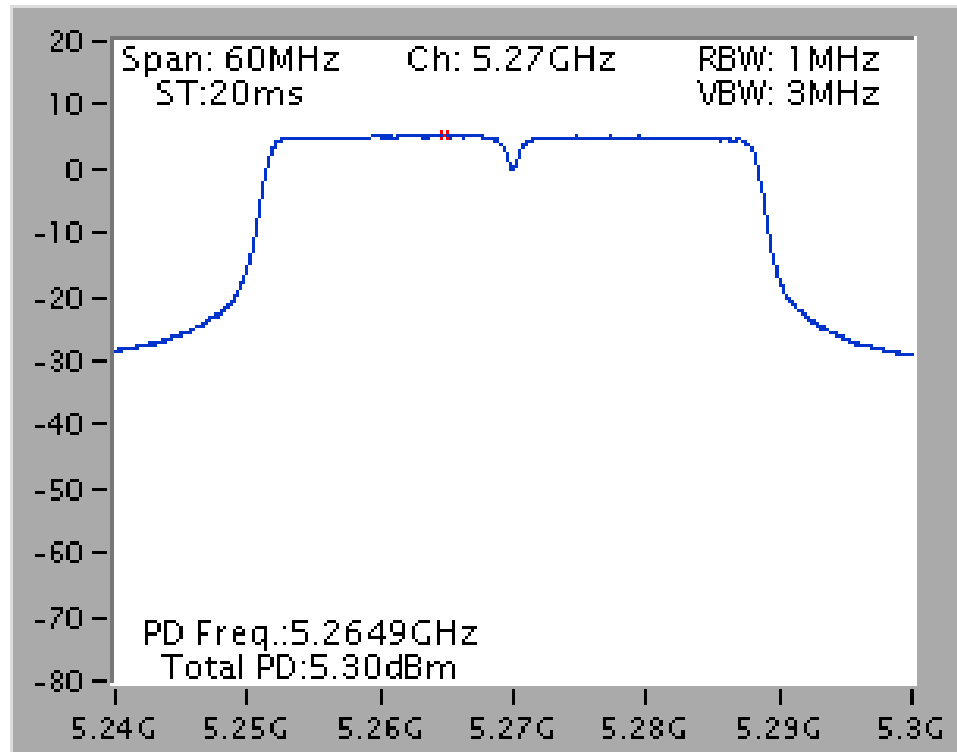
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5260 MHz / Mode 1



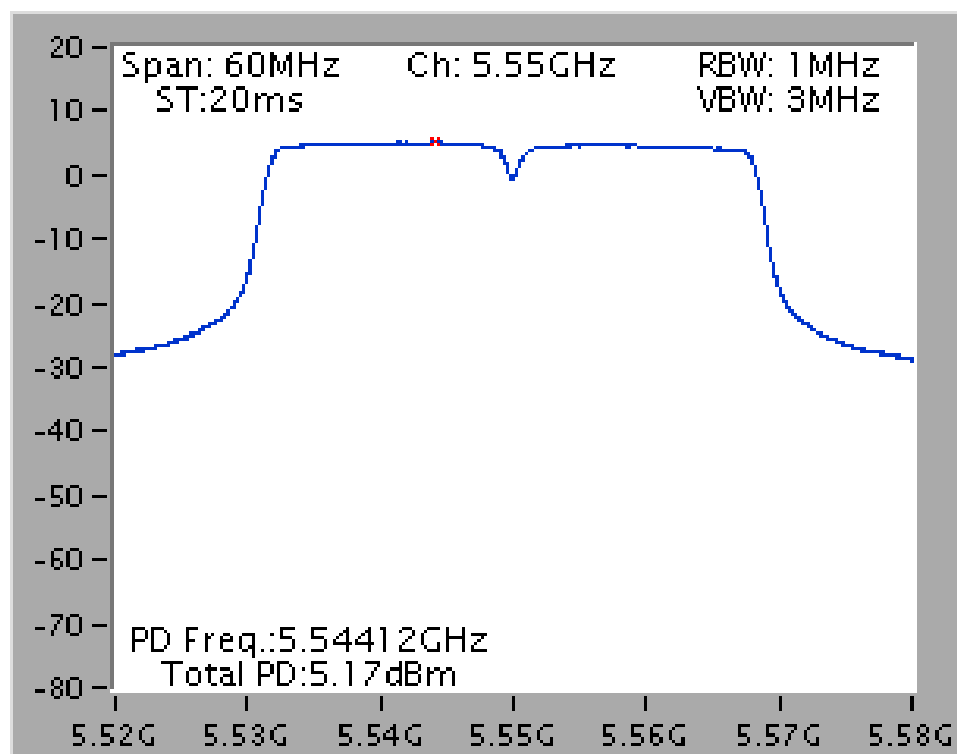
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5580 MHz / Mode 1



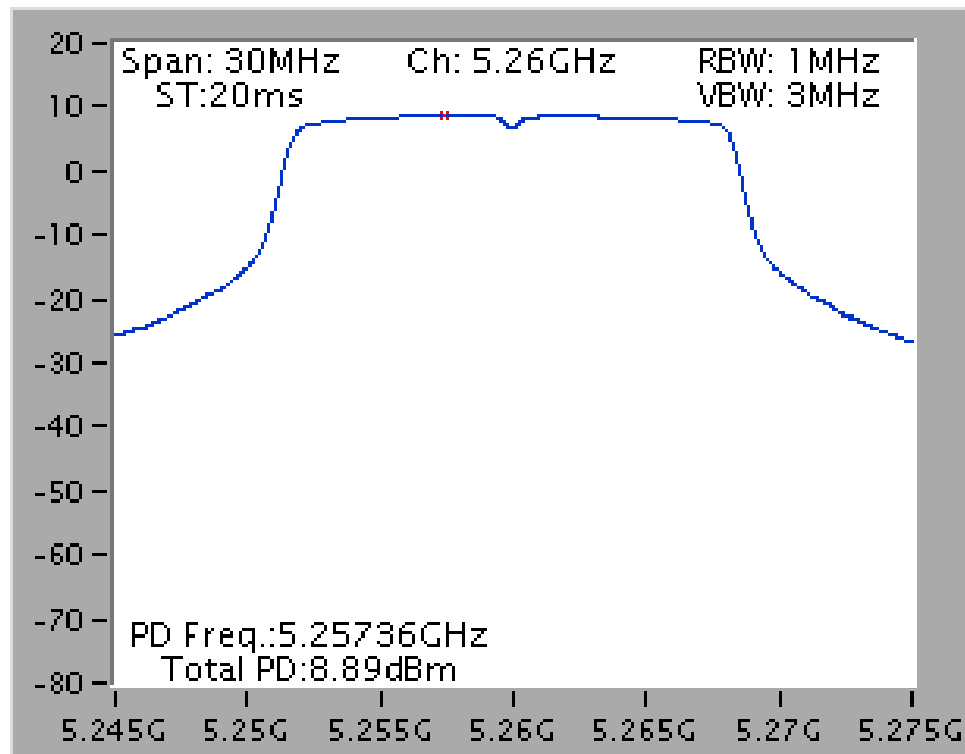
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5270 MHz / Mode 1



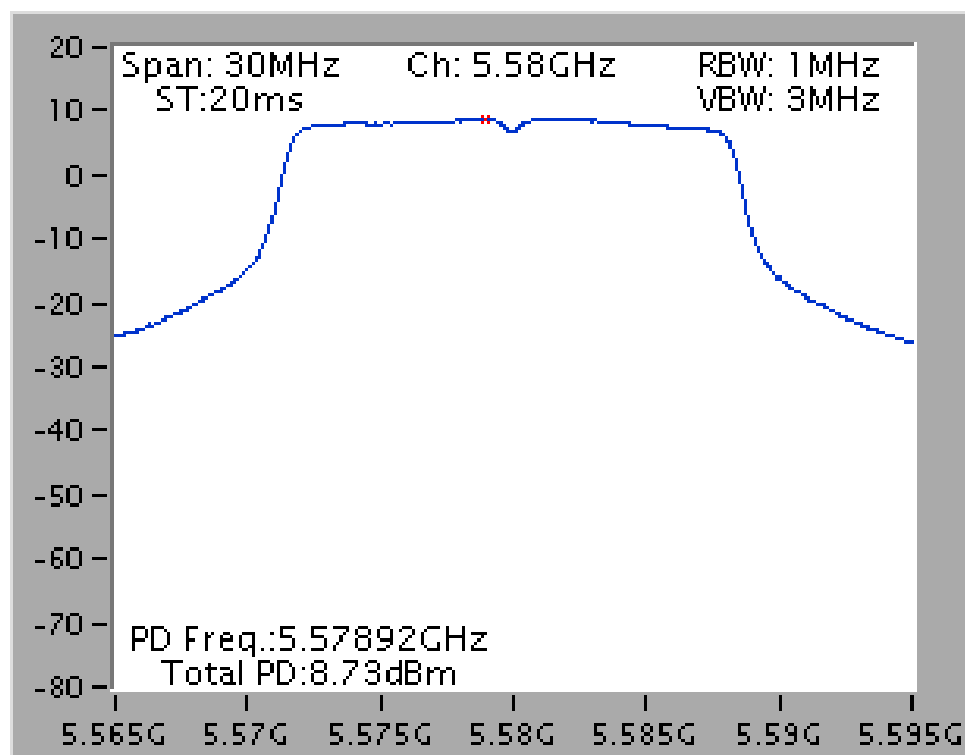
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5550 MHz / Mode 1



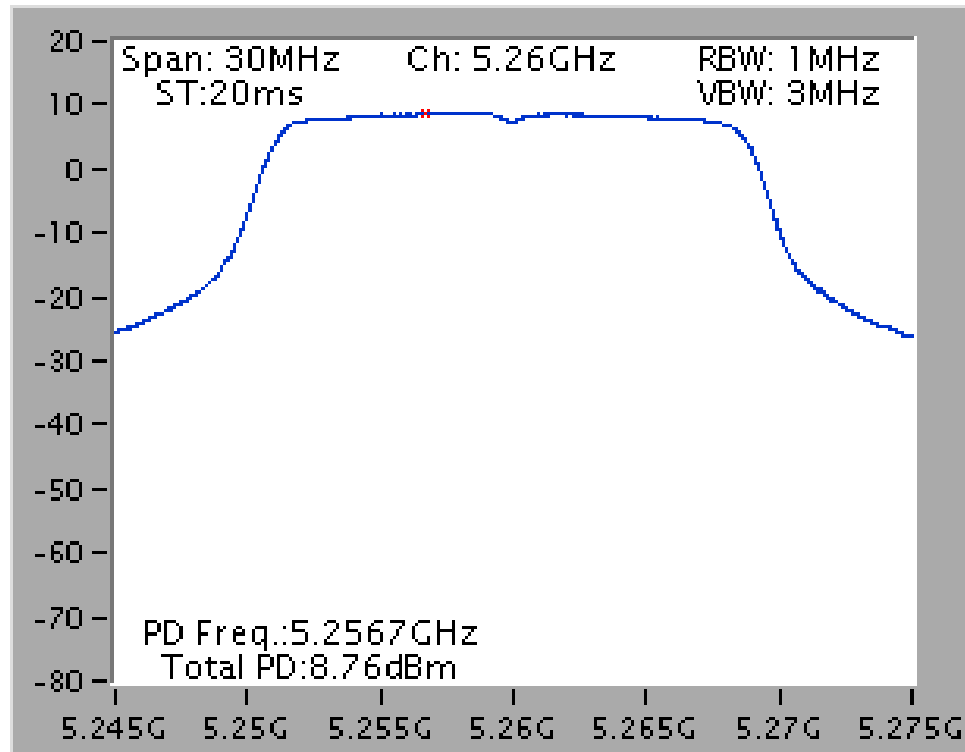
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz / Mode 1



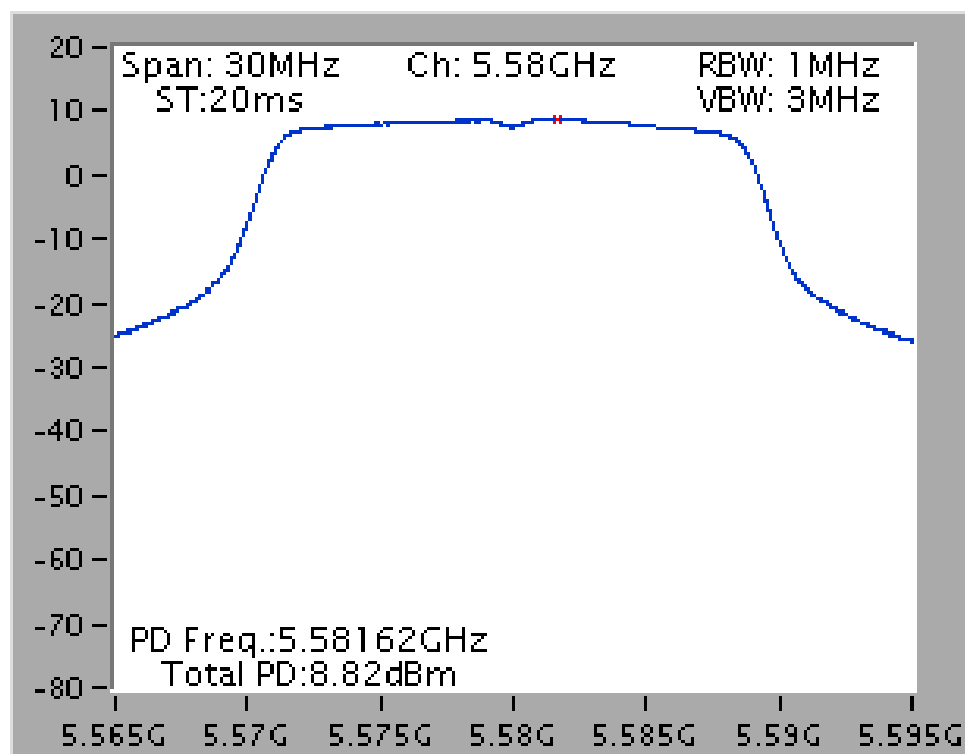
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz / Mode 1



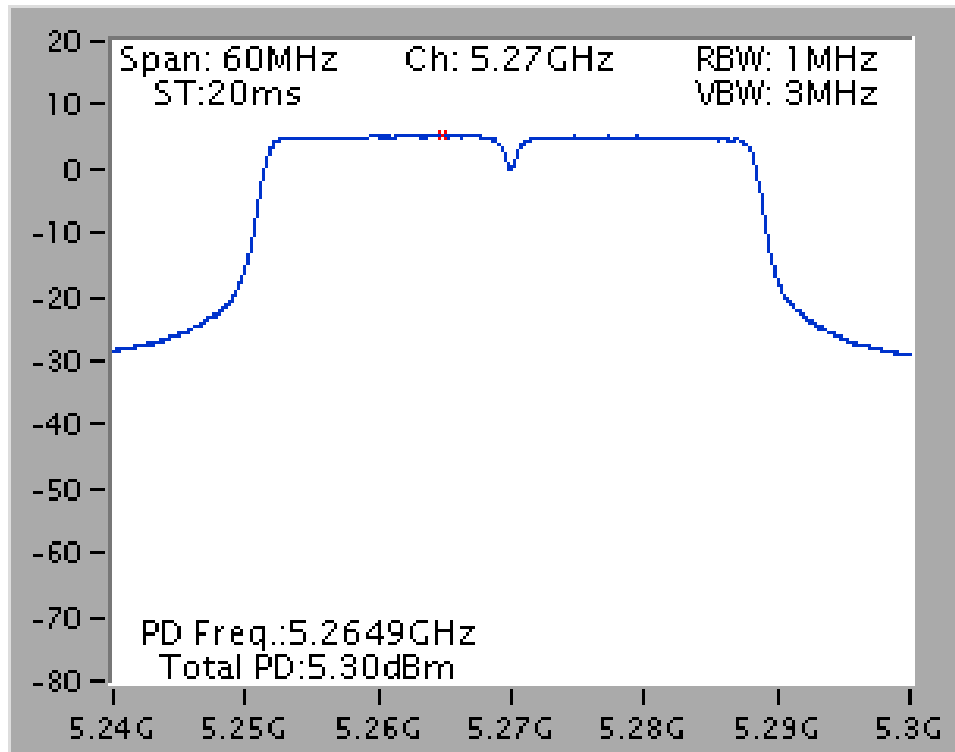
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5260 MHz / Mode 2



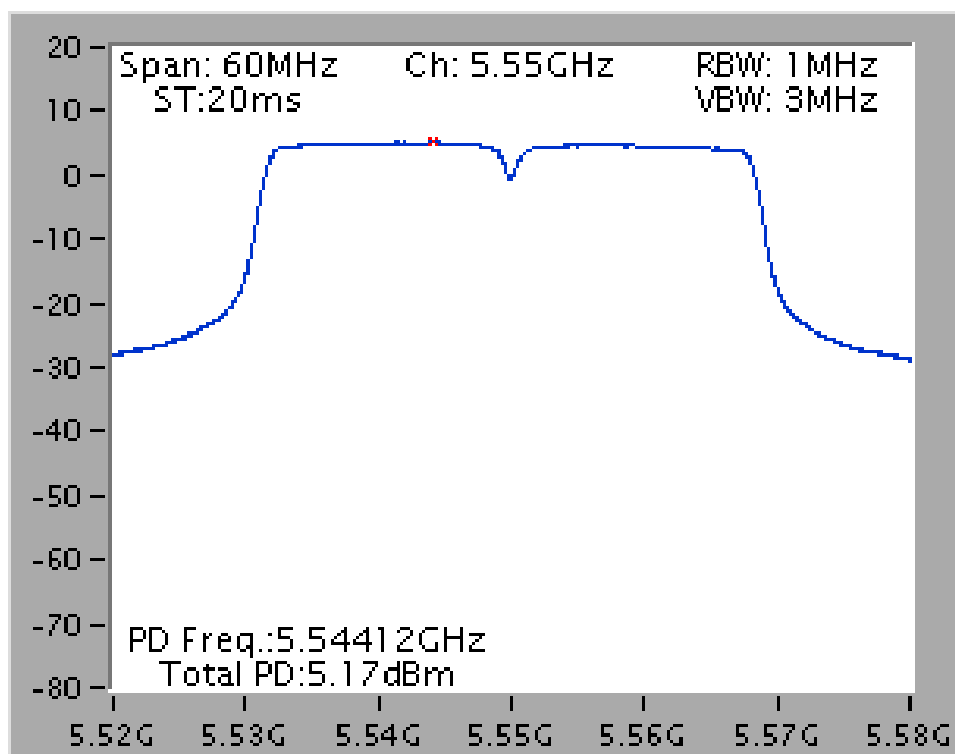
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5580 MHz / Mode 2



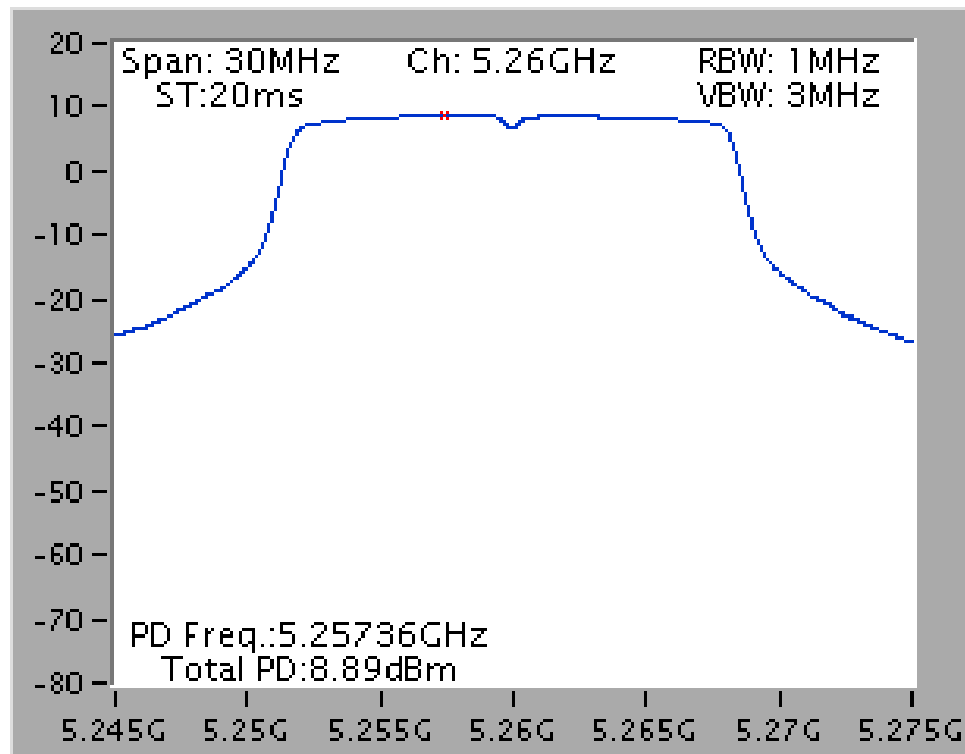
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5270 MHz / Mode 2



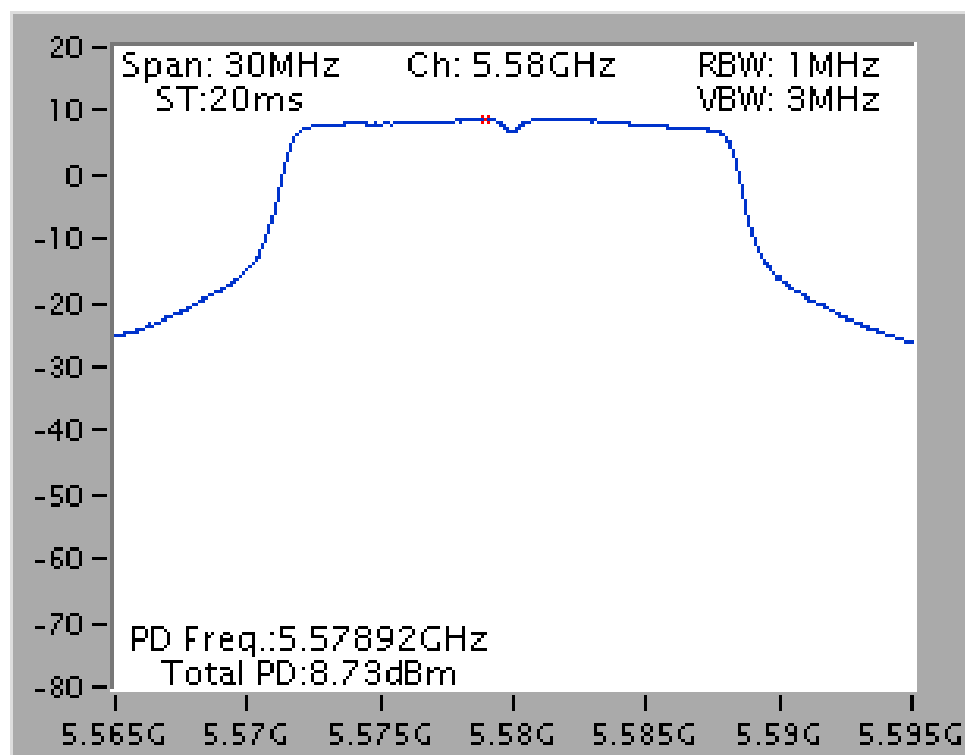
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5550 MHz / Mode 2



