

Conducted Out of Band Emissions

Specifications:

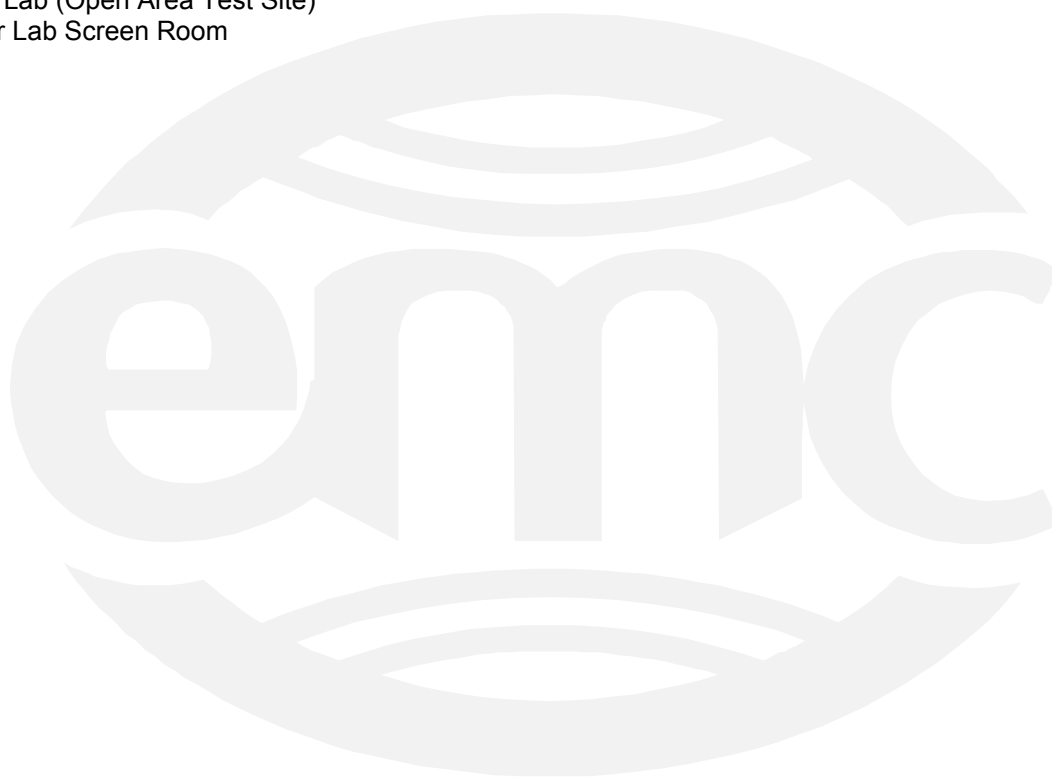
FCC Specification: Paragraph: 15.247 (d)

IC Specification: RSS-210, 6.2.2(o)(e1)

The *Out of Band Emission* measurements were performed at the following test location:

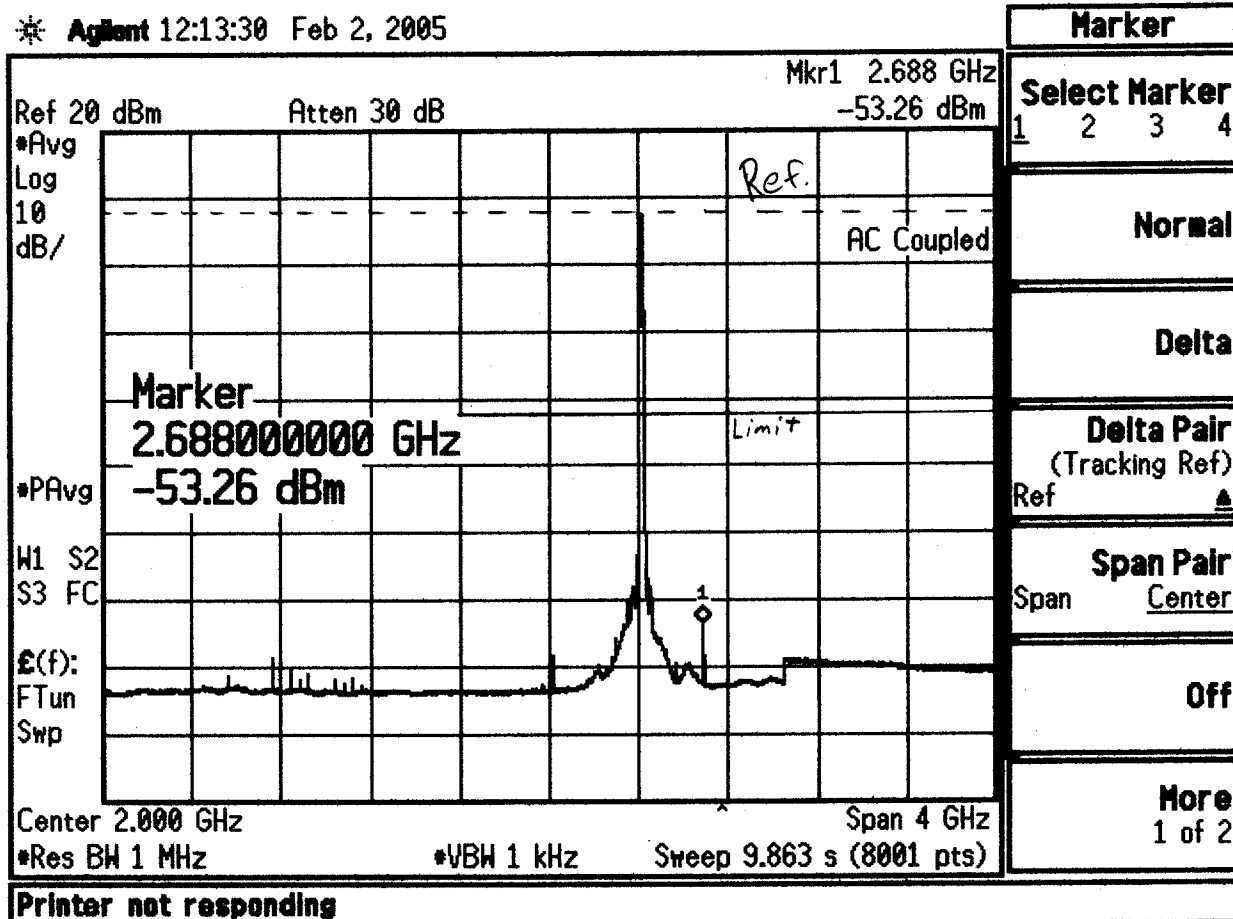
☐ - Test not applicable

- ☐ - Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room
- ☒ - Cal Amp



Conducted out-of-band Emissions

* Agilent 12:13:30 Feb 2, 2005



Cont TX
 CTL 20 dBm
 2412 MHz
 B mode

FCC Requirement: Section 15.247 (d)

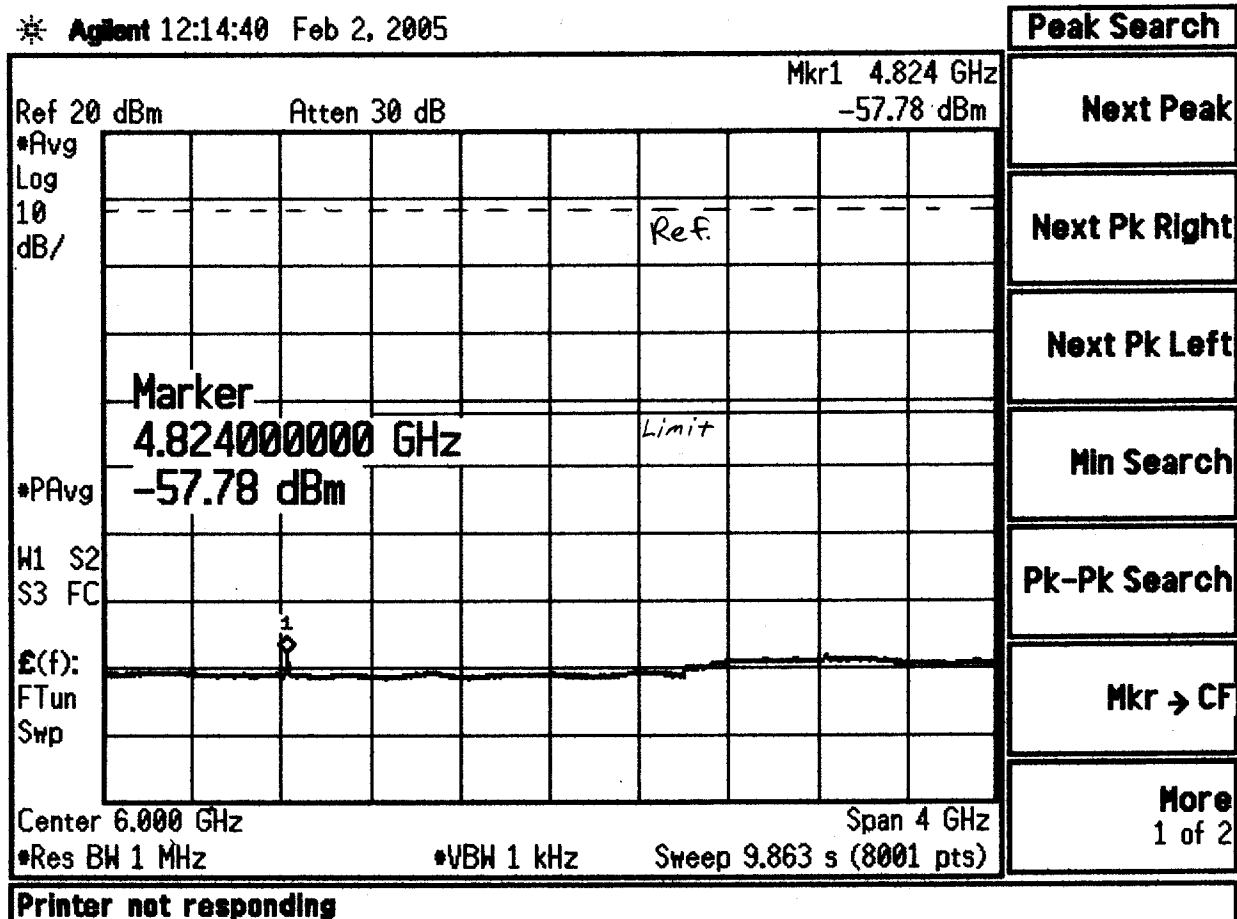
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

✱ Agilent 12:14:40 Feb 2, 2005



Cont. TX
 CTL 20dBm
 2412 MHz

FCC Requirement: Section 15.247 (d)

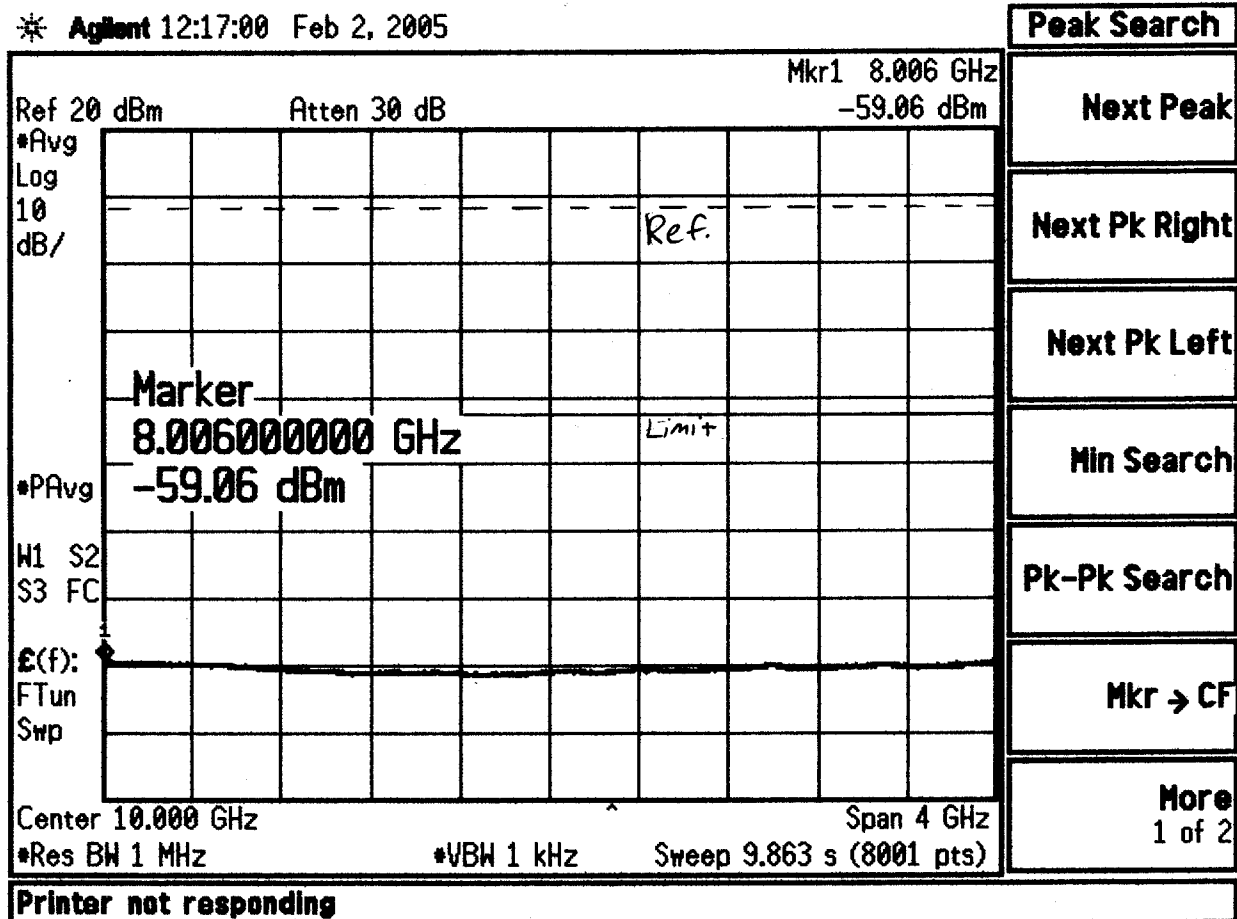
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

✱ Agilent 12:17:00 Feb 2, 2005



Cont. Tx
CTL 20dBm
2412 GHz

FCC Requirement: Section 15.247 (d)

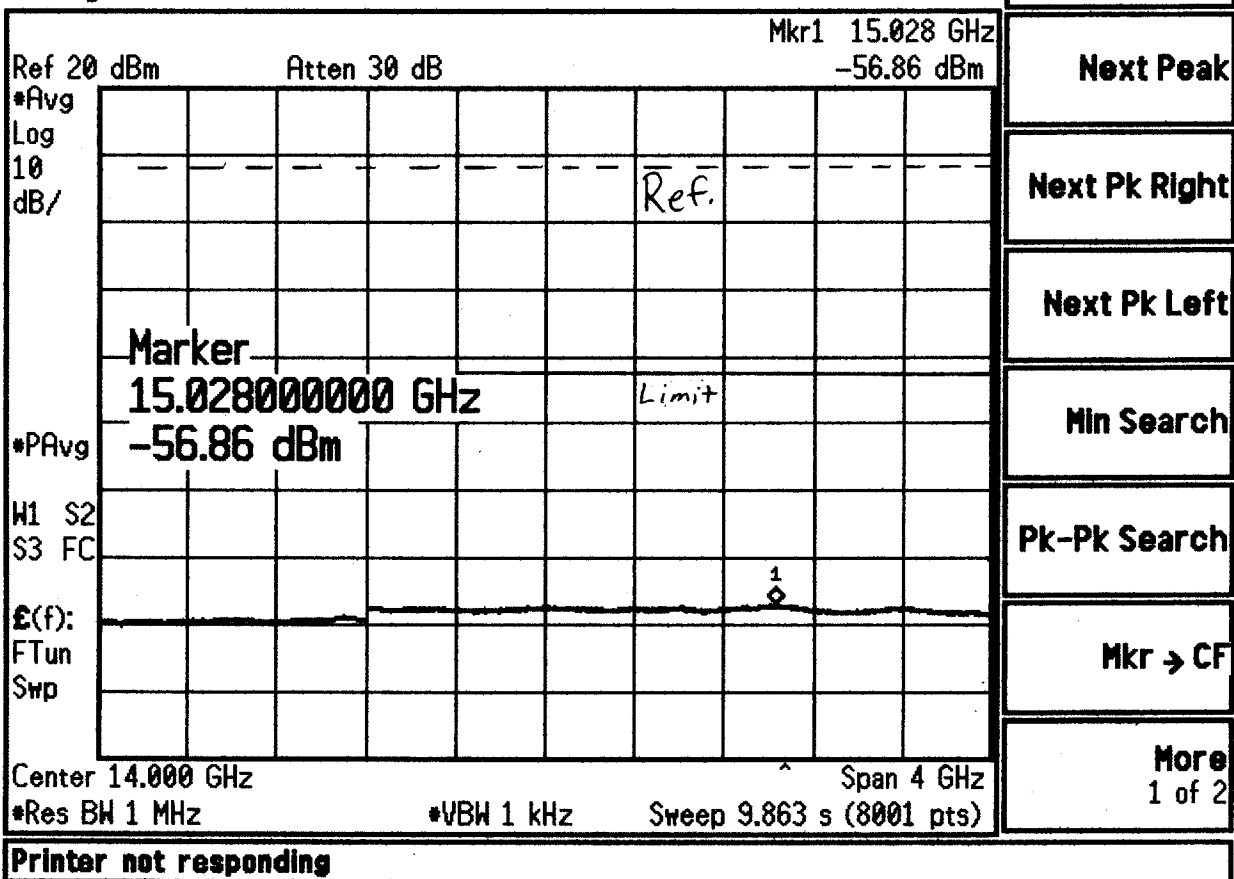
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 12:47:52 Feb 2, 2005



Cont. TX

CTL 20 dBm

2.412 GHz

FCC Requirement: Section 15.247 (d)

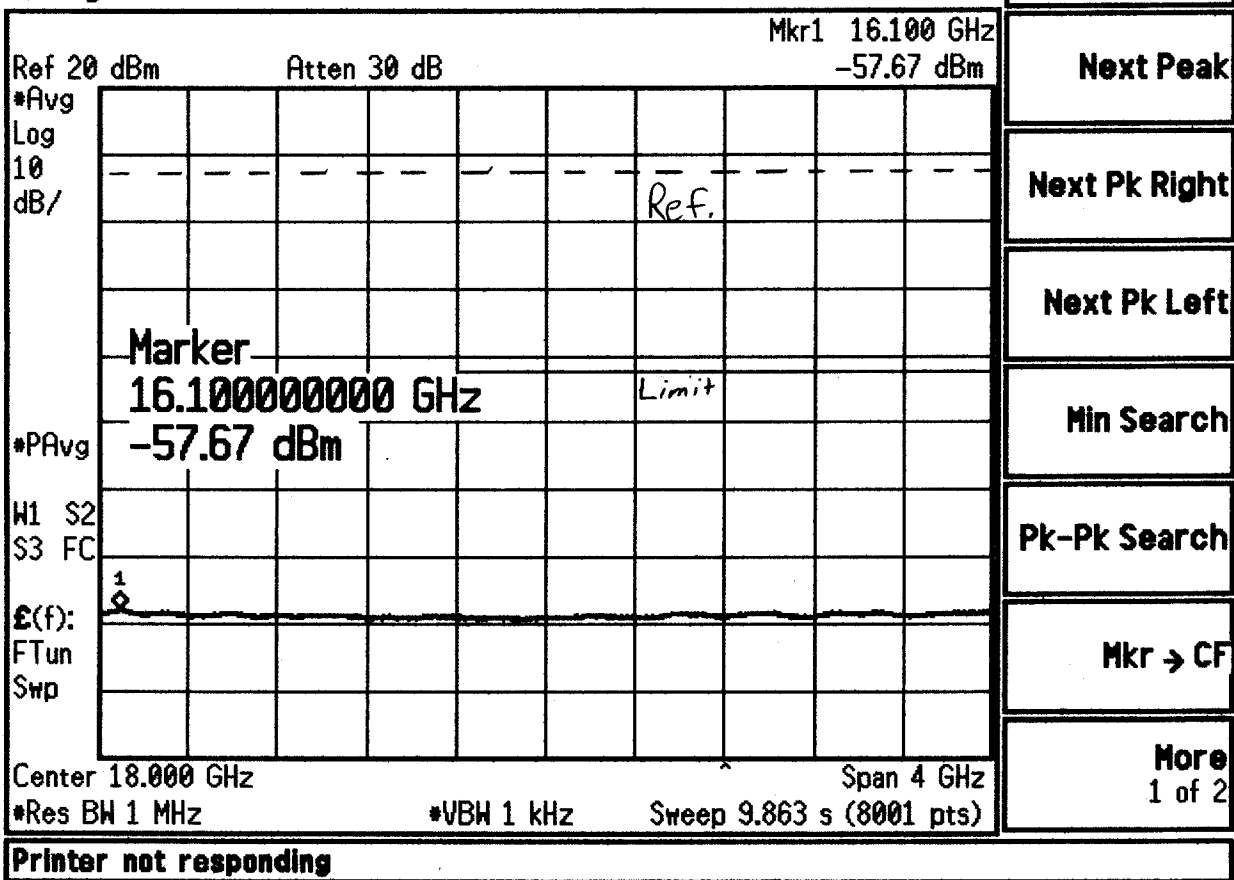
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 12:48:46 Feb 2, 2005



Cont. TX

CTL 20 dBm

2.412 GHz

FCC Requirement: Section 15.247 (d)

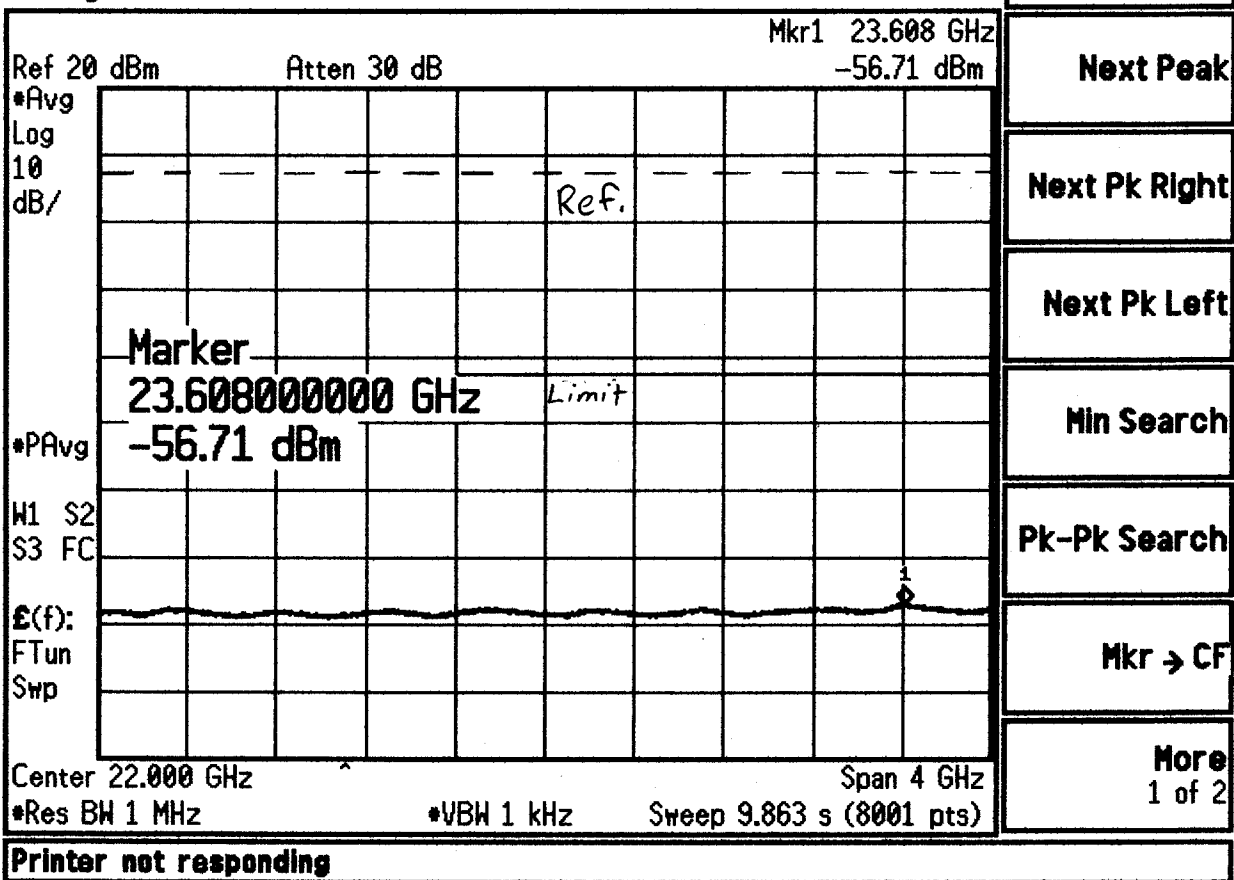
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 12:50:10 Feb 2, 2005



Cont. TX
 CTL 20 dBm
 2.412 GHz

FCC Requirement: Section 15.247 (d)

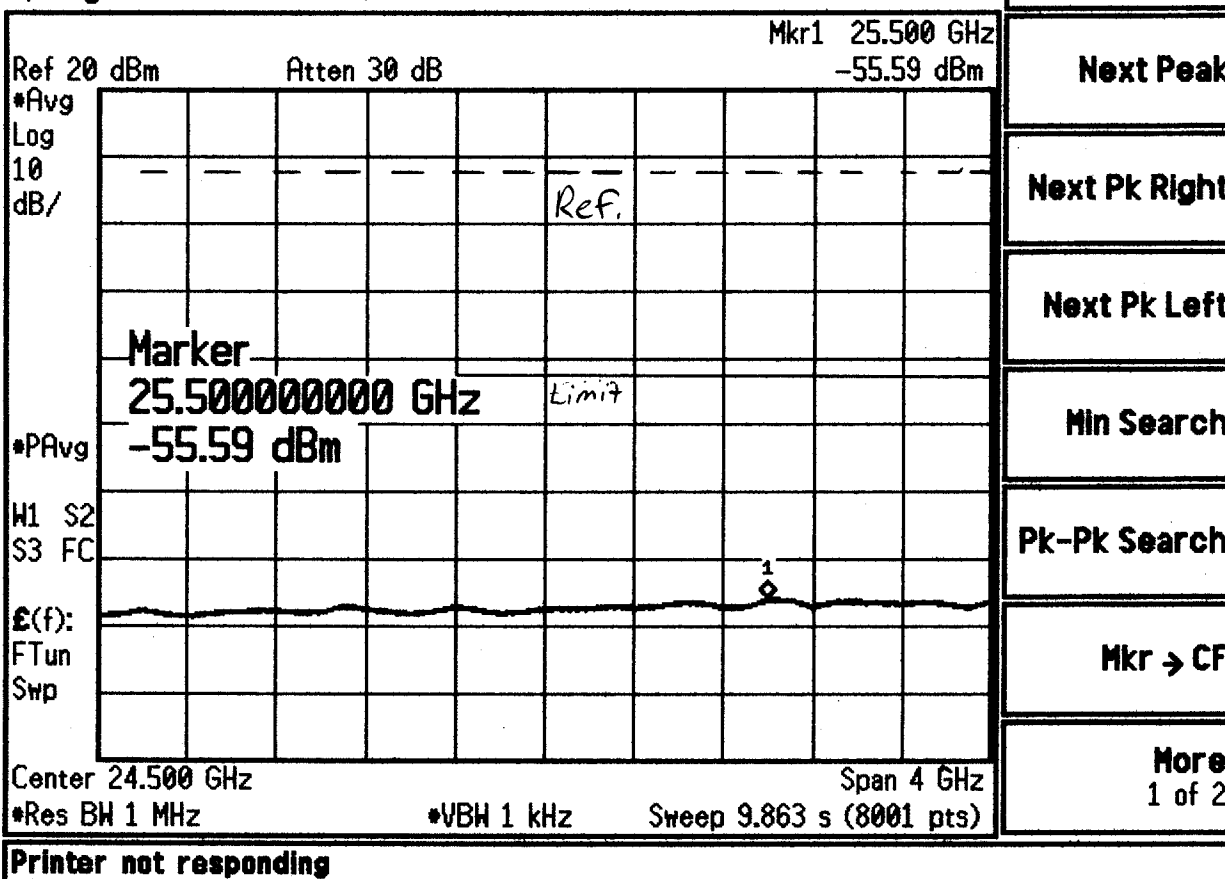
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 12:50:42 Feb 2, 2005



Cont. TX
 CTL 20 dBm
 2.412 GHz

FCC Requirement: Section 15.247 (d)

Tx Conducted Out-of-Band Emissions

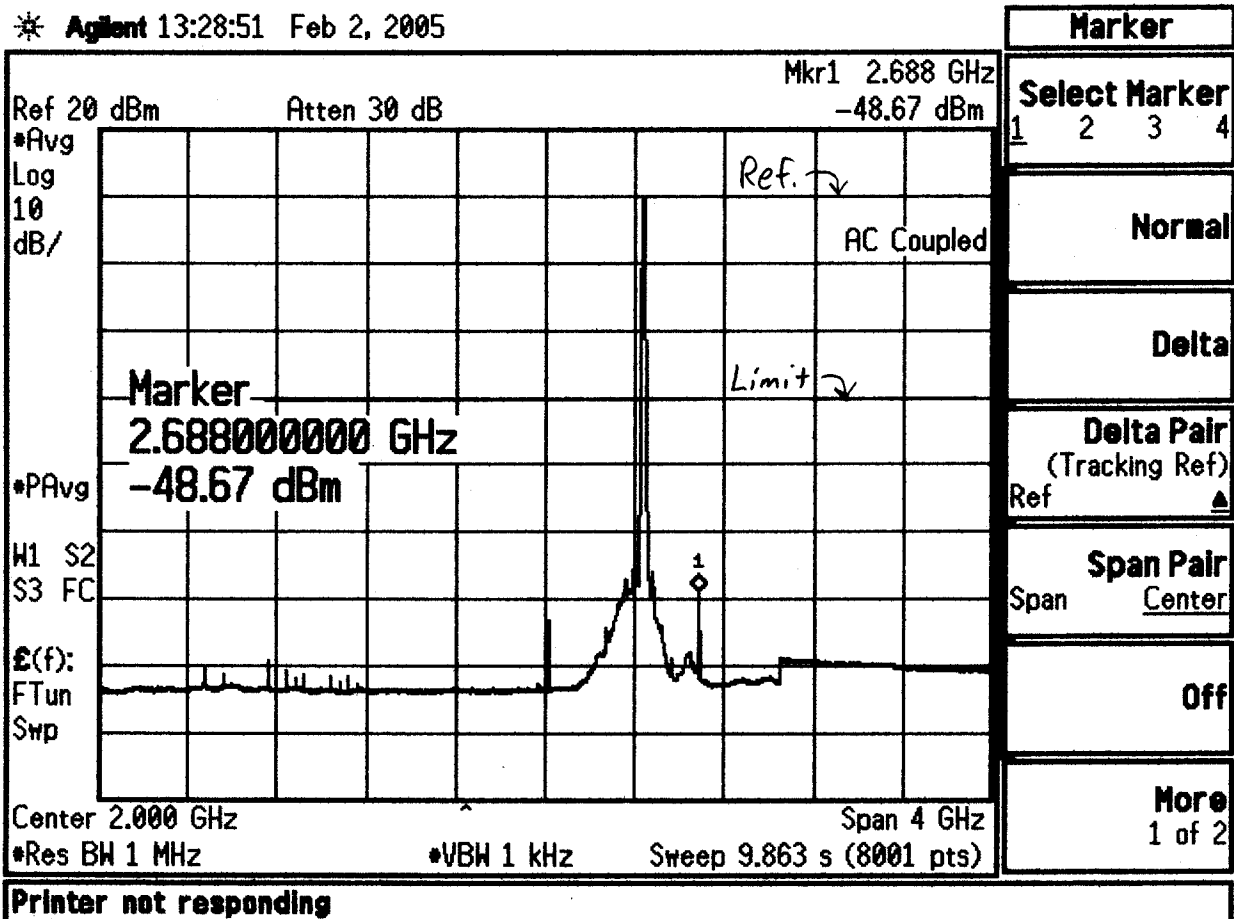
In any 100 kHz bandwidth, out-of-band emissions shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Conducted out-of-band Emissions

