







ISO/IEC17025 Accredited Lab.

Report No: FCC1408147-01 File reference No: 2014-09-12

Applicant: Guangzhou Sunday Electronics Co., Ltd.

Product: Receiver of Wireless Keyboard

Model No: Receiver of S-KW258SL, S-KW1xxxx- S-KW6xxxx (the "x"

means one discretionary character of A/a - Z/z or one Arabic

number of 0-9)

Brand Name: Sunday

Test Standards: FCC Part 15 Subpart C, Paragraph 15.249

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.4&FCC Part 15 Subpart C,

Paragraph 15.249 regulations for the evaluation of

electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated: Sep 12, 2014

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD

East 5/Block 4, Anhua Industrial Zone, No.8, Tairan Rd. CheGongMiao, FuTian District, Shenzhen, CHINA.

Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timewaytech.com

Report No: 1408147-01 Page 2 of 36

Date: 2014-09-12



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

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

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The 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 No.: 899988.

IC- Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-02.

Date: 2014-09-12



Test Report Conclusion

Content

| 1.0 | General Details | 4 |
|------|-------------------------------------|----|
| 1.1 | Test Lab Details. | 4 |
| 1.2 | Applicant Details | 4 |
| 1.3 | Description of EUT | 4 |
| 1.4 | Submitted Sample | 4 |
| 1.5 | Test Duration. | 4 |
| 1.6 | Test Uncertainty. | 5 |
| 1.7 | Test By | 5 |
| 2.0 | List of Measurement Equipment | 5 |
| 3.0 | Technical Details | 6 |
| 3.1 | Summary of Test Results. | 6 |
| 3.2 | Test Standards. | 6 |
| 4.0 | EUT Modification. | 6 |
| 5.0 | Power Line Conducted Emission Test. | 7 |
| 5.1 | Schematics of the Test. | 7 |
| 5.2 | Test Method and Test Procedure. | 7 |
| 5.3 | Configuration of the EUT. | 7 |
| 5.4 | EUT Operating Condition. | 8 |
| 5.5 | Conducted Emission Limit. | 8 |
| 5.6 | Test Result. | 8 |
| 6.0 | Radiated Emission test. | 11 |
| 5.1 | Test Method and Test Procedure. | 11 |
| 5.2 | Configuration of the EUT | 11 |
| 6.3 | EUT Operation Condition. | 11 |
| 5.4 | Radiated Emission Limit. | 12 |
| 6.5 | Test Result. | 13 |
| 7.0 | Band Edge | 21 |
| 7.1 | Test Method and Test Procedure. | 21 |
| 7.2 | Radiated Test Setup. | 21 |
| 7.3 | Configuration of the EUT | 21 |
| 7.4 | EUT Operating Condition. | 21 |
| 7.5 | Band Edge Limit | 21 |
| 7.6 | Band Edge Test Result. | 22 |
| 8.0 | Antenna Requirement. | 26 |
| 9.0 | 20dB bandwidth measurement. | 27 |
| 10.0 | FCC ID Label | 30 |
| 11 0 | Photo of Test Setup and FUT View | 31 |



1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD

Address: 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District,

Shenzhen, CHINA.

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-02

For 3m & 10 m OATS

1.2 Applicant Details

Applicant: Guangzhou Sunday Electronics Co., Ltd.

Address: No.236-238, Minsheng Rd., Lanhe Town, Nansha District, Guangzhou, China

Telephone: +86-20-84928933 / 84928938

Fax: +86-20-84928823

1.3 Description of EUT

Product: Receiver of Wireless Keyboard

Manufacturer: Guangzhou Sunday Electronics Co., Ltd.

Address: No.236-238, Minsheng Rd., Lanhe Town, Nansha District, Guangzhou, China

Brand Name: Sunday

Model Number: Receiver of S-KW258SL

Additional Model Name S-KW1xxxx- S-KW6xxxx (the "x" means one discretionary character of A/a –

 \mathbb{Z}/\mathbb{Z} or one Arabic number of 0-9)

Additional Trade Name N/A

Rating: DC5.0V, Powered by PC

Modulation Type: GFSK

Operation Frequency 2408-2474MHz

Antenna Designation Printed antenna, which is built-in, designed as an indispensable part of the EUT.

Antenna gain is 0dBi

1.4 Submitted Sample

1 Sample

1.5 Test Duration: 2014-08-28 to 2014-09-11

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

Report No: 1408147-01 Page 5 of 36

1.6 Test Uncertainty

Date: 2014-09-12

Conducted Emissions Uncertainty = 3.6dB Radiated Emissions Uncertainty =4.7dB

Test Engineer 1.7

Terry Tang

The sample tested by

Print Name: Terry Tang

| 2.0 | 0 Test Equipments | | | | | | |
|------------------------|-------------------|------------|-------------|--------------|------------|--|--|
| Instrument Type | Manufacturer | Model | Serial No. | Date of Cal. | Due Date | | |
| ESPI Test Receiver | ROHDE&SCHWARZ | ESPI 3 | 100379 | 2014-08-23 | 2015-08-22 | | |
| TWO Line-V-NETW | ROHDE&SCHWARZ | EZH3-Z5 | 100294 | 2014-08-22 | 2015-08-21 | | |
| TWO Line-V-NETW | ROHDE&SCHWARZ | EZH3-Z5 | 100253 | 2014-08-22 | 2015-08-21 | | |
| Ultra Broadband ANT | ROHDE&SCHWARZ | HL562 | 100157 | 2014-08-24 | 2015-08-23 | | |
| ESDV Test Receiver | ROHDE&SCHWARZ | ESDV | 100008 | 2014-08-23 | 2015-08-22 | | |
| Impuls-Begrenzer | ROHDE&SCHWARZ | ESH3-Z2 | 100281 | 2014-08-22 | 2015-08-21 | | |
| Loop Antenna | EMCO | 6502 | 00042960 | 2014-08-22 | 2015-08-21 | | |
| ESPI Test Receiver | ROHDE&SCHWARZ | ESI26 | 838786/013 | 2014-08-23 | 2015-08-22 | | |
| Horn Antenna | SCHWARZBECK | BBHA 9170 | BBHA9170265 | 2014-08-26 | 2015-08-25 | | |
| Horn Antenna | SCHWARZBECK | BBHA 9120D | 9120D-631 | 2014-08-26 | 2015-08-25 | | |
| Power meter | Anritsu | ML2487A | 6K00003613 | 2014-08-22 | 2015-08-21 | | |
| Power sensor | Anritsu | MA2491A | 32263 | 2014-08-22 | 2015-08-21 | | |
| Bilog Antenna | Schwarebeck | VULB9163 | 9163/340 | 2014-08-23 | 2015-08-22 | | |
| LISN | AFJ | LS16C | 10010947251 | 2014-08-22 | 2015-08-21 | | |
| LISN (Three Phase) | Schwarebeck | NSLK 8126 | 8126453 | 2014-08-22 | 2015-08-21 | | |
| 9*6*6 Anechoic | | | N/A | 2014-08-22 | 2015-08-21 | | |
| EMI Test Receiver | RS | ESCS30 | 100139 | 2014-08-23 | 2015-08-22 | | |

