# ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

**Test Report No.** : **OT-20N-RWD-035**

**Reception No.** : **2010003943**

**Applicant** : **Samsung Electronics Co Ltd**

**Address** : **19 Chapin Rd., Building D, Pine Brook, New Jersey, 07058, United States**

**Manufacturer** : **Samsung Electronics Co Ltd**

**Address** : **129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do 16677, Korea**

**Type of Equipment** : **Audio Transceiver**

**FCC ID** : **A3LWSA520S**

**Model Name** : **WSA520S**

**Multiple Model Name** : **N/A**

**Serial number** : **N/A**

**Total page of Report** : **31 pages (including this page)**

**Date of Incoming** : **October 27, 2020**

**Date of Issuing** : **November 11, 2020**

## SUMMARY

The equipment complies with the requirements of ***FCC CFR 47 PART 15 SUBPART C Section 15.249***

This test report contains only the result of a single test of the sample supplied for the examination.

It is not a general valid assessment of the features of the respective products of the mass-production.

| Tested by | Reviewed by | Approved by |
|---|---|---|
| Hyung-Kwon, Oh / Manager | Tae-Ho, Kim / Senior Manager | Ki-Hong, Nam / General Manager |
| ONETECH Corp. | ONETECH Corp. | ONETECH Corp. |

 

**ONETECH Corp.**: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

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## Revision History

| Rev. No. | Issue Report No. | Issued Date | Revisions | Section Affected |
|---|---|---|---|---|
| 0 | OT-20N-RWD-035 | November 11, 2020 | Initial Release | All |
| | | | | |
| | | | | |



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# 1. VERIFICATION OF COMPLIANCE

Applicant : Samsung Electronics Co Ltd

Address : 19 Chapin Rd., Building D, Pine Brook, New Jersey, 07058, United States

Contact Person : Hansung You / Staff Engineer

Telephone No. : +82-31-277-2746

FCC ID : A3LWSA520S

Model Name : WSA520S

Brand Name : SAMSUNG

Serial Number : N/A

Date : November 11, 2020

| | |
|---|---|
| DEVICE TYPE | DXX – Low Power Communication Device Transmitter |
| E.U.T. DESCRIPTION | Modular Transmitter, Audio Transceiver |
| THIS REPORT CONCERNS | Original Grant |
| MEASUREMENT PROCEDURES | ANSI C63.10: 2013 |
| TYPE OF EQUIPMENT TESTED | Pre-Production |
| KIND OF EQUIPMENT AUTHORIZATION REQUESTED | Certification |
| EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S) | FCC CFR47 Part 15 Subpart C Section 15.249 |
| MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE | None |
| FINAL TEST WAS CONDUCTED ON | 3 m Semi Anechoic Chamber |

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

 

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# 2. TEST SUMMARY

## 2.1 Test items and results

| SECTION | TEST ITEMS | RESULTS |
|---|---|---|
| 15.249 (a) | Field Strength of Emission | Met the Limit / PASS |
| 15.249 (c) | Measurement distance | Met the Requirement / PASS |
| 15.249 (d) | Emissions Radiated Outside of the Specified Frequency Band | Met the Limit / PASS |
| 15.249, 15.215 | Minimum 20 dB Bandwidth | Met the Limit / PASS |
| 15.249 (e) | Radiated Emissions above 1 000 MHz | Met the Limit / PASS |
| 15.209 | Radiated Emission Limits, General Requirement | Met the Limit / PASS |
| 15.207 | Conducted Limits | N/A (See Note) |
| 15.203 | Antenna Requirement | Met the Requirement / PASS |

Note: This test is not performed because the EUT is operated by DC Power.

## 2.2 Related Submittal(s) / Grant(s)

Original submittal only

## 2.3 Purpose of the test

To determine whether the equipment under test fulfills the requirements of the regulation stated in section 2.1.

## 2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10: 2013. Radiate d testing was performed at a distance of 3 m from EUT to the antenna.

## 2.5 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-4112/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

 

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# 3. GENERAL INFORMATION

## 3.1 Product Description

The Samsung Electronics Co Ltd, Model WSA520S (referred to as the EUT in this report) is an Audio Transceiver, Product specification information described herein was obtained from product data sheet or user's manual.

| | | |
|---|---|---|
| DEVICE TYPE | Audio Transceiver | |
| Temperature Range | -5 °C ~ 40 °C | |
| OPERATING FREQUENCY | 5 773.35 MHz ~ 5 871.35 MHz | |
| MODULATION TYPE | DQPSK | |
| Field Strength Of Fundamental | 96.76 dBμV/m at 3 m | |
| ANTENNA TYPE | PCB Antenna | |
| ANTENNA GAIN | Antenna 0 | 3.10 dBi |
| | Antenna 1 | 3.10 dBi |
| List of each Osc. or crystal Freq.(Freq. >= 1 MHz) | 16 MHz | |

Note: This Device works a Diversity Antenna. So, We Tested only Antenna 0.

## 3.2 Alternative type(s)/model(s); also covered by this test report.

-. None

# 4. EUT MODIFICATIONS

-. None

# 5. SYSTEM TEST CONFIGURATION

## 5.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

| DEVICE TYPE | MANUFACTURER | MODEL/PART NUMBER | FCC ID |
|---|---|---|---|
| Main Board | Samsung Electronics Co Ltd | AVM500 REV03 | N/A |

## 5.2 Peripheral equipment

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

| Model | Manufacturer | Description | Connected to |
|---|---|---|---|
| WSA520S | Samsung Electronics Co Ltd | Audio Transceiver(EUT) | - |
| AVM500 ANTEATER REV01 | N/A | Jig Board | EUT / Notebook PC |
| HP Probook | HP | Notebook PC | EUT |
| PPP009L-E | LIE-ON TECHNOLOGY (CHANGZHOU) CO., LTD. | AC Adapter | |

## 5.3 Mode of operation during the test

For the testing, software used to control the EUT for staying in continuous transmitting is programmed.

For final testing, the EUT was set at 5 773.35 MHz, 5 821.35 MHz, and 5 871.35 MHz to get a maximum emission levels from the EUT. The EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XY” axis, but the worst data was recorded in this report.

 

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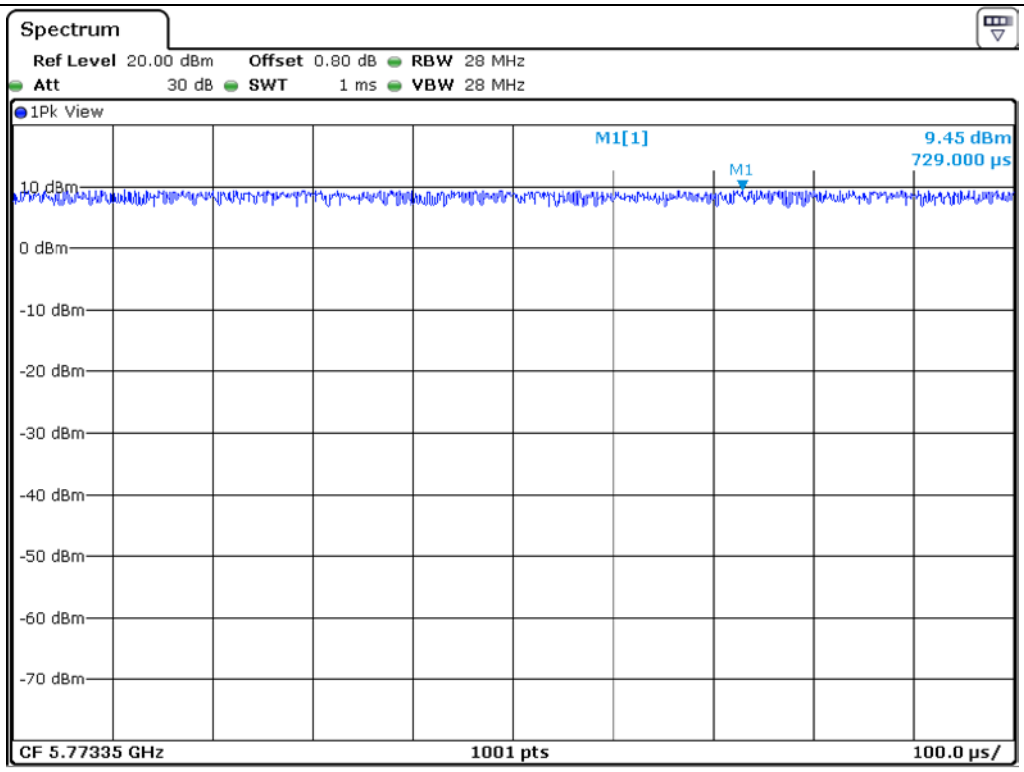
-. Duty Cycle

| Mode | Tx On Time [ ms ] | Tx Off Time [ ms ] | Duty Cycle [ % ] | Correction Factor [ dB ] |
|---|---|---|---|---|
| - | - | - | 100.00 | - |

Note – Duty Cycle : (Tx On Time / (Tx On Time + Tx Off Time)) * 100

Correction Factor : 10 * Log(1 / (Duty Cycle / 100))

-. Test Plot



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**-. Channel List**

| Channel | Frequency[MHz] | Channel | Frequency[MHz] | Channel | Frequency[MHz] |
|---|---|---|---|---|---|
| 0 | 5 773.35 | 18 | 5 809.35 | 36 | 5 845.35 |
| 1 | 5 775.35 | 19 | 5 811.35 | 37 | 5 847.35 |
| 2 | 5 777.35 | 20 | 5 813.35 | 38 | 5 849.35 |
| 3 | 5 779.35 | 21 | 5 815.35 | 39 | 5 851.35 |
| 4 | 5 781.35 | 22 | 5 817.35 | 40 | 5 853.35 |
| 5 | 5 783.35 | 23 | 5 819.35 | 41 | 5 855.35 |
| 6 | 5 785.35 | 24 | 5 821.35 | 42 | 5 857.35 |
| 7 | 5 787.35 | 25 | 5 823.35 | 43 | 5 859.35 |
| 8 | 5 789.35 | 26 | 5 825.35 | 44 | 5 861.35 |
| 9 | 5 791.35 | 27 | 5 827.35 | 45 | 5 863.35 |
| 10 | 5 793.35 | 28 | 5 829.35 | 46 | 5 865.35 |
| 11 | 5 795.35 | 29 | 5 831.35 | 47 | 5 867.35 |
| 12 | 5 797.35 | 30 | 5 833.35 | 48 | 5 869.35 |
| 13 | 5 799.35 | 31 | 5 835.35 | 49 | 5 871.35 |
| 14 | 5 801.35 | 32 | 5 837.35 | | |
| 15 | 5 803.35 | 33 | 5 839.35 | | |
| 16 | 5 805.35 | 34 | 5 841.35 | | |
| 17 | 5 807.35 | 35 | 5 843.35 | | |

 

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### 5.4 Configuration of Test System

**Line Conducted Test**: It is not need to test this requirement, because the EUT shall be operated by DC Power.

**Radiated Emission Test** : Preliminary radiated emissions test were conducted using the procedure in ANSI C63.10: 2013 to determine the worse operating conditions. The radiated emissions measurements were performed on the 10 m Semi Anechoic Chamber.

