



**FCC CFR47 PART 15 SUBPART C
CLASS II PERMISSIVE CHANGE
CERTIFICATION
TEST REPORT**

FOR

BLUETOOTH REMOTE

MODEL NUMBER: PWR-07-01

FCC ID: QYPPWR0701

REPORT NUMBER: 03U2382-1

ISSUE DATE: JANUARY 6, 2004

Prepared for
POLYMAP WIRELESS
310 SOUTH WILLIAMS BLVD. SUITE 346
TUSCON, ARIZONA 85711
U.S.A

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. DESCRIPTION OF EUT AND CLASS II PERMISSIVE CHANGE..... | 4 |
| 3. TEST METHODOLOGY | 5 |
| 4. FACILITIES AND ACCREDITATION..... | 5 |
| 5. CALIBRATION AND UNCERTAINTY | 6 |
| 5.1. <i>MEASURING INSTRUMENT CALIBRATION</i> | <i>6</i> |
| 5.2. <i>MEASUREMENT UNCERTAINTY</i> | <i>6</i> |
| 5.3. <i>TEST AND MEASUREMENT EQUIPMENT</i> | <i>7</i> |
| 6. SETUP OF EQUIPMENT UNDER TEST..... | 8 |
| 7. APPLICABLE LIMITS AND TEST RESULTS..... | 10 |
| 7.1. <i>MAXIMUM PERMISSIBLE EXPOSURE.....</i> | <i>10</i> |
| 7.2. <i>CONDUCTED SPURIOUS EMISSIONS</i> | <i>13</i> |
| 7.3. <i>RADIATED EMISSIONS.....</i> | <i>22</i> |
| 7.3.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS | 22 |
| 7.3.2. TRANSMITTER RADIATED EMISSIONS ABOVE 1 GHZ..... | 25 |
| 7.3.3. WORST-CASE RADIATED EMISSIONS BELOW 1 GHZ..... | 34 |
| 8. SETUP PHOTOS..... | 36 |

1. TEST RESULT CERTIFICATION

COMPANY NAME: POLYMAP WIRELESS
310 SOUTH WILLIAMS BLVD. SUITE 346
TUSCON, ARIZONA 85711
U.S.A

EUT DESCRIPTION: BLUETOOTH REMOTE

MODEL: PWR-07-01

DATE TESTED: NOVEMBER 24 – DECEMBER 1, 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.

Approved & Released For CCS By:



MIKE HECKROTTE
CHIEF ENGINEER
COMPLIANCE CERTIFICATION SERVICES

Tested By:



NEELESH RAJ
EMC TECHNICIAN
COMPLIANCE CERTIFICATION SERVICES

2. DESCRIPTION OF EUT AND CLASS II PERMISSIVE CHANGE

The EUT is a battery powered Bluetooth transceiver with a maximum output power of 0.0021 Watts (3.22 dBm) over the frequency range of 2402 to 2480 MHz.

DESCRIPTION OF CHANGES

1. Switched from a chip antenna soldered to the PCB to a strip antenna connected via a coaxial cable. The peak gain of the antenna is 3.0 dBi.
2. Added a "WAKE-UP" feature to the voltage regulator, which feeds power (3.3VDC) to the circuit. This involved:
 - Switching regulators to one which has this new "SHUT DOWN" feature (same manufacturer and same line of LDO regulators)
 - Increased connector size to allow one more input signal called "WAKE UP" from host system.
 - Routed one more net from the micro-controller's GPIOs: "STAY AWAKE".
3. Reduced pull-up resistor size to enhance 2-wire bus stability (50K to 20K ohms).
4. Added filter to power input of RS232 driver (one series 10 ohm resistor).
5. Added capability to bypass RS232 driver (in case we want to drive a 3.3VDC serial interface instead of the current +/- 12VDC PC standard).

3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4/2001, FCC CFR 47 Part 2 and FCC CFR 47 Part 15.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.



No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government.

5. CALIBRATION AND UNCERTAINTY

5.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

5.2. MEASUREMENT UNCERTAINTY

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

| PARAMETER | UNCERTAINTY |
|-------------------------------------|----------------|
| Radiated Emission, 30 to 200 MHz | +/- 3.3 dB |
| Radiated Emission, 200 to 1000 MHz | +4.5 / -2.9 dB |
| Radiated Emission, 1000 to 2000 MHz | +4.5 / -2.9 dB |
| Power Line Conducted Emission | +/- 2.9 dB |

Uncertainty figures are valid to a confidence level of 95%.

5.3. TEST AND MEASUREMENT EQUIPMENT

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

| TEST EQUIPMENT LIST | | | | |
|-----------------------------------|---------------|------------|------------|------------|
| Name of Equipment | Manufacturer | Model No. | Serial No. | Due Date |
| Spectrum Analyzer 3Hz ~ 26.5 GHz | Agilent | E4440A | US41421507 | 5/8/2004 |
| Spectrum Analyzer 3Hz ~ 44 GHz | Agilent | E4446A | US42510266 | 7/23/2004 |
| RF Filter Section | HP | 85420E | 3705A00256 | 11/21/2004 |
| EMI Receiver, 9 kHz ~ 2.9 GHz | HP | 8542E | 3942A00286 | 11/21/2004 |
| Antenna, Bicon/Log, 25 ~ 2000 MHz | ARA | LPB-2520/A | 1185 | 3/6/2004 |
| Antenna, Horn 1 ~ 18 GHz | EMCO | 3115 | 6717 | 2/4/2004 |
| Antenna, Horn, 18 ~ 26 GHz | ARA | MWH-1826/B | 1013 | 2/2/2004 |
| Amplifier 1-26GHz | MITEQ | NSP2600-SP | 924342 | 4/25/2004 |
| 2.4-2.5 GHz Reject Filter | Micro-Tronics | BRM50702 | 1 | N/A |
| 10dB Attenuator | Weinschel | 56-10 | K16148 | N/A |

6. SETUP OF EQUIPMENT UNDER TEST

SUPPORT EQUIPMENT

| TEST PERIPHERALS | | | | |
|------------------|--------------|--------------|-----------------|--------|
| Device Type | Manufacturer | Model Number | Serial Number | FCC ID |
| ADAPTER BOARD | POLYMAP | 94U-0,34-03 | N/A | N/A |
| AC ADAPTER | CUI, INC. | 35-6-200 | N/A | N/A |
| REMOTE LAPTOP | FUJITSU | FPC03014A | 841570 | DoC |
| AC ADAPTER | SAMSUNG | PSCU480103A | 980903122 REV.A | N/A |

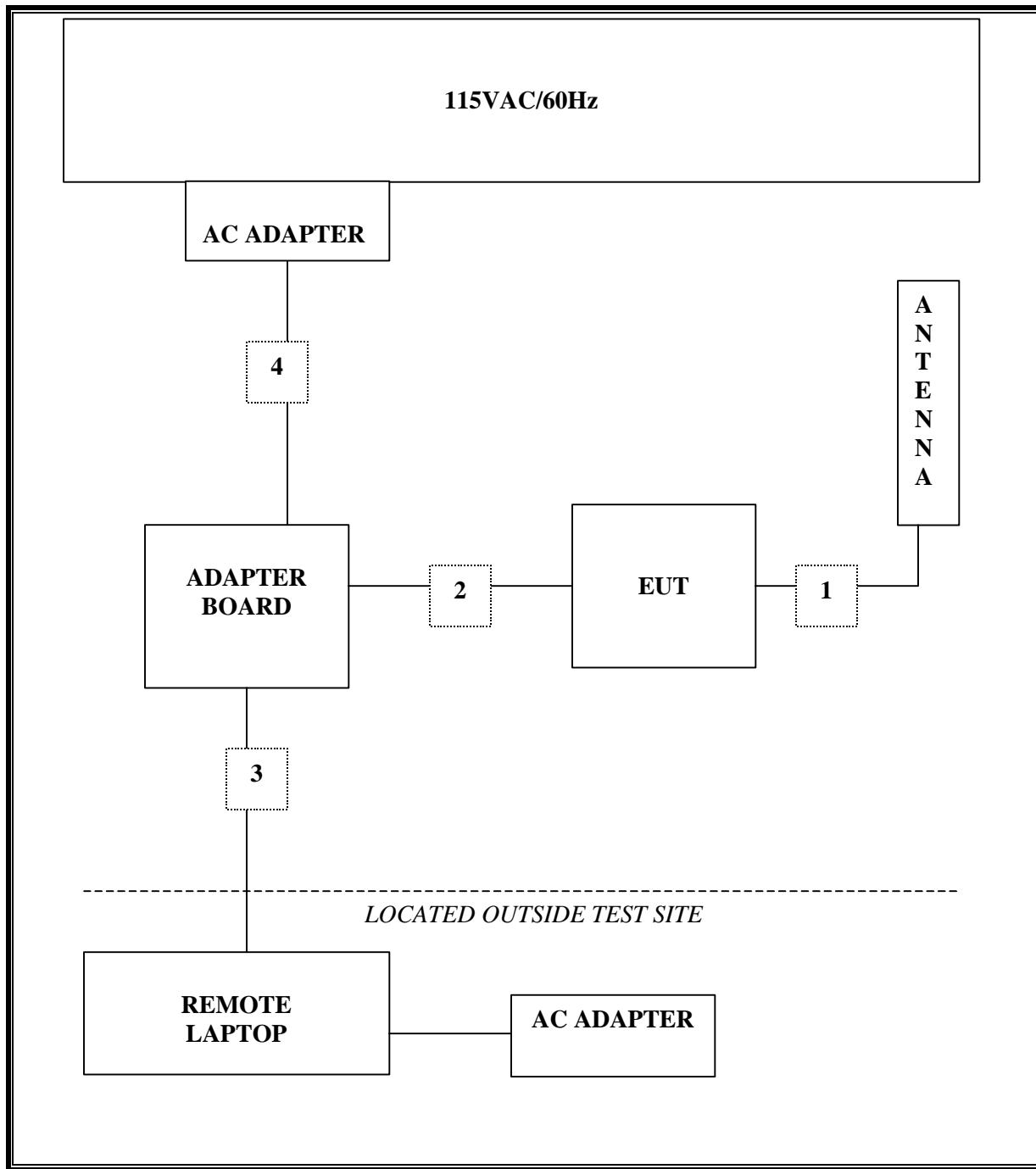
I/O CABLES

| TEST I/O CABLES | | | | | | | | |
|-----------------|----------|---------------|----------------|---------------|--------------|--------------|---------|--------|
| Cable No | I/O Port | # of I/O Port | Connector Type | Type of Cable | Cable Length | Data Traffic | Bundled | Remark |
| 1 | ANTENNA | 1 | UFL | SHIELDED | 0.2M | YES | NO | N/A |
| 2 | CNTL/PWR | 1 | 12 PIN | UNSHIELDED | 0.15M | YES | NO | N/A |
| 3 | SERIAL | 1 | DB9 | SHIELDED | 2.74M | YES | NO | N/A |
| 4 | DC PWR | 1 | DC PWR | UNSHIELDED | 1.86M | NO | NO | N/A |

