SPORTON International Inc.
No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, TaoYuan Hsien, Taiwan, R.O.C.
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

FCC RADIO TEST REPORT

Applicant's company	**Trapeze Networks, Inc.**
Applicant Address	5753 W. Las Positas Blvd., Pleasanton, CA 94588 USA
FCC ID	**QZE303**
Manufacturer's company	**Wistron NeWeb Corporation**
Manufacturer Address	No.10-1,Li-hsin Road I,Hsinchu Science Park,Hsinchu 300,Taiwan, R.O.C.

Product Name	Dual Mode 2.4GHz/5GHz Access Point
Brand Name	Trapeze
Model Name	430,MP-432
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Feb. 01, 2008
Final Test Date	Oct. 27, 2008
Submission Type	Class II Change
Operating Mode	Master
Multiple Listing	Please refer to section 3.7

Statement

Test result included is for the Draft n and 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 C63.4-2003** and **47 CFR FCC Part 15 Subpart E**.

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

Testing Laboratory
1190

Table of Contents

History of This Test Report

Original Issue Date: Oct. 24, 2008

Report No.: FR820103-06

■ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

Certificate No.: CB9710049

1. CERTIFICATE OF COMPLIANCE

Product Name	:	Dual Mode 2.4GHz/5GHz Access Point
Brand Name	:	Trapeze
Model Name	:	430,MP-432
Applicant	:	Trapeze Networks, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart E § 15.407

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Feb. 01, 2008 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.

Wayne Hsu
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	1.97 dB
4.2	15.407(a)	26dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.37 dB
4.4	15.407(a)	Power Spectral Density	Complies	1.89 dB
4.5	15.407(a)	Peak Excursion	Complies	1.14 dB
4.6	15.407(b)	Radiated Emissions	Complies	3.18 dB
4.7	15.407(b)	Band Edge Emissions	Complies	0.52 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Conducted Output Power	±0.5dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
Peak Excursion	±0.5dB	Confidence levels of 95%
26dB Spectrum Bandwidth / Frequency Stability	$\pm 8.5 \times 10^{-8}$	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℃	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

Draft n

Items	Description
Product Type	WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From POE
Modulation	see the below table for draft n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for Draft n
Frequency Range	5250 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	15 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Channel Band Width (99%)	MCS8 (20MHz): 18.24 MHz ; MCS8 (40MHz): 36.64 MHz
Conducted Output Power	Band 2: MCS8 (20MHz): 23.37 dBm ; MCS8 (40MHz): 23.20 dBm Band 3: MCS8 (20MHz): 22.32 dBm ; MCS8 (40MHz): 23.63 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

802.11a

Items	Description
Product Type	WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From POE
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	15
Channel Band Width (99%)	16.96 MHz
Conducted Output Power	Band 2: 22.97 dBm ; Band 3: 23.13 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

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

Draft n 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

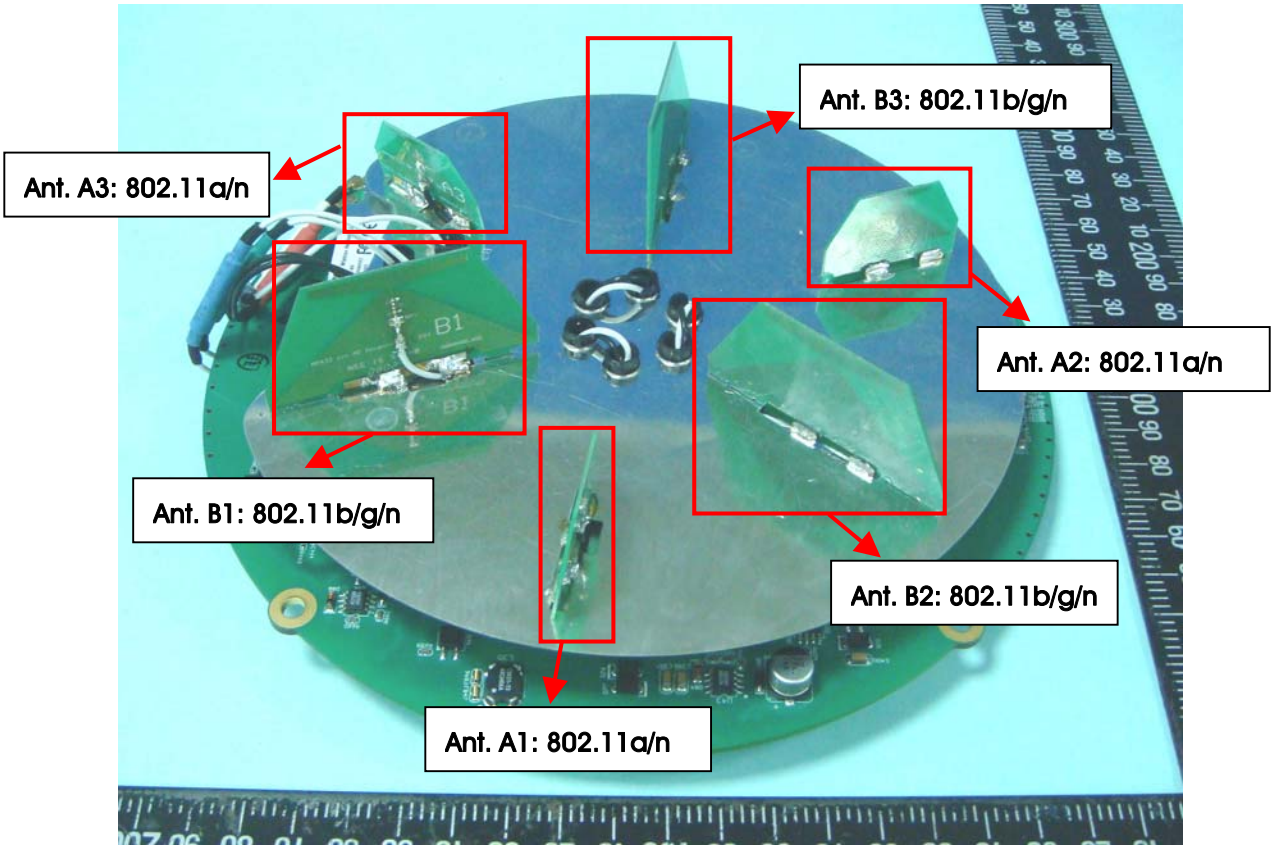
3.2. Accessories

N/A

3.3. Table for Filed Antenna

For 5GHz Band

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
A1	WNC	MP-432	PCB Antenna	UFL	3.75	TX / RX Ant.
A2	WNC	MP-432	PCB Antenna	UFL	3.75	TX / RX Ant.
A3	WNC	MP-432	PCB Antenna	UFL	3.75	TX / RX Ant.



3.4. Table for Carrier Frequencies

Frequency Allocation for 802.11a

There are two bandwidth systems for draft n.

For both 20MHz bandwidth systems, use Channel 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140.

For both 40MHz bandwidth systems, use Channel 54, 62, 102, 110, 118, 126, 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	120	5600 MHz
	102	5510MHz	124	5620 MHz
	104	5520 MHz	126	5630 MHz
	108	5540 MHz	128	5640 MHz
	110	5550 MHz	132	5660 MHz
	112	5560 MHz	134	5670 MHz
	116	5580 MHz	136	5680 MHz
	118	5590 MHz	140	5700 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	Antenna
AC Power Conducted Emission	Normal Link		Auto	-	-
Max. Conducted Output Power	MCS8/ 20MHz	Band 2	13Mbps	52/60/64	A1/A2/A3/A1+A2+A3
		Band 3	13Mbps	100/116/140	A1/A2/A3/A1+A2+A3
	MCS8/ 40MHz	Band 2	27Mbps	54/62	A1/A2/A3/A1+A2+A3
		Band 3	27Mbps	102/118/134	A1/A2/A3/A1+A2+A3
	11a/BPSK	Band 2	13Mbps	52/60/64	A1/A2/A3/A1+A2+A3
		Band 3	13Mbps	100/116/140	A1/A2/A3/A1+A2+A3
26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement Power Spectral Density Peak Excursion	MCS8/ 20MHz	Band 2	13Mbps	52/60/64	A1+A2+A3
		Band 3	13Mbps	100/116/140	A1+A2+A3
	MCS8/ 40MHz	Band 2	27Mbps	54/62	A1+A2+A3
		Band 3	27Mbps	102/118/134	A1+A2+A3
	11a/BPSK	Band 2	13Mbps	52/60/64	A1+A2+A3
		Band 3	13Mbps	100/116/140	A1+A2+A3
Radiated Emission Below 1GHz	Normal Link		Auto	-	-
Radiated Emission Above 1GHz	MCS8/ 20MHz	Band 2	13Mbps	52/60/64	A1+A2+A3
		Band 3	13Mbps	100/116/140	A1+A2+A3
	MCS8/ 40MHz	Band 2	27Mbps	54/62	A1+A2+A3
		Band 3	27Mbps	102/118/134	A1+A2+A3
	11a/BPSK	Band 2	13Mbps	52/60/64	A1+A2+A3
		Band 3	13Mbps	100/116/140	A1+A2+A3
Band Edge Emission	MCS8/ 20MHz	Band 2	13Mbps	52/60/64	A1+A2+A3
		Band 3	13Mbps	100/116/140	A1+A2+A3
	MCS8/ 40MHz	Band 2	27Mbps	54/62	A1+A2+A3
		Band 3	27Mbps	102/118/134	A1+A2+A3
	11a/BPSK	Band 2	13Mbps	52/60/64	A1+A2+A3
		Band 3	13Mbps	100/116/140	A1+A2+A3
Frequency Stability	Un-modulation		-	60/64	N/A

Test Mode:

Mode 1: EUT with POE 1 (Brand / Model: POWER DSINE / 7001G)

Mode 2: EUT with POE 2 (Brand / Model: POWER DSINE / 7012G)

Due to Mode 2 generated the worst test result, so it was recorded in this report.

3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH03-HY	SAC	Hwa Ya	101377	IC 4088	-
CO04-HY	Conduction	Hwa Ya	101377	IC 4088	-
TH01-HY	OVEN Room	Hwa Ya	-	-	-

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

Please refer section 6 for Test Site Address.

3.7. Table for Multiple Listing & Class II Change

This product is an extension of original one reported under Sporton project number: 820103-04

Below is the table for the change of the product with respect to the original one.

Add 802.11a Band 2 and Band 3 (5250~5350MHz and 5470~5725MHz).

There is no change in hardware or in existing RF relevant portion.

3.8. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	D520	E2KWM3945ABG
Notebook	DELL	D400	E2K24GBRL
SMARTBIT	TRAPEZE	MX200R	DOC
PoE Load Fixture	TRAPEZE	IEEE 802.3af standard 150 Ohm PoE Loader	DOC
HIPOE	POWER DSINE	7001G	DOC
HIPOE	POWER DSINE	7012G	DOC

3.9. 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.

Power Parameters of Draft n MCS8 20MHz

Test Software Version	ART					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
Draft n	22	22	16	15	17	15

Power Parameters of Draft n MCS8 40MHz

Test Software Version	ART				
Frequency	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
Draft n	22	13	14	22	22

Power Parameters of IEEE 802.11a

Test Software Version	ART					
Frequency	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	22	22	16	16	17	16

During the test, the following programs under WIN XP were executed:

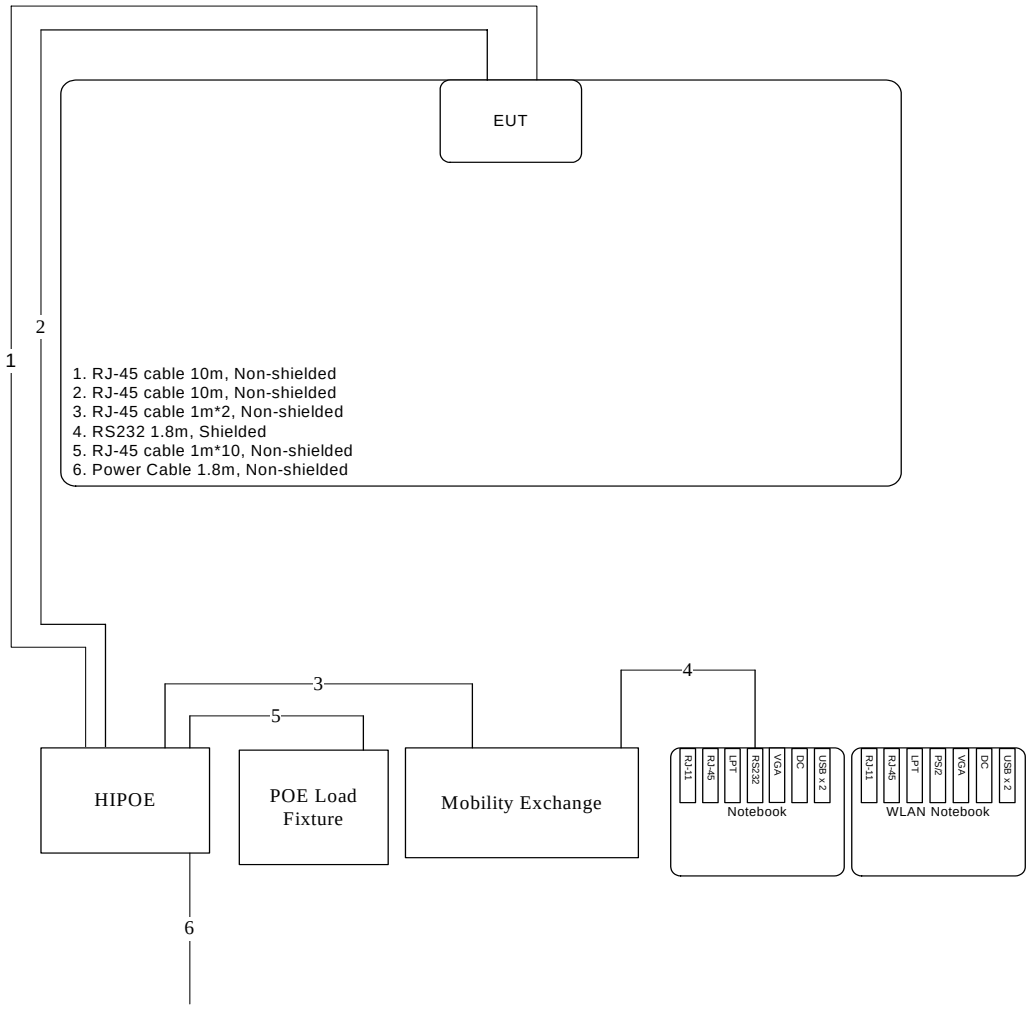
Executed "ART" to control the EUT continuously transmit RF signal. In sections 4.2, 4.3, 4.4 and 4.5, 4.7 and 4.8 while 4.1 and 4.6 using Trapeze MX controller to control the EUT continuous transmit RF signal.

3.10. Test Configurations

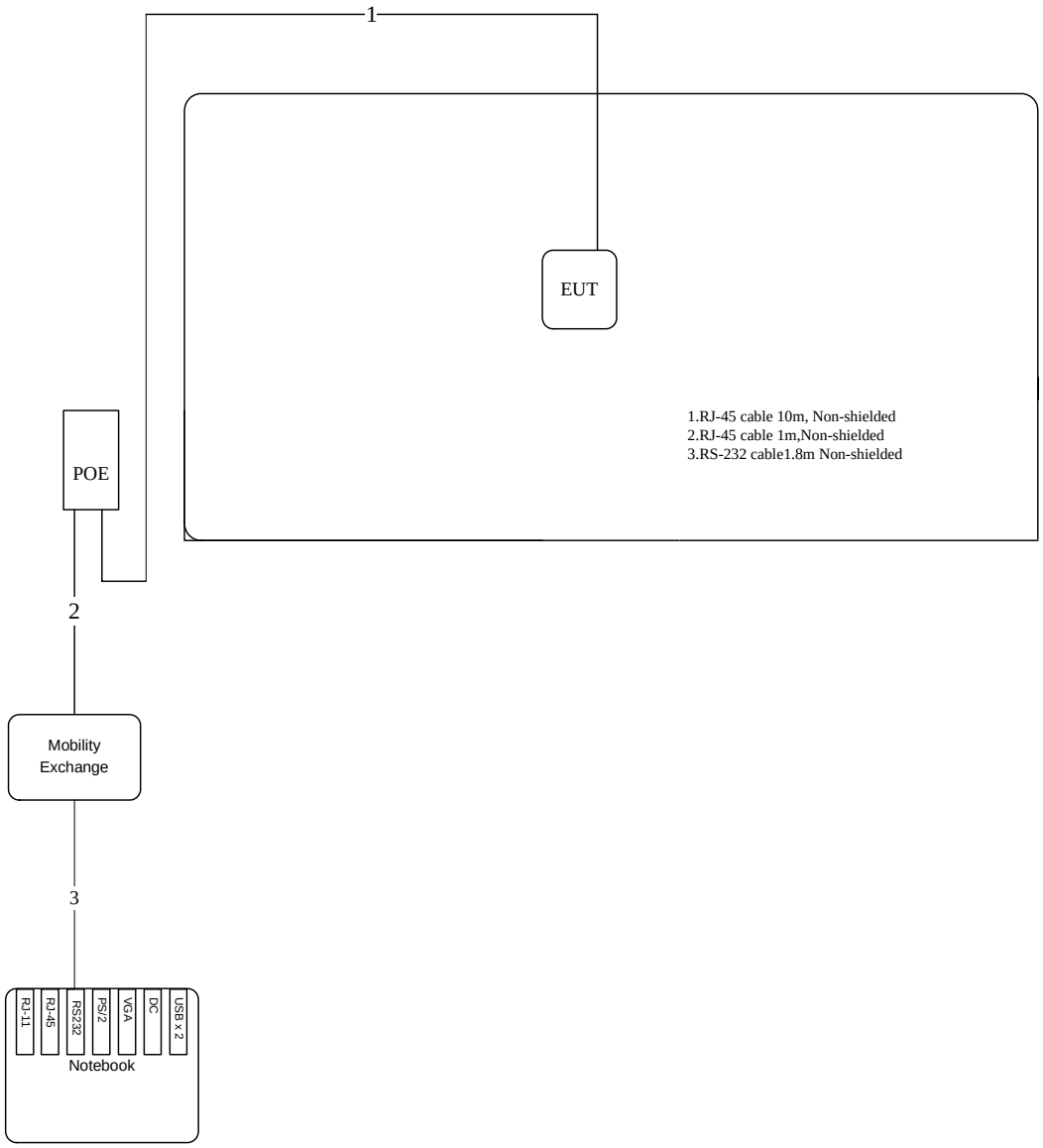
3.10.1. Radiation Emissions Test Configuration

Test Configuration: 9KHz~1GHz

Test Mode: Mode 2

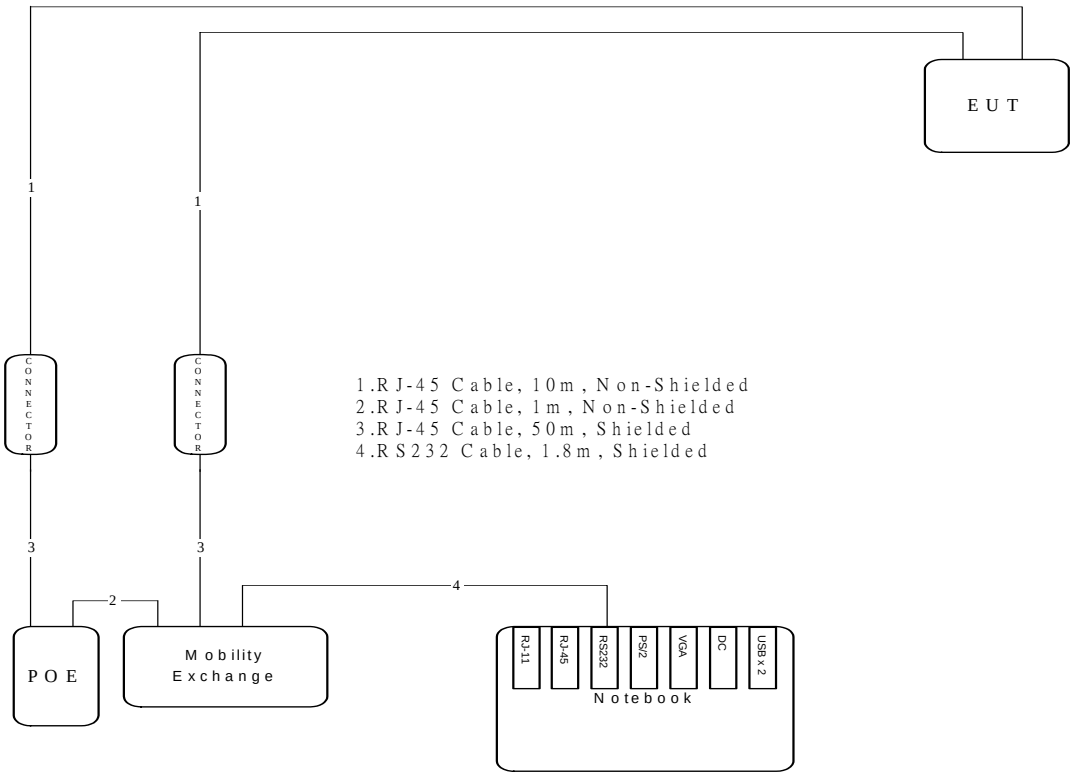


Test Configuration: above 1GHz

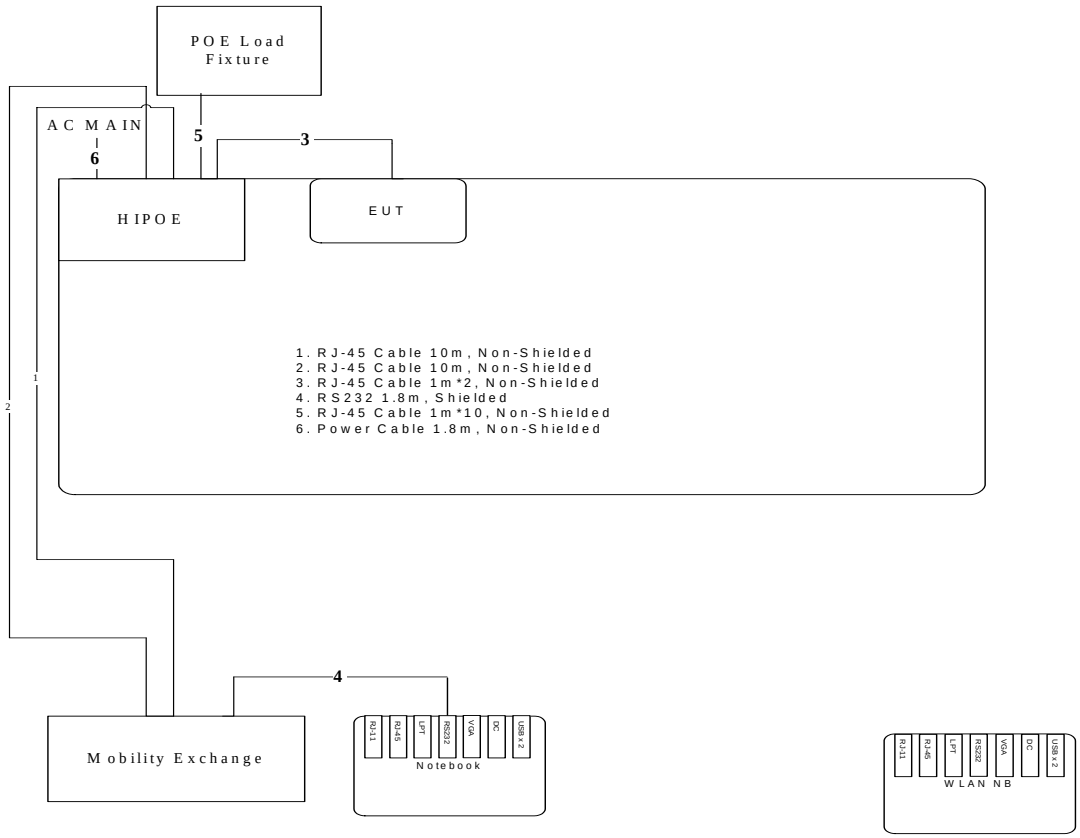


3.10.2. AC Power Line Conduction Emissions Test Configuration

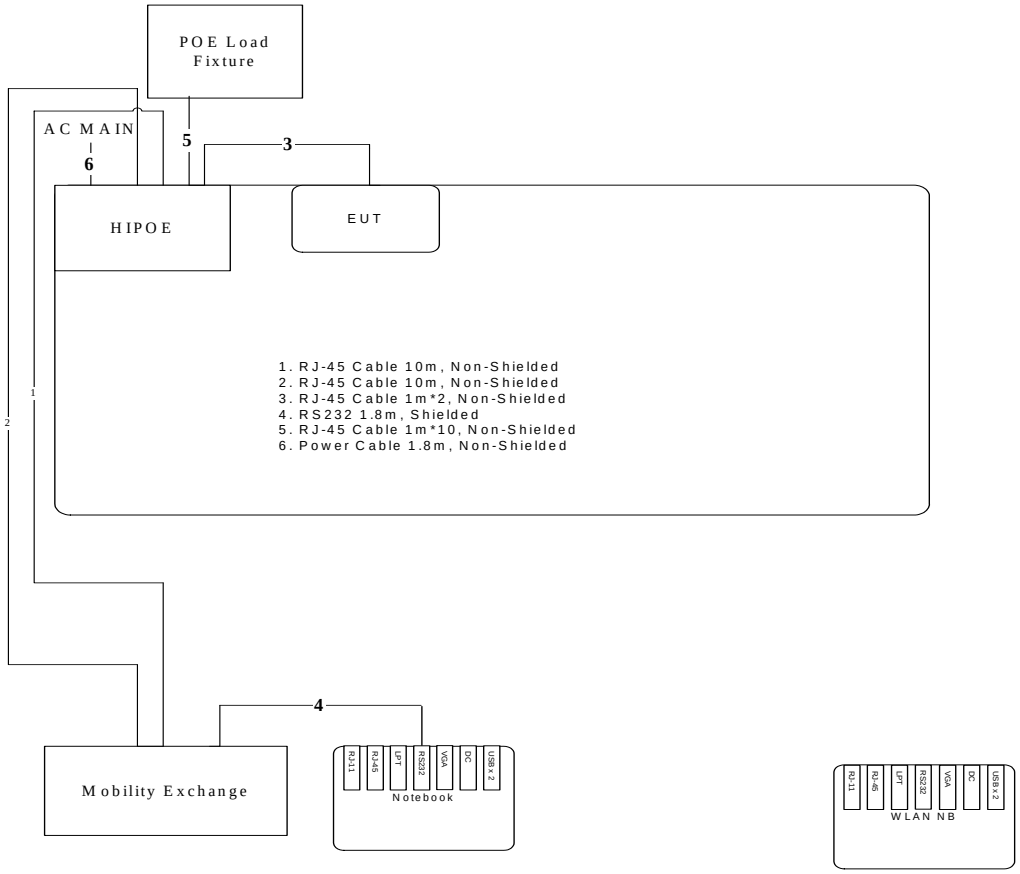
Test Configuration: ART setup for conducted RF tests