For frequencies from 150 kHz to 30 MHz measurements were made of the magnetic H field. The measuring antenna is an electrically screened loop antenna.

The frequency spectrum from 30 MHz to 1 000 MHz was scanned and maximum emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in the height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

### 5.5 Antenna Requirement

For intentional device, according to section 15.203, 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.

**Antenna Construction:**

The antenna of the EUT is PCB Antenna on the main board in the EUT, so no consideration of replacement by the user.

## 6. PRELIMINARY TEST

### 6.1 AC Power line Conducted Emissions Tests

During Preliminary Test, the following operating mode was investigated.

| Operation Mode | The Worse operating condition (Please check one only) |
|---|---|
| It is not need to test this requirement, because the power of the EUT is supplied by DC Power. | |

### 6.2 Radiated Emissions Tests

During Preliminary Tests, the following operating modes were investigated

| Operation Mode | The Worse operating condition (Please check one only) |
|---|---|
| Transmitting Mode | X |

 

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# 7. MINIMUM 20 dB BANDWIDTH

## 7.1 Operating environment

Temperature : 23 °C

Relative humidity : 45 % R.H.

## 7.2 Test set-up

The antenna output of the EUT was connected to the spectrum analyzer. The resolution bandwidth is set to 50 kHz, and peak detection was used. The 20 dB bandwidth is defined as the total spectrum over which the power is higher than the peak power minus 20 dB.


## 7.3 Test Date

October 27, 2020 ~ November 02, 2020

 

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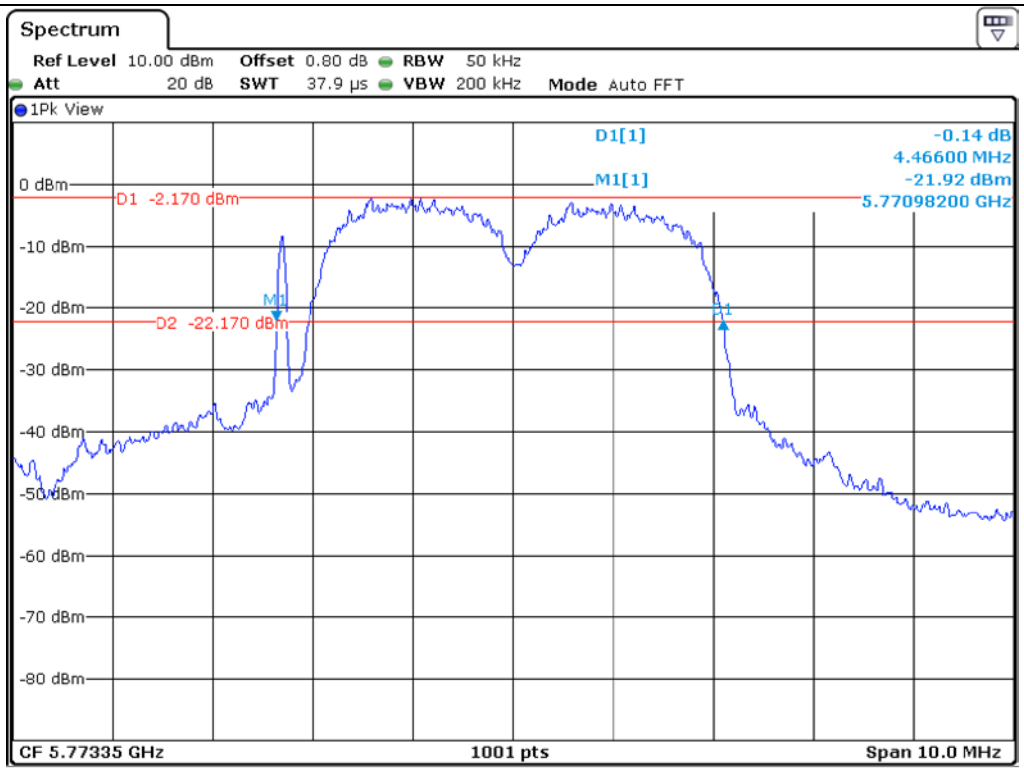
## 7.4 Test data

-. Test Result : Pass

| CHANNEL | FREQUENCY(MHz) | MEASURED VALUE (MHz) |
|---|---|---|
| Low | 5 773.35 | 4.47 |
| Middle | 5 821.35 | 4.46 |
| High | 5 871.35 | 4.45 |

Remark. Margin = Measured Value - Limit




Low Channel

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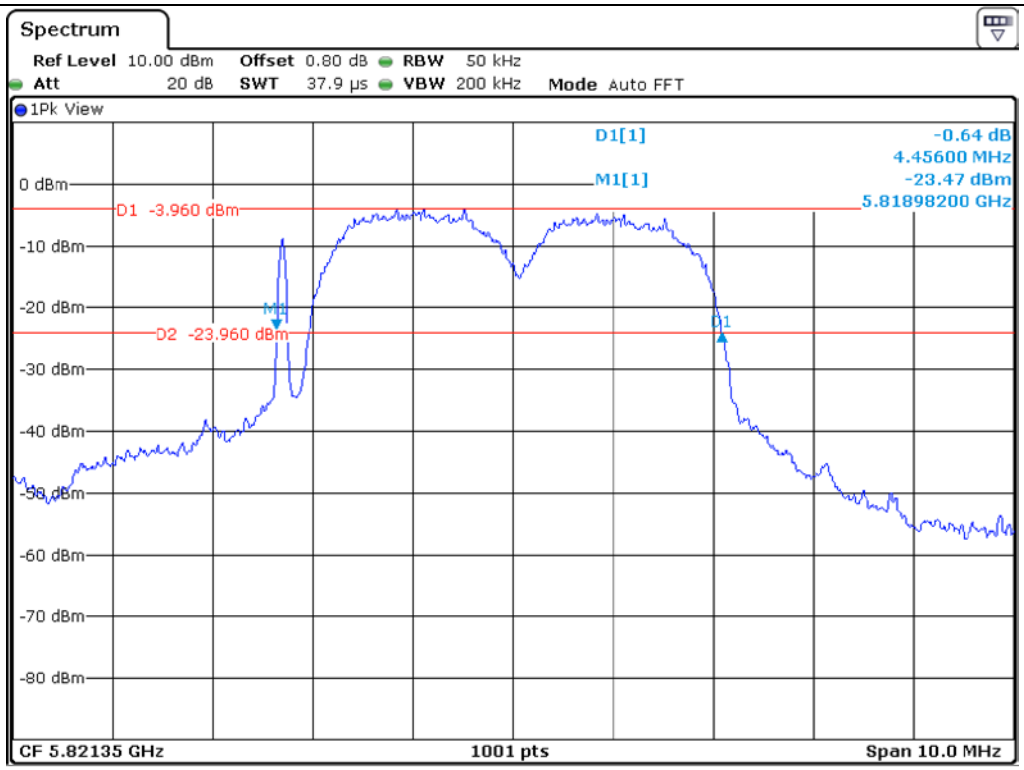
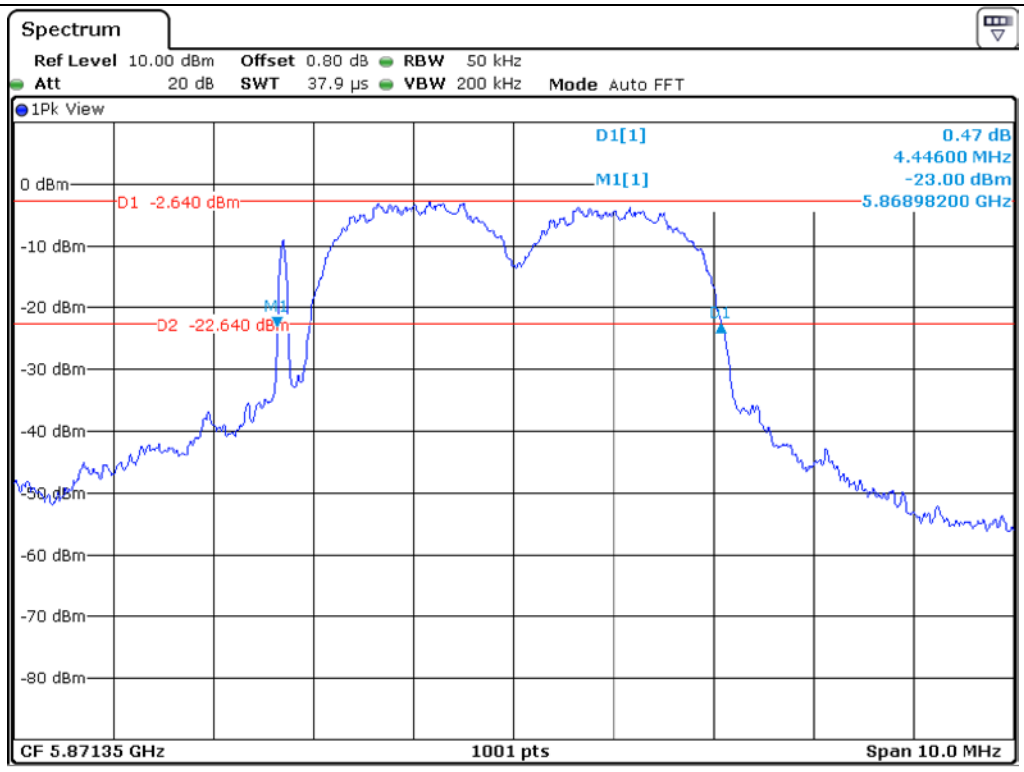



Middle Channel




High Channel



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# 8. RADIATED EMISSION TEST

## 8.1 Operating environment

Temperature : 23 °C

Relative humidity : 45 % R.H.

## 8.2 Test set-up

The radiated emissions measurements were on the 3 m, semi anechoic chamber. The EUT and other support equipment were placed on a non-conductive turntable above the ground plane. The interconnecting cables from outside test site were inserted into ferrite clamps at the point where the cables reach the turntable.

