



# Part 15C

## TEST REPORT

|                      |                       |
|----------------------|-----------------------|
| <b>Product Name</b>  | Neptune pine          |
| <b>Model Name</b>    | P312                  |
| <b>FCC ID</b>        | 2ABWUP312             |
| <b>Client</b>        | NEPTUNE COMPUTER INC. |
| <b>Manufacturer</b>  | NEPTUNE COMPUTER INC. |
| <b>Date of issue</b> | June 10, 2014         |

**TA Technology (Shanghai) Co., Ltd.**

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

Report No.: RXC1312-0222RF06R2

Page 2 of 49

**GENERAL SUMMARY**

|                              |   |
|------------------------------|---|
| <b>Reference Standard(s)</b> | <p><b>FCC CFR47 Part 15C (2012)</b> Radio Frequency Devices</p> <p><b>15.205</b> Restricted bands of operation;</p> <p><b>15.207</b> Conducted limits;</p> <p><b>15.209</b> Radiated emission limits; general requirements;</p> <p><b>15.247</b> Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850MHz.</p> <p><b>ANSI C63.4</b> Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz. (2009)</p> <p><b>KDB 558074 D01 DTS Meas Guidance v03r01</b> Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247</p> |
| <b>Conclusion</b>            | <p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment: <b>Pass</b></p>  |
| <b>Comment</b>               | <p>The test result only responds to the measured sample.</p>  |

Approved by Weizhong Yang

Weizhong Yang  
Director

Revised by Lingling Kang

Lingling Kang  
RF Manager

Performed by Yu Wang

Yu Wang  
RF Engineer

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

Report No.: RXC1312-0222RF06R2

Page 3 of 49

**TABLE OF CONTENT**

|   |    |
|---|----|
| 1. General Information .....                                  | 4  |
| 1.1. Notes of the test report .....                           | 4  |
| 1.2. Testing laboratory .....                                 | 5  |
| 1.3. Applicant Information .....                              | 5  |
| 1.4. Manufacturer Information .....                           | 5  |
| 1.5. Information of EUT .....                                 | 6  |
| 1.6. Test Date .....  | 7  |
| 2. Test Information .....                                     | 8  |
| 2.1. Test Mode .....  | 8  |
| 2.2. Summary of test results .....                            | 9  |
| 2.3. Peak Power Output –Conducted .....                       | 10 |
| 2.4. 6dB Occupied Bandwidth .....                             | 13 |
| 2.5. Band Edge Compliance .....                               | 16 |
| 2.6. Power Spectral Density .....                             | 18 |
| 2.7. Spurious Radiated Emissions in the Restricted Band ..... | 21 |
| 2.8. Spurious RF Conducted Emissions .....                    | 25 |
| 2.9. Radiates Emission .....                                  | 29 |
| 2.10. Conducted Emission .....                                | 44 |
| 3. Main Test Instruments .....                                | 47 |
| ANNEX A: EUT Appearance and Test Setup .....                  | 48 |
| A.1 EUT Appearance .....                                      | 48 |
| A.2 Test Setup .....  | 49 |

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 4 of 49

---

## 1. General Information

### 1.1. Notes of the test report

**TA Technology (Shanghai) Co., Ltd.** has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L2264.

**TA Technology (Shanghai) Co., Ltd.** has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 428261.

**TA Technology (Shanghai) Co., Ltd.** has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 8510A.

**TA Technology (Shanghai) Co., Ltd.** guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

**TA Technology (Shanghai) Co., Ltd.** is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report alone does not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

If the electronic report is inconsistent with the printed one, it should be subject to the latter.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 5 of 49

### 1.2. Testing laboratory

Company: TA Technology (Shanghai) Co., Ltd.  
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong  
City: Shanghai  
Post code: 201201  
Country: P. R. China  
Contact: Yang Weizhong  
Telephone: +86-021-50791141/2/3  
Fax: +86-021-50791141/2/3-8000  
Website: <http://www.ta-shanghai.com>  
E-mail: [yangweizhong@ta-shanghai.com](mailto:yangweizhong@ta-shanghai.com)

### 1.3. Applicant Information

Company: NEPTUNE COMPUTER INC.  
666 SHERBROOKE ST. W., SUITE 1000  
Address: MONTREAL  
H3A 1E7  
CANADA

### 1.4. Manufacturer Information

Company: NEPTUNE COMPUTER INC.  
666 SHERBROOKE ST. W., SUITE 1000  
Address: MONTREAL  
H3A 1E7  
CANADA

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 6 of 49

### 1.5. Information of EUT

#### General information

|                                  |                                 |
|----------------------------------|---------------------------------|
| Product IMEI:                    | 354727049900673                 |
| Hardware Version:                | P1                              |
| Software Version:                | JB_V0.29                        |
| Antenna Type:                    | Internal Antenna                |
| Device Operating Configurations: |                                 |
| Test Mode                        | Bluetooth(Low Energy)           |
| Modulation Type:                 | GFSK                            |
| Packet Type:(Maximum Payload)    | 1Mbps                           |
| Max. Conducted Power             | -0.91dBm                        |
| Power Supply:                    | Battery or Charger (AC adaptor) |
| Operating Frequency Range(s)     | 2400 ~ 2483.5 MHz               |

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 7 of 49

---

### Auxiliary equipment details

#### AE1: Battery

Model: Mini Phone  
Manufacturer: Tian Yu Communication Technology (Kun Shan) CO.,Ltd  
S/N: /

#### AE2: Adapter

Model: DSA-5PFK-05 FUS 050100a  
Manufacturer: DEE VAN ENTERPRISE CO., LTD.  
S/N: /

### 1.6. Test Date

The test is performed from March 11, 2014 to March 19, 2014.

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

Report No.: RXC1312-0222RF06R2

Page 8 of 49

## **2. Test Information**

### **2.1. Test Mode**

During the process of the testing, The EUT is max power transmission with proper modulation.

EUT is stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) with Adapter 1 and the worst case was recorded.

| <b>Test Modes</b>     |                     |                      |
|-----------------------|---------------------|----------------------|
| Band                  | Radiated Test Cases | Conducted Test Cases |
| Bluetooth(Low Energy) | Channel 19          | Channel 0/19/39      |

Note: All modes of operation were investigated. The test results shown in the following sections represent the worst case emissions.

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

Report No.: RXC1312-0222RF06R2

Page 9 of 49

**2.2. Summary of test results**

| <b>Number</b> | <b>Summary of measurements of results</b>          | <b>Clause in FCC rules</b> | <b>Verdict</b> |
|---------------|--|----------------------------|----------------|
| 1             | Peak Power Output -Conducted                       | 15.247(b)(1)               | PASS           |
| 2             | Occupied Bandwidth (6dB)                           | 15.247(a)(2)               | PASS           |
| 3             | Band Edge Compliance                               | 15.247(d)                  | PASS           |
| 4             | Power Spectral Density                             | 15.247(e)                  | PASS           |
| 5             | Spurious Radiated Emissions in the restricted band | 15.247(d),15.205,15.209    | PASS           |
| 6             | Spurious RF Conducted Emissions                    | 15.247(d)                  | PASS           |
| 7             | Radiates Emission                                  | 15.247(d),15.205,15.209    | PASS           |
| 8             | AC Power Line Conducted Emission                   | 15.207                     | PASS           |

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 10 of 49

### 2.3. Peak Power Output –Conducted

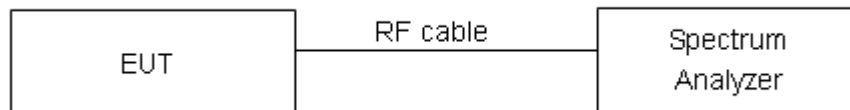
#### Ambient condition

|             |                   |          |
|-------------|-------------------|----------|
| Temperature | Relative humidity | Pressure |
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

#### Methods of Measurement

During the process of the testing, The EUT was connected to the spectrum analyzer with a known loss. The EUT is max power transmission with proper modulation. The peak detector is used. RBW is set to 2 MHz; VBW is set to 6 MHz. These measurements have been tested at following channels: 0, 19 and 39 of Bluetooth (Low Energy).

#### Test Setup



#### Limits

Rule Part 15.247 (b) (1) specifies that " For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts."

|                   |                  |
|-------------------|------------------|
| Peak Output Power | ≤ 0.125W (21dBm) |
|-------------------|------------------|

#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 0.44$  dB.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

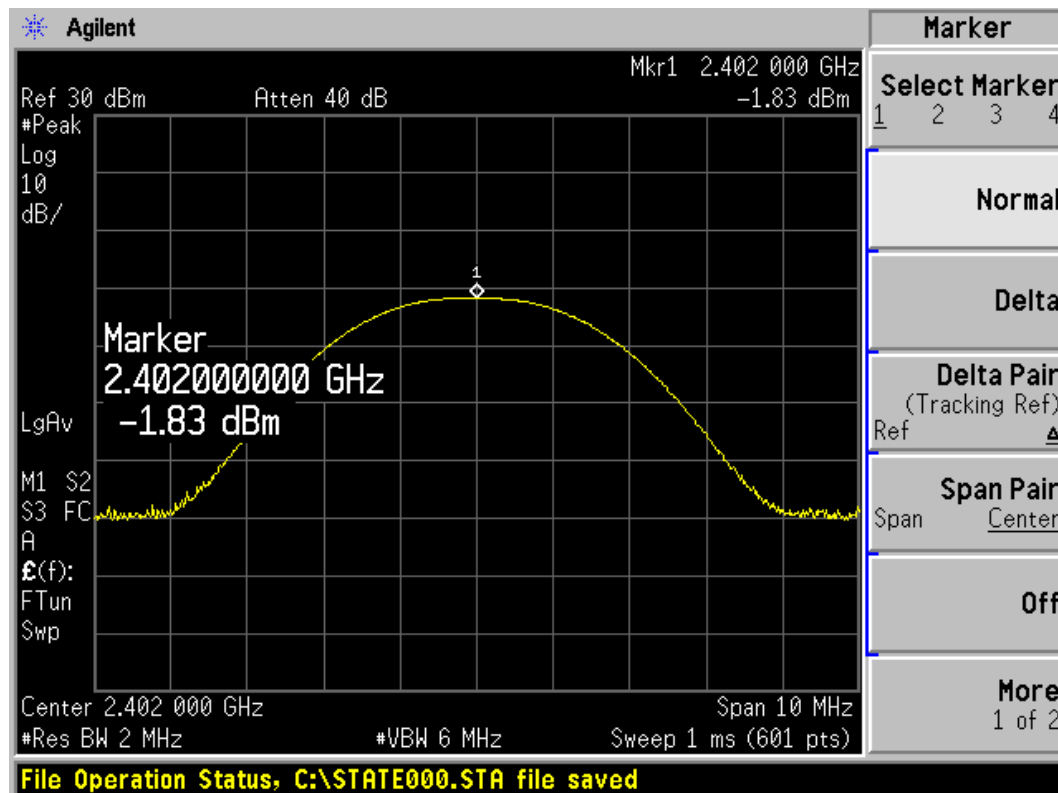
Page 11 of 49

### Test Results

#### Bluetooth (Low Energy)

| Channel | Frequency (MHz) | Peak Output Power (dBm) | Conclusion |
|---------|-----------------|-------------------------|------------|
|         |                 | 1Mbps                   |            |
| 0       | 2402            | -1.83                   | PASS       |
| 19      | 2440            | -0.91                   | PASS       |
| 39      | 2480            | -0.93                   | PASS       |

Note: The measured power density (dBm) has the offset with cable loss already.



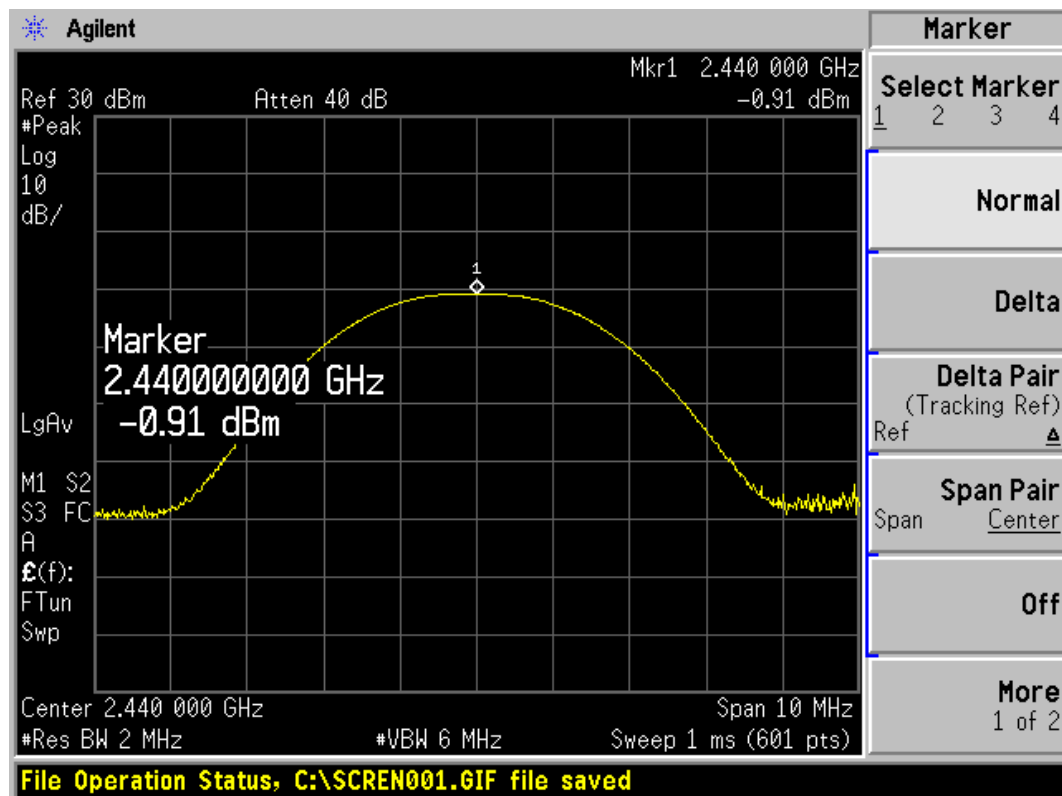
Carrier frequency (MHz): 2402

Channel No.:0

# TA Technology (Shanghai) Co., Ltd. Test Report

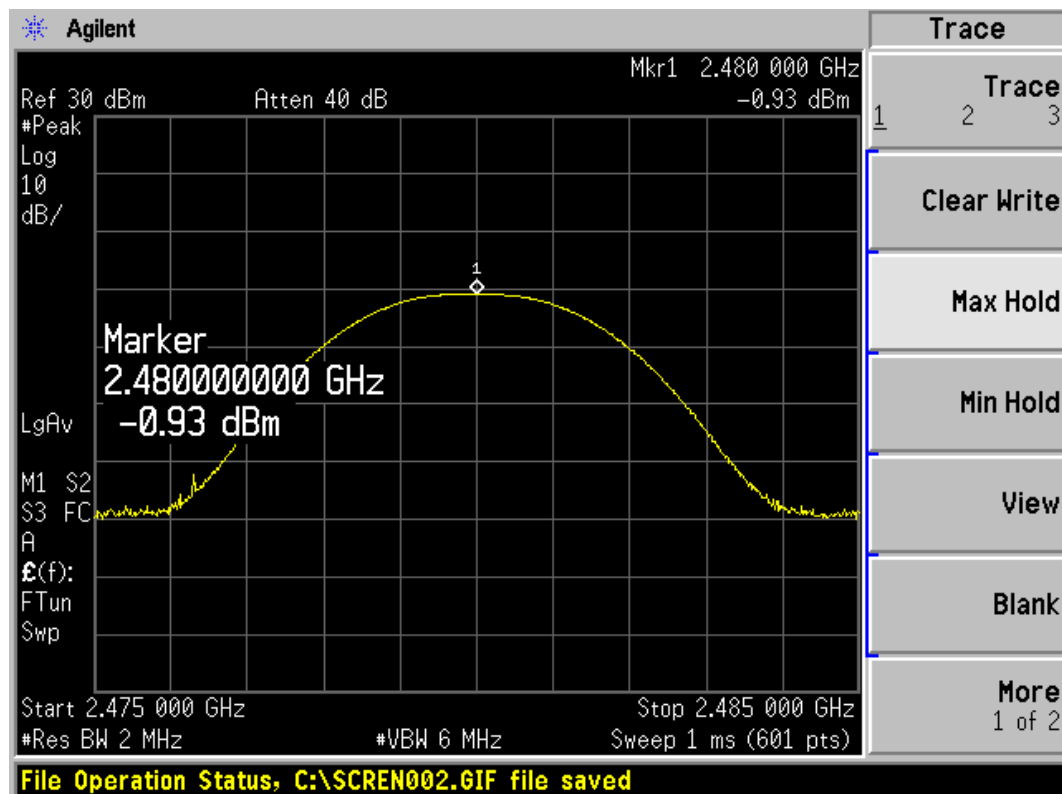
Report No.: RXC1312-0222RF06R2

Page 12 of 49



Carrier frequency (MHz): 2440

Channel No.:19



Carrier frequency (MHz): 2480

Channel No.:39

## 2.4. 6dB Occupied Bandwidth

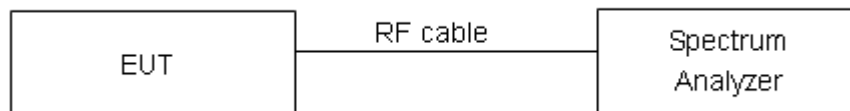
### Ambient condition

|             |                   |          |
|-------------|-------------------|----------|
| Temperature | Relative humidity | Pressure |
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

### Method of Measurement

The EUT was connected to the spectrum analyzer with a known loss. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 100 kHz, VBW is set to 300 kHz on spectrum analyzer.

