



# TEST REPORT

**FCC Rules and Regulations Part 15 Subpart C Section 15.247**

**ANSI C63.10: 2013**

**RSS-GEN: Issue 5**

**RSS-247: Issue 2**

**Test report  
On Behalf of  
Anker Innovations Limited  
For  
Soundcore Ace A0  
Model No.: A3150  
FCC ID: 2AOKB-A3150  
IC:23451-A3150**

**Prepared for :** Anker Innovations Limited  
Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon,  
Hongkong

**Prepared By :** Shenzhen HUAKE Testing Technology Co., Ltd.  
1F, B2 Building, JunfengZhongchengZhizao Innovation Park, Fuhai Street,  
Bao'an District, Shenzhen City, China

**Date of Test:** Feb.15, 2019 ~ Mar. 20, 2019

**Date of Report:** Mar. 20, 2019

**Report Number:** HK1902180254E



## TEST RESULT CERTIFICATION

**Applicant's name** ..... : Anker Innovations Limited  
**Address**..... : Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong  
**Manufacture's Name**..... : Anker Innovations Limited  
**Address**..... : Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong  
**Factory's Name** ..... : Dongguan Jianguan Plastic Electronics Co., Ltd.  
**Address** ..... : Ludong Village, Humen Town, Dongguan City, Guangdong Province, P.R. China

**Product description**  
**Trade Mark**:..... Soundcore Ace A0  
**ProductName**..... : Soundcore  
**Model and/or type reference**... : A3150  
FCC Rules and Regulations Part 15 Subpart C Section 15.247  
ANSI C63.10: 2013  
**Standards**..... : RSS-GEN: Issue 5  
RSS-247: Issue 2

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**Date of Test**..... :  
**Date (s) of performance of tests**..... : Feb.15, 2019 ~ Mar. 20, 2019  
**Date of Issue**..... : Mar. 20, 2019  
**Test Result**..... : **Pass**

**Testing Engineer** :   
\_\_\_\_\_  
(Gary Qian)

**Technical Manager** :   
\_\_\_\_\_  
(Eden Hu)

**Authorized Signatory** :   
\_\_\_\_\_  
(Jason Zhou)



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## 1. TEST SUMMARY

### 1.1. TEST PROCEDURES AND RESULTS

| DESCRIPTION OF TEST         | RESULT    |
|-----------------------------|-----------|
| Peak Output Power           | Compliant |
| 20 dB Bandwidth             | Compliant |
| Conducted Spurious Emission | Compliant |
| Radiated Emission           | Compliant |
| Band Edges                  | Compliant |
| Number of hopping frequency | Compliant |
| Time of Occupancy           | Compliant |
| Frequency Separation        | Compliant |
| Line conduction Emission    | Compliant |

### 1.2. TEST FACILITY

#### 1.2.1 Address of the test laboratory

Shenzhen HUAKE Testing Technology Co., Ltd.

Add.:1F, B2 Building, JunfengZhongchengZhizao Innovation Park,Heping Community, Fuhai Street, Bao'an District, Shenzhen, China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 32/EN 55032 requirements.

#### 1.2.2 Laboratory accreditation

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

##### IC Registration No.: 21210

The 3m alternate test site of Shenzhen HUAKE Testing Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration No.: 21210 on May 24, 2016.

##### FCC Registration No.: CN1229

Test Firm Registration Number : 616276

### 1.3. MEASUREMENT UNCERTAINTY

Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2

Radiated emission expanded uncertainty(30MHz-1000MHz) = 4.42dB, k=2

Radiated emission expanded uncertainty(Above 1GHz) = 4.06dB, k=2



## 2. GENERAL INFORMATION

### 2.1.GENERAL DESCRIPTION OF EUT

|                                                                                                                                      |                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation Frequency                                                                                                                  | 2.402 GHz to 2.480GHz                                                                                                                                                |
| RF Output Power                                                                                                                      | -2.351dBm(Max)                                                                                                                                                       |
| Bluetooth Version                                                                                                                    | V4.2                                                                                                                                                                 |
| Modulation                                                                                                                           | BR <input checked="" type="checkbox"/> GFSK, EDR <input checked="" type="checkbox"/> π /4-DQPSK, <input type="checkbox"/> 8DPSK<br>BLE <input type="checkbox"/> GFSK |
| Number of channels                                                                                                                   | 79 for BR/EDR                                                                                                                                                        |
| Hardware Version                                                                                                                     | V2.0                                                                                                                                                                 |
| Software Version                                                                                                                     | V1.0                                                                                                                                                                 |
| Antenna Designation                                                                                                                  | PCB Antenna                                                                                                                                                          |
| Antenna Gain                                                                                                                         | 0dBi                                                                                                                                                                 |
| Power Supply                                                                                                                         | DC 3.7V by battery                                                                                                                                                   |
| Note:1. The USB port only used for charging and can't be used to transfer data with PC.<br>2. The EUT doesn't support 8DPSK and BLE. |                                                                                                                                                                      |



## 2.2. CARRIER FREQUENCY OF CHANNELS

BR/EDR Channel List

| Frequency Band | Channel Number | Frequency |
|----------------|----------------|-----------|
| 2400~2483.5MHz | 0              | 2402MHz   |
|                | 1              | 2403MHz   |
|                | :              | :         |
|                | 38             | 2440 MHz  |
|                | 39             | 2441 MHz  |
|                | 40             | 2442 MHz  |
|                | :              | :         |
|                | 77             | 2479 MHz  |
|                | 78             | 2480 MHz  |

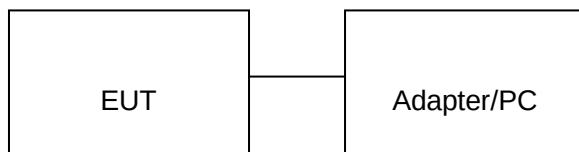
## 2.3. OPERATION OF EUT DURING TESTING

| NO.                                                                                                                                                                                                                                                                               | TEST MODE DESCRIPTION         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 1                                                                                                                                                                                                                                                                                 | Low channel GFSK              |
| 2                                                                                                                                                                                                                                                                                 | Middle channel GFSK           |
| 3                                                                                                                                                                                                                                                                                 | High channel GFSK             |
| 4                                                                                                                                                                                                                                                                                 | Low channel $\pi/4$ -DQPSK    |
| 5                                                                                                                                                                                                                                                                                 | Middle channel $\pi/4$ -DQPSK |
| 6                                                                                                                                                                                                                                                                                 | High channel $\pi/4$ -DQPSK   |
| 7                                                                                                                                                                                                                                                                                 | BT Link(Hopping mode)         |
| 8                                                                                                                                                                                                                                                                                 | BT Link with charging         |
| Note: 1. All the test modes can be supply by battery, only the result of the worst case was recorded in the report, if no other cases.<br>2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.<br>3. The EUT used fully-charged battery when tested. |                               |



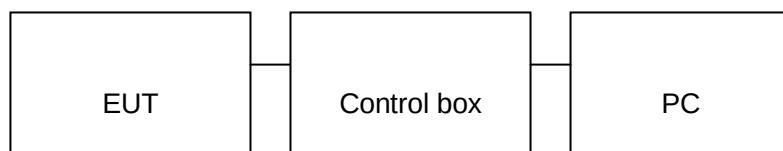
## 2.4. DESCRIPTION OF TEST SETUP

Configure 1: (Normal hopping)



**Note:** Owing to the EUT has own battery, and testing may be performed while adapter or PC removed.

Configure 2: (Control continuous TX)



## 2.5.EQUIPMENT USED IN EUT SYSTEM

| Item | Equipment   | Mfr/Brand | Model/Type No.  | Remark    |
|------|-------------|-----------|-----------------|-----------|
| 1    | Ace A0      | Soundcore | A3150           | EUT       |
| 2    | Battery     | GF        | 563030          | Accessory |
| 3    | IPOD        | APPLE     | A1367           | A.E       |
| 4    | Control box | GZUT      | USB TO TTL      | A.E       |
| 5    | Adapter     | N/A       | FY05020001      | A.E       |
| 6    | Adapter     | HUAWEI    | HW-059200CHQ    | A.E       |
| 7    | USB Cable   | N/A       | 0.5m unshielded | Accessory |
| 8    | PC          | DELL      | INSPIRON 3437   | A.E.      |

Note: AC mains conducted emission test was powered by FY05020001.  
Radiated emissions test was powered by HW-059200CHQ.

**2.6.MEASUREMENT INSTRUMENTS LIST****TEST EQUIPMENT OF CONDUCTED EMISSION TEST**

| Item | Equipment                               | Manufacturer | Model No. | Lab Equipment No. | Last Cal.     | Cal. Interval |
|------|-----------------------------------------|--------------|-----------|-------------------|---------------|---------------|
| 1.   | L.I.S.N.<br>Artificial Mains<br>Network | R&S          | ENV216    | HKE-002           | Dec. 27, 2018 | 1 Year        |
| 2.   | Receiver                                | R&S          | ESCI 7    | HKE-010           | Dec. 27, 2018 | 1 Year        |

**TEST EQUIPMENT OF RADIATED EMISSION TEST**

| Item | Equipment               | Manufacturer    | Model No.    | Lab Equipment No. | Last Cal.     | Cal. Interval |
|------|-------------------------|-----------------|--------------|-------------------|---------------|---------------|
| 1.   | Spectrum analyzer       | Agilent         | N9020A       | HKE-048           | Dec. 27, 2018 | 1 Year        |
| 2.   | Preamplifier            | Schwarzbeck     | BBV 9743     | HKE-006           | Dec. 27, 2018 | 1 Year        |
| 3.   | EMI Test Receiver       | Rohde & Schwarz | ESCI 7       | HKE-010           | Dec. 27, 2018 | 1 Year        |
| 4.   | Bilog Broadband Antenna | Schwarzbeck     | VULB9163     | HKE-012           | Dec. 27, 2018 | 1 Year        |
| 5.   | Loop Antenna            | Schwarzbeck     | FMZB 1519 B  | HKE-014           | Dec. 27, 2018 | 1 Year        |
| 6.   | Horn Antenna            | Schwarzbeck     | 9120D        | HKE-013           | Dec. 27, 2018 | 1 Year        |
| 7.   | Broad-band Horn Antenna | A-INFOMW        | LB-180400-KF | HKE-031           | Dec. 27, 2018 | 1 Year        |
| 8.   | Pre-amplifier           | EMCI            | EMC051845SE  | HKE-015           | Dec. 27, 2018 | 1 Year        |
| 9.   | Pre-amplifier           | Agilent         | 83051A       | HKE-016           | Dec. 27, 2018 | 1 Year        |
| 10.  | Radiation Cable 1       | MXT             | HK1          | R05               | N/A           | N/A           |
| 11.  | Radiation Cable 2       | MXT             | HK1          | R06               | N/A           | N/A           |



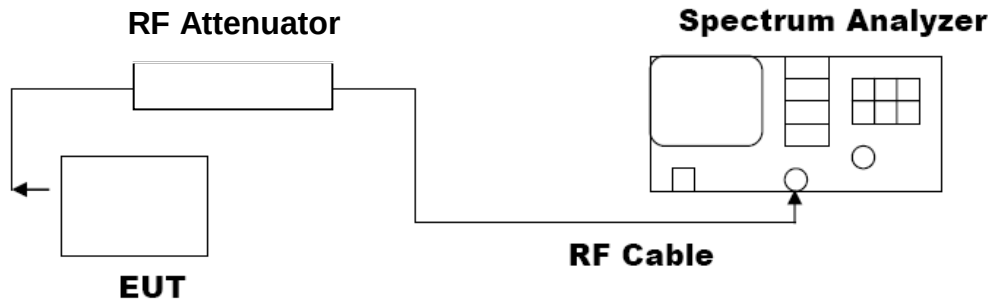
### 3. PEAK OUTPUT POWER

#### 3.1. MEASUREMENT PROCEDURE

For peak power test:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, middle and the bottom operation frequency individually.
3.  $RBW > \text{the 20 dB bandwidth of the emission being measured}$ ,  $VBW \geq RBW$ .
4. Record the maximum power from the Spectrum Analyzer.
5. The maximum peak power shall be less 21dBm.

