# FCC Test Report

Report No.: AGC01110180556FE06

| | | |
|---|---|---|
| **FCC ID** | : | 2AOKB-Z6111 |
| **APPLICATION PURPOSE** | : | Original Equipment |
| **PRODUCT DESIGNATION** | : | Soundcore Model Zero+ |
| **BRAND NAME** | : | Soundcore |
| **MODEL NAME** | : | Z6111 |
| **CLIENT** | : | Anker Innovations Limited |
| **DATE OF ISSUE** | : | Jun. 11, 2018 |
| **STANDARD(S)**<br>**TEST PROCEDURE(S)** | : | FCC Part 15.407<br>KDB 789033 D02 v02r01 |
| **REPORT VERSION** | : | V1.0 |

***A***ttestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd

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**REPORT REVISE RECORD**

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | Jun. 11, 2018 | Valid | Initial Release |

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## 1. VERIFICATION OF CONFORMITY

| | |
|---|---|
| **Applicant** | Anker Innovations Limited |
| **Address** | Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong |
| **Manufacturer** | Anker Innovations Limited |
| **Address** | Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong |
| **Product Designation** | Soundcore Model Zero+ |
| **Brand Name** | Soundcore |
| **Test Model** | Z6111 |
| **Date of test** | Mar. 11, 2018 to Mar. 30, 2018 |
| **Deviation** | None |
| **Condition of Test Sample** | Normal |
| **Test Result** | Pass |
| **Report Template** | AGCRT-US-BGN/RF |

We hereby certify that:
The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

| | | |
|---|---|---|
| Tested By | Max Zhang | |
| | Max Zhang(Zhang Yi) | Jun. 11, 2018 |
| Reviewed By | Bart Xie | |
| | Bart Xie(Xie Xiaobin) | Jun. 11, 2018 |
| Approved By | Forrest Lei | |
| | Forrest Lei(Lei Yonggang)<br>Authorized Officer | Jun. 11, 2018 |

# 2. GENERAL INFORMATION

## 2.1. PRODUCT DESCRIPTION

The EUT is designed as “Soundcore Model Zero+”. It is designed by way of utilizing the OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

| | |
|---|---|
| **Operation Frequency** | 5150 MHz～5250MHz;5725 MHz～5850MHz |
| **Output Power** | IEEE 802.11a20:12.09dBm; IEEE 802.11n(20):9.64dBm;<br>IEEE802.11n(40):7.14dBm |
| **Modulation** | BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM,OFDM |
| **Number of channels** | 9 for 20MHZ bandwidth system<br>4 for 40MHZ bandwidth system |
| **Hardware Version** | Rev: A |
| **Software Version** | V3.6 |
| **Antenna Designation** | PIFA Antenna |
| **Number of transmit chain** | 1 |
| **Antenna Gain** | 1.65dBi for 5150-5250MHz<br>1.92dBi for 5725-5850MHz |
| **Power Supply** | DC 15V by adapter or DC 7.2V by battery |

## 2.2. TABLE OF CARRIER FREQUENCYS

| Frequency Band | Channel Number | Frequency | Frequency Band | Channel Number | Frequency |
|---|---|---|---|---|---|
| 5150 GHz～5250GHz | 36 | 5180 MHz | 5725 GHz～5850GHz | 149 | 5745 MHz |
| | 38 | 5190 MHz | | 151 | 5755 MHz |
| | 40 | 5200 MHz | | 153 | 5765 MHz |
| | 44 | 5220 MHz | | 157 | 5785 MHz |
| | 46 | 5230 MHz | | 159 | 5795 MHz |
| | 48 | 5240 MHz | | 161 | 5805 MHz |
| | | | | 165 | 5825MHz |
| | | | | | |

Note: For 20MHZ bandwidth system use Channel 36,40,44,48,149,153,157,161,165; For 40MHZ bandwidth system use Channel 38,46,151,159;

### 2.3. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AOKB-Z6111** filing to comply with the FCC Part 15 requirements.

### 2.4. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013).
Radiated testing was performed at an antenna to EUT distance 3 meters.
Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.407 rules KDB 789033 D02

### 2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

### 2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

## 3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in measurement” (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission, Uc = ±3.2 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB

## 4. DESCRIPTION OF TEST MODES

| Mode | Available channel | Tested channel | Modulation | Date rate(Mbps) |
|---|---|---|---|---|
| 802.11a/n20 | 36,40,44,48, 149,153,157,161,165 | 36,38,48,149, 157,165 | OFDM | 6/6.5 |
| 802.11n40 | 38,46,151,159 | 38,46, 151,159 | OFDM | 13.5 |

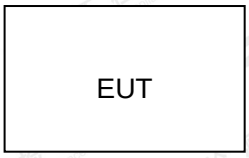
**Note:**

1. The EUT has been set to operate continuously on tested channel individually, and the EUT is operating at its maximum duty cycle>or equal 98%
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.

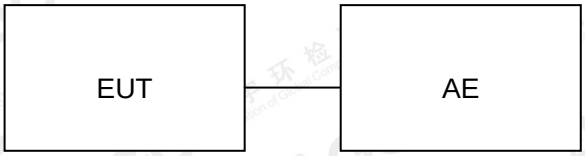
# 5. SYSTEM TEST CONFIGURATION

## 5.1. CONFIGURATION OF EUT SYSTEM

Radiated Emission Configure :




Conducted Emission Configure :




## 5.2. EQUIPMENT USED IN EUT SYSTEM

| Item | Equipment | Model No. | ID or Specification | Remark |
|---|---|---|---|---|
| 1 | Soundcore Model Zero+ | Z6111 | 2AOKB-Z6111 | EUT |
| 2 | Adapter | DYS602-150400W | DC 15V/4A | AE |

## 5.3. SUMMARY OF TEST RESULTS

| FCC RULES | DESCRIPTION OF TEST | RESULT |
|---|---|---|
| §15.407 | 6dB Bandwidth | Compliant |
| §15.407 | Emission Bandwidth | Compliant |
| §15.407 | Maximum conducted output power | Compliant |
| §15.407 | Conducted Spurious Emission | Compliant |
| §15.407 | Maximum Conducted Output Power Density | Compliant |
| §15.209 | Radiated Emission | Compliant |
| §15.407 | Band Edges | Compliant |
| §15.207 | Line Conduction Emission | Compliant |

## 6. TEST FACILITY

| | |
|---|---|
| **Test Site** | Attestation of Global Compliance (Shenzhen) Co., Ltd |
| **Location** | 1-2F., Bldg.2, No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District B112-B113, Bldg.12, Baoan Bldg Materials Center, No.1 of Xixiang Inner Ring Road, Baoan District, Shenzhen 518012 |
| **NVLAP LAB CODE** | 600153-0 |
| **Designation Number** | CN5028 |
| **FCC Test Firm Registration Number** | 682566 |
| **Description** | Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by National Voluntary Laboratory Accreditation program, NVLAP Code 600153-0 |

**TEST EQUIPMENT OF CONDUCTED EMISSION TEST**

| Equipment | Manufacturer | Model | S/N | Cal. Date | Cal. Due |
|---|---|---|---|---|---|
| TEST RECEIVER | R&S | ESPI | 101206 | Jun.20, 2017 | Jun.19, 2018 |
| LISN | R&S | ESH2-Z5 | 100086 | Aug.21, 2017 | Aug.20, 2018 |

**TEST EQUIPMENT OF RADIATED EMISSION TEST**

| Equipment | Manufacturer | Model | S/N | Cal. Date | Cal. Due |
|---|---|---|---|---|---|
| TEST RECEIVER | R&S | ESCI | 10096 | Jun.20, 2017 | Jun.19, 2018 |
| EXA Signal Analyzer | Aglient | N9010A | MY53470504 | Dec.08, 2017 | Dec.07, 2018 |
| Power sensor | Aglient | U2021XA | MY54110007 | Sep.21, 2017 | Sep.20, 2018 |
| Horn antenna | SCHWARZBECK | BBHA 9170 | #768 | Sep.20, 2017 | Sep.19, 2018 |
| preamplifier | ChengYi | EMC184045SE | 980508 | Sep.15, 2017 | Sep.14, 2018 |
| Active loop antenna (9K-30MHz) | A.H. | SAS-562B | N/A | Mar.01, 2018 | Feb.28, 2019 |
| Double-Ridged Waveguide Horn | ETS LINDGREN | 3117 | 00034609 | May.18, 2017 | May.17, 2019 |
| Broadband Preamplifier | SCHWARZBECK | BBV 9718 | 9718-205 | Jun.20, 2017 | Jun.19, 2018 |
| ANTENNA | SCHWARZBECK | VULB9168 | D69250 | Sep.28, 2017 | Sep.27, 2018 |

# 7. MAXIMUM CONDUCTED OUTPUT POWER

## 7.1. MEASUREMENT PROCEDURE

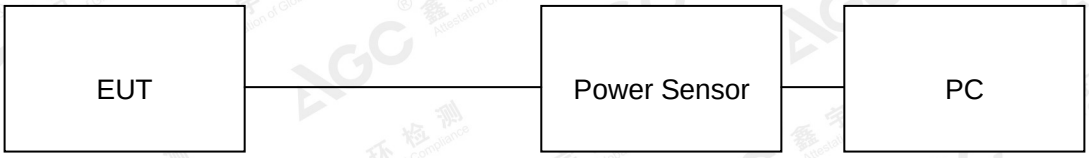
For average power test:

1. Connect EUT RF output port to power sensor through an RF attenuator.
2. Connect the power sensor to the PC.
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Record the maximum power from the software.

**Note**：The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

## 7.2. TEST SET-UP

**AVERAGE POWER SETUP**



## 7.3. LIMITS AND MEASUREMENT RESULT

| LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION | | | |
|---|---|---|---|
| Frequency (MHz) | Average Power (dBm) | Applicable Limits (dBm) | Pass or Fail |
| 5180 | 11.98 | 24 | Pass |
| 5200 | 12.09 | 24 | Pass |
| 5240 | 11.73 | 24 | Pass |
| 5745 | 11.56 | 30 | Pass |
| 5785 | 11.29 | 30 | Pass |
| 5825 | 11.46 | 30 | Pass |

| LIMITS AND MEASUREMENT RESULT FOR 802.11N20 MODULATION | | | |
|---|---|---|---|
| Frequency (MHz) | Average Power (dBm) | Applicable Limits (dBm) | Pass or Fail |
| 5180 | 9.24 | 24 | Pass |
| 5200 | 9.59 | 24 | Pass |
| 5240 | 9.23 | 24 | Pass |
| 5745 | 9.51 | 30 | Pass |
| 5785 | 9.64 | 30 | Pass |
| 5825 | 9.57 | 30 | Pass |

| LIMITS AND MEASUREMENT RESULT FOR 802.11N40 MODULATION | | | |
|---|---|---|---|
| Frequency (MHz) | Average Power (dBm) | Applicable Limits (dBm) | Pass or Fail |
| 5190 | 7.05 | 24 | Pass |
| 5230 | 7.14 | 24 | Pass |
| 5755 | 6.99 | 30 | Pass |
| 5795 | 6.83 | 30 | Pass |

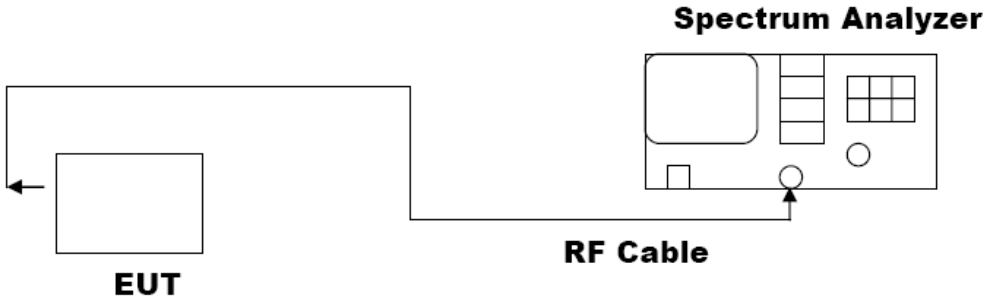
# 8. 6dB BANDWIDTH

## 8.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on operation frequency individually.
3. Set RBW = 100kHz.
4. Set the VBW ≥3*RBW. Detector = Peak. Trace mode = max hold.
5. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.

**Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

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



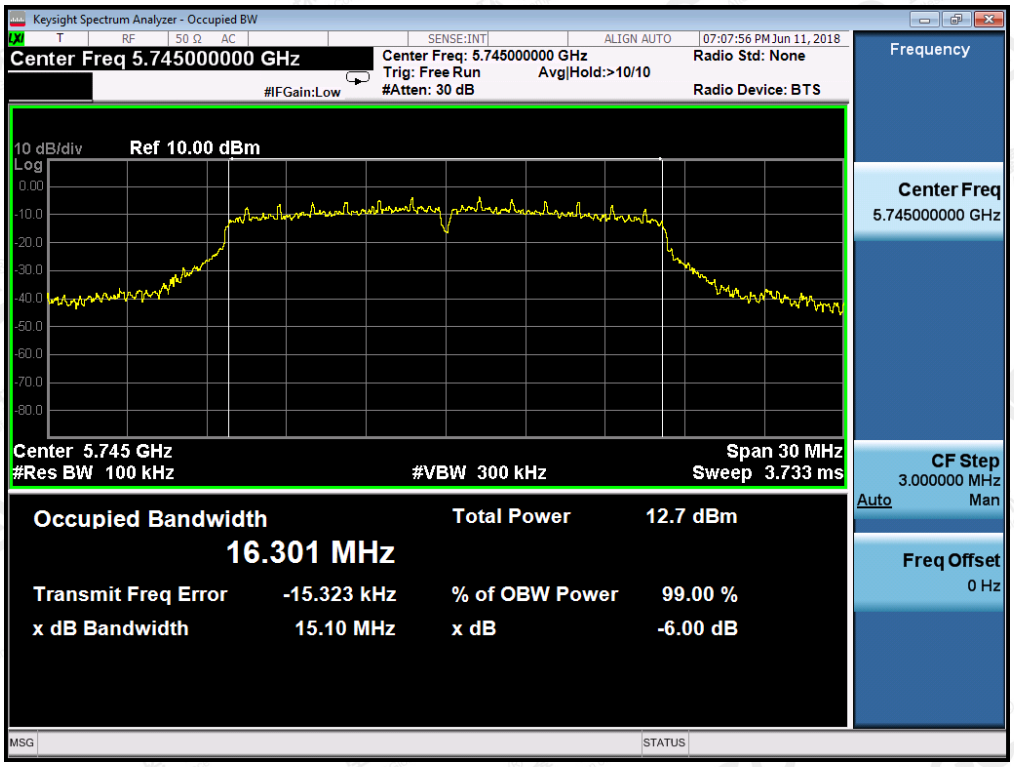
## 8.3. LIMITS AND MEASUREMENT RESULTS

| LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION | | | |
|---|---|---|---|
| Applicable Limits | Applicable Limits | | |
| | Test Data (MHz) | | Criteria |
| >500KHZ | 5745MHz | 15.10 | PASS |
| | 5785MHz | 13.91 | PASS |
| | 5825MHz | 14.99 | PASS |

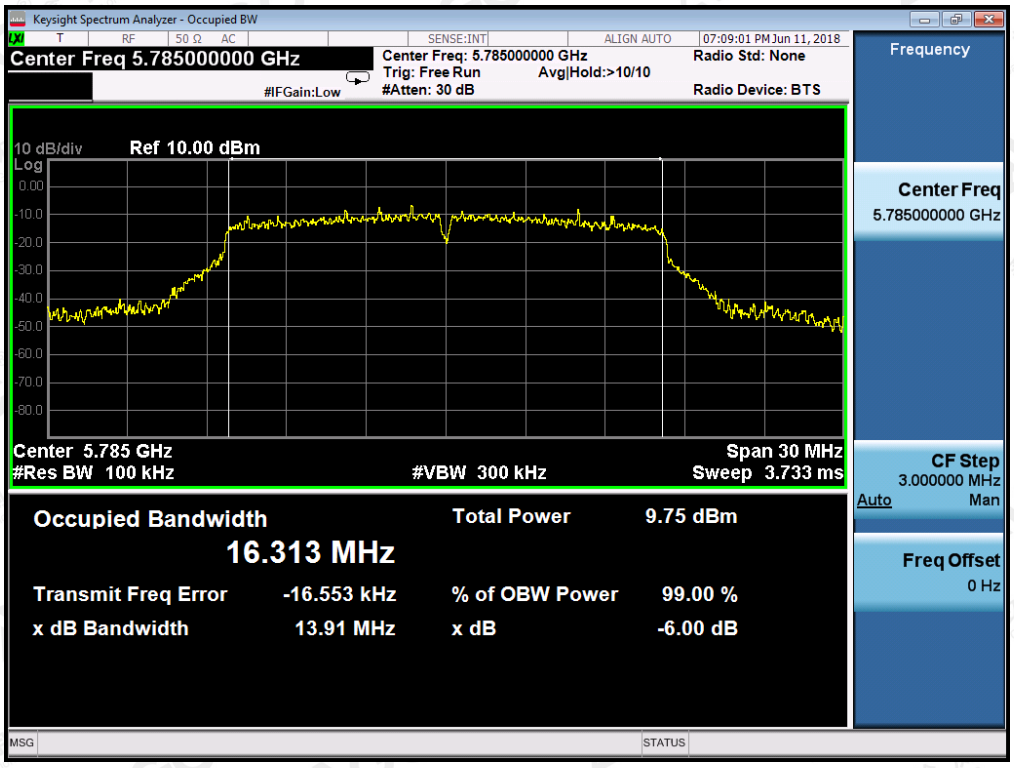
| LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION | | | |
|---|---|---|---|
| Applicable Limits | Applicable Limits | | |
| | Test Data (MHz) | | Criteria |
| >500KHZ | 5745MHz | 15.12 | PASS |
| | 5785MHz | 15.08 | PASS |
| | 5825MHz | 15.11 | PASS |
| | 5755MHz | 33.81 | PASS |
| | 5795MHz | 35.07 | PASS |

