FCC CFR47 PART 15 SUBPART C
CERTIFICATION
TEST REPORT

FOR

802.11 a/b/g MINI PCI CARD

MODEL NUMBER: J07H069.01

FCC ID: MCLJO7H06903

REPORT NUMBER: 03U1760-1A

ISSUE DATE: FEBRUARY 21, 2003

Prepared for
AMBIT MICROSYSTEMS, INC.
5F-1, 5 HSIN-AN ROAD, HSINCU
SCIENCE-BASED INDUSTRAIL PARK, TAIWAN, R.O.C.

Prepared by
COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD,
MORGAN HILL, CA 95037, USA
TEL: (408) 463-0885
FAX: (408) 463-0888

TABLE OF CONTENTS

1. TEST RESULT CERTIFICATION 3

2. EUT DESCRIPTION 4

3. TEST METHODOLOGY 5

4. FACILITIES AND ACCREDITATION 5

4.1. FACILITIES AND EQUIPMENT 5

4.2. TABLE OF ACCREDITATIONS AND LISTINGS 6

5. CALIBRATION AND UNCERTAINTY 7

5.1. MEASURING INSTRUMENT CALIBRATION 7

5.2. MEASUREMENT UNCERTAINTY 7

5.3. TEST AND MEASUREMENT EQUIPMENT 8

6. SETUP OF EQUIPMENT UNDER TEST 9

7. APPLICABLE RULES 13

8. TEST SETUP, PROCEDURE AND RESULT 16

8.1. 6 dB BANDWIDTH 16

8.2. PEAK POWER 30

8.3. AVERAGE POWER 32

8.4. PEAK POWER SPECTRAL DENSITY 34

8.5. MAXIMUM PERMISSIBLE EXPOSURE 47

8.6. SPURIOUS EMISSIONS 50

8.7. RADIATED EMISSIONS 73

8.8. POWERLINE CONDUCTED EMISSIONS 103

8.9. SETUP PHOTOS 106

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

1. TEST RESULT CERTIFICATION

COMPANY NAME: AMBIT MICROSYSTEMS
5F-1, 5 HSIN-AN ROAD, HSINCU
SCIENCE BASED INDUSTRIAL PARK, TAIWAN, R.O.C.

EUT DESCRIPTION: 802.11 A/B/G MINI PCI CARD

MODEL NAME: J07H069.01

DATE TESTED: DECEMBER 20, 2002 – FEBRUARY 21, 2003

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document.

Note: The 2.4 and 5.8 GHz bands are applicable to this report; another band of operation (5.2 GHz) is documented in a separate report

Approved & Released For CCS By:

MIKE HECKROTTE
CHIEF ENGINEER
COMPLIANCE CERTIFICATION SERVICES

Tested By:

NEELESH RAJ
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

2. EUT DESCRIPTION

The J07H069.01 card is an 802.11a/b/g Mini-PCI module for the Agency Series PP2170 Laptop. The module is compatible with the IEEE 802.11a standard and the IEEE 802.11g draft standard, and meets the mechanical specifications of the Type IIIA Mini-PCI form factor. The operational frequency range includes:

2412 to 2.462 GHz and 5.745 to 5.825 GHz

It is based upon an Atheros Communications AR5001 three-chipset reference design. The three chips include the AR5111 integrated 5GHz CMOS radio transceiver, the AR2111 5GHz/2.4GHz integrated up/down-converter, and the AR5212 MAC/baseband processor.

The rated conducted output power of the transmitter when operating in 802.11a mode is 20.71dbm in the 5.725 to 5.850 GHz band. The rated conducted output power of the transmitter when operating in 802.11b CCK mode is 20.08dbm in the 2.4 to 2.4835 GHz band. The rated conducted output power of the transmitter when operating in 802.11g OFDM mode is 21.98dbm in the 2.4 to 2.4835 GHz band. When the J07H069.01 module is installed in the Agency Series PP2170 laptop, each antenna port connector is attached to a stamped metal, PIFA antenna. These antennas are embedded in each side of the laptop display.

The peak gains of these antennas vs. frequency are:

Peak gain in the 2.4 to 2.4835 GHz band is 4.96 dBi.
Peak gain in the 5.725 to 5.850 GHz band is 2.37 dBi.

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, and 15.407.

4. FACILITIES AND ACCREDITATION

4.1. FACILITIES AND EQUIPMENT

The open area test sites and conducted measurement facilities used to collect the radiated data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

4.2. TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	FCC	3/10 meter Open Area Test Sites to perform FCC Part 15/18 measurements	1300
Japan	VCCI	CISPR 22 Two OATS and one conducted Site	VCCI R-1014, R-619, C-640
Norway	NEMKO	EN50081-1, EN50081-2, EN50082-1, EN50082-2, IEC61000-6-1, IEC61000-6-2, EN50083-2, EN50091-2, EN50130-4, EN55011, EN55013, EN55014-1, EN55104, EN55015, EN61547, EN55022, EN55024, EN61000-3-2, EN61000-3-3, EN60945, EN61326-1	ELA 117
Norway	NEMKO	EN60601-1-2 and IEC 60601-1-2, the Collateral Standards for Electro-Medical Products. MDD, 93/42/EEC, AIMD 90/385/EEC	ELA-171
Taiwan	BSMI	CNS 13438	SL2-IN-E-1012
Canada	Industry Canada	RSS210 Low Power Transmitter and Receiver	Canada IC2324 A,B,C, and F

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

5. CALIBRATION AND UNCERTAINTY

5.1. MEASURING INSTRUMENT CALIBRATION

The measurement instruments utilized to perform the tests documented in this report have been calibrated in accordance with the manufacturer's recommendations, and are traceable to national standards.

5.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Radiated Emission	
30MHz – 200 MHz	+/- 3.3dB
200MHz – 1000MHz	+4.5/-2.9dB
1000MHz – 2000MHz	+4.6/-2.2dB
Power Line Conducted Emission	
150kHz – 30MHz	+/-2.9

Any results falling within the above values are deemed to be marginal.

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

5.3. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST AND MEASUREMENT EQUIPMENT LIST				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due Date
Spectrum Analyzer	HP	8566B	3014A06685	6/1/03
Spectrum Display	HP	85662A	2152A03066	6/1/03
Quasi-Peak Detector	HP	85650A	3145A01654	6/1/03
Preamplifier	HP	8447D	2944A06833	8/22/03
Log Periodic Antenna	EMCO	3146	9107-3163	3/30/03
Biconical Antenna	Eaton	94455-1	1197	3/30/03
Spectrum Analyzer	HP	8564E	3943A01643	7/22/03
Spectrum Analyzer	HP	8593EM	3710A00205	6/11/03
Preamplifier (1 - 26.5GHz)	HP	8449B	3008A00369	6/30/03
Preamplifier (1 - 26.5GHz)	Miteq	NSP10023988	646456	4/26/03
Horn Antenna (1 - 18GHz)	EMCO	3115	6717	2/4/04
Horn Antenna (1 - 18GHz)	EMCO	3115	6739	2/4/04
Horn Antenna (18 – 26.5GHz)	ARA	MWH 1826/B	1013	11/7/03
High Pass Filter (4.57GHz)	FSY Microwave	FM-4570-9SS	003	N.C.R.
High Pass Filter (7.600GHz)	FSY Microwave	FM-7600	N/A	N.C.R
Harmonic Mixer	HP	11970A	3008A04190	10/14/05
Spectrum Analyzer	HP	E4404B	ID 963805	3/25/03
PSA Series Spectrum Analyzer	Aglient	E4446A	US42070220	1/13/04
PSA Series Spectrum Analyzer	Aglient	E4440A	US42221737	9/24/03

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

6. SETUP OF EQUIPMENT UNDER TEST

SETUP INFORMATION FOR TRANSMITTER TESTS

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Device Type	Manufacturer	Model	Serial Number	FCC ID
Laptop	TOSHIBA	51212942PU	N/A	N/A
AC Adapter	TOSHIBA	PA3048U-1ACA	002A04650556	N/A

I/O CABLES

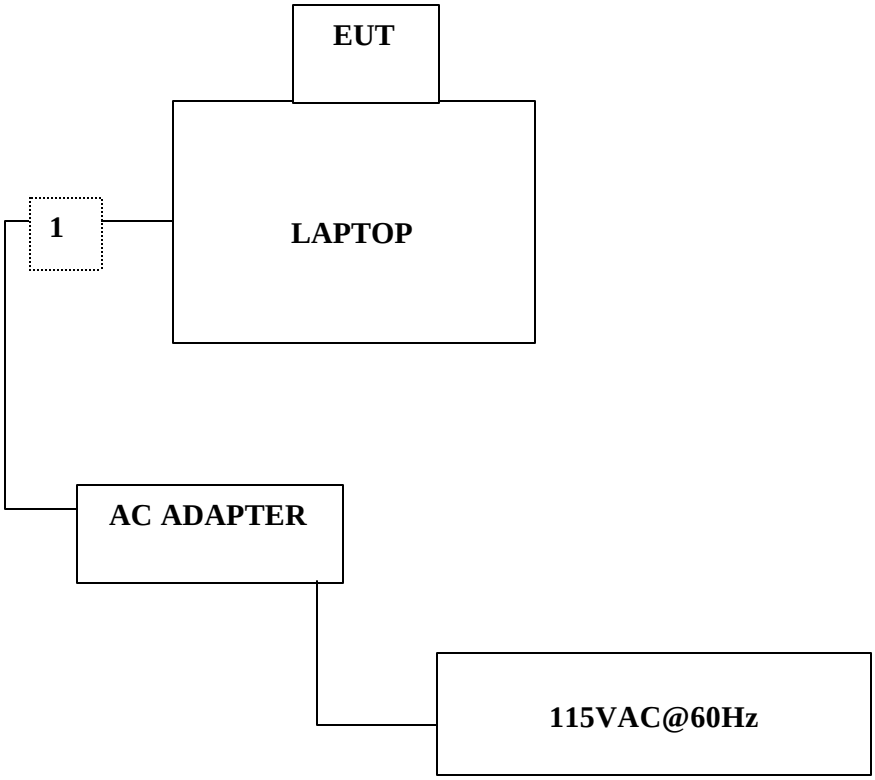
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	PWR	1	¼ DC PWR	Unshielded	1.86 m	

TEST SETUP

The EUT was operated from the PCMCIA slot of the laptop via a PCMCIA extender. The antennas are external.

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

SETUP DIAGRAM FOR TRANSMITTER TESTS



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

SETUP INFORMATION FOR DIGITAL DEVICE TESTS

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Device Type	Manufacturer	Model	Serial Number	FCC ID
LAPTOP	GENERIC H2	MS2111	8141T01S0315100014	N/A
AC ADAPTER	LITE ON ELEC.	PA-1900-05	230001790E	N/A
MODEM	ACEEX	1414	9013538	IFAXDM1414
PRINTER	HP	2225C	2541S41679	BS46XU2225C

I/O CABLES

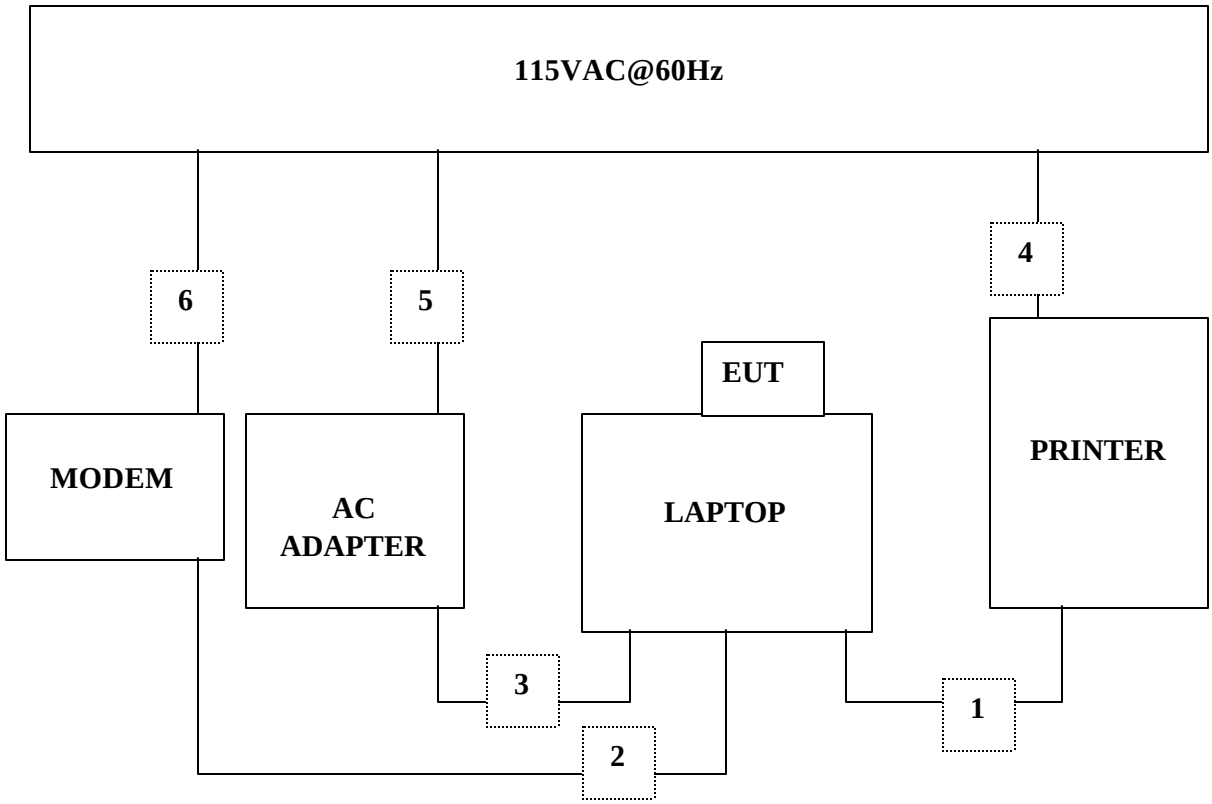
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	PARALLEL	1	DB-25	SHIELDED	1.86M	N/A
2	SERIAL	1	DB-9	SHIELDED	1.86M	N/A
3	PWR	1	¼" DC PWR	UNSHIELDED	1.86M	N/A
4	PWR	1	AC PWR	UNSHIELDED	1.86M	N/A
5	PWR	1	AC PWR	UNSHIELDED	1.86M	N/A
6	PWR	1	AC PWR	UNSHIELDED	1.86M	N/A

TEST SETUP

The EUT was operated from the PCMCIA slot of the laptop via a PCMCIA extender. The antennas are external.

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

SETUP DIAGRAM FOR DIGITAL DEVICE TESTS



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

7. APPLICABLE RULES

§15.247 (a)- BANDWIDTH

(2) For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

§15.247 (b)- POWER OUTPUT

The maximum peak output power of the intentional radiator shall not exceed the following:

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz , and 5725-5850 MHz bands: 1 watt.

(4) Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

§15.247 (b)- RADIO FREQUENCY EXPOSURE

(5) Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See §1.1307(b)(1) of this chapter.

§15.247 (c)- SPURIOUS EMISSIONS

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in §15.209(a) is not required. 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) (see §15.205(c)).

§15.247 (d)- PEAK POWER SPECTRAL DENSITY

(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 3 kHz band during any time interval of continuous transmission.

(f) The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

§15.205- RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2] Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

§15.207- CONDUCTED LIMITS

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

§15.209- RADIATED EMISSION LIMITS

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

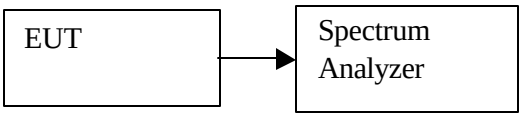
(b) In the emission table above, the tighter limit applies at the band edges.

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8. TEST SETUP, PROCEDURE AND RESULT

8.1. 6 dB BANDWIDTH

TEST SETUP



TEST PROCEDURE

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.

RESULTS

No non-compliance noted:

2.4 GHz b Band

Channel	Frequency (MHz)	B (kHz)	Limit (kHz)	Margin (kHz)
Low	2412	12000	500	11500
Middle	2437	12600	500	12100
High	2462	11070	500	10570

2.4 GHz Normal g Band

Channel	Frequency (MHz)	B (kHz)	Limit (kHz)	Margin (kHz)
Low	2412	16470	500	15970
Middle	2437	16470	500	15970
High	2462	16530	500	16030

2.4 GHz Turbo g Band

Channel	Frequency (MHz)	B (kHz)	Limit (kHz)	Margin (kHz)
Middle	2437	35830	500	35330

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

5.8 GHz Band Normal Mode

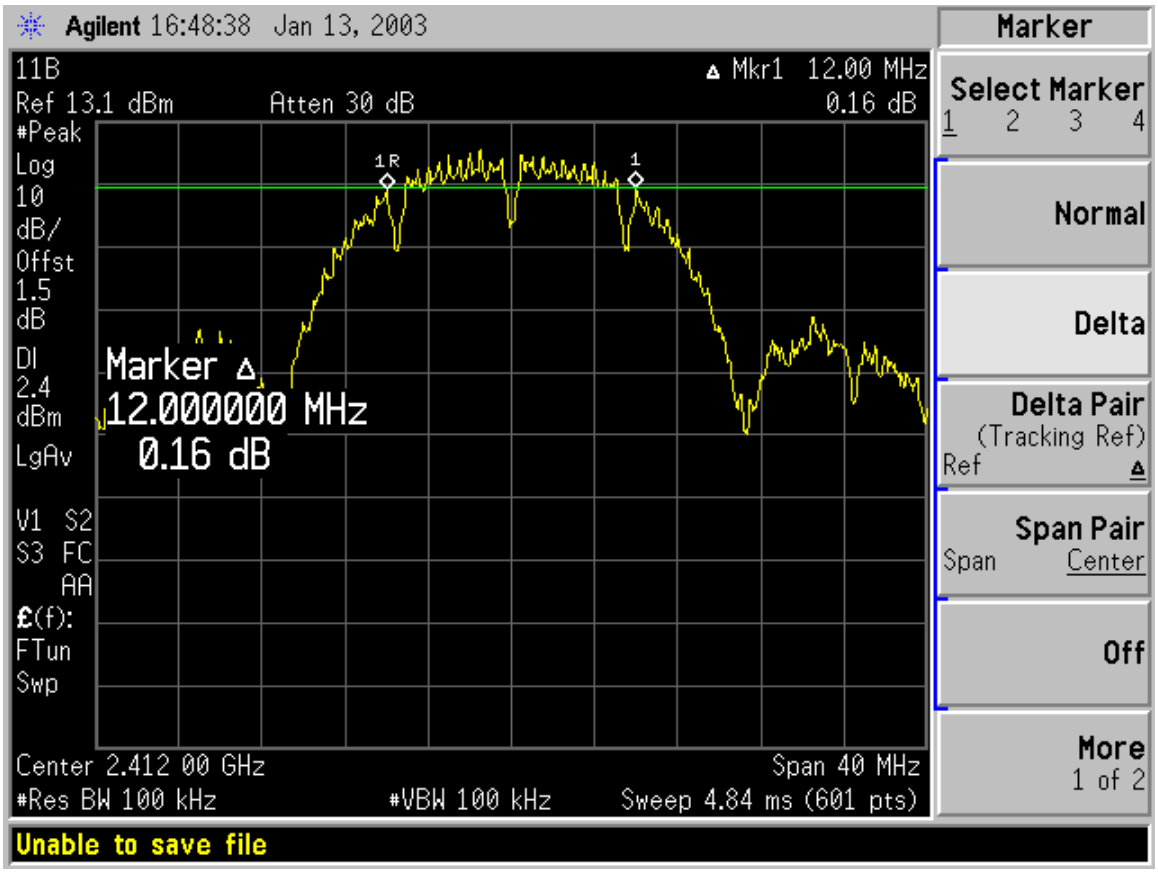
Channel	Frequency (MHz)	B (kHz)	Limit (kHz)	Margin (kHz)
Low	5745	16600	500	16100
Middle	5785	16600	500	16100
High	5825	16600	500	16100

5.8 GHz Band Turbo Mode

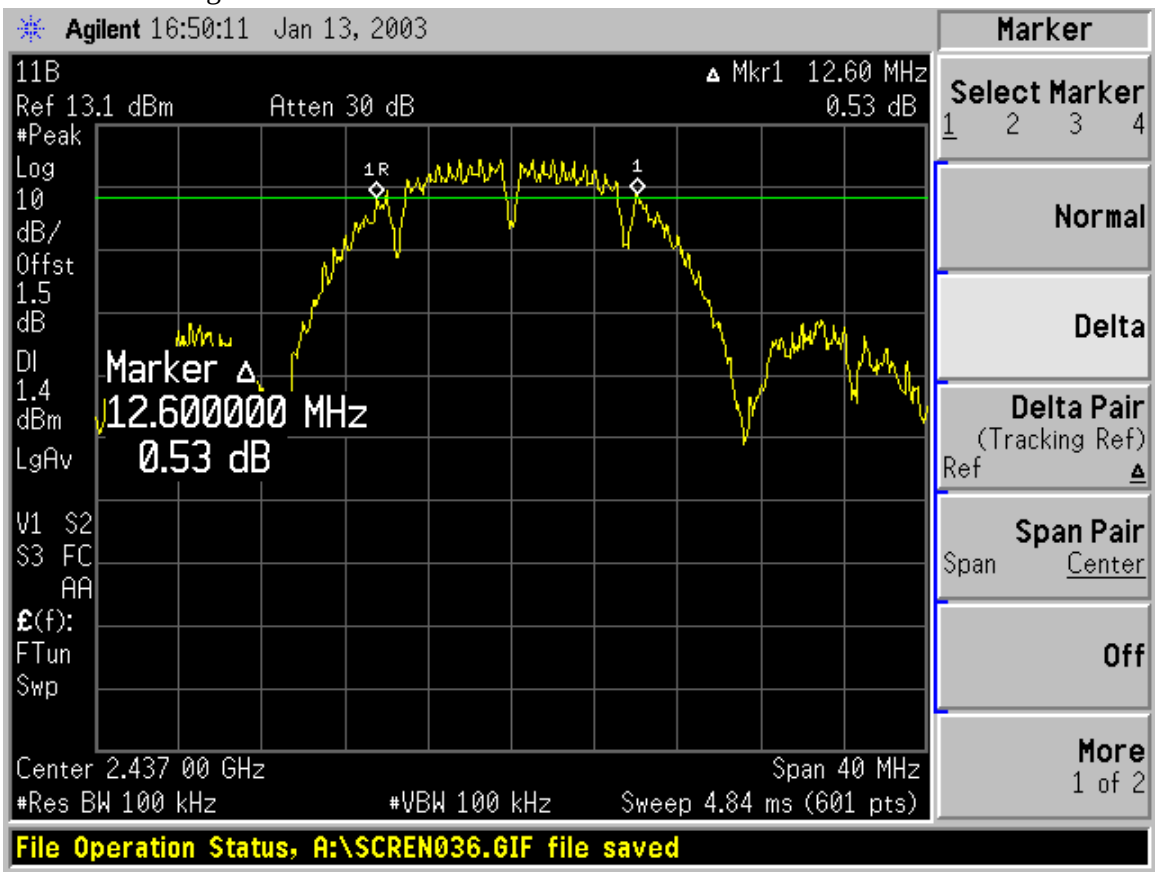
Channel	Frequency (MHz)	B (kHz)	Limit (kHz)	Margin (kHz)
Low	5760	33080	500	32580
High	5800	33080	500	32580

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

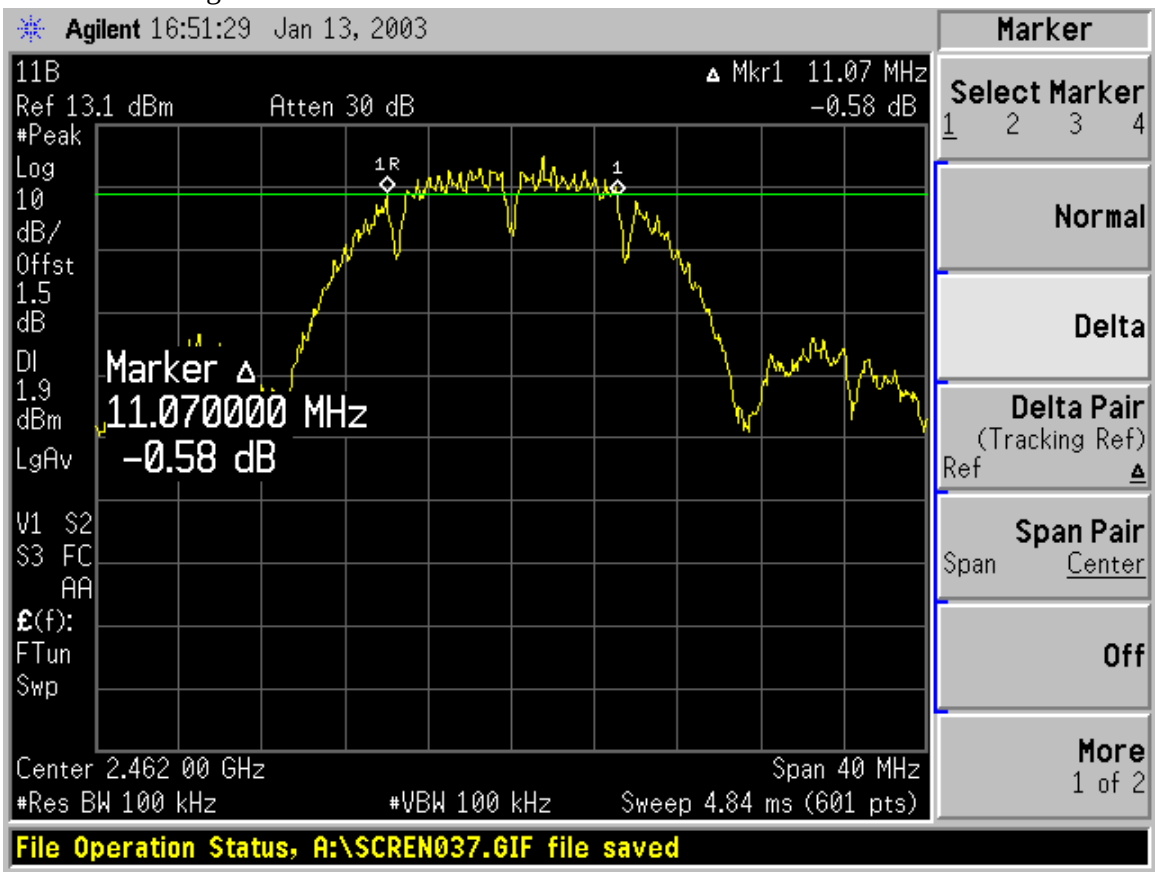
6 DB BANDWIDTH (2.4 GHZ b BAND)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

