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FCC RADIO TEST REPORT

Applicant's company	**Siemens Communications, Inc.**
Applicant Address	1700 Technology Drive, Mailstop 130, San Jose, California 95110
FCC ID	**AY3-AP36V1A**
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	HiPath Wireless Access Point, Altitude 450, Altitude 451
Brand Name	SIEMENS, Extreme
Model Name	HiPath Wireless AP3610, HiPath Wireless AP3620, 15800 Altitude 450, 15801 Altitude 451
Test Rule	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Received Date	Jan. 14, 2008
Final Test Date	Mar. 24, 2008
Submission Type	Original Equipment
Multiple Listing	Please refer to section 3.7

Statement

Test result included is only for the Draft n part 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 C**.

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

TAF
Testing Laboratory
1190

Table of Contents

History of This Test Report

Original Issue Date: Mar. 28, 2008

Report No.: FR811608AC

■ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

1. CERTIFICATE OF COMPLIANCE

Product Name	:	HiPath Wireless Access Point, Altitude 450, Altitude 451
Brand Name	:	SIEMENS, Extreme
Model Name	:	HiPath Wireless AP3610, HiPath Wireless AP3620, 15800 Altitude 450, 15801 Altitude 451
Applicant	:	Siemens Communications, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jan. 14, 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 C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	2.00 dB
4.2	15.247(b)(3)	Maximum Peak Conducted Output Power	Complies	0.21 dB
4.3	15.247(e)	Power Spectral Density	Complies	2.33 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.66 dB
4.6	15.247(d)	Band Edge Emissions	Complies	0.02 dB
4.7	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Conducted Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	$\pm 8.5 \times 10^{-8}$	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

Items	Description
Product Type	WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	POE & Power Adapter
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	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Channel Number	For 2.4GHz Band: 11 for 20MHz bandwidth ; 7 for 40MHz bandwidth For 5GHz Band: 5 for 20MHz bandwidth ; 2 for 40MHz bandwidth
Channel Band Width (99%)	For 2.4GHz Band: MCS16 (20MHz) : 17.72 MHz ; MCS16 (40MHz) : 36.40 MHz For 5GHz Band: MCS16 (20MHz) : 17.80 MHz ; MCS16 (40MHz) : 36.32 MHz
Conducted Output Power	For 2.4GHz Band: MCS16 (20MHz) : 29.79 dBm ; MCS16 (40MHz) : 25.09 dBm For 5GHz Band: MCS16 (20MHz) : 29.36 dBm ; MCS16 (40MHz) : 28.79 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

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

Draft n spec

MCS Index		Modulation		NBPSC	NCBPS		NDBPS		Data rate(Mbps) 800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	486	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0
8	2	BPSK	1/2	1	104	216	52	108	13.0	27.0
9	2	QPSK	1/2	2	208	432	104	216	26.0	54.0
10	2	QPSK	3/4	2	208	432	156	324	39.0	81.0
11	2	16-QAM	1/2	4	416	864	208	432	52.0	108.0
12	2	16-QAM	3/4	4	416	864	312	648	78.0	162.0
13	2	64-QAM	2/3	6	624	1296	416	864	104.0	216.0
14	2	64-QAM	3/4	6	624	1296	468	972	117.0	243.0
15	2	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0
16	3	BPSK	1/2	1	156	324	78	162	19.5	40.5
17	3	QPSK	1/2	2	312	648	156	324	39	81
18	3	QPSK	3/4	2	312	648	234	486	58.5	121.5
19	3	16-QAM	1/2	4	624	1296	312	648	78	162
20	3	16-QAM	3/4	4	624	1296	468	972	117	243
21	3	64-QAM	2/3	6	936	1944	624	1296	156	324
22	3	64-QAM	3/4	6	936	1944	702	1458	175.5	364.5
23	3	64-QAM	5/6	6	936	1944	780	1620	195	4055

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

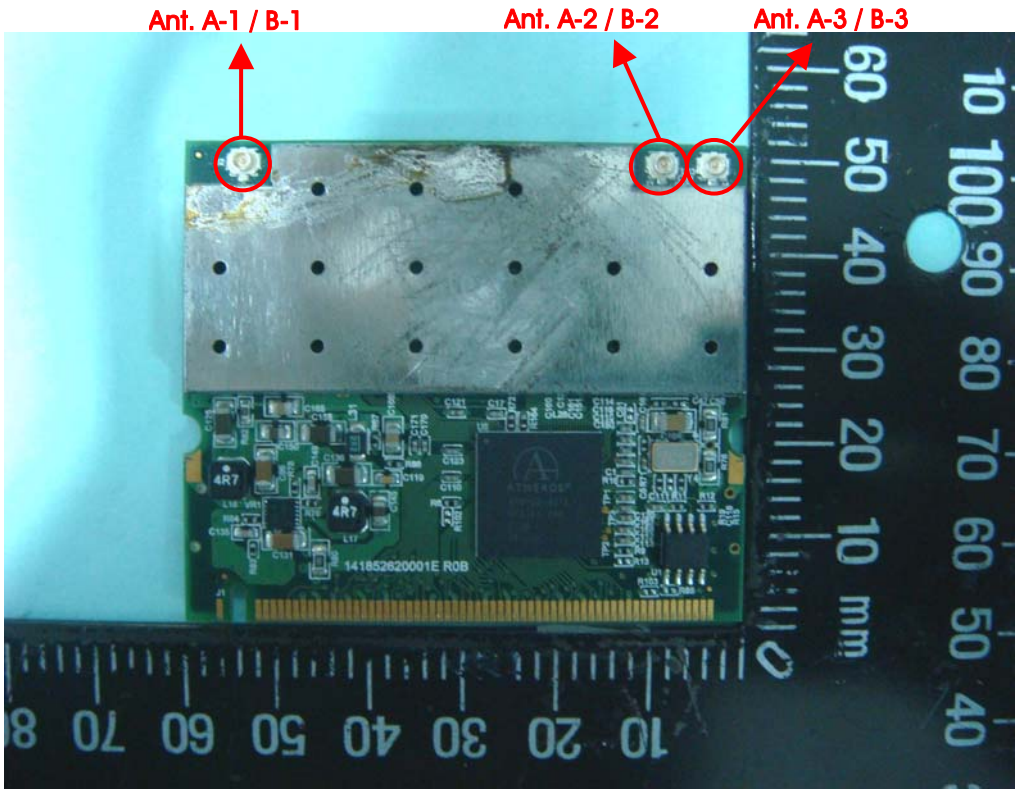
N/A

3.3. Table for Filed Antenna

For 5GHz Band

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
A-1	JOYMAX	FWX-614RSXXX-514	Dipole Antenna	Reversed-SMA	5	TX/RX
A-2	JOYMAX	FWX-614RSXXX-514	Dipole Antenna	Reversed-SMA	5	TX/RX
A-3	JOYMAX	FWX-614RSXXX-514	Dipole Antenna	Reversed-SMA	5	TX/RX
B-1	WYA YU	NP-7041	Embeded Antenna	NA	6	TX/RX
B-2	WYA YU	NP-7041	Embeded Antenna	NA	6	TX/RX
B-3	WYA YU	NP-7041	Embeded Antenna	NA	6	TX/RX

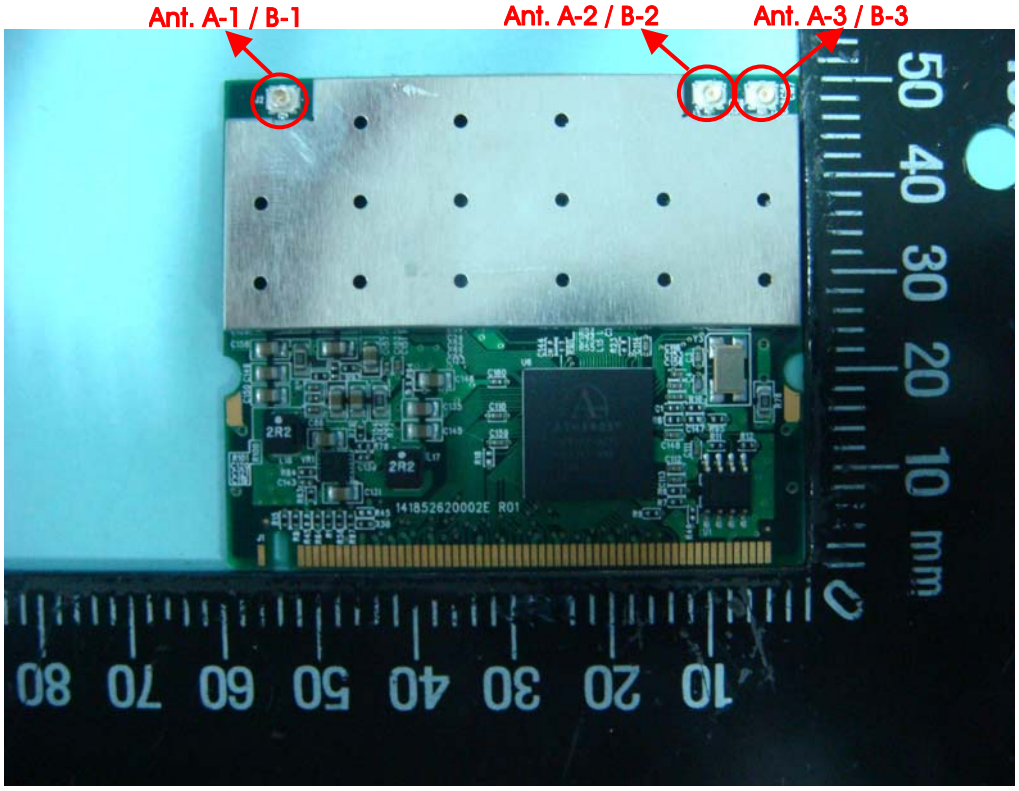
Note: Ant. A-1, Ant. A-2, Ant. A-3, Ant. B-1, Ant. B-2, Ant. B-3 could transmit/receive simultaneously.



For 2.4GHz Band

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Remark
A-1	JOYMAX	FWX-614RSXXX-514	Dipole Antenna	Reversed-SMA	4	TX/RX
A-2	JOYMAX	FWX-614RSXXX-514	Dipole Antenna	Reversed-SMA	4	TX/RX
A-3	JOYMAX	FWX-614RSXXX-514	Dipole Antenna	Reversed-SMA	4	TX/RX
B-1	WYA YU	NP-7041	Embeded Antenna	NA	3	TX/RX
B-2	WYA YU	NP-7041	Embeded Antenna	NA	3	TX/RX
B-3	WYA YU	NP-7041	Embeded Antenna	NA	3	TX/RX

Note: Ant. A-1, Ant. A-2, Ant. A-3, Ant. B-1, Ant. B-2, Ant. B-3 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

There are two bandwidth systems for draft n.

For 2.4GHz Band

Frequency Allocation for 802.11b/g

For 20MHz bandwidth syetems, use Channel 1~Channel 11.

For 40MHz bandwidth syetems, use Channel 3~Channel 9.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz		

For 5GHz Band

Frequency Allocation for 802.11a

For 20MHz bandwidth systems, use Channel 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 151, 159.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5725~5850 MHz	149	5745 MHz	161	5805 MHz
	151	5755 MHz	165	5825 MHz
	153	5765 MHz		
	157	5785 MHz		
	159	5795 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.

For 2.4GHz Band

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	Auto	-	-
Maximum Peak Conducted Output Power	MCS16/20MHz	13 Mbps	1/6/11	A-1+A-2+A-3 / B-1+B-2+B-3
	MCS16/40MHz	27 Mbps	3/6/9	A-1+A-2+A-3 / B-1+B-2+B-3
Power Spectral Density 6dB Spectrum Bandwidth	MCS16/20MHz	13 Mbps	1/6/11	A-1+A-2+A-3 / B-1+B-2+B-3
	MCS16/40MHz	27 Mbps	3/6/9	A-1+A-2+A-3 / B-1+B-2+B-3
Radiated Emissions 9kHz~1GHz	Normal Link	Auto	-	-
Radiated Emissions 1GHz~10th Harmonic	MCS16/20MHz	13 Mbps	1/6/11	A/B
	MCS16/40MHz	27 Mbps	3/6/9	A/B
Band Edge Emissions	MCS16/20MHz	13 Mbps	1/11	A/B
	MCS16/40MHz	27 Mbps	3/9	A/B

For 5GHz Band

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	Auto	-	-
Maximum Peak Conducted Output Power	MCS16/20MHz	13 Mbps	149/157/165	A-1+A-2+A-3 / B-1+B-2+B-3
	MCS16/40MHz	27 Mbps	151/159	A-1+A-2+A-3 / B-1+B-2+B-3
Power Spectral Density 6dB Spectrum Bandwidth	MCS16/20MHz	13 Mbps	149/157/165	A-1+A-2+A-3 / B-1+B-2+B-3
	MCS16/40MHz	27 Mbps	151/159	A-1+A-2+A-3 / B-1+B-2+B-3
Radiated Emissions 9kHz~1GHz	Normal Link	Auto	-	-
Radiated Emissions 1GHz~10th Harmonic	MCS16/20MHz	13 Mbps	149/157/165	A/B
	MCS16/40MHz	27 Mbps	151/159	A/B
Band Edge Emissions	MCS16/20MHz	13 Mbps	149/165	A/B
	MCS16/40MHz	27 Mbps	151/159	A/B

Test Mode:

<For Ant. A Dipole Antenna>

Adapter Mode: EUT with Ant. A + Adapter

POE Mode: EUT with Ant. A + POE

For Conducted Emissions test:

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

For Radiated Emissions test:

Adapter Mode and POE Mode for Radiated emission test were performed at Horizontal and Vertical and the worst-case was found at Horizontal. So it was recorded in this report.

Due to POE Mode (Horizontal) generated the worst test result, so it was recorded in this report.

<For Ant. B Embeded Antenna>

Adapter Mode: EUT with Ant. B + Adapter

POE Mode: EUT with Ant. B + POE

For Conducted Emissions test:

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

For Radiated Emissions test:

Adapter Mode and POE Mode for Radiated emission test were performed at Horizontal and Vertical and the worst-case was found at Vertical. So it was recorded in this report.

Due to POE Mode (Horizontal) 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 & Existing Change

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

Product Name	Brand Name	Model Name	Description
HiPath Wireless Access Point	SIEMENS	AP3610	EUT with internal antennas
		AP3620	EUT with external antennas
Altitude 450	Extreme	15800 Altitude 450	EUT with internal antennas
Altitude 451	Extreme	15801 Altitude 451	EUT with external antennas

Note: All the models are identical, the difference model for difference brand served as marketing strategy.

3.8. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	D400	E2K24GBRL
Notebook	DELL	D400	E2K24GBRL
Adapter	PHIHONG	PSA18U-480C (A)-R	DoC
POE adapter	PHIHONG	POE20U-560 (G)-R	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 2.4GHz Band

Power Parameters of Draft n MCS16 20MHz Ant. A

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
Draft n	15.5	22	15.5

Power Parameters of Draft n MCS16 40MHz Ant. A

Test Software Version	ART		
Frequency	2422 MHz	2437 MHz	2452 MHz
Draft n	14	16.5	14.5

Power Parameters of Draft n MCS16 20MHz Ant. B

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
Draft n	16	22	16

Power Parameters of Draft n MCS16 40MHz Ant. B

Test Software Version	ART		
Frequency	2422 MHz	2437 MHz	2452 MHz
Draft n	13	16.5	13.5

For 5GHz Band

Power Parameters of Draft n MCS16 20MHz Ant. A

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
Draft n	19.5	20.5	21.5

Power Parameters of Draft n MCS16 40MHz Ant. A

Test Software Version	ART	
Frequency	5755 MHz	5795 MHz
Draft n	19.5	21.5

Power Parameters of Draft n MCS16 20MHz Ant. B

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
Draft n	21.5	21.5	21.5

Power Parameters of Draft n MCS16 40MHz Ant. B

Test Software Version	ART	
Frequency	5755 MHz	5795 MHz
Draft n	20	21.5

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

Executed "ping.exe" to link with the remote workstation to receive and transmit signal by LAN and WLAN.

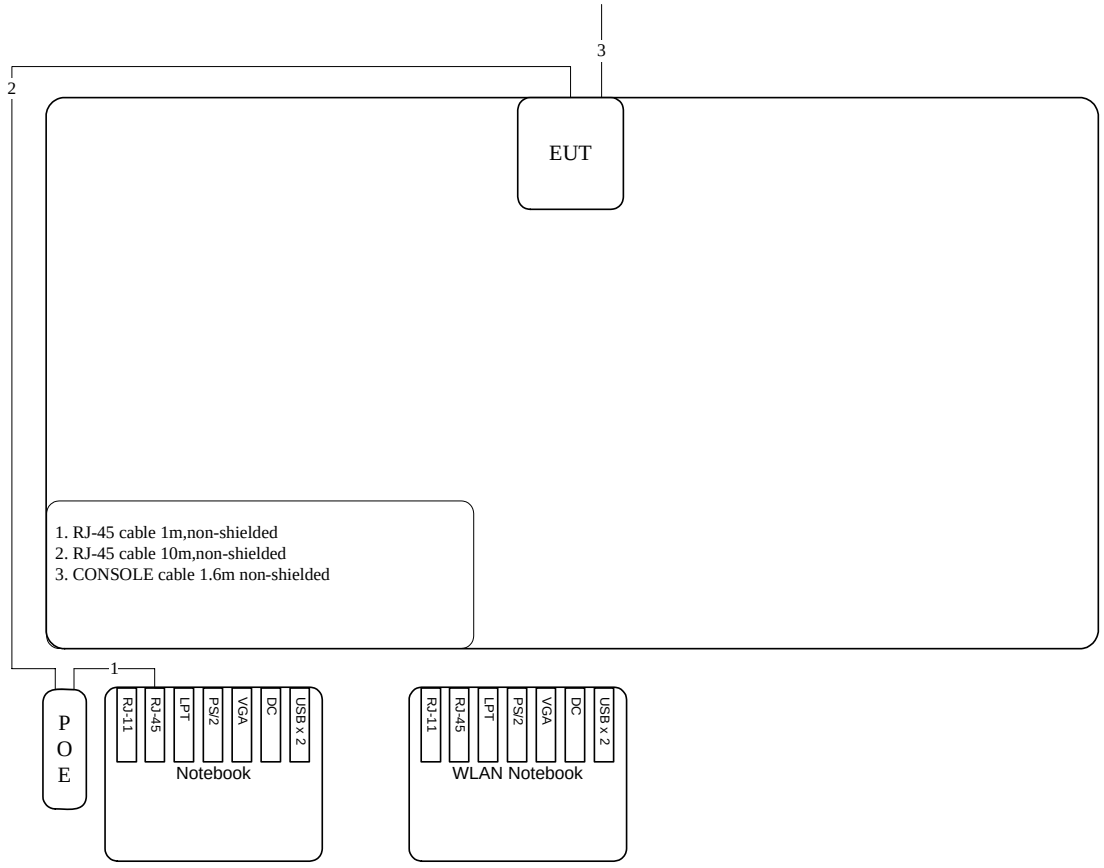
Executed “LAN Test” to traffic packet data generated software and keep 10% traffic load to link with the remote workstation by LAN and WAN.

3.10. Test Configurations

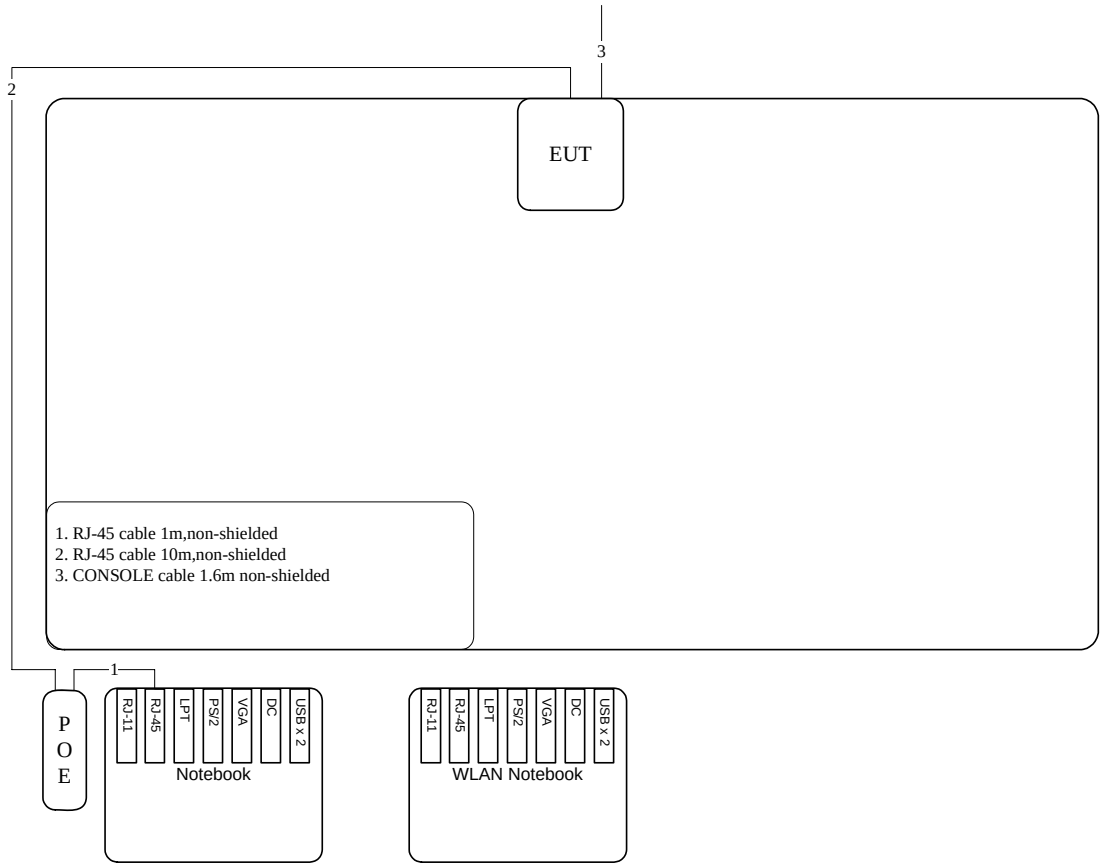
3.10.1. Radiation Emissions Test Configuration

Test Configuration: 9KHz~1GHz

Test Mode: Ant. A POE Mode (Horizontal)

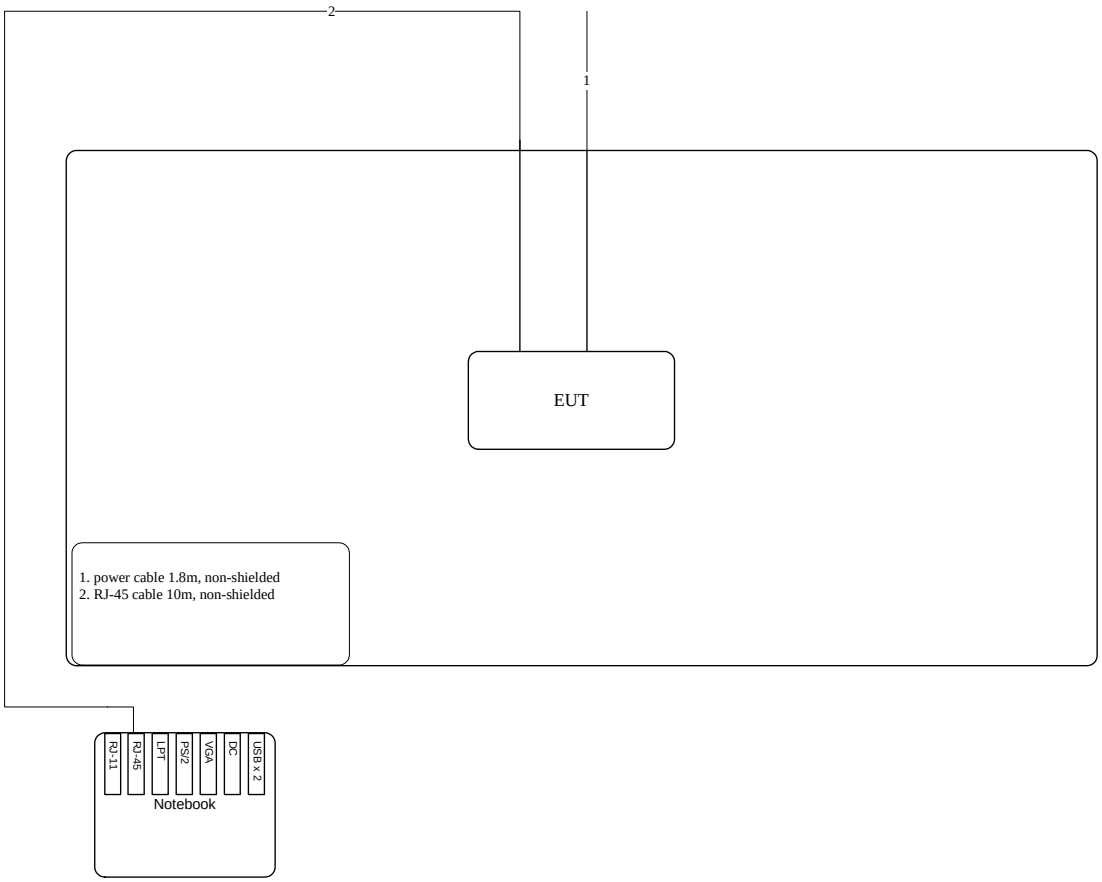


Test Mode: Ant. B POE Mode (Horizontal)

