

**FCC PART 15.249**  
**EMI MEASUREMENT AND TEST REPORT**

For

**Coby Communications Ltd.**

Unit C-E, 8/F., Po Shau Ctr., 115 How Ming St, Kwun Tong, Hong Kong

**FCC ID: S7ICV-890**

April 25, 2005

|                                                                                                                                                                                                                                                  |                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| <b>This Report Concerns:</b><br><input checked="" type="checkbox"/> Original Report                                                                                                                                                              | <b>Equipment Type:</b><br>Transmitter, Wireless Headset |
| <b>Test Engineer:</b> William Chan <i>William Chan</i>                                                                                                                                                                                           |                                                         |
| <b>Report No.:</b> RSZ05041303                                                                                                                                                                                                                   |                                                         |
| <b>Test Date:</b> April 19-21, 2005                                                                                                                                                                                                              |                                                         |
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## GENERAL INFORMATION

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### Product Description for Equipment Under Test (EUT)

The Coby Communications Ltd. 's product, model number: ANJ09122 or the "EUT" as referred to in this report is a Transmitter of Wireless Headset. The EUT is measured approximately 15.5cm L x 12.0cm W x 7.5cm H. rated input voltage: DC 9V battery.

Adapter manufacturer: Coby, model: V090030D1201, Input: AC 120V 60Hz 0.5W, Output: 9V DC 300mA.

*\* The test data gathered are from production sample, serial number: 0000CV890101, provided by the manufacturer.*

### Objective

This Type approval report is prepared on behalf of *Coby Communications Ltd.* in accordance with Part 2, Subpart J, and Part 15, Subparts A , B and C of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules, sec 15.207, 15.209 and sec 15.249.

### Related Submittal(s)/Grant(s)

No Related Submittals.

### Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Lab Corp. (ShenZhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

### Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect radiated and conducted emission measurement data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

**Local Support Equipment List and Details**

| Manufacturer | Description     | Model  | Serial Number | FCC ID |
|--------------|-----------------|--------|---------------|--------|
| NANYAN       | Audio Generator | NY2201 | 019829        | DoC    |
| NANYAN       | Audio Generator | NY2201 | 019596        | DoC    |

**External I/O Cable**

| Cable Description                         | Length (M) | From/Port       | To              |
|-------------------------------------------|------------|-----------------|-----------------|
| Unshielded Undetachable adapter DC Cable  | 1.50       | EUT             | Adapter         |
| Unshielded Detachable Audio Connect Cable | 0.8        | EUT             | Audio Generator |
| Unshielded Detachable AC Cable            | 1.2        | Audio Generator | AC Power        |

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## SYSTEM TEST CONFIGURATION

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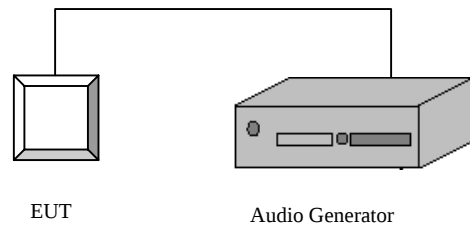
### **Justification**

The system was configured for testing in a typical fashion (as normally used by a typical user).

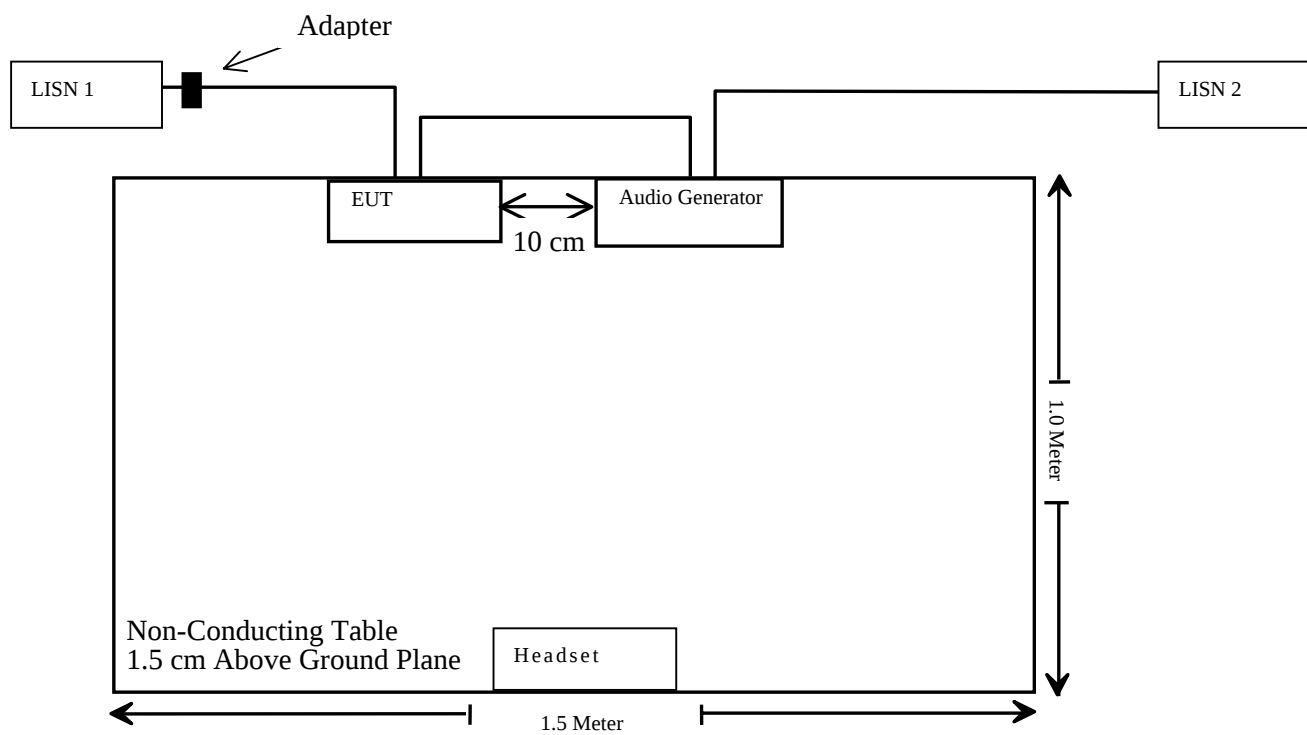
### **Equipment Modifications**

BACL has not done any modification on the EUT.

