



TESTING CERT # 2786.01

**MOTOROLA PENANG ADV. COMM. LABORATORY**

Motorola Solutions Malaysia Sdn Bhd  
Innoplex Plot 2A, Medan Bayan Lepas,  
Mukim 12 S.W.D, 11900 Bayan Lepas,  
Penang, Malaysia.

**FCC / IC TEST REPORT**

Report Revision : Rev.C

**Date/s Tested** : 23-May-2017 - 2-Jun-2017  
**Report Issue Date** : 18-JUL-2017  
**Manufacturer/Location** : Motorola Solutions Malaysia Sdn Bhd  
**Requestor** : MOHAMED AFENDY MOHAMED RAFI  
**Product Type** : Portable  
**Model Number** : AAH88JCD9SA2AN  
**Frequency Band** : 136-174 MHz  
**Low / Max RF Output Power** : 0.5 Watts / 2.4 Watts(Analog) / 3.3 Watts(Digital)  
**Applicant Name** : Motorola Solutions Malaysia Sdn Bhd  
**Applicant Address** : Innoplex Plot 2A, Medan Bayan Lepas,  
Mukim 12 S.W.D, 11900 Bayan Lepas,  
Penang, Malaysia  
**FCC Registrations** : 772092  
**IC Registrations** : 109AK



The equipment was tested accordance to the requirement listed below:

(LMR )  
FCC 47 CFR Part 22 / 90  
IC RSS-119  
PASS

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Prepared By:

Approved By:

\_\_\_\_\_  
Song Zhi Wei  
Test Personnel

\_\_\_\_\_  
Goh Aik Hong  
Responsible Engineer

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**Report Revision History**

<b>Revision History</b>	<b>Description</b>	<b>Date</b>	<b>Originator</b>
Rev. A	Initial Report	30-JUN-2017	Song Zhi Wei
Rev. B	Update report in Section 6.8.2 125kHz , Section 6.7.2 data and add labeling for Section 6.11.2 / 6.11.3.	12-JUL-2017	Song Zhi Wei
Rev. C	Add statement “Not for FCC Review” in Section 6.8.2 for 25kHz data	18-JUL-2017	Song Zhi Wei

## **1.0 General Information**

### **EUT Description:**

<b>Technologies</b>	Land Mobile Radio (LMR)
<b>Modulation Type</b>	Analog, 4FSK

### **General Description of Applied Standards**

The EUT is a RF Product. According to the specifications of the manufacturer, the EUT is to comply with the requirements of the following standards:

**ANSI/TIA/-603-D**  
**ANSI C63.4.2014**  
**TIA-102 CCAA-A**  
**TIA-102 CAAB-D**  
**TIA-102 CAAA-D**  
**ANSI C63.26-2015**

## 2.0 Summary of Test Results

FCC General Rules Part (47CFR)	IC General Rules Part	Test Item	Result
2.1046 (a), 22.565 (f), 74.461, 74.861	RSS-Gen, RSS-119 (4.1,5.4)	RF Power Output	PASS
2.1055, 22.355, 90.213	RSS-Gen, RSS-119 (5.3)	Frequency Stability	PASS
2.1047	-	Audio Frequency Response	PASS
2.1047	-	Audio Low Pass Filter Response	PASS
2.1047	-	Modulation limiting	PASS
2.1049, 22.359 (b), 74.462 (c), 90.210	RSS-Gen, RSS-119 (5.5)	Occupied Bandwidth	PASS
22.359 (a), (b)	-	Band Edge Conducted Spurious Emission	PASS
90.214	-	Transient Frequency Behavior	PASS
-	-	Adjacent Channel Power	NA
2.1051, 90.210	RSS-Gen, RSS-119 (4.2,5.8)	Conducted Spurious Emissions	PASS
2.1051, 90.210	RSS-Gen, RSS-119 (4.2,5.8)	Radiated Spurious Emission	PASS
-	-	GNSS (EIRP for 1559 – 1610MHz)	NA
-	-	Effective Radiated Power (ERP)	NA
-	-	AC Power Line Conducted Spurious Emission	NA

NA → Not Applicable

## 3.0 Measurement Uncertainty

Measurement	Frequency	Expanded Uncertainty (k=1.96) (±)
AC Power Line Conducted Spurious Emission	150KHz ~ 30MHz	3.43
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	5.01
	200MHz ~ 1000MHz	5.01
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.01
	18GHz ~ 25GHz	5.01

#### 4.0 Equipment List

##### FCC Analog ATE#1: (SW Version: Analog ATE\_Rev 2.4.2 & FCC\_FreqStability\_Rev 1.0.3.)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
Audio Analyzer	8903B	3011A10475	2-May-17	2-May-18
SIGNAL GENERATOR	2042	203002/745	2-May-17	2-May-18
MODULATION ANALYZER	8901B	3216A03889	3-May-17	3-May-18
TRANSCIVER INTERFACE	8954A	2234A00398	4-May-17	4-May-18
DSA	36570A	MY42506781	3-May-17	3-May-18
SIGNAL GENERATOR	E4425B	US39260201	2-May-17	2-May-18
SIGNAL GENERATOR	2042	203002/747	2-May-17	2-May-18
POWER SENSOR	E4412A	MY41502652	9-May-17	9-May-18
POWER METER	E4416A	GB41293855	9-May-17	9-May-18
POWER SUPPLY	6031A	3325A02771	3-May-17	3-May-18
CHAMBER	SH-641	92014678	4-Apr-17	3-Apr-18
RF TRANSCIVER CONTROLLER	AX2007AI	NA	CNR	CNR

##### FCC Transient ATE #1: (SW Version: FCC Transient ATE\_R 1.0.3)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
POWER SUPPLY	6032A	2818A03549	11-May-17	11-May-18
POWER SENSOR	E4412A	MY41498918	9-May-17	9-May-18
POWER METER	E4416A	MY45101016	11-Jan-17	11-Jan-18
ATTENUATORS/SWITCH DRIVER	11713A	2508A10141	CNR	CNR
STEP ATTENUATOR/11dB	8494G	MY52300223	9-May-17	9-May-18
STEP ATTENUATOR/110dB	8496G	MY52300176	9-May-17	9-May-18
OSCILLOSCOPE	MSO8064A	MY45001903	10-Jun-16	10-Jun-17
AUDIO ANALYZER	8903B	3729A17409	2-May-17	2-May-18
AUDIO ANALYZER	8903B	3011A08952	2-May-17	2-May-18
MODULATION ANALYZER	8901B	3019A02766	4-Mar-17	4-Mar-18
SIGNAL GENERATOR	8657A	3323A05725	2-May-17	2-May-18
SPECTRUM ANALYZER	E4440A	MY46185415	24-May-17*	24-May-19
SWITCH CONTROL UNIT			CNR	CNR

\* Actual test performed on this ATE is after the calibration date. Therefore is in line with the calibration requirements.

##### Conducted Spurious Emission ATE # 1: (SW Version: Conducted Spur ATE\_rev 1.22.07.)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
SWITCH CONTROL UNIT	3488A	2719A32735	CNR	CNR
SPECTRUM ANALYZER	E4440A	US45303111	16-Feb-17	16-Feb-18
POWER SUPPLY	6032A	MY41002067	5-May-17	5-May-18
HIGH PASS FILTER SWITCH BOX	-	CS001	7-Apr-17	7-Apr-18
MICROWAVE GENERATOR	SMP 02	830682/015	19-Oct-16	19-Oct-17
MODULATION ANALYZER	8901B	3438A05278	3-Mar-17	3-Mar-18

**Radiated Emission Station: (SW Version: EMC\_FCC\_IC\_BT\_RE\_V 1.5.1)**

DESCRIPTION	MODEL	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
DRG HORN FREQ.	SAS-571	566	4-Sep-16	4-Sep-17
DRG HORN FREQ.	SAS-571	720	2-Mar-17	2-Mar-19
POWER SUPPLY	6674A	3126A00133	12-Nov-15	12-Nov-17
MICROWAVE SIGNAL GENERATOR	SMP04	100127	3-Jul-16	3-Jul-17
EMI TEST RECEIVER	ESIB26	100336	19-Oct-16	19-Oct-17
SIGNAL ANALYZER	FSV40	101103	25-Jun-16	25-Jun-17
5m Semi-anechoic Chamber	S800-HX	J2308	29-Jul-16	29-Jul-17
BILOG ANTENNA	CBL6112B	2950	23-Feb-16	23-Feb-18
BILOG ANTENNA	CBL6112B	2964	3-Feb-17	3-Feb-18
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170255	14-Oct-16	14-Oct-17
DATA LOGGER	SDL500	A.016776	18-Mar-17	18-Mar-18
SYSTEM CONTROLLER	SC104V	050806-1	CNR	CNR
TURNTABLE FLUSH MOUNT 2M	FM2011	NA	CNR	CNR
ANTENNA POSITIONING TOWER	TLT2	NA	CNR	CNR
18 - 40GHz PREAMPLIFIER	BBV9721	9721-007	CNR	CNR
LOOP ANTENNA	6502	208416	24-Jun-16	24-Jun-17
PREAMPLIFIER	PAM-0118P	361	CNR	CNR

**CNR → Calibration Not Required**

## 5.0 Test Condition

### 5.1. Transmitter Test Conditions

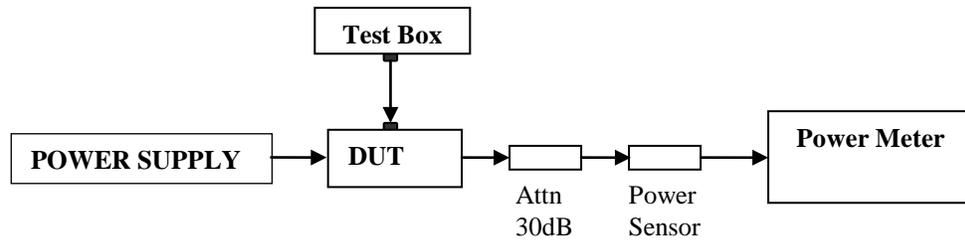
Test Item, (Channel Spacing)	Temperature (°C)	Voltage Supply (V)	Power (W)	Modulation	Test Frequency (MHz)
RF Output Power	25°C	Nominal	Low / Max	Analog, Digital	136.0125, 138.0125, 158.55, 161.7, 173.3875
Frequency Stability	-30°C ~ 60°C	80% ~ 120% of Nominal Volt	Max	Analog	158.55
Audio Frequency Response (12.5kHz / 25kHz)	25°C	Nominal	Max	Analog	158.55
Audio Low Pass Filter Response (12.5kHz / 25kHz)	25°C	Nominal	Max	Analog	158.55
Modulation limiting (12.5kHz / 25kHz)	25°C	Nominal	Max	Analog	158.55
Occupied Bandwidth (12.5kHz / 20kHz / 25kHz)	25°C	Nominal	Max	Analog, Digital	138.0125, 158.55, 161.7, 173.3875
Band Edge Conducted Spurious Emission (12.5kHz / 20kHz / 25kHz)	25°C	Nominal	Max	Analog, Digital	157.77/158.67
Transient Frequency Behavior (UHF & VHF Band) (12.5kHz / 25kHz)	25°C	Nominal	Max	Analog, Digital	158.55
Adjacent Channel Power (700MHz Band) (12.5kHz / 25kHz)	25°C	Nominal	Max	Analog, Digital	NA
Conducted Spurious Emissions (12.5kHz / 20kHz / 25kHz)	25°C	Nominal	Low / Max	Analog, Digital	138.0125, 157.77, 158.55, 158.67, 161.7, 173.3875
Radiated Spurious Emission (12.5kHz / 25kHz)	25°C	Nominal	Low / Max	Analog, Digital	138.0125, 157.77, 158.55, 158.67, 161.7, 173.3875
GNSS (700MHz Band) (EIRP for 1559-1610MHz) (12.5kHz / 25kHz)	25°C	Nominal	Max	Analog	NA
Effective Radiated Power (ERP) (700MHz & 900MHz Band) (12.5kHz / 25kHz)	25°C	Nominal	Max	Analog	N
AC Power Line Conducted Spurious Emissions* (12.5kHz)	25°C	Nominal	Max	Analog	NA

\* – ONLY tested if portables can be operated during charging OR mobiles can be used in desktop operation connected to a power supply  
**NA → Not Applicable**

## 6.0 Transmitter Test Parameters

### 6.1. RF Output Power

#### 6.1.1. Test Setup



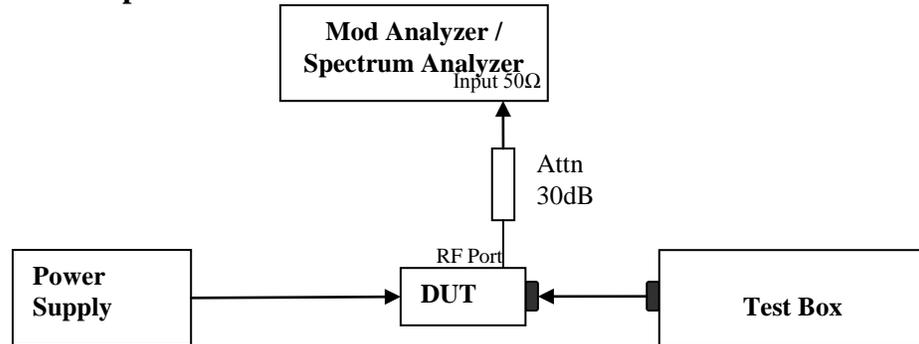
- 1) The DUT transmitter connected to Power Meter using the 30 dB attenuator and power sensor with above setup.
- 2) Path loss for the measurement included.
- 3) All the measurement was done at low, mid, high frequency for each band.
- 4) Record the power into the test report.

#### 6.1.2. Test Result

Temperature	25						Remarks
Voltage	3.70						
Frequency (MHz)	Half Watt (W)	Current (A)	Max Power (W)	Current (A)	Max Power (W)	Current (A)	
	Analog, Digital		Analog		Digital		
138.0125	0.52	0.87	2.28	1.80	3.16	2.19	Not for FCC Review
158.5500	0.51	0.85	2.28	1.82	3.24	2.18	
161.7000	0.51	0.83	2.30	1.83	3.2	2.17	
173.3875	0.51	0.80	2.28	1.82	3.3	2.15	
136.0125	0.51	0.82	2.30	1.84	3.2	2.18	Not for FCC Review

## 6.2. Frequency Stability

### 6.2.1. Test Setup

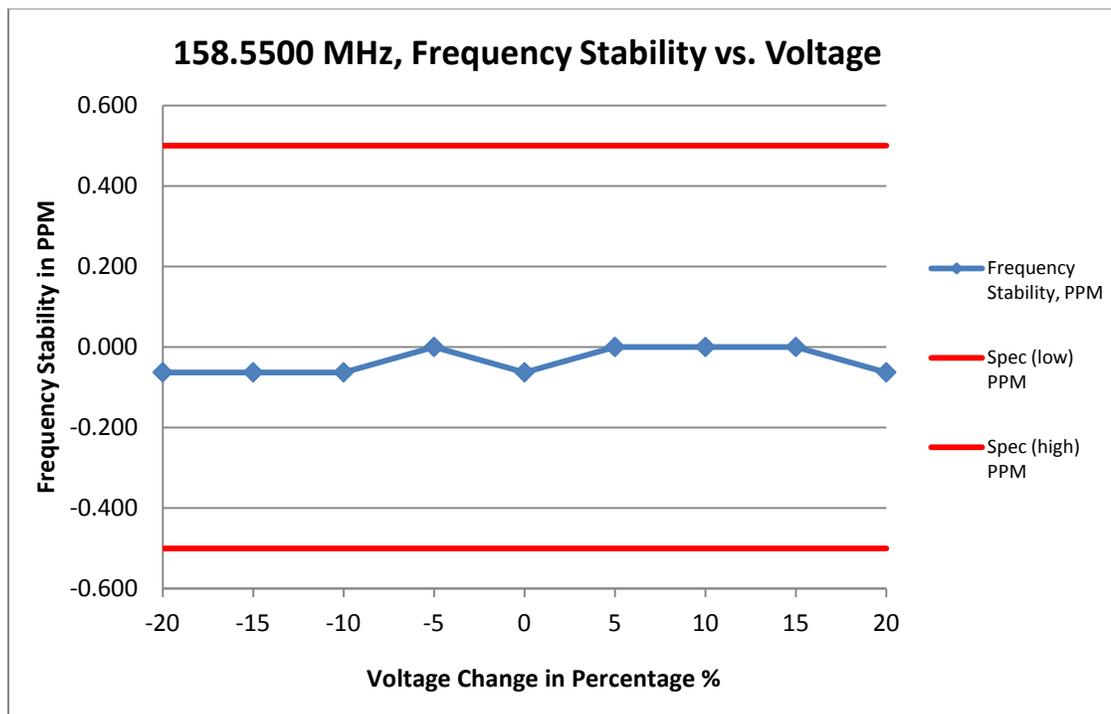


- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Path loss for the measurement included.
- 3) Transmit the DUT and record the freq in  $MCF_{MHz}$ .
- 4) Test in 2 conditions: Different Temperature & Supply Voltage input.
  - Temperature: Vary voltage per test condition in Clause 5.1
  - Supply Voltage: Vary temperature per test condition in Clause 5.1
- 5) Calculate the ppm frequency error by the following:

$$ppm\ error = \left( \frac{MCF_{MHz}}{ACF_{MHz}} - 1 \right) * 10^6$$

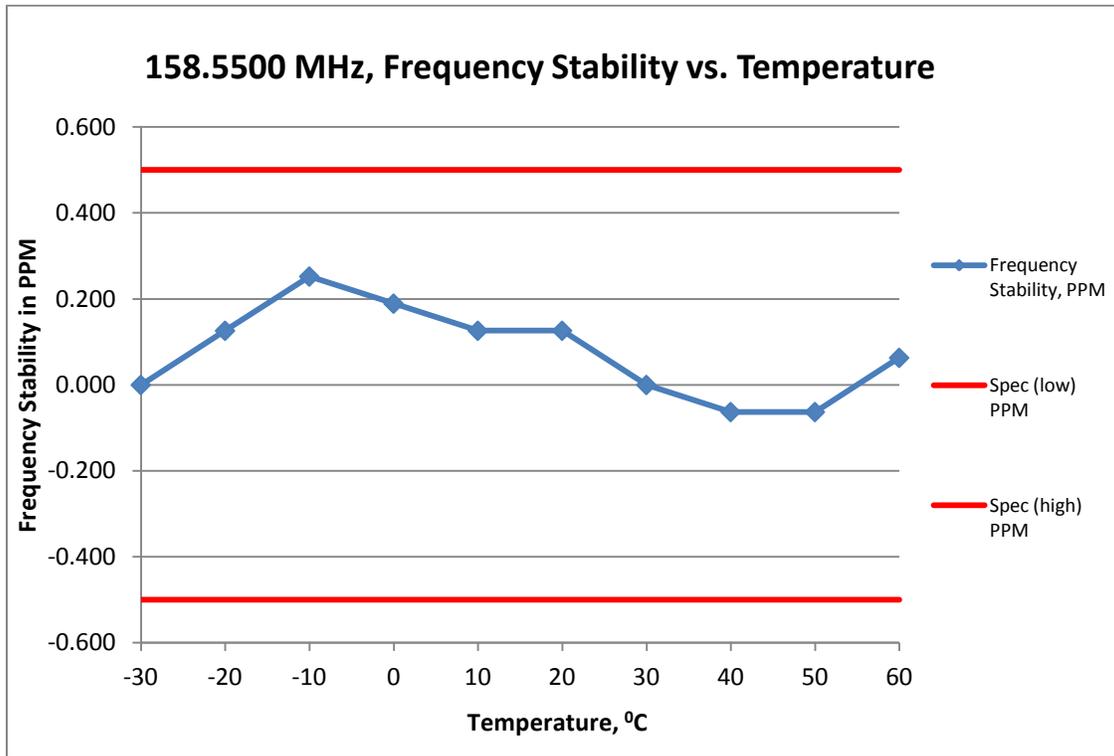
Where:  $MCF_{MHz}$  is the Measured Carrier Frequency in MHz  
 $ACF_{MHz}$  is the Assigned Carrier Frequency in MHz

### 6.2.2. Test Result



(i) Frequency Stability VS Voltage

Frequency / Channel Spacing	158.5500 MHz / 12.5 kHz				
Temperature, °C	25				
Voltage %	Voltage, V	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-20	2.960	158.549990	-0.063	-0.500	0.500
-15	3.145	158.549990	-0.063	-0.500	0.500
-10	3.330	158.549990	-0.063	-0.500	0.500
-5	3.515	158.550000	0.000	-0.500	0.500
0	3.700	158.549990	-0.063	-0.500	0.500
5	3.885	158.550000	0.000	-0.500	0.500
10	4.070	158.550000	0.000	-0.500	0.500
15	4.255	158.550000	0.000	-0.500	0.500
20	4.440	158.549990	-0.063	-0.500	0.500



(ii) Frequency Stability VS temperature

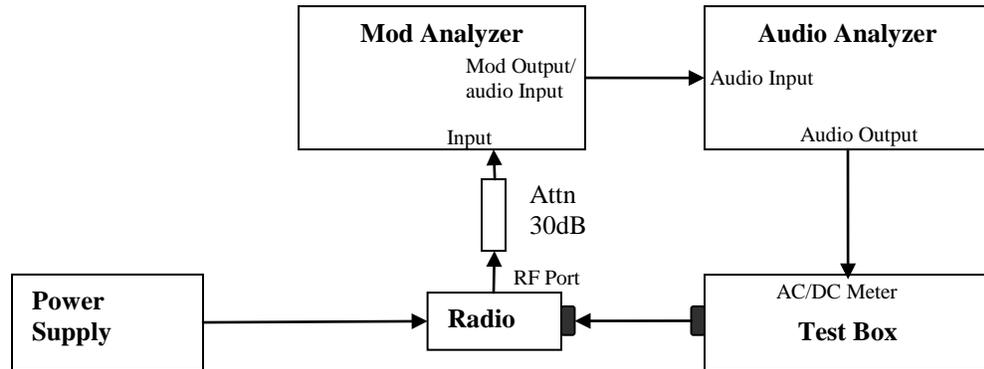
Frequency / Channel Spacing	158.5500 MHz / 12.5 kHz			
Voltage, V	3.70			
Temperature, °C	Frequency, MHz	Frequency Stability, PPM	Spec (low) PPM	Spec (high) PPM
-30	158.550000	0.000	-0.500	0.500
-20	158.550020	0.126	-0.500	0.500
-10	158.550040	0.252	-0.500	0.500
0	158.550030	0.189	-0.500	0.500
10	158.550020	0.126	-0.500	0.500
20	158.550020	0.126	-0.500	0.500
30	158.550000	0.000	-0.500	0.500
40	158.549990	-0.063	-0.500	0.500
50	158.549990	-0.063	-0.500	0.500
60	158.550010	0.063	-0.500	0.500

**6.2.3. Test Limit**

As per manufacturer declared spec +/- 0.5ppm

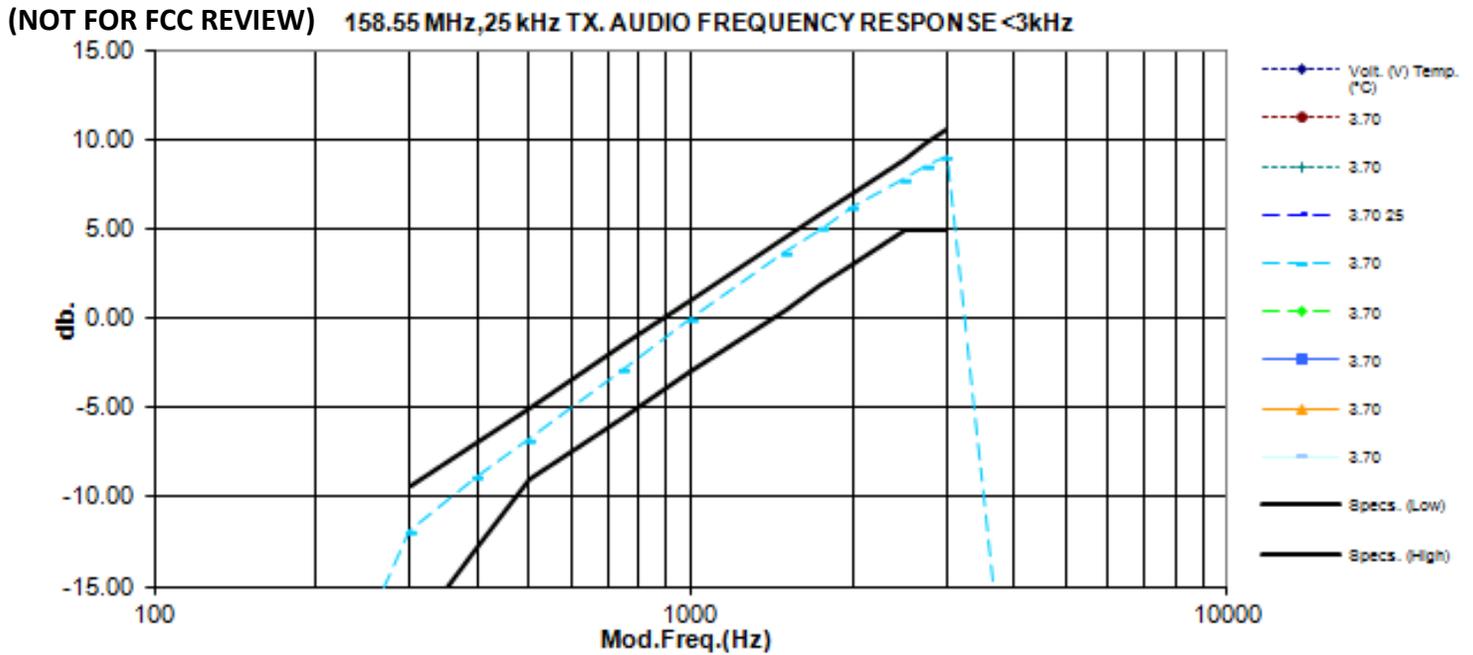
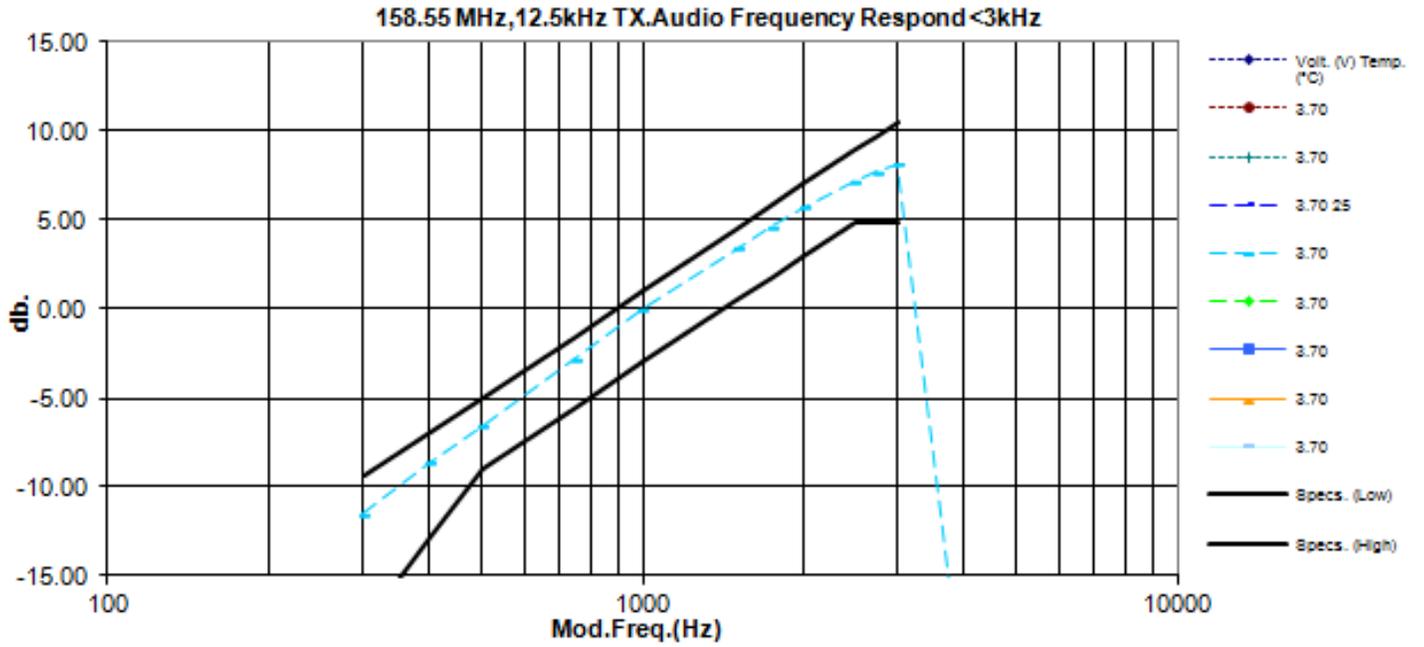
### 6.3. Audio Frequency Response

#### 6.3.1. Test Setup

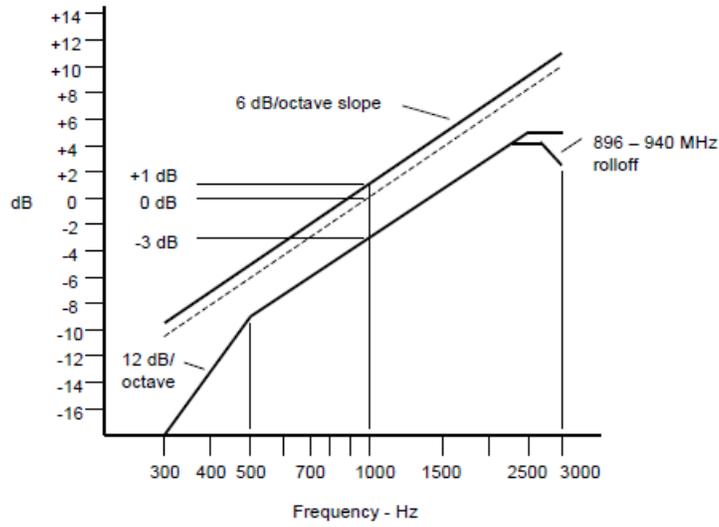


- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Path loss for the measurement included.
- 3) Set the audio bandwidth filter to 15 kHz and 50 kHz.
- 4) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 20% of the maximum deviation.
- 5) On audio analyzer, set the rated level as reference to zero.
- 6) Vary the audio frequency from 300 Hz to 3 kHz. Record the change in dB on the audio analyzer.

### 6.3.2. Test Result



### 6.3.3. Test Limit

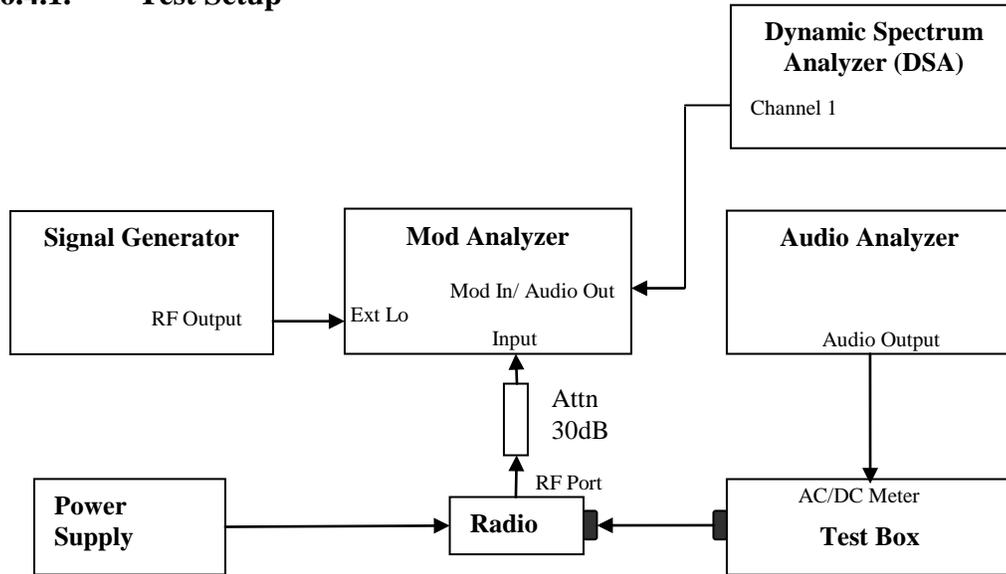


Note:

- o There are additional 6 dB per octave attenuation is allowed from 2.5KHz to 3KHz in equipment 25MHz to 869MHz radio.
- o Additional 6 dB per octave attenuation is allowed from 2.3KHz to 2.7KHz & additional 12 dB per octave attenuation is allowed from 2.7KHz to 3KHz in equipment 896MHz to 940MHz radio.

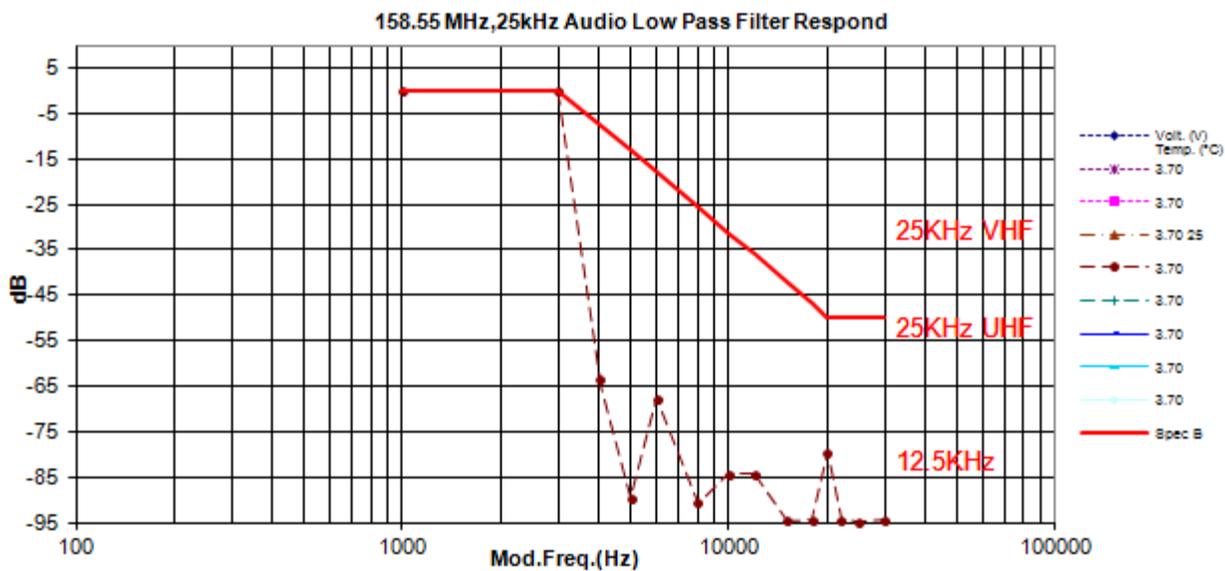
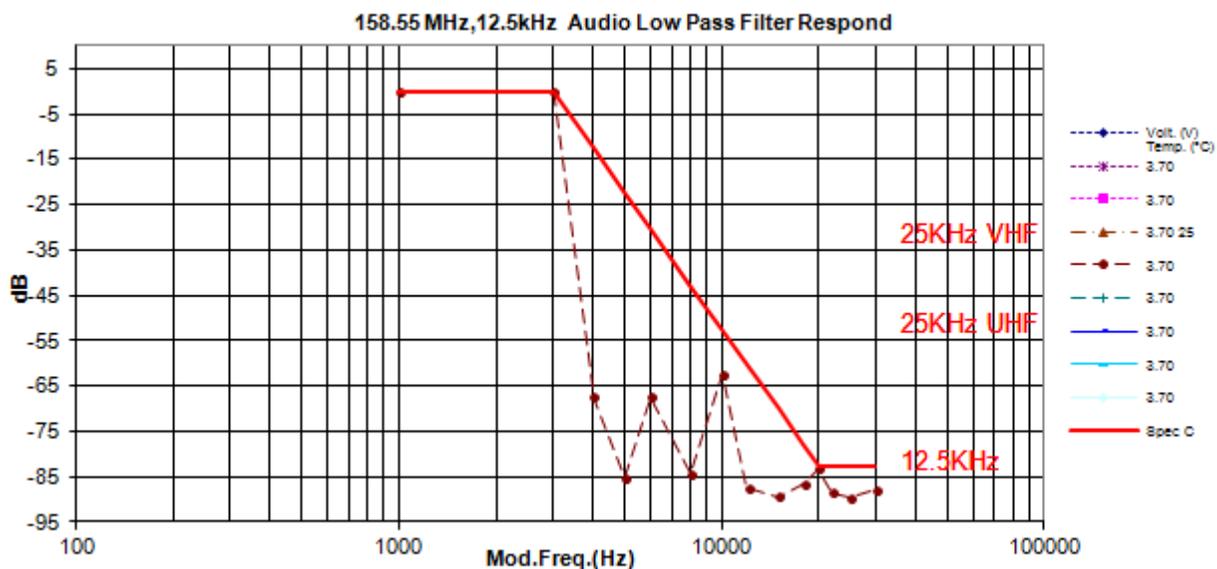
## 6.4. Audio Low Pass Filter Response

### 6.4.1. Test Setup

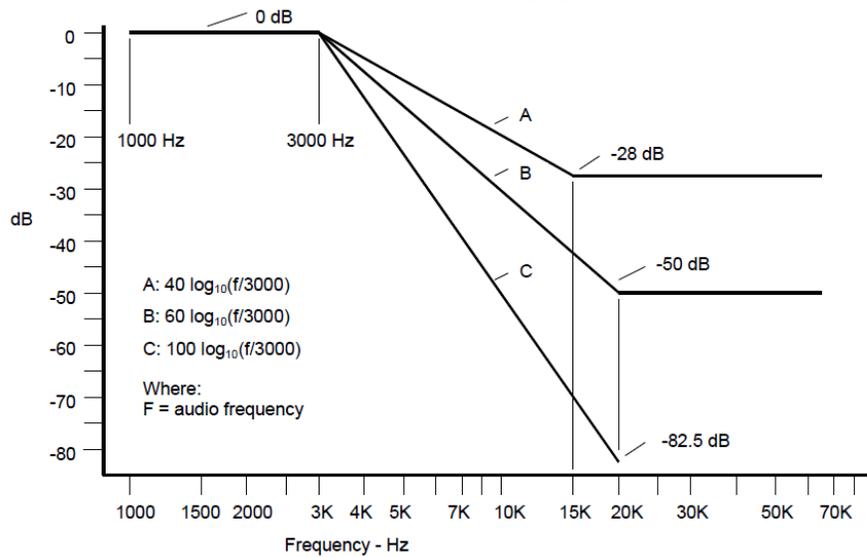


- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Path loss for the measurement included.
- 3) Press 23.1SPCL on modulation analyzer to enable the external LO from Sigen.
- 4) Set the Sigen frequency to  $F_c + 1.5$  MHz, RF output level to 0dBm without modulation.
- 5) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 60% of the maximum deviation.
- 6) Up the amplitude by 20dB.
- 7) On DSA, get the reference point to 0dB.
- 8) Vary the frequency on audio analyzer from 3 kHz to 20 kHz, record the audio tone from DSA.

### 6.4.2. Test Result



### 6.4.3. Test Limit



For audio frequencies above 3000 Hz, the audio response of the post limiter low-pass filter shall meet or exceed the following requirements:

- a) For equipment operating on 20, 25 or 30 kHz channel bandwidth in the 25 MHz to 174 MHz range:

At frequencies from 3000 Hz through 15,000 Hz the attenuation shall be greater than the attenuation at 1000 Hz by at least:  $40 \log_{10}(f/3000)$  dB

where:  $f$  is the audio frequency in Hz.

At frequencies above 15,000 Hz, the attenuation shall be greater than the attenuation at 1000 Hz, by at least: 28 dB.

- b) For equipment operating with 25 kHz bandwidth channels between 406 and 512 MHz through 896 MHz, and between 929 MHz through 930 MHz:

At frequencies from 3000 Hz through 20,000 Hz, the attenuation shall be greater than the attenuation at 1000 Hz by at least:  $60 \log_{10}(f/3000)$  dB

where:  $f$  is the audio frequency in Hz.

At frequencies above 20,000 Hz the attenuation shall be greater than the attenuation at 1000 Hz by at least: 50 dB.

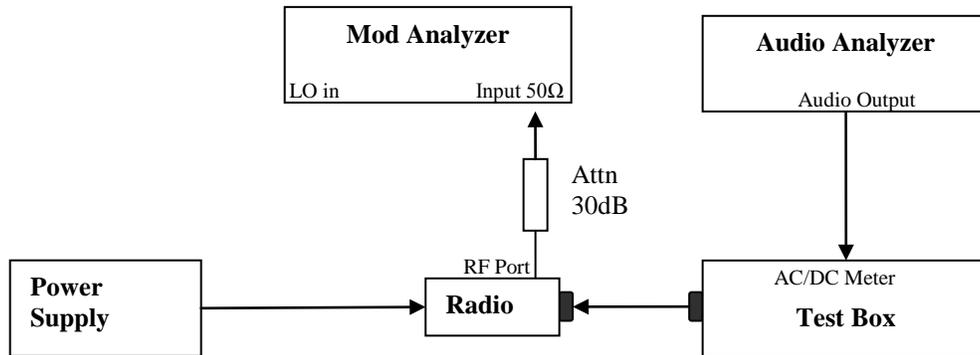
- c) For equipment operating on channels between 896 MHz through 901 MHz, between 935 MHz through 940 MHz, and 12.5 or 15 kHz spaced channels in the frequency range 138-174 MHz and 406-512 MHz.

