

## HCT CO., LTD.



PRODUCT COMPLIANCE DIVISION  
SAN 136-1, AMI-RI, BUBAL-EUP, ICHEON-SI, KYOUNGKI-DO, 467-701, KOREA  
TEL : +82 31 639 8518 FAX : +82 31 639 8525 [www.hct.co.kr](http://www.hct.co.kr)

# EMI REPORT (Certification)

**LG Electronics Inc.**

**60-39, Gasan-dong, Gumchon-gu,  
Seoul, 153-023, Korea**

**Date of Issue: August 18, 2008**

**Test Report No.: HCT-F08-0806**

**Test Site: HCT CO., LTD.**

**HCT FRN: 0005-8664-21**

**FCC ID:**

**BEJKP330**

Classification/ Standard(s): FCC PART 15 Subpart B / CISPR 22 CLASS B  
Equipment (EUT) Type: Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth  
Trade Name/Model(s): LG Electronics Inc. / KP330  
Application Type: Certification  
Port/ Connector(s): DC Input Port / Ear Phone Port

The device bearing the trade name and model specified above, has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2003.(See Test Report if any modifications were made for compliance)

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

HCT certifies that no party to application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse of 1988, 21 U.S.C.853(a).

**Report prepared by  
: Yong Hyun Lee  
Test engineer of EMC Tech.Part**

**Approved by  
: Sang Jun Lee  
Manager of EMC Tech.Part**

## TABLE OF CONTENTS

|                                                         | PAGE |
|---------------------------------------------------------|------|
| 1. GENERAL INFORMATION                                  | 3    |
| 1.1 Product Description.....                            | 3    |
| 1.2 Related submittal(s)/Grant(s).....                  | 3    |
| 1.3 Tested System Details.....                          | 4    |
| 1.4 Cable Description.....                              | 4    |
| 1.5 Noise Suppression Parts on Cable. (I/O CABLE) ..... | 4    |
| 1.6 Test Methodology.....                               | 5    |
| 1.7 Test Facility.....                                  | 5    |
| 1.8 Frequency range of radiated measurements .....      | 5    |
| 2. SYSTEM TEST CONFIGURATION.....                       | 6    |
| 2.1 Configuration of Tested System.....                 | 6    |
| 3. PRELIMINARY TEST.....                                | 7    |
| 3.1 Conducted Emission Test.....                        | 7    |
| 3.2 Radiated Emission Test.....                         | 7    |
| 4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY.....    | 8    |
| 4.1 Conducted Emission Test.....                        | 9    |
| 4.2 Radiated Emission Test.....                         | 13   |
| 5. FIELD STRENGTH CALCULATION.....                      | 14   |
| 6. TEST EQUIPMEN.....                                   | 15   |
| 7. CONCLUSION.....                                      | 16   |

### ATTACHMENT : TEST SETUP PHOTOGRAPHS

## **1. GENERAL INFORMATION**

### **1.1 Product Description**

The LG Electronics Inc. KP330 Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth.

It's basic purpose is used for communications. It transmits from GSM 850 (824.20 MHz – 848.80 MHz), GSM1900 (1850.20 MHz – 1909.80 MHz), WCDMA850 (826.40 MHz – 846.60 MHz), Bluetooth (2402 MHz – 2480 MHz) and receives from GSM 850 (869.20 MHz – 893.80 MHz), GSM1900 (1930.20 MHz – 1989.80 MHz), WCDMA850 (871.40 MHz – 891.60 MHz), Bluetooth (2402 MHz – 2480 MHz).

|              |                                                                                                                                                  |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| MODEL        | KP330                                                                                                                                            |
| FCC ID       | BEJKP330                                                                                                                                         |
| EUT Type     | Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth                                                                                                 |
| TX Frequency | 824.20 MHz – 848.80 MHz (GSM850)<br>1850.20 MHz – 1909.80 MHz (GSM1900)<br>826.40 MHz – 846.60 MHz (WCDMA850)<br>2402 MHz – 2480 MHz (Bluetooth) |
| RX Frequency | 869.20 MHz – 893.80 MHz (GSM850)<br>1930.20 MHz – 1989.80 MHz (GSM1900)<br>871.40 MHz – 891.60 MHz (WCDMA850)<br>2402 MHz – 2480 MHz (Bluetooth) |

