



Shenzhen Certification Technologh Service Co., Ltd
2F, Building B, East Area of Nanchang Second Industrial Zone,
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China

TEST REPORT

FCC ID: N9W-MSR100

Applicant **unique electronic international limited**
Address **Rm 7F, Bld Jinghui, Jingxin Garden, Futian 518034, China**

Equipment under Test (EUT):

Name : Magnetic card reader

Model : MSR100

Standards : FCC PART 15, Subpart B Class B 2011

Report No. : STE120418408

Date of Test : April 20-April 23, 2012

Date of Issue : April 25, 2012

| | |
|----------------------|---------------|
| Test Result : | PASS * |
|----------------------|---------------|

* In the configuration tested, the EUT complied with the standards specified above

Authorized Signature

(Mark Zhu)
General Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Certification Technology Service Co., Ltd. Or test done by Shenzhen Certification Technology Service Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Certification Technology Service Co., Ltd. Approvals in writing.

TABLE OF CONTENTS

| <u>Description</u> | <u>Page</u> |
|---|-------------|
| Test Report Declaration | 3 |
| 1. Summary of standards and results | 4 |
| 1.1. Description of Standards and Results..... | 4 |
| 2. GENERAL INFORMATION | 5 |
| 2.1. Description of Device (EUT) | 5 |
| 2.2. Tested Supporting System Details | 5 |
| 2.3. Block Diagram of connection between EUT and simulators | 6 |
| 2.4. Test Facility | 6 |
| 2.5. Measurement Uncertainty | 6 |
| 3. POWER LINE CONDUCTED Emission test | 7 |
| 3.1. Test Equipment..... | 7 |
| 3.2. Block Diagram of Test Setup | 7 |
| 3.3. Power Line Conducted Emission Test Limits | 7 |
| 3.4. Configuration of EUT on Test..... | 8 |
| 3.5. Operating Condition of EUT | 8 |
| 3.6. Test Procedure | 8 |
| 3.7. Conducted Disturbance at Mains Terminals Test Results..... | 8 |
| 4. Radiated emission Test | 11 |
| 4.1. Test Equipment..... | 11 |
| 4.2. Block Diagram of Test Setup | 11 |
| 4.3. Radiated Emission Limit | 12 |
| 4.4. EUT Configuration on Test..... | 12 |
| 4.5. Operating Condition of EUT | 13 |
| 4.6. Test Procedure | 13 |
| 4.7. Radiated Disturbance Test Results..... | 13 |
| 5. Photograph | 16 |
| 5.1. Photos of Power Line Conducted Emission Test | 16 |
| 5.2. Photos of Radiated Emission Test (In Anechoic Chamber)..... | 17 |
| 6. Photos of the EUT | 18 |

TEST REPORT VERIFICATION

Applicant : unique electronic international limited
Manufacturer : unique electronic international limited
EUT Description : Magnetic card reader

(A) Model No. : MSR100
(B) Trademark : N/A
(C) Serial No. : N/A
(D) Power Supply : DC 5V From PC
(E) Test Voltage : DC 5V From PC

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart B Class B 2011

The device described above is tested by Shenzhen Certification Technology Service Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Certification Technology Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Certification Technology Service Co., Ltd.

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

| EMISSION | | | | |
|------------------------------------|---------------------------------------|---------|---------|---|
| Description of Test Item | Standard | Limits | Results | |
| Power Line Conducted Emission Test | FCC Part 15: 2011 ANSI C63.4: 2003 | Class B | PASS | Minimargin with respect to the limits: -7.36 dB at 13.17MHz |
| Radiated Emission Test | FCC Part 15: 2011 ANSI C63.4: 2003 | Class B | PASS | Minimargin with respect to the limits: -3.10dB at 44.55MHz |

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description : Magnetic card reader

Model Number : MSR100

Trademark : N/A

Highest frequency : Clock frequency: 12MHz

Applicant : unique electronic international limited
Rm 7F, Bld Jinghui, Jingxin Garden, Futian 518034, China

Manufacturer : unique electronic international limited
Rm 7F, Bld Jinghui, Jingxin Garden, Futian 518034, China

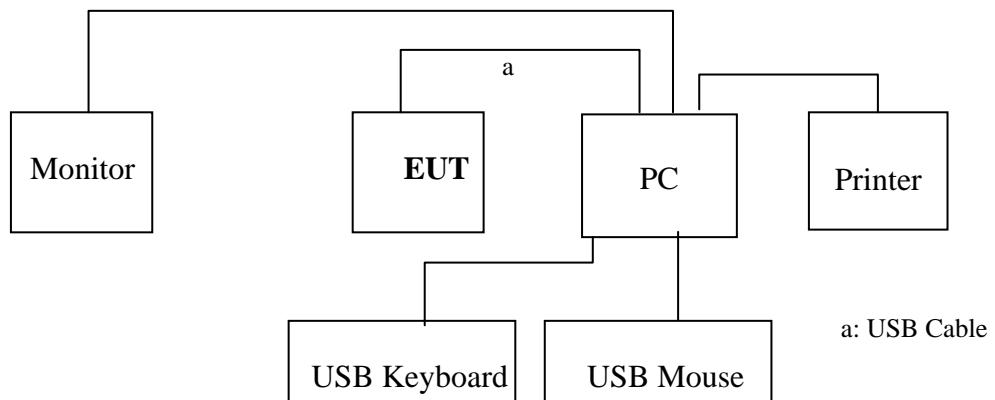
Date of Test : April 20-April 23, 2012

Sample Type : Series production

2.2. Tested Supporting System Details

| No. | Description | Manufacturer | Model | Serial Number |
|-----|-------------------|--------------|--------------|------------------------|
| 1. | Personal Computer | ACER | ASPIRE M1830 | PTSF90C00305005CAC3000 |
| 2. | Monitor | ACER | G205HV | SNID:10306738385 |
| 3. | USB Keyboard | ACER | SK-9625 | KBUSB1580500037E0100 |
| 4. | USB Mouse | ACER | MS.11200.014 | M-UAY-ACR2 |
| 5. | Printer | HP | HP1020 | CNCJ410726 |

2.3. Block Diagram of connection between EUT and simulators



※ EUT: Magnetic card reader

2.4. Test Facility

JAN 13, 2012 File on Federal Communication Commission
Registration Number: 197647

October 11, 2011 Certificated by IC
Registration Number: 8528B

2.5. Measurement Uncertainty

(95% confidence levels, k=2)