Report No: 1408147-01 Page 6 of 36

Date: 2014-09-12



3.0 **Technical Details**

3.1 **Summary of test results**

| The EUT has been tested according to the | ne following speci | fications: | |
|---|-------------------------------------|------------|----------|
| Standard | Test Type | Result | Notes |
| FCC Part 15, Paragraph 15.207 | Conducted Emission Test | PASS | Complies |
| FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit | Field Strength of Fundamental | PASS | Complies |
| FCC Part 15, Paragraph 15.209 | Radiated Emission Test | PASS | Complies |
| FCC Part 15 Subpart C Paragraph 15.249(d) Limit | Band Edge Test | PASS | Complies |

3.2 **Test Standards**

FCC Part 15 Subpart C, Paragraph 15.249

4.0 **EUT Modification**

No modification by Shenzhen Timeway Technology Consulting Co., Ltd

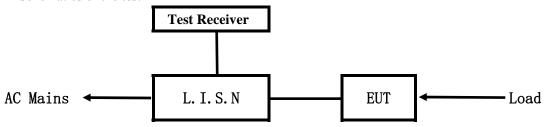
Report No: 1408147-01 Page 7 of 36

Date: 2014-09-12



5. Power Line Conducted Emission Test

5.1 Schematics of the test

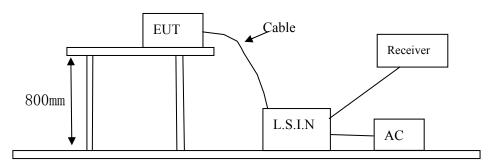


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 500hm/50uH as specified by section 5.1 of ANSI C63.4 –2003. Actual Working Voltage and Frequency: 120V~, 60Hz (PC Host)

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

One channels are provided to the EUT

A. EUT

| Device | Manufacturer | Model | FCC ID |
|-------------------|--|-------------|----------------|
| Receiver of | Guangzhou Sunday Electronics Co., Ltd. | Receiver of | XQLS-KW258SL-D |
| Wireless Keyboard | Guangzhoù Sunday Electronies Co., Ltd. | S-KW258SL | AQL5-KW2365L-D |

Report No: 1408147-01 Page 8 of 36

Date: 2014-09-12



B. Internal Device

| Device | Manufacturer | Model | FCC ID/DOC |
|--------|--------------|-------|------------|
| N/A | | | |

C. Peripherals

| Device | Manufacturer | Model | FCC ID/DOC | Cable |
|-------------|--------------|--------|------------|--------------------------------------|
| Notebook | LENOVO | E43L | FCC DOC | |
| Notebook | IBM | R4 | FCC DOC | |
| Mouse | DELL | | FCC DOC | Data cable of 1.5m length unshielded |
| Passive | | | | |
| Earphone | | | FCC VOC | Data cable of 1.5m length unshielded |
| LCD Monitor | SUMSANG | PH2450 | FCC DOC | |
| Monitor | DELL | D710 | FCC DOC | |

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

| Eraguanay (MHz) | Class A Lir | nits (dB µ V) | Class B Limits (dB µ V) | | |
|------------------|------------------|---------------|-------------------------|---------------|--|
| Frequency(MHz) | Quasi-peak Level | Average Level | Quasi-peak Level | Average Level | |
| $0.15 \sim 0.50$ | 79.0 | 66.0 | 66.0~56.0* | 56.0~46.0* | |
| $0.50 \sim 5.00$ | 73.0 | 60.0 | 56.0 | 46.0 | |
| 5.00 ~ 30.00 | 73.0 | 60.0 | 60.0 | 50.0 | |

Notes:

- 1. *Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

Date: 2014-09-12



A: Conducted Emission on Live Terminal (150kHz to 30MHz)

EUT Operating Environment

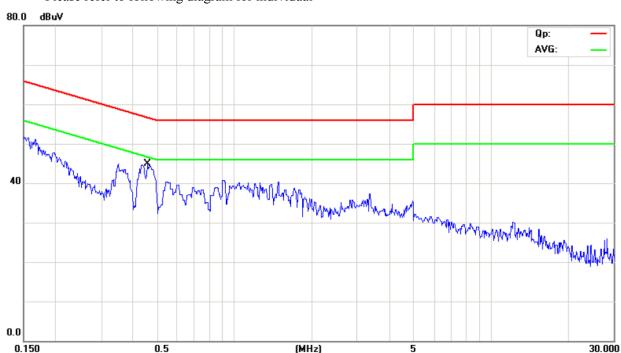
Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Transmitting

