



**FCC 47 CFR PART 15 SUBPART C**  
**CERTIFICATION TEST REPORT**

*For*

**NAVIGATOR X650**

**MODEL NUMBER: DHI-UAV-Aircraft-X650**

**FCC ID: SVNX650**

**REPORT NUMBER: 4788510931-9**

**ISSUE DATE: August 03, 2018**

*Prepared for*

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*Prepared by*

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Revision History

| Rev. | Issue Date | Revisions     | Revised By |
|------|------------|---------------|------------|
| --   | 8/03/2018  | Initial Issue |            |



| Summary of Test Results |                                    |                                            |              |
|-------------------------|------------------------------------|--------------------------------------------|--------------|
| Clause                  | Test Items                         | FCC Rules                                  | Test Results |
| 1                       | 20dB Bandwidth                     | 15.247 (a) (i)                             | Pass         |
| 2                       | Peak Conducted Output Power        | FCC 15.247 (b) (2)                         | Pass         |
| 3                       | Carrier Hopping Channel Separation | FCC 15.247 (a) (1)                         | Pass         |
| 4                       | Number of Hopping Frequency        | 15.247 (a) (i)                             | Pass         |
| 5                       | Time of Occupancy (Dwell Time)     | 15.247 (a) (i)                             | Pass         |
| 6                       | Conducted Bandedge                 | FCC 15.247 (d)                             | Pass         |
| 7                       | Radiated Bandedge and Spurious     | FCC 15.247 (d)<br>FCC 15.209<br>FCC 15.205 | Pass         |
| 8                       | Antenna Requirement                | FCC 15.203                                 | Pass         |



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## 1. ATTESTATION OF TESCT RESULTS

### Applicant Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.  
Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

### Manufacturer Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.  
Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

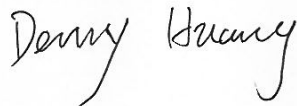
### Factory Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.  
Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

EUT Name: NAVIGATOR X650  
Brand:   
Model: DHI-UAV-Aircraft-X650  
Serial Model: See chapter 5.1  
Sample Received Date: May 26, 2018  
Date of Tested: July 01, 2018 ~ July 26, 2018

| APPLICABLE STANDARDS     |              |
|--------------------------|--------------|
| STANDARD                 | TEST RESULTS |
| CFR 47 Part 15 Subpart C | PASS         |

Tested By:



Denny Huang  
Engineer  
Approved By:



Stephen Guo  
Laboratory Manager

Checked By:



Shawn Wen  
Laboratory Leader



## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with DA 00-705, KDB414788 D01 Radiated Test Site v01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15.

## 3. FACILITIES AND ACCREDITATION

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accreditation Certificate | <p><b>A2LA (Certificate No.: 4102.01)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been assessed and proved to be in compliance with A2LA.</p> <p><b>IAS (Lab Code: TL-702)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has demonstrated compliance with ISO/IEC Standard 17025:2005, General requirements for the competence of testing and calibration laboratories</p> <p><b>FCC (FCC Designation No.: CN1187)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>IC(Company No.: 21320)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been registered and fully described in a report filed with ISED. The Company Number is 21320.</p> <p><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.<br/>Facility Name:<br/>Chamber D, the VCCI registration No. is G-20019 and R-20004<br/>Shielding Room B, the VCCI registration No. is C-20012 and T-20011</p> |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.
3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OATS.



## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Test Item                                                                                                                                     | Uncertainty         |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Uncertainty for Conduction emission test                                                                                                      | 2.90dB              |
| Uncertainty for Radiation Emission test(include Fundamental emission)<br>(9KHz-30MHz)                                                         | 2.2dB               |
| Uncertainty for Radiation Emission test(include Fundamental emission)<br>(30MHz-1GHz)                                                         | 4.52dB              |
| Uncertainty for Radiation Emission test<br>(1GHz to 26GHz)( include Fundamental emission)                                                     | 5.04dB(1-6GHz)      |
|                                                                                                                                               | 5.30dB (6GHz-18Gz)  |
|                                                                                                                                               | 5.23dB (18GHz-26Gz) |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. |                     |



## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

|                     |                                                                                                                                                                            |                         |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Equipment           | NAVIGATOR X650                                                                                                                                                             |                         |
| Model Name          | DHI-UAV-Aircraft-X650                                                                                                                                                      |                         |
| Series Model        | DHI-UAV-Aircraft-X650-1023,DHI-UAV-Aircraft-X650-1033,<br>UAV-Aircraft-X650-1023,UAV-Aircraft-X650-1033,<br>UAV-Aircraft-X650, DHI-UAV-Aircraft-X650,<br>OEM-Aircraft-X650 |                         |
| Model Difference    | All the same except for the appearance of the different color and graphic pattern.                                                                                         |                         |
| Product Description | Operation Frequency                                                                                                                                                        | 907.15 MHz ~ 923.35 MHz |
|                     | Modulation Type                                                                                                                                                            |                         |
|                     | 2GFSK                                                                                                                                                                      |                         |
| Rated Input Voltage | DC 22.2                                                                                                                                                                    |                         |
| Battery             | DC 22.2V, 12000mAh                                                                                                                                                         |                         |

### 5.2. MAXIMUM OUTPUT POWER

| Mode  | Frequency (MHz) | Channel Number | Max Output Power (dBm) |
|-------|-----------------|----------------|------------------------|
| 2GFSK | 907.15 ~ 923.35 | 1-163[163]     | 23.64                  |



### 5.3. CHANNEL LIST

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|
| 1       | 907.15          | 42      | 911.25          | 83      | 915.35          | 124     | 919.45          |
| 2       | 907.25          | 43      | 911.35          | 84      | 915.45          | 125     | 919.55          |
| 3       | 907.35          | 44      | 911.45          | 85      | 915.55          | 126     | 919.65          |
| 4       | 907.45          | 45      | 911.55          | 86      | 915.65          | 127     | 919.75          |
| 5       | 907.55          | 46      | 911.65          | 87      | 915.75          | 128     | 919.85          |
| 6       | 907.65          | 47      | 911.75          | 88      | 915.85          | 129     | 919.95          |
| 7       | 907.75          | 48      | 911.85          | 89      | 915.95          | 130     | 920.05          |
| 8       | 907.85          | 49      | 911.95          | 90      | 916.05          | 131     | 920.15          |
| 9       | 907.95          | 50      | 912.05          | 91      | 916.15          | 132     | 920.25          |
| 10      | 908.05          | 51      | 912.15          | 92      | 916.25          | 133     | 920.35          |
| 11      | 908.15          | 52      | 912.25          | 93      | 916.35          | 134     | 920.45          |
| 12      | 908.25          | 53      | 912.35          | 94      | 916.45          | 135     | 920.55          |
| 13      | 908.35          | 54      | 912.45          | 95      | 916.55          | 136     | 920.65          |
| 14      | 908.45          | 55      | 912.55          | 96      | 916.65          | 137     | 920.75          |
| 15      | 908.55          | 56      | 912.65          | 97      | 916.75          | 138     | 920.85          |
| 16      | 908.65          | 57      | 912.75          | 98      | 916.85          | 139     | 920.95          |
| 17      | 908.75          | 58      | 912.85          | 99      | 916.95          | 140     | 921.05          |
| 18      | 908.85          | 59      | 912.95          | 100     | 917.05          | 141     | 921.15          |
| 19      | 908.95          | 60      | 913.05          | 101     | 917.15          | 142     | 921.25          |
| 20      | 909.05          | 61      | 913.15          | 102     | 917.25          | 143     | 921.35          |
| 21      | 909.15          | 62      | 913.25          | 103     | 917.35          | 144     | 921.45          |
| 22      | 909.25          | 63      | 913.35          | 104     | 917.45          | 145     | 921.55          |
| 23      | 909.35          | 64      | 913.45          | 105     | 917.55          | 146     | 921.65          |
| 24      | 909.45          | 65      | 913.55          | 106     | 917.65          | 147     | 921.75          |
| 25      | 909.55          | 66      | 913.65          | 107     | 917.75          | 148     | 921.85          |
| 26      | 909.65          | 67      | 913.75          | 108     | 917.85          | 149     | 921.95          |
| 27      | 909.75          | 68      | 913.85          | 109     | 917.95          | 150     | 922.05          |
| 28      | 909.85          | 69      | 913.95          | 110     | 918.05          | 151     | 922.15          |
| 29      | 909.95          | 70      | 914.05          | 111     | 918.15          | 152     | 922.25          |
| 30      | 910.05          | 71      | 914.15          | 112     | 918.25          | 153     | 922.35          |
| 31      | 910.15          | 72      | 914.25          | 113     | 918.35          | 154     | 922.45          |
| 32      | 910.25          | 73      | 914.35          | 114     | 918.45          | 155     | 922.55          |
| 33      | 910.35          | 74      | 914.45          | 115     | 918.55          | 156     | 922.65          |
| 34      | 910.45          | 75      | 914.55          | 116     | 918.65          | 157     | 922.75          |
| 35      | 910.55          | 76      | 914.65          | 117     | 918.75          | 158     | 922.85          |
| 36      | 910.65          | 77      | 914.75          | 118     | 918.85          | 159     | 922.95          |
| 37      | 910.75          | 78      | 914.85          | 119     | 918.95          | 160     | 923.05          |
| 38      | 910.85          | 79      | 914.95          | 120     | 919.05          | 161     | 923.15          |
| 39      | 910.95          | 80      | 915.05          | 121     | 919.15          | 162     | 923.25          |
| 40      | 911.05          | 81      | 915.15          | 122     | 919.25          | 163     | 923.35          |
| 41      | 911.15          | 82      | 915.25          | 123     | 919.35          |         |                 |



#### 5.4. TEST CHANNEL CONFIGURATION

| Test Mode | Test Channel Number | Test Channel      |
|-----------|---------------------|-------------------|
| 2GFSK     | CH 1, CH 82, CH 163 | Low, Middle, High |

#### 5.5. THE WORSE CASE POWER SETTING PARAMETER

| The Worse Case Power Setting Parameter under 907.15~923.35MHzMHz Band |                         |              |       |        |
|-----------------------------------------------------------------------|-------------------------|--------------|-------|--------|
| Test Software                                                         |                         | /            |       |        |
| Modulation Type                                                       | Transmit Antenna Number | Test Channel |       |        |
|                                                                       |                         | CH 1         | CH 82 | CH 163 |
| 2GFSK                                                                 | 1                       | 7            | 7     | 7      |

## 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

| Ant. | Frequency (MHz)     | Antenna Type     | Antenna Gain (dBi) |
|------|---------------------|------------------|--------------------|
| 1    | 907.15MHz~923.35MHz | External Antenna | 0.97               |

| Test Mode | Transmit and Receive Mode                    | Description                                            |
|-----------|----------------------------------------------|--------------------------------------------------------|
| 2GFSK     | <input checked="" type="checkbox"/> 1TX, 1RX | Chain 1 can be used as transmitting/receiving antenna. |

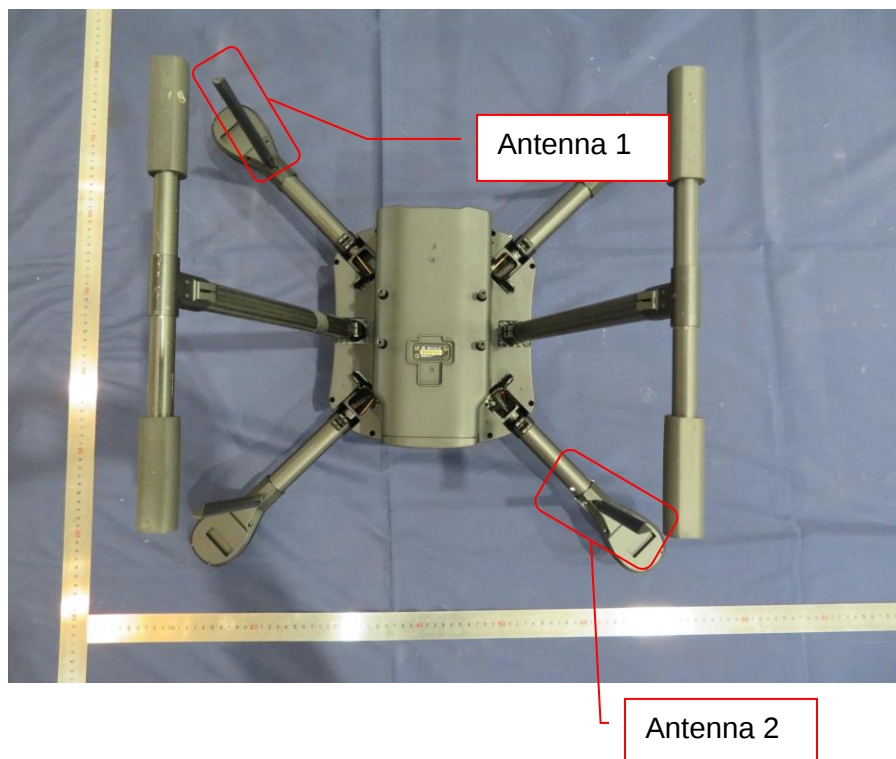
| Ant. | Frequency (MHz)     | Antenna Type     | Antenna Gain (dBi) |
|------|---------------------|------------------|--------------------|
| 2    | 907.15MHz~923.35MHz | External Antenna | 0.97               |

| Test Mode | Transmit and Receive Mode                    | Description                                            |
|-----------|----------------------------------------------|--------------------------------------------------------|
| 2GFSK     | <input checked="" type="checkbox"/> 1TX, 1RX | Chain 2 can be used as transmitting/receiving antenna. |

Note 1: The EUT have 2 antennas, but only 1 antenna active at any moment in time.

Note 2: The EUT only support SISO mode.

Note 3: The circuit before the two difference antenna are the same, so for all test we only perform one output port and one antenna.





## 5.7. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

| Item | Equipment           | Brand Name | Model Name | P/N           |
|------|---------------------|------------|------------|---------------|
| 1    | Laptop              | ThinkPad   | T460S      | SL10K24796 JS |
| 2    | USB to Serial board | N/A        | N/A        | N/A           |

### I/O CABLES

| Cable No | Port | Connector Type | Cable Type | Cable Length(m) | Remarks |
|----------|------|----------------|------------|-----------------|---------|
| 1        | USB  | USB            | Unshielded | 0.7             | N/A     |

Note: The USB port only use for charging.

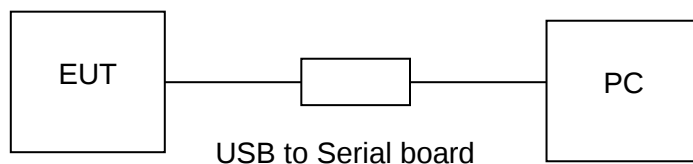
### ACCESSORY

| Item | Accessory | Brand Name | Model Name | Description |
|------|-----------|------------|------------|-------------|
| 1    | N/A       | N/A        | N/A        | N/A         |

### TEST SETUP

The EUT can work in an engineer mode with a software through a PC.

### SETUP DIAGRAM FOR TESTS



**5.8. MEASURING INSTRUMENT AND SOFTWARE USED**

| Conducted Emissions                 |                                         |              |              |               |               |               |
|-------------------------------------|-----------------------------------------|--------------|--------------|---------------|---------------|---------------|
| Instrument                          |                                         |              |              |               |               |               |
| Used                                | Equipment                               | Manufacturer | Model No.    | Serial No.    | Last Cal.     | Next Cal.     |
| <input checked="" type="checkbox"/> | EMI Test Receiver                       | R&S          | ESR3         | 101961        | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Two-Line V-Network                      | R&S          | ENV216       | 101983        | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Artificial Mains Networks               | Schwarzbeck  | NSLK 8126    | 8126465       | Dec.12,2017   | Dec.11,2018   |
| Software                            |                                         |              |              |               |               |               |
| Used                                | Description                             |              | Manufacturer | Name          |               | Version       |
| <input checked="" type="checkbox"/> | Test Software for Conducted disturbance |              | Farad        | EZ-EMC        |               | Ver. UL-3A1   |
| Radiated Emissions                  |                                         |              |              |               |               |               |
| Instrument                          |                                         |              |              |               |               |               |
| Used                                | Equipment                               | Manufacturer | Model No.    | Serial No.    | Last Cal.     | Next Cal.     |
| <input checked="" type="checkbox"/> | MXE EMI Receiver                        | KESIGHT      | N9038A       | MY56400036    | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Hybrid Log Periodic Antenna             | TDK          | HLP-3003C    | 130960        | Jan.09, 2016  | Jan.09, 2019  |
| <input checked="" type="checkbox"/> | Preamplifier                            | HP           | 8447D        | 2944A09099    | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | EMI Measurement Receiver                | R&S          | ESR26        | 101377        | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Horn Antenna                            | TDK          | HRN-0118     | 130939        | Jan. 09, 2016 | Jan. 09, 2019 |
| <input checked="" type="checkbox"/> | High Gain Horn Antenna                  | Schwarzbeck  | BBHA-9170    | 691           | Jan.06, 2016  | Jan.06, 2019  |
| <input checked="" type="checkbox"/> | Preamplifier                            | TDK          | PA-02-0118   | TRS-305-00066 | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Preamplifier                            | TDK          | PA-02-2      | TRS-307-00003 | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Loop antenna                            | Schwarzbeck  | 1519B        | 00008         | Mar. 26, 2016 | Mar. 25, 2019 |
| Software                            |                                         |              |              |               |               |               |
| Used                                | Description                             |              | Manufacturer | Name          |               | Version       |
| <input checked="" type="checkbox"/> | Test Software for Radiated disturbance  |              | Farad        | EZ-EMC        |               | Ver. UL-3A1   |
| Other instruments                   |                                         |              |              |               |               |               |
| Used                                | Equipment                               | Manufacturer | Model No.    | Serial No.    | Last Cal.     | Next Cal.     |
| <input checked="" type="checkbox"/> | Spectrum Analyzer                       | Keysight     | N9030A       | MY55410512    | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Power Meter                             | Keysight     | N1911A       | MY55416024    | Dec.12,2017   | Dec.11,2018   |
| <input checked="" type="checkbox"/> | Power Sensor                            | Keysight     | N1921A       | MY51100041    | Dec.12,2017   | Dec.11,2018   |



## 6. ANTENNA PORT TEST RESULTS

### 6.1. ON TIME AND DUTY CYCLE

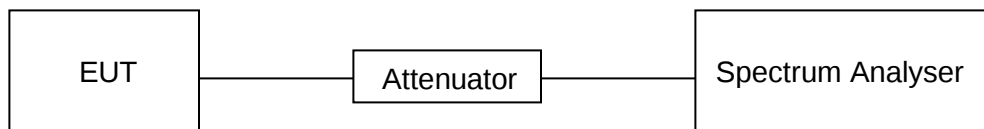
#### LIMITS

None; for reporting purposes only

#### PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

#### TEST SETUP



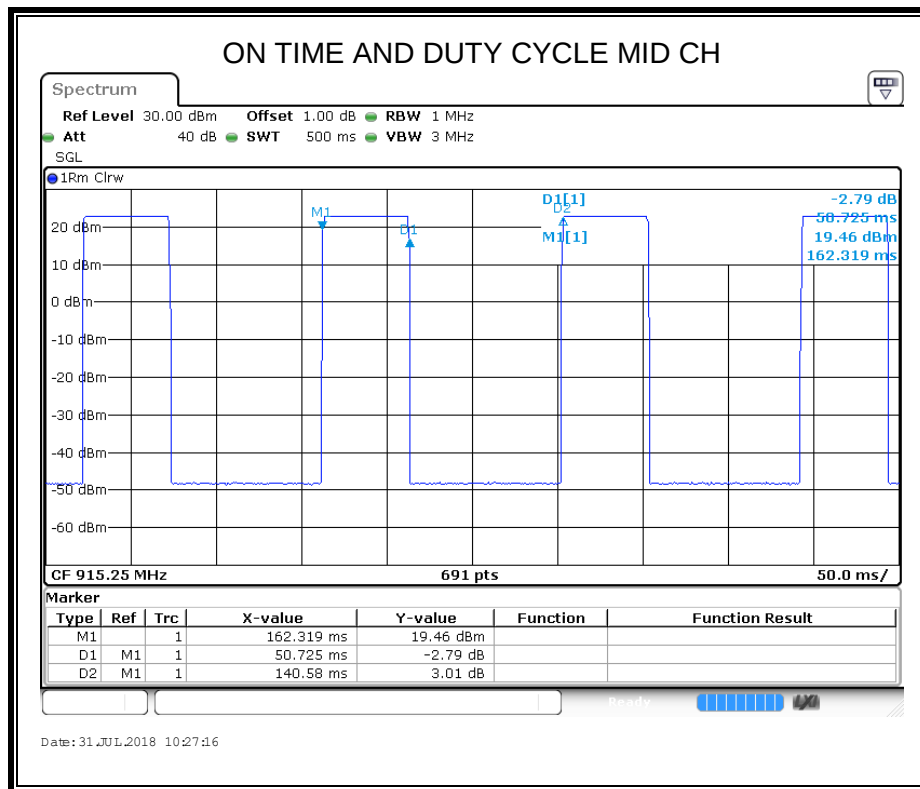
#### TEST ENVIRONMENT

|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 23.5°C | Relative Humidity | 67%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |

#### RESULTS

| Mode  | On Time<br>(msec) | Period<br>(msec) | Duty Cycle<br>x<br>(Linear) | Duty Cycle<br>(%) | Duty Cycle<br>Correction Factor<br>(db) |
|-------|-------------------|------------------|-----------------------------|-------------------|-----------------------------------------|
| 2GFSK | 50.725            | 140.580          | 0.361                       | 36.1              | 4.42                                    |

Note: Duty Cycle Correction Factor= $10\log(1/x)$ .  
Where: x is Duty Cycle(Linear)  
Where: T is On Time (transmit duration)





## 6.2. 20 dB BANDWIDTH

### LIMITS

| FCC Part15 (15.247) Subpart C |                |        |                       |
|-------------------------------|----------------|--------|-----------------------|
| Section                       | Test Item      | Limit  | Frequency Range (MHz) |
| 15.247 (a)(i)                 | 20dB Bandwidth | 250KHz | 902~928               |

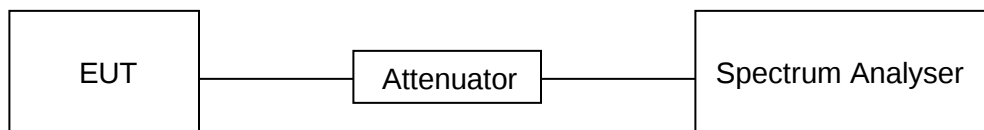
### TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

|                  |                                                |
|------------------|------------------------------------------------|
| Center Frequency | The center frequency of the channel under test |
| Detector         | Peak                                           |
| RBW              | 1% of the 20 dB bandwidth                      |
| VBW              | $\geq$ RBW                                     |
| Span             | approximately 2 to 3 times the 20 dB bandwidth |
| Trace            | Max hold                                       |
| Sweep            | Auto couple                                    |