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

ORIGINAL SUBMITTAL ONLY

### **1.3 Tested System Details**

All equipment descriptions used in the tested system (including inserted cards) are:

| DEVICE TYPE                                             | MANUFACTURER | MODEL NUMBER/<br>PART NUMBER | FCC ID / DoC | CONNECTED TO |
|---------------------------------------------------------|--------------|------------------------------|--------------|--------------|
| Cellular/PCS GSM<br>/EDGE/WCDMA<br>Phone with Bluetooth | LG           | KP330                        | BEJKP330     | PC, TA       |
| Travel Adaptor                                          | DONGDO       | STA-P52WD                    | -            | EUT          |
| Notebook PC                                             | Toshiba      | PSMA2K-01D002                | DoC          | EUT, TA      |
| Notebook PC Adaptor                                     | Delta        | SADP-65KB B                  |              | Notebook PC  |
| Mouse                                                   | Logitech     | M-BT96a                      | DoC          | Notebook PC  |
| Ear phone                                               | I-SOUND      | -                            | -            | EUT          |
| USB Cable                                               | -            | -                            | -            | EUT, PC      |

### **1.4 Cable Description**

| Product Name                                            | Port        | Power Cord<br>Shielded (Y/N) | I/O Cable Shielded<br>(Y/N) | Length (M) |
|---------------------------------------------------------|-------------|------------------------------|-----------------------------|------------|
| Cellular/PCS GSM<br>/EDGE/WCDMA<br>Phone with Bluetooth | DC In       | N                            | N/A                         | (P)1.8     |
|                                                         | Ear Jack    | N/A                          | N                           | (D)1.1     |
|                                                         | USB Data    | Y                            | Y                           | (P, D)1.6  |
| Notebook PC                                             | USB (Mouse) | N/A                          | Y                           | (D)1.8     |

The marked "(D)" means the Data Cable and "(P)" means the Power Cable.

### **1.5 Noise Suppression Parts on Cable. (I/O CABLE)**

| Product Name                                            | Port        | Ferrite Bead<br>(Y/N) | Location | Metal Hood<br>(Y/N) | Location           |
|---------------------------------------------------------|-------------|-----------------------|----------|---------------------|--------------------|
| Cellular/PCS GSM<br>/EDGE/WCDMA<br>Phone with Bluetooth | DC In       | N                     | -        | Y                   | EUT End            |
|                                                         | Ear Jack    | N                     | -        | Y                   | EUT End            |
|                                                         | USB Data    | N                     | -        | Y                   | Both End           |
| Notebook PC                                             | USB (Mouse) | N                     | -        | Y                   | Notebook PC<br>End |

## **1.6 Test Methodology**

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

## **1.7 Test Facility**

The open area test site and conducted measurement facility used to collect the radiated data are located at the 254-1, Maekok-Ri, Hobup-Myun, Ichon-Si, Kyoungki-Do, 467-701, KOREA. The site is constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 6, 2006(Registration Number: 90661)

