



**HCT CO., LTD.**

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## EMI CERTIFICATION REPORT

**Applicant:**

**LG Electronics Inc.**

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

**Date of Issue: February 23, 2011**

**Test Report No.: HCTE1102FE19**

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

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

**FCC ID:**

**IC:**

**BEJV901  
2703C-V901**

Rule Part(s) / Standard(s) : FCC PART 15 Subpart B Class B  
FCC Listing No : 90661  
IC Recognition No : IC 5944A-1  
Equipment Type : Tablet PC with Bluetooth & WLAN  
Trade Name : LG Electronics Inc  
Model(s) : V901, LG-V901  
Port / Connector(s) : DC In Port / USB Data Port / Headset Port / HDMI 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 subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C 862

**Report prepared by  
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Test Engineer of EMC Team**

**Approved by  
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Manager of EMC Team**

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**ATTACHMENT: TEST SETUP PHOTOGRAPHS**

## 1. GENERAL INFORMATION

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### 1.1 Product Description

Equipment Under Test (E.U.T) is **Tablet PC with Bluetooth & WLAN, Model: V901** manufactured by **LG Electronics Inc.** Its basic purpose is used for communications.

|                                  |                                 |
|----------------------------------|---------------------------------|
| <b>FCC / IC Model (s)</b>        | V901                            |
| <b>FCC / IC Additional Model</b> | LG-V901                         |
| <b>FCC ID</b>                    | BEJV901                         |
| <b>IC</b>                        | 2703C-V901                      |
| <b>E.U.T Type</b>                | Tablet PC with Bluetooth & WLAN |

### 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>Serial Number                              | FCC ID / DoC | Connected To              |
|------------------------------------|---------------------|-------------------------------------------------------------|--------------|---------------------------|
| Tablet PC with<br>Bluetooth & WLAN | LG                  | V901                                                        | BEJV901      | Notebook PC<br>TV monitor |
| Travel adaptor                     | TEMPO               | PATA-D01KT                                                  | -            | E.U.T                     |
| Notebook PC                        | LG                  | X140-02<br>009QTAF022208                                    | DoC          | E.U.T                     |
| Notebook PC adaptor                | DELTA<br>(JIANG SU) | ADP-40PH AD<br>EAY60725501                                  | -            | Notebook PC               |
| Mouse                              | Microsoft           | Intellimouse optical USB<br>and PS/2 compatible<br>3902B008 | DoC          | Notebook PC               |
| TV monitor                         | LG                  | W2261Vp-PF<br>912NDDM0C242                                  | -            | E.U.T                     |
| Headset                            | -                   | -                                                           | -            | E.U.T                     |
| USB cable                          | -                   | -                                                           | -            | E.U.T<br>Notebook PC      |
| HDMI cable                         | -                   | -                                                           | -            | E.U.T<br>TV monitor       |

## 1.4 Cable Description

| Product Name                    | Port         | Power Cord Shielded (Y/N) | I/O Cable Shielded (Y/N) | Length (m) |
|---------------------------------|--------------|---------------------------|--------------------------|------------|
| Tablet PC with Bluetooth & WLAN | DC in        | N                         | -                        | (D)1.6     |
|                                 | Headset jack | -                         | N                        | (D)1.2     |
|                                 | USB data     | Y                         | Y                        | (P,D)1.2   |
|                                 | HDMI         | N                         | Y                        | (D)1.0     |
| Notebook PC                     | USB (Mouse)  | -                         | 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 (Y/N) | Location        | Metal Hood (Y/N) | Location        |
|---------------------------------|--------------|--------------------|-----------------|------------------|-----------------|
| Tablet PC with Bluetooth & WLAN | DC in        | N                  | -               | Y                | E.U.T End       |
|                                 | Headset jack | N                  | -               | Y                | E.U.T End       |
|                                 | USB data     | N                  | -               | Y                | Both End        |
|                                 | HDMI         | N                  | -               | Y                | Both End        |
| Notebook PC                     | USB (Mouse)  | Y                  | Notebook PC End | Y                | Notebook PC End |

## 1.6 Test Methodology

Both Conducted and Radiated testing was performed according to the procedures in ANSI C63.4/2003. Radiated testing was performed at an antenna to E.U.T distance of 3 m

## 1.7 Test Facility

The 10 m semi anechoic chamber used to collect the radiated data is located at the 105-1, Jangam-Ri, Majang-Myeon, Icheon-Si, Kyongki-Do, South Korea, and the conducted measurement facility used to measure the conducted data are located at San 136-1, Ami-Ri Bubal-Eup, Icheon-Si, Kyongki-Do, 467-701, South Korea. Those measurement facilities are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. Detailed description of test facilities was submitted to the Commission and accepted dated Sep. 03, 2010 (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