## Configuration of Test Setup



## Block Diagram of Test Setup



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**SUMMARY OF TEST RESULTS**

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| FCC RULES              | DESCRIPTION OF TEST           | RESULT    |
|------------------------|-------------------------------|-----------|
| §15.203                | Antenna Requirement           | Compliant |
| §15.205                | Restricted Bands of Operation | Compliant |
| §15.207(a)             | Conduction Emission           | Compliant |
| §15.209(a), §15.249(a) | Radiated Emission             | Compliant |
| §15.249(d)             | Out of band emission          | Compliant |

Note: The highest clocks of the EUT was 11.15 MHz.

**§15.203 - ANTENNA APPLICATION**

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**Standard Applicable**

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a permanent antenna, fulfill the requirement of this section.

Test Result: Pass

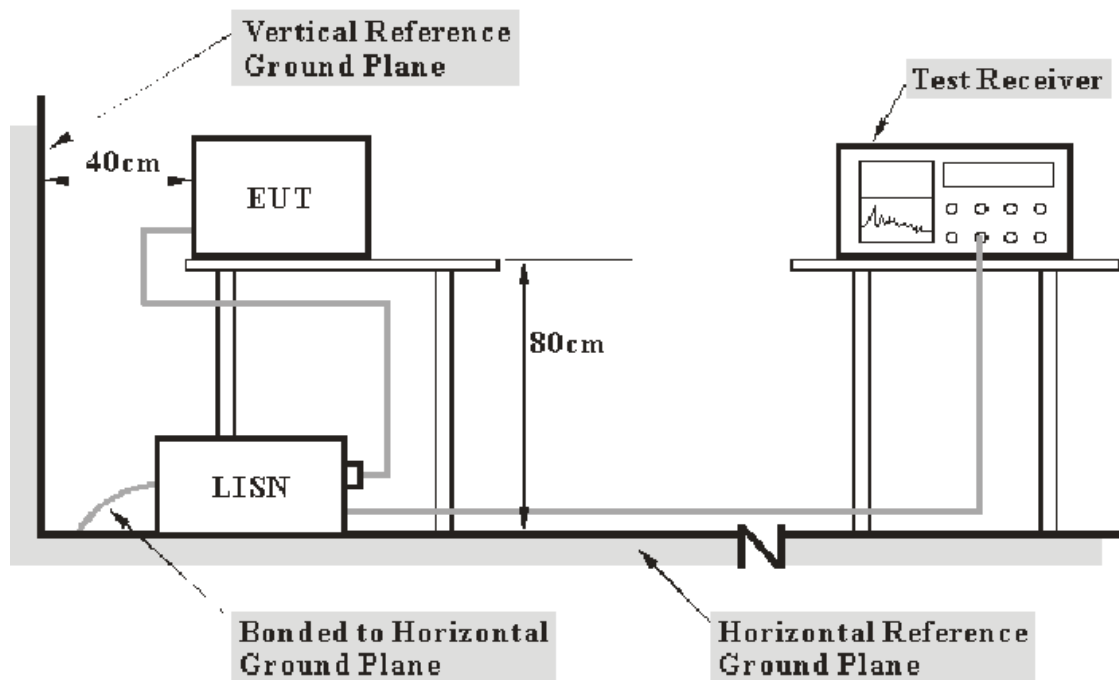
## §15.207 - CONDUCTED EMISSION

### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at BACL is  $\pm 2.4$  dB.

### EUT Setup



- Note: 1. Support units were connected to second LISN.  
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15 .207 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

## Test Receiver Setup

The Test Receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the test receiver was set with the following configurations:

| <u>Frequency Range</u> | <u>IFBW</u> |
|------------------------|-------------|
| 150 kHz – 30 MHz       | 9 kHz       |

## Test Equipment List and Details

| Manufacturer    | Description   | Model   | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|---------------|---------|---------------|------------------|----------------------|
| Com-Power       | L.I.S.N.      | LI-200  | 12005         | N/A              | N/A                  |
| Com-Power       | L.I.S.N.      | LI-200  | 12008         | N/A              | N/A                  |
| Rohde & Schwarz | Test Receiver | ESCS30  | 830245/006    | 2005-1-26        | 2006-1-26            |
| Rohde & Schwarz | L.I.S.N.      | ESH2-Z5 | 892107/021    | 2005-2-28        | 2006-2-27            |
| Rohde & Schwarz | Pulse Limiter | ESH3Z2  | DE25985       | 2004-9-1         | 2005-8-31            |

\* Com-Power's LISN were used as the supporting equipment.

\* **Statement of Traceability:** **BACL** attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Procedure

During the conducted emission test, the adapter power cord was connected to the outlet of the first LISN, the host PC and all other support equipment power cords were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

## Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

Low channel: **-24.20 dB** at **1.165 MHz** in the **Line** conductor mode.  
High channel: **-24.77 dB** at **0.385 MHz** in the **Neutral** conductor mode.

