# 7.2 Radiated Spurious Emission

### 7.2.1 TEST OVERVIEW

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-C-2004 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

**Test Procedures Used**

KDB 971168 v02r01 – Section 5.8
ANSI/TIA-603-C-2004 – Section 2.2.12

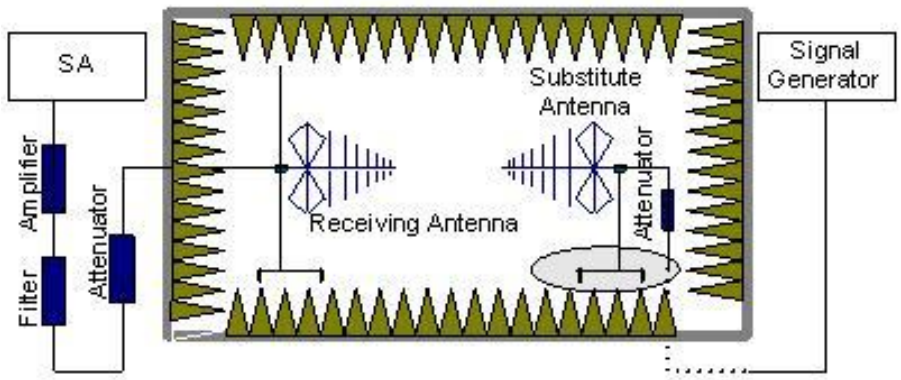
**Test Settings**

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = max hold
7. The trace was allowed to stabilize

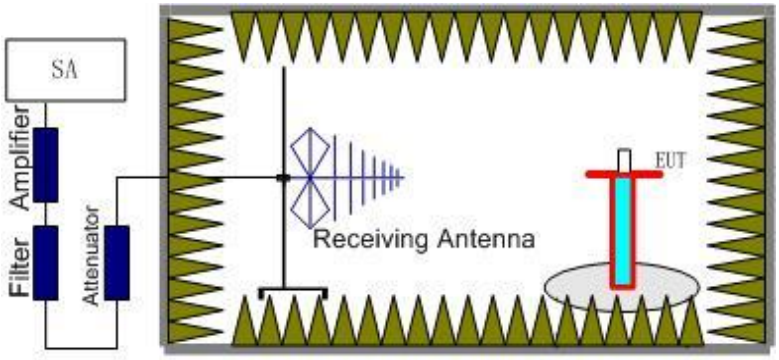
**Test Setup**

The procedure of radiated spurious emissions is as follows:

a) Pre-calibration With pre-calibration method, the Radiated Spurious Emissions(RSE) is calculated as, RSE=Rx（dBuV）+CL（dB）+SA（dB）+Gain（dBi）-107（dBuV to dBm）The SA is calibrated using following setup.



b) EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the test item for emission measurements. The height of receiving antenna is 0.8m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the test item and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector and 1MHz bandwidth.




Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE band 2, the LTE band 4 and LTE band 17. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of any band into any of the other blocks.

The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established and the $A_{Rpl}$ is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss and the air loss. The measurement results are obtained as described below: $Power=P_{Mea}+A_{Rpl}$

### 7.2.2 PROVISIONS APPLICABLE

(a) On any frequency outside a licensee’s frequency block (e.g. A, D, B, etc.) within the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

**Note:** Only record the worst condition of each test mode:

### 7.2.3 MEASUREMENT RESULT

**LTE Band 2**

**Low channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3720 | -46.09 | V | 10.06 | 2.52 | -38.55 | -13 | -25.55 |
| 3720 | -46.76 | H | 10.06 | 2.52 | -39.22 | -13 | -26.22 |
| 257.2 | -51.94 | V | 6.7 | 0.24 | -45.48 | -13 | -32.48 |
| 640.2 | -48.57 | H | 6.5 | 0.39 | -42.46 | -13 | -29.46 |

**Middle channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3760 | -47.20 | V | 10.06 | 2.52 | -39.66 | -13 | -26.66 |
| 3760 | -46.65 | H | 10.06 | 2.52 | -39.11 | -13 | -26.11 |
| 256.9 | -56.21 | V | 6.7 | 0.24 | -49.75 | -13 | -36.75 |
| 639.8 | -48.74 | H | 6.5 | 0.39 | -42.63 | -13 | -29.63 |

**High channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3800 | -48.86 | V | 10.06 | 2.52 | -41.32 | -13 | -28.32 |
| 3800 | -48.82 | H | 10.06 | 2.52 | -41.28 | -13 | -28.28 |
| 254.6 | -55.31 | V | 6.7 | 0.24 | -48.85 | -13 | -35.85 |
| 639.4 | -48.32 | H | 6.5 | 0.39 | -42.21 | -13 | -29.21 |

**LTE Band 4**

**Low channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3440 | -48.75 | V | 10.06 | 2.52 | -41.21 | -13 | -28.21 |
| 3440 | -47.41 | H | 10.06 | 2.52 | -39.87 | -13 | -26.87 |
| 257.4 | -55.09 | V | 6.7 | 0.24 | -48.63 | -13 | -35.63 |
| 640.2 | -51.84 | H | 6.5 | 0.39 | -45.73 | -13 | -32.73 |

**Middle channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3465 | -48.61 | V | 10.06 | 2.52 | -41.07 | -13 | -28.07 |
| 3465 | -47.81 | H | 10.06 | 2.52 | -40.27 | -13 | -27.27 |
| 256.9 | -55.18 | V | 6.7 | 0.24 | -48.72 | -13 | -35.72 |
| 639.8 | -49.82 | H | 6.5 | 0.39 | -43.71 | -13 | -30.71 |