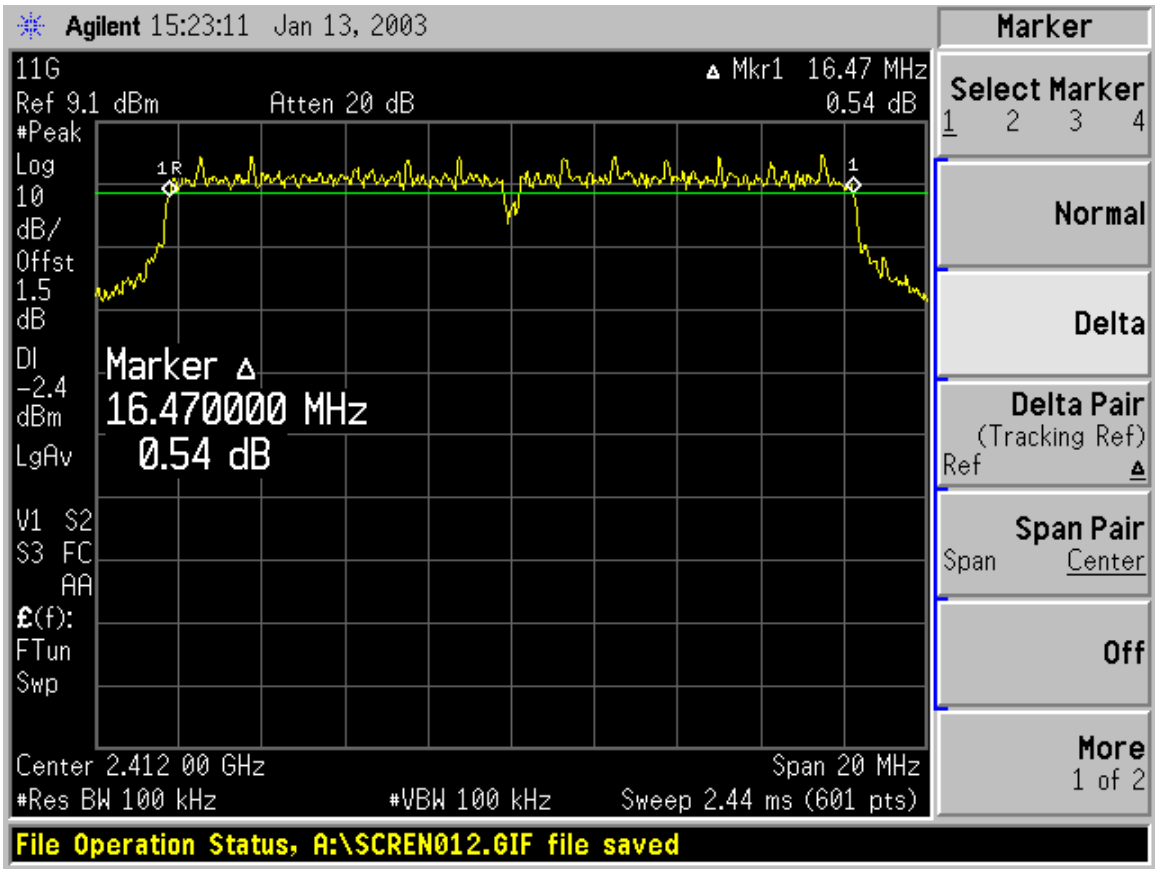


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

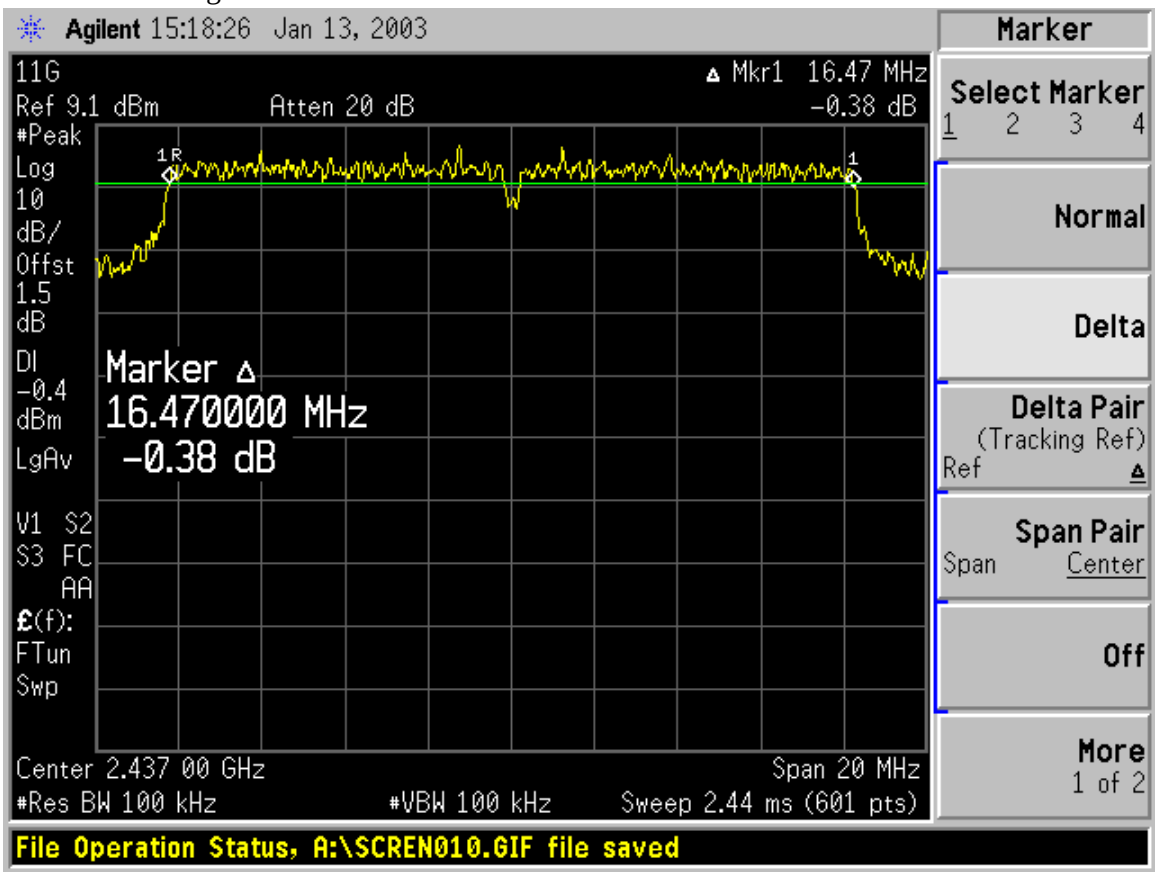


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

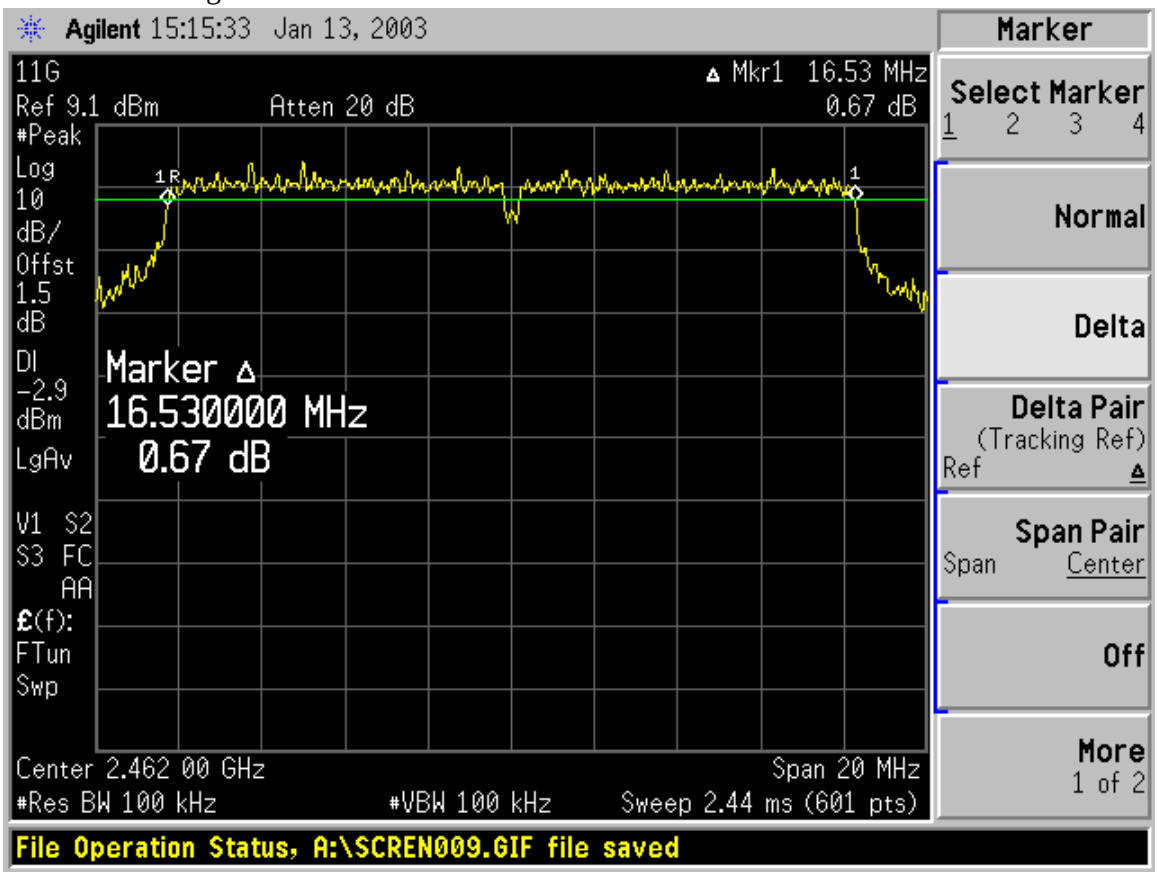
6 DB BANDWIDTH (2.4 GHZ g BAND, NORMAL MODE)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

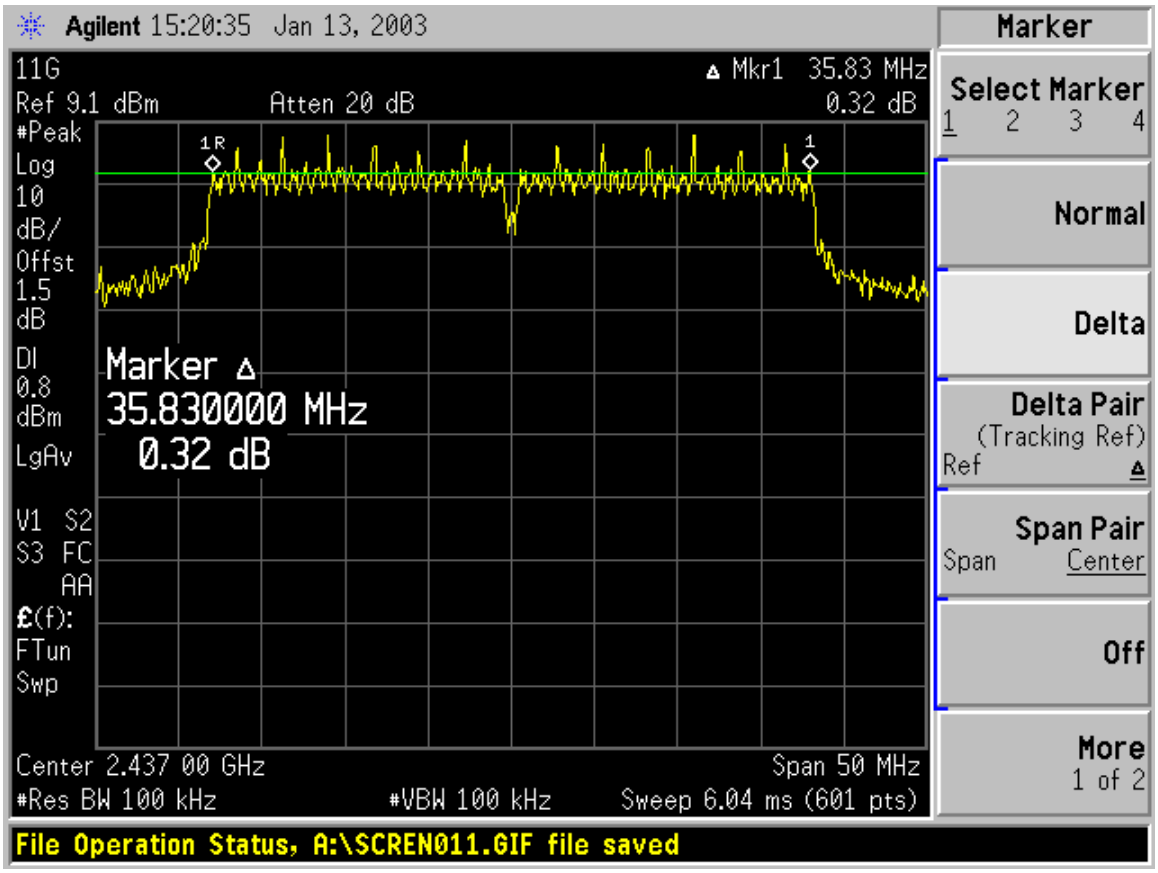


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



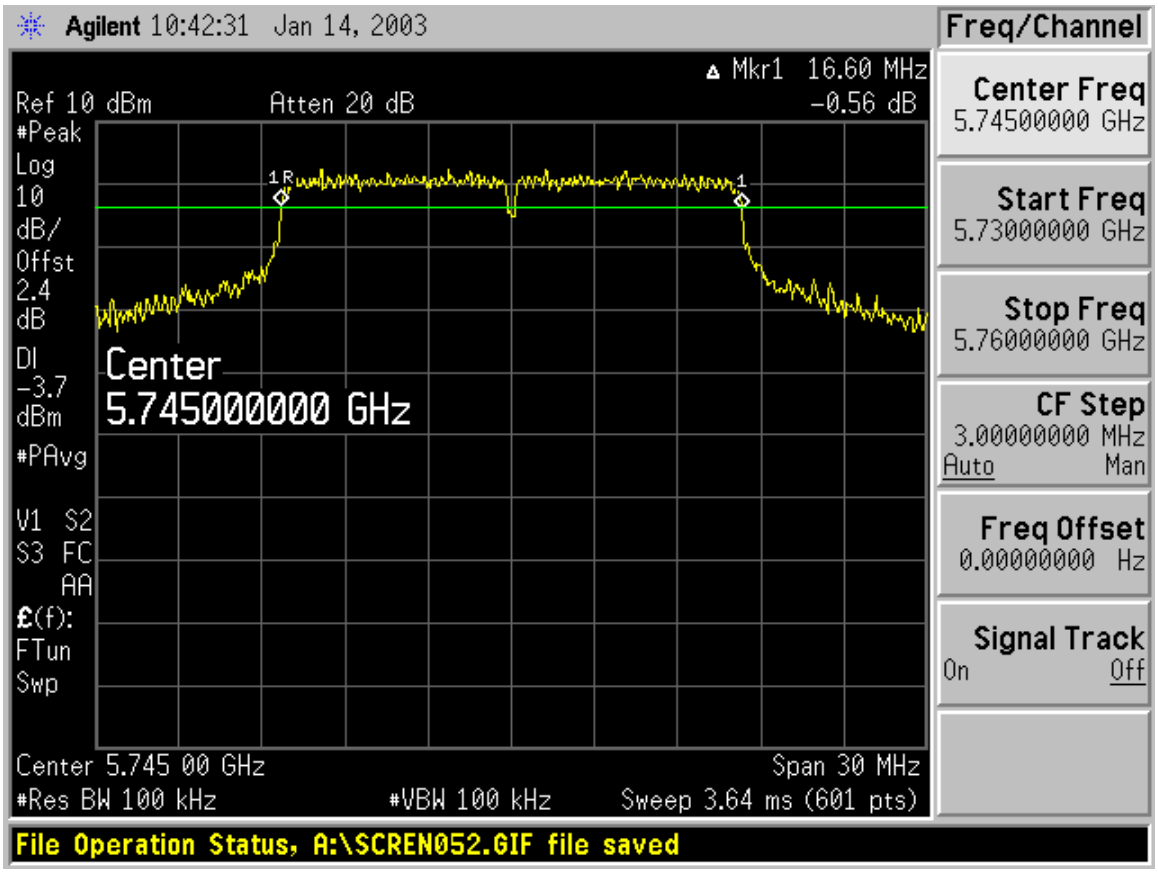
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

6 DB BANDWIDTH (2.4 GHZ g BAND, TURBO MODE)

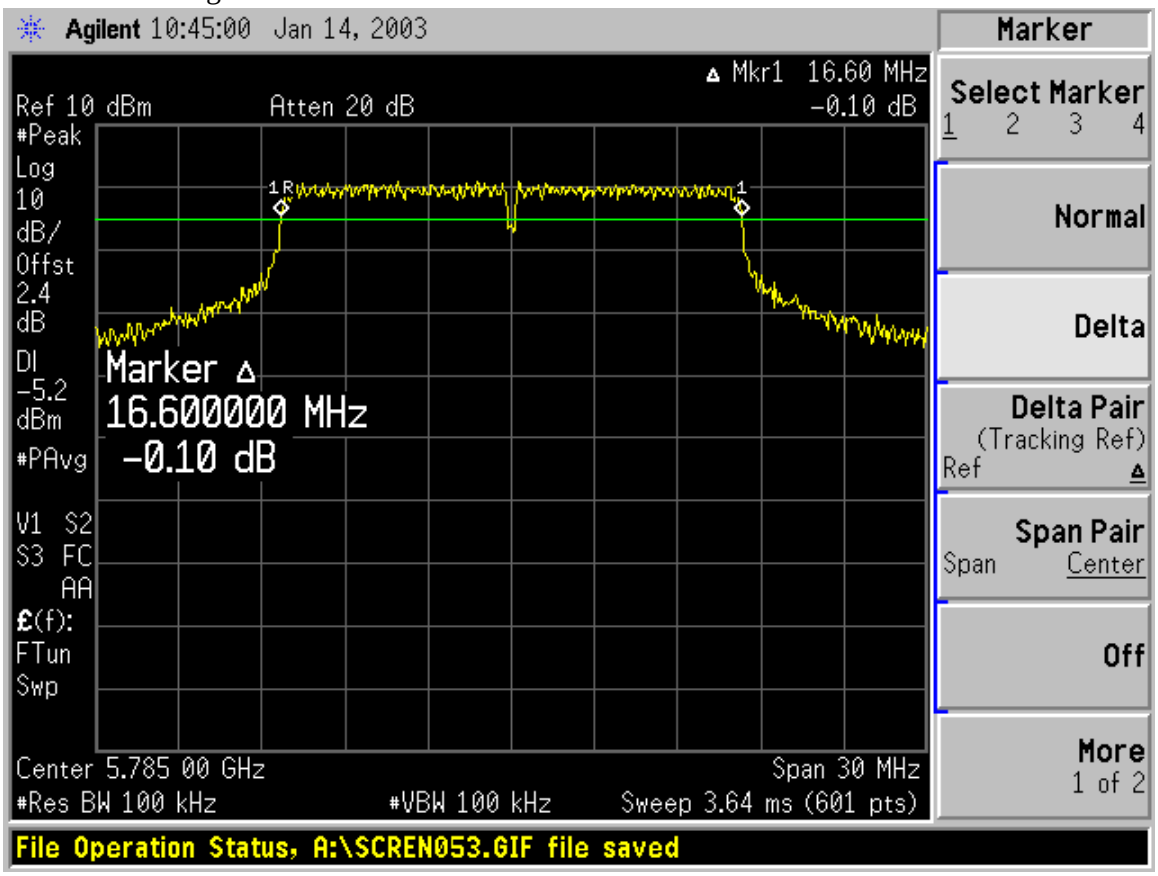


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

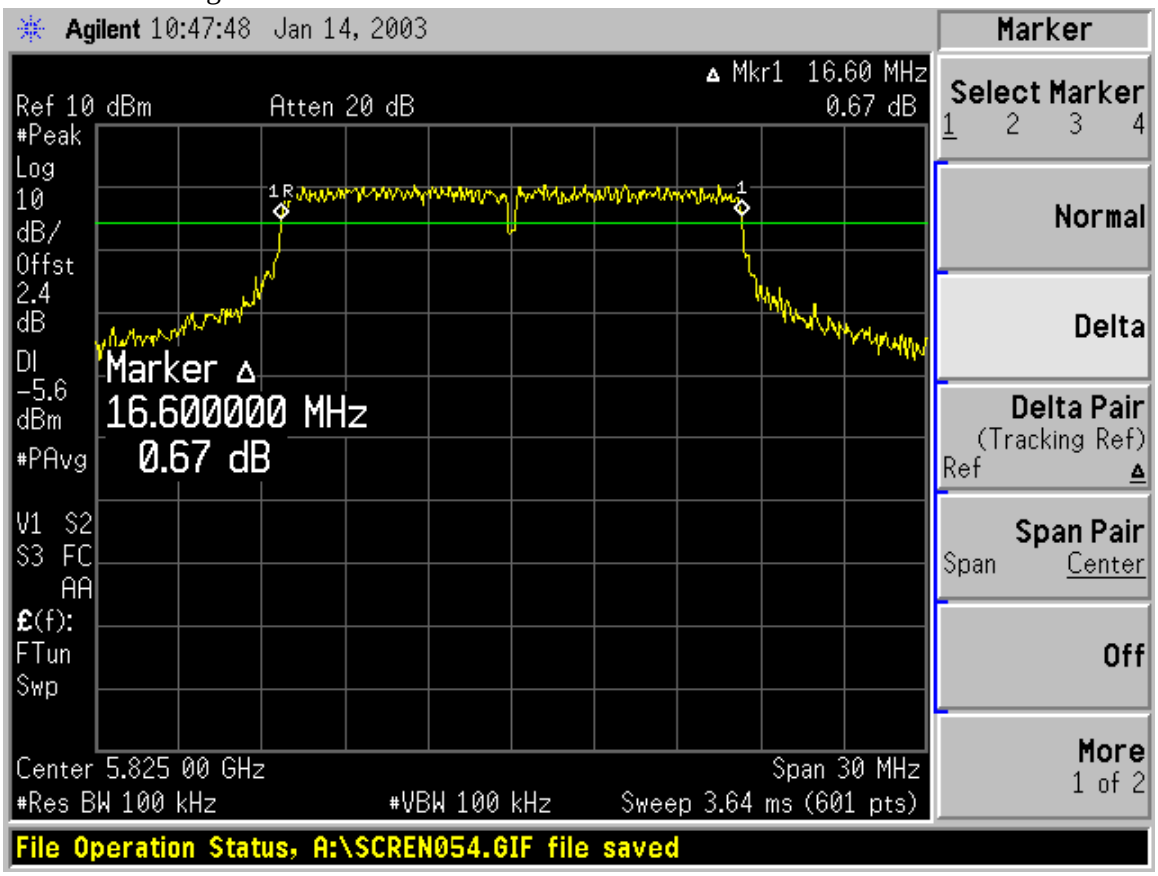
6 DB BANDWIDTH (5.8 GHZ BAND, NORMAL MODE)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

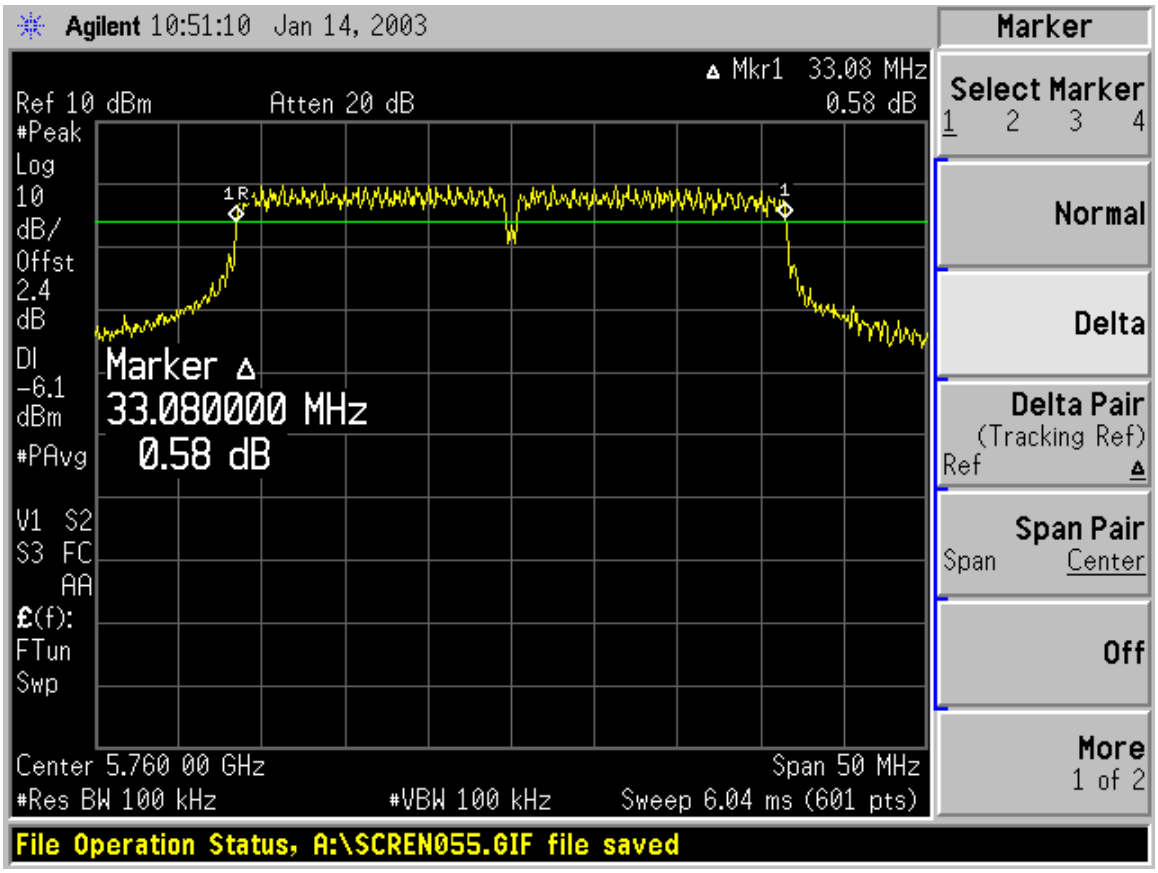


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

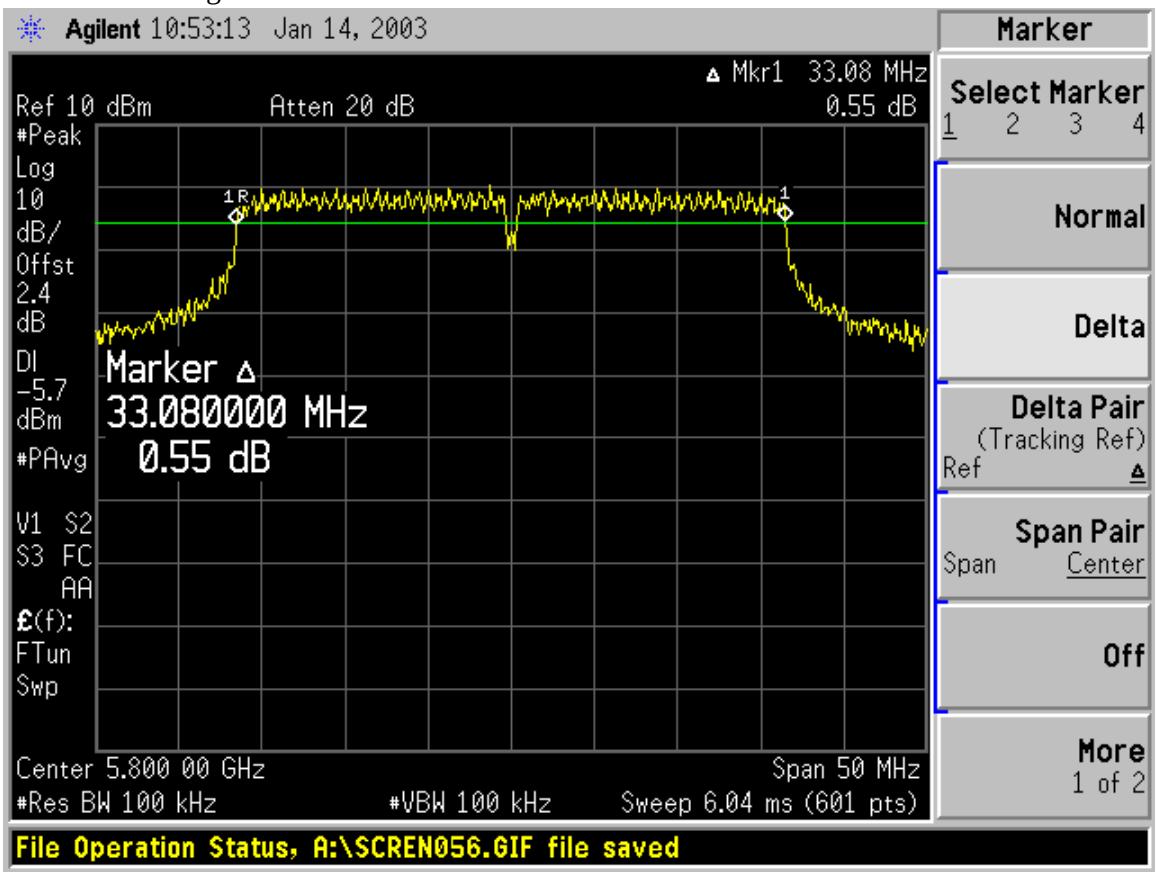


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

6 DB BANDWIDTH (5.8 GHZ BAND, TURBO MODE)



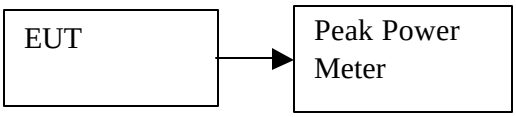
COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.2. PEAK POWER

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the power meter. The power meter is set to read peak power.

LIMIT

The maximum antenna gain = 4.96 dBi, therefore the limit is 30 dBm.

RESULTS

No non-compliance noted:

2.4 GHz BAND RESULTS

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

2.4 GHz b Band

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	20.08	30	-9.92
Middle	2437	19.88	30	-10.12
High	2462	19.09	30	-10.91

2.4 GHz g Band Normal Mode

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	21.65	30	-8.35
Middle	2437	21.74	30	-8.26
High	2462	21.48	30	-8.52

2.4 GHz g Band Turbo Mode

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Middle	2437	21.98	30	-8.02

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

5.8 GHz BAND RESULTS

The cable assembly insertion loss of 12.4 dB (including 10 dB pad and 2.4 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

5.8 GHz Band Normal Mode

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	5745	20.53	30	-9.47
Middle	5785	20.71	30	-9.29
High	5825	20.69	30	-9.31

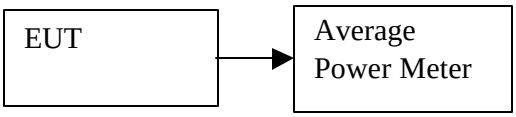
5.8 GHz Band Turbo Mode

Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	5760	20.20	30	-9.8
High	5800	20.17	30	-9.83

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.3. AVERAGE POWER

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the power meter. The power meter is set to read average power.

LIMIT

None, reporting only.

RESULTS

No non-compliance noted:

2.4 GHz BAND RESULTS

The cable assembly insertion loss of 11.5 dB (including 10 dB pad and 1.5 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

2.4 GHz b Band

Channel	Frequency (MHz)	Average Power (dBm)
Low	2412	17.63
Middle	2437	17.77
High	2462	16.43

2.4 GHz g Band Normal Mode

Channel	Frequency (MHz)	Average Power (dBm)
Low	2412	15.41
Middle	2437	18.03
High	2462	18.04

2.4 GHz g Band Turbo Mode

Channel	Frequency (MHz)	Average Power (dBm)
Middle	2437	14.95

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

5.8 GHz BAND RESULTS

The cable assembly insertion loss of 12.4 dB (including 10 dB pad and 2.4 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

5.8 GHz Band Normal Mode

Channel	Frequency (MHz)	Average Power (dBm)
Low	5745	16.00
Middle	5785	16.54
High	5825	16.31

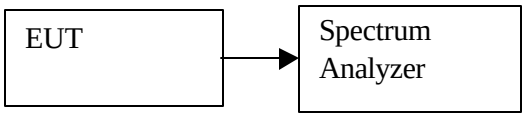
5.8 GHz Band Turbo Mode

Channel	Frequency (MHz)	Average Power (dBm)
Low	5760	16.53
High	5800	16.50

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.4. PEAK POWER SPECTRAL DENSITY

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer, the maximum level in a 3 kHz bandwidth is measured with the spectrum analyzer using RBW = 3 kHz and VBW >= 3KHz, sweep time = span / 3 kHz, and video averaging is turned off. The PPSD is the highest level found across the emission in any 3 kHz band.