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

### TEST SETUP



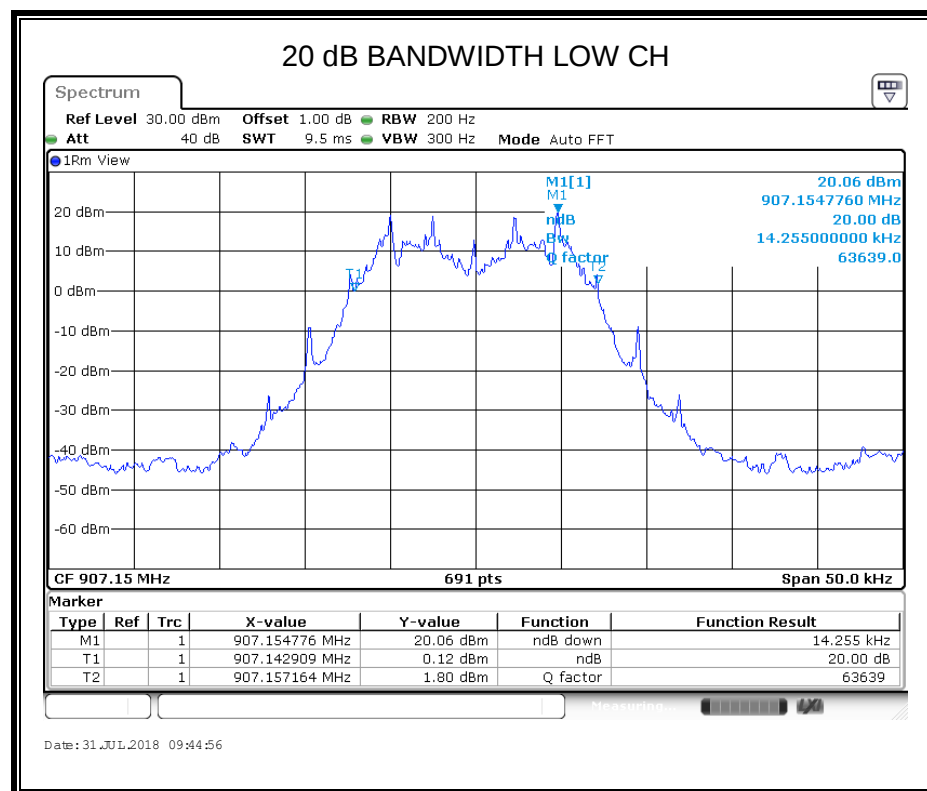


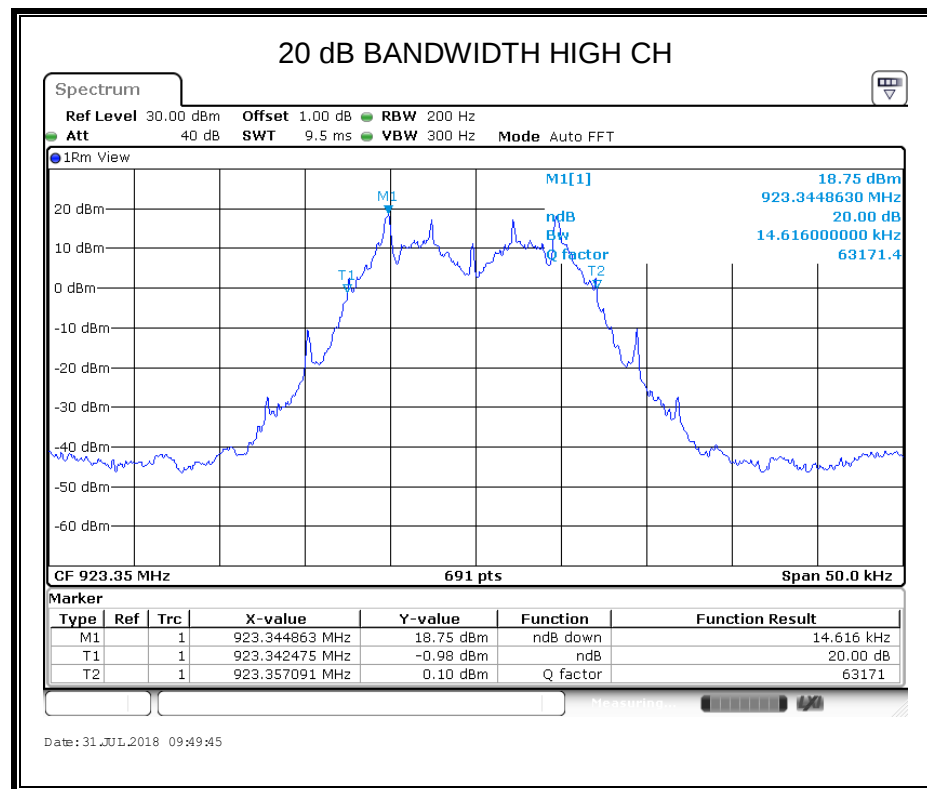
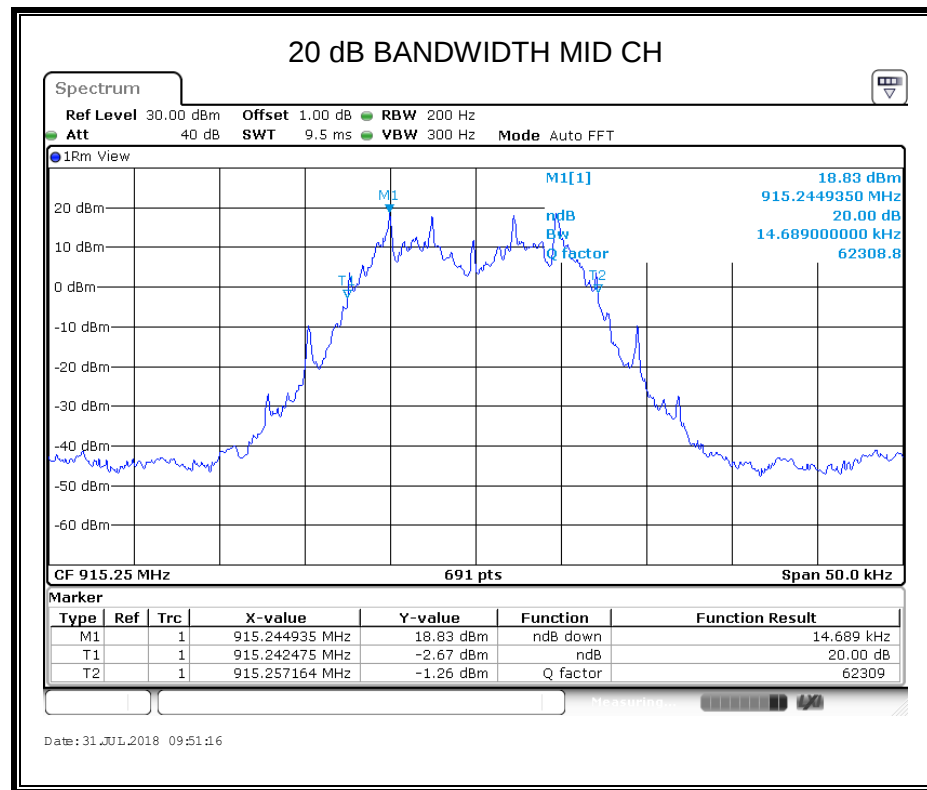
## TEST ENVIRONMENT

|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 23.5°C | Relative Humidity | 67%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |

## RESULTS

| Channel | Frequency (MHz) | 20dB bandwidth (KHz) | Result |
|---------|-----------------|----------------------|--------|
| Low     | 907.15          | 14.255               | PASS   |
| Middle  | 915.25          | 14.689               | PASS   |
| High    | 923.35          | 14.616               | PASS   |







### 6.3. PEAK CONDUCTED OUTPUT POWER

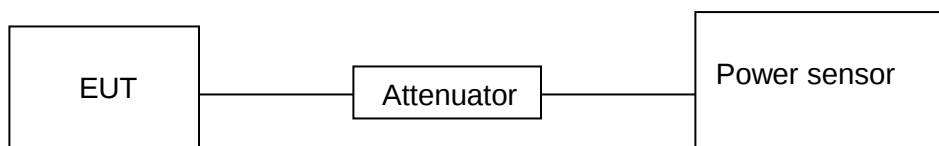
#### LIMITS

| FCC Part15 (15.247) , Subpart C |                             |                                                           |                       |
|---------------------------------|-----------------------------|-----------------------------------------------------------|-----------------------|
| Section                         | Test Item                   | Limit                                                     | Frequency Range (MHz) |
| FCC 15.247 (b) (2)              | Peak Conducted Output Power | 1 watt for systems employing at least 50 hopping channels | 902~928               |

#### TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.  
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.  
Measure peak power each channel.

#### TEST SETUP



#### TEST ENVIRONMENT

|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 23.5°C | Relative Humidity | 67%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |

#### RESULTS



| Channel | Frequency | Maximum<br>Conducted Output<br>Power(PK) | Maximum<br>Conducted Output<br>Power(AVG) | Result |
|---------|-----------|------------------------------------------|-------------------------------------------|--------|
|         | (MHz)     | (dBm)                                    |                                           |        |
| Low     | 907.15    | 23.64                                    | 19.289                                    | Pass   |
| Middle  | 915.25    | 22.82                                    | 18.821                                    | Pass   |
| High    | 923.35    | 22.25                                    | 17.874                                    | Pass   |



## 6.4. CARRIER HOPPING CHANNEL SEPARATION

### LIMITS

| FCC Part15 (15.247) , Subpart C |                                    |                                                                                           |                       |
|---------------------------------|------------------------------------|-------------------------------------------------------------------------------------------|-----------------------|
| Section                         | Test Item                          | Limit                                                                                     | Frequency Range (MHz) |
| FCC 15.247 (a) (1)              | Carrier Hopping Channel Separation | 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater. | 902~928               |

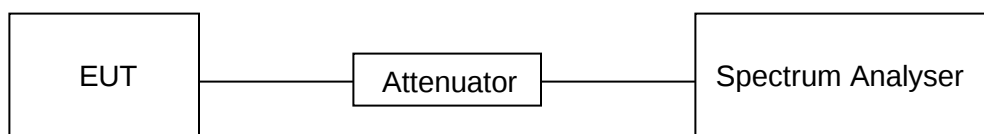
### TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

|                  |                                                           |
|------------------|-----------------------------------------------------------|
| Center Frequency | The center frequency of the channel under test            |
| Span             | wide enough to capture the peaks of two adjacent channels |
| Detector         | Peak                                                      |
| RBW              | $\geq 1\%$ of the span                                    |
| VBW              | $\geq$ RBW                                                |
| Trace            | Max hold                                                  |
| Sweep time       | Auto couple                                               |

Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section. Submit this plot.

### TEST SETUP



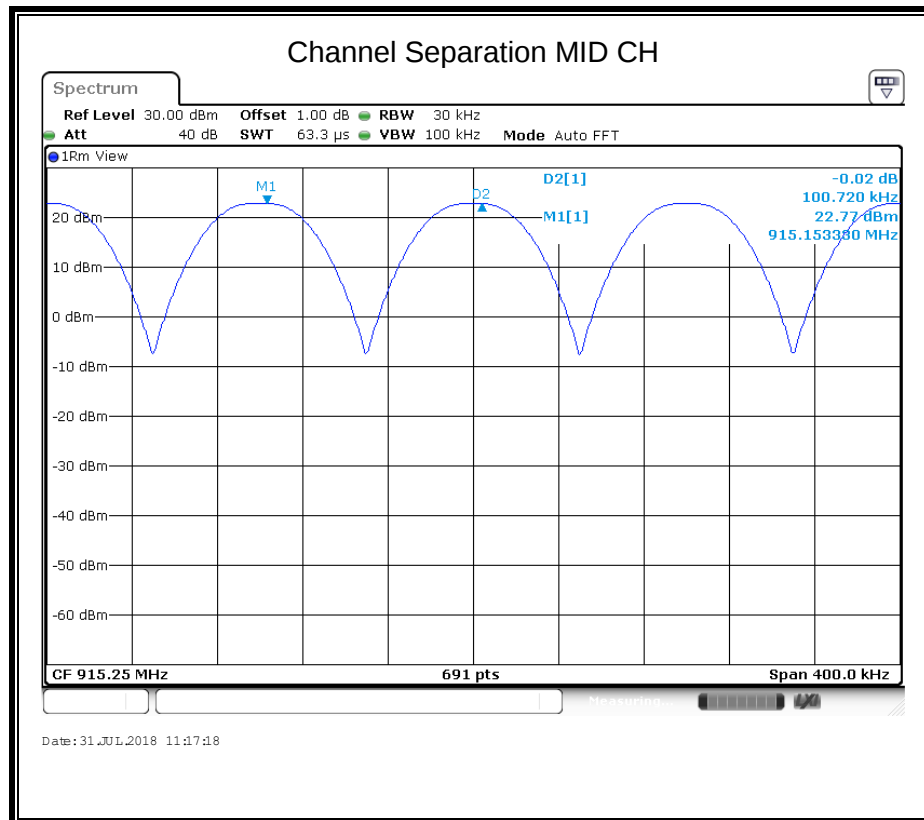
### TEST ENVIRONMENT

|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 23.5°C | Relative Humidity | 67%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |



## RESULTS

| Channel | Carrier Hopping Channel Separation (KHz) | Limit (KHz) | Result |
|---------|------------------------------------------|-------------|--------|
| Middle  | 100.720                                  | $\geq 25$   | PASS   |





## 6.5. NUMBER OF HOPPING FREQUENCY

### LIMITS

| FCC Part15 (15.247) , Subpart C |                             |                              |
|---------------------------------|-----------------------------|------------------------------|
| Section                         | Test Item                   | Limit                        |
| 15.247 (a)(i)                   | Number of Hopping Frequency | at least 50 hopping channels |

### TEST PROCEDURE

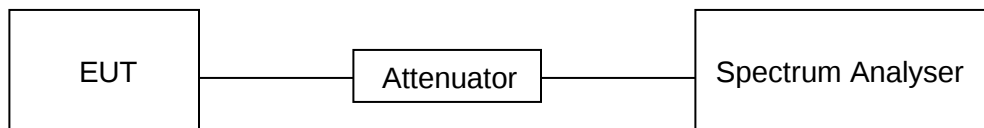
Connect the EUT to the spectrum analyser and use the following settings:

|            |                                 |
|------------|---------------------------------|
| Detector   | Peak                            |
| RBW        | 1% of the span                  |
| VBW        | ≥RBW                            |
| Span       | The frequency band of operation |
| Trace      | Max hold                        |
| Sweep time | Auto couple                     |

Set EUT to transmit maximum output power and switch on frequency hopping function. then set enough count time (larger than 5000 times) to get all the hopping frequency channel displayed on the screen of spectrum analyzer.

Count the quantity of peaks to get the number of hopping channels.

### TEST SETUP

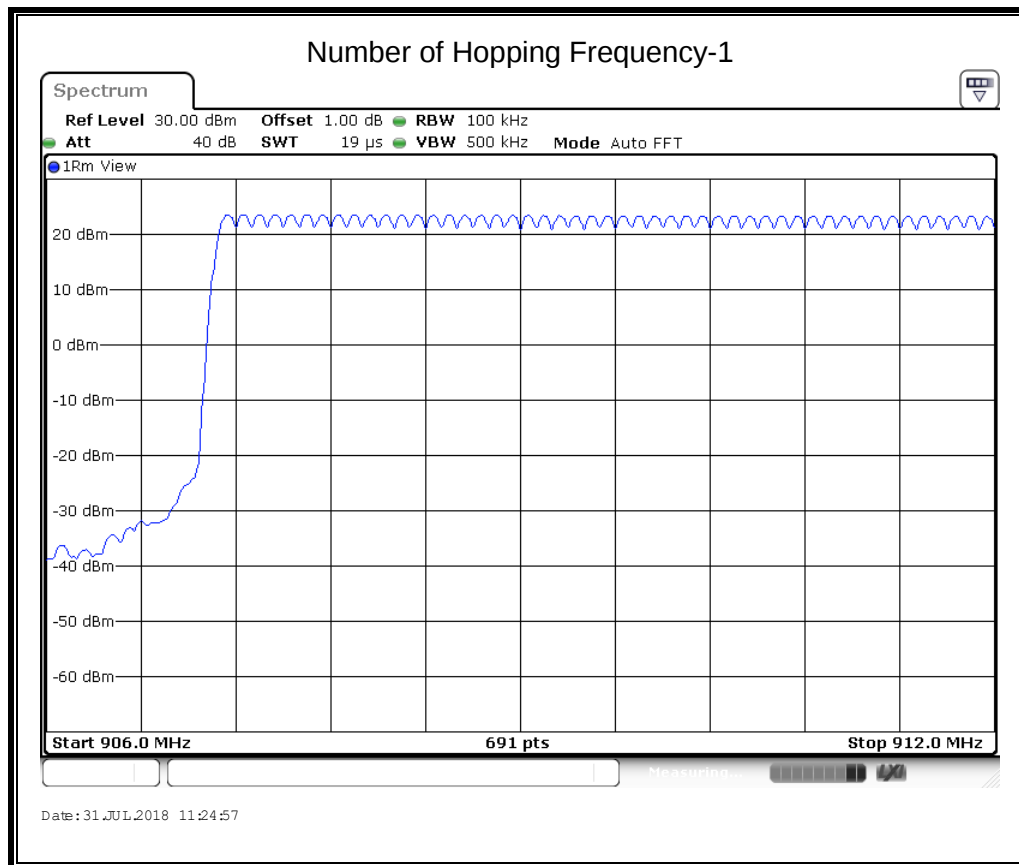


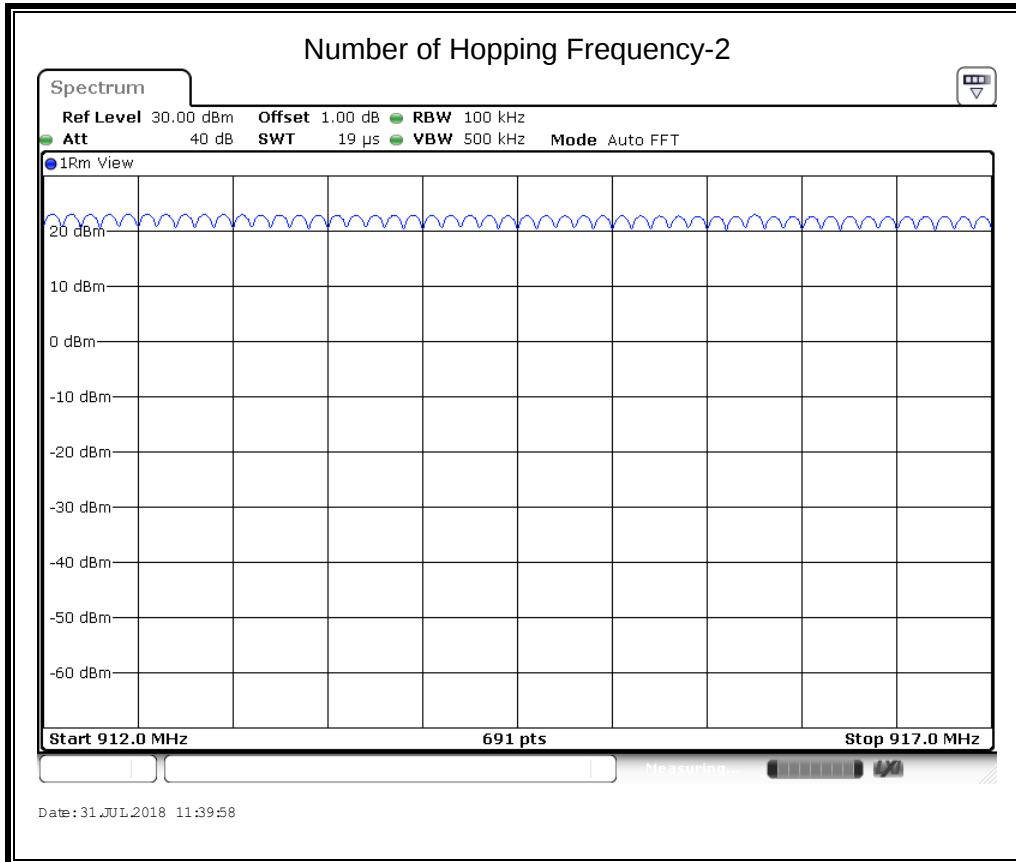
### TEST ENVIRONMENT

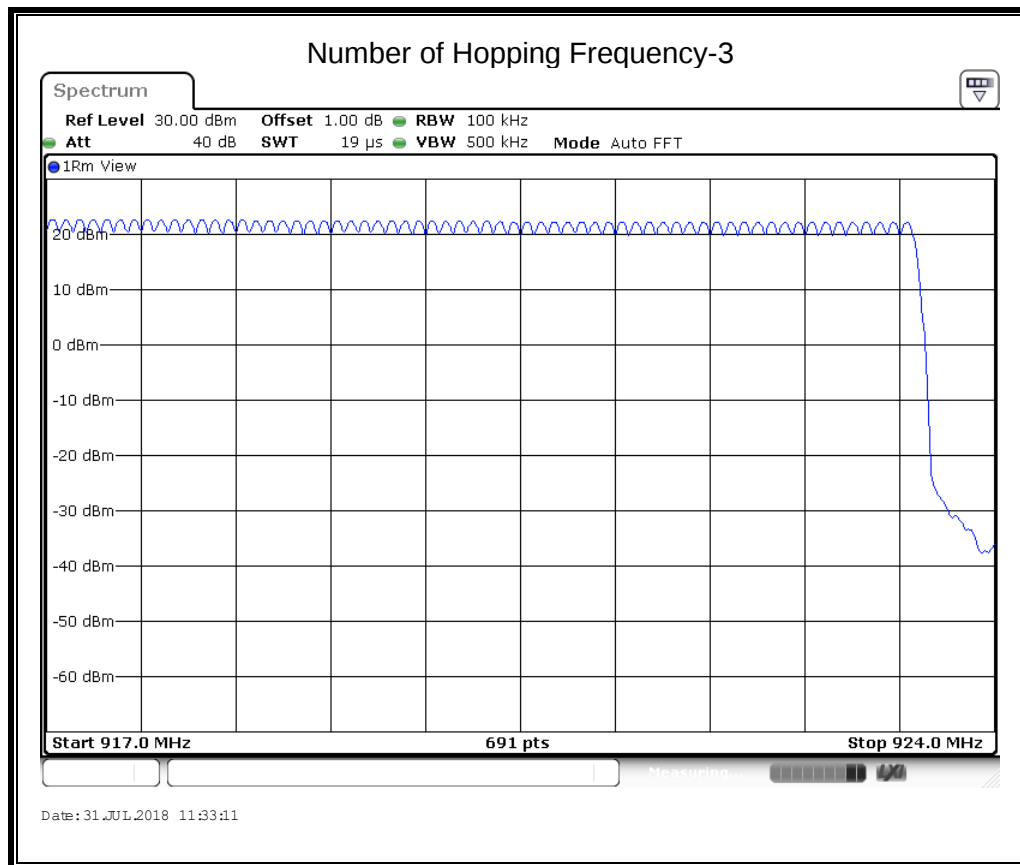
|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 23.5°C | Relative Humidity | 67%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |

**RESULTS**

| Hopping numbers | Limit | Results |
|-----------------|-------|---------|
| 163             | >50   | Pass    |







Note: The EUT doesn't support AFH mode.

