

FCC PART 15.247  
EMI MEASUREMENT AND TEST REPORT

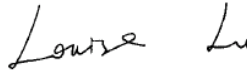
For

**Shenzhen Kingjon Digital Technology Co.,Ltd.**

Rm1028, 10/F, Block A, Jiahe Huaqiang Building, Shennan Mid Road, Futian District, Shenzhen, China

**FCC ID: S7O0013EF1**

September 12, 2005

|                                                                                                                                                                                                                                               |                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| <b>This Report Concerns:</b><br><input checked="" type="checkbox"/> Original Report                                                                                                                                                           | <b>Equipment Type:</b><br>Bluetooth USB Dongle |
| <b>Test Engineer:</b> Louise Lu                                                                                                                           |                                                |
| <b>Report No.:</b> RSZ05081003                                                                                                                                                                                                                |                                                |
| <b>Test Date:</b> August 16-September 8, 2005                                                                                                                                                                                                 |                                                |
| <b>Reviewed By:</b> Chris Zeng                                                                                                                             |                                                |
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**Note:** The test report is specially limited to the above company and this particular sample only. It may not be duplicated without prior written consent of Bay Area Compliance Lab Corp. (ShenZhen). This report **must not** be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the US Government.

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## GENERAL INFORMATION

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

The *Shenzhen Kingjon Digital Technology Co.,Ltd.*'s product, model number: KJ-D108 or the "EUT" as referred to in this report is a Bluetooth USB Dongle. The EUT is measured approximately 4.0 cm L x 1.5 cm W x 0.5 cm H, rated input voltage: DC 5V.

*\* The test data gathered are from production sample, serial number: 20050826P, provided by the manufacturer.*

### Objective

The following test report is prepared on behalf of *Shenzhen Kingjon Digital Technology Co.,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 Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, and 15.247 rules.

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

No related submittal(s).

### 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 test 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.

Additionally, Bay Area Compliance Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm>

**Host System Configuration List and Details**

| Manufacturer | Description | Model             | Serial Number            | FCC ID |
|--------------|-------------|-------------------|--------------------------|--------|
| DELL         | Motherboard | OWC297            | CN-OWC297-70821-564-00NI | DoC    |
| DELL         | Power       | NPS-250KB D       | CN-0H2678-17972-56E-80BM | DoC    |
| Intel        | CPU         | Celeron D-2533    | N/A                      | DoC    |
| ProMOS       | Memory      | V826632K24SATG-C0 | 0525-K1933700            | DoC    |
| Seagate      | Hard Disk   | ST340014A         | 5JXK3GXE                 | DoC    |
| DELL         | 3.5' Floppy | N/A               | CN-0N8893-69802-54Q-02P0 | DoC    |
| Lite-ON      | CD-Rom      | LTN-489S          | N/A                      | DoC    |
| Intel        | Ethernet    | PRO 10/100 VE     | N/A                      | DoC    |

**Local Support Equipment List and Details**

| Manufacturer | Description | Model     | Serial Number            | FCC ID |
|--------------|-------------|-----------|--------------------------|--------|
| DELL         | PC          | DELL 170L | CN-0TC670-70821-560-F4Q6 | DoC    |
| DELL         | LCD Monitor | 1505FP    | Y4287-7168-571-GBSH      | DoC    |
| DELL         | Keyboard    | SK-8110   | CN07N244-71616-56A-1B1E  | DoC    |
| DELL         | Mouse       | M071KC    | 520027907                | DoC    |
| HP           | Laser Jet5L | C3941A    | JPTVOB2337               | DoC    |
| SAST         | Modem       | AEM-2100  | 0293                     | DoC    |

**External I/O Cable**

| Cable Description                  | Length (M) | From/Port            | To       |
|------------------------------------|------------|----------------------|----------|
| Shielded Detachable Keyboard Cable | 1.50       | Keyboard Port / Host | Keyboard |
| Shielded Detachable Mouse Cable    | 1.50       | PS/2 Port / Host     | Mouse    |
| Shielded Detachable Printer Cable  | 1.20       | Parallel Port / Host | Printer  |
| Shielded Detachable Serial Cable   | 1.20       | Serial Port / Host   | Modem    |
| Shielded Detachable VGA Cable      | 1.50       | VGA Port / Host      | Monitor  |
| Shielded detachable USB Cable      | 1.28       | EUT                  | PC       |

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## SYSTEM TEST CONFIGURATION

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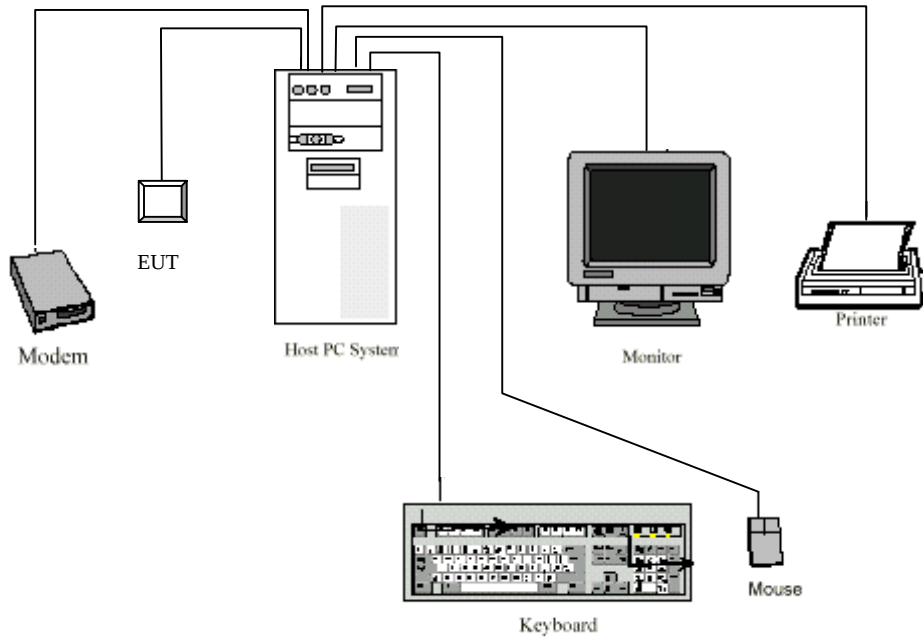
### Description of Test Configuration

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

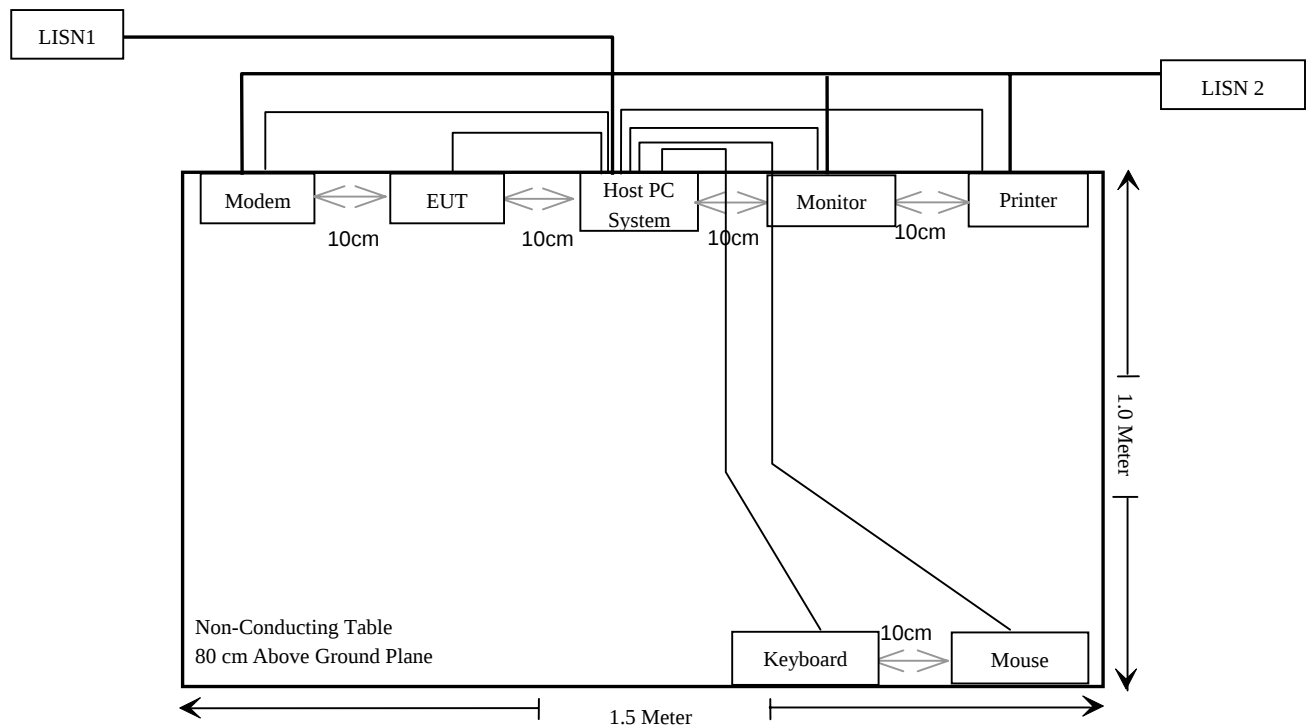
### Equipment Modifications

Bay Area Compliance Lab Corp. (ShenZhen) has not done any modification on the EUT.

## Configuration of Test Setup



## Block Diagram of Test Setup



## SUMMARY OF TEST RESULTS

| FCC RULES          | DESCRIPTION OF TEST              | RESULT      |
|--------------------|----------------------------------|-------------|
| §15.203            | Antenna Requirement              | Compliant   |
| §15.207 (a)        | Conducted Emission               | Compliant   |
| §15.205&§15.209    | Radiated Emission                | Compliant * |
| §15.247(a)(1)      | Channel Separation Test          | Compliant   |
| §15.247(a)(1)(iii) | Time of occupancy (Dwell Time)   | Compliant   |
| §15.247(a)(1)(iii) | Quantity of hopping channel Test | Compliant   |
| §15.247(b)(1)      | Peak Output Power Measurement    | Compliant   |
| §15.247(d)         | Band edges testing               | Compliant   |

\* Within measurement uncertainty

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## **§15.203 - ANTENNA APPLICATION**

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### **Applicable Standard**

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

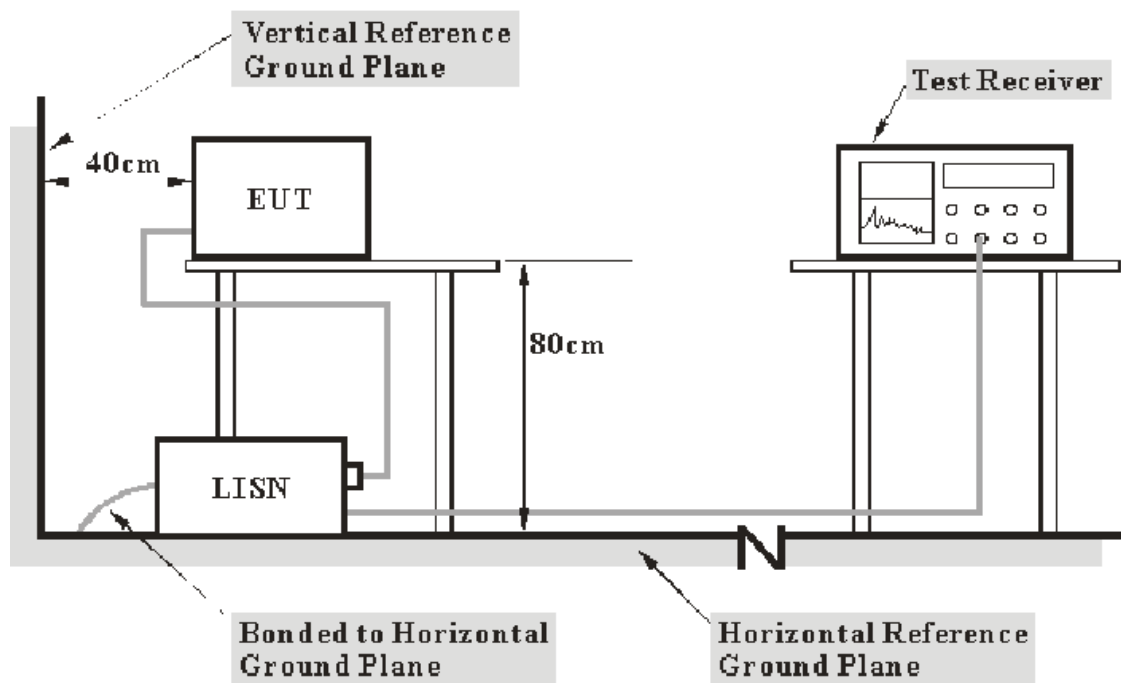
## §15.207 (a)- CONDUCTED EMISSION

### 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 Bay Area Compliance Lab Corp. (ShenZhen) is  $\pm 3.2$  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(a) Limit.

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 host PC was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI 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 | EMI Test Receiver | ESCS30  | 830245/006    | 2005-1-26        | 2006-1-26            |
| Rohde & Schwarz | L.I.S.N.          | ESH2-Z5 | 892107/021    | 2005-2-28        | 2006-2-28            |

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

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Procedure

During the conducted emission test, the host PC System power cord was connected to the outlet of the first LISN 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 were 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: **-8.7 dB** at **2.075 MHz** in the **Line** conductor mode.  
 Middle Channel: **-7.7 dB** at **0.1985 MHz** in the **Neutral** conductor mode.  
 High Channel: **-8.0 dB** at **0.1985 MHz** in the **Line** conductor mode.

