

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT**

OF

802.11a/b/g WIRELESS LAN CARDBUS ADAPTER

MODEL No.: DWL-AG520, PC22ag, WPC-D11 v.C1

FCC ID: KA22002080002-2

REPORT NO: 030041-RF-ID

ISSUE DATE: April 07, 2003

Prepared for

D-LINK Corporation

**No. 8, Li-hsin Road VII, Science-based Industrial Park,
Hsinchu, Taiwan, R.O.C.**



Prepared by

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VERIFICATION OF COMPLIANCE

Applicant: D-LINK Corporation
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Product Description: IEEE 802.11 a/b/g PCI Adapter

Model No.: DWL-AG520, PC22ag, WPC-D11 v.C1

Serial Number: N/A

File Number: 030041-RF-ID

Date of test: April 2, 2003 ~April 07, 2003

We hereby certify that:

The above equipment was tested by C&C Laboratory Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2000) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247

The test results of this report relate only to the tested sample identified in this report.

Approved By

A handwritten signature in black ink, appearing to read 'Vincent Su', is written over a horizontal line.

Vincent Su / Vice Manager
C&C Laboratory Co., Ltd..

Table of Contents

1.	GENERAL INFORMATION	5
1.1	PRODUCT DESCRIPTION	5
1.2	RELATED SUBMITTAL(S) / GRANT (S)	5
1.3	TEST METHODOLOGY	6
1.4	TEST FACILITY	6
1.5	SPECIAL ACCESSORIES.....	6
1.6	EQUIPMENT MODIFICATIONS	6
2.	SYSTEM TEST CONFIGURATION	7
2.1	EUT CONFIGURATION	7
2.2	EUT EXERCISE.....	7
2.3	TEST PROCEDURE	7
2.4	CONFIGURATION OF TESTED SYSTEM.....	8
3.	SUMMARY OF TEST RESULTS	9
4.	DESCRIPTION OF TEST MODES	9
5.	SPURIOUS EMISSION TEST	10
5.1	STANDARD APPLICABLE	10
5.2	EUT SETUP	10
5.3	MEASUREMENT PROCEDURE	10
5.4	TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION).....	11
5.5	MEASUREMENT EQUIPMENT USED:.....	12
5.6	MEASUREMENT RESULT	12
6.	AC POWER LINE CONDUCTED EMISSION TEST.....	73
6.1	STANDARD APPLICABLE	73
6.2	EUT SETUP	73
6.3	MEASUREMENT PROCEDURE	73
6.4	MEASUREMENT EQUIPMENT USED:.....	74
6.5	MEASUREMENT RESULT	74
7.	6 DB BANDWIDTH MEASUREMENT	77
7.1	STANDARD APPLICABLE	77
7.2	MEASUREMENT EQUIPMENT USED:.....	77
7.3	TEST SET-UP:	77
7.4	MEASUREMENT PROCEDURE	77
7.5	MEASUREMENT RESULT	78
8.	PEAK OUTPUT POWER MEASUREMENT.....	96
8.1	STANDARD APPLICABLE	96
8.2	TEST SETUP	96
8.3	MEASUREMENT PROCEDURE	96
8.4	MEASUREMENT EQUIPMENT USED:.....	96
9.	100KHZ BANDWIDTH OF BAND EDGES MEASUREMENT.....	99

9.1	STANDARD APPLICABLE	99
9.2	TEST SETUP	99
9.3	MEASUREMENT PROCEDURE	99
9.4	MEASUREMENT EQUIPMENT USED:	100
9.5	MEASUREMENT RESULT	101
10.	PEAK POWER SPECTRAL DENSITY	117
10.1	STANDARD APPLICABLE	117
10.2	MEASUREMENT PROCEDURE	117
10.3	MEASUREMENT EQUIPMENT USED:	117
10.4	MEASUREMENT RESULT	118
11.	ANTENNA REQUIREMENT	132
11.1	STANDARD APPLICABLE	132
11.2	ANTENNA CONNECTED CONSTRUCTION	132
12.	12. RF EXPOSURE	133
12.1	STANDARD APPLICABLE	133
	RESULT	134
	RESULT	134
	RESULT	135
14.	TERMS OF ABRIVATION	136
	APPENDIX 1	137
	PHOTOGRPHS OF SET UP	137
	APPENDIX 2	140
	PHOTOGRPHS OF EUT	140

1. GENERAL INFORMATION

1.1 Product Description

The D-LINK Corporation Model: DWL-AG520, PC22ag, WPC-D11 v.C1 (referred to as the EUT in this report) is a IEEE802.11a/b/g PCI Adapter.

A major technical descriptions of EUT is described as following:

A). Operation Frequency:

	2400~2483.5				5725~5850		
	IEEE802.11b	IEEE802.11g	IEEE802.11g (Turbo Mode)		Normal Mode		Turbo Mode
1	2412	2412	2437	1	5745	1	5760
2	2417	2417		2	5765	2	5800
3	2422	2422		3	5785		
4	2427	2427		4	5805		
5	2432	2432		5	5825		
6	2437	2437					
7	2442	2442					
8	2447	2447					
9	2452	2452					
10	2457	2457					
11	2462	2462					

B). Transmit Power: 17dBm (Peak)

C). Modulation type: Direct Sequence Spread Spectrum, (CCK; DQPSK; DBPSK)
OFDM(IEEE802.11a/g)

D). Transition Speed: 1/2/5.5/11Mbps(IEEE802.11b), up to 54Mbps(108Mbps:Turbo mode)

E). Antenna Designation: dipole Antenna and Patch antenna; Non-User Replaceable (Fixed),
two provided. The antennas are diversity transmitter or receiver mode.

F). Power Supply: DC3.3V from PCI port of PC system for EUT

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: KA22002080002-2 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.



1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (2000). Radiated testing was performed at an antenna to EUT distance 3 meters..

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of C&C Laboratory, Co., Ltd. No. 81-1, 210 Lane, Pa-de 2nd Road, Lu-Chu Hsiang, Taoyuan, Taiwan, R.O.C.. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2000 and CISPR 22/EN 55022 requirements.

1.5 Special Accessories

Not available for this EUT intended for grant.

1.6 Equipment Modifications

Not available for this EUT intended for grant.



2. SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2000, conducted emissions from the EUT are measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak detector mode.

2.3.2 Radiated Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) were rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2000.

2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

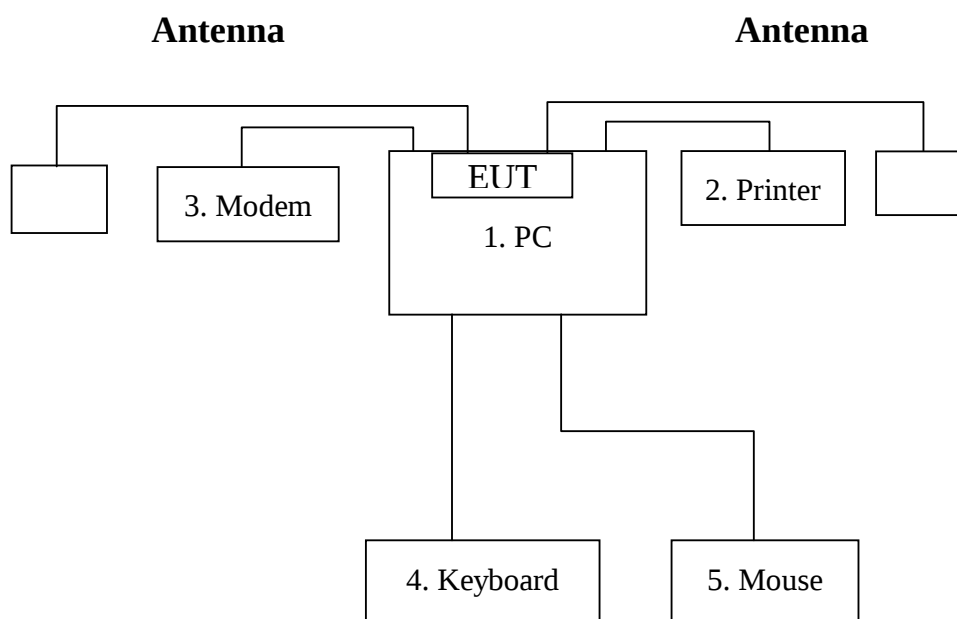


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	FCC ID	Series No.	Data Cable	Power Cord
1	PC	COMPAQ	EVO D300	DoC	6K1BKF83F10T	N/A	Unshielded, 1.8m AC power cable
2	Printer	EPSON	C20SX	N/A	DW4E126664	Shielded, 1.8m	Unshielded, 1.8m
3	Modem	Hayes	231AA	BFJ9D9308US	A08431083982	Shielded, 1.8m	Unshielded, 1.8m
4	Keyboard	IBM	SK-8805	N/A	00037822	Shielded, 1.8m	N/A
5	Mouse	LOGITECH	M-BB48	N/A	LZE01450987	Shielded, 1.8m	N/A

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.209(a) (f)	Spurious Emission	Compliant
§15.207(a)	AC Power Port Conducted Emission	Compliant
§15.247(a)(2)	6dB Bandwidth	Compliant
§15.247(b)	Peak Output Power	Compliant
§15.247(c)	100 KHz Bandwidth Of Frequency Band Edges	Compliant
§15.247(d)	Power Density	Compliant
§15.203	Antenna Requirement	Compliant
§1.1310 and §2.1093	RF exposures	Compliant

4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

IEEE802.11b:Channel 1(2412MHz)、6(2437MHz) and 11(2462MHz) with are chosen for full testing.

IEEE802.11g: Base mode of frequency band 2.4GHz – 2.4835GHz Channel 1(2412MHz), 7(2442MHz) and 11(2462MHz) are chosen for full testing.

Turbo mode of frequency band 2.4GHz – 2.4835GHz: Channel 1(2437MHz) with 12Mbps (Turbo Mode) data rate is chosen for full testing. (A and B antenna port)

IEEE802.11a:Base mode of frequency band 5.725GHz – 5.850GHz: Channel 1(5745MHz)、3(5785MHz)and 5(5825MHz) with 6Mbps data rate are chosen for full testing. (A and B antenna port)

Turbo mode of frequency band 5.725GHz – 5.850GHz: Channel 1(5760MHz) and 2(5800MHz) with 12Mbps data rate are chosen for full testing. (A and B antenna port)

AC Power port conducted emission and Radiated Spurious Emission are measured with PC

5. SPURIOUS EMISSION TEST

5.1 Standard Applicable

According to §15.247(c), all other emissions outside these bands shall not exceed the general radiated emission limits specified in §15.209(a). And according to §15.33(a)(1), for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

5.2 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2000.
2. The EUT was plug-in the host PC system via PCI port. The host PC system was placed on the center of the back edge on the test table. The peripherals like printer, modem, K/B, and mouse were placed on the side of the host PC system. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The keyboard was placed directly in the front of the PC, flushed with the front tabletop. The mouse was placed next to the Keyboard, flushed with the back of keyboard.
4. The spacing between the peripherals was 10 centimeters.
5. External I/O cables were draped along the edge of the test table and bundle when necessary.
6. The host PC system was connected with 110Vac/60Hz power source.

5.3 Measurement Procedure

(1) Conducted test:

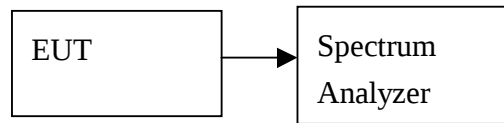
1. Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation

(2) Radiation test:

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until all frequency measured were complete.

5.4 Test SET-UP (Block Diagram of Configuration)

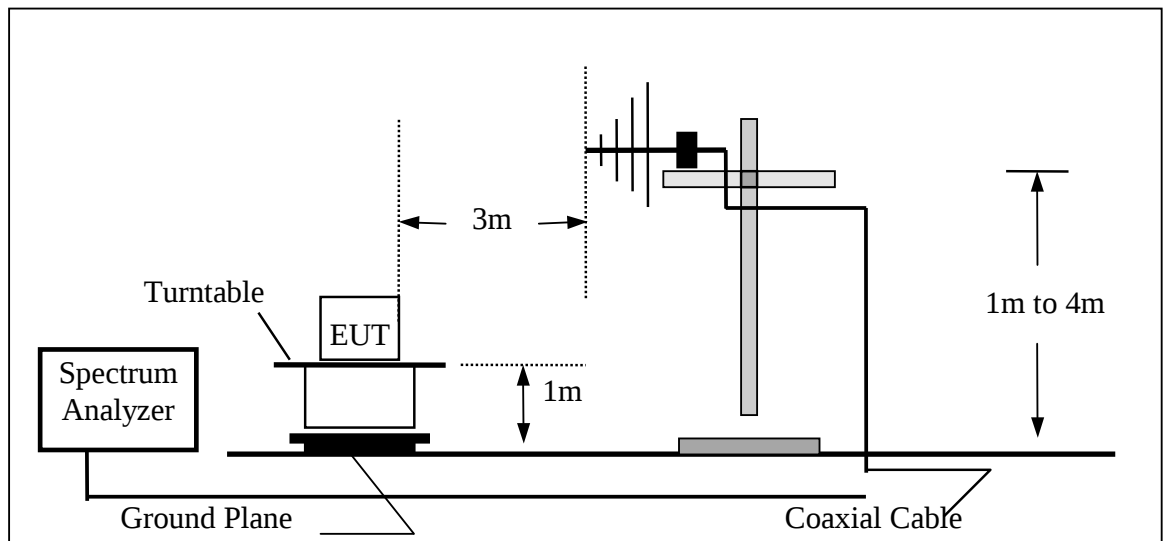
1. Conducted test:



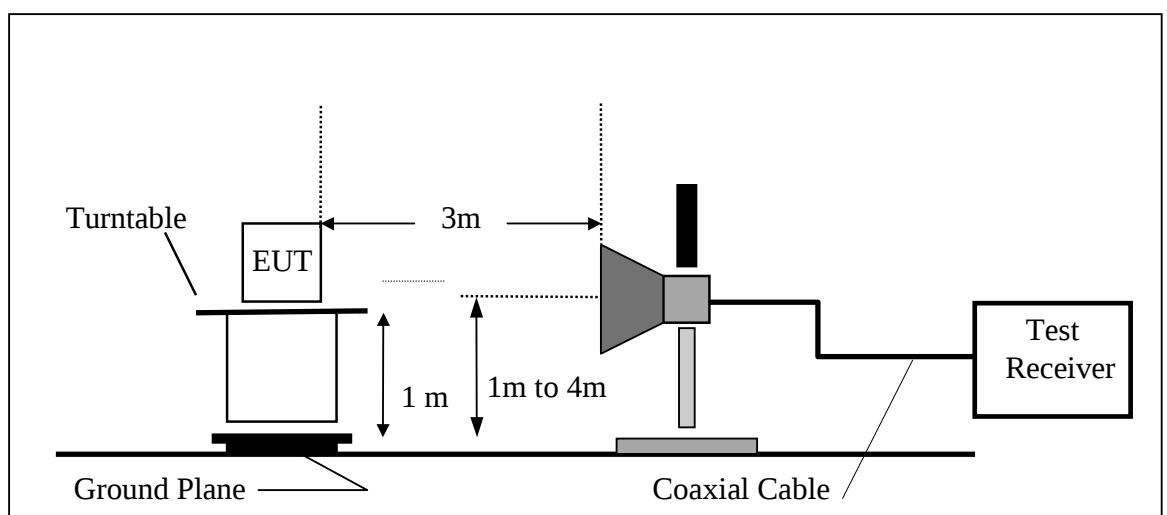
The EUT was connected to the spectrum analyzer through a 50Ω RF cable.

2. Radiation test:

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



5.5 Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ADVANTEST	R3261A	N/A	03/18/2003	03/17/2004
Spectrum Analyzer	Advantest	R3182	110600647	11/16/2002	11/15/2003
Spectrum Analyzer	ROHDE & SCHWARZ	FSP30	100112	06/29/2002	06/28/2003
EMI Test Receiver	R&S	ESVS20	838804/004	01/04/2003	01/03/2004
Pre-Amplifier	HP	8447D	2944A09173	03/03/2003	03/02/2004
Bi-log Antenna	SCHWAZBECK	VULB9163	145	07/06/2002	07/05/2003
Turn Table	EMCO	2081-1.21	9709-1885	N.C.R	N.C.R
Antenna Tower	EMCO	2075-2	9707-2060	N.C.R	N.C.R
Controller	EMCO	2090	9709-1256	N.C.R	N.C.R
RF Switch	ANRITSU	MP59B	M53867	N.C.R	N.C.R
Site NSA	C&C	N/A	N/A	11/17/2002	11/16/2003
Horn antenna	Schwarzbeck	BBHA 9120	D210	2/23/2003	2/22/2004
Horn antenna	EMCO	3116	2487	11/11/2002	11/10/2003
Pre-Amplifier	HP	8449B	3008B00965	10/01/2002	10/02/2003

Factor Calculation

The Factor is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$F = AF + CL - AG$$

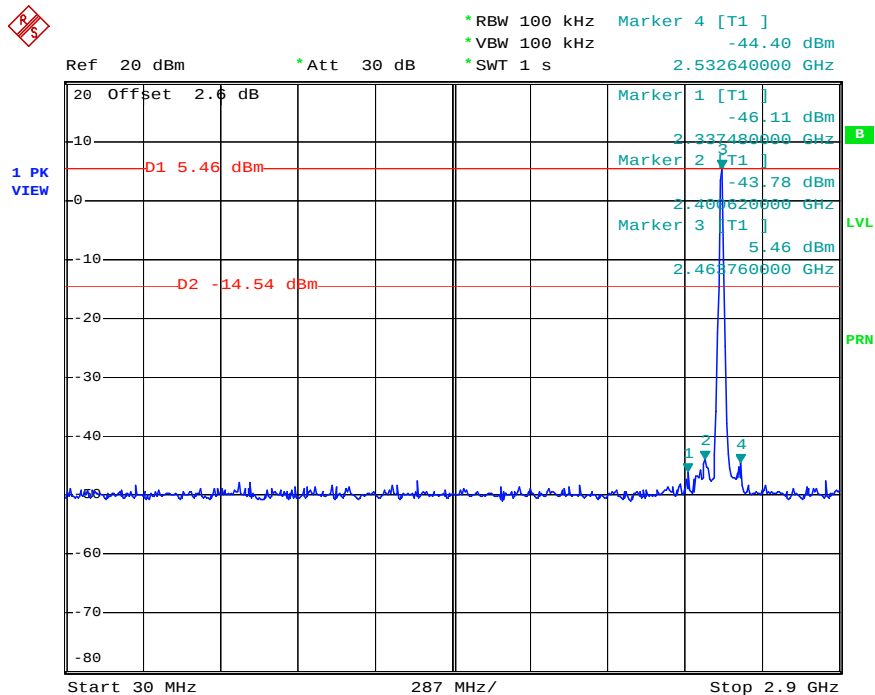
Where F = Factor	CL = Cable Attenuation Factor (Cable Loss)
AF = Antenna Factor	AG = Amplifier Gain

5.6 Measurement Result

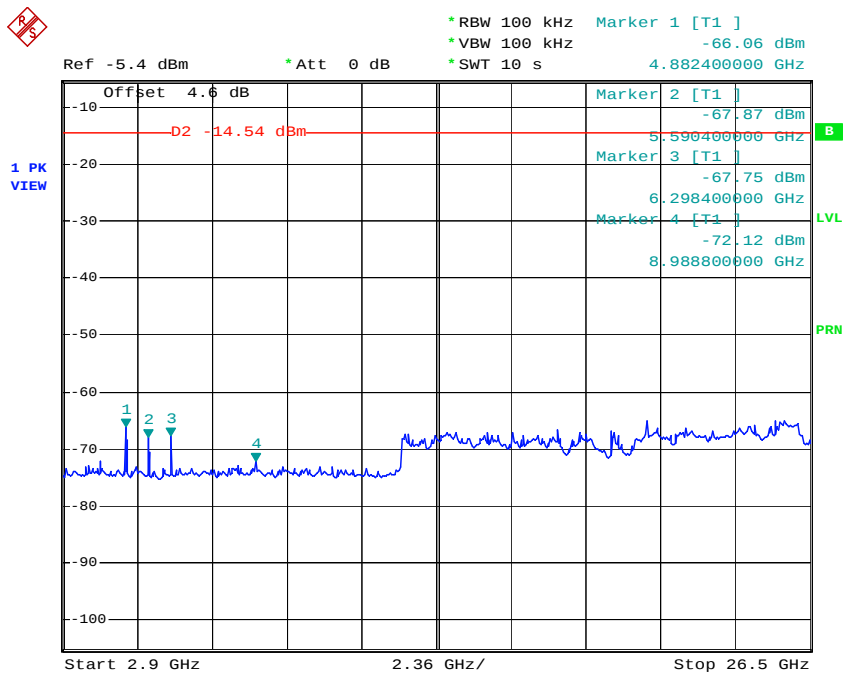
Refer to attach tabular data sheets.

NOTE:

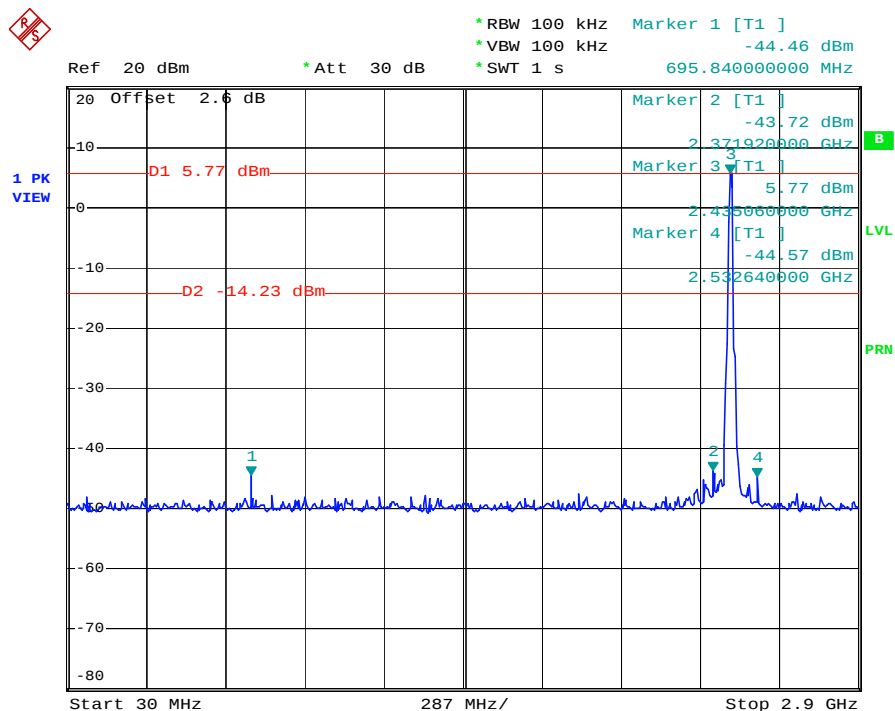
The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 100kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

Conducted Spurious Emission Measurement Result**SMT (A-antenna)****2.4GHz Band, IEEE802.11b Mode****CH Low 30MHz – 2.9GHz**

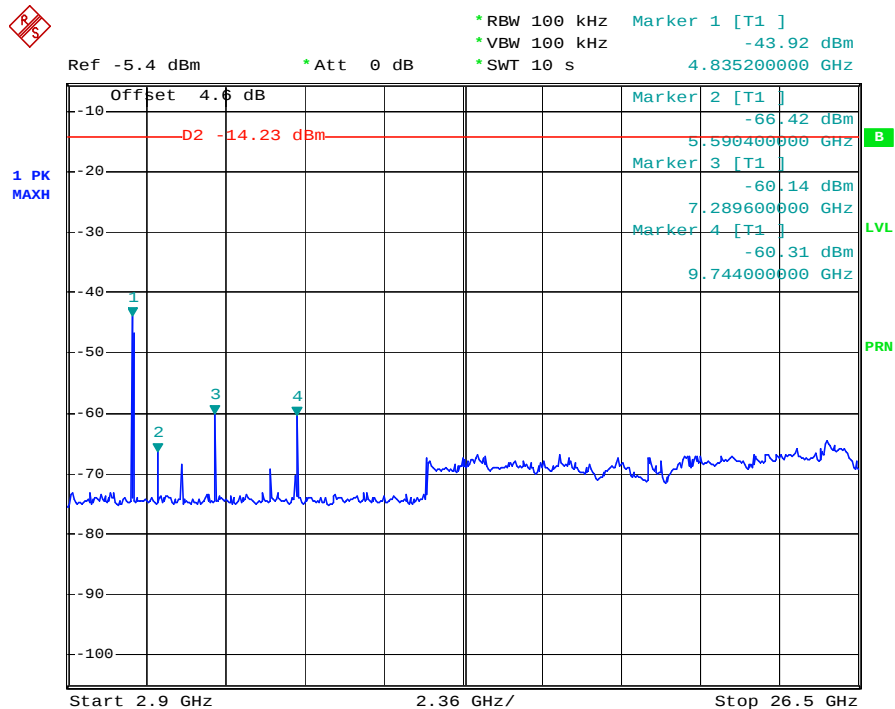
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CH Low 2.9GHz – 26.5GHz

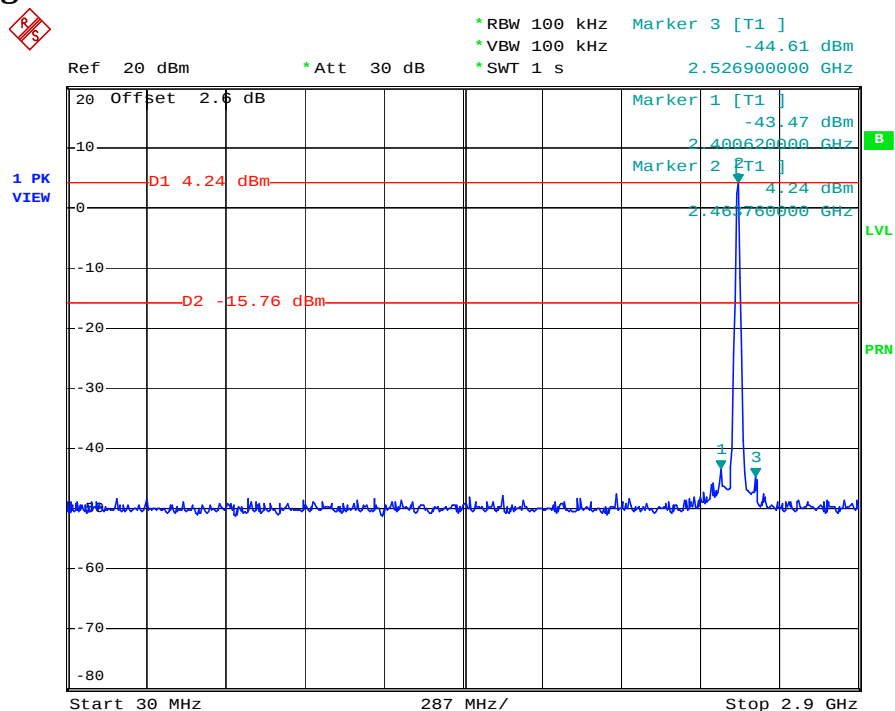
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CH Mid 30MHz – 2.9GHz

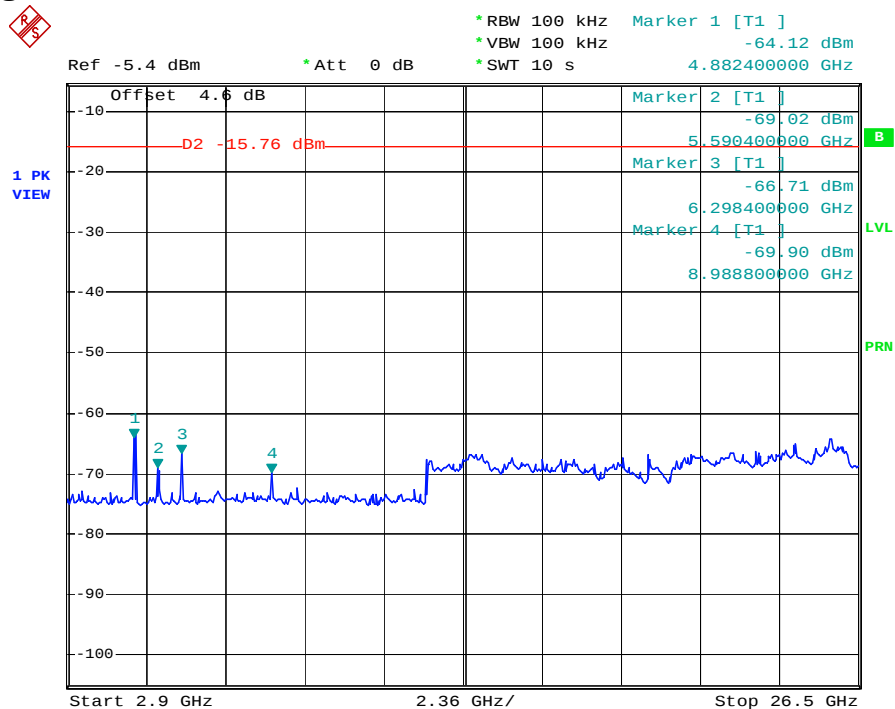
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CH Mid 2.9GHz – 26.5GHz

Date: 3.APR.2003 17:00:34

CH High 30MHz – 2.9GHz

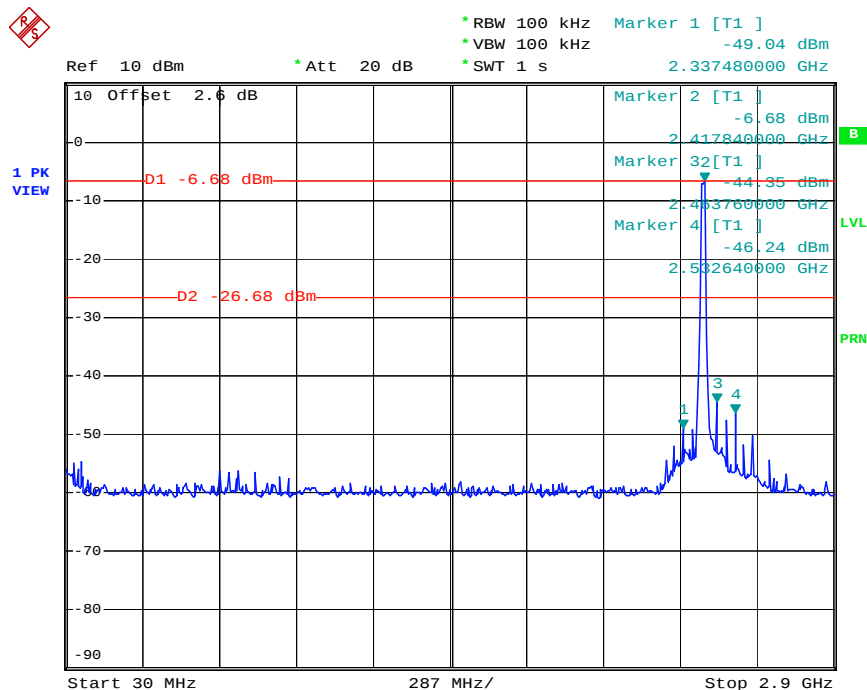
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CH High 2.9GHz – 26.5GHz

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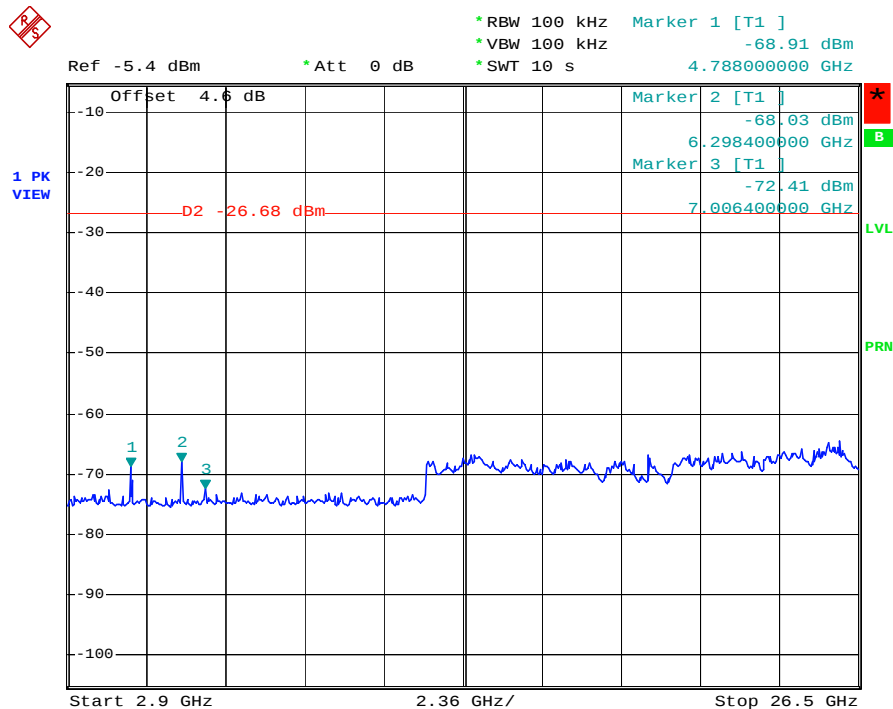
2.4GHz Band, IEEE802.11g Mode

CH Low 30MHz – 2.9GHz

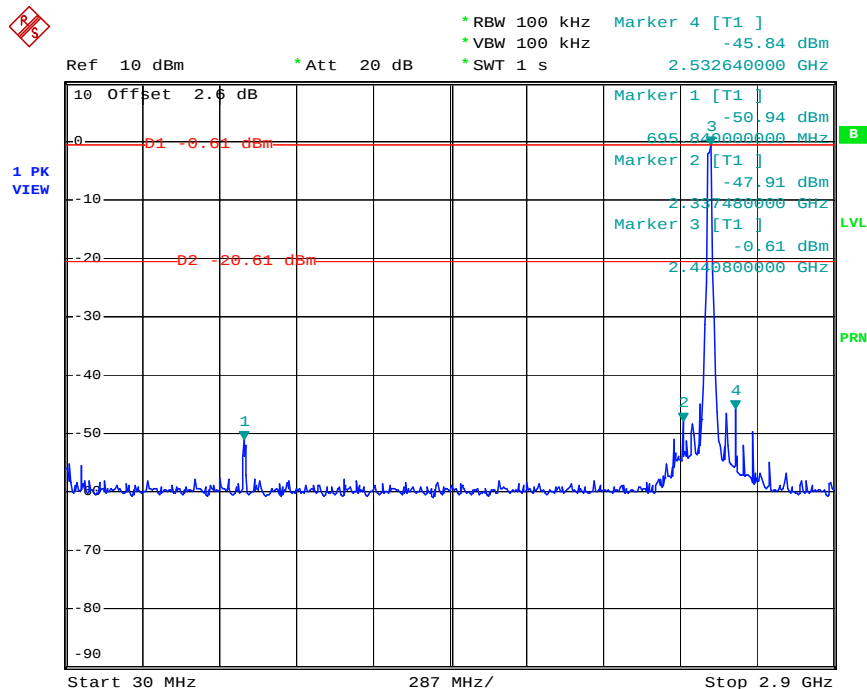


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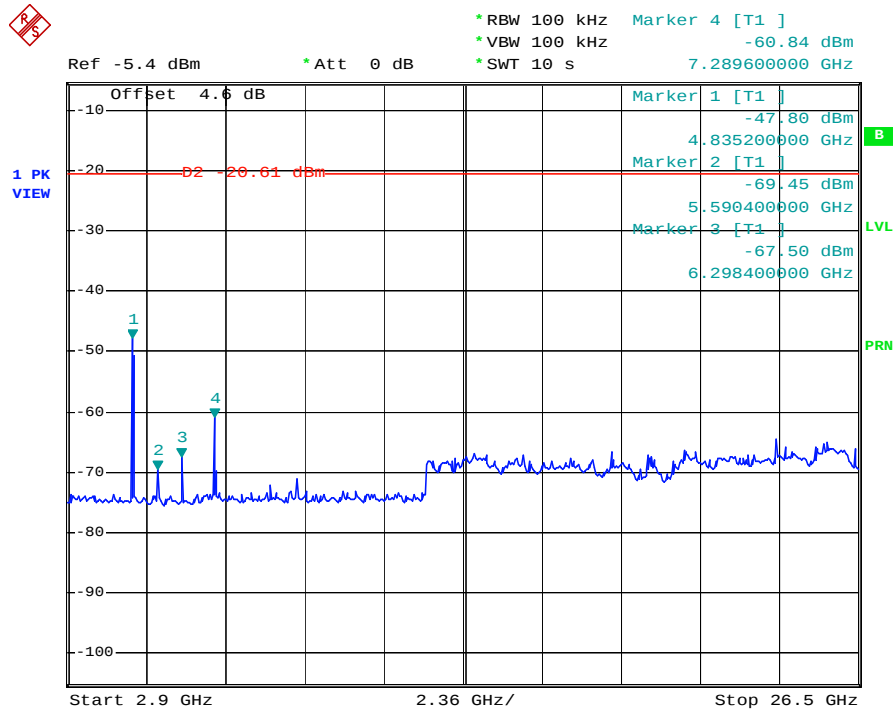
CH Low 2.9GHz – 26.5GHz



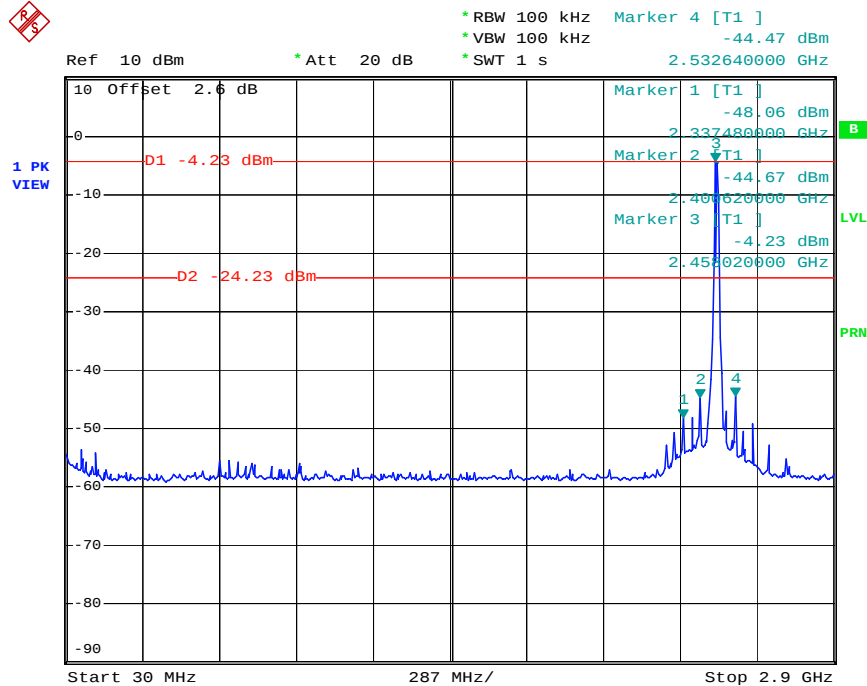
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CH Middle 30MHz – 2.9GHz

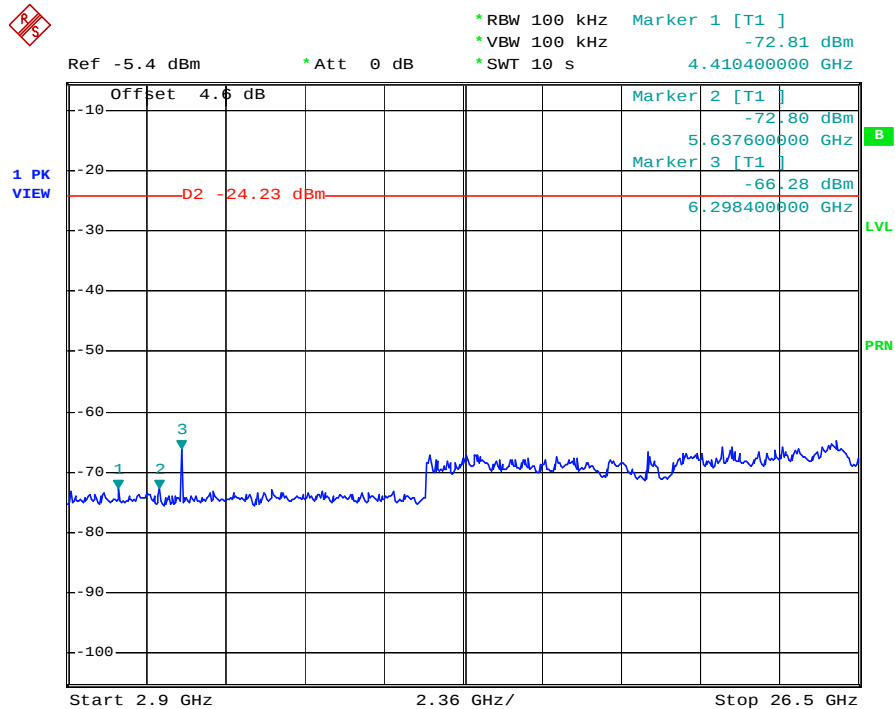
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CH Middle 2.9GHz – 26.5GHz

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CH High 30MHz – 2.9GHz

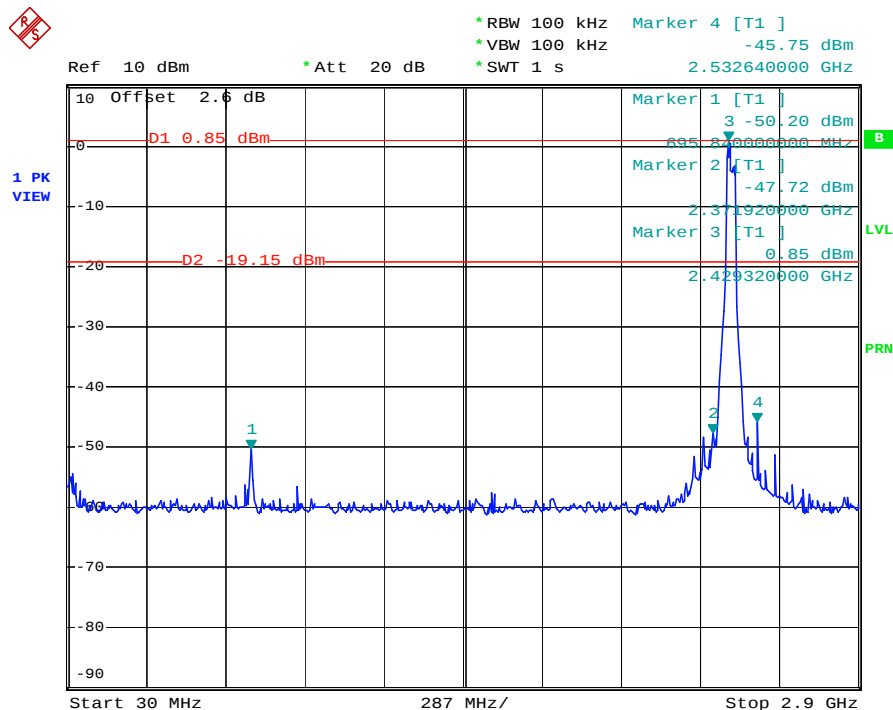
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CH High 2.9GHz – 26.5GHz

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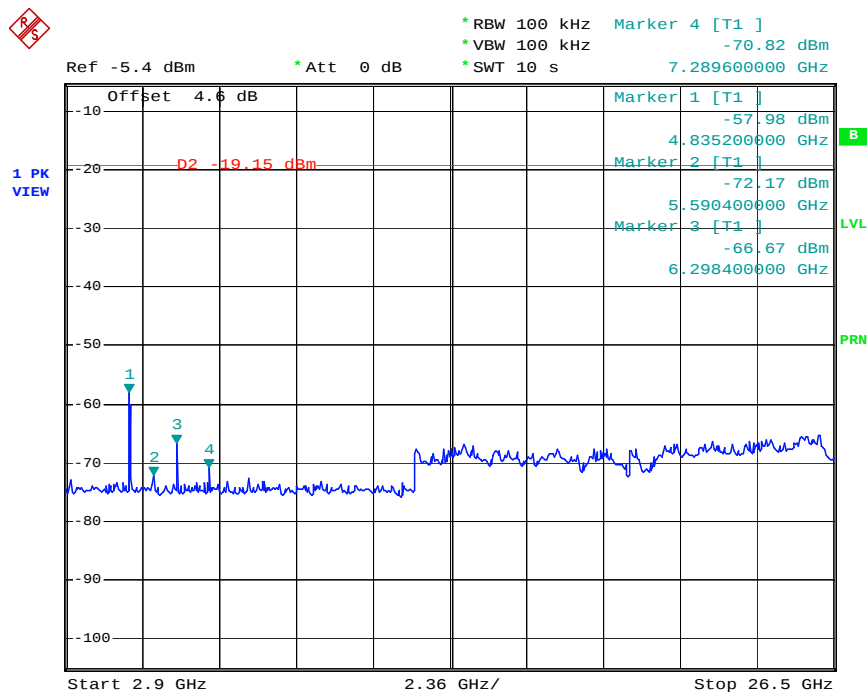
2.4GHz Band, IEEE802.11g Turbo Mode