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



| No. Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
|---------|--------|------------------|-------------------|------------------|-------|--------|----------|---------|
| | MHz | dBuV | dB | dBu∀ | dBuV | dB | Detector | Comment |
| 1 | 0.4556 | 25.20 | 11.32 | 36.52 | 56.77 | -20.25 | QP | |
| 2 * | 0.4556 | 17.30 | 11.32 | 28.62 | 46.77 | -18.15 | AVG | |

Report No: 1408147-01 Page 10 of 36

Date: 2014-09-12



B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

EUT Operating Environment

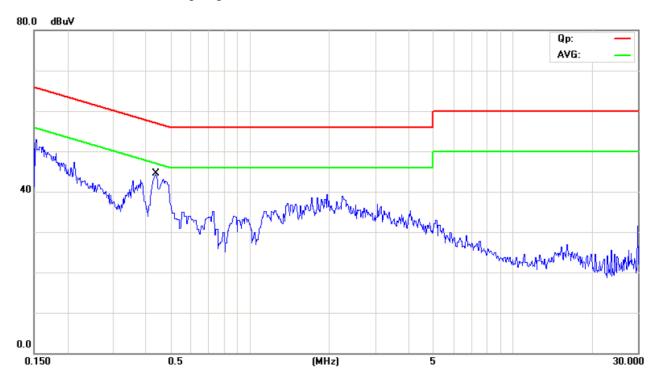
Temperature: 25°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Transmitting

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



| No. Mk. | Freq. | Reading Level | Correct Factor | Measure- ment | Limit | Over | | |
|---------|--------|------------------|-------------------|------------------|-------|--------|----------|---------|
| | MHz | dBuV | dB | dBu∀ | dBuV | dB | Detector | Comment |
| 1 | 0.4362 | 31.30 | 11.30 | 42.60 | 57.13 | -14.53 | QP | |
| 2 * | 0.4362 | 26.10 | 11.30 | 37.40 | 47.13 | -9.73 | AVG | |

Report No: 1408147-01 Page 11 of 36

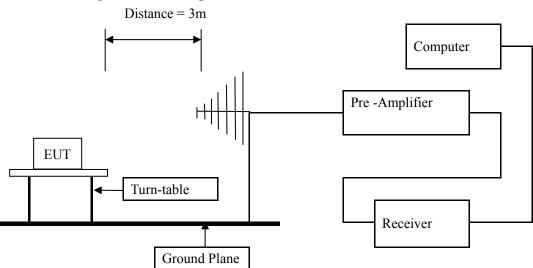
Date: 2014-09-12



6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup



- 6.2 Configuration of The EUT

 Same as section 5.3 of this report
- 6.3 EUT Operating Condition
 Same as section 5.4 of this report.

Report No: 1408147-01 Page 12 of 36

Date: 2014-09-12



6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

| ſ | Fundamental Frequency | Field Strength of Fundamental (3m) | | | Field Strength of Harmonics (3m) | | |
|---|-----------------------|------------------------------------|--------------|------------|----------------------------------|--------------|-----------|
| | (MHz) | mV/m | dBuV/m | | uV/m | dBu | V/m |
| ſ | 2400-2483.5 | 50 | 94 (Average) | 114 (Peak) | 500 | 54 (Average) | 74 (Peak) |

Note:

- 1. RF Field Strength (dBuV) = 20 log RF Voltage (uV)
- 2.Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- 3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

B. Frequencies in restricted band are complied to limit on Paragraph 15.209.

| Frequency Range (MHz) | Distance (m) | Field strength (dB µ V/m) |
|-----------------------|--------------|---------------------------|
| 30-88 | 3 | 40.0 |
| 88-216 | 3 | 43.5 |
| 216-960 | 3 | 46.0 |
| Above 960 | 3 | 54.0 |

Note:

- 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
- 2. In the Above Table, the tighter limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
- 4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz.As to 1G-25G, the final emission level got using PK

Page 13 of 36 Report No: 1408147-01

Date: 2014-09-12



6.5 Test result

Fundamental & Harmonics Radiated Emission Data \mathbf{A}

| Product: | Receiver of Wireless Keyboard | Test Mode: | Low Channel—Keep Transmitting |
|---------------|-------------------------------|--------------|-------------------------------|
| Test Item: | Fundamental Radiated Emission | Temperature: | 25℃ |
| | Data | | |
| Test Voltage: | 5.0VDC | Humidity: | 56% |
| Test Result: | Pass | | |

| Frequency | Emission PK/AV | Horiz / | Limits PK/AV | Margin |
|-----------|----------------|---------|--------------|--------|
| (MHz) | (dBuV/m) | Vert | (dBuV/m) | (dB) |
| 2408 | 93.48 (PK) | Н | 114/94 | -0.52 |
| 2408 | 92.58 (PK) | V | 114/94 | -1.42 |
| 4816 | | H/V | 74/54 | |
| 7224 | | H/V | 74/54 | |
| 9632 | | H/V | 74/54 | |
| 12040 | | H/V | 74/54 | |
| 14448 | | H/V | 74/54 | |
| 16856 | | H/V | 74/54 | |
| 19264 | | H/V | 74/54 | |
| 21672 | | H/V | 74/54 | |
| 24080 | | H/V | 74/54 | |

Page 14 of 36 Report No: 1408147-01

| Product: | Receiver of Wireless Keyboard | Test Mode: | Middle Channel—Keep Transmitting |
|---------------|------------------------------------|--------------|----------------------------------|
| Test Item: | Fundamental Radiated Emission Data | Temperature: | 25℃ |
| Test Voltage: | 5.0VDC | Humidity: | 56% |
| Test Result: | Pass | | |

| Frequency | Emission PK/AV | Horiz / | Limits PK/AV | Margin | |
|-----------|----------------|---------|--------------|--------|--|
| (MHz) | (dBuV/m) | Vert | (dBuV/m) | (dB) | |
| 2440 | 91.28 (PK) | Н | 114/94 | -2.72 | |
| 2440 | 90.02.(PK) | V | 114/94 | -3.98 | |
| 4880 | | H/V | 74/54 | | |
| 7320 | H/V 74/54 | | 74/54 | | |
| 9760 | | H/V | 74/54 | | |
| 12200 | | H/V | 74/54 | | |
| 14640 | 40 H/V 74/54 | | 74/54 | | |
| 17080 | | H/V | 74/54 | | |
| 19520 | | H/V | 74/54 | | |
| 21960 | | H/V | 74/54 | | |
| 24400 | | H/V | 74/54 | | |

