



## TEST REPORT

### 47 CFR FCC Part 15 Subpart B (Class B)

#### Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement

#### ANSI C63.4: 2009

#### 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

|  |   |                                     |  |
|--|---|-------------------------------------|--|
| Report Reference No.....   | TRE14010025 R/C:95572   |                                     |  |
| FCC ID.....  | BBP-PRSP213NW1  |                                     |  |
| Compiled by<br>( position+printed name+signature)...   | File administrators Eric Wang                                 | <i>Eric Wang</i>                    |  |
| Supervised by<br>( position+printed name+signature)...   | Test Engineer Yingchun Shan                                   | <i>Yingchun Shan</i>                |  |
| Approved by<br>( position+printed name+signature)...   | Manager Wenliang Li   | <i>Wenliang Li</i>                  |  |
| Date of issue.....   | Jan 20, 2014  |                                     |  |
| <b>Testing Laboratory Name</b> .....   | <b>Shenzhen Huatongwei International Inspection Co., Ltd</b>  |                                     |  |
| Address.....   | Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China            |                                     |  |
| Testing location/ procedure .....  | Full application of Harmonised standards                      | <input checked="" type="checkbox"/> |  |
|  | Partial application of Harmonised standards                   | <input type="checkbox"/>            |  |
|  | Other standard testing methods                                | <input type="checkbox"/>            |  |
| <b>Applicant's name</b> .....  | <b>RICOH Co., LTD.</b>  |                                     |  |
| Address.....   | 810 Shimoimaizumi, Ebina City, Kanagawa-Pref., 243-0460 Japan |                                     |  |
| <b>Test specification</b> .....  |   |                                     |  |
| Standard .....   | <b>47 CFR FCC Part 15 Subpart B (Class B)</b>                 | <b>ANSI C63.4: 2009</b>             |  |
| Non-standard test method.....  | /   |                                     |  |
| <b>Test Report Form No.</b> .....  | HTWEMCFCC_1A  |                                     |  |
| TRF Originator.....  | Shenzhen Huatongwei International Inspection Co., Ltd         |                                     |  |
| Master TRF.....  | Dated 2006-06   |                                     |  |
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| <b>Test item description</b> .....   | Printer   |                                     |  |
| Trade Mark .....   | RICOH   |                                     |  |
| Model/Type reference.....  | SP 213Nw  |                                     |  |
| Listed Model.....  | SP 212Nw  |                                     |  |
| Ratings.....   | AC 120V/60Hz 8A 900W  |                                     |  |
| Result.....  | <b>PASS</b>   |                                     |  |

# EMC - TEST REPORT

|                          |                    |               |
|--------------------------|--------------------|---------------|
| <b>Test Report No. :</b> | <b>TRE14010025</b> | Jan 20,2014   |
|                          |                    | Date of issue |

Equipment under Test : Printer

Model / Type : SP 213Nw

Listed Model : SP 212Nw

**Applicant** : RICOH Co., LTD.

Address : 810 Shimoimaizumi,Ebina City, Kanagawa-Pref., 243-0460 Japan

**Manufacturer** : RICOH Co., LTD.

Address : 3-6, Naka-magome 1-Chome Ohta-ku,Tokyo 143-8555 Japan

|                     |             |
|---------------------|-------------|
| <b>Test Result:</b> | <b>PASS</b> |
|---------------------|-------------|

The test report merely corresponds to the test sample.  
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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## **1. TEST STANDARDS**

The tests were performed according to following standards:

[47 CFR FCC Part 15 Subpart B \(Class B\)](#) Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement.

[ANSI C63.4: 2009](#) 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.

## 2. SUMMARY

### 2.1. General Remarks:

|                                |   |              |
|--------------------------------|---|--------------|
| Date of receipt of test sample | : | Jan 14, 2014 |
|                                |   |              |
| Testing commenced on           | : | Jan 14, 2014 |
|                                |   |              |
| Testing concluded on           | : | Jan 20,2014  |

### 2.2. Equipment under Test

#### Power supply system utilised

|                      |   |   |                                   |
|----------------------|---|---|-----------------------------------|
| Power supply voltage | : | <input type="radio"/> 230V / 50 Hz                                | <input type="radio"/> 115V / 60Hz |
|                      |   | <input type="radio"/> 12 V DC                                     | <input type="radio"/> 24 V DC     |
|                      |   | <input checked="" type="radio"/> Other (specified in blank below) |                                   |

AC 120V/60Hz

### 2.3. Short description of the Equipment under Test (EUT)

The EUT is a laser printer, and there is a WIFI module in SP 213Nw and SP 212Nw and the WIFI module has been confirmed

Model Difference: SP 213Nw and SP 212Nw are similar, but different from the mechanical structure which does not affect EMC.

Unless otherwise indicated, all tests were conducted on SP 213Nw.

Tests performed on SP 213Nw were considered to be representative of SP 212Nw.

### 2.4. EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

Test program (customer specific)

|  |
|--|
| Emissions tests.....: 47 CFR FCC Part 15 Subpart B (Class B) and ANSI C63.4 2009, searching for the highest disturbance. |
|--|

### 2.5. EUT configuration

#### 1) Equipment under test

| Kind of equipment | Manufacturer | Model name | Serial number | Remarks |
|-------------------|--------------|------------|---------------|---------|
| EUT               | RICOH        | SP 213Nw   | LM213170005   | /       |

#### 2) Highest Frequency Generated or Used in The Device or on Which the Device Operates (MHz)

| Kind of equipment | Mode name | Operates Frequency | Remark |
|-------------------|-----------|--------------------|--------|
| EUT               | SP 213Nw  | 480MHz             | USB    |

**3) Supporting equipment**

| Kind of equipment | Manufacturer | Model name     | Serial number  | Remarks |
|-------------------|--------------|----------------|----------------|---------|
| Notebook          | LENOVO       | ThinkPad X201i | R8-7DYTX 10/11 |         |

**4) Cables Used**

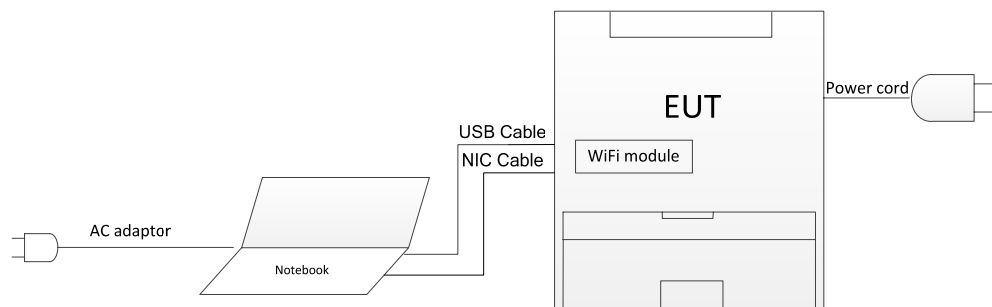
|   | Cable Name  | Length | Shielded | Maker       | Remarks |
|---|-------------|--------|----------|-------------|---------|
| 1 | USB Cable   | 2m     | YES      | New Nam Lee |         |
| 2 | NIC Cable   | 3m     | No       | Black Box   |         |
| 3 | Power Cable | 1.5m   | No       | LONGWELL    |         |

**5)Operating modes:**

| No. | Operating modes | Remarks |
|-----|-----------------|---------|
| 1   | USB Print       |         |
| 2   | NIC Print       |         |
| 3   | WIFI Print      |         |

**6)EUT Setup:**

SP 213Nw machine system configuration



### **3. TEST ENVIRONMENT**

#### **3.1. Address of the test laboratory**

Shenzhen Huatongwei International Inspection Co., Ltd  
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China  
Phone: 86-755-26715686 Fax: 86-755-26748089

#### **3.2. Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

##### **CNAS-Lab Code: L1225**

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: Mar. 01, 2012. Valid time is until Feb. 28, 2015.

##### **A2LA-Lab Cert. No. 2243.01**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept. 30, 2015.

##### **FCC-Registration No.: 662850**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date June. 01, 2012, valid time is until Jun. 01, 2015.

##### **IC-Registration No.: 5377A**

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Dec. 31, 2013, valid time is until Dec. 31, 2016.

##### **ACA**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

##### **VCCI**

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2012. Valid time is until Dec. 29, 2015.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2013. Valid time is until May 06, 2016.

##### **DNV**

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2016.

### 3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15-35 ° C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

### 3.4. Test Description

| Emission Measurement  |   |      |
|-----------------------|---|------|
| Radiated Emission     | 47 CFR FCC Part 15 Subpart B Class B<br>ANSI C63.4 2009 | PASS |
| Conducted Disturbance | 47 CFR FCC Part 15 Subpart B Class B<br>ANSI C63.4 2009 | PASS |

Remark: The measurement uncertainty is not included in the test result.

### 3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

| Test                  | Range       | Measurement Uncertainty | Notes |
|-----------------------|-------------|-------------------------|-------|
| Radiated Emission     | 30~1000MHz  | 4.65dB                  | (1)   |
| Radiated Emission     | 1G~2G       | 5.16dB                  | (1)   |
| Conducted Disturbance | 0.15~30 MHz | 3.35dB                  | (1)   |

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

### 3.6. Equipments Used during the Test

| Radiated Emission |                                      |                 |            |              |            |
|-------------------|--------------------------------------|-----------------|------------|--------------|------------|
| Item              | Test Equipment                       | Manufacturer    | Model No.  | Serial No.   | Last Cal.  |
| 1                 | ULTRA-BROADBAND ANTENNA              | Rohde & Schwarz | HL562      | 100015       | 2013/10/26 |
| 2                 | EMI TEST RECEIVER                    | Rohde & Schwarz | ESI 26     | 100009       | 2013/10/26 |
| 3                 | RF TEST PANEL                        | Rohde & Schwarz | TS / RSP   | 335015/ 0017 | 2013/10/26 |
| 4                 | TURNTABLE                            | ETS             | 2088       | 2149         | N/A        |
| 5                 | ANTENNA MAST                         | ETS             | 2075       | 2346         | N/A        |
| 6                 | EMI TEST Software                    | Rohde & Schwarz | ESK1       | N/A          | N/A        |
| 7                 | Double-Ridged-Waveguide Horn Antenna | Rohde & Schwarz | HF906      | 100039       | 2013/10/26 |
| 8                 | Semi-anechoic chamber                | ETS-LINDGREN    | AJ 593 HTW | N/A          | N/A        |



| Conducted Disturbance |                   |                 |           |            |            |
|-----------------------|-------------------|-----------------|-----------|------------|------------|
| Item                  | Test Equipment    | Manufacturer    | Model No. | Serial No. | Last Cal.  |
| 1                     | EMI Test Receiver | Rohde & Schwarz | ESCS30    | 100038     | 2013/10/26 |
| 2                     | Artificial Mains  | Rohde & Schwarz | ESH2-Z5   | 100028     | 2013/10/26 |
| 3                     | Artificial Mains  | Rohde & Schwarz | ESH3-Z5   | 100040     | 2013/10/26 |
| 4                     | Pulse Limiter     | Rohde & Schwarz | ESH3-Z2   | 100044     | 2013/10/26 |
| 5                     | EMI Test Software | Rohde & Schwarz | ESK1      | N/A        | N/A        |
| 6                     | 3# shielded room  | ETS-LINDGREN    | RFD-100   | 2406       | N/A        |

The Cal.Interval was one year.

## **4. TEST CONDITIONS AND RESULTS**

### **4.1. Radiated Emission**

For test instruments and accessories used see section 3.6.

#### **4.1.1. Description of the test location**

Test location: Shielded room No. 4

#### **4.1.2. Limits of disturbance**

| Frequency (MHz) | Distance (Meters) | Field Strengths Limits (dB $\mu$ V/m) |        |
|-----------------|-------------------|---------------------------------------|--------|
| 30 ~ 88         | 3                 | 40                                    |        |
| 88~216          | 3                 | 43.5                                  |        |
| 216 ~ 960       | 3                 | 46                                    |        |
| 960-1000        | 3                 | 54                                    |        |
| 1000-2000       | 3                 | 74(PK)                                | 54(AV) |

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

(3)The highest frequency of the internal sources of the EUT is 480MHz, so the measurement was made up to 2 GHz.

#### **4.1.3. Description of the test set-up**

##### **4.1.3.1. Operating Condition**

The EUT is set to work that shall be carried out respectively USB Print, NIC Print, WIFI Print, modes on different motor, Stepping motor and DC motor during the test and the results of the maximum emanation are recorded.

##### **4.1.3.2. Test Configuration and Procedure**

Test is carried out in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. EUT is set 3 meters away from the center of receiving antenna. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level and then the antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

4.1.3.3. Photos of the test set-up



**4.1.4. Test result**

The requirements are **Fulfilled**

Band Width: 120 KHz

Frequency Range: 30MHz to 1000MHz

Band Width: 1MHz

Frequency Range: 1G-2G

The average measurement was not performed when the peak measured data under the limit of average detection.

