



FCC - TEST REPORT

Report Number : **68.960.17.038.01** Date of Issue: 22 August 2017

Model : **SFM 4 A1 R**

Product Type : 2.4GHz Wireless Mouse

Applicant : Lidl US Trading, LLC

Address : 3500 S Clark Street, 22202 Arlington, Virginia, United States

Production Facility : Shenzhen SQT Electronics Co., Ltd.

Address : ZhengChengFeng Technology Zone, Xinsha Road, Sha Yi Village,

Sha Jing Town, Baoan Area, 518104 Shenzhen,

PEOPLE'S REPUBLIC OF CHINA

Test Result : **Positive** **Negative**

Total pages : 15

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2 Details about the Test Laboratory

Details about the Test Laboratory

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13, Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2, Nanshan District,
518052 Shenzhen, CHINA

Telephone: 86 755 8828 6998
Fax: 86 755 8828 5299

3 Description of the Equipment Under Test

Description of the Equipment Under Test

Product: 2.4GHz Wireless Mouse

FCC ID: 2AJ9O-SFM4A1R

Model no.: SFM 4 A1 R

Serial number: NIL

Options and accessories: Mouse: 1.5VDC, 10mA
(Supplied by 1 PC AA battery or 2 PCS AA batteries in parallel)

Input Rated Voltage: 5.0VDC (Supplied by PC USB port)

Description of the EUT: Class III

Auxiliary Equipment Used during Test:

| Name | Model No | S/N | Manufacturer | FCC |
|--------|----------|-----|--------------|-----|
| Laptop | X240 | -- | Lenovo | -- |

4 Summary of Test Standards

| Test Standards | |
|---|--|
| FCC Part 15 Subpart B, 10-1-2016 Edition | PART 15 – Radio Frequency Devices Subpart B – Unintentional Radiators |

5 Summary of Test Results

| Emission Tests | | | | |
|---|-------|-------------------------------------|--------------------------|--------------------------|
| FCC Part 15 Subpart B,10-1-2016 Edition | | | | |
| Test Condition Class B | Pages | Test Result | | |
| | | Pass | Fail | N/A |
| Radiated Emission * (3 semi-anechoic chamber) 30MHz to 1000MHz | 8 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Conducted Emission on AC 150kHz to 30MHz | 11 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Remark: “*” Due to the highest frequency of the internal sources of the EUT is less than 108MHz, the measurement only is made up to 1GHz.

| System Measurement Uncertainty | |
|--|--|
| Test Items | Extended Uncertainty |
| Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz | Horizontal: 4.99dB Vertical: 4.97dB |
| Uncertainty for Conducted Emission 150kHz-30MHz (for test using AMN ENV216 or ENV4200) | 3.46dB |

6 General Remarks

Remarks

NIL

SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: 17 May 2017

Testing Start Date: 17 May 2017

Testing End Date: 29 May 2017

- TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch-

Reviewed by:

Prepared by:

Laurent Yuan
EMC Project Manager

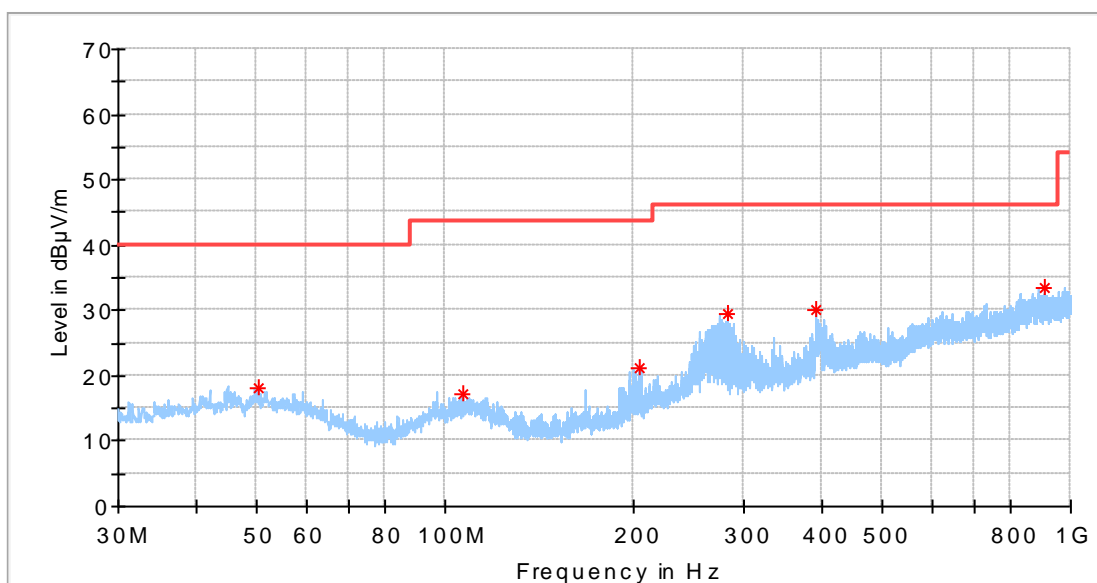
Dawi Xu
EMC Project Engineer

7 Emission Test Results

7.1 Radiated Emission Test 30MHz – 1000MHz

M/N: SFM 4 A1 R
 Mode: ON
 Test Spec: Horizontal
 Comment: Connected the Laptop

Temperature (°C): 23.6 Relative Humidity (%): 60.4 Atmospheric Pressure(mbar) : 1013

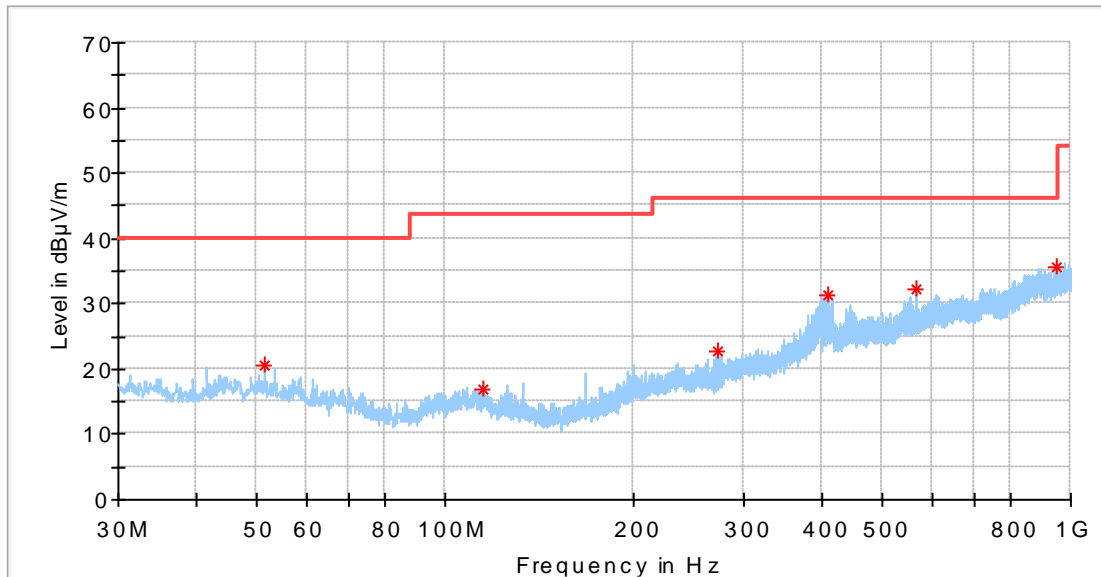


| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|------------|
| 50.127500 | 17.97 | 40.00 | 22.03 | 100.0 | H | 0.0 | 17.7 |
| 106.933125 | 17.10 | 43.50 | 26.40 | 100.0 | H | 68.0 | 16.1 |
| 203.993750 | 21.21 | 43.50 | 22.29 | 100.0 | H | 117.0 | 15.4 |
| 282.624375 | 29.63 | 46.00 | 16.37 | 100.0 | H | 126.0 | 18.2 |
| 392.416250 | 29.94 | 46.00 | 16.06 | 100.0 | H | 86.0 | 21.1 |
| 910.820625 | 33.60 | 46.00 | 12.40 | 100.0 | H | 117.0 | 29.6 |