Report No: 1408147-01 Page 15 of 36

Date: 2014-09-12



| Product: | Receiver of Wireless Keyboard | Test Mode: | High Channel—Keep Transmitting |
|---------------|------------------------------------|--------------|--------------------------------|
| Test Item: | Fundamental Radiated Emission Data | Temperature: | 25℃ |
| Test Voltage: | 5.0VDC | Humidity: | 56% |
| Test Result: | Pass | | |

| Frequency | Emission PK/AV | Horiz / | Limits PK/AV | Margin |
|-----------|----------------|---------|--------------|--------|
| (MHz) | (dBuV/m) | Vert | (dBuV/m) | (dB) |
| 2474 | 89.06 (PK) | Н | 114/94 | -4.94 |
| 2474 | 89.57 (PK) | V | 114/94 | -4.43 |
| 4948 | | H/V | 74/54 | |
| 7422 | | H/V | 74/54 | |
| 9896 | | H/V | 74/54 | |
| 12370 | | H/V | 74/54 | |
| 14844 | | H/V | 74/54 | |
| 17318 | | H/V | 74/54 | |
| 19792 | | H/V | 74/54 | |
| 22266 | | H/V | 74/54 | |
| 24740 | | H/V | 74/54 | |

Note: (1) PK= Peak, AV= Average

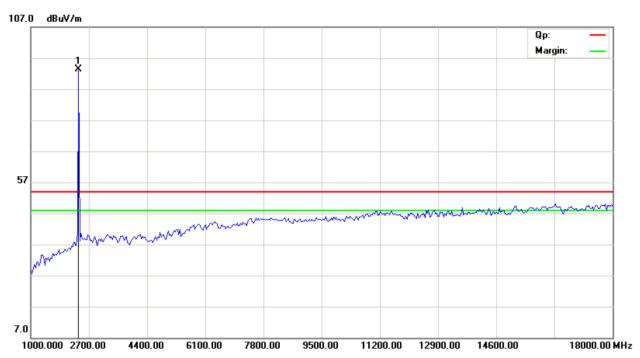
- (2) Emission Level = Reading Level + Probe Factor + Cable Loss.
- (3)Margin=Emission-Limits
- (4)According to section 15.35(b), the peak limit is 20dB higher than the average limit
- (5) The measured PK value less than the AV limit.
- (6) for fundamental emissions measurement, RBW=3MHz, VBW=10MHz

Date: 2014-09-12

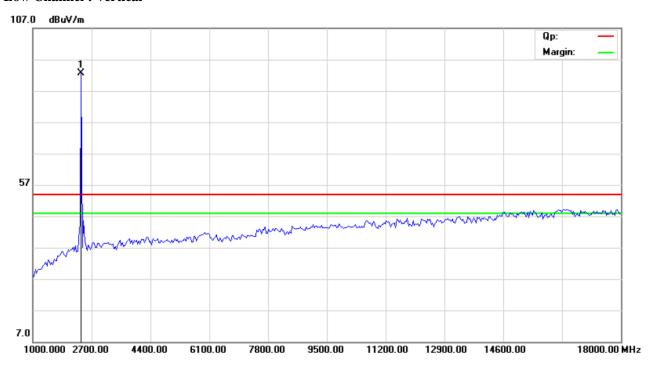


Please refer to the following test plots for details:

Low Channel: Horizontal



Low Channel: Vertical



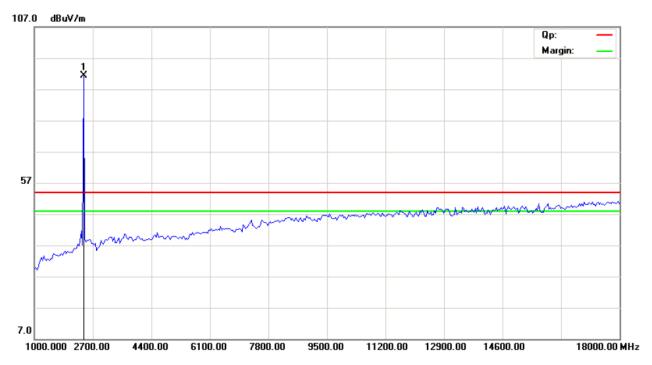
The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

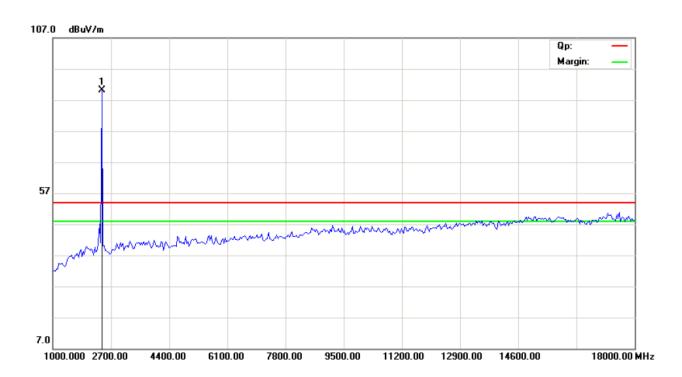
Date: 2014-09-12



Middle Channel: Horizontal



Middle Channel :: Vertical



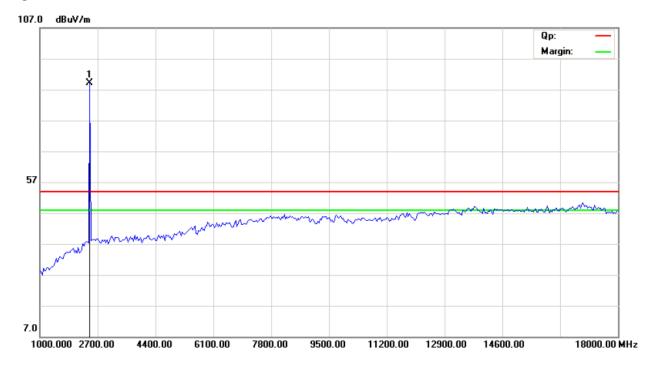
The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

