#### FCC CERTIFICATION On Behalf of Eastern Times Technology Co., Ltd.

2.4G Wireless Laser Mouse Model No.: DS-2316L

FCC ID: TUV2316L

| Prepared for<br>Address | : | Eastern Times Technology Co., Ltd.<br>Building 5, Penghua Industry Park, Heping Rd.(W),<br>Longhua, Shenzhen, Guangdong, China                             |
|-------------------------|---|--|
| Prepared by<br>Address  | : | ACCURATE TECHNOLOGY CO. LTD<br>F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.<br>Science & Industry Park, Nanshan, Shenzhen, Guangdong<br>P.R. China |
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| Report Number  | : | ATE20101492   |
|----------------|---|---------------|
| Date of Test   | : | July 14, 2010 |
| Date of Report | : | July 15, 2010 |

# TABLE OF CONTENTS

# Description

Page

| 1. | GE   | NERAL INFORMATION  | 4     |
|----|------|--|-------|
|    | 1.1. | Description of Device (EUT)                                  | 4     |
|    | 1.2. | Description of Test Facility                                 |       |
|    | 1.3. | Measurement Uncertainty                                      |       |
| 2. | ME   | CASURING DEVICE AND TEST EQUIPMENT                           |       |
| 3. | SU   | MMARY OF TEST RESULTS  | 7     |
| 4. | FU   | NDAMENTAL AND HARMONICS RADIATED EMISSION FOR SECTION 15.249 | (A) 8 |
|    | 4.1. | Block Diagram of Test Setup                                  | 8     |
|    | 4.2. | The Emission Limit   | 9     |
|    | 4.3. | Configuration of EUT on Measurement                          | 9     |
|    | 4.4. | Operating Condition of EUT                                   | 9     |
|    | 4.5. | Test Procedure   |       |
|    | 4.6. | The Field Strength of Radiation Emission Measurement Results | 11    |
| 5. | SP   | URIOUS RADIATED EMISSION FOR SECTION 15.249(D)               | 14    |
|    | 5.1. | Block Diagram of Test Setup                                  | 14    |
|    | 5.2. | The Emission Limit For Section 15.249(d)                     | 15    |
|    | 5.3. | EUT Configuration on Measurement                             | 15    |
|    | 5.4. | Operating Condition of EUT                                   | 15    |
|    | 5.5. | Test Procedure   | 16    |
|    | 5.6. | The Emission Measurement Result                              | 17    |
| 6. | BA   | ND EDGES   | 20    |
|    | 6.1. | The Requirement  | 20    |
|    | 6.2. | EUT Configuration on Measurement                             | 20    |
|    | 6.3. | Operating Condition of EUT                                   | 20    |
|    | 6.4. | Test Procedure   | 20    |
|    | 6.5. | The Measurement Result                                       | 21    |
| 7. | AN   | TENNA REQUIREMENT  | 23    |
|    | 7.1. | The Requirement  | 23    |
|    | 7.2. | Antenna Construction   | 23    |

#### APPENDIX I (TEST CURVES) (22 pages)

#### **Test Report Certification**

| Applicant       | : | Eastern Times Technology Co., Ltd.                    |
|-----------------|---|---|
| Manufacturer    | : | Eastern Times Technology Co., Ltd.                    |
| EUT Description | : | 2.4G Wireless Laser Mouse                             |
|                 |   | (A) MODEL NO.: DS-2331L                               |
|                 |   | (B) SERIAL NO.: N/A                                   |
|                 |   | (C) POWER SUPPLY: 3V DC ("AAA" batteries $2 \times$ ) |

Measurement Procedure Used:

#### FCC Rules and Regulations Part 15 Subpart C Section 15.249 ANSI C63.4: 2003

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :

Prepared by :

July 14, 2010

(Engineer)

Approved & Authorized Signer :

(Manager)

# **1. GENERAL INFORMATION**

# 1.1.Description of Device (EUT)

| EUT                     | : | 2.4G Wireless Laser Mouse  |
|-------------------------|---|--|
| Model Number            | : | DS-2316L   |
| Power Supply            | : | 3V DC ("AAA" batteries $2 \times$ )  |
| Operate Frequency       | : | 2408-2474MHz   |
| Applicant<br>Address    | : | Eastern Times Technology Co., Ltd.<br>Building 5, Penghua Industry Park, Heping Rd.(W),<br>Longhua, Shenzhen, Guangdong, China |
| Manufacturer<br>Address | : | Eastern Times Technology Co., Ltd.<br>Building 5, Penghua Industry Park, Heping Rd.(W),<br>Longhua, Shenzhen, Guangdong, China |
| Date of sample received | : | July 10, 2010  |
| Date of Test            | : | July 14, 2010  |

# 1.2.Description of Test Facility

| EMC Lab       | : | Accredited by TUV Rheinland Shenzhen                                  |
|---------------|---|---|
|               |   | Listed by FCC   |
|               |   | The Registration Number is 752051                                     |
|               |   | Listed by Industry Canada   |
|               |   | The Registration Number is 5077A-2                                    |
|               |   | Accredited by China National Accreditation Committee for Laboratories |
|               |   | The Certificate Registration Number is L3193                          |
|               |   |   |
| Name of Firm  | : | ACCURATE TECHNOLOGY CO. LTD   |
| Site Location | : | F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.                  |
|               |   | Science & Industry Park, Nanshan, Shenzhen, Guangdong                 |
|               |   | P.R. China  |

| 1.3.Measurement | Uncertainty |
|-----------------|-------------|
|-----------------|-------------|

| Conducted Emission Expanded Uncertainty                | = | 2.23dB, k=2 |
|--|---|-------------|
| Radiated emission expanded uncertainty (9kHz-30MHz)    | = | 3.08dB, k=2 |
| Radiated emission expanded uncertainty (30MHz-1000MHz) | = | 4.42dB, k=2 |
| Radiated emission expanded uncertainty (Above 1GHz)    | = | 4.06dB, k=2 |

# 2. MEASURING DEVICE AND TEST EQUIPMENT

| Kind of equipment | Manufacturer  | Туре               | S/N        | Calibrated until |
|-------------------|---------------|--------------------|------------|------------------|
| EMI Test Receiver | Rohde&Schwarz | ESCS30             | 100307     | Jan. 9, 2011     |
| EMI Test Receiver | Rohde&Schwarz | ESPI3              | 101526/003 | Jan. 9, 2011     |
| Spectrum Analyzer | Agilent       | E7405A             | MY45115511 | Jan. 9, 2011     |
| Pre-Amplifier     | Rohde&Schwarz | CBLU118354<br>0-01 | 3791       | Jan. 9, 2011     |
| Loop Antenna      | Schwarzbeck   | FMZB1516           | 1516131    | Jan. 9, 2011     |
| Bilog Antenna     | Schwarzbeck   | VULB9163           | 9163-323   | Jan. 9, 2011     |
| Horn Antenna      | Schwarzbeck   | BBHA9120D          | 9120D-655  | Jan. 9, 2011     |
| Horn Antenna      | Schwarzbeck   | BBHA9170           | 9170-359   | Jan. 9, 2011     |
| LISN              | Rohde&Schwarz | ESH3-Z5            | 100305     | Jan. 9, 2011     |
| LISN              | Schwarzbeck   | NSLK8126           | 8126431    | Jan. 9, 2011     |

