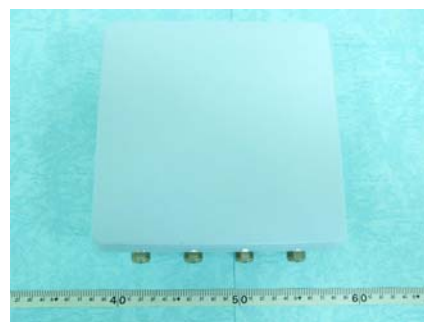


FCC RADIO TEST REPORT

Applicant's company	Accton Technology Corporation
Applicant Address	No. 1 Creation Rd., III, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C.
FCC ID	HEDOAP6626A
Manufacturer's company	Accton Technology Corporation
Manufacturer Address	No. 1 Creation Rd., III, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C.

Product Name	Outdoor Access Point/Bridge
Brand Name	Edge-corE, Accton, SMC, bluesocket
Model Name	WA6202AM, OAP6626A, SMC2890W-AG, BSAP-1600
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5250 ~ 5350MHz
Receive Date	Feb. 8, 2006
Test Date	May 17, 2006
Submission Type	Original Equipment
Multiple Listing	Please refer to section 3.7



Statement

Test result included is only for the 802.11a (5250 ~ 5350MHz) 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.



Lab Code: 200079-0

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History of This Test Report

Original Issue Date: May 26, 2006

Report No.: FR630910-AA

☒ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description



1. CERTIFICATE OF COMPLIANCE

Product Name : Outdoor Access Point/Bridge
Brand Name : Edge-corE, Accton, SMC, bluesocket
Model Name : WA6202AM, OAP6626A, SMC2890W-AG, BSAP-1600
Applicant : Accton Technology 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 Feb. 8, 2006 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.

Mandy Liang 1-6-2006
Prepared By:
Mandy Liang / Specialist

Steven Lu 1-6-2006
Technical Acceptance By:
Steven Lu / Engineer

Wayne Hsu 1-6-06
Reviewed By:
Wayne Hsu

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	8.36 dB
4.2	15.407(a)	26dB Spectrum Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.69dB
4.4	15.407(a)	Power Spectral Density	Complies	4.15dB
4.5	15.407(a)	Peak Excursion	Complies	7.7 dB
4.6	15.407(b)	Radiated Emissions	Complies	0.62 dB
4.7	15.407(b)	Band Edge Emissions	Complies	0.10 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	$\pm 2.26\text{dB}$	Confidence levels of 95%
Maximum Conducted Output Power	$\pm 0.71\text{dB}$	Confidence levels of 95%
Power Spectral Density	$\pm 0.71\text{dB}$	Confidence levels of 95%
Peak Excursion	$\pm 0.71\text{dB}$	Confidence levels of 95%
26dB Spectrum Bandwidth / Frequency Stability	$\pm 6.25 \times 10^{-7}$	Confidence levels of 95%
Radiated Emissions/ Band Edge Emissions	$\pm 3.72\text{dB}$	Confidence levels of 95%

3. GENERAL INFORMATION

3.1. Product Details

Items	Description
Product Type	WLAN(outdoor)
Power Type	POE
Interface Type	POE / Console / Antenna
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11a/g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54/108)
Frequency Range	5250 ~ 5350MHz
Channel Number	11a: 5
Channel Band Width (99%)	11a: 19.74 MHz ; 11a Turbo: 38.62 MHz
Conducted Output Power	11a: 20.82dBm ; 11a Turbo: 9.74dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

3.2. Accessories

Power	Brand	Model	Rating
POE	CINCON	TR60A-POE-L	100-240VAC, 48VDC

3.3. Table for Filed Antenna

For 2.4GHz Band

Ant.	Model Name	Frequency Band	Antenna Type	Connector	Gain (dBi)
1	ACC04-05427A	2.4~2.5GHz	Omni-Directional Ant.	N Plug	8.0
2	ACC04-05028A	2.4~2.5GHz	Omni-Directional Ant.	N Jack	8.0
3	ACC04-053830	2.4~2.5GHz	0 Degree Sector Ant.	N Jack	10.0
4	ACC04-050090	2.4~2.5GHz	Directional Panel Ant.	N Jack	18.0
5	S24015P36NM	2.4~2.5GHz	Patch antenna	N Jack	14.5

Note: The difference between Antenna 1 & 2 is the antenna connector type.

For 5GHz Band

Ant.	Model Name	Frequency Band	Antenna Type	Connector	Gain (dBi)
6	ACC04-200180	5150~5350GHz	Omni-Directional Ant.	N Jack	8.0
7	ACC04-202130	5150~5350GHz	High-Gain Omni Directional Ant.	N Plug	8.0
8	ACC05-200180	5.5~5.825GHz	Omni-Directional Ant.	N Jack	8.0
9	ACC04-090380	5.5~5.825GHz	High-Gain Omni Directional Ant.	N Plug	8.0
10	ACC04-200010	5150~5.875GHz	Directional Sector Ant.	N Jack	13.5
11	-	5.150~5.875GHz	Embedded Ant.	MMCX	17.0
12	ACC04-20212A	5.150~5.875GHz	Directional Panel Ant.	N Jack	23.0
13	S51514WP	5.150~5.875GHz	Wideband Panel Ant.	N Jack	13.0

Note: The difference between Antenna 6&7 is the antenna connector type.

The difference between Antenna 8&9 is the antenna connector type.

Ant. 12 is not suitable for use in Band2.

Ant. 13 is not suitable for use turbo mode.

Collocate antenna cable length list for 2.4GHz antenna

Ant.	length	Attenuation at 2.4GHz
1	60m	14dB
2	60m	14dB
3	84m	18dB
4	84m	18dB
5	0.9m	0.9dB

Collocate antenna cable length list for 5GHz antenna

Ant.	length	Attenuation at 5GHz
6	30m	12dB
7	30m	12dB
8	30m	12dB
9	30m	12dB
10	1m	2dB
11	N/A	N/A
12	1m	2dB
13	0.9m	1.8dB

3.4. Table for Carrier Frequencies

Frequency Allocation for 802.11a

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5250~5350 MHz	52	5260 MHz	Turbo 58	5290 MHz
	56	5280 MHz		
	60	5300 MHz		
	64	5320 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	54Mbps	64	11
26dB Spectrum Bandwidth	Band 2/BPSK	6Mbps	56/60/64	6/7/10/11/13
99% Occupied Bandwidth	Band 2 Turbo/BPSK	12Mbps	58	6/7/10/11
Measurement				
Max. Conducted Output Power				
Power Spectral Density				
Peak Excursion				
Radiated Emission Below 1GHz	BPSK	6Mbps	64	6/7/10/11/13
Radiated Emission Above 1GHz	Band 2/BPSK	6Mbps	56/60/64	6/7/10/11/13
Band Edge Emission	Band 2 Turbo/BPSK	12Mbps	58	6/7/10/11
Frequency Stability	Un-modulation	-	64	NA

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

The brand/model names in the following table are all refer to the identical product.

Brand Name	Model Name	Manufacturer
Edge-corE	WA6202AM	Accton Technology Corporation
Accton	OAP6626A	Accton Technology Corporation
SMC	SMC2890W-AG	Accton Technology Corporation
bluesocket	BSAP-1600	Accton Technology Corporation

3.8. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	PP01L	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.

For Ant. 6/7

Power Parameters of IEEE 802.11a

Test Software Version	ART		
Frequency	5280 MHz	5300 MHz	5320 MHz
IEEE 802.11a	16	19	19
Frequency	5290 MHz		
IEEE 802.11a Turbo	19		

For Ant. 10

Power Parameters of IEEE 802.11a

Test Software Version	ART		
Frequency	5280 MHz	5300 MHz	5320 MHz
IEEE 802.11a	8	15	10
Frequency	5290 MHz		
IEEE 802.11a Turbo	1		

For Ant. 11

Power Parameters of IEEE 802.11a

Test Software Version	ART		
Frequency	5280 MHz	5300 MHz	5320 MHz
IEEE 802.11a	7	7	7
Frequency	5290 MHz		
IEEE 802.11a Turbo	6		

For Ant. 13

Power Parameters of IEEE 802.11a

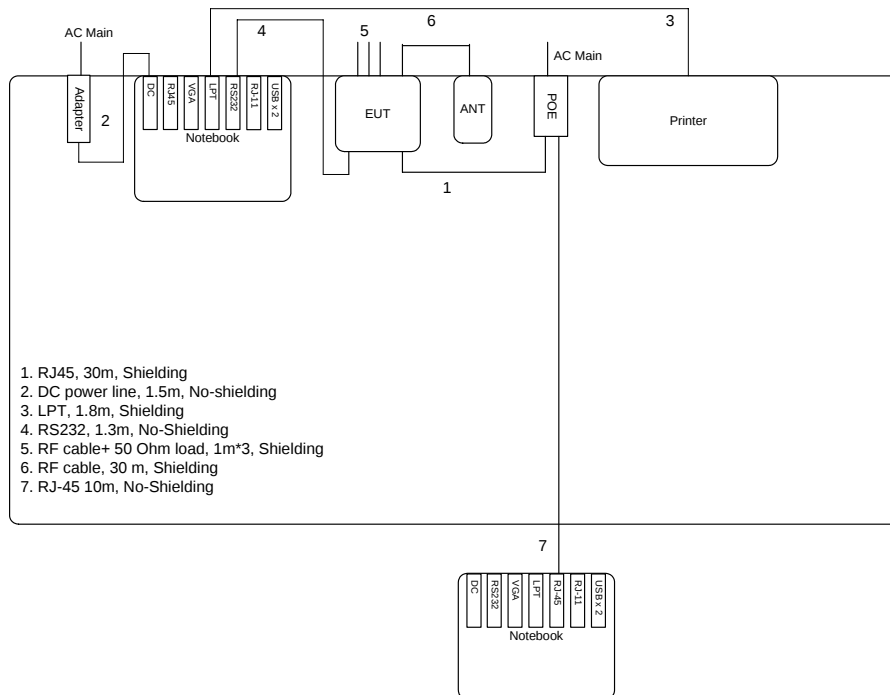
Test Software Version	ART		
Frequency	5280 MHz	5300 MHz	5320 MHz
IEEE 802.11a	3	4	6

3.10. Test Configurations

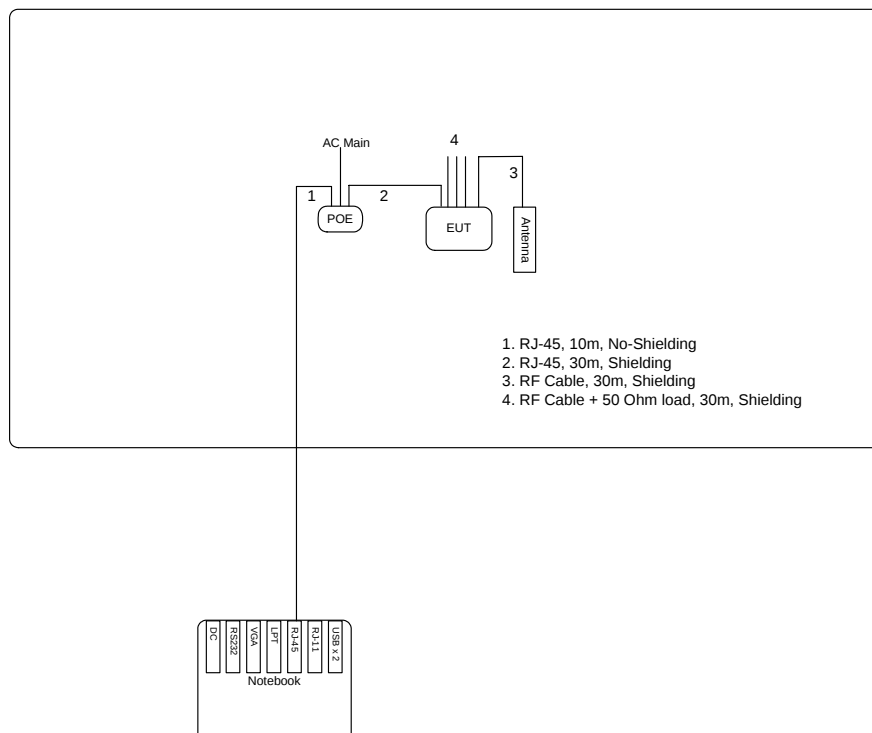
3.10.1. Radiation Emissions Test Configuration

