# TEST REPORT

**Report Number: G100070164MPK-001**
**Project Number: G100070164**
**March 24, 2010**

**Testing performed on the**
**Hand Held Scanning Receiver**
**Model Number: PSR-700**
**FCC ID: ADV0602901**

**to**

**FCC Part 15, Subpart B**

**Class: B**

**for**
**GRE America**

| Test Performed by: | Test Authorized by: |
|---|---|
| Intertek | GRE America |
| 1365 Adams Court | 425 Harbor Blvd. Suite B |
| Menlo Park, CA 94025 | Belmont, CA 94002 |

Prepared by: _____ **Date:** March 24, 2010
Arkadi Kaplan & Marcos Rodriguez

Reviewed by: _____ **Date:** March 24, 2010
Ollie Moyrong

# VERIFICATION OF COMPLIANCE
# Report No. G100070164-001

Verification is hereby issued to the named APPLICANT and is VALID ONLY for the equipment identified hereon for use under the rules and regulations listed below.

| | |
|---|---|
| **Equipment Under Test**: | Hand Held Scanning Receiver |
| **Trade Name**: | GRE America |
| **Model No.**: | PSR-700 |
| **Serial No.** | 000015 |
| | |
| **Applicant**: | GRE America |
| **Contact**: | Mr. Teru Takahashi |
| **Address**: | 425 Harbor Blvd. Suite B<br>Belmont, CA 94002 |
| **Country** | USA |
| | |
| **Tel. number**: | 650-591-1400 |
| **Fax number**: | 650-591-2001 |
| | |
| **Applicable Regulation**: | FCC Part 15, Subpart B |
| | |
| **Equipment Class**: | Class B |
| | |
| **Date of Test**: | August 11 and September 08, 2009<br>March 17, 2010 |

***We attest to the accuracy of this report:***

Arkadi Kaplan and Marcos Rodriguez
EMC Engineer

Ollie Moyrong
EMC Manager

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## 1.0 General Description

### 1.1 Product Description

The Equipment under Test (EUT) is an Advanced Digital Scanning Receiver, model PSR-700

A pre-production version of the sample was received on August 11, 2009 and March 16, 2010 in good condition. As declared by the Applicant, it is identical to production units.

### 1.2 Related Submittal(s) Grants

This is a single application for certification of a scanning receiver.

### 1.3 Test Methodology

Both conducted (if applicable) and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). All radiated measurements were performed in a semi-anechoic chamber. Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the **"Data Section"** of this Application.

### 1.4 Test Facility

The test site and conducted measurement facility used to collect the radiated data is Site 1, a 10 meter semi-anechoic chamber. This test facility and site measurement data have been fully placed on file with the FCC and A2LA accredited.

1.5 Summary of Test Results

**Model: PSR-700**
**FCC ID: ADV0602901**

| TEST | REFERENCE | RESULTS |
|---|---|---|
| Radiated Emission | 15.109 | Complies |
| AC Line Conducted Emission | 15.107 | Complies |
| Antenna Conducted Emission | 15.111 | Complies |
| FCC Part 15.121 Requirement | 15.121 | Complies * |

* Refer to file: “ADV0602901 REPORT FOR FCC RULE PART 15.121”

## 2.0 System Test Configuration

### 2.1 Justification

The tests were performed according to the test procedures as outlined in CFR47 Part 15.31 and in ANSI C63.4.

For emission testing, the equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). During testing, all cables were manipulated to produce worst-case emissions.

For the measurements, the EUT is placed on top of a non-conductive table. If the EUT attaches to peripherals, they are connected and operational (as typical as possible).

For radiated emission measurements, the signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters or ten meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance. All readings are extrapolated back to the equivalent three meter or ten meter reading using inverse scaling with distance if measured at a closer distance.

The EUT was tested in August and September of 2009, and certification was granted under FCC ID ADV0602 on September 29, 2009. The EUT was recently modified by changing the position of the key pad on the front panel of the EUT. The receiver circuitry has not been modified. This report contains data taken from the receiving circuit from the original report of FCC ID ADV0602. Limited testing was performed for radiated emissions in the band of 30 MHz – 5 GHz to ensure continued compliance of the device for the changes made to the position of the key pad.

### 2.2 EUT Exercising Software

None.

### 2.3 Mode of Operation

The EUT was tested in two modes:

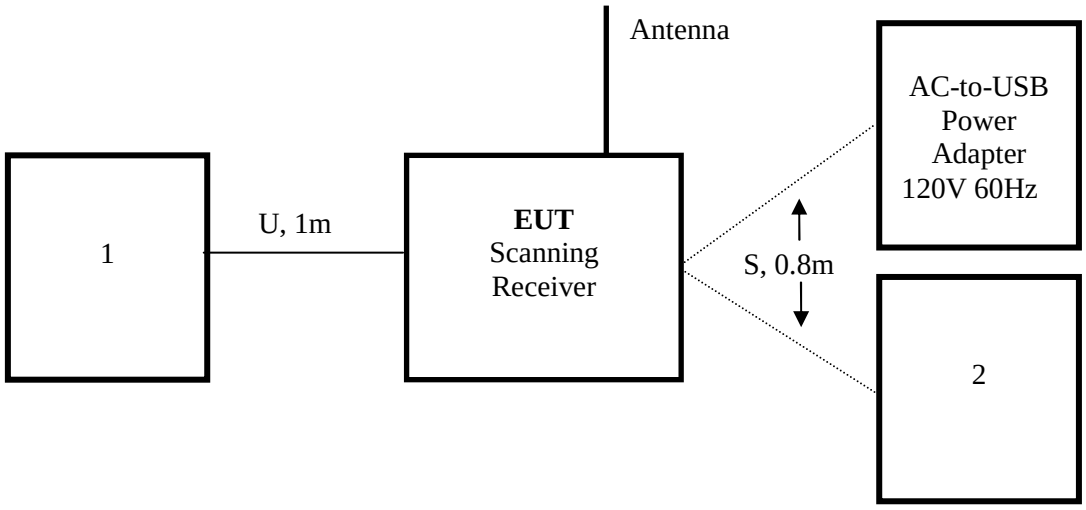
Test Mode 1: The EUT was set to continuously receive at the low, middle and high channels of each band.

Test Mode 2: The EUT was set to continuously scan all bands.

2.4 Support Equipment List and Description

| Item # | Description | Model No. | Serial No. |
|---|---|---|---|
| 1 | External headphones | KOSS | Not Labeled |
| 2 | Compaq | 6901 | X99312BJ7F001 |

2.5 Equipment Setup Block Diagram




Power Adapter: AC-to-USB, Enercell, Cat. #273-317
U: Unshielded
S: Shielded
m: meter

Note: The USB port of the EUT can either be connected to a AC-to-USB power adapter or to a USB port of a computer. The EUT was tested in both configurations.

2.6 Equipment Modification

Intertek Testing Services installed no modifications.

Any modifications installed previous to testing by GRE will be incorporated in each production model sold/leased in the United States.

## 3.0 Emission Test Results

Radiated emission measurements were performed from 30 MHz to 5000 MHz. Antenna conducted emission measurements performed from 30 MHz to 10000 MHz. Analyzer resolution is 100 kHz or greater for frequencies from 30 MHz to 1000 MHz, 1 MHz – for frequencies above 1000 MHz.