Radiated Emission Test 30MHz – 1000MHz

M/N: SFM 4 A1 R
 Mode: ON
 Test Spec: Vertical
 Comment: Connected the Laptop

Temperature (°C): 23.6 Relative Humidity (%): 60.4 Atmospheric Pressure(mbar) : 1013



| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|------------------|----------------|-------------|-------------|-----|---------------|------------|
| 51.400625 | 20.63 | 40.00 | 19.37 | 100.0 | V | 228.0 | 18.3 |
| 114.753750 | 17.02 | 43.50 | 26.48 | 100.0 | V | 179.0 | 16.3 |
| 272.863750 | 22.67 | 46.00 | 23.33 | 100.0 | V | 161.0 | 18.9 |
| 408.360625 | 31.34 | 46.00 | 14.66 | 100.0 | V | 0.0 | 23.9 |
| 566.652500 | 32.34 | 46.00 | 13.66 | 100.0 | V | 198.0 | 26.1 |
| 950.045000 | 35.59 | 46.00 | 10.41 | 100.0 | V | 79.0 | 32.1 |

Test Equipment List

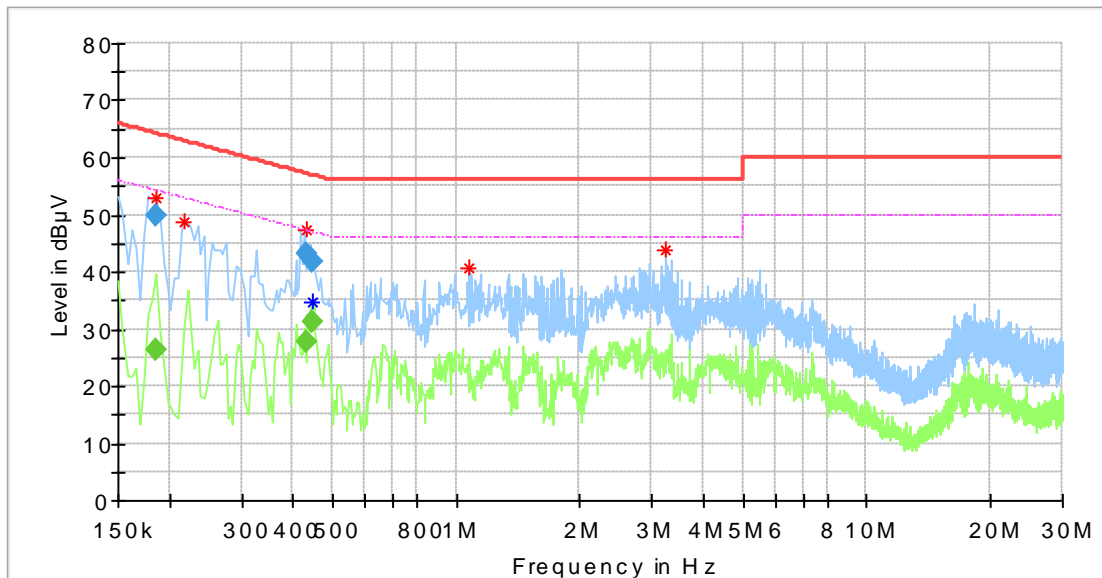
Radiated Emission Test

| DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | CAL. DUE DATE |
|-------------------------------------|-----------------|-----------|-----------------|---------------|
| EMI Test Receiver | Rohde & Schwarz | ESR 26 | 101269 | 2017-7-15 |
| Trilog Super Broadband Test Antenna | Schwarzbeck | VULB 9163 | 707 | 2017-8-14 |
| Horn Antenna | Rohde & Schwarz | HF907 | 102294 | 2017-7-24 |
| Pre-amplifier | Rohde & Schwarz | SCU 18 | 102230 | 2017-7-15 |
| 3m Semi-anechoic chamber | TDK | 9X6X6 | ---- | 2019-5-29 |
| Test software | Rohde & Schwarz | EMC32 | Version 9.15.00 | N/A |