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

|                    |           |
|--------------------|-----------|
| Temperature:       | 27 °C     |
| Relative Humidity: | 50 %      |
| ATM Pressure:      | 1009 mbar |

The testing was performed by Louise Lu on 2005-8-17

Test mode: Transmitting

**Low Channel**

| 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 |
| 2.075                    | 37.3              | AV                | Neutral               | 46.00           | -8.70        |
| 0.180                    | 40.4              | AV                | Line                  | 54.49           | -14.09       |
| 2.075                    | 41.4              | QP                | Neutral               | 56.00           | -14.60       |
| 0.495                    | 31.1              | AV                | Line                  | 46.08           | -14.98       |
| 0.990                    | 30.4              | AV                | Line                  | 46.00           | -15.60       |
| 2.075                    | 40.1              | QP                | Line                  | 56.00           | -15.90       |
| 0.495                    | 29.8              | AV                | Neutral               | 46.08           | -16.28       |
| 11.000                   | 43.0              | QP                | Neutral               | 60.00           | -17.00       |
| 0.990                    | 28.4              | AV                | Neutral               | 46.00           | -17.60       |
| 0.990                    | 37.4              | QP                | Line                  | 56.00           | -18.60       |
| 11.480                   | 41.3              | QP                | Line                  | 60.00           | -18.70       |
| 0.180                    | 35.3              | AV                | Neutral               | 54.49           | -19.19       |
| 0.990                    | 35.9              | QP                | Neutral               | 56.00           | -20.10       |
| 0.495                    | 34.9              | QP                | Line                  | 56.08           | -21.18       |
| 0.270                    | 29.8              | AV                | Line                  | 51.12           | -21.32       |
| 0.180                    | 43.0              | QP                | Line                  | 64.49           | -21.49       |
| 11.000                   | 28.5              | AV                | Neutral               | 50.00           | -21.50       |
| 0.495                    | 34.1              | QP                | Neutral               | 56.08           | -21.98       |
| 0.180                    | 38.9              | QP                | Neutral               | 64.49           | -25.59       |
| 0.270                    | 35.5              | QP                | Line                  | 61.12           | -25.62       |
| 0.270                    | 24.5              | AV                | Neutral               | 51.12           | -26.62       |
| 0.270                    | 31.3              | QP                | Neutral               | 61.12           | -29.82       |

## Middle Channel

| Frequency<br>MHz | LINE CONDUCTED EMISSIONS |                   |                       | FCC Part 15.207 |              |
|------------------|--------------------------|-------------------|-----------------------|-----------------|--------------|
|                  | Amplitude<br>dBμV        | Detector<br>QP/AV | Phase<br>Line/Neutral | Limit<br>dBμV   | Margin<br>dB |
| 1.985            | 38.3                     | AV                | Neutral               | 46.00           | -7.70        |
| 0.990            | 37.6                     | AV                | Neutral               | 46.00           | -8.40        |
| 1.985            | 40.9                     | QP                | Neutral               | 56.00           | -15.10       |
| 1.985            | 40.8                     | QP                | Line                  | 56.00           | -15.20       |
| 0.495            | 29.9                     | AV                | Line                  | 46.08           | -16.18       |
| 0.495            | 29.8                     | AV                | Neutral               | 46.08           | -16.28       |
| 11.460           | 43.5                     | QP                | Neutral               | 60.00           | -16.50       |
| 11.460           | 43.4                     | QP                | Line                  | 60.00           | -16.60       |
| 0.990            | 28.1                     | AV                | Line                  | 46.00           | -17.90       |
| 0.180            | 35.3                     | AV                | Line                  | 54.49           | -19.19       |
| 0.180            | 35.1                     | AV                | Neutral               | 54.49           | -19.39       |
| 0.990            | 35.9                     | QP                | Line                  | 56.00           | -20.10       |
| 0.990            | 35.2                     | QP                | Neutral               | 56.00           | -20.80       |
| 0.495            | 34.0                     | QP                | Neutral               | 56.08           | -22.08       |
| 0.495            | 33.9                     | QP                | Line                  | 56.08           | -22.18       |
| 11.460           | 27.8                     | AV                | Neutral               | 50.00           | -22.20       |
| 0.180            | 38.7                     | QP                | Line                  | 64.49           | -25.79       |
| 0.180            | 38.6                     | QP                | Neutral               | 64.49           | -25.89       |
| 0.245            | 25.0                     | AV                | Neutral               | 51.92           | -26.92       |
| 0.245            | 24.9                     | AV                | Line                  | 51.92           | -27.02       |
| 0.245            | 32.5                     | QP                | Neutral               | 61.92           | -29.42       |
| 0.245            | 32.0                     | QP                | Line                  | 61.92           | -29.92       |

## High Channel

| Frequency<br>MHz | LINE CONDUCTED EMISSIONS |                   |                       | FCC Part 15.207     |              |
|------------------|--------------------------|-------------------|-----------------------|---------------------|--------------|
|                  | Amplitude<br>dB $\mu$ V  | Detector<br>QP/AV | Phase<br>Line/Neutral | Limit<br>dB $\mu$ V | Margin<br>dB |
| 1.985            | 38.0                     | AV                | Line                  | 46.00               | -8.00        |
| 0.990            | 37.7                     | AV                | Line                  | 46.00               | -8.30        |
| 2.075            | 36.3                     | AV                | Neutral               | 46.00               | -9.70        |
| 0.180            | 40.4                     | AV                | Neutral               | 54.49               | -14.09       |
| 1.985            | 40.8                     | QP                | Line                  | 56.00               | -15.20       |
| 3.430            | 30.1                     | AV                | Neutral               | 46.00               | -15.90       |
| 2.075            | 39.9                     | QP                | Neutral               | 56.00               | -16.10       |
| 0.495            | 29.8                     | AV                | Line                  | 46.08               | -16.28       |
| 0.990            | 29.6                     | AV                | Neutral               | 46.00               | -16.40       |
| 11.475           | 43.0                     | QP                | Line                  | 60.00               | -17.00       |
| 11.455           | 42.9                     | QP                | Neutral               | 60.00               | -17.10       |
| 3.430            | 37.6                     | QP                | Neutral               | 56.00               | -18.40       |
| 0.990            | 37.0                     | QP                | Neutral               | 56.00               | -19.00       |
| 0.180            | 35.2                     | AV                | Line                  | 54.49               | -19.29       |
| 16.505           | 40.2                     | QP                | Line                  | 60.00               | -19.80       |
| 0.990            | 35.2                     | QP                | Line                  | 56.00               | -20.80       |
| 0.180            | 42.9                     | QP                | Neutral               | 64.49               | -21.59       |
| 0.270            | 29.4                     | AV                | Neutral               | 51.12               | -21.72       |
| 0.495            | 33.8                     | QP                | Line                  | 56.08               | -22.28       |
| 11.455           | 27.4                     | AV                | Neutral               | 50.00               | -22.60       |
| 0.180            | 38.8                     | QP                | Line                  | 64.49               | -25.69       |
| 0.270            | 34.4                     | QP                | Neutral               | 61.12               | -26.72       |

## Plot(s) of Test Data

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

# Conducted Disturbance Test FCC Part15

EUT: Bluetooth USB Dongle M/N:KJ-D108  
Manuf: Kingjon  
Op Cond: High channel  
Operator: Louise  
Test Spec: AC 120V/60Hz L  
Comment: Temp:27  
Humi:50%  
Date: 17. Aug 05 15:43

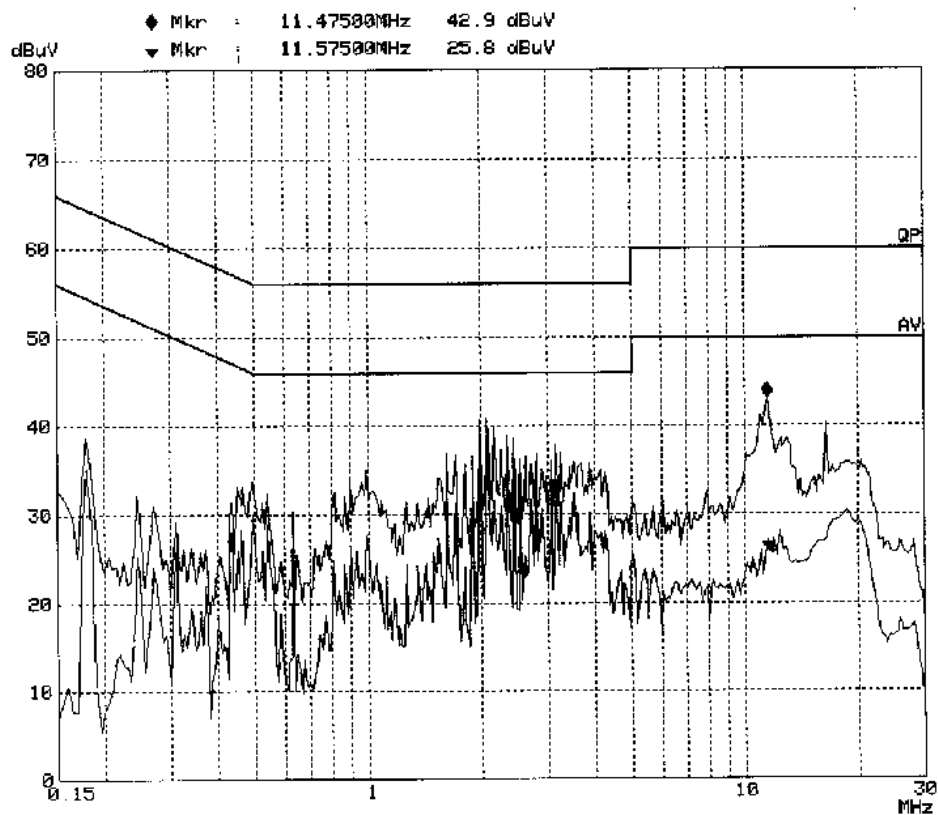
## Scan Settings (1 Range)

| ----- Frequencies ----- |      |      | ----- Receiver Settings ----- |          |        |              |
|-------------------------|------|------|-------------------------------|----------|--------|--------------|
| Start                   | Stop | Step | IF BW                         | Detector | M-Time | Atten Preamp |
| 150k                    | 30M  | 5k   | 9k                            | PK+AV    | 20ms   | AUTO LN OFF  |

| Transducer No. | Start | Stop | Name |
|----------------|-------|------|------|
| 1              | 9k    | 30M  | ESH3 |

Final Measurement: x QP / + AV

Meas Time: 1 s  
Subranges: 25  
Acc Margin: 6dB



# Conducted Disturbance Test FCC Part 15

EUT: Bluetooth USB Dongle M/N:KJ-D108  
Manuf: Kingjon  
Op Cond: High channel  
Operator: Louise  
Test Spec: AC 120V/60Hz N  
Comment: Temp:27  
Humi:50%  
Date: 17. Aug 05 15:58

## Scan Settings (1 Range)

| Frequencies |      |      | Receiver Settings |          |        |       |        |
|-------------|------|------|-------------------|----------|--------|-------|--------|
| Start       | Stop | Step | IF BW             | Detector | M-Time | Atten | Preamp |
| 150k        | 30M  | 5k   | 9k                | PK+AV    | 20ms   | AUTO  | LN OFF |

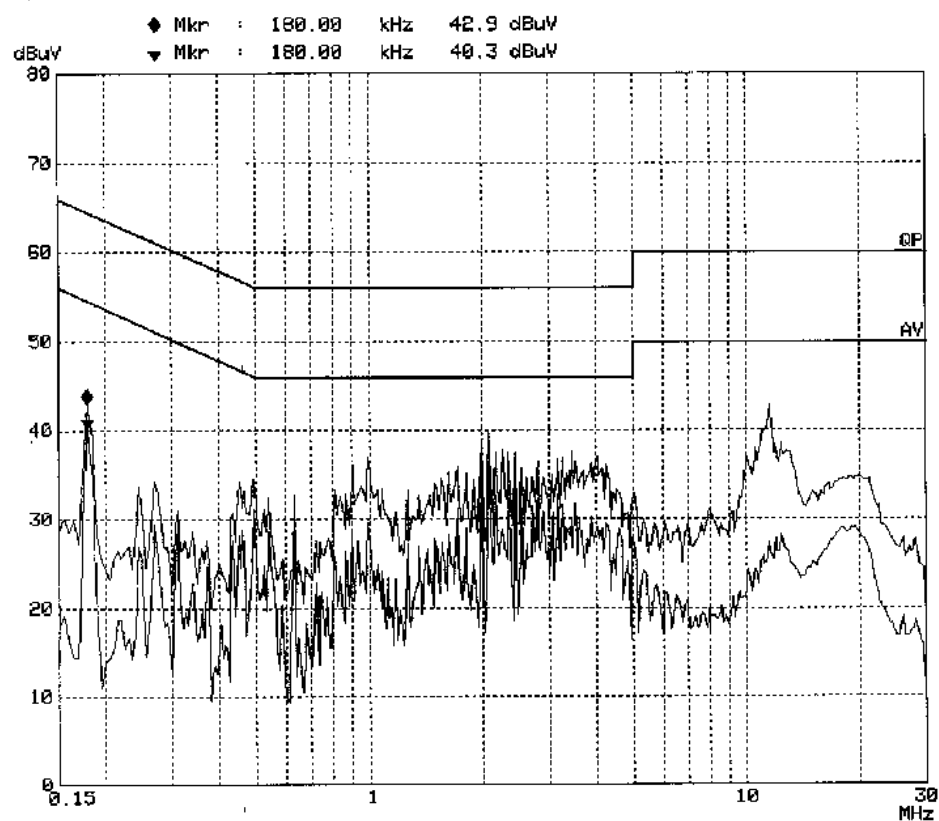
| Transducer No. | Start | Stop | Name |
|----------------|-------|------|------|
| 1              | 9k    | 30M  | ESH3 |

Final Measurement: x QP / + AV

Meas Time: 1 s

Subranges: 25

Acc Margin: 6dB



## Conducted Disturbance Test FCC Part15

EUT: Bluetooth USB Dongle M/N:KJ-D109  
Manuf: Kingjon  
Op Cond: Middle channel  
Operator: Louise  
Test Spec: AC 120V/60Hz L  
Comment: Temp:27  
Humi:50%  
Date: 17. Aug 05 15:27

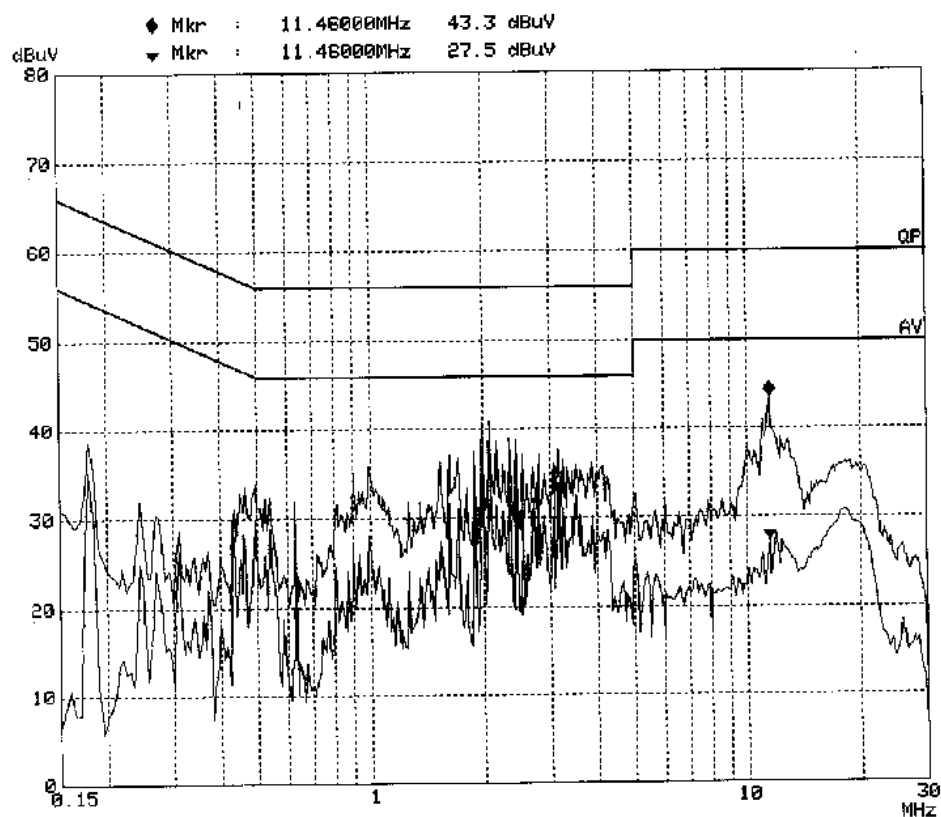
### Scan Settings (1 Range)

| Frequencies |      |      | Receiver Settings |          |        |       |        |
|-------------|------|------|-------------------|----------|--------|-------|--------|
| Start       | Stop | Step | IF BW             | Detector | M-Time | Atten | Preamp |
| 150k        | 30M  | 5k   | 9k                | PK+AV    | 20ms   | AUTO  | LN OFF |

| Transducer No. | Start | Stop | Name |
|----------------|-------|------|------|
| 1              | 9k    | 30M  | ESH3 |