## **1.8 Frequency range of radiated measurements**

An unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table

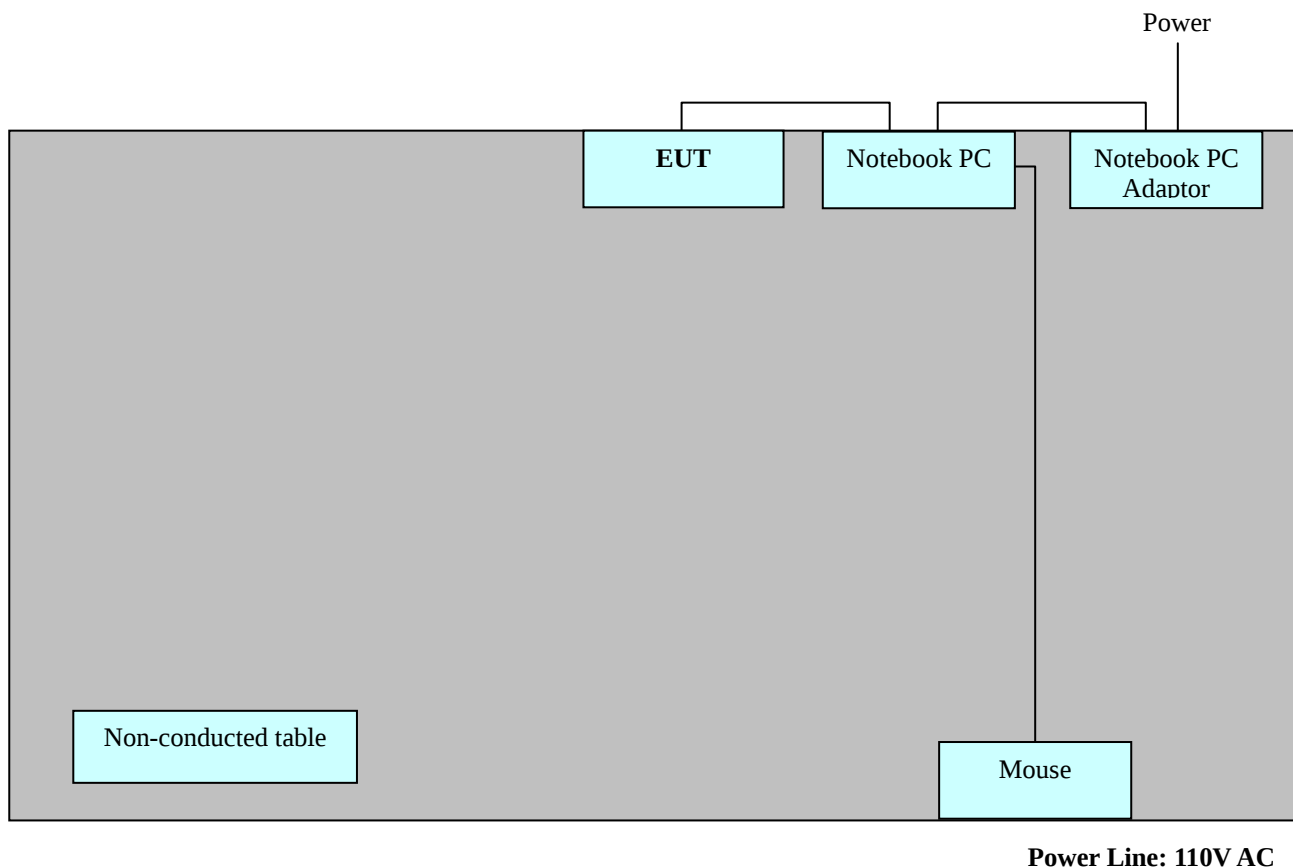
| Highest frequency generated or used in the device or on which the device operates or tunes (MHz) | Upper frequency of measurement range (MHz)                          |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Below 1.705                                                                                      | 30                                                                  |
| 1.705-108                                                                                        | 1000                                                                |
| 108-500                                                                                          | 2000                                                                |
| 500-1000                                                                                         | 5000                                                                |
| Above 1000                                                                                       | 5th harmonic of the highest frequency or 40 GHz, whichever is lower |

## 2.SYSTEM TEST CONFIGURATION

### 2.1 Configuration of Test system

Line Conducted Test : EUT was connected to LISN, all other supporting equipment were Connected to another LISN. Preliminary Power line Conducted Emission tests were performed by using the procedure in ANSI C63.4/2003 7.2.3 to determine the worst operating conditions.