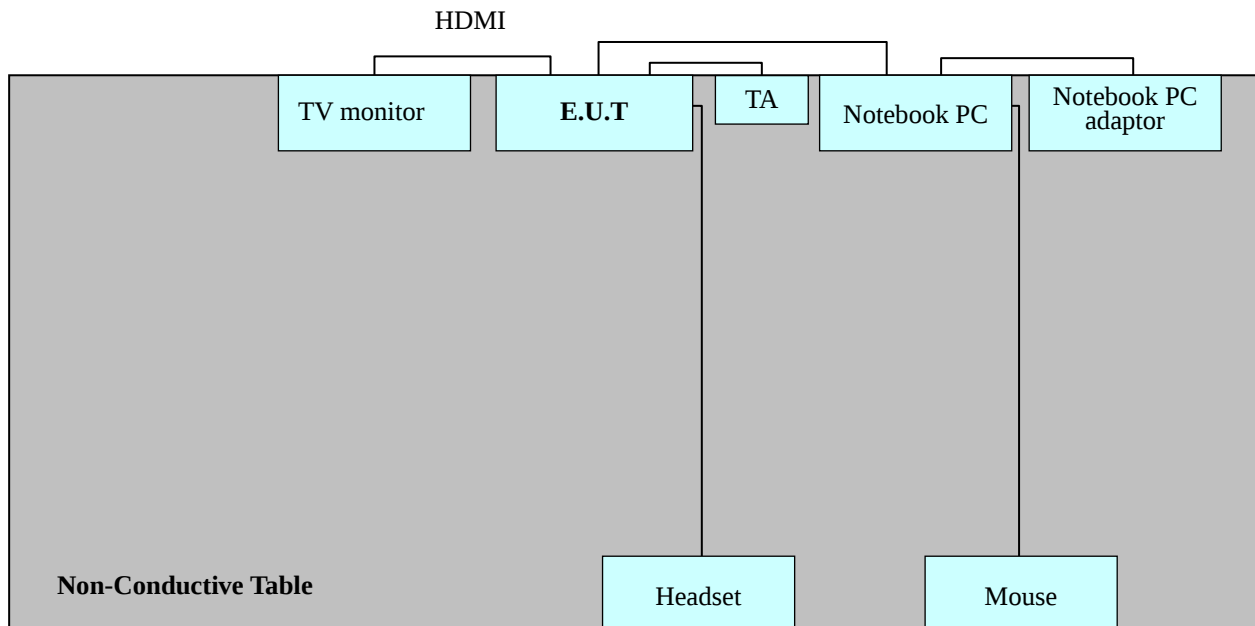
| Highest frequency generated or used in the device<br>or on which the device operates or tunes (MHz) | Upper frequency of measurement range<br>(MHz)                                      |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Below 1.705                                                                                         | 30                                                                                 |
| 1.705 to 108                                                                                        | 1 000                                                                              |
| 108 to 500                                                                                          | 2 000                                                                              |
| 500 to 1 000                                                                                        | 5 000                                                                              |
| Above 1 000                                                                                         | 5 <sup>th</sup> harmonic of the highest frequency<br>or 40 GHz, whichever is lower |

## 2. SYSTEM TEST CONFIGURATION

### 2.1 Configuration of Test System

- Power Line Conducted test : E.U.T was connected to LISN via Notebook PC adaptor.  
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 m semi-anechoic chamber.

[Configuration of Tested System]



Power Line: 110 VAC

### **3. PRELIMINARY TEST**

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

- Test E.U.T with Data Communication mode, after connecting all peripheral devices.

During preliminary tests, the following operating mode was investigated:

| Operation Mode     | The Worst Operating Condition |
|--------------------|-------------------------------|
| Data Communication | <input type="radio"/>         |

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

- Test E.U.T with Data Communication mode, after connecting all peripheral devices.

During preliminary tests, the following operating mode was investigated:

| Operation Mode     | The Worst Operating Condition |
|--------------------|-------------------------------|
| Data Communication | <input type="radio"/>         |

## 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 | : FCC PART 15 Subpart B Class B               |
| Detector       | : Quasi-Peak, Average (6 dB Bandwidth: 9 kHz) |
| Temperature    | : 24.1 °C                                     |
| Humidity level | : 45.2 %                                      |
| Test date      | : February 21, 2011                           |

※ **NOTE:** Refer to page 10 to page 13 for details.