Tests were performed with the EUT tuned to the low, middle and high channels of each band and with the EUT setup in scanning mode. The final recorded data reflects the worst-case results.

A sample calculation and data tables of the emissions are included.

All measurements were performed with peak detection unless otherwise specified.

***Limits for Electromagnetic Radiated Disturbance, FCC Section 15.109(b)***

| **Frequency (MHz)** | **Class B at 3m dB(μV/m)** |
|---|---|
| 30-88 | 40.0 |
| 88-216 | 43.5 |
| 216-960 | 46.0 |
| Above 960 | 54.0 |

## 3.1 Field Strength Calculation

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

FS = RA + AF + CF – AG + DF

Where FS = Field Strength in dB(µV/m)
RA = Receiver Amplitude (including preamplifier) in dB(µV)
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB(1/m)
AG = Amplifier Gain in dB
DF = Distance Factor in dB

Assume a receiver reading of 52.0 dB(µV) is obtained. The antennas factor of 7.4 dB(1/m) and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving field strength of 32 dB(µV/m). This value in dB(µV/m) was converted to its corresponding level in µV/m.

RA = 52.0 dB(µV)
AF = 7.4 dB(1/m)
CF = 1.6 dB
AG = 29.0 dB
DF = 0 dB
FS = 52 +7.4 +1.6 –29.0 + 0 = 32 dB(µV/m)
Level in µV/m = Common Antilogarithm [(32 dB(µV/m)/20] = 39.8 µV/m

## 3.2 Radiated Emission Data

| | |
|---|---|
| **Tested By:** | Arkadi Kaplan & Marcos Rodriguez |
| **Test Date:** | August 11, 2009 & March 17, 2010 |

The results on the following page(s) were obtained when the device was tested in the condition described in Section 2.

| | |
|---|---|
| **Results:** | **Complies** |

3.2 Test Data (Continued)

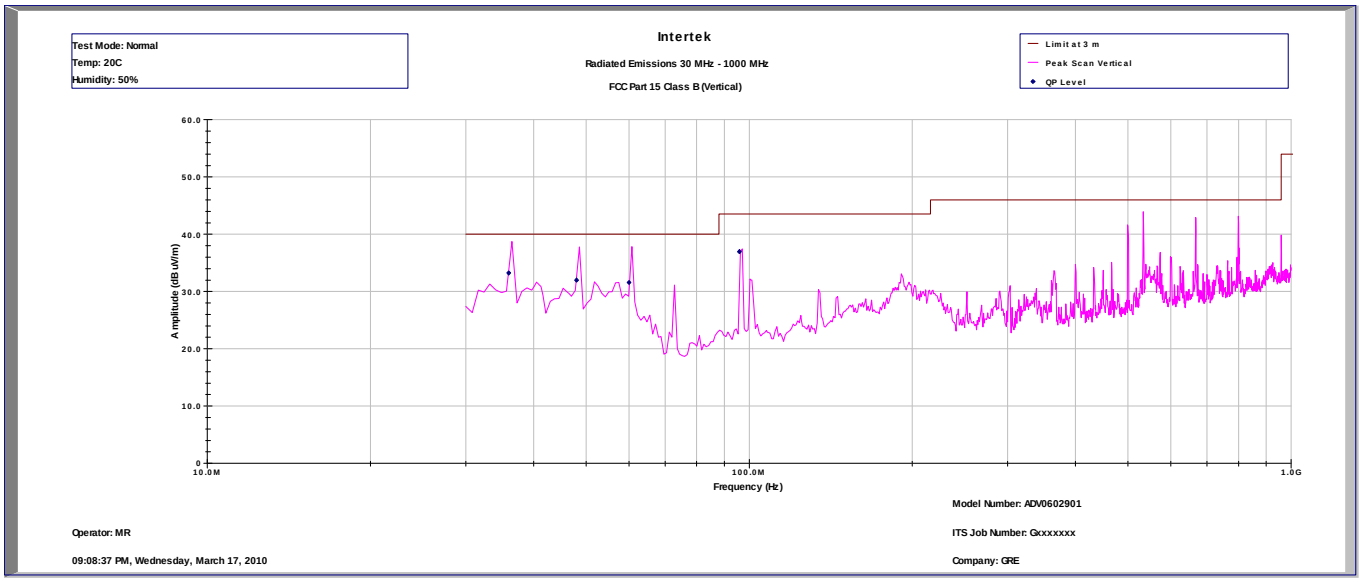
FCC Part 15.109 Class B Radiated Emissions Data

Test Mode: Tuned Frequency
Test distance: 3 m
Date of Test: August 11, 2009

| Tuned Frequency | L.O. Frequency | Antenna Polarization | Quasi-PK FS | Limit @3m | RA | AG | CF | AF | Margin |
|---|---|---|---|---|---|---|---|---|---|
| MHz | MHz | H/V | dB(uV/m) | dB(uV/m) | dB(uV) | dB | dB | dB(1/m) | dB |
| 25 | 405.8 | V | 21.4 | 46 | 34.5 | 32.1 | 2.1 | 16.9 | -24.6 |
| 41 | 421.8 | V | 22.4 | 46 | 34.8 | 32.1 | 2.2 | 17.6 | -23.6 |
| 54 | 434.8 | V | 21.2 | 46 | 33.5 | 32.2 | 2.2 | 17.6 | -24.8 |
| 108 | 488.8 | V | 14.3 | 46 | 25.8 | 32.3 | 2.3 | 18.4 | -31.7 |
| 124 | 504.8 | V | 16.3 | 46 | 27.6 | 32.3 | 2.4 | 18.6 | -29.7 |
| 136 | 516.8 | V | 16.3 | 46 | 27.4 | 32.3 | 2.5 | 18.8 | -29.7 |
| 137 | 517.8 | V | 15.3 | 46 | 26.4 | 32.3 | 2.5 | 18.8 | -30.7 |
| 154 | 534.9 | V | 17.8 | 46 | 28.5 | 32.4 | 2.6 | 19.1 | -28.2 |
| 174 | 554.8 | V | 17.9 | 46 | 28.2 | 32.4 | 2.7 | 19.3 | -28.1 |
| 216.0025 | 596.0025 | V | 29.6 | 46 | 39.3 | 32.5 | 3 | 19.8 | -16.4 |
| 225 | 605.8 | V | 30.1 | 46 | 38.2 | 32.5 | 3 | 21.3 | -15.9 |
| 310 | 690.8 | V | 21.3 | 46 | 29.8 | 32.5 | 2.8 | 21.3 | -24.7 |
| 406 | 786.8 | V | 23.9 | 46 | 31.4 | 32.4 | 3 | 21.9 | -22.1 |
| 450 | 830.8 | V | 25.7 | 46 | 32.6 | 32.2 | 3.1 | 22.3 | -20.3 |
| 512 | 892.8 | V | 37.6 | 46 | 42.8 | 31.9 | 3.2 | 23.5 | -8.4 |
| 764 | 383.2 | V | 20.9 | 46 | 34.7 | 32 | 2.1 | 16.1 | -25.1 |
| 806 | 425.2 | V | 23.6 | 46 | 35.7 | 32 | 2.2 | 17.7 | -22.4 |
| 860 | 479.2 | V | 21.1 | 46 | 32.7 | 32.1 | 2.3 | 18.2 | -24.9 |
| 960 | 579.2 | V | 20.7 | 46 | 31.1 | 32.3 | 2.6 | 19.3 | -25.3 |
| 1240 | 859.2 | V | 17.2 | 46 | 22.9 | 31.8 | 3.1 | 23 | -28.8 |
| 1270 | 889.2 | V | 25.9 | 46 | 30.6 | 31.6 | 3.2 | 23.7 | -20.1 |
| 1300 | 919.2 | V | 23.5 | 46 | 28.2 | 31.3 | 3.2 | 23.4 | -22.5 |

Notes:
1. Negative signs (-) in the Margin column signify levels below the limit.
2. All readings below 1 GHz are quasi-peak, above 1 GHz – average.
3. All other readings not reported are at least 20 dB below the limit.
4. For L.O. frequency calculation, see Appendix A.
5. Emissions in the “Scanning” mode were lower than the “Tuned Frequency” Mode .