At frequencies from 3000 Hz through 20,000 Hz the attenuation shall be greater than the attenuation at 1000 Hz by at least:  $100 \log_{10}(f/3000)$  dB

where:  $f$  is the audio frequency in Hz.

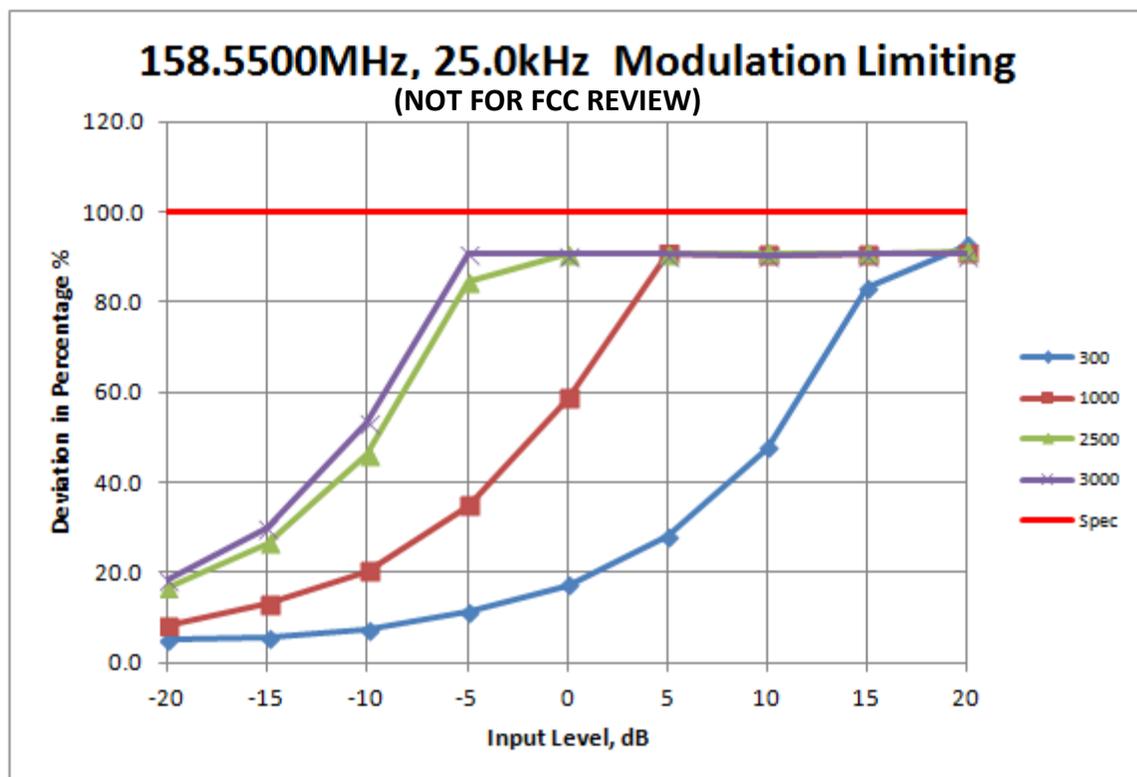
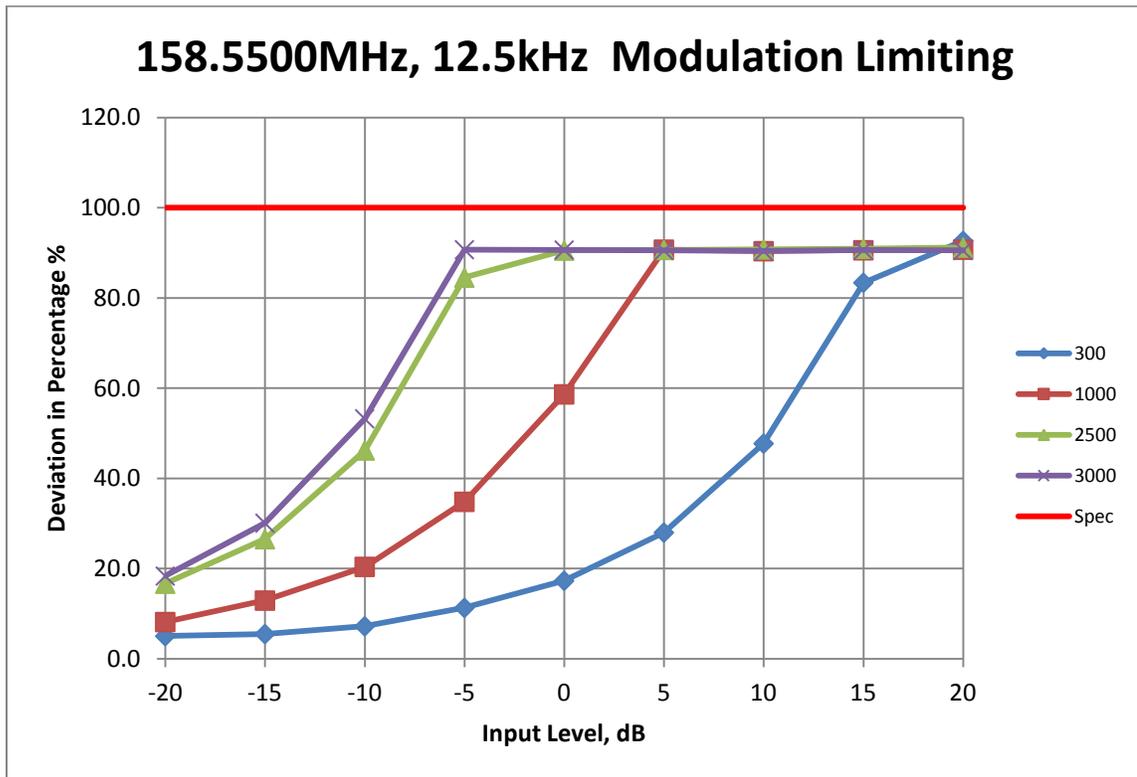
## 6.5. Modulation Limiting

### 6.5.1. Test Setup



- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Path loss for the measurement included.
- 3) Set the audio bandwidth filter to 15 kHz.
- 4) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 60% of the maximum deviation.
- 5) Record the frequency deviation as 0dB input level at 1kHz audio frequency.
- 6) Repeat the step and record the frequency deviation from -20 dB to 20dB by 5 dB increments and different audio freq 300 Hz, 2.5 kHz and 3 kHz.

### 6.5.2. Test Result

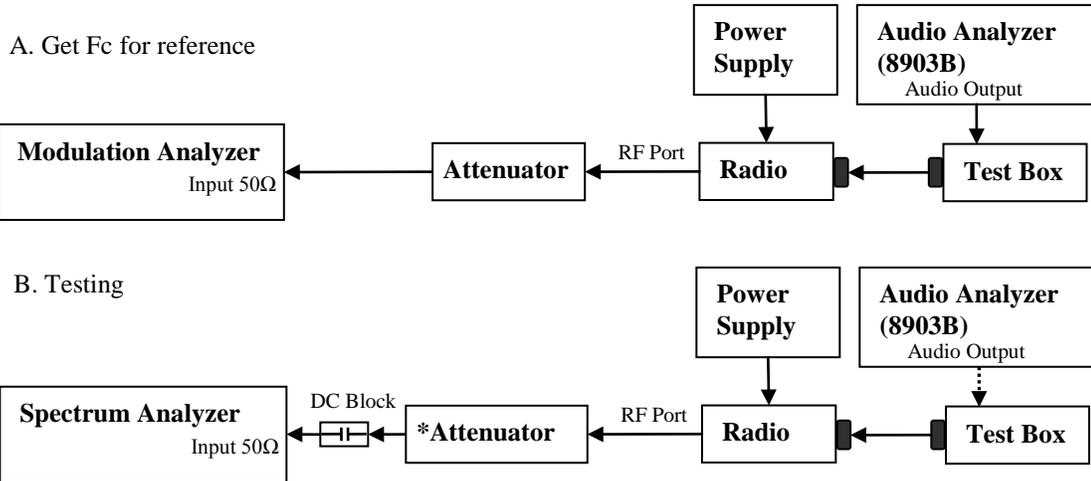


### 6.5.3. Test Limit

Modulation shall not exceed 100 percent if amplitude modulation is employed.

## 6.6. Occupied Bandwidth

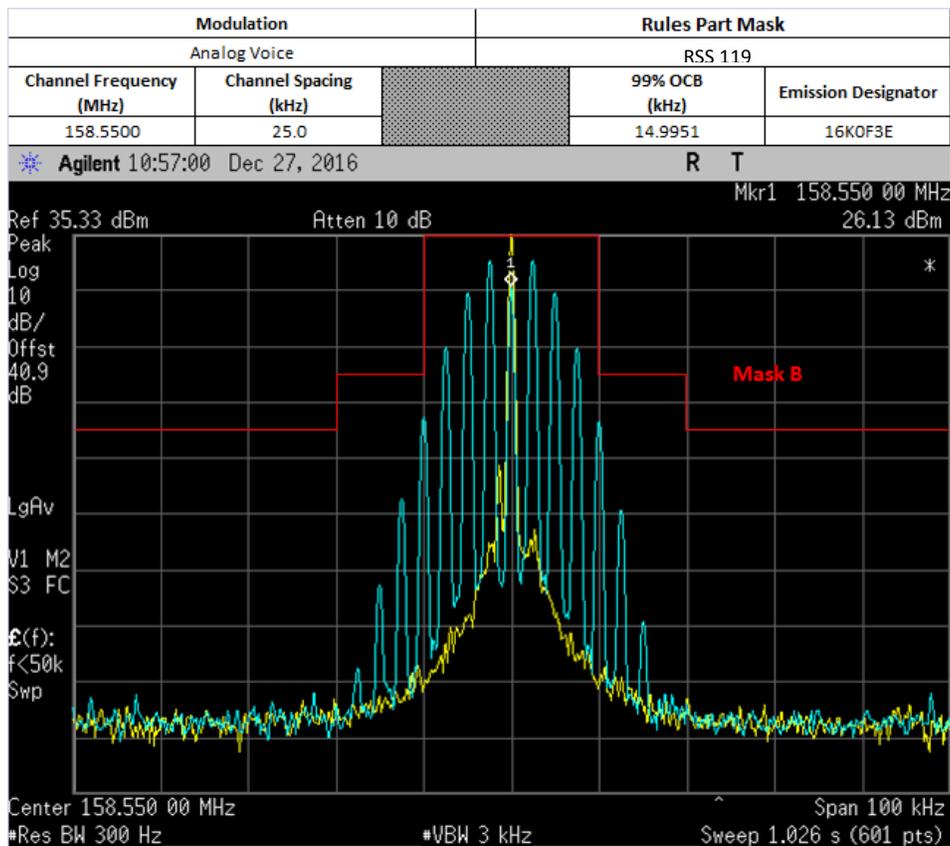
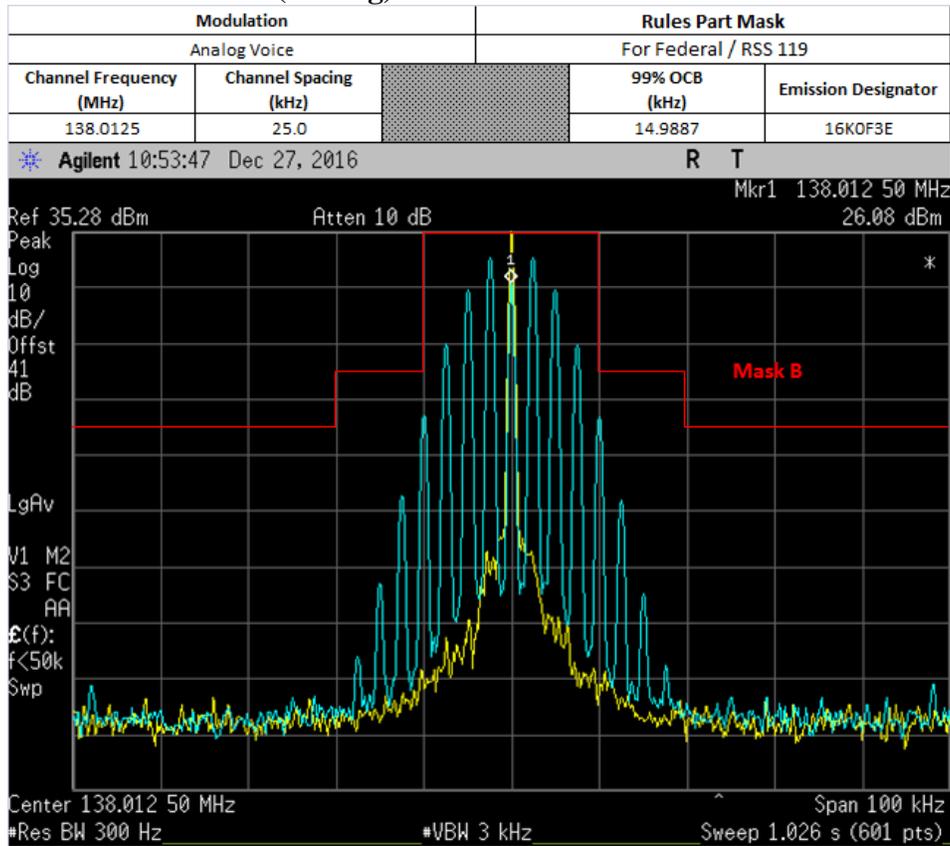
### 6.6.1. Test Setup (Analog)

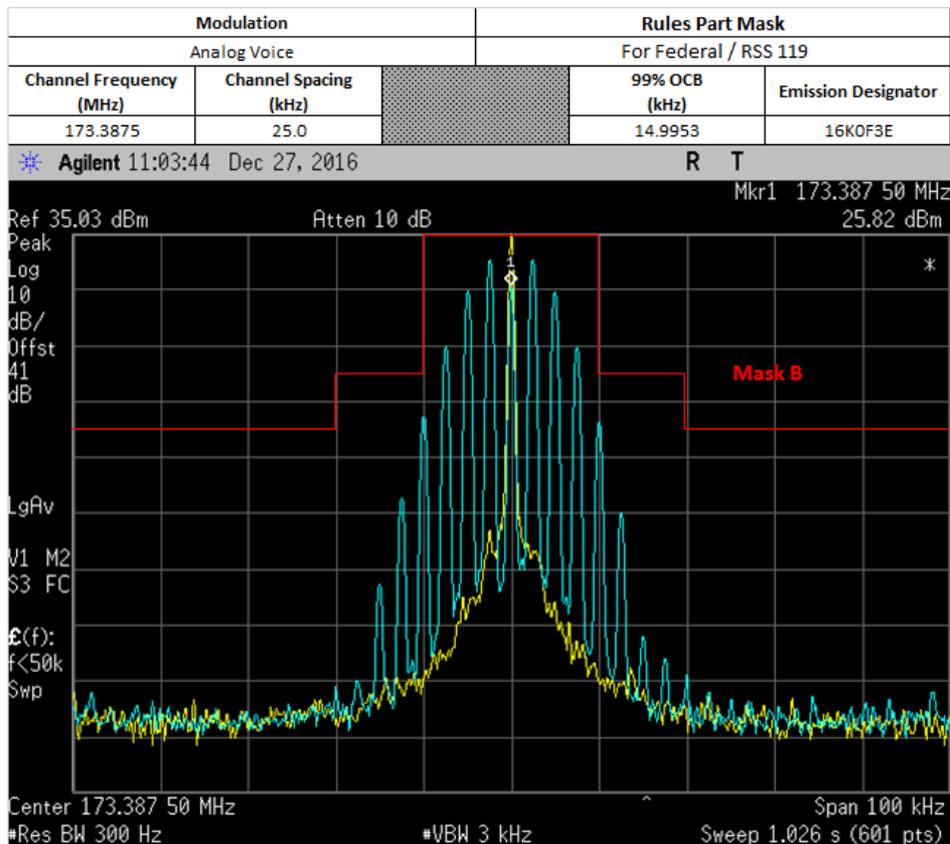
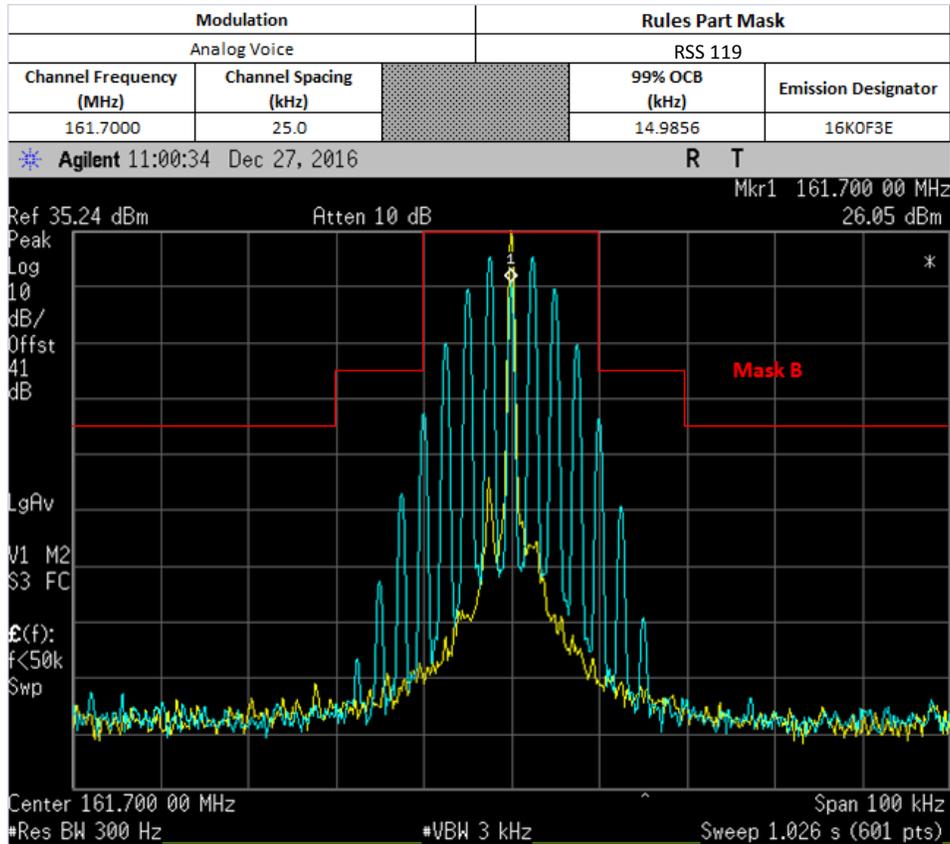


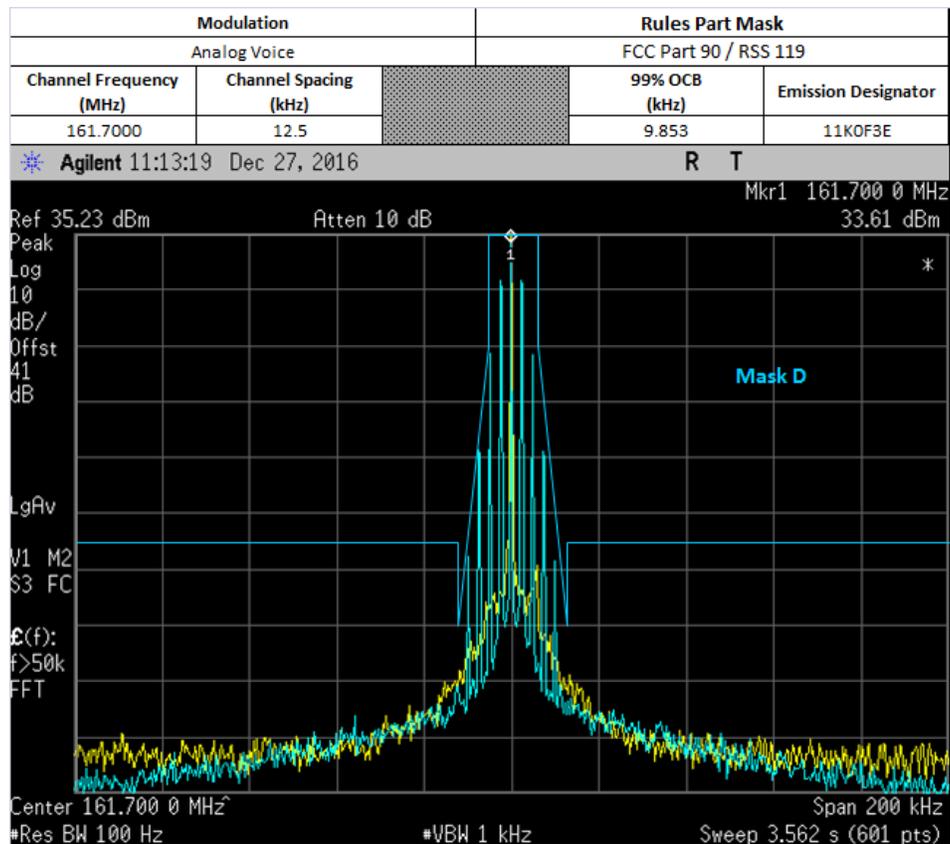
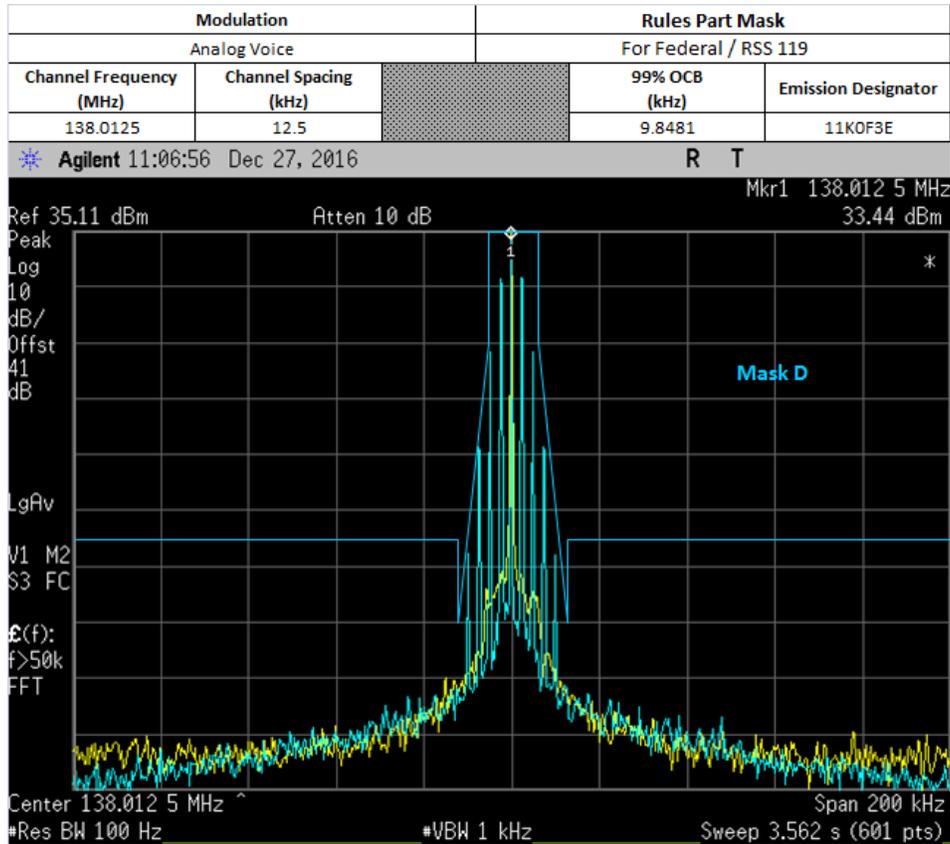
- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
- 3) Transmit the radio and set the audio analyzer to 2.5 kHz audio frequency and 50% of the rated deviation. Up the amplitude by 16 dB. Dekey the DUT.
- 4) Path loss for the measurement included.
- 5) Select the Occupied Bandwidth measurement for 99% Bandwidth Measurement.
- 6) Key in the Fc and Resolution Bandwidth (1 ~ 5 % of emission designator).
- 7) Transmit the DUT and record the occupied Bandwidth frequency.
- 8) Preset the spectrum analyzer for sideband spectrum measurement.
- 9) Set the span to 100 KHz and Resolution Bandwidth (according to FCC/ ISED standard).
- 10) Save the screen shot as modulated signal
- 11) Remove the audio tone from audio analyzer to capture unmodulated signal.

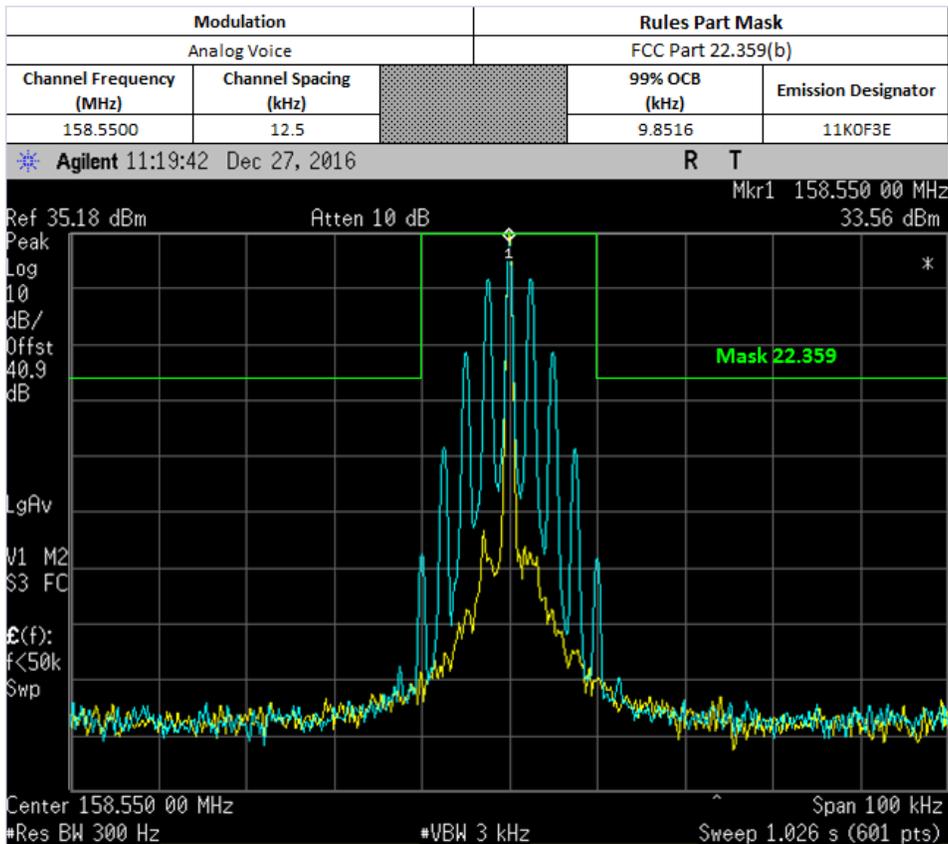
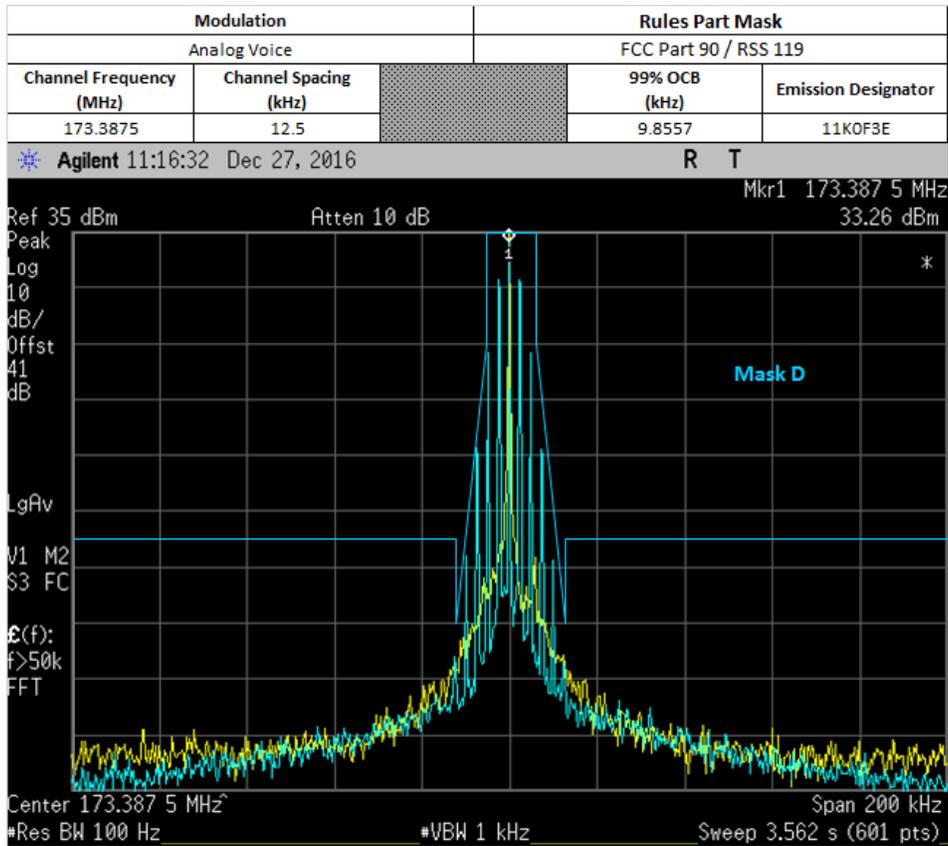
\* Only HPF added for Mask 80.211 measurement with attenuator.

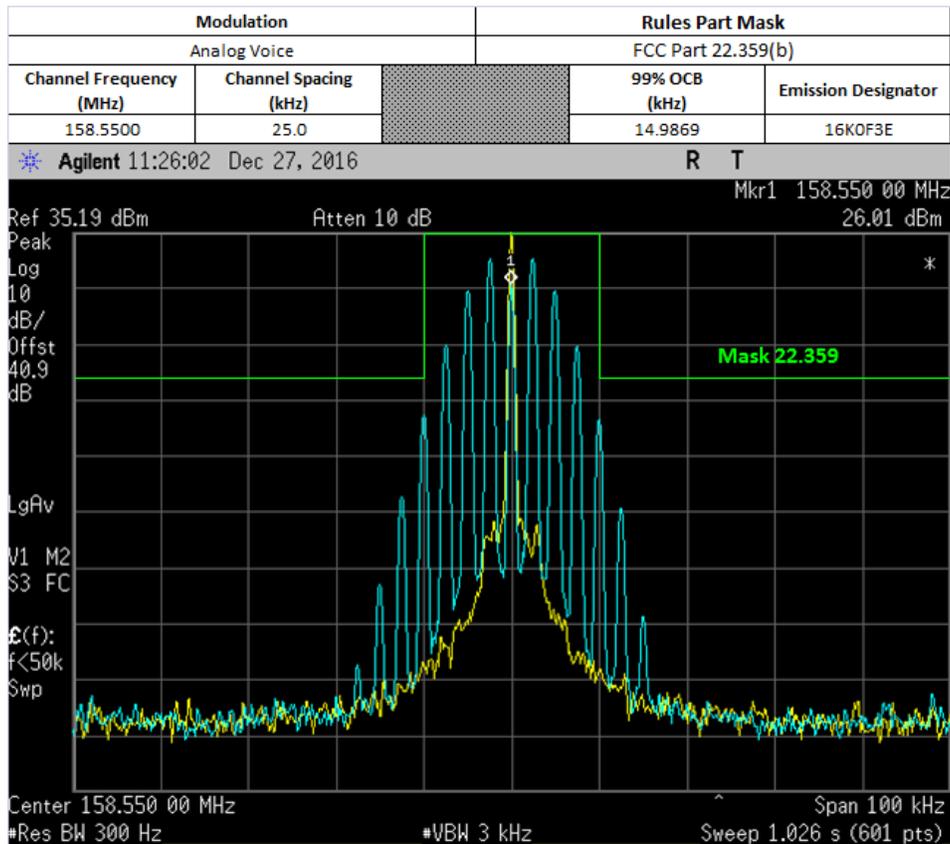
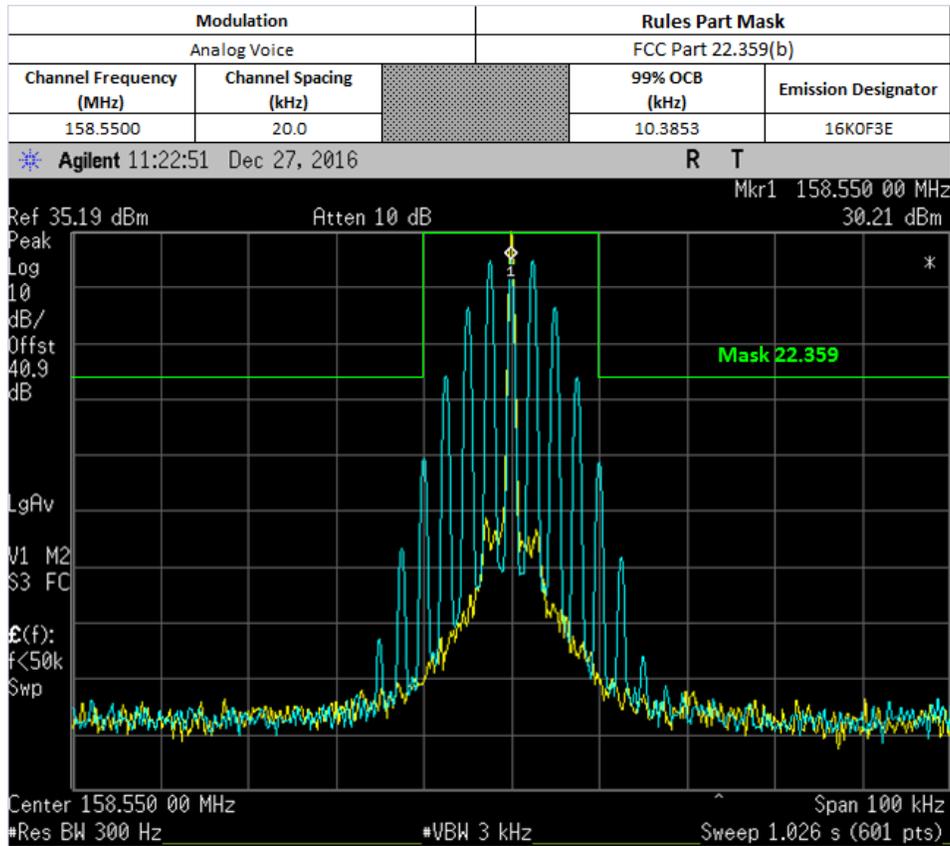
### 6.6.2. Test Result (Analog)



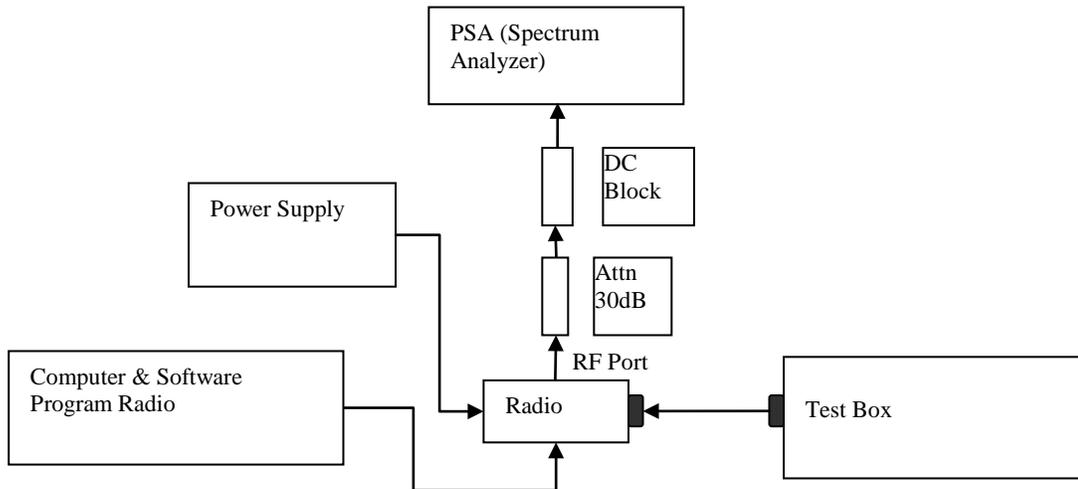






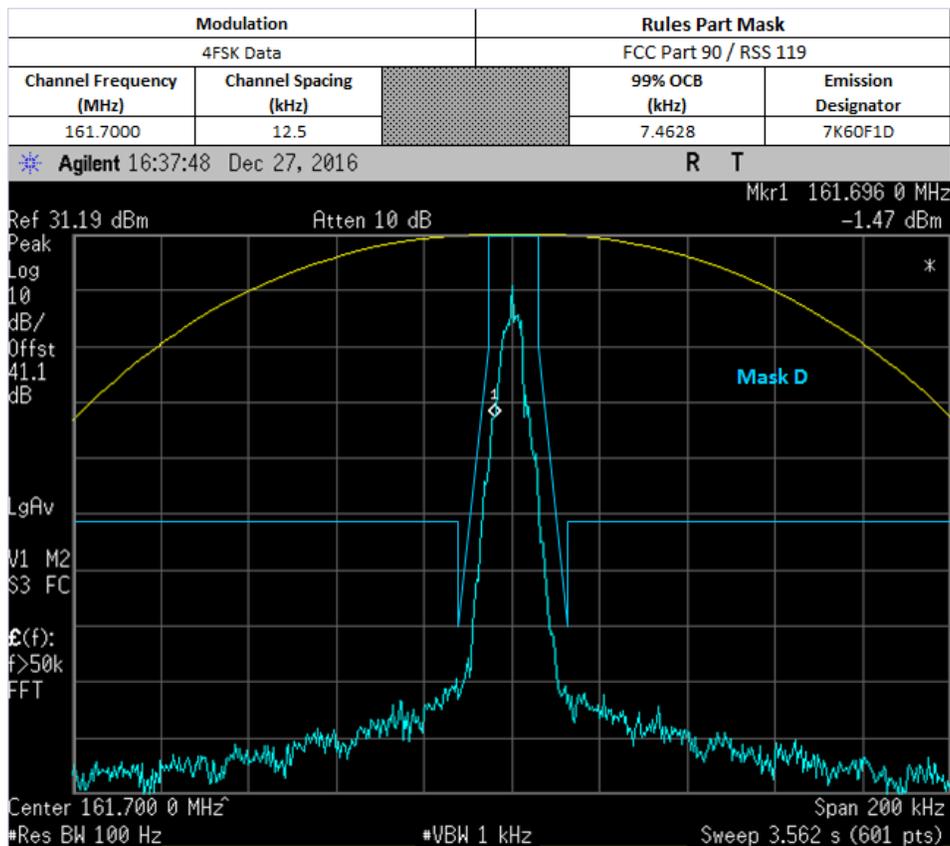
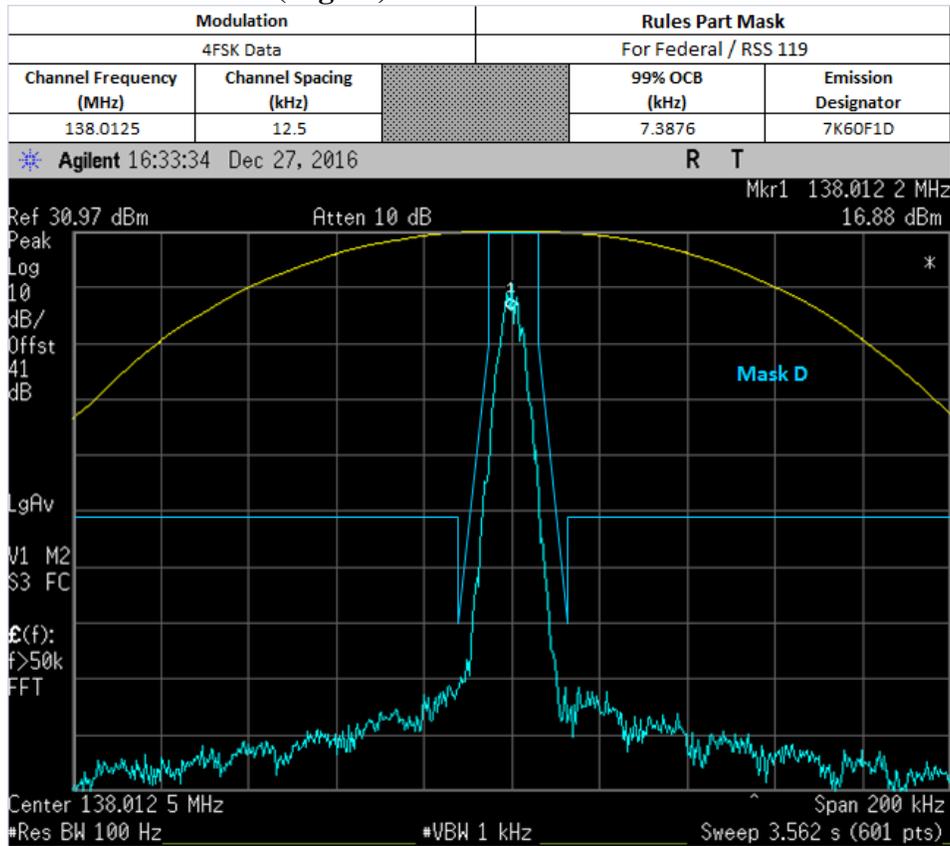