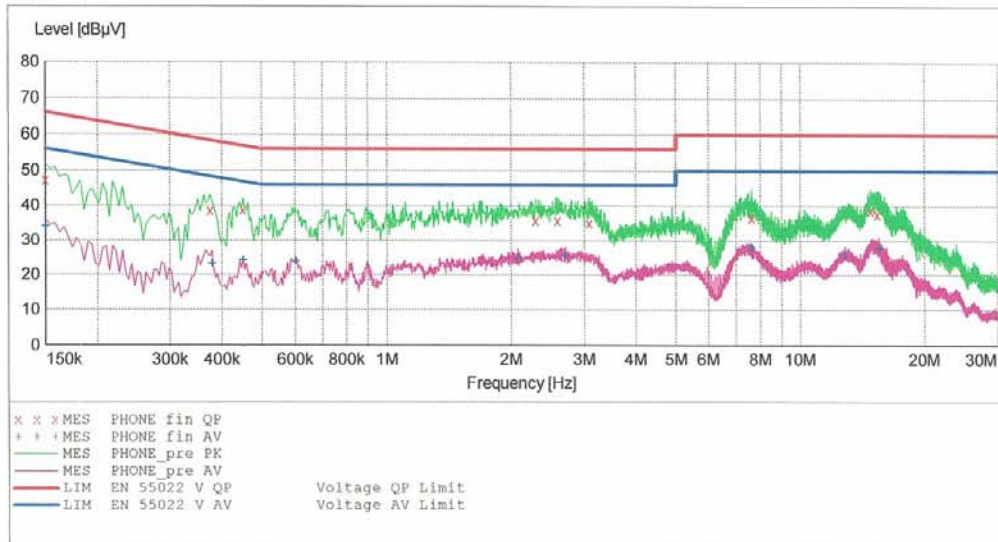
**HCT**

**EMC**

EUT: V901  
Manufacturer: LG  
Operating Condition: DATA MODE  
Test Site: SHIELD ROOM  
Operator: DH-RYU  
Test Specification: FCC PART 15 CLASS B  
Comment: H

**SCAN TABLE: "FCC PART 15 CLASS B"**

| Short Description: |           |         | FCC PART 15 CLASS B |            |           |            |
|--------------------|-----------|---------|---------------------|------------|-----------|------------|
| Start              | Stop      | Step    | Detector            | Meas. Time | IF Bandw. | Transducer |
| Frequency          | Frequency | Width   |                     |            |           |            |
| 150.0 kHz          | 500.0 kHz | 4.0 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: "PHONE\_fin QP"**

2/21/2011 11:28AM

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Line | PE  |
|---------------|------------|-----------|------------|-----------|------|-----|
| 0.150010      | 47.40      | 10.1      | 66         | 18.6      | ---  | --- |
| 0.374010      | 38.70      | 10.1      | 58         | 19.7      | ---  | --- |
| 0.450010      | 38.90      | 10.1      | 57         | 17.9      | ---  | --- |
| 2.292000      | 35.80      | 10.3      | 56         | 20.2      | ---  | --- |
| 2.592000      | 35.80      | 10.3      | 56         | 20.2      | ---  | --- |
| 3.088000      | 35.00      | 10.3      | 56         | 21.0      | ---  | --- |
| 7.632000      | 36.70      | 10.7      | 60         | 23.3      | ---  | --- |
| 14.824000     | 38.70      | 11.2      | 60         | 21.3      | ---  | --- |
| 15.356000     | 37.80      | 11.2      | 60         | 22.2      | ---  | --- |

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

2/21/2011 11:28AM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.150010         | 34.10         | 10.1         | 56            | 21.9         | ---  | --- |
| 0.378010         | 23.30         | 10.1         | 48            | 25.0         | ---  | --- |
| 0.450010         | 24.30         | 10.1         | 47            | 22.6         | ---  | --- |
| 0.604000         | 24.00         | 10.1         | 46            | 22.0         | ---  | --- |
| 2.076000         | 24.80         | 10.3         | 46            | 21.2         | ---  | --- |
| 2.716000         | 25.60         | 10.3         | 46            | 20.4         | ---  | --- |
| 7.632000         | 27.70         | 10.7         | 50            | 22.3         | ---  | --- |
| 12.852000        | 25.80         | 11.0         | 50            | 24.2         | ---  | --- |
| 15.540000        | 27.80         | 11.2         | 50            | 22.2         | ---  | --- |