RESULTS

No non-compliance noted:

2.4 GHz b Band

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-5.58	8	-13.58
Middle	2437	-6.00	8	-14.00
High	2462	-5.42	8	-13.42

2.4 GHz g Band Normal Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-8.82	8	-16.82
Middle	2437	-7.39	8	-15.39
High	2462	-9.69	8	-17.69

2.4 GHz g Band Turbo Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Middle	2437	-10.69	8	-18.69

5.8 GHz Band Normal Mode

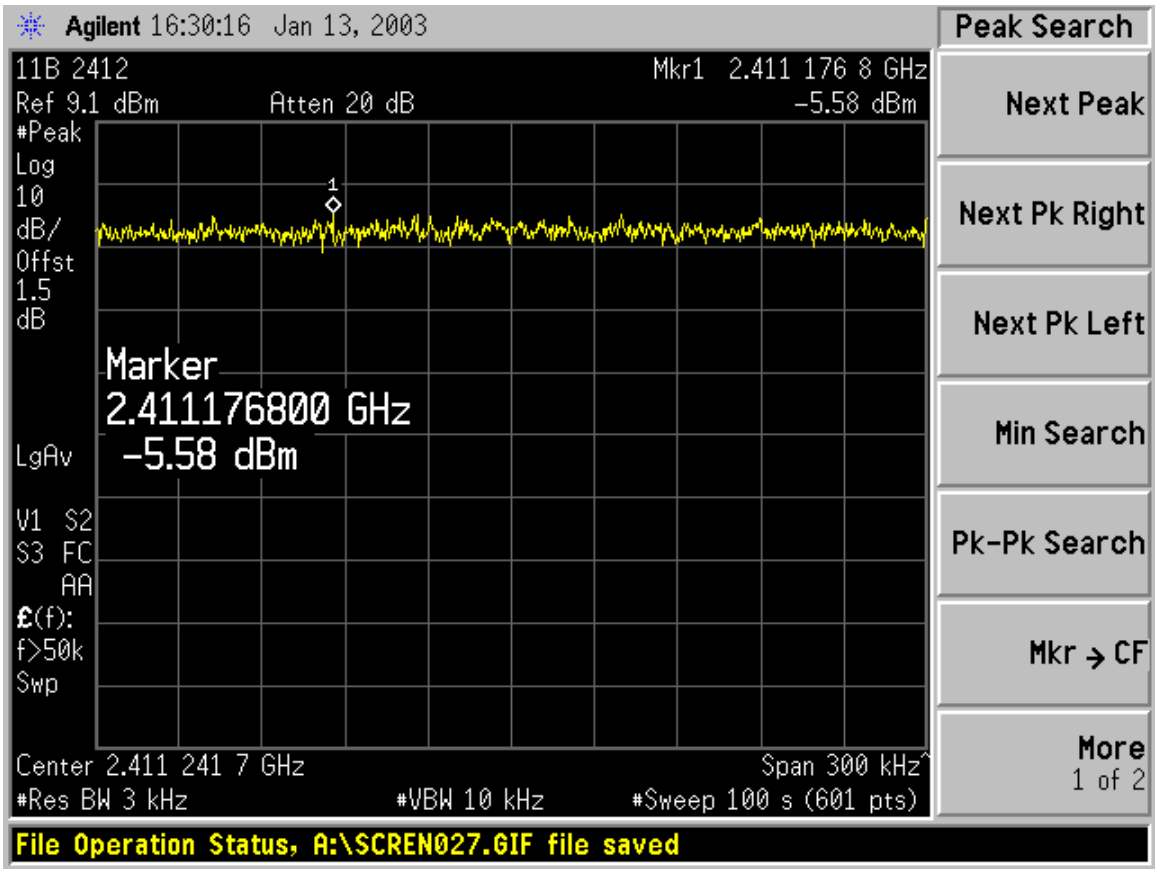
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5745	-9.26	8	-17.26
Middle	5785	-10.07	8	-18.07
High	5825	-10.24	8	-18.24

5.8 GHz Band Turbo Mode

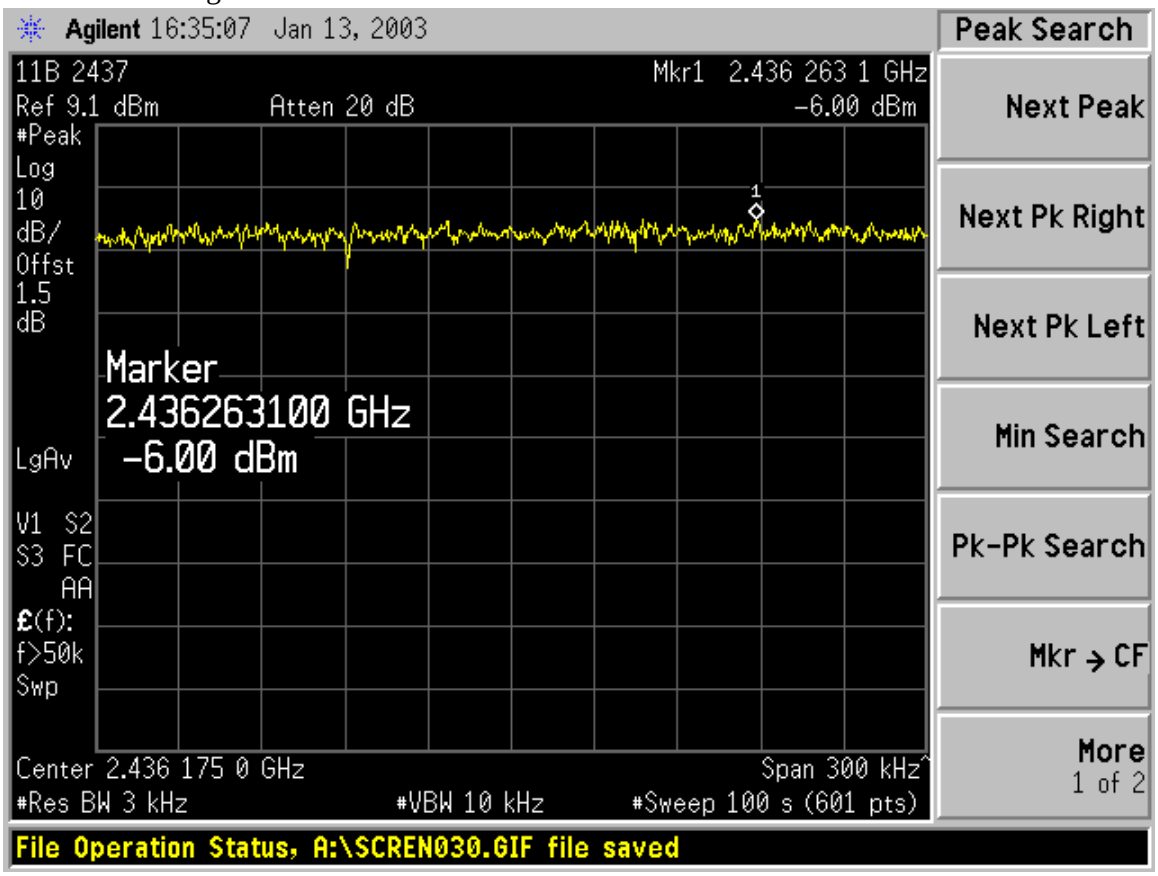
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	5760	-12.08	8	-20.08
High	5800	-12.59	8	-20.59

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

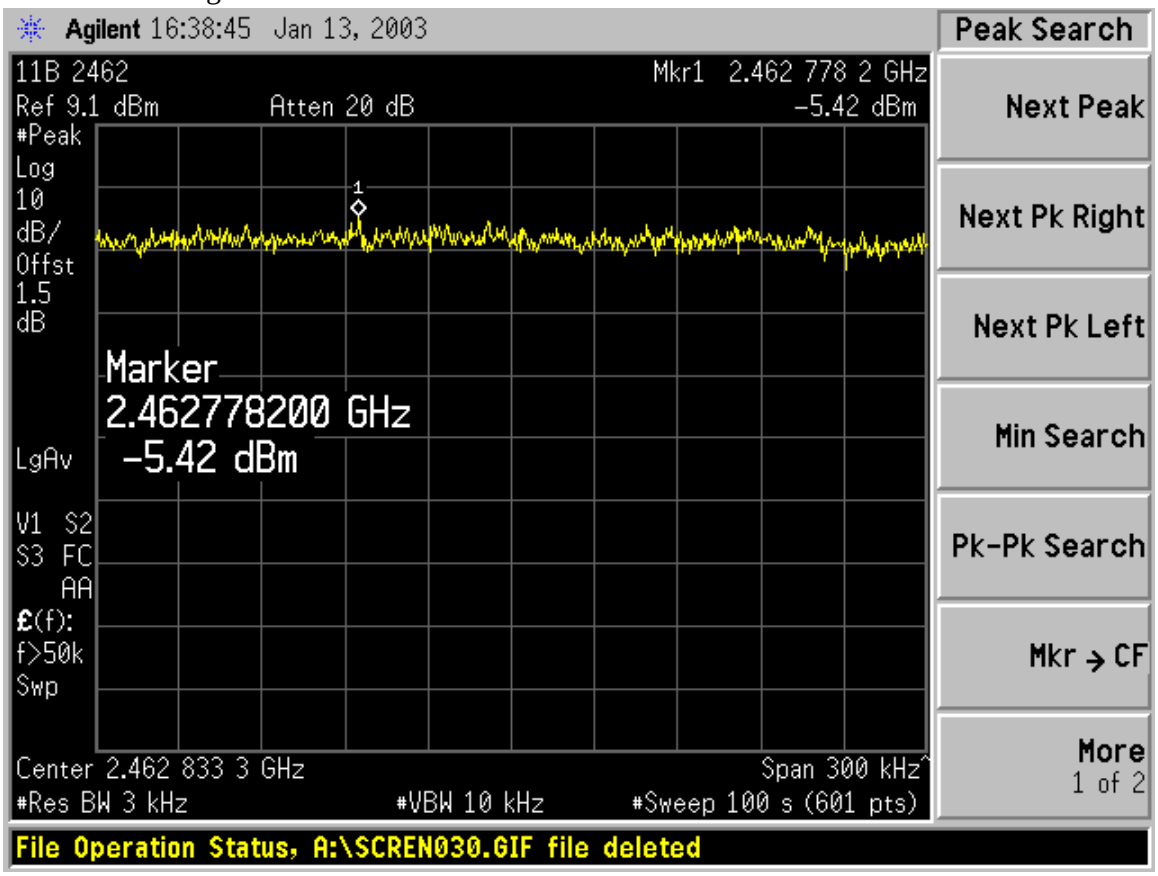
PPSD (2.4 GHZ b BAND)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

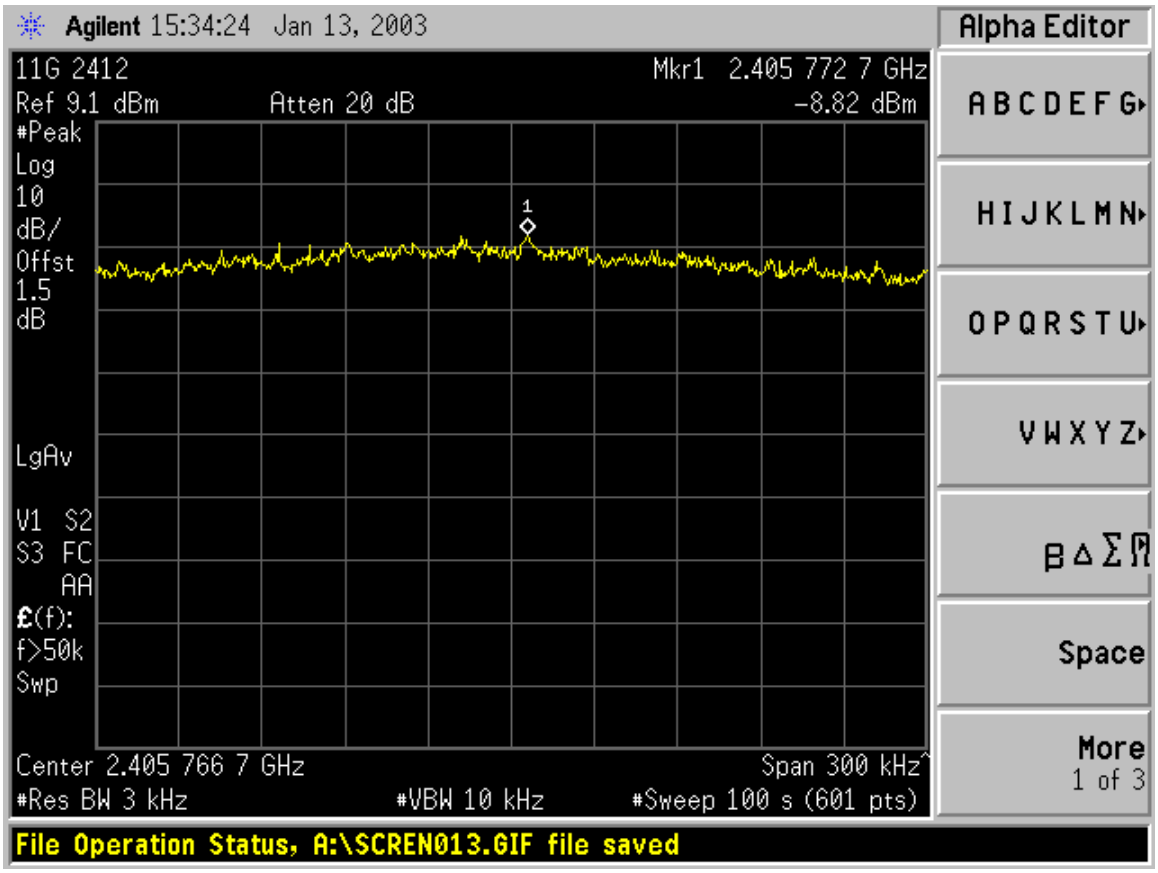


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

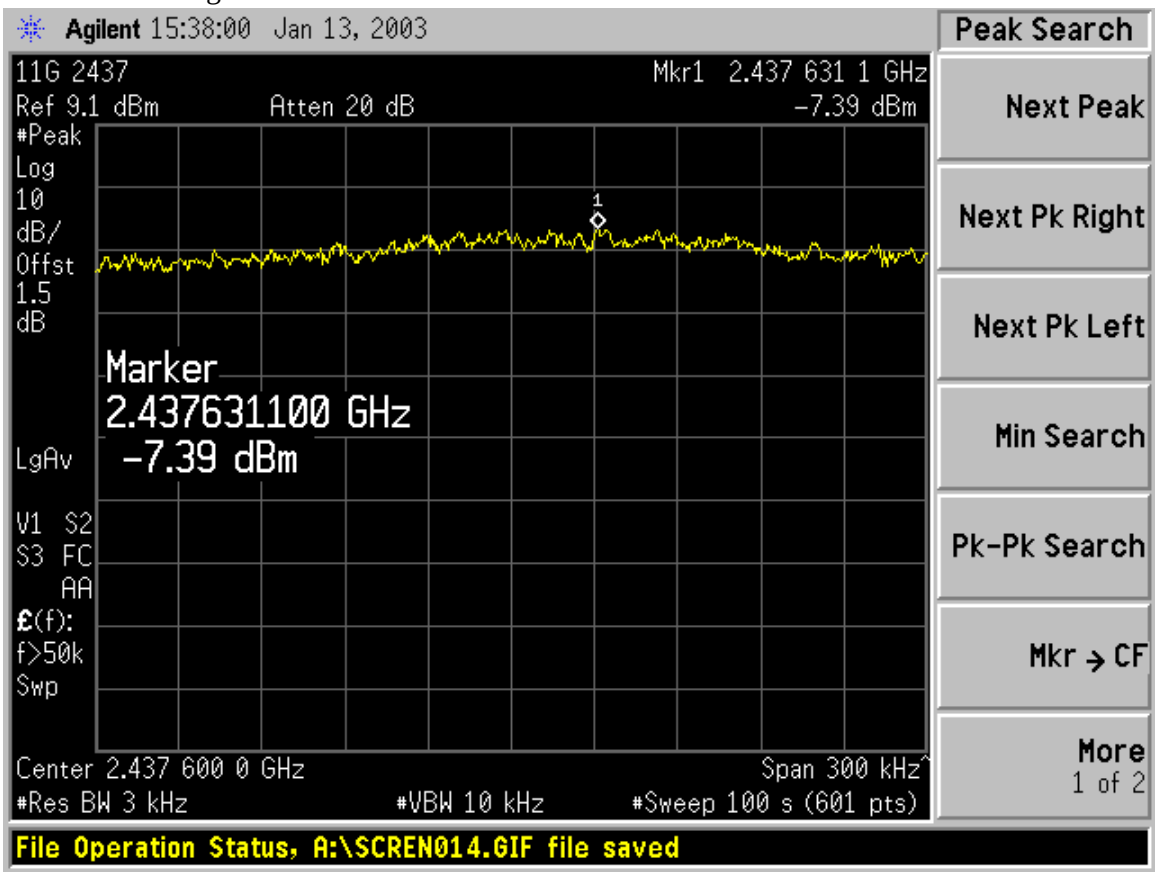


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

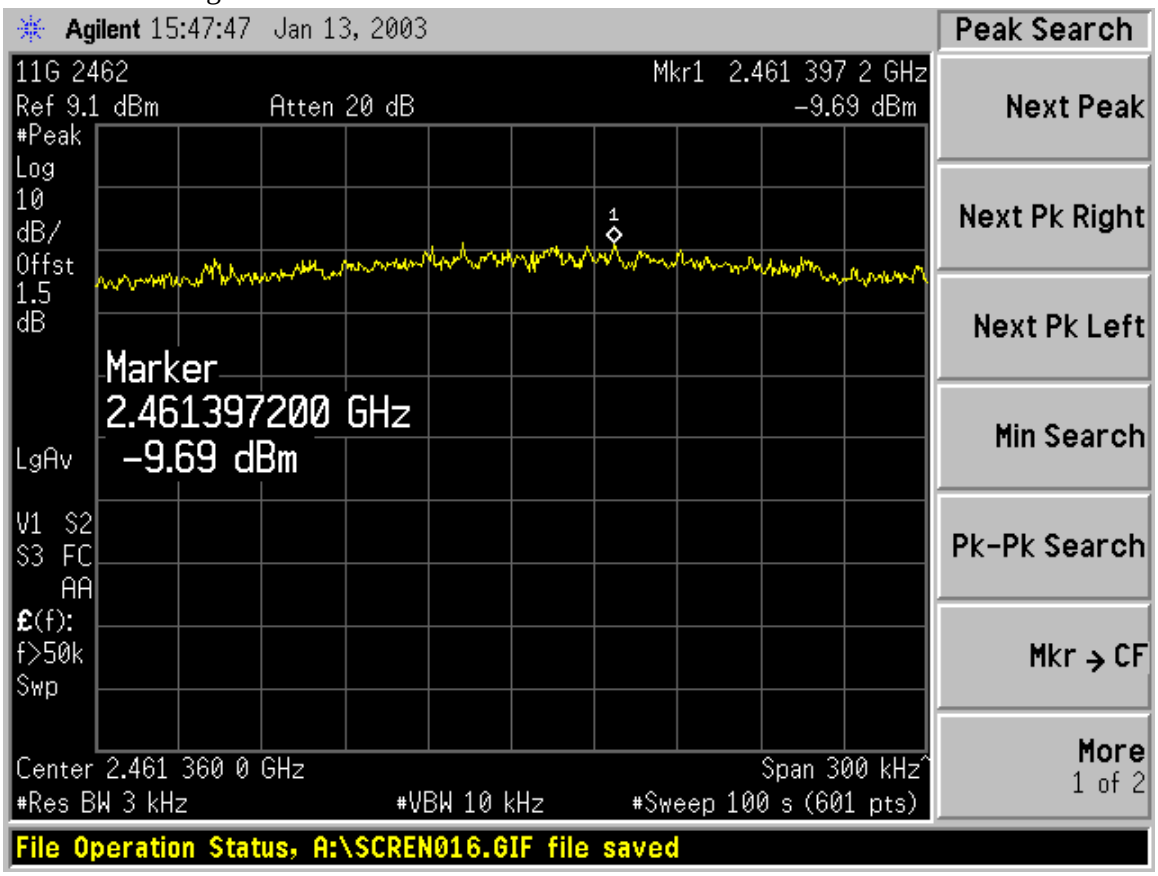
PPSD (2.4 GHZ g BAND, NORMAL MODE)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

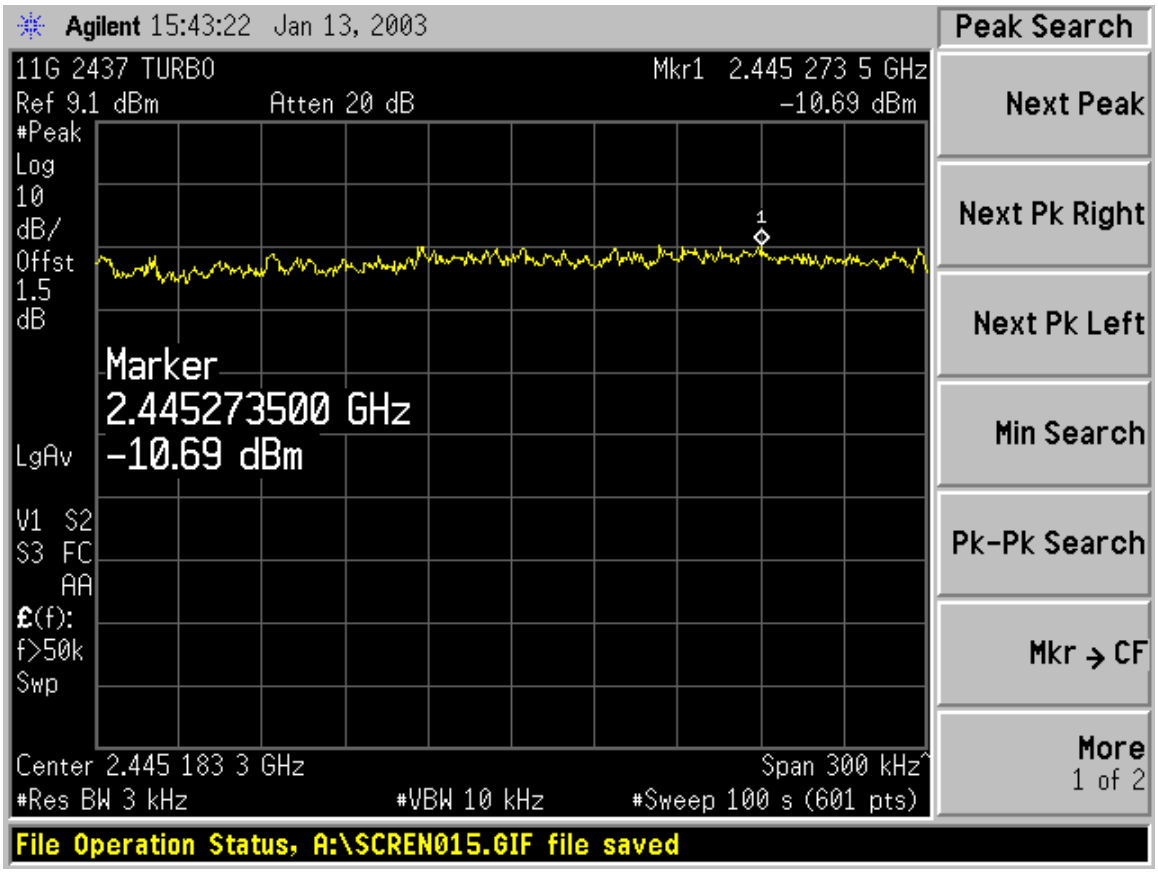


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



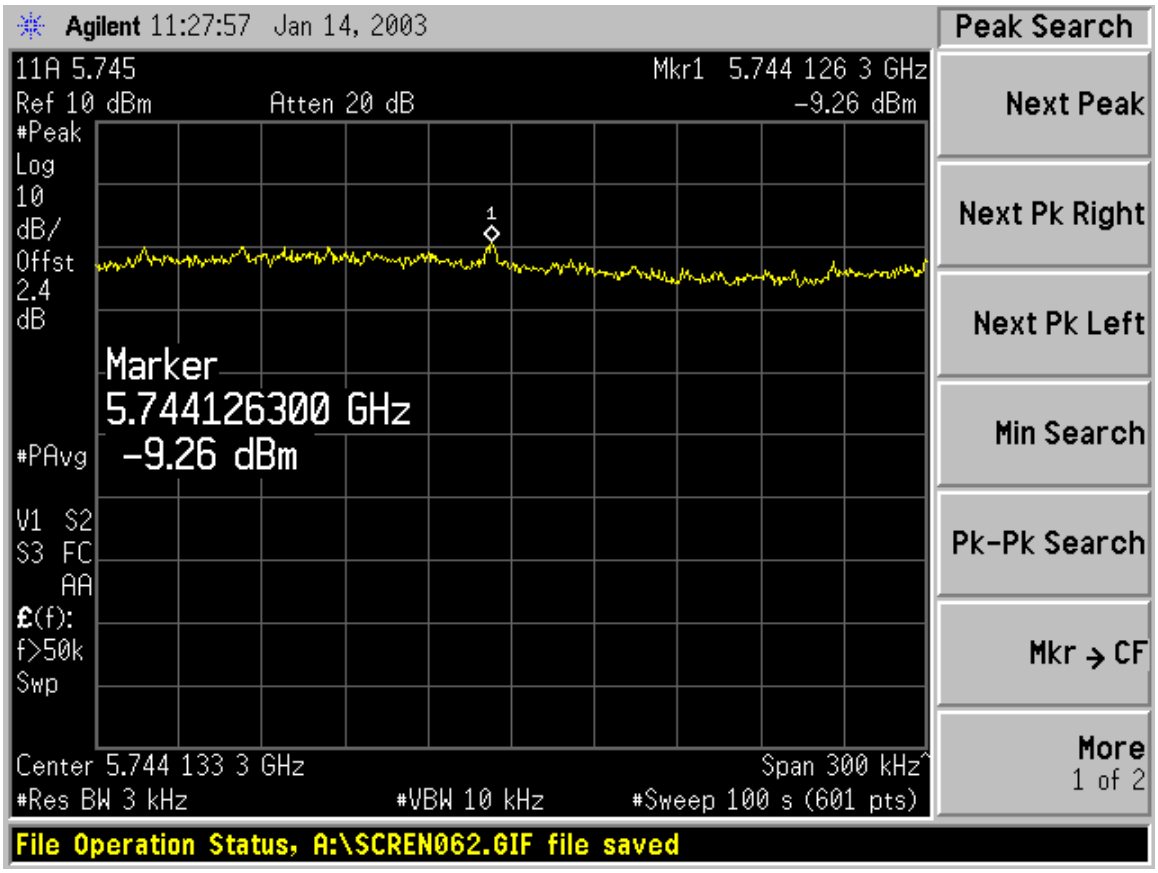
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

PPSD (2.4 GHZ g BAND, TURBO MODE)

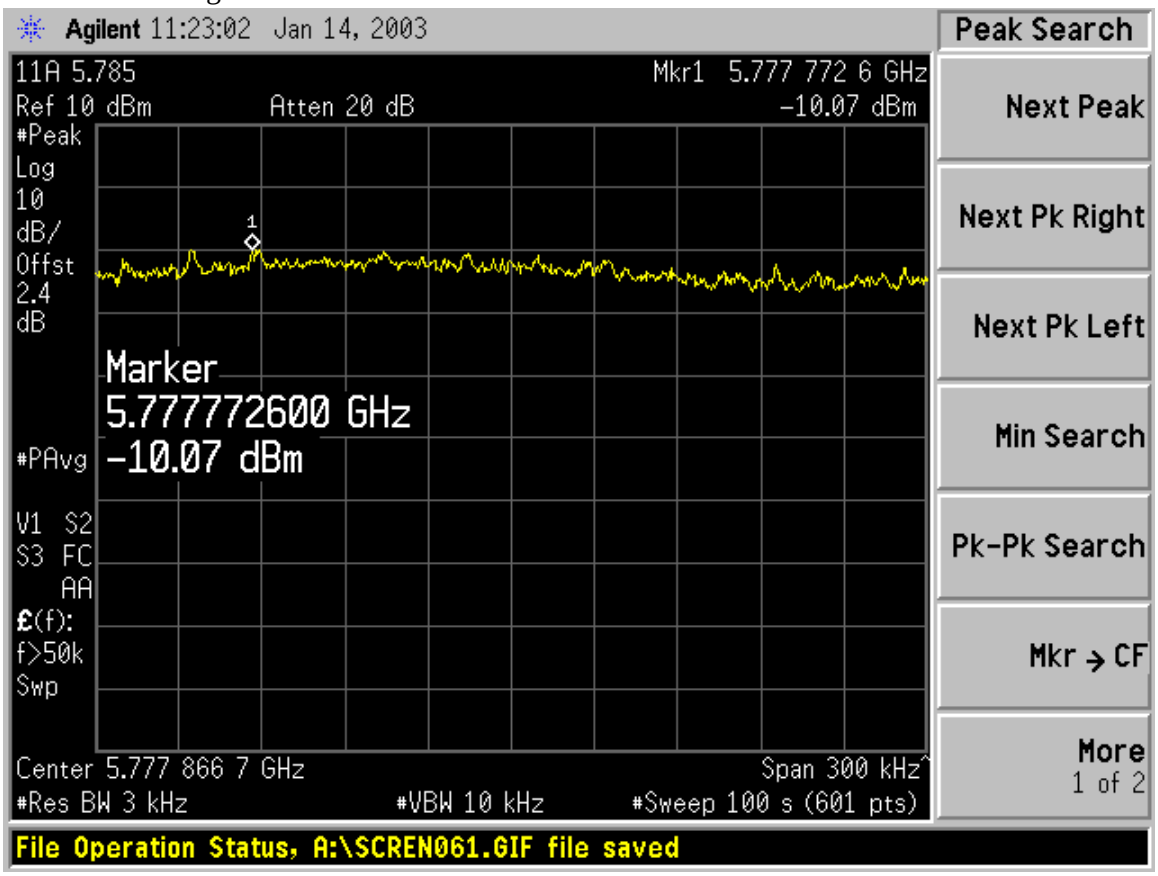


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

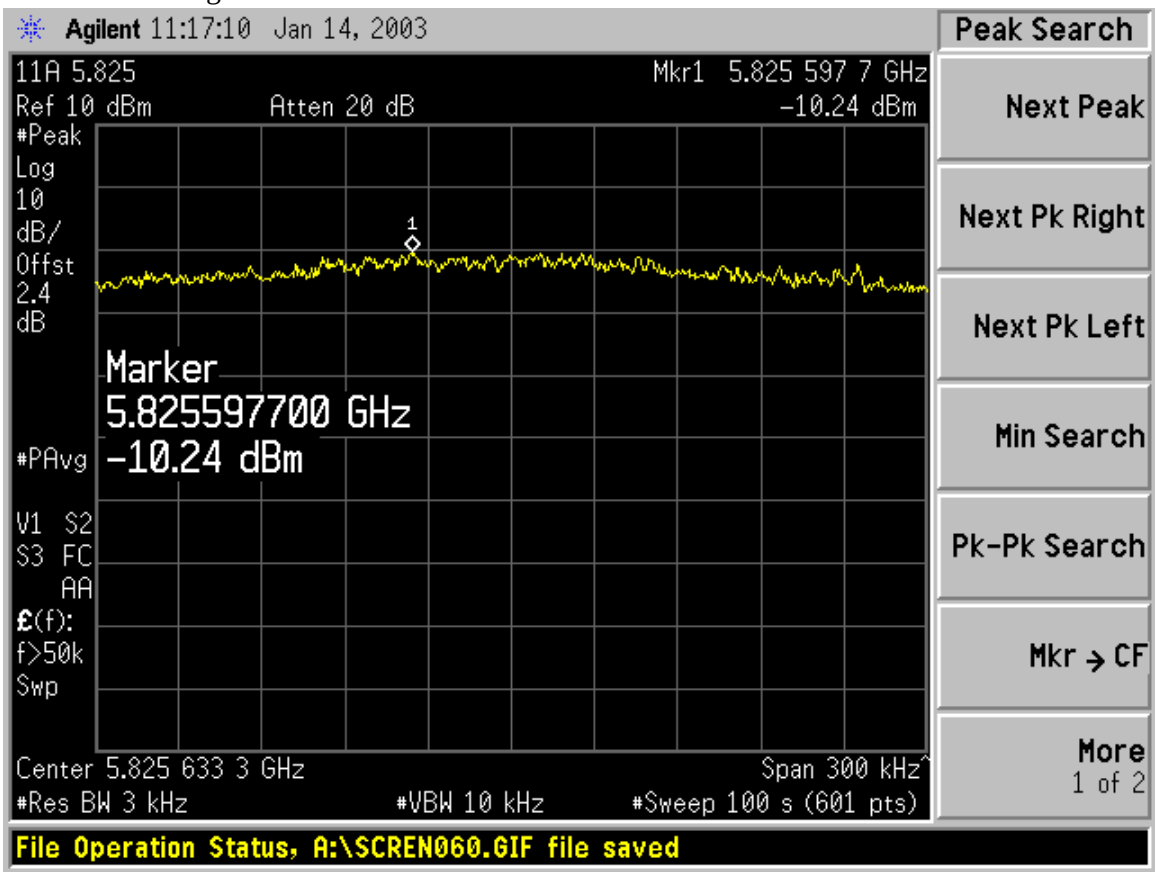
PPSD (5.8 GHZ BAND, NORMAL MODE)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