**Remarks:** The limits are kept. For detailed results, please see the following page(s).

Margin=limit-level

Level=read value+transducer

Transducer=antenna factor+pre-amplifier factor+cable loss (with 6db attenuator)

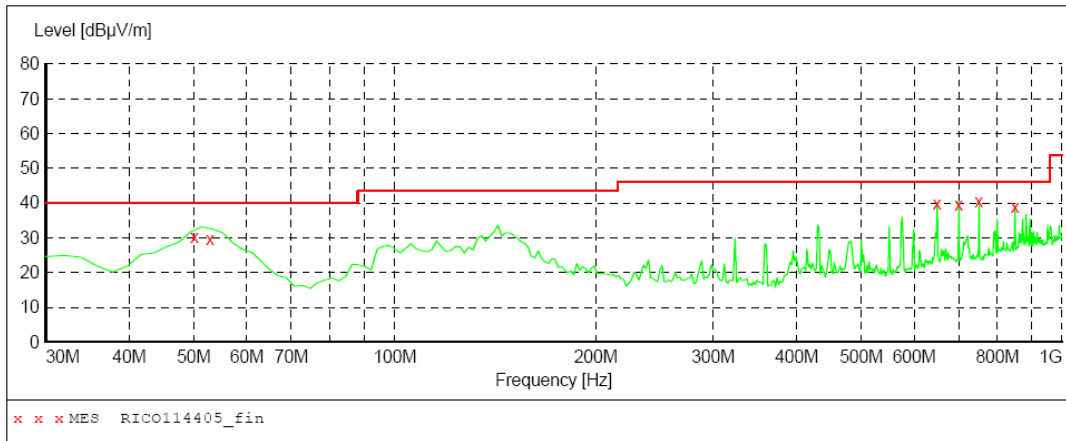
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: USB PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 10:44:51AM

SCAN TABLE: "test Field(30M-1G)OP"

| Short Description: |           | Field Strength(30M-1G) |           |            |           |            |
|--------------------|-----------|------------------------|-----------|------------|-----------|------------|
| Start              | Stop      | Step                   | Detector  | Meas. Time | IF Bandw. | Transducer |
| Frequency          | Frequency | Width                  |           |            |           |            |
| 30.0 MHz           | 1.0 GHz   | 60.0 kHz               | QuasiPeak | 1.0 s      | 120 kHz   | HL562      |



MEASUREMENT RESULT: "RICO114405\_fin"

1/14/2014 10:57AM

| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 50.100000     | 30.40        | -21.0     | 40.0         | 9.6       | QP   | 100.0     | 72.00       | VERTICAL     |
| 52.860000     | 29.40        | -21.7     | 40.0         | 10.6      | QP   | 150.0     | 77.00       | VERTICAL     |
| 649.980000    | 39.80        | -8.4      | 46.0         | 6.2       | QP   | 101.0     | 9.00        | VERTICAL     |
| 700.020000    | 39.50        | -7.7      | 46.0         | 6.5       | QP   | 98.0      | 5.00        | VERTICAL     |
| 750.000000    | 40.60        | -7.8      | 46.0         | 5.4       | QP   | 100.0     | 166.00      | VERTICAL     |
| 850.020000    | 38.80        | -5.1      | 46.0         | 7.2       | QP   | 100.0     | 13.00       | VERTICAL     |

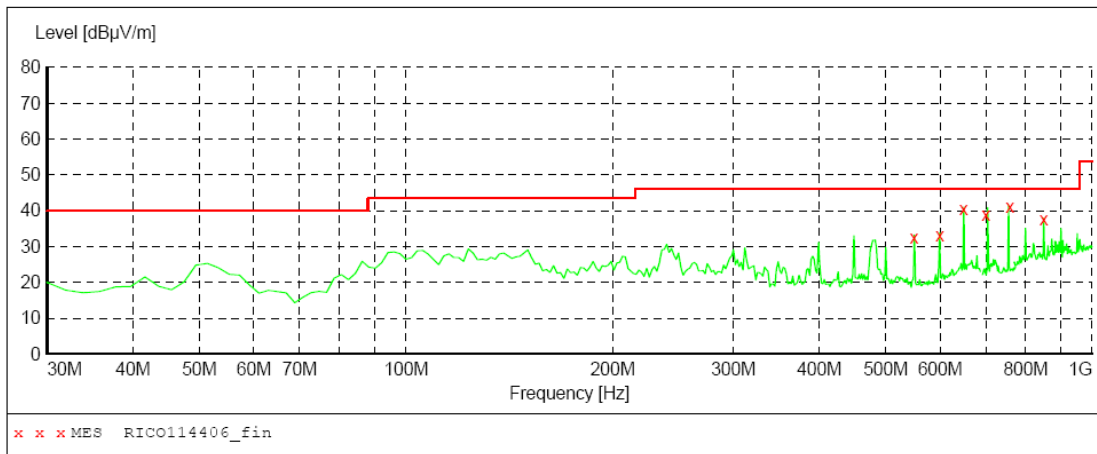
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO., LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: USB PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 10:58:50AM

SCAN TABLE: "test Field(30M-1G)OP"

| Start    | Stop    | Step     | Detector  | Meas. Time | IF Bandw. | Transducer |
|----------|---------|----------|-----------|------------|-----------|------------|
| 30.0 MHz | 1.0 GHz | 60.0 kHz | QuasiPeak | 1.0 s      | 120 kHz   | HL562      |



MEASUREMENT RESULT: "RICO114406\_fin"

1/14/2014 11:10AM

| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 550.020000    | 32.60        | -11.8     | 46.0         | 13.4      | QP   | 119.0     | 20.00       | HORIZONTAL   |
| 600.000000    | 33.00        | -10.6     | 46.0         | 13.0      | QP   | 100.0     | 16.00       | HORIZONTAL   |
| 649.980000    | 40.60        | -8.4      | 46.0         | 5.4       | QP   | 100.0     | 23.00       | HORIZONTAL   |
| 700.020000    | 38.70        | -7.7      | 46.0         | 7.3       | QP   | 100.0     | 23.00       | HORIZONTAL   |
| 750.000000    | 41.10        | -7.8      | 46.0         | 4.9       | QP   | 100.0     | 21.00       | HORIZONTAL   |
| 850.020000    | 37.50        | -5.1      | 46.0         | 8.5       | QP   | 100.0     | 235.00      | HORIZONTAL   |

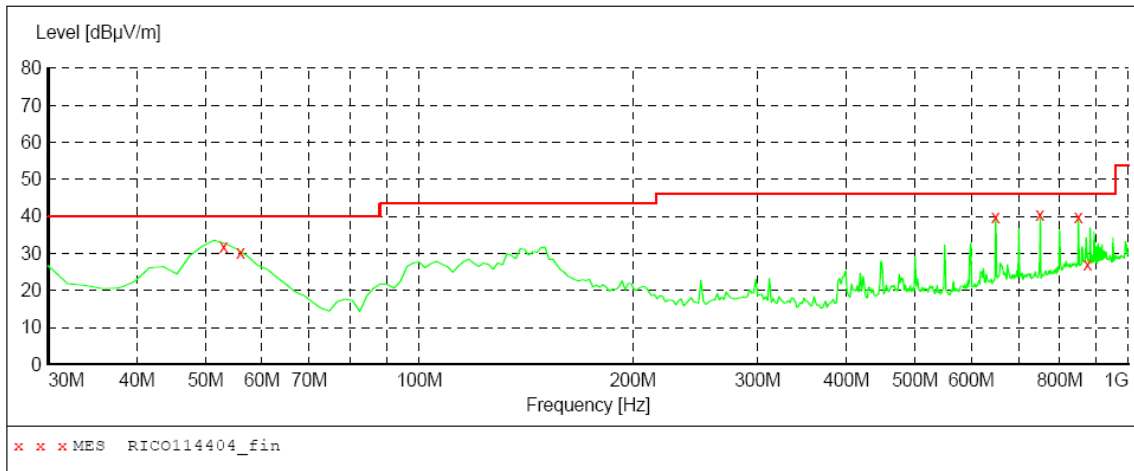
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: NIC PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 10:32:02AM

SCAN TABLE: "test Field(30M-1G)OP"

| Short Description: |           | Field Strength(30M-1G) |           |            |           |            |
|--------------------|-----------|------------------------|-----------|------------|-----------|------------|
| Start              | Stop      | Step                   | Detector  | Meas. Time | IF Bandw. | Transducer |
| Frequency          | Frequency | Width                  |           |            |           |            |
| 30.0 MHz           | 1.0 GHz   | 60.0 kHz               | QuasiPeak | 1.0 s      | 120 kHz   | HL562      |



MEASUREMENT RESULT: "RICO114404\_fin"

1/14/2014 10:42AM

| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 53.940000     | 17.80        | -22.0     | 40.0         | 22.2      | QP   | 100.0     | 48.00       | VERTICAL     |
| 55.980000     | 30.30        | -22.7     | 40.0         | 9.7       | QP   | 100.0     | 83.00       | VERTICAL     |
| 649.980000    | 39.70        | -8.4      | 46.0         | 6.3       | QP   | 98.0      | 6.00        | VERTICAL     |
| 750.000000    | 40.50        | -7.8      | 46.0         | 5.5       | QP   | 100.0     | 168.00      | VERTICAL     |
| 850.020000    | 39.80        | -5.1      | 46.0         | 6.2       | QP   | 100.0     | 16.00       | VERTICAL     |
| 886.320000    | 28.10        | -4.2      | 46.0         | 17.9      | QP   | 100.0     | 68.00       | VERTICAL     |

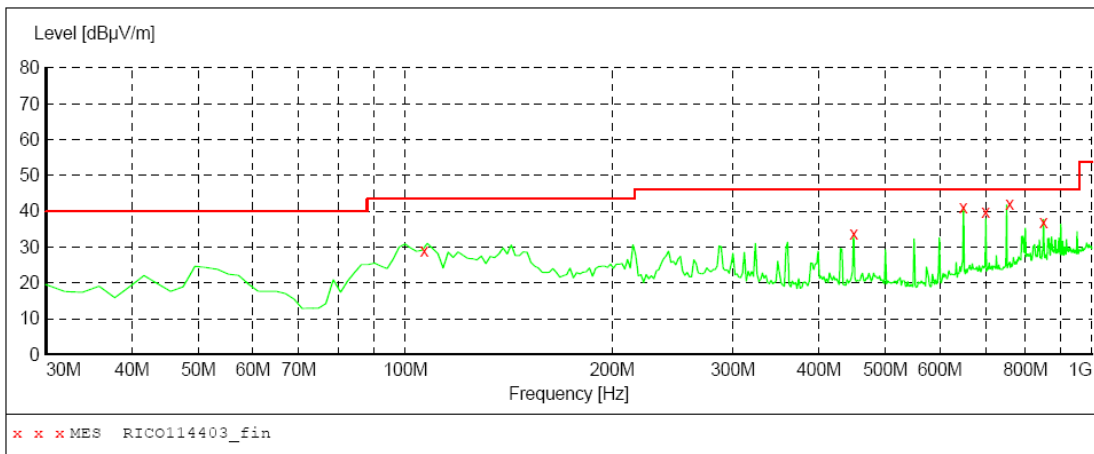
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: NIC PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 10:19:30AM

SCAN TABLE: "test Field(30M-1G)OP"

| Short Description: |                | Field Strength(30M-1G) |           |            |           |            |
|--------------------|----------------|------------------------|-----------|------------|-----------|------------|
| Start Frequency    | Stop Frequency | Step Width             | Detector  | Meas. Time | IF Bandw. | Transducer |
| 30.0 MHz           | 1.0 GHz        | 60.0 kHz               | QuasiPeak | 1.0 s      | 120 kHz   | HL562      |



MEASUREMENT RESULT: "RICO114403\_fin"

1/14/2014 10:31AM

| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 106.680000    | 29.80        | -18.2     | 43.5         | 13.7      | QP   | 293.0     | 328.00      | HORIZONTAL   |
| 450.000000    | 33.70        | -12.6     | 46.0         | 12.3      | QP   | 100.0     | 33.00       | HORIZONTAL   |
| 649.980000    | 41.00        | -8.4      | 46.0         | 5.0       | QP   | 100.0     | 22.00       | HORIZONTAL   |
| 700.020000    | 39.80        | -7.7      | 46.0         | 6.2       | QP   | 100.0     | 20.00       | HORIZONTAL   |
| 750.000000    | 41.60        | -7.8      | 46.0         | 4.4       | QP   | 100.0     | 25.00       | HORIZONTAL   |
| 850.020000    | 37.00        | -5.1      | 46.0         | 9.0       | QP   | 100.0     | 229.00      | HORIZONTAL   |



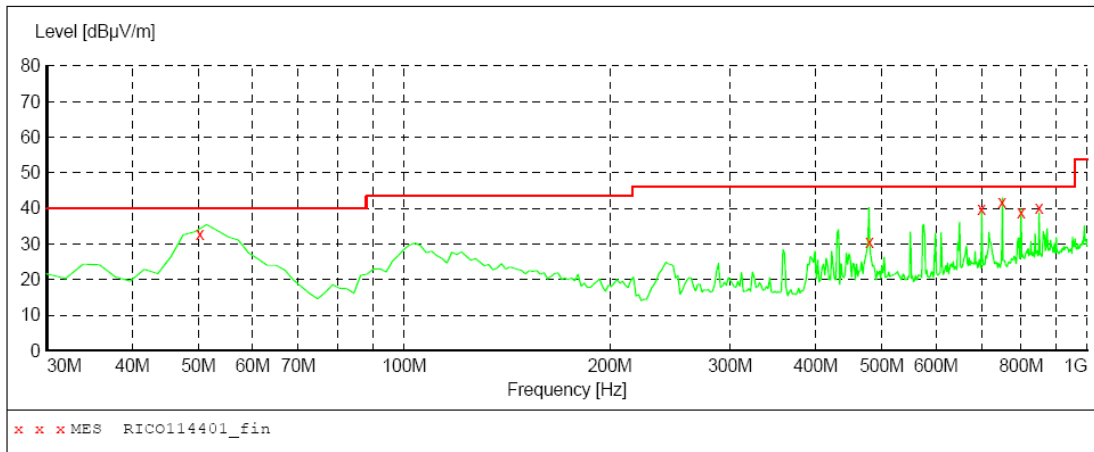
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO., LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: WIFI PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 9:51:58AM

SCAN TABLE: "test Field(30M-1G)OP"

| Short Description: |           | Field Strength(30M-1G) |           |            |           |            |
|--------------------|-----------|------------------------|-----------|------------|-----------|------------|
| Start              | Stop      | Step                   | Detector  | Meas. Time | IF Bandw. | Transducer |
| Frequency          | Frequency | Width                  |           |            |           |            |
| 30.0 MHz           | 1.0 GHz   | 60.0 kHz               | QuasiPeak | 1.0 s      | 120 kHz   | HL562      |



MEASUREMENT RESULT: "RICO114401\_fin"

1/14/2014 10:00AM

| Frequency MHz | Level dBµV/m | Transd dB | Limit dBµV/m | Margin dB | Det. | Height cm | Azimuth deg | Polarization |
|---------------|--------------|-----------|--------------|-----------|------|-----------|-------------|--------------|
| 49.980000     | 34.50        | -21.0     | 40.0         | 5.5       | QP   | 100.0     | 285.00      | VERTICAL     |
| 480.000000    | 30.70        | -11.6     | 46.0         | 15.3      | QP   | 139.0     | 185.00      | VERTICAL     |
| 700.020000    | 39.90        | -7.7      | 46.0         | 6.1       | QP   | 98.0      | 359.00      | VERTICAL     |
| 750.000000    | 41.10        | -7.8      | 46.0         | 4.9       | QP   | 100.0     | 40.00       | VERTICAL     |
| 800.040000    | 38.70        | -6.3      | 46.0         | 7.3       | QP   | 100.0     | 42.00       | VERTICAL     |
| 850.020000    | 40.30        | -5.1      | 46.0         | 5.7       | QP   | 100.0     | 11.00       | VERTICAL     |