* Agilent 13:28:51 Feb 2, 2005



CONT TX
 CTL 22dBm
 2437 MHz
 B-mode

FCC Requirement: Section 15.247 (d)

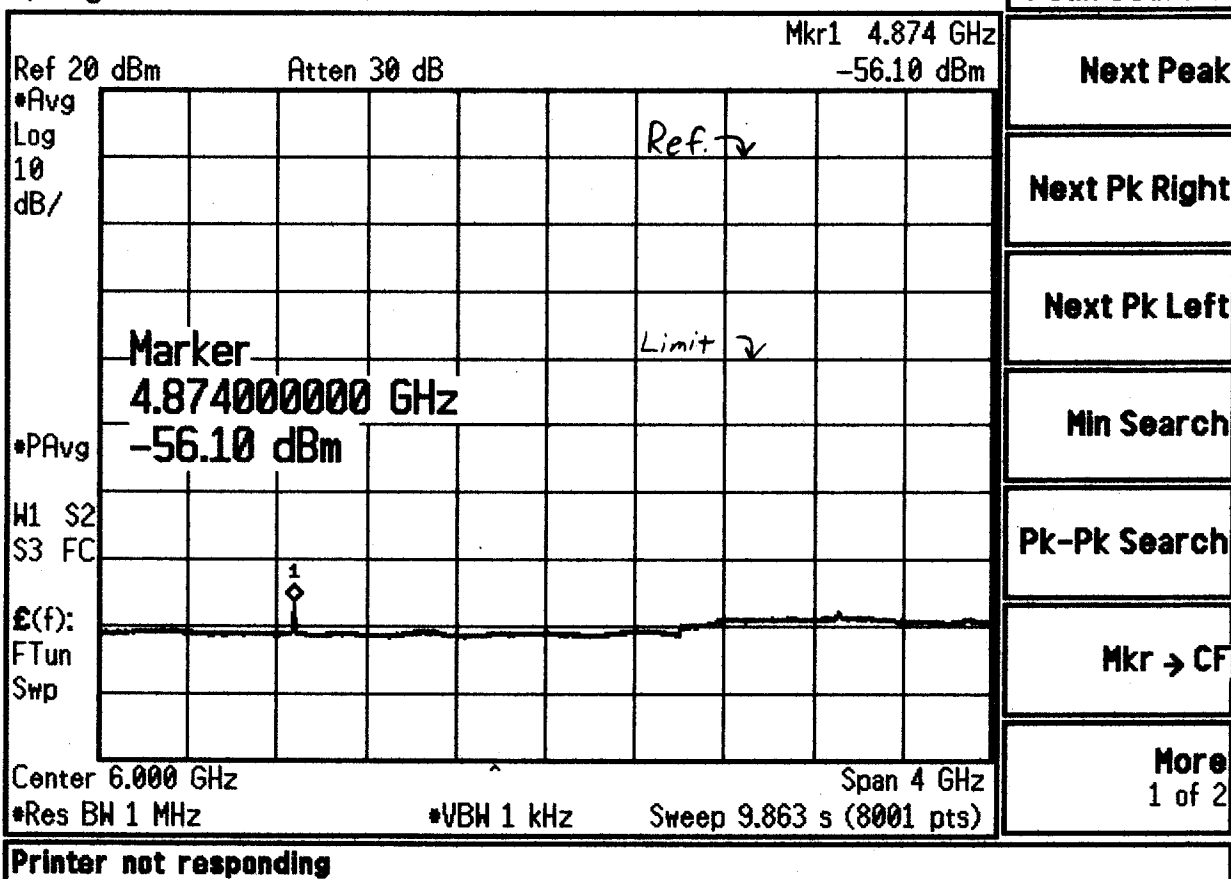
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 13:29:43 Feb 2, 2005



CONT TX
CTL 22 dBm
2437 MHz
B-mode

FCC Requirement: Section 15.247 (d)

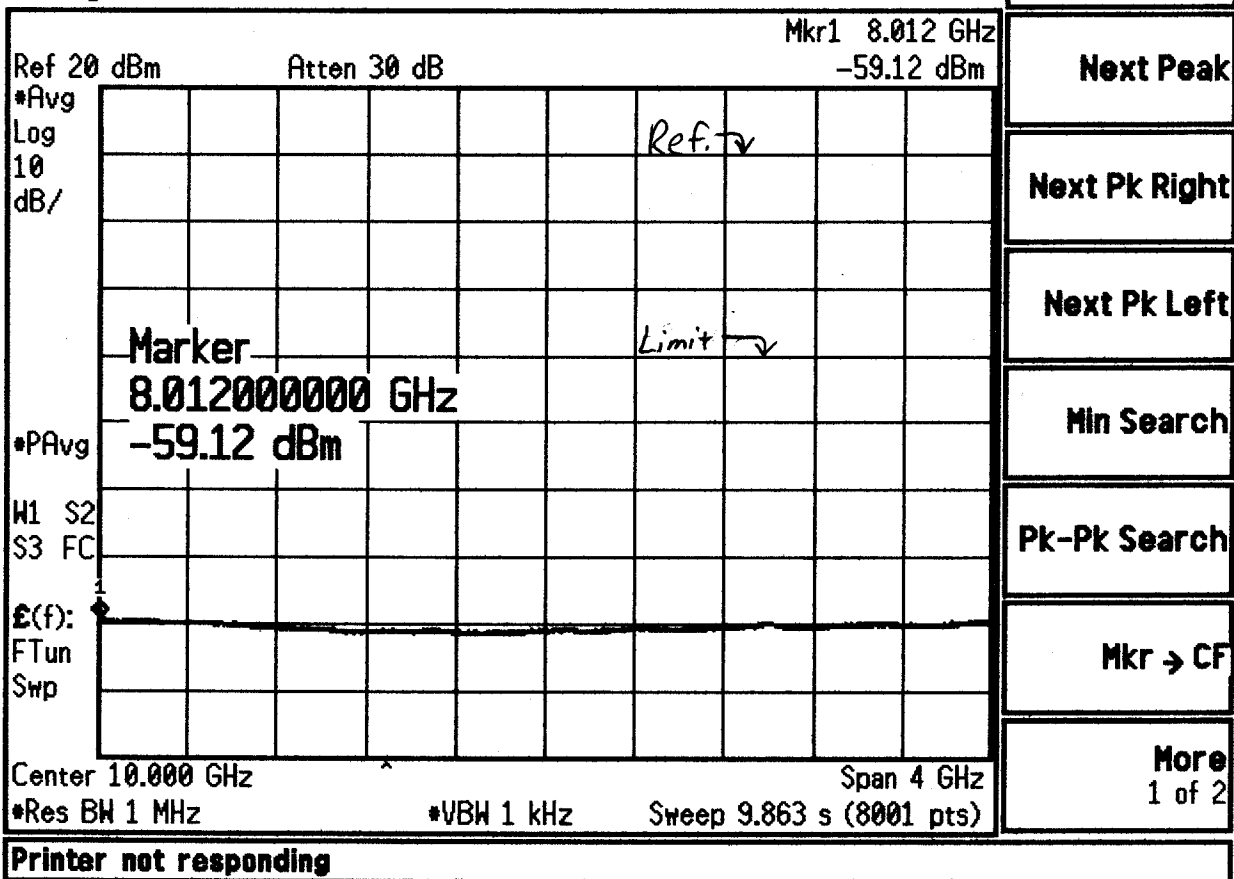
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 13:30:21 Feb 2, 2005



Cont Tx
 CTL 22 dBm
 2437 MHz
 B-mode

FCC Requirement: Section 15.247 (d)

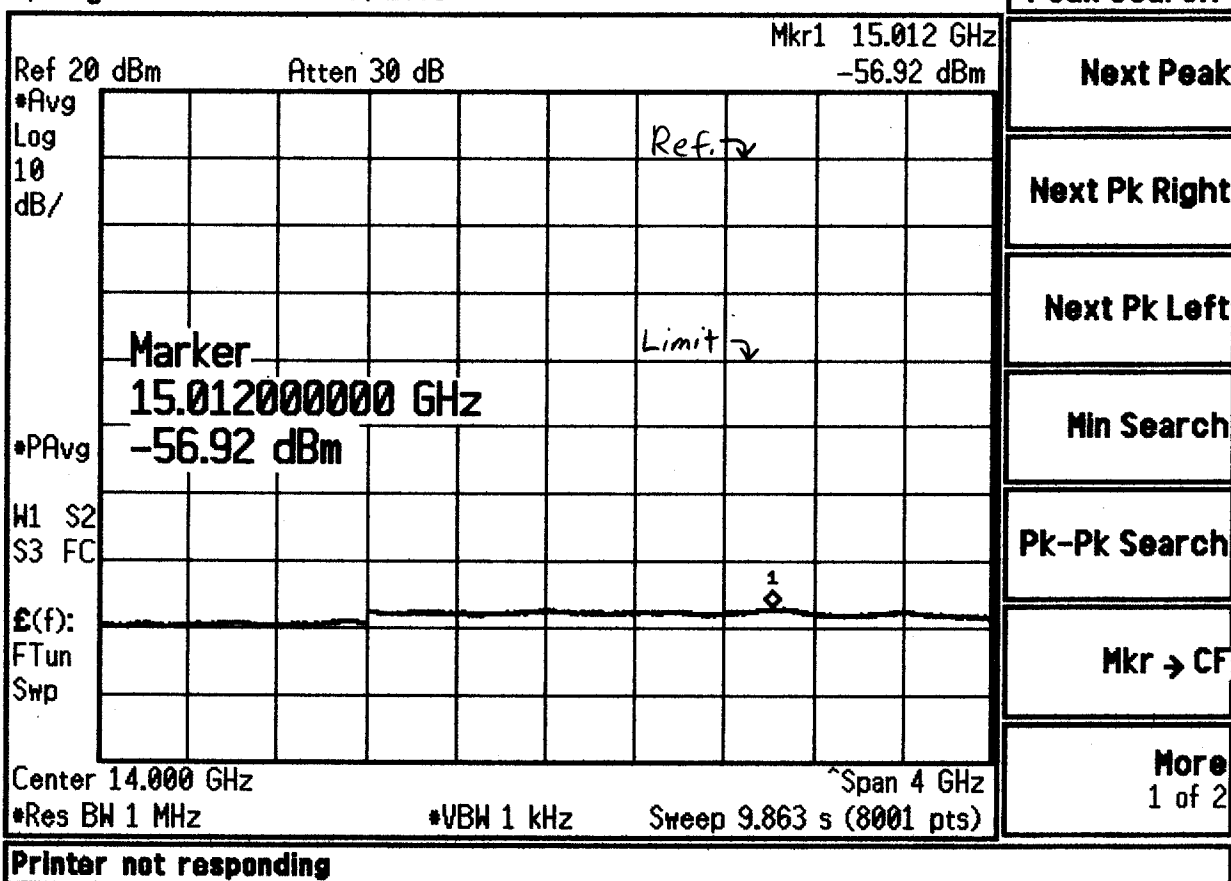
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 13:30:48 Feb 2, 2005



Cont TX
 CTL 22dBm
 2437 MHz
 B-mode

FCC Requirement: Section 15.247 (d)

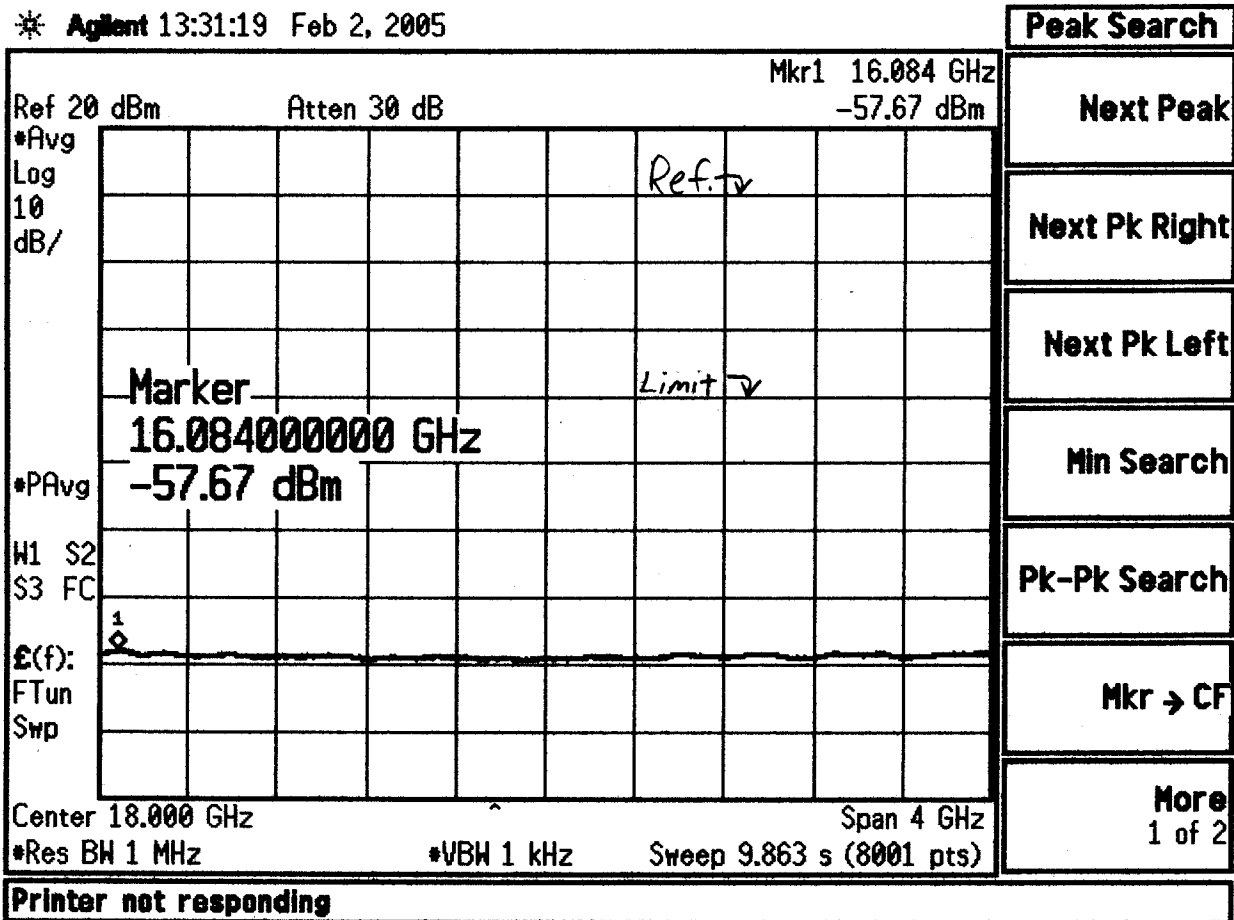
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 13:31:19 Feb 2, 2005



Cont TX
CTL 22 dBm
2437 MHz
B-mode

FCC Requirement: Section 15.247 (d)

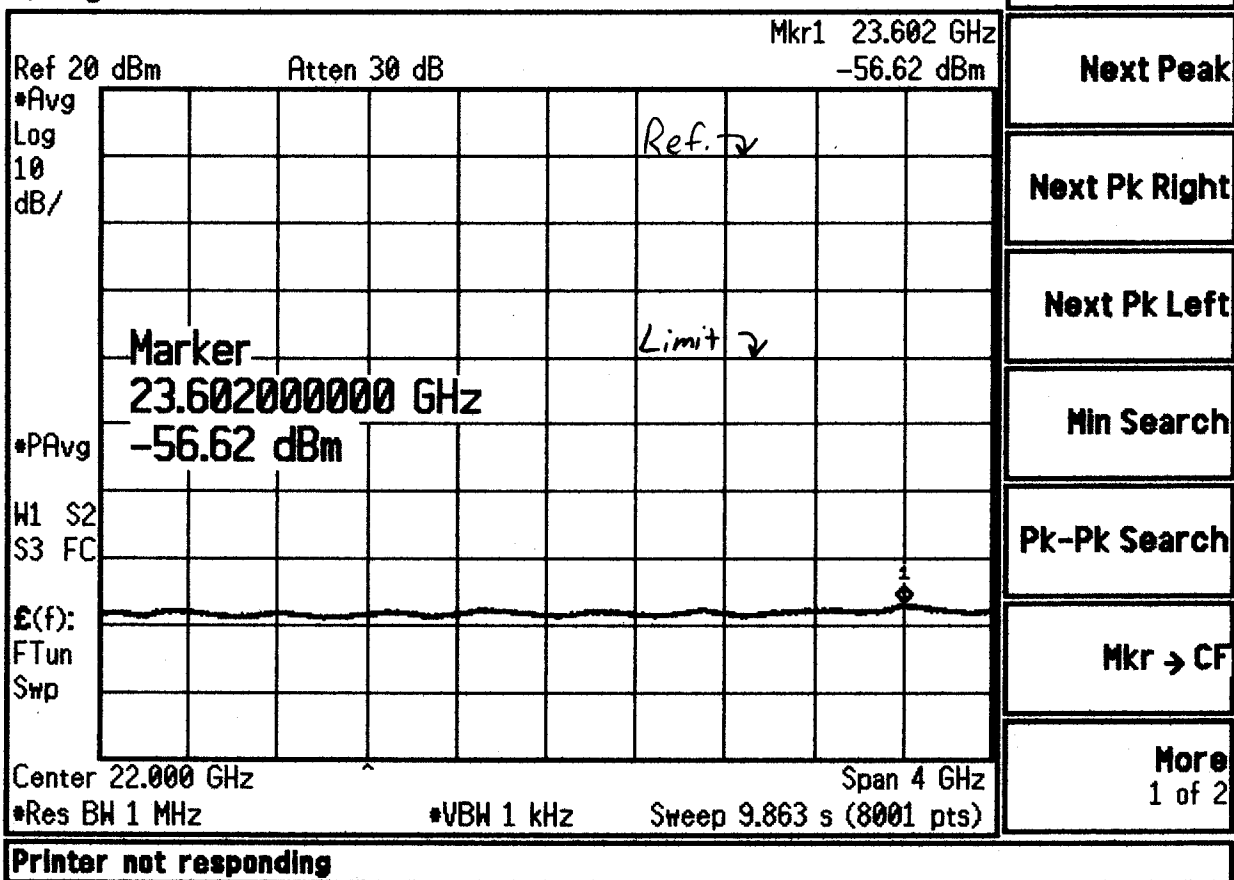
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 13:31:52 Feb 2, 2005



CONT TX
CTL 22dBm
2437 MHz
B-mode

FCC Requirement: Section 15.247 (d)

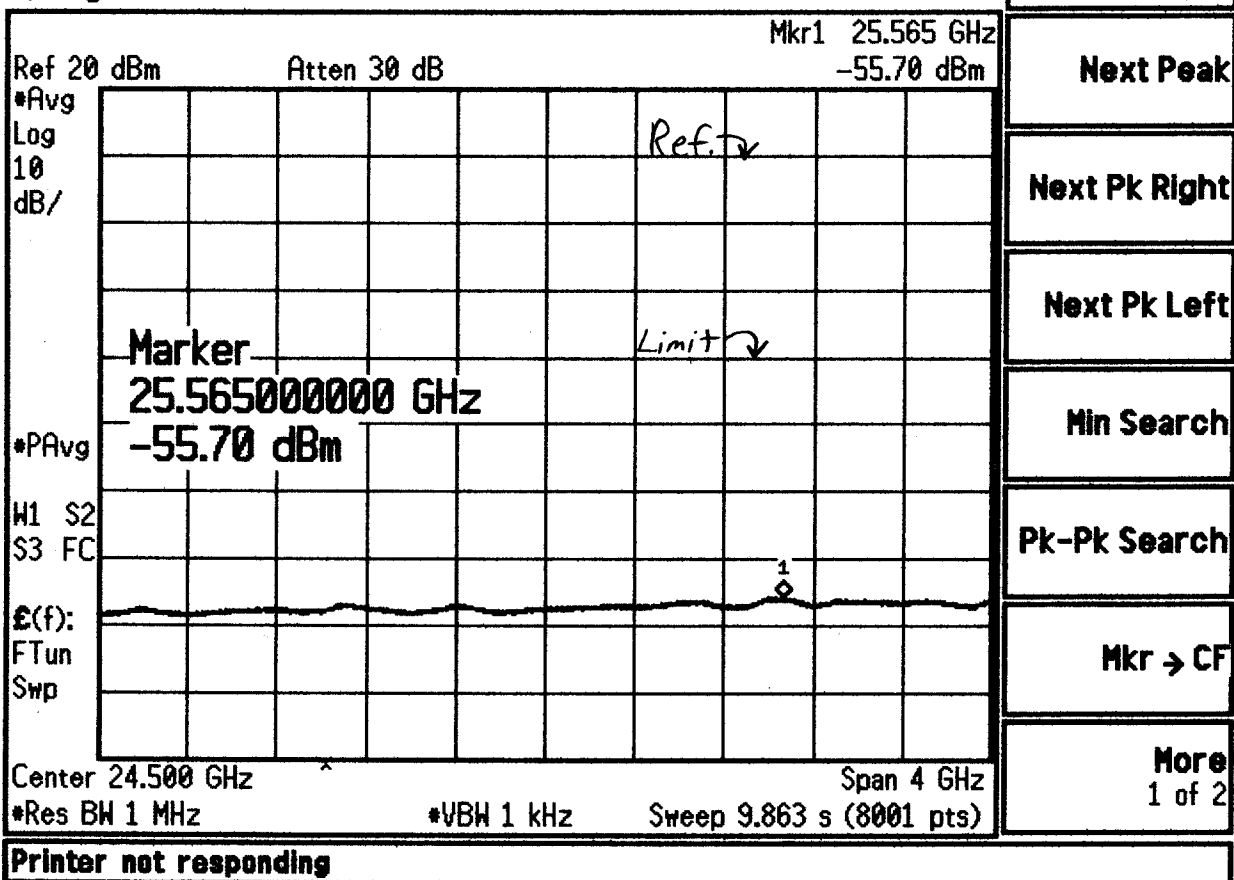
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 13:32:35 Feb 2, 2005



Cont TX

CTL 22dBm

2437 MHz

B-mode

FCC Requirement: Section 15.247 (d)

Tx Conducted Out-of-Band Emissions

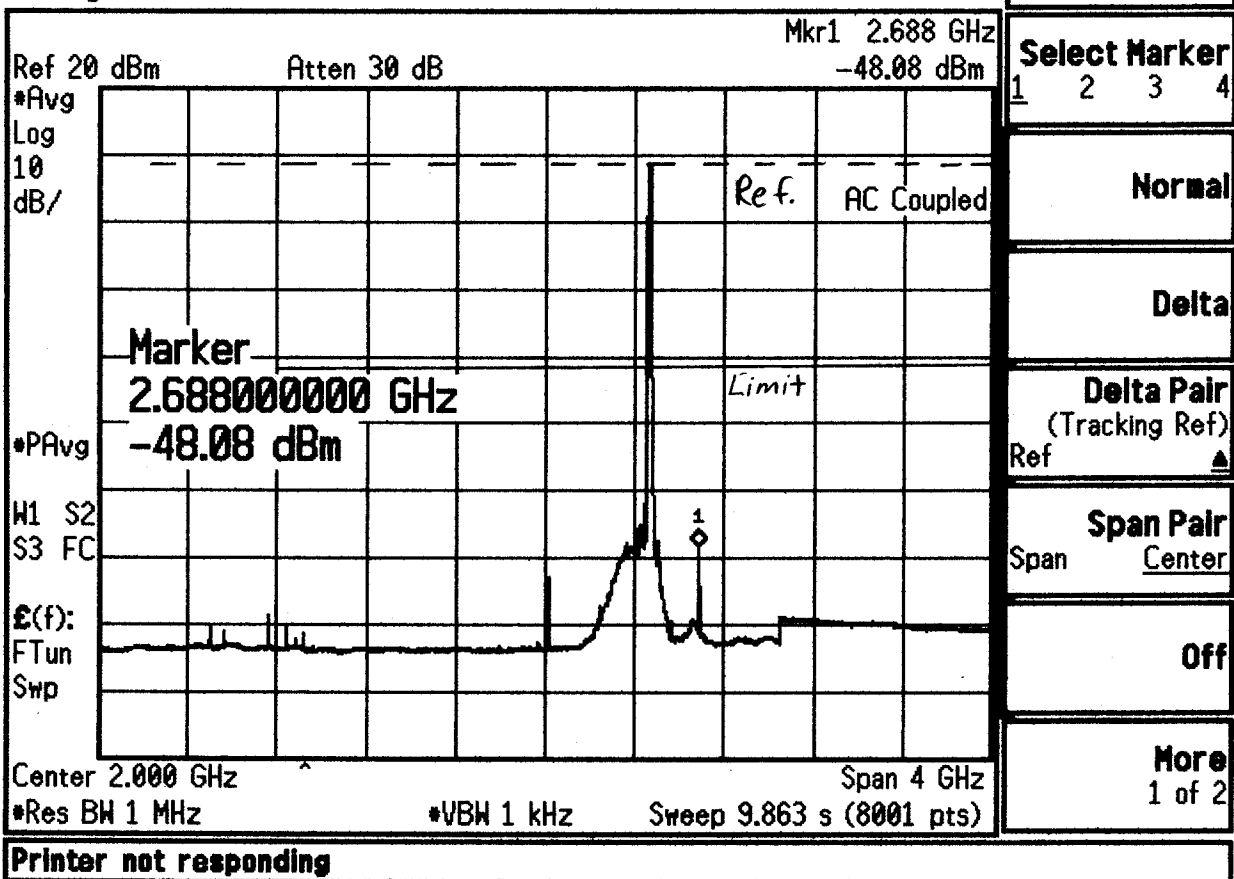
In any 100 kHz bandwidth, out-of-band emissions shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Conducted out-of-band Emissions

Agilent 13:22:58 Feb 2, 2005



Cont Tx

CTL 20 dBm

2462 MHz

B-mode

FCC Requirement: Section 15.247 (d)

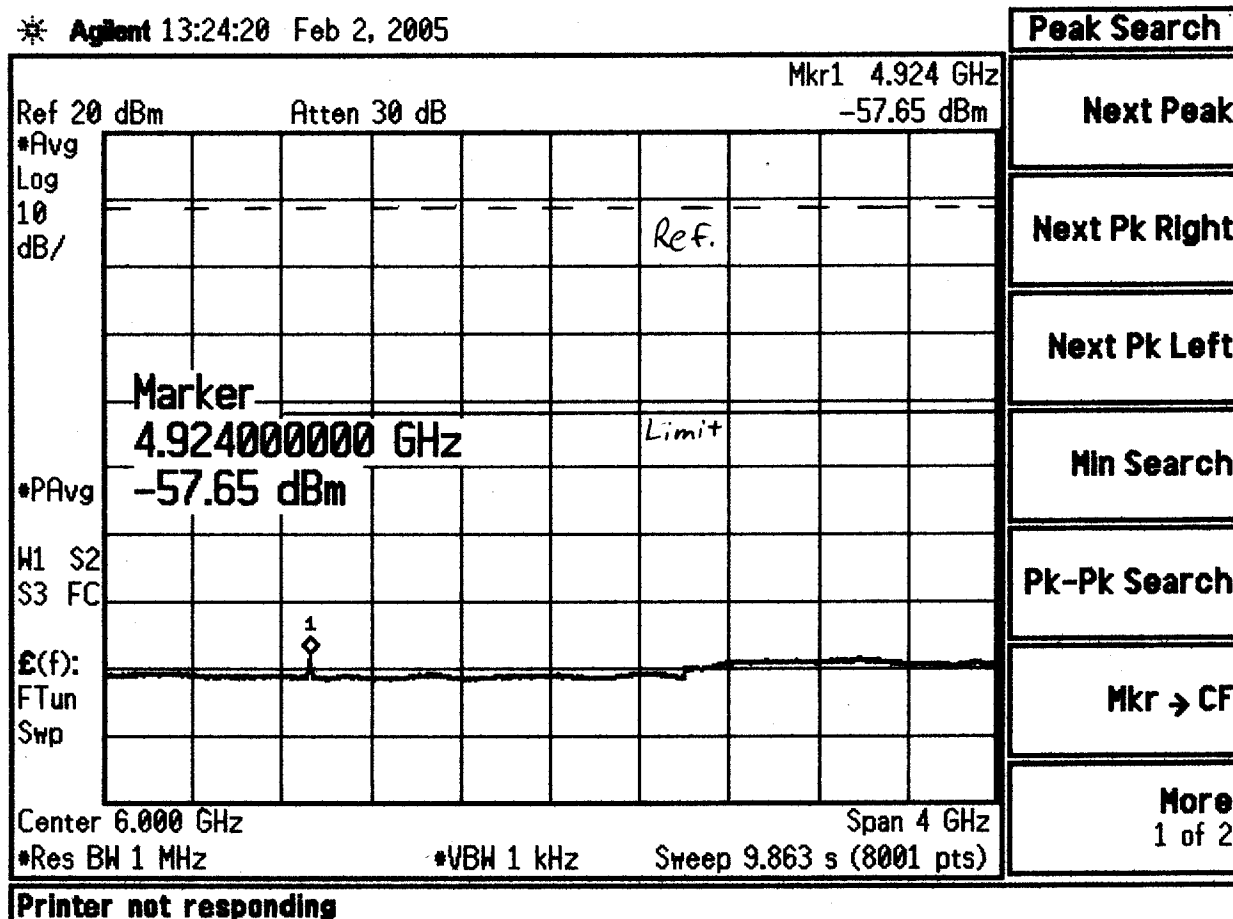
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 13:24:20 Feb 2, 2005



Cont Tx.
 CTZ 20 dBm
 2462
 B-mode

FCC Requirement: Section 15.247 (d)