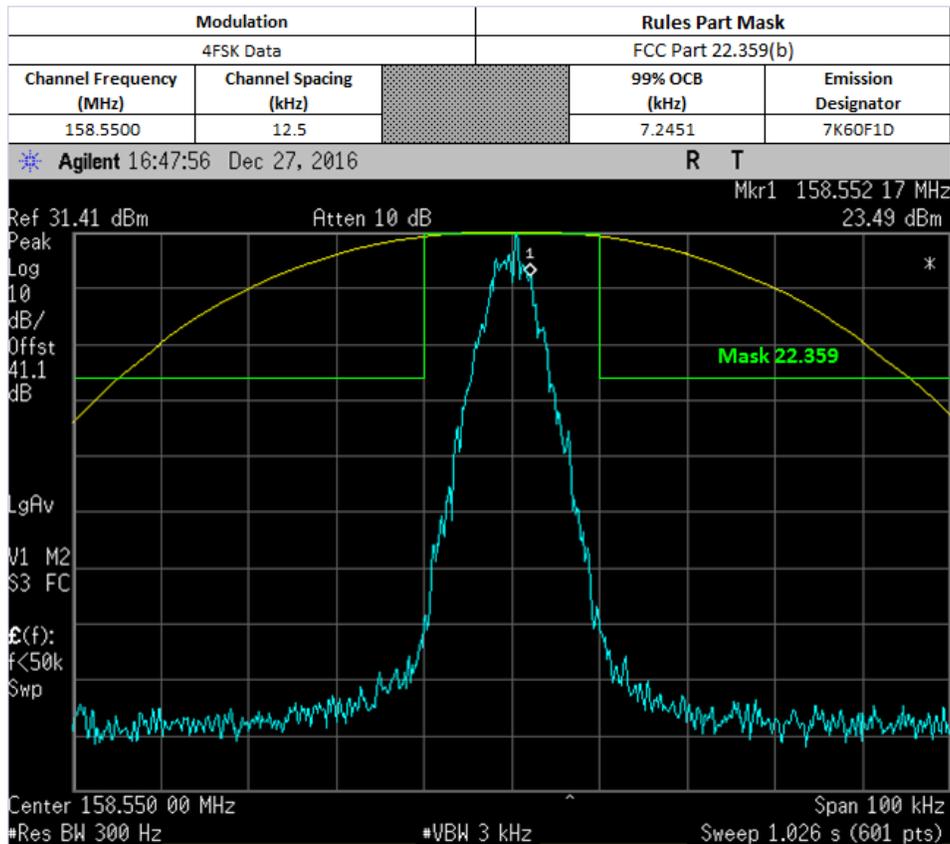
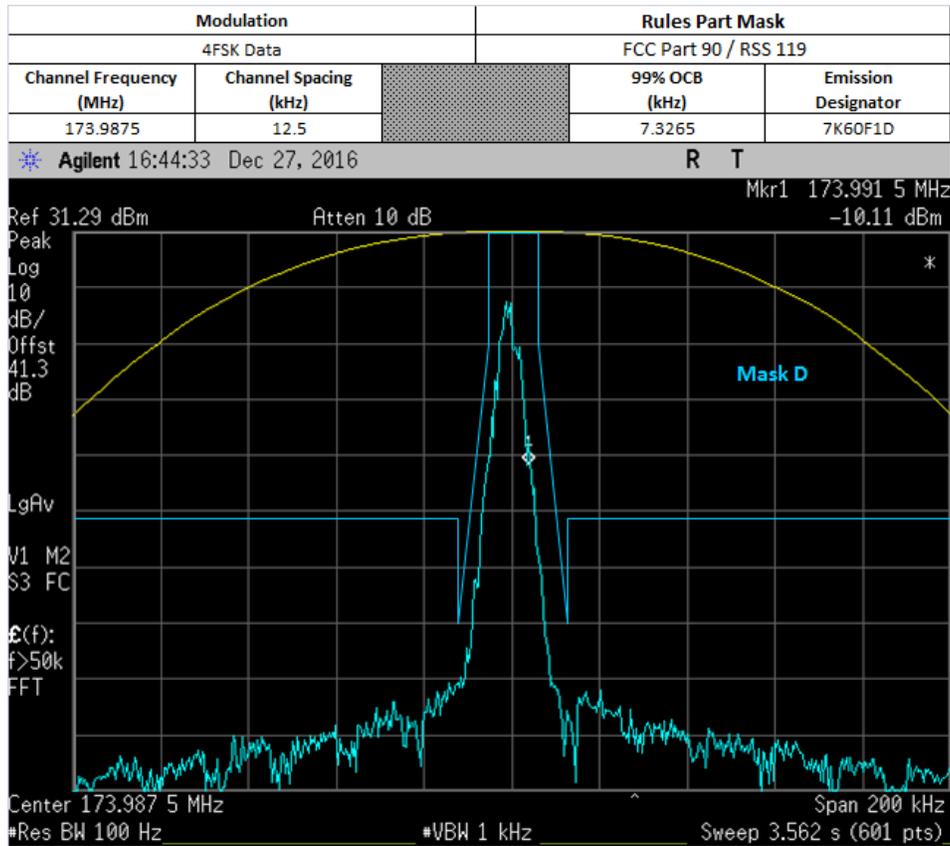
### 6.6.3. Test Setup (Digital)

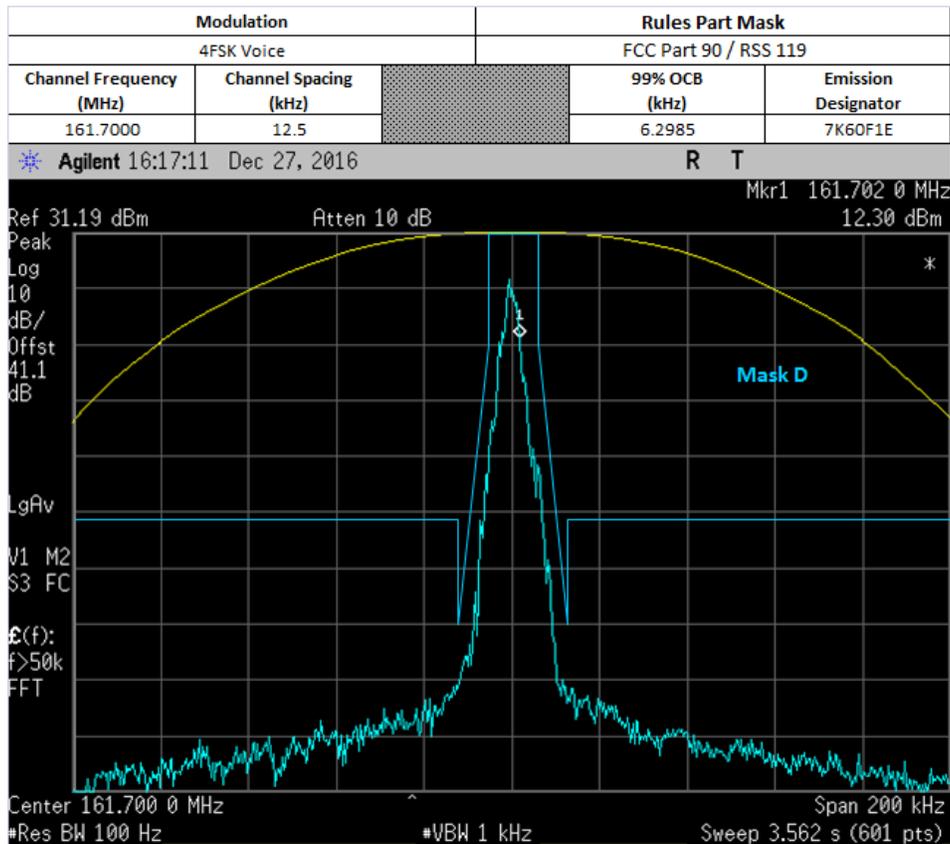
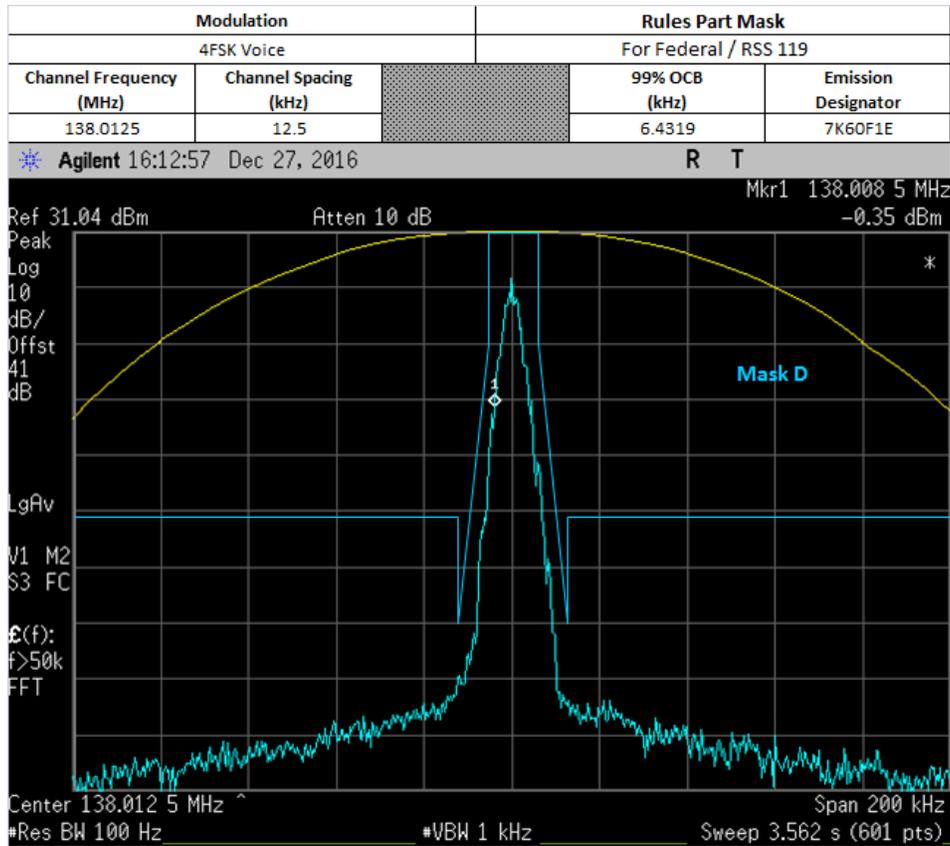


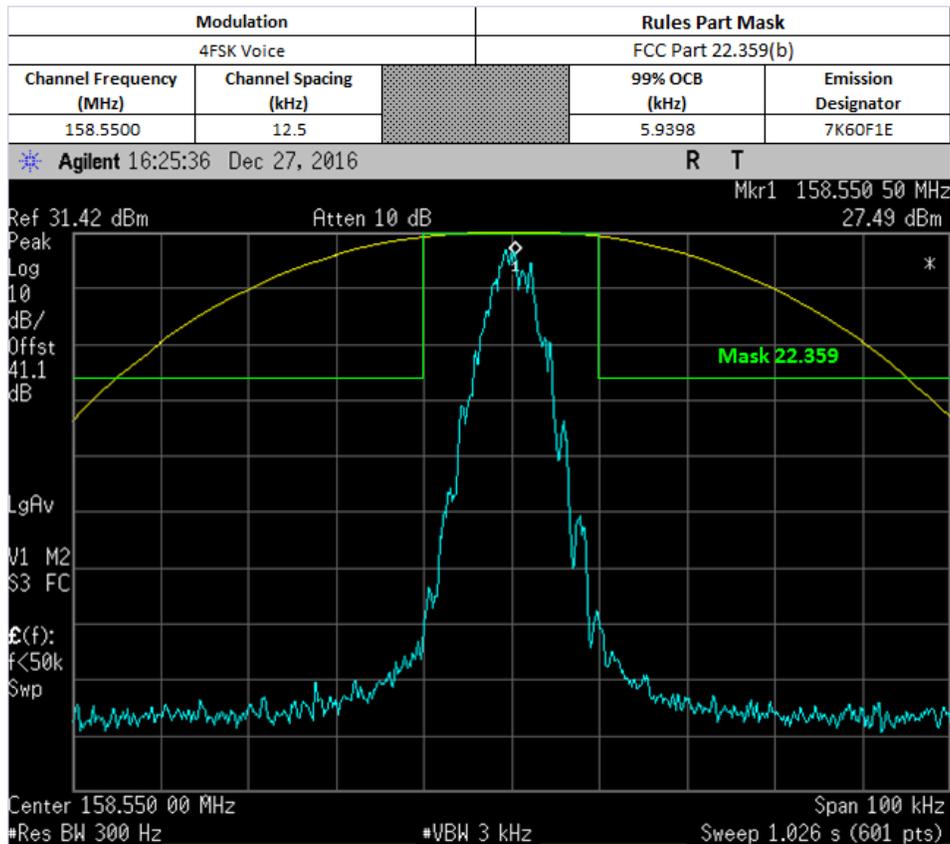
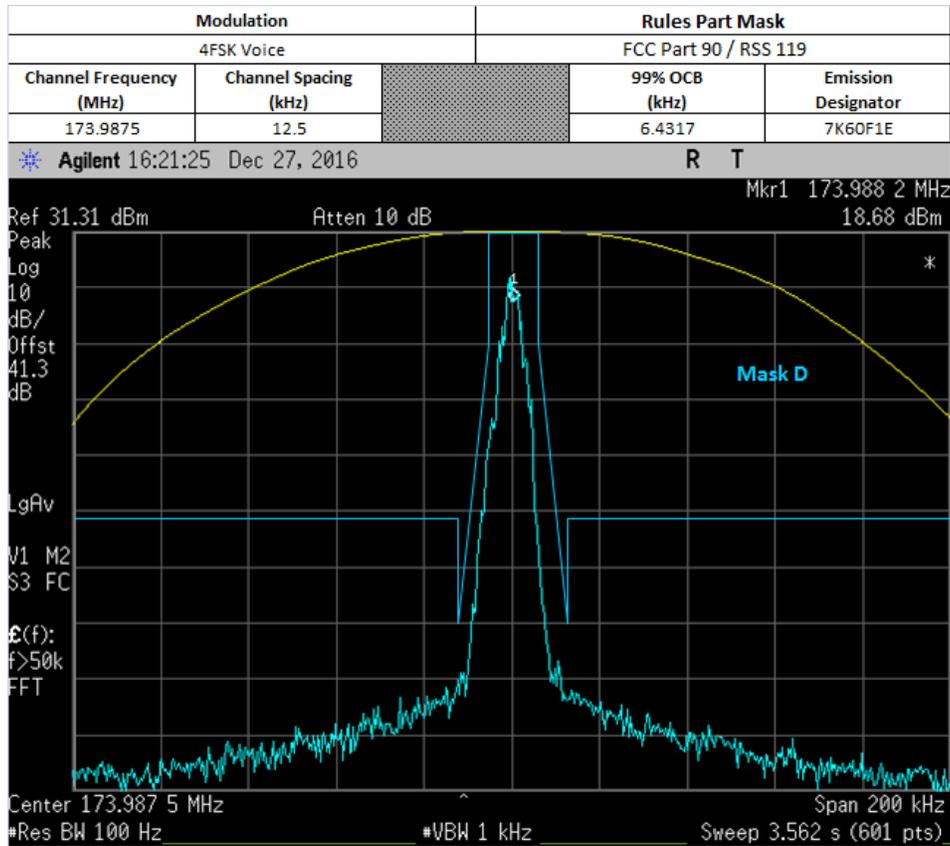
- 1) Program and set radio to operate in desire test frequency and digital mode with modulation. (4FSK, C4FM, CQPSK or other digital modulation form).
- 2) Path loss for the measurement included.
- 3) Select the Occupied Bandwidth measurement for 99% Bandwidth Measurement.
- 4) Key in the Fc and RBW (1 ~ 5 % of emission designator).
- 5) Transmit the DUT and record the occupied Bandwidth frequency.
- 6) Preset the spectrum analyzer for modulation emission spectrum measurement.
- 7) Set the span to 100 KHz and Resolution Bandwidth (according to FCC/ ISED standard).
- 8) Capture the screen shot as modulated signal.

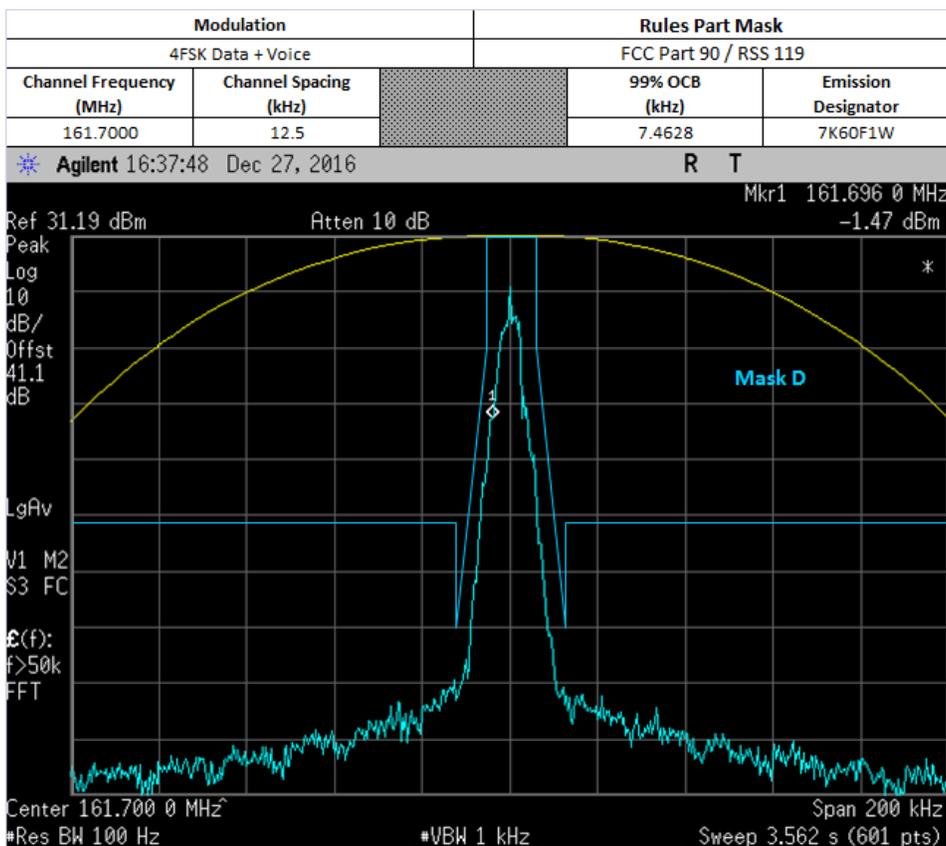
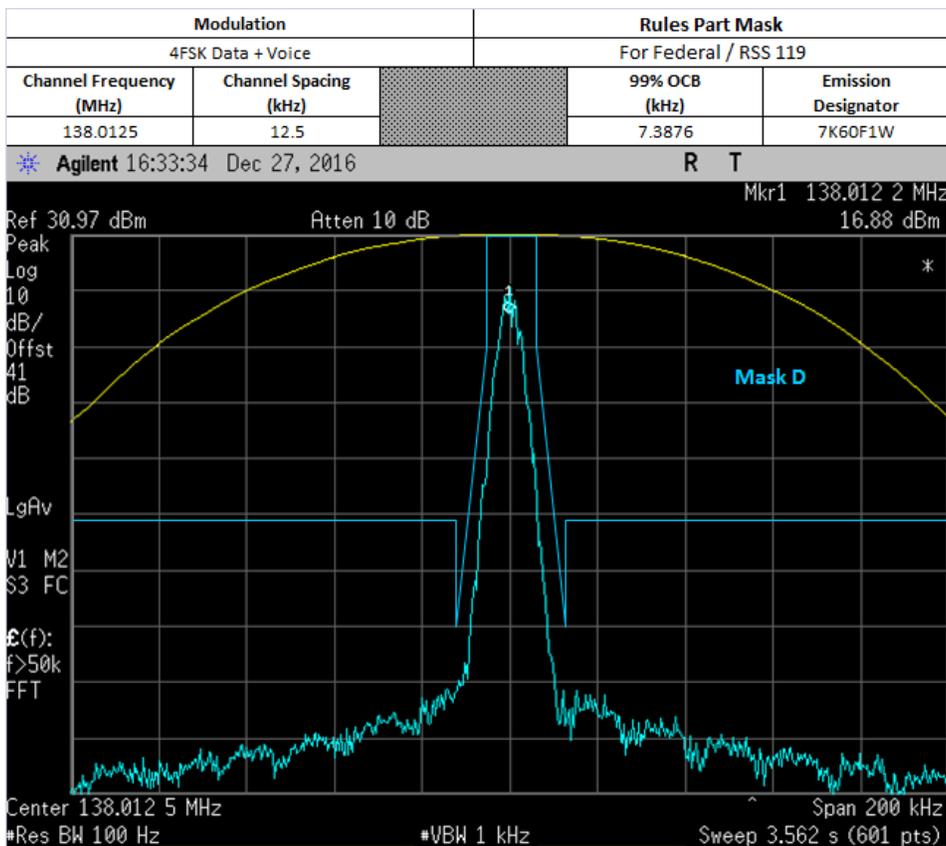
### 6.6.4. Test Result (Digital)

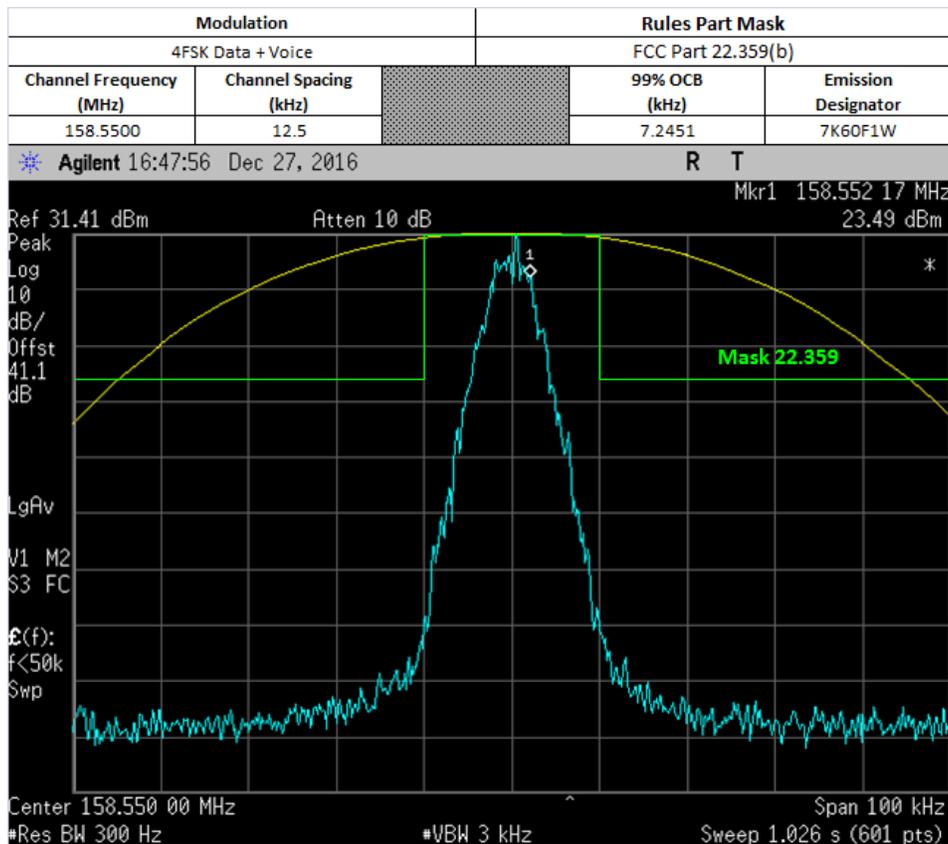
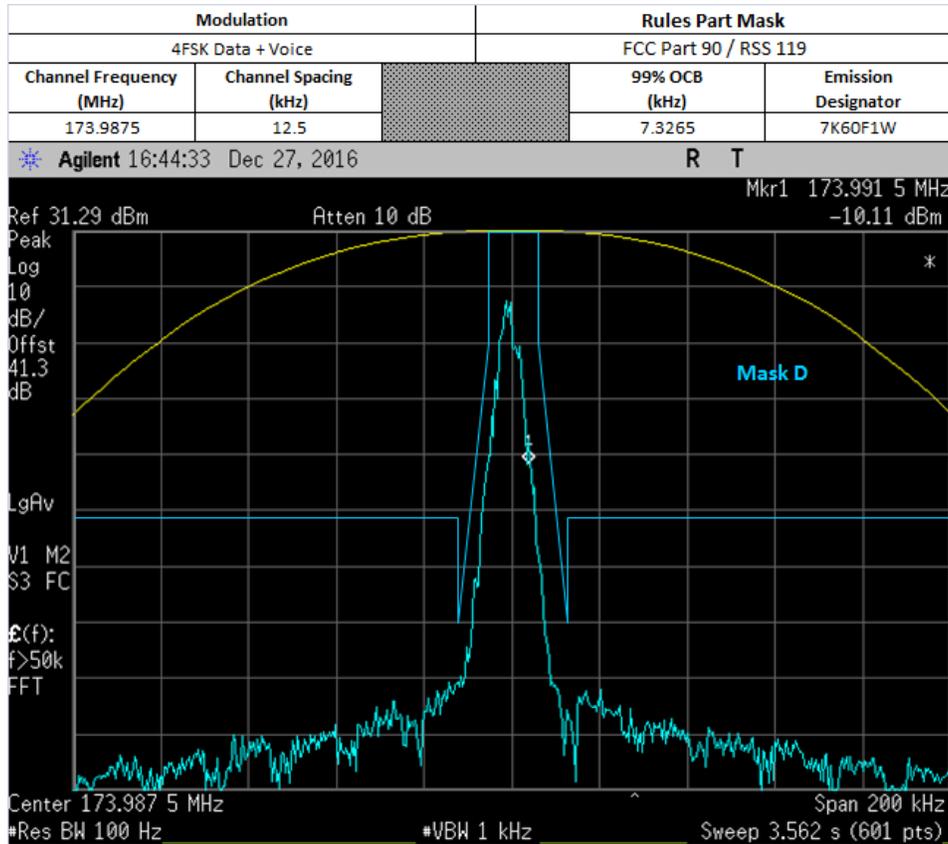












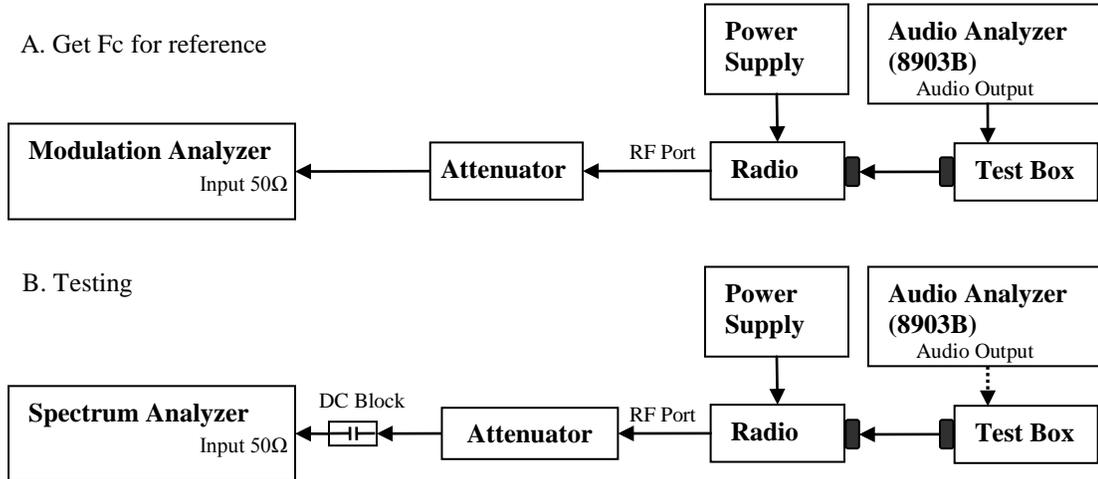
**\*\*Note: Occupied bandwidth plots for 7K60FXD and 7K60FXE are identical to that of 7K60F1E/D/W as they all use the same bitstream pattern. Therefore only emissions for 7K60F1E/D/W are shown.**

**6.6.5. Test Limit**

The 99% occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

## 6.7. Band Edge Conducted Spurious Emission (Part 22)

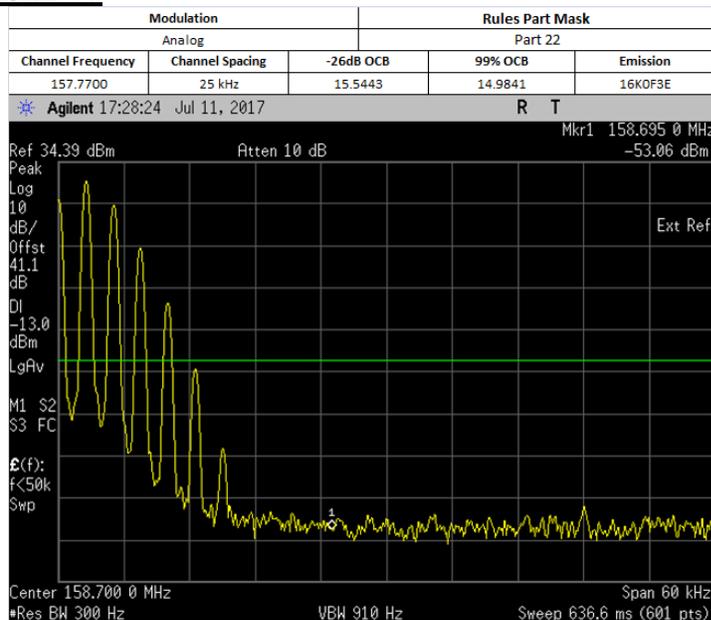
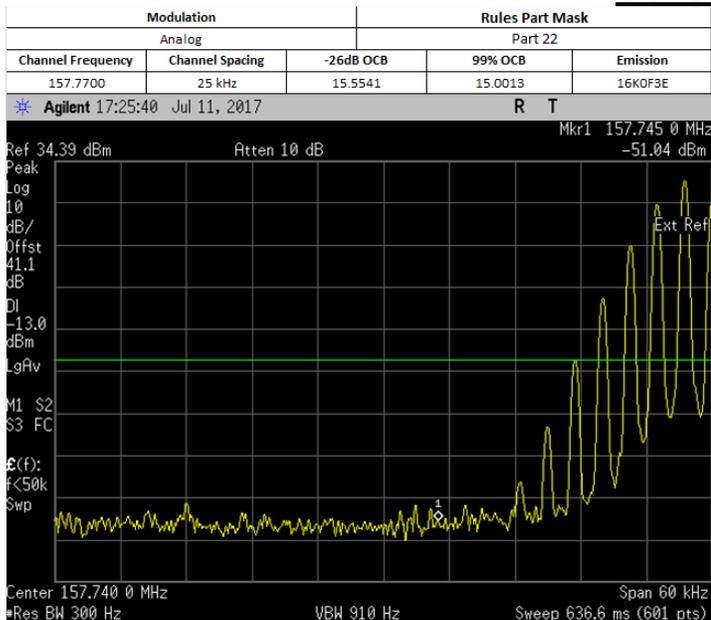
### 6.7.1. Test Setup (Analog)



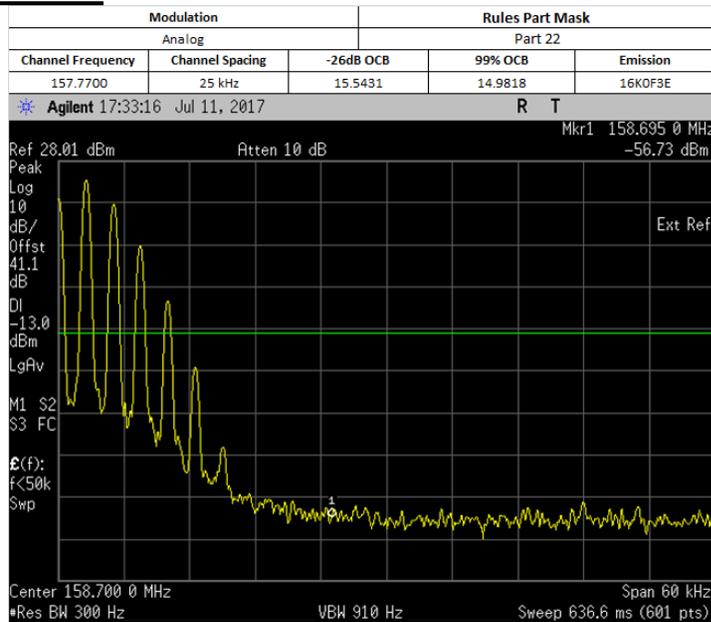
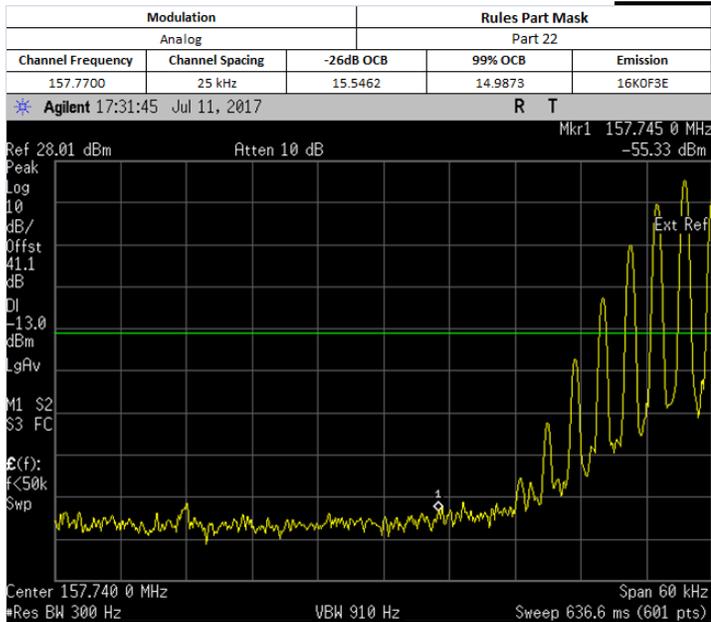
- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
- 3) Path loss for the measurement included.
- 4) Select the Occupied Bandwidth measurement for 99% and 26dB Emissions Bandwidth Measurement.
- 5) Key in the Fc and RBW= 100Hz.
- 6) Transmit the DUT and record the occupied Bandwidth frequencies.
- 7) Preset the spectrum analyzer for band edge measurement.
- 8) The band edges of lowest and highest channels were measured.
- 9) The center frequency of spectrum is the band edge frequency, span is 60 kHz and RBW is at least 1% of Emission Bandwidth.
- 10) Save the screen shot as modulated signal.
- 11) Remove the audio tone from audio analyzer to capture unmodulated signal.

### 6.7.2. Test Result (Analog)

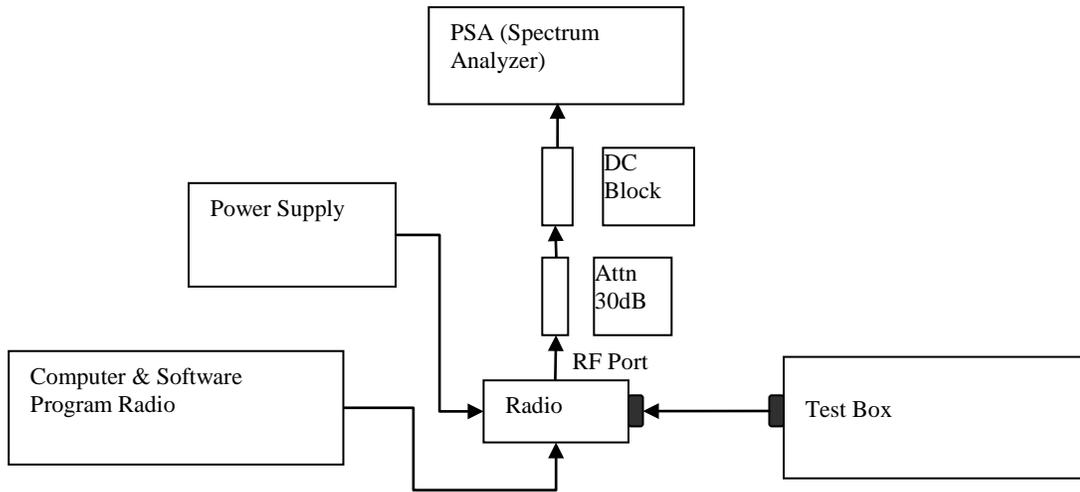
#### MAX POWER



#### LOW POWER



### 6.7.3. Test Setup (Digital)



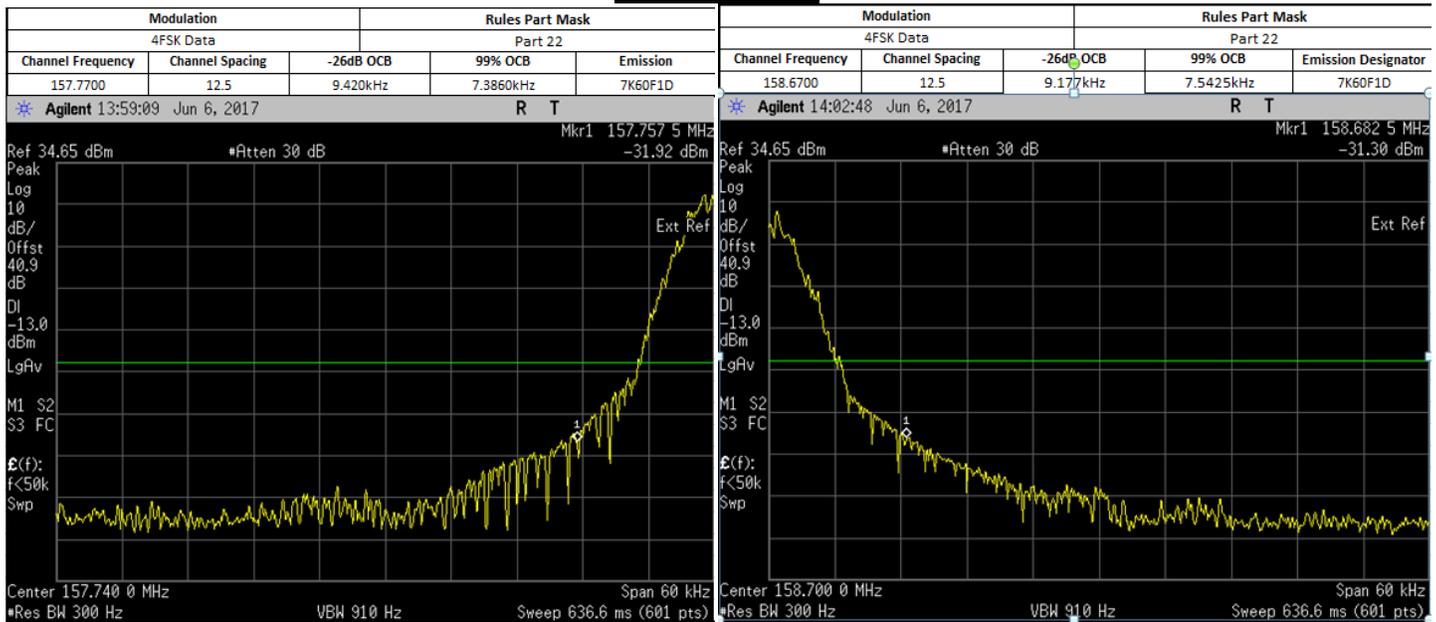
- 1) Program and set radio to operate in desire test frequency and digital mode with modulation. (4FSK\*\*, C4FM or other digital modulation form).
- 2) Path loss for the measurement included.
- 3) Select the Occupied Bandwidth measurement for 99% and 26dB Emissions Bandwidth Measurement.
- 4) Key in the Fc and RBW= 100Hz.
- 5) Transmit radio record the occupied Bandwidth frequencies.
- 6) Preset the spectrum analyzer for band edge measurement.
- 7) The band edges of lowest and highest channels were measured.
- 8) The center frequency of spectrum is the band edge frequency, span is 60 kHz and RBW is at least 1% of Emission Bandwidth.
- 9) Save the screen shot.

\*\*Note:

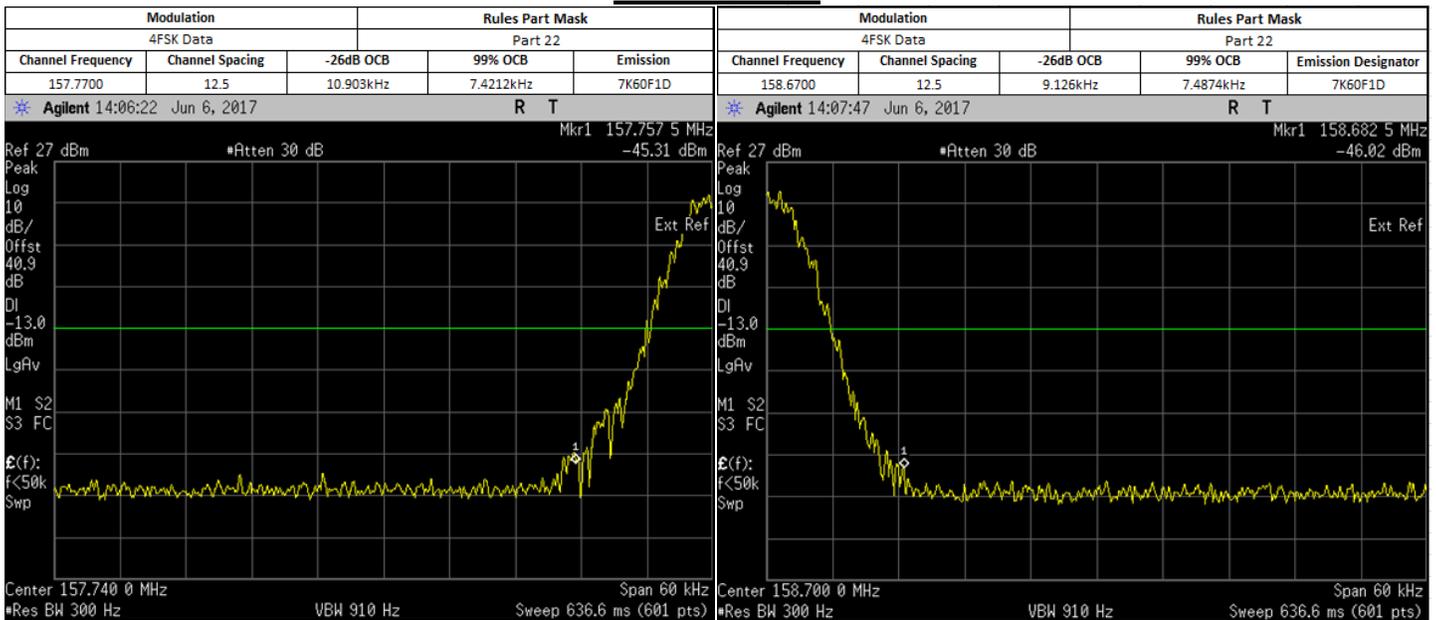
- For Digital Modulation for 12.5 kHz Voice (F1E) and 12.5 kHz Data (F1D) would be the same. Therefore only measurements with F1E modulation shown below.