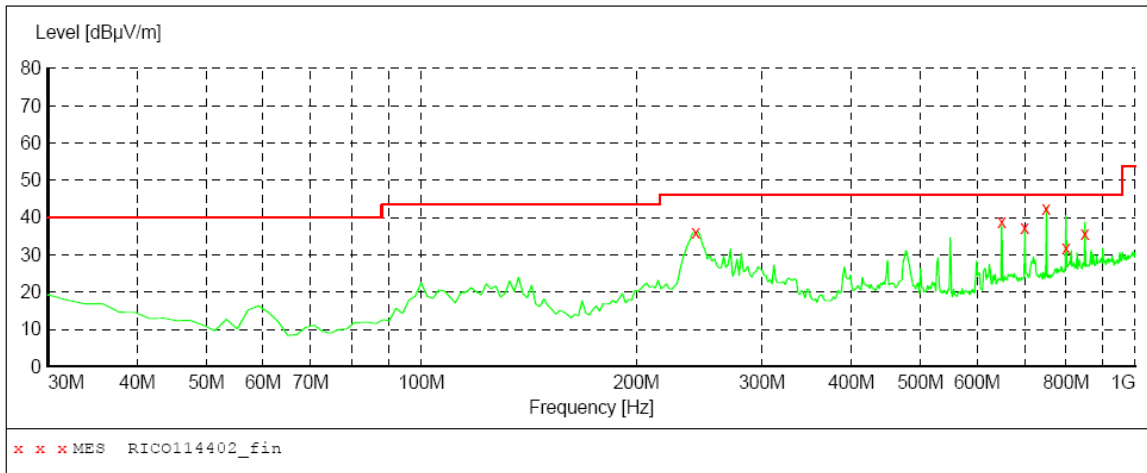
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: WIFI PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 10:02:09AM

SCAN TABLE: "test Field(30M-1G)OP"

Short Description: Field Strength(30M-1G)  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 30.0 MHz 1.0 GHz 60.0 kHz QuasiPeak 1.0 s 120 kHz HL562



MEASUREMENT RESULT: "RICO114402\_fin"

1/14/2014 10:11AM

| Frequency<br>MHz | Level<br>dBµV/m | Transd<br>dB | Limit<br>dBµV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 242.520000       | 35.90           | -17.2        | 46.0            | 10.1         | QP   | 135.0        | 328.00         | HORIZONTAL   |
| 649.980000       | 38.80           | -8.4         | 46.0            | 7.2          | QP   | 122.0        | 320.00         | HORIZONTAL   |
| 700.020000       | 37.30           | -7.7         | 46.0            | 8.7          | QP   | 100.0        | 323.00         | HORIZONTAL   |
| 750.000000       | 41.90           | -7.8         | 46.0            | 4.1          | QP   | 100.0        | 328.00         | HORIZONTAL   |
| 799.980000       | 31.90           | -6.3         | 46.0            | 14.1         | QP   | 100.0        | 124.00         | HORIZONTAL   |
| 850.020000       | 35.60           | -5.1         | 46.0            | 10.4         | QP   | 100.0        | 256.00         | HORIZONTAL   |

Above 1G

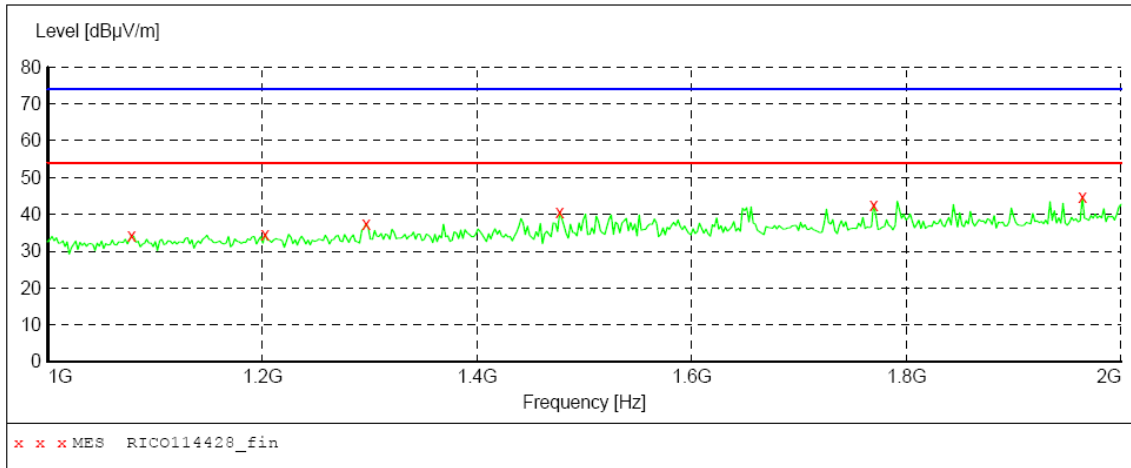
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: USB PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 4:11:12PM

SWEEP TABLE: "test (1G-18G) P"

Short Description: Field Strength  
 Unit: dBµV/m  
 Detector: Mode:



MEASUREMENT RESULT: "RICO114428\_fin"

1/14/2014 4:12PM

| Frequency<br>MHz | Level<br>dBµV/m | Transd<br>dB | Limit<br>dBµV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 1078.156313      | 34.40           | -9.7         | 54.0            | 19.6         | PK   | 100.0        | 322.00         | VERTICAL     |
| 1202.404810      | 34.70           | -8.8         | 54.0            | 19.3         | PK   | 100.0        | 287.00         | VERTICAL     |
| 1296.593186      | 37.50           | -8.1         | 54.0            | 16.5         | PK   | 100.0        | 157.00         | VERTICAL     |
| 1476.953908      | 40.70           | -7.2         | 54.0            | 13.3         | PK   | 100.0        | 3.00           | VERTICAL     |
| 1769.539078      | 42.70           | -5.4         | 54.0            | 11.3         | PK   | 100.0        | 0.00           | VERTICAL     |
| 1963.927856      | 44.80           | -3.9         | 54.0            | 9.2          | PK   | 100.0        | 0.00           | VERTICAL     |

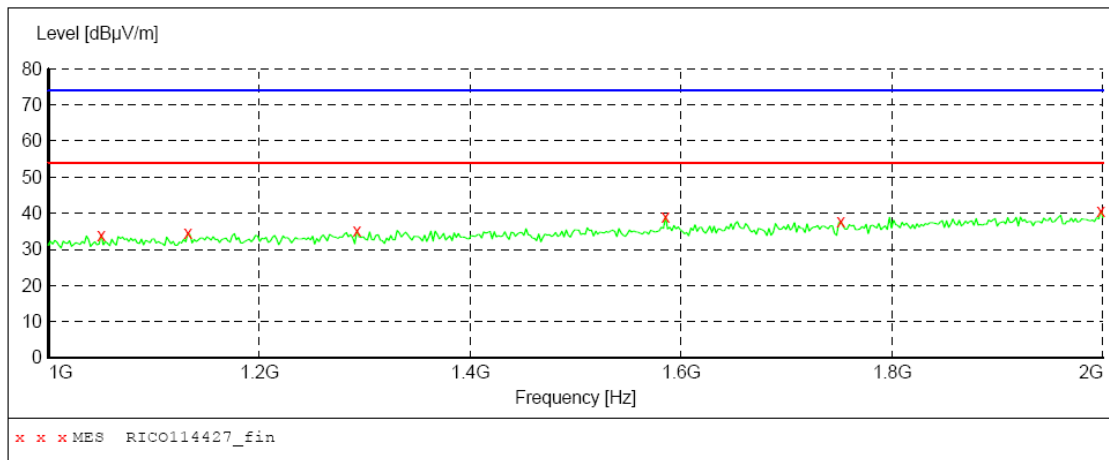
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: USB PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 4:09:25PM

SWEEP TABLE: "test (1G-18G) P"

Short Description: Field Strength  
 Unit: dBµV/m  
 Detector: Mode:



MEASUREMENT RESULT: "RICO114427\_fin"

1/14/2014 4:10PM

| Frequency<br>MHz | Level<br>dBµV/m | Transd<br>dB | Limit<br>dBµV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 1050.100200      | 34.00           | -9.9         | 54.0            | 20.0         | PK   | 100.0        | 346.00         | HORIZONTAL   |
| 1132.264529      | 34.60           | -9.3         | 54.0            | 19.4         | PK   | 100.0        | 39.00          | HORIZONTAL   |
| 1292.585170      | 35.30           | -8.1         | 54.0            | 18.7         | PK   | 100.0        | 140.00         | HORIZONTAL   |
| 1585.170341      | 39.20           | -6.6         | 54.0            | 14.8         | PK   | 100.0        | 173.00         | HORIZONTAL   |
| 1751.503006      | 37.80           | -5.5         | 54.0            | 16.2         | PK   | 100.0        | 194.00         | HORIZONTAL   |
| 1997.995992      | 40.70           | -3.7         | 54.0            | 13.3         | PK   | 100.0        | 140.00         | HORIZONTAL   |

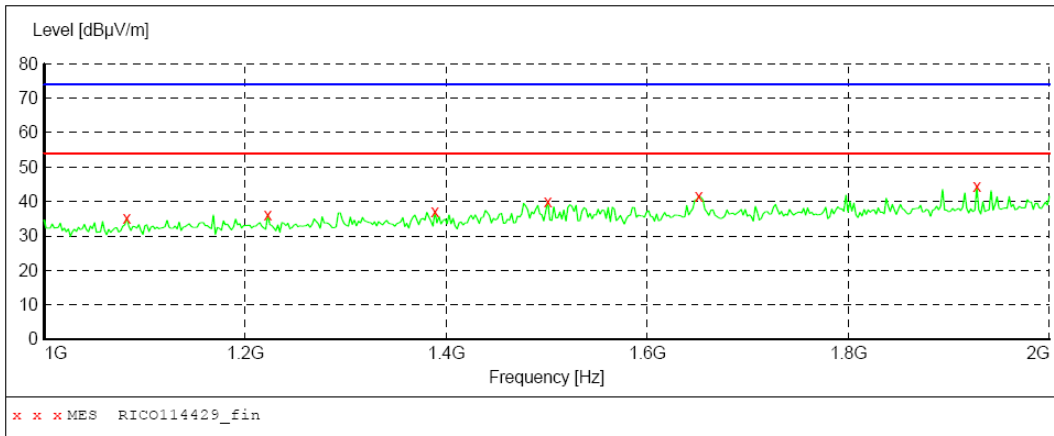
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: NIC PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 4:14:34PM

SWEEP TABLE: "test (1G-18G) P"

Short Description: Field Strength  
 Unit: dBµV/m  
 Detector: Mode:



MEASUREMENT RESULT: "RICO114429\_fin"

1/14/2014 4:16PM

| Frequency<br>MHz | Level<br>dBµV/m | Transd<br>dB | Limit<br>dBµV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 1082.164329      | 35.20           | -9.7         | 54.0            | 18.8         | PK   | 100.0        | 249.00         | VERTICAL     |
| 1222.444890      | 36.30           | -8.6         | 54.0            | 17.7         | PK   | 100.0        | 267.00         | VERTICAL     |
| 1388.777555      | 37.10           | -7.5         | 54.0            | 16.9         | PK   | 100.0        | 3.00           | VERTICAL     |
| 1501.002004      | 40.10           | -7.1         | 54.0            | 13.9         | PK   | 100.0        | 358.00         | VERTICAL     |
| 1651.302605      | 41.50           | -6.2         | 54.0            | 12.5         | PK   | 100.0        | 284.00         | VERTICAL     |
| 1927.855711      | 44.30           | -4.1         | 54.0            | 9.7          | PK   | 100.0        | 5.00           | VERTICAL     |

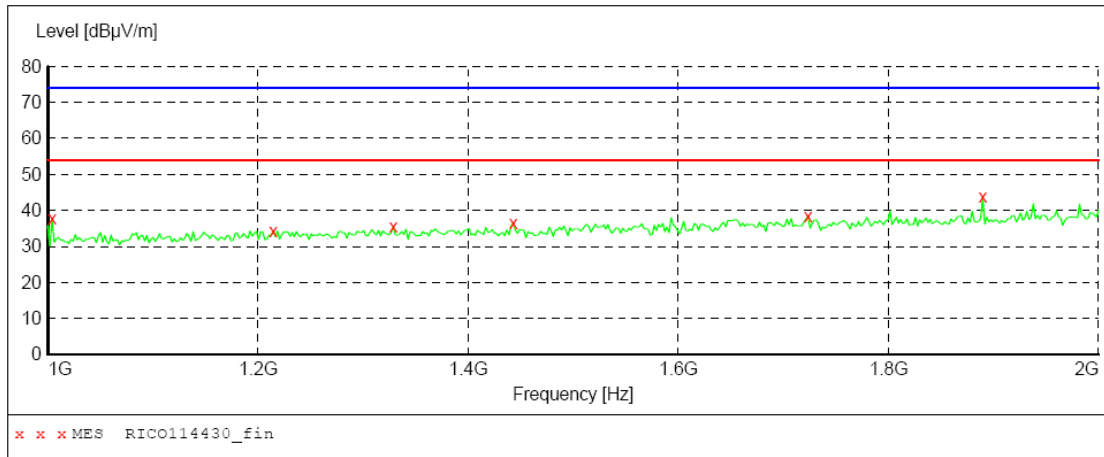
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: NIC PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 4:16:52PM

SWEEP TABLE: "test (1G-18G) P"

Short Description: Field Strength  
 Unit: dBµV/m  
 Detector: Mode:



MEASUREMENT RESULT: "RICO114430\_fin"

1/14/2014 4:18PM

| Frequency<br>MHz | Level<br>dBµV/m | Transd<br>dB | Limit<br>dBµV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 1004.008016      | 37.60           | -10.2        | 54.0            | 16.4         | PK   | 100.0        | 316.00         | HORIZONTAL   |
| 1214.428858      | 34.30           | -8.7         | 54.0            | 19.7         | PK   | 100.0        | 79.00          | HORIZONTAL   |
| 1328.657315      | 35.40           | -7.9         | 54.0            | 18.6         | PK   | 100.0        | 63.00          | HORIZONTAL   |
| 1442.885772      | 36.50           | -7.3         | 54.0            | 17.5         | PK   | 100.0        | 292.00         | HORIZONTAL   |
| 1723.446894      | 38.30           | -5.8         | 54.0            | 15.7         | PK   | 100.0        | 260.00         | HORIZONTAL   |
| 1889.779559      | 43.80           | -4.4         | 54.0            | 10.2         | PK   | 100.0        | 57.00          | HORIZONTAL   |