## 6.6. TIME OF OCCUPANCY (DWELL TIME)

### LIMITS

| FCC Part15 (15.247) , Subpart C |                                |                                                                                                                |
|---------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------|
| Section                         | Test Item                      | Limit                                                                                                          |
| 15.247 (a)(i)                   | Time of Occupancy (Dwell Time) | The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period |

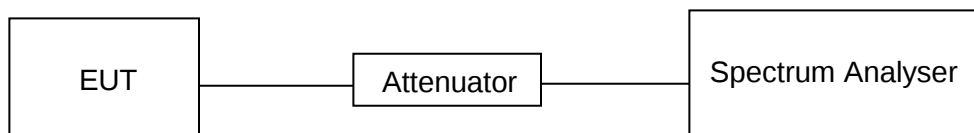
### TEST PROCEDURE

|                  |                                                                   |
|------------------|-------------------------------------------------------------------|
| Center Frequency | The center frequency of the channel under test                    |
| Detector         | Peak                                                              |
| RBW              | 1 MHz                                                             |
| VBW              | ≥RBW                                                              |
| Span             | zero span                                                         |
| Trace            | Max hold                                                          |
| Sweep time       | As necessary to capture the entire dwell time per hopping channel |

Connect the UUT to the spectrum analyser and use the following settings:

- The transmitter output (antenna port) was connected to the spectrum analyzer
- Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- Use a video trigger with the trigger level set to enable triggering only on full pulses.
- Sweep Time is more than once pulse time.
- Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- Measure the maximum time duration of one single pulse.
- Measure the maximum time duration of one single pulse.  
 $A \text{ Period Time} = (\text{channel number}) \times 0.4$

### TEST SETUP





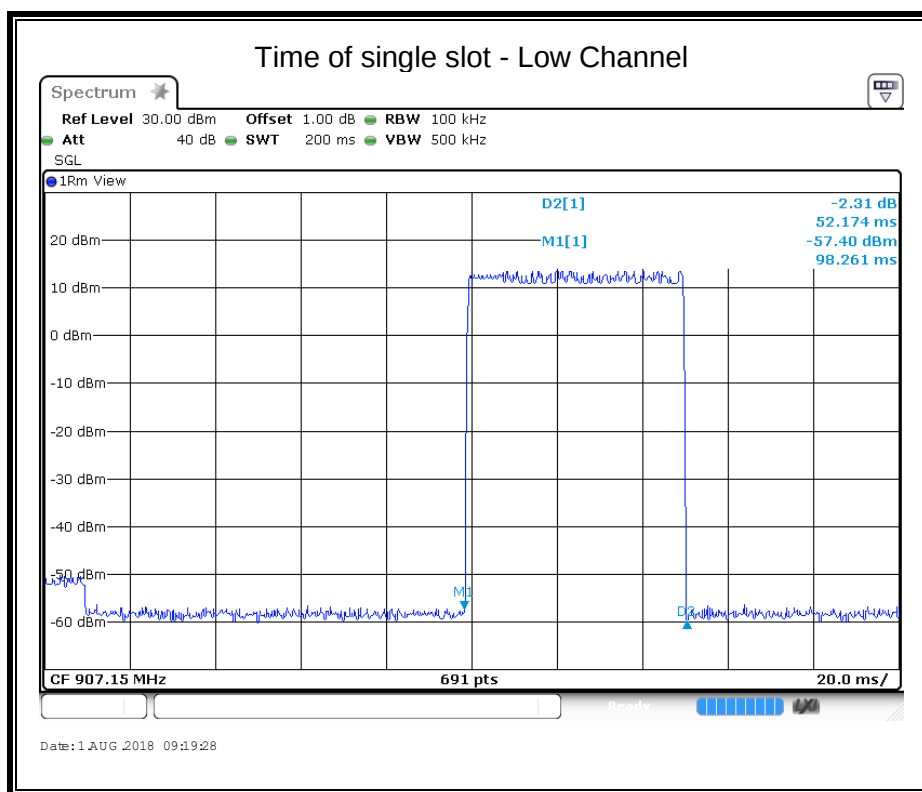
## TEST ENVIRONMENT

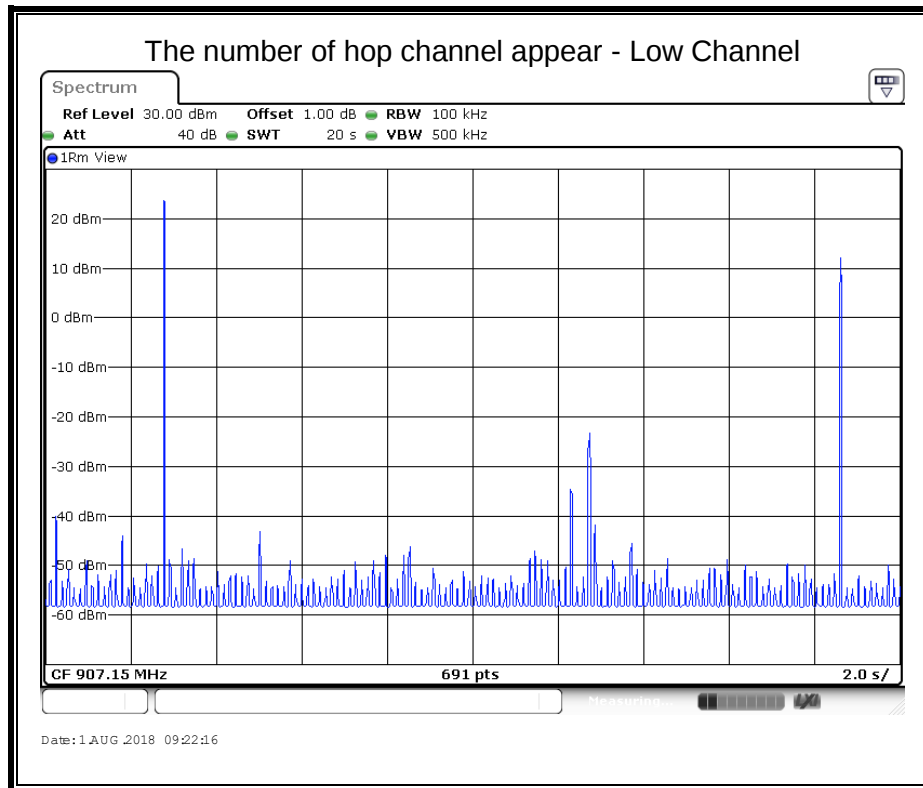
|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 23.5°C | Relative Humidity | 67%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |

## RESULTS

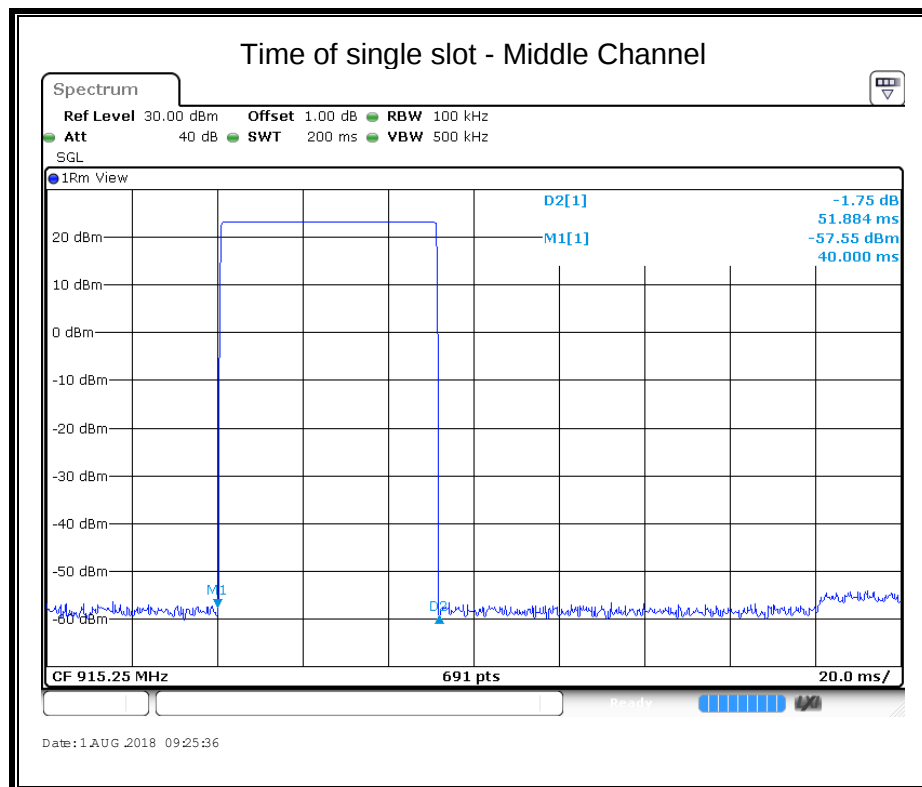
| Channel | Burst Width<br>[ms/hop/ch] | Dwell Time<br>[s] | Limit<br>[s] | Results |
|---------|----------------------------|-------------------|--------------|---------|
| Low     | 52.174                     | 0.104             | 0.4          | PASS    |
| Middle  | 51.884                     | 0.104             | 0.4          | PASS    |
| High    | 52.174                     | 0.104             | 0.4          | PASS    |

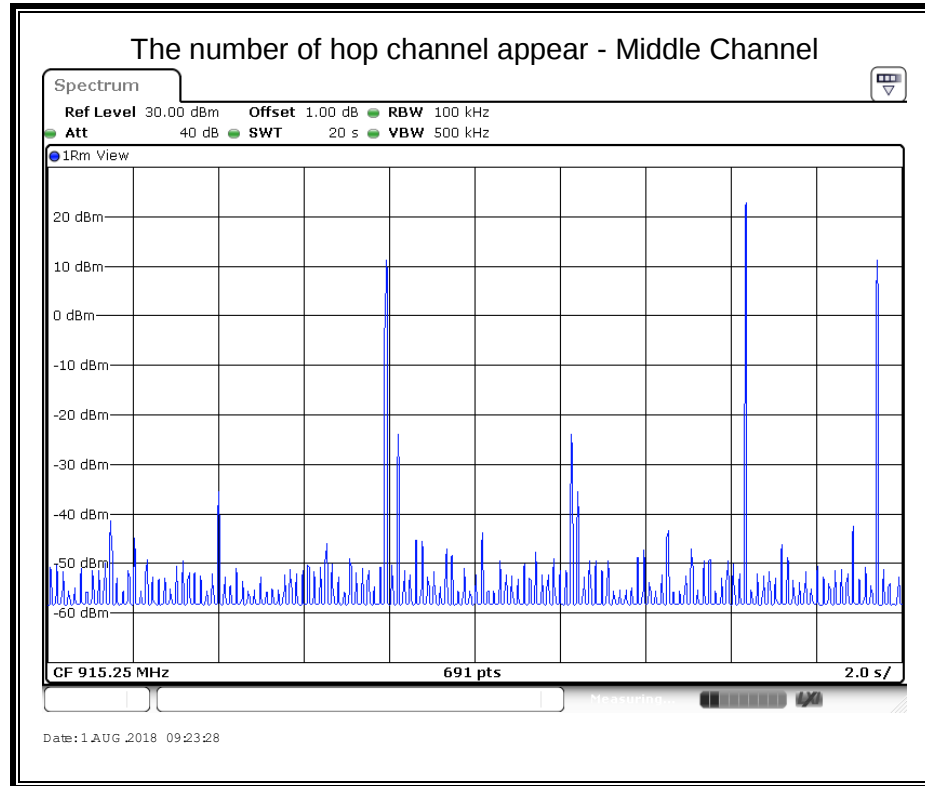
Note: The EUT doesn't support AFH mode.



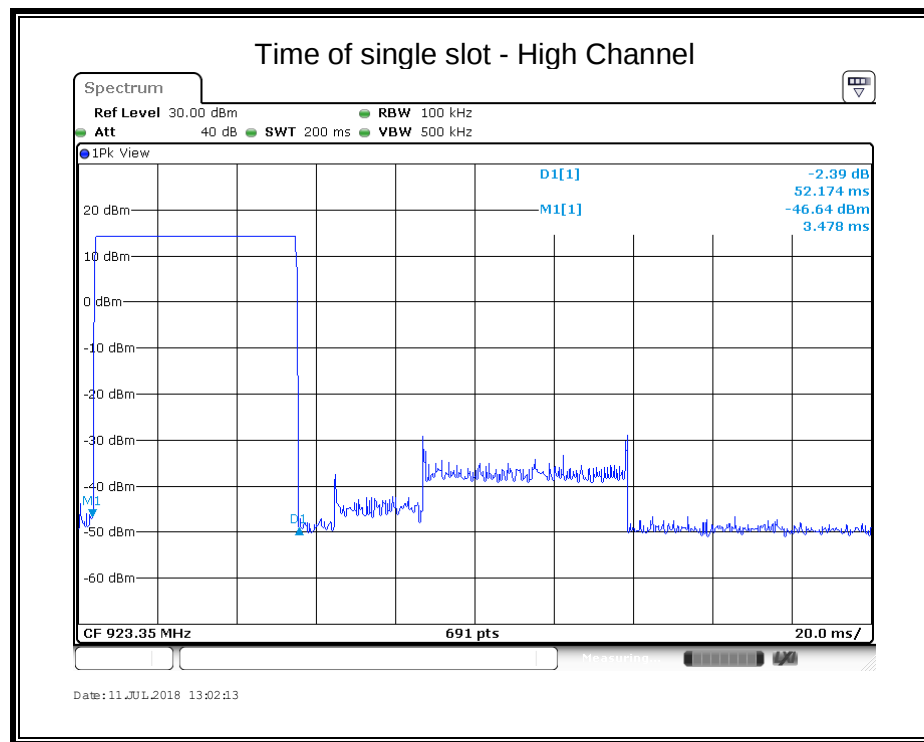


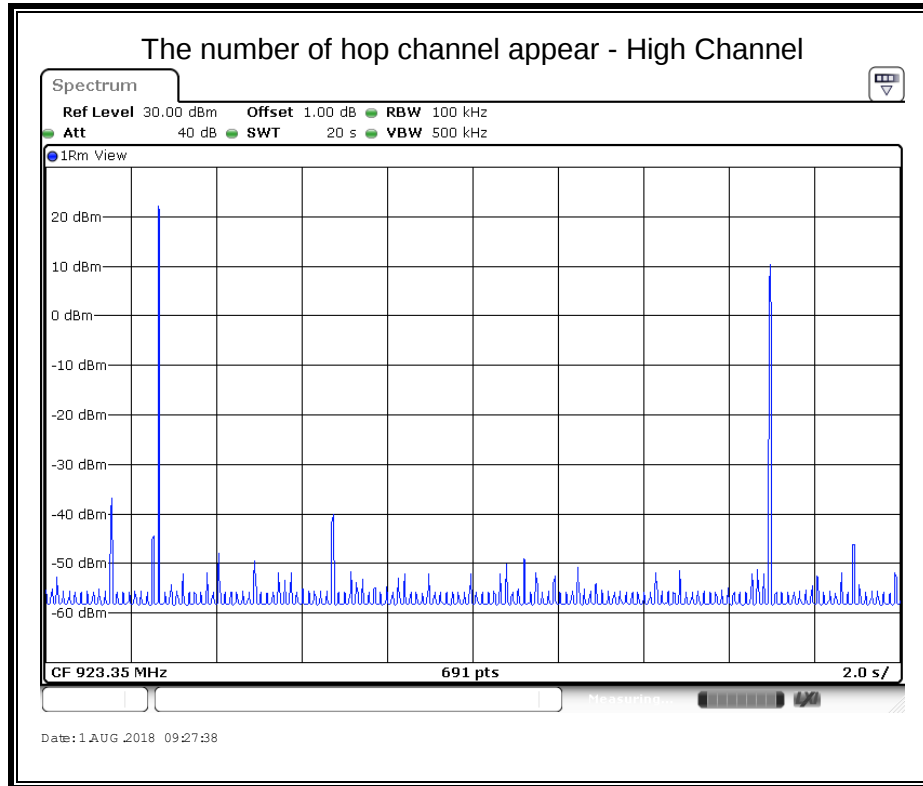
Note: The dwell time = Time of single slot \* The number of hop channel appear within 20s





Note: The dwell time = Time of single slot \* The number of hop channel appear within 20s





Note: The dwell time = Time of single slot \* The number of hop channel appear within 20s



## 6.7. CONDUCTED SPURIOUS EMISSION

### LIMITS

| FCC Part15 (15.247) , Subpart C |                             |                                                                                                                         |
|---------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Section                         | Test Item                   | Limit                                                                                                                   |
| FCC §15.247 (d)                 | Conducted Spurious Emission | at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power |

### TEST PROCEDURE

For Bandedge use the following settings:

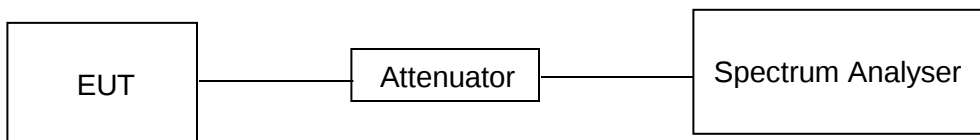
|            |                                                          |
|------------|----------------------------------------------------------|
| Detector   | Peak                                                     |
| RBW        | RBW $\geq$ 1% of the span                                |
| VBW        | $\geq$ RBW                                               |
| Span       | wide enough to fully capture the emission being measured |
| Trace      | Max hold                                                 |
| Sweep time | Auto couple.                                             |

For Spurious Emission use the following settings:

|            |                                                          |
|------------|----------------------------------------------------------|
| Detector   | Peak                                                     |
| RBW        | 100K                                                     |
| VBW        | $\geq$ RBW                                               |
| Span       | wide enough to fully capture the emission being measured |
| Trace      | Max hold                                                 |
| Sweep time | Auto couple.                                             |

Use the peak marker function to determine the maximum amplitude level.

### TEST SETUP

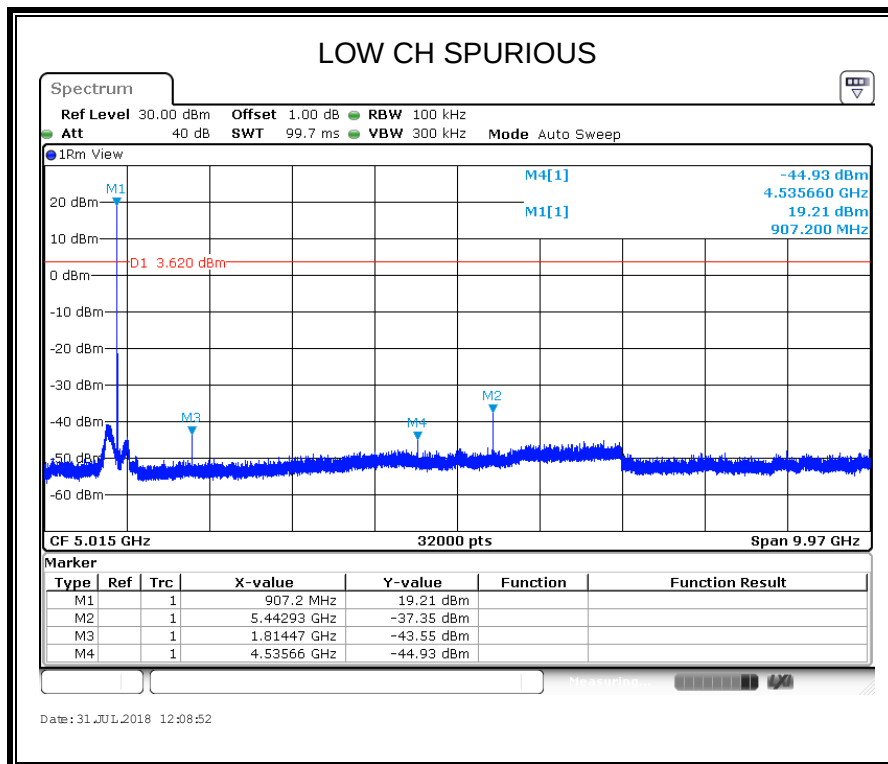
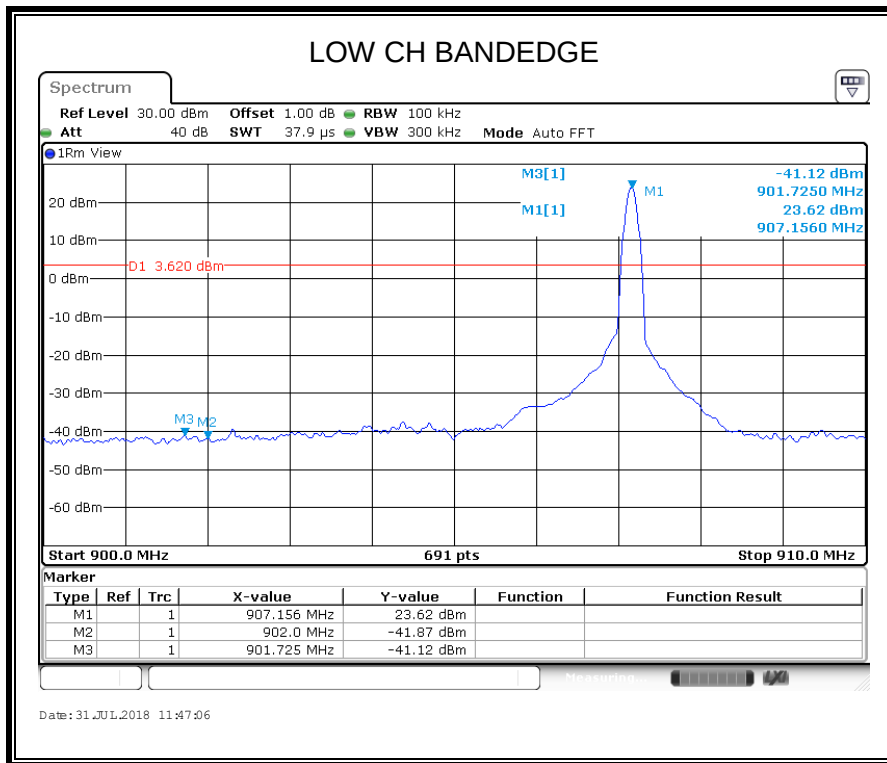