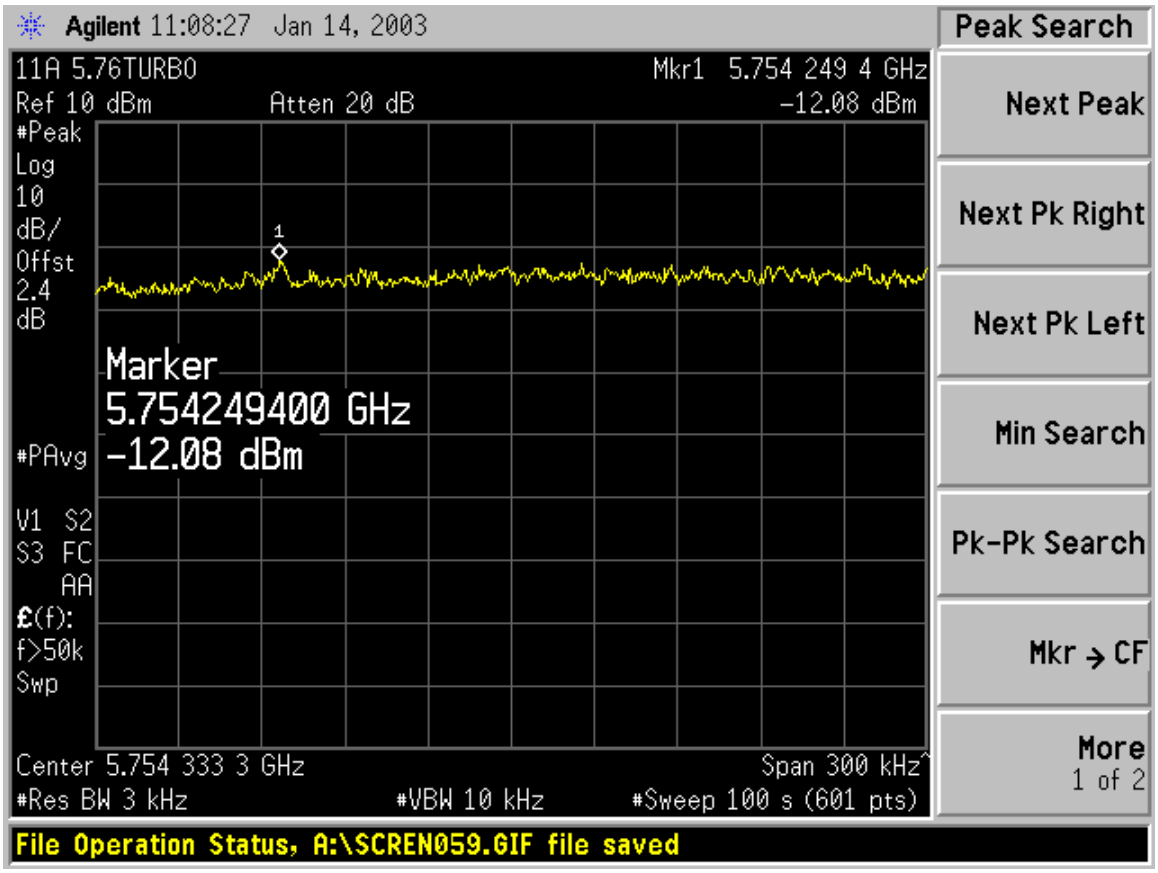


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

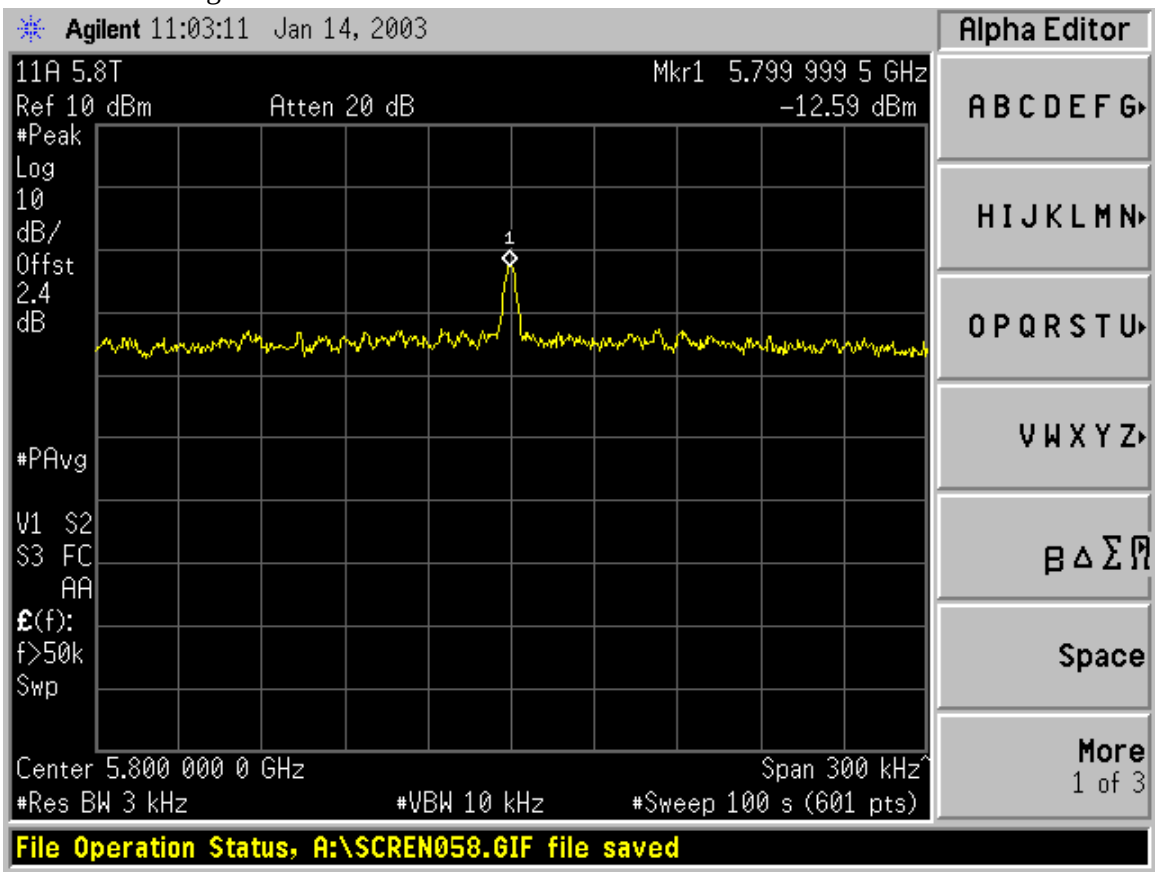


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

PPSD (5.8 GHZ BAND, TURBO MODE)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.5. MAXIMUM PERMISSIBLE EXPOSURE

CALCULATIONS

Given

$E = \sqrt{(30 * P * G)} / d$

and

$S = E \wedge 2 / 3770$

where

E = Field Strength in Volts / meter
P = Power in Watts
G = Numeric antenna gain
d = distance in meters
S = Power Density in milliwatts / square centimeter

Combining equations and rearranging the terms to express the distance as a function of the remaining variables yields:

$d = \sqrt{((30 * P * G) / (3770 * S))}$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) =100 * d (m)

yields

$d = 100 * \sqrt{((30 * (P / 1000) * G) / (3770 * S))}$

$d = 0.282 * \sqrt{(P * G / S)}$

where

d = distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power Density in mW / cm^2

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

Substituting the logarithmic form of power and gain using:

P (mW) = 10 ^ (P (dBm) / 10) and

G (numeric) = 10 ^ (G (dBi) / 10)

yields

d = 0.282 * 10 ^ ((P + G) / 20) / √ S Equation (1)

where

d = MPE safe distance in cm
P = Power in dBm
G = Antenna Gain in dBi
S = Power Density Limit in mW / cm^2

RESULTS

No non-compliance noted:

MAXIMUM PERMISSIBLE EXPOSURE (2.4 GHZ b BAND)

EUT output power = 20.08 dBm
Antenna Gain = 4.96 dBi
S = 1.0 mW / cm^2 from 1.1310 Table 1

Substituting these parameters into Equation (1) above:

MPE Safe Distance = 5.04 cm

MAXIMUM PERMISSIBLE EXPOSURE (2.4 GHZ g BAND)

EUT output power = 21.98 dBm
Antenna Gain = 4.96 dBi
S = 1.0 mW / cm^2 from 1.1310 Table 1

Substituting these parameters into Equation (1) above:

MPE Safe Distance = 6.27 cm

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

MAXIMUM PERMISSIBLE EXPOSURE (5.8 GHZ BAND)

EUT output power = 20.71 dBm
Antenna Gain = 2.37 dBi
S = 1.0 mW / cm^2 from 1.1310 Table 1

Substituting these parameters into Equation (1) above:

MPE Safe Distance = 4.02 cm

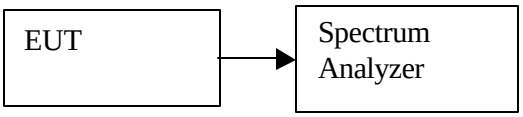
NOTE: For mobile or fixed location transmitters, the minimum separation distance is 20 cm, even if calculations indicate that the MPE distance would be less.

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.6. SPURIOUS EMISSIONS

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 or measurements on the radiated emissions site.

TEST SETUP



TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

Measurements are made over the 30 MHz to 26.5 GHz range with the transmitter set to the lowest, middle, and highest channels within the 2.4 GHz band.

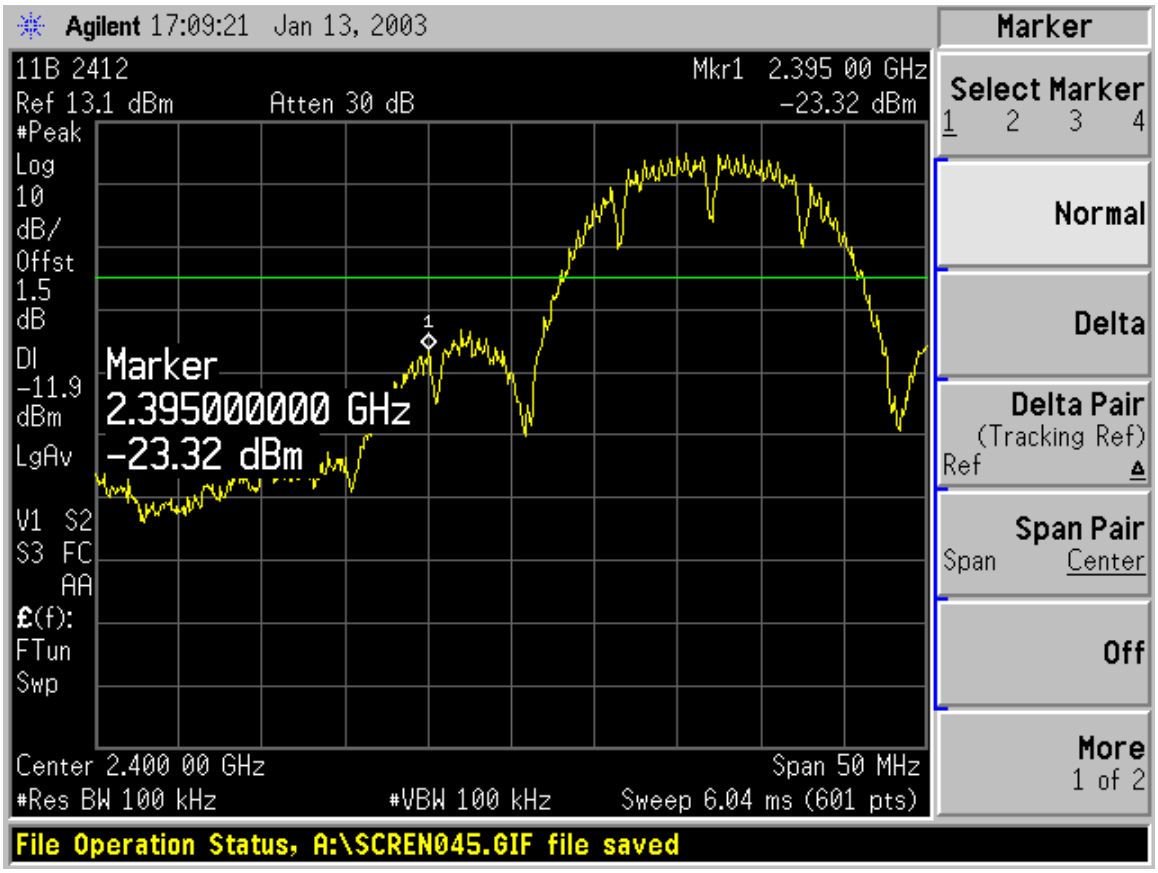
Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels within the 5.8 GHz band.

RESULTS

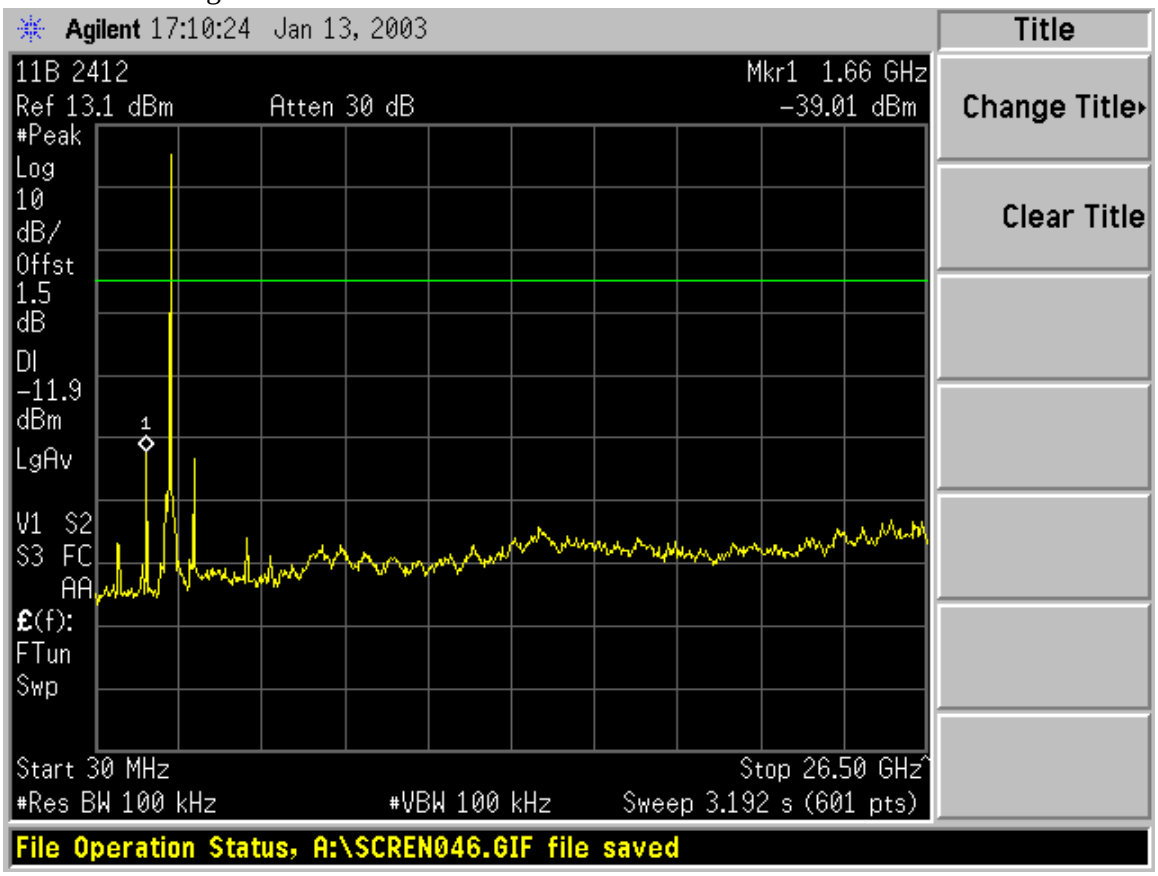
No non-compliance noted:

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

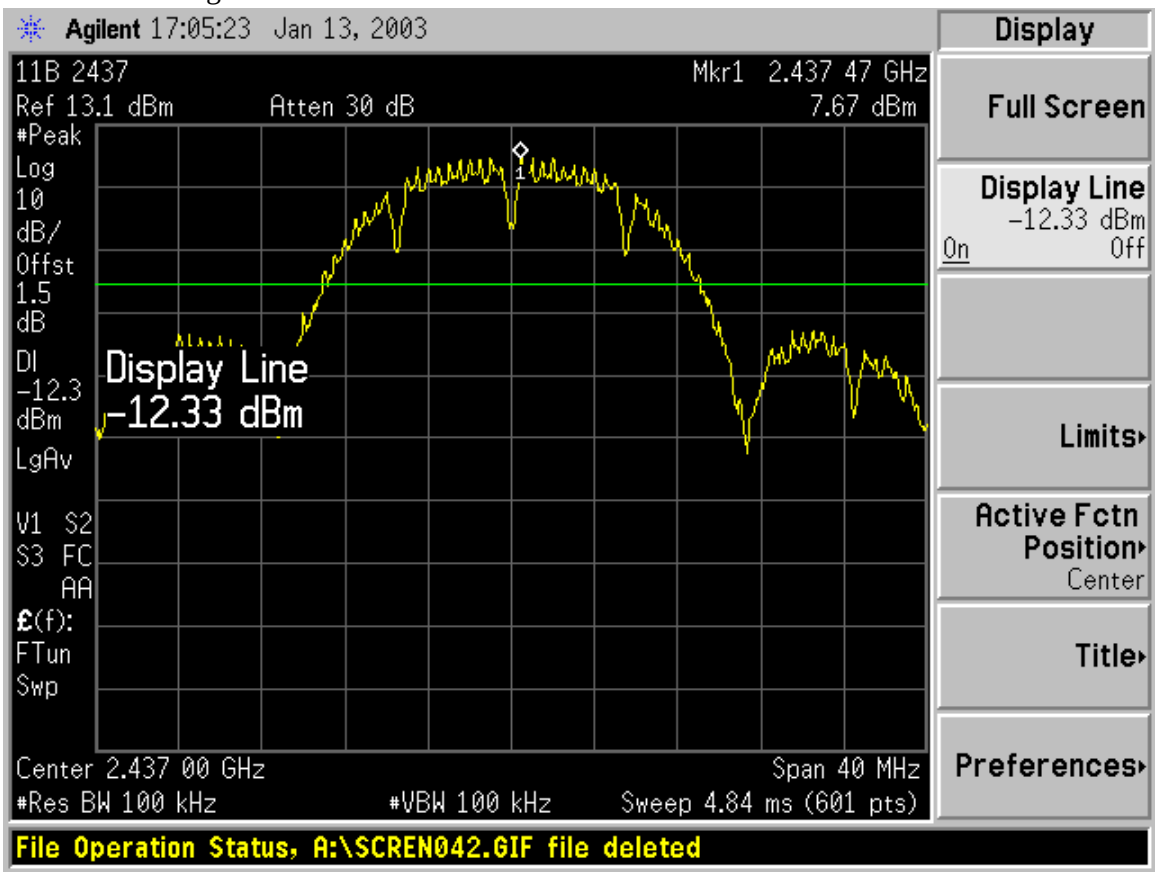
CONDUCTED SPURIOUS EMISSIONS (2.4 GHZ b BAND)



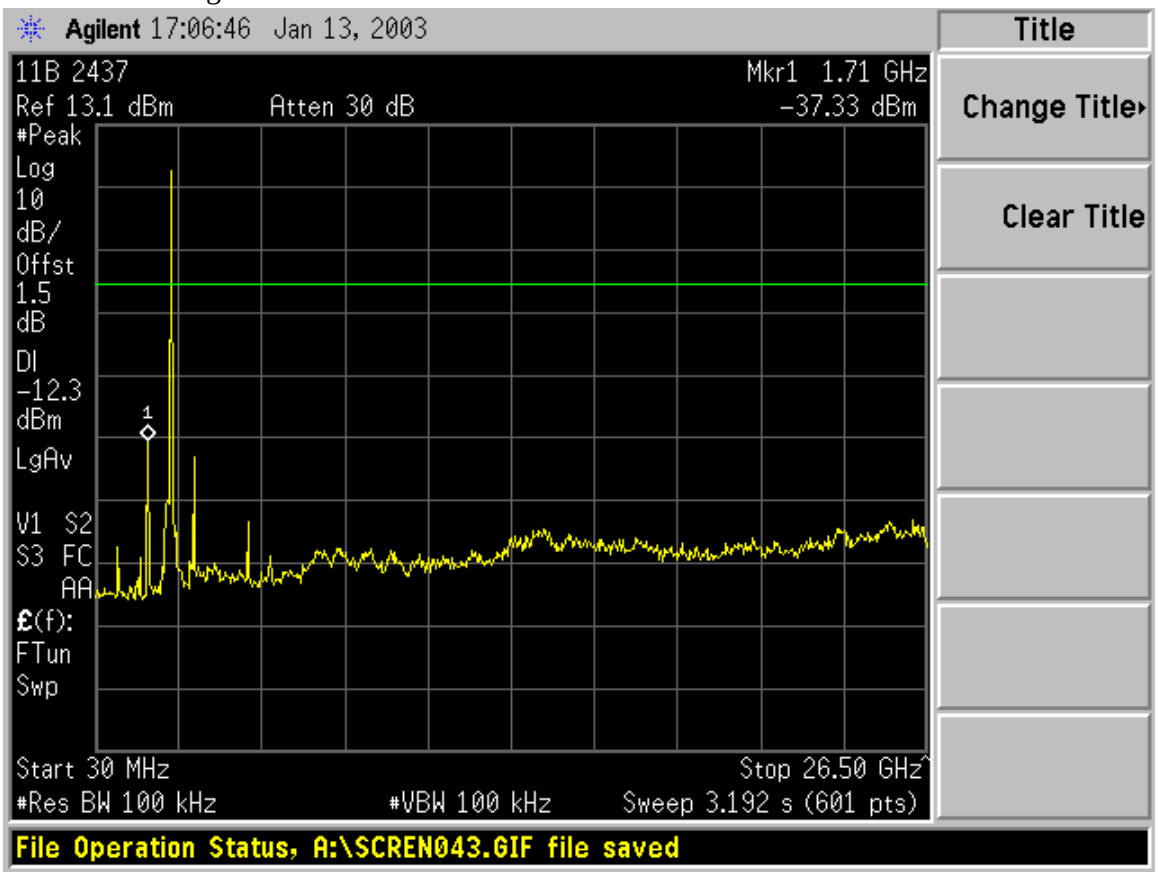
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



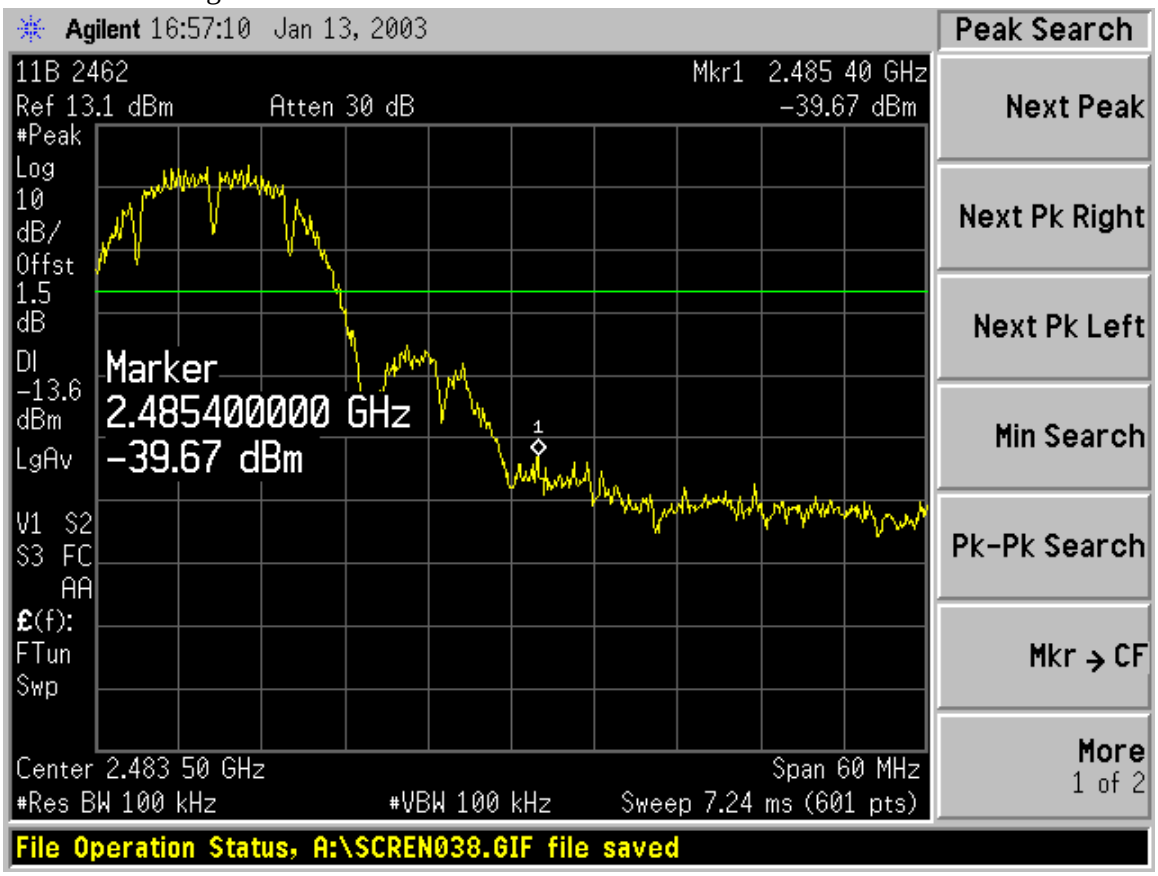
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



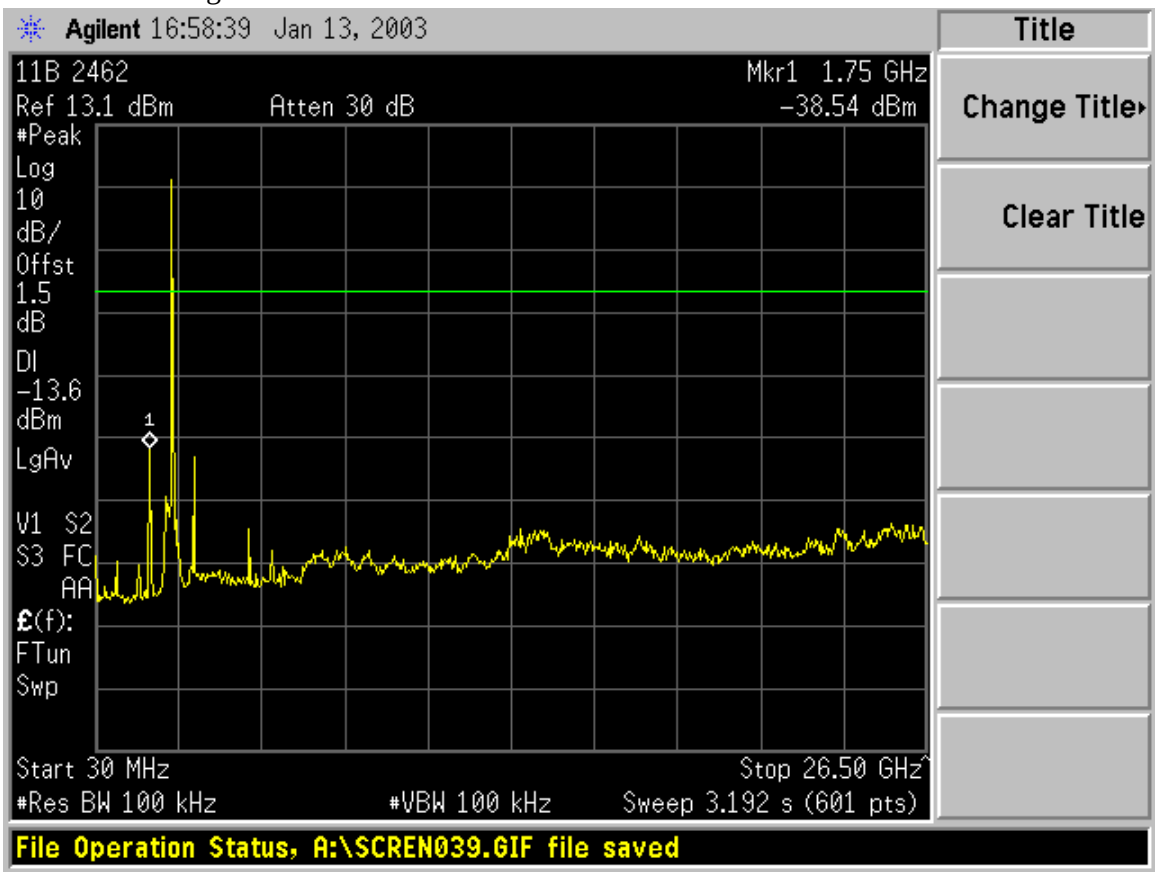
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