Final Measurement: x QP / + AV

Meas Time: 1 s  
Subranges: 25  
Acc Margin: 6dB



# Conducted Disturbance Test FCC Part15

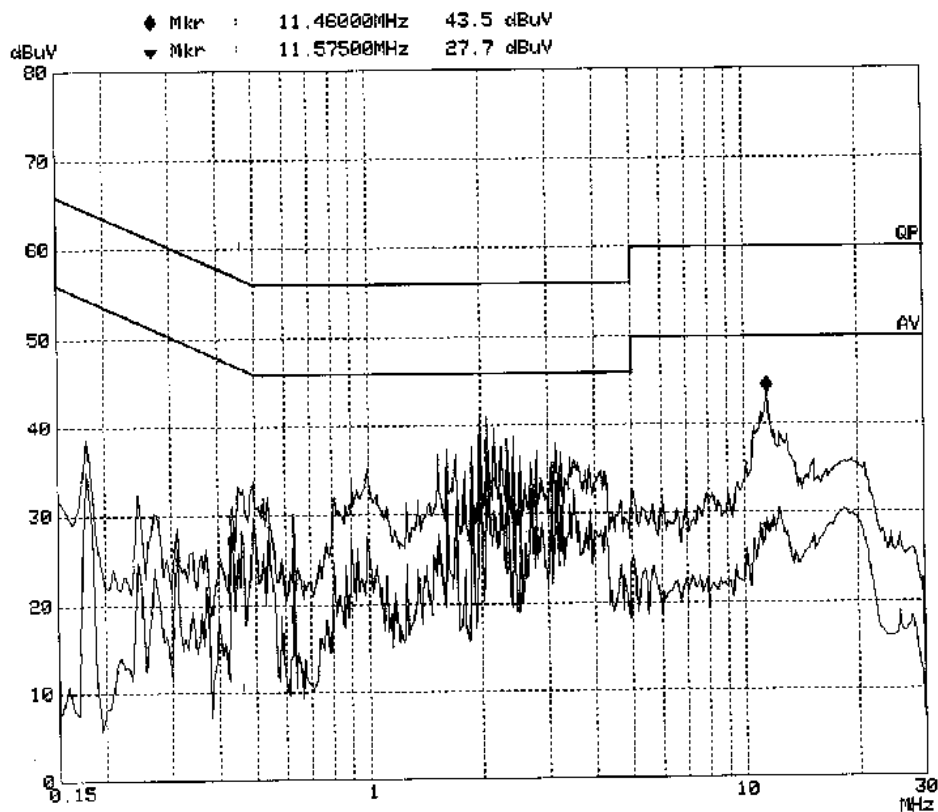
EUT: Bluetooth USB Dongle M/N:KJ-D108  
Manuf: Kingjon  
Op Cond: Middle channel  
Operator: Louise  
Test Spec: AC 120V/60Hz N  
Comment: Temp:27  
Humi:50%  
Date: 17. Aug 05 15:12

## Scan Settings (1 Range)

| Frequencies |      |      | Receiver Settings |          |           |              |
|-------------|------|------|-------------------|----------|-----------|--------------|
| Start       | Stop | Step | IF BW             | Detector | M-Time    | Atten Preamp |
| 150k        | 30M  | 5k   | 9k                | PK+AV    | 20ms AUTO | LN OFF       |

| Transducer No. | Start | Stop | Name |
|----------------|-------|------|------|
| 1              | 9k    | 30M  | ESH3 |

Final Measurement: x QP / + AV  
Meas Time: 1 s  
Subranges: 25  
Acc Margin: 6dB



# Conducted Disturbance Test FCC Part15

EUT: Bluetooth USB Dongle M/N:KJ-D108  
Manuf: Kingjon  
Op Cond: Low channel  
Operator: Louise  
Test Spec: AC 120V/60Hz L  
Comment: Temp:27  
Humi:50%  
Date: 17. Aug 05 14:28

## Scan Settings (1 Range)

| Frequencies |      |      | Receiver Settings |          |           |              |
|-------------|------|------|-------------------|----------|-----------|--------------|
| Start       | Stop | Step | IF BW             | Detector | M-Time    | Atten Preamp |
| 150k        | 30M  | 5k   | 9k                | PK+AV    | 20ms AUTO | LN OFF       |

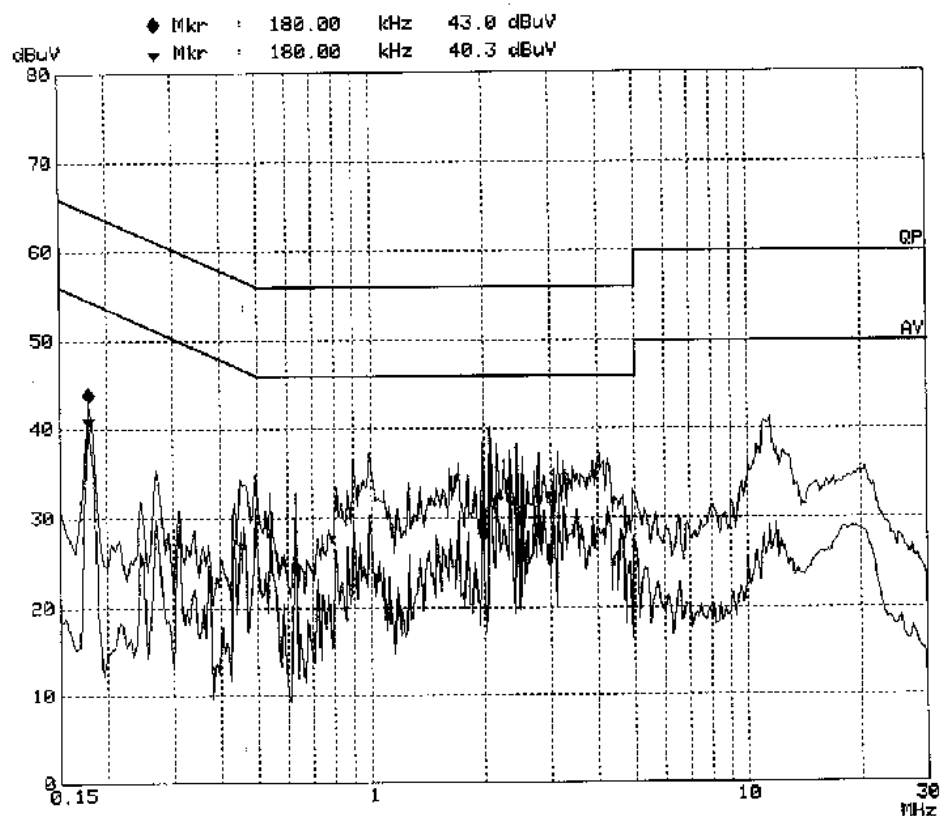
| Transducer No. | Start | Stop | Name |
|----------------|-------|------|------|
| 1              | 9k    | 30M  | ESH3 |

Final Measurement: x QP / + AV

Meas Time: 1 s

Subranges: 25

Acc Margin: 6dB



# Conducted Disturbance Test FCC Part15

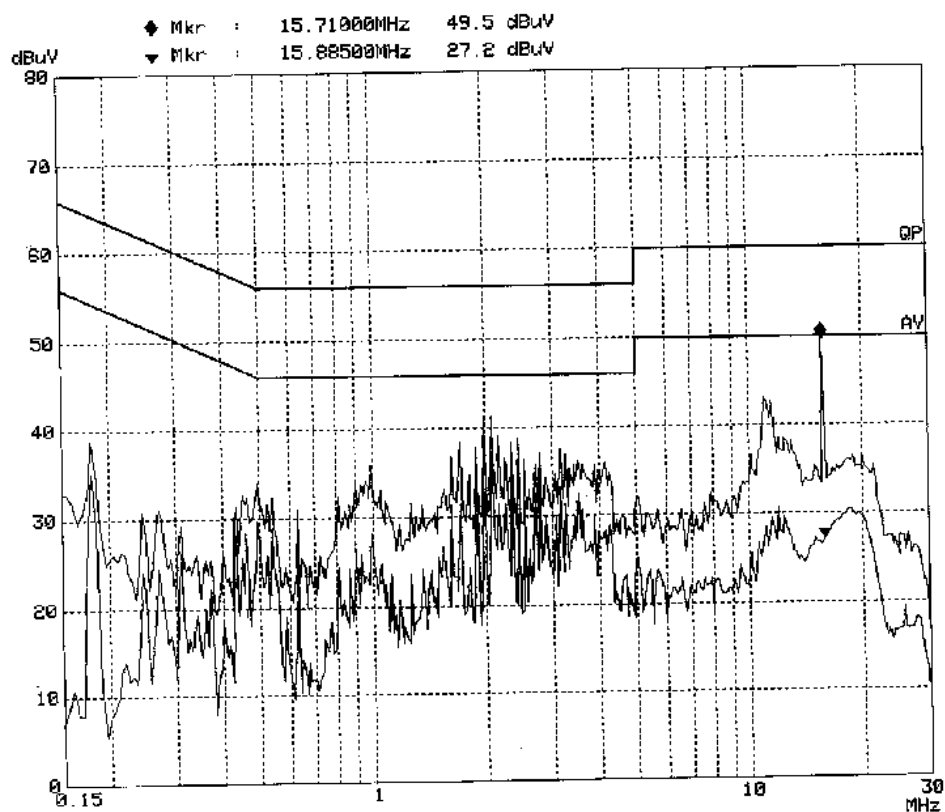
EUT: Bluetooth USB Dongle M/N:KJ-D108  
Manuf: Kingjon  
Op Cond: Low channel  
Operator: Louise  
Test Spec: AC 120V/60Hz N  
Comment: Temp:27  
Humi:50%  
Date: 17. Aug 05 14:51

## Scan Settings (1 Range)

| Frequencies |      |      | Receiver Settings |          |        |       |        |
|-------------|------|------|-------------------|----------|--------|-------|--------|
| Start       | Stop | Step | IF BW             | Detector | M-Time | Atten | Preamp |
| 150k        | 30M  | 5k   | 9k                | PK+AV    | 20ms   | AUTO  | LN OFF |

| Transducer No. | Start | Stop | Name |
|----------------|-------|------|------|
| 1              | 9k    | 30M  | ESH3 |

Final Measurement: x QP / + AV  
Meas Time: 1 s  
Subranges: 25  
Acc Margin: 6dB



## §15.205, §15.209, §15.247 - RADIATED EMISSION

### Applicable Standard

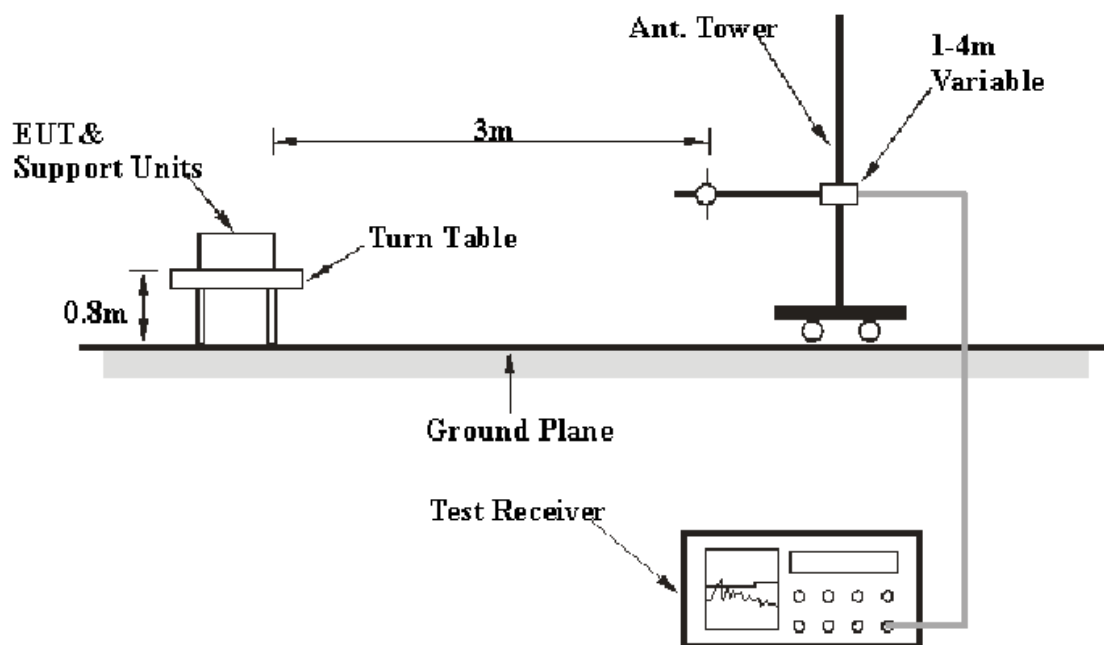
According to FCC §15.247 (d)

### 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 Bay Area Compliance Lab Corp. (ShenZhen) is  $\pm 4.4$  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 15.247 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 host PC was connected to a 120 VAC/60 Hz power source.

## EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

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

## Test Equipment List and Details

| Manufacturer    | Description       | Model       | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------------|---------------|------------------|----------------------|
| A.H. System     | Horn Antenna      | SAS-200/571 | 135           | 2005-4-28        | 2006-4-28            |
| HP              | Amplifier         | HP8447D     | 2944A09795    | 2004-9-1         | 2005-8-31            |
| HP              | Preamplifier      | 8449B       | 3008A00277    | 2004-9-1         | 2005-8-31            |
| Rohde & Schwarz | Spectrum Analyzer | FSEM30      | 849720/019    | 2004-11-10       | 2005-11-10           |
| Rohde&Schwarz   | EMI Test Receiver | ESCI        | 100028        | 2004-9-15        | 2005-9-15            |
| Sunol Sciences  | Broadband Antenna | JB1         | A040904-1     | 2005-4-28        | 2006-4-28            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

## Test Procedure

For the radiated emissions test, the host PC 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 PK&AV 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 Meter reading. The basic equation is as follows:

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

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 limit. The equation for margin calculation is as follows:

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

## Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.207, and 15.247, with the worst margin reading of:

**-8.61 dB** at **6583.27 MHz** in the **Vertical** polarization, Low Channel

**-20.59 dB** at **4881.968 MHz** in the **Vertical** polarization, Middle Channel

**-8.68 dB** at **9919.888 MHz** in the **Horizontal** polarization, High Channel

**-2.5 dB** at **366.820 MHz** in the **Vertical polarization**, Unintentional Emission

## Test Data

### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 27 °C     |
| Relative Humidity: | 50 %      |
| ATM Pressure:      | 1009 mbar |