3.2 Test Data (Continued)




Intertek Testing Services
Radiated Emissions 30 MHz – 1000 MHz
FCC Part 15 Class B (QP-Vertical)

Operator: MR Model Number: ADV0602901

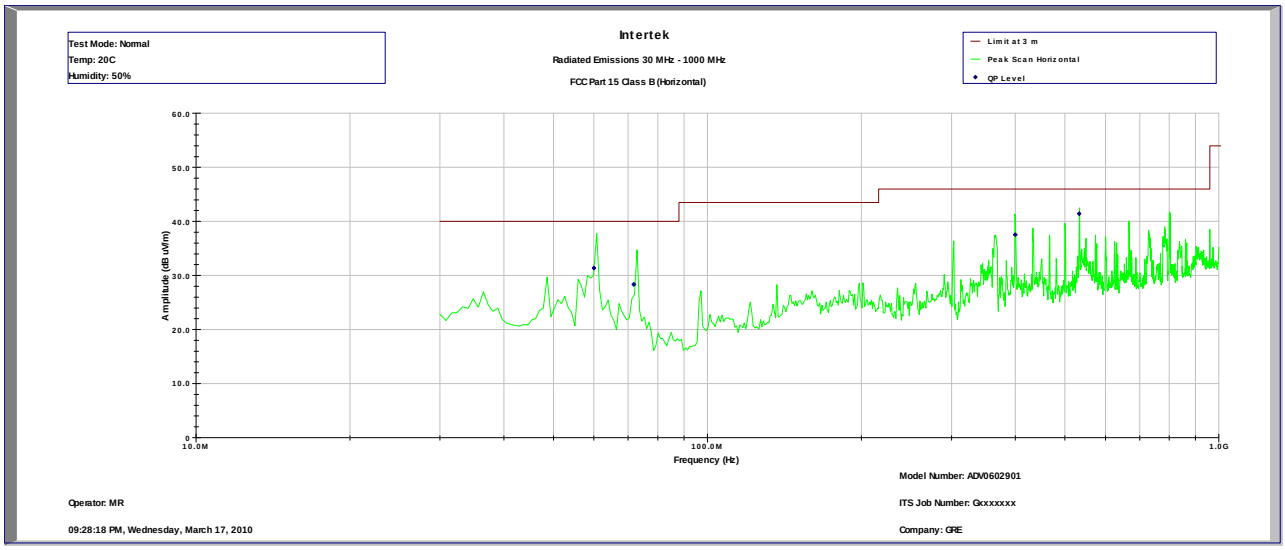
Wednesday, March 17, 2010 Company: GRE

| Frequency | Quasi Pk FS | Limit@3m | Margin | RA | Cable | AG | DCF | AF |
|---|---|---|---|---|---|---|---|---|
| MHz | dB(uV/m) | dB(uV/m) | dB | dB(uV) | dB | dB | dB | dB(1/m) |
| 359.901 | 33.2 | 40 | -6.8 | 36.8 | 0.7 | 32.1 | 10.5 | 17.3 |
| 480.013 | 32 | 40 | -8 | 37.9 | 0.8 | 32.1 | 10.5 | 14.8 |
| 599.939 | 31.6 | 40 | -8.4 | 42.1 | 0.9 | 32.1 | 10.5 | 10.1 |
| 960.013 | 37 | 43.5 | -6.5 | 47.3 | 1.1 | 32 | 10.5 | 10 |

Test Mode: Scanning Mode
Temp: 20C
Humidity: 50%

Frequency range of investigation was 30 MHz – 5 GHz. No emissions were detected above the noise floor above 1 GHz. The noise floor was at least 20 dB below the limit.

3.2 Test Data (Continued)




Intertek Testing Services
Radiated Emissions 30 MHz – 1000 MHz
FCC Part 15 Class B (QP-Horizontal)

Operator: MR Model Number: ADV0602901

Wednesday, March 17, 2010 Company: GRE

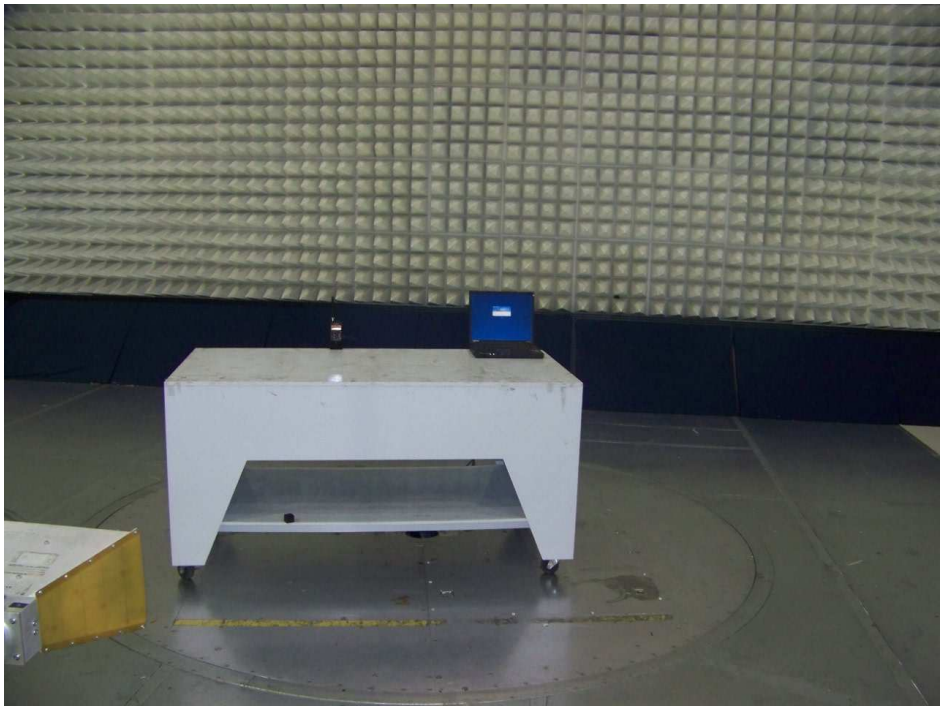
| Frequency | Quasi Pk FS | Limit@3m | Margin | RA | CF | AG | DCF | AF |
|---|---|---|---|---|---|---|---|---|
| MHz | dB(uV/m) | dB(uV/m) | dB | dB(uV) | dB | dB | dB | dB(1/m) |
| 60.011 | 31.3 | 40 | -8.7 | 41.2 | 0.9 | 32.1 | 10.5 | 10.8 |
| 71.834 | 28.4 | 40 | -11.6 | 41.8 | 1 | 32 | 10.5 | 7.2 |
| 399.784 | 37.5 | 46 | -8.5 | 41 | 2.4 | 32 | 10.5 | 15.7 |
| 533.006 | 41.4 | 46 | -4.6 | 42.5 | 2.7 | 32.2 | 10.5 | 17.9 |