#### 3.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

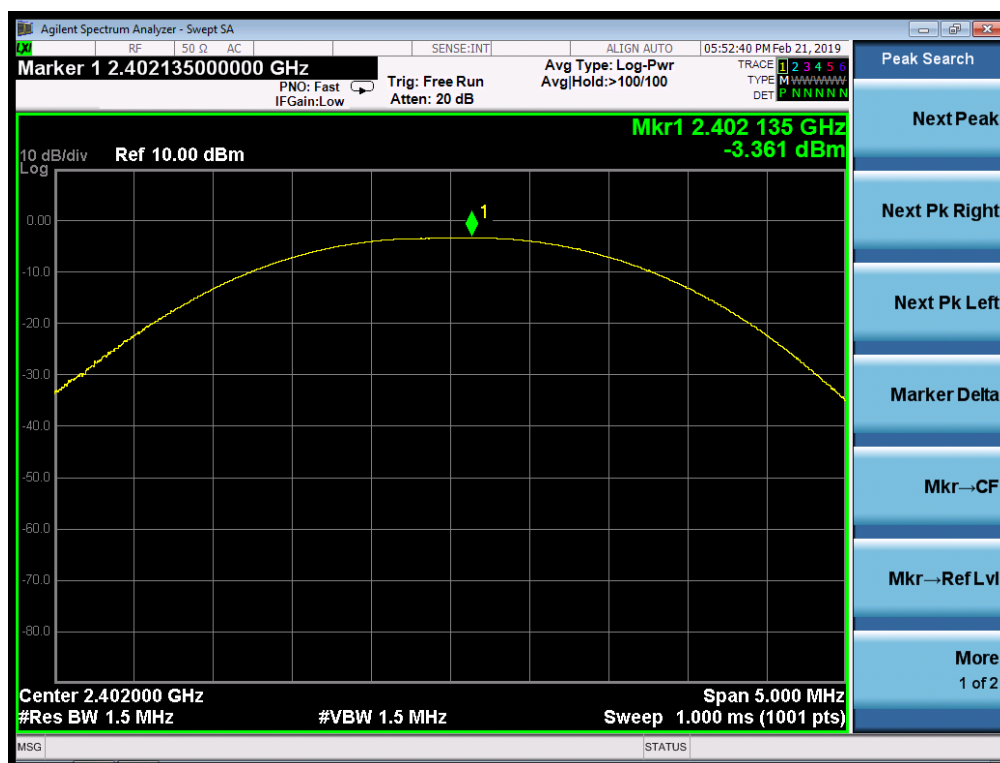




### 3.3. LIMITS AND MEASUREMENT RESULT

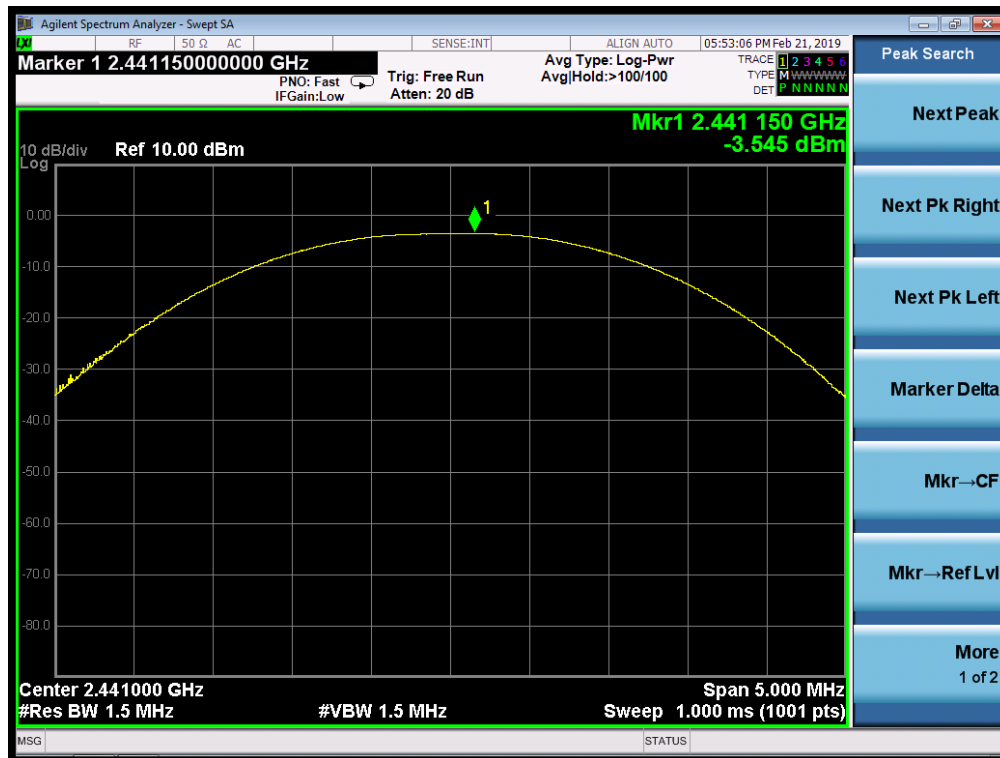
| PEAK OUTPUT POWER MEASUREMENT RESULT<br>FOR GFSK MOUDULATION |                     |                            |              |
|--------------------------------------------------------------|---------------------|----------------------------|--------------|
| Frequency<br>(GHz)                                           | Peak Power<br>(dBm) | Applicable Limits<br>(dBm) | Pass or Fail |
| 2.402                                                        | -3.361              | 21                         | Pass         |
| 2.441                                                        | -3.545              | 21                         | Pass         |
| 2.480                                                        | -4.331              | 21                         | Pass         |

CH00

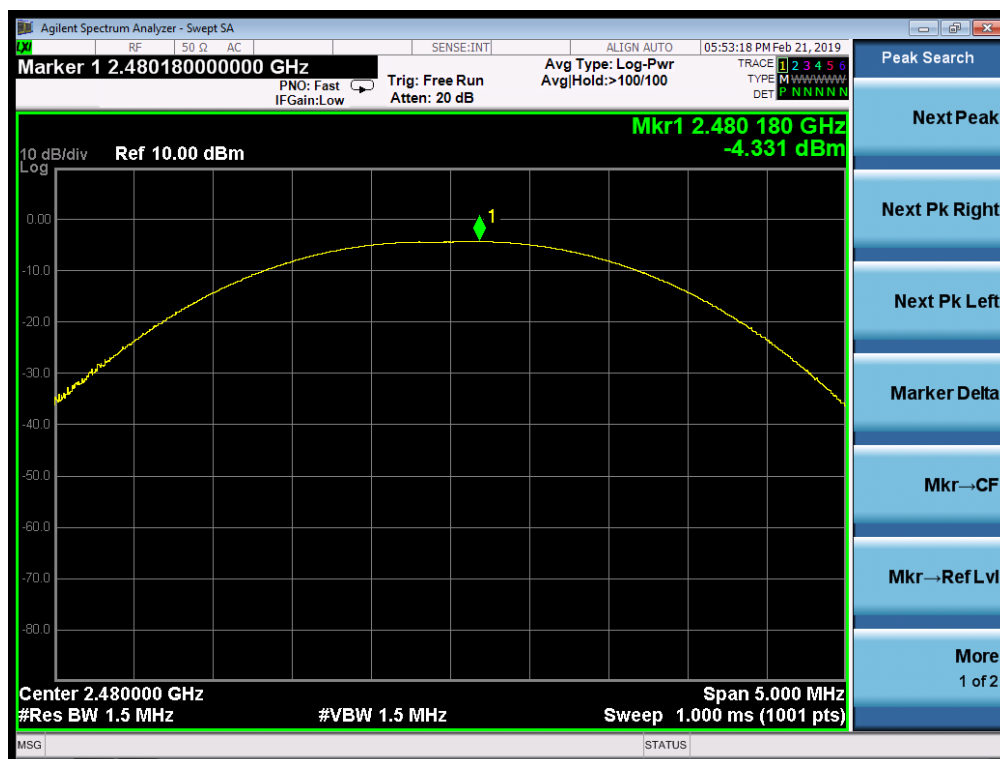




CH39



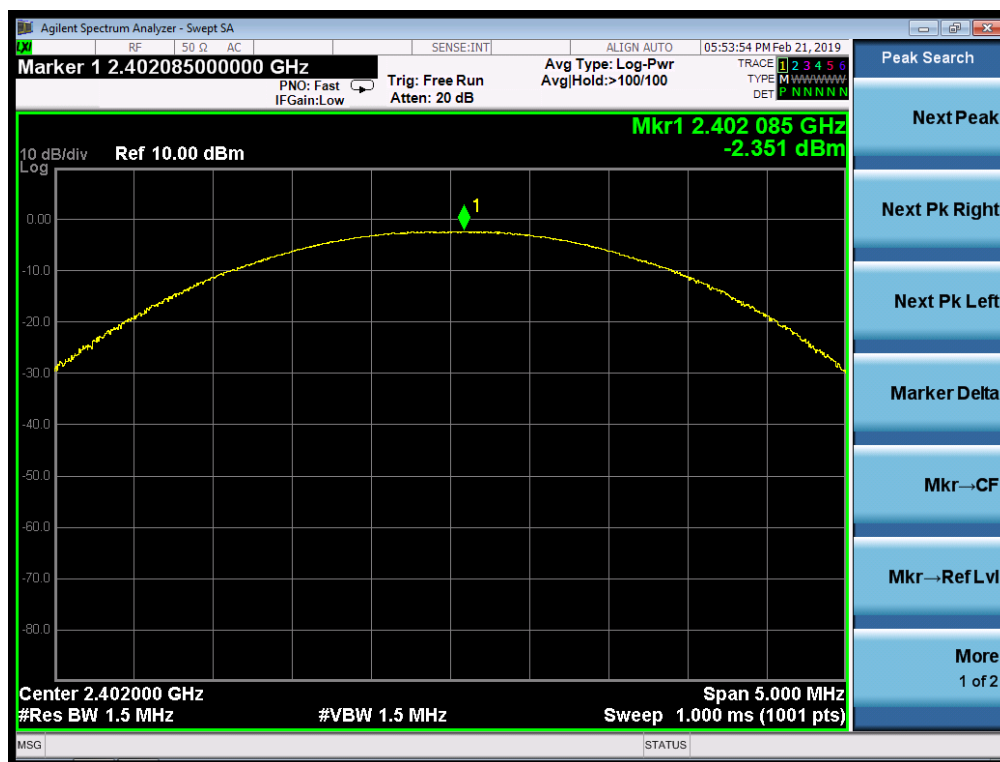
CH78





| PEAK OUTPUT POWER MEASUREMENT RESULT<br>FOR II /4-DQPSK MODULATION |                     |                            |              |
|--------------------------------------------------------------------|---------------------|----------------------------|--------------|
| Frequency<br>(GHz)                                                 | Peak Power<br>(dBm) | Applicable Limits<br>(dBm) | Pass or Fail |
| 2.402                                                              | -2.351              | 21                         | Pass         |
| 2.441                                                              | -2.506              | 21                         | Pass         |
| 2.480                                                              | -3.291              | 21                         | Pass         |

CH00





CH39



CH78



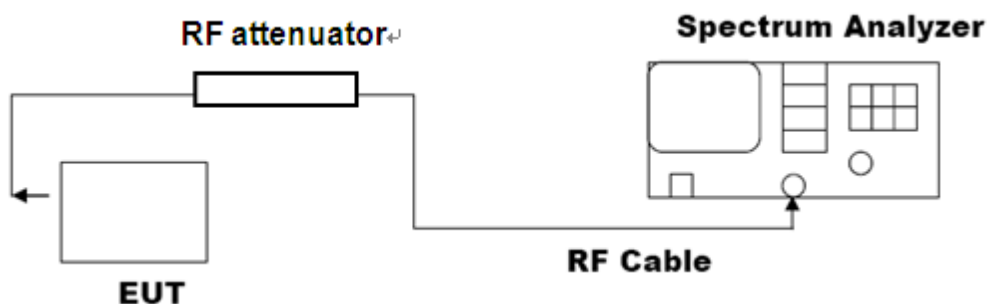


## 4. BANDWIDTH

### 4.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hoping channel  
RBW  $\geq$  1% of the 20 dB bandwidth, VBW  $\geq$  3RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

### 4.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



Note: The EUT has been used temporary antenna connector for testing.

### 4.3. LIMITS AND MEASUREMENT RESULTS

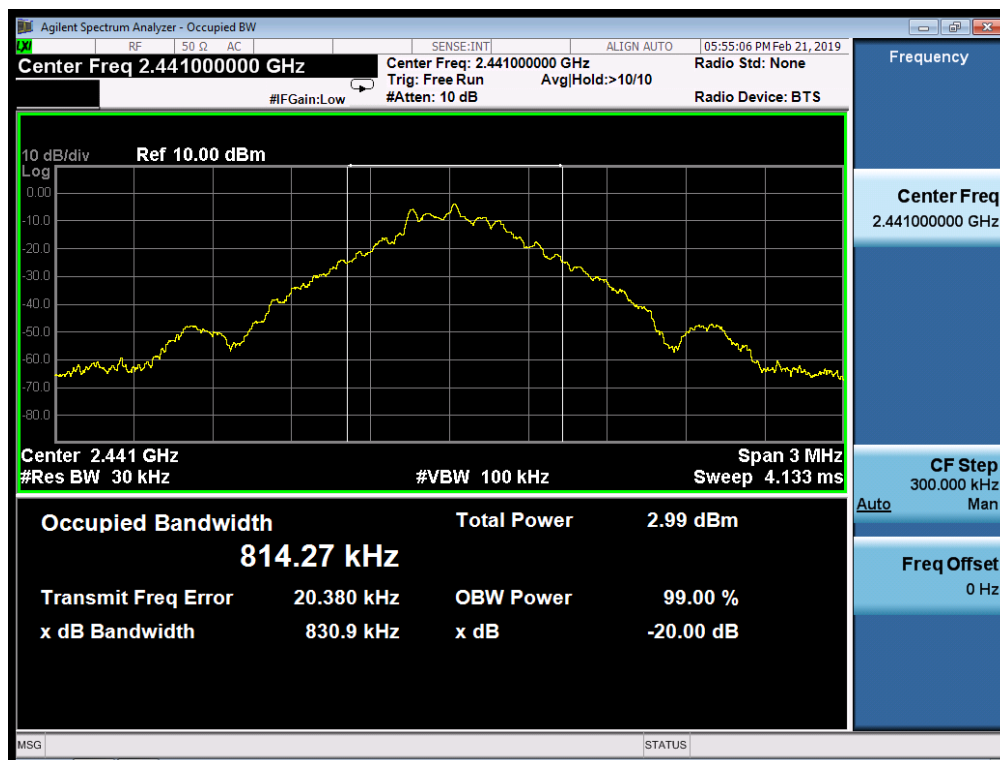
| BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESULT |                    |              |               |        |
|-----------------------------------------------|--------------------|--------------|---------------|--------|
| Applicable Limits                             | Measurement Result |              |               |        |
|                                               | Test Data (MHz)    |              |               | Result |
|                                               |                    | 99%OBW (MHz) | -20dB BW(MHz) |        |
| N/A                                           | Low Channel        | 0.820        | 0.792         | PASS   |
|                                               | Middle Channel     | 0.814        | 0.831         | PASS   |
|                                               | High Channel       | 0.820        | 0.842         | PASS   |



### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL





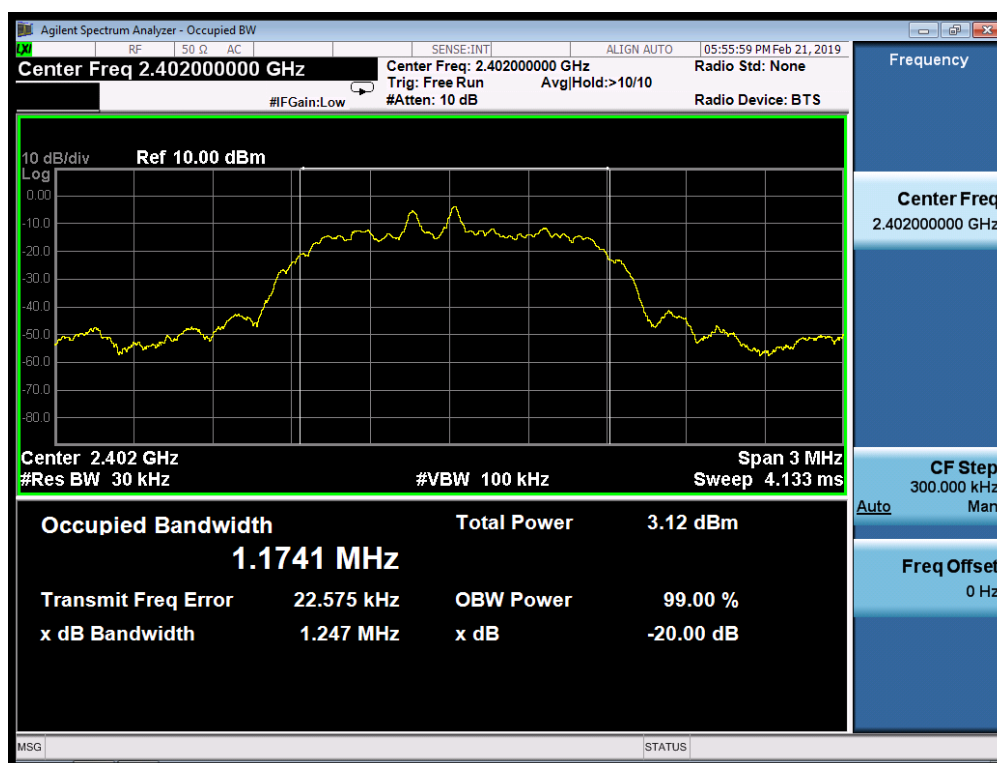
### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL





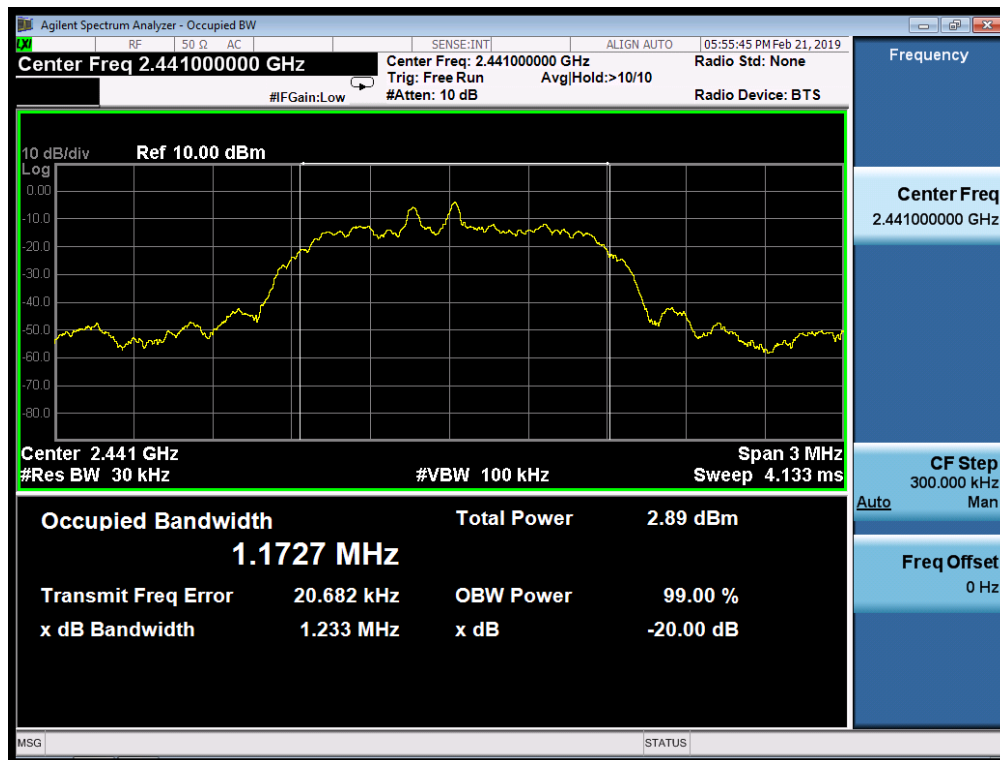
| BLUETOOTH 2MBPS LIMITS AND MEASUREMENT RESULT |                    |              |               |        |
|-----------------------------------------------|--------------------|--------------|---------------|--------|
| Applicable Limits                             | Measurement Result |              |               |        |
|                                               | Test Data (MHz)    |              |               | Result |
|                                               |                    | 99%OBW (MHz) | -20dB BW(MHz) |        |
| N/A                                           | Low Channel        | 1.174        | 1.247         | PASS   |
|                                               | Middle Channel     | 1.173        | 1.233         | PASS   |
|                                               | High Channel       | 1.174        | 1.241         | PASS   |

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL





### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



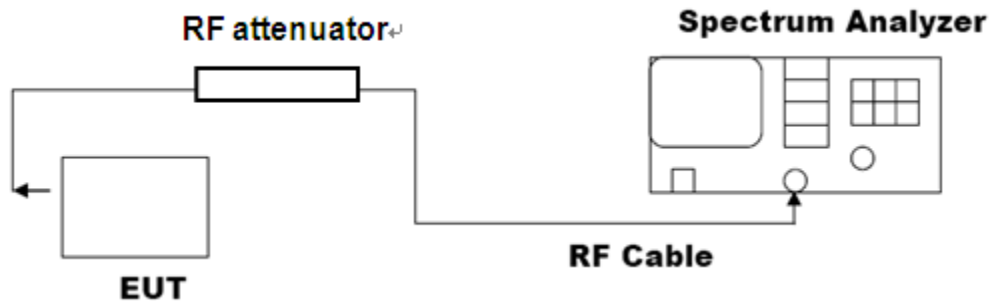


## 5. CONDUCTED SPURIOUS EMISSION

### 5.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the Middle and the bottom operation frequency individually.
3. Set the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic.  
RBW = 100 kHz; VBW = 300kHz; Sweep = auto; Detector function = peak.
4. Set SPA Trace 1 Max hold, then View.

### 5.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

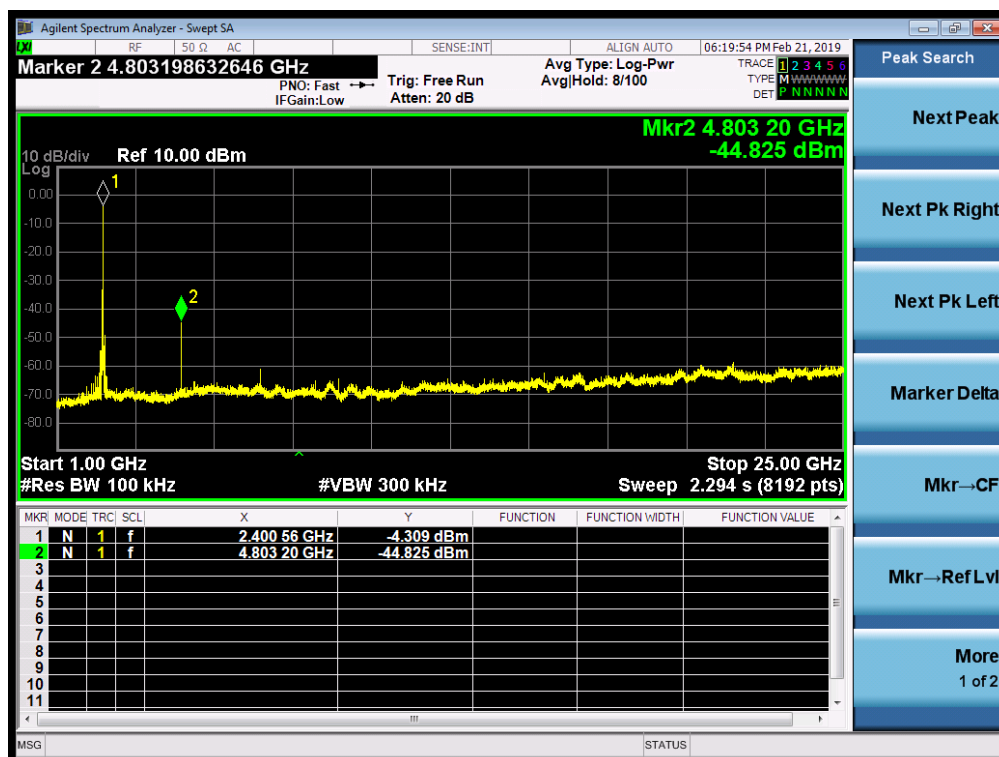
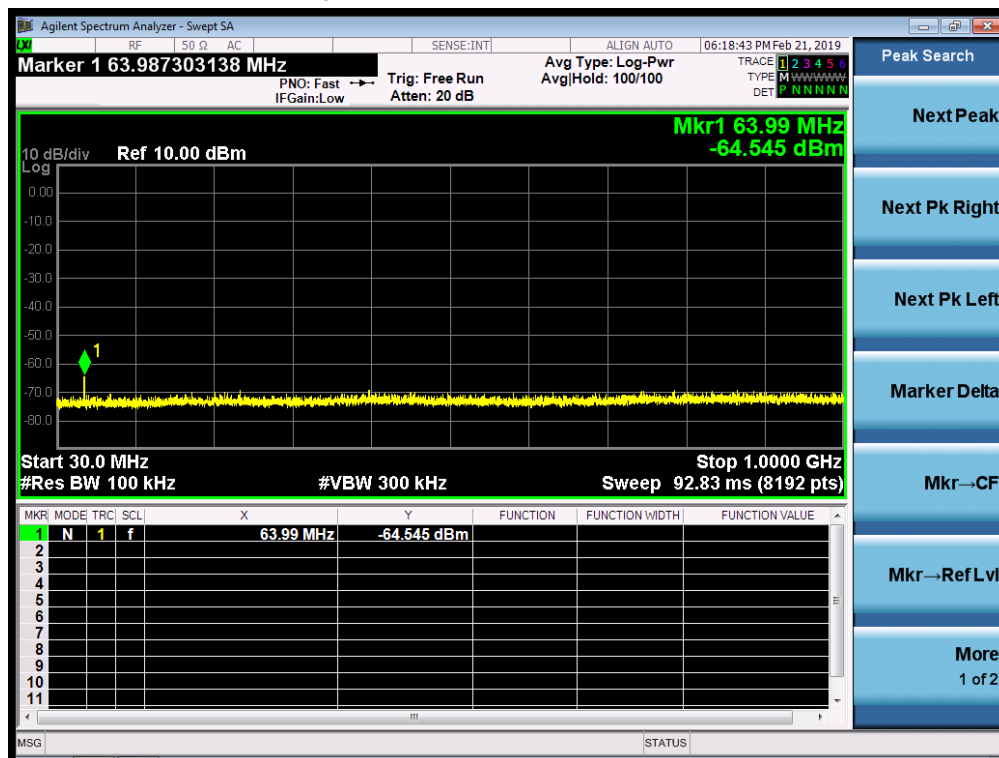


**5.3. LIMITS AND MEASUREMENT RESULT**

| LIMITS AND MEASUREMENT RESULT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------|
| Applicable Limits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Measurement Result                                             |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Test Data                                                      | Result |
| <p><b>FCC requirement:</b><br/>In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.<br/>In addition, radiation 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))</p> <p><b>IC requirement:</b><br/>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB.<br/>Attenuation below the general field strength limits specified in RSS-Gen is not required.</p> | At least -20dBc than the limit Specified on the BOTTOM Channel | PASS   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | At least -20dBc than the limit Specified on the TOP Channel    | PASS   |