#### Table 1: List of Test and Measurement Equipment

# 3. SUMMARY OF TEST RESULTS

| FCC Rules         | Description of Test                            | Result    |
|-------------------|--|-----------|
| Section 15.207    | Conducted Emission                             | N/A       |
| Section 15.249(a) | Fundamental and Harmonics Radiated<br>Emission | Compliant |
| Section 15.249(d) | Spurious Radiated Emission                     | Compliant |
| Section 15.249(d) | Band Edge                                      | Compliant |
| Section 15.203    | Antenna Requirement                            | Compliant |

Remark: "N/A" means "Not applicable".

# 4. FUNDAMENTAL AND HARMONICS RADIATED EMISSION FOR SECTION 15.249(A)

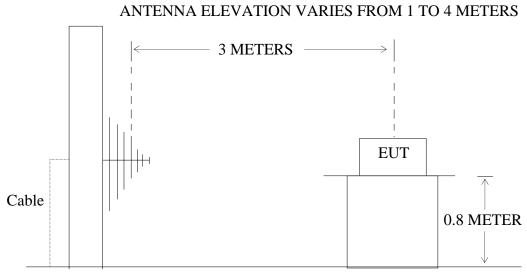
4.1.Block Diagram of Test Setup

4.1.1.Block diagram of connection between the EUT and simulators



(EUT: 2.4G Wireless Laser Mouse)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram



GROUND PLANE

(EUT: 2.4G Wireless Laser Mouse)

#### 4.2. The Emission Limit

4.2.1.For intentional radiators, According to section 15.249(a), Operation within the frequency band of 2.4 to 2.4835GHz, The fundamental field strength shall not exceed 94 dB $\mu$ V/m and the harmonics shall not exceed 54 dB $\mu$ V/m.

| Fundamental    | Field Strength of Fundamental | Field Strength of harmonics |
|----------------|-------------------------------|-----------------------------|
| Frequency      | (millivolts/meter)            | (microvolts/meter)          |
| 902-928MHz     | 50                            | 500                         |
| 2400-2483.5MHz | 50                            | 500                         |
| 5725-5875MHz   | 50                            | 500                         |
| 24.0-24.25GHz  | 250                           | 2500                        |

4.2.2.According to section 15.249(e), as shown in section 15.35(b), the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

#### 4.3.Configuration of EUT on Measurement

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

4.3.1. 2.4G Wireless Laser Mouse (EUT)

| Model Number  | : | DS-2316L                           |
|---------------|---|------------------------------------|
| Serial Number | : | N/A                                |
| Manufacturer  | : | Eastern Times Technology Co., Ltd. |

#### 4.4.Operating Condition of EUT

4.4.1.Setup the EUT and simulator as shown as Section 4.1.

4.4.2.Turn on the power of all equipment.

4.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2408-2474MHz. We are select 2408MHz, 2440MHz, 2474MHz TX frequency to transmit.

#### **4.5.Test Procedure**

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 1MHz.

# 4.6.The Field Strength of Radiation Emission Measurement Results **PASS.**

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2408MHz                | Test Engineer: | Joe                                 |

#### **Fundamental Radiated Emissions**

| Frequency | Reading( | dBµV/m) | Factor(dB) | Result(c | lBµV/m) | Limit(dl | BμV/m) | Marg   | in(dB) | Polarization |
|-----------|----------|---------|------------|----------|---------|----------|--------|--------|--------|--------------|
| (MHz)     | AV       | PEAK    | Corr.      | AV       | PEAK    | AV       | PEAK   | AV     | PEAK   |              |
| 2408.278  | 87.39    | 92.92   | -7.44      | 79.95    | 85.48   | 94       | 114    | -14.05 | -28.52 | Vertical     |
| 2408.278  | 91.90    | 97.46   | -7.44      | 84.46    | 90.02   | 94       | 114    | -9.54  | -23.98 | Horizontal   |

#### **Harmonics Radiated Emissions**

| Frequency | Reading( | dBµV/m) | Factor(dB) | Result(c | lBµV/m) | Limit(d | BμV/m) | Marg  | in(dB) | Polarization |
|-----------|----------|---------|------------|----------|---------|---------|--------|-------|--------|--------------|
| (MHz)     | AV       | PEAK    | Corr.      | AV       | PEAK    | AV      | PEAK   | AV    | PEAK   |              |
| 4816.552  | 44.49    | 49.96   | -0.23      | 44.26    | 49.73   | 54      | 74     | -9.74 | -24.27 | Vertical     |
| 4816.552  | 46.17    | 551.70  | -0.23      | 45.94    | 51.47   | 54      | 74     | -8.06 | -22.53 | Horizontal   |

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

 $Where \ Corrected \ Factor = Antenna \ Factor + Cable \ Loss + High \ Pass \ Filter \ Loss - Amplifier \ Gain$ 

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2440MHz                | Test Engineer: | Joe                                 |

#### **Fundamental Radiated Emissions**

| Frequency (MHz) | Reading( | dBµV/m | Factor(dB)<br>Corr. | Result(dBµV/m) |       | Limit(dBµV/m) |      | Margin(dB) |        | Polarization |
|-----------------|----------|--------|---------------------|----------------|-------|---------------|------|------------|--------|--------------|
| (11112)         | AV       | PEAK   | Con.                | AV             | PEAK  | AV            | PEAK | AV         | PEAK   |              |
| 2440.278        | 87.23    | 92.78  | -7.36               | 79.87          | 85.42 | 94            | 114  | -14.13     | -28.58 | Vertical     |
| 2440.278        | 91.08    | 97.37  | -7.36               | 84.44          | 90.01 | 94            | 114  | -9.56      | -23.99 | Horizontal   |

#### **Harmonics Radiated Emissions**

| Frequency<br>(MHz) | Reading(o | dBµV/m | Factor(dB)<br>Corr. | Result(dBµV/m) |       | Limit(dBµV/m) |      | Margin(dB) |        | Polarization |
|--------------------|-----------|--------|---------------------|----------------|-------|---------------|------|------------|--------|--------------|
| (WHIZ)             | AV        | PEAK   | Con.                | AV             | PEAK  | AV            | PEAK | AV         | PEAK   |              |
| 4880.550           | 43.14     | 48.63  | 0.13                | 43.27          | 48.76 | 54            | 74   | -10.73     | -25.24 | Vertical     |
| 4880.550           | 45.34     | 50.85  | 0.13                | 45.47          | 50.98 | 54            | 74   | -8.53      | -23.02 | Horizontal   |