### Test Setup



### Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

|                        |           |
|------------------------|-----------|
| minimum 6 dB bandwidth | ≥ 500 kHz |
|------------------------|-----------|

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 936$  Hz.

# TA Technology (Shanghai) Co., Ltd.

## Test Report

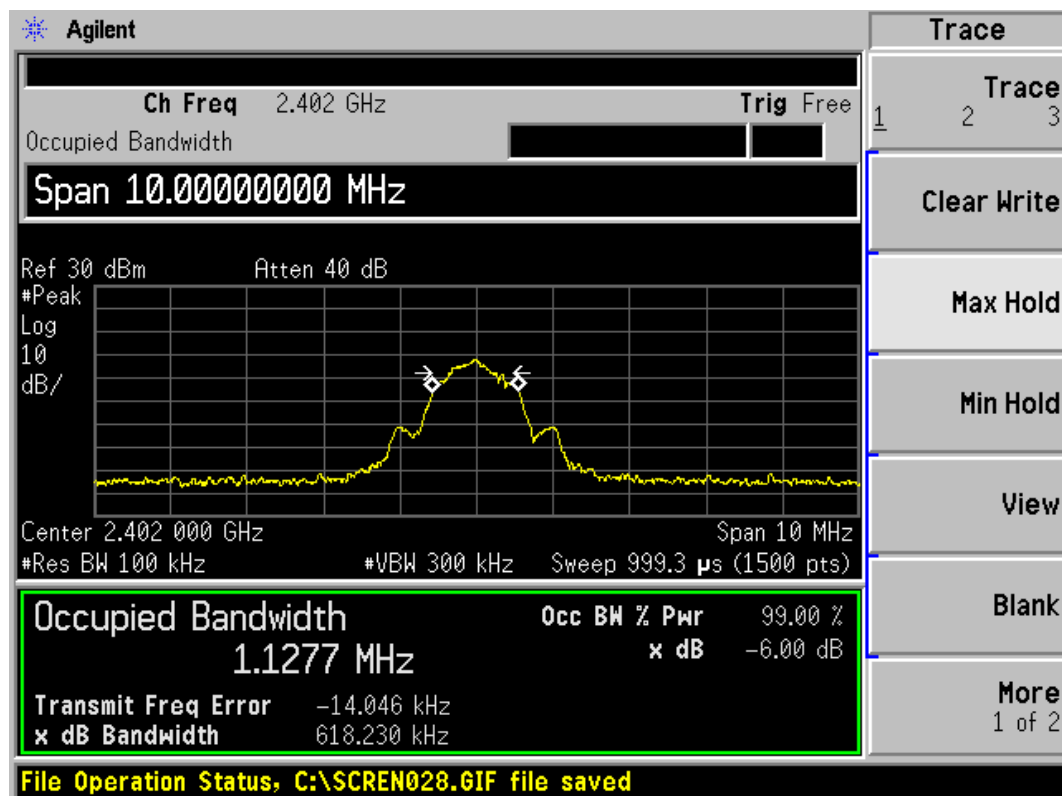
Report No.: RXC1312-0222RF06R2

Page 14 of 49

### Test Results:

#### Bluetooth (Low Energy)

| Channel | Frequency (MHz) | 6dB Bandwidth (kHz) |
|---------|-----------------|---------------------|
| 0       | 2402            | 618.230             |
| 19      | 2440            | 568.804             |
| 39      | 2480            | 568.161             |



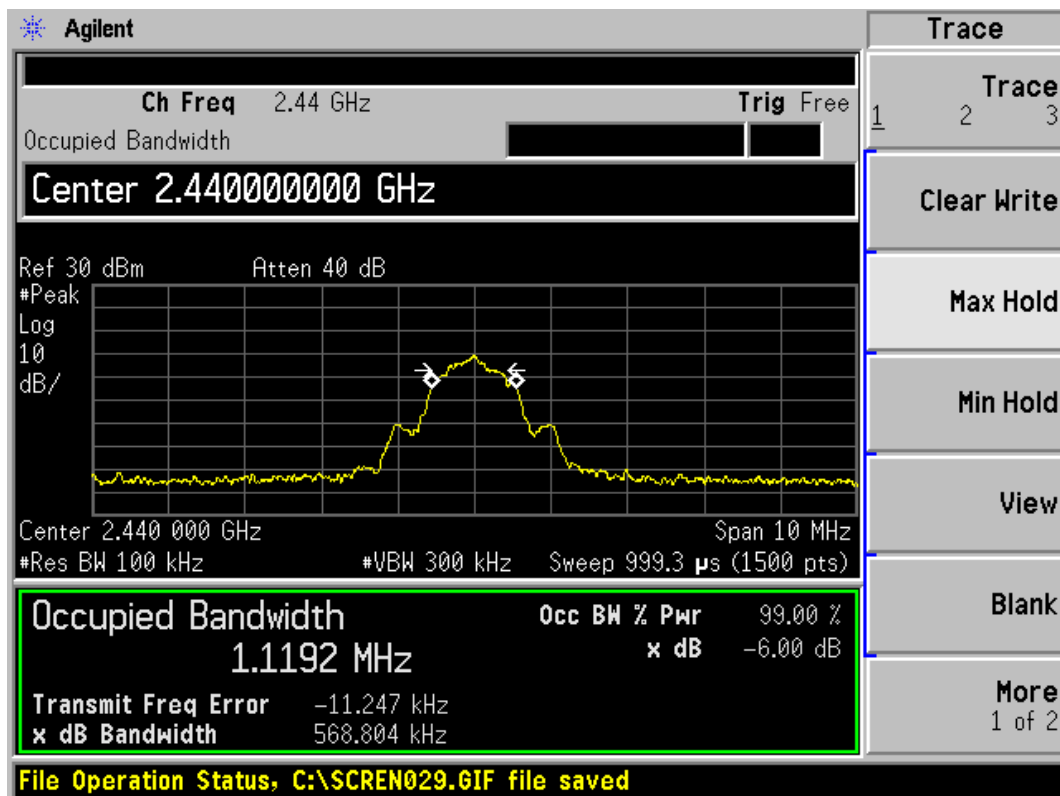
Carrier frequency (MHz): 2402

Channel No.:0

TA Technology (Shanghai) Co., Ltd.  
Test Report

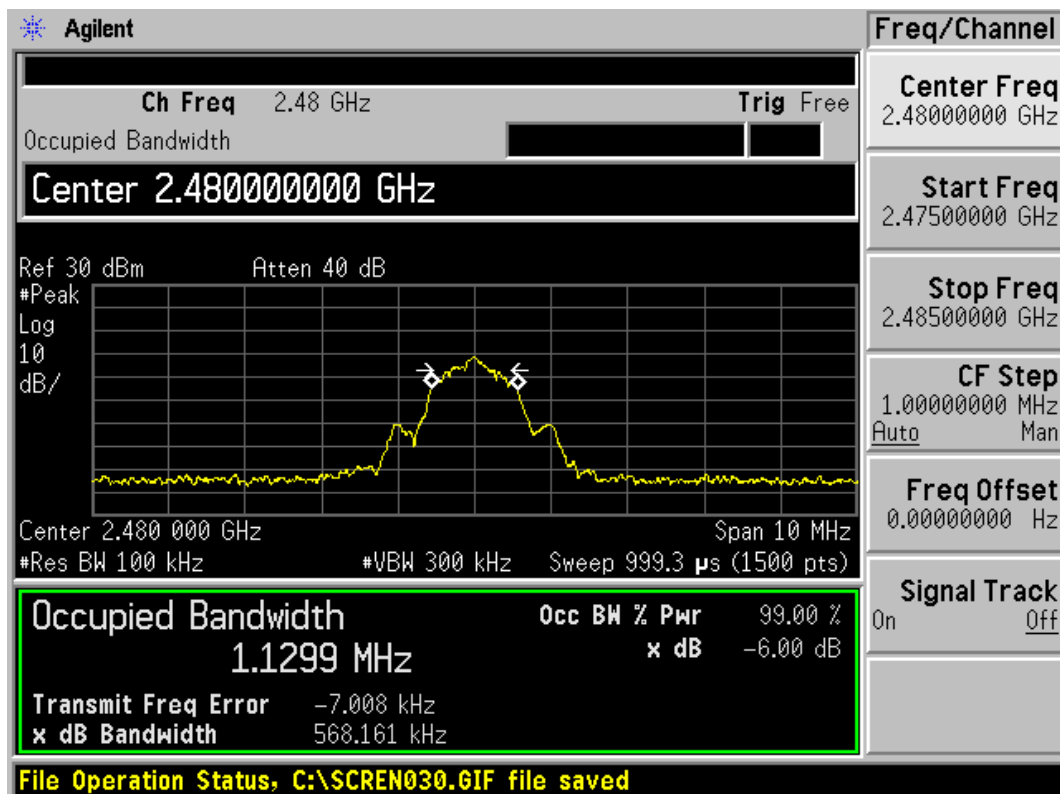
Report No.: RXC1312-0222RF06R2

Page 15 of 49



Carrier frequency (MHz): 2440

Channel No.:19



Carrier frequency (MHz): 2480

Channel No.:39

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 16 of 49

### 2.5. Band Edge Compliance

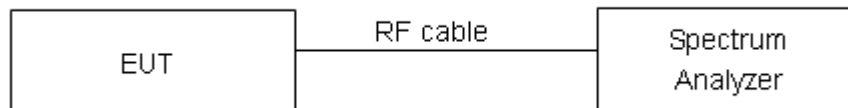
#### Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

#### Method of Measurement

The EUT was connected to the spectrum analyzer with a known loss. The lowest and highest channels were measured. The peak detector is used. RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer.

#### Test Setup



#### Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.”

#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

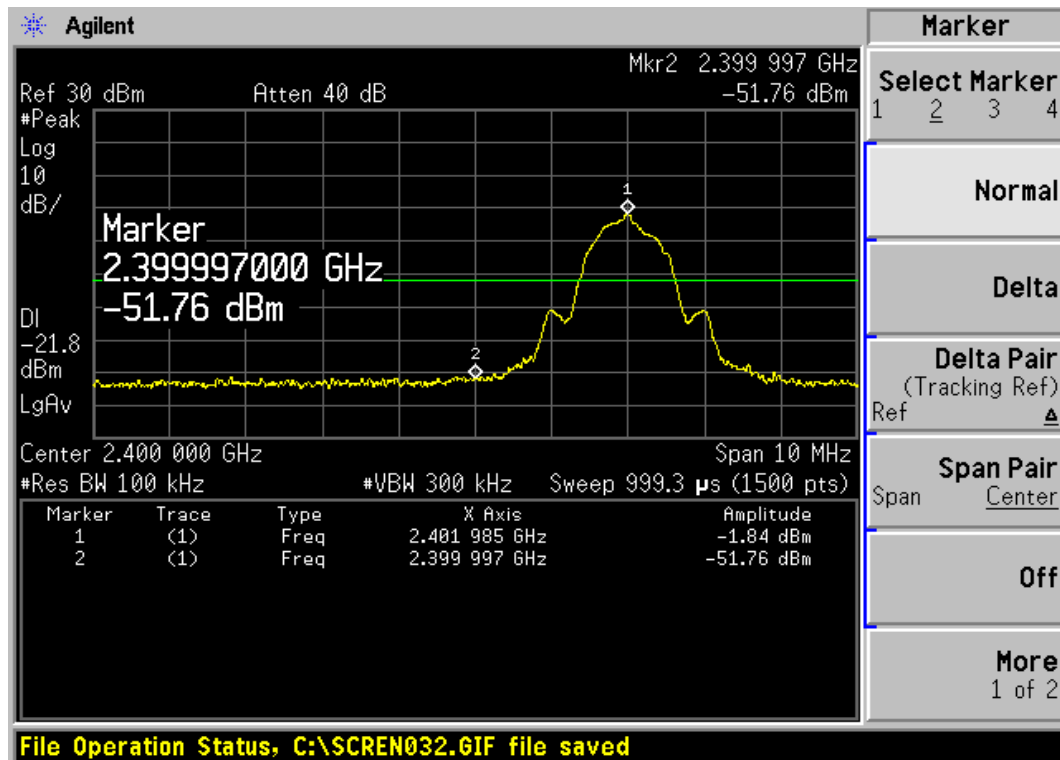
TA Technology (Shanghai) Co., Ltd.  
Test Report

Report No.: RXC1312-0222RF06R2

Page 17 of 49

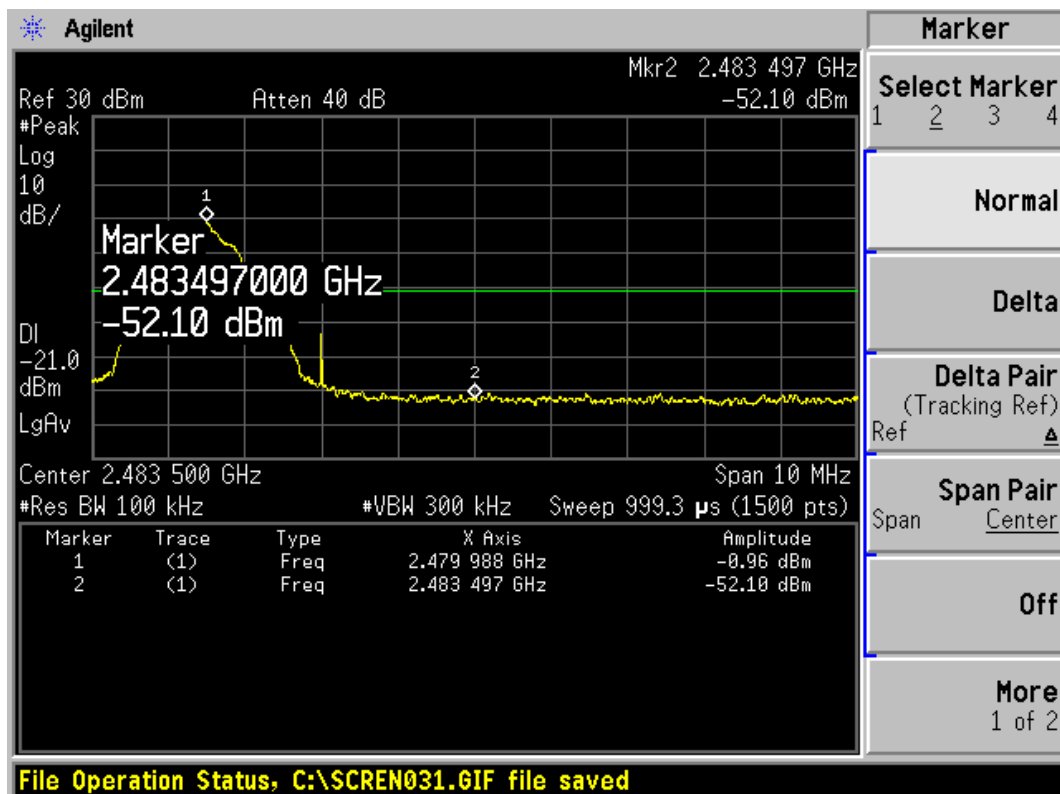
Test Results: PASS

Low Energy



Carrier frequency (MHz): 2402

Channel No.:0



Carrier frequency (MHz): 2480

Channel No.:39

## 2.6. Power Spectral Density

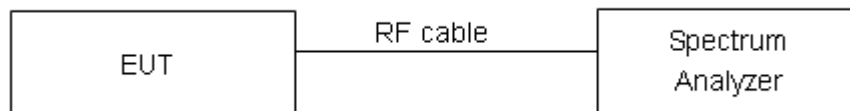
### Ambient condition

|             |                   |          |
|-------------|-------------------|----------|
| Temperature | Relative humidity | Pressure |
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

### Method of Measurement

The EUT was connected to the spectrum analyzer with a known loss. RBW is set to 3 kHz and VBW is set to 10 kHz on spectrum analyzer. Set the span to at least 1.5 times the Low Energy channel bandwidth. The peak power spectral density is recorded. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{kHz}) = -15.2\text{ dB}$ .