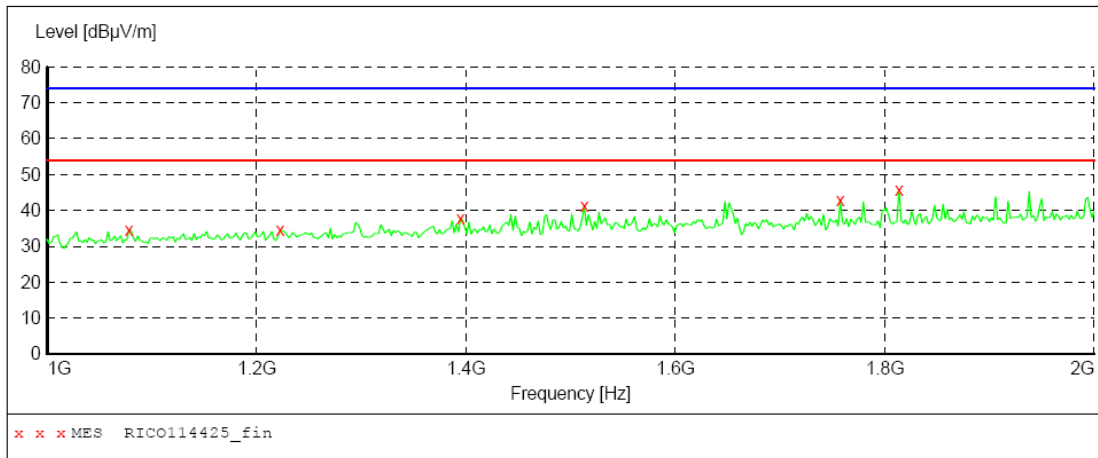
**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO., LTD**

**RADIATED EMISSION TEST FCC PART 15 CLASS B**

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: WIFI PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 4:04:51PM

**SWEEP TABLE: "test (1G-18G) P"**

Short Description: Field Strength  
 Unit: dBµV/m  
 Detector: Mode:



**MEASUREMENT RESULT: "RICO114425\_fin"**

1/14/2014 4:06PM

| Frequency<br>MHz | Level<br>dBµV/m | Transd<br>dB | Limit<br>dBµV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 1078.156313      | 34.60           | -9.7         | 54.0            | 19.4         | PK   | 100.0        | 245.00         | VERTICAL     |
| 1222.444890      | 34.50           | -8.6         | 54.0            | 19.5         | PK   | 100.0        | 269.00         | VERTICAL     |
| 1394.789579      | 37.60           | -7.5         | 54.0            | 16.4         | PK   | 100.0        | 0.00           | VERTICAL     |
| 1513.026052      | 41.30           | -7.0         | 54.0            | 12.7         | PK   | 100.0        | 359.00         | VERTICAL     |
| 1757.515030      | 42.90           | -5.5         | 54.0            | 11.1         | PK   | 100.0        | 351.00         | VERTICAL     |
| 1813.627255      | 45.90           | -5.0         | 54.0            | 8.1          | PK   | 100.0        | 359.00         | VERTICAL     |

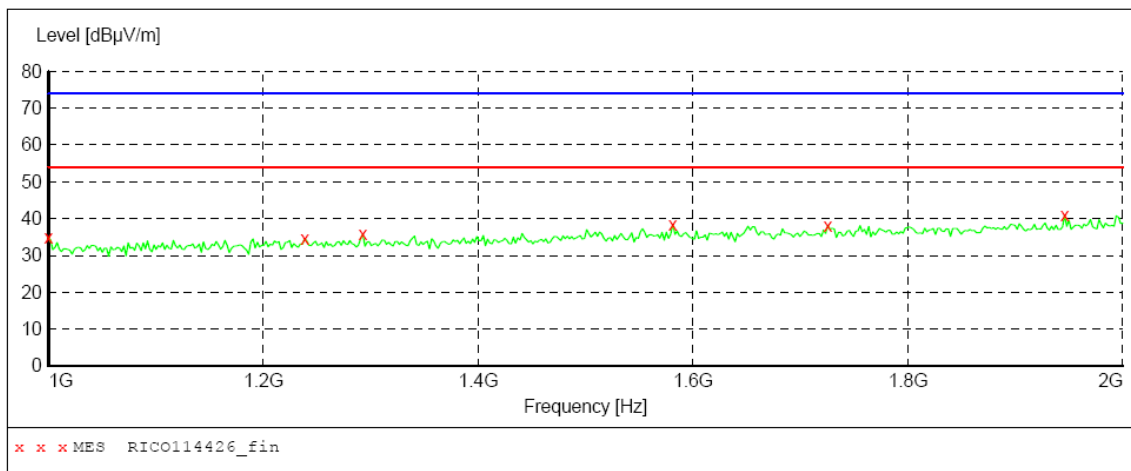
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION TEST FCC PART 15 CLASS B

EUT: SP 213Nw  
 Manufacturer: RICOH  
 Operating Condition: WIFI PRINT  
 Test Site: 3M CHAMBER  
 Operator: KAIJIN.LI  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 4:06:40PM

SWEEP TABLE: "test (1G-18G) P"

Short Description: Field Strength  
 Unit: dBuV/m  
 Detector: Mode:



MEASUREMENT RESULT: "RICO114426\_ fin"

1/14/2014 4:08PM

| Frequency<br>MHz | Level<br>dBuV/m | Transd<br>dB | Limit<br>dBuV/m | Margin<br>dB | Det. | Height<br>cm | Azimuth<br>deg | Polarization |
|------------------|-----------------|--------------|-----------------|--------------|------|--------------|----------------|--------------|
| 1000.000000      | 34.80           | -10.3        | 54.0            | 19.2         | PK   | 100.0        | 122.00         | HORIZONTAL   |
| 1238.476954      | 34.60           | -8.5         | 54.0            | 19.4         | PK   | 100.0        | 132.00         | HORIZONTAL   |
| 1292.585170      | 35.90           | -8.1         | 54.0            | 18.1         | PK   | 100.0        | 162.00         | HORIZONTAL   |
| 1581.162325      | 38.50           | -6.6         | 54.0            | 15.5         | PK   | 100.0        | 156.00         | HORIZONTAL   |
| 1725.450902      | 38.20           | -5.8         | 54.0            | 15.8         | PK   | 100.0        | 280.00         | HORIZONTAL   |
| 1945.891784      | 41.00           | -4.0         | 54.0            | 13.0         | PK   | 100.0        | 229.00         | HORIZONTAL   |



**4.2. Conducted Disturbance**

For test instruments and accessories used see section 3.6.

**4.2.1. Description of the test location**

Test location: Shielded room No. 3

**4.2.2. Limits of disturbance**

Limit of Conducted Disturbance at Mains Ports (Class B)

| Frequency Range (MHz) | Limits (dBuV) |         |
|-----------------------|---------------|---------|
|                       | Quasi-Peak    | Average |
| 0.150~0.500           | 66~56         | 56~46   |
| 0.500~5.000           | 56            | 46      |
| 5.000~30.000          | 60            | 50      |

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

**4.2.3. Description of the test set-up**

**4.2.3.1. Operating Condition**

The EUT is set to work that shall be carried out respectively USB Print, NIC Print, WIFI Print modes during the test and the results of the maximum emanation are recorded.

**4.2.3.2. Test Procedure**

EUT is placed on a nonmetal table 0.8 meter above the grounded reference plane. The power line of the EUT is connected to the LISN which is connected to receiver by coaxial line, and then disturbance signals of the neutral line and live line can be detected by the receiver.

**4.2.3.3. Photos of the test set-up**



**4.2.4. Test result**

The requirements are **Fulfilled**

Band Width: 9 KHz

Frequency Range: 150 KHz to 30MHz

**Remarks:** The limits are kept. For detailed results, please see the following page(s).

---

Margin=limit-level

Level=read value+transducer

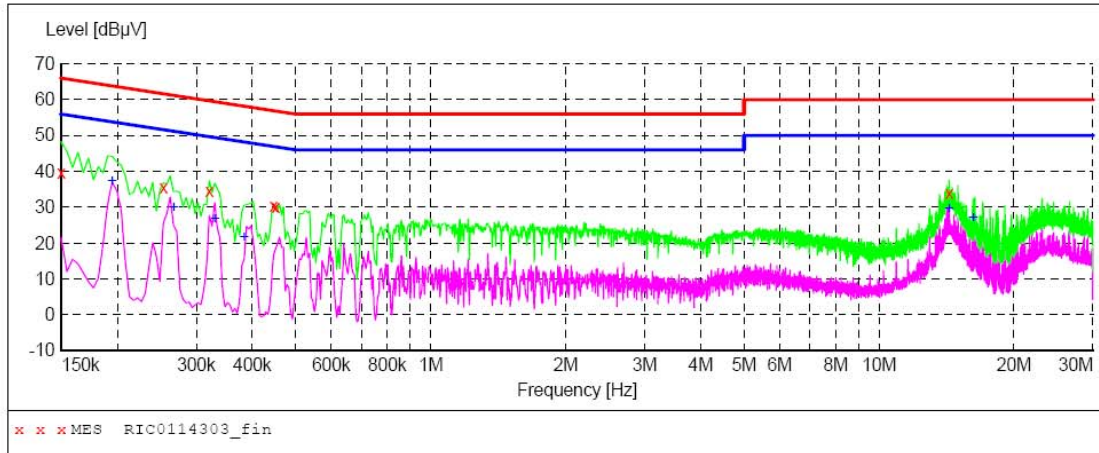
Transducer=insertion loss of LISN+cable loss+insertion loss of pulse limiter

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test FCC PART 15 CLASS B

EUT: SP213NW  
 Manufacturer: RICOH  
 Operating Condition: USB Print  
 Test Site: 3# SHIELDED ROOM  
 Operator: ZHANGBAO.SUN  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 3:19:06PM

SCAN TABLE: "Voltage (9K-30M) FIN"  
 Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "RICO114303\_fin"

1/14/2014 3:21PM

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.150000      | 39.60      | 10.3      | 66         | 26.4      | QP       | N    | GND |
| 0.253500      | 35.50      | 10.5      | 62         | 26.1      | QP       | N    | GND |
| 0.321000      | 34.40      | 10.6      | 60         | 25.3      | QP       | N    | GND |
| 0.447000      | 30.30      | 10.4      | 57         | 26.6      | QP       | N    | GND |
| 0.451500      | 30.00      | 10.4      | 57         | 26.8      | QP       | N    | GND |
| 14.334000     | 34.00      | 10.7      | 60         | 26.0      | QP       | N    | GND |

MEASUREMENT RESULT: "RICO114303\_fin2"

1/14/2014 3:21PM

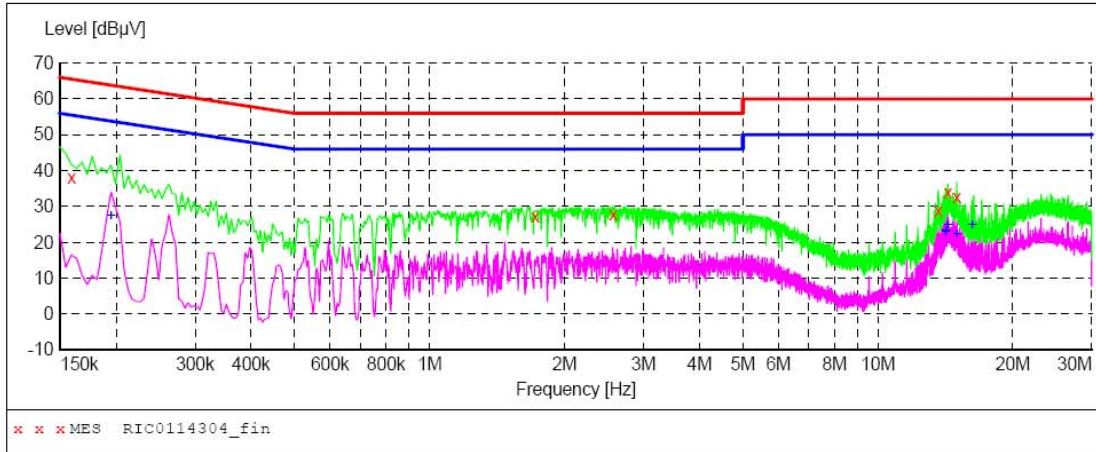
| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.195000      | 37.30      | 10.4      | 54         | 16.5      | AV       | N    | GND |
| 0.267000      | 29.90      | 10.6      | 51         | 21.3      | AV       | N    | GND |
| 0.330000      | 26.80      | 10.6      | 50         | 22.7      | AV       | N    | GND |
| 0.384000      | 21.60      | 10.5      | 48         | 26.6      | AV       | N    | GND |
| 14.334000     | 29.70      | 10.7      | 50         | 20.3      | AV       | N    | GND |
| 16.228500     | 27.20      | 10.7      | 50         | 22.8      | AV       | N    | GND |

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test FCC PART 15 CLASS B

EUT: SP213NW  
 Manufacturer: RICOH  
 Operating Condition: USB Print  
 Test Site: 3# SHIELDED ROOM  
 Operator: ZHANGBAO.SUN  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 3:21:58PM

SCAN TABLE: "Voltage (9K-30M)FIN"  
 Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "RIC0114304\_fin"

1/14/2014 3:24PM

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.159000      | 37.90      | 10.3      | 66         | 27.6      | QP       | L1   | GND |
| 1.720500      | 27.30      | 10.3      | 56         | 28.7      | QP       | L1   | GND |
| 2.571000      | 27.90      | 10.3      | 56         | 28.1      | QP       | L1   | GND |
| 13.650000     | 28.70      | 10.7      | 60         | 31.3      | QP       | L1   | GND |
| 14.334000     | 34.00      | 10.7      | 60         | 26.0      | QP       | L1   | GND |
| 15.009000     | 32.70      | 10.7      | 60         | 27.3      | QP       | L1   | GND |

MEASUREMENT RESULT: "RIC0114304\_fin2"

1/14/2014 3:24PM

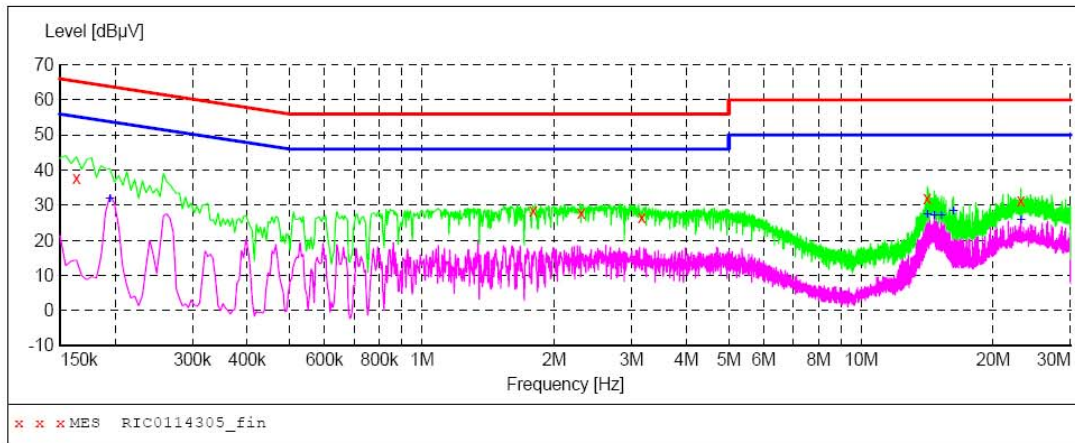
| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.195000      | 27.50      | 10.4      | 54         | 26.3      | AV       | L1   | GND |
| 14.154000     | 22.90      | 10.7      | 50         | 27.1      | AV       | L1   | GND |
| 14.212500     | 23.30      | 10.7      | 50         | 26.7      | AV       | L1   | GND |
| 14.334000     | 24.90      | 10.7      | 50         | 25.1      | AV       | L1   | GND |
| 15.009000     | 22.50      | 10.7      | 50         | 27.5      | AV       | L1   | GND |
| 16.228500     | 24.90      | 10.7      | 50         | 25.1      | AV       | L1   | GND |