The testing was performed by Louise Lu on 2005-8-17

Test mode: Transmitting

| INDICATED               |                          |          | TABLE           | ANTENNA         |               | CORRECTION FACTOR     |                     |                    | CORRECTED<br>AMPLITUDE | FCC 15 .209 &<br>FCC 15.247 |              |
|-------------------------|--------------------------|----------|-----------------|-----------------|---------------|-----------------------|---------------------|--------------------|------------------------|-----------------------------|--------------|
| Frequency<br>MHz        | Meter<br>Reading<br>dBμV | Comments | Angle<br>Degree | Height<br>Meter | Polar<br>H/ V | Antenna<br>Loss<br>dB | Cable<br>Loss<br>dB | Amp.<br>Gain<br>dB | Corr. Ampl.<br>dBμV/m  | Limit<br>dBμV/m             | Margin<br>dB |
| Low Channel, 1GHz-25GHz |                          |          |                 |                 |               |                       |                     |                    |                        |                             |              |
| 2401.98                 | 88.80                    | PK       | 180             | 1.2             | H             | 28.1                  | 3.7                 | 35.0               | 85.60                  |                             |              |
| 2401.98                 | 88.20                    | AV       | 90              | 1.0             | H             | 28.1                  | 3.7                 | 35.0               | 85.00                  |                             |              |
| 2401.98                 | 92.40                    | PK       | 60              | 1.2             | V             | 28.1                  | 3.7                 | 35.0               | 89.20                  |                             |              |
| 2401.98                 | 92.30                    | AV       | 270             | 1.0             | V             | 28.1                  | 3.7                 | 35.0               | 89.10                  |                             |              |
| 6583.27                 | 38.39                    | AV       | 60              | 1.2             | V             | 35.6                  | 5.8                 | 34.4               | 45.39                  | 54                          | -8.61        |
| 5885.795                | 37.28                    | AV       | 90              | 1.2             | V             | 34.1                  | 5.6                 | 34.4               | 42.58                  | 54                          | -11.42       |
| 6583.23                 | 51.87                    | PK       | 60              | 1.2             | V             | 35.6                  | 5.8                 | 34.4               | 58.87                  | 74                          | -15.13       |
| 5885.75                 | 51.93                    | PK       | 90              | 1.2             | V             | 34.1                  | 5.6                 | 34.4               | 57.23                  | 74                          | -16.77       |
| 7012.085                | 44.01                    | PK       | 60              | 1.0             | H             | 36.8                  | 6.0                 | 33.7               | 53.11                  | 74                          | -20.89       |
| 7424.856                | 44.39                    | PK       | 270             | 1.0             | V             | 35.8                  | 6.1                 | 33.7               | 52.59                  | 74                          | -21.41       |
| 4803.96                 | 46.84                    | PK       | 45              | 1.2             | V             | 33.8                  | 5.2                 | 33.4               | 52.44                  | 74                          | -21.56       |
| 7699.03                 | 44.22                    | PK       | 45              | 1.2             | H             | 35.8                  | 6.1                 | 33.7               | 52.42                  | 74                          | -21.58       |
| 4803.96                 | 46.27                    | PK       | 60              | 1.0             | H             | 33.8                  | 5.2                 | 33.4               | 51.87                  | 74                          | -22.13       |
| 5516.4                  | 43.27                    | PK       | 60              | 1.2             | H             | 33.9                  | 5.4                 | 33.4               | 49.17                  | 74                          | -24.83       |
| 1925.82                 | 48.66                    | PK       | 45              | 1.0             | H             | 28.4                  | 3.4                 | 35.0               | 45.46                  | 74                          | -28.54       |
| 1329.46                 | 48.58                    | PK       | 45              | 1.2             | V             | 25.0                  | 2.6                 | 36.0               | 40.18                  | 74                          | -33.82       |
| 1327.05                 | 48.30                    | PK       | 45              | 1.2             | H             | 25.0                  | 2.6                 | 36.0               | 39.9                   | 74                          | -34.10       |

| INDICATED                  |                          |          | TABLE           | ANTENNA         |               | CORRECTION FACTOR     |                     |                    | CORRECTED<br>AMPLITUDE | FCC 15.209 &<br>FCC 15.247 |              |
|----------------------------|--------------------------|----------|-----------------|-----------------|---------------|-----------------------|---------------------|--------------------|------------------------|----------------------------|--------------|
| Frequency<br>MHz           | Meter<br>Reading<br>dBμV | Comments | Angle<br>Degree | Height<br>Meter | Polar<br>H/ V | Antenna<br>Loss<br>dB | Cable<br>Loss<br>dB | Amp.<br>Gain<br>dB | Corr. Ampl.<br>dBμV/m  | Limit<br>dBμV/m            | Margin<br>dB |
| Middle Channel, 1GHz-25GHz |                          |          |                 |                 |               |                       |                     |                    |                        |                            |              |
| 2440.984                   | 84.60                    | PK       | 180             | 1.2             | H             | 28.1                  | 3.7                 | 35.0               | 81.40                  |                            |              |
| 2440.984                   | 83.30                    | AV       | 90              | 1.0             | H             | 28.1                  | 3.7                 | 35.0               | 80.10                  |                            |              |
| 2440.984                   | 85.60                    | PK       | 60              | 1.2             | V             | 28.1                  | 3.7                 | 35.0               | 82.40                  |                            |              |
| 2440.984                   | 84.30                    | AV       | 270             | 1.0             | V             | 28.1                  | 3.7                 | 35.0               | 81.10                  |                            |              |
| 4881.968                   | 47.81                    | PK       | 45              | 1.2             | V             | 33.8                  | 5.2                 | 33.4               | 53.41                  | 74                         | -20.59       |
| 4881.968                   | 47.08                    | PK       | 60              | 1.0             | H             | 33.8                  | 5.2                 | 33.4               | 52.68                  | 74                         | -21.32       |
| 7769.57                    | 43.21                    | PK       | 60              | 1.0             | H             | 37.1                  | 6.1                 | 34.3               | 52.11                  | 74                         | -21.89       |
| 8863.718                   | 41.59                    | PK       | 45              | 1.2             | V             | 37.8                  | 6.8                 | 34.3               | 51.89                  | 74                         | -22.11       |
| 9340.61                    | 36.82                    | PK       | 45              | 1.2             | H             | 38.0                  | 7.0                 | 34.1               | 51.83                  | 74                         | -22.17       |
| 7545.025                   | 43.49                    | PK       | 270             | 1.0             | V             | 35.8                  | 6.1                 | 33.7               | 51.69                  | 74                         | -22.31       |
| 6282.583                   | 43.79                    | PK       | 60              | 1.2             | V             | 34.1                  | 5.8                 | 34.4               | 49.29                  | 74                         | -24.71       |
| 6245.52                    | 42.99                    | PK       | 60              | 1.2             | H             | 34.1                  | 5.6                 | 34.4               | 48.29                  | 74                         | -25.71       |
| 1333.823                   | 53.47                    | PK       | 45              | 1.2             | H             | 25.0                  | 2.6                 | 36.0               | 45.07                  | 74                         | -28.93       |
| 1661.30                    | 49.91                    | PK       | 45              | 1.0             | H             | 25.0                  | 2.6                 | 35.0               | 42.51                  | 74                         | -31.49       |
| 1327.409                   | 49.33                    | PK       | 90              | 1.2             | V             | 25.0                  | 2.6                 | 36.0               | 40.93                  | 74                         | -33.07       |
| High Channel, 1GHz-25GHz   |                          |          |                 |                 |               |                       |                     |                    |                        |                            |              |
| 2479.972                   | 90.10                    | PK       | 180             | 1.2             | H             | 28.1                  | 3.7                 | 35.0               | 86.90                  |                            |              |
| 2479.972                   | 89.30                    | AV       | 90              | 1.0             | H             | 28.1                  | 3.7                 | 35.0               | 86.10                  |                            |              |
| 2479.972                   | 89.90                    | PK       | 60              | 1.2             | V             | 28.1                  | 3.7                 | 35.0               | 86.70                  |                            |              |
| 2479.972                   | 89.30                    | AV       | 270             | 1.0             | V             | 28.1                  | 3.7                 | 35.0               | 86.10                  |                            |              |
| 9919.888                   | 34.52                    | AV       | 60              | 1.2             | H             | 37.6                  | 7.3                 | 34.1               | 45.32                  | 54                         | -8.68        |
| 9919.888                   | 44.07                    | PK       | 60              | 1.2             | H             | 37.6                  | 7.3                 | 34.1               | 54.87                  | 74                         | -19.13       |
| 7439.916                   | 44.21                    | PK       | 90              | 1.2             | V             | 35.8                  | 6.1                 | 33.7               | 52.41                  | 74                         | -21.59       |
| 4959.944                   | 46.23                    | PK       | 45              | 1.2             | V             | 33.8                  | 5.2                 | 33.4               | 51.83                  | 74                         | -22.17       |
| 11200.323                  | 39.04                    | PK       | 60              | 1.0             | H             | 38.8                  | 7.5                 | 34.1               | 51.24                  | 74                         | -22.76       |
| 4959.944                   | 45.13                    | PK       | 60              | 1.0             | H             | 33.8                  | 5.2                 | 33.4               | 50.73                  | 74                         | -23.27       |
| 1860.914                   | 45.88                    | PK       | 45              | 1.2             | H             | 28.4                  | 3.4                 | 35.0               | 42.68                  | 74                         | -31.32       |
| 1329.546                   | 48.48                    | PK       | 45              | 1.0             | H             | 25.0                  | 2.6                 | 36.0               | 40.08                  | 74                         | -33.92       |
| 1654.007                   | 46.4                     | PK       | 45              | 1.2             | H             | 25.0                  | 2.6                 | 35.0               | 39.00                  | 74                         | -35.00       |
| 1860.925                   | 40.2                     | PK       | 45              | 1.2             | V             | 28.4                  | 3.4                 | 35.0               | 37.00                  | 74                         | -37.00       |
| 1223.113                   | 44.9                     | PK       | 60              | 1.2             | V             | 23.3                  | 4.2                 | 36.0               | 36.40                  | 74                         | -37.60       |
| 1100.007                   | 42.13                    | PK       | 270             | 1.0             | V             | 23.3                  | 4.2                 | 36.0               | 33.63                  | 74                         | -40.37       |

30MHz – 1GHz

| Frequency<br>MHz | Indicated                      |          |                     | Table           | Antenna      |                       | Correction Factor   |                    |                                | FCC 15 .209           |              |
|------------------|--------------------------------|----------|---------------------|-----------------|--------------|-----------------------|---------------------|--------------------|--------------------------------|-----------------------|--------------|
|                  | Meter<br>Reading<br>dB $\mu$ V | Comments | Direction<br>Degree | Height<br>Meter | Polar<br>H/V | Antenna<br>Loss<br>dB | Cable<br>Loss<br>dB | Amp.<br>Gain<br>dB | Corr.<br>Ampl.<br>dB $\mu$ V/m | Limit<br>dB $\mu$ V/m | Margin<br>dB |
| 366.820          | 54.0                           | PK       | 45                  | 1.2             | V            | 15.4                  | 1.8                 | 27.7               | 43.5                           | 46.0                  | -2.5         |
| 31.500           | 38.9                           | PK       | 45                  | 1.2             | V            | 24.1                  | 0.6                 | 28.8               | 34.8                           | 40.0                  | -5.2         |
| 299.315          | 52.5                           | PK       | 60                  | 1.2             | H            | 13.8                  | 1.6                 | 27.6               | 40.3                           | 46.0                  | -5.7         |
| 366.820          | 46.2                           | PK       | 60                  | 1.0             | H            | 15.4                  | 1.8                 | 27.7               | 35.7                           | 46.0                  | -10.3        |
| 528.240          | 42.7                           | PK       | 90                  | 1.2             | V            | 18.3                  | 2.5                 | 28.6               | 34.9                           | 46.0                  | -11.1        |
| 299.315          | 45.8                           | PK       | 270                 | 1.0             | V            | 13.8                  | 1.6                 | 27.6               | 33.6                           | 46.0                  | -12.4        |
| 166.068          | 44.7                           | PK       | 90                  | 1.0             | H            | 12.5                  | 1.2                 | 28.3               | 30.1                           | 43.5                  | -13.4        |
| 234.168          | 47.2                           | PK       | 60                  | 1.0             | H            | 11.7                  | 1.3                 | 27.7               | 32.5                           | 46.0                  | -13.5        |
| 528.240          | 38.0                           | PK       | 45                  | 1.2             | H            | 18.3                  | 2.5                 | 28.6               | 30.2                           | 46.0                  | -15.8        |
| 144.330          | 39.6                           | PK       | 180                 | 1.2             | H            | 13.8                  | 1.1                 | 28.5               | 26.0                           | 43.5                  | -17.5        |
| 137.420          | 39.2                           | PK       | 45                  | 1.0             | V            | 14.2                  | 1.1                 | 28.5               | 26.0                           | 43.5                  | -17.5        |
| 234.168          | 40.9                           | PK       | 60                  | 1.2             | V            | 11.7                  | 1.3                 | 27.7               | 26.2                           | 46.0                  | -19.8        |

**Plot(s) of Test Data**

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



17.Aug 05 09:38

Ref 80 dBμV

\*Att 10 dB

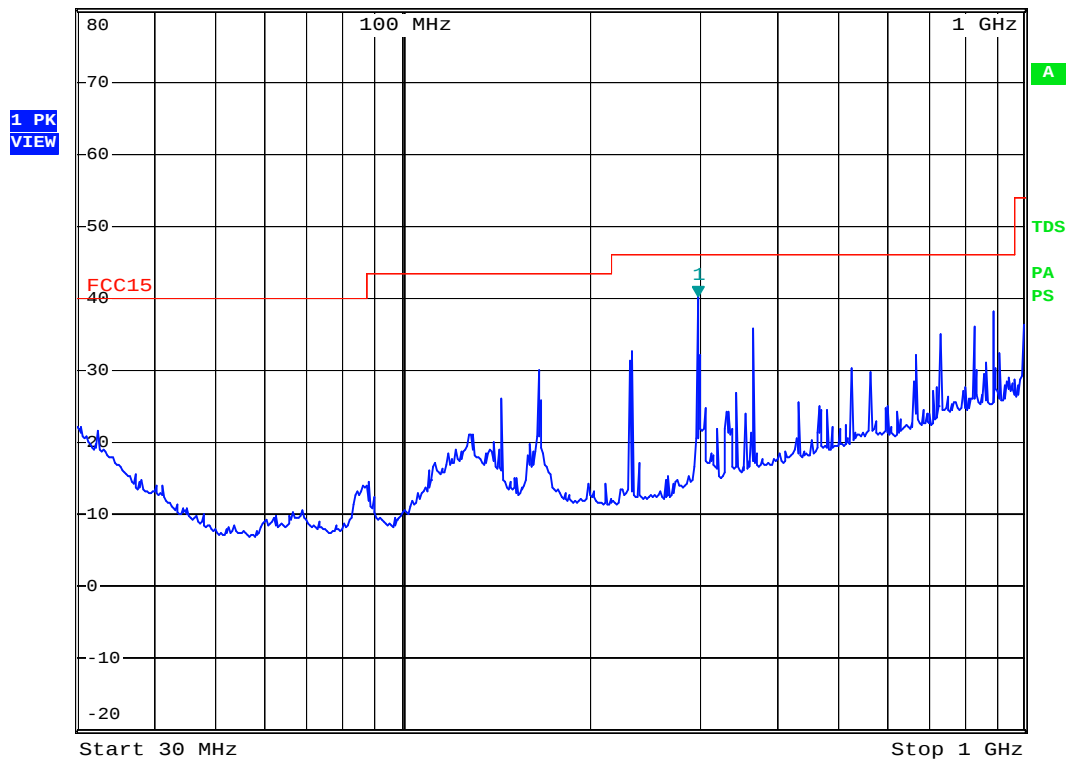
\*RBW 100 kHz Marker 1 [T1]