CH Middle 30MHz – 2.9GHz



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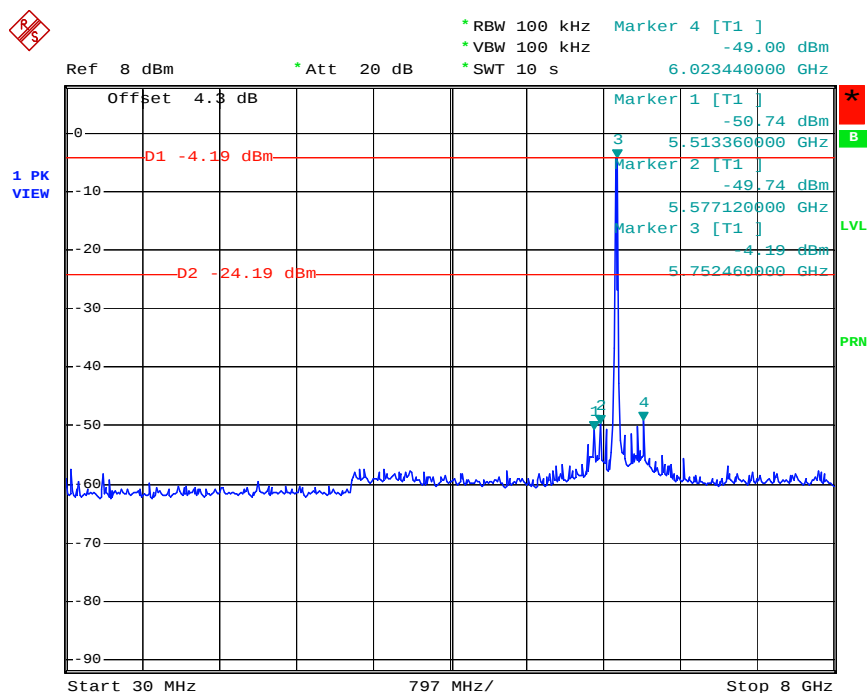
CH Middle 2.9GHz – 26.5GHz



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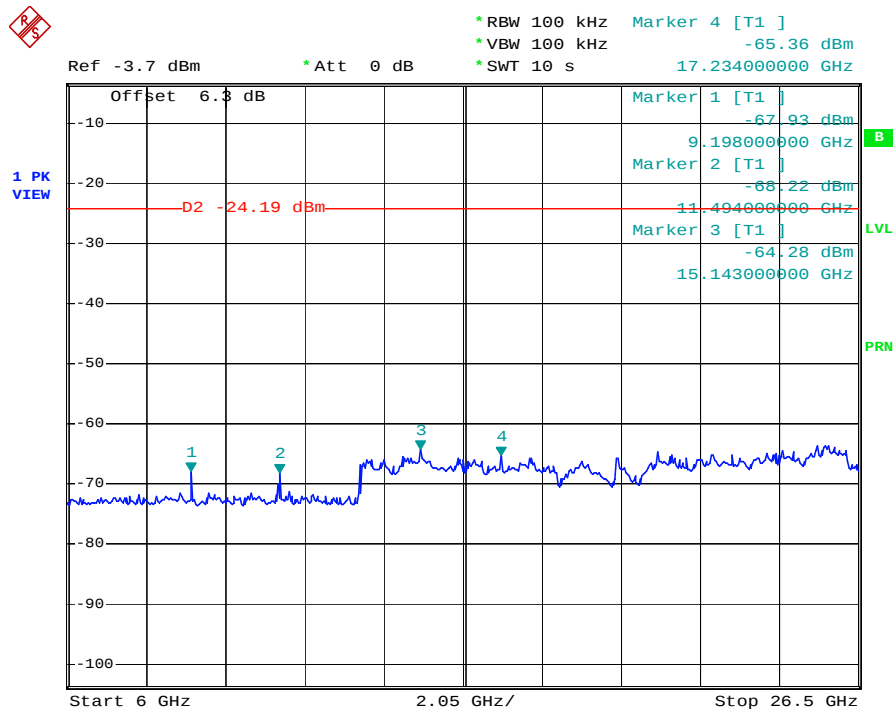
5.8GHz Band, IEEE802.11a Mode

CH Low 30MHz – 8GHz

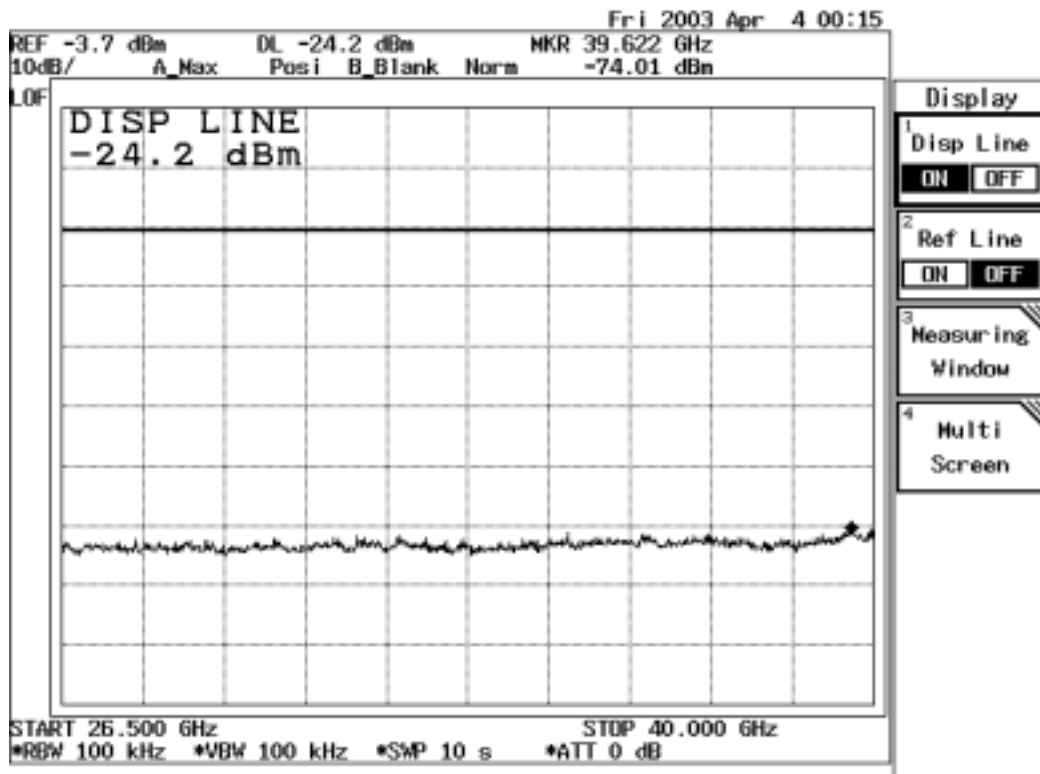
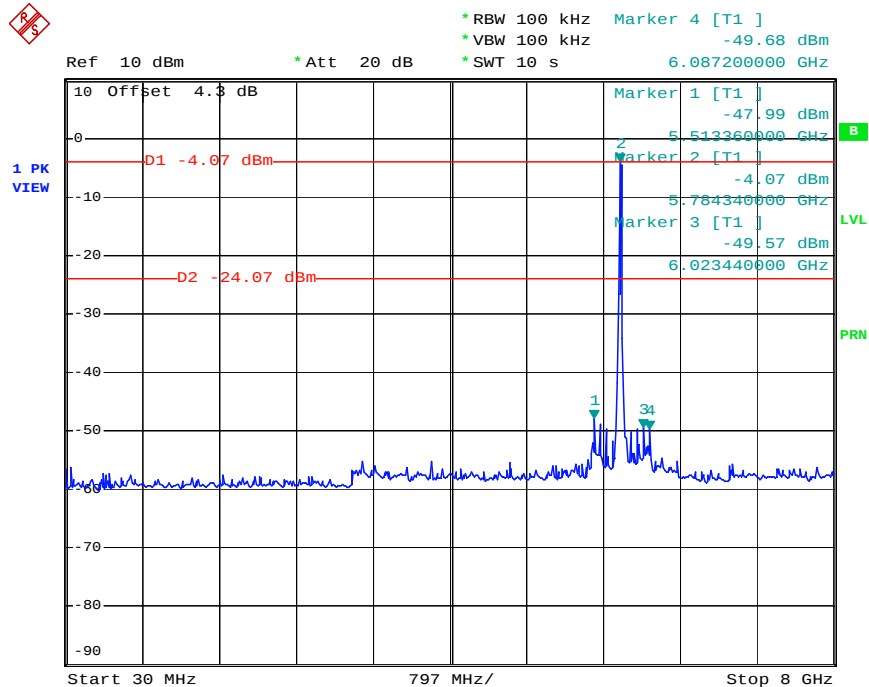


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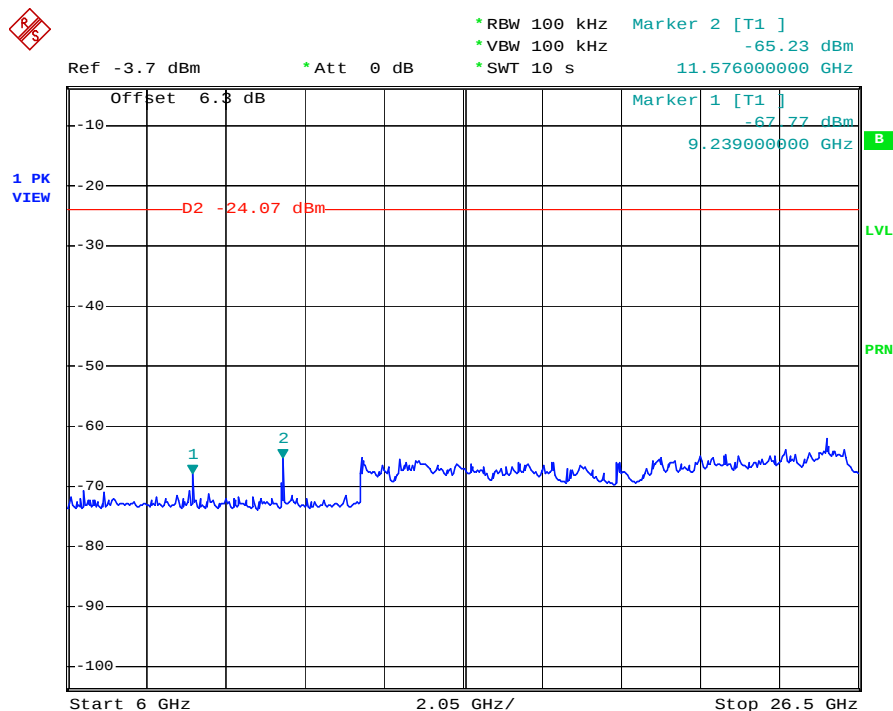
CH Low 8GHz – 26.5GHz



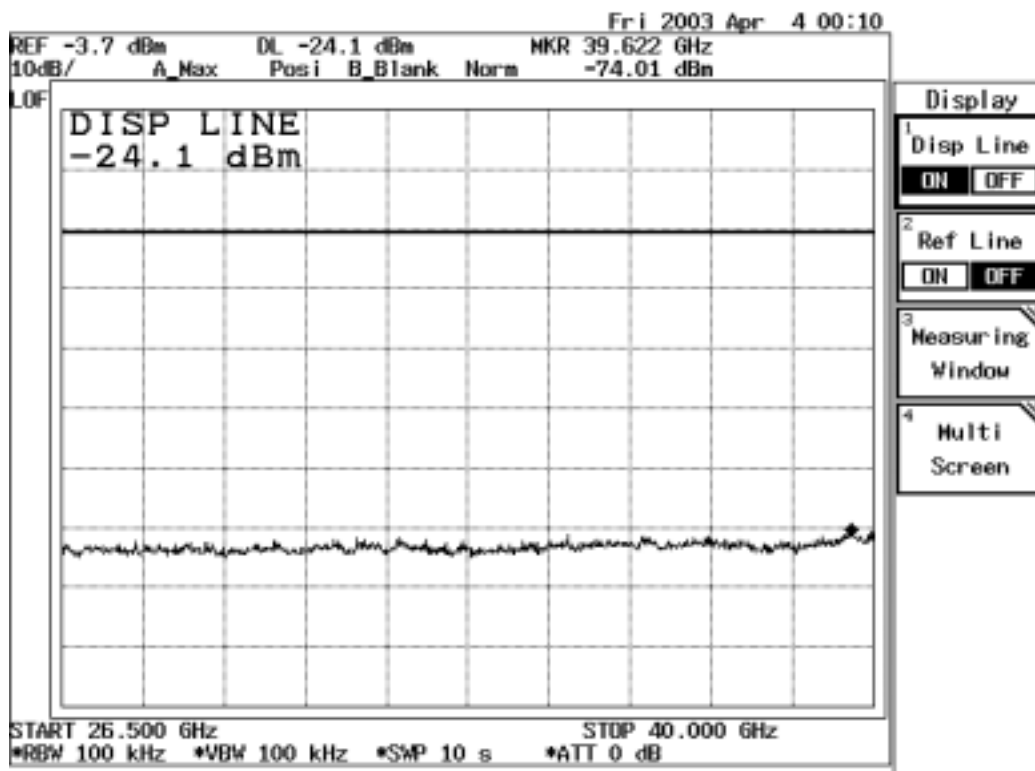
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CH Low 26.5GHz – 40GHz**CH Middle 30MHz – 8GHz**

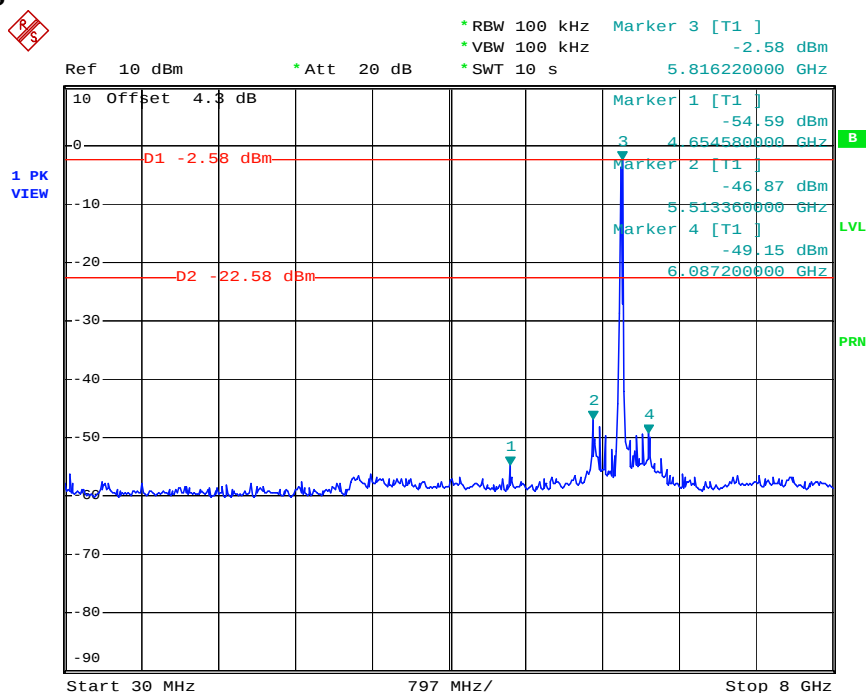
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CH Middle 8GHz – 26.5GHz

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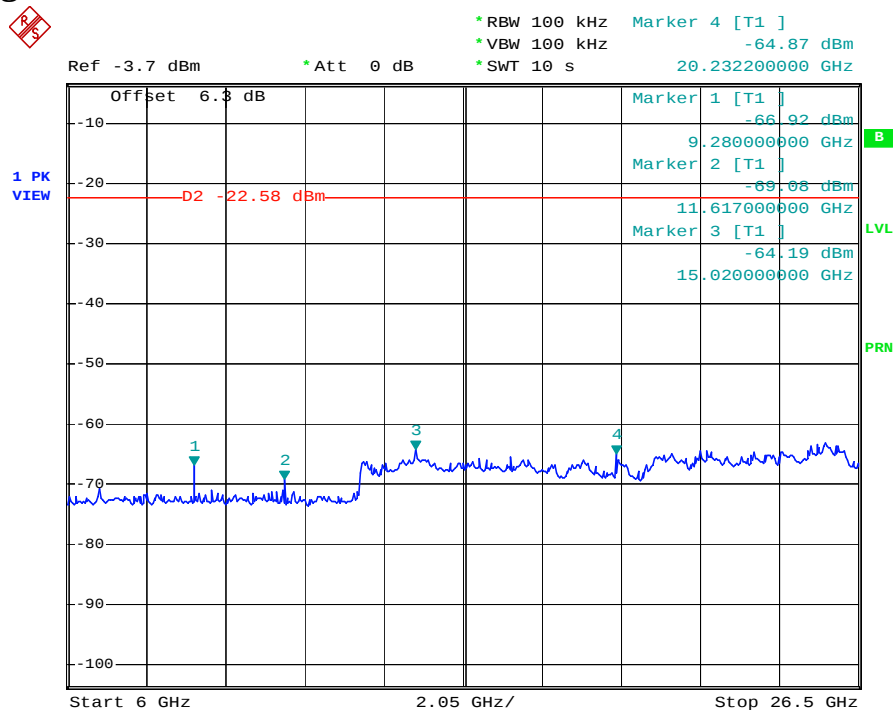
CH Middle 26.5GHz – 40GHz

CH High 30MHz – 8GHz



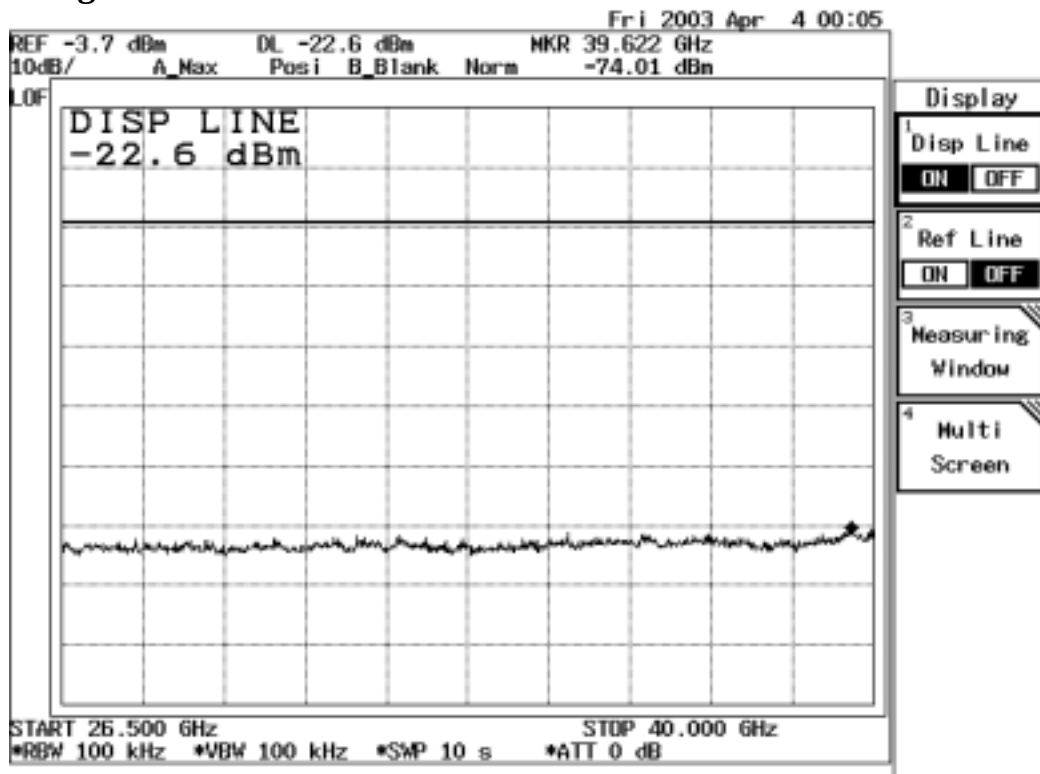
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CH High 8GHz – 26.5GHz

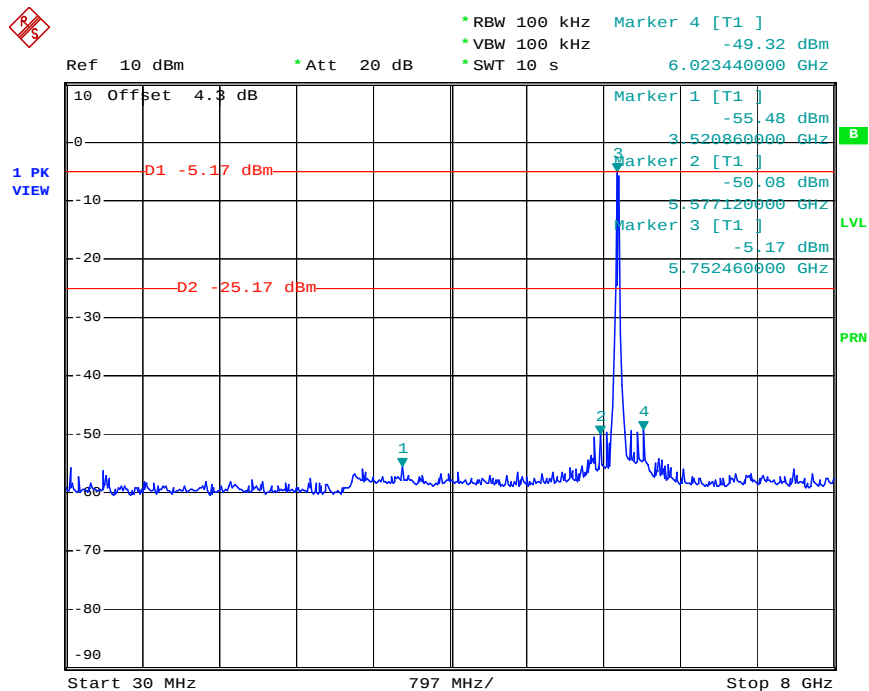


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CH High 26.5GHz – 40GHz

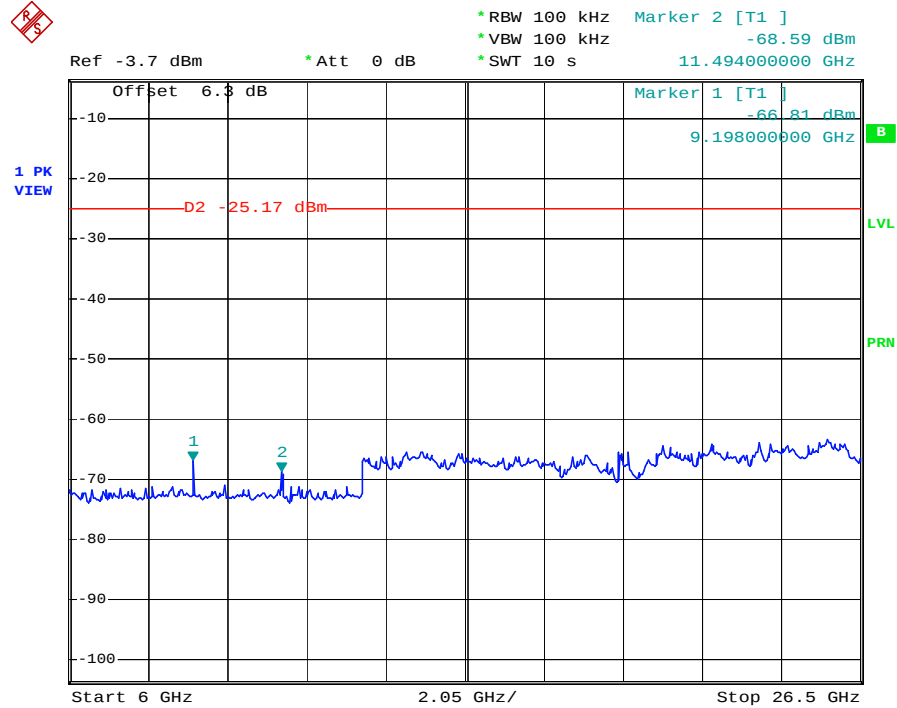


5.8GHz Band, IEEE802.11a Turbo Mode CH Low 30MHz – 8GHz



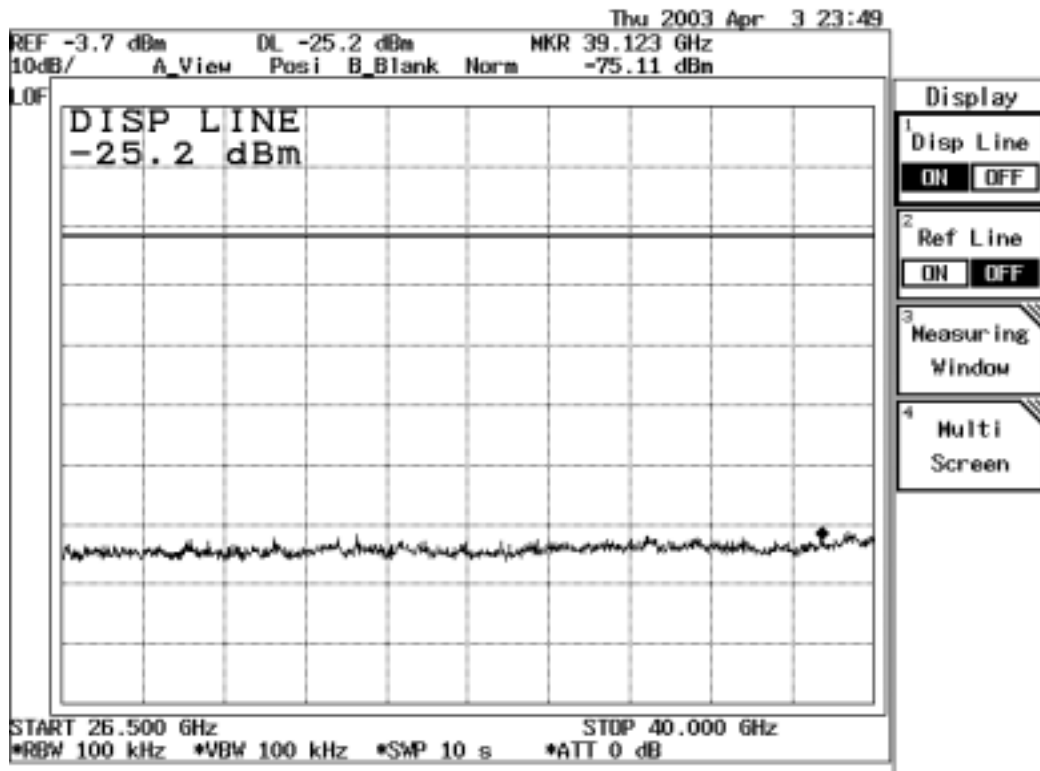
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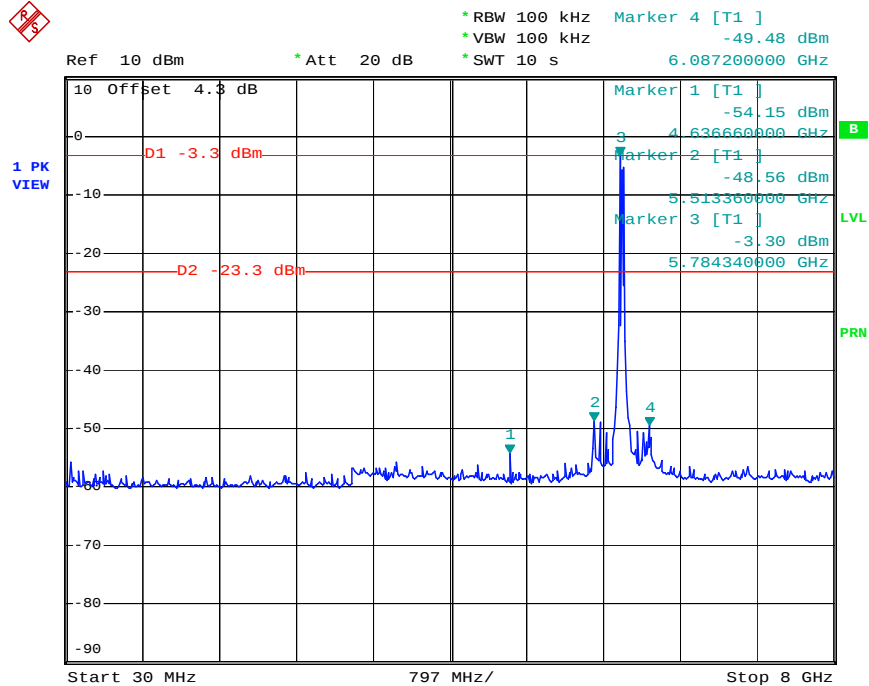
CH Low 8GHz –26.5GHz



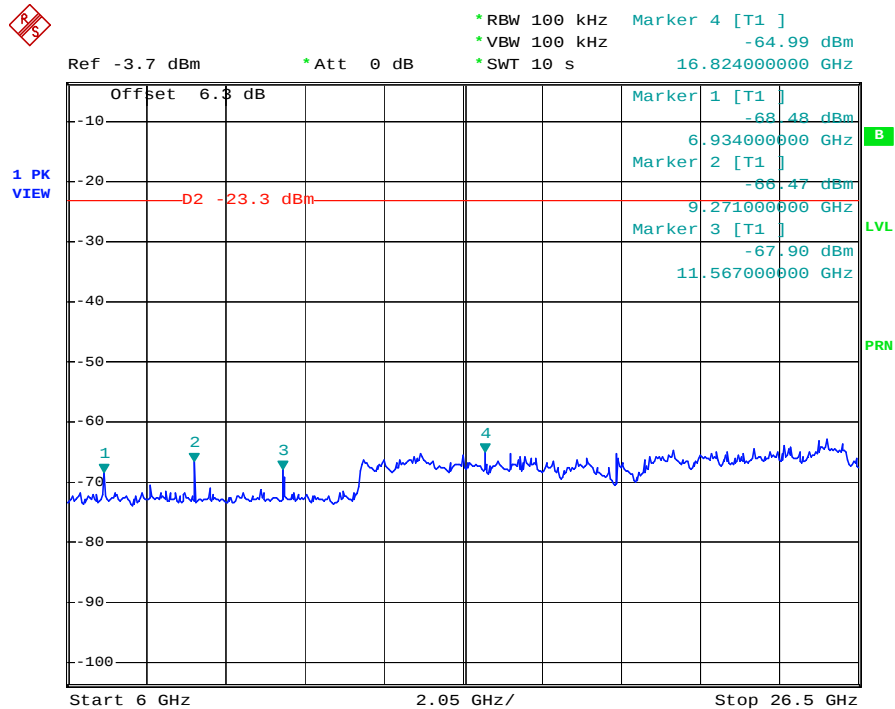
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CH Low 26.5GHz – 40GHz

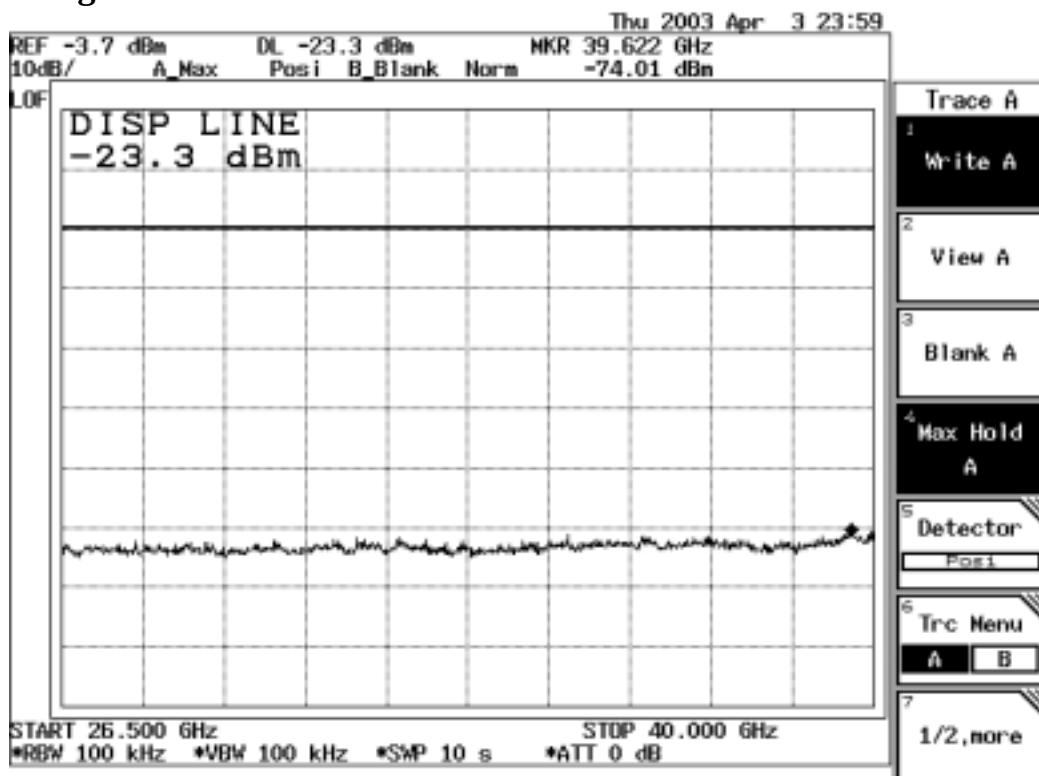


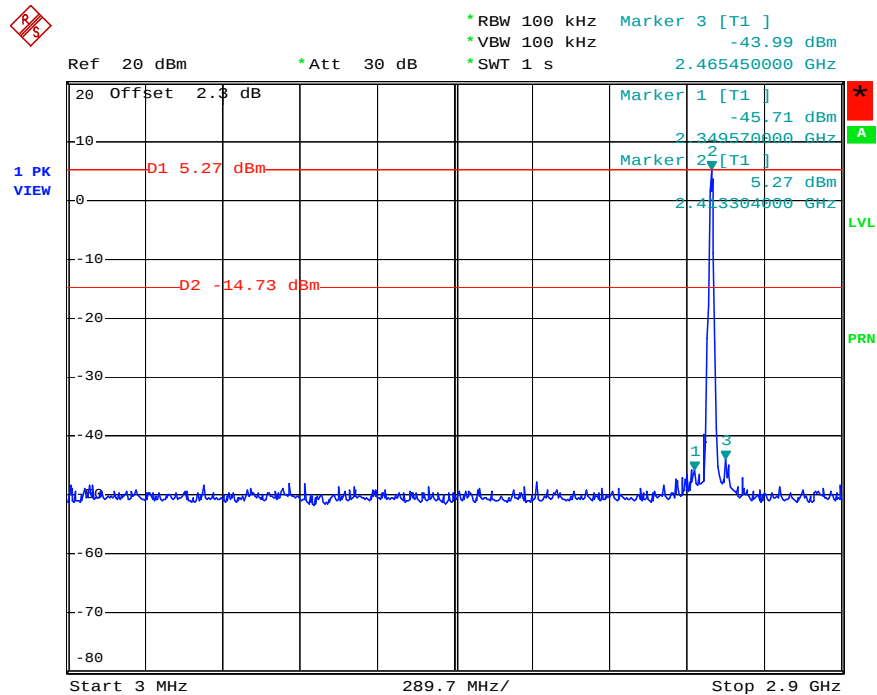
CH High 30MHz – 8GHz

Date: 3.APR.2003 18:26:22

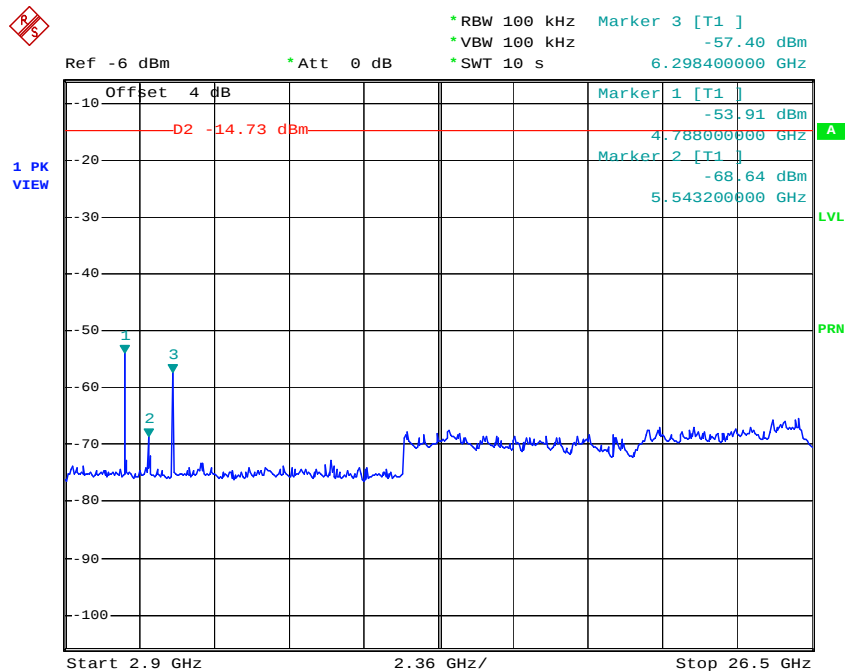
CH High 8GHz – 26.5GHz

Date: 3.APR.2003 18:28:52

CH High 26.5GHz – 40GHz**Joymax (B-antenna)****2.4GHz Band, IEEE802.11b Mode****CH Low 30MHz – 2.9GHz**