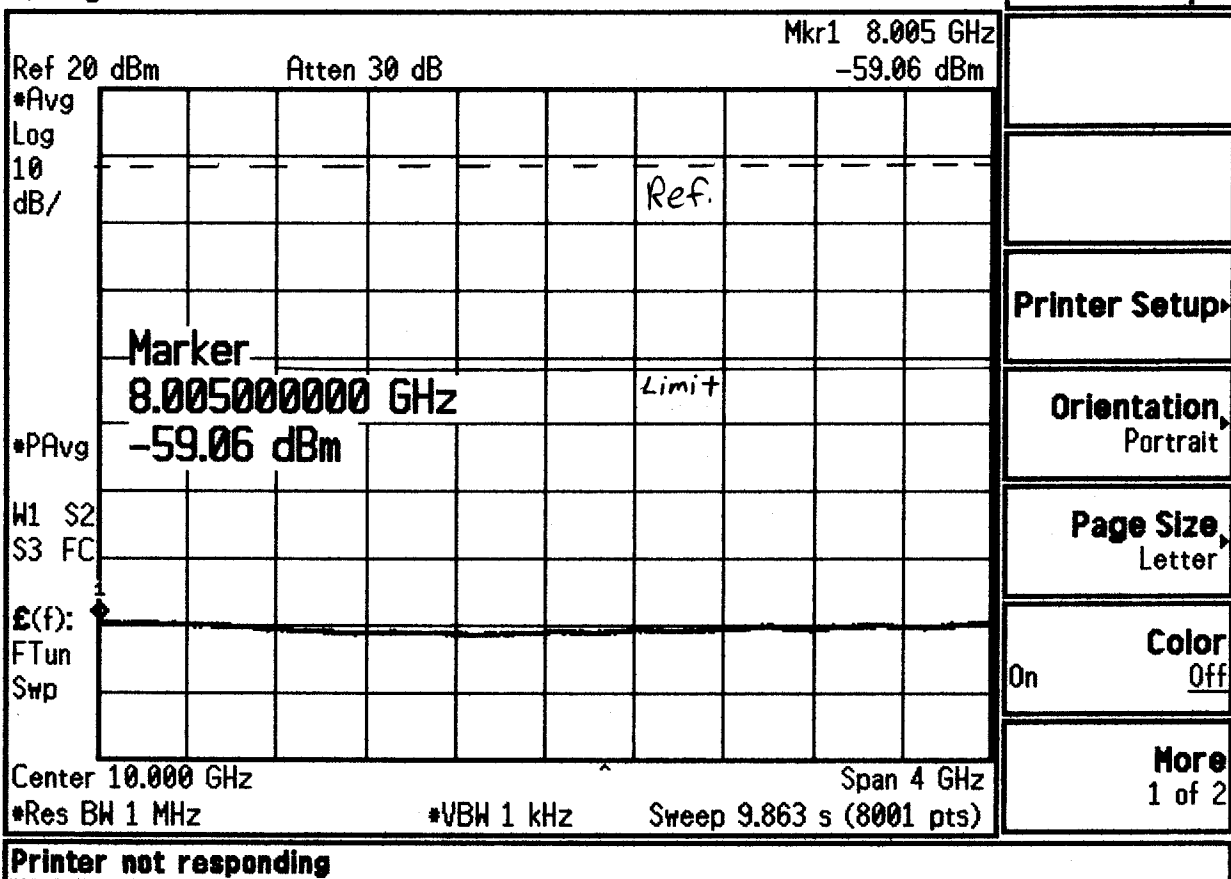
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 13:24:54 Feb 2, 2005



Cont TX
 CTL 20dBm
 2462 MHz
 B-mode

FCC Requirement: Section 15.247 (d)

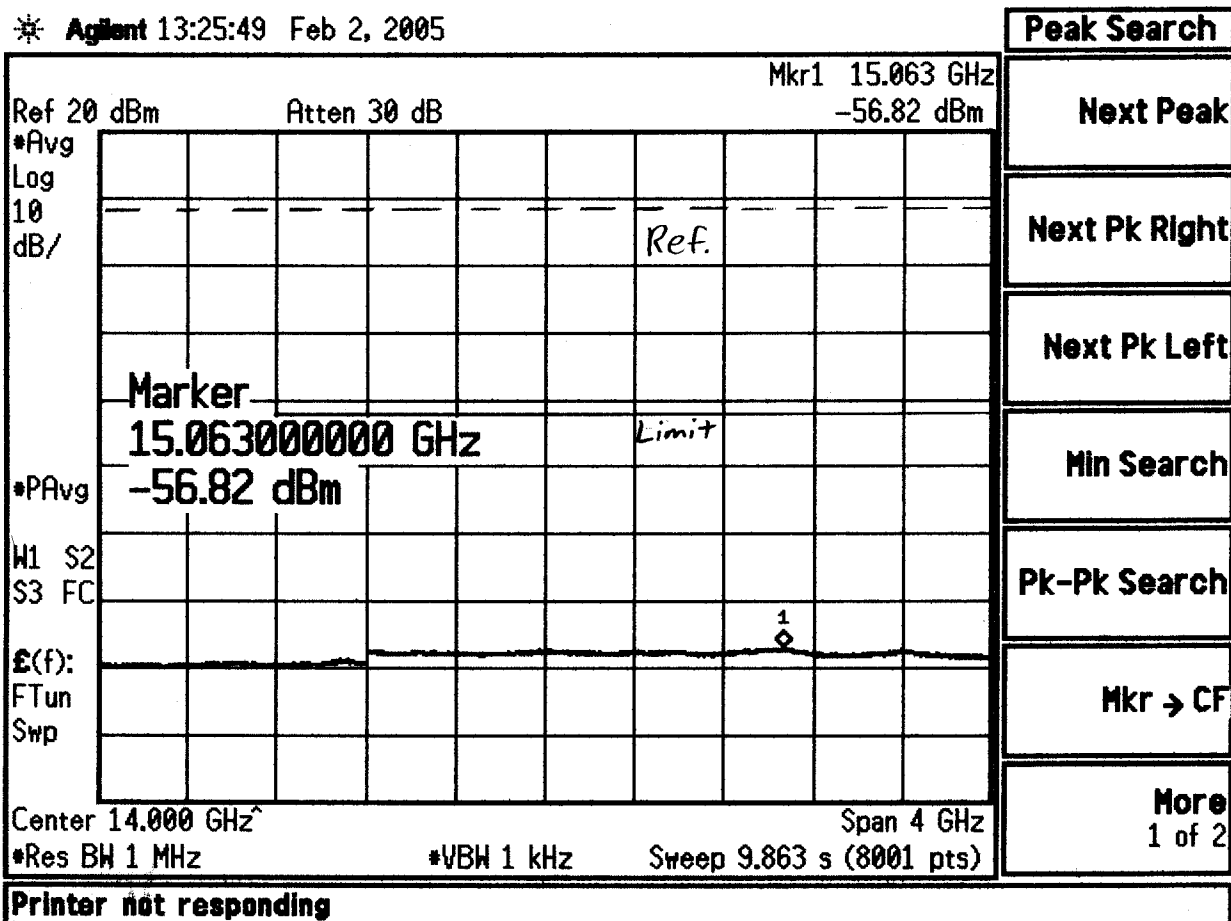
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 13:25:49 Feb 2, 2005



Cont TX
CTL 20dBm
2462 MHz
B-mode

FCC Requirement: Section 15.247 (d)

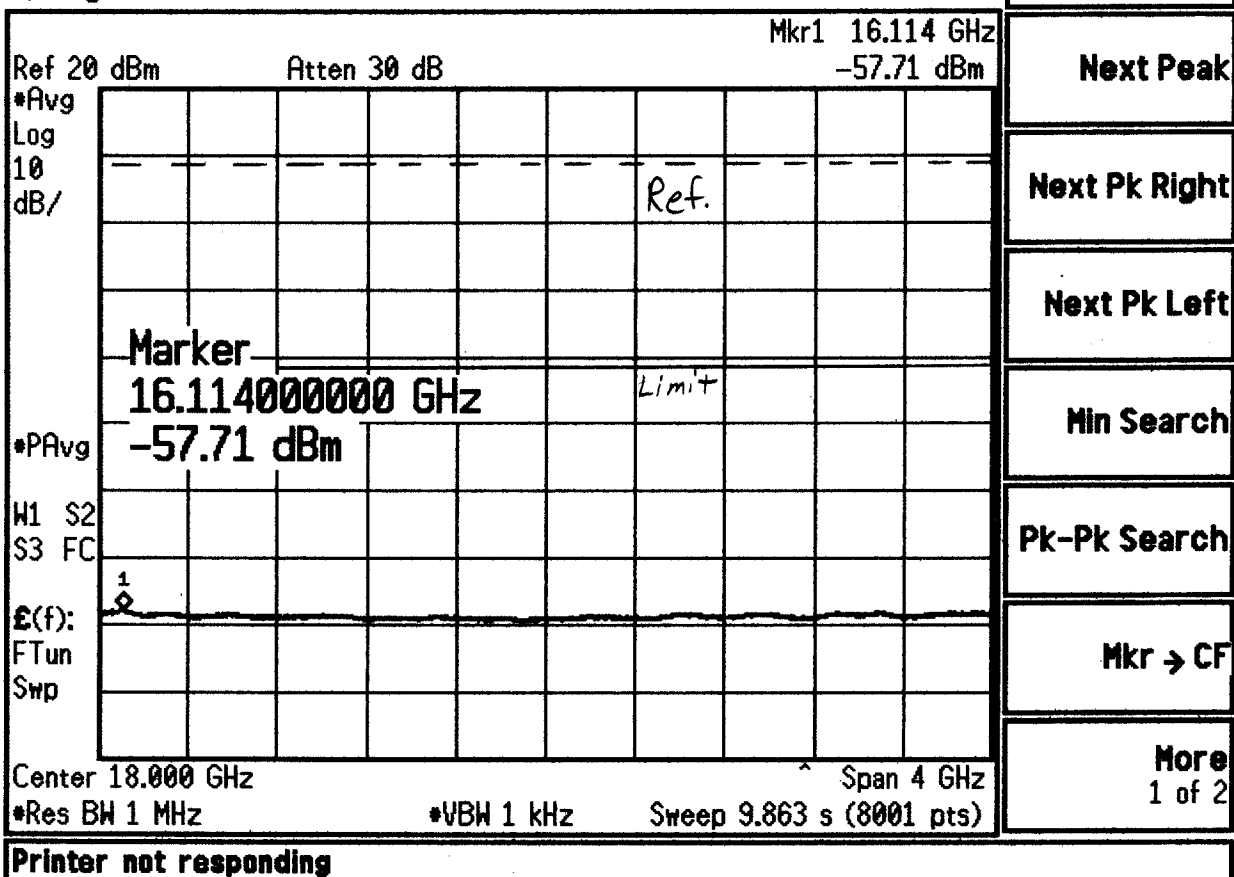
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 13:26:19 Feb 2, 2005



Cont Tx
 CTL 20dBm
 2462 MHz
 B-mode

FCC Requirement: Section 15.247 (d)

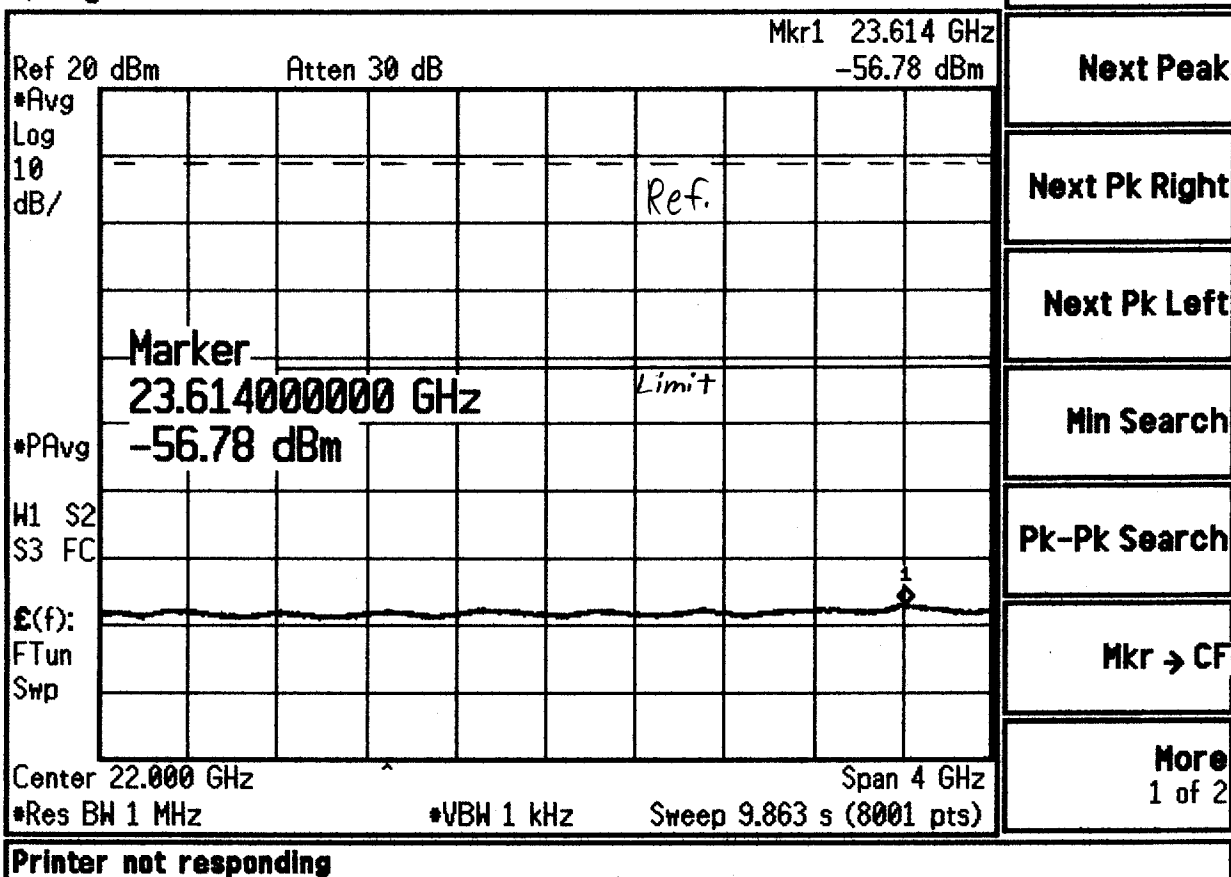
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

✱ Agilent 13:26:45 Feb 2, 2005



Cont Tx
 CTL 20 dBm
 2462 MHz
 B-mode

FCC Requirement: Section 15.247 (d)

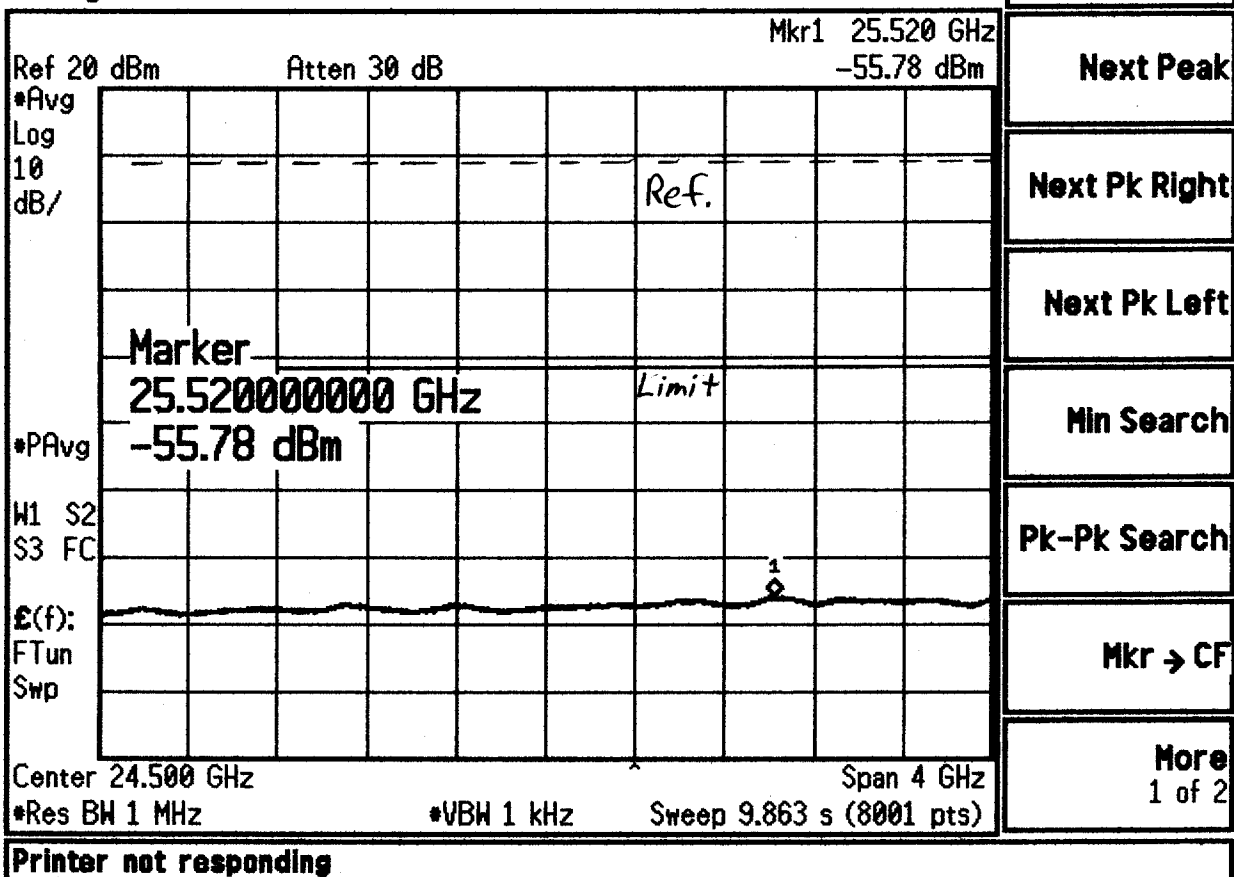
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

✱ Agilent 13:27:17 Feb 2, 2005



CONT TX

CTL 20 dBm

2462 MHz

B-mode

FCC Requirement: Section 15.247 (d)

Tx Conducted Out-of-Band Emissions

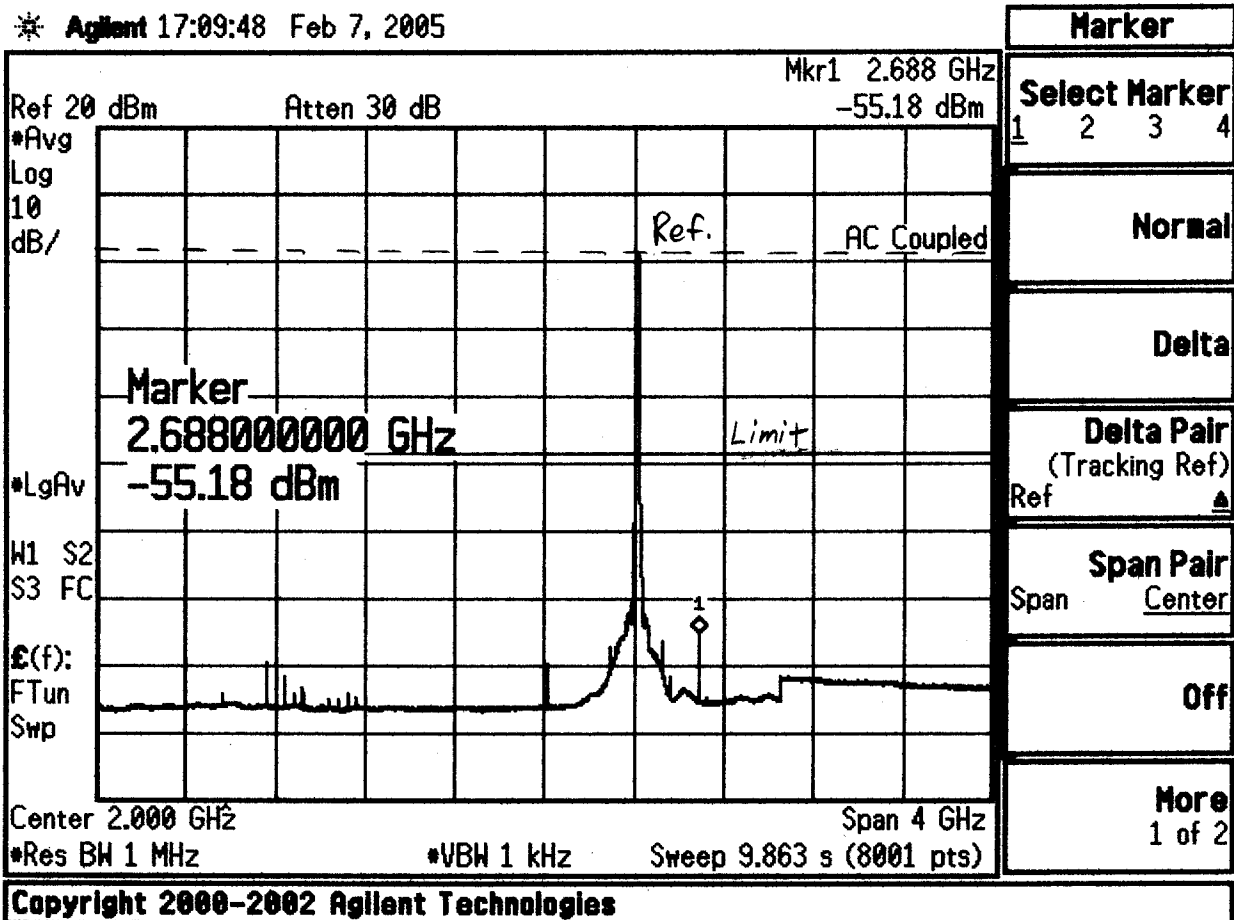
In any 100 kHz bandwidth, out-of-band emissions shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Conducted out of Band Emissions

* Agilent 17:09:48 Feb 7, 2005



Cont. Tx
2.412 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

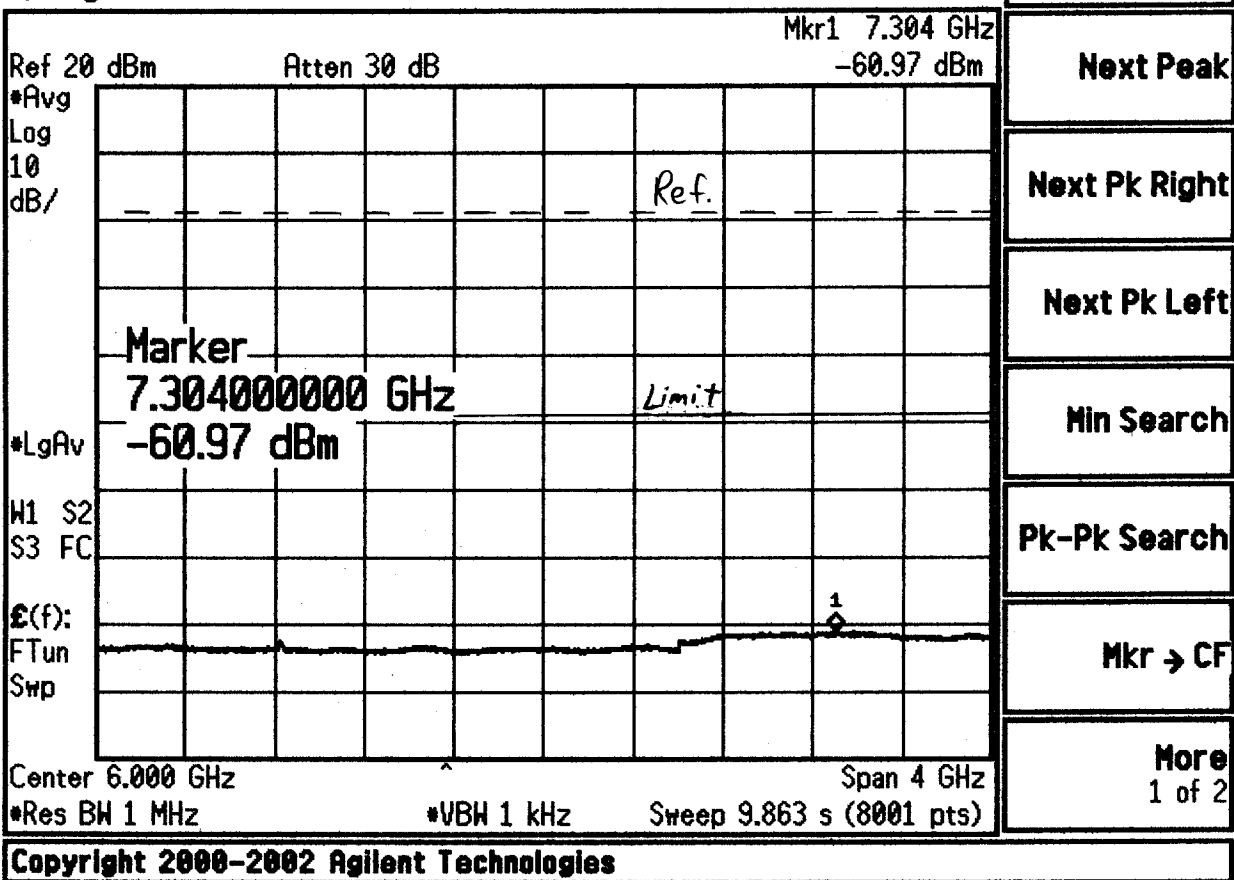
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 17:10:46 Feb 7, 2005



Cont. Tx
2.412 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

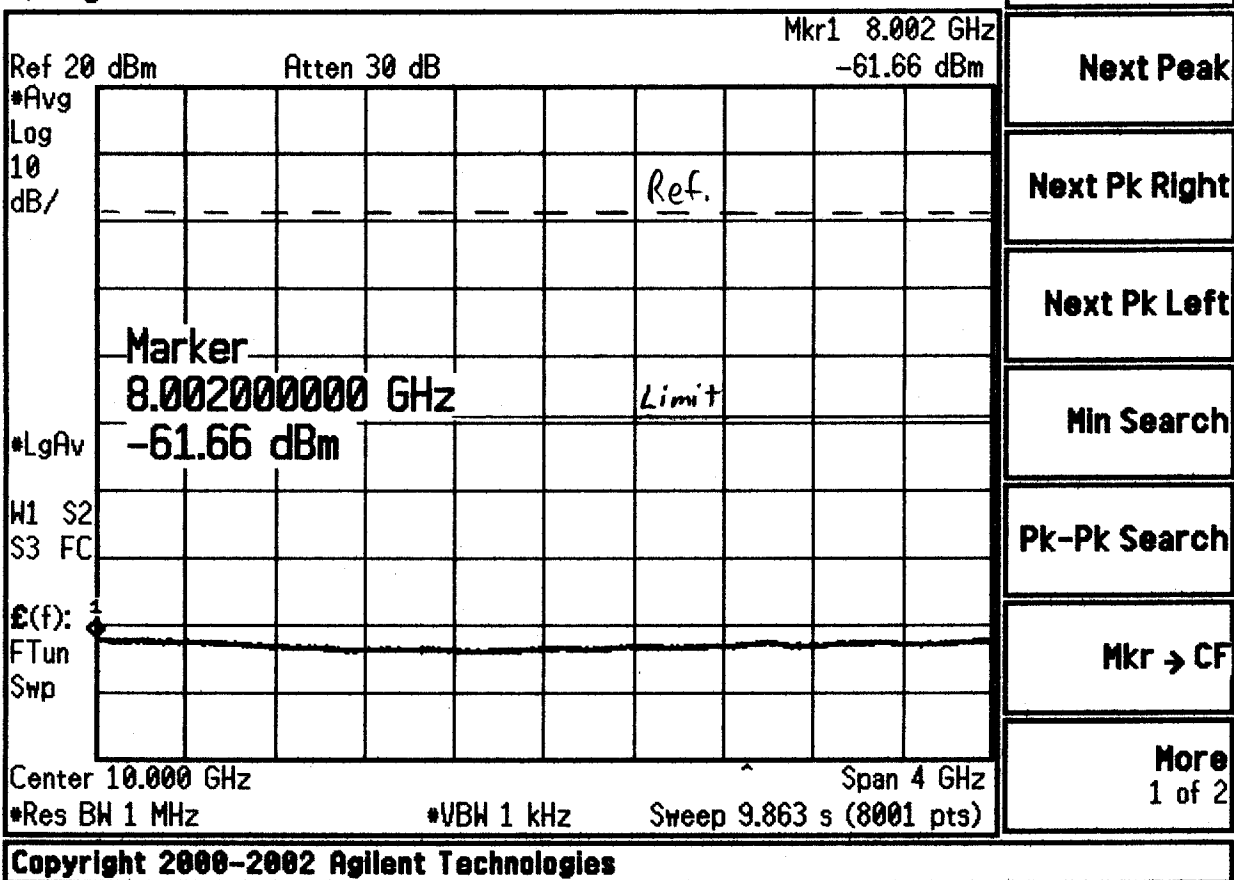
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:11:45 Feb 7, 2005



Cont. Tx
2.412 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

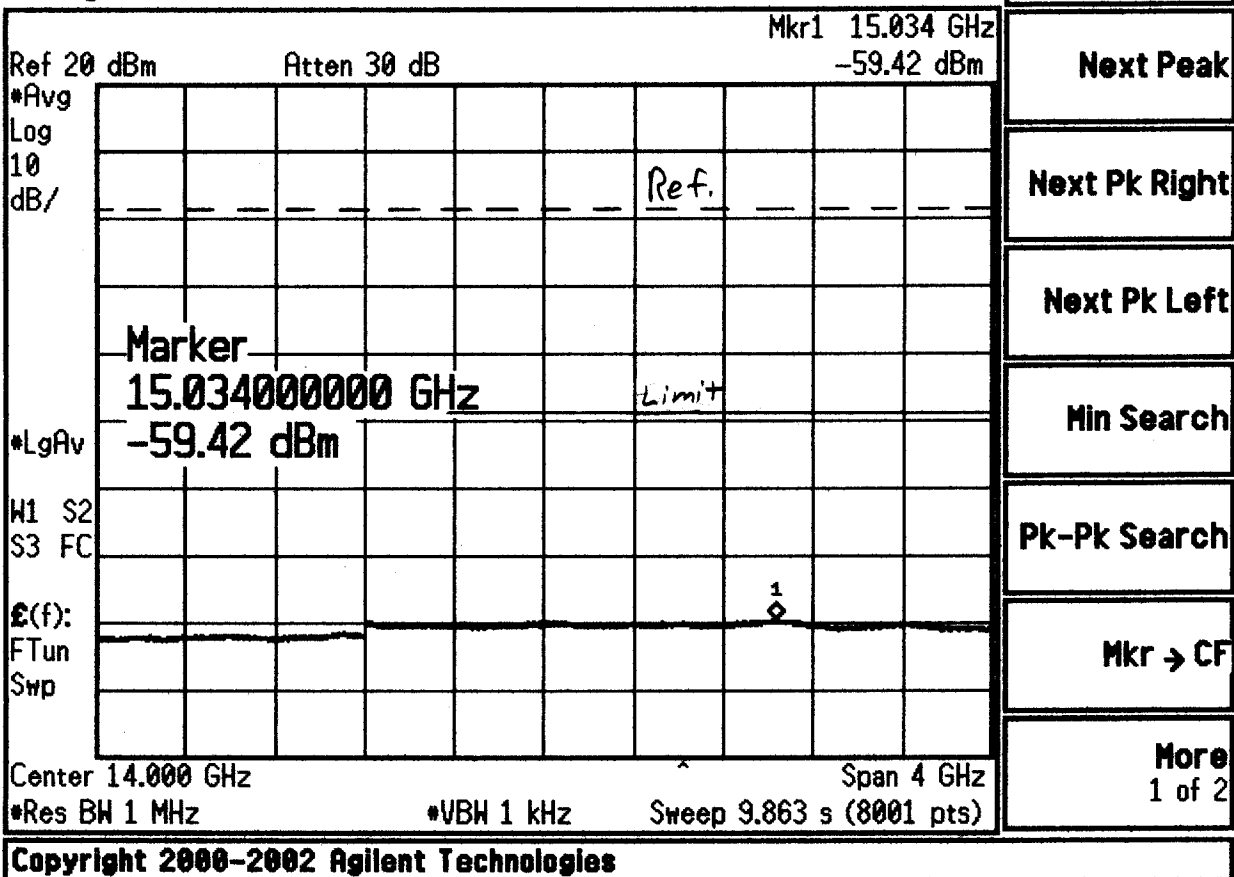
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:12:20 Feb 7, 2005