### Test setup



### Limits

Rule Part 15.247(e) specifies that "For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission."

|        |                                   |
|--------|-----------------------------------|
| Limits | $\leq 8\text{ dBm} / 3\text{kHz}$ |
|--------|-----------------------------------|

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 0.75\text{dB}$ .

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 19 of 49

### Test Results:

#### Bluetooth (Low Energy)

| Channel Number | Power Spectral Density<br>dBm / 3kHz | Conclusion |
|----------------|--------------------------------------|------------|
| 0              | -3.08                                | PASS       |
| 19             | -2.34                                | PASS       |
| 39             | -2.38                                | PASS       |

Note: The measured power density (dBm) has the offset with cable loss already.



Low energy, Channel No.: 0

TA Technology (Shanghai) Co., Ltd.  
Test Report

Report No.: RXC1312-0222RF06R2

Page 20 of 49



Low energy, Channel No.: 19



Low energy, Channel No.: 39

## 2.7. Spurious Radiated Emissions in the Restricted Band

### Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

### Method of Measurement

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. RBW is set to 100kHz. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

Set the spectrum analyzer in the following:

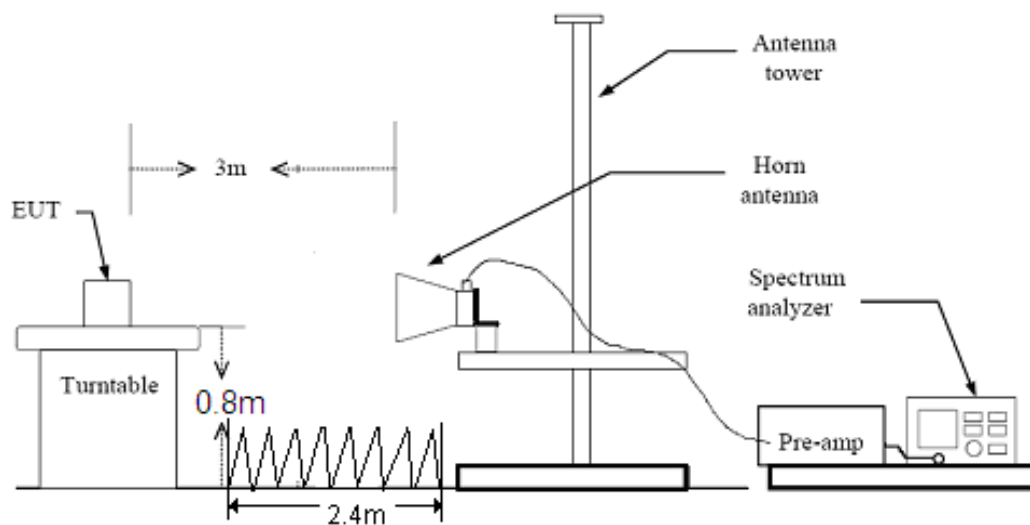
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from  $20\log(\text{dwell time}/100 \text{ ms})$ , in an effort to demonstrate compliance with the 15.209 limit.

If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak- average correction factor, derived from the appropriate duty cycle calculation.

This setting method can refer to KDB 558074.

### Test setup



Note: Area side: 2.4mX3.6m

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 22 of 49

### Limits

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

| MHz                        | MHz                   | MHz             | GHz              |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110              | 16.42 - 16.423        | 399.9 - 410     | 4.5 - 5.15       |
| <sup>1</sup> 0.495 - 0.505 | 16.69475 - 16.69525   | 608 - 614       | 5.35 - 5.46      |
| 2.1735 - 2.1905            | 16.80425 - 16.80475   | 960 - 1240      | 7.25 - 7.75      |
| 4.125 - 4.128              | 25.5 - 25.67          | 1300 - 1427     | 8.025 - 8.5      |
| 4.17725 - 4.17775          | 37.5 - 38.25          | 1435 - 1626.5   | 9.0 - 9.2        |
| 4.20725 - 4.20775          | 73 - 74.6             | 1645.5 - 1646.5 | 9.3 - 9.5        |
| 6.215 - 6.218              | 74.8 - 75.2           | 1660 - 1710     | 10.6 - 12.7      |
| 6.26775 - 6.26825          | 108 - 121.94          | 1718.8 - 1722.2 | 13.25 - 13.4     |
| 6.31175 - 6.31225          | 123 - 138             | 2200 - 2300     | 14.47 - 14.5     |
| 8.291 - 8.294              | 149.9 - 150.05        | 2310 - 2390     | 15.35 - 16.2     |
| 8.362 - 8.366              | 156.52475 - 156.52525 | 2483.5 - 2500   | 17.7 - 21.4      |
| 8.37625 - 8.38675          | 156.7 - 156.9         | 2690 - 2900     | 22.01 - 23.12    |
| 8.41425 - 8.41475          | 162.0125 - 167.17     | 3260 - 3267     | 23.6 - 24.0      |
| 12.29 - 12.293             | 167.72 - 173.2        | 3332 - 3339     | 31.2 - 31.8      |
| 12.51975 - 12.52025        | 240 - 285             | 3345.8 - 3358   | 36.43 - 36.5     |
| 12.57675 - 12.57725        | 322 - 335.4           | 3600 - 4400     | ( <sup>2</sup> ) |
| 13.36 - 13.41              |                       |                 |                  |

Limit in restricted band

| Frequency of emission (MHz) | Field strength(uV/m) | Field strength(dBuV/m) |
|-----------------------------|----------------------|------------------------|
| 0.009-0.490                 | 2400/F(kHz)          | /                      |
| 0.490-1.705                 | 24000/F(kHz)         | /                      |
| 1.705-30.0                  | 30                   | /                      |
| 30-88                       | 100                  | 40                     |
| 88-216                      | 150                  | 43.5                   |
| 216-960                     | 200                  | 46                     |
| Above960                    | 500                  | 54                     |

### §15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dBuV/m

Average Limit=54 dBuV/m

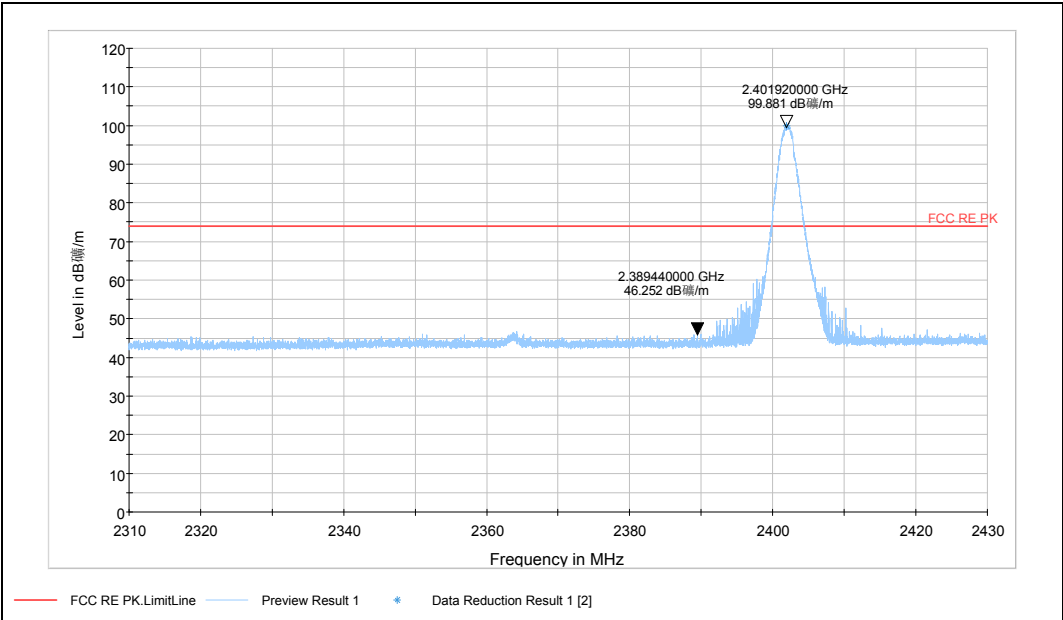
### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U = 3.55$  dB.

Test Results: PASS

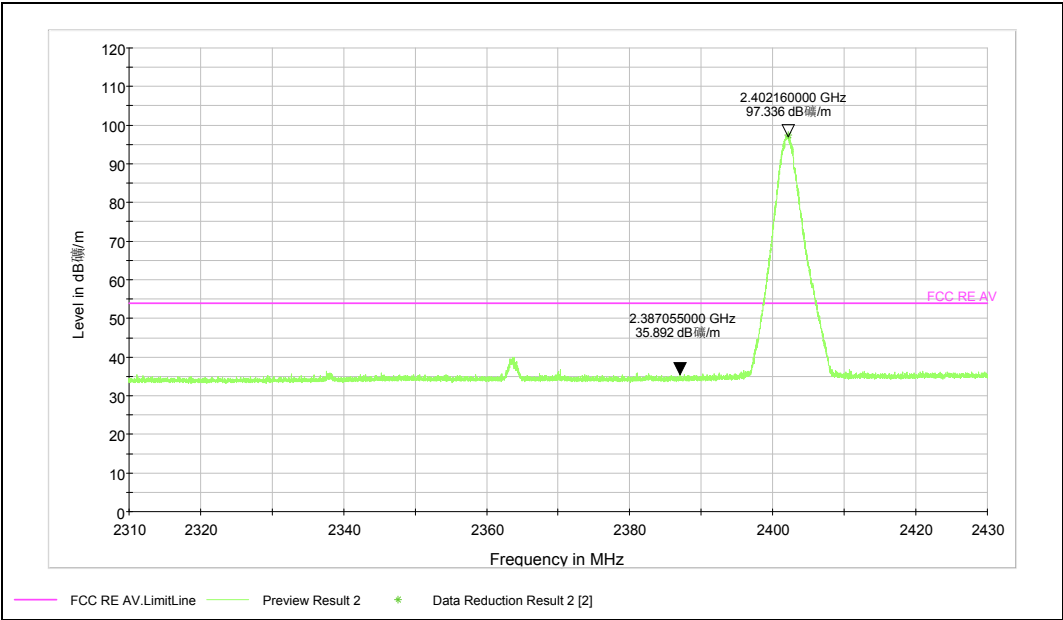
Channel 0

Peak



Note: The signal beyond the limit is carrier, a font ( Level in dB $\mu$ V/m ) in the test plot =(level in dBuV/m)

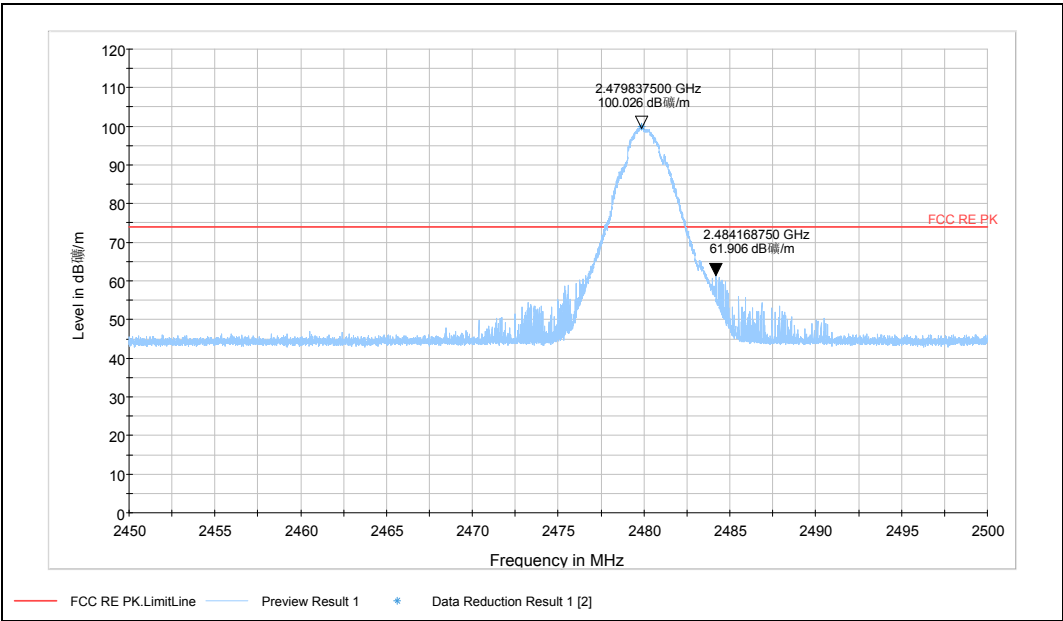
Average



Note: The signal beyond the limit is carrier, a font ( Level in dB $\mu$ V/m ) in the test plot =(level in dBuV/m)

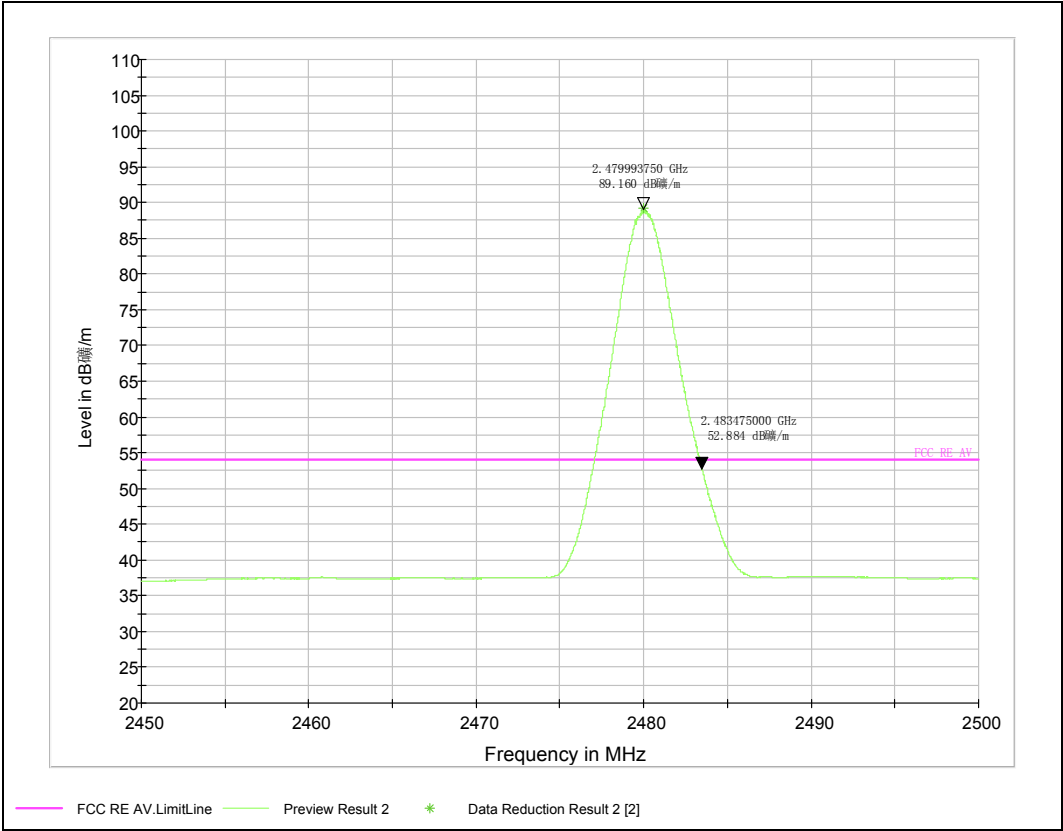
Channel 39

Peak



Note: The signal beyond the limit is carrier, a font ( Level in dBm/m ) in the test plot =(level in dBuV/m)

Average



Note: The signal beyond the limit is carrier, a font ( Level in dBm/m ) in the test plot =(level in dBuV/m)

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 25 of 49

### 2.8. Spurious RF Conducted Emissions

#### Ambient condition

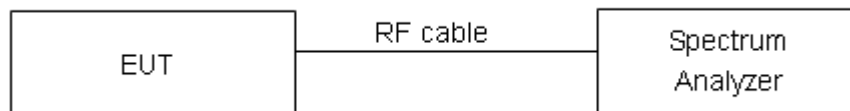
|             |                   |          |
|-------------|-------------------|----------|
| Temperature | Relative humidity | Pressure |
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

#### Method of Measurement

The EUT was connected to the spectrum analyzer with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO.