TEST SETUP

The EUT was connected to the remote laptop (located outside the test site) via the adapter board (serial port). Both the module and antenna were tested in the X, Y, and Z positions, Y position was found to be worst case and all testing was done in the worst-case position. During the testing process the EUT was placed in a continuous transmit mode using a test utility program residing in the remote laptop.

SETUP DIAGRAM FOR TESTS



7. APPLICABLE LIMITS AND TEST RESULTS

7.1. MAXIMUM PERMISSIBLE EXPOSURE

LIMITS

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposures | | | | |
| 0.3–3.0 | 614 | 1.63 | *(100) | 6 |
| 3.0–30 | 1842/f | 4.89/f | *(900/f ²) | 6 |
| 30–300 | 61.4 | 0.163 | 1.0 | 6 |
| 300–1500 | | | f/300 | 6 |
| 1500–100,000 | | | 5 | 6 |
| (B) Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3–1.34 | 614 | 1.63 | *(100) | 30 |
| 1.34–30 | 824/f | 2.19/f | *(180/f ²) | 30 |

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|-----------------------|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| 30–300 | 27.5 | 0.073 | 0.2 | 30 |
| 300–1500 | | | f/1500 | 30 |
| 1500–100,000 | | | 1.0 | 30 |

f = frequency in MHz

* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

CALCULATIONS

Given

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

and

$$S = E^2 / 3770$$

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 Power to mW and Distance to cm, using:

$$P (\text{mW}) = P (\text{W}) / 1000 \text{ and}$$

$$d (\text{cm}) = 100 * d (\text{m})$$

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/cm²

Substituting the logarithmic form of power and gain using:

$$P (\text{mW}) = 10^{(P (\text{dBm}) / 10)} \text{ and}$$

$$G (\text{numeric}) = 10^{(G (\text{dBi}) / 10)}$$

yields

$$d = 0.282 * 10^{(P + G) / 20} / \sqrt{S} \quad \text{Equation (1)}$$

where

d = MPE distance in cm

P = Power in dBm

G = Antenna Gain in dBi

S = Power Density Limit in mW/cm²

Equation (1) and the measured peak power is used to calculate the MPE distance.

LIMITS

From §1.1310 Table 1 (B), $S = 1.0 \text{ mW/cm}^2$

RESULTS

No non-compliance noted:

| Power Density Limit (mW/cm ²) | Output Power (dBm) | Antenna Gain (dBi) | MPE Distance (cm) |
|---|--------------------|--------------------|-------------------|
| 1.0 | 3.22 | 3.00 | 0.58 |

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.

7.2. CONDUCTED SPURIOUS EMISSIONS

LIMITS

§15.247 (c) 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)).

TEST PROCEDURE

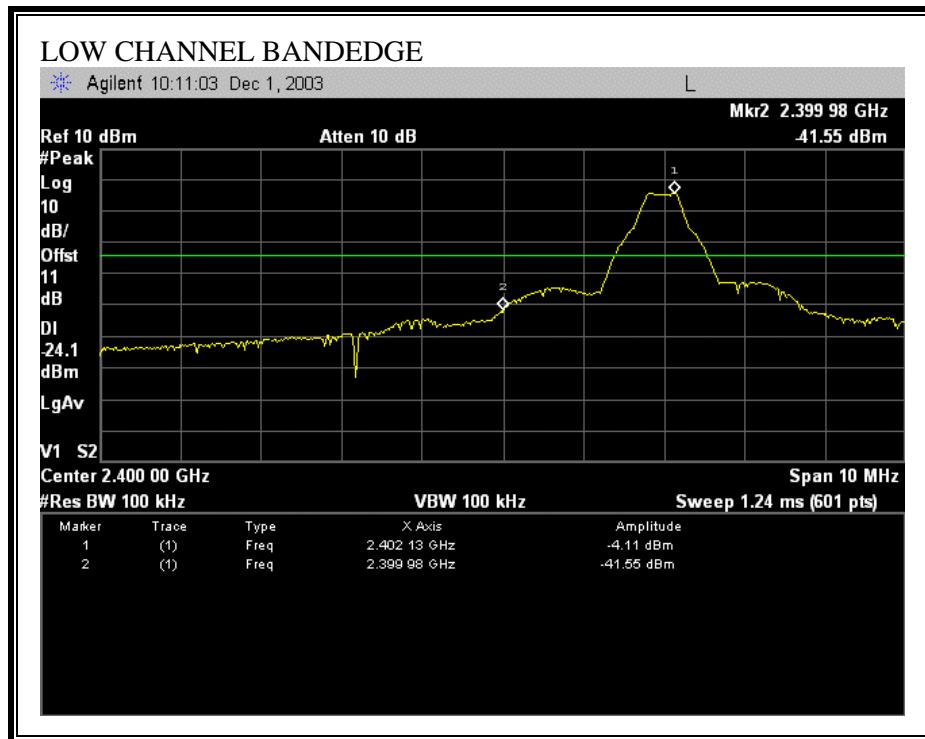
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 100 kHz.

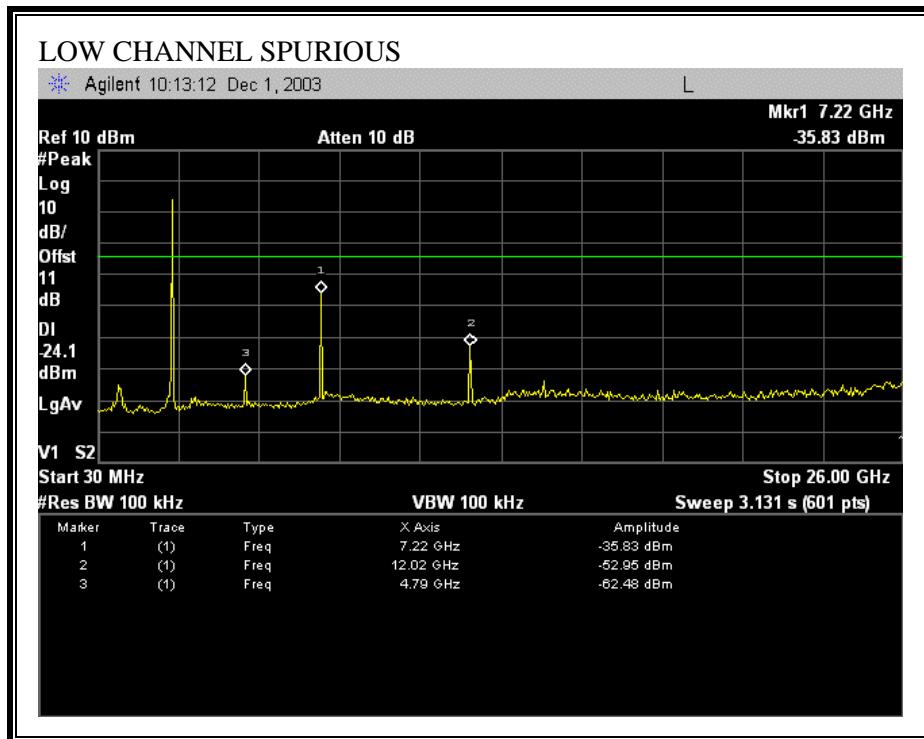
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

RESULTS

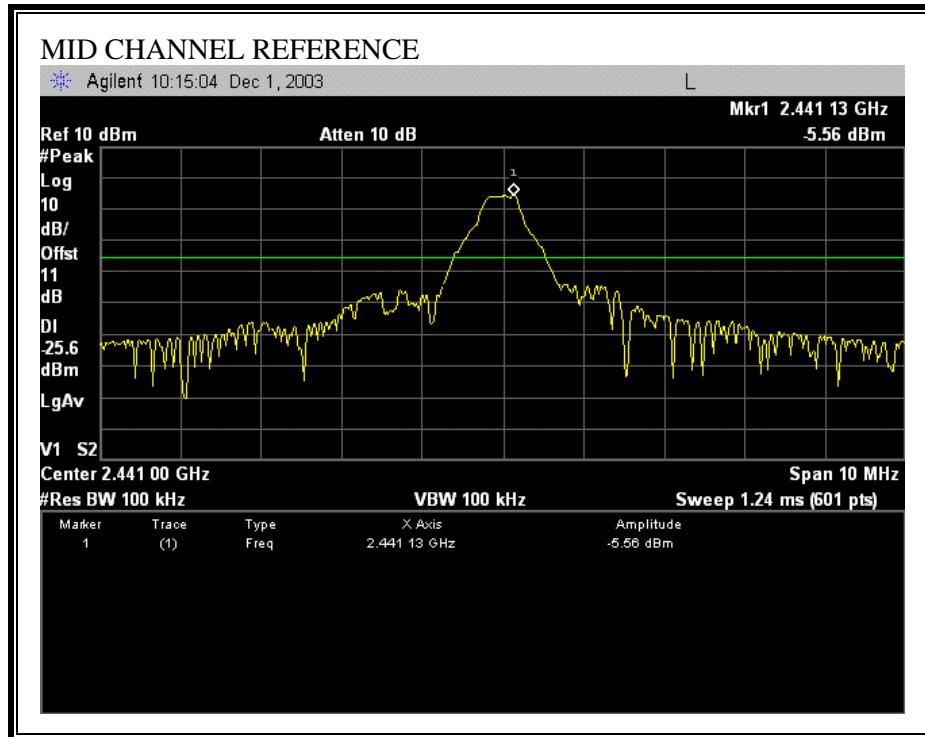
No non-compliance noted:

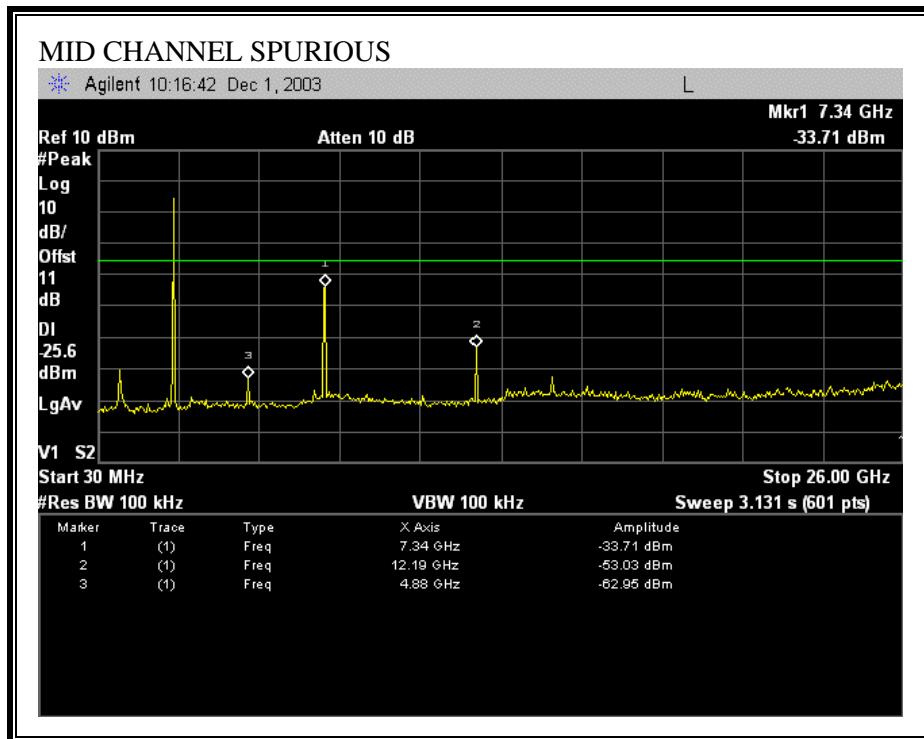
SPURIOUS EMISSIONS, LOW CHANNEL



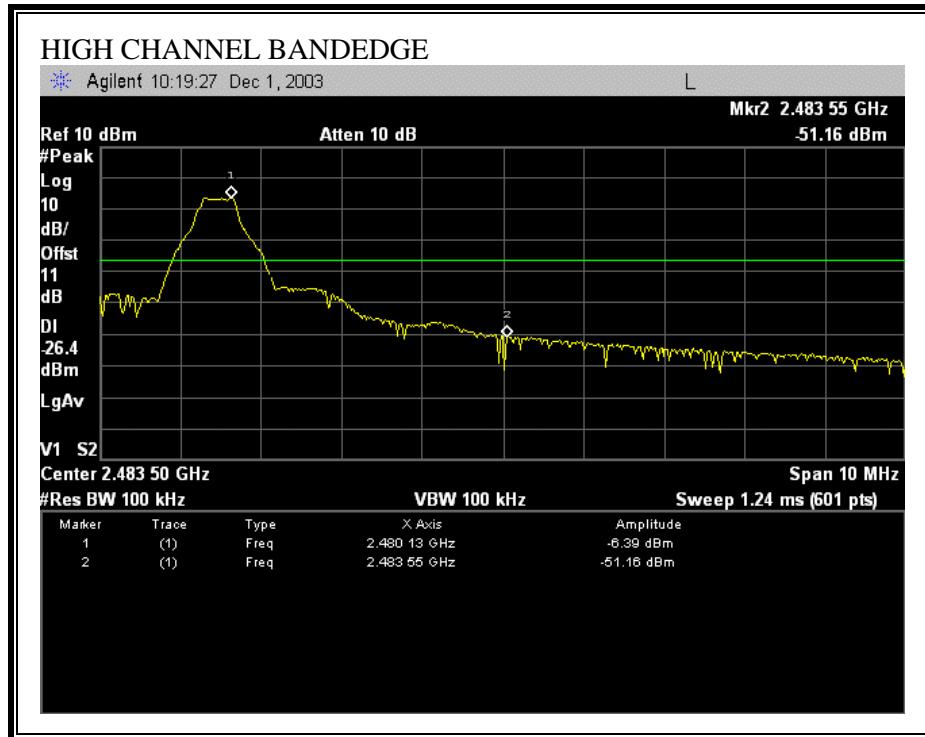


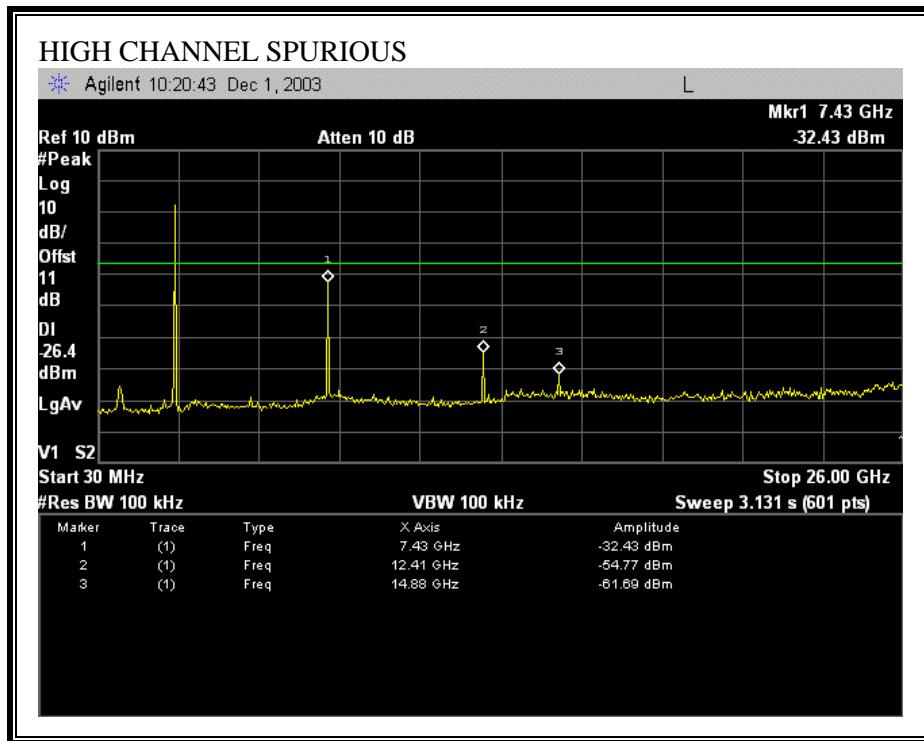
SPURIOUS EMISSIONS, MID CHANNEL



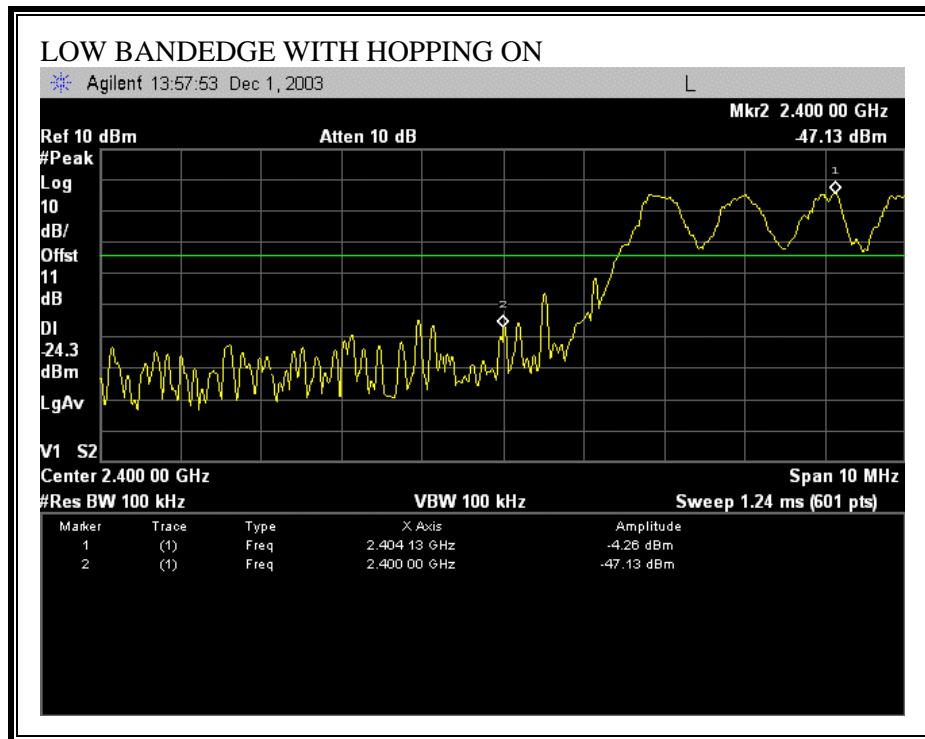


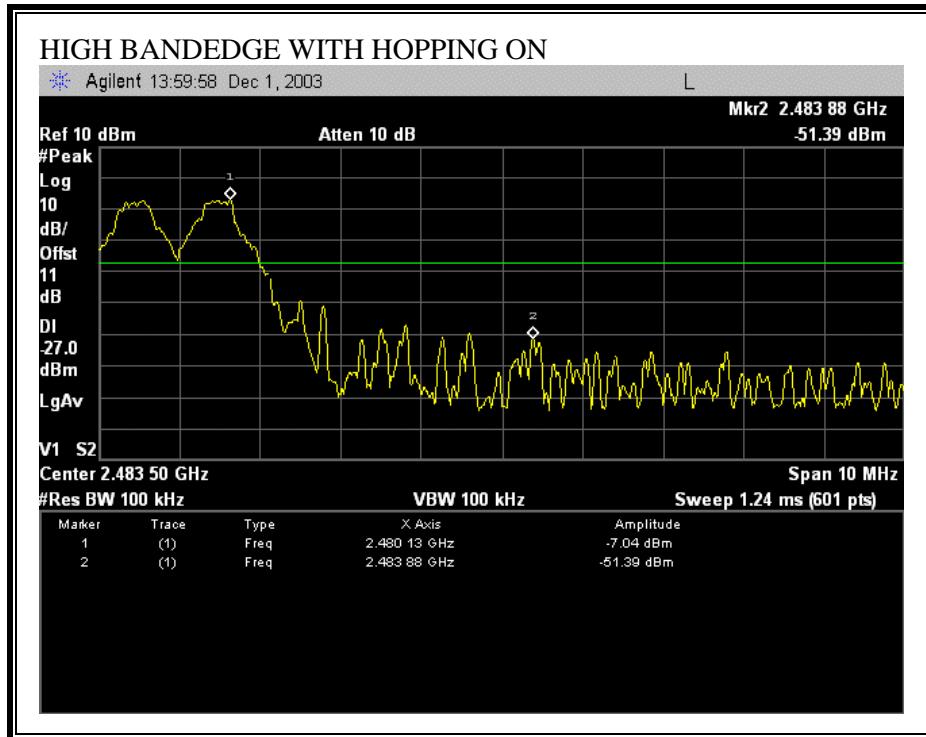
SPURIOUS EMISSIONS, HIGH CHANNEL





SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON





7.3. RADIATED EMISSIONS

7.3.1. TRANSMITTER RADIATED SPURIOUS EMISSIONS

LIMITS

§15.205 (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