Cont. Tx
 2.412 GHz G-mode
 16dBm
 6 MBit

FCC Requirement: Section 15.247 (d)

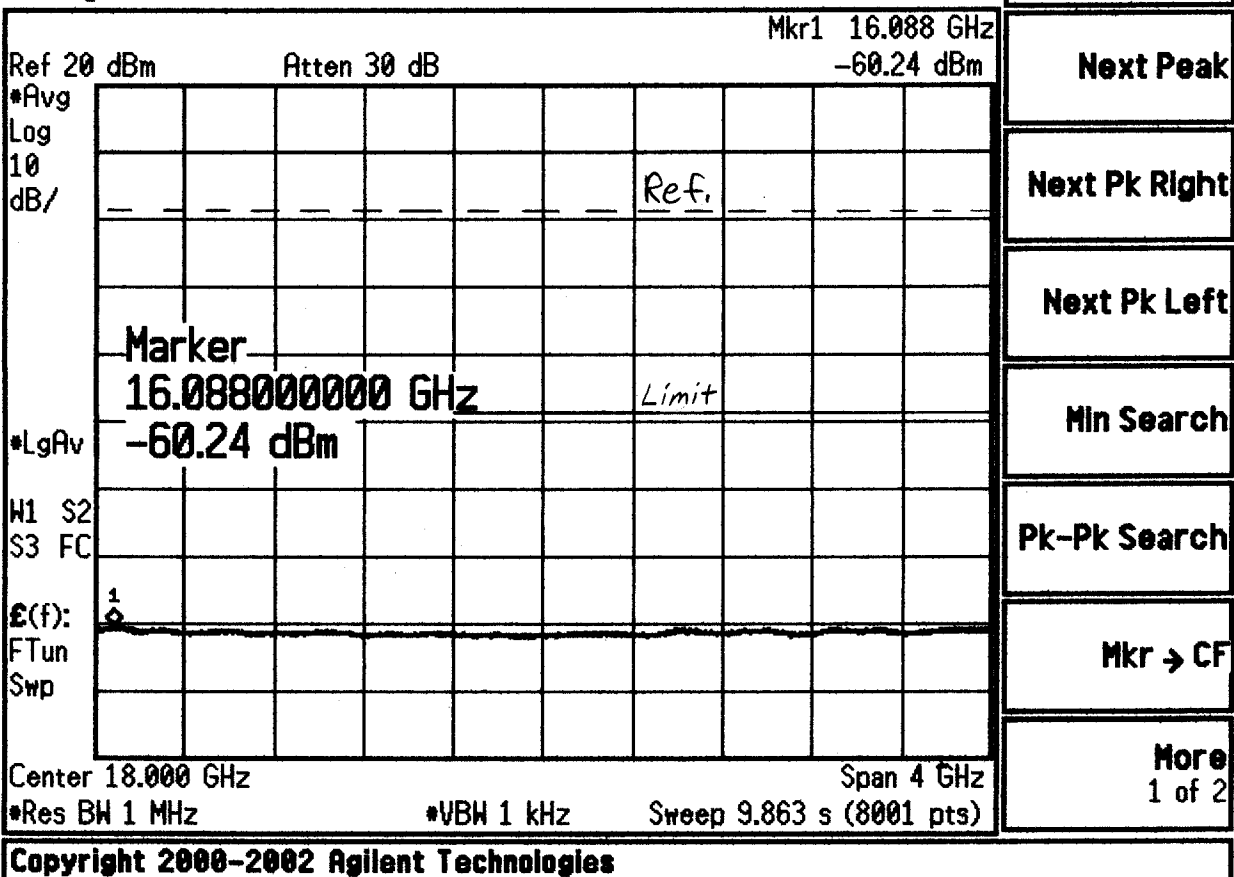
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

✱ Agilent 17:13:45 Feb 7, 2005



Cont. TX
2.412 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

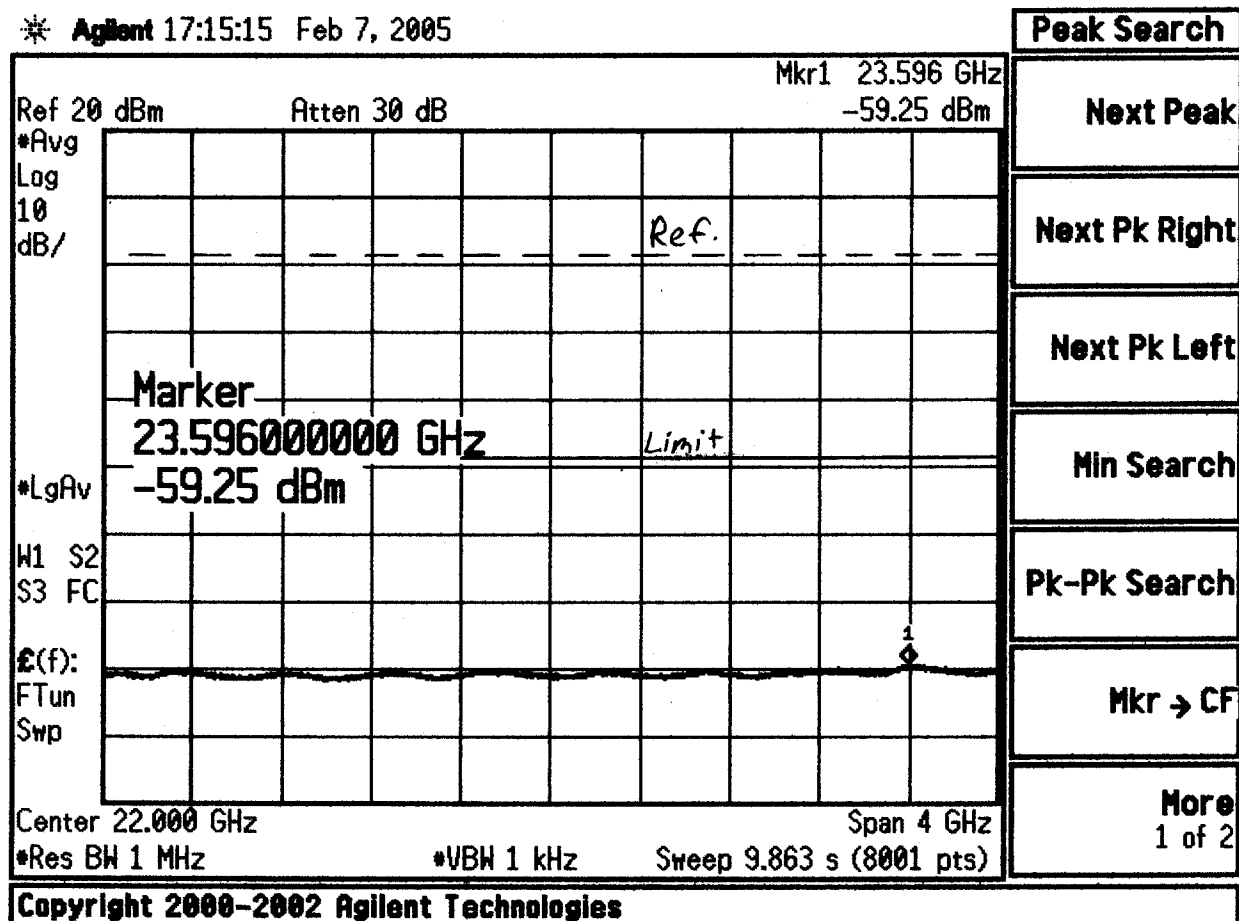
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:15:15 Feb 7, 2005



Cont. Tx
2.412 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

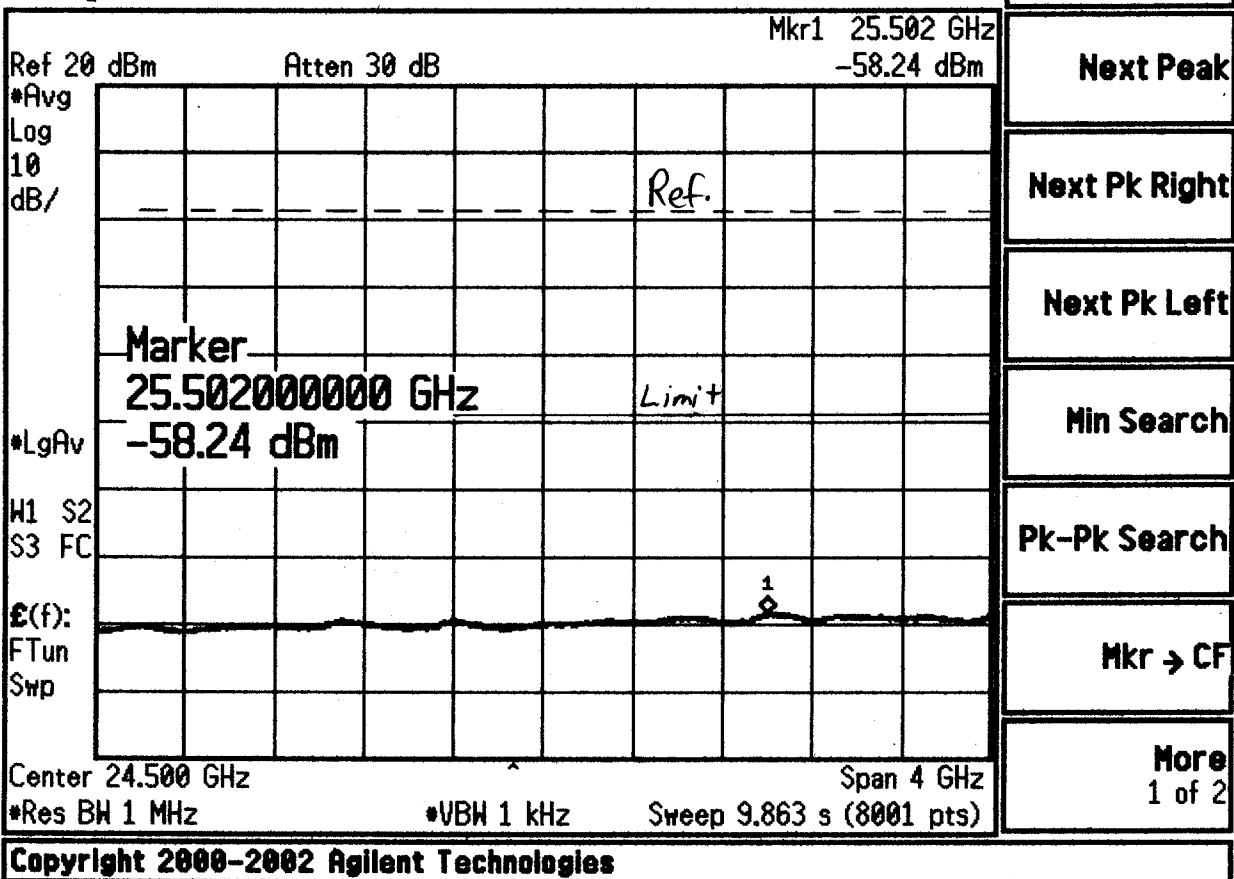
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:15:51 Feb 7, 2005



Cont. Tx
 2.412 GHz G-mode
 16 dBm
 6 MBit

FCC Requirement: Section 15.247 (d)

Tx Conducted Out-of-Band Emissions

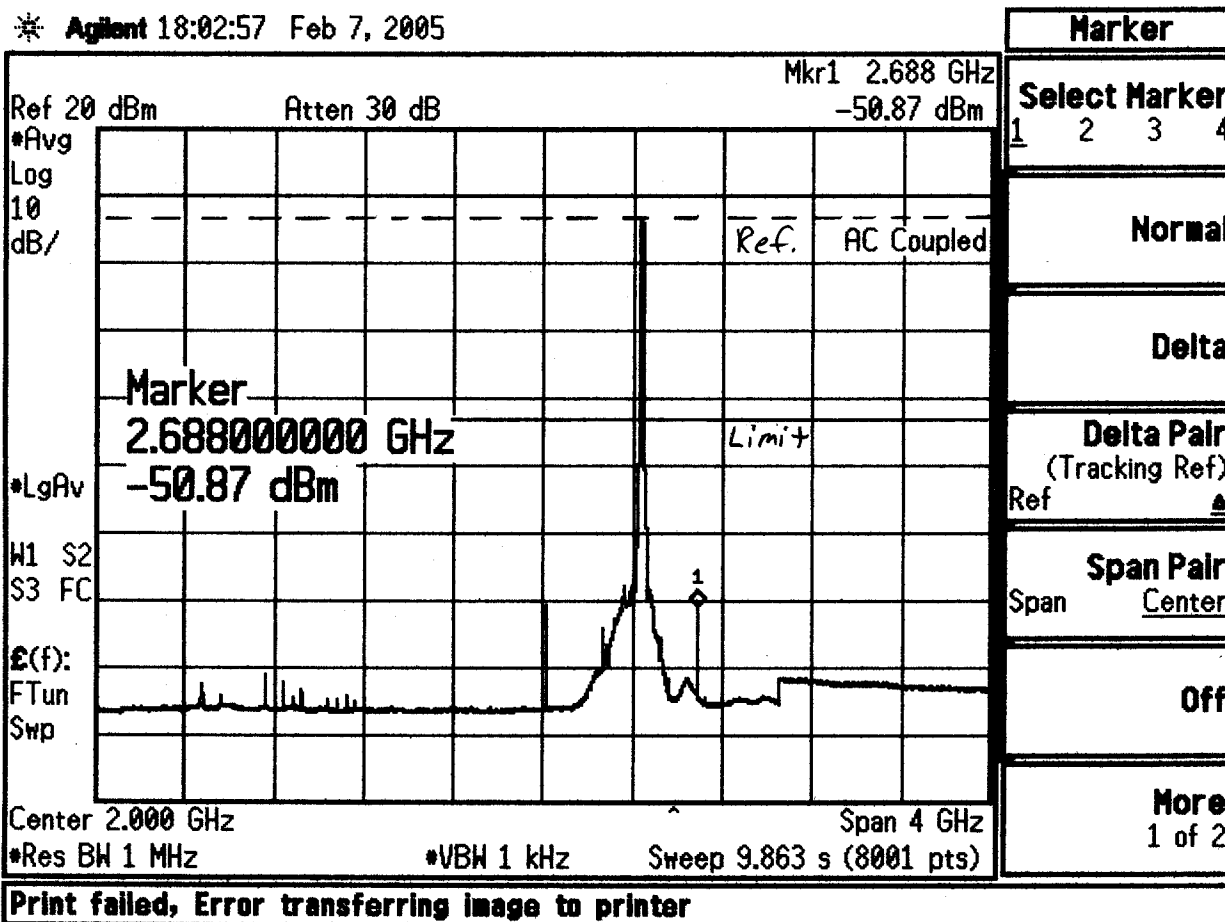
In any 100 kHz bandwidth, out-of-band emissions shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Conducted out of band Emissions

* Agilent 18:02:57 Feb 7, 2005



Cont. Tx
2.437 GHz G-mode
22 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

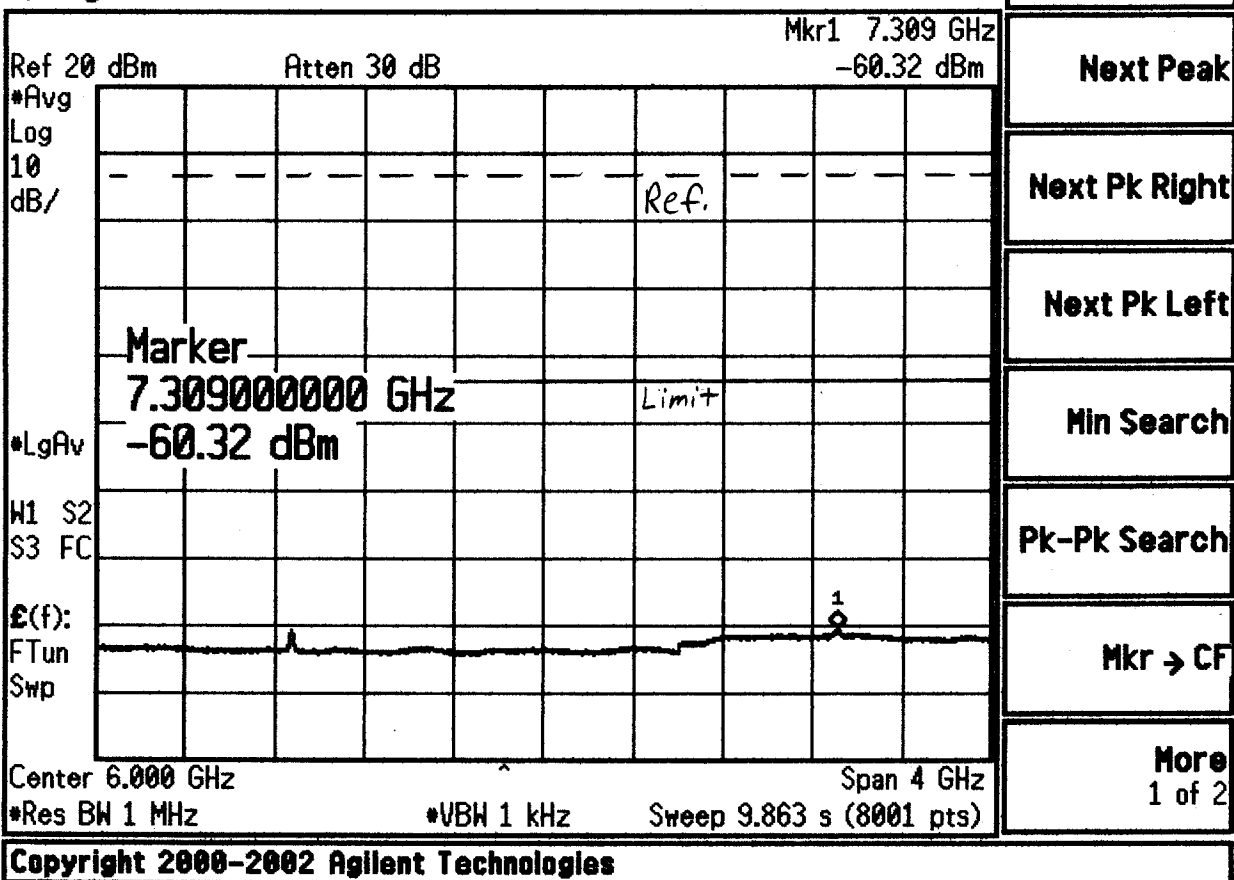
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 17:41:05 Feb 7, 2005



Cont. Tx
2.437GHz G-mode
16dBm
6MBit

FCC Requirement: Section 15.247 (d)

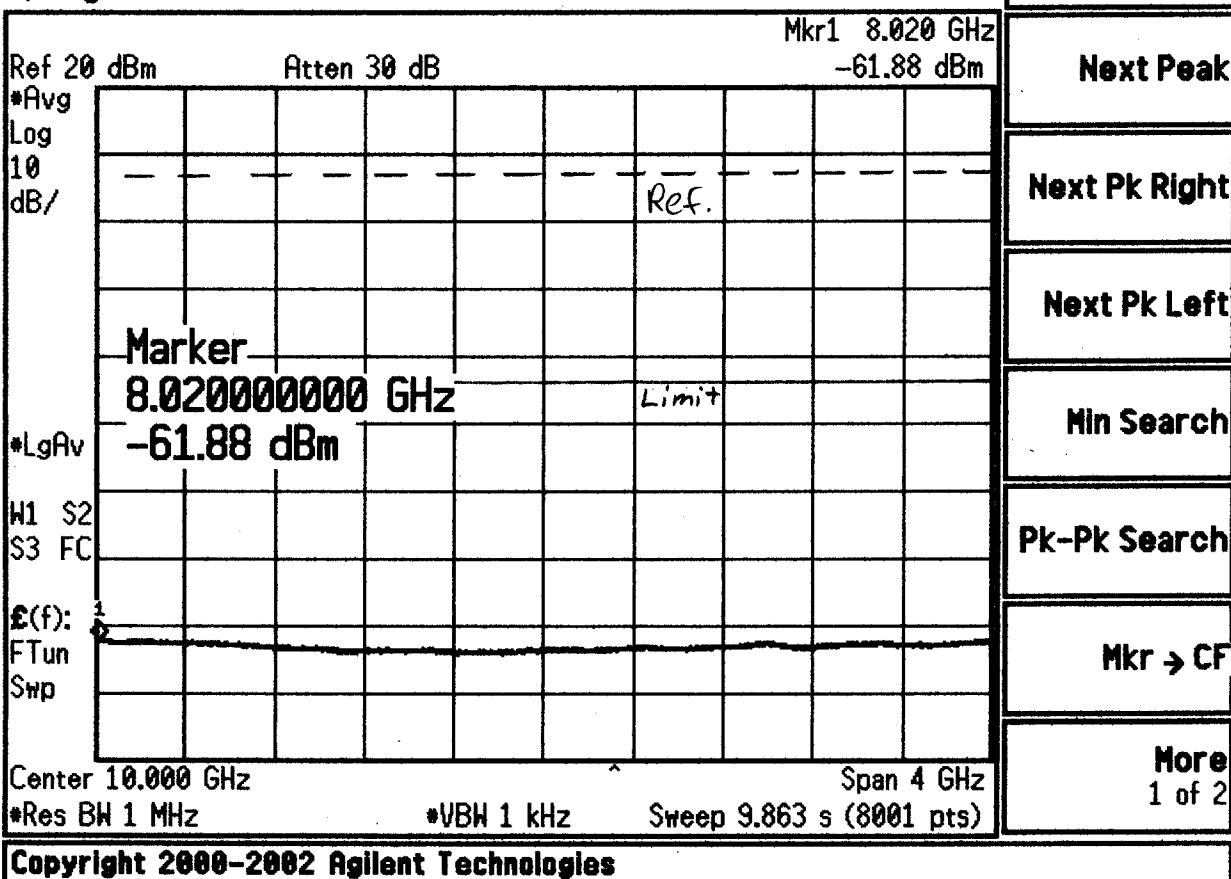
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 17:42:48 Feb 7, 2005



Cont. Tx
2.437 GHz G-mode
16 dBm
6 MHz

FCC Requirement: Section 15.247 (d)

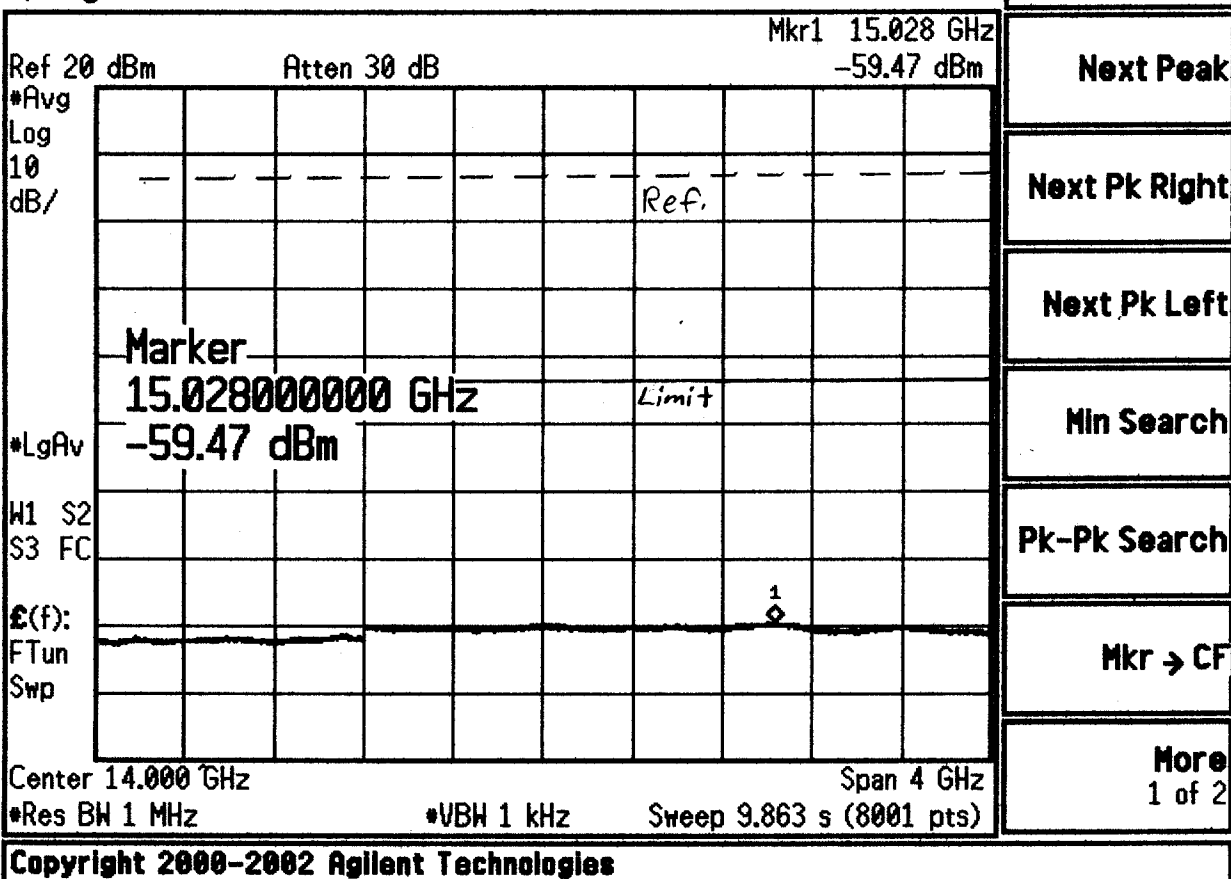
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:44:02 Feb 7, 2005



Cont. Tx
2.437 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

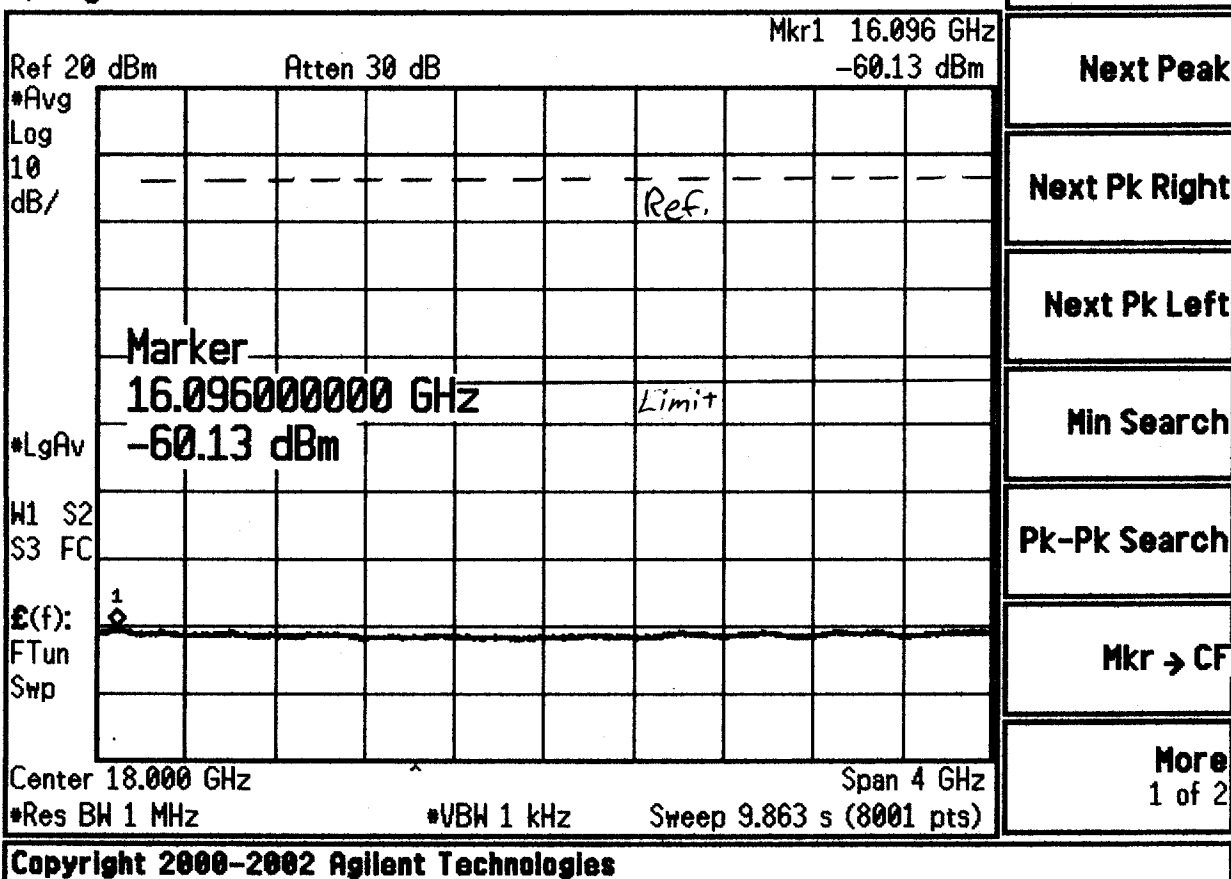
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1 MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

✱ Agilent 17:45:06 Feb 7, 2005



Cont. Tx
2.437 GHz G-mode
16 dBm
6 Mbit

FCC Requirement: Section 15.247 (d)

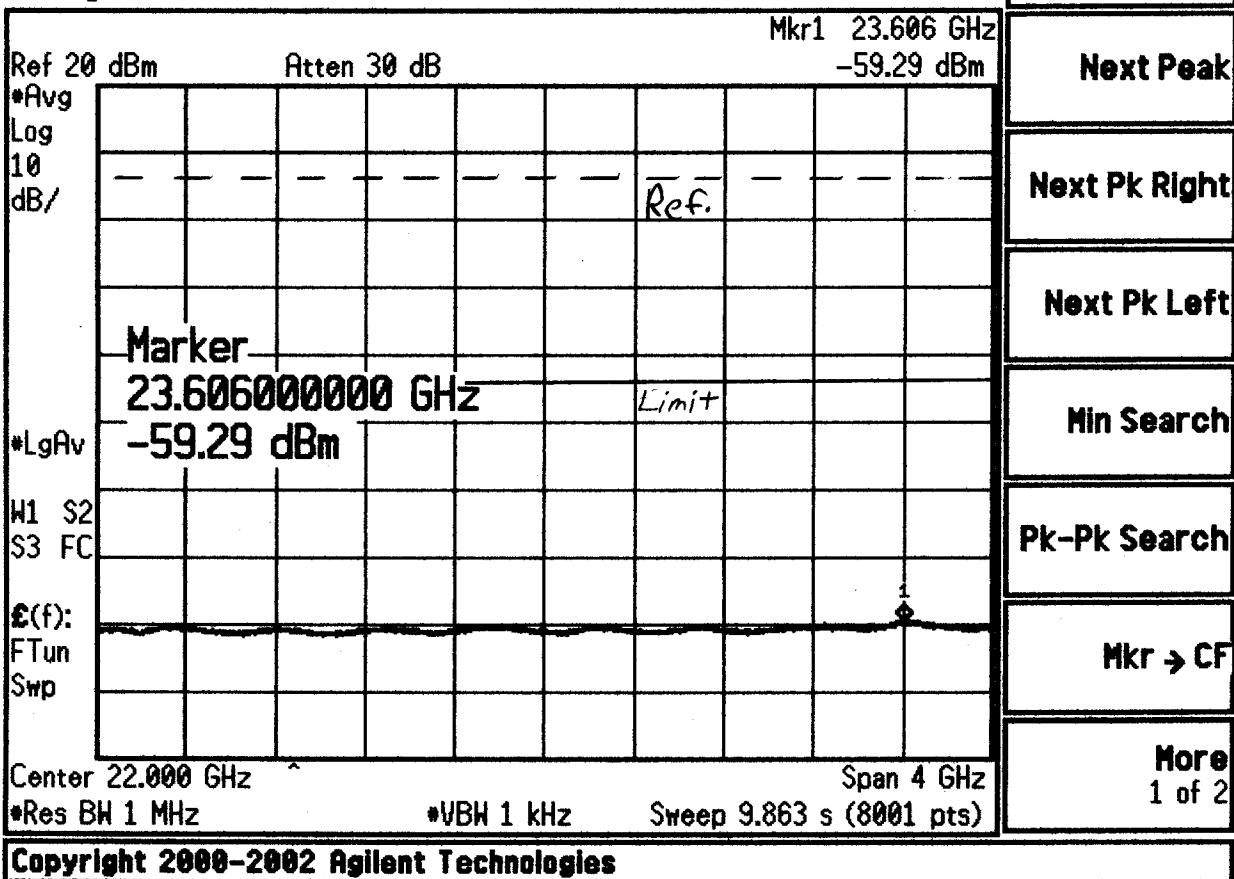
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:45:45 Feb 7, 2005