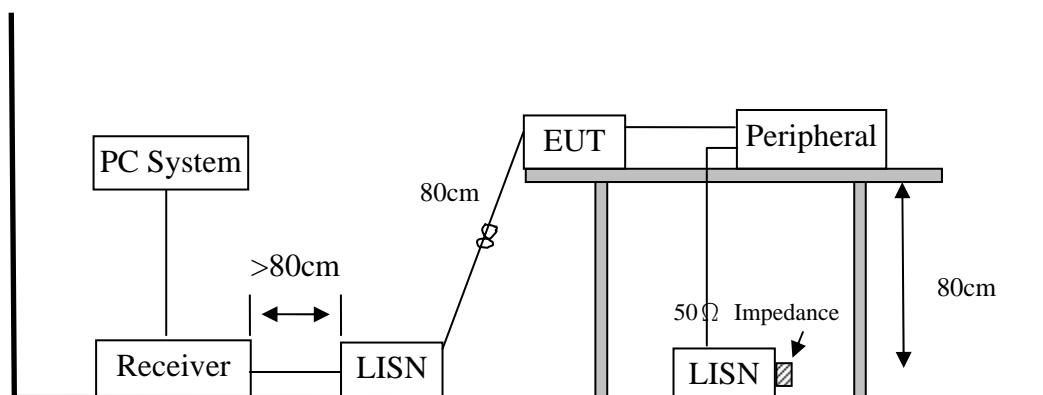
| Test Item | Uncertainty |
|--|------------------------------------|
| Uncertainty for Conduction emission test | 2.50dB |
| Uncertainty for Radiation Emission test | 3.04 dB (Distance: 3m Polarize: V) |
| | 3.02 dB (Distance: 3m Polarize: H) |
| Uncertainty for test site temperature and humidity | 0.6°C |
| | 3% |

3. POWER LINE CONDUCTED EMISSION TEST

3.1. Test Equipment

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------|---------------|-----------------|-----------------------|-------------|---------------|
| 1. | Test Receiver | Rohde&Schwarz | ESCI | 1166.5950K03 -1011 | Oct. 17, 11 | 1 Year |
| 2. | L.I.S.N. | Schwarzbeck | NSLK8126 | 8126466 | Oct. 17, 11 | 1 Year |
| 3. | L.I.S.N.-2 | Kyoritsu | KNW-407 | 8-1628-5 | Oct. 17, 11 | 1 Year |
| 4. | Terminator | Hubersuhner | 50Ω | No. 1 | Oct. 17, 11 | 1 Year |
| 5. | RF Cable | Schwarzbeck | 9111505/20 0 | 5995-12-161-6 890# | Oct. 17, 11 | 1 Year |
| 6. | Coaxial Switch | Schwarzbeck | CX-210 | N/A | Oct. 17, 11 | 1 Year |
| 7. | Pulse Limiter | Schwarzbeck | VTSD9516 F | 9618 | Oct. 17, 11 | 1 Year |

3.2. Block Diagram of Test Setup



3.3. Power Line Conducted Emission Test Limits

| Frequency | Maximum RF Line Voltage | |
|-----------------|----------------------------|-------------------------|
| | Quasi-Peak Level dB(µV) | Average Level dB(µV) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

Notes: 1. Emission level=Read level+ LISN factor+Preamp factor+ Cable loss

2* Decreasing linearly with logarithm of frequency.

3. The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

Support Equipments : As Tested Supporting System Detail, in Section 2.2.

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT and simulator as shown as Section 3.2.
- 3.5.2. Turn on the power of all equipment.
- 3.5.3. Let the EUT work in test mode (Link PC) and measure it.

3.6. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N. #2), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on conducted Emission test.

The bandwidth of test receiver (R&S TEST RECEIVER ESCI) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 3.7.

3.7. Conducted Disturbance at Mains Terminals Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test mode was tested and read Q.P values and average values, the test results are listed in next pages.

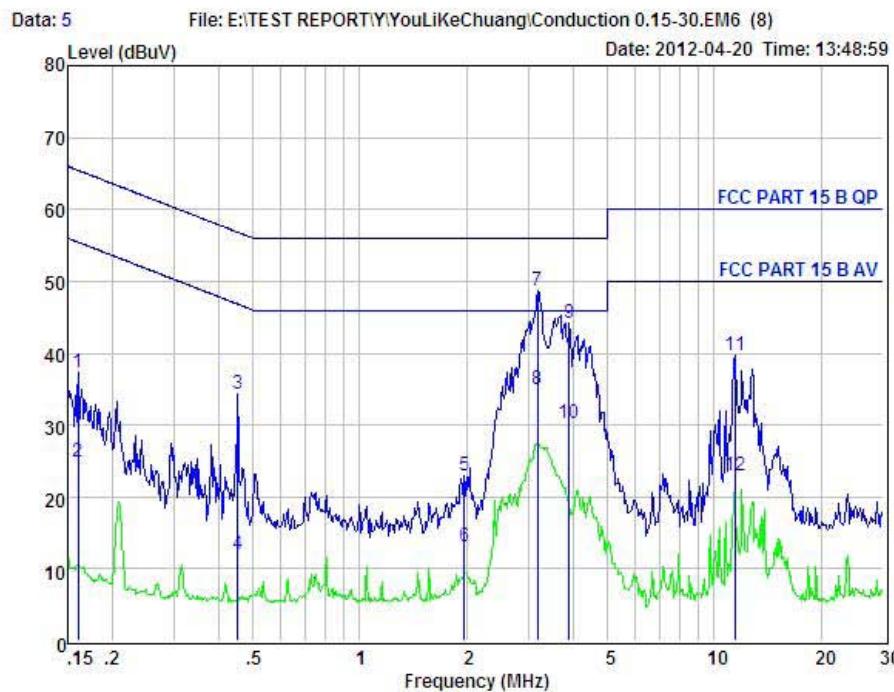
Temperature: 29.5°C Humidity: 55%

The details of test mode is as follows :

