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|  |  MS ISO/IEC 17025 TESTING SAMM No. 0825 |
| <p>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.</p> | <p>FCC TEST REPORT Report Revision : Rev.B</p> |
| <p>Date/s Tested : 28-OCT-2016 – 19-DEC-2017 Report Issue Date : 19-DEC-2017 Manufacturer/Location : Motorola Solutions Malaysia Sdn Bhd Requestor : Low Yoong Sing Product Type : Mobile Model Number : AAM28JQN9RA1AN Frequency Band : 136-174 MHz Low / Max RF Output Power : 25 Watts / 45 Watts 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</p> <p>The equipment was tested accordance to the requirement listed below:</p> <p>(LMR) FCC 47 CFR Part 22 / 74 PASS</p>  | |
| <p>This report shall not be reproduced without written approval from an officially designated representative of the Motorola Penang Adv. Comm. Laboratory. The results and statements contained in this report pertain only to the device(s) evaluated.</p> | |
| <p>Prepared By:</p> <hr/> <p>Song Zhi Wei Test Personnel</p> | <p>Approved By:</p> <hr/> <p>Vincent Foong Responsible Engineer</p> |

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Report Revision History

| Revision History | Description | Date | Originator |
|-------------------------|---------------------------|-------------|-------------------|
| Rev. A | Initial Report. | 07-APR-2017 | Edmond Too |
| Rev. B | Amended on Section 6.7.4. | 19-DEC-2017 | Song Zhi Wei |

1.0 General Information

EUT Description:

| | |
|------------------------|-------------------------|
| Technologies | Land Mobile Radio (LMR) |
| Modulation Type | 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 |
|--------------------------------|-----------------------|---|--------|
| - | - | RF Power Output | NA |
| - | - | Frequency Stability | NA |
| - | - | Audio Frequency Response | NA |
| - | - | Audio Low Pass Filter Response | NA |
| - | - | Modulation limiting | NA |
| 22.359, 74.462(b) | - | Occupied Bandwidth | Pass |
| 22.359(a),(b) | - | Band Edge Conducted Spurious Emission | Pass |
| - | - | Transient Frequency Behavior | NA |
| - | - | Adjacent Channel Power | NA |
| 22.359,74.462(c) | - | Conducted Spurious Emissions | Pass |
| 22.359,74.462(c) | - | 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 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 | M508064A | MY45001903 | 25-May-17 | 25-May-18 |
| 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 | 16-Aug-17 | 16-Aug-19 |
| SWITCH CONTROL UNIT | - | - | CNR | CNR |

Conducted Spurious Emission ATE # 1: (SW Version: Conducted Spur ATE_rev 1.22.06)

| Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------------------|--------|---------------|------------------|----------------------|
| SWITCH CONTROL UNIT | 3488A | 2719A32735 | CNR | CNR |
| SPECTRUM ANALYZER | E4445A | MY4618732 | 16-Feb-17 | 19-Feb-19 |
| POWER SUPPLY | 6032A | 3319A08920 | 19-Apr-16 | 19-Apr-17 |
| HIGH PASS FILTER SWITCH BOX | CS | CS001 | 25-Aug-16 | 25-Aug-17 |
| MICROWAVE GENERATOR | SMP02 | 830682/015 | 18-Oct-16 | 18-Oct-17 |
| MODULATION ANALYZER | 8901B | 3438A05278 | 12-Apr-16 | 12-Apr-17 |

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 | 04-Sep-16 | 04-Sep-17 |
| DRG HORN FREQ. | SAS-571 | 719 | 28-Apr-15 | 28-Apr-17 |
| BILOG ANTENNA | CBL6112B | 2964 | 23-Jan-15 | 23-Jan-17 |
| POWER SUPPLY | 6674A | 3126A00133 | 12-Nov-15 | 12-Nov-17 |
| MICROWAVE SIGNAL GENERATOR | SMP04 | 100127 | 03-Jul-16 | 03-Jul-17 |
| EMI TEST RECEIVER | ESIB26 | 100336 | 19-Oct-16 | 19-Oct-17 |
| SIGNAL ANALYZER | FSV40 | 101431 | 02-Jul-16 | 02-Jul-18 |
| 5m Semi-anechoic Chamber | S800-HX | J2308 | 29-Jul-16 | 29-Jul-17 |
| BILOG ANTENNA | CBL6112D | 25516 | 23-Jan-16 | 23-Jan-17 |
| BROAD-BAND HORN ANTENNA | BBHA9170 | BBHA9170143 | 24-Nov-14 | 24-Feb-17 |
| DATA LOGGER | TM320 | 12249289 | 27-Apr-16 | 27-Apr-17 |
| 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 |
| 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) | Modulati on | Test Frequency (MHz) |
|---|---------------------|----------------------------------|--------------|--------------------|-------------------------------------|
| RF Output Power | 25°C | Nominal | Low / Max | Analog | NA |
| Frequency Stability | -30°C ~ 60°C | 80% ~ 120% of Nominal Volt | Max | Analog | NA |
| Audio Frequency Response (12.5kHz / 25kHz) | 25°C | Nominal | Max | Analog | NA |
| Audio Low Pass Filter Response (12.5kHz / 25kHz) | 25°C | Nominal | Max | Analog | NA |
| Modulation limiting (12.5kHz / 25kHz) | 25°C | Nominal | Max | Analog | NA |
| Occupied Bandwidth (12.5kHz / 20kHz / 25kHz) | 25°C | Nominal | Max | Analog, Digital | 161.700 |
| Band Edge Conducted Spurious Emission (12.5kHz / 20kHz / 25kHz) | 25°C | Nominal | Max | Analog, Digital | 157.770, 158.670 |
| Transient Frequency Behavior (UHF & VHF Band) (12.5kHz / 25kHz) | 25°C | Nominal | Max | Analog, Digital | NA |
| 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 | 158.550,161.7, 138.0125,173.3875 |
| Radiated Spurious Emission (12.5kHz / 25kHz) | 25°C | Nominal | Low / Max | Analog, Digital | 158.550,161.7, 138.0125,173.3875 |
| 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 | NA |
| AC Power Line Conducted Spurious Emissions* (12.5kHz) | 25°C | Nominal | Max | Analog | NA |

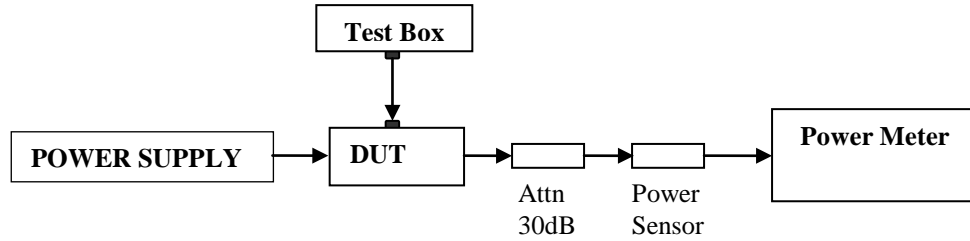
* – ONLY tested if portables can be operated during charging OR mobiles can be used in desktop operation connected to a power supply

NA → Not Applicable

6.0 Transmitter Test Parameters

6.1. RF Output Power

6.1.1. Test Setup

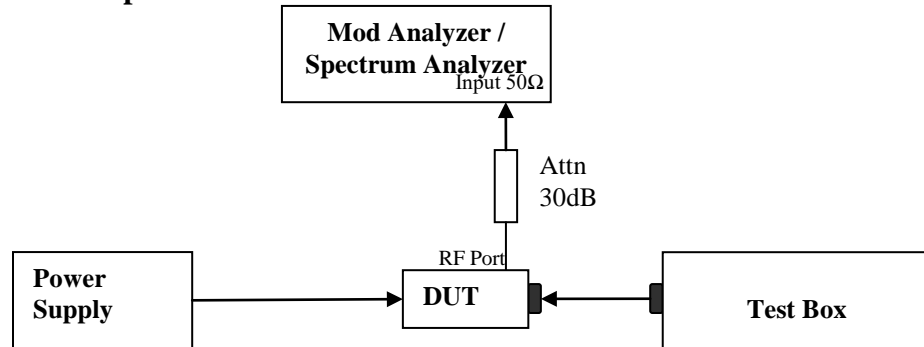


- 1) The DUT transmitter connected to Power Meter using the 30 dB attenuator and power sensor with above setup.
- 2) Path loss for the measurement included.
- 3) All the measurement was done at low, mid, high frequency for each band.
- 4) Record the power into the test report.

6.1.1. Test Result **Not Applicable**

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:

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

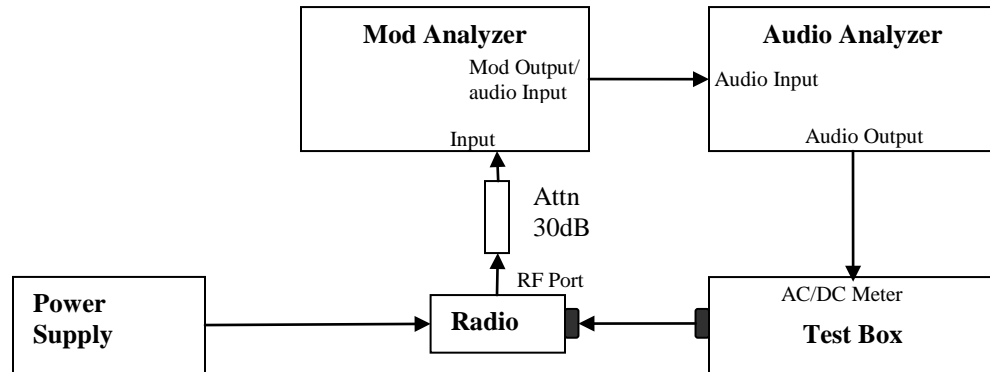
Where: MCF_{MHz} is the Measured Carrier Frequency in MHz
 ACF_{MHz} is the Assigned Carrier Frequency in MHz

6.2.2. Test Result
Not Applicable

6.2.3. Test Limit
Not Applicable

6.3. Audio Frequency Response

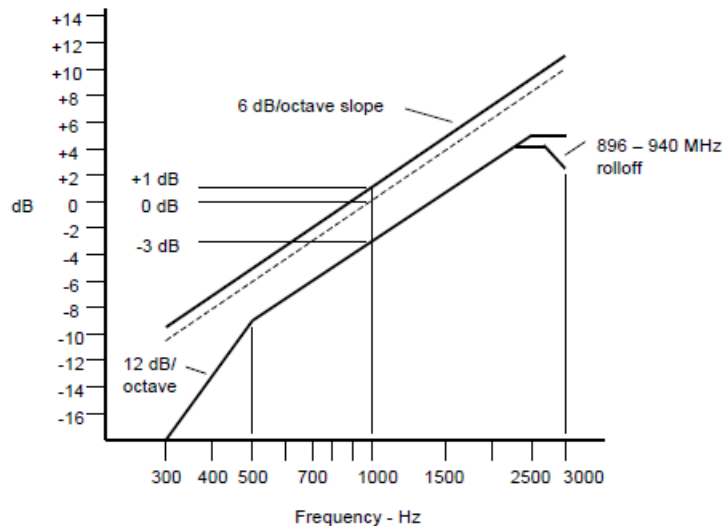
6.3.1. Test Setup



- 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 Not Applicable

6.3.3. Test Limit

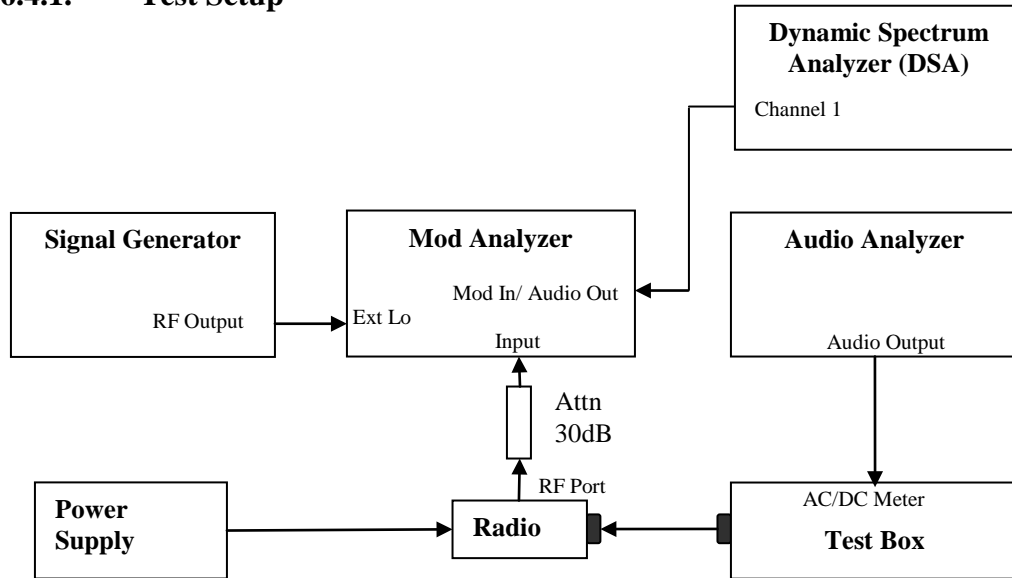


Note:

- 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

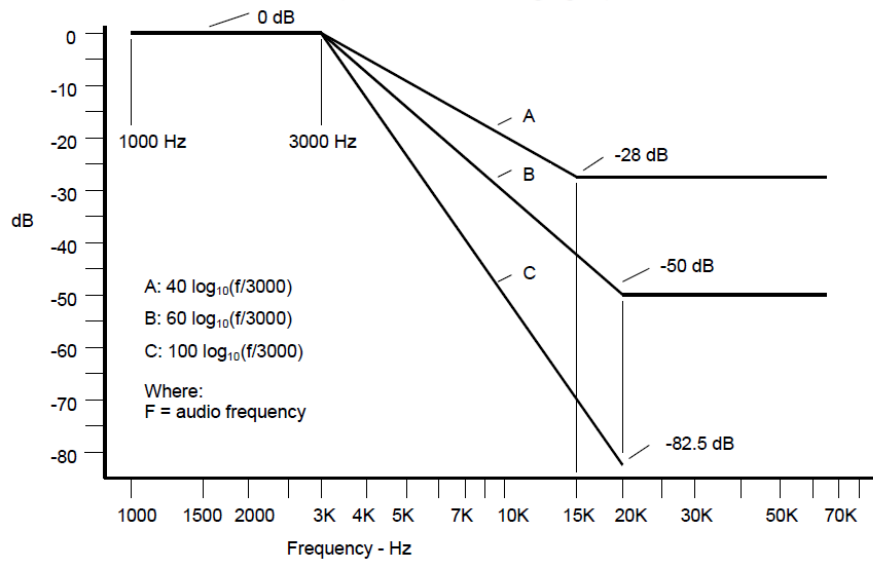
6.4.1. Test Setup



- 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 **Not Applicable**

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.