Cont. Tx
 2.437GHz G-mode
 16dBm
 6MBit

FCC Requirement: Section 15.247 (d)

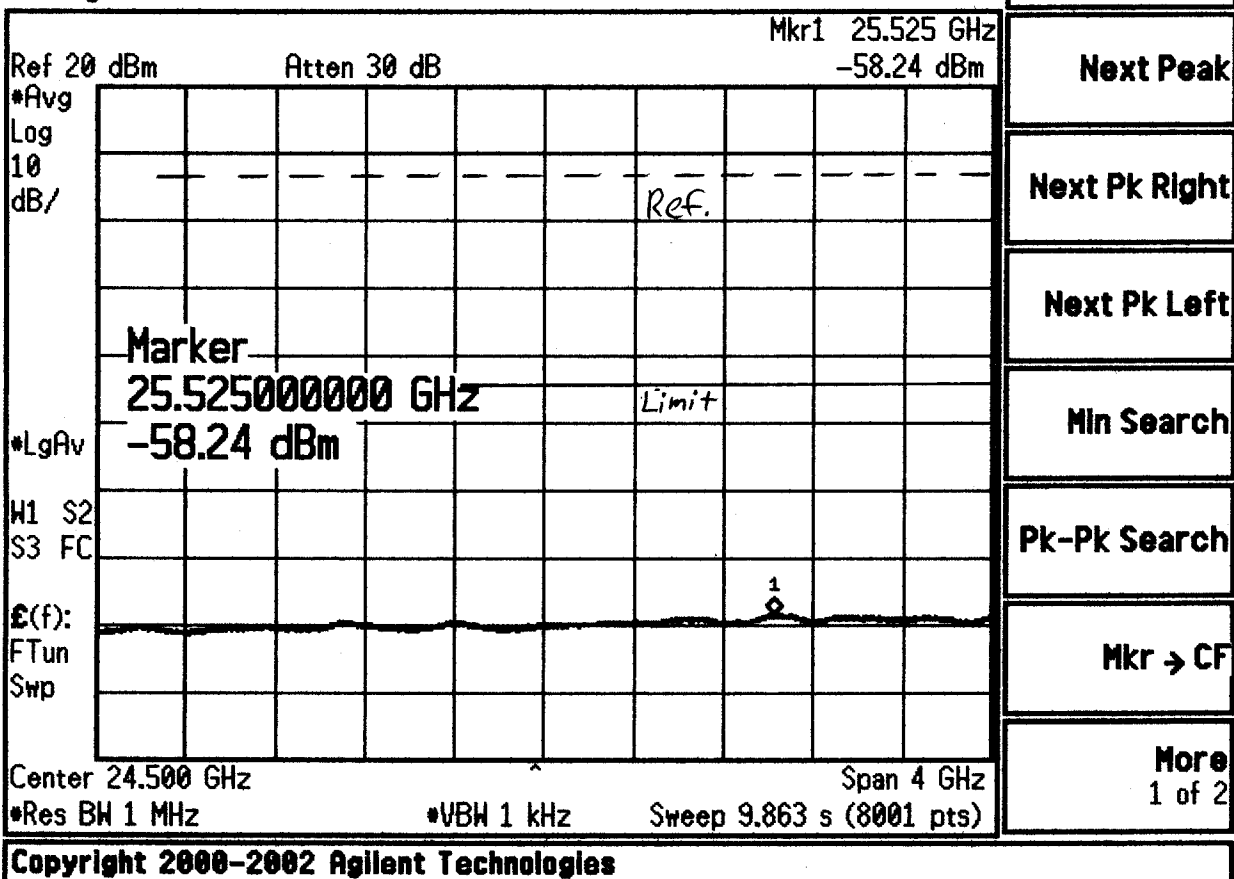
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:47:26 Feb 7, 2005



Cont. Tx

2.437 GHz G-mode

16 dBm

6 MBit

FCC Requirement: Section 15.247 (d)

Tx Conducted Out-of-Band Emissions

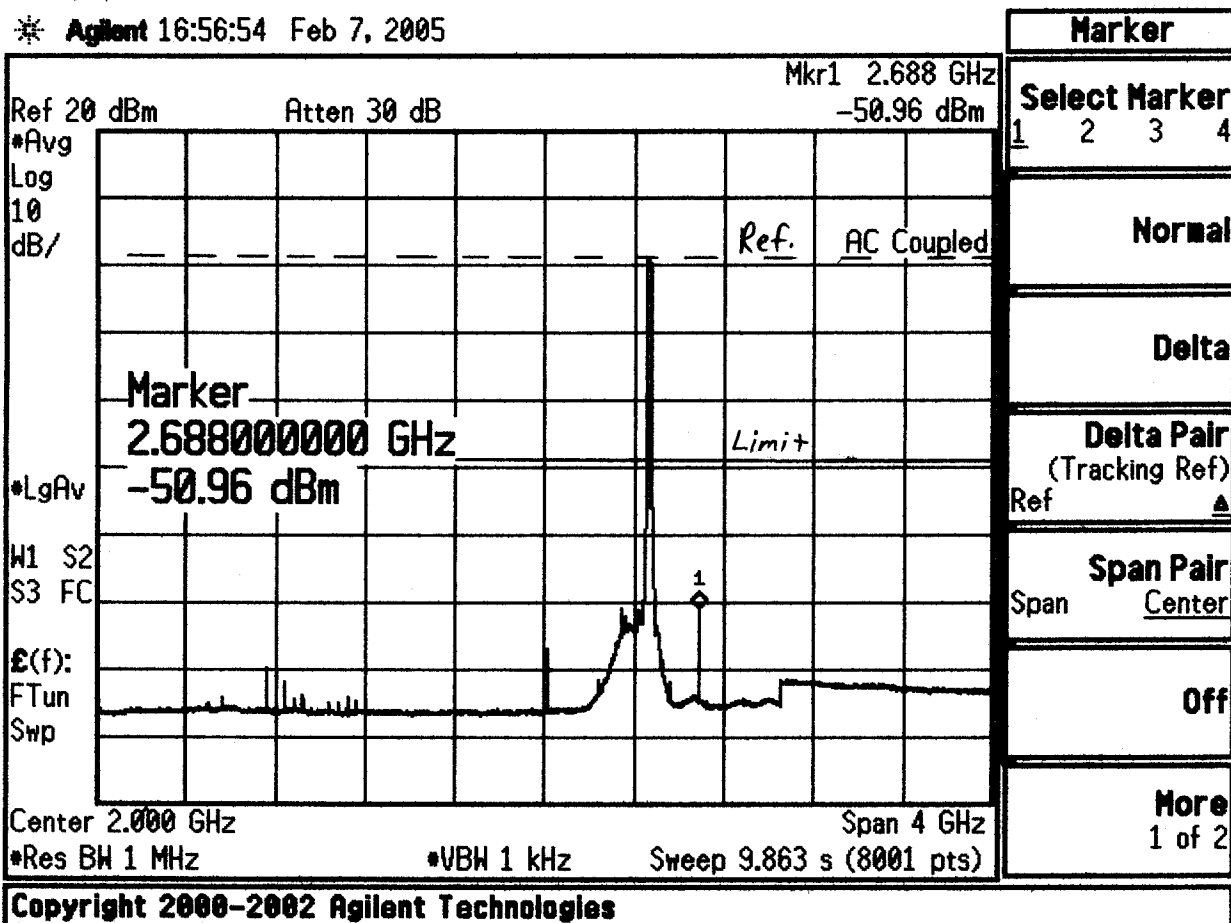
In any 100 kHz bandwidth, out-of-band emissions shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Conducted out of band emissions

* Agilent 16:56:54 Feb 7, 2005



Cont. Tx
2.462 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

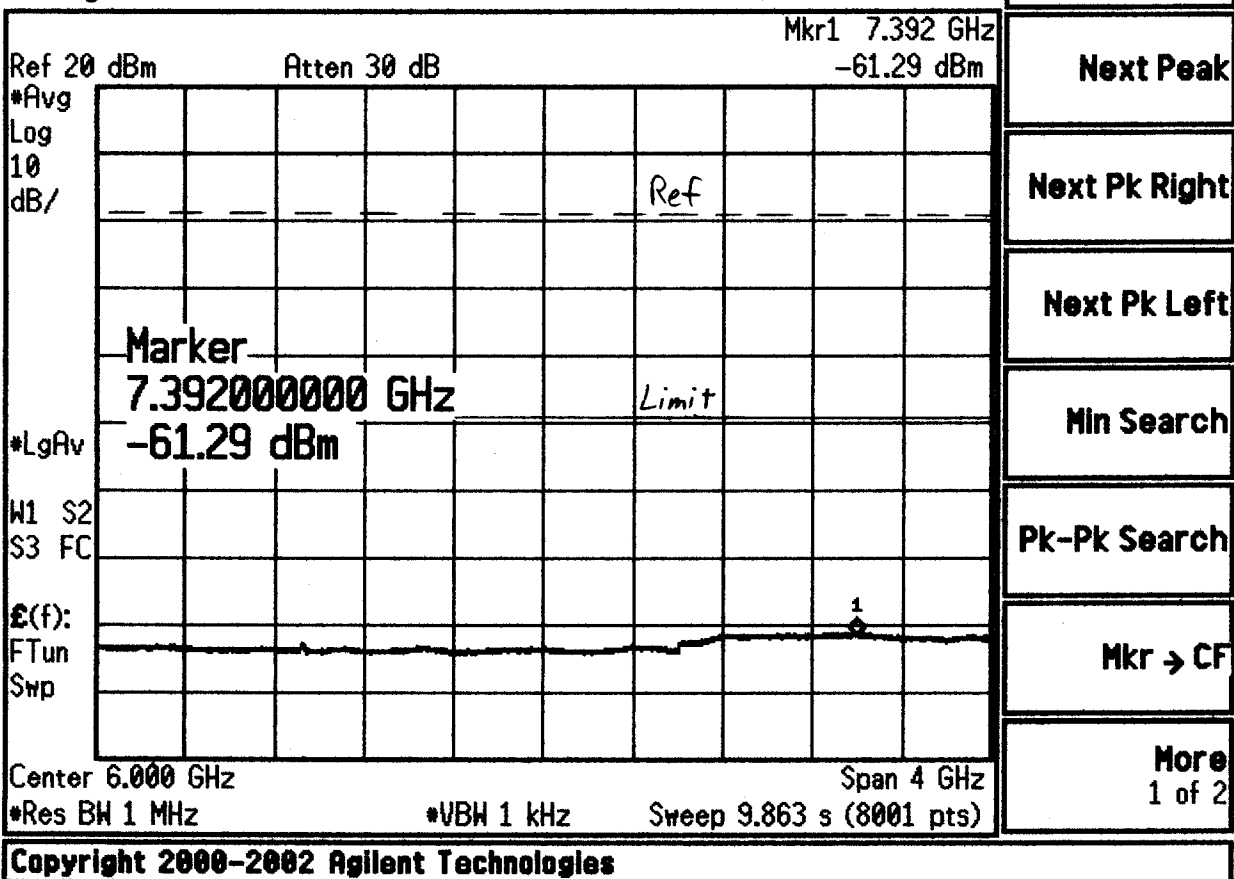
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1 MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 17:02:36 Feb 7, 2005



Cont. Tx
2.462 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

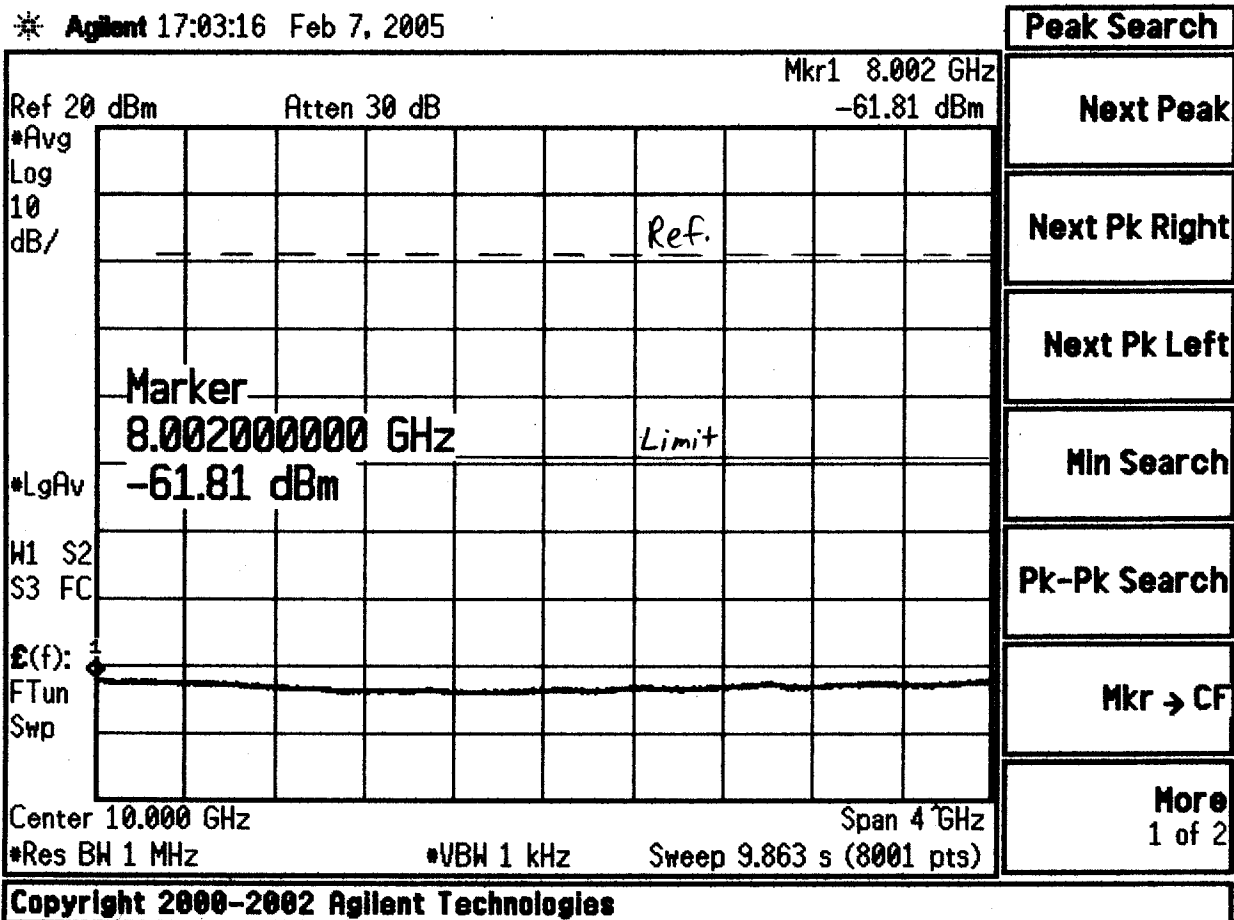
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:03:16 Feb 7, 2005



Cont. Tx
 2.462 GHz G-mode
 16 dBm
 6 MBit

FCC Requirement: Section 15.247 (d)

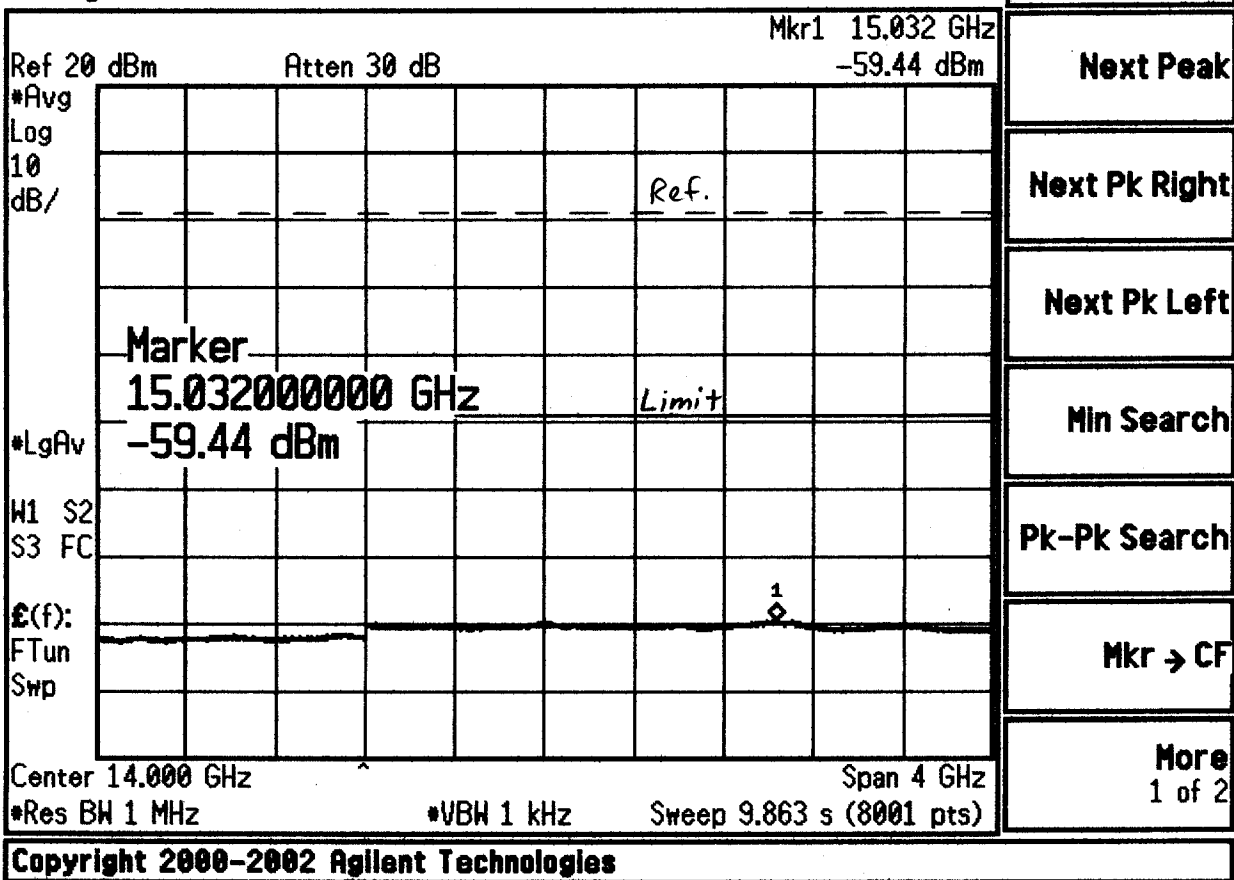
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 17:04:29 Feb 7, 2005



Cont. TX
 2.462 GHz G-mode
 16 dBm
 6 MBit

FCC Requirement: Section 15.247 (d)

Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

The image shows the screen of an Agilent spectrum analyzer. At the top, the status bar displays the Agilent logo, time '17:05:40', and date 'Feb 7, 2005'. The main display area is a grid with a horizontal line representing the signal. A peak search function is active, with a marker labeled 'Mkr1 16.101 GHz' and a value of '-60.11 dBm'. The search results are listed on the right side of the screen: 'Peak Search', 'Next Peak', 'Next Pk Right', 'Next Pk Left', 'Min Search', 'Pk-Pk Search', 'Mkr → CF', and 'More 1 of 2'. The bottom status bar shows 'Center 18.000 GHz', 'Span 4 GHz', 'Res BW 1 MHz', 'VBW 1 kHz', and 'Sweep 9.863 s (8001 pts)'. The copyright notice 'Copyright 2000-2002 Agilent Technologies' is at the bottom.

Cont. Tx
2.462 GHz G-mode
16 dBm
6 MBit

FCC Requirement: Section 15.247 (d)

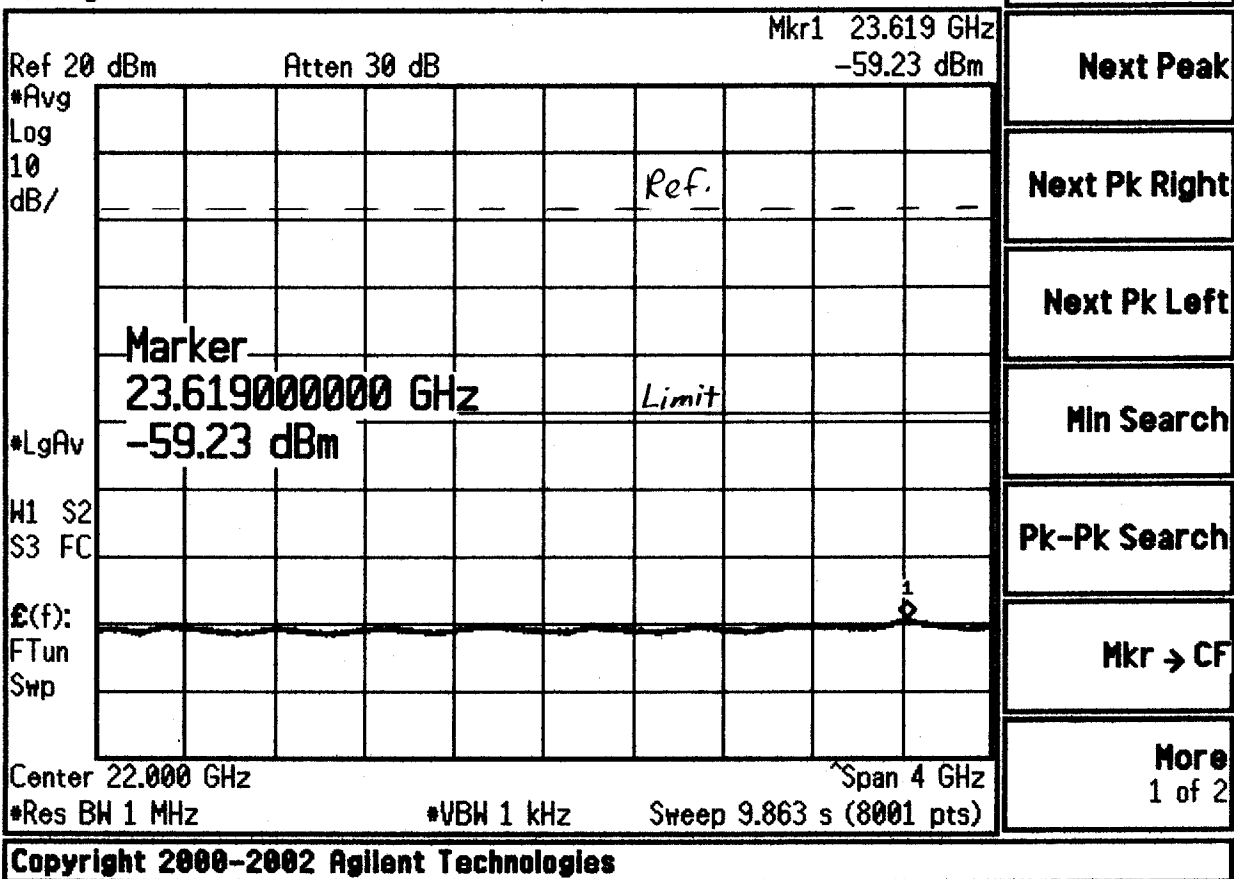
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

* Agilent 17:06:17 Feb 7, 2005



Cont. Tx
 2,462 GHz G-mode
 16 dBm
 6 MBit

FCC Requirement: Section 15.247 (d)

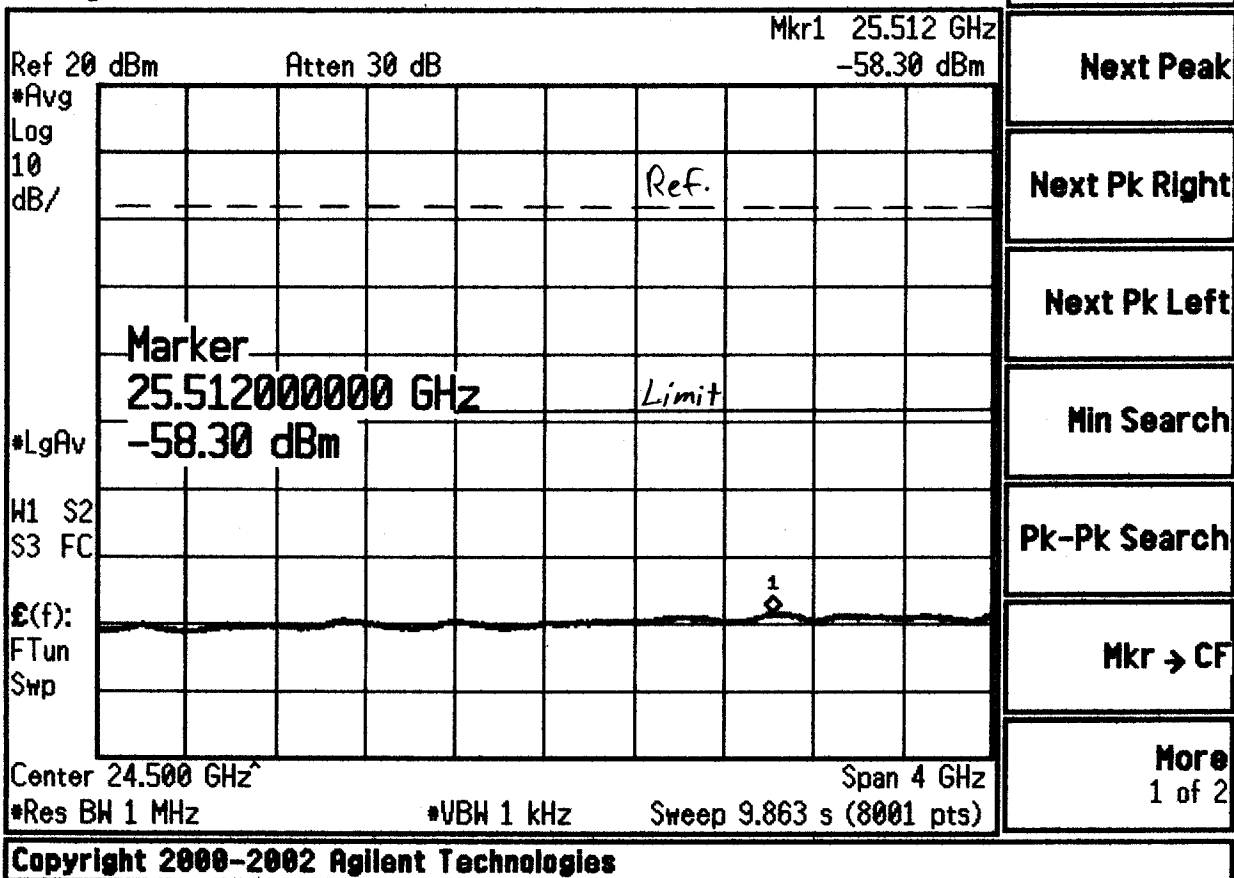
Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Agilent 17:07:34 Feb 7, 2005



Cont. Tx
2.462 GHz G-mode
16 dBm
6 Mbit

FCC Requirement: Section 15.247 (d)

Tx Conducted Out-of-Band Emissions

In any 100 kHz bandwidth, out-of-band emissions 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.

Using a 1MHz resolution bandwidth, the limit is -30 dBc.

For compliance in the restricted bands, see radiated emissions measurements.

Radiated Emissions in Restricted Bands

Specifications:

FCC Specification: Paragraph: 15.247 (d)

IC Specification: N/A

The Radiated Emissions in Restricted Band measurements were performed at the following test location:

☐ - Test not applicable

- - TUV America Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room
- ☐ - Cal Amp

Test Equipment Used:

	TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	3204	EM-6917B	Electro-Metrics	Biconicalog Periodic	102	21-Oct-05
■ -	2682	85650A	Hewlett-Packard	Quasi-Peak Adapter	2811A01127	14-Aug-05
■ -	2689	8566B	Hewlett-Packard	Spectrum Analyzer	2416A00321	31-Jan-05
■ -	2674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	31-Jan-05
■ -	3962	ZHL-1042J	Mini-Circuits	Preamplifier	D120403-2	Code B
						08-Feb-05
■ -	3957	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0001	Code B
						17-Oct-05
■ -	2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	24-Nov-05
■ -	2478	AWT-18037	Avantek	Preamplifier 8-18 GHz	1001-9226	Code B
						24-May-05
■ -	2862	8491A	Hewlett Packard	6 dB Attenuator	7268	Code B
						21-Jun-05
■ -	2835	8491A	Hewlett Packard	3 dB Attenuator	8021	Code B
						21-Jun-05
■ -	3933	F551B-1	Acronetics	8 – 12 GHz Bandpass Filter	010	Code B
						17-Oct-05
■ -	3997	EWT-14-0066	EWT	2.4 GHz Notch Filter	E2	Code B
						19Jan-06
■ -	3935	F548B-1	Acronetics	1 – 2 GHz Bandpass Filter	010	Code B
						17-Oct-05
■ -	2127	11975A	Hewlett Packard	Amplifier 2- 8 GHz	2738A01200	Code B
						25-May-05
■ -	2661	11970A	Hewlett-Packard	Harm Mixer – 26.5-40 GHz	2332A01861	11-Jul-06
■ -	2662	11970K	Hewlett-Packard	Harm Mixer – 18-26.5 GHz	2332A01170	11-Jul-06
■ -	2919	11970U	Hewlett-Packard	Harm Mixer – 40-60 GHz	3003A01395	11-Jul-06
■ -	2788	3116	Electro-Mechanics (EMCO)	Ridge Guide Ant 18-40 GHz	2005	27-Sep-05
■ -	2918	19-7025	Hewlett-Packard	Horn Antenna – 40-60 GHz		N/A

Cal Code B = Calibration verification performed internally.

Cal Code Y = Calibration not required when used with other calibrated equipment.

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

RADIATED EMISSIONS



Test Report #: WC500164 Run 4 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC (POE) Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode. With outlet mounted p/s attached.