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test FCC PART 15 CLASS B

EUT: SP213NW  
 Manufacturer: RICOH  
 Operating Condition: NIC Print  
 Test Site: 3# SHIELDED ROOM  
 Operator: ZHANGBAO.SUN  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 3:26:46PM

SCAN TABLE: "Voltage (9K-30M)FIN"  
 Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "RIC0114305\_fin"

1/14/2014 3:29PM

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.163500      | 37.80      | 10.3      | 65         | 27.5      | QP       | L1   | GND |
| 1.792500      | 28.30      | 10.3      | 56         | 27.7      | QP       | L1   | GND |
| 2.305500      | 27.70      | 10.3      | 56         | 28.3      | QP       | L1   | GND |
| 3.165000      | 26.70      | 10.3      | 56         | 29.3      | QP       | L1   | GND |
| 14.154000     | 31.80      | 10.7      | 60         | 28.2      | QP       | L1   | GND |
| 23.127000     | 31.30      | 10.9      | 60         | 28.7      | QP       | L1   | GND |

MEASUREMENT RESULT: "RIC0114305\_fin2"

1/14/2014 3:29PM

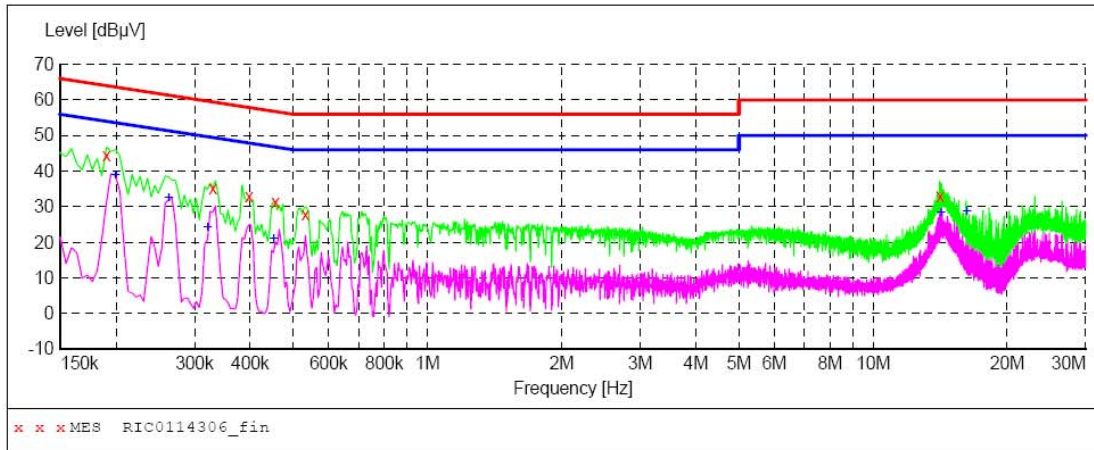
| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.195000      | 31.80      | 10.4      | 54         | 22.0      | AV       | L1   | GND |
| 14.154000     | 27.60      | 10.7      | 50         | 22.4      | AV       | L1   | GND |
| 14.703000     | 27.30      | 10.7      | 50         | 22.7      | AV       | L1   | GND |
| 15.252000     | 27.30      | 10.7      | 50         | 22.7      | AV       | L1   | GND |
| 16.228500     | 28.60      | 10.7      | 50         | 21.4      | AV       | L1   | GND |
| 23.131500     | 25.80      | 10.9      | 50         | 24.2      | AV       | L1   | GND |

*Shenzhen Huatongwei International Inspection CO.,Ltd*

**Voltage Mains Test FCC PART 15 CLASS B**

EUT: SP213NW  
 Manufacturer: RICOH  
 Operating Condition: NIC Print  
 Test Site: 3# SHIELDED ROOM  
 Operator: ZHANGBAO.SUN  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 3:33:50PM

**SCAN TABLE: "Voltage (9K-30M)FIN"**  
 Short Description: 150K-30M Voltage



**MEASUREMENT RESULT: "RIC0114306\_fin"**

1/14/2014 3:34PM

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.190500      | 44.30      | 10.4      | 64         | 19.7      | QP       | N    | GND |
| 0.330000      | 35.10      | 10.6      | 60         | 24.4      | QP       | N    | GND |
| 0.397500      | 32.90      | 10.5      | 58         | 25.0      | QP       | N    | GND |
| 0.456000      | 31.40      | 10.4      | 57         | 25.4      | QP       | N    | GND |
| 0.532500      | 27.70      | 10.3      | 56         | 28.3      | QP       | N    | GND |
| 14.154000     | 32.80      | 10.7      | 60         | 27.2      | QP       | N    | GND |

**MEASUREMENT RESULT: "RIC0114306\_fin2"**

1/14/2014 3:34PM

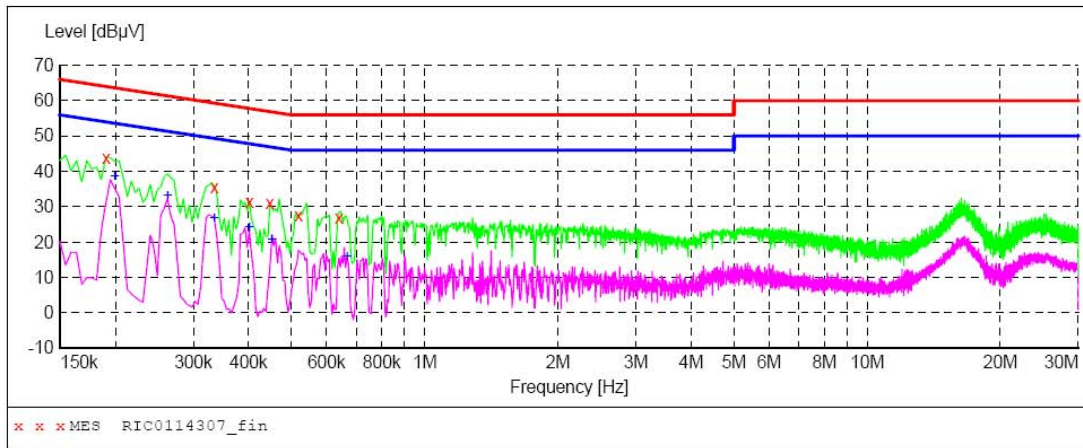
| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.199500      | 38.90      | 10.4      | 54         | 14.7      | AV       | N    | GND |
| 0.262500      | 32.70      | 10.6      | 51         | 18.7      | AV       | N    | GND |
| 0.321000      | 24.20      | 10.6      | 50         | 25.5      | AV       | N    | GND |
| 0.451500      | 21.20      | 10.4      | 47         | 25.6      | AV       | N    | GND |
| 14.212500     | 28.40      | 10.7      | 50         | 21.6      | AV       | N    | GND |
| 16.228500     | 28.80      | 10.7      | 50         | 21.2      | AV       | N    | GND |

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test FCC PART 15 CLASS B

EUT: SP213NW  
 Manufacturer: RICOH  
 Operating Condition: WIFI Print  
 Test Site: 3# SHIELDED ROOM  
 Operator: ZHANGBAO.SUN  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 3:48:33PM

SCAN TABLE: "Voltage (9K-30M)FIN"  
 Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "RIC0114307\_fin"

1/14/2014 3:50PM

| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.190500      | 43.90      | 10.4      | 64         | 20.1      | QP       | N    | GND |
| 0.334500      | 35.60      | 10.6      | 59         | 23.7      | QP       | N    | GND |
| 0.402000      | 31.30      | 10.5      | 58         | 26.5      | QP       | N    | GND |
| 0.447000      | 31.00      | 10.4      | 57         | 25.9      | QP       | N    | GND |
| 0.519000      | 27.40      | 10.3      | 56         | 28.6      | QP       | N    | GND |
| 0.640500      | 26.90      | 10.3      | 56         | 29.1      | QP       | N    | GND |

MEASUREMENT RESULT: "RIC0114307\_fin2"

1/14/2014 3:50PM

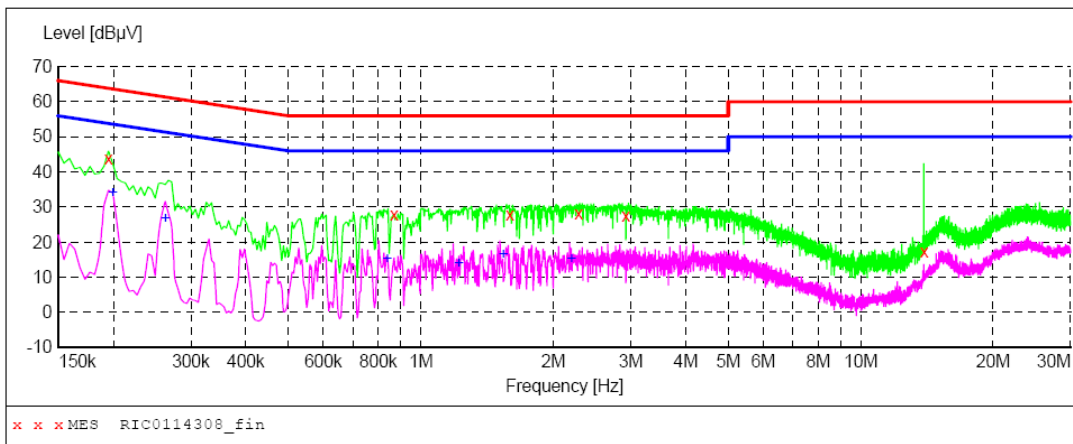
| Frequency MHz | Level dBµV | Transd dB | Limit dBµV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.199500      | 38.70      | 10.4      | 54         | 14.9      | AV       | N    | GND |
| 0.262500      | 33.10      | 10.6      | 51         | 18.3      | AV       | N    | GND |
| 0.334500      | 27.00      | 10.6      | 49         | 22.3      | AV       | N    | GND |
| 0.402000      | 24.30      | 10.5      | 48         | 23.5      | AV       | N    | GND |
| 0.451500      | 20.80      | 10.4      | 47         | 26.0      | AV       | N    | GND |
| 0.667500      | 16.00      | 10.3      | 46         | 30.0      | AV       | N    | GND |

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test FCC PART 15 CLASS B

EUT: SP213NW  
 Manufacturer: RICOH  
 Operating Condition: WIFI Print  
 Test Site: 3# SHIELDED ROOM  
 Operator: ZHANGBAO.SUN  
 Test Specification: AC 120V/60Hz  
 Comment:  
 Start of Test: 1/14/2014 / 3:51:20PM

SCAN TABLE: "Voltage (9K-30M) FIN"  
 Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "RICO114308\_fin"

1/14/2014 3:54PM

| Frequency MHz | Level dBuV | Transd dB | Limit dBuV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.195000      | 43.90      | 10.4      | 64         | 19.9      | QP       | L1   | GND |
| 0.870000      | 27.70      | 10.2      | 56         | 28.3      | QP       | L1   | GND |
| 1.594500      | 27.70      | 10.3      | 56         | 28.3      | QP       | L1   | GND |
| 2.283000      | 28.20      | 10.3      | 56         | 27.8      | QP       | L1   | GND |
| 2.926500      | 27.60      | 10.3      | 56         | 28.4      | QP       | L1   | GND |
| 13.942500     | 17.30      | 10.7      | 60         | 42.7      | QP       | L1   | GND |

MEASUREMENT RESULT: "RICO114308\_fin2"

1/14/2014 3:54PM

| Frequency MHz | Level dBuV | Transd dB | Limit dBuV | Margin dB | Detector | Line | PE  |
|---------------|------------|-----------|------------|-----------|----------|------|-----|
| 0.199500      | 34.20      | 10.4      | 54         | 19.4      | AV       | L1   | GND |
| 0.262500      | 27.00      | 10.6      | 51         | 24.4      | AV       | L1   | GND |
| 0.838500      | 15.20      | 10.2      | 46         | 30.8      | AV       | L1   | GND |
| 1.221000      | 14.20      | 10.3      | 46         | 31.8      | AV       | L1   | GND |
| 1.540500      | 16.60      | 10.3      | 46         | 29.4      | AV       | L1   | GND |
| 2.202000      | 15.50      | 10.3      | 46         | 30.5      | AV       | L1   | GND |