## Environmental Conditions

|                    |          |
|--------------------|----------|
| Temperature:       | 28 ° C   |
| Relative Humidity: | 37%      |
| ATM Pressure:      | 1032mbar |

The testing was performed by William Chan on 2005-4-19

## Test Data

Test mode: Running

| LINE CONDUCTED EMISSIONS |                   |                   |                       | FCC PART 15 .207 |              |
|--------------------------|-------------------|-------------------|-----------------------|------------------|--------------|
| Frequency<br>MHz         | Amplitude<br>dBμV | Detector<br>QP/AV | Phase<br>Line/Neutral | Limit<br>dBμV    | Margin<br>dB |
| Low Channel              |                   |                   |                       |                  |              |
| 1.165                    | 21.80             | AV                | Line                  | 46.00            | -24.20       |
| 0.385                    | 23.70             | AV                | Neutral               | 48.17            | -24.47       |
| 0.385                    | 33.00             | QP                | Neutral               | 58.17            | -25.17       |
| 0.725                    | 19.80             | AV                | Neutral               | 46.00            | -26.20       |
| 0.725                    | 29.50             | QP                | Neutral               | 56.00            | -26.50       |
| 0.385                    | 31.50             | QP                | Line                  | 58.17            | -26.67       |
| 1.165                    | 28.50             | QP                | Line                  | 56.00            | -27.50       |
| 0.385                    | 20.30             | AV                | Line                  | 48.17            | -27.87       |
| 1.125                    | 25.90             | QP                | Neutral               | 56.00            | -30.10       |
| 7.320                    | 28.30             | QP                | Line                  | 60.00            | -31.70       |
| 0.915                    | 13.90             | AV                | Line                  | 46.00            | -32.10       |
| 0.915                    | 23.60             | QP                | Line                  | 56.00            | -32.40       |
| 13.930                   | 27.60             | QP                | Line                  | 60.00            | -32.40       |
| 13.930                   | 17.40             | AV                | Line                  | 50.00            | -32.60       |
| 14.960                   | 27.00             | QP                | Neutral               | 60.00            | -33.00       |
| 1.125                    | 12.40             | AV                | Neutral               | 46.00            | -33.60       |
| 7.320                    | 15.60             | AV                | Line                  | 50.00            | -34.40       |
| 7.235                    | 24.70             | QP                | Neutral               | 60.00            | -35.30       |
| 7.235                    | 14.50             | AV                | Neutral               | 50.00            | -35.50       |
| 14.960                   | 13.40             | AV                | Neutral               | 50.00            | -36.60       |

Continues

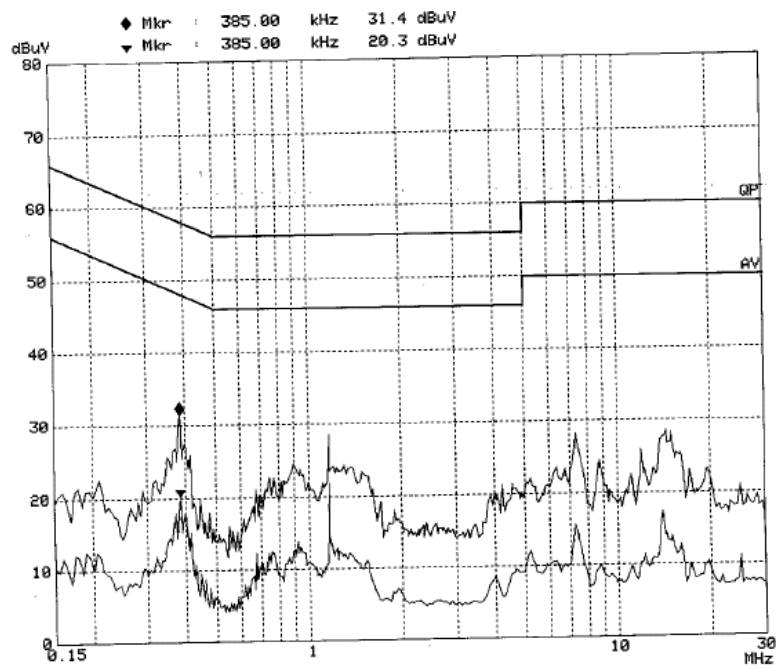
| High Channel |       |    |         |       |        |
|--------------|-------|----|---------|-------|--------|
| 0.385        | 23.40 | AV | Neutral | 48.17 | -24.77 |
| 0.385        | 33.10 | QP | Neutral | 58.17 | -25.07 |
| 0.705        | 29.60 | QP | Neutral | 56.00 | -26.40 |
| 0.705        | 19.20 | AV | Neutral | 46.00 | -26.80 |
| 0.385        | 19.60 | AV | Line    | 48.17 | -28.57 |
| 0.385        | 28.70 | QP | Line    | 58.17 | -29.47 |
| 13.855       | 30.50 | QP | Line    | 60.00 | -29.50 |
| 1.200        | 25.90 | QP | Neutral | 56.00 | -30.10 |
| 0.875        | 25.70 | QP | Line    | 56.00 | -30.30 |
| 1.230        | 25.20 | QP | Line    | 56.00 | -30.80 |
| 13.865       | 28.80 | QP | Neutral | 60.00 | -31.20 |
| 1.200        | 14.50 | AV | Neutral | 46.00 | -31.50 |
| 0.705        | 24.40 | QP | Line    | 56.00 | -31.60 |
| 1.230        | 13.60 | AV | Line    | 46.00 | -32.40 |
| 0.705        | 13.40 | AV | Line    | 46.00 | -32.60 |
| 0.875        | 12.10 | AV | Line    | 46.00 | -33.90 |
| 13.855       | 14.80 | AV | Line    | 50.00 | -35.20 |
| 13.865       | 13.60 | AV | Neutral | 50.00 | -36.40 |
| 0.170        | 25.20 | QP | Neutral | 64.96 | -39.76 |
| 0.170        | 12.10 | AV | Neutral | 54.96 | -42.86 |