| No. | Test Mode |
|-----|-----------|
| 1. | Read card |



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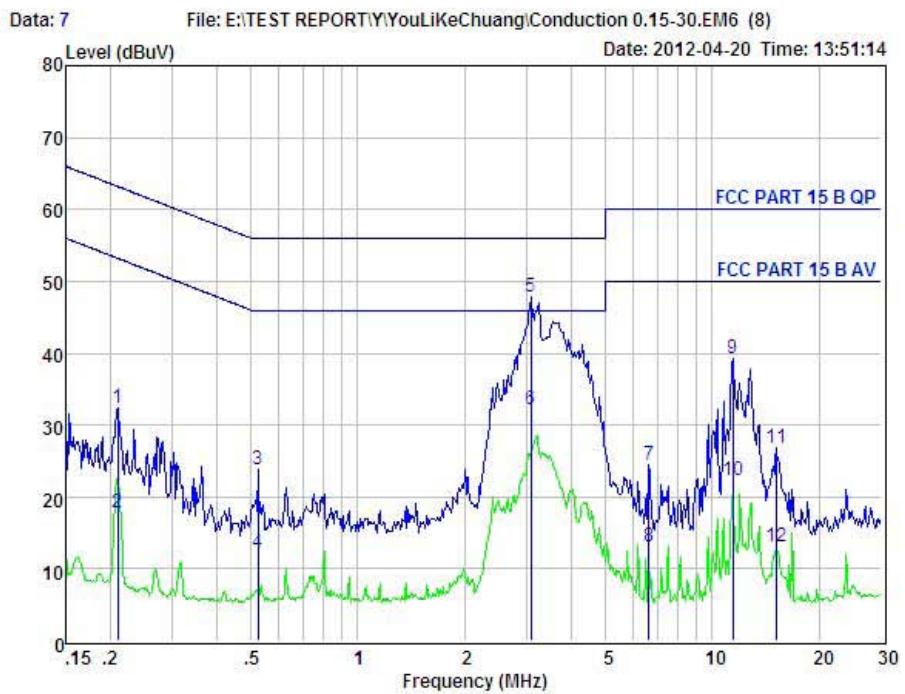


Condition : FCC PART 15 B QP POL: NEUTRAL
 EUT : Magnetic card reader
 Model No. : MSR100
 Test Mode : Normal
 Power : DC 5V From PC
 Test Engineer: Store
 Remark :

| Item | Freq | Read | LISN | Preamp | Cable | Level | Limit | Margin | Remark |
|------|-------|-------|--------|--------|-------|-------|-------|--------|---------|
| | | | Factor | Factor | Cable | | | | |
| | MHz | dBuV | dB | dB | Lose | dBuV | dBuV | dBuV | |
| 1 | 0.16 | 27.39 | 0.03 | -9.72 | 0.10 | 37.24 | 65.43 | -28.19 | QP |
| 2 | 0.16 | 15.09 | 0.03 | -9.72 | 0.10 | 24.94 | 55.43 | -30.49 | Average |
| 3 | 0.45 | 24.37 | 0.03 | -9.72 | 0.10 | 34.22 | 56.85 | -22.63 | QP |
| 4 | 0.45 | 2.07 | 0.03 | -9.72 | 0.10 | 11.92 | 46.85 | -34.93 | Average |
| 5 | 1.97 | 13.02 | 0.06 | -9.70 | 0.10 | 22.88 | 56.00 | -33.12 | QP |
| 6 | 1.97 | 3.18 | 0.06 | -9.70 | 0.10 | 13.04 | 46.00 | -32.96 | Average |
| 7 | 3.17 | 38.76 | 0.07 | -9.69 | 0.12 | 48.64 | 56.00 | -7.36 | QP |
| 8 | 3.17 | 25.06 | 0.07 | -9.69 | 0.12 | 34.94 | 46.00 | -11.06 | Average |
| 9 | 3.90 | 34.20 | 0.08 | -9.69 | 0.12 | 44.09 | 56.00 | -11.91 | QP |
| 10 | 3.90 | 20.30 | 0.08 | -9.69 | 0.12 | 30.19 | 46.00 | -15.81 | Average |
| 11 | 11.44 | 29.78 | 0.24 | -9.48 | 0.22 | 39.72 | 60.00 | -20.28 | QP |
| 12 | 11.44 | 13.08 | 0.24 | -9.48 | 0.22 | 23.02 | 50.00 | -26.98 | Average |



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Condition : FCC PART 15 B QP POL: LINE
 EUT : Magnetic card reader
 Model No. : MSR100
 Test Mode : Normal
 Power : DC 5V From PC
 Test Engineer: Store
 Remark :

| Item | Freq | Read | LISN | Preamp | Cable | Level | Limit | Margin | Remark |
|------|-------|-------|--------|--------|-------|-------|-------|--------|---------|
| | | | Factor | Factor | Lose | dBuV | dBuV | dBuV | |
| | MHz | dBuV | dB | dB | dB | | | | |
| 1 | 0.21 | 22.53 | 0.03 | -9.72 | 0.10 | 32.38 | 63.18 | -30.80 | QP |
| 2 | 0.21 | 8.03 | 0.03 | -9.72 | 0.10 | 17.88 | 53.18 | -35.30 | Average |
| 3 | 0.52 | 13.85 | 0.03 | -9.72 | 0.10 | 23.70 | 56.00 | -32.30 | QP |
| 4 | 0.52 | 2.29 | 0.03 | -9.72 | 0.10 | 12.14 | 46.00 | -33.86 | Average |
| 5 | 3.07 | 37.89 | 0.07 | -9.69 | 0.12 | 47.77 | 56.00 | -8.23 | QP |
| 6 | 3.07 | 22.30 | 0.07 | -9.69 | 0.12 | 32.18 | 46.00 | -13.82 | Average |
| 7 | 6.63 | 14.57 | 0.12 | -9.57 | 0.15 | 24.41 | 60.00 | -35.59 | QP |
| 8 | 6.63 | 3.17 | 0.12 | -9.57 | 0.15 | 13.01 | 50.00 | -36.99 | Average |
| 9 | 11.44 | 29.19 | 0.25 | -9.48 | 0.22 | 39.14 | 60.00 | -20.86 | QP |
| 10 | 11.44 | 12.37 | 0.25 | -9.48 | 0.22 | 22.32 | 50.00 | -27.68 | Average |
| 11 | 15.15 | 17.00 | 0.25 | -9.38 | 0.24 | 26.87 | 60.00 | -33.13 | QP |
| 12 | 15.15 | 3.23 | 0.25 | -9.38 | 0.24 | 13.10 | 50.00 | -36.90 | Average |