Test Mode: Mode 1



Test Mode: Mode 2



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

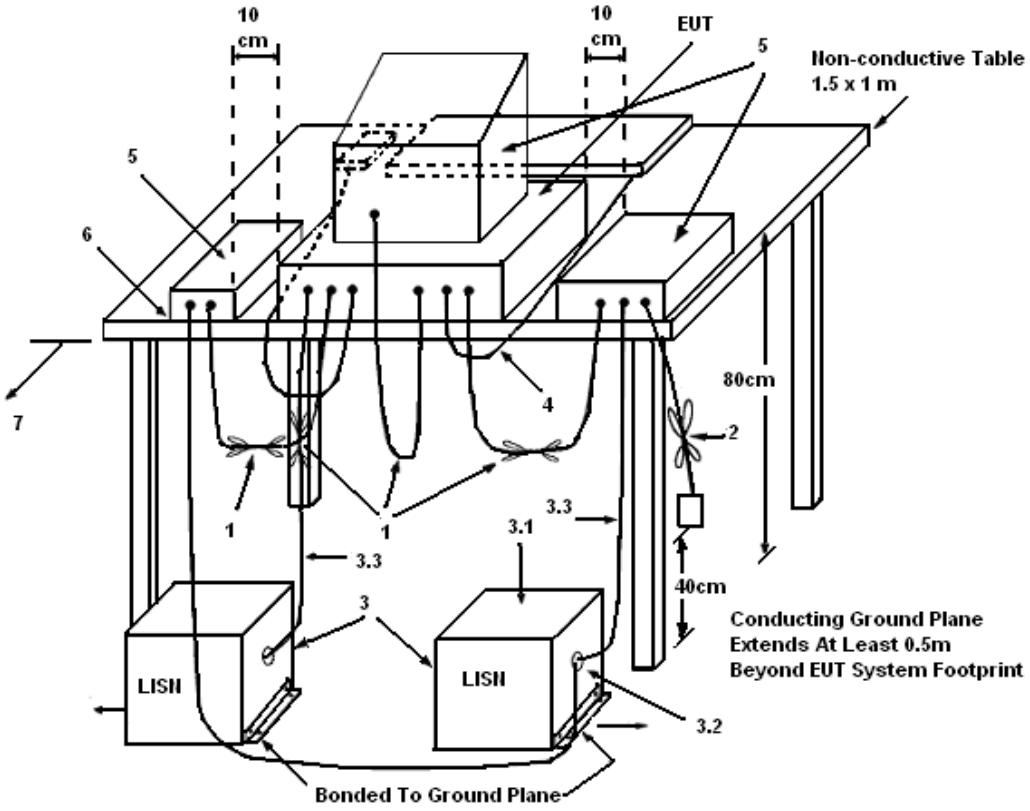
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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 C63.4. 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

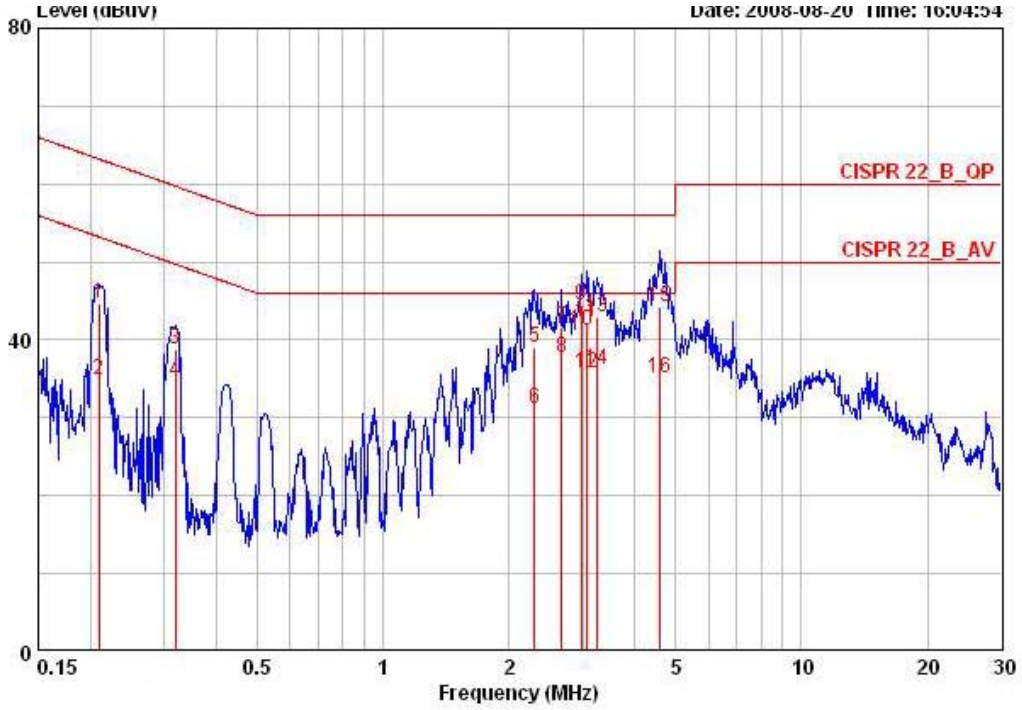
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

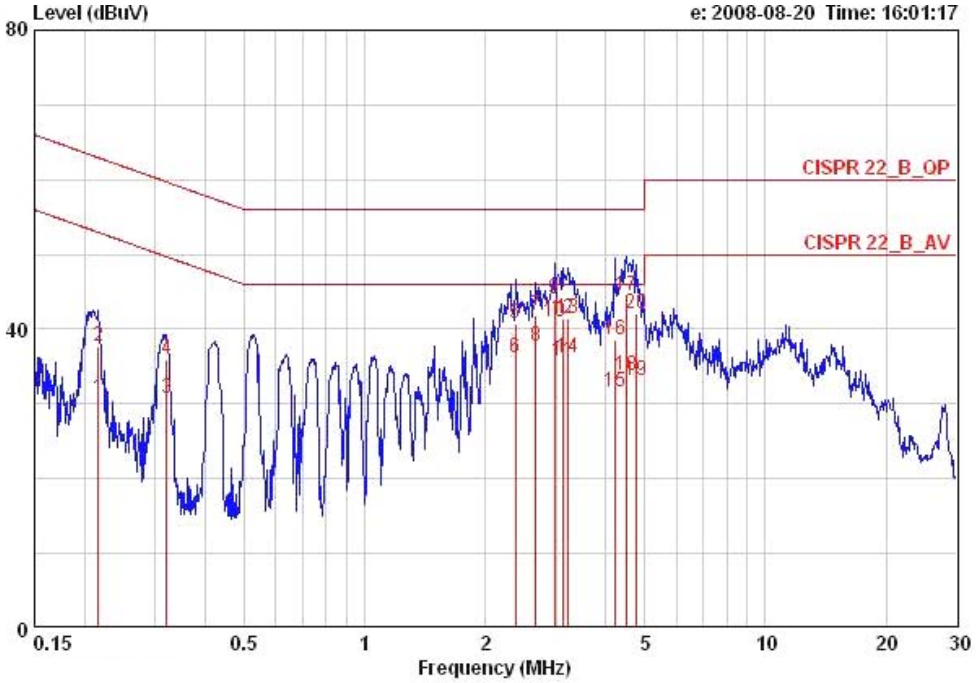
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24℃	Humidity	56%
Test Engineer	Aric Li	Phase	Line
Configuration	Mode 1 with ch.1 and 149 on continuous transmit RF signals		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.20944	44.73	-18.50	63.23	44.48	0.05	0.20	QP
2	0.20944	34.81	-18.42	53.23	34.56	0.05	0.20	AVERAGE
3	0.31830	38.82	-20.93	59.75	38.58	0.04	0.20	QP
4	0.31830	34.69	-15.06	49.75	34.45	0.04	0.20	AVERAGE
5	2.297	39.00	-17.00	56.00	38.74	0.06	0.20	QP
6	2.297	31.23	-14.77	46.00	30.97	0.06	0.20	AVERAGE
7	2.678	41.61	-14.39	56.00	41.34	0.07	0.20	QP
8	2.678	37.77	-8.23	46.00	37.50	0.07	0.20	AVERAGE
9	2.978	44.41	-11.59	56.00	44.13	0.08	0.20	QP
10	2.978	41.23	-4.77	46.00	40.95	0.08	0.20	AVERAGE
11	3.074	42.28	-13.72	56.00	41.98	0.08	0.22	QP
12	3.074	35.72	-10.28	46.00	35.42	0.08	0.22	AVERAGE
13	3.241	42.86	-13.14	56.00	42.53	0.08	0.25	QP
14	3.241	36.23	-9.77	46.00	35.90	0.08	0.25	AVERAGE
15	4.598	44.28	-11.72	56.00	43.84	0.14	0.30	QP
16	4.598	35.06	-10.94	46.00	34.62	0.14	0.30	AVERAGE

Temperature	24℃	Humidity	56%
Test Engineer	Aric Li	Phase	Neutral
Configuration	Mode 1 with ch.1 and 149 on continuous transmit RF signals		

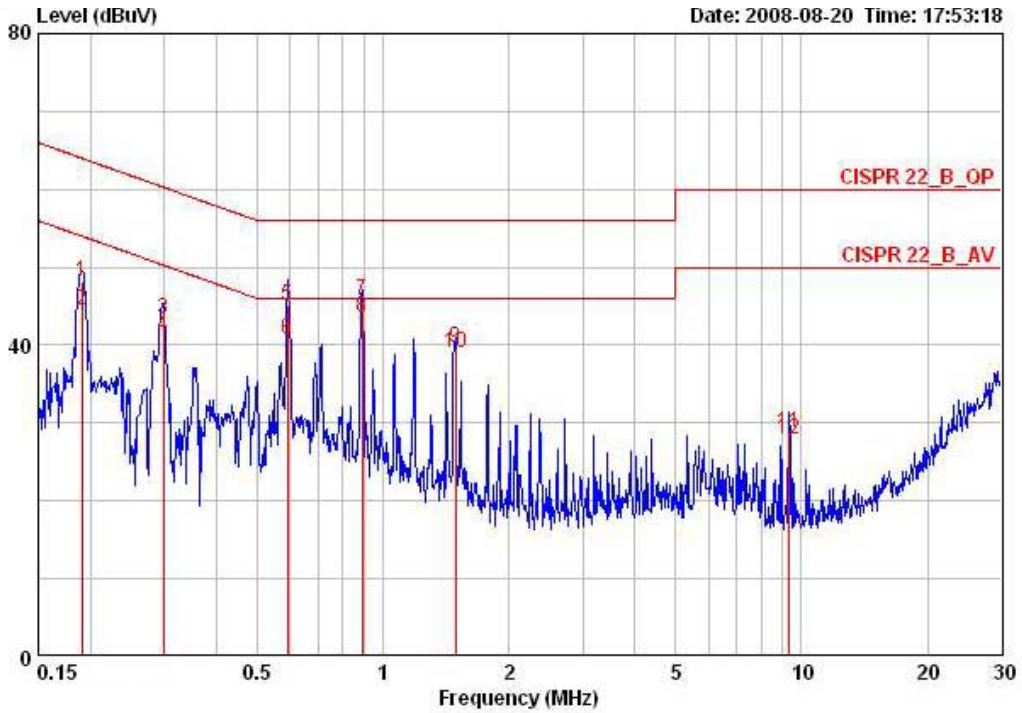


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.21620	30.66	-22.30	52.96	30.38	0.08	0.20	AVERAGE
2	0.21620	37.73	-25.23	62.96	37.45	0.08	0.20	QP
3	0.31999	30.66	-19.04	49.71	30.39	0.07	0.20	AVERAGE
4	0.31999	35.97	-23.73	59.71	35.70	0.07	0.20	QP
5	2.384	40.74	-15.26	56.00	40.44	0.10	0.20	QP
6	2.384	36.28	-9.72	46.00	35.98	0.10	0.20	AVERAGE
7	2.678	41.85	-14.15	56.00	41.54	0.11	0.20	QP
8	2.678	37.81	-8.19	46.00	37.50	0.11	0.20	AVERAGE
9	2.978	44.06	-11.94	56.00	43.74	0.12	0.20	QP
10	2.978	41.01	-4.99	46.00	40.69	0.12	0.20	AVERAGE
11	3.140	35.80	-10.20	46.00	35.45	0.12	0.23	AVERAGE
12	3.140	41.45	-14.55	56.00	41.10	0.12	0.23	QP
13	3.224	41.45	-14.55	56.00	41.08	0.12	0.25	QP
14	3.224	36.15	-9.85	46.00	35.78	0.12	0.25	AVERAGE
15	4.202	31.54	-14.46	46.00	31.09	0.15	0.30	AVERAGE
16	4.202	38.60	-17.40	56.00	38.15	0.15	0.30	QP
17	4.501	44.39	-11.61	56.00	43.92	0.17	0.30	QP
18	4.501	33.70	-12.30	46.00	33.23	0.17	0.30	AVERAGE
19	4.772	33.11	-12.89	46.00	32.62	0.19	0.30	AVERAGE
20	4.772	42.18	-13.82	56.00	41.69	0.19	0.30	QP

Note:

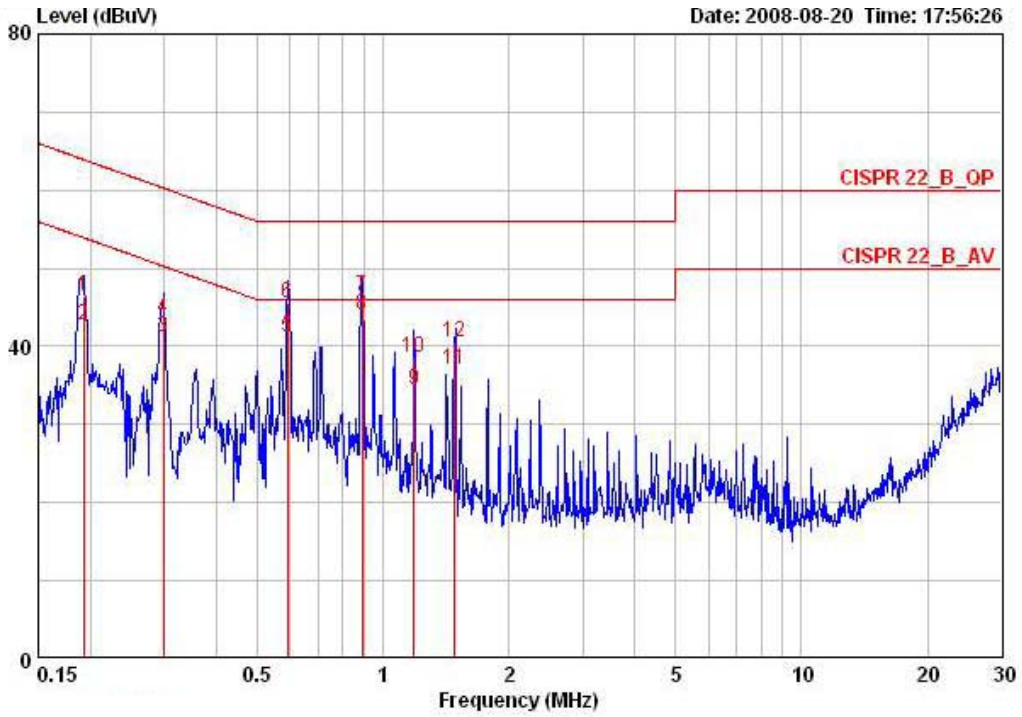
Level = Read Level + LISN Factor + Cable Loss.

Temperature	24℃	Humidity	56%
Test Engineer	Aric Li	Phase	Line
Configuration	Mode 2 with ch.1 and 149 on continuous transmit RF signals		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.19039	48.11	-15.91	64.02	47.86	0.05	0.20	QP
2	0.19039	44.41	-9.61	54.02	44.16	0.05	0.20	AVERAGE
3	0.29869	43.43	-16.85	60.28	43.19	0.04	0.20	QP
4	0.29869	41.12	-9.16	50.28	40.88	0.04	0.20	AVERAGE
5	0.59164	45.18	-10.82	56.00	44.95	0.03	0.20	QP
6	0.59164	40.82	-5.18	46.00	40.59	0.03	0.20	AVERAGE
7	0.88969	45.73	-10.27	56.00	45.50	0.03	0.20	QP
8 @	0.88969	43.50	-2.50	46.00	43.27	0.03	0.20	AVERAGE
9	1.487	39.76	-16.24	56.00	39.62	0.04	0.10	QP
10	1.487	39.01	-6.99	46.00	38.87	0.04	0.10	AVERAGE
11	9.345	28.83	-31.17	60.00	28.20	0.33	0.30	QP
12	9.345	27.98	-22.02	50.00	27.35	0.33	0.30	AVERAGE

Temperature	24℃	Humidity	56%
Test Engineer	Aric Li	Phase	Neutral
Configuration	Mode 2 with ch.1 and 149 on continuous transmit RF signals		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.19242	46.51	-17.42	63.93	46.23	0.08	0.20	QP
2	0.19242	42.73	-11.20	53.93	42.45	0.08	0.20	AVERAGE
3	0.29869	41.15	-9.12	50.28	40.88	0.07	0.20	AVERAGE
4	0.29869	43.50	-16.77	60.28	43.23	0.07	0.20	QP
5	0.59164	41.18	-4.82	46.00	40.91	0.07	0.20	AVERAGE
6	0.59164	45.51	-10.49	56.00	45.24	0.07	0.20	QP
7	0.89049	46.46	-9.54	56.00	46.19	0.07	0.20	QP
8 @	0.89049	44.03	-1.97	46.00	43.76	0.07	0.20	AVERAGE
9	1.184	34.52	-11.48	46.00	34.29	0.07	0.16	AVERAGE
10	1.184	38.61	-17.39	56.00	38.38	0.07	0.16	QP
11	1.483	37.13	-8.87	46.00	36.94	0.08	0.10	AVERAGE
12	1.483	40.58	-15.42	56.00	40.39	0.08	0.10	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. 99% Occupied Bandwidth Measurement

4.2.1. Limit

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

4.2.2. Measuring Instruments and Setting

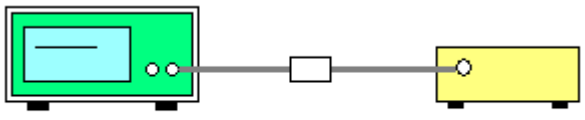
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RB	300 kHz
VB	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. Measuring multiple antennas, the connector is required to link with spectrum analyzer through a combiner.