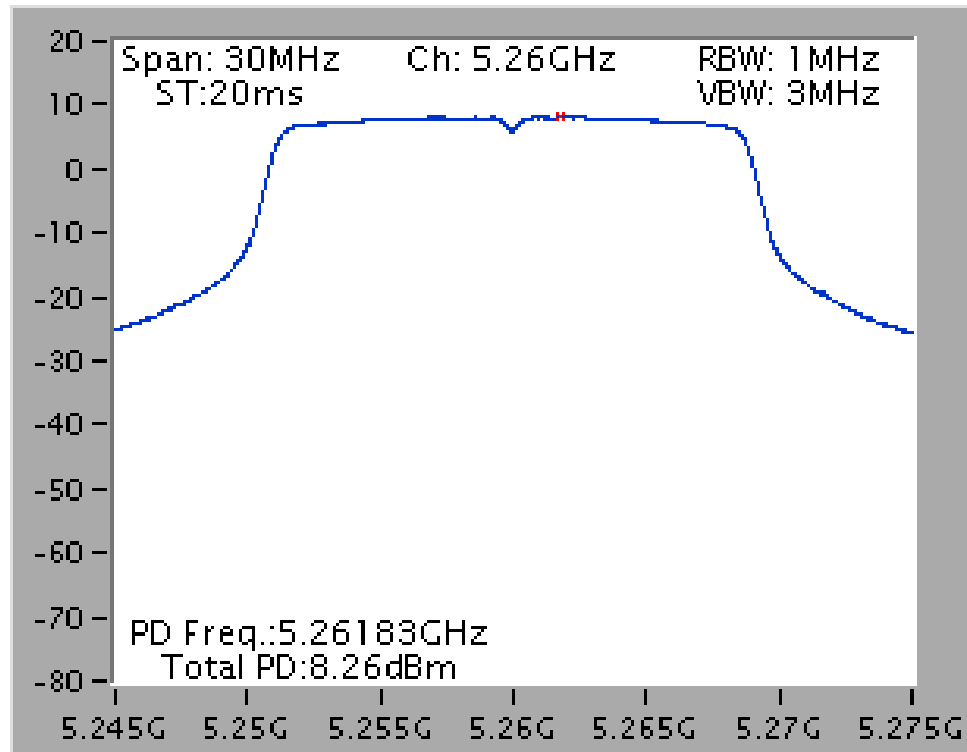
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz / Mode 2



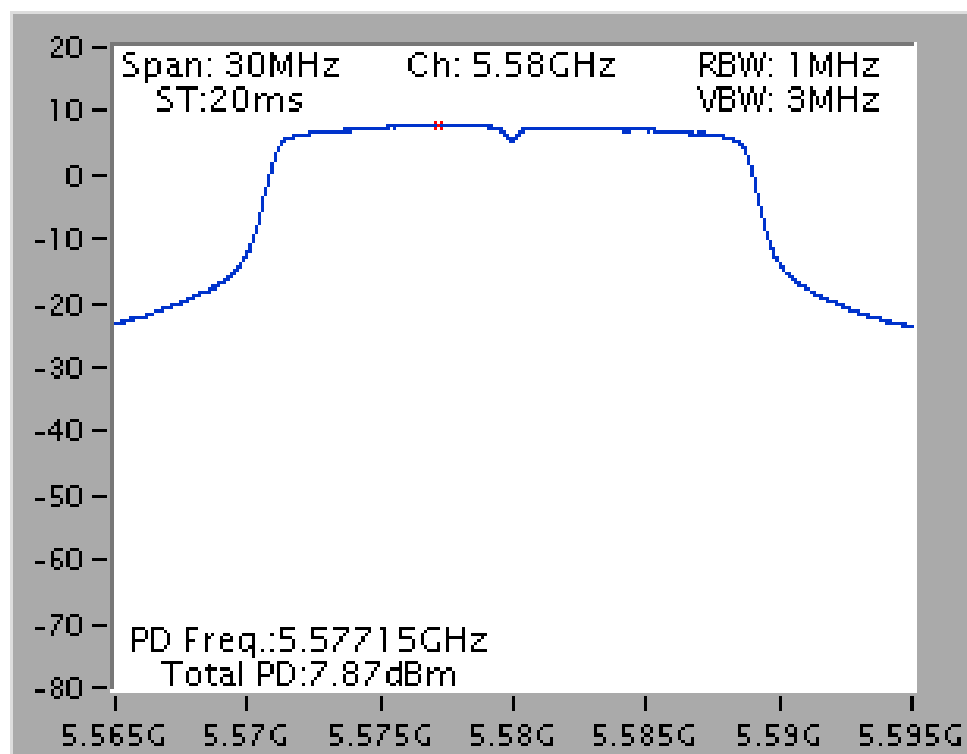
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz / Mode 2



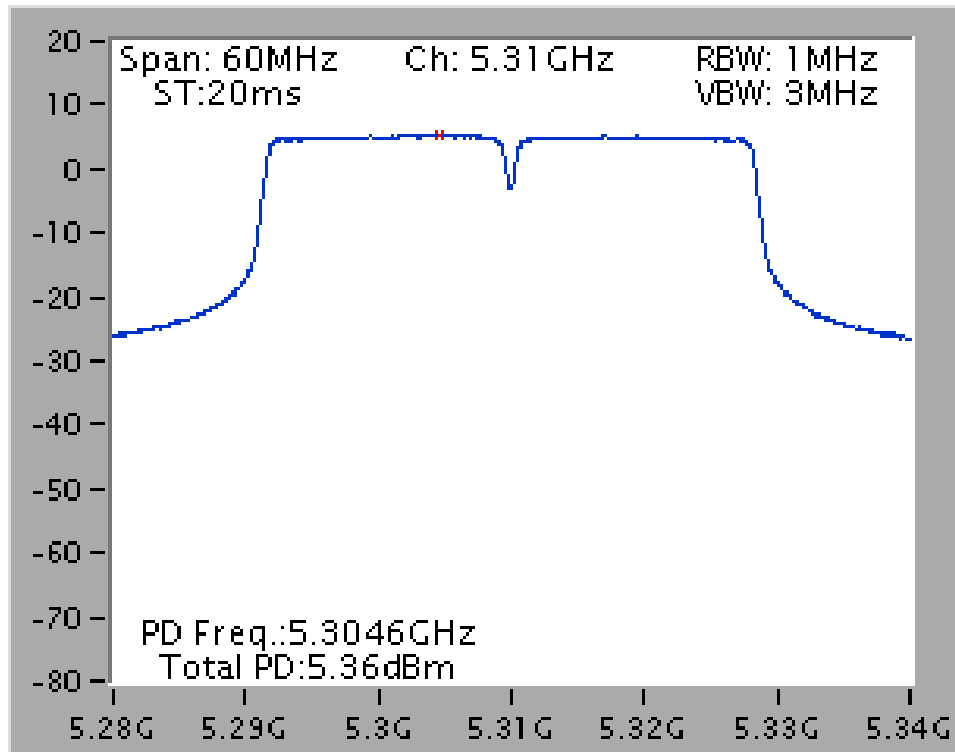
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5260 MHz / Mode 3



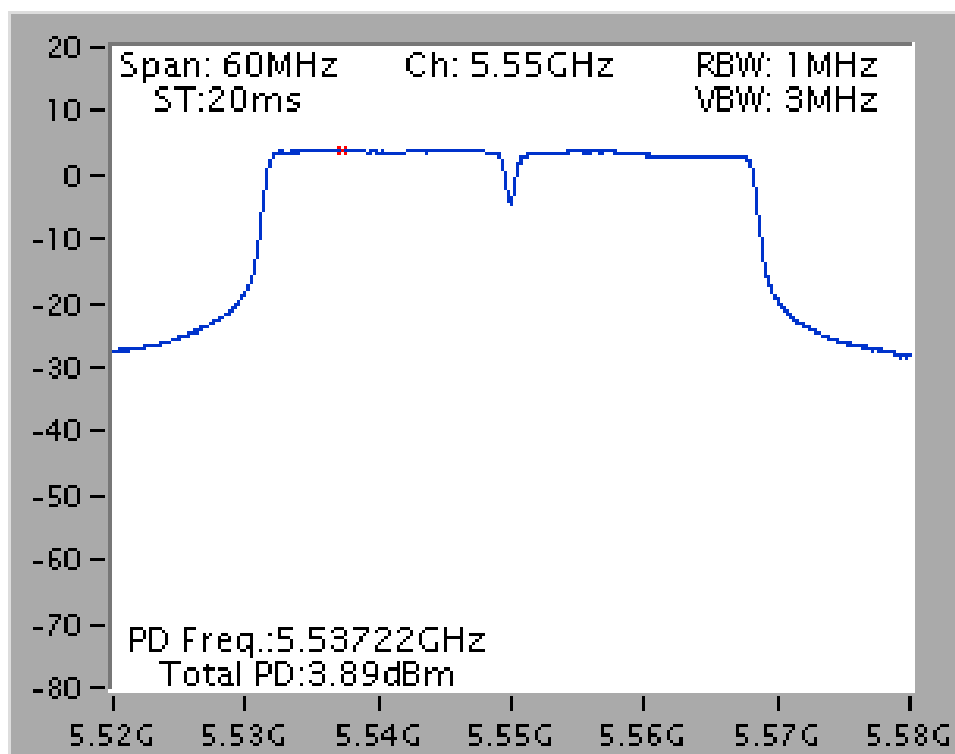
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5580 MHz / Mode 3



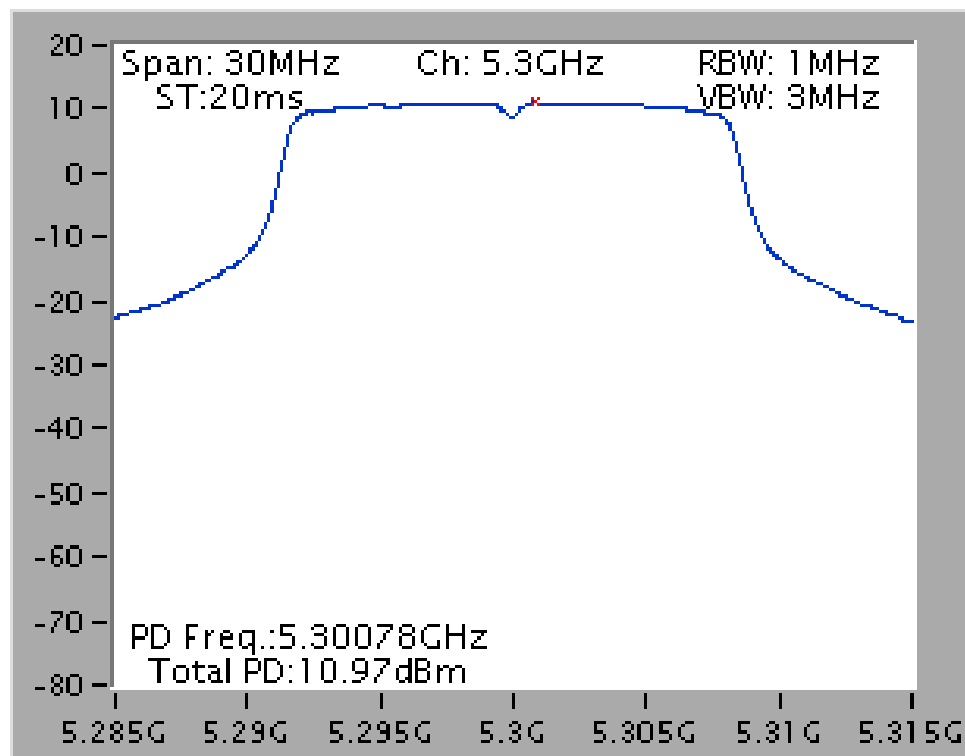
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5310 MHz / Mode 3



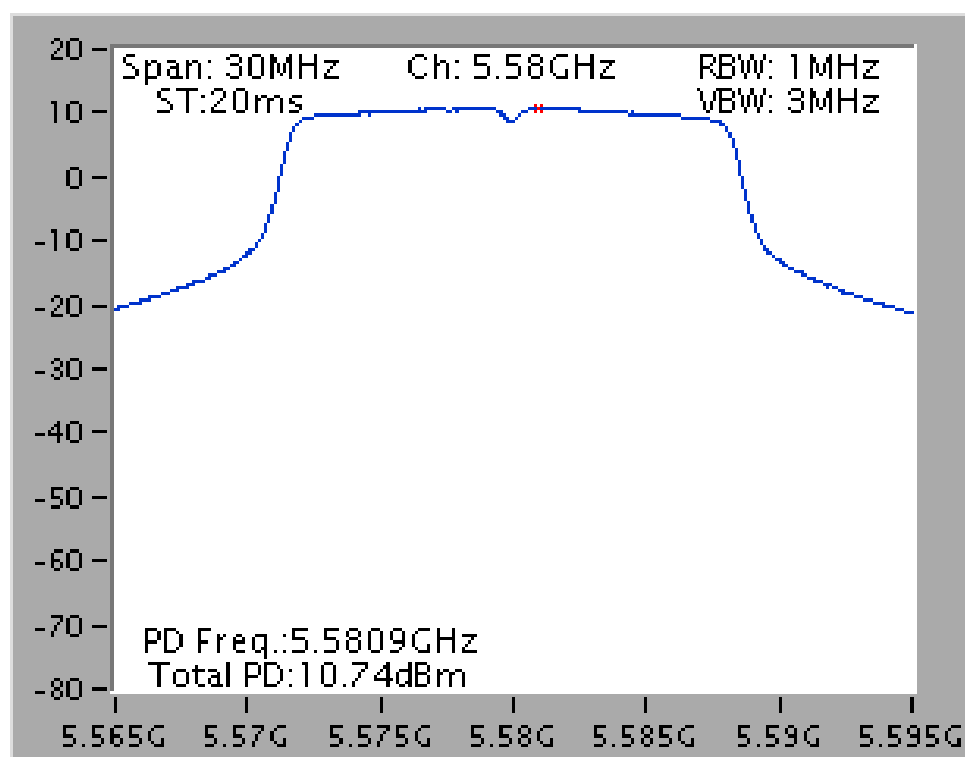
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5550 MHz / Mode 3



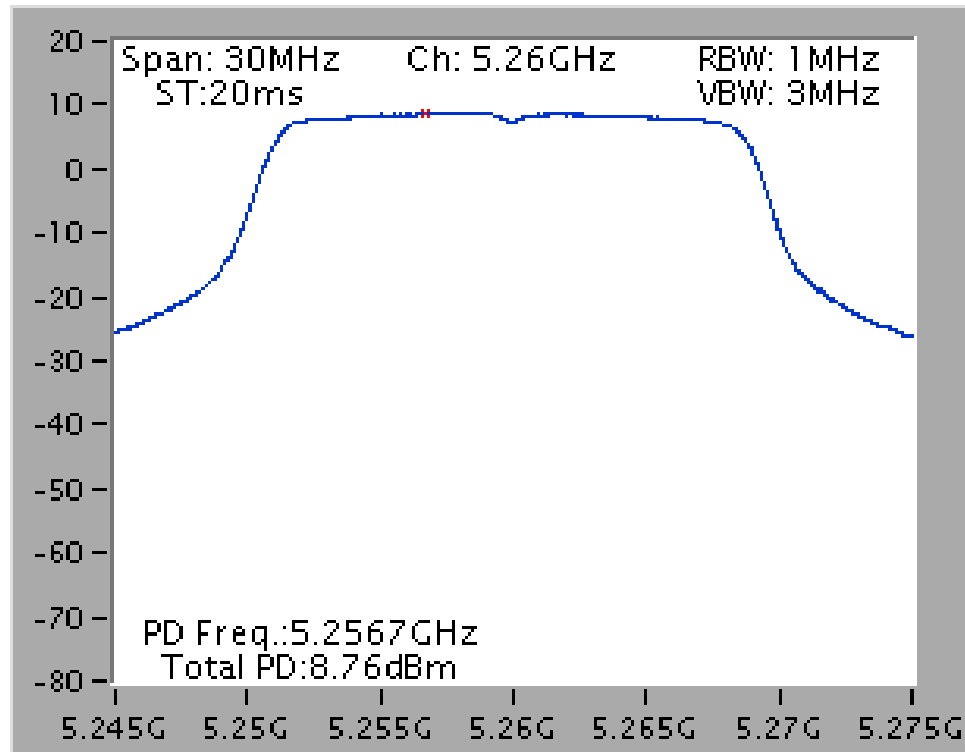
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5300 MHz / Mode 3



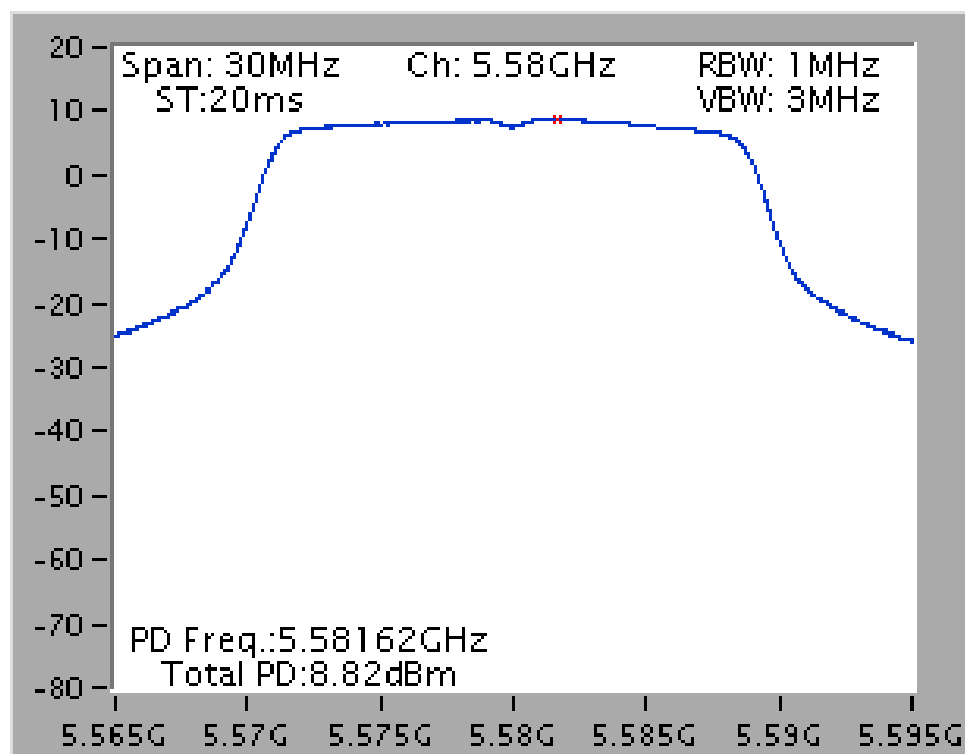
Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz / Mode 3



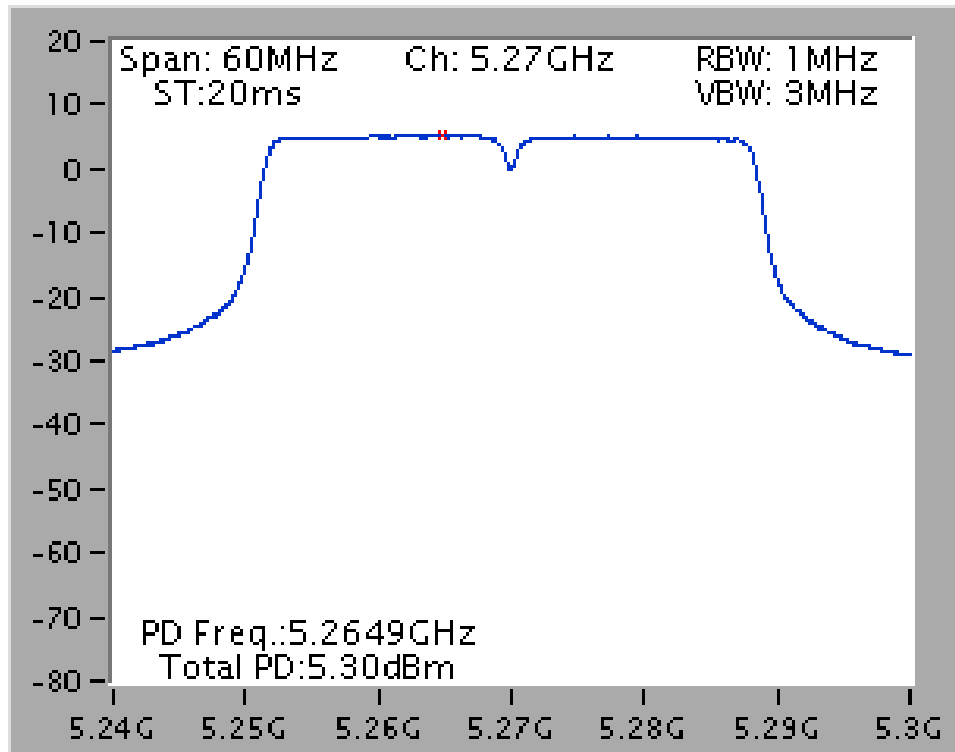
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5260 MHz / Mode 4