7.2 Conducted Emission Test 150kHz – 30MHz

M/N: SFM 4 A1 R
 Op Cond.: ON
 Test Spec.: Power Line, Live
 Comment: Connected the Laptop

Temperature (°C): 22.5 Relative Humidity (%): 46.7 Atmospheric Pressure(mbar) : 1012

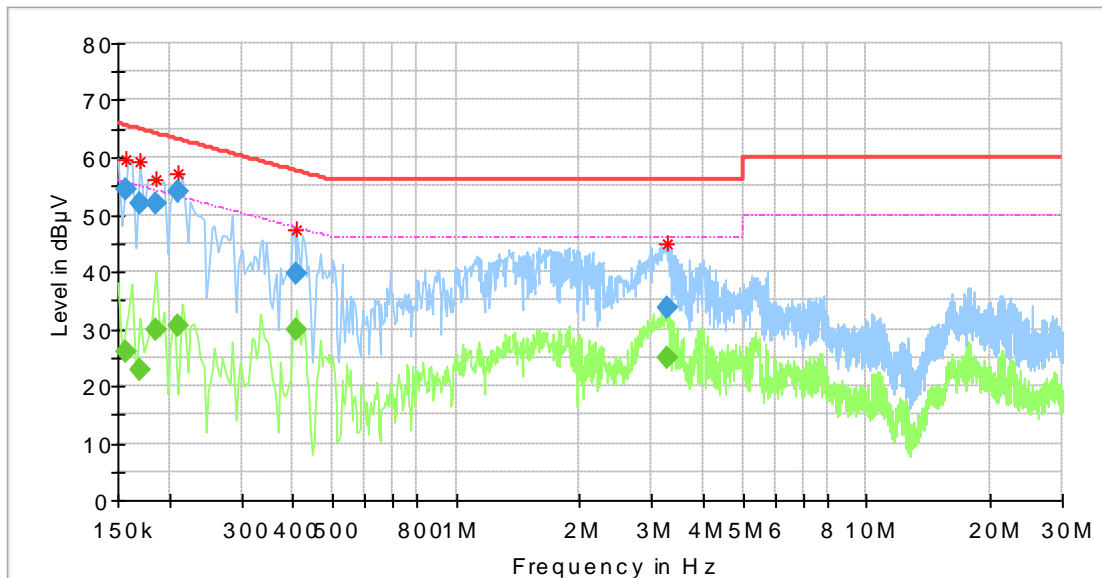


| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|------------------|----------------|--------------|-------------|------|------------|
| 0.185500 | --- | 26.24 | 54.24 | 28.00 | L1 | 10.3 |
| 0.185500 | 49.73 | --- | 64.24 | 14.51 | L1 | 10.3 |
| 0.430500 | --- | 27.89 | 47.24 | 19.35 | L1 | 11.2 |
| 0.430500 | 43.04 | --- | 57.24 | 14.20 | L1 | 11.2 |
| 0.445500 | --- | 31.33 | 46.96 | 15.63 | L1 | 11.0 |
| 0.445500 | 41.79 | --- | 56.96 | 15.17 | L1 | 11.0 |

Conducted Emission Test 150kHz – 30MHz

M/N: SFM 4 A1 R
 Op Cond.: ON
 Test Spec.: Power Line, Neutral
 Comment: Connected the Laptop

Temperature (°C): 22.5 Relative Humidity (%): 46.7 Atmospheric Pressure(mbar) : 1012



| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|------------------|----------------|--------------|-------------|------|------------|
| 0.157500 | --- | 25.94 | 55.59 | 29.65 | N | 10.3 |
| 0.157500 | 54.34 | --- | 65.59 | 11.25 | N | 10.3 |
| 0.169500 | --- | 22.72 | 54.98 | 32.26 | N | 10.3 |
| 0.169500 | 52.01 | --- | 64.98 | 12.97 | N | 10.3 |
| 0.185500 | --- | 29.70 | 54.24 | 24.54 | N | 10.3 |
| 0.185500 | 51.80 | --- | 64.24 | 12.44 | N | 10.3 |
| 0.209500 | --- | 30.70 | 53.23 | 22.53 | N | 10.3 |
| 0.209500 | 54.11 | --- | 63.23 | 9.12 | N | 10.3 |
| 0.406500 | --- | 29.67 | 47.72 | 18.05 | N | 10.3 |
| 0.406500 | 39.59 | --- | 57.72 | 18.13 | N | 10.3 |
| 3.269500 | --- | 24.98 | 46.00 | 21.02 | N | 10.4 |
| 3.269500 | 33.69 | --- | 56.00 | 22.31 | N | 10.4 |

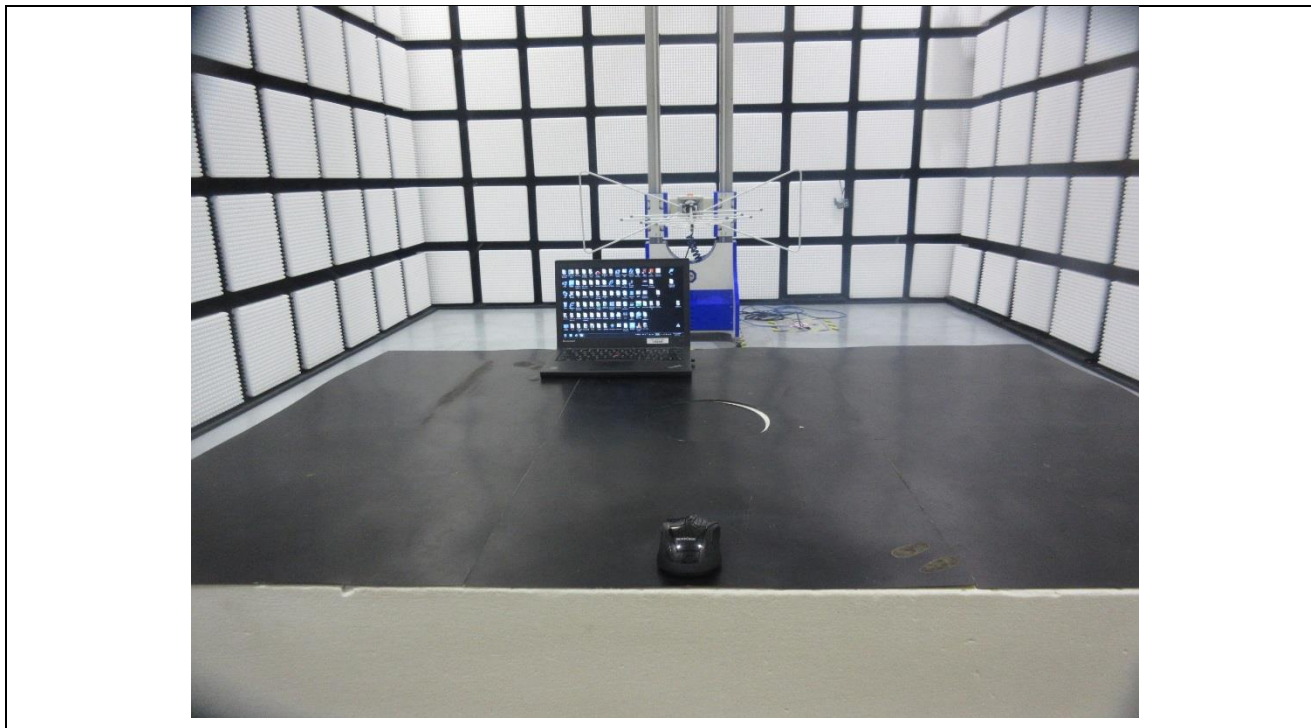