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	26℃	Humidity	56%
Test Engineer	Sam Chen	Configurations	Draft n

Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	22.88	18.24
60	5300 MHz	22.56	18.08
64	5320 MHz	22.40	17.92
100	5500 MHz	23.52	17.92
116	5580 MHz	23.20	17.92
140	5700 MHz	22.88	17.92

Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3

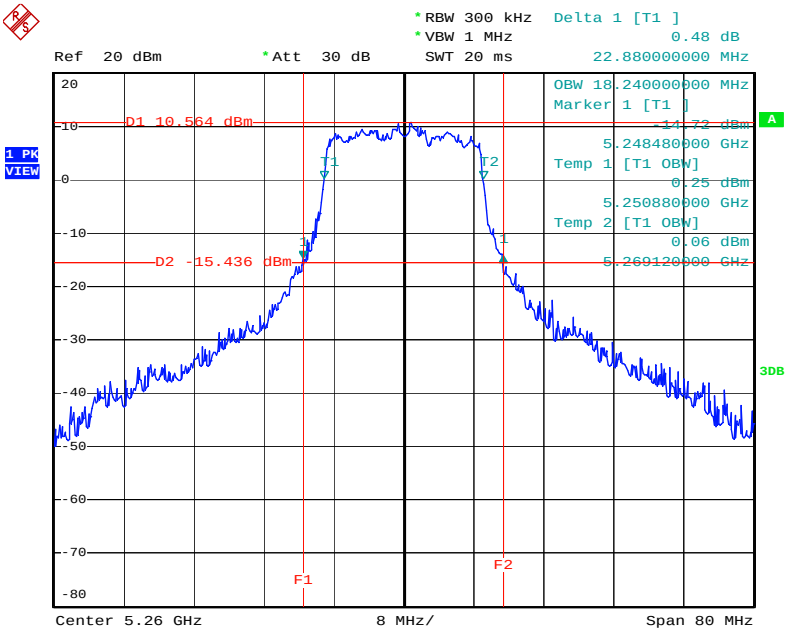
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
54	5270 MHz	43.04	36.64
62	5310 MHz	42.08	36.32
102	5510MHz	42.72	36.48
110	5550 MHz	50.08	36.48
134	5670 MHz	43.04	36.48

Temperature	26℃	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a

Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3

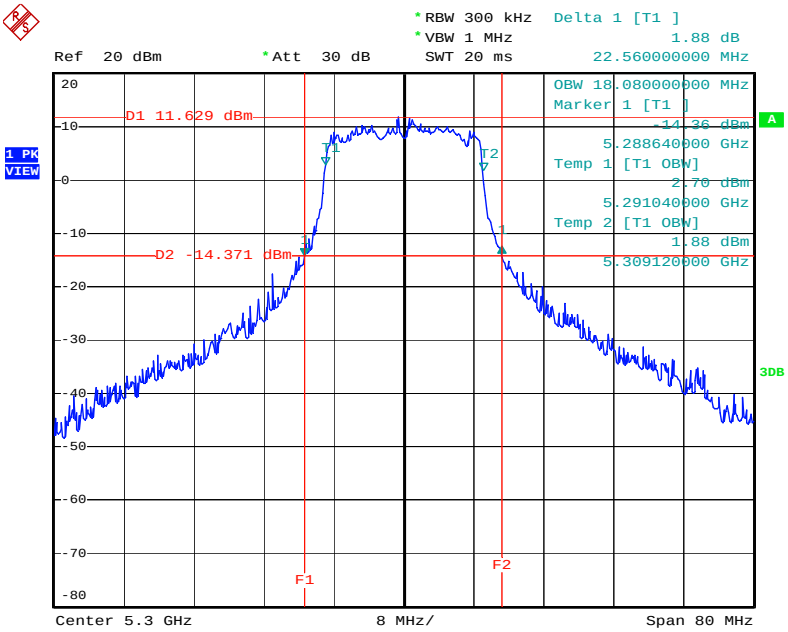
Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
52	5260 MHz	21.60	16.80
60	5300 MHz	21.76	16.96
64	5320 MHz	21.92	16.96
100	5500 MHz	21.92	16.80
116	5580 MHz	23.68	16.80
140	5700 MHz	21.28	16.64

26 dB Bandwidth Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



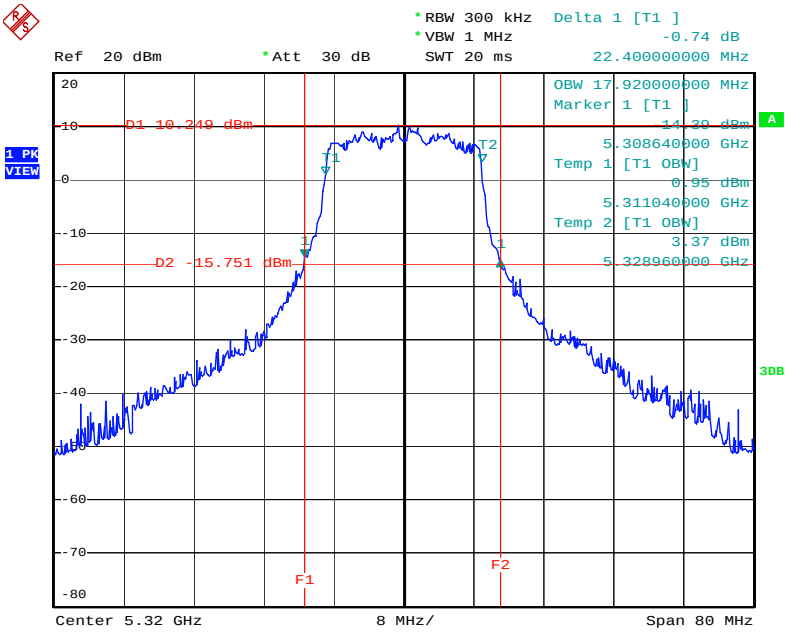
Date: 8.OCT.2008 20:01:55

26 dB Bandwidth Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



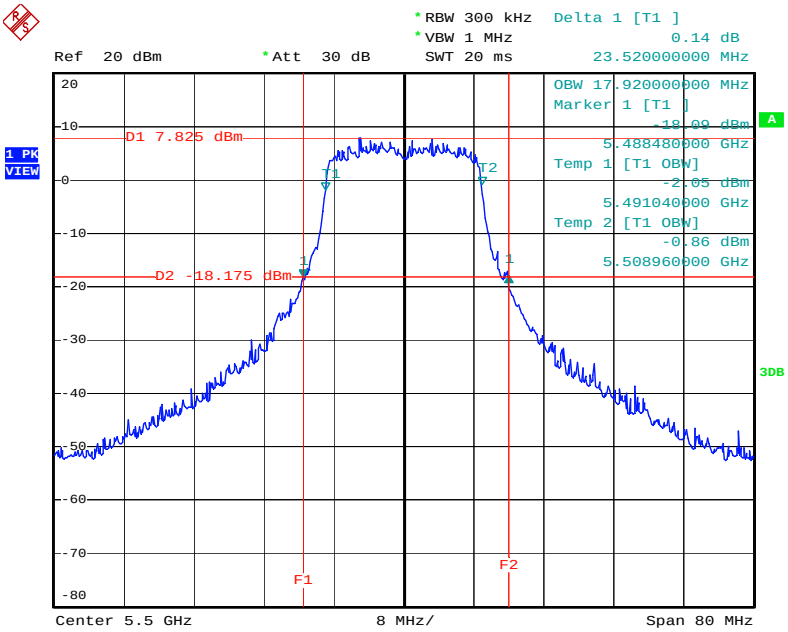
Date: 8.OCT.2008 19:59:38

26 dB Bandwidth Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



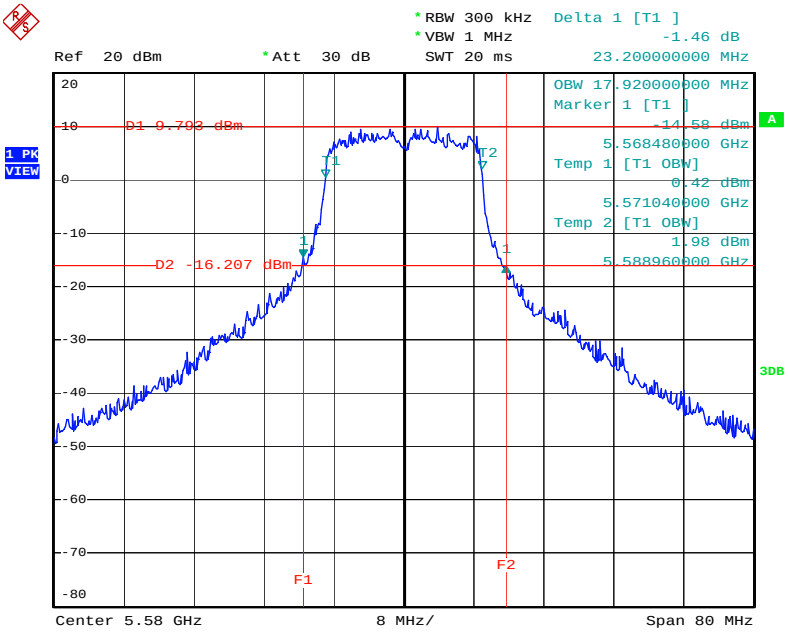
Date: 8.OCT.2008 19:55:10

26 dB Bandwidth Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



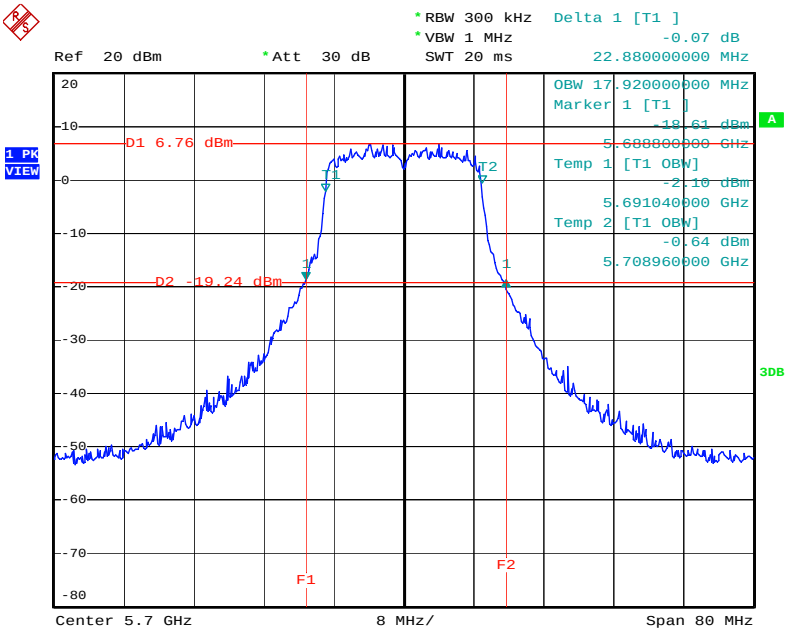
Date: 8.OCT.2008 19:52:57

26 dB Bandwidth Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



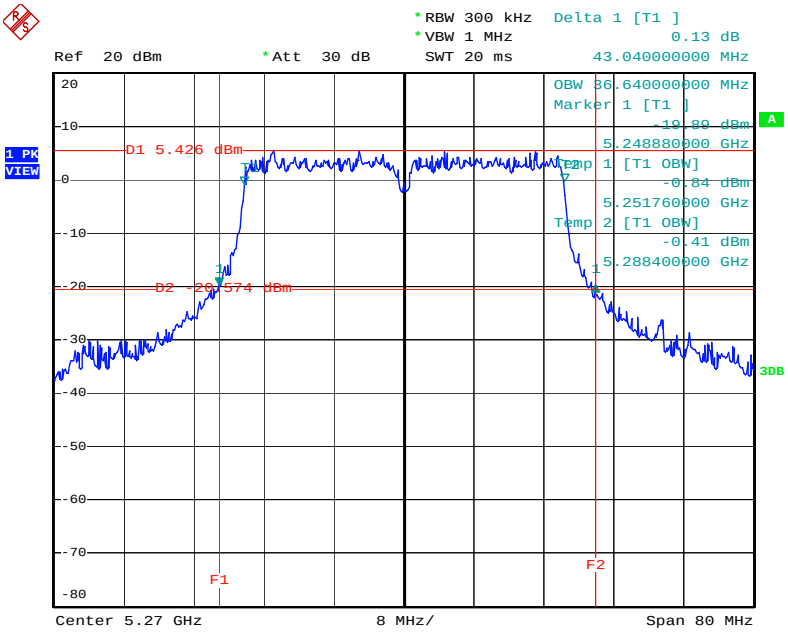
Date: 8.OCT.2008 19:51:05

26 dB Bandwidth Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5700 MHz



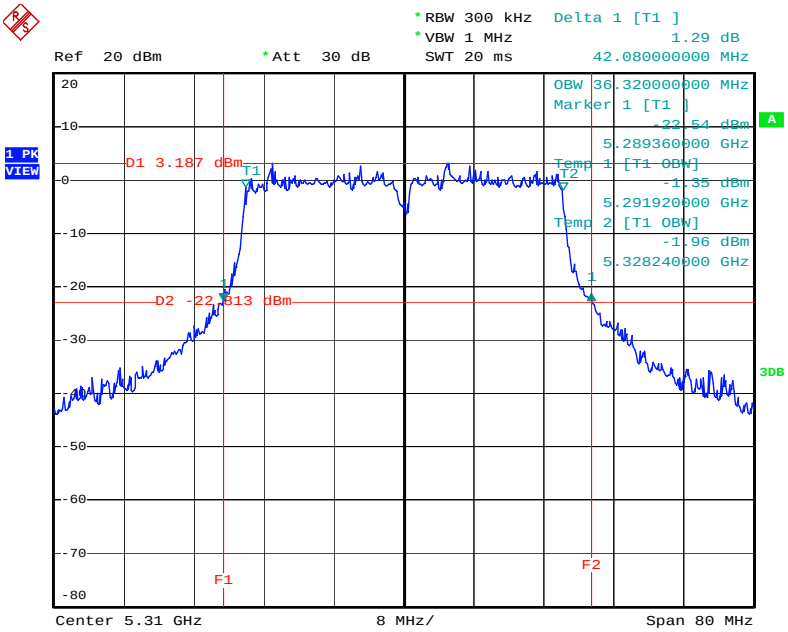
Date: 8.OCT.2008 19:48:53

26 dB Bandwidth Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5270 MHz



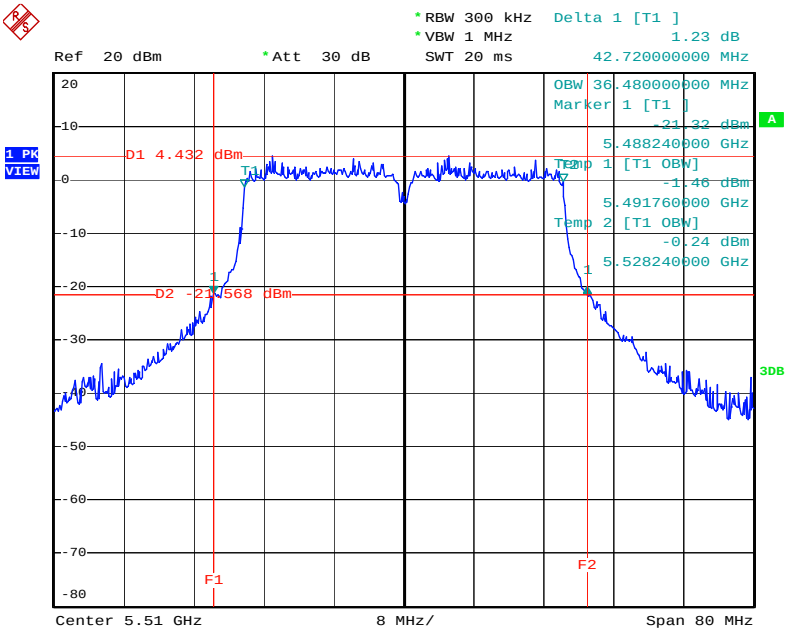
Date: 8.OCT.2008 20:07:20

26 dB Bandwidth Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5310 MHz



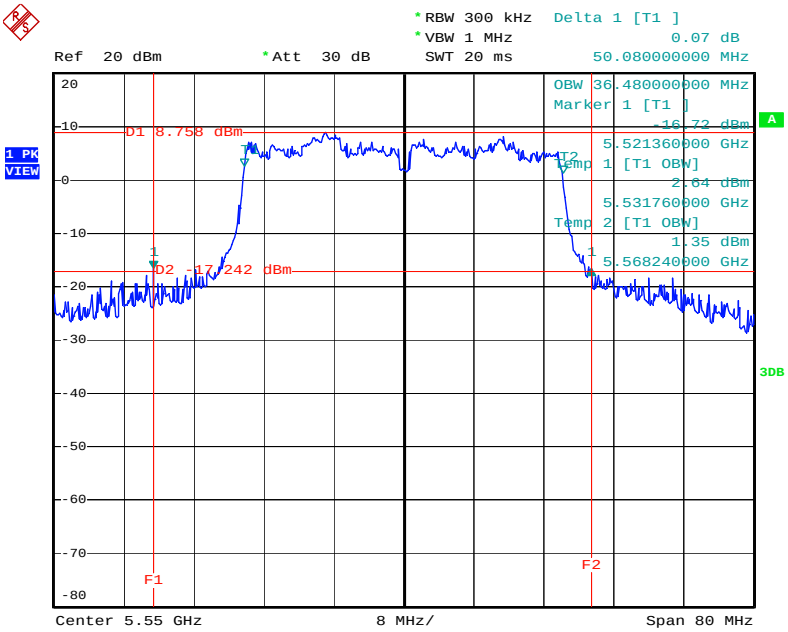
Date: 8.OCT.2008 20:09:36

26 dB Bandwidth Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5510MHz



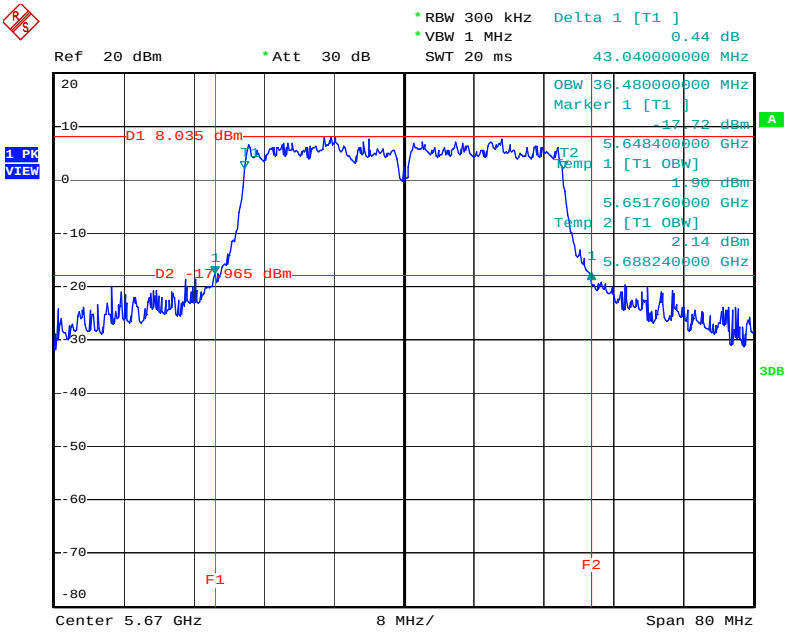
Date: 8.OCT.2008 20:11:03

26 dB Bandwidth Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5550 MHz



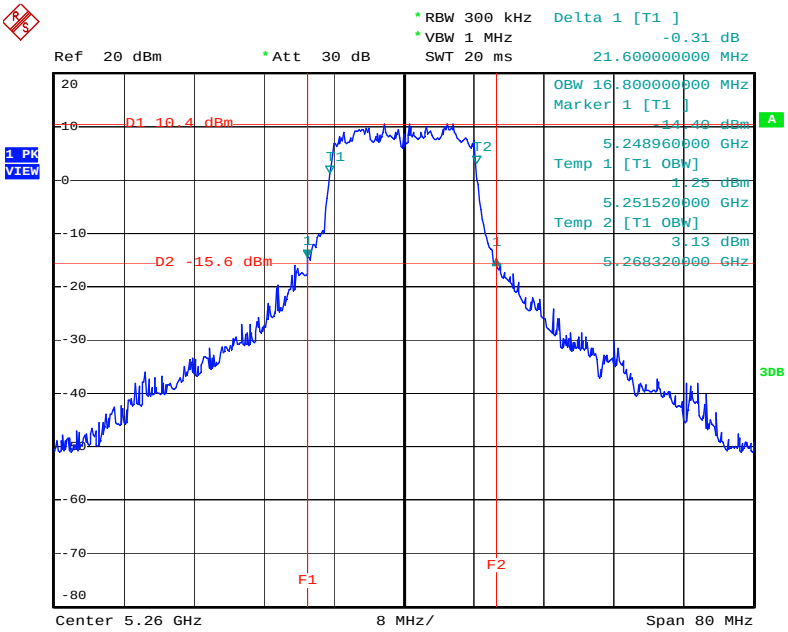
Date: 8.OCT.2008 20:16:59

26 dB Bandwidth Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5670 MHz



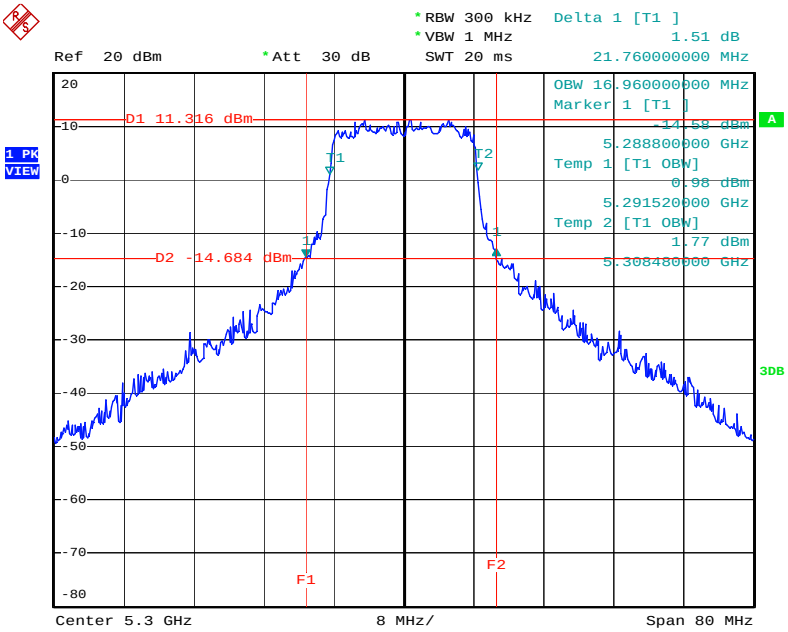
Date: 8.OCT.2008 20:18:38

26 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



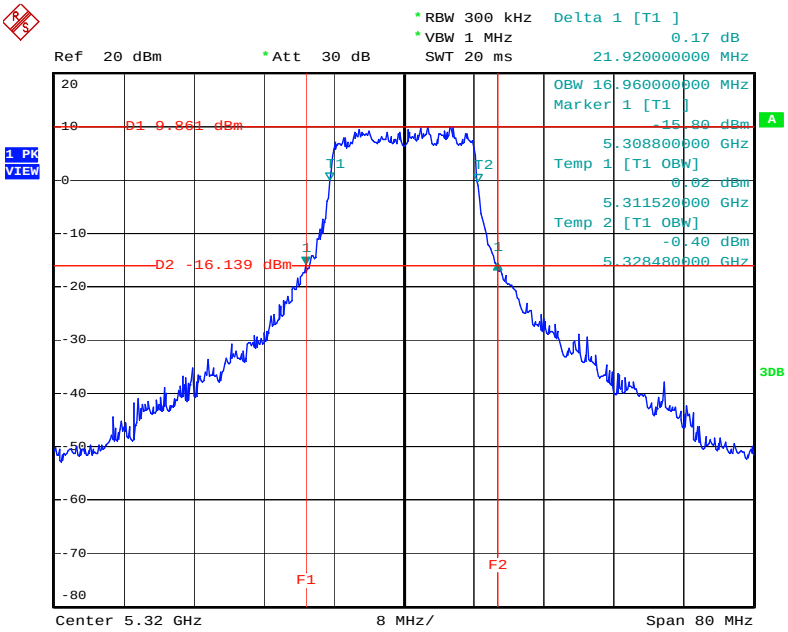
Date: 8.OCT.2008 19:31:51

26 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



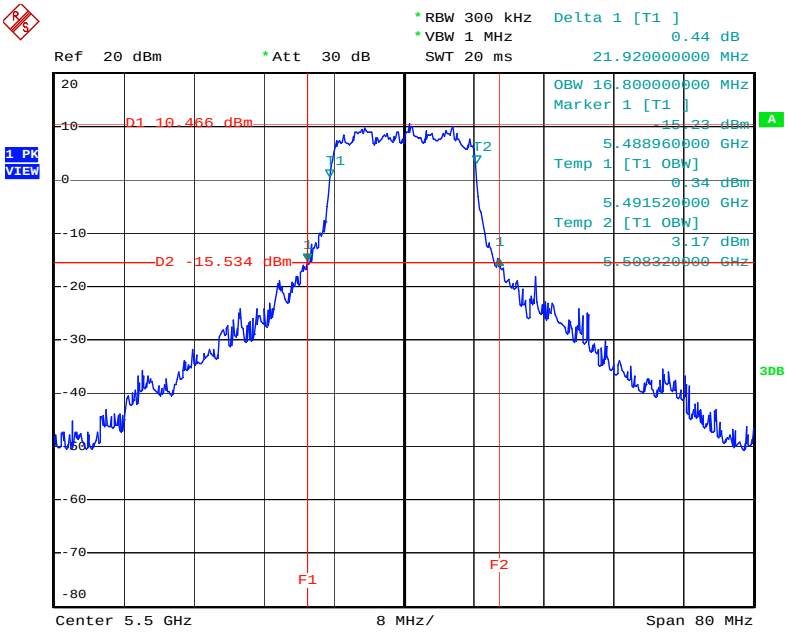
Date: 8.OCT.2008 19:37:01

26 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



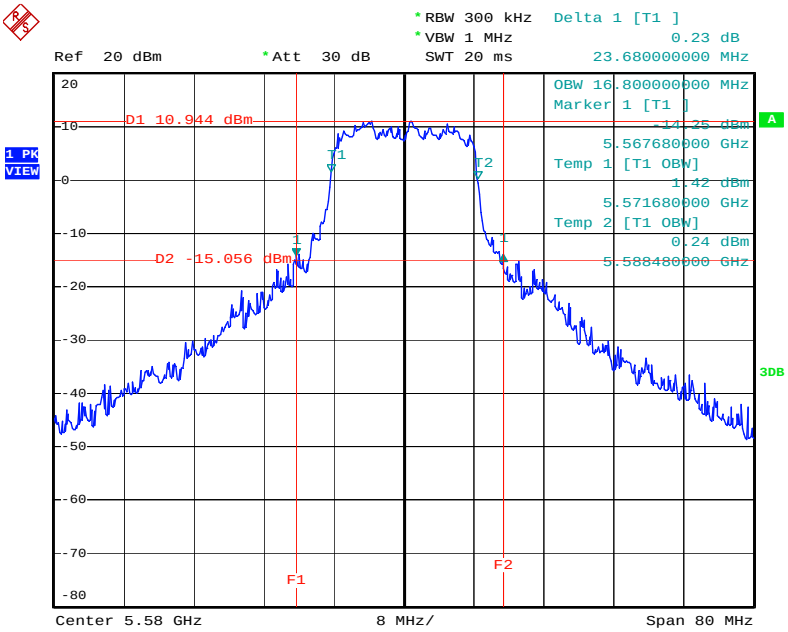
Date: 8.OCT.2008 19:39:53

26 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



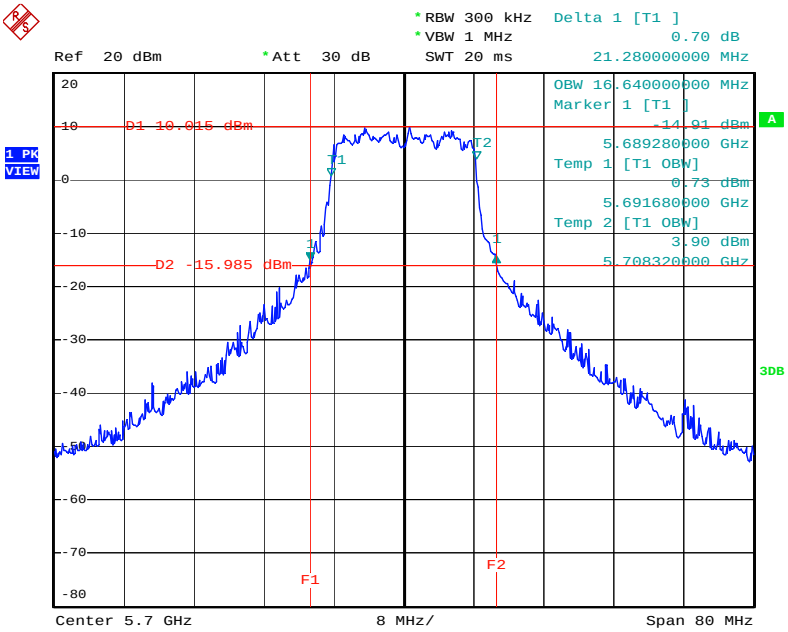
Date: 8.OCT.2008 19:43:04

26 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



Date: 8.OCT.2008 19:45:02

26 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5700 MHz



4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

For the band 5.15~5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B, where B is the 26 dB emissions bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power and power density from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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 dBm + 10log B. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power and power density from the intentional radiator 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 (30dBm) or 17 dBm + 10log B. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power and power density from the intentional radiator 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 and 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