### TEST ENVIRONMENT

|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 23.5°C | Relative Humidity | 67%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |

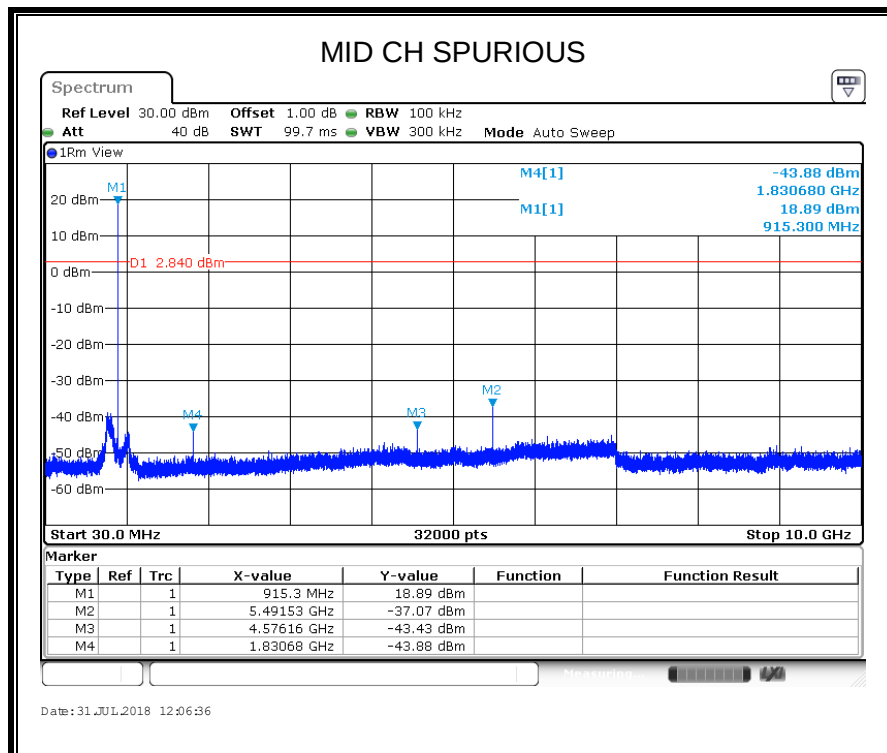
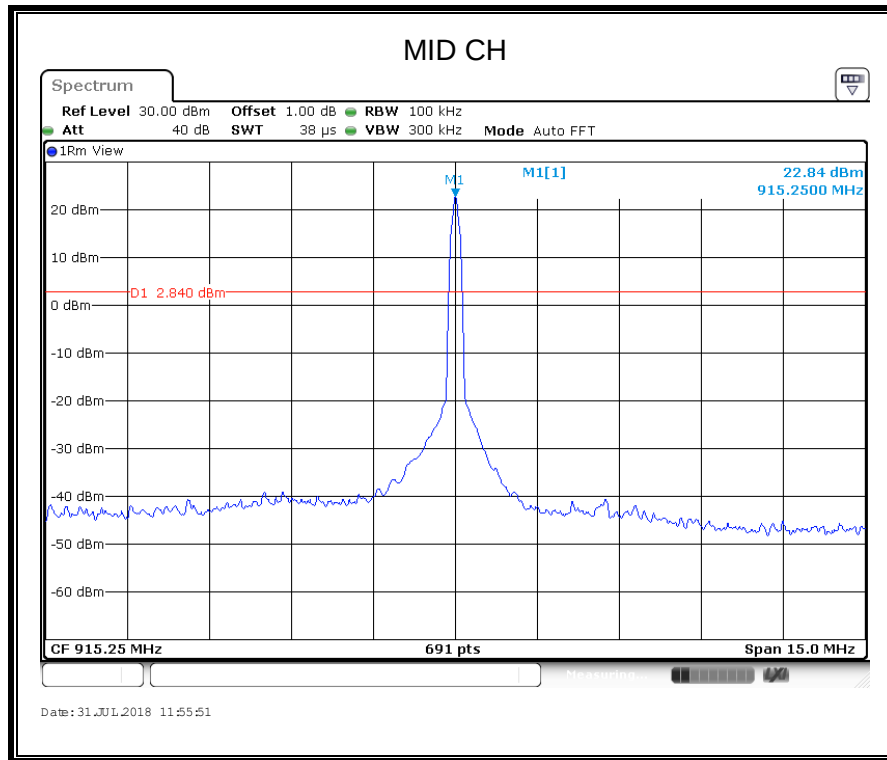
### RESULTS

### SPURIOUS EMISSIONS, LOW CHANNEL

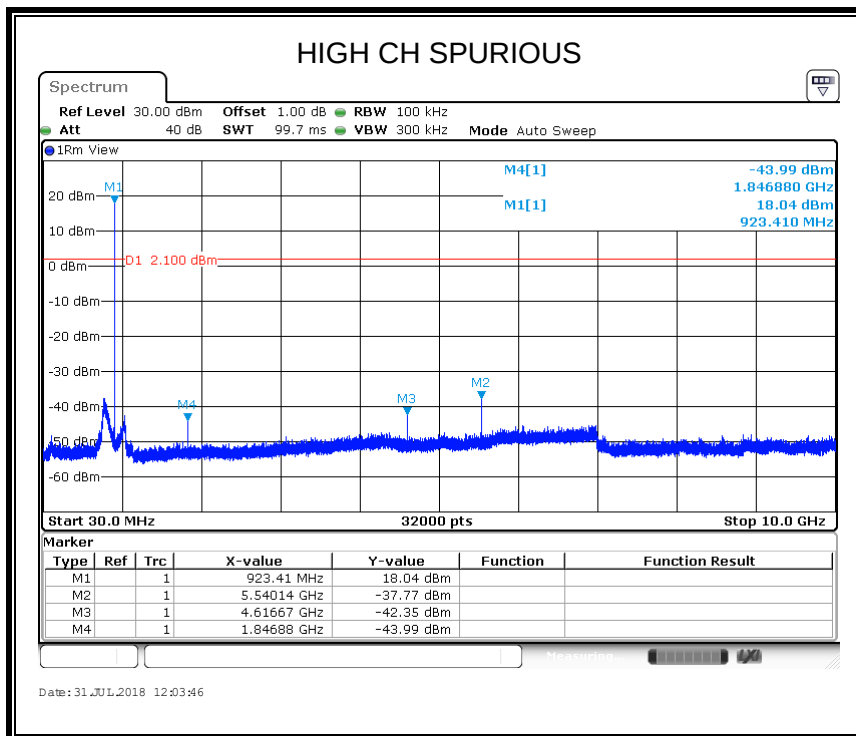
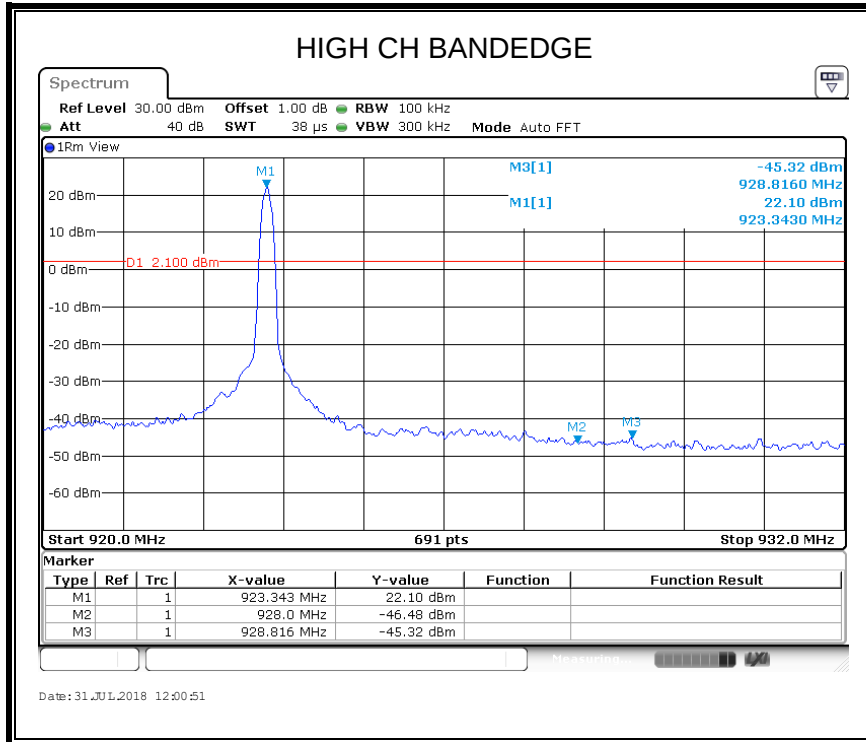




### SPURIOUS EMISSIONS, MID CHANNEL

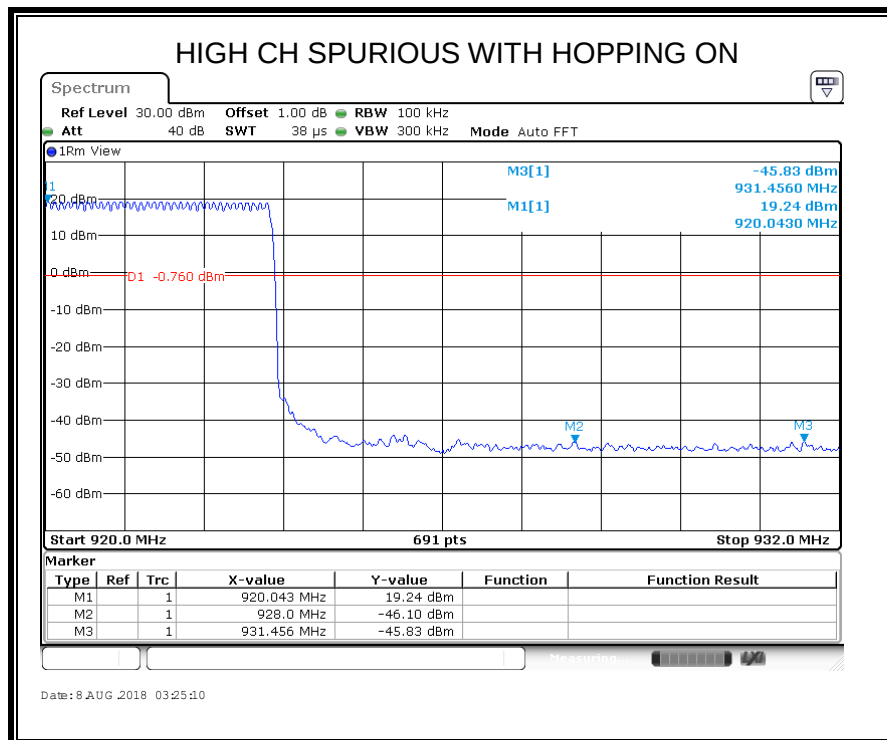
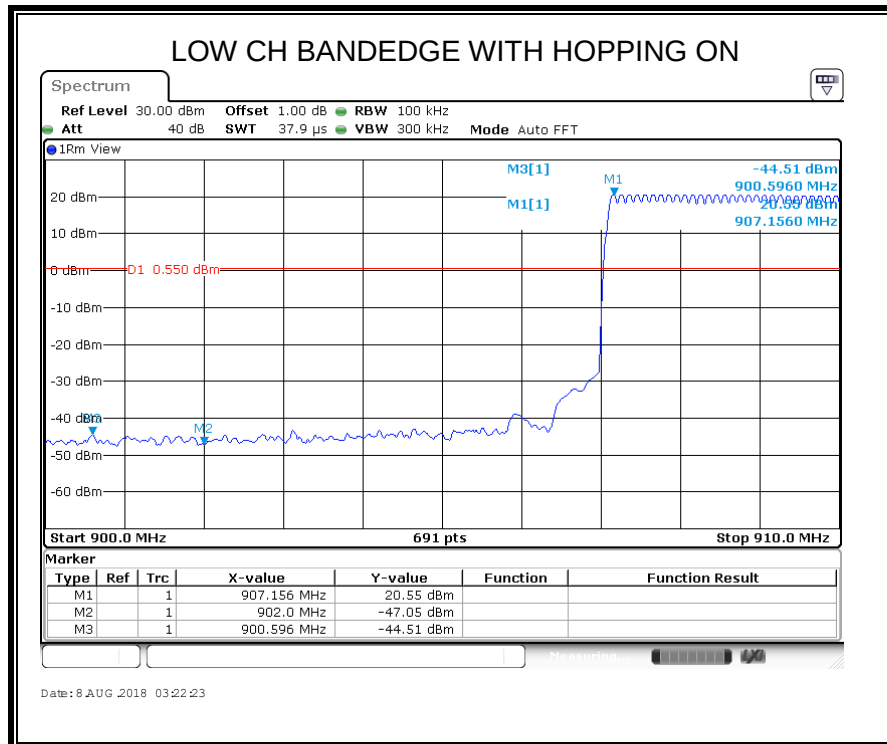


### SPURIOUS EMISSIONS, HIGH CHANNEL





### SPURIOUS BANDEDGE EMISSIONS WITH HOPPING ON





## 7. RADIATED TEST RESULTS

### 7.1. LIMITS AND PROCEDURE

#### LIMITS

Please refer to FCC §15.205 and §15.209

Please refer to RSS-GEN Clause 8.9 and Clause 8.10

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

| Frequency<br>(MHz) | Field Strength<br>(microvolts/meter) | Measurement Distance<br>(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                                |
| 960~1000           | 500                                  | 3                                |

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.



Radiation Disturbance Test Limit for FCC (Above 1G)

| Frequency (MHz) | dB(uV/m) (at 3 meters) |         |
|-----------------|------------------------|---------|
|                 | Peak                   | Average |
| Above 1000      | 74                     | 54      |

Restricted bands of operation

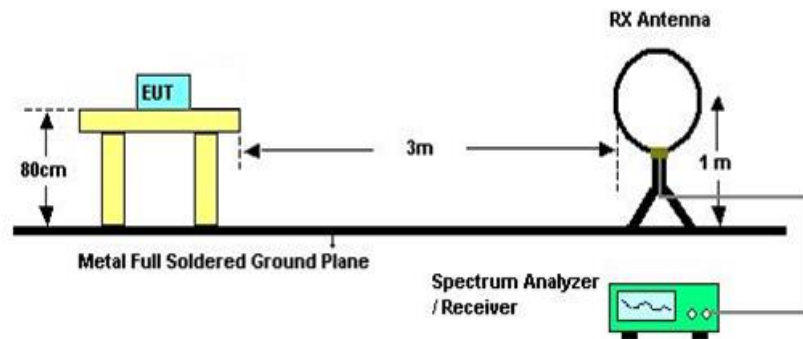
| MHz                      | MHz                 | MHz           | GHz              |
|--------------------------|---------------------|---------------|------------------|
| 0.090-0.110              | 16.42-16.423        | 399.9-410     | 4.5-5.15         |
| <sup>1</sup> 0.495-0.505 | 16.69475-16.69525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

Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup>Above 38.6c

## TEST SETUP AND PROCEDURE

Below 30MHz

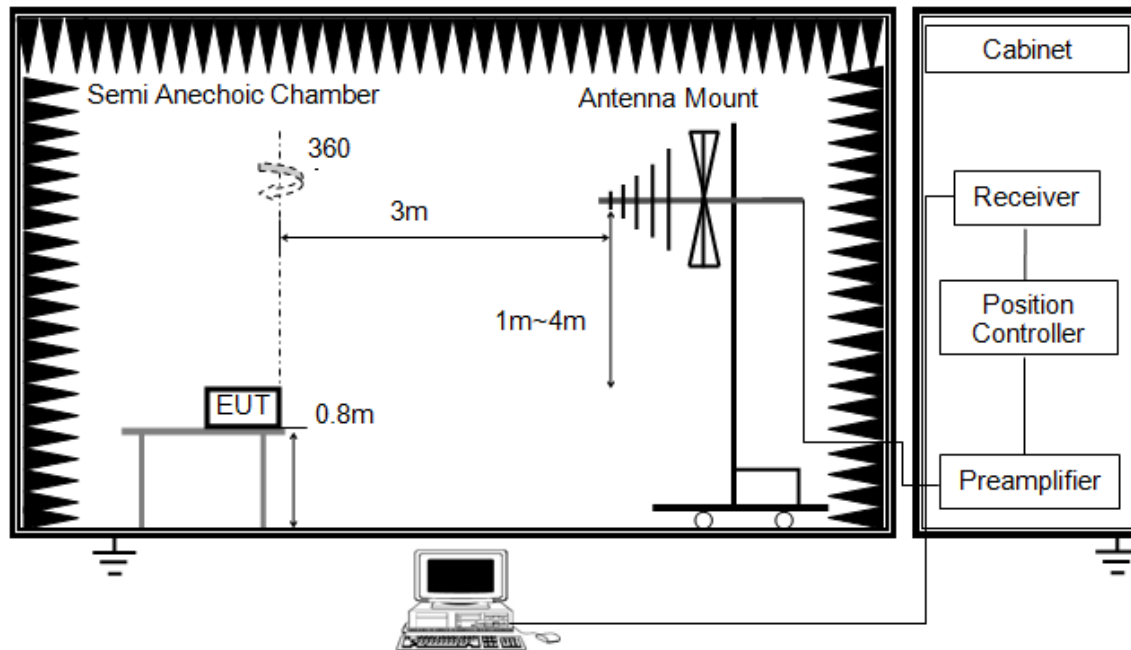


The setting of the spectrum analyser

|       |                                                            |
|-------|------------------------------------------------------------|
| RBW   | 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz) |
| VBW   | 200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz) |
| Sweep | Auto                                                       |
| Trace | Max hold                                                   |

1. The testing follows the guidelines in ANSI C63.10-2013 and 414788 D01 Radiated Test Site v01.
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788. Anechoic chamber is shown to be equivalent to or worst case from the open field site.

Below 1G and above 30MHz

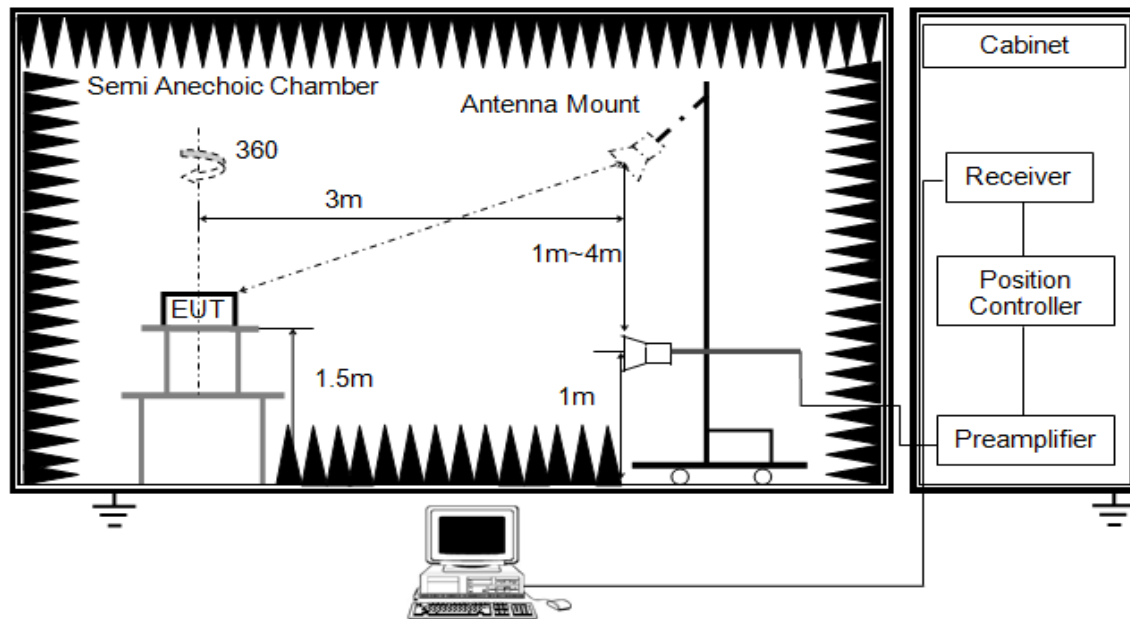


The setting of the spectrum analyser

|       |          |
|-------|----------|
| RBW   | 120K     |
| VBW   | 300K     |
| Sweep | Auto     |
| Trace | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
6. For the actual test configuration, please refer to the related item in this test report.

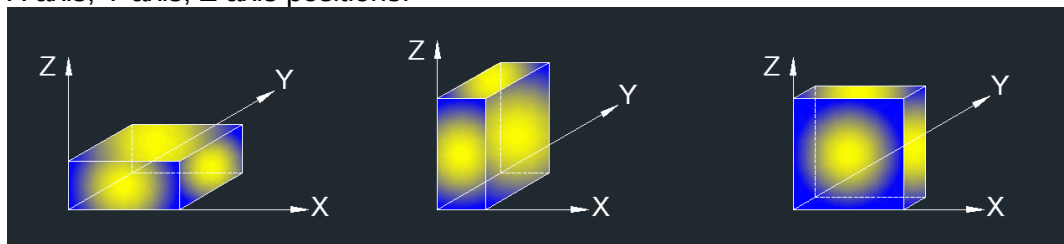
Above 1G



|          |          |
|----------|----------|
| RBW      | 1M       |
| VBW      | 3M       |
| Sweep    | Auto     |
| Detector | Peak     |
| Trace    | Max hold |

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For average power measurement, set the Detector to RMS, the detector and averaging type may be set for linear voltage averaging, while maintaining all of the other instrument settings, if the duty cycle of the EUT is less than 98%, the Duty Cycle Correction Factor shall be added to the measured emission levels. For the Duty Cycle and Correction Factor please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: All the EUT's emissions had been evaluated for simultaneous transmission with the other 2.4GHz transmitter and there were no any additional or worse emissions found.