## 802.11a20 TEST RESULT

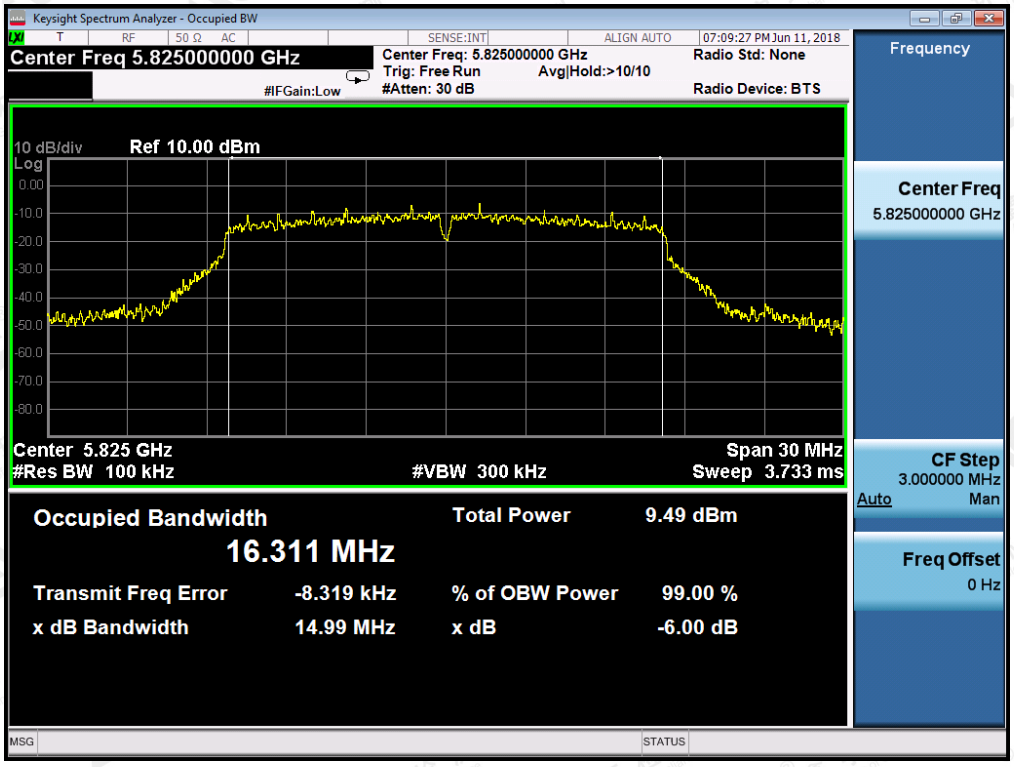
TEST PLOT OF BANDWIDTH FOR 5745MHz




TEST PLOT OF BANDWIDTH FOR 5785MHz

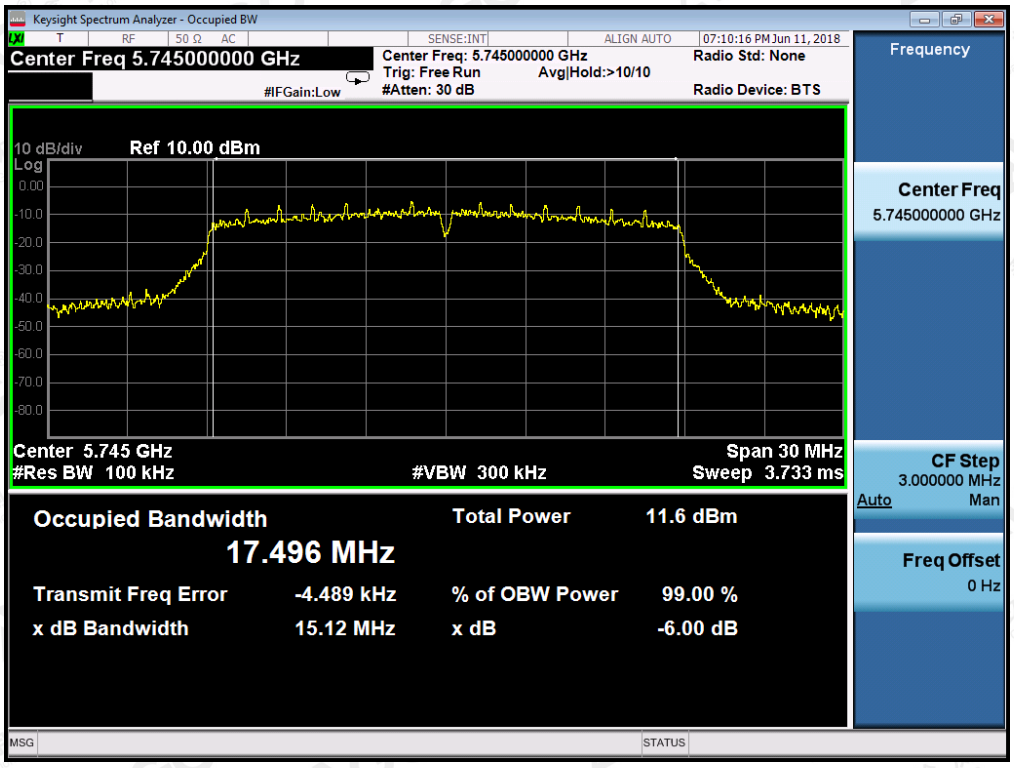


TEST PLOT OF BANDWIDTH FOR 5825MHz

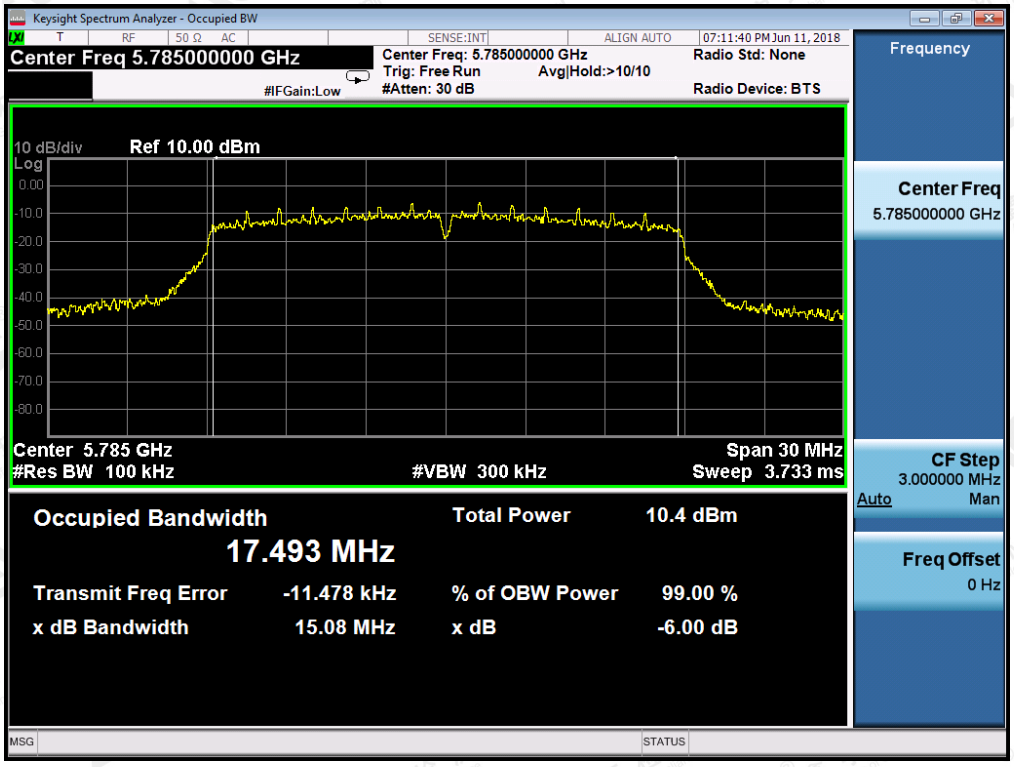



**802.11n20 TEST RESULT**

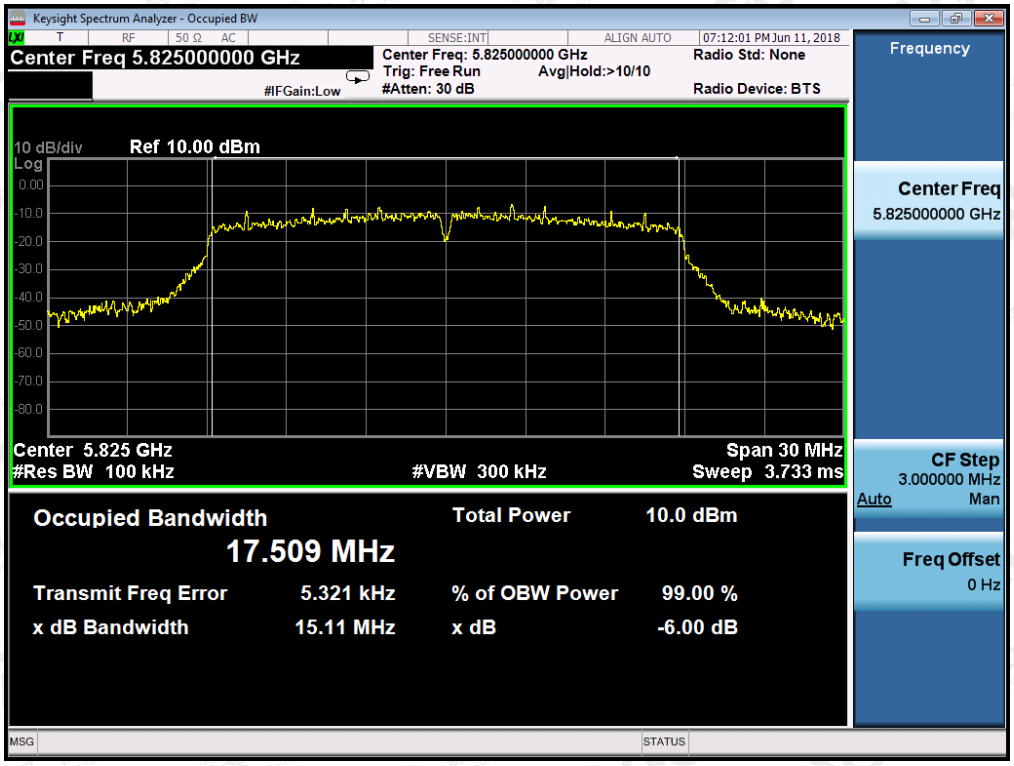
TEST PLOT OF BANDWIDTH FOR 5745MHz



TEST PLOT OF BANDWIDTH FOR 5785MHz

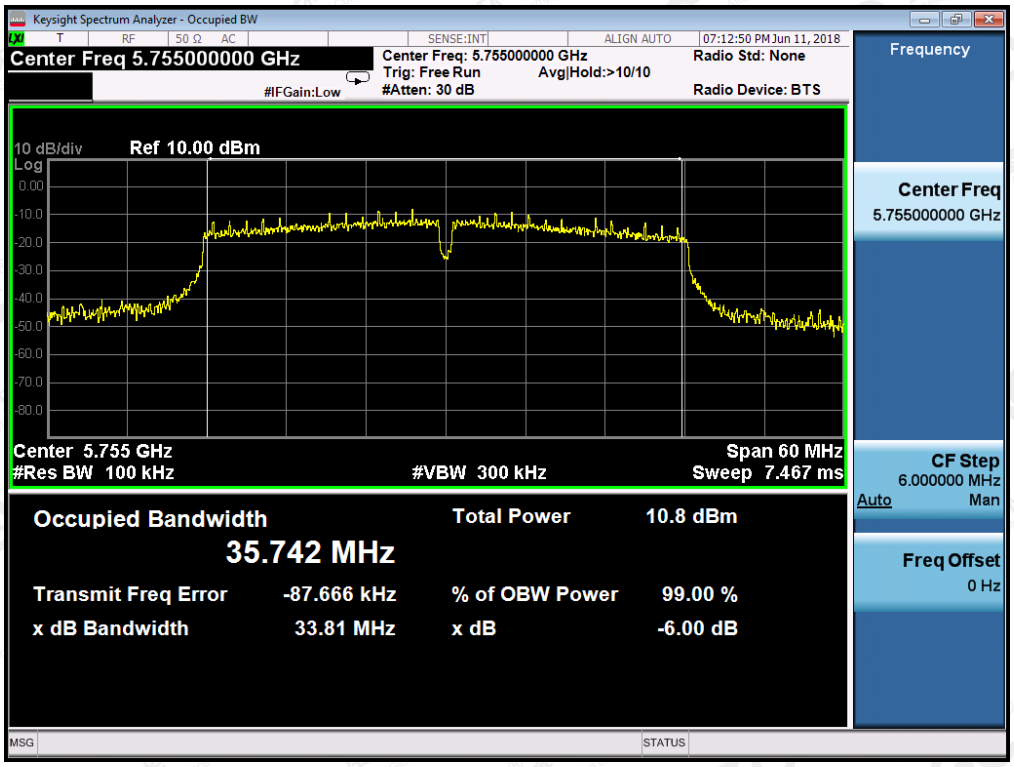



TEST PLOT OF BANDWIDTH FOR 5825MHz

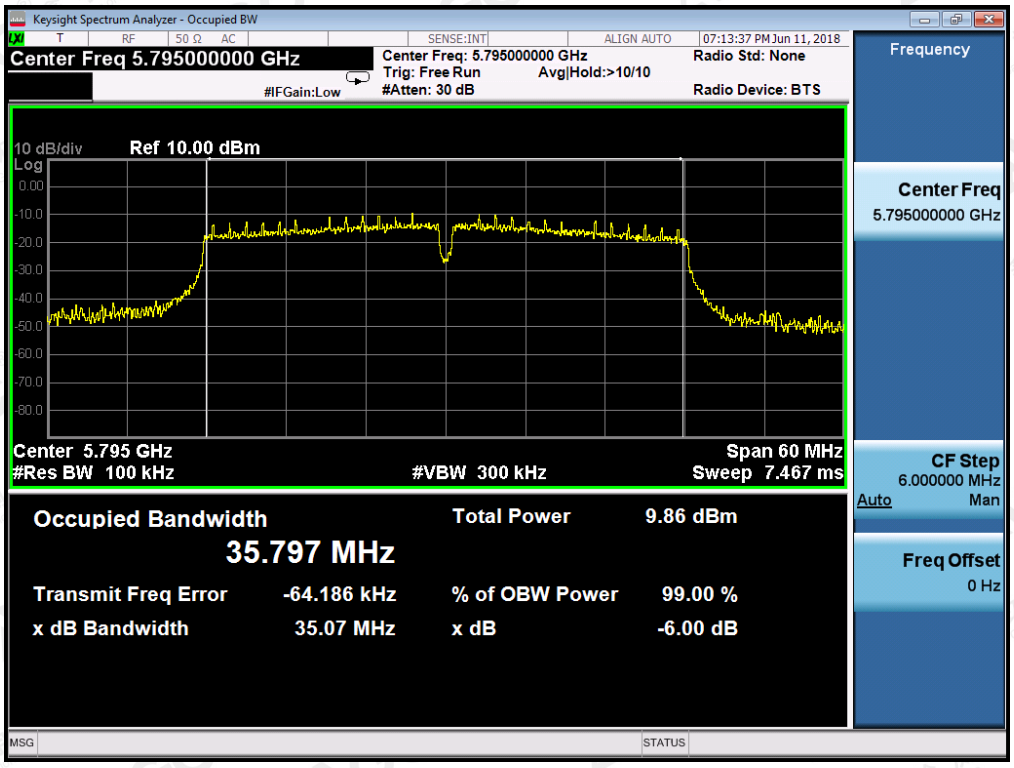


## 802.11n40 TEST RESULT

TEST PLOT OF BANDWIDTH FOR 5755MHz




TEST PLOT OF BANDWIDTH FOR 5795MHz



# 9. EMISSION BANDWIDTH

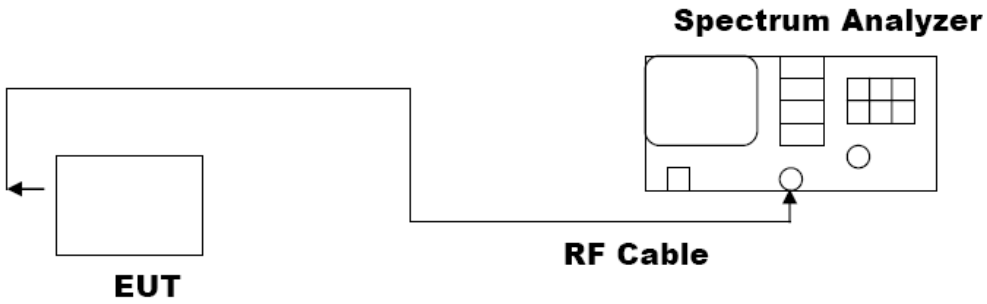
## 9.1. MEASUREMENT PROCEDURE

a) Set RBW = approximately 1% of the emission bandwidth.
a) Set RBW = approximately 1% of the emission bandwidth.
b) Set the VBW > RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

The following procedure shall be used for measuring (99 %) power bandwidth:
1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument

**Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

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



### 9.3. LIMITS AND MEASUREMENT RESULTS

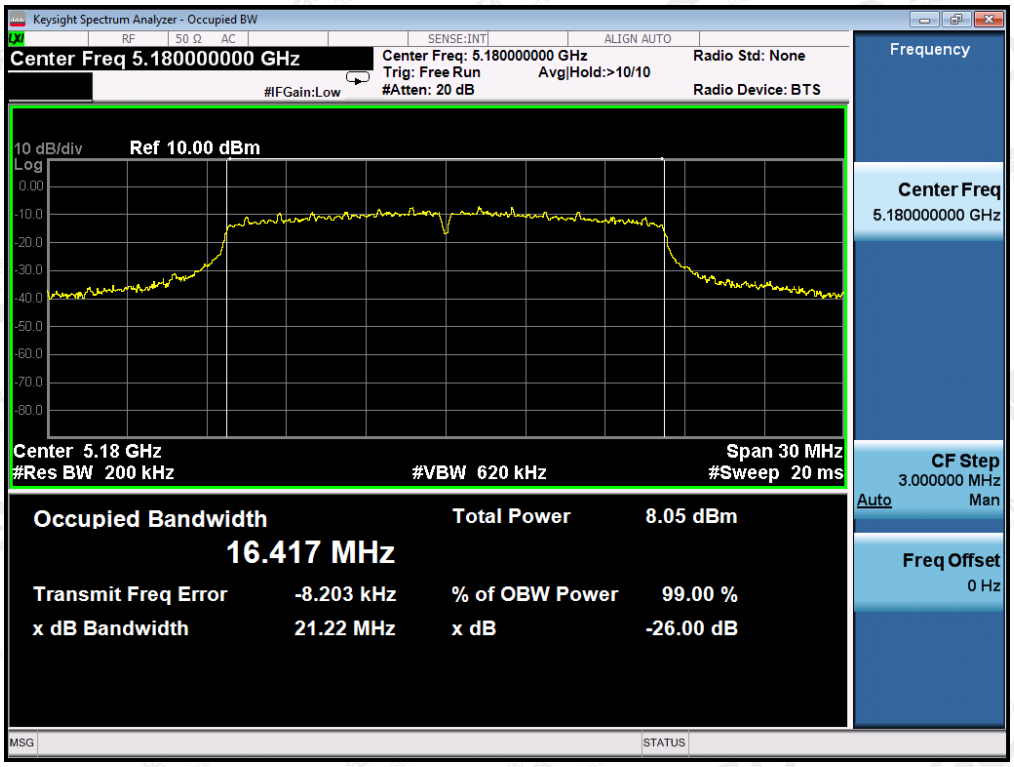
| LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION | | | |
|---|---|---|---|
| **Test Channel** | **-26dBc EBW (MHz)** | **99% OBW (MHz)** | **Criteria** |
| 5180MHz | 21.22 | 16.417 | PASS |
| 5200MHz | 19.50 | 16.367 | PASS |
| 5240MHz | 20.46 | 16.405 | PASS |

| LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION | | | |
|---|---|---|---|
| **Test Channel** | **-26dBc EBW (MHz)** | **99% OBW (MHz)** | **Criteria** |
| 5180MHz | 19.77 | 17.577 | PASS |
| 5200MHz | 19.60 | 17.547 | PASS |
| 5240MHz | 19.74 | 17.575 | PASS |
| 5190MHz | 39.93 | 35.962 | PASS |
| 5230MHz | 39.30 | 35.918 | PASS |

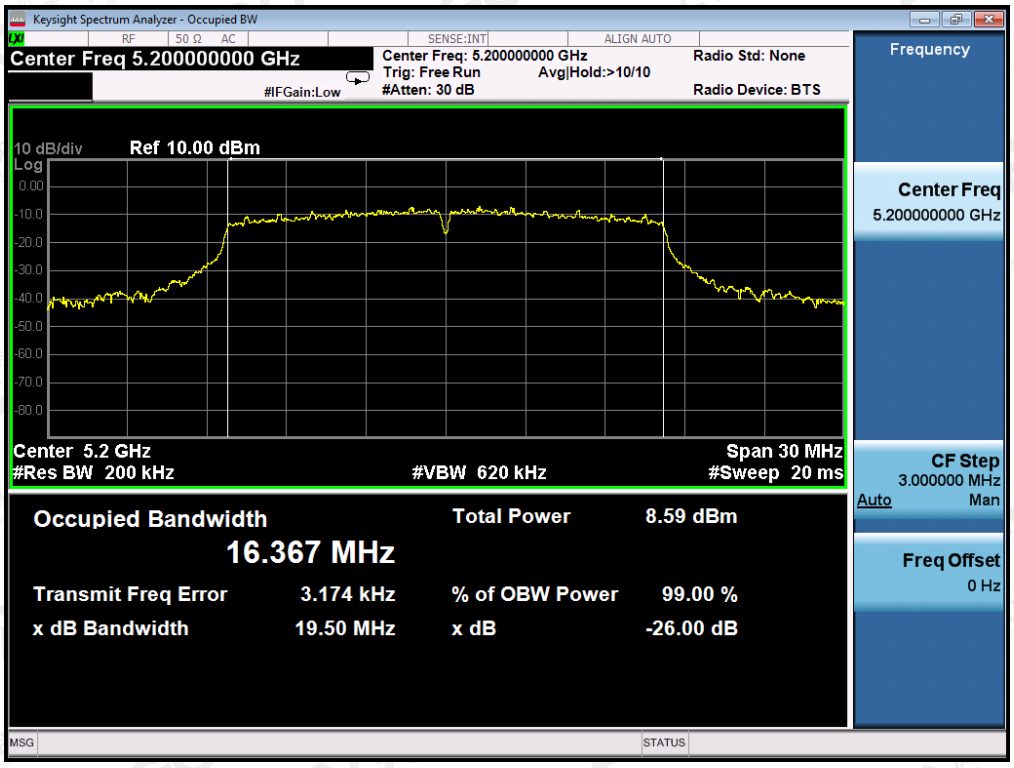
A 26-dB bandwidth that straddles into U-NII 2A band but its 99% occupied power bandwidth does not. If DFS is required, the device must be able to detect radar signal within its 99% occupied power bandwidth. For this rare case, DFS requirement does not apply.