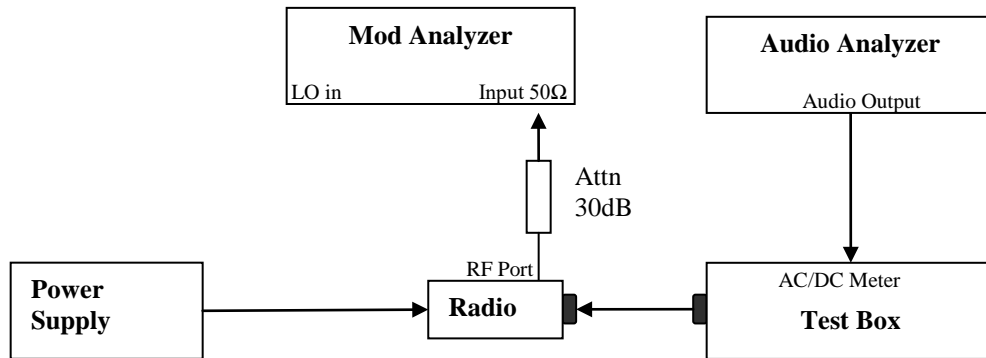
- c) For equipment operating on channels between 896 MHz through 901 MHz, between 935 MHz through 940 MHz, and 12.5 or 15 kHz spaced channels in the frequency range 138-174 MHz and 406-512 MHz.

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



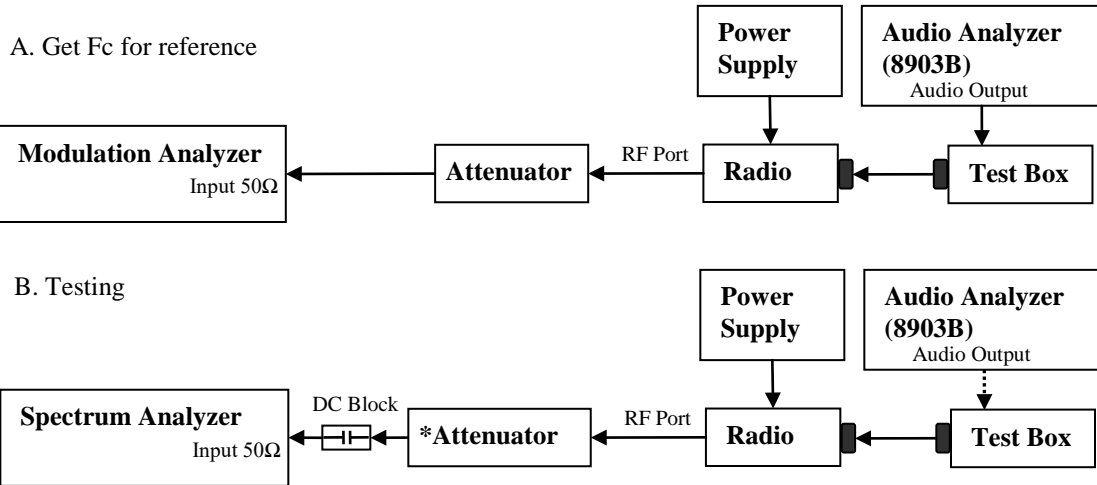
- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Path loss for the measurement included.
- 3) Set the audio bandwidth filter to 15 kHz.
- 4) Transmit the radio and set the audio analyzer to 1 kHz audio frequency and 60% of the maximum deviation.
- 5) Record the frequency 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 **Not Applicable**

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

6.6. Occupied Bandwidth

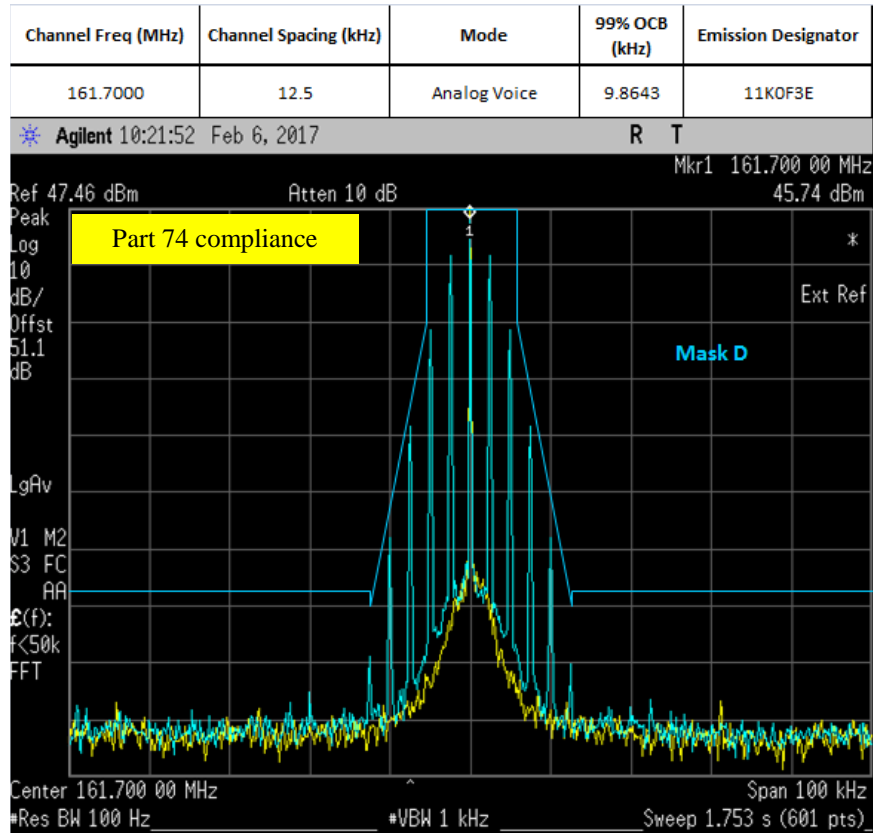
6.6.1. Test Setup (Analog)



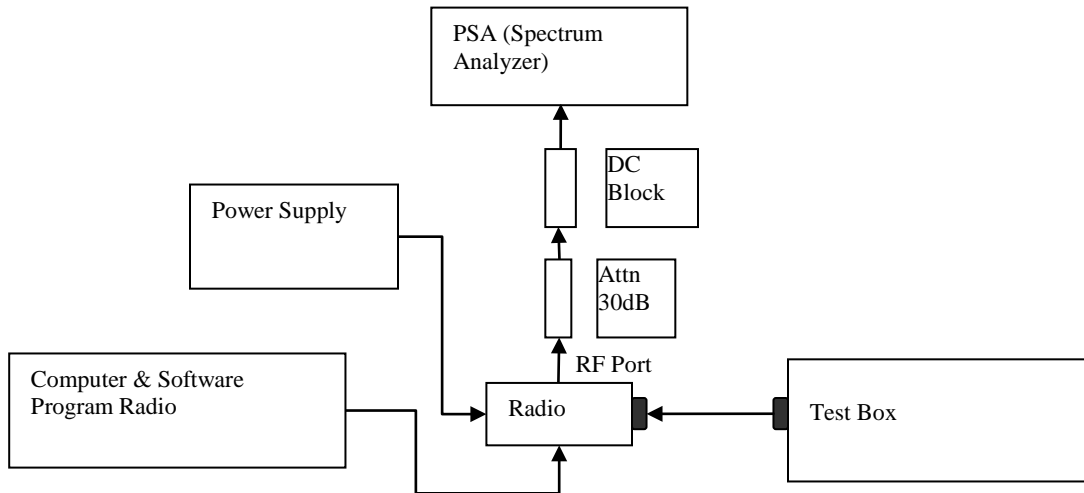
- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
- 3) Transmit the radio and set the audio analyzer to 2.5 kHz audio frequency and 50% of the rated deviation. Up the amplitude by 16 dB. 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)



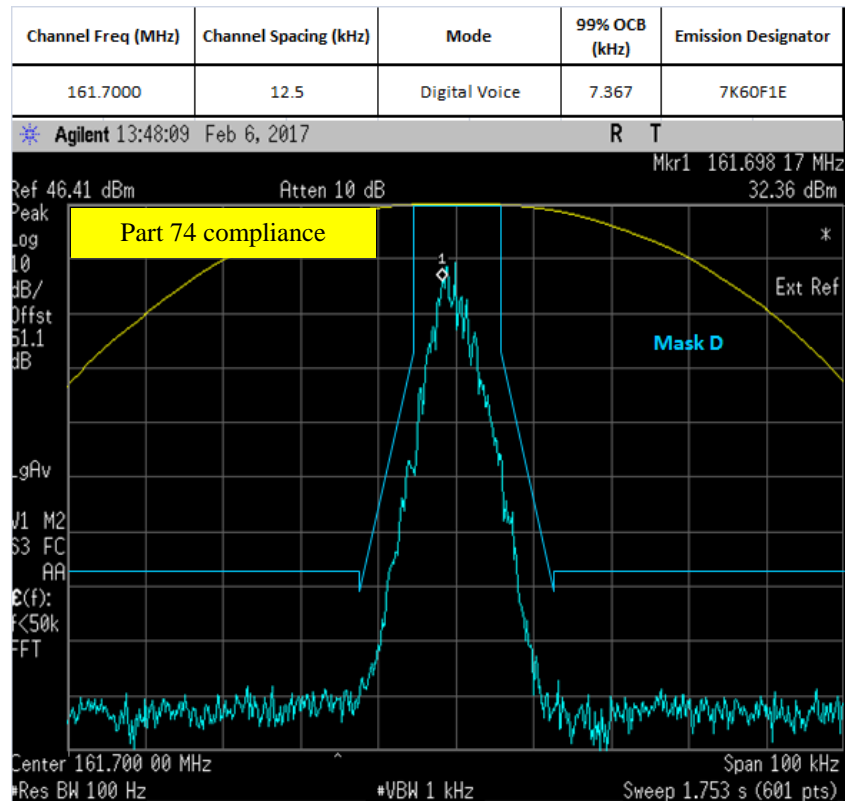
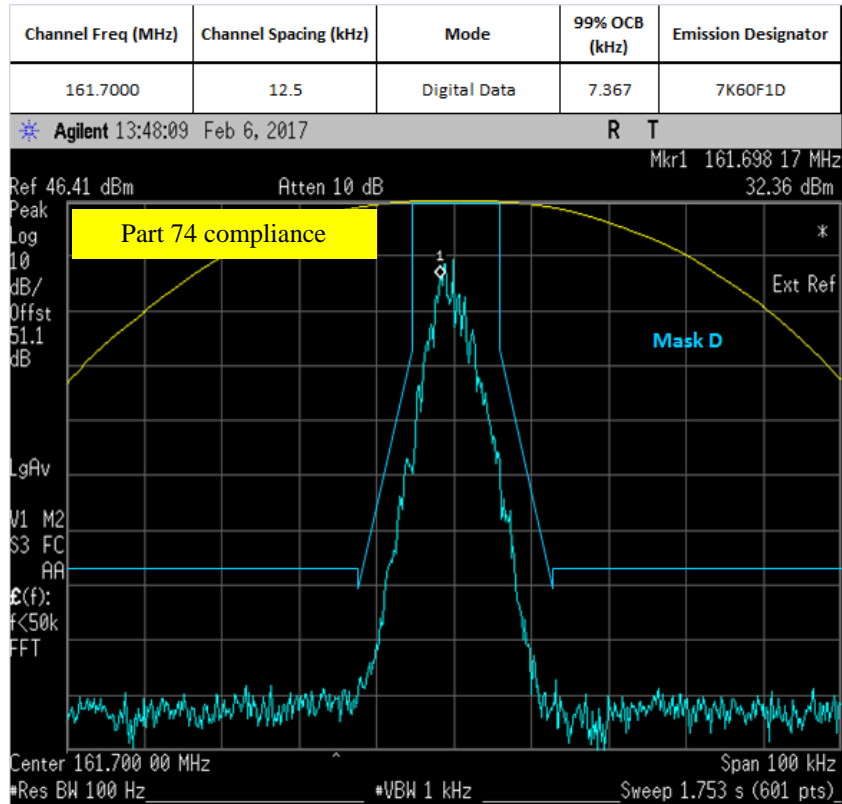
6.6.3. Test Setup (Digital)



- 1) Program and set radio to operate in desired 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.