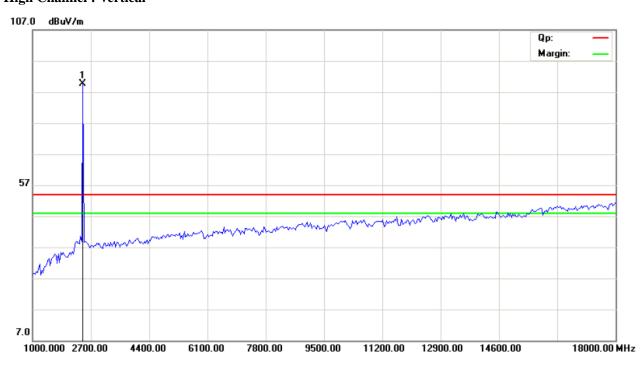
Date: 2014-09-12



High Channel: Horizontal



High Channel: Vertical



Note: for the radiated emissions from 18-25GHz, it was the floor noise.

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

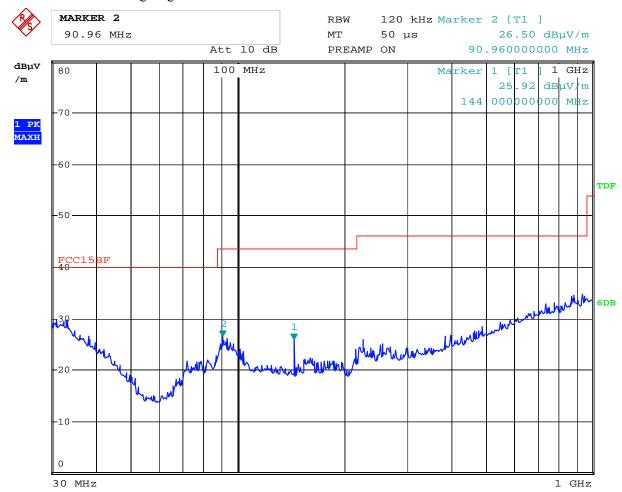


B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep transmitting Mode: Low Channel

Results: Pass

Please refer to following diagram for individual



Date: 2.SEP.2014 16:17:24

| Frequency (MHz) | Level@3m (dB \u03b4 V/m) | Antenna Polarity | Limit@3m (dB \(\mu \)V/m) |
|-----------------|--------------------------|------------------|----------------------------|
| 90.960 | 26.50 | Н | 43.50 |
| 144.000 | 25.92 | Н | 43.50 |

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

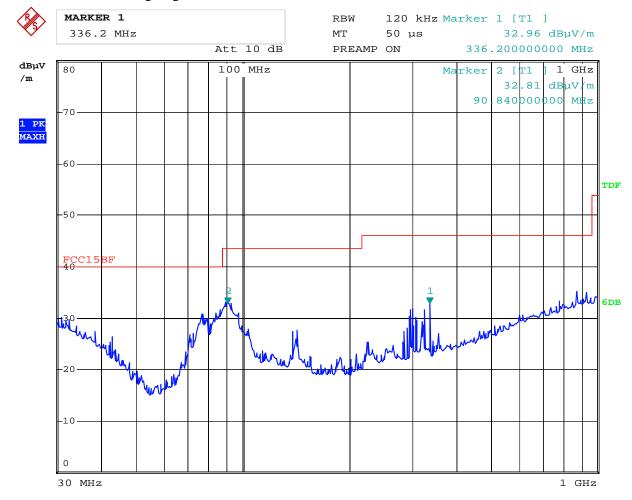


Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep transmitting Mode: Low Channel

Results: Pass

Please refer to following diagram for individual



Date: 2.SEP.2014 16:19:59

| Frequency (MHz) | Level@3m (dB \u03b4 V/m) | Antenna Polarity | Limit@3m (dB \mu V/m) |
|-----------------|--------------------------|------------------|-----------------------|
| 336.200 | 32.96 | V | 46.00 |
| 90.840 | 32.81 | V | 43.50 |

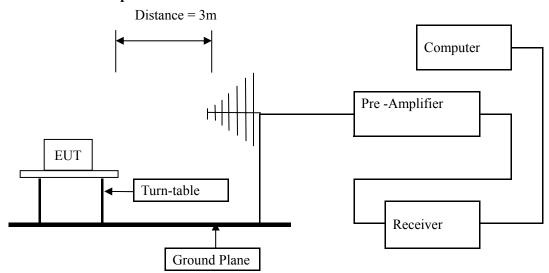


7. Band Edge

7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) Set Spectrum as RBW=VBW=1MHz and Peak detector used
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

7. 2 Radiated Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing

7.3 Configuration of The EUT

Same as section 5.3 of this report

7.4 EUT Operating Condition

Same as section 5.4 of this report.

7.5 Band Edge Limit

Emissions 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.

Remark: low, mid and high channel all have been tested; only worse case is reported.

The report refers only to the sample tested and does not apply to the bulk.