\*VBW 100 kHz

40.28 dBμV

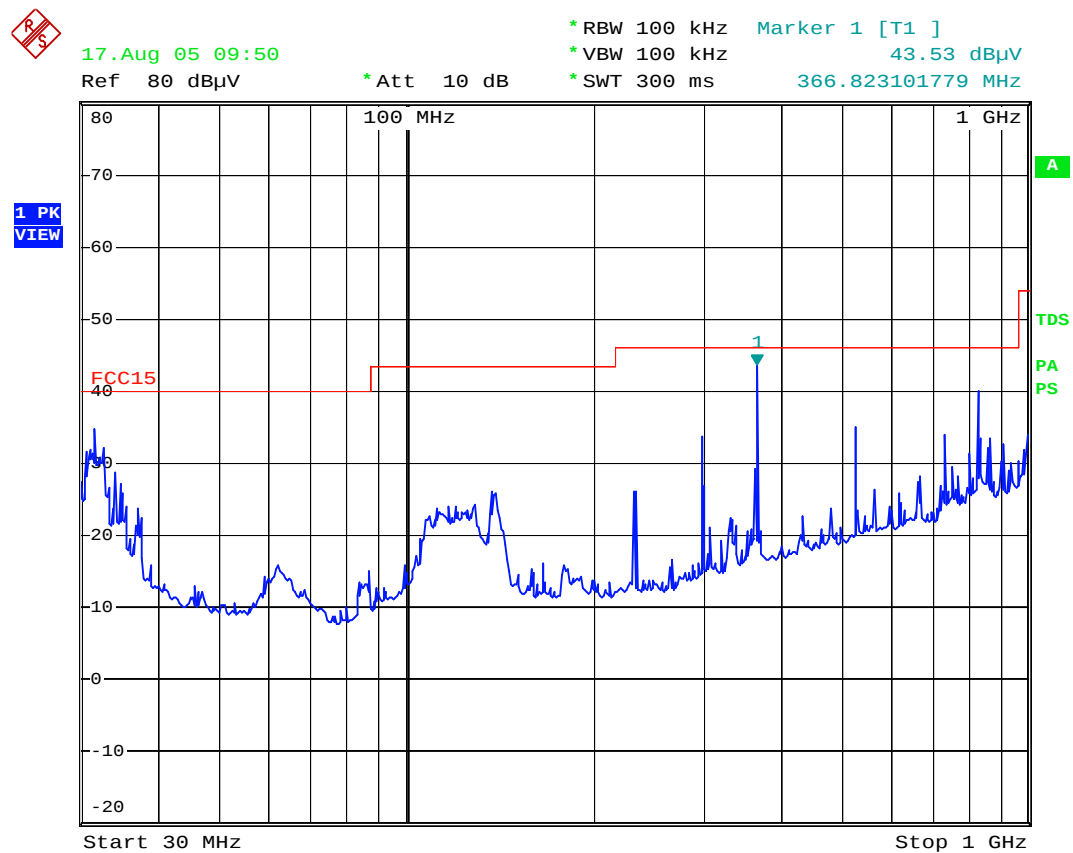
\*SWT 300 ms

299.315847590 MHz



Kingjon Bluetooth USB Dongle M/N:KJ-D108 Low channel (horizontal)

Date: 17.AUG.2005 09:38:46



Kingjon Bluetooth USB Dongle M/N:KJ-D108 Low channel ( Vertical)

Date: 17.AUG.2005 09:50:43

## §15.247(a)(1)-CHANNEL SEPARATION TEST

### Applicable Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB Bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

### Test Equipment List and Details

| Manufacturer    | Description       | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|------------------|----------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI  | 100028        | 2004-9-15        | 2005-9-15            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Procedure

1. Set the EUT in transmitting mode, spectrum Bandwidth was set at 100 kHz, maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another truce
3. Measure the channel separation.

Limit

FCC Part 15, Subpart C Section 15.247(a)(1). Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB Bandwidth of the hopping channel, whichever is greater.

| FREQUENCY RANGE (MHz) | Limit (kHz) |
|-----------------------|-------------|
| 902-928               | >25kHz      |
| 2400-2483.5           | >25kHz      |
| 5725-5850             | >25kHz      |

### Test Data

#### Environmental Conditions

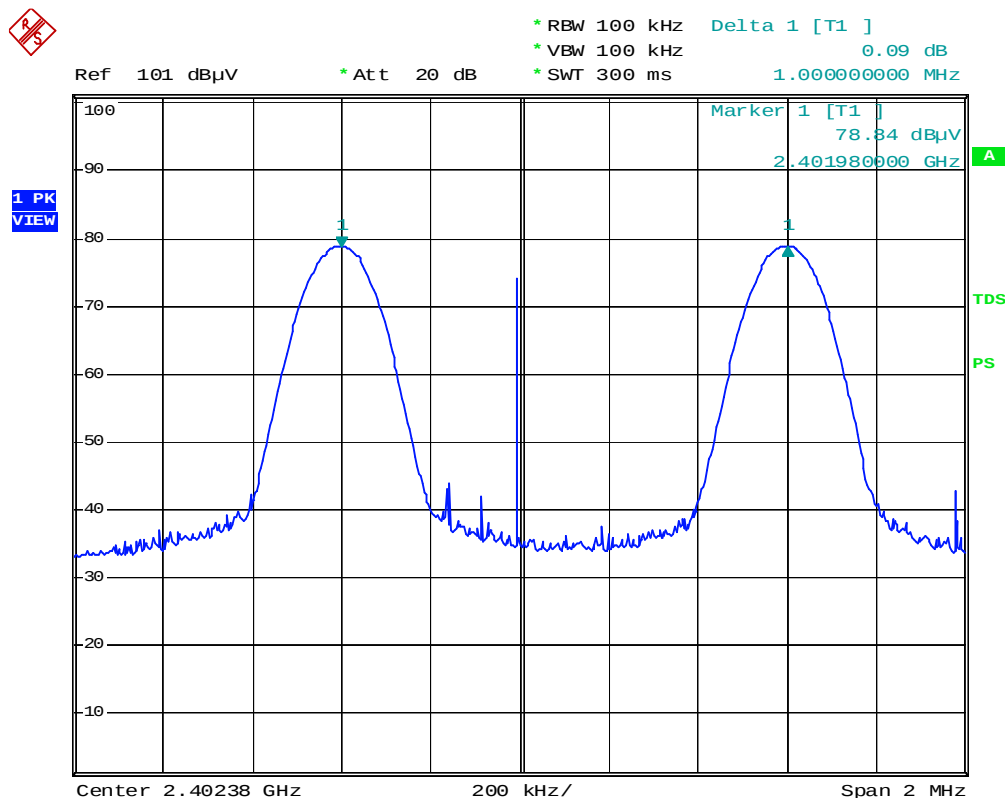
|                    |           |
|--------------------|-----------|
| Temperature:       | 27 °C     |
| Relative Humidity: | 50 %      |
| ATM Pressure:      | 1009 mbar |

The testing was performed by Louise Lu on 2005-9-8

Test Result: Pass

Test mode: Transmitting

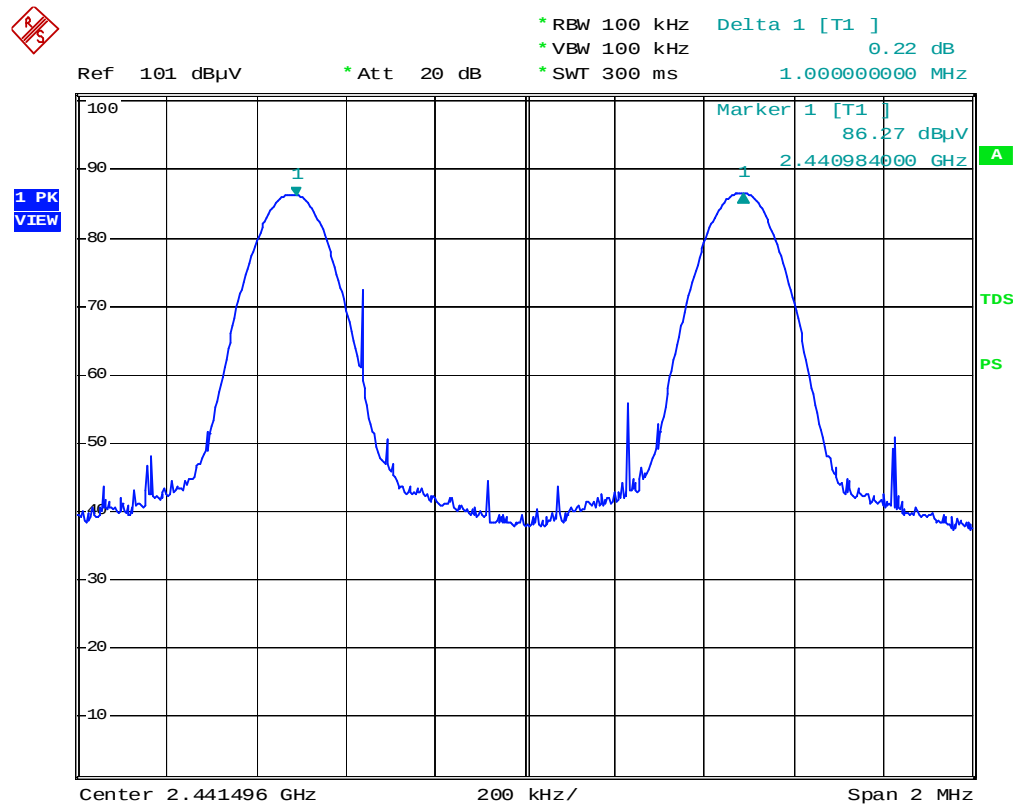
| CHANNEL           | CHANNEL<br>FREQUENCY<br>(MHz) | SEPARATION<br>READ VALUE (kHz) | SEPARATION<br>LIMIT<br>(kHz) |
|-------------------|-------------------------------|--------------------------------|------------------------------|
| Low Channel       | 2401.980                      | 1000                           | >25                          |
| Adjacency Channel | 2402.980                      |                                |                              |
| Middle Channel    | 2440.984                      | 1000                           | >25                          |
| Adjacency Channel | 2441.984                      |                                |                              |
| High Channel      | 2479.972                      | 1000                           | >25                          |
| Adjacency Channel | 2478.972                      |                                |                              |



Kingjon Bluetooth USB Dongle M/N: KJ-D108 channel separation

n test ( low channel)

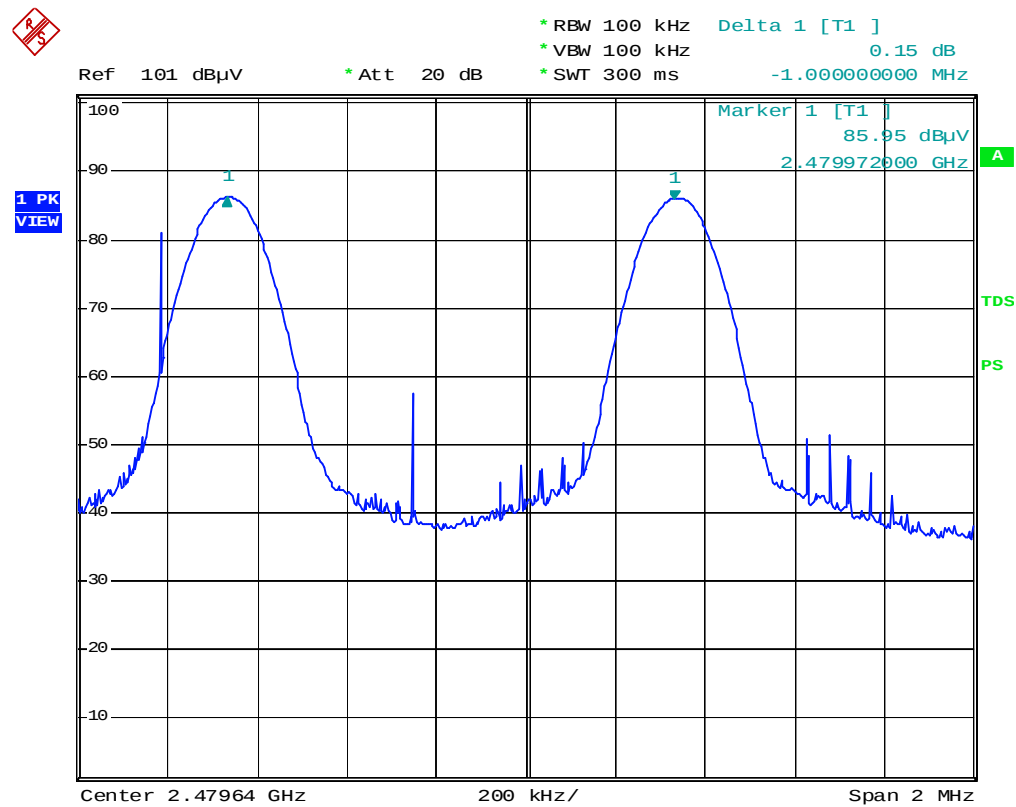
Date: 8.SEP.2005 15:13:33



Kingjon Bluetooth USB Dongle M/N: KJ-D108 channel separatio

n test ( middle channel)

Date: 8.SEP.2005 15:16:31



Kingjon Bluetooth USB Dongle M/N: KJ-D108 channel separation test ( high channel)  
Date: 8.SEP.2005 15:22:09

## §15.247(a)(1) 20dB BANDWIDTH TESTING

### Applicable Standard

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB Bandwidth of the hopping channel, whichever is greater.