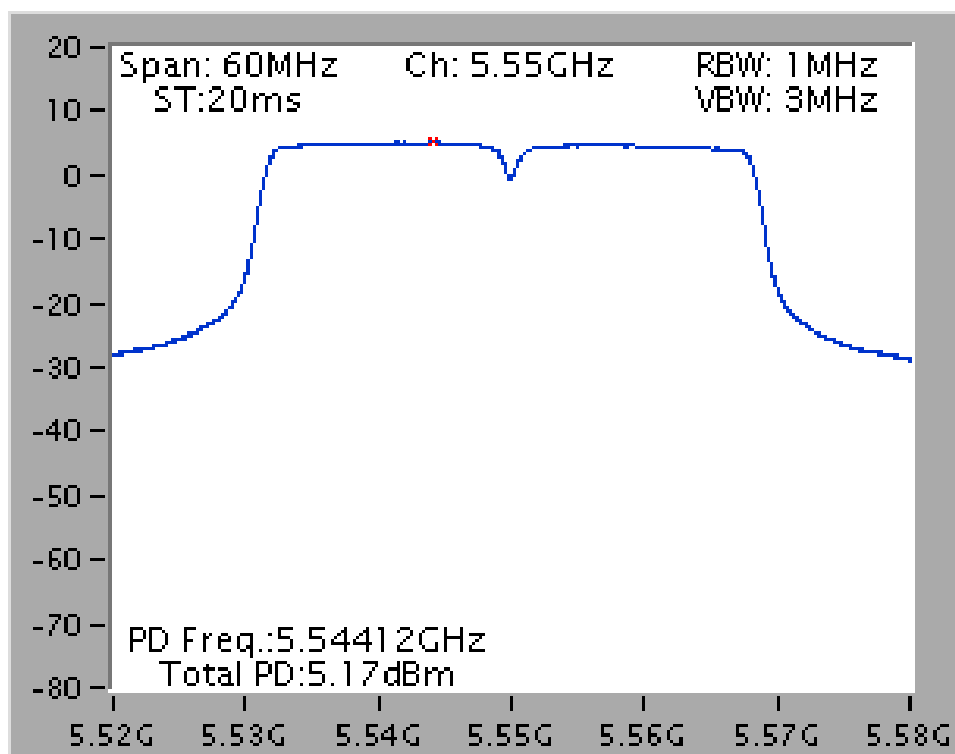
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 /
5580 MHz / Mode 4



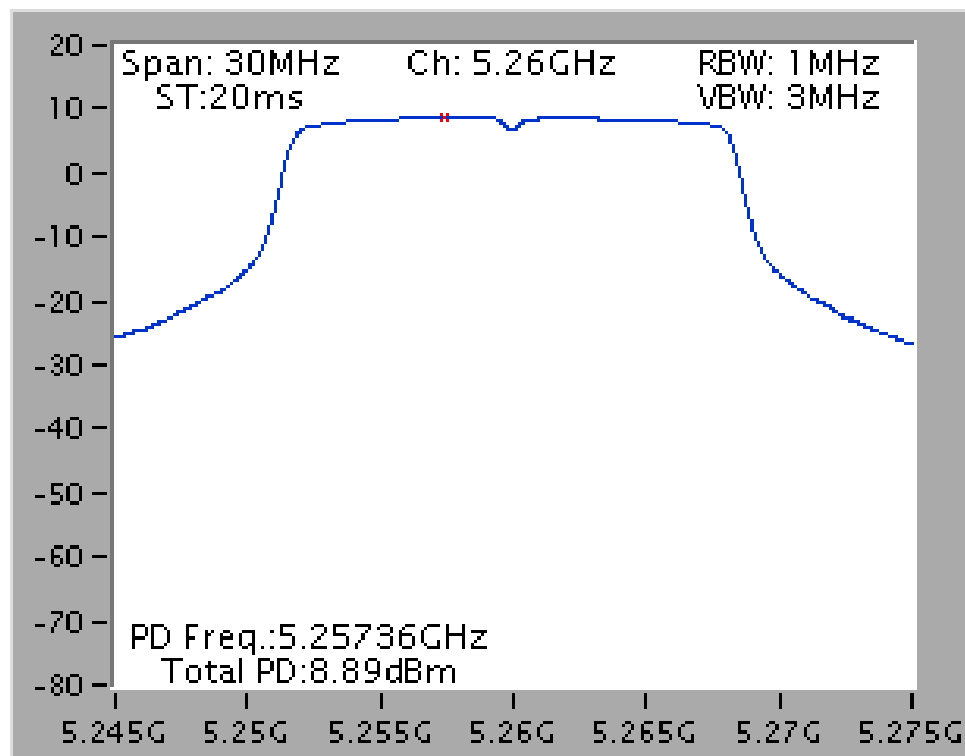
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5270 MHz / Mode 4



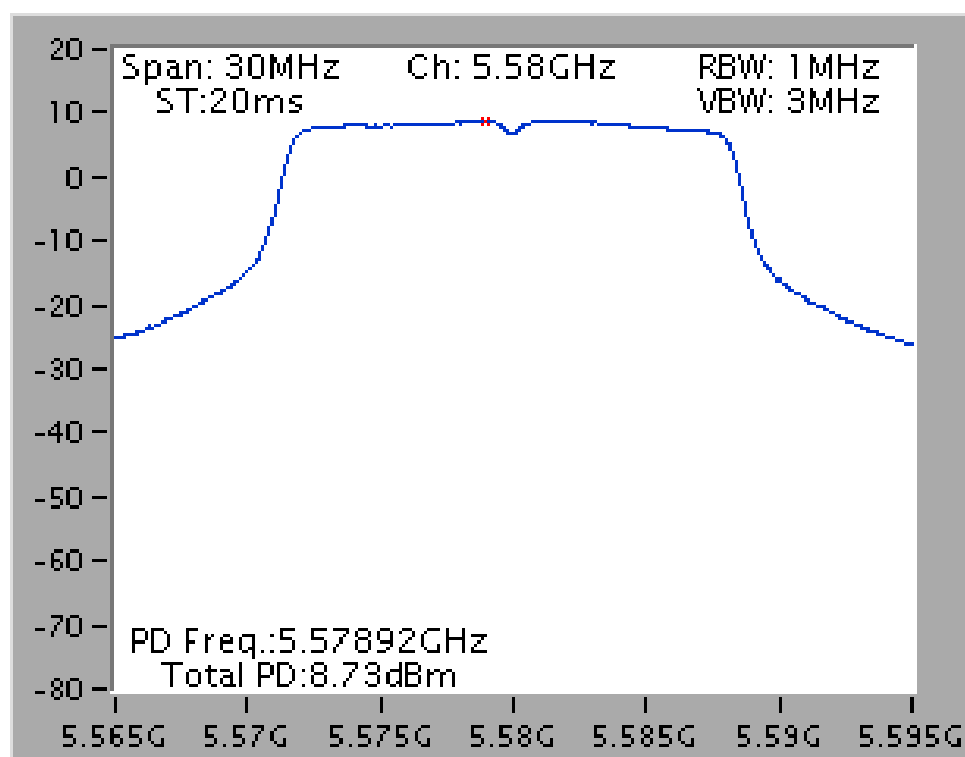
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 /
5550 MHz / Mode 4

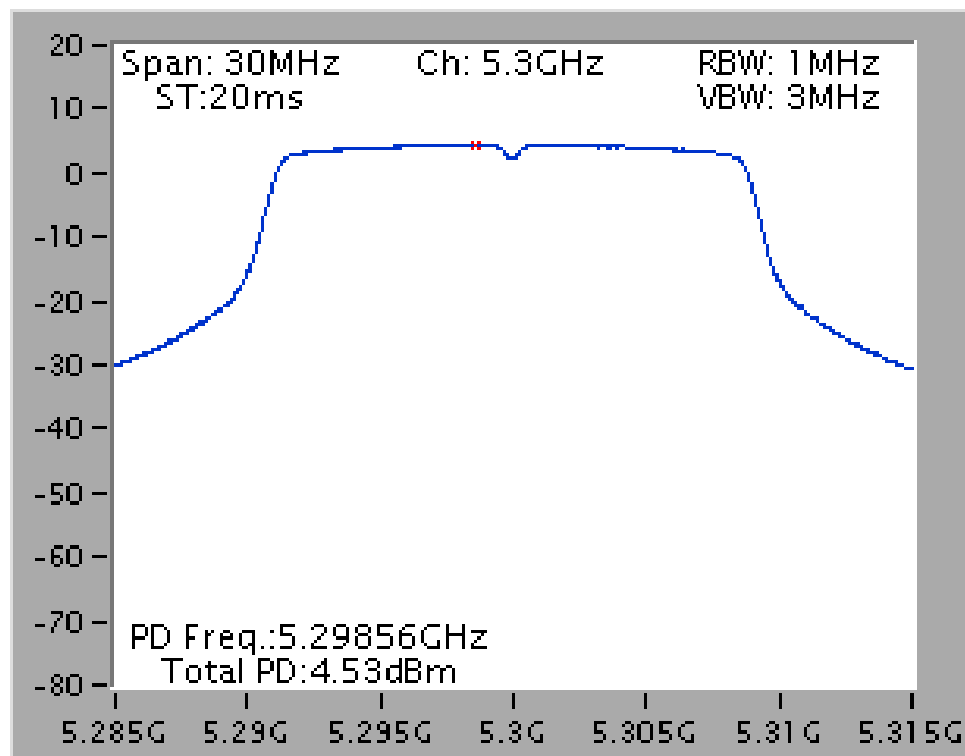
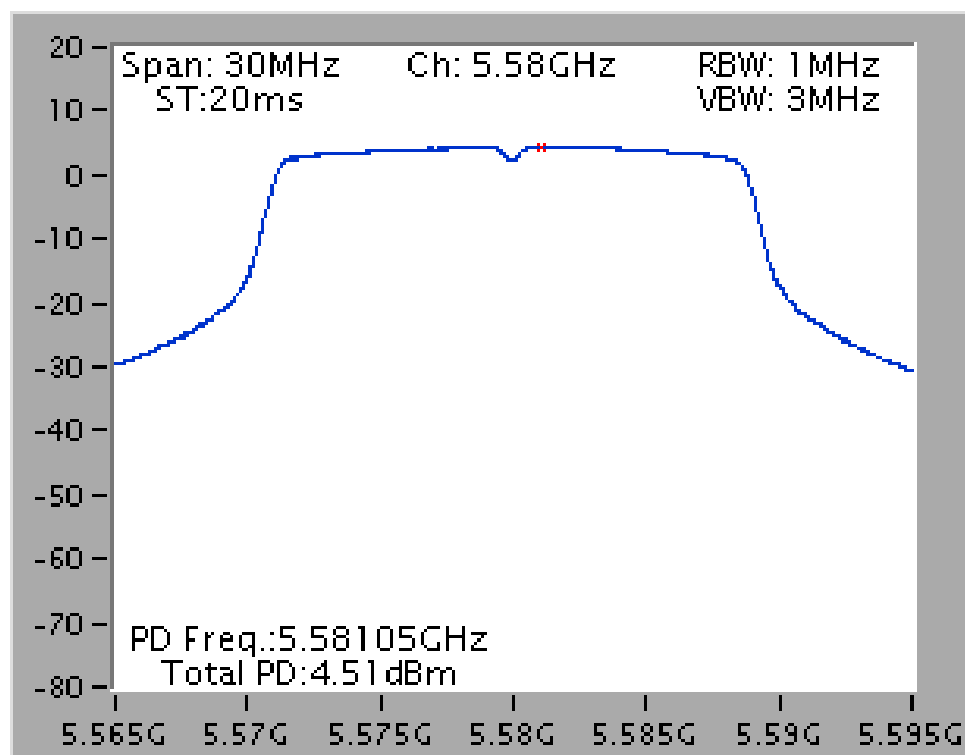


Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz / Mode 4

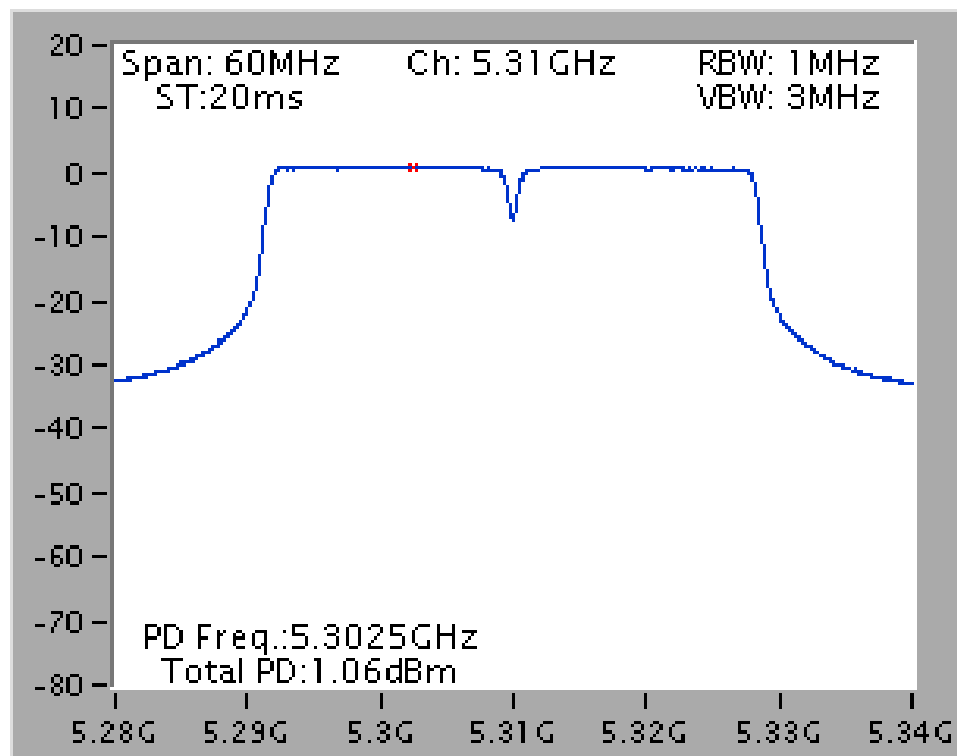


Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz / Mode 4

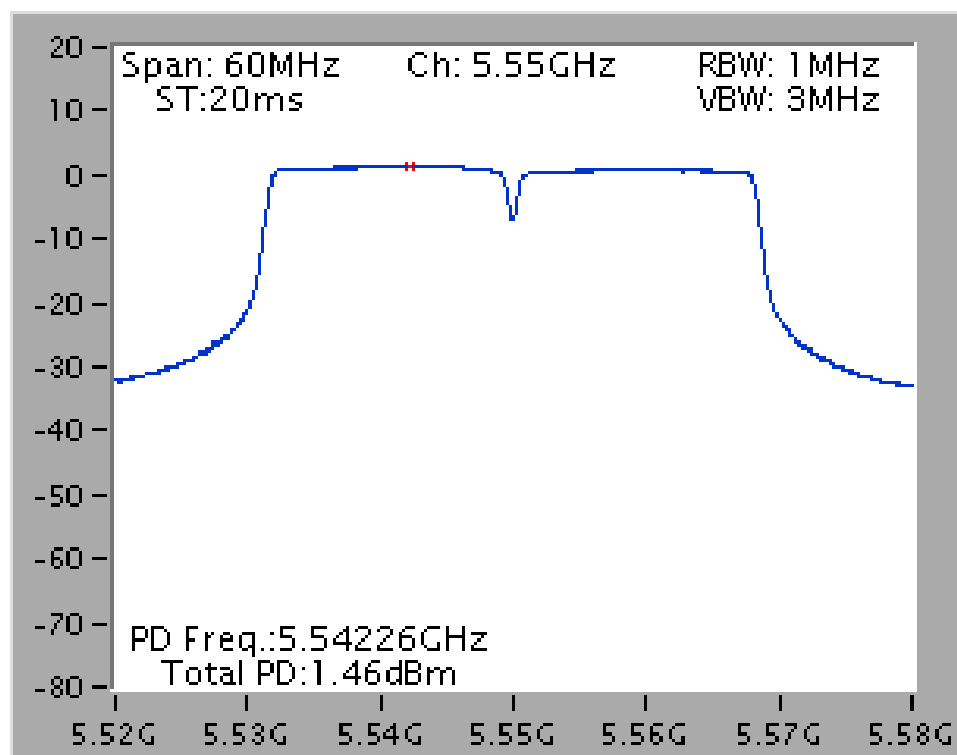


Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3 / 5300 MHz / Mode 5

Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3 / 5580 MHz / Mode 5


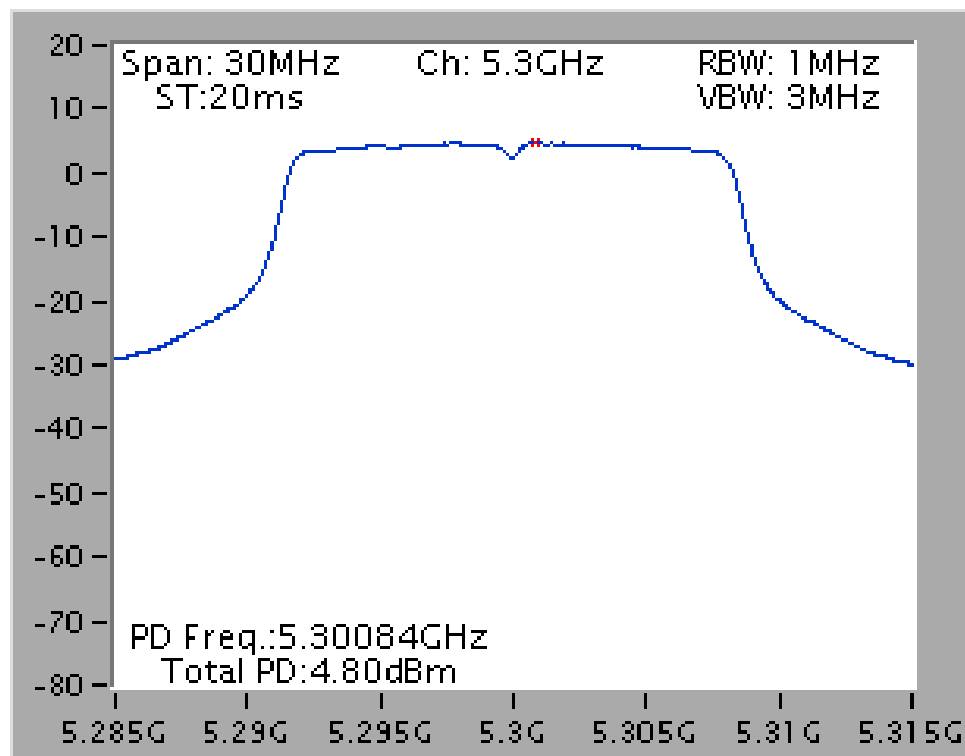
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3 / 5310 MHz / Mode 5



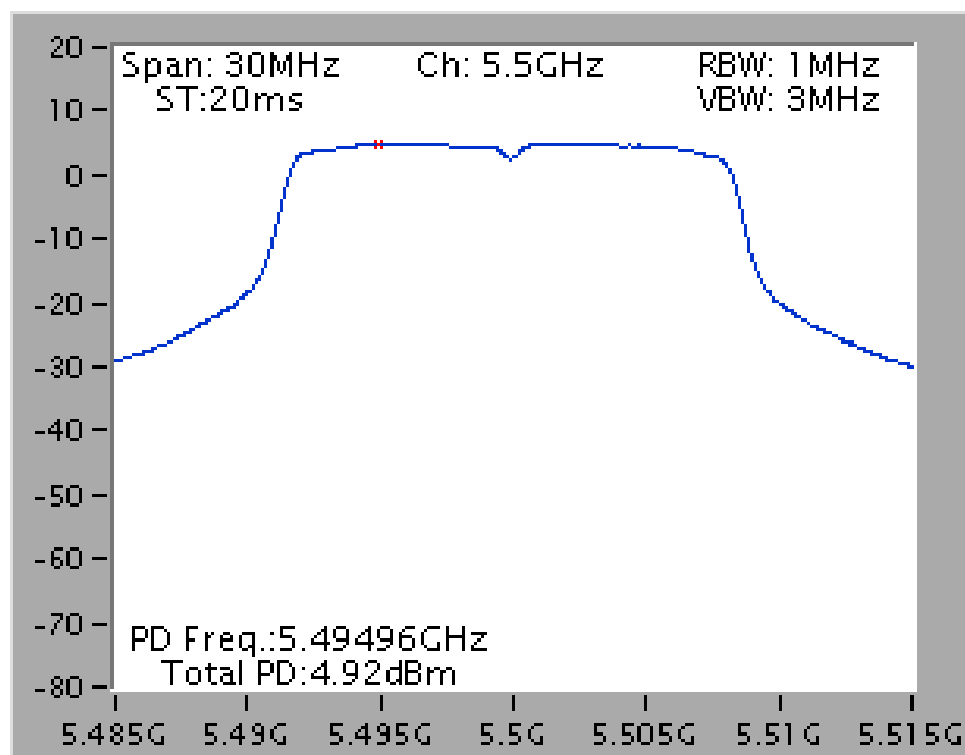
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3 / 5550 MHz / Mode 5



Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 3 / 5300 MHz / Mode 5



Power Density Plot on Configuration IEEE 802.11a / Chain 1 + Chain 3 / 5500 MHz / Mode 5



4.5. Peak Excursion Measurement

4.5.1. Limit

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emissions bandwidth whichever is less.

4.5.2. 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 Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1MHz (Peak Trace) / 1MHz (Average Trace)
VB	3MHz (Peak Trace) / 3MHz (Average Trace)
Detector	Peak (Peak Trace) / RMS
Trace	Peak : Trace :Max hold/Average: Trace Average Sweep Count 100
Sweep Time	AUTO

4.5.3. Test Procedures

1. The test procedure is the same as section 4.6.3.
2. Trace A, Set RBW = 1MHz, VBW = 3MHz, Span >26dB bandwidth, Max. hold.
3. Delta Mark trace A Maximum frequency and trace B same frequency.
4. Repeat the above procedure until measurements for all frequencies were complete.