### 6.7.4. Test Result (Digital)

#### MAX POWER



#### LOW POWER

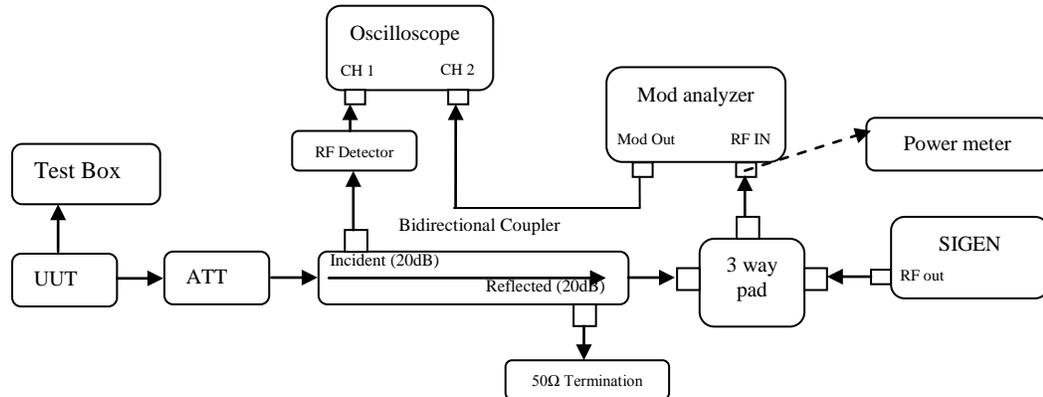


### 6.7.5. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

## 6.8. Transient Frequency Behavior

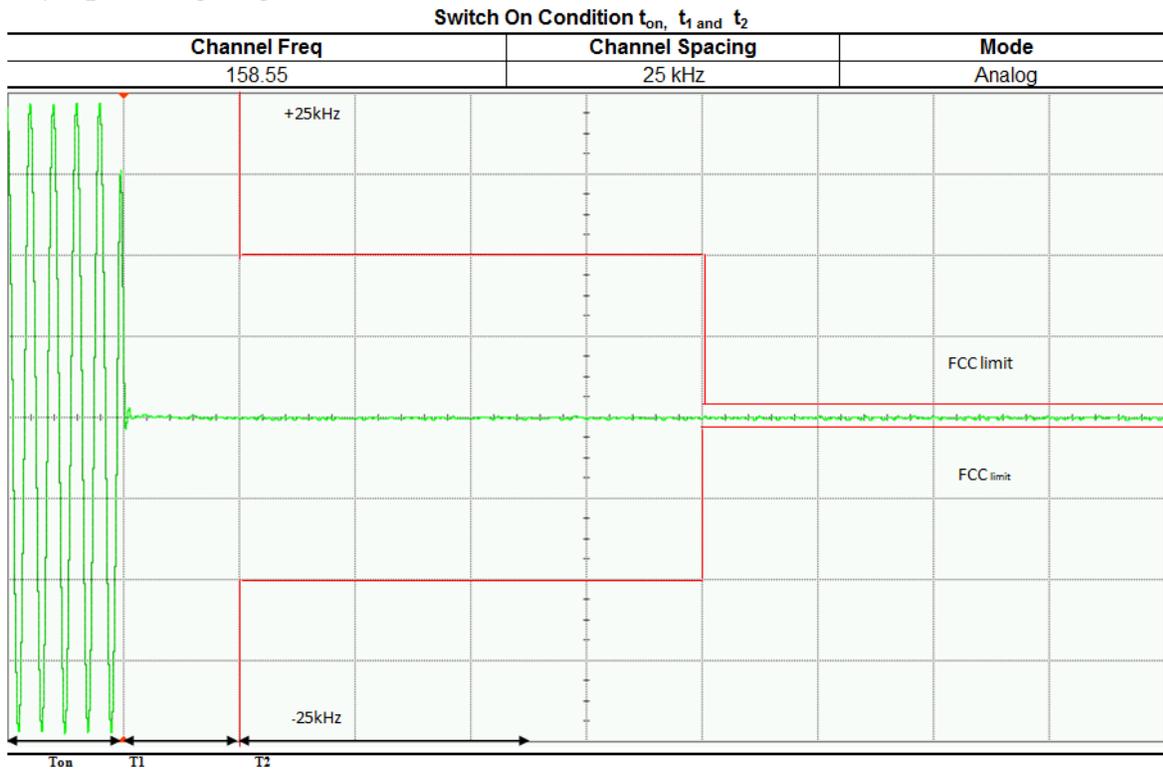
### 6.8.1. Test Setup



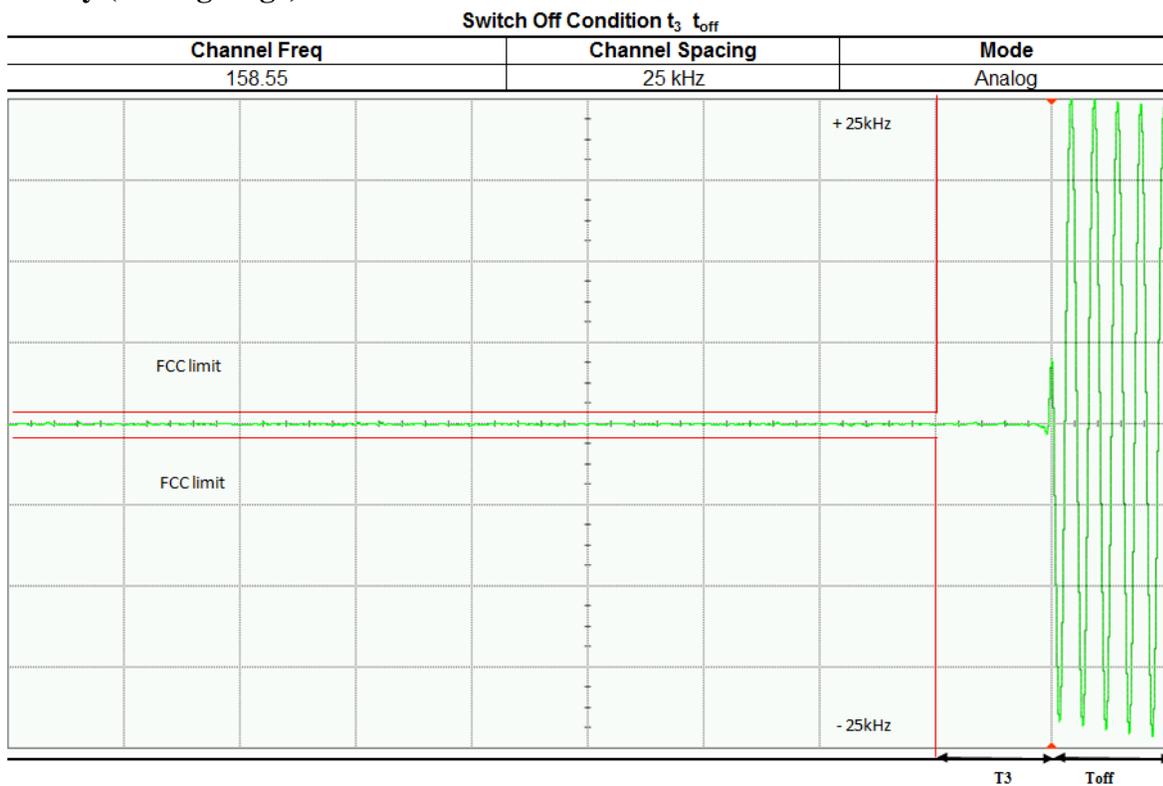
- 1) Connect the setup as figure above.
- 2) Path loss for the measurement included.
- 3) Set on Sigen with the assigned center frequency, internal 1 kHz FM tone.  
FM Deviation: Analog 25kHz Channel Spacing = 25 kHz  
Analog 12.5 kHz Channel Spacing = 12.5 kHz  
C4FM = 12.5 kHz
- 4) Turn on 50 kHz high pass filter and 15 kHz low pass filter on modulation analyzer.
- 5) Supply sufficient attenuation ATT to provide the output power of  $\leq -11\text{dBm}$  into power meter when UUT is keying up.
- 6) Note the power level on power meter and dekey the UUT.
- 7) Adjust the amplitude of the signal generator to the level power meter, maintained the amplitude throughout the rest of the measurement.
- 8) Connect the output to modulation analyzer.
- 9) Set the horizontal sweep rate on the storage oscilloscope to 10 milliseconds per division and adjust the display to continuously view the 1000 Hz. Adjust the vertical amplitude control of the oscilloscope to display the 1000 Hz at  $\square 4$  divisions vertically centered on the display.
- 10) Reduce 30dB attenuation and transmit the radio to get the trigger line.
- 11) Capture the screen shot for key-up (rising edge) and de-key (falling edge) mode.

### 6.8.2. Test Result

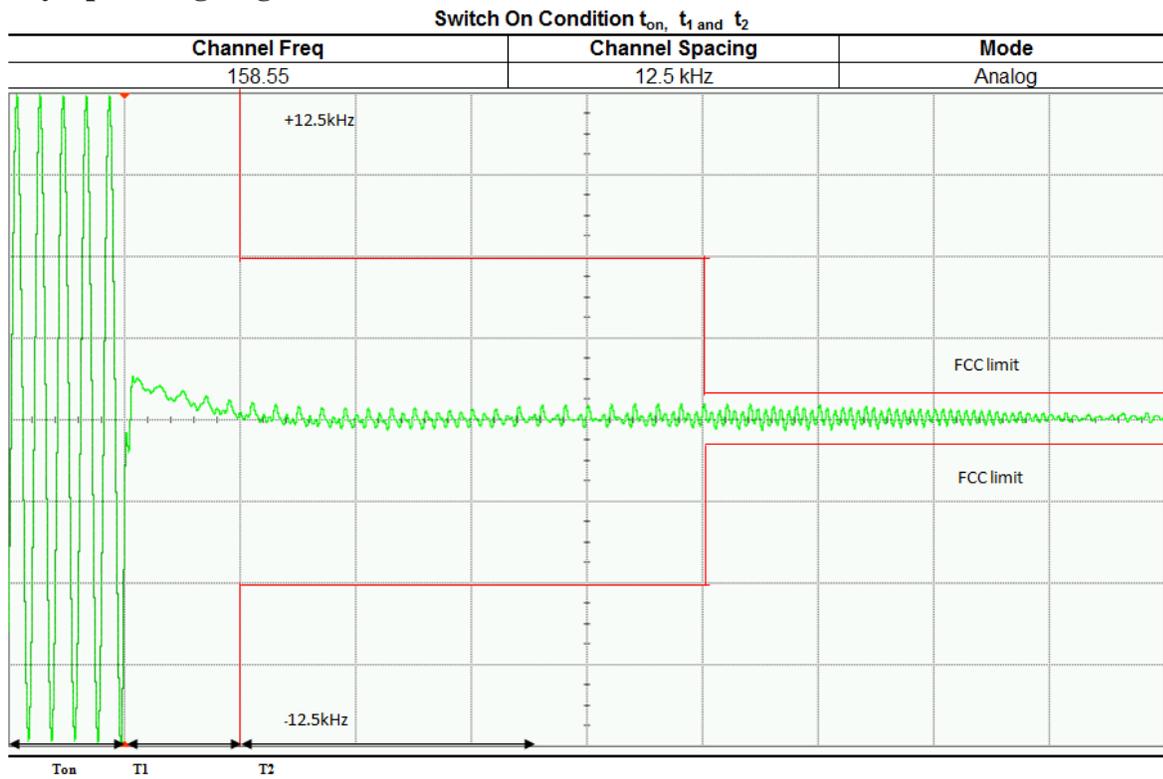
**Analog: 158.55 MHz, 25.0 kHz Channel Spacing, Max Power (Not for FCC Review)**  
**Key-up (Rising Edge)**



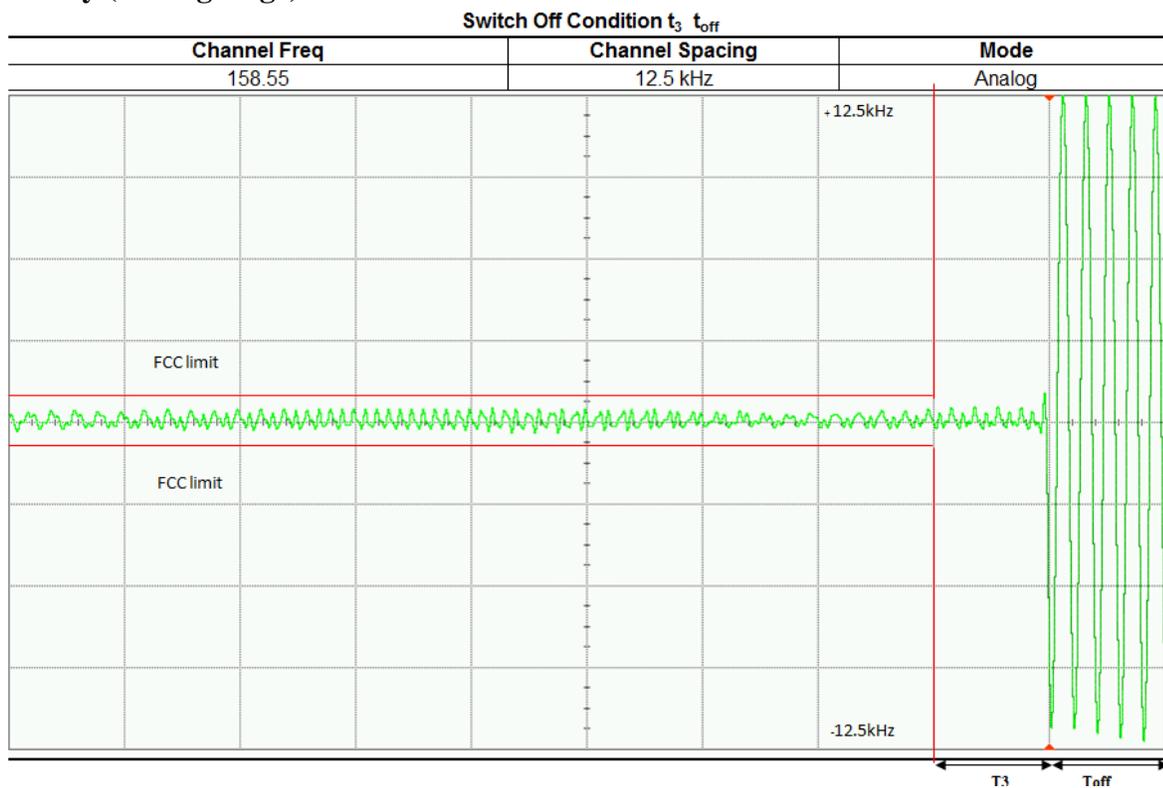
### De-key (Falling Edge)



**Analog: 158.55 MHz, 12.5 kHz Channel Spacing, Max Power  
 Key-up (Rising Edge)**



**De-key (Falling Edge)**



### 6.8.3. Test Limit

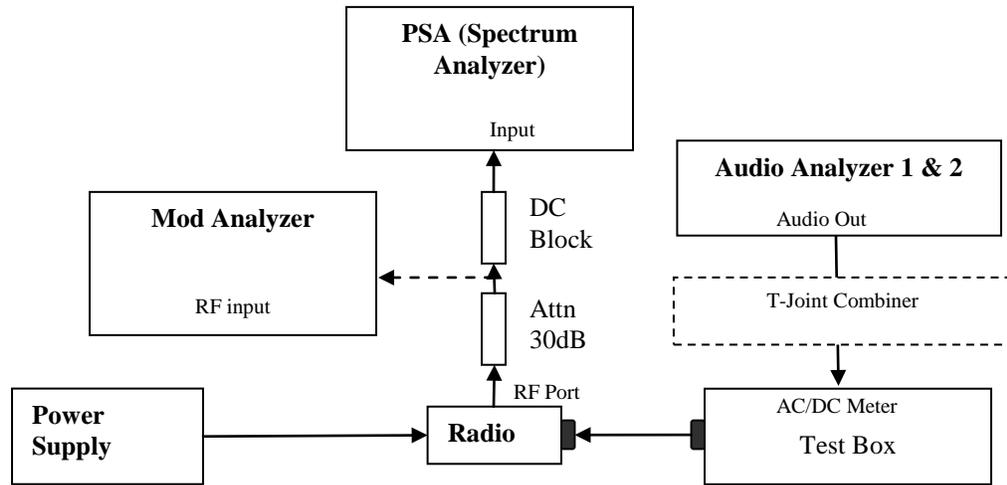
Transmitters designed to operate in the 150-174 MHz and 421-512 MHz frequency bands must maintain transient frequencies within the maximum frequency difference limits during the time intervals indicated:

Time intervals <sup>1 2</sup>	Maximum frequency difference <sup>3</sup>	All equipment	
		150 to 174 MHz	421 to 512 MHz
Transient Frequency Behavior for Equipment Designed to Operate on 25 kHz Channels			
t <sub>1</sub> <sup>4</sup>	±25.0 kHz	5.0 ms	10.0 ms
t <sub>2</sub>	±12.5 kHz	20.0 ms	25.0 ms
t <sub>3</sub> <sup>4</sup>	±25.0 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels			
t <sub>1</sub> <sup>4</sup>	±12.5 kHz	5.0 ms	10.0 ms
t <sub>2</sub>	±6.25 kHz	20.0 ms	25.0 ms
t <sub>3</sub> <sup>4</sup>	±12.5 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 6.25 kHz Channels			
t <sub>1</sub> <sup>4</sup>	±6.25 kHz	5.0 ms	10.0 ms
t <sub>2</sub>	±3.125 kHz	20.0 ms	25.0 ms
t <sub>3</sub> <sup>4</sup>	±6.25 kHz	5.0 ms	10.0 ms

- <sup>1</sup> <sub>on</sub> is the instant when a 1 kHz test signal is completely suppressed, including any capture time due to phasing.
- t<sub>1</sub> is the time period immediately following t<sub>on</sub>.
- t<sub>2</sub> is the time period immediately following t<sub>1</sub>.
- t<sub>3</sub> is the time period from the instant when the transmitter is turned off until t<sub>off</sub>.
- t<sub>off</sub> is the instant when the 1 kHz test signal starts to rise.
- <sup>2</sup> During the time from the end of t<sub>2</sub> to the beginning of t<sub>3</sub>, the frequency difference must not exceed the limits specified in §90.213.
- <sup>3</sup> Difference between the actual transmitter frequency and the assigned transmitter frequency.
- <sup>4</sup> If the transmitter carrier output power rating is 6 watts or less, the frequency difference during this time period may exceed the maximum frequency difference for this time period.

## 6.9. Adjacent Channel Power

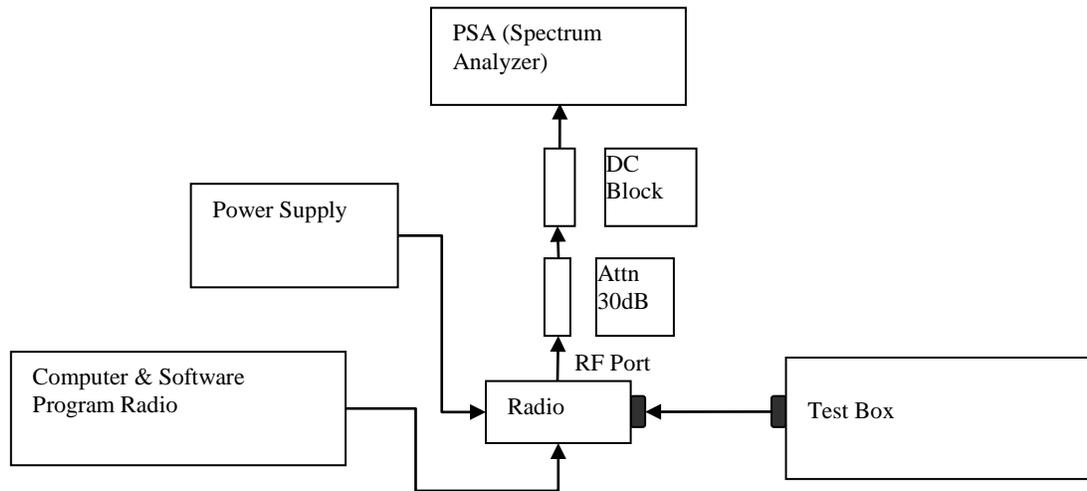
### 6.9.1. Test Setup (Analog)



- 1) The DUT transmitter output port was connected to modulation analyzer.
- 2) Path loss for the measurement included.
- 3) Transmit the radio and turn on 1<sup>st</sup> audio analyzer with audio frequency 650Hz, 50% rated deviation, and record the amplitude value as AmpT1.
- 4) Turn off Audio analyzer 1 and turn on audio analyzer 2, set the audio frequency to 2.2 kHz and 50% deviation. Record the amplitude as AmpT2.
- 5) Turn both audio analyzers ON and up 10dB amplitude level.
- 6) Connect the output to PSA and set to assigned center frequency.
- 7) Set Span, RBW and VBW as shown in FCC rules part 90.543.
- 8) Transmit the radio and record the ACP value in dBc.

### 6.9.2. Test Result Not Applicable

### 6.9.3. Test Setup (Digital)



- 1) Program and set radio to operate in desire test frequency and digital mode with modulation. (4FSK, C4FM, CQPSK or other digital modulation form).
- 2) Path loss for the measurement included.
- 3) Prepare setup as per picture.
- 4) Turn on the ACP Measurement – Press Measure, ACP.
- 5) Set Span, RBW and VBW as shown in FCC rules part 90.543.
- 6) Transmit the radio and record the ACP value in dBc.

### 6.9.4. Test Result **Not Applicable**

### 6.9.5. Test Limit

#### 12.5 kHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
9.375	6.25	-40
15.625	6.25	-60
21.875	6.25	-60
37.50	25.00	-60
62.50	25.00	-65
87.50	25.00	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

#### 25 kHz MOBILE TRANSMITTER ACP REQUIREMENTS

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)
15.625	6.25	-40
21.875	6.25	-60
37.50	25	-60
62.50	25	-65
87.50	25	-65
150.00	100	-65
250.00	100	-65
350.00	100	-65
>400 kHz to 12 MHz	30 (s)	-75
12 MHz to paired receive band	30 (s)	-75
In the paired receive band	30 (s)	-100

**12.5 kHz BASE TRANSMITTER ACP REQUIREMENTS**

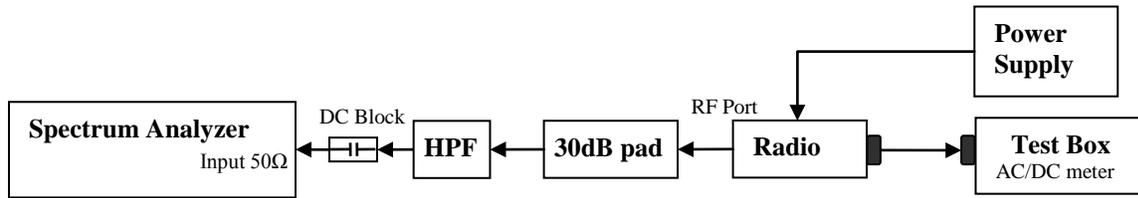
Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
9.375	6.25	-40
15.625	6.25	-60
21.875	6.25	-60
37.5	25	-60
62.5	25	-65
87.5	25	-65
150	100	-65
250	100	-65
350.00	100	-65
>400 kHz to 12 MHz	30 (s)	-80
12 MHz to paired receive band	30 (s)	-80
In the paired receive band	30 (s)	-85

**25 kHz BASE TRANSMITTER ACP REQUIREMENTS**

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP (dBc)
15.625	6.25	-40
21.875	6.25	-60
37.5	25	-60
62.5	25	-65
87.5	25	-65
150	100	-65
250	100	-65
350	100.00	-65
>400 kHz to 12 MHz	30 (s)	-80
12 MHz to paired receive band	30 (s)	-80
In the paired receive band	30 (s)	-85

## 6.10. Conducted Spurious Emission

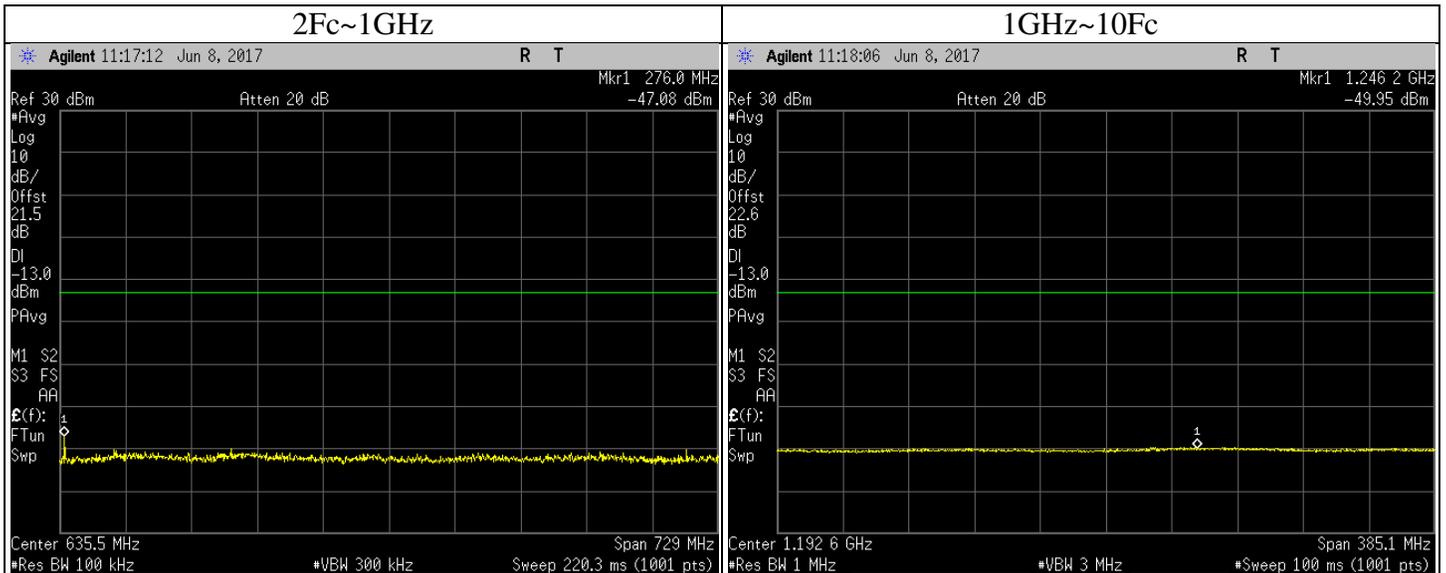
### 6.10.1. Test Setup



- 1) The DUT transmitter output port was connected to Spectrum Analyzer with above setup.
- 2) Program and set radio to operate in desire test frequency and mode. (Analog / digital modulation form).
- 3) Adjust the PSA RBW = 100kHz for spur emission below 1GHz, and 1MHz for spur emission above 1GHz.
- 4) Set the Ref offset from the pathloss offset calibration file.
- 5) Adjust the center frequency of the spectrum analyzer for incremental coverage of the range from:
  - (a) The lowest radio frequency to  $F_c - \text{Test BW}$
  - (b)  $F_c + \text{Test BW}$  to  $\text{Freq} < 2F_c$ .
- 6) Record the levels of spurious emissions and dekey the UUT.
- 7) Turn On HPF path and Key up the UUT.
- 8) Adjust the PSA Freq for incremental coverage of range from  $2F_c$  to  $10F_c$ .
- 9) The levels recorded are the absolute levels of conducted spurious emissions in dBm.

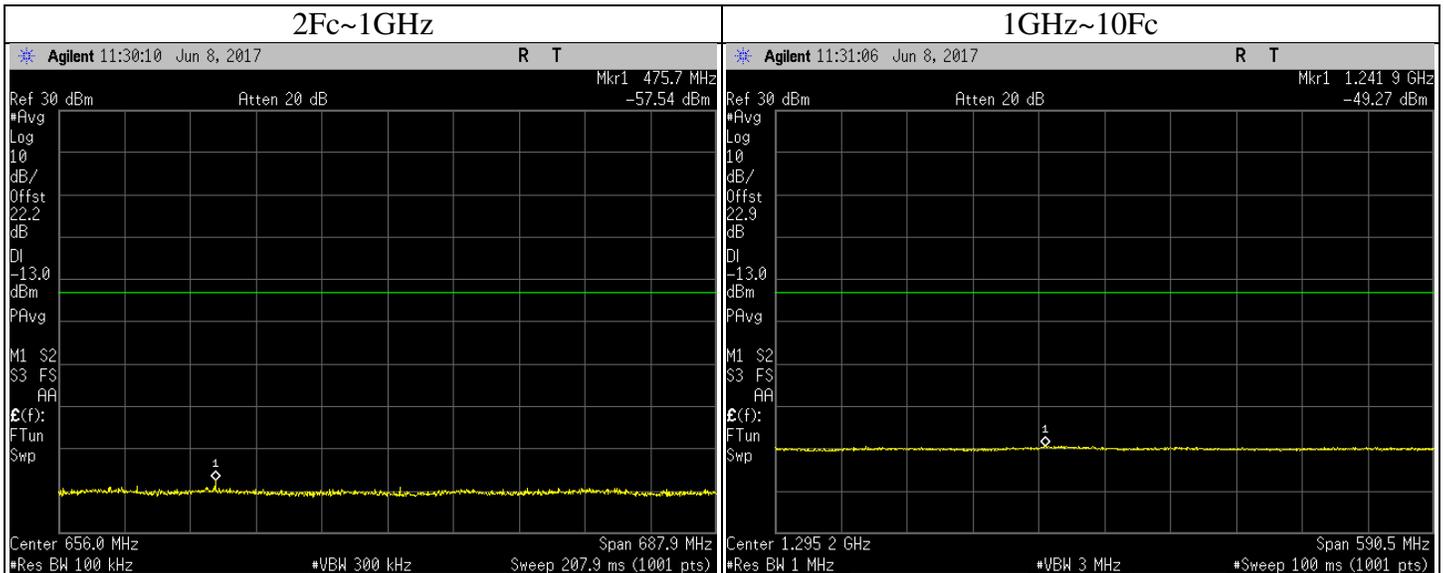
**6.10.2. Test Result (Analog)**

**Analog: 138.0125 MHz, 25.0 kHz Channel Spacing, Max Power (NOT FOR FCC REVIEW)**  
**For Federal, RSS-119**



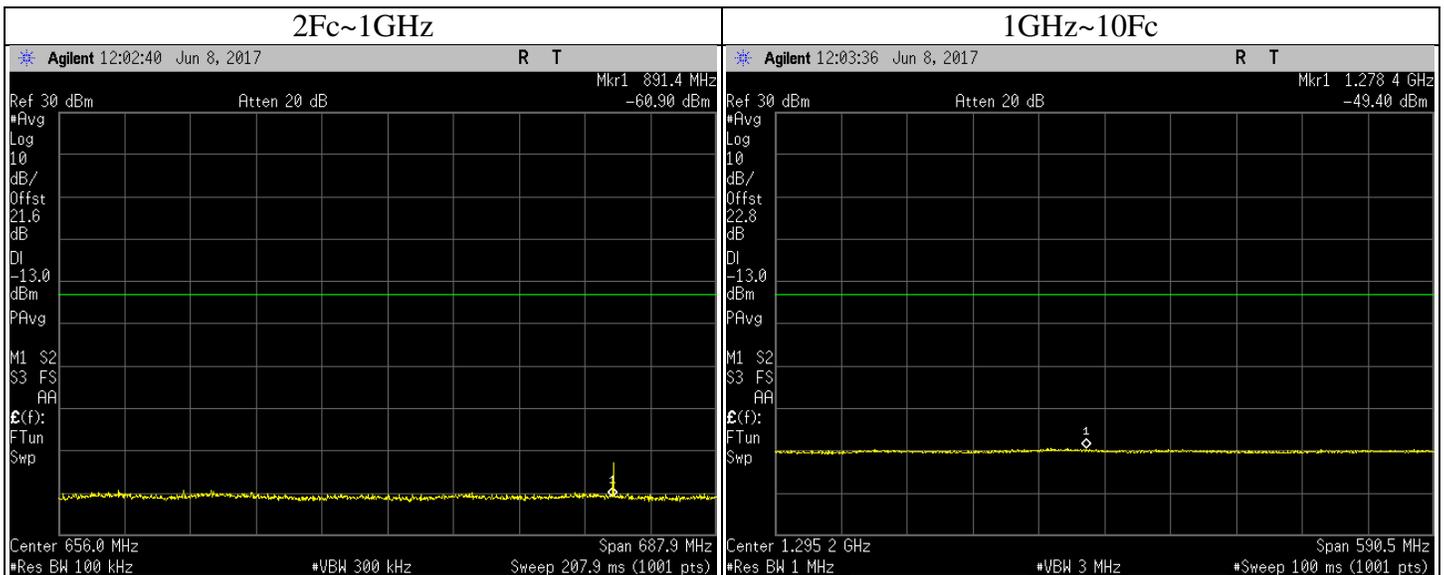
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	0.700	-37.38	-13	Pass
(Fc-Test BW)~2Fc	145.500	-39.08	-13	Pass
2Fc~1GHz	276.020	-47.90	-13	Pass
1GHz~10Fc	1246.230	-49.52	-13	Pass

**Analog: 158.55 MHz, 25.0 kHz Channel Spacing, Max Power  
 FCC Part 22, RSS-119**



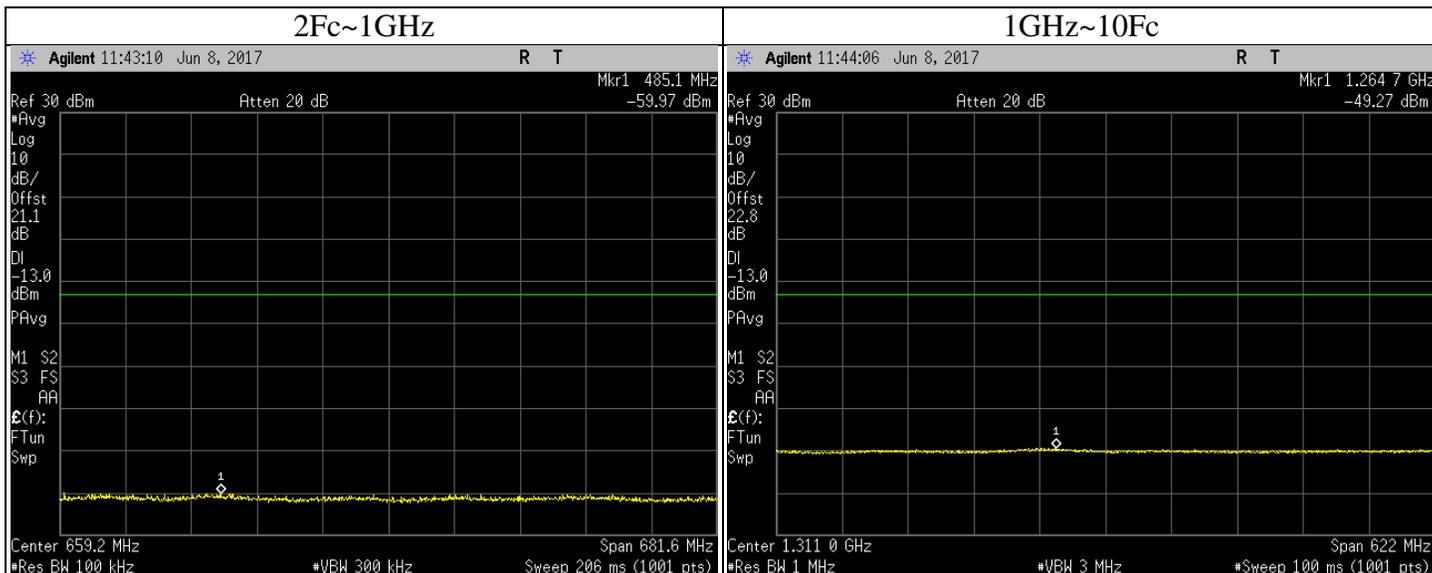
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	0.480	-36.82	-13	Pass
(Fc-Test BW)~2Fc	263.18	-38.44	-13	Pass
2Fc~1GHz	475.650	-57.54	-13	Pass
1GHz~10Fc	1241.860	-49.27	-13	Pass

**Analog: 158.55 MHz, 25.0 kHz Channel Spacing, Low Power  
 FCC Part 22, RSS-119**



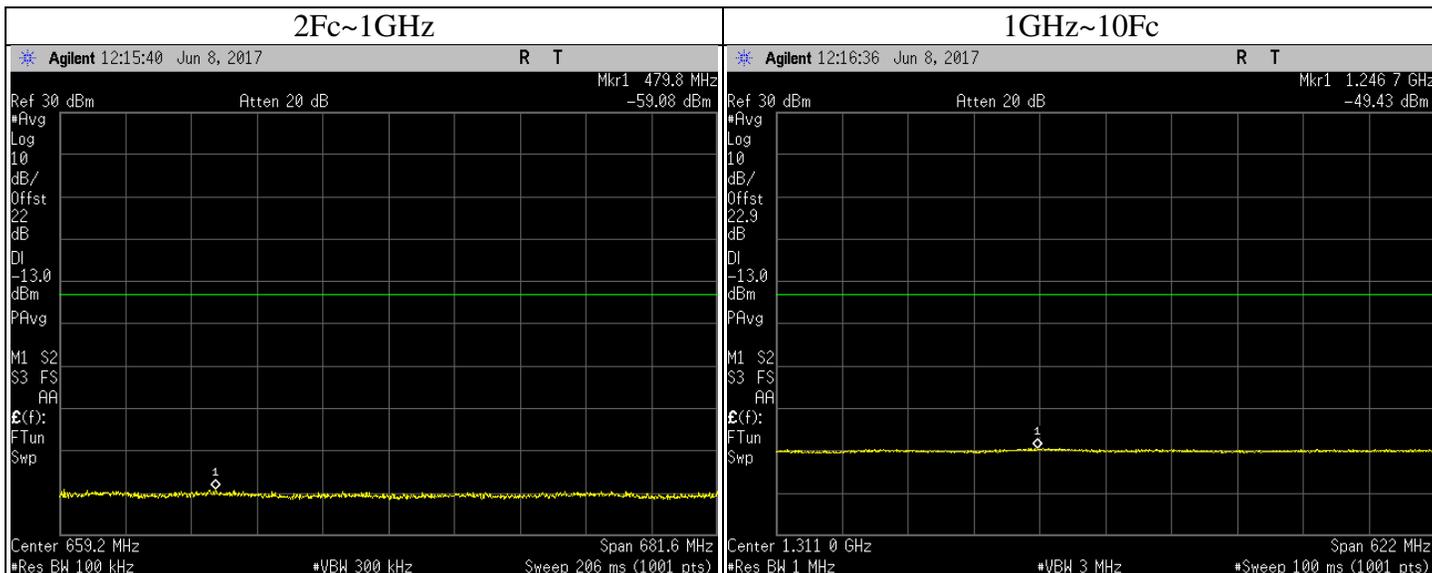
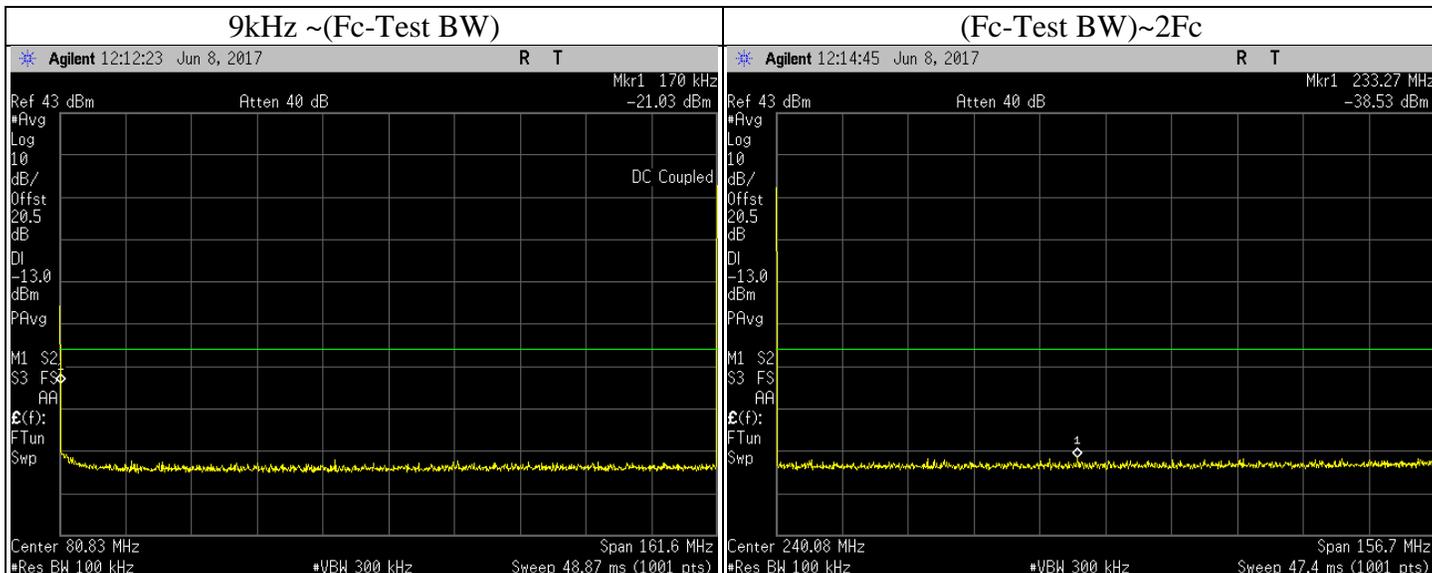
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	1.280	-37.15	-13	Pass
(Fc-Test BW)~2Fc	255.210	-38.24	-13	Pass
2Fc~1GHz	891.420	-52.83	-13	Pass
1GHz~10Fc	1278.440	-49.40	-13	Pass