## 802.11a20 TEST RESULT

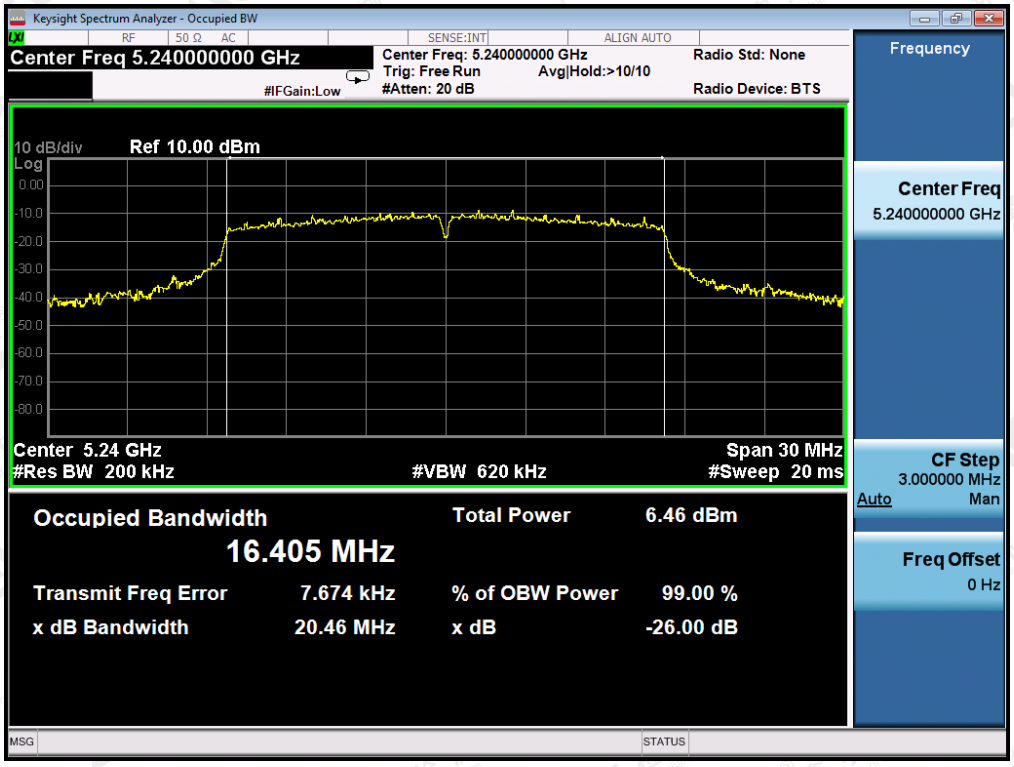
TEST PLOT OF BANDWIDTH FOR 5180MHz




TEST PLOT OF BANDWIDTH FOR 5200MHz

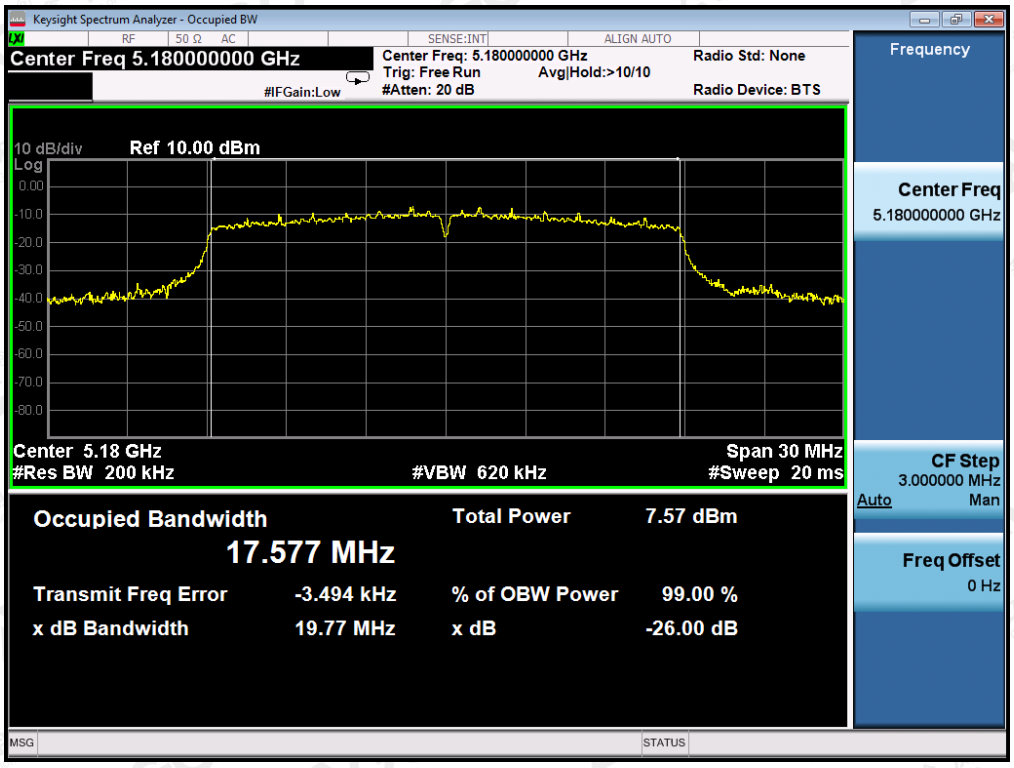


TEST PLOT OF BANDWIDTH FOR 5240MHz



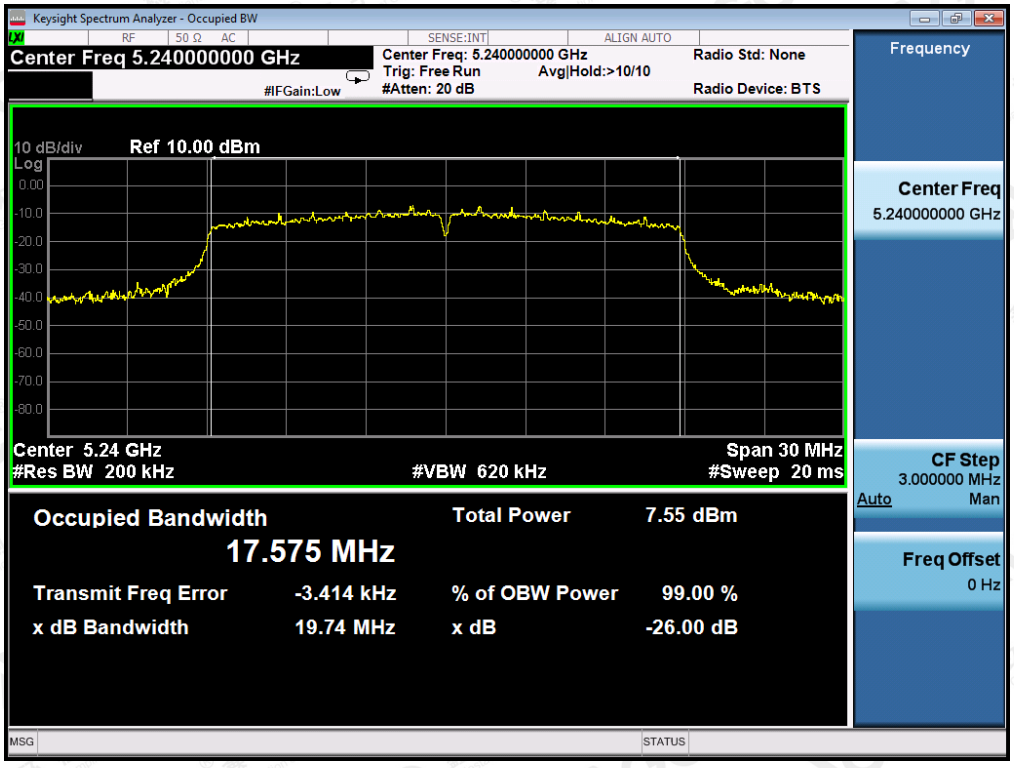

**802.11n20 TEST RESULT**

TEST PLOT OF BANDWIDTH FOR 5180MHz



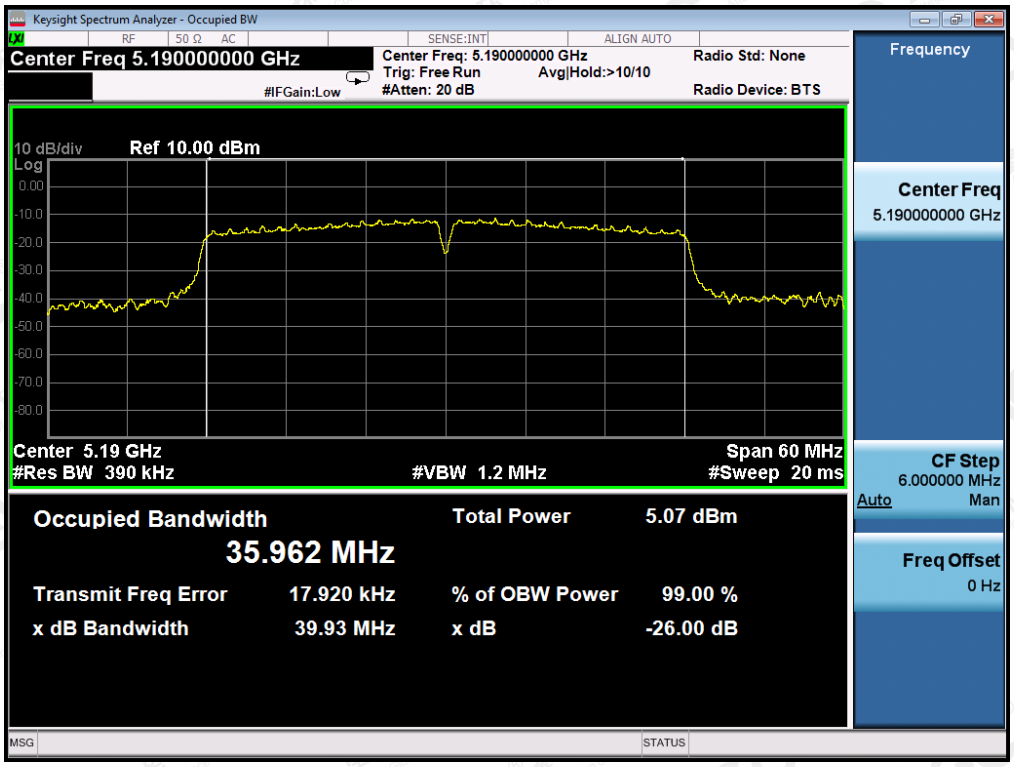
TEST PLOT OF BANDWIDTH FOR 5200MHz


TEST PLOT OF BANDWIDTH FOR 5240MHz



## 802.11n40 TEST RESULT

TEST PLOT OF BANDWIDTH FOR 5190MHz




TEST PLOT OF BANDWIDTH FOR 5230MHz

# 10. MAXIMUM CONDUCTED OUTPUT PEAK POWER SPECTRAL DENSITY

## 10.1 MEASUREMENT PROCEDURE

Refer to KDB 789033 section F

## 10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 8.2.

## 10.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.

## 10.4 LIMITS AND MEASUREMENT RESULT

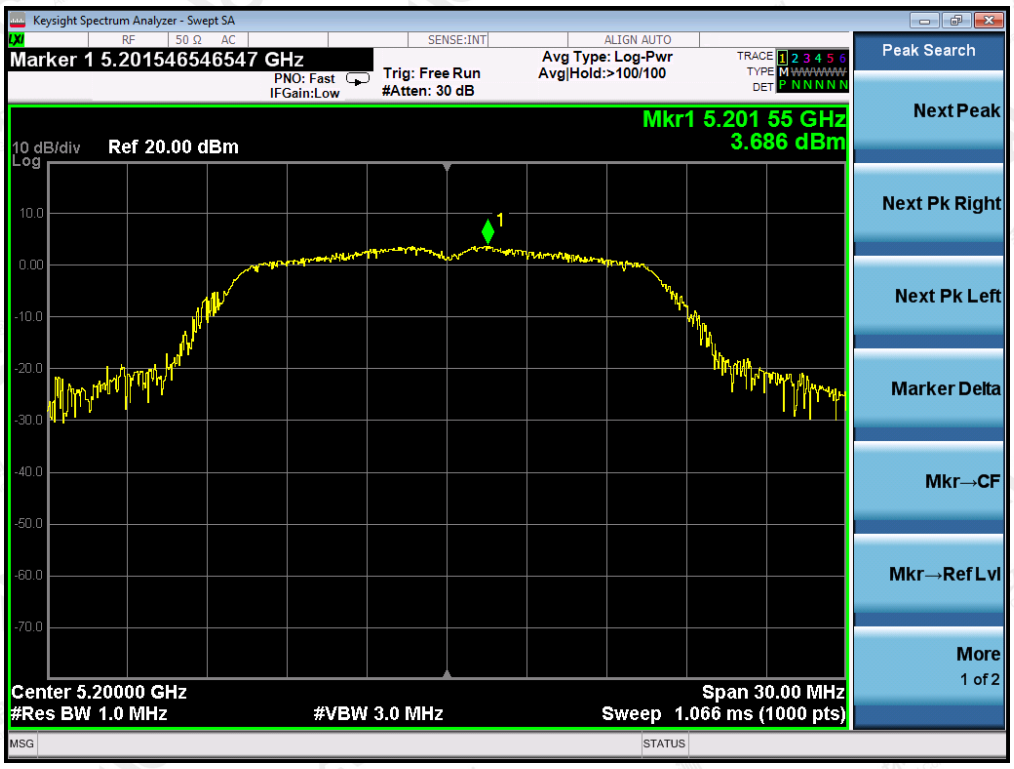
| LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION | | | |
|---|---|---|---|
| **Frequency (MHz)** | **Power density (dBm/MHz)** | **Applicable Limits (dBm)** | **Pass or Fail** |
| 5180 | 4.059 | 11 | Pass |
| 5200 | 3.686 | 11 | Pass |
| 5240 | 3.856 | 11 | Pass |
| **Frequency (MHz)** | **Power density (dBm/500kHz)** | **Applicable Limits (dBm)** | **Pass or Fail** |
| 5745 | 3.995 | 30 | Pass |
| 5785 | 3.465 | 30 | Pass |
| 5825 | 2.536 | 30 | Pass |

| LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION | | | |
|---|---|---|---|
| **Frequency (MHz)** | **Power density (dBm/MHz)** | **Applicable Limits (dBm)** | **Pass or Fail** |
| 5180 | 3.759 | 11 | Pass |
| 5200 | 3.395 | 11 | Pass |
| 5240 | 3.471 | 11 | Pass |
| 5190 | 3.583 | 11 | Pass |
| 5230 | 2.252 | 11 | Pass |
| **Frequency (MHz)** | **Power density (dBm/500kHz)** | **Applicable Limits (dBm)** | **Pass or Fail** |
| 5745 | 1.660 | 30 | Pass |
| 5785 | 0.802 | 30 | Pass |
| 5825 | 0.870 | 30 | Pass |
| 5755 | 1.214 | 30 | Pass |
| 5795 | -0.300 | 30 | Pass |

## 802.11a20 TEST RESULT

TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz

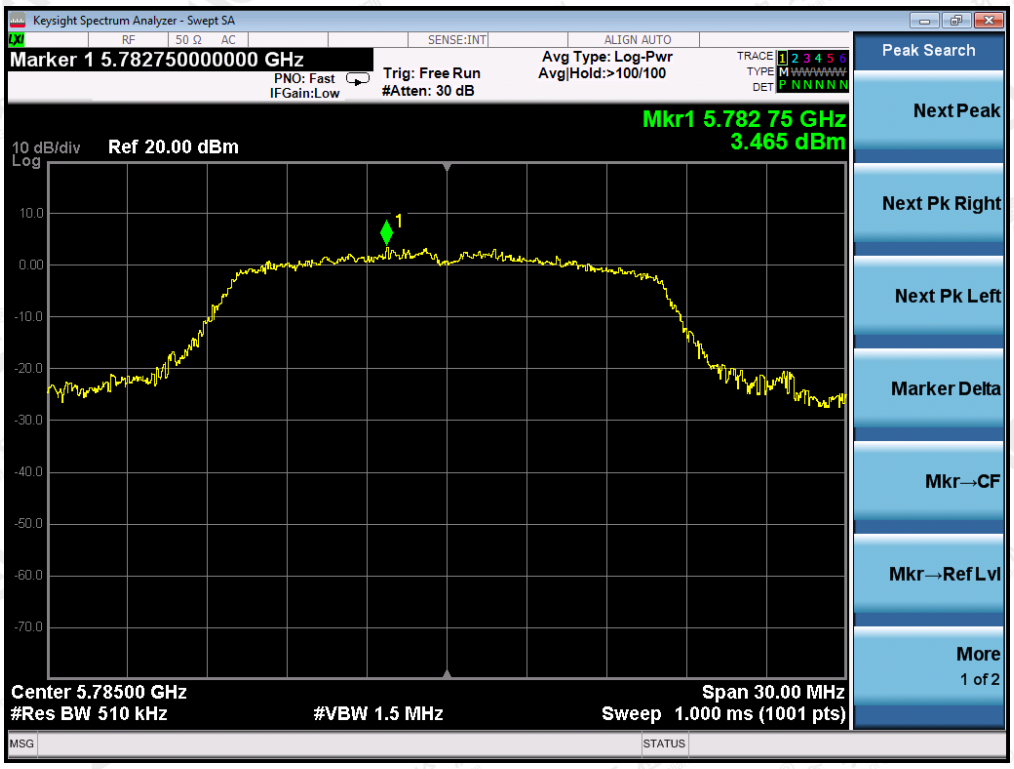

TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz



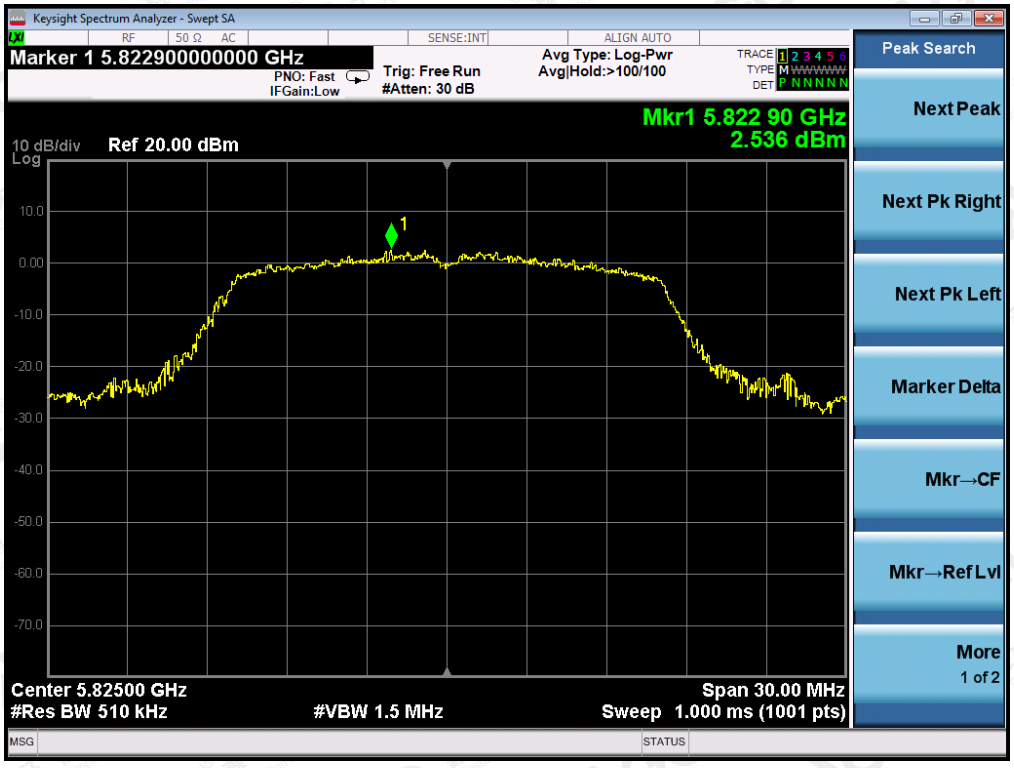
TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz


TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz

TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz

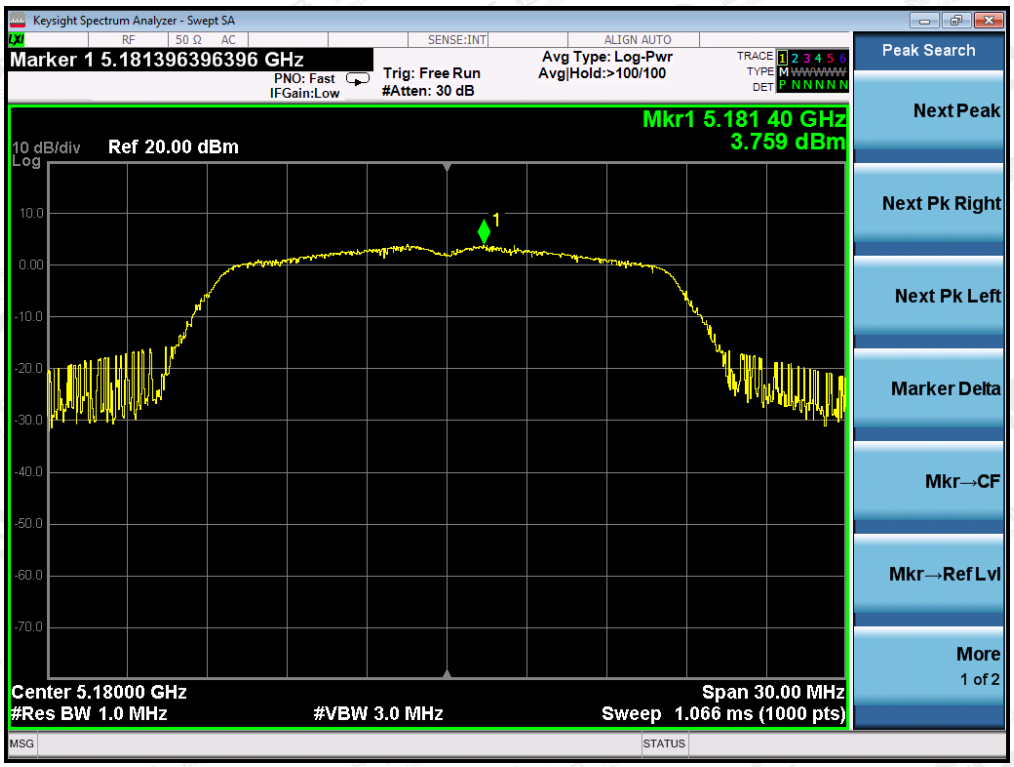



TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz

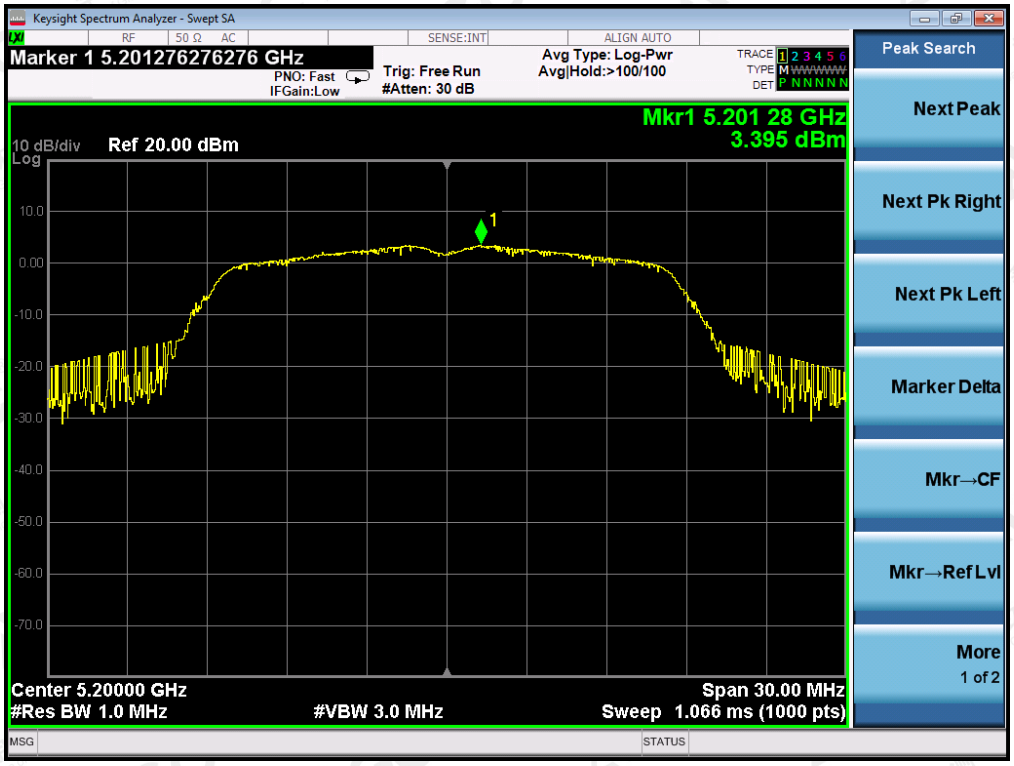


## 802.11n20 TEST RESULT

TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz




TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz



TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz


TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz

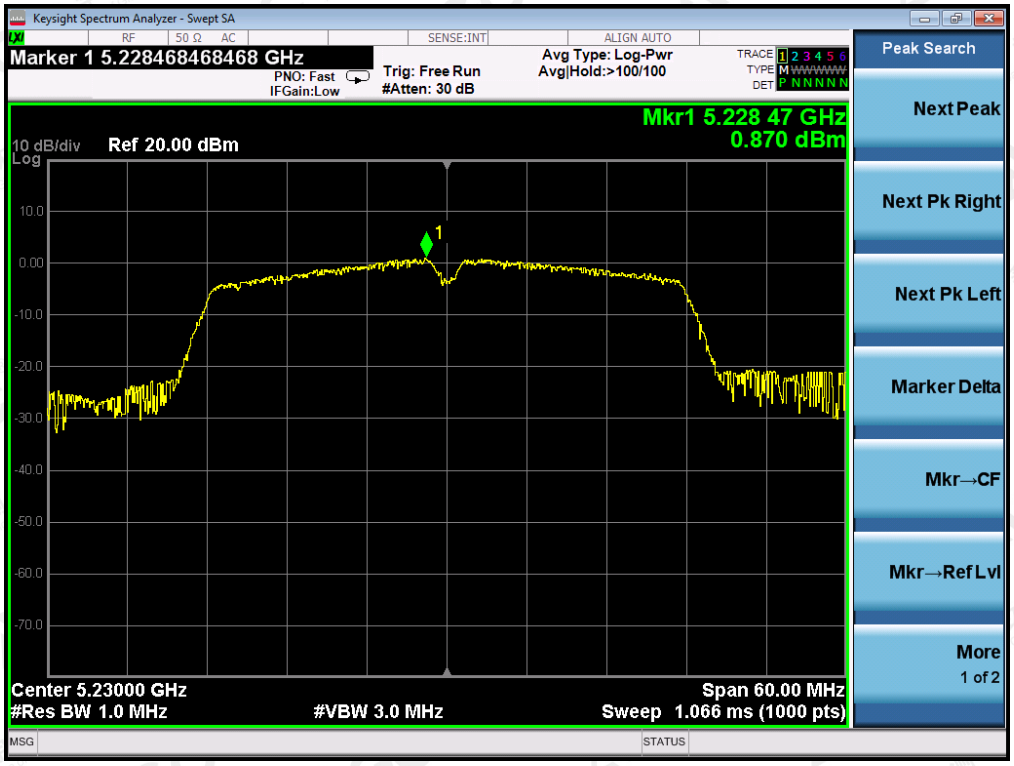
TEST PLOT OF SPECTRAL DENSITY FOR 5785MHz


TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz

## 802.11n40 TEST RESULT

TEST PLOT OF SPECTRAL DENSITY FOR 5190MHz


TEST PLOT OF SPECTRAL DENSITY FOR 5230MHz



TEST PLOT OF SPECTRAL DENSITY FOR 5755MHz


TEST PLOT OF SPECTRAL DENSITY FOR 5795MHz

# 11. CONDUCTED SPURIOUS EMISSION

## 11.1. 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 SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

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

The same as described in section 8.2.

## 11.3. MEASUREMENT EQUIPMENT USED

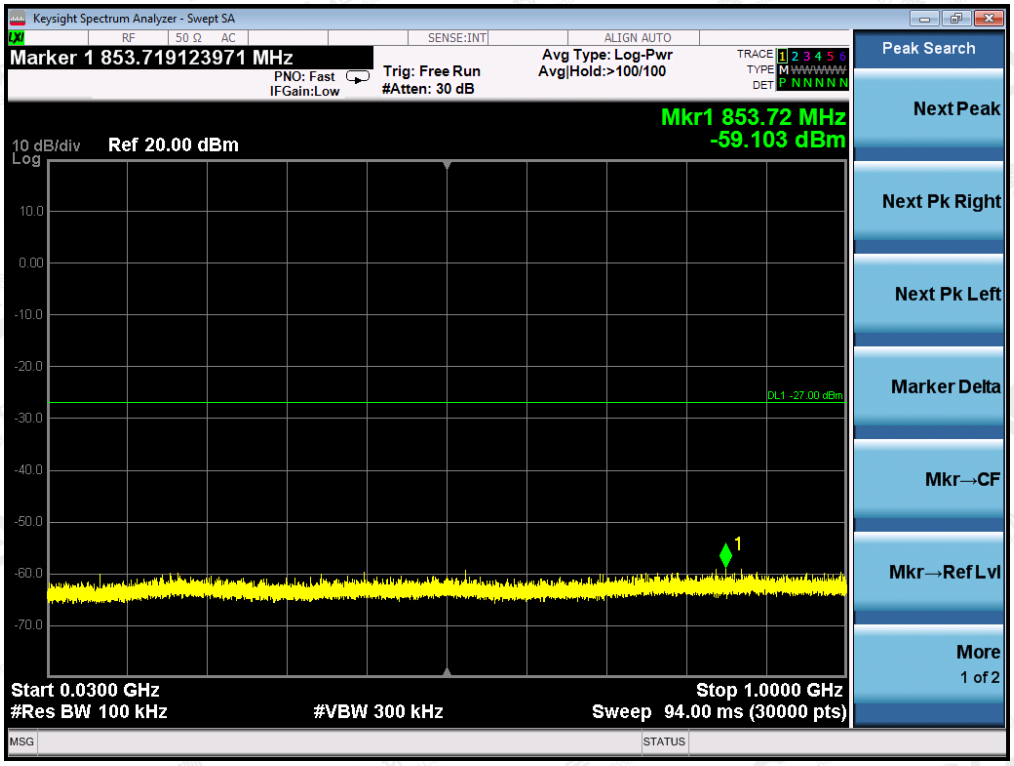
The same as described in section 6.