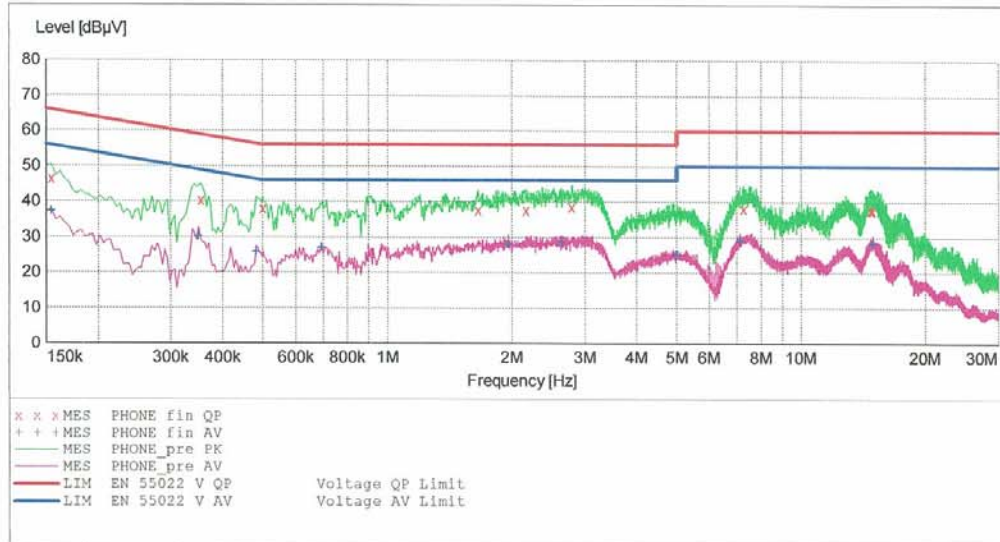
**HCT**

**EMC**

EUT: V901  
Manufacturer: LG  
Operating Condition: DATA MODE  
Test Site: SHIELD ROOM  
Operator: DH-RYU  
Test Specification: FCC PART 15 CLASS B  
Comment: N

**SCAN TABLE: "FCC PART 15 CLASS B"**

| Short Description: |           |         | FCC PART 15 CLASS B |            |           |            |
|--------------------|-----------|---------|---------------------|------------|-----------|------------|
| Start              | Stop      | Step    | Detector            | Meas. Time | IF Bandw. | Transducer |
| Frequency          | Frequency | Width   |                     |            |           |            |
| 150.0 kHz          | 500.0 kHz | 4.0 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: "PHONE\_fin QP"**

2/21/2011 11:35AM

| Frequency MHz | Level dBμV | Transd dB | Limit dBμV | Margin dB | Line | PE  |
|---------------|------------|-----------|------------|-----------|------|-----|
| 0.154010      | 46.40      | 10.1      | 66         | 19.4      | ---  | --- |
| 0.354010      | 40.50      | 10.1      | 59         | 18.4      | ---  | --- |
| 0.500000      | 38.20      | 10.1      | 56         | 17.8      | ---  | --- |
| 1.660000      | 37.70      | 10.2      | 56         | 18.3      | ---  | --- |
| 2.168000      | 37.80      | 10.3      | 56         | 18.2      | ---  | --- |
| 2.796000      | 38.60      | 10.3      | 56         | 17.4      | ---  | --- |
| 7.280000      | 38.20      | 10.6      | 60         | 21.8      | ---  | --- |
| 14.776000     | 37.90      | 11.1      | 60         | 22.1      | ---  | --- |
| 14.880000     | 37.70      | 11.2      | 60         | 22.3      | ---  | --- |

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

2/21/2011 11:35AM

| Frequency<br>MHz | Level<br>dBμV | Transd<br>dB | Limit<br>dBμV | Margin<br>dB | Line | PE  |
|------------------|---------------|--------------|---------------|--------------|------|-----|
| 0.154010         | 37.20         | 10.1         | 56            | 18.6         | ---  | --- |
| 0.350010         | 30.20         | 10.1         | 49            | 18.8         | ---  | --- |
| 0.482010         | 25.90         | 10.1         | 46            | 20.4         | ---  | --- |
| 0.692000         | 27.10         | 10.1         | 46            | 18.9         | ---  | --- |
| 1.964000         | 28.10         | 10.3         | 46            | 17.9         | ---  | --- |
| 2.632000         | 28.50         | 10.3         | 46            | 17.5         | ---  | --- |
| 5.000000         | 25.10         | 10.5         | 46            | 20.9         | ---  | --- |
| 7.116000         | 29.10         | 10.6         | 50            | 20.9         | ---  | --- |
| 14.920000        | 28.40         | 11.2         | 50            | 21.6         | ---  | --- |