For Ant. 6/7

Test Configuration: 9KHz~1GHz

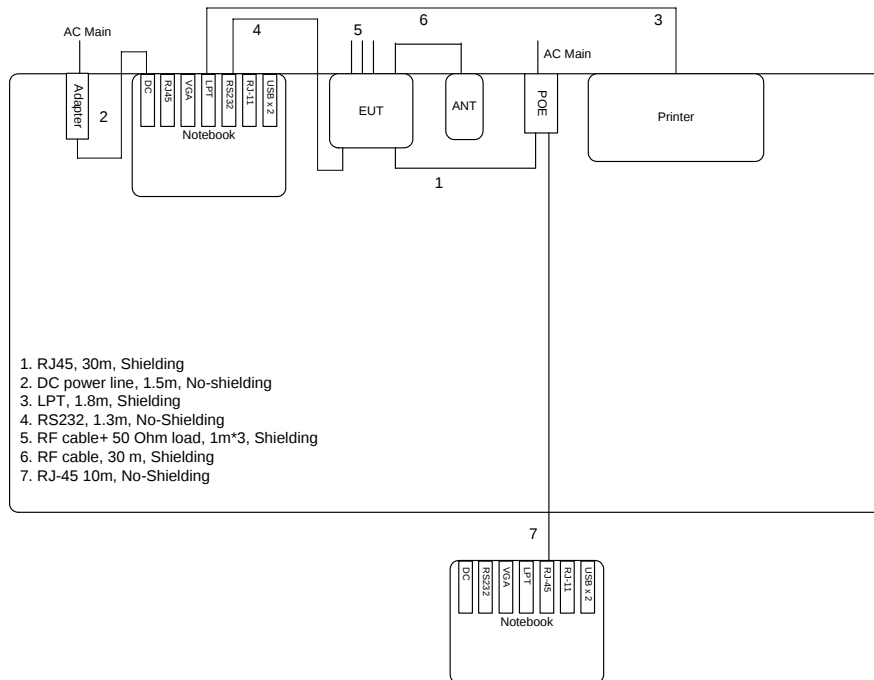


Test Configuration: above 1GHz

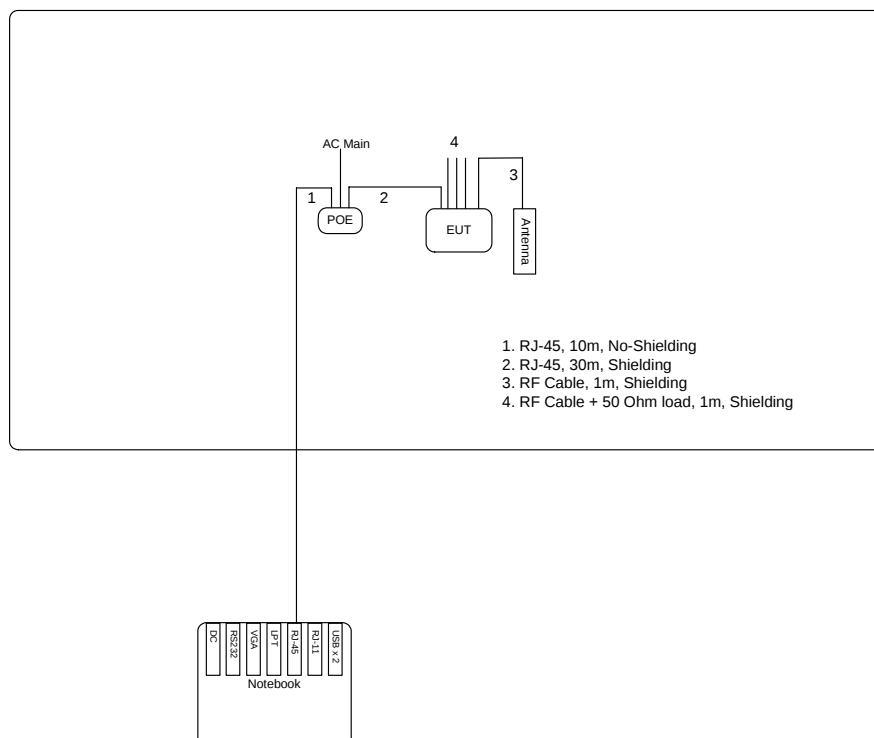


For Ant. 10

Test Configuration: 9KHz~1GHz

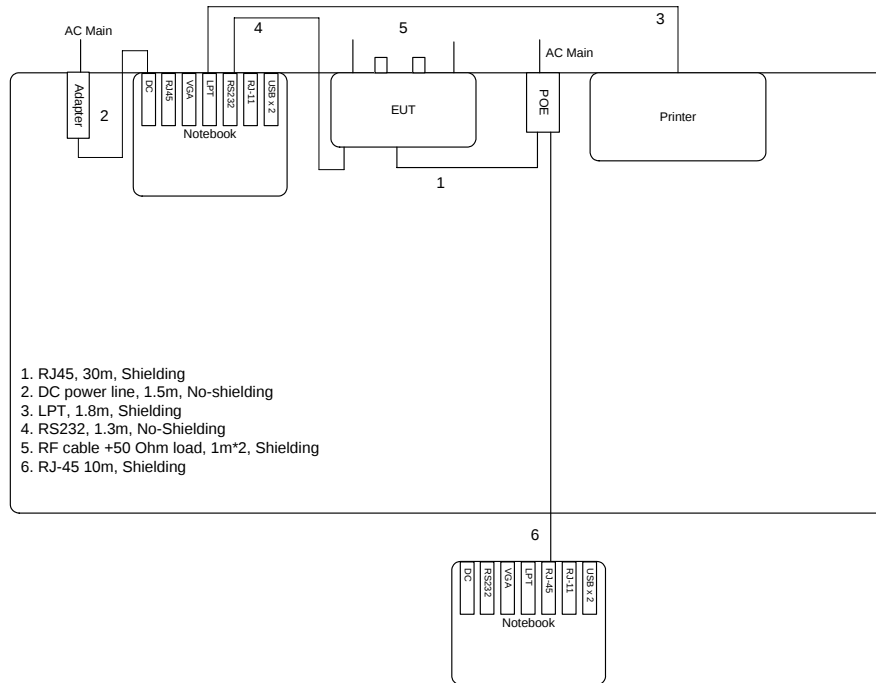


Test Configuration: above 1GHz

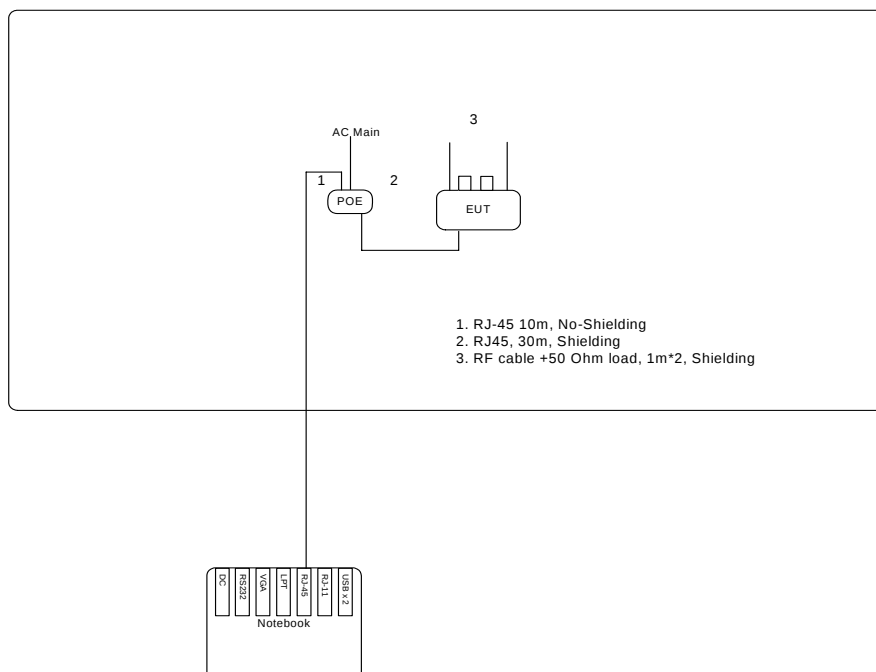


For Ant. 11

Test Configuration: 9KHz~1GHz

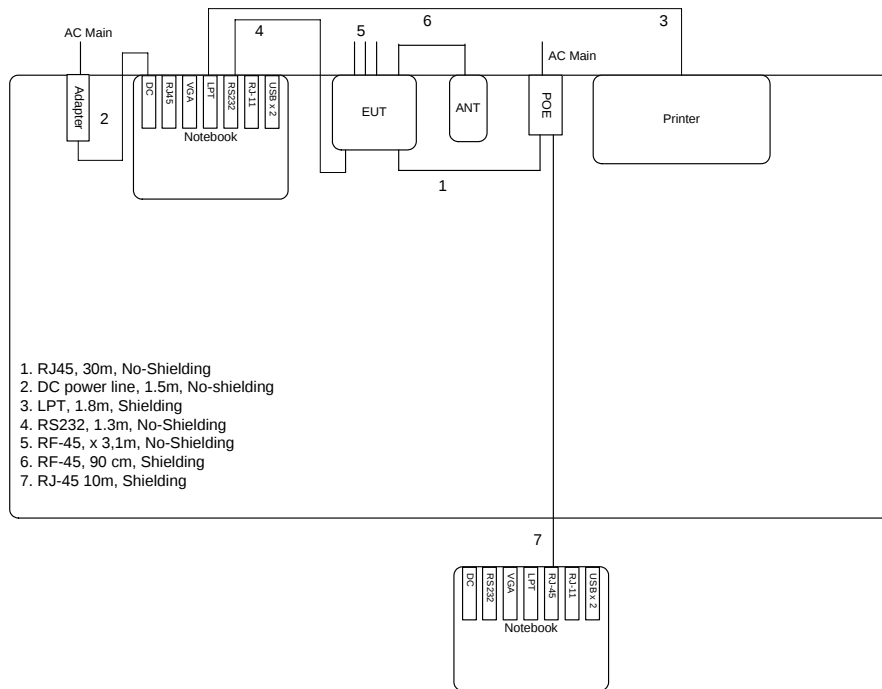


Test Configuration: above 1GHz

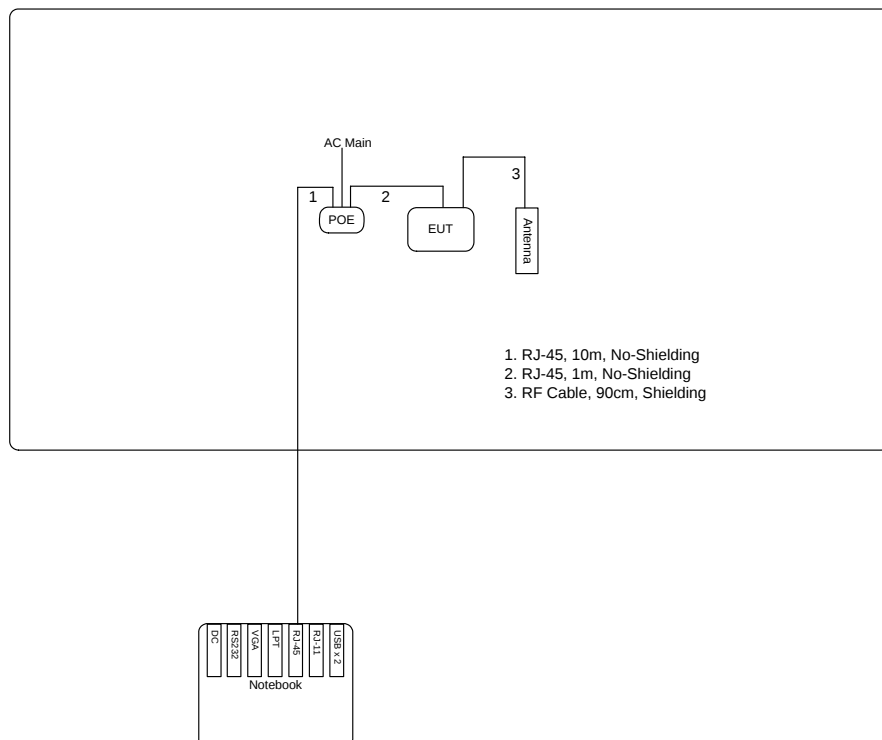


For Ant. 13

Test Configuration: 9KHz~1GHz

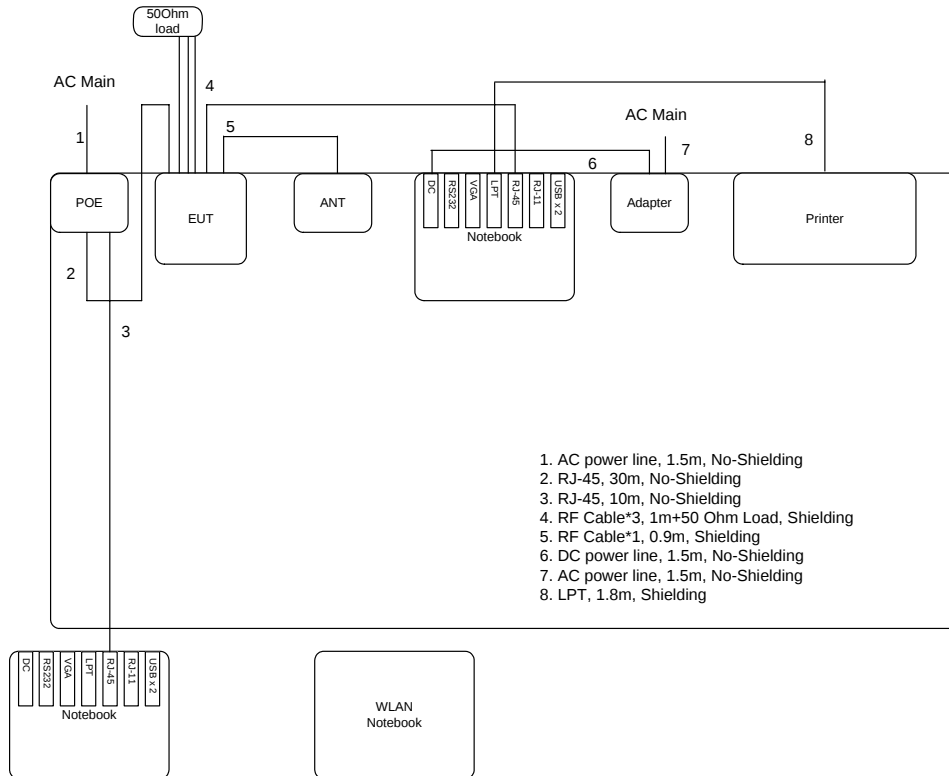


Test Configuration: above 1GHz



3.10.2.AC Power Line Conduction Emissions Test Configuration

For Ant. 11



4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For a Low-power Radio-frequency Device which is designed to be connected 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