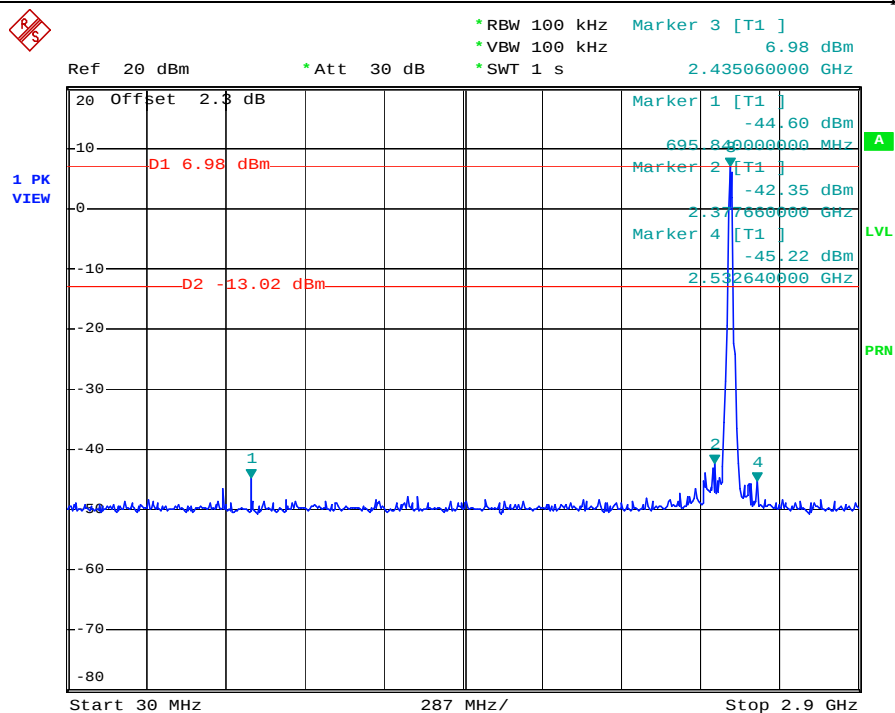


CH Low 2.9GHz - 26.5GHz



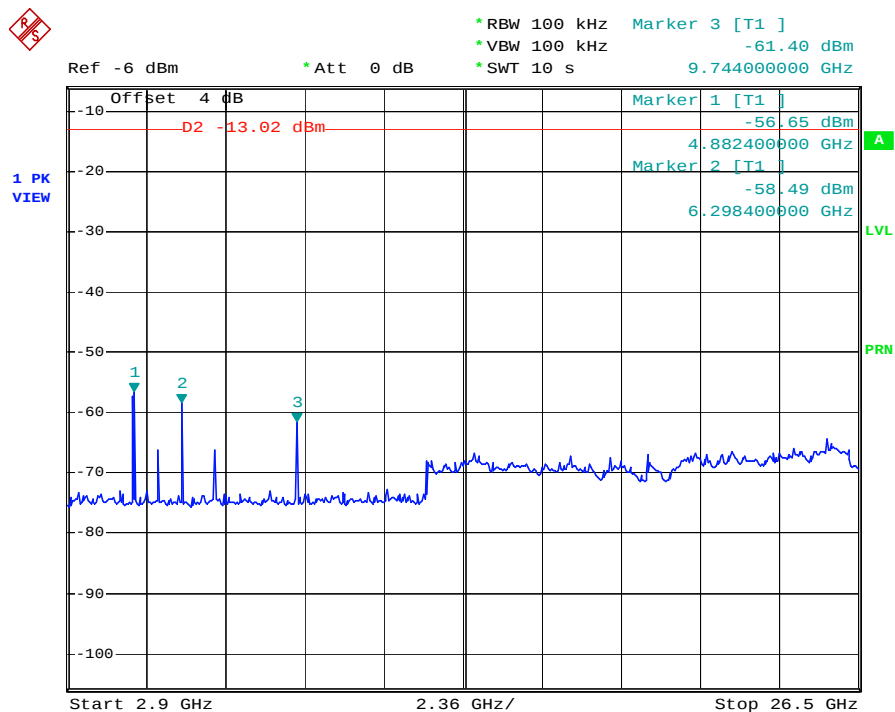
Date: 4.APR.2003 00:54:40

CH Mid 30MHz - 2.9GHz

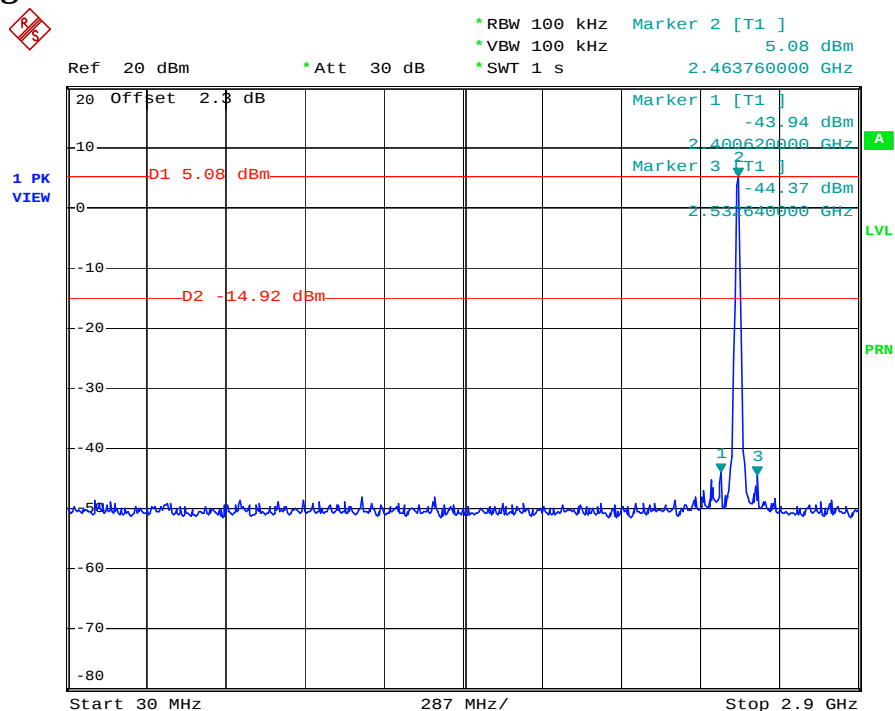


Date: 4.APR.2003 00:47:40

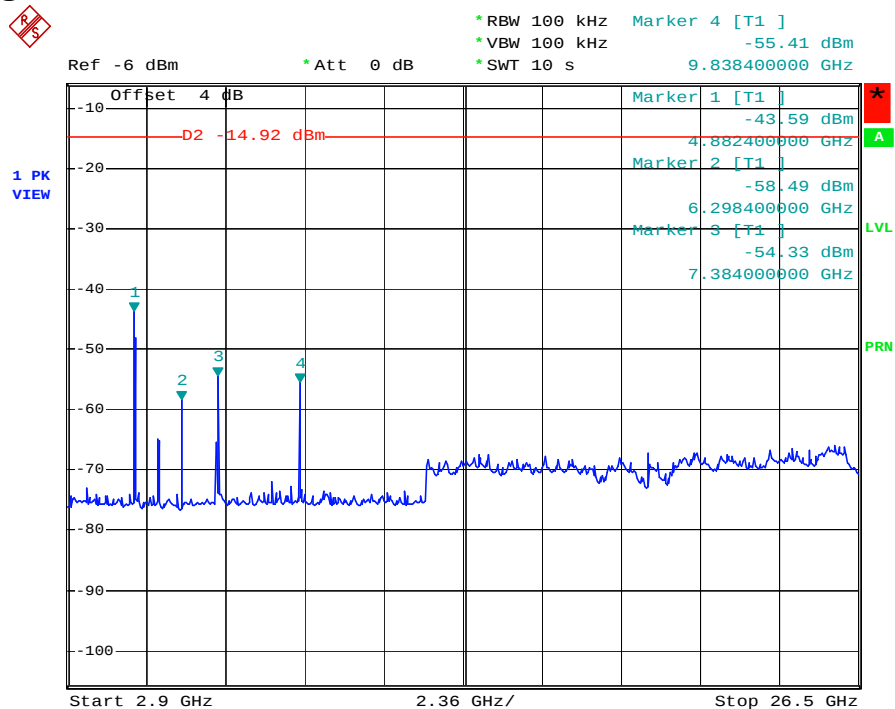
CH Mid 2.9GHz – 26.5GHz



Date: 4.APR.2003 00:50:29

CH High 30MHz – 2.9GHz

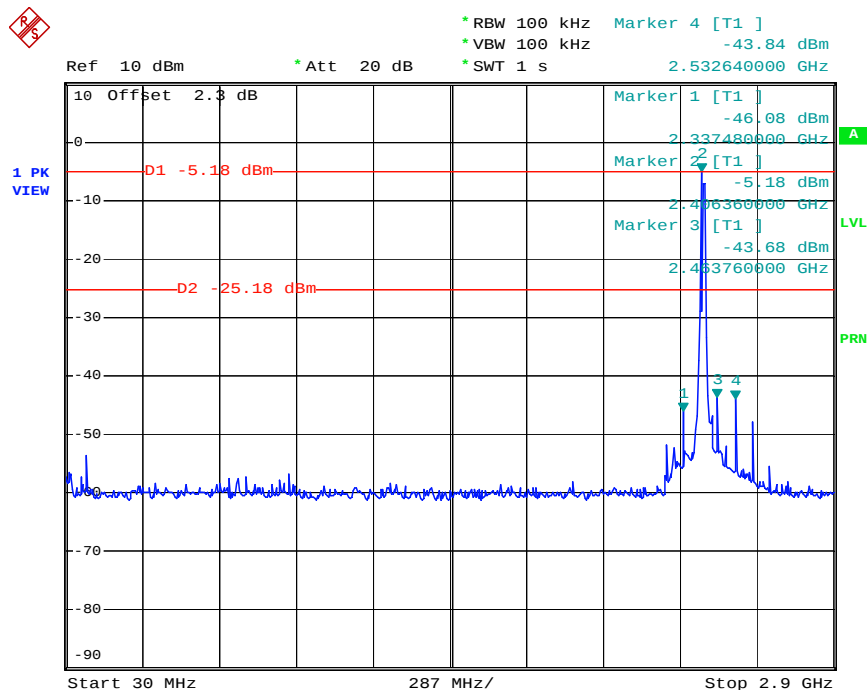
Date: 4.APR.2003 00:43:09

CH High 2.9GHz – 26.5GHz

Date: 4.APR.2003 00:44:38

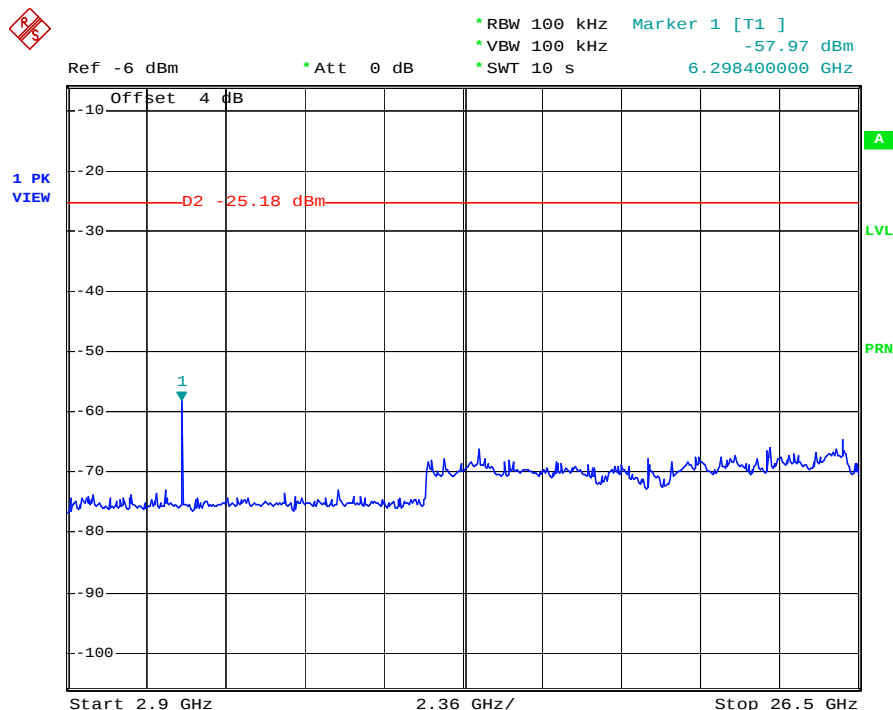
2.4GHz Band, IEEE802.11g Mode

CH Low 30MHz – 2.9GHz



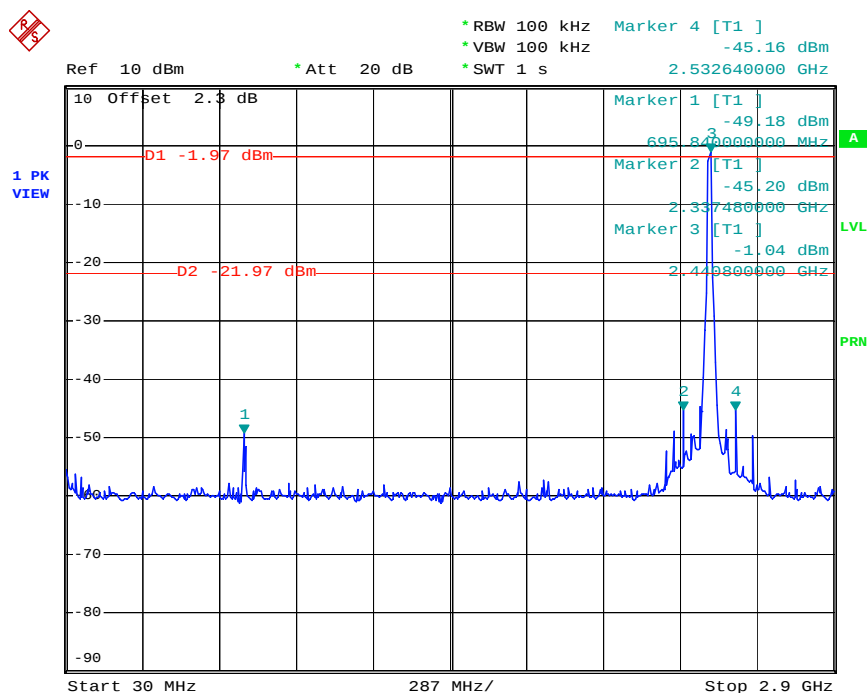
Date: 4.APR.2003 00:30:21

CH Low 2.9GHz – 26.5GHz



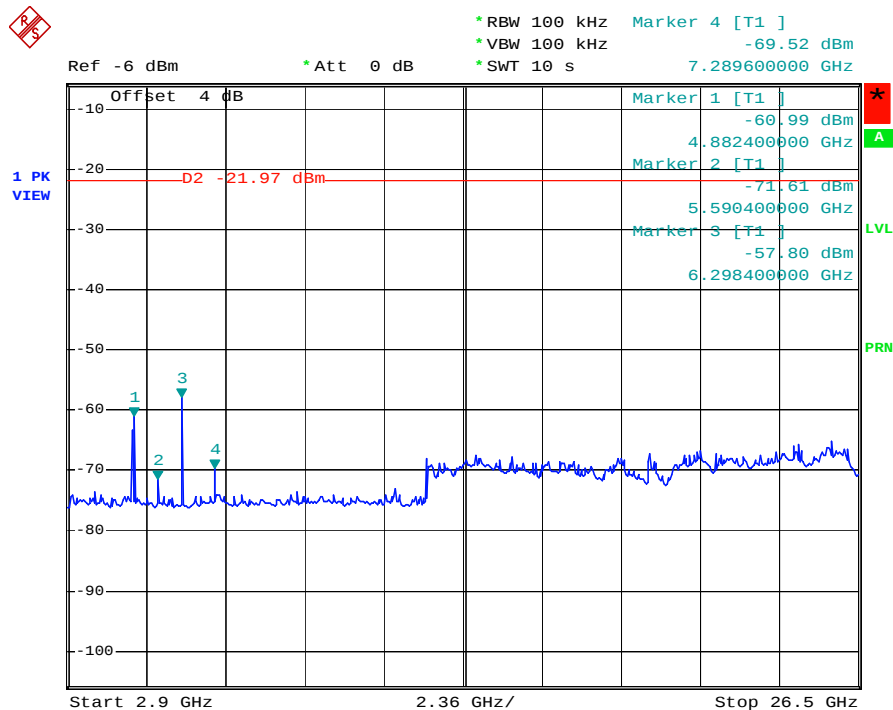
Date: 4.APR.2003 00:32:03

CH Middle 30MHz – 2.9GHz



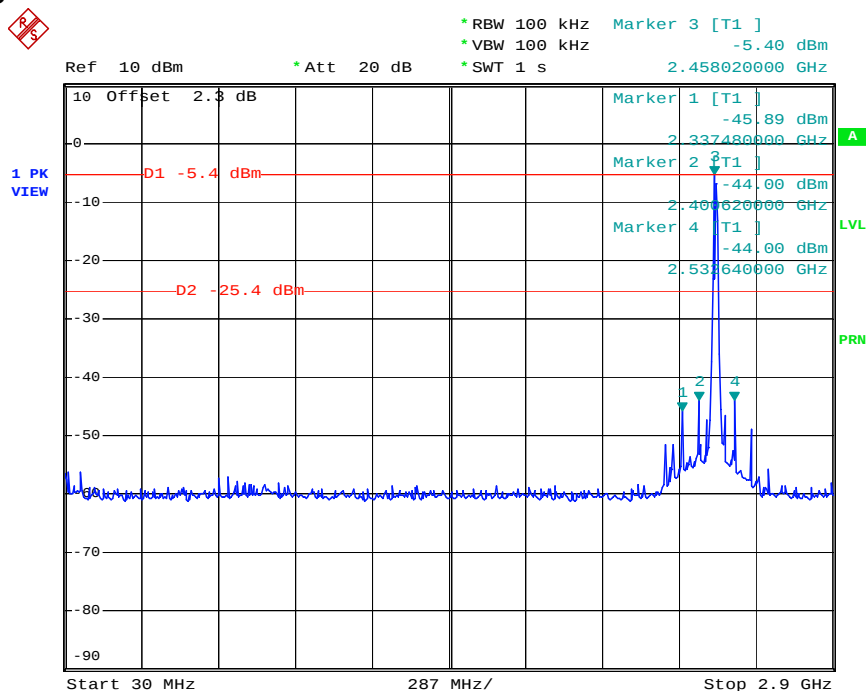
Date: 4.APR.2003 00:25:27

CH Middle 2.9GHz – 26.5GHz



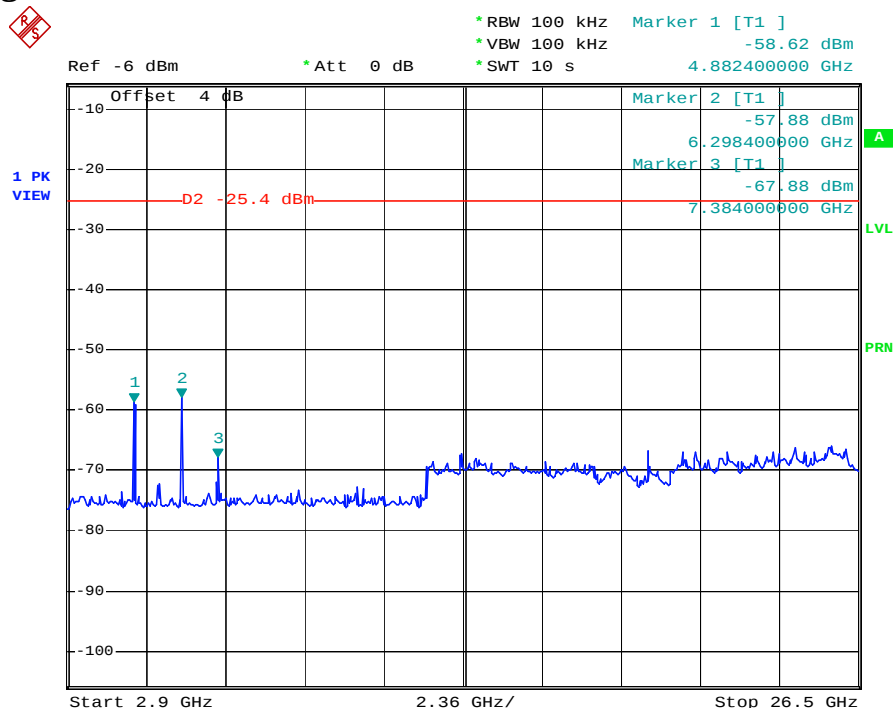
Date: 4.APR.2003 00:27:26

CH High 30MHz – 2.9GHz



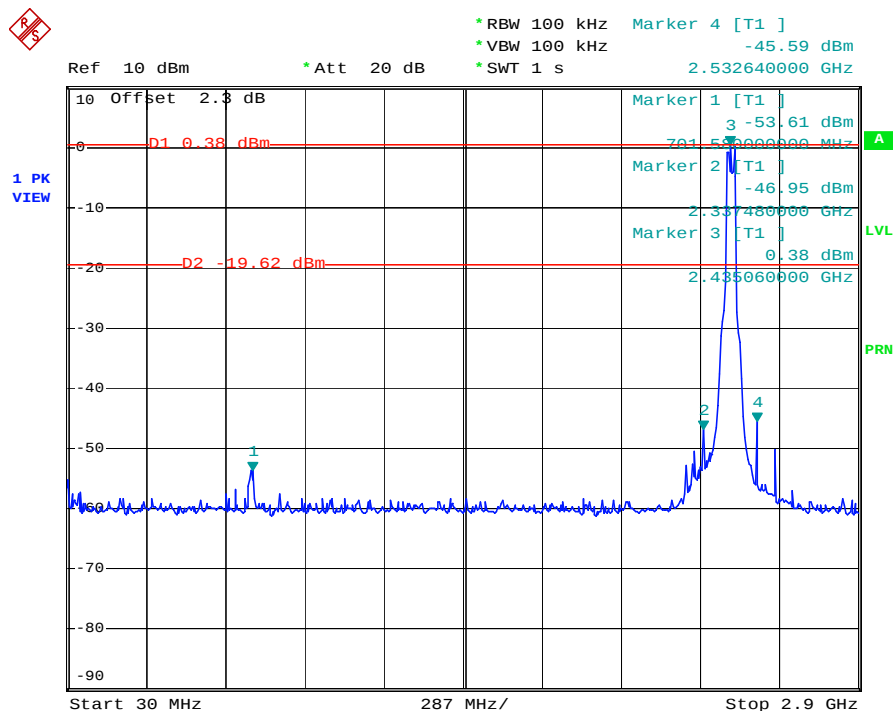
Date: 4.APR.2003 00:34:32

CH High 2.9GHz – 26.5GHz

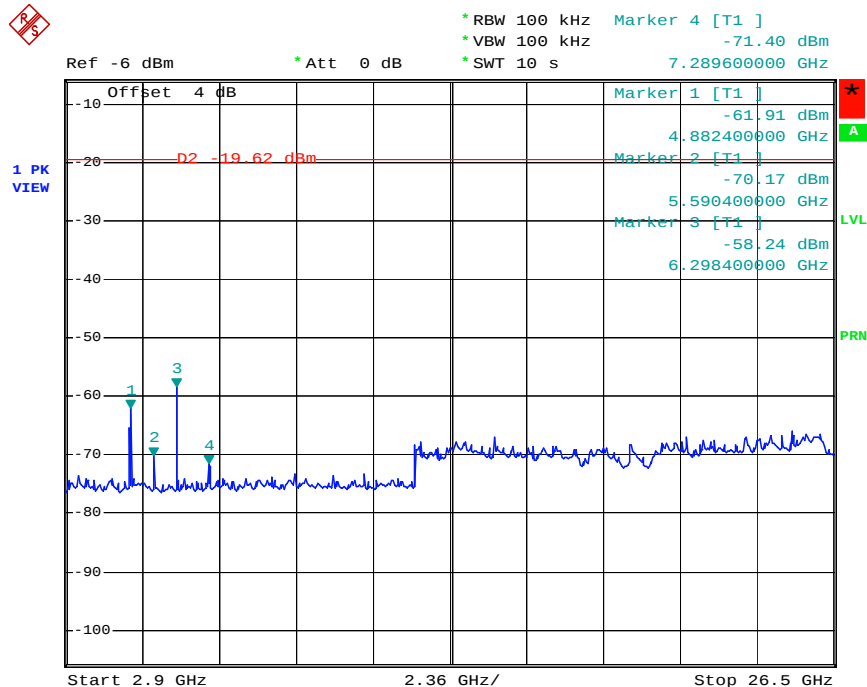


Date: 4.APR.2003 00:40:09

2.4GHz Band, IEEE802.11g Turbo Mode

CH Middle 30MHz – 2.9GHz

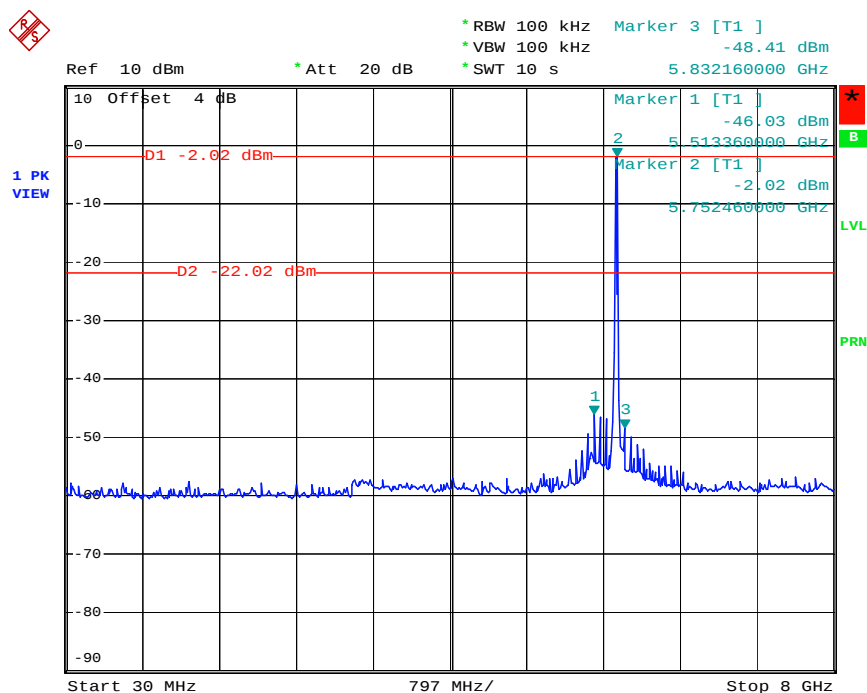
Date: 4.APR.2003 00:20:37

CH Middle 2.9GHz – 26.5GHz

Date: 4.APR.2003 00:22:40

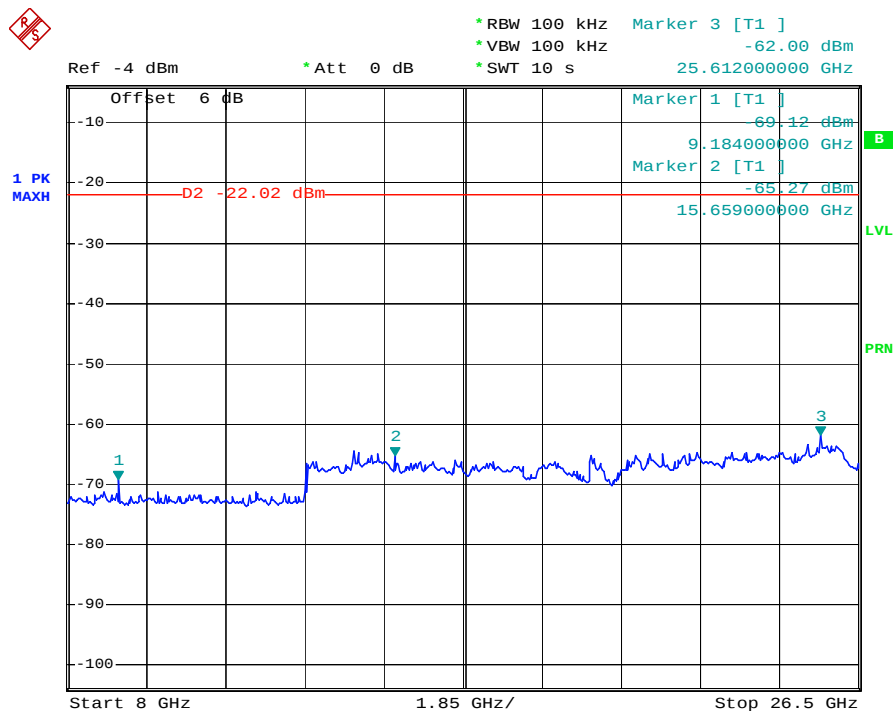
5.8GHz Band, IEEE802.11a Mode

CH Low 30MHz – 8GHz



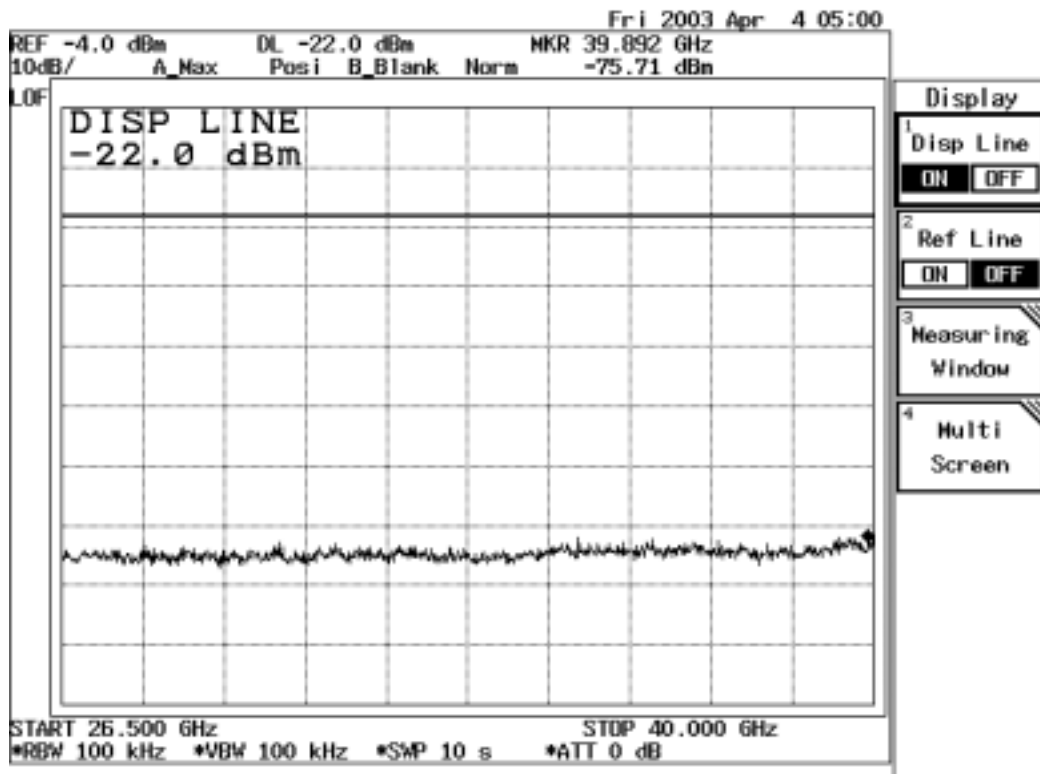
Date: 3.APR.2003 23:31:08

CH Low 8GHz – 26.5GHz

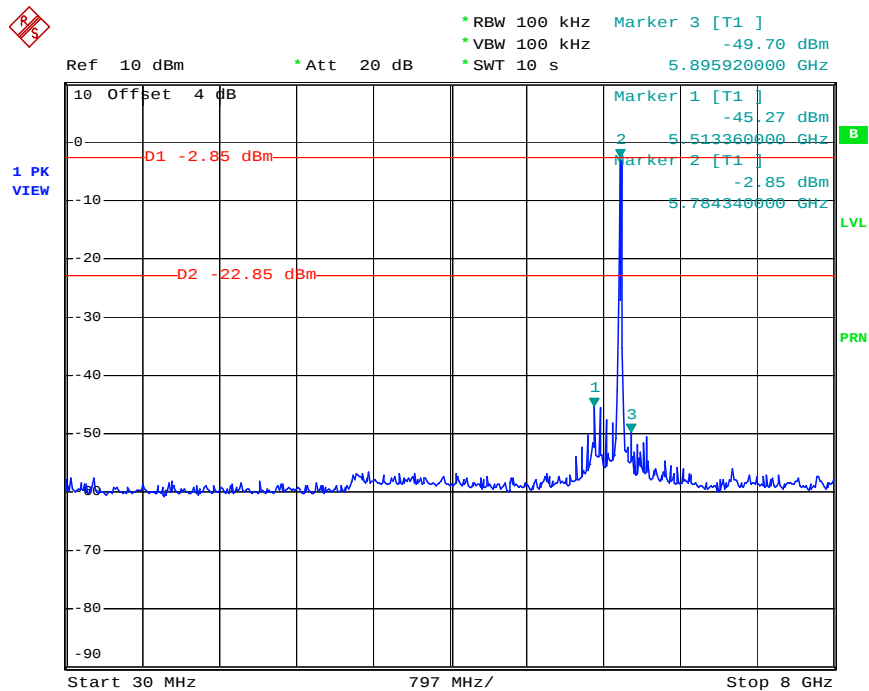


Date: 3.APR.2003 23:33:05

CH Low 26.5GHz – 40GHz

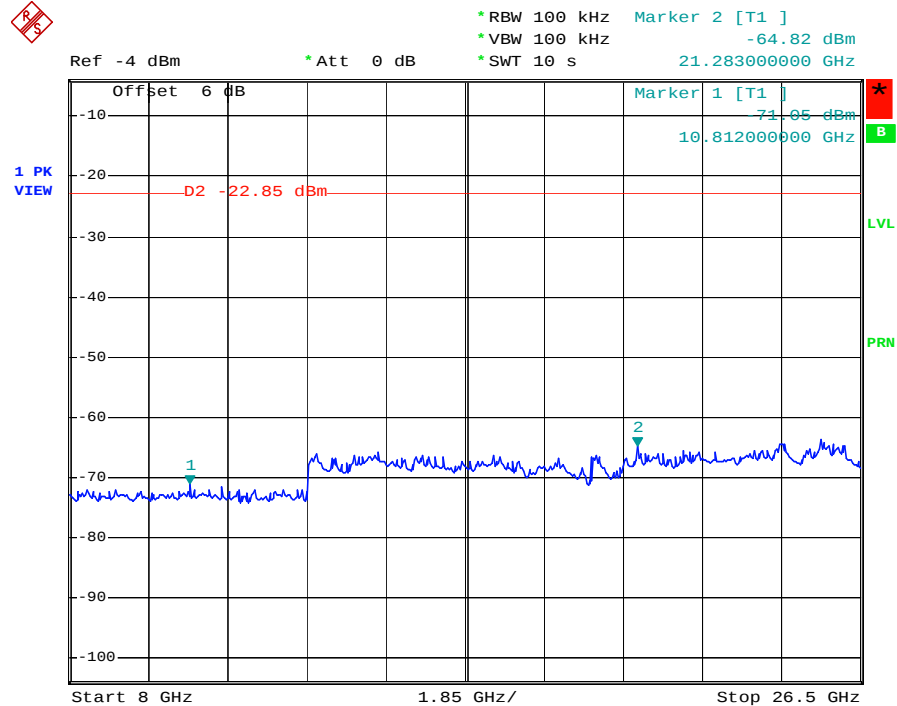


CH Middle 30MHz – 8GHz



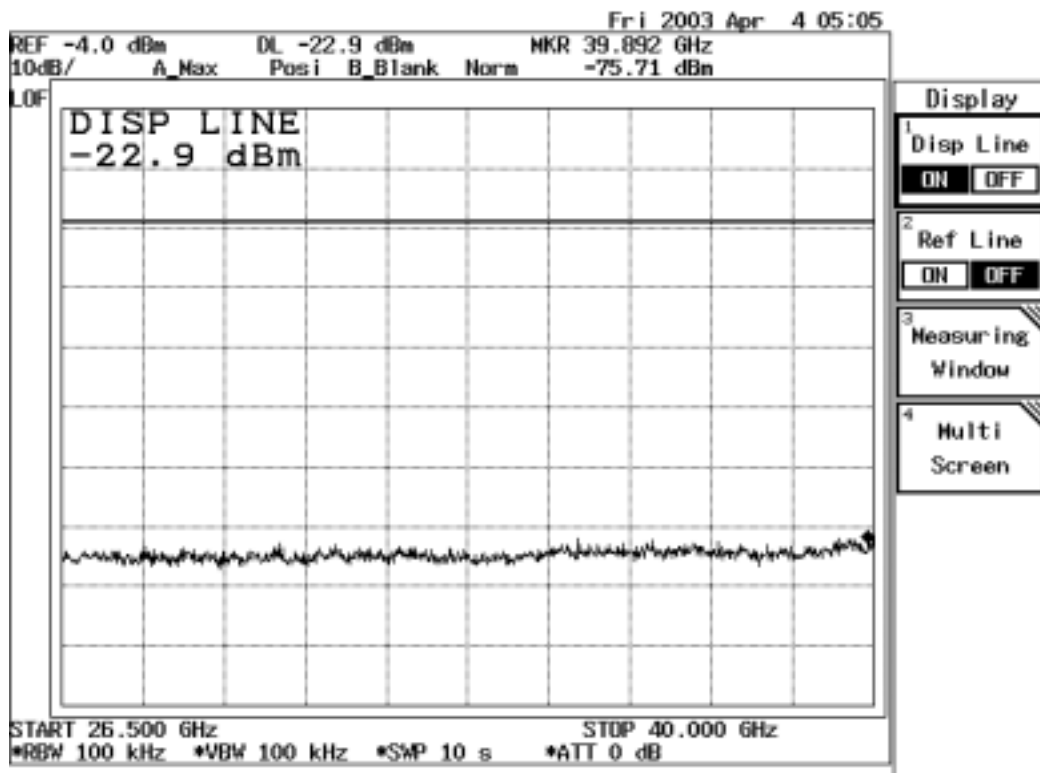
Date: 3.APR.2003 23:35:54

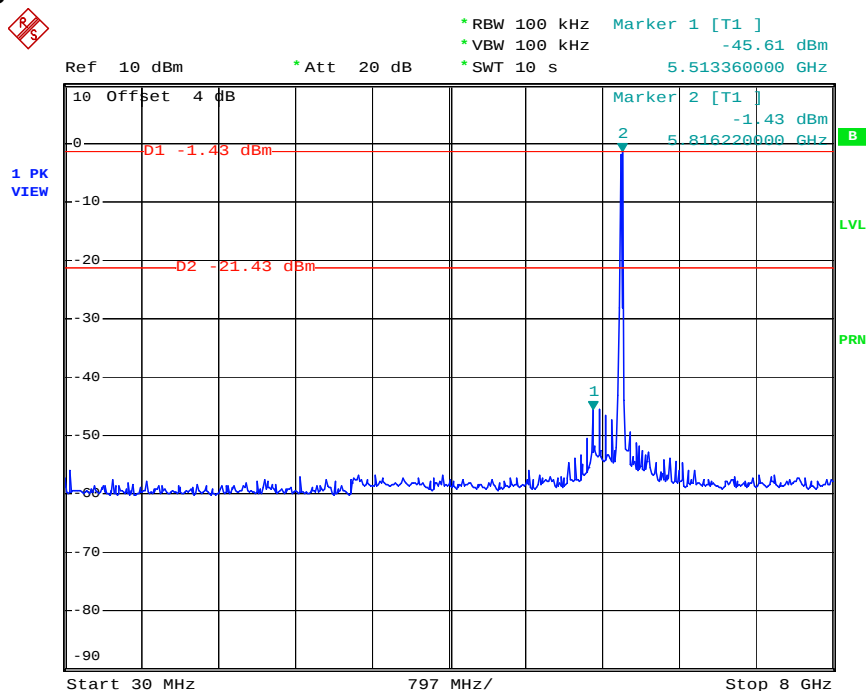
CH Middle 8GHz – 26.5GHz



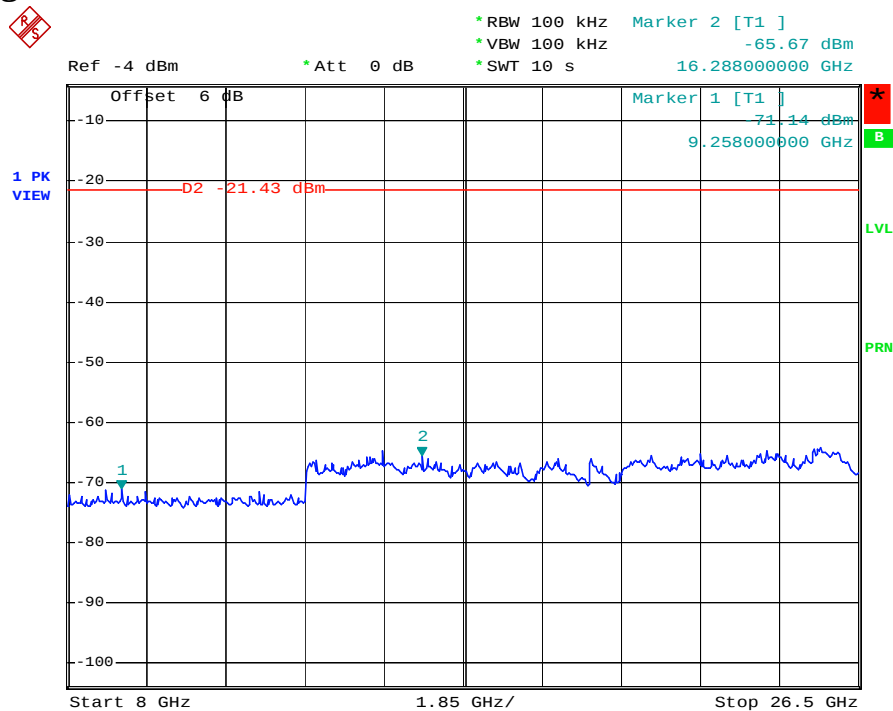
Date: 3.APR.2003 23:38:12

CH Middle 26.5GHz – 40GHz

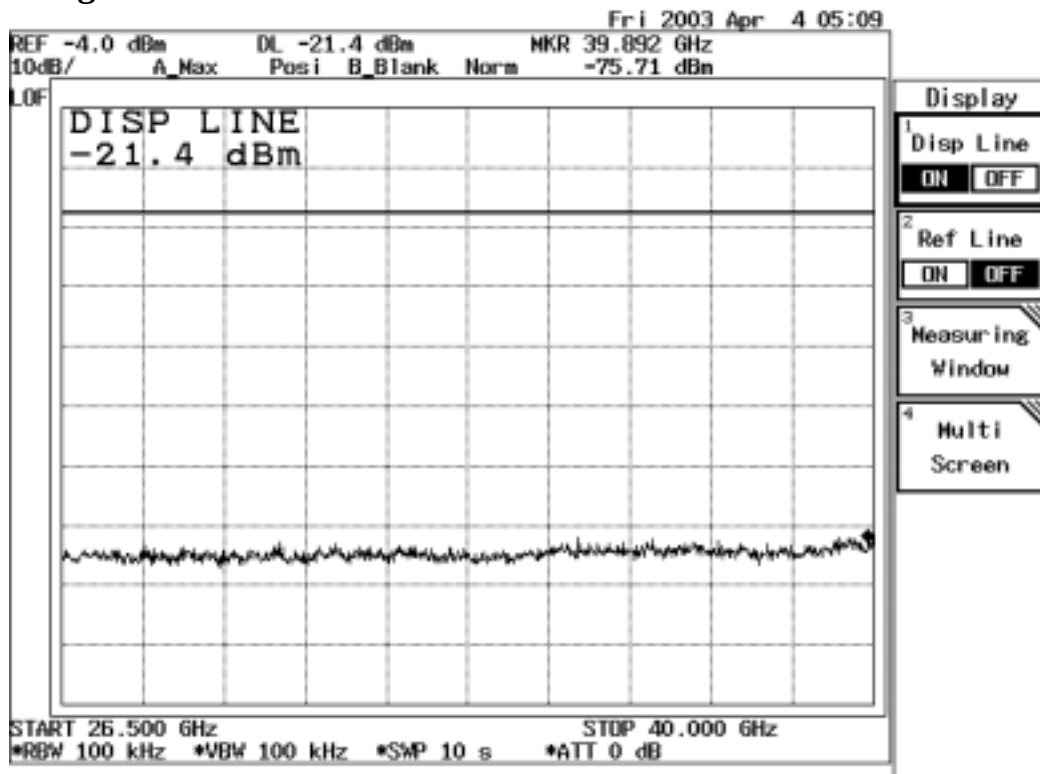
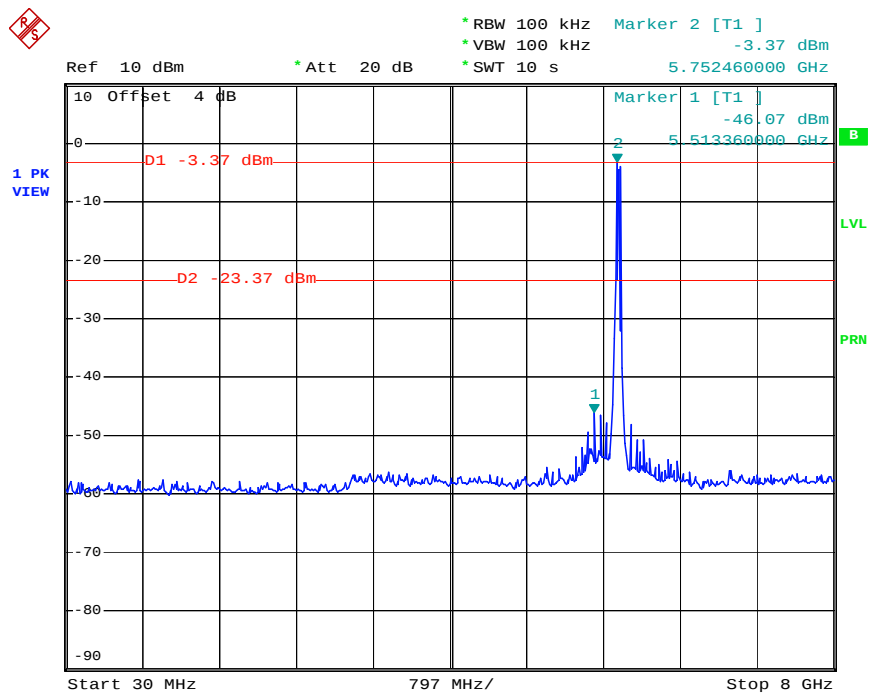


CH High 30MHz – 8GHz

Date: 3.APR.2003 23:40:16

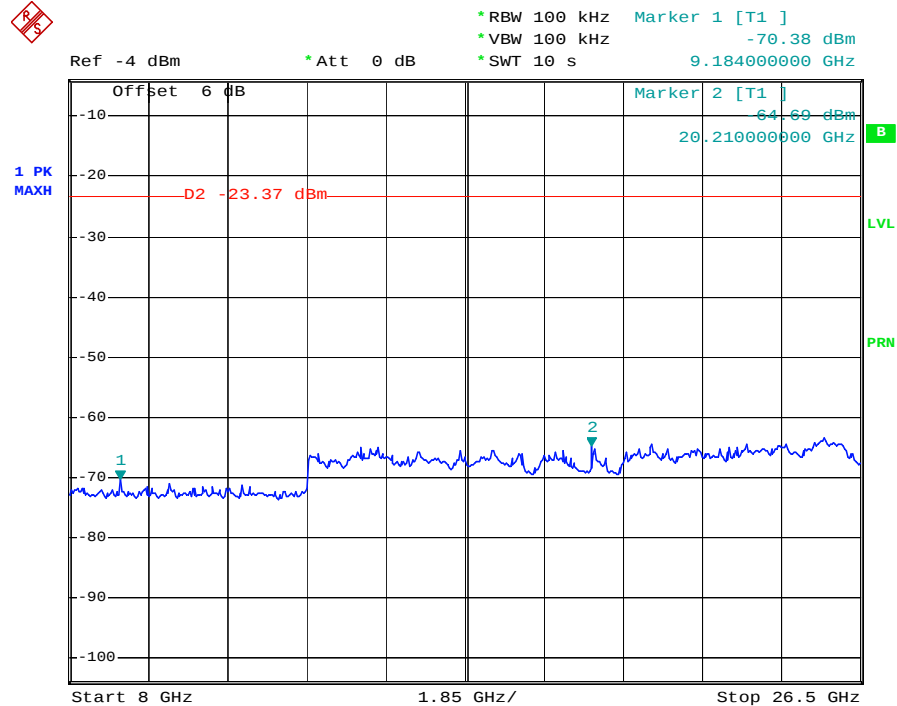
CH High 8GHz – 26.5GHz

Date: 3.APR.2003 23:42:34

CH High 26.5GHz – 40GHz**5.8GHz Band, IEEE802.11a Turbo Mode
CH Low 30MHz – 8GHz**

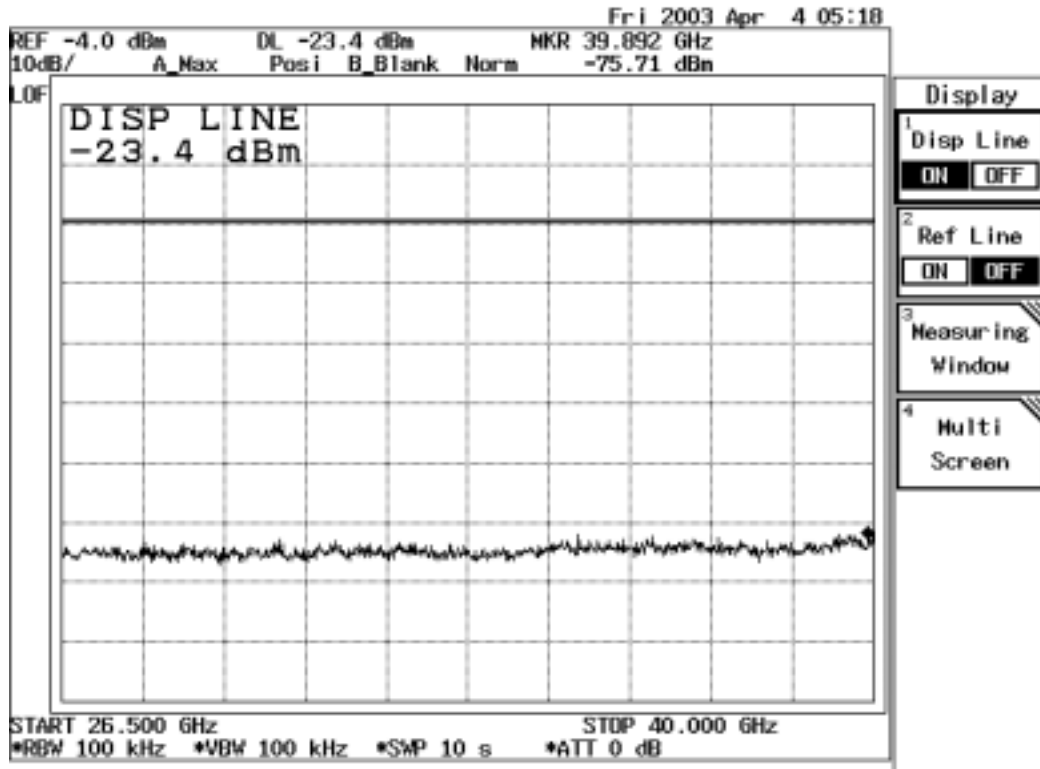
Date: 3.APR.2003 23:49:24

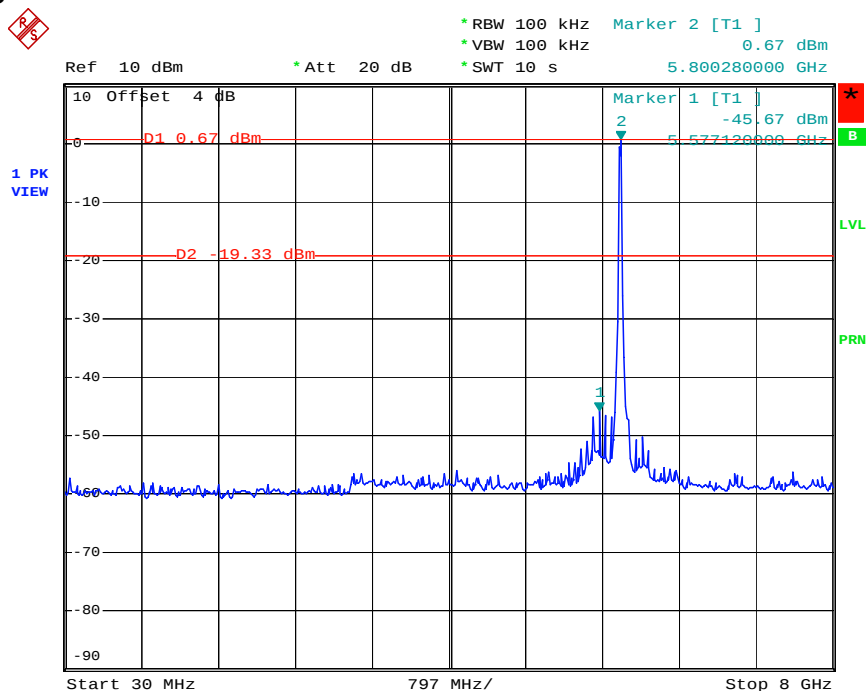
CH Low 8GHz –26.5GHz



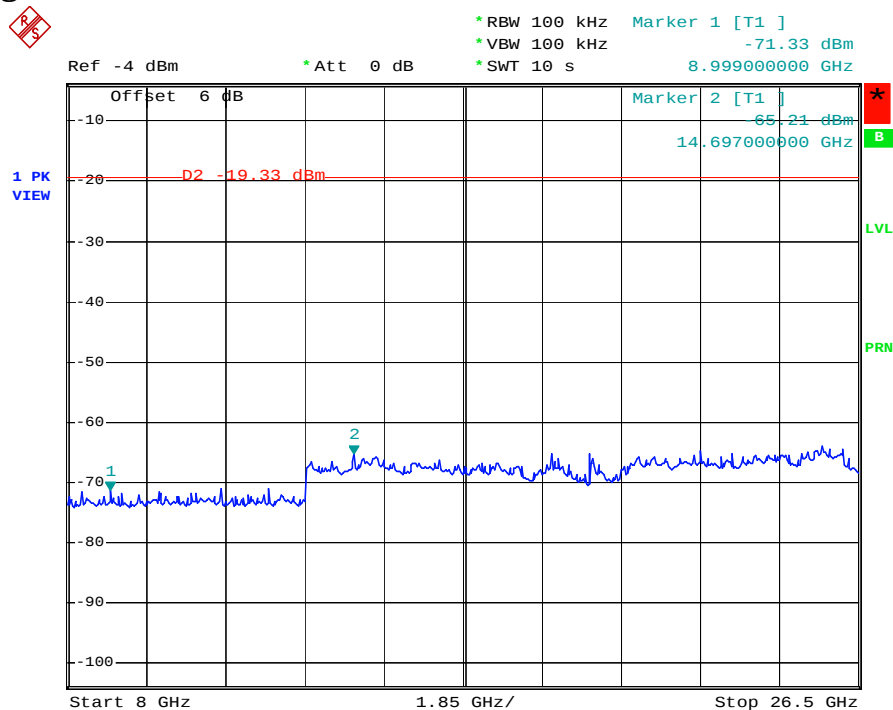
Date: 3.APR.2003 23:51:32

CH Low 26.5GHz – 40GHz

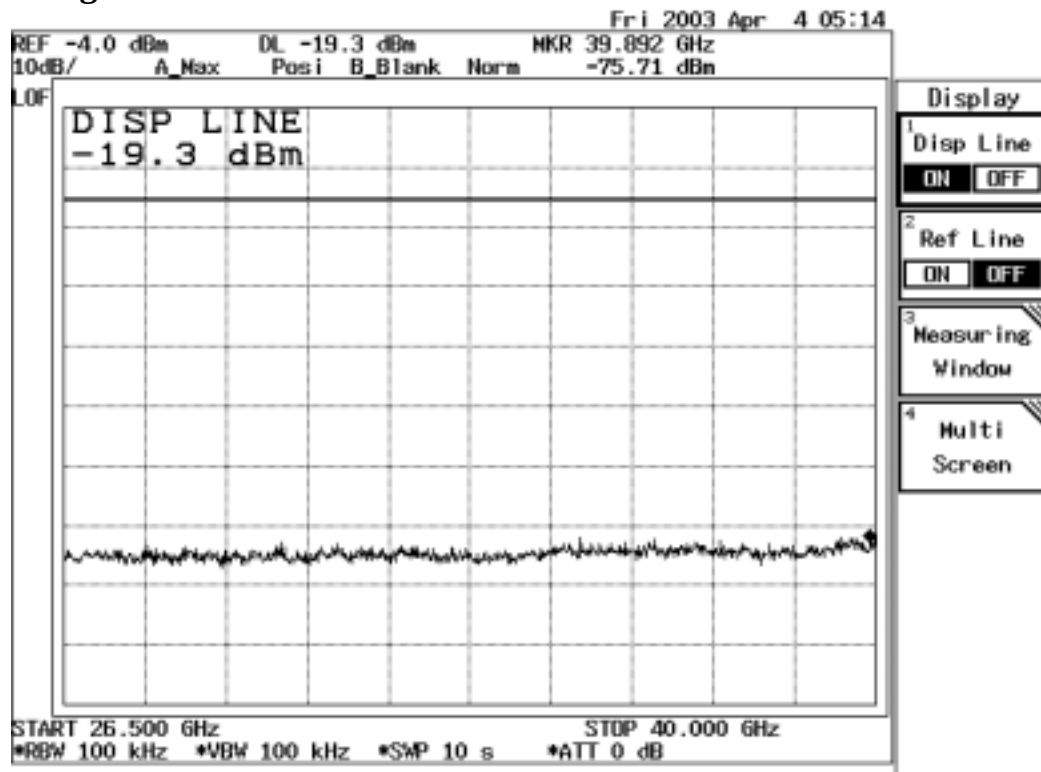


CH High 30MHz – 8GHz

Date: 3.APR.2003 23:44:54

CH High 8GHz – 26.5GHz

Date: 3.APR.2003 23:46:47

CH High 26.5GHz – 40GHz

**Radiated Spurious Emission Measurement Result (below 1GHz)**

Operation Mode:	TX Mode	Test Date :	April 07 2003
Temperature :	26	Test By:	James
Humidity :	60 %	Pol:	Ver./Hor