## 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 Class B  
 Detector : Quasi-Peak (6 dB Bandwidth: 120 kHz)  
 Temperature : 22.0 °C  
 Humidity level : 42.5 %  
 Test date : February 17, 2011

| Frequency | Reading    | Ant. Factor | Cable Loss | Ant. POL | Total        | Limit        | Margin |
|-----------|------------|-------------|------------|----------|--------------|--------------|--------|
| MHz       | dB $\mu$ V | dB/m        | dB         | (H/V)    | dB $\mu$ V/m | dB $\mu$ V/m | dB     |
| 45.4      | 10.7       | 12.4        | 0.8        | V        | 23.9         | 40.0         | 16.1   |
| 80.8      | 16.4       | 8.0         | 1.3        | V        | 25.7         | 40.0         | 14.3   |
| 130.8     | 14.3       | 11.9        | 1.4        | H        | 27.6         | 43.5         | 15.9   |
| 332.9     | 20.0       | 13.7        | 2.3        | H        | 36.0         | 46.0         | 10.0   |
| 396.8     | 14.9       | 15.5        | 2.6        | H        | 33.0         | 46.0         | 13.0   |
| 647.7     | 9.0        | 19.9        | 3.4        | V        | 32.3         | 46.0         | 13.7   |

※ **NOTE:**

1. For measurement above 1 GHz, noise level is more than 14 dB below the limit, specified in FCC Part 15.35

## 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 dB $\mu$ V is obtained. The antenna factor of 7.4 dB/m and a cable factor of 1.1 dB are added. The 30 dB $\mu$ V/m value is mathematically converted to its corresponding level in  $\mu$ V/m.

$$FS = 21.5 + 7.4 + 1.1 = 30 \text{ dB}\mu\text{V/m}$$

### [Radiated Emission Limits]

| Frequency of Emission<br>(MHz) | Field Strength |              |
|--------------------------------|----------------|--------------|
|                                | $\mu$ V/m      | dB $\mu$ V/m |
| 30 to 88                       | 100            | 40.0         |
| 88 to 216                      | 150            | 43.5         |
| 216 to 960                     | 200            | 46.0         |
| Above 960                      | 500            | 54.0         |

## 6. TEST EQUIPMENT

| <u>Type</u> | <u>Manufacturer</u> | <u>Model Number</u> | <u>Serial Number</u> | <u>Next CAL Date</u> |
|-------------|---------------------|---------------------|----------------------|----------------------|
|-------------|---------------------|---------------------|----------------------|----------------------|

### Conducted Emission

|                                                       |                 |         |              |            |
|-------------------------------------------------------|-----------------|---------|--------------|------------|
| <input checked="" type="checkbox"/> EMI Test Receiver | Rohde & Schwarz | ESCI    | 100584       | 2011.05.28 |
| <input checked="" type="checkbox"/> LISN              | Rohde & Schwarz | ESH3-Z5 | 100282       | 2012.02.01 |
| <input checked="" type="checkbox"/> LISN              | Rohde & Schwarz | ENV216  | 3560.6550.02 | 2011.04.05 |
| <input checked="" type="checkbox"/> Attenuator        | Rohde & Schwarz | ESH3-Z2 | 357.8810.52  | 2011.10.25 |

### Radiated Emission

|                                                           |                 |                               |            |            |
|-----------------------------------------------------------|-----------------|-------------------------------|------------|------------|
| <input type="checkbox"/> EMI Test Receiver                | Rohde & Schwarz | ESI40                         | 831564103  | 2011.10.29 |
| <input checked="" type="checkbox"/> EMI Test Receiver     | Rohde & Schwarz | ESU26                         | 100241     | 2011.09.01 |
| <input checked="" type="checkbox"/> Trilog Antenna        | Schwarzbeck     | VULB9160                      | 3301       | 2012.09.13 |
| <input checked="" type="checkbox"/> Antenna master        | INNCO Systems   | MA4000-EP                     | MA4000/283 | -          |
| <input checked="" type="checkbox"/> Turn Table            | INNCO Systems   | DT3000-3T                     | DT3000/69  | -          |
| <input checked="" type="checkbox"/> Communication Antenna | Schwarzbeck     | USLP9142                      | 9142-248   | -          |
| <input type="checkbox"/> RF-Amplifier                     | MITEQ           | AMF-6D-0010<br>1800-35.20P.PS | -          | 2011.05.20 |
| <input type="checkbox"/> Base Station                     | Rohde & Schwarz | CMU 200                       | 1100000802 | 2012.02.16 |

## **7. CONCLUSION**

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The data collected shows that the **Tablet PC with Bluetooth & WLAN, Model: V901, FCC ID: BEJV901** complies with §15.107 and §15.109 of the FCC rules.

**IC Model: V901, IC: 2703C-V901** complies with ICES-003 Issue 4 of the IC rule.