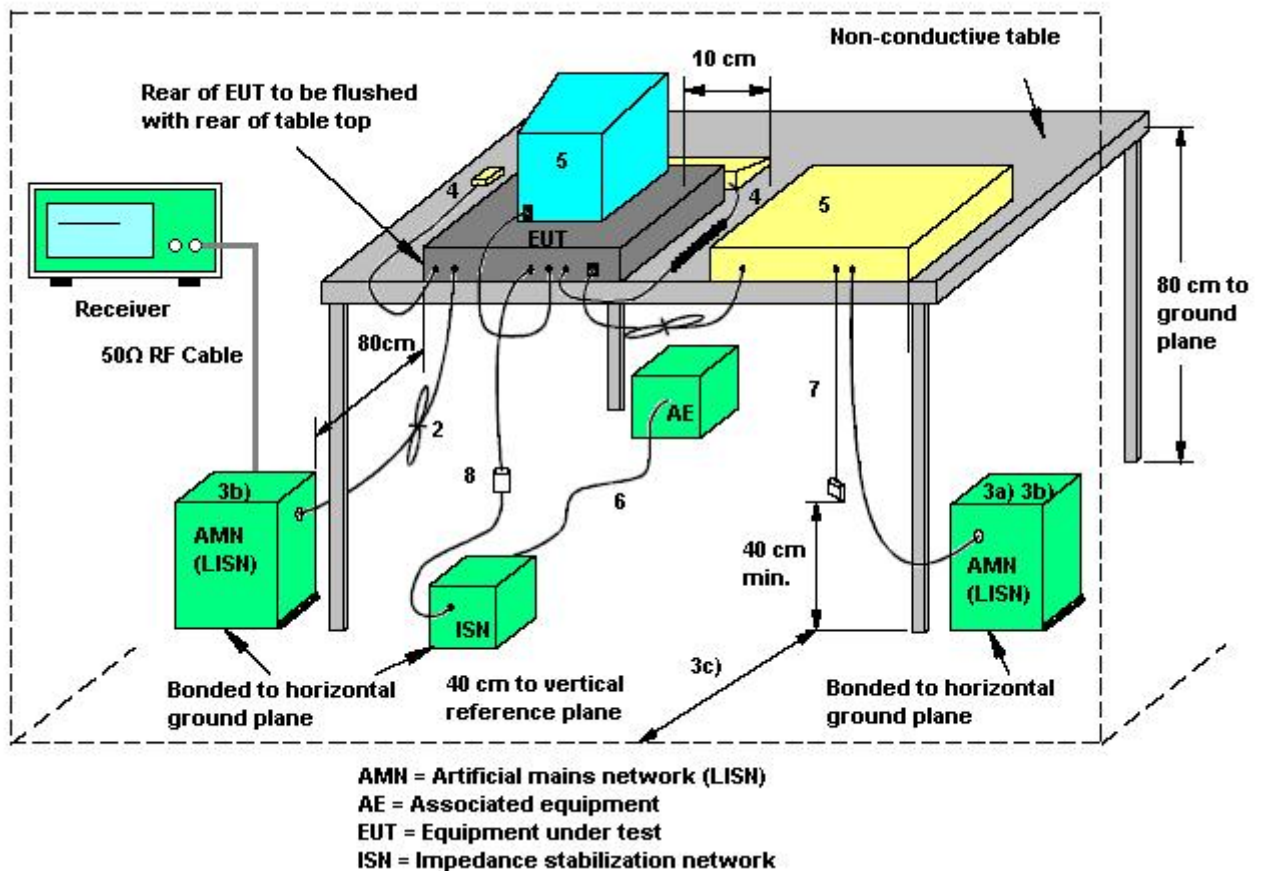
Please refer to section 5 in this report. The following table is the setting of the receiver.

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



1. If cables, which hang closer than 40 cm to the horizontal metal groundplane, cannot be shortened to appropriate length, the excess shall be folded back and forth forming a bundle 30 cm to 40 cm long.
2. Excess mains cord shall be bundled in the centre or shortened to appropriate length.
3. EUT is connected to one artificial mains network (AMN). All AMNs and ISNs may alternatively be connected to a vertical reference plane or metal wall.
4. All other units of a system are powered from a second AMN. A multiple outlet strip can be used for multiple mains cords.
5. AMN and ISN are 80 cm from the EUT and at least 80 cm from other units and other metal planes.
6. Mains cords and signal cables shall be positioned for their entire lengths, as far as possible, at 40 cm from the vertical reference plane.
7. Cables of hand operated devices, such as keyboards, mice, etc. shall be placed as for normal usage.
8. Peripherals shall be placed at a distance of 10 cm from each other and from the controller, except for the monitor which, if this is an acceptable installation practice, shall be placed directly on the top of the controller.
9. I/O signal cable intended for external connection.
10. The end of the I/O signal cables which are not connected to an AE may be terminated, if required, using correct terminating impedance.
11. If used, the current probe shall be placed at 0.1 m from the ISN.

4.1.5. Test Deviation

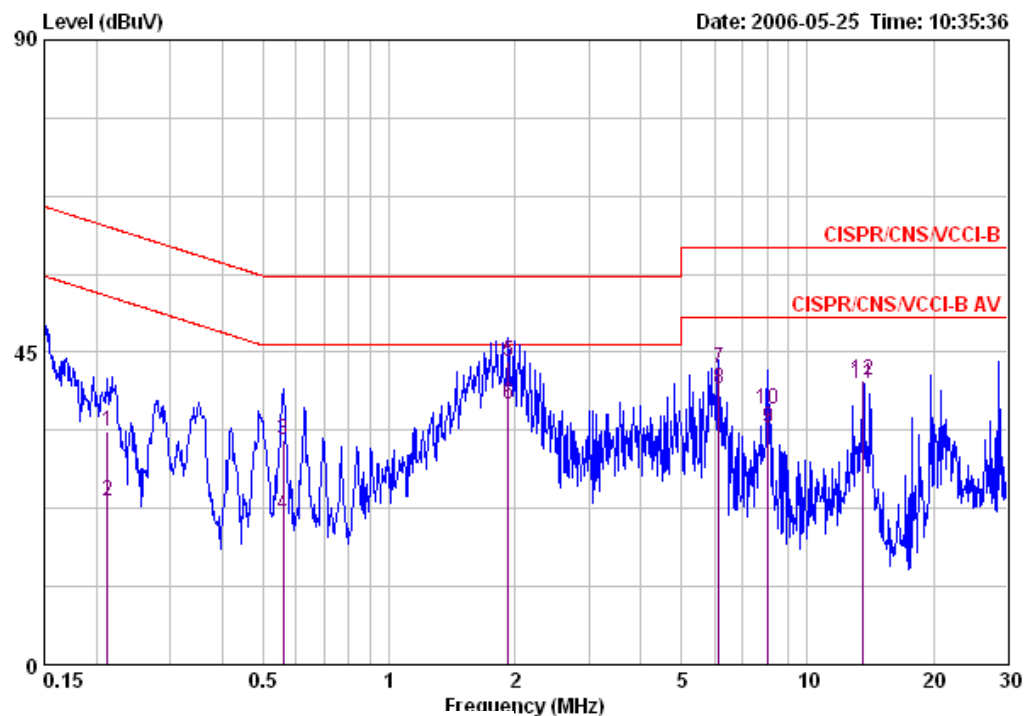
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

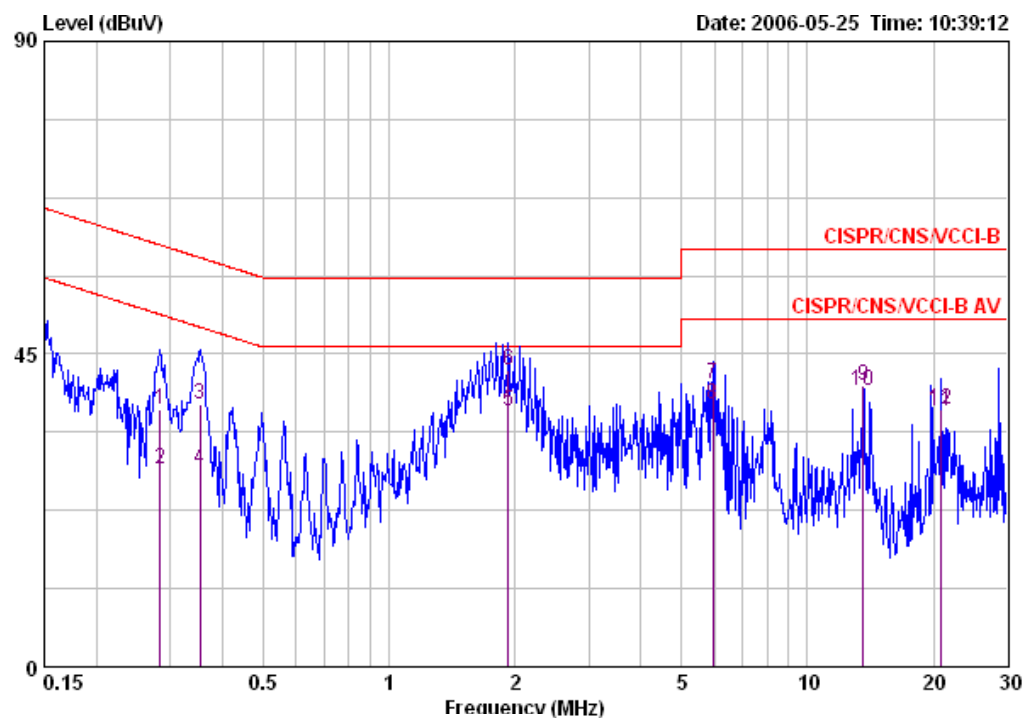
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24°C	Humidity	64%
Test Engineer	Evelyn Shih	Phase	Line
Configuration	Normal Link / Ant. 11		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.21285	33.64	-29.45	63.09	32.27	1.18	0.20	QP
2	0.21285	23.48	-29.61	53.09	22.11	1.18	0.20	AVERAGE
3	0.55815	32.45	-23.55	56.00	31.85	0.40	0.20	QP
4	0.55815	21.63	-24.37	46.00	21.03	0.40	0.20	AVERAGE
5	1.928	43.69	-12.31	56.00	43.20	0.30	0.19	QP
6	1.928	37.64	-8.36	46.00	37.15	0.30	0.19	AVERAGE
7	6.150	42.61	-17.39	60.00	41.98	0.30	0.33	QP
8	6.150	39.64	-10.36	50.00	39.01	0.30	0.33	AVERAGE
9	8.036	34.12	-15.88	50.00	33.42	0.30	0.40	AVERAGE
10	8.036	36.74	-23.26	60.00	36.04	0.30	0.40	QP
11	13.600	40.45	-9.55	50.00	39.75	0.30	0.40	AVERAGE
12	13.600	40.87	-19.13	60.00	40.17	0.30	0.40	QP

Temperature	24°C	Humidity	64%
Test Engineer	Evelyn Shih	Phase	Neutral
Configuration	Normal Link / Ant. 11		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.28328	36.99	-23.73	60.72	36.09	0.70	0.20	QP
2	0.28328	28.46	-22.26	50.72	27.56	0.70	0.20	AVERAGE
3	0.35388	37.84	-21.03	58.87	37.04	0.60	0.20	QP
4	0.35388	28.46	-20.41	48.87	27.66	0.60	0.20	AVERAGE
5 @	1.928	36.84	-9.16	46.00	36.44	0.21	0.19	AVERAGE
6	1.928	42.74	-13.26	56.00	42.34	0.21	0.19	QP
7	5.952	40.67	-19.33	60.00	40.07	0.30	0.30	QP
8	5.952	37.84	-12.16	50.00	37.24	0.30	0.30	AVERAGE
9	13.602	40.35	-19.65	60.00	39.72	0.23	0.40	QP
10	13.602	39.85	-10.15	50.00	39.22	0.23	0.40	AVERAGE
11	20.928	36.74	-13.26	50.00	35.94	0.30	0.50	AVERAGE
12	20.928	36.91	-23.09	60.00	36.11	0.30	0.50	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. 99% Occupied Bandwidth Measurement

4.2.1. Limit

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

4.2.2. Measuring Instruments and Setting

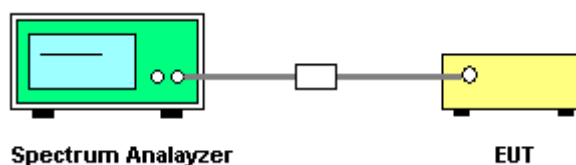
Please refer to section 5 in this report. The following table is the setting of the Spectrum Analyzer.

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 analyser 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	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 6/7

Configuration IEEE 802.11a

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
56	5280 MHz	26.41	17.69
60	5300 MHz	40.25	19.74
64	5320 MHz	35.00	18.58

Configuration IEEE 802.11a Turbo

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
58	5290 MHz	68.10	38.62

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 10

Configuration IEEE 802.11a

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
56	5280 MHz	24.61	17.43
60	5300 MHz	25.38	17.56
64	5320 MHz	24.87	17.43

Configuration IEEE 802.11a Turbo

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
58	5290 MHz	46.79	33.65

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 11

Configuration IEEE 802.11a

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
56	5280 MHz	24.96	17.44
60	5300 MHz	25.44	17.60
64	5320 MHz	23.04	17.60

Configuration IEEE 802.11a Turbo

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
58	5290 MHz	51.20	36.00

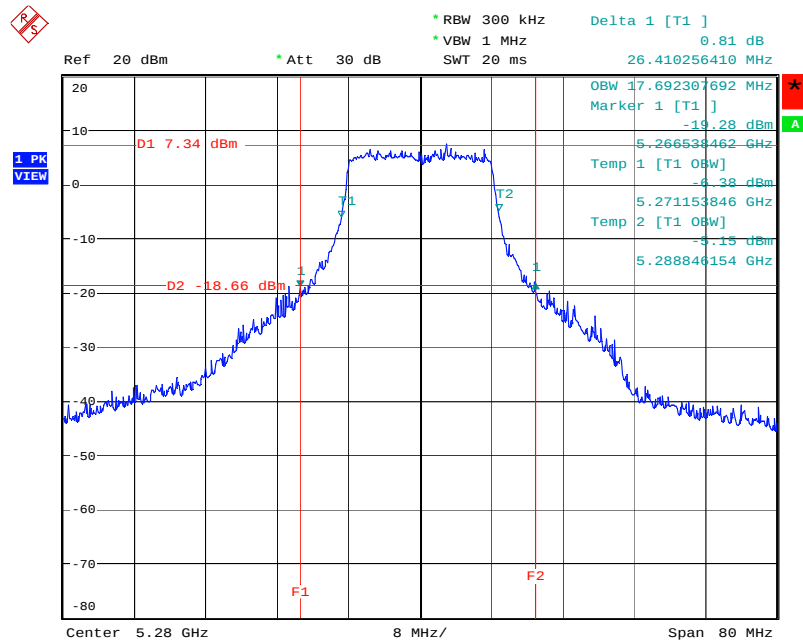
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 13

Configuration IEEE 802.11a

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
56	5280 MHz	25.89	17.43
60	5300 MHz	25.89	17.43
64	5320 MHz	26.15	17.43