Report No: 1408147-01 Page 22 of 36

Date: 2014-09-12

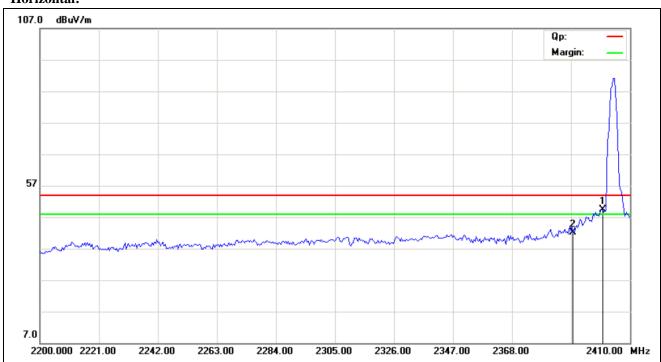


7.6 Restrict Band Test Result

| Product: | Receiver of W | ireless Keyboard | Test Mode: | Low Channel |
|--------------|----------------------|------------------|--------------|-----------------|
| Mode | Keeping Transmitting | | Test Voltage | DC5V |
| Temperature | 24 deg. C | | Humidity | 56% RH |
| Test Result: | Pass | | Detector | PK |
| 2390MHz | PK (dBμV/m) | 42.03 | Limit | $74(dB\mu V/m)$ |
| 2390МПZ | $AV(dB\mu V/m)$ | | Lillit | $54(dB\mu V/m)$ |
| 2400MHz | PK (dBμV/m) | 49.49 | | $74(dB\mu V/m)$ |
| | AV(dBμV/m) | | | 54(dBµV/m) |

Test Figure:

Horizontal:



Page 23 of 36 Report No: 1408147-01

Date: 2014-09-12

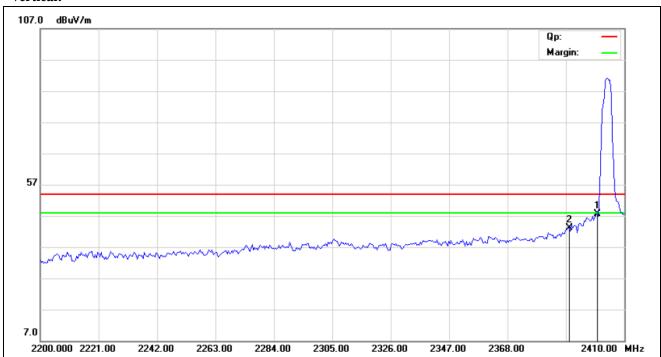


7.6 Restrict Band Test Result

| Product: | Receiver of W | ireless Keyboard | Test Mode: | Low Channel |
|--------------|----------------------|------------------|--------------|-------------|
| Mode | Keeping Transmitting | | Test Voltage | DC5V |
| Temperature | 24 deg. C | | Humidity | 56% RH |
| Test Result: | Pass | | Detector | PK |
| 2390MHz | PK (dBμV/m) | 43.11 | Limit | 74(dBμV/m) |
| 2390WIHZ | $AV(dB\mu V/m)$ | | Lillit | 54(dBµV/m) |
| 2400MHz | PK (dBμV/m) | 47.69 | Limit | 74(dBμV/m) |
| | AV(dBμV/m) | | | 54(dBµV/m) |

Test Figure:

Vertical:



Report No: 1408147-01 Page 24 of 36

Date: 2014-09-12

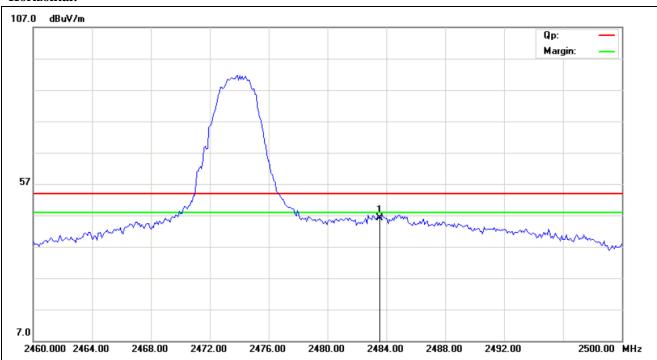


7.6 Restrict Band Test Result

| Product: | Receiver of W | ireless Keyboard | Test Mode: | High Channel | | |
|--------------|----------------------|------------------|----------------------|--------------|--------------|------|
| Mode | Keeping Transmitting | | Keeping Transmitting | | Test Voltage | DC5V |
| Temperature | 24 deg. C | | Humidity | 56% RH | | |
| Test Result: | F | Pass | | PK | | |
| 2492 5MHz | PK (dBμV/m) | 46.24 | Limit | 74(dBμV/m) | | |
| 2483.5MHz | AV(dBμV/m) | AV(dBμV/m) | | 54(dBμV/m) | | |

Test Figure:

Horizontal:



Report No: 1408147-01 Page 25 of 36

Date: 2014-09-12

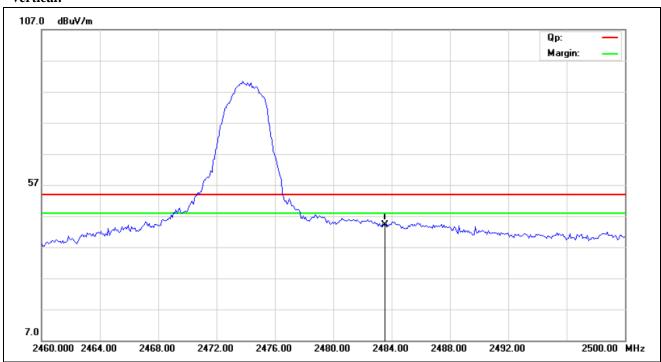


7.6 Restrict Band Test Result

| Product: | Receiver of Wireless Keyboard | | Receiver of Wireless Keyboard | | Test Mode: | High Channel | | | | | | |
|--------------|-------------------------------|-------|-------------------------------|-----------------|----------------------|--------------|----------------------|--|----------------------|--|--------------|------|
| Mode | Keeping Transmitting | | Keeping Transmitting | | Keeping Transmitting | | Keeping Transmitting | | Keeping Transmitting | | Test Voltage | DC5V |
| Temperature | 24 deg. C | | 24 deg. C | | Humidity | 56% RH | | | | | | |
| Test Result: | F | Pass | | PK | | | | | | | | |
| 2483.5MHz | PK (dBμV/m) | 44.24 | Limit | $74(dB\mu V/m)$ | | | | | | | | |
| 2403.3WITZ | $AV(dB\mu V/m)$ | | LIIIII | $54(dB\mu V/m)$ | | | | | | | | |

Test Figure:

Vertical:



Report No: 1408147-01 Page 26 of 36

Date: 2014-09-12



8.0 Antenna Requirement

Applicable Standard

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a PCB permanent antenna, fulfill the requirement of this section.