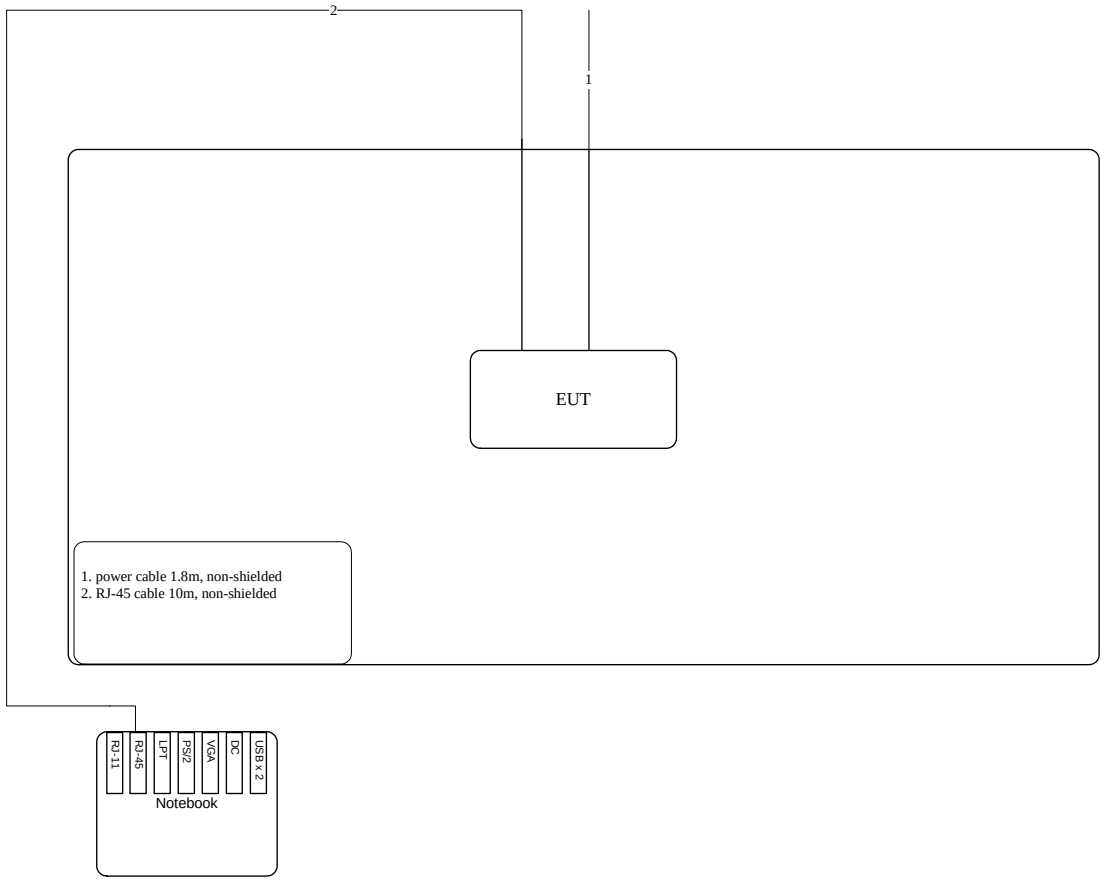


Test Configuration: above 1GHz

Ant. A

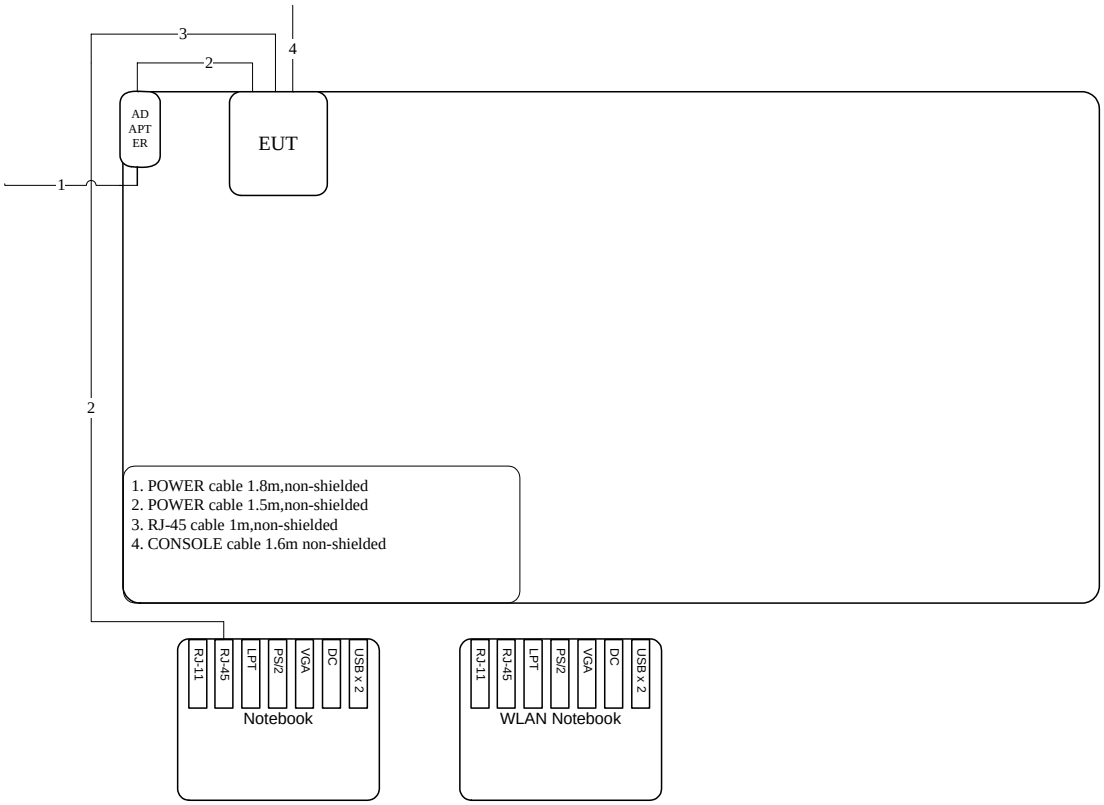


Ant. B

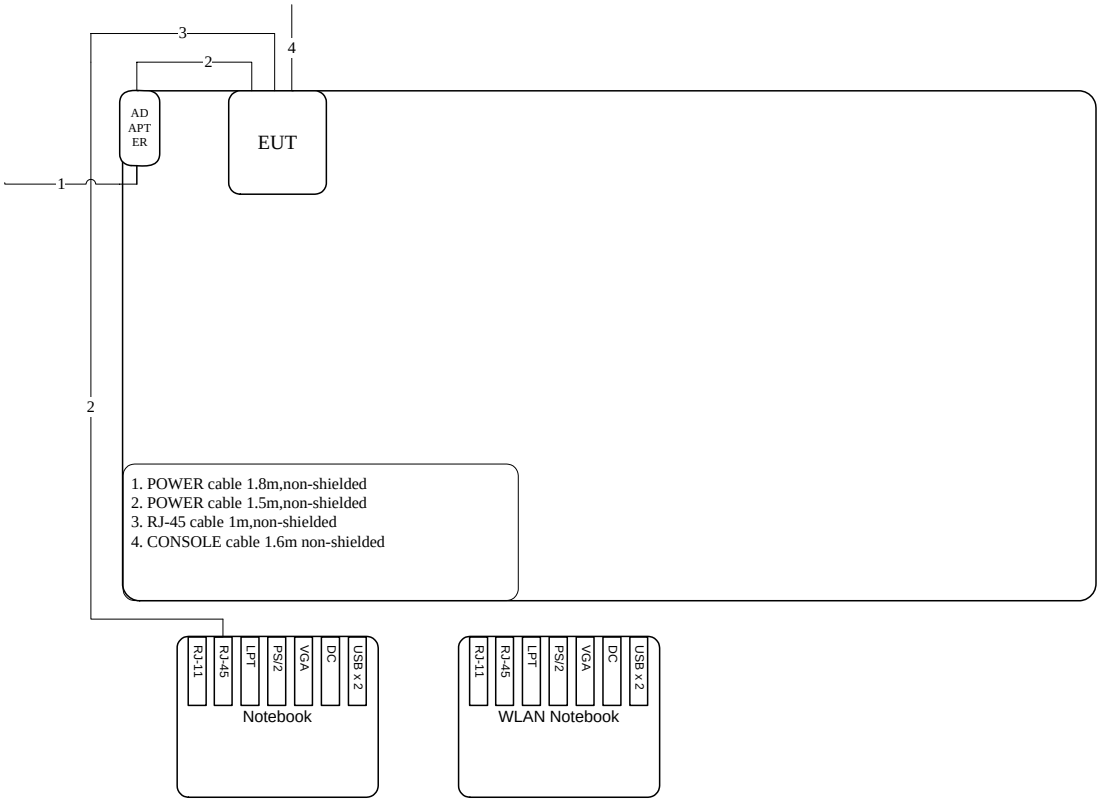

2
1
EUT
1. power cable 1.8m, non-shielded
2. RJ-45 cable 10m, non-shielded
RJ-11
RJ-45
LPT
PS/2
VGA
DC
USB x 2
Notebook

3.10.2. AC Power Line Conduction Emissions Test Configuration

Test Mode: Ant. A Adapter Mode



Test Mode: Ant. B Adapter Mode



4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product 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

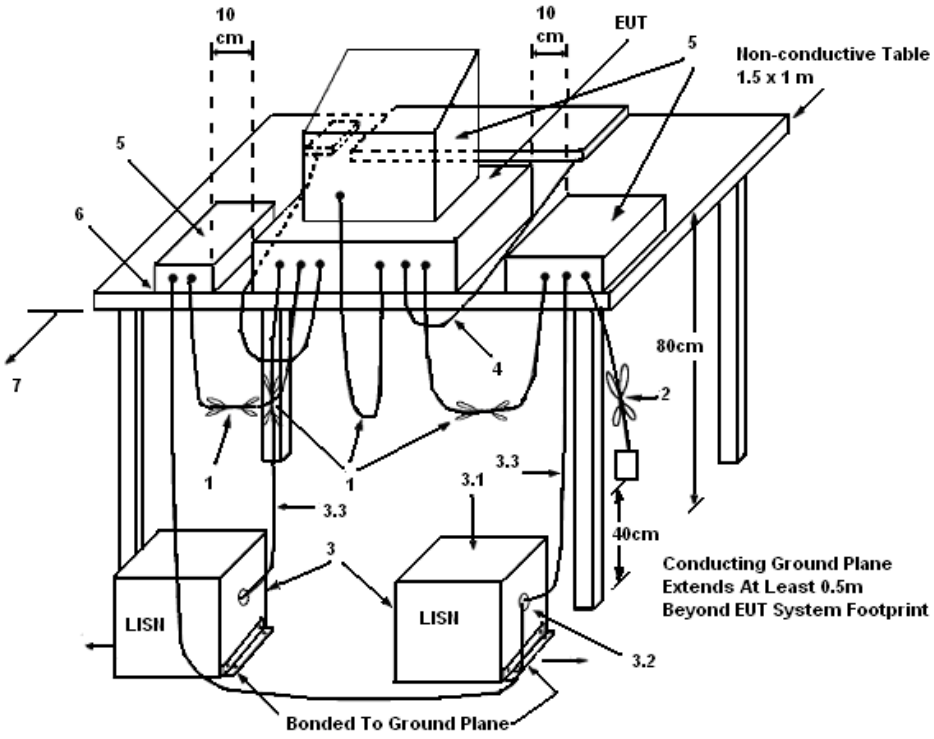
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

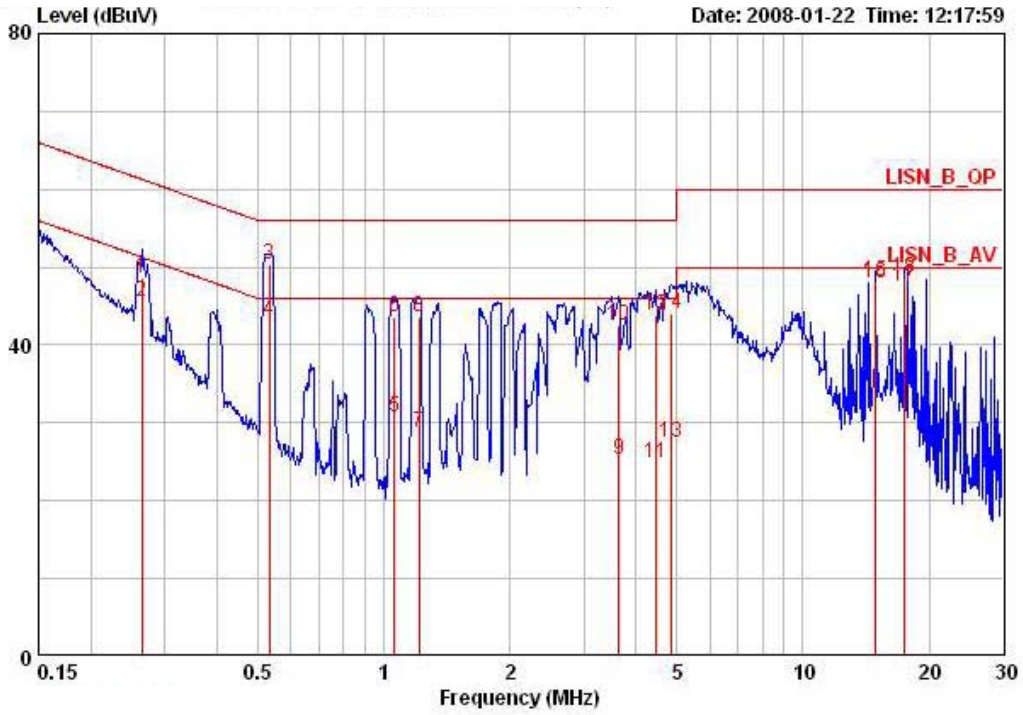
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

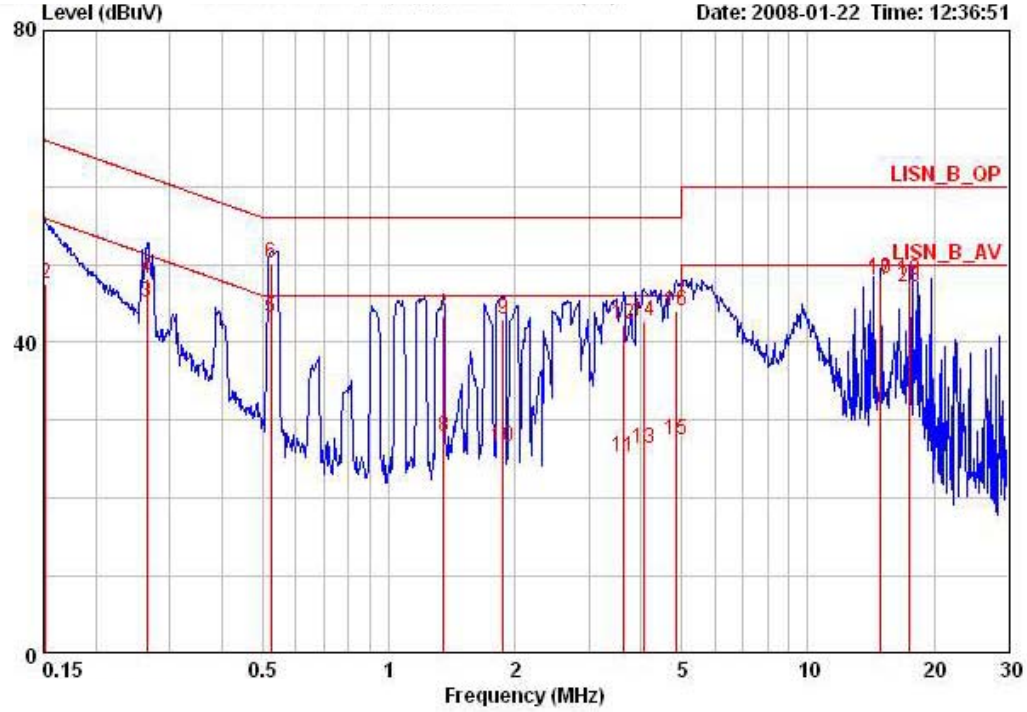
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	21℃	Humidity	60%
Test Engineer	Andy Tsai	Phase	Line
Configuration	Ant. A Adapter Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1 @	0.26442	48.55	-12.74	61.29	48.25	0.10	0.20	QP	LINE
2 @	0.26442	45.49	-5.80	51.29	45.19	0.10	0.20	AVERAGE	LINE
3 @	0.53215	50.27	-5.74	56.00	49.99	0.08	0.20	QP	LINE
4 @	0.53215	43.18	-2.83	46.00	42.90	0.08	0.20	AVERAGE	LINE
5 @	1.060	30.76	-15.24	46.00	30.57	0.00	0.19	AVERAGE	LINE
6 @	1.060	43.55	-12.45	56.00	43.36	0.00	0.19	QP	LINE
7	1.216	28.78	-17.22	46.00	28.63	0.00	0.15	AVERAGE	LINE
8 @	1.216	43.54	-12.46	56.00	43.39	0.00	0.15	QP	LINE
9	3.642	25.23	-20.77	46.00	24.93	0.00	0.30	AVERAGE	LINE
10 @	3.642	42.53	-13.47	56.00	42.23	0.00	0.30	QP	LINE
11	4.472	24.93	-21.07	46.00	24.62	0.01	0.30	AVERAGE	LINE
12 @	4.472	43.86	-12.14	56.00	43.55	0.01	0.30	QP	LINE
13	4.848	27.39	-18.61	46.00	27.08	0.01	0.30	AVERAGE	LINE
14 @	4.848	44.11	-11.89	56.00	43.80	0.01	0.30	QP	LINE
15 @	14.903	48.08	-11.92	60.00	47.58	0.10	0.40	QP	LINE
16 @	14.903	47.94	-2.06	50.00	47.44	0.10	0.40	AVERAGE	LINE
17 @	17.418	47.49	-2.51	50.00	46.89	0.10	0.50	AVERAGE	LINE
18 @	17.418	48.66	-11.34	60.00	48.06	0.10	0.50	QP	LINE

Temperature	21℃	Humidity	60%
Test Engineer	Andy Tsai	Phase	Neutral
Configuration	Ant. A Adapter Mode		

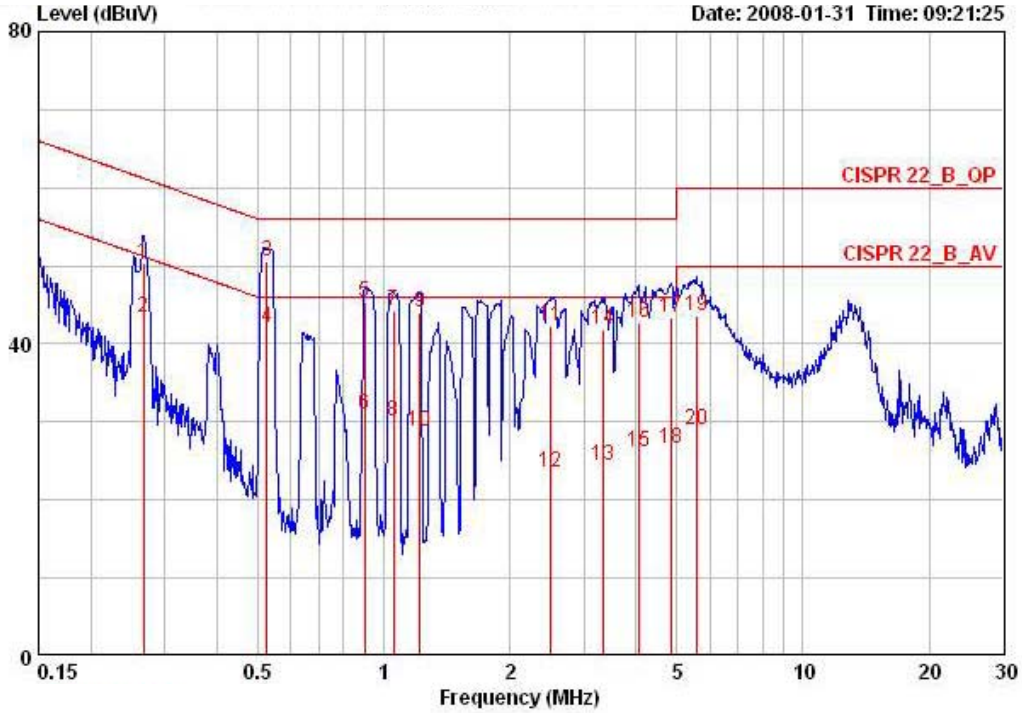


	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15160	22.48	-33.43	55.91	21.98	0.30	0.20	AVERAGE	NEUTRAL
2	0.15160	47.61	-18.30	65.91	47.11	0.30	0.20	QP	NEUTRAL
3 @	0.26442	45.16	-6.13	51.29	44.79	0.17	0.20	AVERAGE	NEUTRAL
4 @	0.26442	48.26	-13.03	61.29	47.89	0.17	0.20	QP	NEUTRAL
5 @	0.52376	43.09	-2.91	46.00	42.79	0.10	0.20	AVERAGE	NEUTRAL
6 @	0.52376	50.19	-5.81	56.00	49.89	0.10	0.20	QP	NEUTRAL
7 @	1.352	43.35	-12.65	56.00	43.12	0.10	0.13	QP	NEUTRAL
8	1.352	27.95	-18.05	46.00	27.72	0.10	0.13	AVERAGE	NEUTRAL
9 @	1.878	42.90	-13.10	56.00	42.62	0.10	0.18	QP	NEUTRAL
10	1.878	26.57	-19.43	46.00	26.29	0.10	0.18	AVERAGE	NEUTRAL
11	3.642	25.27	-20.73	46.00	24.87	0.10	0.30	AVERAGE	NEUTRAL
12 @	3.642	42.38	-13.62	56.00	41.98	0.10	0.30	QP	NEUTRAL
13	4.049	26.46	-19.54	46.00	26.06	0.10	0.30	AVERAGE	NEUTRAL
14 @	4.049	42.80	-13.20	56.00	42.40	0.10	0.30	QP	NEUTRAL
15	4.848	27.48	-18.52	46.00	27.08	0.10	0.30	AVERAGE	NEUTRAL
16 @	4.848	44.08	-11.92	56.00	43.68	0.10	0.30	QP	NEUTRAL
17 @	14.907	48.00	-2.00	50.00	47.50	0.10	0.40	AVERAGE	NEUTRAL
18 @	14.907	48.14	-11.86	60.00	47.64	0.10	0.40	QP	NEUTRAL
19 @	17.423	47.95	-12.05	60.00	47.35	0.10	0.50	QP	NEUTRAL
20 @	17.423	47.03	-2.97	50.00	46.43	0.10	0.50	AVERAGE	NEUTRAL

Note:

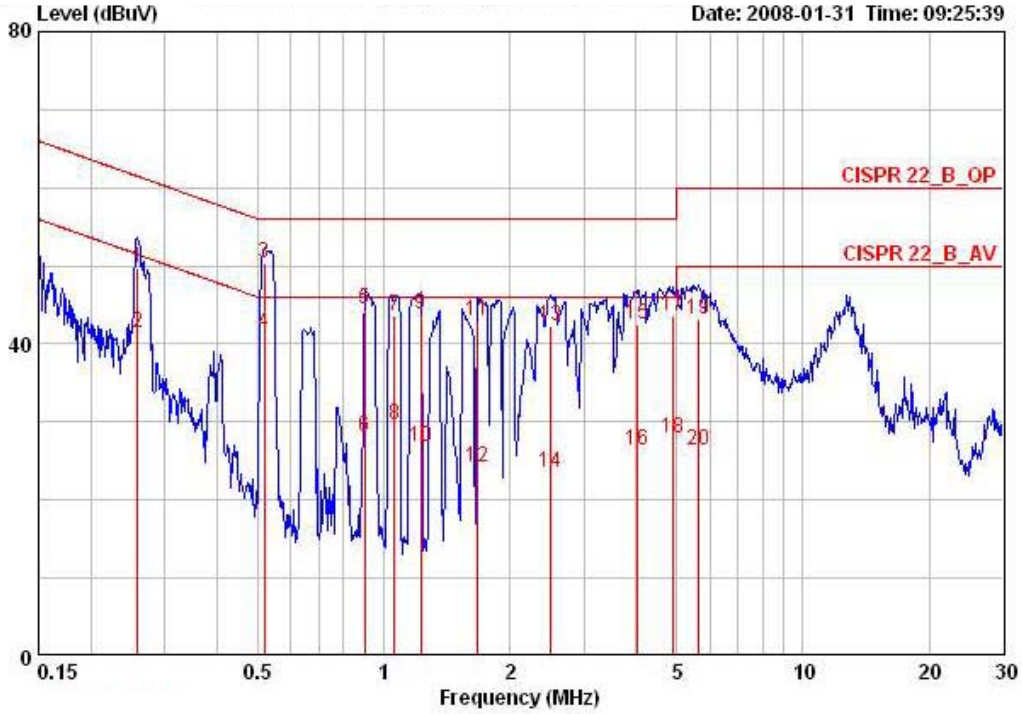
Level = Read Level + LISN Factor + Cable Loss.