### TEST ENVIRONMENT

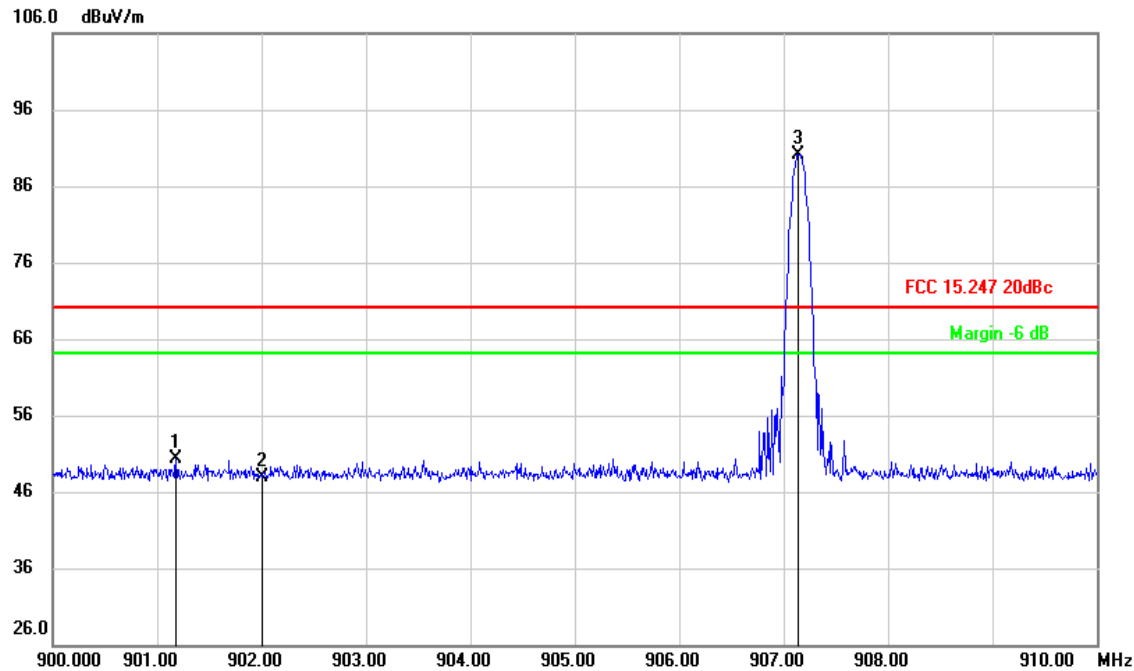
|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 22.7°C | Relative Humidity | 62%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |

### RESULTS



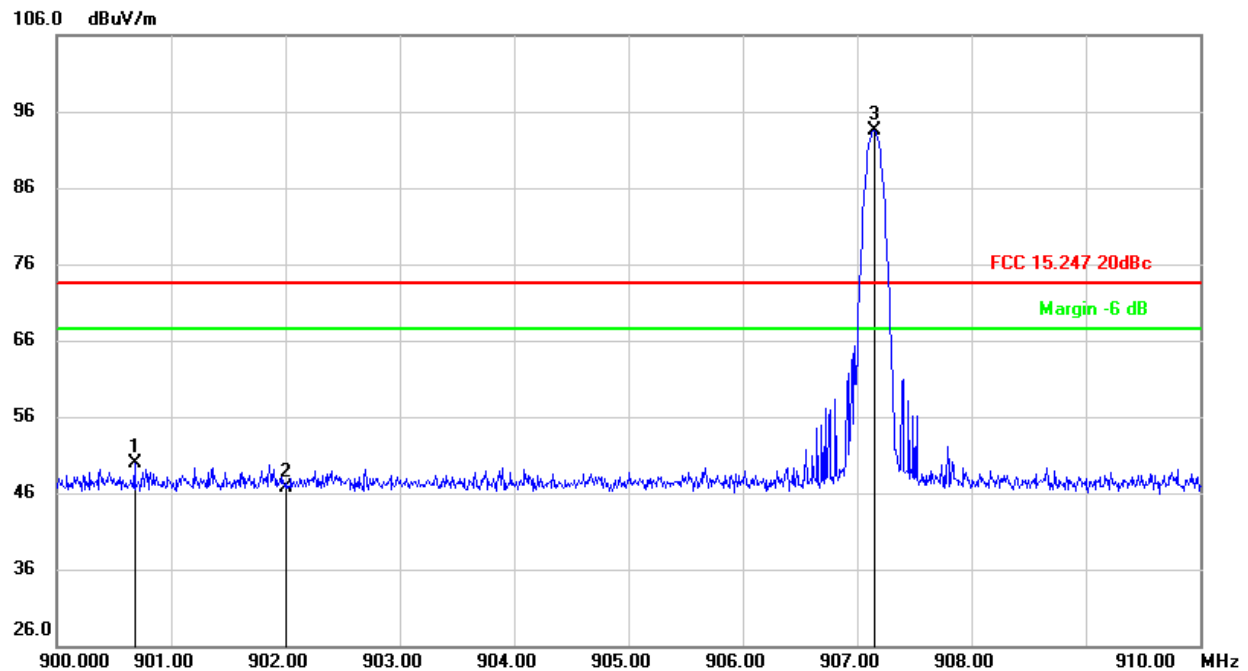
## 7.2. RADIATED BANDEGE

### RADIATED BANDEGE (LOW CHANNEL, HORIZONTAL)



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 901.1800           | 25.13             | 25.10             | 50.23              | 70.15             | -19.92         | QP     |
| 2   | 902.0000           | 22.79             | 25.12             | 47.91              | 70.15             | -22.24         | QP     |
| 3   | 907.1400           | 65.00             | 25.15             | 90.15              | /                 | /              | QP     |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. Peak: Peak detector.  
3. The limit = The test result of fundamental frequency - 20dB

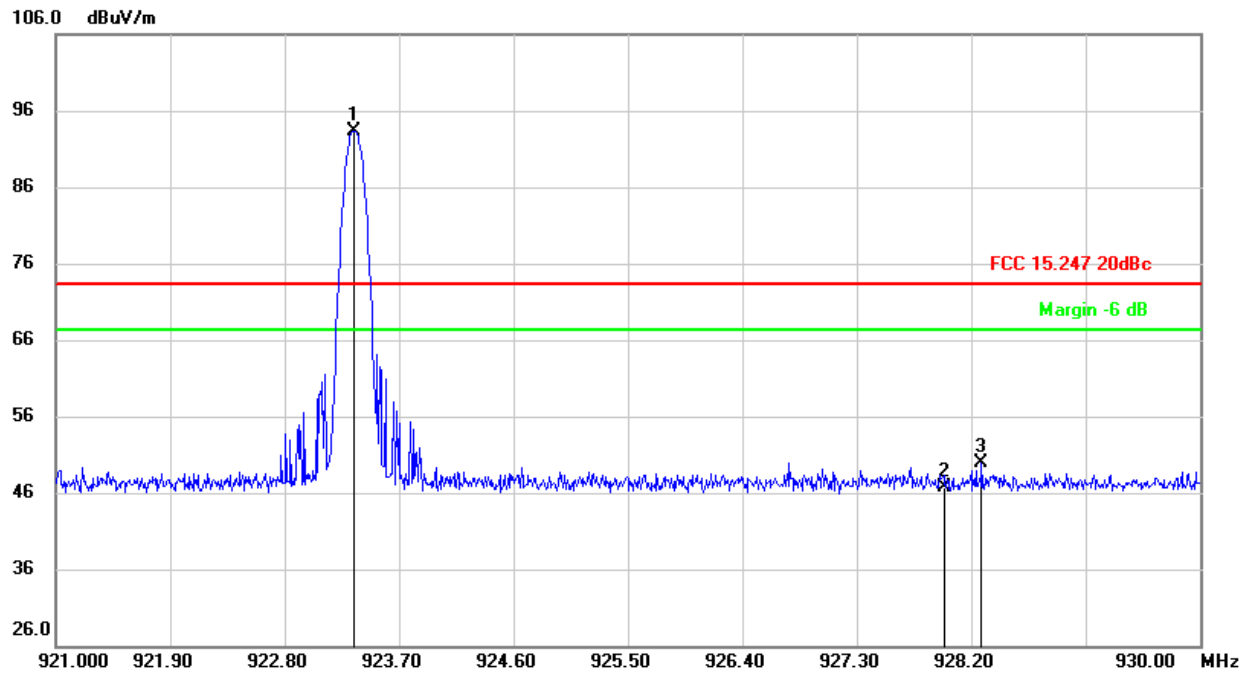
**RADIATED BANDEGE (LOW CHANNEL, VERTICAL)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 900.6800           | 24.88             | 25.10             | 49.98              | 73.42             | -23.44         | QP     |
| 2   | 902.0000           | 21.63             | 25.12             | 46.75              | 73.42             | -26.67         | QP     |
| 3   | 907.1500           | 68.27             | 25.15             | 93.42              | /                 | /              | QP     |

Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.

3. The limit = The test result of fundamental frequency - 20dB

**RADIATED BANDEDGE (HIGH CHANNEL, HORIZONTAL)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 923.3400           | 68.21             | 25.15             | 93.36              | /                 | /              | QP     |
| 2   | 928.0000           | 21.46             | 25.21             | 46.67              | 73.36             | -26.69         | QP     |
| 3   | 928.2810           | 24.77             | 25.21             | 49.98              | 73.36             | -23.38         | QP     |

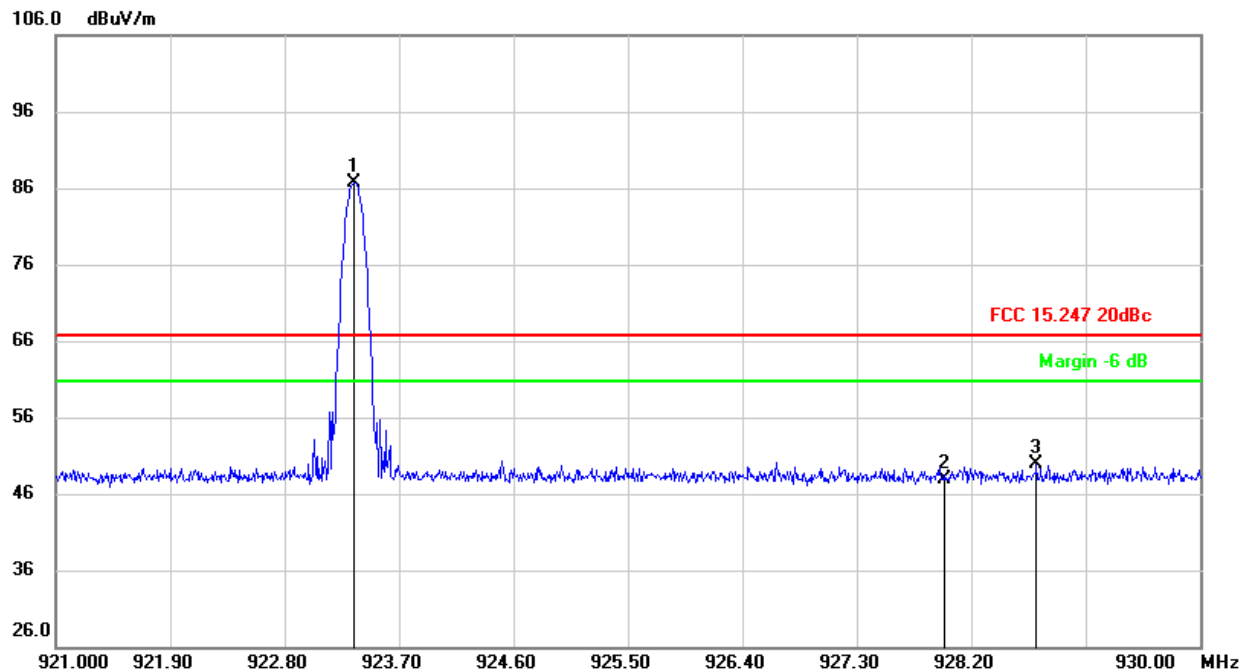
Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.

3. The limit = The test result of fundamental frequency - 20dB

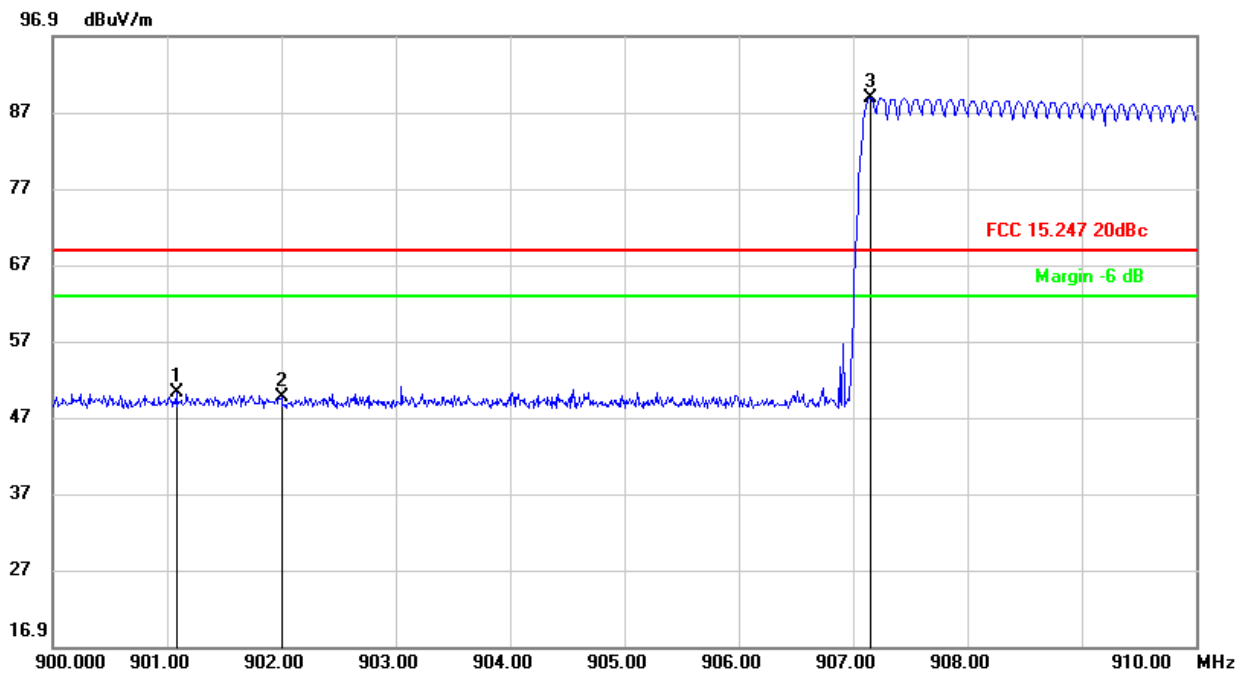


**RADIATED BANDEDGE (HIGH CHANNEL, VERTICAL)**



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 923.3400        | 61.51          | 25.15          | 86.66           | /              | /           | QP     |
| 2   | 928.0000        | 22.65          | 25.21          | 47.86           | 66.66          | -18.80      | QP     |
| 3   | 928.7130        | 24.72          | 25.21          | 49.93           | 66.66          | -16.73      | QP     |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. Peak: Peak detector.  
3. The limit = The test result of fundamental frequency - 20dB

**RADIATED BANDEDGE (LOW HOP CHANNEL, HORIZONTAL)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 901.0800           | 25.09             | 25.10             | 50.19              | 68.85             | -18.66         | QP     |
| 2   | 902.0000           | 24.49             | 25.12             | 49.61              | 68.85             | -19.24         | QP     |
| 3   | 907.1500           | 63.70             | 25.15             | 88.85              | /                 | /              | QP     |

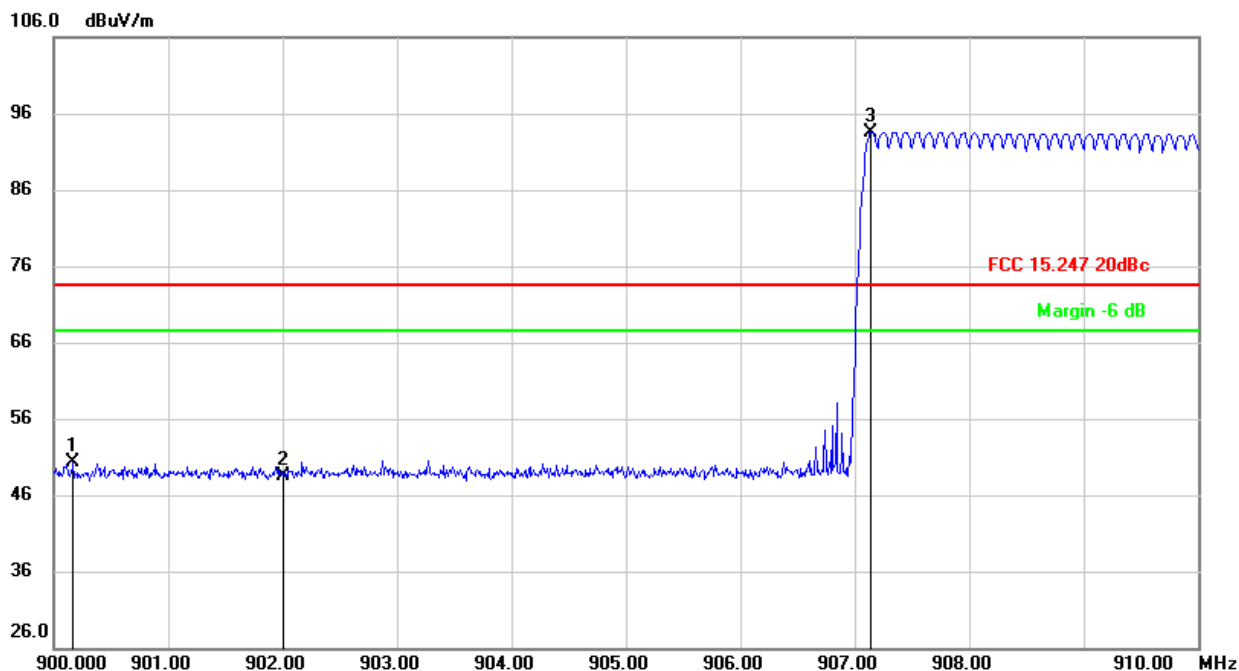
Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.

3. The limit = The test result of fundamental frequency - 20dB

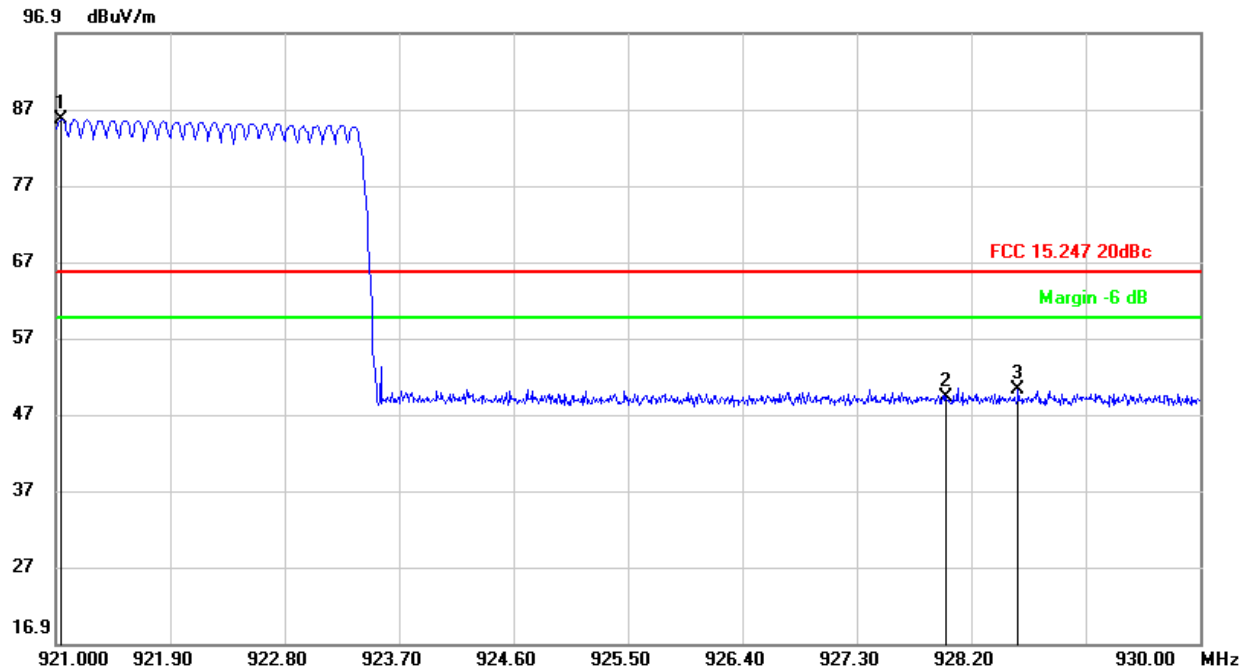


**RADIATED BANDEDGE (LOW HOP CHANNEL, VERTICAL)**



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 900.1700           | 25.10             | 25.10             | 50.20              | 73.56             | -23.36         | QP     |
| 2   | 902.0000           | 23.36             | 25.12             | 48.48              | 73.56             | -25.08         | QP     |
| 3   | 907.1400           | 68.41             | 25.15             | 93.56              | /                 | /              | QP     |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. Peak: Peak detector.  
3. The limit = The test result of fundamental frequency - 20dB

**RADIATED BANDEGE (HIGH HOP CHANNEL, HORIZONTAL)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 921.0450           | 60.48             | 25.13             | 85.61              | /                 | /              | QP     |
| 2   | 928.0000           | 23.94             | 25.21             | 49.15              | 65.61             | -16.46         | QP     |
| 3   | 928.5690           | 25.07             | 25.21             | 50.28              | 65.61             | -15.33         | QP     |

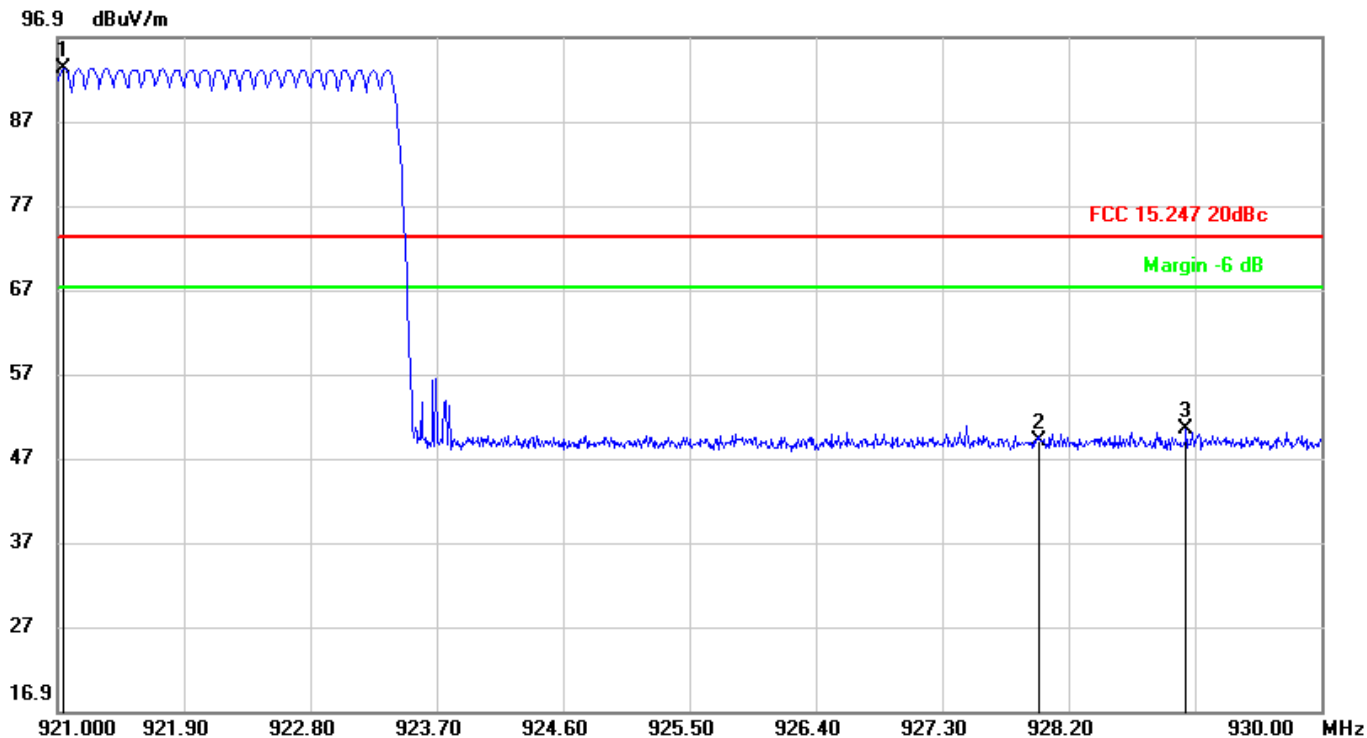
Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.