Frequency (MHz)	Ant. Pol. (H/V)	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit(3m) (dBuV/m)	Margin (dB)
32.70	H	PK	35.26	-1.18	34.08	40.0	-5.92
40.26	H	PK	37.45	-4.08	33.37	40.0	-6.63
48.36	H	PK	36.54	-7.73	28.81	40.0	-11.19
78.06	H	PK	42.07	-17.84	24.23	40.0	-15.77
159.60	H	PK	41.28	-17.59	23.69	43.5	-19.81
273.54	H	PK	43.84	-13.29	30.55	46.0	-15.45
280.02	H	PK	44.91	-13.34	31.57	46.0	-14.43
311.20	H	PK	46.04	-12.33	33.71	46.0	-12.29
337.80	H	PK	45.22	-11.49	33.73	46.0	-12.27
370.00	H	PK	47.25	-10.88	36.37	46.0	-9.63
377.00	H	PK	47.61	-10.64	36.97	46.0	-9.03
553.40	H	PK	44.05	-7.64	36.41	46.0	-9.59
931.40	H	PK	40.95	-3.28	37.67	46.0	-8.33
32.70	V	PK	32.65	-1.18	31.47	40.0	-8.53
54.30	V	PK	36.93	-5.52	31.41	40.0	-8.59
78.06	V	PK	44.54	-18.00	26.54	40.0	-13.46
84.54	V	PK	41.15	-18.82	22.33	40.0	-17.67
120.18	V	PK	40.97	-17.88	23.09	43.5	-20.41
280.02	V	PK	44.07	-13.34	30.73	46.0	-15.27
311.20	V	PK	43.90	-12.33	31.57	46.0	-14.43
344.80	V	PK	46.80	-11.18	35.62	46.0	-10.38
370.00	V	PK	49.82	-10.88	38.94	46.0	-7.06
377.00	V	PK	49.88	-10.64	39.24	46.0	-6.76
697.60	V	PK	41.58	-5.78	35.80	46.0	-10.20
930.00	V	PK	36.87	-3.31	33.56	46.0	-12.44

Remark :

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak detector mode.
- (3) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.
- (5) Emission level = Reading value + Factor

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(2.4GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low (IEEE802.11b)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2347.60	3.66	27.80	35.37	59.95	52.84	H	56.04	48.93	74.0	54.0	-17.96	-5.07
2390.00	3.66	27.80	35.37	64.03	55.90	H	60.12	51.99	74.0	54.0	-13.88	-2.01
2410.40	3.66	27.80	35.37	110.95	104.43	H	107.04	100.52				
2476.00	3.66	27.80	35.37	58.55	51.15	H	54.64	47.24	74.0	54.0	-19.36	-6.76
4824.00	5.68	32.60	35.64	51.37	42.04	H	54.01	44.68	74.0	54.0	-19.99	-9.32
5580.40	6.45	34.60	35.54	47.19	38.10	H	52.70	43.61	74.0	54.0	-21.30	-10.39
7232.00	7.27	36.30	35.84	50.11	41.90	H	57.84	49.63	74.0	54.0	-16.16	-4.37
9648.00	9.54	37.80	35.79	46.17	38.26	H	57.72	49.81	87.0	80.5	-29.32	-30.71
2349.20	3.66	27.80	35.37	49.87	40.91	V	45.96	37.00	74.0	54.0	-28.04	-17.00
2390.00	3.66	27.80	35.37	52.88	44.50	V	48.97	40.59	74.0	54.0	-25.03	-13.41
2411.20	3.66	27.80	35.37	97.57	91.08	V	93.66	87.17				
4824.40	5.68	32.60	35.64	48.87	40.16	V	51.51	42.80	74.0	54.0	-22.49	-11.20
5581.20	6.45	34.60	35.54	47.12	39.47	V	52.63	44.98	74.0	54.0	-21.37	-9.02
7234.40	7.27	36.30	35.84	45.78	37.02	V	53.51	44.75	74.0	54.0	-20.49	-9.25
9648.00	9.54	37.80	35.79	45.34	35.97	V	56.89	47.52	73.7	67.2	-16.77	-19.65

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Mid (IEEE802.11b) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2372.40	3.66	27.80	35.37	61.36	53.75	H	57.45	49.84	74.0	54.0	-16.55	-4.16
2436.80	3.66	27.80	35.37	108.66	102.51	H	104.75	98.60				
2499.20	3.66	27.80	35.37	56.48	47.15	H	52.57	43.24	74.0	54.0	-21.43	-10.76
4874.00	5.68	32.60	35.64	54.28	46.79	H	56.92	49.43	74.0	54.0	-17.08	-4.57
5606.40	6.45	34.60	35.54	52.21	44.93	H	57.72	50.44	74.0	54.0	-16.28	-3.56
7312.20	7.27	36.30	35.84	50.97	43.41	H	58.70	51.14	74.0	54.0	-15.30	-2.86
9748.00	9.54	37.80	35.79	48.14	43.03	H	59.69	54.58	84.8	78.6	-25.06	-24.02
2373.00	3.66	27.80	35.37	51.25	42.64	V	47.34	38.73	74.0	54.0	-26.66	-15.27
2435.80	3.66	27.80	35.37	98.91	92.14	V	95.00	88.23				
4874.00	5.68	32.60	35.64	54.35	47.97	V	56.99	50.61	74.0	54.0	-17.01	-3.39
5606.40	6.45	34.60	35.54	49.25	41.14	V	54.76	46.65	74.0	54.0	-19.24	-7.35
7313.80	7.27	36.30	35.84	49.09	40.00	V	56.82	47.73	74.0	54.0	-17.18	-6.27
9748.00	9.54	37.80	35.79	46.52	40.27	V	58.07	51.82	75.0	68.2	-16.93	-16.41
2373.00	3.66	27.80	35.37	51.25	42.64	V	47.34	38.73	74.0	54.0	-26.66	-15.27

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(2.4GHz Band)	Test Date :	Mar. 07 2003
Channel :	High(IEEE802.11b)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2398.50	3.66	27.80	35.37	62.29	54.55	H	58.38	50.64	74.0	54.0	-15.62	-3.36
2460.79	3.66	27.80	35.37	109.82	103.20	H	105.91	99.29				
2483.50	3.66	27.80	35.37	64.40	55.00	H	60.49	51.09	74.0	54.0	-13.51	-2.91
2486.90	3.66	27.80	35.37	66.31	56.76	H	62.40	52.85	74.0	54.0	-11.60	-1.15
4924.40	5.68	32.60	35.64	56.91	48.55	H	59.55	51.19	74.0	54.0	-14.45	-2.81
5630.00	6.45	34.60	35.54	53.91	46.15	H	59.42	51.66	74.0	54.0	-14.58	-2.34
7383.40	7.27	36.30	35.84	53.22	44.24	H	60.95	51.97	74.0	54.0	-13.05	-2.03
9848.99	9.54	37.80	35.79	49.97	46.18	H	61.52	57.73	85.9	79.3	-24.39	-21.56
2459.60	3.66	27.80	35.37	96.38	89.50	V	92.47	85.59				
2483.50	3.66	27.80	35.37	53.46	44.02	V	49.55	40.11	74.0	54.0	-24.45	-13.89
2487.50	3.66	27.80	35.37	52.84	45.35	V	48.93	41.44	74.0	54.0	-25.07	-12.56
4923.97	5.68	32.60	35.64	59.35	47.55	V	61.99	50.19	74.0	54.0	-12.01	-3.81
5630.00	6.45	34.60	35.54	50.30	41.93	V	55.81	47.44	74.0	54.0	-18.19	-6.56
7386.71	7.27	36.30	35.84	51.62	42.57	V	59.35	50.30	74.0	54.0	-14.65	-3.70
9848.00	9.54	37.80	35.79	50.18	45.73	V	61.73	57.28	72.5	65.6	-10.74	-8.31

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Low(IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2336.00	3.66	27.80	35.37	57.79	50.45	H	53.88	46.54	74.0	54.0	-20.12	-7.46
2390.00	3.66	27.80	35.37	66.02	52.49	H	62.11	48.58	74.0	54.0	-11.89	-5.42
2407.20	3.66	27.80	35.37	93.84	102.59	H	89.93	98.68				
2463.80	3.66	27.80	35.37	56.61	50.28	H	52.70	46.37	74.0	54.0	-21.30	-7.63
2527.80	4.09	28.60	35.48	54.26	47.75	H	51.47	44.96	74.0	54.0	-22.53	-9.04
4824.00	5.68	32.60	35.64	45.11	33.79	H	47.75	36.43	74.0	54.0	-26.25	-17.57
5577.60	6.45	34.60	35.54	46.13	36.55	H	51.64	42.06	74.0	54.0	-22.36	-11.94
7232.00	7.27	36.30	35.84	45.91	34.98	H	53.64	42.71	74.0	54.0	-20.36	-11.29
9648.00	9.54	37.80	35.79	46.49	34.72	H	58.04	46.27	74.0	54.0	-15.96	-7.73
2294.00	3.66	27.80	35.37	49.28	39.79	V	45.37	35.88	74.0	54.0	-28.63	-18.12
2390.00	3.66	27.80	35.37	54.61	42.37	V	50.70	38.46	74.0	54.0	-23.30	-15.54
2407.40	3.66	27.80	35.37	91.07	82.14	V	87.16	78.23				
2464.00	3.66	27.80	35.37	49.15	39.98	V	45.24	36.07	74.0	54.0	-28.76	-17.93
4824.00	5.68	32.60	35.64	44.35	33.04	V	46.99	35.68	74.0	54.0	-27.01	-18.32
5587.20	6.45	34.60	35.54	44.92	34.33	V	50.43	39.84	74.0	54.0	-23.57	-14.16
7236.00	7.27	36.30	35.84	44.12	33.75	V	51.85	41.48	74.0	54.0	-22.15	-12.52
9649.60	9.54	37.80	35.79	45.65	33.82	V	57.20	45.37	74.0	54.0	-16.80	-8.63

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Mid(IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2295.00	3.66	27.80	35.37	47.12	38.42	H	43.21	34.51	74.0	54.0	-30.79	-19.49
2335.80	3.66	27.80	35.37	56.99	49.17	H	53.08	45.26	74.0	54.0	-20.92	-8.74
2390.00	3.66	27.80	35.37	64.82	50.53	H	60.91	46.62	74.0	54.0	-13.09	-7.38
2427.80	3.66	27.80	35.37	91.06	83.16	H	87.15	79.25				
2483.50	3.66	27.80	35.37	61.67	48.34	H	57.76	44.43	74.0	54.0	-16.24	-9.57
2528.00	4.09	28.60	35.48	46.09	36.73	H	43.30	33.94	74.0	54.0	-30.70	-20.06
2529.00	4.09	28.60	35.48	52.57	46.23	H	49.78	43.44	74.0	54.0	-24.22	-10.56
4877.80	5.68	32.60	35.64	46.37	35.74	H	49.01	38.38	74.0	54.0	-24.99	-15.62
5607.00	6.45	34.60	35.54	46.08	37.44	H	51.59	42.95	74.0	54.0	-22.41	-11.05
7325.80	7.27	36.30	35.84	45.72	34.65	H	53.45	42.38	74.0	54.0	-20.55	-11.62
9741.80	9.54	37.80	35.79	44.54	33.51	H	56.09	45.06	74.0	54.0	-17.91	-8.94
2275.00	3.66	27.80	35.37	46.42	38.74	V	42.51	34.83	74.0	54.0	-31.49	-19.17
2390.00	3.66	27.80	35.37	54.65	49.21	V	50.74	45.30	74.0	54.0	-23.26	-8.70
2432.00	3.66	27.80	35.37	91.62	83.73	V	87.71	79.82				
2483.50	3.66	27.80	35.37	48.98	36.62	V	45.07	32.71	74.0	54.0	-28.93	-21.29
4878.40	5.68	32.60	35.64	46.55	35.11	V	49.19	37.75	74.0	54.0	-24.81	-16.25
5607.00	6.45	34.60	35.54	45.07	34.57	V	50.58	40.08	74.0	54.0	-23.42	-13.92
7323.40	7.27	36.30	35.84	44.35	33.50	V	52.08	41.23	74.0	54.0	-21.92	-12.77
9747.20	9.54	37.80	35.79	44.75	33.80	V	56.30	45.35	74.0	54.0	-17.70	-8.65

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.



- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) $\text{Emission(dBuV/m)} = \text{Reading(dBuV)} + \text{Cable loss(dB)} + \text{Ant.Fact.(dB/m)} - \text{Pre-amp.(dB)}$

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : High(IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2399.50	3.66	27.80	35.37	59.08	51.13	H	55.17	47.22	74.0	54.0	-18.83	-6.78
2469.20	3.66	27.80	35.37	101.05	92.91	H	97.14	89.00				
2483.50	3.66	27.80	35.37	65.66	50.59	H	61.75	46.68	74.0	54.0	-12.25	-7.32
2528.30	4.09	28.60	35.48	54.87	48.11	H	52.08	45.32	74.0	54.0	-21.92	-8.68
4923.30	5.68	32.60	35.64	45.94	33.87	H	48.58	36.51	74.0	54.0	-25.42	-17.49
5635.00	6.45	34.60	35.54	48.48	37.67	H	53.99	43.18	74.0	54.0	-20.01	-10.82
7386.80	7.27	36.30	35.84	44.81	33.71	H	52.54	41.44	74.0	54.0	-21.46	-12.56
9848.00	9.54	37.80	35.79	44.16	33.59	H	55.71	45.14	74.0	54.0	-18.29	-8.86
2399.50	3.66	27.80	35.37	49.42	40.18	V	45.51	36.27	74.0	54.0	-28.49	-17.73
2455.00	3.66	27.80	35.37	88.22	80.26	V	84.31	76.35				
2483.50	3.66	27.80	35.37	53.06	37.13	V	49.15	33.22	74.0	54.0	-24.85	-20.78
2528.30	4.09	28.60	35.48	46.58	38.02	V	43.79	35.23	74.0	54.0	-30.21	-18.77
4925.20	5.68	32.60	35.64	46.58	34.17	V	49.22	36.81	74.0	54.0	-24.78	-17.19
5626.40	6.45	34.60	35.54	44.97	34.86	V	50.48	40.37	74.0	54.0	-23.52	-13.63
7386.30	7.27	36.30	35.84	45.09	33.09	V	52.82	40.82	74.0	54.0	-21.18	-13.18
9848.20	9.54	37.80	35.79	44.63	33.49	V	56.18	45.04	74.0	54.0	-17.82	-8.96

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)



Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Mid(IEEE802.11g,Turbo Mode) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2367.40	3.66	27.80	35.37	59.13	50.19	H	55.22	46.28	74.0	54.0	-18.78	-7.72
2430.40	3.66	27.80	35.37	105.33	96.77	H	101.42	92.86				
2495.50	3.66	27.80	35.37	55.15	44.83	H	51.24	40.92	74.0	54.0	-22.76	-13.08
2528.20	4.09	28.60	35.48	52.55	46.54	H	49.76	43.75	74.0	54.0	-24.24	-10.25
4875.40	5.68	32.60	35.64	49.82	37.96	H	52.46	40.60	74.0	54.0	-21.54	-13.40
5603.20	6.45	34.60	35.54	49.41	39.73	H	54.92	45.24	74.0	54.0	-19.08	-8.76
7331.40	7.27	36.30	35.84	48.00	35.49	H	55.73	43.22	74.0	54.0	-18.27	-10.78
9748.40	9.54	37.80	35.79	44.38	33.85	H	55.93	45.40	74.0	54.0	-18.07	-8.60
2374.00	3.66	27.80	35.37	49.29	39.66	V	45.38	35.75	74.0	54.0	-28.62	-18.25
2430.60	3.66	27.80	35.37	94.48	86.14	V	90.57	82.23				
2529.00	4.09	28.60	35.48	47.22	38.11	V	44.43	35.32	74.0	54.0	-29.57	-18.68
4874.80	5.68	32.60	35.64	47.89	36.27	V	50.53	38.91	74.0	54.0	-23.47	-15.09
5600.80	6.45	34.60	35.54	46.67	36.12	V	52.18	41.63	74.0	54.0	-21.82	-12.37
7317.40	7.27	36.30	35.84	46.28	34.19	V	54.01	41.92	74.0	54.0	-19.99	-12.08
9750.40	9.54	37.80	35.79	45.76	34.22	V	57.31	45.77	74.0	54.0	-16.69	-8.23

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low(IEEE802.11a)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5471.40	2.15	33.90	35.53	62.99	53.41	H	63.51	53.93	89.5	80.7	-25.98	-26.77
5536.20	2.25	34.60	35.54	60.33	51.53	H	61.64	52.84	89.5	80.7	-27.85	-27.86
5725.00	2.25	34.60	35.54	81.13	65.60	H	82.44	66.91	89.5	80.7	-7.05	-13.79
5739.60	2.25	34.60	35.54	108.18	99.39	H	109.49	100.70				
11490.00	3.13	38.70	35.64	44.88	33.70	H	51.07	39.89	74.0	54.0	-22.93	-14.11
17235.20	4.01	41.50	35.13	47.26	37.14	H	57.64	47.52	89.5	80.7	-31.86	-33.18
5536.00	2.25	34.60	35.54	47.47	38.37	V	48.78	39.68	75.7	67.4	-26.90	-27.67
5599.00	2.25	34.60	35.54	48.25	37.64	V	49.56	38.95	75.7	67.4	-26.12	-28.40
5725.00	2.25	34.60	35.54	64.41	49.95	V	65.72	51.26	75.7	67.4	-9.96	-16.09
5746.00	2.25	34.60	35.54	94.37	86.04	V	95.68	87.35				
11490.00	3.13	38.70	35.64	45.00	34.00	V	51.19	40.19	74.0	54.0	-22.81	-13.81
17235.20	4.01	41.50	35.13	48.00	37.60	V	58.38	47.98	75.7	67.4	-17.32	-19.42

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	Mid(IEEE802.11a)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5536.20	2.25	34.60	35.54	62.03	52.92	H	63.34	54.23	90.7	81.3	-27.39	-27.04
5599.20	2.25	34.60	35.54	58.46	50.82	H	59.77	52.13	90.7	81.3	-30.96	-29.14
5779.20	2.25	34.60	35.54	109.42	99.96	H	110.73	101.27				
11570.00	3.17	39.10	35.73	44.17	33.01	H	50.71	39.55	74.0	54.0	-23.29	-14.45
17355.20	4.01	41.50	35.13	46.08	35.88	H	56.46	46.26	90.7	81.3	-34.24	-35.04
5536.20	2.25	34.60	35.54	49.42	39.27	V	50.73	40.58	77.5	69.2	-26.79	-28.59
5664.00	2.25	34.60	35.54	48.22	38.38	V	49.53	39.69	77.5	69.2	-27.99	-29.48
5790.00	2.25	34.60	35.54	96.21	87.86	V	97.52	89.17				
11570.00	3.17	39.10	35.73	45.17	34.01	V	51.71	40.55	74.0	54.0	-22.29	-13.45
17355.20	4.01	41.50	35.13	47.08	36.88	V	57.46	47.26	77.5	69.2	-20.04	-21.94

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	High(IEEE802.11a)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5520.80	2.25	34.60	35.54	62.81	50.80	H	64.12	52.11	90.1	81.4	-25.98	-29.24
5600.00	2.25	34.60	35.54	59.55	51.60	H	60.86	52.91	90.1	81.4	-29.24	-28.44
5808.60	2.25	34.60	35.54	108.79	100.04	H	110.10	101.35				
5825.00	2.25	34.60	35.54	60.75	46.32	H	62.06	47.63	90.1	81.4	-28.04	-33.72
11614.00	3.17	39.10	35.73	45.93	35.89	H	52.47	42.43	74.0	54.0	-21.53	-11.57
17419.00	4.01	41.50	35.13	47.37	37.05	H	57.75	47.43	90.1	81.4	-32.35	-33.97
5808.60	2.25	34.60	35.54	96.34	87.89	V	97.65	89.20				
5850.00	2.25	34.60	35.54	56.24	43.39	V	57.55	44.70	77.7	69.2	-20.10	-24.50
5600.00	2.25	34.60	35.54	47.72	39.35	V	49.03	40.66	77.7	69.2	-28.67	-28.54
11614.00	3.17	39.10	35.73	45.20	35.60	V	51.74	42.14	74.0	54.0	-22.26	-11.86
17419.00	4.01	41.50	35.13	48.10	37.90	V	58.48	48.28	77.7	69.2	-19.22	-20.92

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low(IEEE802.11a,Turbo Mode)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5472.00	2.15	33.90	35.53	62.96	54.14	H	63.48	54.66	86.3	78.0	-22.85	-23.35
5599.80	2.25	34.60	35.54	59.78	50.68	H	61.09	51.99	86.3	78.0	-25.24	-26.02
5725.00	2.25	34.60	35.54	77.95	65.30	H	79.26	66.61	86.3	78.0	-7.07	-11.40
5767.20	2.25	34.60	35.54	105.02	96.70	H	106.33	98.01				
11520.20	3.17	39.10	35.73	45.20	35.40	H	51.74	41.94	74.0	54.0	-22.26	-12.06
17280.20	4.01	41.50	35.13	47.00	36.60	H	57.38	46.98	86.3	78.0	-28.92	-31.03
5663.80	2.25	34.60	35.54	53.04	41.38	V	54.35	42.69	72.9	65.4	-18.57	-22.70
5725.00	2.25	34.60	35.54	62.18	50.68	V	63.49	51.99	72.9	65.4	-9.43	-13.40
5774.40	2.25	34.60	35.54	91.61	84.08	V	92.92	85.39				
11520.20	3.17	39.10	35.73	45.59	35.51	V	52.13	42.05	74.0	54.0	-21.87	-11.95
17280.20	4.01	41.50	35.13	47.58	36.88	V	57.96	47.26	72.9	65.4	-14.94	-18.14

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(5.8GHz Band) Test Date : Mar. 07 2003
 Channel : High(IEEE802.11a,Turbo Mode) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5535.20	2.25	34.60	35.54	63.07	53.49	H	64.38	54.80	86.4	78.4	-21.97	-23.56
5600.00	2.25	34.60	35.54	60.08	50.85	H	61.39	52.16	86.4	78.4	-24.96	-26.20
5812.60	2.25	34.60	35.54	105.04	97.05	H	106.35	98.36				
5850.00	2.25	34.60	35.54	60.35	57.52	H	61.66	58.83	86.4	78.4	-24.69	-19.53
11600.40	3.17	39.10	35.73	46.40	35.86	H	52.94	42.40	74.0	54.0	-21.06	-11.60
17400.00	4.01	41.50	35.13	47.70	37.20	H	58.08	47.58	86.4	78.4	-28.32	-30.82
5809.00	2.25	34.60	35.54	92.28	84.85	V	93.59	86.16				
5850.00	2.25	34.60	35.54	50.39	44.27	V	51.70	45.58	73.6	66.2	-21.89	-20.58
5600.00	2.25	34.60	35.54	50.87	41.72	V	52.18	43.03	73.6	66.2	-21.41	-23.13
11600.00	3.17	39.10	35.73	45.00	34.30	V	51.54	40.84	74.0	54.0	-22.46	-13.16
17400.00	4.01	41.50	35.13	49.00	37.40	V	59.38	47.78	73.6	66.2	-14.22	-18.42

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(2.4GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low (IEEE802.11b)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2390.00	3.66	27.80	35.37	60.32	50.74	H	56.41	46.83	74.0	54.0	-17.59	-7.17
2413.60	3.66	27.80	35.37	106.26	99.62	H	102.35	95.71				
2474.40	3.66	27.80	35.37	55.76	46.76	H	51.85	42.85	74.0	54.0	-22.15	-11.15
4824.40	5.68	32.60	35.64	50.55	42.92	H	53.19	45.56	74.0	54.0	-20.81	-8.44
5581.20	6.45	34.60	35.54	49.90	40.90	H	55.41	46.41	74.0	54.0	-18.59	-7.59
7234.40	7.27	36.30	35.84	47.25	38.02	H	54.98	45.75	74.0	54.0	-19.02	-8.25
9648.00	9.54	37.80	35.79	45.46	37.22	H	57.01	48.77	74.0	54.0	-16.99	-5.23
2387.00	3.66	27.80	35.37	64.50	56.00	V	60.59	52.09	74.0	54.0	-13.41	-1.91
2414.00	3.66	27.80	35.37	112.20	105.38	V	108.29	101.47				
2475.60	3.66	27.80	35.37	60.68	51.10	V	56.77	47.19	74.0	54.0	-17.23	-6.81
4823.60	5.68	32.60	35.64	50.03	43.62	V	52.67	46.26	74.0	54.0	-21.33	-7.74
5578.40	6.45	34.60	35.54	48.46	40.43	V	53.97	45.94	74.0	54.0	-20.03	-8.06
7236.80	7.27	36.30	35.84	46.98	37.54	V	54.71	45.27	74.0	54.0	-19.29	-8.73
9648.40	9.54	37.80	35.79	45.53	36.86	V	57.08	48.41	74.0	54.0	-16.92	-5.59

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Mid (IEEE802.11b) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2373.00	3.66	27.80	35.37	56.25	48.64	H	52.34	44.73	74.0	54.0	-21.66	-9.27
2436.40	3.66	27.80	35.37	106.55	100.01	H	102.64	96.10				
2500.00	4.09	28.60	35.48	52.97	45.49	H	50.18	42.70	74.0	54.0	-23.82	-11.30
4874.00	5.68	32.60	35.64	59.31	46.43	H	61.95	49.07	74.0	54.0	-12.05	-4.93
5604.40	6.45	34.60	35.54	49.50	42.04	H	55.01	47.55	74.0	54.0	-18.99	-6.45
7310.50	7.27	36.30	35.84	52.45	43.12	H	60.18	50.85	74.0	54.0	-13.82	-3.15
9748.00	9.54	37.80	35.79	49.42	44.42	H	60.97	55.97	82.6	76.1	-21.67	-20.13
2372.97	3.66	27.80	35.37	63.14	54.58	V	59.23	50.67	74.0	54.0	-14.77	-3.33
2435.37	3.66	27.80	35.37	113.61	107.06	V	109.70	103.15				
2501.37	4.09	28.60	35.48	61.42	51.43	V	58.63	48.64	74.0	54.0	-15.37	-5.36
4873.80	5.68	32.60	35.64	57.44	46.50	V	60.08	49.14	74.0	54.0	-13.92	-4.86
5604.20	6.45	34.60	35.54	51.15	43.24	V	56.66	48.75	74.0	54.0	-17.34	-5.25
7312.47	7.27	36.30	35.84	50.65	42.91	V	58.38	50.64	74.0	54.0	-15.62	-3.36
9747.87	9.54	37.80	35.79	47.63	41.03	V	59.18	52.58	89.7	83.2	-30.52	-30.57

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : High(IEEE802.11b) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2414.30	3.66	27.80	35.37	55.90	47.31	H	51.99	43.40	74.0	54.0	-22.01	-10.60
2463.20	3.66	27.80	35.37	104.77	98.23	H	100.86	94.32				
2483.50	3.66	27.80	35.37	61.36	51.43	H	57.45	47.52	74.0	54.0	-16.55	-6.48
2487.50	3.66	27.80	35.37	58.48	50.07	H	54.57	46.16	74.0	54.0	-19.43	-7.84
4923.80	5.68	32.60	35.64	48.90	41.39	H	51.54	44.03	74.0	54.0	-22.46	-9.97
5632.20	6.45	34.60	35.54	49.34	40.82	H	54.85	46.33	74.0	54.0	-19.15	-7.67
7388.40	7.27	36.30	35.84	49.97	41.36	H	57.70	49.09	74.0	54.0	-16.30	-4.91
9848.00	9.54	37.80	35.79	47.21	41.50	H	58.76	53.05	80.9	74.3	-22.10	-21.27
2399.60	3.66	27.80	35.37	58.39	50.08	V	54.48	46.17	74.0	54.0	-19.52	-7.83
2462.00	3.66	27.80	35.37	109.06	102.59	V	105.15	98.68				
2483.50	3.66	27.80	35.37	65.20	54.42	V	61.29	50.51	74.0	54.0	-12.71	-3.49
2487.00	3.66	27.80	35.37	64.48	55.80	V	60.57	51.89	74.0	54.0	-13.43	-2.11
2527.20	4.09	28.60	35.48	59.95	51.04	V	57.16	48.25	74.0	54.0	-16.84	-5.75
4924.00	5.68	32.60	35.64	55.03	47.95	V	57.67	50.59	74.0	54.0	-16.33	-3.41
5630.40	6.45	34.60	35.54	50.03	41.87	V	55.54	47.38	74.0	54.0	-18.46	-6.62
7386.80	7.27	36.30	35.84	48.57	40.47	V	56.30	48.20	74.0	54.0	-17.70	-5.80
9848.00	9.54	37.80	35.79	47.61	40.45	V	59.16	52.00	85.2	78.7	-25.99	-26.68

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Low(IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2334.20	3.66	27.80	35.37	52.98	45.80	H	49.07	41.89	74.0	54.0	-24.93	-12.11
2390.00	3.66	27.80	35.37	66.82	46.28	H	62.91	42.37	74.0	54.0	-11.09	-11.63
2416.60	3.66	27.80	35.37	96.58	88.43	H	92.67	84.52				
2464.20	3.66	27.80	35.37	53.06	45.63	H	49.15	41.72	74.0	54.0	-24.85	-12.28
2528.20	4.09	28.60	35.48	50.86	43.45	H	48.07	40.66	74.0	54.0	-25.93	-13.34
4826.00	5.68	32.60	35.64	46.35	41.34	H	48.99	43.98	74.0	54.0	-25.01	-10.02
5586.40	6.45	34.60	35.54	45.29	33.99	H	50.80	39.50	74.0	54.0	-23.20	-14.50
7239.20	7.27	36.30	35.84	46.01	38.23	H	53.74	45.96	74.0	54.0	-20.26	-8.04
9648.00	9.54	37.80	35.79	44.57	33.88	H	56.12	45.43	74.0	54.0	-17.88	-8.57
2336.20	3.66	27.80	35.37	55.91	48.47	V	52.00	44.56	74.0	54.0	-22.00	-9.44
2390.00	3.66	27.80	35.37	67.30	52.58	V	63.39	48.67	74.0	54.0	-10.61	-5.33
2407.20	3.66	27.80	35.37	104.23	95.52	V	100.32	91.61				
2464.20	3.66	27.80	35.37	60.11	53.81	V	56.20	49.90	74.0	54.0	-17.80	-4.10
2496.20	3.66	27.80	35.37	56.44	49.08	V	52.53	45.17	74.0	54.0	-21.47	-8.83
2528.20	4.09	28.60	35.48	58.47	52.72	V	55.68	49.93	74.0	54.0	-18.32	-4.07
2529.20	4.09	28.60	35.48	54.49	46.75	V	51.70	43.96	74.0	54.0	-22.30	-10.04
4826.08	5.68	32.60	35.64	45.50	37.25	V	48.14	39.89	74.0	54.0	-25.86	-14.11
5582.00	6.45	34.60	35.54	46.42	36.22	V	51.93	41.73	74.0	54.0	-22.07	-12.27
7236.00	7.27	36.30	35.84	44.02	33.37	V	51.75	41.10	74.0	54.0	-22.25	-12.90
9648.00	9.54	37.80	35.79	45.52	34.07	V	57.07	45.62	74.0	54.0	-16.93	-8.38

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.



- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) $\text{Emission(dBuV/m)} = \text{Reading(dBuV)} + \text{Cable loss(dB)} + \text{Ant.Fact.(dB/m)} - \text{Pre-amp.(dB)}$

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Mid(IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2336.20	3.66	27.80	35.37	55.75	46.86	H	51.84	42.95	74.0	54.0	-22.16	-11.05
2368.20	3.66	27.80	35.37	56.25	47.23	H	52.34	43.32	74.0	54.0	-21.66	-10.68
2431.40	3.66	27.80	35.37	103.23	94.61	H	99.32	90.70				
2496.20	3.66	27.80	35.37	51.09	42.95	H	47.18	39.04	74.0	54.0	-26.82	-14.96
2528.20	4.09	28.60	35.48	50.09	42.62	H	47.30	39.83	74.0	54.0	-26.70	-14.17
4873.40	5.68	32.60	35.64	51.66	39.60	H	54.30	42.24	74.0	54.0	-19.70	-11.76
5611.80	6.45	34.60	35.54	48.72	38.26	H	54.23	43.77	74.0	54.0	-19.77	-10.23
7315.20	7.27	36.30	35.84	49.46	38.64	H	57.19	46.37	74.0	54.0	-16.81	-7.63
9748.00	9.54	37.80	35.79	45.50	34.08	H	57.05	45.63	74.0	54.0	-16.95	-8.37
2304.00	3.66	27.80	35.37	56.30	46.51	V	52.39	42.60	74.0	54.0	-21.61	-11.40
2336.00	3.66	27.80	35.37	58.24	49.48	V	54.33	45.57	74.0	54.0	-19.67	-8.43
2366.00	3.66	27.80	35.37	57.76	51.47	V	53.85	47.56	74.0	54.0	-20.15	-6.44
2430.00	3.66	27.80	35.37	111.39	102.65	V	107.48	98.74				
2496.00	3.66	27.80	35.37	61.16	51.80	V	57.25	47.89	74.0	54.0	-16.75	-6.11
2528.30	4.09	28.60	35.48	58.75	52.61	V	55.96	49.82	74.0	54.0	-18.04	-4.18
2593.00	4.09	28.60	35.48	53.26	44.34	V	50.47	41.55	74.0	54.0	-23.53	-12.45
4876.00	5.68	32.60	35.64	56.04	44.04	V	58.68	46.68	74.0	54.0	-15.32	-7.32
5602.40	6.45	34.60	35.54	51.56	42.42	V	57.07	47.93	74.0	54.0	-16.93	-6.07
7310.60	7.27	36.30	35.84	53.22	41.66	V	60.95	49.39	74.0	54.0	-13.05	-4.61
9749.60	9.54	37.80	35.79	46.36	35.69	V	57.91	47.24	74.0	54.0	-16.09	-6.76

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.



- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) $\text{Emission(dBuV/m)} = \text{Reading(dBuV)} + \text{Cable loss(dB)} + \text{Ant.Fact.(dB/m)} - \text{Pre-amp.(dB)}$

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : High(IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2400.40	3.66	27.80	35.37	54.70	45.16	H	50.79	41.25	74.0	54.0	-23.21	-12.75
2458.00	3.66	27.80	35.37	96.59	88.48	H	92.68	84.57				
2528.40	4.09	28.60	35.48	51.37	43.96	H	48.58	41.17	74.0	54.0	-25.42	-12.83
4924.00	5.68	32.60	35.64	43.30	32.87	H	45.94	35.51	74.0	54.0	-28.06	-18.49
5629.80	6.45	34.60	35.54	44.76	34.89	H	50.27	40.40	74.0	54.0	-23.73	-13.60
7386.60	7.27	36.30	35.84	43.96	33.06	H	51.69	40.79	74.0	54.0	-22.31	-13.21
9848.40	9.54	37.80	35.79	46.52	34.47	H	58.07	46.02	74.0	54.0	-15.93	-7.98
2399.50	3.66	27.80	35.37	60.17	52.43	V	56.26	48.52	74.0	54.0	-17.74	-5.48
2457.80	3.66	27.80	35.37	104.89	96.30	V	100.98	92.39				
2483.50	3.66	27.80	35.37	69.11	54.09	V	65.20	50.18	74.0	54.0	-8.80	-3.82
2528.30	4.09	28.60	35.48	61.10	53.87	V	58.31	51.08	74.0	54.0	-15.69	-2.92
2592.30	4.09	28.60	35.48	54.96	48.48	V	52.17	45.69	74.0	54.0	-21.83	-8.31
4922.40	5.68	32.60	35.64	44.30	33.57	V	46.94	36.21	74.0	54.0	-27.06	-17.79
5629.80	6.45	34.60	35.54	47.07	36.19	V	52.58	41.70	74.0	54.0	-21.42	-12.30
7385.60	7.27	36.30	35.84	43.98	33.50	V	51.71	41.23	74.0	54.0	-22.29	-12.77
9848.40	9.54	37.80	35.79	45.23	34.34	V	56.78	45.89	74.0	54.0	-17.22	-8.11

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Mid(IEEE802.11g,Turbo Mode) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2296.00	3.66	27.80	35.37	48.12	39.42	H	44.21	35.51	74.0	54.0	-29.79	-18.49
2335.90	3.66	27.80	35.37	57.80	50.17	H	53.89	46.26	74.0	54.0	-20.11	-7.74
2390.10	3.66	27.80	35.37	65.82	51.53	H	61.91	47.62	74.0	54.0	-12.09	-6.38
2427.90	3.66	27.80	35.37	100.00	83.26	H	96.09	79.35				
2483.50	3.66	27.80	35.37	61.80	48.64	H	57.89	44.73	74.0	54.0	-16.11	-9.27
2528.10	4.09	28.60	35.48	47.09	37.73	H	44.30	34.94	74.0	54.0	-29.70	-19.06
2529.40	4.09	28.60	35.48	52.80	46.40	H	50.01	43.61	74.0	54.0	-23.99	-10.39
4877.80	5.68	32.60	35.64	47.37	36.74	H	50.01	39.38	74.0	54.0	-23.99	-14.62
5607.20	6.45	34.60	35.54	46.88	37.94	H	52.39	43.45	74.0	54.0	-21.61	-10.55
7325.80	7.27	36.30	35.84	45.72	34.65	H	53.45	42.38	74.0	54.0	-20.55	-11.62
9741.90	9.54	37.80	35.79	44.84	33.80	H	56.39	45.35	74.0	54.0	-17.61	-8.65
2275.00	3.66	27.80	35.37	46.42	38.74	V	42.51	34.83	74.0	54.0	-31.49	-19.17
2390.10	3.66	27.80	35.37	54.80	49.30	V	50.89	45.39	74.0	54.0	-23.11	-8.61
2432.30	3.66	27.80	35.37	108.00	98.00	V	104.09	94.09				
2496.10	3.66	27.80	35.37	60.16	50.80	V	56.25	46.89	74.0	54.0	-17.75	-7.11
2528.10	4.09	28.60	35.48	57.75	51.61	V	54.96	48.82	74.0	54.0	-19.04	-5.18
2593.10	4.09	28.60	35.48	52.26	43.34	V	49.47	40.55	74.0	54.0	-24.53	-13.45
4875.90	5.68	32.60	35.64	52.04	43.04	V	54.68	45.68	74.0	54.0	-19.32	-8.32
5602.30	6.45	34.60	35.54	51.00	42.00	V	56.51	47.51	74.0	54.0	-17.49	-6.49
7310.20	7.27	36.30	35.84	53.00	41.32	V	60.73	49.05	74.0	54.0	-13.27	-4.95
9749.10	9.54	37.80	35.79	46.16	35.39	V	57.71	46.94	74.0	54.0	-16.29	-7.06

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.



- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) $\text{Emission(dBuV/m)} = \text{Reading(dBuV)} + \text{Cable loss(dB)} + \text{Ant.Fact.(dB/m)} - \text{Pre-amp.(dB)}$

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low(IEEE802.11a)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5471.20	2.15	33.90	35.53	51.09	42.22	H	51.61	42.74	78.2	71.2	-26.57	-28.41
5536.00	2.25	34.60	35.54	50.08	42.76	H	51.39	44.07	78.2	71.2	-26.79	-27.08
5725.00	2.25	34.60	35.54	67.34	54.78	H	68.65	56.09	78.2	71.2	-9.53	-15.06
5739.60	2.25	34.60	35.54	96.87	89.84	H	98.18	91.15				
11490.00	3.13	38.70	35.64	44.88	33.70	H	51.07	39.89	74.0	54.0	-22.93	-14.11
17235.20	4.01	41.50	35.13	47.26	37.14	H	57.64	47.52	78.2	71.2	-20.56	-23.68
5471.20	2.15	33.90	35.53	58.86	51.06	V	59.38	51.58	83.4	75.4	-24.06	-23.81
5536.00	2.25	34.60	35.54	57.42	50.15	V	58.73	51.46	83.4	75.4	-24.71	-23.93
5725.00	2.25	34.60	35.54	72.82	59.51	V	74.13	60.82	83.4	75.4	-9.31	-14.57
5745.00	2.25	34.60	35.54	102.13	94.08	V	103.44	95.39				
11490.00	3.13	38.70	35.64	45.00	34.00	V	51.19	40.19	74.0	54.0	-22.81	-13.81
17235.20	4.01	41.50	35.13	48.00	37.60	V	58.38	47.98	83.4	75.4	-25.02	-27.42

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	Mid(IEEE802.11a)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5536.60	2.25	34.60	35.54	51.27	42.47	H	52.58	43.78	79.4	71.3	-26.77	-27.56
5599.60	2.25	34.60	35.54	49.90	41.64	H	51.21	42.95	79.4	71.3	-28.14	-28.39
5781.40	2.25	34.60	35.54	98.04	90.03	H	99.35	91.34				
11570.00	3.17	39.10	35.73	44.17	33.01	H	50.71	39.55	74.0	54.0	-23.29	-14.45
17355.20	4.01	41.50	35.13	46.08	35.88	H	56.46	46.26	79.4	71.3	-22.94	-25.04
5471.00	2.15	33.90	35.53	57.30	48.70	V	57.82	49.22	82.7	74.5	-24.89	-25.25
5534.91	2.25	34.60	35.54	58.24	49.15	V	59.55	50.46	82.7	74.5	-23.16	-24.01
5788.65	2.25	34.60	35.54	101.40	93.16	V	102.71	94.47				
11570.00	3.17	39.10	35.73	45.17	34.01	V	51.71	40.55	74.0	54.0	-22.29	-13.45
17355.20	4.01	41.50	35.13	47.08	36.88	V	57.46	47.26	82.7	74.5	-25.24	-27.24

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	High(IEEE802.11a)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5535.00	2.25	34.60	35.54	51.89	43.60	H	53.20	44.91	79.2	71.9	-26.04	-27.00
5599.00	2.25	34.60	35.54	49.41	41.25	H	50.72	42.56	79.2	71.9	-28.52	-29.35
5805.00	2.25	34.60	35.54	97.93	90.60	H	99.24	91.91				
5850.00	2.25	34.60	35.54	65.88	53.72	H	67.19	55.03	79.2	71.9	-12.05	-16.88
11614.00	3.17	39.10	35.73	45.93	35.89	H	52.47	42.43	74.0	54.0	-21.53	-11.57
17419.00	4.01	41.50	35.13	47.37	37.05	H	57.75	47.43	79.2	71.9	-21.45	-24.47
5471.00	2.15	33.90	35.53	56.70	47.63	V	57.22	48.15	83.2	75.1	-26.01	-26.99
5535.00	2.25	34.60	35.54	59.44	50.53	V	60.75	51.84	83.2	75.1	-22.48	-23.30
5799.00	2.25	34.60	35.54	101.92	93.83	V	103.23	95.14				
5850.00	2.25	34.60	35.54	70.10	57.25	V	71.41	58.56	83.2	75.1	-11.82	-16.58
11614.00	3.17	39.10	35.73	45.20	35.60	V	51.74	42.14	74.0	54.0	-22.26	-11.86
17419.00	4.01	41.50	35.13	48.10	37.90	V	58.48	48.28	83.2	75.1	-24.72	-26.82

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(5.8GHz Band) Test Date : Mar. 07 2003
 Channel : Low(IEEE802.11a,Turbo Mode) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5471.00	2.15	33.90	35.53	51.32	41.55	H	51.84	42.07	75.6	68.0	-23.80	-25.93
5535.00	2.25	34.60	35.54	50.68	42.49	H	51.99	43.80	75.6	68.0	-23.65	-24.20
5725.00	2.25	34.60	35.54	66.53	55.35	H	67.84	56.66	75.6	68.0	-7.80	-11.34
5748.00	2.25	34.60	35.54	94.33	86.69	H	95.64	88.00				
11520.20	3.17	39.10	35.73	45.20	35.40	H	51.74	41.94	74.0	54.0	-22.26	-12.06
17280.20	4.01	41.50	35.13	47.00	36.60	H	57.38	46.98	75.6	68.0	-18.22	-21.02
5725.00	2.25	34.60	35.54	72.32	59.94	V	73.63	61.25	79.6	71.8	-5.93	-10.58
5472.00	2.15	33.90	35.53	58.98	50.29	V	59.50	50.81	79.6	71.8	-20.06	-21.02
5536.00	2.25	34.60	35.54	58.54	50.30	V	59.85	51.61	79.6	71.8	-19.71	-20.22
5600.00	2.25	34.60	35.54	55.95	49.23	V	57.26	50.54	79.6	71.8	-22.30	-21.29
5746.00	2.25	34.60	35.54	98.25	90.52	V	99.56	91.83				
11520.20	3.17	39.10	35.73	45.59	35.51	V	52.13	42.05	74.0	54.0	-21.87	-11.95
17280.20	4.01	41.50	35.13	47.58	36.88	V	57.96	47.26	79.6	71.8	-21.64	-24.54

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

Radiated Spurious Emission Measurement Result (Above 1GHz)

Operation Mode: TX Mode(5.8GHz Band) Test Date : Mar. 07 2003
 Channel : High(IEEE802.11a,Turbo Mode) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5599.00	2.25	34.60	35.54	51.29	43.15	H	52.60	44.46	76.8	69.6	-24.22	-25.13
5664.40	2.25	34.60	35.54	50.99	42.56	H	52.30	43.87	76.8	69.6	-24.52	-25.72
5790.40	2.25	34.60	35.54	95.51	88.28	H	96.82	89.59				
5850.00	2.25	34.60	35.54	54.51	46.50	H	55.82	47.81	76.8	69.6	-21.00	-21.78
11600.40	3.17	39.10	35.73	46.57	35.96	H	53.11	42.50	74.0	54.0	-20.89	-11.50
17400.00	4.01	41.50	35.13	47.75	37.44	H	58.13	47.82	76.8	69.6	-18.67	-21.78
5536.00	2.25	34.60	35.54	59.98	50.15	V	61.29	51.46	79.5	71.7	-18.16	-20.24
5663.00	2.25	34.60	35.54	54.95	47.61	V	56.26	48.92	79.5	71.7	-23.19	-22.78
5790.00	2.25	34.60	35.54	98.14	90.39	V	99.45	91.70				
5850.00	2.25	34.60	35.54	60.50	49.84	V	61.81	51.15	79.5	71.7	-17.64	-20.55
11600.00	3.17	39.10	35.73	45.32	34.72	V	51.86	41.26	74.0	54.0	-22.14	-12.74
17400.00	4.01	41.50	35.13	49.13	37.60	V	59.51	47.98	79.5	71.7	-19.99	-23.72

Remark :

- (1) Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
- (2) Datas of measurement within this frequency range shown “ - ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Emission.
- (4) Spectrum Peak Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.
Spectrum AV Setting 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.
- (5) Emission(dBuV/m)=Reading(dBuV)+Cable loss(dB)+Ant.Fact.(dB/m)-Pre-amp.(dB)

6. AC POWER LINE CONDUCTED EMISSION TEST

6.1 Standard Applicable

According to §15.207. frequency within 150KHz to 30MHz shall not exceed

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

6.2 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2000.
2. The EUT was plug-in the host Notebook via PCMCIA port. The host Notebook system was placed on the center of the back edge on the test table. The peripherals like printer, K/B, and mouse were placed on the side of the host Notebook system. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The keyboard was placed directly in the front of the Notebook, flushed with the front tabletop. The mouse was placed next to the Keyboard, flushed with the back of keyboard.
4. The spacing between the peripherals was 10 centimeters.
5. External I/O cables were draped along the edge of the test table and bundle when necessary.
6. The host Notebook system was connected with 110Vac/60Hz power source.