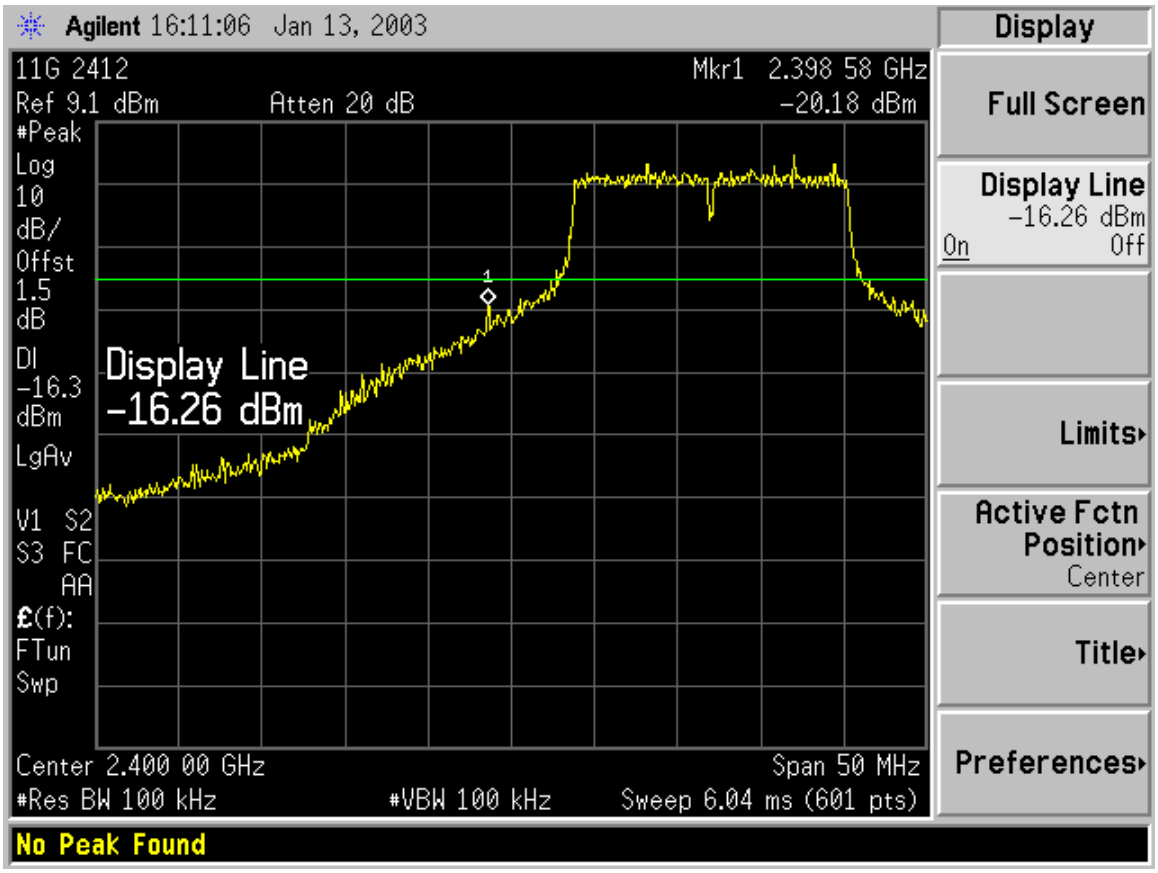


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

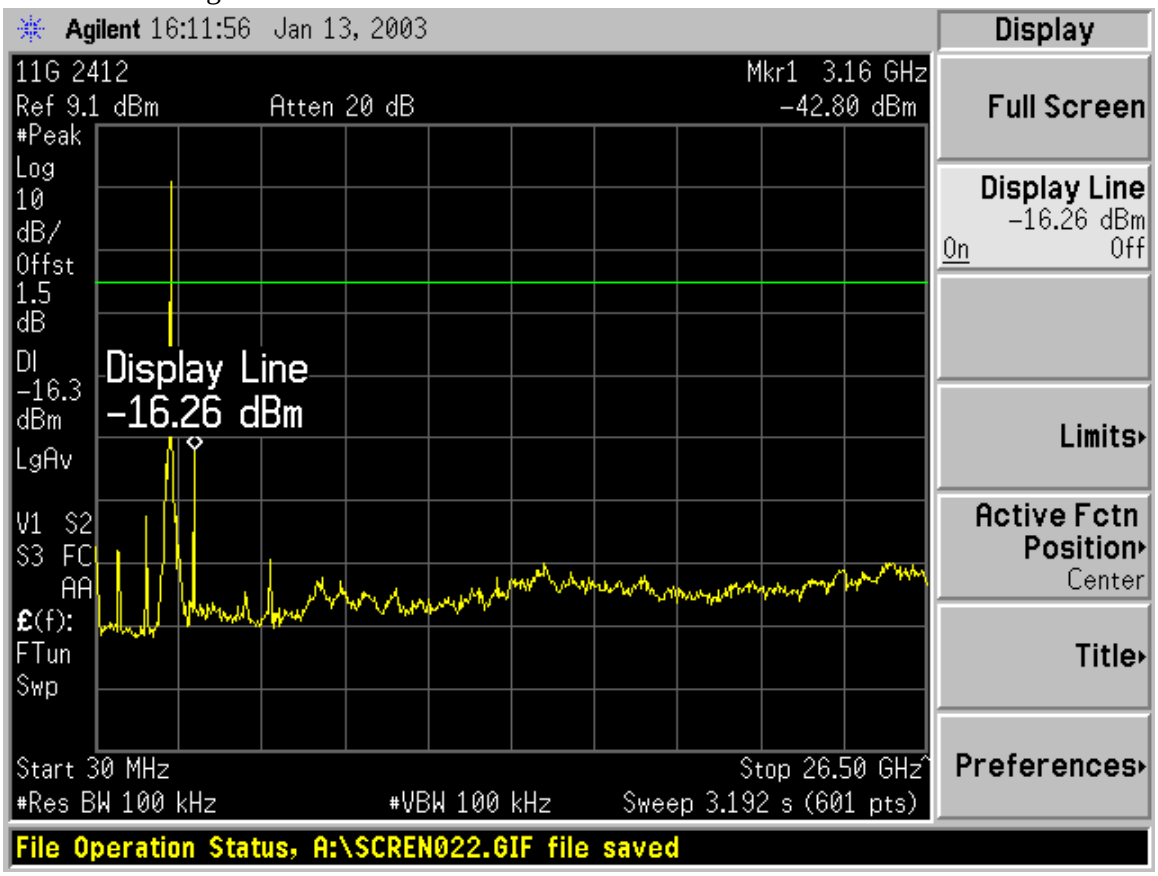


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

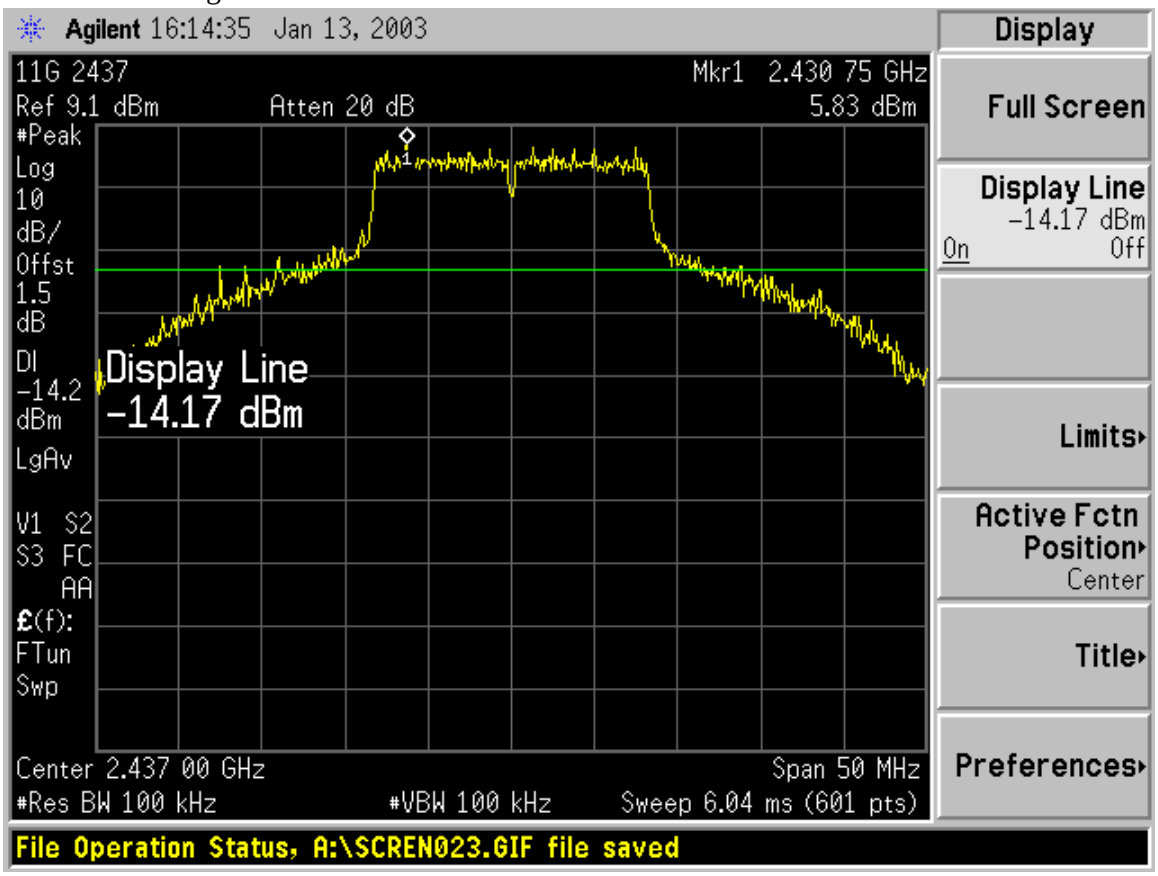
CONDUCTED SPURIOUS EMISSIONS (2.4 GHZ g BAND)



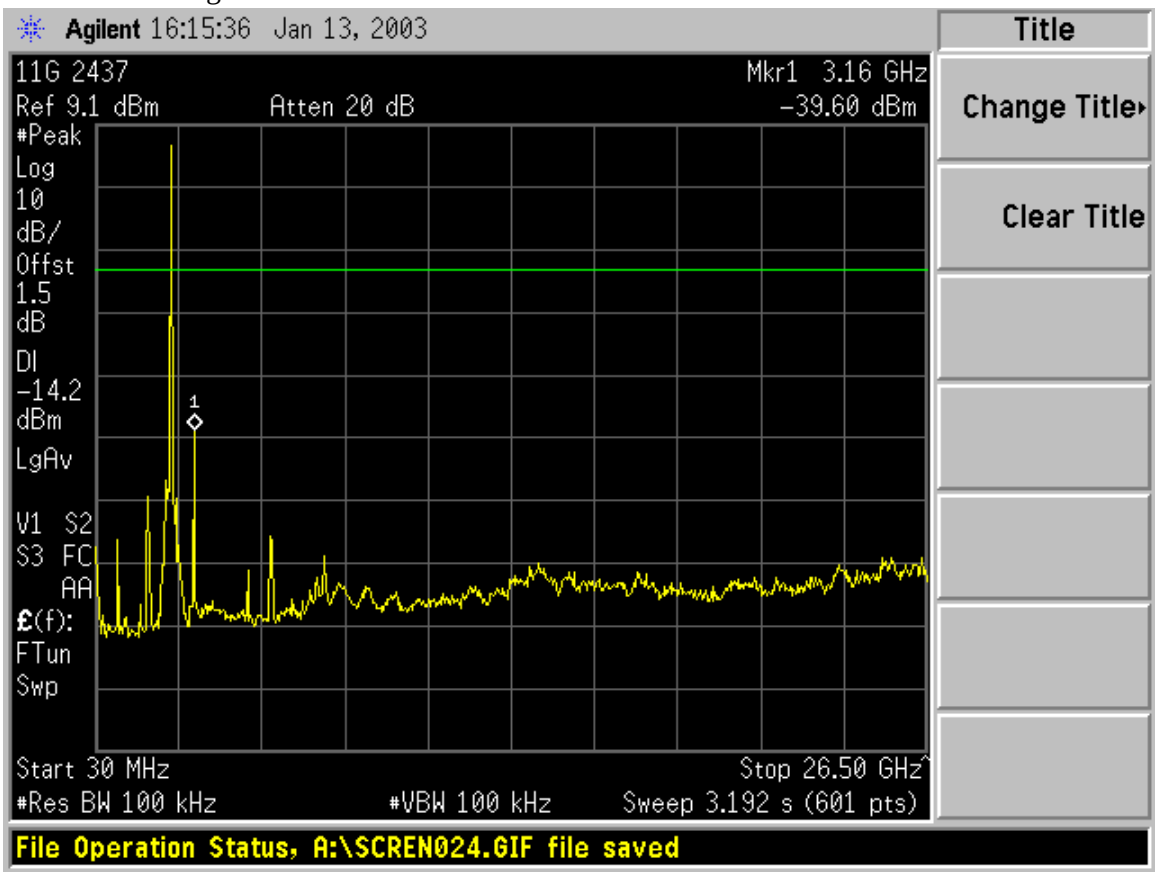
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

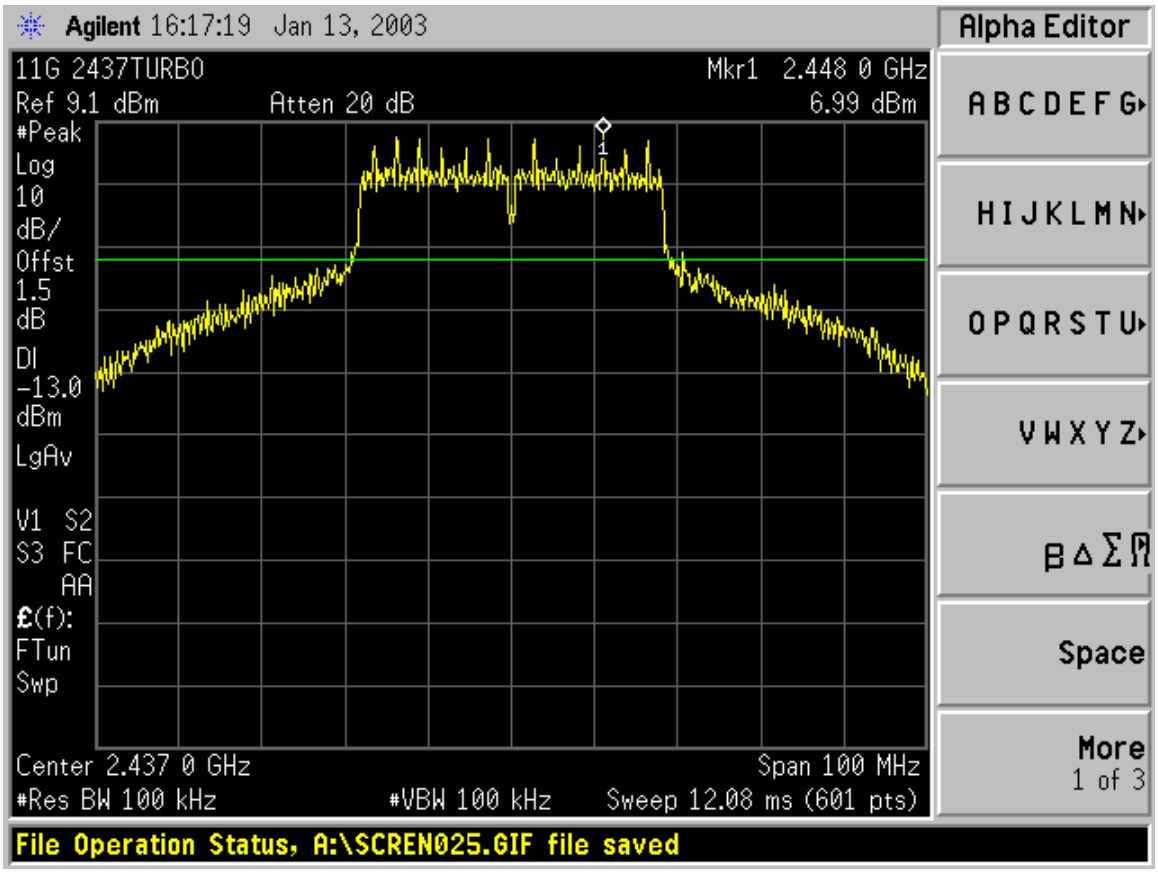


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

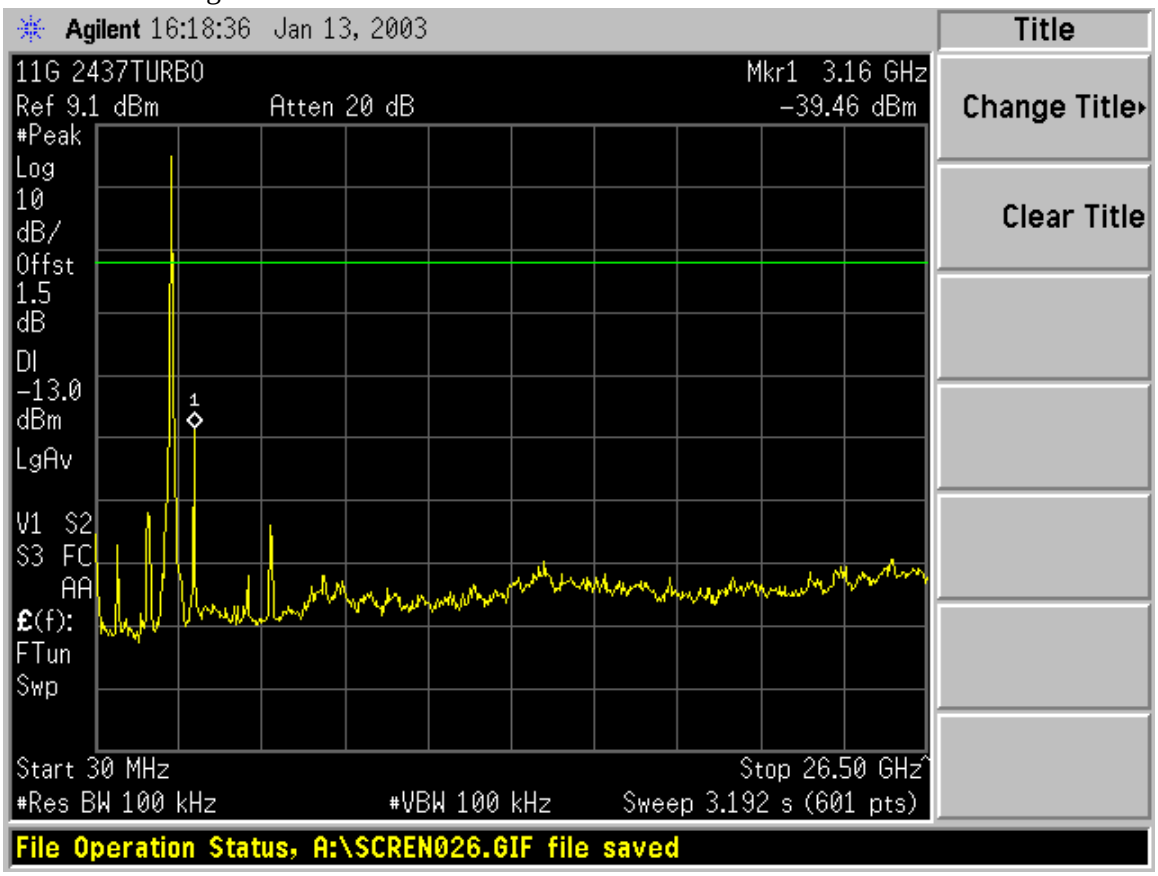


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

CONDUCTED SPURIOUS EMISSIONS (2.4 GHZ g BAND, TURBO MODE)

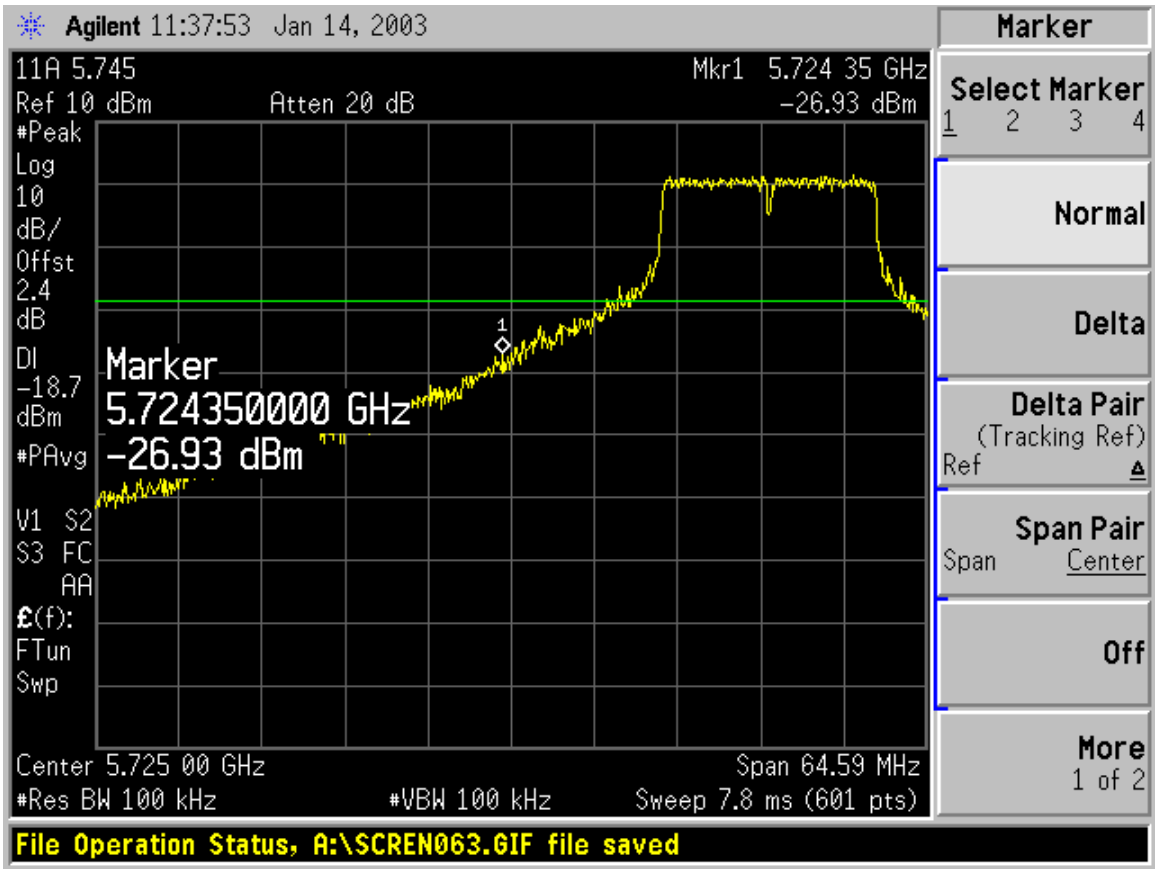


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

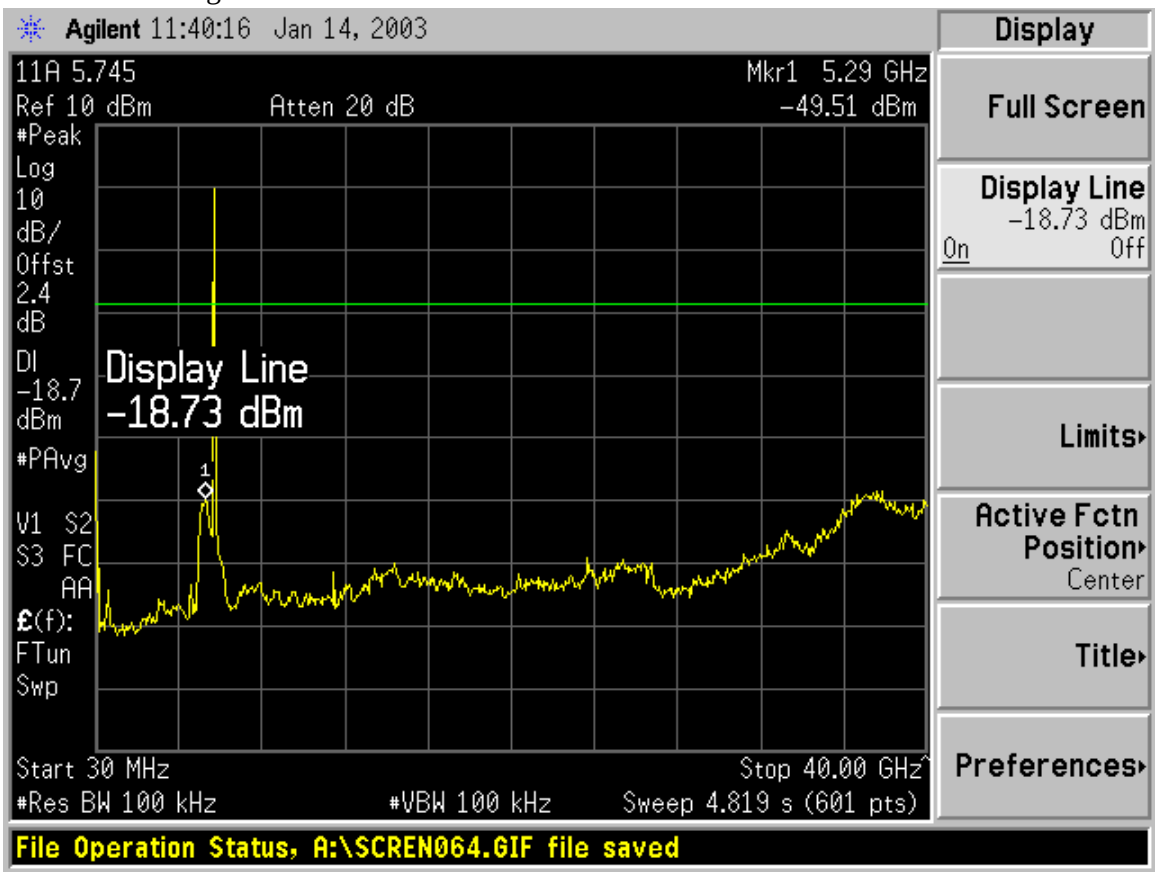


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

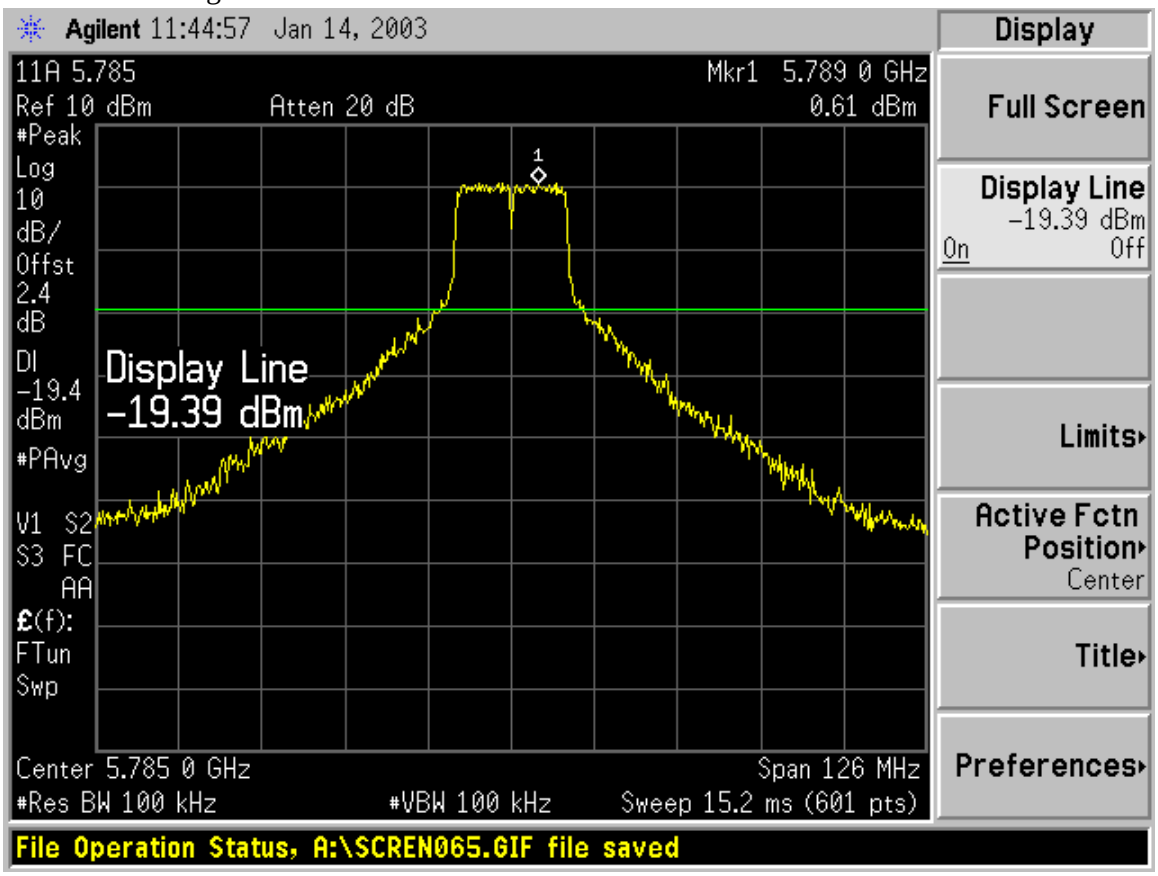
CONDUCTED SPURIOUS EMISSIONS (5.8 GHZ BAND, NORMAL MODE)



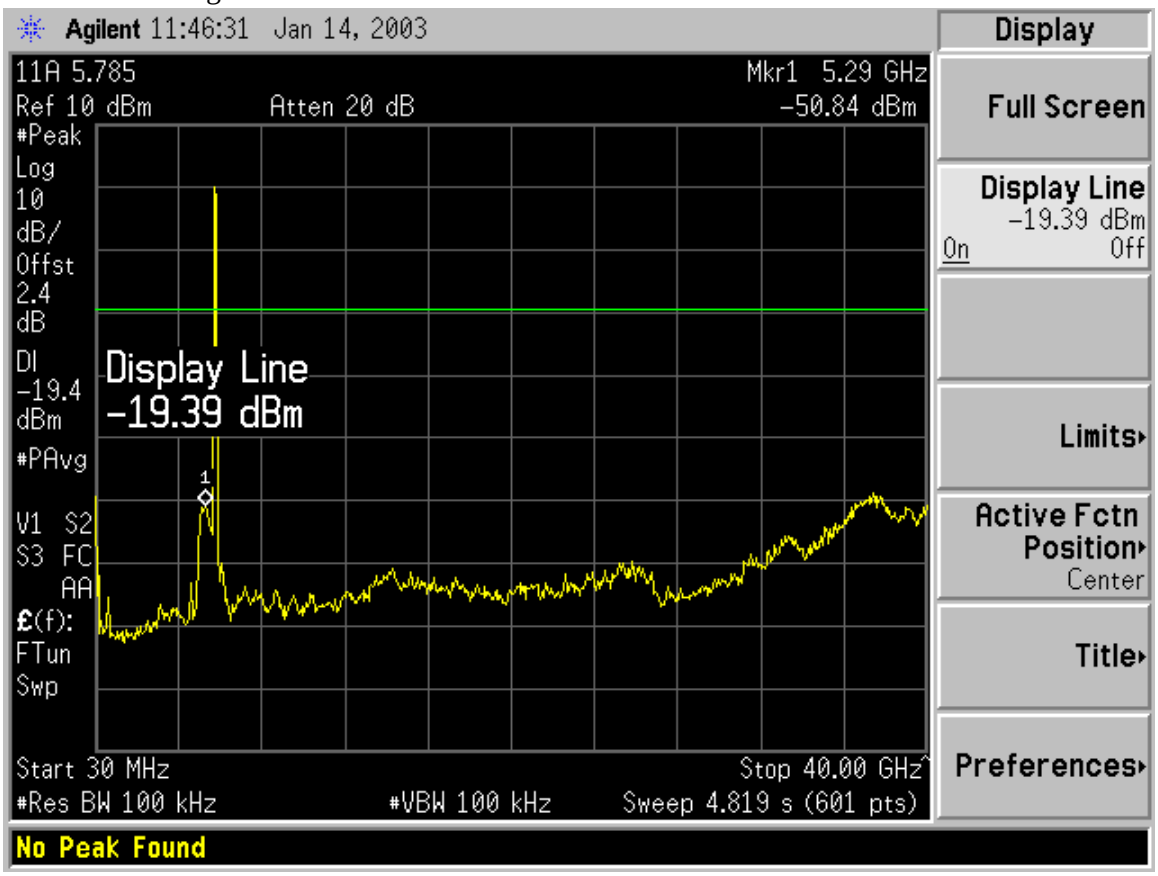
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