***Note: Emission designators 7K60FXD and 7K60FXE utilizes the same test pattern as 7K60F1E, 7K60F1D, and are therefore identical. Hence, only the latter 2 plots are shown.**

6.6.4. Test Result (Digital)

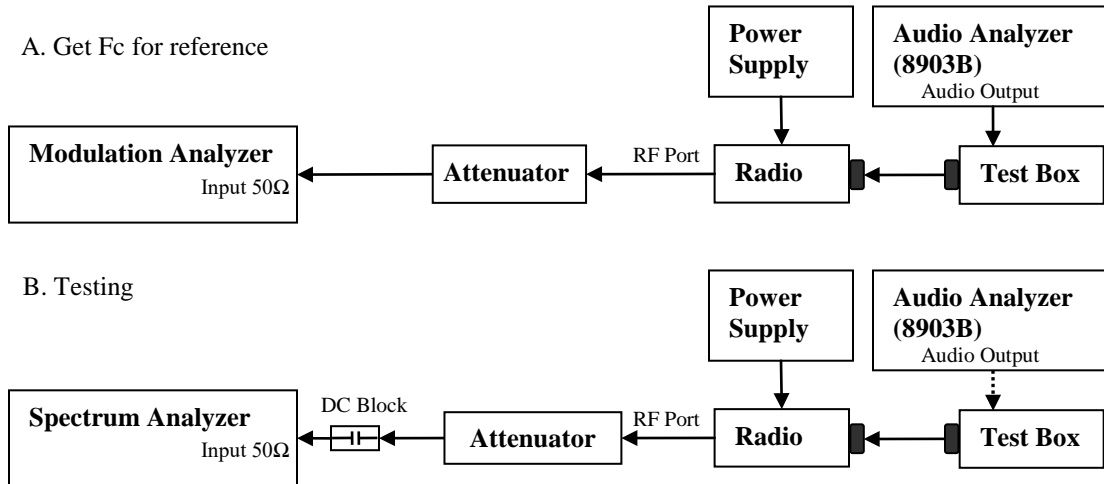


6.6.5. Test Limit

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)

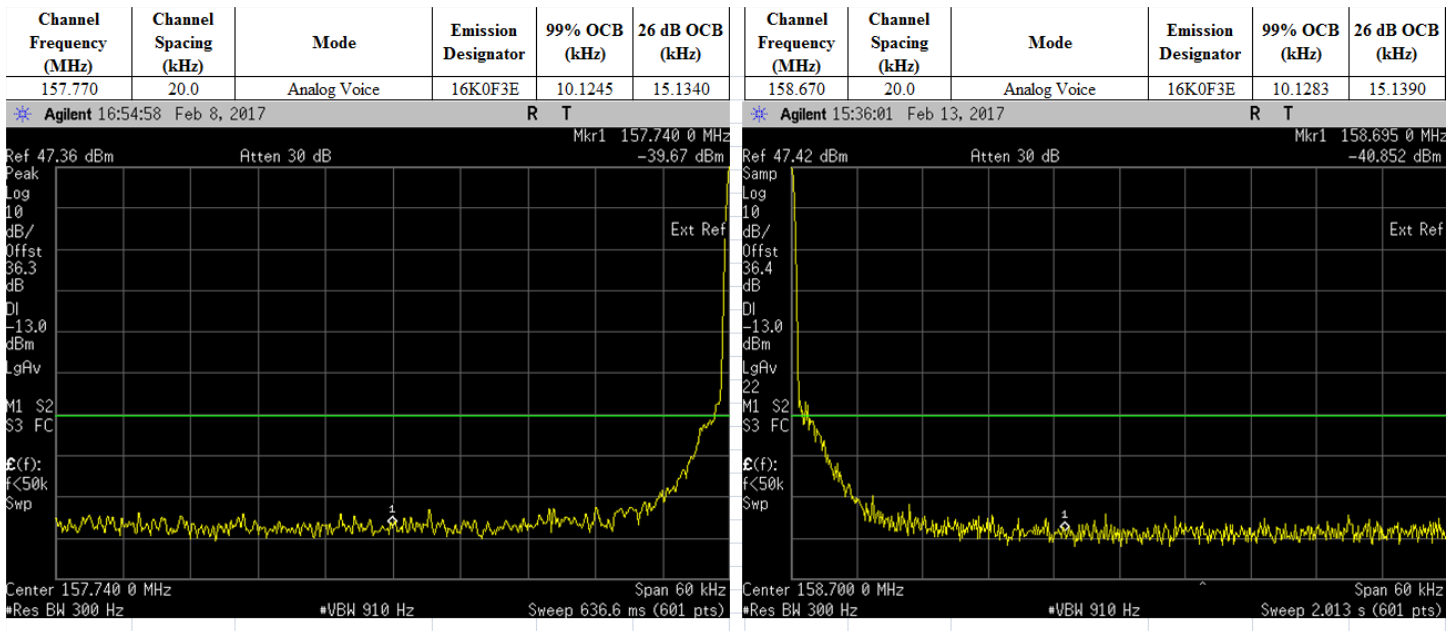
6.7.1. Test Setup (Analog)



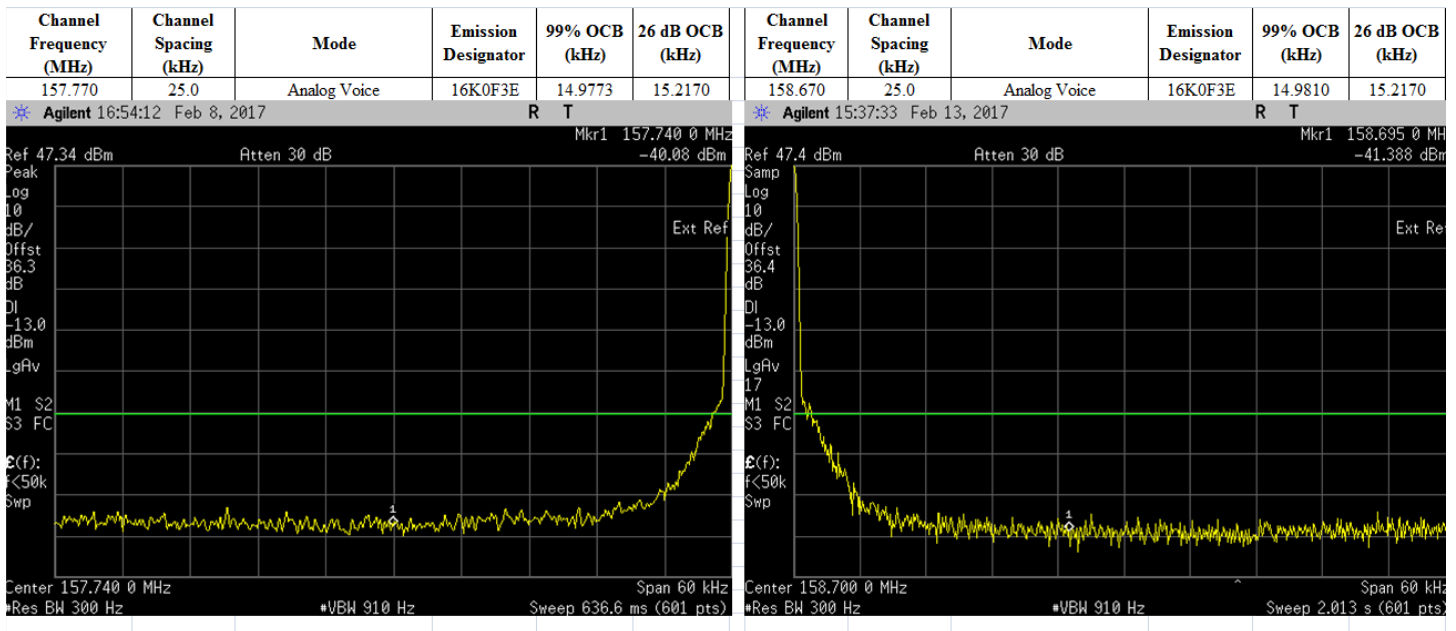
- 1) The DUT transmitter output port was connected to Modulation Analyzer.
- 2) Set the audio bandwidth filter to 15 kHz low pass filter and 50 kHz high pass filter.
- 3) Path loss for the measurement included.
- 4) Select the Occupied Bandwidth measurement for 99% and 26dB Emissions Bandwidth Measurement.
- 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)

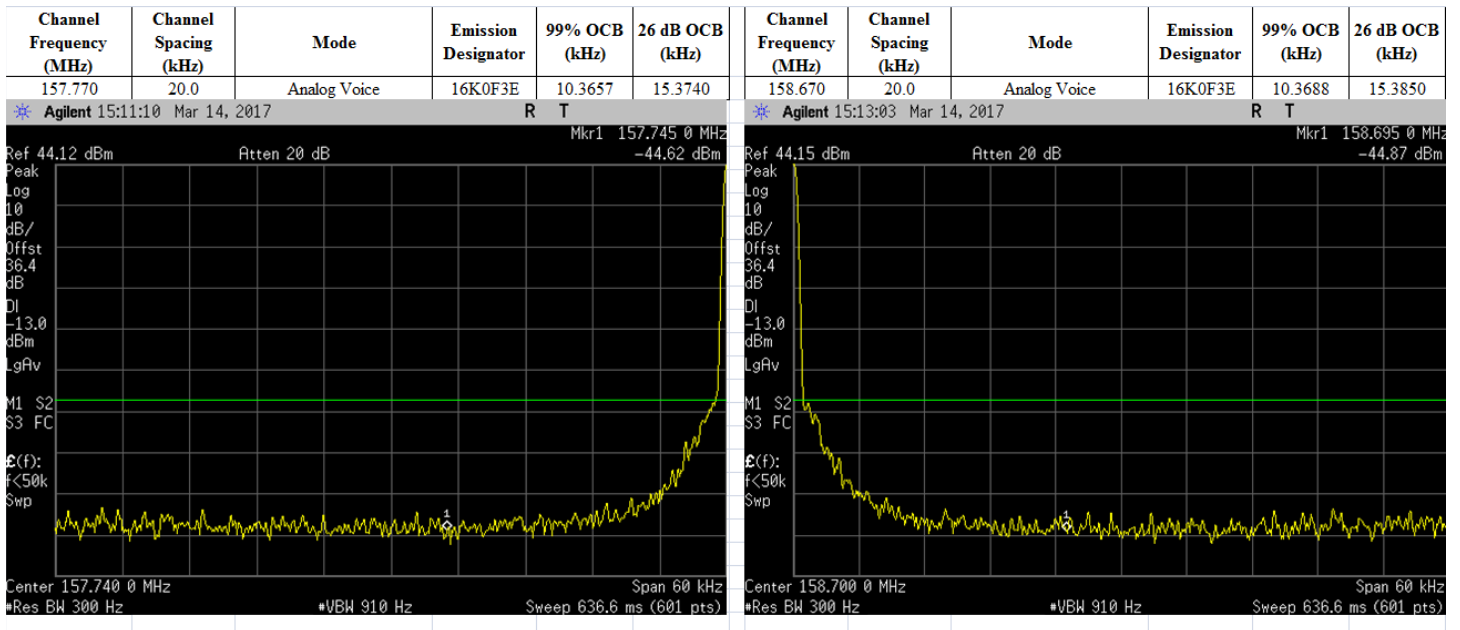
Analog: 157.77,158.670 MHz, 20.0 kHz Channel Spacing, Max Power



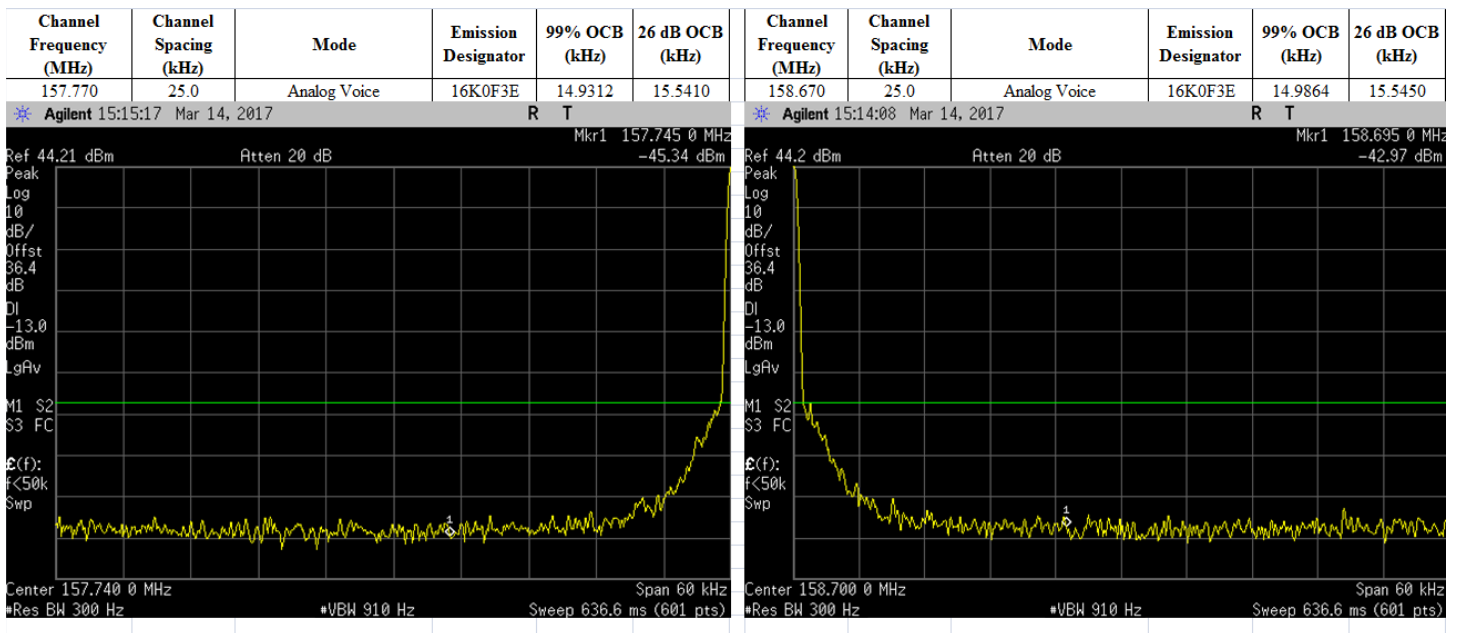
Analog: 157.77, 158.670 MHz, 25.0 kHz Channel Spacing, Max Power