4.5.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Peak Excursion

Temperature	23°C	Humidity	60%
Test Engineer	Robert Chang	Configurations	IEEE 802.11n / a
Test Date	Jul. 22, 2012		

Test Mode : Mode 1

Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.54	13	Complies
60	5300 MHz	8.49	13	Complies
64	5320 MHz	9.72	13	Complies
100	5500 MHz	8.48	13	Complies
116	5580 MHz	8.83	13	Complies
140	5700 MHz	9.33	13	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
54	5270 MHz	9.66	13	Complies
62	5310 MHz	8.89	13	Complies
102	5510 MHz	9.65	13	Complies
110	5550 MHz	9.46	13	Complies
134	5670 MHz	9.61	13	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.97	13	Complies
60	5300 MHz	8.09	13	Complies
64	5320 MHz	8.76	13	Complies
100	5500 MHz	7.39	13	Complies
116	5580 MHz	9.03	13	Complies
140	5700 MHz	8.60	13	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 2
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.54	13	Complies
60	5300 MHz	8.49	13	Complies
64	5320 MHz	9.18	13	Complies
100	5500 MHz	8.80	13	Complies
116	5580 MHz	8.83	13	Complies
140	5700 MHz	9.20	13	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
54	5270 MHz	9.66	13	Complies
62	5310 MHz	9.47	13	Complies
102	5510 MHz	9.86	13	Complies
110	5550 MHz	9.46	13	Complies
134	5670 MHz	8.86	13	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.97	13	Complies
60	5300 MHz	8.09	13	Complies
64	5320 MHz	8.76	13	Complies
100	5500 MHz	7.39	13	Complies
116	5580 MHz	9.03	13	Complies
140	5700 MHz	9.67	13	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 3
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.21	13	Complies
60	5300 MHz	8.84	13	Complies
64	5320 MHz	8.60	13	Complies
100	5500 MHz	9.69	13	Complies
116	5580 MHz	8.53	13	Complies
140	5700 MHz	9.80	13	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
54	5270 MHz	8.88	13	Complies
62	5310 MHz	8.78	13	Complies
102	5510 MHz	8.94	13	Complies
110	5550 MHz	10.04	13	Complies
134	5670 MHz	9.22	13	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.86	13	Complies
60	5300 MHz	8.80	13	Complies
64	5320 MHz	8.89	13	Complies
100	5500 MHz	10.04	13	Complies
116	5580 MHz	8.74	13	Complies
140	5700 MHz	9.31	13	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 4
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.54	13	Complies
60	5300 MHz	8.49	13	Complies
64	5320 MHz	9.00	13	Complies
100	5500 MHz	9.26	13	Complies
116	5580 MHz	8.83	13	Complies
140	5700 MHz	9.05	13	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
54	5270 MHz	9.66	13	Complies
62	5310 MHz	8.84	13	Complies
102	5510 MHz	8.48	13	Complies
110	5550 MHz	9.46	13	Complies
134	5670 MHz	9.82	13	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	8.97	13	Complies
60	5300 MHz	8.09	13	Complies
64	5320 MHz	8.81	13	Complies
100	5500 MHz	9.47	13	Complies
116	5580 MHz	9.03	13	Complies
140	5700 MHz	9.67	13	Complies

Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

Test Mode : Mode 5
Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	9.39	13	Complies
60	5300 MHz	9.22	13	Complies
64	5320 MHz	9.41	13	Complies
100	5500 MHz	9.15	13	Complies
116	5580 MHz	9.79	13	Complies
140	5700 MHz	9.15	13	Complies

Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
54	5270 MHz	10.19	13	Complies
62	5310 MHz	10.50	13	Complies
102	5510 MHz	9.56	13	Complies
110	5550 MHz	9.52	13	Complies
134	5670 MHz	9.32	13	Complies

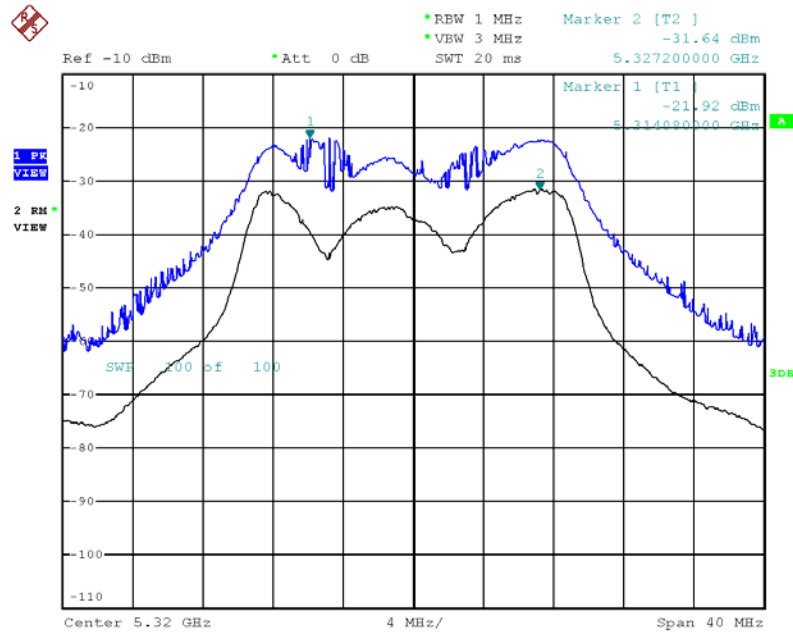
Configuration IEEE 802.11a / Chain 1 + Chain 3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	9.60	13	Complies
60	5300 MHz	9.57	13	Complies
64	5320 MHz	8.96	13	Complies
100	5500 MHz	9.81	13	Complies
116	5580 MHz	9.23	13	Complies
140	5700 MHz	9.17	13	Complies

Note: All the test values were listed in the report.

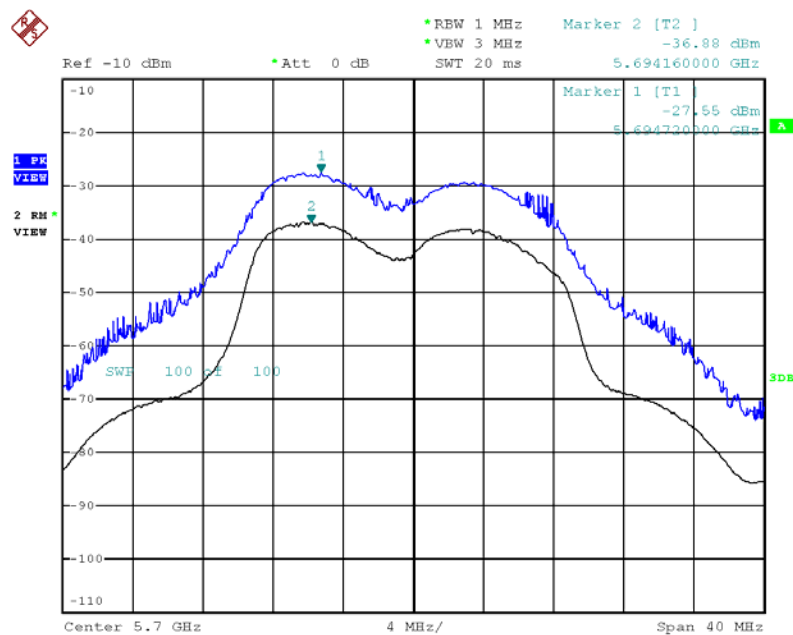
For plots, only the channel with maximum results was shown.