Data File Name: 0164.dat

Page: 1 of 6

List of measurements for run #: 4

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m	DELTA2
720 MHz maxed:						
720.0 MHz	36.15 Qp	4.07 / 20.19 / 26.76 / 0.1	33.75	V / 2.60 / 158	-12.65	n/a
720.0 MHz	37.24 Qp	4.07 / 20.19 / 26.76 / 0.1	34.84	V / 2.60 / 158	-11.56	n/a
42.614 MHz	45.07 Qp	0.8 / 15.74 / 25.9 / 0.0	35.71	V / 1.00 / 158	-3.39	n/a
50.414 MHz	44.83 Qp	0.9 / 13.16 / 25.9 / 0.0	32.99	V / 1.00 / 158	-6.11	n/a
120.009 MHz	50.1 Qp	1.48 / 8.11 / 25.96 / 0.0	33.74	V / 1.00 / 158	-9.76	n/a
110.001 MHz	45.65 Qp	1.4 / 8.4 / 25.96 / 0.0	29.49	V / 1.00 / 158	-14.01	n/a
130.001 MHz	37.2 Qp	1.6 / 7.75 / 26.08 / 0.0	20.48	V / 1.00 / 158	-23.02	n/a
160.001 MHz	50.75 Qp	1.7 / 8.09 / 25.98 / 0.0	34.56	V / 1.00 / 158	-8.94	n/a
200.001 MHz	41.6 Qp	2.0 / 10.0 / 26.3 / 0.1	27.4	V / 1.00 / 158	-16.1	n/a
220.001 MHz	36.15 Qp	2.06 / 10.38 / 26.3 / 0.1	22.39	V / 1.00 / 158	-24.01	n/a
240.001 MHz	51.0 Qp	2.18 / 10.76 / 26.3 / 0.1	37.75	V / 1.00 / 158	-8.65	n/a
250.019 MHz	41.3 Qp	2.29 / 11.24 / 26.32 / 0.0	28.51	V / 1.00 / 158	-17.89	n/a
280.001 MHz	35.6 Qp	2.41 / 12.21 / 26.48 / 0.2	23.93	V / 1.00 / 158	-22.47	n/a
320.001 MHz	34.1 Qp	2.6 / 13.19 / 26.68 / 0.0	23.21	V / 1.00 / 158	-23.19	n/a
330.001 MHz	35.1 Qp	2.64 / 13.18 / 26.7 / 0.09	24.32	V / 1.00 / 158	-22.08	n/a
360.001 MHz	32.0 Qp	2.77 / 14.64 / 26.65 / 0.2	22.95	V / 1.00 / 158	-23.45	n/a
400.001 MHz	35.2 Qp	2.92 / 15.49 / 26.7 / 0.1	27.02	V / 1.00 / 158	-19.38	n/a
440.001 MHz	40.05 Qp	3.06 / 16.02 / 26.84 / 0.1	32.39	V / 1.00 / 158	-14.01	n/a
480.001 MHz	41.3 Qp	3.27 / 17.63 / 27.02 / 0.1	35.28	V / 1.00 / 158	-11.12	n/a
520.001 MHz	36.1 Qp	3.4 / 18.38 / 26.94 / 0.0	30.93	V / 1.00 / 158	-15.47	n/a
550.001 MHz	40.65 Qp	3.48 / 18.68 / 26.96 / 0.1	35.95	V / 1.00 / 158	-10.45	n/a
560.001 MHz	45.45 Qp	3.51 / 18.65 / 26.98 / 0.1	40.73	V / 1.00 / 158	-5.67	n/a
720.001 MHz	34.2 Qp	4.07 / 20.19 / 26.76 / 0.1	31.8	V / 1.00 / 158	-14.6	n/a
770.001 MHz	31.8 Qp	4.23 / 21.74 / 26.64 / 0.0	31.13	V / 1.00 / 158	-15.27	n/a
990.001 MHz	33.5 Qp	4.86 / 23.2 / 26.4 / 0.04	35.2	V / 1.00 / 158	-14.3	n/a

Tested by: JCS

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J C Sausen

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Reviewed by: TKS

Printed

Thomas K. Swanson

Signature

RADIATED EMISSIONS



Test Report #: WC500164 Run 4 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC (POE) Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode. With outlet mounted p/s attached.

Data File Name: 0164.dat

Page: 2 of 6

List of measurements for run #: 4

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m	DELTA2
42.6 MHz maxed:						
42.614 MHz	45.63 Qp	0.8 / 15.74 / 25.9 / 0.0	36.27	V / 1.00 / 118	-2.83	n/a
35.228 MHz	41.65 Qp	0.75 / 17.57 / 25.9 / 0.0	34.07	V / 1.00 / 118	-5.03	n/a
58.095 MHz	43.1 Qp	1.0 / 11.08 / 25.9 / 0.0	29.28	V / 1.00 / 118	-9.82	n/a
65.403 MHz	42.35 Qp	1.01 / 9.76 / 25.9 / 0.0	27.22	V / 1.00 / 118	-11.88	n/a
200.007 MHz	44.78 Qp	2.0 / 10.0 / 26.3 / 0.1	30.58	V / 1.00 / 118	-12.92	n/a
160.001 MHz	53.15 Qp	1.7 / 8.09 / 25.98 / 0.0	36.96	V / 1.00 / 118	-6.54	n/a
280.001 MHz	37.4 Qp	2.41 / 12.21 / 26.48 / 0.2	25.73	V / 1.00 / 118	-20.67	n/a
320.001 MHz	35.15 Qp	2.6 / 13.19 / 26.68 / 0.0	24.26	V / 1.00 / 118	-22.14	n/a
330.001 MHz	36.55 Qp	2.64 / 13.18 / 26.7 / 0.09	25.77	V / 1.00 / 118	-20.63	n/a
480.001 MHz	42.6 Qp	3.27 / 17.63 / 27.02 / 0.1	36.58	V / 1.00 / 118	-9.82	n/a
520.001 MHz	43.35 Qp	3.4 / 18.38 / 26.94 / 0.0	38.18	V / 1.00 / 118	-8.22	n/a
220.001 MHz	38.2 Qp	2.06 / 10.38 / 26.3 / 0.1	24.44	V / 1.00 / 118	-21.96	n/a
120.009 MHz	50.45 Qp	1.48 / 8.11 / 25.96 / 0.0	34.09	V / 1.00 / 118	-9.41	n/a
240.001 MHz	53.45 Qp	2.18 / 10.76 / 26.3 / 0.1	40.2	V / 1.00 / 118	-6.2	n/a
250.019 MHz	42.65 Qp	2.29 / 11.24 / 26.32 / 0.0	29.86	V / 1.00 / 118	-16.54	n/a
360.001 MHz	34.3 Qp	2.77 / 14.64 / 26.65 / 0.2	25.25	V / 1.00 / 118	-21.15	n/a
440.001 MHz	40.25 Qp	3.06 / 16.02 / 26.84 / 0.1	32.59	V / 1.00 / 118	-13.81	n/a
480.001 MHz	42.95 Qp	3.27 / 17.63 / 27.02 / 0.1	36.93	V / 1.00 / 118	-9.47	n/a
200.007 MHz	47.3 Qp	2.0 / 10.0 / 26.3 / 0.1	33.1	V / 1.00 / 270	-10.4	n/a
220.001 MHz	44.45 Qp	2.06 / 10.38 / 26.3 / 0.1	30.69	V / 1.00 / 270	-15.71	n/a
360.001 MHz	36.25 Qp	2.77 / 14.64 / 26.65 / 0.2	27.2	V / 1.00 / 270	-19.2	n/a
520.001 MHz	44.2 Qp	3.4 / 18.38 / 26.94 / 0.0	39.03	V / 1.00 / 270	-7.37	n/a
440.001 MHz	40.8 Qp	3.06 / 16.02 / 26.84 / 0.1	33.14	V / 1.00 / 180	-13.26	n/a
560.001 MHz	45.6 Qp	3.51 / 18.65 / 26.98 / 0.1	40.88	V / 1.00 / 180	-5.52	n/a

Tested by: JCS

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J C Swanson

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Reviewed by: TKS

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Thomas K. Swanson

Signature

RADIATED EMISSIONS



Test Report #: WC500164 Run 4 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC (POE) Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode. With outlet mounted p/s attached.

Data File Name: 0164.dat

Page: 3 of 6

List of measurements for run #: 4

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m	DELTA2
130.031 MHz	39.0 Qp	1.6 / 7.75 / 26.08 / 0.0	22.27	V / 1.00 / 90	-21.23	n/a
160.001 MHz	54.55 Qp	1.7 / 8.09 / 25.98 / 0.0	38.36	V / 1.00 / 90	-5.14	n/a
330.001 MHz	38.05 Qp	2.64 / 13.18 / 26.7 / 0.09	27.27	V / 1.00 / 90	-19.13	n/a
400.001 MHz	40.9 Qp	2.92 / 15.49 / 26.7 / 0.1	32.72	V / 1.00 / 90	-13.68	n/a
550.001 MHz	41.7 Qp	3.48 / 18.68 / 26.96 / 0.1	37.0	V / 1.00 / 90	-9.4	n/a
160 MHz maxed:						
160.001 MHz	54.96 Qp	1.7 / 8.09 / 25.98 / 0.0	38.77	V / 1.00 / 42	-4.73	n/a
129.971 MHz	39.9 Qp	1.6 / 7.75 / 26.08 / 0.0	23.18	V / 1.00 / 42	-20.32	n/a
770.001 MHz	37.15 Qp	4.23 / 21.74 / 26.64 / 0.0	36.48	H / 1.00 / 42	-9.92	n/a
480.001 MHz	41.85 Qp	3.27 / 17.63 / 27.02 / 0.1	35.83	H / 1.00 / 42	-10.57	n/a
550.001 MHz	44.0 Qp	3.48 / 18.68 / 26.96 / 0.1	39.3	H / 1.00 / 90	-7.1	n/a
990.001 MHz	34.6 Qp	4.86 / 23.2 / 26.4 / 0.04	36.3	H / 1.00 / 90	-13.2	n/a
480.001 MHz	43.45 Qp	3.27 / 17.63 / 27.02 / 0.1	37.43	H / 1.00 / 180	-8.97	n/a
520.001 MHz	44.85 Qp	3.4 / 18.38 / 26.94 / 0.0	39.68	H / 1.00 / 180	-6.72	n/a
990.001 MHz	37.6 Qp	4.86 / 23.2 / 26.4 / 0.04	39.3	H / 1.00 / 180	-10.2	n/a
330.001 MHz	38.75 Qp	2.64 / 13.18 / 26.7 / 0.09	27.97	H / 2.50 / 270	-18.43	n/a
520 Mhz maxed:						
520.001 MHz	49.08 Qp	3.4 / 18.38 / 26.94 / 0.0	43.91	H / 2.20 / 184	-2.49	n/a
560.001 MHz	46.85 Qp	3.51 / 18.65 / 26.98 / 0.1	42.13	H / 2.50 / 184	-4.27	n/a
480.001 MHz	47.42 Qp	3.27 / 17.63 / 27.02 / 0.1	41.4	H / 2.50 / 184	-5.0	n/a
End of nonintentional emissions measurements 30 MHz to 1000 MHz, vert and hor ant.						

Tested by: JCS

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Reviewed by: TKS

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RADIATED EMISSIONS



Test Report #: WC500164 Run 4 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC (POE) Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode. With outlet mounted p/s attached.

Data File Name: 0164.dat

Page: 4 of 6

Measurement summary for limit1: FCC-A <1GHz 10m (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m
520.001 MHz	49.08 Qp	3.4 / 18.38 / 26.94 / 0.0	43.91	H / 2.20 / 184	-2.49
42.614 MHz	45.63 Qp	0.8 / 15.74 / 25.9 / 0.0	36.27	V / 1.00 / 118	-2.83
560.001 MHz	46.85 Qp	3.51 / 18.65 / 26.98 / 0.1	42.13	H / 2.50 / 184	-4.27
160.001 MHz	54.96 Qp	1.7 / 8.09 / 25.98 / 0.0	38.77	V / 1.00 / 42	-4.73
480.001 MHz	47.42 Qp	3.27 / 17.63 / 27.02 / 0.1	41.4	H / 2.50 / 184	-5.0
35.228 MHz	41.65 Qp	0.75 / 17.57 / 25.9 / 0.0	34.07	V / 1.00 / 118	-5.03
50.414 MHz	44.83 Qp	0.9 / 13.16 / 25.9 / 0.0	32.99	V / 1.00 / 158	-6.11
240.001 MHz	53.45 Qp	2.18 / 10.76 / 26.3 / 0.1	40.2	V / 1.00 / 118	-6.2
550.001 MHz	44.0 Qp	3.48 / 18.68 / 26.96 / 0.1	39.3	H / 1.00 / 90	-7.1
120.009 MHz	50.45 Qp	1.48 / 8.11 / 25.96 / 0.0	34.09	V / 1.00 / 118	-9.41
58.095 MHz	43.1 Qp	1.0 / 11.08 / 25.9 / 0.0	29.28	V / 1.00 / 118	-9.82
770.001 MHz	37.15 Qp	4.23 / 21.74 / 26.64 / 0.0	36.48	H / 1.00 / 42	-9.92
990.001 MHz	37.6 Qp	4.86 / 23.2 / 26.4 / 0.04	39.3	H / 1.00 / 180	-10.2
200.007 MHz	47.3 Qp	2.0 / 10.0 / 26.3 / 0.1	33.1	V / 1.00 / 270	-10.4
720.0 MHz	37.24 Qp	4.07 / 20.19 / 26.76 / 0.1	34.84	V / 2.60 / 158	-11.56
65.403 MHz	42.35 Qp	1.01 / 9.76 / 25.9 / 0.0	27.22	V / 1.00 / 118	-11.88
440.001 MHz	40.8 Qp	3.06 / 16.02 / 26.84 / 0.1	33.14	V / 1.00 / 180	-13.26
400.001 MHz	40.9 Qp	2.92 / 15.49 / 26.7 / 0.1	32.72	V / 1.00 / 90	-13.68
110.001 MHz	45.65 Qp	1.4 / 8.4 / 25.96 / 0.0	29.49	V / 1.00 / 158	-14.01
220.001 MHz	44.45 Qp	2.06 / 10.38 / 26.3 / 0.1	30.69	V / 1.00 / 270	-15.71
250.019 MHz	42.65 Qp	2.29 / 11.24 / 26.32 / 0.0	29.86	V / 1.00 / 118	-16.54
330.001 MHz	38.75 Qp	2.64 / 13.18 / 26.7 / 0.09	27.97	H / 2.50 / 270	-18.43
360.001 MHz	36.25 Qp	2.77 / 14.64 / 26.65 / 0.2	27.2	V / 1.00 / 270	-19.2
129.971 MHz	39.9 Qp	1.6 / 7.75 / 26.08 / 0.0	23.18	V / 1.00 / 42	-20.32
280.001 MHz	37.4 Qp	2.41 / 12.21 / 26.48 / 0.2	25.73	V / 1.00 / 118	-20.67

Tested by: JCS

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J C Sausen

Signature

Reviewed by: TKS

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Thomas K. Swanson

Signature

RADIATED EMISSIONS



Test Report #: WC500164 Run 4 Test Area: LTS
EUT Model #: DIRECTED AP Date: 1/27/05
EUT Serial #: Unit "A" EUT Power: 48VDC (POE) Temperature: 23.0 °C
Test Method: FCC A Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %
EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode. With outlet mounted p/s attached.

Data File Name: 0164.dat

Page: 5 of 6

Measurement summary for limit1: FCC-A <1GHz 10m (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m
320.001 MHz	35.15 Qp	2.6 / 13.19 / 26.68 / 0.0	24.26	V / 1.00 / 118	-22.14

Tested by: JCS

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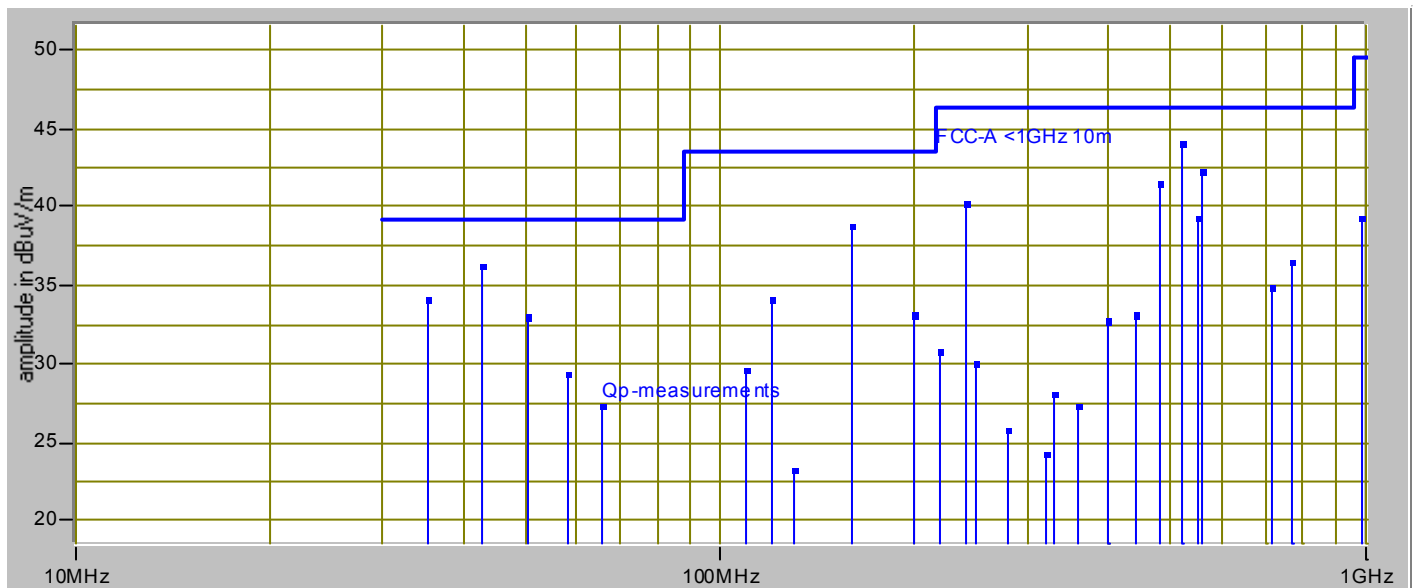
Test Report #: WC500164 Run 4 Test Area: LTS
EUT Model #: DIRECTED AP Date: 1/27/05
EUT Serial #: Unit "A" EUT Power: 48VDC (POE) Temperature: 23.0 °C
Test Method: FCC A Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %
EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode. With outlet mounted p/s attached.

Data File Name: 0164.dat

Page: 6 of 6

Graph:



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Test Report #: WC500164 Run 5 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode.

Data File Name: 0164.dat

Page: 1 of 6

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m	DELTA2
160.001 MHz	40.2 Qp	1.7 / 8.09 / 25.98 / 0.0	24.01	H / 2.50 / 184	-19.49	n/a
240.001 MHz	39.1 Qp	2.18 / 10.76 / 26.3 / 0.1	25.85	H / 2.50 / 184	-20.55	n/a
400.001 MHz	34.0 Qp	2.92 / 15.49 / 26.7 / 0.1	25.82	H / 2.50 / 184	-20.58	n/a
440.001 MHz	35.6 Qp	3.06 / 16.02 / 26.84 / 0.1	27.94	H / 2.50 / 184	-18.46	n/a
480.001 MHz	39.7 Qp	3.27 / 17.63 / 27.02 / 0.1	33.68	H / 2.50 / 184	-12.72	n/a
520.001 MHz	42.0 Qp	3.4 / 18.38 / 26.94 / 0.0	36.83	H / 2.50 / 184	-9.57	n/a
550.001 MHz	48.6 Qp	3.48 / 18.68 / 26.96 / 0.1	43.9	H / 2.50 / 184	-2.5	n/a
560.001 MHz	42.25 Qp	3.51 / 18.65 / 26.98 / 0.1	37.53	H / 2.50 / 184	-8.87	n/a
770.001 MHz	34.05 Qp	4.23 / 21.74 / 26.64 / 0.0	33.38	H / 2.50 / 184	-13.02	n/a
990.001 MHz	35.25 Qp	4.86 / 23.2 / 26.4 / 0.04	36.95	H / 2.50 / 184	-12.55	n/a
550 MHz maxed:						
550.001 MHz	49.93 Qp	3.48 / 18.68 / 26.96 / 0.1	45.23	H / 2.56 / 186	-1.17	n/a
990.001 MHz	35.4 Qp	4.86 / 23.2 / 26.4 / 0.04	37.1	H / 2.56 / 186	-12.4	n/a
560 MHz maxed:						
560.001 MHz	44.81 Qp	3.51 / 18.65 / 26.98 / 0.1	40.09	H / 1.47 / 177	-6.31	n/a
520.001 MHz	44.17 Qp	3.4 / 18.38 / 26.94 / 0.0	39.0	H / 2.26 / 175	-7.4	n/a
990.001 MHz	37.4 Qp	4.86 / 23.2 / 26.4 / 0.04	39.1	H / 2.26 / 175	-10.4	n/a
46 MHz maxed:						
45.992 MHz	48.03 Qp	0.9 / 14.67 / 25.9 / 0.0	37.7	V / 1.00 / 6	-1.4	n/a
42.973 MHz	46.48 Qp	0.8 / 15.63 / 25.9 / 0.0	37.02	V / 1.00 / 6	-2.08	n/a
120.025 MHz	50.85 Qp	1.48 / 8.11 / 25.96 / 0.0	34.49	V / 1.00 / 6	-9.01	n/a
123.955 MHz	43.9 Qp	1.53 / 7.88 / 26.01 / 0.0	27.3	V / 1.00 / 6	-16.2	n/a
35.228 MHz	32.9 Qp	0.75 / 17.57 / 25.9 / 0.0	25.32	V / 1.00 / 6	-13.78	n/a
58.095 MHz	39.1 Qp	1.0 / 11.08 / 25.9 / 0.0	25.28	V / 1.00 / 6	-13.82	n/a

Tested by: J. C. Sausen

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Test Report #: WC500164 Run 5 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode.

Data File Name: 0164.dat

Page: 2 of 6

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m	DELTA2
65.403 MHz	40.0 Qp	1.01 / 9.76 / 25.9 / 0.0	24.87	V / 1.00 / 6	-14.23	n/a
110.001 MHz	42.25 Qp	1.4 / 8.4 / 25.96 / 0.0	26.09	V / 1.00 / 6	-17.41	n/a
130.019 MHz	43.0 Qp	1.6 / 7.75 / 26.08 / 0.0	26.27	V / 1.00 / 6	-17.23	n/a
160.001 MHz	55.55 Qp	1.7 / 8.09 / 25.98 / 0.0	39.36	V / 1.00 / 6	-4.14	n/a
200.007 MHz	51.75 Qp	2.0 / 10.0 / 26.3 / 0.1	37.55	V / 1.00 / 6	-5.95	n/a
220.001 MHz	41.85 Qp	2.06 / 10.38 / 26.3 / 0.1	28.09	V / 1.00 / 6	-18.31	n/a
240.001 MHz	51.25 Qp	2.18 / 10.76 / 26.3 / 0.1	38.0	V / 1.00 / 6	-8.4	n/a
250.019 MHz	40.35 Qp	2.29 / 11.24 / 26.32 / 0.0	27.56	V / 1.00 / 6	-18.84	n/a
280.001 MHz	37.9 Qp	2.41 / 12.21 / 26.48 / 0.2	26.23	V / 1.00 / 6	-20.17	n/a
320.001 MHz	38.3 Qp	2.6 / 13.19 / 26.68 / 0.0	27.41	V / 1.00 / 6	-18.99	n/a
330.001 MHz	41.65 Qp	2.64 / 13.18 / 26.7 / 0.09	30.87	V / 1.00 / 6	-15.53	n/a
360.001 MHz	36.05 Qp	2.77 / 14.64 / 26.65 / 0.2	27.0	V / 1.00 / 6	-19.4	n/a
400.001 MHz	35.15 Qp	2.92 / 15.49 / 26.7 / 0.1	26.97	V / 1.00 / 6	-19.43	n/a
440.001 MHz	39.2 Qp	3.06 / 16.02 / 26.84 / 0.1	31.54	V / 1.00 / 6	-14.86	n/a
480.001 MHz	38.7 Qp	3.27 / 17.63 / 27.02 / 0.1	32.68	V / 1.00 / 6	-13.72	n/a
520.001 MHz	31.0 Qp	3.4 / 18.38 / 26.94 / 0.0	25.83	V / 1.00 / 6	-20.57	n/a
550.001 MHz	37.55 Qp	3.48 / 18.68 / 26.96 / 0.1	32.85	V / 1.00 / 6	-13.55	n/a
560.001 MHz	34.35 Qp	3.51 / 18.65 / 26.98 / 0.1	29.63	V / 1.00 / 6	-16.77	n/a
720.0 MHz	31.75 Qp	4.07 / 20.19 / 26.76 / 0.1	29.35	V / 1.00 / 6	-17.05	n/a
160 MHz maxed:						
160.001 MHz	58.52 Qp	1.7 / 8.09 / 25.98 / 0.0	42.33	V / 1.00 / 117	-1.17	n/a
280.001 MHz	39.9 Qp	2.41 / 12.21 / 26.48 / 0.2	28.23	V / 1.00 / 117	-18.17	n/a
320.001 MHz	39.9 Qp	2.6 / 13.19 / 26.68 / 0.0	29.01	V / 1.00 / 117	-17.39	n/a
360.001 MHz	40.85 Qp	2.77 / 14.64 / 26.65 / 0.2	31.8	V / 1.00 / 117	-14.6	n/a
400.001 MHz	37.3 Qp	2.92 / 15.49 / 26.7 / 0.1	29.12	V / 1.00 / 117	-17.28	n/a

Tested by: J. C. Sausen

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RADIATED EMISSIONS



Test Report #: WC500164 Run 5 Test Area: LTS
EUT Model #: DIRECTED AP Date: 1/27/05
EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C
Test Method: FCC A Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode.

Data File Name: 0164.dat

Page: 3 of 6

List of measurements for run #: 5

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m	DELTA2
770.001 MHz	35.9 Qp	4.23 / 21.74 / 26.64 / 0.0	35.23	V / 1.00 / 117	-11.17	n/a
480.001 MHz	46.82 Qp	3.27 / 17.63 / 27.02 / 0.1	40.8	V / 1.00 / 210	-5.6	n/a
Moved cables to max 160 MHz.						
160.001 MHz	58.55 Qp	1.7 / 8.09 / 25.98 / 0.0	42.36	V / 1.00 / 210	-1.14	n/a
770.001 MHz	36.3 Qp	4.23 / 21.74 / 26.64 / 0.0	35.63	V / 1.00 / 210	-10.77	n/a
No further significant EUT emissions detected with wall cube power supply, 30 MHz to 1000 MHz.						

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RADIATED EMISSIONS



Test Report #: WC500164 Run 5 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode.

Data File Name: 0164.dat

Page: 4 of 6

Measurement summary for limit1: FCC-A <1GHz 10m (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m
160.001 MHz	58.55 Qp	1.7 / 8.09 / 25.98 / 0.0	42.36	V / 1.00 / 210	-1.14
550.001 MHz	49.93 Qp	3.48 / 18.68 / 26.96 / 0.1	45.23	H / 2.56 / 186	-1.17
45.992 MHz	48.03 Qp	0.9 / 14.67 / 25.9 / 0.0	37.7	V / 1.00 / 6	-1.4
42.973 MHz	46.48 Qp	0.8 / 15.63 / 25.9 / 0.0	37.02	V / 1.00 / 6	-2.08
480.001 MHz	46.82 Qp	3.27 / 17.63 / 27.02 / 0.1	40.8	V / 1.00 / 210	-5.6
200.007 MHz	51.75 Qp	2.0 / 10.0 / 26.3 / 0.1	37.55	V / 1.00 / 6	-5.95
560.001 MHz	44.81 Qp	3.51 / 18.65 / 26.98 / 0.1	40.09	H / 1.47 / 177	-6.31
520.001 MHz	44.17 Qp	3.4 / 18.38 / 26.94 / 0.0	39.0	H / 2.26 / 175	-7.4
240.001 MHz	51.25 Qp	2.18 / 10.76 / 26.3 / 0.1	38.0	V / 1.00 / 6	-8.4
120.025 MHz	50.85 Qp	1.48 / 8.11 / 25.96 / 0.0	34.49	V / 1.00 / 6	-9.01
990.001 MHz	37.4 Qp	4.86 / 23.2 / 26.4 / 0.04	39.1	H / 2.26 / 175	-10.4
770.001 MHz	36.3 Qp	4.23 / 21.74 / 26.64 / 0.0	35.63	V / 1.00 / 210	-10.77
35.228 MHz	32.9 Qp	0.75 / 17.57 / 25.9 / 0.0	25.32	V / 1.00 / 6	-13.78
58.095 MHz	39.1 Qp	1.0 / 11.08 / 25.9 / 0.0	25.28	V / 1.00 / 6	-13.82
65.403 MHz	40.0 Qp	1.01 / 9.76 / 25.9 / 0.0	24.87	V / 1.00 / 6	-14.23
360.001 MHz	40.85 Qp	2.77 / 14.64 / 26.65 / 0.2	31.8	V / 1.00 / 117	-14.6
440.001 MHz	39.2 Qp	3.06 / 16.02 / 26.84 / 0.1	31.54	V / 1.00 / 6	-14.86
330.001 MHz	41.65 Qp	2.64 / 13.18 / 26.7 / 0.09	30.87	V / 1.00 / 6	-15.53
123.955 MHz	43.9 Qp	1.53 / 7.88 / 26.01 / 0.0	27.3	V / 1.00 / 6	-16.2
720.0 MHz	31.75 Qp	4.07 / 20.19 / 26.76 / 0.1	29.35	V / 1.00 / 6	-17.05
130.019 MHz	43.0 Qp	1.6 / 7.75 / 26.08 / 0.0	26.27	V / 1.00 / 6	-17.23
400.001 MHz	37.3 Qp	2.92 / 15.49 / 26.7 / 0.1	29.12	V / 1.00 / 117	-17.28
320.001 MHz	39.9 Qp	2.6 / 13.19 / 26.68 / 0.0	29.01	V / 1.00 / 117	-17.39
110.001 MHz	42.25 Qp	1.4 / 8.4 / 25.96 / 0.0	26.09	V / 1.00 / 6	-17.41
280.001 MHz	39.9 Qp	2.41 / 12.21 / 26.48 / 0.2	28.23	V / 1.00 / 117	-18.17

Tested by: J. C. Sausen

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RADIATED EMISSIONS



Test Report #: WC500164 Run 5 Test Area: LTS
EUT Model #: DIRECTED AP Date: 1/27/05
EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C
Test Method: FCC A Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode.

Data File Name: 0164.dat

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Measurement summary for limit1: FCC-A <1GHz 10m (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 10m
220.001 MHz	41.85 Qp	2.06 / 10.38 / 26.3 / 0.1	28.09	V / 1.00 / 6	-18.31
250.019 MHz	40.35 Qp	2.29 / 11.24 / 26.32 / 0.0	27.56	V / 1.00 / 6	-18.84

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Test Report #: WC500164 Run 5 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC A Air Pressure: 99.0 kPa

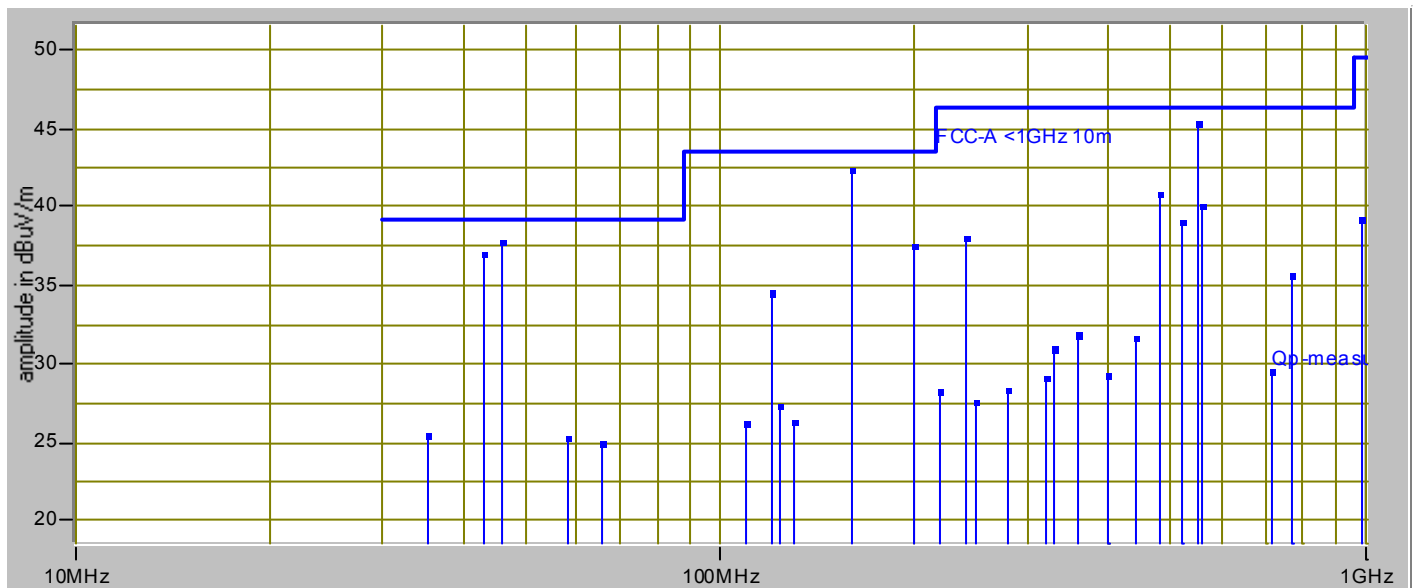
Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A)

Notes: PA's set to min power. Beacon Mode.