## 5. External and Internal Photos of the EUT

### 5.1. External photos of the EUT

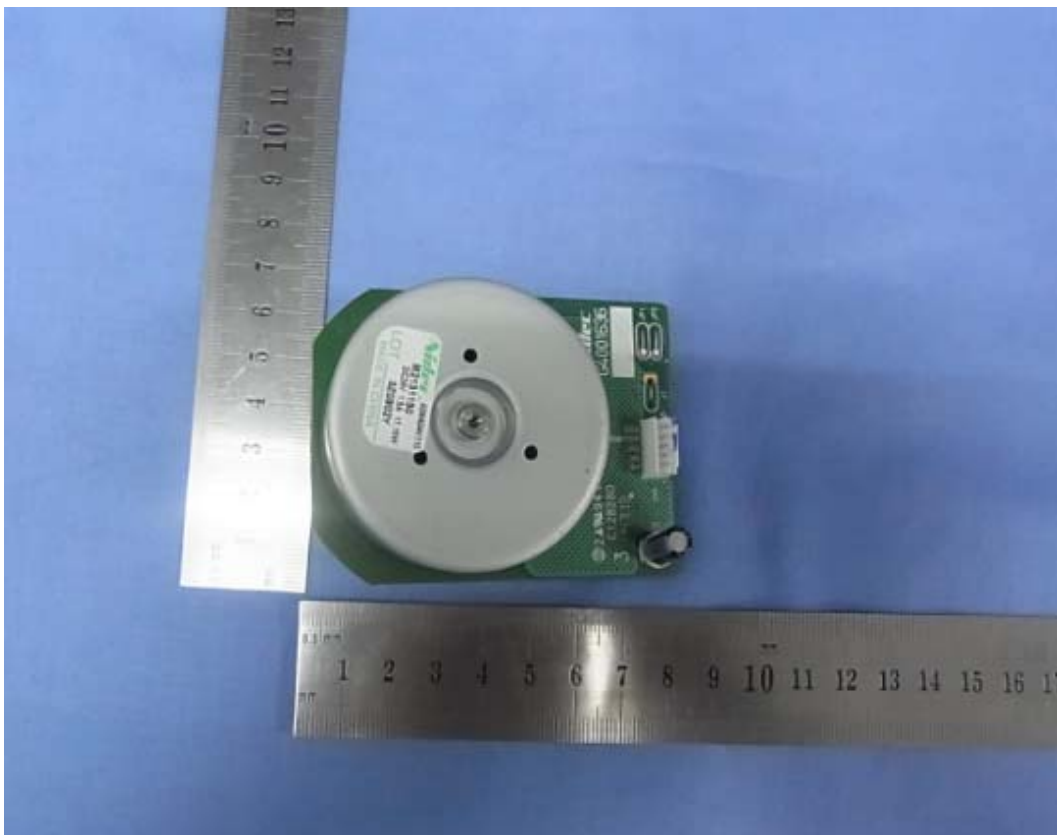
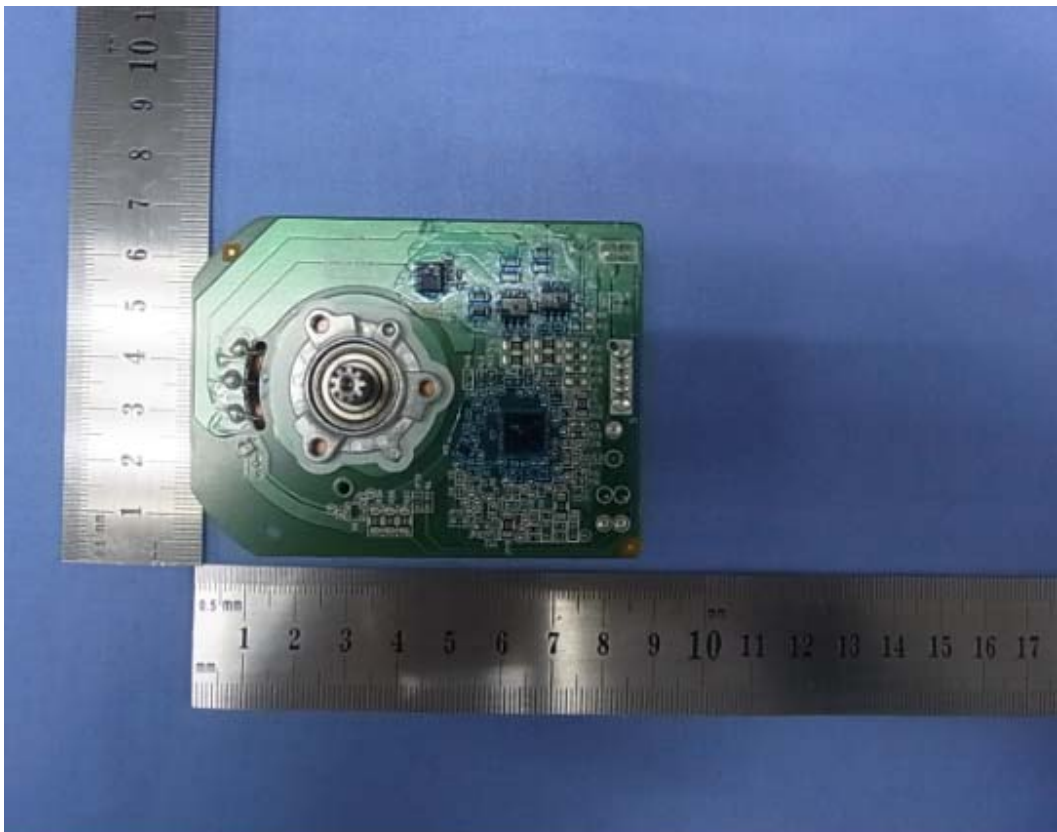


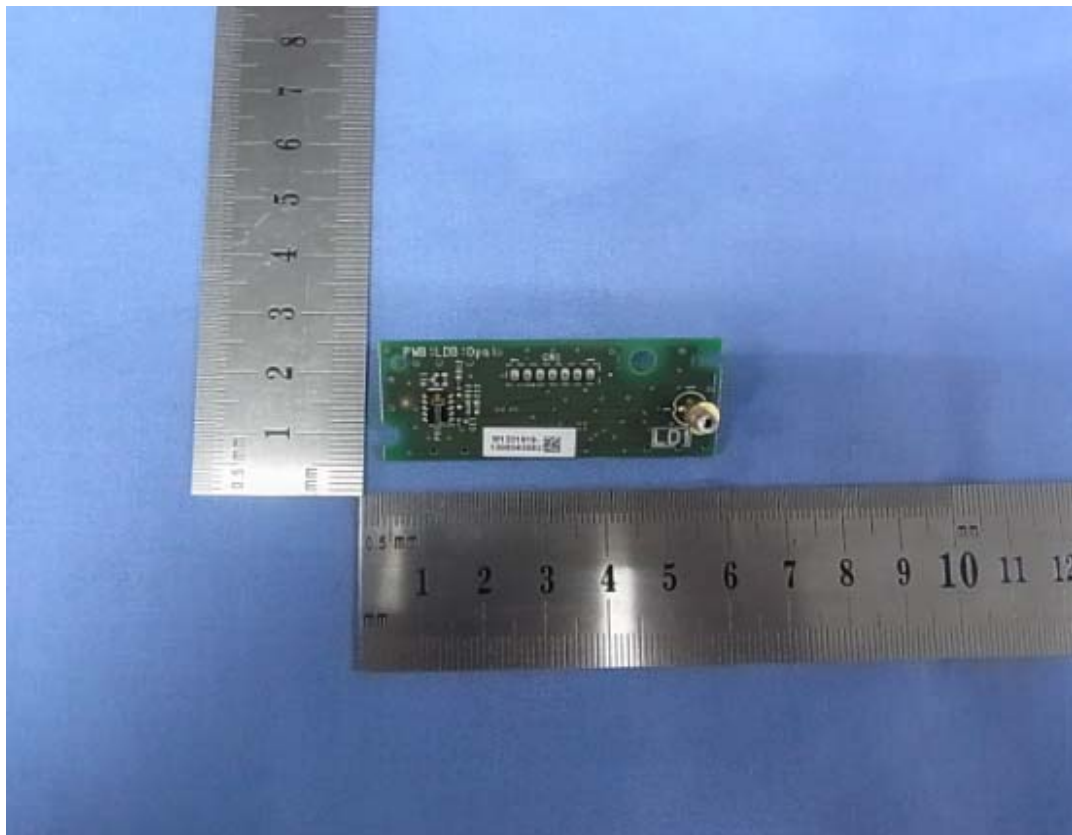
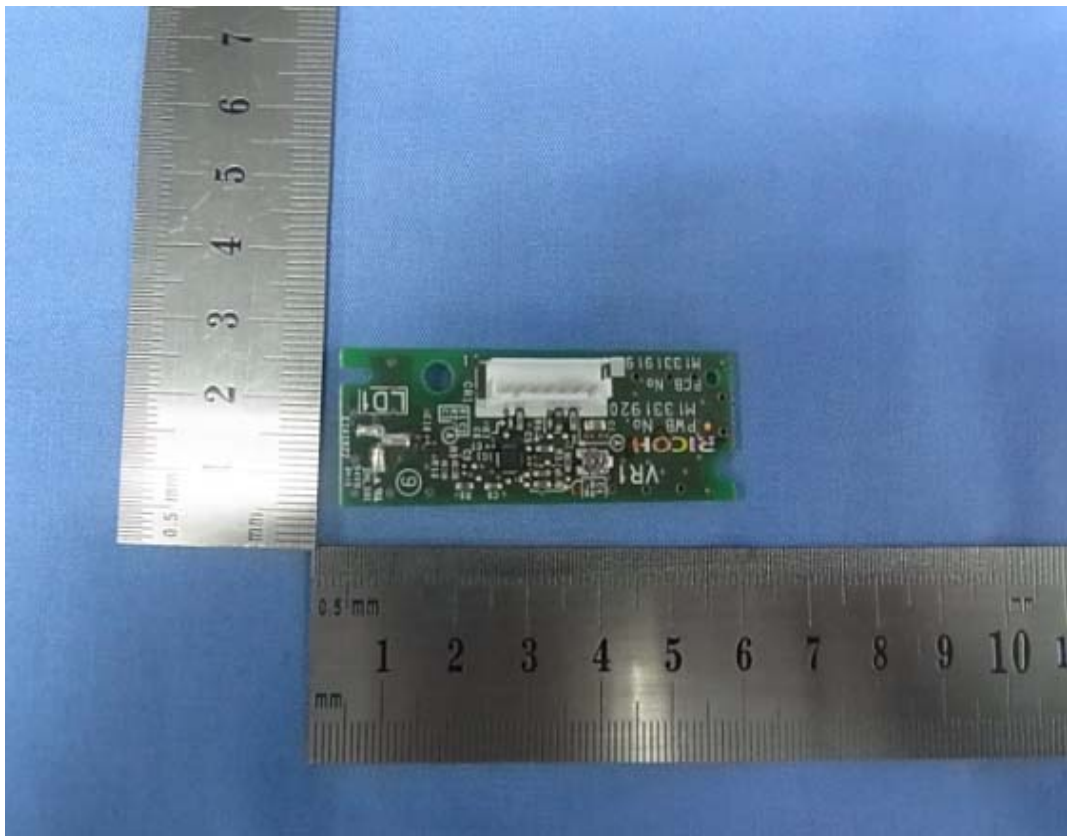


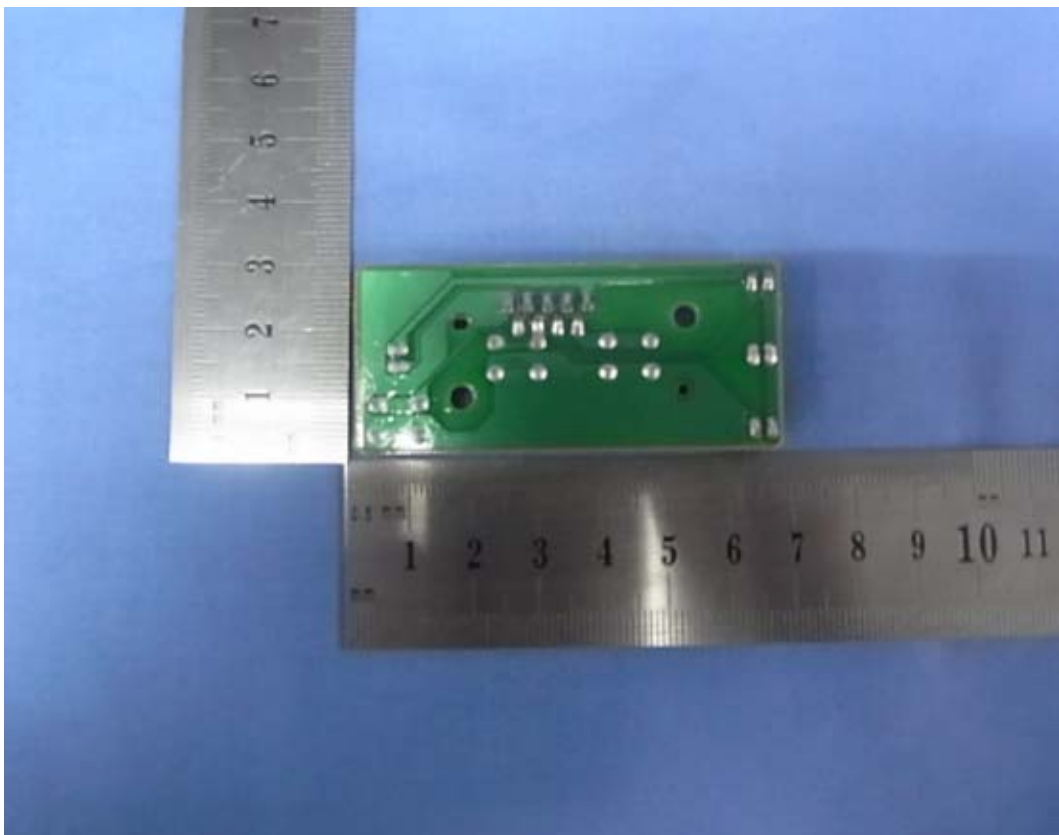
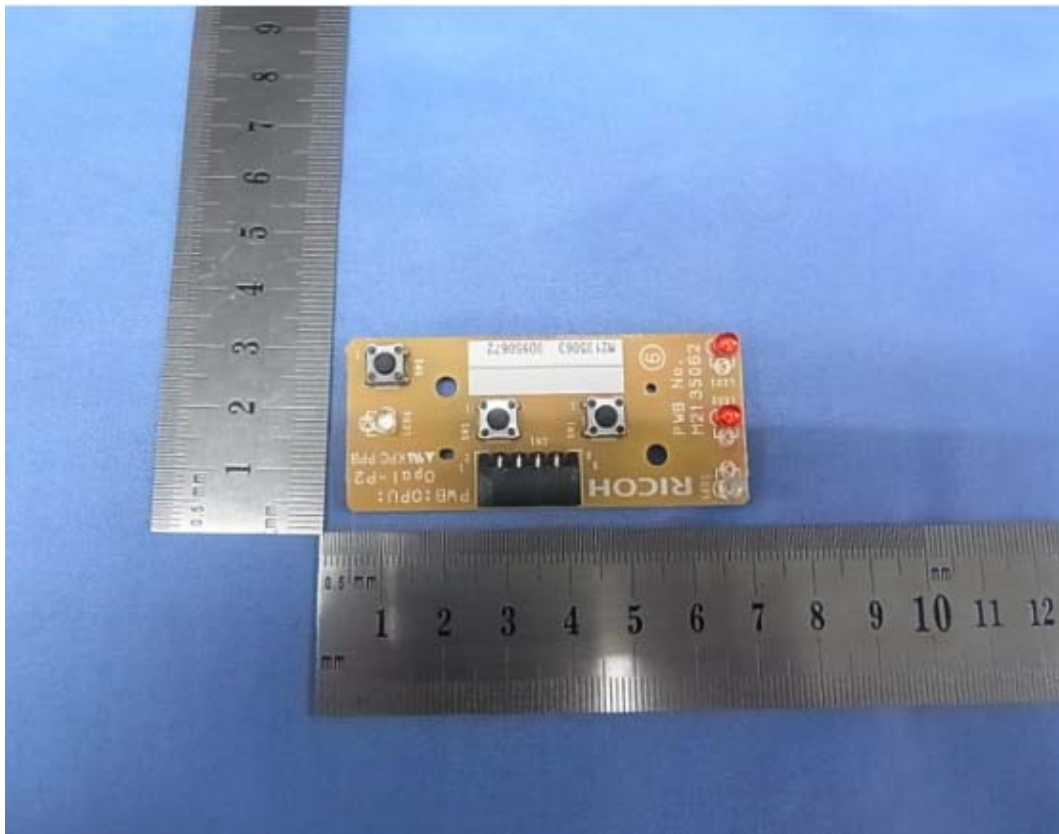