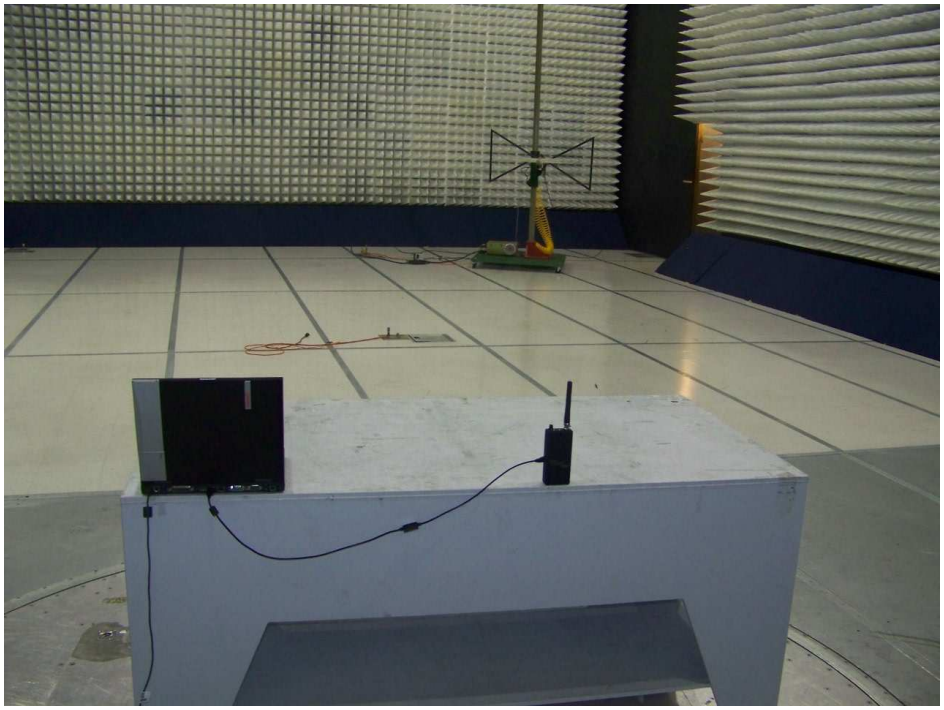
Test Mode: Scanning Mode
Temp: 20C
Humidity: 50%

Frequency range of investigation was 30 MHz – 5 GHz. No emissions were detected above the noise floor above 1 GHz. The noise floor was at least 20 dB below the limit.

## 3.3 Test Configuration

**The following photographs** show the testing configurations used.





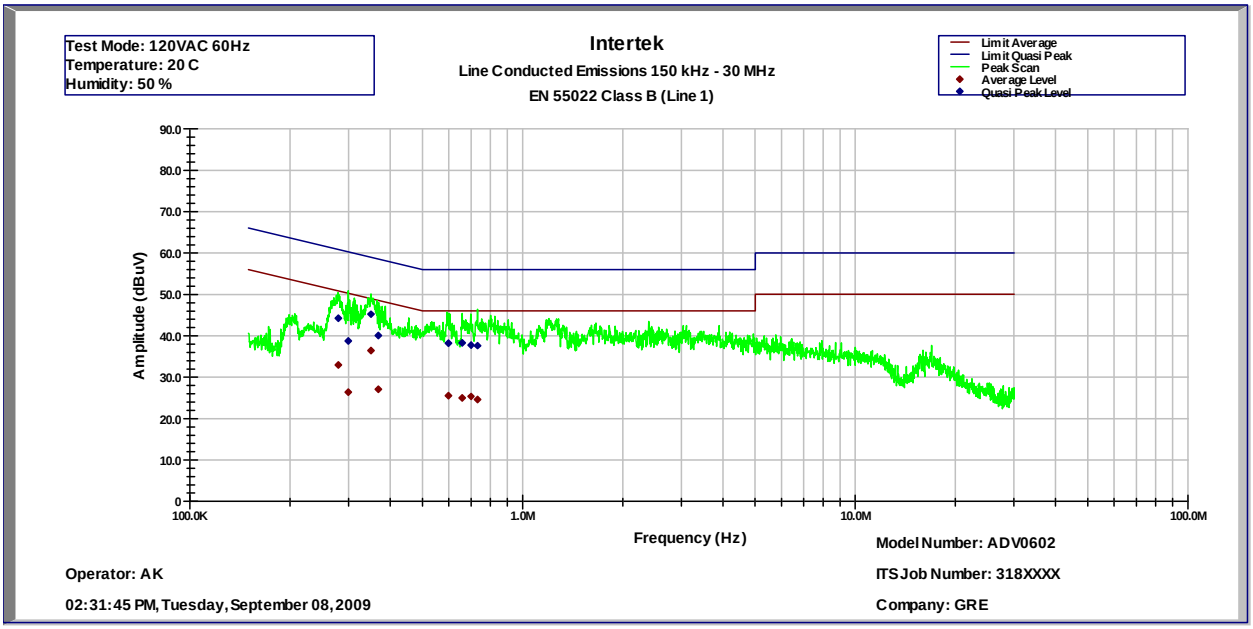
## 3.4 AC Line Conducted Emission Data

| | |
|---|---|
| **Tested By:** | Arkadi Kaplan |
| **Test Date:** | September 8, 2009 |

The results on the following page(s) were obtained when the device was tested in the condition described in Section 2.

| | |
|---|---|
| **Results:** | **Complies** by 13.9 dB |

3.4 Test Data (Continued)




Intertek
Line Conducted Emissions 150 kHz – 30 MHz
EN 55022 Class B (Line 1)