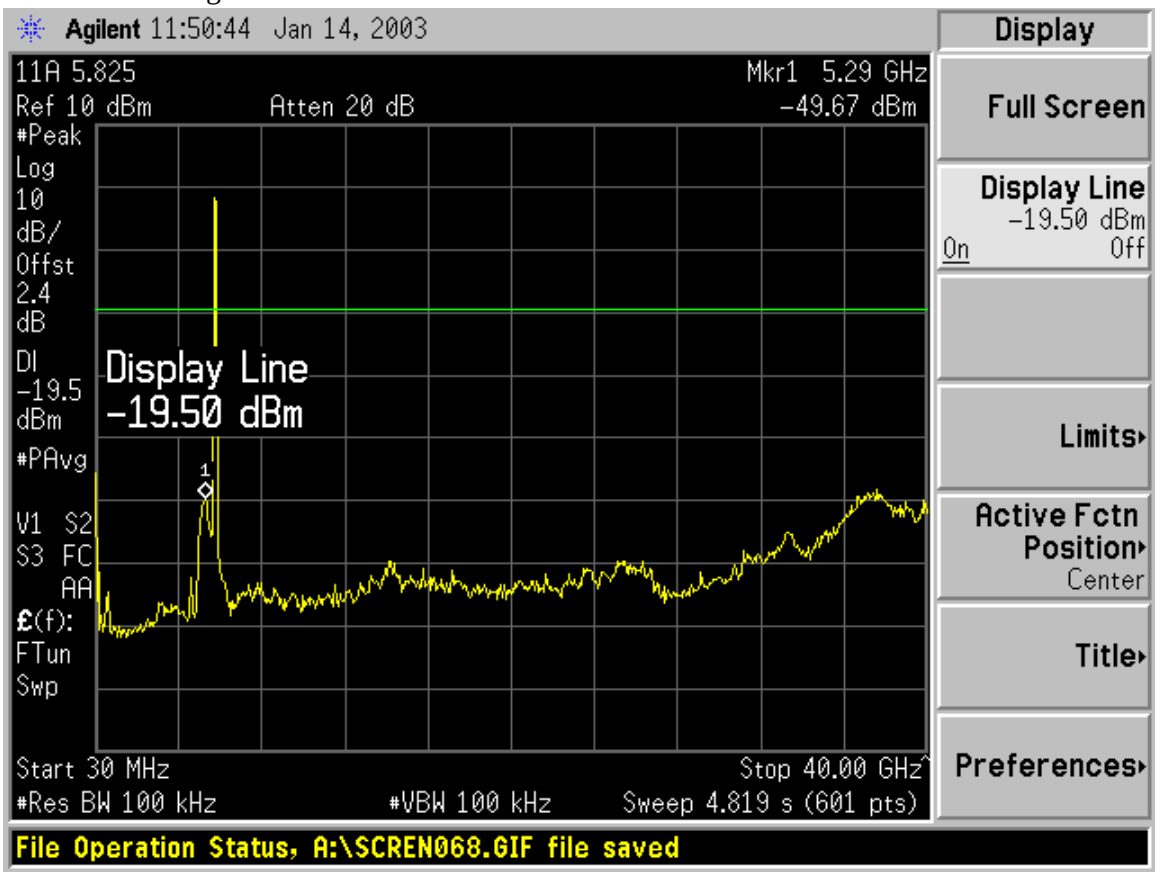


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



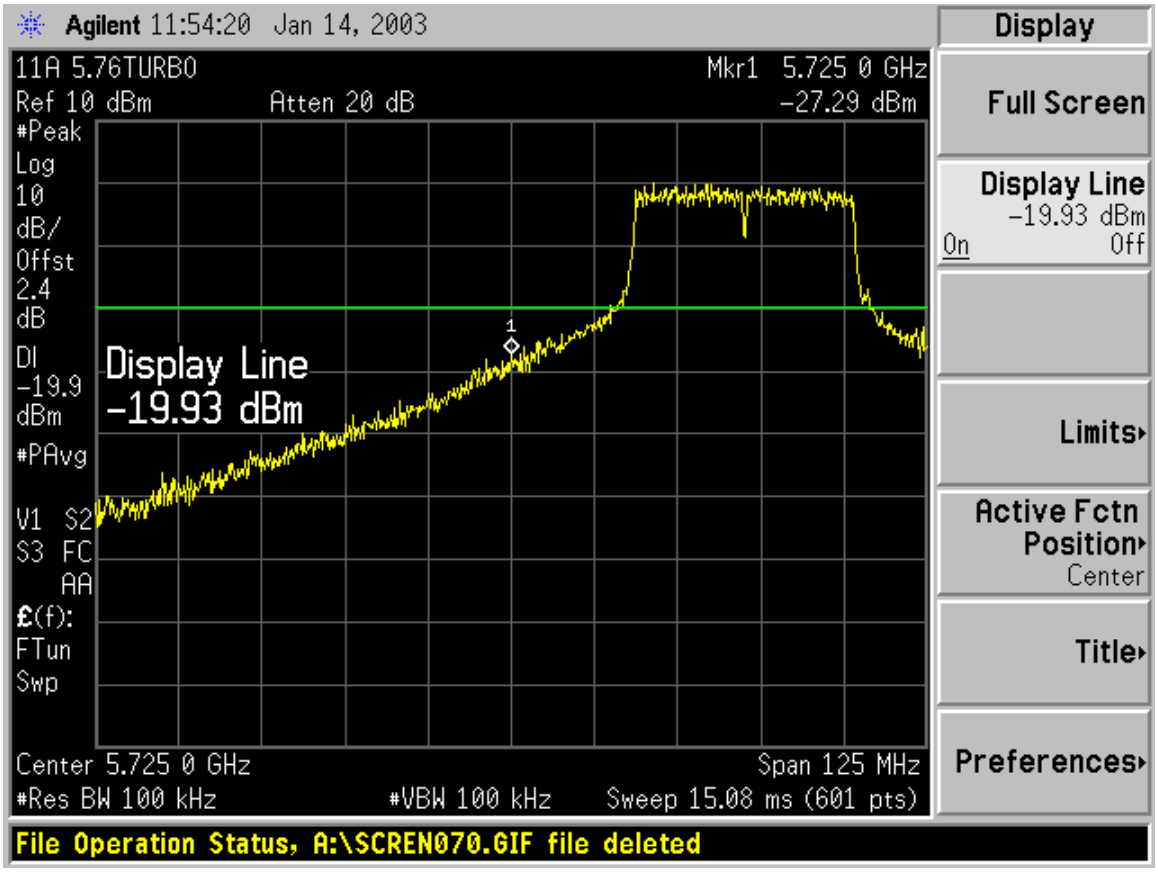
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

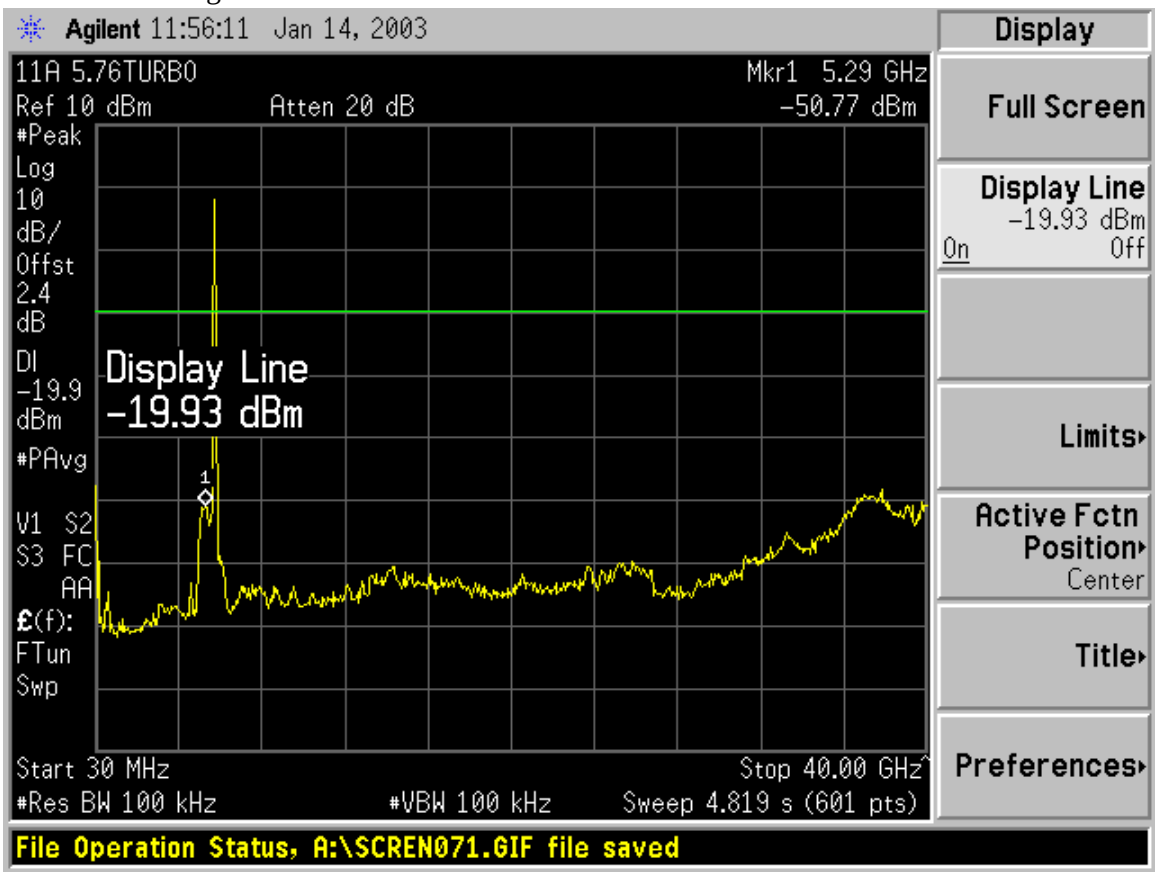


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

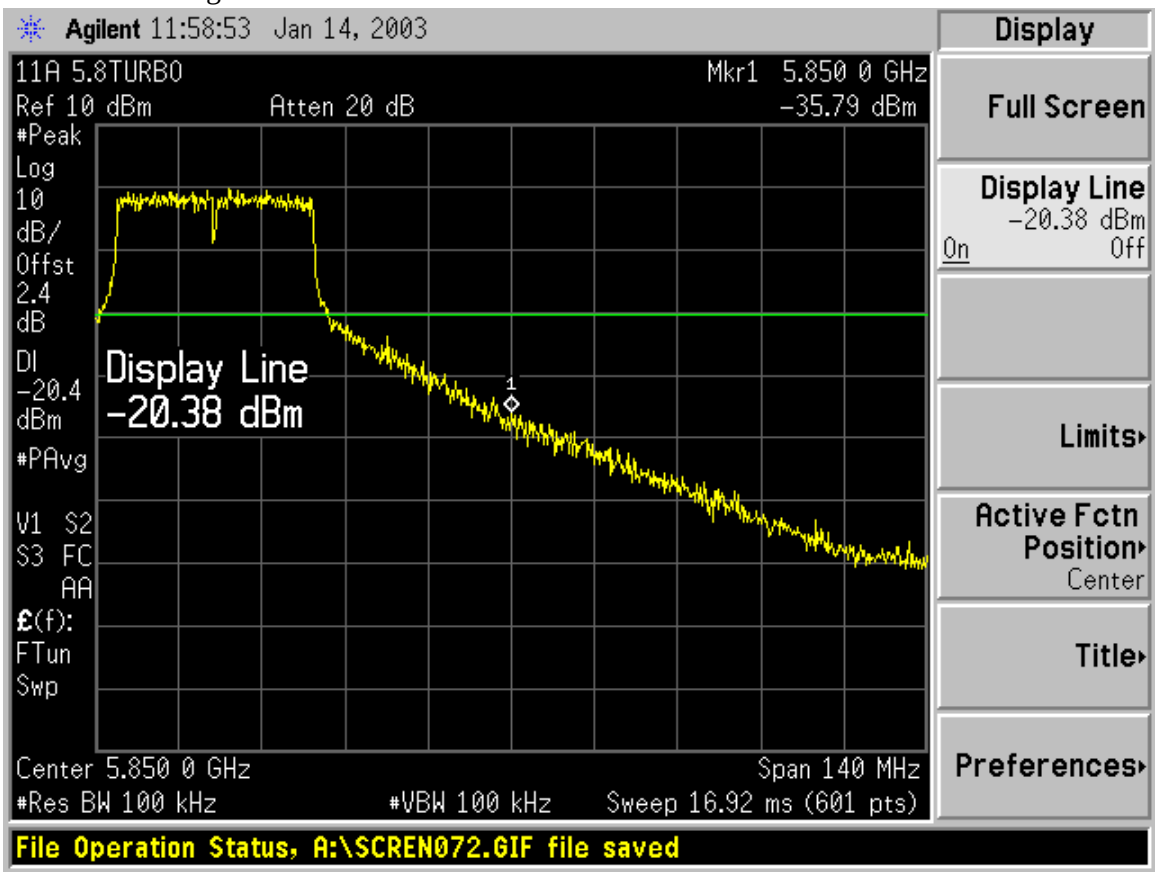
CONDUCTED SPURIOUS EMISSIONS (5.8 GHZ BAND, TURBO MODE)



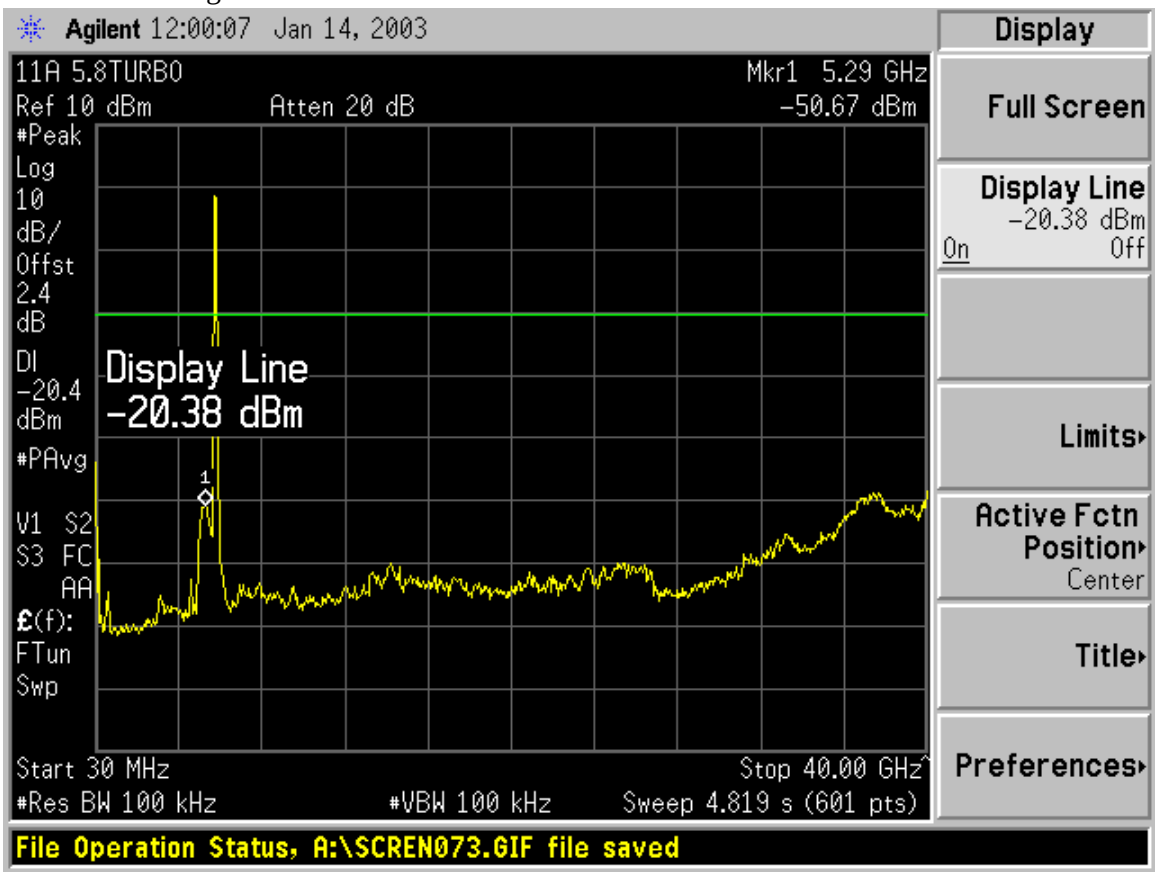
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.7. RADIATED EMISSIONS

TEST SETUP

The EUT is placed on the wooden table. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4/1992.

The EUT is set to transmit in a continuous mode.

TEST PROCEDURE

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

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.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels within the 2.4 GHz band.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels within the 5.8 GHz band.

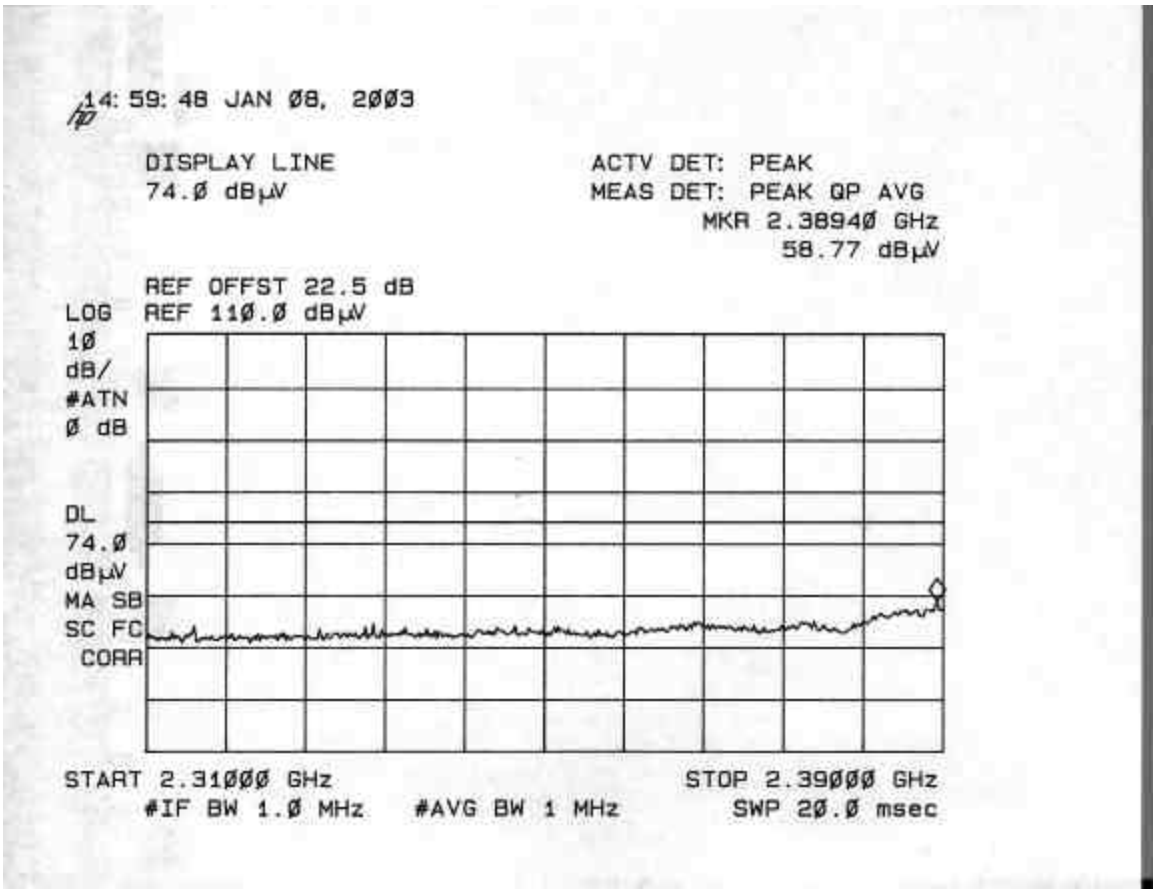
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The frequency span is set small enough to easily differentiate between broadcast stations, intermittent ambient signals and EUT emissions. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the suspected signal. Measurements were made with the antenna polarized in both the vertical and the horizontal positions.

TEST RESULTS

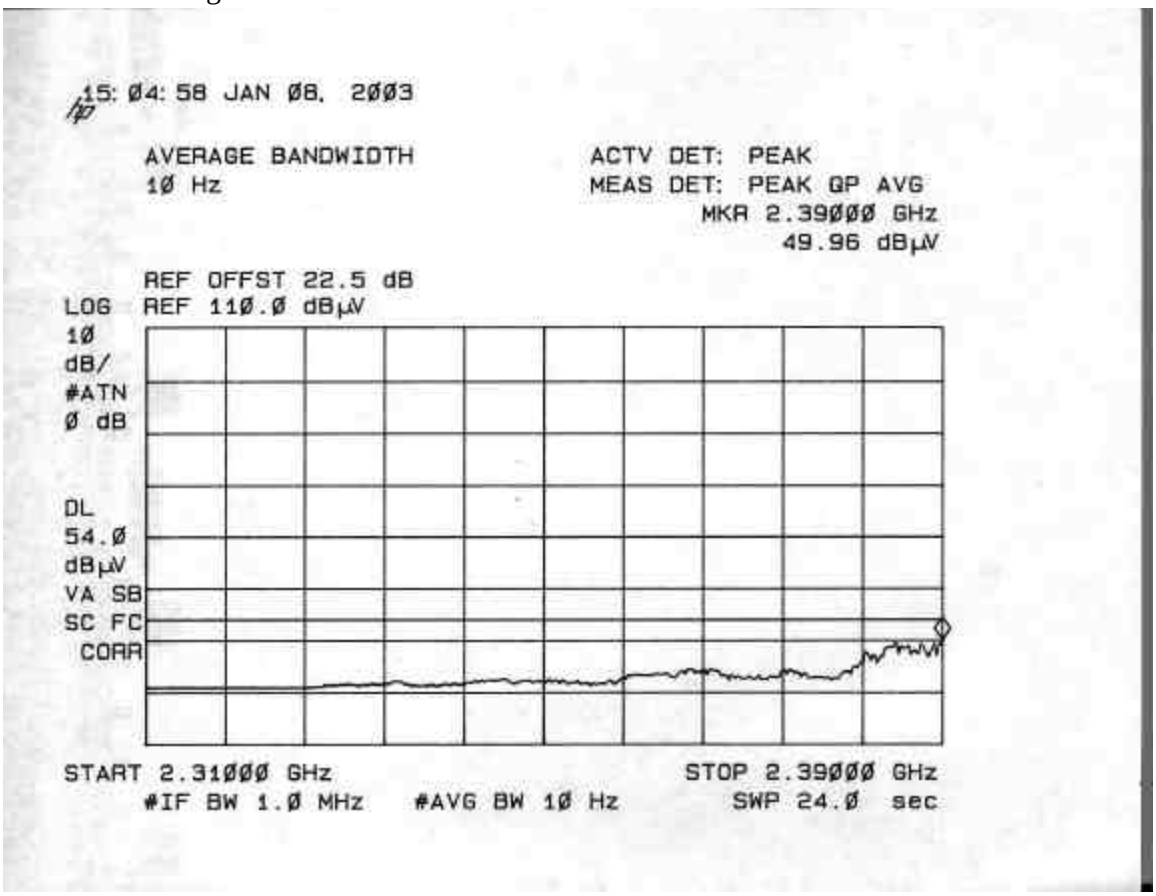
No non-compliance noted:

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (LOW CHANNEL, HORIZONTAL POLARIZATION) (B MODE)

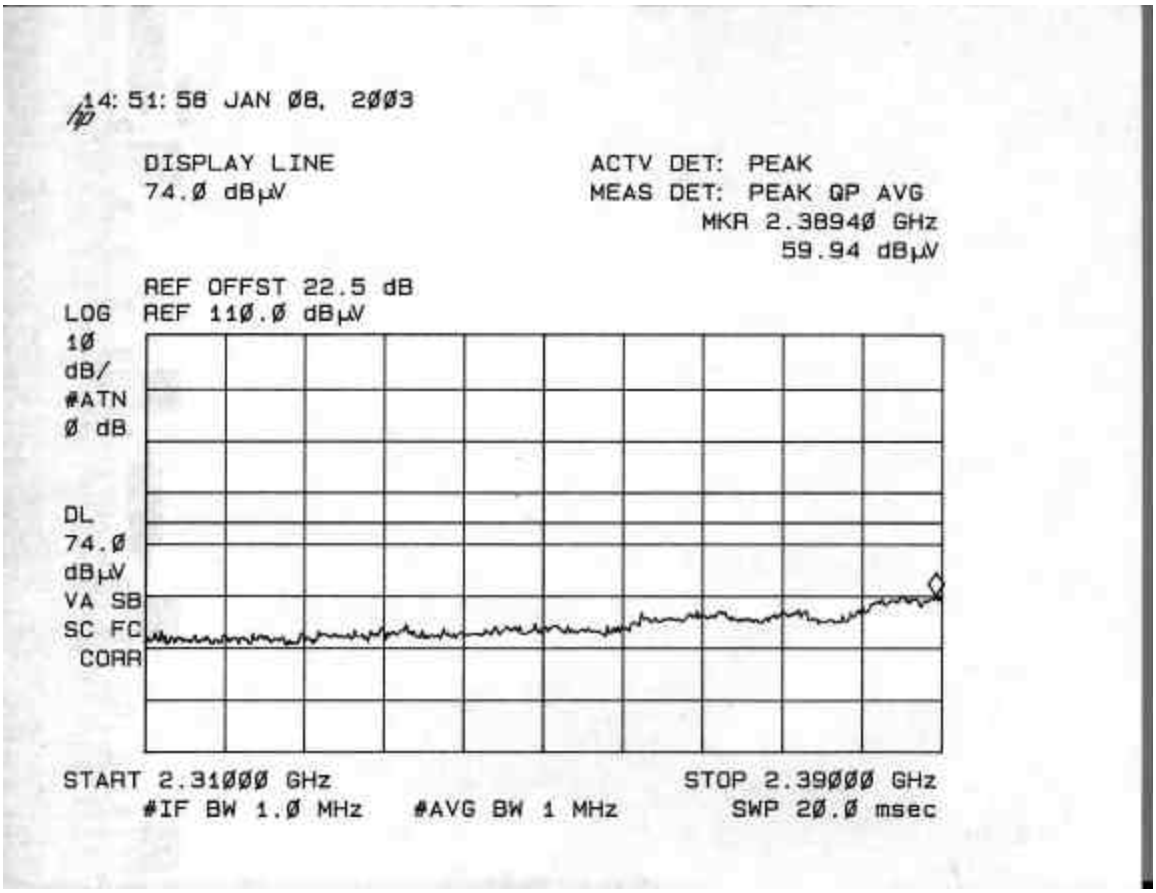


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

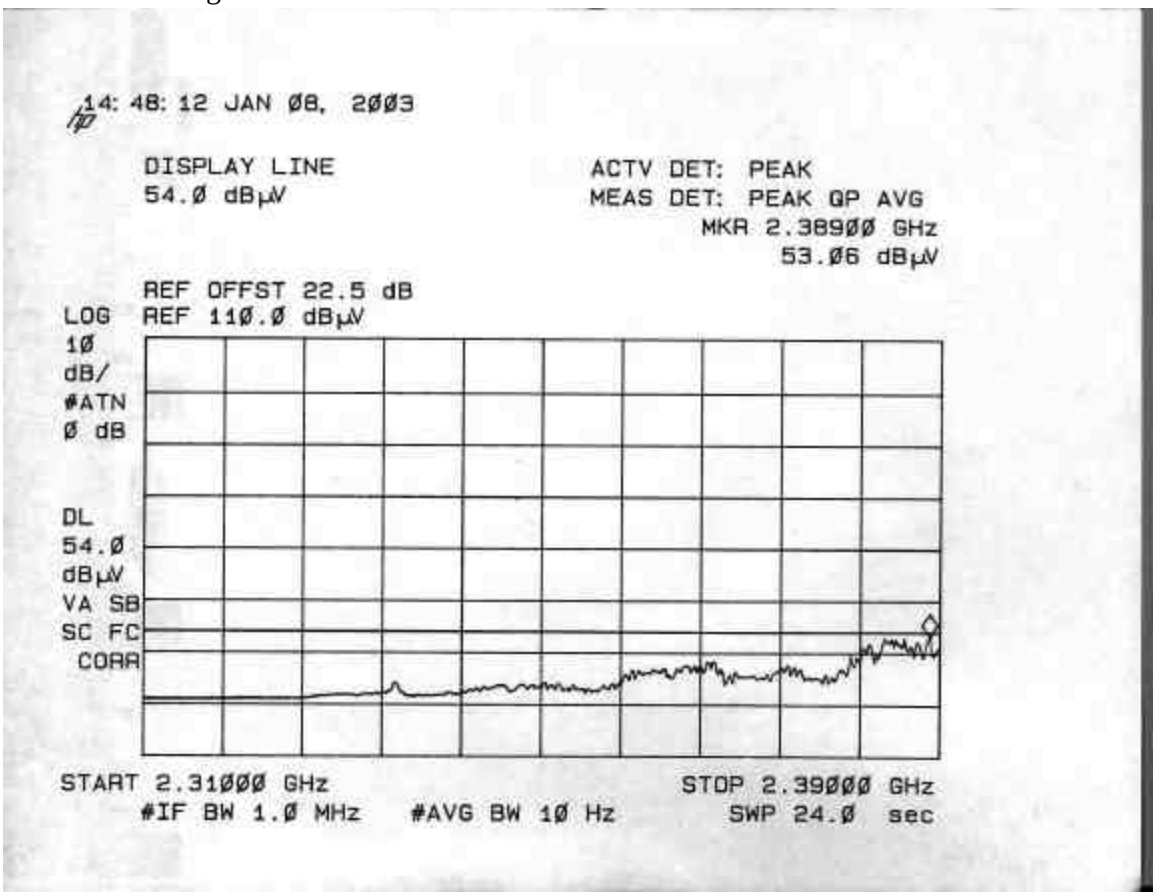


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (LOW CHANNEL, VERTICAL POLARIZATION) (B MODE)