4. RADIATED EMISSION TEST

4.1. Test Equipment

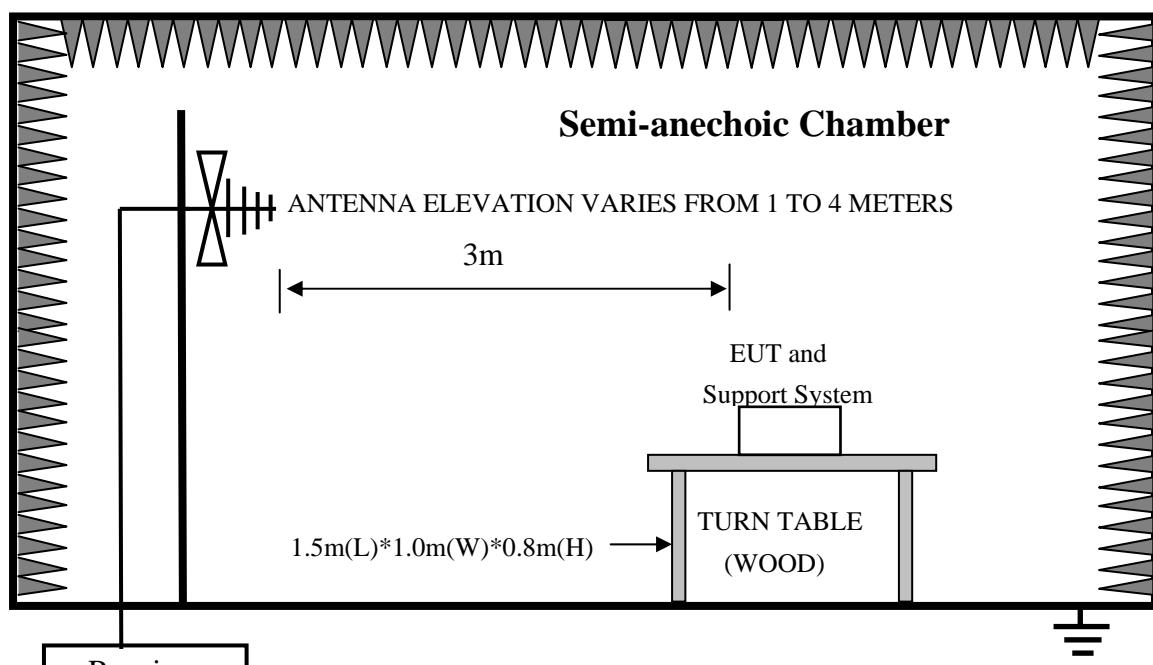
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|---------------|---------------|-----------|-------------------|-------------|---------------|
| 1 | Test Receiver | Rohde&Schwarz | ESCI | 1166.5950K06-1012 | Oct. 17, 11 | 1 Year |
| 2 | Amplifier | Schwarzbeck | BBV9743 | 9743-019 | Oct. 17, 11 | 1 Year |
| 3 | Bilog Antenna | Schwarzbeck | VULB 9168 | VULB9168-438 | Feb. 10, 12 | 1 Year |
| 4 | RF Cable | Schwarzbeck | AK9515E | 95891-2m | Oct. 17, 11 | 1 Year |
| 5 | RF Cable | Schwarzbeck | AK9515E | 95891-11m | Oct. 17, 11 | 1 Year |
| 6 | RF Cable | Schwarzbeck | AK9515E | 95891-0.5m | Oct. 17, 11 | |

For frequency range 1GHz~5GHz (At Semi Anechoic Chamber)

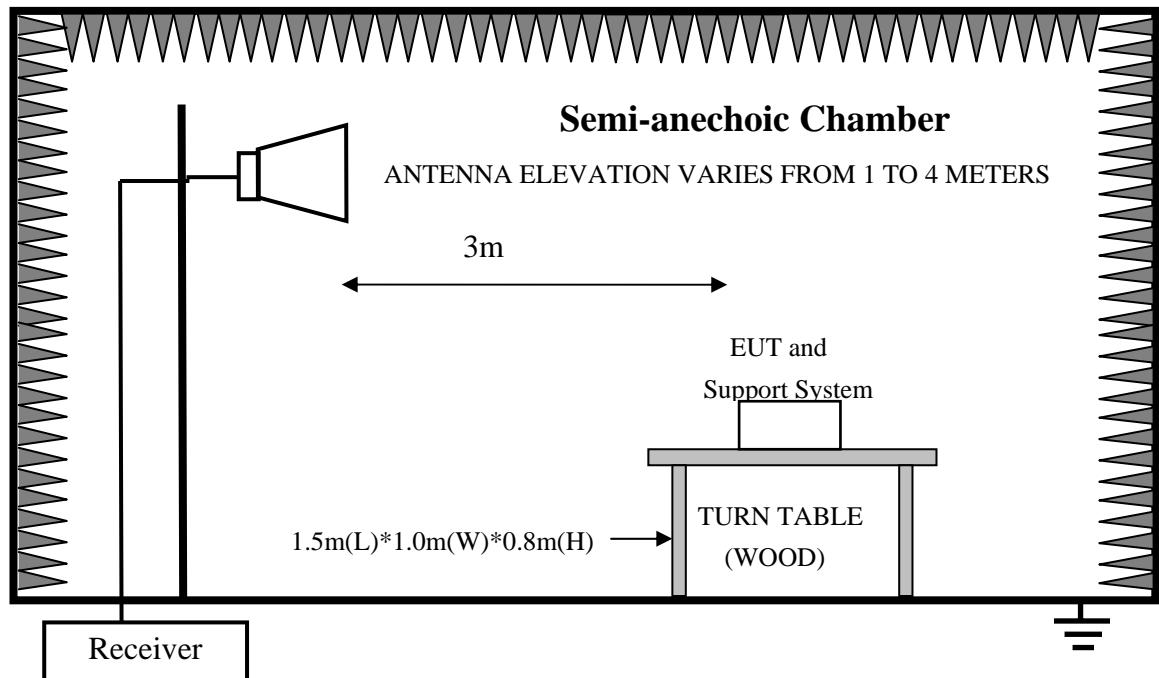
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------|--------------|--------------|------------|-------------|---------------|
| 1 | Spectrum Analyzer | Agilent | E4446A | US44300459 | Oct. 17, 11 | 1 Year |
| 2 | Horn Antenna | EMCO | BBV9743 | 9743-019 | Feb. 10, 12 | 1 Year |
| 3 | Amplifier | Schwarzbeck | SCHWARZBEC K | N/A | Oct. 17, 11 | 1 Year |
| 4 | RF Cable | Hubersuhner | SUCOFLEX102 | 28620/2 | Oct. 17, 11 | 1 Year |
| 5 | RF Cable | Hubersuhner | SUCOFLEX102 | 271471/4 | Oct. 17, 11 | 1 Year |
| 6 | RF Cable | Hubersuhner | SUCOFLEX102 | 29086/2 | Oct. 17, 11 | 1 Year |