### Test Equipment List and Details

| Manufacturer    | Description       | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|------------------|----------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI  | 100028        | 2004-9-15        | 2005-9-15            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Procedure

1. Check the calibration of the measuring instrument using a known signal from an external generator.
2. Position the EUT without connection to the tunable table. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

### Test Data

#### Environmental Conditions

|                    |          |
|--------------------|----------|
| Temperature:       | 25 ° C   |
| Relative Humidity: | 50%      |
| ATM Pressure:      | 1032mbar |

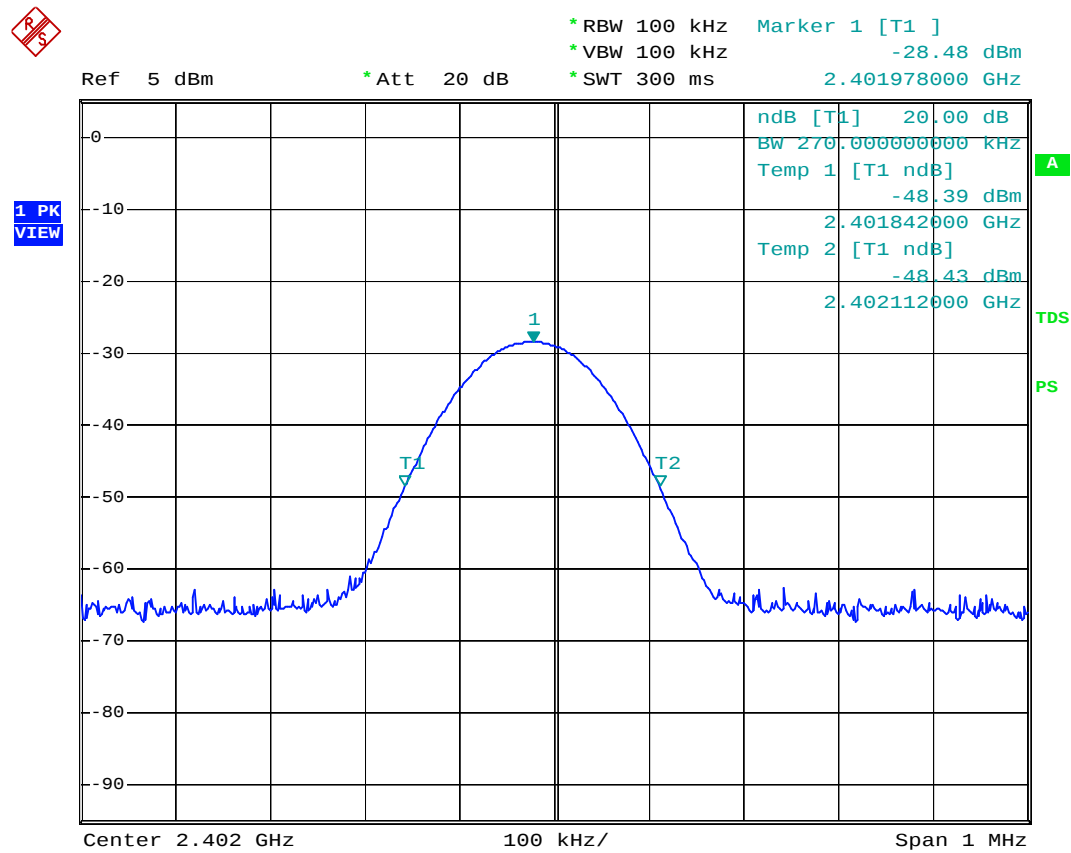
The testing was performed by Louise Lu on 2005-9-8

Test Result: Pass

Test mode: Transmitting

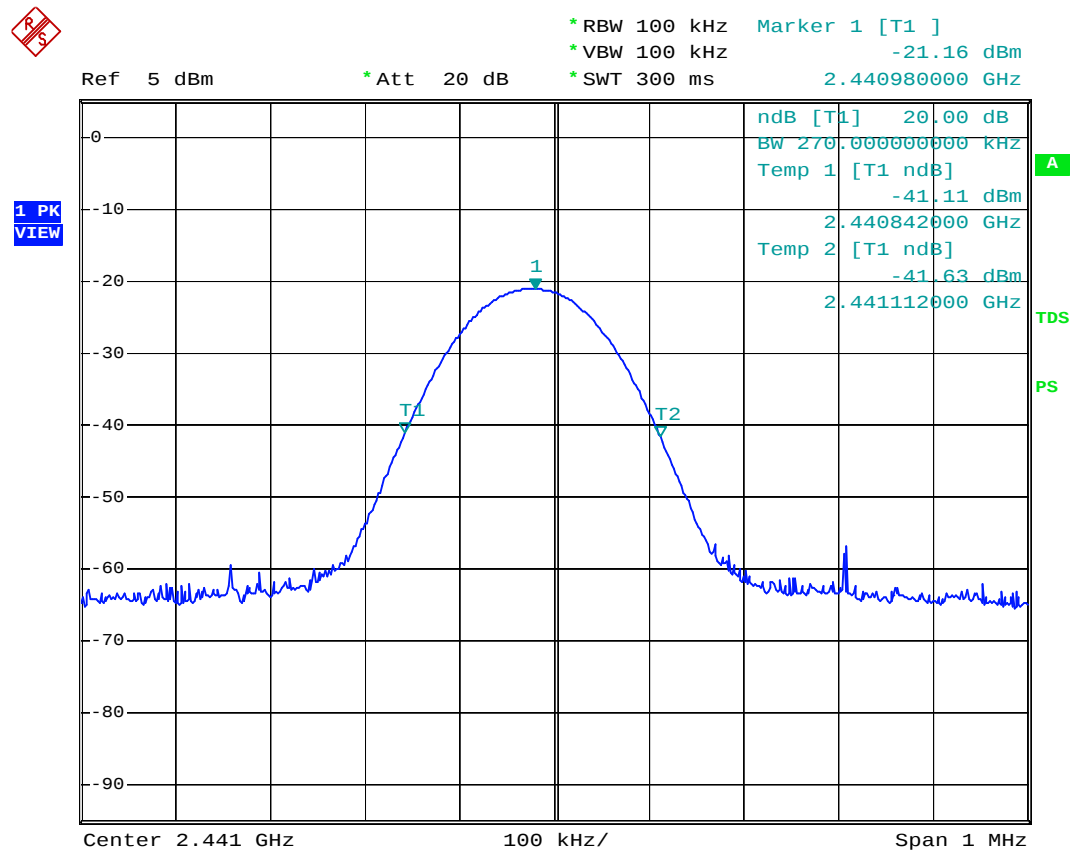
The result has been complied with the §15.247(a)(1), see the following plot:

| Channel        | Channel frequency (MHz) | 20dB Bandwidth (KHz) | Limit (KHz) |
|----------------|-------------------------|----------------------|-------------|
| Low channel    | 2401.978                | 270.00               | <1000       |
| Middle channel | 2440.980                | 270.00               | <1000       |
| High channel   | 2479.976                | 272.00               | <1000       |



Kingjon Bluetooth USB Dongle M/N: KJ-D108 ( low channel)

Date: 8.SEP.2005 15:27:17



Kingjon Bluetooth USB Dongle M/N: KJ-D108 ( middle channel)

Date: 8.SEP.2005 15:25:58



Date: 8.SEP.2005 15:24:22

## §15.247(a)(1)(iii)-QUANTITY OF HOPPING CHANNEL TEST

### Applicable Standard

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### Test Equipment List and Details

| Manufacturer    | Description       | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|------------------|----------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI  | 100035        | 2004-9-15        | 2005-9-15            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Procedure

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
2. Set the EUT in transmitting mode from first channel to last.
3. By using the Max-Hold function record the Quantity of the channel.

Limit

FCC Part 15, Subpart C Section 15.247

| FREQUENCY RANGE (MHz) | Limit (Quantity of Hopping Channel) |                          |                        |                        |
|-----------------------|-------------------------------------|--------------------------|------------------------|------------------------|
|                       | 20 dB bandwidth <250 kHz            | 20 dB bandwidth >250 kHz | 20 dB bandwidth <1 MHz | 20 dB bandwidth >1 MHz |
| 902-928               | 50                                  | 25                       | N/A                    | N/A                    |
| 2400-2483.5           | N/A                                 | N/A                      | 15                     | 15                     |
| 5725-5850             | N/A                                 | N/A                      | 75                     | N/A                    |

### Test Data

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 27 °C     |
| Relative Humidity: | 50 %      |
| ATM Pressure:      | 1009 mbar |

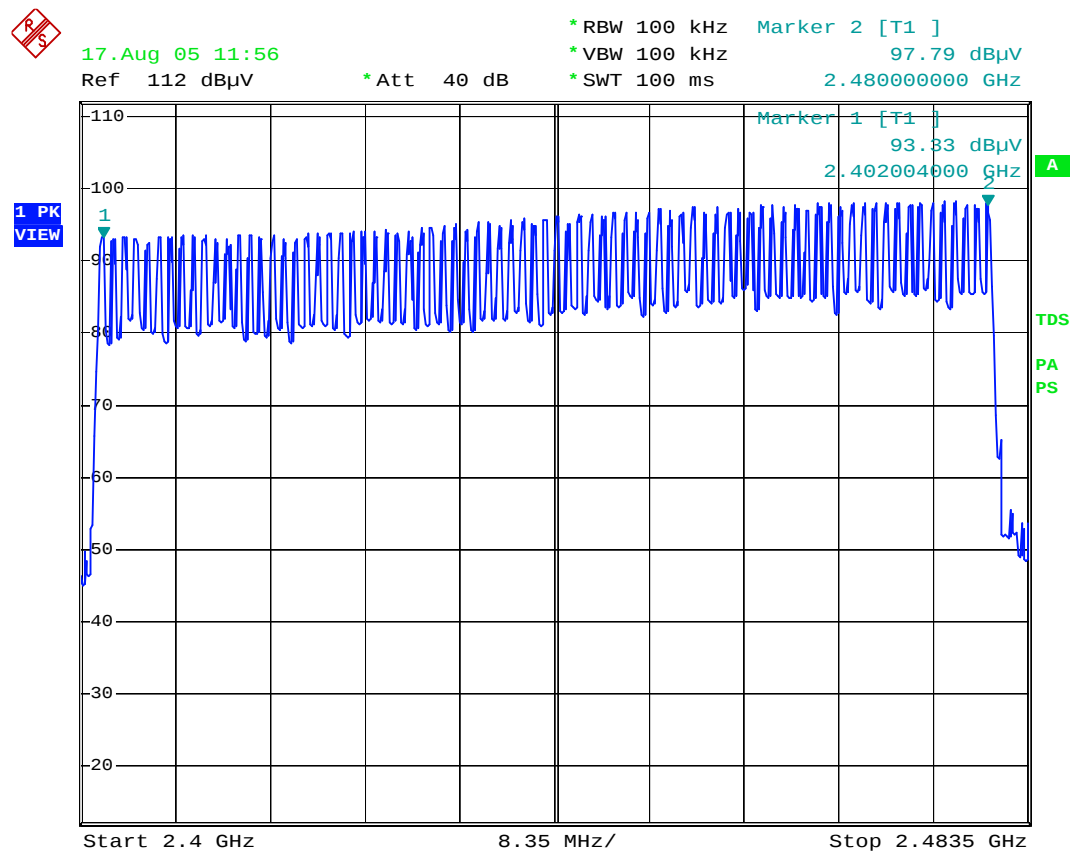
The testing was performed by Louise Lu on 2005-8-17

Test Result: Pass

Test mode: Transmitting

The frequency hopping systems operating in 2.4~2.4835 GHz band employ 78 nonoverlapping channels.

| Hopping Channel Frequency Range (MHz) | Quantity OF hopping Channel Read Value (Channel) | Quantity Of Hopping channel limit (Channel) |
|---------------------------------------|--------------------------------------------------|---------------------------------------------|
| 2400.0 ~ 2483.5                       | 79                                               | 15                                          |



Kingjon Bluetooth USB Dongle M/N:KJ-D108 Quantity of hopping channel test

Date: 17.AUG.2005 11:56:38

## §15.247(a)(1)(iii) -TIME OF OCCUPANCY (DWELL TIME)

### Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### Test Equipment List and Details

| Manufacturer    | Description       | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|------------------|----------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI  | 100035        | 2004-9-15        | 2005-9-15            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as 0.4 X channel no.(s), The quantity of False was get from single sweep. In addition, the time of single Pluses was tested.

Limit

FCC Part 15, Subpart C Section 15.247.

| FREQUENCY RANGE<br>(MHz) | LIMIT (ms)                             |                                        |                                       |
|--------------------------|----------------------------------------|----------------------------------------|---------------------------------------|
|                          | 20dB bandwidth<br><250kHz (50 Channel) | 20dB bandwidth<br>>250kHz (50 Channel) | 20dB bandwidth<br><1 MHz (79 Channel) |
| 902-928                  | 400(20s)                               | 400(10s)                               | N/A                                   |
| 2400-2483.5              | N/A                                    | N/A                                    | 400(31.6s)                            |
| 5725-5850                | N/A                                    | N/A                                    | 400(30s)                              |

### Test Data

#### Environmental Conditions

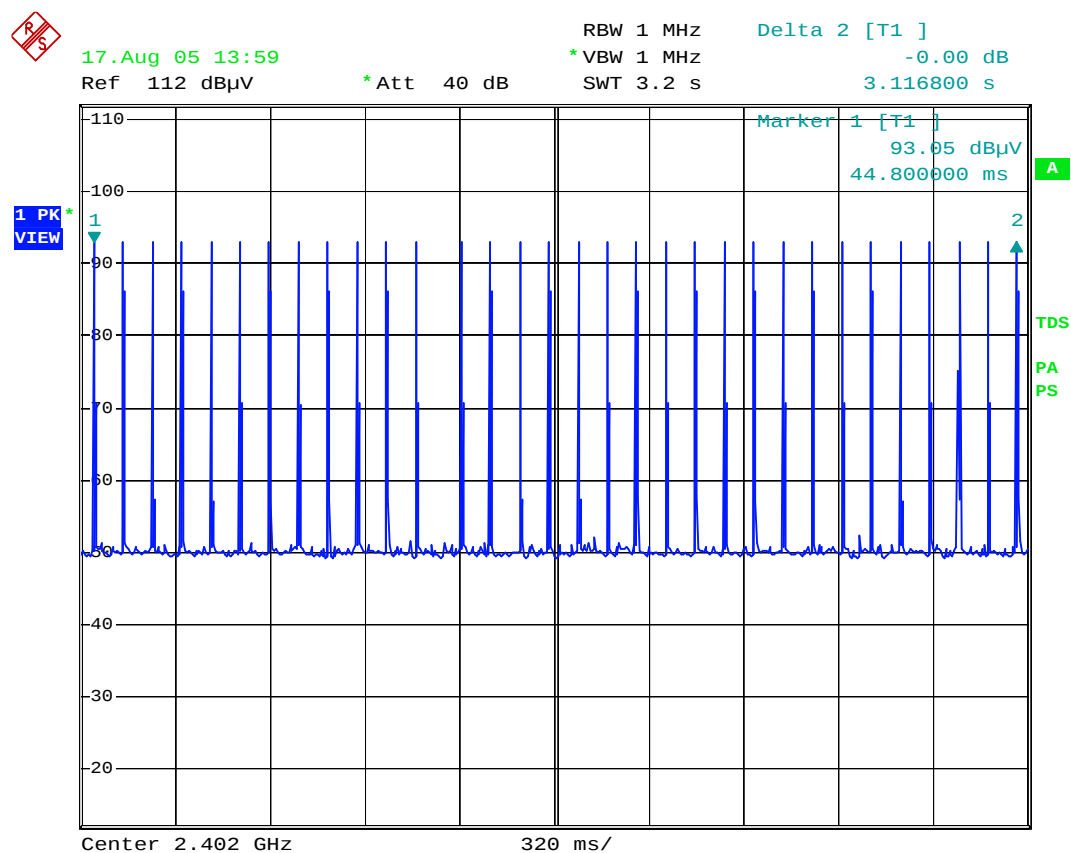
|                    |           |
|--------------------|-----------|
| Temperature:       | 27 °C     |
| Relative Humidity: | 50 %      |
| ATM Pressure:      | 1009 mbar |