6.3 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

6.4 Measurement Equipment Used:

Conducted Emission Test Site # 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESHS30	828144/003	08/08/2002	08/07/2003
LISN	R&S	ESH2-Z5	843285/010	10/17/2002	10/16/2003
LISN	EMCO	3825/2	9003-1628	07/26/2002	07/25/2003
Spectrum Analyzer	ADVANTEST	R3261A	91720031	N/A	N/A
2X2 WIRE ISN	R&S	ENY22	100020	06/20/2002	06/19/2003
FOUR WIRE ISN	R&S	ENY41	100006	06/20/2002	06/19/2003

6.5 Measurement Result

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Operation Mode: TX + RX Mode
 Temperature : 21
 Humidity : 56%

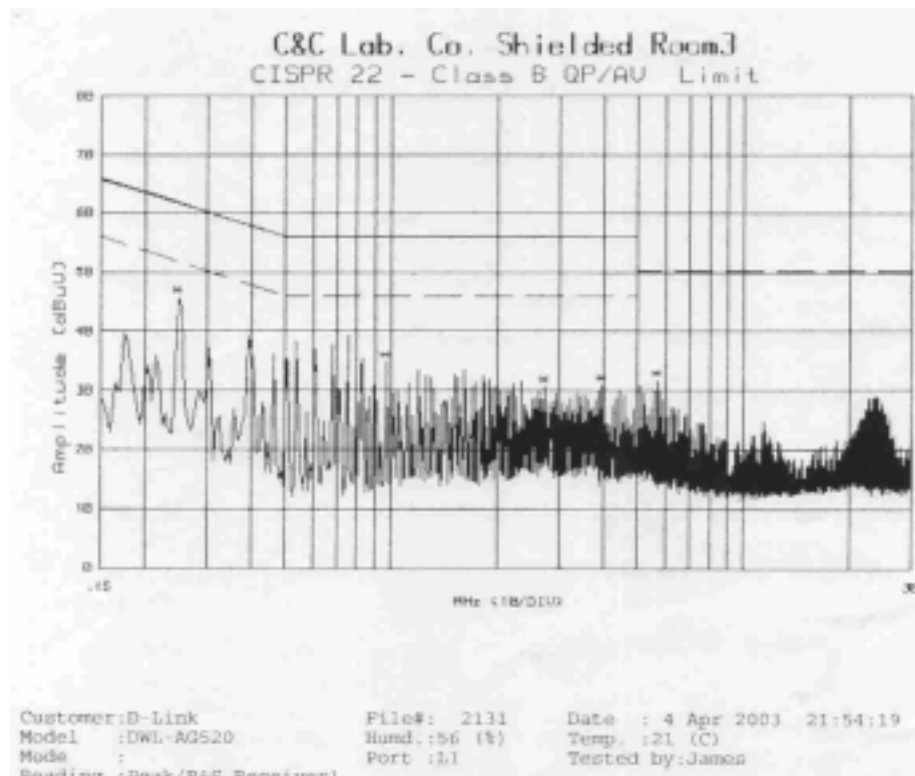
Test Date : Mar. 06 2003
 Test By: James

FREQ MHz	Q.P. Raw dBuV	AVG Raw dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.25088	45.00	42.10	61.80	51.80	-16.80	-9.70	L1
0.97241	34.10	32.00	56.00	46.00	-21.90	-14.00	L1
2.7399	28.90	25.10	56.00	46.00	-27.10	-20.90	L1
3.96183	30.30	26.00	60.00	50.00	-29.70	-24.00	L1
5.68933	30.20	28.40	60.00	50.00	-29.80	-21.60	L1
23.97816	27.60	27.10	60.00	50.00	-32.40	-22.90	L1
0.25164	44.10	41.50	61.80	51.80	-17.70	-10.30	L2
0.97126	33.50	31.90	56.00	46.00	-22.50	-14.10	L2
5.07998	32.50	30.60	56.00	46.00	-23.50	-15.40	L2
5.68903	31.20	29.60	60.00	50.00	-28.80	-20.40	L2
23.57191	31.30	30.50	60.00	50.00	-28.70	-19.50	L2
23.97742	31.20	30.70	60.00	50.00	-28.80	-19.30	L2

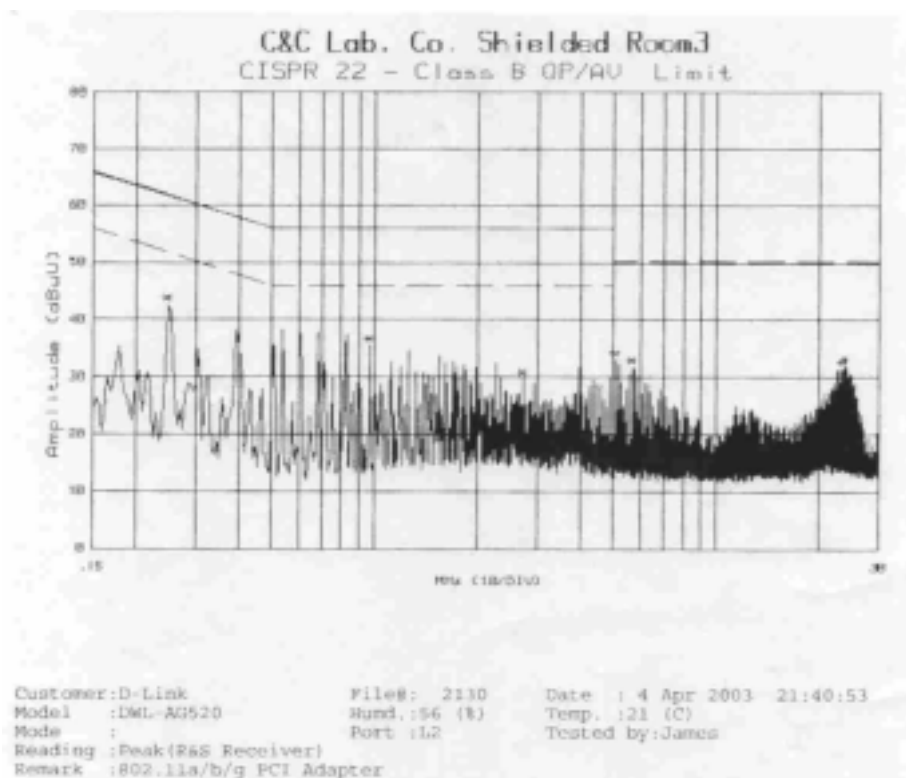
Remark :

- (1) Measuring frequencies from 0.15 MHz to 30MHz.
- (2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-Peak detector and Average detector.
- (3) “---” denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.
- (4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz;
The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;
- (5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

Conducted Emission Test Data L1



Conducted Emission Test Data L2



7. 6 dB Bandwidth Measurement

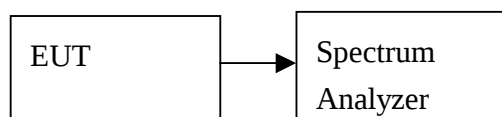
7.1 Standard Applicable

According to §15.247(a)(2), DSSS Systems operating in the 2400MHz-2483.5 MHz and 5725MHz – 5850MHz bands. The Minimum 6dB bandwidth shall be at least 500KHz.

7.2 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	Model No.	Serial No.	LAST CAL.	Cal. Due.
Spectrum Analyzer	Advantest	R3182	110600647	11/16/2002	11/15/2003
Spectrum Analyzer	R&S	FSP30	1093.4495.30	07/23/2002	07/22/2003

7.3 Test Set-up:



The EUT was connected to a spectrum analyzer through a 50 Ω RF cable.

7.4 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100KHz, VBW = RBW, Span= Applicable Span, Sweep=auto
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat above procedures until all frequency measured were complete.

7.5 Measurement Result

(A-antenna port)

2.4 GHz Band, IEEE802.11b Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	2412	11080	500	PASS
Mid	2437	11760	500	PASS
High	2462	11960	500	PASS

2.4 GHz Band, IEEE802.11g Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	2412	16440	500	PASS
Mid	2437	16400	500	PASS
High	2462	16520	500	PASS

2.4 GHz Band, IEEE802.11g Turbo Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Middle	2437	32800	500	PASS

5.8 GHz Band, IEEE802.11a Normal Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	5745	16440	500	PASS
Middle	5785	16480	500	PASS
High	5825	16440	500	PASS

5.8 GHz Band, IEEE802.11a Turbo Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	5760	33200	500	PASS
High	5800	33200	500	PASS

(B-antenna port)**2.4 GHz Band, IEEE802.11b Mode**

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	2412	11400	500	PASS
Middle	2437	9760	500	PASS
High	2462	10160	500	PASS

2.4 GHz Band, IEEE802.11g Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	2412	16520	500	PASS
Middle	2437	16480	500	PASS
High	2462	16480	500	PASS

2.4 GHz Band, IEEE802.11g Turbo Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Middle	2437	32720	500	PASS

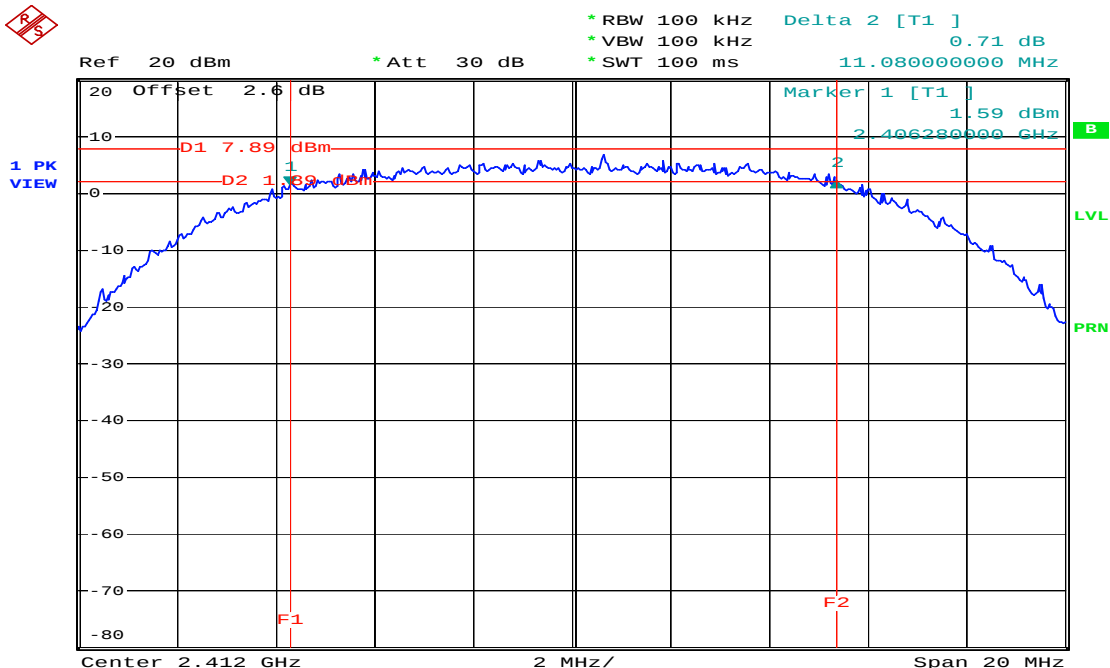
5.8 GHz Band, IEEE802.11a Normal Mode

Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	5745	16400	500	PASS
Middle	5785	16440	500	PASS
High	5825	16400	500	PASS

5.8 GHz Band, IEEE802.11a Turbo Mode

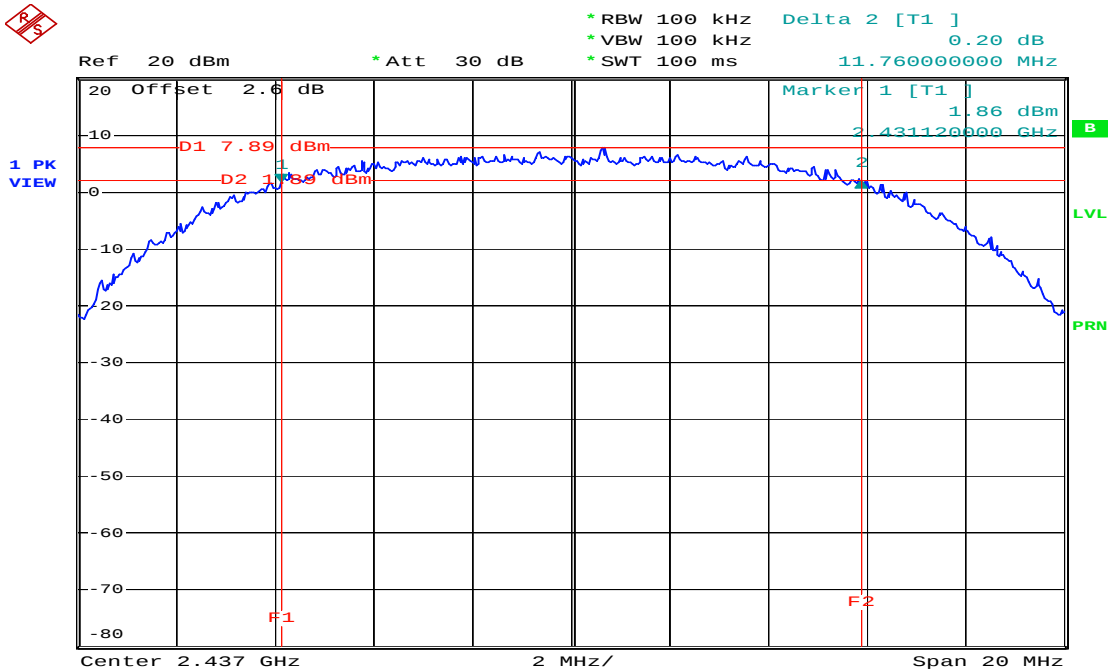
Channel	Frequency (MHz)	6dB Down BW (kHz)	Minimum Limit (kHz)	Result
Low	5760	32280	500	PASS
High	5800	32280	500	PASS

(A-antenna port)
2.4GHz Band, IEEE802.11b Mode
6dB Band Width Test Data CH-Low



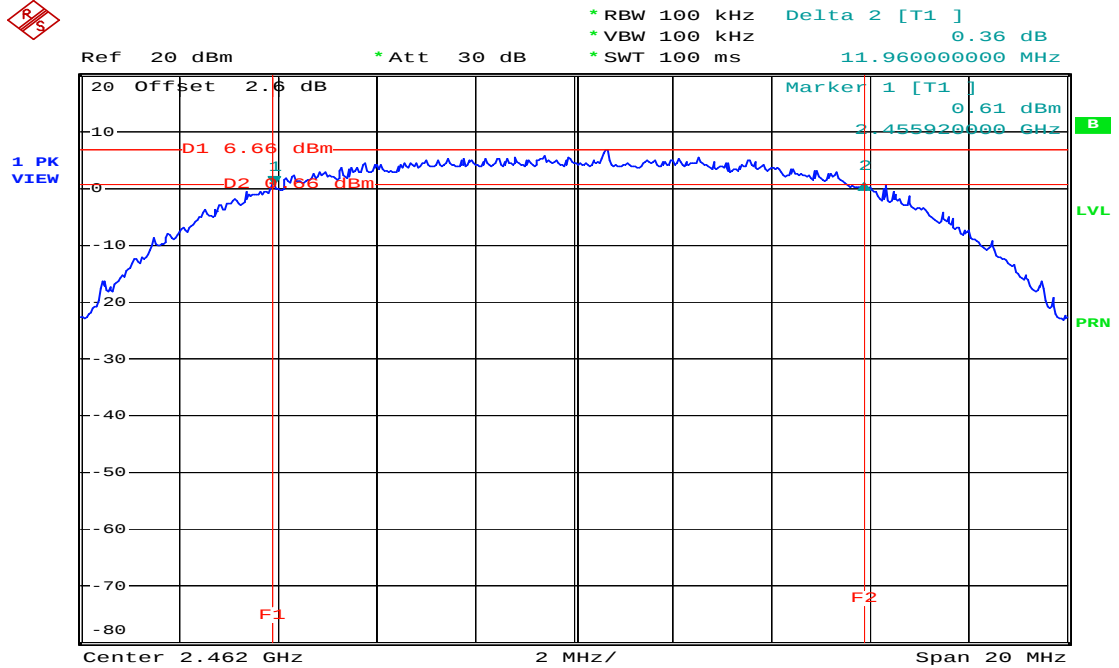
Date: 3.APR.2003 16:41:19

6dB Band Width Test Data CH-Mid



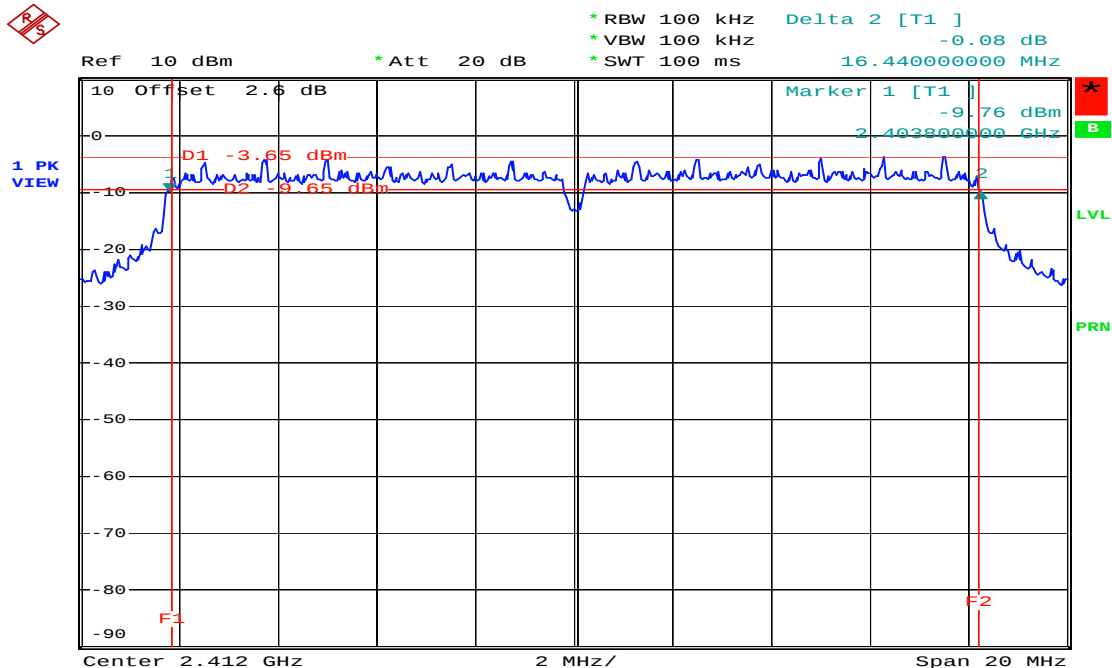
Date: 3.APR.2003 16:40:06

6dB Band Width Test Data CH-High



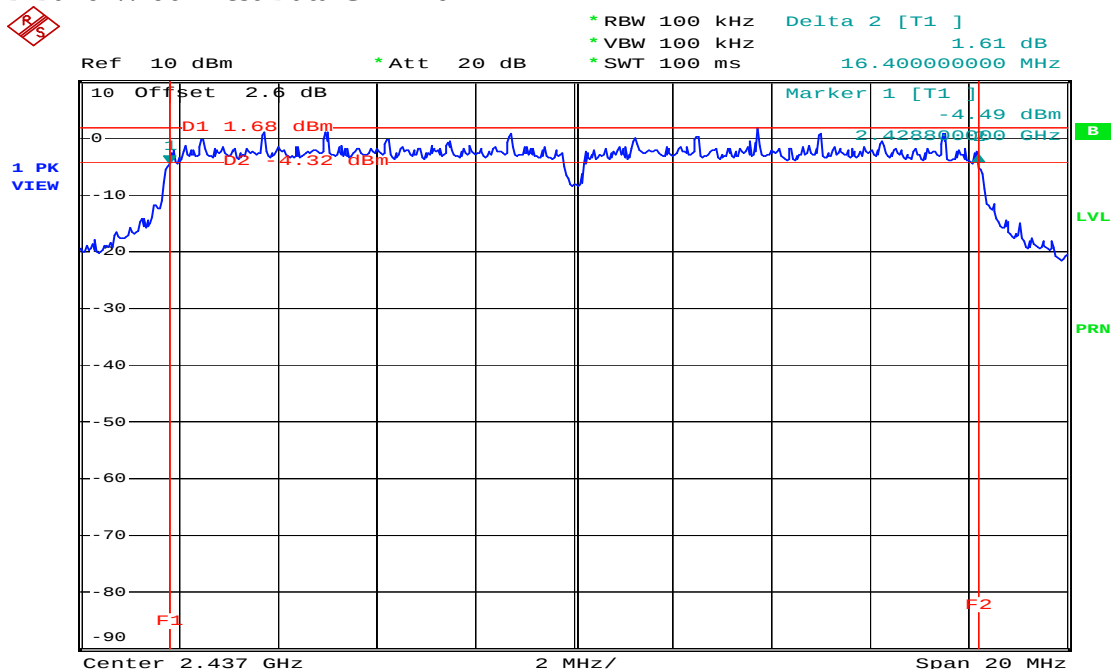
Date: 3.APR.2003 16:37:24

2.4GHz Band, IEEE802.11g Mode 6dB Band Width Test Data CH-Low



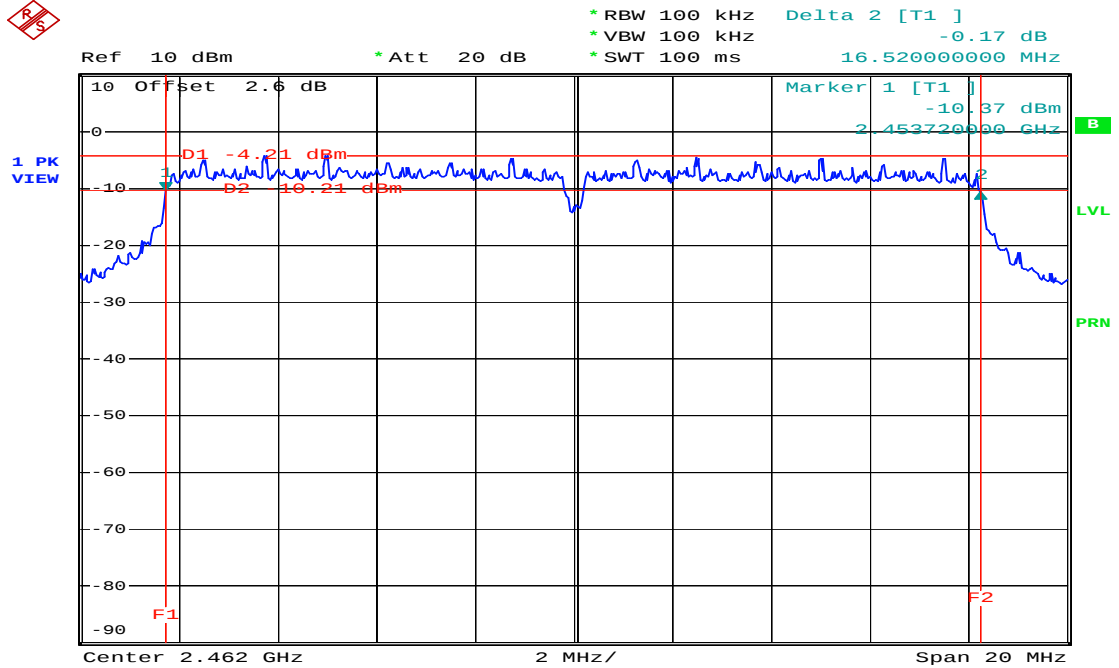
Date: 3.APR.2003 14:14:10

6dB Band Width Test Data CH-Mid



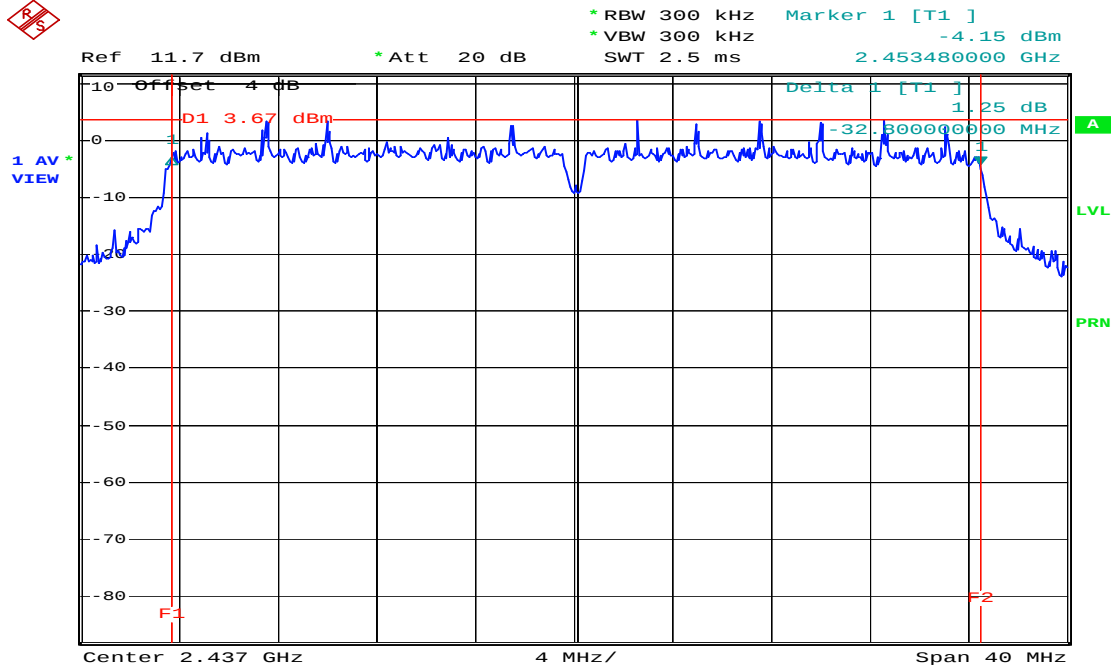
Date: 3.APR.2003 14:23:29

6dB Band Width Test Data CH-High



Date: 3.APR.2003 14:19:57

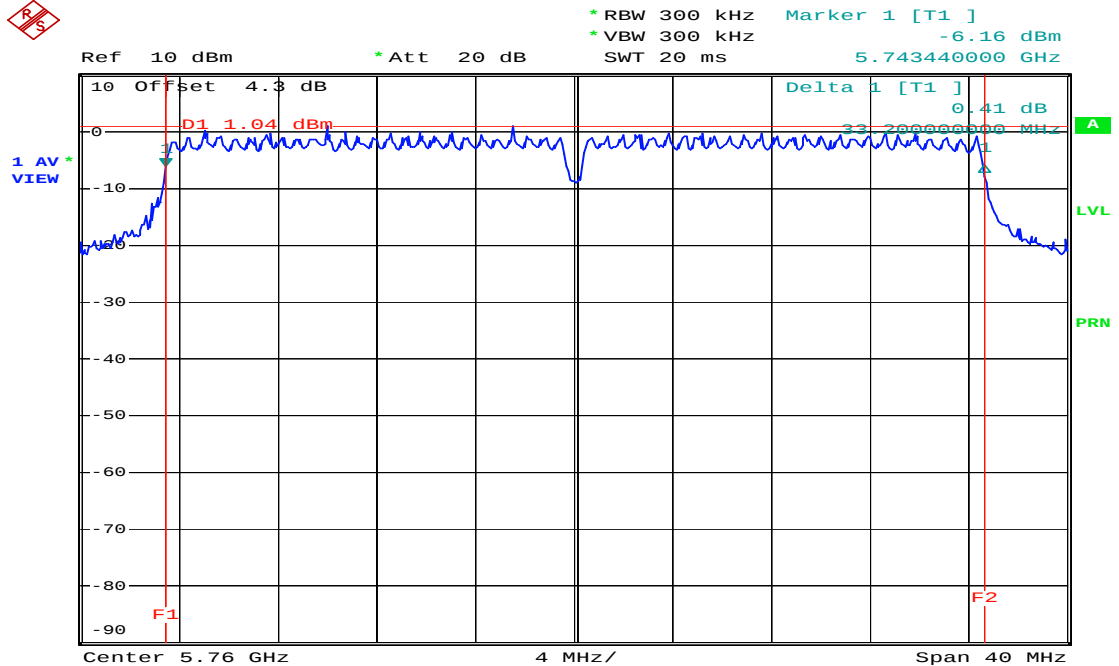
2.4GHz Band, IEEE802.11g Turbo Mode 6dB Band Width Test Data CH-Mid



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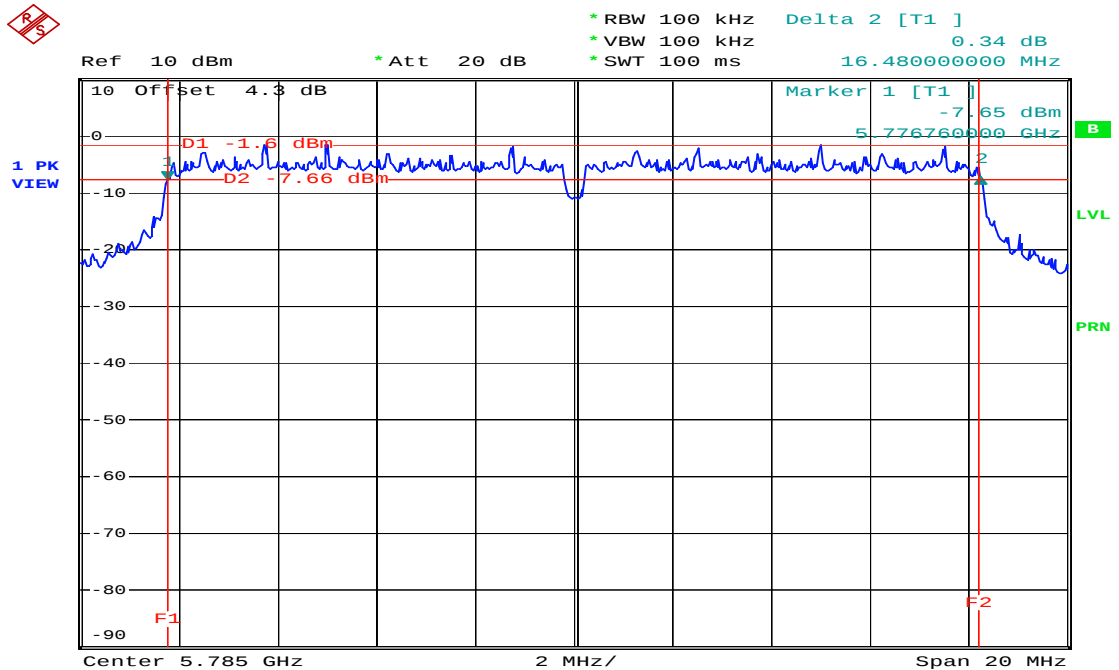
5.8GHz Band, IEEE802.11a Mode

6dB Band Width Test Data CH-Low



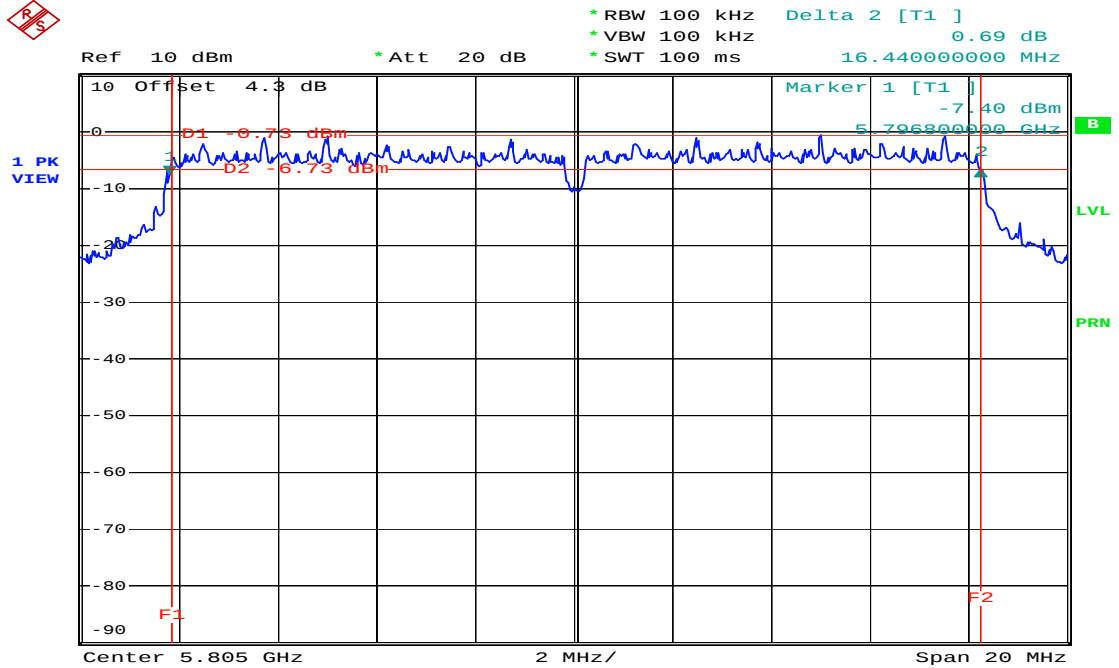
Date: 15.APR.2003 21:00:26

6dB Band Width Test Data CH-Mid

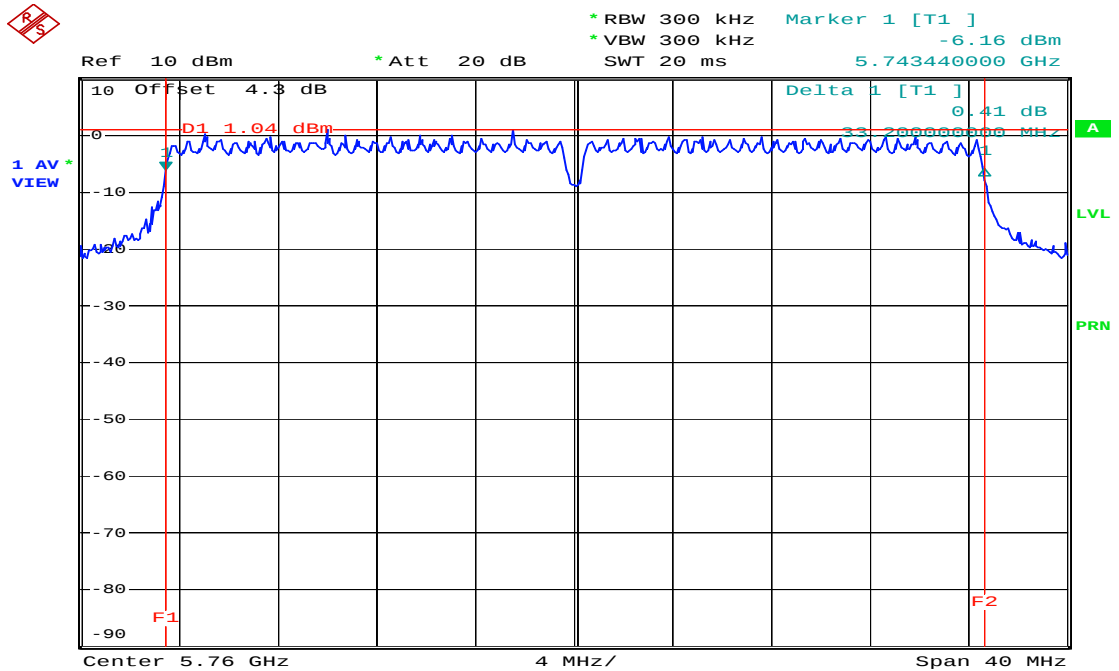


Date: 3.APR.2003 17:36:00

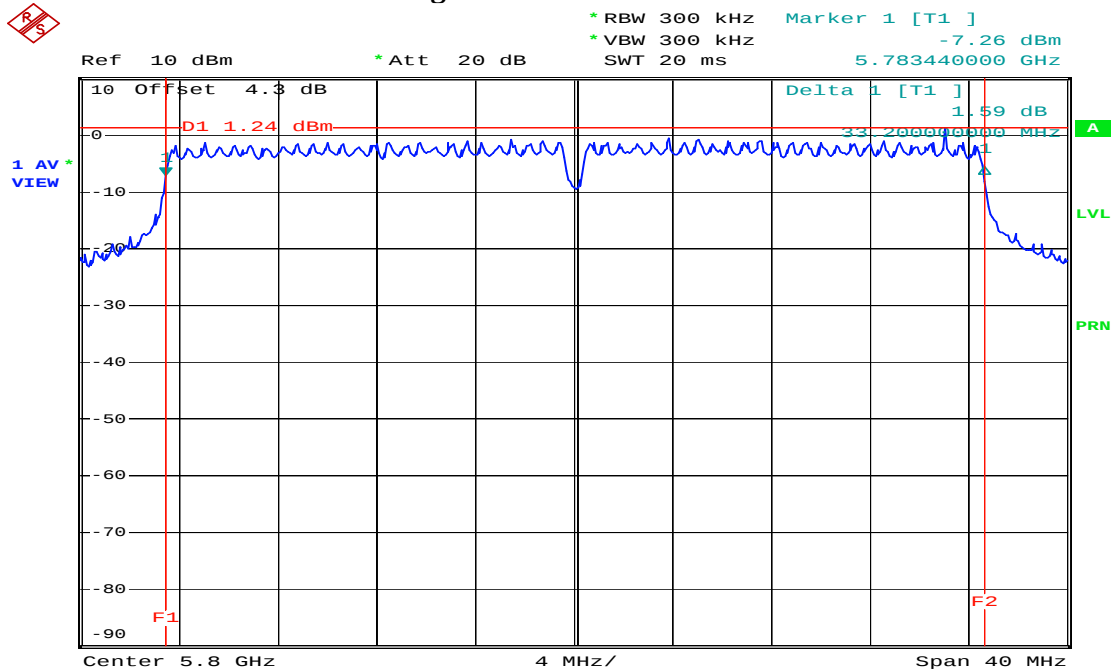
6dB Band Width Test Data CH-High



Date: 3.APR.2003 17:37:08

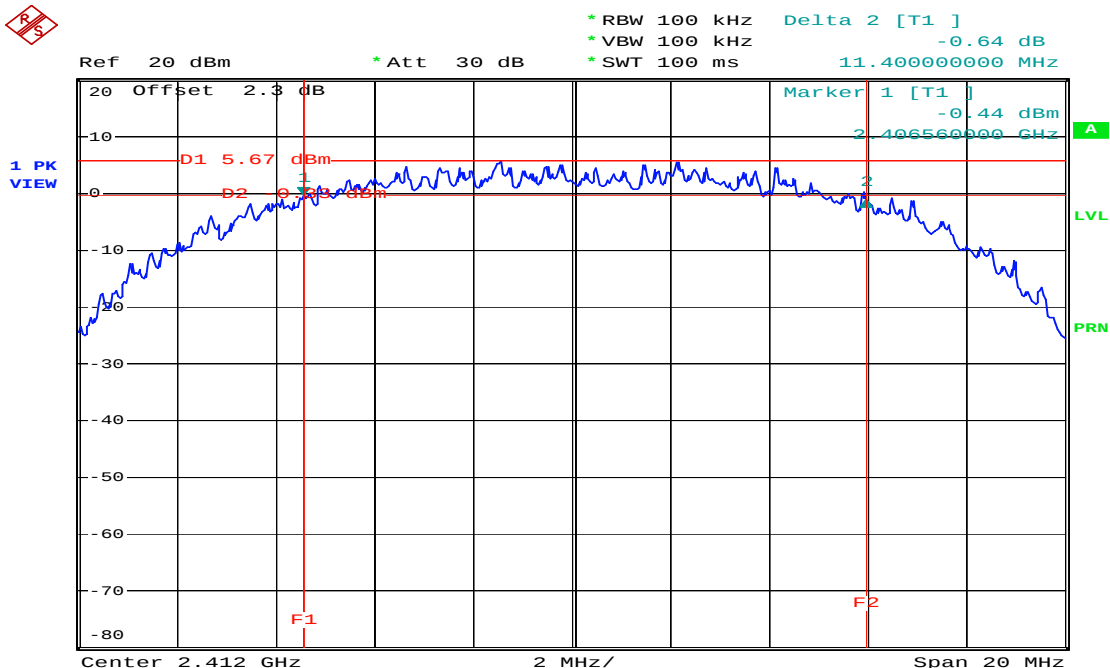
**5.8GHz Band, IEEE802.11a Turbo Mode
6dB Band Width Test Data CH-Low**