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5320 MHz / Mode 1



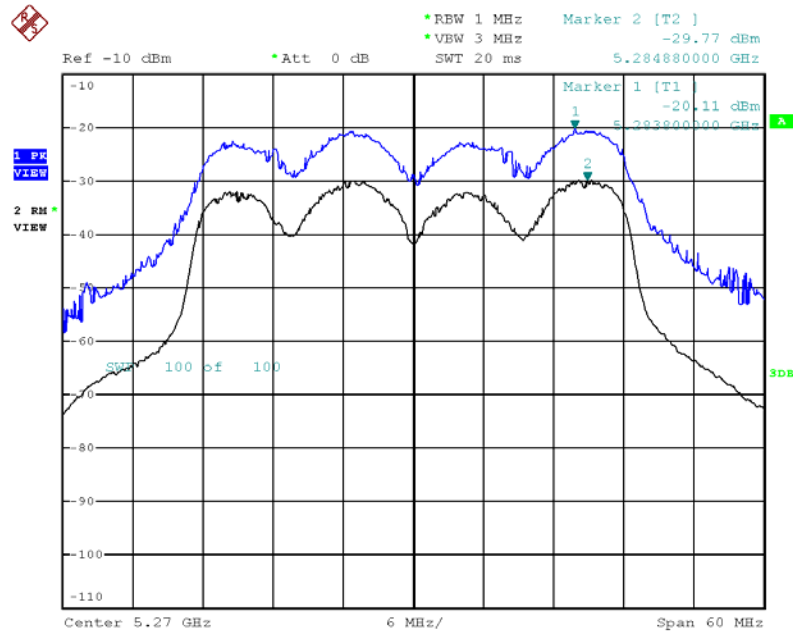
Date: 22.JUL.2012 14:18:50

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5700 MHz / Mode 1



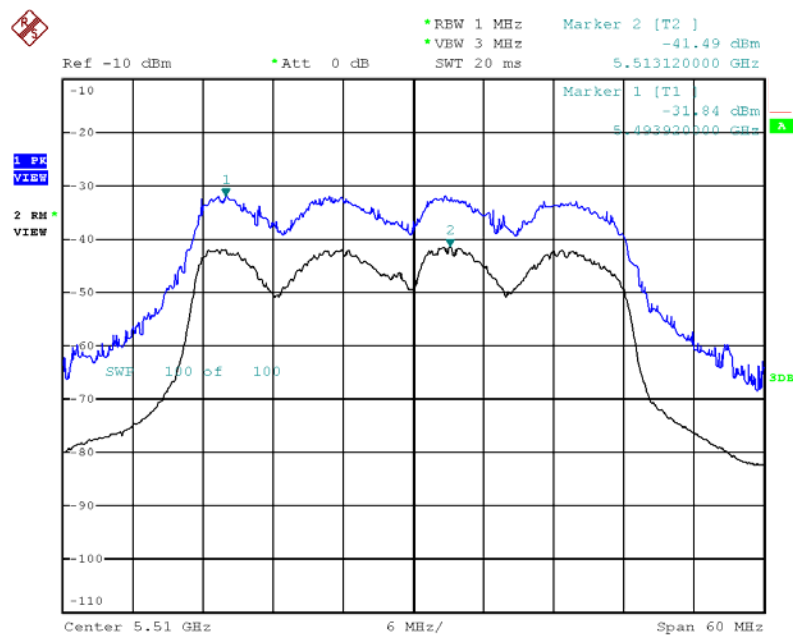
Date: 22.JUL.2012 14:21:22

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5270 MHz / Mode 1



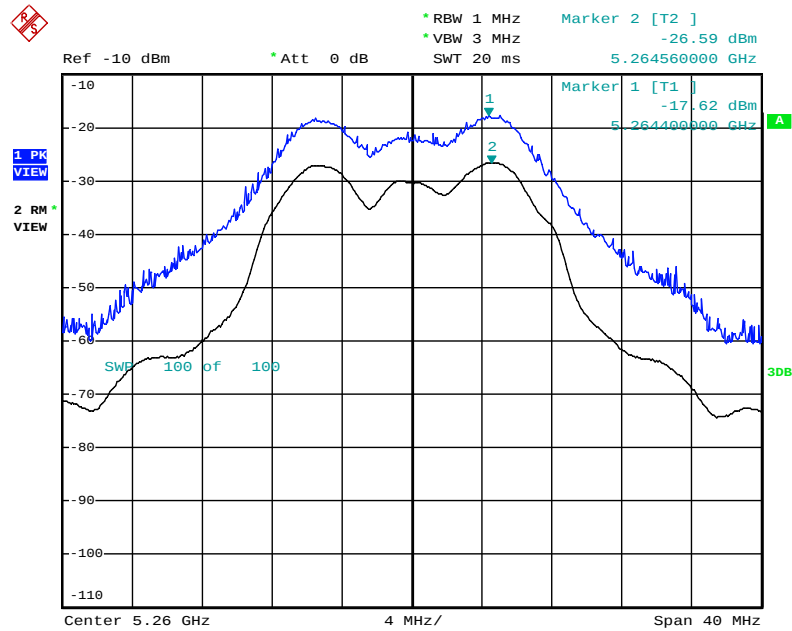
Date: 22.JUL.2012 06:04:19

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5510 MHz / Mode 1



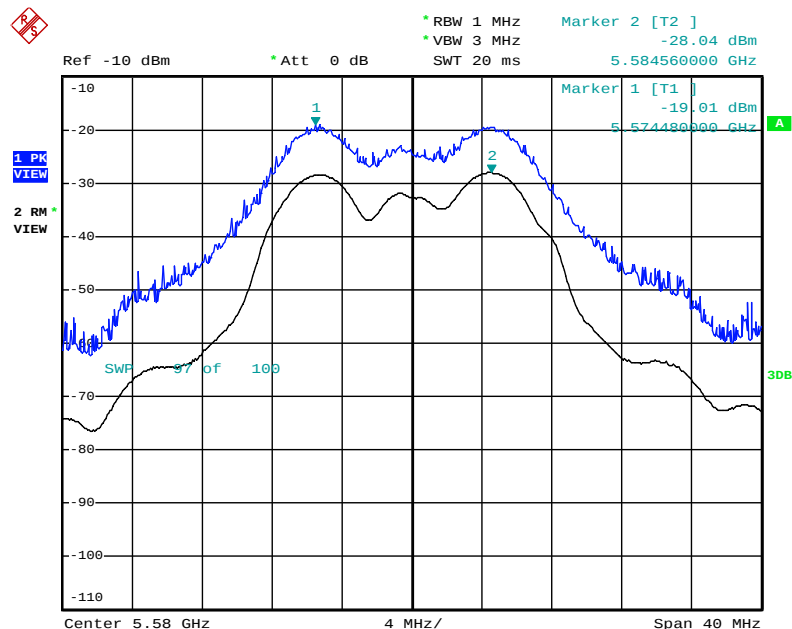
Date: 22.JUL.2012 14:29:10

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz / Mode 1



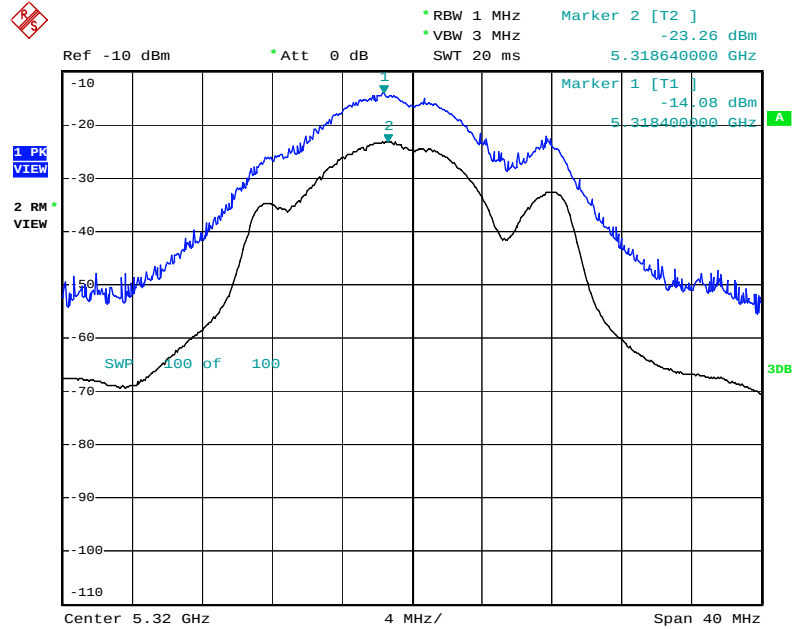
Date: 9.AUG.2012 23:06:06

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5580 MHz / Mode 1



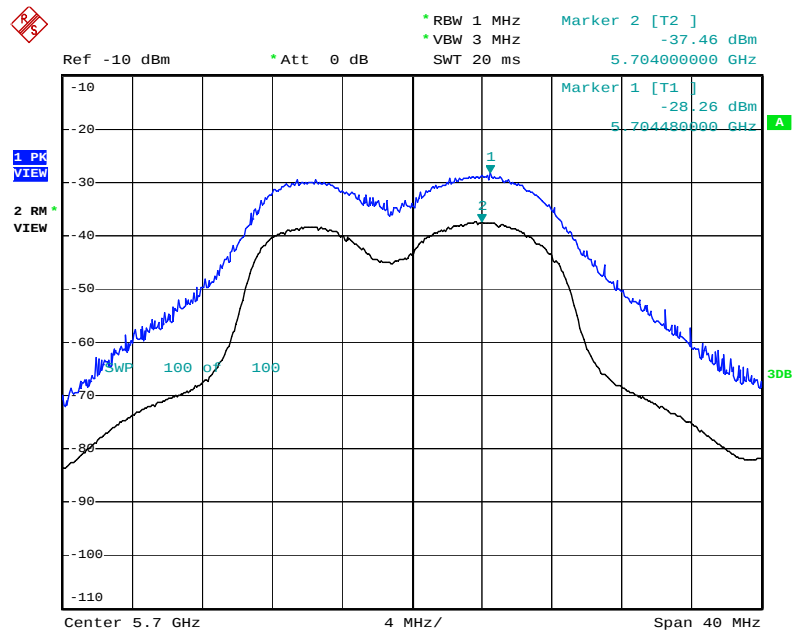
Date: 9.AUG.2012 23:03:23

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5320 MHz / Mode 2



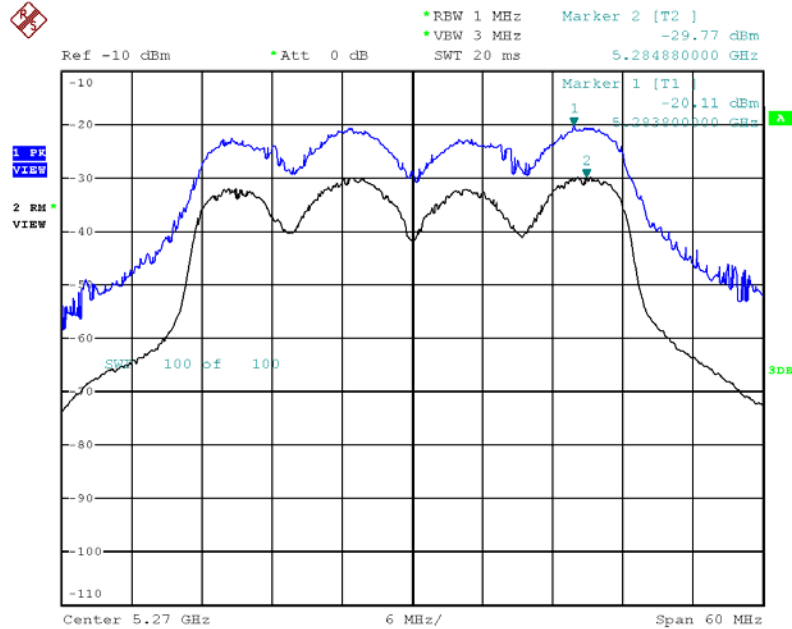
Date: 24.JUL.2012 10:50:16

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5700 MHz / Mode 2



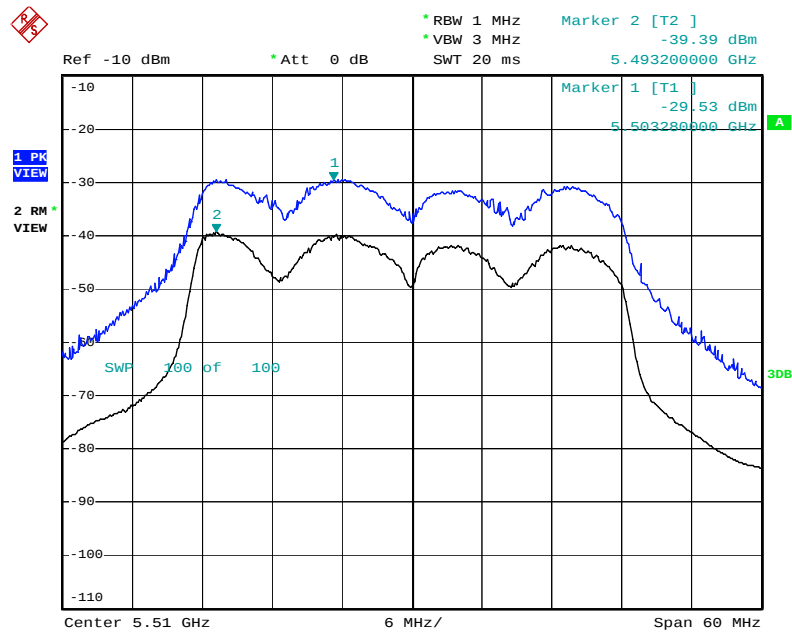
Date: 24.JUL.2012 10:54:17

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5270 MHz / Mode 2



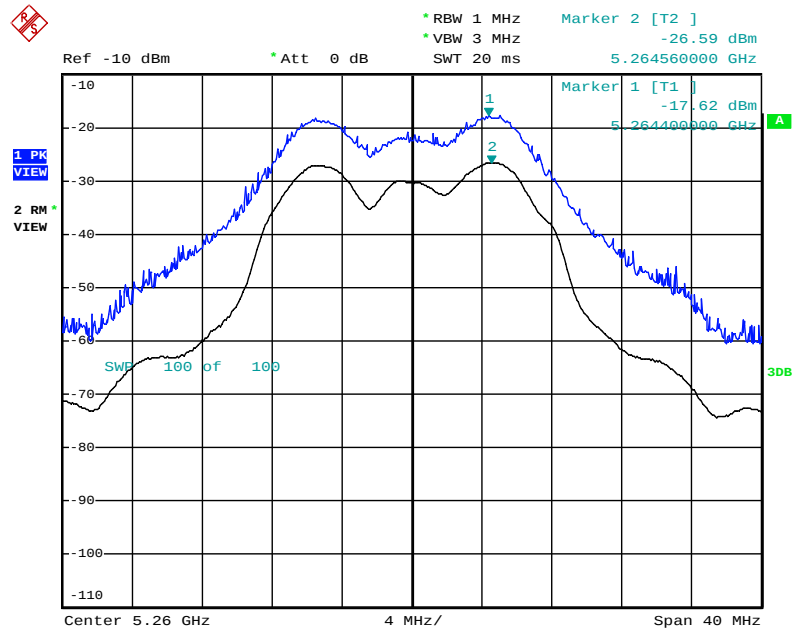
Date: 22.JUL.2012 06:04:19

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5510 MHz / Mode 2



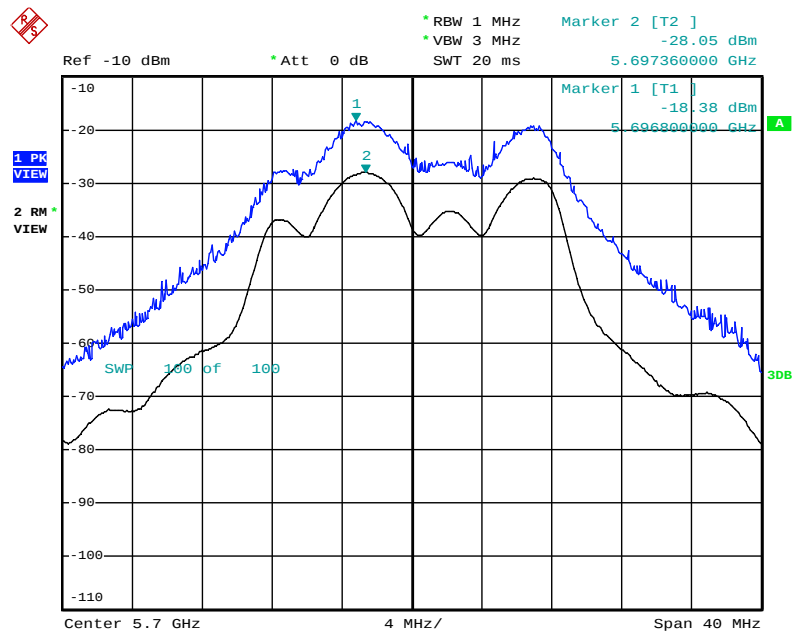
Date: 24.JUL.2012 10:58:39

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz / Mode 2



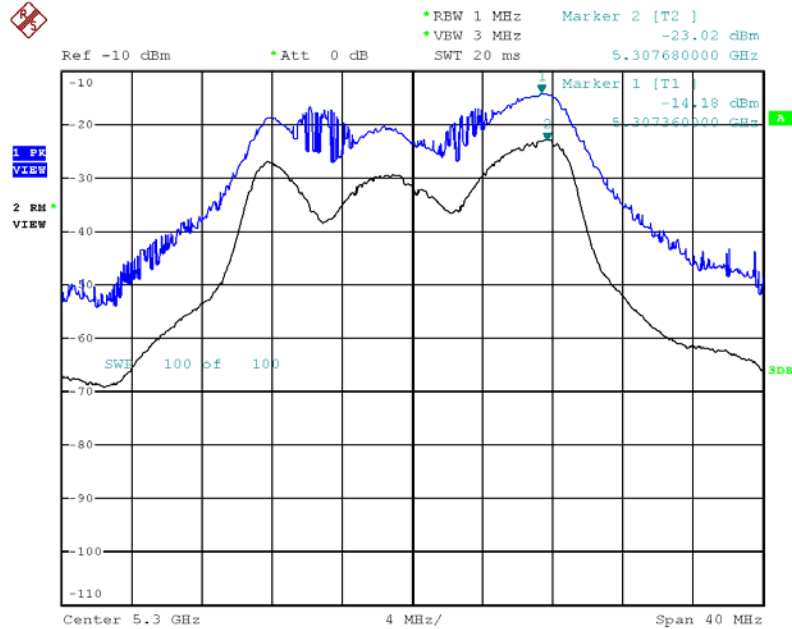
Date: 9.AUG.2012 23:06:06

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5700 MHz / Mode 2



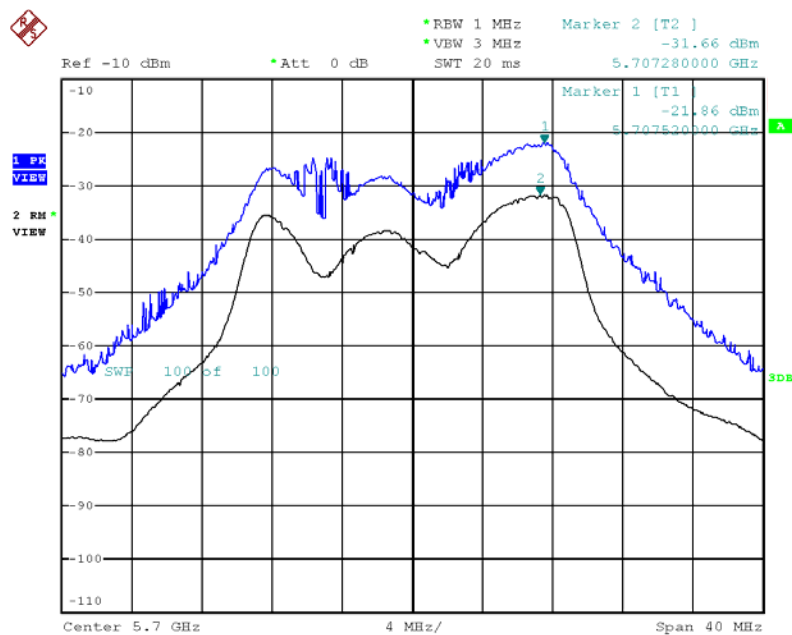
Date: 10.AUG.2012 01:04:13

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5300 MHz / Mode 3



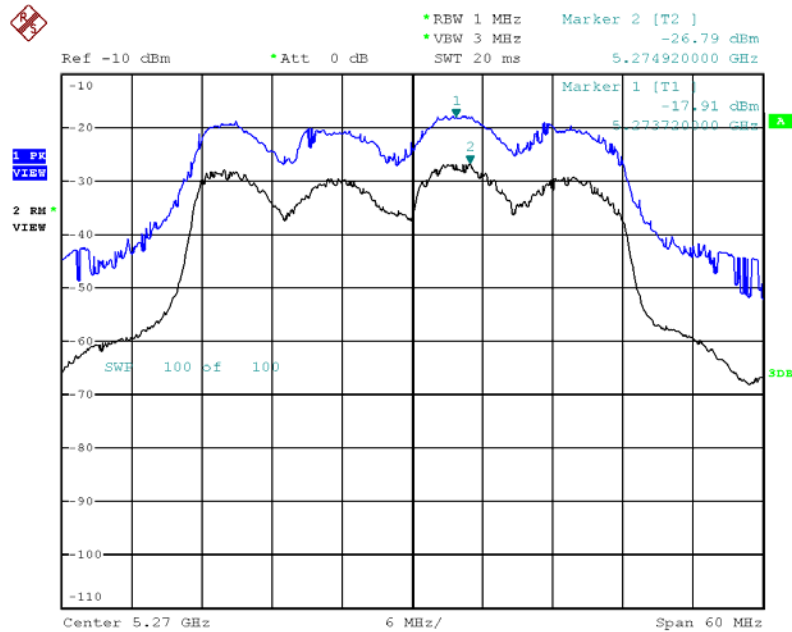
Date: 20.JUL.2012 16:42:15

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5700 MHz / Mode 3



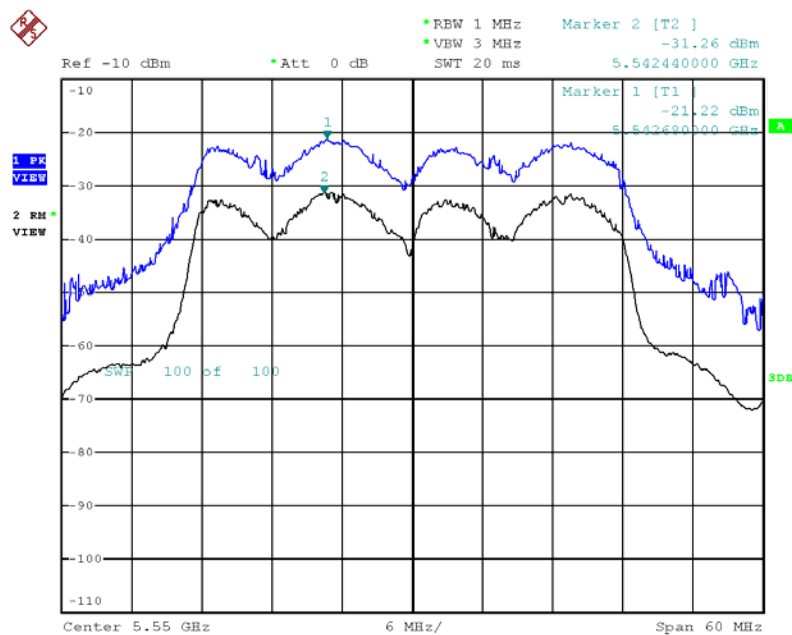
Date: 20.JUL.2012 16:45:35

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5270 MHz / Mode 3



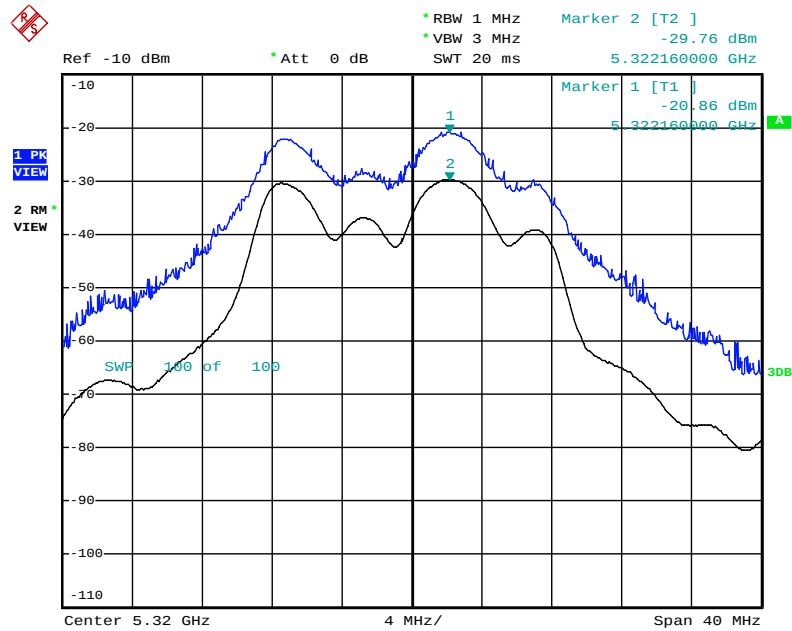
Date: 20.JUL.2012 16:58:11

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5550 MHz / Mode 3



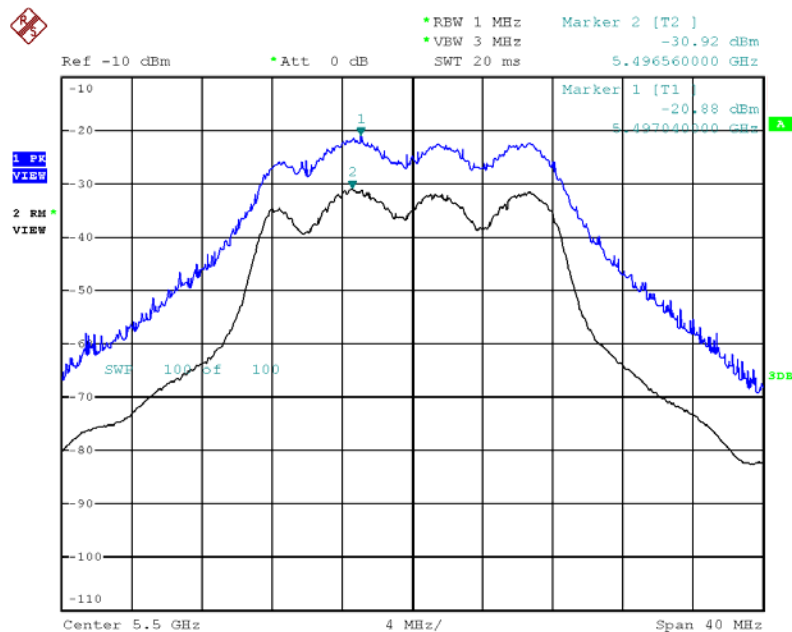
Date: 20.JUL.2012 16:47:41

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5320 MHz / Mode 3



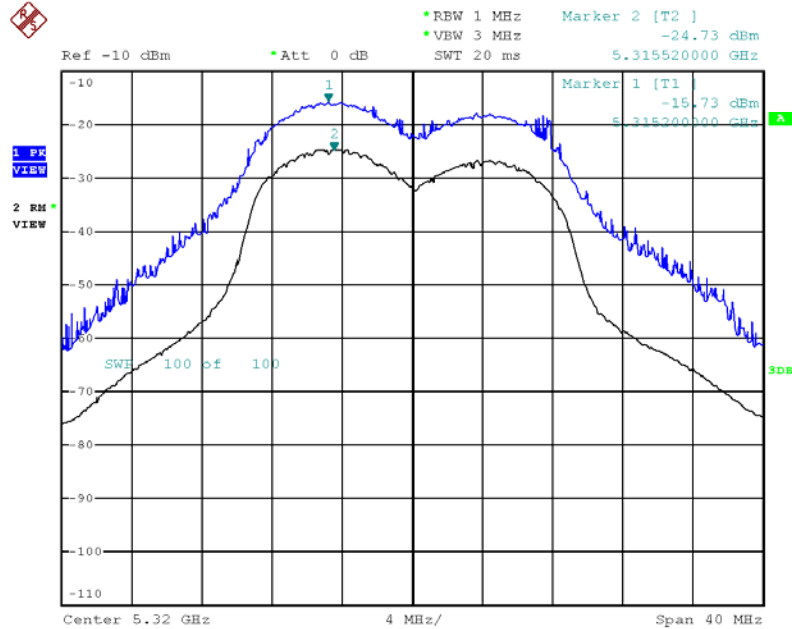
Date: 9.AUG.2012 22:59:46

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5500 MHz / Mode 3



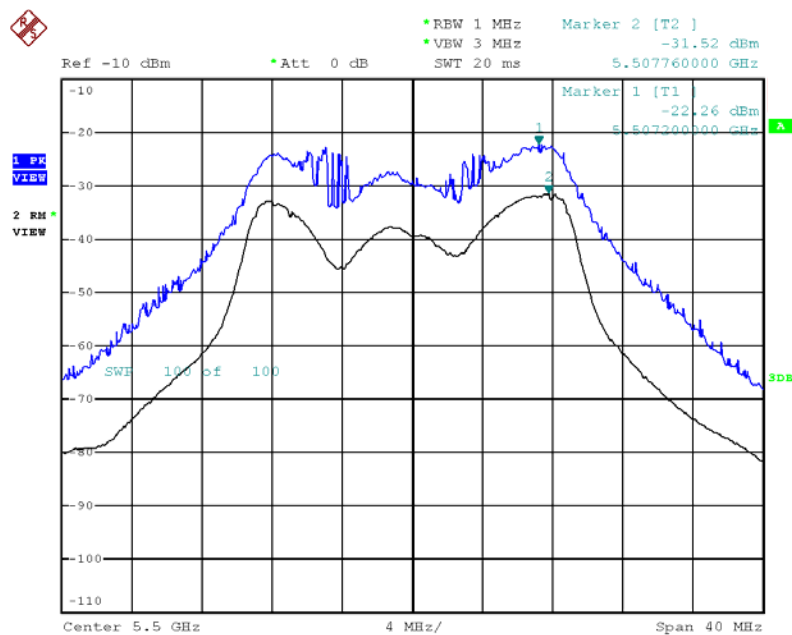
Date: 20.JUL.2012 16:36:52

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5320 MHz / Mode 4



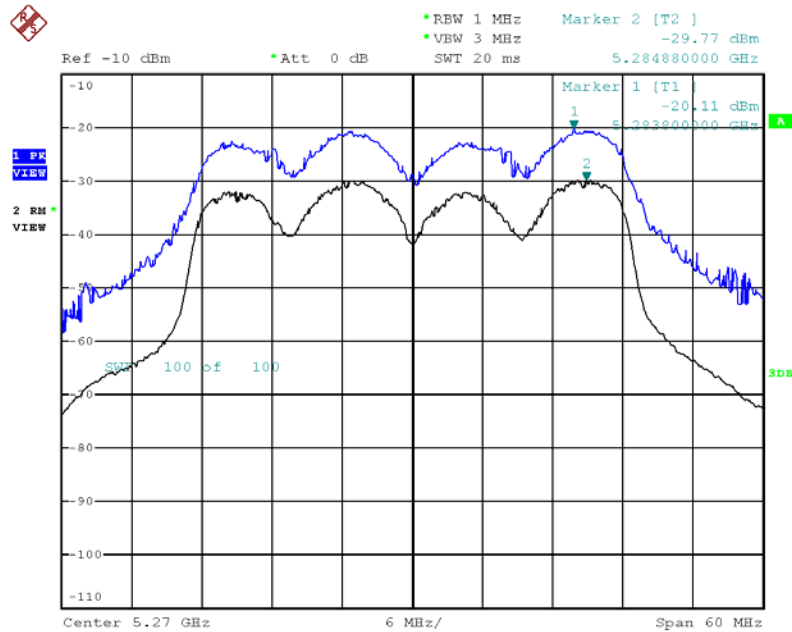
Date: 22.JUL.2012 06:01:46

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 2 + Chain 3 / 5500 MHz / Mode 4



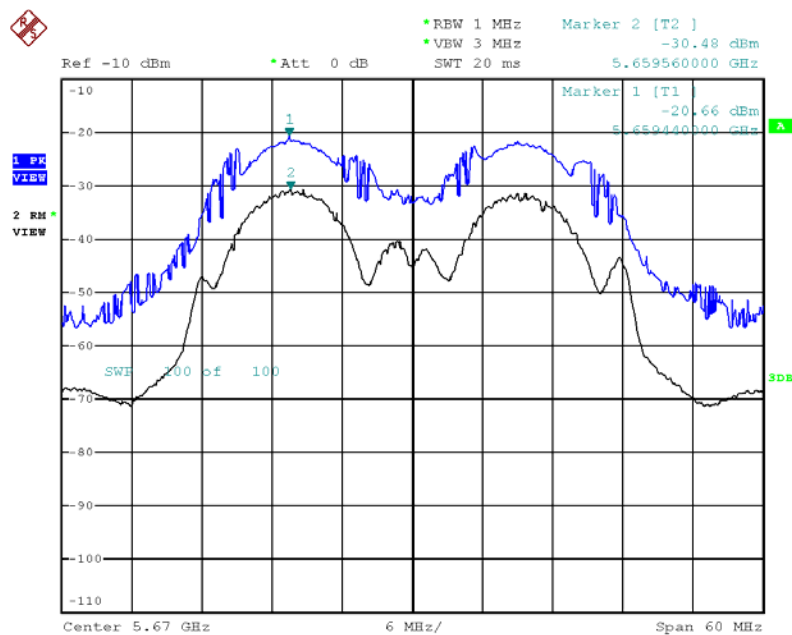
Date: 22.JUL.2012 05:55:55

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5270 MHz / Mode 4



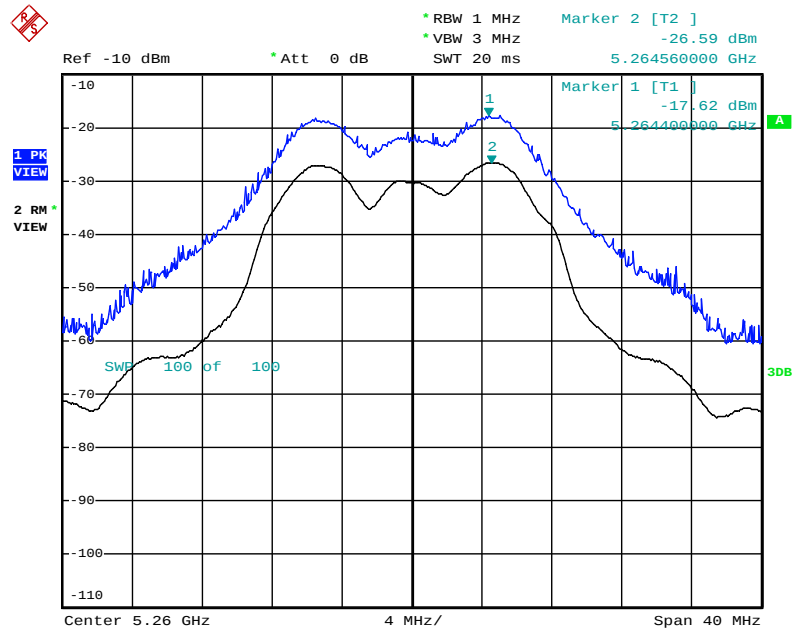
Date: 22.JUL.2012 06:04:19

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 2 + Chain 3 / 5670 MHz / Mode 4