3. The limit = The test result of fundamental frequency - 20dB



**RADIATED BANDEDGE (HIGH HOP CHANNEL, VERTICAL)**



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 921.0450           | 68.05             | 25.13             | 93.18              | /                 | /              | QP     |
| 2   | 928.0000           | 23.73             | 25.21             | 48.94              | 73.18             | -24.24         | QP     |
| 3   | 929.0370           | 25.20             | 25.22             | 50.42              | 73.18             | -22.76         | QP     |

Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.

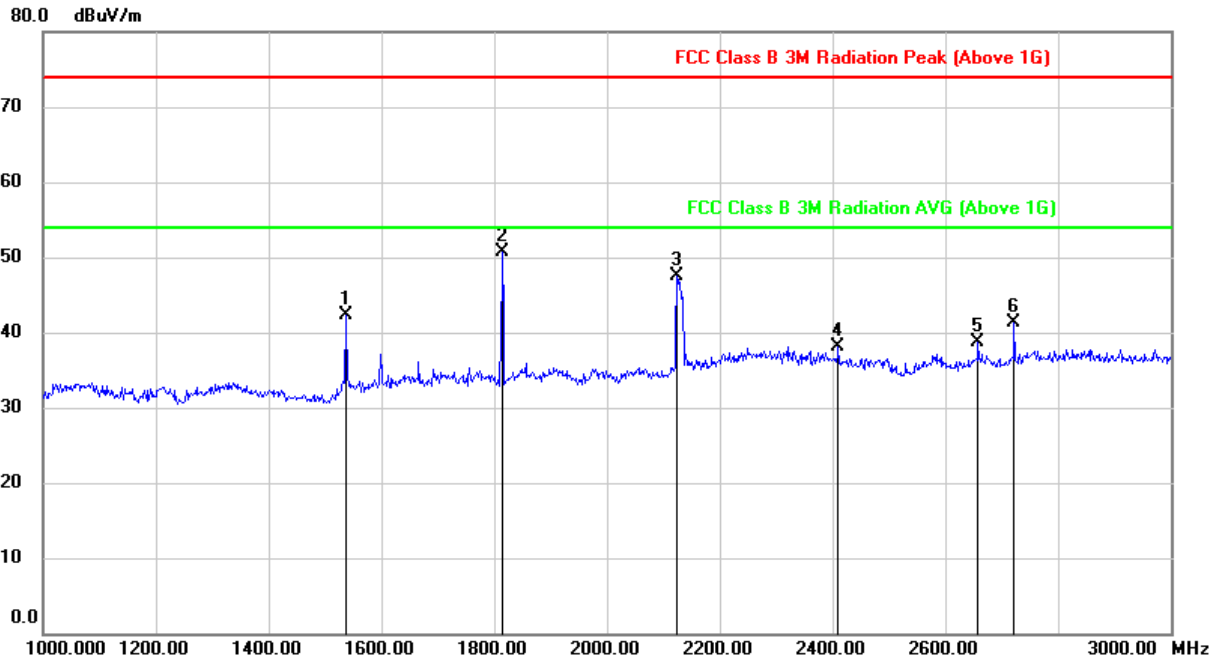
3. The limit = The test result of fundamental frequency - 20dB



### 7.3. SPURIOUS EMISSIONS (1~10GHz)

#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

##### 1GHz ~ 3GHz



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 1536.000           | 54.56             | -12.32            | 42.24              | 74.00             | -31.76         | peak   |
| 2   | 1814.000           | 61.72             | -11.06            | 50.66              | 74.00             | -23.34         | peak   |
| 3   | 2124.000           | 56.71             | -9.26             | 47.45              | 74.00             | -26.55         | peak   |
| 4   | 2410.000           | 46.29             | -8.15             | 38.14              | 74.00             | -35.86         | peak   |
| 5   | 2658.000           | 46.55             | -7.82             | 38.73              | 74.00             | -35.27         | peak   |
| 6   | 2722.000           | 48.74             | -7.44             | 41.30              | 74.00             | -32.70         | peak   |

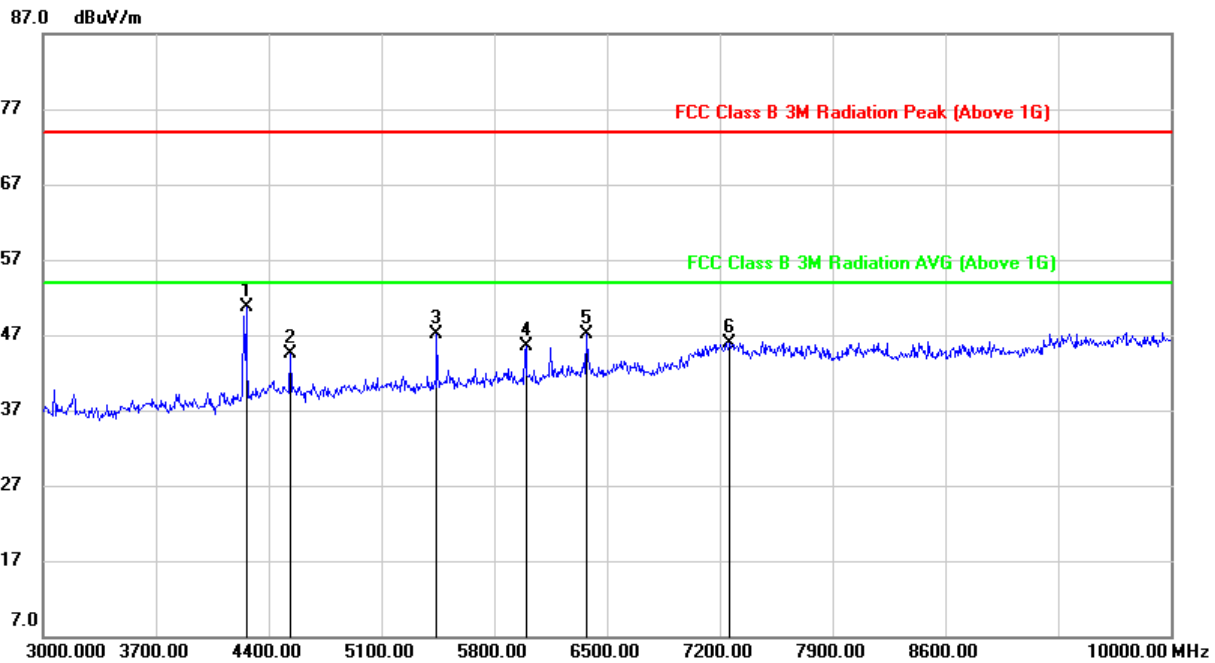
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



**3GHz ~ 10GHz**



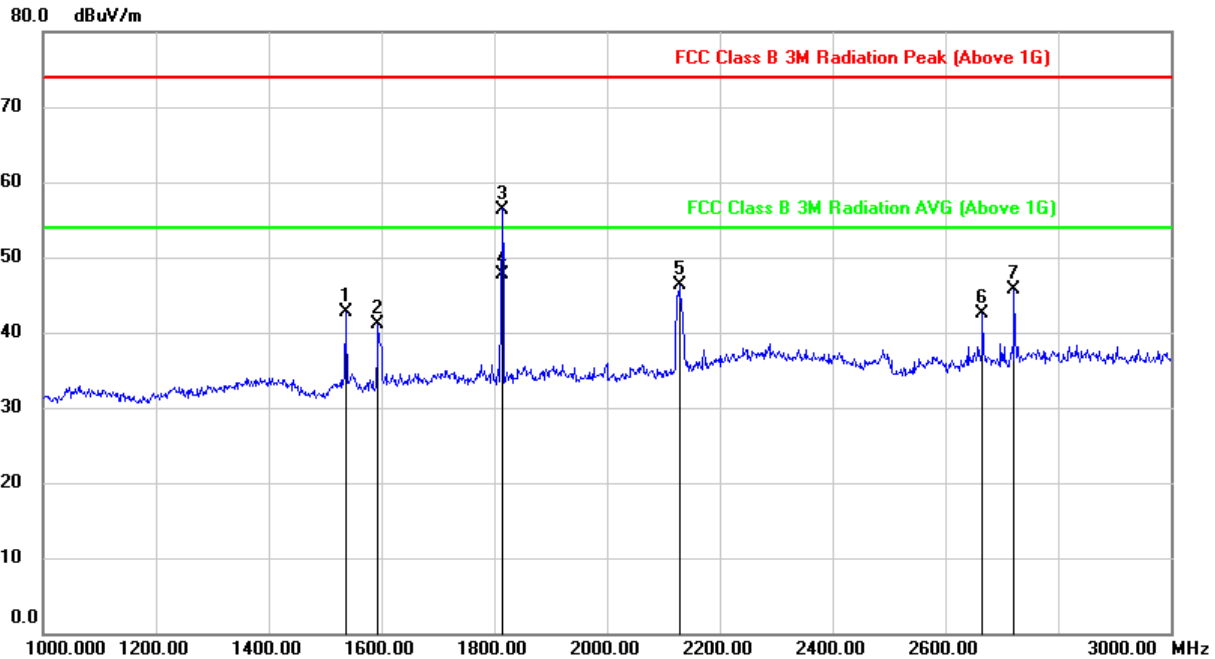
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 4260.000           | 52.60             | -1.90             | 50.70              | 74.00             | -23.30         | peak   |
| 2   | 4533.000           | 45.21             | -0.80             | 44.41              | 74.00             | -29.59         | peak   |
| 3   | 5443.000           | 45.19             | 1.95              | 47.14              | 74.00             | -26.86         | peak   |
| 4   | 5996.000           | 42.31             | 3.21              | 45.52              | 74.00             | -28.48         | peak   |
| 5   | 6374.000           | 42.40             | 4.64              | 47.04              | 74.00             | -26.96         | peak   |
| 6   | 7263.000           | 38.11             | 7.85              | 45.96              | 74.00             | -28.04         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.



**HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)**

**1GHz ~ 3GHz**

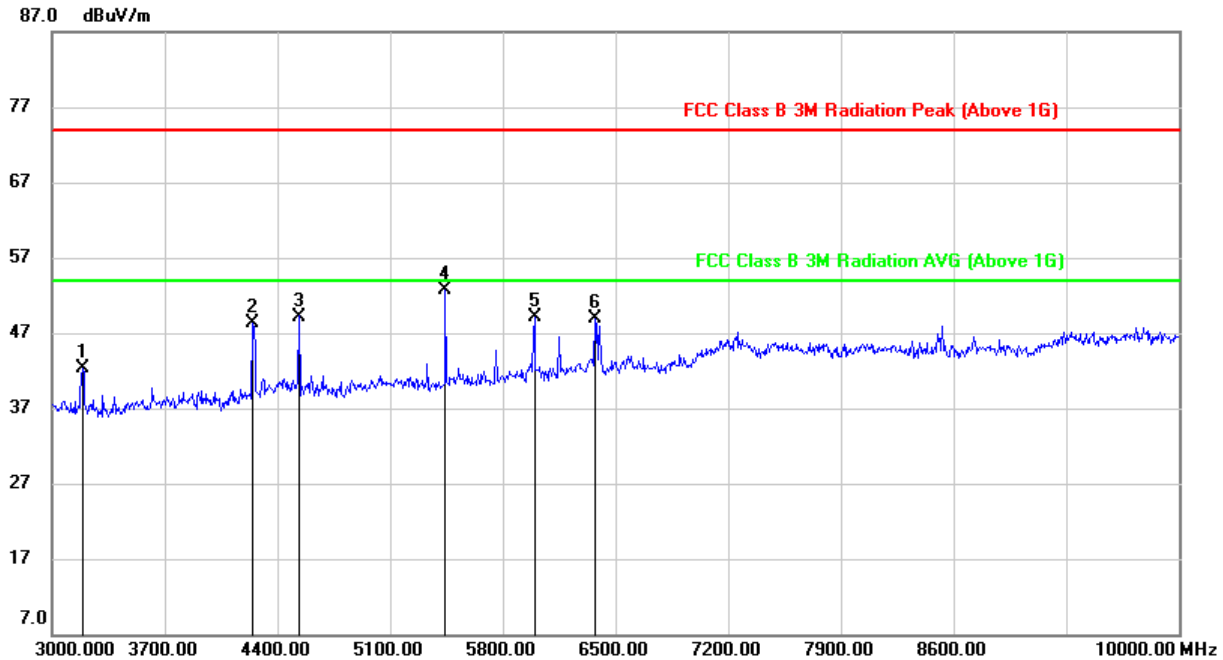


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 1536.000           | 55.04             | -12.27            | 42.77              | 74.00             | -31.23         | peak   |
| 2   | 1594.000           | 53.09             | -12.08            | 41.01              | 74.00             | -32.99         | peak   |
| 3   | 1814.719           | 67.46             | -11.06            | 56.40              | 74.00             | -17.60         | peak   |
| 4   | 1814.719           | 58.74             | -6.64             | 52.10              | 54.00             | -1.90          | AVG    |
| 5   | 2130.000           | 55.56             | -9.28             | 46.28              | 74.00             | -27.72         | peak   |
| 6   | 2666.000           | 50.32             | -7.84             | 42.48              | 74.00             | -31.52         | peak   |
| 7   | 2722.000           | 53.19             | -7.48             | 45.71              | 74.00             | -28.29         | peak   |

- Note: 1. Measurement = Reading Level + Correct Factor.  
2. AVG: RMS detector, the detector and averaging type may be set for linear voltage averaging.  
3. DCCF: Duty Cycle Correction Factor (Please refer to clause 7.1.ON TIME AND DUTY CYCLE)  
4. The DCCF already added in Correct Factor.



**3GHz ~ 10GHz**



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 3189.000           | 47.13             | -4.76             | 42.37              | 74.00             | -31.63         | peak   |
| 2   | 4246.000           | 50.31             | -1.91             | 48.40              | 74.00             | -25.60         | peak   |
| 3   | 4533.000           | 49.90             | -0.70             | 49.20              | 74.00             | -24.80         | peak   |
| 4   | 5443.000           | 50.79             | 1.95              | 52.74              | 74.00             | -21.26         | peak   |
| 5   | 5996.000           | 45.80             | 3.31              | 49.11              | 74.00             | -24.89         | peak   |
| 6   | 6374.000           | 44.24             | 4.69              | 48.93              | 74.00             | -25.07         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

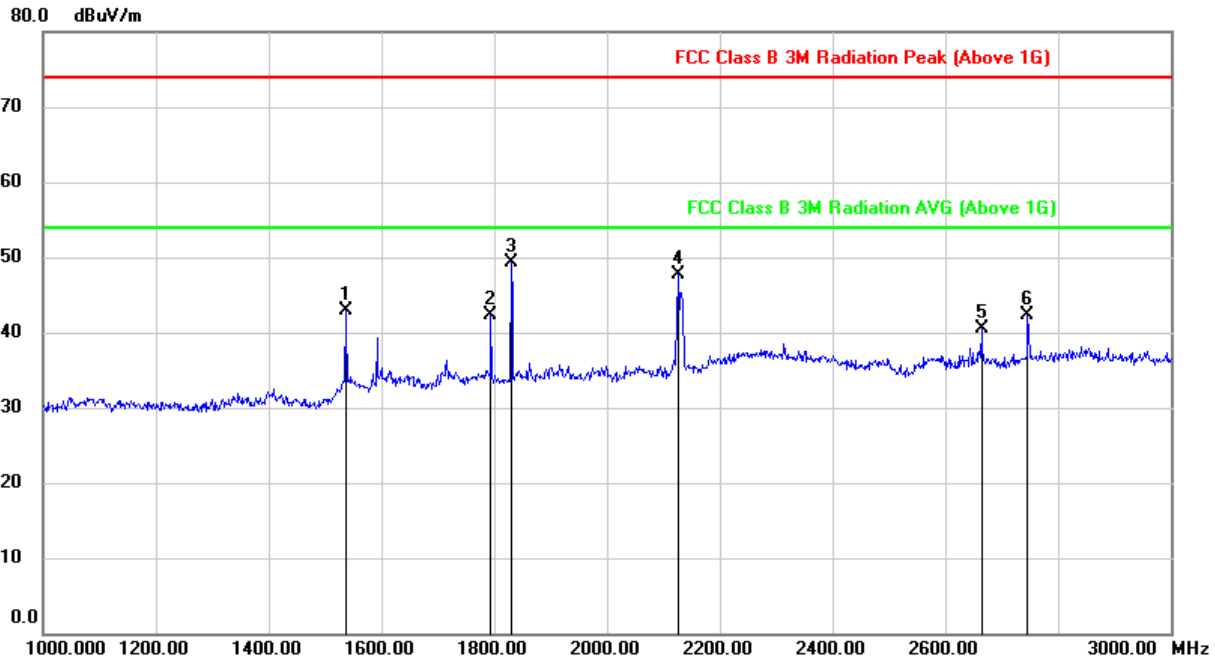
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



**HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)**

**1GHz ~ 3GHz**

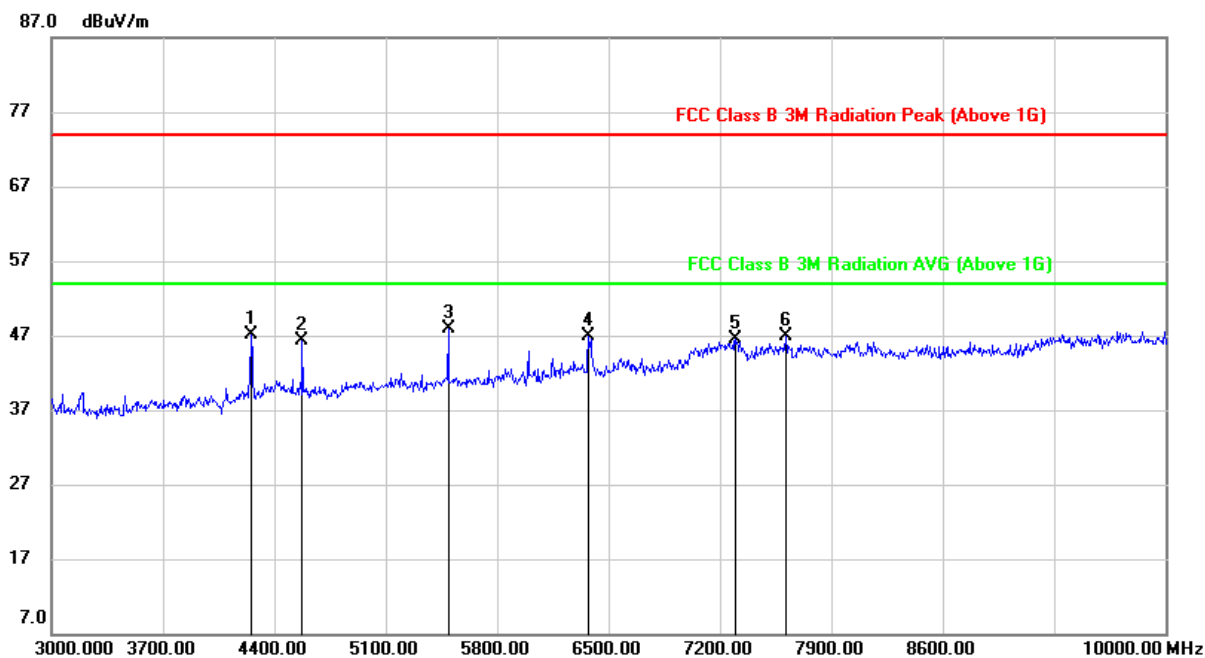


| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 1536.000        | 55.14          | -12.32         | 42.82           | 74.00          | -31.18      | peak   |
| 2   | 1794.000        | 53.37          | -11.15         | 42.22           | 74.00          | -31.78      | peak   |
| 3   | 1830.000        | 60.24          | -10.98         | 49.26           | 74.00          | -24.74      | peak   |
| 4   | 2126.000        | 56.96          | -9.24          | 47.72           | 74.00          | -26.28      | peak   |
| 5   | 2664.000        | 48.36          | -7.78          | 40.58           | 74.00          | -33.42      | peak   |
| 6   | 2746.000        | 49.60          | -7.26          | 42.34           | 74.00          | -31.66      | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.