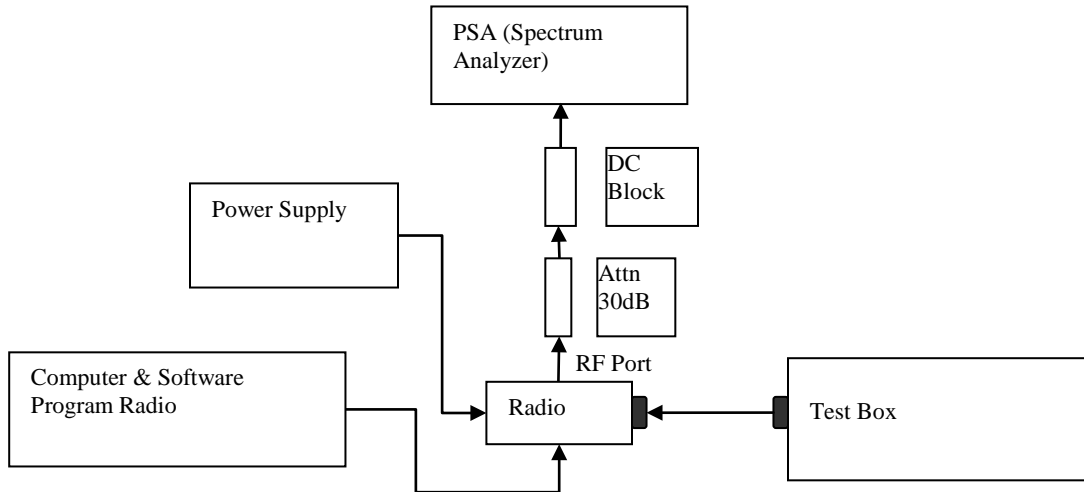
Analog: 157.77, 158.670 MHz, 20.0 kHz Channel Spacing, Low Power



Analog: 157.77, 158.670 MHz, 25.0 kHz Channel Spacing, Low Power



6.7.3. Test Setup (Digital)

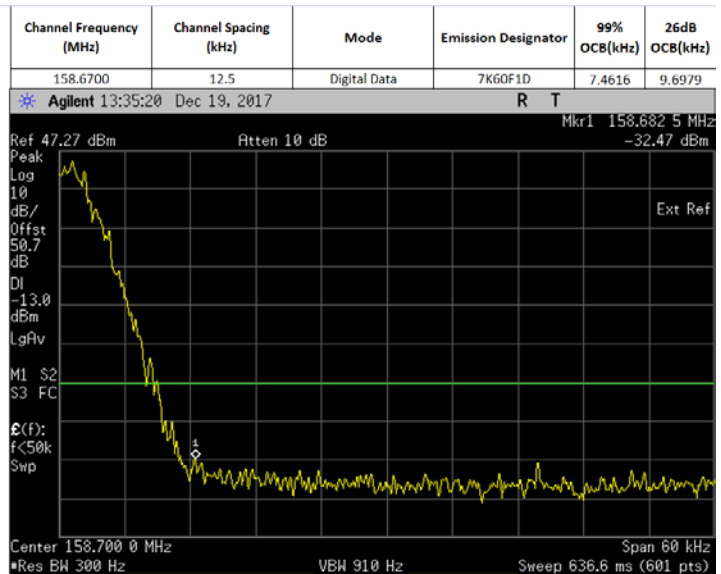
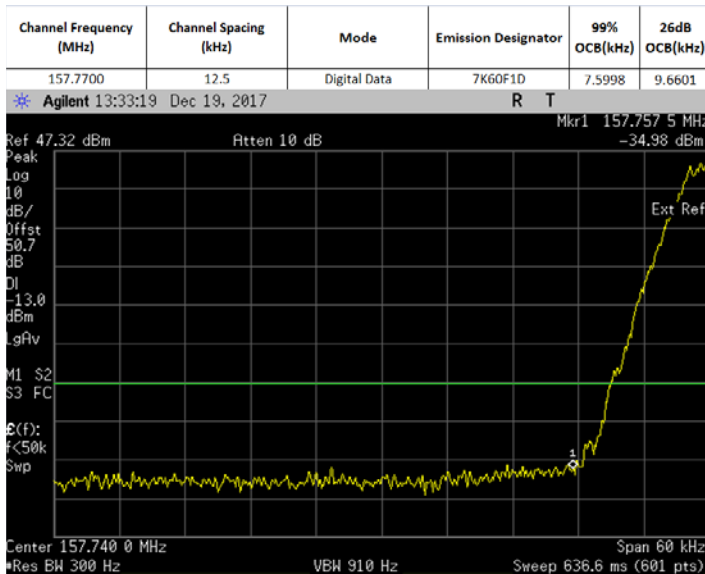


- 1) Program and set radio to operate in desire test frequency and digital mode with modulation. (4FSK**, C4FM or other digital modulation form).
- 2) Path loss for the measurement included.
- 3) Select the Occupied Bandwidth measurement for 99% and 26dB Emissions Bandwidth Measurement.
- 4) Key in the 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.

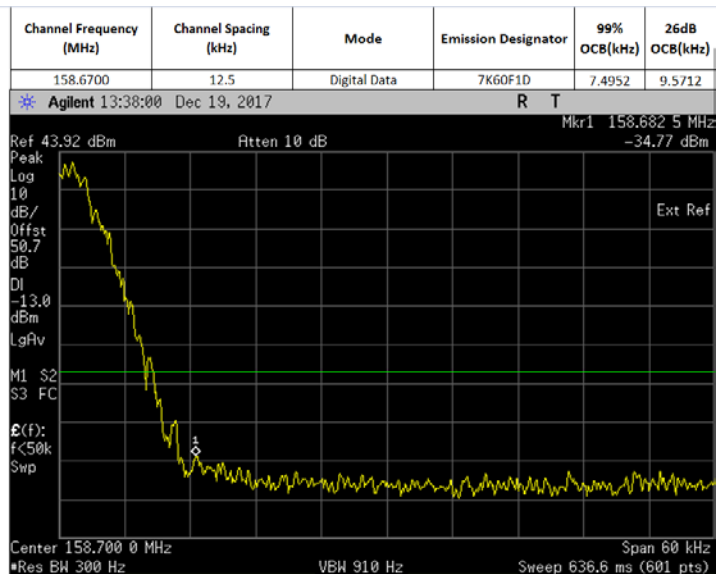
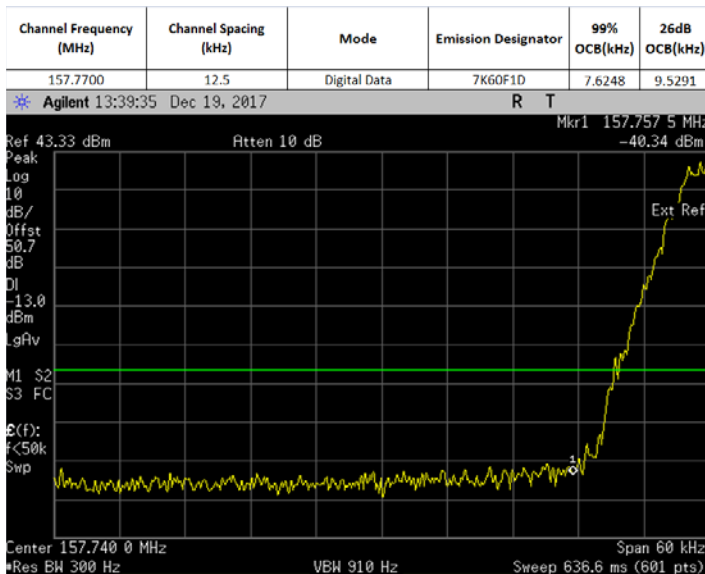
*Note: Test patterns for all digital emissions (7K60F1E, 7K60F1D, 7K60F1W, 7K60FXE, 7K60FXW) are identical, hence only 7K60F1D is shown.

6.7.4. Test Result (Digital)

4FSK: 157.77,158.67 MHz, 12.5 kHz Channel Spacing, Max Power



4FSK: 157.77,158.67 MHz, 12.5 kHz Channel Spacing, Low Power

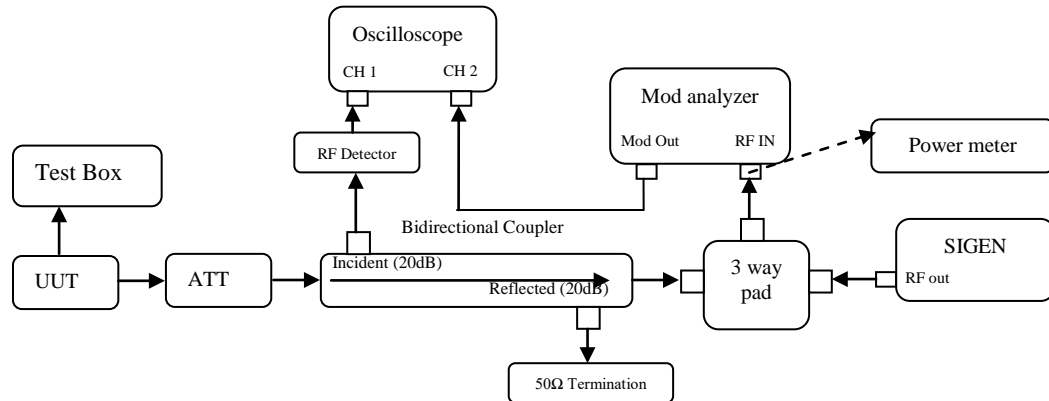


6.7.5. Test Limit

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 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
Not Applicable

6.8.3. Test Limit

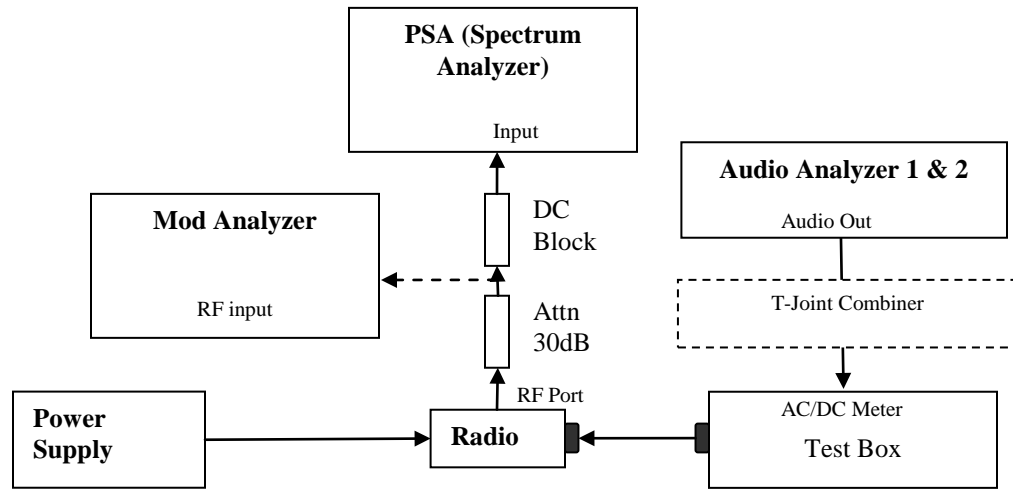
Transmitters designed to operate in the 150-174 MHz and 421-512 MHz frequency bands must maintain transient frequencies within the maximum frequency difference limits during the time intervals indicated:

| Time intervals ^{1 2} | Maximum frequency difference ³ | All equipment | |
|---|---|----------------|----------------|
| | | 150 to 174 MHz | 421 to 512 MHz |
| Transient Frequency Behavior for Equipment Designed to Operate on 25 kHz Channels | | | |
| t ₁ ⁴ | ±25.0 kHz | 5.0 ms | 10.0 ms |
| t ₂ | ±12.5 kHz | 20.0 ms | 25.0 ms |
| t ₃ ⁴ | ±25.0 kHz | 5.0 ms | 10.0 ms |
| Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels | | | |
| t ₁ ⁴ | ±12.5 kHz | 5.0 ms | 10.0 ms |
| t ₂ | ±6.25 kHz | 20.0 ms | 25.0 ms |
| t ₃ ⁴ | ±12.5 kHz | 5.0 ms | 10.0 ms |
| Transient Frequency Behavior for Equipment Designed to Operate on 6.25 kHz Channels | | | |
| t ₁ ⁴ | ±6.25 kHz | 5.0 ms | 10.0 ms |
| t ₂ | ±3.125 kHz | 20.0 ms | 25.0 ms |
| t ₃ ⁴ | ±6.25 kHz | 5.0 ms | 10.0 ms |

- ¹ _{on} is the instant when a 1 kHz test signal is completely suppressed, including any capture time due to phasing.
- t₁ is the time period immediately following t_{on}.
- t₂ is the time period immediately following t₁.
- t₃ is the time period from the instant when the transmitter is turned off until t_{off}.
- t_{off} is the instant when the 1 kHz test signal starts to rise.
- ² During the time from the end of t₂ to the beginning of t₃, the frequency difference must not exceed the limits specified in §90.213.
- ³ Difference between the actual transmitter frequency and the assigned transmitter frequency.
- ⁴ 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)

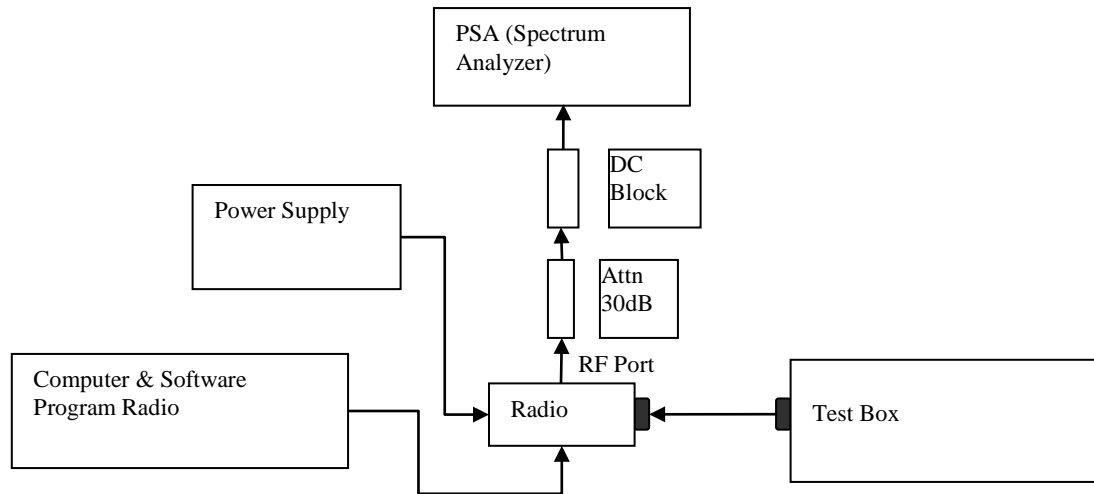


- 1) The DUT transmitter output port was connected to modulation analyzer.
- 2) Path loss for the measurement included.
- 3) Transmit the radio and turn on 1st audio analyzer with audio frequency 650Hz, 50% rated deviation, and record the amplitude value as AmpT1.
- 4) Turn off Audio analyzer 1 and turn 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