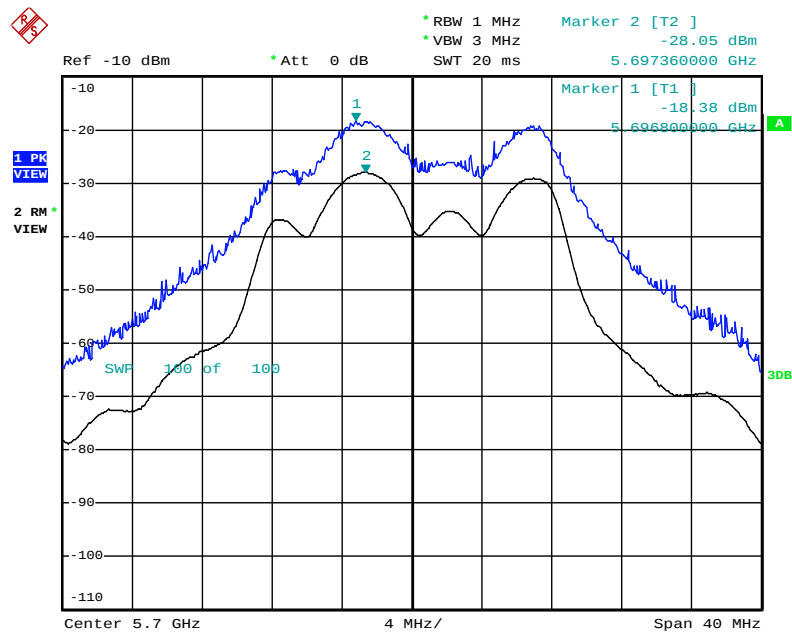
Date: 22.JUL.2012 06:07:44

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5260 MHz / Mode 4



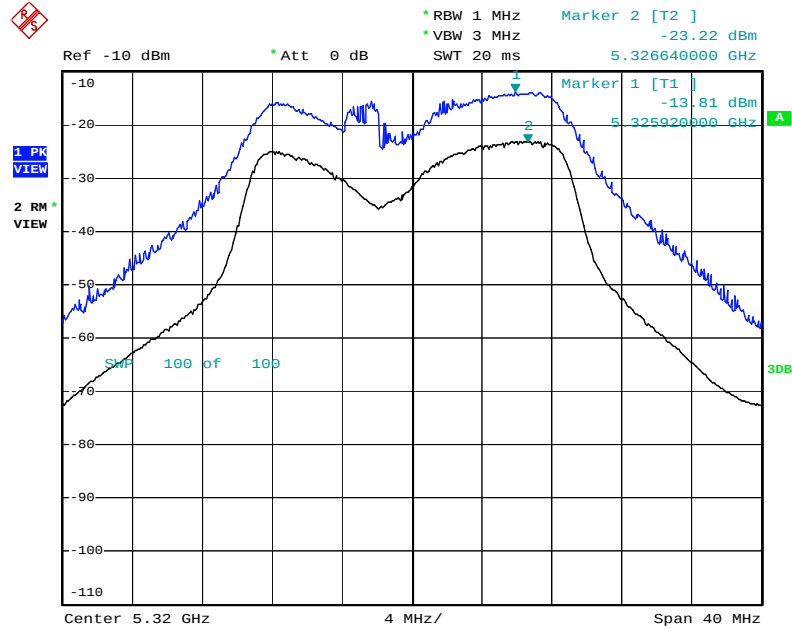
Date: 9.AUG.2012 23:06:06

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 / 5700 MHz / Mode 4



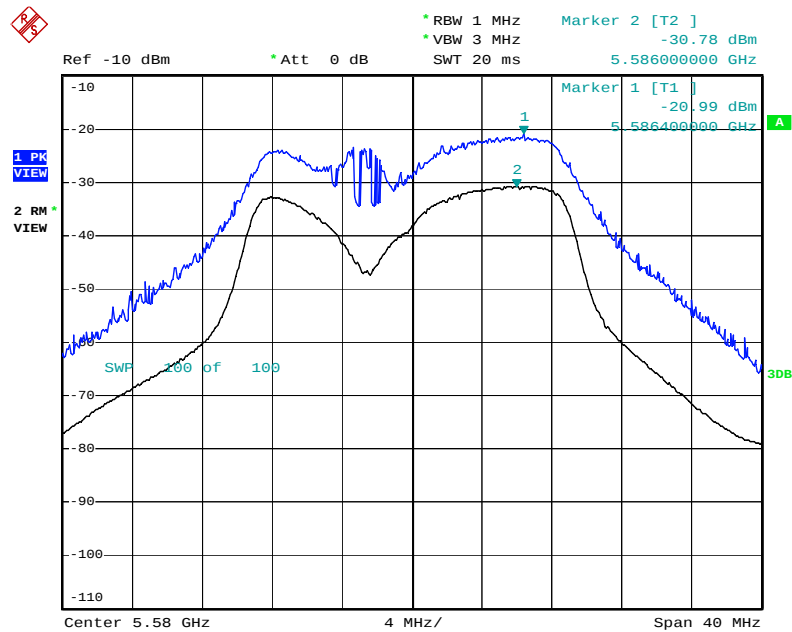
Date: 10.AUG.2012 01:04:13

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3 / 5320 MHz / Mode 5



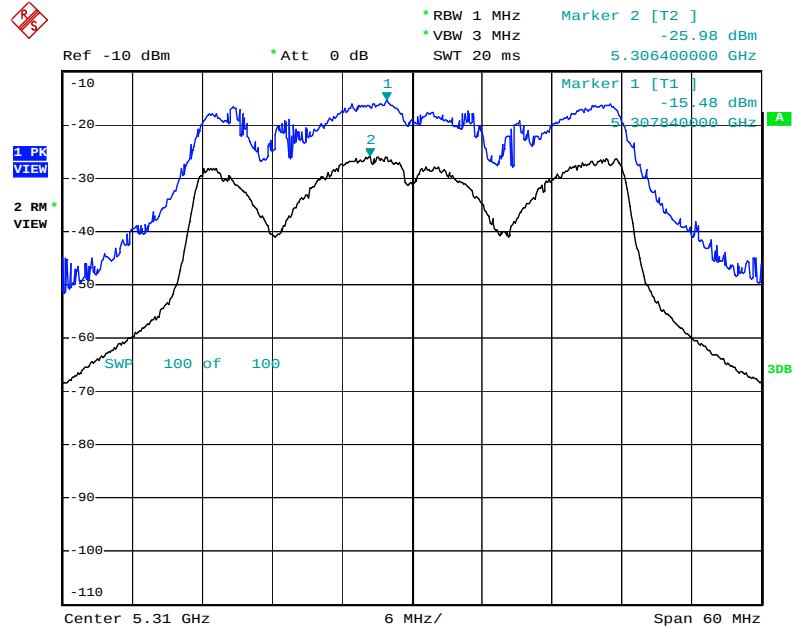
Date: 24.JUL.2012 10:35:02

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Chain 1 + Chain 3 / 5580 MHz / Mode 5



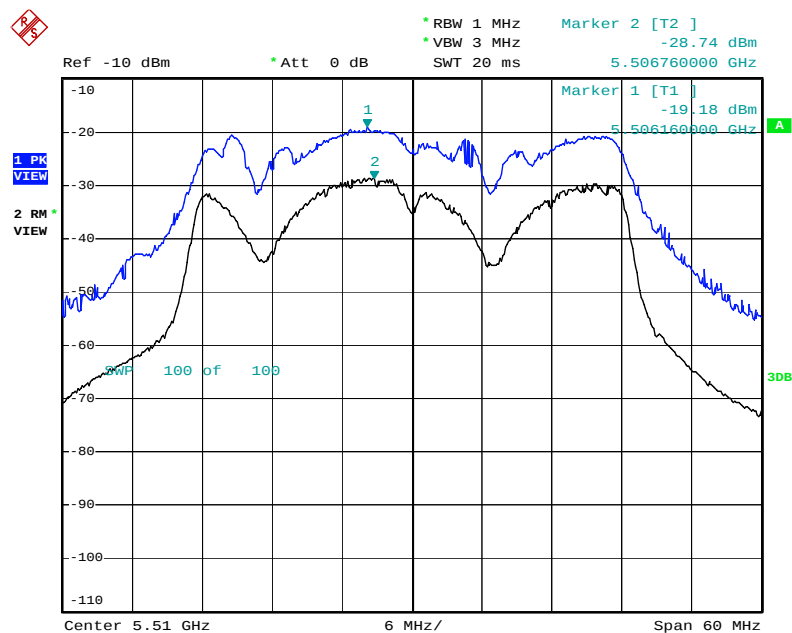
Date: 24.JUL.2012 10:32:04

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3 / 5310 MHz / Mode 5



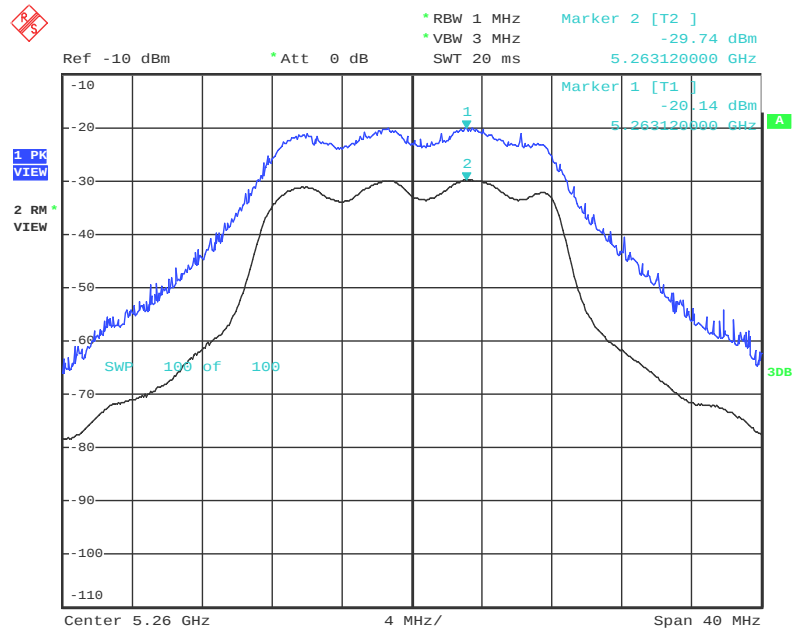
Date: 24.JUL.2012 10:39:42

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Chain 1 + Chain 3 / 5510 MHz / Mode 5



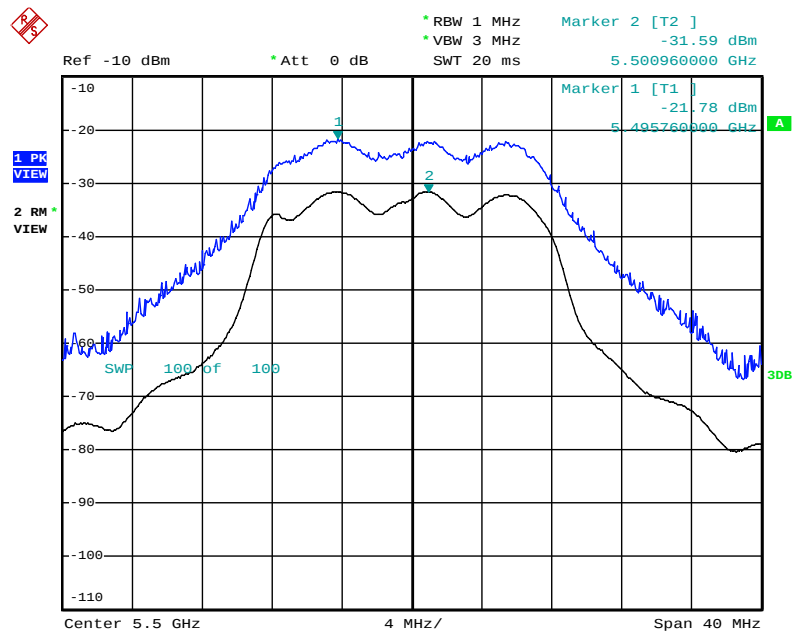
Date: 24.JUL.2012 10:43:44

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 3 / 5260 MHz / Mode 5



Date: 9.AUG.2012 22:39:40

Peak Excursion Plot on Configuration IEEE 802.11a / Chain 1 + Chain 3 / 5500 MHz / Mode 5



Date: 9.AUG.2012 22:42:35

4.6. Radiated Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.25-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz (78.3dBuV/m at 3m); for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

4.6.2. Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RB / VB (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 3MHz for peak

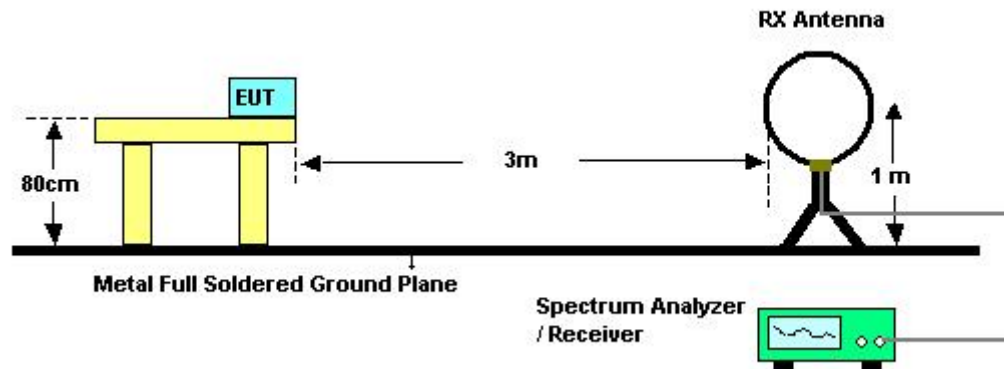
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.6.3. Test Procedures

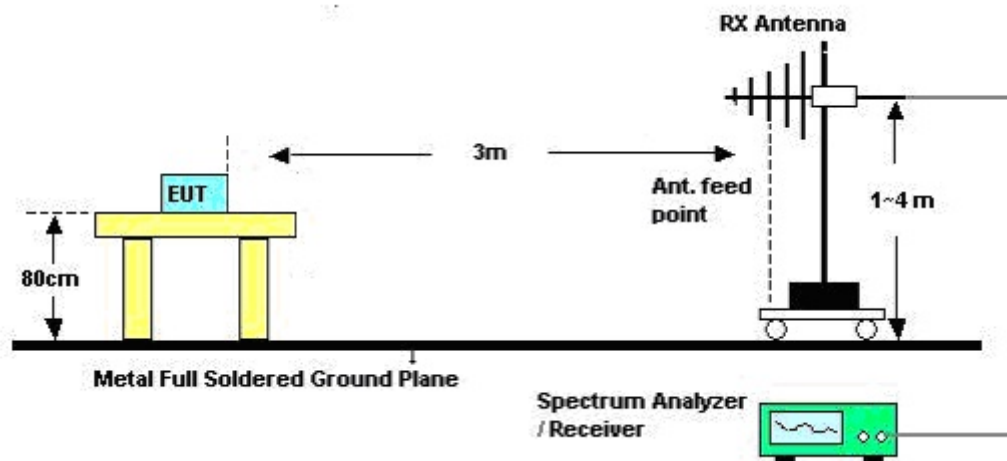
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.6.4. Test Setup Layout

For radiated emissions below 1GHz



For radiated emissions above 1GHz



4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	CTX
Test Date	Jul. 18, 2012		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

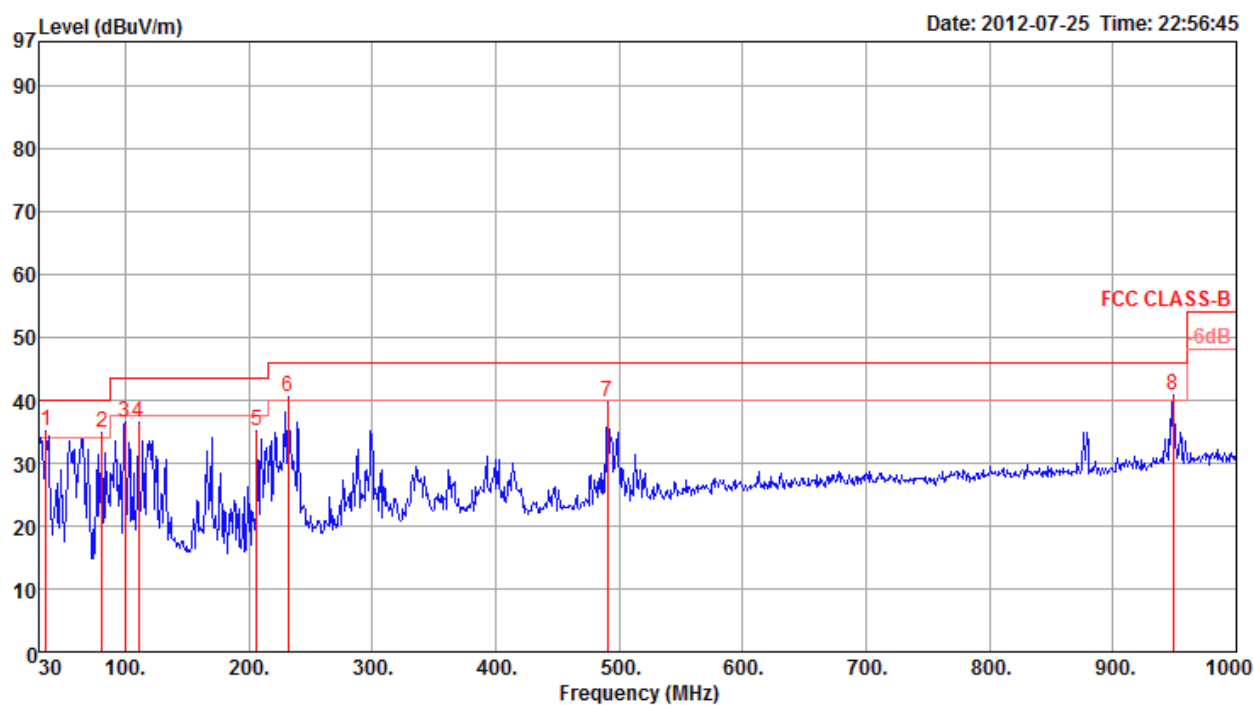
Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.6.8. Results of Radiated Emissions (30MHz~1GHz)

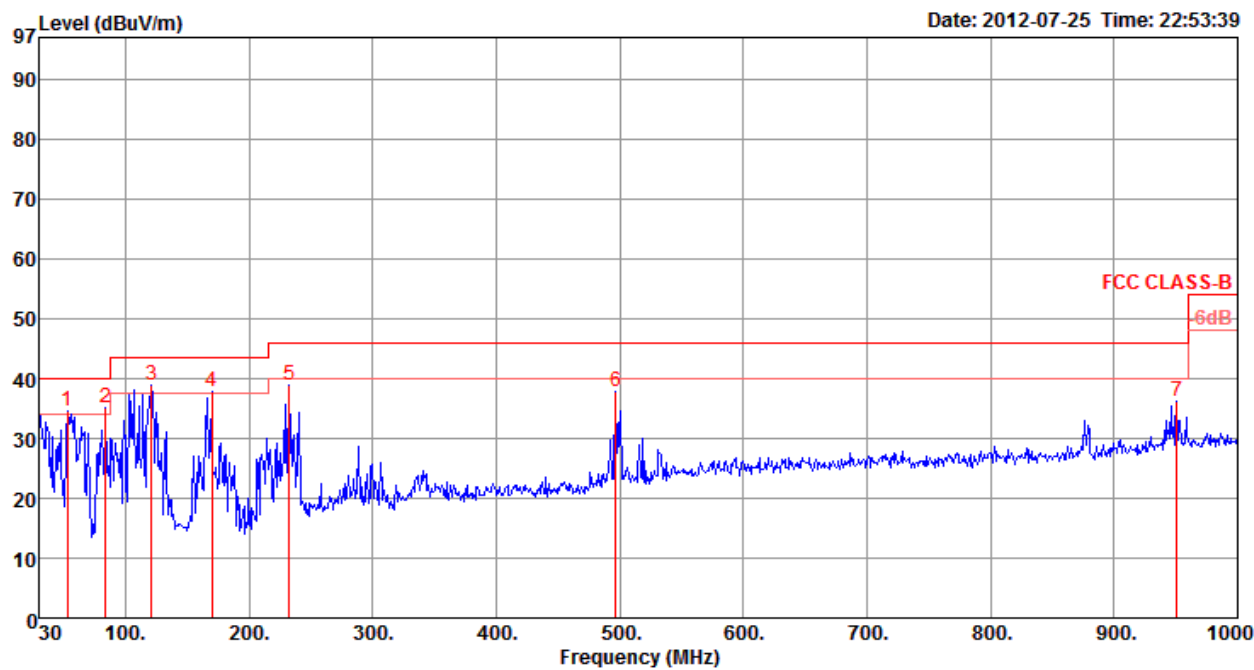
Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	CTX
Test Mode	Mode 1		

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna		Pol/Phase	T/Pos	A/Pos
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor	Remark		deg	cm
1 p	35.82	35.21	40.00	-4.79	46.02	0.93	28.00	16.26	Peak	HORIZONTAL	0	100
2 !	81.41	34.94	40.00	-5.06	53.81	1.35	27.90	7.68	Peak	HORIZONTAL	0	100
3	99.84	36.57	43.50	-6.93	51.49	1.50	27.82	11.40	Peak	HORIZONTAL	0	100
4	110.51	36.48	43.50	-7.02	50.00	1.57	27.73	12.64	Peak	HORIZONTAL	0	100
5	206.54	35.10	43.50	-8.40	49.62	2.15	27.20	10.53	Peak	HORIZONTAL	0	100
6 !	231.76	40.59	46.00	-5.41	53.86	2.29	27.02	11.46	Peak	HORIZONTAL	0	100
7	490.75	39.79	46.00	-6.21	46.70	3.36	27.92	17.65	Peak	HORIZONTAL	0	100
8 !	948.59	40.77	46.00	-5.23	40.55	4.85	26.52	21.89	Peak	HORIZONTAL	0	100

Vertical



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Remark	Pol/Phase	T/Pos	A/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			deg	cm
1	53.28	34.71	40.00	-5.29	53.36	1.10	27.91	8.16	Peak	VERTICAL	208	100
2	84.32	35.14	40.00	-4.86	53.44	1.37	27.89	8.22	Peak	VERTICAL	208	100
3	121.18	38.88	43.50	-4.62	51.94	1.64	27.68	12.98	Peak	VERTICAL	208	100
4	169.68	37.91	43.50	-5.59	53.08	1.94	27.41	10.30	Peak	VERTICAL	208	100
5	232.73	38.94	46.00	-7.06	52.12	2.29	27.01	11.54	Peak	VERTICAL	208	100
6	496.57	37.78	46.00	-8.22	44.59	3.37	27.92	17.74	Peak	VERTICAL	208	100
7	950.53	36.14	46.00	-9.86	35.87	4.86	26.50	21.91	Peak	VERTICAL	208	100

Note:

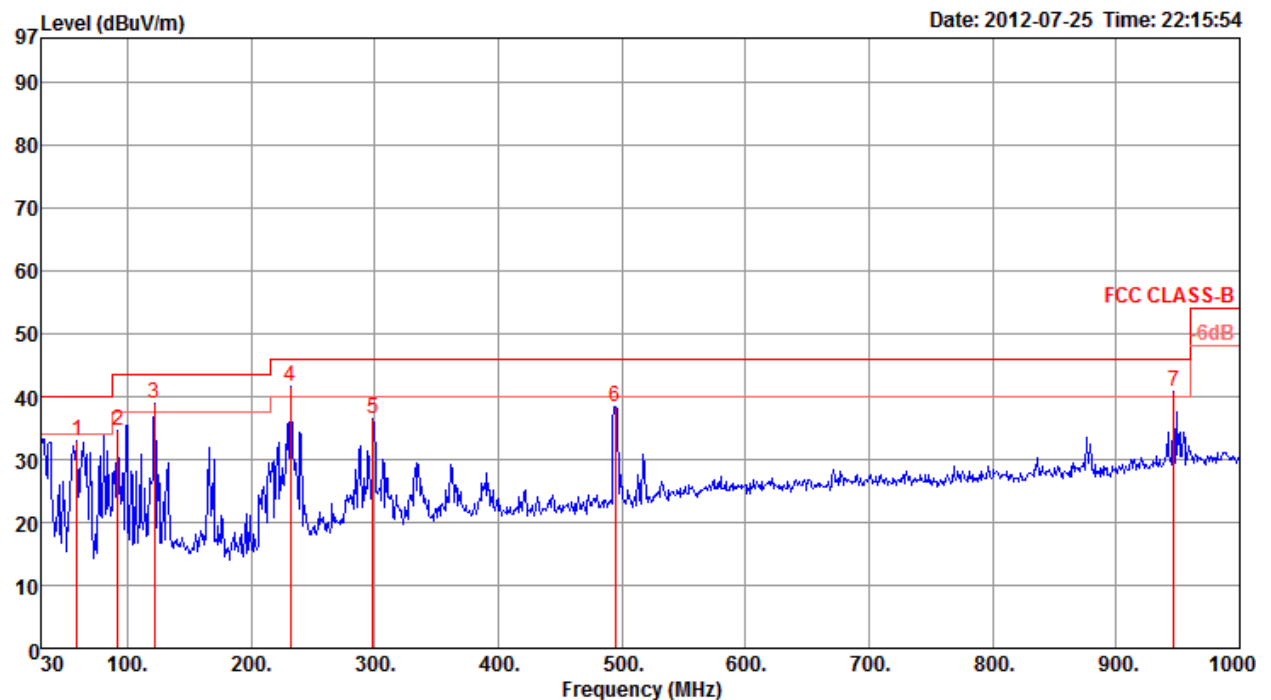
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