4.2. Block Diagram of Test Setup

4.2.1. In Semi Anechoic Chamber (3m) Test Setup Diagram for 30MHz~1000MHz



4.2.2. In Semi Anechoic Chamber (3m) Test Setup Diagram for 1-5GHz



4.3. Radiated Emission Limit

| Frequency MHz | Distance (Meters) | Field Strengths Limits dB(μ V)/m |
|------------------|----------------------|--|
| 30 ~ 88 | 3 | 40.0 |
| 88 ~ 216 | 3 | 43.5 |
| 216 ~ 960 | 3 | 46.0 |
| 960 ~ 1000 | 3 | 54.0 |
| 1000 ~ 5000 | 3 | 74(Peak) 54(Average) |

Remark: (1) Emission level = Read level+Antenna Factor+Preamp Factor +Cable Loss
 (2) The smaller limit shall apply at the cross point between two frequency bands.
 (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner that tends to maximize its emission characteristics in normal application.

4.4.1. Support Equipments : As Tested Supporting System Detail, in Section 2.2.

4.5. Operating Condition of EUT

- 4.5.1. Setup the EUT as shown in Section 4.2.
- 4.5.2. Turn on the power of all equipment.
- 4.5.3. Let the EUT work in test mode (Link PC) and test it.

4.6. Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on Radiated Emission test.

The bandwidth setting on the test receiver (ROHDE&SCHWARZ TEST RECEIVER ESCI) is 120 kHz.

The resolution bandwidth of the Agilent Spectrum Analyzer E4446A was set at 1MHz. (For above 1GHz)

The frequency range from 30MHz to 1000MHz was pre-scanned with a peak detector and all final readings of measurement from Test Receiver are Quasi-Peak values.

The frequency range from 1GHz to 5GHz was checked with peak and average detector, measurement distance is 3m in 3m chamber.

Finally, selected operating situations at Anechoic Chamber measurement, all the test results are listed in section 4.7.

4.7. Radiated Disturbance Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

For frequency range 30MHz~1000MHz

The EUT with the following test mode was tested and read Q.P values, all the test results listed in next pages.

Temperature: 24°C Humidity: 56%

The details of test mode is as follows :

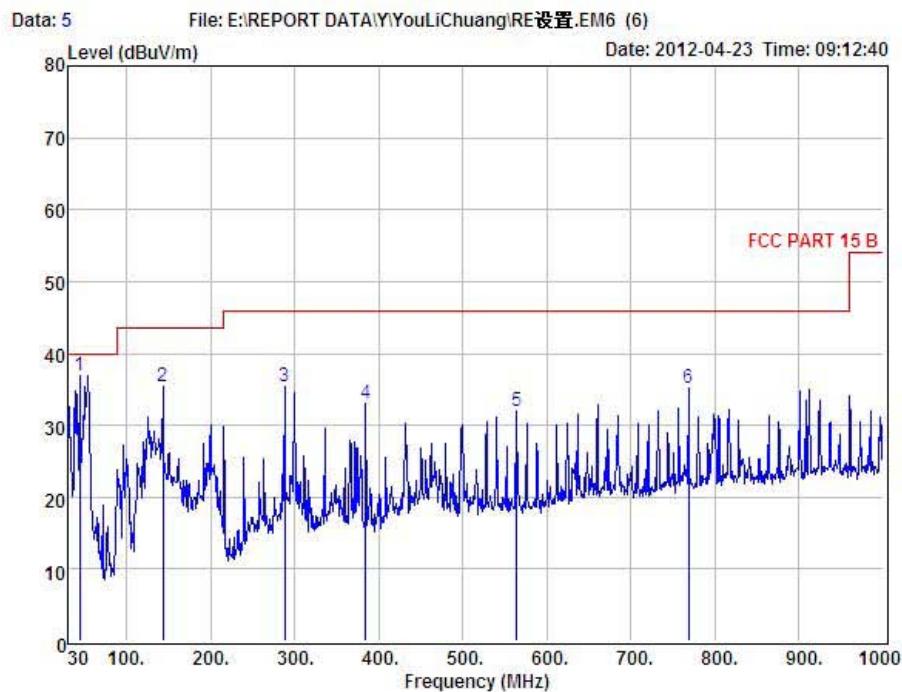
| NO. | Test Mode |
|-----|-----------|
| 1. | Read card |

For frequency range above 1GHz

the highest frequency of the internal sources of the EUT is clock frequency is 12MHz less than 108 MHz, the measurement shall only be made up to 1 GHz. So the frequency above 1GHz radiation test not applicable.



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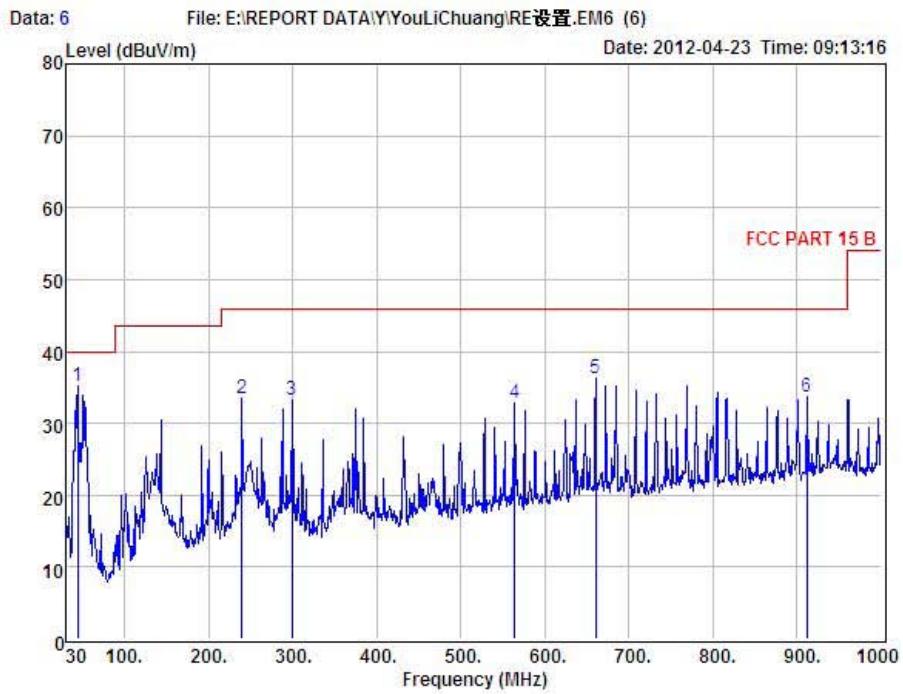