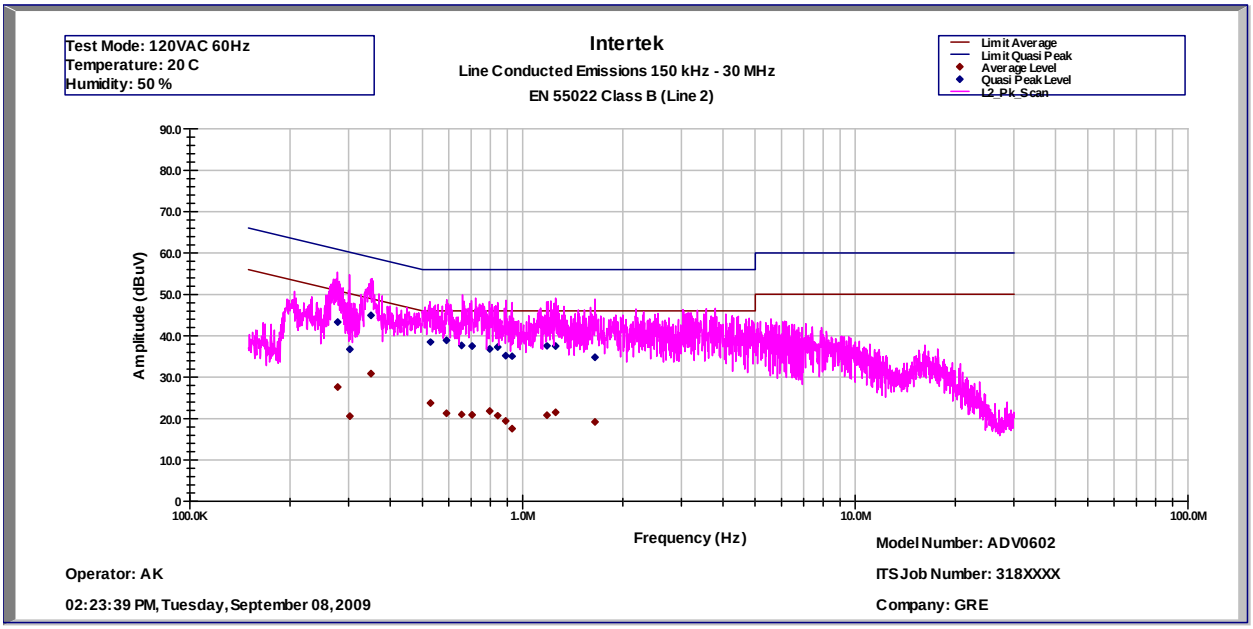
Operator: AK Model Number: ADV0602

02:31:45 PM, Tuesday, September 08, 2009 Company: GRE

| Frequency MHz | Av Level (dBuV) | QP Level (dBuV) | Av Limit (dBuV) | QP Limit (dBuV) | Av Margin (dB) | QP Margin (dB) |
|---|---|---|---|---|---|---|
| 0.279 | 32.9 | 44.2 | 52.3 | 62.3 | -19.4 | -18.1 |
| 0.299 | 26.4 | 38.8 | 51.7 | 61.7 | -25.3 | -23.0 |
| 0.350 | 36.4 | 45.2 | 50.3 | 60.3 | -13.9 | -15.1 |
| 0.368 | 27.1 | 40.1 | 49.8 | 59.8 | -22.7 | -19.7 |
| 0.599 | 25.5 | 38.2 | 46.0 | 56.0 | -20.5 | -17.8 |
| 0.657 | 25.0 | 38.3 | 46.0 | 56.0 | -21.0 | -17.7 |
| 0.699 | 25.3 | 37.8 | 46.0 | 56.0 | -20.7 | -18.2 |
| 0.732 | 24.6 | 37.6 | 46.0 | 56.0 | -21.4 | -18.4 |

Test Mode: 120VAC 60Hz
Temperature: 20 C
Humidity: 50 %

3.4 Test Data (Continued)




Intertek
Line Conducted Emissions 150 kHz – 30 MHz
EN 55022 Class B (Line 2)

Operator: AK — Model Number: ADV0602

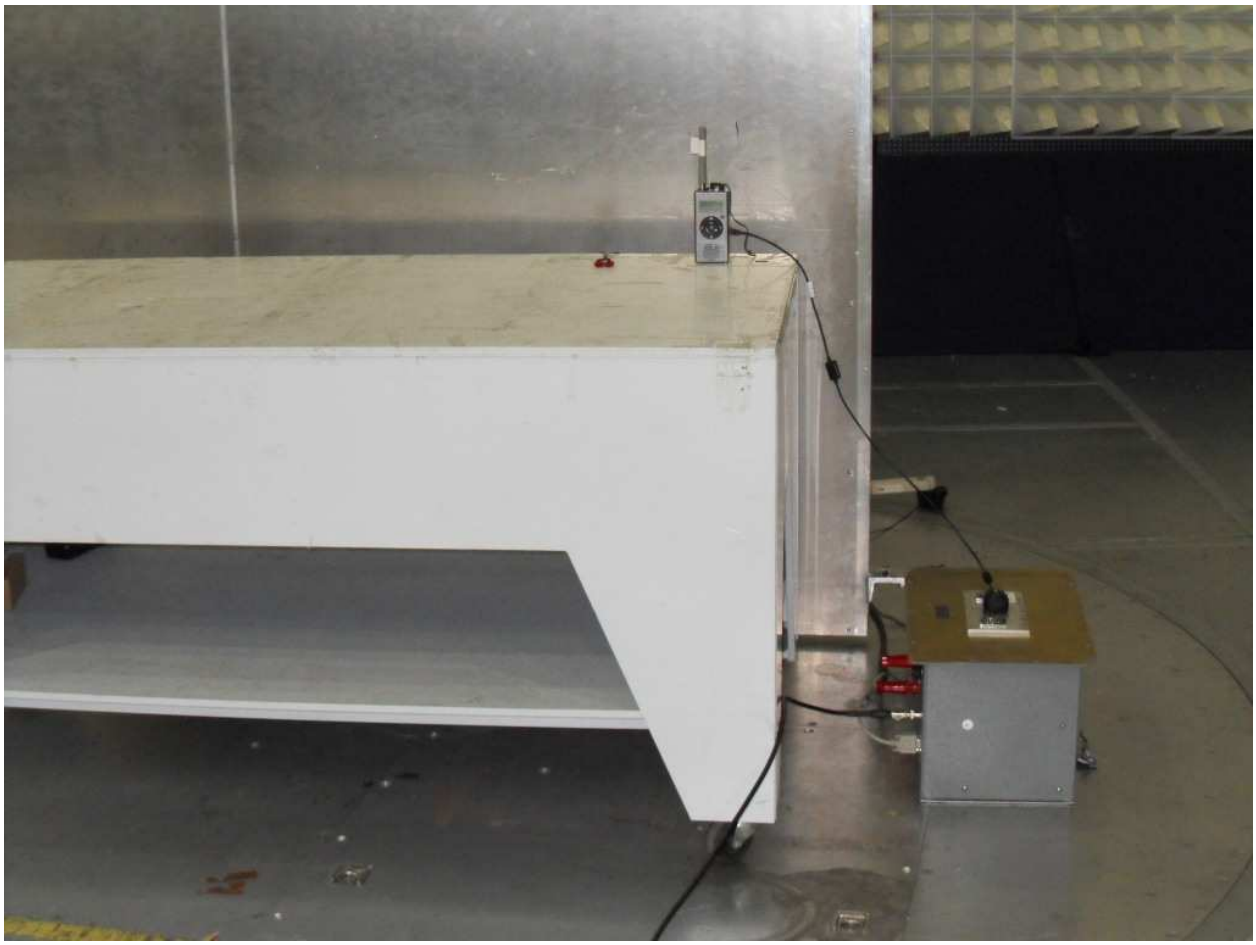
02:23:39 PM, Tuesday, September 08, 2009 — Company: GRE