§15.205 (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.

§15.209 (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.

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

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

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.

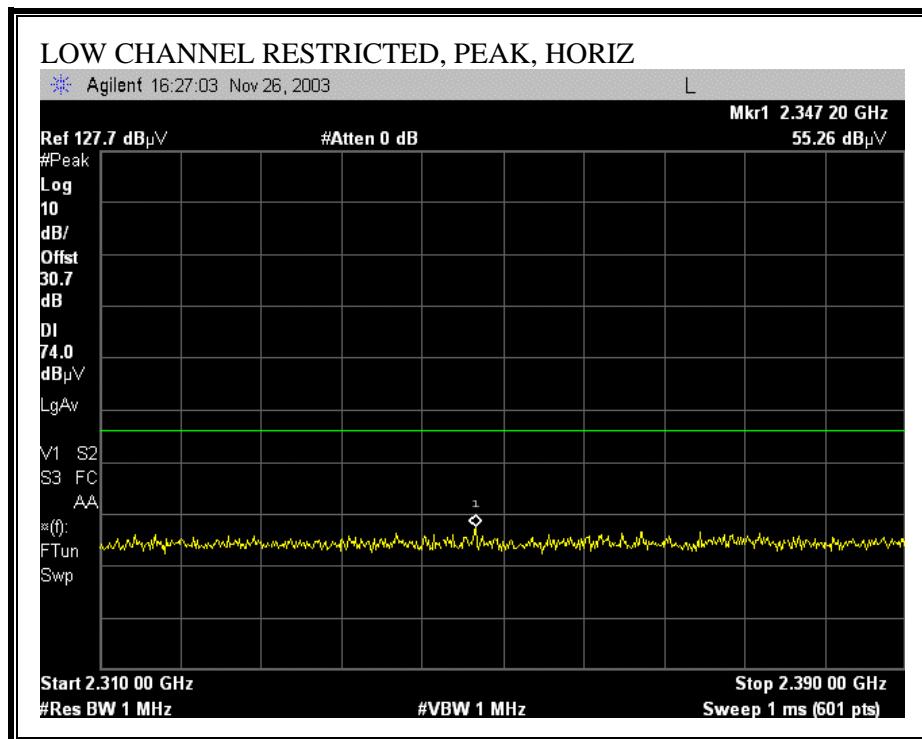
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

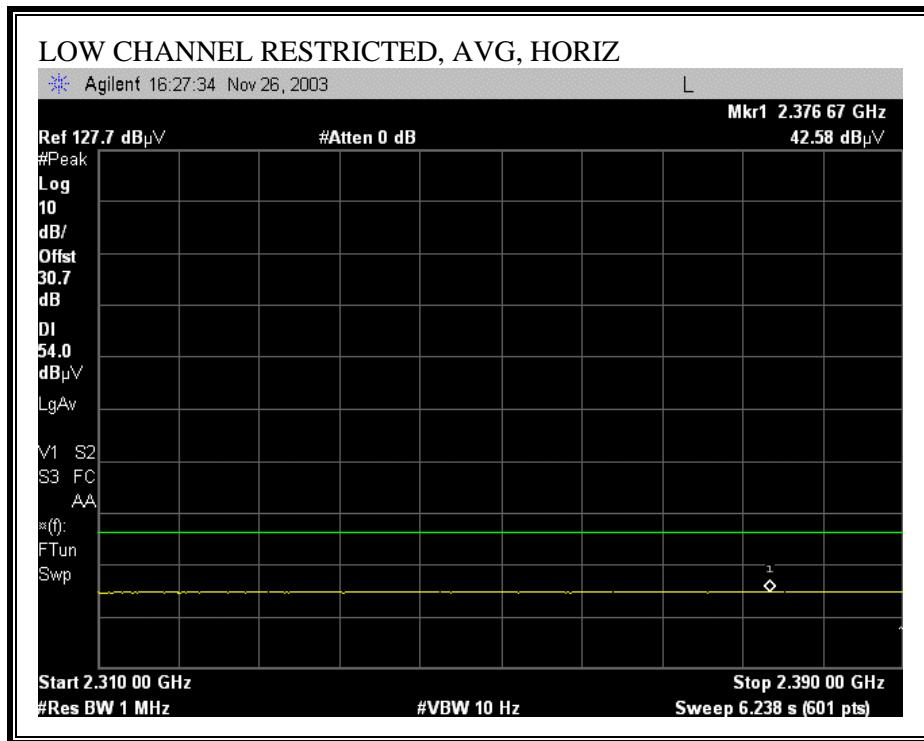
RESULTS

No non-compliance noted:

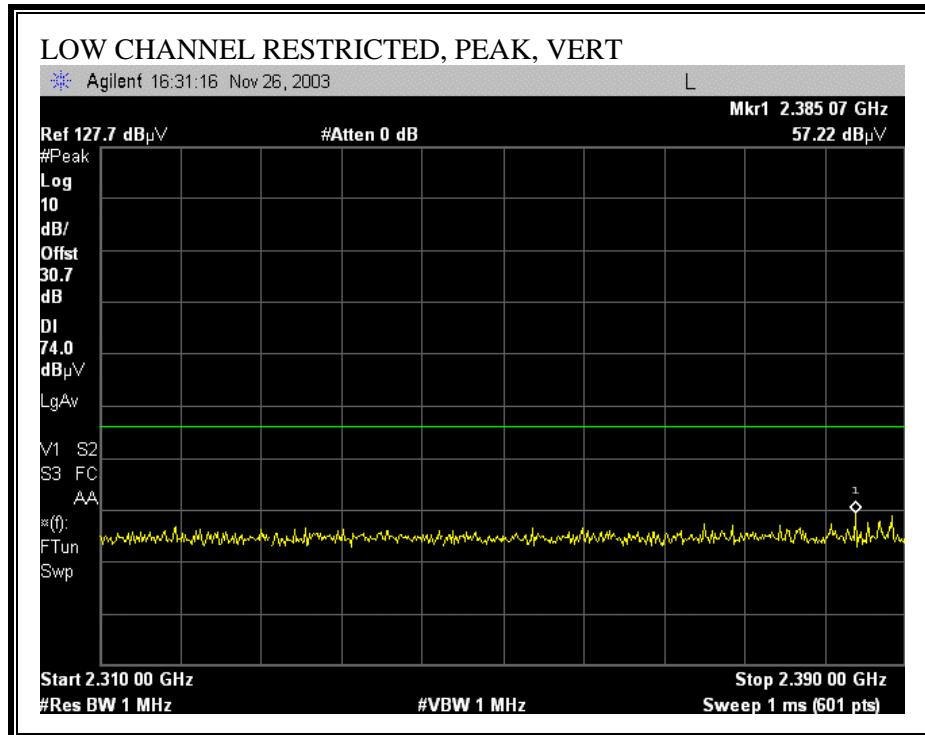
7.3.2. TRANSMITTER RADIATED EMISSIONS ABOVE 1 GHZ