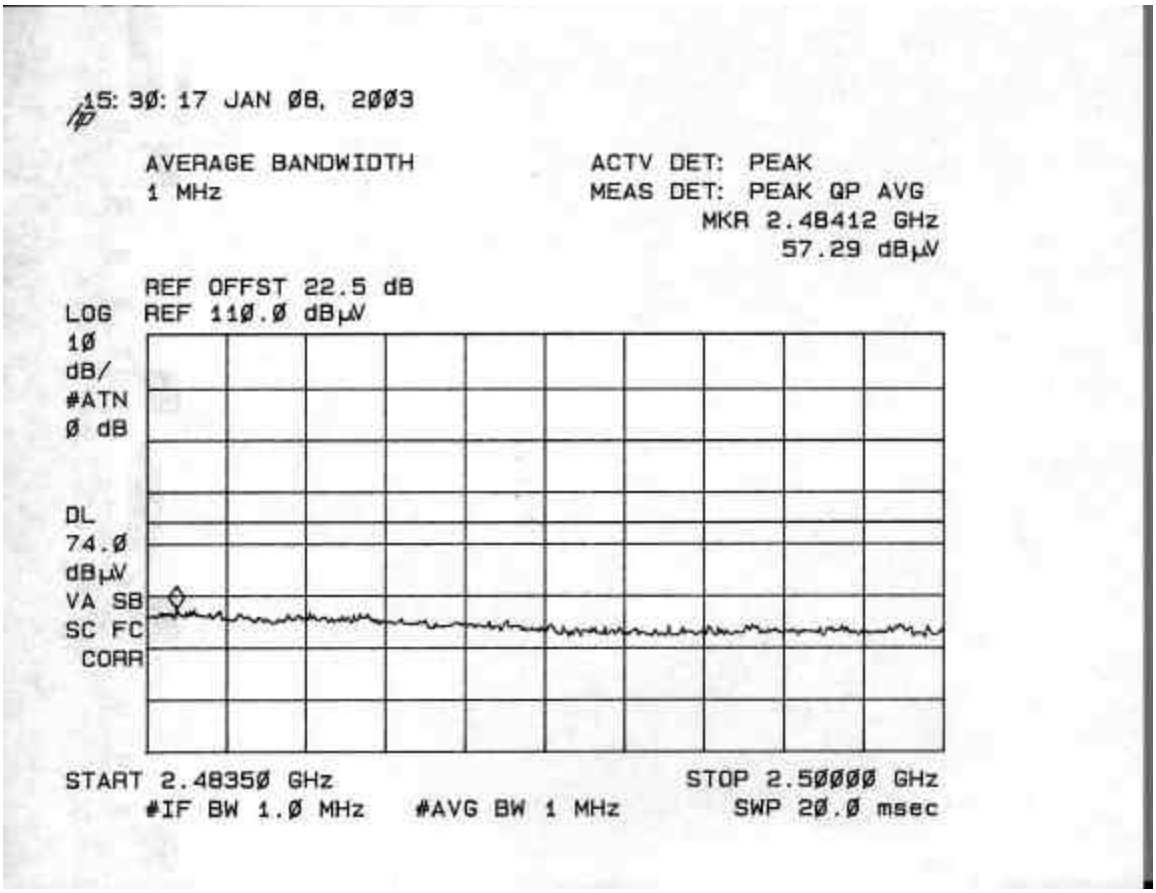


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

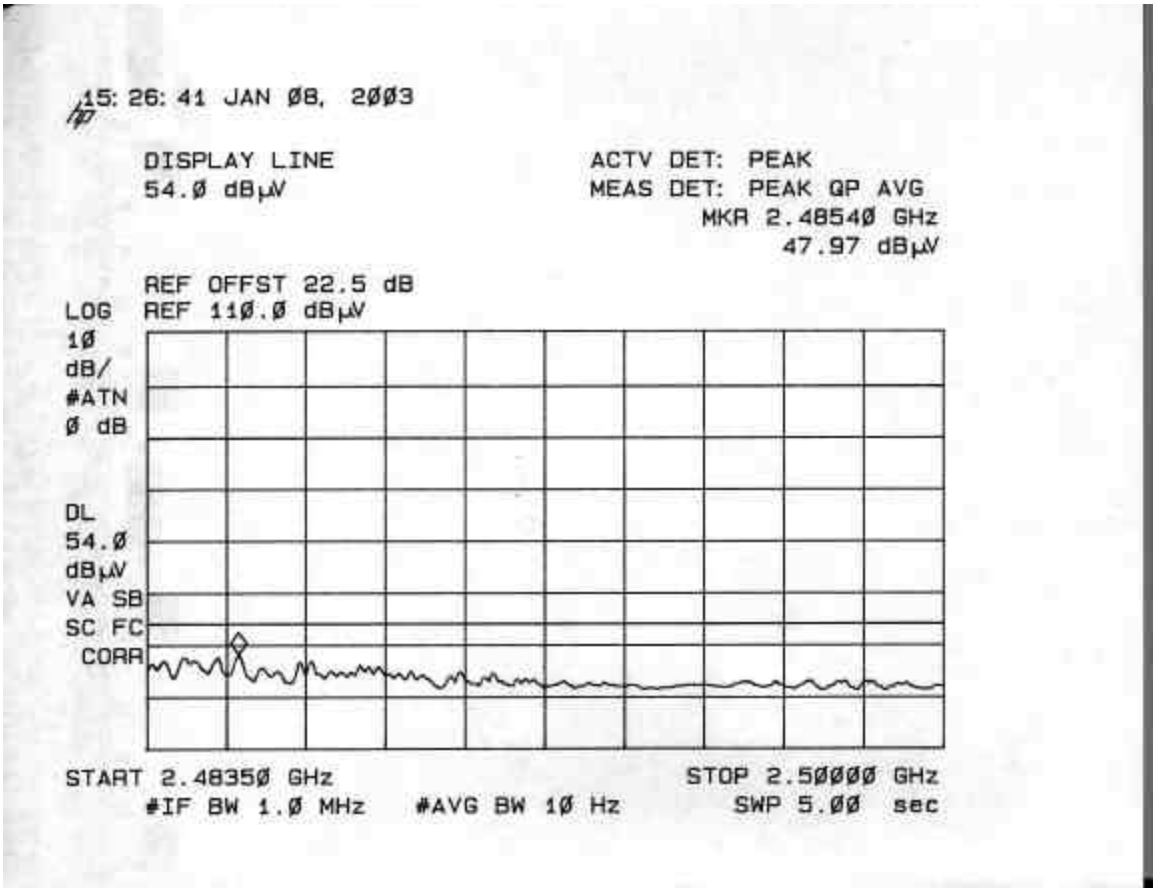


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (HIGH CHANNEL, HORIZONTAL POLARIZATION) (B MODE)

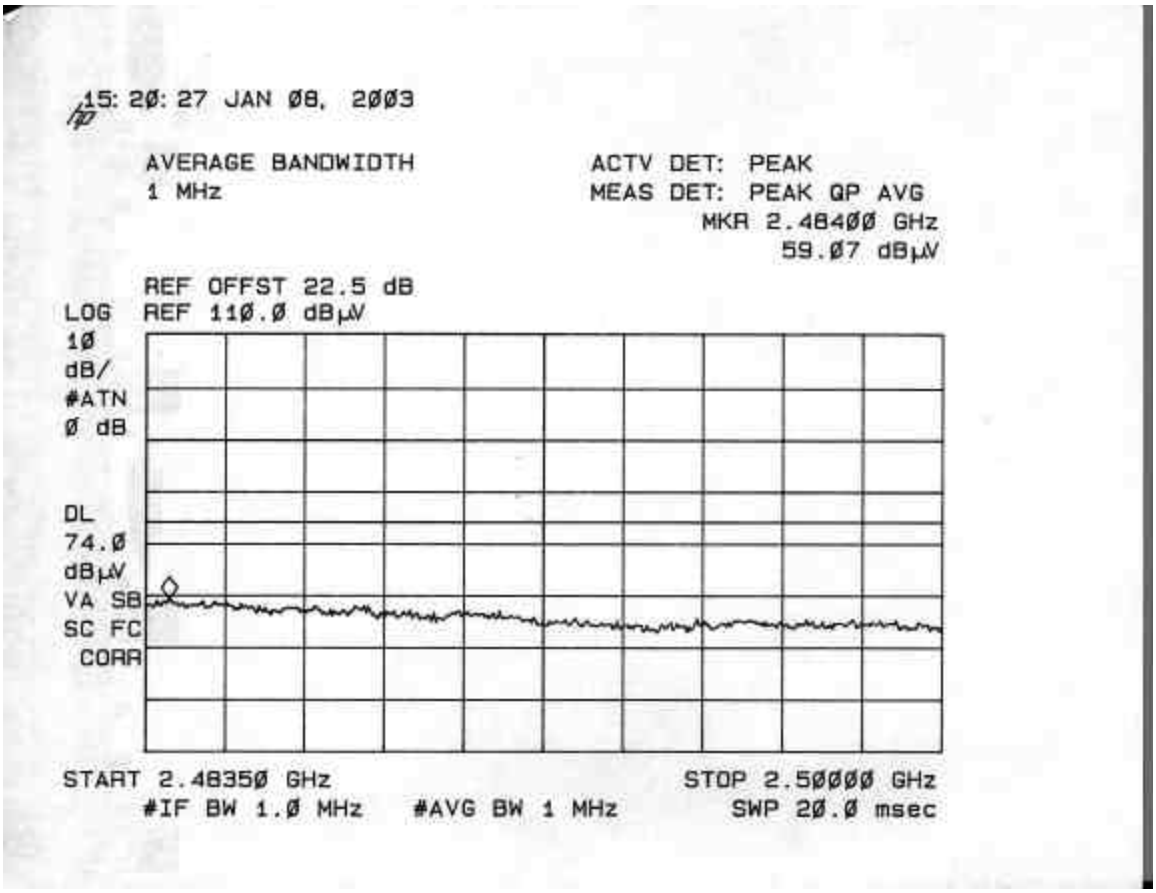


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

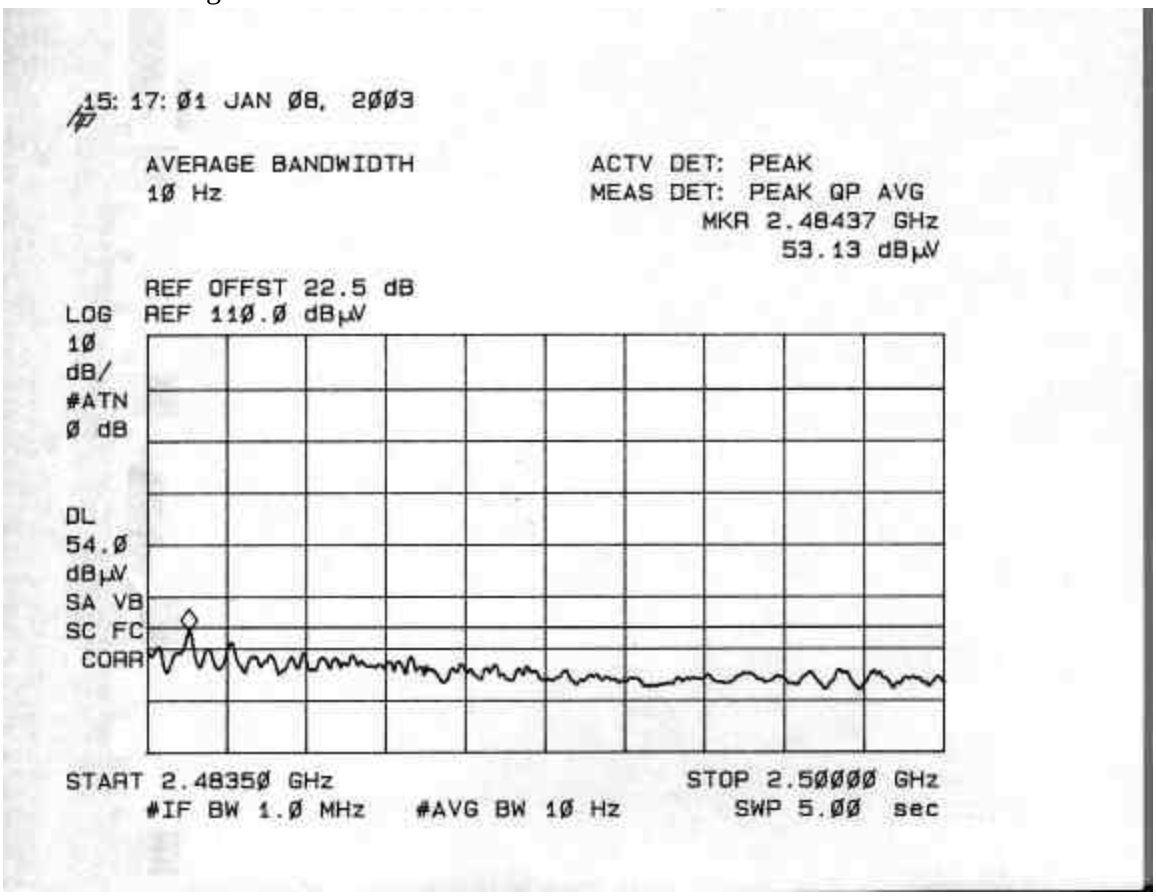


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (HIGH CHANNEL, VERTICAL POLARIZATION) (B MODE)

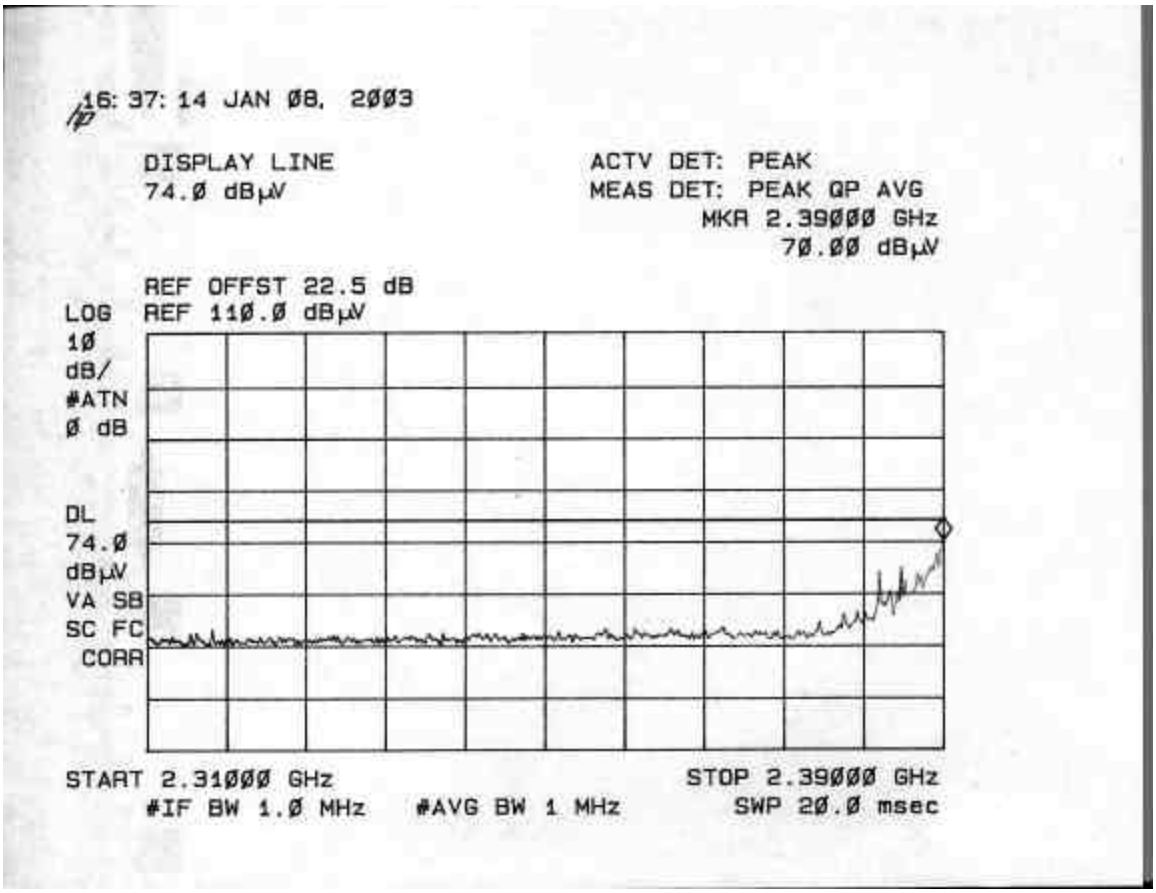


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

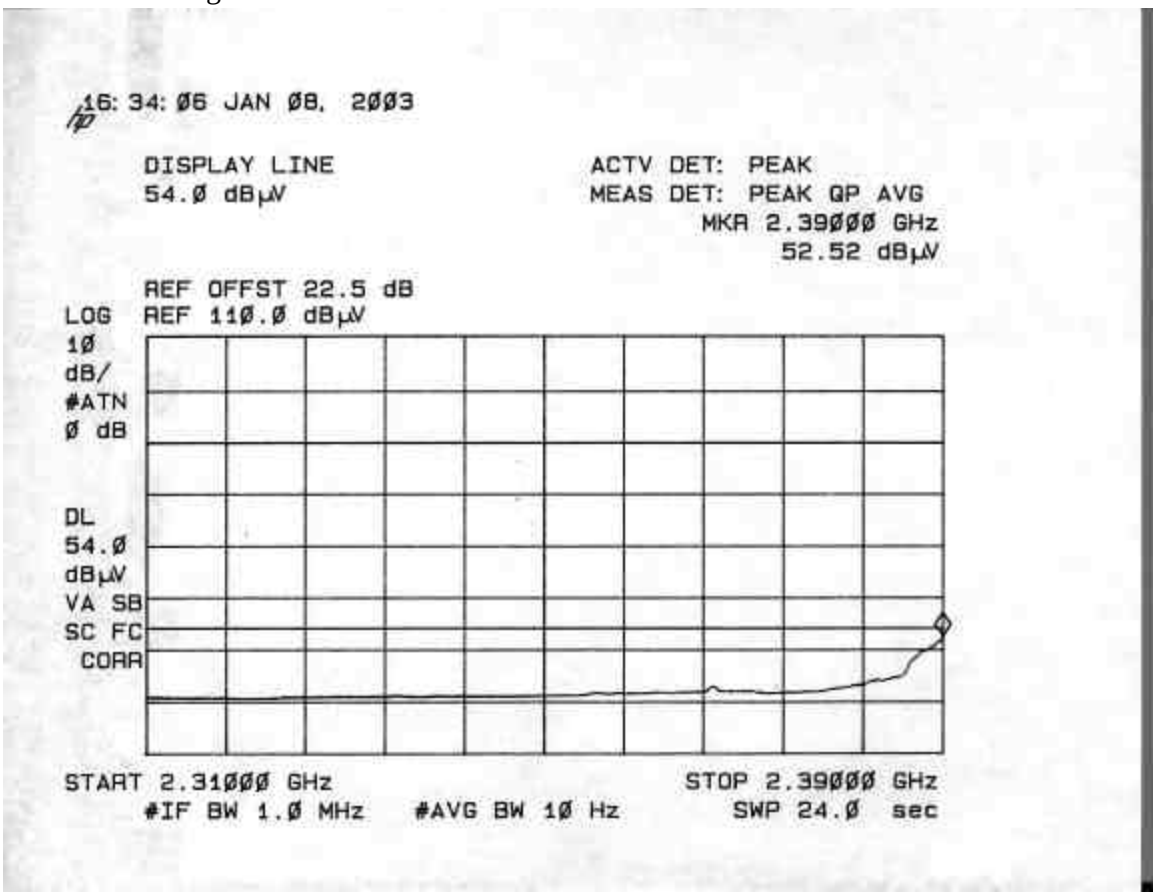


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (LOW CHANNEL, HORIZONTAL POLARIZATION) (G MODE)

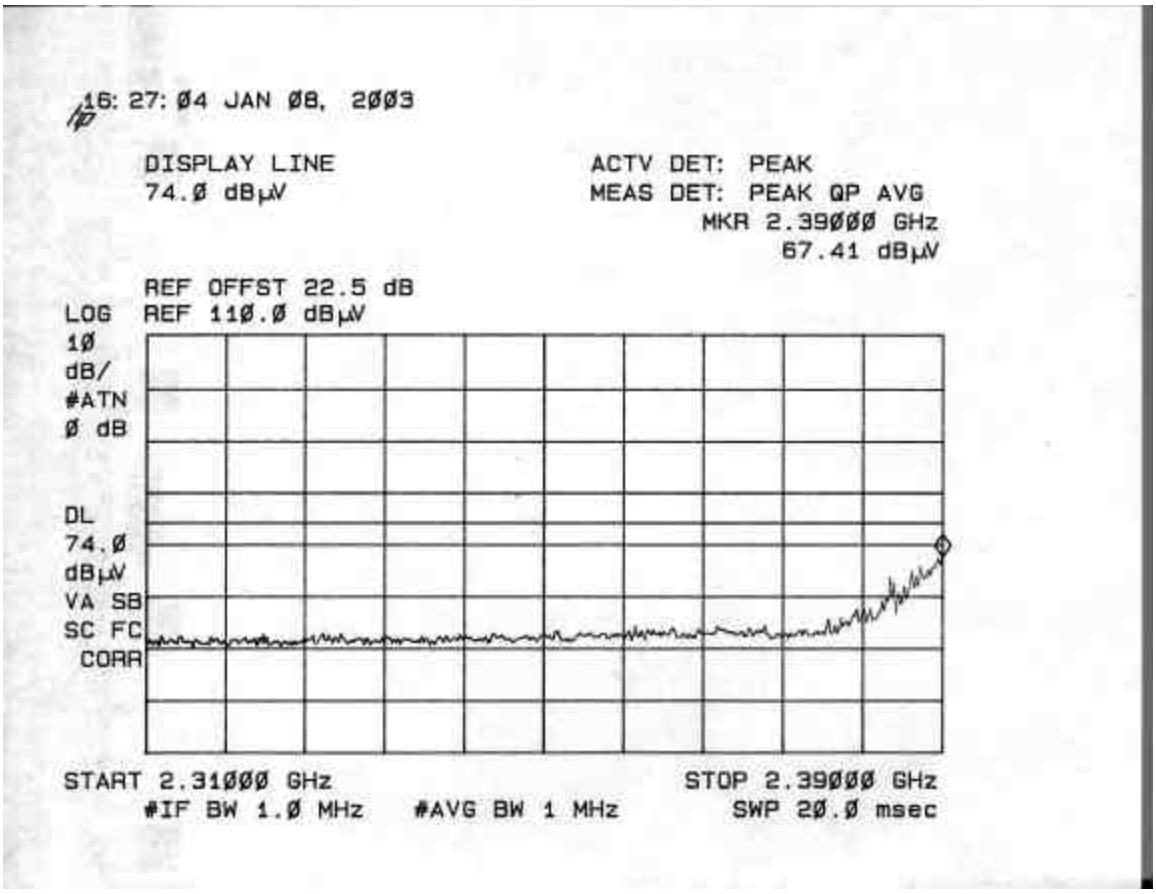


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

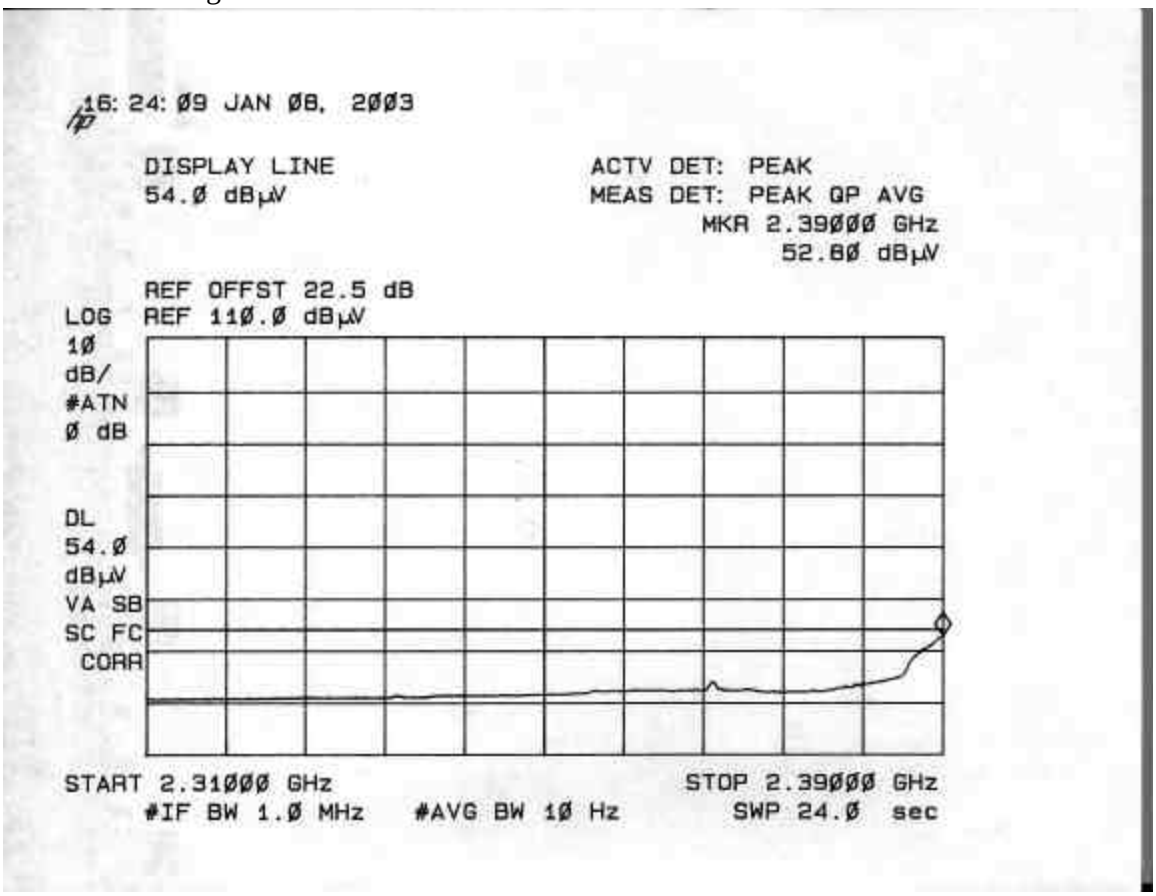


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (LOW CHANNEL, VERTICAL POLARIZATION) (G MODE)

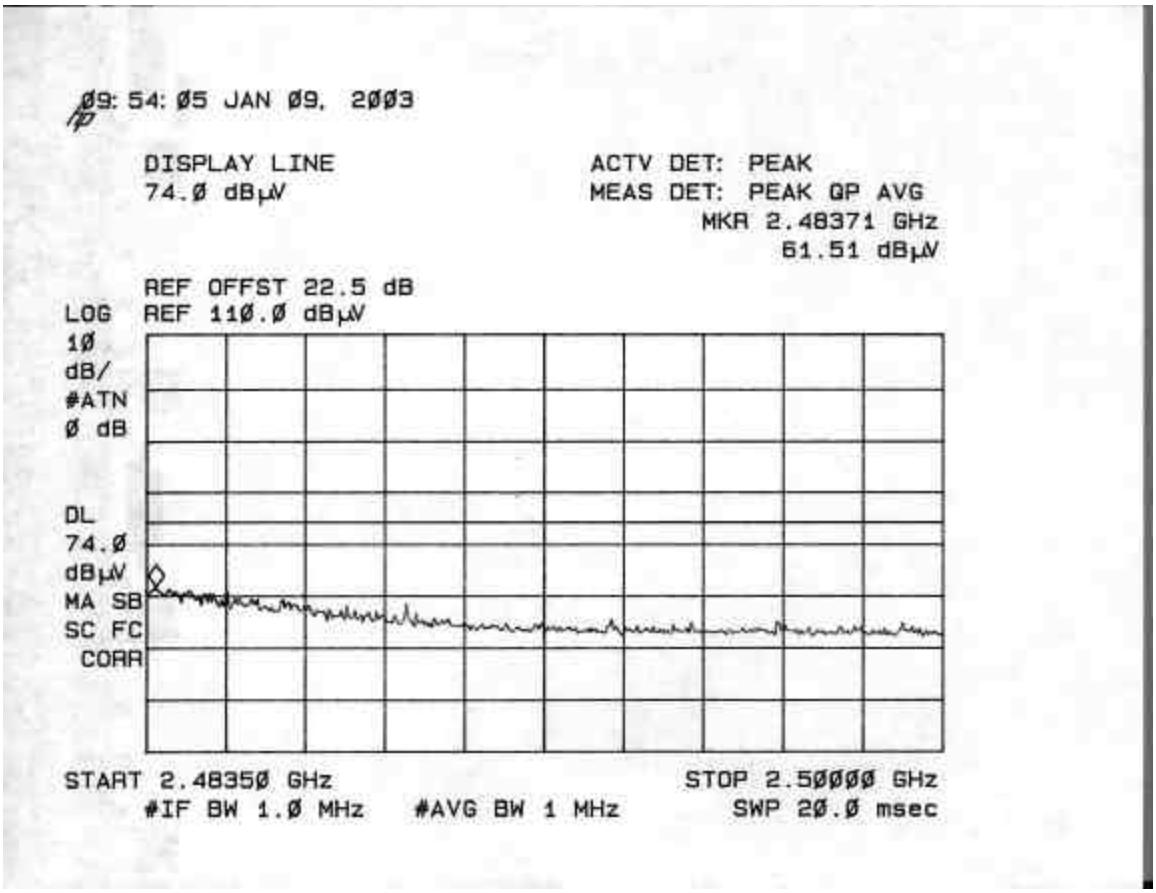


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

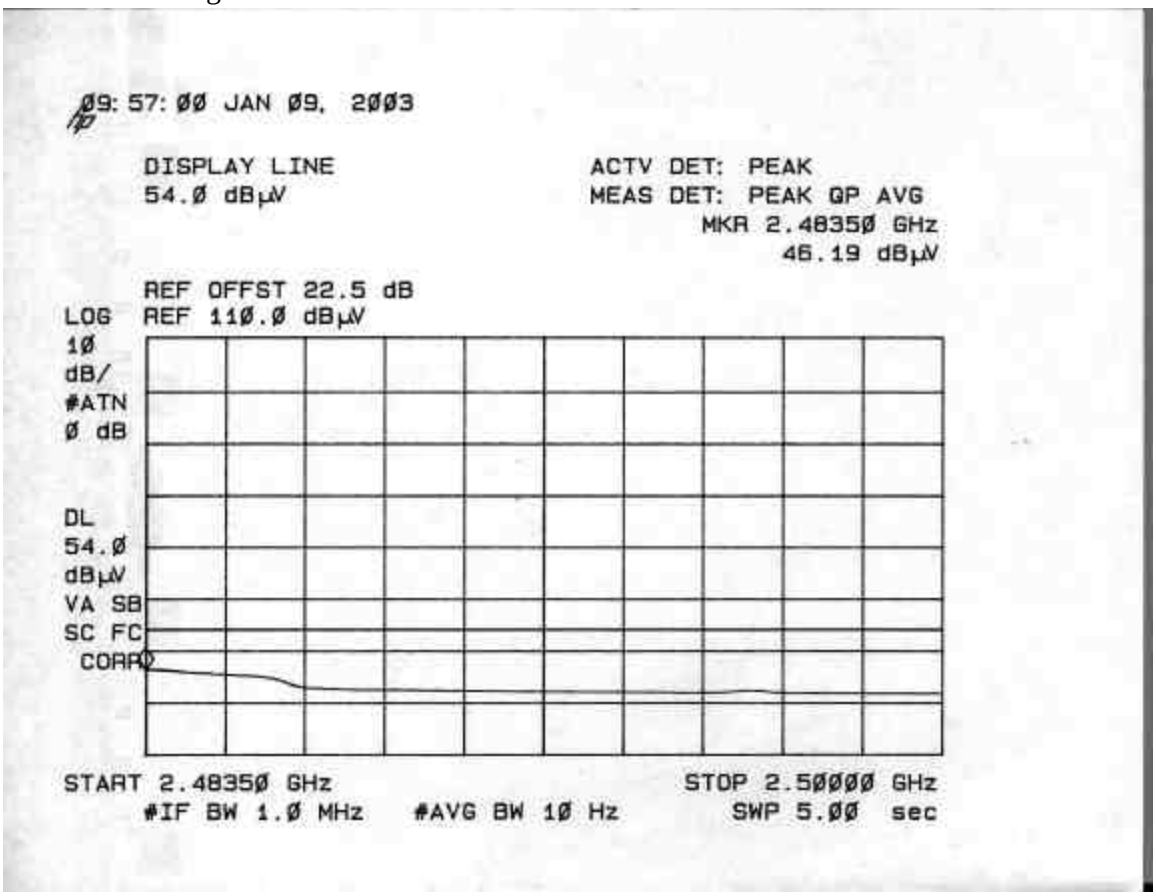


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (HIGH CHANNEL, HORIZONTAL POLARIZATION) (G MODE)