**Analog: 161.7 MHz, 25.0 kHz Channel Spacing, Max Power (NOT FOR FCC REVIEW)  
 RSS-119**



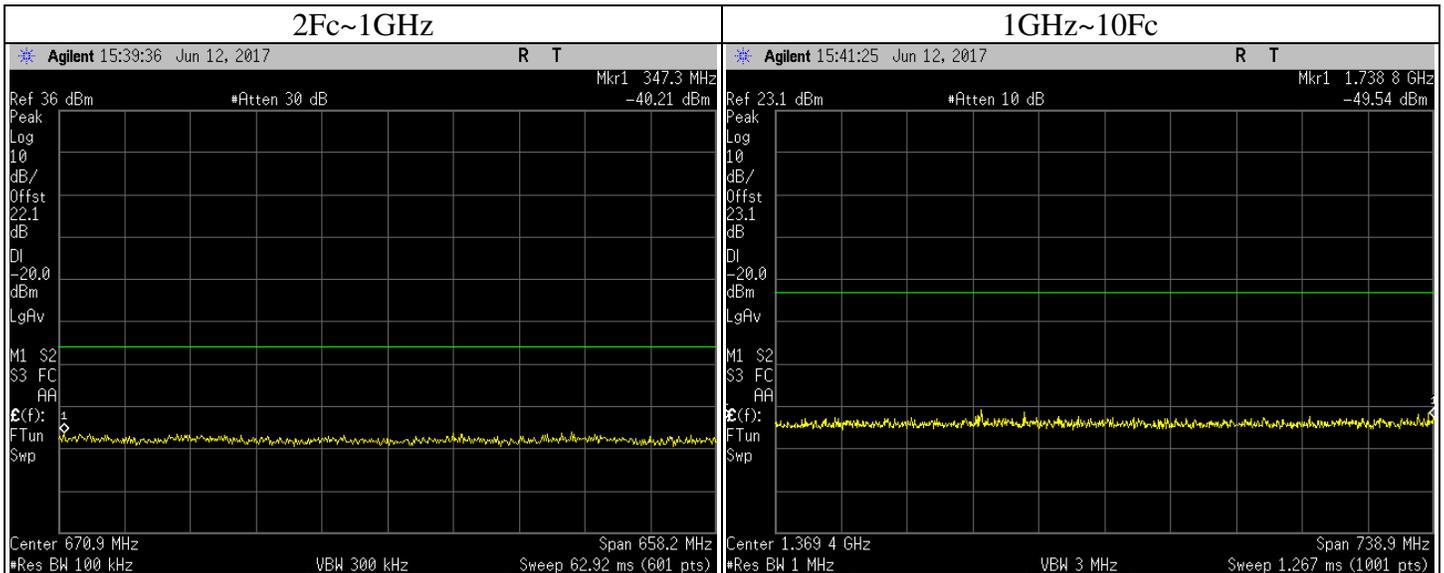
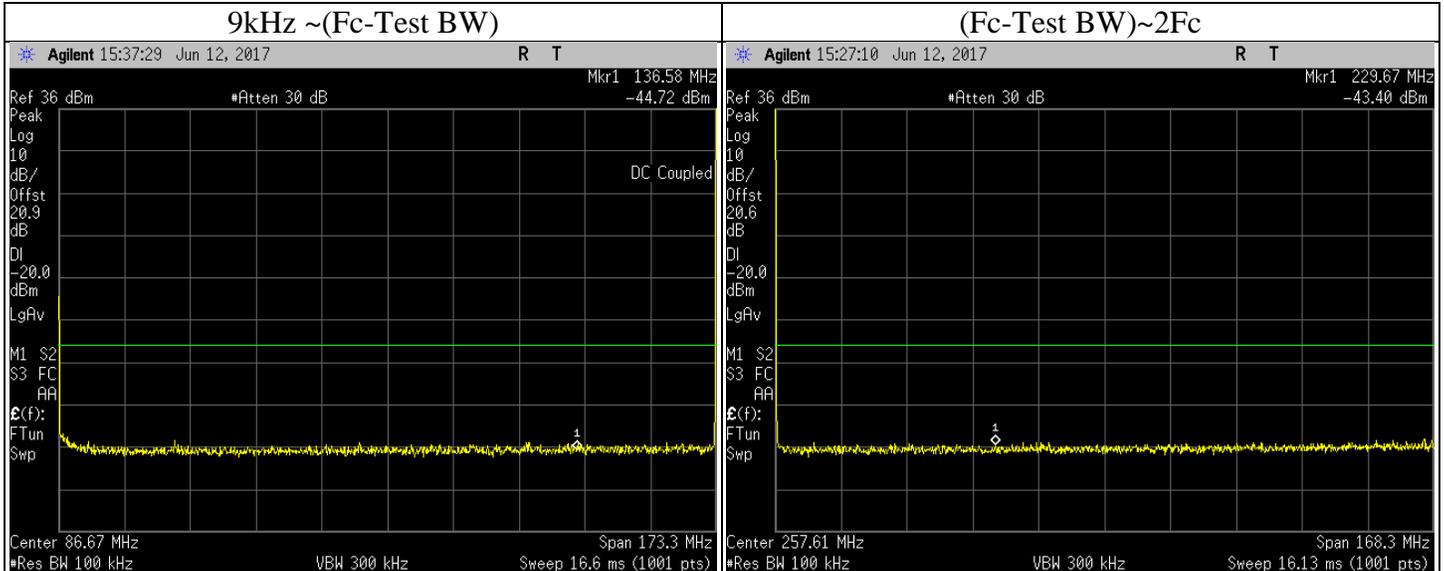
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	1.300	-37.53	-13	Pass
(Fc-Test BW)~2Fc	232.490	-37.36	-13	Pass
2Fc~1GHz	485.100	-59.97	-13	Pass
1GHz~10Fc	1264.710	-49.27	-13	Pass

**Analog: 161.7 MHz, 25.0 kHz Channel Spacing, Low Power (NOT FOR FCC REVIEW)  
 RSS-119**



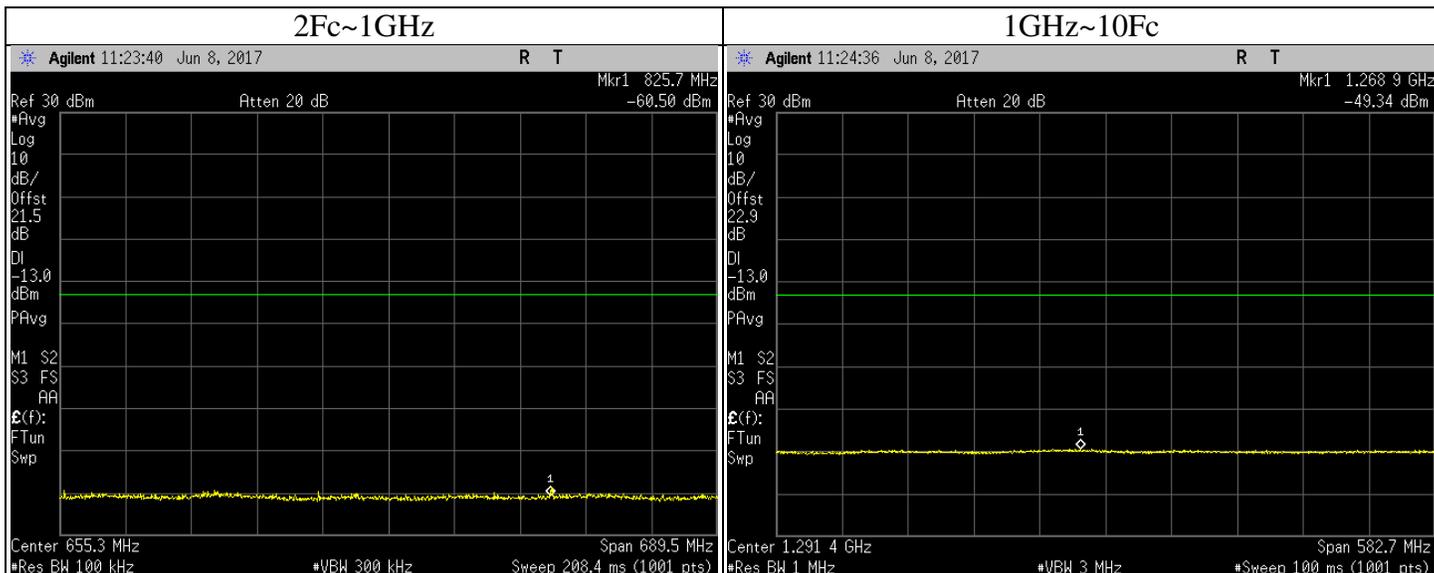
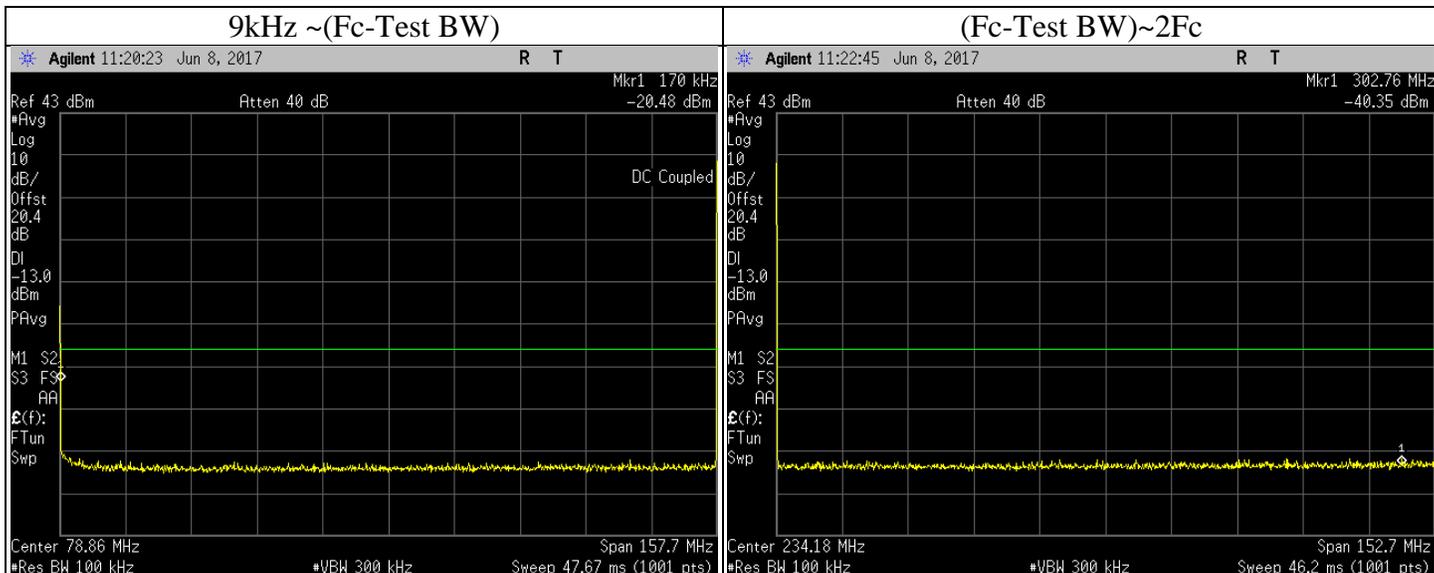
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	0.650	-37.30	-13	Pass
(Fc-Test BW)~2Fc	233.270	-38.53	-13	Pass
2Fc~1GHz	479.780	-59.08	-13	Pass
1GHz~10Fc	1246.69	-49.43	-13	Pass

**Analog: 173.3875 MHz, 25.0 kHz Channel Spacing, Max Power  
 RSS-119**



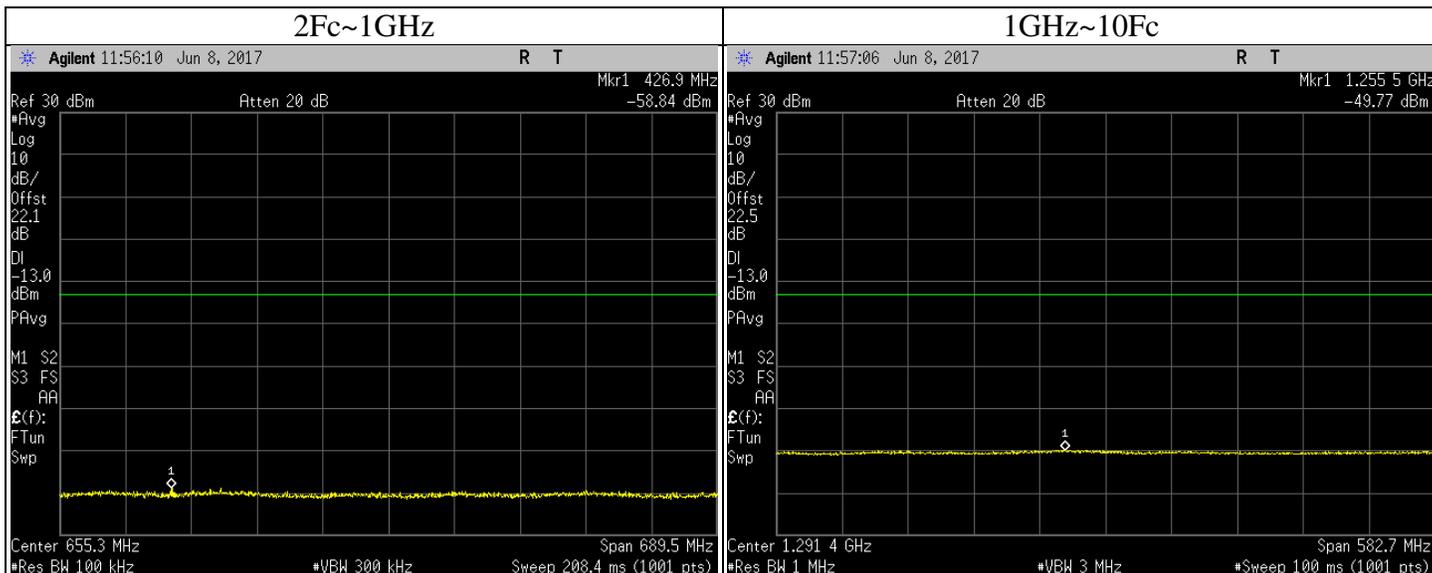
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	136.580	-44.72	-13	Pass
(Fc-Test BW)~2Fc	229.670	-43.40	-13	Pass
2Fc~1GHz	347.300	-40.21	-13	Pass
1GHz~10Fc	1738.800	-49.54	-13	Pass

**Analog: 157.77 MHz, 25.0 kHz Channel Spacing, Max Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge**



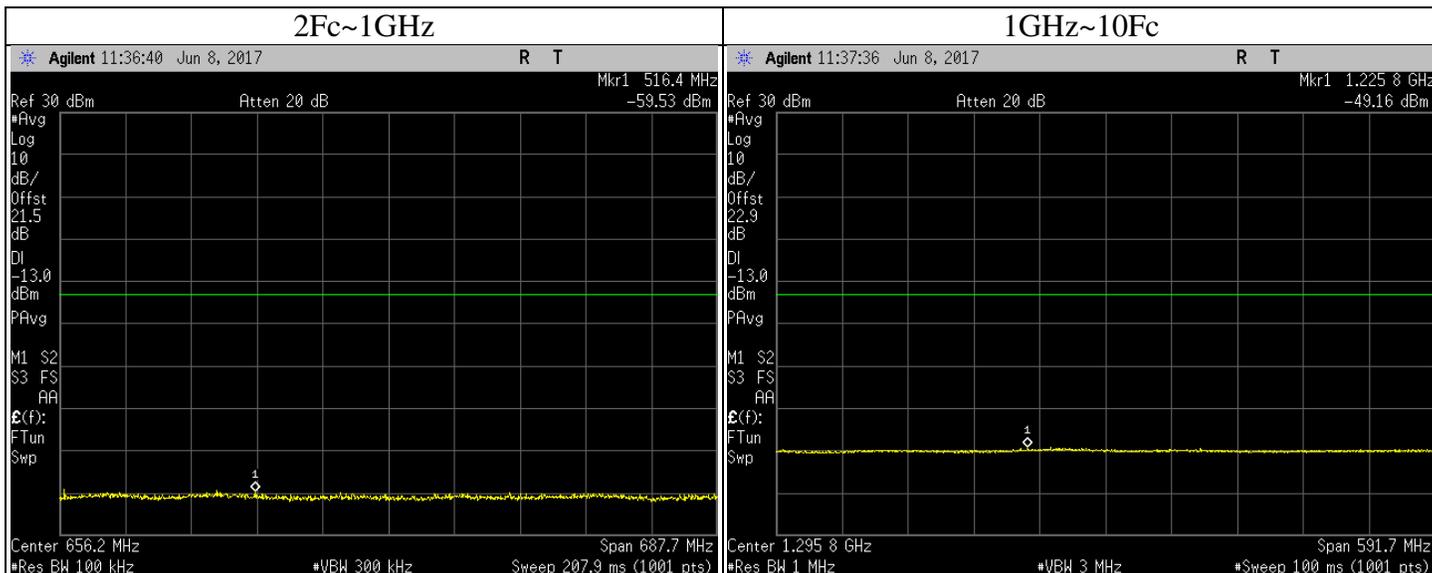
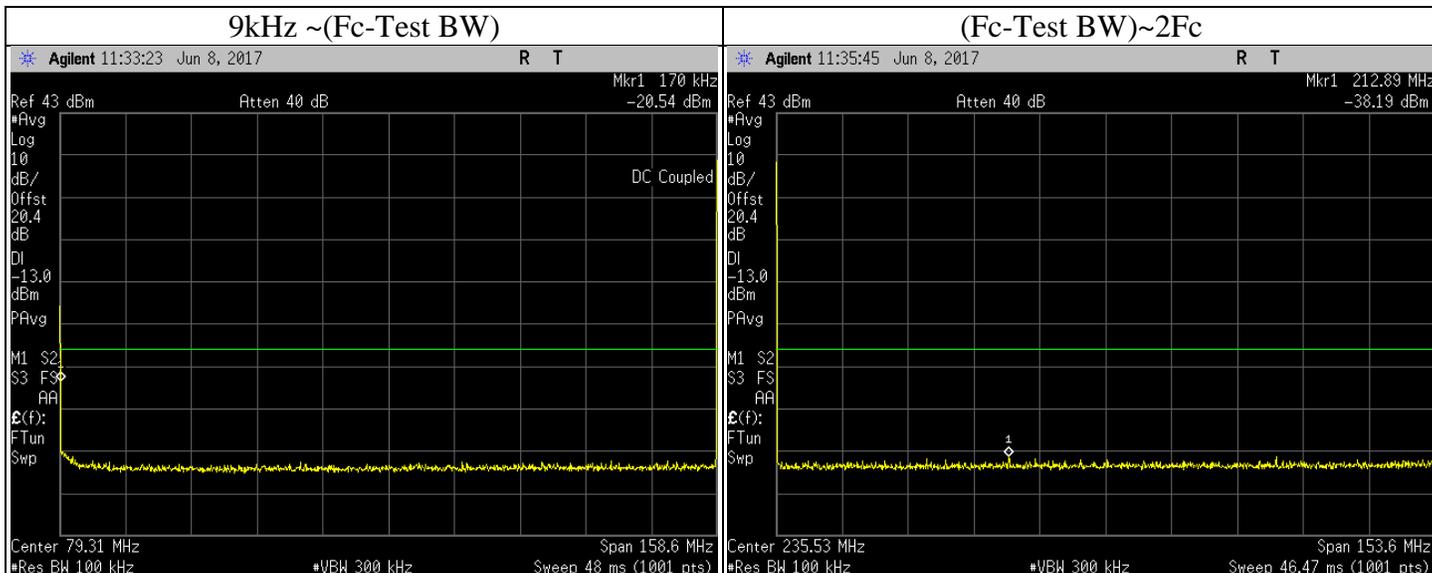
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	0.640	-37.24	-13	Pass
(Fc-Test BW)~2Fc	302.760	-38.59	-13	Pass
2Fc~1GHz	825.740	-58.63	-13	Pass
1GHz~10Fc	1268.94	-49.34	-13	Pass

**Analog: 157.77 MHz, 25.0 kHz Channel Spacing, Low Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge**



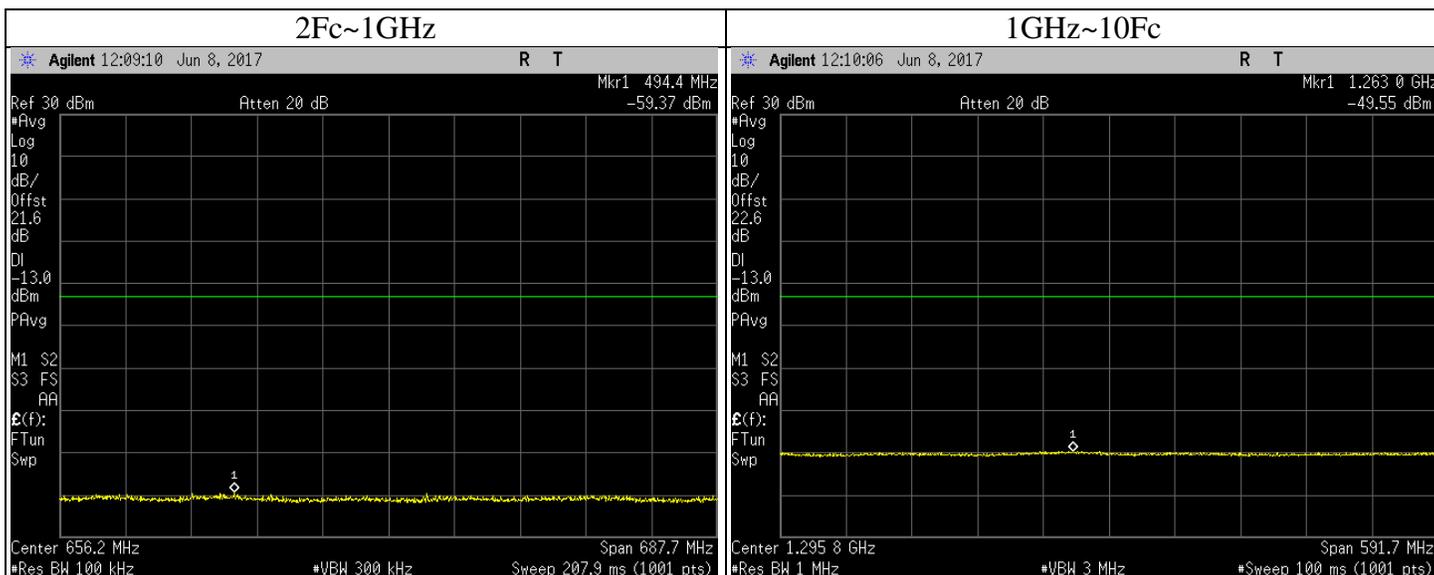
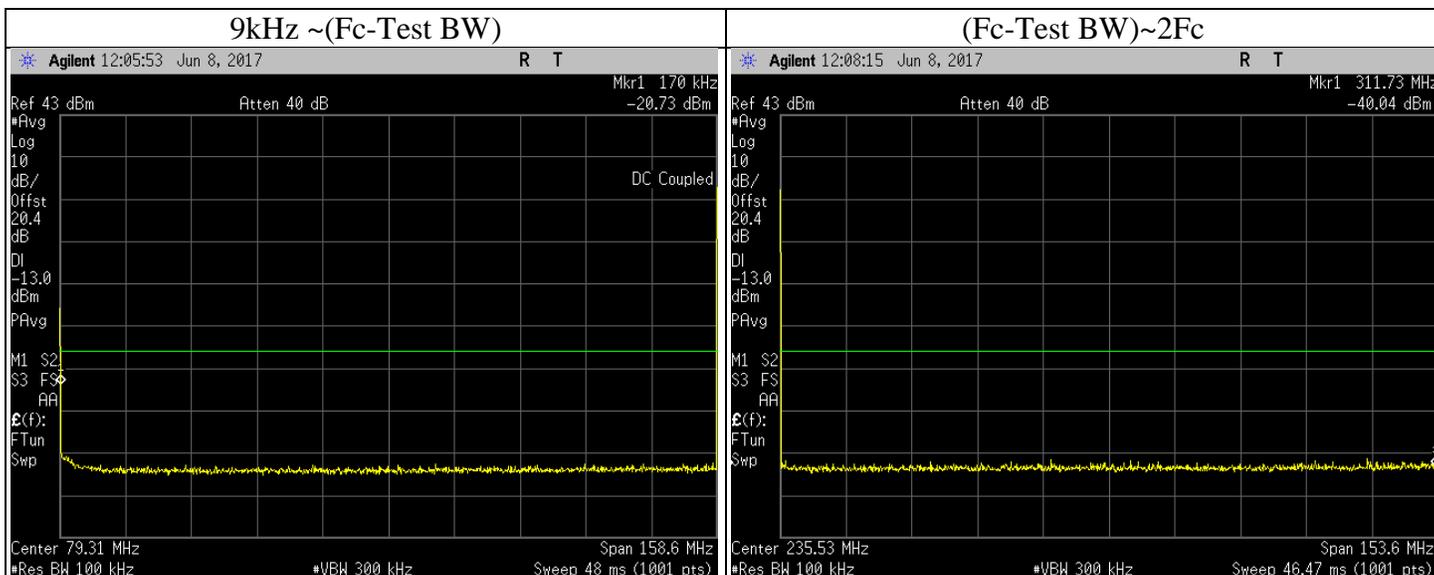
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	0.640	-37.26	-13	Pass
(Fc-Test BW)~2Fc	194.89	-38.62	-13	Pass
2Fc~1GHz	426.940	-58.84	-13	Pass
1GHz~10Fc	1255.55	-49.77	-13	Pass

**Analog: 158.67 MHz, 25.0 kHz Channel Spacing, Max Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge**



Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	0.800	-37.04	-13	Pass
(Fc-Test BW) ~ 2Fc	212.890	-38.19	-13	Pass
2Fc ~ 1GHz	516.370	-59.52	-13	Pass
1GHz ~ 10Fc	1225.800	-49.16	-13	Pass

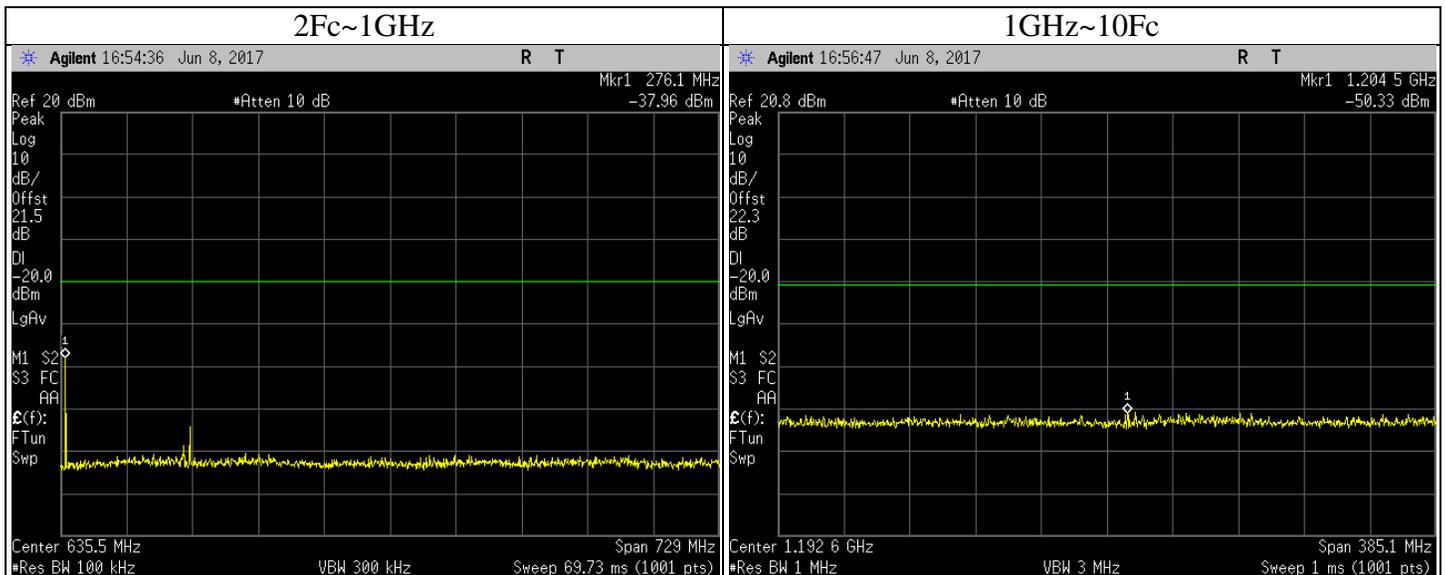
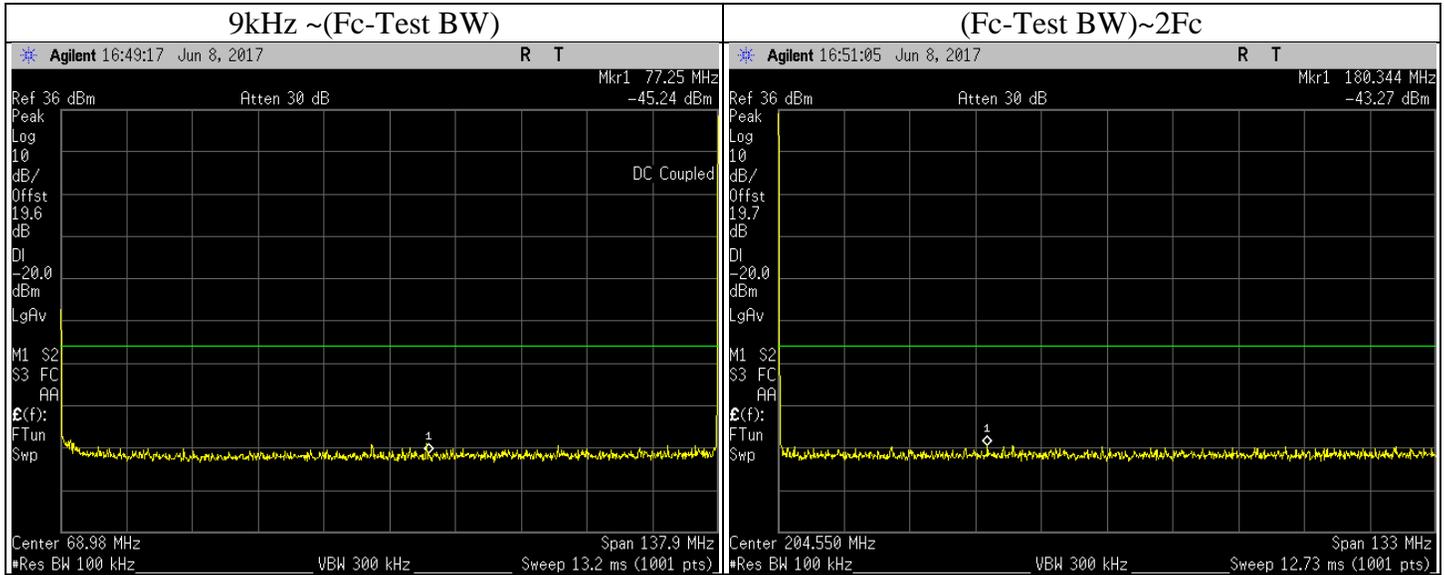
**Analog: 158.67 MHz, 25.0 kHz Channel Spacing, Low Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge**



Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	1.590	-37.67	-13	Pass
(Fc-Test BW)~2Fc	311.730	-37.62	-13	Pass
2Fc~1GHz	494.390	-59.37	-13	Pass
1GHz~10Fc	1263.040	-49.55	-13	Pass

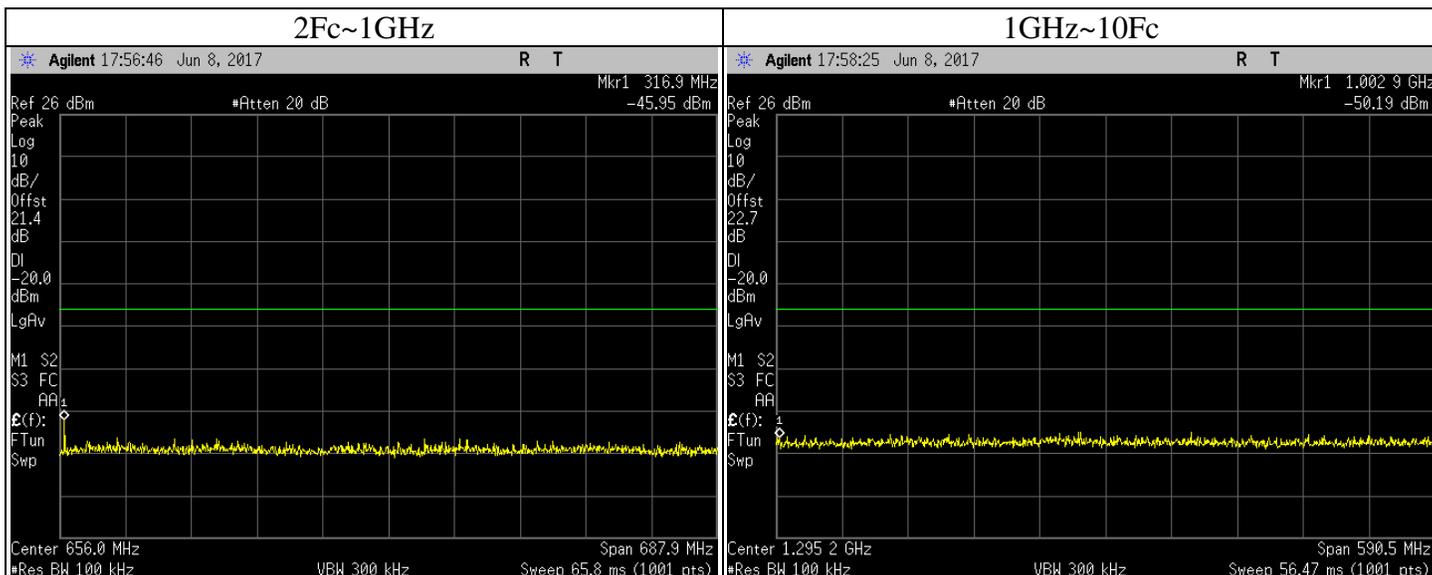
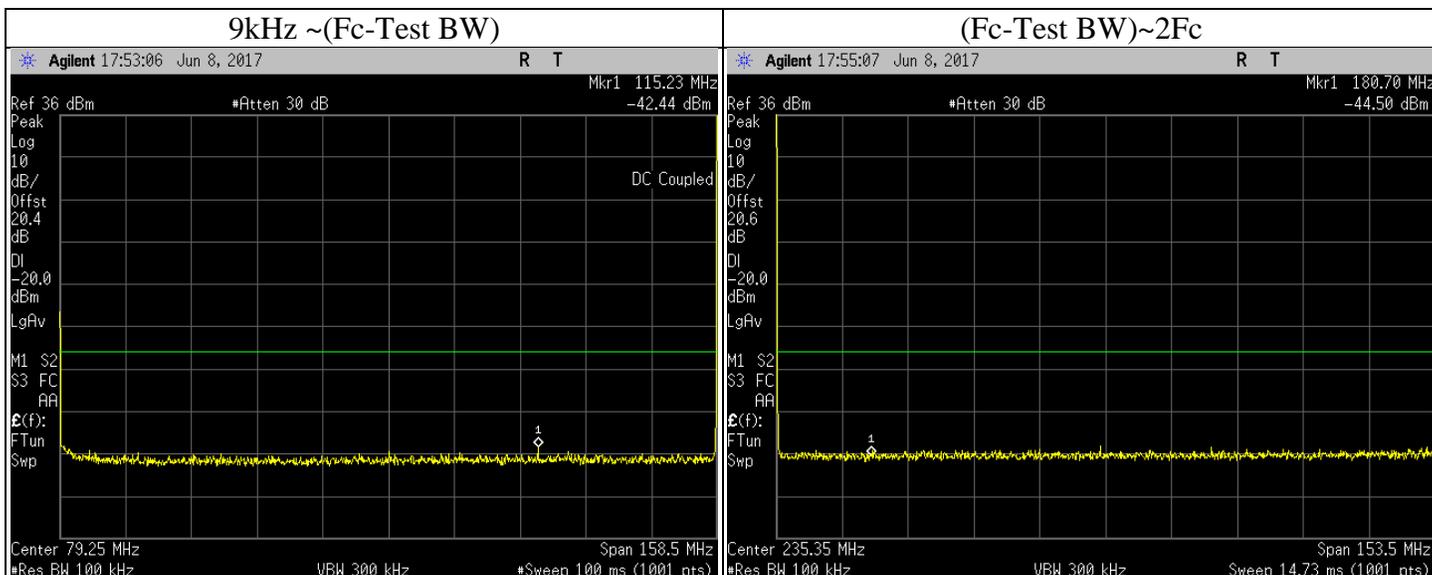
### 6.10.3. Test Result (Digital)

#### Digital 138.0125 MHz, 12.5 kHz Channel Spacing, Max Power (NOT FOR FCC REVIEW) For Federal, RSS-119



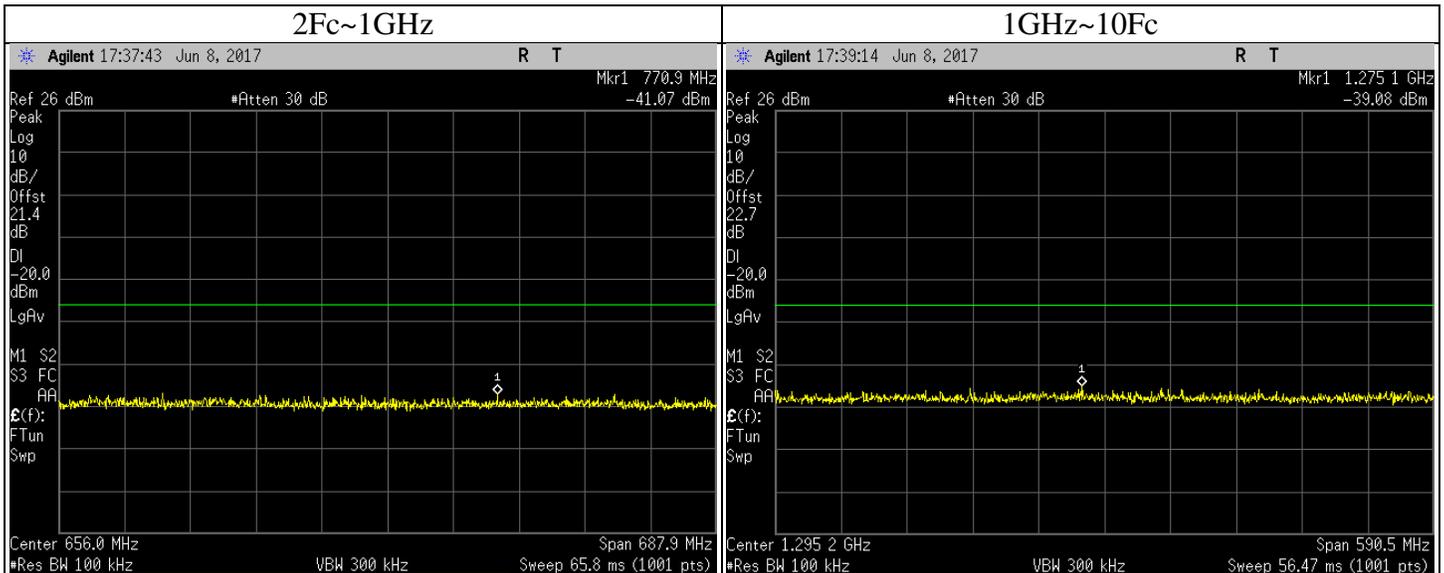
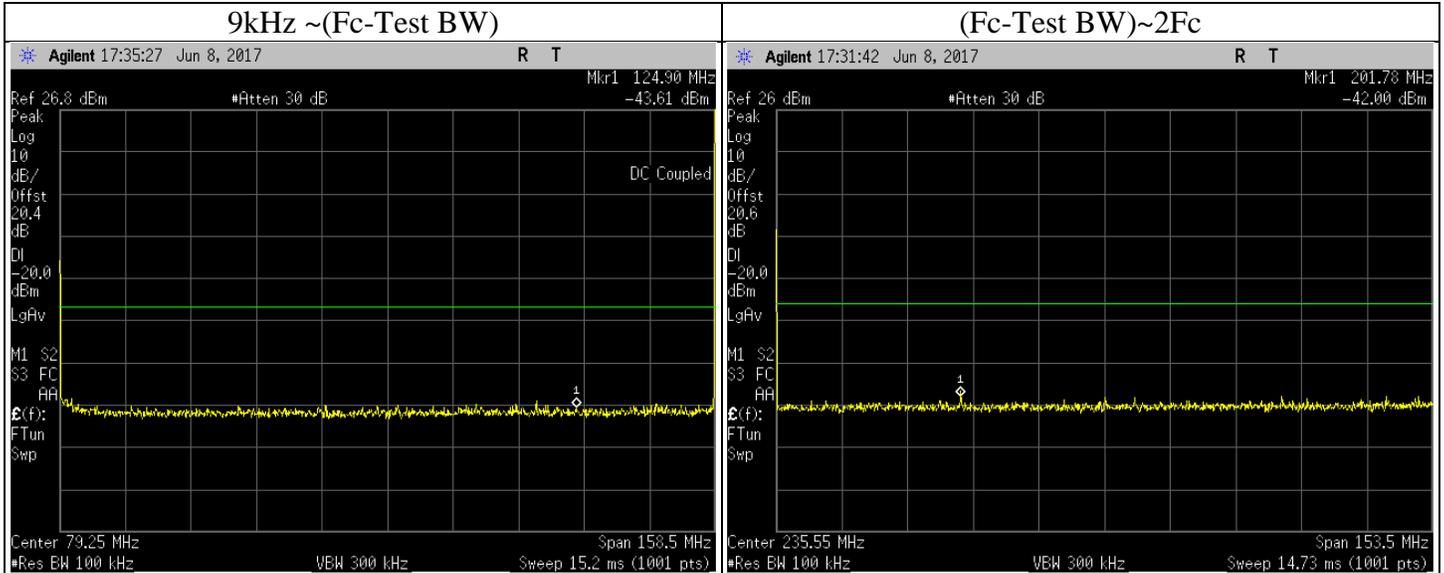
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	77.250	-45.24	-20	Pass
(Fc-Test BW)~2Fc	180.344	-43.27	-20	Pass
2Fc~1GHz	276.100	-37.96	-20	Pass
1GHz~10Fc	1204.500	-50.33	-20	Pass