| Frequency MHz | Av Level (dBuV) | QP Level (dBuV) | Av Limit (dBuV) | QP Limit (dBuV) | Av Margin (dB) | QP Margin (dB) |
|---|---|---|---|---|---|---|
| 0.278 | 27.6 | 43.3 | 52.3 | 62.3 | -24.8 | -19.0 |
| 0.302 | 20.6 | 36.7 | 51.7 | 61.7 | -31.1 | -24.9 |
| 0.350 | 30.8 | 44.9 | 50.3 | 60.3 | -19.5 | -15.3 |
| 0.528 | 23.7 | 38.5 | 46.0 | 56.0 | -22.3 | -17.5 |
| 0.591 | 21.3 | 38.9 | 46.0 | 56.0 | -24.7 | -17.1 |
| 0.656 | 21.0 | 37.6 | 46.0 | 56.0 | -25.0 | -18.4 |
| 0.705 | 20.9 | 37.5 | 46.0 | 56.0 | -25.1 | -18.5 |
| 0.796 | 21.8 | 36.8 | 46.0 | 56.0 | -24.2 | -19.2 |
| 0.842 | 20.7 | 37.3 | 46.0 | 56.0 | -25.3 | -18.7 |
| 0.889 | 19.4 | 35.2 | 46.0 | 56.0 | -26.6 | -20.8 |
| 0.930 | 17.5 | 35.1 | 46.0 | 56.0 | -28.5 | -20.9 |
| 1.180 | 20.8 | 37.6 | 46.0 | 56.0 | -25.2 | -18.4 |
| 1.260 | 21.5 | 37.5 | 46.0 | 56.0 | -24.5 | -18.5 |
| 1.650 | 19.2 | 34.8 | 46.0 | 56.0 | -26.8 | -21.2 |