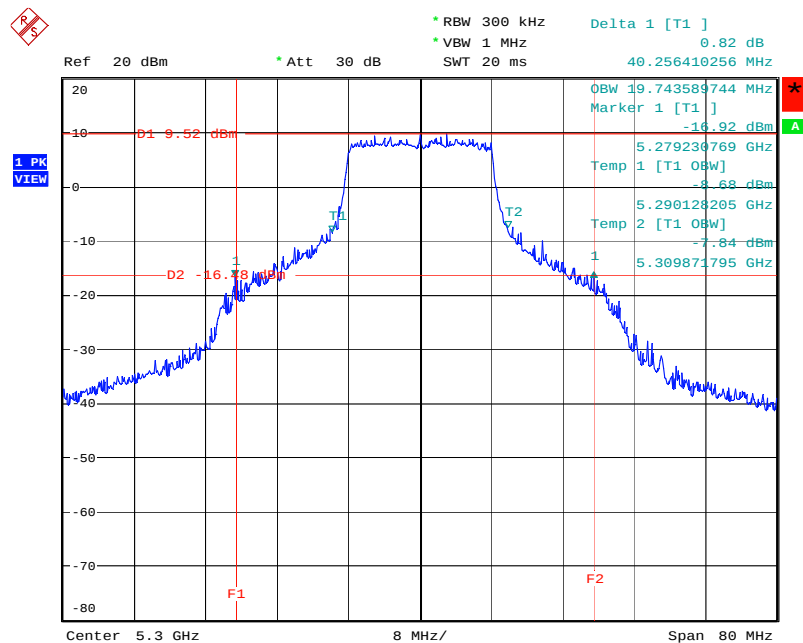
For Ant. 6/7

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5280 MHz



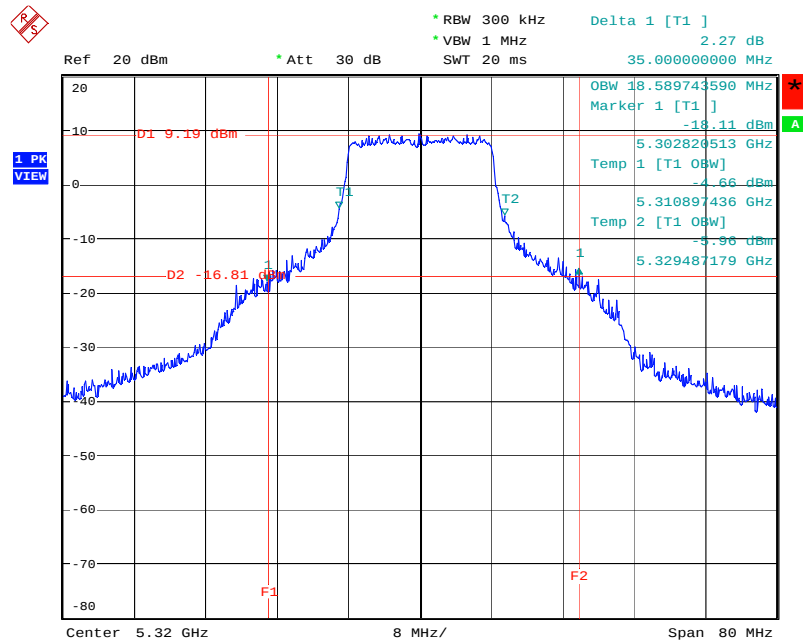
Date: 30.MAY.2006 20:41:00

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5300 MHz



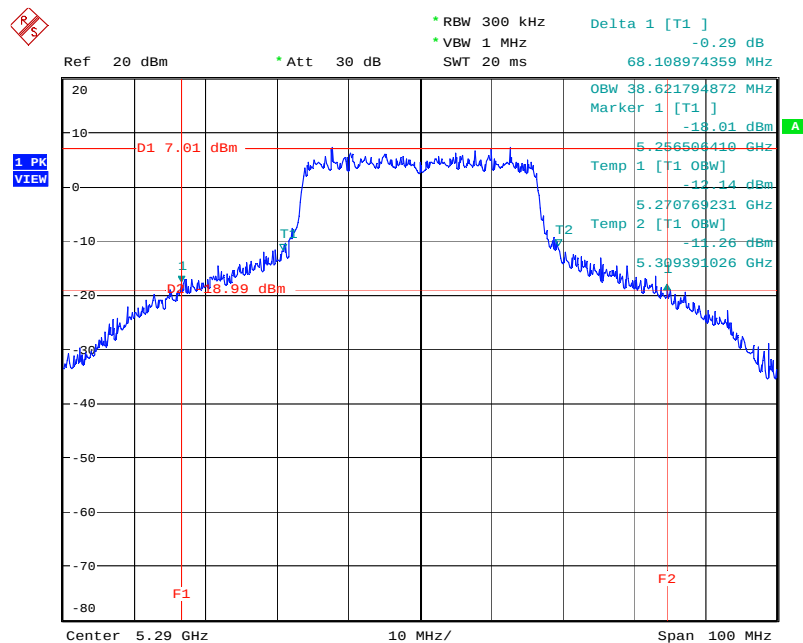
Date: 30.MAY.2006 20:42:00

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 30.MAY.2006 20:42:52

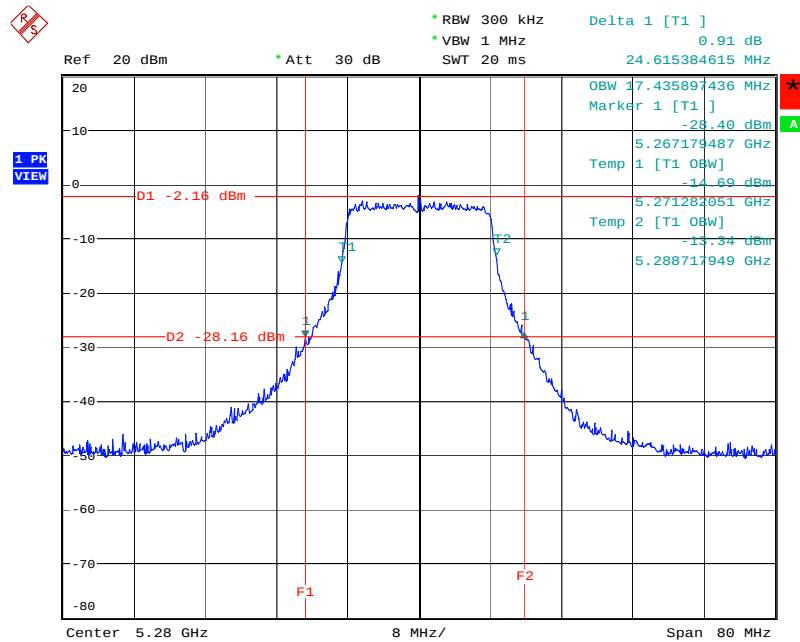
26 dB Bandwidth Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 30.MAY.2006 20:09:12

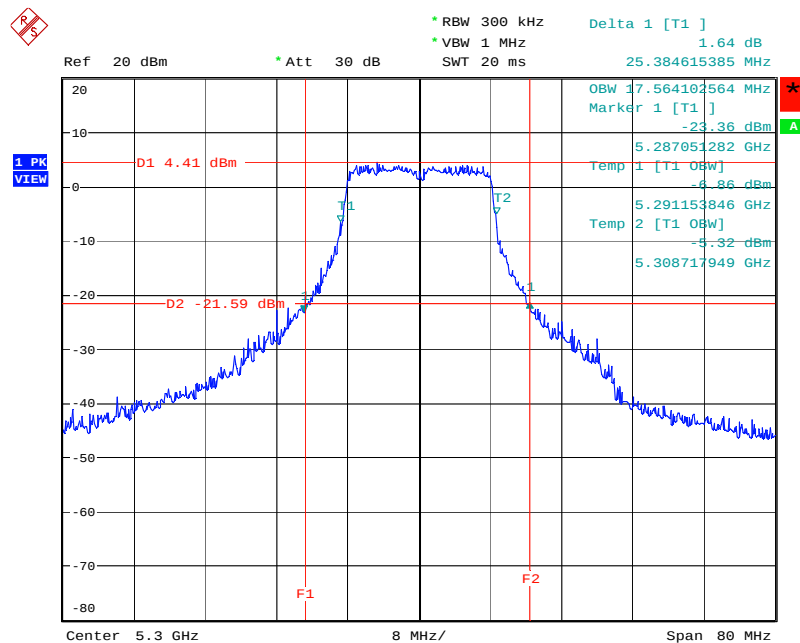
For Ant.10

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5280 MHz



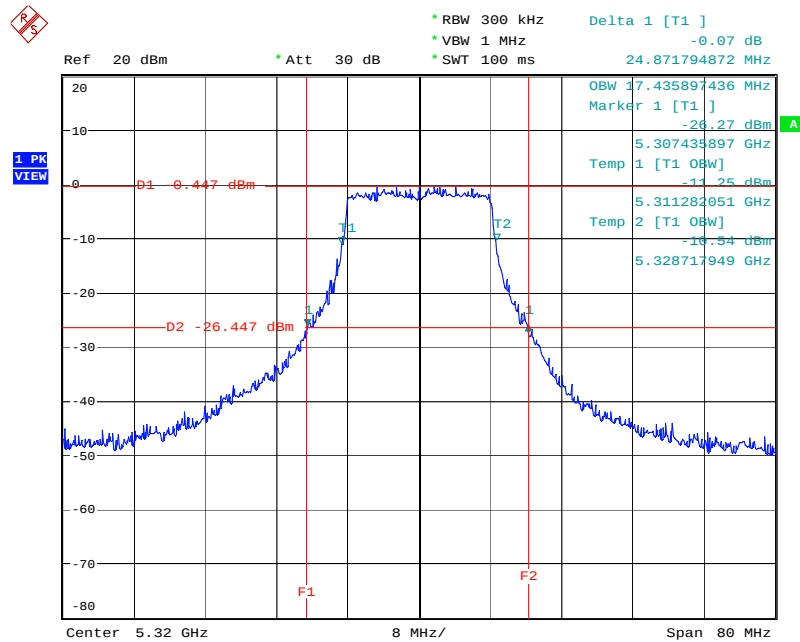
Date: 9.MAY.2006 21:37:41

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5300 MHz



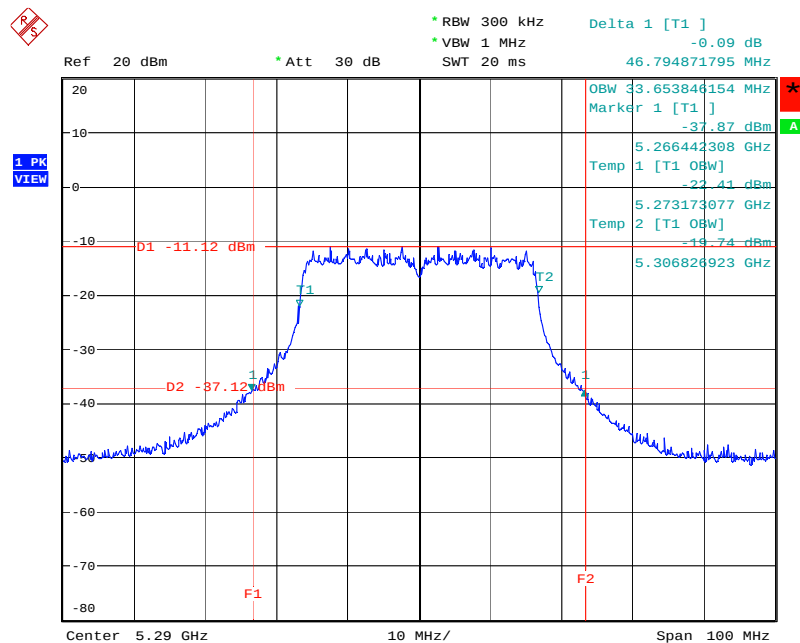
Date: 9.MAY.2006 21:38:50

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 19:22:52

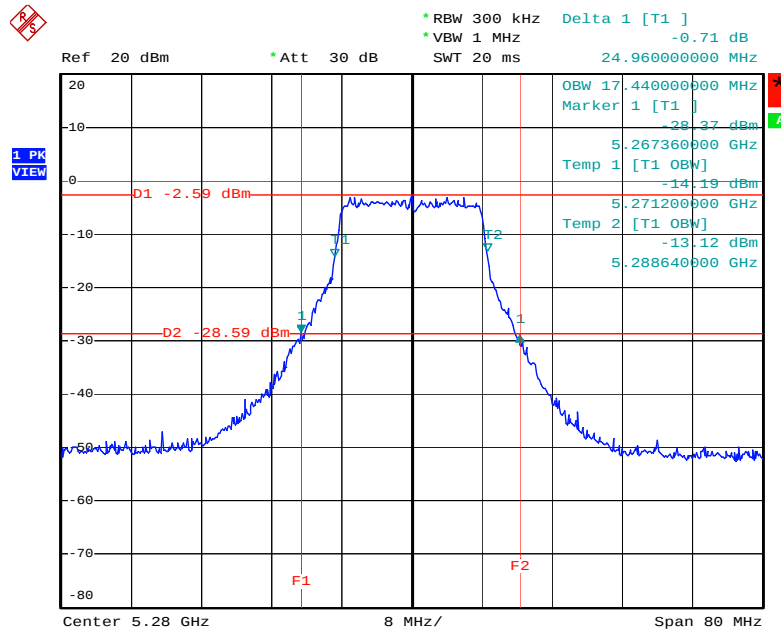
26 dB Bandwidth Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 9.MAY.2006 19:42:20