The frequency spectrum from up to 40 GHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

Test set-up photos are included in appendix I.

## 8.3 Measurement uncertainty

Radiated emission electric field intensity, 0.15 MHz ~ 30 MHz : ± 2.61 dB

Radiated emission electric field intensity, 30 MHz ~ 300 MHz : ± 4.43 dB

Radiated emission electric field intensity, 300 MHz ~ 1 000 MHz : ± 3.80 dB

Radiated emission electric field intensity, 1 000 MHz ~ 3 000 MHz: ± 4.40 dB

Measurement uncertainty is calculated in accordance with CISPR 16-4-2. The measurement uncertainty is given with a confidence of 95 % with the coverage factor, $k$ = 2.

## 8.4 Test Date

October 27, 2020 ~ November 02, 2020

 

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## 8.5 Final Result of Measurement

### 8.5.1 Field Strength of the Fundamental Frequency

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249(a)

Result : PASSED

EUT : Audio Transceiver

Operating Condition : TX mode

Distance : 3 m

| Radiated Emissions | | | Ant | Correction Factors | | Total | FCC Limit | |
|---|---|---|---|---|---|---|---|---|
| Carrier Freq. (MHz) | Reading (dBµV) | Detector Mode | Pol. | Antenna (dB/m) | Cable Loss (dB) | Amplitude (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
| **Test Data for Low Channel** | | | | | | | | |
| 5 773.35 | 47.45 | Peak | H | 34.50 | 12.38 | 94.33 | 114.00 | 19.67 |
| | 44.47 | Average | H | | | 91.35 | 94.00 | 2.65 |
| | 46.33 | Peak | V | | | 93.21 | 114.00 | 20.79 |
| | 42.45 | Average | V | | | 89.33 | 94.00 | 4.67 |
| **Test Data for Middle Channel** | | | | | | | | |
| 5 821.35 | 49.88 | Peak | H | 34.50 | 12.38 | 96.76 | 114.00 | 17.24 |
| | 45.15 | Average | H | | | 92.03 | 94.00 | 1.97 |
| | 48.70 | Peak | V | | | 95.58 | 114.00 | 18.42 |
| | 44.10 | Average | V | | | 90.98 | 94.00 | 3.02 |
| **Test Data for High Channel** | | | | | | | | |
| 5 871.35 | 47.61 | Peak | H | 34.50 | 12.38 | 94.49 | 114.00 | 19.51 |
| | 43.38 | Average | H | | | 90.26 | 94.00 | 3.74 |
| | 46.19 | Peak | V | | | 93.07 | 114.00 | 20.93 |
| | 42.14 | Average | V | | | 89.02 | 94.00 | 4.98 |

*Remark: To get a maximum emission level from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes, but the worst plane data were recorded in the report.

Margin (dB) = Limit (dBuV/m) – Total (dBuV/m)

Total = Reading + Antenna Factor + Cable Loss + Duty Cycle Reduction

 

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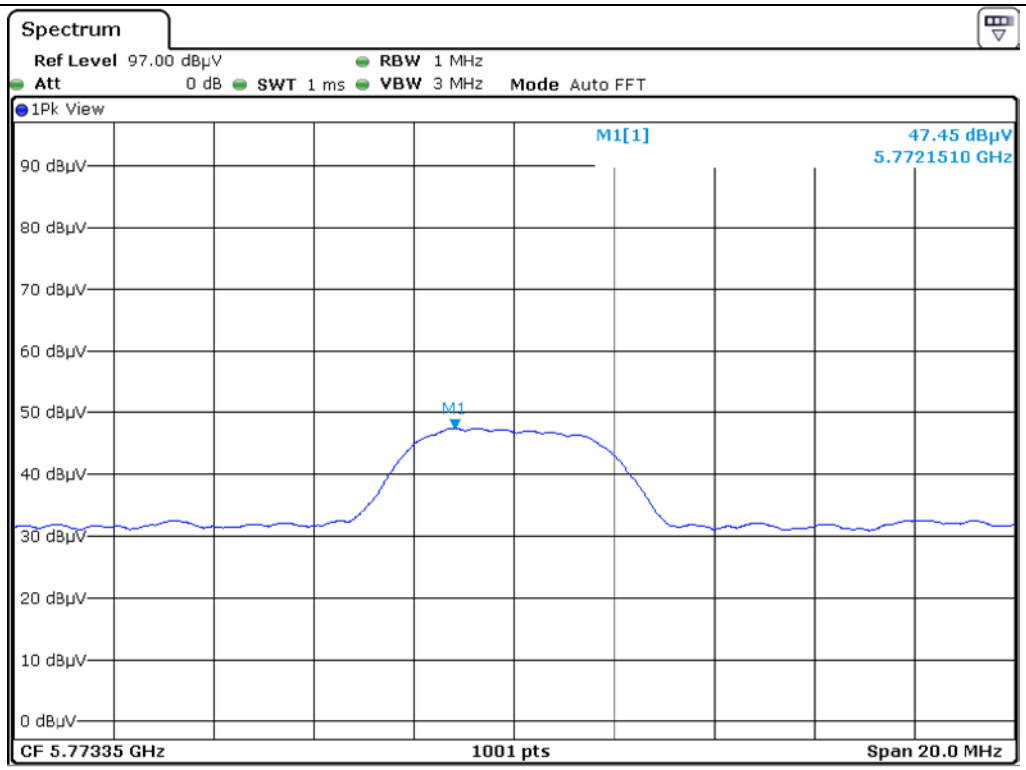
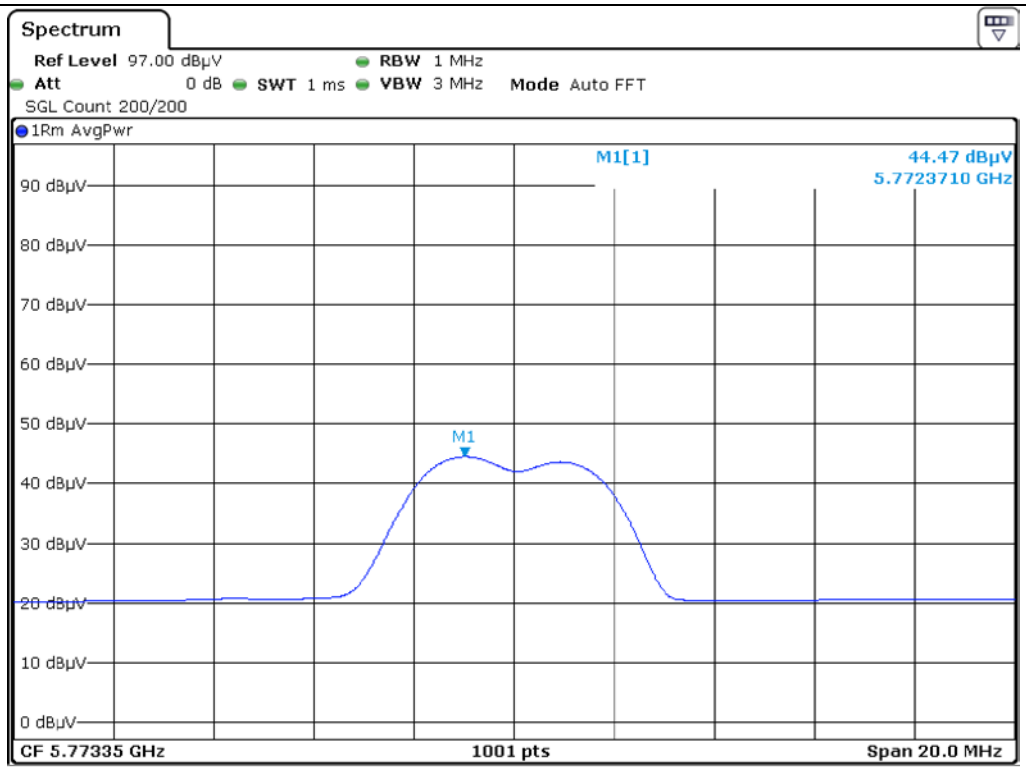