Data File Name: 0164.dat Page: 6 of 6

Graph:



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EUT Description: WIRELESS ACCESS POINT (802.11A). TRXing

Data File Name: 0164.dat

Page: 1 of 3

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RADIATED EMISSIONS



Test Report #: WC500164 Run 6 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A). TRXing

Notes: Transmitting B, & G Modes. See notes on data sheets for each mode.

Data File Name: 0164.dat

Page: 2 of 3

List of measurements for run #: 6

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-B <1GHz 3m	DELTA2 FCC B >1GHz 3m
1.12 GHz	59.84 Av	2.91 / 25.53 / 40.34 / 0.3	48.24	H / 1.46 / 315	n/a	-5.76
1.12 GHz	55.03 Av	2.91 / 25.53 / 40.34 / 0.3	43.43	V / 1.35 / 127	n/a	-10.57
1.12 GHz	57.1 Pk	2.91 / 25.53 / 40.34 / 0.3	45.5	V / 1.35 / 127	n/a	-8.5*
1.36 GHz	49.68 Av	3.19 / 25.25 / 41.21 / 0.32	37.23	V / 1.35 / 127	n/a	-16.77
1.36 GHz	53.65 Pk	3.19 / 25.25 / 41.21 / 0.32	41.2	V / 1.35 / 127	n/a	-12.8*
1.54 GHz	51.23 Av	3.47 / 25.35 / 42.14 / 0.46	38.36	V / 1.35 / 127	n/a	-15.64
1.54 GHz	55.0 Pk	3.47 / 25.35 / 42.14 / 0.46	42.13	V / 1.35 / 127	n/a	-11.87*

Note: no emissions 2-4 GHz.

AP mode, Wlan0 & Wlan1 min power, tx at min power:

following readings made 2/5/2005 by jts - 5 ghz transmitter on

11.82 GHz is 5 GHz receiver spur

7.973 GHz	37.7 Pk	8.39 / 36.89 / 44.23 / 0.0	38.75	V / 1.70 / 355	n/a	-15.25*
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last reading demonstrating noise level

no spurious emissions detected in 4-8 GHz restricted bands

changed to 8-18 GHz preamplifier

added 9 dB attenuation in front of preamplifier

moved antenna into 1 meter, transmitter off, 10 dB analyzer input attenuation

15.956 GHz	42.28 Av	12.04 / 37.77 / 45.83 / 9.1	55.36	V / 1.01 / 11	n/a	-8.64
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transmitter on - 1 meter antenna distance

15.956 GHz	47.1 Av	12.04 / 37.77 / 45.83 / 9.1	60.18	V / 1.01 / 11	n/a	-3.82
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no other signals in 12-18 ghz restricted bands

no signals from 2.4 ghz transmitter in 12-18 ghz restricted bands

no signals from 2.4 ghz transmitter in 18-25 GHz restricted bands

no signals from 5 ghz transmitters in 18-60 GHz restricted bands

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RADIATED EMISSIONS



Test Report #: WC500164 Run 6 Test Area: LTS

EUT Model #: DIRECTED AP Date: 1/27/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A). TRXing

Notes: Transmitting B, & G Modes. See notes on data sheets for each mode.

Data File Name: 0164.dat

Page: 3 of 3

Measurement summary for limit2: FCC B >1GHz 3m (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 FCC B >1GHz 3m
15.956 GHz	47.1 Av	12.04 / 37.77 / 45.83 / 9.1	60.18	V / 1.01 / 11	-3.82
3.94 GHz	57.84 Av	5.79 / 32.3 / 45.28 / 0.13	50.77	V / 1.00 / 248	-3.23
1.12 GHz	59.84 Av	2.91 / 25.53 / 40.34 / 0.3	48.24	H / 1.46 / 315	-5.76
10.64 GHz	40.59 Av	9.95 / 38.07 / 44.49 / 0.6	44.73	V / 1.38 / 7	-9.27
2.688 GHz	52.52 Av	4.47 / 29.18 / 44.6 / 0.4	41.97	V / 1.60 / 42	-12.03
4.914 GHz	43.95 Av	6.42 / 33.21 / 44.61 / 0.14	39.12	V / 1.05 / 340	-14.88
1.54 GHz	51.23 Av	3.47 / 25.35 / 42.14 / 0.46	38.36	V / 1.35 / 127	-15.64
1.36 GHz	49.68 Av	3.19 / 25.25 / 41.21 / 0.32	37.23	V / 1.35 / 127	-16.77
2.688 GHz	58.1 Pk	4.47 / 29.18 / 44.6 / 0.4	47.55	V / 1.60 / 42	-6.45*
4.914 GHz	52.45 Pk	6.42 / 33.21 / 44.61 / 0.14	47.62	V / 1.05 / 340	-6.38*
3.94 GHz	60.15 Pk	5.79 / 32.3 / 45.28 / 0.13	53.08	V / 1.00 / 248	-0.92*
10.64 GHz	48.65 Pk	9.95 / 38.07 / 44.49 / 0.6	52.79	V / 1.38 / 7	-1.21*
1.12 GHz	57.1 Pk	2.91 / 25.53 / 40.34 / 0.3	45.5	V / 1.35 / 127	-8.5*
1.36 GHz	53.65 Pk	3.19 / 25.25 / 41.21 / 0.32	41.2	V / 1.35 / 127	-12.8*
1.54 GHz	55.0 Pk	3.47 / 25.35 / 42.14 / 0.46	42.13	V / 1.35 / 127	-11.87*
7.973 GHz	37.7 Pk	8.39 / 36.89 / 44.23 / 0.0	38.75	V / 1.70 / 355	-15.25*

Note: 3.94 GHz is a Rx LO frequency emission.

* Denotes a peak measurement compared to an average limit.

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Test Report #: WC500164 Run 9 Test Area: LTS

EUT Model #: DIRECTED AP Date: 3/17/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A). TRXing BOTH 2.437 AND 5.28 GHz

Notes: Radiated emissions in restricted bands.

Data File Name: 0164.dat

Page: 1 of 4

List of measurements for run #: 9

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC B >1GHz 3m	DELTA2
* Denotes a peak measurement compared to the average limit.						
1.0 GHz	31.98 Av	2.74 / 25.66 / 27.56 / 0.1	32.93	V / 1.00 / 0	-21.07	n/a
1.0 GHz	33.95 Pk	2.74 / 25.66 / 27.56 / 0.1	34.9	V / 1.00 / 0	-19.1*	n/a
1.125 GHz	30.33 Av	2.91 / 25.52 / 27.59 / 0.0	31.18	V / 1.00 / 0	-22.82	n/a
1.125 GHz	34.1 Pk	2.91 / 25.52 / 27.59 / 0.0	34.95	V / 1.00 / 0	-19.05*	n/a
1.16 GHz	27.42 Av	2.96 / 25.48 / 27.54 / 0.1	28.41	V / 1.00 / 0	-25.59	n/a
1.18 GHz	29.79 Av	2.98 / 25.46 / 27.52 / 0.12	30.83	V / 1.00 / 0	-23.17	n/a
1.2 GHz	27.91 Av	3.01 / 25.44 / 27.5 / 0.0	28.85	V / 1.00 / 0	-25.15	n/a
1.36 GHz	31.54 Av	3.19 / 25.25 / 27.59 / 0.08	32.47	V / 1.00 / 0	-21.53	n/a
1.375 GHz	29.31 Av	3.21 / 25.24 / 27.6 / 0.39	30.54	V / 1.00 / 0	-23.46	n/a
1.5 GHz	27.41 Av	3.43 / 25.1 / 27.57 / 0.08	28.45	V / 1.00 / 0	-25.55	n/a
1.52 GHz	27.73 Av	3.45 / 25.22 / 27.55 / 0.37	29.22	V / 1.00 / 0	-24.78	n/a
1.625 GHz	28.51 Av	3.54 / 25.88 / 27.59 / 0.0	30.35	V / 1.00 / 0	-23.65	n/a
1.1 GHz	34.97 Av	2.88 / 25.55 / 27.58 / 0.1	35.92	V / 1.00 / 0	-18.08	n/a
1.1 GHz	39.5 Pk	2.88 / 25.55 / 27.58 / 0.1	40.45	V / 1.00 / 0	-13.55*	n/a
1.12 GHz	30.93 Av	2.91 / 25.53 / 27.59 / 0.0	31.77	V / 1.00 / 0	-22.23	n/a
1.21 GHz	29.84 Av	3.02 / 25.42 / 27.5 / 0.0	30.78	V / 1.00 / 0	-23.22	n/a
2688 MHz maxed						
2.688 GHz	28.27 Av	4.47 / 29.18 / 27.56 / 0.4	34.76	V / 1.90 / 201	-19.24	n/a
2.688 GHz	30.4 Pk	4.47 / 29.18 / 27.56 / 0.4	36.89	V / 1.90 / 201	-17.11*	n/a
1100 MHz maxed						
1.1 GHz	44.56 Av	2.88 / 25.55 / 27.58 / 0.1	45.51	V / 1.00 / 222	-8.49	n/a
1.1 GHz	47.85 Pk	2.88 / 25.55 / 27.58 / 0.1	48.8	V / 1.00 / 222	-5.2*	n/a

Tested by: TKS

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Thomas K. Swanson
Signature

Reviewed by: JTS

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Joel T. Schmeiss
Signature

RADIATED EMISSIONS



Test Report #: WC500164 Run 9 Test Area: LTS

EUT Model #: DIRECTED AP Date: 3/17/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A). TRXing BOTH 2.437 AND 5.28 GHz

Notes: Radiated emissions in restricted bands.

Data File Name: 0164.dat

Page: 2 of 4

List of measurements for run #: 9

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC B >1GHz 3m	DELTA2
1120 MHz Maxed						
1.12 GHz	40.45 Av	2.91 / 25.53 / 27.59 / 0.0	41.29	V / 1.00 / 222	-12.71	n/a
1.12 GHz	41.5 Pk	2.91 / 25.53 / 27.59 / 0.0	42.34	V / 1.00 / 222	-11.66*	n/a
1.08 GHz	28.16 Av	2.85 / 25.57 / 27.55 / 0.0	29.03	V / 1.00 / 222	-24.97	n/a
All above frequencies between 1 and 2 GHz still present with transmitter off. Deleting these frequencies from summary.						
No further emissions detected 2 to 4 GHz						
No emissions detected 4 to 5 GHz						
7717 MHz Maxed						
7.718 GHz	43.89 Av	8.22 / 36.73 / 41.18 / 1.32	48.98	H / 1.10 / 85	-5.02	n/a
7.718 GHz	44.5 Pk	8.22 / 36.73 / 41.18 / 1.32	49.59	H / 1.10 / 85	-4.41*	n/a
7.718 GHz	44.39 Av	8.22 / 36.73 / 41.18 / 1.32	49.48	V / 1.30 / 30	-4.52	n/a
7.718 GHz	44.05 Pk	8.22 / 36.73 / 41.18 / 1.32	49.14	V / 1.30 / 30	-4.86*	n/a
No further emissions detected 5 to 8 GHz						
10.1 GHz	45.97 Av	9.75 / 38.05 / 47.43 / 0.6	46.94	V / 1.30 / 30	-7.06	n/a
above emission is NOT in restricted band - will not include in summary						
10.56 GHz	49.08 Av	9.93 / 38.02 / 46.8 / 0.6	50.82	V / 1.30 / 30	-3.18	n/a
above emission is NOT in restricted band - will not include in summary						

Tested by: TKS

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Thomas K. Swanson
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Reviewed by: JTS

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Joel T. Schmeiss
Signature

RADIATED EMISSIONS



Test Report #: WC500164 Run 9 Test Area: LTS

EUT Model #: DIRECTED AP Date: 3/17/05

EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A). TRXing BOTH 2.437 AND 5.28 GHz

Notes: Radiated emissions in restricted bands.

Data File Name: 0164.dat

Page: 3 of 4

List of measurements for run #: 9

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC B >1GHz 3m	DELTA2
15 GHz Maxed						
15.838 GHz	55.46 Av	12.0 / 37.78 / 45.68 / 0.0	59.56	V / 1.30 / 30	5.56	n/a
Transmitter off						
noise floor						
15.838 GHz	44.95 Pk	12.0 / 37.78 / 45.68 / 0.0	49.05	V / 1.30 / 30	-4.95*	n/a
added 6 dB attenuator						
noise floor						
15.838 GHz	45.55 Pk	12.0 / 37.78 / 45.68 / 0.0	49.65	V / 1.30 / 30	-4.35*	n/a
transmitter on						
15.838 GHz	47.55 Pk	12.0 / 37.78 / 45.68 / 0.0	51.65	V / 1.30 / 30	-2.35*	n/a
with 5 GHz on only						
15.838 GHz	48.6 Pk	12.0 / 37.78 / 45.68 / 0.0	52.7	V / 1.30 / 30	-1.3*	n/a
With 9 dB attenuation						
both transmitters off - noise floor						
15.838 GHz	44.64 Av	12.0 / 37.78 / 45.68 / 0.0	48.74	V / 1.30 / 30	-5.26	n/a
both transmitters back on - spurious emission plus noise floor						
15.838 GHz	45.39 Av	12.0 / 37.78 / 45.68 / 0.0	49.49	V / 1.30 / 30	-4.51	n/a
preamp is overloading						
Noise floor correction factor is 8dB which means spurious emission is 12.5 minus 9 (for atten) = 3.5 dB below limit						
same result for 15.838 GHz as in run #6 with transmitters running separately						
no further emissions detected 18 GHz – 55 GHz.						

Tested by:

TKS

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Thomas K. Swanson

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by:

JTS

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Joel T. Schmeiss

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RADIATED EMISSIONS



Test Report #: WC500164 Run 9 Test Area: LTS
EUT Model #: DIRECTED AP Date: 3/17/05
EUT Serial #: Unit "A" EUT Power: 48VDC via p/s Temperature: 23.0 °C
Test Method: FCC B Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT (802.11A). TRXing BOTH 2.437 AND 5.28 GHz

Notes: Radiated emissions in restricted bands.

Data File Name: 0164.dat

Page: 4 of 4

Measurement summary for limit1: FCC B >1GHz 3m (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC B >1GHz 3m
15.838 GHz	46.39 Av	12.0 / 37.78 / 45.68 / 0.0	50.49	V / 1.30 / 30	-3.51
7.718 GHz	44.39 Av	8.22 / 36.73 / 41.18 / 1.32	49.48	V / 1.30 / 30	-4.52
2.688 GHz	28.27 Av	4.47 / 29.18 / 27.56 / 0.4	34.76	V / 1.90 / 201	-19.24
2.688 GHz	30.4 Pk	4.47 / 29.18 / 27.56 / 0.4	36.89	V / 1.90 / 201	-17.11*
7.718 GHz	44.5 Pk	8.22 / 36.73 / 41.18 / 1.32	49.59	H / 1.10 / 85	-4.41*
15.838 GHz	48.6 Pk	12.0 / 37.78 / 45.68 / 0.0	52.7	V / 1.30 / 30	-1.3*

* Denotes peak measurement compared to average limit.

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Radiated Emissions in Restricted Bands (2.4 GHz Band Edges)

Specifications:

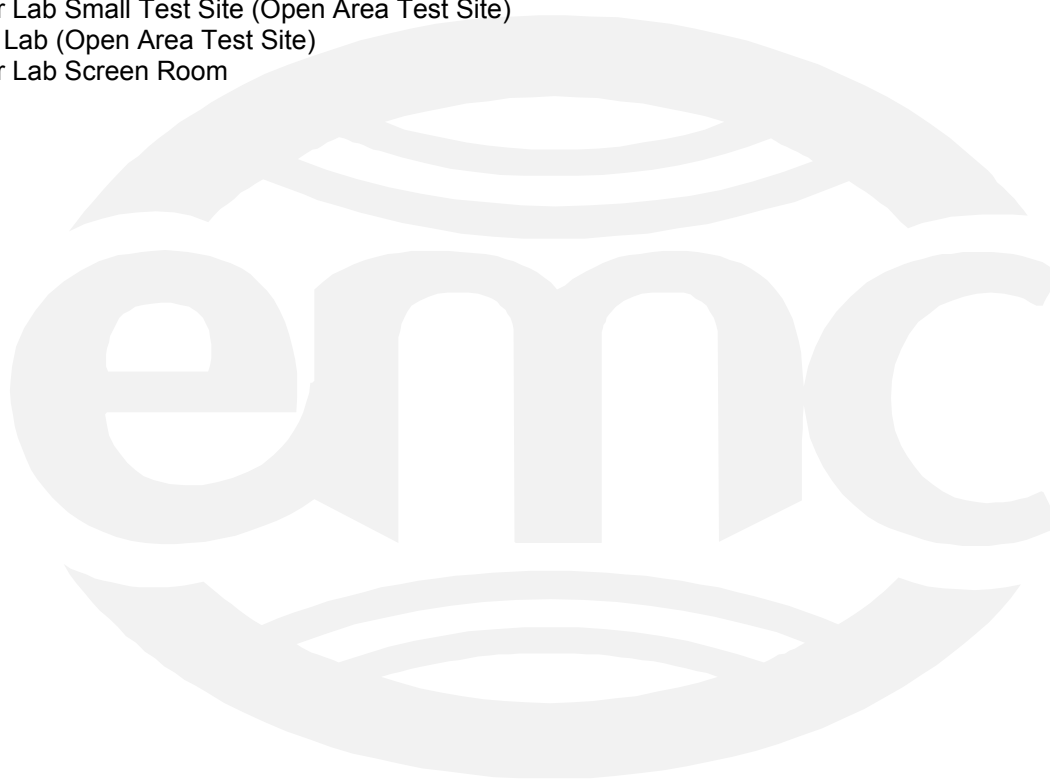
FCC Specification: Paragraph: 15.247 (c)

IC Specification: N/A

The *Radiated Emissions in Restricted Band* – Band Edge measurements were performed at the following test location:

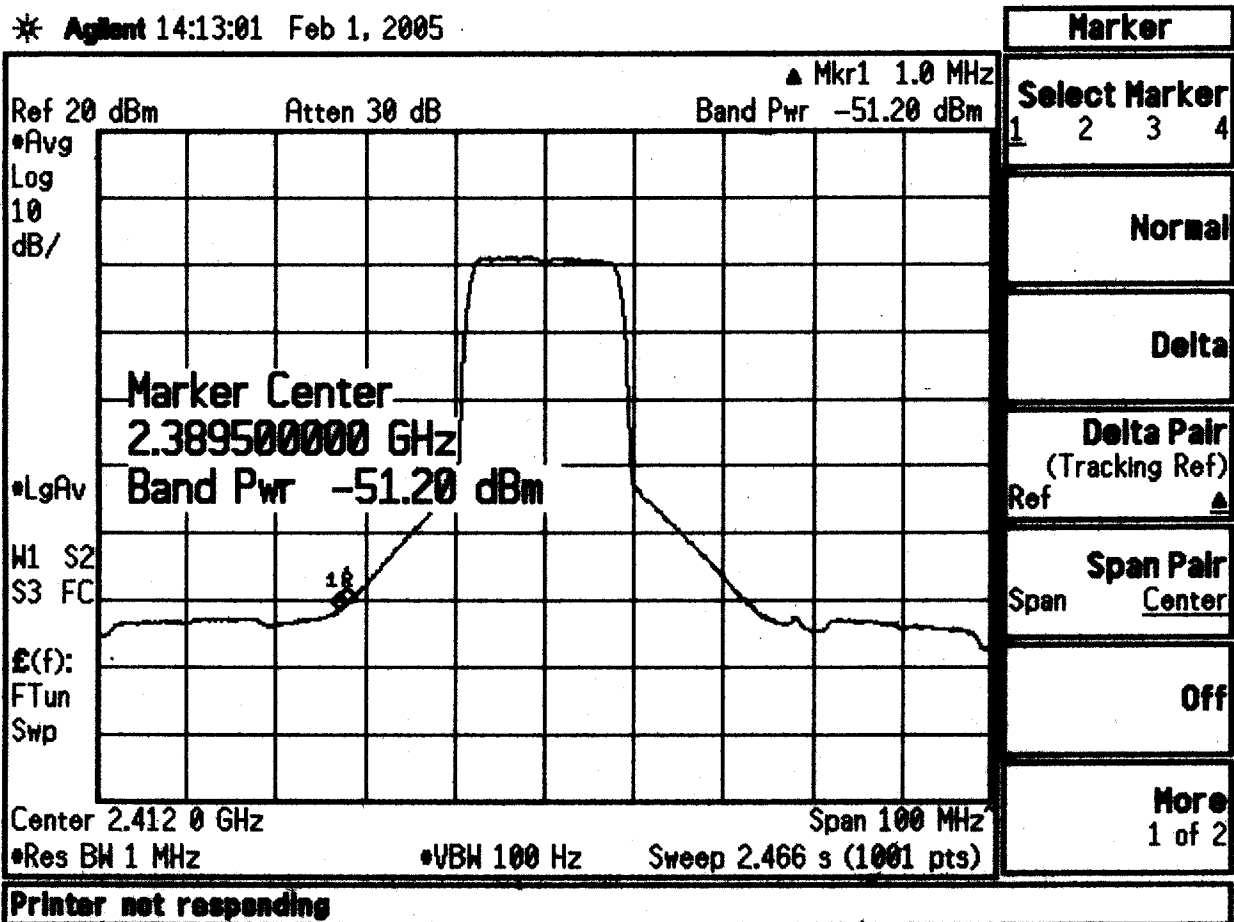
☐ - Test not applicable

- ☐ - TÜV America Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room
- ☒ - Cal Amp



Conducted out-of-band Emission Restricted band power

* Agilent 14:13:01 Feb 1, 2005



Continuous Tx

CTL 16 dBm

6 MBit rate - (G-mode)

Limit -41.3 dBm EIRP (500 uV/meter @ 3 meters)

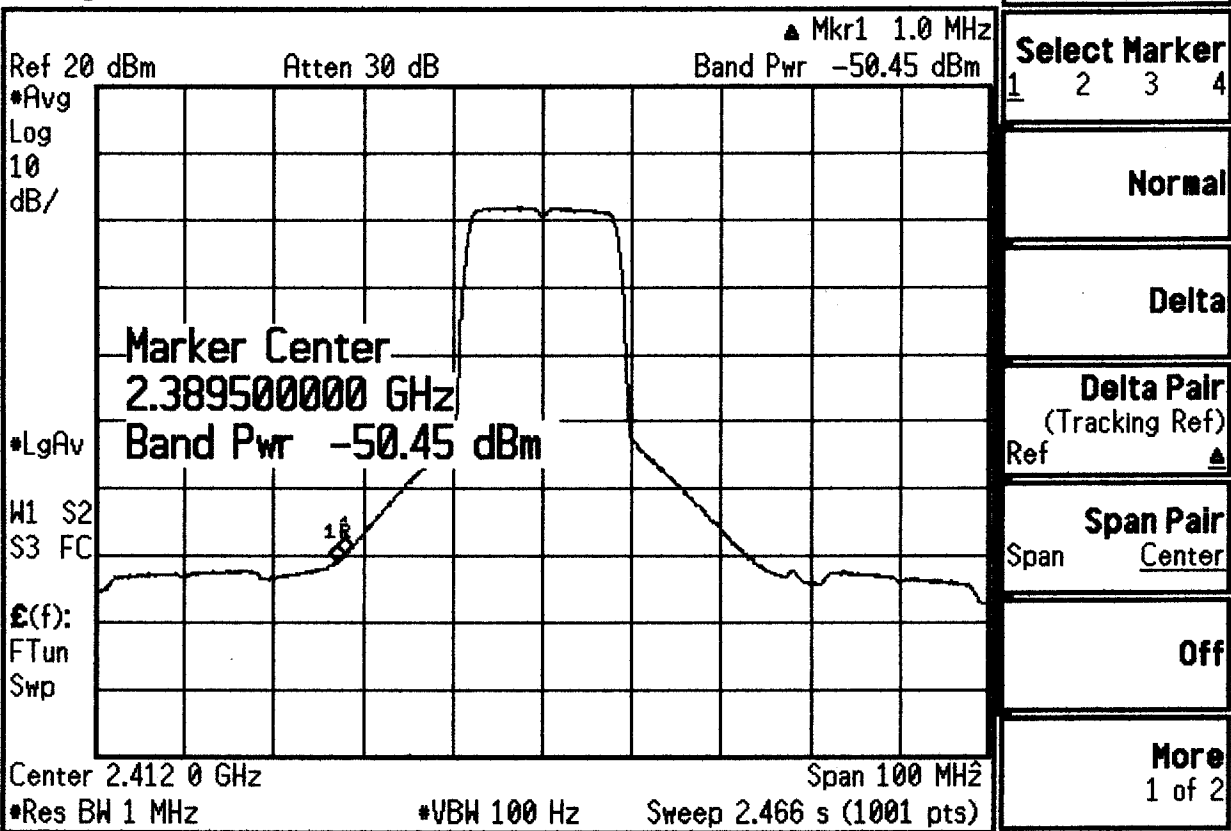
measured = -51.2 + 5.85 dBi = -45.35 dBm EIRP
ANT

FCC 15.205(a)

Restricted Band 2.31 - 2.39 GHz

Shows Compliance to FCC 15.209(a) Levels.