Test Equipment List

Conducted Emission Test

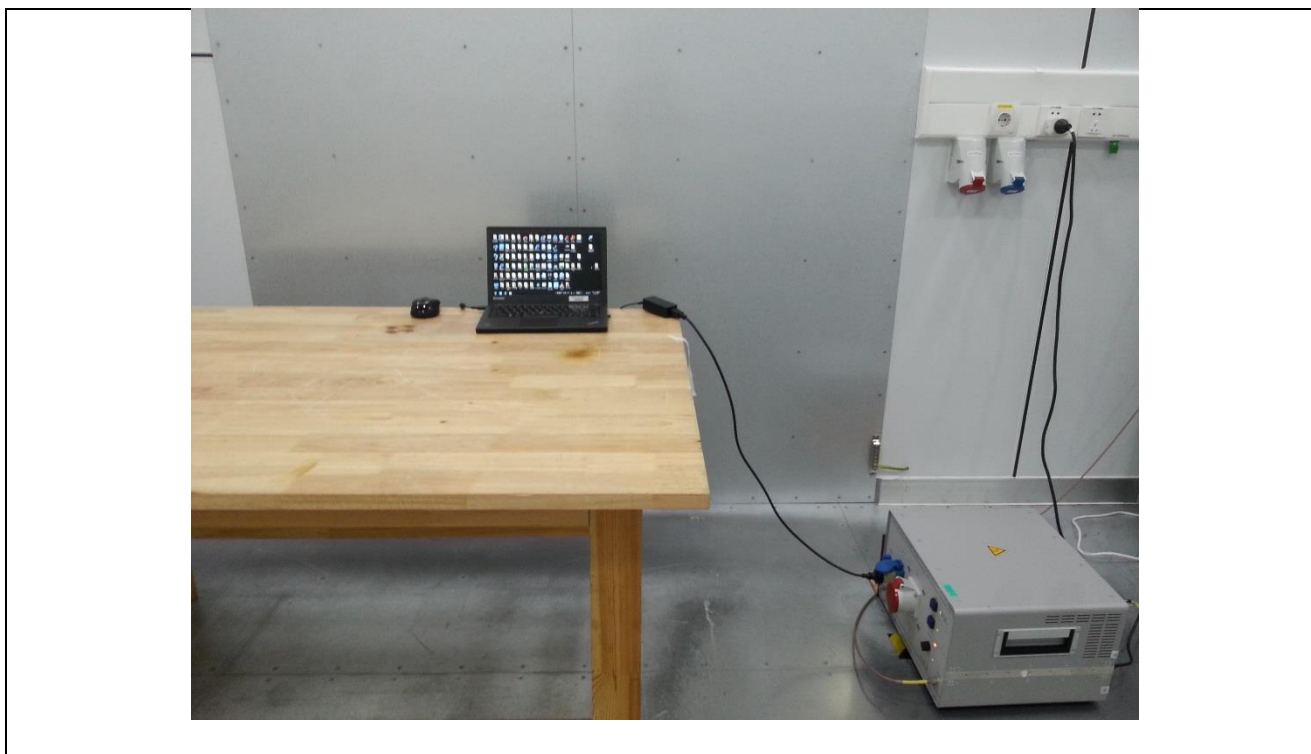
| DESCRIPTION | MANUFACTURER | MODEL NO. | SERIAL NO. | CAL. DUE DATE |
|--------------------|-----------------|--------------------|----------------|---------------|
| EMI Test Receiver | Rohde & Schwarz | ESR 3 | 101782 | 2017-7-15 |
| LISN | Rohde & Schwarz | ENV4200 | 100249 | 2017-7-15 |
| LISN | Rohde & Schwarz | ENV216 | 100326 | 2017-7-15 |
| ISN | Rohde & Schwarz | ENY81 | 100177 | 2017-7-15 |
| ISN | Rohde & Schwarz | ENY81-CA6 | 101664 | 2017-7-15 |
| High Voltage Probe | Rohde & Schwarz | TK9420(VT94 20) | 9420-58 | 2017-7-15 |
| RF Current Probe | Rohde & Schwarz | EZ-17 | 100816 | 2017-7-15 |
| Test software | Rohde & Schwarz | EMC32 | Version9.15.00 | N/A |

8 Appendix A

Radiated Emission Test



Conducted Emission Test



9 Appendix B