Low Channel_Peak_H




Low Channel_Average_H

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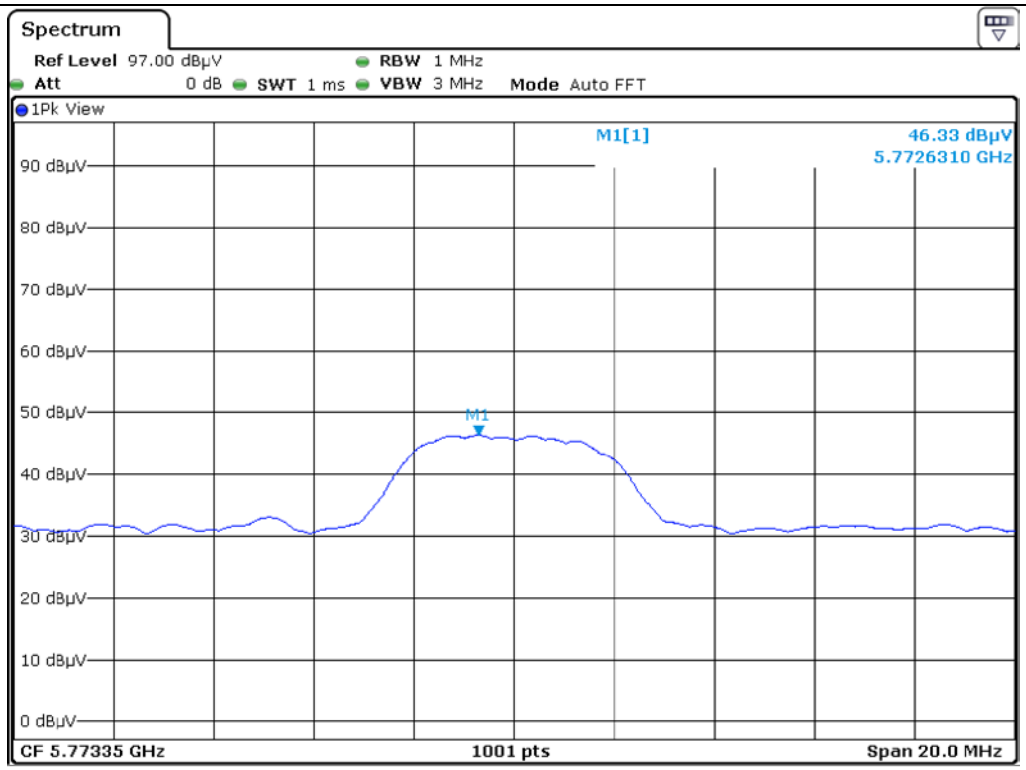
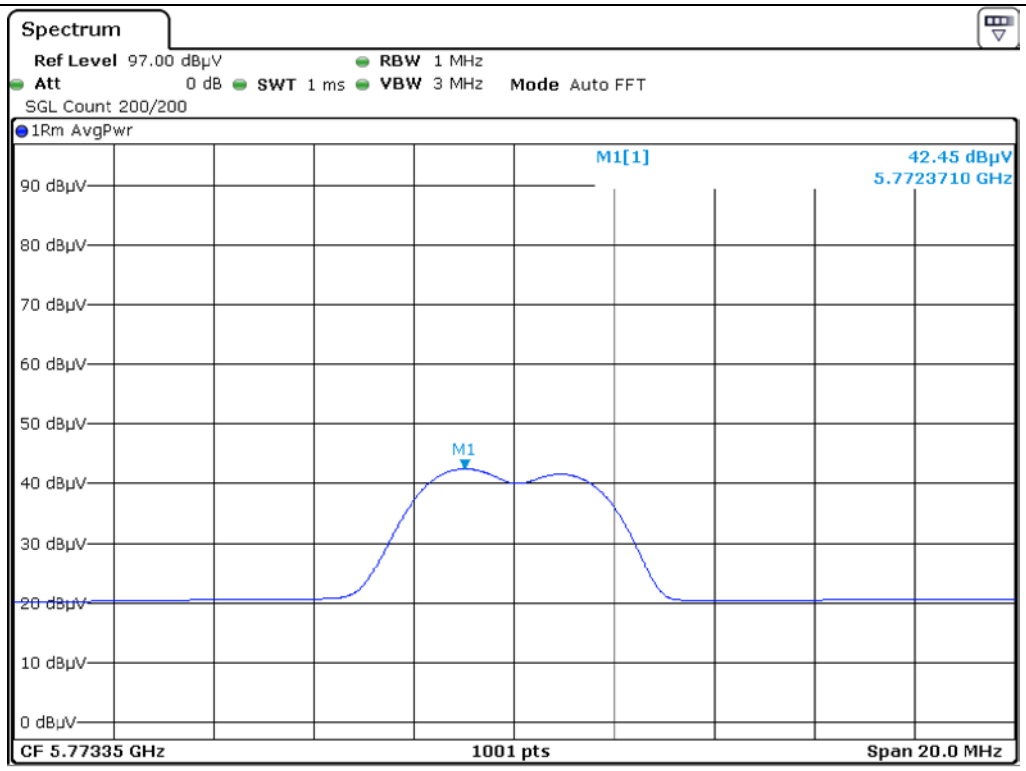



Low Channel_Peak_V




Low Channel_Average_V

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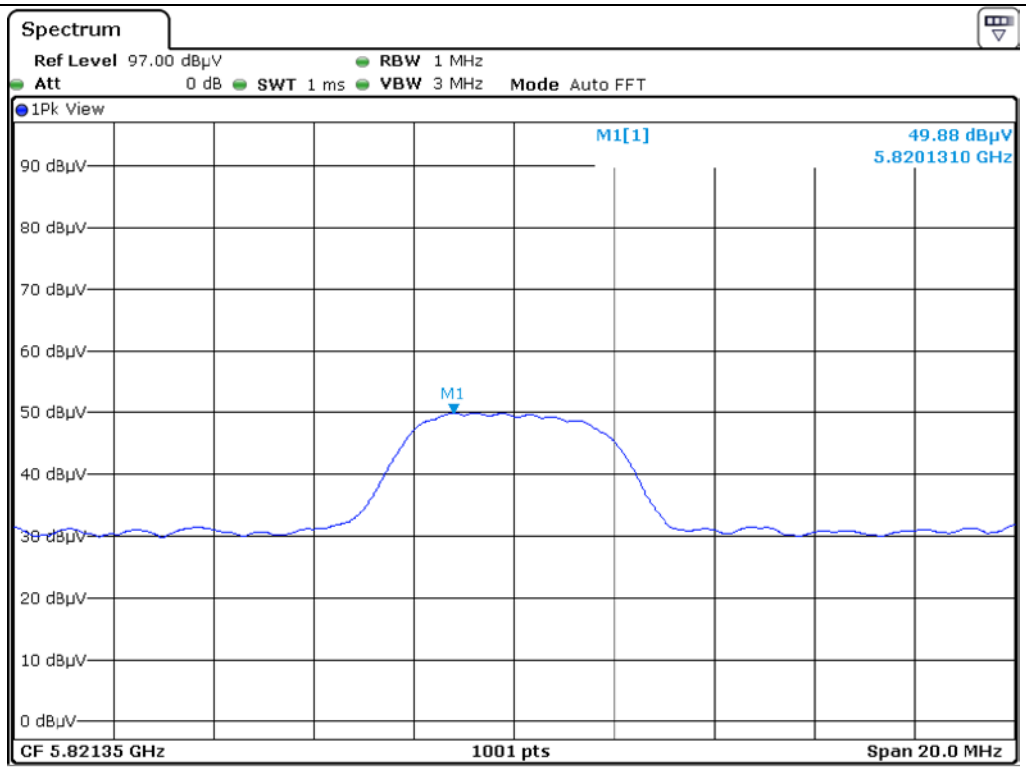
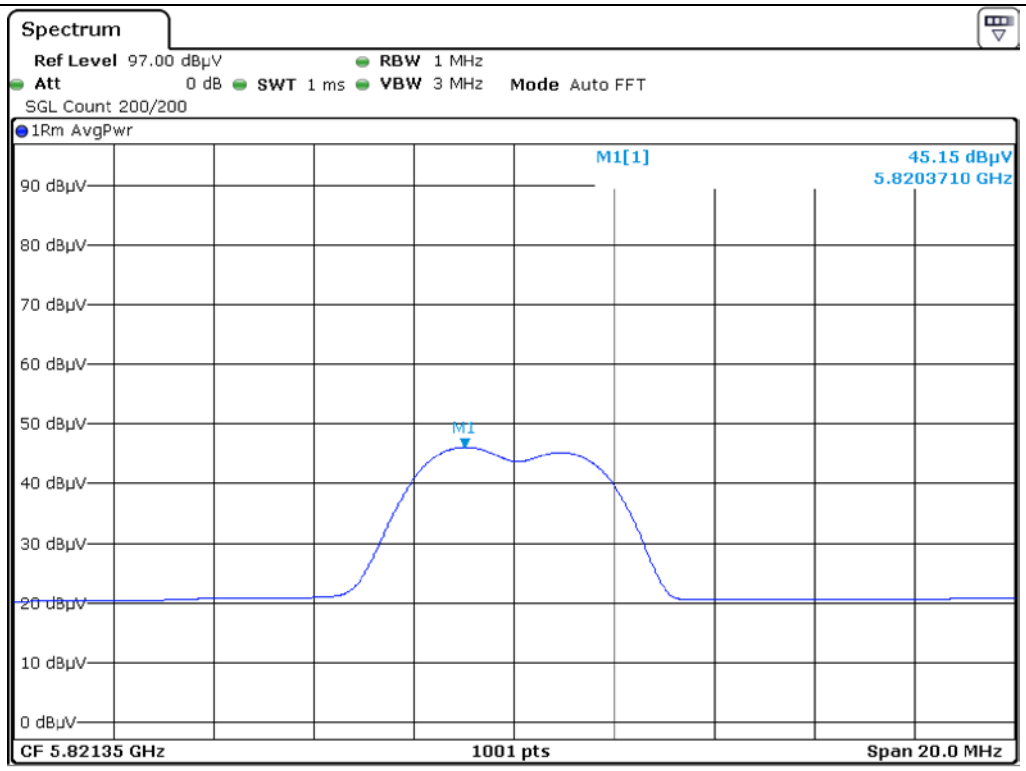