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2474MHz                | Test Engineer: | Joe                                 |

#### **Fundamental Radiated Emissions**

| Frequency<br>(MHz) | Reading( | dBµV/m | Factor(dB)<br>Corr. | Result(dBµV/m) |       | Limit(dBµV/m) |      | Margin(dB) |        | Polarization |
|--------------------|----------|--------|---------------------|----------------|-------|---------------|------|------------|--------|--------------|
| (11112)            | AV       | PEAK   | Con.                | AV             | PEAK  | AV            | PEAK | AV         | PEAK   |              |
| 2474.276           | 87.17    | 92.64  | -7.37               | 79.80          | 85.27 | 94            | 114  | -14.20     | -28.73 | Vertical     |
| 2474.276           | 91.85    | 97.37  | -7.37               | 84.48          | 90.00 | 94            | 114  | -9.52      | -24.00 | Horizontal   |

#### **Harmonics Radiated Emissions**

| Frequency<br>(MHz) | Reading( | dBµV/m | Factor(dB)<br>Corr. | Result(d | BμV/m) | Limit(d | BμV/m) | Margi  | in(dB) | Polarization |
|--------------------|----------|--------|---------------------|----------|--------|---------|--------|--------|--------|--------------|
| (11112)            | AV       | PEAK   | Con.                | AV       | PEAK   | AV      | PEAK   | AV     | PEAK   |              |
| 4948.546           | 42.09    | 47.55  | 0.47                | 42.56    | 48.02  | 54      | 74     | -11.44 | -25.98 | Vertical     |
| 4948.546           | 46.38    | 51.91  | 0.47                | 46.85    | 52.38  | 54      | 74     | -7.15  | -21.62 | Horizontal   |

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

# 5. SPURIOUS RADIATED EMISSION FOR SECTION 15.249(D)

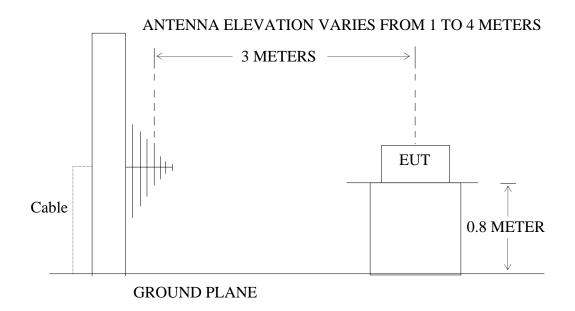
#### 5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators



(EUT: 2.4G Wireless Laser Mouse)

5.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: 2.4G Wireless Laser Mouse)

#### 5.2. The Emission Limit For Section 15.249(d)

5.2.1.Emission radiated outside of the specified frequency bands, except for harmonics, shall be comply with the general radiated emission limits in Section 15.209.

|                    |   | 0   |   |  |
|--------------------|---|---|---|--|
|                    |   | Limit   |   |  |
| Frequency<br>(MHz) | Field Strength of<br>Quasi-peak Value<br>(microvolts/m) | Field Strength of<br>Quasi-peak Value<br>(dBµV/m) | The final measurement<br>in band 9-90kHz,<br>110-490kHz and<br>above 1000MHz is |  |
| 30 - 88            | 100   | 40  | performed with Average detector.  |  |
| 88 - 216           | 150   | 43.5  | Except those<br>frequency bands<br>mention above, the                           |  |
| 216 - 960          | 200   | 46  | final measurement for frequencies below   |  |
| Above 960          | 500   | 54  | 1000MHz is<br>performed with Quasi<br>Peak detector.                            |  |

Radiation Emission Measurement Limits According to Section 15.209

#### 5.3.EUT Configuration on Measurement

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

5.3.1. 2.4G Wireless Laser Mouse (EUT)

| Model Number  | : | DS-2316L                           |
|---------------|---|------------------------------------|
| Serial Number | : | N/A                                |
| Manufacturer  | : | Eastern Times Technology Co., Ltd. |

#### 5.4. Operating Condition of EUT

- 5.4.1.Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2.Turn on the power of all equipment.
- 5.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2408-2474MHz. We are select 2408MHz, 2440MHz, 2474MHz TX frequency to transmit.

#### 5.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 120kHz in 30-1000MHz. and set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 25000MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

#### 5.6. The Emission Measurement Result

#### PASS.

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2408MHz                | Test Engineer: | Joe                                 |

| Frequency | Reading  | Factor(dB) | Result   | Limit    | Margin | Polarization |
|-----------|----------|------------|----------|----------|--------|--------------|
| (MHz)     | (dBµV/m) | Corr.      | (dBµV/m) | (dBµV/m) | (dB)   |              |
|           | QP       |            | QP       | QP       | QP     |              |
| -         | -        | -          | -        | -        | -      | Vertical     |
| -         | -        | -          | -        | -        | -      | Horizontal   |

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

 $Result = Reading + Corrected \ Factor$ 

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2440MHz                | Test Engineer: | Joe                                 |

| Frequency | Reading  | Factor(dB) | Result           | Limit | Margin | Polarization |
|-----------|----------|------------|------------------|-------|--------|--------------|
| (MHz)     | (dBµV/m) | Corr.      | (dBµV/m) (dBµV/m |       | (dB)   |              |
|           | QP       |            | QP               | QP    | QP     |              |
| -         | -        | -          | -                | -     | -      | Vertical     |
| -         | -        | -          | -                | -     | -      | Horizontal   |

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2474MHz                | Test Engineer: | Joe                                 |

| Frequency | Reading  | Factor(dB) | Result           | Limit | Margin | Polarization |
|-----------|----------|------------|------------------|-------|--------|--------------|
| (MHz)     | (dBµV/m) | Corr.      | (dBµV/m) (dBµV/m |       | (dB)   |              |
|           | QP       |            | QP               | QP    | QP     |              |
| -         | -        | -          | -                | -     | -      | Vertical     |
| -         | -        | -          | -                | -     | -      | Horizontal   |

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

### 6. BAND EDGES

#### 6.1.The Requirement

6.1.1.Band Edge from 2400MHz to 2483.5MHz. Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

#### 6.2.EUT Configuration on Measurement

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

6.2.1. 2.4G Wireless Laser Mouse (EUT)

| Model Number  | : | DS-2316L                           |
|---------------|---|------------------------------------|
| Serial Number | : | N/A                                |
| Manufacturer  | : | Eastern Times Technology Co., Ltd. |

#### 6.3. Operating Condition of EUT

6.3.1.Setup the EUT and simulator as shown as Section 4.1.

- 6.3.2.Turn on the power of all equipment.
- 6.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2408-2474MHz. We are select 2408MHz, 2474MHz TX frequency to transmit.