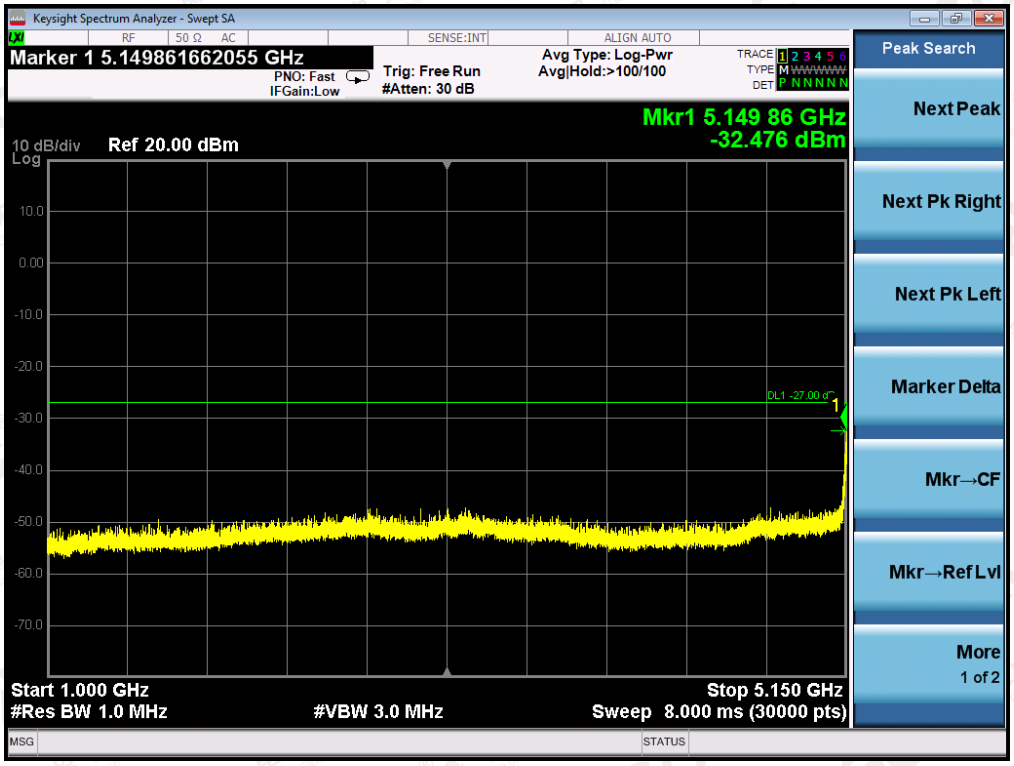
## 11.4. LIMITS AND MEASUREMENT RESULT

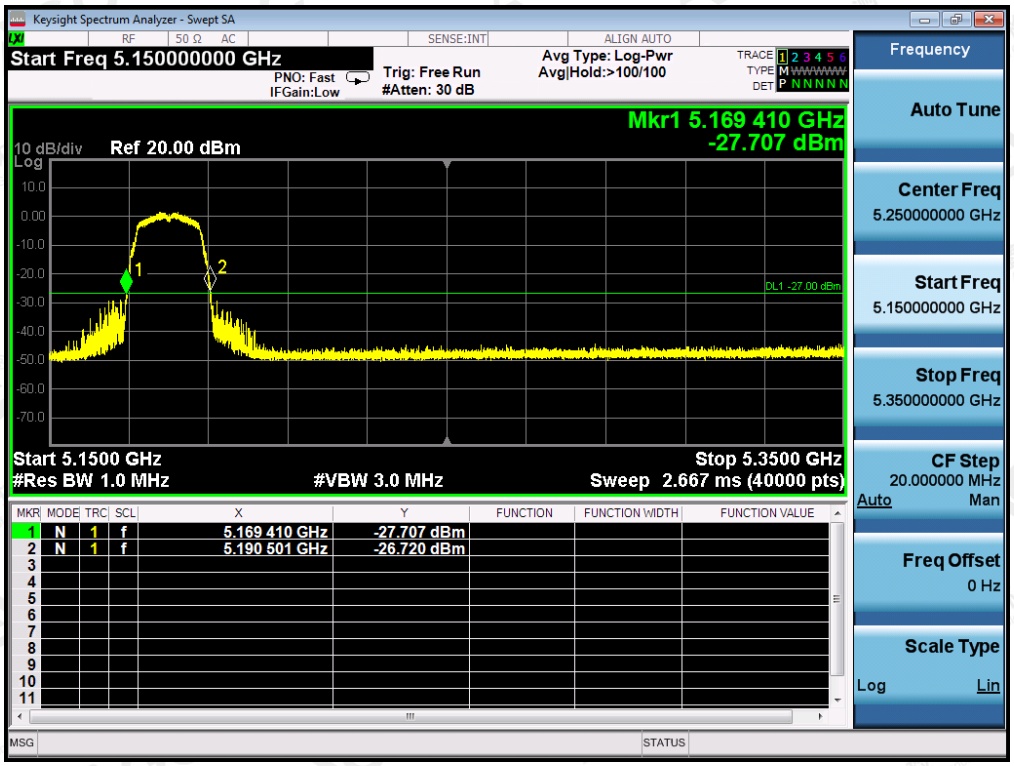
| LIMITS AND MEASUREMENT RESULT | | |
|---|---|---|
| Applicable Limits | Measurement Result | |
| | Test channel | Criteria |
| -27dBm/MHz | 5150MHz-5250MHz | PASS |
| All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edgeincreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. | 5725MHz-5850MHz | PASS |