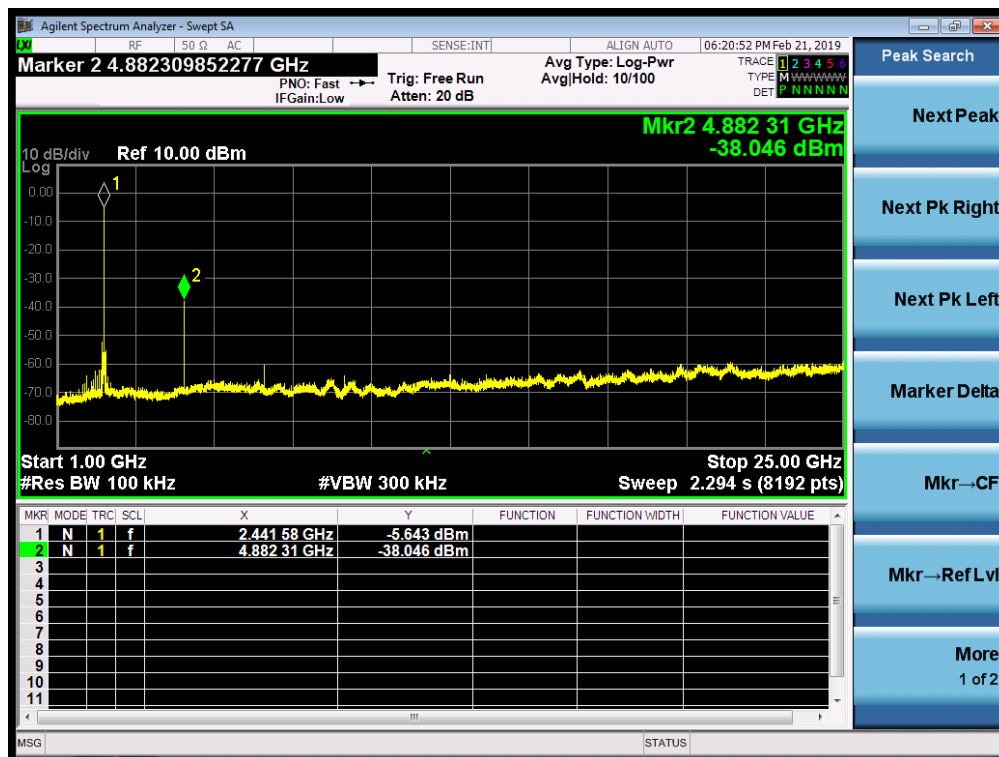
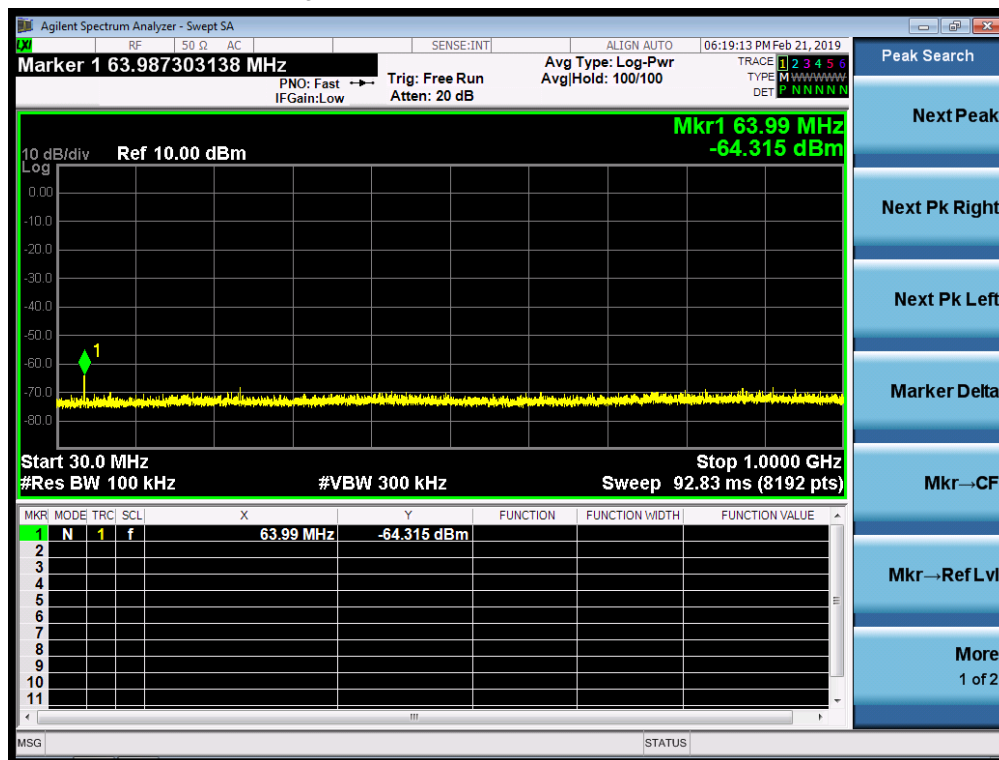


TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE  
OF  $\pi/4$ -DQPSK MODULATION IN LOW CHANNEL



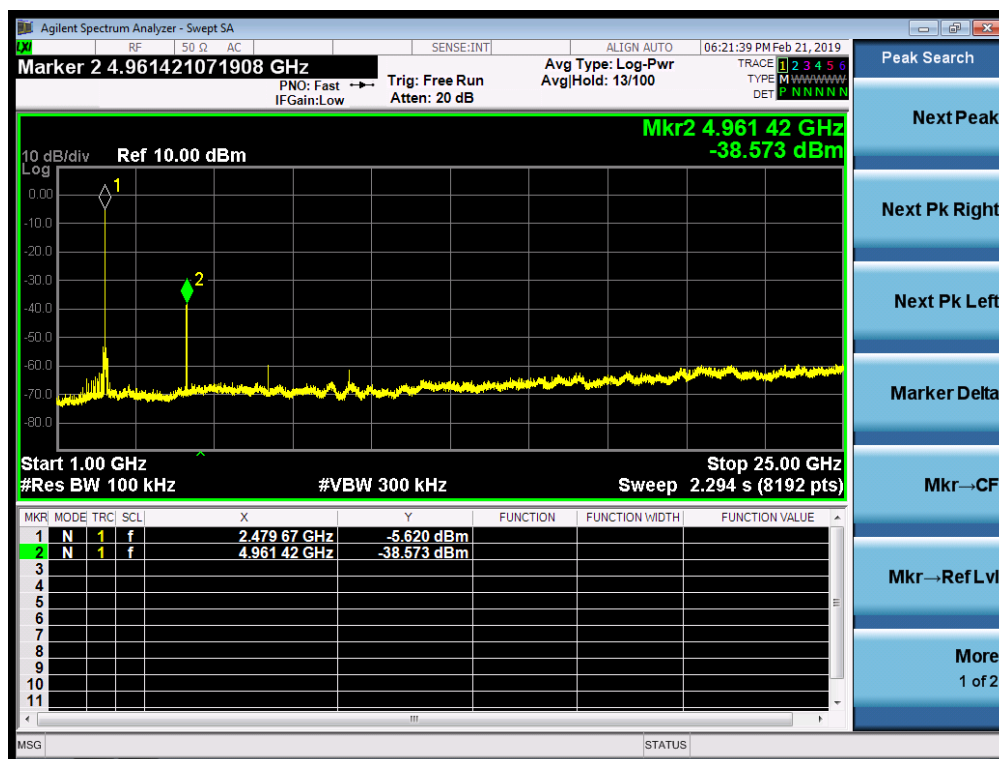
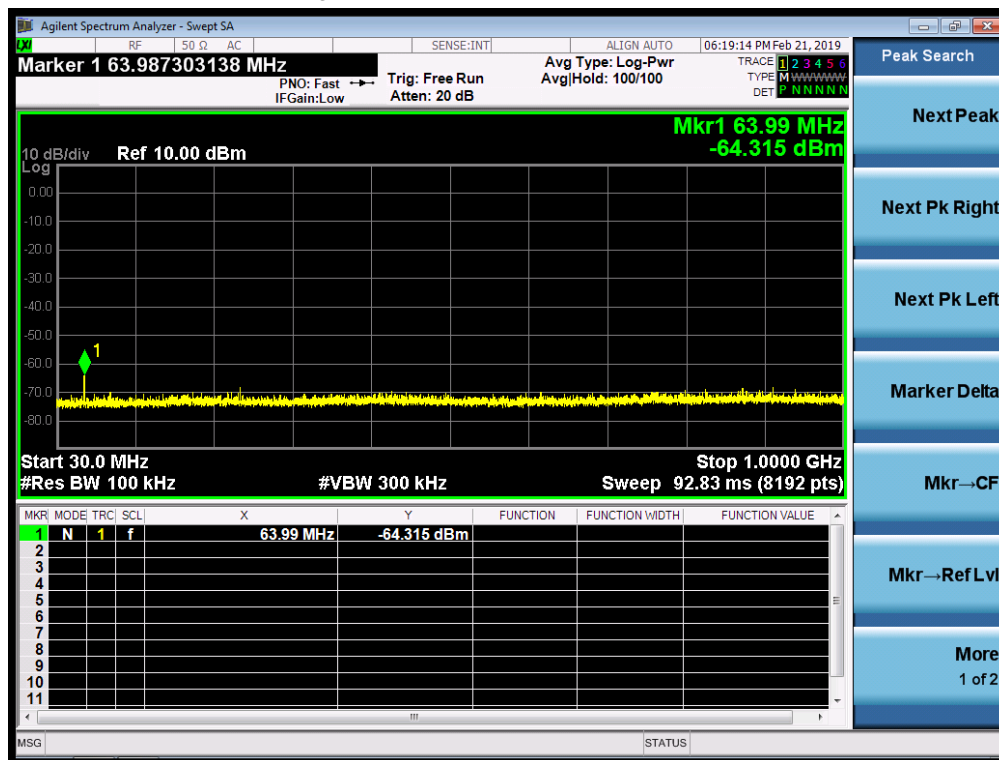


TEST PLOT OF OUT OF BAND EMISSIONS  
OF  $\pi/4$ -DQPSK MODULATION IN MIDDLE CHANNEL





TEST PLOT OF OUT OF BAND EMISSIONS  
OF  $\pi/4$ -DQPSK MODULATION IN HIGH CHANNEL







The following table is the setting of spectrum analyzer and receiver.

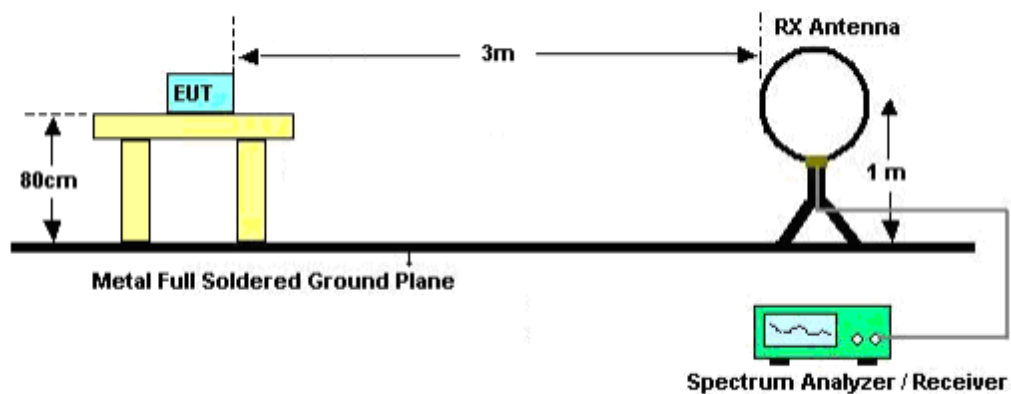
| Spectrum Parameter    | Setting                                                                        |
|-----------------------|--------------------------------------------------------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP                                                    |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP                                                    |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP                                                 |
| Start ~Stop Frequency | 1GHz~26.5GHz<br>RBW 1MHz/ VBW 3MHz for Peak,<br>RBW 1MHz/ VBW 10Hz for Average |

| Receiver Parameter    | Setting                        |
|-----------------------|--------------------------------|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP    |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP    |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