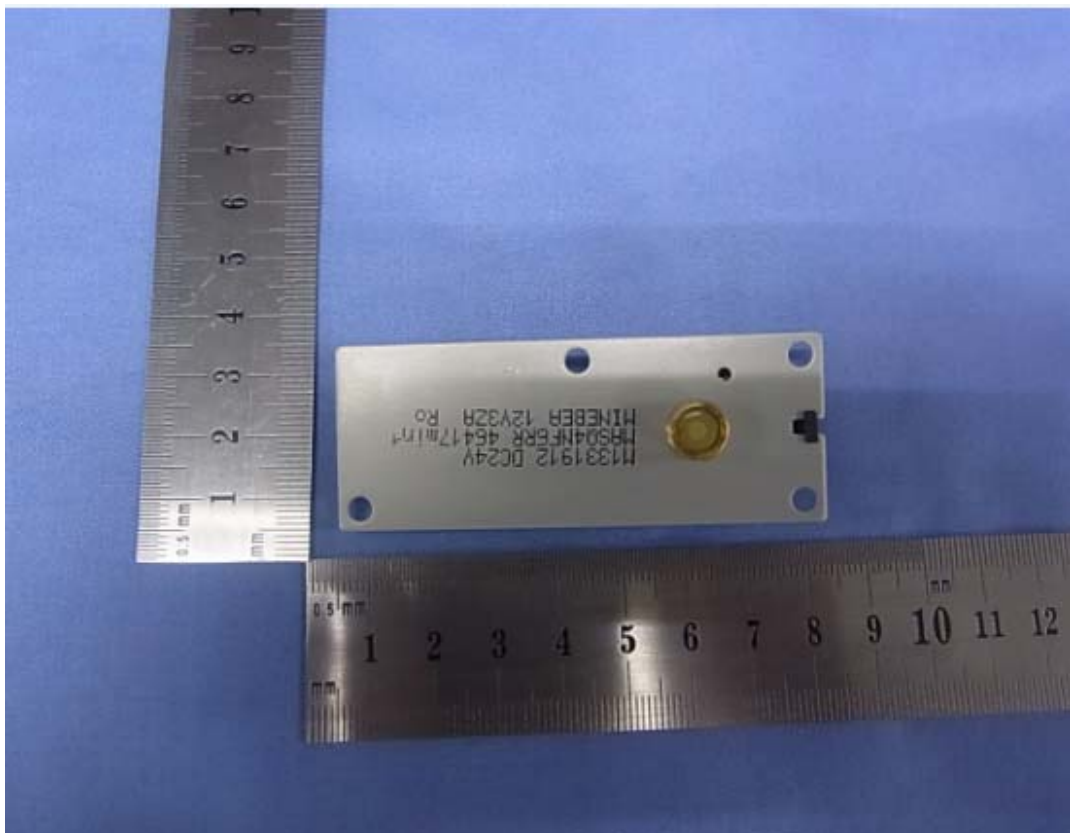
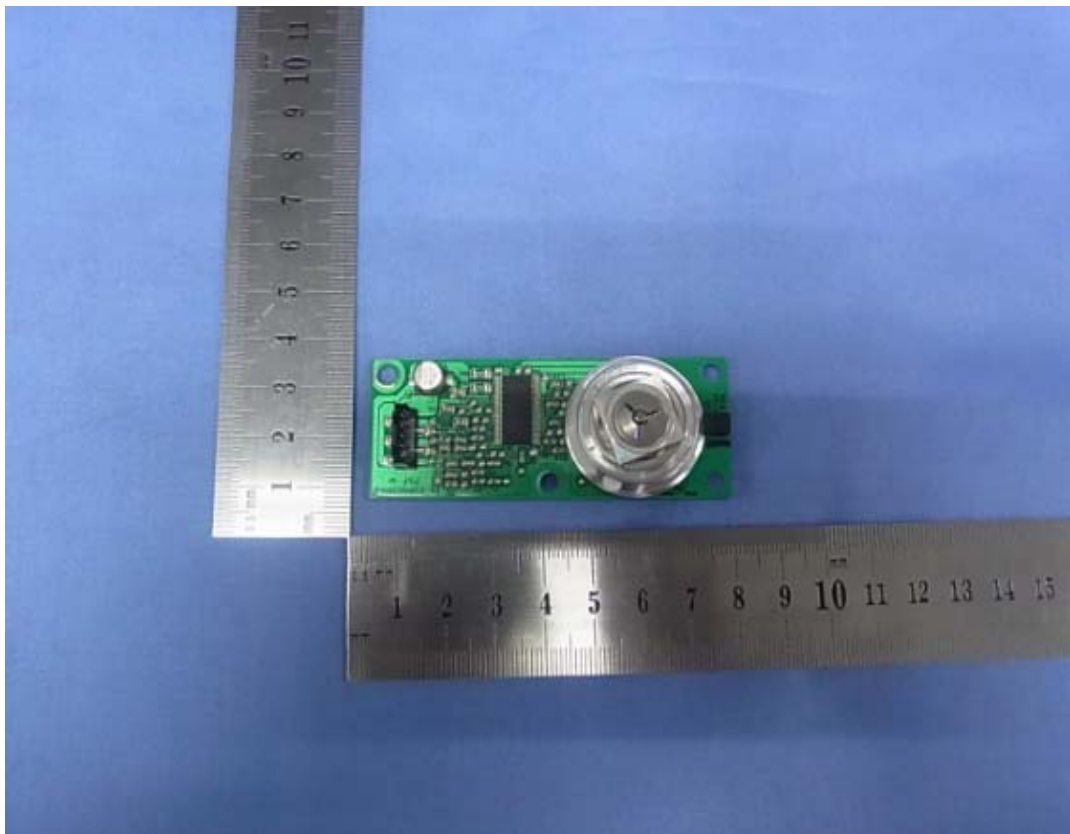
## 5.2. Internal photos of the EUT



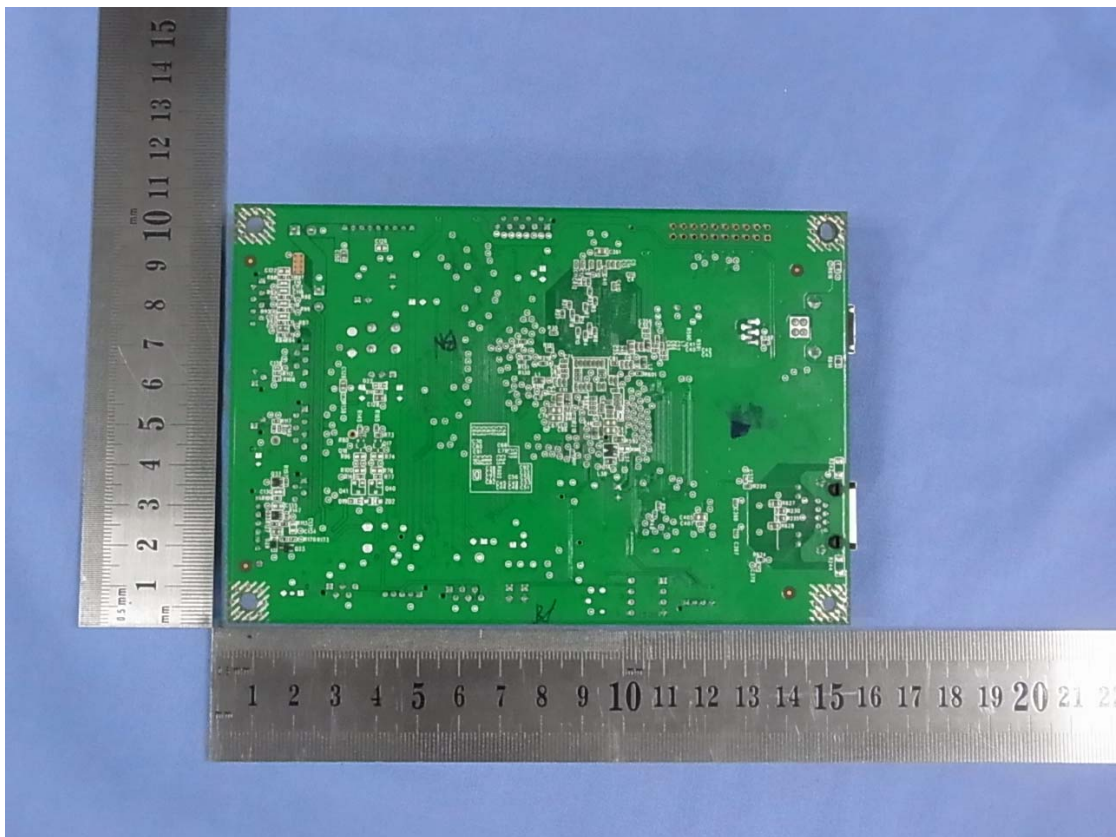
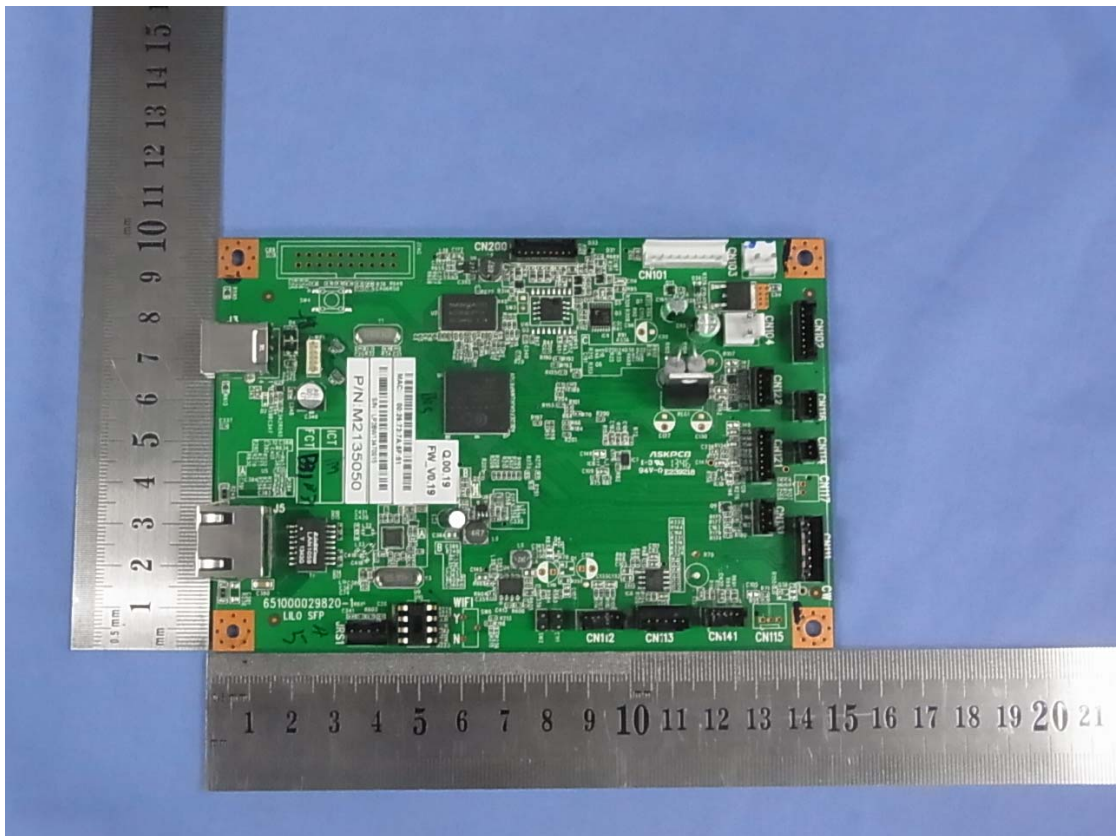