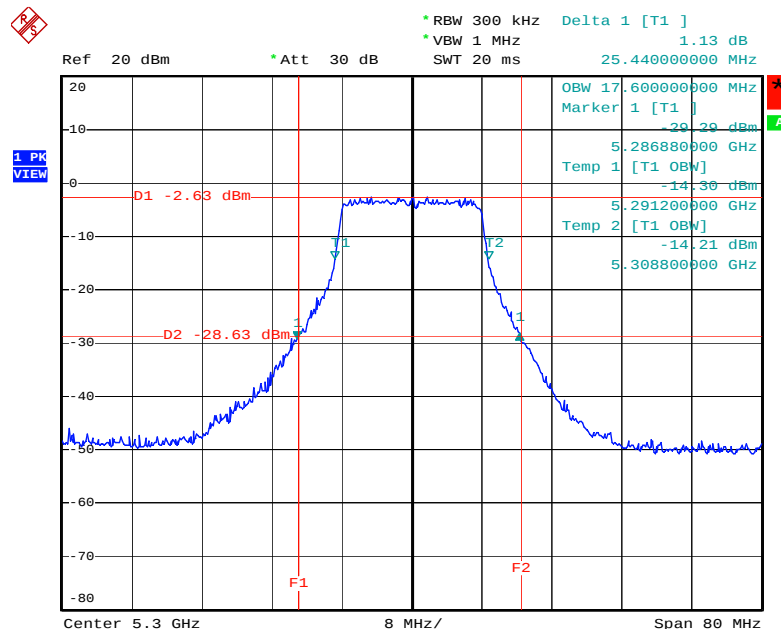
For Ant. 11

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5280 MHz



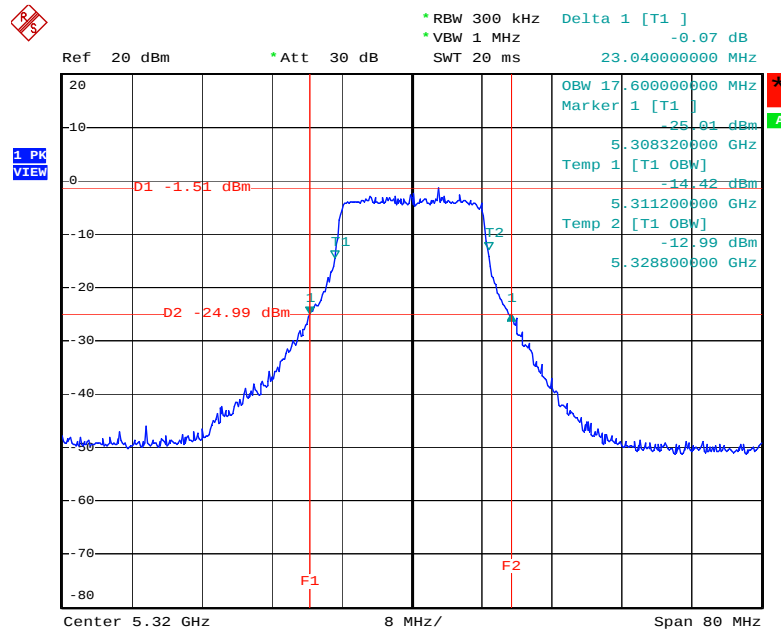
Date: 27.MAY.2006 11:14:36

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5300 MHz



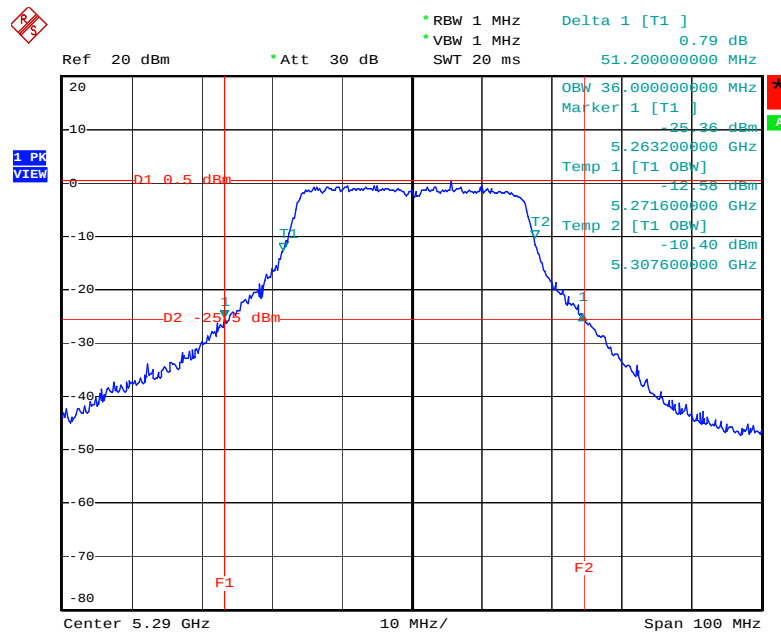
Date: 27.MAR.2006 19:23:22

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 27.MAR.2006 19:19:48

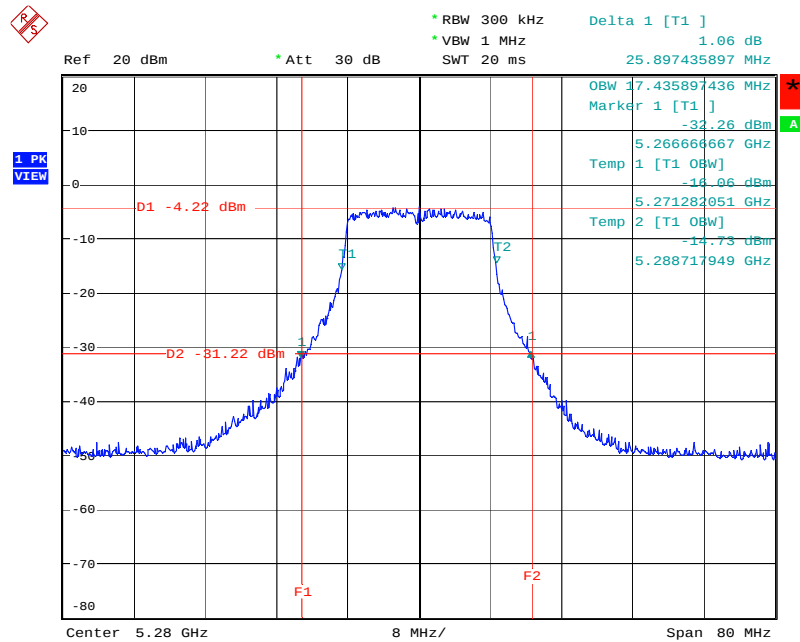
26 dB Bandwidth Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 27.MAR.2006 18:24:49

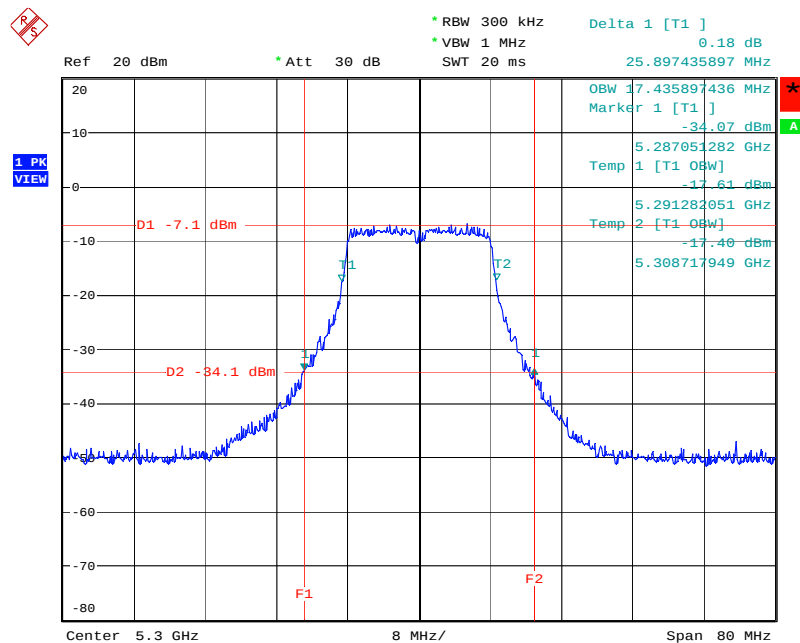
For Ant. 13

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5280 MHz



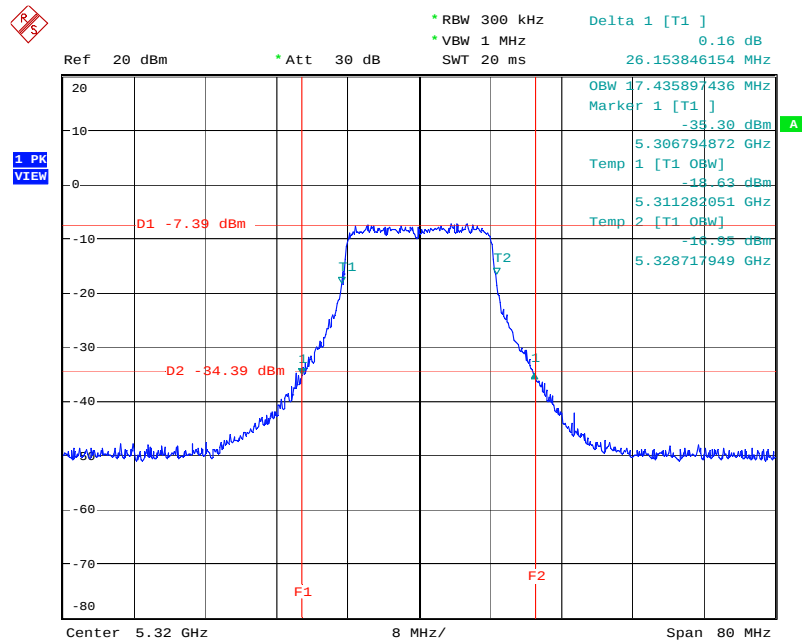
Date: 9.MAY.2006 21:29:10

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5300 MHz



Date: 9.MAY.2006 21:28:17

26 dB Bandwidth Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 21:27:27

4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

For the band 5.25~5.35 GHz , the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (24dBm) or $11 \text{ dBm} + 10\log B$, 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 from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.3.2. Measuring Instruments and Setting

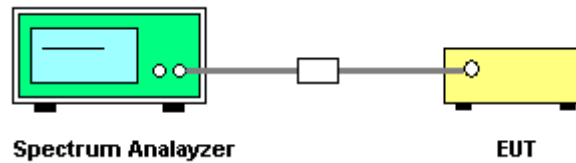
Please refer to section 5 in this report. The following table is the setting of the spectrum.

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

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with method #3 of FCC Public Notice DA-02-2138.

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	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 6/7

Configuration IEEE 802.11a

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
56	5280 MHz	17.58	22.00	Complies
60	5300 MHz	20.48	22.00	Complies
64	5320 MHz	20.82	22.00	Complies

Configuration IEEE 802.11a Turbo

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
58	5290 MHz	8.75	22.00	Complies

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 10

Configuration IEEE 802.11a

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
56	5280 MHz	8.61	16.50	Complies
60	5300 MHz	15.81	16.50	Complies
64	5320 MHz	11.07	16.50	Complies

Configuration IEEE 802.11a Turbo

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
58	5290 MHz	2.25	16.50	Complies

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 11

Configuration IEEE 802.11a

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
56	5280 MHz	8.20	13.00	Complies
60	5300 MHz	8.72	13.00	Complies
64	5320 MHz	8.97	13.00	Complies

Configuration IEEE 802.11a Turbo

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
58	5290 MHz	9.74	13.00	Complies

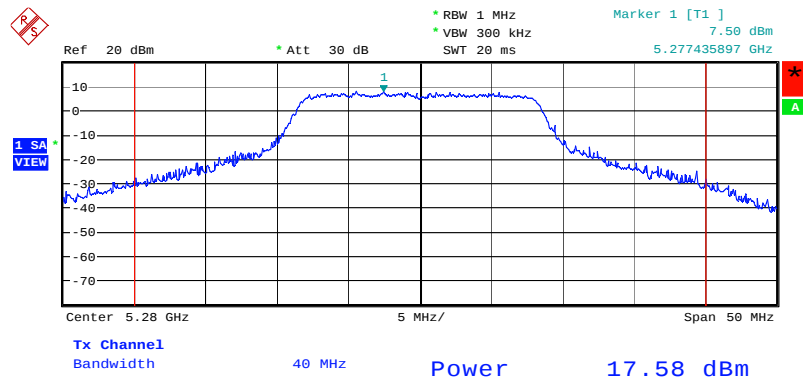
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 13

Configuration IEEE 802.11a

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
56	5280 MHz	7.14	16.00	Complies
60	5300 MHz	4.58	16.00	Complies
64	5320 MHz	3.87	16.00	Complies