Temperature	21℃	Humidity	60%
Test Engineer	Andy Tsai	Phase	Line
Configuration	Ant. B Adapter Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.26724	50.46	-10.74	61.20	50.16	0.10	0.20	QP	LINE
2	0.26724	43.38	-7.82	51.20	43.08	0.10	0.20	AVERAGE	LINE
3	0.52655	50.61	-5.40	56.00	50.33	0.08	0.20	QP	LINE
4 @	0.52655	42.03	-3.97	46.00	41.75	0.08	0.20	AVERAGE	LINE
5	0.89917	45.34	-10.67	56.00	45.12	0.02	0.20	QP	LINE
6	0.89917	30.89	-15.12	46.00	30.67	0.02	0.20	AVERAGE	LINE
7	1.054	44.24	-11.76	56.00	44.05	0.00	0.19	QP	LINE
8	1.054	30.09	-15.91	46.00	29.90	0.00	0.19	AVERAGE	LINE
9	1.217	44.01	-11.99	56.00	43.86	0.00	0.15	QP	LINE
10	1.217	28.73	-17.27	46.00	28.58	0.00	0.15	AVERAGE	LINE
11	2.500	42.34	-13.66	56.00	42.14	0.00	0.20	QP	LINE
12	2.500	23.44	-22.56	46.00	23.24	0.00	0.20	AVERAGE	LINE
13	3.346	24.49	-21.51	46.00	24.22	0.00	0.27	AVERAGE	LINE
14	3.346	41.87	-14.13	56.00	41.60	0.00	0.27	QP	LINE
15	4.070	26.22	-19.78	46.00	25.92	0.00	0.30	AVERAGE	LINE
16	4.070	42.82	-13.18	56.00	42.52	0.00	0.30	QP	LINE
17	4.848	43.37	-12.63	56.00	43.06	0.01	0.30	QP	LINE
18	4.848	26.61	-19.39	46.00	26.30	0.01	0.30	AVERAGE	LINE
19	5.564	43.66	-16.34	60.00	43.33	0.03	0.30	QP	LINE
20	5.564	29.00	-21.00	50.00	28.67	0.03	0.30	AVERAGE	LINE

Temperature	21℃	Humidity	60%
Test Engineer	Andy Tsai	Phase	Neutral
Configuration	Ant. B Adapter Mode		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.25888	49.79	-11.68	61.47	49.42	0.17	0.20	QP	NEUTRAL
2	0.25888	41.50	-9.97	51.47	41.13	0.17	0.20	AVERAGE	NEUTRAL
3	0.51824	50.36	-5.64	56.00	50.06	0.10	0.20	QP	NEUTRAL
4	0.51824	41.32	-4.68	46.00	41.02	0.10	0.20	AVERAGE	NEUTRAL
5	0.89917	44.42	-11.58	56.00	44.12	0.10	0.20	QP	NEUTRAL
6	0.89917	28.08	-17.92	46.00	27.78	0.10	0.20	AVERAGE	NEUTRAL
7	1.060	43.65	-12.35	56.00	43.36	0.10	0.19	QP	NEUTRAL
8	1.060	29.59	-16.41	46.00	29.30	0.10	0.19	AVERAGE	NEUTRAL
9	1.223	43.76	-12.24	56.00	43.51	0.10	0.15	QP	NEUTRAL
10	1.223	26.77	-19.23	46.00	26.52	0.10	0.15	AVERAGE	NEUTRAL
11	1.671	42.94	-13.06	56.00	42.70	0.10	0.14	QP	NEUTRAL
12	1.671	24.26	-21.74	46.00	24.02	0.10	0.14	AVERAGE	NEUTRAL
13	2.487	42.30	-13.70	56.00	42.00	0.10	0.20	QP	NEUTRAL
14	2.487	23.46	-22.54	46.00	23.16	0.10	0.20	AVERAGE	NEUTRAL
15	4.027	42.47	-13.53	56.00	42.07	0.10	0.30	QP	NEUTRAL
16	4.027	26.35	-19.65	46.00	25.95	0.10	0.30	AVERAGE	NEUTRAL
17	4.900	43.62	-12.38	56.00	43.22	0.10	0.30	QP	NEUTRAL
18	4.900	27.91	-18.09	46.00	27.51	0.10	0.30	AVERAGE	NEUTRAL
19	5.623	43.08	-16.92	60.00	42.68	0.10	0.30	QP	NEUTRAL
20	5.623	26.33	-23.67	50.00	25.93	0.10	0.30	AVERAGE	NEUTRAL

Note:

Level = Read Level + LISN Factor + Cable Loss.

4.2. Maximum Peak Output Power Measurement

4.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

4.2.2. Measuring Instruments and Setting

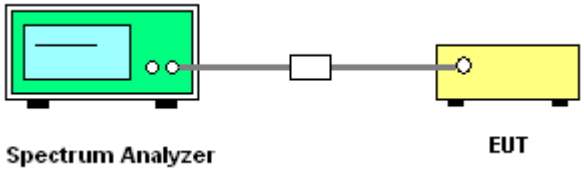
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz
VB	3000 kHz
Detector	Sample
Trace	Average 100 traces.
Sweep Time	20ms

4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under Section 15.247 March 23, 2005.
3. When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.
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 Maximum Peak Output Power

Temperature	23℃	Humidity	61%
Test Engineer	Jacky Ho	Configurations	Draft n

For 2.4GHz Band

Configuration Draft n MCS16 20MHz Ant. A-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.07	30.00	Complies
6	2437 MHz	23.40	30.00	Complies
11	2462 MHz	18.75	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. A-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	17.71	30.00	Complies
6	2437 MHz	24.54	30.00	Complies
11	2462 MHz	18.40	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.02	30.00	Complies
6	2437 MHz	24.00	30.00	Complies
11	2462 MHz	18.47	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	22.71	30.00	Complies
6	2437 MHz	28.78	30.00	Complies
11	2462 MHz	23.31	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.20	30.00	Complies
6	2437 MHz	25.41	30.00	Complies
11	2462 MHz	18.26	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	17.90	30.00	Complies
6	2437 MHz	25.52	30.00	Complies
11	2462 MHz	18.03	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.01	30.00	Complies
6	2437 MHz	23.94	30.00	Complies
11	2462 MHz	17.95	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	22.81	30.00	Complies
6	2437 MHz	29.79	30.00	Complies
11	2462 MHz	22.85	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.75	30.00	Complies
6	2437 MHz	20.83	30.00	Complies
9	2452 MHz	19.08	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.62	30.00	Complies
6	2437 MHz	20.07	30.00	Complies
9	2452 MHz	19.08	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.51	30.00	Complies
6	2437 MHz	20.02	30.00	Complies
9	2452 MHz	18.14	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	20.40	30.00	Complies
6	2437 MHz	25.09	30.00	Complies
9	2452 MHz	23.18	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.97	30.00	Complies
6	2437 MHz	19.40	30.00	Complies
9	2452 MHz	16.22	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.50	30.00	Complies
6	2437 MHz	18.84	30.00	Complies
9	2452 MHz	16.04	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	15.33	30.00	Complies
6	2437 MHz	19.06	30.00	Complies
9	2452 MHz	16.07	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
3	2422 MHz	20.38	30.00	Complies
6	2437 MHz	23.88	30.00	Complies
9	2452 MHz	20.88	30.00	Complies

For 5GHz Band

Configuration Draft n MCS16 20MHz Ant. A-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	19.75	30.00	Complies
157	5785 MHz	20.68	30.00	Complies
165	5825 MHz	21.31	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. A-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	24.50	30.00	Complies
157	5785 MHz	24.65	30.00	Complies
165	5825 MHz	24.45	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	25.24	30.00	Complies
157	5785 MHz	21.19	30.00	Complies
165	5825 MHz	24.85	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	28.52	30.00	Complies
157	5785 MHz	27.33	30.00	Complies
165	5825 MHz	28.57	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	24.22	30.00	Complies
157	5785 MHz	24.12	30.00	Complies
165	5825 MHz	24.71	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	24.42	30.00	Complies
157	5785 MHz	24.47	30.00	Complies
165	5825 MHz	24.51	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	24.91	30.00	Complies
157	5785 MHz	24.68	30.00	Complies
165	5825 MHz	24.54	30.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	29.30	30.00	Complies
157	5785 MHz	29.20	30.00	Complies
165	5825 MHz	29.36	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	20.22	30.00	Complies
159	5795 MHz	23.77	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	23.56	30.00	Complies
159	5795 MHz	23.65	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	20.69	30.00	Complies
159	5795 MHz	24.22	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	26.53	30.00	Complies
159	5795 MHz	28.66	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-1

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	22.17	30.00	Complies
159	5795 MHz	24.16	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-2

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	23.72	30.00	Complies
159	5795 MHz	23.93	30.00	Complies

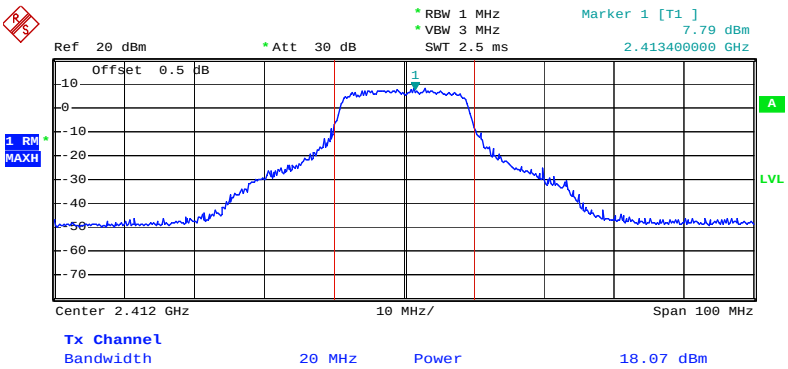
Configuration Draft n MCS16 40MHz Ant. B-3

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	21.14	30.00	Complies
159	5795 MHz	23.97	30.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3

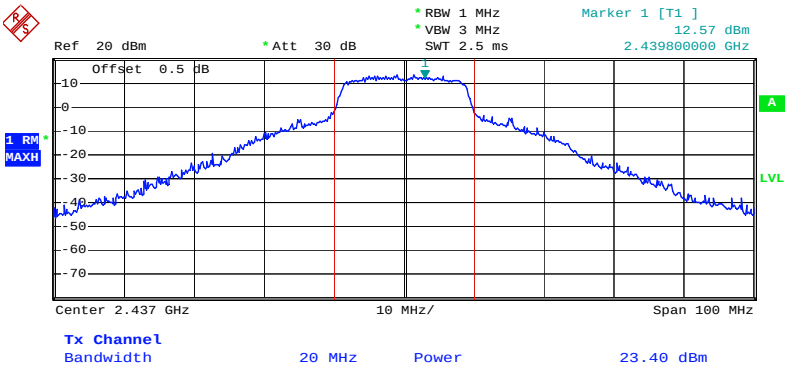
Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
151	5755 MHz	27.25	30.00	Complies
159	5795 MHz	28.79	30.00	Complies

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-1 / 2412 MHz



Date: 25.FEB.2008 06:48:16

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-1 / 2437 MHz



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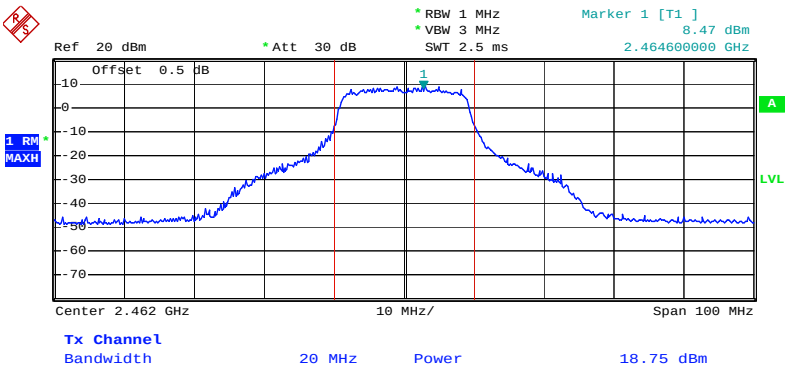
Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-1 / 2462 MHz



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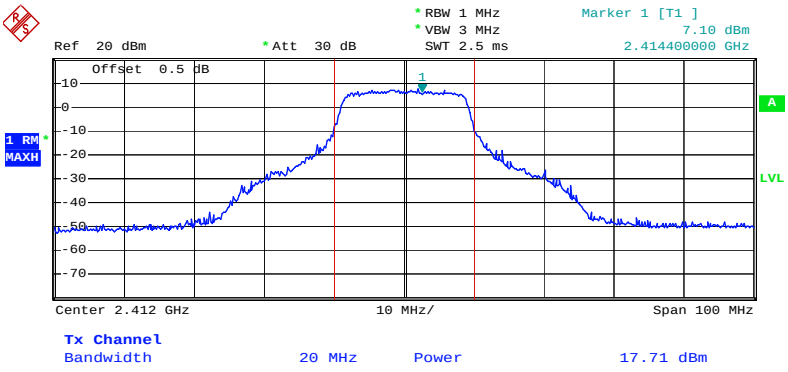
Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-2 / 2412 MHz



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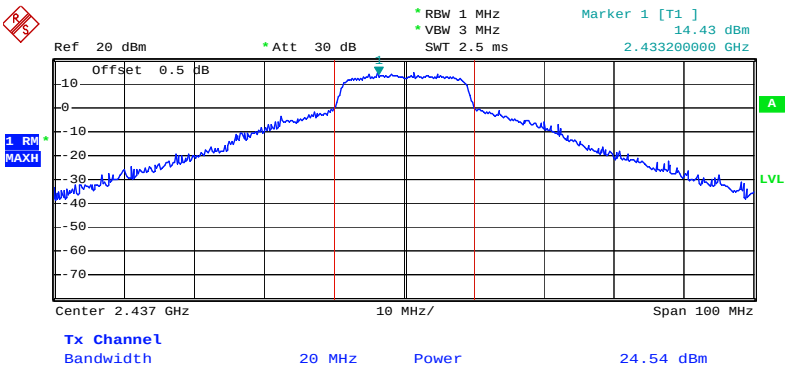
Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-2 / 2437 MHz



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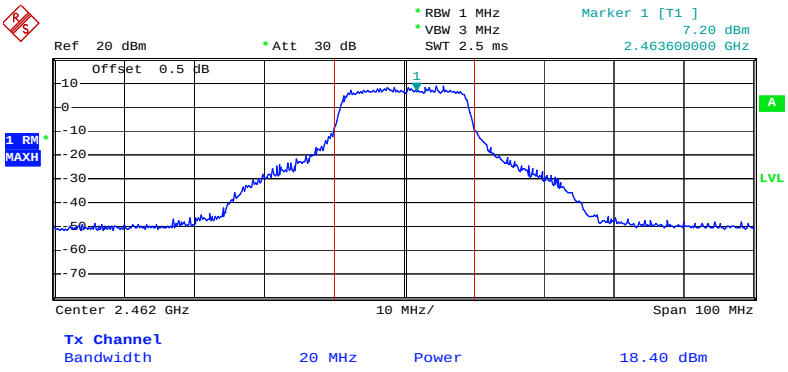
Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-2 / 2462 MHz



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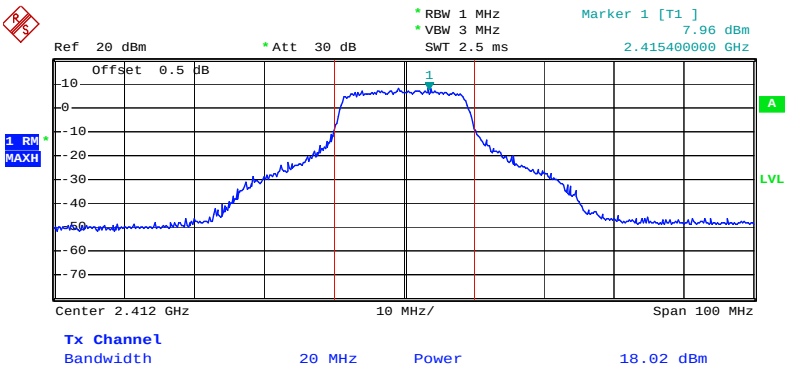
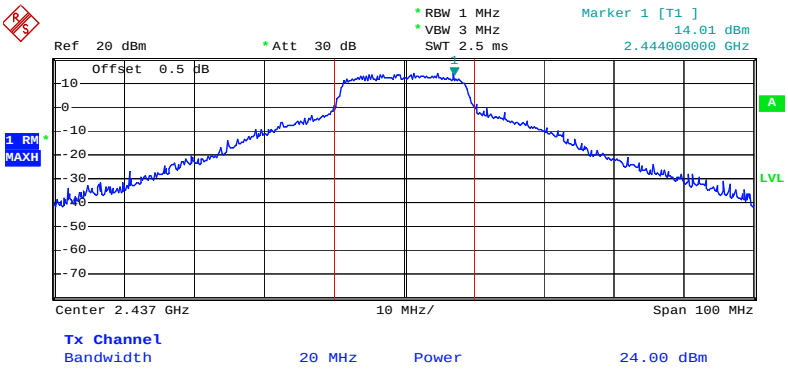
Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-3 / 2412 MHz



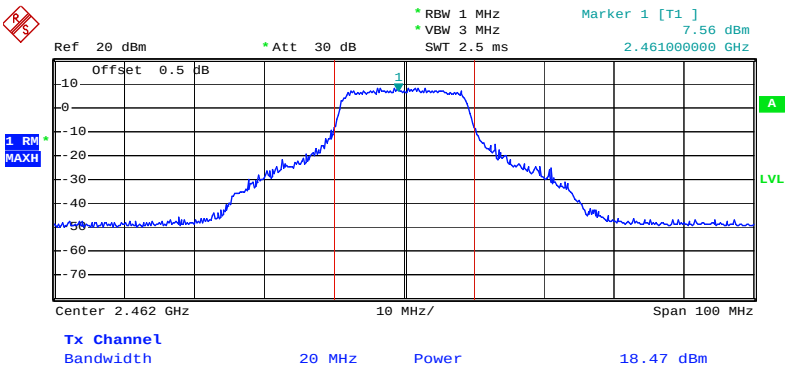
Date: 25.FEB.2008 06:46:52

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-3 / 2437 MHz



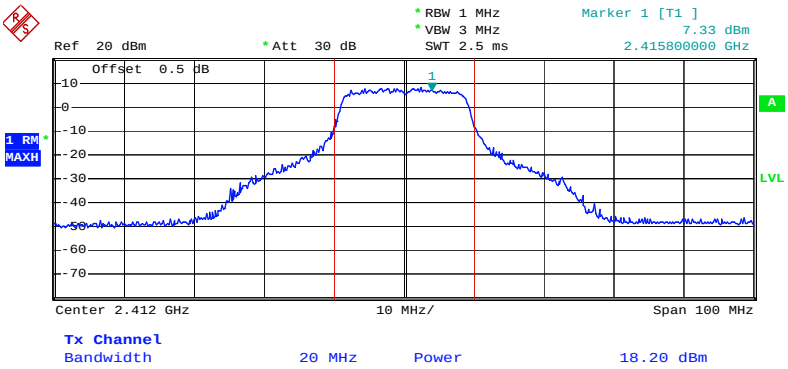
Date: 25.FEB.2008 06:50:29

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. A-3 / 2462 MHz



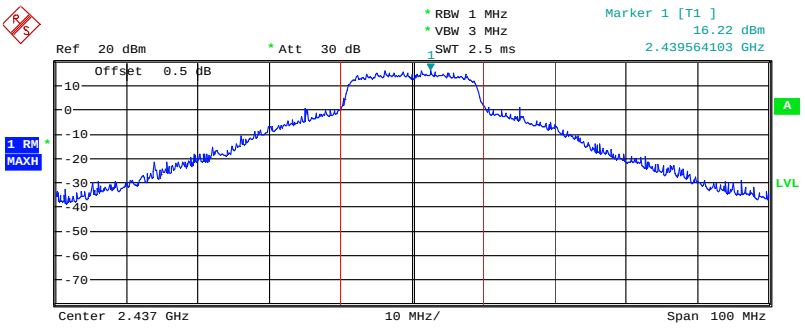
Date: 25.FEB.2008 06:51:35

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-1 / 2412 MHz



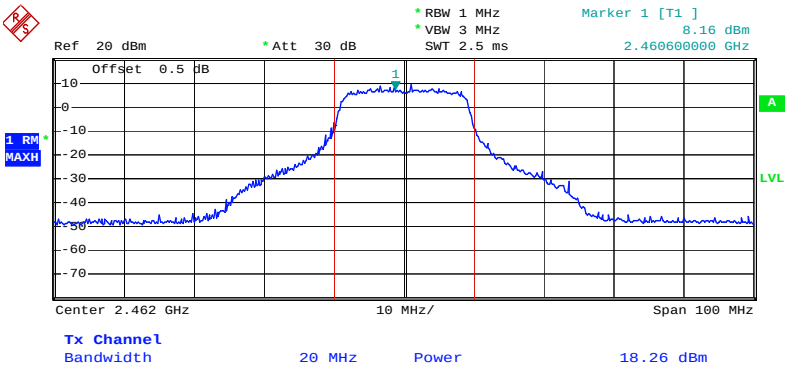
Date: 25.FEB.2008 03:36:22

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-1 / 2437 MHz



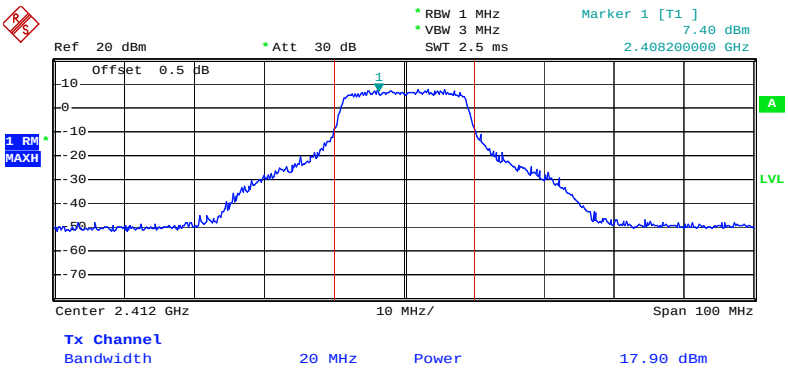
Date: 12.FEB.2008 19:55:36

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-1 / 2462 MHz



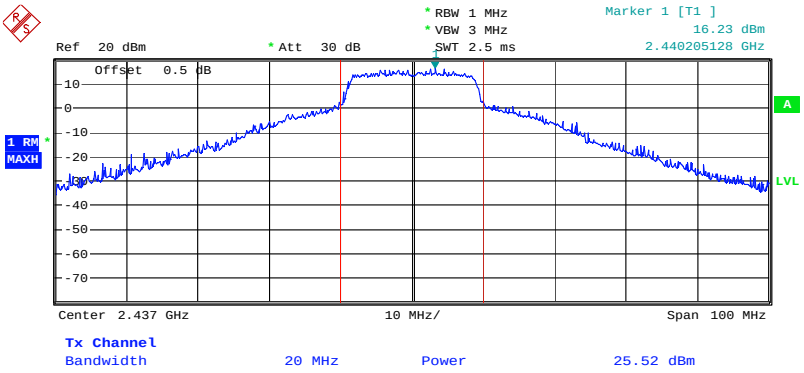
Date: 25.FEB.2008 03:39:44

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-2 / 2412 MHz



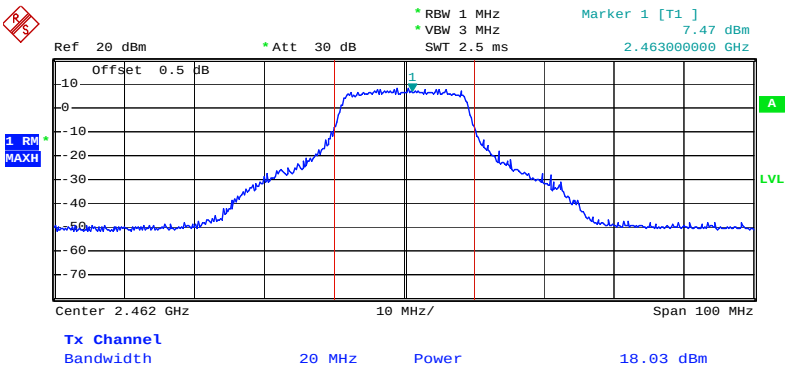
Date: 25.FEB.2008 03:33:55

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-2 / 2437 MHz



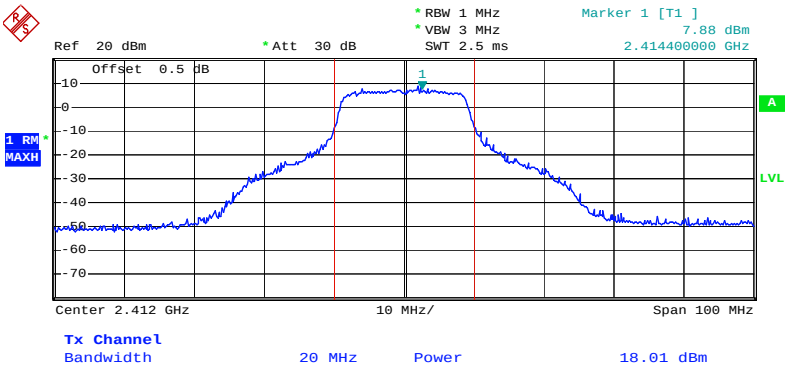
Date: 12.FEB.2008 19:56:03

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-2 / 2462 MHz



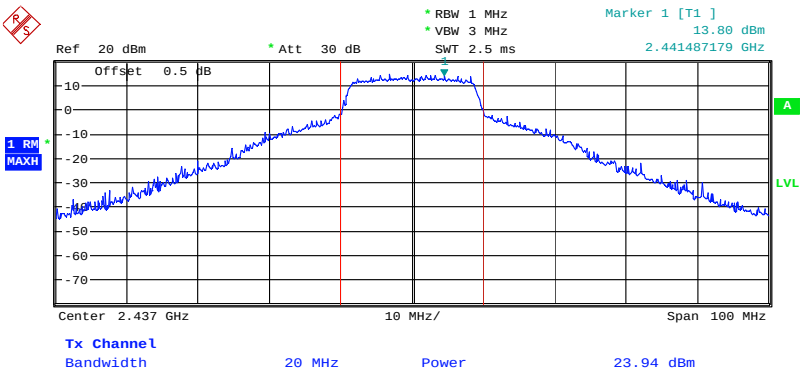
Date: 25.FEB.2008 03:40:51

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-3 / 2412 MHz



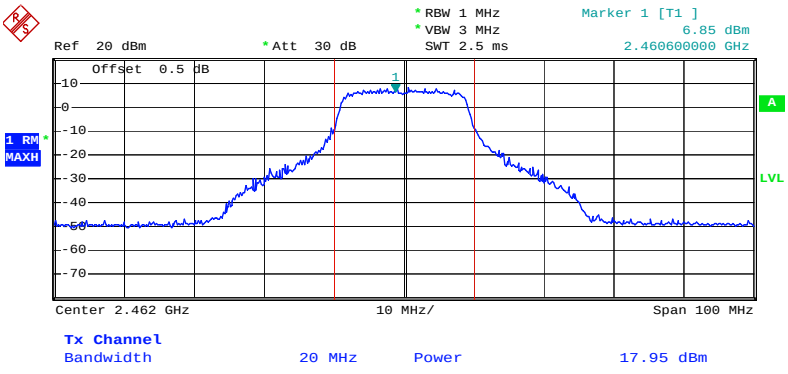
Date: 25.FEB.2008 03:34:49

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-3 / 2437 MHz



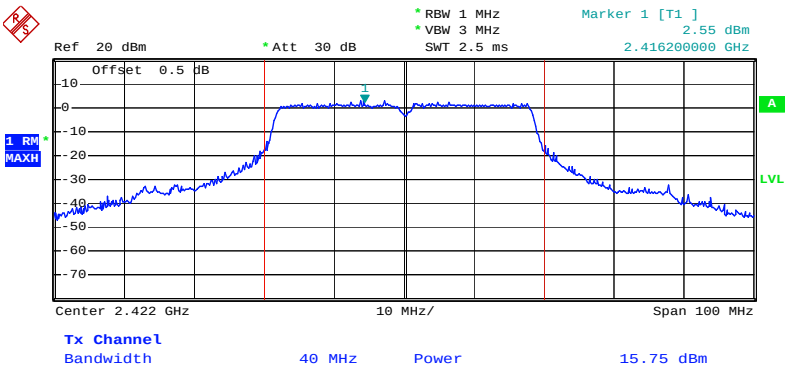
Date: 12.FEB.2008 19:56:38

Channel Output Power Plot on Configuration Draft n MCS16 20MHz Ant. B-3 / 2462 MHz