*The testing was performed by Louise Lu on 2005-8-17*

Test Result: Pass

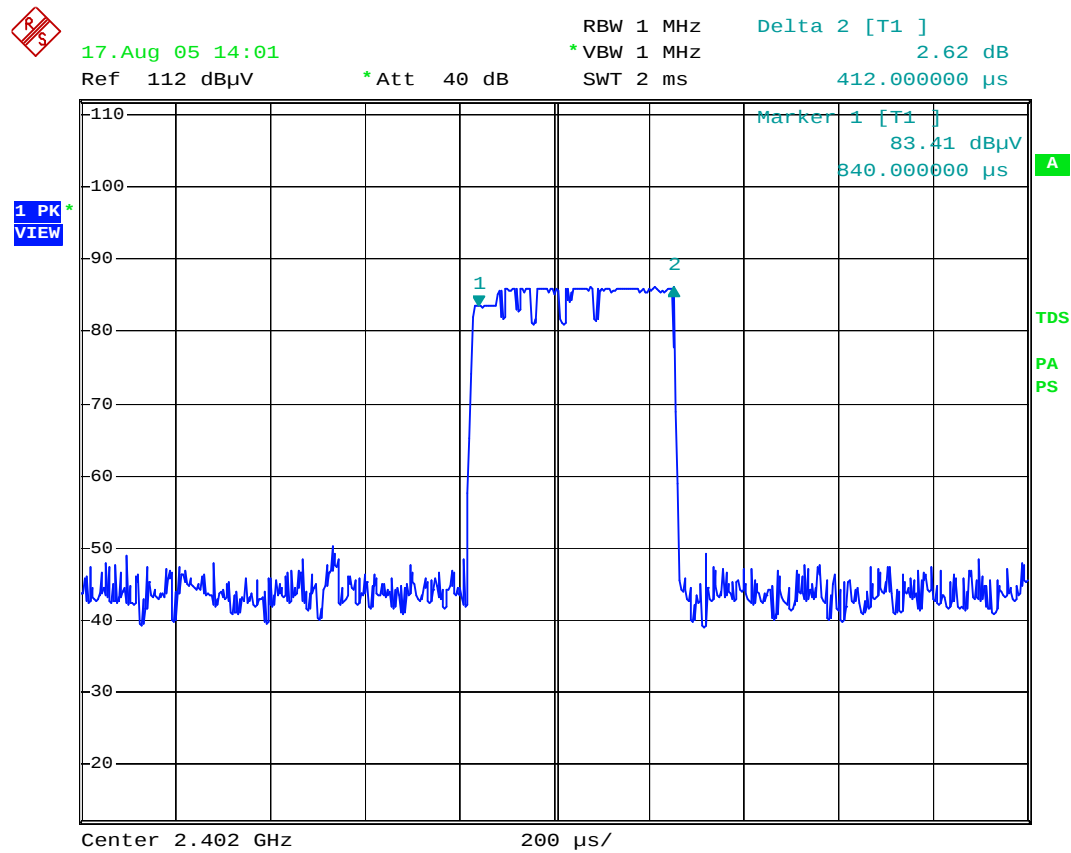
Test mode: Transmitting

| Channel        | Frequency MHz | Pulse Wide m Sec | Quantity Pulse per 3.2 Sec | Quantity Pulse per 32 Sec | Dwell Time m Sec | Limit m Sec |
|----------------|---------------|------------------|----------------------------|---------------------------|------------------|-------------|
| Low channel    | 2401.980      | 0.412            | 32                         | 320                       | 131.84           | 400         |
| Middle channel | 2440.984      | 0.420            | 32                         | 320                       | 134.40           | 400         |
| High channel   | 2479.972      | 0.424            | 33                         | 330                       | 139.92           | 400         |



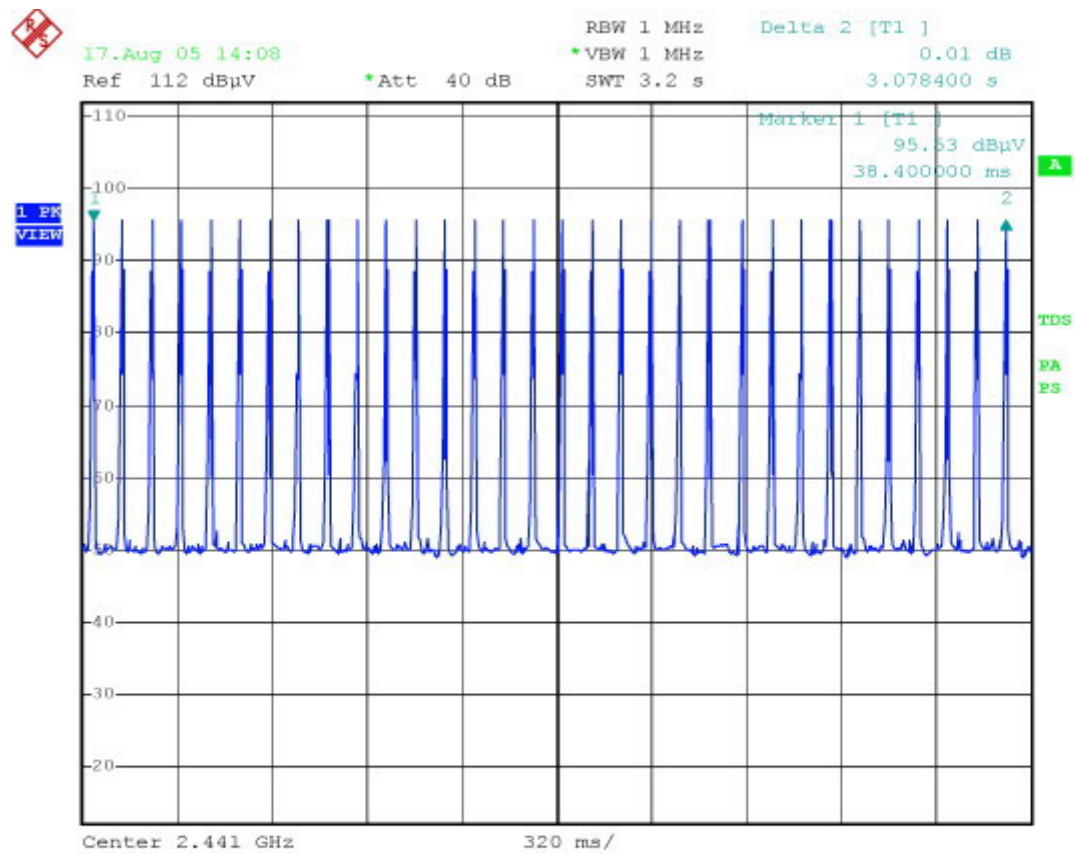
Kingjon Bluetooth USB Dongle M/N:KJ-D108 Low channel

Date: 17.AUG.2005 13:59:26



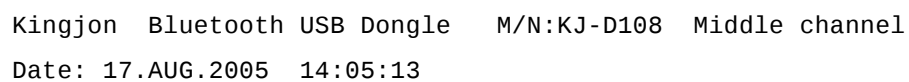
Kingjon Bluetooth USB Dongle M/N:KJ-D108 Low channel

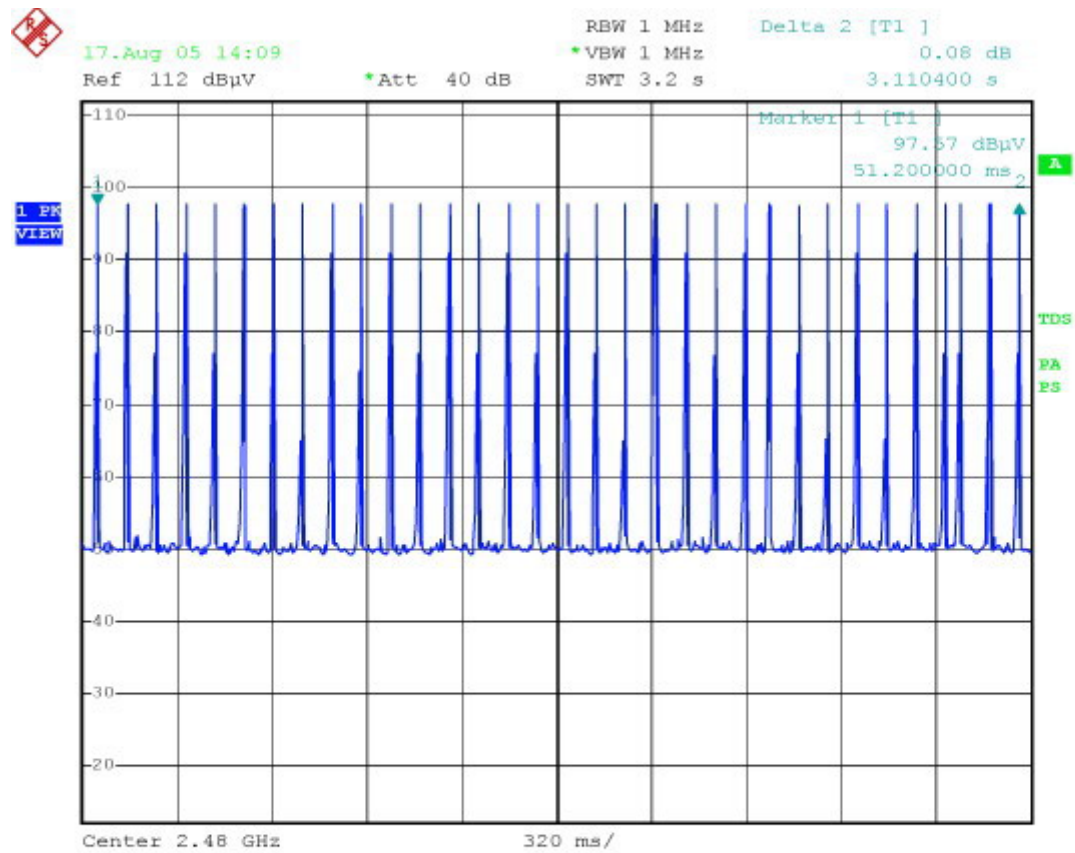
Date: 17.AUG.2005 14:01:25



Kingjon Bluetooth USB Dongle M/N:KJ-D108 Middle channel

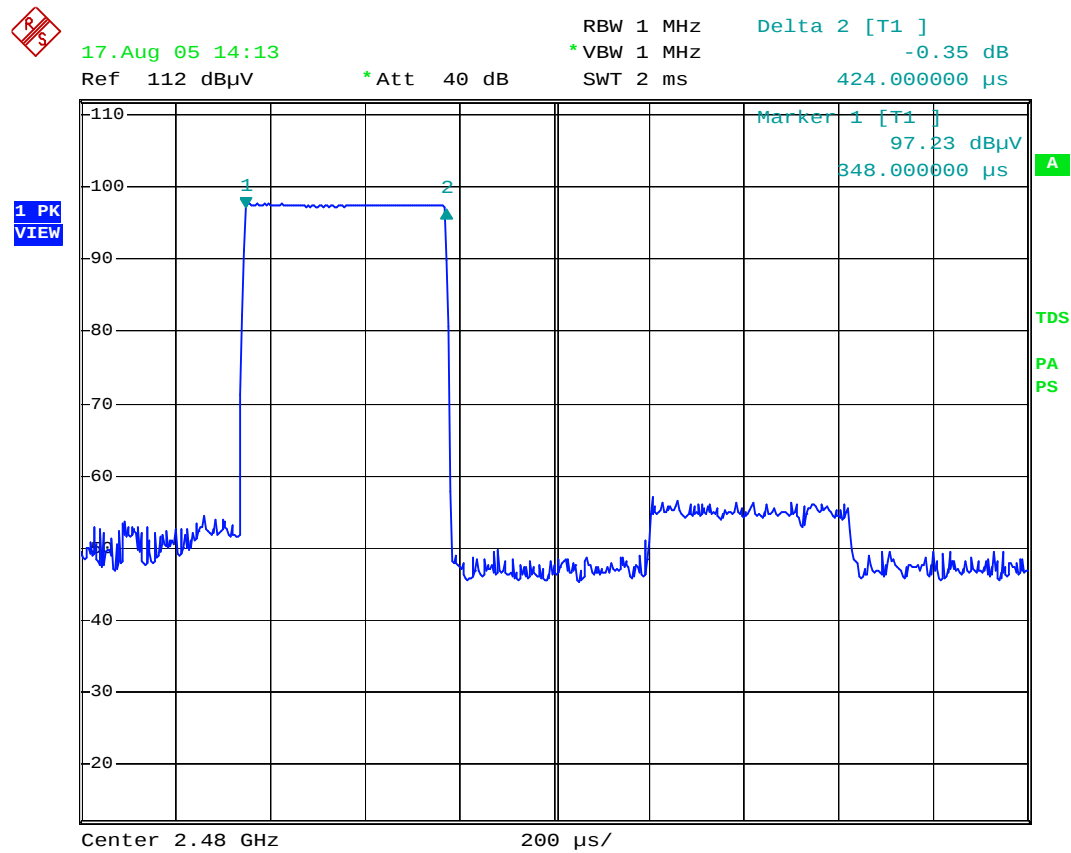
Date: 17.AUG.2005 14:08:14





Kingjon Bluetooth USB Dongle M/N:KJ-D108 High channel

Date: 17.AUG.2005 14:09:33



Kingjon Bluetooth USB Dongle M/N:KJ-D108 High channel

Date: 17.AUG.2005 14:13:02

## §15.247(b)(1) - PEAK OUTPUT POWER MEASUREMENT

### Applicable Standard

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

(1) For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

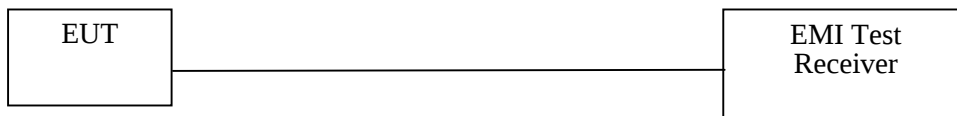
### Test Equipment List and Details

| Manufacturer  | Description       | Model | Serial Number | Calibration Date | Calibration Due Date |
|---------------|-------------------|-------|---------------|------------------|----------------------|
| Rohde&Schwarz | EMI Test Receiver | ESCI  | 100028        | 2004-9-15        | 2005-9-15            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the UFL port of EUT to a Peak Power Meter.



### Test Data

#### Environmental Conditions

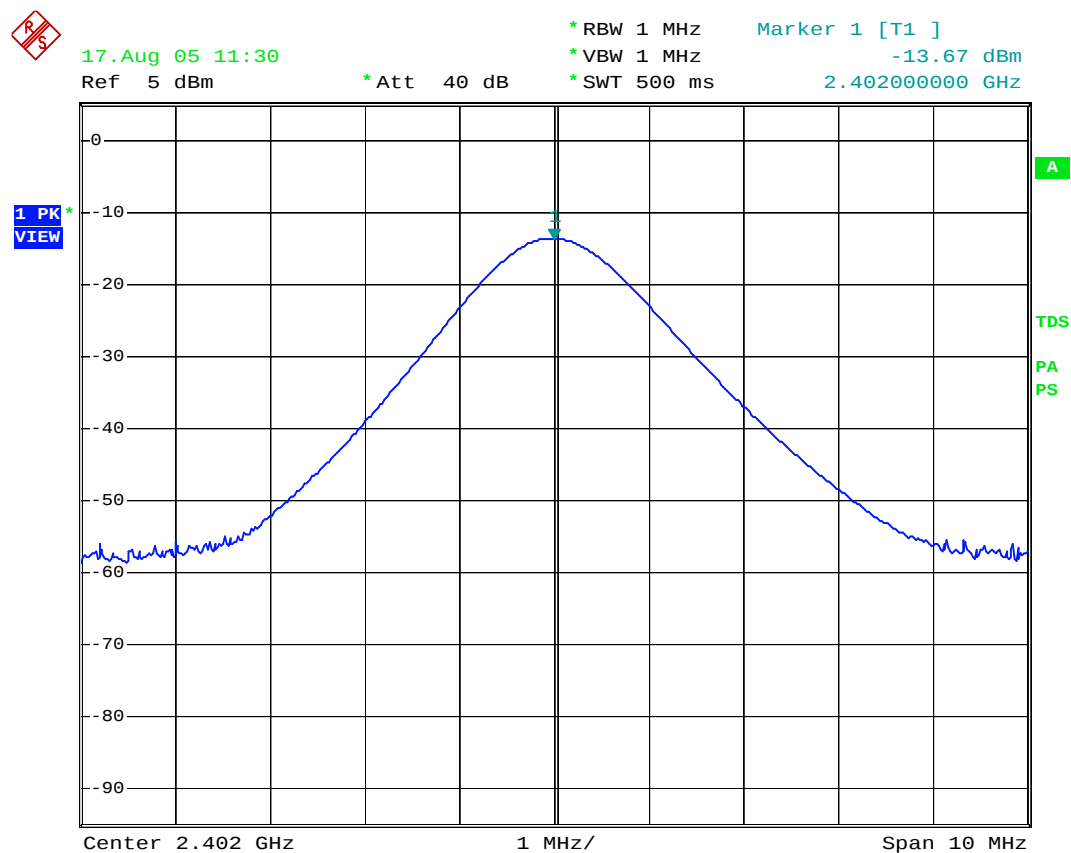
|                    |           |
|--------------------|-----------|
| Temperature:       | 27 °C     |
| Relative Humidity: | 50 %      |
| ATM Pressure:      | 1009 mbar |