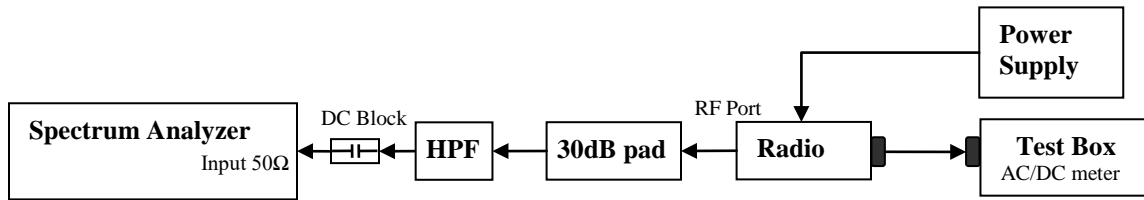
| Offset from center frequency (kHz) | Measurement bandwidth (kHz) | Maximum ACP (dBc) |
|------------------------------------|-----------------------------|-------------------|
| 9.375 | 6.25 | -40 |
| 15.625 | 6.25 | -60 |
| 21.875 | 6.25 | -60 |
| 37.5 | 25 | -60 |
| 62.5 | 25 | -65 |
| 87.5 | 25 | -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

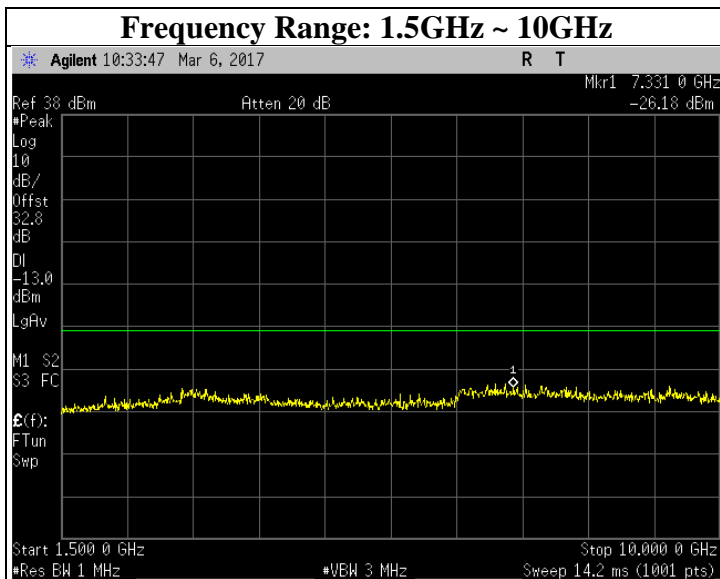
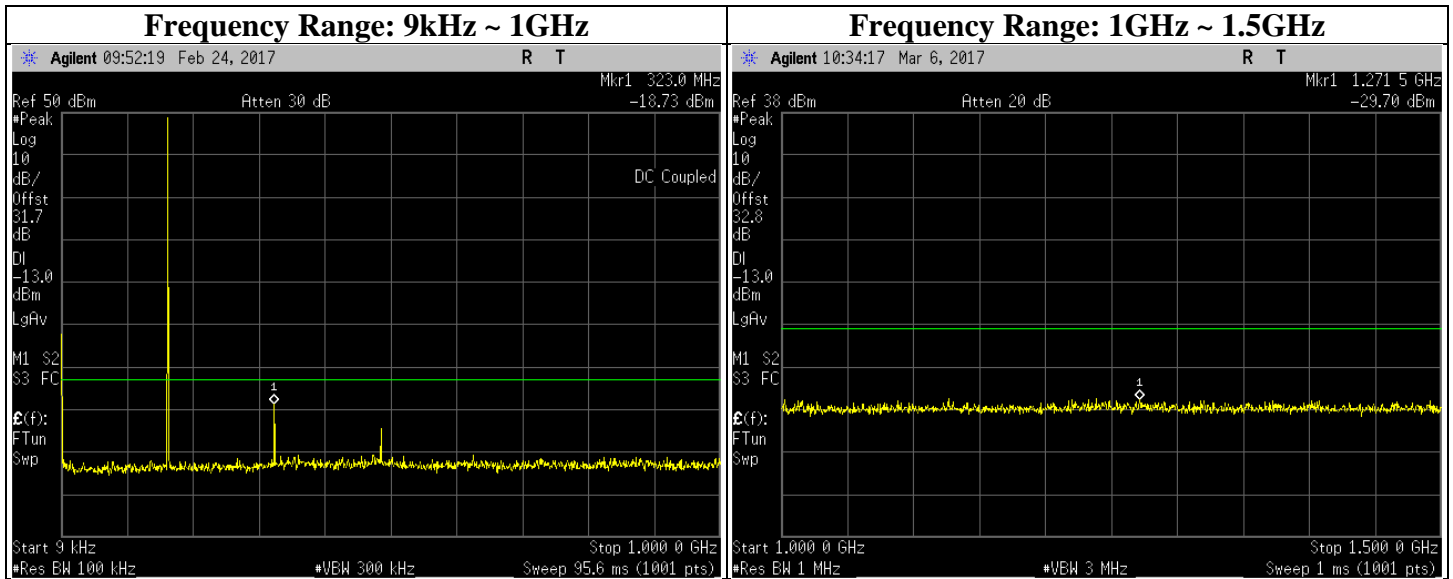
6.10.1. Test Setup



- 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.

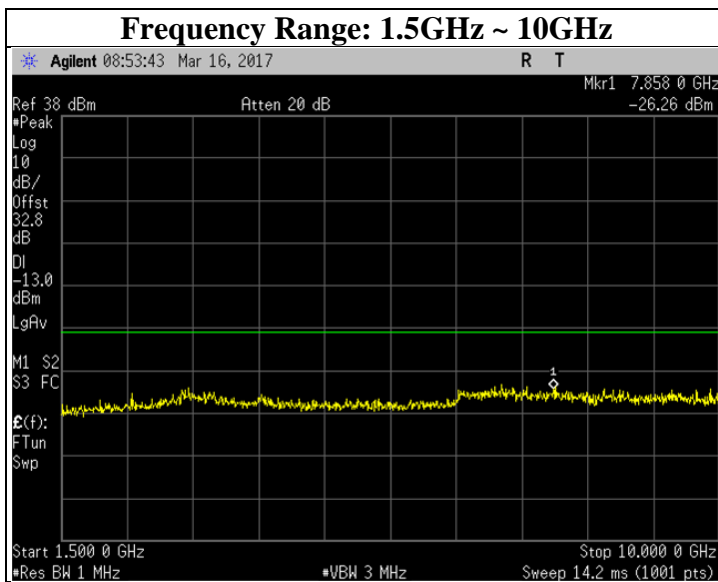
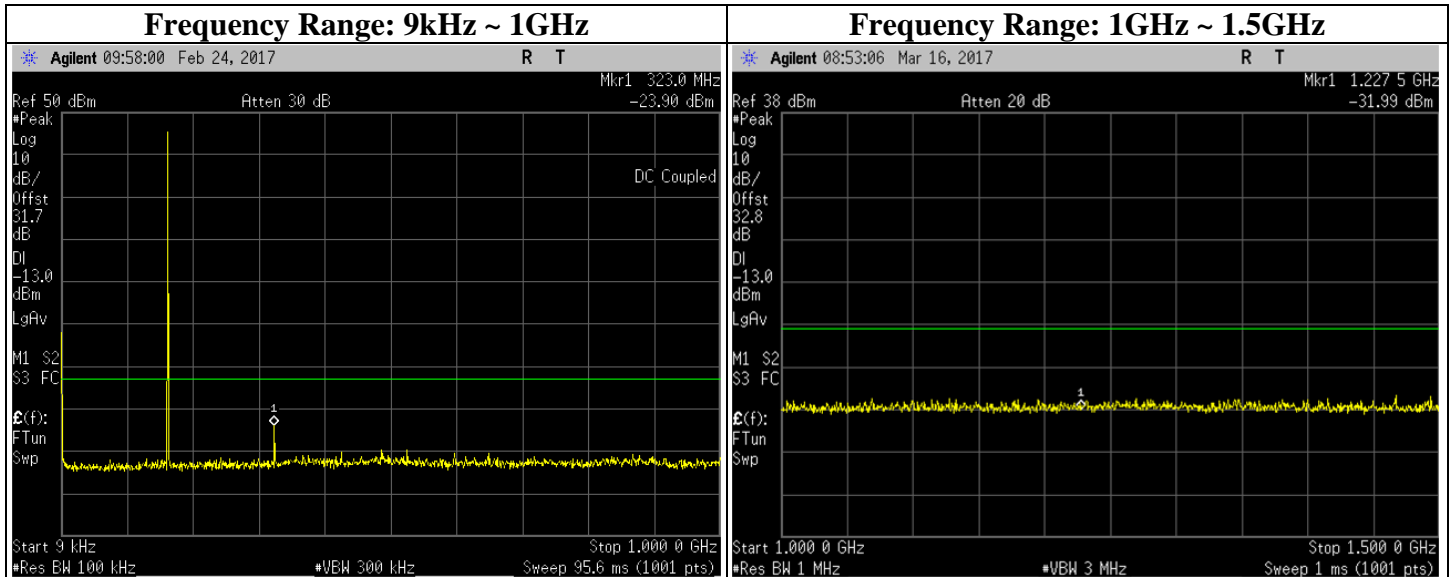
6.10.2. Test Result (Analog)

Analog: 161.7 MHz, 20.0 kHz Channel Spacing, Max Power



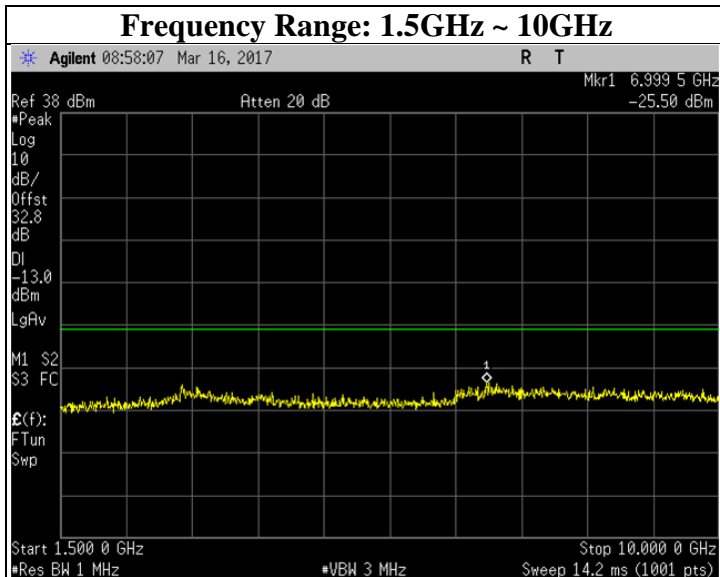
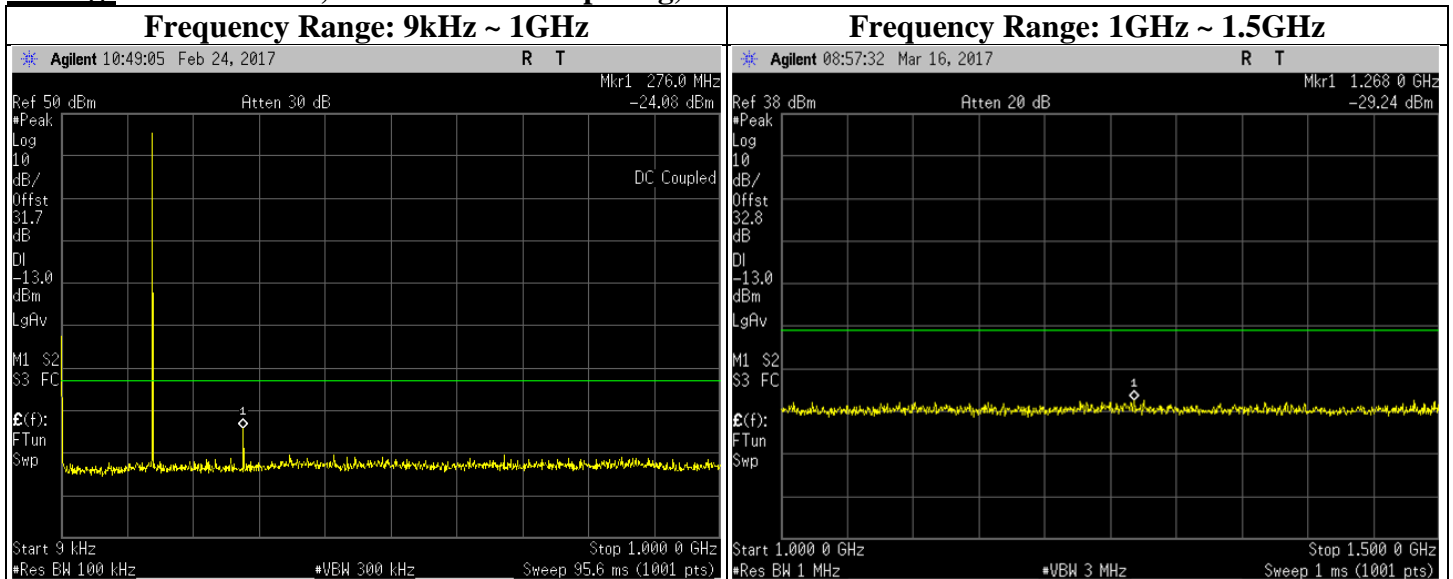
| Frequency Range | Highest Spur Freq (MHz) | Spurious Level (dBm) | Failing Limit (dBm) | Remark |
|-----------------|-------------------------|----------------------|---------------------|--------|
| 9kHz ~ 1GHz | 323 | -18.73 | -13 | Pass |
| 1GHz ~ 1.5GHz | 1271.5 | -29.70 | -13 | Pass |
| 1.5GHz ~ 10GHz | 7331.0 | -26.18 | -13 | Pass |