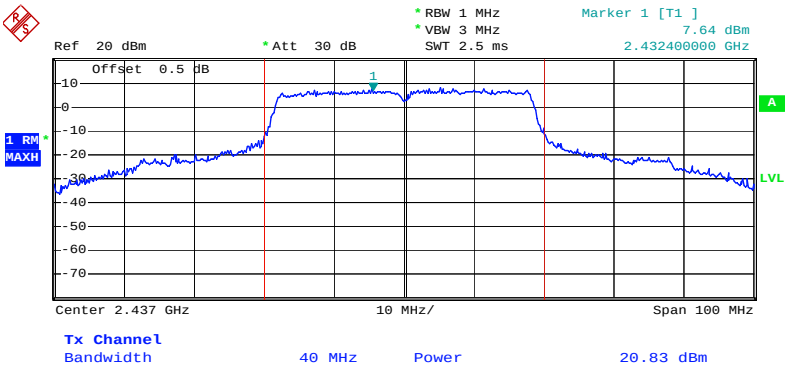
Date: 25.FEB.2008 03:42:18

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-1 / 2422 MHz



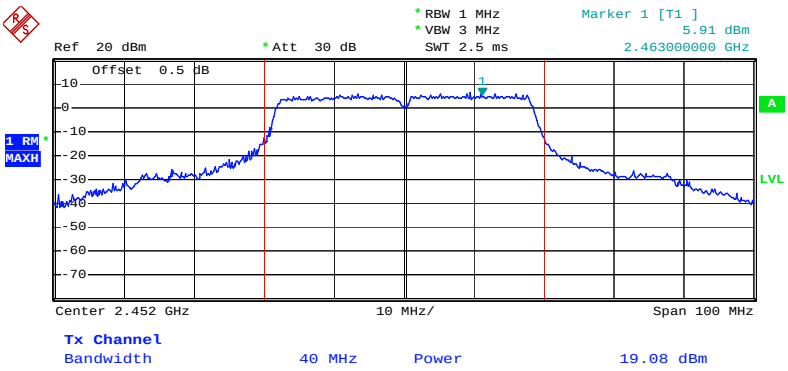
Date: 25.FEB.2008 06:43:40

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-1 / 2437 MHz



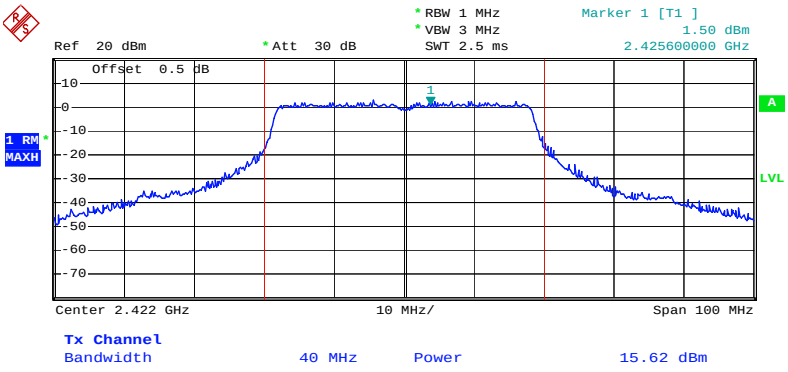
Date: 19.FEB.2008 11:52:44

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-1 / 2452 MHz



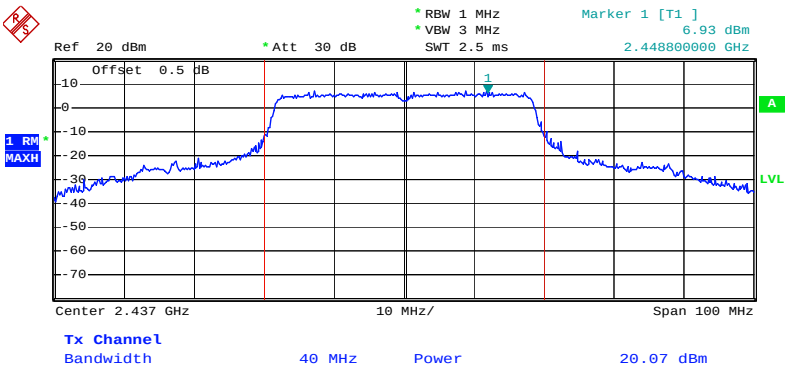
Date: 19.FEB.2008 11:57:19

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-2 / 2422 MHz



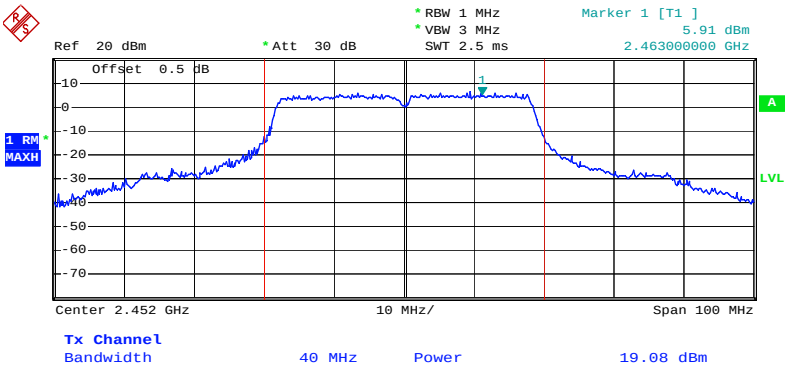
Date: 25.FEB.2008 06:44:21

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-2 / 2437 MHz



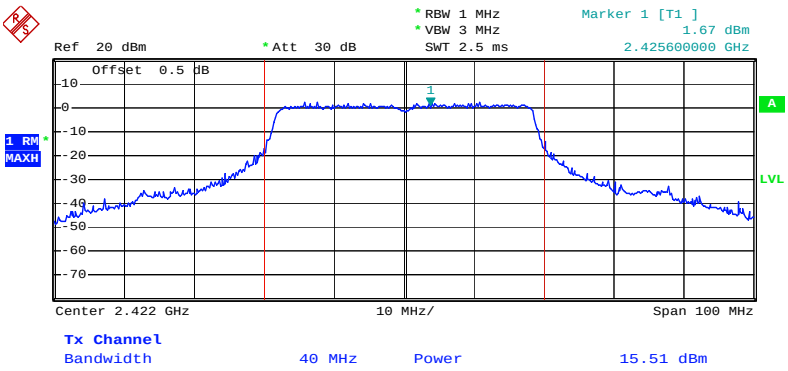
Date: 19.FEB.2008 11:53:29

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-2 / 2452 MHz



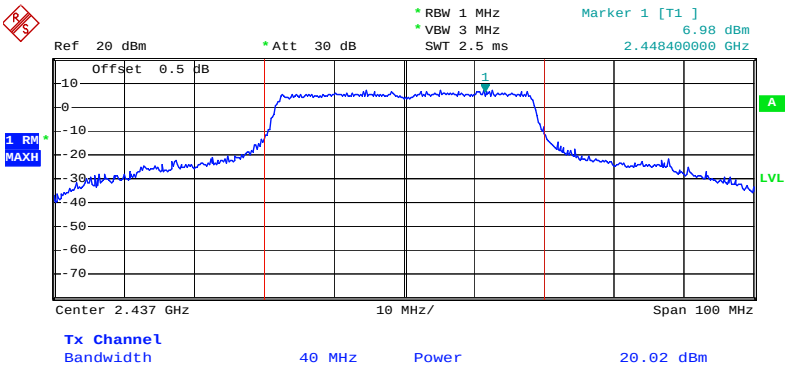
Date: 19.FEB.2008 11:57:19

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-3 / 2422 MHz



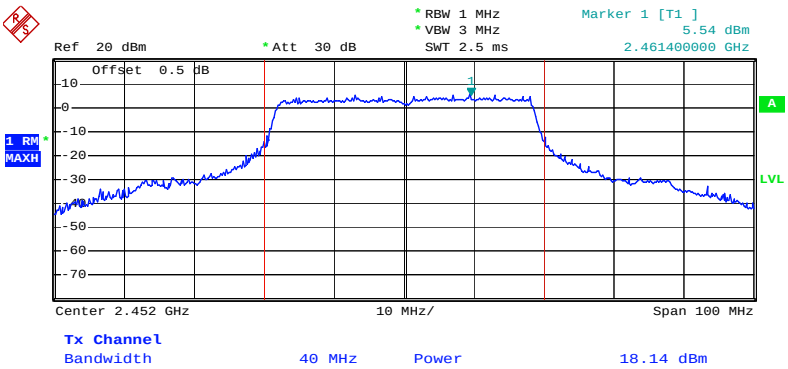
Date: 25.FEB.2008 06:45:10

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-3 / 2437 MHz



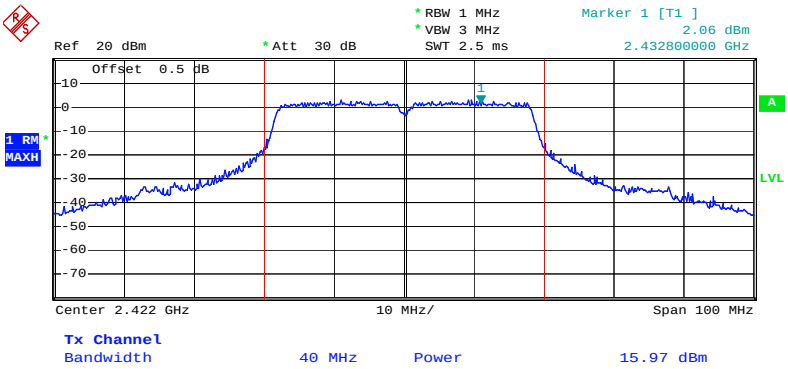
Date: 19.FEB.2008 11:54:38

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. A-3 / 2452 MHz



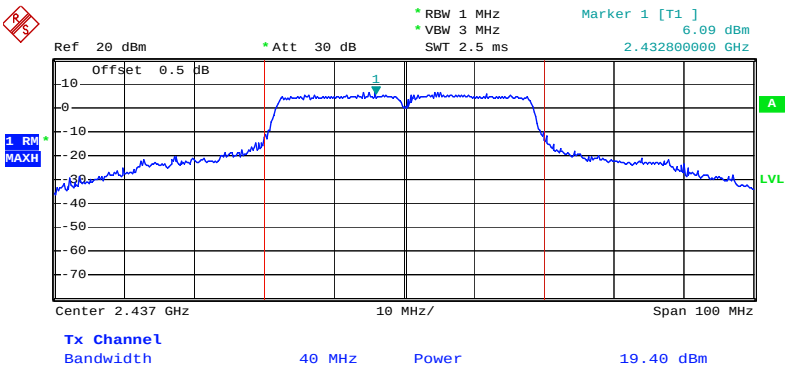
Date: 19.FEB.2008 11:55:56

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-1 / 2422 MHz



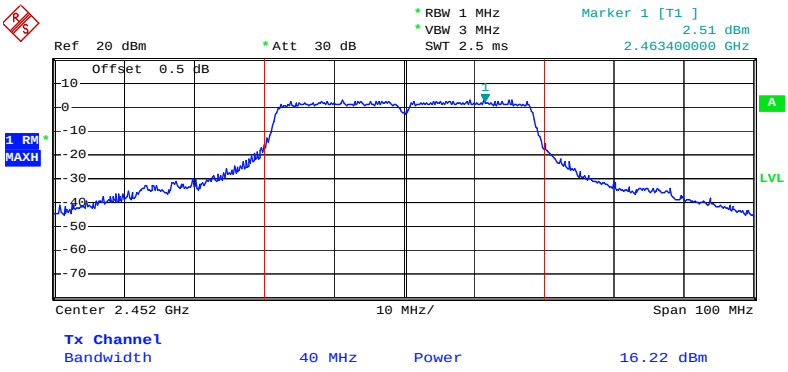
Date: 25.FEB.2008 03:48:17

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-1 / 2437 MHz



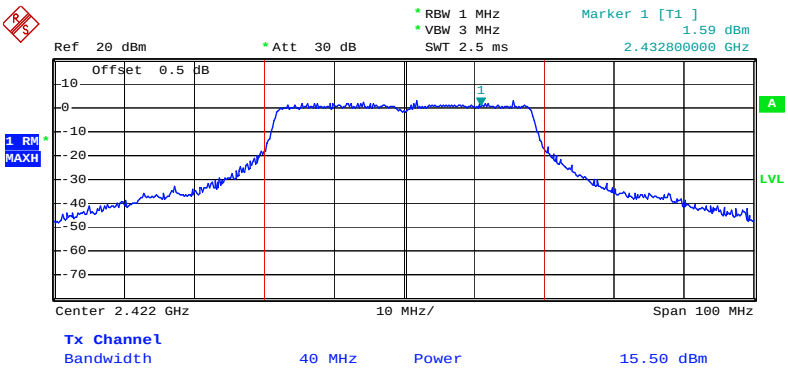
Date: 25.FEB.2008 03:49:56

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-1 / 2452 MHz



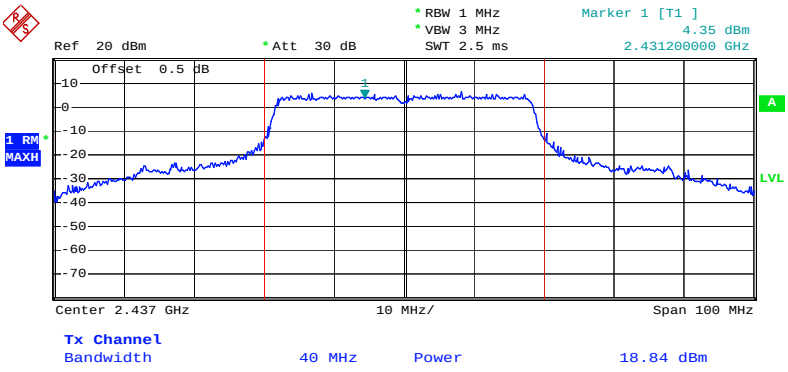
Date: 25.FEB.2008 03:56:57

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-2 / 2422 MHz



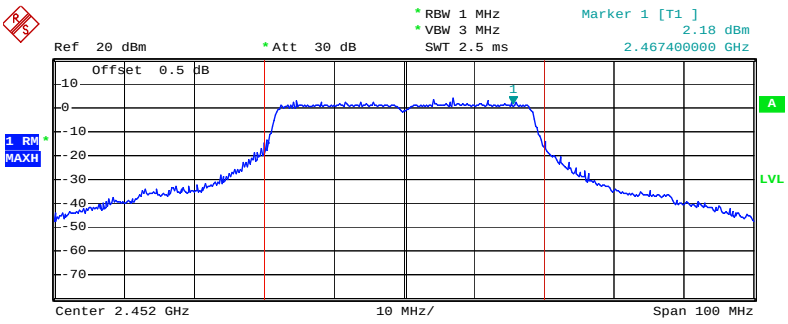
Date: 25.FEB.2008 03:46:35

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-2 / 2437 MHz



Date: 25.FEB.2008 03:51:11

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-2 / 2452 MHz



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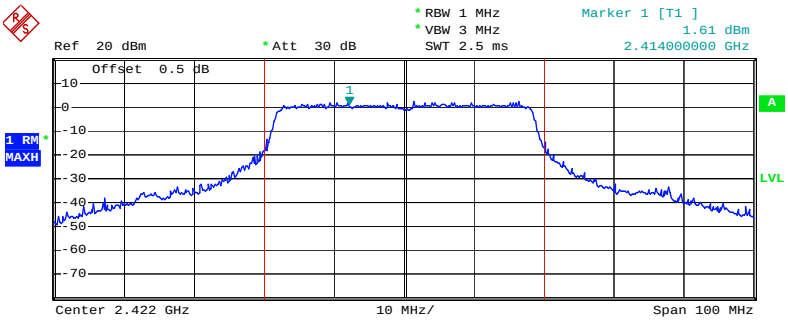
Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-3 / 2422 MHz



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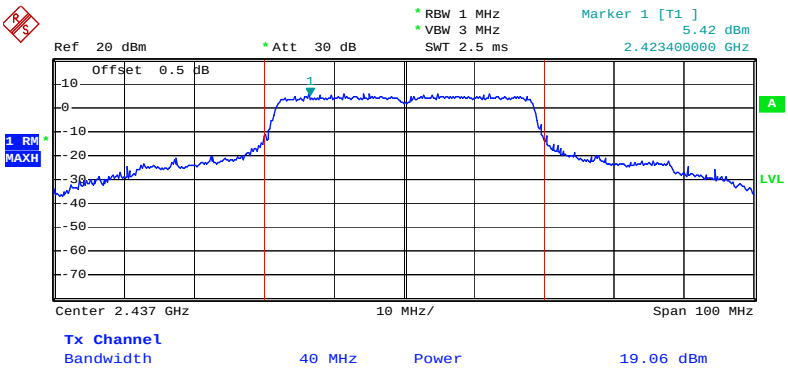
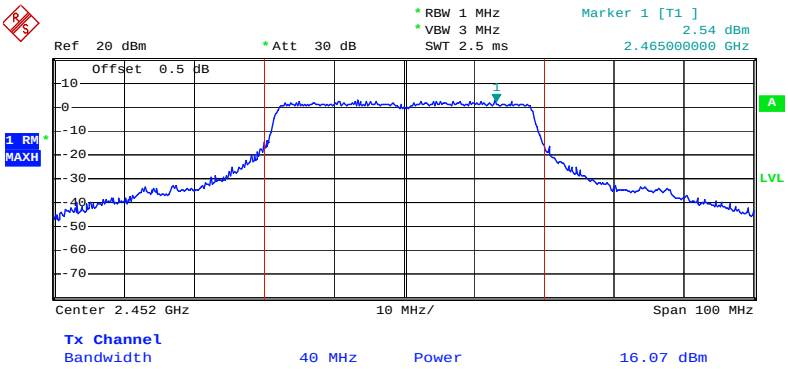
Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-3 / 2437 MHz



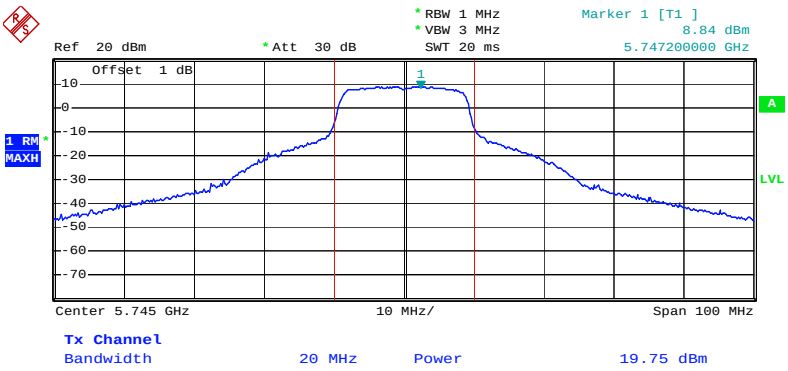
Date: 25.FEB.2008 03:52:09

Channel Output Power Plot on Configuration Draft n MCS16 40MHz Ant. B-3 / 2452 MHz



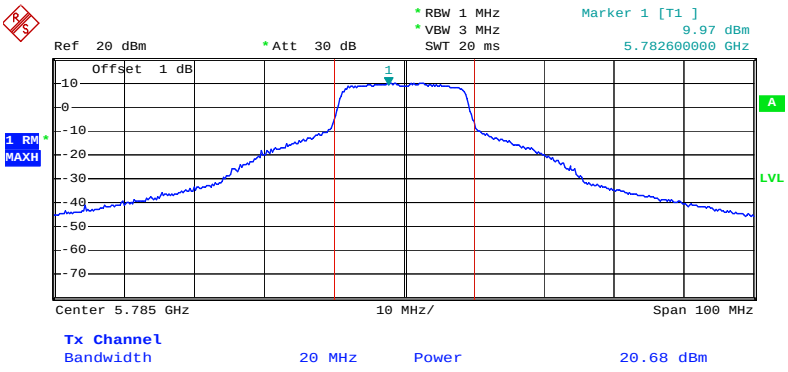
Date: 25.FEB.2008 03:53:52

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-1 / 5745 MHz



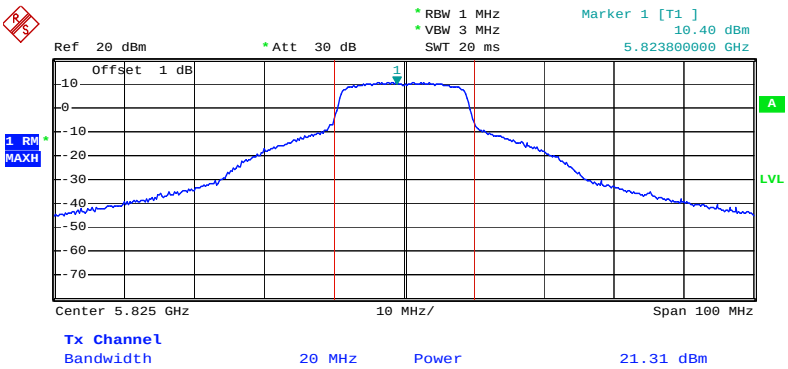
Date: 19.FEB.2008 13:13:00

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-1 / 5785MHz



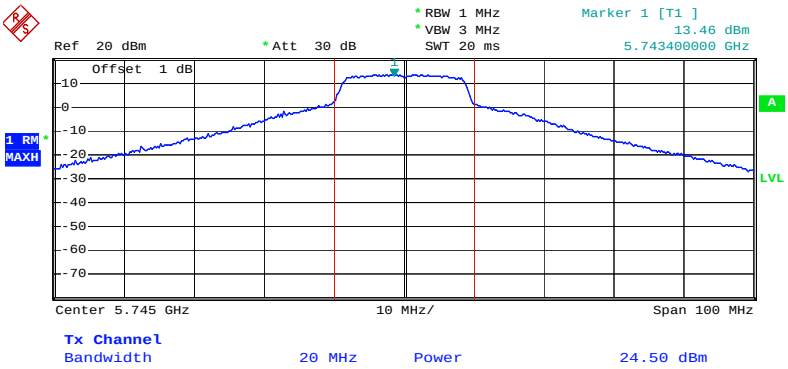
Date: 19.FEB.2008 13:14:58

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-1 / 5825 MHz



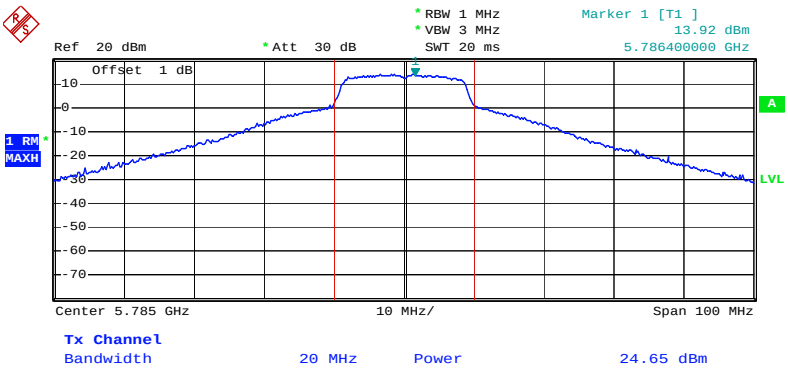
Date: 19.FEB.2008 13:16:17

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-2 / 5745 MHz



Date: 19.FEB.2008 13:13:16

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-2 / 5785MHz



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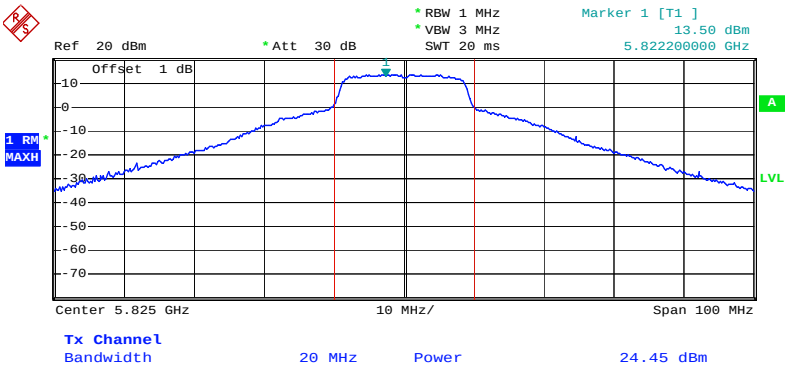
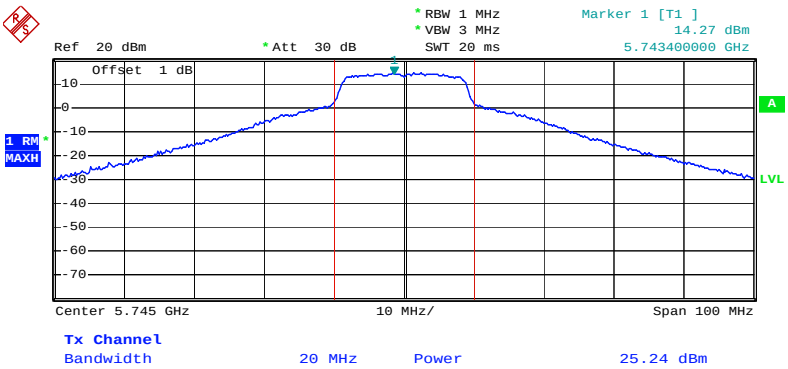
Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-2 / 5825 MHz