Date: 15.APR.2003 21:00:26

6dB Band Width Test Data CH-High

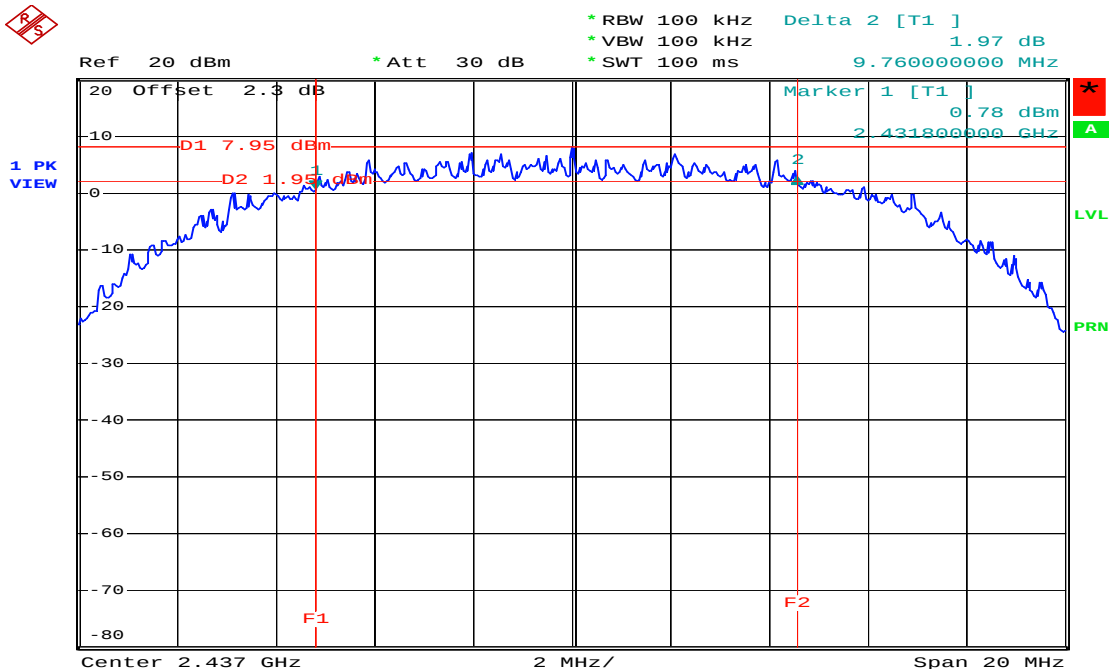
Date: 15.APR.2003 21:05:05

(B-antenna port)
2.4GHz Band, IEEE802.11b Mode
6dB Band Width Test Data CH-Low



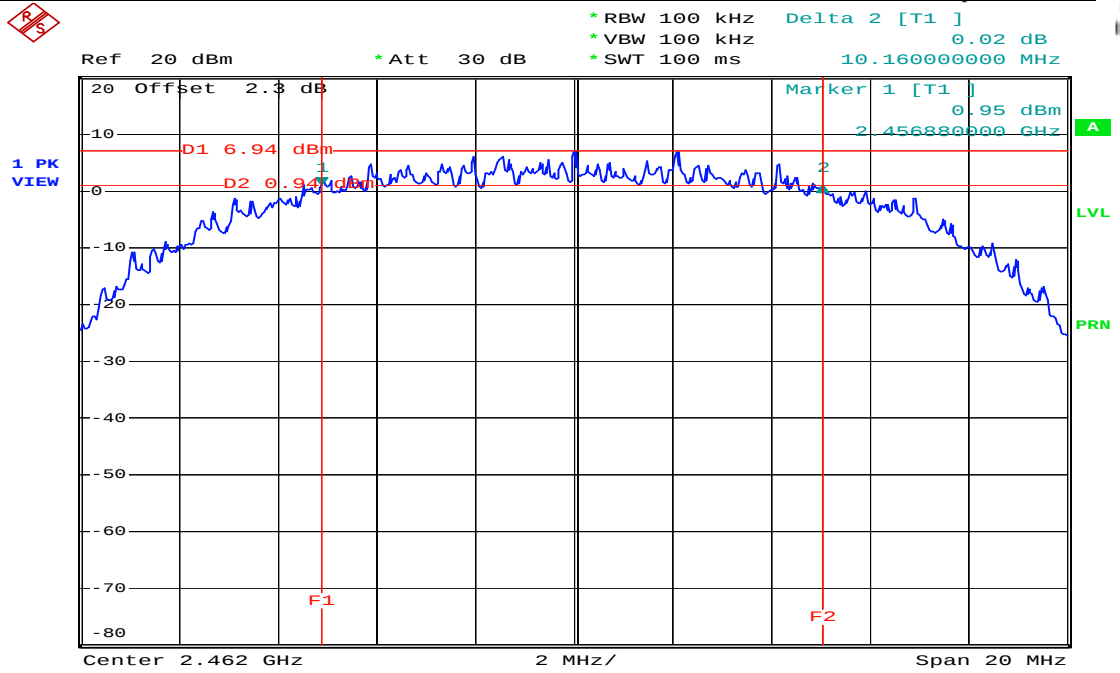
Date: 4.APR.2003 01:00:35

6dB Band Width Test Data CH-Mid



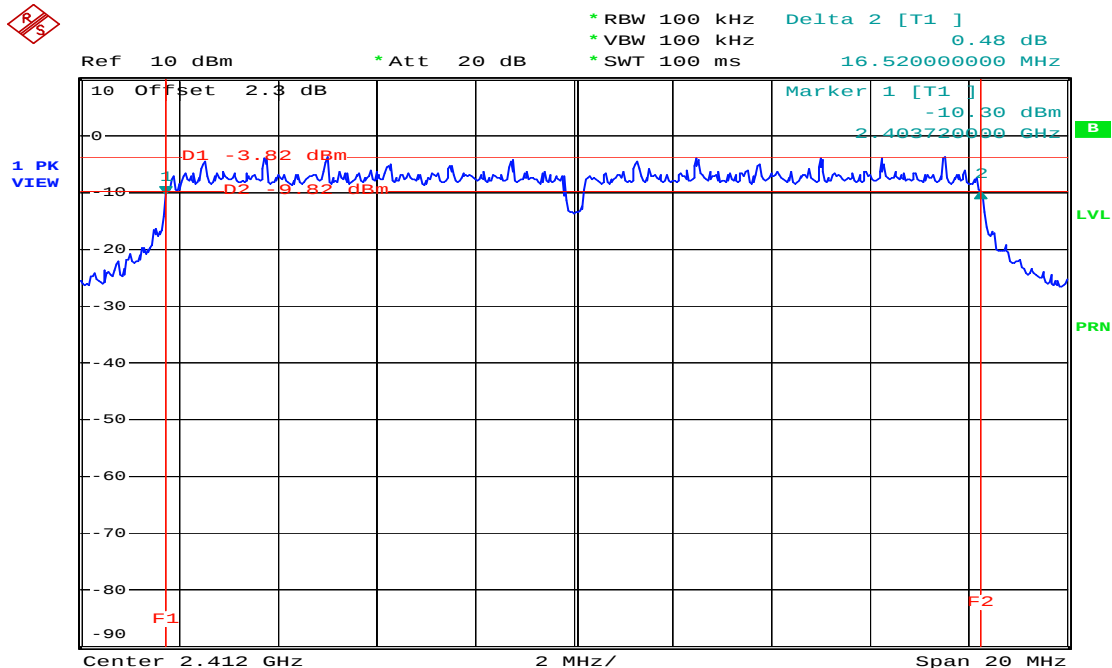
Date: 4.APR.2003 01:28:13

6dB Band Width Test Data CH-High



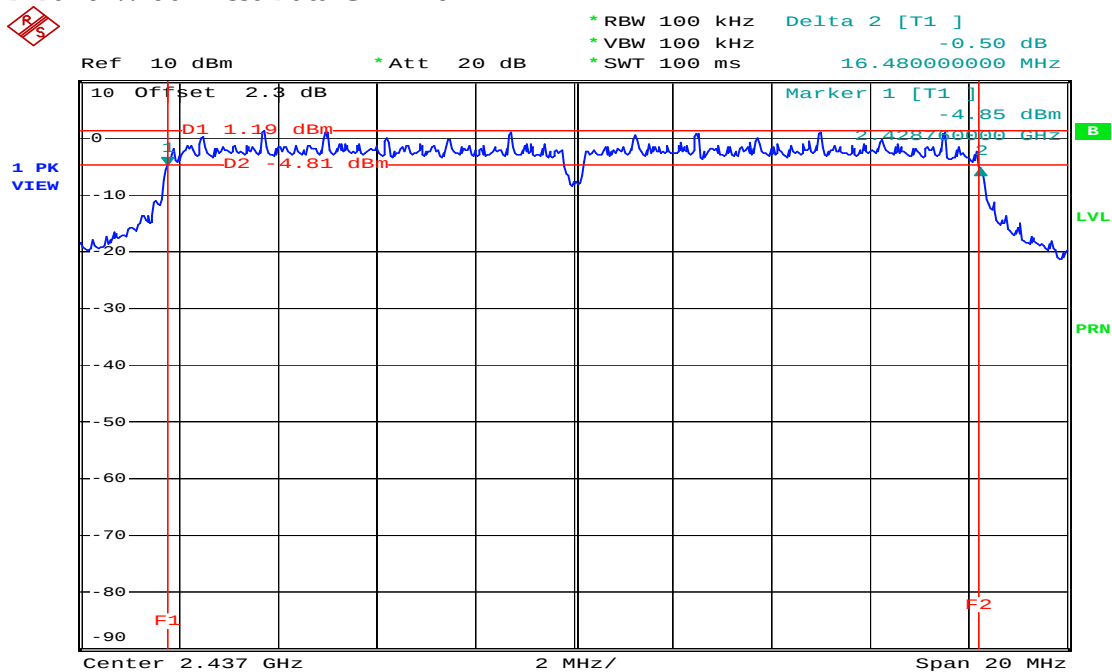
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2.4GHz Band, IEEE802.11g Mode 6dB Band Width Test Data CH-Low



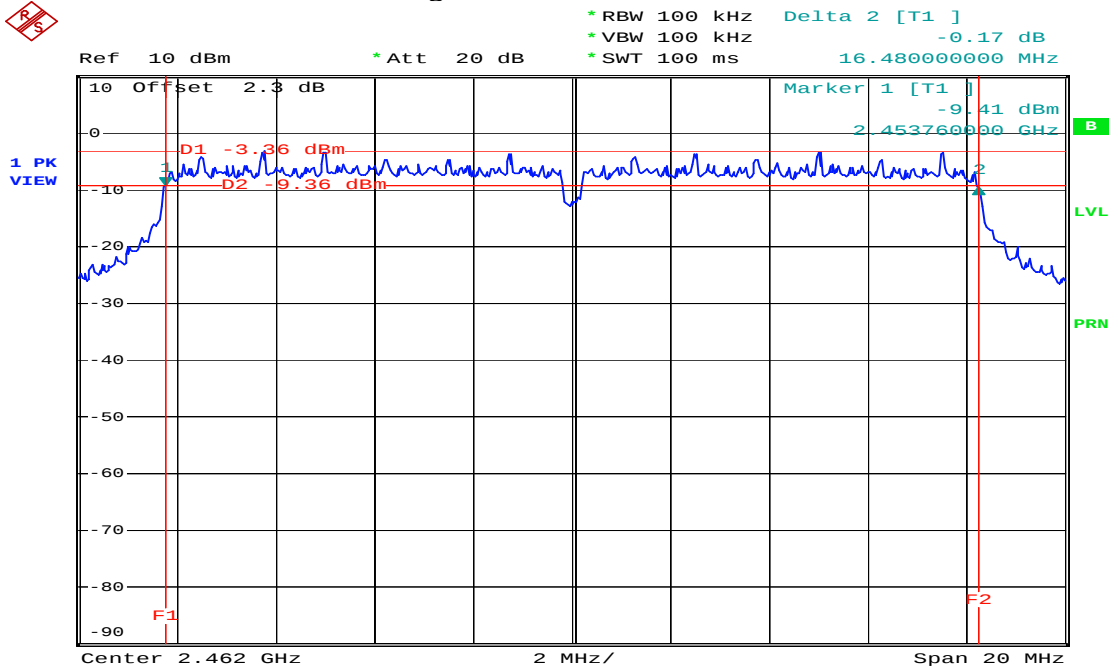
Date: 3.APR.2003 13:29:55

6dB Band Width Test Data CH-Mid



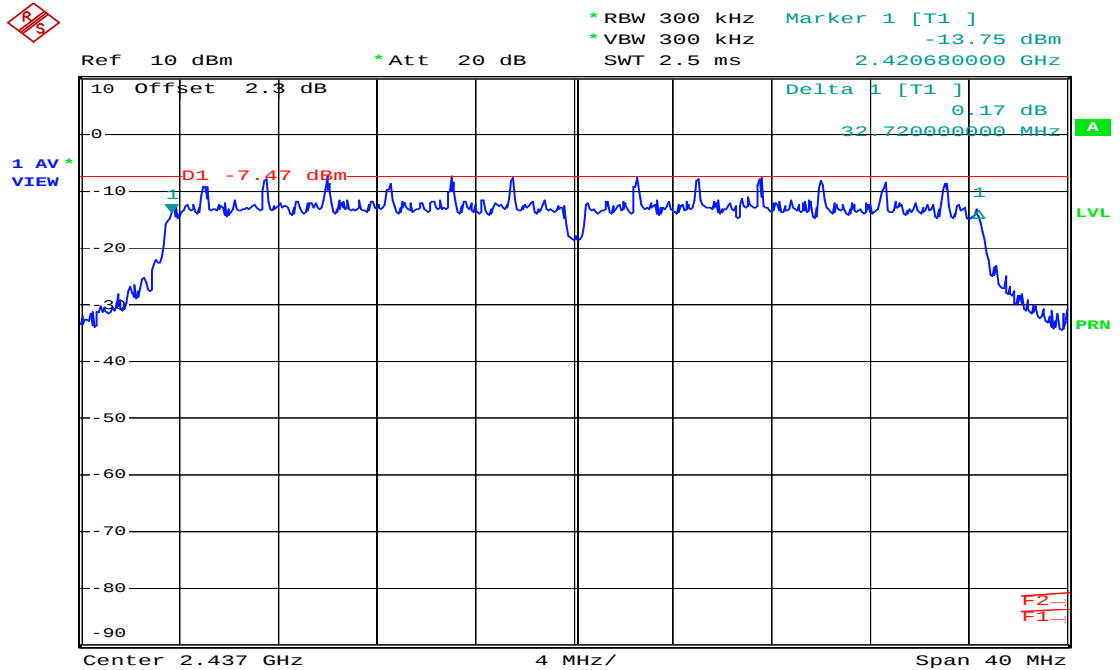
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6dB Band Width Test Data CH-High

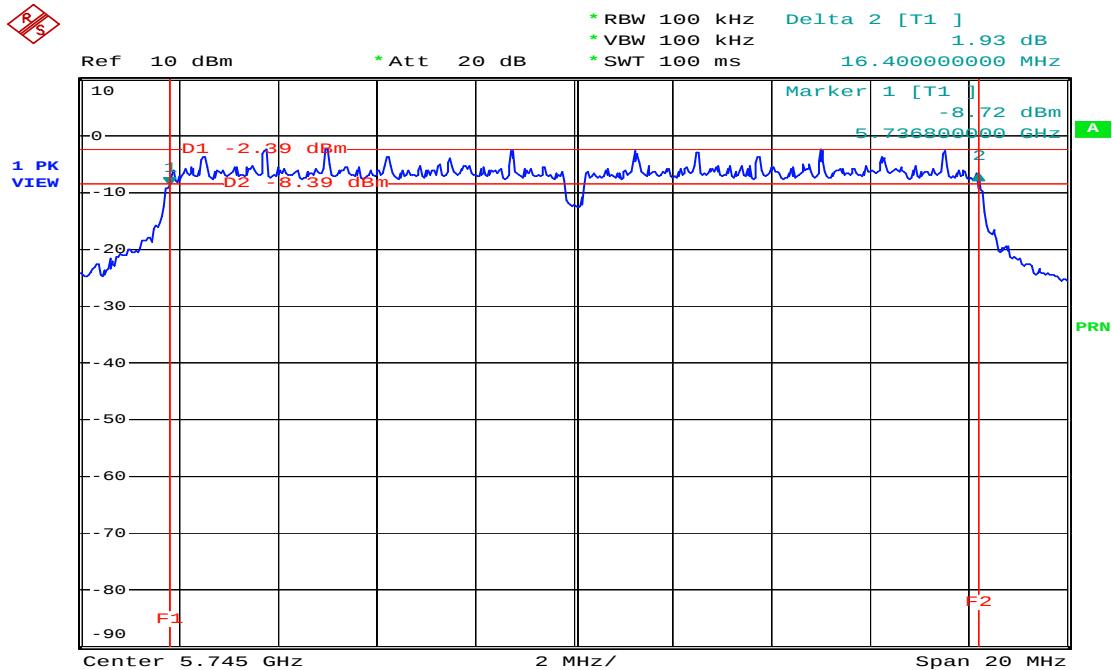


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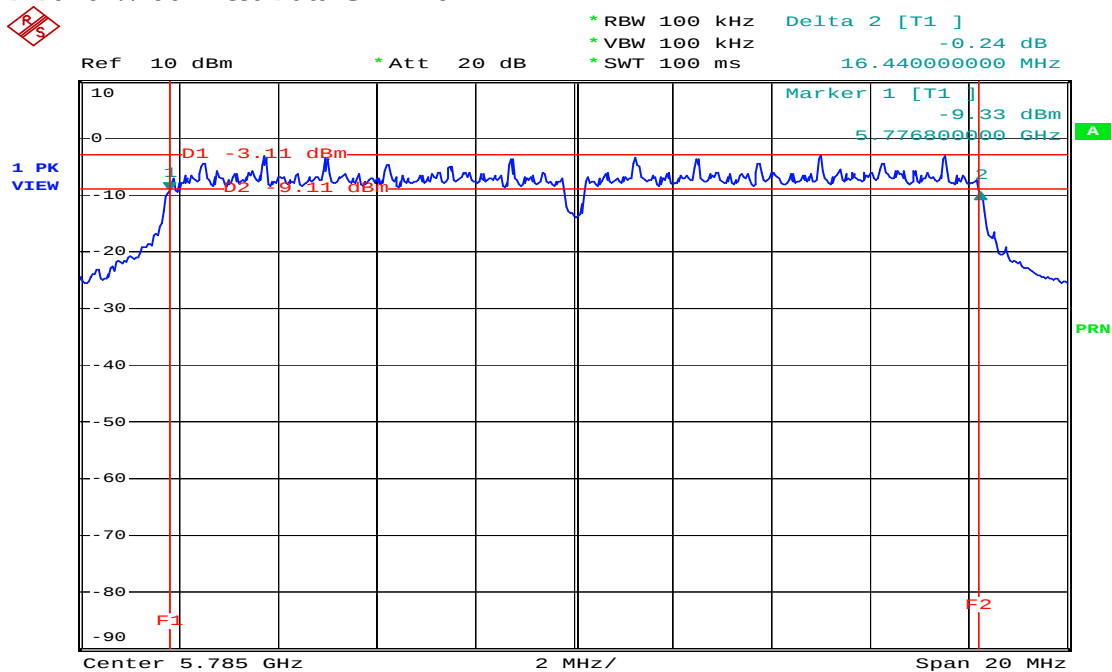
2.4GHz Band, IEEE802.11g Turbo Mode 6dB Band Width Test Data CH-Mid



Date: 15.APR.2003 21:31:22

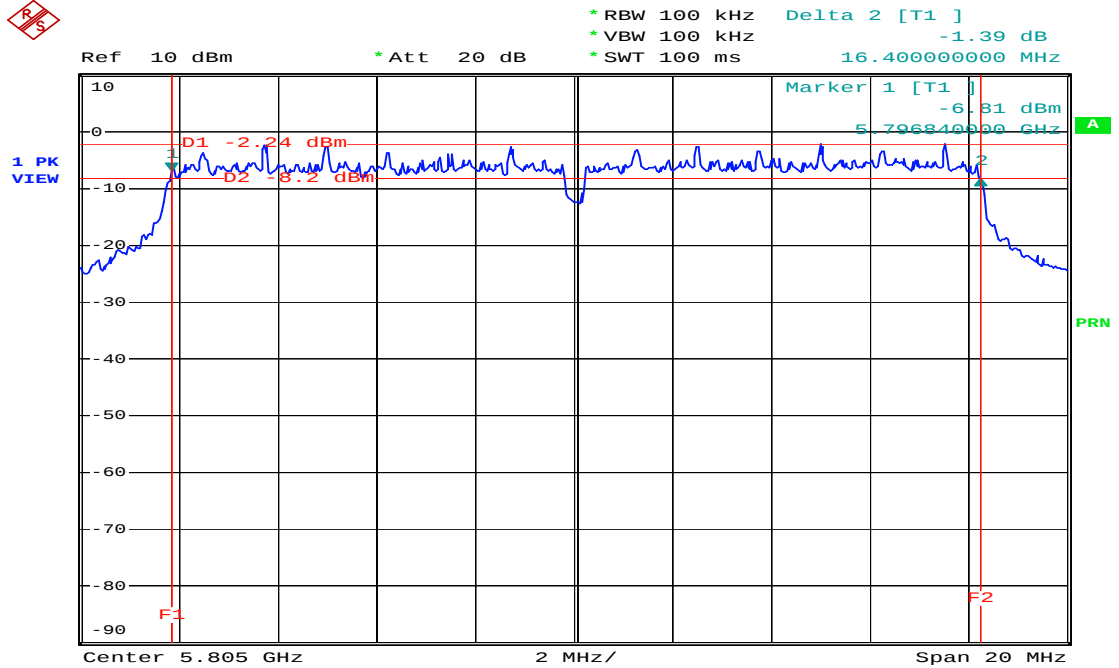
**5.8GHz Band, IEEE802.11a Mode
6dB Band Width Test Data CH-Low**

Date: 4.APR.2003 00:02:55

6dB Band Width Test Data CH-Mid

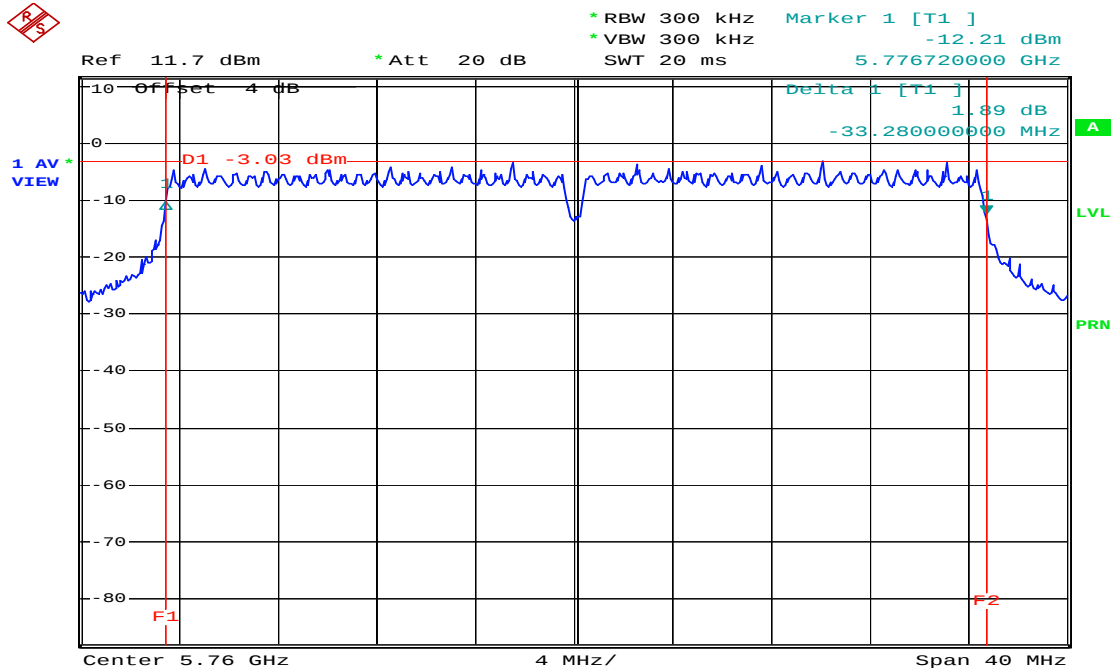
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6dB Band Width Test Data CH-High



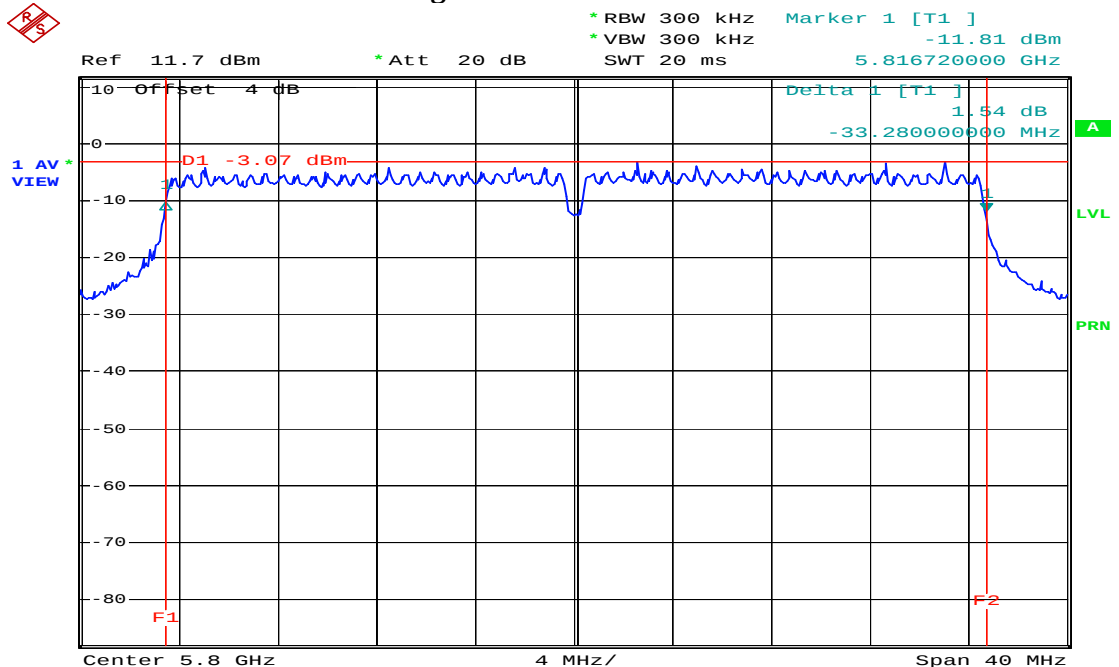
Date: 4.APR.2003 00:05:08

5.8GHz Band, IEEE802.11a Turbo Mode 6dB Band Width Test Data CH-Low



Date: 16.APR.2003 02:40:43

6dB Band Width Test Data CH-High



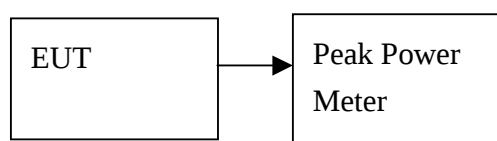
Date: 16.APR.2003 02:42:50

8. PEAK OUTPUT POWER MEASUREMENT

8.1 Standard Applicable

According to §15.247(b)(2), for direct sequence systems, the maximum peak output power of the intentional radiator shall not exceed 1 Watt.

8.2 Test Setup



The EUT was connected to a power meter through a 50 Ω RF cable.

8.3 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter or spectrum. (Channel power function, RBW, VBW = 1MHz,Bandwidth=26dB occupied Bandwidth)
3. Record the max. reading.
4. Repeat above procedures until all frequency measured were complete.

8.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	Model No.	Serial No.	LAST CAL.	Cal. Due.
Power meter	BOONTON	4531	130601	1/03/2003	1/02/2004
Peak Power Sensor	BOONTON	56218	2240	1/03/2003	1/02/2004

8.5 Test Results:**(A-antenna port)****2.4 GHz Band, IEEE802.11b Mode**

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	2412	15.84	2.5	18.34	30	-11.66
Mid	2437	16.09	2.6	18.69	30	-11.31
High	2462	17.91	2.7	20.61	30	-9.39

2.4 GHz Band, IEEE802.11g Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	2412	14.78	2.5	17.28	30	-12.72
Mid	2437	14.91	2.6	17.51	30	-12.49
High	2462	14.93	2.7	17.63	30	-12.37

2.4 GHz Band, IEEE802.11g TURBO Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Mid	2437	15.42	2.6	18.02	30	-11.98

5.8 GHz Band, IEEE802.11a Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	5745	14.36	4.2	18.56	30	-11.44
Mid	5785	14.43	4.3	18.73	30	-11.27
High	5825	14.42	4.5	18.92	30	-11.08

5.8 GHz Band, IEEE802.11a Turbo Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	5760	16.14	4.2	20.34	30	-9.66
High	5800	16.11	4.5	20.61	30	-9.39

(B-antenna port)**2.4 GHz Band, IEEE802.11b Mode**

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	2412	17.81	2.5	20.31	30	-9.69
Mid	2437	18.01	2.6	20.61	30	-9.39
High	2462	17.61	2.7	20.31	30	-9.69

2.4 GHz Band, IEEE802.11g Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	2412	14.65	2.5	17.15	30	-12.85
Mid	2437	14.66	2.6	17.26	30	-12.74
High	2462	14.63	2.7	17.33	30	-12.67

2.4 GHz Band, IEEE802.11g TURBO Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Mid	2437	15.66	2.6	18.26	30	-11.74

5.8 GHz Band, IEEE802.11a Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	5745	14.94	4.2	19.14	30	-10.86
Mid	5785	14.91	4.3	19.21	30	-10.79
High	5825	14.72	4.5	19.22	30	-10.78

5.8 GHz Band, IEEE802.11a Turbo Mode

Channel	Frequency (MHz)	Power (dBm)	Cable loss (dB)	Power (dBm)	Limit (dBm)	Margin (dBm)
Low	5745	15.91	4.2	20.11	30	-9.89
High	5825	15.66	4.5	20.16	30	-9.84

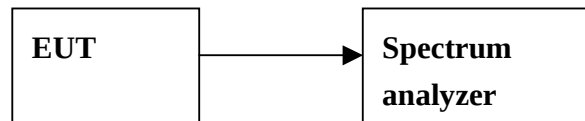
9. 100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

9.1 Standard Applicable

According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

9.2 Test Setup

1. Conducted test



The EUT was connected to the spectrum analyzer through a 50Ω RF cable.

2. Radiation test

The EUT is placed on the wooden table. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4/2000.

9.3 Measurement Procedure

1. Conducted test:

The transmitter output is connected to the spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 100 kHz. The sweep time is coupled.

2. Radiation test

For measurements above 1 GHz, the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

9.4 Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	ADVANTEST	R3261A	N/A	03/18/2003	03/17/2004
Spectrum Analyzer	Advantest	R3182	110600647	11/16/2002	11/15/2003
Spectrum Analyzer	ROHDE & SCHWARZ	FSP30	100112	06/29/2002	06/28/2003
EMI Test Receiver	R&S	ESVS20	838804/004	01/04/2003	01/03/2004
Pre-Amplifier	HP	8447D	2944A09173	03/03/2003	03/02/2004
Bi-log Antenna	SCHWAZBECK	VULB9163	145	07/06/2002	07/05/2003
Turn Table	EMCO	2081-1.21	9709-1885	N.C.R	N.C.R
Antenna Tower	EMCO	2075-2	9707-2060	N.C.R	N.C.R
Controller	EMCO	2090	9709-1256	N.C.R	N.C.R
RF Switch	ANRITSU	MP59B	M53867	N.C.R	N.C.R
Site NSA	C&C	N/A	N/A	11/17/2002	11/16/2003
Horn antenna	Schwarzbeck	BBHA 9120	D210	2/23/2003	2/22/2004
Horn antenna	EMCO	3116	2487	11/11/2002	11/10/2003
Pre-Amplifier	HP	8449B	3008B00965	10/01/2002	10/02/2003

9.5 Measurement Result

Refer to attach spectrum analyzer data chart.

SMT (A-antenna)**2.4 GHz Band, IEEE802.11b Mode****1. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
2336.16	62.96	113.48	50.52	20	-30.52
2390.00	64.11	113.48	49.37	20	-29.37
2483.50	65.21	113.04	47.83	20	-27.83
2528.00	64.85	113.04	48.19	20	-28.19

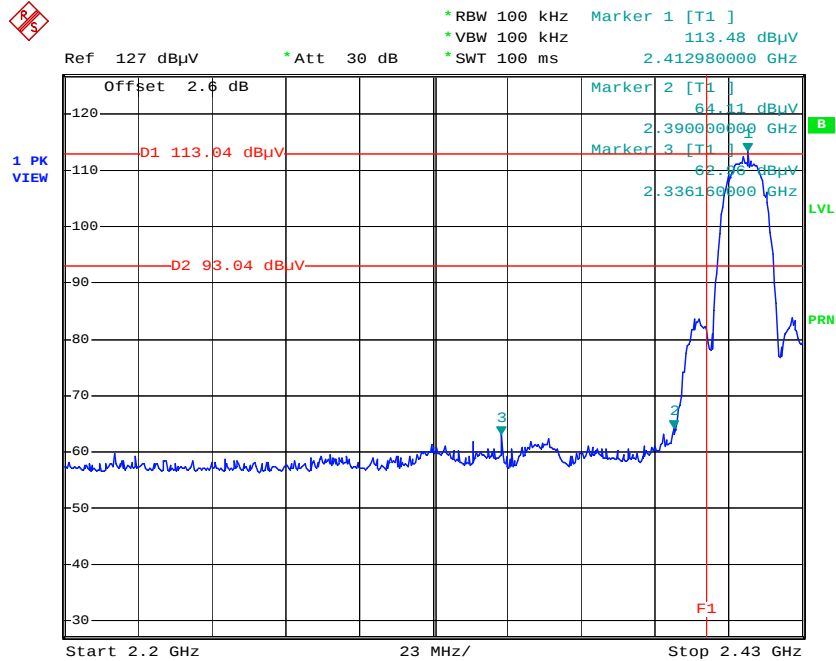
2. Radiation test:

Operation Mode:	TX Mode(2.4GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low & High (IEEE802.11b)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2347.60	3.66	27.80	35.37	59.95	52.84	H	56.04	48.93	74.0	54.0	-17.96	-5.07
2390.00	3.66	27.80	35.37	64.03	55.90	H	60.12	51.99	74.0	54.0	-13.88	-2.01
2398.50	3.66	27.80	35.37	62.29	54.55	H	58.38	50.64	74.0	54.0	-15.62	-3.36
2476.00	3.66	27.80	35.37	58.55	51.15	H	54.64	47.24	74.0	54.0	-19.36	-6.76
2483.50	3.66	27.80	35.37	64.40	55.00	H	60.49	51.09	74.0	54.0	-13.51	-2.91
2486.90	3.66	27.80	35.37	66.31	56.76	H	62.40	52.85	74.0	54.0	-11.60	-1.15
2349.20	3.66	27.80	35.37	49.87	40.91	V	45.96	37.00	74.0	54.0	-28.04	-17.00
2390.00	3.66	27.80	35.37	52.88	44.50	V	48.97	40.59	74.0	54.0	-25.03	-13.41
2483.50	3.66	27.80	35.37	53.46	44.02	V	49.55	40.11	74.0	54.0	-24.45	-13.89
2487.50	3.66	27.80	35.37	52.84	45.35	V	48.93	41.44	74.0	54.0	-25.07	-12.56

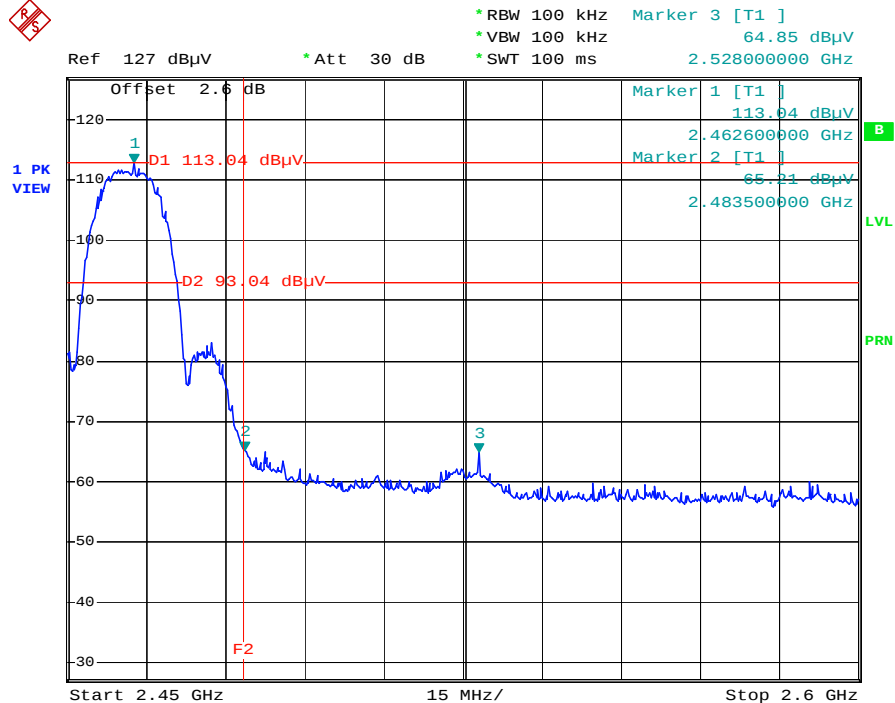
2.4GHz Band, IEEE802.11b Mode

Out of Band Conducted Test Data CH-Low



Date: 3.APR.2003 18:07:08

Out of Band Conducted Test Data CH-High



Date: 3.APR.2003 18:06:02

2.4 GHz Band, IEEE802.11G Mode**1. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
2309.60	57.7	102.52	45.02	20	-25.02
2336.16	59.73	102.52	42.79	20	-22.79
2390.00	60.91	102.52	41.61	20	-21.61
2483.5	63.17	102.77	39.60	20	-19.60
2528.00	64.10	102.77	38.67	20	-18.67
2592.20	58.77	102.77	44.00	20	-24.00

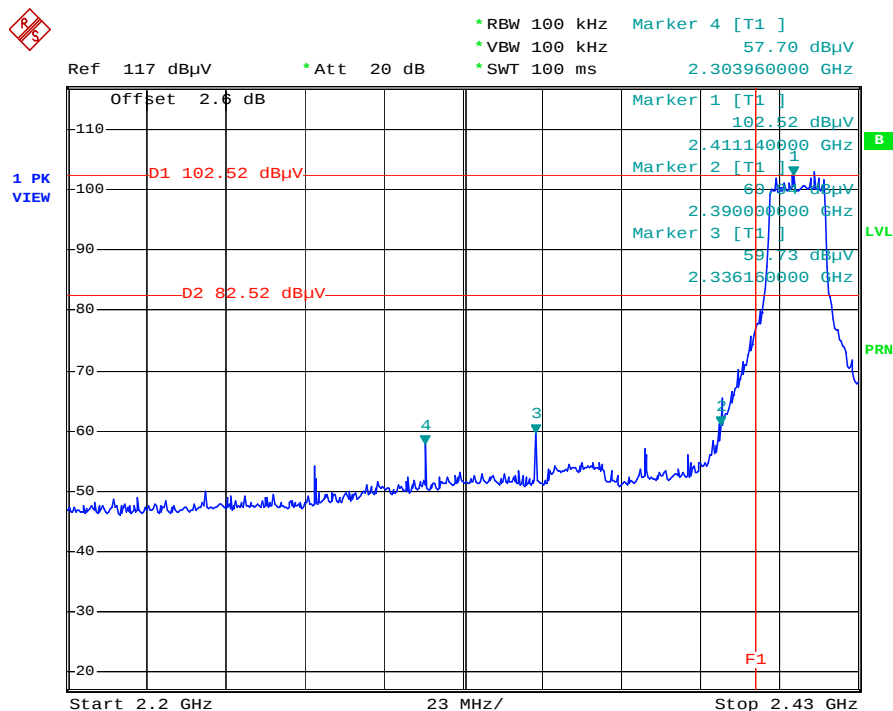
2. Radiation test:

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Low & High (IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2336.00	3.66	27.80	35.37	57.79	50.45	H	53.88	46.54	74.0	54.0	-20.12	-7.46
2390.00	3.66	27.80	35.37	66.02	52.49	H	62.11	48.58	74.0	54.0	-11.89	-5.42
2399.50	3.66	27.80	35.37	59.08	51.13	H	55.17	47.22	74.0	54.0	-18.83	-6.78
2463.80	3.66	27.80	35.37	56.61	50.28	H	52.70	46.37	74.0	54.0	-21.30	-7.63
2483.50	3.66	27.80	35.37	65.66	50.59	H	61.75	46.68	74.0	54.0	-12.25	-7.32
2527.80	4.09	28.60	35.48	54.26	47.75	H	51.47	44.96	74.0	54.0	-22.53	-9.04
2528.30	4.09	28.60	35.48	54.87	48.11	H	52.08	45.32	74.0	54.0	-21.92	-8.68
2294.00	3.66	27.80	35.37	49.28	39.79	V	45.37	35.88	74.0	54.0	-28.63	-18.12
2390.00	3.66	27.80	35.37	54.61	42.37	V	50.70	38.46	74.0	54.0	-23.30	-15.54
2399.50	3.66	27.80	35.37	49.42	40.18	V	45.51	36.27	74.0	54.0	-28.49	-17.73
2464.00	3.66	27.80	35.37	49.15	39.98	V	45.24	36.07	74.0	54.0	-28.76	-17.93
2483.50	3.66	27.80	35.37	53.06	37.13	V	49.15	33.22	74.0	54.0	-24.85	-20.78
2528.30	4.09	28.60	35.48	46.58	38.02	V	43.79	35.23	74.0	54.0	-30.21	-18.77

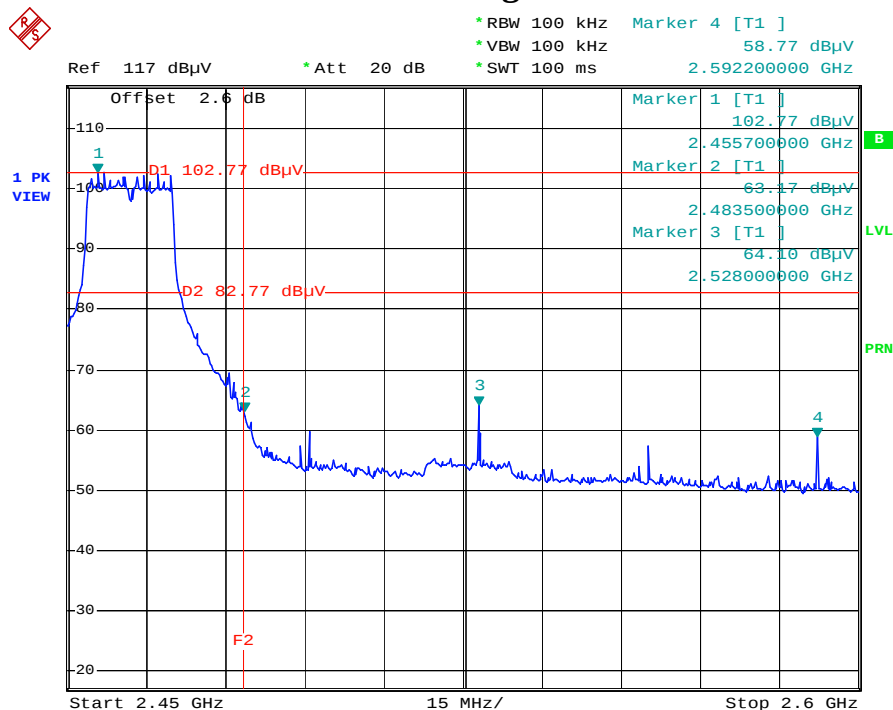
2.4GHz Band, IEEE802.11g Mode

Out of Band Conducted Test Data CH-Low



Date: 3.APR.2003 14:31:50

Out of Band Conducted Test Data CH-High



Date: 3.APR.2003 14:29:02

5.8 GHz Band, IEEE802.11a Mode**1. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
5568.12	58.01	105.82	47.81	20	-27.18
5632.08	57.59	105.82	48.23	20	-28.23
5725.00	73.16	105.82	32.66	20	-12.66
5850.00	57.26	106.15	48.89	20	-28.89
5888.00	57.20	106.15	48.95	20	-28.95
5952.00	57.98	106.15	48.17	20	-28.17

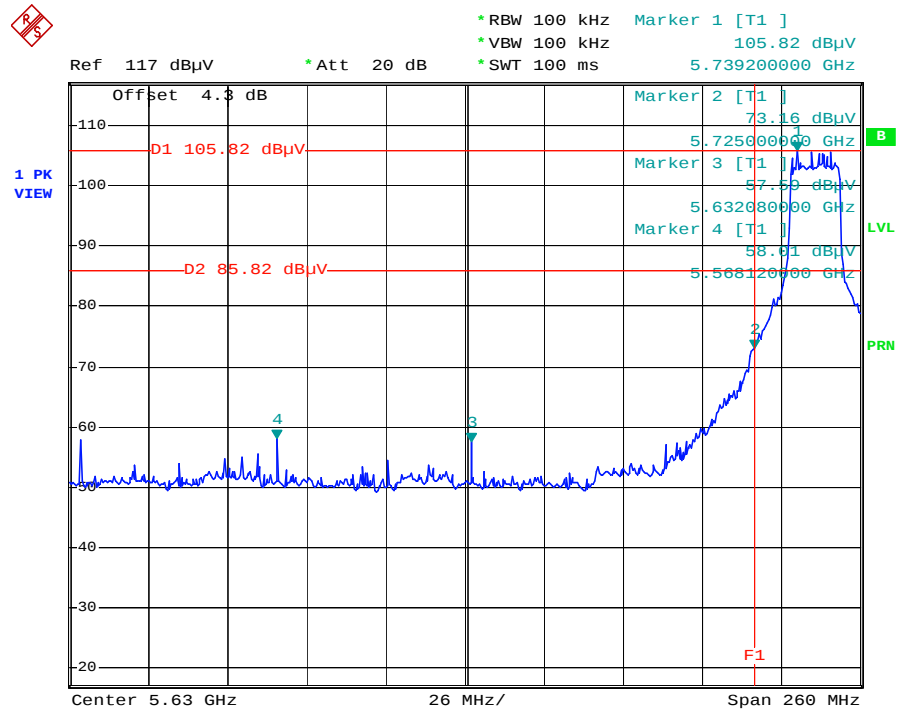
2. Radiation test:

Operation Mode: TX Mode(5.8GHz Band) Test Date : Mar. 07 2003
 Channel : Low & High (IEEE802.11a) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5471.40	2.15	33.90	35.53	62.99	53.41	H	63.51	53.93	89.5	80.7	-25.98	-26.77
5520.80	2.25	34.60	35.54	62.81	50.80	H	64.12	52.11	90.1	81.4	-25.98	-29.24
5536.20	2.25	34.60	35.54	60.33	51.53	H	61.64	52.84	89.5	80.7	-27.85	-27.86
5600.00	2.25	34.60	35.54	59.55	51.60	H	60.86	52.91	90.1	81.4	-29.24	-28.44
5725.00	2.25	34.60	35.54	81.13	65.60	H	82.44	66.91	89.5	80.7	-7.05	-13.79
5739.60	2.25	34.60	35.54	108.18	99.39	H	109.49	100.70				
5808.60	2.25	34.60	35.54	108.79	100.04	H	110.10	101.35				
5825.00	2.25	34.60	35.54	60.75	46.32	H	62.06	47.63	90.1	81.4	-28.04	-33.72
5536.00	2.25	34.60	35.54	47.47	38.37	V	48.78	39.68	75.7	67.4	-26.90	-27.67
5599.00	2.25	34.60	35.54	48.25	37.64	V	49.56	38.95	75.7	67.4	-26.12	-28.40
5600.00	2.25	34.60	35.54	47.72	39.35	V	49.03	40.66	77.7	69.2	-28.67	-28.54
5725.00	2.25	34.60	35.54	64.41	49.95	V	65.72	51.26	75.7	67.4	-9.96	-16.09
5746.00	2.25	34.60	35.54	94.37	86.04	V	95.68	87.35				
5808.60	2.25	34.60	35.54	96.34	87.89	V	97.65	89.20				
5850.00	2.25	34.60	35.54	56.24	43.39	V	57.55	44.70	77.7	69.2	-20.10	-24.50