Test Mode: 120VAC 60Hz
Temperature: 20 C
Humidity: 50 %

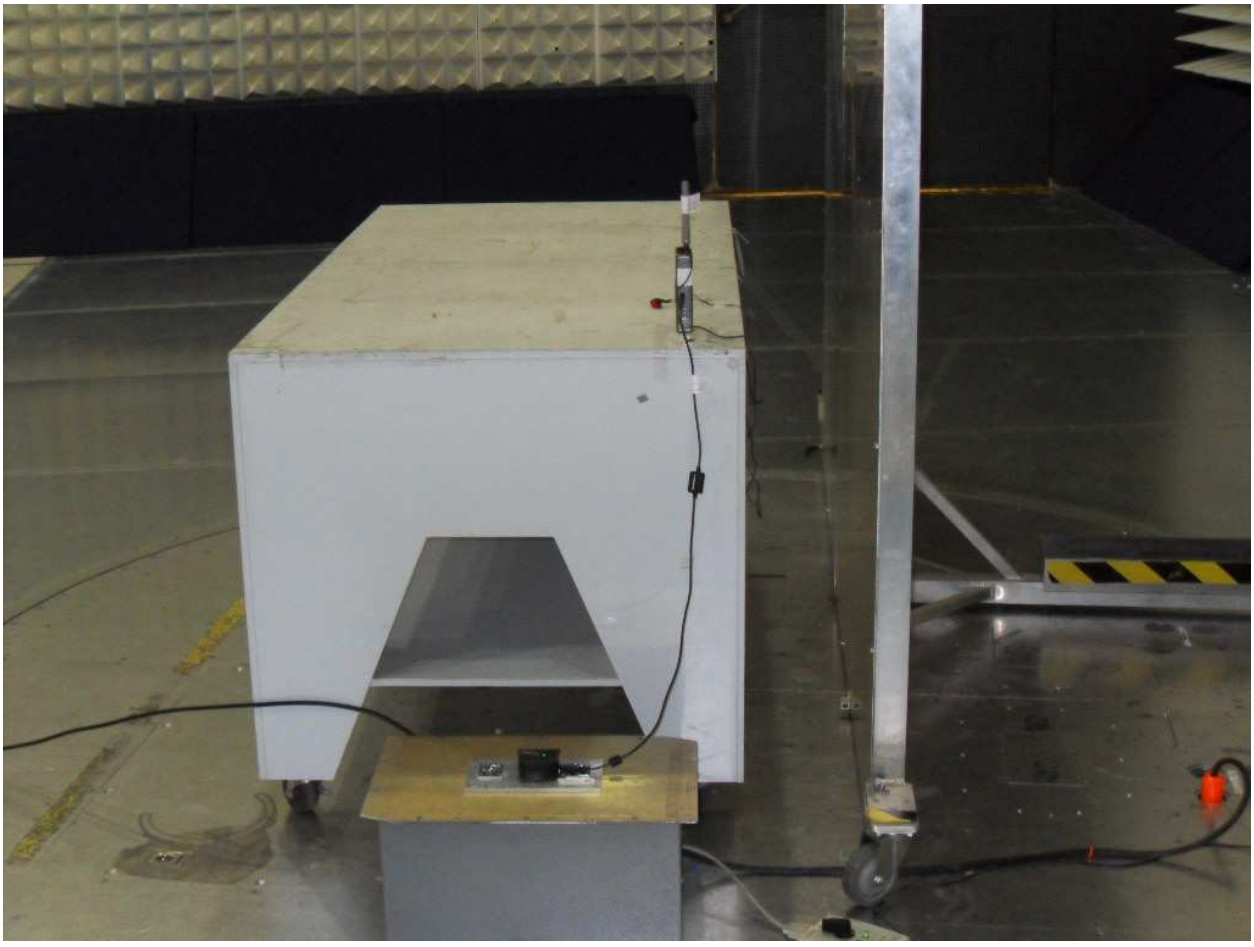
## 3.5 Test Configuration Photographs

**The following photographs** show the testing configurations used.



*Electromagnetic Radiated Disturbance Setup Photograph*

3.5 Test Configuration Photograph (Continued)



*Electromagnetic Radiated Disturbance Setup Photograph*

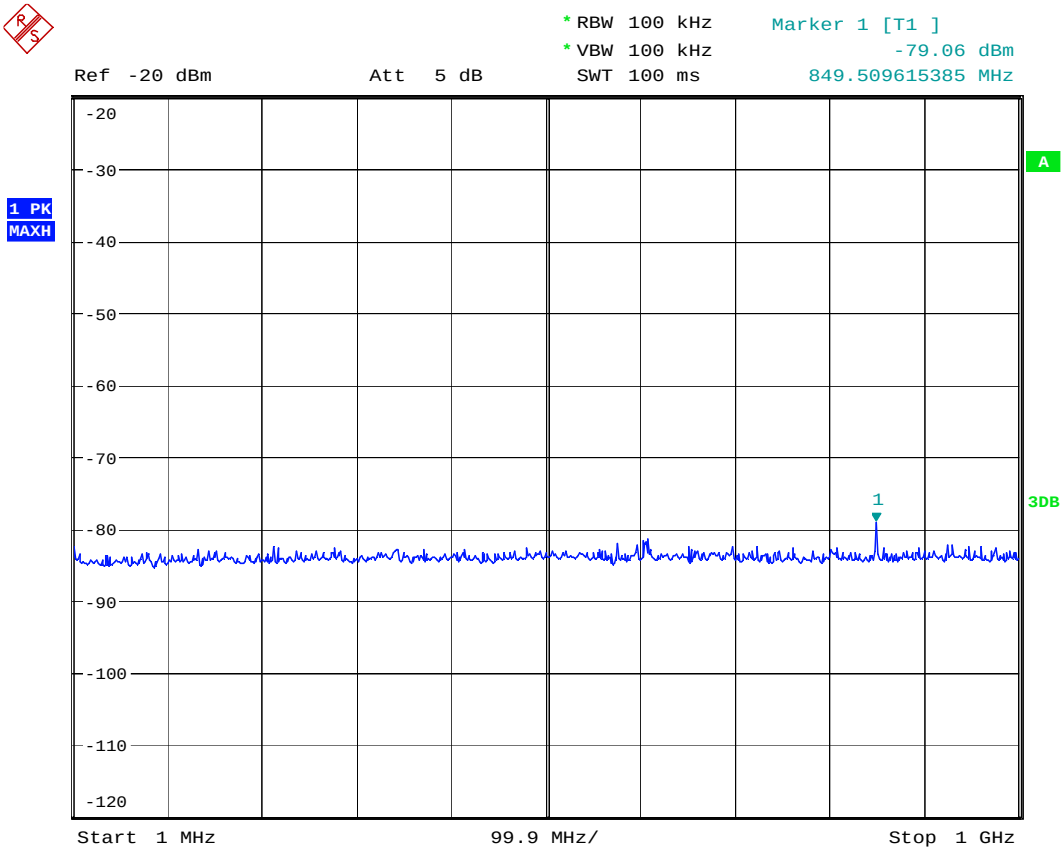
## 3.6 Antenna Conducted Emission Data

| | |
|---|---|
| **Tested By:** | Arkadi Kaplan |
| **Test Date:** | August 27, 2009 |

The results on the following page(s) were obtained when the device was tested in the condition described in Section 2.

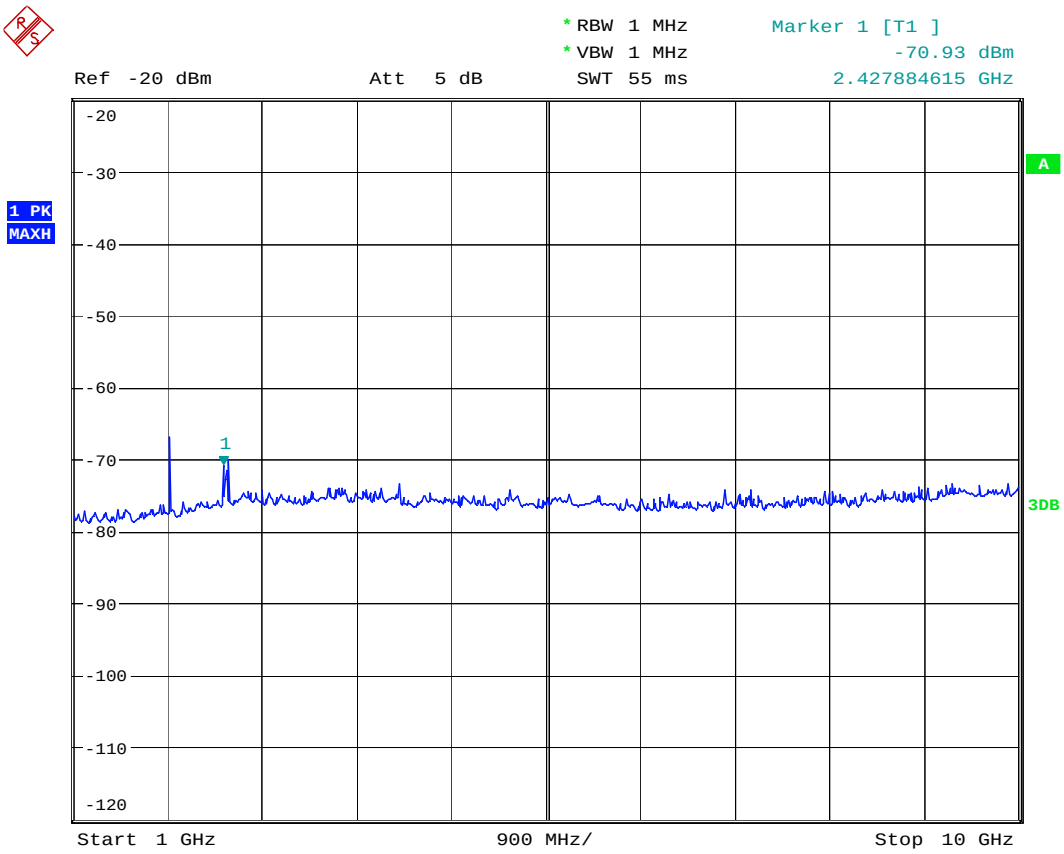
| | |
|---|---|
| **Results:** | **Complies** |

Note: Measurements were performed with the EUT tuned at 25 MHz, 512 MHz and 1300 MHz. Data for the worst-case tuned frequency was 512 MHz which is reported.




Antenna Port Conducted

Date: 27.AUG.2009 23:42:07




Antenna Port Conducted

Date: 27.AUG.2009 23:43:16

## 4.0 List of Test Equipment

Measurement equipment used for emission compliance testing utilized the equipment on the following list.

**Test List for 2009 Test**

| Equipment | Manufacturer | Model/Type | Serial # | Cal Int | Cal Due |
|---|---|---|---|---|---|
| RF Filter Section | Hewlett Packard | 85460A | 3448A00267 | 12 | 10/01/09 |
| EMI Receiver | Hewlett Packard | 8546A | 3710A00373 | 12 | 10/01/09 |
| BI-Log Antenna | EMCO | 3143 | 9509-1160 | 12 | 11/06/10 |
| Pre-Amplifier | Sonoma | 310N | 185634 | 12 | 11/10/09 |
| LISN | FCC | FCC-LISN-50-50-M-H | 2011 | 12 | 09/19/09 |
| Spectrum Analyzer | Rohde/Schwarz | FSP-40 | 100030 | 12 | 10/13/09 |

**Test List for 2010 Test**

| Equipment | Manufacturer | Model/Type | Serial # | Cal Int | Cal Due |
|---|---|---|---|---|---|
| RF Filter Section | Hewlett Packard | 85460A | 3448A00267 | 12 | 12/04/10 |
| EMI Receiver | Hewlett Packard | 8546A | 3710A00373 | 12 | 12/04/10 |
| BI-Log Antenna | EMCO | 3143 | 9509-1160 | 12 | 11/06/10 |
| Pre-Amplifier | Sonoma | 310N | 185634 | 12 | 11/19/10 |
| Spectrum Analyzer | Rohde/Schwarz | FSP-40 | 100030 | 12 | 10/13/09 |
| Horn Antenna | EMCO | 3115 | 9107-3712 | 12 | 11/03/10 |
| Pre-Amplifier | Miteq | AMF-4D-001180-24-10P | 799159 | 12 | 07/28/10 |