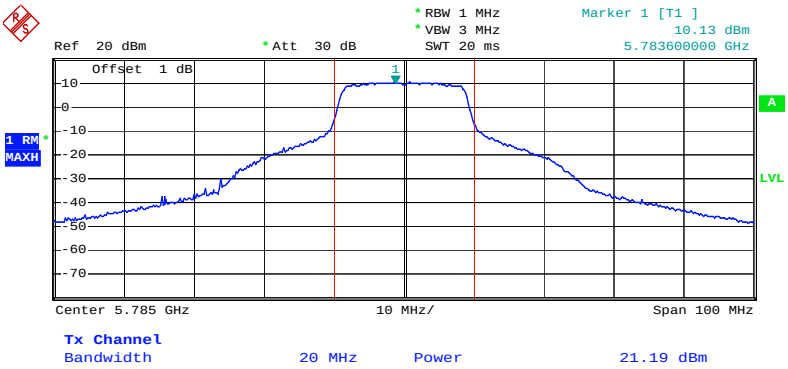
Date: 19.FEB.2008 13:15:46

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-3 / 5745 MHz



Date: 19.FEB.2008 13:13:52

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-3 / 5785MHz



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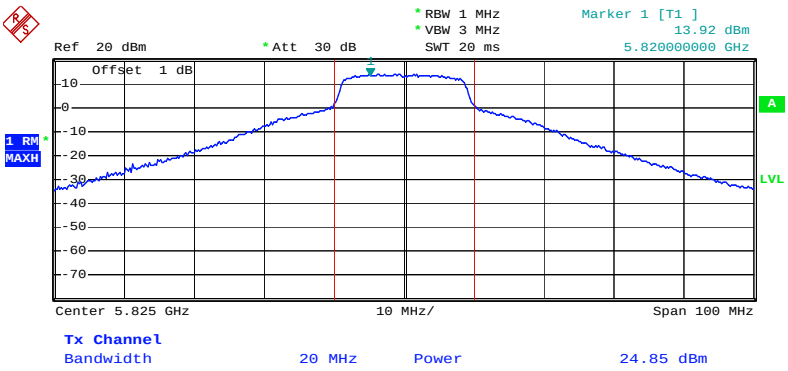
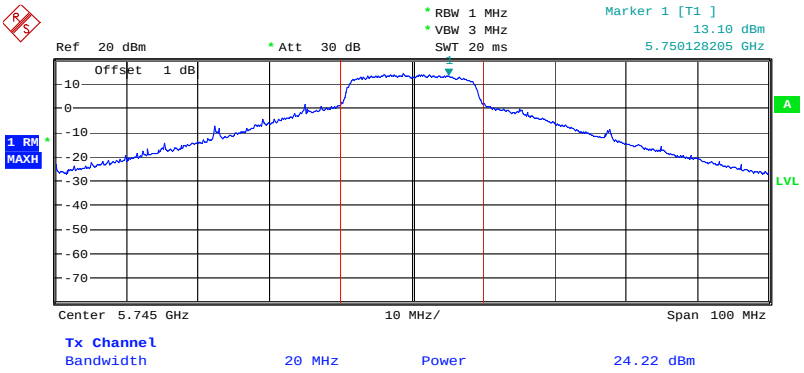
Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. A-3 / 5825 MHz



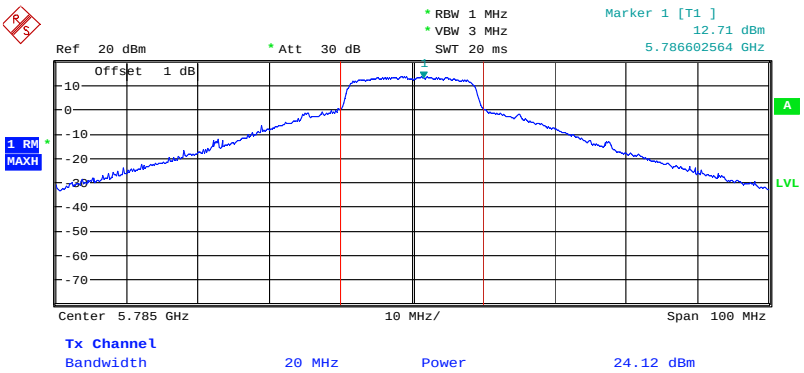
Date: 19.FEB.2008 13:16:01

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-1 / 5745 MHz



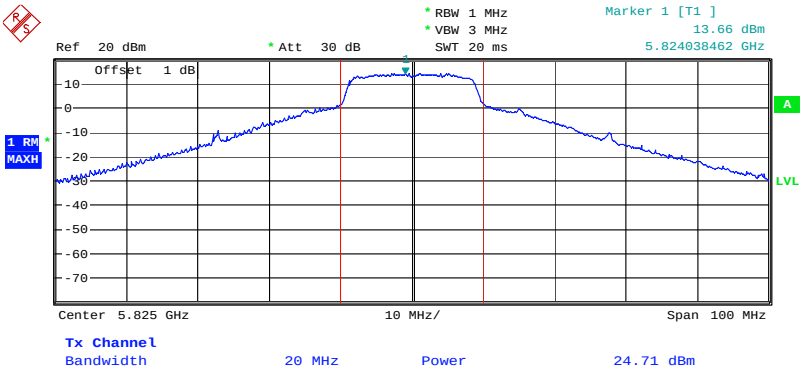
Date: 12.FEB.2008 15:41:07

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-1 / 5785MHz



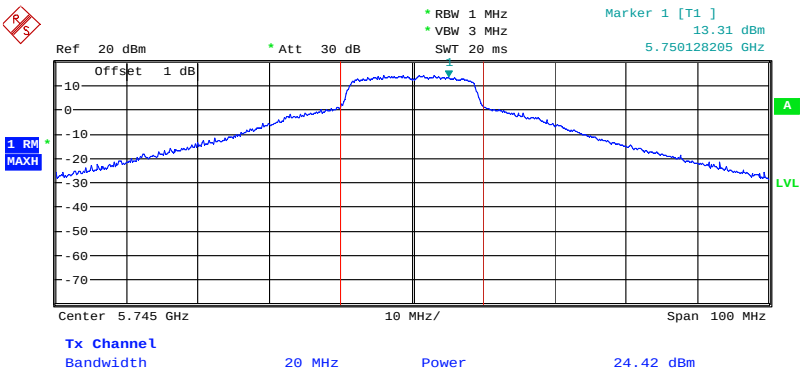
Date: 12.FEB.2008 15:35:22

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-1 / 5825 MHz



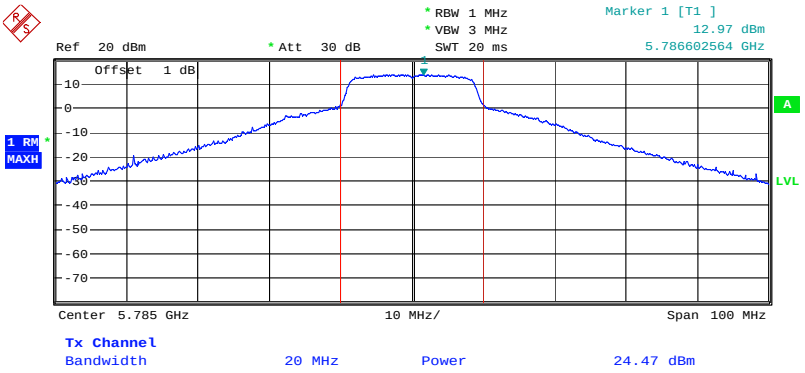
Date: 12.FEB.2008 15:33:07

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-2 / 5745 MHz



Date: 12.FEB.2008 15:40:36

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-2 / 5785MHz



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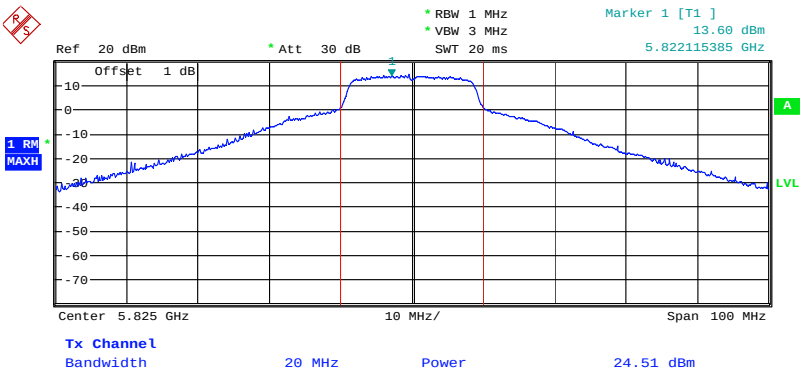
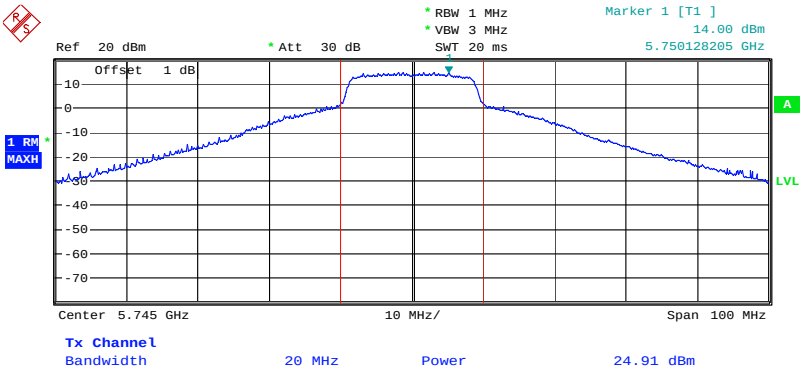
Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-2 / 5825 MHz



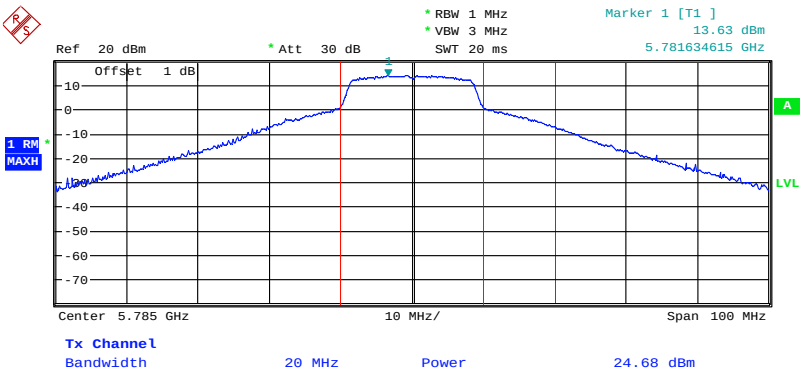
Date: 12.FEB.2008 15:32:32

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-3 / 5745 MHz



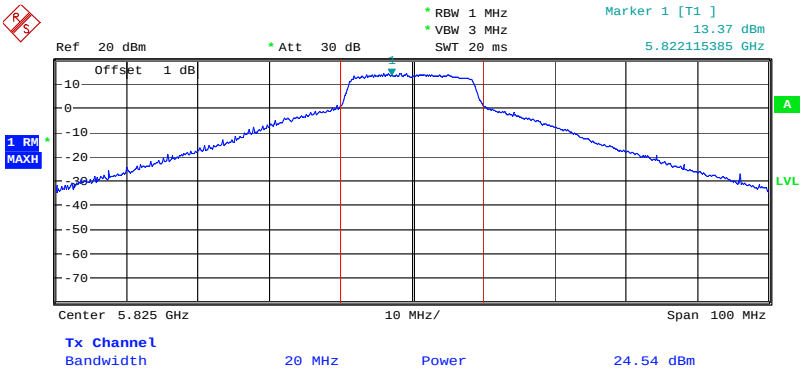
Date: 12.FEB.2008 15:39:50

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-3 / 5785MHz



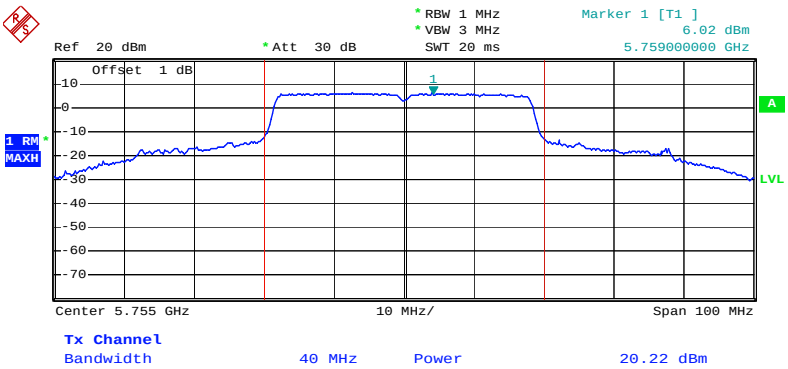
Date: 12.FEB.2008 15:36:34

Channel Output Power Plot on Configuration 11a Draft n MCS16 20MHz Ant. B-3 / 5825 MHz



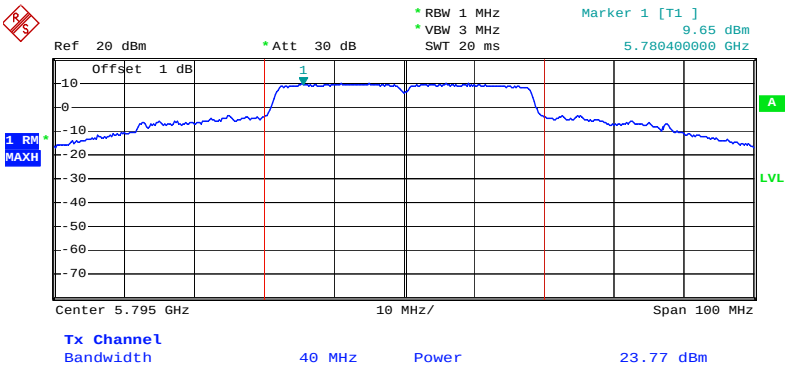
Date: 12.FEB.2008 15:31:57

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. A-1 / 5755 MHz



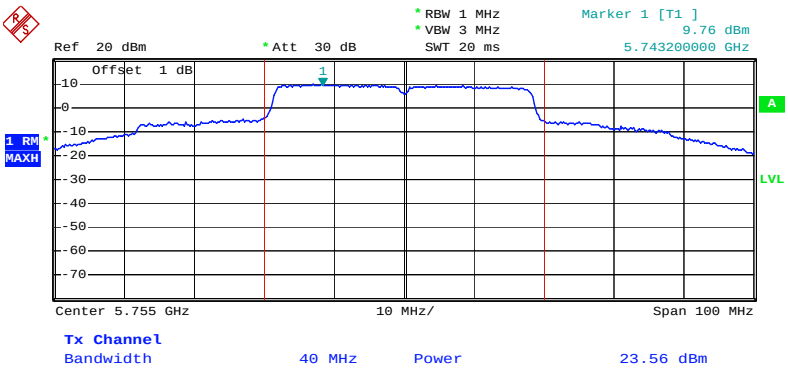
Date: 19.FEB.2008 15:10:12

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. A-1 / 5795 MHz



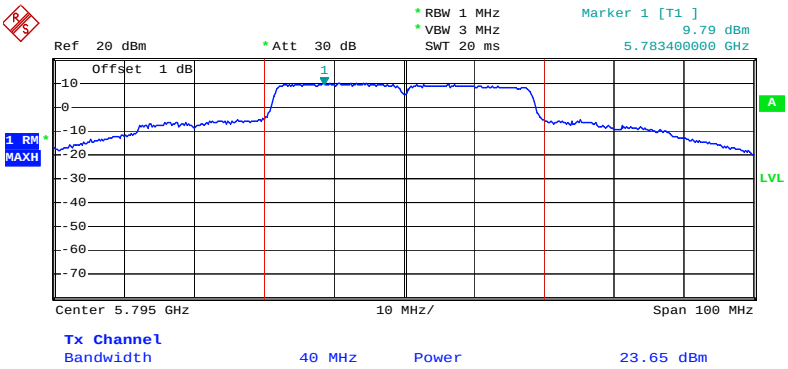
Date: 19.FEB.2008 13:34:01

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. A-2 / 5755 MHz



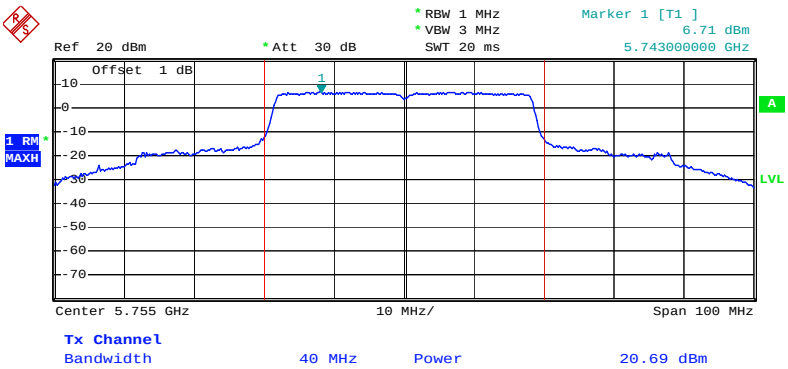
Date: 19.FEB.2008 15:11:37

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. A-2 / 5795 MHz



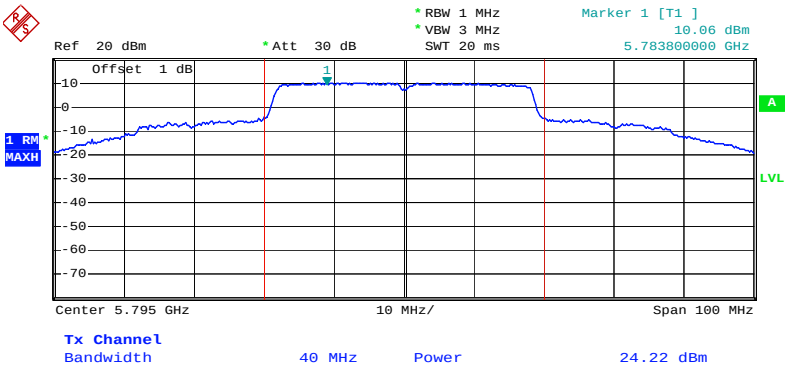
Date: 19.FEB.2008 13:33:36

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. A-3 / 5755 MHz



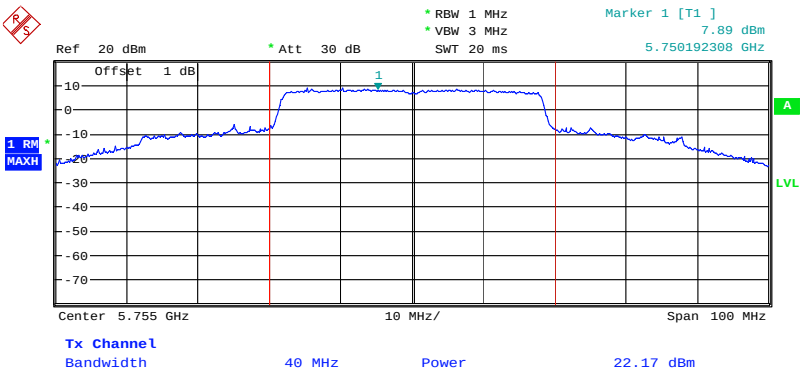
Date: 19.FEB.2008 15:12:26

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. A-3 / 5795 MHz



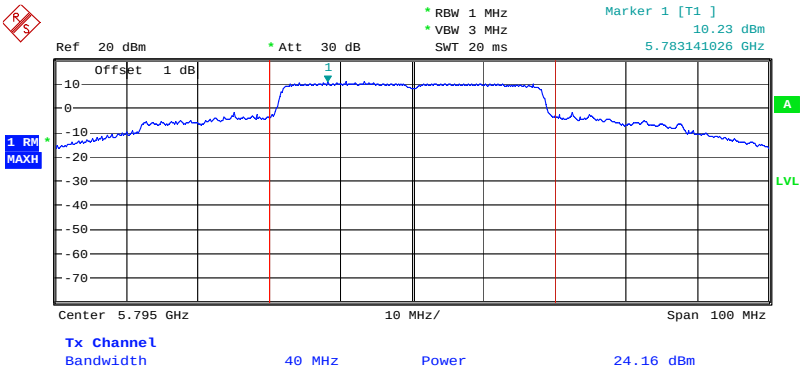
Date: 19.FEB.2008 13:33:09

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. B-1 / 5755 MHz



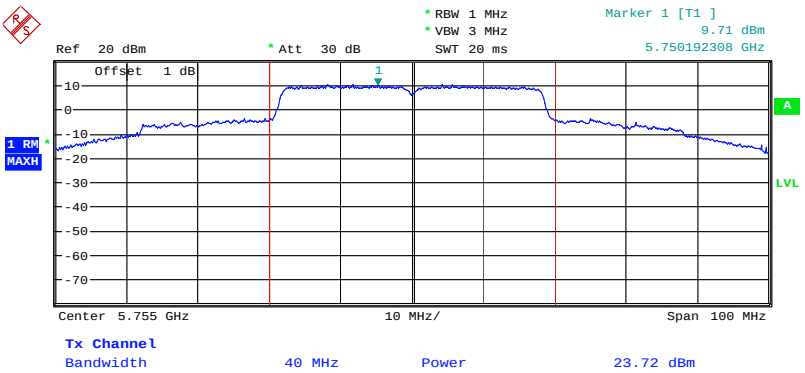
Date: 12.FEB.2008 17:39:09

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. B-1 / 5795 MHz



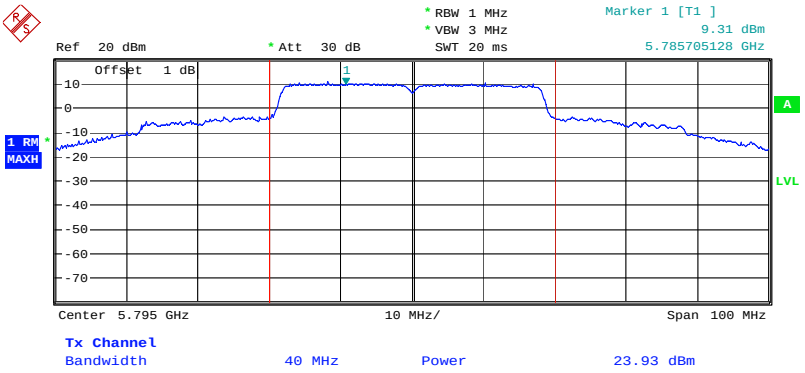
Date: 12.FEB.2008 15:47:13

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. B-2 / 5755 MHz



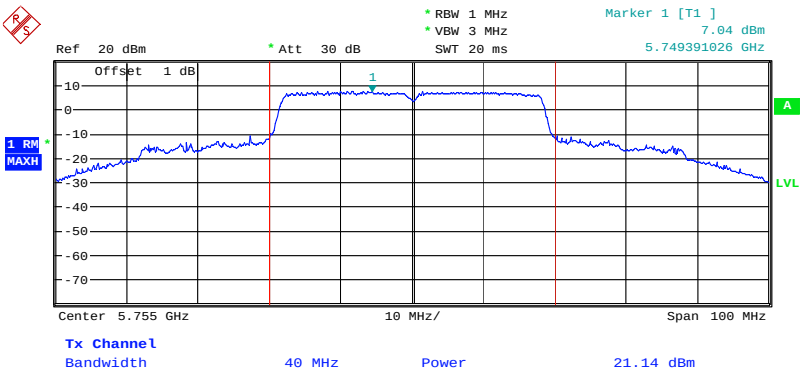
Date: 12.FEB.2008 17:40:05

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. B-2 / 5795 MHz



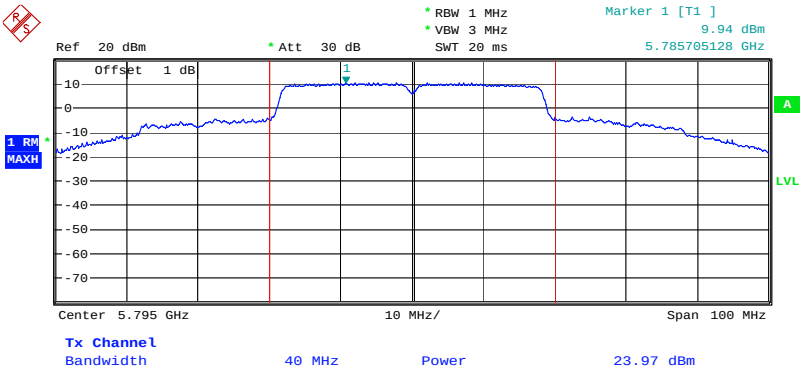
Date: 12.FEB.2008 15:45:57

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. B-3 / 5755 MHz



Date: 12.FEB.2008 17:40:42

Channel Output Power Plot on Configuration 11a Draft n MCS16 40MHz Ant. B-3 / 5795 MHz



Date: 12.FEB.2008 15:45:13

4.3. Power Spectral Density Measurement

4.3.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

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 Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	1.5MHz
RB	3 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	500s

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser.
2. Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz. Set Detector to Peak, Trace to Max Hold.
3. Mark the frequency with maximum peak power as the center of the display of the spectrum.
4. Set the span to 1.5MHz and the sweep time to 500s and record the maximum peak value.
5. Measuring multiple antennas, the connector is required to link with spectrum analyser through a combiner.