## Plot(s) of Test Data

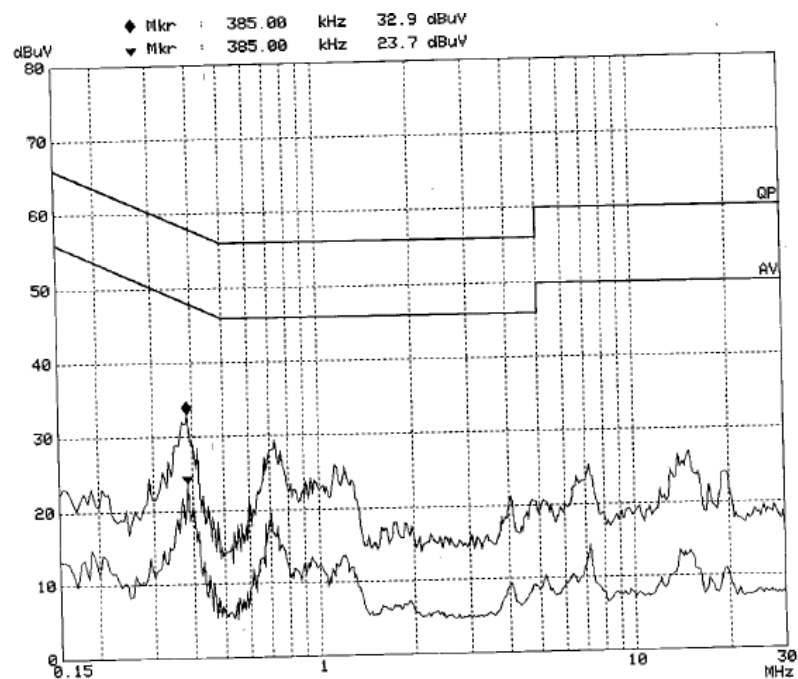
Plot(s) of Test Data is presented hereinafter as reference.

Low channel:

Line:

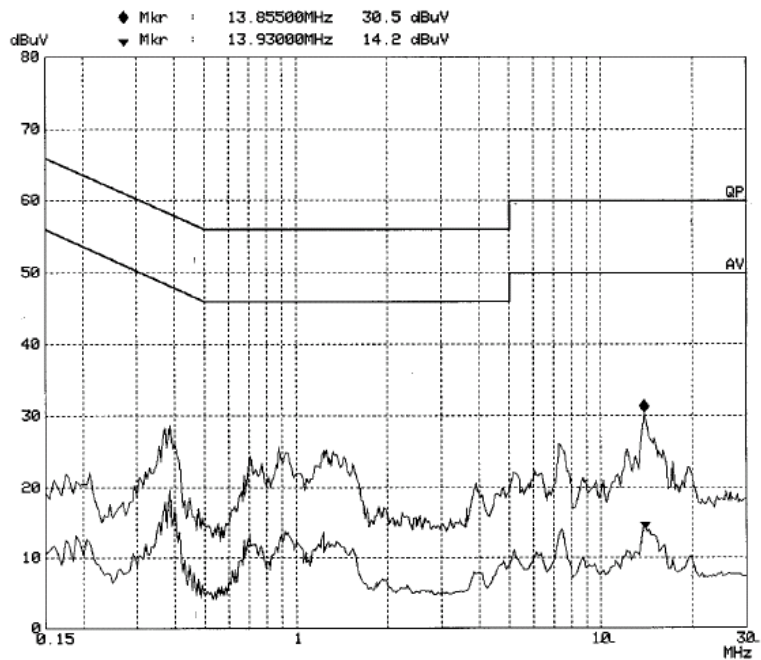


Neutral:

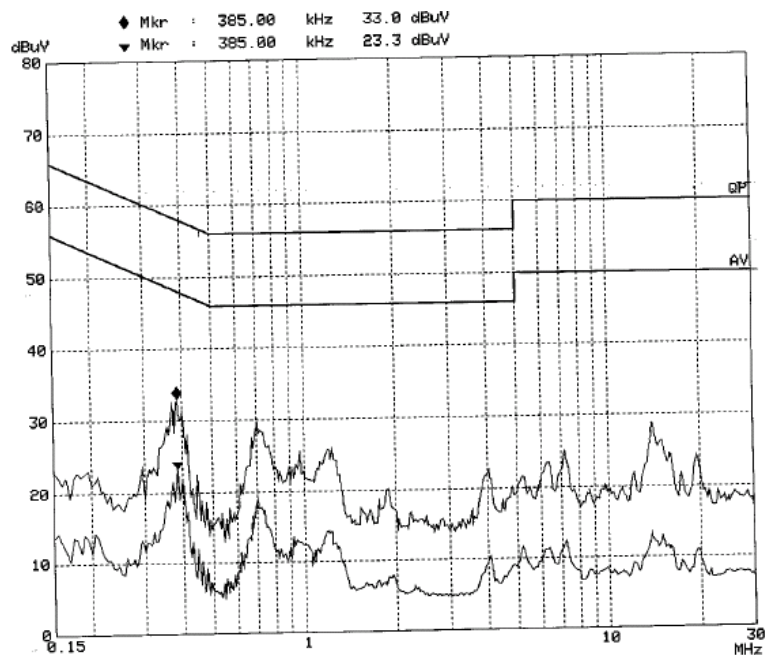


High channel:

Line:



Neutral



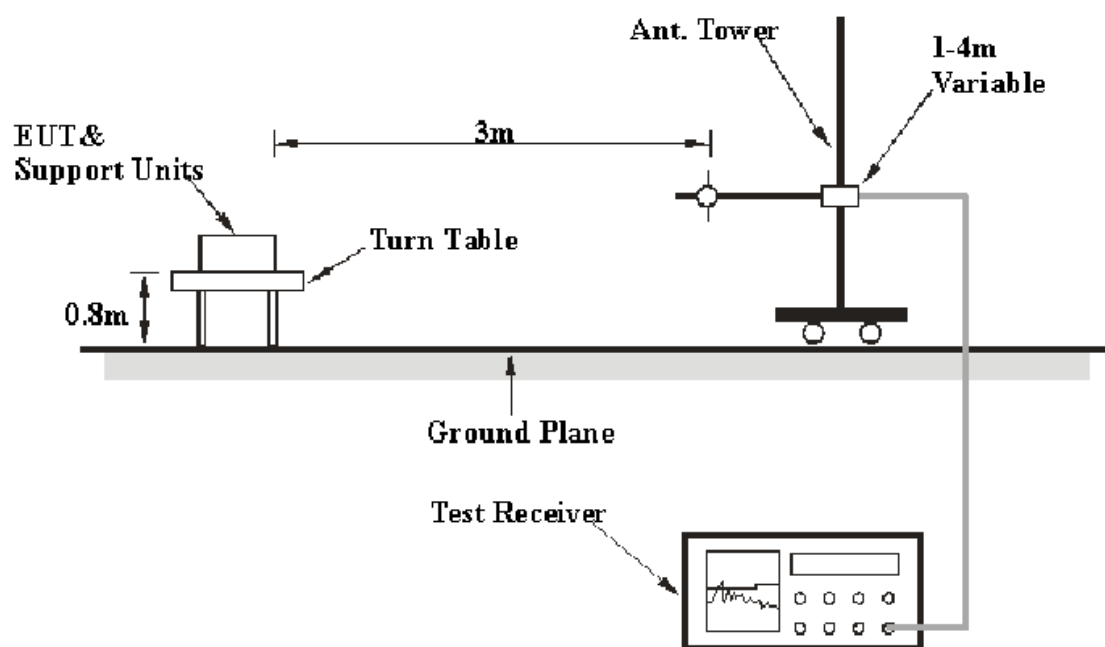
## §15.205 §15.209(a) §15.249(a) - RADIATED EMISSION

### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at BACL is  $\pm 4.0$  dB.

### EUT Setup



The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209 and FCC 15.249 limits.

### Test Receiver Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the test receiver was set with the following configurations:

| <b><i>Frequency Range</i></b> | <b><i>RBW</i></b> | <b><i>Video B/W</i></b> |
|-------------------------------|-------------------|-------------------------|
| 30 – 1000 MHz                 | 100 kHz           | 100 kHz                 |
| 1 GHz – 25 GHz                | 1MHz              | 1 MHz                   |

## Test Equipment List and Details

| Manufacturer    | Description       | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|------------------|----------------------|
| HP              | Amplifier         | 8447E | 1937A01046    | 2004-9-1         | 2005-8-31            |
| Rohde & Schwarz | Test Receiver     | ESCI  | 100035        | 2004-9-15        | 2005-9-14            |
| Sunol Sciences  | Bilog Antenna     | JB1   | A040904-2     | 2005-4-19        | 2006-4-18            |
| Sunol Sciences  | System Controller | SC99V | 041304-1      | N/A              | N/A                  |
| HP              | Amplifier         | 8447D | 2994A09795    | 2004-9-1         | 2005-8-31            |
| Rohde & Schwarz | Test Receiver     | ESCI  | 100028        | 2004-9-6         | 2005-9-5             |
| Sunol Sciences  | Bilog Antenna     | JB1   | A040904-1     | 2005-4-19        | 2006-4-18            |

\* **Statement of Traceability:** **BACL** attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Procedure

For the radiated emissions test, the adapter and all support equipment power cords were connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detection mode.

## Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Standard Limit}$$

## Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.249, with the worst margin reading of:

Radiation below 1GHz:

Low channel: **-7.39 dB** at **49.410 MHz** in the **Vertical** polarization.  
High channel: **-5.74dB** at **52.680 MHz** in the **Vertical** polarization.

Radiation above 1GHz:

Low channel: **-7.54 dB** at **9768.800 MHz** in the **Horizontal** polarization.  
High channel: **-6.64 dB** at **9786.810 MHz** in the **Vertical** polarization.

**Test Data****Environmental Conditions**

|                    |          |
|--------------------|----------|
| Temperature:       | 28 ° C   |
| Relative Humidity: | 37%      |
| ATM Pressure:      | 1032mbar |