Analog: 161.7 MHz, 20.0 kHz Channel Spacing, Low Power



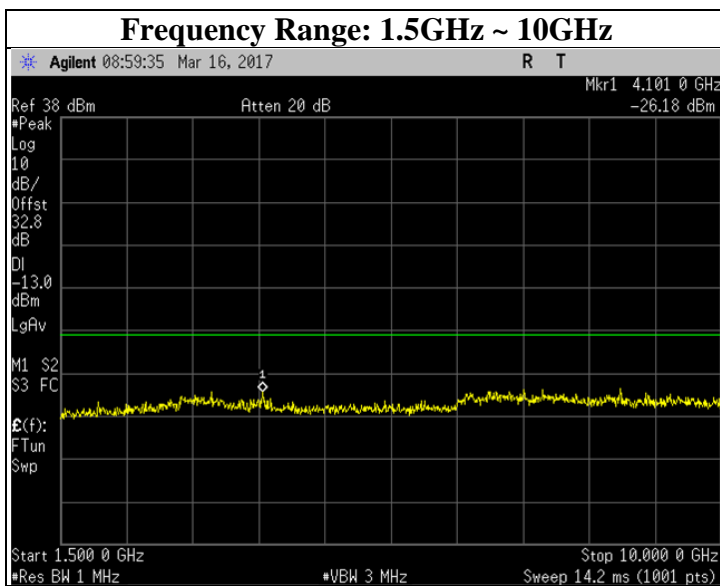
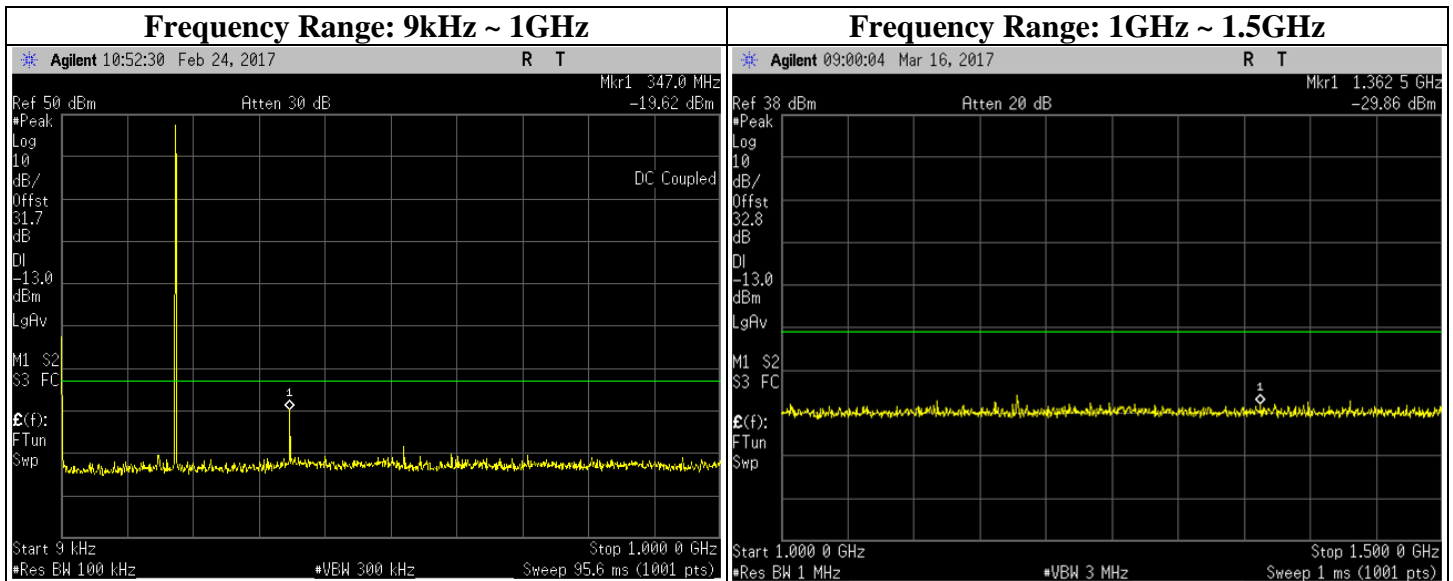
| Frequency Range | Highest Spur Freq (MHz) | Spurious Level (dBm) | Failing Limit (dBm) | Remark |
|-----------------|-------------------------|----------------------|---------------------|--------|
| 9kHz ~ 1GHz | 323 | -23.90 | -13 | Pass |
| 1GHz ~ 1.5GHz | 1227.5 | -31.99 | -13 | Pass |
| 1.5GHz ~ 10GHz | 7858 | -26.26 | -13 | Pass |

Analog: 138.0125 MHz, 25 kHz Channel Spacing, Low Power



| Frequency Range | Highest Spur Freq (MHz) | Spurious Level (dBm) | Failing Limit (dBm) | Remark |
|-----------------|-------------------------|----------------------|---------------------|--------|
| 9kHz ~ 1GHz | 276 | -24.08 | -13 | Pass |
| 1GHz ~ 1.5GHz | 1268.0 | -29.70 | -13 | Pass |
| 1.5GHz ~ 10GHz | 6999.5 | -25.50 | -13 | Pass |

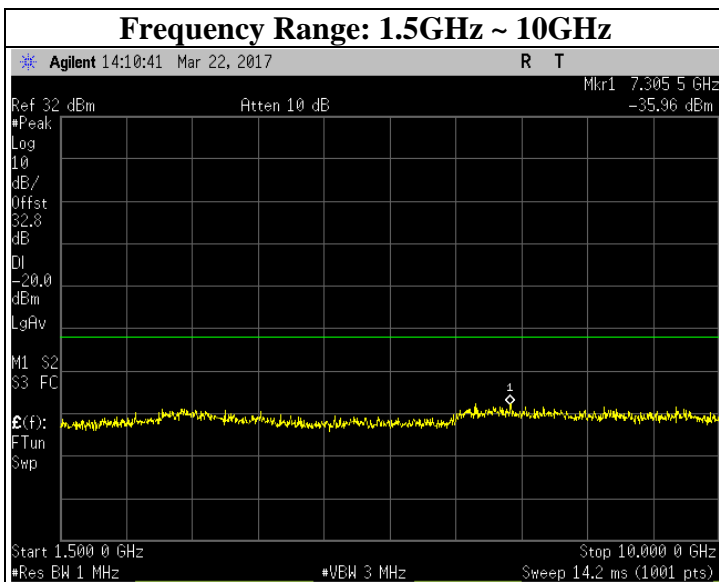
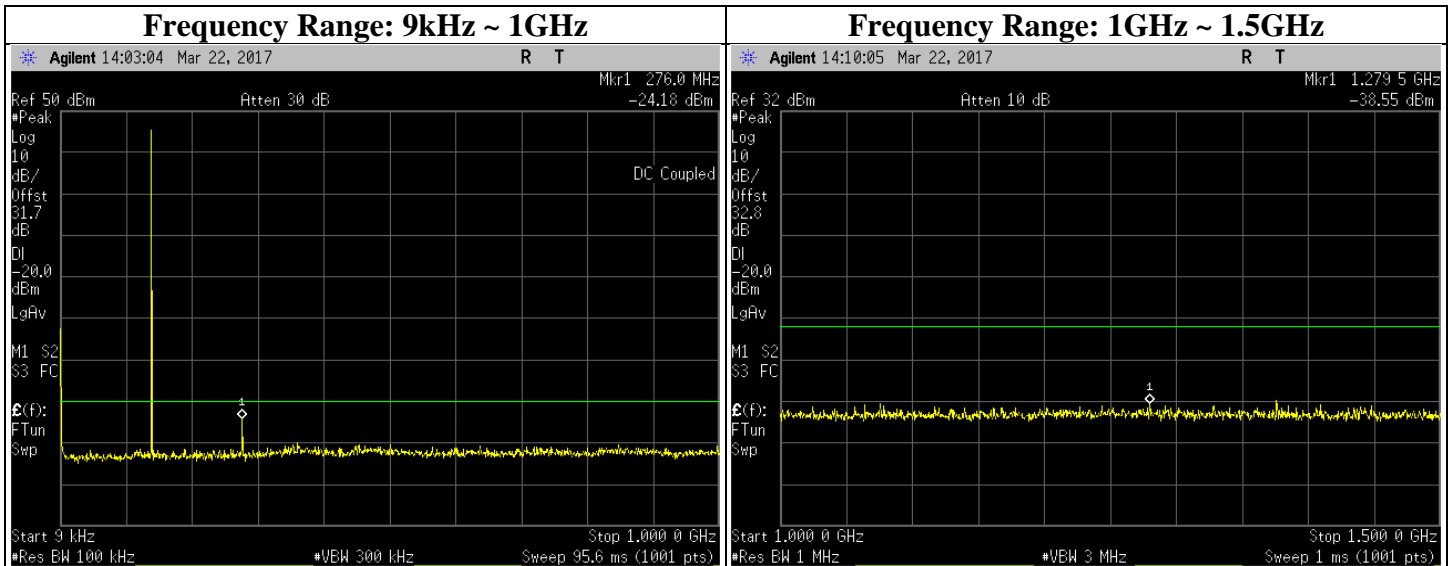
Analog: 173.3875 MHz, 25 kHz Channel Spacing, Low Power



| Frequency Range | Highest Spur Freq (MHz) | Spurious Level (dBm) | Failing Limit (dBm) | Remark |
|-----------------|-------------------------|----------------------|---------------------|--------|
| 9kHz ~ 1GHz | 347 | -19.62 | -13 | Pass |
| 1GHz ~ 1.5GHz | 1362.5 | -29.86 | -13 | Pass |
| 1.5GHz ~ 10GHz | 4101.0 | -26.18 | -13 | Pass |

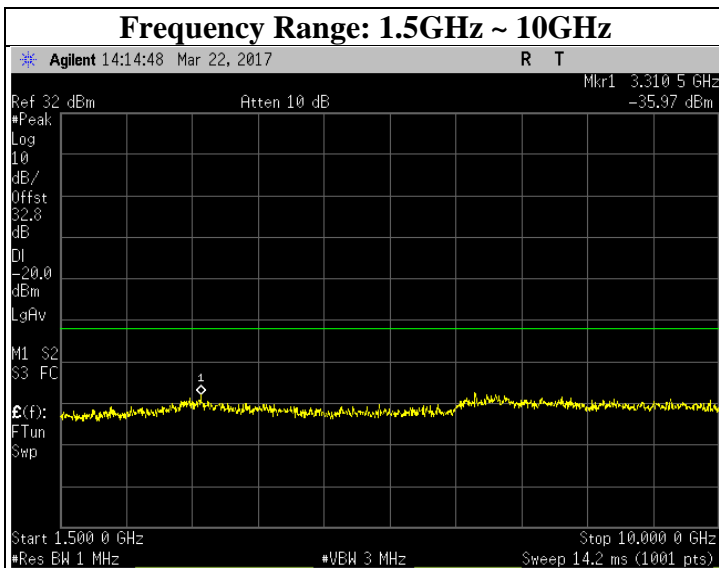
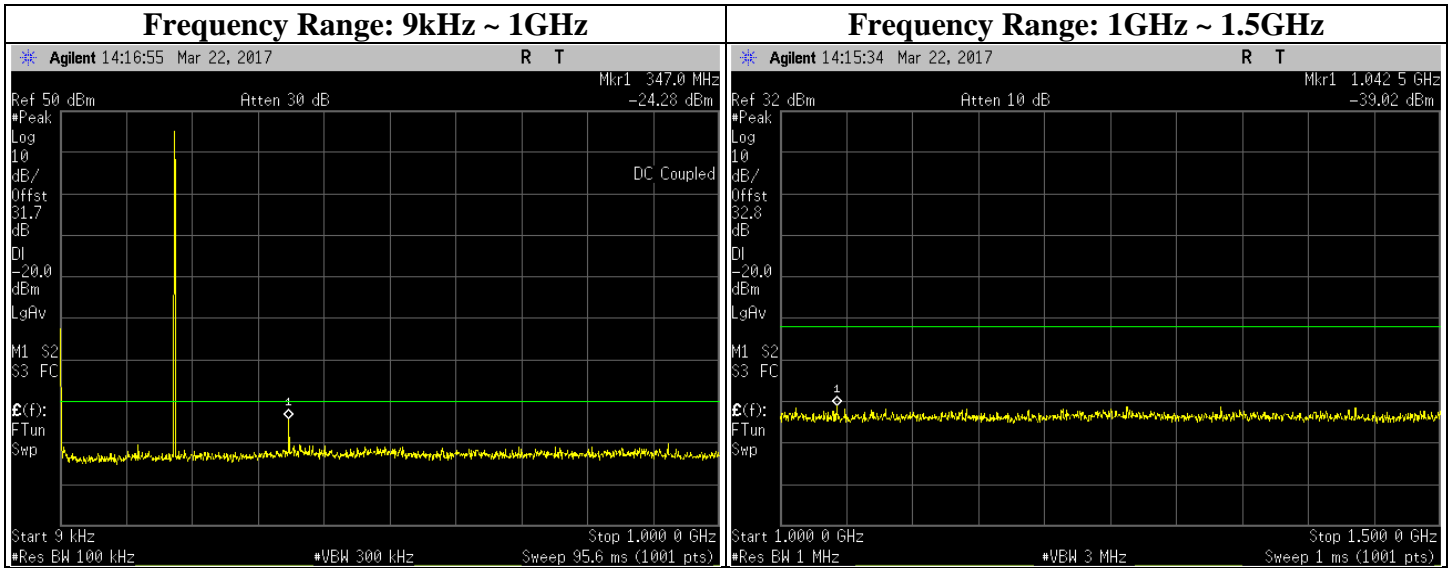
6.10.1. Test Result (Digital)