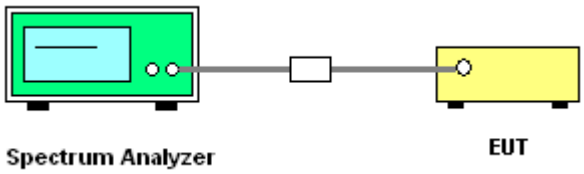
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz
VB	3000 kHz
Detector	PEAK
Trace	MAX HOLD
Sweep Time	Auto

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with FCC Public Notice DA 02-2138, August 30, 2002.
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	26℃	Humidity	56%
Test Engineer	Sam Chen	Configurations	Draft n

Configuration Draft n MCS8 20MHz Ant. A1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	18.66	24.00	Complies
60	5300 MHz	17.78	24.00	Complies
64	5320 MHz	15.95	24.00	Complies
100	5500 MHz	17.59	24.00	Complies
116	5580 MHz	18.53	24.00	Complies
140	5700 MHz	15.78	24.00	Complies

Configuration Draft n MCS8 20MHz Ant. A2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	18.21	24.00	Complies
60	5300 MHz	18.36	24.00	Complies
64	5320 MHz	16.22	24.00	Complies
100	5500 MHz	16.11	24.00	Complies
116	5580 MHz	18.32	24.00	Complies
140	5700 MHz	15.93	24.00	Complies

Configuration Draft n MCS8 20MHz Ant. A3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	18.00	24.00	Complies
60	5300 MHz	19.48	24.00	Complies
64	5320 MHz	17.36	24.00	Complies
100	5500 MHz	15.94	24.00	Complies
116	5580 MHz	18.43	24.00	Complies
140	5700 MHz	15.64	24.00	Complies

Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	23.07	24.00	Complies
60	5300 MHz	23.37	24.00	Complies
64	5320 MHz	21.33	24.00	Complies
100	5500 MHz	21.38	24.00	Complies
116	5580 MHz	23.20	24.00	Complies
140	5700 MHz	20.56	24.00	Complies

Configuration Draft n MCS8 40MHz Ant. A1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
54	5270 MHz	17.80	24.00	Complies
62	5310 MHz	12.86	24.00	Complies
102	5510MHz	16.29	24.00	Complies
110	5550 MHz	19.50	24.00	Complies
134	5670 MHz	18.74	24.00	Complies

Configuration Draft n MCS8 40MHz Ant. A2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
54	5270 MHz	17.54	24.00	Complies
62	5310 MHz	14.03	24.00	Complies
102	5510MHz	15.57	24.00	Complies
110	5550 MHz	18.36	24.00	Complies
134	5670 MHz	18.44	24.00	Complies

Configuration Draft n MCS8 40MHz Ant. A3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
54	5270 MHz	17.28	24.00	Complies
62	5310 MHz	14.14	24.00	Complies
102	5510MHz	15.33	24.00	Complies
110	5550 MHz	18.62	24.00	Complies
134	5670 MHz	18.71	24.00	Complies

Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
54	5270 MHz	22.32	24.00	Complies
62	5310 MHz	18.49	24.00	Complies
102	5510MHz	20.52	24.00	Complies
110	5550 MHz	23.63	24.00	Complies
134	5670 MHz	23.40	24.00	Complies

Temperature	26℃	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a

Configuration IEEE 802.11a Ant. A1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	18.07	24.00	Complies
60	5300 MHz	17.51	24.00	Complies
64	5320 MHz	15.85	24.00	Complies
100	5500 MHz	18.49	24.00	Complies
116	5580 MHz	18.50	24.00	Complies
140	5700 MHz	17.50	24.00	Complies

Configuration IEEE 802.11a Ant. A2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	18.23	24.00	Complies
60	5300 MHz	18.26	24.00	Complies
64	5320 MHz	16.47	24.00	Complies
100	5500 MHz	17.12	24.00	Complies
116	5580 MHz	18.23	24.00	Complies
140	5700 MHz	16.86	24.00	Complies

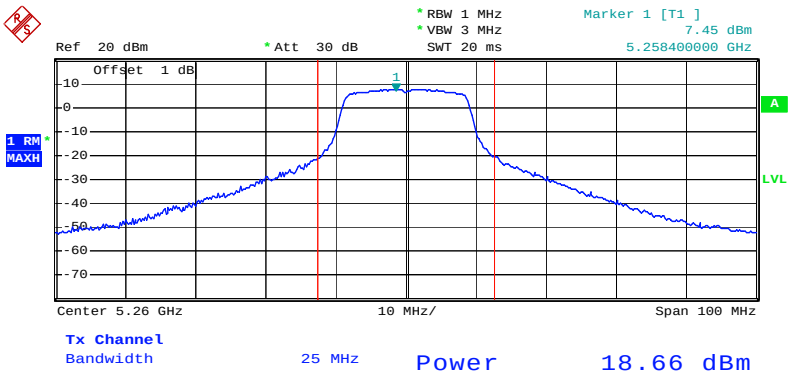
Configuration IEEE 802.11a Ant. A3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	18.02	24.00	Complies
60	5300 MHz	18.74	24.00	Complies
64	5320 MHz	17.30	24.00	Complies
100	5500 MHz	16.94	24.00	Complies
116	5580 MHz	18.33	24.00	Complies
140	5700 MHz	16.84	24.00	Complies

Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3

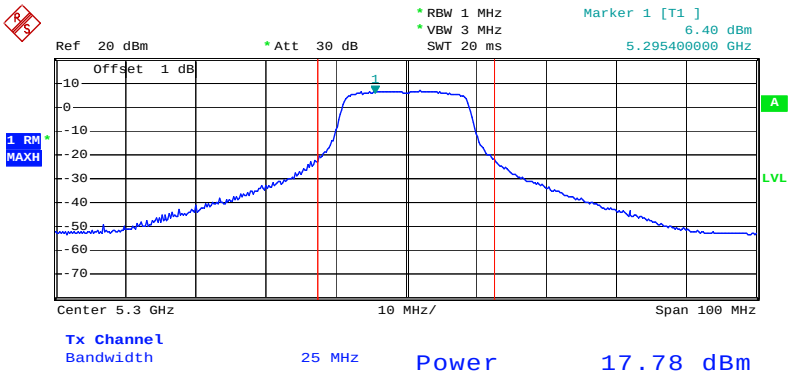
Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	22.88	24.00	Complies
60	5300 MHz	22.97	24.00	Complies
64	5320 MHz	21.35	24.00	Complies
100	5500 MHz	22.34	24.00	Complies
116	5580 MHz	23.13	24.00	Complies
140	5700 MHz	21.85	24.00	Complies

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A1 / 5260 MHz



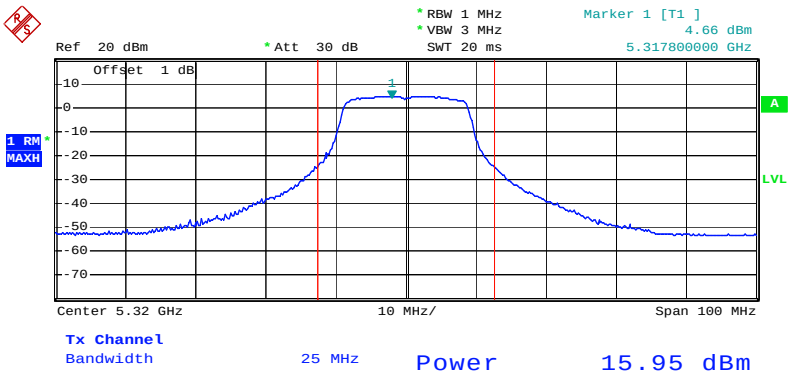
Date: 8.OCT.2008 19:43:55

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A1 / 5300 MHz



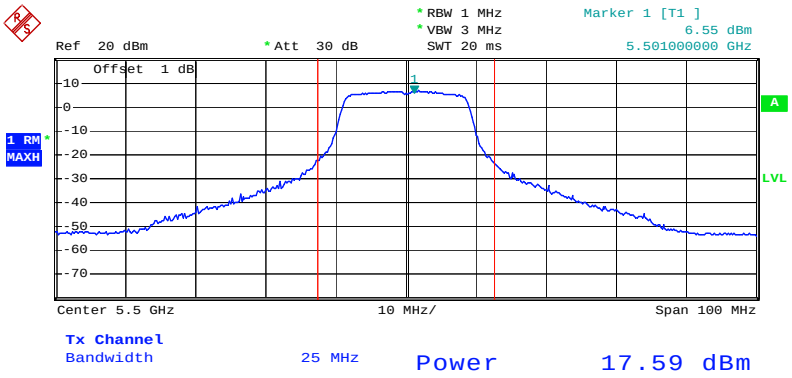
Date: 8.OCT.2008 20:02:15

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A1 / 5320 MHz



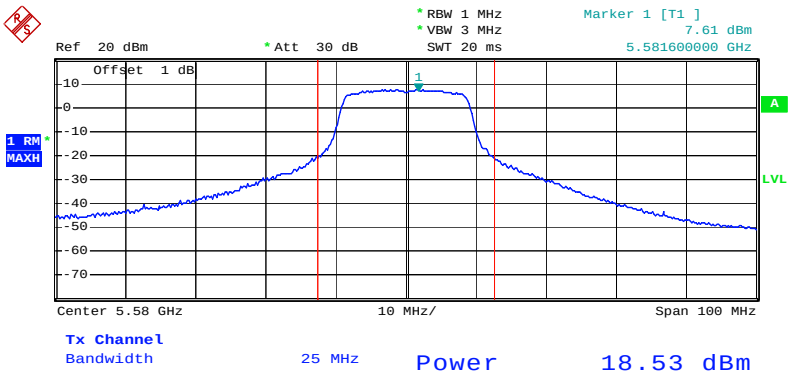
Date: 8.OCT.2008 20:03:21

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A1 / 5500 MHz



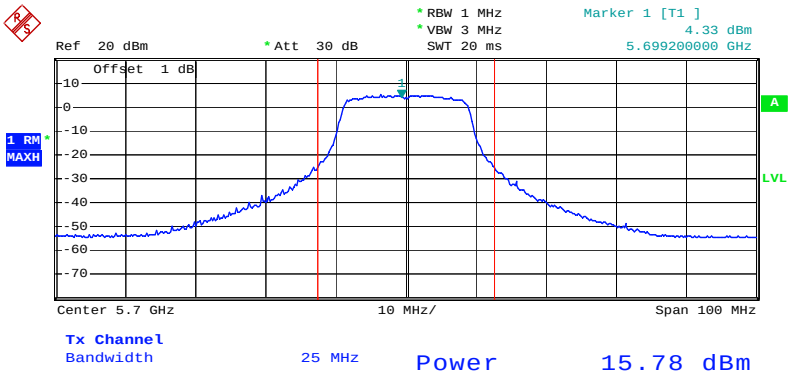
Date: 8.OCT.2008 20:08:15

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A1 / 5580 MHz



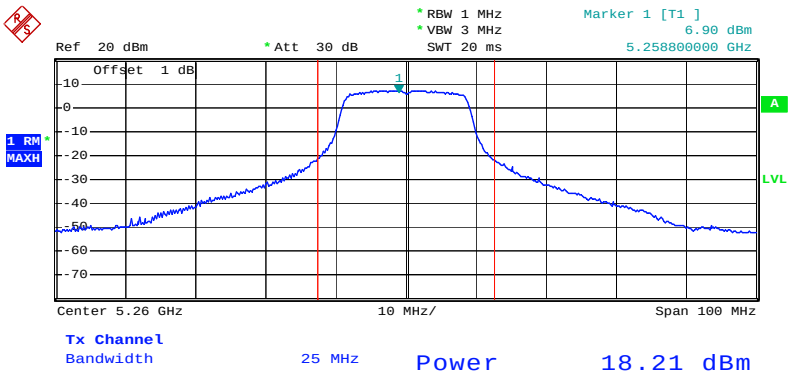
Date: 8.OCT.2008 20:10:17

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A1 / 5700 MHz



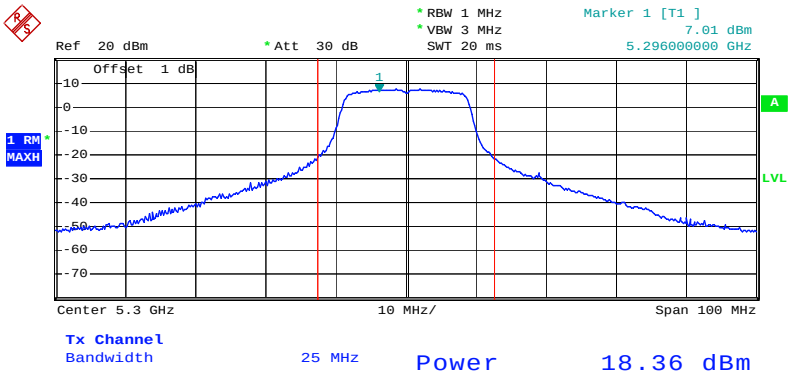
Date: 8.OCT.2008 20:15:48

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A2 / 5260 MHz



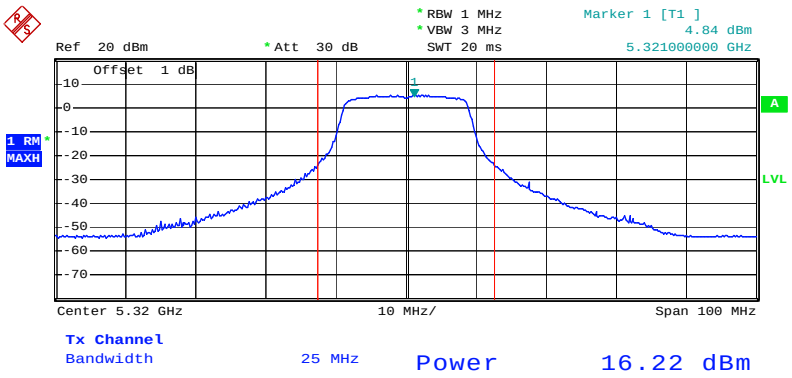
Date: 8.OCT.2008 19:44:43

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A2 / 5300 MHz



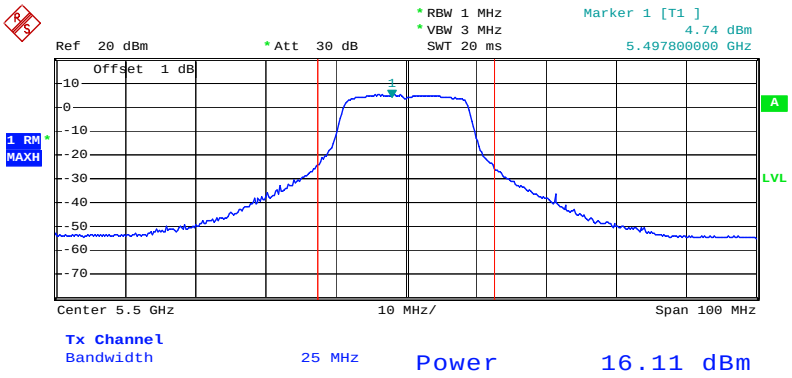
Date: 8.OCT.2008 20:00:58

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A2 / 5320 MHz



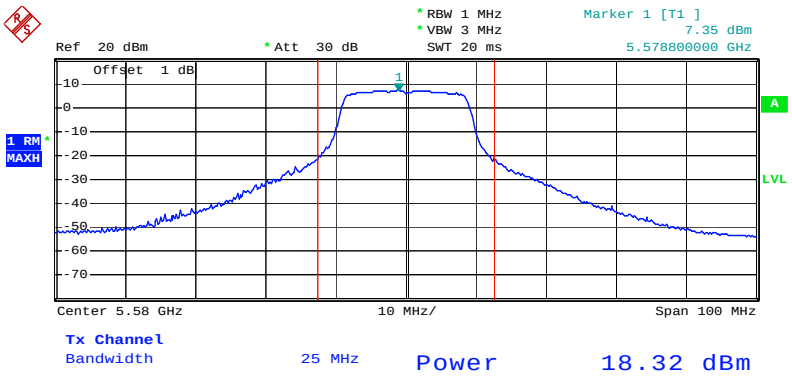
Date: 8.OCT.2008 20:04:34

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A2 / 5500 MHz



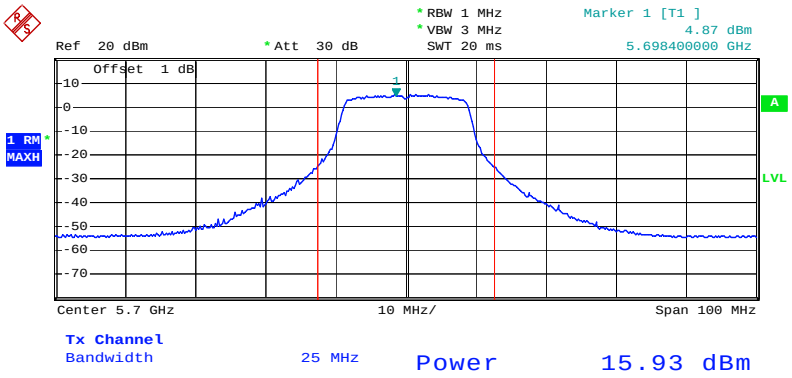
Date: 8.OCT.2008 20:07:09

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A2 / 5580 MHz



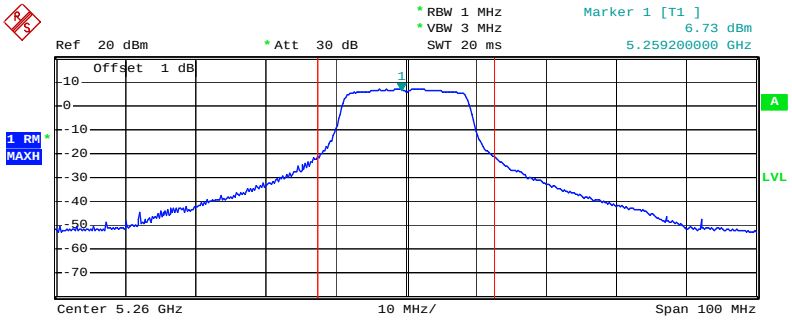
Date: 8.OCT.2008 20:11:19

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A2 / 5700 MHz



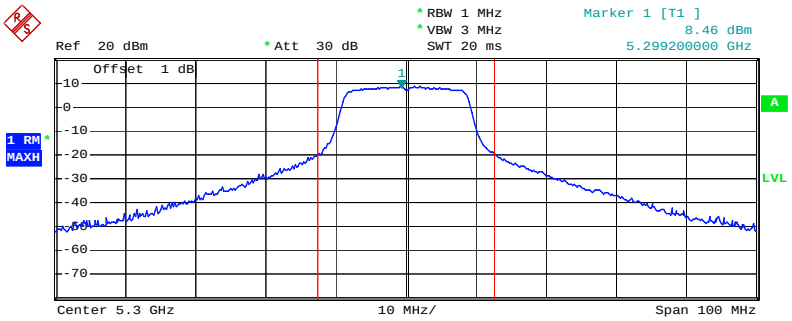
Date: 8.OCT.2008 20:14:25

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A3 / 5260 MHz



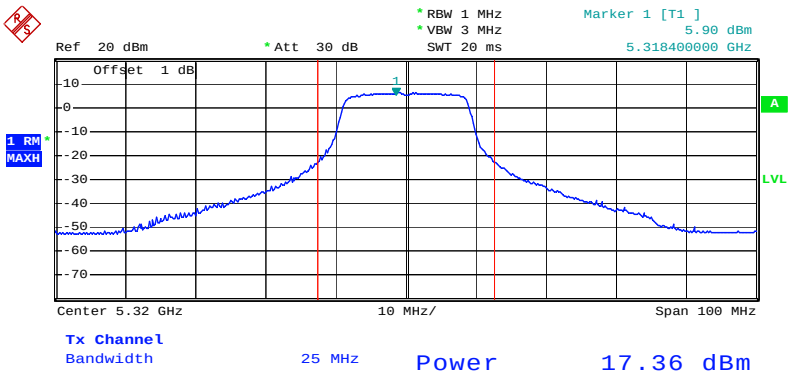
Date: 8.OCT.2008 19:45:56

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A3 / 5300 MHz



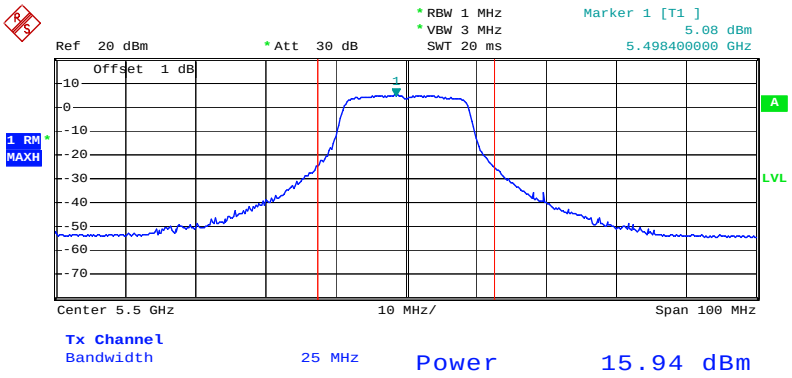
Date: 8.OCT.2008 19:59:34

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A3 / 5320 MHz



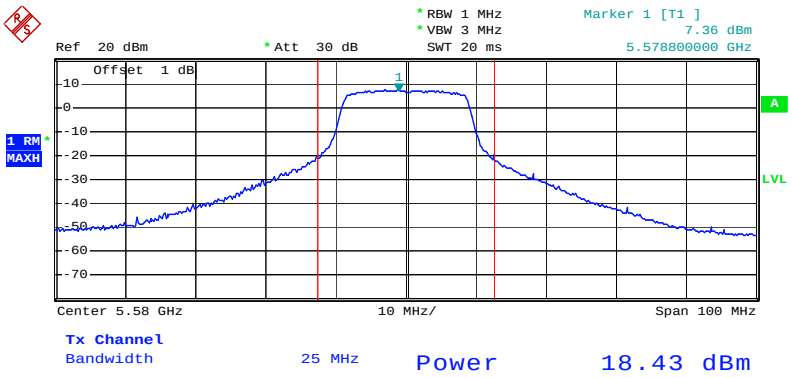
Date: 8.OCT.2008 20:05:12

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A3 / 5500 MHz



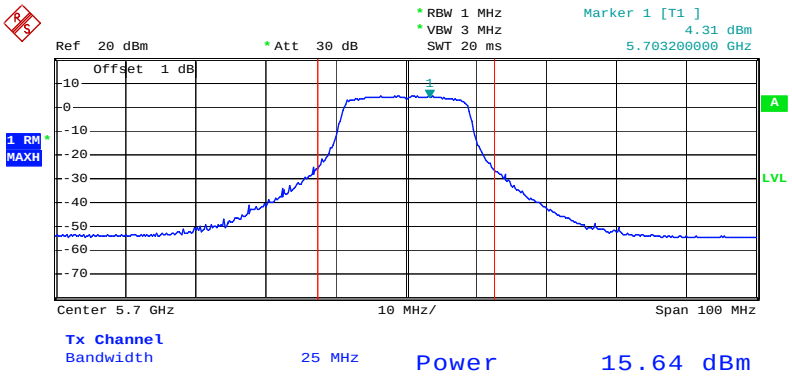
Date: 8.OCT.2008 20:06:23

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A3 / 5580 MHz



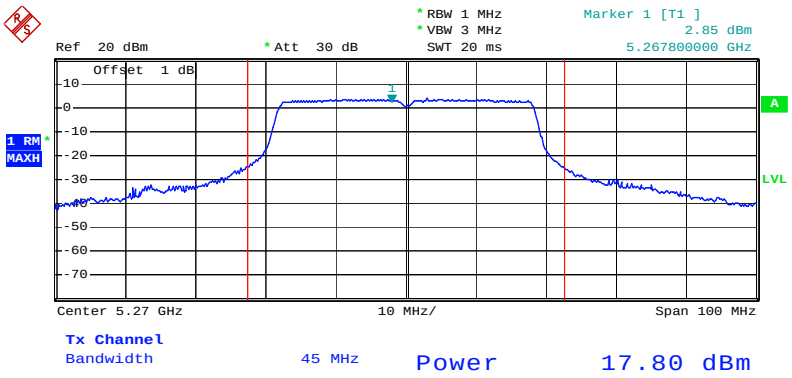
Date: 8.OCT.2008 20:12:11

Conducted Output Power Plot on Configuration Draft n MCS8 20MHz Ant. A3 / 5700 MHz