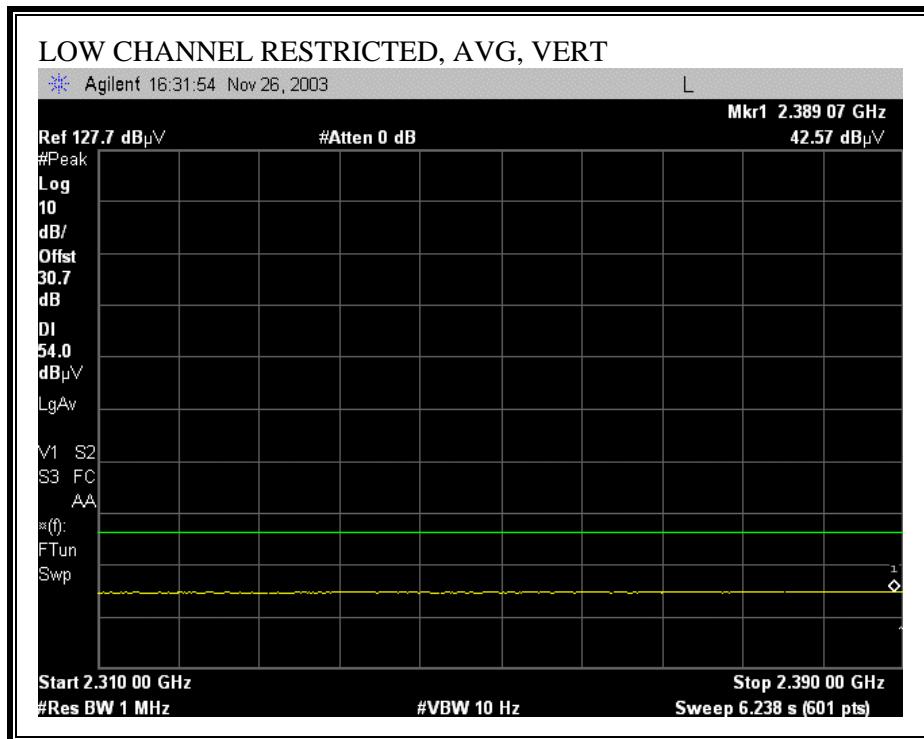
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



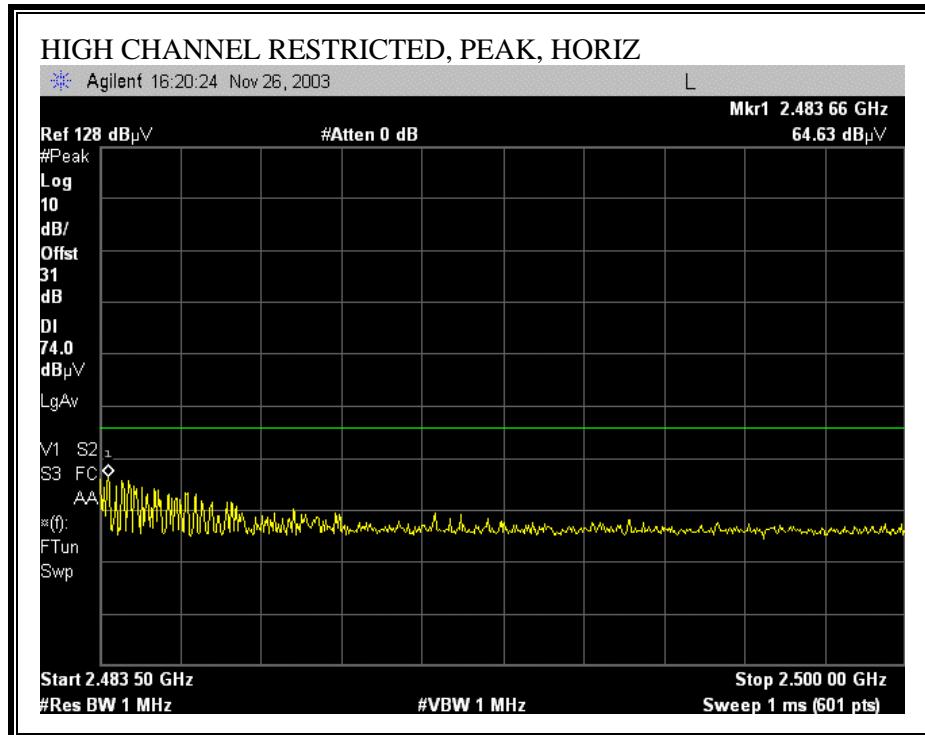


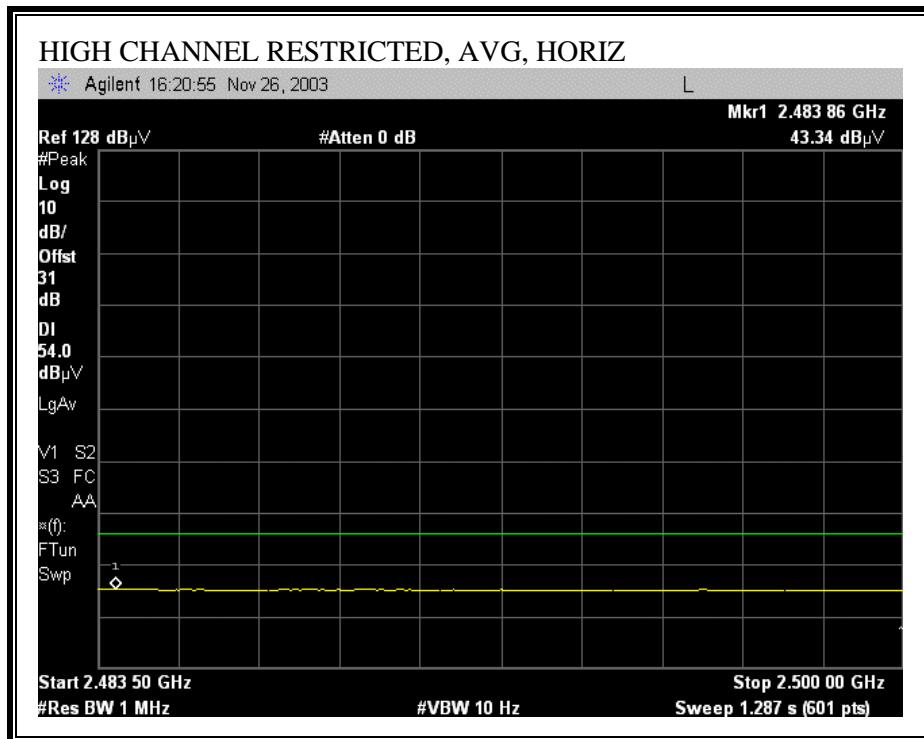
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



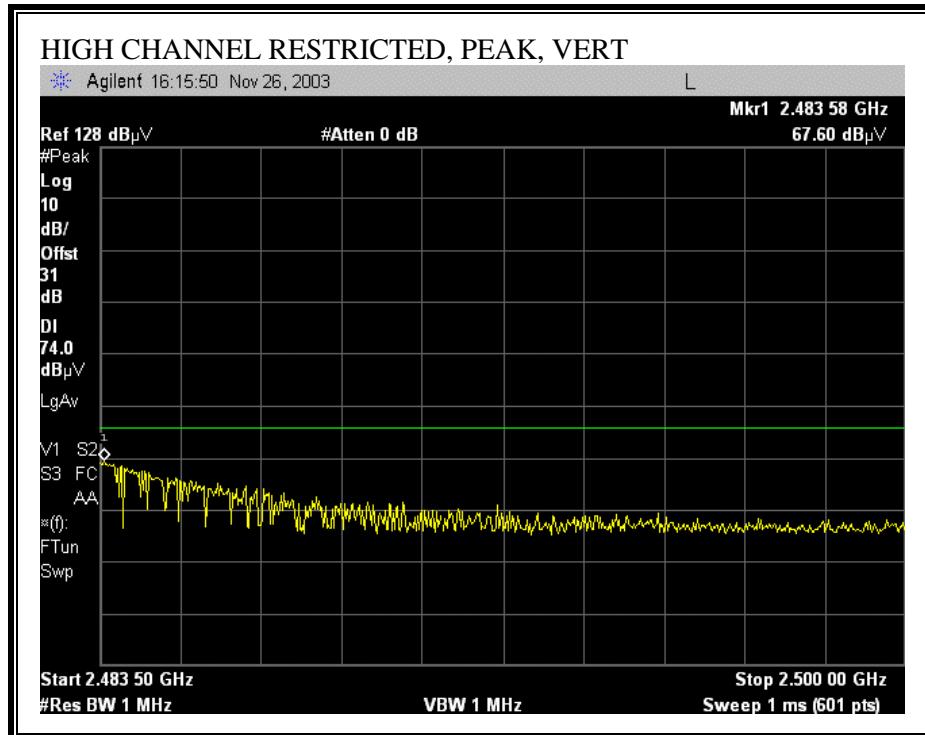


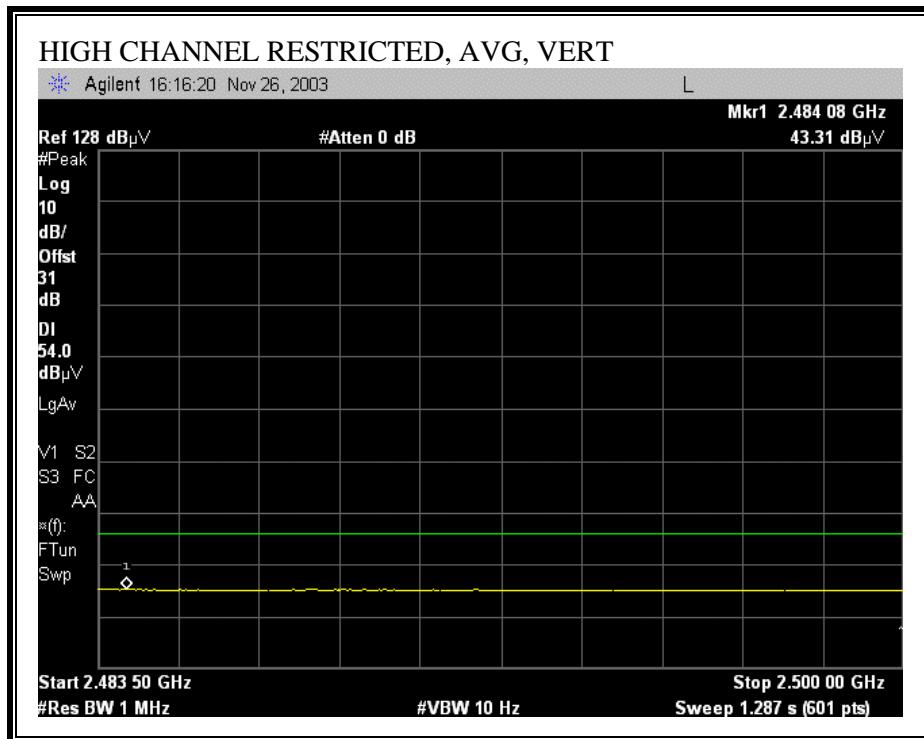
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