#### 6.4. Test Procedure

- 1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
- 2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: RBW=1MHz, VBW=1MHz

#### 6.5. The Measurement Result

#### Pass.

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2408MHz                | Test Engineer: | Joe                                 |

| Frequency | Reading(c | lBμV/m) | Factor(dB) | Result(c | lBµV/m) | Limit(dl | BμV/m) | Margi | n(dB) | Polarization |
|-----------|-----------|---------|------------|----------|---------|----------|--------|-------|-------|--------------|
| (MHz)     | AV        | PEAK    | Corr.      | AV       | PEAK    | AV       | PEAK   | AV    | PEAK  |              |
| -         | -         | -       | -          | -        | -       | -        | -      | -     | -     | Vertical     |
| _         | -         | _       | -          | -        | -       | -        | -      | -     | -     | Horizontal   |

Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

| Date of Test: | July 14, 2010             | Temperature:   | 25°C                                |
|---------------|---------------------------|----------------|-------------------------------------|
| EUT:          | 2.4G Wireless Laser Mouse | Humidity:      | 50%                                 |
| Model No.:    | DS-2316L                  | Power Supply:  | 3V DC ("AAA" batteries $2 \times$ ) |
| Test Mode:    | TX 2474MHz                | Test Engineer: | Joe                                 |

| Frequency | Reading(c | lBμV/m) | Factor(dB) | Result(c | lBµV/m) | Limit(dl | BμV/m) | Margi | n(dB) | Polarization |
|-----------|-----------|---------|------------|----------|---------|----------|--------|-------|-------|--------------|
| (MHz)     | AV        | PEAK    | Corr.      | AV       | PEAK    | AV       | PEAK   | AV    | PEAK  |              |
| _         | -         | -       | -          | -        | -       | -        | -      | -     | -     | Vertical     |
| -         | -         | -       | -          | -        | -       | -        | _      | _     | -     | Horizontal   |

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss - Amplifier Gain

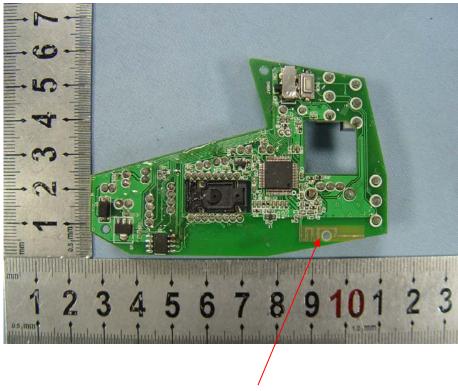
# 7. ANTENNA REQUIREMENT

#### 7.1.The Requirement

7.1.1.According to Section 15.203, 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.

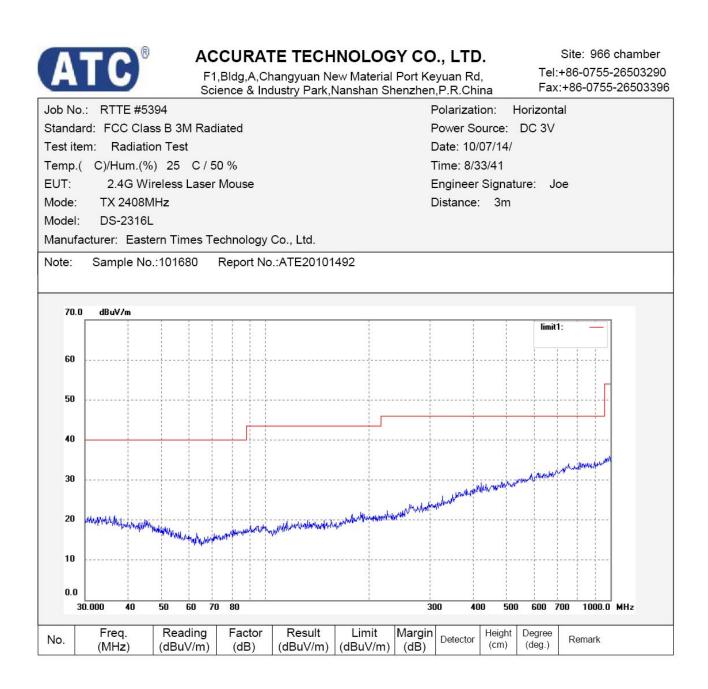
#### 7.2. Antenna Construction

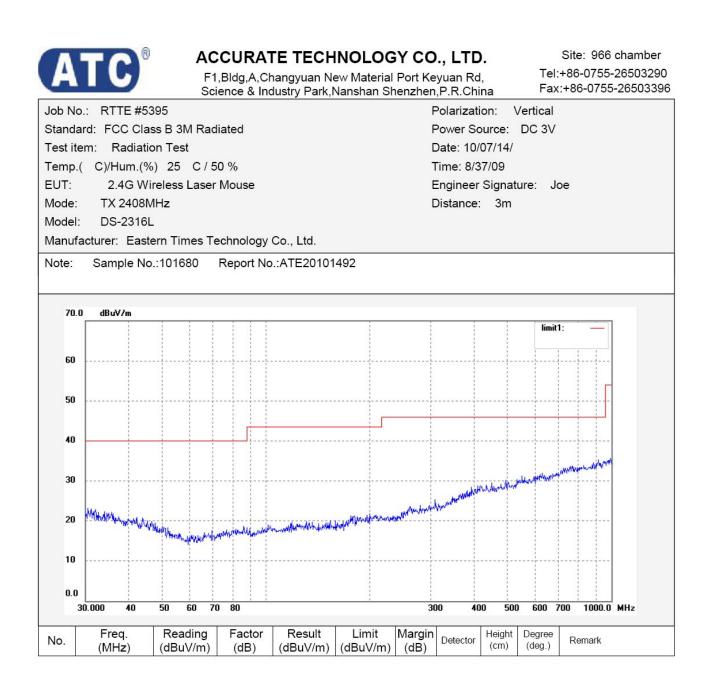
The antenna is PCB Layout antenna, no consideration of replacement.