**Digital 158.55 MHz, 12.5 kHz Channel Spacing, Max Power  
 FCC Part 90, RSS-119**



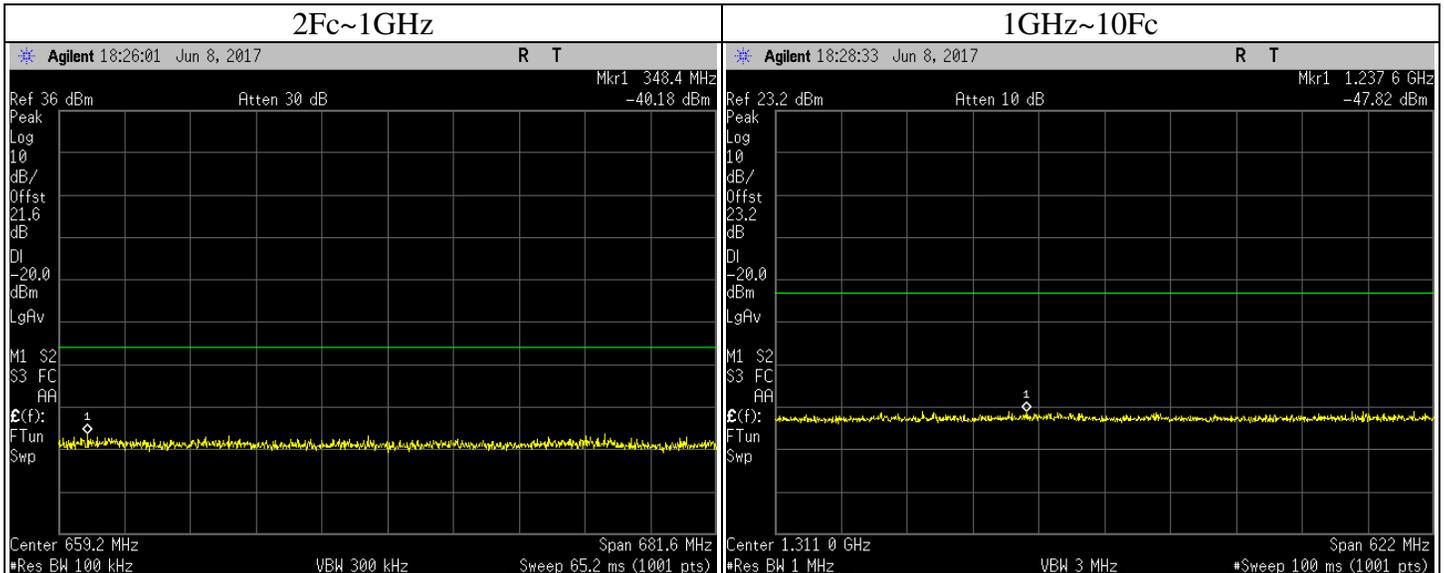
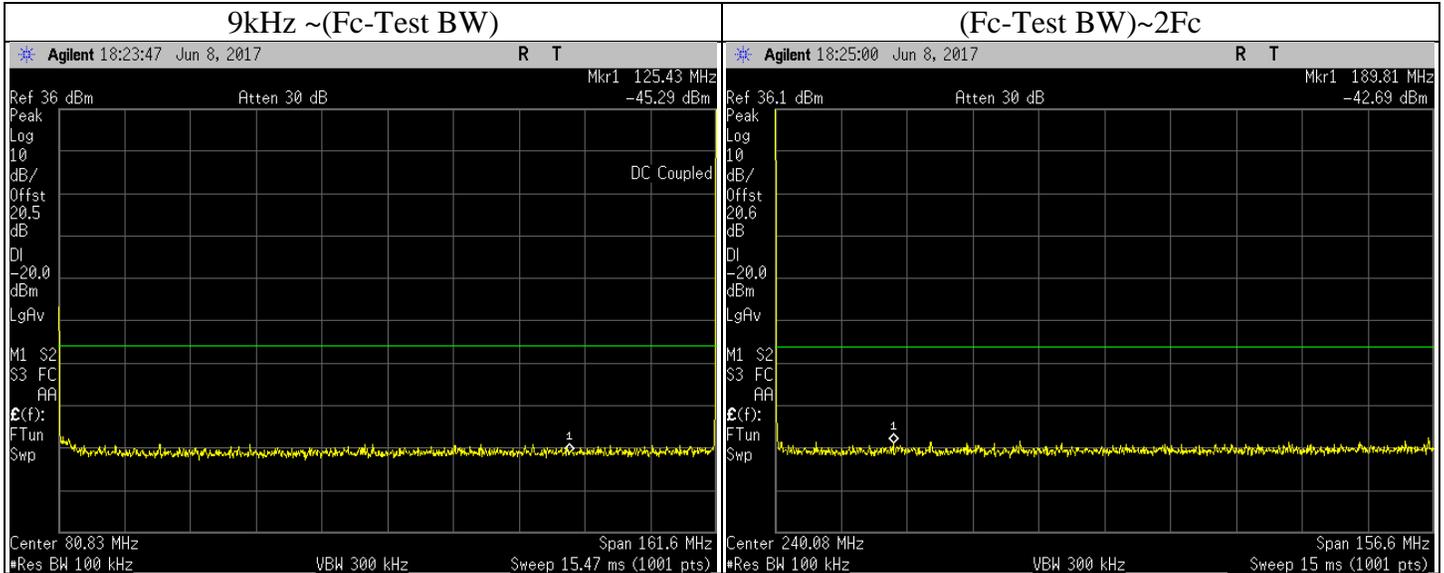
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	115.230	-42.44	-20	Pass
(Fc-Test BW) ~ 2Fc	180.700	-44.50	-20	Pass
2Fc ~ 1GHz	316.900	-45.95	-20	Pass
1GHz ~ 10Fc	1002.900	-50.19	-20	Pass

**Digital 158.55 MHz, 12.5 kHz Channel Spacing, Low Power  
 FCC Part 90, RSS-119**



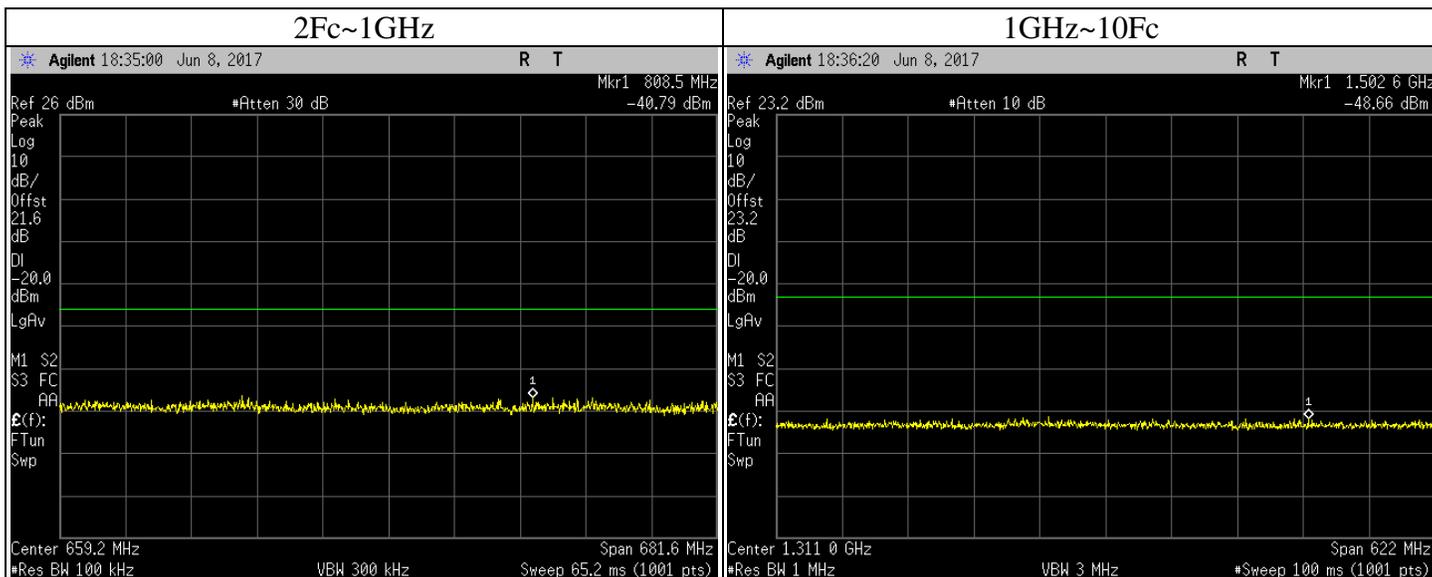
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	124.900	-43.61	-20	Pass
(Fc-Test BW)~2Fc	201.780	-42.00	-20	Pass
2Fc~1GHz	770.900	-41.07	-20	Pass
1GHz~10Fc	1275.100	-39.08	-20	Pass

**Digital 161.7 MHz, 12.5 kHz Channel Spacing, Max Power (NOT FOR IC REVIEW)**  
**FCC Part 90**



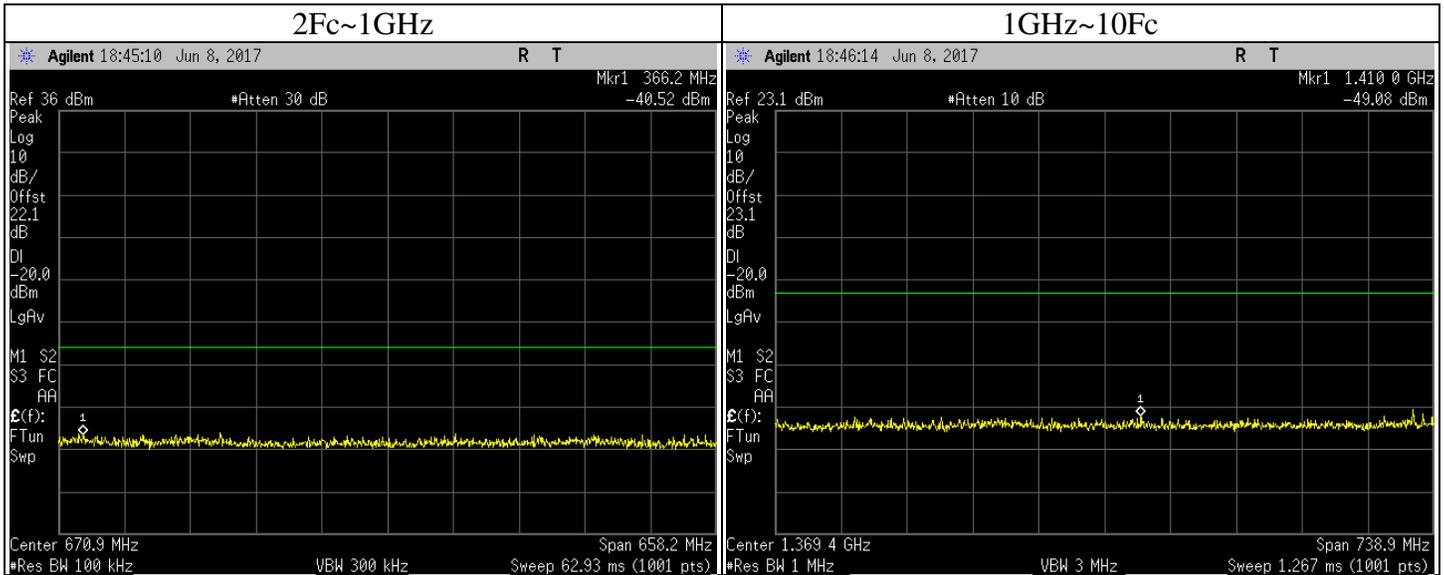
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	125.430	-45.29	-20	Pass
(Fc-Test BW)~2Fc	189.810	-42.69	-20	Pass
2Fc~1GHz	348.400	-40.18	-20	Pass
1GHz~10Fc	1237.600	-47.82	-20	Pass

**Digital 161.7 MHz, 12.5 kHz Channel Spacing, Low Power (NOT FOR IC REVIEW)**  
**FCC Part 90**



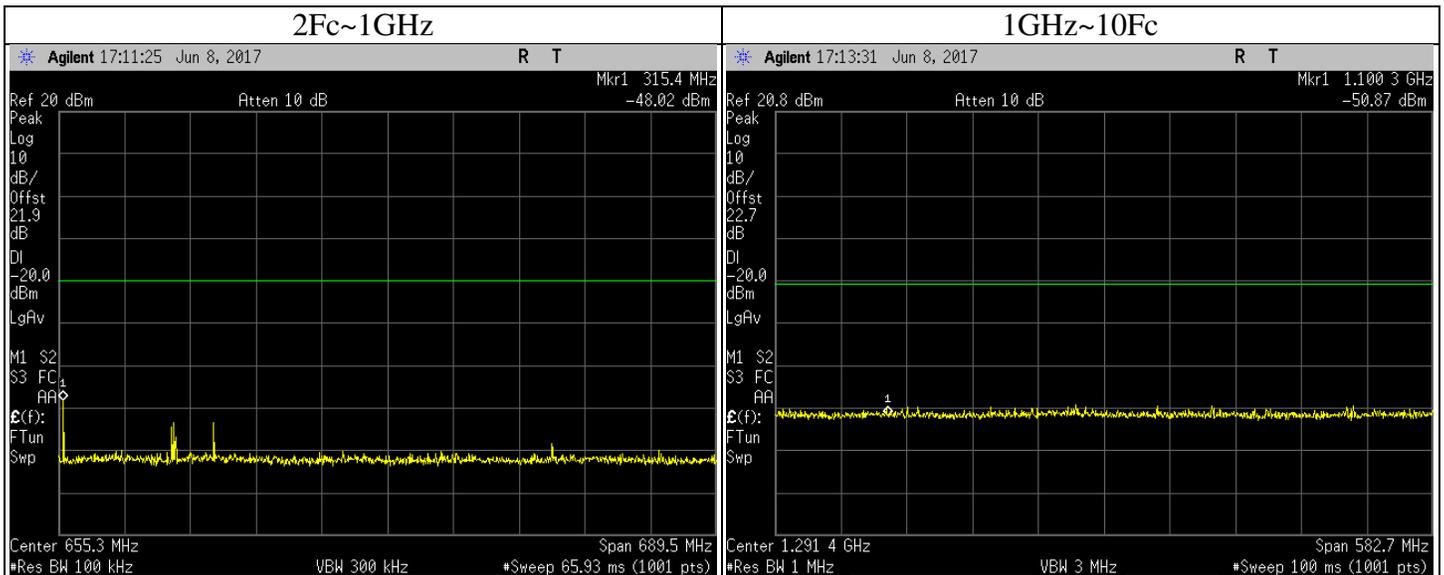
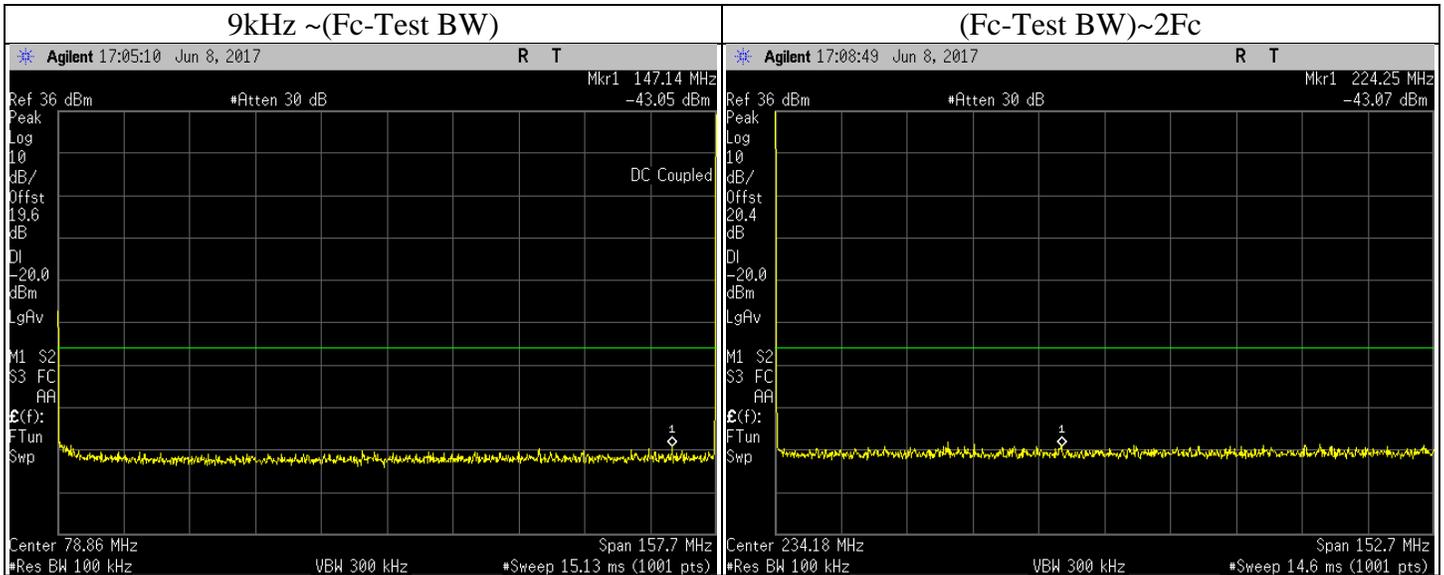
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	129.470	-42.86	-20	Pass
(Fc-Test BW)~2Fc	208.13	-39.77	-20	Pass
2Fc~1GHz	808.500	-40.79	-20	Pass
1GHz~10Fc	1502.600	-48.66	-20	Pass

**Digital 173.3875 MHz, 12.5 kHz Channel Spacing, Max Power  
 FCC Part 90, RSS-119**



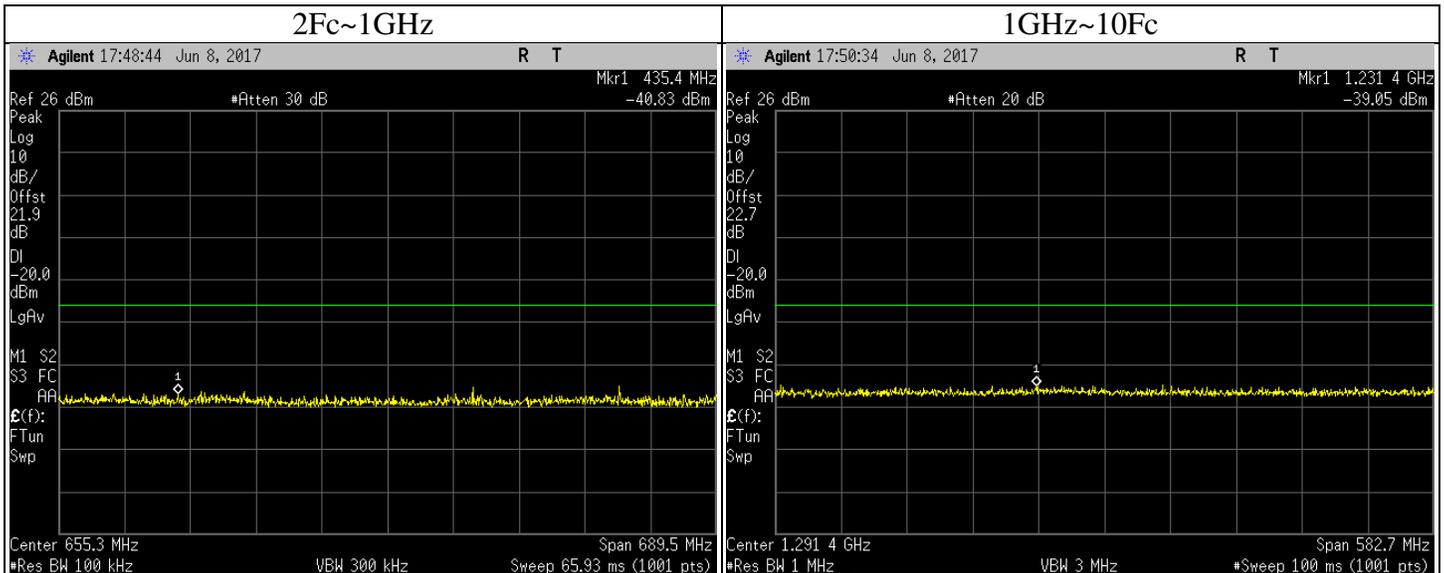
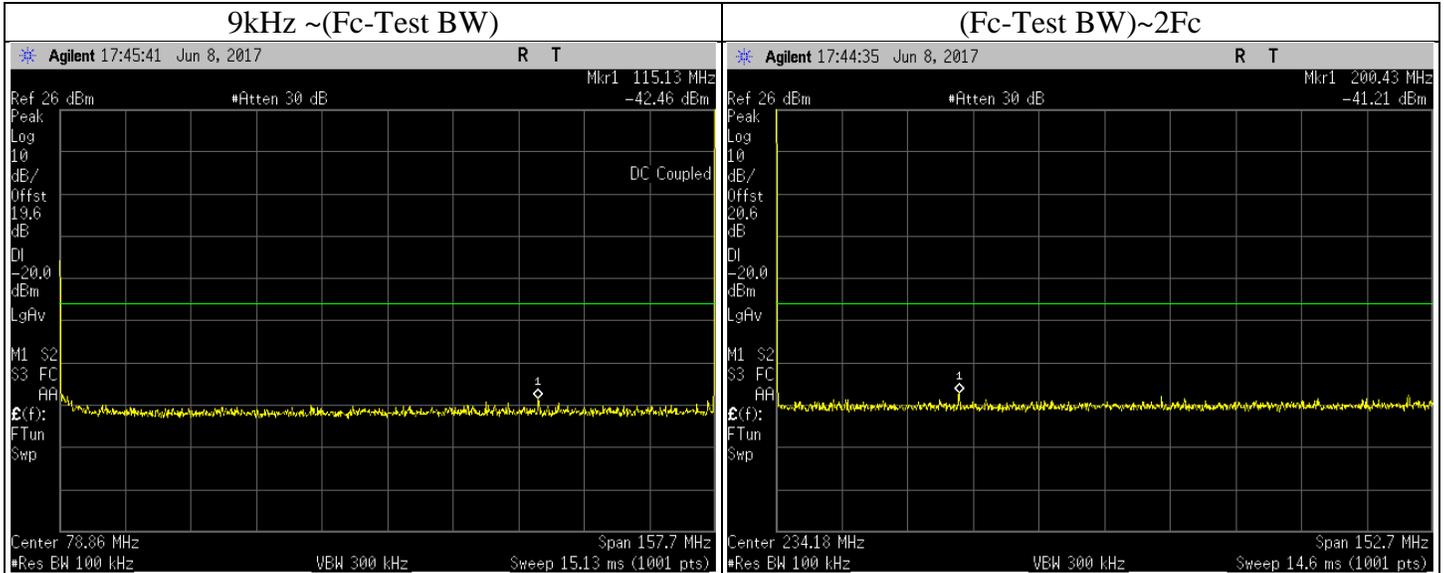
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	130.860	-41.88	-20	Pass
(Fc-Test BW)~2Fc	287.570	-41.39	-20	Pass
2Fc~1GHz	366.200	-40.52	-20	Pass
1GHz~10Fc	1410.000	-49.08	-20	Pass

**Digital 157.77 MHz, 12.5 kHz Channel Spacing, Max Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge, Part 90**



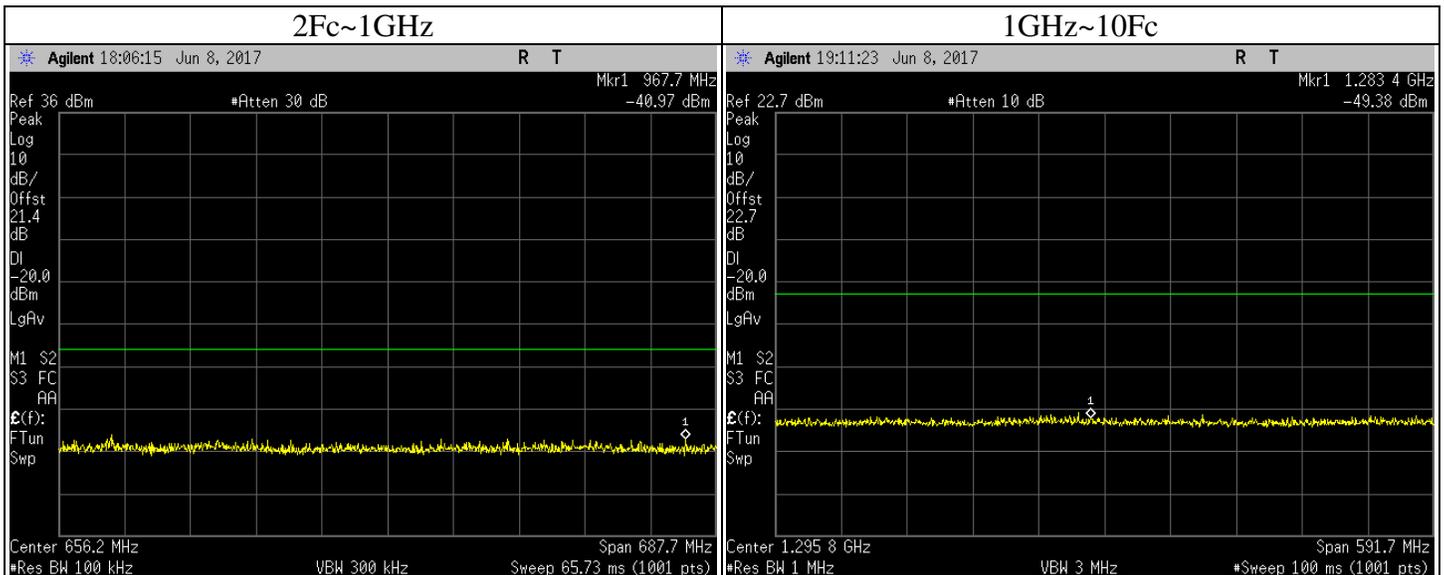
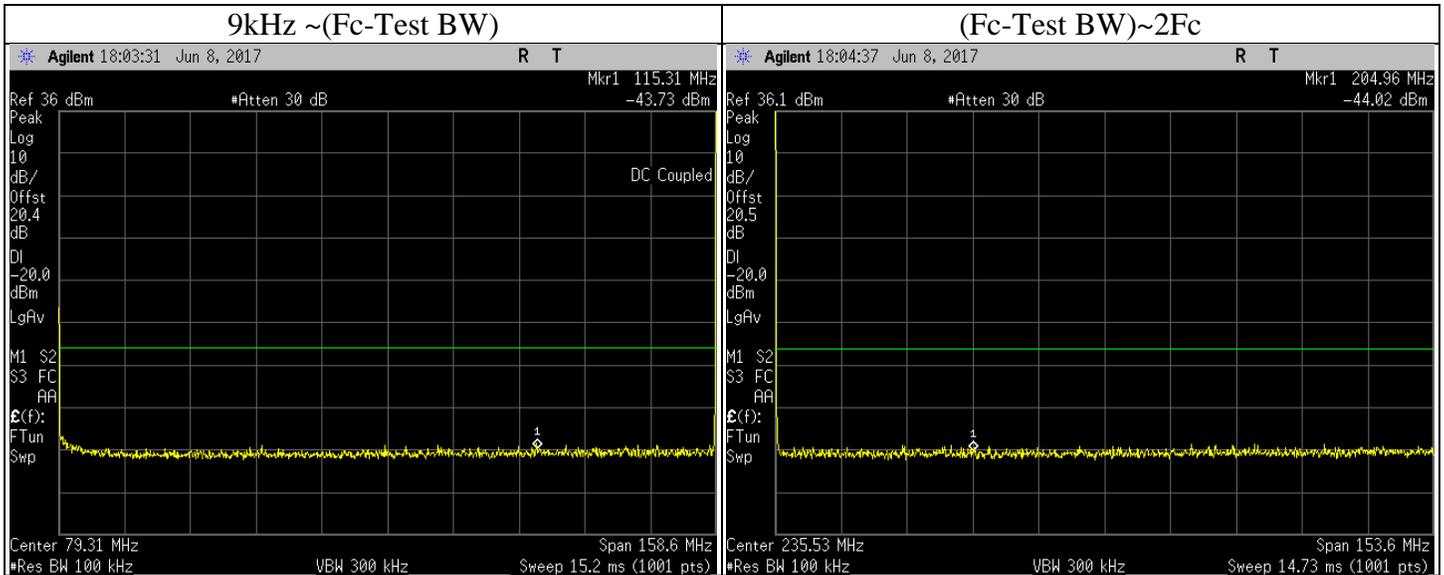
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	147.140	-43.05	-20	Pass
(Fc-Test BW) ~ 2Fc	224.250	-43.07	-20	Pass
2Fc ~ 1GHz	315.400	-48.02	-20	Pass
1GHz ~ 10Fc	1100.300	-50.87	-20	Pass

**Digital 157.77 MHz, 12.5 kHz Channel Spacing, Low Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge, Part 90**



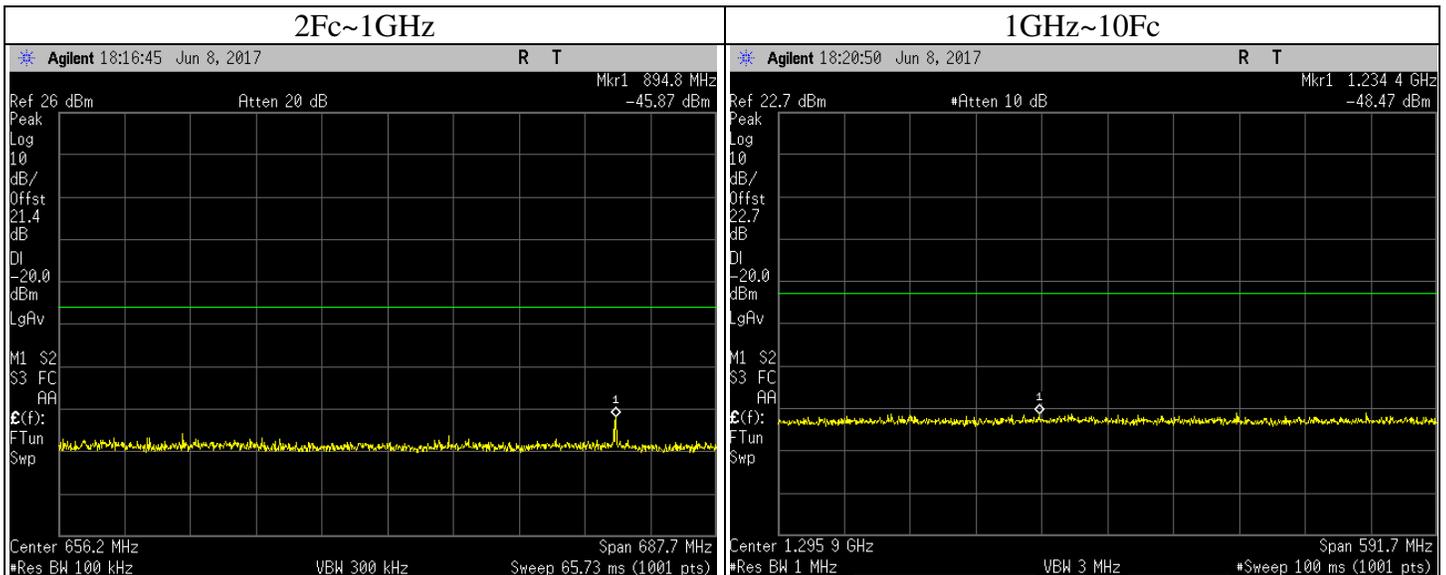
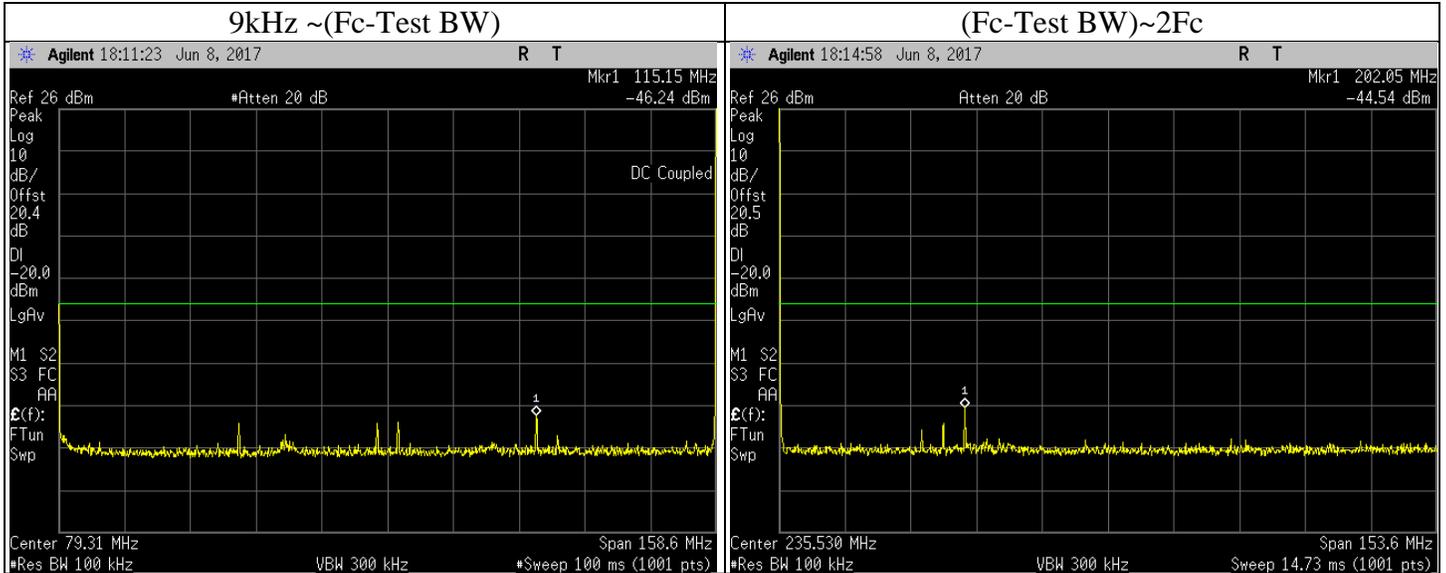
Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	115.130	-42.46	-20	Pass
(Fc-Test BW) ~ 2Fc	200.430	-41.21	-20	Pass
2Fc ~ 1GHz	435.400	-40.83	-20	Pass
1GHz ~ 10Fc	1231.400	-39.05	-20	Pass

**Digital 158.67 MHz, 12.5 kHz Channel Spacing, Max Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge, Part 90**



Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	115.310	-43.73	-20	Pass
(Fc-Test BW) ~ 2Fc	204.960	-44.02	-20	Pass
2Fc ~ 1GHz	967.700	-40.97	-20	Pass
1GHz ~ 10Fc	1283.400	-49.38	-20	Pass

**Digital 158.67 MHz, 12.5 kHz Channel Spacing, Low Power (NOT FOR IC REVIEW)**  
**FCC Part 22 Bandedge, Part 90**



Frequency Range	Highest Spur Freq (MHz)	Spurious Level (dBm)	Failing Limit (dBm)	Remark
9kHz ~ 1GHz	80.850	-47.98	-20	Pass
	115.150	-46.24		
(Fc-Test BW)~2Fc	196.980	-48.67	-20	Pass
	202.950	-44.54		
2Fc~1GHz	894.800	-45.87	-20	Pass
1GHz~10Fc	1234.400	-48.47	-20	Pass

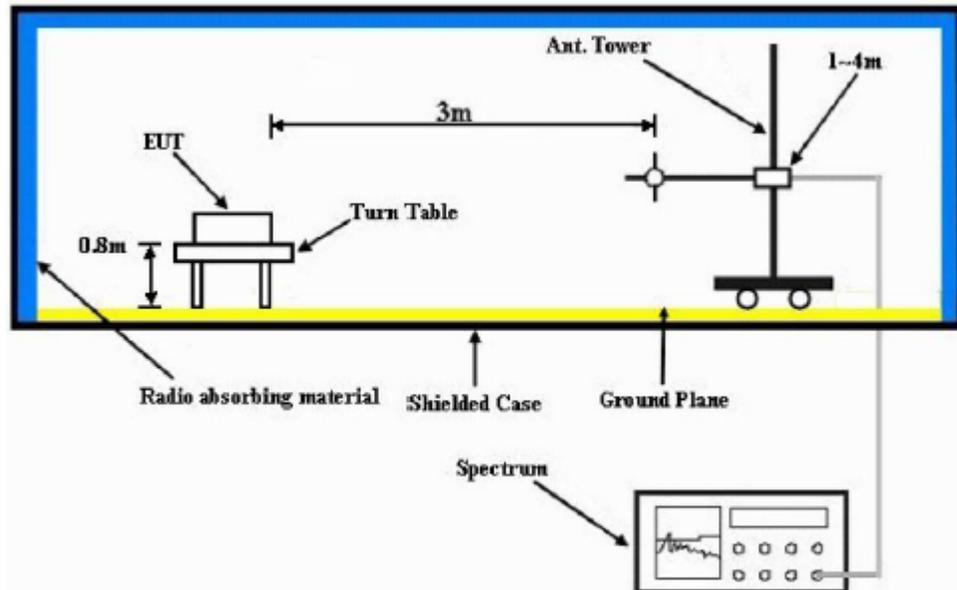
### 6.10.4. Test Limit

Table below summarized the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least

Channel Spacing	Part 22	Part 24D	Part 74	Part 80	Part 90
12.5kHz	43 + log <sub>10</sub> (P) (-13 dBm)	43 + log <sub>10</sub> (P) (-13 dBm)	43 + log <sub>10</sub> (P) (-13 dBm)	Not Applicable	50 + log <sub>10</sub> (P) (-20 dBm)
25kHz		Not Applicable		43 + log <sub>10</sub> (P) (-13 dBm)	Not Applicable

## 6.11. Radiated Spurious Emission

### 6.11.1. Test Setup



- 1) The spectrum setting for scanning Radiated Emission below 1 GHz is RBW = 100 kHz, VBW = 300 kHz and above 1 GHz is RBW = 1 MHz, VBW = 3 MHz. Detector mode is positive peak.
- 2) In the semi-anechoic chamber, setup as illustrated above the EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- 3) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
- 4) Final Radiated Spurious Emission = “Read Value” + Measured substitution value.