Middle Channel_Peak_H




Middle Channel_Average_H

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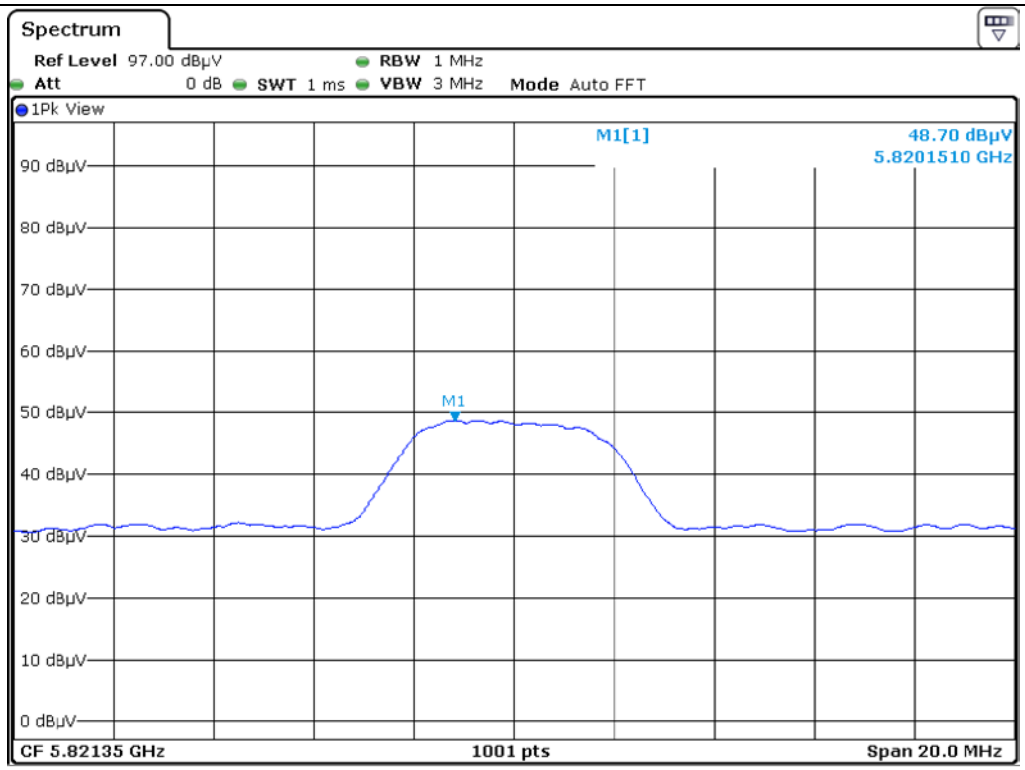
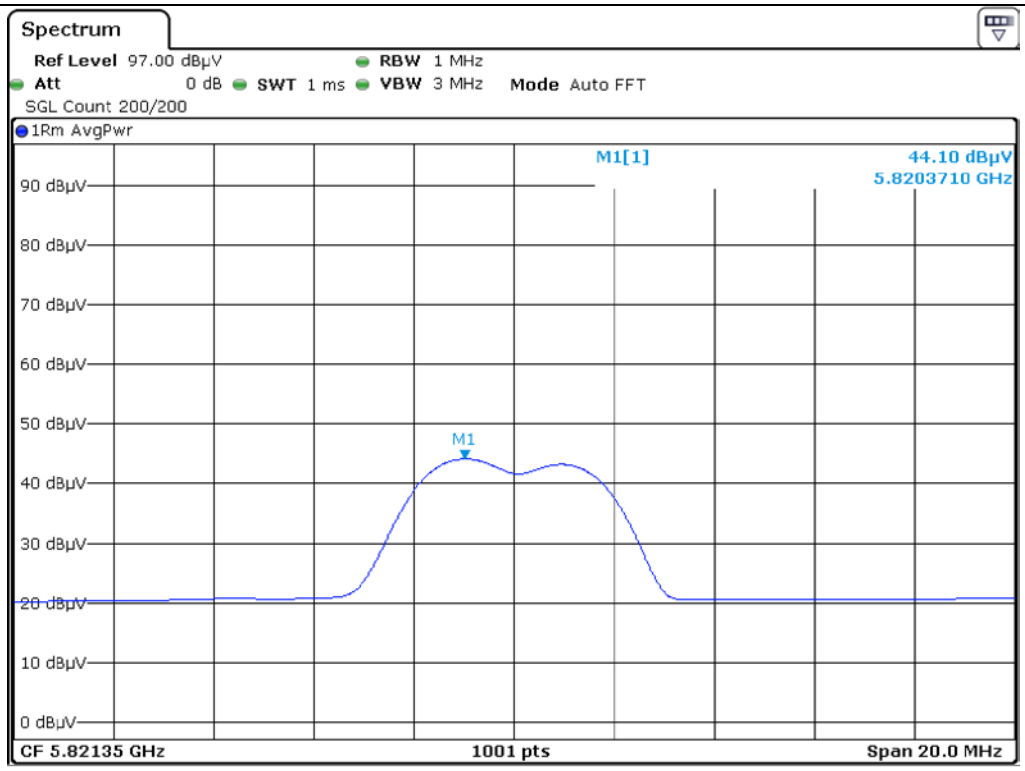



Middle Channel_Peak_V




Middle Channel_Average_V

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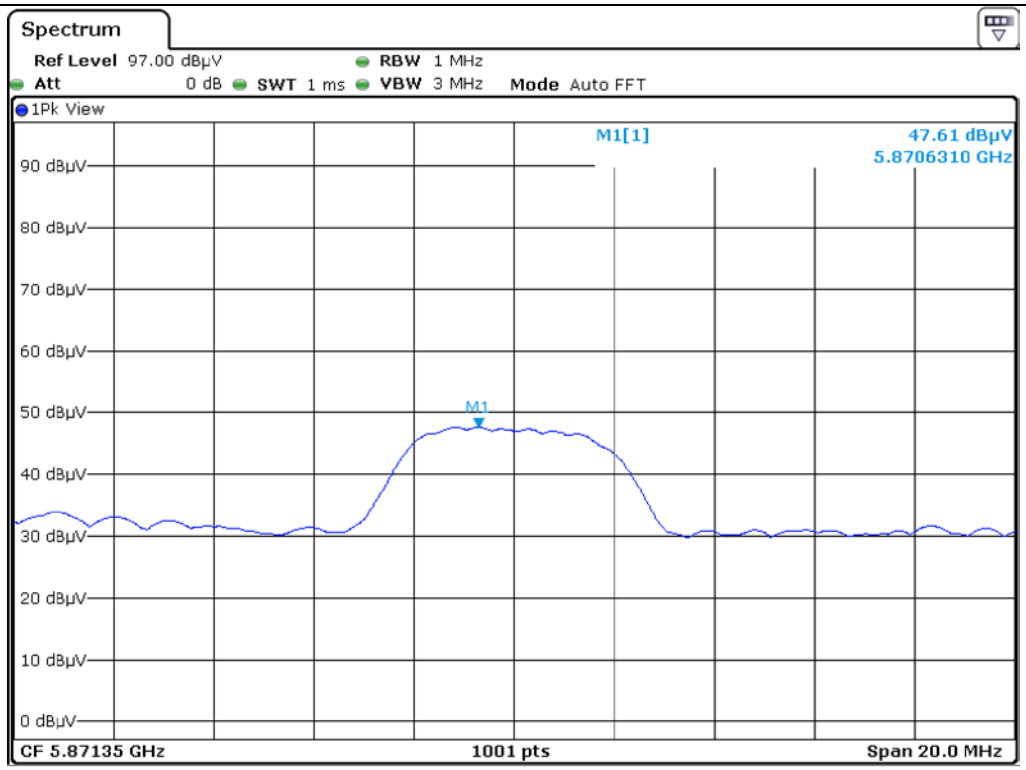
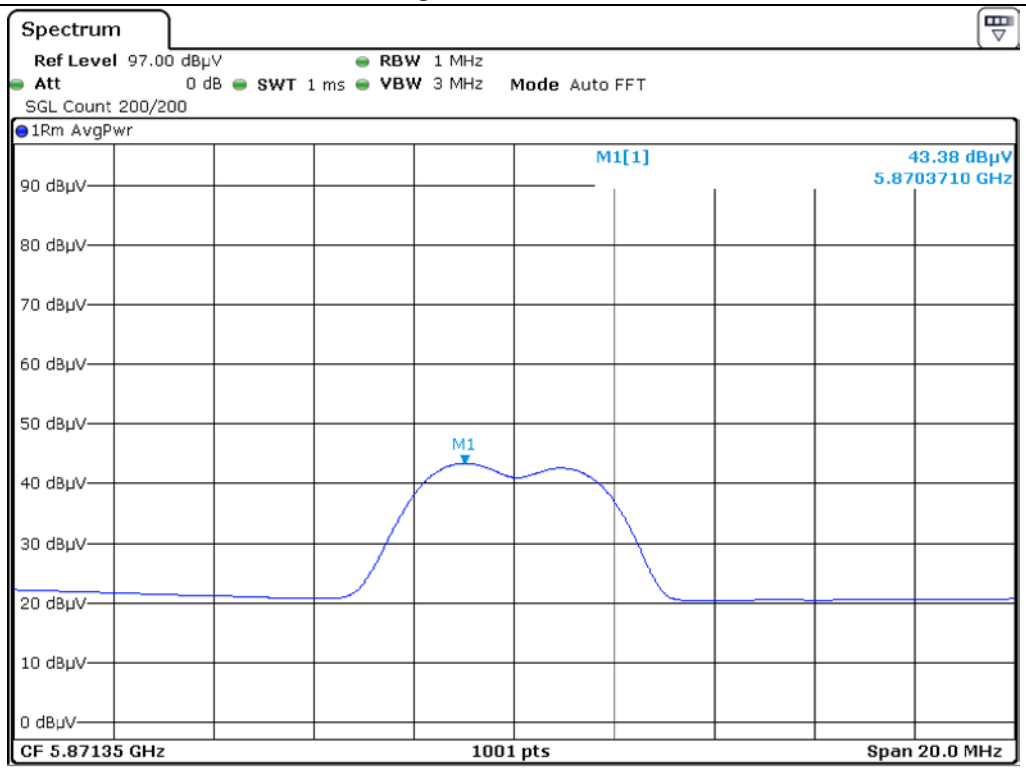



High Channel_Peak_H




High Channel_Average_H

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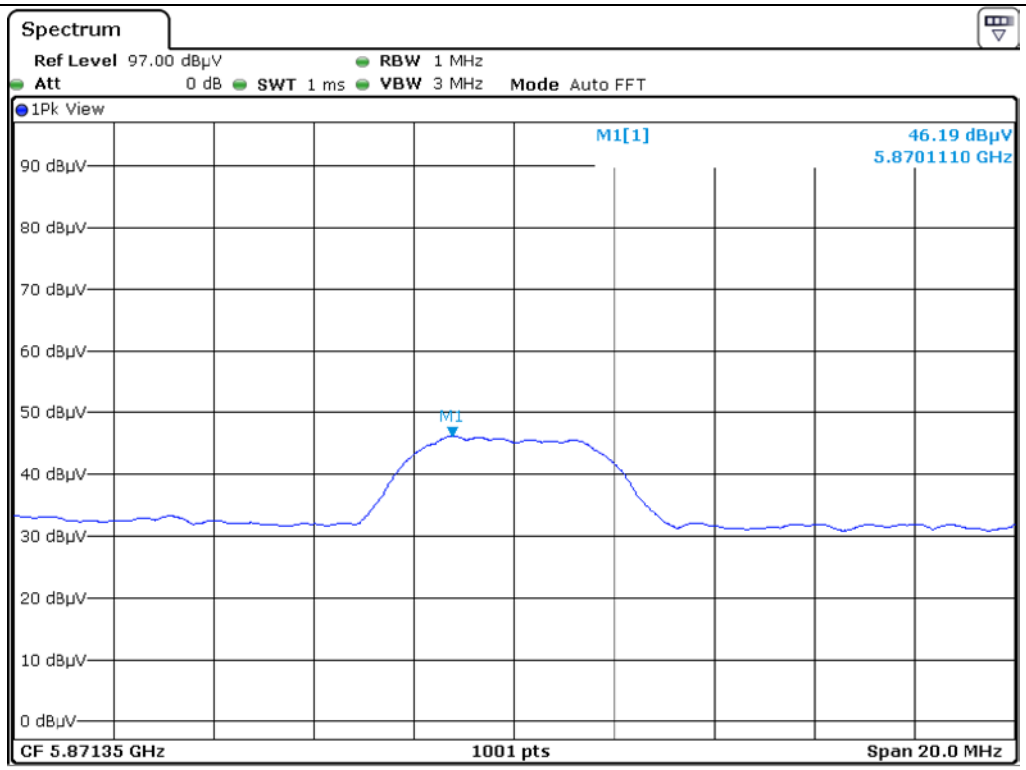
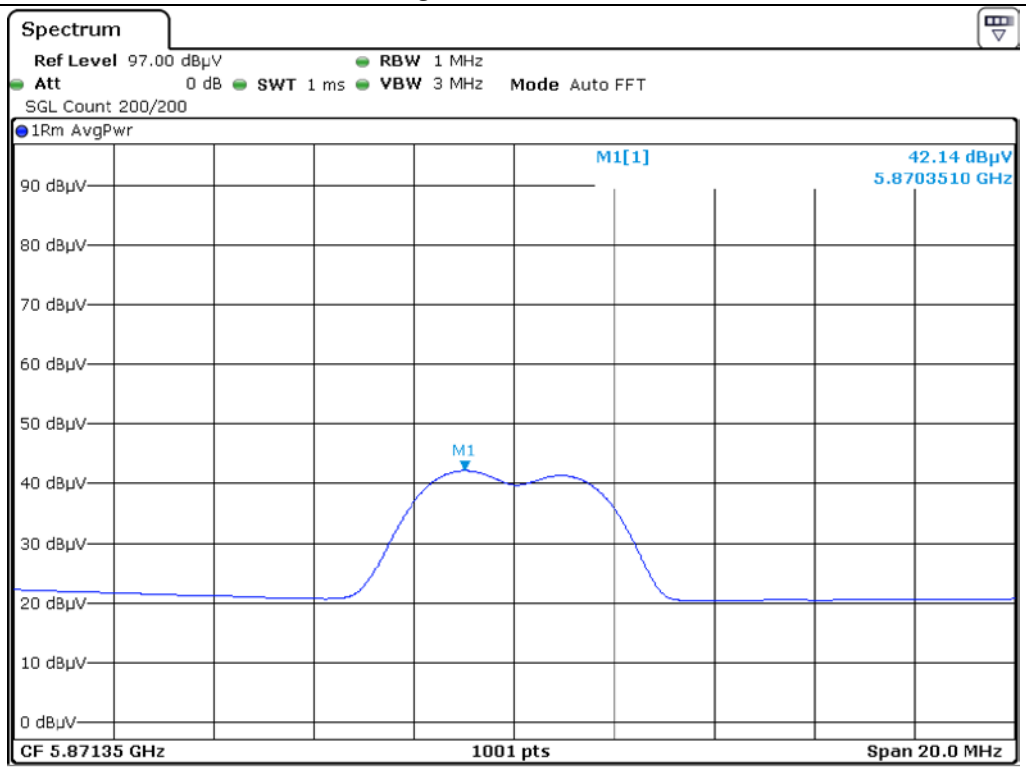