*The testing was performed by Louise Lu on 2005-8-17*

Test Result: Pass

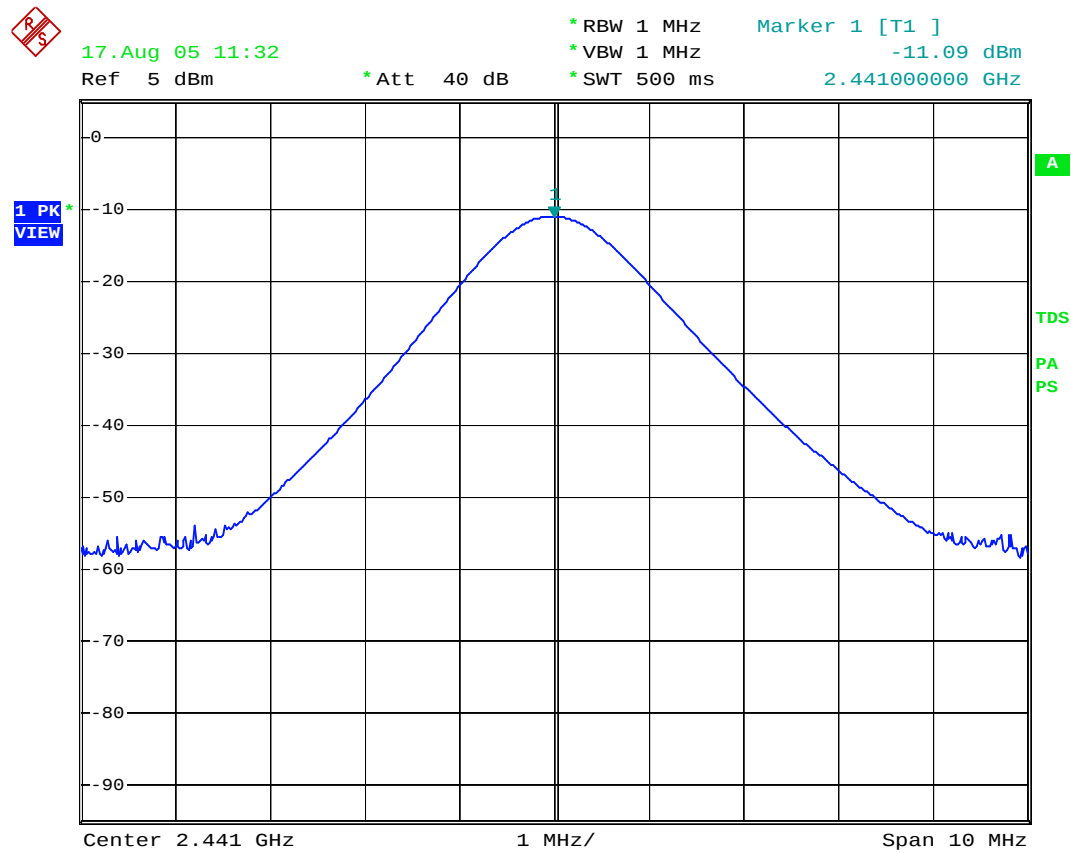
Test mode: Transmitting

| CHANNLE        | CHANNEL<br>FREQUENCY<br>(MHz) | PEAK POWER<br>OUTPUT<br>(dBm) | PEAK POWER<br>OUTPUT<br>(mW) | PEAK POWER<br>LIMIT<br>(W) |
|----------------|-------------------------------|-------------------------------|------------------------------|----------------------------|
| Low Channel    | 2402.00                       | -13.67                        | 0.043                        | 0.125                      |
| Middle Channel | 2441.00                       | -11.09                        | 0.078                        | 0.125                      |
| High Channel   | 2480.00                       | -8.78                         | 0.132                        | 0.125                      |



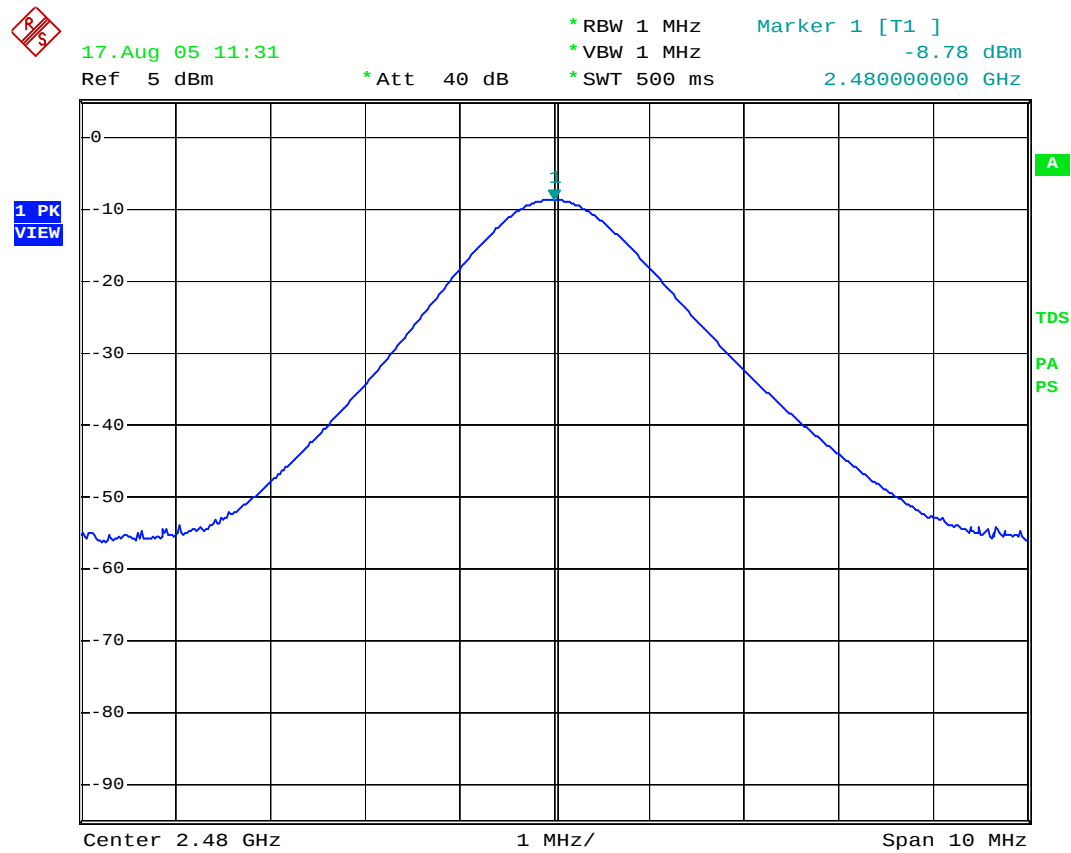
Kingjon Bluetooth USB Dongle M/N:KJ-D108 Low channel

Date: 17.AUG.2005 11:30:46



Kingjon Bluetooth USB Dongle M/N:KJ-D108 Middle channel

Date: 17.AUG.2005 11:32:49



Kingjon Bluetooth USB Dongle M/N:KJ-D108 high channel

Date: 17.AUG.2005 11:31:58

## §15.247(d)- BAND EDGES TESTING

### Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

### Test Equipment List and Details

| Manufacturer    | Description       | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------|---------------|------------------|----------------------|
| Rohde & Schwarz | EMI Test Receiver | ESCI  | 100035        | 2004-9-15        | 2005-9-15            |

\* **Statement of Traceability:** Bay Area Compliance Lab Corp. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

### Test Procedure

1. Check the calibration of the measuring instrument using a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Start 2.4 G Hz, stop 2.4835 GHz, and make sure the instrument is operated in its linear range.
3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100kHz bandwidth from band edge.
4. Measure the frequency edge point amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the edge frequency.

### Test Data

#### Environmental Conditions

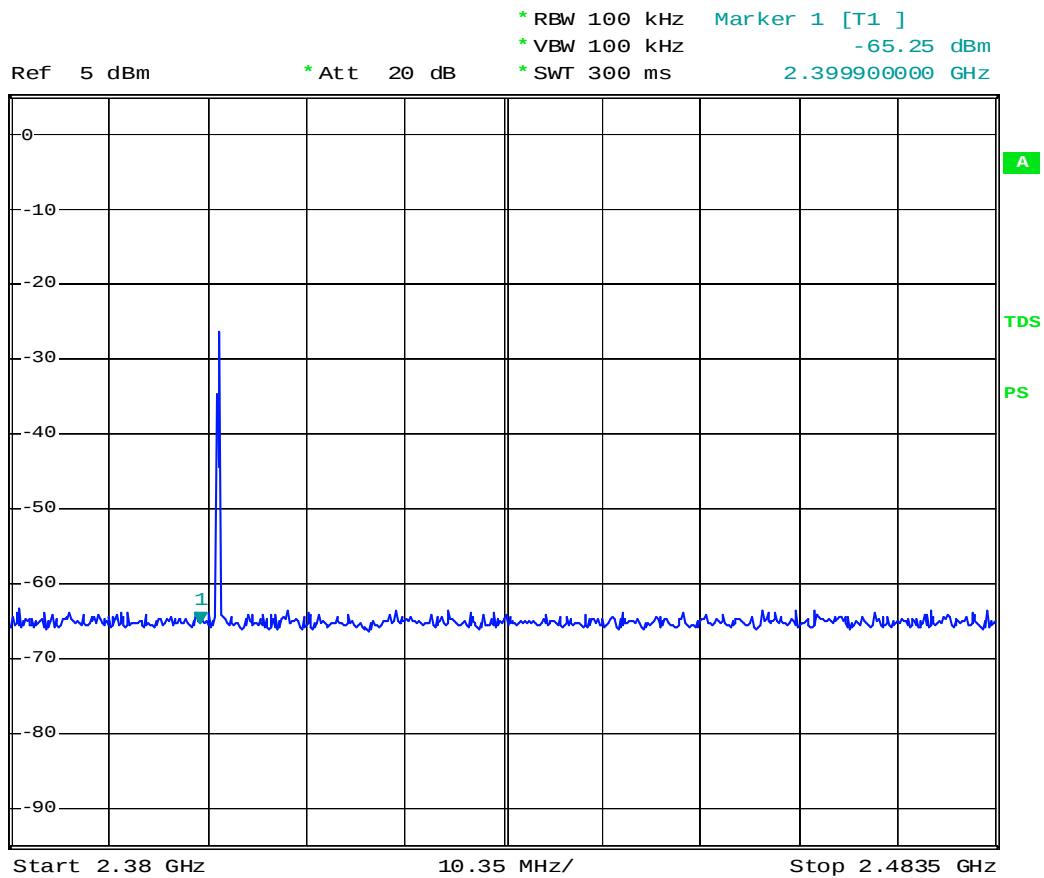
|                    |           |
|--------------------|-----------|
| Temperature:       | 27 °C     |
| Relative Humidity: | 50 %      |
| ATM Pressure:      | 1009 mbar |

*The testing was performed by Louise Lu on 2005-9-8*

Test Result: Pass

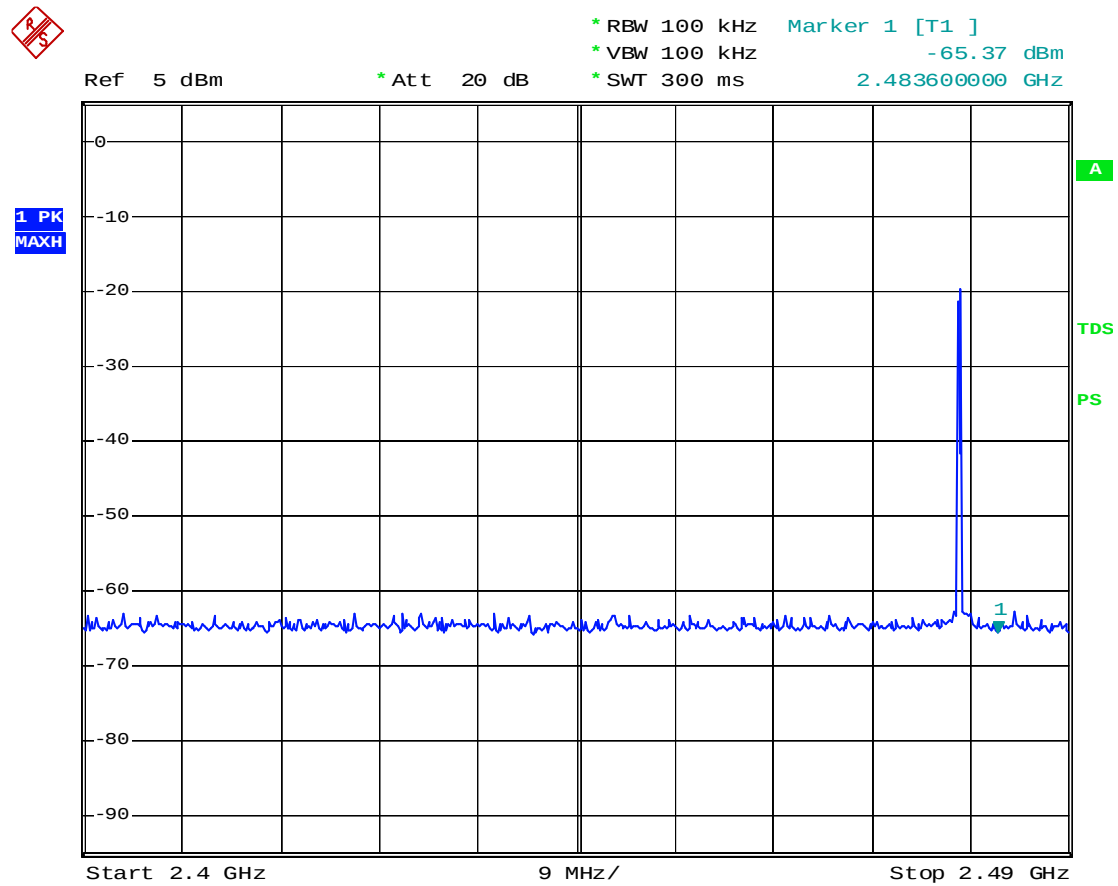
Test mode: Transmitting

| Frequency<br>MHz | Emission<br>dB $\mu$ V/m | Limit<br>dB $\mu$ V/m |
|------------------|--------------------------|-----------------------|
| 2483.6           | 41.63                    | 54                    |
| 2399.9           | 41.75                    | 54                    |

1 PK  
VIEW

Kingjon Bluetooth USB Dongle    M/N: KJ-D108

Date: 8.SEP.2005    16:16:31



Kingjon Bluetooth USB Dongle      M/N: KJ-D108

Date: 8.SEP.2005      16:19:40