Condition : FCC PART 15 B 3m POL: VERTICAL
 EUT : Magnetic card reader
 Model No. : MSR100
 Test Mode : Normal
 Power : DC 5V From PC
 Test Engineer : Store
 Remark :

| Item | Freq | Read | Antenna | Preamp | Cable | Level | Limit | Margin | Remark |
|------|--------|-------|---------|--------|-------|-------|-------|--------|--------|
| | | Level | Factor | Factor | Lose | dBuV | dBuV | dBuV | |
| | MHz | dBuV | dB | dB | dB | | | | |
| 1 | 44.55 | 50.35 | 13.79 | 27.81 | 0.57 | 36.90 | 40.00 | -3.10 | QP |
| 2 | 143.49 | 47.51 | 13.64 | 26.90 | 1.10 | 35.35 | 43.50 | -8.15 | QP |
| 3 | 288.02 | 48.14 | 12.54 | 27.17 | 1.87 | 35.38 | 46.00 | -10.62 | QP |
| 4 | 384.05 | 43.48 | 14.48 | 27.38 | 2.38 | 32.96 | 46.00 | -13.04 | QP |
| 5 | 564.47 | 39.00 | 17.64 | 27.74 | 3.13 | 32.03 | 46.00 | -13.97 | QP |
| 6 | 768.17 | 38.78 | 20.47 | 27.67 | 3.54 | 35.12 | 46.00 | -10.88 | QP |



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Condition : FCC PART 15 B 3m POL: HORIZONTAL
 EUT : Magnetic card reader
 Model No. : MSR100
 Test Mode : Normal
 Power : DC 5V From PC
 Test Engineer : Store
 Remark :

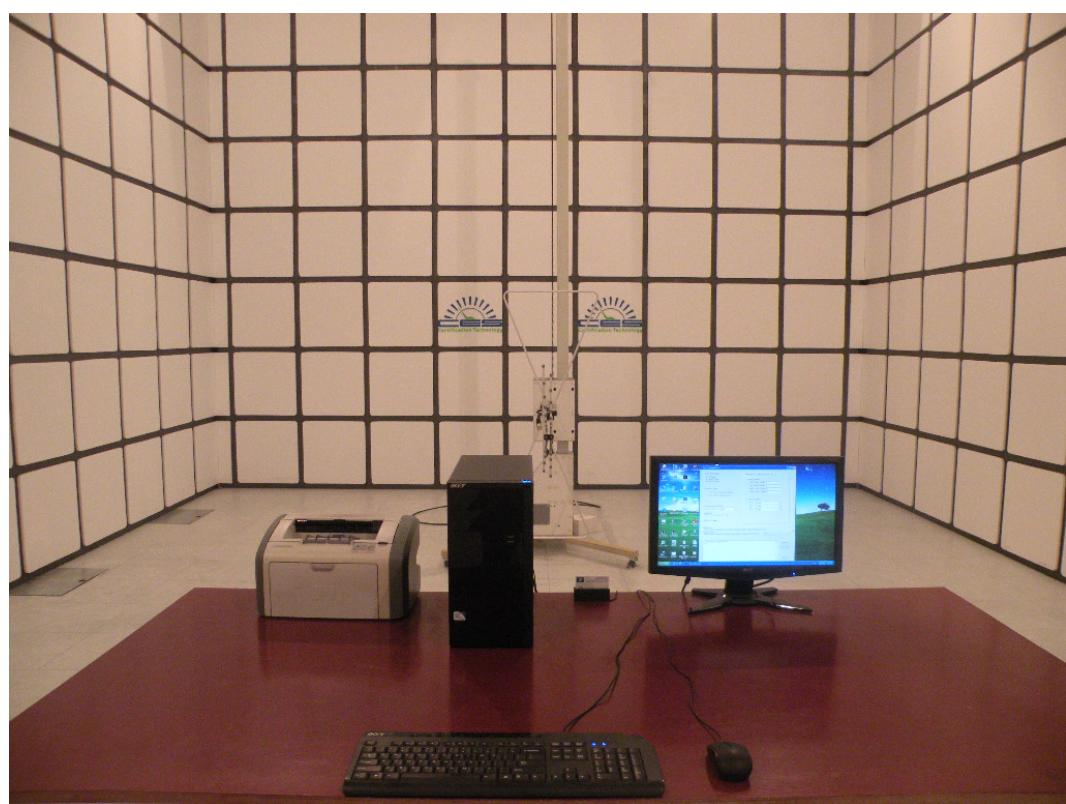
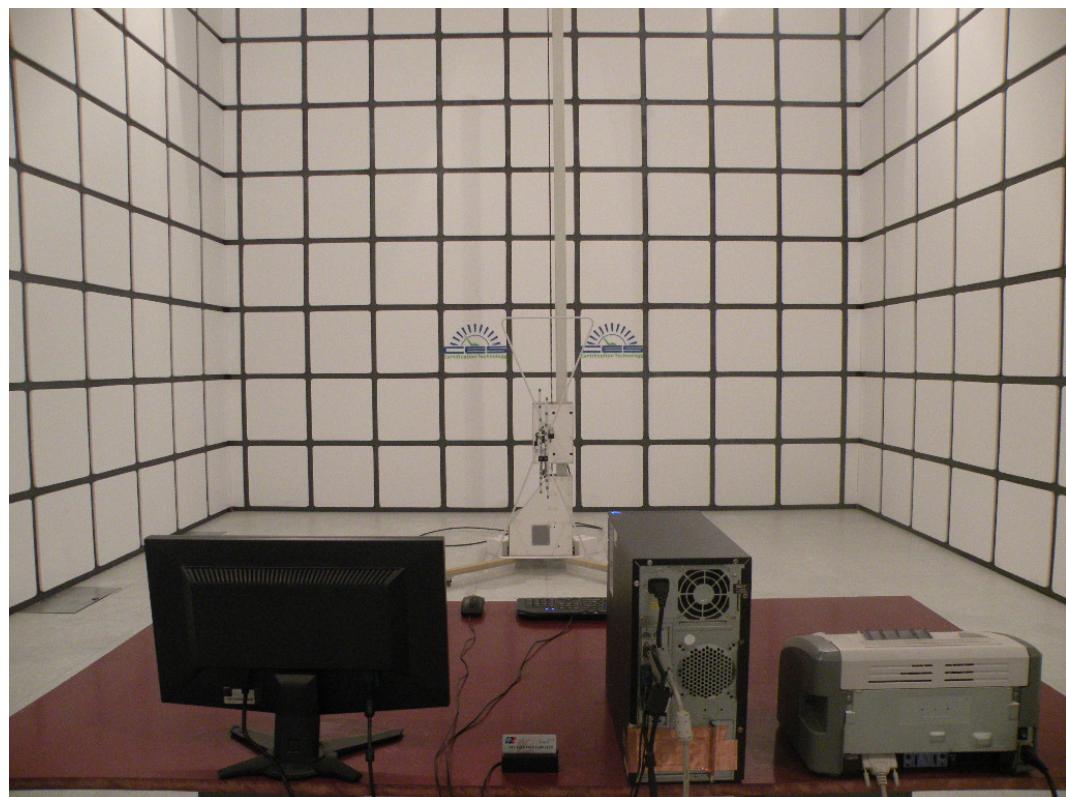
| Item | Freq MHz | Read | Antenna | Preamp | Cable | Level | Limit | Margin | Remark |
|------|-------------|---------------|--------------|--------------|------------|-------|-------|--------|--------|
| | | Level dBuV | Factor dB | Factor dB | Lose dB | dBuV | dBuV | dBuV | |
| 1 | 44.55 | 48.71 | 13.79 | 27.81 | 0.57 | 35.26 | 40.00 | -4.74 | QP |
| 2 | 239.52 | 47.47 | 11.45 | 27.09 | 1.61 | 33.44 | 46.00 | -12.56 | QP |
| 3 | 298.69 | 45.65 | 12.80 | 27.19 | 1.92 | 33.18 | 46.00 | -12.82 | QP |
| 4 | 564.47 | 39.73 | 17.64 | 27.74 | 3.13 | 32.82 | 46.00 | -13.18 | QP |
| 5 | 660.50 | 41.46 | 19.21 | 27.78 | 3.32 | 36.21 | 46.00 | -9.79 | QP |
| 6 | 911.73 | 35.66 | 21.79 | 27.64 | 3.82 | 33.63 | 46.00 | -12.37 | QP |