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 Power Spectral Density

Temperature	23℃	Humidity	61%
Test Engineer	Jacky Ho	Configurations	Draft n

For 2.4GHz Band

Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
1	2412 MHz	-0.28	8.00	Complies
6	2437 MHz	5.37	8.00	Complies
11	2462 MHz	0.48	8.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
1	2412 MHz	0.76	8.00	Complies
6	2437 MHz	2.92	8.00	Complies
11	2462 MHz	-0.47	8.00	Complies

Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
3	2422 MHz	-0.33	8.00	Complies
6	2437 MHz	5.67	8.00	Complies
9	2452 MHz	2.90	8.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
3	2422 MHz	-0.64	8.00	Complies
6	2437 MHz	2.76	8.00	Complies
9	2452 MHz	1.40	8.00	Complies

For 5GHz Band

Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
149	5745 MHz	-4.09	8.00	Complies
157	5785 MHz	-2.81	8.00	Complies
165	5827 MHz	-2.69	8.00	Complies

Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
149	5745 MHz	-0.89	8.00	Complies
157	5785 MHz	1.07	8.00	Complies
165	5827 MHz	-1.15	8.00	Complies

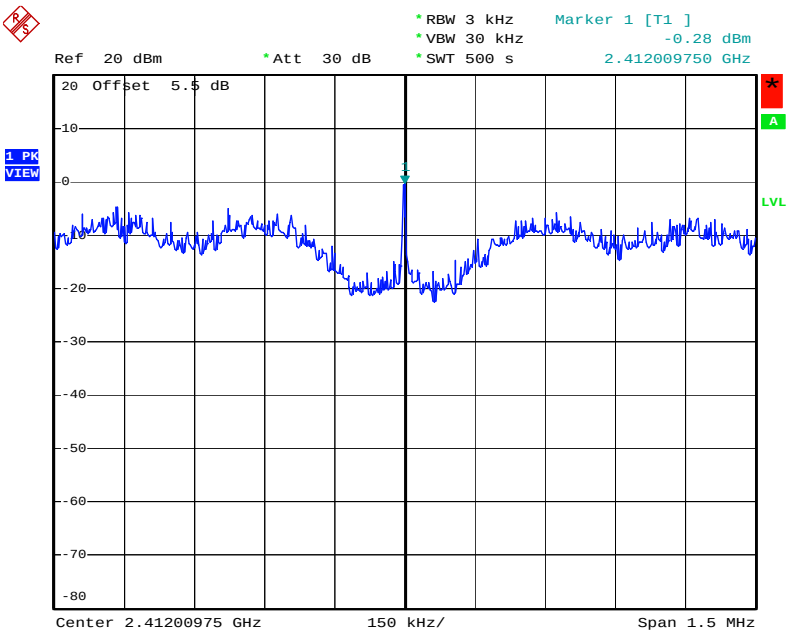
Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3

Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
151	5755 MHz	-0.82	8.00	Complies
159	5795 MHz	-1.45	8.00	Complies

Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3

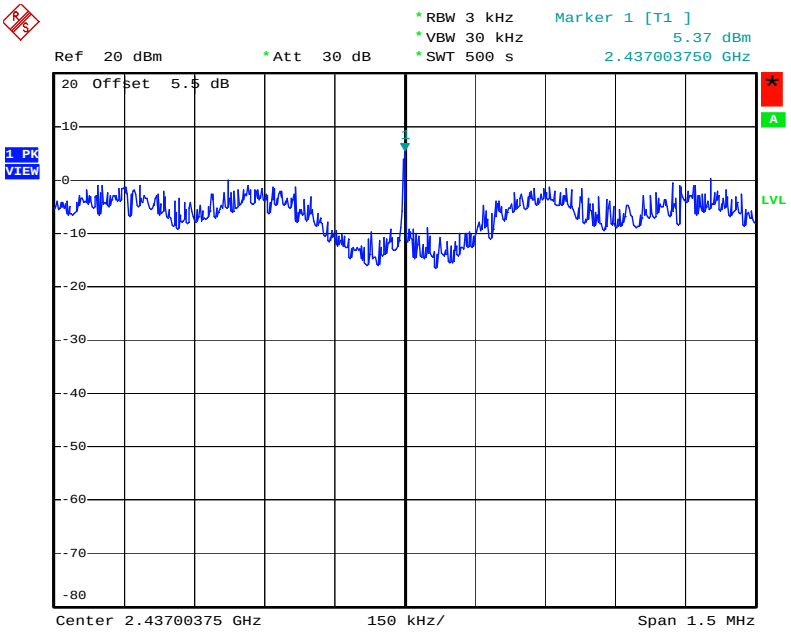
Channel	Frequency	Power Density (dBm/3kHz)	Max. Limit (dBm)	Result
151	5755 MHz	3.04	8.00	Complies
159	5795 MHz	2.83	8.00	Complies

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 2412 MHz



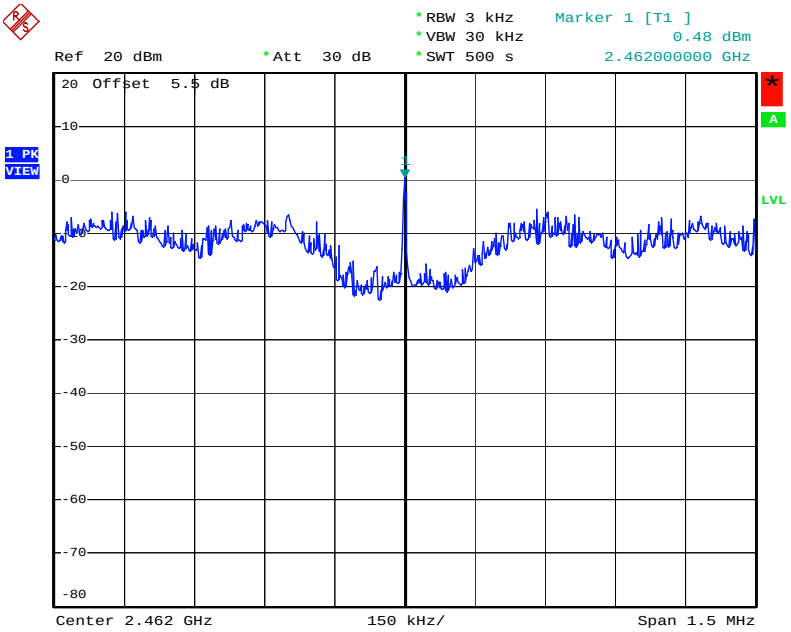
Date: 25.FEB.2008 06:25:16

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 2437 MHz



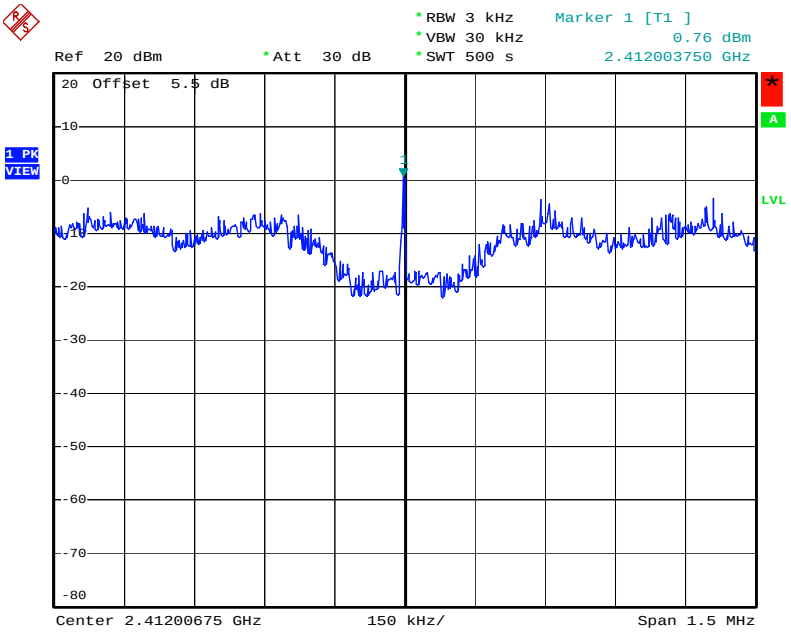
Date: 25.FEB.2008 06:26:12

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 2462 MHz



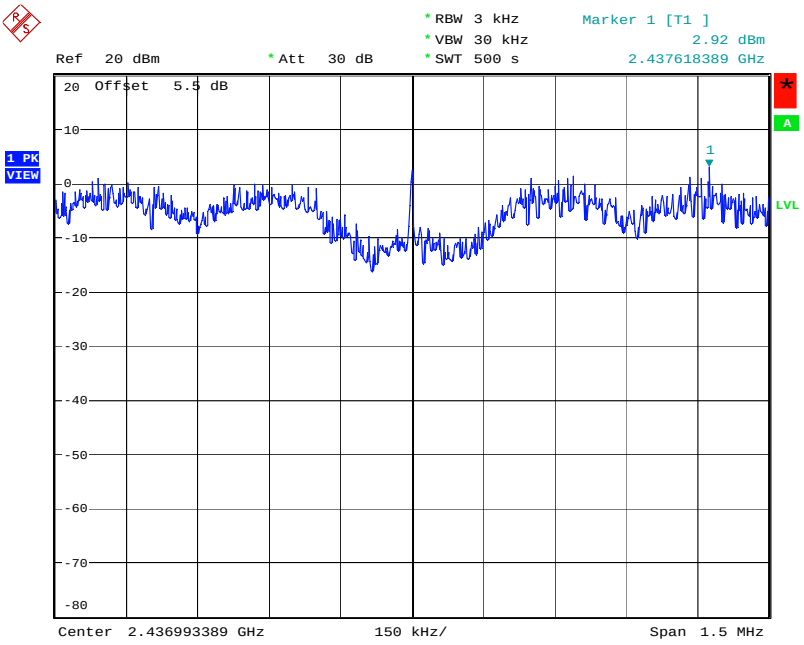
Date: 25.FEB.2008 06:27:46

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 2412 MHz



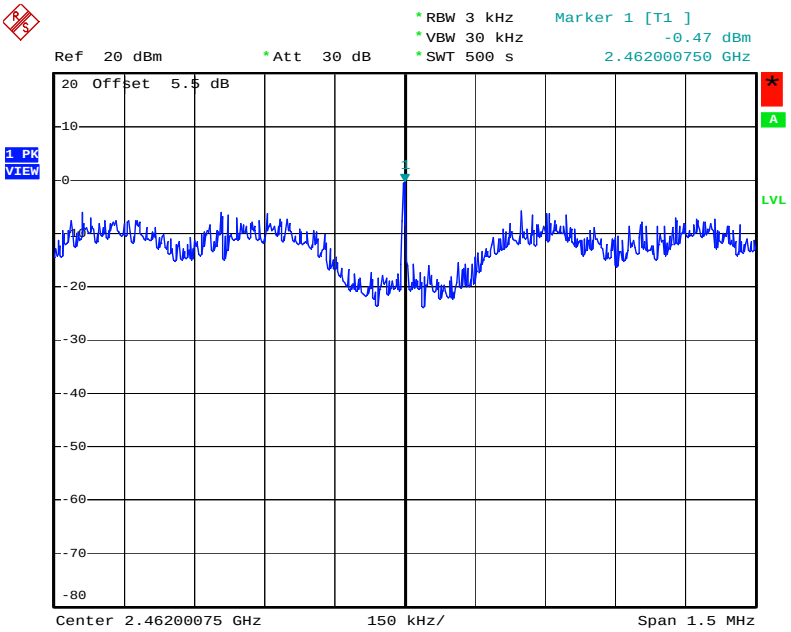
Date: 25.FEB.2008 06:59:33

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 2437 MHz



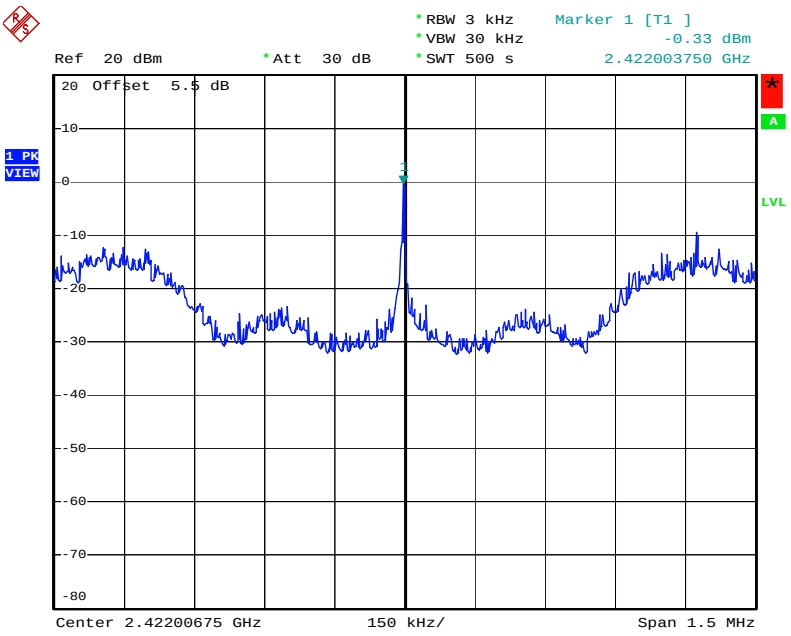
Date: 12.FEB.2008 20:40:58

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 2462 MHz



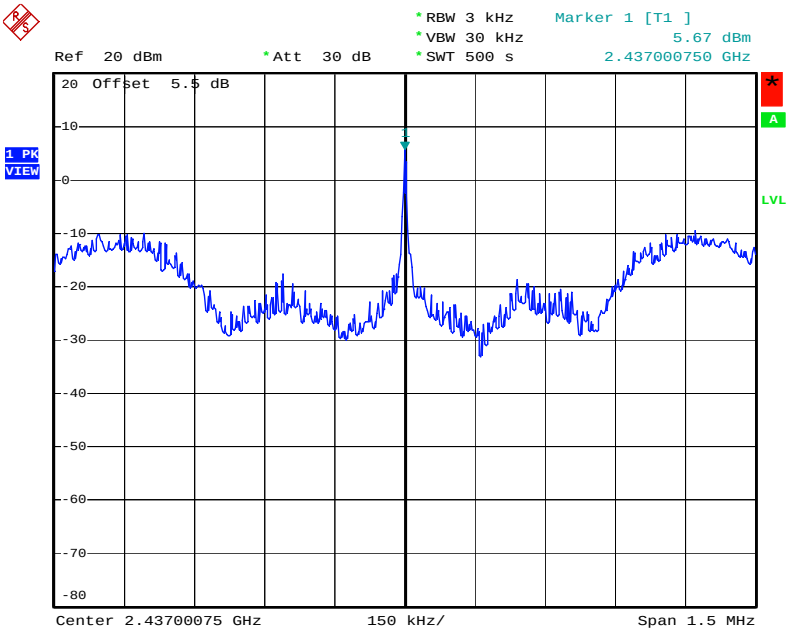
Date: 25.FEB.2008 04:05:45

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 2422 MHz



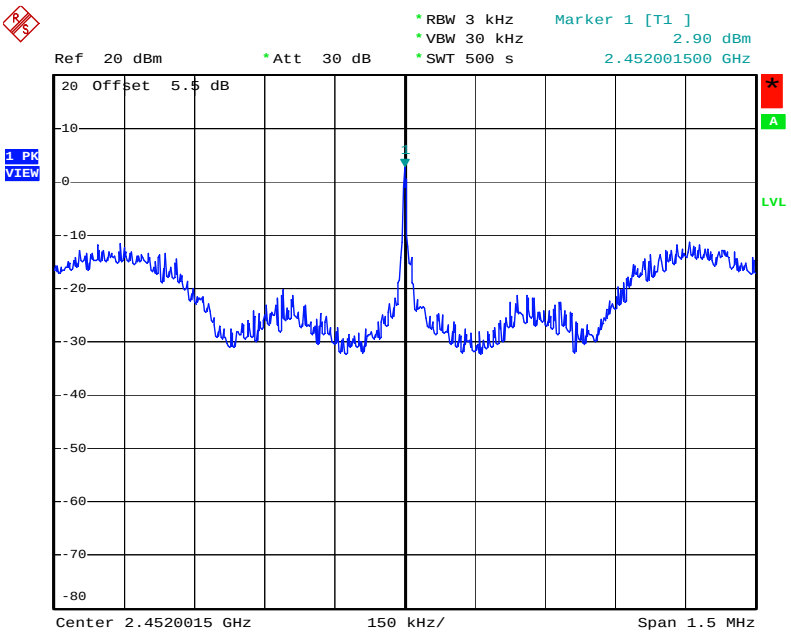
Date: 25.FEB.2008 06:34:46

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 2437 MHz



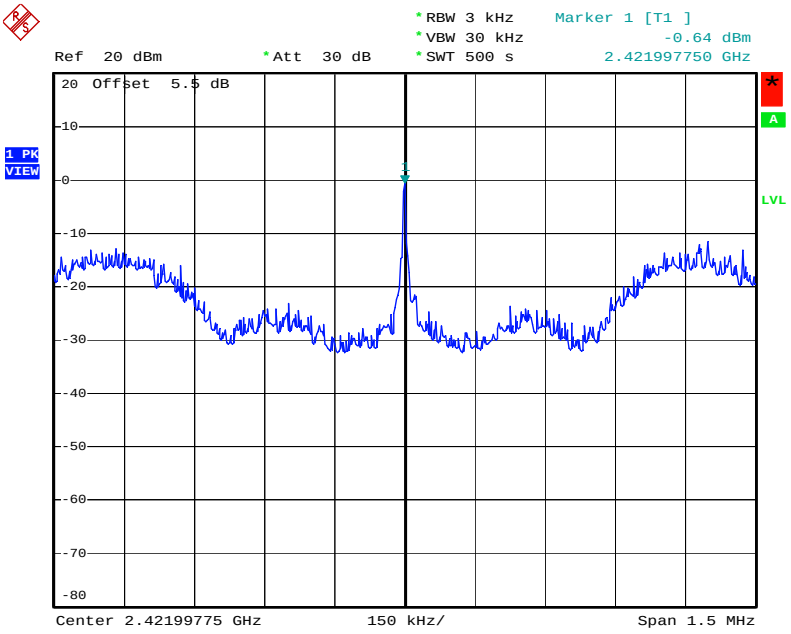
Date: 19.FEB.2008 15:32:54

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 2452 MHz



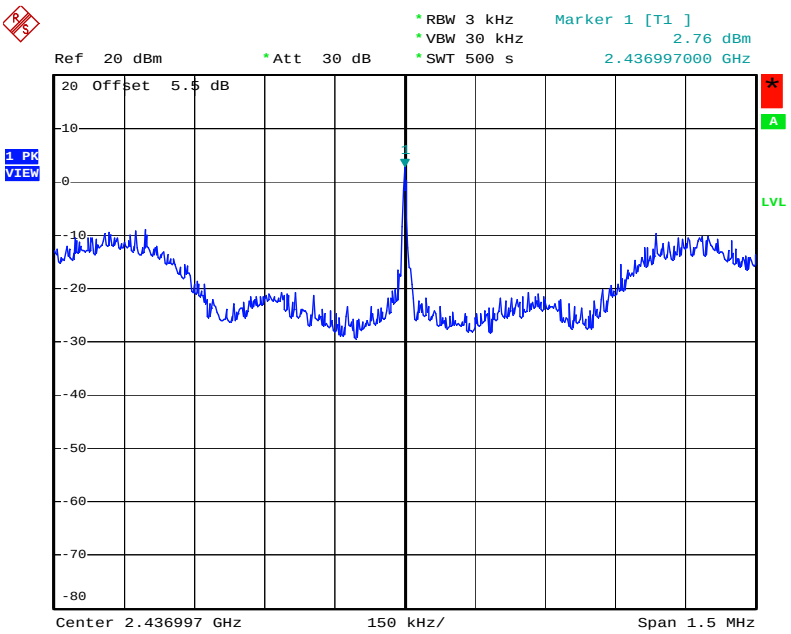
Date: 19.FEB.2008 15:33:44

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 2422 MHz

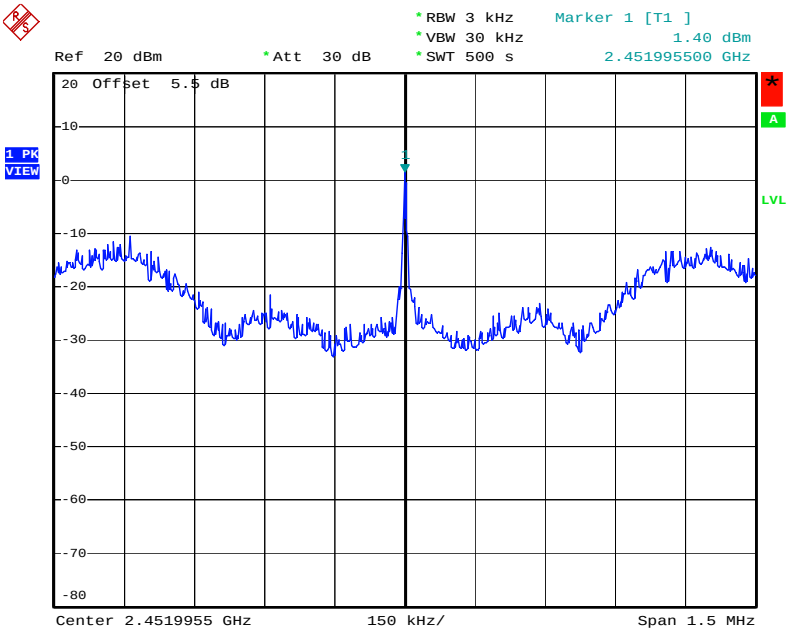


Date: 25.FEB.2008 04:07:39

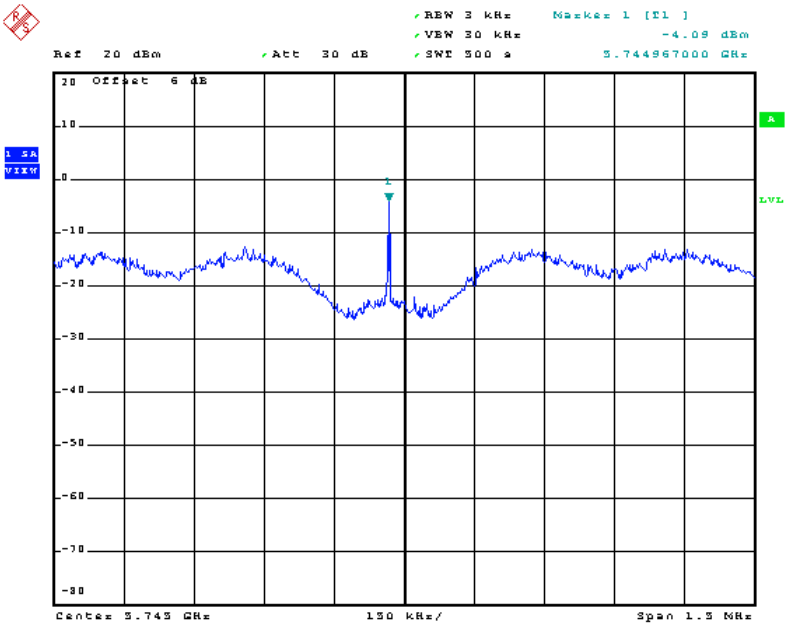
Power Density Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 2437 MHz