High Channel_Peak_V




High Channel_Average_V

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### 8.5.2 Emissions Radiated Outside of the Specified Frequency Bands_ Harmonic

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249(a)

Result : PASSED

EUT : Audio Transceiver

Operating Condition : TX mode

Distance : 3 m

| Radiated Emissions | | | Ant | Correction Factors | | Total | FCC Limit | |
|---|---|---|---|---|---|---|---|---|
| Carrier Freq. (MHz) | Reading (dBµV) | Detector Mode | Pol. | Antenna (dB/m) | Cable Loss (dB) | Amplitude (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
| **Test Data for Low Channel** | | | | | | | | |
| 11 546.70 | 13.78 | Peak | H | 42.30 | 4.98 | 61.06 | 74.00 | 12.94 |
| | 2.59 | Average | H | | | 49.87 | 54.00 | 4.13 |
| | 13.56 | Peak | V | | | 60.84 | 74.00 | 13.16 |
| | 2.42 | Average | V | | | 49.70 | 54.00 | 4.30 |
| **Test Data for Middle Channel** | | | | | | | | |
| 11 642.70 | 13.60 | Peak | H | 41.80 | 4.98 | 60.38 | 74.00 | 13.62 |
| | 2.55 | Average | H | | | 49.33 | 54.00 | 4.67 |
| | 13.51 | Peak | V | | | 60.29 | 74.00 | 13.71 |
| | 2.49 | Average | V | | | 49.27 | 54.00 | 4.73 |
| **Test Data for High Channel** | | | | | | | | |
| 11 742.76 | 13.57 | Peak | H | 41.30 | 4.98 | 59.85 | 74.00 | 14.15 |
| | 2.53 | Average | H | | | 48.81 | 54.00 | 5.19 |
| | 13.48 | Peak | V | | | 59.76 | 74.00 | 14.24 |
| | 2.56 | Average | V | | | 48.84 | 54.00 | 5.16 |
| Other frequencies were not found up to 10 GHz. | | | | | | | | |

Tabulated test data for Restricted Band

Remark: “H”: Horizontal, “V”: Vertical, “*” Frequency fall in restricted band

Margin (dB) = Limit (dBuV/m) – Total (dBuV/m)

Total = Reading + Antenna Factor + Cable Loss + Duty Cycle Reduction

 

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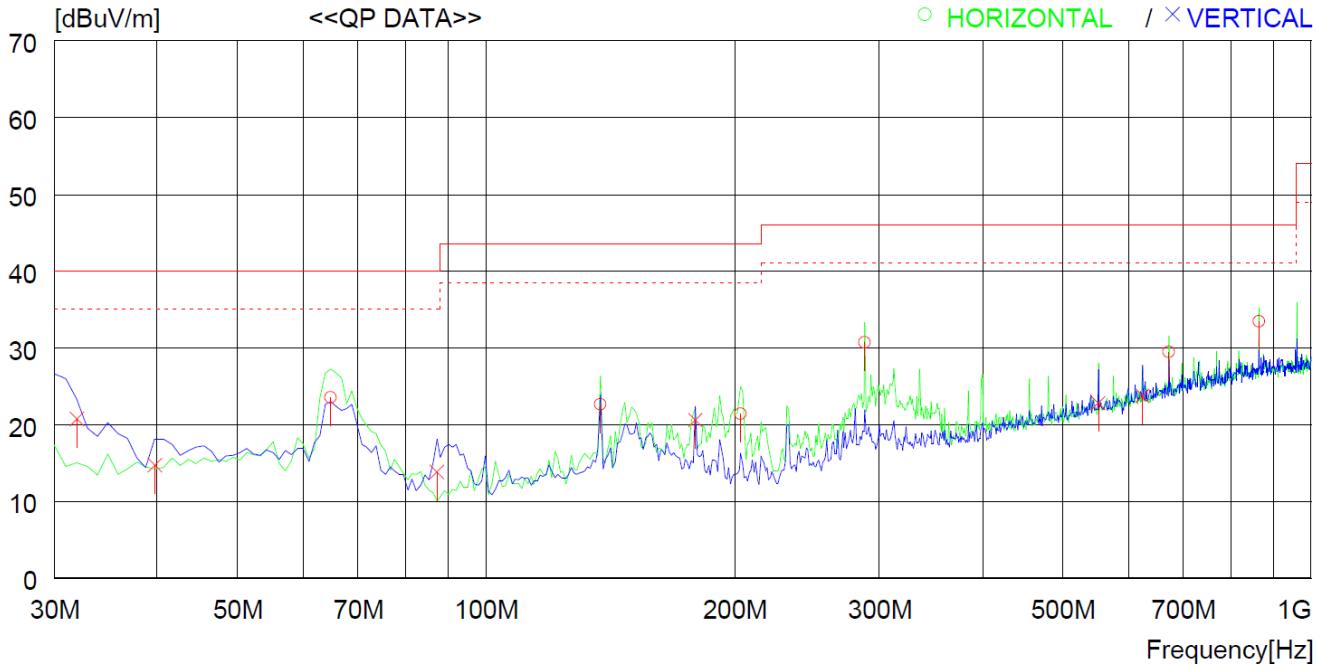
### 8.5.3 Test Data for Frequency range: 30 MHz ~ 1 000 MHz

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

Result : PASSED

EUT : Audio Transceiver

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)




| No. | FREQ [MHz] | READING QP [dBuV] | ANT FACTOR [dB] | LOSS [dB] | GAIN [dB] | RESULT [dBuV/m] | LIMIT [dBuV/m] | MARGIN [dB] | ANTENNA [cm] | TABLE [DEG] |
|---|---|---|---|---|---|---|---|---|---|---|
| ----- Horizontal ------ | | | | | | | | | | |
| 1 | 64.920 | 36.5 | 18.4 | 1.3 | 32.7 | 23.5 | 40.0 | 16.5 | 300 | 359 |
| 2 | 137.670 | 35.0 | 18.2 | 2.0 | 32.6 | 22.6 | 43.5 | 20.9 | 200 | 75 |
| 3 | 203.630 | 35.7 | 15.8 | 2.4 | 32.5 | 21.4 | 43.5 | 22.1 | 100 | 359 |
| 4 | 288.020 | 41.1 | 19.1 | 2.9 | 32.4 | 30.7 | 46.0 | 15.3 | 100 | 100 |
| 5 | 672.136 | 30.8 | 26.5 | 4.5 | 32.4 | 29.4 | 46.0 | 16.6 | 100 | 359 |
| 6 | 864.190 | 31.7 | 28.7 | 5.2 | 32.2 | 33.4 | 46.0 | 12.6 | 100 | 117 |
| ----- Vertical ------ | | | | | | | | | | |
| 7 | 31.940 | 34.5 | 17.9 | 0.9 | 32.6 | 20.7 | 40.0 | 19.3 | 200 | 139 |
| 8 | 39.700 | 27.4 | 18.9 | 1.0 | 32.6 | 14.7 | 40.0 | 25.3 | 100 | 0 |
| 9 | 87.230 | 31.0 | 13.9 | 1.5 | 32.6 | 13.8 | 40.0 | 26.2 | 100 | 0 |
| 10 | 179.380 | 33.2 | 17.7 | 2.3 | 32.6 | 20.6 | 43.5 | 22.9 | 100 | 323 |
| 11 | 551.859 | 26.4 | 24.6 | 4.1 | 32.3 | 22.8 | 46.0 | 23.2 | 100 | 166 |
| 12 | 624.607 | 26.0 | 25.9 | 4.3 | 32.5 | 23.7 | 46.0 | 22.3 | 100 | 307 |

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### 8.5.4 Test Data for Below 30 MHz

Resolution bandwidth : 200 Hz (from 9 kHz to 0.15 MHz), 9 kHz (from 0.15 MHz to 30 MHz)

Frequency range : 9 kHz ~ 30 MHz

Measurement distance : 3 m

Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

Result : PASSED

| Frequency (MHz) | Reading (dBµV) | Ant. Pol. (H/V) | Ant. Height (m) | Angle (°) | Ant. Factor (dB/m) | Cable Loss | Emission Level(dBµV/m) | Limits (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|
| It was not observed any emissions from the EUT. | | | | | | | | | |