The test is in transmitting mode.

#### Test setup



#### Limits

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.”

| Mode                  | Carrier frequency (MHz) | Reference value (dBm) | Limit          |
|-----------------------|-------------------------|-----------------------|----------------|
| Bluetooth(Low Energy) | 2402                    | 2.08                  | $\leq -17.92$  |
|                       | 2440                    | -5.622                | $\leq -25.622$ |
|                       | 2480                    | -5.176                | $\leq -25.176$ |

#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

| Frequency   | Uncertainty |
|-------------|-------------|
| 100kHz-2GHz | 0.684 dB    |
| 2GHz-26GHz  | 1.407 dB    |

# TA Technology (Shanghai) Co., Ltd.

## Test Report

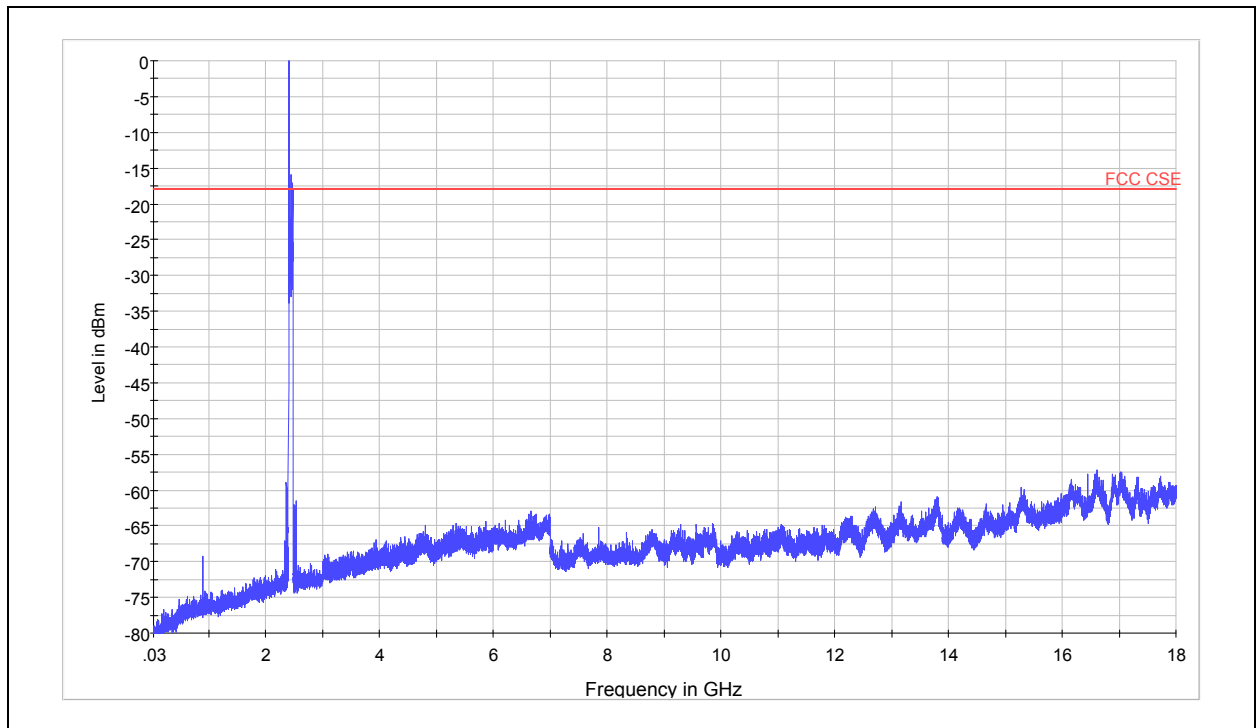
Report No.: RXC1312-0222RF06R2

Page 26 of 49

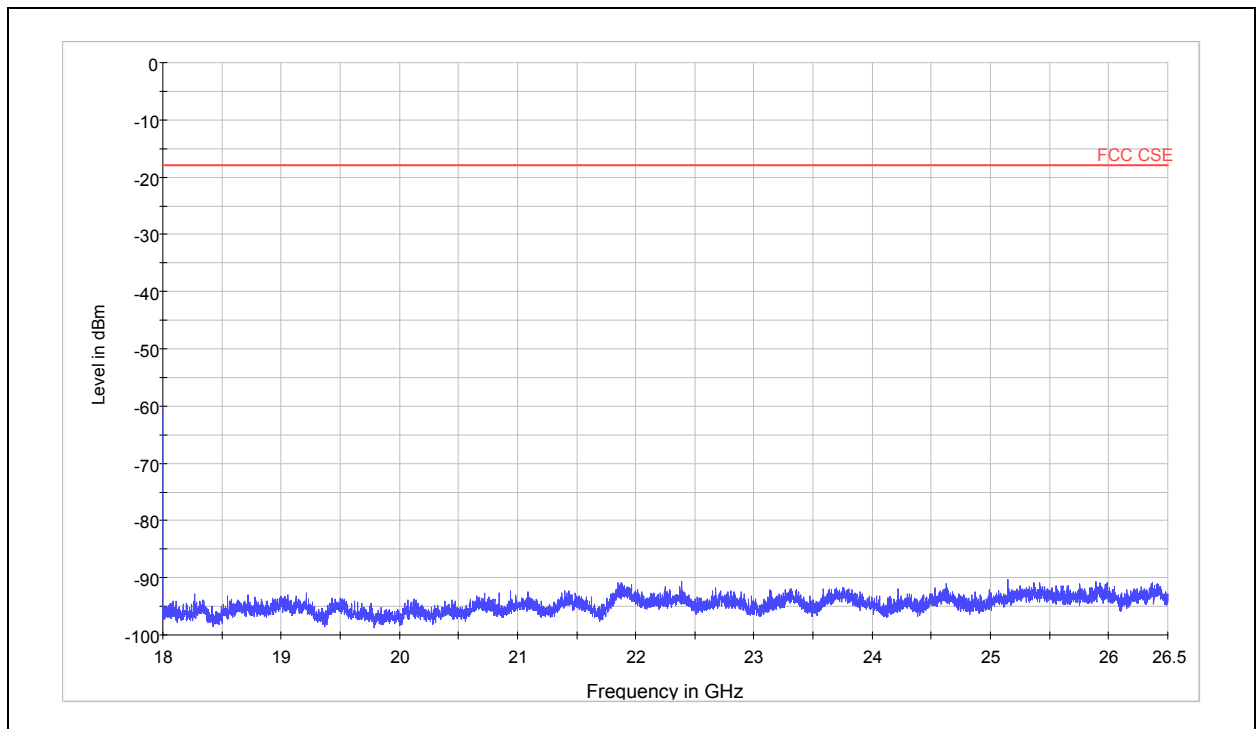
### Test Results:

Bluetooth (Low Energy)

CH0:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2402  
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

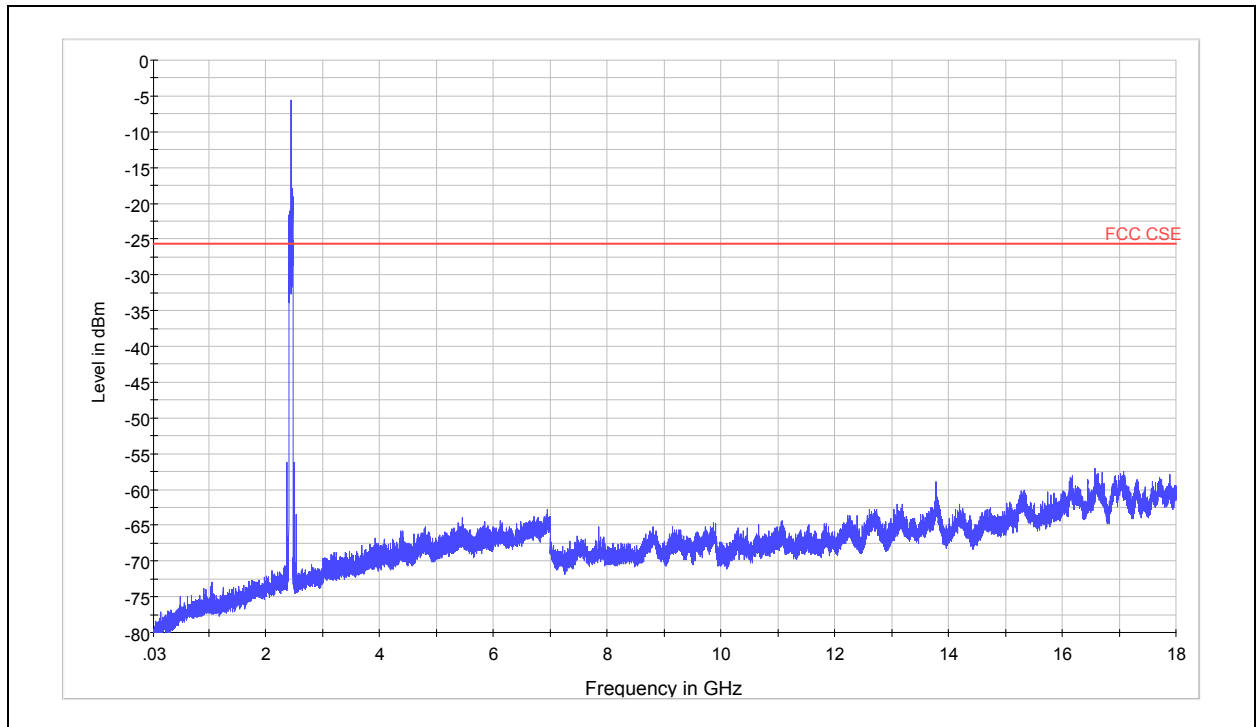
# TA Technology (Shanghai) Co., Ltd.

## Test Report

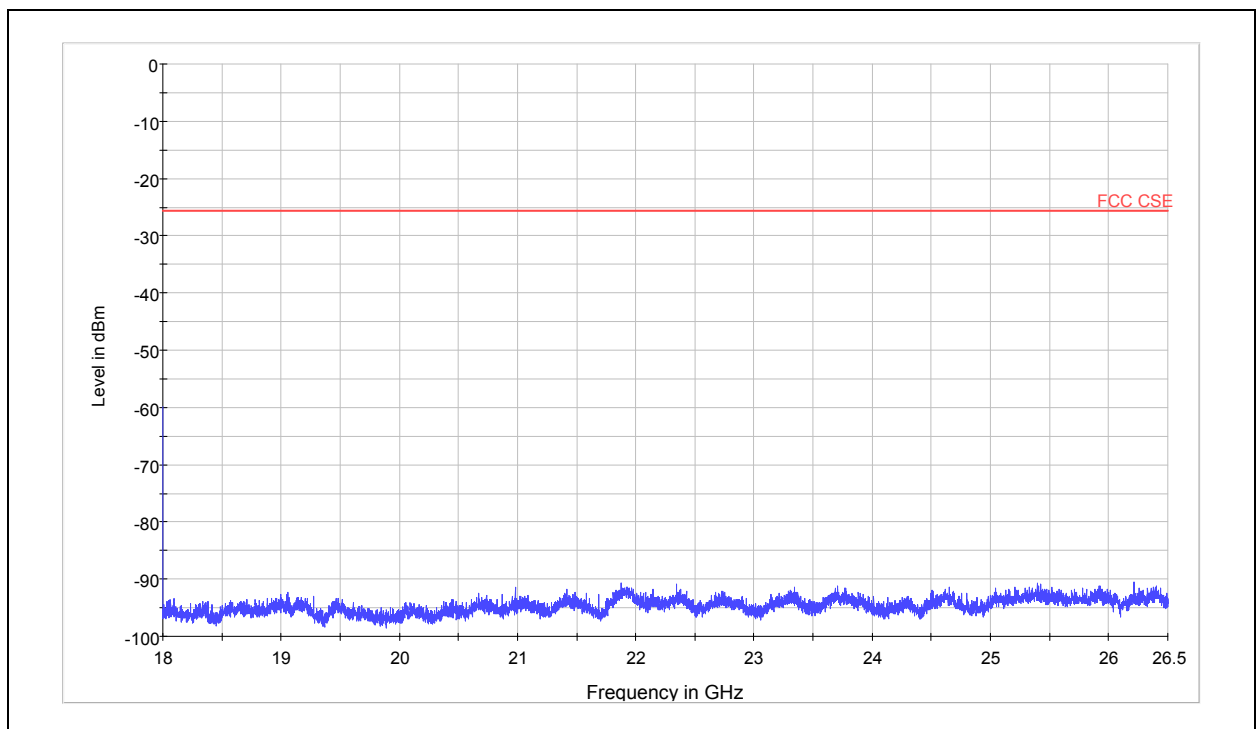
Report No.: RXC1312-0222RF06R2

Page 27 of 49

CH19:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2440  
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

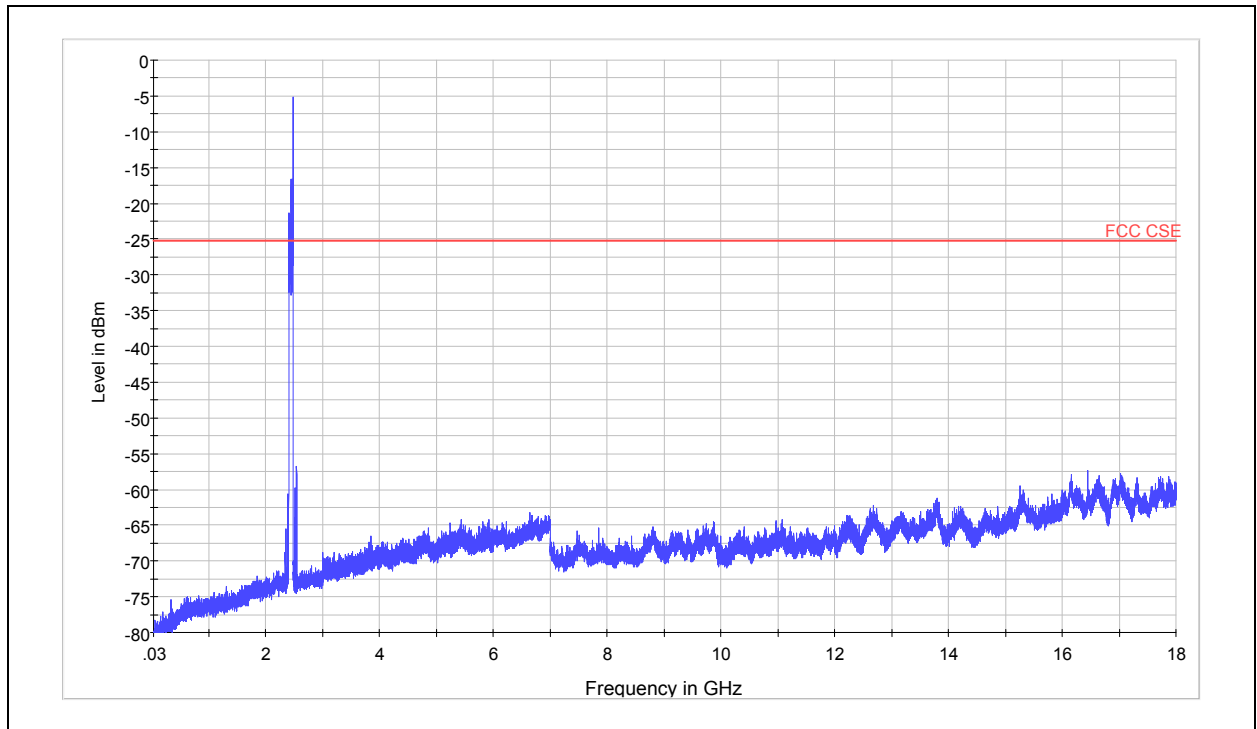
# TA Technology (Shanghai) Co., Ltd.