4FSK: 138.0125 MHz, 12.5 kHz Channel Spacing, Low Power



| Frequency Range | Highest Spur Freq (MHz) | Spurious Level (dBm) | Failing Limit (dBm) | Remark |
|-----------------|-------------------------|----------------------|---------------------|--------|
| 9kHz ~ 1GHz | 276 | -24.18 | -20 | Pass |
| 1GHz ~ 1.5GHz | 1279.5 | -38.55 | -20 | Pass |
| 1.5GHz ~ 10GHz | 7305.5 | -35.96 | -20 | Pass |

4FSK: 173.3875 MHz, 12.5 kHz Channel Spacing, Low Power



| Frequency Range | Highest Spur Freq (MHz) | Spurious Level (dBm) | Failing Limit (dBm) | Remark |
|-----------------|-------------------------|----------------------|---------------------|--------|
| 9kHz ~ 1GHz | 347 | -24.28 | -20 | Pass |
| 1GHz ~ 1.5GHz | 1042.5 | -39.02 | -20 | Pass |
| 1.5GHz ~ 10GHz | 3310.5 | -35.97 | -20 | Pass |

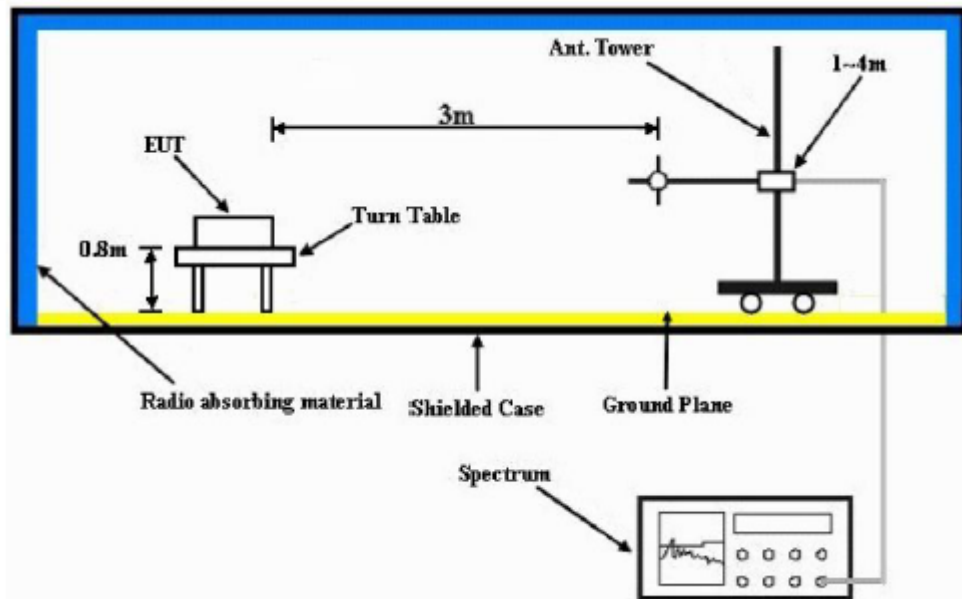
6.10.2. Test Limit

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 ₁₀ (P) (-13 dBm) | 43 + log ₁₀ (P) (-13 dBm) | 43 + log ₁₀ (P) (-13 dBm) | Not Applicable | 50 + log ₁₀ (P) (-20 dBm) |
| 25kHz | | Not Applicable | | 43 + log ₁₀ (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.

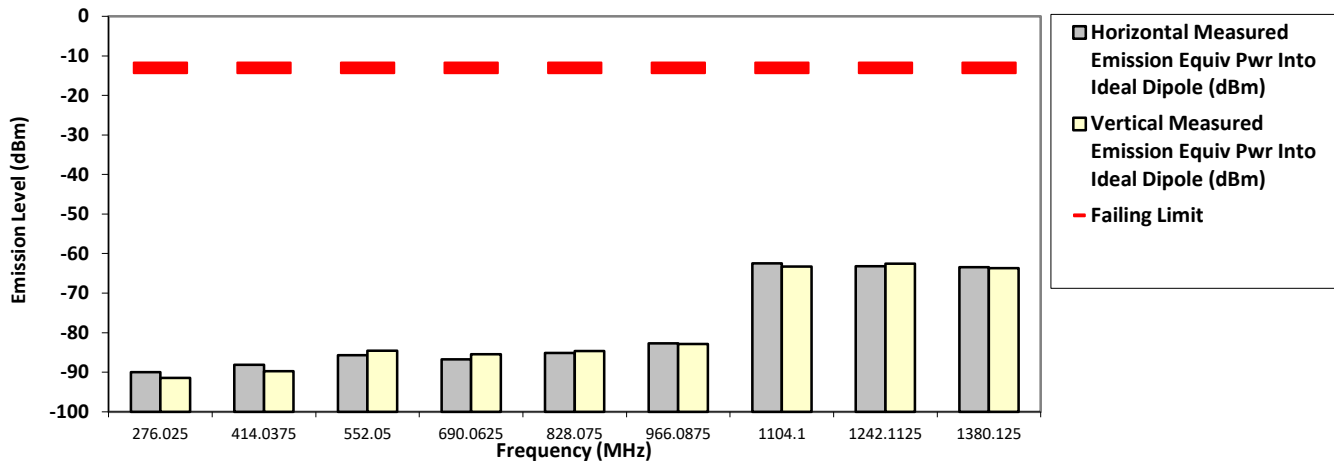
6.11.2. Test Result (Analog)

SAC Transmitter Radiated Emission

Model Number: AAM28JQN9RA1AN S/N: 511TRP5901 SR:02809-RF-00022
 Battery Part No: NA Accy Part No: RMN5127C
 Test Mode: TX Analog
 138.012500 MHz 25 kHz 25.000 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) |
|-----------------|----------|--|--|
| 276.0250 | -13.0000 | -89.9530 ** | -91.4751 ** |
| 414.0375 | -13.0000 | -88.1612 ** | -89.7525 ** |
| 552.0500 | -13.0000 | -85.7039 ** | -84.5511 ** |
| 690.0625 | -13.0000 | -86.7753 ** | -85.4481 ** |
| 828.0750 | -13.0000 | -85.1516 ** | -84.6090 ** |
| 966.0875 | -13.0000 | -82.7156 ** | -82.8387 ** |
| 1104.1000 | -13.0000 | -62.4834 ** | -63.2633 ** |
| 1242.1125 | -13.0000 | -63.1803 ** | -62.5397 ** |
| 1380.1250 | -13.0000 | -63.4415 ** | -63.6592 ** |

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 Wed, Jan 18, 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): 23.2 Hum(%RH): 71.2

System MU: 5.01 dB

Remarks: Passed Results Marginal Results Failed Results

SAC Transmitter Radiated Emission

Model Number: AAM28JQN9RA1AN

S/N: 511TRP5901

SR:02809-RF-00022

Battery Part No: NA

Accy Part No: RMN5127C

Test Mode: TX Analog

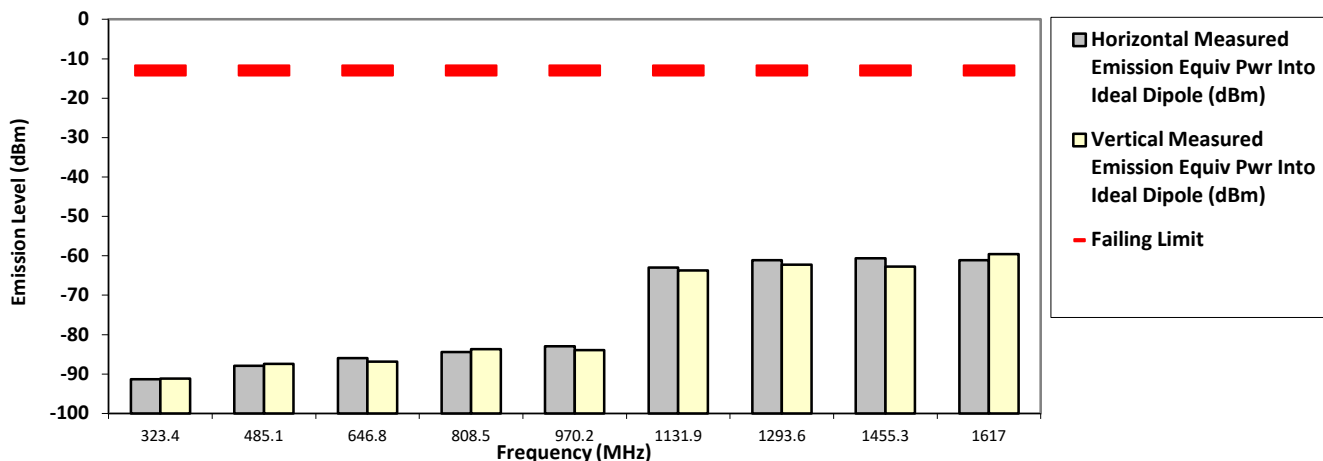
161.700000 MHz

20 kHz

25.000 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 | -13.0000 | -91.3366 ** | -91.1255 ** |
| 485.1000 | -13.0000 | -87.9303 ** | -87.4353 ** |
| 646.8000 | -13.0000 | -85.9703 ** | -86.8262 ** |
| 808.5000 | -13.0000 | -84.4121 ** | -83.6724 ** |
| 970.2000 | -13.0000 | -82.9125 ** | -83.8891 ** |
| 1131.9000 | -13.0000 | -62.9785 ** | -63.7072 ** |
| 1293.6000 | -13.0000 | -61.1012 ** | -62.2483 ** |
| 1455.3000 | -13.0000 | -60.6426 ** | -62.7679 ** |
| 1617.0000 | -13.0000 | -61.1203 ** | -59.5282 ** |

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

Wed, Jan 18, 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): 23.2 Hum(%RH): 71.2

System MU: 5.01 dB

Remarks:

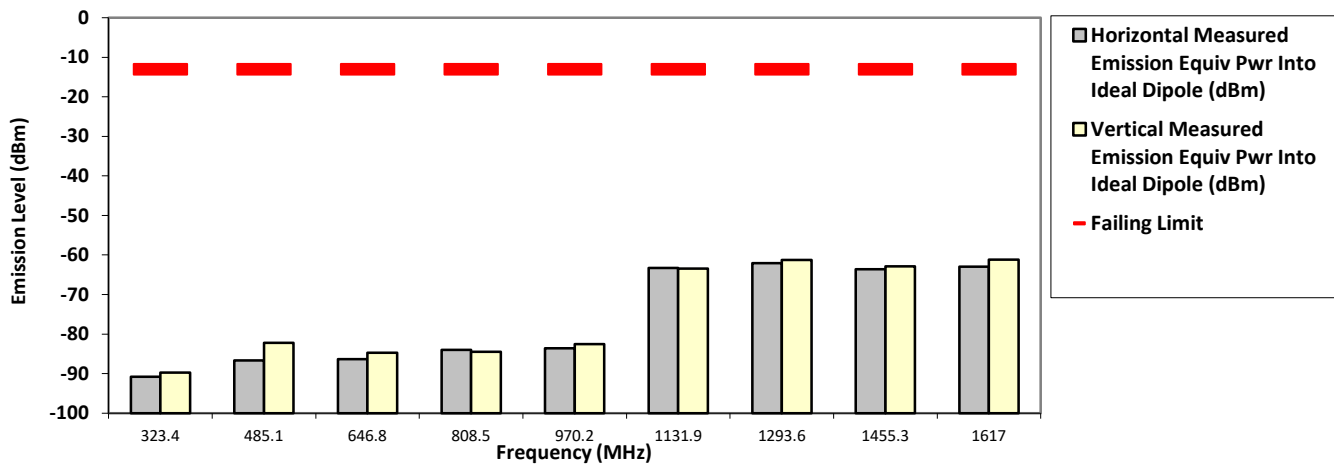
| | | |
|----------------|------------------|----------------|
| Passed Results | Marginal Results | Failed Results |
|----------------|------------------|----------------|

SAC Transmitter Radiated Emission
Model Number: AAM28JQN9RA1AN **S/N: 511TRP5901**
Battery Part No: NA **Accy Part No: RMN5127C**
Test Mode: TX Analog
161.700000 MHz **20 kHz** **54.000 Watt(s) /Max Power**

SR:02809-RF-00022

| Frequency (MHz) | Limit | Horizontal Measured Emission Equiv Pwr Into Ideal Dipole (dBm) | Vertical Measured Emission Equiv Pwr Into ideal Dipole (dBm) |
|-----------------|----------|--|--|
| 323.4000 | -13.0000 | -90.8219 ** | -89.7474 ** |
| 485.1000 | -13.0000 | -86.6486 ** | -82.2332 ** |
| 646.8000 | -13.0000 | -86.3188 ** | -84.7651 ** |
| 808.5000 | -13.0000 | -83.9916 ** | -84.4908 ** |
| 970.2000 | -13.0000 | -83.5705 ** | -82.5185 ** |
| 1131.9000 | -13.0000 | -63.2566 ** | -63.4342 ** |
| 1293.6000 | -13.0000 | -62.0944 ** | -61.2636 ** |
| 1455.3000 | -13.0000 | -63.5700 ** | -62.9010 ** |
| 1617.0000 | -13.0000 | -62.9215 ** | -61.2114 ** |

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

Wed, Jan 18, 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): 23.2 Hum(%RH): 71.2

System MU: 5.01 dB

Remarks:

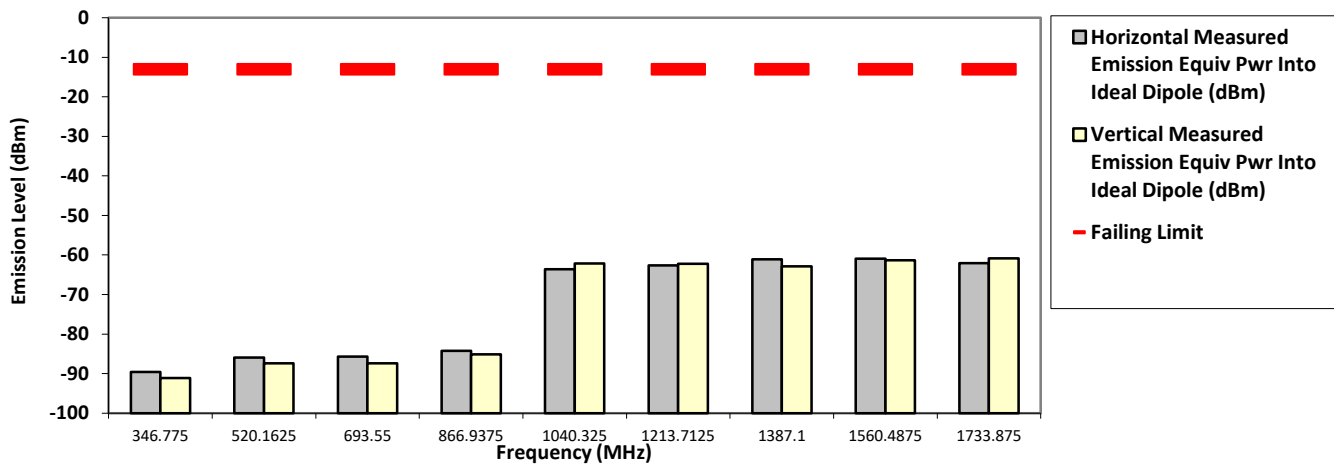
| | | |
|----------------|------------------|----------------|
| Passed Results | Marginal Results | Failed Results |
|----------------|------------------|----------------|

SAC Transmitter Radiated Emission
Model Number: AAM28JQN9RA1AN **S/N: 511TRP5901**
Battery Part No: NA **Accy Part No: RMN5127C**
Test Mode: TX Analog
173.387500 MHz **25 kHz** **25.000 Watt(s) /Low Power**

SR:02809-RF-00022

| 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 | -89.5728 ** | -91.1122 ** |
| 520.1625 | -13.0000 | -85.9109 ** | -87.4100 ** |
| 693.5500 | -13.0000 | -85.6637 ** | -87.3629 ** |
| 866.9375 | -13.0000 | -84.2278 ** | -85.1653 ** |
| 1040.3250 | -13.0000 | -63.6037 ** | -62.1822 ** |
| 1213.7125 | -13.0000 | -62.6007 ** | -62.2098 ** |
| 1387.1000 | -13.0000 | -61.0768 ** | -62.8490 ** |
| 1560.4875 | -13.0000 | -60.9528 ** | -61.3150 ** |
| 1733.8750 | -13.0000 | -62.0611 ** | -60.8725 ** |

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

Wed, Jan 18, 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): 23.2 Hum(%RH): 71.2

System MU: 5.01 dB

Remarks:

| | | |
|----------------|------------------|----------------|
| Passed Results | Marginal Results | Failed Results |
|----------------|------------------|----------------|

6.11.3. Test Result (Digital)

SAC Transmitter Radiated Emission

Model Number: AAM28JQN9RA1AN

S/N: 511TRP5901

SR:02809-RF-00022

Battery Part No: NA

Accy Part No: RMN5127C

Test Mode: TX Digital

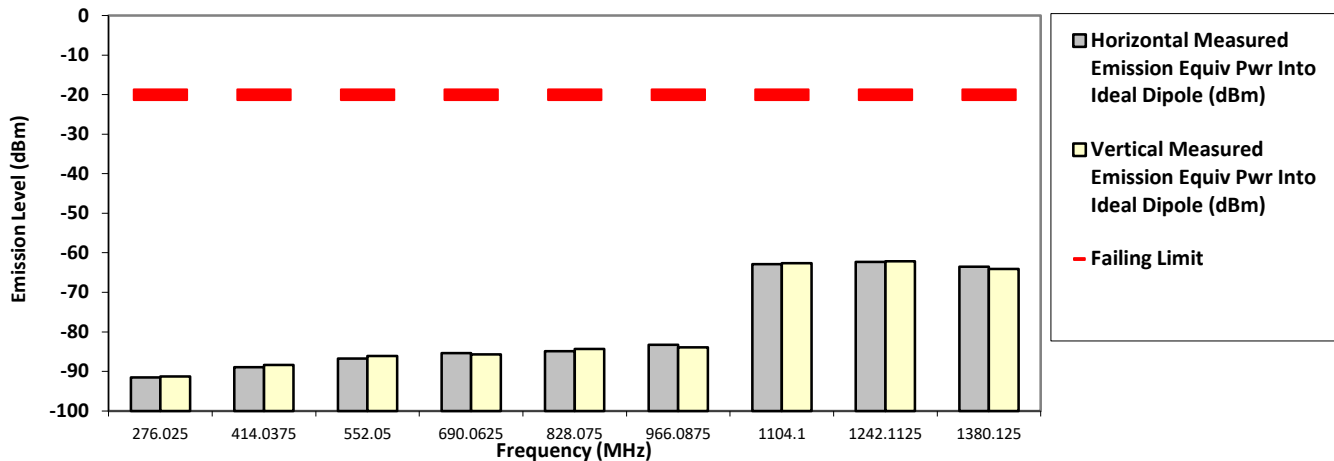
138.012500 MHz

12.5 kHz

25.000 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) |
|-----------------|----------|--|--|
| 276.0250 | -20.0000 | -91.5497 ** | -91.3050 ** |
| 414.0375 | -20.0000 | -88.9711 ** | -88.3893 ** |
| 552.0500 | -20.0000 | -86.7389 ** | -86.0634 ** |
| 690.0625 | -20.0000 | -85.3726 ** | -85.6913 ** |
| 828.0750 | -20.0000 | -84.8647 ** | -84.3076 ** |
| 966.0875 | -20.0000 | -83.2912 ** | -83.9408 ** |
| 1104.1000 | -20.0000 | -62.8964 ** | -62.6460 ** |
| 1242.1125 | -20.0000 | -62.3297 ** | -62.1826 ** |
| 1380.1250 | -20.0000 | -63.4903 ** | -64.1213 ** |

RADIATED SPURIOUS EMISSIONS



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Wed, Jan 18, 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): 23.2 Hum(%RH): 71.2

System MU: 5.01 dB

Remarks:

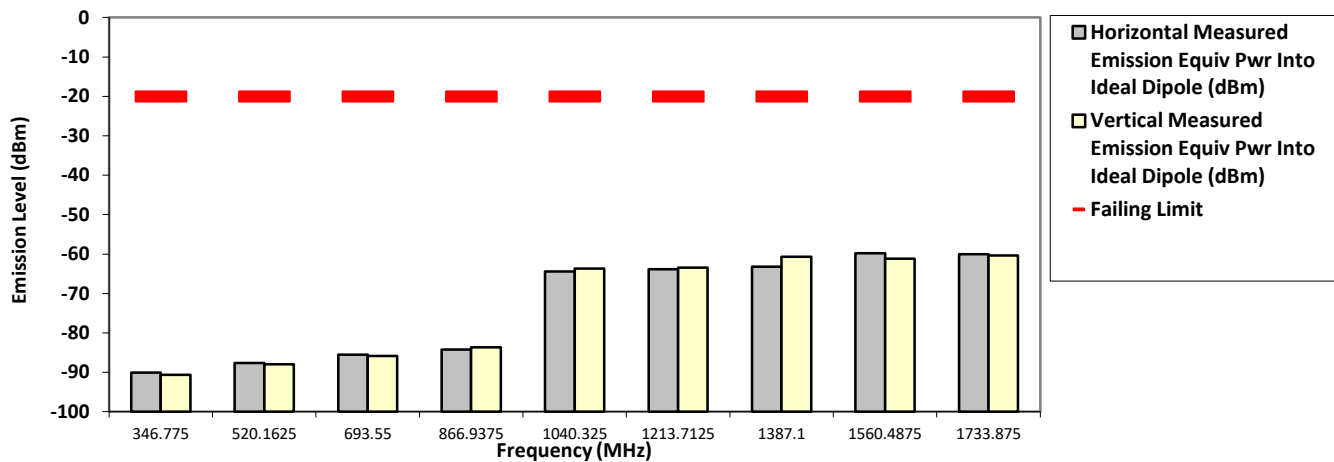
| | | |
|----------------|------------------|----------------|
| Passed Results | Marginal Results | Failed Results |
|----------------|------------------|----------------|

SAC Transmitter Radiated Emission
Model Number: AAM28JQN9RA1AN **S/N: 511TRP5901**
Battery Part No: NA **Accy Part No: RMN5127C**
Test Mode: TX Digital
173.387500 MHz **12.5 kHz** **25.000 Watt(s) /Low Power**

SR:02809-RF-00022

| 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 | -90.0750 ** | -90.6563 ** |
| 520.1625 | -20.0000 | -87.6456 ** | -87.9260 ** |
| 693.5500 | -20.0000 | -85.4860 ** | -85.8303 ** |
| 866.9375 | -20.0000 | -84.2098 ** | -83.6383 ** |
| 1040.3250 | -20.0000 | -64.4231 ** | -63.6744 ** |
| 1213.7125 | -20.0000 | -63.8473 ** | -63.4676 ** |
| 1387.1000 | -20.0000 | -63.2224 ** | -60.7192 ** |
| 1560.4875 | -20.0000 | -59.8052 ** | -61.1427 ** |
| 1733.8750 | -20.0000 | -60.0209 ** | -60.3242 ** |

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

Wed, Jan 18, 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): 23.2 Hum(%RH): 71.2

System MU: 5.01 dB

| | | | |
|----------|----------------|------------------|----------------|
| Remarks: | Passed Results | Marginal Results | Failed Results |
|----------|----------------|------------------|----------------|

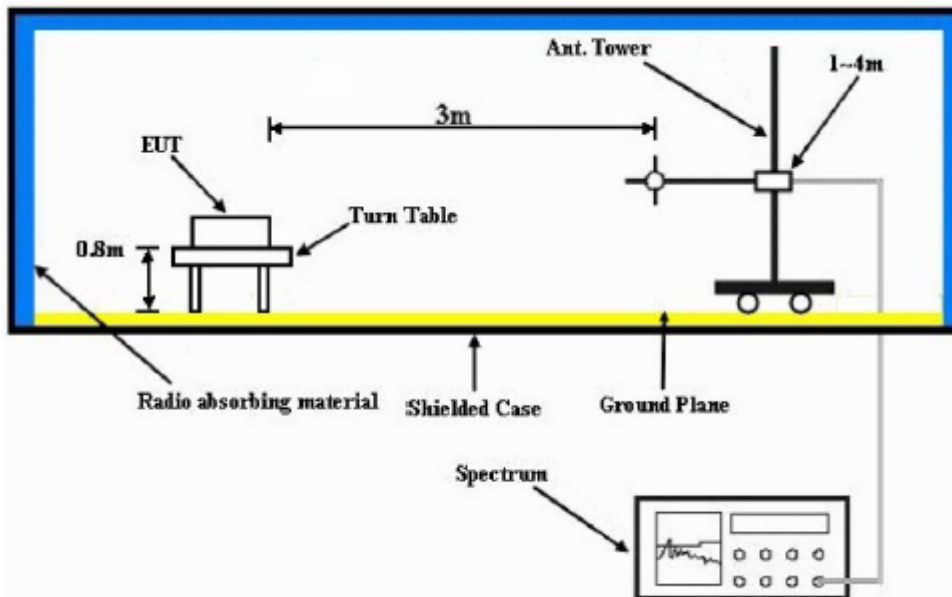
6.11.4. Test Limit

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 ₁₀ (P) (-13 dBm) | 43 + log ₁₀ (P) (-13 dBm) | 43 + log ₁₀ (P) (-13 dBm) | Not Applicable | 50 + log ₁₀ (P) (-20 dBm) |
| 25kHz | | Not Applicable | | 43 + log ₁₀ (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**

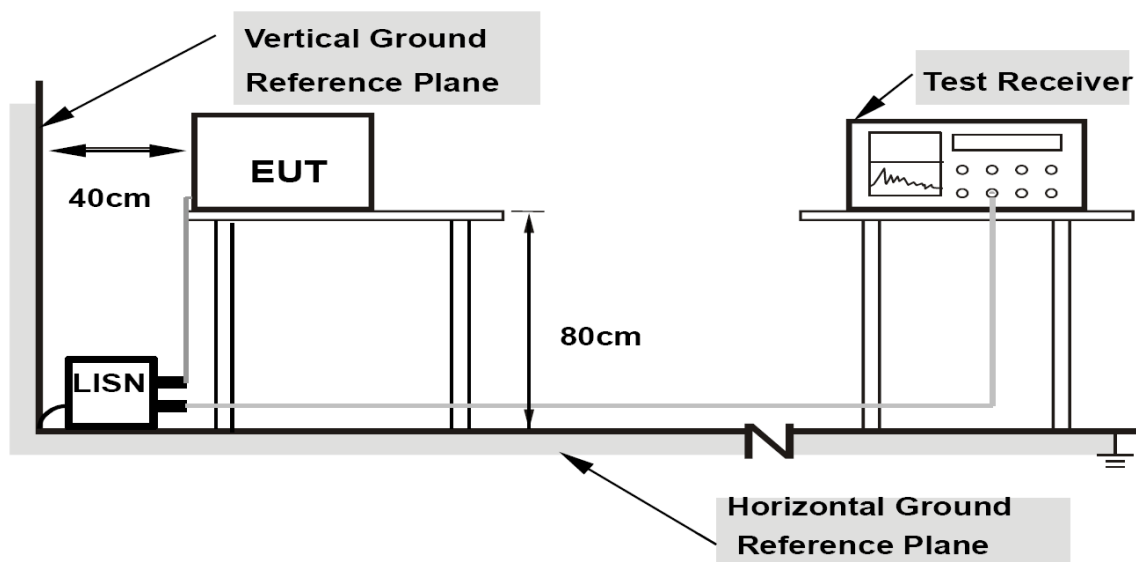
6.12.3. Test Limit

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 μ 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(μ 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(μ 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. | | |