Radiated Emission Test : Preliminary Radiated Emission tests were performed by using the procedure in ANSI C63.4/2003 8.3.1.1 to determine the worst operating condition. Final Radiated Emission tests were performed at 3 meter open area test site.



[Configuration of Tested System]

### **3. PRELIMINARY TEST**

#### **3.1 Conducted Emission Test**

During Preliminary Tests, the following operating mode was investigated

| Operation Mode            | The worst operating condition |
|---------------------------|-------------------------------|
| GSM Idle (850, 1900) Mode |                               |
| WCDMA Idle (850) Mode     |                               |
| Camera Mode               |                               |
| MP3 Mode                  |                               |
| Bluetooth Mode            |                               |
| Data Communication Mode   | ○                             |

#### **3. 2 Radiated Emission Test**

During Preliminary Test, the Following operation mode was investigated

| Operation Mode            | The worst operating condition |
|---------------------------|-------------------------------|
| GSM Idle (850, 1900) Mode |                               |
| WCDMA Idle (850) Mode     |                               |
| Camera Mode               |                               |
| MP3 Mode                  |                               |
| Bluetooth Mode            |                               |
| Data Communication Mode   | ○                             |

## **4. CONDUCTED AND RADIATED EMISSION TEST SUMMARY**

### **4.1 Conducted Emission Test**

The following table shows the highest levels of conducted emissions on both polarization of hot and neutral line.

|                     |                                               |
|---------------------|-----------------------------------------------|
| Limit apply to      | : CISPR 22 CLASS B                            |
| Result              | : PASSED BY 9.1 dB                            |
| Operating Condition | : Data Communication Mode                     |
| Detector            | : Quasi-Peak, Average (6 dB Bandwidth: 9 kHz) |
| Temperature         | : 32.7 °C                                     |
| Humidity Level      | : 53.8 %                                      |
| Test Date           | : July 29, 2008                               |

| Power Line Conducted Emissions |                  |           |            | CISPR 22 Class B |             |
|--------------------------------|------------------|-----------|------------|------------------|-------------|
| Frequency (MHz)                | Amplitude (dBuV) | Conductor | Result     | Limit (dBuV)     | Margin (dB) |
| 0.2001                         | 52.1             | HOT       | Quasi-Peak | 64.0             | 11.5        |
| 0.2001                         | 43.7             | HOT       | Average    | 54.0             | 9.9         |
| 0.2001                         | 53.6             | NEUTRAL   | Quasi-Peak | 64.0             | 10.0        |
| 0.2001                         | 44.5             | NEUTRAL   | Average    | 54.0             | 9.1         |

\*\*\* Line Conducted Emissions Tabulated Data

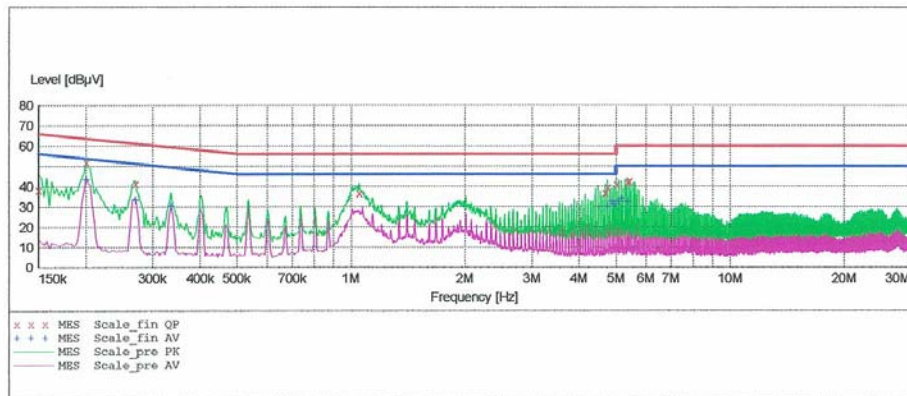
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**EMC TEST LAB.**