**3GHz ~ 10GHz**



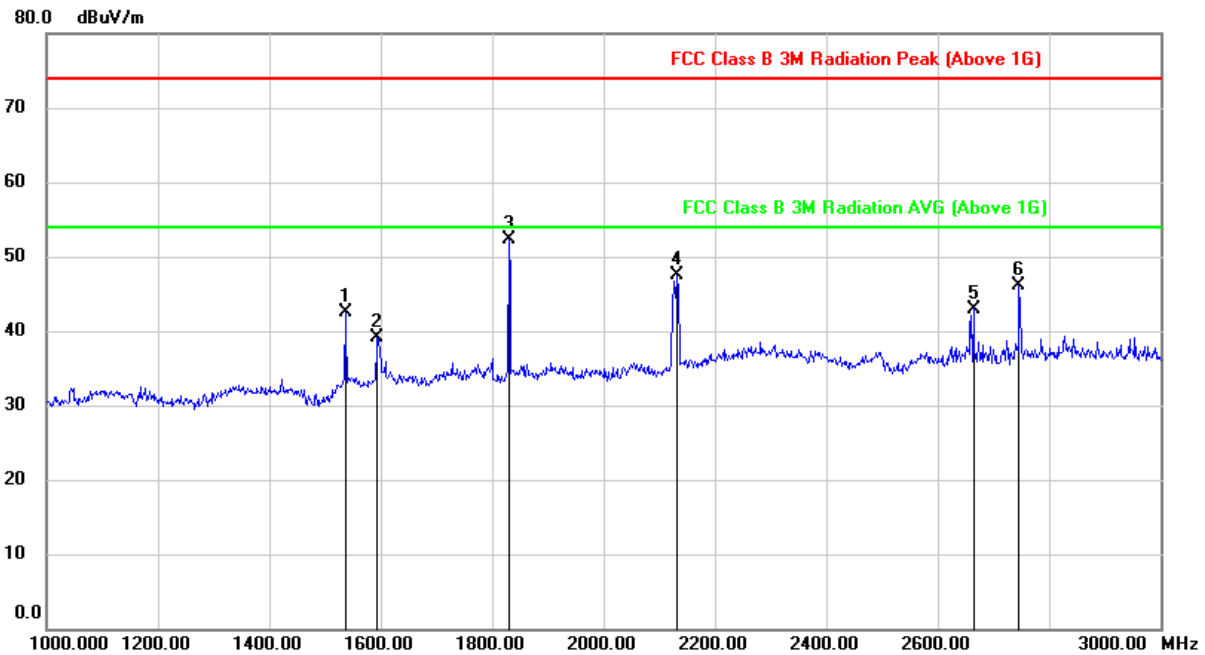
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 4253.000           | 49.08             | -1.97             | 47.11              | 74.00             | -26.89         | peak   |
| 2   | 4575.000           | 47.00             | -0.79             | 46.21              | 74.00             | -27.79         | peak   |
| 3   | 5492.000           | 45.58             | 2.30              | 47.88              | 74.00             | -26.12         | peak   |
| 4   | 6374.000           | 42.30             | 4.64              | 46.94              | 74.00             | -27.06         | peak   |
| 5   | 7298.000           | 38.59             | 7.86              | 46.45              | 74.00             | -27.55         | peak   |
| 6   | 7613.000           | 38.82             | 8.12              | 46.94              | 74.00             | -27.06         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.



**HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)**

**1GHz ~ 3GHz**

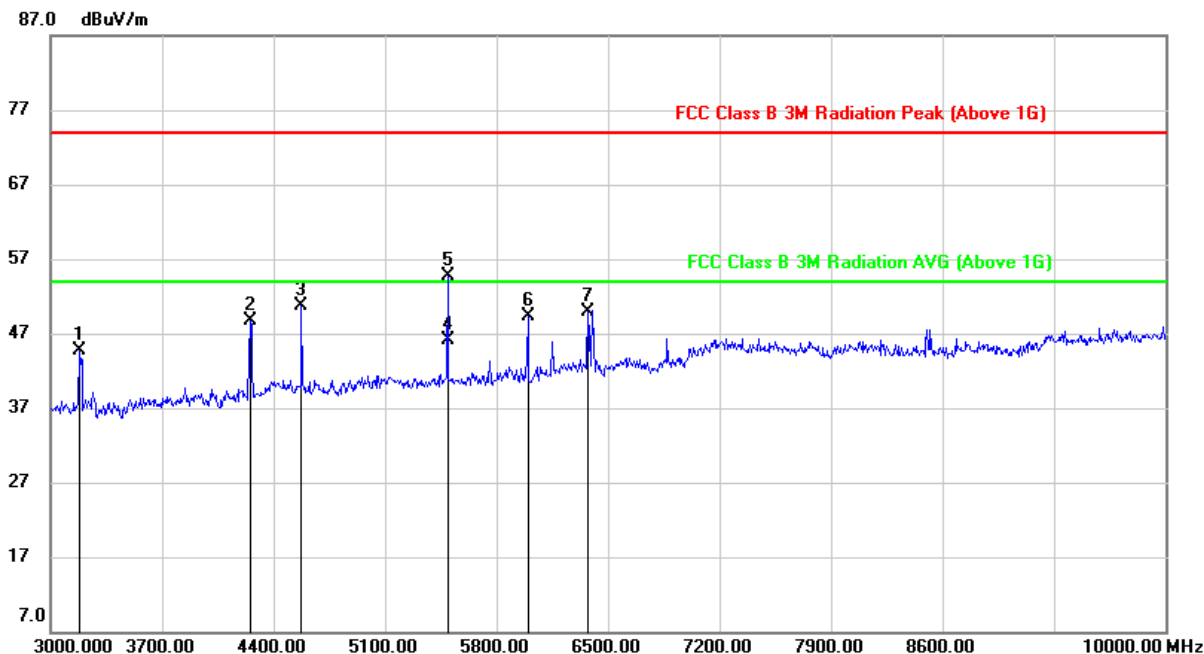


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 1536.000           | 54.68             | -12.27            | 42.41              | 74.00             | -31.59         | peak   |
| 2   | 1594.000           | 51.11             | -12.08            | 39.03              | 74.00             | -34.97         | peak   |
| 3   | 1830.000           | 63.21             | -10.98            | 52.23              | 74.00             | -21.77         | peak   |
| 4   | 2132.000           | 56.82             | -9.26             | 47.56              | 74.00             | -26.44         | peak   |
| 5   | 2664.000           | 50.86             | -7.86             | 43.00              | 74.00             | -31.00         | peak   |
| 6   | 2746.000           | 53.45             | -7.36             | 46.09              | 74.00             | -27.91         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.



**3GHz ~ 10GHz**



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 3182.000           | 49.52             | -4.79             | 44.73              | 74.00             | -29.27         | peak   |
| 2   | 4253.000           | 50.67             | -1.87             | 48.80              | 74.00             | -25.20         | peak   |
| 3   | 4575.000           | 51.38             | -0.64             | 50.74              | 74.00             | -23.26         | peak   |
| 4   | 5491.500           | 43.72             | 6.72              | 50.44              | 54.00             | -3.56          | AVG    |
| 5   | 5491.500           | 52.42             | 2.30              | 54.72              | 74.00             | -19.28         | peak   |
| 6   | 5996.000           | 45.97             | 3.31              | 49.28              | 74.00             | -24.72         | peak   |
| 7   | 6374.000           | 45.17             | 4.69              | 49.86              | 74.00             | -24.14         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

2. AVG: RMS detector, the detector and averaging type may be set for linear voltage averaging.

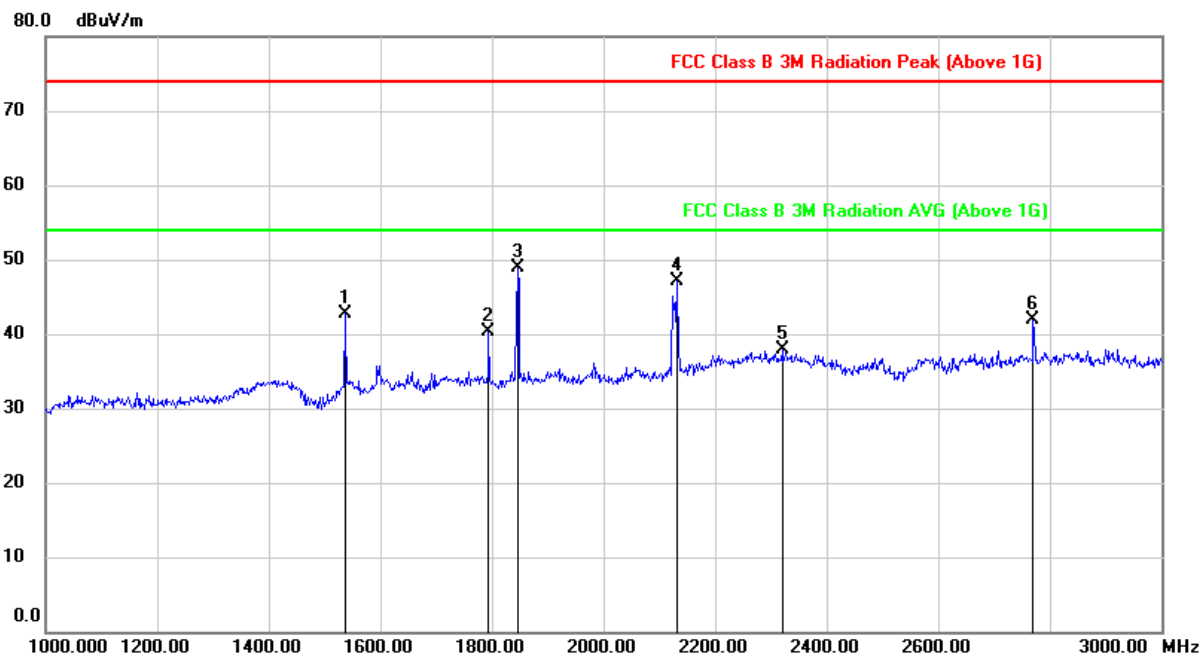
3. DCCF: Duty Cycle Correction Factor (Please refer to clause 7.1.ON TIME AND DUTY CYCLE)

4. The DCCF already added in Correct Factor.



**HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)**

**1GHz ~ 3GHz**

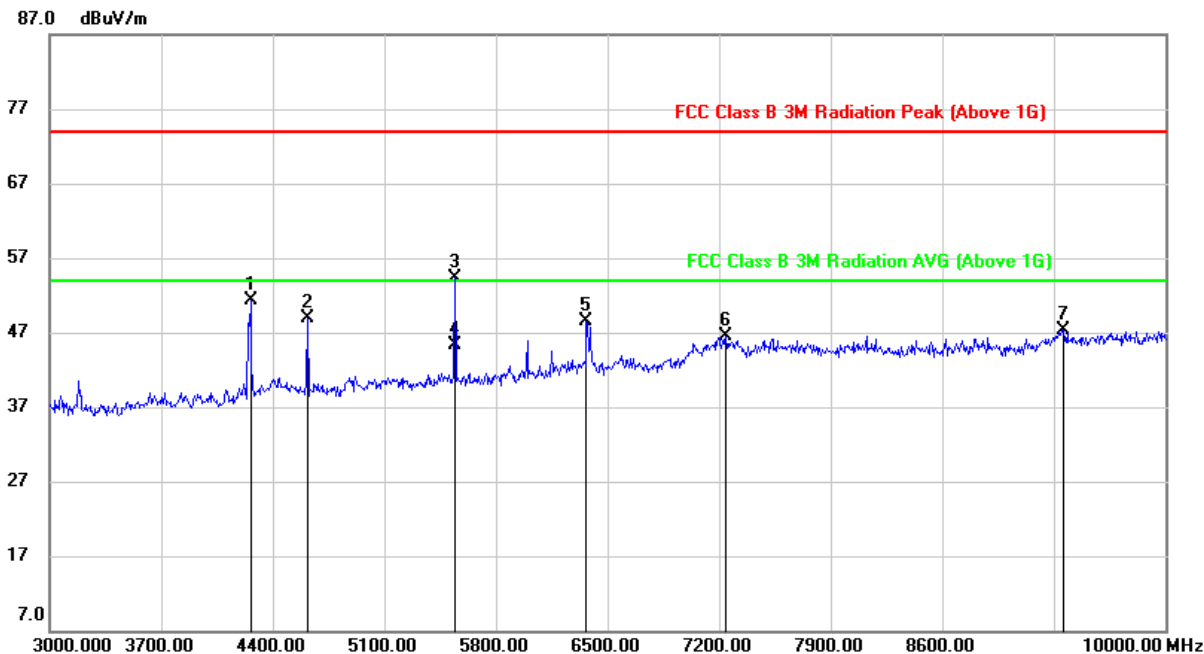


| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 1536.000           | 55.02             | -12.32            | 42.70              | 74.00             | -31.30         | peak   |
| 2   | 1794.000           | 51.50             | -11.15            | 40.35              | 74.00             | -33.65         | peak   |
| 3   | 1846.000           | 59.78             | -10.90            | 48.88              | 74.00             | -25.12         | peak   |
| 4   | 2132.000           | 56.22             | -9.16             | 47.06              | 74.00             | -26.94         | peak   |
| 5   | 2320.000           | 45.49             | -7.54             | 37.95              | 74.00             | -36.05         | peak   |
| 6   | 2770.000           | 48.96             | -7.12             | 41.84              | 74.00             | -32.16         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.

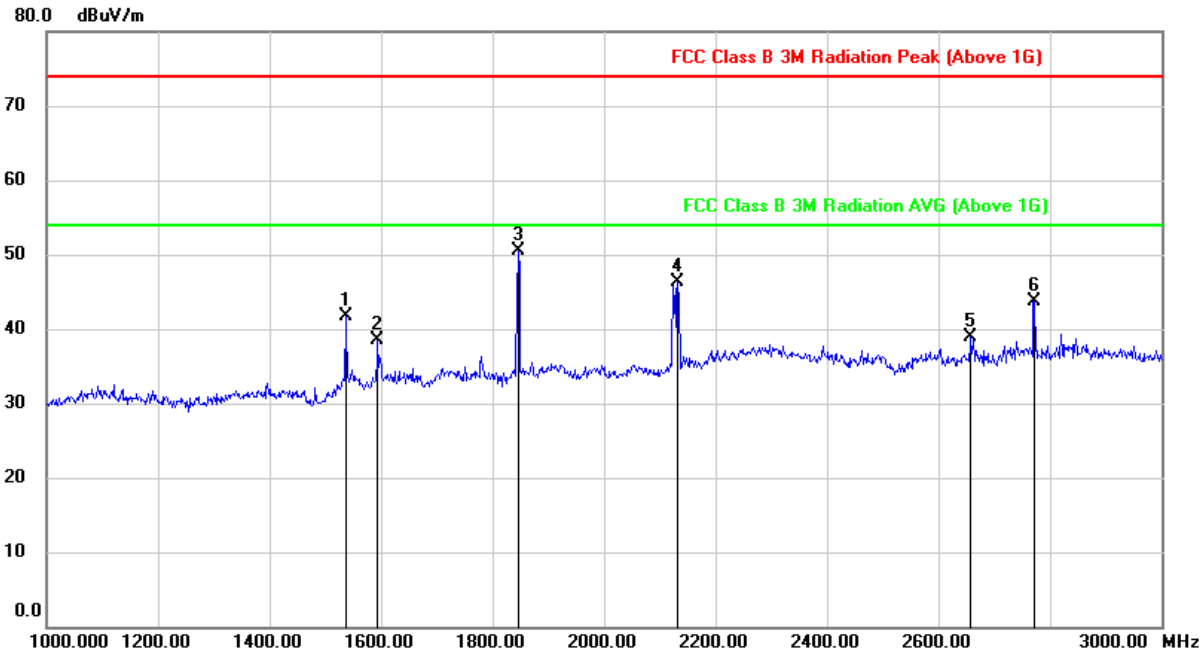


**3GHz ~ 10GHz**



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 4260.000           | 53.22             | -1.90             | 51.32              | 74.00             | -22.68         | peak   |
| 2   | 4617.000           | 49.59             | -0.76             | 48.83              | 74.00             | -25.17         | peak   |
| 3   | 5540.121           | 52.08             | 2.29              | 54.37              | 74.00             | -19.63         | peak   |
| 4   | 5540.121           | 43.03             | 6.71              | 49.74              | 54.00             | -4.26          | AVG    |
| 5   | 6367.000           | 43.78             | 4.65              | 48.43              | 74.00             | -25.57         | peak   |
| 6   | 7242.000           | 38.74             | 7.84              | 46.58              | 74.00             | -27.42         | peak   |
| 7   | 9363.000           | 36.46             | 10.84             | 47.30              | 74.00             | -26.70         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. AVG: RMS detector, the detector and averaging type may be set for linear voltage averaging.  
3. DCCF: Duty Cycle Correction Factor (Please refer to clause 7.1.ON TIME AND DUTY CYCLE)  
4. The DCCF already added in Correct Factor.

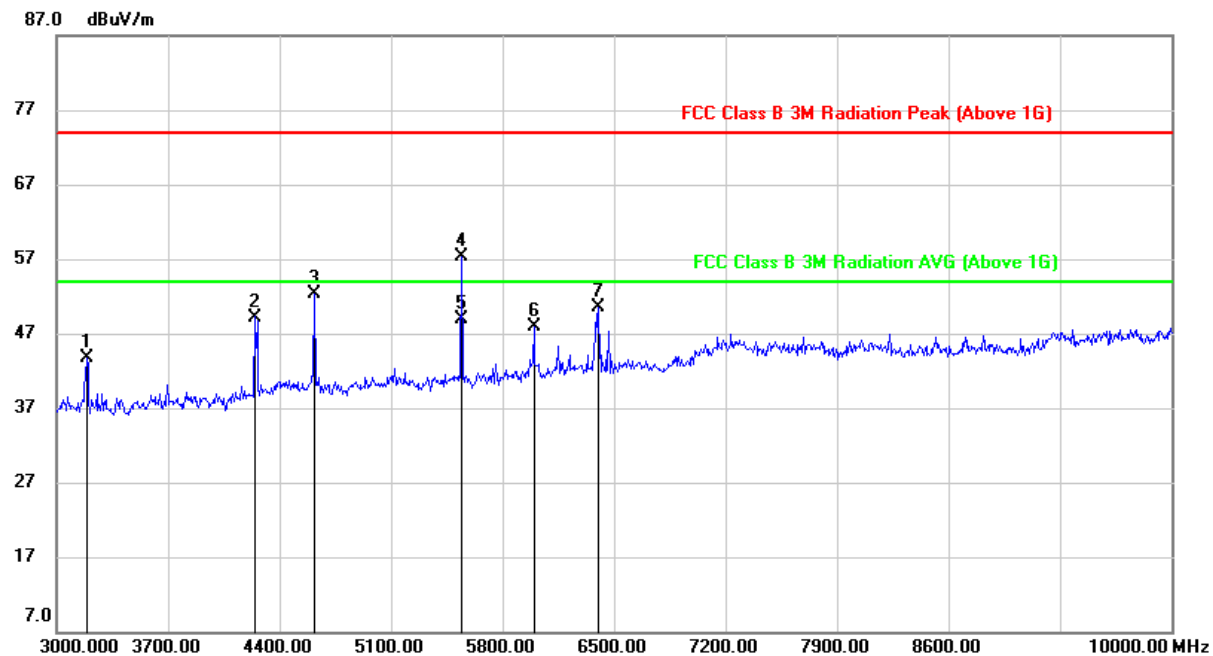
**HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)****1GHz ~ 3GHz**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 1536.000           | 54.07             | -12.27            | 41.80              | 74.00             | -32.20         | peak   |
| 2   | 1594.000           | 50.52             | -12.08            | 38.44              | 74.00             | -35.56         | peak   |
| 3   | 1846.000           | 61.37             | -10.90            | 50.47              | 74.00             | -23.53         | peak   |
| 4   | 2132.000           | 55.49             | -9.26             | 46.23              | 74.00             | -27.77         | peak   |
| 5   | 2658.000           | 46.75             | -7.90             | 38.85              | 74.00             | -35.15         | peak   |
| 6   | 2772.000           | 50.89             | -7.17             | 43.72              | 74.00             | -30.28         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.  
3. Peak: Peak detector.



**3GHz ~ 10GHz**



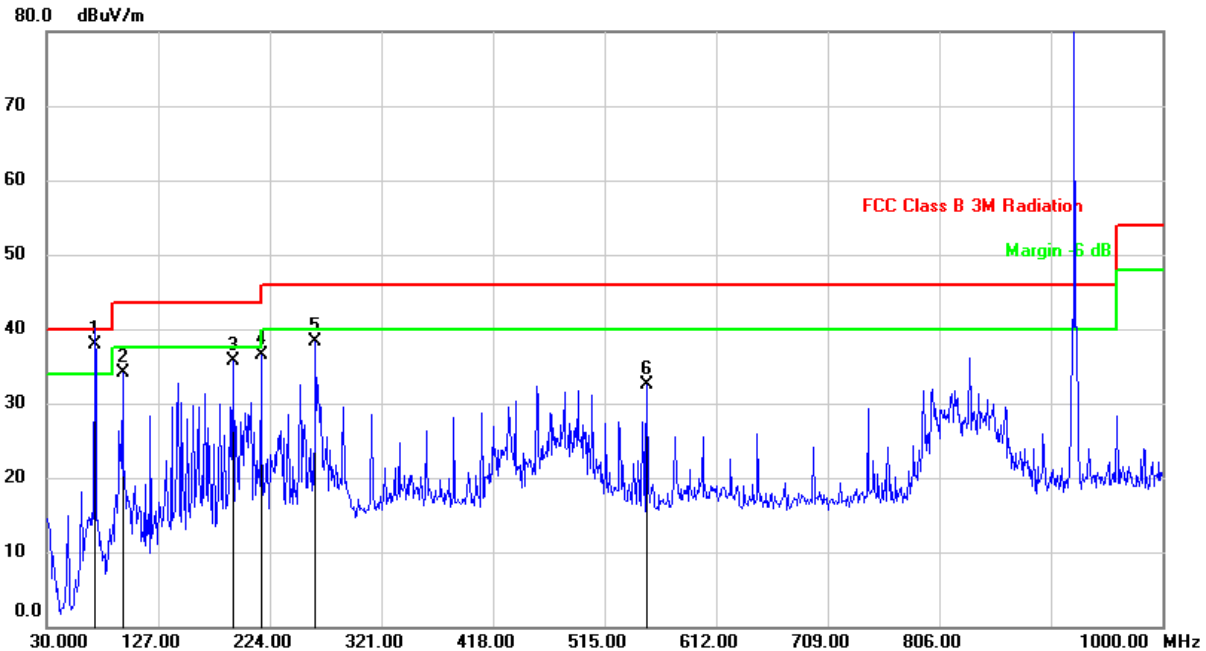
| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 3189.000           | 48.53             | -4.76             | 43.77              | 74.00             | -30.23         | peak   |
| 2   | 4246.000           | 51.11             | -1.91             | 49.20              | 74.00             | -24.80         | peak   |
| 3   | 4617.000           | 52.89             | -0.59             | 52.30              | 74.00             | -21.70         | peak   |
| 4   | 5540.100           | 55.06             | 2.29              | 57.35              | 74.00             | -16.65         | peak   |
| 5   | 5540.100           | 46.63             | 6.71              | 53.34              | 54.00             | -0.66          | AVG    |
| 6   | 5996.000           | 44.59             | 3.31              | 47.90              | 74.00             | -26.10         | peak   |
| 7   | 6402.000           | 45.70             | 4.75              | 50.45              | 74.00             | -23.55         | peak   |

- Note: 1. Measurement = Reading Level + Correct Factor.  
2. AVG: RMS detector, the detector and averaging type may be set for linear voltage averaging.  
3. DCCF: Duty Cycle Correction Factor (Please refer to clause 7.1.ON TIME AND DUTY CYCLE)  
4. The DCCF already added in Correct Factor.