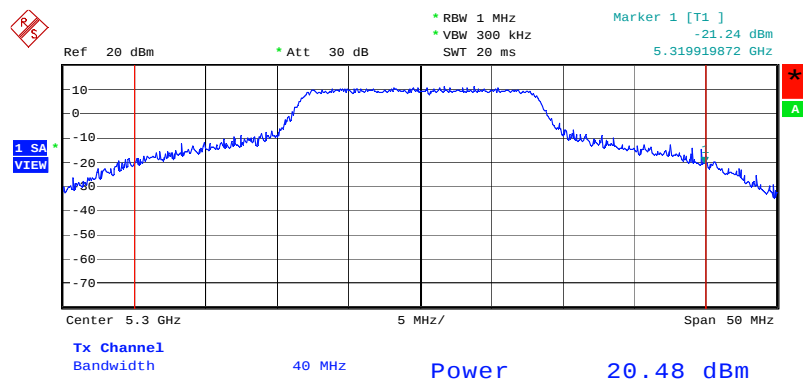
For Ant. 6/7

Channel Output Power Plot on Configuration IEEE 802.11a / 5280 MHz



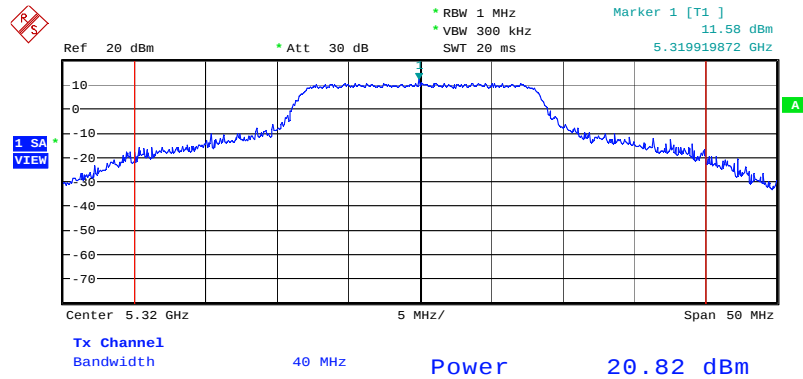
Date: 30.MAY.2006 20:51:32

Channel Output Power Plot on Configuration IEEE 802.11a / 5300 MHz



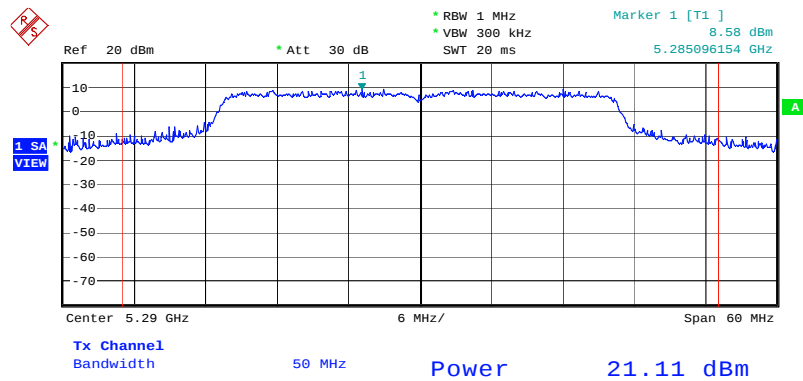
Date: 30.MAY.2006 20:50:53

Channel Output Power Plot on Configuration IEEE 802.11 a / 5320 MHz



Date: 30.MAY.2006 20:50:32

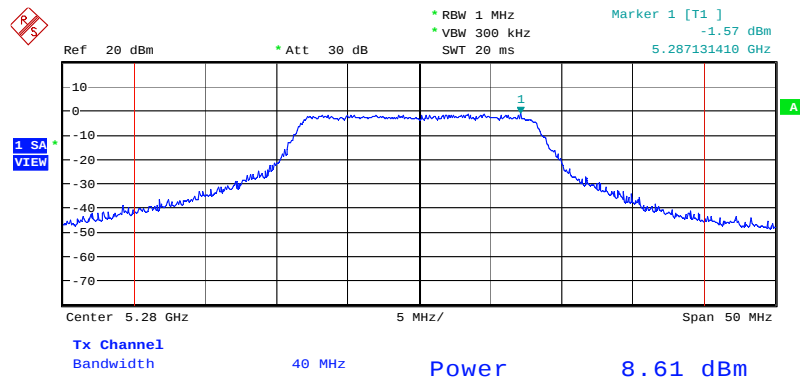
Channel Output Power Plot on Configuration IEEE 802.11 a Turbo / 5290 MHz



Date: 30.MAY.2006 20:04:32

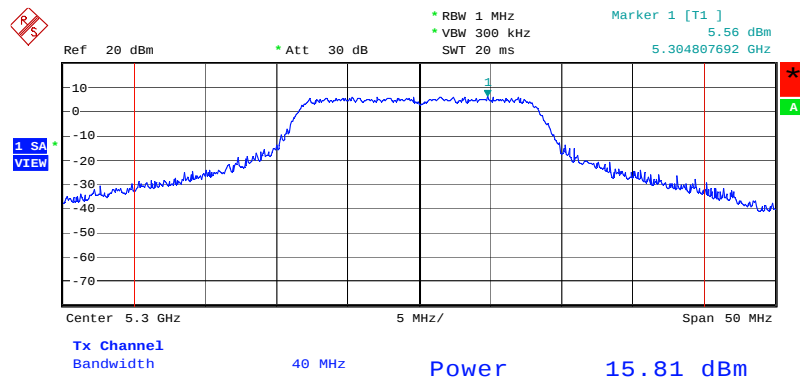
For Ant. 10

Channel Output Power Plot on Configuration IEEE 802.11a / 5280 MHz



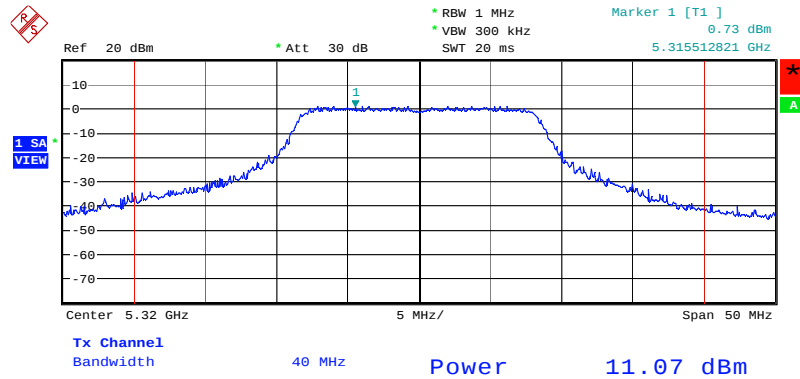
Date: 9.MAY.2006 19:34:43

Channel Output Power Plot on Configuration IEEE 802.11a / 5300 MHz



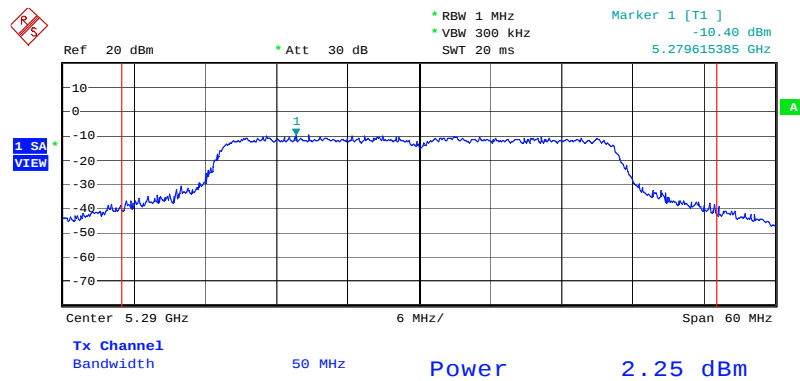
Date: 9.MAY.2006 19:35:11

Channel Output Power Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 19:35:35

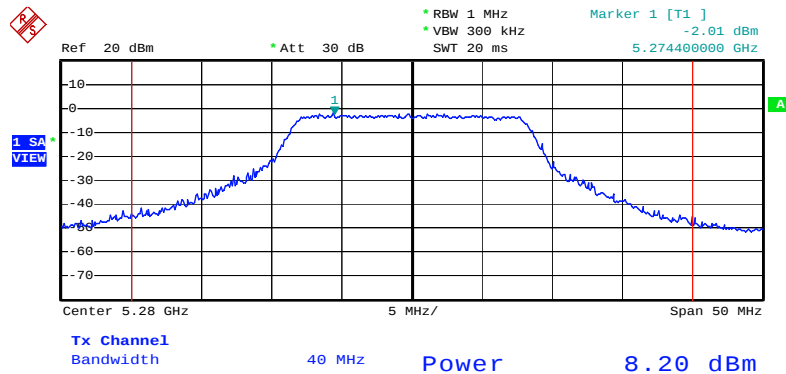
Channel Output Power Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 9.MAY.2006 19:38:15

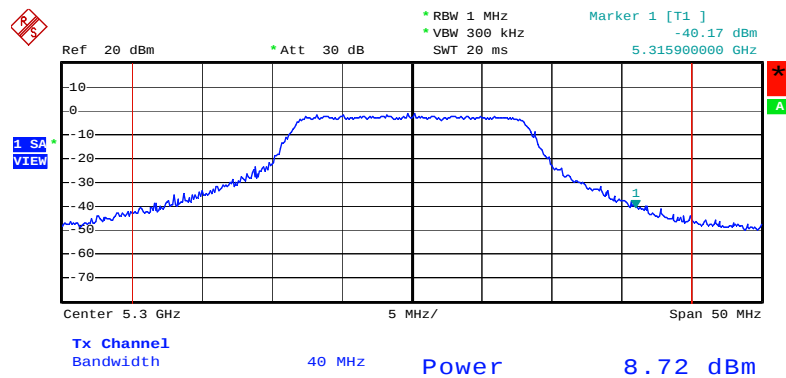
For Ant. 11

Channel Output Power Plot on Configuration IEEE 802.11a / 5280 MHz



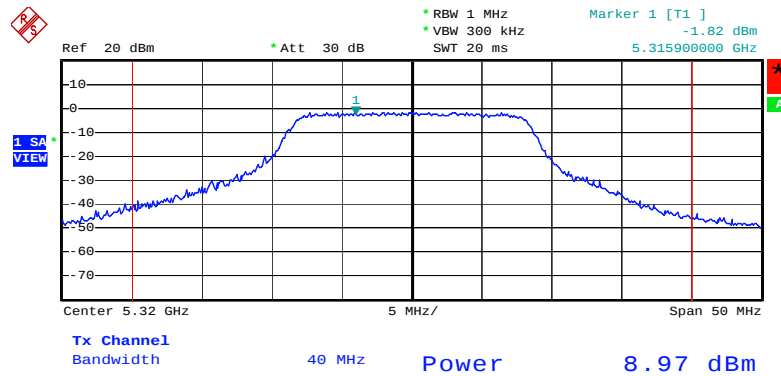
Date: 27.MAY.2006 11:19:12

Channel Output Power Plot on Configuration IEEE 802.11a / 5300 MHz



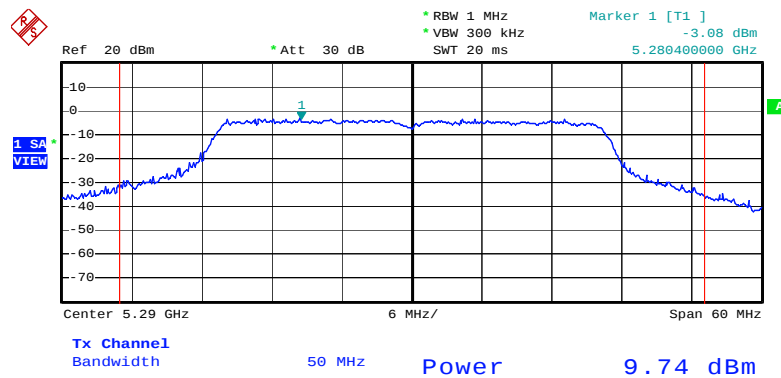
Date: 27.MAR.2006 19:12:13

Channel Output Power Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 27.MAR.2006 19:11:47

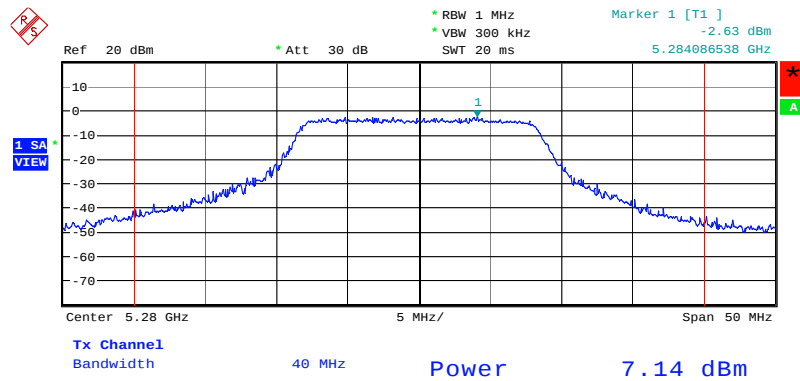
Channel Output Power Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 27.MAR.2006 18:28:24

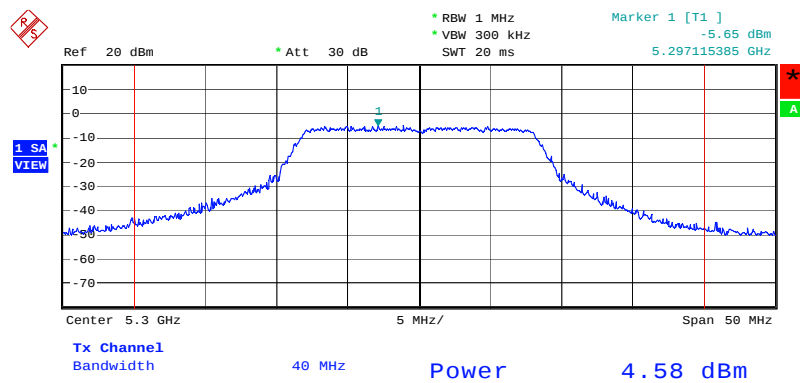
For Ant. 13

Channel Output Power Plot on Configuration IEEE 802.11a / 5280 MHz



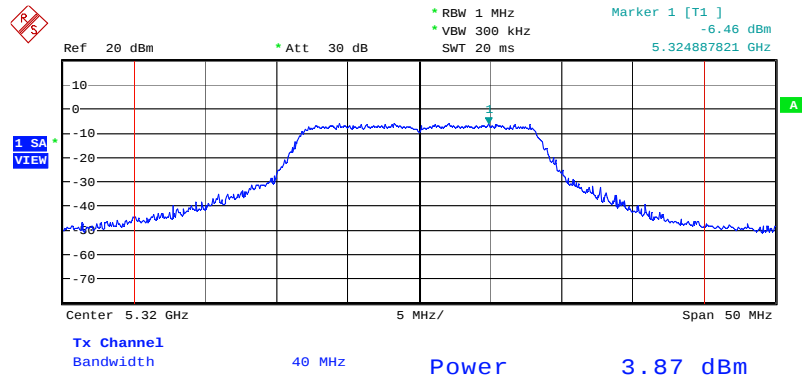
Date: 9.MAY.2006 21:35:42

Channel Output Power Plot on Configuration IEEE 802.11a / 5300 MHz



Date: 9.MAY.2006 21:35:15

Channel Output Power Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 21:34:50

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.

Frequency Range	Power Spectral Density limit (dBm/MHz)
5.25~5.35 GHz	11

4.4.2. Measuring Instruments and Setting

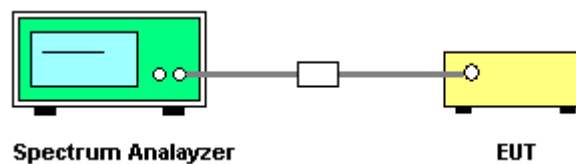
Please refer to section 5 in this report. The following table is the setting of Spectrum Analyzer.