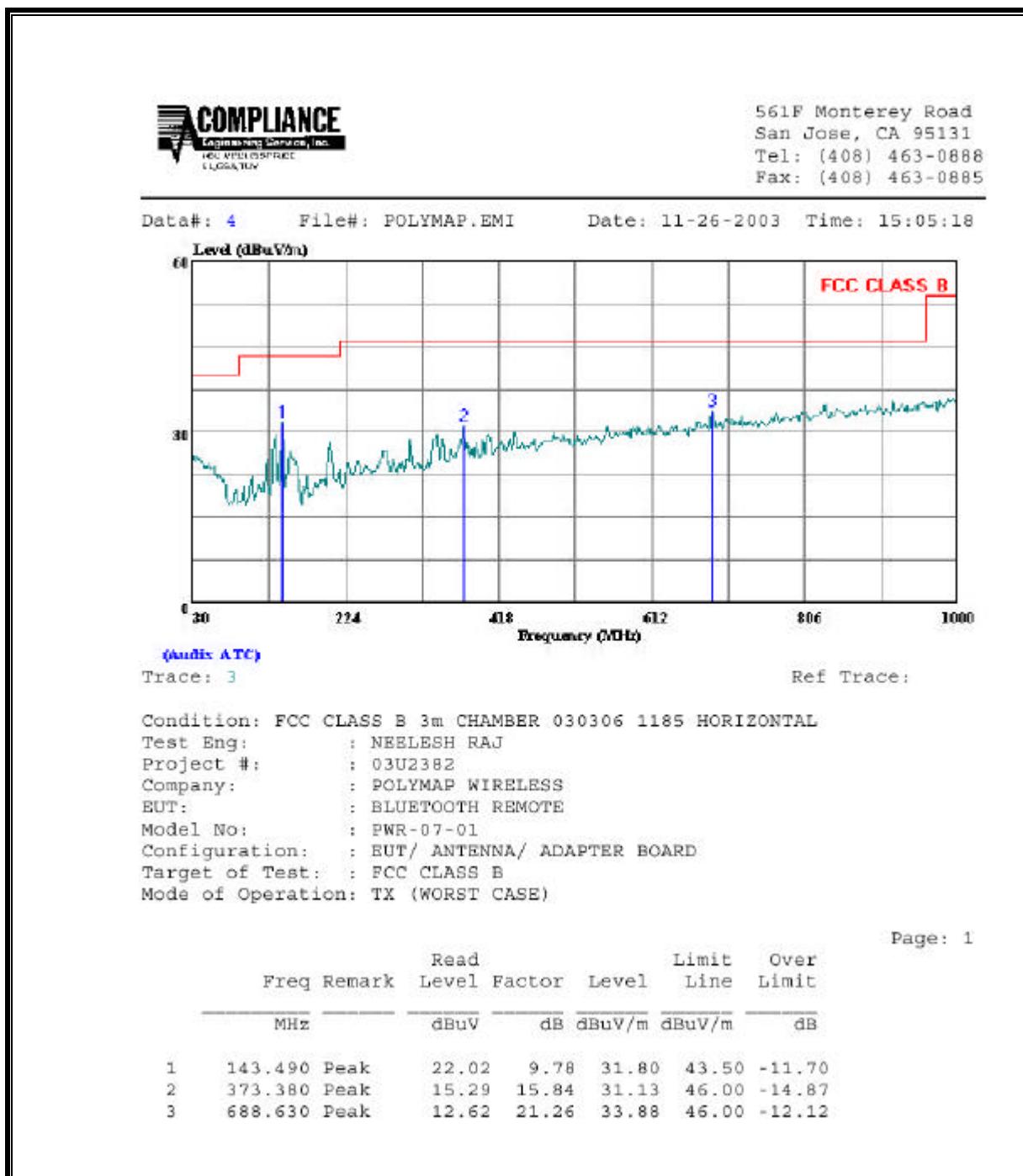


HARMONICS AND SPURIOUS EMISSIONS

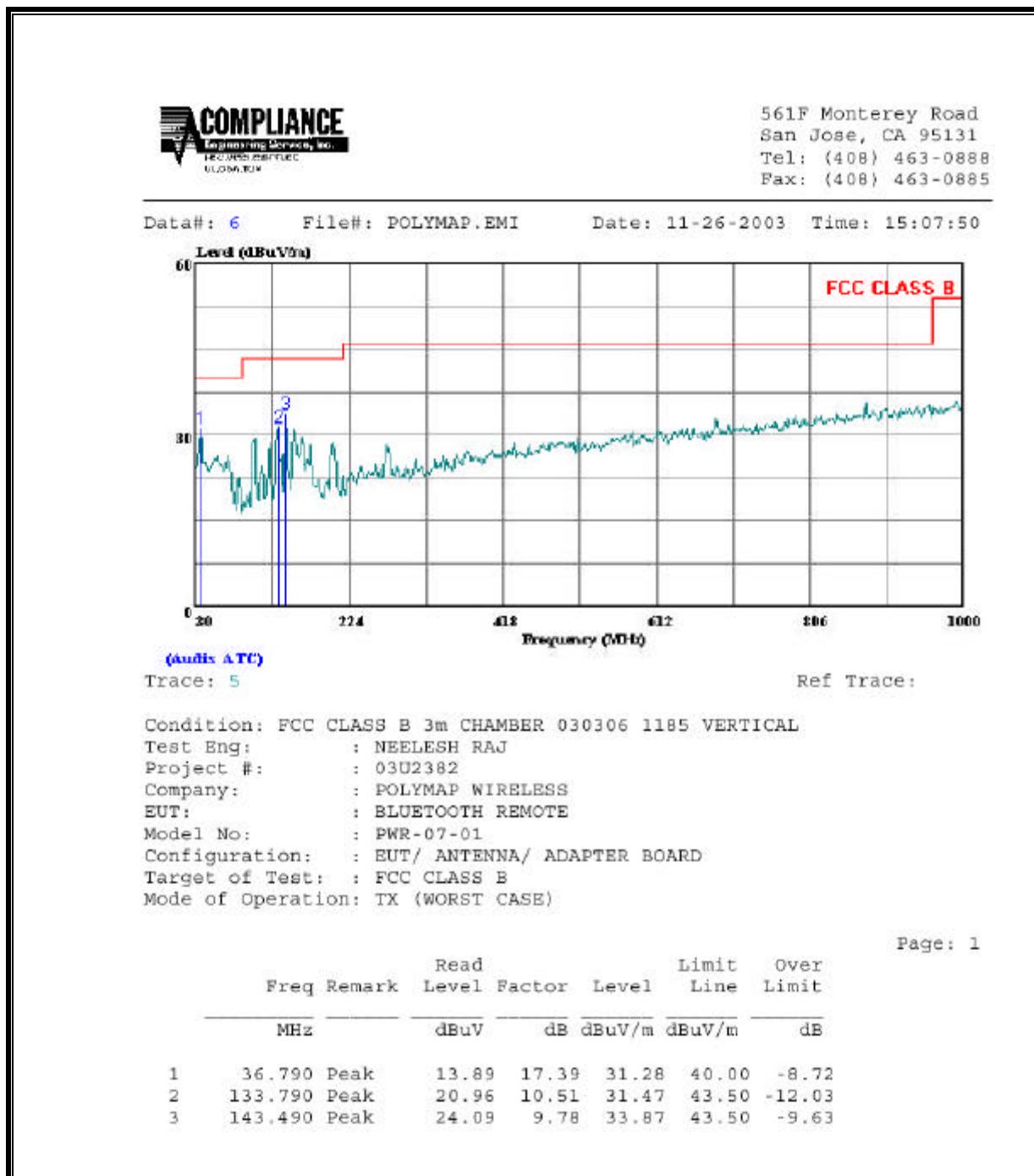
| | | | | | | | | | | | | | | | |
|---|-----------------------|-----------------------|------------------|-------------------------|--------------------------------|--------------|--------------|------------|----------------|------------------------------|------------------|-------------------|--------------|----------------|----------------|
| 102803 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site | | | | | | | | | | | | | | | |
| Test Engn: | NEELISH RAJ | | | | | | | | | | | | | | |
| Project #: | 03U2382 | | | | | | | | | | | | | | |
| Company: | POLYMAP WIRELESS | | | | | | | | | | | | | | |
| EUT Descrip: | BLUETOOTH REMOTE | | | | | | | | | | | | | | |
| EUT M/N: | PWR-07-01 | | | | | | | | | | | | | | |
| Test Target: | FCC | | | | | | | | | | | | | | |
| Mod Oper: | TX | | | | | | | | | | | | | | |
| <u>Test Equipment:</u> | | | | | | | | | | | | | | | |
| EMCO Horn 1-18GHz | | Pre-amplifier 1-26GHz | | Spectrum Analyzer | | Horn > 18GHz | | Limit | | | | | | | |
| T73; S/N: 6717 @3m | | T87 Miltek 924342 | | Agilent E4446A Analyzer | | | | FCC 15.205 | | | | | | | |
| H Frequency Cables <input checked="" type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2~3 ft) <input type="checkbox"/> (4~6 ft) <input checked="" type="checkbox"/> (12 ft) | | | | | | | | | | | | | | | |
| Peak Measurements: 1 MHz Resolution Bandwidth 1 MHz Video Bandwidth | | | | | | | | | | | | | | | |
| Average Measurements: 1 MHz Resolution Bandwidth 10Hz Video Bandwidth | | | | | | | | | | | | | | | |
| f GHz | Dist feet | Read Pk dBuV | Read Avg dBuV | AF | CL | 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 |
| LOW CHANNEL 2402 MHz | | | | | | | | | | | | | | | |
| 4.804 | 9.8 | 49.5 | 39.4 | 2.0 | -44.7 | 0.0 | 1.0 | 42.1 | 32.0 | 74.0 | 54.0 | 31.0 | -22.0 | V(NOISE FLOOR) | |
| 12.810 | 9.8 | 49.2 | 38.3 | 5.1 | -42.1 | 0.0 | 1.0 | 52.3 | 41.4 | 74.0 | 54.0 | 21.7 | -12.6 | V(NOISE FLOOR) | |
| 4.804 | 9.8 | 50.0 | 39.1 | 2.9 | -44.7 | 0.0 | 1.0 | 42.6 | 31.7 | 74.0 | 54.0 | 31.4 | -22.3 | H(NOISE FLOOR) | |
| 12.810 | 9.8 | 48.3 | 39.2 | 5.1 | -42.1 | 0.0 | 1.0 | 51.4 | 39.2 | 74.0 | 54.0 | 22.6 | -14.8 | H(NOISE FLOOR) | |
| MIDDLE CHANNEL 2441 MHz | | | | | | | | | | | | | | | |
| 4.882 | 9.8 | 49.4 | 39.4 | 3.0 | -44.7 | 0.0 | 1.0 | 42.0 | 32.1 | 74.0 | 54.0 | 32.0 | -21.9 | V | |
| 7.323 | 9.8 | 61.6 | 54.0 | 35.0 | -44.5 | 0.0 | 1.0 | 57.7 | 50.1 | 74.0 | 54.0 | 16.3 | 3.9 | V | |
| 12.205 | 9.8 | 46.3 | 36.0 | 39.2 | 5.2 | -42.4 | 0.0 | 1.0 | 49.2 | 38.9 | 74.0 | 54.0 | 24.8 | -15.1 | V(NOISE FLOOR) |
| 4.882 | 9.8 | 47.6 | 37.9 | 33.4 | 3.0 | -44.7 | 0.0 | 1.0 | 40.2 | 30.5 | 74.0 | 54.0 | 33.8 | -23.5 | H(NOISE FLOOR) |
| 7.323 | 9.8 | 65.8 | 57.5 | 35.0 | 3.8 | -44.5 | 0.0 | 1.0 | 61.0 | 53.6 | 74.0 | 54.0 | 12.1 | 0.4 | H |
| 12.205 | 9.8 | 45.5 | 35.9 | 39.2 | 5.2 | -42.4 | 0.0 | 1.0 | 48.4 | 38.8 | 74.0 | 54.0 | 25.6 | -15.2 | H(NOISE FLOOR) |
| HIGH CHANNEL 2480 MHz | | | | | | | | | | | | | | | |
| 4.960 | 9.8 | 49.3 | 40.0 | 33.5 | 3.0 | -44.8 | 0.0 | 1.0 | 42.0 | 32.7 | 74.0 | 54.0 | 32.0 | -21.3 | V(NOISE FLOOR) |
| 7.440 | 9.8 | 61.2 | 52.9 | 36.1 | 3.8 | -44.4 | 0.0 | 1.0 | 57.6 | 49.3 | 74.0 | 54.0 | 16.4 | 4.7 | V |
| 12.480 | 9.8 | 47.9 | 37.1 | 39.2 | 5.2 | -42.6 | 0.0 | 1.0 | 50.5 | 39.8 | 74.0 | 54.0 | 23.4 | -14.2 | V(NOISE FLOOR) |
| 4.960 | 9.8 | 49.1 | 39.4 | 33.5 | 3.0 | -44.8 | 0.0 | 1.0 | 41.8 | 32.1 | 74.0 | 54.0 | 32.3 | -21.9 | H(NOISE FLOOR) |
| 7.440 | 9.8 | 62.3 | 54.4 | 36.1 | 3.8 | -44.4 | 0.0 | 1.0 | 58.7 | 50.8 | 74.0 | 54.0 | 15.3 | 3.2 | H |
| 12.480 | 9.8 | 48.3 | 38.2 | 39.2 | 5.2 | -42.6 | 0.0 | 1.0 | 51.0 | 40.9 | 74.0 | 54.0 | 23.0 | -13.1 | H(NOISE FLOOR) |
| NO OTHER EMISSIONS DETECTED IN THE REST BANDS ABOVE THE SYSTEM 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 | | | | | | | | | | |