## Test Report

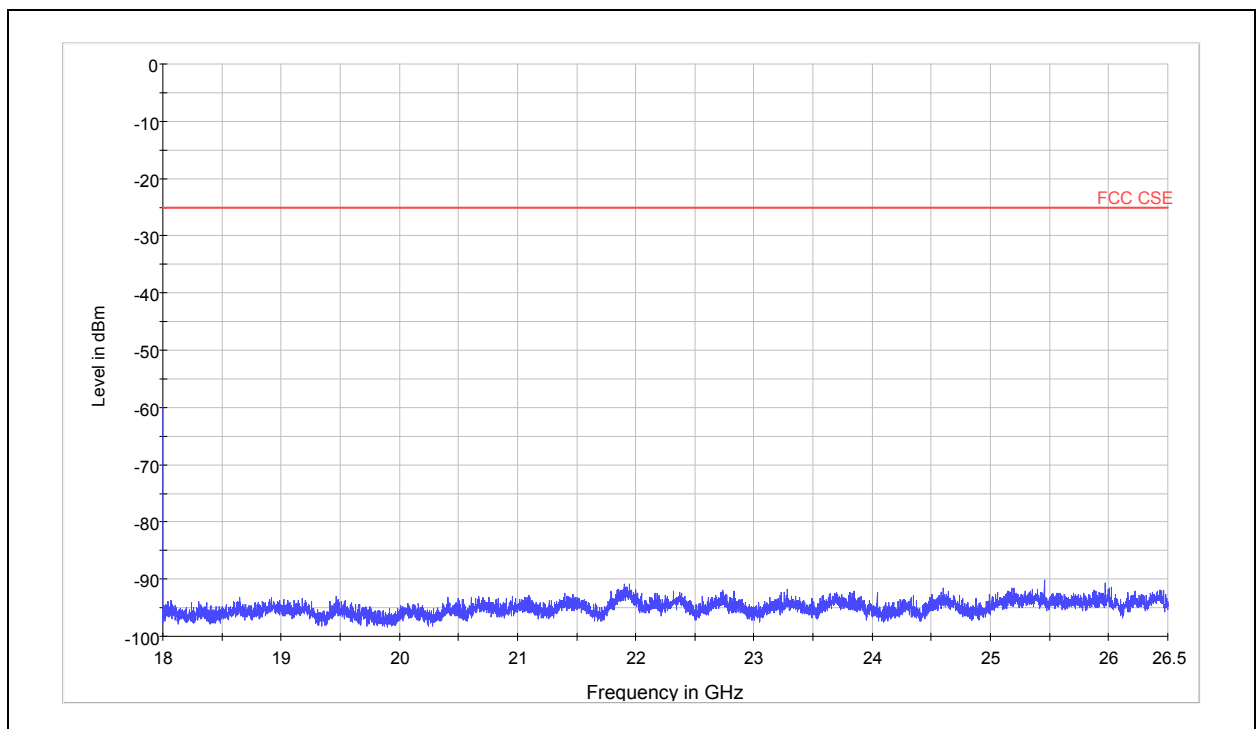
Report No.: RXC1312-0222RF06R2

Page 28 of 49

CH39:



Note: The signal beyond the limit is carrier. Carrier frequency (MHz): 2480  
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

## 2.9. Radiates Emission

### Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 23°C ~25°C  | 45%~50%           | 102.5kPa |

### Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.4-2009. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

The height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

Above 1GHz (detector: Peak):

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

The test is in transmitting mode.

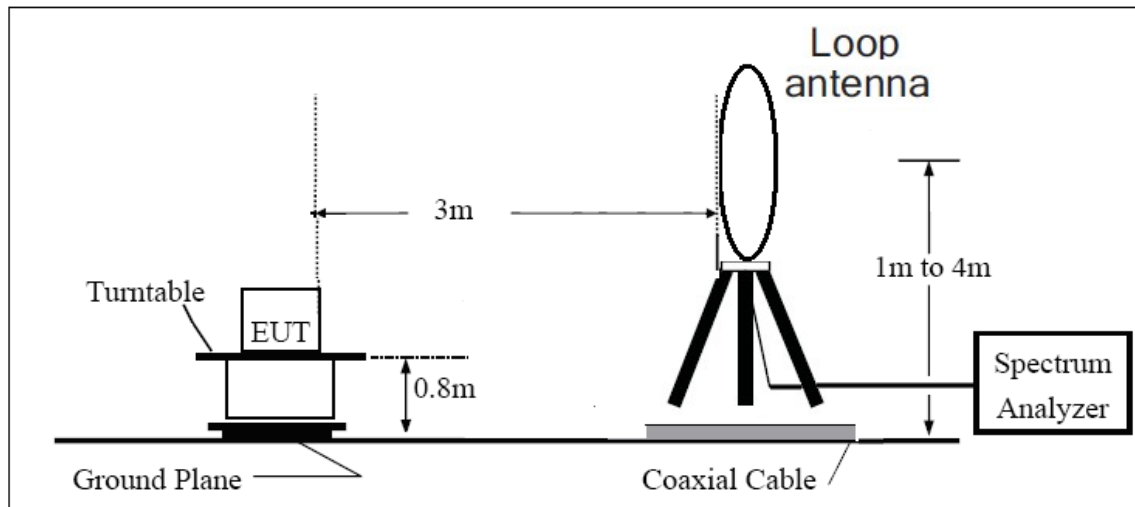
TA Technology (Shanghai) Co., Ltd.  
Test Report

Report No.: RXC1312-0222RF06R2

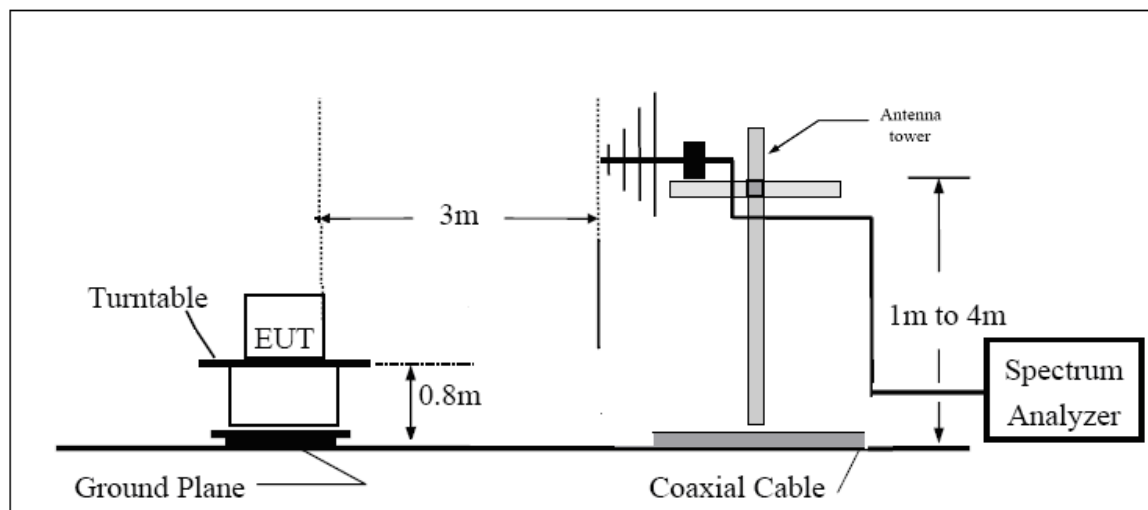
Page 30 of 49

Test setup

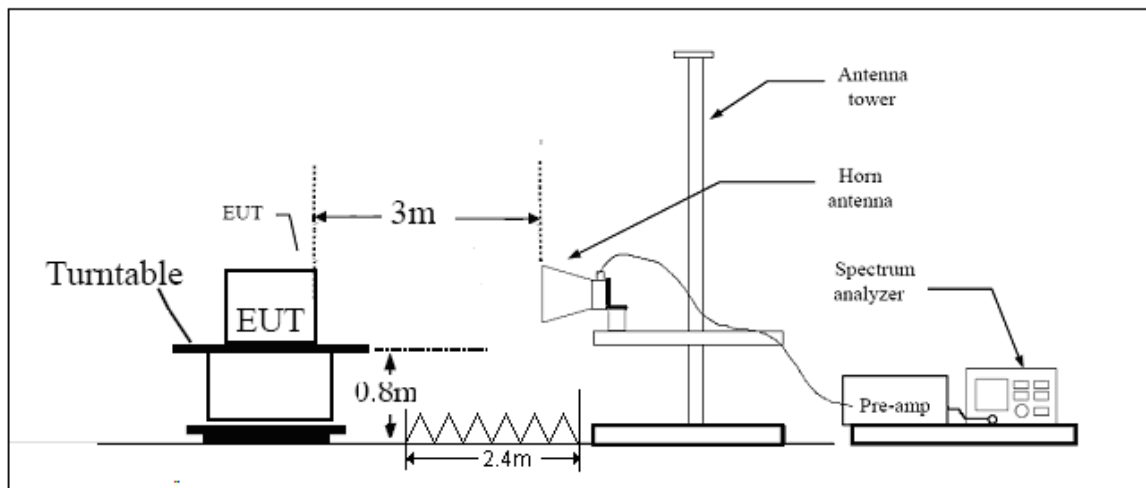
9KHz~~~ 30MHz



30MHz~~~ 1GHz



Above 1GHz



Note: Area side: 2.4mX3.6m

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

Report No.: RXC1312-0222RF06R2

Page 31 of 49

**Limits**

Rule Part 15.247(d) specifies that “In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).”

Limit in restricted band

| Frequency of emission (MHz) | Field strength(uV/m) | Field strength(dBuV/m) |
|-----------------------------|----------------------|------------------------|
| 0.009–0.490                 | 2400/F(kHz)          | /                      |
| 0.490–1.705                 | 24000/F(kHz)         | /                      |
| 1.705–30.0                  | 30                   | /                      |
| 30-88                       | 100                  | 40                     |
| 88-216                      | 150                  | 43.5                   |
| 216-960                     | 200                  | 46                     |
| Above960                    | 500                  | 54                     |

§15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

**Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

| Frequency    | Uncertainty |
|--------------|-------------|
| 9KHz-30MHz   | 3.55 dB     |
| 30MHz-200MHz | 4.19 dB     |
| 200MHz-1GHz  | 3.63 dB     |
| Above 1GHz   | 3.68 dB     |

# TA Technology (Shanghai) Co., Ltd.

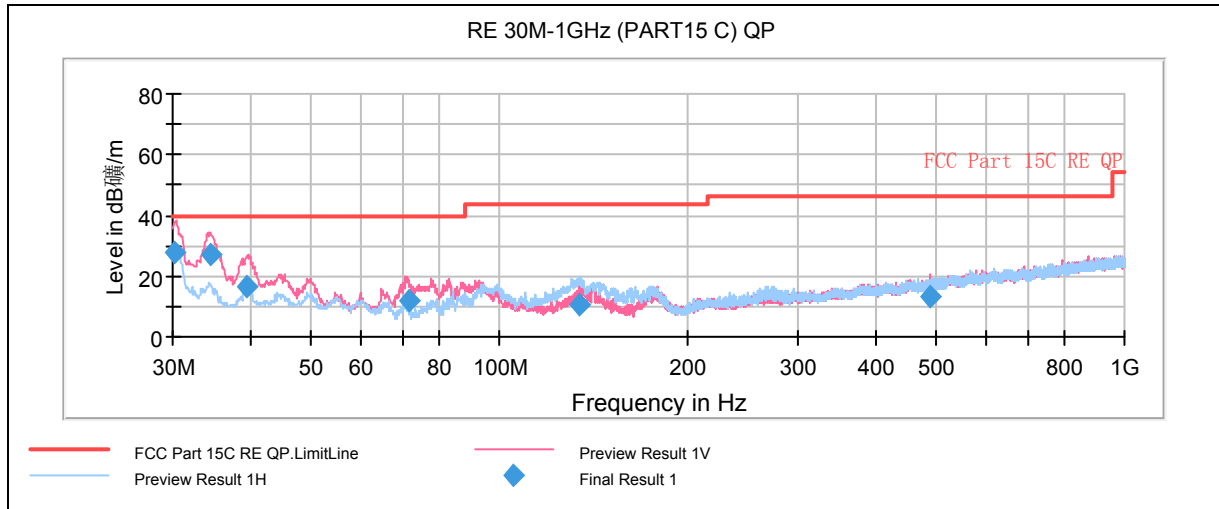
## Test Report

Report No.: RXC1312-0222RF06R2

Page 32 of 49

### Test result

Low Energy-Channel 0



Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)  
Radiates Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 30.300000       | 27.5                | 100.0       | V            | 45.0          | 44.7                   | -17.2               | 12.5        | 40.0           |
| 34.423750       | 27.1                | 100.0       | V            | 321.0         | 46.1                   | -19.0               | 12.9        | 40.0           |
| 39.478750       | 16.6                | 100.0       | V            | 16.0          | 35.9                   | -19.3               | 23.4        | 40.0           |
| 71.606250       | 12.0                | 100.0       | V            | 342.0         | 39.8                   | -27.8               | 28.0        | 40.0           |
| 134.413750      | 10.8                | 201.0       | H            | 127.0         | 39.7                   | -28.9               | 32.7        | 43.5           |
| 487.936250      | 13.3                | 400.0       | V            | 324.0         | 31.7                   | -18.4               | 32.7        | 46.0           |

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

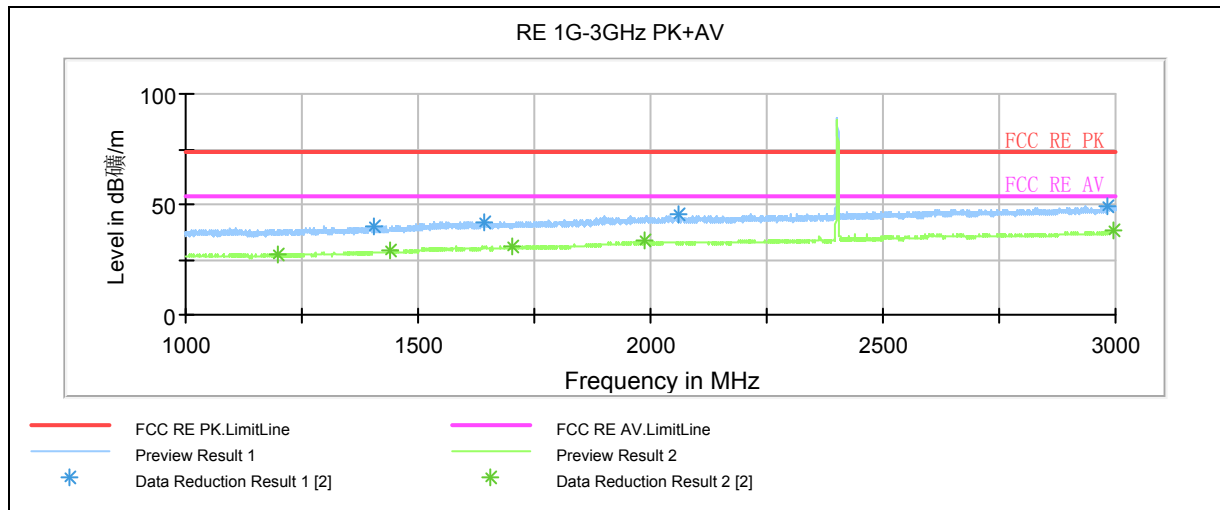
3. Margin = Limit – Quasi-Peak

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 33 of 49



Note: a font ( Level in dBμV/m ) in the test plot =(level in dBμV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 1406.500000     | 40.1          | 100.0       | V            | 290.0         | 48.5                   | -8.4                | 33.9        | 74             |
| 1642.750000     | 42.1          | 100.0       | V            | 327.0         | 47.3                   | -5.2                | 31.9        | 74             |
| 2061.250000     | 45.8          | 100.0       | V            | 248.0         | 48.8                   | -3                  | 28.2        | 74             |
| 2981.750000     | 49.2          | 100.0       | V            | 356.0         | 47.9                   | 1.3                 | 24.8        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 1197.000000     | 27.2             | 100.0       | H            | 31.0          | 36.9                   | -9.7                | 26.8        | 54             |
| 1441.000000     | 28.7             | 100.0       | V            | 248.0         | 36.7                   | -8                  | 25.3        | 54             |
| 1704.000000     | 30.9             | 100.0       | V            | 327.0         | 36.4                   | -5.5                | 23.1        | 54             |
| 1988.500000     | 33.3             | 100.0       | H            | 38.0          | 36.5                   | -3.2                | 20.7        | 54             |
| 2994.250000     | 37.9             | 100.0       | V            | 263.0         | 36.5                   | 1.4                 | 16.1        | 54             |