EUT: KP330  
Manufacturer: LG  
Operating Condition: DATA COMMUNICATION MODE  
Test Site: SHIELD ROOM  
Operator: KH, YOON  
Test Specification: CISPR 22 CLASS B  
Comment: H

**SCAN TABLE: "CISPR 22 Voltage"**

| Short Description: |           |         | CISPR 22 Voltage |            |           |            |
|--------------------|-----------|---------|------------------|------------|-----------|------------|
| Start              | Stop      | Step    | Detector         | Meas. Time | IF Bandw. | Transducer |
| Frequency          | Frequency | Width   |                  |            |           |            |
| 150.1 kHz          | 500.0 kHz | 2.5 kHz | MaxPeak          | 10.0 ms    | 9 kHz     | None       |
|                    |           |         | Average          |            |           |            |
| 500.0 kHz          | 5.0 MHz   | 4.0 kHz | MaxPeak          | 10.0 ms    | 9 kHz     | None       |
|                    |           |         | Average          |            |           |            |
| 5.0 MHz            | 30.0 MHz  | 4.0 kHz | MaxPeak          | 10.0 ms    | 9 kHz     | None       |
|                    |           |         | Average          |            |           |            |



**MEASUREMENT RESULT: "Scale\_fin QP"**

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| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Line | PE  |
|---------------|------------|-----------|------------|-----------|------|-----|
| 0.150100      | 38.40      | 10.0      | 66         | 27.6      | ---  | --- |
| 0.200100      | 52.10      | 10.0      | 64         | 11.5      | ---  | --- |
| 0.270100      | 41.60      | 10.0      | 61         | 19.5      | ---  | --- |
| 1.052000      | 36.90      | 10.1      | 56         | 19.1      | ---  | --- |
| 4.688000      | 36.90      | 10.6      | 56         | 19.1      | ---  | --- |
| 4.752000      | 39.60      | 10.6      | 56         | 16.4      | ---  | --- |
| 5.024000      | 41.00      | 10.6      | 60         | 19.0      | ---  | --- |
| 5.356000      | 42.30      | 10.7      | 60         | 17.7      | ---  | --- |
| 5.424000      | 42.60      | 10.7      | 60         | 17.4      | ---  | --- |

**MEASUREMENT RESULT: "Scale\_fin AV"**

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| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.200100         | 43.70         | 10.0         | 54            | 9.9          | ---  | --- |
| 0.270100         | 33.50         | 10.0         | 51            | 17.6         | ---  | --- |
| 0.335100         | 30.60         | 10.0         | 49            | 18.7         | ---  | --- |
| 4.752000         | 30.30         | 10.6         | 46            | 15.7         | ---  | --- |
| 4.888000         | 32.90         | 10.6         | 46            | 13.1         | ---  | --- |
| 4.956000         | 31.50         | 10.6         | 46            | 14.5         | ---  | --- |
| 5.088000         | 32.90         | 10.6         | 50            | 17.1         | ---  | --- |
| 5.156000         | 34.20         | 10.6         | 50            | 15.8         | ---  | --- |
| 5.356000         | 32.70         | 10.7         | 50            | 17.3         | ---  | --- |