7.3.3. WORST-CASE RADIATED EMISSIONS BELOW 1 GHZ

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

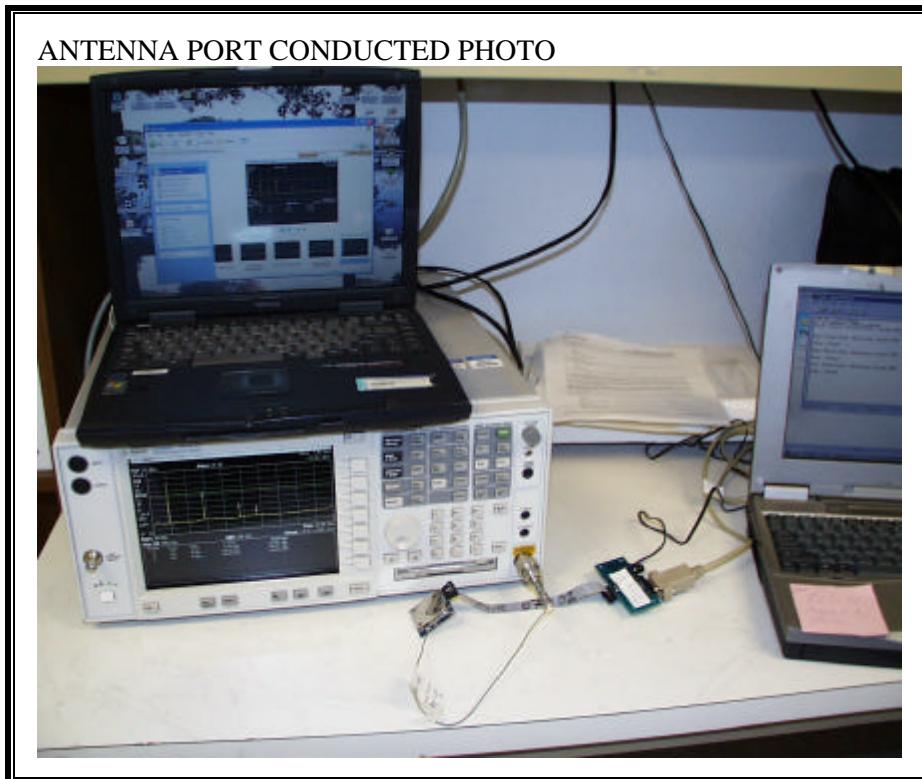


SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

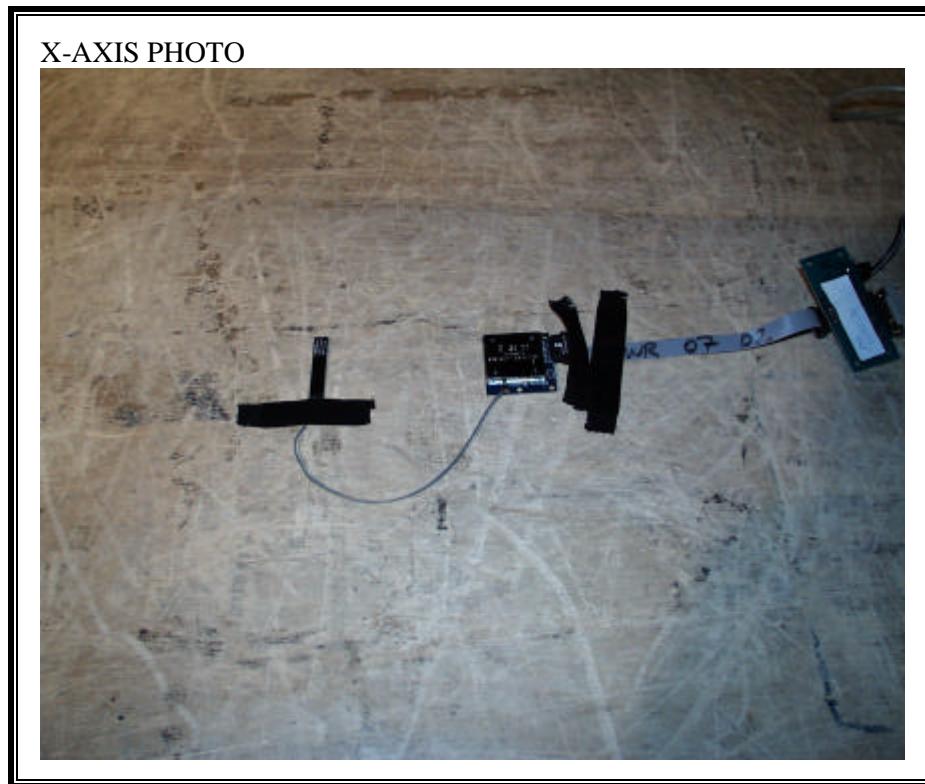


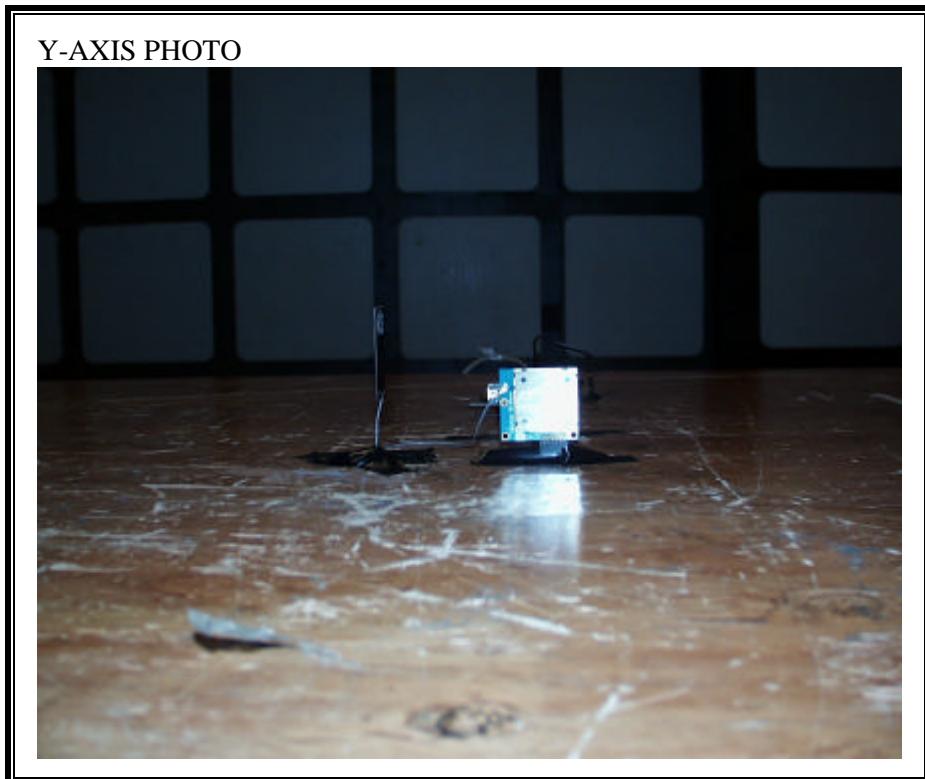