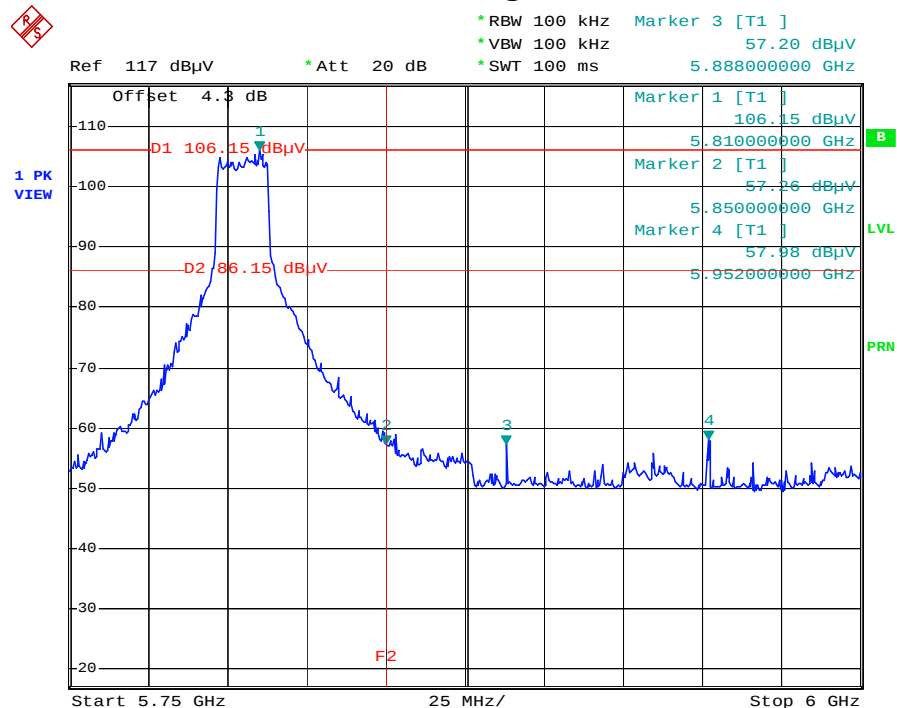
5.8GHz Band, IEEE802.11a Mode

Out of Band Conducted Test Data CH-Low



Date: 3.APR.2003 17:50:22

Out of Band Conducted Test Data CH-High



Date: 3.APR.2003 17:59:23

5.8 GHz Band, IEEE802.11a TURBO Mode**1. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
5568.40	57.46	105.78	48.32	20	-28.32
5632.00	56.76	105.78	49.02	20	-29.02
5725.00	72.40	105.78	33.38	20	-13.38
5850.00	64.60	105.72	41.12	20	-21.12
5888.00	58.65	105.72	47.07	20	-27.07
5952.00	58.44	105.72	47.28	20	-27.28

2. Radiation test:

Operation Mode: TX Mode(5.8GHz Band)

Test Date :

Mar. 07 2003

Channel : Low & High(IEEE802.11a, Turbo Mode)

Test By:

James

Temperature : 26

Pol:

Ver./Hor

Humidity : 60 %

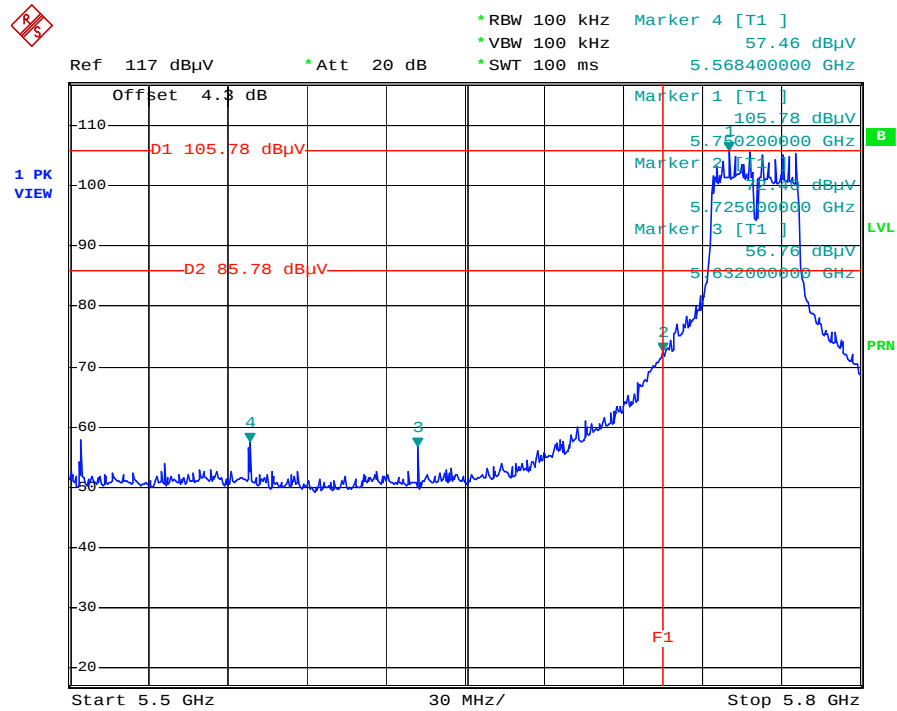
Test Antenna:

SMT(A-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5472.00	2.15	33.90	35.53	62.96	54.14	H	63.48	54.66	86.3	78.0	-22.85	-23.35
5535.20	2.25	34.60	35.54	63.07	53.49	H	64.38	54.80	86.4	78.4	-21.97	-23.56
5599.80	2.25	34.60	35.54	59.78	50.68	H	61.09	51.99	86.3	78.0	-25.24	-26.02
5600.00	2.25	34.60	35.54	60.08	50.85	H	61.39	52.16	86.4	78.4	-24.96	-26.20
5725.00	2.25	34.60	35.54	77.95	65.30	H	79.26	66.61	86.3	78.0	-7.07	-11.40
5767.20	2.25	34.60	35.54	105.02	96.70	H	106.33	98.01				
5812.60	2.25	34.60	35.54	105.04	97.05	H	106.35	98.36				
5850.00	2.25	34.60	35.54	60.35	57.52	H	61.66	58.83	86.4	78.4	-24.69	-19.53
5600.00	2.25	34.60	35.54	50.87	41.72	V	52.18	43.03	73.6	66.2	-21.41	-23.13
5663.80	2.25	34.60	35.54	53.04	41.38	V	54.35	42.69	72.9	65.4	-18.57	-22.70
5725.00	2.25	34.60	35.54	62.18	50.68	V	63.49	51.99	72.9	65.4	-9.43	-13.40
5774.40	2.25	34.60	35.54	91.61	84.08	V	92.92	85.39				
5809.00	2.25	34.60	35.54	92.28	84.85	V	93.59	86.16				
5850.00	2.25	34.60	35.54	50.39	44.27	V	51.70	45.58	73.6	66.2	-21.89	-20.58

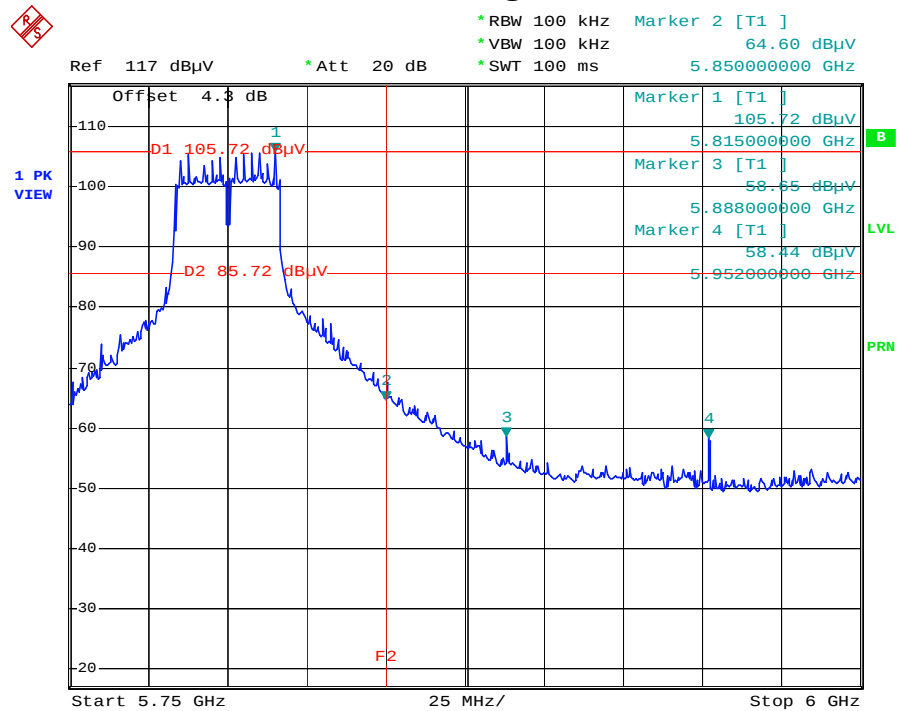
5.8GHz Band, IEEE802.11a Turbo Mode

Out of Band Conducted Test Data CH-Low



Date: 3.APR.2003 18:01:40

Out of Band Conducted Test Data CH-High



Date: 3.APR.2003 17:57:52

Joymax (B-antenna)**2.4 GHz Band, IEEE802.11b Mode****1. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
2348.12	62.96	113.81	50.85	20	-30.85
2390.00	64.46	113.81	49.35	20	-29.35
2483.5	62.00	114.09	52.09	20	-32.09
2486.00	67.38	114.09	46.71	20	-26.71
2528.00	63.59	114.09	50.50	20	-30.50

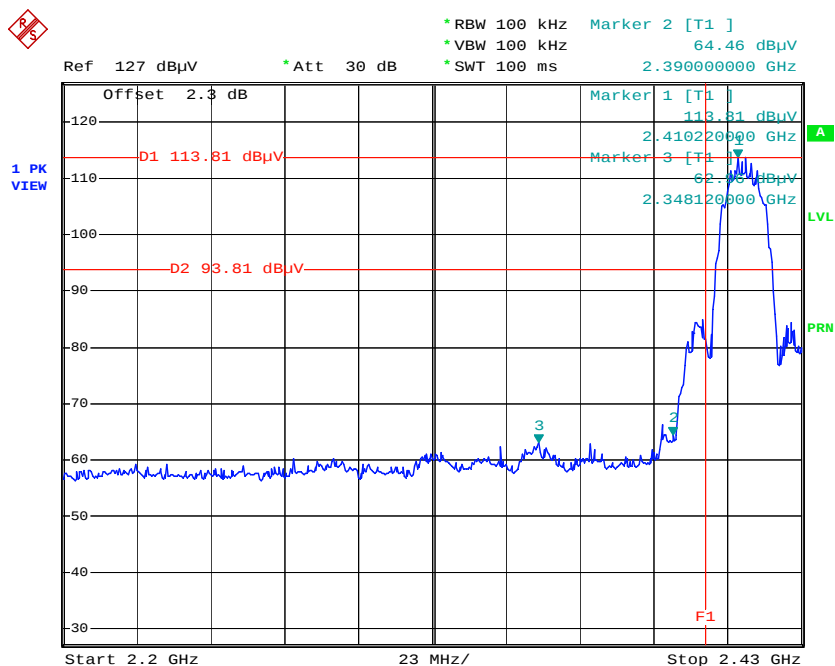
2. Radiation test:

Operation Mode:	TX Mode(2.4GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low & High(IEEE802.11b)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2390.00	3.66	27.80	35.37	60.32	50.74	H	56.41	46.83	74.0	54.0	-17.59	-7.17
2414.30	3.66	27.80	35.37	55.90	47.31	H	51.99	43.40	74.0	54.0	-22.01	-10.60
2474.40	3.66	27.80	35.37	55.76	46.76	H	51.85	42.85	74.0	54.0	-22.15	-11.15
2483.50	3.66	27.80	35.37	61.36	51.43	H	57.45	47.52	74.0	54.0	-16.55	-6.48
2487.50	3.66	27.80	35.37	58.48	50.07	H	54.57	46.16	74.0	54.0	-19.43	-7.84
2387.00	3.66	27.80	35.37	64.50	56.00	V	60.59	52.09	74.0	54.0	-13.41	-1.91
2399.60	3.66	27.80	35.37	58.39	50.08	V	54.48	46.17	74.0	54.0	-19.52	-7.83
2475.60	3.66	27.80	35.37	60.68	51.10	V	56.77	47.19	74.0	54.0	-17.23	-6.81
2483.50	3.66	27.80	35.37	65.20	54.42	V	61.29	50.51	74.0	54.0	-12.71	-3.49
2487.00	3.66	27.80	35.37	64.48	55.80	V	60.57	51.89	74.0	54.0	-13.43	-2.11
2527.20	4.09	28.60	35.48	59.95	51.04	V	57.16	48.25	74.0	54.0	-16.84	-5.75

2.4GHz Band, IEEE802.11b Mode

Out of Band Conducted Test Data CH-Low



Date: 4.APR.2003 01:07:24

Out of Band Conducted Test Data CH-High



Date: 4.APR.2003 01:09:33

2.4 GHz Band, IEEE802.11G Mode**1. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
2271.76	56.74	103.16	46.42	20	-26.42
2336.16	62.06	103.16	41.10	20	-21.10
2390.00	61.28	103.16	41.88	20	-21.88
2483.50	61.69	103.28	41.59	20	-21.59
2528.00	63.42	103.28	39.86	20	-19.86
2592.20	59.78	103.28	43.50	20	-23.50

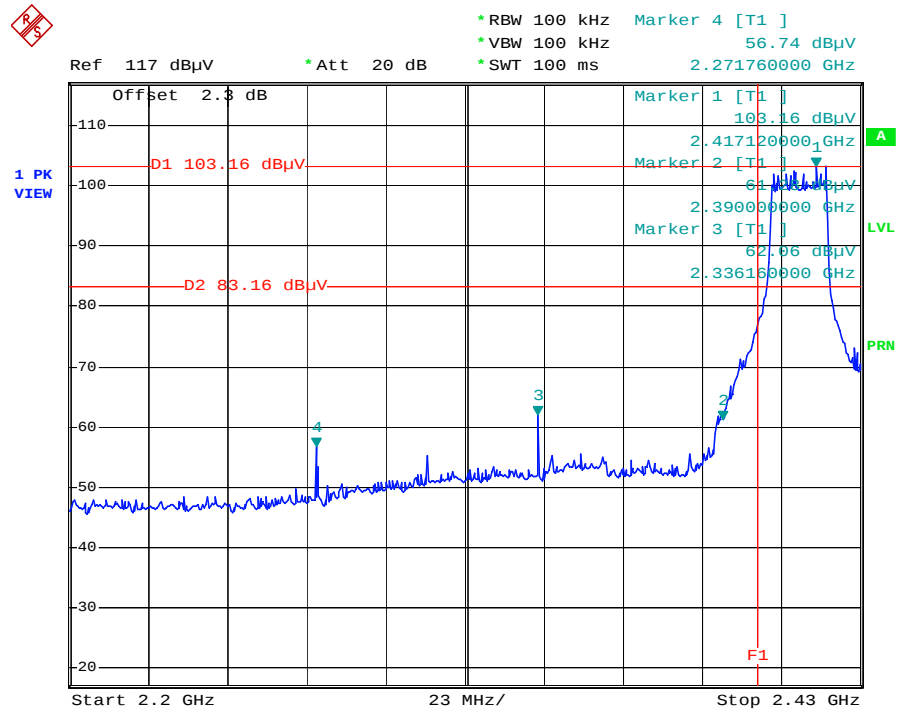
2. Radiation test:

Operation Mode: TX Mode(2.4GHz Band) Test Date : Mar. 07 2003
 Channel : Low & High(IEEE802.11g) Test By: James
 Temperature : 26 Pol: Ver./Hor
 Humidity : 60 % Test Antenna: Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
2334.20	3.66	27.80	35.37	52.98	45.80	H	49.07	41.89	74.0	54.0	-24.93	-12.11
2390.00	3.66	27.80	35.37	66.82	46.28	H	62.91	42.37	74.0	54.0	-11.09	-11.63
2400.40	3.66	27.80	35.37	54.70	45.16	H	50.79	41.25	74.0	54.0	-23.21	-12.75
2464.20	3.66	27.80	35.37	53.06	45.63	H	49.15	41.72	74.0	54.0	-24.85	-12.28
2528.20	4.09	28.60	35.48	50.86	43.45	H	48.07	40.66	74.0	54.0	-25.93	-13.34
2528.40	4.09	28.60	35.48	51.37	43.96	H	48.58	41.17	74.0	54.0	-25.42	-12.83
2336.20	3.66	27.80	35.37	55.91	48.47	V	52.00	44.56	74.0	54.0	-22.00	-9.44
2390.00	3.66	27.80	35.37	67.30	52.58	V	63.39	48.67	74.0	54.0	-10.61	-5.33
2399.50	3.66	27.80	35.37	60.17	52.43	V	56.26	48.52	74.0	54.0	-17.74	-5.48
2464.20	3.66	27.80	35.37	60.11	53.81	V	56.20	49.90	74.0	54.0	-17.80	-4.10
2483.50	3.66	27.80	35.37	69.11	54.09	V	65.20	50.18	74.0	54.0	-8.80	-3.82
2496.20	3.66	27.80	35.37	56.44	49.08	V	52.53	45.17	74.0	54.0	-21.47	-8.83
2528.20	4.09	28.60	35.48	58.47	52.72	V	55.68	49.93	74.0	54.0	-18.32	-4.07
2528.30	4.09	28.60	35.48	61.10	53.87	V	58.31	51.08	74.0	54.0	-15.69	-2.92
2529.20	4.09	28.60	35.48	54.49	46.75	V	51.70	43.96	74.0	54.0	-22.30	-10.04
2592.30	4.09	28.60	35.48	54.96	48.48	V	52.17	45.69	74.0	54.0	-21.83	-8.31

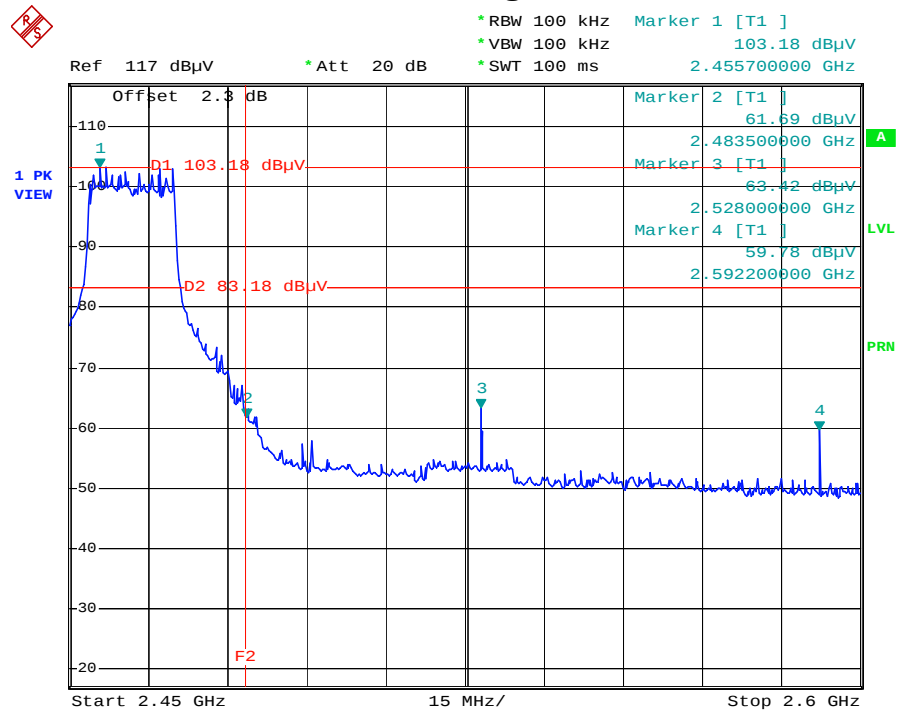
2.4GHz Band, IEEE802.11g Mode

Out of Band Conducted Test Data CH-Low



Date: 4.APR.2003 01:40:24

Out of Band Conducted Test Data CH-High



Date: 4.APR.2003 01:41:50

5.8 GHz Band, IEEE802.11a Mode**3. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
5632.08	57.37	103.34	45.97	20	-25.97
5696.04	57.94	103.34	45.40	20	-25.40
5725.00	69.79	103.34	33.55	20	-13.55
5850.00	52.14	104.77	52.63	20	-32.63
5888.00	55.57	104.77	49.20	20	-29.20
5952.50	52.74	104.77	52.03	20	-32.03

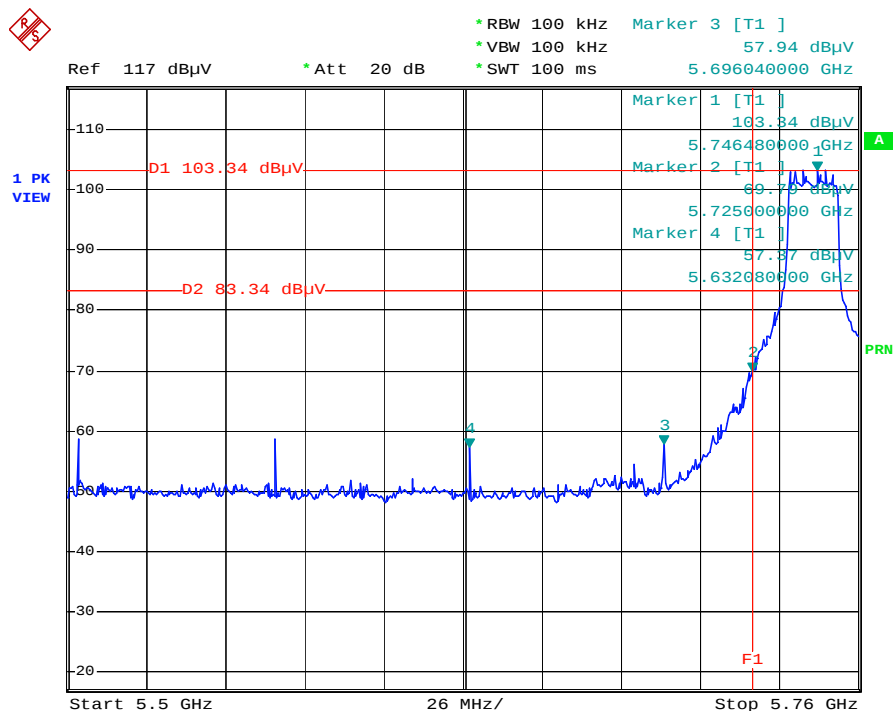
2.Radiation test:

Operation Mode:	TX Mode(5.8GHz Band)	Test Date :	Mar. 07 2003
Channel :	Low & High(IEEE802.11a)	Test By:	James
Temperature :	26	Pol:	Ver./Hor
Humidity :	60 %	Test Antenna:	Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5471.20	2.15	33.90	35.53	51.09	42.22	H	51.61	42.74	78.2	71.2	-26.57	-28.41
5520.80	2.25	34.60	35.54	62.81	50.80	H	64.12	52.11	90.1	81.4	-25.98	-29.24
5536.00	2.25	34.60	35.54	50.08	42.76	H	51.39	44.07	78.2	71.2	-26.79	-27.08
5600.00	2.25	34.60	35.54	59.55	51.60	H	60.86	52.91	90.1	81.4	-29.24	-28.44
5725.00	2.25	34.60	35.54	67.34	54.78	H	68.65	56.09	78.2	71.2	-9.53	-15.06
5739.60	2.25	34.60	35.54	96.87	89.84	H	98.18	91.15				
5808.60	2.25	34.60	35.54	108.79	100.04	H	110.10	101.35				
5825.00	2.25	34.60	35.54	60.75	46.32	H	62.06	47.63	90.1	81.4	-28.04	-33.72
5471.20	2.15	33.90	35.53	58.86	51.06	V	59.38	51.58	83.4	75.4	-24.06	-23.81
5536.00	2.25	34.60	35.54	57.42	50.15	V	58.73	51.46	83.4	75.4	-24.71	-23.93
5600.00	2.25	34.60	35.54	47.72	39.35	V	49.03	40.66	77.7	69.2	-28.67	-28.54
5725.00	2.25	34.60	35.54	72.82	59.51	V	74.13	60.82	83.4	75.4	-9.31	-14.57
5745.00	2.25	34.60	35.54	102.13	94.08	V	103.44	95.39				
5808.60	2.25	34.60	35.54	96.34	87.89	V	97.65	89.20				
5850.00	2.25	34.60	35.54	56.24	43.39	V	57.55	44.70	77.7	69.2	-20.10	-24.50

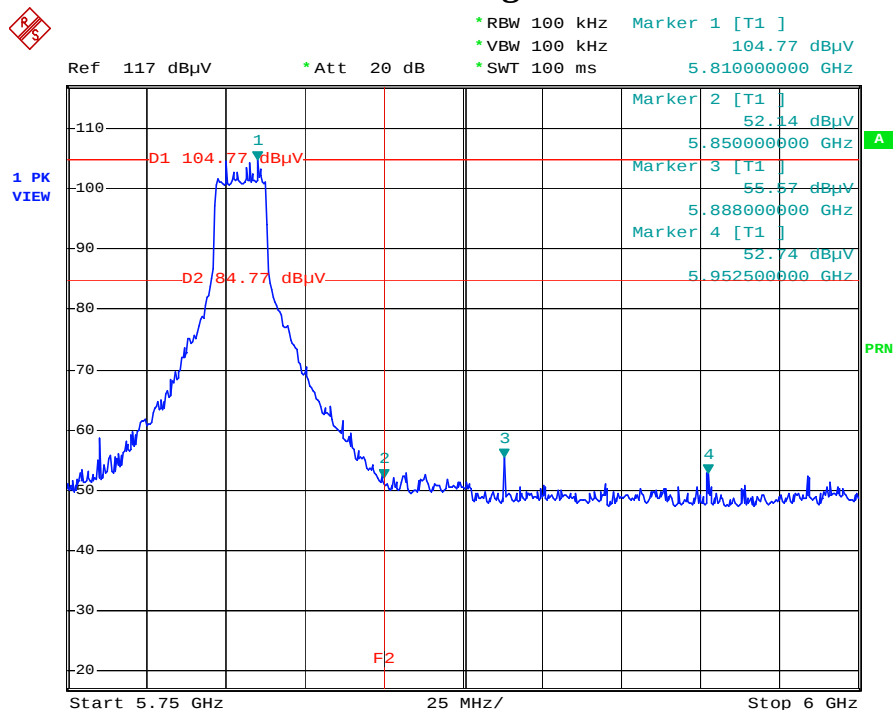
5.8GHz Band, IEEE802.11a Mode

Out of Band Conducted Test Data CH-Low



Date: 4.APR.2003 00:00:40

Out of Band Conducted Test Data CH-High



Date: 3.APR.2003 23:58:03

5.8 GHz Band, IEEE802.11a TURBO Mode**1. Conducted test**

Frequency (MHz)	Emission level (dBuV)	Peak power read value (dBuV)	Result of Band edge (dBc)	Band edge limit (dBc)	Margin(dB)
5696.04	57.94	103.34	45.40	20	-25.40
5632.08	57.37	103.34	45.97	20	-25.97
5725.00	69.79	103.34	33.55	20	-13.55
5850.00	52.14	104.77	52.63	20	-32.63
5888.00	55.57	104.77	49.20	20	-29.20
5952.50	52.74	104.77	52.03	20	-32.03

2. Radiation test:

Operation Mode: TX Mode(5.8GHz Band)

Test Date :

Mar. 07 2003

Channel : Low & High(IEEE802.11a, Turbo Mode)

Test By:

James

Temperature : 26

Pol:

Ver./Hor

Humidity : 60 %

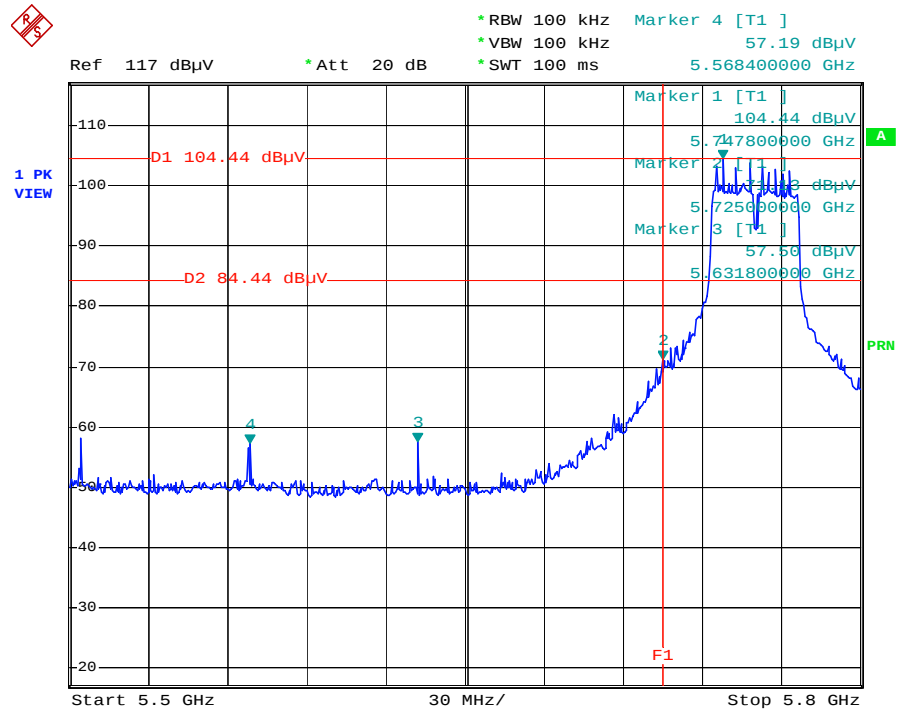
Test Antenna:

Joymax (B-antenna)

Frequency (MHz)	Cable loss (dB)	Ant. Fact (dB/m)	Pre-amp. (dB)	Reading (dBuV)		Ant. Pol. (H/V)	Emission (dBuV/m)		Limit Line (dBuV/m)		Margin (dBuV/m)	
				PK	AV		PK	AV	PK	AV	PK	AV
5471.00	2.15	33.90	35.53	51.32	41.55	H	51.84	42.07	75.6	68.0	-23.80	-25.93
5535.00	2.25	34.60	35.54	50.68	42.49	H	51.99	43.80	75.6	68.0	-23.65	-24.20
5599.00	2.25	34.60	35.54	51.29	43.15	H	52.60	44.46	76.8	69.6	-24.22	-25.13
5664.40	2.25	34.60	35.54	50.99	42.56	H	52.30	43.87	76.8	69.6	-24.52	-25.72
5725.00	2.25	34.60	35.54	66.53	55.35	H	67.84	56.66	75.6	68.0	-7.80	-11.34
5748.00	2.25	34.60	35.54	94.33	86.69	H	95.64	88.00				
5790.40	2.25	34.60	35.54	95.51	88.28	H	96.82	89.59				
5850.00	2.25	34.60	35.54	54.51	46.50	H	55.82	47.81	76.8	69.6	-21.00	-21.78
5472.00	2.15	33.90	35.53	58.98	50.29	V	59.50	50.81	79.6	71.8	-20.06	-21.02
5536.00	2.25	34.60	35.54	58.54	50.30	V	59.85	51.61	79.6	71.8	-19.71	-20.22
5536.00	2.25	34.60	35.54	59.98	50.15	V	61.29	51.46	79.5	71.7	-18.16	-20.24
5600.00	2.25	34.60	35.54	55.95	49.23	V	57.26	50.54	79.6	71.8	-22.30	-21.29
5663.00	2.25	34.60	35.54	54.95	47.61	V	56.26	48.92	79.5	71.7	-23.19	-22.78
5725.00	2.25	34.60	35.54	72.32	59.94	V	73.63	61.25	79.6	71.8	-5.93	-10.58
5746.00	2.25	34.60	35.54	98.25	90.52	V	99.56	91.83				
5790.00	2.25	34.60	35.54	98.14	90.39	V	99.45	91.70				
5850.00	2.25	34.60	35.54	60.50	49.84	V	61.81	51.15	79.5	71.7	-17.64	-20.55

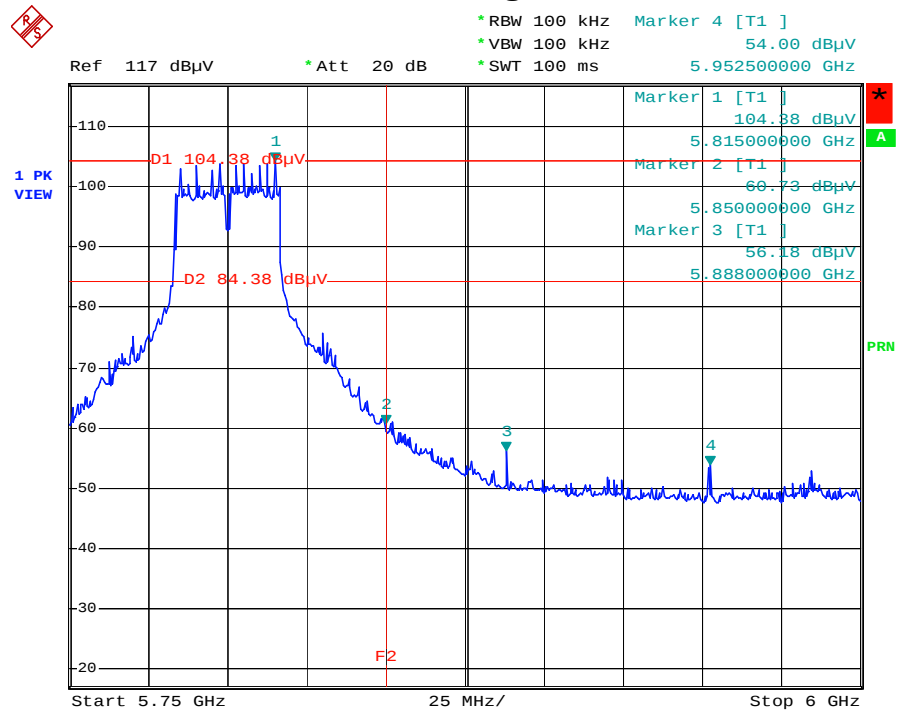
5.8GHz Band, IEEE802.11a Turbo Mode

Out of Band Conducted Test Data CH-Low



Date: 3.APR.2003 23:55:40

Out of Band Conducted Test Data CH-High



Date: 3.APR.2003 23:57:12



10. Peak Power Spectral Density

10.1 Standard Applicable

According to §15.247(d), for direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3kHz band during any time interval of continuous transmission.

10.2 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 3KHz, VBW = 30KHz, Span = 300KHz, Sweep=100s
4. Record the max reading.
5. Repeat above procedures until all frequency measured were complete.

10.3 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	Model No.	Serial No.	LAST CAL.	Cal. Due.
Spectrum Analyzer	Advantest	R3182	110600647	11/16/2002	11/15/2003
Spectrum Analyzer	R&S	FSP30	1093.4495.30	07/23/2002	07/22/2003

10.4 Measurement Result**SMT (A-antenna)****2.4 GHz Band, IEEE802.11b Mode**

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-7.81	8	-15.81
Middle	2437	-5.62	8	-13.62
High	2462	-7.88	8	-15.88

2.4 GHz Band, IEEE802.11g Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-16.98	8	-24.98
Middle	2437	-12.30	8	-20.30
High	2462	-17.50	8	-25.50

2.4 GHz Band, IEEE802.11g TURBO Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Middle	2437	-14.93	8	-22.93

5.8 GHz Band, IEEE802.11a Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-14.34	8	-22.34
Middle	5785	-13.99	8	-21.99
High	5825	-12.82	8	-20.82

5.8 GHz Band, IEEE802.11a Turbo Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5760	-14.84	8	-22.84
High	5800	-16.84	8	-24.84

Joymax (B-antenna)**2.4 GHz Band, IEEE802.11b Mode**

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-7.18	8	-15.18
Middle	2437	-6.41	8	-14.41
High	2462	-6.95	8	-14.95

2.4 GHz Band, IEEE802.11g Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-16.69	8	-24.49
Middle	2437	-11.62	8	-19.62
High	2462	-17.04	8	-25.04

2.4 GHz Band, IEEE802.11g TURBO Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Middle	2437	-17.50	8	-25.50

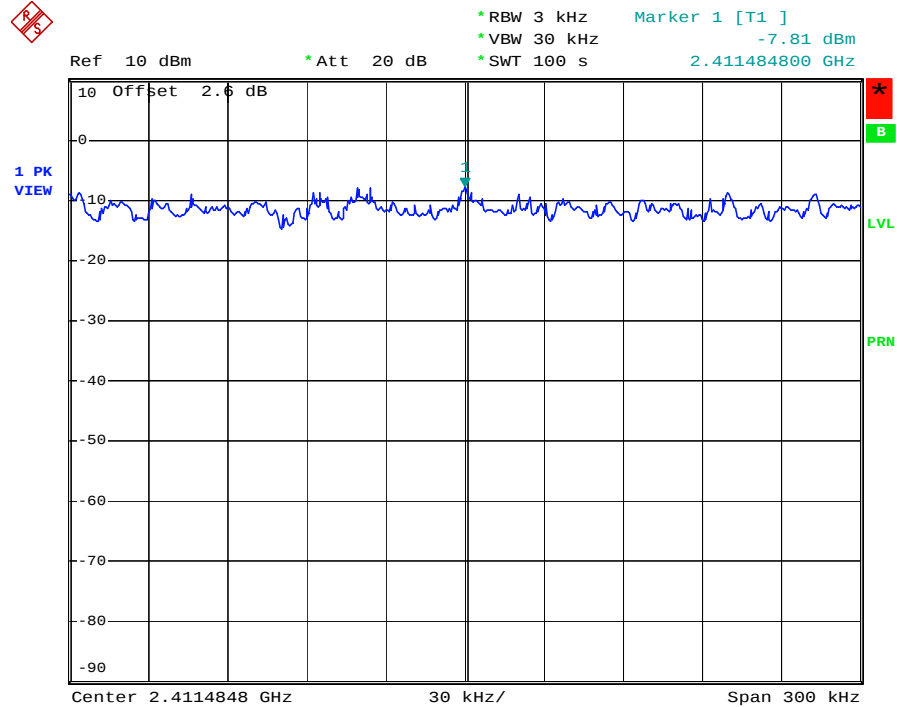
5.8 GHz Band, IEEE802.11a Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-12.59	8	-20.59
Middle	5785	-12.24	8	-20.24
High	5825	-11.53	8	-19.53

5.8 GHz Band, IEEE802.11a Turbo Mode

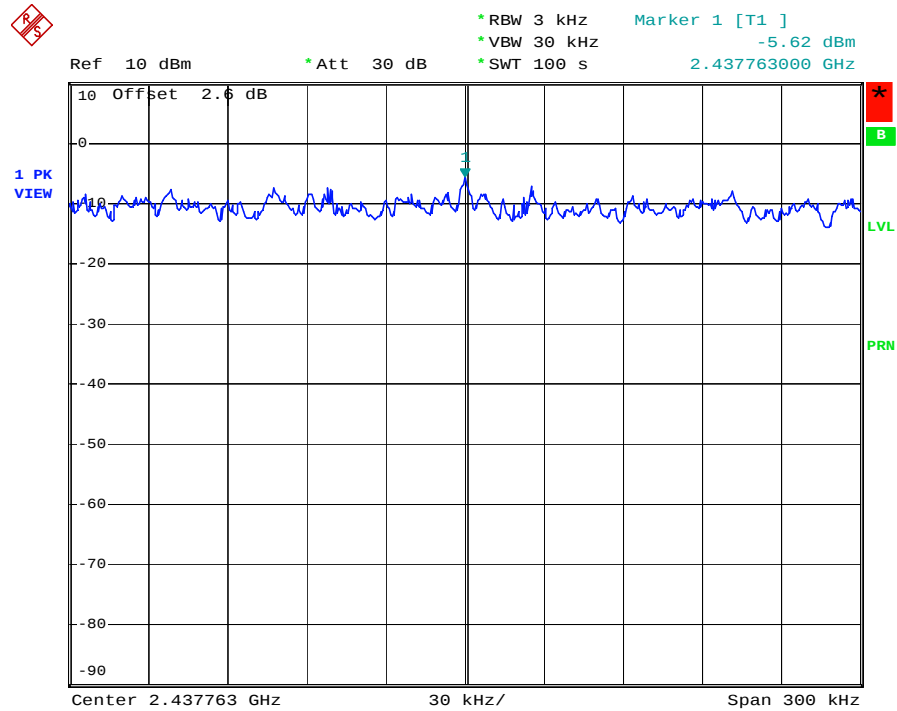
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5760	-17.96	8	-25.96
High	5800	-18.06	8	-26.06