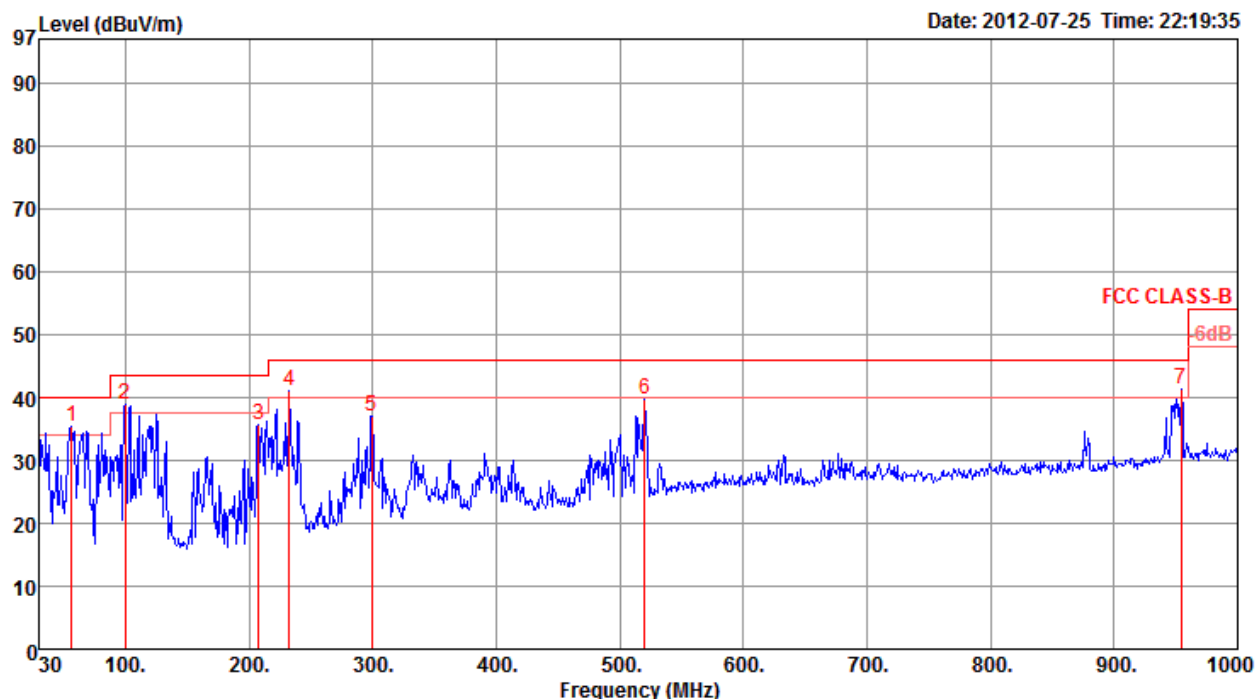
Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	CTX
Test Mode	Mode 2		

Horizontal



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Remark	Pol/Phase	T/Pos	A/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			deg	cm
1	59.10	32.97	40.00	-7.03	52.69	1.16	27.96	7.08	Peak	HORIZONTAL	0	100
2	92.08	34.56	43.50	-8.94	51.28	1.42	27.86	9.72	Peak	HORIZONTAL	0	100
3	122.15	38.92	43.50	-4.58	52.00	1.64	27.68	12.96	Peak	HORIZONTAL	0	100
4	231.76	41.59	46.00	-4.41	54.86	2.29	27.02	11.46	Peak	HORIZONTAL	0	100
5	298.69	36.48	46.00	-9.52	47.00	2.51	26.83	13.80	Peak	HORIZONTAL	0	100
6	494.63	38.37	46.00	-7.63	45.21	3.37	27.92	17.71	Peak	HORIZONTAL	0	100
7	946.65	40.80	46.00	-5.20	40.61	4.84	26.53	21.88	Peak	HORIZONTAL	0	100

Vertical



	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna			T/Pos	A/Pos
	MHz	dBuV/m	dBuV/m	Limit	Level	Loss	Factor	Factor	Remark	Pol/Phase	deg	cm
1	56.19	35.29	40.00	-4.71	54.45	1.14	27.92	7.62	Peak	VERTICAL	0	400
2	99.84	38.91	43.50	-4.59	53.83	1.50	27.82	11.40	Peak	VERTICAL	0	100
3	207.51	35.56	43.50	-7.94	50.05	2.15	27.19	10.55	Peak	VERTICAL	0	400
4	232.73	41.17	46.00	-4.83	54.35	2.29	27.01	11.54	Peak	VERTICAL	0	400
5	299.66	37.04	46.00	-8.96	47.56	2.51	26.83	13.80	Peak	VERTICAL	0	400
6	519.85	39.62	46.00	-6.38	45.89	3.45	27.91	18.19	Peak	VERTICAL	0	400
7	954.41	41.35	46.00	-4.65	41.04	4.86	26.48	21.93	Peak	VERTICAL	0	400

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6.9. Results for Radiated Emissions (1GHz~40GHz)

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15786.12	53.05	74.00	-20.95	40.19	10.65	37.75	35.54	Peak	100	130	HORIZONTAL
2	15786.64	39.76	54.00	-14.24	26.90	10.65	37.75	35.54	Average	100	130	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15772.00	54.07	74.00	-19.93	41.19	10.65	37.77	35.54	Peak	100	224	VERTICAL
2	15776.40	39.89	54.00	-14.11	27.03	10.65	37.75	35.54	Average	100	224	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10596.84	55.68	68.30	-12.62	41.87	9.05	39.90	35.14	Peak	137	265	HORIZONTAL
2	10597.60	41.60	68.30	-26.70	27.79	9.05	39.90	35.14	Average	137	265	HORIZONTAL
3	15893.88	40.17	54.00	-13.83	27.42	10.68	37.59	35.52	Average	100	147	HORIZONTAL
4	15904.52	54.75	74.00	-19.25	42.03	10.68	37.56	35.52	Peak	100	147	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.12	55.27	74.00	-18.73	41.46	9.05	39.90	35.14	Peak	106	243	VERTICAL
2	10600.60	41.77	54.00	-12.23	27.96	9.05	39.90	35.14	Average	106	243	VERTICAL
3	15896.60	42.38	54.00	-11.62	29.66	10.68	37.56	35.52	Average	146	266	VERTICAL
4	15897.20	55.75	74.00	-18.25	43.03	10.68	37.56	35.52	Peak	146	266	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10644.64	54.87	74.00	-19.13	41.04	9.06	39.86	35.09	123	268	HORIZONTAL
2	10646.00	41.94	54.00	-12.06	28.11	9.06	39.86	35.09	123	268	HORIZONTAL
3	15965.04	40.05	54.00	-13.95	27.41	10.70	37.45	35.51	100	245	HORIZONTAL
4	15965.56	53.55	74.00	-20.45	40.91	10.70	37.45	35.51	100	245	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10635.56	55.24	74.00	-18.76	41.41	9.06	39.86	35.09	100	195	VERTICAL
2	10644.48	40.65	54.00	-13.35	26.82	9.06	39.86	35.09	100	195	VERTICAL
3	15962.68	43.07	54.00	-10.93	30.40	10.70	37.48	35.51	100	141	VERTICAL
4	15965.20	56.09	74.00	-17.91	43.45	10.70	37.45	35.51	100	141	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10998.64	41.31	54.00	-12.69	27.50	9.11	39.50	34.80	Average	130	233 HORIZONTAL
2	10999.60	54.38	74.00	-19.62	40.57	9.11	39.50	34.80	Peak	130	233 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10992.68	54.59	74.00	-19.41	40.78	9.11	39.50	34.80	Peak	136	231 VERTICAL
2	10993.16	40.76	54.00	-13.24	26.95	9.11	39.50	34.80	Average	136	231 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11159.48	44.02	54.00	-9.98	30.12	9.29	39.50	34.89	Average	159	241 HORIZONTAL
2	11159.48	57.49	74.00	-16.51	43.59	9.29	39.50	34.89	Peak	159	241 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11159.52	43.80	54.00	-10.20	29.90	9.29	39.50	34.89	Average	148	191 VERTICAL
2	11160.20	56.43	74.00	-17.57	42.53	9.29	39.50	34.89	Peak	148	191 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11400.24	42.03	54.00	-11.97	27.98	9.59	39.50	35.04	Average	144	247 HORIZONTAL
2	11406.60	57.26	74.00	-16.74	43.21	9.59	39.50	35.04	Peak	144	247 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11405.24	61.08	74.00	-12.92	47.03	9.59	39.50	35.04	Peak	138	227 VERTICAL
2	11405.72	45.70	54.00	-8.30	31.65	9.59	39.50	35.04	Average	138	227 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10537.68	52.50	68.30	-15.80	38.66	9.05	39.97	35.18	100	35	HORIZONTAL
2	10548.16	39.38	68.30	-28.92	25.56	9.05	39.95	35.18	100	35	HORIZONTAL
3	15801.92	41.10	54.00	-12.90	28.26	10.66	37.72	35.54	100	159	HORIZONTAL
4	15803.92	54.84	74.00	-19.16	42.00	10.66	37.72	35.54	100	159	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10537.84	54.49	68.30	-13.81	40.65	9.05	39.97	35.18	139	247	VERTICAL
2	10538.72	41.45	68.30	-26.85	27.61	9.05	39.97	35.18	139	247	VERTICAL
3	15802.12	41.21	54.00	-12.79	28.37	10.66	37.72	35.54	100	220	VERTICAL
4	15813.16	55.01	74.00	-18.99	42.19	10.66	37.69	35.53	100	220	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10613.16	39.07	54.00	-14.93	25.23	9.06	39.90	35.12	40	42	HORIZONTAL
2	10617.12	52.66	74.00	-21.34	38.84	9.06	39.88	35.12	100	42	HORIZONTAL
3	15925.76	54.75	74.00	-19.25	42.04	10.69	37.53	35.51	100	168	HORIZONTAL
4	15934.56	41.84	54.00	-12.16	29.15	10.69	37.51	35.51	100	168	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10610.24	52.24	74.00	-21.76	38.41	9.05	39.90	35.12	100	301	VERTICAL
2	10616.48	39.16	54.00	-14.84	25.34	9.06	39.88	35.12	100	301	VERTICAL
3	15935.04	41.78	54.00	-12.22	29.09	10.69	37.51	35.51	100	256	VERTICAL
4	15939.04	55.05	74.00	-18.95	42.35	10.70	37.51	35.51	100	256	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 102 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg
1	11011.16	39.55	54.00	-14.45	25.75	9.11	39.50	34.81	Average	100	207 HORIZONTAL
2	11015.08	52.80	74.00	-21.20	38.97	9.14	39.50	34.81	Peak	100	207 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg
1	11013.64	39.54	54.00	-14.46	25.71	9.14	39.50	34.81	Average	100	24 VERTICAL
2	11029.88	53.01	74.00	-20.99	39.18	9.14	39.50	34.81	Peak	100	24 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 110 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11082.70	39.80	54.00	-14.20	25.94	9.20	39.50	34.84	100	306	HORIZONTAL
2	11117.40	53.34	74.00	-20.66	39.46	9.26	39.50	34.88	100	306	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11100.10	41.49	54.00	-12.51	27.62	9.23	39.50	34.86	141	191	VERTICAL
2	11100.40	55.53	74.00	-18.47	41.66	9.23	39.50	34.86	141	191	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11356.70	39.35	54.00	-14.65	25.33	9.53	39.50	35.01	Average	100	4	HORIZONTAL
2	11359.10	52.86	74.00	-21.14	38.84	9.53	39.50	35.01	Peak	100	4	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11345.44	41.82	54.00	-12.18	27.80	9.53	39.50	35.01	Average	137	230	VERTICAL
2	11346.76	55.42	74.00	-18.58	41.40	9.53	39.50	35.01	Peak	137	230	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15780.84	52.33	74.00	-21.67	39.47	10.65	37.75	35.54	Peak	100	118	HORIZONTAL
2	15781.56	39.11	54.00	-14.89	26.25	10.65	37.75	35.54	Average	100	118	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15779.24	52.98	74.00	-21.02	40.12	10.65	37.75	35.54	Peak	100	257	VERTICAL
2	15789.20	39.20	54.00	-14.80	26.33	10.66	37.75	35.54	Average	355	257	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10602.60	38.74	54.00	-15.26	24.91	9.05	39.90	35.12	Average	100	249	HORIZONTAL
2	10609.20	51.78	74.00	-22.22	37.95	9.05	39.90	35.12	Peak	100	249	HORIZONTAL
3	15902.36	52.17	74.00	-21.83	39.45	10.68	37.56	35.52	Peak	100	135	HORIZONTAL
4	15909.16	39.31	54.00	-14.69	26.59	10.68	37.56	35.52	Average	100	135	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10601.08	41.43	54.00	-12.57	27.62	9.05	39.90	35.14	Average	136	108	VERTICAL
2	10601.12	54.08	74.00	-19.92	40.27	9.05	39.90	35.14	Peak	136	108	VERTICAL
3	15896.60	53.07	74.00	-20.93	40.35	10.68	37.56	35.52	Peak	100	239	VERTICAL
4	15901.32	39.35	54.00	-14.65	26.63	10.68	37.56	35.52	Average	100	239	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10638.44	54.30	74.00	-19.70	40.47	9.06	39.86	35.09	Peak	100	267	HORIZONTAL
2	10643.64	40.27	54.00	-13.73	26.44	9.06	39.86	35.09	Average	100	267	HORIZONTAL
3	15952.32	38.91	54.00	-15.09	26.24	10.70	37.48	35.51	Average	100	267	HORIZONTAL
4	15967.80	52.33	74.00	-21.67	39.69	10.70	37.45	35.51	Peak	100	267	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10640.08	55.39	74.00	-18.61	41.56	9.06	39.86	35.09	Peak	138	105	VERTICAL
2	10640.84	41.94	54.00	-12.06	28.11	9.06	39.86	35.09	Average	138	105	VERTICAL
3	15959.96	40.64	54.00	-13.36	27.97	10.70	37.48	35.51	Average	100	142	VERTICAL
4	15965.32	53.27	74.00	-20.73	40.63	10.70	37.45	35.51	Peak	100	142	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10990.36	38.77	54.00	-15.23	24.96	9.11	39.50	34.80	Average	100	158 HORIZONTAL
2	11000.96	51.49	74.00	-22.51	37.68	9.11	39.50	34.80	Peak	100	158 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10995.60	41.00	54.00	-13.00	27.19	9.11	39.50	34.80	Average	125	242 VERTICAL
2	11000.96	54.04	74.00	-19.96	40.23	9.11	39.50	34.80	Peak	125	242 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11154.72	55.21	74.00	-18.79	41.31	9.29	39.50	34.89	Peak	146	229	HORIZONTAL
2	11159.52	41.33	54.00	-12.67	27.43	9.29	39.50	34.89	Average	146	229	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11154.56	43.63	54.00	-10.37	29.73	9.29	39.50	34.89	Average	153	221	VERTICAL
2	11154.64	56.98	74.00	-17.02	43.08	9.29	39.50	34.89	Peak	153	221	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 1

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11397.96	52.62	74.00	-21.38	38.57	9.59	39.50	35.04	Peak	150	252	HORIZONTAL
2	11400.44	39.96	54.00	-14.04	25.91	9.59	39.50	35.04	Average	150	252	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11400.92	57.47	74.00	-16.53	43.42	9.59	39.50	35.04	Peak	138	254	VERTICAL
2	11400.96	43.56	54.00	-10.44	29.51	9.59	39.50	35.04	Average	138	254	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15756.40	52.48	74.00	-21.52	44.31	6.14	37.44	35.41	Peak	100	102	HORIZONTAL
2	15763.60	42.14	54.00	-11.86	33.99	6.14	37.42	35.41	Average	100	223	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15762.40	43.16	54.00	-10.84	35.01	6.14	37.42	35.41	Average	100	267	VERTICAL
2	15774.00	53.70	74.00	-20.30	45.56	6.14	37.42	35.42	Peak	100	267	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.00	37.52	54.00	-16.48	29.55	5.01	38.38	35.42	Average	100	329	HORIZONTAL
2	10602.80	50.37	74.00	-23.63	42.40	5.01	38.38	35.42	Peak	100	329	HORIZONTAL
3	15822.00	51.34	74.00	-22.66	43.27	6.14	37.37	35.44	Peak	100	143	HORIZONTAL
4	15909.60	39.97	54.00	-14.03	31.97	6.15	37.29	35.44	Average	100	143	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10603.20	40.17	54.00	-13.83	32.20	5.01	38.38	35.42	Average	100	269	VERTICAL
2	10604.40	51.35	74.00	-22.65	43.38	5.01	38.38	35.42	Peak	100	269	VERTICAL
3	15891.20	53.55	74.00	-20.45	45.54	6.15	37.30	35.44	Peak	157	263	VERTICAL
4	15900.80	42.97	54.00	-11.03	34.97	6.15	37.29	35.44	Average	157	263	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10553.00	49.60	68.30	-18.70	41.66	5.01	38.39	35.46	Peak	100	360	HORIZONTAL
2	10600.00	36.43	54.00	-17.57	28.46	5.01	38.38	35.42	Average	100	360	HORIZONTAL
3	16018.80	52.20	74.00	-21.80	44.18	6.16	37.29	35.43	Peak	100	175	HORIZONTAL
4	16042.00	40.22	54.00	-13.78	32.16	6.16	37.33	35.43	Average	100	175	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10644.00	37.41	54.00	-16.59	29.42	5.01	38.37	35.39	Average	100	127	VERTICAL
2	10670.00	49.71	74.00	-24.29	41.70	5.01	38.37	35.37	Peak	100	127	VERTICAL
3	15965.60	40.80	54.00	-13.20	32.87	6.15	37.22	35.44	Average	100	270	VERTICAL
4	16060.00	52.95	74.00	-21.05	44.84	6.16	37.37	35.42	Peak	100	270	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	10912.80	47.75	74.00	-26.25	39.58	5.01	38.32	35.16	Peak	100	192 HORIZONTAL
2	11093.60	36.37	54.00	-17.63	28.08	5.03	38.40	35.14	Average	100	192 HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	11022.40	48.32	74.00	-25.68	40.08	5.02	38.33	35.11	Peak	100	320 VERTICAL
2	11099.60	36.39	54.00	-17.61	28.10	5.03	38.40	35.14	Average	100	320 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11180.00	37.84	54.00	-16.16	29.48	5.05	38.48	35.17	Average	100	93	HORIZONTAL
2	11194.80	49.91	74.00	-24.09	41.54	5.05	38.50	35.18	Peak	100	93	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11180.40	43.17	54.00	-10.83	34.81	5.05	38.48	35.17	Average	150	252	VERTICAL
2	11182.80	55.27	74.00	-18.73	46.91	5.05	38.48	35.17	Peak	150	252	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11309.20	36.67	54.00	-17.33	28.21	5.08	38.60	35.22	100	125	HORIZONTAL
2	11322.00	48.69	74.00	-25.31	40.22	5.08	38.62	35.23	100	125	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11308.00	48.58	74.00	-25.42	40.12	5.08	38.60	35.22	100	330	VERTICAL
2	11394.80	36.75	54.00	-17.25	28.22	5.10	38.68	35.25	100	330	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.00	36.55	54.00	-17.45	28.58	5.01	38.38	35.42	Average	100	286	HORIZONTAL
2	10600.00	46.27	74.00	-27.73	38.30	5.01	38.38	35.42	Peak	100	286	HORIZONTAL
3	15738.40	51.42	74.00	-22.58	43.21	6.14	37.46	35.39	Peak	100	223	HORIZONTAL
4	15809.20	40.33	54.00	-13.67	32.23	6.14	37.39	35.43	Average	100	223	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.00	36.61	54.00	-17.39	28.64	5.01	38.38	35.42	Average	100	96	VERTICAL
2	10600.00	47.18	74.00	-26.82	39.21	5.01	38.38	35.42	Peak	100	98	VERTICAL
3	15748.00	50.95	74.00	-23.05	42.78	6.14	37.44	35.41	Peak	100	68	VERTICAL
4	15806.40	40.13	54.00	-13.87	32.03	6.14	37.39	35.43	Average	100	68	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10600.00	36.14	54.00	-17.86	28.17	5.01	38.38	35.42	Average	100	211 HORIZONTAL
2	10600.00	47.33	74.00	-26.67	39.36	5.01	38.38	35.42	Peak	100	211 HORIZONTAL
3	15970.60	39.71	54.00	-14.29	31.78	6.15	37.22	35.44	Average	100	286 HORIZONTAL
4	15974.40	52.41	74.00	-21.59	44.47	6.15	37.22	35.43	Peak	100	286 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10600.00	36.27	54.00	-17.73	28.30	5.01	38.38	35.42	Average	100	295 VERTICAL
2	10600.00	46.75	74.00	-27.25	38.78	5.01	38.38	35.42	Peak	100	295 VERTICAL
3	15973.80	39.76	54.00	-14.24	31.82	6.15	37.22	35.43	Average	100	360 VERTICAL
4	15975.20	51.93	74.00	-22.07	43.99	6.15	37.22	35.43	Peak	100	360 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 102 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11067.80	35.89	54.00	-18.11	27.62	5.03	38.37	35.13	Average	100	109	HORIZONTAL
2	11067.80	48.63	74.00	-25.37	40.36	5.03	38.37	35.13	Peak	100	109	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11062.40	35.92	54.00	-18.08	27.65	5.03	38.37	35.13	Average	100	287	VERTICAL
2	11063.40	48.22	74.00	-25.78	39.95	5.03	38.37	35.13	Peak	100	287	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 110 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11135.40	49.38	74.00	-24.62	41.07	5.04	38.43	35.16	100	360	HORIZONTAL
2	11145.00	36.66	54.00	-17.34	28.33	5.04	38.45	35.16	100	360	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11094.00	48.46	74.00	-25.54	40.17	5.03	38.40	35.14	100	25	VERTICAL
2	11148.80	36.59	54.00	-17.41	28.26	5.04	38.45	35.16	100	25	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11342.10	36.25	54.00	-17.75	27.77	5.09	38.63	35.24	Average	100	19 HORIZONTAL
2	11365.00	49.39	74.00	-24.61	40.88	5.09	38.67	35.25	Peak	100	19 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11342.00	36.50	54.00	-17.50	28.02	5.09	38.63	35.24	Average	100	241 VERTICAL
2	11359.30	49.30	74.00	-24.70	40.80	5.09	38.65	35.24	Peak	100	241 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	15684.80	51.35	74.00	-22.65	43.07	6.14	37.51	35.37	Peak	100	146	HORIZONTAL
2	15808.80	40.77	54.00	-13.23	32.67	6.14	37.39	35.43	Average	100	146	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	15682.00	53.62	74.00	-20.38	45.34	6.14	37.51	35.37	Peak	100	233	VERTICAL
2	15808.80	43.14	54.00	-10.86	35.04	6.14	37.39	35.43	Average	100	233	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg
1	10601.60	49.72	74.00	-24.28	41.75	5.01	38.38	35.42	Peak	100	35 HORIZONTAL
2	10617.20	38.46	54.00	-15.54	30.49	5.01	38.38	35.42	Average	100	35 HORIZONTAL
3	15920.00	52.83	74.00	-21.17	44.85	6.15	37.27	35.44	Peak	100	119 HORIZONTAL
4	15929.60	40.06	54.00	-13.94	32.08	6.15	37.27	35.44	Average	100	119 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg
1	10615.60	53.96	74.00	-20.04	45.99	5.01	38.38	35.42	Peak	100	262 VERTICAL
2	10616.80	41.46	54.00	-12.54	33.49	5.01	38.38	35.42	Average	100	262 VERTICAL
3	15920.00	54.97	74.00	-19.03	46.99	6.15	37.27	35.44	Peak	100	130 VERTICAL
4	15930.00	43.07	54.00	-10.93	35.11	6.15	37.25	35.44	Average	100	130 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10660.80	37.09	54.00	-16.91	29.08	5.01	38.37	35.37	Average	100	187	HORIZONTAL
2	10681.20	49.32	74.00	-24.68	41.29	5.01	38.37	35.35	Peak	100	187	HORIZONTAL
3	15987.20	40.36	54.00	-13.64	32.44	6.15	37.20	35.43	Average	100	259	HORIZONTAL
4	16041.60	52.26	74.00	-21.74	44.20	6.16	37.33	35.43	Peak	100	259	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10656.00	39.53	54.00	-14.47	31.52	5.01	38.37	35.37	Average	100	262	VERTICAL
2	10656.00	51.74	74.00	-22.26	43.73	5.01	38.37	35.37	Peak	100	262	VERTICAL
3	15978.00	53.51	74.00	-20.49	45.57	6.15	37.22	35.43	Peak	100	120	VERTICAL
4	15987.20	41.99	54.00	-12.01	34.04	6.15	37.23	35.43	Average	100	120	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10900.40	48.25	74.00	-25.75	40.10	5.01	38.32	35.18	Peak	100	338	HORIZONTAL
2	11098.40	36.45	54.00	-17.55	28.16	5.03	38.40	35.14	Average	100	338	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11020.40	36.42	54.00	-17.58	28.19	5.02	38.32	35.11	Average	100	135	VERTICAL
2	11093.20	48.35	74.00	-25.65	40.06	5.03	38.40	35.14	Peak	100	135	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11180.40	37.93	54.00	-16.07	29.57	5.05	38.48	35.17	Average	100	135	HORIZONTAL
2	11228.00	49.67	74.00	-24.33	41.27	5.06	38.53	35.19	Peak	100	135	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11181.20	42.68	54.00	-11.32	34.32	5.05	38.48	35.17	Average	100	242	VERTICAL
2	11181.60	54.44	74.00	-19.56	46.08	5.05	38.48	35.17	Peak	100	242	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 2