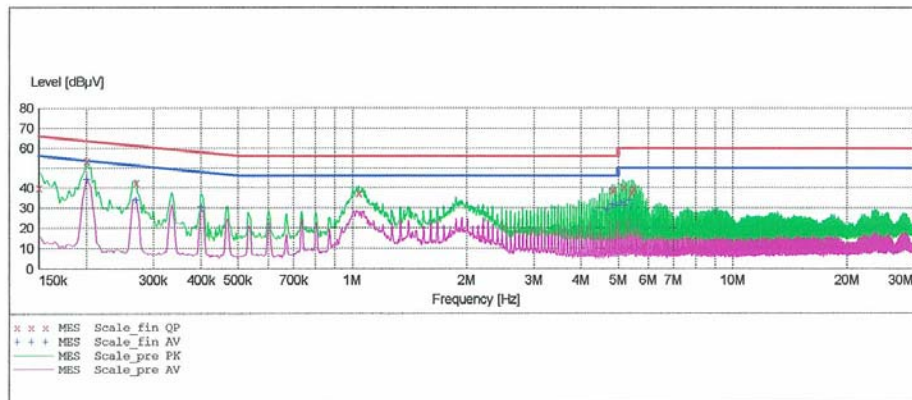
**HCT**

**EMC TEST LAB.**

EUT: KP330  
Manufacturer: LG  
Operating Condition: DATA COMMUNICATION MODE  
Test Site: SHIELD ROOM  
Operator: KH, YOON  
Test Specification: CISPR 22 CLASS B  
Comment: N

**SCAN TABLE: "CISPR 22 Voltage"**

| Short Description: |                | CISPR 22 Voltage |          |            |           |            |
|--------------------|----------------|------------------|----------|------------|-----------|------------|
| Start Frequency    | Stop Frequency | Step Width       | Detector | Meas. Time | IF Bandw. | Transducer |
| 150.1 kHz          | 500.0 kHz      | 2.5 kHz          | MaxPeak  | 10.0 ms    | 9 kHz     | None       |
|                    |                |                  | Average  |            |           |            |
| 500.0 kHz          | 5.0 MHz        | 4.0 kHz          | MaxPeak  | 10.0 ms    | 9 kHz     | None       |
|                    |                |                  | Average  |            |           |            |
| 5.0 MHz            | 30.0 MHz       | 4.0 kHz          | MaxPeak  | 10.0 ms    | 9 kHz     | None       |
|                    |                |                  | Average  |            |           |            |



**MEASUREMENT RESULT: "Scale\_fin QP"**

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| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Line | PE  |
|---------------|------------|-----------|------------|-----------|------|-----|
| 0.150100      | 40.20      | 10.0      | 66         | 25.8      | ---  | --- |
| 0.200100      | 53.60      | 10.0      | 64         | 10.0      | ---  | --- |
| 0.270100      | 42.60      | 10.0      | 61         | 18.6      | ---  | --- |
| 1.040000      | 37.50      | 10.1      | 56         | 18.5      | ---  | --- |
| 4.816000      | 38.80      | 10.6      | 56         | 17.2      | ---  | --- |
| 4.884000      | 39.30      | 10.6      | 56         | 16.7      | ---  | --- |
| 5.152000      | 40.70      | 10.6      | 60         | 19.3      | ---  | --- |
| 5.416000      | 37.70      | 10.7      | 60         | 22.3      | ---  | --- |
| 5.484000      | 40.10      | 10.7      | 60         | 19.9      | ---  | --- |

**MEASUREMENT RESULT: "Scale\_fin AV"**

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| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.200100         | 44.50         | 10.0         | 54            | 9.1          | ---  | --- |
| 0.270100         | 34.00         | 10.0         | 51            | 17.1         | ---  | --- |
| 0.400100         | 30.70         | 10.0         | 48            | 17.2         | ---  | --- |
| 4.680000         | 29.50         | 10.6         | 46            | 16.5         | ---  | --- |
| 4.816000         | 31.80         | 10.6         | 46            | 14.2         | ---  | --- |
| 4.948000         | 31.60         | 10.6         | 46            | 14.4         | ---  | --- |
| 5.084000         | 32.80         | 10.6         | 50            | 17.2         | ---  | --- |
| 5.216000         | 31.50         | 10.6         | 50            | 18.5         | ---  | --- |
| 5.352000         | 33.90         | 10.7         | 50            | 16.1         | ---  | --- |

## **4.2 Radiated Emission Test**

The following table shows the highest levels of Radiated Emissions on both polarization of horizontal and vertical.