Antenna

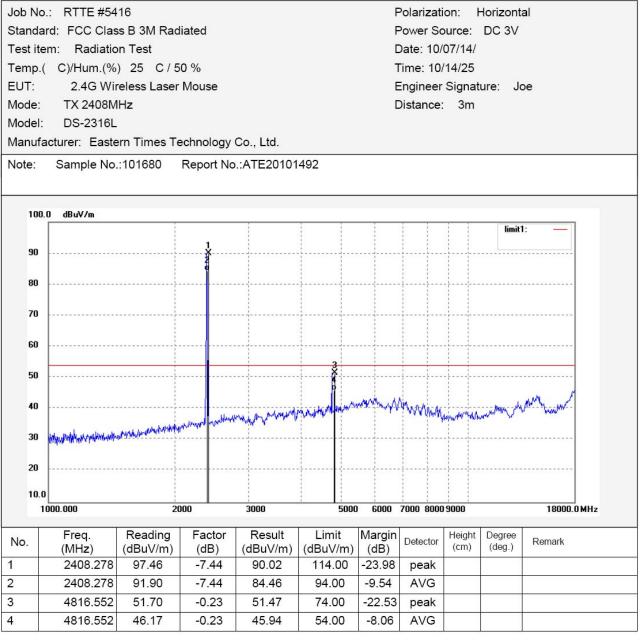
# APPENDIX I (Test Curves)