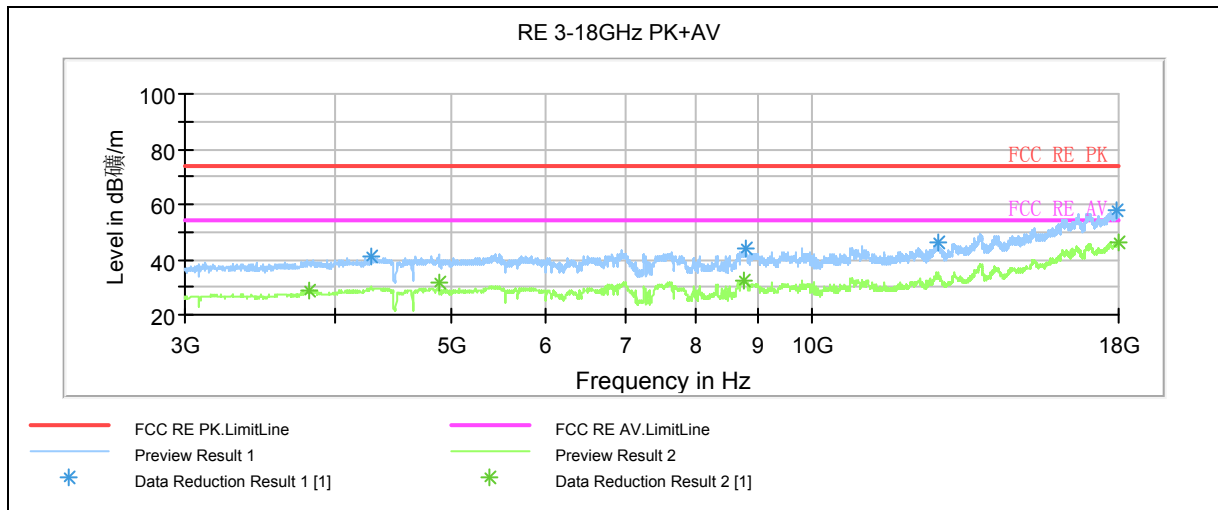
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 34 of 49



Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)  
Radiates Emission from 3GHz to 18GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 4297.500000     | 41.0          | 100.0       | V            | 251.0         | 39.5                   | 1.5                 | 33.0        | 74             |
| 8788.125000     | 44.2          | 100.0       | H            | 0.0           | 36.1                   | 8.1                 | 29.8        | 74             |
| 12718.125000    | 46.4          | 100.0       | V            | 339.0         | 33.9                   | 12.5                | 27.6        | 74             |
| 17938.125000    | 57.6          | 100.0       | H            | 186.0         | 34.2                   | 23.4                | 16.4        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

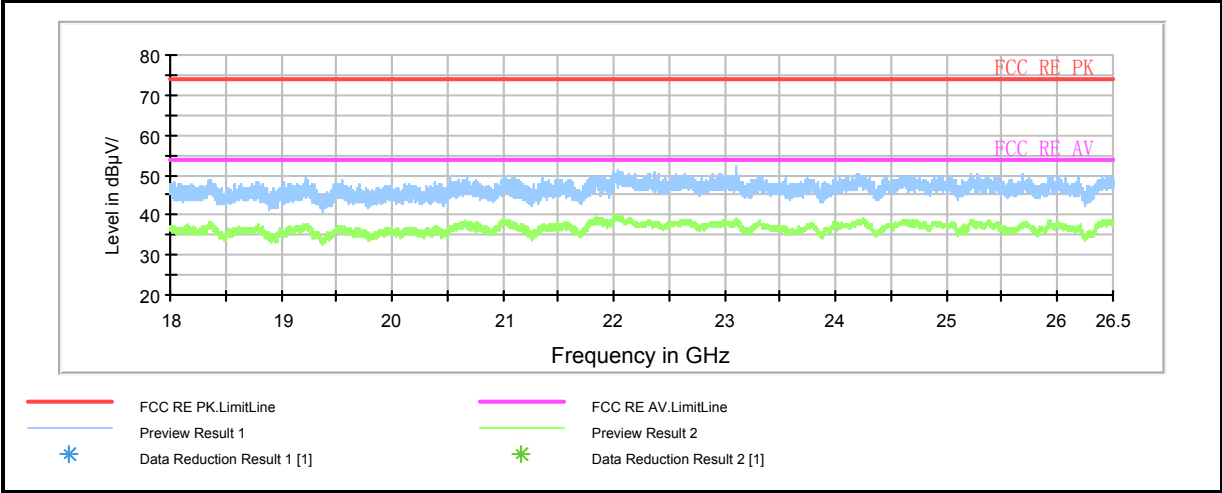
| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3808.125000     | 28.9             | 100.0       | V            | 179.0         | 29.2                   | -0.3                | 25.1        | 54             |
| 4880.625000     | 31.7             | 100.0       | V            | 347.0         | 29.8                   | 1.9                 | 22.3        | 54             |
| 8780.625000     | 32.4             | 100.0       | H            | 52.0          | 24.3                   | 8.1                 | 21.6        | 54             |
| 18000.000000    | 46.3             | 100.0       | V            | 269.0         | 22.8                   | 23.5                | 7.7         | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

TA Technology (Shanghai) Co., Ltd.  
Test Report

Report No.: RXC1312-0222RF06R2

Page 35of 49



Radiates Emission from 18GHz to 26.5GHz

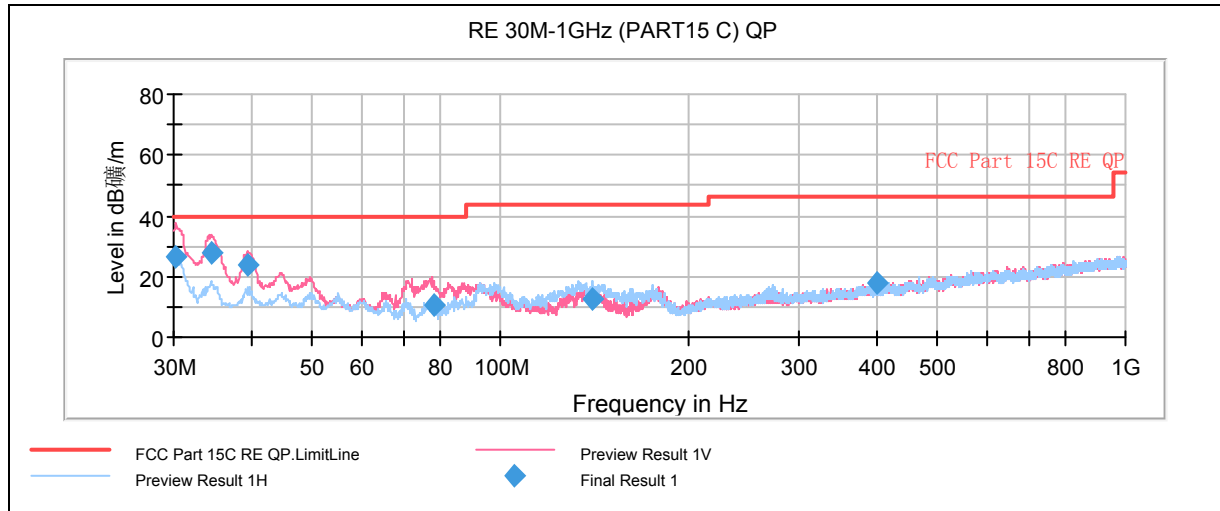
# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 36 of 49

### Low Energy-Channel 19



Note: a font ( Level in dB $\mu$ V/m ) in the test plot =(level in dBuV/m)  
Radiates Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 30.140000       | 26.6                | 100.0       | V            | 16.0          | 43.7                   | -17.1               | 13.4        | 40.0           |
| 34.503750       | 27.6                | 100.0       | V            | 152.0         | 46.6                   | -19.0               | 12.4        | 40.0           |
| 39.516250       | 23.9                | 100.0       | V            | 271.0         | 43.2                   | -19.3               | 16.1        | 40.0           |
| 78.191250       | 10.3                | 125.0       | V            | 193.0         | 38.5                   | -28.2               | 29.7        | 40.0           |
| 140.761250      | 12.4                | 221.0       | H            | 117.0         | 41.6                   | -29.2               | 31.1        | 43.5           |
| 399.995000      | 18.0                | 100.0       | H            | 155.0         | 38.2                   | -20.2               | 28.0        | 46.0           |

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

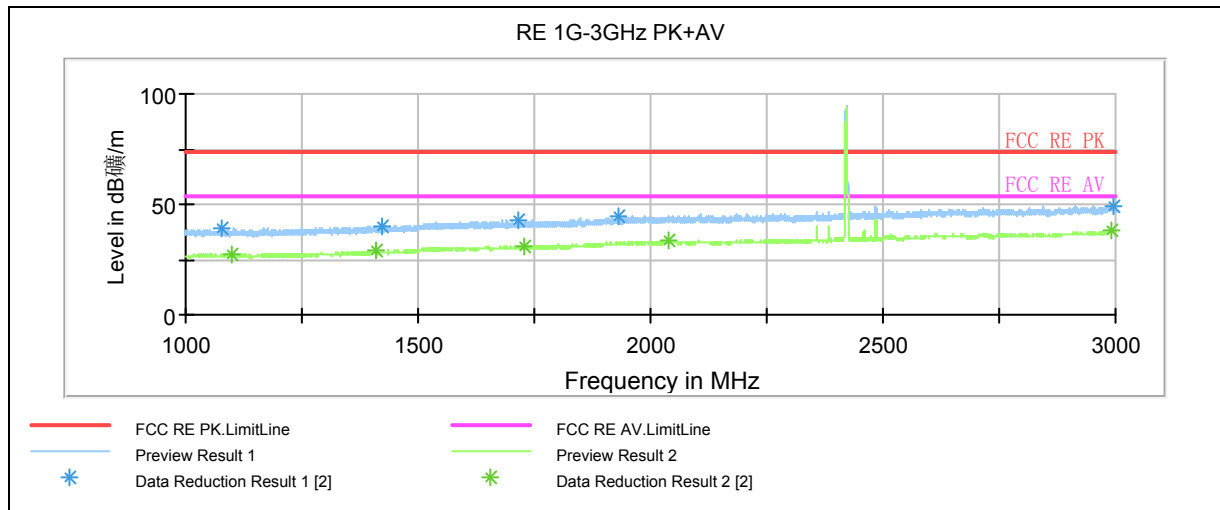
3. Margin = Limit – Quasi-Peak

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 37 of 49



Note: a font ( Level in dBμV/m ) in the test plot =(level in dBuV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 1077.750000     | 39.2          | 100.0       | V            | 182.0         | 49.1                   | -9.9                | 34.8        | 74             |
| 1421.750000     | 40.0          | 100.0       | V            | 346.0         | 48.1                   | -8.1                | 34.0        | 74             |
| 1714.000000     | 43.0          | 100.0       | V            | 28.0          | 48.5                   | -5.5                | 31.0        | 74             |
| 1932.500000     | 44.6          | 100.0       | V            | 182.0         | 48.5                   | -3.9                | 29.4        | 74             |
| 2997.500000     | 49.2          | 100.0       | V            | 234.0         | 47.8                   | 1.4                 | 24.8        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 1097.000000     | 27.4             | 100.0       | H            | 0.0           | 37.4                   | -10                 | 26.6        | 54             |
| 1409.000000     | 28.9             | 100.0       | H            | 68.0          | 37.3                   | -8.4                | 25.1        | 54             |
| 1728.500000     | 31.0             | 100.0       | V            | 212.0         | 36.7                   | -5.7                | 23.0        | 54             |
| 2038.500000     | 33.3             | 100.0       | H            | 145.0         | 36.3                   | -3                  | 20.7        | 54             |
| 2991.500000     | 38.2             | 100.0       | V            | 340.0         | 36.8                   | 1.4                 | 15.8        | 54             |

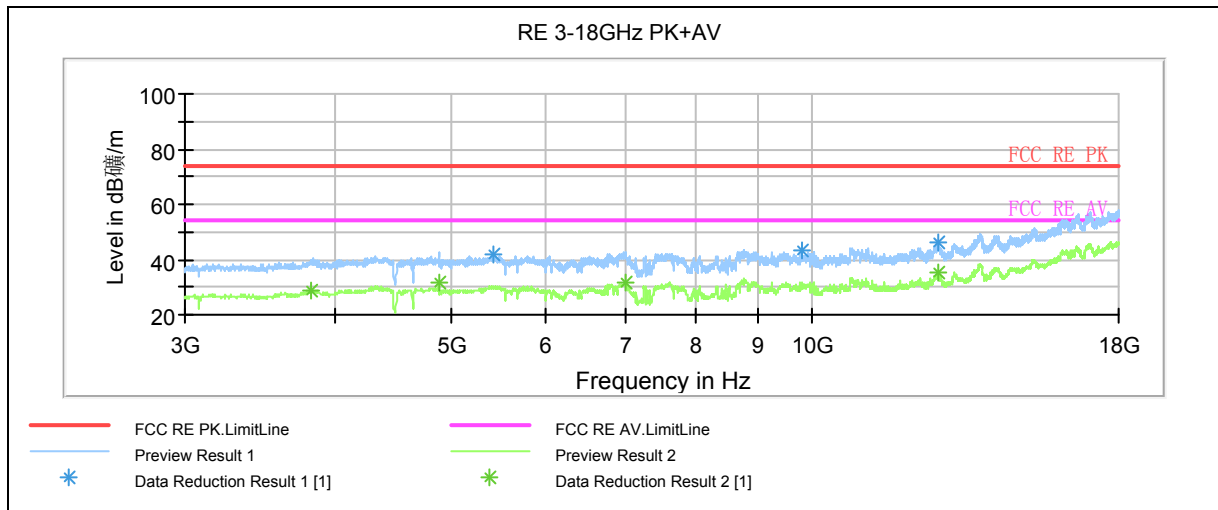
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 38 of 49



Note: a font (Level in dBμV/m) in the test plot =(level in dBμV/m)  
Radiates Emission from 3GHz to 18GHz

| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 5413.125000     | 42.1          | 100.0       | H            | 274.0         | 39.5                   | 2.6                 | 31.9        | 74             |
| 9802.500000     | 43.6          | 100.0       | H            | 230.0         | 34.1                   | 9.5                 | 30.4        | 74             |
| 12735.000000    | 45.9          | 100.0       | H            | 87.0          | 33.3                   | 12.6                | 28.1        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