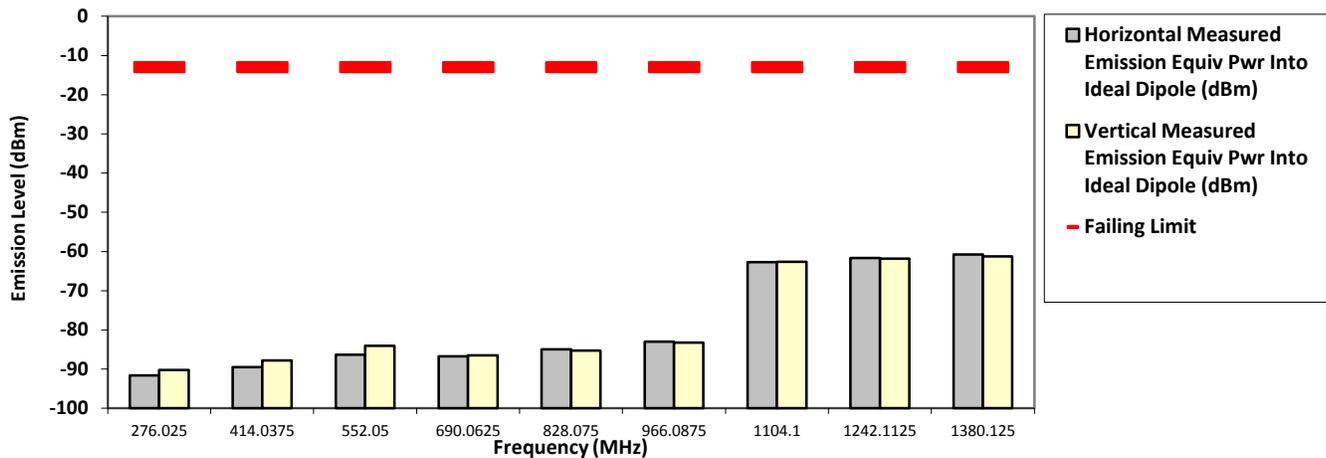
### 6.11.2. Test Result (Analog)

**SAC Transmitter Radiated Emission:**

Model Number: AAH88JCD9SA2AN      S/N: 130TTK0356      SR:06406-EMC-00001  
 Battery Part No: PMNN4468A      Accy Part No: NA  
 Test Mode: TX Analog  
 138.012500 MHz      25 kHz      2.400 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
276.0250	-13.0000	-91.6461 **	-90.1912 **
414.0375	-13.0000	-89.4970 **	-87.7590 **
552.0500	-13.0000	-86.3454 **	-84.0395 **
690.0625	-13.0000	-86.7491 **	-86.5195 **
828.0750	-13.0000	-84.9486 **	-85.3078 **
966.0875	-13.0000	-83.0078 **	-83.2442 **
1104.1000	-13.0000	-62.6887 **	-62.6180 **
1242.1125	-13.0000	-61.6564 **	-61.8021 **
1380.1250	-13.0000	-60.7555 **	-61.2404 **

#### RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported

Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

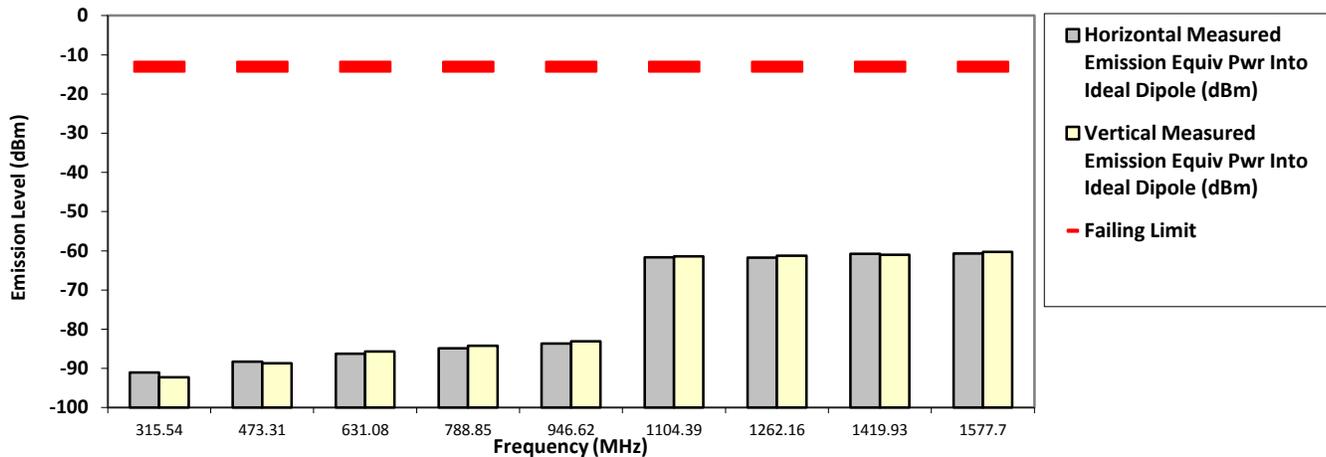
Remarks: Passed Results Marginal Results Failed Results

**NOT FOR FCC REVIEW (Federal Frequency)**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**157.770000 MHz**      **25 kHz**      **0.500 Watt(s) /Low Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
315.5400	-13.0000	-91.0415 **	-92.2569 **
473.3100	-13.0000	-88.2800 **	-88.7166 **
631.0800	-13.0000	-86.2829 **	-85.7209 **
788.8500	-13.0000	-84.8729 **	-84.2466 **
946.6200	-13.0000	-83.6553 **	-83.0487 **
1104.3900	-13.0000	-61.6549 **	-61.3987 **
1262.1600	-13.0000	-61.7167 **	-61.2644 **
1419.9300	-13.0000	-60.7454 **	-61.0296 **
1577.7000	-13.0000	-60.7154 **	-60.2416 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.  
 Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman Thu, Jun 01, 2017  
 FCC Registration: 772092 Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks: 

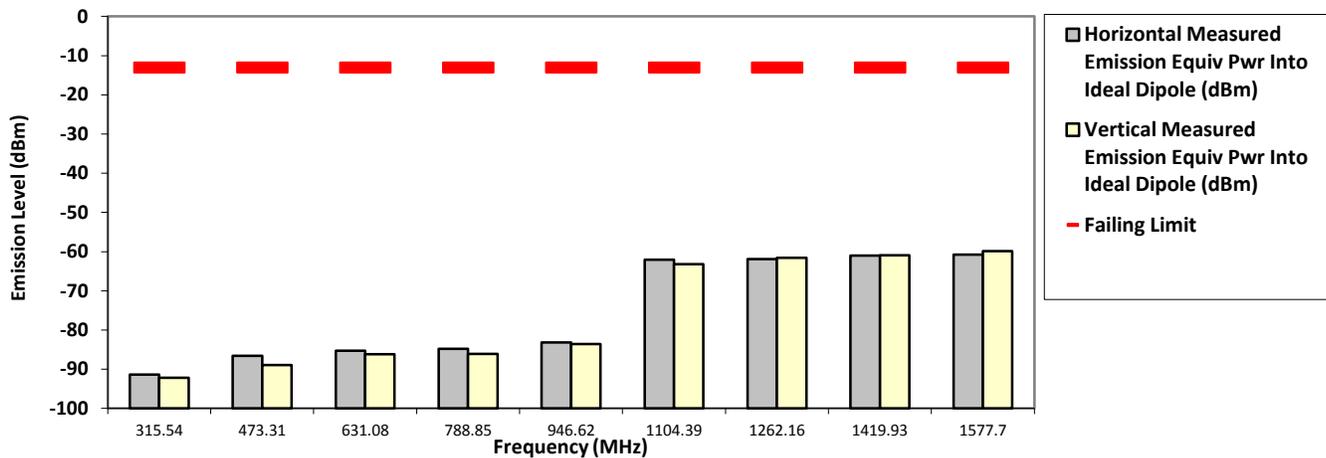
Passed Results	Marginal Results	Failed Results
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**FCC Part 22**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**157.770000 MHz**      **25 kHz**      **2.400 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
315.5400	-13.0000	-91.4064 **	-92.1584 **
473.3100	-13.0000	-86.5556 **	-88.9117 **
631.0800	-13.0000	-85.2843 **	-86.1342 **
788.8500	-13.0000	-84.8262 **	-86.0664 **
946.6200	-13.0000	-83.1552 **	-83.5849 **
1104.3900	-13.0000	-62.0653 **	-63.2241 **
1262.1600	-13.0000	-61.9129 **	-61.5698 **
1419.9300	-13.0000	-60.9964 **	-60.8941 **
1577.7000	-13.0000	-60.7764 **	-59.9004 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

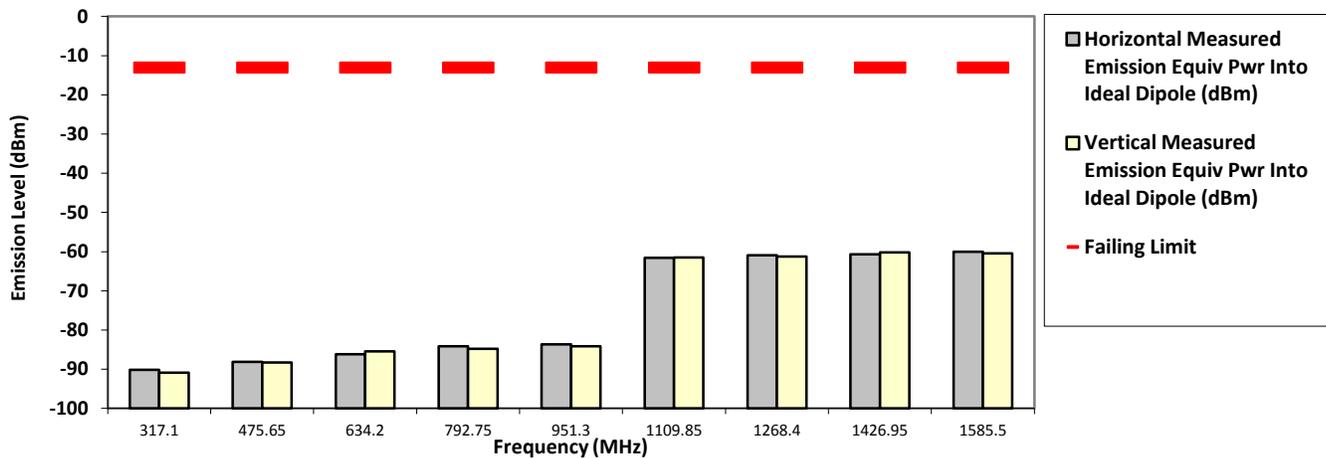
Passed Results	Marginal Results	Failed Results
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**FCC Part 22**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**158.550000 MHz**      **25 kHz**      **0.500 Watt(s) /Low Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equip Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equip Pwr Into ideal Dipole (dBm)
317.1000	-13.0000	-90.1313 **	-90.9131 **
475.6500	-13.0000	-88.0967 **	-88.3174 **
634.2000	-13.0000	-86.2048 **	-85.4099 **
792.7500	-13.0000	-84.1670 **	-84.8196 **
951.3000	-13.0000	-83.6796 **	-84.1529 **
1109.8500	-13.0000	-61.6040 **	-61.4764 **
1268.4000	-13.0000	-60.8910 **	-61.2464 **
1426.9500	-13.0000	-60.6947 **	-60.1923 **
1585.5000	-13.0000	-60.0327 **	-60.4417 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

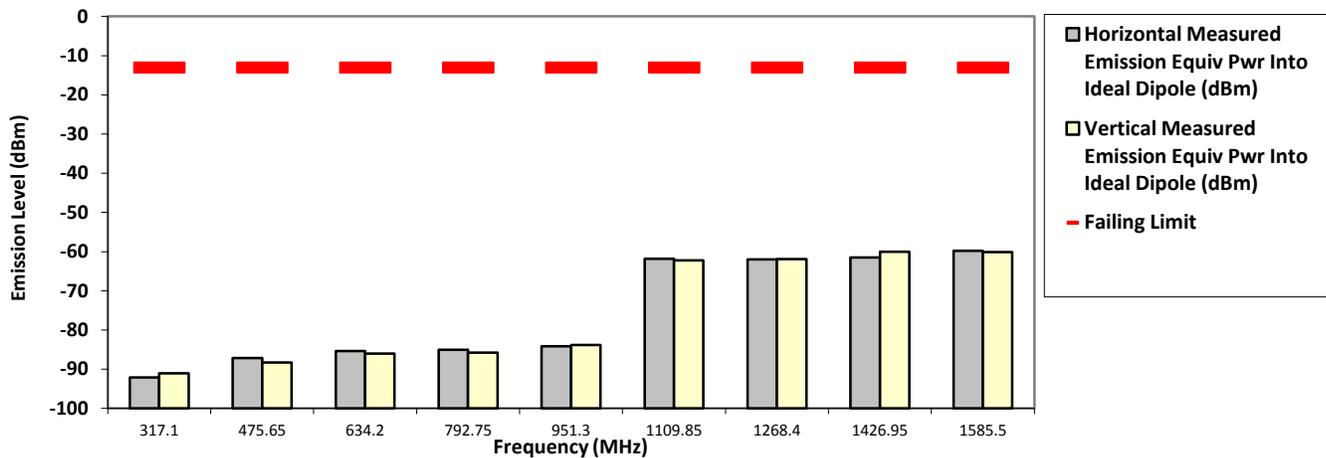
Passed Results	Marginal Results	Failed Results
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**FCC Part 22**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**158.550000 MHz**      **25 kHz**      **2.400 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equip Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equip Pwr Into ideal Dipole (dBm)
317.1000	-13.0000	-92.0677 **	-91.0465 **
475.6500	-13.0000	-87.1536 **	-88.3104 **
634.2000	-13.0000	-85.3894 **	-86.0233 **
792.7500	-13.0000	-85.0316 **	-85.7340 **
951.3000	-13.0000	-84.1109 **	-83.8204 **
1109.8500	-13.0000	-61.8051 **	-62.2496 **
1268.4000	-13.0000	-61.9530 **	-61.9335 **
1426.9500	-13.0000	-61.5227 **	-60.0489 **
1585.5000	-13.0000	-59.7776 **	-60.1434 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

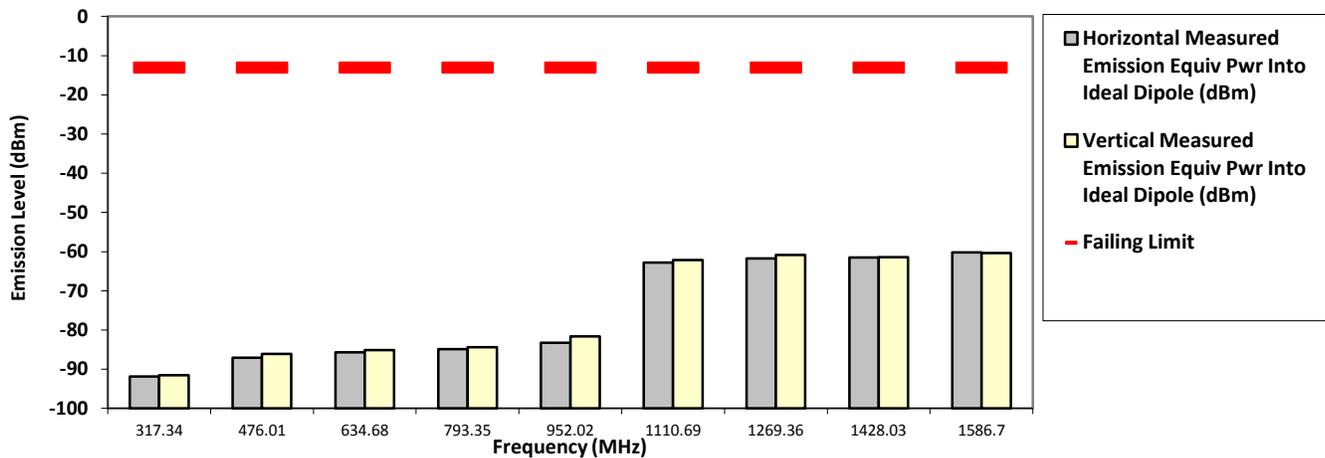
Remarks:	Passed Results	Marginal Results	Failed Results
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**FCC Part 22**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**158.670000 MHz**      **25 kHz**      **0.500 Watt(s)/Low Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.3400	-13.0000	-91.8400 **	-91.5078 **
476.0100	-13.0000	-87.0898 **	-86.0526 **
634.6800	-13.0000	-85.6805 **	-85.0884 **
793.3500	-13.0000	-84.8347 **	-84.4159 **
952.0200	-13.0000	-83.2347 **	-81.6421 **
1110.6900	-13.0000	-62.8240 **	-62.1154 **
1269.3600	-13.0000	-61.7361 **	-60.8823 **
1428.0300	-13.0000	-61.5250 **	-61.4222 **
1586.7000	-13.0000	-60.1767 **	-60.3802 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

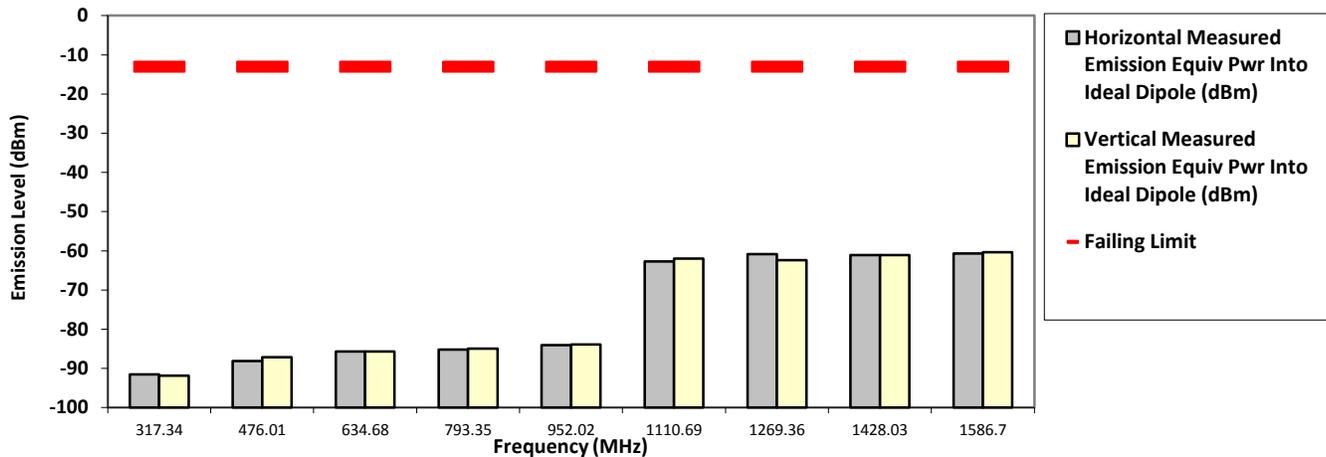
Passed Results	Marginal Results	Failed Results
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**FCC Part 22**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**158.670000 MHz**      **25 kHz**      **2.400 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.3400	-13.0000	-91.5163 **	-91.8382 **
476.0100	-13.0000	-88.1522 **	-87.1492 **
634.6800	-13.0000	-85.7214 **	-85.7066 **
793.3500	-13.0000	-85.2310 **	-84.9345 **
952.0200	-13.0000	-84.0223 **	-83.8610 **
1110.6900	-13.0000	-62.6901 **	-61.9609 **
1269.3600	-13.0000	-60.8408 **	-62.3675 **
1428.0300	-13.0000	-61.0661 **	-61.0661 **
1586.7000	-13.0000	-60.6954 **	-60.3247 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.  
 Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman      Thu, Jun 01, 2017  
 FCC Registration: 772092      Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks: 

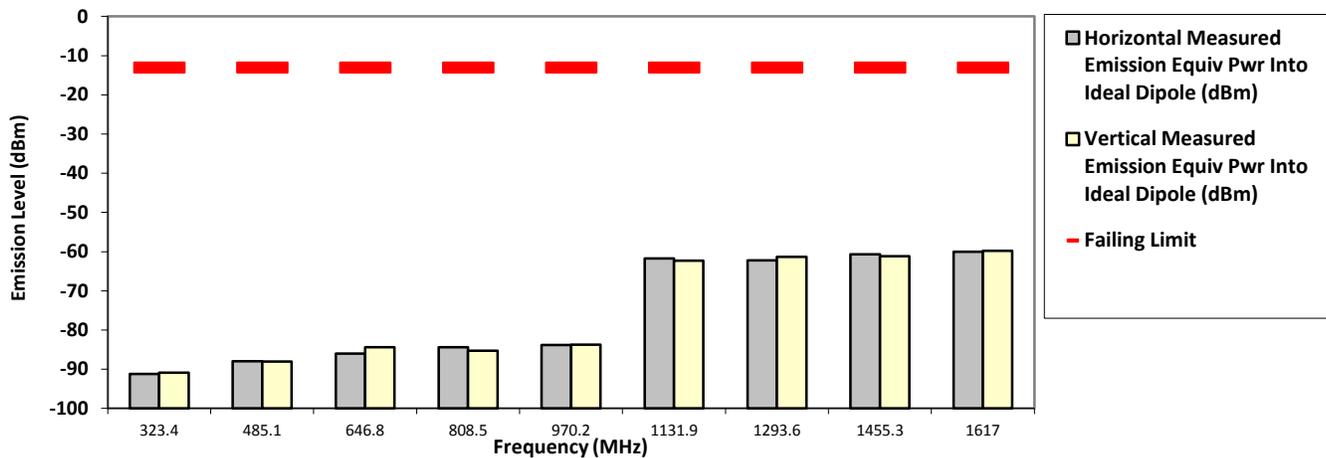
Passed Results	Marginal Results	Failed Results
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**FCC Part 22**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**161.700000 MHz**      **25 kHz**      **0.500 Watt(s) /Low Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equip Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equip Pwr Into ideal Dipole (dBm)
323.4000	-13.0000	-91.2392 **	-90.8864 **
485.1000	-13.0000	-87.9627 **	-88.0053 **
646.8000	-13.0000	-85.9854 **	-84.3638 **
808.5000	-13.0000	-84.3851 **	-85.3187 **
970.2000	-13.0000	-83.8213 **	-83.7692 **
1131.9000	-13.0000	-61.7789 **	-62.3201 **
1293.6000	-13.0000	-62.2447 **	-61.3396 **
1455.3000	-13.0000	-60.6631 **	-61.1594 **
1617.0000	-13.0000	-60.0564 **	-59.8125 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

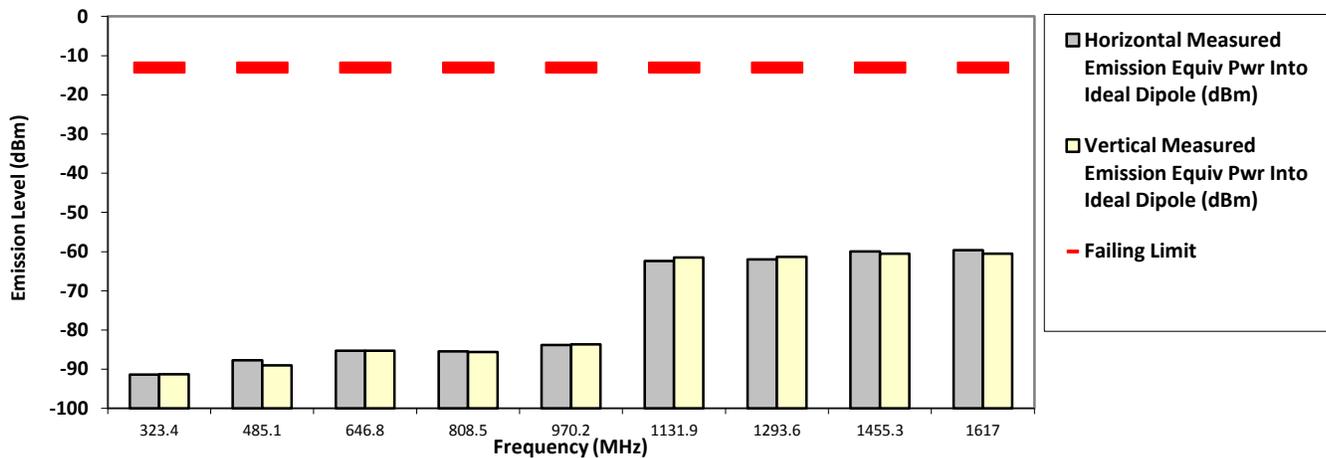
Remarks:	Passed Results	Marginal Results	Failed Results
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**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Test Mode: TX Analog**      **Accy Part No: NA**  
**161.700000 MHz**      **25 kHz**      **2.400 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equip Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equip Pwr Into ideal Dipole (dBm)
323.4000	-13.0000	-91.3881 **	-91.2624 **
485.1000	-13.0000	-87.7113 **	-88.9942 **
646.8000	-13.0000	-85.2847 **	-85.2473 **
808.5000	-13.0000	-85.4329 **	-85.5975 **
970.2000	-13.0000	-83.8510 **	-83.6386 **
1131.9000	-13.0000	-62.3970 **	-61.4907 **
1293.6000	-13.0000	-61.9637 **	-61.3430 **
1455.3000	-13.0000	-59.9245 **	-60.5177 **
1617.0000	-13.0000	-59.6637 **	-60.5082 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

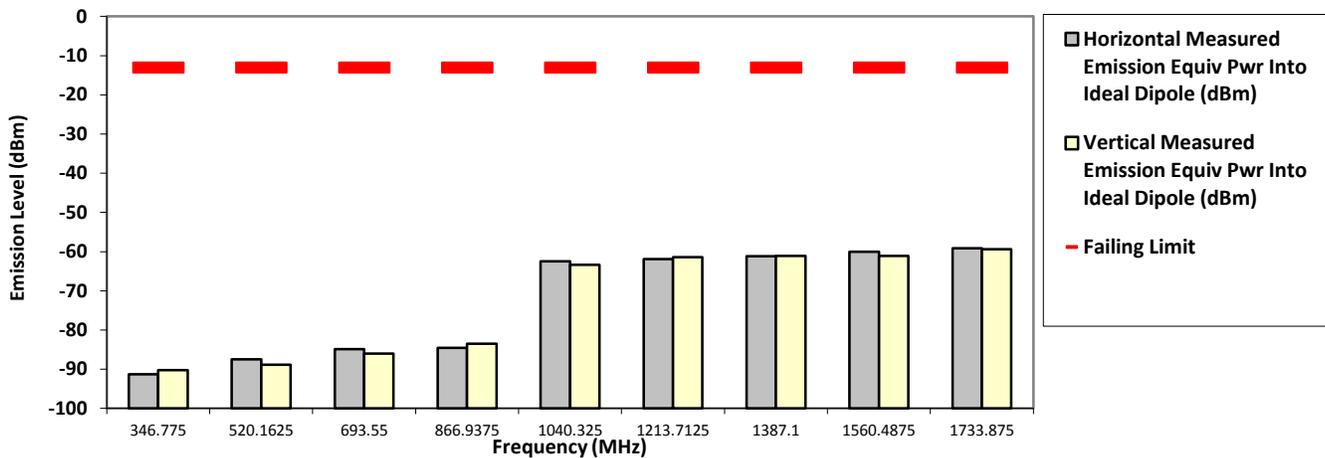
Remarks:	Passed Results	Marginal Results	Failed Results
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**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**173.387500 MHz**      **25 kHz**      **2.400 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equip Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equip Pwr Into ideal Dipole (dBm)
346.7750	-13.0000	-91.2899 **	-90.2602 **
520.1625	-13.0000	-87.4671 **	-88.8420 **
693.5500	-13.0000	-84.8880 **	-85.9974 **
866.9375	-13.0000	-84.5325 **	-83.5089 **
1040.3250	-13.0000	-62.4577 **	-63.3816 **
1213.7125	-13.0000	-61.8729 **	-61.4100 **
1387.1000	-13.0000	-61.1837 **	-61.0821 **
1560.4875	-13.0000	-60.0097 **	-61.1168 **
1733.8750	-13.0000	-59.1800 **	-59.3529 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

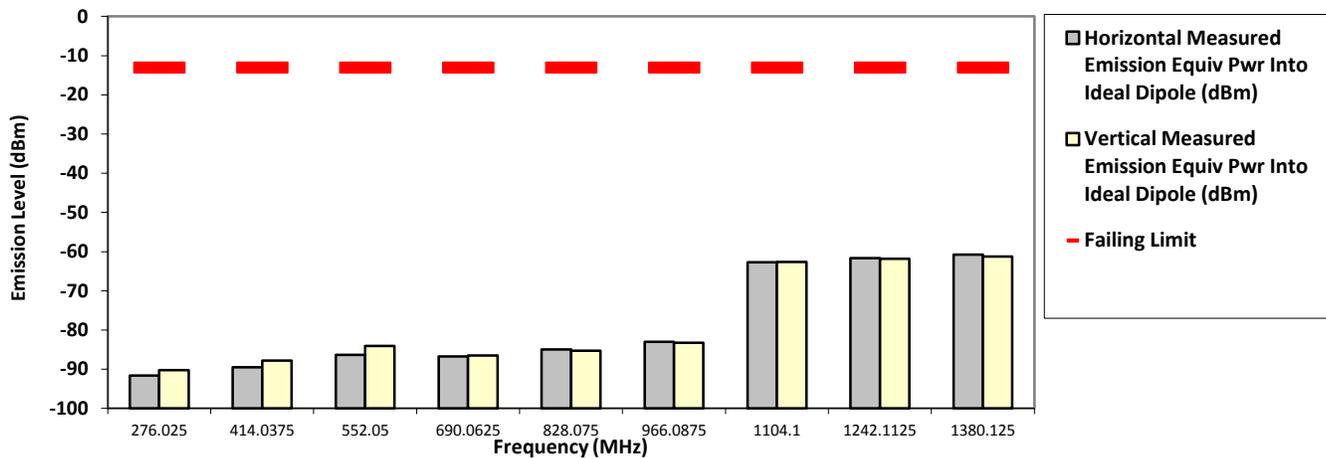
Passed Results	Marginal Results	Failed Results
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**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**138.012500 MHz**      **25 kHz**      **2.400 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equip Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equip Pwr Into ideal Dipole (dBm)
276.0250	-13.0000	-91.6461 **	-90.1912 **
414.0375	-13.0000	-89.4970 **	-87.7590 **
552.0500	-13.0000	-86.3454 **	-84.0395 **
690.0625	-13.0000	-86.7491 **	-86.5195 **
828.0750	-13.0000	-84.9486 **	-85.3078 **
966.0875	-13.0000	-83.0078 **	-83.2442 **
1104.1000	-13.0000	-62.6887 **	-62.6180 **
1242.1125	-13.0000	-61.6564 **	-61.8021 **
1380.1250	-13.0000	-60.7555 **	-61.2404 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks: 

Passed Results	Marginal Results	Failed Results
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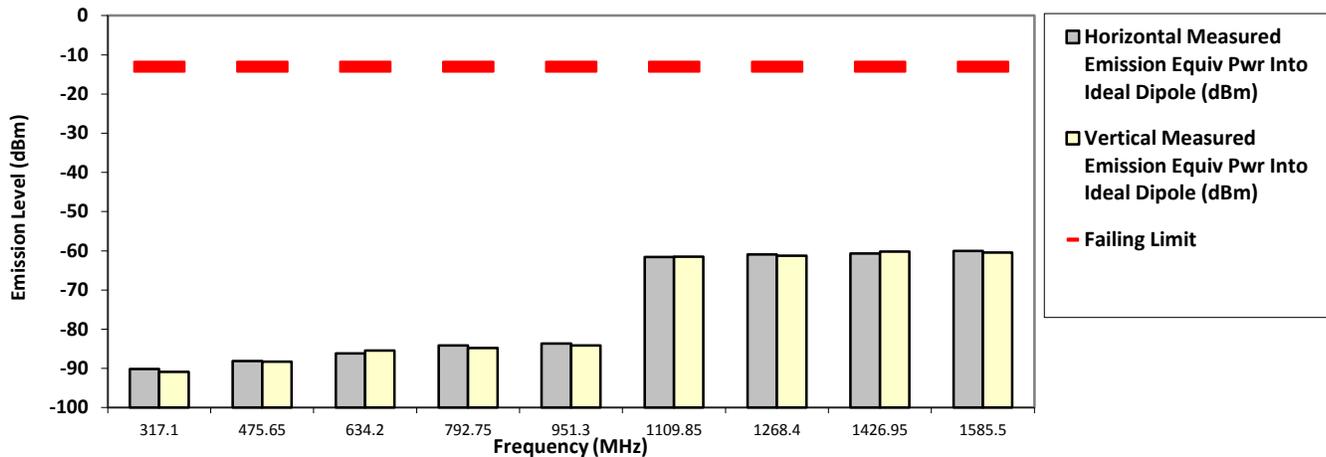
**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**

Model Number: AAH88JCD9SA2AN      S/N: 130TTK0356      SR:06406-EMC-00001  
 Battery Part No: PMNN4468A      Accy Part No: NA  
 Test Mode: TX Analog  
 158.550000 MHz      25 kHz      0.500 Watt(s) /Low Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.1000	-13.0000	-90.1313 **	-90.9131 **
475.6500	-13.0000	-88.0967 **	-88.3174 **
634.2000	-13.0000	-86.2048 **	-85.4099 **
792.7500	-13.0000	-84.1670 **	-84.8196 **
951.3000	-13.0000	-83.6796 **	-84.1529 **
1109.8500	-13.0000	-61.6040 **	-61.4764 **
1268.4000	-13.0000	-60.8910 **	-61.2464 **
1426.9500	-13.0000	-60.6947 **	-60.1923 **
1585.5000	-13.0000	-60.0327 **	-60.4417 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.  
 Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman      Thu, Jun 01, 2017  
 FCC Registration: 772092      Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

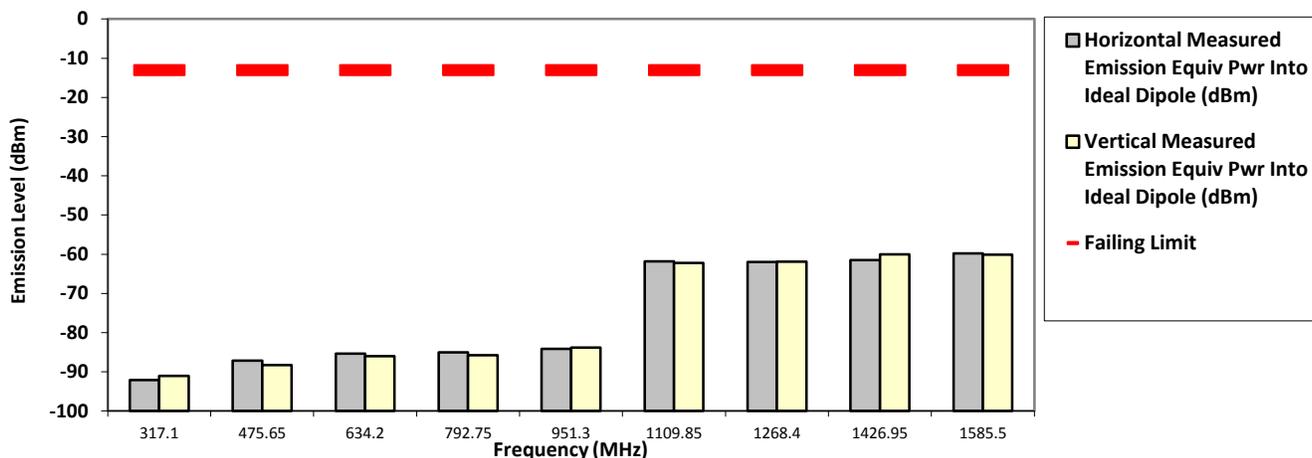
Remarks: Passed Results Marginal Results Failed Results

**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Analog**  
**158.550000 MHz**      **25 kHz**      **2.400 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.1000	-13.0000	-92.0677 **	-91.0465 **
475.6500	-13.0000	-87.1536 **	-88.3104 **
634.2000	-13.0000	-85.3894 **	-86.0233 **
792.7500	-13.0000	-85.0316 **	-85.7340 **
951.3000	-13.0000	-84.1109 **	-83.8204 **
1109.8500	-13.0000	-61.8051 **	-62.2496 **
1268.4000	-13.0000	-61.9530 **	-61.9335 **
1426.9500	-13.0000	-61.5227 **	-60.0489 **
1585.5000	-13.0000	-59.7776 **	-60.1434 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

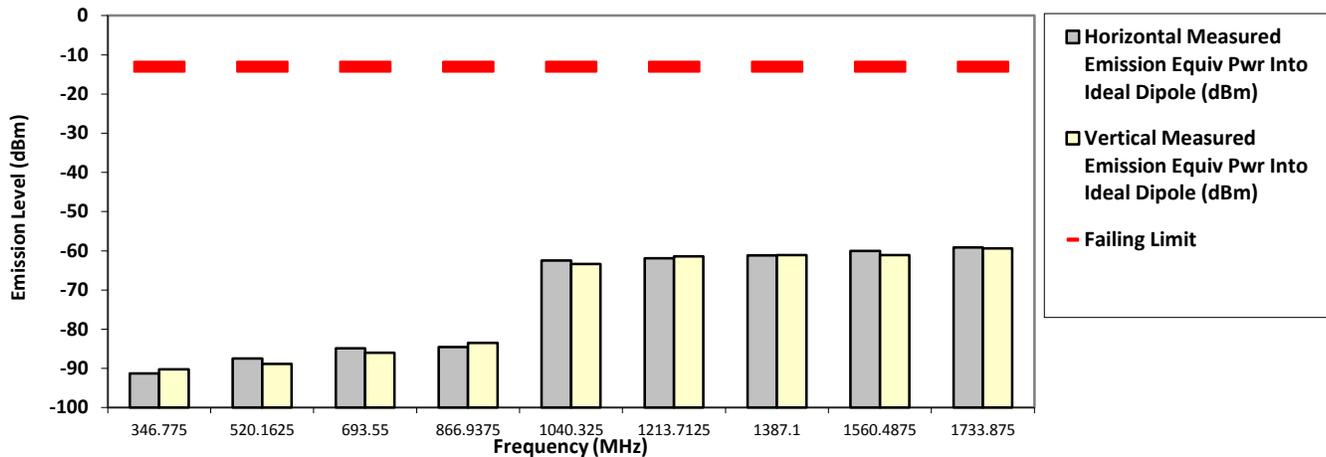
Passed Results	Marginal Results	Failed Results
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**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**  
 Model Number: AAH88JCD9SA2AN      S/N: 130TTK0356      SR:06406-EMC-00001  
 Battery Part No: PMNN4468A      Accy Part No: NA  
 Test Mode: TX Analog  
 173.387500 MHz      25 kHz      2.400 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
346.7750	-13.0000	-91.2899 **	-90.2602 **
520.1625	-13.0000	-87.4671 **	-88.8420 **
693.5500	-13.0000	-84.8880 **	-85.9974 **
866.9375	-13.0000	-84.5325 **	-83.5089 **
1040.3250	-13.0000	-62.4577 **	-63.3816 **
1213.7125	-13.0000	-61.8729 **	-61.4100 **
1387.1000	-13.0000	-61.1837 **	-61.0821 **
1560.4875	-13.0000	-60.0097 **	-61.1168 **
1733.8750	-13.0000	-59.1800 **	-59.3529 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.  
 Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman      Thu, Jun 01, 2017  
 FCC Registration: 772092      Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks: Passed Results Marginal Results Failed Results

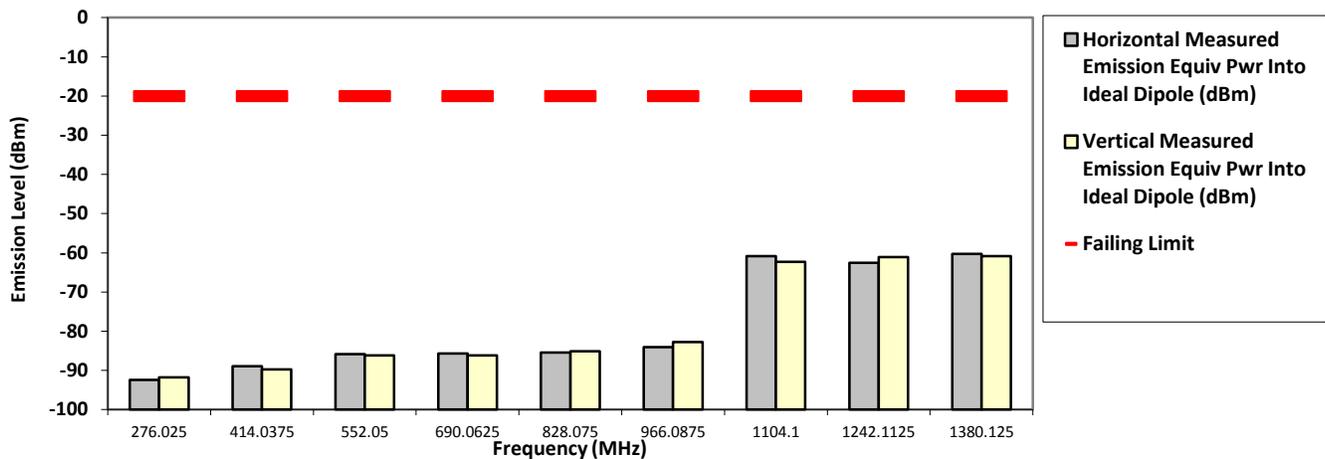
**NOT FOR FCC REVIEW**

### 6.11.3. Test Result (Digital)

**SAC Transmitter Radiated Emission:**  
 Model Number: AAH88JCD9SA2AN      S/N: 130TTK0356      SR:06406-EMC-00001  
 Battery Part No: PMNN4468A      Accy Part No: NA  
 Test Mode: TX Digital 4FSK  
 138.012500 MHz      12.5 kHz      3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
276.0250	-20.0000	-92.4191 **	-91.7566 **
414.0375	-20.0000	-88.9364 **	-89.7793 **
552.0500	-20.0000	-85.8560 **	-86.1770 **
690.0625	-20.0000	-85.6559 **	-86.2080 **
828.0750	-20.0000	-85.4205 **	-85.1492 **
966.0875	-20.0000	-84.0569 **	-82.7546 **
1104.1000	-20.0000	-60.8288 **	-62.2757 **
1242.1125	-20.0000	-62.5355 **	-61.1142 **
1380.1250	-20.0000	-60.2882 **	-60.8797 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.  
 Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman      Thu, Jun 01, 2017  
 FCC Registration: 772092      Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks: 

Passed Results	Marginal Results	Failed Results
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**NOT FOR FCC REVIEW (Federal Frequency)**