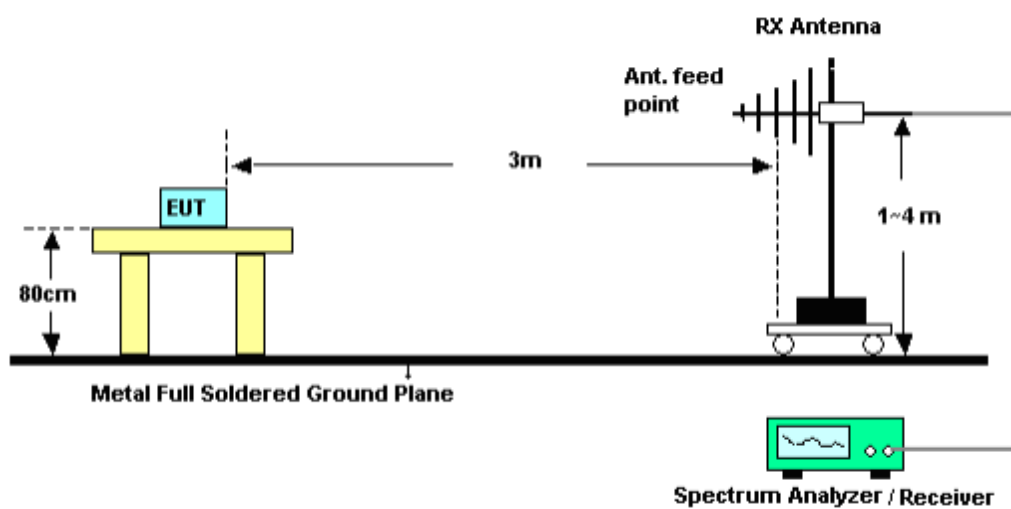


### 6.3. TEST SETUP

#### RADIATED EMISSION TEST SETUP BELOW 30MHz

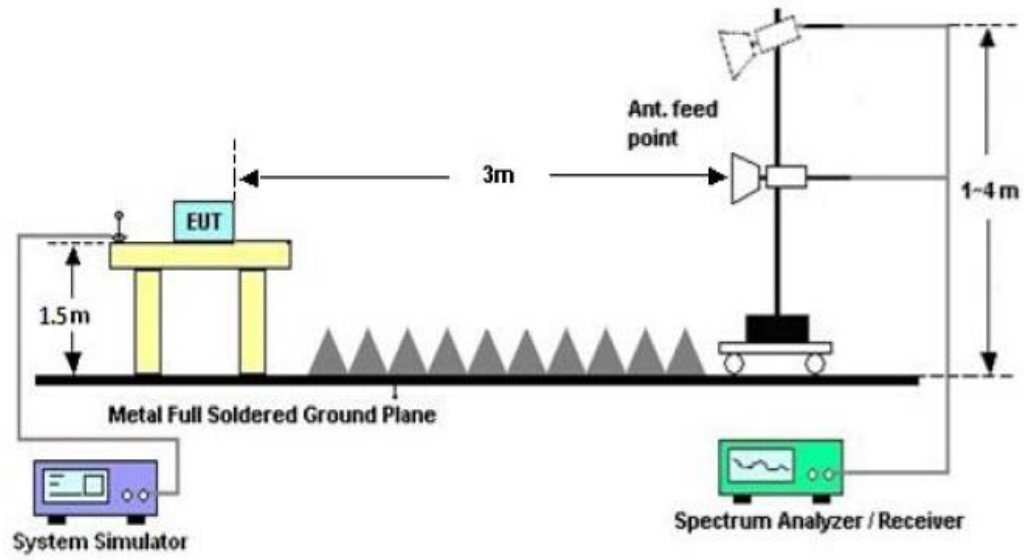


#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz





## RADIATED EMISSION TEST SETUP ABOVE 1000MHz





## 6.4. TEST RESULT

**Note:** All modes were tested For restricted band radiated emission, the test records reported below are the worst result worst modulation  $\pi/4$ -DQPSK.

### RADIATED EMISSION BELOW 30MHz

No emission found between lowest internal used/generated frequencies to 30MHz.

### RADIATED EMISSION BELOW 1GHz

#### RADIATED EMISSION TEST- (30MHz-1GHz)-LOW CHANNEL-HORIZONTAL

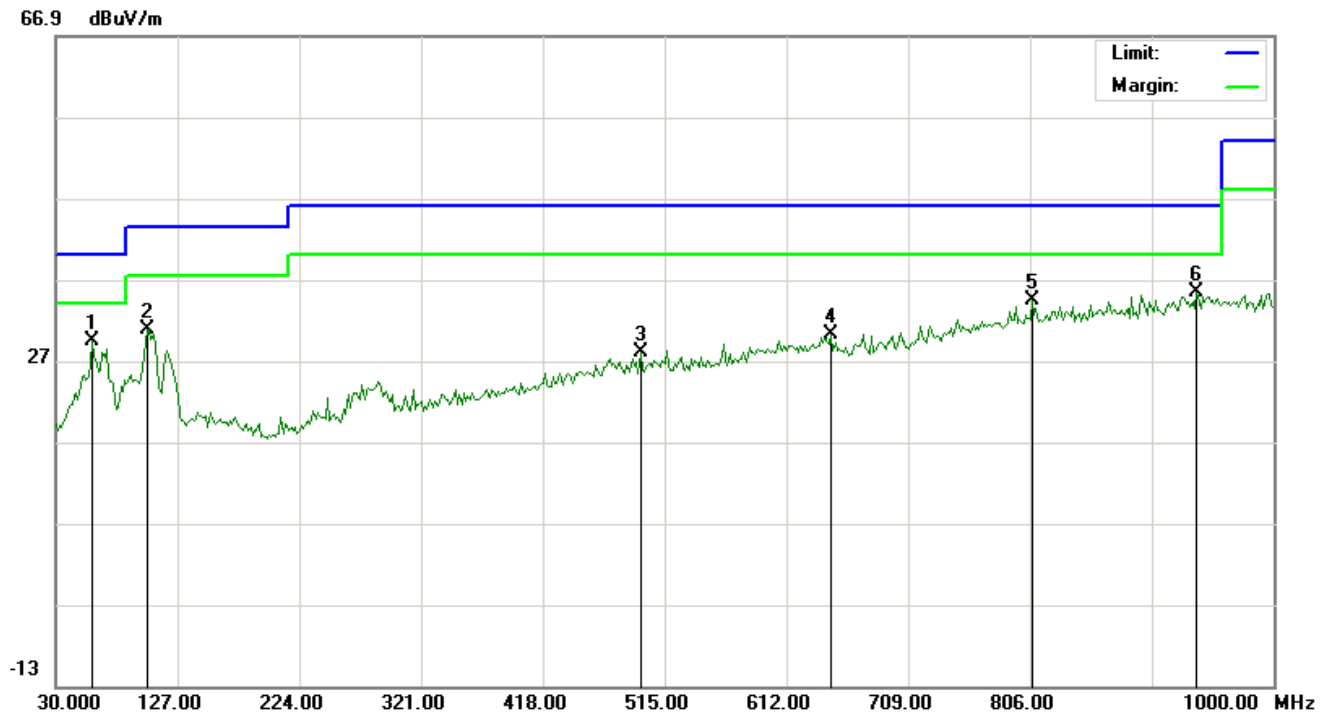


| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dB/m   | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 60.7167  | 3.72    | 18.74  | 22.46       | 40.00  | -17.54 | peak     |                |              |         |
| 2   |    | 209.4500 | 9.02    | 16.62  | 25.64       | 43.50  | -17.86 | peak     |                |              |         |
| 3   |    | 288.6667 | 8.41    | 19.74  | 28.15       | 46.00  | -17.85 | peak     |                |              |         |
| 4   |    | 534.4000 | 2.68    | 25.66  | 28.34       | 46.00  | -17.66 | peak     |                |              |         |
| 5   |    | 784.9833 | 2.64    | 30.07  | 32.71       | 46.00  | -13.29 | peak     |                |              |         |
| 6   | *  | 948.2667 | 2.66    | 32.12  | 34.78       | 46.00  | -11.22 | peak     |                |              |         |

**RESULT: PASS**



## RADIATED EMISSION TEST- (30MHz-1GHz)-LOW CHANNEL -VERTICAL



| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dB/m   | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 59.1000  | 10.37   | 18.95  | 29.32       | 40.00  | -10.68 | peak     |                |              |         |
| 2   |    | 102.7500 | 14.51   | 16.28  | 30.79       | 43.50  | -12.71 | peak     |                |              |         |
| 3   |    | 495.6000 | 3.01    | 24.90  | 27.91       | 46.00  | -18.09 | peak     |                |              |         |
| 4   |    | 647.5667 | 2.67    | 27.52  | 30.19       | 46.00  | -15.81 | peak     |                |              |         |
| 5   |    | 807.6167 | 3.84    | 30.51  | 34.35       | 46.00  | -11.65 | peak     |                |              |         |
| 6   | *  | 938.5667 | 3.40    | 32.03  | 35.43       | 46.00  | -10.57 | peak     |                |              |         |

**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor+ Cable loss, Margin=Measurement-Limit.

2. The “Factor”value can be calculated automatically by software of measurement system.

3. All test modes had been pre-tested. The mode 4 is the worst case and recorded in the report.

## RADIATED EMISSION ABOVE 1GHz

## FIELD STRENGTH OF FUNDAMENTAL FOR BR/EDR

|                   |                  |                     |            |
|-------------------|------------------|---------------------|------------|
| EUT :             | Soundcore Ace A0 | Model Name. :       | A3150      |
| Temperature :     | 20 °C            | Relative Humidity : | 48%        |
| Pressure :        | 1010 hPa         | Test Voltage :      | DC 3.7V    |
| Test Modulation : | GFSK             | Polarization :      | Horizontal |

| Frequency                                             | Meter Reading | Factor | Emission Level | Limits   | Margin | Value Type |
|-------------------------------------------------------|---------------|--------|----------------|----------|--------|------------|
| (MHz)                                                 | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |            |
| 4804.062                                              | 45.74         | 3.76   | 49.5           | 74       | -24.5  | peak       |
| 4804.062                                              | 44.26         | 3.76   | 48.02          | 54       | -5.98  | AVG        |
| 7206.093                                              | 35.3          | 8.17   | 43.47          | 74       | -30.53 | peak       |
| 7206.093                                              | 31.29         | 8.17   | 39.46          | 54       | -14.54 | AVG        |
| Remark:                                               |               |        |                |          |        |            |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. |               |        |                |          |        |            |

|                   |                  |                     |          |
|-------------------|------------------|---------------------|----------|
| EUT :             | Soundcore Ace A0 | Model Name. :       | A3150    |
| Temperature :     | 20 °C            | Relative Humidity : | 48%      |
| Pressure :        | 1010 hPa         | Test Voltage :      | DC 3.7V  |
| Test Modulation : | GFSK             | Polarization :      | Vertical |

| Frequency                                             | Meter Reading | Factor | Emission Level | Limits   | Margin | Value Type |
|-------------------------------------------------------|---------------|--------|----------------|----------|--------|------------|
| (MHz)                                                 | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |            |
| 4804.062                                              | 48.6          | 3.76   | 52.36          | 74       | -21.64 | peak       |
| 4804.062                                              | 42.74         | 3.76   | 46.5           | 54       | -7.5   | AVG        |
| 7206.093                                              | 37.86         | 8.17   | 46.03          | 74       | -27.97 | peak       |
| 7206.093                                              | 35.29         | 8.17   | 43.46          | 54       | -10.54 | AVG        |
| Remark:                                               |               |        |                |          |        |            |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. |               |        |                |          |        |            |

|                   |                  |                     |            |
|-------------------|------------------|---------------------|------------|
| EUT :             | Soundcore Ace A0 | Model Name. :       | A3150      |
| Temperature :     | 20 °C            | Relative Humidity : | 48%        |
| Pressure :        | 1010 hPa         | Test Voltage :      | DC 3.7V    |
| Test Modulation : | $\pi/4$ -DQPSK   | Polarization :      | Horizontal |

| Frequency                                             | Meter Reading | Factor | Emission Level | Limits   | Margin | Value Type |
|-------------------------------------------------------|---------------|--------|----------------|----------|--------|------------|
| (MHz)                                                 | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |            |
| 4882.062                                              | 46.35         | 3.78   | 50.13          | 74       | -23.87 | peak       |
| 4882.062                                              | 42.15         | 3.78   | 45.93          | 54       | -8.07  | AVG        |
| 7323.093                                              | 40.27         | 8.23   | 48.5           | 74       | -25.5  | peak       |
| 7323.093                                              | 38.8          | 8.23   | 47.03          | 54       | -6.97  | AVG        |
| Remark:                                               |               |        |                |          |        |            |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. |               |        |                |          |        |            |

|                   |                  |                     |          |
|-------------------|------------------|---------------------|----------|
| EUT :             | Soundcore Ace A0 | Model Name. :       | A3150    |
| Temperature :     | 20 °C            | Relative Humidity : | 48%      |
| Pressure :        | 1010 hPa         | Test Voltage :      | DC 3.7V  |
| Test Modulation : | $\pi/4$ -DQPSK   | Polarization :      | Vertical |

| Frequency                                             | Meter Reading | Factor | Emission Level | Limits   | Margin | Value Type |
|-------------------------------------------------------|---------------|--------|----------------|----------|--------|------------|
| (MHz)                                                 | (dBμV)        | (dB)   | (dBμV/m)       | (dBμV/m) | (dB)   |            |
| 4882.062                                              | 47.7          | 3.78   | 51.48          | 74       | -22.52 | peak       |
| 4882.062                                              | 43.28         | 3.78   | 47.06          | 54       | -6.94  | AVG        |
| 7323.093                                              | 39.26         | 8.23   | 47.49          | 74       | -26.51 | peak       |
| 7323.093                                              | 36.58         | 8.23   | 44.81          | 54       | -9.19  | AVG        |
| Remark:                                               |               |        |                |          |        |            |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. |               |        |                |          |        |            |

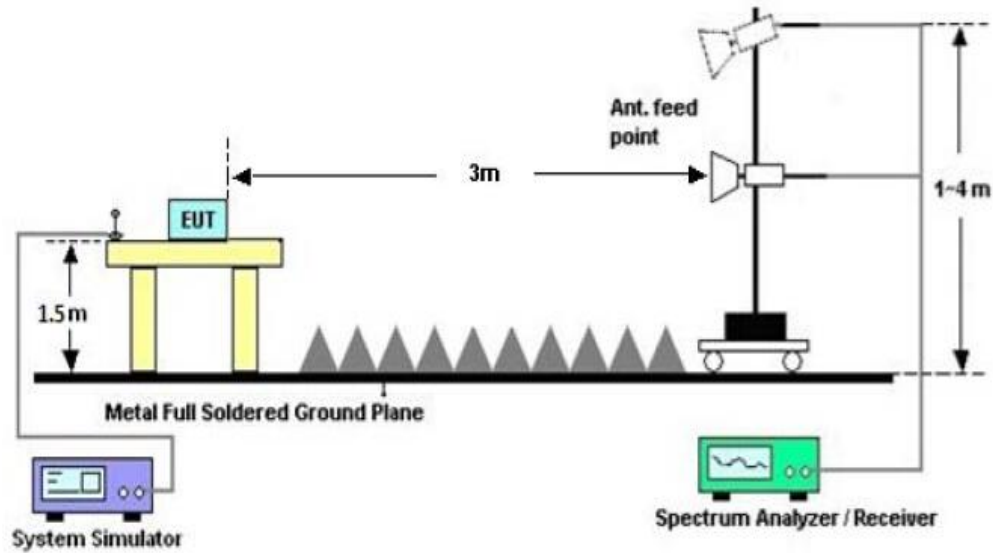


## 7. BAND EDGE EMISSION

### 7.1. MEASUREMENT PROCEDURE

1. Set the EUT Work on the top, the bottom operation frequency individually.
2. Set SPA Start or Stop Frequency=Operation Frequency,  
For unrestricted band: RBW=100kHz, VBW=300kHz  
For restricted band: RBW=1MHz, VBW=3\*RBW  
Center frequency =Operation frequency
3. The band edges was measured and recorded.