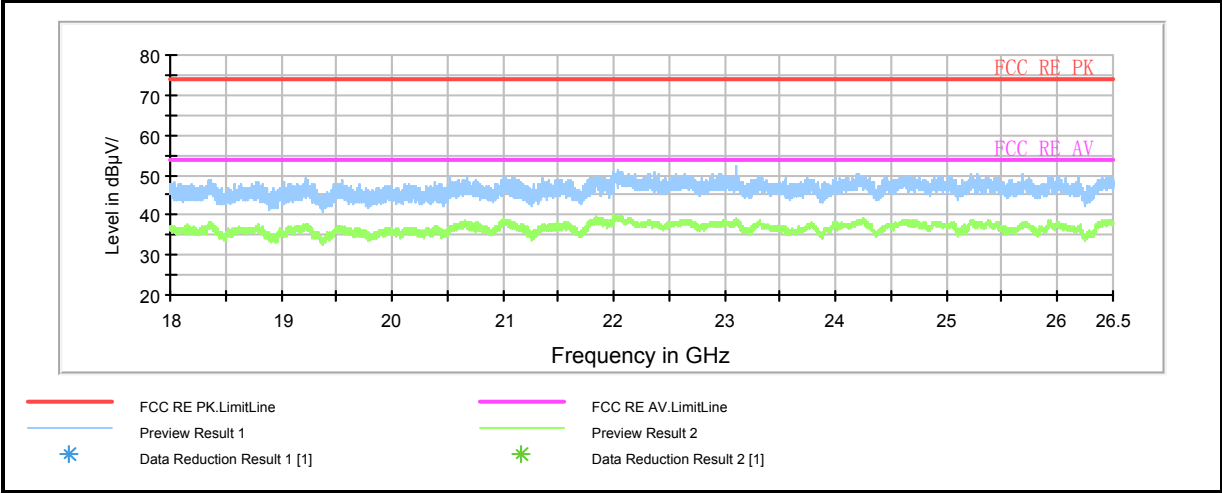
| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 3823.125000     | 29.0             | 100.0       | H            | 140.0         | 29.1                   | -0.1                | 25.0        | 54             |
| 4880.625000     | 31.8             | 100.0       | V            | 350.0         | 29.9                   | 1.9                 | 22.2        | 54             |
| 6991.875000     | 31.9             | 100.0       | V            | 0.0           | 26.9                   | 5                   | 22.1        | 54             |
| 12742.500000    | 35.4             | 100.0       | V            | 236.0         | 22.8                   | 12.6                | 18.6        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

TA Technology (Shanghai) Co., Ltd.  
Test Report

Report No.: RXC1312-0222RF06R2

Page 39 of 49



Radiates Emission from 18GHz to 26.5GHz

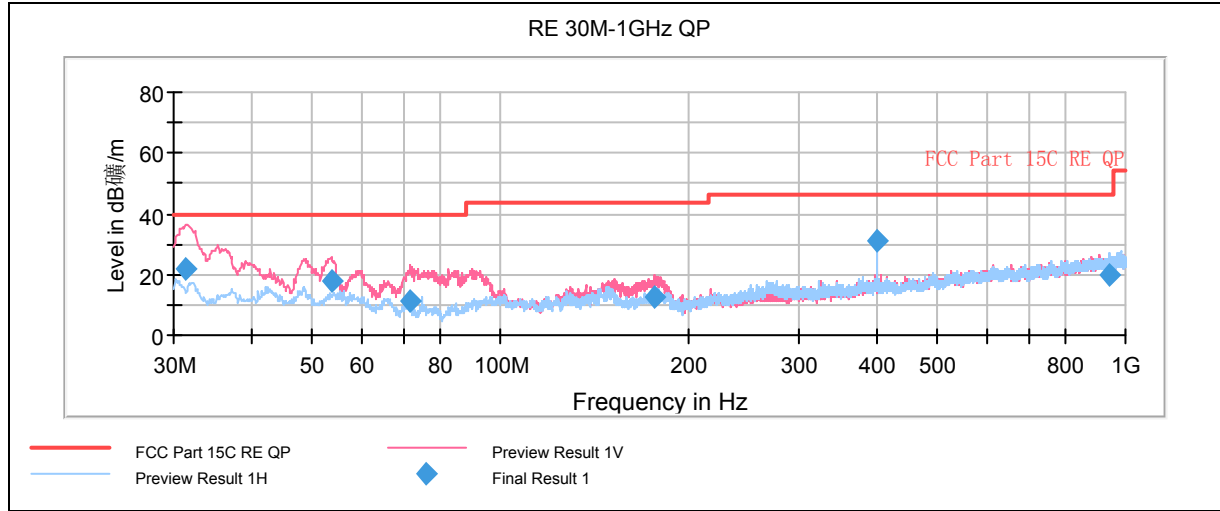
# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 40 of 49

### Low Energy-Channel 39



Note: a font ( Level in dBμV/m ) in the test plot =(level in dBuV/m)  
 Radiates Emission from 30MHz to 1GHz

| Frequency (MHz) | Quasi-Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 31.376362       | 21.9                | 120.0       | V            | 299.0         | 39.8                   | -17.9               | 18.1        | 40.0           |
| 53.831534       | 18.0                | 100.0       | V            | 115.0         | 40.3                   | -22.3               | 22.0        | 40.0           |
| 71.729778       | 11.5                | 100.0       | V            | 273.0         | 39.6                   | -28.1               | 28.5        | 40.0           |
| 176.629772      | 12.6                | 100.0       | V            | 278.0         | 40.5                   | -27.9               | 30.9        | 43.5           |
| 399.975000      | 31.2                | 125.0       | V            | 229.0         | 52.0                   | -20.8               | 14.8        | 46.0           |
| 944.984500      | 19.9                | 100.0       | H            | 24.0          | 32.2                   | -12.3               | 26.1        | 46.0           |

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

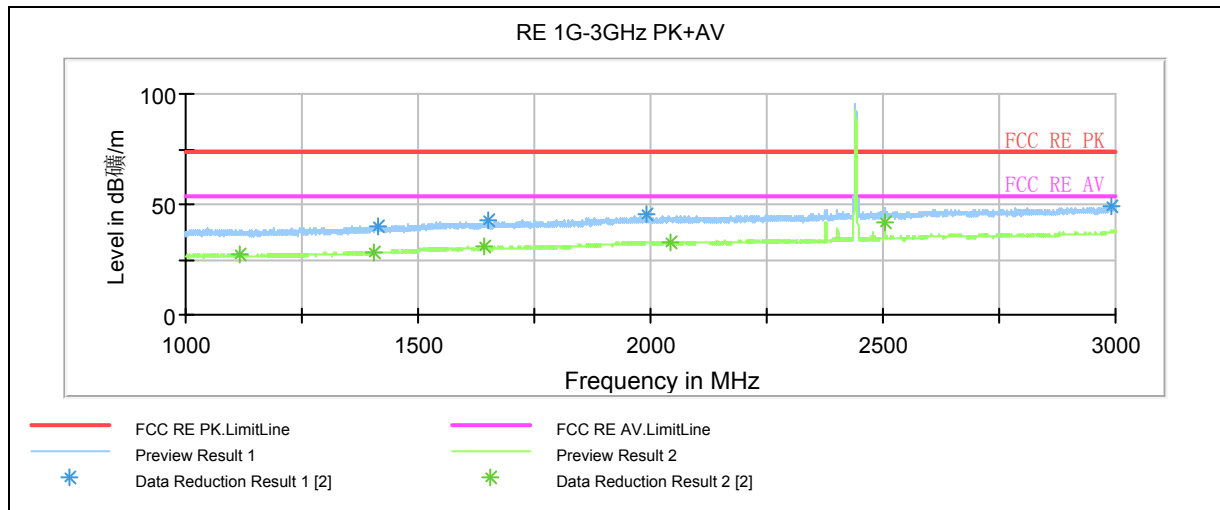
3. Margin = Limit – Quasi-Peak

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 41 of 49



Note: a font ( Level in dBμV/m ) in the test plot =(level in dBμV/m)

Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

| Frequency (MHz) | Peak (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBμV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 1415.000000     | 40.0          | 100.0       | H            | 7.0           | 48.2                   | -8.2                | 34.0        | 74             |
| 1652.000000     | 42.7          | 100.0       | H            | 207.0         | 48.3                   | -5.6                | 31.3        | 74             |
| 1990.250000     | 45.2          | 100.0       | V            | 0.0           | 48.3                   | -3.1                | 28.8        | 74             |
| 2991.750000     | 48.8          | 100.0       | H            | 271.0         | 47.4                   | 1.4                 | 25.2        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBμV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBμV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBμV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 1117.500000     | 27.4             | 100.0       | H            | 100.0         | 37.1                   | -9.7                | 26.6        | 54             |
| 1403.500000     | 28.6             | 100.0       | H            | 305.0         | 37.0                   | -8.4                | 25.4        | 54             |
| 1643.500000     | 31.0             | 100.0       | V            | 0.0           | 36.2                   | -5.2                | 23.0        | 54             |
| 2043.750000     | 33.2             | 100.0       | V            | 134.0         | 36.2                   | -3                  | 20.8        | 54             |
| 2504.750000     | 41.9             | 100.0       | H            | 0.0           | 42.8                   | -0.9                | 12.1        | 54             |

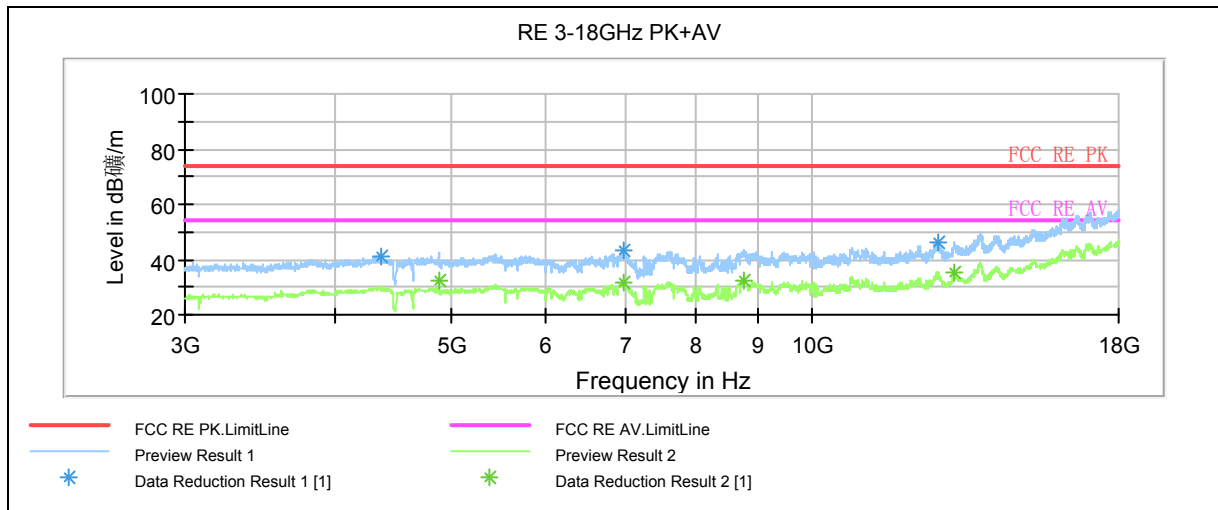
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 42 of 49



Note: a font (Level in dBμV/m) in the test plot =(level in dBuV/m)  
Radiates Emission from 3GHz to 18GHz

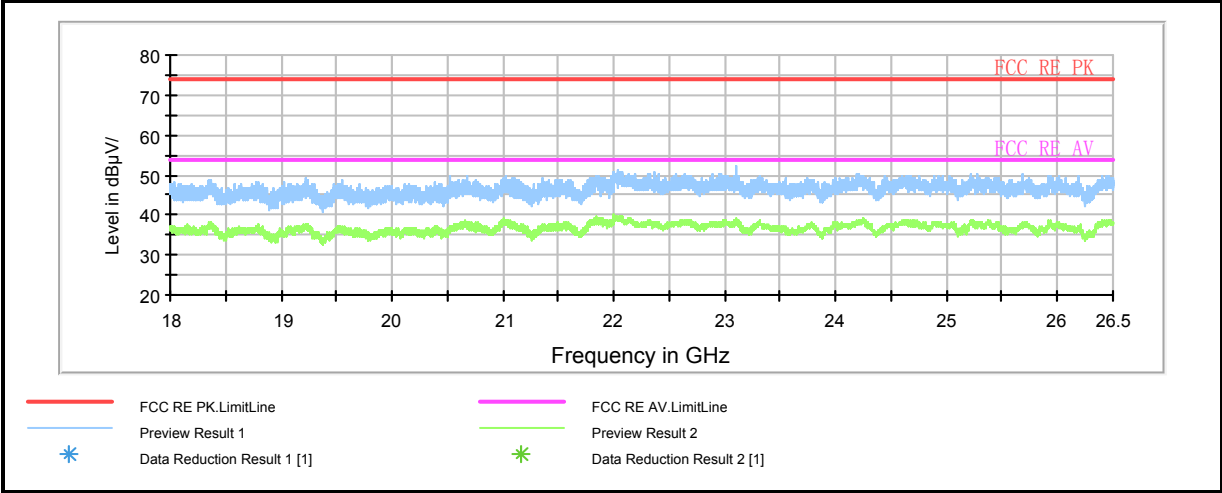
| Frequency (MHz) | Peak (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|---------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 12744.375000    | 46.1          | 100.0       | V            | 39.0          | 33.5                   | 12.6                | 27.9        | 74             |
| 6952.500000     | 43.5          | 100.0       | H            | 77.0          | 38.8                   | 4.7                 | 30.5        | 74             |
| 4365.000000     | 41.3          | 100.0       | H            | 147.0         | 39.9                   | 1.4                 | 32.7        | 74             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

| Frequency (MHz) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Reading value (dBuV/m) | Correct Factor (dB) | Margin (dB) | Limit (dBuV/m) |
|-----------------|------------------|-------------|--------------|---------------|------------------------|---------------------|-------------|----------------|
| 4882.500000     | 32.3             | 100.0       | V            | 18.0          | 30.5                   | 1.8                 | 21.7        | 54             |
| 6956.250000     | 31.5             | 100.0       | H            | 0.0           | 26.8                   | 4.7                 | 22.5        | 54             |
| 8786.250000     | 32.5             | 100.0       | H            | 0.0           | 24.4                   | 8.1                 | 21.5        | 54             |
| 13138.125000    | 35.2             | 100.0       | V            | 343.0         | 22.4                   | 12.8                | 18.8        | 54             |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

TA Technology (Shanghai) Co., Ltd.  
Test Report



Radiates Emission from 18GHz to 26.5GHz

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 44 of 49

### 2.10. Conducted Emission

#### Ambient condition

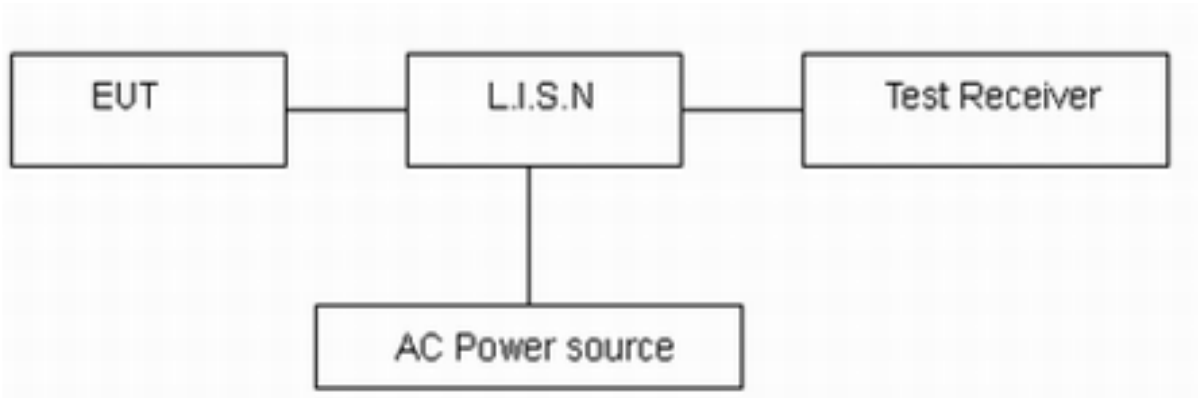
|             |                   |          |
|-------------|-------------------|----------|
| Temperature | Relative humidity | Pressure |
| 23°C ~25°C  | 45%~50%           | 101.5kPa |

#### Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2009. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.