|                     |                                        |
|---------------------|----------------------------------------|
| Limit apply to      | : FCC PART 15 Subpart B                |
| Result              | : PASSED BY 7.9 dB                     |
| Operating Condition | : Data Communication Mode              |
| Detector            | : Quasi-Peak (6 dB Bandwidth: 120 kHz) |
| Temperature         | : 32.7 °C                              |
| Humidity Level      | : 53.8 %                               |
| Test Date           | : July 29, 2008                        |

| Frequency | Reading | Ant. Factor | Cable Loss | ANT POL | Total  | Limit  | Margin |
|-----------|---------|-------------|------------|---------|--------|--------|--------|
| MHz       | dBuV/m  | dB/m        | dB         | (H/V)   | dBuV/m | dBuV/m | dB     |
| 51.8      | 15.8    | 13.4        | 1.6        | V       | 30.8   | 40.0   | 9.2    |
| 107.8     | 20.0    | 9.3         | 2.5        | V       | 31.8   | 43.5   | 11.7   |
| 192.0     | 22.4    | 9.9         | 3.3        | V       | 35.6   | 43.5   | 7.9    |
| 636.0     | 10.1    | 19.6        | 5.9        | V       | 35.6   | 46.0   | 10.4   |

\*\*\* For measurement over 1 GHz, noise level was more than 10 dB below the limit.

## 5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor.

The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF$$

where FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 21.5 dBuV/m is obtained. The Antenna Factor of 7.4 dB and a Cable Factor of 1.1 dB is added. The 30 dBuV/m value is mathematically converted to its corresponding level in uV/m.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dBuV/m}$$

### Radiated emission limits

| Frequency of emission | Field strength           |                                     |
|-----------------------|--------------------------|-------------------------------------|
|                       | $\mu\text{V} / \text{m}$ | $\text{dB } \mu\text{V} / \text{m}$ |
| 30 ~ 88               | 100                      | 40.0                                |
| 88 ~ 216              | 150                      | 43.5                                |
| 216 ~ 960             | 200                      | 46.0                                |
| Above 960             | 500                      | 54.0                                |

## **6. TEST EQUIPMENT**

| <b><u>Type</u></b>     | <b><u>Manufacture</u></b> | <b><u>Model Number</u></b> | <b><u>Next CAL Date</u></b> |
|------------------------|---------------------------|----------------------------|-----------------------------|
| EMI Test Receiver      | Rohde & Schwarz           | ESI40                      | 2008.11.06                  |
| EMI Test Receiver      | Rohde & Schwarz           | ESCI                       | 2009.06.01                  |
| LISN                   | EMCO                      | 703125                     | 2009.05.04                  |
| LISN                   | Rohde & Schwarz           | ESH2-Z5                    | 2009.04.18                  |
| LISN                   | Rohde & Schwarz           | ESH3-Z5                    | 2009.06.13                  |
| LISN                   | EMCO                      | 3816/2SH                   | 2009.02.01                  |
| Attenuator             | Rohde & Schwarz           | ESH3-Z2                    | 2009.10.30                  |
| TRILOG Antenna         | Schwarzbeck               | VULB9168                   | 2009.01.18                  |
| Communication Antenna  | TDK                       | LPDA-0802                  | N/A                         |
| Antenna Position Tower | HD                        | 240/520/00                 | N/A                         |
| Base Station           | Rohde & Schwarz           | CMU 200                    | 2009.02.28                  |
| Horn Antenna           | Schwarzbeck               | BBHA 9120D                 | 2009.03.18                  |
| RF-Amplifier           | MITEQ                     | AMF-6D-00101800-35.20P.PS  | 2009.04.25                  |
| Bluetooth Base Station | TESCOM                    | TC-3000A                   | 2009.01.11                  |

## 7. CONCLUSION

The data collected shows that the **LG Electronics Inc. Cellular/PCS GSM/EDGE/WCDMA Phone with Bluetooth. FCC ID: BEJKP330** Complies with §15.107 and §15.109 of the FCC Rules.