8. SETUP PHOTOS

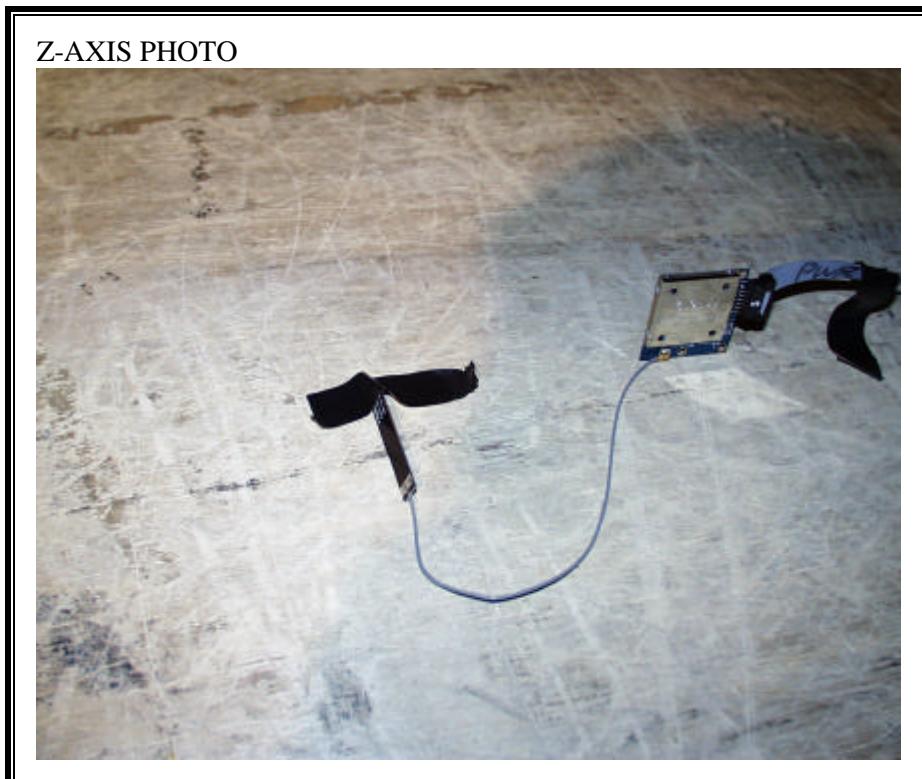
ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP



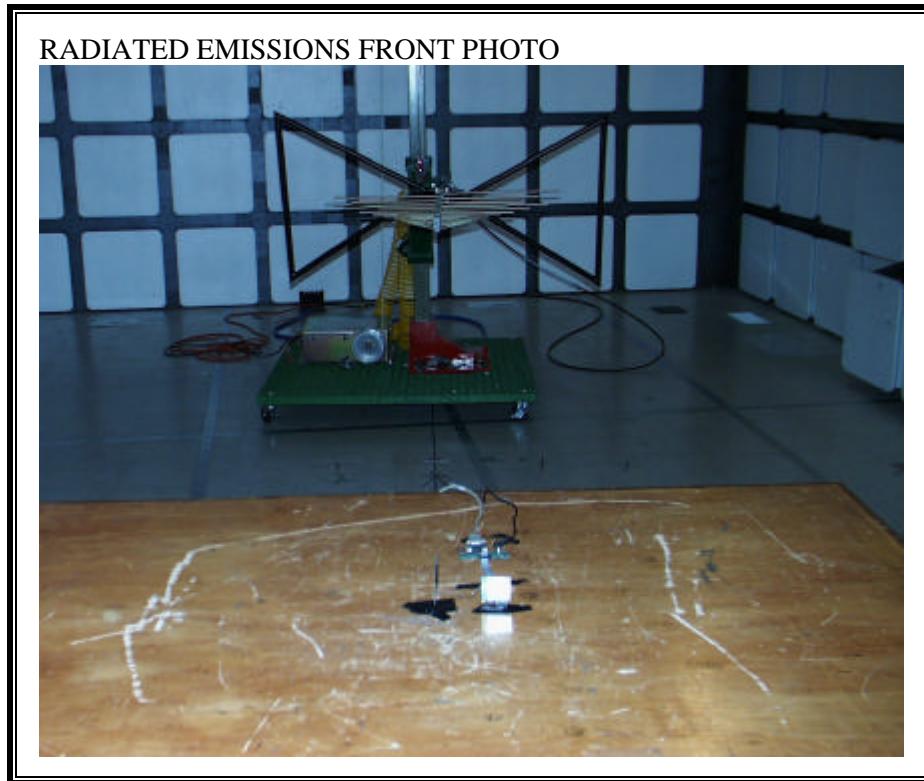
RADIATED RF MEASUREMENT SETUP

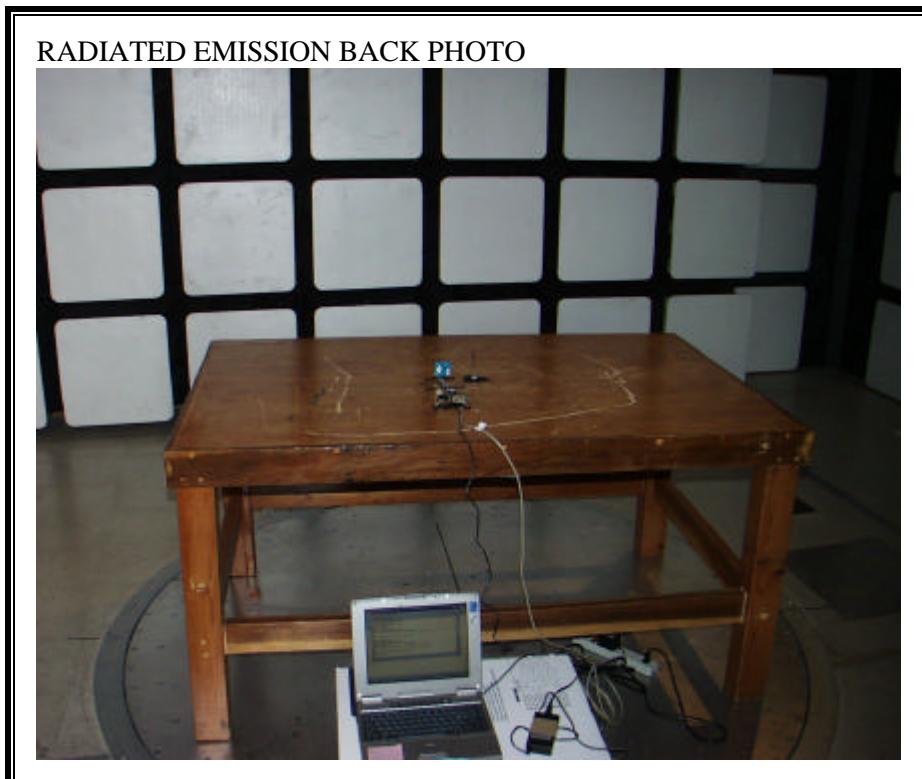






RADIATED EMISSIONS SETUP





END OF REPORT