The testing was performed by William Chan on 2005-4-19

Test mode: Running

| INDICATED                 |                 | TABLE           | ANTENNA         |               | CORRECTION FACTOR |             |            | CORRECTED AMPLITUDE   | FCC PART 15.209 |              |
|---------------------------|-----------------|-----------------|-----------------|---------------|-------------------|-------------|------------|-----------------------|-----------------|--------------|
| Frequency<br>MHz          | Ampl.<br>dBμV/m | Angle<br>Degree | Height<br>Meter | Polar<br>H/ V | Antenna<br>dB/m   | Cable<br>dB | Amp.<br>dB | Corr. Ampl.<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB |
| Low channel (below 1GHz)  |                 |                 |                 |               |                   |             |            |                       |                 |              |
| 49.410                    | 49.55           | 180             | 1.2             | V             | 11.3              | 0.56        | 28.8       | 32.61                 | 40.0            | -7.39        |
| 57.160                    | 50.14           | 90              | 1               | V             | 10.3              | 0.73        | 28.7       | 32.47                 | 40.0            | -7.53        |
| 119.240                   | 52.16           | 60              | 1               | V             | 11.9              | 1.10        | 28.5       | 36.66                 | 43.5            | -6.84        |
| 179.380                   | 51.98           | 45              | 1.2             | V             | 13.4              | 1.20        | 28.2       | 38.38                 | 43.5            | -5.12        |
| 224.150                   | 54.33           | 45              | 1.2             | V             | 10.1              | 1.30        | 27.8       | 37.93                 | 46.0            | -8.07        |
| 239.520                   | 53.29           | 45              | 1.2             | V             | 11.3              | 1.30        | 27.7       | 38.19                 | 46.0            | -7.81        |
| 49.450                    | 50.22           | 45              | 1.2             | H             | 11.3              | 0.56        | 28.8       | 33.28                 | 40.0            | -6.72        |
| 62.360                    | 51.48           | 45              | 1.2             | H             | 9.7               | 0.75        | 28.7       | 33.23                 | 40.0            | -6.77        |
| 112.650                   | 50.97           | 45              | 1.2             | H             | 11.7              | 1.00        | 28.5       | 35.17                 | 43.5            | -8.33        |
| 179.380                   | 50.46           | 45              | 1.2             | H             | 13.4              | 1.20        | 28.2       | 36.86                 | 43.5            | -6.64        |
| 221.560                   | 53.11           | 45              | 1.2             | H             | 10.1              | 1.30        | 27.8       | 36.71                 | 46.0            | -9.29        |
| 239.480                   | 52.17           | 45              | 1.2             | H             | 11.3              | 1.30        | 27.7       | 37.07                 | 46.0            | -8.93        |
| High channel (below 1GHz) |                 |                 |                 |               |                   |             |            |                       |                 |              |
| 52.680                    | 51.77           | 90              | 1.2             | V             | 10.5              | 0.69        | 28.7       | 34.26                 | 40.0            | -5.74        |
| 72.980                    | 51.64           | 180             | 1.0             | V             | 9.6               | 0.82        | 28.7       | 33.36                 | 40.0            | -6.64        |
| 112.950                   | 51.21           | 180             | 1.0             | V             | 11.7              | 1           | 28.5       | 35.41                 | 43.5            | -8.09        |
| 156.480                   | 50.87           | 360             | 1.2             | V             | 13.0              | 1.1         | 28.4       | 36.57                 | 43.5            | -6.93        |
| 216.850                   | 51.67           | 120             | 1.0             | V             | 10.1              | 1.3         | 27.8       | 35.27                 | 46.0            | -10.73       |
| 239.750                   | 51.84           | 120             | 1.2             | V             | 11.3              | 1.3         | 27.7       | 36.74                 | 46.0            | -9.26        |
| 68.740                    | 50.94           | 90              | 1.2             | H             | 9.7               | 0.8         | 28.7       | 32.74                 | 40.0            | -7.26        |
| 71.950                    | 50.66           | 180             | 1.2             | H             | 9.6               | 0.82        | 28.7       | 32.38                 | 40.0            | -7.62        |
| 112.310                   | 49.85           | 180             | 1.2             | H             | 11.7              | 1           | 28.5       | 34.05                 | 43.5            | -9.45        |
| 158.750                   | 50.17           | 360             | 1.2             | H             | 13.0              | 1.1         | 28.4       | 35.87                 | 43.5            | -7.63        |
| 215.350                   | 51.31           | 120             | 1.2             | H             | 10.1              | 1.3         | 27.8       | 34.91                 | 43.5            | -8.59        |
| 238.540                   | 50.62           | 120             | 1.2             | H             | 11.3              | 1.3         | 27.7       | 35.52                 | 46.0            | -10.48       |

Continues

| INDICATED                |                 |          | TABLE           | ANTENNA         |               | CORRECTION FACTOR |             |            | CORRECTED AMPLITUDE   | FCC PART 15.249 |              |
|--------------------------|-----------------|----------|-----------------|-----------------|---------------|-------------------|-------------|------------|-----------------------|-----------------|--------------|
| Frequency<br>MHz         | Ampl.<br>dBμV/m | Comments | Angle<br>Degree | Height<br>Meter | Polar<br>H/ V | Antenna<br>dB/m   | Cable<br>dB | Amp.<br>dB | Corr. Ampl.<br>dBμV/m | Limit<br>dBμV/m | Margin<br>dB |
| Low Channel (above 1GHz) |                 |          |                 |                 |               |                   |             |            |                       |                 |              |
| 9768.800                 | 32.76           | AV       | 180             | 1.2             | H             | 38.5              | 7.0         | 31.8       | 46.46                 | 54              | -7.54        |
| 9768.750                 | 32.48           | AV       | 180             | 1.2             | V             | 38.5              | 7.0         | 31.8       | 46.18                 | 54              | -7.82        |
| 9700.120                 | 32.26           | AV       | 180             | 1.2             | V             | 38.5              | 7.0         | 31.8       | 45.96                 | 54              | -8.04        |
| 9700.010                 | 32.18           | AV       | 180             | 1.2             | H             | 38.5              | 7.0         | 31.8       | 45.88                 | 54              | -8.12        |
| 7326.600                 | 32.13           | AV       | 90              | 1.0             | H             | 36.6              | 6.0         | 31.6       | 43.13                 | 54              | -10.87       |
| 7326.580                 | 31.56           | AV       | 90              | 1.0             | V             | 36.6              | 6.0         | 31.6       | 42.56                 | 54              | -11.44       |
| 7275.010                 | 31.32           | AV       | 90              | 1.0             | V             | 36.6              | 6.0         | 31.6       | 42.32                 | 54              | -11.68       |
| 7275.030                 | 31.26           | AV       | 90              | 1.0             | H             | 36.6              | 6.0         | 31.6       | 42.26                 | 54              | -11.74       |
| 4850.040                 | 32.03           | AV       | 180             | 1.2             | H             | 33.5              | 4.9         | 30.4       | 40.03                 | 54              | -13.97       |
| 4884.410                 | 31.92           | AV       | 45              | 1.0             | V             | 33.5              | 4.9         | 30.4       | 39.92                 | 54              | -14.08       |
| 4850.020                 | 31.85           | AV       | 45              | 1.2             | V             | 33.5              | 4.9         | 30.4       | 39.85                 | 54              | -14.15       |
| 4884.400                 | 31.80           | AV       | 180             | 1.0             | H             | 33.5              | 4.9         | 30.4       | 39.80                 | 54              | -14.2        |
| 9768.750                 | 44.78           | PK       | 180             | 1.0             | V             | 38.5              | 7.0         | 31.8       | 58.48                 | 74              | -15.52       |
| 7326.600                 | 43.77           | PK       | 90              | 1.2             | H             | 36.6              | 6.0         | 31.6       | 57.67                 | 74              | -16.33       |
| 9768.800                 | 43.86           | PK       | 180             | 1.0             | H             | 38.5              | 7.0         | 31.8       | 57.56                 | 74              | -16.44       |
| 9700.120                 | 43.32           | PK       | 180             | 1.0             | V             | 38.5              | 7.0         | 31.8       | 57.02                 | 74              | -16.98       |
| 9700.010                 | 43.31           | PK       | 180             | 1.0             | H             | 38.5              | 7.0         | 31.8       | 57.01                 | 74              | -16.99       |
| 7326.580                 | 43.91           | PK       | 90              | 1.2             | V             | 36.6              | 6.0         | 31.6       | 54.91                 | 74              | -19.09       |
| 7275.010                 | 43.83           | PK       | 90              | 1.2             | V             | 36.6              | 6.0         | 31.6       | 54.83                 | 74              | -19.17       |
| 7275.030                 | 43.52           | PK       | 90              | 1.2             | H             | 36.6              | 6.0         | 31.6       | 54.25                 | 74              | -19.75       |
| 4884.410                 | 43.96           | PK       | 45              | 1.2             | V             | 33.5              | 4.9         | 30.4       | 51.96                 | 74              | -22.04       |
| 4850.020                 | 43.75           | PK       | 45              | 1.2             | V             | 33.5              | 4.9         | 30.4       | 51.75                 | 74              | -22.25       |
| 4884.400                 | 43.73           | PK       | 180             | 1.2             | H             | 33.5              | 4.9         | 30.4       | 51.73                 | 74              | -22.27       |
| 4850.040                 | 43.13           | PK       | 180             | 1.2             | H             | 33.5              | 4.9         | 30.4       | 51.13                 | 74              | -22.87       |
| 2442.190                 | 63.39           | FUND/AV  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 67.19                 | 94              | - 26.81      |
| 2442.210                 | 63.14           | FUND/AV  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 66.94                 | 94              | -27.06       |
| 2425.010                 | 62.76           | FUND/AV  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 66.56                 | 94              | -27.44       |
| 2425.030                 | 62.50           | FUND/AV  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 66.30                 | 94              | - 27.7       |
| 2442.210                 | 63.85           | FUND/PK  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 67.65                 | 114             | -46.35       |
| 2442.190                 | 63.78           | FUND/PK  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 67.58                 | 114             | - 46.42      |
| 2425.030                 | 63.29           | FUND/PK  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 67.09                 | 114             | - 46.91      |
| 2425.010                 | 63.18           | FUND/PK  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 66.98                 | 114             | - 47.02      |