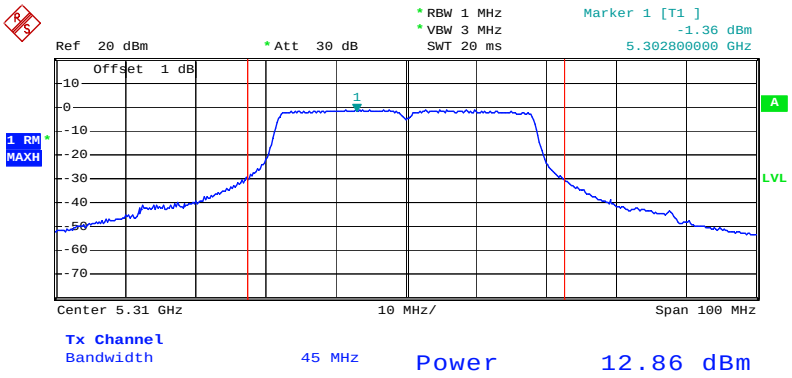
Date: 8.OCT.2008 20:13:18

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A1 / 5270 MHz



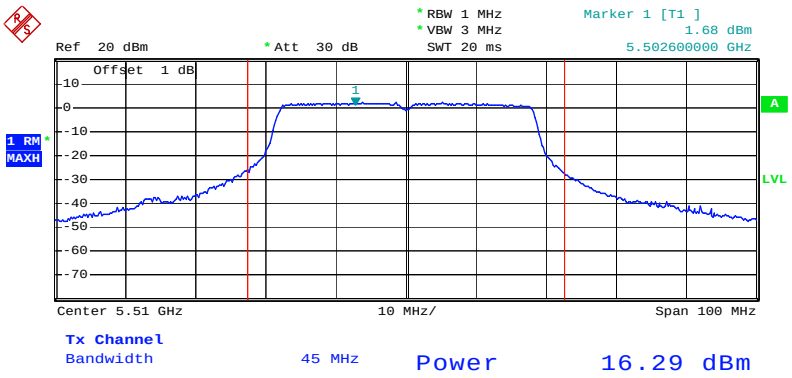
Date: 8.OCT.2008 20:40:25

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A1 / 5310 MHz



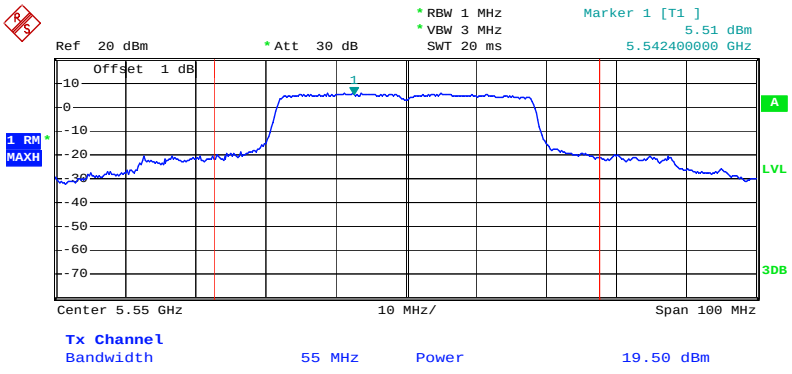
Date: 8.OCT.2008 20:36:22

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A1 / 5510MHz



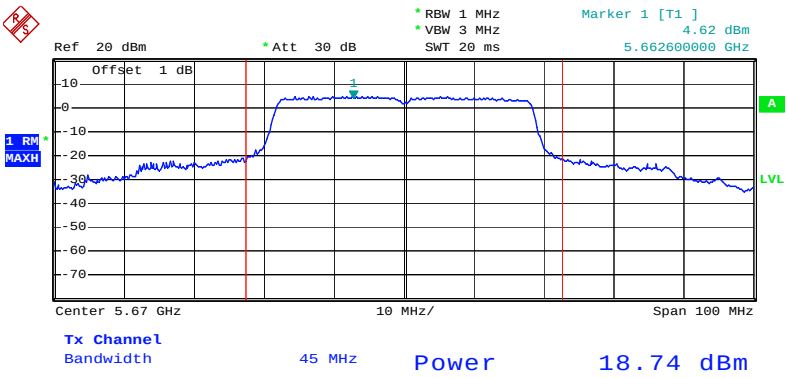
Date: 8.OCT.2008 20:34:51

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A1 / 5550 MHz



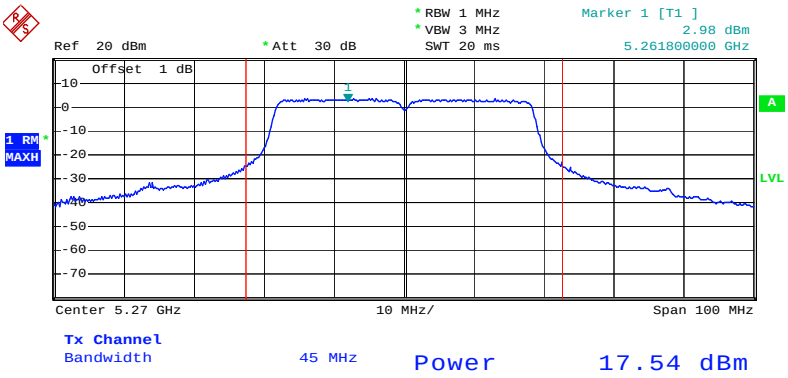
Date: 8.OCT.2008 20:40:53

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A1 / 5670 MHz



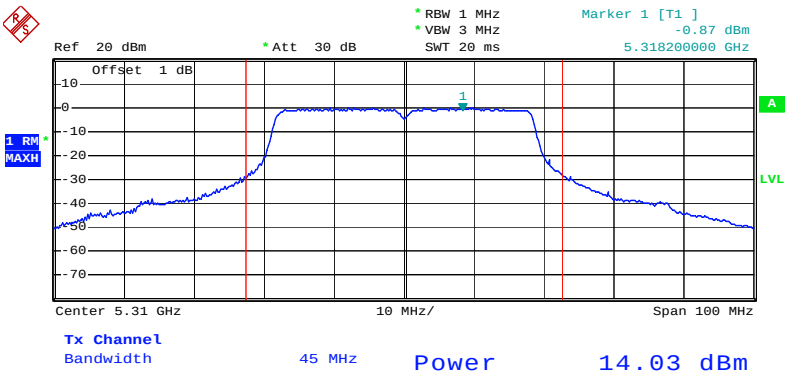
Date: 8.OCT.2008 20:17:13

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A2 / 5270 MHz



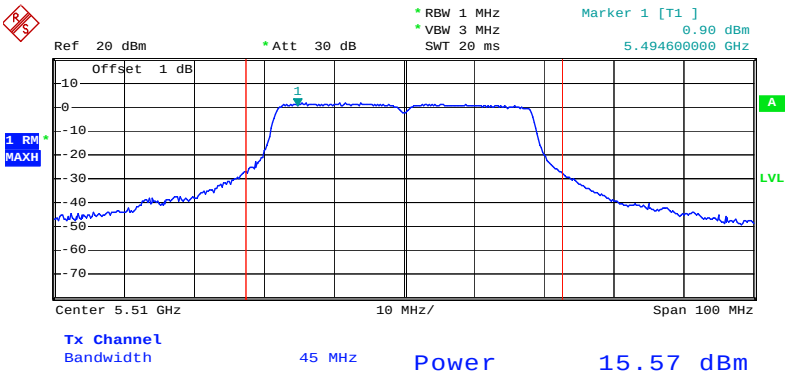
Date: 8.OCT.2008 20:39:48

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A2 / 5310 MHz



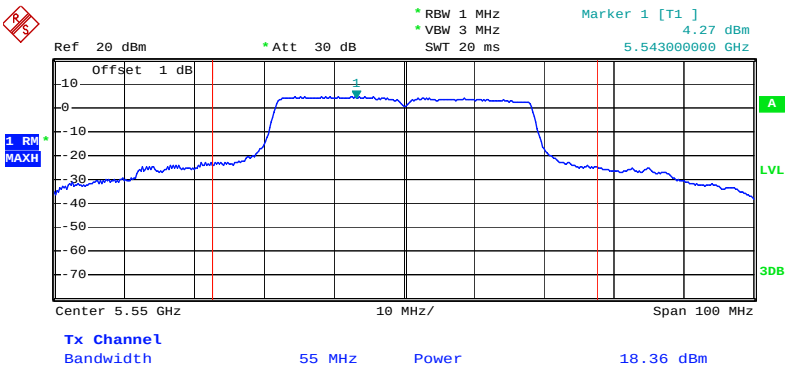
Date: 8.OCT.2008 20:37:09

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A2 / 5510MHz



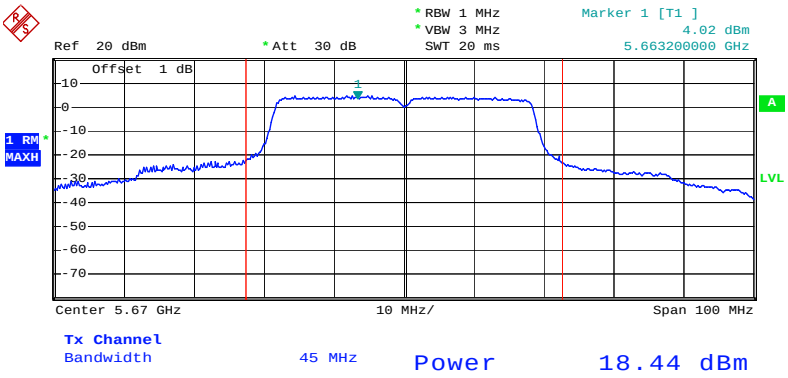
Date: 8.OCT.2008 20:33:51

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A2 / 5550 MHz



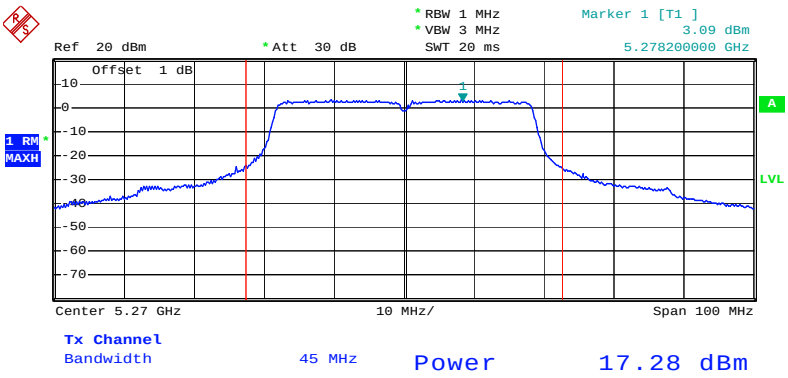
Date: 8.OCT.2008 20:39:19

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A2 / 5670 MHz



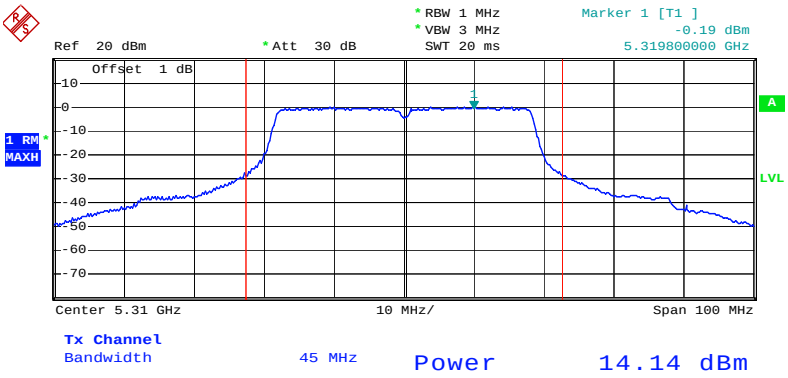
Date: 8.OCT.2008 20:18:05

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A3 / 5270 MHz



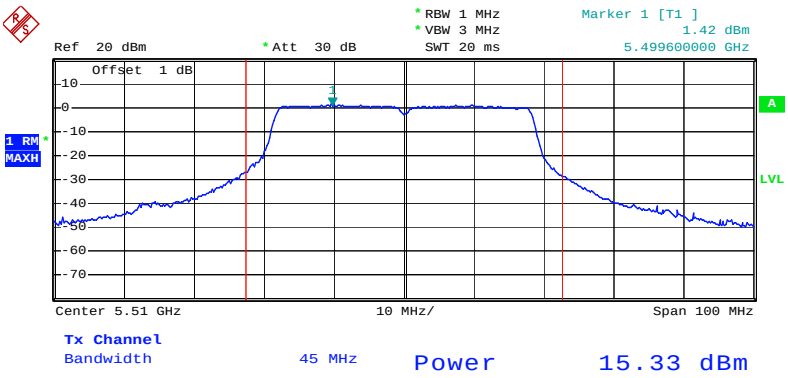
Date: 8.OCT.2008 20:38:57

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A3 / 5310 MHz



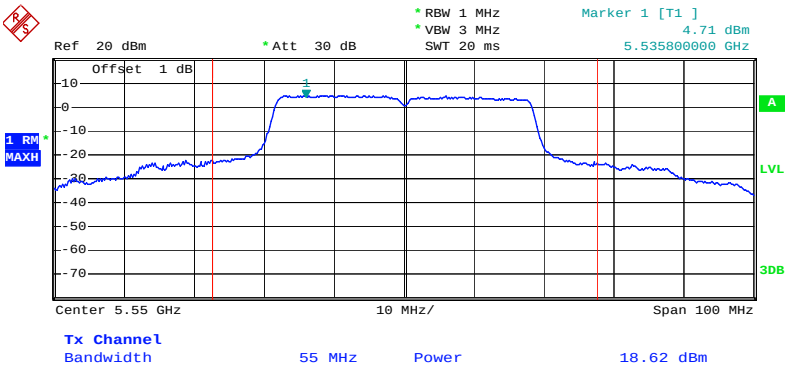
Date: 8.OCT.2008 20:37:45

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A3 / 5510MHz



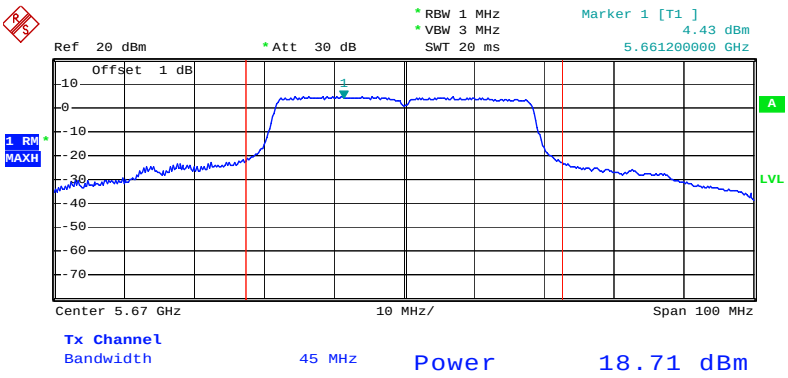
Date: 8.OCT.2008 20:33:08

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A3 / 5550 MHz



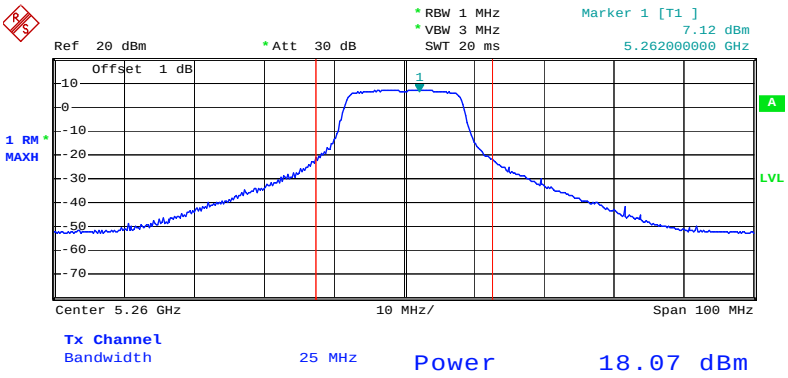
Date: 8.OCT.2008 20:40:09

Conducted Output Power Plot on Configuration Draft n MCS8 40MHz Ant. A3 / 5670 MHz