### 8.5.5 Test Data above 1 GHz except for harmonic

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode

1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Frequency range : 1 GHz ~ 40 GHz

-. Measurement distance : 3 m

-. Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

- Result : PASSED

| Frequency (MHz) | Reading (dBµV) | Ant. Pol. (H/V) | Ant. Height (m) | Angle (°) | Ant. Factor (dB/m) | Cable Loss | Emission Level(dBµV/m) | Limits (dBµV/m) | Margin (dB) |
|---|---|---|---|---|---|---|---|---|---|
| It was not observed any emissions from the EUT. | | | | | | | | | |

 

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### 8.5.6 Band Edge

-. Resolution bandwidth : 1 MHz and Peak Detector for Peak Mode
1 MHz and RMS Detector for Average Mode

-. Video bandwidth : 3 MHz for Peak and Average Mode

-. Measurement distance : 3 m

-. Limits apply to : FCC CFR 47, PART 15, SUBPART C, SECTION 15.249 (d)

-. Result : PASSED

| Radiated Emissions | | | Ant | Correction Factors | | Total | FCC Limit | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Reading (dBµV) | Detector Mode | Ant. Pol. (H/V) | Ant. Factor | Cable Loss (dB) | Total (dBµV/m) | Limits (dBµV/m) | Margin (dB) |
| **Test Data for Low Channel** | | | | | | | | |
| 5 725.00 | 13.40 | Peak | H | 34.50 | 12.38 | 60.28 | 74.00 | 13.72 |
| | 3.72 | Average | H | | | 50.60 | 54.00 | 3.40 |
| | 13.78 | Peak | V | | | 60.66 | 74.00 | 13.34 |
| | 3.75 | Average | V | | | 50.63 | 54.00 | 3.37 |
| 5 875.00 | 13.86 | Peak | H | | | 60.74 | 74.00 | 13.26 |
| | 3.87 | Average | H | | | 50.75 | 54.00 | 3.25 |
| | 13.17 | Peak | V | | | 60.05 | 74.00 | 13.95 |
| | 3.82 | Average | V | | | 50.70 | 54.00 | 3.30 |
| **Test Data for Middle Channel** | | | | | | | | |
| 5 725.00 | 13.28 | Peak | H | 34.50 | 12.38 | 60.16 | 74.00 | 13.84 |
| | 3.43 | Average | H | | | 50.31 | 54.00 | 3.69 |
| | 11.68 | Peak | V | | | 58.56 | 74.00 | 15.44 |
| | 3.43 | Average | V | | | 50.31 | 54.00 | 3.69 |
| 5 875.00 | 13.70 | Peak | H | | | 60.58 | 74.00 | 13.42 |
| | 4.19 | Average | H | | | 51.07 | 54.00 | 2.93 |
| | 12.35 | Peak | V | | | 59.23 | 74.00 | 14.77 |
| | 4.06 | Average | V | | | 50.94 | 54.00 | 3.06 |



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| Test Data for High Channel | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 725.00 | 12.59 | Peak | H | 34.50 | 12.38 | 59.47 | 74.00 | 14.53 |
| | 3.56 | Average | H | | | 50.44 | 54.00 | 3.56 |
| | 12.07 | Peak | V | | | 58.95 | 74.00 | 15.05 |
| | 3.69 | Average | V | | | 50.57 | 54.00 | 3.43 |
| 5 875.00 | 14.07 | Peak | H | | | 60.95 | 74.00 | 13.05 |
| | 4.87 | Average | H | | | 51.75 | 54.00 | 2.25 |
| | 13.31 | Peak | V | | | 60.19 | 74.00 | 13.81 |
| | 4.55 | Average | V | | | 51.43 | 54.00 | 2.57 |

Remark. Margin (dB) = Limit (dBuV/m) – Total (dBuV/m)

Total = Reading + Antenna Factor + Cable Loss + Duty Cycle Reduction

 

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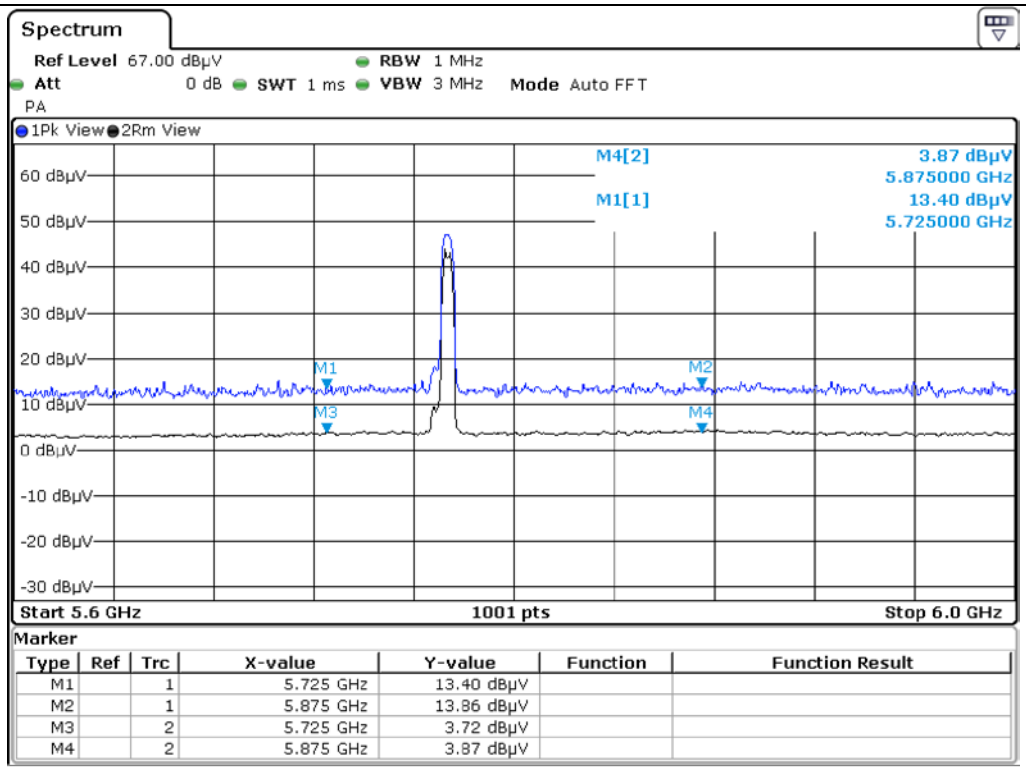
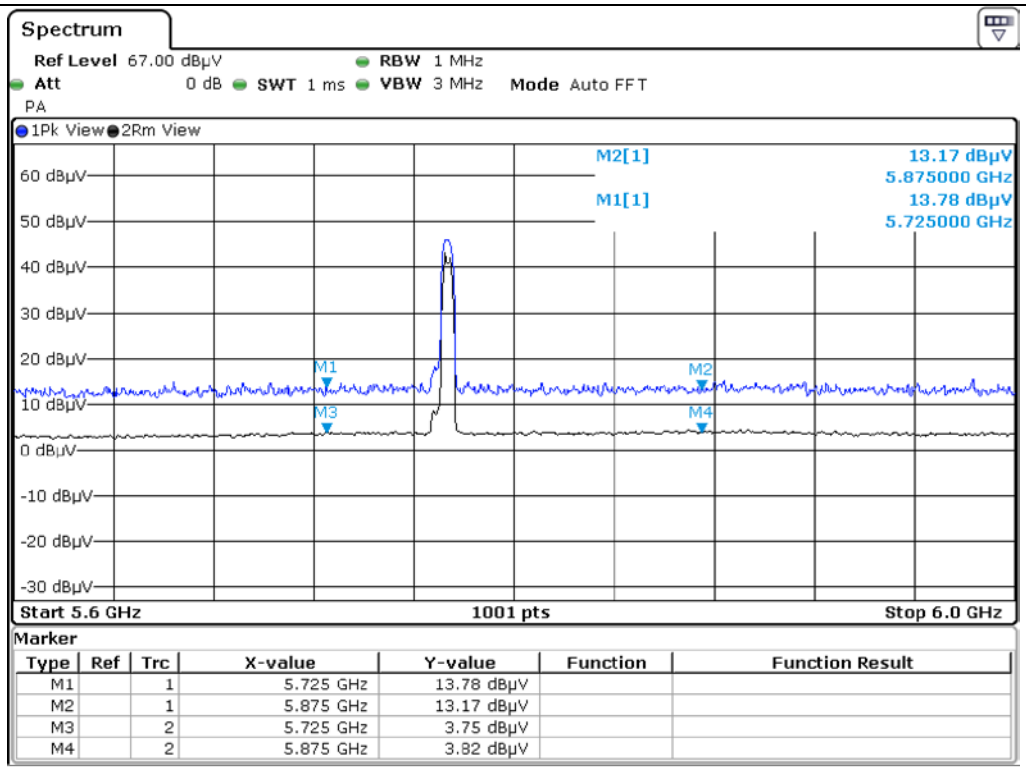