### 7.2. TEST SET-UP

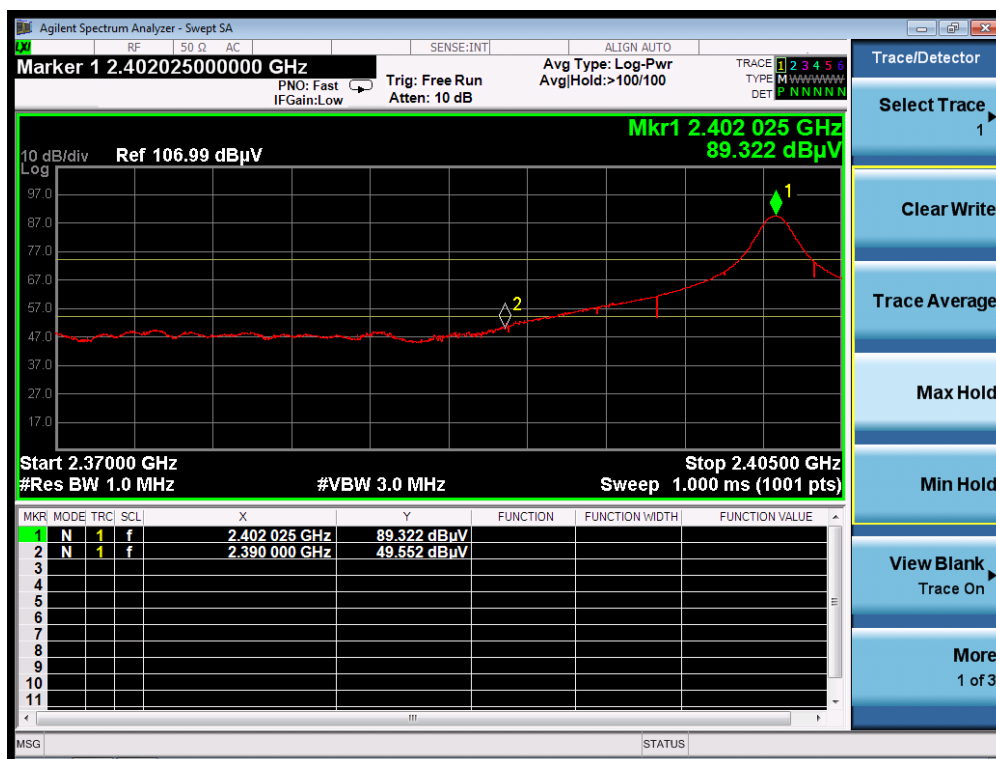




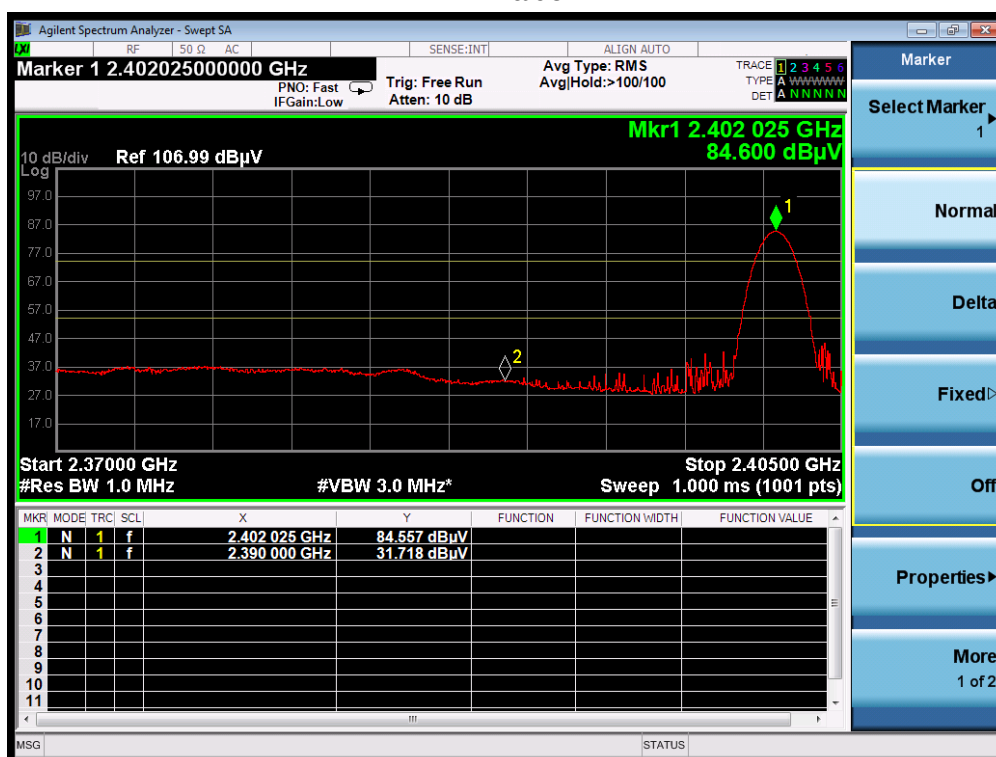
**For BR/EDR**

|               |                  |                     |            |
|---------------|------------------|---------------------|------------|
| EUT :         | Soundcore Ace A0 | Model Name. :       | A3150      |
| Temperature : | 20 °C            | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa         | Test Voltage :      | DC 3.7V    |
| Test Mode :   | Mode 4           | Polarization :      | Horizontal |

PK Value



AV Value



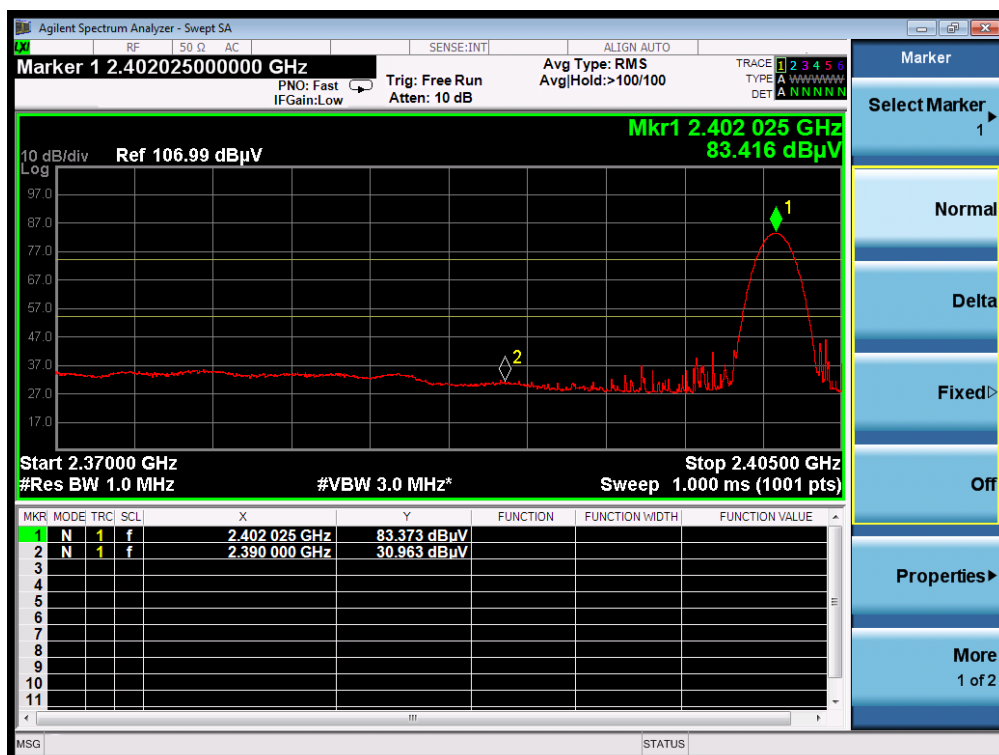


|               |                  |                     |          |
|---------------|------------------|---------------------|----------|
| EUT :         | Soundcore Ace A0 | Model Name. :       | A3150    |
| Temperature : | 20 °C            | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa         | Test Voltage :      | DC 3.7V  |
| Test Mode :   | Mode 4           | Polarization :      | Vertical |

## PK Value



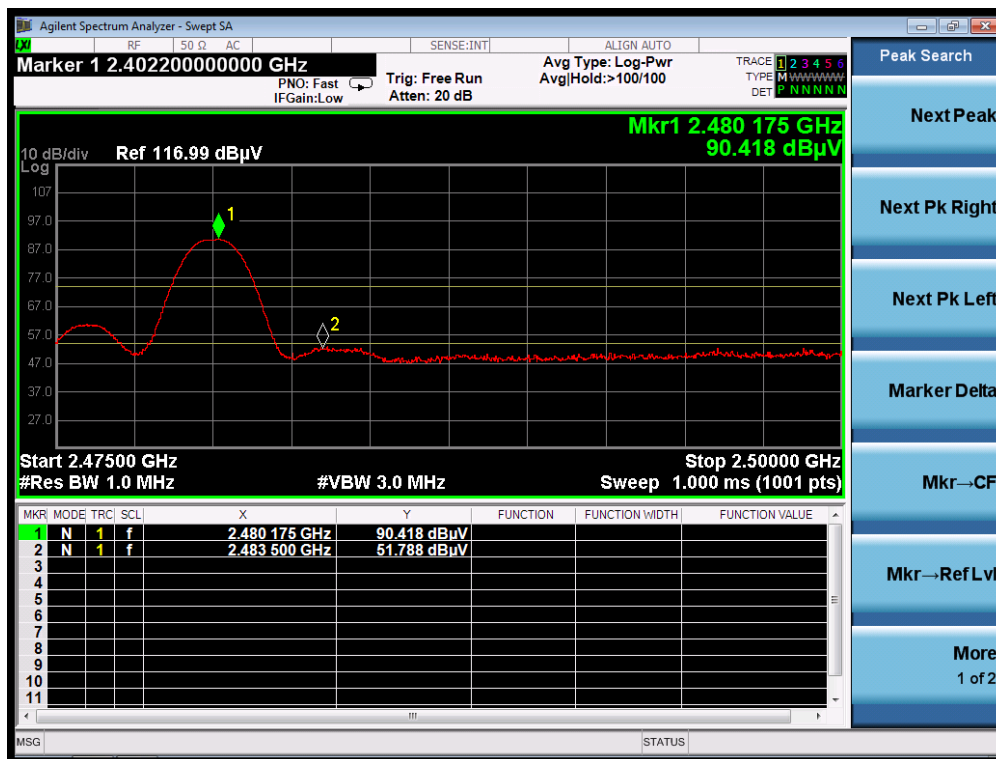
## AV Value





|               |                  |                     |            |
|---------------|------------------|---------------------|------------|
| EUT :         | Soundcore Ace A0 | Model Name. :       | A3150      |
| Temperature : | 20 °C            | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa         | Test Voltage :      | DC 3.7V    |
| Test Mode :   | Mode 6           | Polarization :      | Horizontal |