Test Result: Pass

Page 27 of 36

Report No: 1408147-01



| Produc | ct: | Recei | ver of Wi | reless Ke | yboard | Test | Mode: | | Low C | Channel | |
|--------------|-----------|--------------------|-----------------------------|------------|--------|----------------------|--------------|-------------|---|--------------|-----|
| Mode | e | ŀ | Keeping T | ransmittir | ng | Test | Test Voltage | | DC5V | | |
| Tempera | iture | | 24 de | eg. C, | | Humid | Humidity | | 56% | 6 RH | |
| Test Res | sult: | | Pa | ıss | | De | tector | | P | 'K | |
| 20dB Band | dwidth | | 1.56 | MHz | | | | | | | |
| | | 3 18 GHz dBm | , | *Att 2 | 0 dB | *RBW 3 *VBW 1 *SWT 3 | 00 kHz | | 3 [T1 -11 | .58 dBm | |
| | 10 | | | | | | | Marker | -32 |] .05 dBm | A |
| 1 PK MAXH | 10 | | | | | 3 | | | 2 [T1] | .01 dB | |
| | 20 | | | / | M | <u> </u> | | | | | - |
| | 30 | D1 -31. | 58 dBm— | 4 | 1 | | | | | | - |
| | 40 | | Λ | M | , A | V | \\ | Λ | | | |
| | 59 | AA | $\mathcal{N}^{\mathcal{N}}$ | V | | | \ \(\) | $M_{\rm A}$ | 1 A A | A A | 3DB |
| | $\sqrt{}$ | / V V | V | | | | | V | $\frac{1}{1000000000000000000000000000000000$ | VV | 4 |
| | 70 | | | | | | | | | | - |
| | 80 | | | | | | | | | | - |
| | -90 | | | | | | | | | | |
| (| Center | 2.408 G | Hz | | 500 | kHz/ | | | Spa | n 5 MHz | |

Page 28 of 36

Report No: 1408147-01



| Product: | | Receiver of Wireless Keyboard | | | | Test Mode: | | Middle Channel | | | | |
|--------------|----------------------------|-------------------------------|---------|-------|--|---------------------------------------|-----------------|---|--------------------------|---------------------------|-----|--|
| Mode | | Keeping Transmitting | | | | | Test Voltage | | DC5V | | | |
| Temperature | | 24 deg. C, | | | | | Humidity | | 56% RH | | | |
| Test Result: | | Pass | | | | Detector | | PK | | | | |
| 20dB Ban | | 1.63MHz | | | | | | | | | | |
| 8 /s> | DELTA MARKER 2 1.63 MHz | | | | | *RBW 3 | 0 kHz 00 kHz | Delta | Delta 2 [T1] 1.03 dB | | | |
| | | | | Att 2 | 0 dB | *SWT 35 ms | | 1.630000000 MHz | | | | |
| | 10 | | | | | | | Marker | |] .10 dBm | A | |
| 1 PK MAXH | -0 | | | | | | | Marker | 3 [T1 | .78 dBm | | |
| | 10 | | | / ا | w N | Λn | \ | 2 | . 4404801 | JOO GHZ | | |
| | 30 | D1 22 | 0 45 | 1 | \ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 1 2 | | | | | |
| | 40 | D1 -33. | 8 dBm— | ΛΪ | V | VV | Ţ | Λ | | | | |
| | 50 | 1 | 4 V L 1 | V | | | | $^{\prime\prime}$ $^{\prime}$ $^{\prime}$ | . | | 3DB | |
| | | $/ \vee \vee$ | 10 | | | | | V | $\bigvee \bigvee$ | $\Lambda \Lambda \Lambda$ | | |
| | 70 | | | | | | | | | 4 V 0 | | |
| | | | | | | | | | | | | |
| | 80 -90 | | | | | | | | | | | |
| | Center 2.44 GHz | | | | 500 | 500 kHz/ | | | Span 5 MHz | | | |

Page 29 of 36

Report No: 1408147-01



| Product: | Receiver of Wireles | Test Mode: Test Voltage Humidity Detector | | High Channel | | | | | |
|----------------------|-----------------------|---|-------------------------------|--------------------------|-------------|--|------------------------------------|-----|--|
| Mode | Keeping Trans | | | DC5V 56% RH PK | | | | | |
| Temperature | 24 deg. C | | | | | | | | |
| Test Result: | Pass | | | | | | | | |
| 0dB Bandwidth | 1.63MHz | | | | | | | | |
| 1.63 | MARKER 2 MHz dBm *Att | t 20 dB | *RBW 30 *VBW 10 *SWT 35 | 00 kHz | | Delta 2 [T1] -0.24 dB 1.630000000 MHz | | | |
| 10 | | | | | Marker | 473160 |] .45 dBm]00 GHz | A | |
| 1 PK MAXH | | | | | Marker 2 | 3 [T1 -14 .473480 0 |] .23 dBm)00 GHz | | |
| 20 | D1 -34.23 dBm | | M | 2 | | | | | |
| 40 | | W | | M | M_/ | \mathcal{M} | √ | 3DB | |
| 70 | | | | | | | V W V | | |
| -80 -90 Center | 2.474 GHz | 500 | kHz/ | | | Spa | n 5 MHz | | |