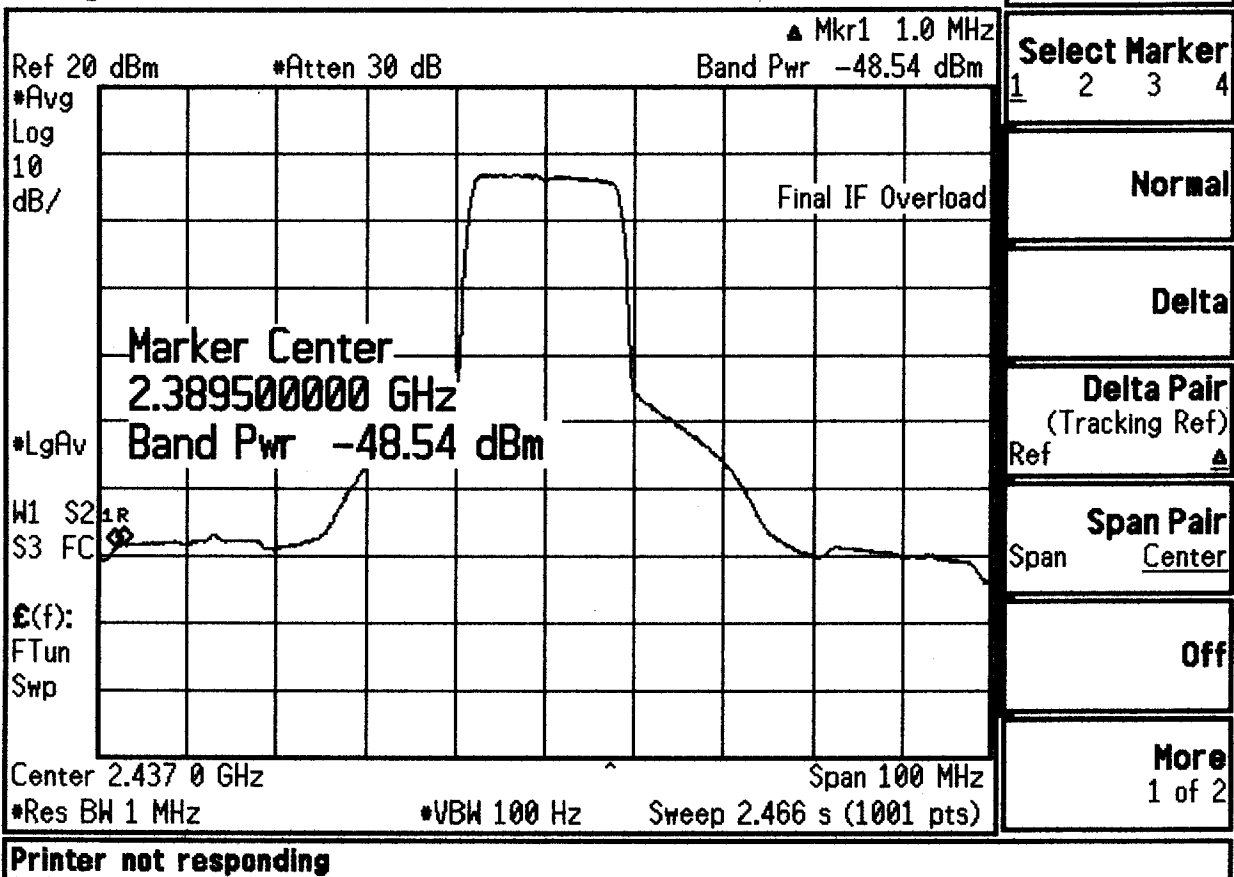
* Agilent 14:09:39 Feb 1, 2005



Print failed, Error transferring image to printer

Continuous TX
CTL 16 dBm
54 MBit rate

* Agilent 14:19:37 Feb 1, 2005



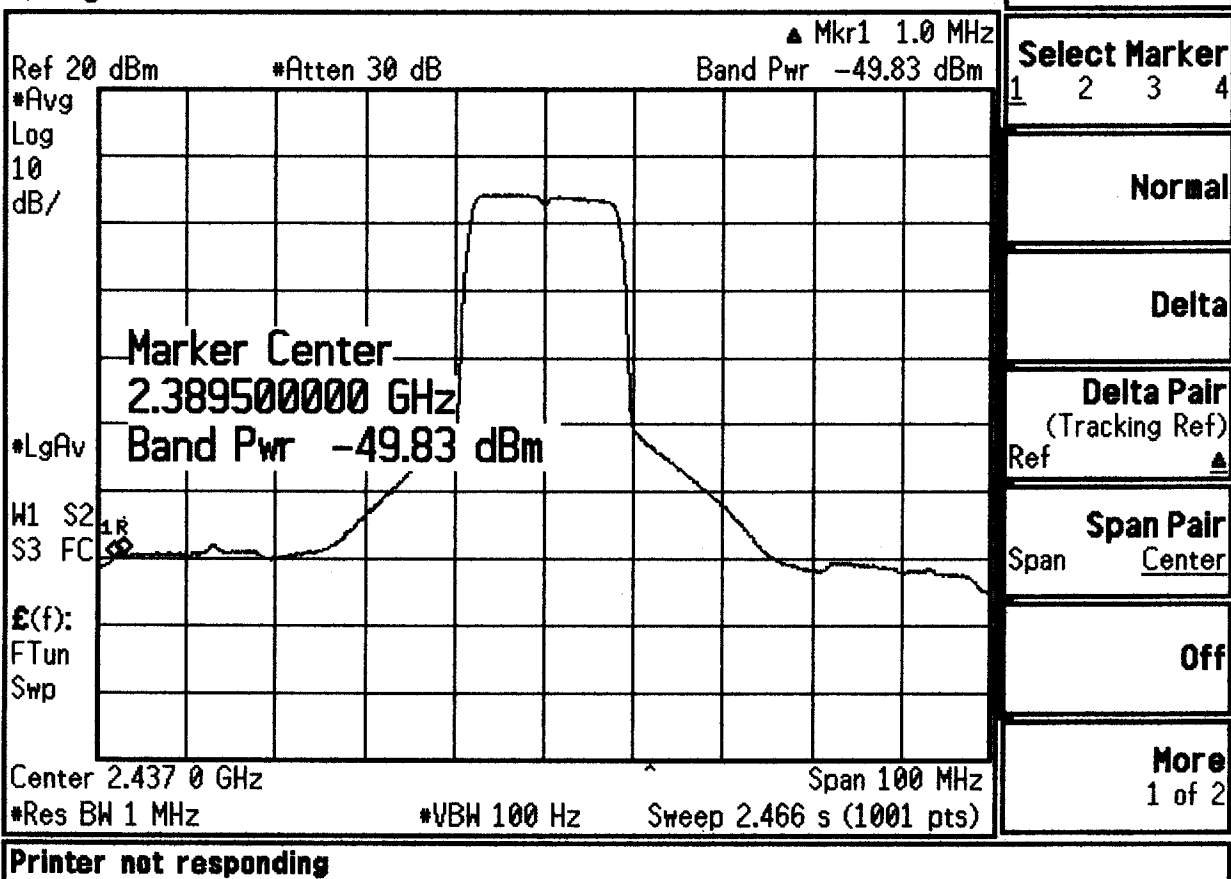
Continuous TX

CTL 22dBm

6MBit rate

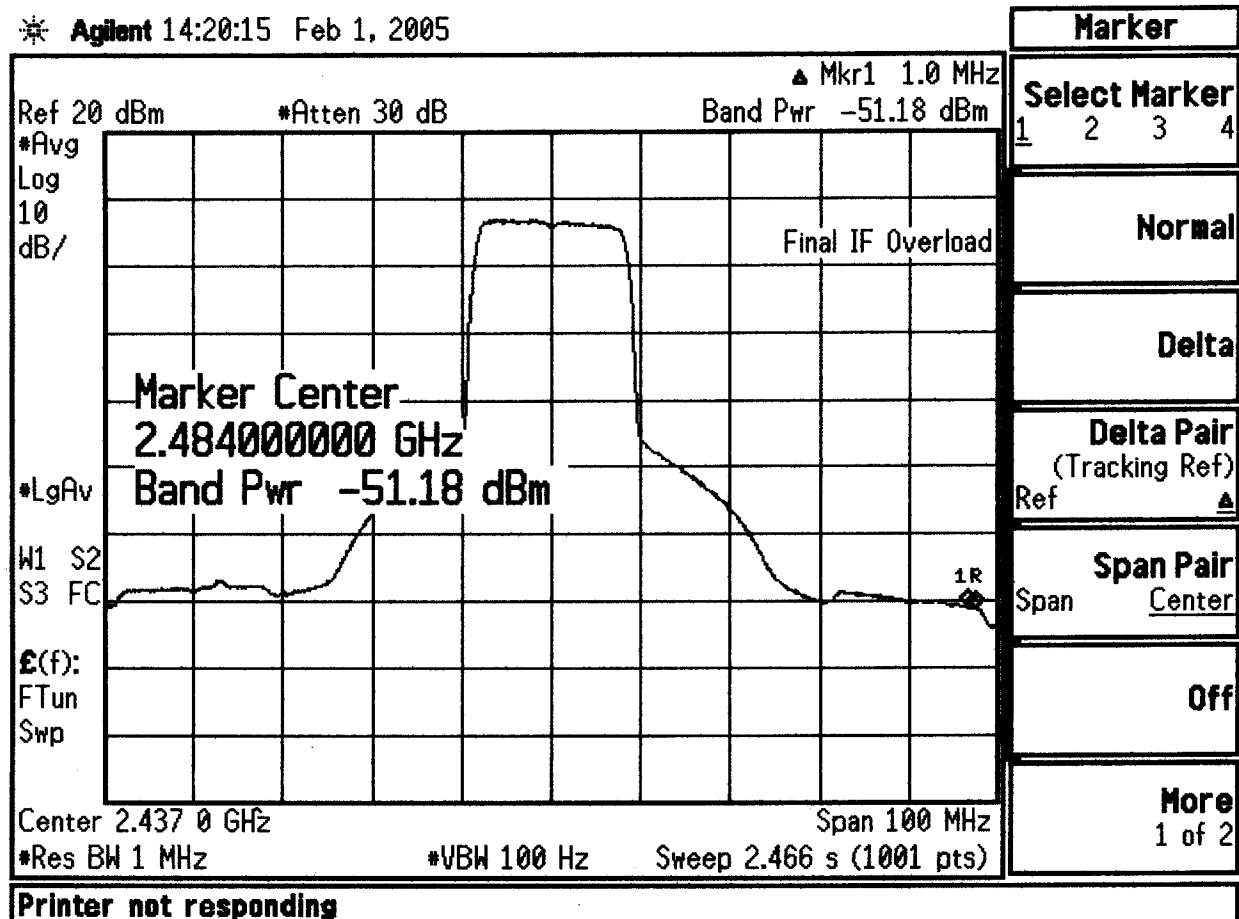
shows compliance at restricted band
edge at 2390 MHz

Agilent 14:19:01 Feb 1, 2005



Continuous TX
CTL 19dBm
54Mbit rate

Agilent 14:20:15 Feb 1, 2005



Continuous TX

CTL 22 dBm

6 MBit rate

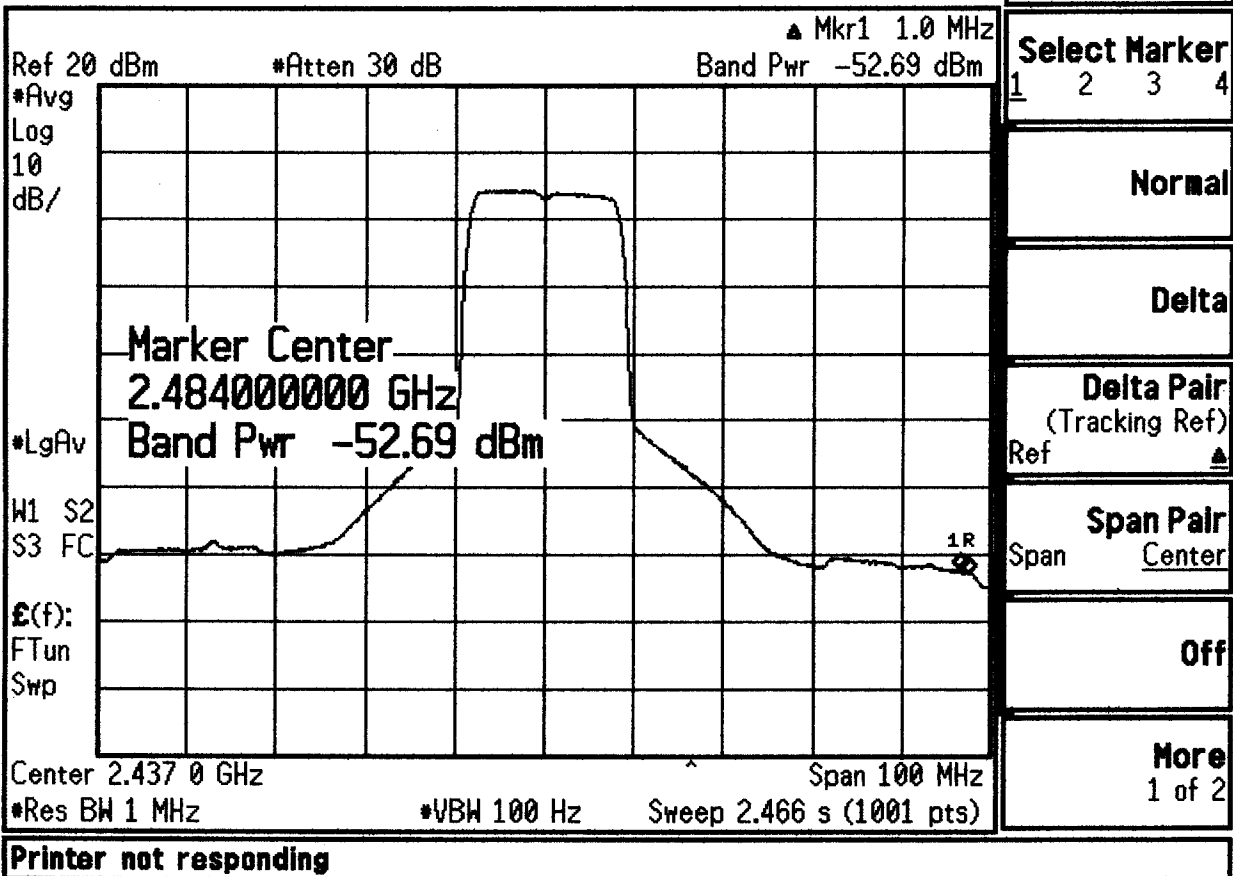
shows compliance at restricted band

2.4835-2.5 GHz

Limit = -41.3 dBm EIRP

calculated = -51.2 dBm + 5 dB = -46.2 dBm EIRP

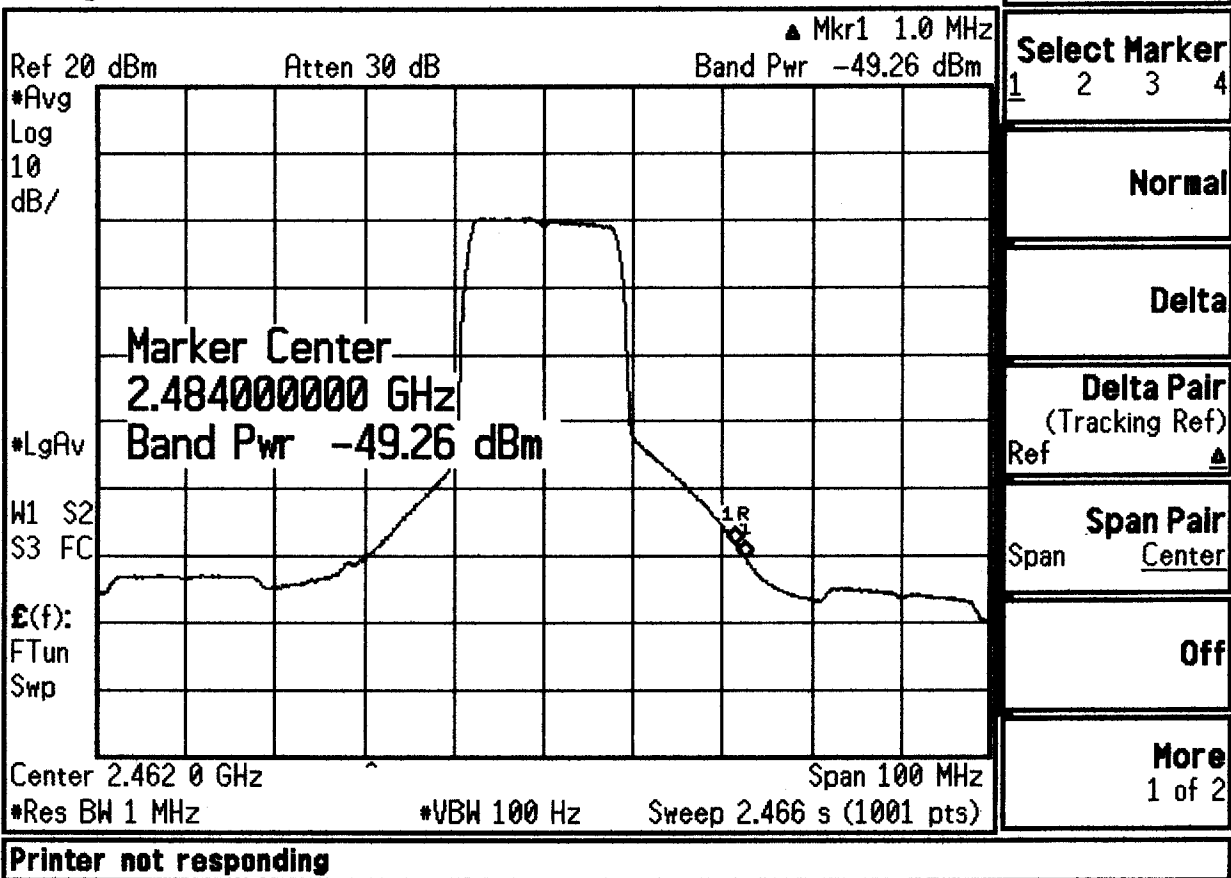
* Agilent 14:18:30 Feb 1, 2005



Continuous Tx
CTL 19dBm
54MBit rate

shows compliance at restricted band
edge at 2483.5 MHz

Agilent 14:11:04 Feb 1, 2005



Continuous Tx

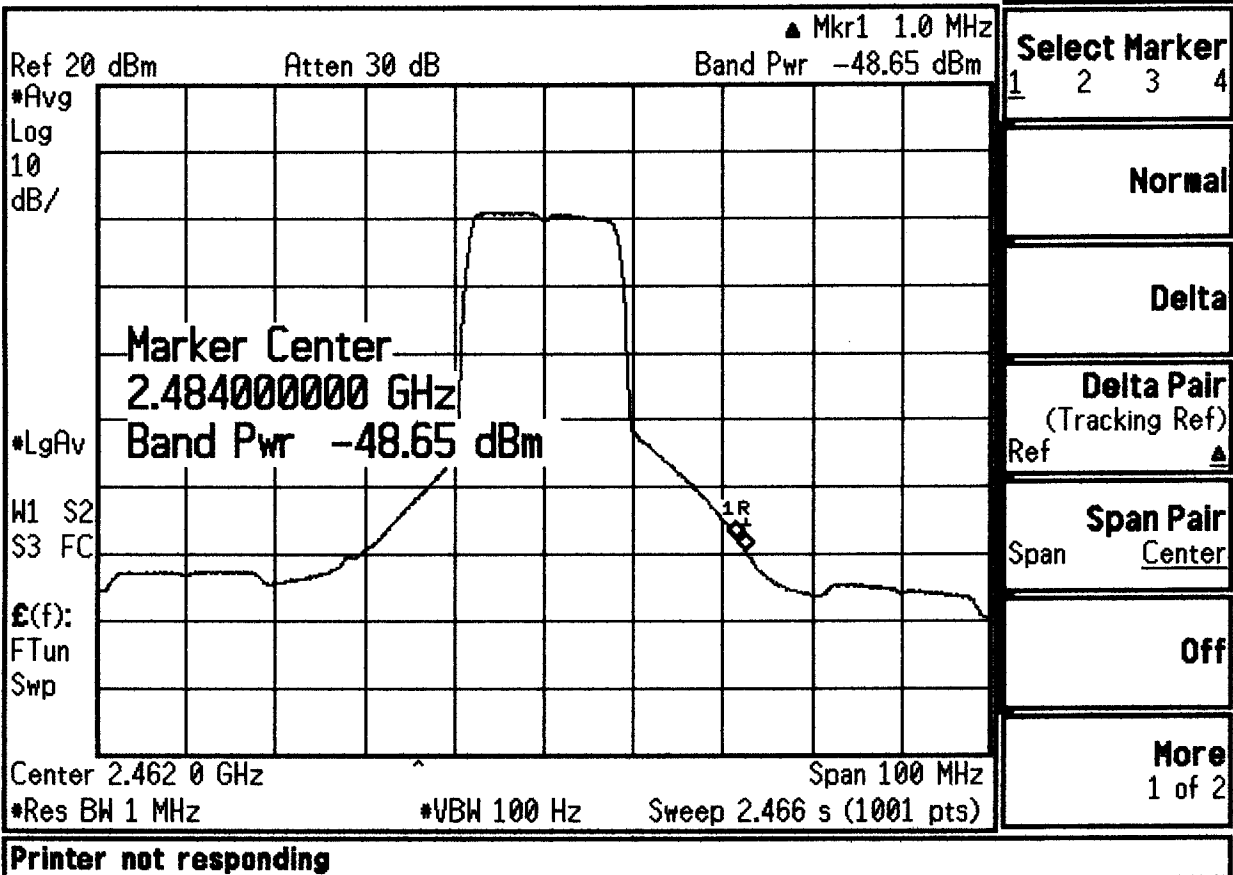
CTL 16 dBm

6 MBit rate

Limit = -41.3 dBm EIRP

calculated = -49.3 dBm + 5 dB = -44.3 dBm EIRP

* Agilent 14:14:57 Feb 1, 2005



Continuous Tx
CTL / 6 dBm
54 MBit rate

AC Line Conducted Emissions

Specifications:
CISPR 22

The *AC Line Conducted Emission* measurements were performed at the following test location:

☐ - Test not applicable

- - TUV America Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room
- ☐ - Cal Amp

Test Equipment Used:

	TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	2416	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN	8812-1437	Code B 05-Jan-06
■ -	3990	3816/2	ETS Lindgren	50 Ω LISN	00035359	Code B 27-May-05
■ -	3800	ESCS 30	Rhode & Schwarz	EMI Receiver	100312	18-Jan-06
■ -	2741	11947A	Hewlett-Packard	Transient Limiter	3107A00779	Code B 07-Dec-05

Cal Code B = Calibration verification performed internally.

Cal Code Y = Calibration not required when used with other calibrated equipment.

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

CONDUCTED EMISSIONS



Test Report #: WC500164 Run 8 Test Area: LTS

EUT Model #: DIRECTED AP Date: 2/5/05

EUT Serial #: Unit "A" EUT Power: 60 Hz 110 VAC Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT TRXing

Notes: Bothhand Enterprise Inc. SA06L48-V power supply

Data File Name: 0164.dat

Page: 1 of 5

List of measurements for run #: 8

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
150.0 kHz	40.84 Qp	0.0 / 0.05 / 0.0 / 10.0	50.89	N	-15.11	n/a
159.21 kHz	49.05 Qp	0.0 / 0.05 / 0.0 / 10.0	59.1	N	-6.41	n/a
234.02 kHz	42.33 Qp	0.0 / 0.04 / 0.0 / 9.9	52.27	N	-10.04	n/a
316.0 kHz	37.16 Qp	0.0 / 0.04 / 0.0 / 9.8	47.0	N	-12.81	n/a
702.22 kHz	30.97 Qp	0.0 / 0.04 / 0.0 / 10.0	41.01	N	-14.99	n/a
936.85 kHz	29.39 Qp	0.0 / 0.04 / 0.0 / 10.0	39.43	N	-16.57	n/a
1.48 MHz	30.95 Qp	0.0 / 0.04 / 0.0 / 10.0	40.99	N	-15.01	n/a
1.95 MHz	29.99 Qp	0.1 / 0.05 / 0.0 / 9.99	40.13	N	-15.87	n/a
2.03 MHz	30.13 Qp	0.1 / 0.05 / 0.0 / 9.94	40.22	N	-15.78	n/a
3.9 MHz	27.38 Qp	0.1 / 0.08 / 0.0 / 10.01	37.57	N	-18.43	n/a
5.07 MHz	32.24 Qp	0.1 / 0.09 / 0.0 / 10.02	42.45	N	-17.55	n/a
7.64 MHz	27.24 Qp	0.18 / 0.1 / 0.0 / 10.02	37.54	N	-22.46	n/a
10.69 MHz	33.74 Qp	0.2 / 0.23 / 0.0 / 10.0	44.17	N	-15.83	n/a
15.92 MHz	35.9 Qp	0.3 / 0.32 / 0.0 / 10.0	46.52	N	-13.48	n/a
19.4 MHz	35.22 Qp	0.3 / 0.39 / 0.0 / 10.04	45.95	N	-14.05	n/a
24.41 MHz	33.81 Qp	0.35 / 0.49 / 0.0 / 10.1	44.75	N	-15.25	n/a
150.0 kHz	25.41 Av	0.0 / 0.05 / 0.0 / 10.0	35.46	N	n/a	-20.54
159.21 kHz	32.52 Av	0.0 / 0.05 / 0.0 / 10.0	42.57	N	n/a	-12.94
234.02 kHz	26.28 Av	0.0 / 0.04 / 0.0 / 9.9	36.22	N	n/a	-16.09
316.0 kHz	23.16 Av	0.0 / 0.04 / 0.0 / 9.8	33.0	N	n/a	-16.81
702.22 kHz	27.78 Av	0.0 / 0.04 / 0.0 / 10.0	37.82	N	n/a	-8.18
936.85 kHz	27.2 Av	0.0 / 0.04 / 0.0 / 10.0	37.24	N	n/a	-8.76
1.48 MHz	28.26 Av	0.0 / 0.04 / 0.0 / 10.0	38.3	N	n/a	-7.7
1.95 MHz	26.28 Av	0.1 / 0.05 / 0.0 / 9.99	36.42	N	n/a	-9.58
2.03 MHz	24.83 Av	0.1 / 0.05 / 0.0 / 9.94	34.92	N	n/a	-11.08
3.9 MHz	22.45 Av	0.1 / 0.08 / 0.0 / 10.01	32.64	N	n/a	-13.36

Tested by: J. T. Schneider

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Joel T. Schneider

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Reviewed by: TKS

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Thomas K. Swanson

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CONDUCTED EMISSIONS



Test Report #: WC500164 Run 8 Test Area: LTS
EUT Model #: DIRECTED AP Date: 2/5/05
EUT Serial #: Unit "A" EUT Power: 60 Hz 110 VAC Temperature: 23.0 °C
Test Method: FCC B Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT TRXing

Notes: Bothhand Enterprise Inc. SA06L48-V power supply

Data File Name: 0164.dat

Page: 2 of 5

List of measurements for run #: 8

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp	DELTA2 EN55022 B Avg
5.07 MHz	27.47 Av	0.1 / 0.09 / 0.0 / 10.02	37.68	N	n/a	-12.32
7.64 MHz	22.99 Av	0.18 / 0.1 / 0.0 / 10.02	33.29	N	n/a	-16.71
15.92 MHz	14.23 Av	0.3 / 0.32 / 0.0 / 10.0	24.85	N	n/a	-25.15
19.4 MHz	36.01 Av	0.3 / 0.39 / 0.0 / 10.04	46.74	N	n/a	-3.26
24.41 MHz	35.11 Av	0.35 / 0.49 / 0.0 / 10.1	46.05	N	n/a	-3.95
936.85 kHz	30.78 Qp	0.0 / 0.04 / 0.0 / 10.0	40.82	L1	-15.18	n/a

Tested by: J. T. Schneider

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CONDUCTED EMISSIONS



Test Report #: WC500164 Run 8 Test Area: LTS

EUT Model #: DIRECTED AP Date: 2/5/05

EUT Serial #: Unit "A" EUT Power: 60 Hz 110 VAC Temperature: 23.0 °C

Test Method: FCC B Air Pressure: 99.0 kPa

Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT TRXing

Notes: Bothhand Enterprise Inc. SA06L48-V power supply

Data File Name: 0164.dat

Page: 3 of 5

Measurement summary for limit1: EN55022 B Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA1 EN55022 B Qp
159.21 kHz	49.05 Qp	0.0 / 0.05 / 0.0 / 10.0	59.1	N	-6.41
234.02 kHz	42.33 Qp	0.0 / 0.04 / 0.0 / 9.9	52.27	N	-10.04
316.0 kHz	37.16 Qp	0.0 / 0.04 / 0.0 / 9.8	47.0	N	-12.81
15.92 MHz	35.9 Qp	0.3 / 0.32 / 0.0 / 10.0	46.52	N	-13.48
19.4 MHz	35.22 Qp	0.3 / 0.39 / 0.0 / 10.04	45.95	N	-14.05
702.22 kHz	30.97 Qp	0.0 / 0.04 / 0.0 / 10.0	41.01	N	-14.99
1.48 MHz	30.95 Qp	0.0 / 0.04 / 0.0 / 10.0	40.99	N	-15.01
150.0 kHz	40.84 Qp	0.0 / 0.05 / 0.0 / 10.0	50.89	N	-15.11
936.85 kHz	30.78 Qp	0.0 / 0.04 / 0.0 / 10.0	40.82	L1	-15.18
24.41 MHz	33.81 Qp	0.35 / 0.49 / 0.0 / 10.1	44.75	N	-15.25
2.03 MHz	30.13 Qp	0.1 / 0.05 / 0.0 / 9.94	40.22	N	-15.78
10.69 MHz	33.74 Qp	0.2 / 0.23 / 0.0 / 10.0	44.17	N	-15.83
1.95 MHz	29.99 Qp	0.1 / 0.05 / 0.0 / 9.99	40.13	N	-15.87
5.07 MHz	32.24 Qp	0.1 / 0.09 / 0.0 / 10.02	42.45	N	-17.55
3.9 MHz	27.38 Qp	0.1 / 0.08 / 0.0 / 10.01	37.57	N	-18.43
7.64 MHz	27.24 Qp	0.18 / 0.1 / 0.0 / 10.02	37.54	N	-22.46

Tested by: J. T. Schneider

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Signature

Reviewed by: TKS

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CONDUCTED EMISSIONS



Test Report #: WC500164 Run 8 Test Area: LTS
EUT Model #: DIRECTED AP Date: 2/5/05
EUT Serial #: Unit "A" EUT Power: 60 Hz 110 VAC Temperature: 23.0 °C
Test Method: FCC B Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %

EUT Description: WIRELESS ACCESS POINT TRXing

Notes: Bothhand Enterprise Inc. SA06L48-V power supply

Data File Name: 0164.dat

Page: 4 of 5

Measurement summary for limit2: EN55022 B Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	EUT Lead	DELTA2 EN55022 B Avg
19.4 MHz	36.01 Av	0.3 / 0.39 / 0.0 / 10.04	46.74	N	-3.26
24.41 MHz	35.11 Av	0.35 / 0.49 / 0.0 / 10.1	46.05	N	-3.95
1.48 MHz	28.26 Av	0.0 / 0.04 / 0.0 / 10.0	38.3	N	-7.7
702.22 kHz	27.78 Av	0.0 / 0.04 / 0.0 / 10.0	37.82	N	-8.18
936.85 kHz	27.2 Av	0.0 / 0.04 / 0.0 / 10.0	37.24	N	-8.76
1.95 MHz	26.28 Av	0.1 / 0.05 / 0.0 / 9.99	36.42	N	-9.58
2.03 MHz	24.83 Av	0.1 / 0.05 / 0.0 / 9.94	34.92	N	-11.08
5.07 MHz	27.47 Av	0.1 / 0.09 / 0.0 / 10.02	37.68	N	-12.32
159.21 kHz	32.52 Av	0.0 / 0.05 / 0.0 / 10.0	42.57	N	-12.94
3.9 MHz	22.45 Av	0.1 / 0.08 / 0.0 / 10.01	32.64	N	-13.36
234.02 kHz	26.28 Av	0.0 / 0.04 / 0.0 / 9.9	36.22	N	-16.09
7.64 MHz	22.99 Av	0.18 / 0.1 / 0.0 / 10.02	33.29	N	-16.71
316.0 kHz	23.16 Av	0.0 / 0.04 / 0.0 / 9.8	33.0	N	-16.81
150.0 kHz	25.41 Av	0.0 / 0.05 / 0.0 / 10.0	35.46	N	-20.54
15.92 MHz	14.23 Av	0.3 / 0.32 / 0.0 / 10.0	24.85	N	-25.15

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Joel T. Schneider

Signature

Reviewed by: TKS

Printed

Thomas K. Swanson

Signature

CONDUCTED EMISSIONS



Test Report #: WC500164 Run 8 Test Area: LTS
EUT Model #: DIRECTED AP Date: 2/5/05
EUT Serial #: Unit "A" EUT Power: 60 Hz 110 VAC Temperature: 23.0 °C
Test Method: FCC B Air Pressure: 99.0 kPa
Customer: CALAMP Rel. Humidity: 20.0 %

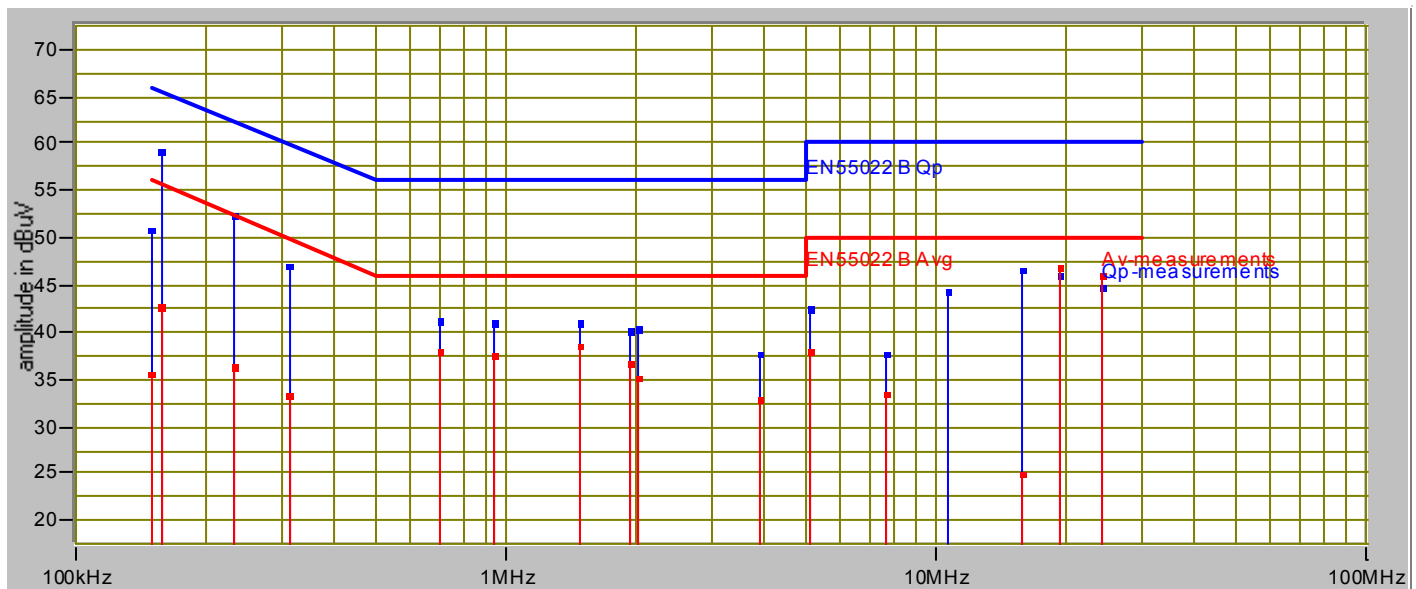
EUT Description: WIRELESS ACCESS POINT TRXing

Notes: Bothhand Enterprise Inc. SA06L48-V power supply

Data File Name: 0164.dat

Page: 5 of 5

Graph:



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Thomas K. Swanson

Signature

Receiver Spurious Radiated Emissions

Specifications:

FCC Specification: Paragraph: 15.109

The *Receiver Spurious Emission* measurements were performed at the following test location:

■ - Test not applicable

- ☐ - TUV America Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☐ - Oakwood Lab (Open Area Test Site)
- ☐ - Wild River Lab Screen Room
- ☐ - Cal Amp