5. PHOTOGRAPH

5.1. Photos of Power Line Conducted Emission Test



5.2.Photos of Radiated Emission Test (In Anechoic Chamber)



6. PHOTOS OF THE EUT

Rear View



Front View



Top View



Bottom View



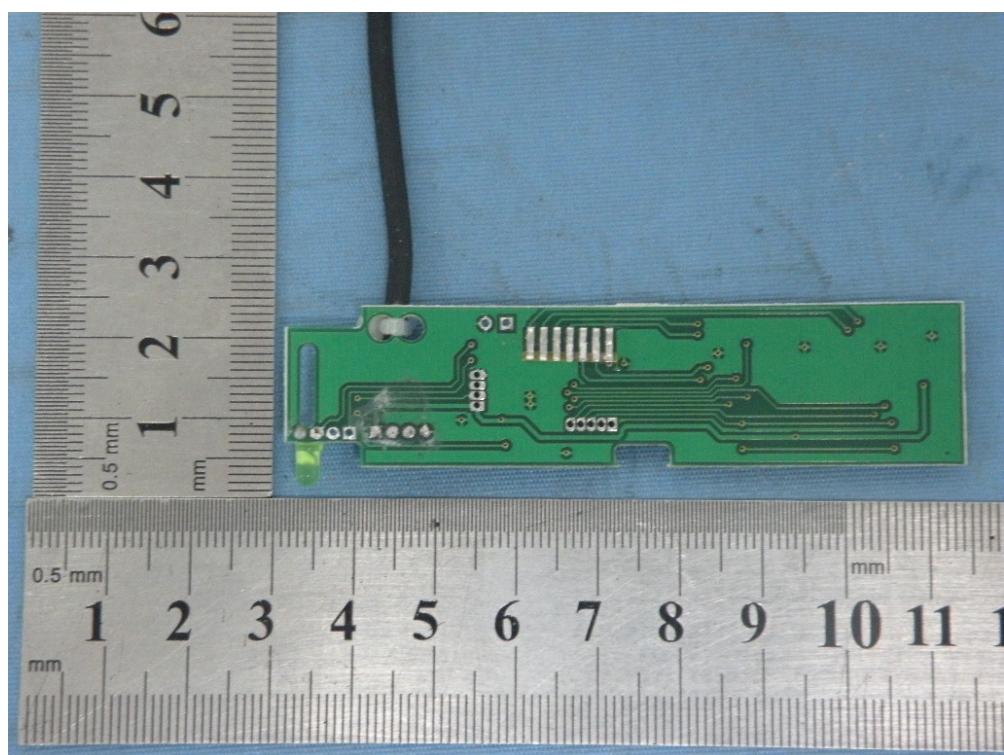
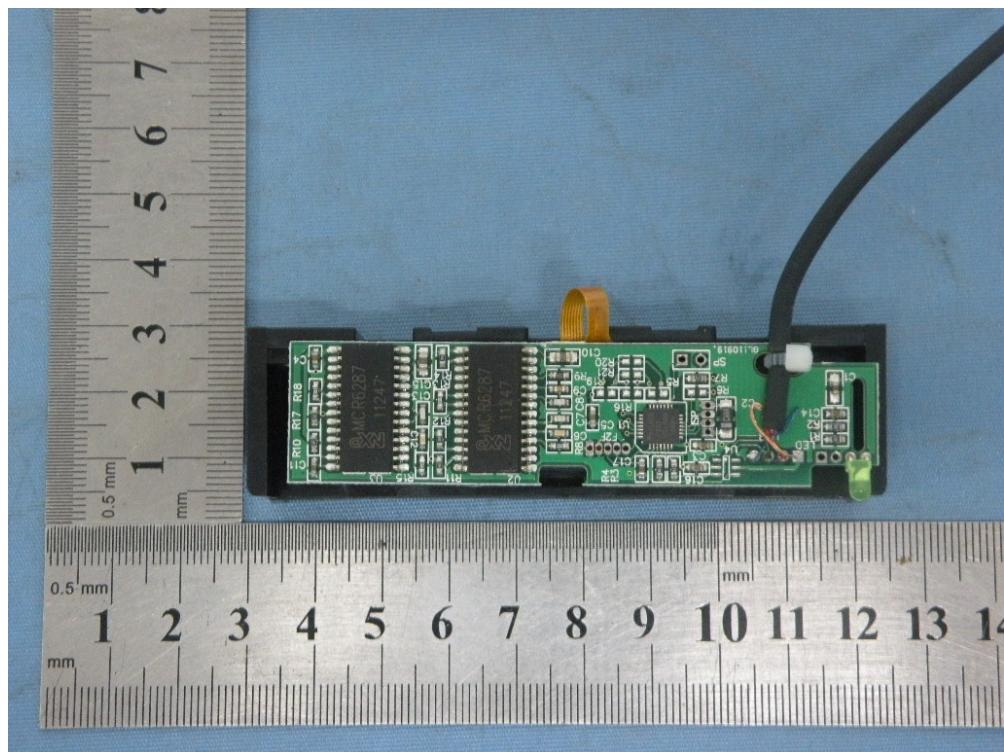
Left View