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 analyser.
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.

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	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 6/7

Configuration IEEE 802.11a

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5280 MHz	1.79	9.00	Complies
5300 MHz	4.85	9.00	Complies
5320 MHz	4.70	9.00	Complies

Configuration IEEE 802.11a Turbo

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5290 MHz	2.55	9.00	Complies

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 10

Configuration IEEE 802.11a

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5280 MHz	-7.49	3.50	Complies
5300 MHz	-0.27	3.50	Complies
5320 MHz	-4.72	3.50	Complies

Configuration IEEE 802.11a Turbo

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5290 MHz	-16.73	3.50	Complies

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 11

Configuration IEEE 802.11a

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5280 MHz	-7.62	0.00	Complies
5300 MHz	-7.18	0.00	Complies
5320 MHz	-7.11	0.00	Complies

Configuration IEEE 802.11a Turbo

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5290 MHz	-7.60	0.00	Complies

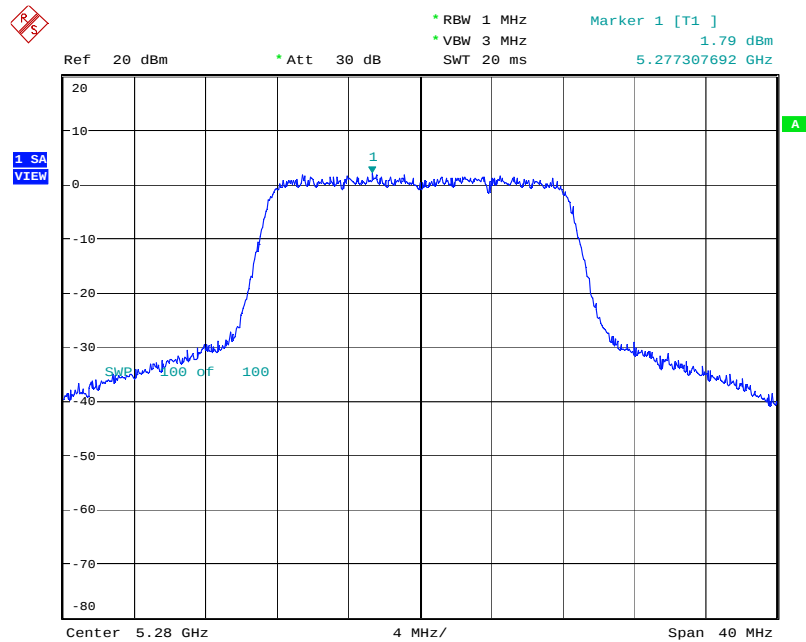
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 13

Configuration IEEE 802.11a

Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
5280 MHz	-9.42	4.00	Complies
5300 MHz	-11.13	4.00	Complies
5320 MHz	-12.42	4.00	Complies

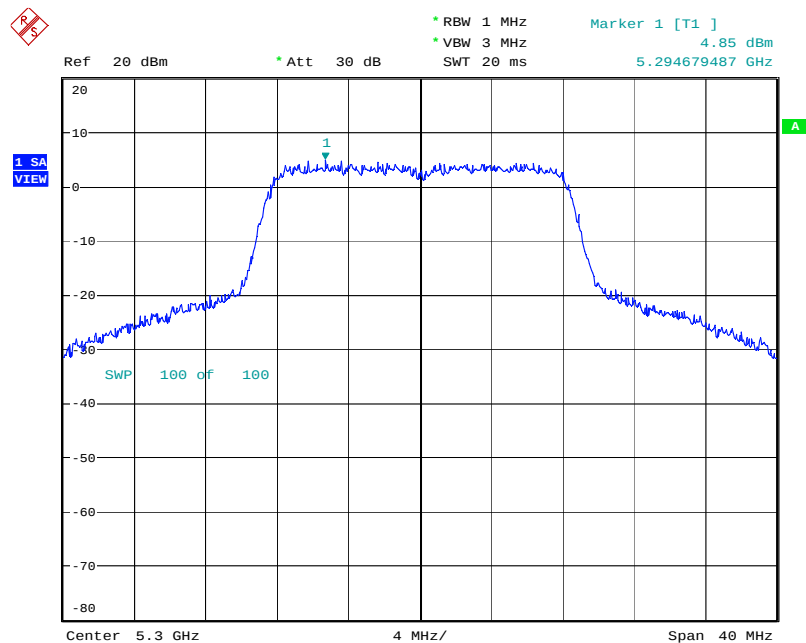
For Ant. 6/7

Power Density Plot on Configuration IEEE 802.11a / 5280 MHz



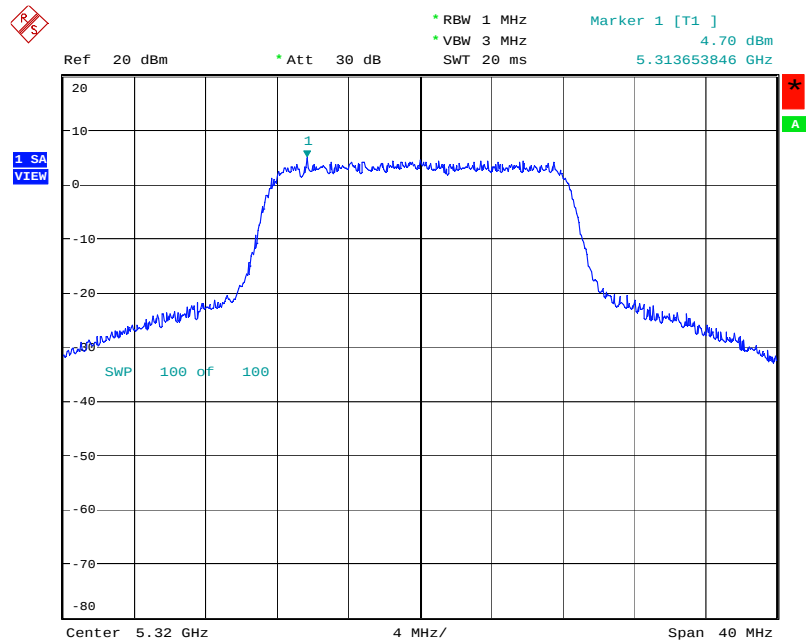
Date: 30.MAY.2006 20:49:13

Power Density Plot on Configuration IEEE 802.11a / 5300 MHz



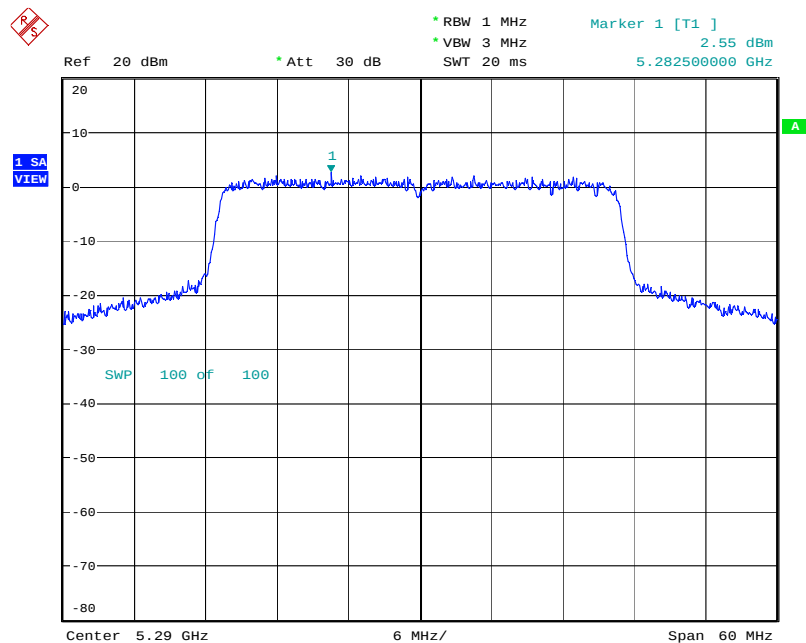
Date: 30.MAY.2006 21:00:21

Power Density Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 30.MAY.2006 20:49:57

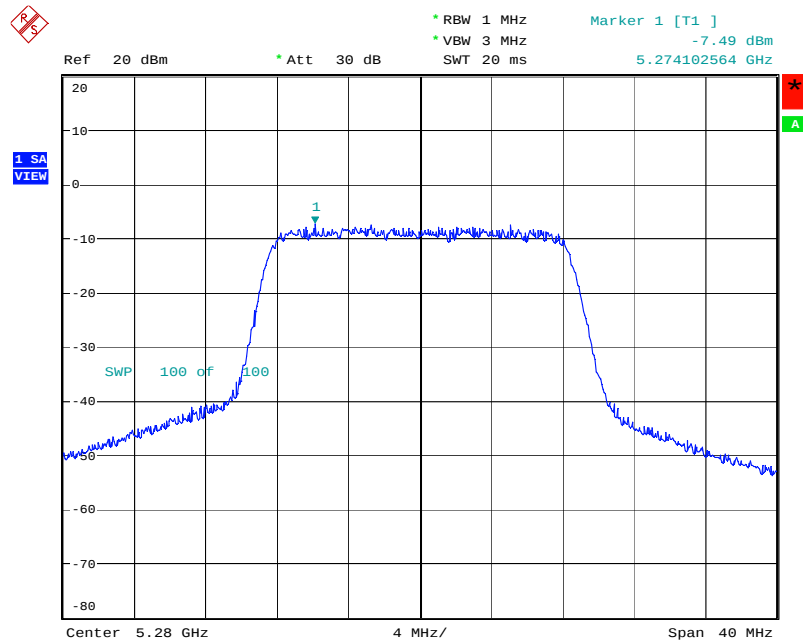
Power Density Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 30.MAY.2006 20:05:14