Power Density Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 2452 MHz

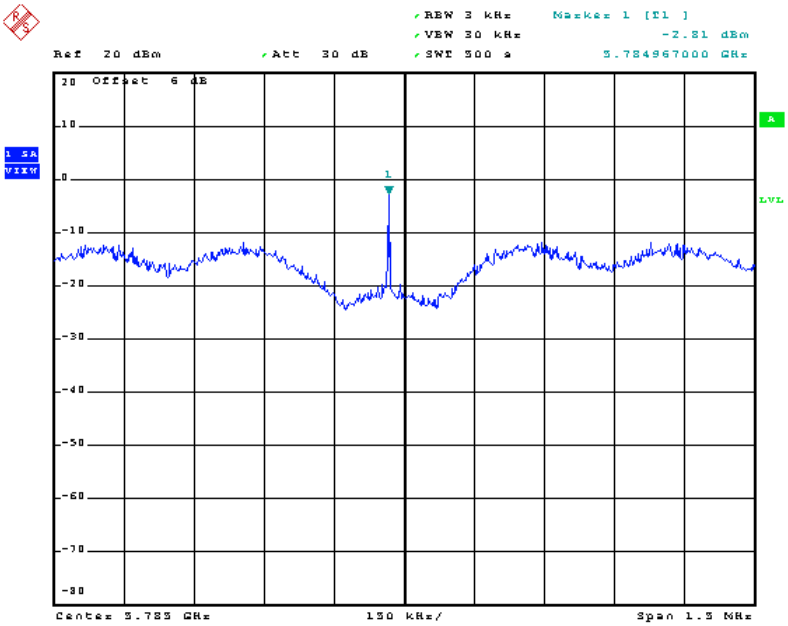


Power Density Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 5745 MHz



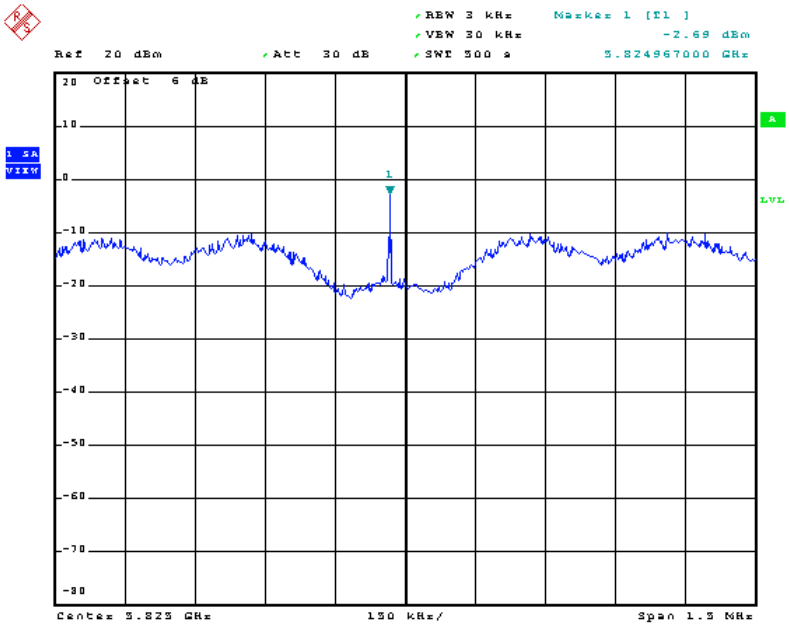
Date: 19.FEB.2008 14:35:10

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 5785 MHz



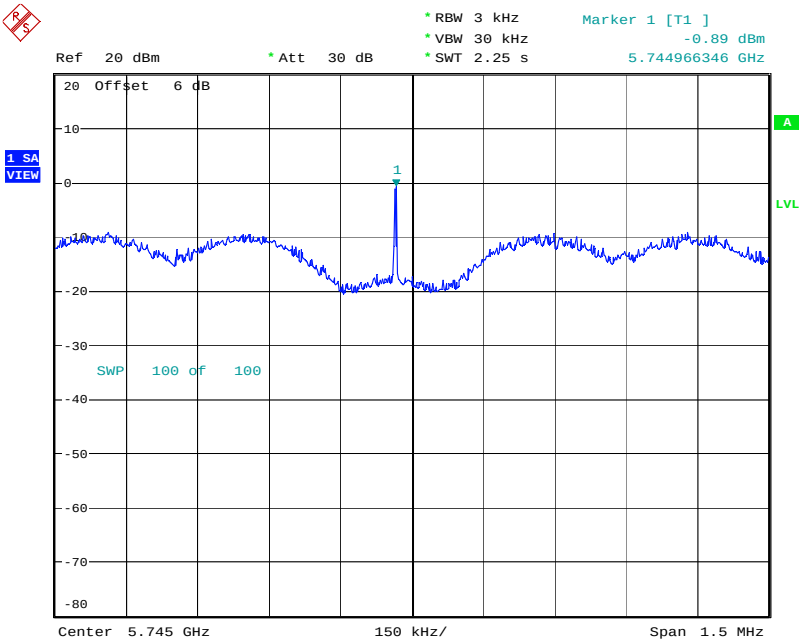
Date: 19.FEB.2008 14:39:48

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 5825 MHz



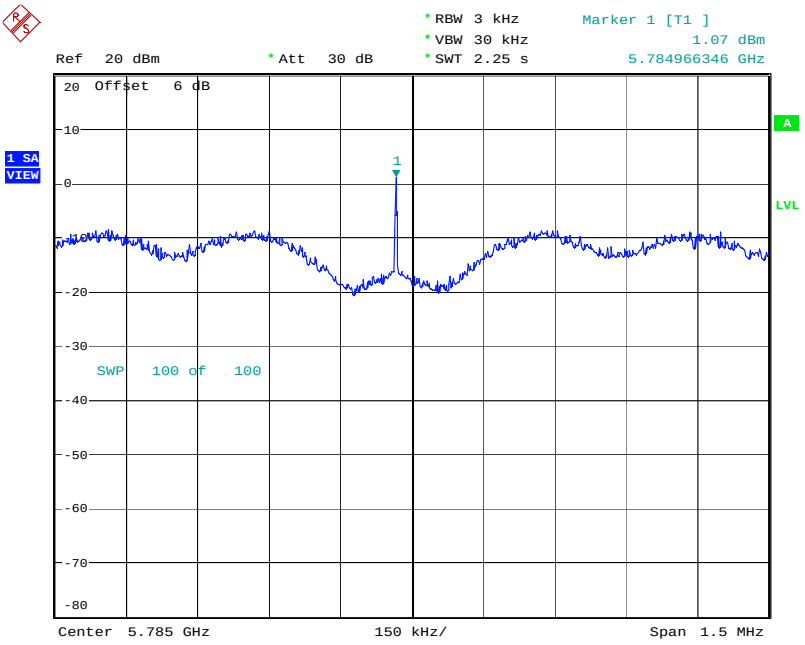
Date: 19.FEB.2008 14:44:05

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 5745 MHz



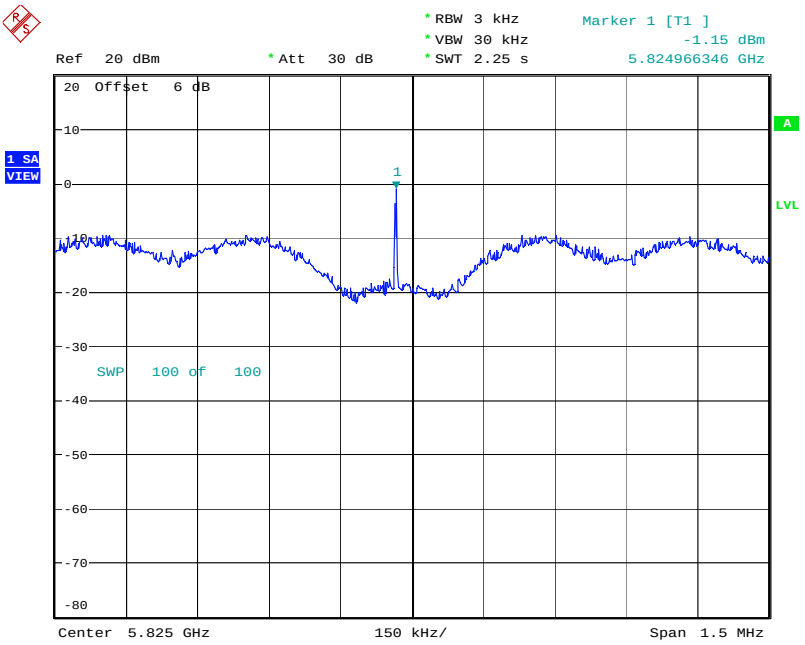
Date: 12.FEB.2008 16:13:14

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 5785 MHz



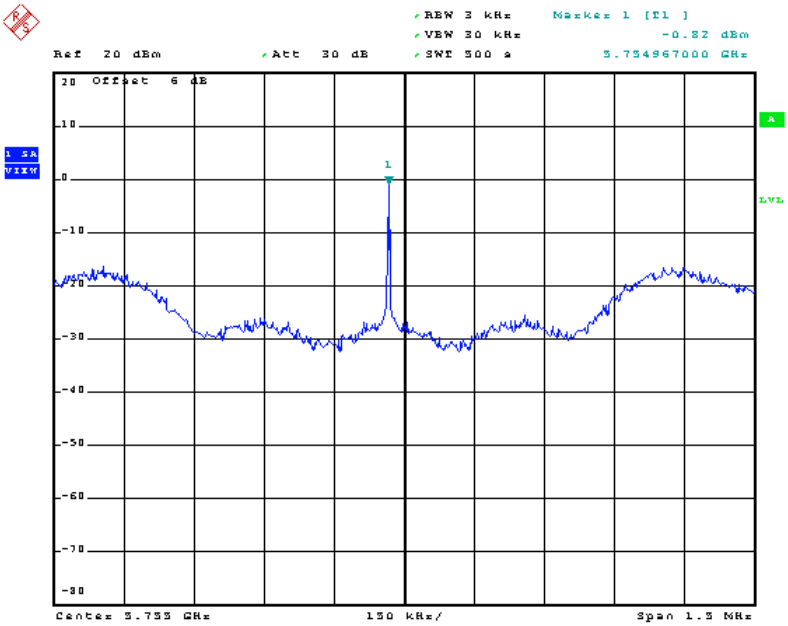
Date: 12.FEB.2008 16:18:21

Power Density Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 5825 MHz



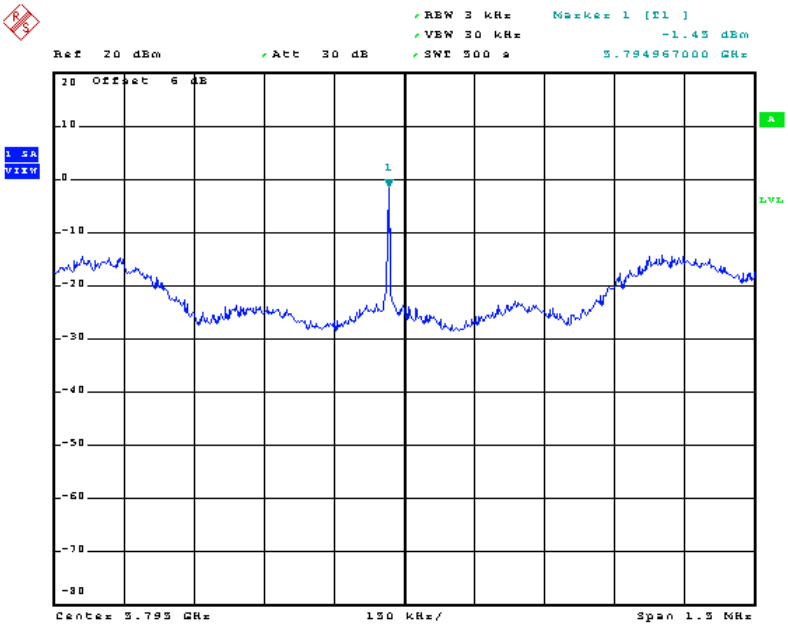
Date: 12.FEB.2008 16:28:58

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 5755MHz



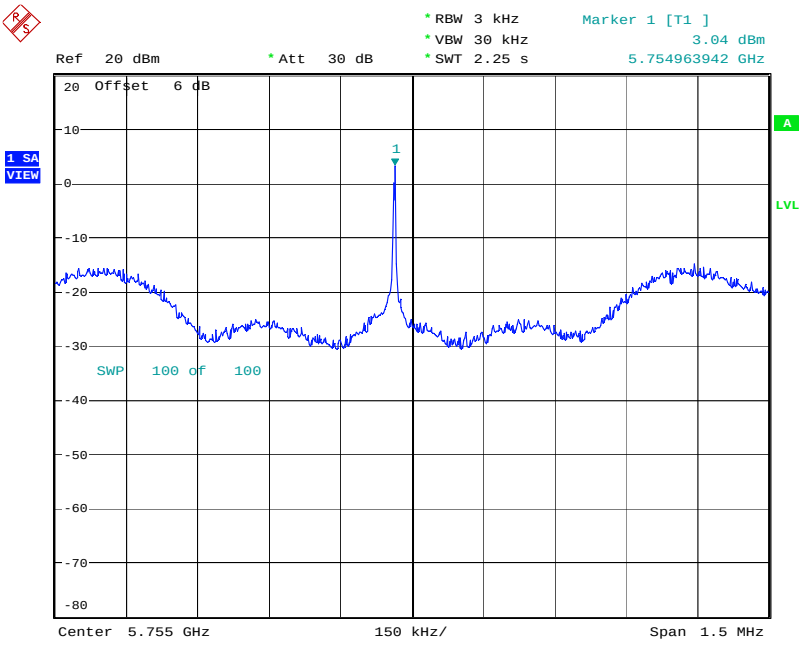
Date: 19.FEB.2008 14:54:11

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 5795 MHz



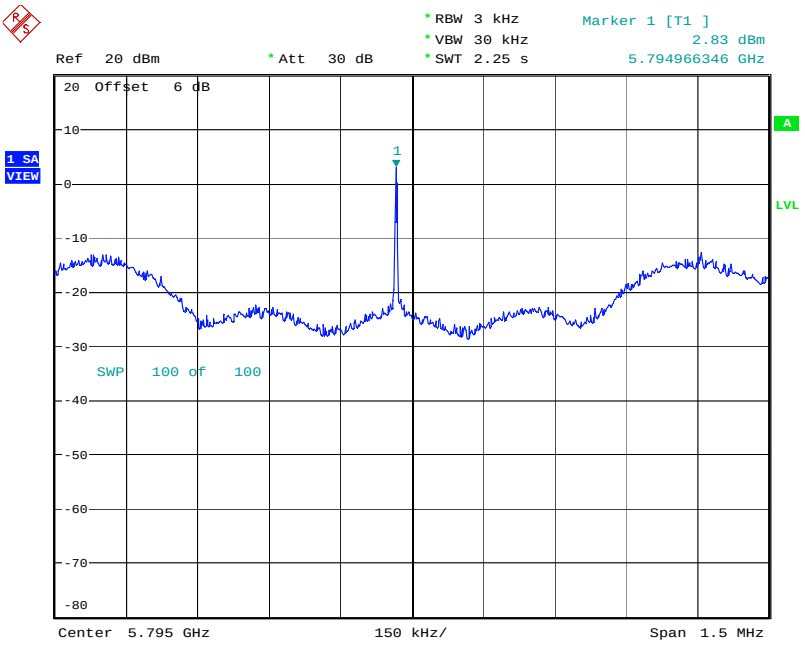
Date: 19.FEB.2008 14:59:03

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 5755MHz



Date: 12.FEB.2008 16:06:47

Power Density Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 5795 MHz



Date: 12.FEB.2008 17:03:58

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

For digital modulation systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

4.4.2. Measuring Instruments and Setting

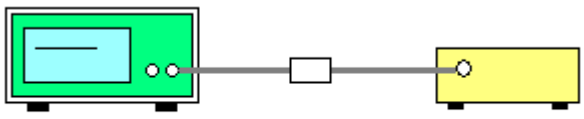
Please refer to section 5 of equipments list in this report. The following table is the setting of the Spectrum Analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

5. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
6. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were used.
7. Measured the spectrum width with power higher than 6dB below carrier.
8. Measuring multiple antennas, the connector is required to link with spectrum analyse 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 6dB Spectrum Bandwidth

Temperature	23℃	Humidity	61%
Test Engineer	Jacky Ho	Configurations	Draft n

For 2.4GHz Band

Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	17.60	17.60	500	Complies
6	2437 MHz	15.68	17.72	500	Complies
11	2462 MHz	15.04	17.64	500	Complies

Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.04	17.60	500	Complies
6	2437 MHz	13.87	17.69	500	Complies
11	2462 MHz	15.76	17.64	500	Complies

Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	35.04	36.40	500	Complies
6	2437 MHz	35.44	36.32	500	Complies
9	2452 MHz	36.32	36.24	500	Complies

Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	35.76	36.32	500	Complies
6	2437 MHz	35.52	36.24	500	Complies
9	2452 MHz	35.36	36.24	500	Complies

For 5GHz Band

Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	15.00	17.64	500	Complies
157	5785 MHz	15.76	17.76	500	Complies
165	5825 MHz	15.00	17.80	500	Complies

Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	15.06	17.78	500	Complies
157	5785 MHz	15.06	17.75	500	Complies
165	5825 MHz	15.06	17.66	500	Complies

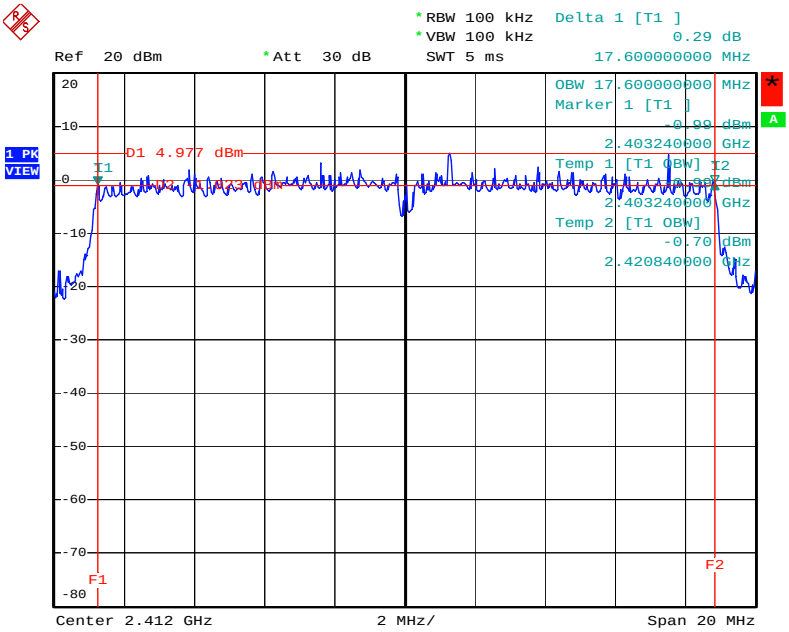
Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	36.32	36.32	500	Complies
159	5795 MHz	33.92	36.32	500	Complies

Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3

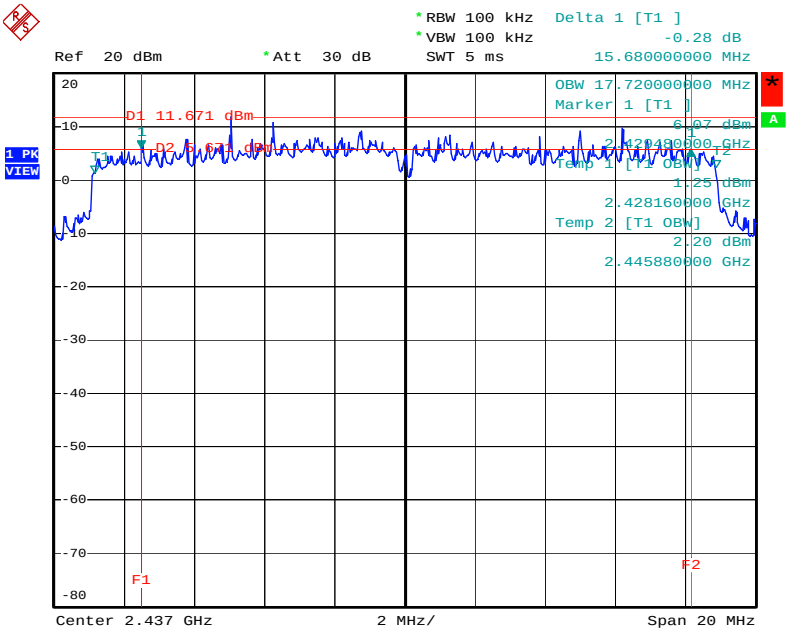
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	35.06	36.28	500	Complies
159	5795 MHz	35.06	36.28	500	Complies

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 2412 MHz



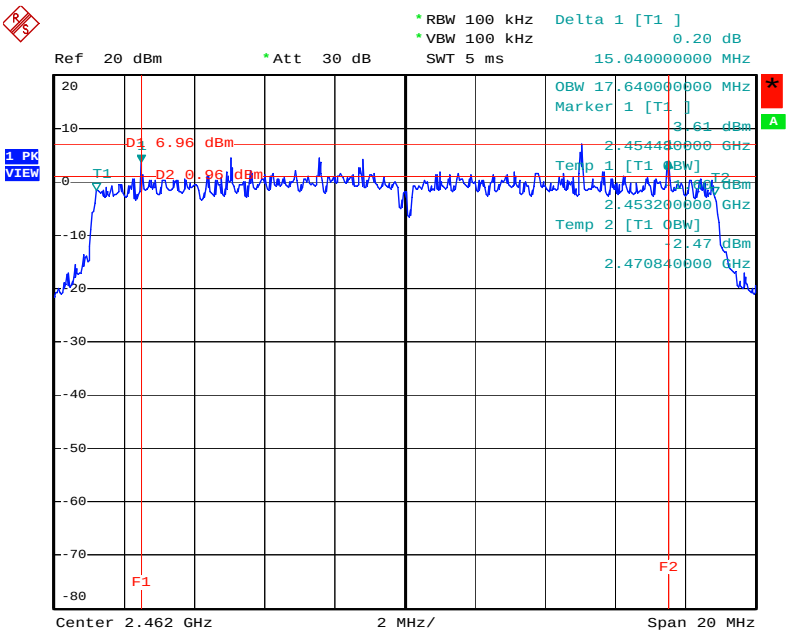
Date: 25.FEB.2008 06:24:50

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 2437 MHz



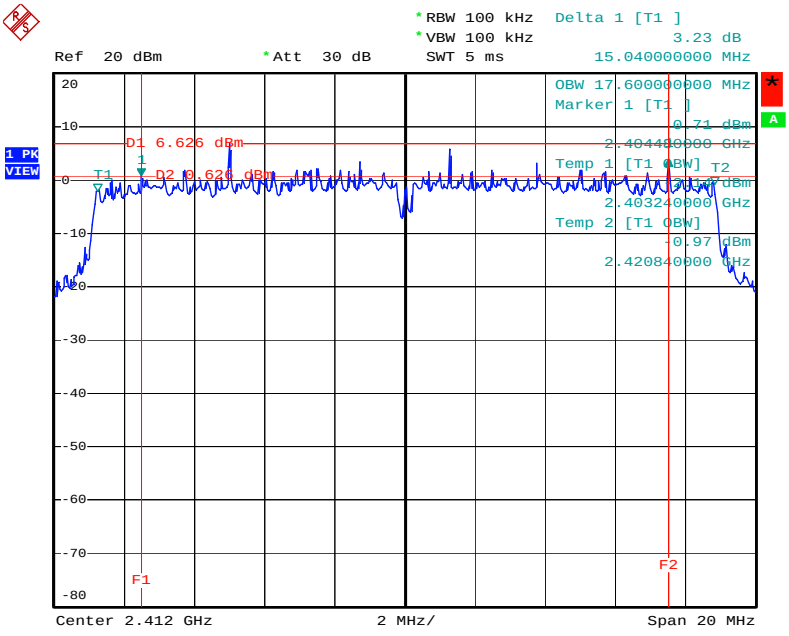
Date: 25.FEB.2008 06:25:56

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 2462 MHz



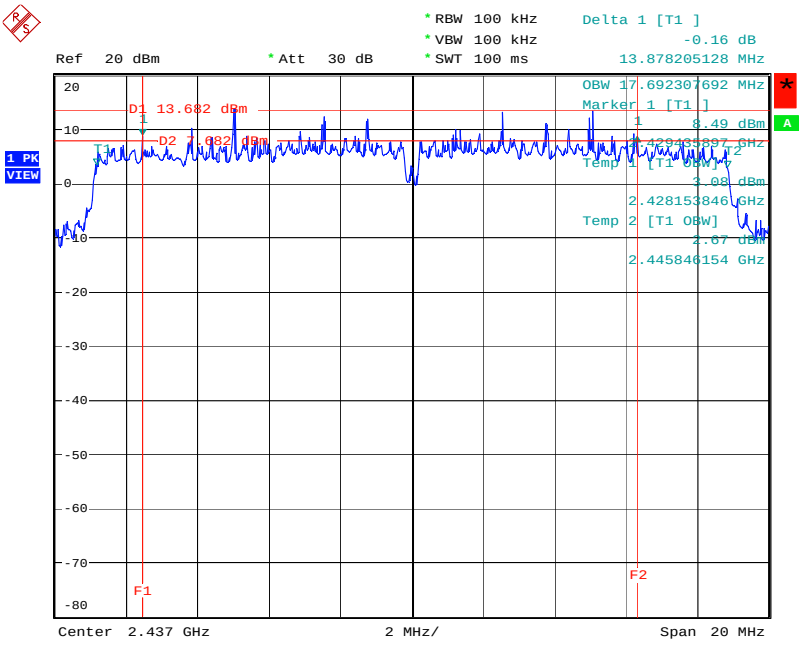
Date: 25.FEB.2008 06:27:30

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 2412 MHz

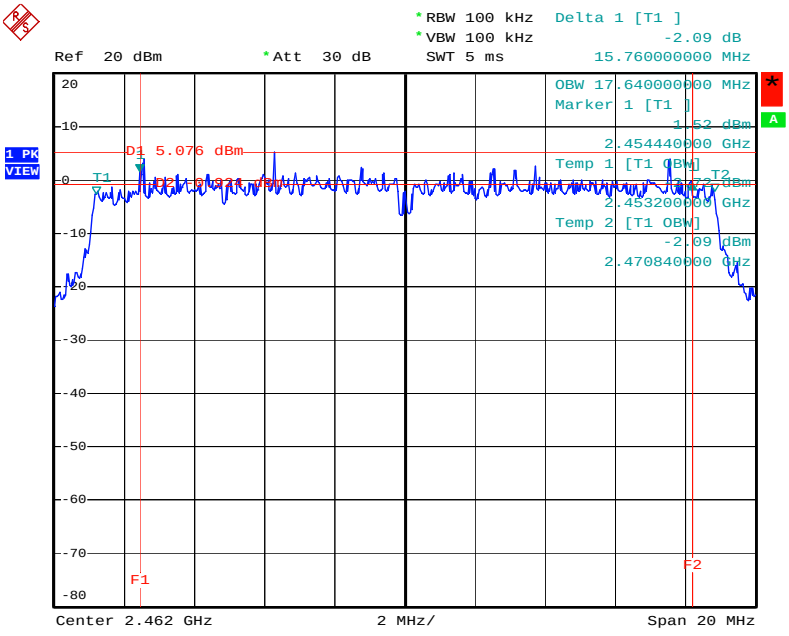


Date: 25.FEB.2008 06:59:08

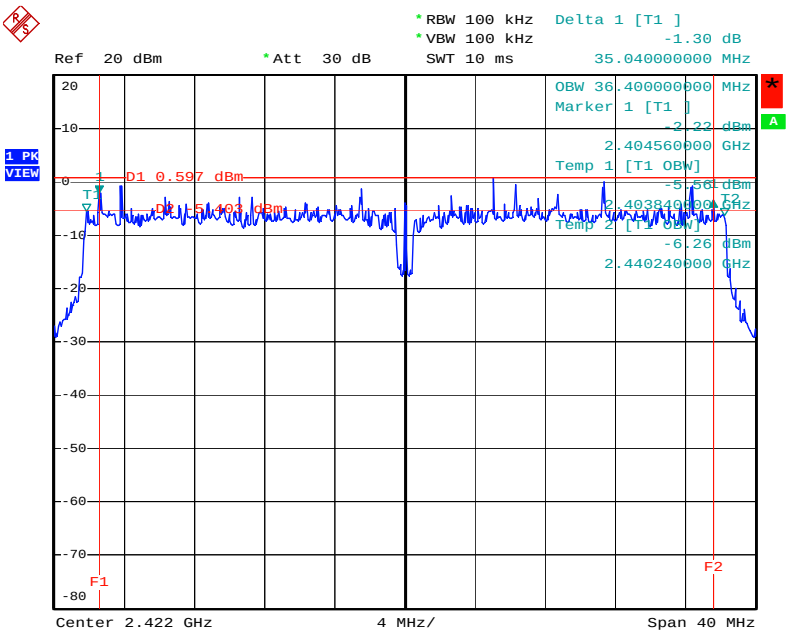
6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 2437 MHz