The test is in transmitting mode.

#### Test Setup



Note: AC Power source is used to change the voltage from 220V/50Hz to 110V/60Hz.

#### Limits

| Frequency (MHz)                                   | Conducted Limits(dBμV) |            |
|---|------------------------|------------|
|   | Quasi-peak             | Average    |
| 0.15 - 0.5  | 66 to 56 *             | 56 to 46 * |
| 0.5 - 5   | 56                     | 46         |
| 5 - 30  | 60                     | 50         |
| *: Decreases with the logarithm of the frequency. |                        |            |

#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U = 2.69$  dB.

# TA Technology (Shanghai) Co., Ltd.

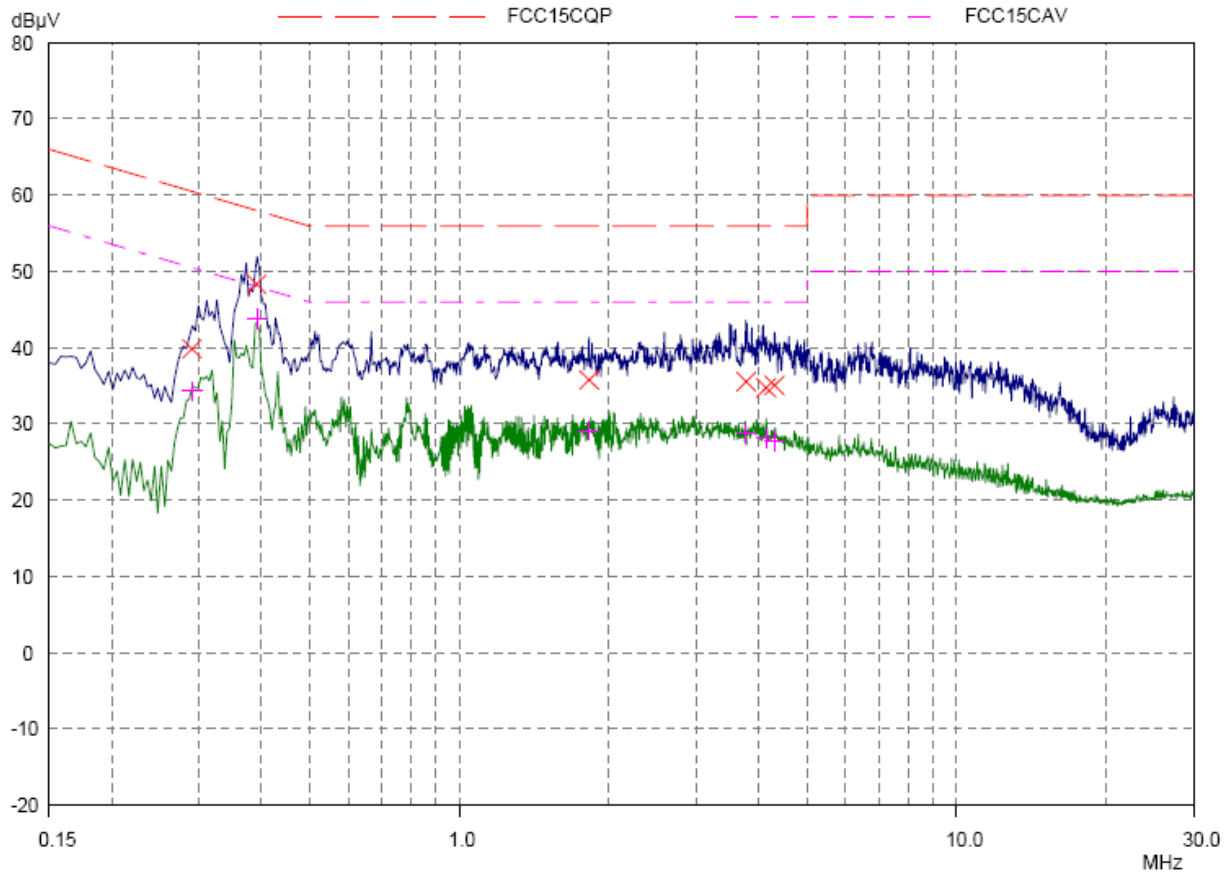
## Test Report

Report No.: RXC1312-0222RF06R2

Page 45 of 49

### Test Results:

#### Low Energy



#### Final Measurement Results

| Frequency<br>MHz | QP Level<br>dBμV | QP Limit<br>dBμV | QP Delta<br>dB | Phase<br>- | PE<br>- |
|------------------|------------------|------------------|----------------|------------|---------|
| 0.29062          | 39.83            | 60.51            | 20.68          | L1         | gnd     |
| 0.39218          | 48.34            | 58.02            | 9.68           | L1         | gnd     |
| 1.82187          | 35.75            | 56.00            | 20.25          | L1         | gnd     |
| 3.77109          | 35.56            | 56.00            | 20.44          | L1         | gnd     |
| 4.13828          | 34.72            | 56.00            | 21.28          | L1         | gnd     |
| 4.30625          | 35.07            | 56.00            | 20.93          | L1         | gnd     |

| Frequency<br>MHz | AV Level<br>dBμV | AV Limit<br>dBμV | AV Delta<br>dB | Phase<br>- | PE<br>- |
|------------------|------------------|------------------|----------------|------------|---------|
| 0.29062          | 34.30            | 50.51            | 16.21          | L1         | gnd     |
| 0.39218          | 43.80            | 48.02            | 4.22           | L1         | gnd     |
| 1.82187          | 29.17            | 46.00            | 16.83          | L1         | gnd     |
| 3.77109          | 28.71            | 46.00            | 17.29          | L1         | gnd     |
| 4.13828          | 28.09            | 46.00            | 17.91          | L1         | gnd     |
| 4.30625          | 27.80            | 46.00            | 18.20          | L1         | gnd     |

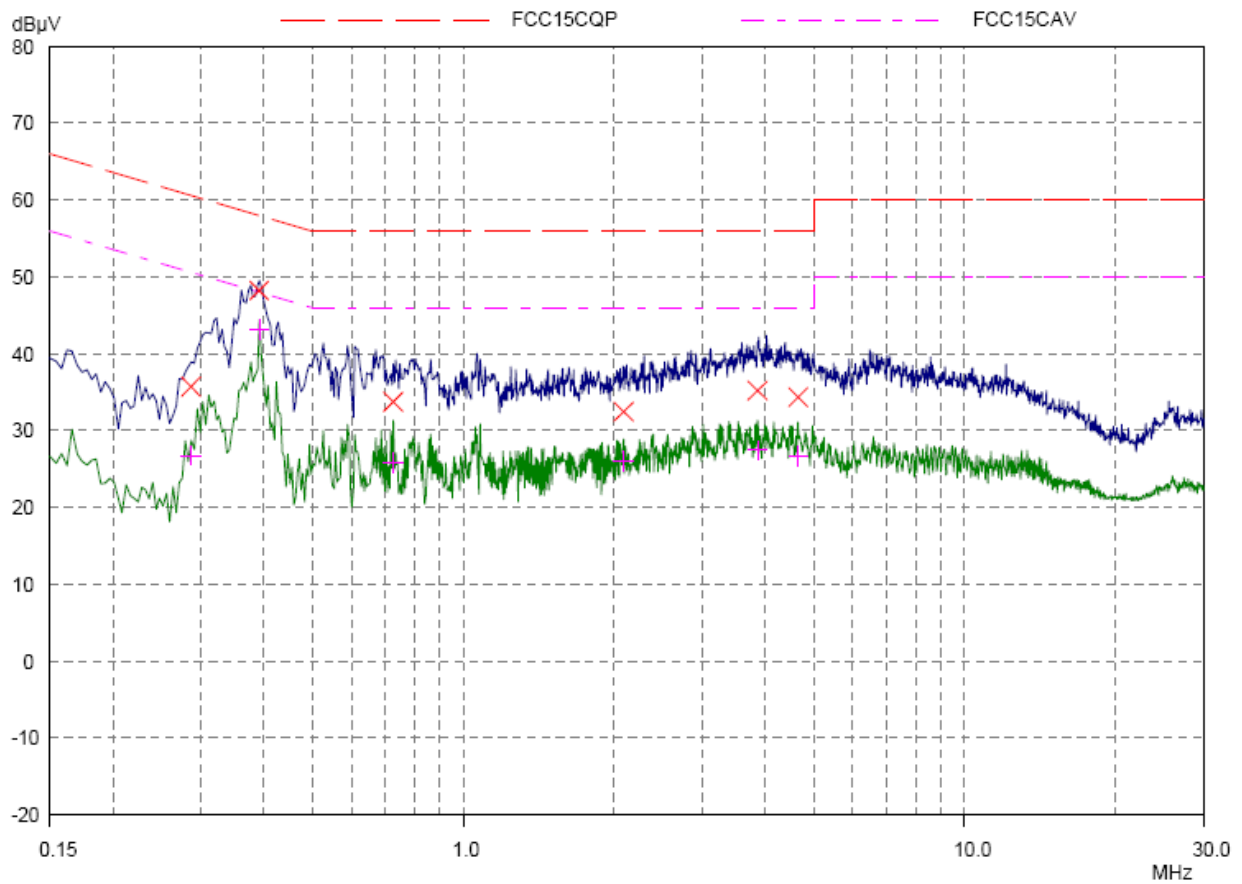
L Line

# TA Technology (Shanghai) Co., Ltd.

## Test Report

Report No.: RXC1312-0222RF06R2

Page 46 of 49



### Final Measurement Results

| Frequency<br>MHz | QP Level<br>dBμV | QP Limit<br>dBμV | QP Delta<br>dB | Phase<br>- | PE<br>- |
|------------------|------------------|------------------|----------------|------------|---------|
| 0.28671          | 35.73            | 60.62            | 24.89          | N          | gnd     |
| 0.39218          | 48.22            | 58.02            | 9.80           | N          | gnd     |
| 0.72421          | 33.77            | 56.00            | 22.23          | N          | gnd     |
| 2.0914           | 32.48            | 56.00            | 23.52          | N          | gnd     |
| 3.86484          | 35.24            | 56.00            | 20.76          | N          | gnd     |
| 4.6539           | 34.37            | 56.00            | 21.63          | N          | gnd     |

| Frequency<br>MHz | AV Level<br>dBμV | AV Limit<br>dBμV | AV Delta<br>dB | Phase<br>- | PE<br>- |
|------------------|------------------|------------------|----------------|------------|---------|
| 0.28671          | 26.80            | 50.62            | 23.82          | N          | gnd     |
| 0.39218          | 43.16            | 48.02            | 4.86           | N          | gnd     |
| 0.72421          | 25.79            | 46.00            | 20.21          | N          | gnd     |
| 2.0914           | 26.06            | 46.00            | 19.94          | N          | gnd     |
| 3.86484          | 27.46            | 46.00            | 18.54          | N          | gnd     |
| 4.6539           | 26.72            | 46.00            | 19.28          | N          | gnd     |

N Line

**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

Report No.: RXC1312-0222RF06R2

Page 47 of 49

### 3. Main Test Instruments

| No. | Name                                 | Type         | Manufacturer | Serial Number | Calibration Date | Valid Period |
|-----|--------------------------------------|--------------|--------------|---------------|------------------|--------------|
| 01  | EMI Test Receiver                    | ESCS30       | R&S          | 100138        | 2014-01-14       | One year     |
| 02  | Loop Antenna                         | FMZB1516     | SCHWARZBECK  | 237           | 2012-06-30       | Two years    |
| 03  | LISN                                 | ENV216       | R&S          | 101171        | 2014-04-12       | One year     |
| 04  | EMI Test Receiver                    | ESCI         | R&S          | 100948        | 2013-06-29       | One year     |
| 05  | TRILOG Broadband Antenna             | VULB 9163    | Schwarzbeck  | 9163-201      | 2013-06-19       | Three years  |
| 06  | Signal Analyzer                      | FSV30        | R&S          | 100815        | 2013-06-29       | One year     |
| 07  | Double Ridged Waveguide Horn Antenna | HF907        | R&S          | 100126        | 2012-07-02       | Three years  |
| 08  | Standard Gain Horn                   | 3160-09      | ETS-Lindgren | 00102644      | 2012-05-20       | Three years  |
| 09  | PSG Analog Signal Generator          | E8257D       | Agilent      | MY49281101    | 2013-06-29       | One year     |
| 10  | ESG Vector Signal Generator          | E4438C       | Agilent      | MY49070900    | 2013-06-29       | One year     |
| 11  | Spectrum Analyzer                    | E4445A       | Agilent      | MY46181146    | 2013-06-29       | One year     |
| 12  | Power Splitter                       | SHX-GF2-2-13 | Hua Xiang    | 10120101      | NA               | NA           |
| 13  | MOB COMMS DC SUPPLY                  | 66319D       | Agilent      | MY43004105    | 2013-06-29       | One year     |
| 14  | Power Sensor                         | E9304A       | Agilent      | MY50220022    | 2013-06-29       | One year     |
| 15  | Power Meter                          | E4418B       | Agilent      | MY50000623    | 2013-06-29       | One year     |
| 16  | Vibration table                      | ESS-050-120  | dongling     | D1007126      | 2013-08-22       | Three years  |

\*\*\*\*\*END OF REPORT \*\*\*\*\*

## ANNEX A: EUT Appearance and Test Setup

### A.1 EUT Appearance



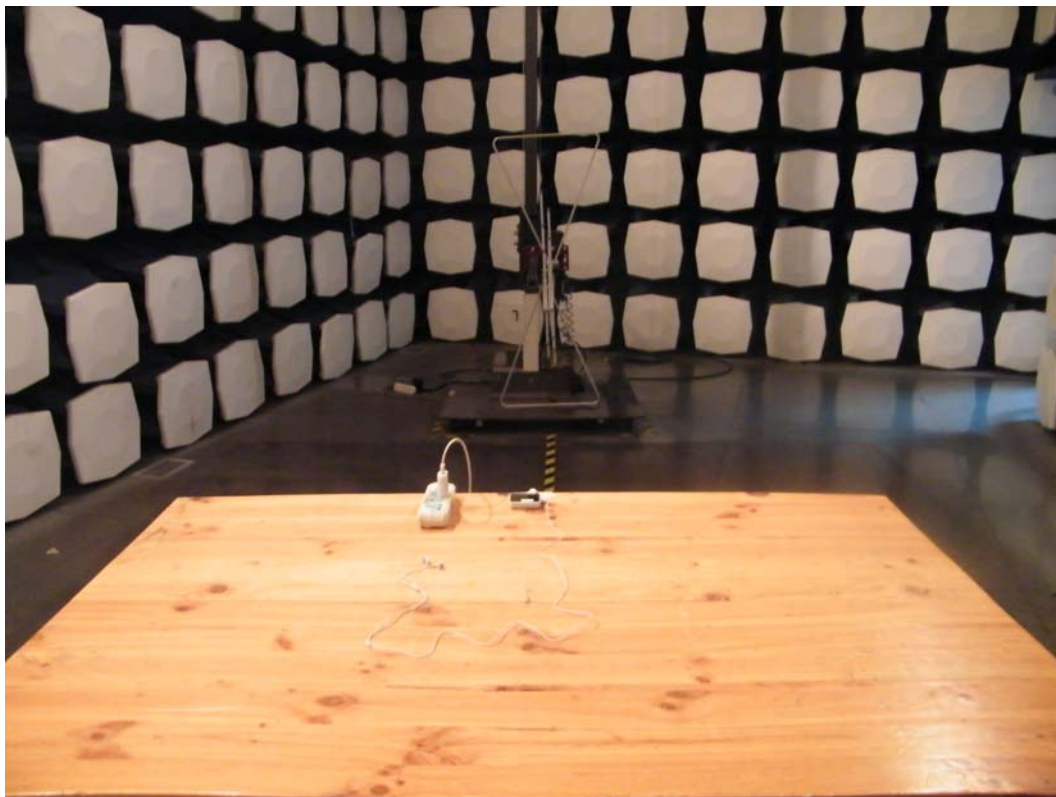
a: EUT



b: Adapter

Picture 1 Constituents of EUT

## **A.2 Test Setup**



**Picture 2 Radiated Emission Test Setup**