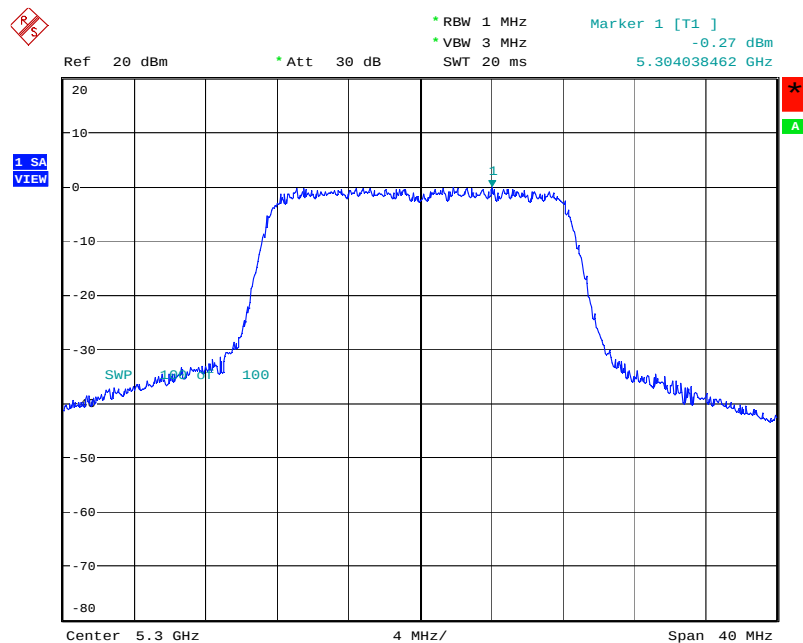
For Ant. 10

Power Density Plot on Configuration IEEE 802.11a / 5280 MHz



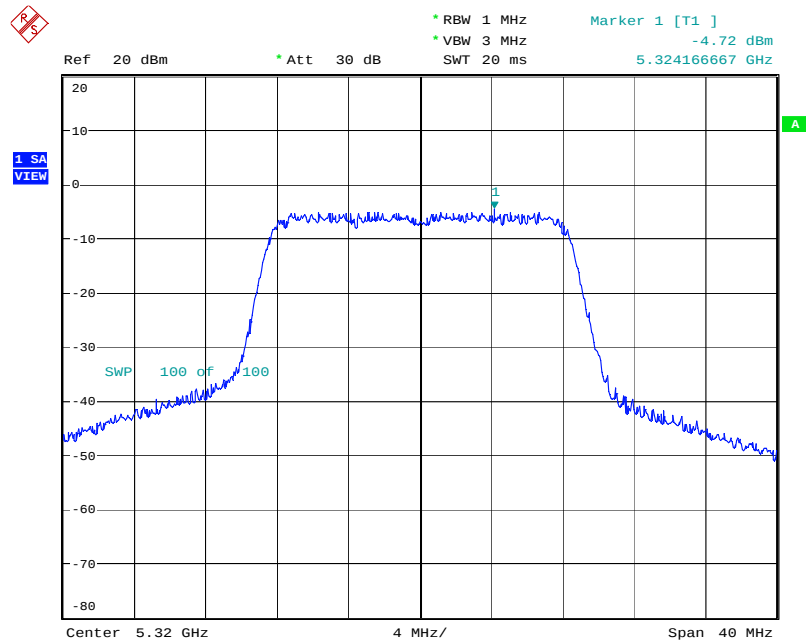
Date: 9.MAY.2006 19:33:55

Power Density Plot on Configuration IEEE 802.11a / 5300 MHz



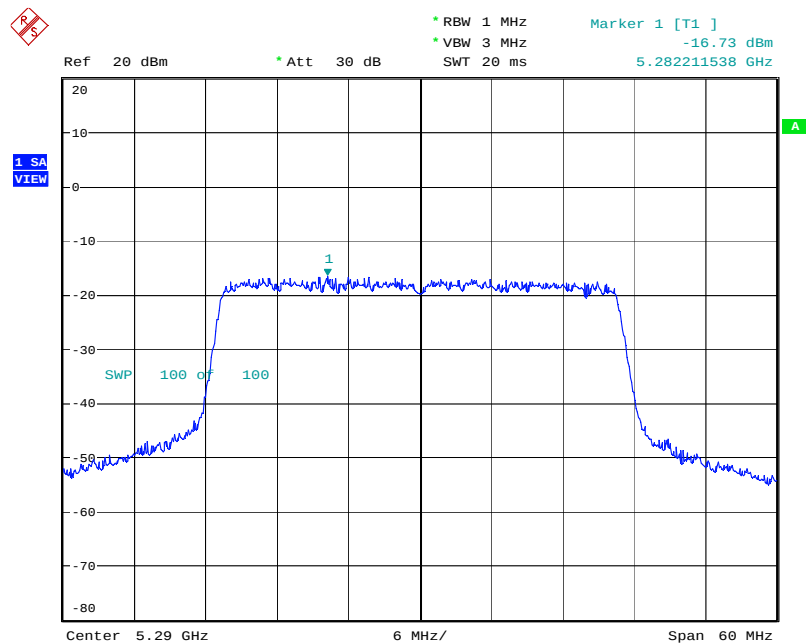
Date: 9.MAY.2006 19:33:32

Power Density Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 19:33:07

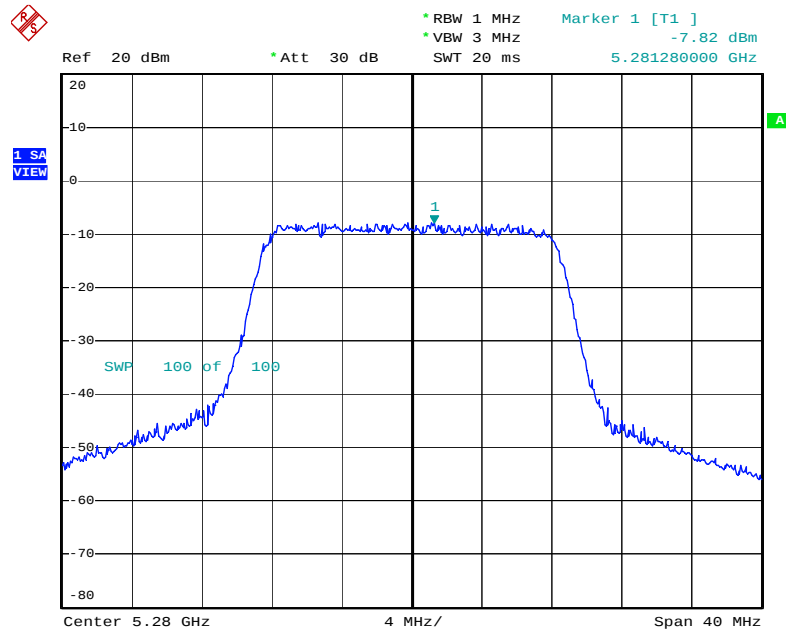
Power Density Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 9.MAY.2006 19:39:20

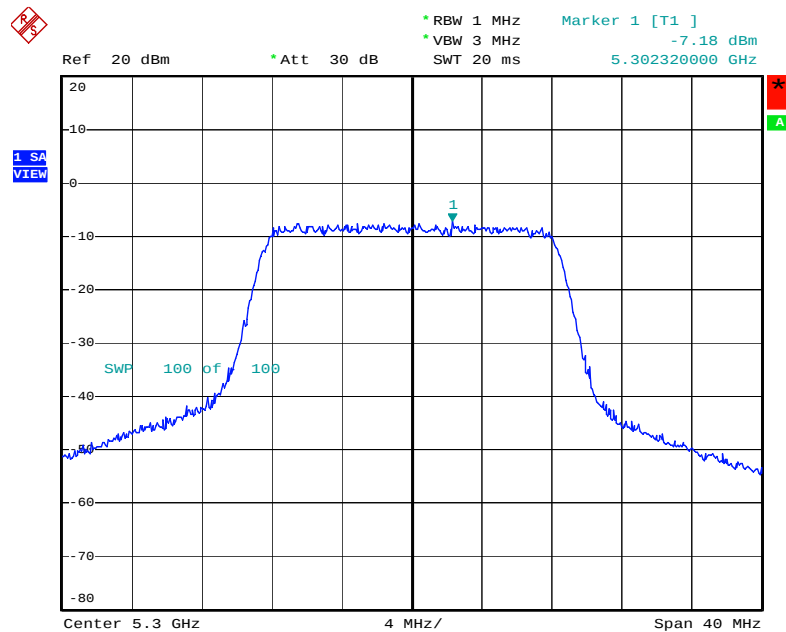
For Ant. 11

Power Density Plot on Configuration IEEE 802.11a / 5280 MHz



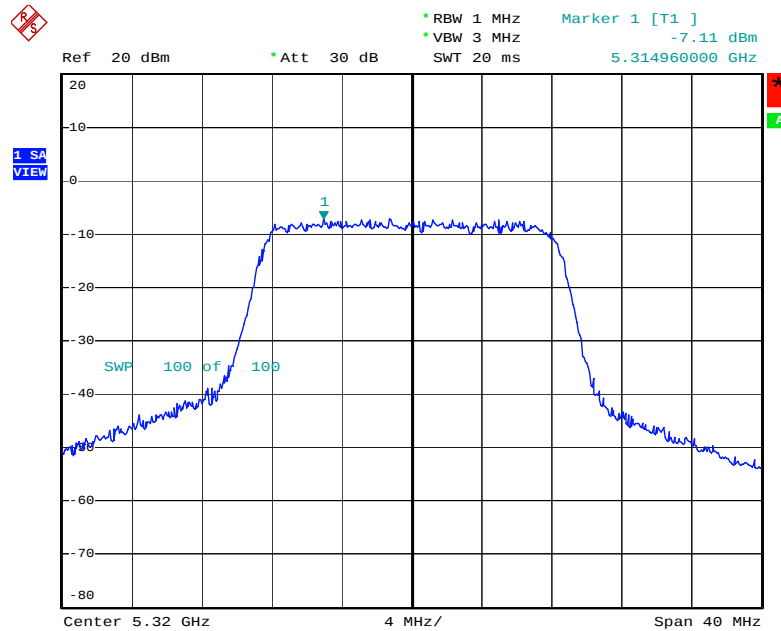
Date: 27.MAY.2006 11:30:56

Power Density Plot on Configuration IEEE 802.11a / 5300 MHz



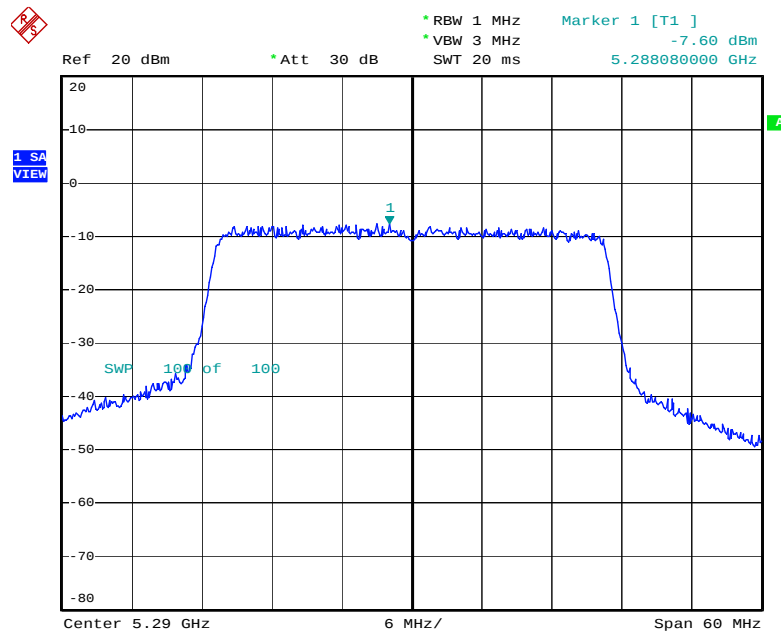
Date: 27.MAR.2006 19:13:57

Power Density Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 27.MAR.2006 19:14:13

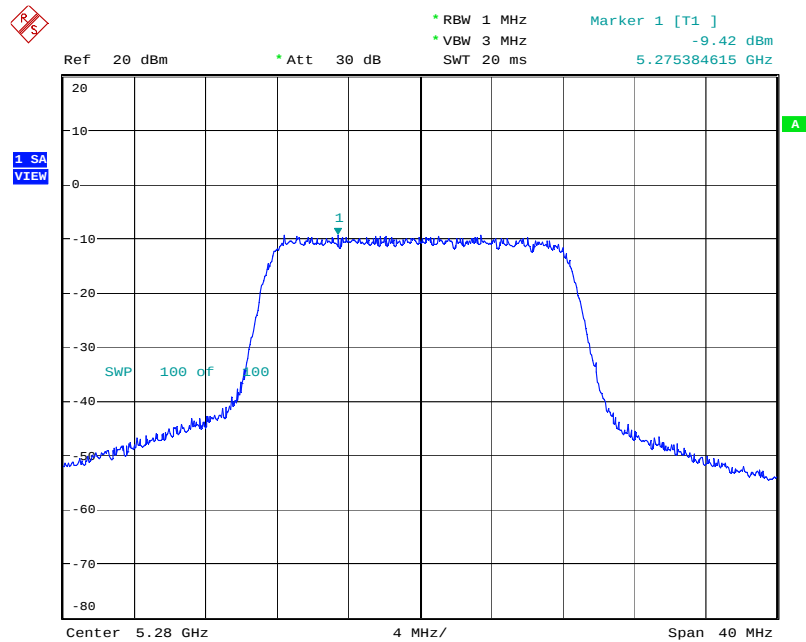
Power Density Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 27.MAR.2006 18:19:26

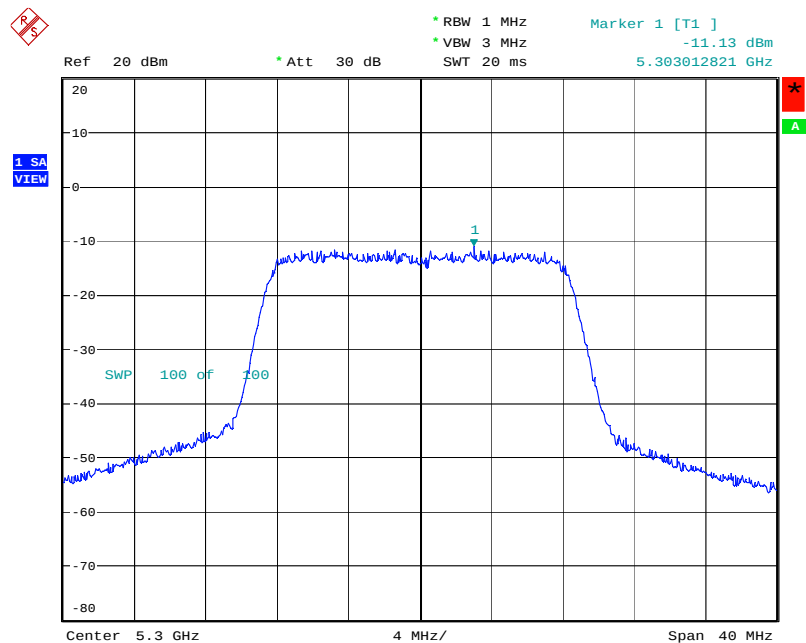
For Ant. 13

Power Density Plot on Configuration IEEE 802.11a / 5280 MHz



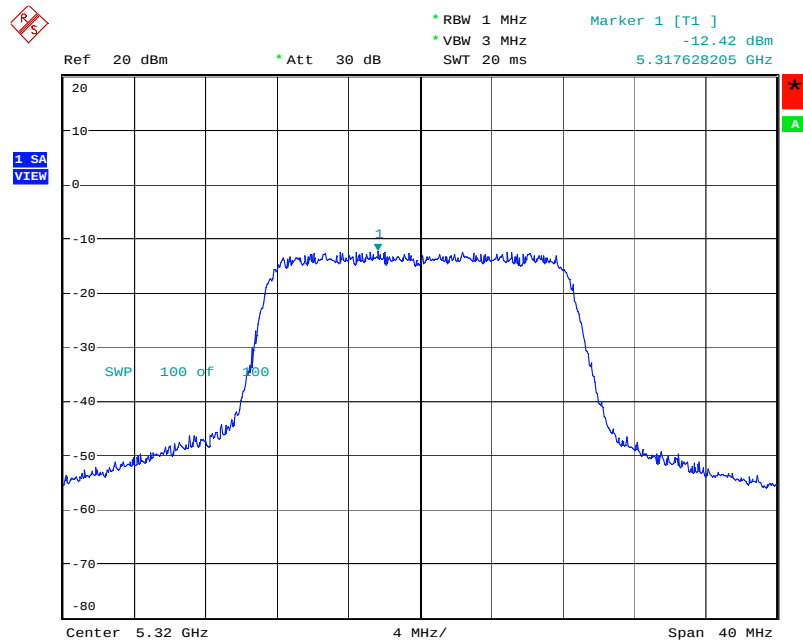
Date: 9.MAY.2006 21:33:30

Power Density Plot on Configuration IEEE 802.11a / 5300 MHz



Date: 9.MAY.2006 21:33:50

Power Density Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 21:34:07

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

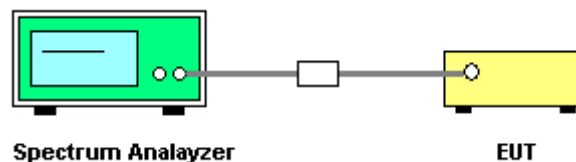
Please refer to section 5 in this report. The following table is the setting of Spectrum Analyzer.

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 analyser.
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 maxhold 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 $\geq 1/T$ (IEEE 802.11a VBW = 300kHz $\geq 1/4 \mu s$). 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.

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	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 6/7

Configuration IEEE 802.11a

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5280 MHz	4.31	13	Complies
5300 MHz	3.13	13	Complies
5320 MHz	4.56	13	Complies

Configuration IEEE 802.11a Turbo

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5290 MHz	4.63	13	Complies

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 10

Configuration IEEE 802.11a

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5280 MHz	4.24	13	Complies
5300 MHz	3.78	13	Complies
5320 MHz	4.26	13	Complies

Configuration IEEE 802.11a Turbo

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5290 MHz	3.89	13	Complies