Continues

| INDICATED                 |                 |          | TABLE           | ANTENNA         |               | CORRECTION FACTOR |             |            | CORRECTED<br>AMPLITUDE | FCC PART 15.249 |              |
|---------------------------|-----------------|----------|-----------------|-----------------|---------------|-------------------|-------------|------------|------------------------|-----------------|--------------|
| Frequency<br>MHz          | Ampl.<br>dBμV/m | Comments | Angle<br>Degree | Height<br>Meter | Polar<br>H/ V | Antenna<br>dB/m   | Cable<br>dB | Amp.<br>dB | Corr. Ampl.<br>dBμV/m  | Limit<br>dBμV/m | Margin<br>dB |
| High Channel (above 1GHz) |                 |          |                 |                 |               |                   |             |            |                        |                 |              |
| 9786.810                  | 33.66           | AV       | 270             | 1.2             | V             | 38.5              | 7.0         | 31.8       | 47.36                  | 54              | -6.64        |
| 9786.210                  | 32.48           | AV       | 180             | 1.2             | H             | 38.5              | 7.0         | 31.8       | 46.18                  | 54              | -7.82        |
| 9718.050                  | 32.48           | AV       | 270             | 1.2             | V             | 38.5              | 7.0         | 31.8       | 46.18                  | 54              | -7.82        |
| 9718.120                  | 32.36           | AV       | 180             | 1.2             | H             | 38.5              | 7.0         | 31.8       | 46.06                  | 54              | -7.94        |
| 7340.180                  | 32.06           | AV       | 90              | 1.0             | V             | 36.6              | 6.0         | 31.6       | 43.06                  | 54              | -10.94       |
| 7288.560                  | 31.82           | AV       | 90              | 1.0             | V             | 36.6              | 6.0         | 31.6       | 42.82                  | 54              | -11.18       |
| 7340.260                  | 31.56           | AV       | 360             | 1.0             | H             | 36.6              | 6.0         | 31.6       | 42.56                  | 54              | -11.44       |
| 7288.510                  | 31.06           | AV       | 360             | 1.0             | H             | 36.6              | 6.0         | 31.6       | 42.06                  | 54              | -11.94       |
| 4893.150                  | 32.88           | AV       | 120             | 1.0             | V             | 33.5              | 4.9         | 30.4       | 40.88                  | 54              | -13.12       |
| 4859.630                  | 32.26           | AV       | 120             | 1.2             | V             | 33.5              | 4.9         | 30.4       | 40.26                  | 54              | -13.74       |
| 4892.760                  | 31.78           | AV       | 45              | 1.0             | H             | 33.5              | 4.9         | 30.4       | 39.78                  | 54              | -14.22       |
| 4859.820                  | 31.56           | AV       | 45              | 1.2             | H             | 33.5              | 4.9         | 30.4       | 39.56                  | 54              | -14.44       |
| 9718.050                  | 45.35           | PK       | 270             | 1.0             | V             | 38.5              | 7.0         | 31.8       | 59.05                  | 74              | -14.95       |
| 9786.810                  | 44.93           | PK       | 270             | 1.0             | V             | 38.5              | 7.0         | 31.8       | 58.63                  | 74              | -15.37       |
| 9786.210                  | 44.86           | PK       | 180             | 1.0             | H             | 38.5              | 7.0         | 31.8       | 58.56                  | 74              | -15.44       |
| 9718.120                  | 43.37           | PK       | 180             | 1.0             | H             | 38.5              | 7.0         | 31.8       | 57.07                  | 74              | -16.93       |
| 7340.180                  | 44.61           | PK       | 90              | 1.2             | V             | 36.6              | 6.0         | 31.6       | 55.61                  | 74              | -18.39       |
| 7340.260                  | 44.15           | PK       | 360             | 1.2             | H             | 36.6              | 6.0         | 31.6       | 55.15                  | 74              | -18.85       |
| 7288.560                  | 43.93           | PK       | 90              | 1.2             | V             | 36.6              | 6.0         | 31.6       | 54.93                  | 74              | -19.07       |
| 7288.510                  | 43.87           | PK       | 360             | 1.2             | H             | 36.6              | 6.0         | 31.6       | 54.87                  | 74              | -19.13       |
| 4893.150                  | 44.32           | PK       | 120             | 1.2             | V             | 33.5              | 4.9         | 30.4       | 52.32                  | 74              | -21.68       |
| 4859.820                  | 43.68           | PK       | 45              | 1.2             | H             | 33.5              | 4.9         | 30.4       | 51.68                  | 74              | -22.32       |
| 4892.760                  | 43.54           | PK       | 45              | 1.2             | H             | 33.5              | 4.9         | 30.4       | 51.54                  | 74              | -22.46       |
| 4859.630                  | 42.62           | PK       | 120             | 1.2             | V             | 33.5              | 4.9         | 30.4       | 50.62                  | 74              | -23.38       |
| 2446.680                  | 64.78           | FUND/AV  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 68.58                  | 94              | - 25.42      |
| 2446.720                  | 61.62           | FUND/AV  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 65.42                  | 94              | -28.58       |
| 2429.570                  | 60.85           | FUND/AV  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 64.65                  | 94              | - 29.35      |
| 2429.550                  | 60.04           | FUND/AV  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 63.84                  | 94              | -30.16       |
| 2446.680                  | 65.55           | FUND/PK  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 69.35                  | 114             | - 44.65      |
| 2446.720                  | 63.09           | FUND/PK  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 66.89                  | 114             | -47.11       |
| 2429.570                  | 61.87           | FUND/PK  | 180             | 1.0             | H             | 29.1              | 3.4         | 28.7       | 65.67                  | 114             | - 48.33      |
| 2429.550                  | 61.20           | FUND/PK  | 180             | 1.0             | V             | 29.1              | 3.4         | 28.7       | 65.00                  | 114             | - 49.00      |