## Appendix A LO Frequency Calculation

1 LOCAL OSC FREQUENCY CALCULATION

-1 FCC ID: ADV0602 formula for 1st, 2nd and 3rd Local oscillation frequencies are as follow :

| RECEIVING BAND (FR STEP) | FREQ. STEP (kHz) | RECEIVING FREQ. FR (MHz) | 1st LOCAL PLL 1 /VCO 1 or VCO 2 (MHz) | 2nd LOCAL PLL 2 /VCO 3 (MHz) | 3rd LOCAL X' TAL (MHz) |
|---|---|---|---|---|---|
| VHF Low | 10 | 25.0000 ~ 27.4050 | A = (FR + 380.800) / 0.075 | 2nd Local = 1st IF - 21.4 | 20.9450 |
| | 5 | 27.4100 ~ 29.7000 | = A.xxx (Cut away decimal) | | |
| | 10 | 29.7100 ~ 49.8300 | 1st Local = A x 0.075 | | |
| | 5 | 49.8350 ~ 54.0000 | 1st IF = 1st Local - FR | | |
| VHF High | 8.33 | 108.0000 ~ 136.99166 | | 2nd Local = 1st IF - 21.4 | 20.9450 |
| | 5 | 137.0000 ~ 137.9950 | | | |
| | 12.5 | 138.0000 ~ 143.9875 | | | |
| | 5 | 144.0000 ~ 147.9950 | FR DENOTES Frequency Received. | | |
| | 12.5 | 148.0000 ~ 150.7875 | | | |
| | 5 | 150.8000 ~ 150.8450 | | | |
| | 7.5 | 150.8525 ~ 154.4975 | | | |
| | 5 | 154.5150 ~ 154.6400 | | | |
| | 7.5 | 154.6500 ~ 156.2550 | | | |
| | 25 | 156.2750 ~ 157.4500 | | | |
| | 7.5 | 157.4700 ~ 161.5725 | | | |
| | 5 | 161.6000 ~ 161.9750 | | | |
| | 12.5 | 162.0000 ~ 174.0000 | | | |
| | 5 | 216.0025 ~ 224.9950 | | | |
| UHF Low | 6.25 | 225.0000 ~ 316.54375 | | 2nd Local = 1st IF - 21.4 | 20.9450 |
| | 〃 | 316.5500 ~ 316.79375 | A = (FR + 380.700) / 0.075 | | |
| | 〃 | 316.8000 ~ 337.89375 | A = (FR + 380.800) / 0.075 | | |
| | 〃 | 337.9000 ~ 338.09375 | A = (FR + 380.700) / 0.075 | | |
| | 〃 | 338.1000 ~ 359.29375 | A = (FR + 380.800) / 0.075 | | |
| | 〃 | 359.3000 ~ 359.49375 | A = (FR + 380.700) / 0.075 | | |
| | 〃 | 359.5000 ~ 379.99375 | A = (FR + 380.800) / 0.075 | | |
| | 12.5 | 380.0000 ~ 380.7125 | 〃 | | |
| | 〃 | 380.7250 ~ 380.8000 | A = (FR + 380.700) / 0.075 | | |
| | 〃 | 380.8125 ~ 400.0000 | A = (FR + 380.800) / 0.075 | | |
| | 〃 | 400.0125 ~ 405.9750 | A = (FR + 380.700) / 0.075 | | |
| | 〃 | 405.9875 ~ 419.9875 | A = (FR + 380.800) / 0.075 | | |
| | 5 | 420.0000 ~ 450.0000 | 〃 | | |
| | 6.25 | 450.00625 ~ 469.99375 | 〃 | | |
| | 6.25 | 470.0000 ~ 512.0000 | 〃 | | |
| UHF High | 3.125 | 764.0000 ~ 781.996875 | A = (FR - 380.800) / 0.075 | 2nd Local = 1st IF - 21.4 | 20.9450 |
| | 〃 | 791.0000 ~ 796.996875 | = A.xxx (Cut away decimal) | | |
| | 12.5 | 806.0000 ~ 823.9875 | 1st Local = A x 0.075 | | |
| | 〃 | 849.0000 ~ 868.9875 | 1st IF = FR - 1st Local | | |
| | 〃 | 894.0000 ~ 939.9875 | | | |
| | 6.25 | 940.0000 ~ 960.0000 | | | |
| | 〃 | 1240.0000 ~ 1300.0000 | | | |

| RECEIVING BAND (FR STEP) | FREQ. STEP ( kHz ) | RECEIVING FREQ. FR (MHz) | 1st LOCAL PLL 1 /VCO 1 or VCO 2 (MHz) | 2nd LOCAL PLL 2 /VCO 3 (MHz) | 3rd LOCAL X' TAL (MHz) |
|---|---|---|---|---|---|
| UHF Low | 6.25 | 310.0000 | 9210.666 = (310.0000 + 380.800) / 0.075<br>= 9210.666 (Cut away decimal)<br>690.750 =9210 x 0.075<br>380.750 = 690.750 − 310.0000 | 359.350 = 380.750 − 21.4 | 20.9450 |
| | 12.5 | 406.0000 | 10490.666 = (406.0000 + 380.800) / 0.075<br>= 10490.666 (Cut away decimal)<br>786.750 =10490 x 0.075<br>380.750 = 786.750 − 406.0000 | 359.350 = 380.750 − 21.4 | 20.9450 |
| | 5.0 | 450.0000 | 11077.333 = (450.0000 + 380.800) / 0.075<br>= 11077.333 (Cut away decimal)<br>830.775 =11077 x 0.075<br>380.775 = 830.775 − 450.0000 | 359.375 = 380.775 − 21.4 | 20.9450 |
| | 6.25 | 512.0000 | 11904.000 = (512.0000 + 380.800) / 0.075<br>= 11904.000 (Cut away decimal)<br>892.800 =11904 x 0.075<br>380.800 = 892.800 − 512.0000 | 359.400 = 380.800 − 21.4 | 20.9450 |
| UHF High | 3.125 | 764.0000 | 5109.333 = (764.0000 − 380.800) / 0.075<br>= 5109.333 (Cut away decimal)<br>383.175 =5109 x 0.075<br>380.825 = 764.000 − 383.175 | 359.425 = 380.825 − 21.4 | 20.9450 |
| | 12.5 | 806.0000 | 5669.333 = (806.0000 − 380.800) / 0.075<br>= 5669.333 (Cut away decimal)<br>425.175 =5669 x 0.075<br>380.825 = 806.000 − 425.175 | 359.425 = 380.825 − 21.4 | 20.9450 |
| | 12.5 | 860.0000 | 6389.333 = (860.0000 − 380.800) / 0.075<br>= 6389.333 (Cut away decimal)<br>479.175 =6389 x 0.075<br>380.825 = 860.000 − 479.175 | 359.425 = 380.825 − 21.4 | 20.9450 |
| | 6.25 | 960.0000 | 7722.666 = (960.0000 − 380.800) / 0.075<br>= 7722.666 (Cut away decimal)<br>579.150 =7722 x 0.075<br>380.850 = 960.000 − 579.150 | 359.450 = 380.850 − 21.4 | 20.9450 |
| | 6.25 | 12400.0000 | 11456.000 = (1240.0000 − 380.800) / 0.075<br>= 11456.000 (Cut away decimal)<br>859.200 =11456 x 0.075<br>380.800 = 1240.000 − 859.200 | 359.400 = 380.800 − 21.4 | 20.9450 |
| | 6.25 | 1300.0000 | 12256.000 = (1300.0000 − 380.800) / 0.075<br>= 12256.000 (Cut away decimal)<br>919.200 =12256 x 0.075<br>380.800 = 1300.000 − 919.200 | 359.400 = 380.800 − 21.4 | 20.9450 |