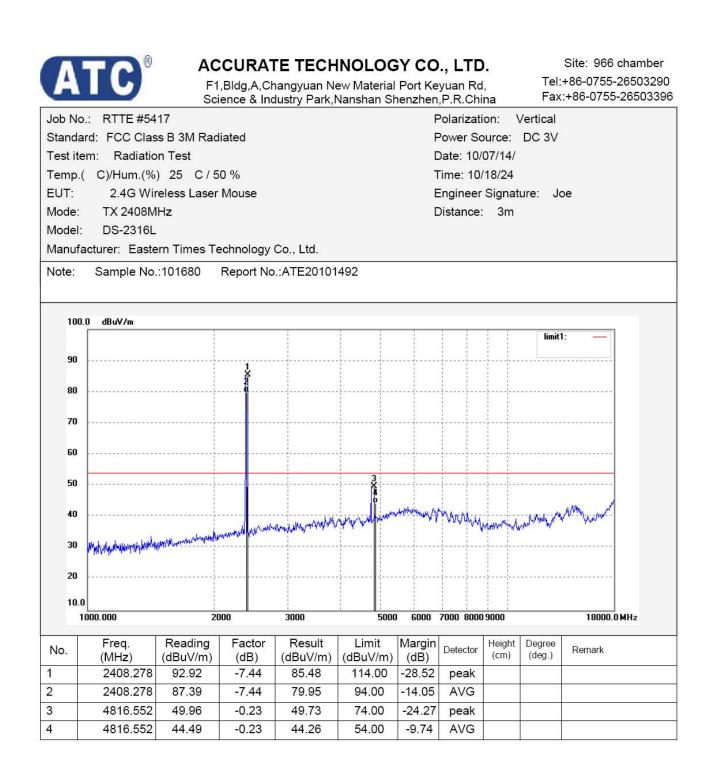


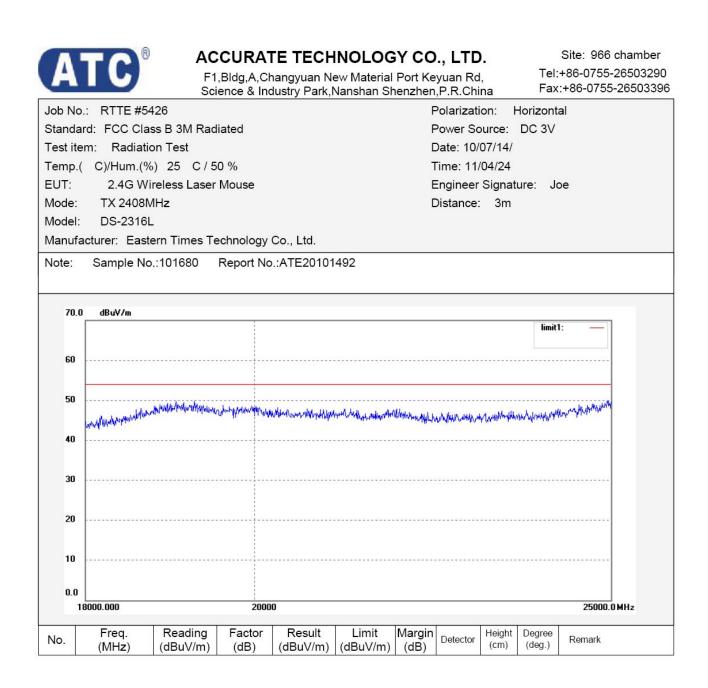


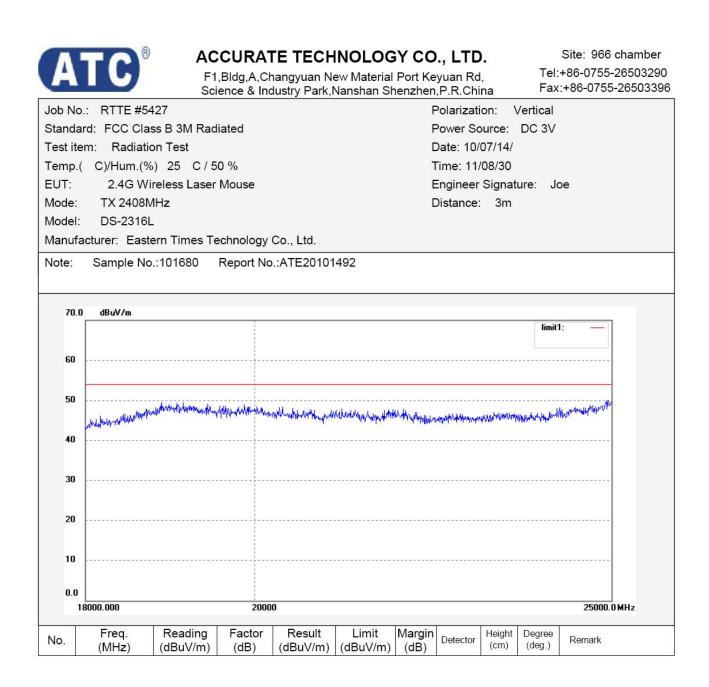


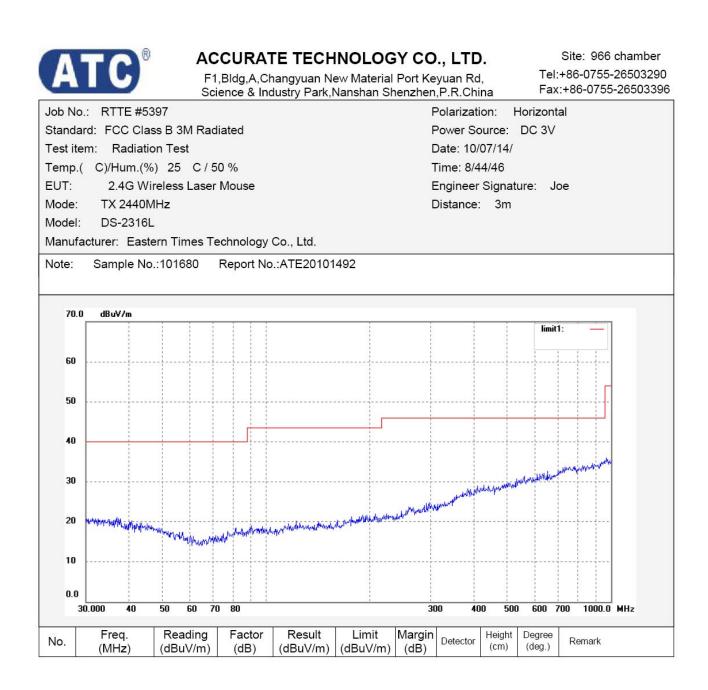
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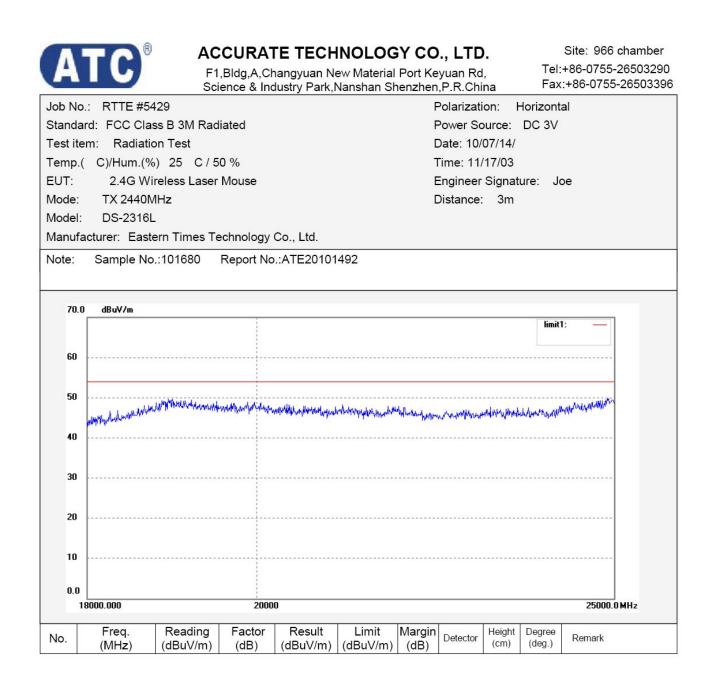
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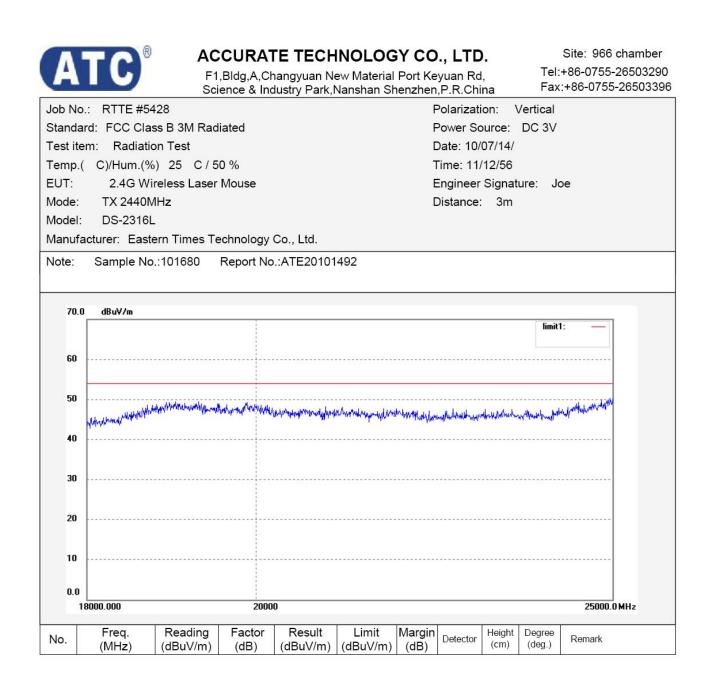
| Job N   | o.: RTTE #54             |                     |                | austry r ant,r     |                   |                | Polarizati |                | Horizont         | al          |
|---|--------------------------|---------------------|----------------|--------------------|-------------------|----------------|------------|----------------|------------------|-------------|
| Stand   | ard: FCC Clas            | s B 3M Ra           | diated         |                    | Power Sc          |                | DC 3V      |                |                  |             |
| Test it   | est item: Radiation Test |                     |                |                    |                   |                |            |                |                  |             |
| Temp.( C)/Hum.(%) 25 C / 50 %<br>EUT: 2.4G Wireless Laser Mouse |                          |                     |                |                    |                   |                | Time: 10/  | 26/56          |                  |             |
|   |                          |                     |                |                    |                   |                | Engineer   | Signat         | ure: Jo          | be          |
| Mode  | TX 2440M                 | Hz                  |                |                    |                   |                | Distance:  | - To           |                  |             |
| Model   | : DS-2316L               |                     |                |                    |                   |                |            |                |                  |             |
| Manut   | facturer: Easte          | ern Times T         | echnology      | Co., Ltd.          |                   |                |            |                |                  |             |
| Note:   | Sample No.               | :101680             | Report No      | .:ATE20101         | 492               |                |            |                |                  |             |
|   |                          |                     |                |                    |                   |                |            |                |                  |             |
|   |                          |                     |                |                    |                   |                |            |                |                  |             |
| 10  | 0.0 dBuV/m               |                     |                |                    | : :               |                |            | : :            | limit            |             |
|   |                          |                     | 1              |                    |                   | 1              |            |                | umici            | . —         |
| 90  |                          |                     | ž.             |                    |                   |                |            |                |                  |             |
| 80  |                          |                     | i              |                    |                   |                |            |                |                  |             |
| 00  |                          |                     |                |                    |                   |                |            |                |                  |             |
| 70  |                          |                     |                |                    |                   |                |            |                |                  |             |
|   |                          |                     |                |                    |                   |                |            |                |                  |             |
| 60  |                          |                     |                |                    |                   | ····-          |            |                |                  |             |
| 50  |                          |                     |                |                    | 3                 |                |            |                |                  |             |
|   |                          |                     |                |                    | 4                 |                |            |                |                  |             |
| 40  |                          |                     |                |                    | A A DE MAN        | homestic       | MANTHING   |                | - ANN MA         | Man with    |
|   | mallalaturationsta       |                     | have many      | wantinter          | Aure a            | 1              | - A KINAN  | Muhaming       | pursue and the   |             |
| 30  | rondificitionships       | MARY WARNESS IN     |                |                    |                   |                |            |                |                  |             |
| 20  |                          |                     |                |                    |                   |                |            |                |                  |             |
| 20  |                          |                     |                |                    |                   |                |            |                |                  |             |
| 10  | .0                       |                     | 2000           | 3000               |                   | 000            | 7000 8000  | 0000           |                  | 10000 0 MU  |
|   | 1000.000                 | 2                   | :000           | 3000               | 5000              | 6000           | 7000 8000  | 9000           |                  | 18000.0 MHz |
| No.   | Freq.<br>(MHz)           | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector   | Height<br>(cm) | Degree<br>(deg.) | Remark      |
| ĺ.  | 2440.278                 | 97.37               | -7.36          | 90.01              | 114.00            | -23.99         | peak       |                |                  |             |
| 2   | 2440.278                 | 91.80               | -7.36          | 84.44              | 94.00             | -9.56          | AVG        |                |                  |             |
| 3   | 4880.550                 | 50.85               | 0.13           | 50.98              | 74.00             | -23.02         | peak       |                |                  |             |
|   | 4880.550                 | 45.34               | 0.13           | 45.47              | 54.00             | -8.53          | AVG        |                |                  |             |