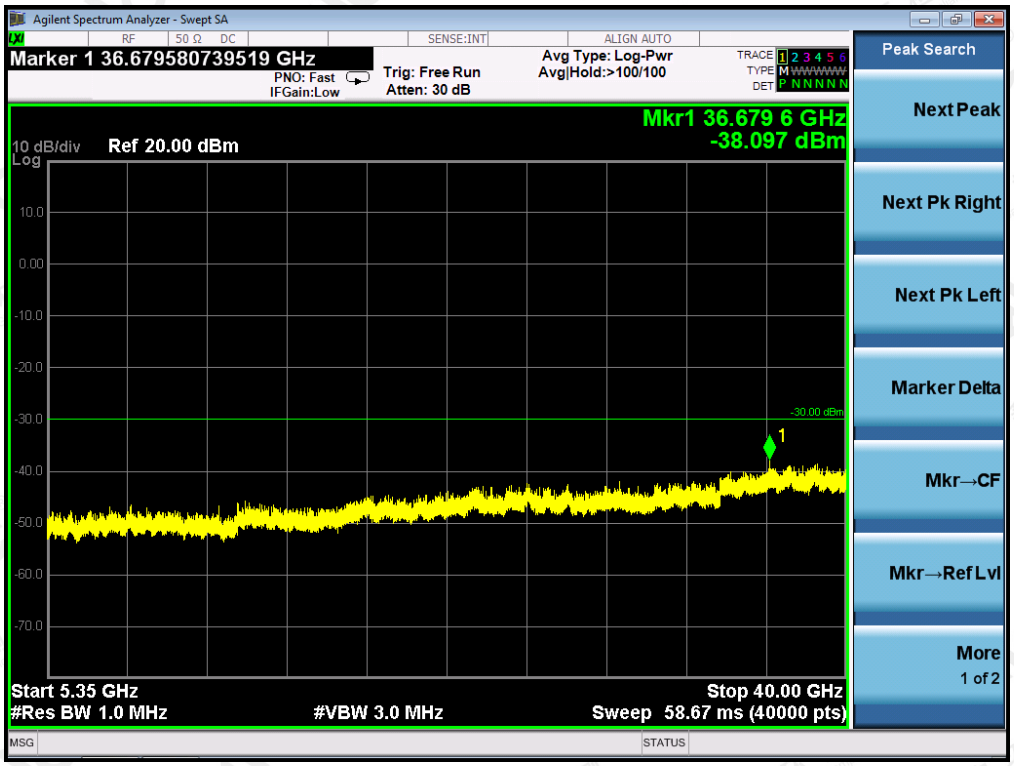
**FOR 802.11A20 MODULATION**

TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5180MHz

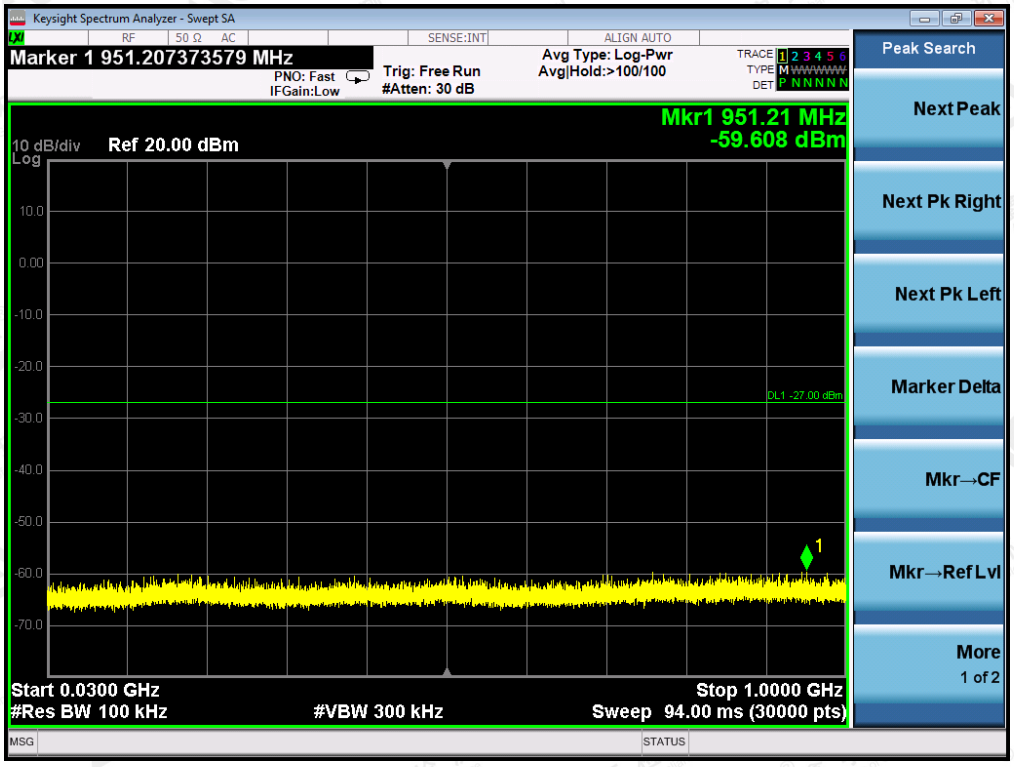


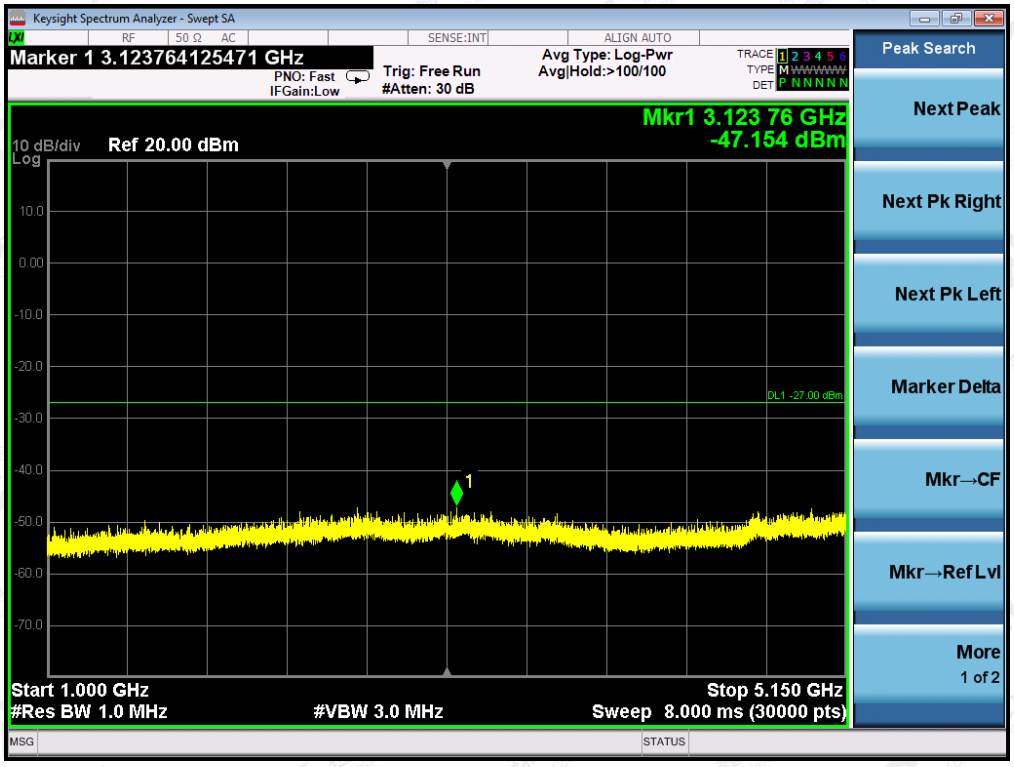



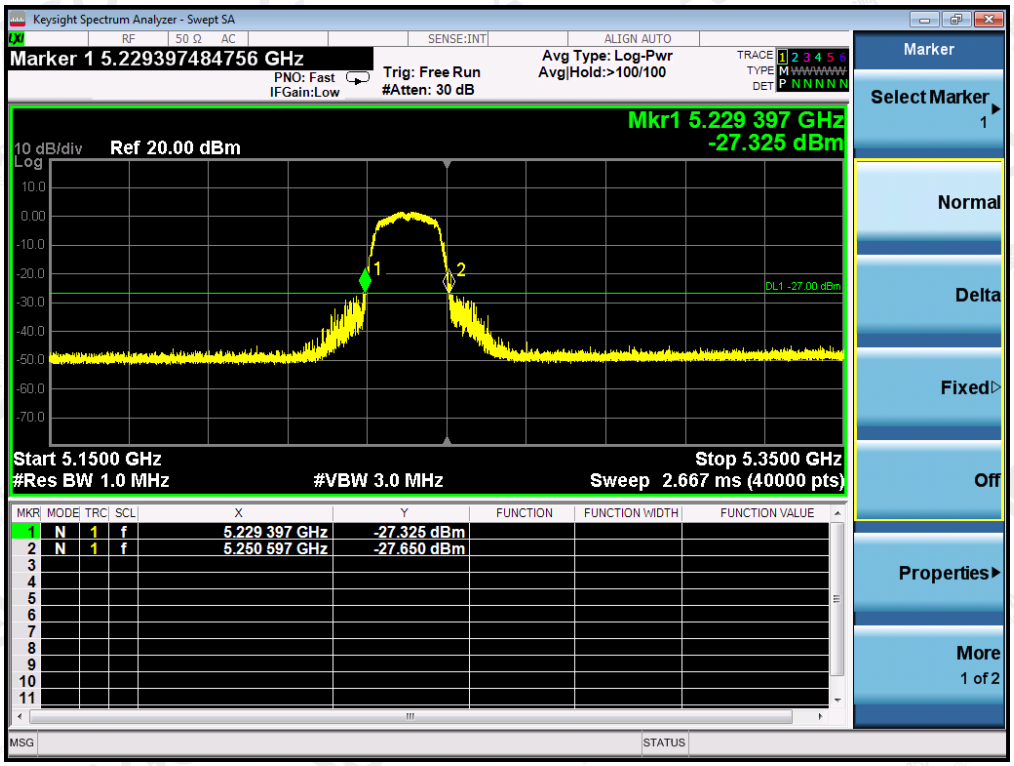


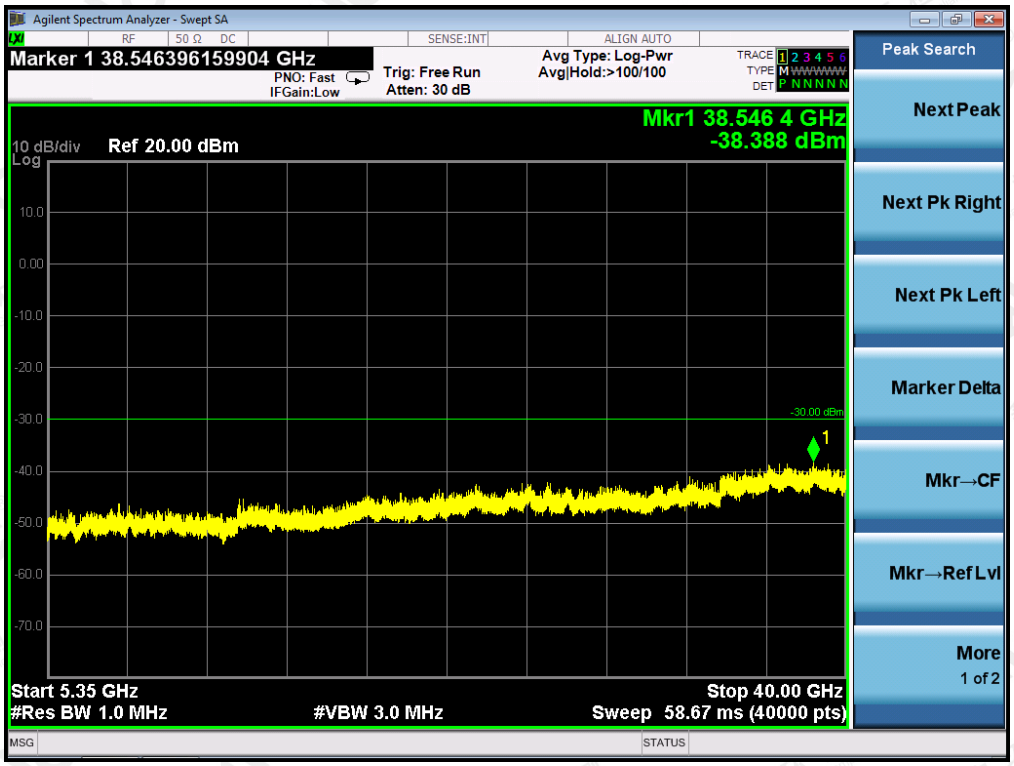



TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5240MHz

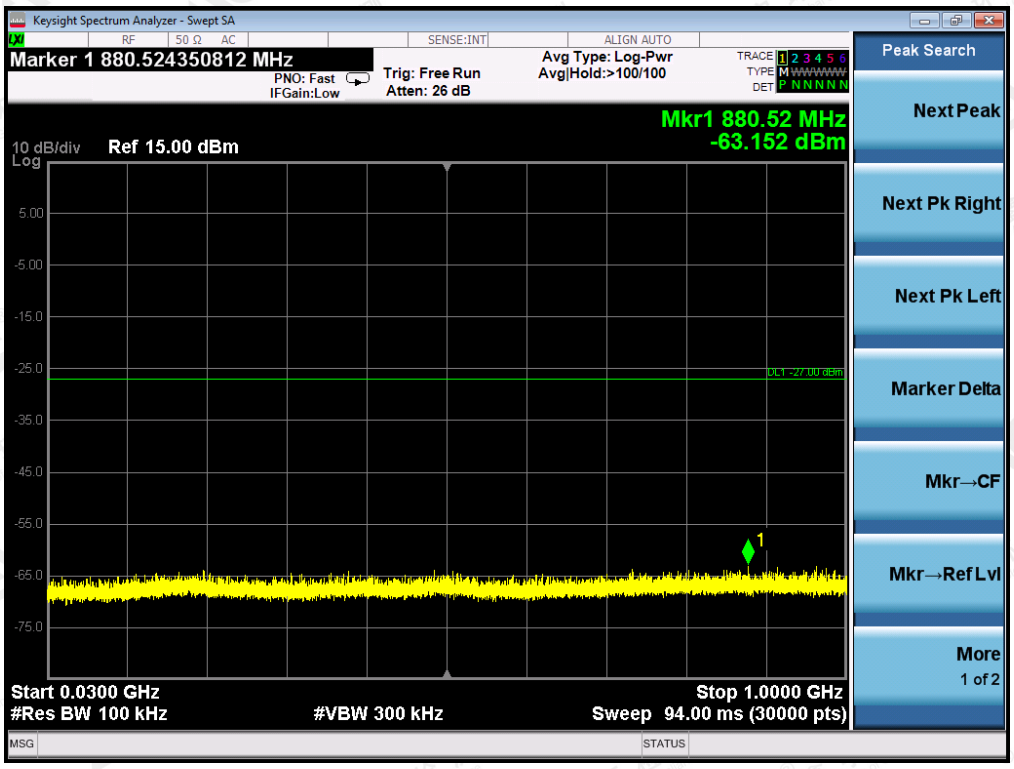


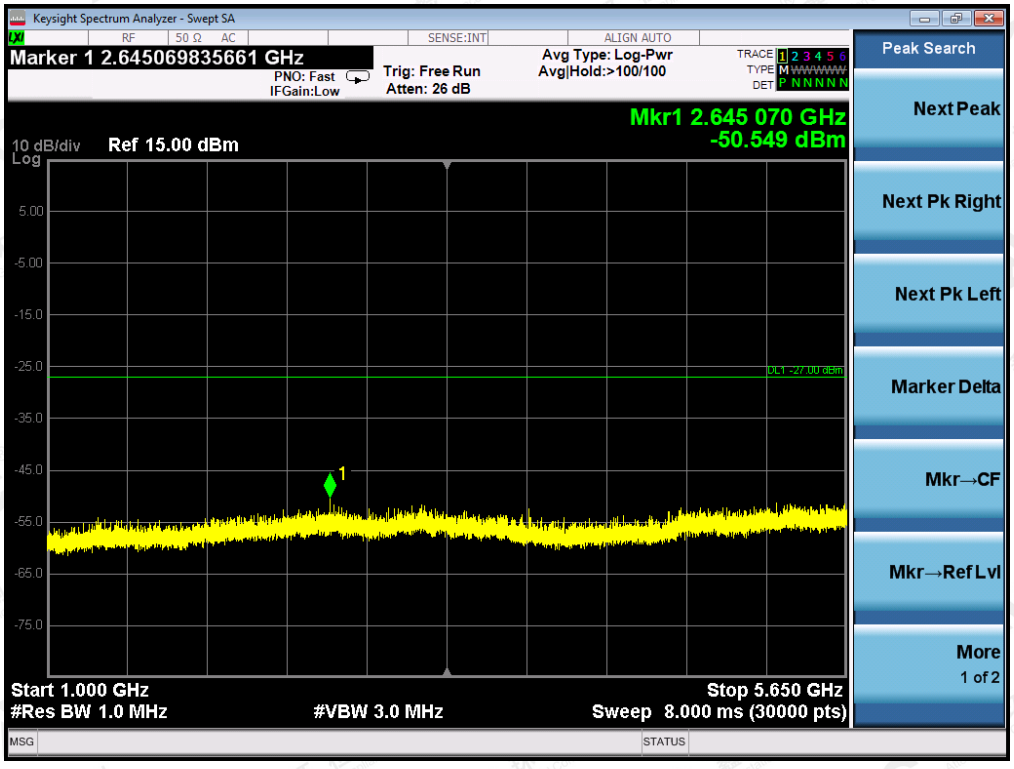



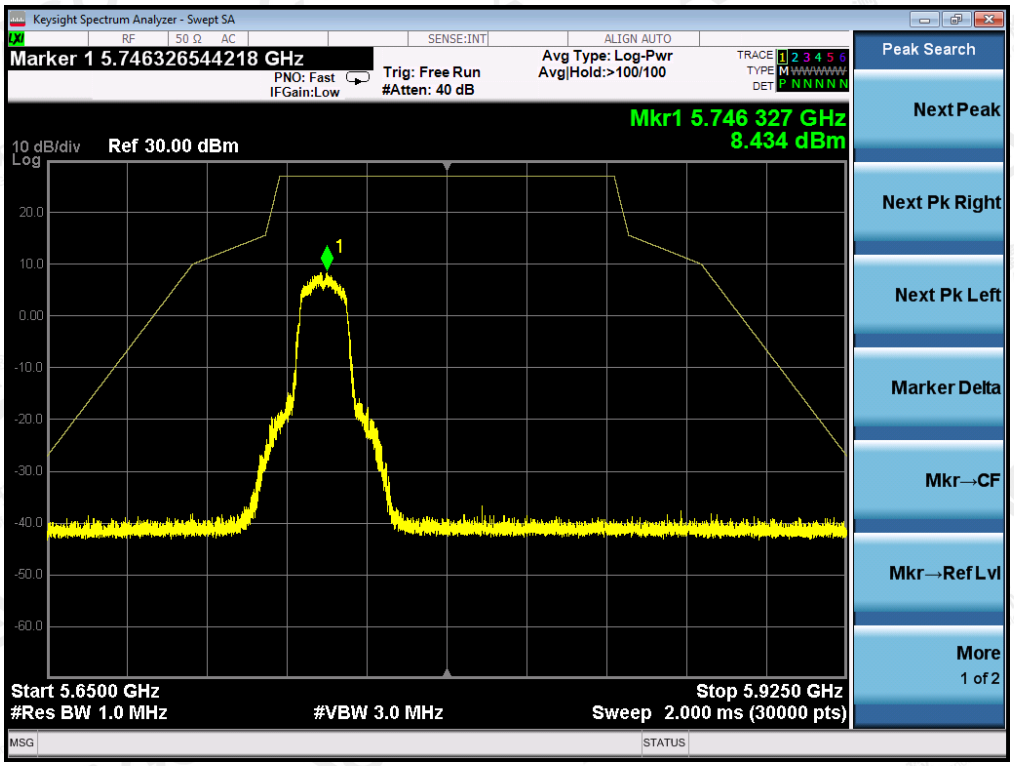


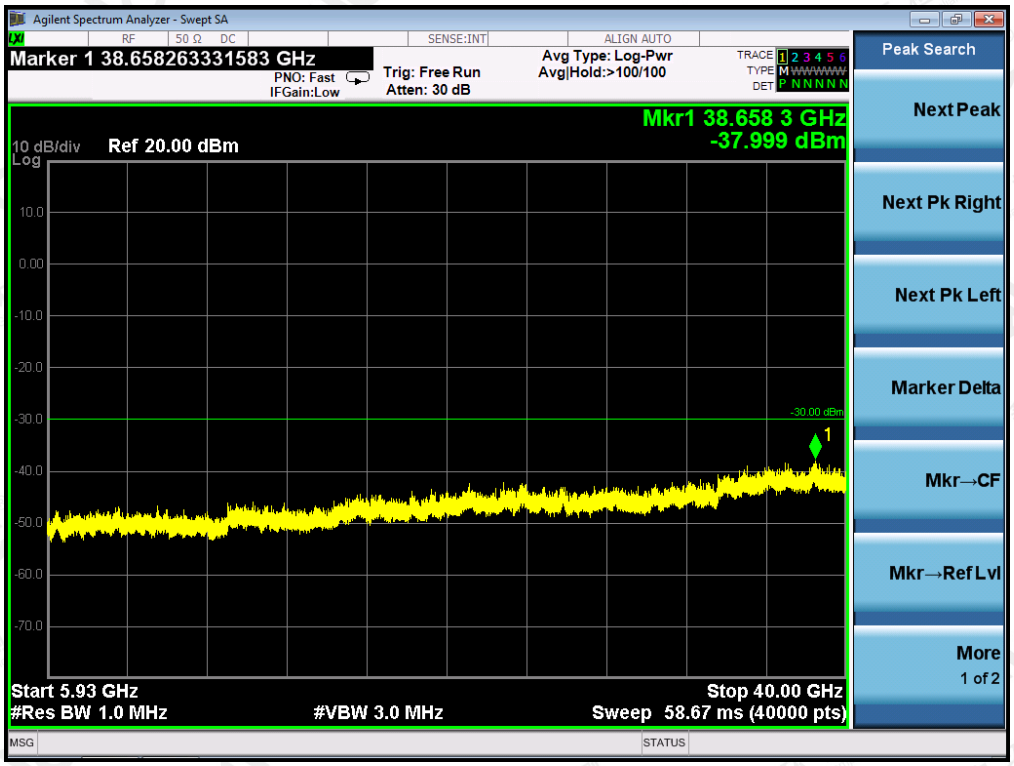



TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5745MHz

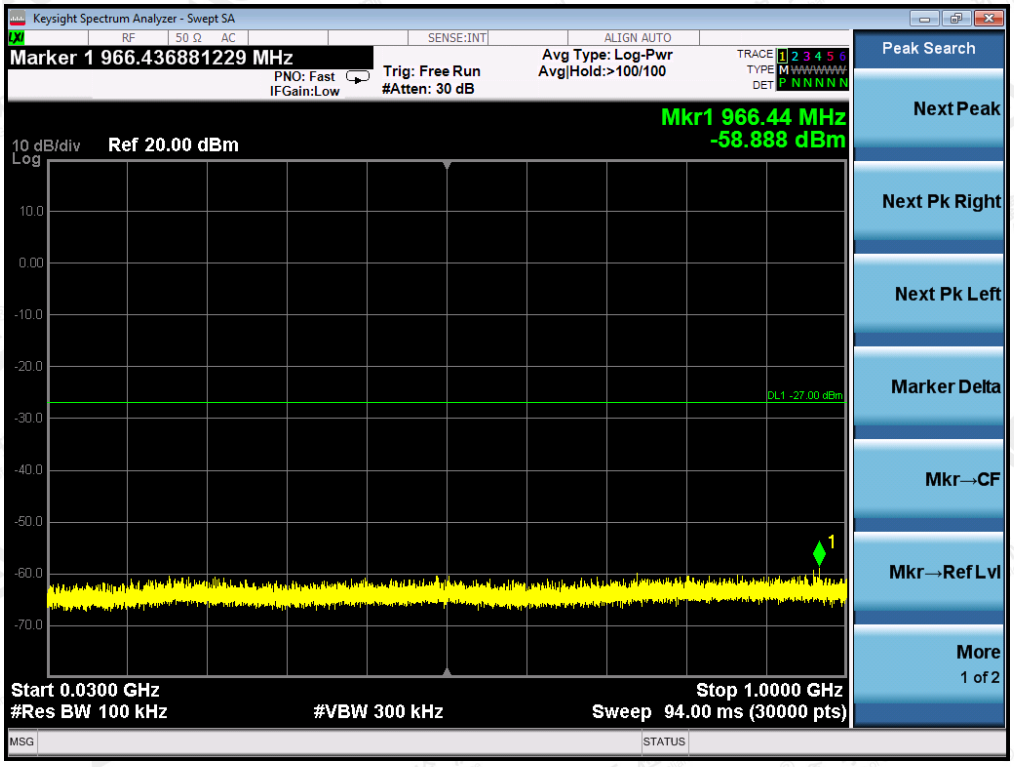


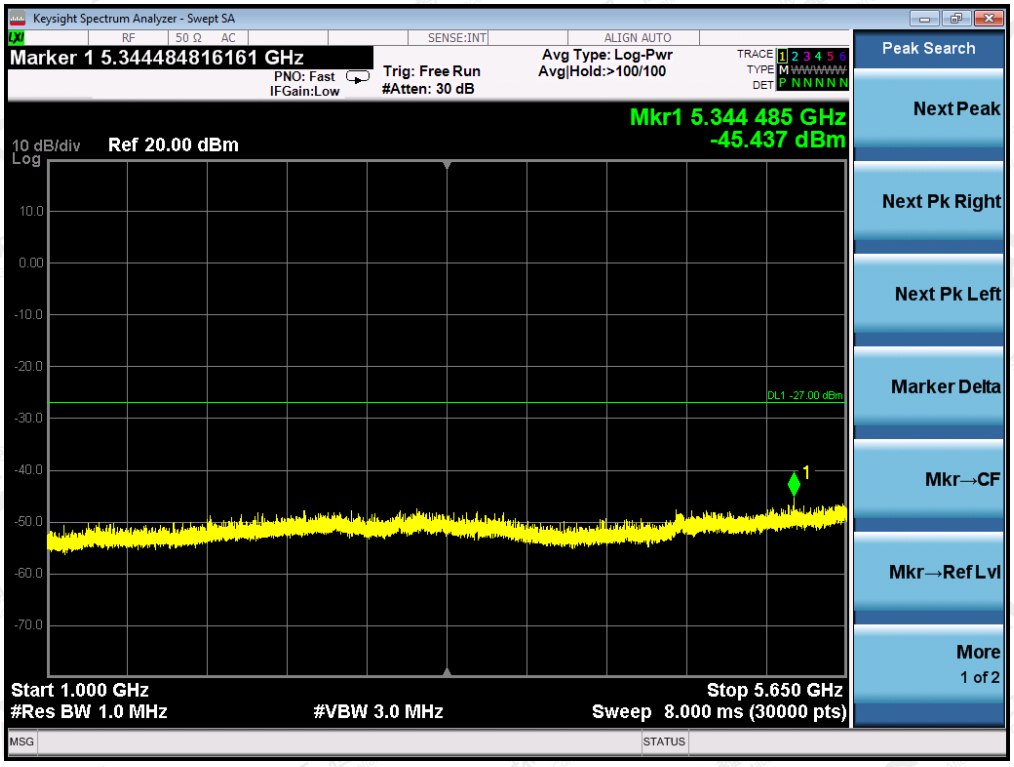



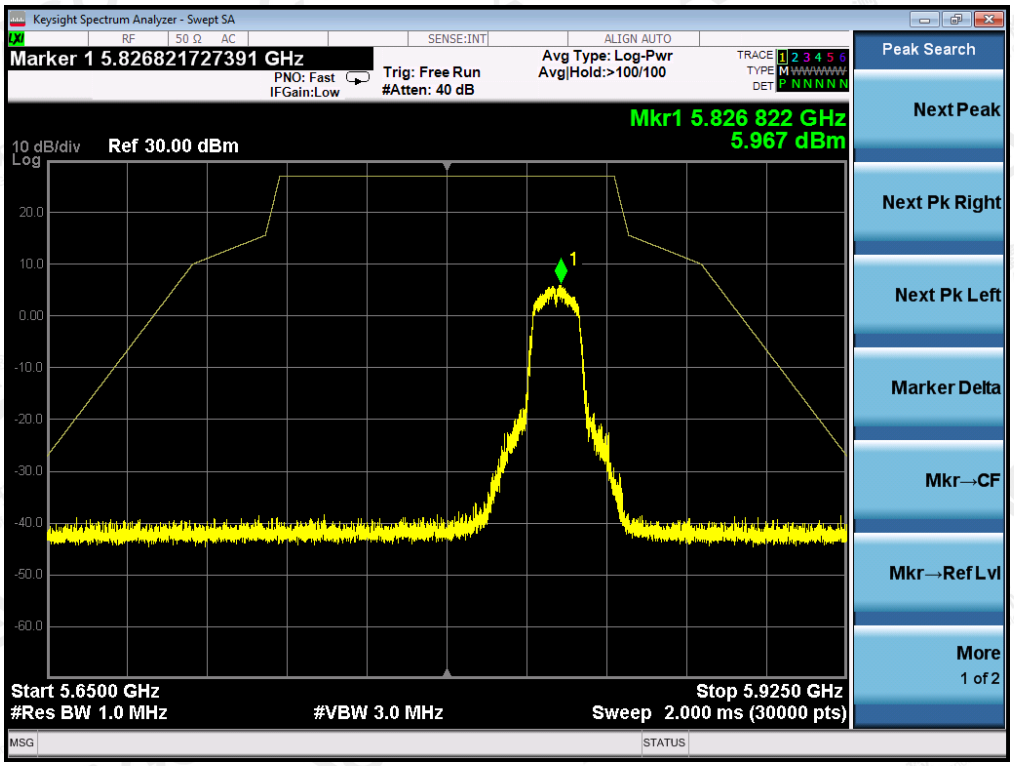


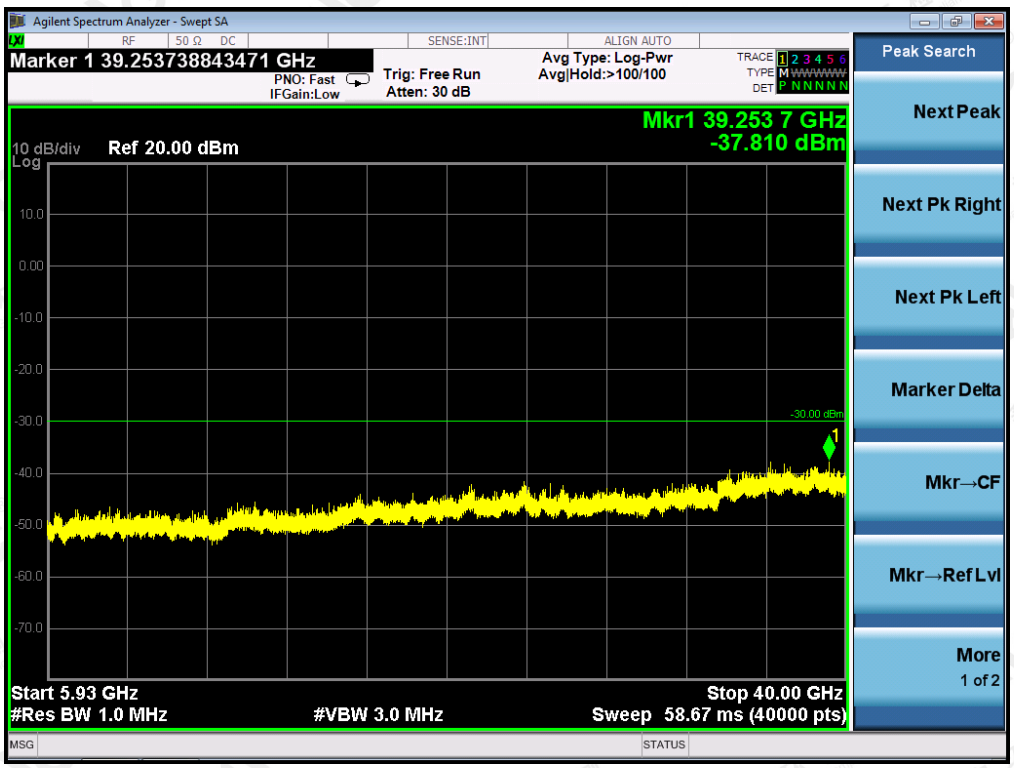



TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5825MHz



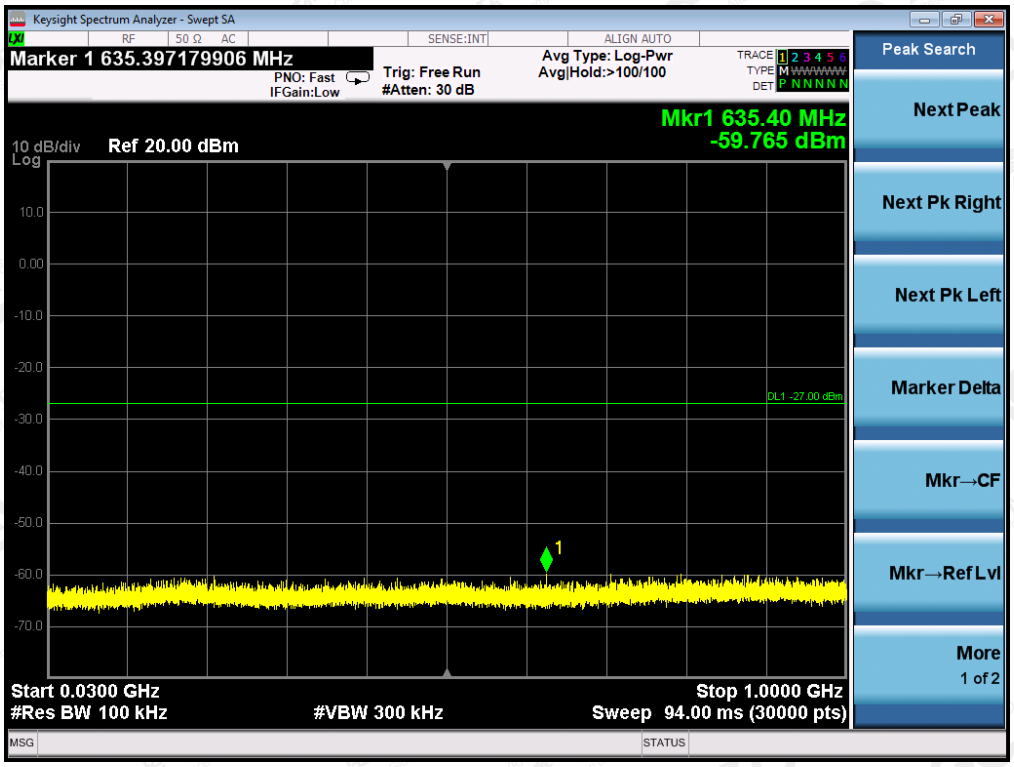



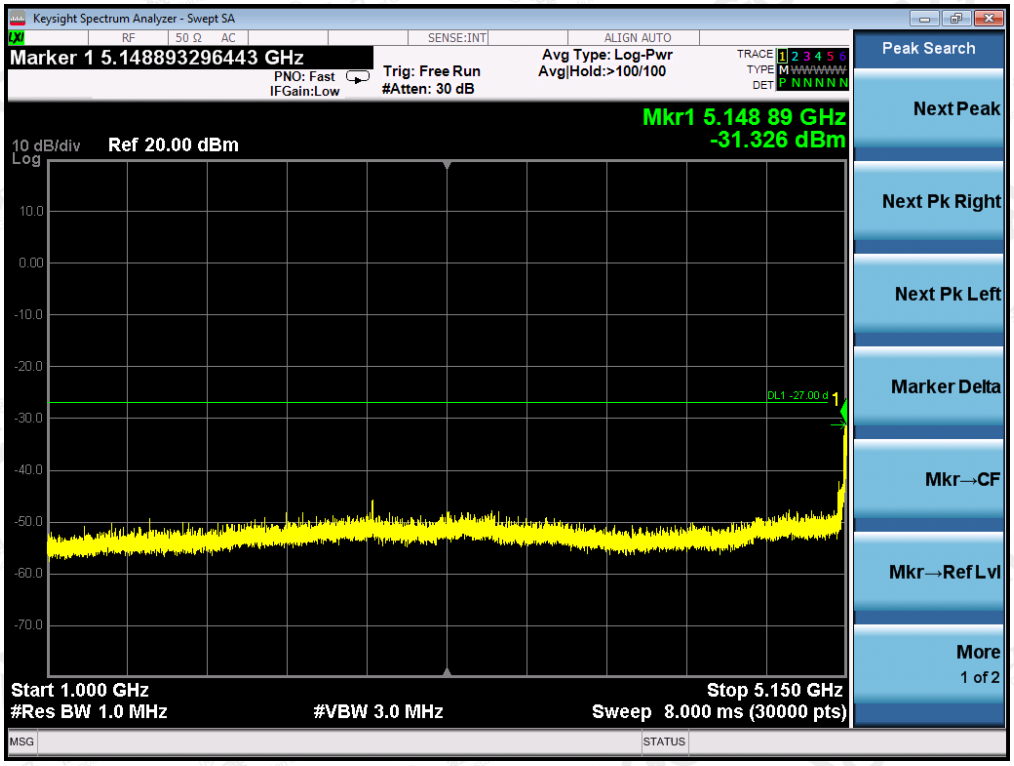


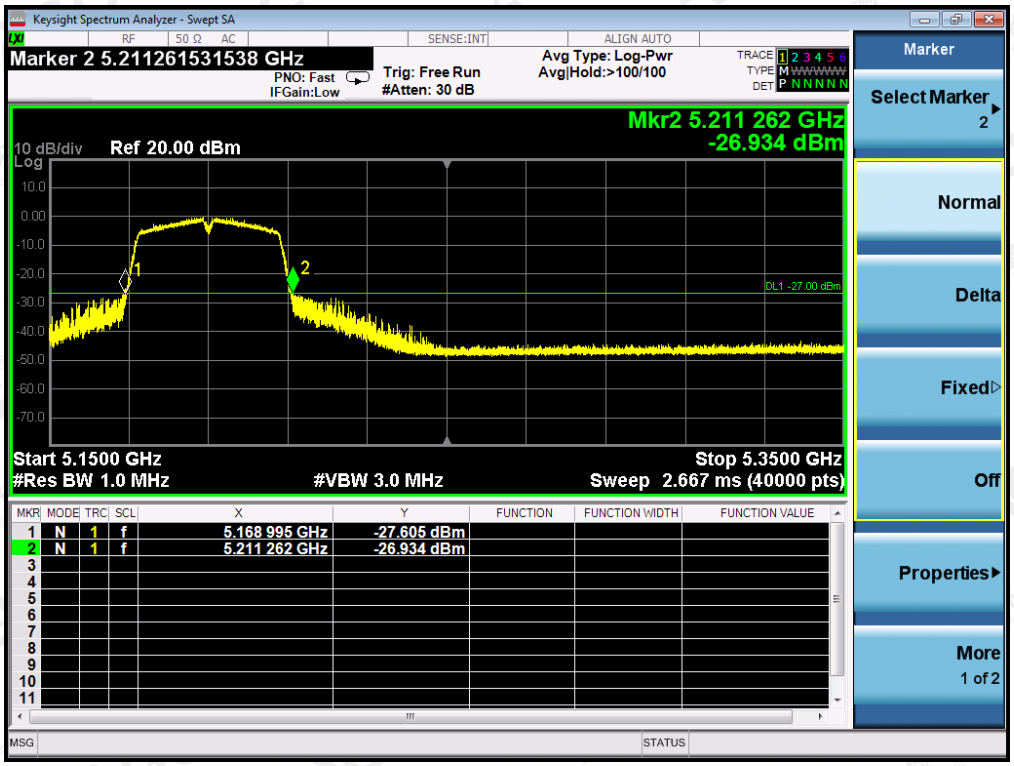