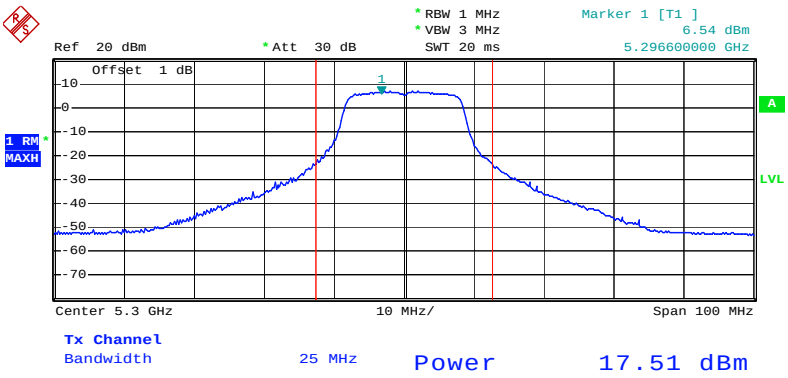
Date: 8.OCT.2008 20:19:04

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A1 / 5260 MHz



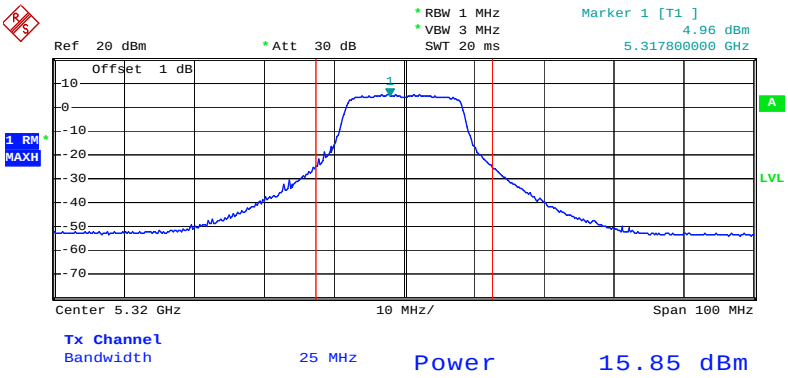
Date: 8.OCT.2008 19:06:47

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A1 / 5300 MHz



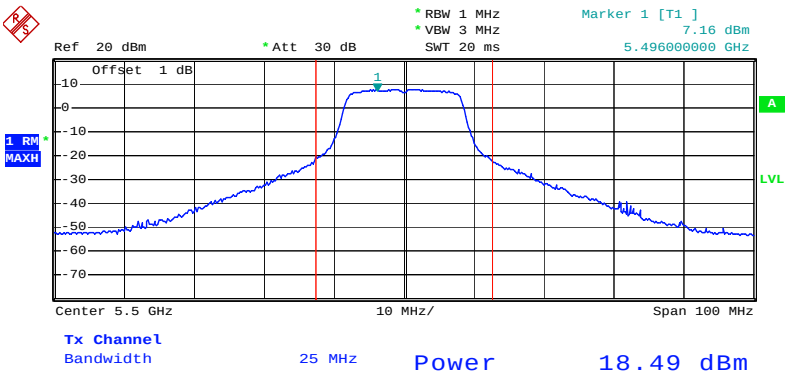
Date: 8.OCT.2008 19:10:58

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A1 / 5320 MHz



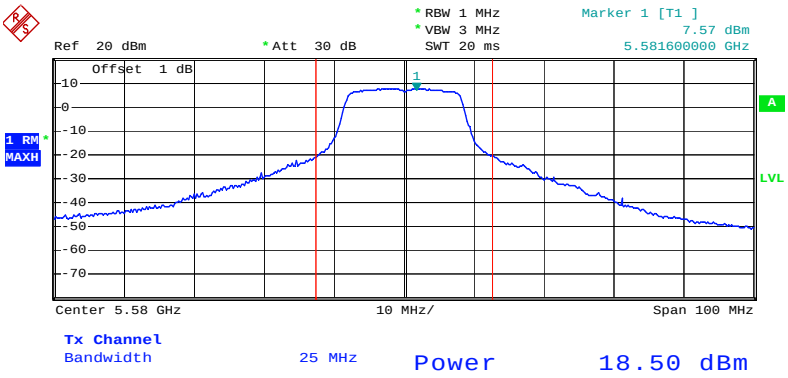
Date: 8.OCT.2008 19:13:22

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A1 / 5500 MHz



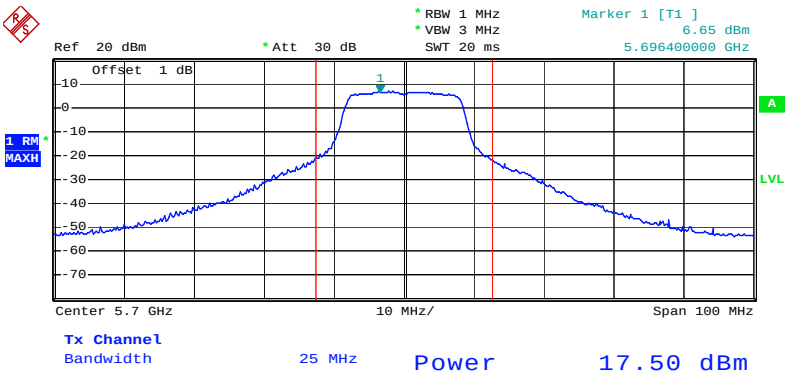
Date: 8.OCT.2008 19:31:00

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A1 / 5580 MHz



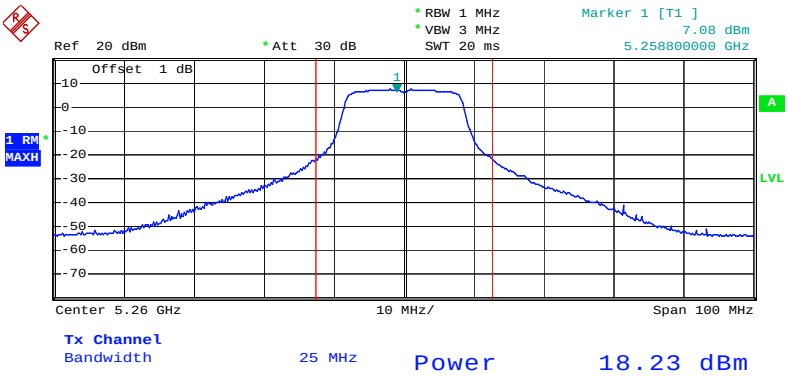
Date: 8.OCT.2008 19:56:45

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A1 / 5700 MHz



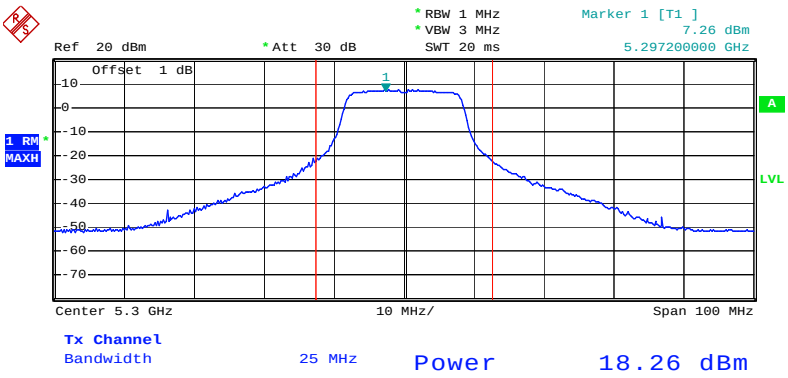
Date: 8.OCT.2008 19:42:19

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A2 / 5260 MHz



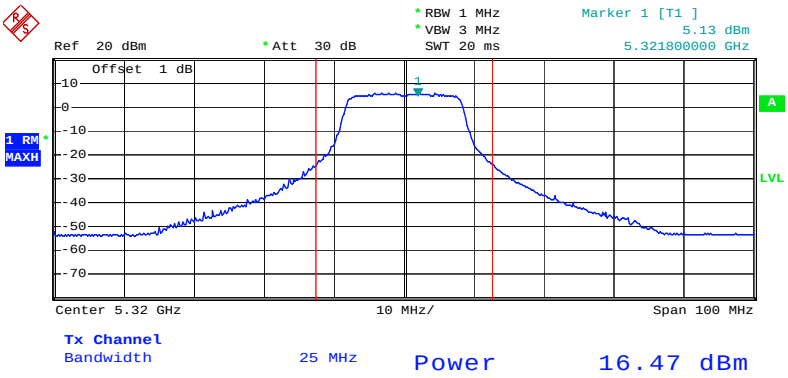
Date: 8.OCT.2008 19:07:46

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A2 / 5300 MHz



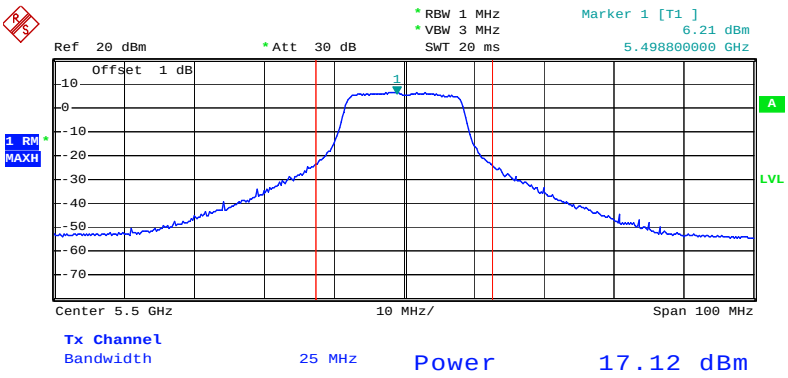
Date: 8.OCT.2008 19:10:18

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A2 / 5320 MHz



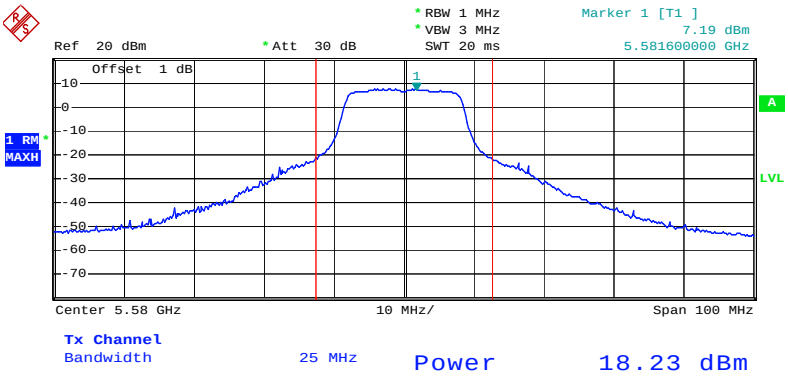
Date: 8.OCT.2008 19:25:05

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A2 / 5500 MHz



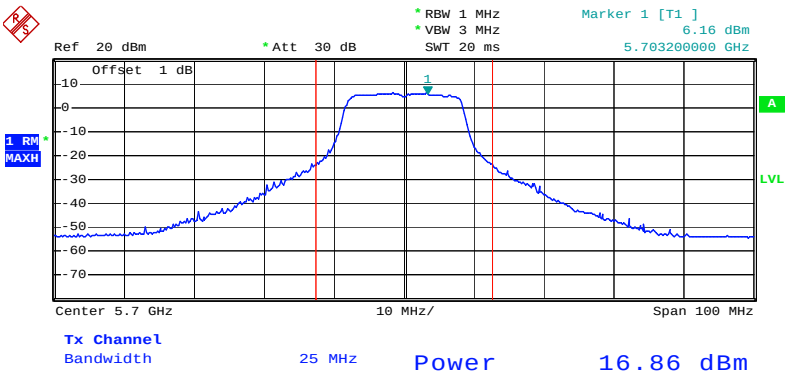
Date: 8.OCT.2008 19:30:08

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A2 / 5580 MHz



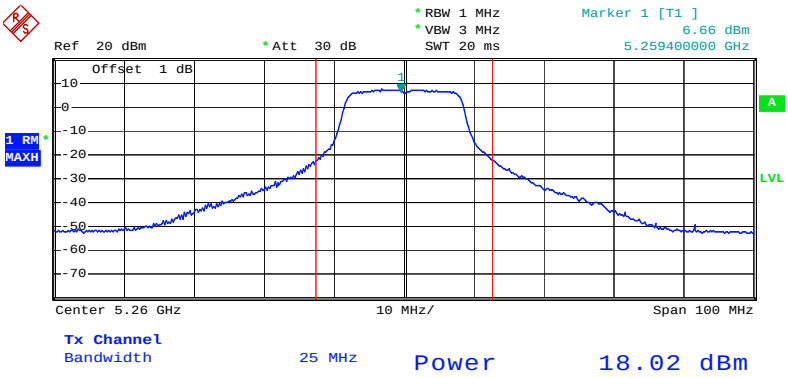
Date: 8.OCT.2008 19:53:30

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A2 / 5700 MHz



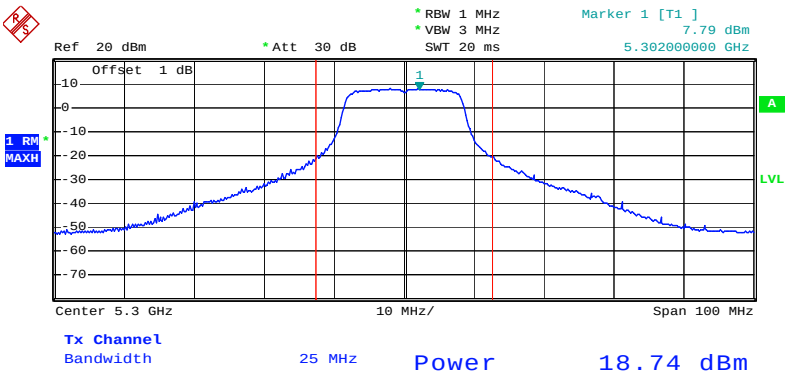
Date: 8.OCT.2008 19:39:57

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A3 / 5260 MHz



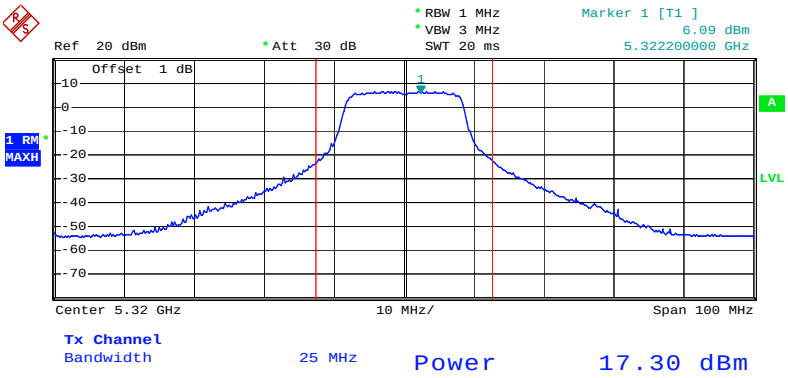
Date: 8.OCT.2008 19:08:35

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A3 / 5300 MHz



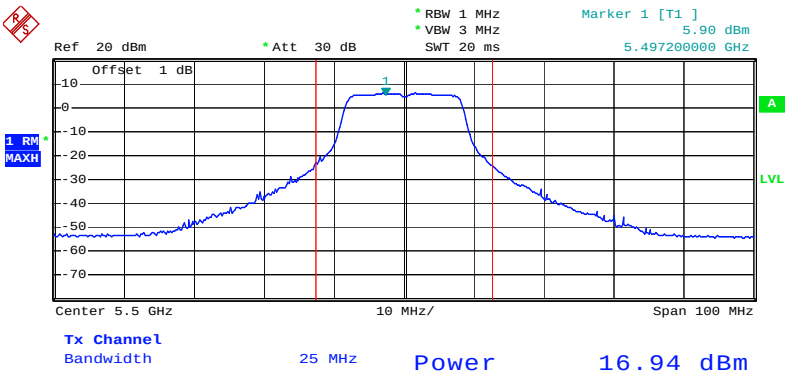
Date: 8.OCT.2008 19:09:41

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A3 / 5320 MHz



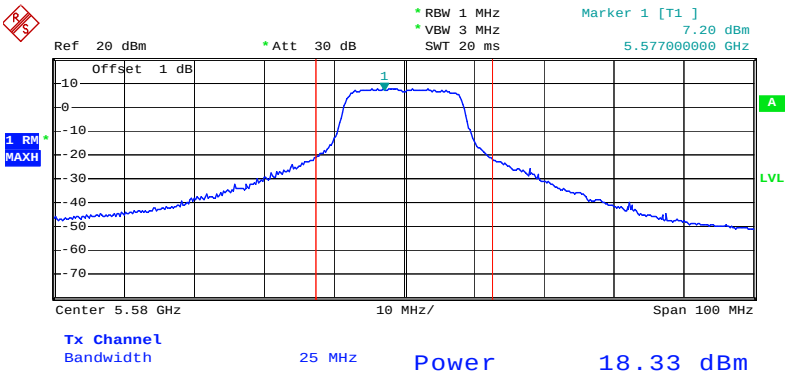
Date: 8.OCT.2008 19:26:06

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A3 / 5500 MHz



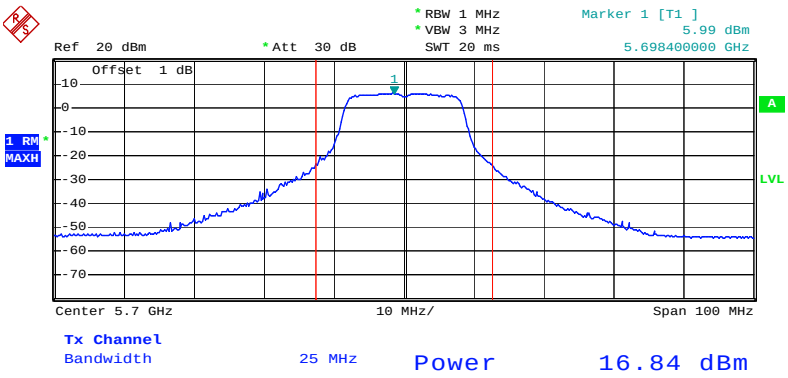
Date: 8.OCT.2008 19:28:21

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A3 / 5580 MHz



Date: 8.OCT.2008 19:57:54

Conducted Output Power Plot on Configuration IEEE 802.11a Ant. A3 / 5700 MHz



Date: 8.OCT.2008 19:38:35

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)
5.15~5.25 GHz	4
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	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set RBW of spectrum analyzer to 1000kHz and VBW to 3000kHz. Set Detector to Peak, Trace to Max Hold. Mark the frequency with maximum peak power as the center of the display of the spectrum.
3. Measuring multiple antennas, the connector is required to link with spectrum analyzer through a combiner.

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	26℃	Humidity	56%
Test Engineer	Sam Chen	Configurations	Draft n

Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	6.62	11.00	Complies
60	5300 MHz	8.01	11.00	Complies
64	5320 MHz	5.93	11.00	Complies
100	5500 MHz	5.14	11.00	Complies
116	5580 MHz	7.63	11.00	Complies
140	5700 MHz	3.85	11.00	Complies

Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3

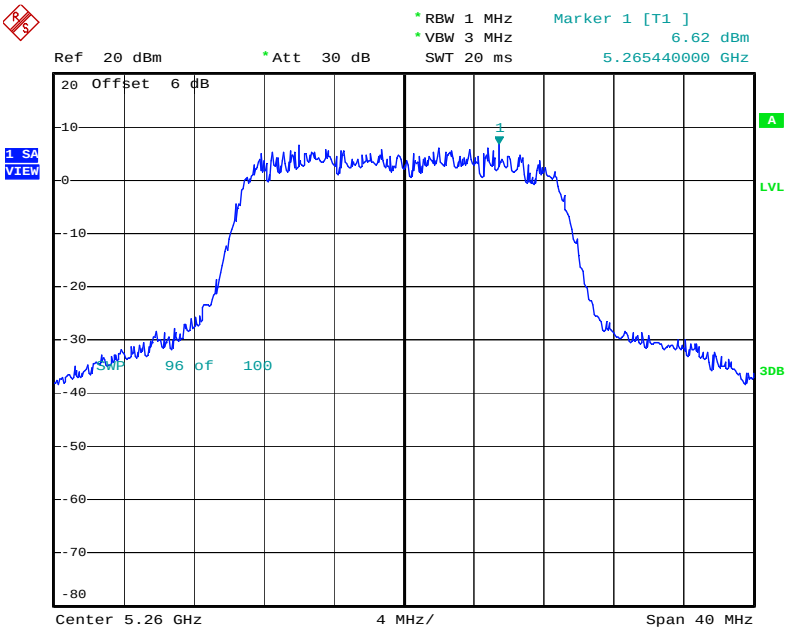
Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
54	5270 MHz	-0.44	11.00	Complies
62	5310 MHz	-2.48	11.00	Complies
102	5510MHz	-1.35	11.00	Complies
110	5550 MHz	4.19	11.00	Complies
134	5670 MHz	3.52	11.00	Complies

Temperature	26℃	Humidity	56%
Test Engineer	Sam Lee	Configurations	802.11a

Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3

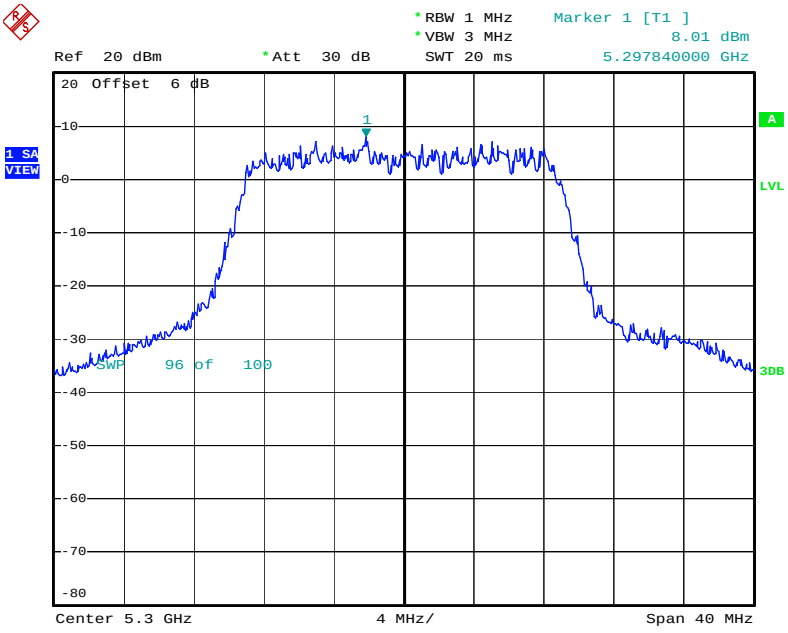
Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
52	5260 MHz	7.45	11.00	Complies
60	5300 MHz	9.11	11.00	Complies
64	5320 MHz	6.68	11.00	Complies
100	5500 MHz	6.47	11.00	Complies
116	5580 MHz	7.90	11.00	Complies
140	5700 MHz	6.24	11.00	Complies