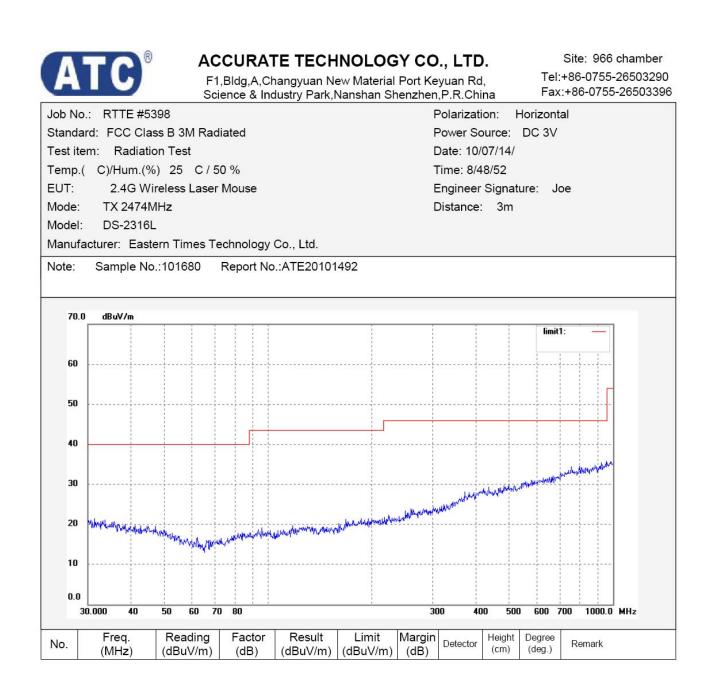


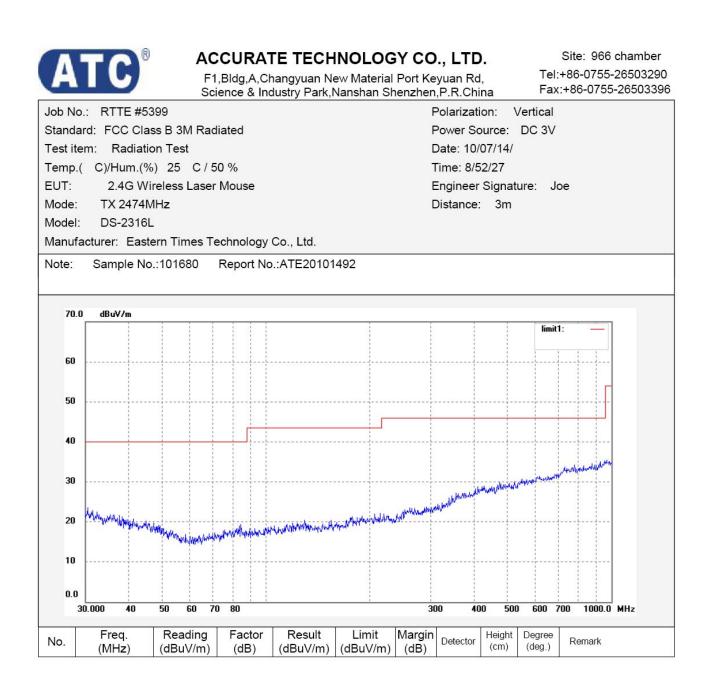
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| Job N                             | lo.: RTTE #54  |                            |                     | uusuy Faik,i   | Number of                               |                | Polarizati                              |                | /ertical         |                 |  |  |
|-----------------------------------|--|----------------------------|---------------------|--|---|----------------|---|----------------|------------------|-----------------|--|--|
| Standard: FCC Class B 3M Radiated |  |                            |                     |  |   |                | Power Sc                                | ource:         | DC 3V            |                 |  |  |
| Test item: Radiation Test         |  |                            |                     |  |   |                | Date: 10/                               | 07/14/         |                  |                 |  |  |
| Temp.( C)/Hum.(%) 25 C / 50 %     |  |                            |                     |  |   |                | -<br>ime: 10/                           | 22/55          |                  |                 |  |  |
| EUT:                              |  | ,<br>reless Laser          |                     |  |   | E              | Engineer                                | Signat         | ure: Jo          | be              |  |  |
| Mode                              | : TX 2440M   | IHz                        |                     |  |   |                | Engineer Signature: Joe<br>Distance: 3m |                |                  |                 |  |  |
| Mode                              | l: DS-2316L  |                            |                     |  |   |                |   |                |                  |                 |  |  |
| Manu                              | facturer: Easte  | ern Times Te               | echnology           | Co., Ltd.  |   |                |   |                |                  |                 |  |  |
| Note:                             | Sample No.   | :101680                    | Report No           | .:ATE20101   | 492                                     |                |   |                |                  |                 |  |  |
|                                   |  |                            |                     |  |   |                |   |                |                  |                 |  |  |
| 1(                                | 00.0 dBuV/m  |                            |                     |  |   |                |   |                |                  |                 |  |  |
|                                   |  |                            |                     | 1  |   | 1              | 1 1                                     | 1              | limit            | I:              |  |  |
| 90                                |  |                            |                     |  |   | -              |   |                |                  |                 |  |  |
| 51                                | ·  | 1                          | 1                   | 1  |   | 1              |   |                |                  |                 |  |  |
| 80                                | ,  |                            | <mark>2</mark><br>9 |  | ·   · · · · · · · · · · · · · · · · · · |                |   |                |                  |                 |  |  |
|                                   |  |                            |                     |  |   |                |   |                |                  |                 |  |  |
| 70                                | )  |                            |                     |  |   |                | +                                       | - <del> </del> |                  |                 |  |  |
| 60                                | .  |                            | 1. C                |  |   |                |   |                |                  |                 |  |  |
|                                   |  |                            |                     |  |   |                |   |                |                  |                 |  |  |
| 50                                | )  |                            |                     |  |   |                |   |                |                  |                 |  |  |
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| 40                                |  |                            |                     | all as developed                                       | MANNON                                  | marine 1       | MAMM                                    | in Mahun       | Mary Mary Mary   | 1 March Winnell |  |  |
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| 30                                | which we have a set of the set of |                            |                     |  |   |                |   |                |                  | 00555676666     |  |  |
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|                                   |  |                            |                     |  |   |                |   |                |                  |                 |  |  |
| , n                               | ).0<br>1000.000  | 20                         | 000                 | 3000   | 5000                                    | 6000           | 7000 8000                               | 9000           |                  | 18000.0 MHz     |  |  |
|                                   |  | 199                        |                     |  |   |                |   |                |                  |                 |  |  |
| No.                               | Freq.<br>(MHz)   | Reading<br>(dBuV/m)        | Factor<br>(dB)      | Result<br>(dBuV/m)                                     | Limit<br>(dBuV/m)                       | Margin<br>(dB) | Detector                                | Height<br>(cm) | Degree<br>(deg.) | Remark          |  |  |
| 1                                 | 2440.278   | 92.78                      | -7.36               | 85.42  | 114.00                                  | -28.58         | peak                                    |                |                  |                 |  |  |
| 2                                 | 2440.278   | 87.23                      | -7.36               | 79.87  | 94.00                                   | -14.13         | AVG                                     |                |                  |                 |  |  |
| 3                                 | 4880.550   | 48.63                      | 0.13                | 48.76  | 74.00                                   | -25.24         | peak                                    |                |                  |                 |  |  |
|                                   | 1  |                            | 0.13                | 43.27  | 54.00                                   | -10.73         | AVG                                     |                |                  |                 |  |  |