## PK Value



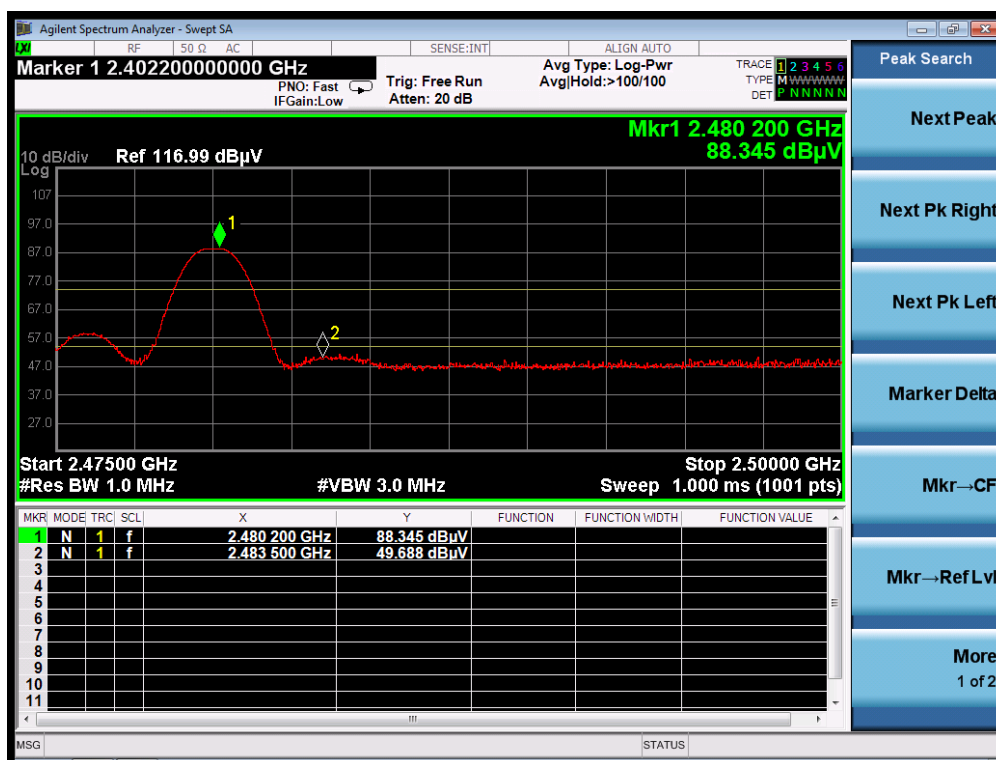
## AV Value





|               |                  |                     |          |
|---------------|------------------|---------------------|----------|
| EUT :         | Soundcore Ace A0 | Model Name. :       | A3150    |
| Temperature : | 20 °C            | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa         | Test Voltage :      | DC 3.7V  |
| Test Mode :   | Mode 6           | Polarization :      | Vertical |

## PK Value



## AV Value



Note: 1. The  $\pi/4$ -DQPSK modulation was the worst case and only the data of worst recorded in this report.

2. Test results(measurement)=Reading+ Factor(cable loss+ antenna factor-Amplifier gain)

3. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of



test plots is equal to Reading level plus the Factor in dB. Use the A dB( $\mu$ V) to represent the Amplitude. Use the F dB( $\mu$ V/m) to represent the Field Strength. So  $A=F$ .

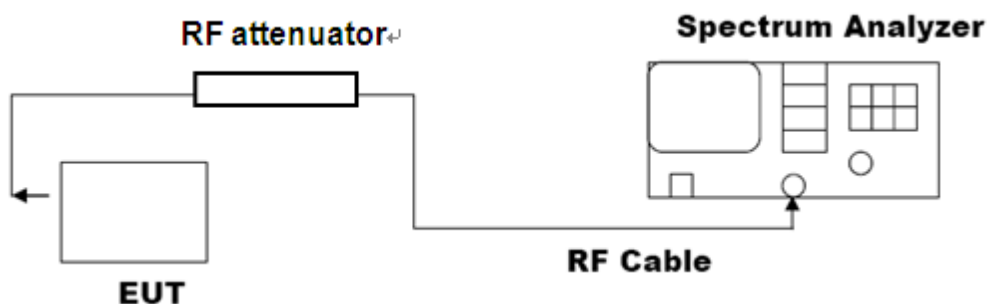


## 8. NUMBER OF HOPPING FREQUENCY

### 8.1. MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer Start = 2.4GHz Stop = 2.4835GHz
4. Set the Spectrum Analyzer as RBW $\geq$ 1%span, VBW $\geq$ 3RBW.

### 8.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

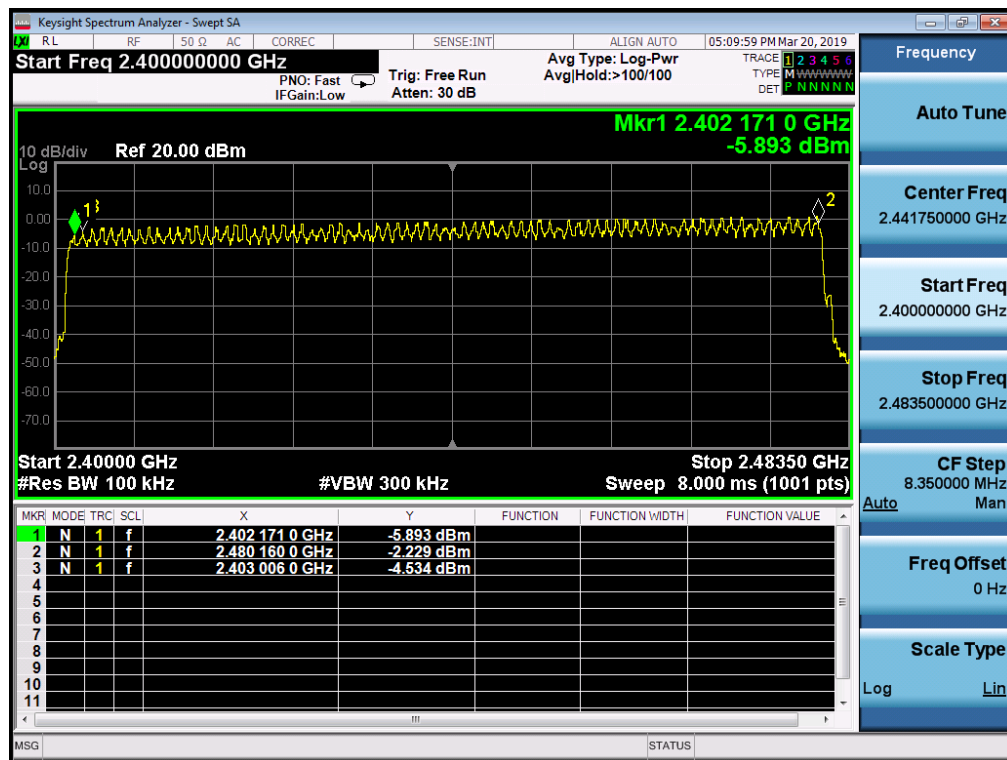


### 8.3. LIMITS AND MEASUREMENT RESULT

| TOTAL NO. OF HOPPING CHANNEL | LIMIT (NO. OF CH) | MEASUREMENT (NO. OF CH) | RESULT |
|------------------------------|-------------------|-------------------------|--------|
|                              | $\geq 15$         | 79                      | PASS   |



### TEST PLOT FOR NO. OF TOTAL CHANNELS



Note: All modes were tested, the test recorded modulation is  $\pi/4$ -DQPSK.

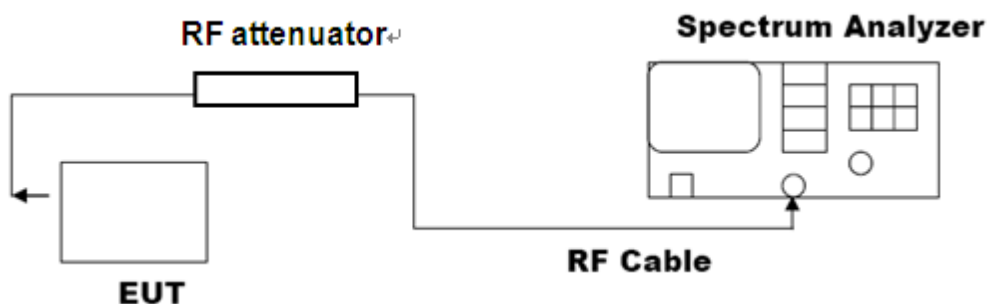


## 9. TIME OF OCCUPANCY (DWELL TIME)

### 9.1. MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
3. Set Span = zero span, centered on a hopping channel
4. Set the spectrum analyzer as RBW=1MHz, VBW>=RBW, Span = 0 Hz

### 9.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)



### 9.3. LIMITS AND MEASUREMENT RESULT

#### The Worst Case (2Mbps)

| Channel | Time of Pulse for DH5 (ms) | Period Time (s) | Sweep Time (ms) | Limit (ms) |
|---------|----------------------------|-----------------|-----------------|------------|
| Low     | 2.917                      | 31.6            | 311.15          | 400        |
| Middle  | 2.917                      | 31.6            | 311.15          | 400        |
| High    | 2.900                      | 31.6            | 309.33          | 400        |

Low Channel Time

$$2.917 \times (1600/6) / 79 \times 31.6 = 311.15 \text{ ms}$$

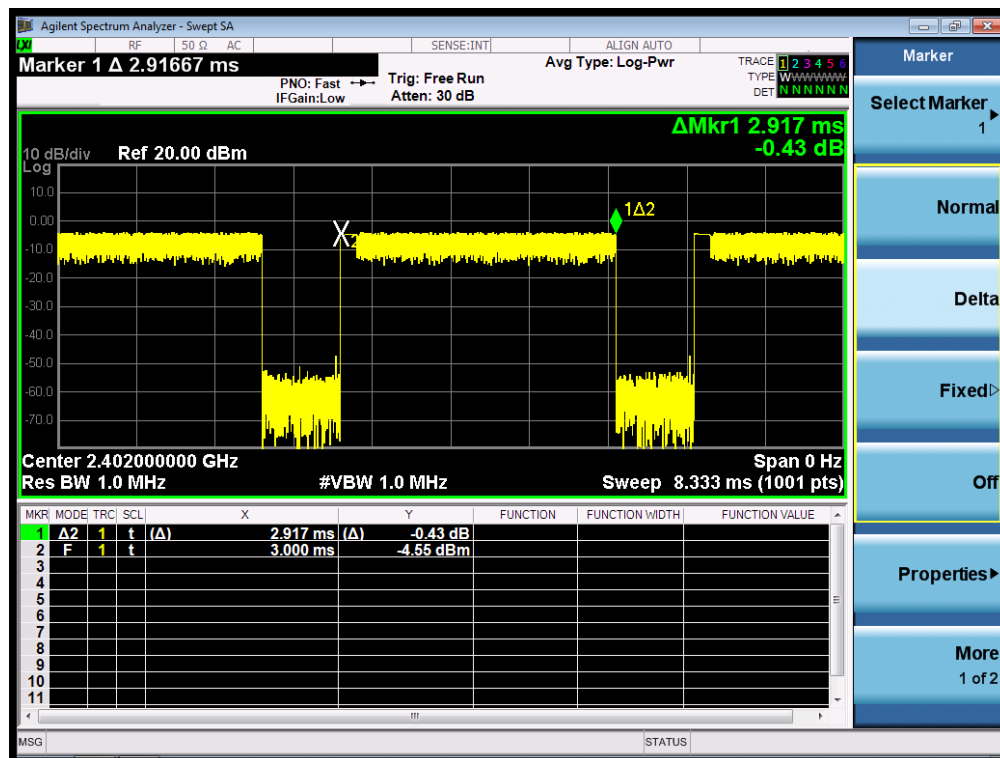
Middle Channel Time

$$2.917 \times (1600/6) / 79 \times 31.6 = 311.15 \text{ ms}$$

High Channel Time

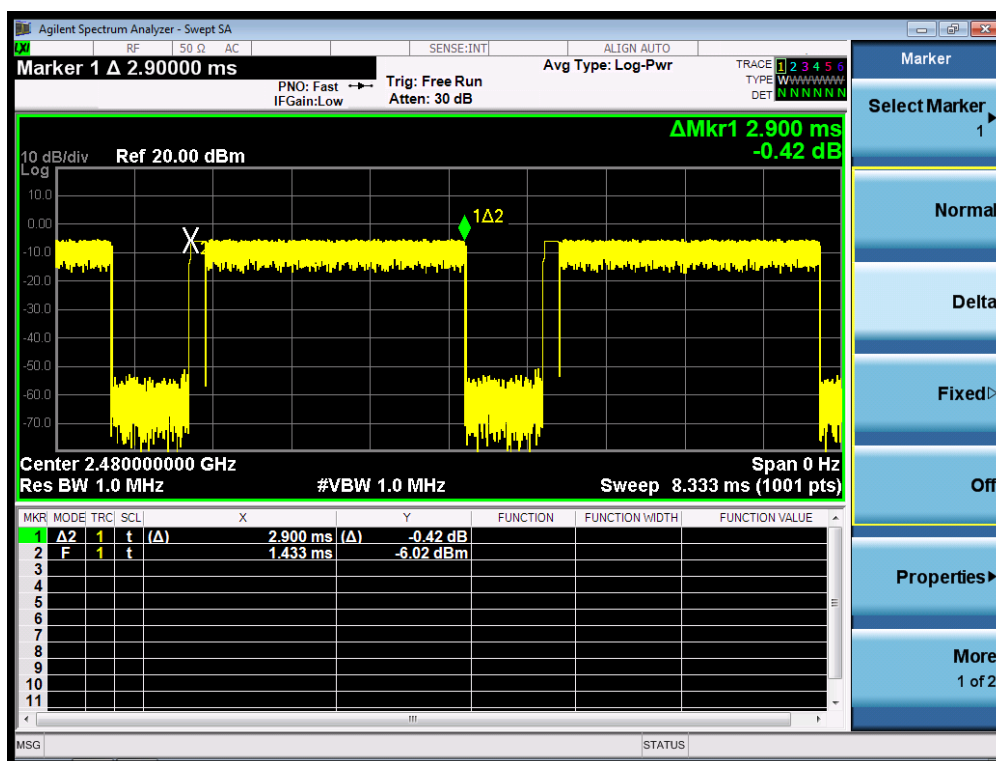
$$2.900 \times (1600/6) / 79 \times 31.6 = 309.33 \text{ ms}$$