Power Density Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



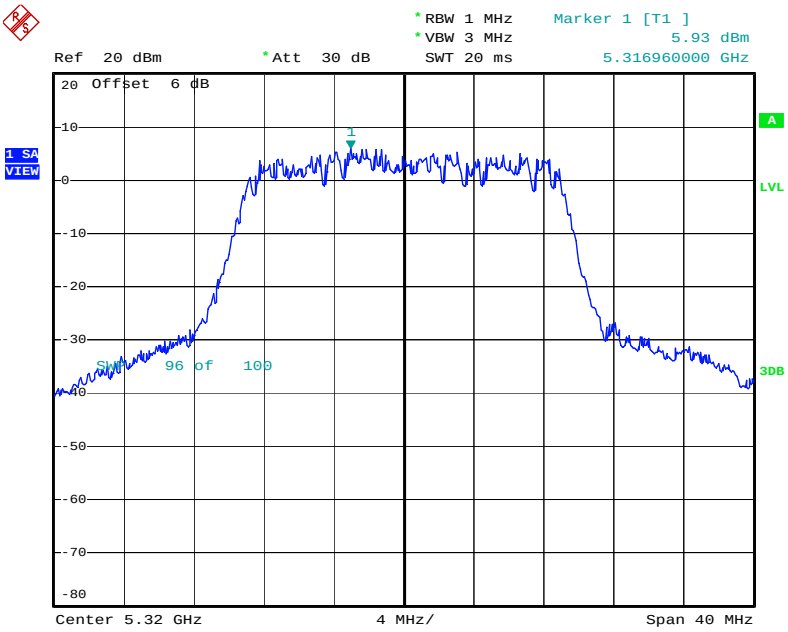
Date: 8.OCT.2008 20:02:02

Power Density Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



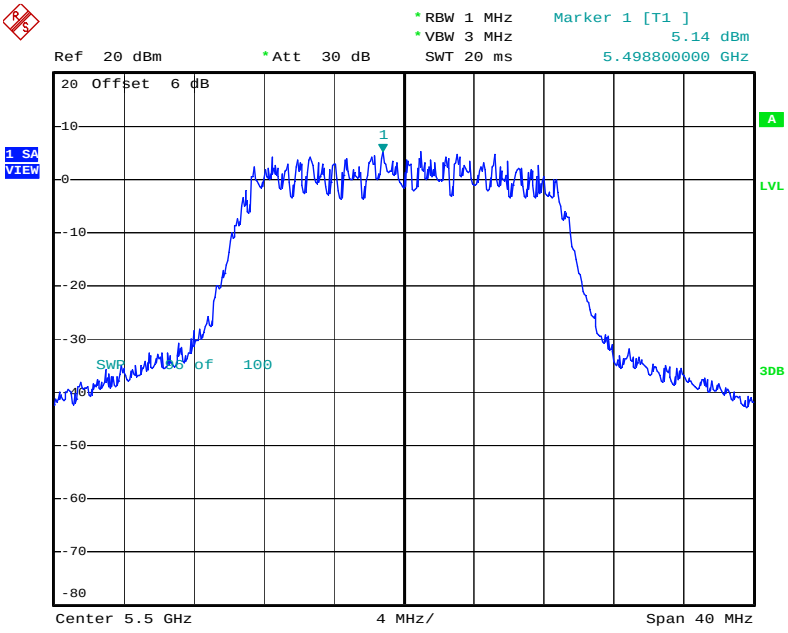
Date: 8.OCT.2008 19:59:45

Power Density Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



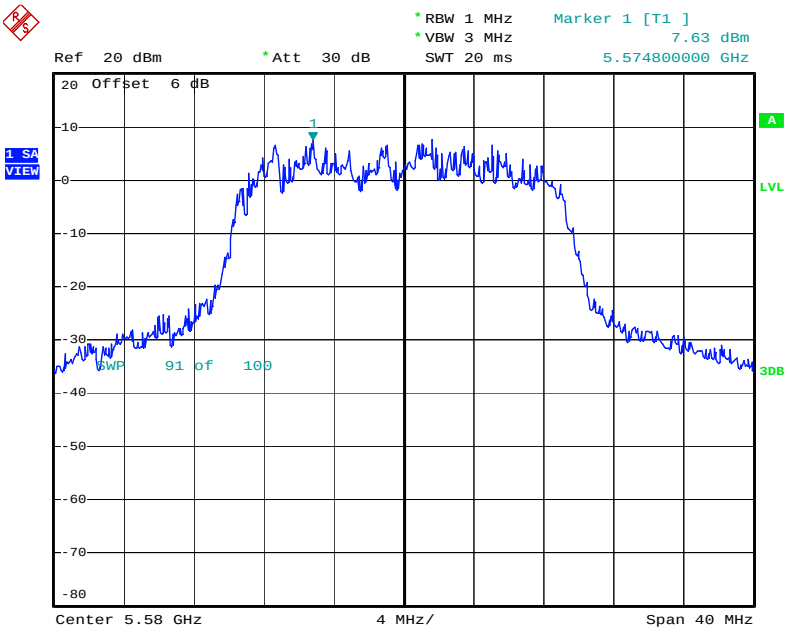
Date: 8.OCT.2008 19:55:17

Power Density Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



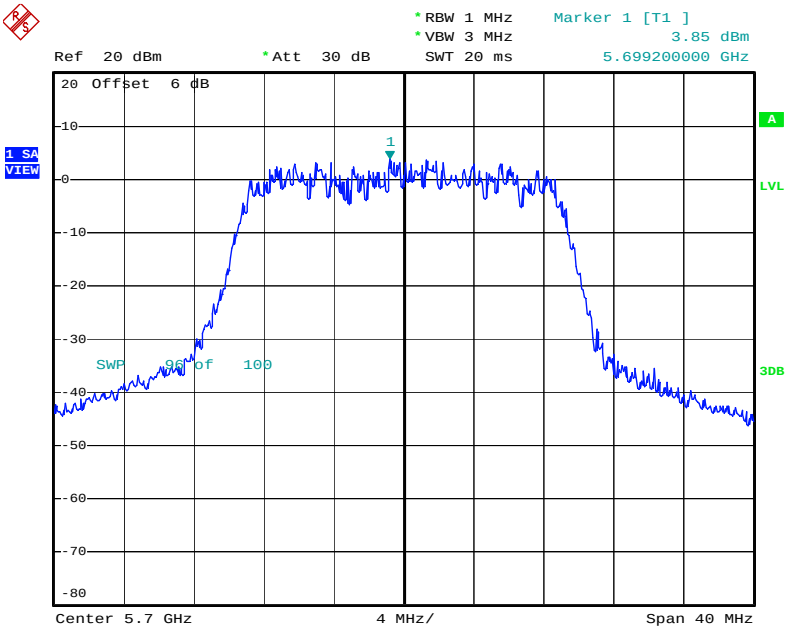
Date: 8.OCT.2008 19:53:04

Power Density Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



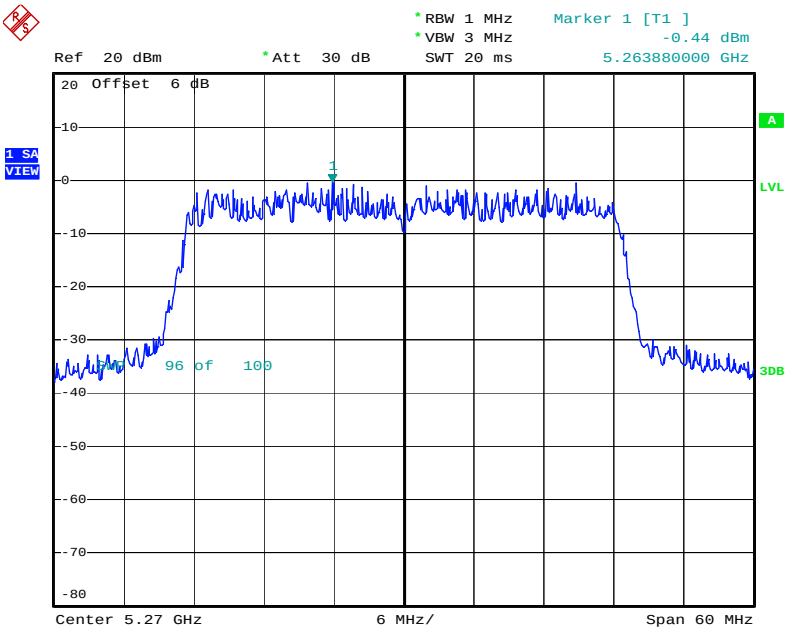
Date: 8.OCT.2008 19:51:13

Power Density Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5700 MHz



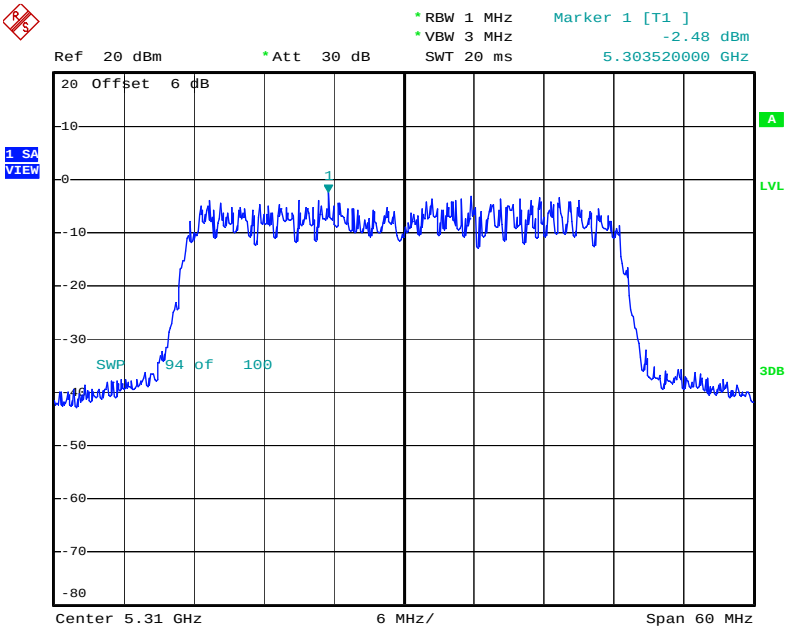
Date: 8.OCT.2008 19:49:01

Power Density Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5270 MHz



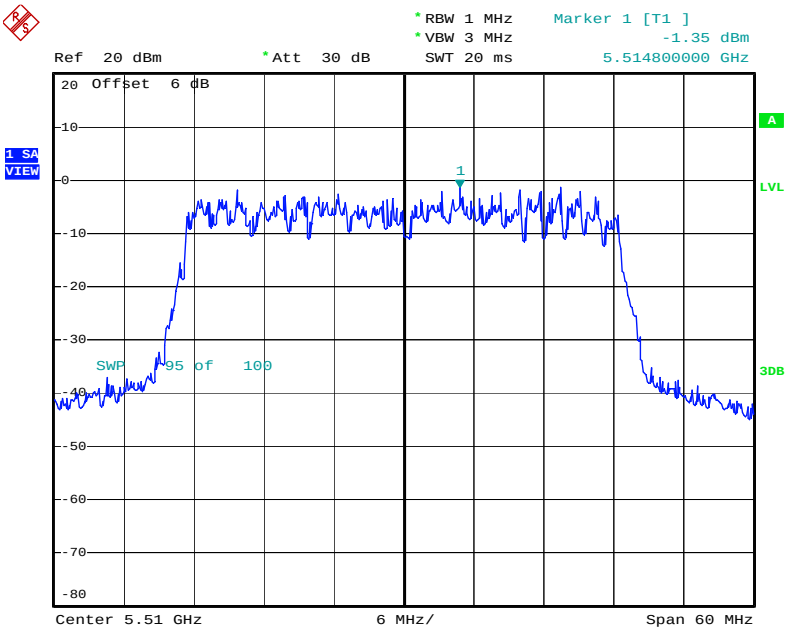
Date: 8.OCT.2008 20:07:27

Power Density Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5310 MHz



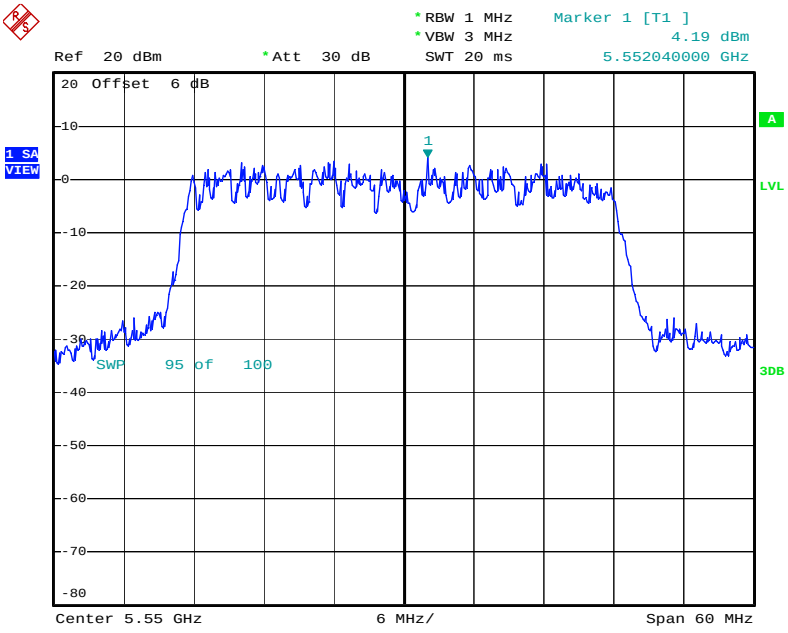
Date: 8.OCT.2008 20:09:42

Power Density Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5510MHz



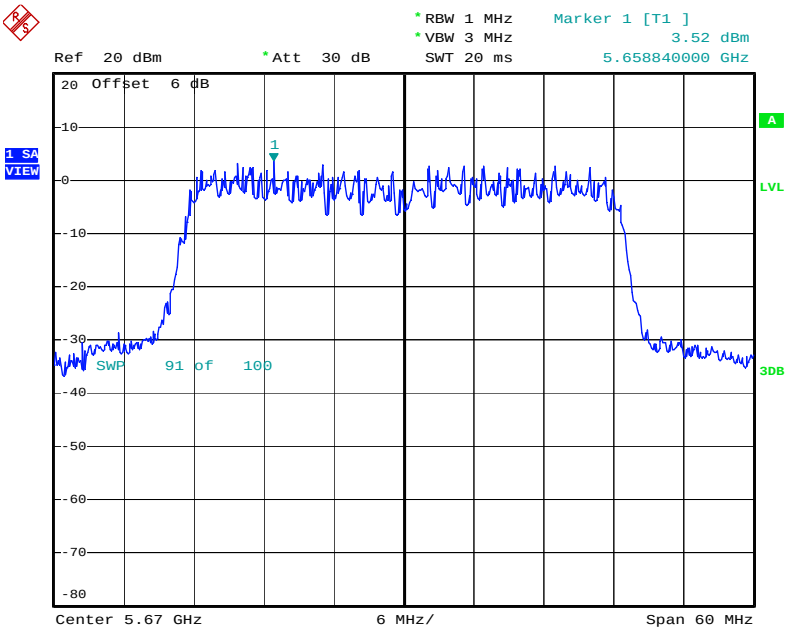
Date: 8.OCT.2008 20:11:10

Power Density Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5550 MHz



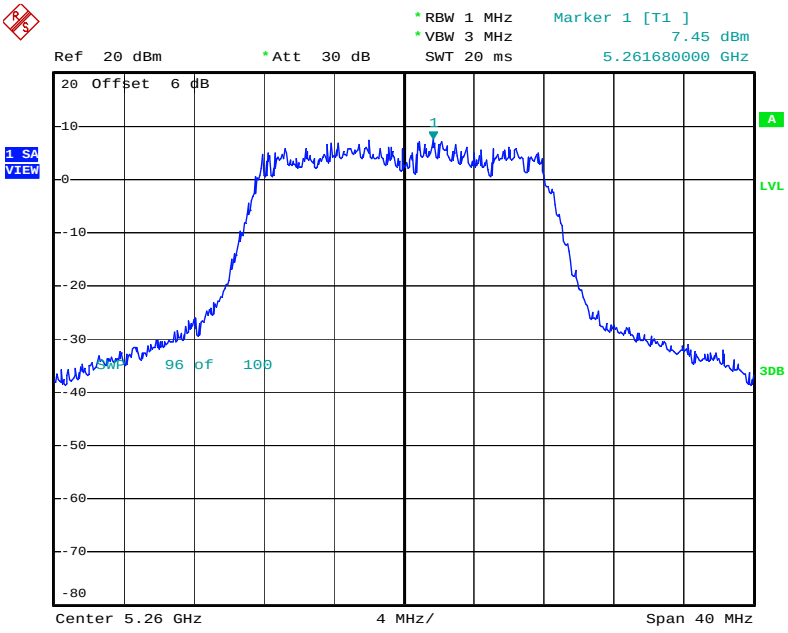
Date: 8.OCT.2008 20:17:06

Power Density Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5670 MHz



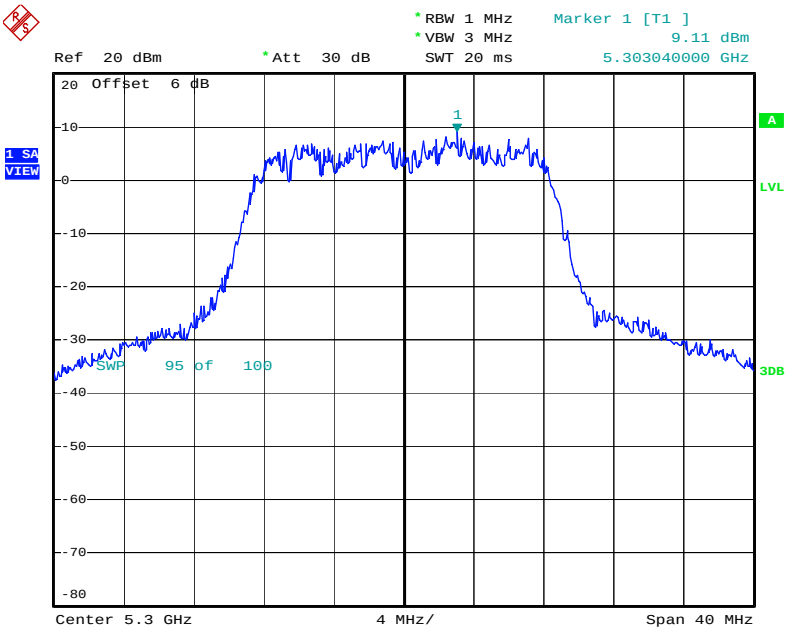
Date: 8.OCT.2008 20:18:45

Power Density Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



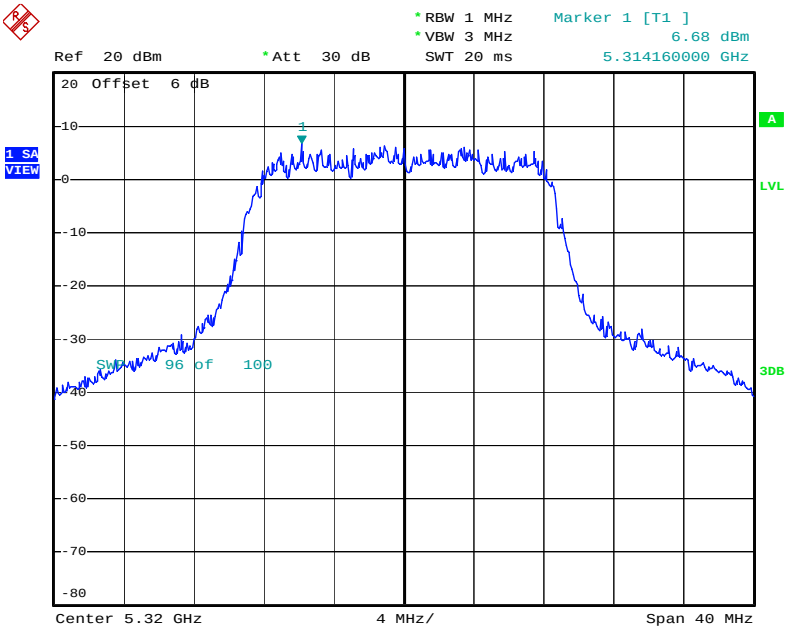
Date: 8.OCT.2008 19:31:57

Power Density Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



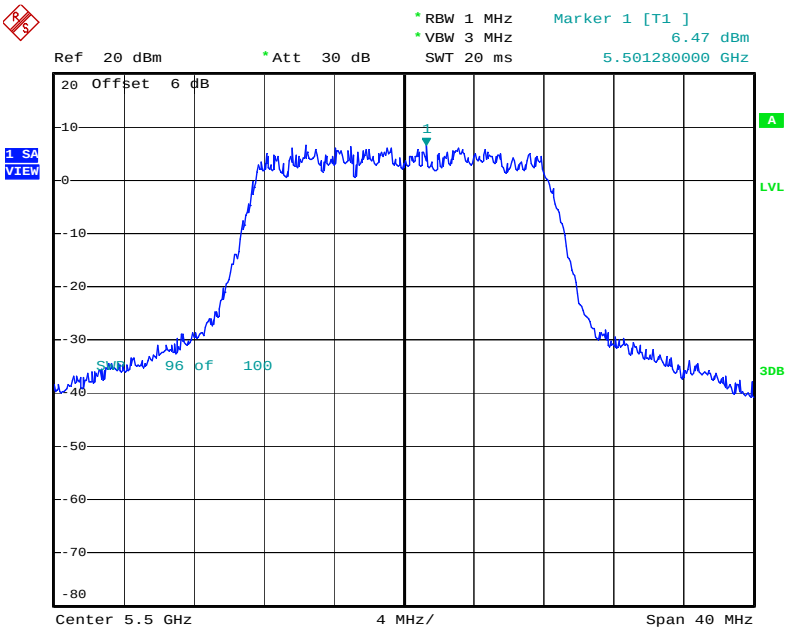
Date: 8.OCT.2008 19:37:07

Power Density Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



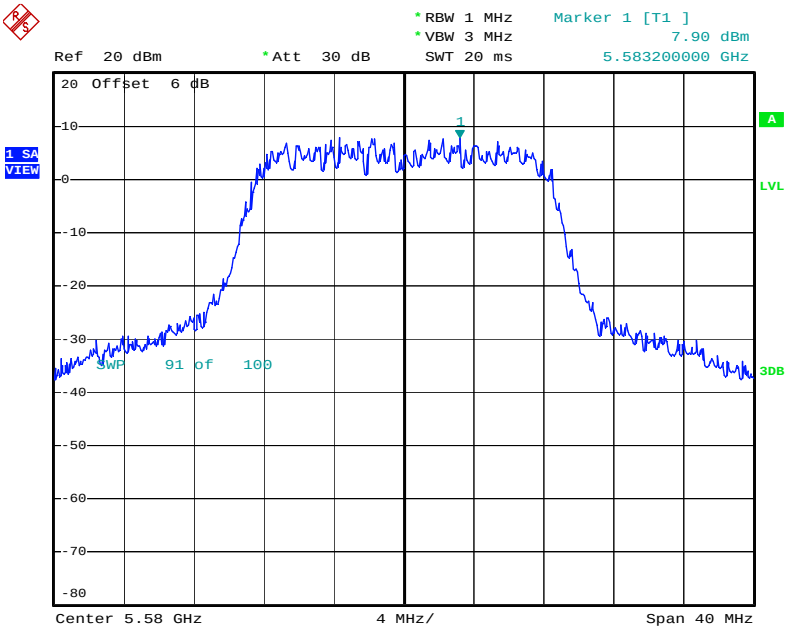
Date: 8.OCT.2008 19:40:00

Power Density Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



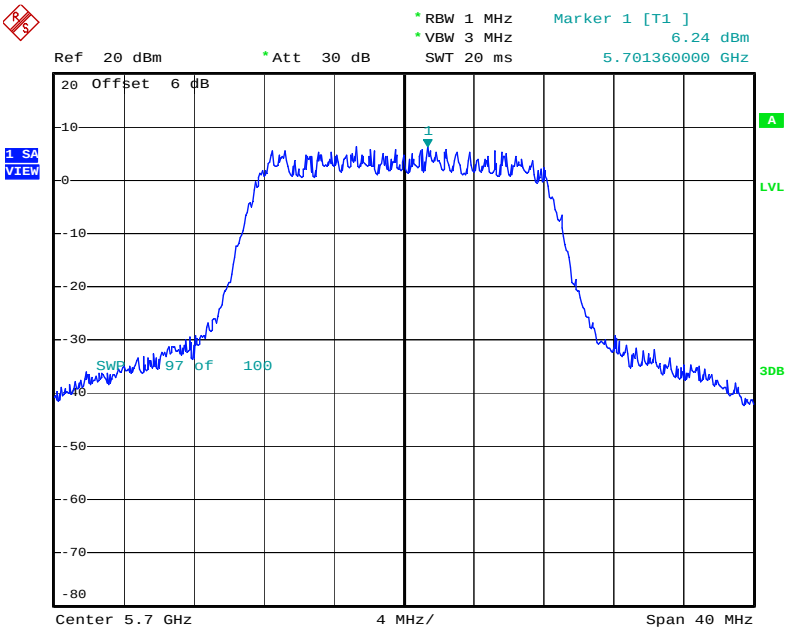
Date: 8.OCT.2008 19:43:11

Power Density Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



Date: 8.OCT.2008 19:45:09

Power Density Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5700 MHz



Date: 8.OCT.2008 19:46:43

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

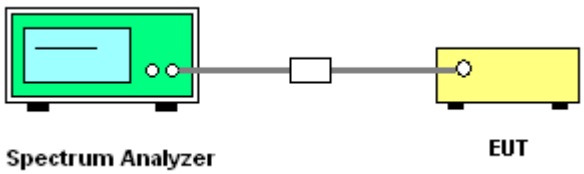
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz (Peak Trace) / 1000 kHz (Average Trace)
VB	3000 kHz (Peak Trace) / 300 kHz (Average Trace)
Detector	Peak (Peak Trace) / Sample (Average Trace)
Trace	Max Hold
Sweep Time	60s

4.5.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set the spectrum analyzer span to view the entire emissions bandwidth. The largest difference between the following two traces (Peak Trace and Average Trace) must be ≤ 13 dB for all frequencies across the emissions bandwidth. Submit a plot.
3. Peak Trace: Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and max-hold settings.
4. Average Trace: Method #3—video averaging with max hold--and sum power across the band. Set span to encompass the entire emissions bandwidth (EBW) of the signal. Set sweep trigger to "free run". Set RBW = 1 MHz. Set VBW ≥ 1/T (Draft n VBW = 300kHz ≥ 1/4 μs). Use sample detector mode if bin width (i.e., span/number of points in spectrum) < 0.5 RBW. Otherwise use peak detector mode. Set max hold. Allow max hold to run for 60 seconds.
5. Measuring multiple antennas, the connector is required to link with spectrum analyzer through a combiner.

4.5.4. Test Setup Layout



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	26℃	Humidity	56%
Test Engineer	Sam Chen	Configurations	Draft n

Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3

Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	9.16	13	Complies
60	5300 MHz	10.19	13	Complies
64	5320 MHz	11.86	13	Complies
100	5500 MHz	11.43	13	Complies
116	5580 MHz	10.94	13	Complies
140	5700 MHz	10.32	13	Complies

Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3

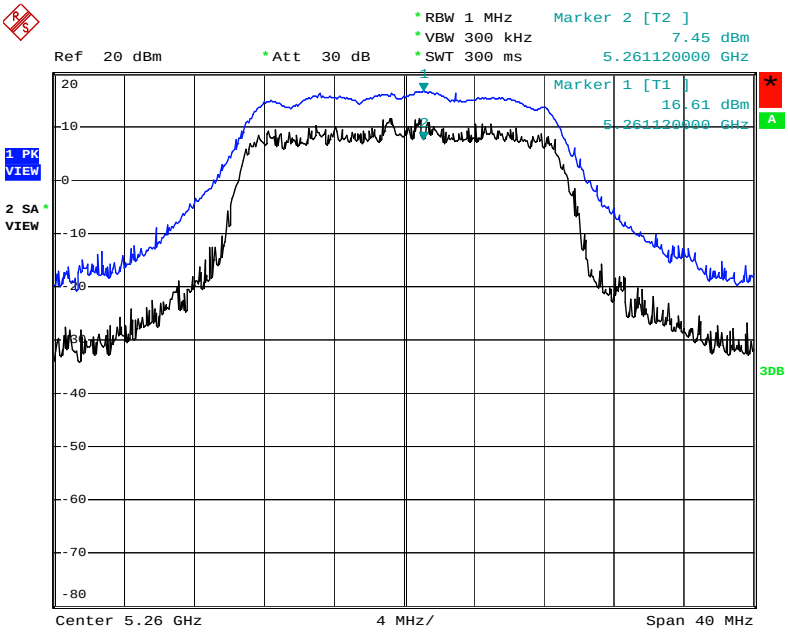
Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
54	5270 MHz	10.08	13	Complies
62	5310 MHz	10.65	13	Complies
102	5510MHz	10.62	13	Complies
110	5550 MHz	8.92	13	Complies
134	5670 MHz	8.87	13	Complies

Temperature	26℃	Humidity	56%
Test Engineer	Sam Chen	Configurations	802.11a

Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3

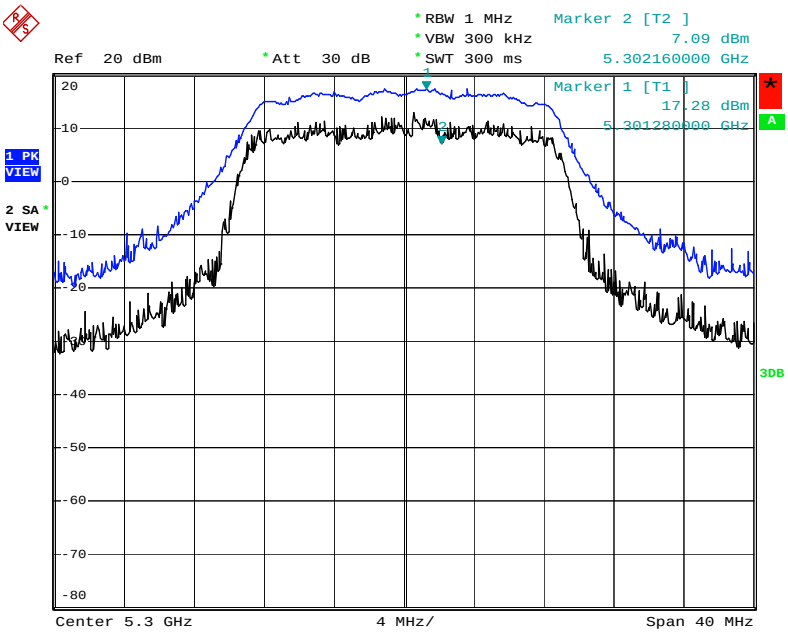
Channel	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
52	5260 MHz	9.07	13	Complies
60	5300 MHz	9.43	13	Complies
64	5320 MHz	9.65	13	Complies
100	5500 MHz	9.76	13	Complies
116	5580 MHz	9.34	13	Complies
140	5700 MHz	9.36	13	Complies