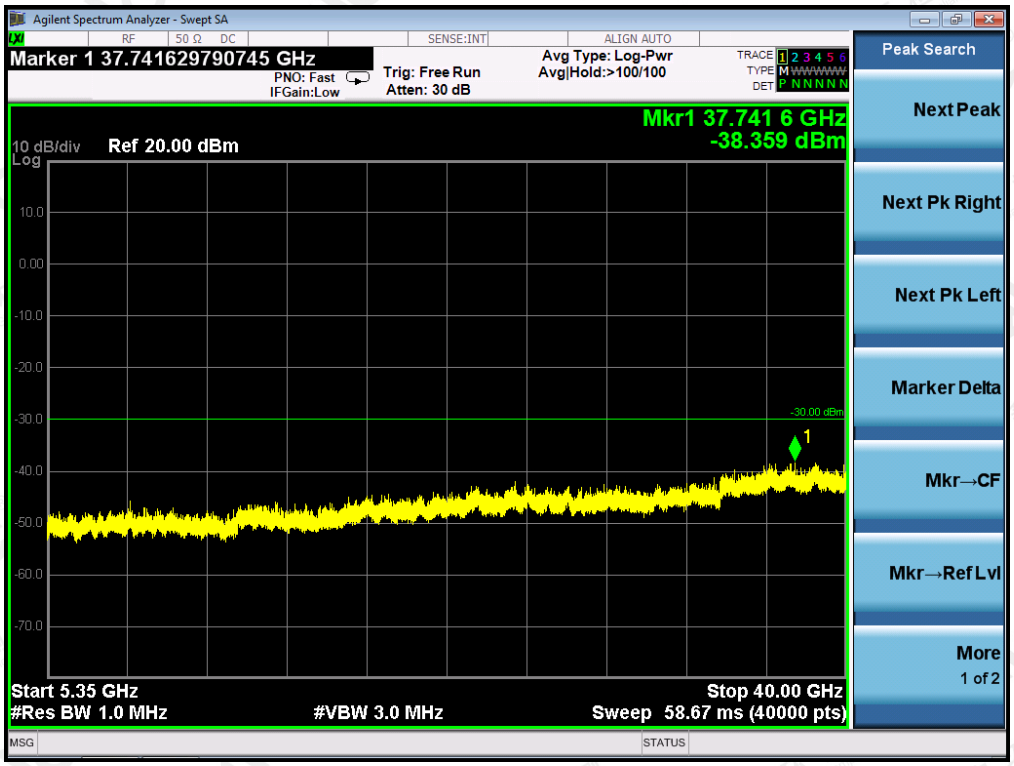
**FOR 802.11N40 MODULATION**

TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5190MHz

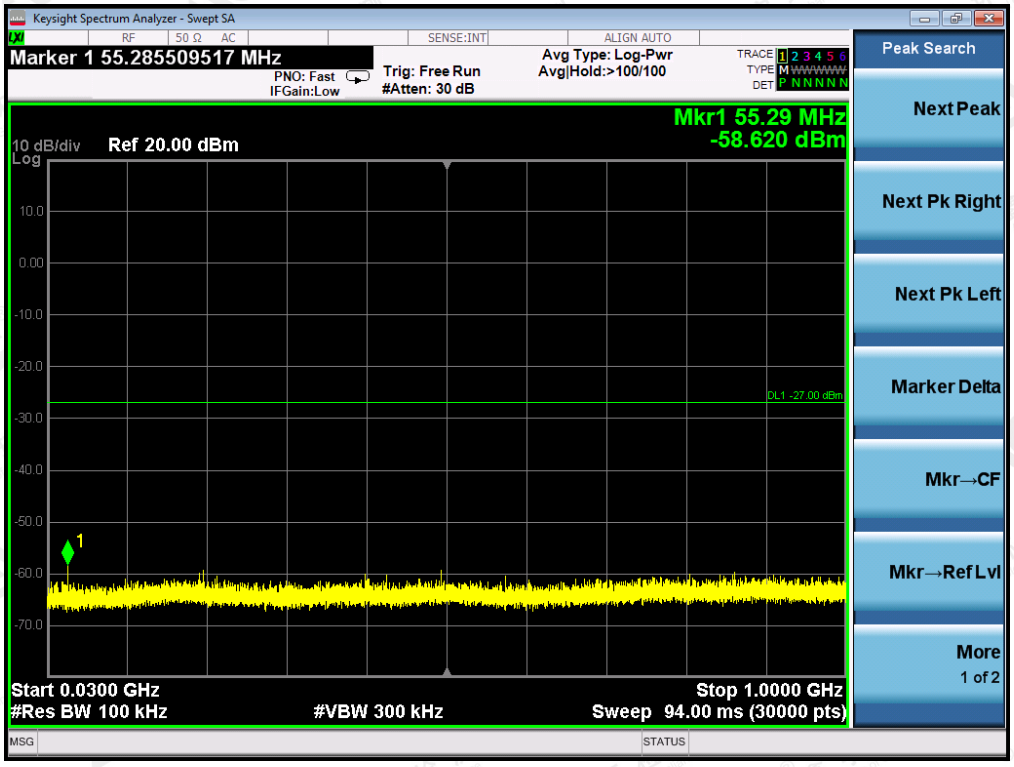


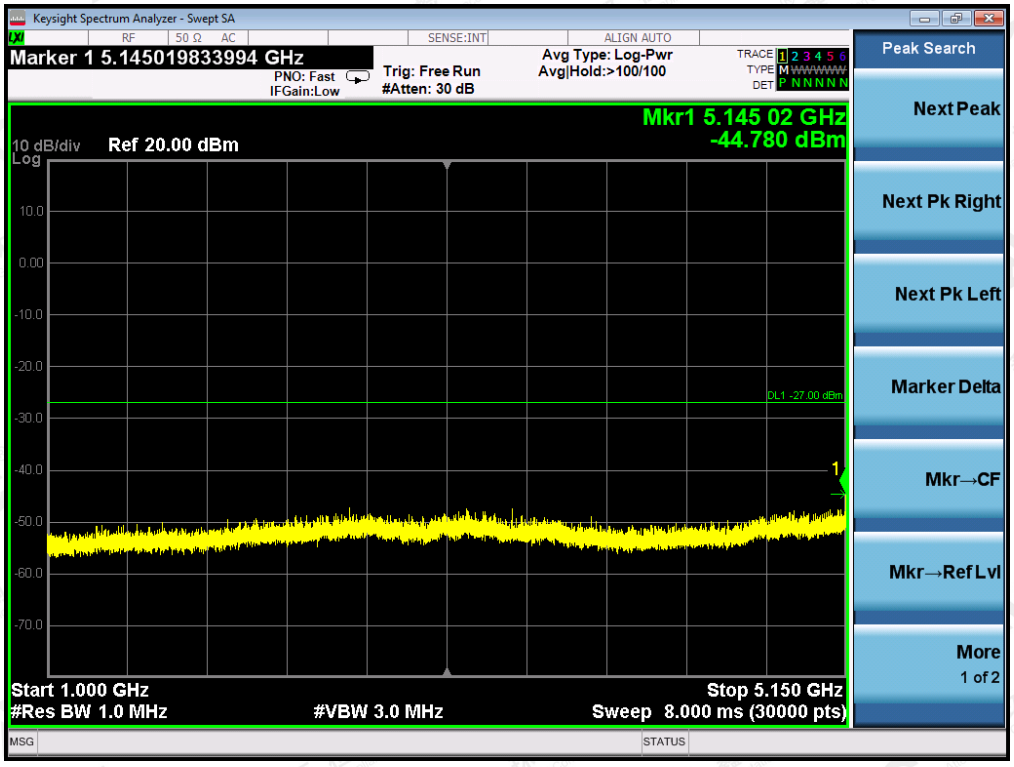



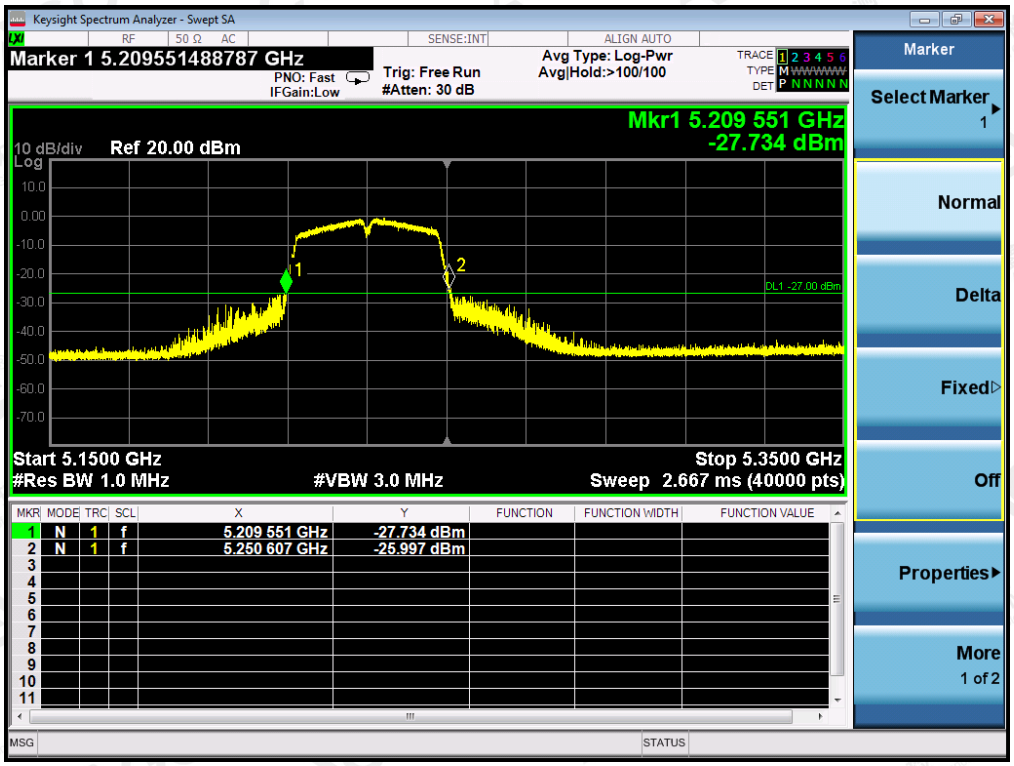


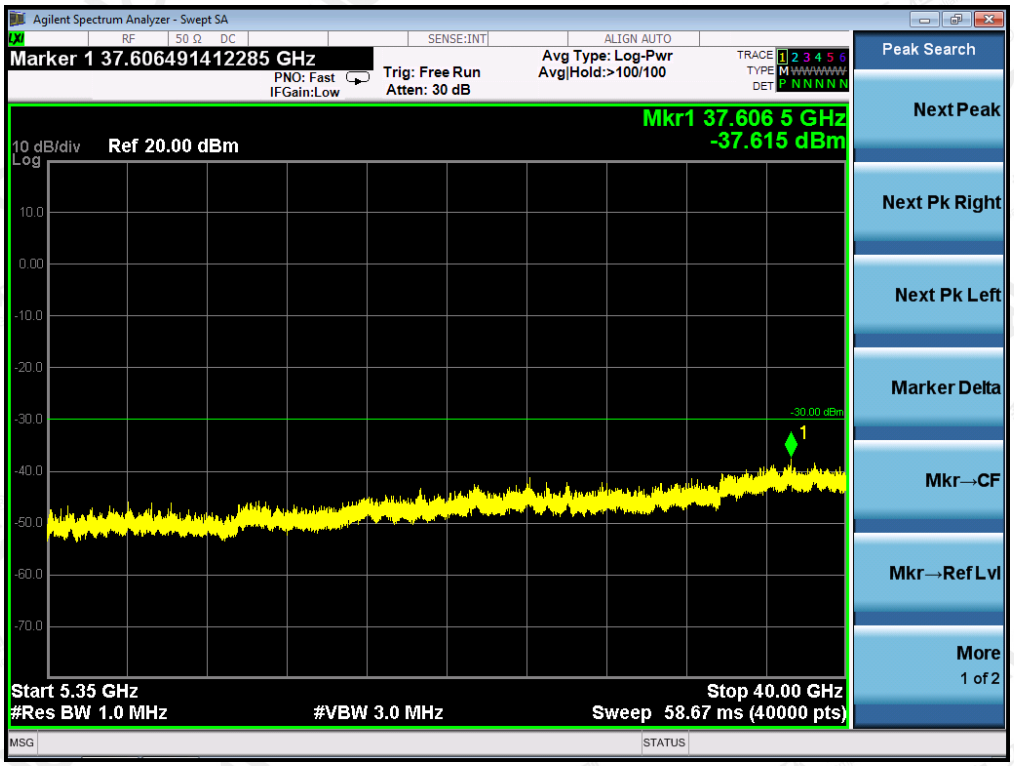



TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5230MHz

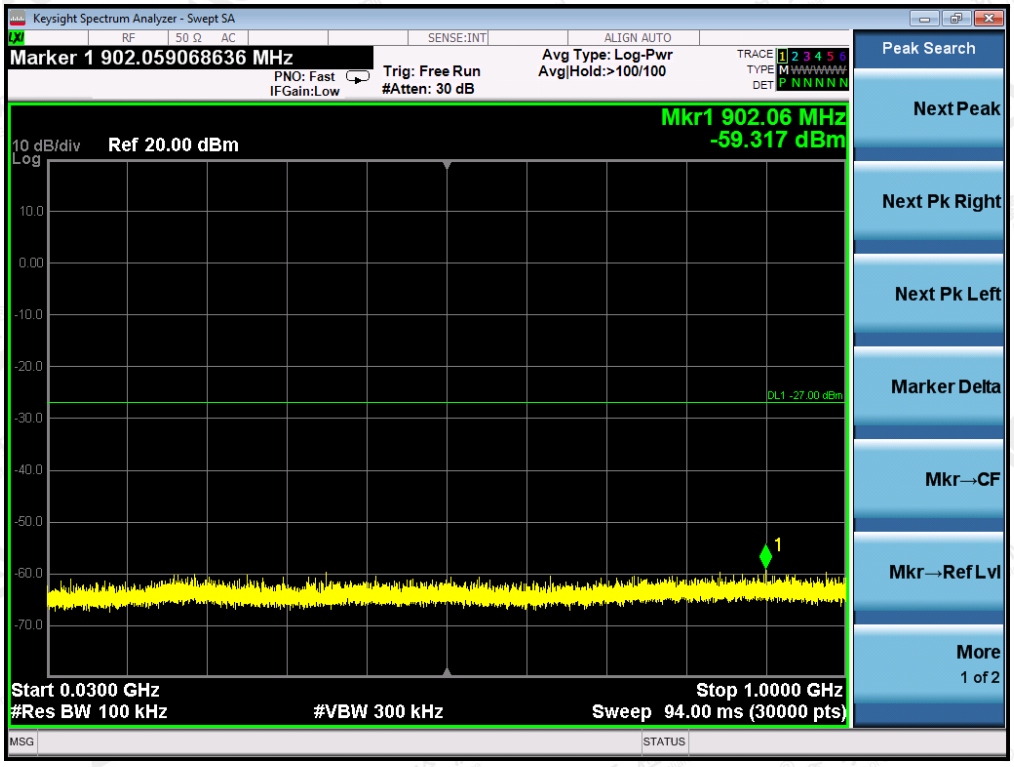


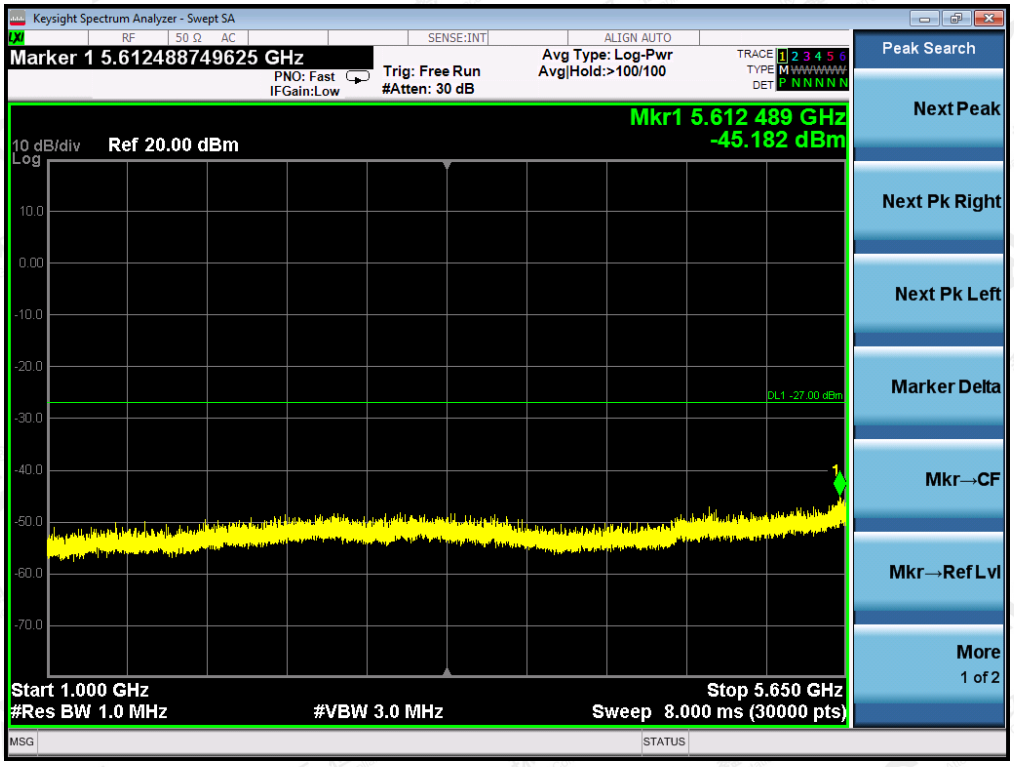



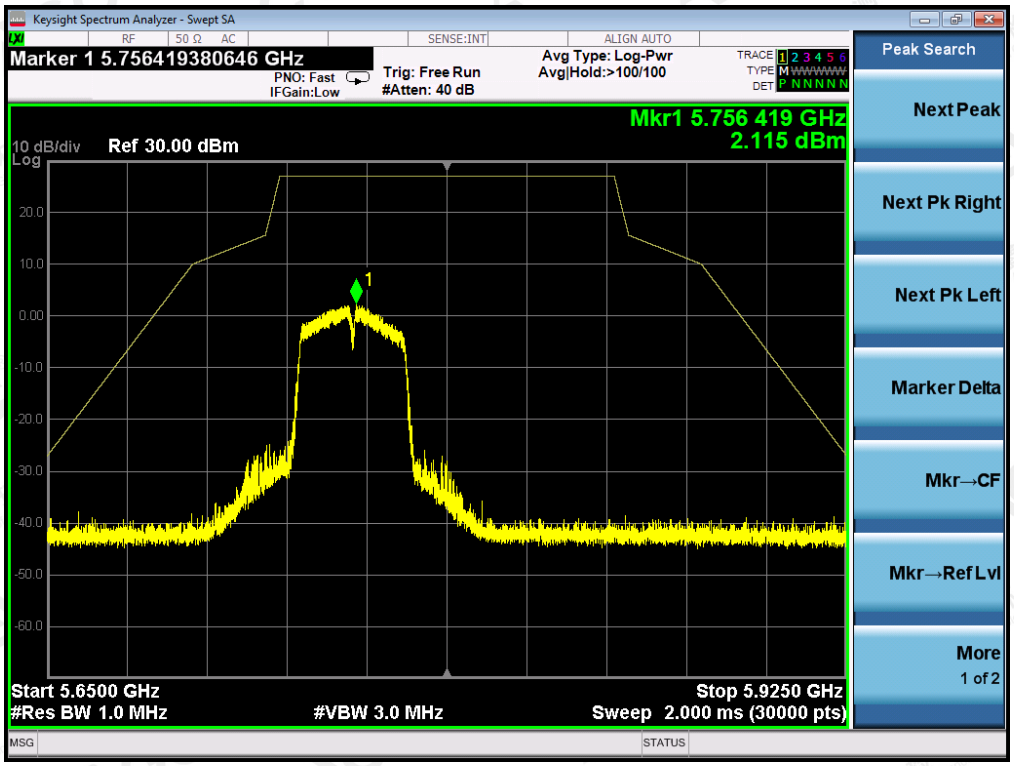


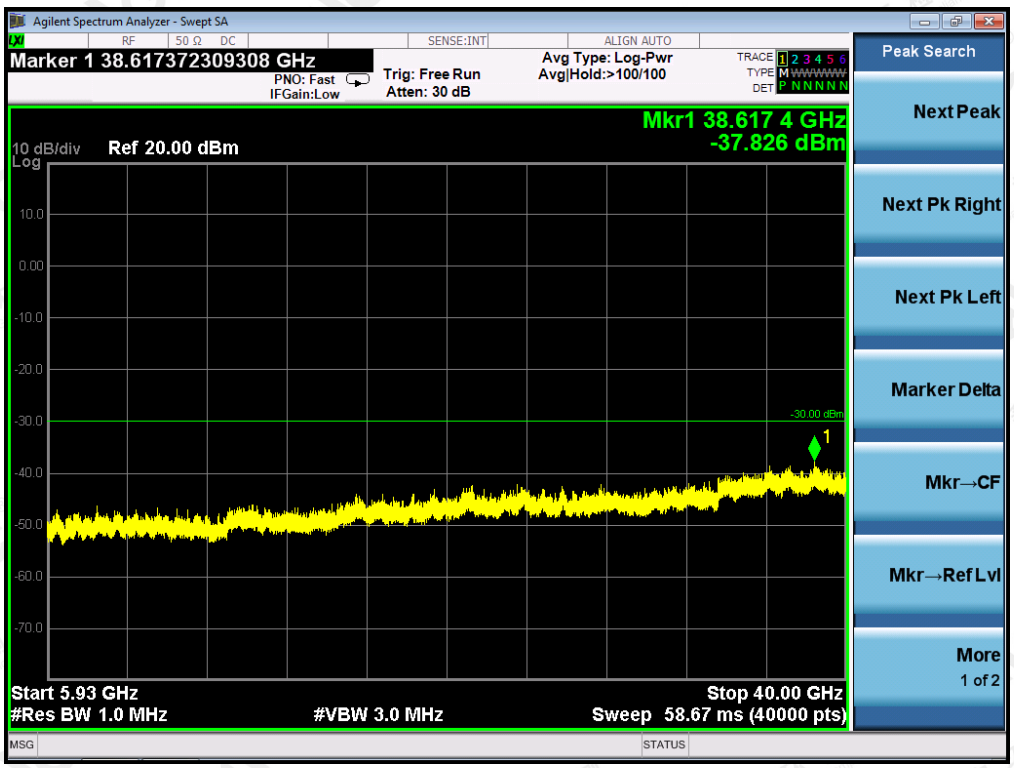



TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5755MHz

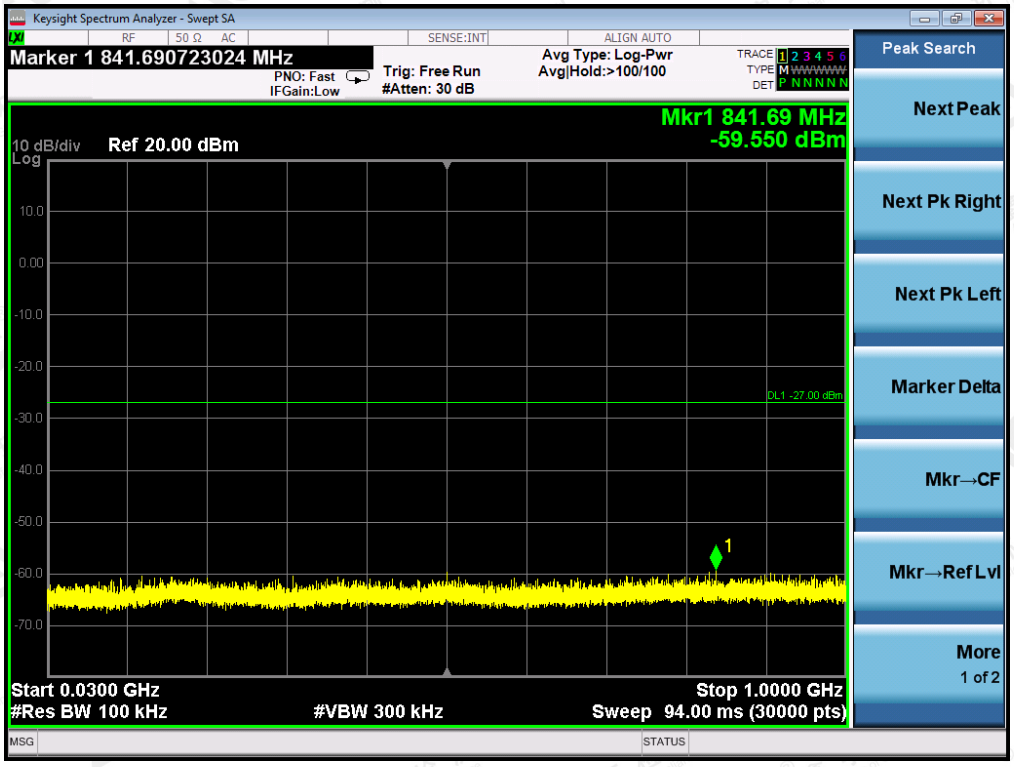


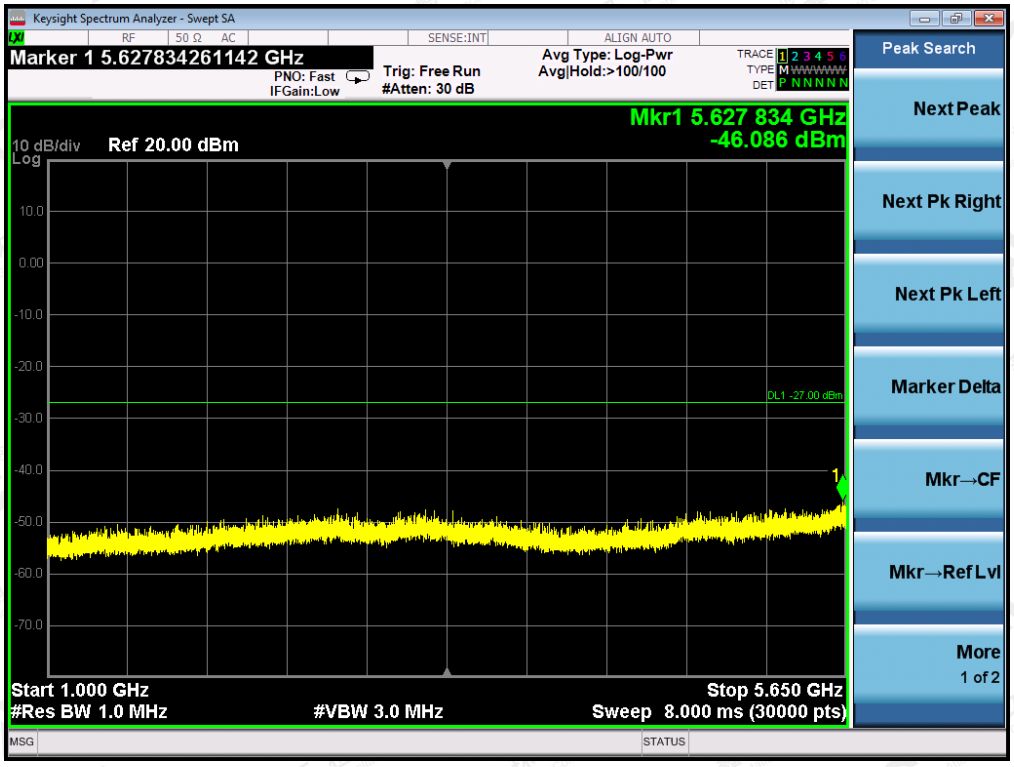



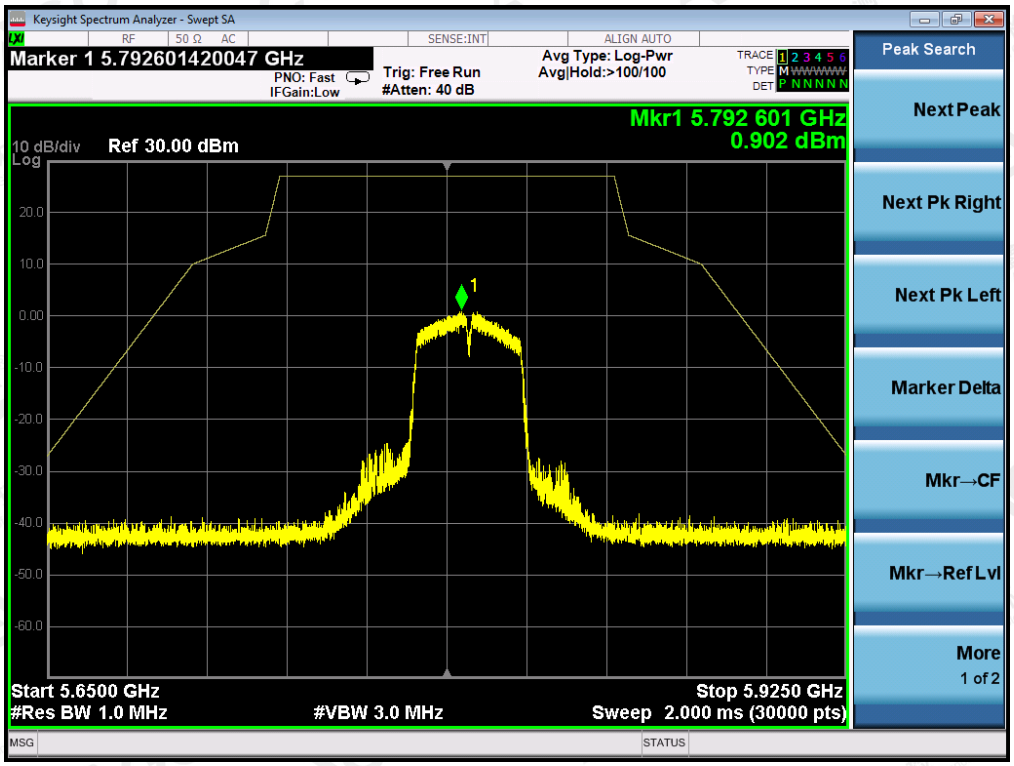


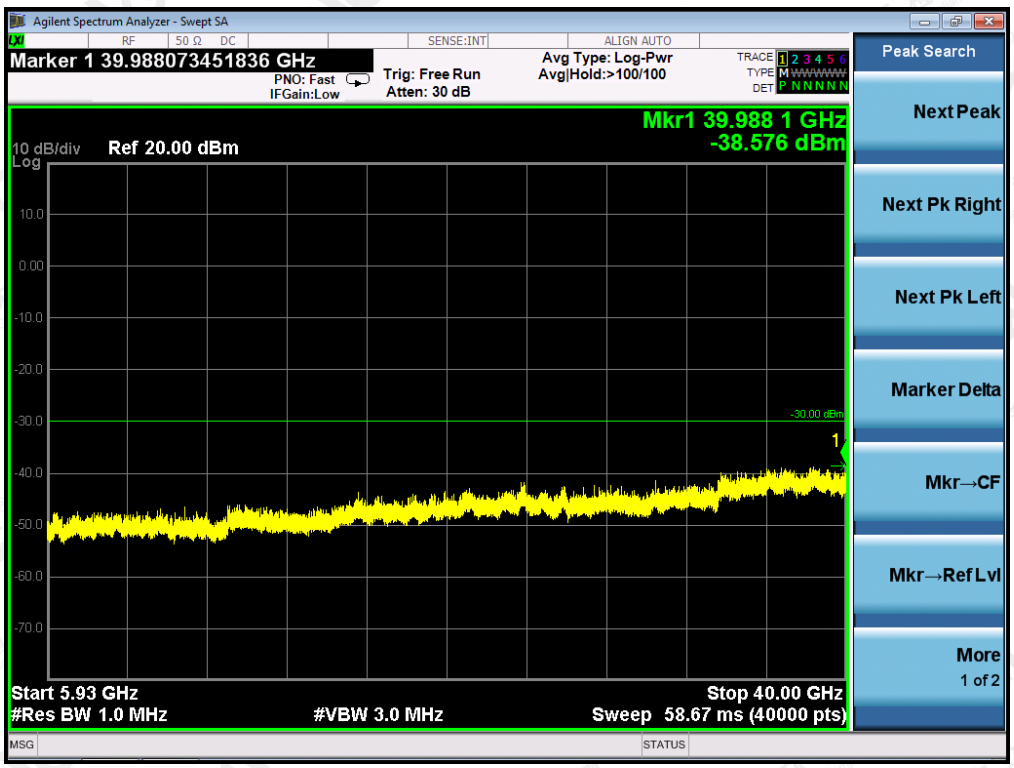



TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5795MHz






Note: All the 20MHz bandwidth modulation had been tested, the 802.11a20 was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in his test report.