## §15.249(d) – OUT OF BAND EMISSION

### Standard Applicable

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

### Test Procedure

With the EUT's antenna attached, the EUT's radiated emission power was received by the test antenna which was connected to the spectrum analyzer with the START and STOP frequencies set to the EUT's operation band.

### Test Equipment List and Details

| Manufacturer    | Description       | Model   | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|---------|---------------|------------------|----------------------|
| HP              | Amplifier         | 8447E   | 1937A01046    | 2004-9-1         | 2005-8-31            |
| Rohde & Schwarz | Test Receiver     | ESCI    | 100035        | 2004-9-15        | 2005-9-14            |
| Sunol Sciences  | Bilog Antenna     | JB1     | A040904-2     | 2005-4-19        | 2006-4-18            |
| Sunol Sciences  | System Controller | SC99V   | 041304-1      | N/A              | N/A                  |
| Thermax         | Coaxial Cable     | RGS-142 | EC004         | 2004-9-1         | 2005-8-31            |
| HP              | Amplifier         | 8447D   | 2994A09795    | 2004-9-1         | 2005-8-31            |
| Rohde & Schwarz | Test Receiver     | ESCI    | 100028        | 2004-9-6         | 2005-9-5             |
| Sunol Sciences  | Bilog Antenna     | JB1     | A040904-1     | 2005-4-19        | 2006-4-18            |
| Sunol Sciences  | System Controller | SC99V   | 033004-1      | N/A              | N/A                  |

**\* Statement of Traceability: BACL Corp.** attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Data

#### Environmental Conditions

|                    |          |
|--------------------|----------|
| Temperature:       | 20 °C    |
| Relative Humidity: | 55%      |
| ATM Pressure:      | 1016mbar |

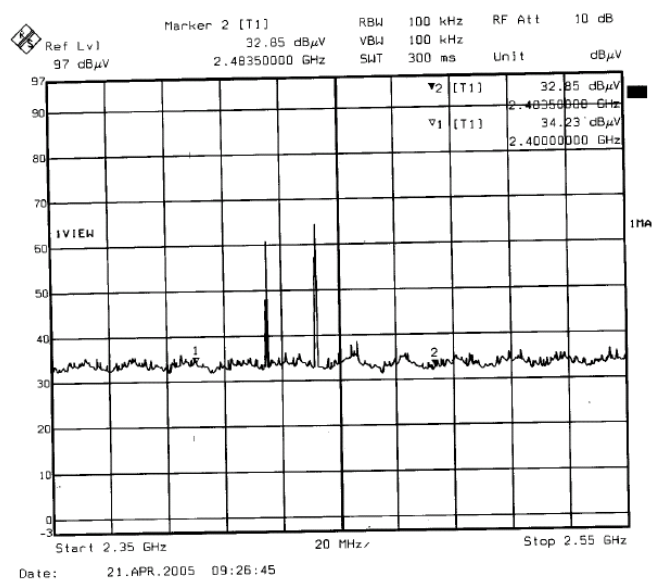
*The testing was performed by William Chan on 2005-4-21*

The result has been complied with the 15.249(d), see the following plot:

| Channel<br>Low/High | Frequency<br>MHz | Emission<br>dB $\mu$ V/m | Limit<br>dB $\mu$ V/m |
|---------------------|------------------|--------------------------|-----------------------|
| Low<br>Channel      | 2483.50          | 34.23                    | 54.00                 |
|                     | 2400.00          | 32.85                    | 54.00                 |
| High<br>Channel     | 2483.00          | 32.24                    | 54.00                 |
|                     | 2400.00          | 32.05                    | 54.00                 |

Test Result: Pass

#### Low Channel



#### High Channel