Peak Excursion Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



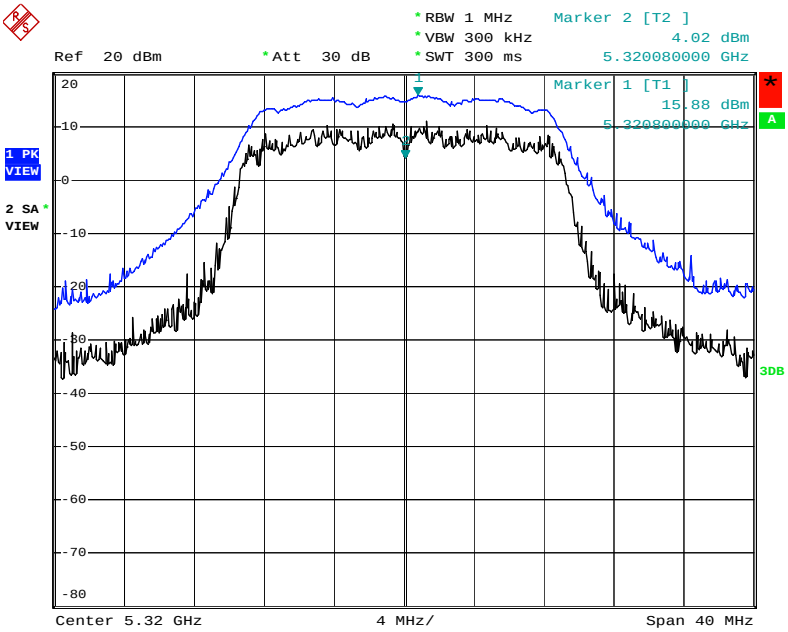
Date: 8.OCT.2008 20:01:32

Peak Excursion Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



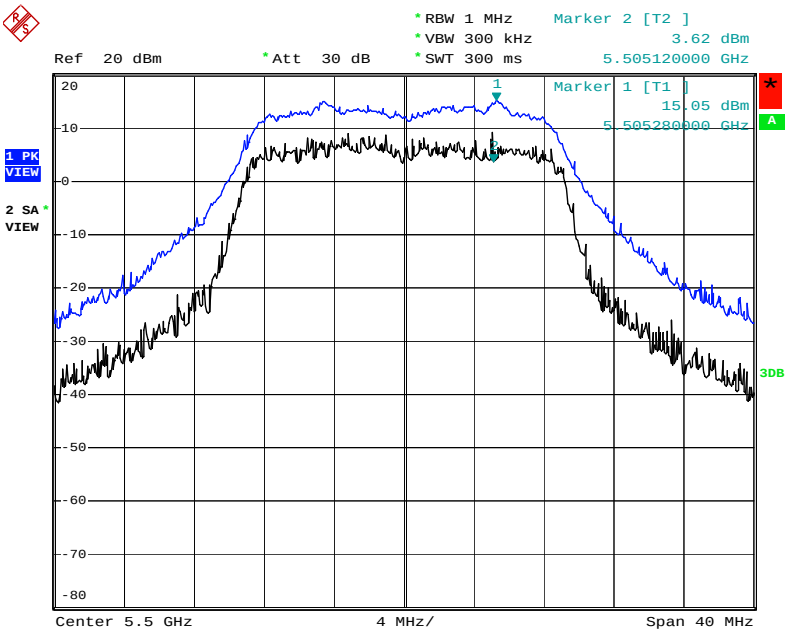
Date: 8.OCT.2008 19:59:23

Peak Excursion Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



Date: 8.OCT.2008 19:57:23

Peak Excursion Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



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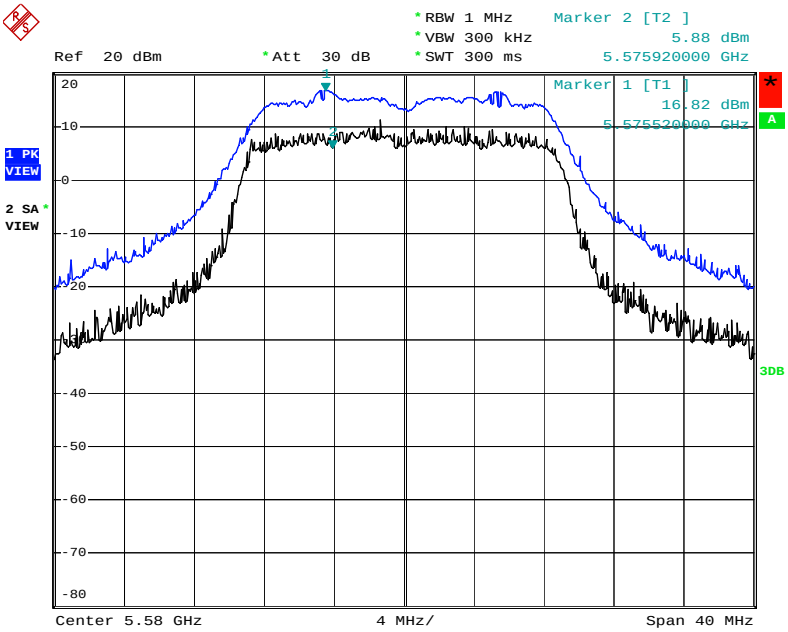
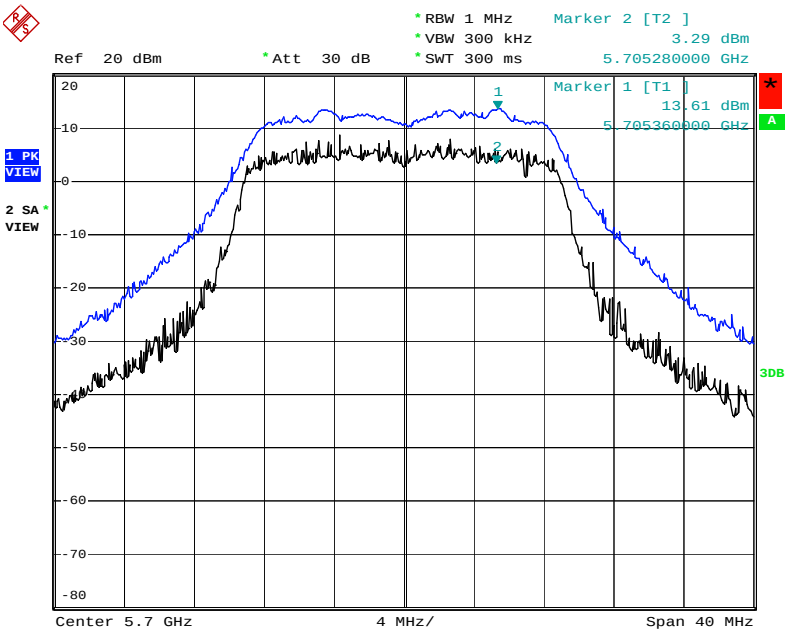
Peak Excursion Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



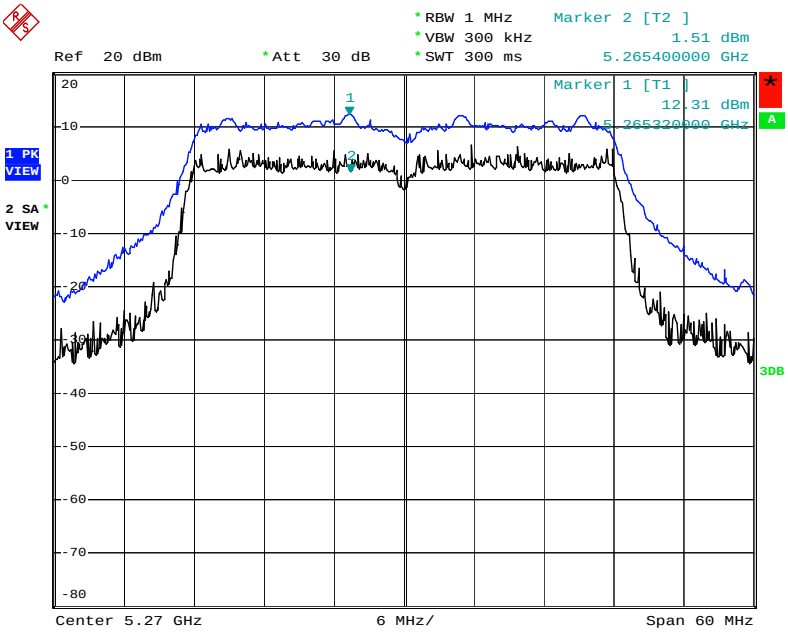
Date: 8.OCT.2008 19:52:11

Peak Excursion Plot on Configuration Draft n MCS8 20MHz Ant. A1 + Ant. A2 + Ant. A3 / 5700 MHz



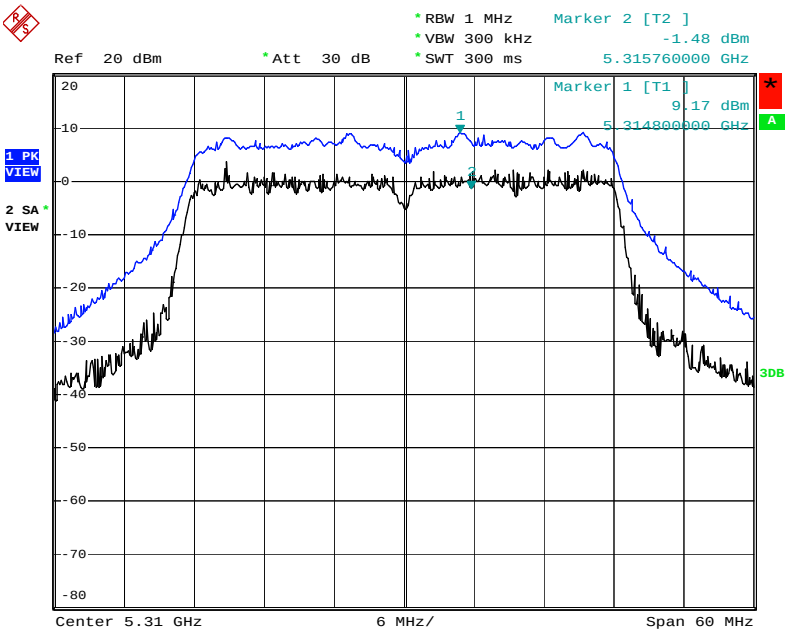
Date: 8.OCT.2008 19:50:18

Peak Excursion Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5270 MHz



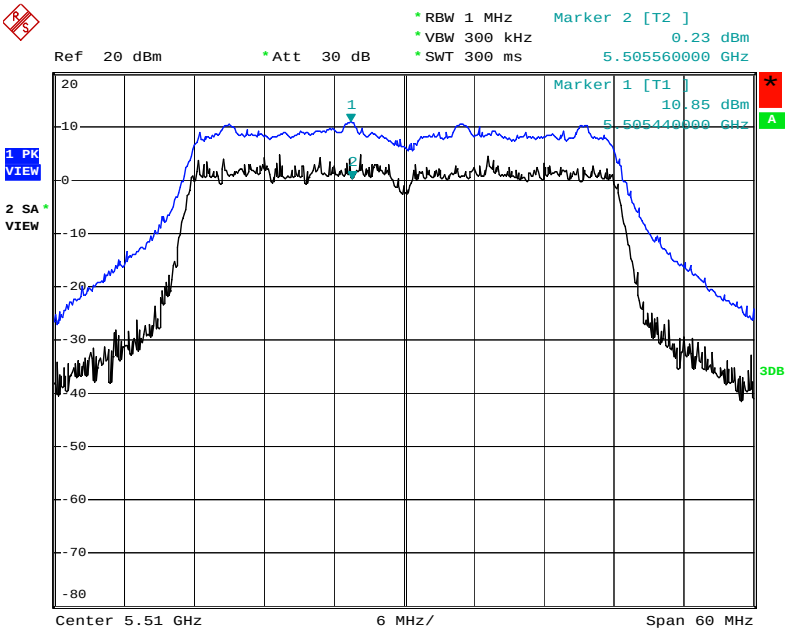
Date: 8.OCT.2008 20:08:33

Peak Excursion Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5310 MHz



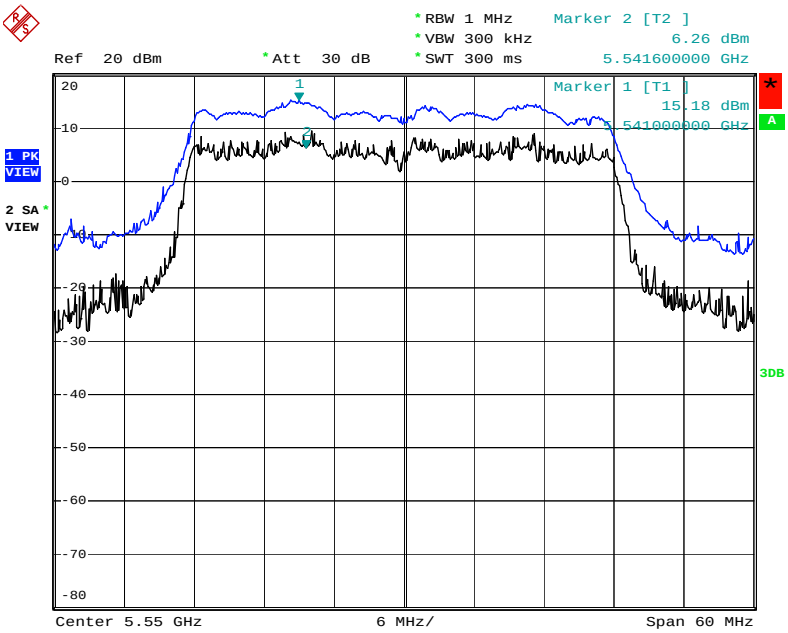
Date: 8.OCT.2008 20:10:26

Peak Excursion Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5510MHz



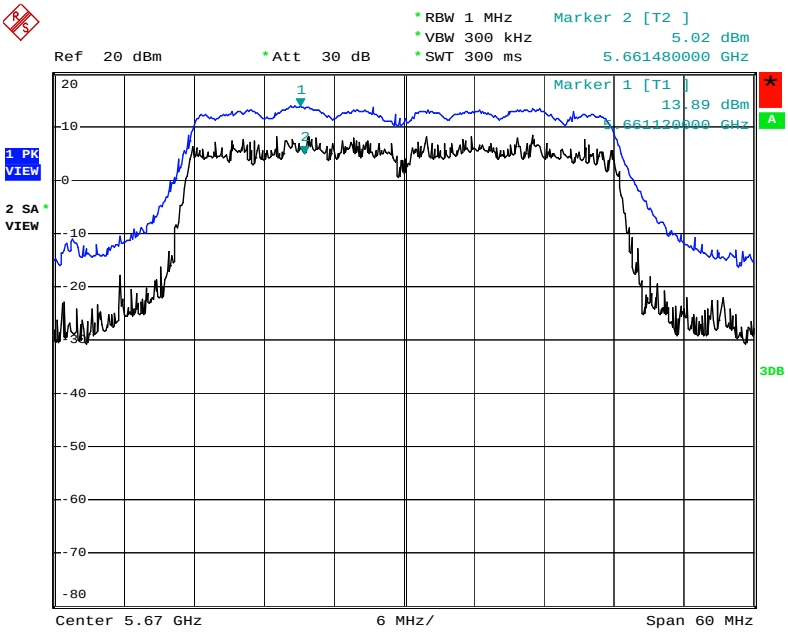
Date: 8.OCT.2008 20:12:43

Peak Excursion Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5550 MHz



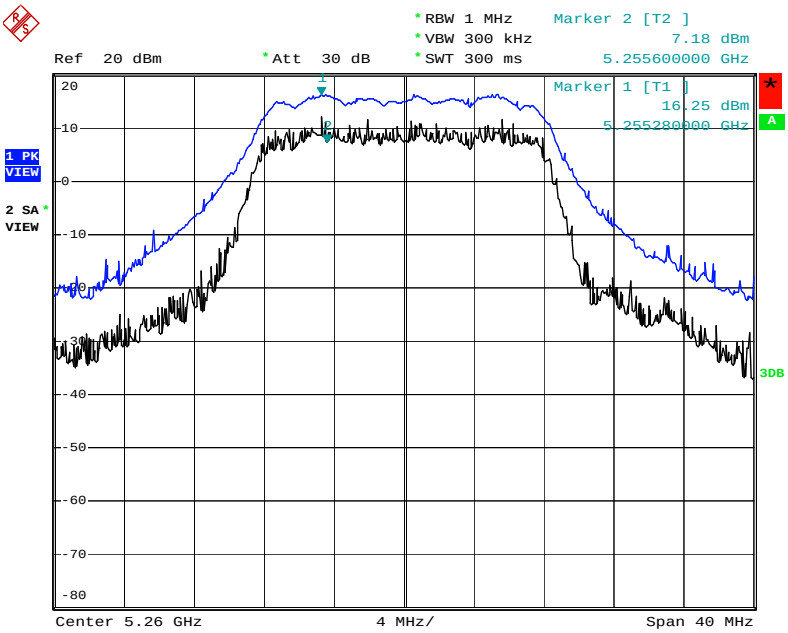
Date: 8.OCT.2008 20:17:56

Peak Excursion Plot on Configuration Draft n MCS8 40MHz Ant. A1 + Ant. A2 + Ant. A3 / 5670 MHz



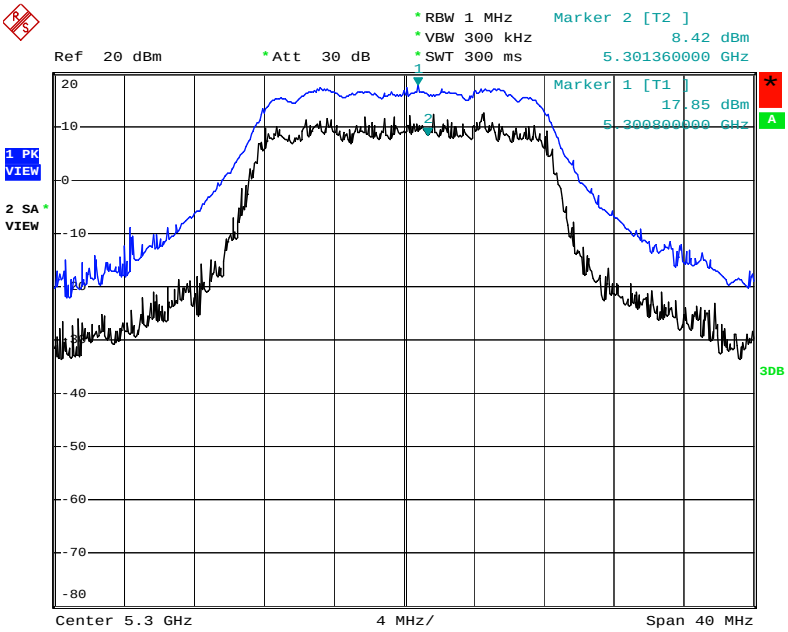
Date: 8.OCT.2008 20:19:35

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5260 MHz



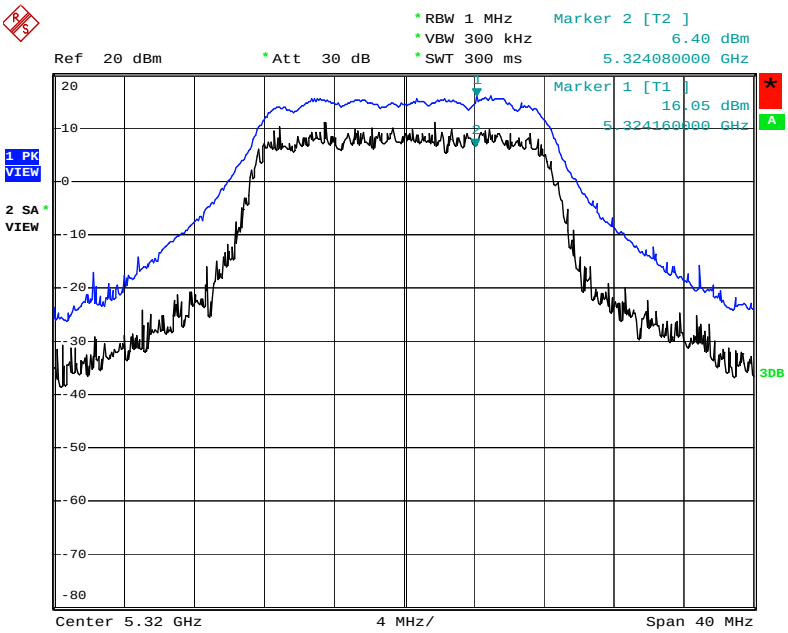
Date: 8.OCT.2008 19:33:29

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5300 MHz



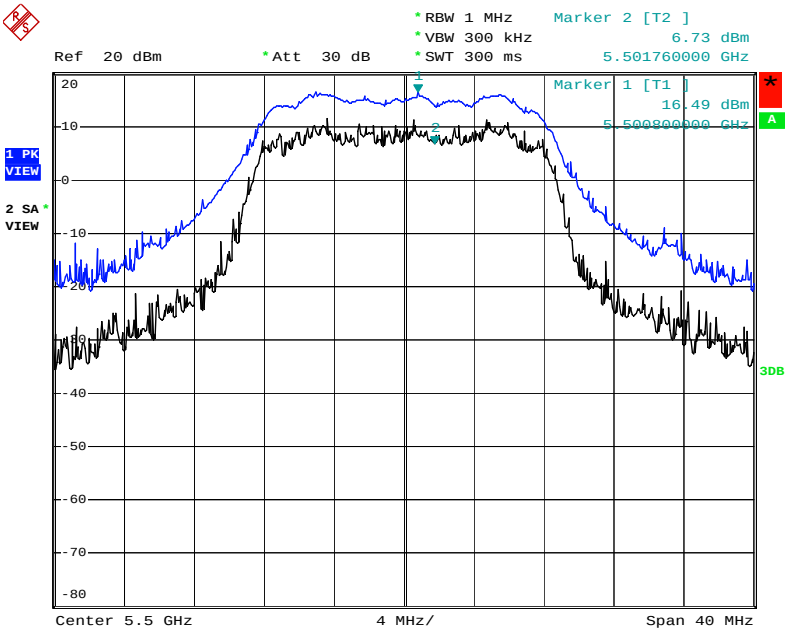
Date: 8.OCT.2008 19:38:19

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5320 MHz



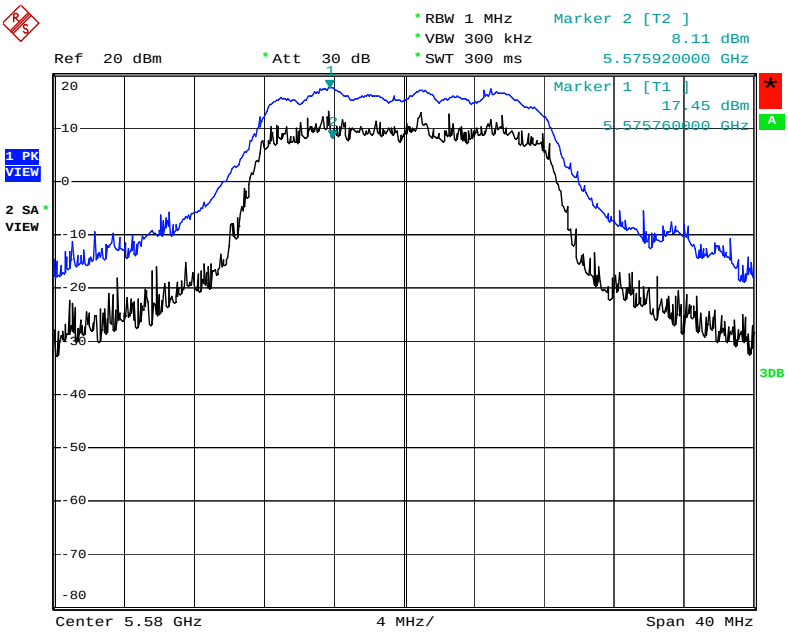
Date: 8.OCT.2008 19:41:40

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5500 MHz



Date: 8.OCT.2008 19:44:26

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5580 MHz



Date: 8.OCT.2008 19:46:10

Peak Excursion Plot on Configuration IEEE 802.11a Ant. A1 + Ant. A2 + Ant. A3 / 5700 MHz