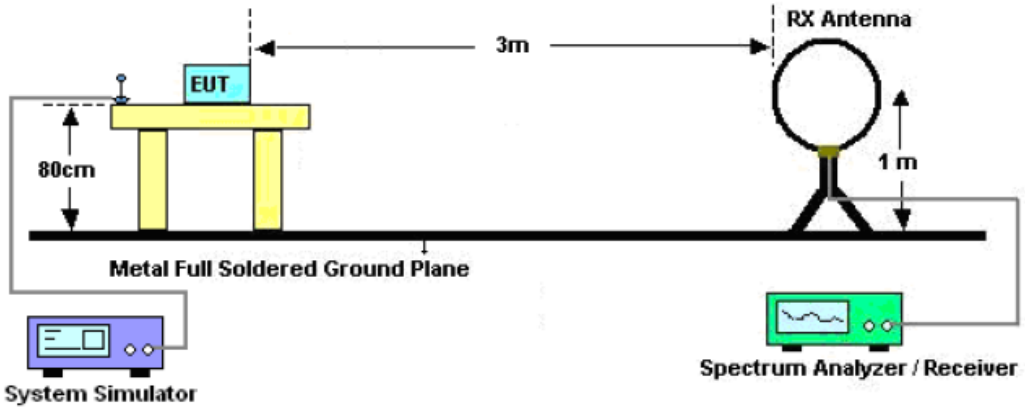
# 12. RADIATED EMISSION

## 12.1. MEASUREMENT PROCEDURE

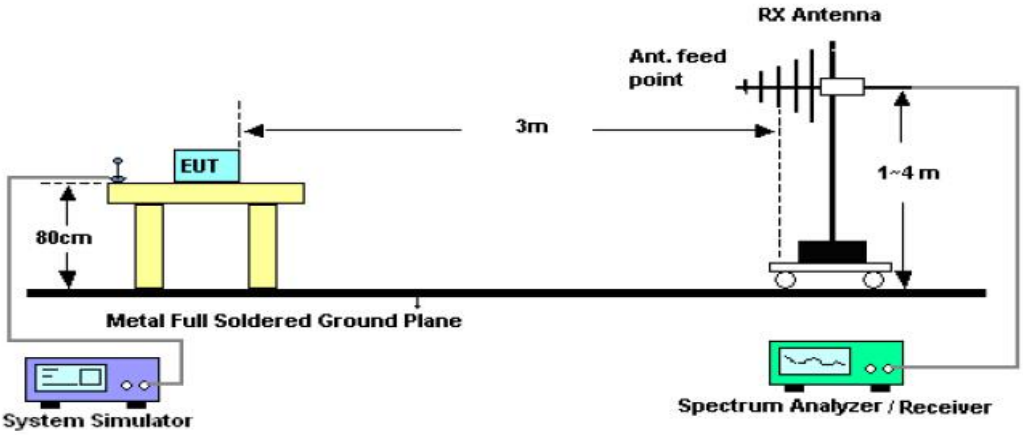
1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3M VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

## 12.2. TEST SETUP

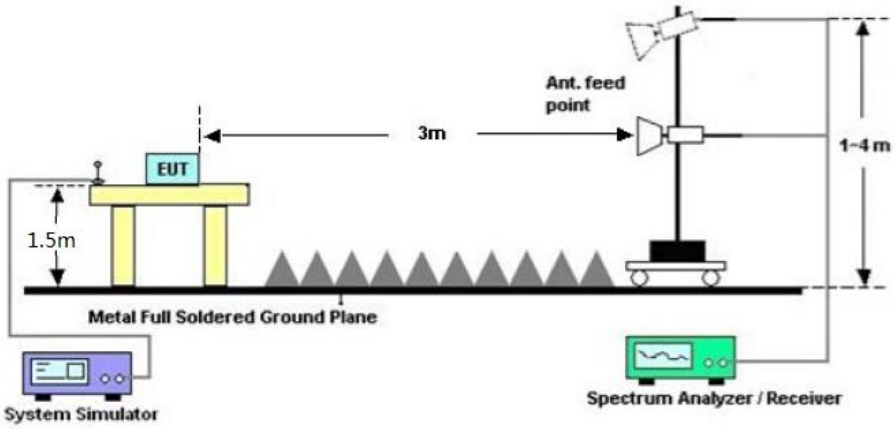
Radiated Emission Test-Setup Frequency Below 30MHz




RADIATED EMISSION TEST SETUP 30MHz-1000MHz




RADIATED EMISSION TEST SETUP ABOVE 1000MHz



## 12.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

| Frequencies (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(KHz) | 300 |
| 0.490~1.705 | 24000/F(KHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

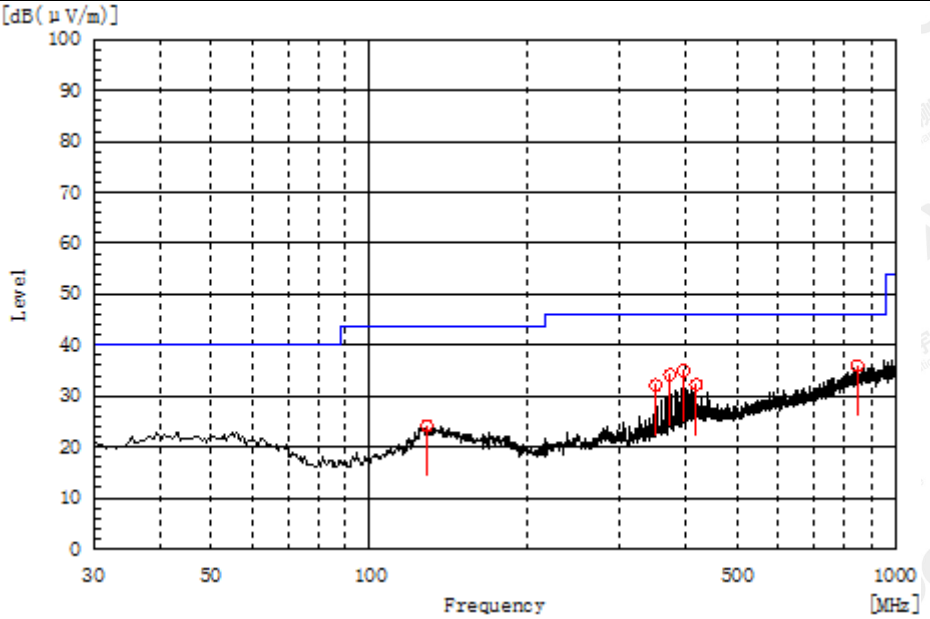
## 12.4. TEST RESULT

**RADIATED EMISSION BELOW 30MHZ**

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

## RADIATED EMISSION BELOW 1GHZ

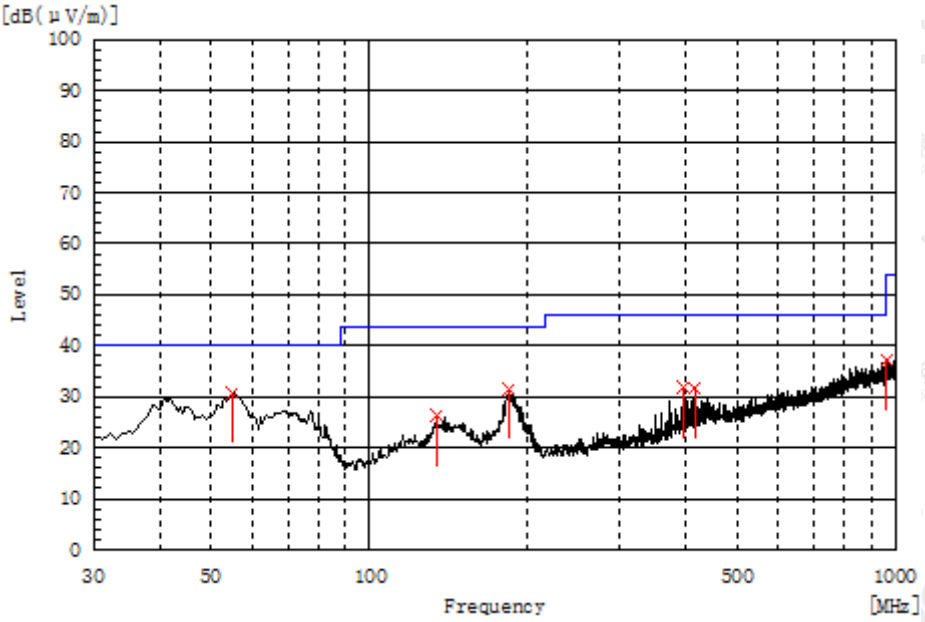
| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Horizontal |




| Frequency MHz | Polarization | Reading dB(uV) | Factor dB (1/m) | Level dB(uV/m) PK | Limit dB(uV/m) QP | Margin dB | Pass/Fail | Height cm | Angle deg |
|---|---|---|---|---|---|---|---|---|---|
| 350.100 | H | 13.3 | 18.9 | 32.2 | 46.0 | 13.8 | Pass | 150.0 | 288.1 |
| 372.410 | H | 14.4 | 19.8 | 34.2 | 46.0 | 11.8 | Pass | 200.0 | 265.5 |
| 395.205 | H | 14.4 | 20.6 | 35.0 | 46.0 | 11.0 | Pass | 150.0 | 71.9 |
| 418.000 | H | 10.8 | 21.4 | 32.2 | 46.0 | 13.8 | Pass | 100.0 | 288.1 |
| 128.455 | H | 8.1 | 16.1 | 24.2 | 43.5 | 19.3 | Pass | 150.0 | 214.6 |
| 847.225 | H | 6.5 | 29.5 | 36.0 | 46.0 | 10.0 | Pass | 200.0 | 265.5 |

**RESULT: PASS**

| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Vertical |




| Frequency MHz | Polarization | Reading dB(uV) | Factor dB (1/m) | Level dB(uV/m) PK | Limit dB(uV/m) QP | Margin dB | Pass/Fail | Height cm | Angle deg |
|---|---|---|---|---|---|---|---|---|---|
| 54.735 | V | 14.0 | 16.7 | 30.7 | 40.0 | 9.3 | Pass | 150.0 | 143.0 |
| 134.275 | V | 9.8 | 16.5 | 26.3 | 43.5 | 17.2 | Pass | 200.0 | 143.7 |
| 184.230 | V | 17.4 | 14.1 | 31.5 | 43.5 | 12.0 | Pass | 200.0 | 287.8 |
| 395.205 | V | 11.1 | 20.6 | 31.7 | 46.0 | 14.3 | Pass | 100.0 | 92.3 |
| 416.060 | V | 10.4 | 21.3 | 31.7 | 46.0 | 14.3 | Pass | 200.0 | 143.7 |
| 964.110 | V | 6.6 | 30.8 | 37.4 | 54.0 | 16.6 | Pass | 100.0 | 1.7 |

**RESULT: PASS**

**Note:** All test channels had been tested. The 802.11a20 at 5180MHz is the worst case and recorded in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.

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

## RADIATED EMISSION ABOVE 1GHZ

| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10360.120 | 43.09 | 9.14 | 52.23 | 74 | -21.77 | peak |
| 10360.120 | 38.13 | 9.14 | 47.27 | 54 | -6.73 | AVG |
| 15540.180 | 40.05 | 10.22 | 50.27 | 74 | -23.73 | peak |
| 15540.180 | 34.42 | 10.22 | 44.64 | 54 | -9.36 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10360.120 | 42.36 | 9.14 | 51.5 | 74 | -22.5 | peak |
| 10360.120 | 37.19 | 9.14 | 46.33 | 54 | -7.67 | AVG |
| 15540.180 | 36.99 | 10.22 | 47.21 | 74 | -26.79 | peak |
| 15540.180 | 33.05 | 10.22 | 43.27 | 54 | -10.73 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5240MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10480.120 | 42.09 | 9.27 | 51.36 | 74 | -22.64 | peak |
| 10480.120 | 36.17 | 9.27 | 45.44 | 54 | -8.56 | AVG |
| 15720.180 | 39.05 | 10.38 | 49.43 | 74 | -24.57 | peak |
| 15720.180 | 33.17 | 10.38 | 43.55 | 54 | -10.45 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 10480.120 | 39.63 | 9.27 | 48.9 | 74 | -25.1 | peak |
| 10480.120 | 35.71 | 9.27 | 44.98 | 54 | -9.02 | AVG |
| 15720.180 | 39.01 | 10.38 | 49.39 | 74 | -24.61 | peak |
| 15720.180 | 34.59 | 10.38 | 44.97 | 54 | -9.03 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5745MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11490.120 | 40.11 | 9.42 | 49.53 | 74 | -24.47 | peak |
| 11490.120 | 35.26 | 9.42 | 44.68 | 54 | -9.32 | AVG |
| 17235.180 | 37.19 | 10.51 | 47.7 | 74 | -26.3 | peak |
| 17235.180 | 32.22 | 10.51 | 42.73 | 54 | -11.27 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11490.120 | 39.62 | 9.42 | 49.04 | 74 | -24.96 | peak |
| 11490.120 | 38.61 | 9.42 | 48.03 | 54 | -5.97 | AVG |
| 17235.180 | 26.04 | 10.51 | 36.55 | 74 | -37.45 | peak |
| 17235.180 | 31.54 | 10.51 | 42.05 | 54 | -11.95 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5825MHz | Antenna | Horizontal/Vertical |

RADIATED EMISSION ABOVE 1GHZ–Horizontal

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11650.120 | 41.26 | 9.62 | 50.88 | 74 | -23.12 | peak |
| 11650.120 | 35.69 | 9.62 | 45.31 | 54 | -8.69 | AVG |
| 17475.180 | 38.41 | 10.75 | 49.16 | 74 | -24.84 | peak |
| 17475.180 | 36.05 | 10.75 | 46.8 | 54 | -7.2 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

RADIATED EMISSION ABOVE 1GHZ–Vertical

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 11650.120 | 41.85 | 9.62 | 51.47 | 74 | -22.53 | peak |
| 11650.120 | 39.1 | 9.62 | 48.72 | 54 | -5.28 | AVG |
| 17475.180 | 38.42 | 10.75 | 49.17 | 74 | -24.83 | peak |
| 17475.180 | 31.99 | 10.75 | 42.74 | 54 | -11.26 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

**Note:** All the case had been tested. The 802.11a modulation is the worst case and recorded in the test report. Other frequencies radiation emission from 1GHz to 40GHz at least have 20dB margin and not recorded in the test report.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.

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

# 13. BAND EDGE EMISSION

## 13.1. MEASUREMENT PROCEDURE

1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO

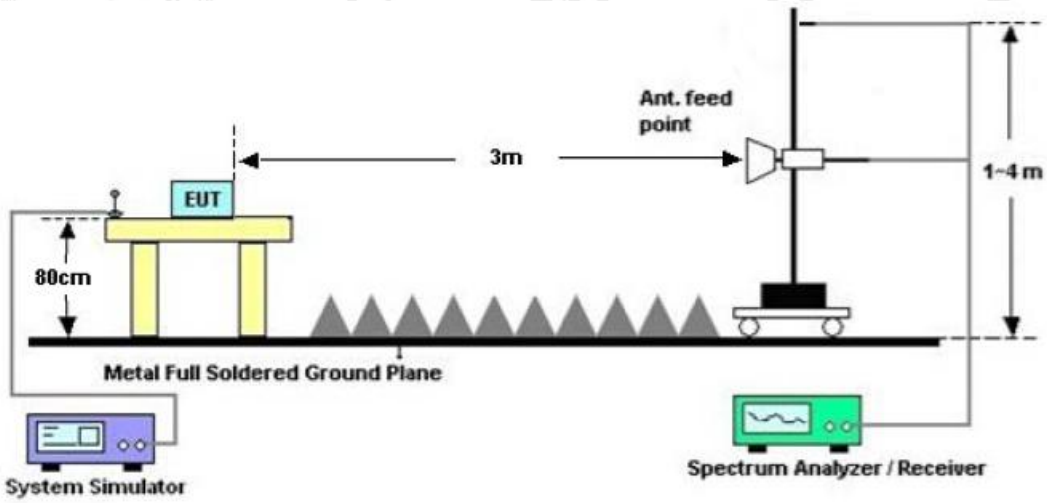
(b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

3. Other procedures refer to clause 11.2.

**Note**:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. 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(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.
3. Only the data of band edge emission at the restricted band 4.5GHz-5.15GHz record in the report. Other restricted band 5.35GHz-5.46GHz and 7.25GHz-7.77GHz were considered as ambient noise. No recording in the test report.

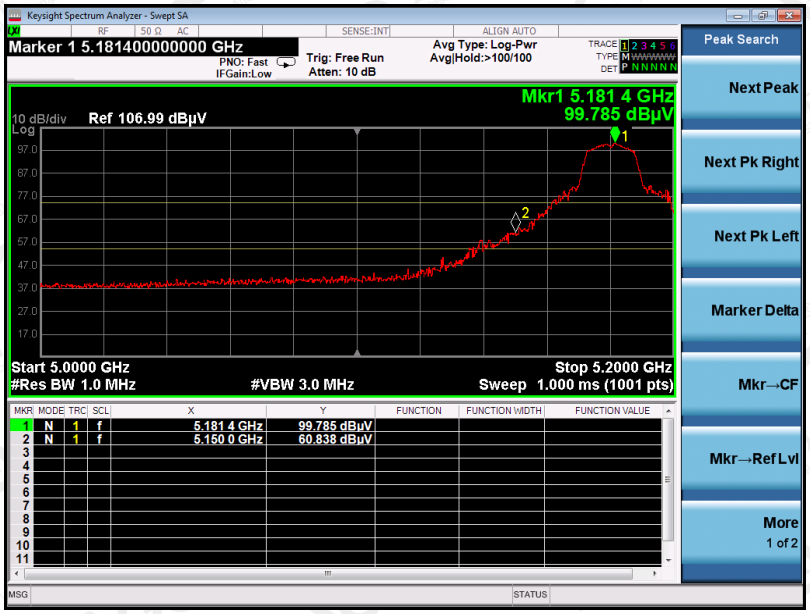
## 13.2. TEST SET-UP



### 13.3. TEST RESULT

| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25°C | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Horizontal |

PK Value

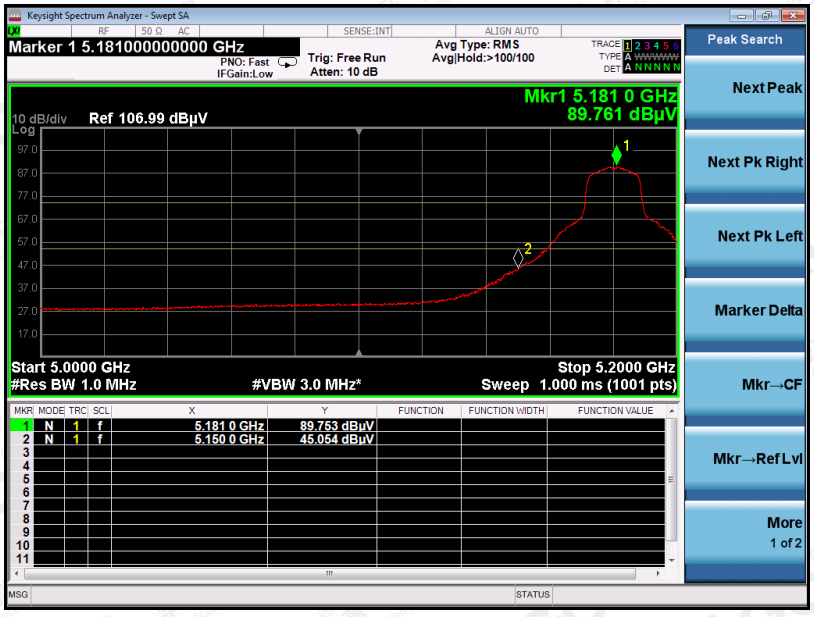



AV Value

| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11a20 5180MHz | Antenna | Vertical |

PK Value

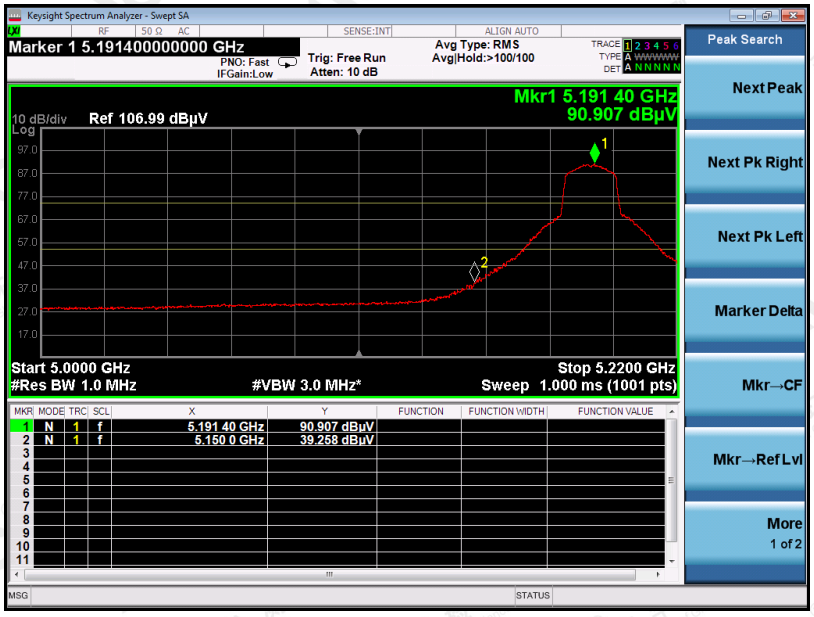

AV Value



| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5190MHz | Antenna | Horizontal |

PK Value

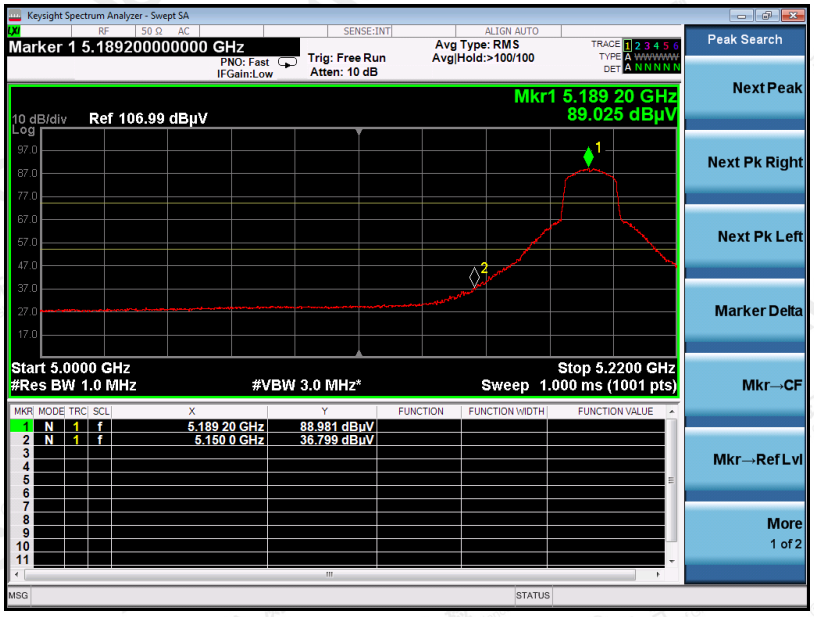

AV Value



| EUT | Soundcore Model Zero+ | Model Name | Z6111 |
|---|---|---|---|
| Temperature | 25℃ | Relative Humidity | 55.4% |
| Pressure | 960hPa | Test Voltage | Normal Voltage |
| Test Mode | 802.11n40 5190MHz | Antenna | Vertical |

PK Value


AV Value




**RESULT: PASS**

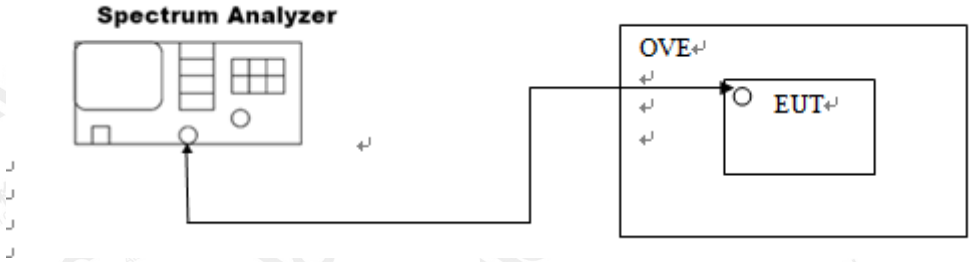
Note: All the 20MHz bandwidth modulation had been tested, the 802.11a20 was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in his test report.