6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 2462 MHz

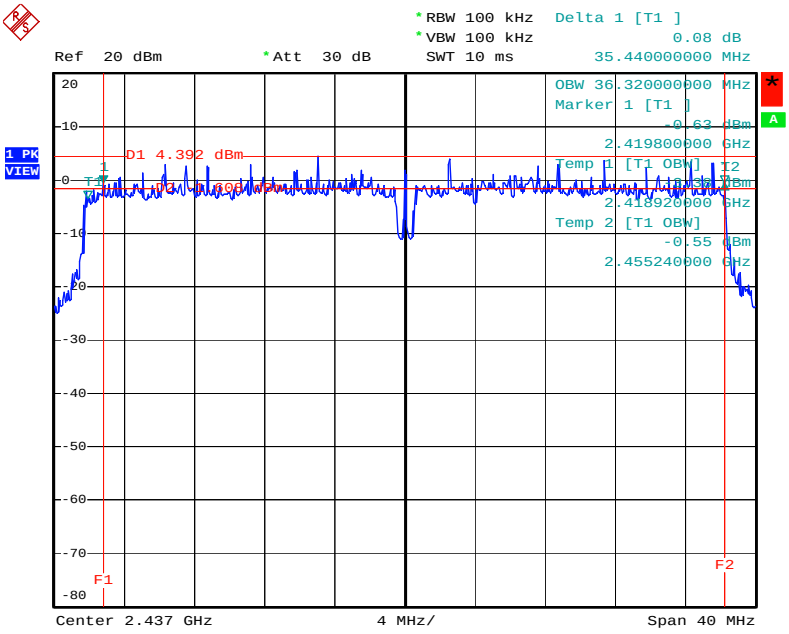


6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 2422 MHz



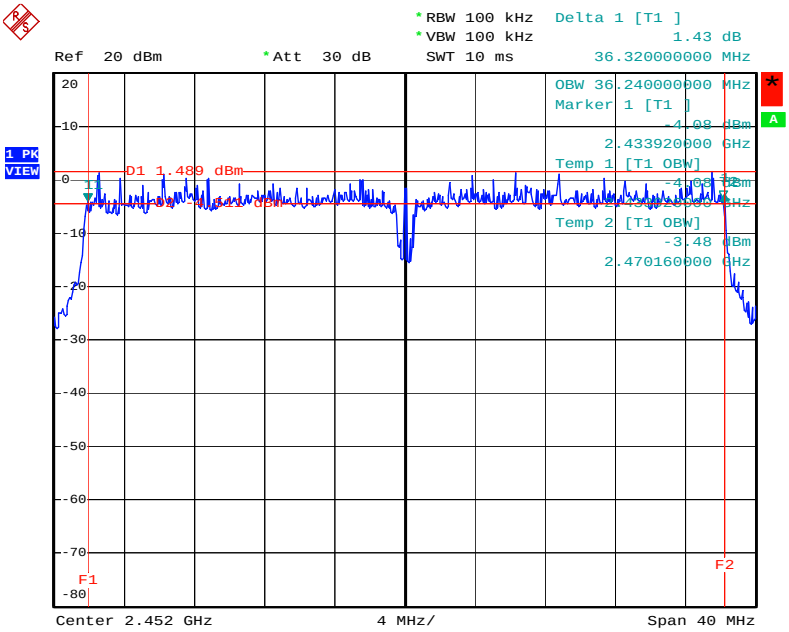
Date: 25.FEB.2008 06:34:21

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 2437 MHz



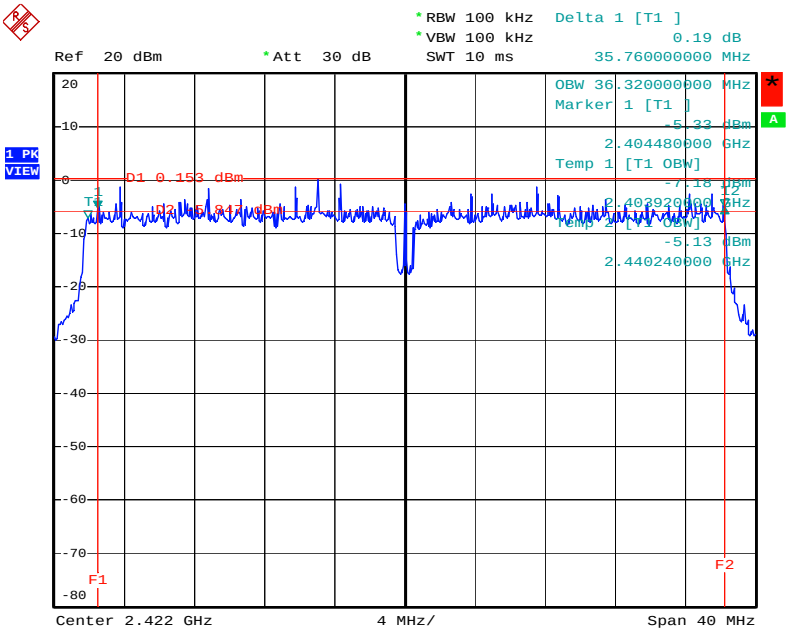
Date: 19.FEB.2008 15:32:28

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 2452 MHz



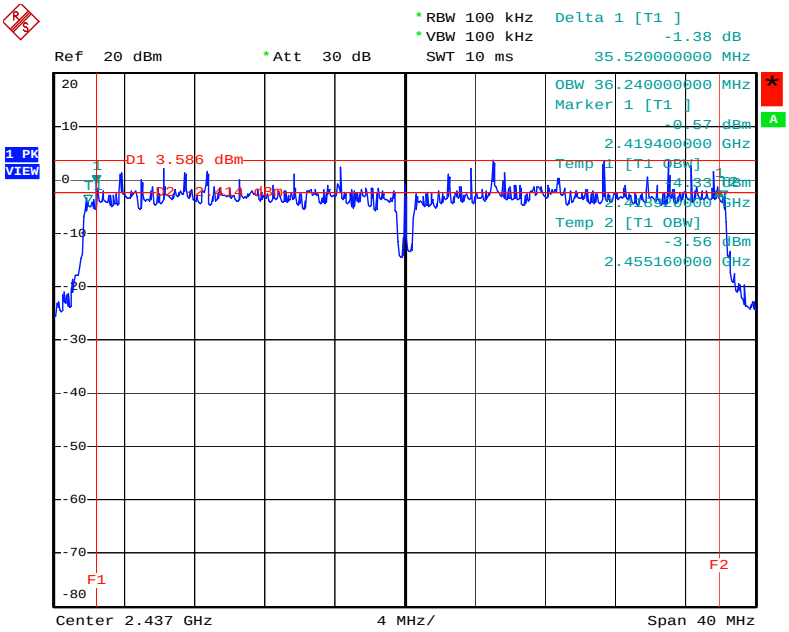
Date: 19.FEB.2008 15:33:18

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 2422 MHz



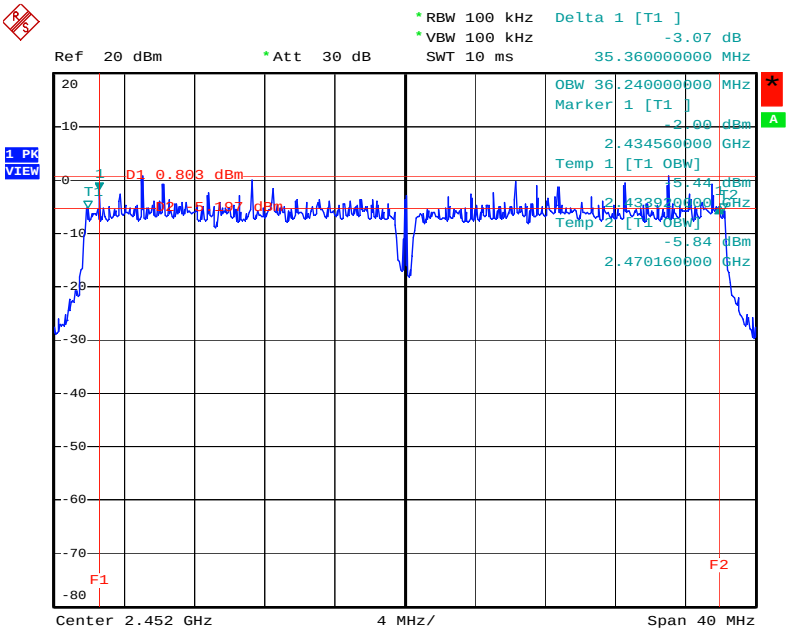
Date: 25.FEB.2008 04:07:14

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 2437 MHz



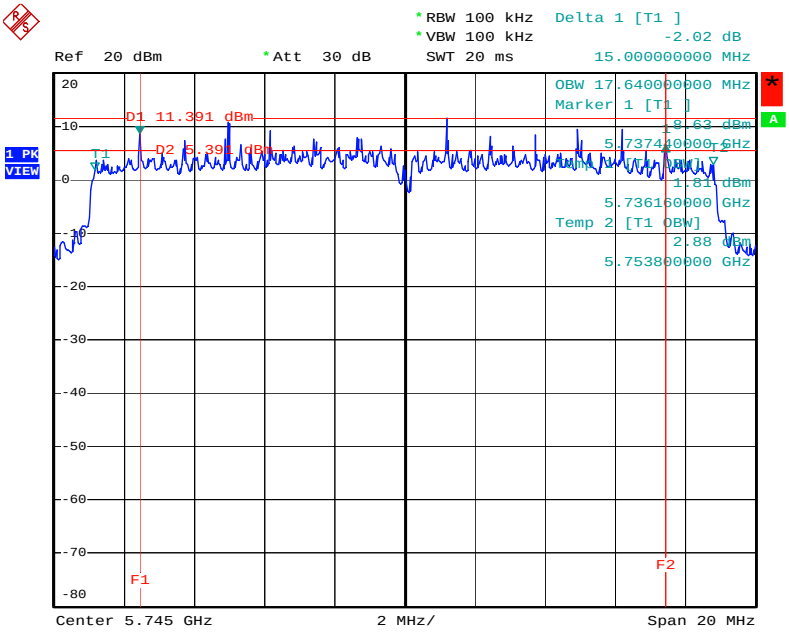
Date: 25.FEB.2008 04:08:22

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 2452 MHz



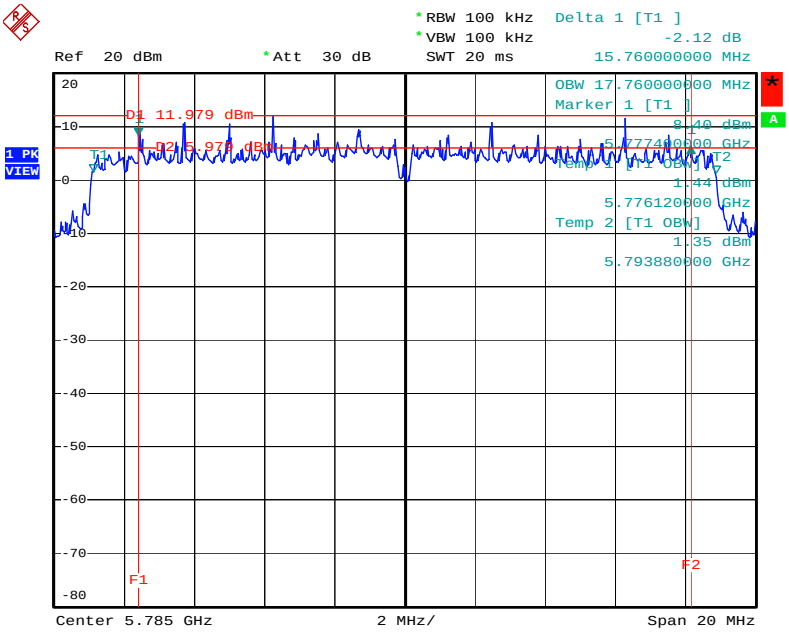
Date: 25.FEB.2008 04:09:37

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 5745 MHz



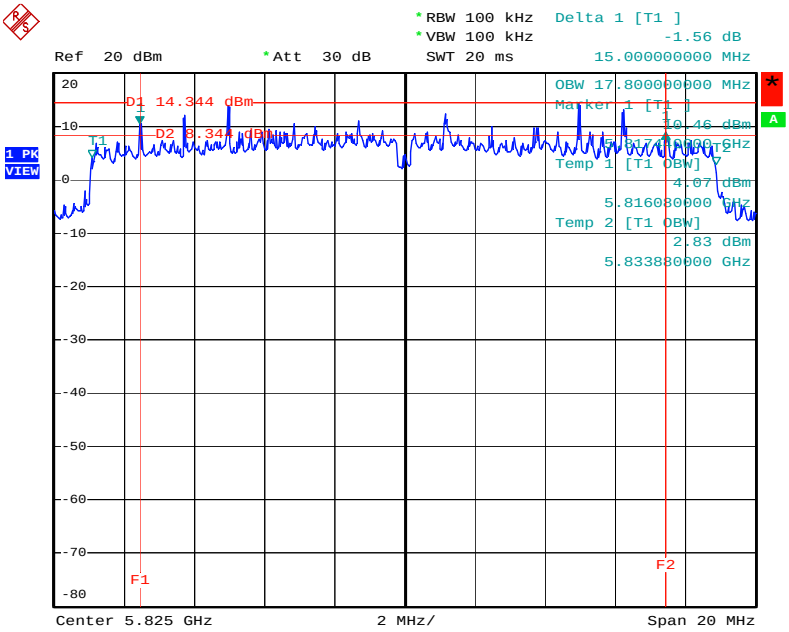
Date: 19.FEB.2008 14:31:20

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 5785MHz



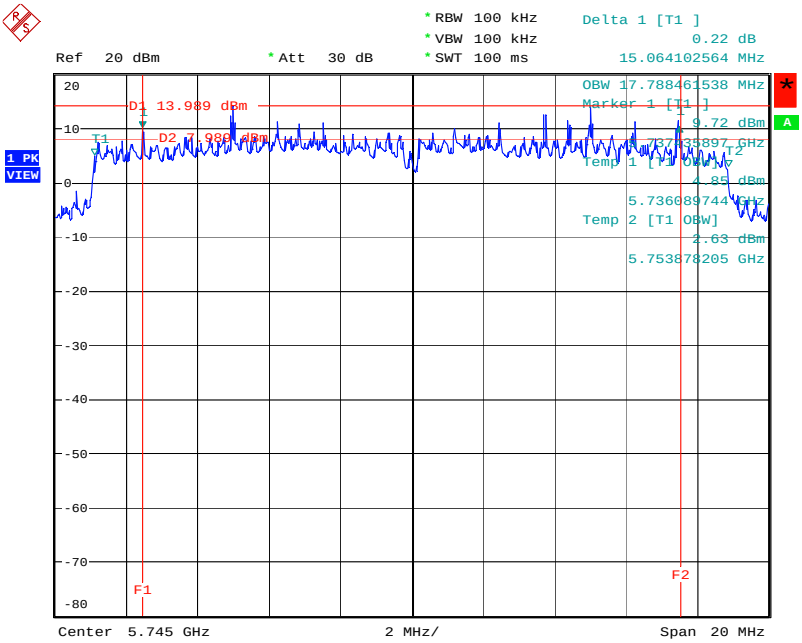
Date: 19.FEB.2008 14:35:58

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. A-1+A-2+A-3 / 5825 MHz



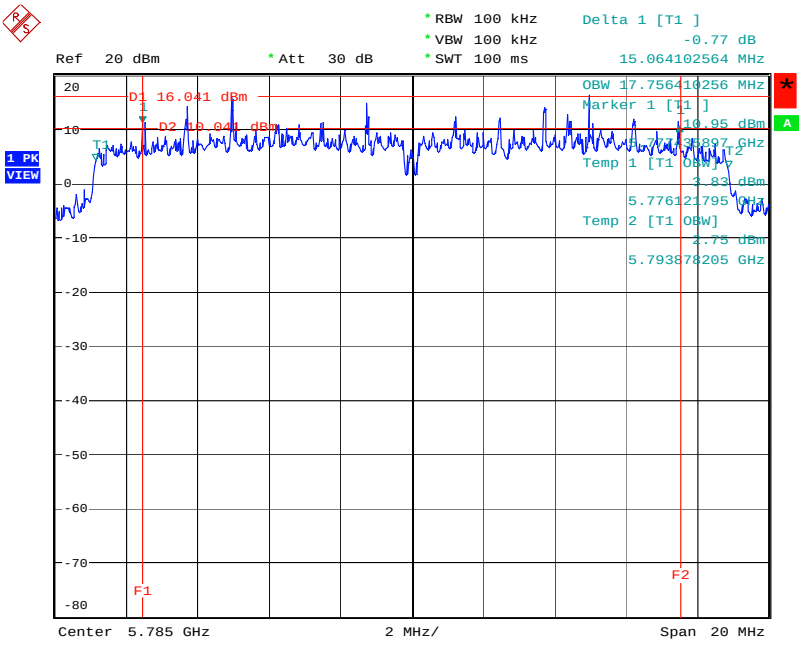
Date: 19.FEB.2008 14:40:15

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 5745 MHz



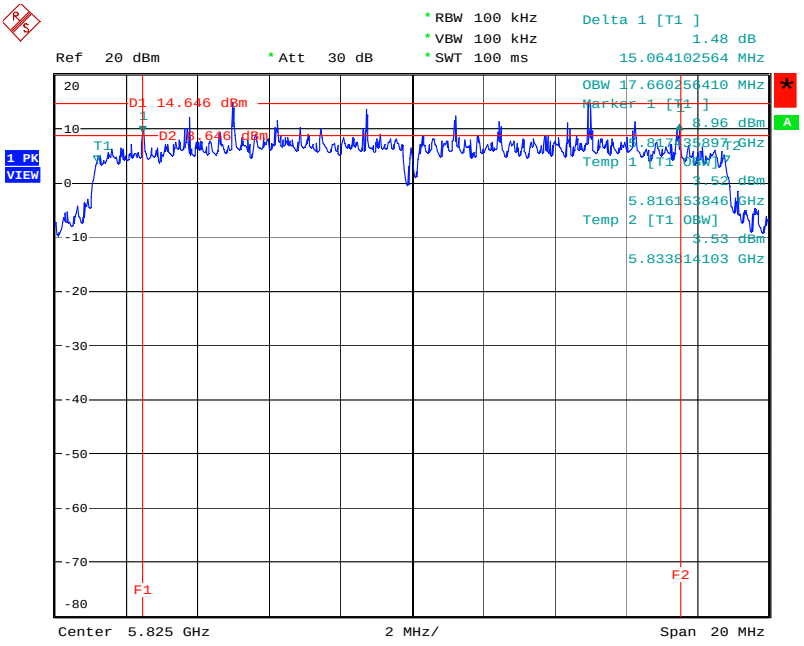
Date: 12.FEB.2008 16:09:23

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 5785MHz



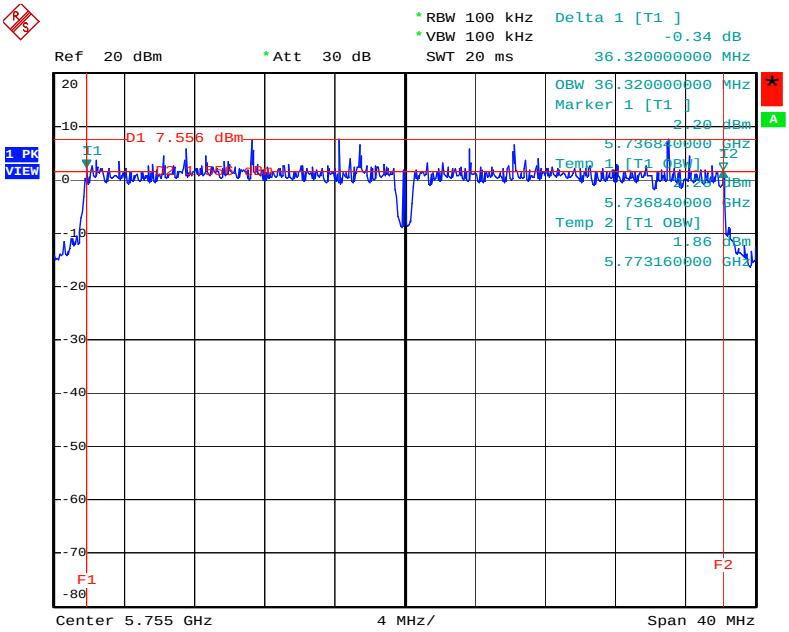
Date: 12.FEB.2008 16:14:30

6 dB Bandwidth Plot on Configuration Draft n MCS16 20MHz Ant. B-1+B-2+B-3 / 5825 MHz



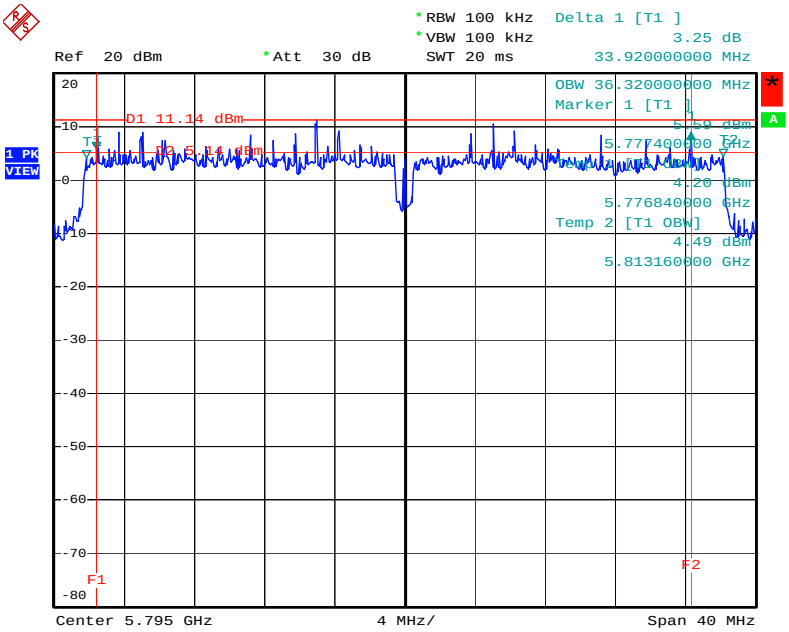
Date: 12.FEB.2008 16:25:07

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. A-1+A-2+A-3 / 5755MHz



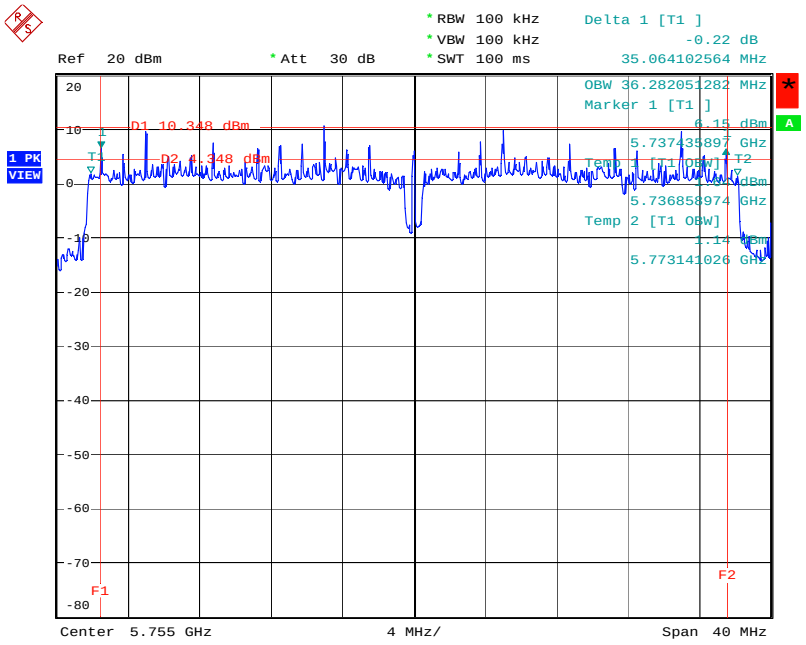
Date: 19.FEB.2008 14:50:20

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. A-1+Ant. A-2+Ant. A-3 / 5795 MHz



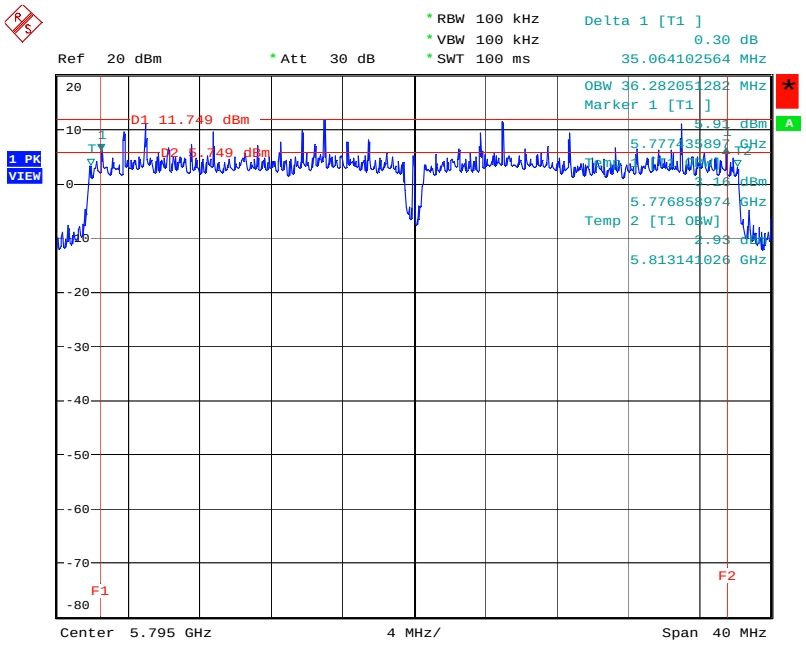
Date: 19.FEB.2008 14:55:12

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 5755MHz



Date: 12.FEB.2008 16:02:57

6 dB Bandwidth Plot on Configuration Draft n MCS16 40MHz Ant. B-1+B-2+B-3 / 5795 MHz



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