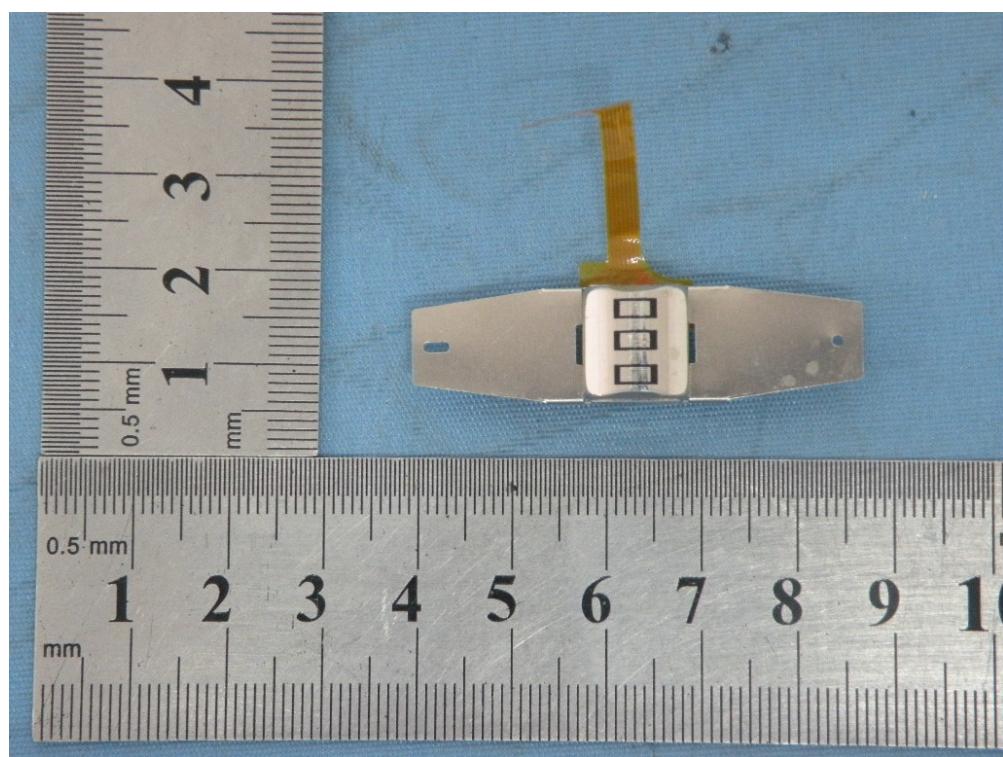
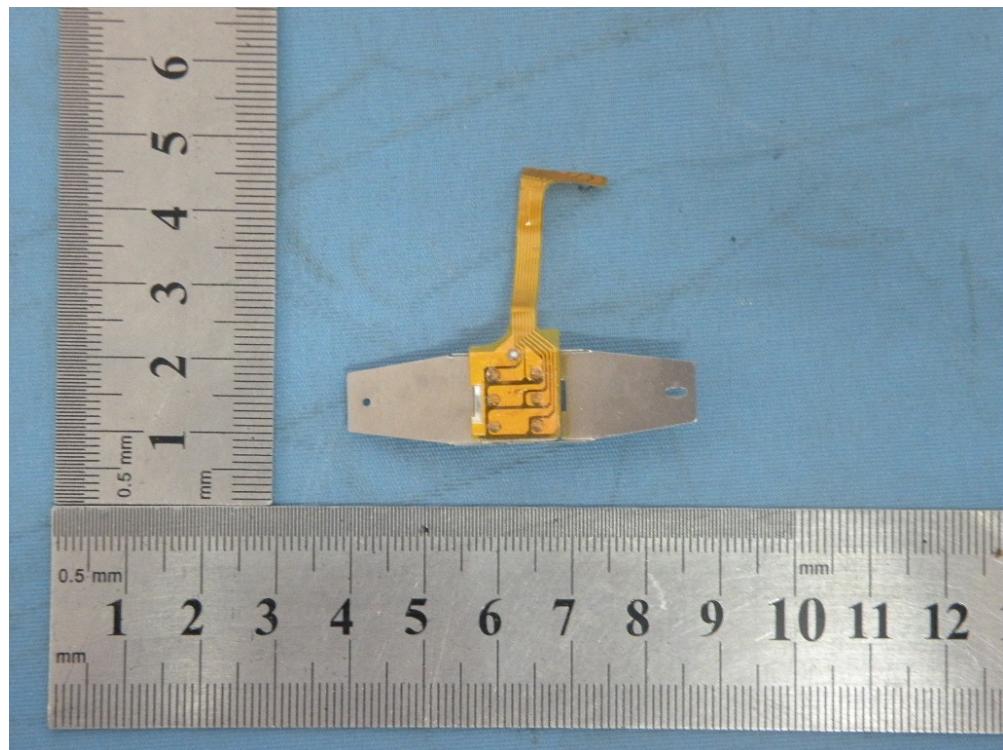


Right View



Inside View





-----THE END OF REPORT-----