# 14. FREQUENCY STABILITY

## 14.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the operation frequency.
3. Set SPA Centre Frequency = Operation Frequency. SPAN=enough to measure the emission is maintained within the band
4. Set SPA Trace 1 Max hold, then View.
5. Extreme temperature rule is -10°C~60°C.

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



## 14.3. MEASUREMENT RESULTS

| Test Mode | Temperature | Measurement Frequency (MHz) | Result | Conclusion |
|---|---|---|---|---|
| 802.11a | - 10℃ | 5180 | within the band | PASS |
| | 0℃ | 5180 | within the band | PASS |
| | 10℃ | 5180 | within the band | PASS |
| | 20℃ | 5180 | within the band | PASS |
| | 30℃ | 5180 | within the band | PASS |
| | 40℃ | 5180 | within the band | PASS |
| | - 10℃ | 5240 | within the band | PASS |
| | 0℃ | 5240 | within the band | PASS |
| | 10℃ | 5240 | within the band | PASS |
| | 20℃ | 5240 | within the band | PASS |
| | 30℃ | 5240 | within the band | PASS |
| | 40℃ | 5240 | within the band | PASS |
| | - 10℃ | 5745 | within the band | PASS |
| | 0℃ | 5745 | within the band | PASS |
| | 10℃ | 5745 | within the band | PASS |
| | 20℃ | 5745 | within the band | PASS |
| | 30℃ | 5745 | within the band | PASS |
| | 40℃ | 5745 | within the band | PASS |
| | - 10℃ | 5825 | within the band | PASS |
| | 0℃ | 5825 | within the band | PASS |
| | 10℃ | 5825 | within the band | PASS |
| | 20℃ | 5825 | within the band | PASS |
| | 30℃ | 5825 | within the band | PASS |
| | 40℃ | 5825 | within the band | PASS |

| Test Mode | Temperature | Measurement Frequency (MHz) | Result | Conclusion |
|---|---|---|---|---|
| 802.11n20 | - 10℃ | 5180 | within the band | PASS |
| | 0℃ | 5180 | within the band | PASS |
| | 10℃ | 5180 | within the band | PASS |
| | 20℃ | 5180 | within the band | PASS |
| | 30℃ | 5180 | within the band | PASS |
| | 40℃ | 5180 | within the band | PASS |
| | - 10℃ | 5240 | within the band | PASS |
| | 0℃ | 5240 | within the band | PASS |
| | 10℃ | 5240 | within the band | PASS |
| | 20℃ | 5240 | within the band | PASS |
| | 30℃ | 5240 | within the band | PASS |
| | 40℃ | 5240 | within the band | PASS |
| | - 10℃ | 5745 | within the band | PASS |
| | 0℃ | 5745 | within the band | PASS |
| | 10℃ | 5745 | within the band | PASS |
| | 20℃ | 5745 | within the band | PASS |
| | 30℃ | 5745 | within the band | PASS |
| | 40℃ | 5745 | within the band | PASS |
| | - 10℃ | 5825 | within the band | PASS |
| | 0℃ | 5825 | within the band | PASS |
| | 10℃ | 5825 | within the band | PASS |
| | 20℃ | 5825 | within the band | PASS |
| | 30℃ | 5825 | within the band | PASS |
| | 40℃ | 5825 | within the band | PASS |

| Test Mode | Temperature | Measurement Frequency (MHz) | Result | Conclusion |
|---|---|---|---|---|
| 802.11n40 | - 10℃ | 5190 | within the band | PASS |
| | 0℃ | 5190 | within the band | PASS |
| | 10℃ | 5190 | within the band | PASS |
| | 20℃ | 5190 | within the band | PASS |
| | 30℃ | 5190 | within the band | PASS |
| | 40℃ | 5190 | within the band | PASS |
| | - 10℃ | 5230 | within the band | PASS |
| | 0℃ | 5230 | within the band | PASS |
| | 10℃ | 5230 | within the band | PASS |
| | 20℃ | 5230 | within the band | PASS |
| | 30℃ | 5230 | within the band | PASS |
| | 40℃ | 5230 | within the band | PASS |
| | - 10℃ | 5755 | within the band | PASS |
| | 0℃ | 5755 | within the band | PASS |
| | 10℃ | 5755 | within the band | PASS |
| | 20℃ | 5755 | within the band | PASS |
| | 30℃ | 5755 | within the band | PASS |
| | 40℃ | 5755 | within the band | PASS |
| | - 10℃ | 5795 | within the band | PASS |
| | 0℃ | 5795 | within the band | PASS |
| | 10℃ | 5795 | within the band | PASS |
| | 20℃ | 5795 | within the band | PASS |
| | 30℃ | 5795 | within the band | PASS |
| | 40℃ | 5795 | within the band | PASS |

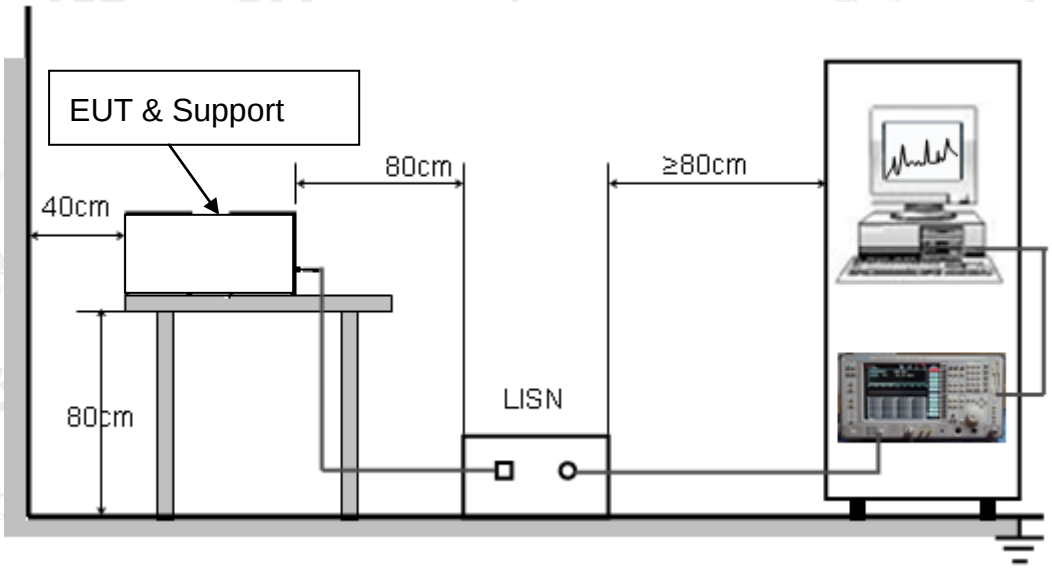
# 15. FCC LINE CONDUCTED EMISSION TEST

## 15.1. 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 0.50MHz.

## 15.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



### 15.3. 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 (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.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hzpower 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.

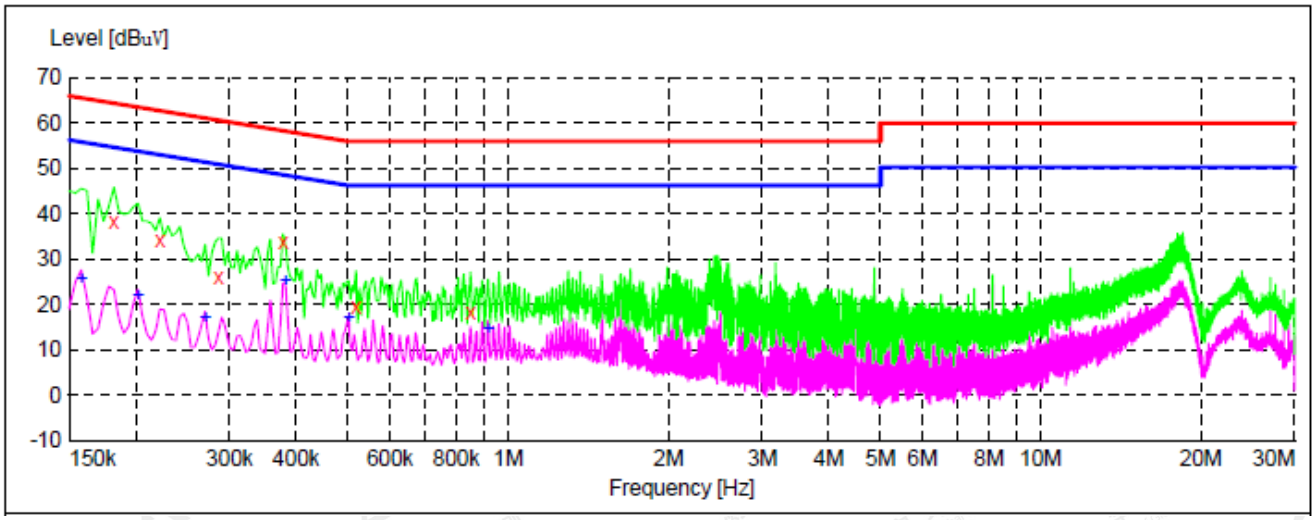
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

### 15.4. 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.

## 15.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L



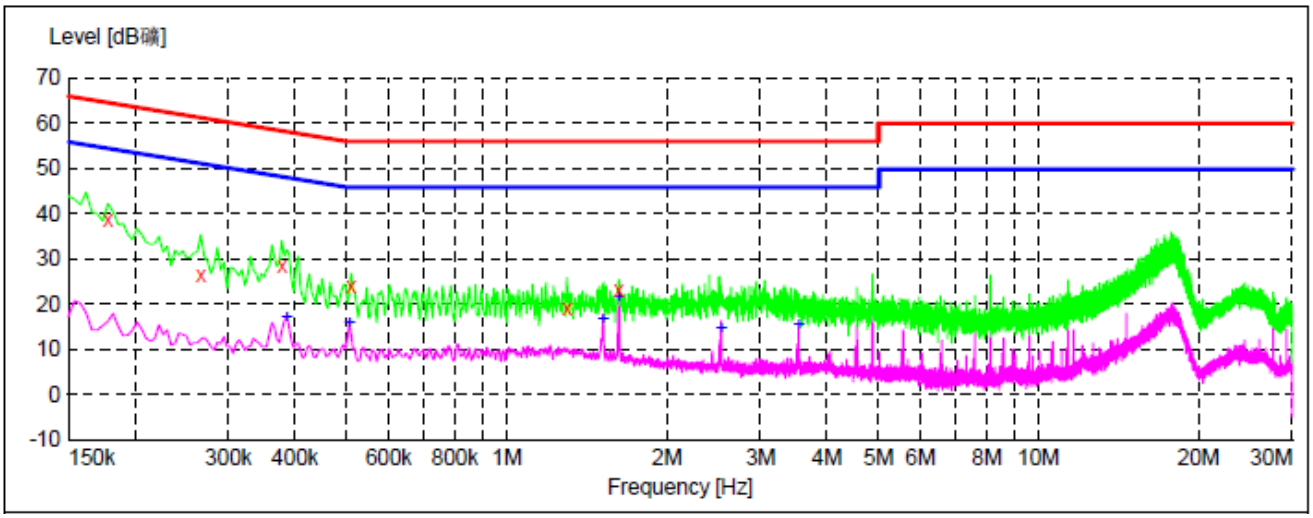

***MEASUREMENT RESULT: "TEST_fin"***

| Frequency MHz | Level dBuV | Transd dB | Limit dBuV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.182000 | 38.10 | 10.0 | 64 | 26.3 | QP | L1 | FLO |
| 0.222000 | 34.00 | 10.1 | 63 | 28.7 | QP | L1 | FLO |
| 0.286000 | 26.10 | 10.1 | 61 | 34.5 | QP | L1 | FLO |
| 0.378000 | 33.80 | 10.0 | 58 | 24.5 | QP | L1 | FLO |
| 0.518000 | 19.60 | 9.9 | 56 | 36.4 | QP | L1 | FLO |
| 0.850000 | 18.40 | 10.1 | 56 | 37.6 | QP | L1 | FLO |

***MEASUREMENT RESULT: "TEST_fin2"***

| Frequency MHz | Level dBuV | Transd dB | Limit dBuV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.158000 | 25.70 | 10.0 | 55 | 29.7 | AV | L1 | FLO |
| 0.202000 | 22.10 | 10.1 | 54 | 35.7 | AV | L1 | FLO |
| 0.270000 | 17.20 | 10.1 | 53 | 35.5 | AV | L1 | FLO |
| 0.382000 | 25.30 | 10.0 | 49 | 23.6 | AV | L1 | FLO |
| 0.502000 | 17.00 | 9.9 | 46 | 29.0 | AV | L1 | FLO |
| 0.918000 | 14.60 | 10.1 | 46 | 31.4 | AV | L1 | FLO |

LINE CONDUCTED EMISSION TEST-N




***MEASUREMENT RESULT: "TEST_fin"***

| Frequency MHz | Level dBuV | Transd dB | Limit dBuV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.178000 | 38.70 | 10.0 | 65 | 25.9 | QP | N | FLO |
| 0.266000 | 26.60 | 10.1 | 61 | 34.6 | QP | N | FLO |
| 0.378000 | 28.50 | 10.0 | 58 | 29.8 | QP | N | FLO |
| 0.510000 | 23.90 | 9.9 | 56 | 32.1 | QP | N | FLO |
| 1.298000 | 19.00 | 10.1 | 56 | 37.0 | QP | N | FLO |
| 1.626000 | 23.30 | 10.0 | 56 | 32.7 | QP | N | FLO |

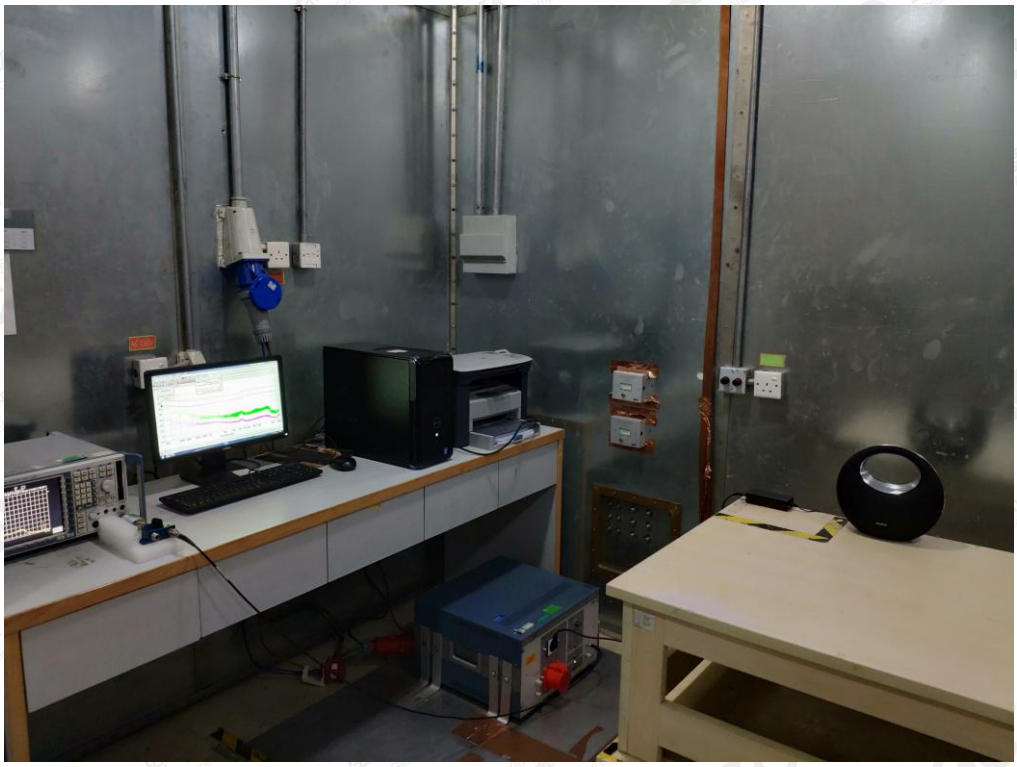
***MEASUREMENT RESULT: "TEST_fin2"***

| Frequency MHz | Level dBuV | Transd dB | Limit dBuV | Margin dB | Detector | Line | PE |
|---|---|---|---|---|---|---|---|
| 0.386000 | 17.10 | 10.0 | 49 | 31.7 | AV | N | FLO |
| 0.506000 | 15.80 | 9.9 | 46 | 30.2 | AV | N | FLO |
| 1.518000 | 16.50 | 10.0 | 46 | 29.5 | AV | N | FLO |
| 1.626000 | 21.60 | 10.0 | 46 | 24.4 | AV | N | FLO |
| 2.530000 | 14.70 | 9.9 | 46 | 31.3 | AV | N | FLO |
| 3.546000 | 15.40 | 10.0 | 46 | 30.6 | AV | N | FLO |

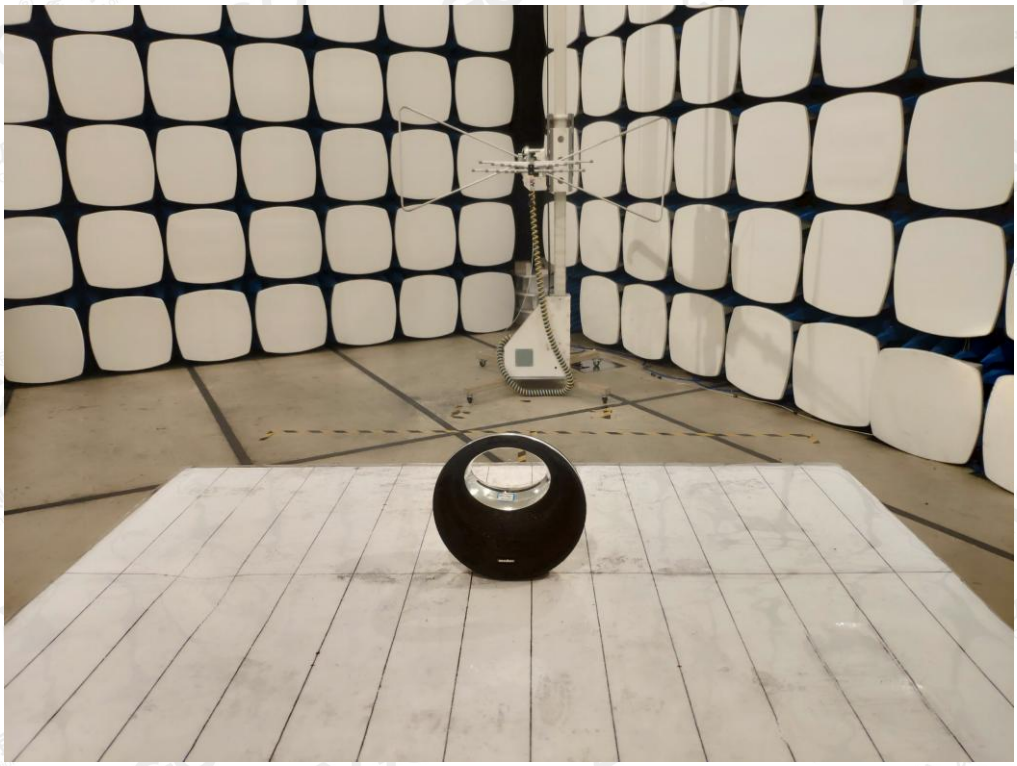
**RESULT: PASS**

# APPENDIX A: PHOTOGRAPHS OF TEST SETUP

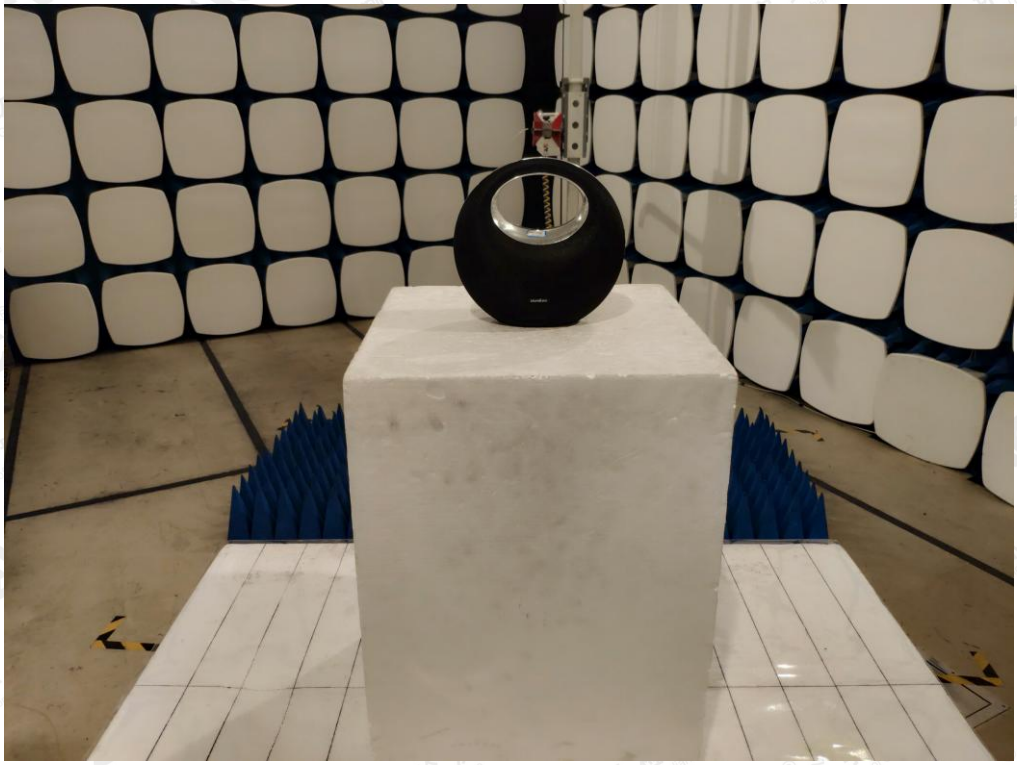
FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ



FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ



**----END OF REPORT----**