**SAC Transmitter Radiated Emission:**

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

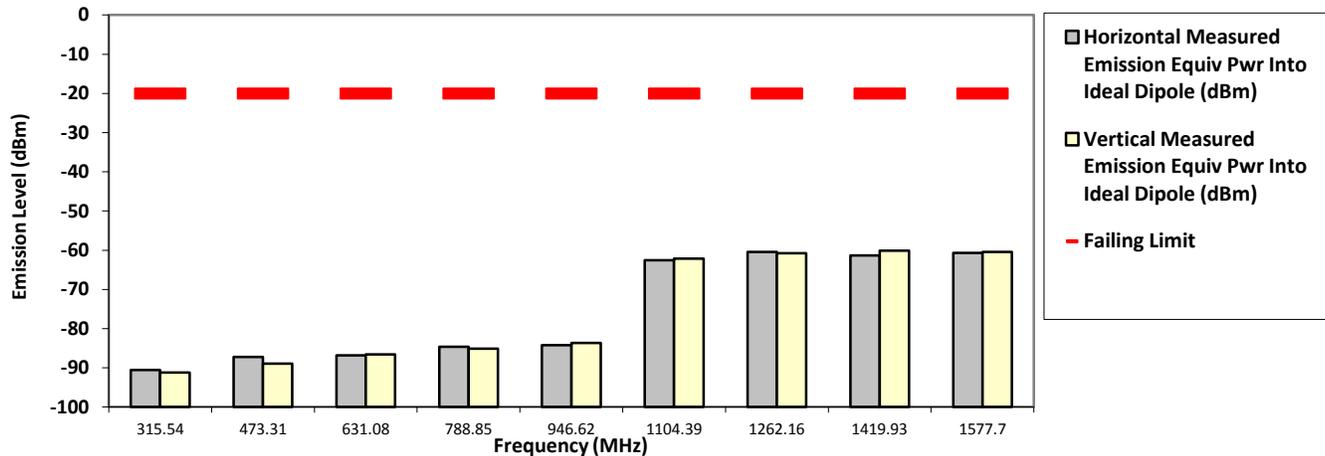
157.770000 MHz

12.5 kHz

0.500 Watt(s) /Low Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
315.5400	-20.0000	-90.5908 **	-91.2302 **
473.3100	-20.0000	-87.2297 **	-88.9490 **
631.0800	-20.0000	-86.7816 **	-86.5412 **
788.8500	-20.0000	-84.6439 **	-85.1313 **
946.6200	-20.0000	-84.2280 **	-83.6274 **
1104.3900	-20.0000	-62.5255 **	-62.1095 **
1262.1600	-20.0000	-60.4390 **	-60.8018 **
1419.9300	-20.0000	-61.3436 **	-60.1055 **
1577.7000	-20.0000	-60.6636 **	-60.4008 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

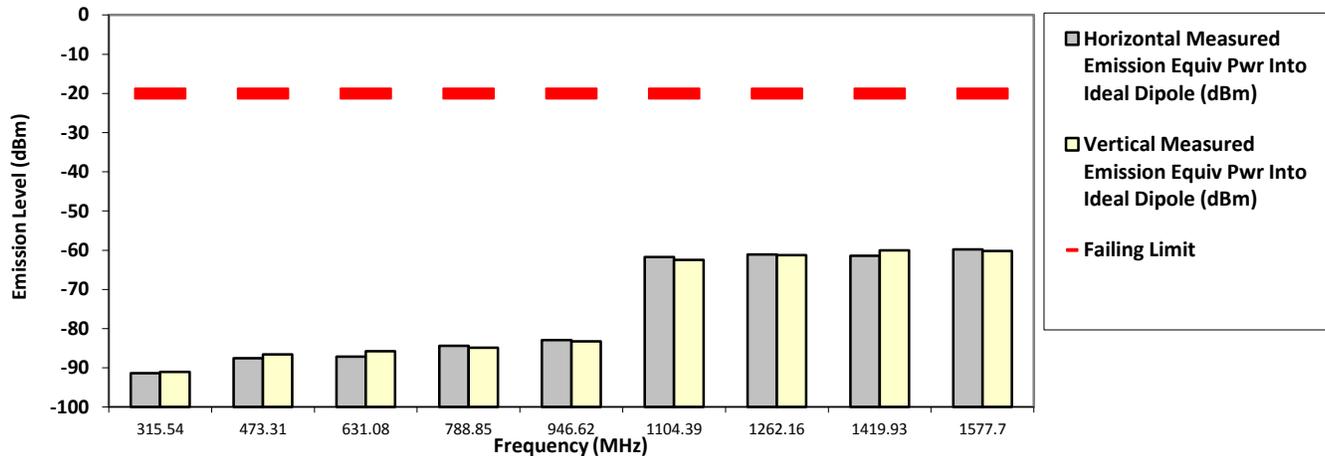
157.770000 MHz

12.5 kHz

3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
315.5400	-20.0000	-91.3716 **	-91.0145 **
473.3100	-20.0000	-87.5930 **	-86.6168 **
631.0800	-20.0000	-87.1128 **	-85.7569 **
788.8500	-20.0000	-84.4207 **	-84.8648 **
946.6200	-20.0000	-82.8906 **	-83.2316 **
1104.3900	-20.0000	-61.7264 **	-62.4713 **
1262.1600	-20.0000	-61.0622 **	-61.2907 **
1419.9300	-20.0000	-61.3897 **	-60.0195 **
1577.7000	-20.0000	-59.8082 **	-60.1616 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

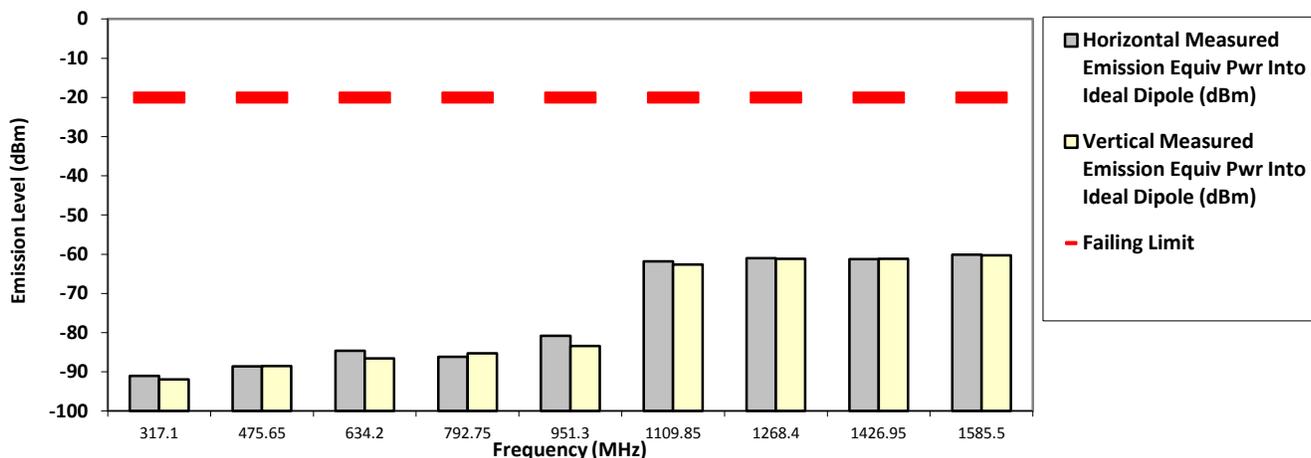
Passed Results	Marginal Results	Failed Results
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**SAC Transmitter Radiated Emission:**

Model Number: **AAH88JCD9SA2AN**      S/N: **130TTK0356**      SR: **06406-EMC-00001**  
 Battery Part No: **PMNN4468A**      Accy Part No: **NA**  
 Test Mode: **TX Digital 4FSK**  
**158.550000 MHz**      **12.5 kHz**      **0.500 Watt(s) /Low Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.1000	-20.0000	-91.0417 **	-91.9090 **
475.6500	-20.0000	-88.6141 **	-88.5099 **
634.2000	-20.0000	-84.6209 **	-86.5923 **
792.7500	-20.0000	-86.1431 **	-85.2960 **
951.3000	-20.0000	-80.7775 **	-83.3773 **
1109.8500	-20.0000	-61.8359 **	-62.5912 **
1268.4000	-20.0000	-61.0374 **	-61.1701 **
1426.9500	-20.0000	-61.2180 **	-61.1371 **
1585.5000	-20.0000	-60.0818 **	-60.3169 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported

Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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**SAC Transmitter Radiated Emission:**

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

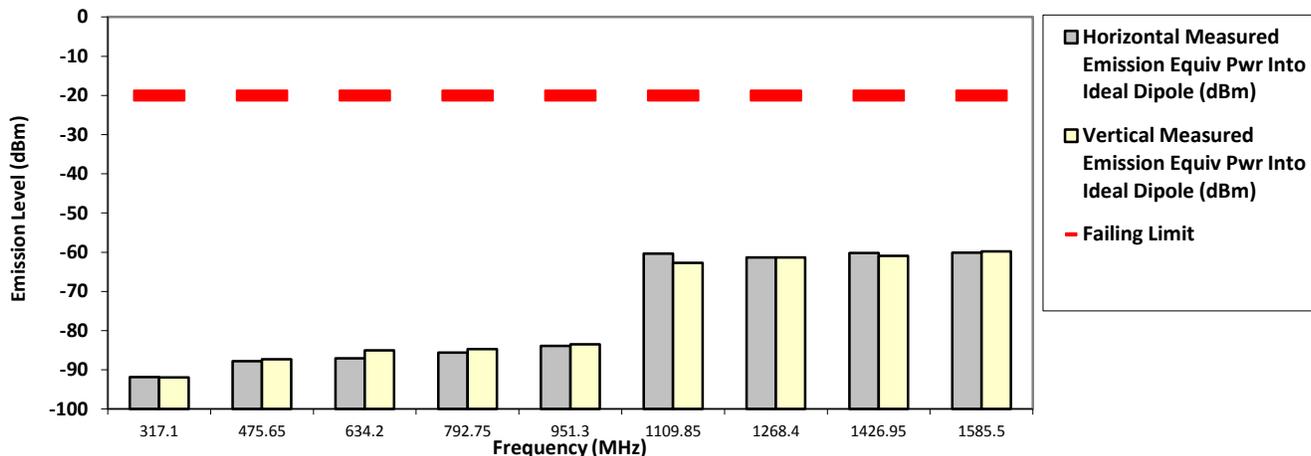
158.550000 MHz

12.5 kHz

3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.1000	-20.0000	-91.8666 **	-91.8966 **
475.6500	-20.0000	-87.7872 **	-87.3389 **
634.2000	-20.0000	-87.0397 **	-85.0707 **
792.7500	-20.0000	-85.6387 **	-84.7495 **
951.3000	-20.0000	-83.8594 **	-83.4596 **
1109.8500	-20.0000	-60.3593 **	-62.7488 **
1268.4000	-20.0000	-61.3270 **	-61.3199 **
1426.9500	-20.0000	-60.1844 **	-60.9401 **
1585.5000	-20.0000	-60.1533 **	-59.7835 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

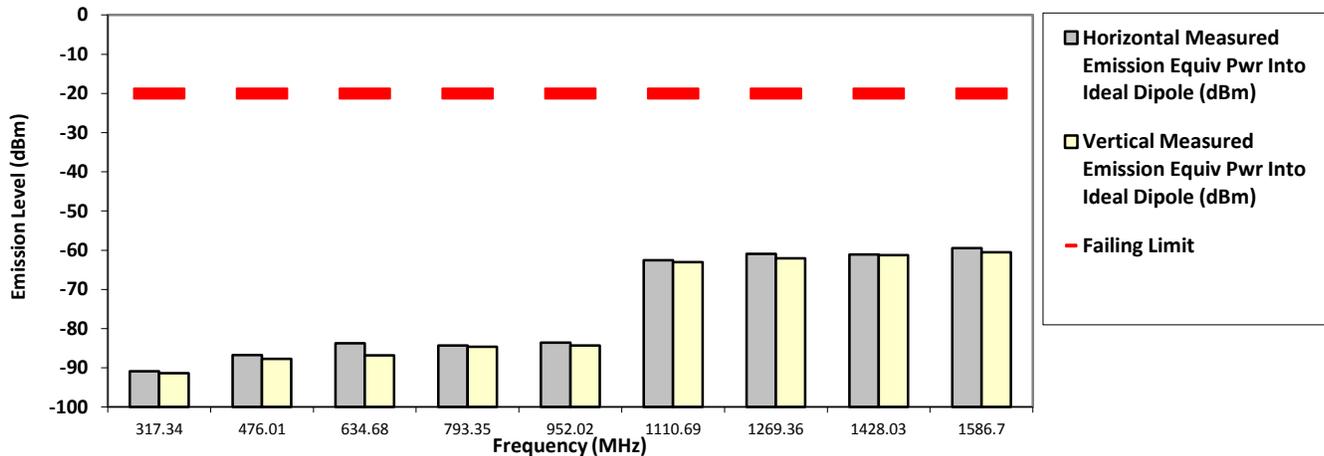
Remarks:

Passed Results	Marginal Results	Failed Results
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**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Digital 4FSK**  
**158.670000 MHz**      **12.5 kHz**      **0.500 Watt(s) /Low Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.3400	-20.0000	-90.8998 **	-91.3389 **
476.0100	-20.0000	-86.7447 **	-87.7468 **
634.6800	-20.0000	-83.7613 **	-86.8492 **
793.3500	-20.0000	-84.3143 **	-84.6368 **
952.0200	-20.0000	-83.5570 **	-84.2878 **
1110.6900	-20.0000	-62.5403 **	-63.0328 **
1269.3600	-20.0000	-60.9074 **	-62.0916 **
1428.0300	-20.0000	-61.1177 **	-61.2485 **
1586.7000	-20.0000	-59.4419 **	-60.4826 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

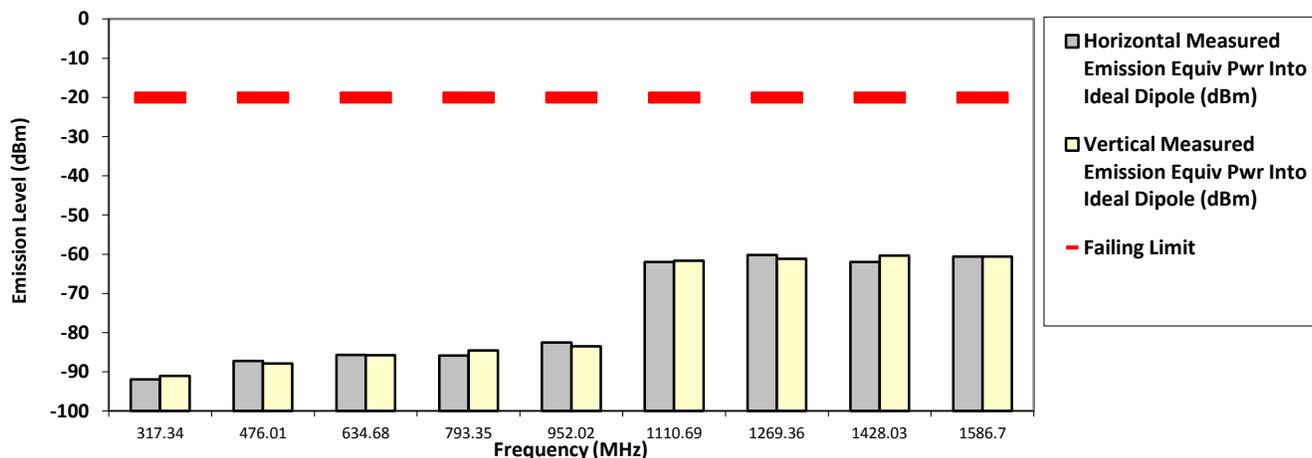
Passed Results	Marginal Results	Failed Results
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**SAC Transmitter Radiated Emission:**

Model Number: **AAH88JCD9SA2AN**      S/N: **130TTK0356**      SR: **06406-EMC-00001**  
 Battery Part No: **PMNN4468A**      Accy Part No: **NA**  
 Test Mode: **TX Digital 4FSK**  
**158.670000 MHz**      **12.5 kHz**      **3.300 Watt(s) /Max Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.3400	-20.0000	-91.9388 **	-91.0635 **
476.0100	-20.0000	-87.2075 **	-87.9004 **
634.6800	-20.0000	-85.7017 **	-85.7723 **
793.3500	-20.0000	-85.8615 **	-84.5822 **
952.0200	-20.0000	-82.5549 **	-83.5193 **
1110.6900	-20.0000	-61.9425 **	-61.6627 **
1269.3600	-20.0000	-60.2083 **	-61.2083 **
1428.0300	-20.0000	-61.9524 **	-60.3959 **
1586.7000	-20.0000	-60.5949 **	-60.5829 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported

Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

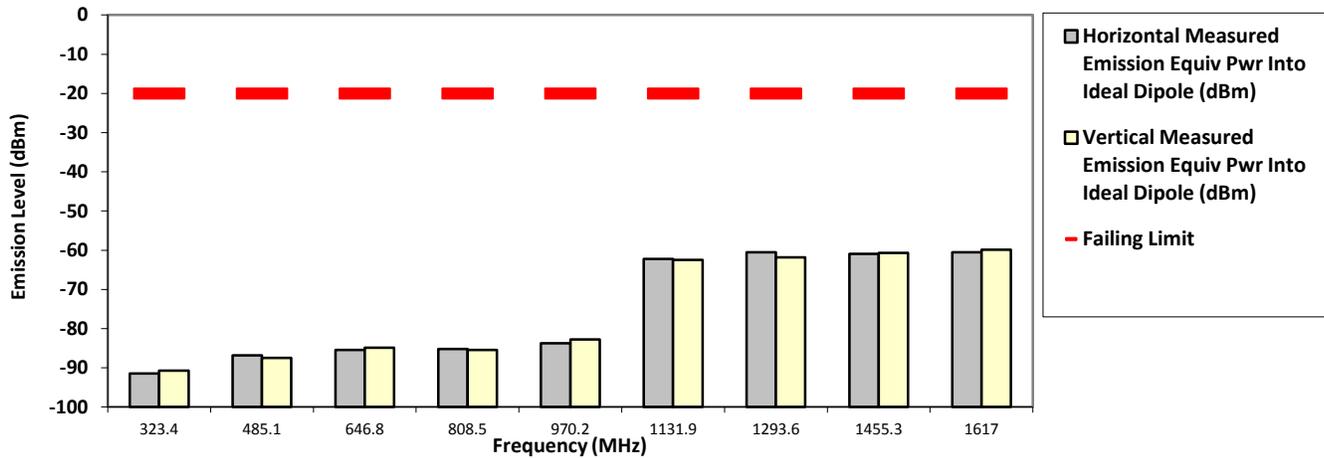
161.700000 MHz

12.5 kHz

0.500 Watt(s) /Low Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
323.4000	-20.0000	-91.4627 **	-90.6848 **
485.1000	-20.0000	-86.8218 **	-87.4846 **
646.8000	-20.0000	-85.4280 **	-84.8804 **
808.5000	-20.0000	-85.2110 **	-85.4381 **
970.2000	-20.0000	-83.7554 **	-82.7262 **
1131.9000	-20.0000	-62.1883 **	-62.4606 **
1293.6000	-20.0000	-60.4879 **	-61.8485 **
1455.3000	-20.0000	-60.9038 **	-60.6910 **
1617.0000	-20.0000	-60.5095 **	-59.9004 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

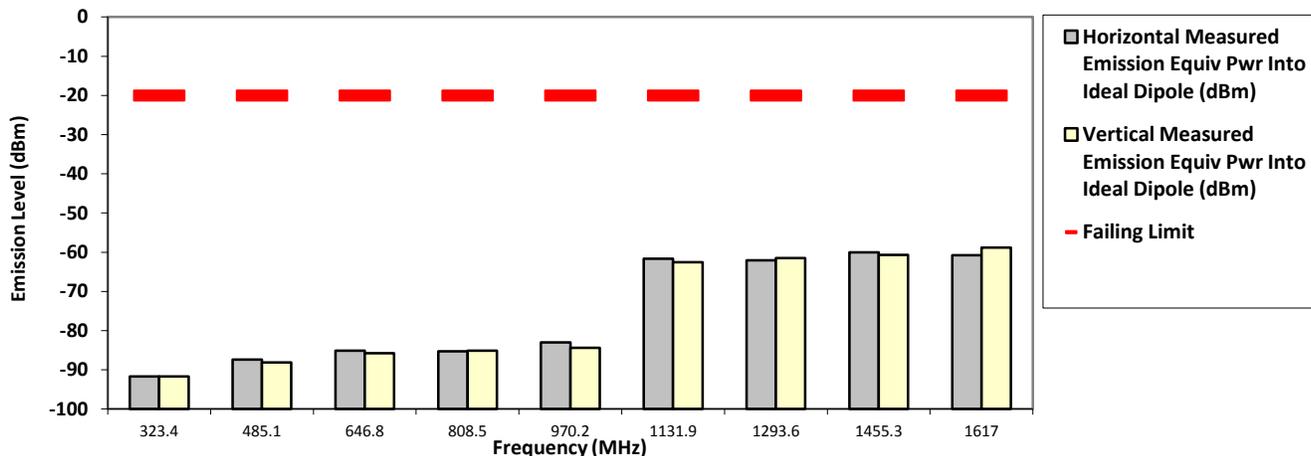
161.700000 MHz

12.5 kHz

3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
323.4000	-20.0000	-91.7009 **	-91.7184 **
485.1000	-20.0000	-87.4301 **	-88.1084 **
646.8000	-20.0000	-85.1115 **	-85.7417 **
808.5000	-20.0000	-85.3103 **	-85.0832 **
970.2000	-20.0000	-83.0135 **	-84.4012 **
1131.9000	-20.0000	-61.6177 **	-62.5284 **
1293.6000	-20.0000	-62.0386 **	-61.4562 **
1455.3000	-20.0000	-60.0157 **	-60.6954 **
1617.0000	-20.0000	-60.7308 **	-58.8547 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported

Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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SAC Transmitter Radiated Emission:

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

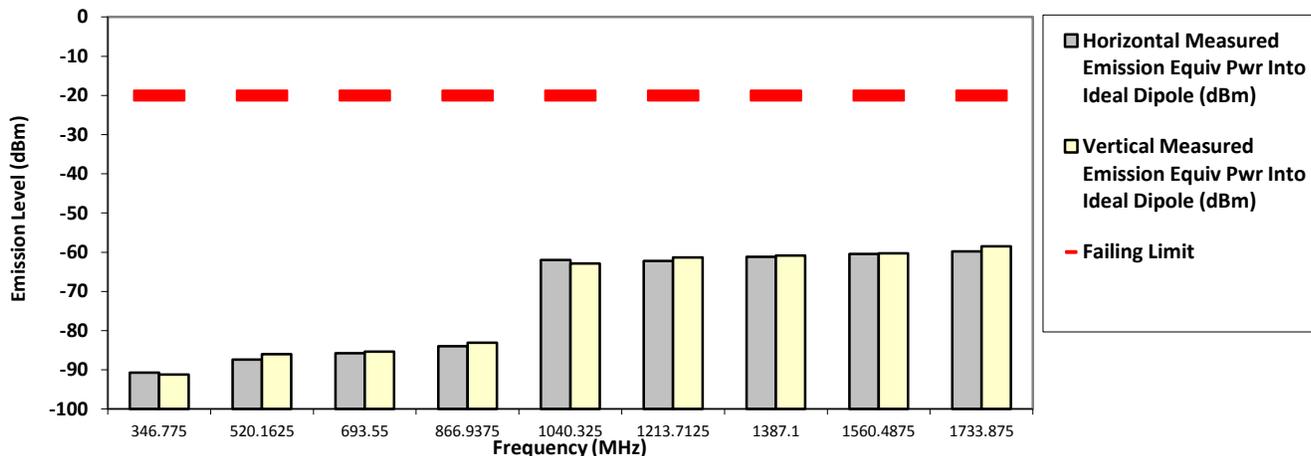
173.387500 MHz

12.5 kHz

3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
346.7750	-20.0000	-90.6930 **	-91.2215 **
520.1625	-20.0000	-87.3731 **	-85.9978 **
693.5500	-20.0000	-85.8064 **	-85.3647 **
866.9375	-20.0000	-84.0000 **	-83.1234 **
1040.3250	-20.0000	-61.9620 **	-62.8872 **
1213.7125	-20.0000	-62.1913 **	-61.3620 **
1387.1000	-20.0000	-61.2039 **	-60.8418 **
1560.4875	-20.0000	-60.4622 **	-60.2423 **
1733.8750	-20.0000	-59.8087 **	-58.5243 **

RADIATED SPURIOUS EMISSIONS



The data presented here was taken using the substitution method as found in the TIA/EIA-603D document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported

Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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**SAC Transmitter Radiated Emission:**

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

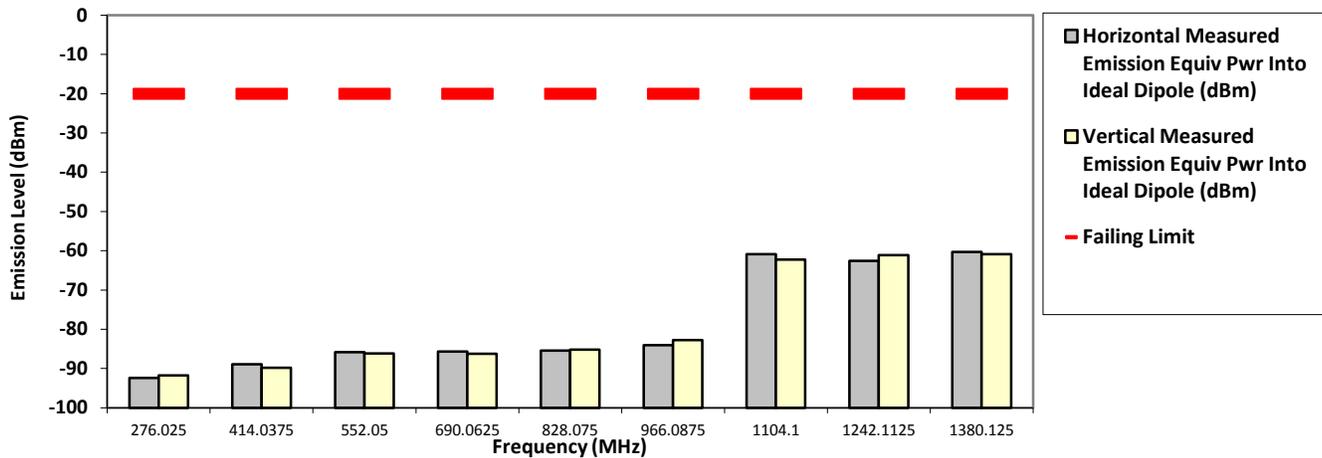
138.012500 MHz

12.5 kHz

3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
276.0250	-20.0000	-92.4191 **	-91.7566 **
414.0375	-20.0000	-88.9364 **	-89.7793 **
552.0500	-20.0000	-85.8560 **	-86.1770 **
690.0625	-20.0000	-85.6559 **	-86.2080 **
828.0750	-20.0000	-85.4205 **	-85.1492 **
966.0875	-20.0000	-84.0569 **	-82.7546 **
1104.1000	-20.0000	-60.8288 **	-62.2757 **
1242.1125	-20.0000	-62.5355 **	-61.1142 **
1380.1250	-20.0000	-60.2882 **	-60.8797 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

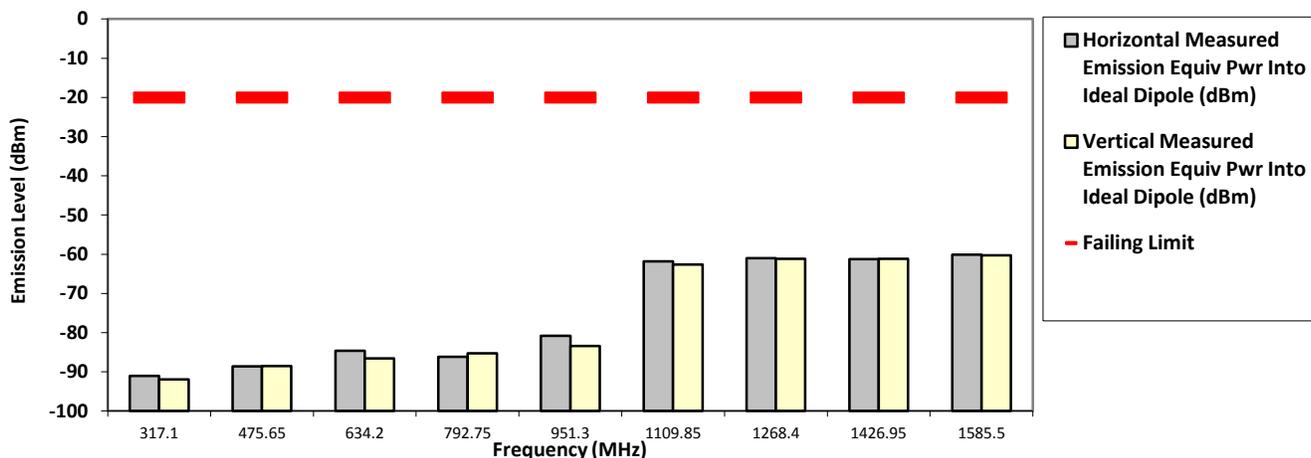
Remarks: Passed Results Marginal Results Failed Results

**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**  
**Model Number: AAH88JCD9SA2AN**      **S/N: 130TTK0356**      **SR:06406-EMC-00001**  
**Battery Part No: PMNN4468A**      **Accy Part No: NA**  
**Test Mode: TX Digital 4FSK**  
**158.550000 MHz**      **12.5 kHz**      **0.500 Watt(s) /Low Power**

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.1000	-20.0000	-91.0417 **	-91.9090 **
475.6500	-20.0000	-88.6141 **	-88.5099 **
634.2000	-20.0000	-84.6209 **	-86.5923 **
792.7500	-20.0000	-86.1431 **	-85.2960 **
951.3000	-20.0000	-80.7775 **	-83.3773 **
1109.8500	-20.0000	-61.8359 **	-62.5912 **
1268.4000	-20.0000	-61.0374 **	-61.1701 **
1426.9500	-20.0000	-61.2180 **	-61.1371 **
1585.5000	-20.0000	-60.0818 **	-60.3169 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported

Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks: Passed Results Marginal Results Failed Results

**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

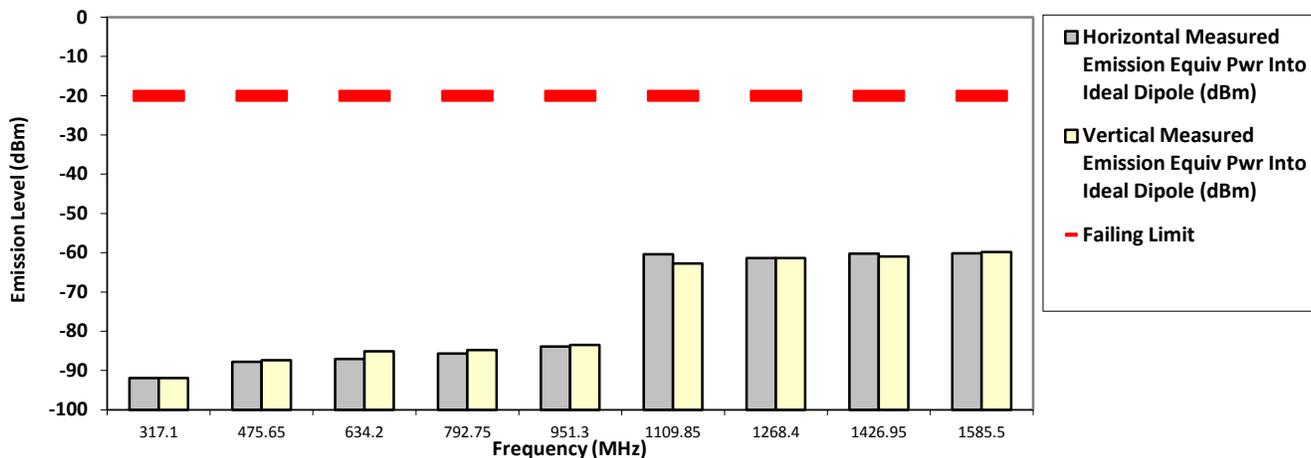
158.550000 MHz

12.5 kHz

3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
317.1000	-20.0000	-91.8666 **	-91.8966 **
475.6500	-20.0000	-87.7872 **	-87.3389 **
634.2000	-20.0000	-87.0397 **	-85.0707 **
792.7500	-20.0000	-85.6387 **	-84.7495 **
951.3000	-20.0000	-83.8594 **	-83.4596 **
1109.8500	-20.0000	-60.3593 **	-62.7488 **
1268.4000	-20.0000	-61.3270 **	-61.3199 **
1426.9500	-20.0000	-60.1844 **	-60.9401 **
1585.5000	-20.0000	-60.1533 **	-59.7835 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks:

Passed Results	Marginal Results	Failed Results
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**NOT FOR FCC REVIEW**

**SAC Transmitter Radiated Emission:**

Model Number: AAH88JCD9SA2AN

S/N: 130TTK0356

SR:06406-EMC-00001

Battery Part No: PMNN4468A

Accy Part No: NA

Test Mode: TX Digital 4FSK

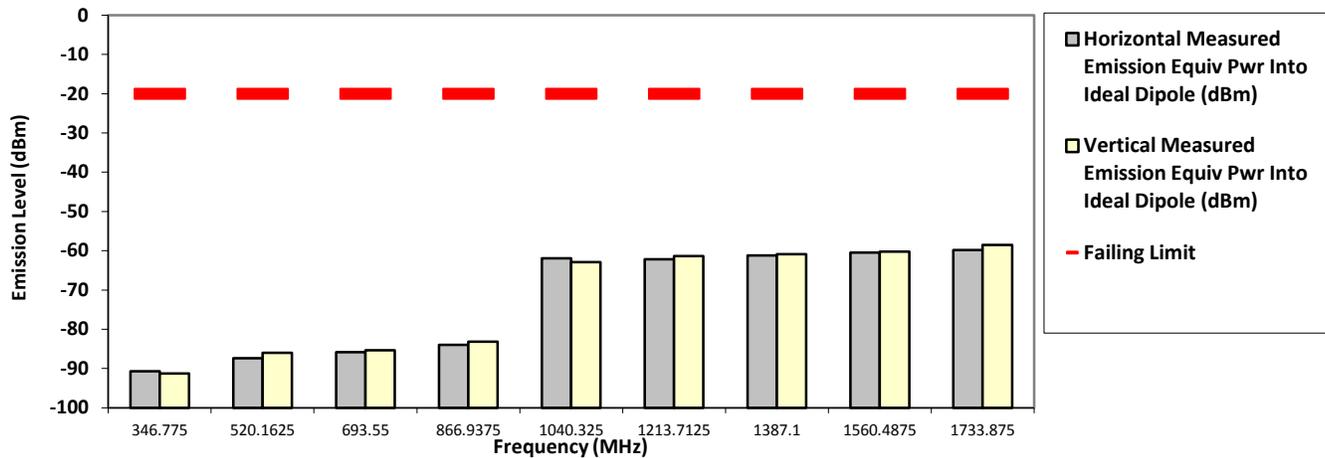
173.387500 MHz

12.5 kHz

3.300 Watt(s) /Max Power

Frequency (MHz)	Limit	Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm)
346.7750	-20.0000	-90.6930 **	-91.2215 **
520.1625	-20.0000	-87.3731 **	-85.9978 **
693.5500	-20.0000	-85.8064 **	-85.3647 **
866.9375	-20.0000	-84.0000 **	-83.1234 **
1040.3250	-20.0000	-61.9620 **	-62.8872 **
1213.7125	-20.0000	-62.1913 **	-61.3620 **
1387.1000	-20.0000	-61.2039 **	-60.8418 **
1560.4875	-20.0000	-60.4622 **	-60.2423 **
1733.8750	-20.0000	-59.8087 **	-58.5243 **

**RADIATED SPURIOUS EMISSIONS**



The data presented here was taken using the substitution method as found in the ANSI C63.26 document.

Motorola Penang EMC Lab - Test Performed by: Nazrin&Qawiman

Thu, Jun 01, 2017

FCC Registration: 772092

Industry Canada: 109AK

Remarks: \*\* Indicates the spurious emission could not be detected due to noise limitations or ambient.

\*Pursuant to CFR 47 Part 2.1057 ( c ), emissions attenuated more than 20 dB below the permissible limit are not reported  
 Temp(Deg): 23.8 Hum(%RH): 72.5

System MU: 5.01 dB

Remarks: Passed Results Marginal Results Failed Results

**NOT FOR FCC REVIEW**

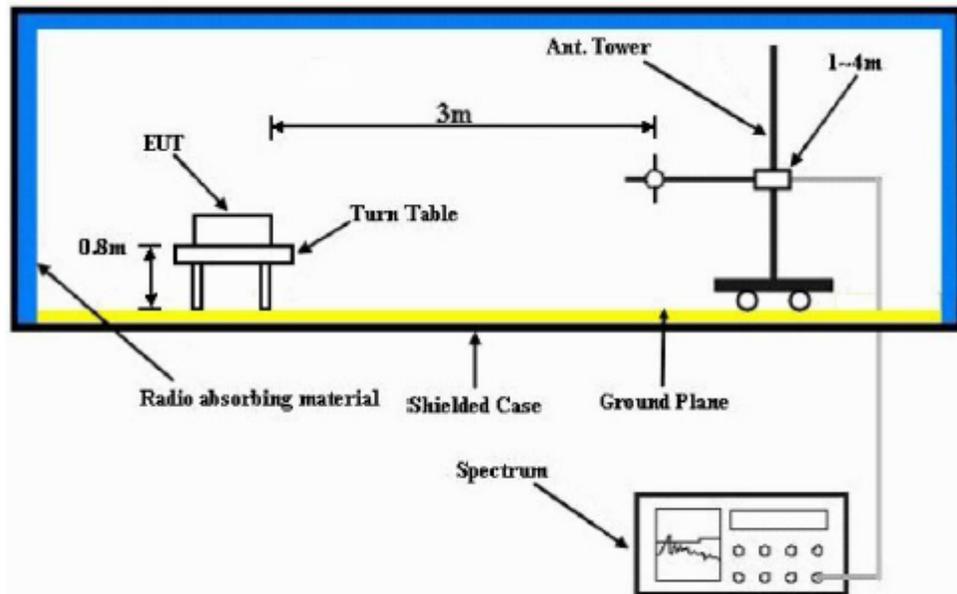
**6.11.4. Test Limit**

Table below summarized the power of any emission outside a licensee’s frequency block shall be attenuated below the transmitter power (P) by at least

Channel Spacing	Part 22	Part 24D	Part 74	Part 80	Part 90
12.5kHz	43 + log <sub>10</sub> (P) (-13 dBm)	43 + log <sub>10</sub> (P) (-13 dBm)	43 + log <sub>10</sub> (P) (-13 dBm)	Not Applicable	50 + log <sub>10</sub> (P) (-20 dBm)
25kHz		Not Applicable		43 + log <sub>10</sub> (P) (-13 dBm)	Not Applicable

## 6.12. Effective Radiated Power (ERP) / GNSS (EIRP for 1559 - 1610MHz)

### 6.12.1. Test Setup



- 1) The spectrum setting for Equivalent Isotropically Radiated Power (EIRP) is RBW = 100 kHz, VBW = 300 kHz. Detector Mode is RMS.
- 2) In the semi-anechoic chamber, setup as illustrated above the EUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The “Read Value” is the spectrum reading of maximum power value.
- 3) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.
- 4)  $EIRP = \text{“Read Value”} + \text{Measured substitution value} + 2.15$ .

### 6.12.2. Test Result **Not Applicable**

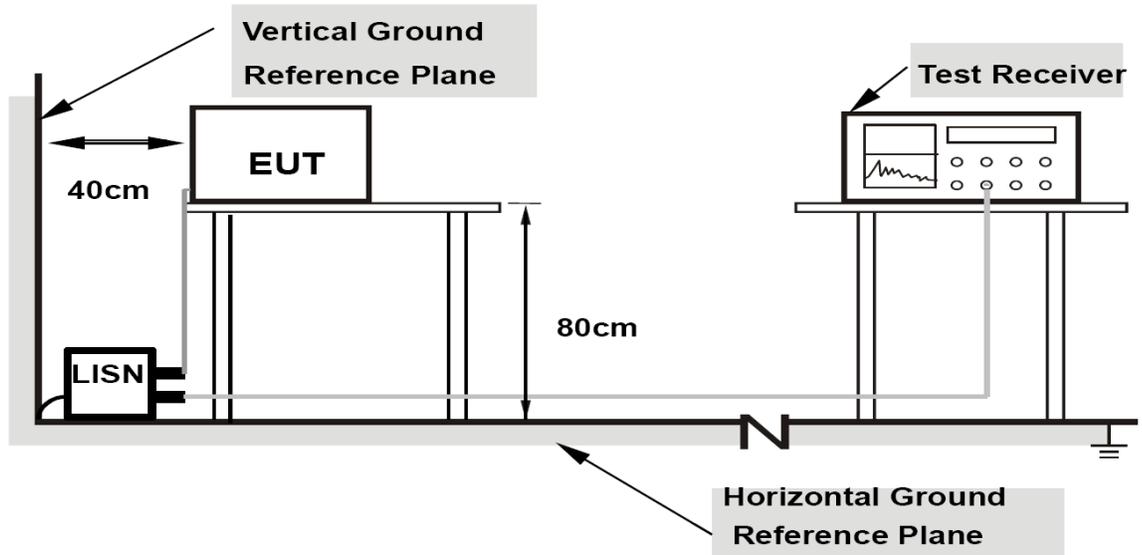
### 6.12.3. Test Limit

The maximum output power of the transmitter for mobile stations is 100 watts (20 dBW). Power is given in terms of effective radiated power (ERP).

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

## 6.13. AC Power Line Conducted Spur Emissions

### 6.13.1. Test Setup



- 1) Tests were conducted for both Receive and Transmit Mode of the EUT.
- 2) The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm / 50  $\mu$ H of coupling impedance for the measuring instrument.
- 3) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- 4) The frequency range from 150 kHz to 30 MHz was measured.

### 6.13.2. Test Result **Not Applicable**

### 6.13.3. Test Limit

For AC Power Line Conducted Test Limit can be Class A or B depends on product classification.

#### Limits for conducted disturbance at the mains ports of class A ITE

Frequency range MHz	Limits dB( $\mu$ V)	
	Quasi-peak	Average
0,15 to 0,50	79	66
0,50 to 30	73	60
NOTE The lower limit shall apply at the transition frequency.		

#### Limits for conducted disturbance at the mains ports of class B ITE

Frequency range MHz	Limits dB( $\mu$ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50
NOTE 1 The lower limit shall apply at the transition frequencies.		
NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		