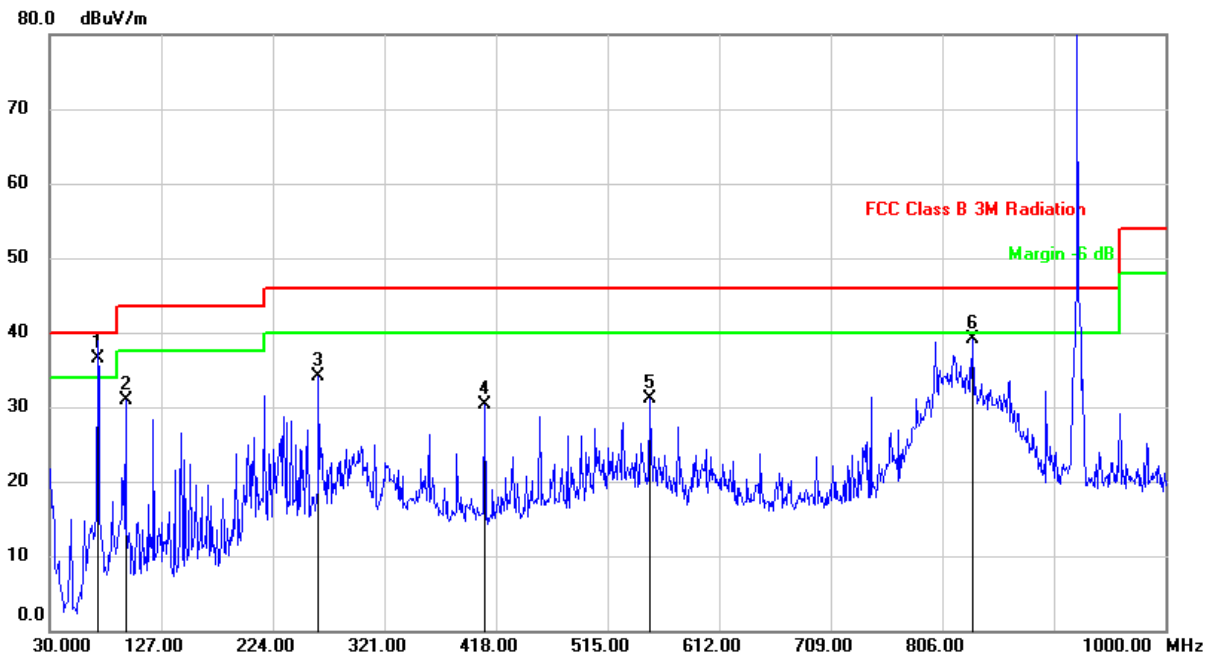
## 7.4. SPURIOUS EMISSIONS 30M ~ 1 GHz

### SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 71.7100            | 59.65             | -21.79            | 37.86              | 40.00             | -2.14          | QP     |
| 2   | 95.9600            | 55.99             | -21.93            | 34.06              | 43.50             | -9.44          | QP     |
| 3   | 191.9900           | 50.61             | -14.98            | 35.63              | 43.50             | -7.87          | QP     |
| 4   | 216.2400           | 53.10             | -16.61            | 36.49              | 46.00             | -9.51          | QP     |
| 5   | 263.7700           | 55.13             | -16.92            | 38.21              | 46.00             | -7.79          | QP     |
| 6   | 551.8600           | 42.63             | -10.08            | 32.55              | 46.00             | -13.45         | QP     |

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.  
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.  
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

**SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)**

| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 71.7100            | 58.21             | -21.79            | 36.42              | 40.00             | -3.58          | QP     |
| 2   | 95.9600            | 52.88             | -21.93            | 30.95              | 43.50             | -12.55         | QP     |
| 3   | 263.7700           | 51.10             | -16.92            | 34.18              | 46.00             | -11.82         | QP     |
| 4   | 408.3000           | 42.45             | -12.23            | 30.22              | 46.00             | -15.78         | QP     |
| 5   | 551.8600           | 41.20             | -10.08            | 31.12              | 46.00             | -14.88         | QP     |
| 6   | 832.1900           | 45.49             | -6.48             | 39.01              | 46.00             | -6.99          | QP     |

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.

2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.

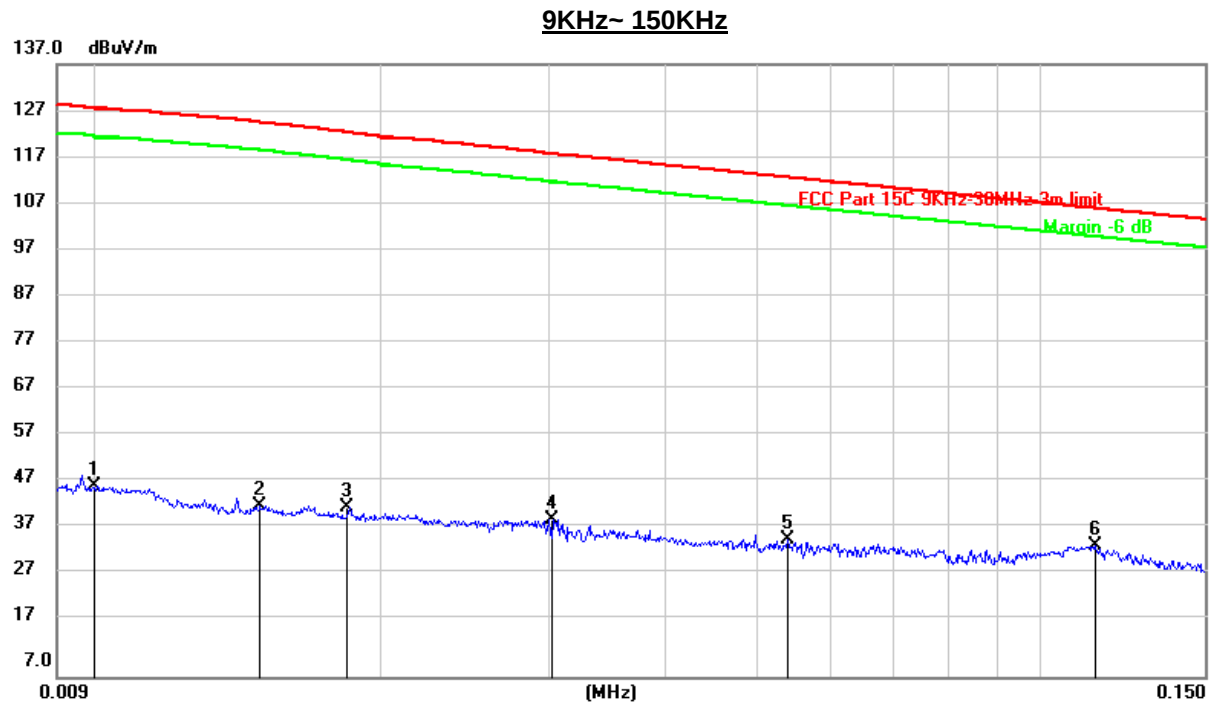
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

Note: All the modes had been tested, but only the worst data recorded in the report.



## 7.5. SPURIOUS EMISSIONS BELOW 30M

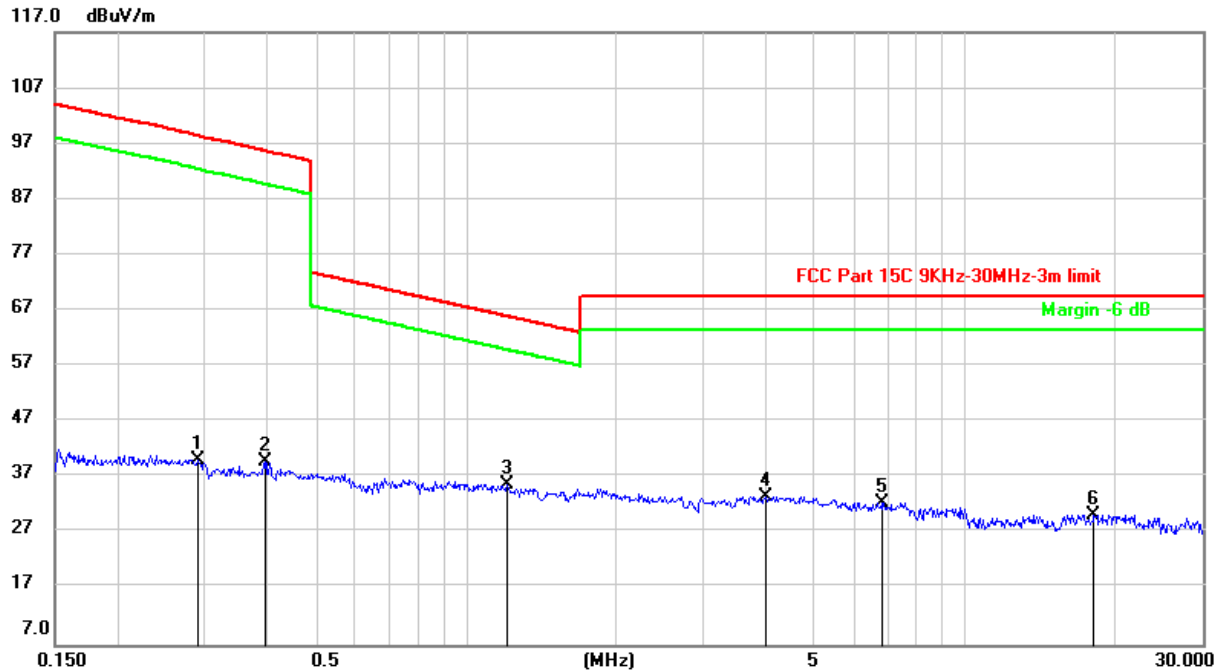
### SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



| No. | Frequency (KHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 0.0100          | 27.13          | 20.21          | 47.34           | 127.60         | -80.26      | peak   |
| 2   | 0.0148          | 23.07          | 20.26          | 43.33           | 124.71         | -81.38      | peak   |
| 3   | 0.0183          | 22.57          | 20.29          | 42.86           | 122.60         | -79.74      | peak   |
| 4   | 0.0303          | 19.95          | 20.31          | 40.26           | 117.98         | -77.72      | peak   |
| 5   | 0.0539          | 15.63          | 20.31          | 35.94           | 113.00         | -77.06      | peak   |
| 6   | 0.1145          | 14.37          | 20.28          | 34.65           | 106.44         | -71.79      | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. All the modes had been tested, but only the worst data were recorded in the report.  
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

### 150KHz ~ 30M



| No. | Frequency (MHz) | Reading (dBuV) | Correct (dB/m) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|-----|-----------------|----------------|----------------|-----------------|----------------|-------------|--------|
| 1   | 0.2893          | 19.86          | 20.31          | 40.17           | 98.44          | -58.27      | peak   |
| 2   | 0.3955          | 19.49          | 20.27          | 39.76           | 95.67          | -55.91      | peak   |
| 3   | 1.2096          | 15.20          | 20.44          | 35.64           | 65.95          | -30.31      | peak   |
| 4   | 3.9849          | 12.56          | 21.06          | 33.62           | 69.54          | -35.92      | peak   |
| 5   | 6.8051          | 11.54          | 20.91          | 32.45           | 69.54          | -37.09      | peak   |
| 6   | 18.1352         | 9.36           | 21.00          | 30.36           | 69.54          | -39.18      | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.

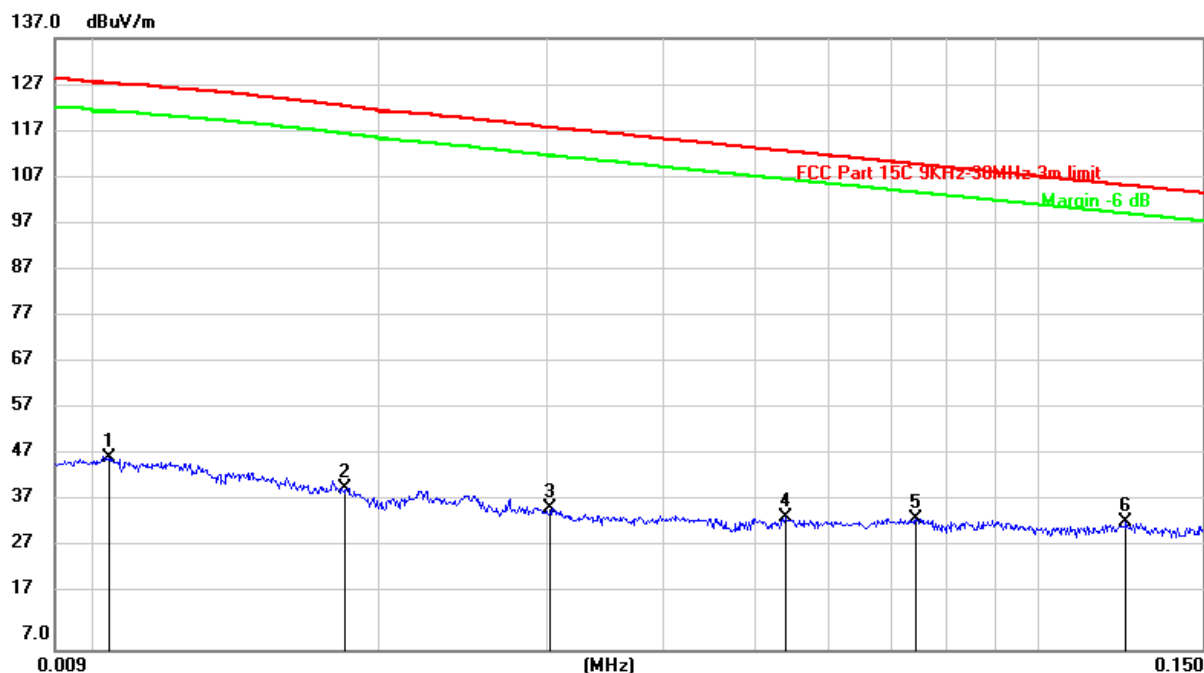
2. All the modes had been tested, but only the worst data were recorded in the report.

3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.



**SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)**

**9KHz~ 150KHz**

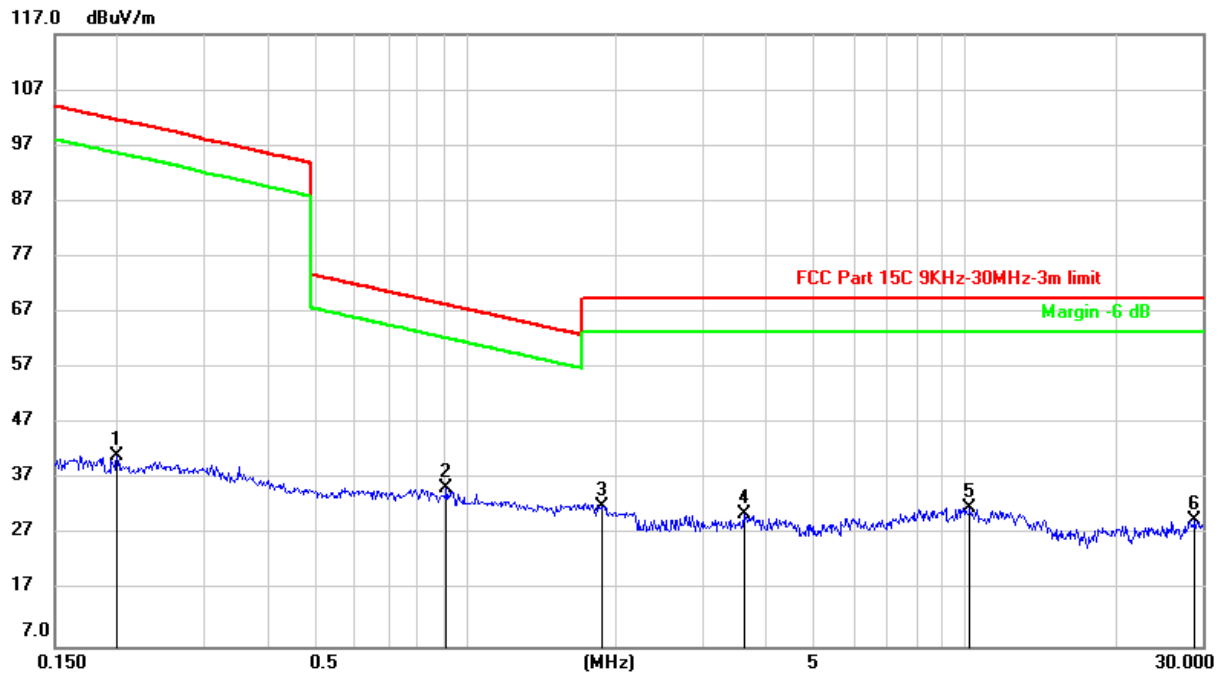


| No. | Frequency<br>(KHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 0.0103             | 27.57             | 20.21             | 47.78              | 127.42            | -79.64         | peak   |
| 2   | 0.0183             | 21.10             | 20.29             | 41.39              | 122.60            | -81.21         | peak   |
| 3   | 0.0303             | 16.69             | 20.31             | 37.00              | 117.98            | -80.98         | peak   |
| 4   | 0.0539             | 14.79             | 20.31             | 35.10              | 113.00            | -77.90         | peak   |
| 5   | 0.0742             | 14.49             | 20.31             | 34.80              | 110.21            | -75.41         | peak   |
| 6   | 0.1242             | 13.80             | 20.32             | 34.12              | 105.73            | -71.61         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. All the modes had been tested, but only the worst data were recorded in the report.  
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.



**150KHz ~ 30M**



| No. | Frequency<br>(MHz) | Reading<br>(dBuV) | Correct<br>(dB/m) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Remark |
|-----|--------------------|-------------------|-------------------|--------------------|-------------------|----------------|--------|
| 1   | 0.1995             | 20.85             | 20.37             | 41.22              | 101.60            | -60.38         | peak   |
| 2   | 0.9133             | 15.09             | 20.37             | 35.46              | 68.40             | -32.94         | peak   |
| 3   | 1.8770             | 11.48             | 20.69             | 32.17              | 69.54             | -37.37         | peak   |
| 4   | 3.6034             | 9.69              | 20.99             | 30.68              | 69.54             | -38.86         | peak   |
| 5   | 10.2332            | 10.84             | 21.05             | 31.89              | 69.54             | -37.65         | peak   |
| 6   | 28.9070            | 7.87              | 21.90             | 29.77              | 69.54             | -39.77         | peak   |

Note: 1. Measurement = Reading Level + Correct Factor.  
2. All the modes had been tested, but only the worst data were recorded in the report.  
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

Note: All the modes had been tested, but only the worst data recorded in the report.

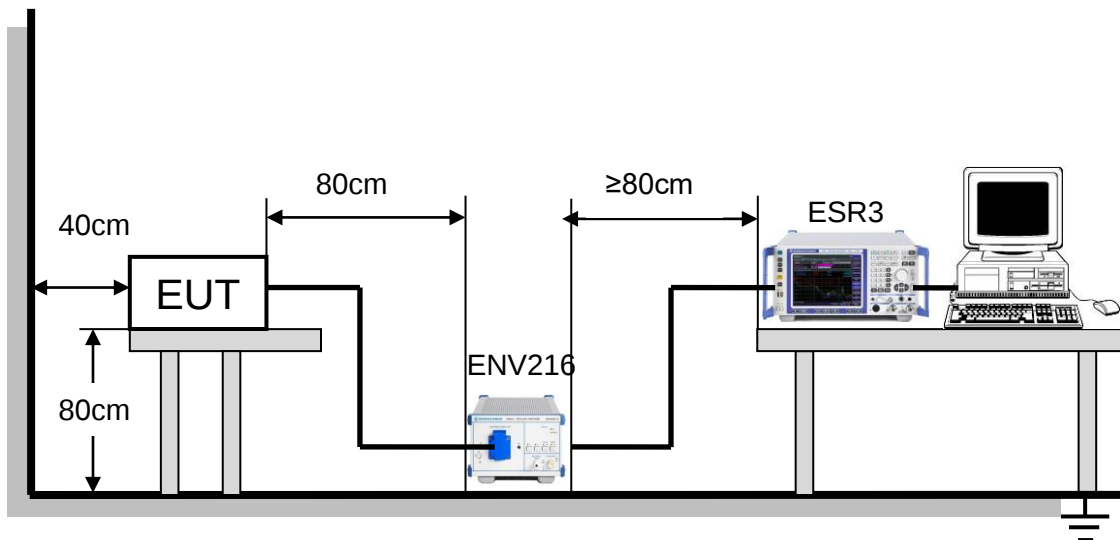
## 8. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

Please refer to FCC §15.207 (a) and RSS-Gen Clause 8.8.

| FREQUENCY (MHz) | Class A (dBuV) |         | Class B (dBuV) |           |
|-----------------|----------------|---------|----------------|-----------|
|                 | Quasi-peak     | Average | Quasi-peak     | Average   |
| 0.15 -0.5       | 79.00          | 66.00   | 66 - 56 *      | 56 - 46 * |
| 0.50 -5.0       | 73.00          | 60.00   | 56.00          | 46.00     |
| 5.0 -30.0       | 73.00          | 60.00   | 60.00          | 50.00     |

### TEST SETUP AND PROCEDURE



The EUT is put on a table of non-conducting material that is 0.8m high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). An EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013, Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

### TEST ENVIRONMENT

|                     |        |                   |          |
|---------------------|--------|-------------------|----------|
| Temperature         | 22.8°C | Relative Humidity | 65%      |
| Atmosphere Pressure | 101kPa | Test Voltage      | DC 22.2V |



## **RESULTS**

Not Applicable.

Note: The EUT is powered by battery and can't charge directly.



## 9. ANTENNA REQUIREMENTS

### APPLICABLE REQUIREMENTS

Please refer to FCC §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### ANTENNA CONNECTOR

EUT has a external antenna with an antenna connector.

### ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.

**END OF REPORT**