SMT (A-antenna)
2.4GHz Band, IEEE802.11b Mode
Power Density Test Data CH-Low

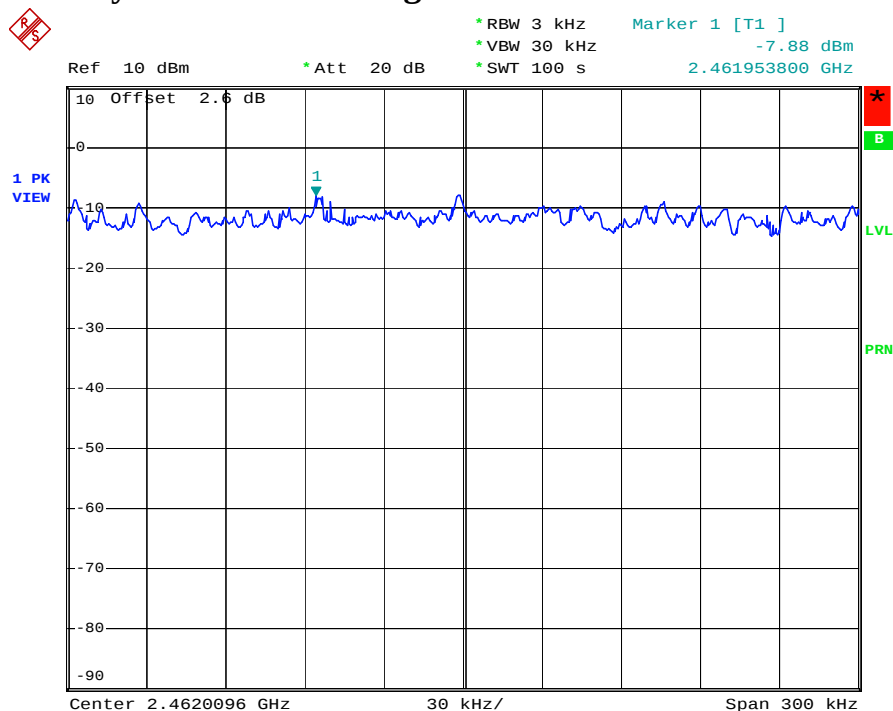


Date: 3.APR.2003 16:17:32

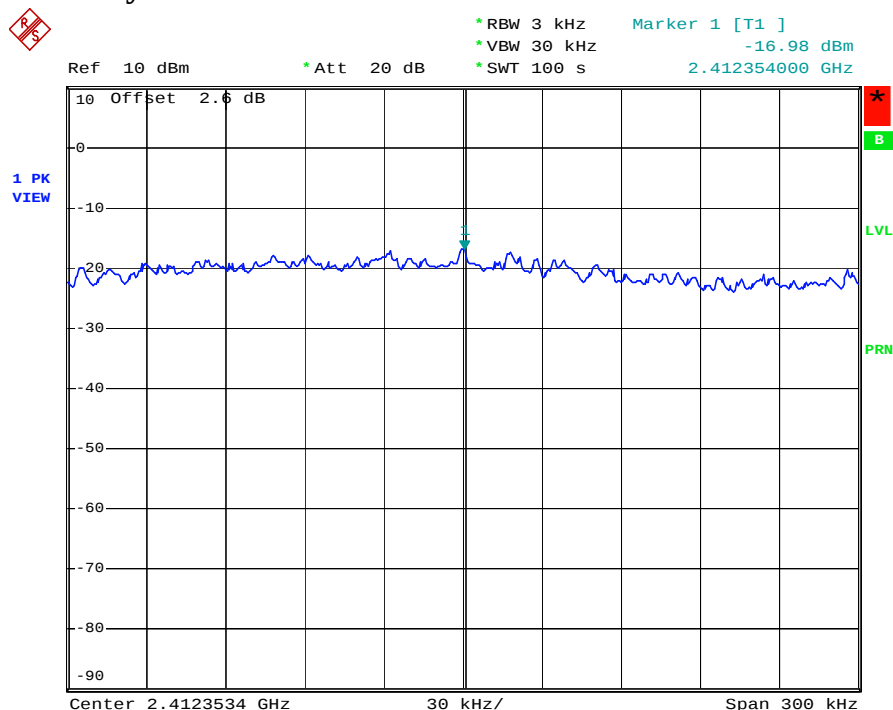
Power Density Test Data CH-Middle



Date: 3.APR.2003 16:30:28

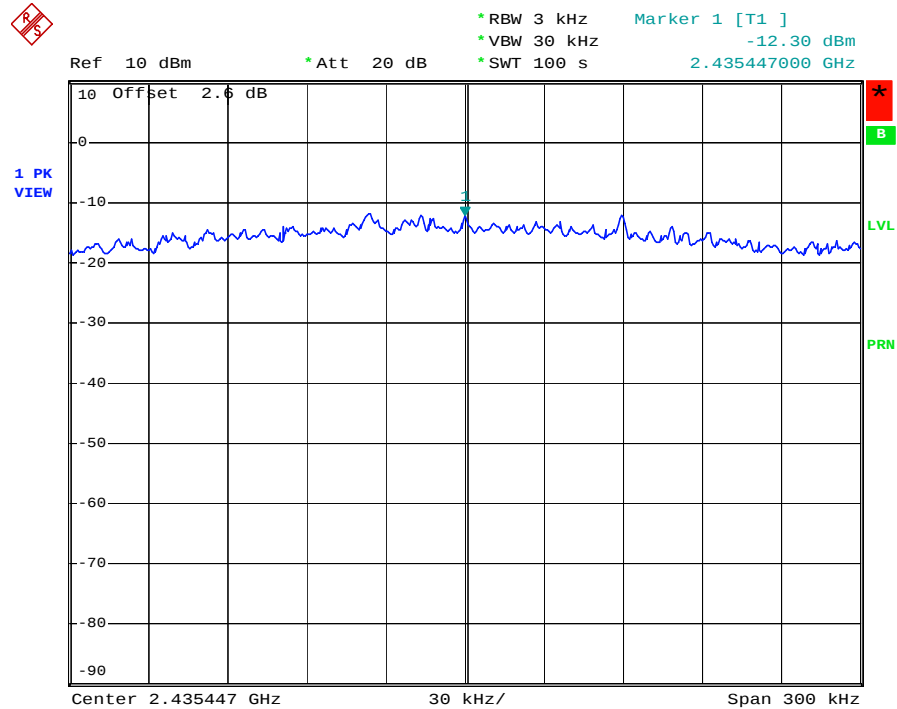
Power Density Test Data CH-High

Date: 3.APR.2003 16:33:57

**2.4GHz Band, IEEE802.11gMode
Power Density Test Data CH-Low**

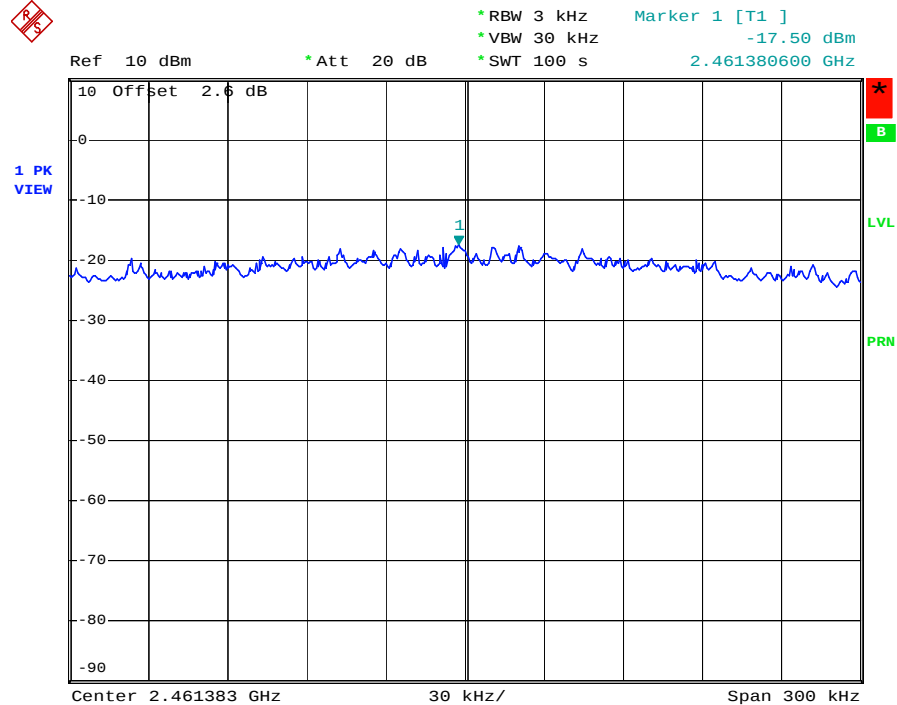
Date: 3.APR.2003 14:39:40

Power Density Test Data CH-Middle



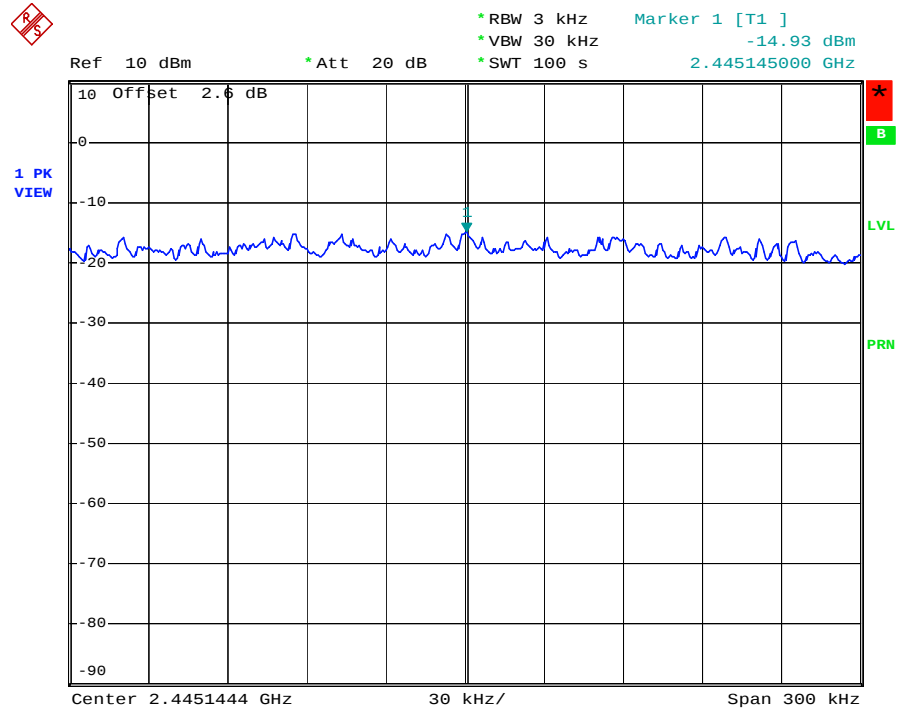
Date: 3.APR.2003 14:43:15

Power Density Test Data CH-High



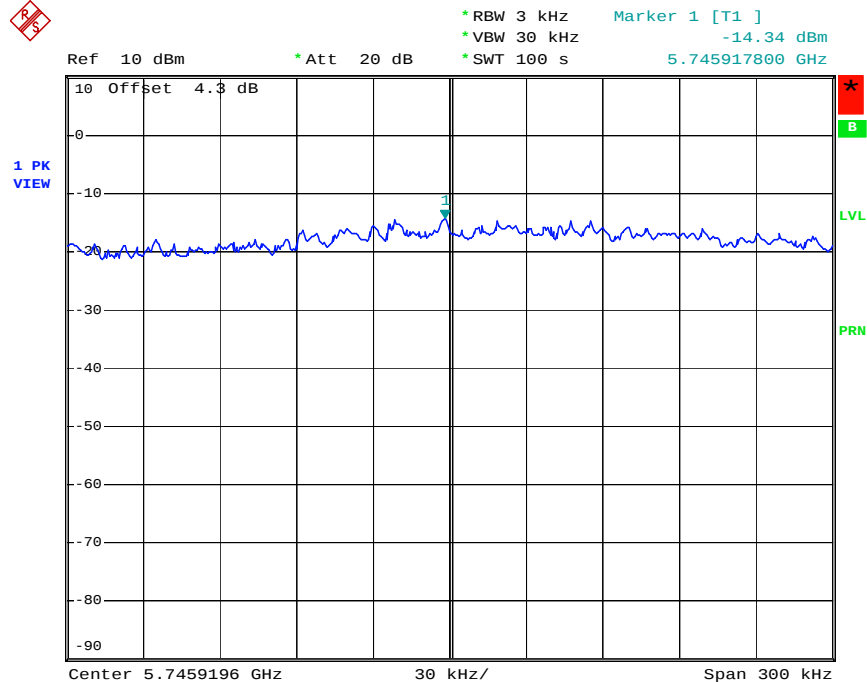
Date: 3.APR.2003 14:50:57

2.4GHz Band, IEEE802.11g Turbo Mode Power Density Test Data CH-Middle



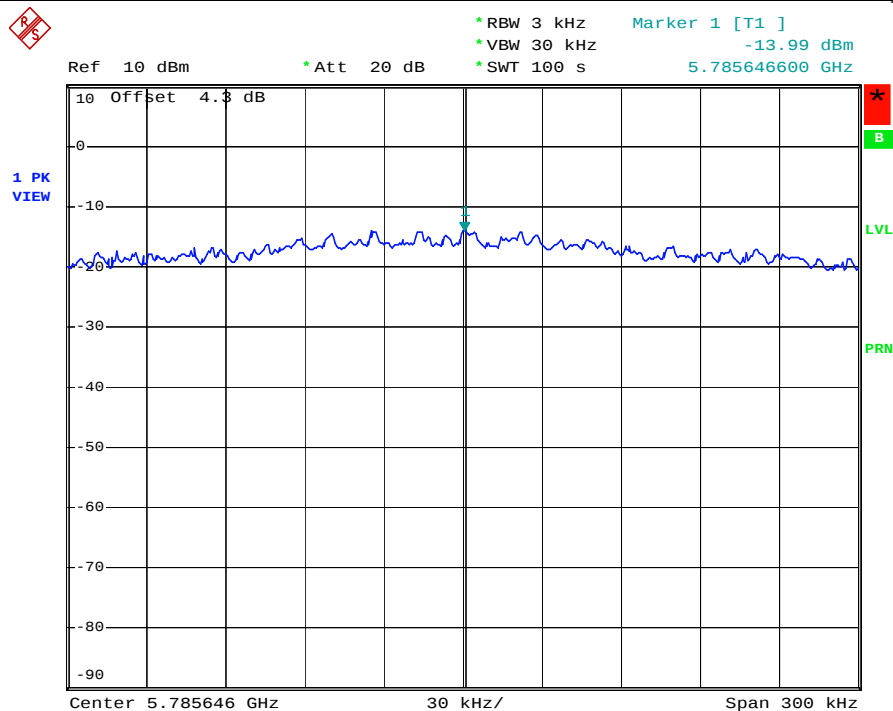
Date: 3.APR.2003 14:47:25

5.8GHz Band, IEEE802.11a Mode Power Density Test Data CH-Low



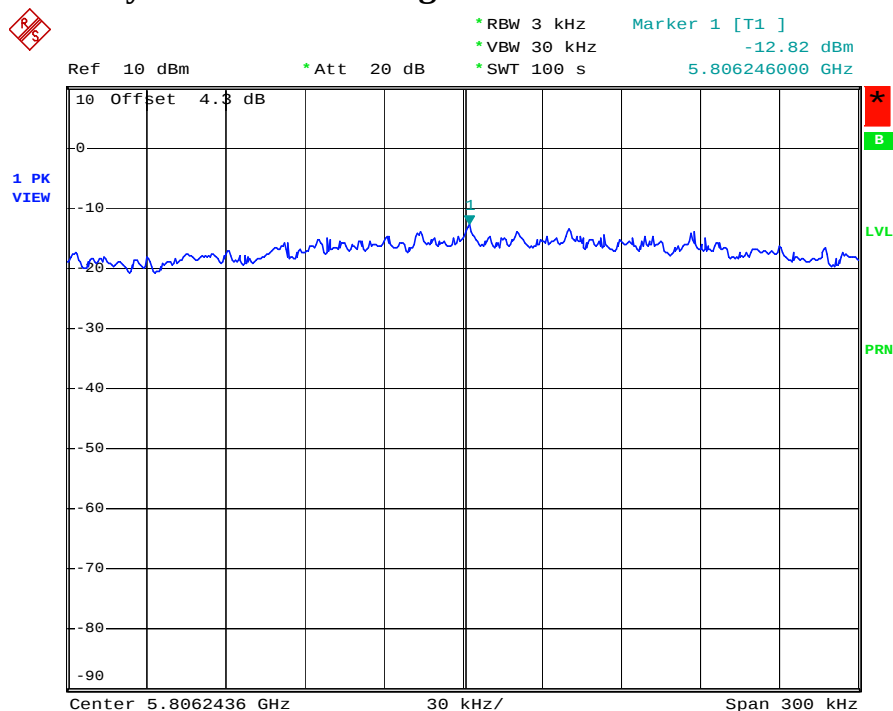
Date: 3.APR.2003 17:32:27

Power Density Test Data CH-Middle



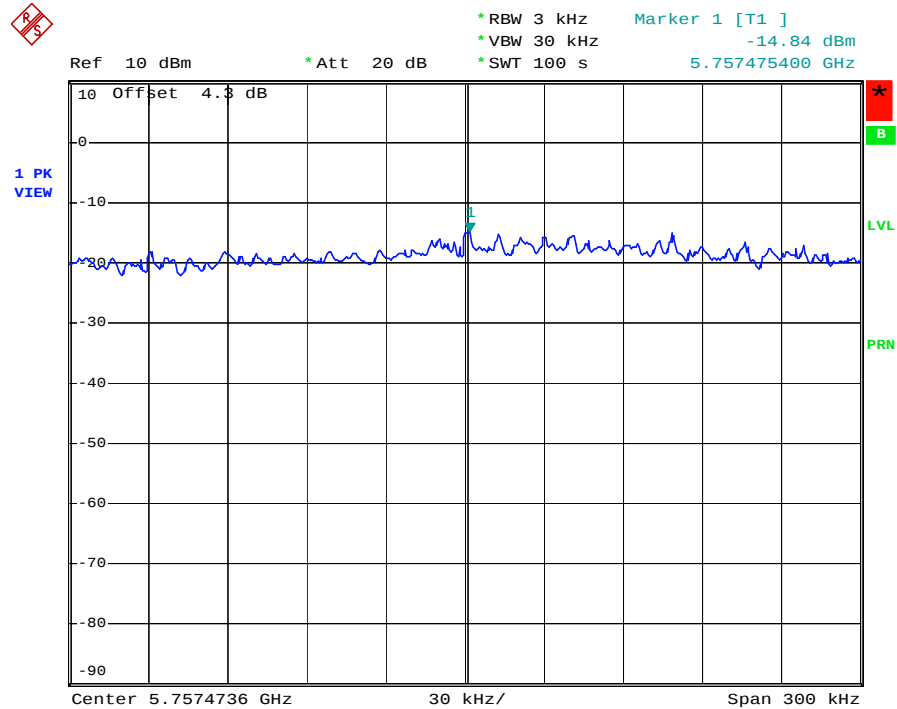
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Power Density Test Data CH-High



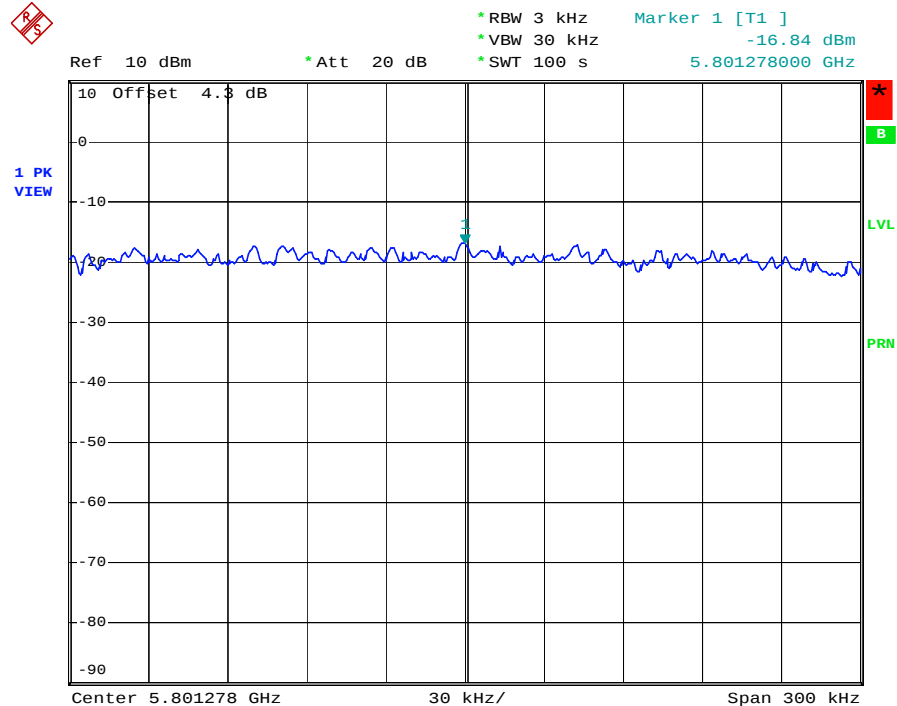
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5.8GHz Band, IEEE802.11a Turbo Mode Power Density Test Data CH-Low



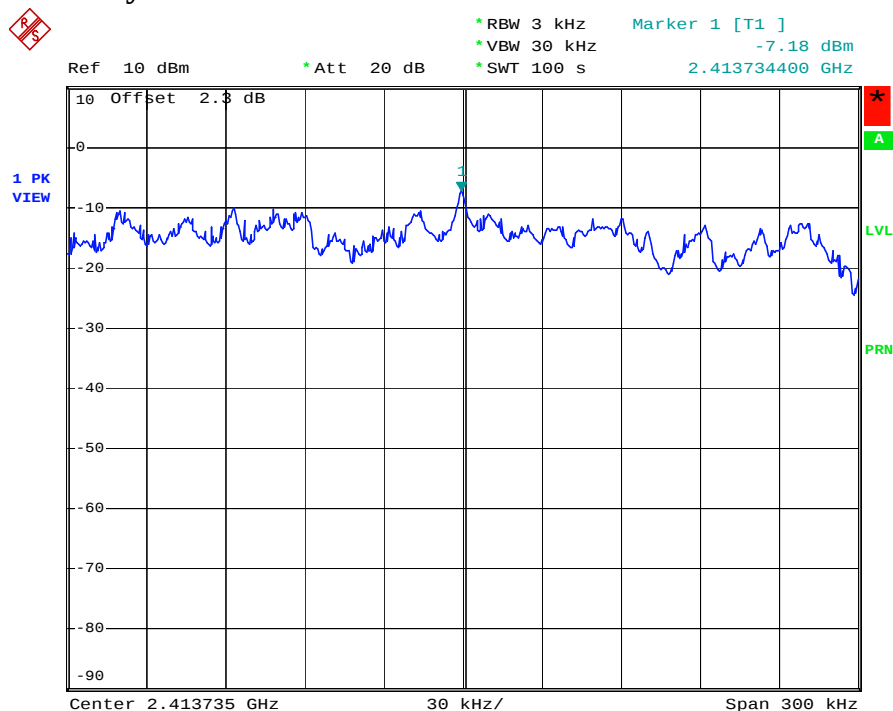
Date: 3.APR.2003 17:20:27

Power Density Test Data CH-High

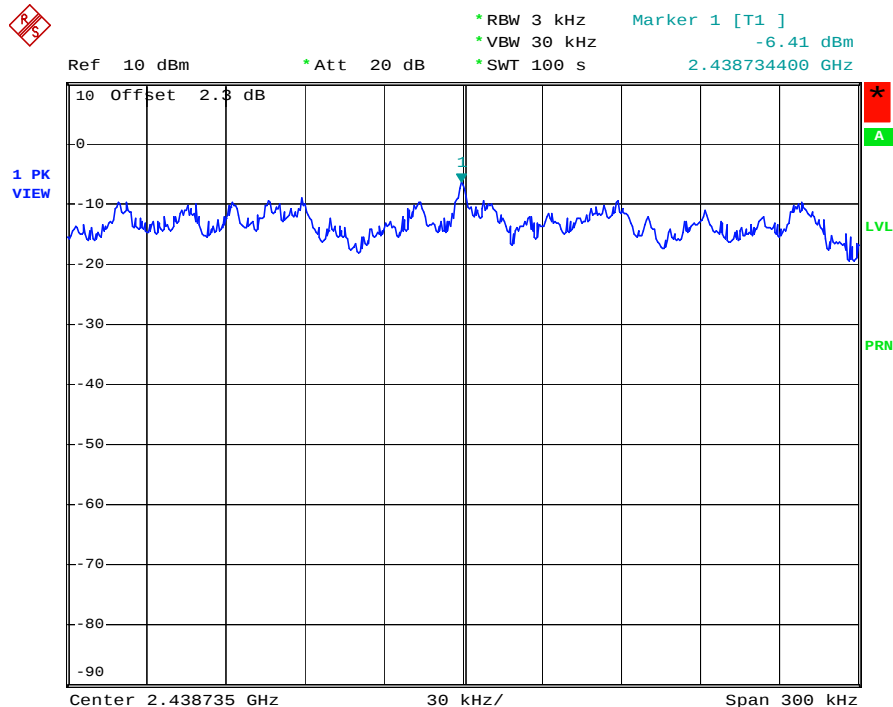


Date: 3.APR.2003 17:23:41

Joymax (B-antenna)
2.4GHz Band, IEEE802.11b Mode

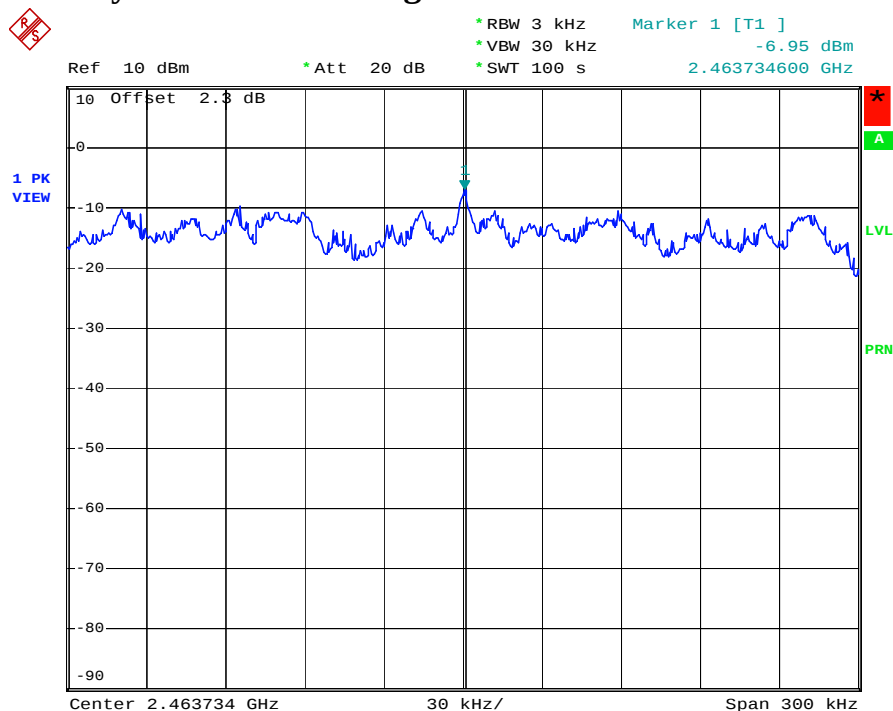
Power Density Test Data CH-Low

Date: 4.APR.2003 01:22:11

Power Density Test Data CH-Middle

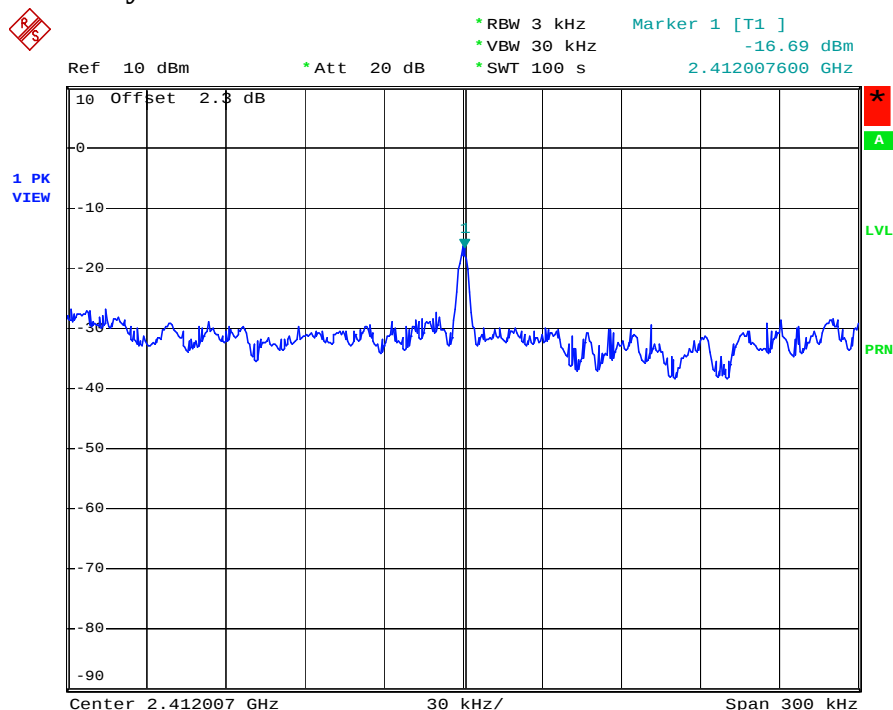
Date: 4.APR.2003 01:31:58

Power Density Test Data CH-High



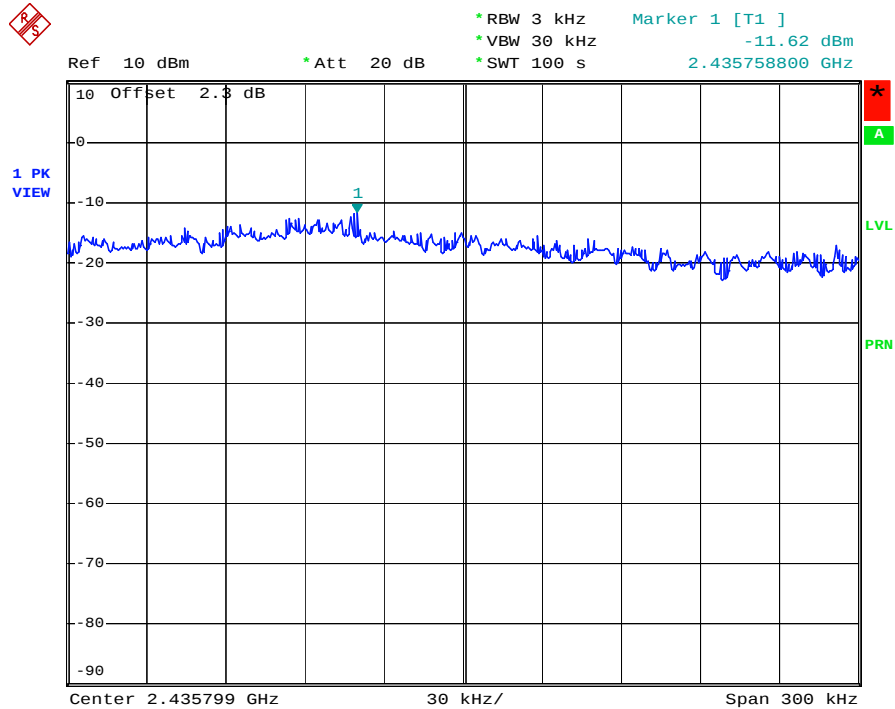
Date: 4.APR.2003 01:15:40

2.4GHz Band, IEEE802.11gMode Power Density Test Data CH-Low



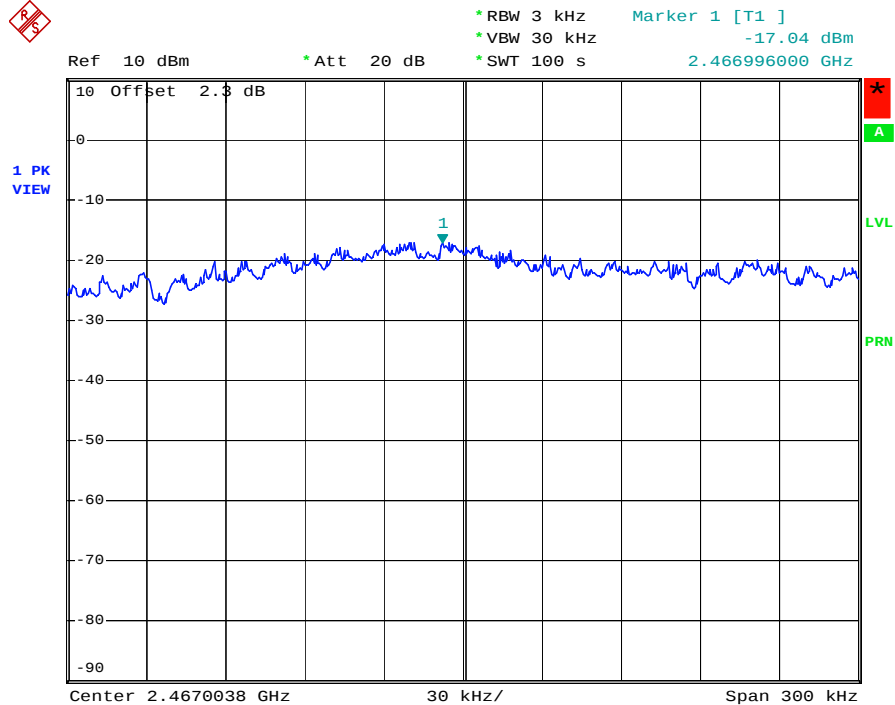
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Power Density Test Data CH-Middle



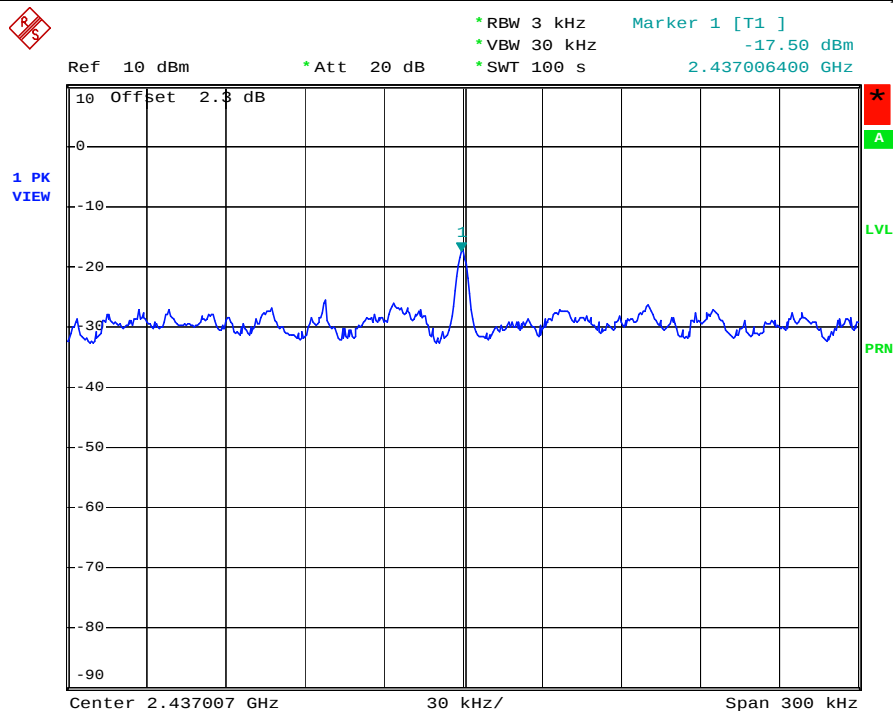
Date: 4.APR.2003 01:58:36

Power Density Test Data CH-High



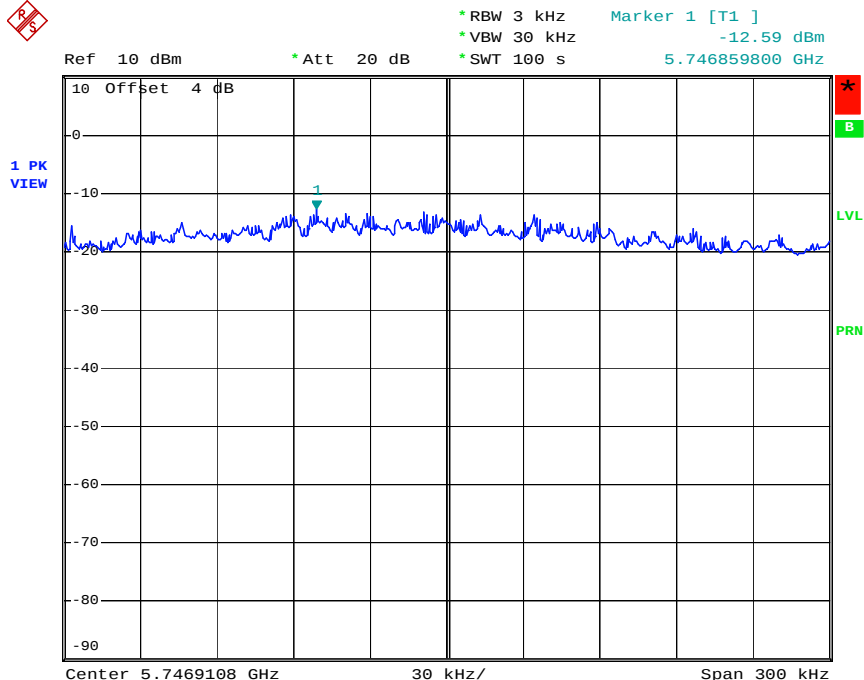
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2.4GHz Band, IEEE802.11g Turbo Mode Power Density Test Data CH-Middle



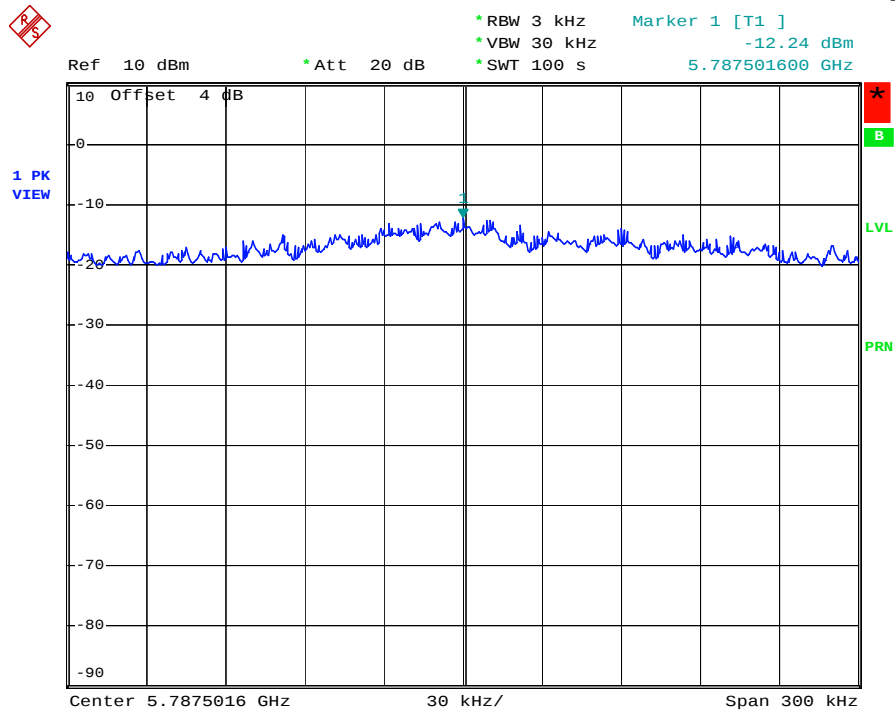
Date: 4.APR.2003 00:17:54

5.8GHz Band, IEEE802.11a Mode Power Density Test Data CH-Low



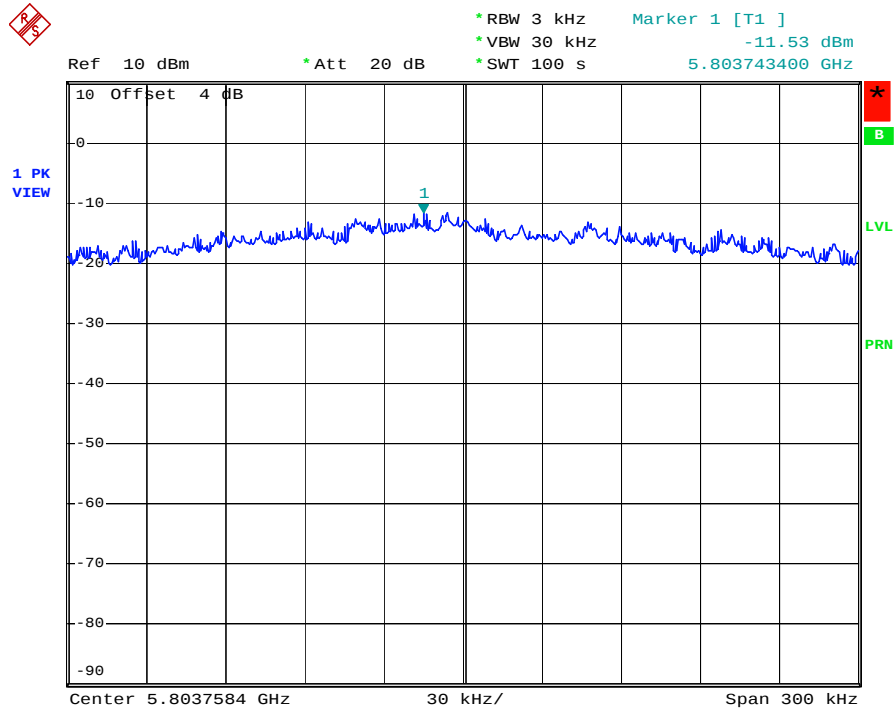
Date: 3.APR.2003 23:29:09

Power Density Test Data CH-Middle



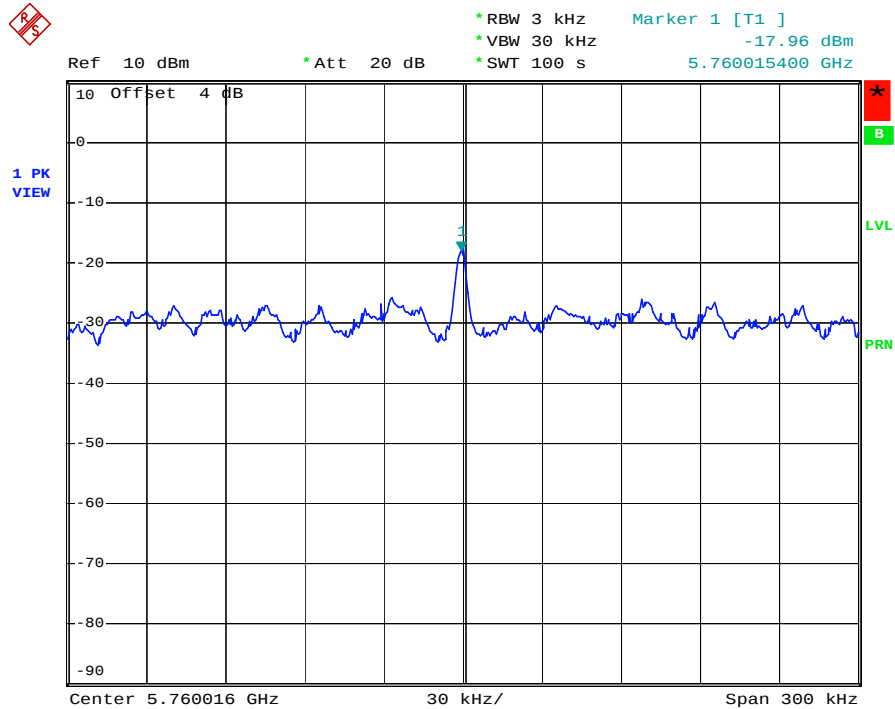
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Power Density Test Data CH-High



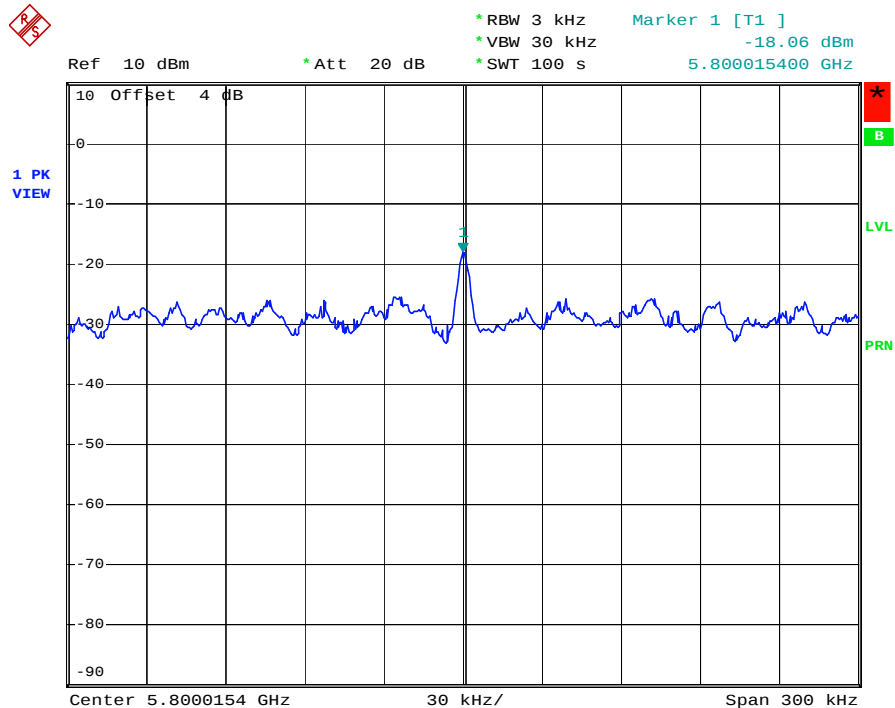
Date: 3.APR.2003 23:22:48

5.8GHz Band, IEEE802.11a Turbo Mode Power Density Test Data CH-Low



Date: 3.APR.2003 23:17:02

Power Density Test Data CH-High



Date: 3.APR.2003 23:19:58

11. ANTENNA REQUIREMENT

11.1 Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

And according to §15.247(i), if transmitting antennas of directional gain greater than 6dBi are used the power shall be reduced by the amount in 1dB that the directional gain of the antenna exceeds 6 dBi.

11.2 Antenna Connected Construction

The directional gins of antenna used for transmitting as below:

- i. antenna:
Manufacturer: SkyCross
Model : CBL-2450U-5250U-5800U-A
Antenna Gain: 3.0 dBi for 2.4GHz
3.25 dBi for 5.25GHz
2.0 dBi for 5.8GHz
- ii. antenna :
Manufacturer: Joymax,
Model : THF-6180-120-1
Antenna Gain: 5dBi for both 2.4GHz and 5GHz

the antenna connector is designed with unique connector no consideration of replacement by the user. Please see EUT photo for details.

12. RF Exposure

12.1 Standard Applicable

According to §15.247(b)(4) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-15000	/	/	1.0	30

F = frequency in MHz

* = Plane-wave equipment power density

MPE Prediction

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG / 4 \pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

SkyCross (A-antenna port)**2.4GHz Band**

Maximum peak output power at antenna input terminal: 20.61 (dBm)

Maximum peak output power at antenna input terminal: 115.08 (mW)

Antenna gain (typical): 3 (dBi)

Maximum antenna gain: 1.995 (numeric)

Prediction distance: 20 (cm)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)Power density at predication frequency at 20 (cm) distance 0.045703 (mW/cm²)

S	P	P	G	G	R
mW/cm ²	mW	dBm	dBi	(numeric)	cm
0.045703596	115.0800389	20.61	3	1.995262	20

Result

The predicted power density level at 20 cm is 0.045703 mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm² at 2462 MHz.

SkyCross (A-antenna port)**5.8GHz Band**

Maximum peak output power at antenna input terminal: 20.61 (dBm)

Maximum peak output power at antenna input terminal: 115.08 (mW)

Antenna gain (typical): 2 (dBi)

Maximum antenna gain: 1.584 (numeric)

Prediction distance: 20 (cm)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)Power density at predication frequency at 20 (cm) distance 0.0363 (mW/cm²)

S	P	P	G	G	R
mW/cm ²	mW	dBm	dBi	(numeric)	cm
0.036303656	115.0800389	20.61	2	1.584893	20

Result

The predicted power density level at 20 cm is 0.0363 mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm² at 5800 MHz.

Joymax (B-antenna port)

Maximum peak output power at antenna input terminal: 20.61(dBm)

Maximum peak output power at antenna input terminal: 115.08 (mW)

Antenna gain (typical): 5 (dBi)

Maximum antenna gain: 3.162 (numeric)

Prediction distance: 20 (cm)

MPE limit for uncontrolled exposure at prediction frequency: 1 (mW/cm²)Power density at predication frequency at 20 (cm) distance 0.072435 (mW/cm²)

S	P	P	G	G	R
mW/cm ²	mW	dBm	dBi	(numeric)	cm
0.072435318	115.0800389	20.61	5	3.162278	20

Result

The predicted power density level at 20 cm is 0.072435 mW/cm². This is below the uncontrolled exposure limit of 1 mW/cm² at 2437 MHz.

14. TERMS OF ABRIVATION

ACP	Adjecent Channel Power
ANSI	Americal National Standard Institute
Ant.	Antenna
AV.	Average detection
CAL.	Calibration
Correct.	Correction
dBc	dB relative to fundamental frequency level
dB_i	Gain in decibels relative to an isotropic antenna
EUT	Equipment Under Test
FREQ.	Frequency
Hor.	Horizontal direction
IEEE	Institute of Electral and Electronic Engineer
LISN	Line Impedance Stabilization Network
MFR	Manufacturer
NSA	Normalized Site Attenuation
OFDM	Orthogonal Frequency Division Multiplexing
PK	Peak detection
PIFA	Printed Invert-F Antenna
Pol.	Polarization
PPSD	Peak Power Spectral Density
Pre-amp.	Pre-amplifier
Q.P.	Quasi-peak detection
RBW	Resolution bandwidth
SAR	Specific Absorption Rate
SRA	Spectrum analyzer
VBW	Video bandwidth
Vert.	Vertical direction



APPENDIX 1

PHOTOGRPHS OF SET UP

Radiated Emission Set up Photos



Conducted Emission Set Up Photos





APPENDIX 2

PHOTOGRPHS OF EUT

Internal antenna with pc-1



Internal antenna with pc-2



Front View of EUT



Back View of EUT



Dissolution View of EUT



Front View of EUT with Antenna



Back View of EUT with Antenna