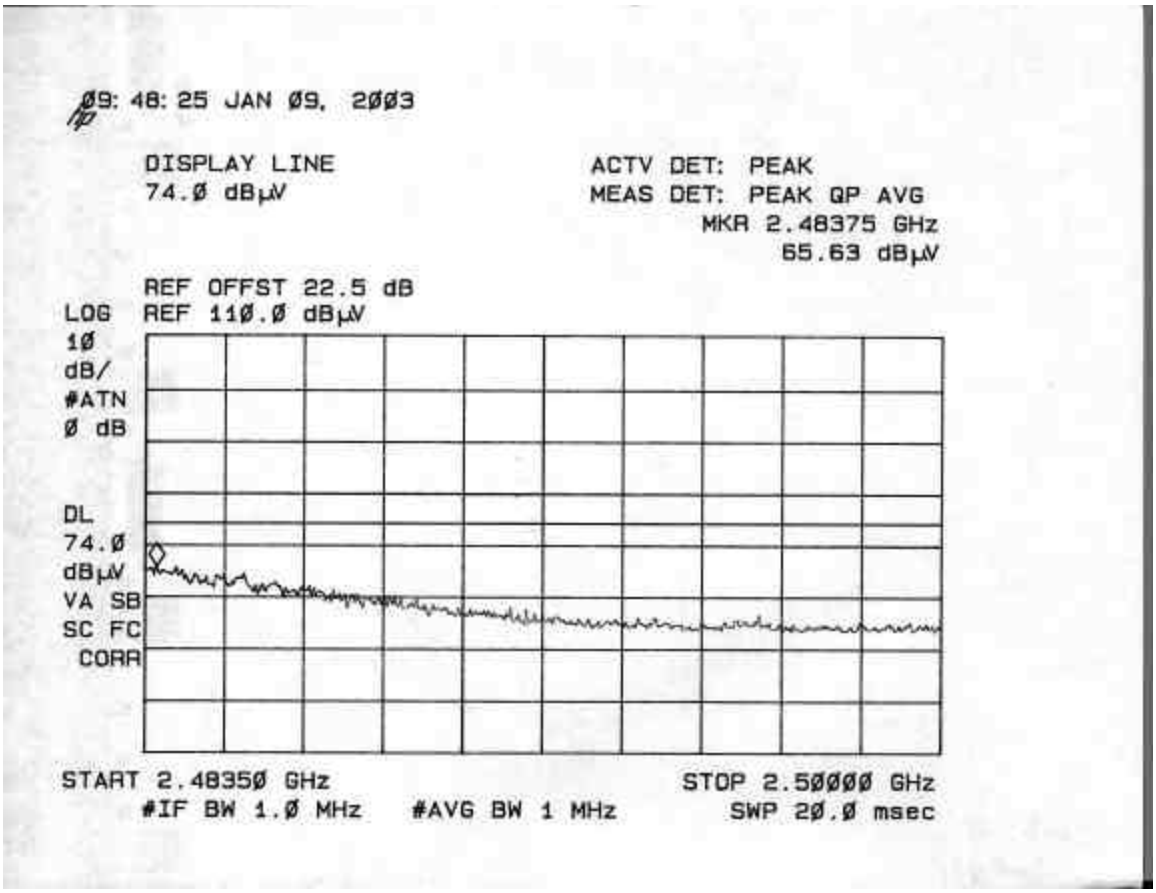


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

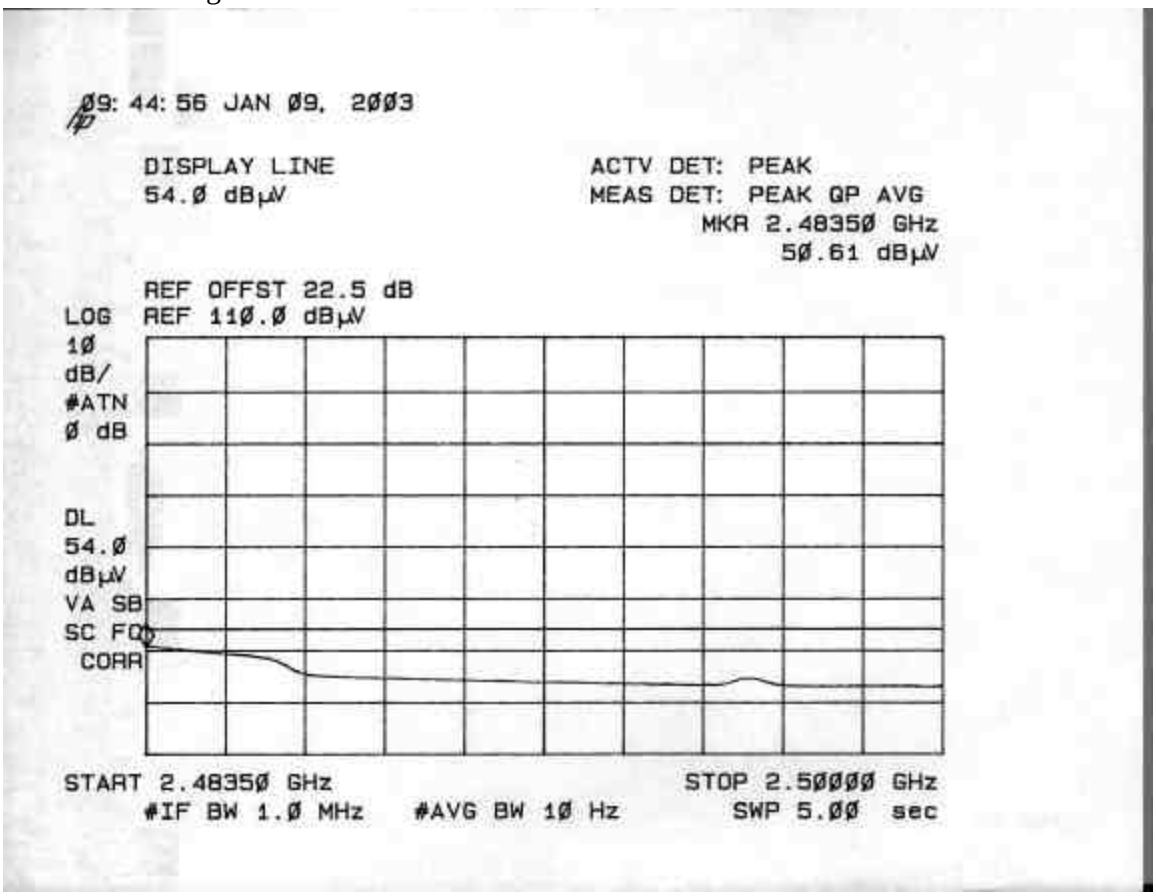


This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RESTRICTED BAND RADIATED EMISSIONS (HIGH CHANNEL, VERTICAL POLARIZATION) (G MODE)



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

HARMONIC AND SPURIOUS RADIATED EMISSIONS (2.4 GHZ BAND) (B MODE)

2.412GHz

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank Ibrahim
Project #:	02U1750-1
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	11b Base Mode, Fund = 2.412 GHz

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T72; S/N: 6739	Miteq NSP2600-44	8564E Analyzer	T87; ARA 18-26GHz; S/N:1049

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
4.824	9.8	45.6	42.2	33.9	5.7	-36.1	0.0	1.0	50.1	46.7	74.0	54.0	-23.9	-7.3	V
4.824	9.8	36.6	33.9	33.9	5.7	-36.1	0.0	1.0	41.1	38.4	74.0	54.0	-32.9	-15.6	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank Ibrahim
Project #:	02U1750-1
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	11b Base Mode, Fund = 2.437 GHz

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T72; S/N: 6739	Miteq NSP2600-44	8564E Analyzer	T87; ARA 18-26GHz; S/N:1049

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
4.874	9.8	46.7	45.2	34.0	5.8	-36.1	0.0	1.0	51.4	49.9	74.0	54.0	-22.6	-4.1	V
7.311	9.8	34.7	33.1	37.1	7.3	-36.3	0.0	1.0	43.8	42.2	74.0	54.0	-30.2	-11.8	V
4.874	9.8	40.1	37.3	34.0	5.8	-36.1	0.0	1.0	44.8	42.0	74.0	54.0	-29.2	-12.0	H
7.311	9.8	34.2	29.6	37.1	7.3	-36.3	0.0	1.0	43.3	38.7	74.0	54.0	-30.7	-15.3	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Frank Ibrahim
Project #: 02U1750-1
Company: AMBIT MICROSYSTEMS
EUT Descrip.: 802.11 A/B/G MINI PCI CARD
EUT M/N: A/B/G CARD
Test Target: FCC
Mode Oper: 11b Base Mode, Fund = 2.462 GHz

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T72; S/N: 6739	Miteq NSP2600-44	8564E Analyzer	T87; ARA 18-26GHz; S/N:1049

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
4.924	9.8	47.6	44.2	34.2	5.8	-36.1	0.0	1.0	52.5	49.1	74.0	54.0	-21.5	-4.9	V
7.386	9.8	37.9	34.2	37.3	7.3	-36.2	0.0	1.0	47.2	43.5	74.0	54.0	-26.8	-10.5	V
4.924	9.8	41.2	35.9	34.2	5.8	-36.1	0.0	1.0	46.1	40.8	74.0	54.0	-27.9	-13.2	H
7.386	9.8	37.1	31.3	37.3	7.3	-36.2	0.0	1.0	46.4	40.6	74.0	54.0	-27.6	-13.4	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

HARMONIC AND SPURIOUS RADIATED EMISSIONS (2.4 GHZ BAND) (G NORMAL MODE)

2.412GHz

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank Ibrahim
Project #:	02U1750-1
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	11g Base Mode, Fund = 2.412 GHz,

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T72; S/N: 6739	Miteq NSP2600-44	8564E Analyzer	T87; ARA 18-26GHz; S/N:1049

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
4.824	9.8	49.5	43.7	33.9	5.7	-36.1	0.0	1.0	54.0	48.2	74.0	54.0	-20.0	-5.8	V
4.824	9.8	41.0	30.4	33.9	5.7	-36.1	0.0	1.0	45.5	34.9	74.0	54.0	-28.5	-19.1	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank Ibrahim
Project #:	02U1750-1
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	11g Base Mode, Fund = 2.437 GHz,

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T72; S/N: 6739	Miteq NSP2600-44	8564E Analyzer	T87; ARA 18-26GHz; S/N:1049

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
4.874	9.8	40.3	29.5	34.0	5.8	-36.1	0.0	1.0	45.0	34.2	74.0	54.0	-29.0	-19.8	V
7.311	9.8	42.0	29.1	37.1	7.3	-36.3	0.0	1.0	51.1	38.2	74.0	54.0	-22.9	-15.8	V
4.874	9.8	38.2	30.1	34.0	5.8	-36.1	0.0	1.0	42.9	34.8	74.0	54.0	-31.1	-19.2	H
7.311	9.8	39.6	29.9	37.1	7.3	-36.3	0.0	1.0	48.7	39.0	74.0	54.0	-25.3	-15.0	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank Ibrahim
Project #:	02U1750-1
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	11g Base Mode, Fund = 2.462 GHz,

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T72; S/N: 6739	Miteq NSP2600-44	8564E Analyzer	T87; ARA 18-26GHz; S/N:1049

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
4.924	9.8	45.2	35.6	34.2	5.8	-36.1	0.0	1.0	50.1	40.5	74.0	54.0	-23.9	-13.5	V
7.386	9.8	38.1	29.8	37.3	7.3	-36.2	0.0	1.0	47.4	39.1	74.0	54.0	-26.6	-14.9	V
4.924	9.8	40.5	30.2	34.2	5.8	-36.1	0.0	1.0	45.4	35.1	74.0	54.0	-28.6	-18.9	H
7.386	9.8	34.3	29.6	37.3	7.3	-36.2	0.0	1.0	43.6	38.9	74.0	54.0	-30.4	-15.1	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA

DOCUMENT NO: CCSUP4031A
TEL: (408) 463-0885 FAX: (408) 463-0888

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

HARMONIC AND SPURIOUS RADIATED EMISSIONS (2.4 GHZ BAND) (G TURBO MODE)

2.437GHz

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank Ibrahim
Project #:	02U1750-1
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	11g Turbo Mode, Fund = 2.437 GHz

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T72; S/N: 6739	Miteq NSP2600-44	8564E Analyzer	T87; ARA 18-26GHz; S/N:1049

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
4.874	9.8	40.3	30.6	34.0	5.8	-36.1	0.0	1.0	45.0	35.3	74.0	54.0	-29.0	-18.7	V
7.311	9.8	44.5	32.1	37.1	7.3	-36.3	0.0	1.0	53.6	41.2	74.0	54.0	-20.4	-12.8	V
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

HARMONIC AND SPURIOUS RADIATED EMISSIONS (5.8 GHZ BAND, NORMAL MODE)

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank brahim
Project #:	02U1731
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	5.745 GHz, Base Mode

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T73; S/N: 6717	HP8449B	8566B Analyzer	T87-T88 ARA 18-40GHz & Mixer > 40GHz

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
11.490	9.8	41.5	31.2	39.7	9.3	-33.8	0.0	1.0	57.6	47.3	74.0	54.0	-16.4	-6.7	V
11.490	9.8	40.1	30.5	39.7	9.3	-33.8	0.0	1.0	56.2	46.6	74.0	54.0	-17.8	-7.4	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank brahim
Project #:	02U1731
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	5.785 GHz, Base Mode

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T73; S/N: 6717	HP8449B	8566B Analyzer	T87-T88 ARA 18-40GHz & Mixer > 40GHz

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
11.570	9.8	42.3	32.1	39.7	9.3	-33.7	0.0	1.0	58.5	48.3	74.0	54.0	-15.5	-5.7	V
11.570	9.8	41.0	30.2	39.7	9.3	-33.7	0.0	1.0	57.2	46.4	74.0	54.0	-16.8	-7.6	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank brahim
Project #:	02U1731
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	5.825 GHz, Base Mode

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T73; S/N: 6717	HP8449B	8566B Analyzer	T87-T88 ARA 18-40GHz & Mixer > 40GHz

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
11.650	9.8	42.3	31.9	39.6	9.3	-33.7	0.0	1.0	58.5	48.1	74.0	54.0	-15.5	-5.9	V
11.650	9.8	40.6	30.4	39.6	9.3	-33.7	0.0	1.0	56.8	46.6	74.0	54.0	-17.2	-7.4	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

HARMONIC AND SPURIOUS RADIATED EMISSIONS (5.8 GHZ BAND, TURBO MODE)

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank brahim
Project #:	02U1731
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	5.760 GHz, Turbo Mode

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T73; S/N: 6717	HP8449B	8566B Analyzer	T87-T88 ARA 18-40GHz & Mixer > 40GHz

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
11.520	9.8	41.3	31.2	39.7	9.3	-33.8	0.0	1.0	57.4	47.3	74.0	54.0	-16.6	-6.7	V
11.520	9.8	40.2	30.1	39.7	9.3	-33.8	0.0	1.0	56.3	46.2	74.0	54.0	-17.7	-7.8	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

01/11/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:	Frank brahim
Project #:	02U1731
Company:	AMBIT MICROSYSTEMS
EUT Descrip.:	802.11 A/B/G MINI PCI CARD
EUT M/N:	A/B/G CARD
Test Target:	FCC
Mode Oper:	5.800 GHz, Turbo Mode

Test Equipment:

Cable (feet)	EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
15	T73; S/N: 6717	HP 8449B	8566B Analyzer	T87-T88 ARA 18-40GHz & Mixer > 40GHz

Peak Measurements:
1 MHz Resolution Bandwidth
1MHz Video Bandwidth

Average Measurements:
1 MHz Resolution Bandwidth
10Hz Video Bandwidth

f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
11.600	9.8	41.0	31.5	39.7	9.3	-33.7	0.0	1.0	57.2	47.7	74.0	54.0	-16.8	-6.3	V
11.600	9.8	40.2	29.9	39.7	9.3	-33.7	0.0	1.0	56.4	46.1	74.0	54.0	-17.6	-7.9	H
NOTE: NO OTHER HARMONICS OR SPURIOUS EMISSIONS WERE DETECTED ABOVE THE NOISE FLOOR															

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

DIGITAL DEVICE RADIATED EMISSIONS

COMPLIANCE Certification Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001
PHONE: (408) 463-0885 FAX: (408) 463-0888

Project #: 03U1716
Report #: 021003C1
Date& Time: 02/10/03 11:08 AM
Test Engr: NEELESH RAJ

Company: AMBIT MICROSYSTEMS
EUT Description: 802.11 a/b/g MINI PCI CARD
Test Configuration : EUT/AC ADAPTER/PRINTER/MODEM
Type of Test: CISPR22-B
Mode of Operation: TX

<< Main Sheet

Freq. (MHz)	Reading (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit EN_B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
133.33	40.00	13.36	1.94	26.95	28.35	30.00	-1.65	10mV	180.00	1.00	QP
324.83	43.60	14.86	3.14	26.57	35.03	37.00	-1.97	10mV	180.00	1.00	QP
633.33	38.10	19.70	4.69	27.84	34.65	37.00	-2.35	10mV	45.00	1.00	QP
334.78	43.00	14.95	3.19	26.64	34.50	37.00	-2.50	10mV	180.00	1.00	QP
192.00	36.00	15.70	2.37	26.66	27.41	30.00	-2.59	10mV	180.00	1.00	P
160.00	35.00	17.05	2.14	26.80	27.39	30.00	-2.61	10mV	180.00	1.00	P
6 Worst Data											

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.8. POWERLINE CONDUCTED EMISSIONS

TEST SETUP

The EUT is placed on a wooden table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane on the floor.

The EUT is set to transmit in a continuous mode.

TEST PROCEDURE

The resolution bandwidth is set to 10 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

No non-compliance noted:

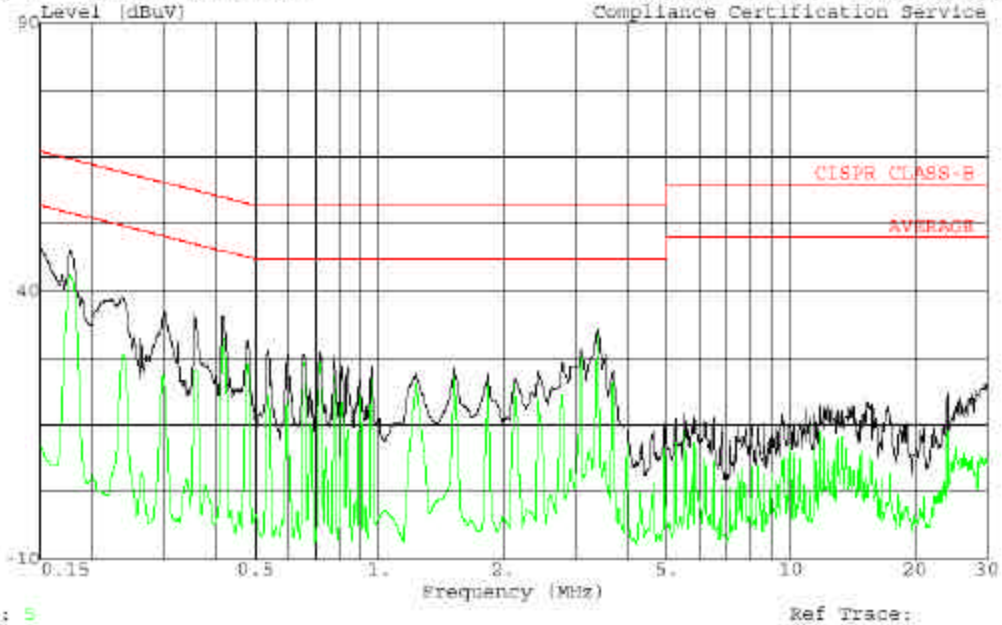
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.18	47.60	--	43.04	0.00	65.23	55.23	-17.63	-12.19	L1
0.24	38.82	--	27.65	0.00	63.51	53.51	-24.69	-25.86	L1
0.30	36.20	--	24.56	0.00	61.71	51.71	-25.51	-27.15	L1
0.15	47.16	--	10.72	0.00	66.00	56.00	-18.84	-45.28	L2
0.18	44.96	--	36.88	0.00	65.23	55.23	-20.27	-18.35	L2
0.30	36.40	--	23.63	0.00	61.80	51.80	-25.40	-28.17	L2
6 Worst Data									

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

COMPLIANCE Engineering Services, Inc.

561F Monterey Road,
San Jose, CA 95037 USA
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 7 File#: AMBIT1.EMI Date: 02-20-2003 Time: 18:13:36



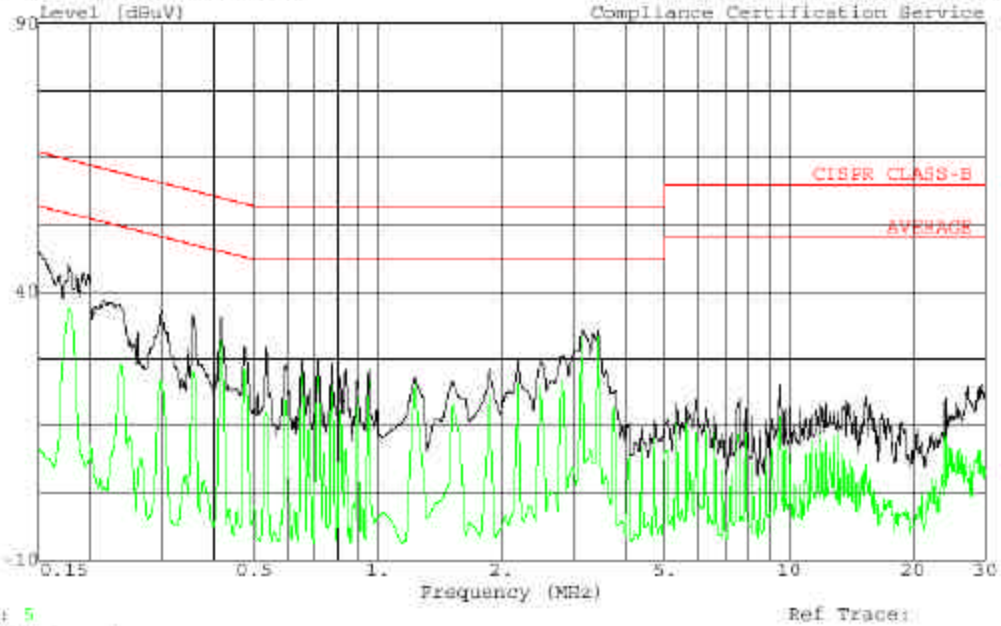
Trace: 5 Ref Trace:
Project # :
Test Engineer : NEELESH RAJ
Company : AMBIT MICROSYSTEMS
EUT : A/B/G CARD MODULAR
Test Config. : EUT/PRINTER/MODEM
Test of Target: CISPR22-B
Mode of Oper. : Tx
: L1: Peak (Black), Ave (Green)
: 115VAC@60Hz

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

COMPLIANCE Engineering Services, Inc.

561F Monterey Road,
San Jose, CA 95037 USA
Tel: (408) 463-0885
Fax: (408) 463-0888

Data#: 7 File#: AMBIT2.EMI Date: 02-20-2003 Time: 18:23:23

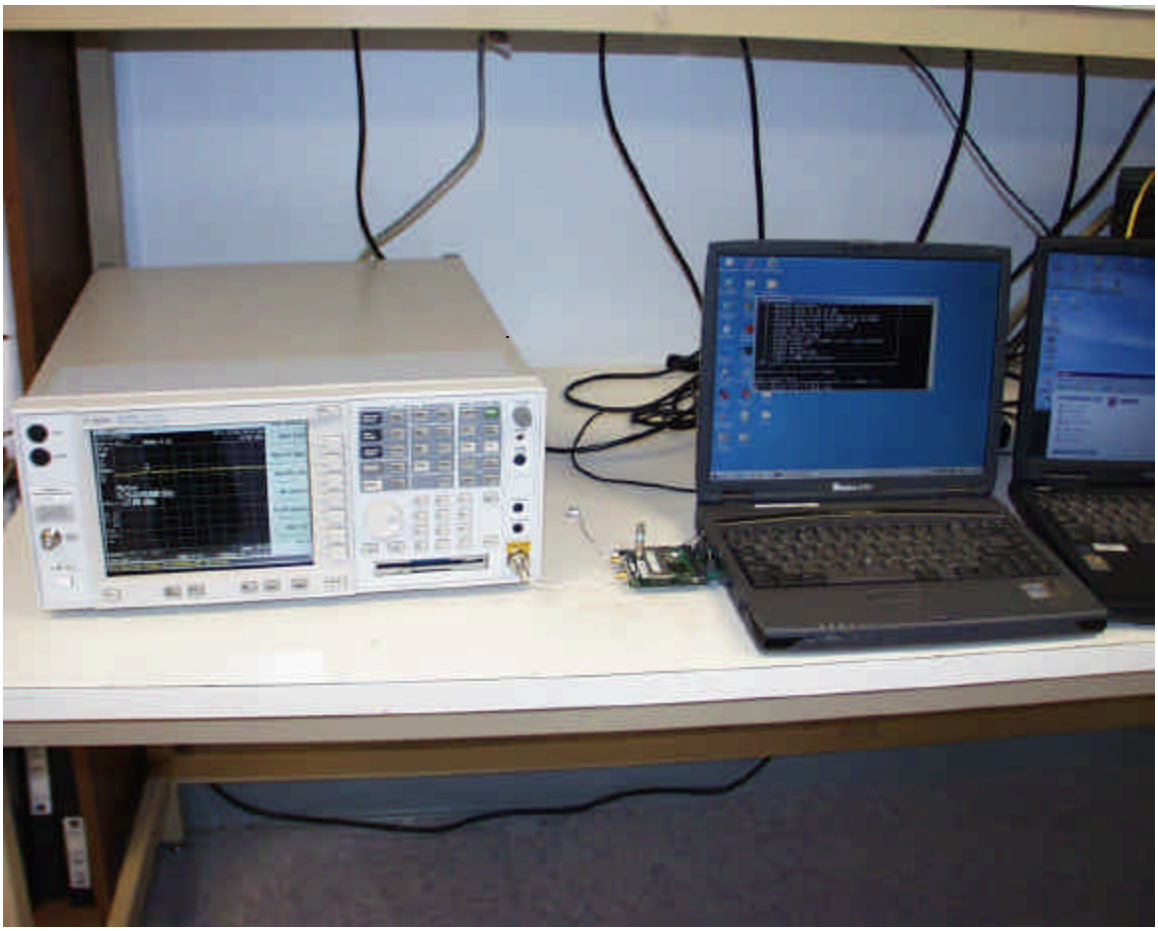


Trace: 5 Ref Trace:
Project # :
Test Engineer : NEELESH RAJ
Company : AMBIT MICROSYSTEMS
EUT : A/B/G CARD MODULAR
Test Config. : EUT/PRINTER/MODEM
Test of Target: CISPR22-B
Mode of Oper. : Tx
: L2: Peak (Black), Ave (Green)
: 115VAC@60Hz

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

8.9. SETUP PHOTOS

ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP



This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

RADIATED RF MEASUREMENT SETUP

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

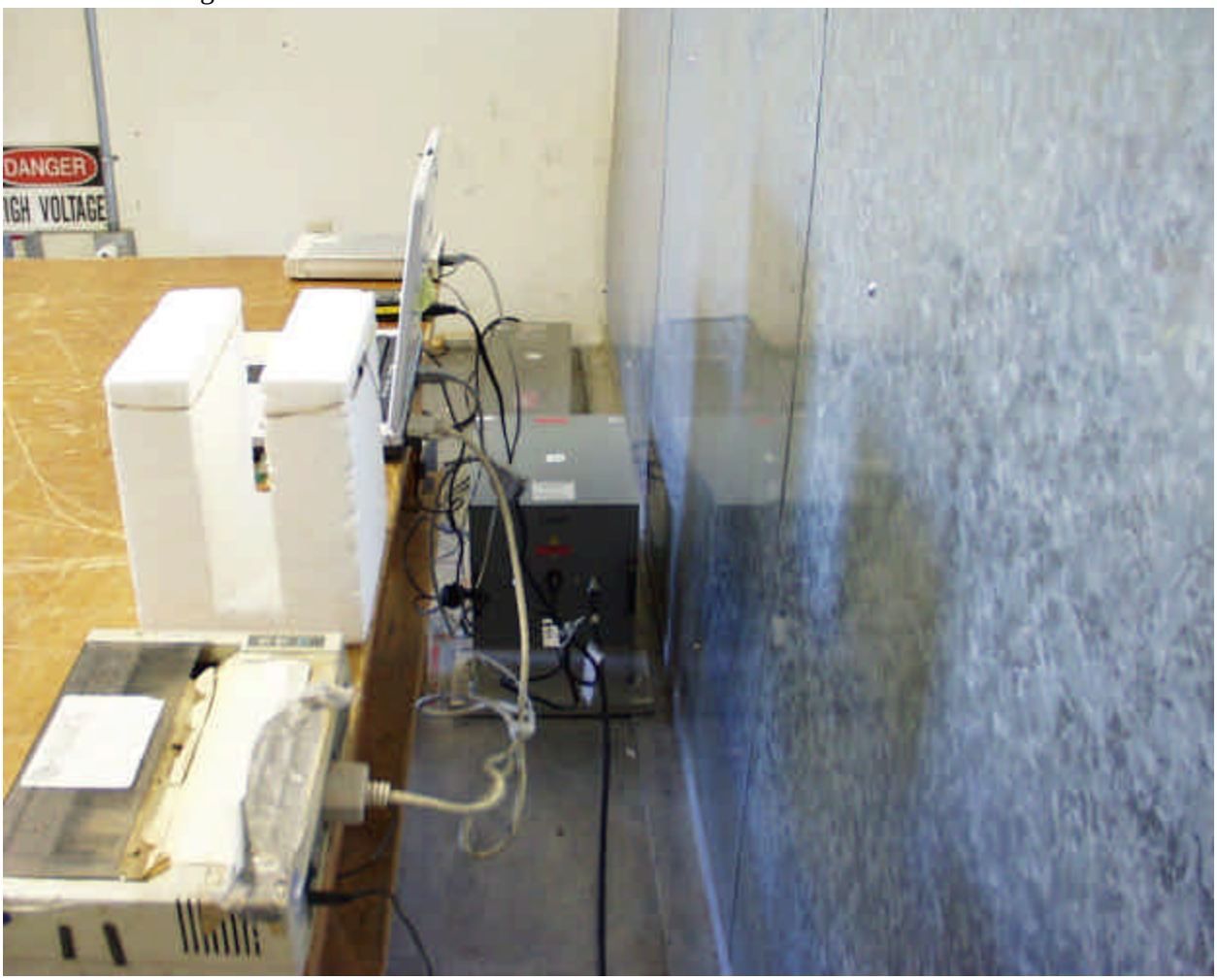
DIGITAL DEVICE RADIATED EMISSIONS MEASUREMENT SETUP

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.

POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP

This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.



END OF REPORT

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
561F MONTEREY ROAD, MORGAN HILL, CA 95037 USA TEL: (408) 463-0885 FAX: (408) 463-0888
This report shall not be reproduced except in full, without the written approval of CCS. This document may be altered or revised by Compliance Certification Services personnel only, and shall be noted in the revision section of the document.