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss Factor	Factor	Remark	cm	deg	
1	11303.60	36.58	54.00	-17.42	28.12	5.08	38.60	35.22 Average	100	333	HORIZONTAL
2	11374.40	49.31	74.00	-24.69	40.80	5.09	38.67	35.25 Peak	100	333	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss Factor	Factor	Remark	cm	deg	
1	11306.00	36.68	54.00	-17.32	28.22	5.08	38.60	35.22 Average	100	197	VERTICAL
2	11332.40	48.87	74.00	-25.13	40.39	5.08	38.63	35.23 Peak	100	197	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15755.00	36.53	54.00	-17.47	28.36	6.14	37.44	35.41	Average	100	55	HORIZONTAL
2	15782.08	49.81	74.00	-24.19	41.68	6.14	37.41	35.42	Peak	100	55	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	15787.77	45.41	54.00	-8.59	37.28	6.14	37.41	35.42	Average	100	258	VERTICAL
2	15788.81	61.31	74.00	-12.69	53.18	6.14	37.41	35.42	Peak	100	258	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10602.16	37.55	54.00	-16.45	29.58	5.01	38.38	35.42	Average	100	134 HORIZONTAL
2	10602.24	51.01	74.00	-22.99	43.04	5.01	38.38	35.42	Peak	100	134 HORIZONTAL
3	15890.87	53.67	74.00	-20.33	45.66	6.15	37.30	35.44	Peak	164	337 HORIZONTAL
4	15891.03	39.36	54.00	-14.64	31.35	6.15	37.30	35.44	Average	164	337 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10598.48	61.45	68.30	-6.85	53.48	5.01	38.38	35.42	Peak	100	158 VERTICAL
2	10598.96	47.78	68.30	-20.52	39.81	5.01	38.38	35.42	Average	100	158 VERTICAL
3	15891.27	47.78	54.00	-6.22	39.77	6.15	37.30	35.44	Average	111	69 VERTICAL
4	15891.91	63.01	74.00	-10.99	55.00	6.15	37.30	35.44	Peak	111	69 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	10637.76	35.55	54.00	-18.45	27.56	5.01	38.37	35.39	Average	100	280 HORIZONTAL
2	10649.70	48.47	74.00	-25.53	40.46	5.01	38.37	35.37	Peak	100	280 HORIZONTAL
3	15958.40	49.82	74.00	-24.18	41.88	6.15	37.23	35.44	Peak	100	65 HORIZONTAL
4	15960.64	36.80	54.00	-17.20	28.86	6.15	37.23	35.44	Average	100	65 HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	10640.48	53.84	74.00	-20.16	45.85	5.01	38.37	35.39	Peak	100	346 VERTICAL
2	10641.12	40.06	54.00	-13.94	32.07	5.01	38.37	35.39	Average	100	346 VERTICAL
3	15958.72	58.50	74.00	-15.50	50.56	6.15	37.23	35.44	Peak	110	71 VERTICAL
4	15959.84	44.89	54.00	-9.11	36.95	6.15	37.23	35.44	Average	110	71 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10980.77	35.82	54.00	-18.18	27.61	5.01	38.30	35.10 Average	100	200	HORIZONTAL
2	10994.47	48.82	74.00	-25.18	40.59	5.01	38.32	35.10 Peak	100	200	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11000.88	50.12	74.00	-23.88	41.91	5.01	38.30	35.10 Peak	136	228	VERTICAL
2	11001.60	37.72	54.00	-16.28	29.51	5.01	38.30	35.10 Average	136	228	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11159.60	36.51	54.00	-17.49	28.17	5.04	38.47	35.17	Average	100	279	HORIZONTAL
2	11159.92	49.57	74.00	-24.43	41.23	5.04	38.47	35.17	Peak	100	279	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11161.92	43.65	54.00	-10.35	35.30	5.05	38.47	35.17	Average	127	232	VERTICAL
2	11162.16	56.77	74.00	-17.23	48.42	5.05	38.47	35.17	Peak	127	232	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11381.25	36.12	54.00	-17.88	27.60	5.09	38.68	35.25	Average	100	248 HORIZONTAL
2	11381.65	49.79	74.00	-24.21	41.27	5.09	38.68	35.25	Peak	100	248 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11396.07	36.14	54.00	-17.86	27.61	5.10	38.68	35.25	Average	100	4 VERTICAL
2	11416.91	49.11	74.00	-24.89	40.55	5.10	38.72	35.26	Peak	100	4 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10532.23	35.93	68.30	-32.37	28.01	5.01	38.39	35.48 Average	100	145	HORIZONTAL
2	10540.96	49.25	68.30	-19.05	41.33	5.01	38.39	35.48 Peak	100	145	HORIZONTAL
3	15820.18	36.33	54.00	-17.67	28.26	6.14	37.37	35.44 Average	100	288	HORIZONTAL
4	15834.76	49.48	74.00	-24.52	41.42	6.14	37.36	35.44 Peak	100	288	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10536.15	45.13	68.30	-23.17	37.21	5.01	38.39	35.48 Average	102	178	VERTICAL
2	10537.52	59.97	68.30	-8.33	52.05	5.01	38.39	35.48 Peak	102	178	VERTICAL
3	15821.38	56.12	74.00	-17.88	48.05	6.14	37.37	35.44 Peak	117	65	VERTICAL
4	15822.02	42.26	54.00	-11.74	34.19	6.14	37.37	35.44 Average	117	65	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 62 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10610.00	35.16	54.00	-18.84	27.19	5.01	38.38	35.42	Average	100	277	HORIZONTAL
2	10610.16	49.11	74.00	-24.89	41.14	5.01	38.38	35.42	Peak	100	277	HORIZONTAL
3	15920.38	50.13	74.00	-23.87	42.15	6.15	37.27	35.44	Peak	100	161	HORIZONTAL
4	15921.06	36.53	54.00	-17.47	28.55	6.15	37.27	35.44	Average	100	161	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10615.77	35.21	54.00	-18.79	27.24	5.01	38.38	35.42	Average	100	242	VERTICAL
2	10627.05	48.38	74.00	-25.62	40.38	5.01	38.38	35.39	Peak	100	242	VERTICAL
3	15920.74	50.30	74.00	-23.70	42.32	6.15	37.27	35.44	Peak	100	135	VERTICAL
4	15921.12	36.48	54.00	-17.52	28.50	6.15	37.27	35.44	Average	100	135	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 102 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11011.22	35.91	54.00	-18.09	27.67	5.02	38.33	35.11	Average	100	164	HORIZONTAL
2	11025.22	49.17	74.00	-24.83	40.92	5.02	38.34	35.11	Peak	100	164	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11010.96	35.92	54.00	-18.08	27.69	5.02	38.32	35.11	Average	100	138	VERTICAL
2	11017.37	49.64	74.00	-24.36	41.41	5.02	38.32	35.11	Peak	100	138	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 110 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11100.53	49.21	74.00	-24.79	40.92	5.03	38.40	35.14	Peak	100	316	HORIZONTAL
2	11101.65	35.81	54.00	-18.19	27.52	5.03	38.40	35.14	Average	100	316	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11100.96	52.86	74.00	-21.14	44.57	5.03	38.40	35.14	Peak	100	230	VERTICAL
2	11101.28	39.02	54.00	-14.98	30.73	5.03	38.40	35.14	Average	100	230	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 134 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11339.13	49.87	74.00	-24.13	41.40	5.08	38.63	35.24	Peak	100	247 HORIZONTAL
2	11342.87	35.93	54.00	-18.07	27.45	5.09	38.63	35.24	Average	100	247 HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	11341.11	36.20	54.00	-17.80	27.72	5.09	38.63	35.24	Average	100	247 VERTICAL
2	11343.59	50.08	74.00	-23.92	41.60	5.09	38.63	35.24	Peak	100	247 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	15757.64	36.49	54.00	-17.51	28.32	6.14	37.44	35.41	Average	100	289	HORIZONTAL
2	15760.45	49.76	74.00	-24.24	41.61	6.14	37.42	35.41	Peak	100	289	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	15780.72	44.04	54.00	-9.96	35.91	6.14	37.41	35.42	Average	107	89	VERTICAL
2	15781.20	57.27	74.00	-16.73	49.14	6.14	37.41	35.42	Peak	107	89	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10600.88	37.92	54.00	-16.08	29.95	5.01	38.38	35.42	100	132	HORIZONTAL
2	10601.04	50.89	74.00	-23.11	42.92	5.01	38.38	35.42	100	132	HORIZONTAL
3	15897.52	39.84	54.00	-14.16	31.84	6.15	37.29	35.44	100	167	HORIZONTAL
4	15897.52	52.82	74.00	-21.18	44.82	6.15	37.29	35.44	100	167	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	10599.44	47.35	68.30	-20.95	39.38	5.01	38.38	35.42	100	158	VERTICAL
2	10599.68	62.03	68.30	-6.27	54.06	5.01	38.38	35.42	100	158	VERTICAL
3	15897.20	63.40	74.00	-10.60	55.40	6.15	37.29	35.44	122	61	VERTICAL
4	15897.92	49.44	54.00	-4.56	41.44	6.15	37.29	35.44	122	61	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10624.62	48.31	74.00	-25.69	40.31	5.01	38.38	35.39	Peak	100	93	HORIZONTAL
2	10637.04	35.25	54.00	-18.75	27.26	5.01	38.37	35.39	Average	100	93	HORIZONTAL
3	15935.08	36.35	54.00	-17.65	28.39	6.15	37.25	35.44	Average	100	206	HORIZONTAL
4	15939.09	49.30	74.00	-24.70	41.34	6.15	37.25	35.44	Peak	100	206	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.52	53.03	74.00	-20.97	45.04	5.01	38.37	35.39	Peak	105	137	VERTICAL
2	10640.00	40.74	54.00	-13.26	32.75	5.01	38.37	35.39	Average	105	137	VERTICAL
3	15959.76	56.78	74.00	-17.22	48.84	6.15	37.23	35.44	Peak	115	69	VERTICAL
4	15960.16	44.24	54.00	-9.76	36.30	6.15	37.23	35.44	Average	115	69	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	10976.92	35.77	54.00	-18.23	27.58	5.01	38.30	35.12	Average	100	275	HORIZONTAL
2	10988.14	49.21	74.00	-24.79	40.98	5.01	38.32	35.10	Peak	100	275	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	10989.90	50.16	74.00	-23.84	41.95	5.01	38.30	35.10	Peak	100	143	VERTICAL
2	10998.32	35.81	54.00	-18.19	27.60	5.01	38.30	35.10	Average	100	143	VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	11159.84	35.99	54.00	-18.01	27.65	5.04	38.47	35.17	Average	100	324 HORIZONTAL
2	11161.44	49.76	74.00	-24.24	41.42	5.04	38.47	35.17	Peak	100	324 HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg
			dBuV/m	dB	dBuV	dB	dB/m	dB			Pol/Phase
1	11154.39	58.38	74.00	-15.62	50.05	5.04	38.45	35.16	Peak	128	231 VERTICAL
2	11159.52	44.19	54.00	-9.81	35.85	5.04	38.47	35.17	Average	128	231 VERTICAL

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a Ch 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 3

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11378.04	36.17	54.00	-17.83	27.66	5.09	38.67	35.25	Average	100	83	HORIZONTAL
2	11396.47	50.17	74.00	-23.83	41.64	5.10	38.68	35.25	Peak	100	83	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	Cable	Antenna	Preamp		A/Pos	T/Pos	
	MHz	dBuV/m	Line	Limit	Level	Loss	Factor	Factor	Remark	cm	deg	Pol/Phase
1	11400.32	37.46	54.00	-16.54	28.91	5.10	38.70	35.25	Average	100	259	VERTICAL
2	11400.64	50.42	74.00	-23.58	41.87	5.10	38.70	35.25	Peak	100	259	VERTICAL

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 4

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Remark	Pol/Phase	A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1 p	10505.58	52.49	68.30	-15.81	42.53	6.64	35.18	38.50	Peak	HORIZONTAL	100	266
2	15762.13	56.13	74.00	-17.87	44.74	7.93	34.99	38.45	Peak	HORIZONTAL	111	153
3 a	15786.17	41.45	54.00	-12.55	30.08	7.94	35.01	38.44	Average	HORIZONTAL	111	153

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Remark	Pol/Phase	A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1 p	10523.21	59.20	68.30	-9.10	49.25	6.63	35.18	38.50	Peak	VERTICAL	100	88
2	15780.96	62.35	74.00	-11.65	50.99	7.93	35.01	38.44	Peak	VERTICAL	136	94
3 a	15782.00	48.23	54.00	-5.77	36.86	7.94	35.01	38.44	Average	VERTICAL	136	94

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 4

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna			A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	Pol/Phase	cm	deg
1	10605.77	40.31	54.00	-13.69	30.33	6.60	35.10	38.48	Average	HORIZONTAL	100	60
2	10607.29	52.91	74.00	-21.09	42.93	6.60	35.10	38.48	Peak	HORIZONTAL	100	60
3 a	15896.47	43.37	54.00	-10.63	32.07	7.97	35.09	38.42	Average	HORIZONTAL	111	159
4 p	15896.88	56.99	74.00	-17.01	45.69	7.97	35.09	38.42	Peak	HORIZONTAL	111	159

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna			A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	Pol/Phase	cm	deg
1	10604.81	43.23	54.00	-10.77	33.25	6.60	35.10	38.48	Average	VERTICAL	100	92
2	10606.73	55.85	74.00	-18.15	45.87	6.60	35.10	38.48	Peak	VERTICAL	100	92
3 a	15896.31	51.33	54.00	-2.67	40.03	7.97	35.09	38.42	Average	VERTICAL	131	95
4 p	15896.55	65.38	74.00	-8.62	54.08	7.97	35.09	38.42	Peak	VERTICAL	131	95

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 4

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna			A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	Pol/Phase	cm	deg
1	10632.23	50.95	74.00	-23.05	40.97	6.59	35.08	38.47	Peak	HORIZONTAL	100	66
2	10643.04	37.93	54.00	-16.07	27.95	6.59	35.08	38.47	Average	HORIZONTAL	100	66
3 a	15960.24	39.97	54.00	-14.03	28.72	8.00	35.16	38.41	Average	HORIZONTAL	111	153
4 p	15966.25	53.24	74.00	-20.76	41.99	8.00	35.16	38.41	Peak	HORIZONTAL	111	153

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna			A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	Remark	Pol/Phase	cm	deg
1	10634.63	39.40	54.00	-14.60	29.42	6.59	35.08	38.47	Average	VERTICAL	100	302
2	10634.95	52.17	74.00	-21.83	42.19	6.59	35.08	38.47	Peak	VERTICAL	100	302
3 a	15962.96	43.47	54.00	-10.53	32.22	8.00	35.16	38.41	Average	VERTICAL	125	106
4 p	15964.17	56.78	74.00	-17.22	45.53	8.00	35.16	38.41	Peak	VERTICAL	125	106

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 4

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Pol/Phase	A/Pos	T/Pos
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1	a	11004.97	37.80	54.00	-16.20	27.74	6.47	34.81	38.40	Average	HORIZONTAL	100	121
2		11013.22	51.13	74.00	-22.87	41.07	6.47	34.81	38.40	Peak	HORIZONTAL	100	121
3	p	16491.67	55.66	68.30	-12.64	42.48	8.03	34.80	39.95	Peak	HORIZONTAL	100	153

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Pol/Phase	A/Pos	T/Pos
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1	a	11001.12	37.88	54.00	-16.12	27.83	6.46	34.81	38.40	Average	VERTICAL	100	29
2		11012.58	51.73	74.00	-22.27	41.67	6.47	34.81	38.40	Peak	VERTICAL	100	29
3	p	16500.88	65.62	68.30	-2.68	52.38	8.04	34.80	40.00	Peak	VERTICAL	121	100

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 4

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Pol/Phase	A/Pos	T/Pos
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1	a	11156.23	38.42	54.00	-15.58	28.25	6.55	34.81	38.43	Average	HORIZONTAL	100	48
2		11174.74	51.33	74.00	-22.67	41.13	6.57	34.81	38.44	Peak	HORIZONTAL	100	48
3	p	16730.22	59.38	68.30	-8.92	45.27	8.05	34.43	40.49	Peak	HORIZONTAL	153	111

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Pol/Phase	A/Pos	T/Pos
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1	a	11161.44	42.47	54.00	-11.53	32.29	6.56	34.81	38.43	Average	VERTICAL	104	220
2		11162.24	55.79	74.00	-18.21	45.61	6.56	34.81	38.43	Peak	VERTICAL	104	220
3	p	16731.03	67.68	68.30	-0.62	53.57	8.05	34.43	40.49	Peak	VERTICAL	130	100

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 4

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Pol/Phase	A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1	11379.01	52.25	74.00	-21.75	41.91	6.68	34.82	38.48	Peak	HORIZONTAL	100	173
2 a	11412.26	38.23	54.00	-15.77	27.88	6.69	34.82	38.48	Average	HORIZONTAL	100	173
3 p	17093.75	56.75	68.30	-11.55	41.27	8.07	33.99	41.40	Peak	HORIZONTAL	100	244

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	Pol/Phase	A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1 a	11396.07	38.56	54.00	-15.44	28.21	6.69	34.82	38.48	Average	VERTICAL	100	31
2	11406.49	52.49	74.00	-21.51	42.14	6.69	34.82	38.48	Peak	VERTICAL	100	31
3 p	17095.91	60.64	68.30	-7.66	45.16	8.07	33.99	41.40	Peak	VERTICAL	117	101

Temperature	24°C	Humidity	56%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Chain 1 + Chain 2 + Chain 3
Test Date	Jul. 18, 2012	Test Mode	Mode 4

Horizontal

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Remark	Pol/Phase	A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1 p	10538.32	51.50	68.30	-16.80	41.54	6.63	35.16	38.49	Peak	HORIZONTAL	100	185
2	10541.52	38.17	68.30	-30.13	28.21	6.63	35.16	38.49	Average	HORIZONTAL	100	185
3 a	15788.45	39.78	54.00	-14.22	28.41	7.94	35.01	38.44	Average	HORIZONTAL	100	22
4	15826.03	53.41	74.00	-20.59	42.06	7.95	35.03	38.43	Peak	HORIZONTAL	100	22

Vertical

	Freq	Level	Limit	Over	Read	Cable	Preamp	Antenna	Remark	Pol/Phase	A/Pos	T/Pos
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m			cm	deg
1	10538.08	40.20	68.30	-28.10	30.24	6.63	35.16	38.49	Average	VERTICAL	106	29
2 p	10538.64	53.40	68.30	-14.90	43.44	6.63	35.16	38.49	Peak	VERTICAL	106	29
3	15806.71	54.08	74.00	-19.92	42.72	7.95	35.03	38.44	Peak	VERTICAL	100	124
4 a	15827.07	40.85	54.00	-13.15	29.50	7.95	35.03	38.43	Average	VERTICAL	100	124