### TEST PLOT OF LOW CHANNEL





### TEST PLOT OF HIGH CHANNEL



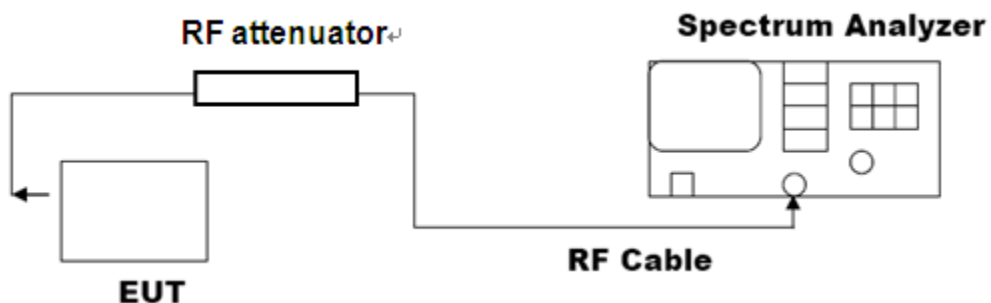


## 10. FREQUENCY SEPARATION

### 10.1. MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer
3. Set Span = wide enough to capture the peaks of two adjacent channels Resolution (or IF) Bandwidth (RBW)  $\geq$  1% of the span Video (or Average) Bandwidth (VBW)  $\geq$  RBW; Sweep = auto; Detector function = peak; Trace = max hold

### 10.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)



### 10.3. LIMITS AND MEASUREMENT RESULT

| CHANNEL   | CHANNEL SEPARATION | LIMIT                         | RESULT |
|-----------|--------------------|-------------------------------|--------|
|           | KHz                | KHz                           |        |
| CH00-CH01 | 1000               | $\geq 25$ KHz or 2/3 20 dB BW | Pass   |





## 11. LINE CONDUCTED EMISSION TEST

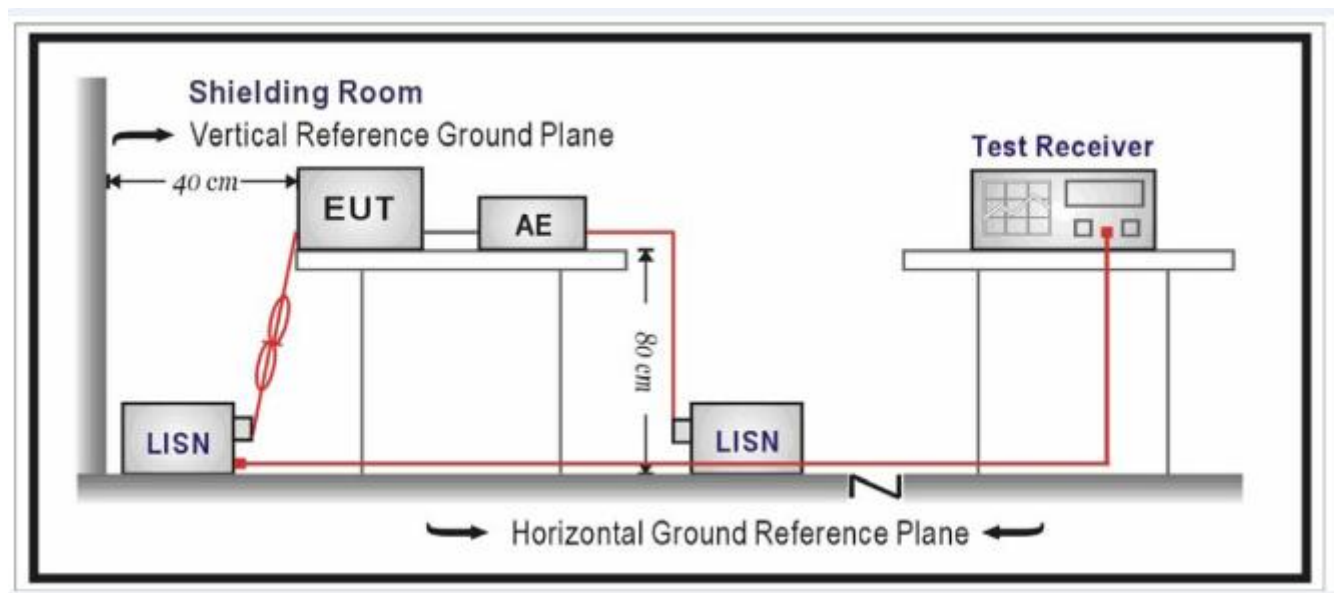
### 11.1. LIMITS OF LINE CONDUCTED EMISSION TEST

| Frequency     | Maximum RF Line Voltage |               |
|---------------|-------------------------|---------------|
|               | Q.P.( dBuV)             | Average(dBuV) |
| 150kHz~500kHz | 66-56                   | 56-46         |
| 500kHz~5MHz   | 56                      | 46            |
| 5MHz~30MHz    | 60                      | 50            |

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

### 11.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST





### **11.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST**

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10, RSS-GEN(see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10, RSS-GEN.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10, RSS-GEN.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC charging voltage by adapter which received 120V/60Hz power by a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### **11.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST**

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

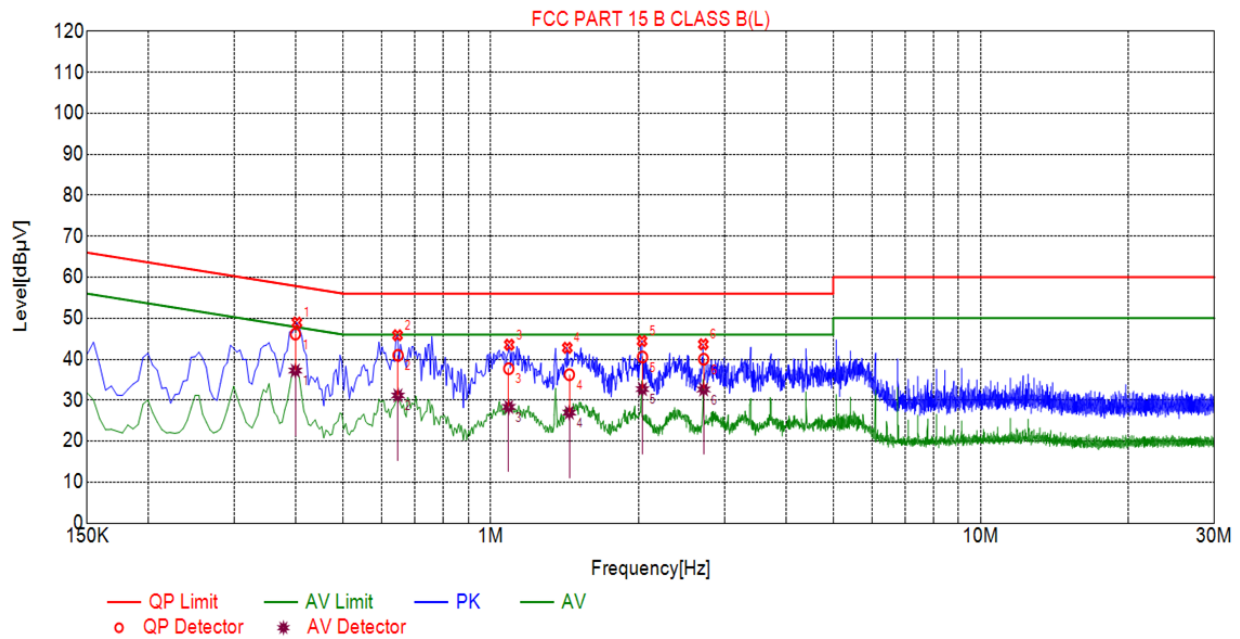


## 11.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

By adapter (worst case)

FOR BR/EDR

Line Conducted Emission Test Line 1-L

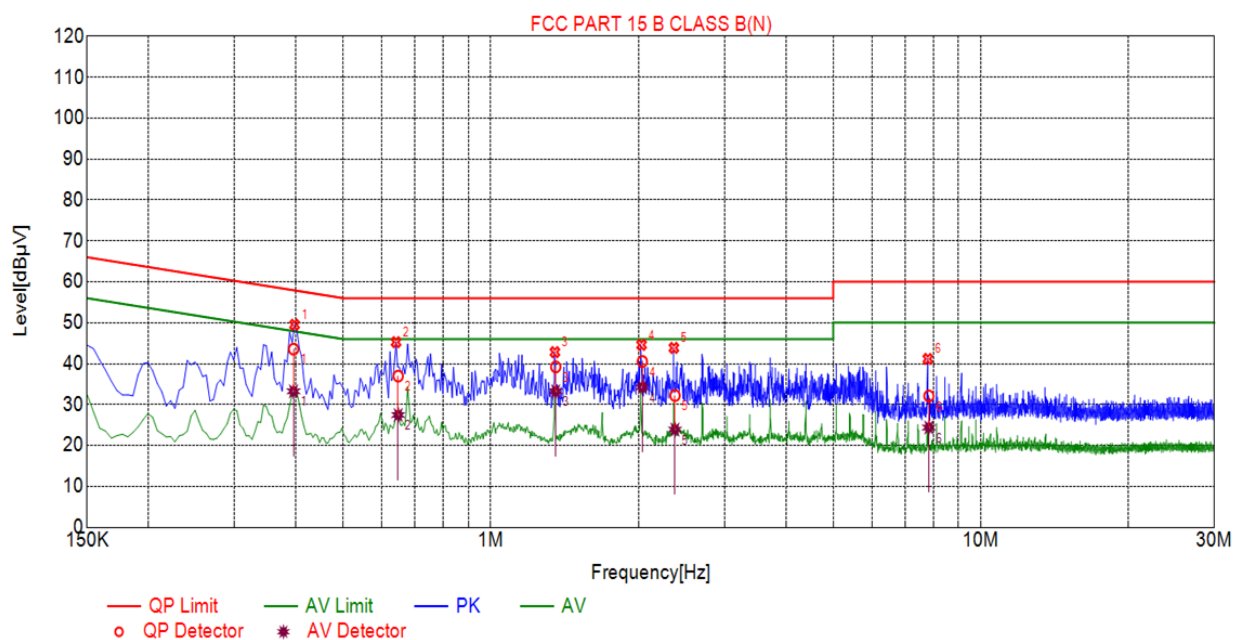


### Final Data List

| NO. | Freq.<br>[MHz] | Factor<br>[dB] | QP<br>Value<br>[dBuV] | QP<br>Limit<br>[dBuV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBuV] | AV<br>Limit<br>[dBuV] | AV<br>Margin<br>[dB] |
|-----|----------------|----------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|
| 1   | 0.3990         | 10.04          | 46.15                 | 57.87                 | 11.72                | 37.23                 | 47.87                 | 10.64                |
| 2   | 0.6463         | 10.05          | 40.96                 | 56.00                 | 15.04                | 31.17                 | 46.00                 | 14.83                |
| 3   | 1.0879         | 10.07          | 37.69                 | 56.00                 | 18.31                | 28.36                 | 46.00                 | 17.64                |
| 4   | 1.4462         | 10.10          | 36.23                 | 56.00                 | 19.77                | 26.97                 | 46.00                 | 19.03                |
| 5   | 2.0396         | 10.15          | 40.54                 | 56.00                 | 15.46                | 32.70                 | 46.00                 | 13.30                |
| 6   | 2.7192         | 10.21          | 40.01                 | 56.00                 | 15.99                | 32.62                 | 46.00                 | 13.38                |



Line Conducted Emission Test Line 2-N



Final Data List

| NO. | Freq.<br>[MHz] | Fador<br>[dB] | QP<br>Value<br>[dBuV] | QP<br>Limit<br>[dBuV] | QP<br>Margin<br>[dB] | AV<br>Value<br>[dBuV] | AV<br>Limit<br>[dBuV] | AV<br>Margin<br>[dB] |
|-----|----------------|---------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|
| 1   | 0.3956         | 10.04         | 43.56                 | 57.94                 | 14.38                | 33.25                 | 47.94                 | 14.69                |
| 2   | 0.6469         | 10.05         | 36.97                 | 56.00                 | 19.03                | 27.46                 | 46.00                 | 18.54                |
| 3   | 1.3564         | 10.10         | 39.22                 | 56.00                 | 16.78                | 33.26                 | 46.00                 | 12.74                |
| 4   | 2.0378         | 10.15         | 40.54                 | 56.00                 | 15.46                | 34.21                 | 46.00                 | 11.79                |
| 5   | 2.3763         | 10.18         | 32.22                 | 56.00                 | 23.78                | 23.90                 | 46.00                 | 22.10                |
| 6   | 7.8379         | 10.16         | 32.10                 | 60.00                 | 27.90                | 24.40                 | 50.00                 | 25.60                |



## 12. ANTENNA REQUIREMENT

### **Standard Applicable**

For intentional device, according to FCC 47 CFR Section 15.203 and RSS-GEN, 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.

### **Refer to statement below for compliance.**

The device has a fixed antenna, full with the requirement of this part.  
For the details, please refer to APPENDIX I.



### **13. PHOTOGRAPH OF TEST**

Refer to Attached file(Appendix I).