Low Channel_H




Low Channel_V

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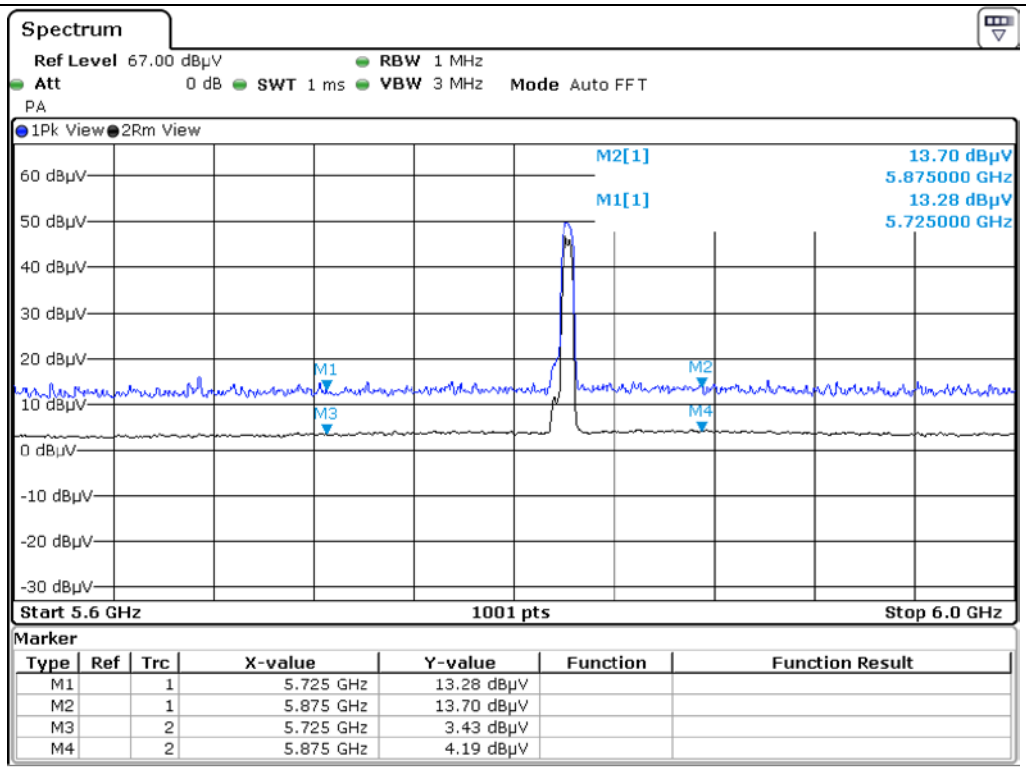
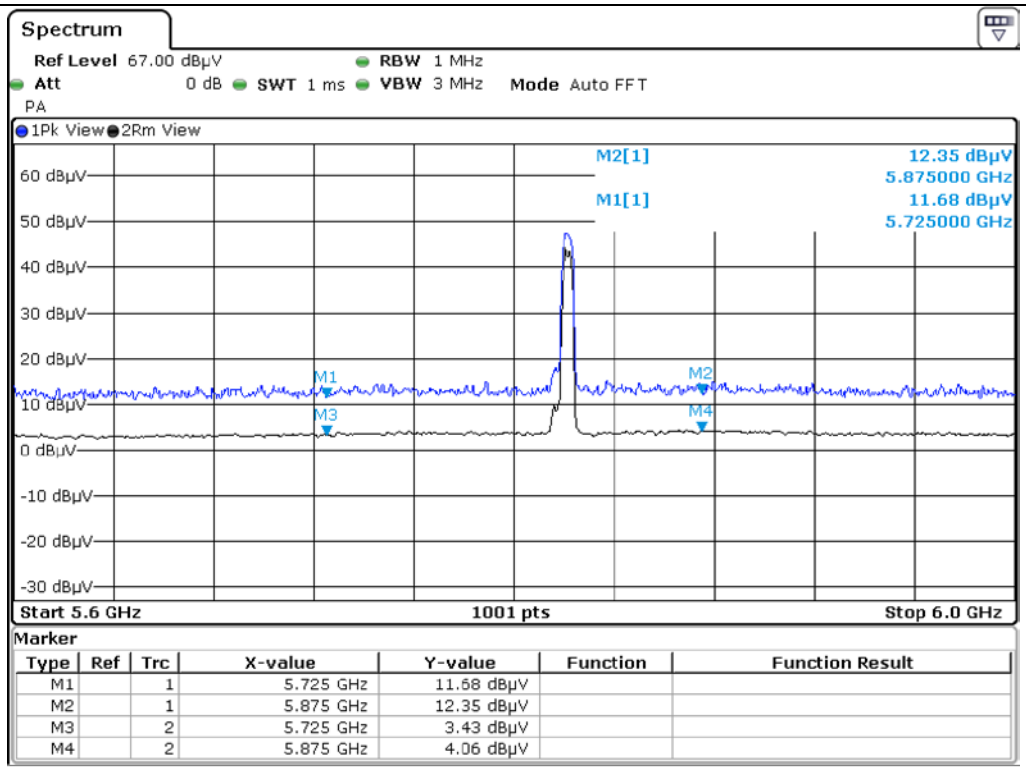
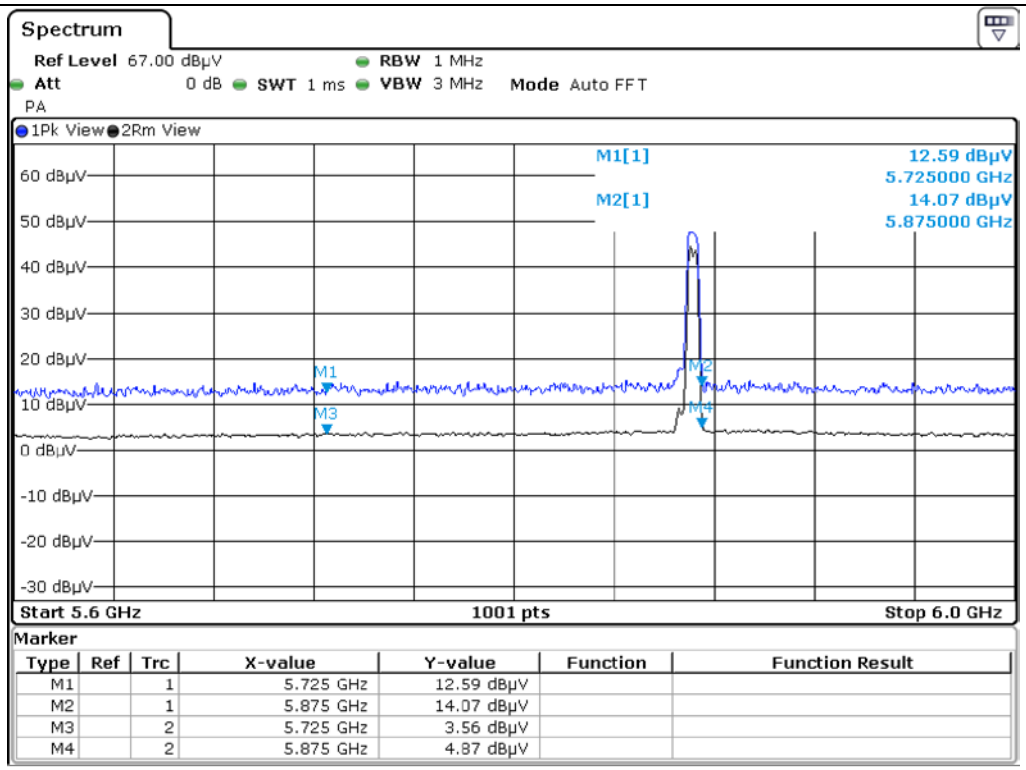


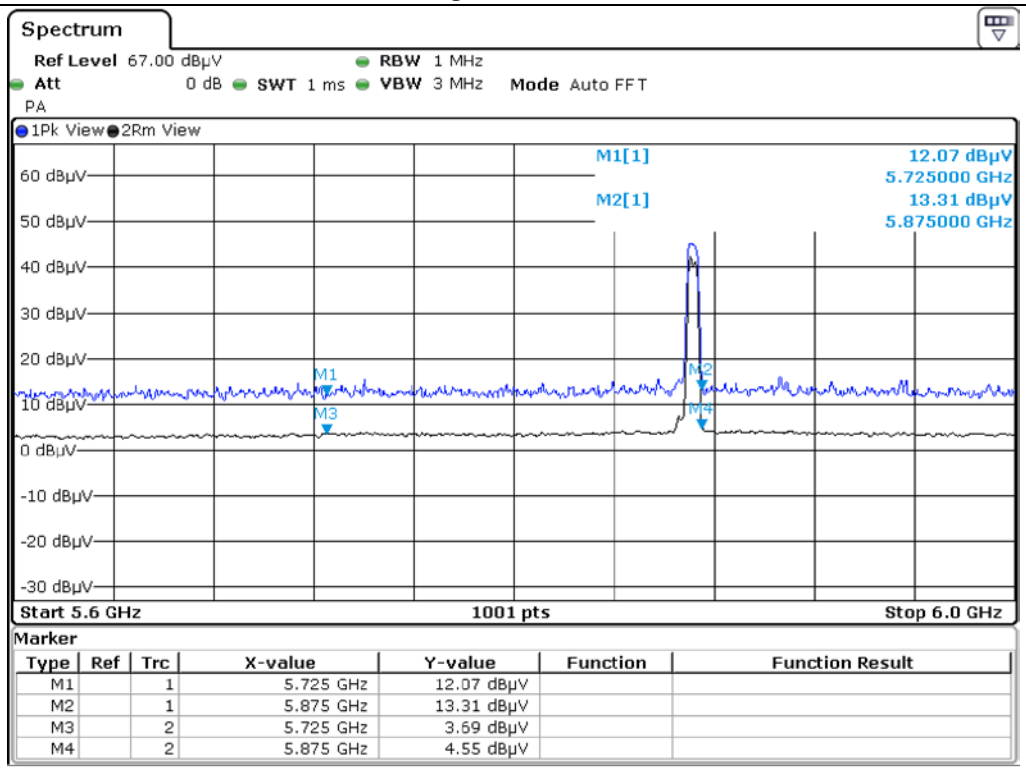

Middle Channel_H




Middle Channel_V




High Channel_H




High Channel_V

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## 9. LIST OF TEST EQUIPMENT

| Model Number | Manufacturer | Description | Serial Number | Last Cal.(Interval) |
|---|---|---|---|---|
| FSV40-N | Rohde & Schwarz | Signal Analyzer | 102177 | Apr. 21, 2020 (1Y) |
| ESW | Rohde & Schwarz | EMI Test Receiver | 101851 | Mar. 27, 2020 (1Y) |
| 310N | Sonoma Instrument | Pre-Amplifier | 312544 | Mar. 16, 2020 (1Y) |
| BBV 9718 B | Schwarzbeck | Broadband Preamplifier | 00009 | Mar. 16, 2020 (1Y) |
| SCU40A | Rohde & Schwarz | Signal Conditioning unit | 100436 | Feb. 20, 2020 (1Y) |
| SCU18 | Rohde & Schwarz | Signal Conditioning unit | 102266 | Jul. 15, 2020 (1Y) |
| DT3000-3t | Innco System | Turn Table | DT3000/093 | N/A |
| MA-4000XPET | Innco System | Antenna Master | MA4000/509 | N/A |
| VULB9163 | Schwarzbeck | TRILOG Broadband Antenna | 777 | Apr. 08, 2020 (2Y) |
| BBHA 9120D | Schwarzbeck | Horn Antenna | 9120D-1366 | Jul. 23, 2020 (1Y) |
| BBHA9170 | Schwarzbeck | Horn Antenna | BBHA9170178 | Jan. 07, 2020(1Y) |
| FMZB1513 | Schwarzbeck | Active Loop Antenna | 1513-235 | Oct.28.2020(2Y) |

 

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