Report No: 1408147-01 Page 30 of 36

Date: 2014-09-12

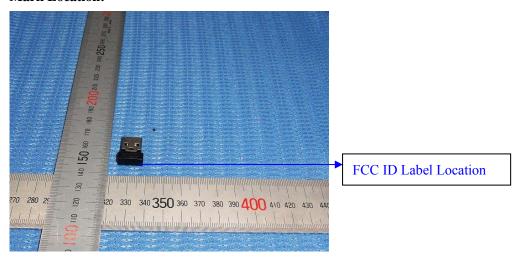


10.0 FCC ID Label

FCC ID: XQLS-KW258SL-D

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



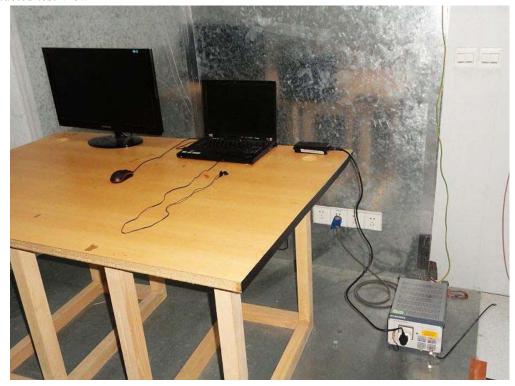
Report No: 1408147-01 Page 31 of 36

Date: 2014-09-12



11.0 Photo of testing

11.1 Conducted test View--



Report No: 1408147-01 Date: 2014-09-12



11.2 Radiated emission test view



11.2 Radiated emission test view



The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

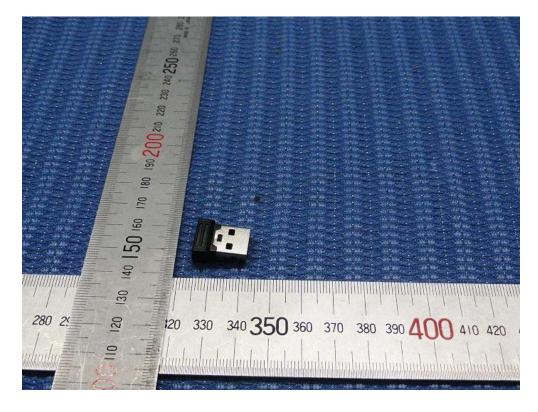
Date: 2014-09-12



11.3 Photo for the EUT

Outside View





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

Page 34 of 36

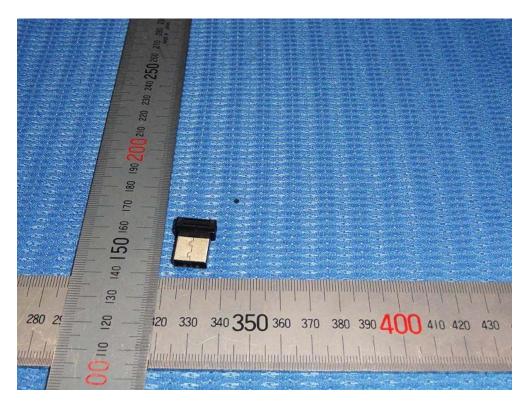
Report No: 1408147-01 Date: 2014-09-12



Photo for the EUT

Outside View





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

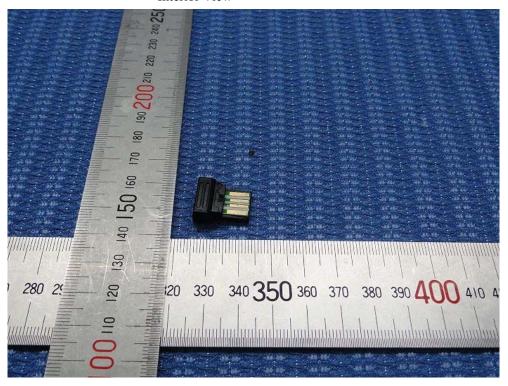
Page 35 of 36

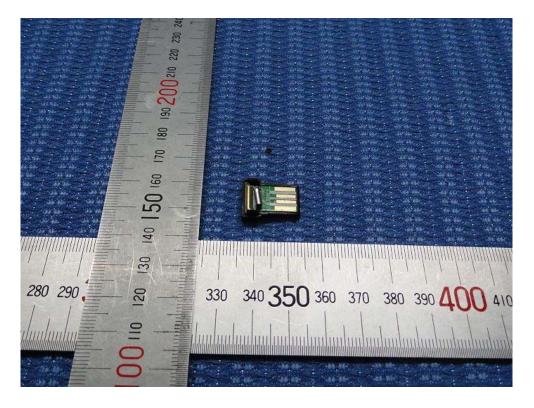
Report No: 1408147-01

Date: 2014-09-12



Interior View





The report refers only to the sample tested and does not apply to the bulk.

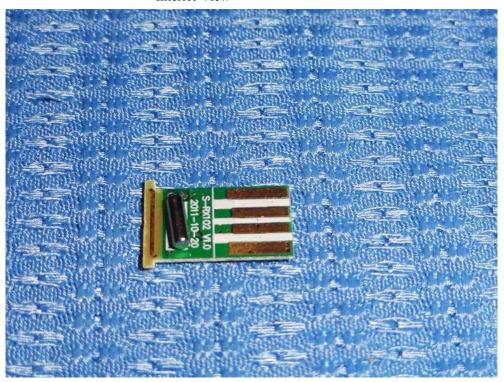
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

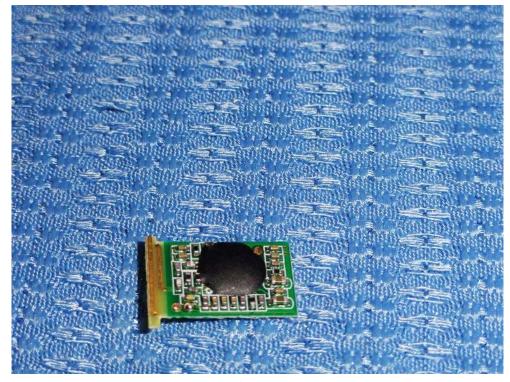
In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

Date: 2014-09-12



Interior View





-- End of the report--

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to