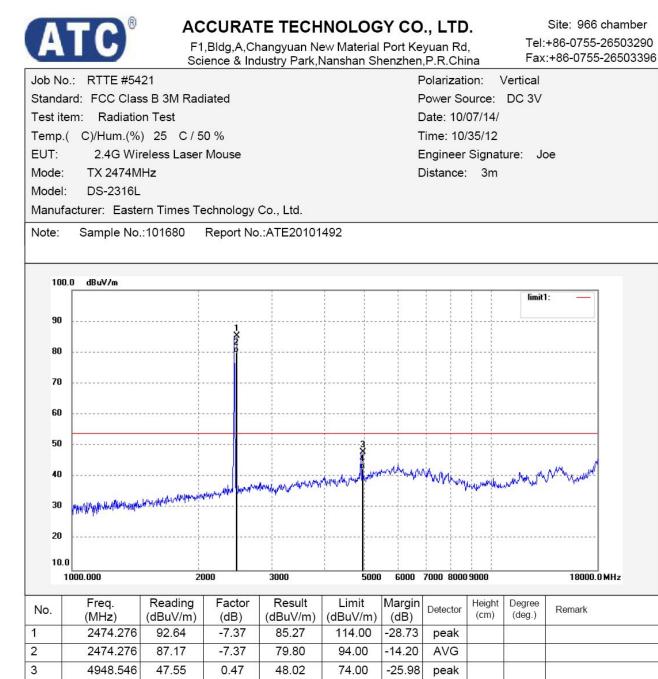






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| Job N                             | lo.: RTTE #54                    | 100000              |                 | austry Fark,i                   |                   |                | Polarizati     |                | Horizonta        | al           |  |  |
|-----------------------------------|----------------------------------|---------------------|-----------------|---------------------------------|-------------------|----------------|----------------|----------------|------------------|--------------|--|--|
| Standard: FCC Class B 3M Radiated |                                  |                     |                 |                                 |                   |                | Power So       | ource:         | DC 3V            |              |  |  |
| Test item: Radiation Test         |                                  |                     |                 |                                 |                   |                | Date: 10/      | 07/14/         |                  |              |  |  |
| Temp.( C)/Hum.(%) 25 C / 50 %     |                                  |                     |                 |                                 |                   |                | Time: 10/31/08 |                |                  |              |  |  |
| EUT:                              | 2.4G Wir                         | eless Laser         | Mouse           |                                 |                   | E              | Engineer       | Signat         | ure: Jo          | be           |  |  |
| Mode: TX 2474MHz                  |                                  |                     |                 |                                 |                   |                |                | 3m             |                  |              |  |  |
| Mode                              | I: DS-2316L                      |                     |                 |                                 |                   |                |                |                |                  |              |  |  |
| Manu                              | facturer: Easte                  | ern Times Te        | echnology       | Co., Ltd.                       |                   |                |                |                |                  |              |  |  |
| Note:                             | Sample No.                       | :101680             | Report No       | .:ATE20101                      | 492               |                |                |                |                  |              |  |  |
|                                   |                                  |                     |                 |                                 |                   |                |                |                |                  |              |  |  |
|                                   |                                  |                     |                 |                                 |                   |                |                |                |                  |              |  |  |
| 10                                | 10.0 dBuV/m                      |                     |                 | 1                               |                   |                |                | : :            | limit1           |              |  |  |
|                                   |                                  |                     | 1               |                                 |                   | -              |                |                |                  | . —          |  |  |
| 90                                |                                  |                     | Ř               |                                 |                   |                |                |                |                  |              |  |  |
| 80                                |                                  |                     | 2               |                                 |                   | 1              |                |                |                  |              |  |  |
|                                   |                                  |                     |                 |                                 |                   | 1              |                |                |                  |              |  |  |
| 70                                |                                  |                     |                 |                                 |                   |                |                |                |                  |              |  |  |
|                                   |                                  | 1                   |                 |                                 |                   | 1              |                |                |                  |              |  |  |
| 60                                |                                  |                     |                 |                                 |                   |                | +              |                |                  | 55266556666  |  |  |
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| 40                                |                                  |                     |                 |                                 | M. M. MUM MAN     | 1000 many      | manning        |                | - Mar My         | Manuntak     |  |  |
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| 30                                | and the production of the second | ANALY STATE         |                 |                                 |                   |                |                |                |                  |              |  |  |
| 20                                |                                  |                     |                 |                                 |                   |                |                |                |                  |              |  |  |
|                                   |                                  |                     |                 |                                 |                   |                |                |                |                  |              |  |  |
| 10                                | 1000.000                         | 20                  | )00             | 3000                            | 5000              | 6000           | 7000 8000      |                |                  | 18000.0 MHz  |  |  |
|                                   | 1000.000                         |                     |                 |                                 |                   |                |                |                |                  | 10000.0 M112 |  |  |
| No.                               | Freq.<br>(MHz)                   | Reading<br>(dBuV/m) | Factor<br>(dB)  | Result<br>(dBuV/m)              | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector       | Height<br>(cm) | Degree<br>(deg.) | Remark       |  |  |
|                                   | 2474.276                         | 97.37               | -7.37           | 90.00                           | 114.00            | -24.00         | peak           |                |                  |              |  |  |
|                                   | 2474.276                         | 91.85               | -7.37           | 84.48                           | 94.00             | -9.52          | AVG            |                |                  |              |  |  |
| 2                                 |                                  |                     |                 |                                 |                   |                |                |                |                  |              |  |  |
| 2                                 | 4948.546                         | 51.91               | 0.47            | 52.38                           | 74.00             | -21.62         | peak           |                |                  |              |  |  |



4

4948.546

42.09

0.47

42.56

54.00

-11.44

AVG