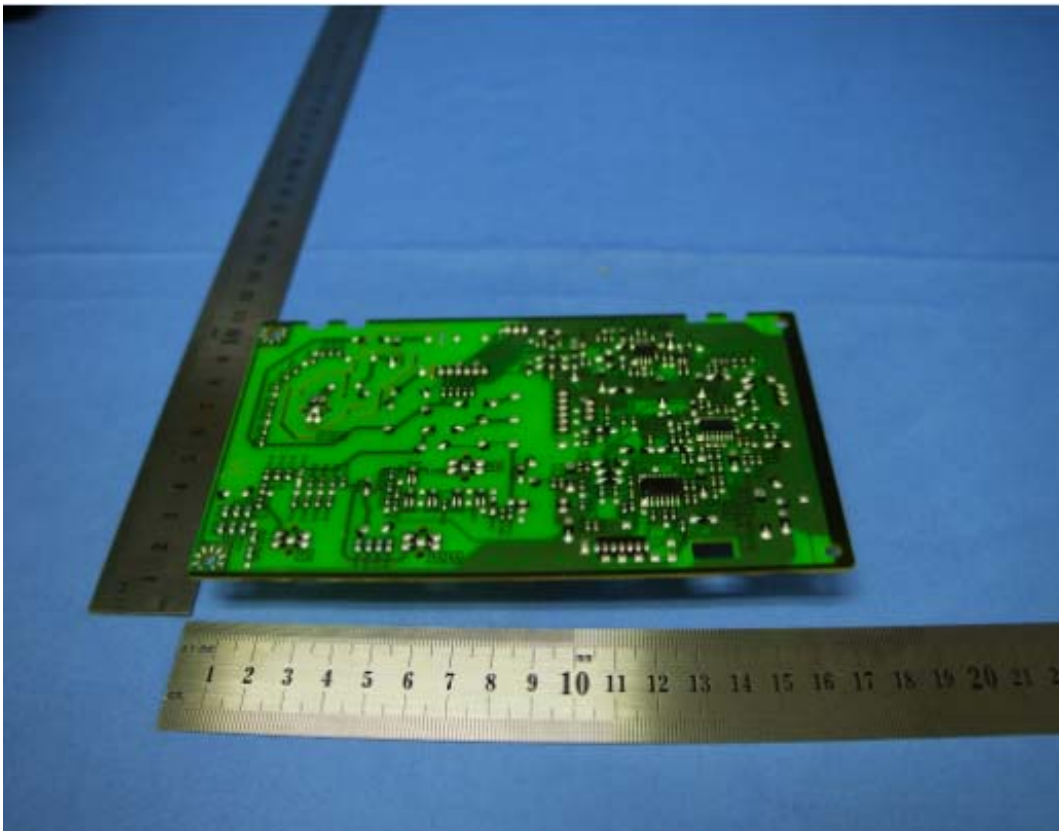
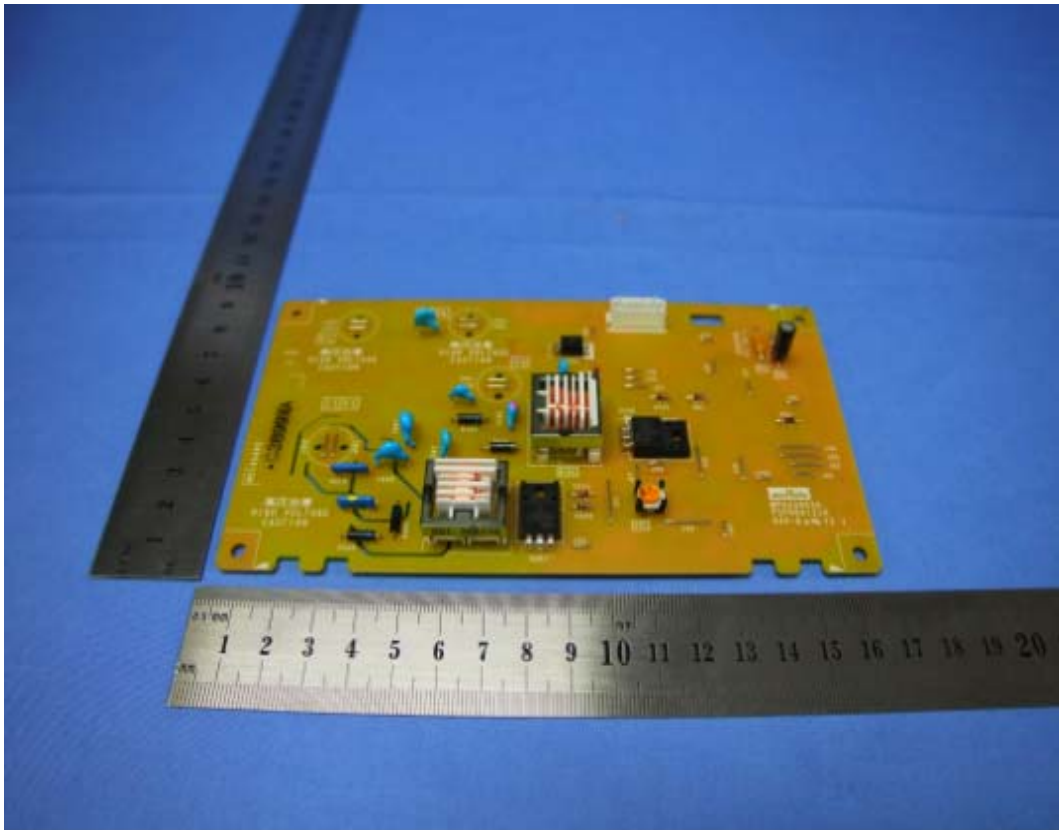


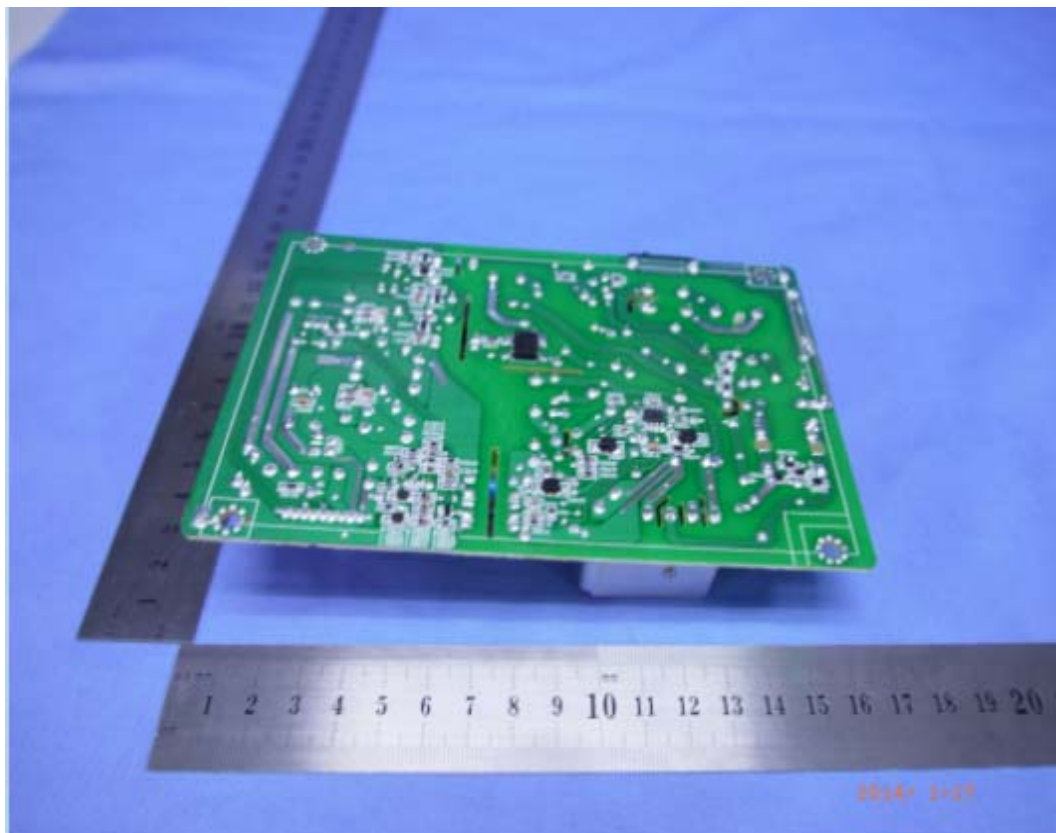
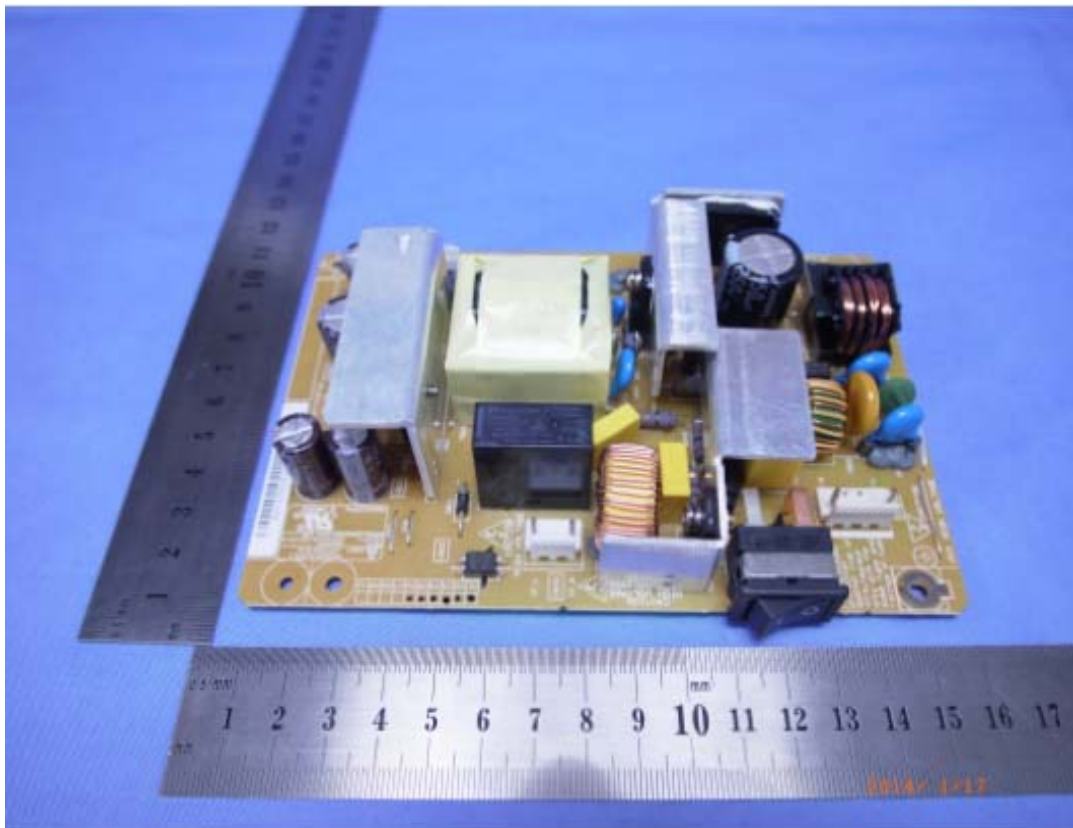


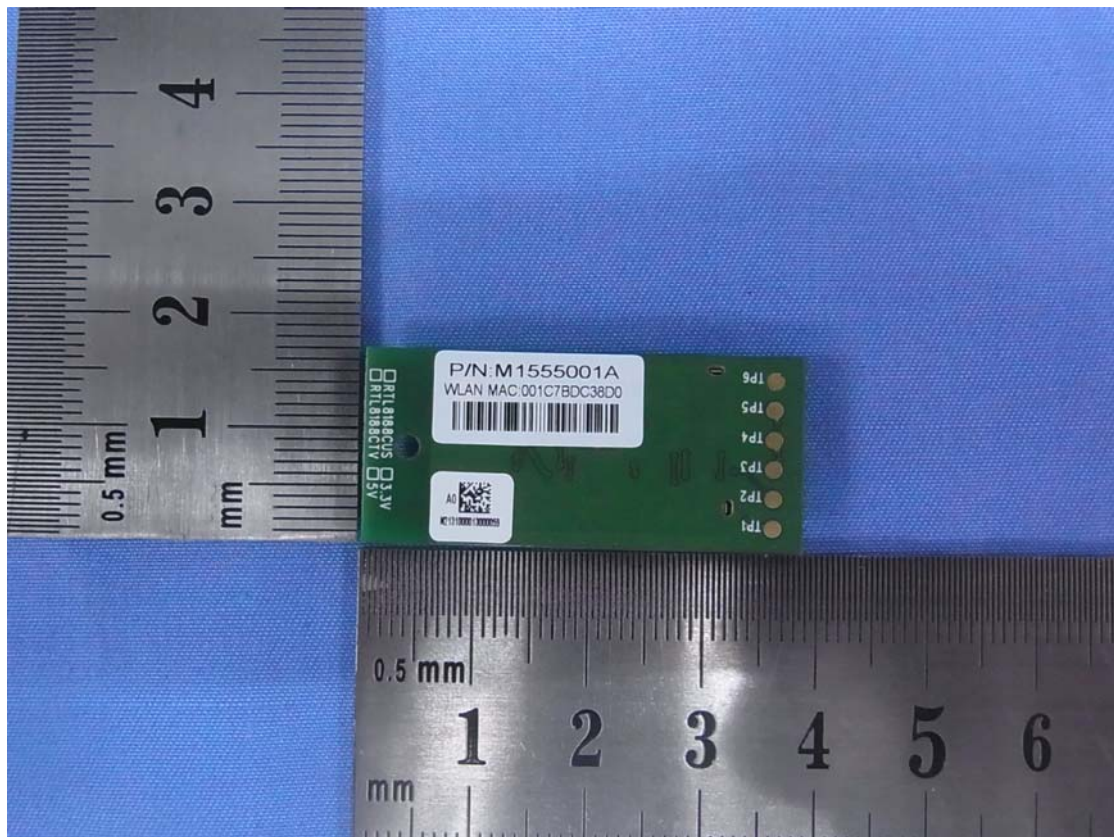
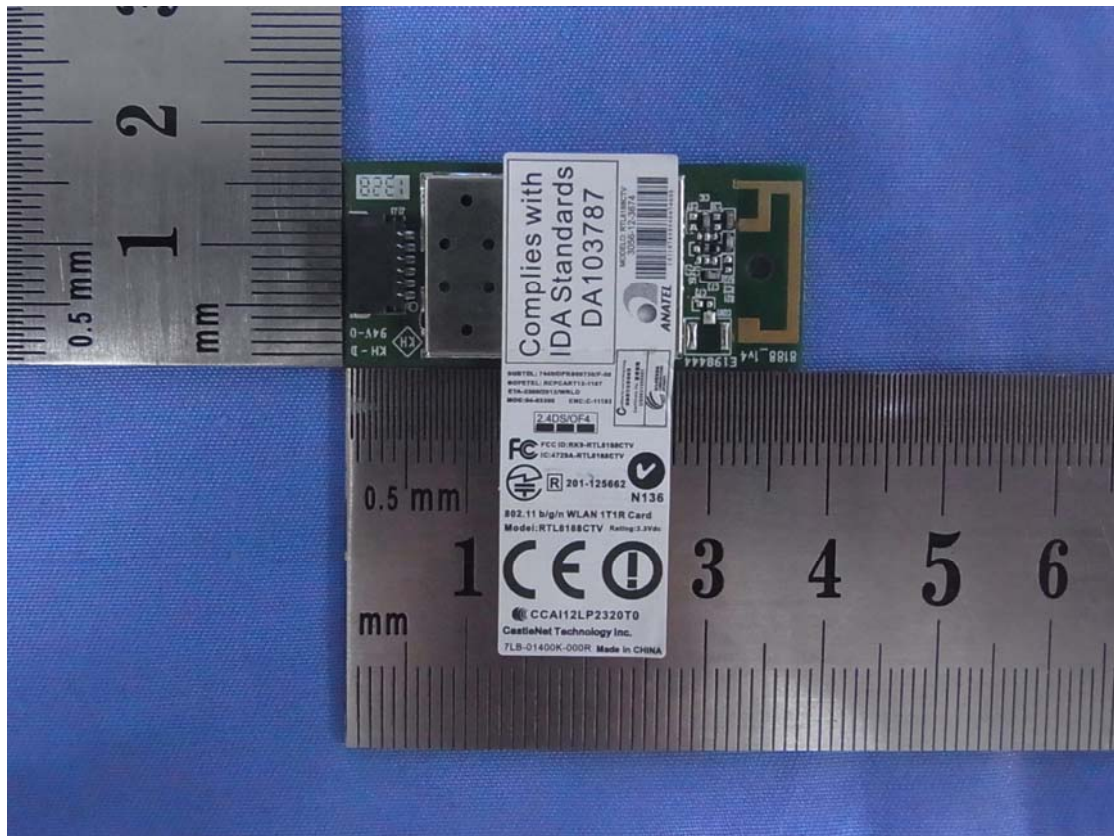












.....End of Report.....