**High channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 3490 | -48.63 | V | 10.06 | 2.52 | -41.09 | -13 | -28.09 |
| 3490 | -45.74 | H | 10.06 | 2.52 | -38.20 | -13 | -25.20 |
| 254.6 | -54.10 | V | 6.7 | 0.24 | -47.64 | -13 | -34.64 |
| 639.4 | -48.18 | H | 6.5 | 0.39 | -42.07 | -13 | -29.07 |

**LTE Band 12**

**Low channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 1408 | -49.44 | V | 10.72 | 1.65 | -40.37 | -13 | -27.37 |
| 1408 | -44.36 | H | 10.72 | 1.65 | -35.29 | -13 | -22.29 |
| 255.2 | -51.86 | V | 6.7 | 0.24 | -45.40 | -13 | -32.40 |
| 641.1 | -48.67 | H | 6.5 | 0.39 | -42.56 | -13 | -29.56 |

**Middle channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 1415 | -48.22 | V | 10.72 | 1.65 | -39.15 | -13 | -26.15 |
| 1415 | -47.50 | H | 10.72 | 1.65 | -38.43 | -13 | -25.43 |
| 254.5 | -55.92 | V | 6.7 | 0.24 | -49.46 | -13 | -36.46 |
| 640.2 | -50.28 | H | 6.5 | 0.39 | -44.17 | -13 | -31.17 |

**High channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 1422 | -46.59 | V | 10.72 | 1.65 | -37.52 | -13 | -24.52 |
| 1422 | -46.78 | H | 10.72 | 1.65 | -37.71 | -13 | -24.71 |
| 254.2 | -53.49 | V | 6.7 | 0.24 | -47.03 | -13 | -34.03 |
| 640.8 | -50.53 | H | 6.5 | 0.39 | -44.42 | -13 | -31.42 |

**LTE Band 17**

**Low channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 1418 | -49.04 | V | 10.72 | 1.65 | -41.50 | -13 | -28.50 |
| 1418 | -46.57 | H | 10.72 | 1.65 | -39.03 | -13 | -26.03 |
| 253.8 | -53.70 | V | 6.7 | 0.24 | -47.24 | -13 | -34.24 |
| 640.5 | -54.30 | H | 6.5 | 0.39 | -48.19 | -13 | -35.19 |

**Middle channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 1420 | -47.81 | V | 10.72 | 1.65 | -38.74 | -13 | -25.74 |
| 1420 | -48.31 | H | 10.72 | 1.65 | -39.24 | -13 | -26.24 |
| 253.8 | -54.10 | V | 6.7 | 0.24 | -47.64 | -13 | -34.64 |
| 639.7 | -50.59 | H | 6.5 | 0.39 | -44.48 | -13 | -31.48 |

**High channel**

| Frequency (MHz) | Substituted level (dBm) | Polarity (H/V) | Antenna Gain Correction (dB) | Cable Loss (dB) | Corrected Reading (dBm) | Limit (dBm) | Margin (dB) |
|---|---|---|---|---|---|---|---|
| 1422 | -49.98 | V | 10.72 | 1.65 | -40.91 | -13 | -27.91 |
| 1422 | -46.80 | H | 10.72 | 1.65 | -37.73 | -13 | -24.73 |
| 254.5 | -51.40 | V | 6.7 | 0.24 | -44.94 | -13 | -31.94 |
| 639.4 | -49.74 | H | 6.5 | 0.39 | -43.63 | -13 | -30.63 |

**Note:** 1. EUT Field Strength (dBm) = Reading (Signal generator) + Antenna Gain (substitution antenna) - Cable loss (From Signal Generator to substitution antenna).

2. Below 30MHZ no Spurious found and the QPSK modes is the worst condition.

# 8. FREQUENCY STABILITY

## 8.1 MEASUREMENT METHOD

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

1 , Measure the carrier frequency at room temperature.

2 , Subject the EUT to overnight soak at -10℃.

, With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on channel 20175 for LTE band 4 measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

3 , Repeat the above measurements at 10℃ increments from -10℃ to +50℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

4 , Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.

5 , Subject the EUT to overnight soak at +50℃.

6 , With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

7 , Repeat the above measurements at 10℃ increments from +50℃ to -10℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

8 , At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

## 8.2 PROVISIONS APPLICABLE

### 8.2.1 For Hand carried battery powered equipment

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-C-2004. The frequency stability of the transmitter is measured by:

a.) Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24 and Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

**8.2.2 For equipment powered by primary supply voltage**

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

## 8.3 MEASUREMENT RESULT (WORST)

**LTE Band 2**

| Middle Channel, $f_O$ = 1880 MHz | | | | |
|---|---|---|---|---|
| **Temperature (℃)** | **Power Supplied** | **Frequency Error (Hz)** | **Frequency Error (ppm)** | **Limit (ppm)** |
| -10 | 3.7 | -3.35 | -0.001781 | ±2.5 |
| 0 | | -4.03 | -0.002146 | ±2.5 |
| 10 | | -4.28 | -0.002275 | ±2.5 |
| 20 | | -4.09 | -0.002176 | ±2.5 |
| 30 | | -4.02 | -0.002138 | ±2.5 |
| 40 | | -3.98 | -0.002115 | ±2.5 |
| 50 | | -3.52 | -0.001872 | ±2.5 |
| 55 | | -2.49 | -0.001324 | ±2.5 |
| - 25 | 4.2 | -2.59 | -0.001377 | ±2.5 |
| | 3.5 | -3.83 | -0.002039 | ±2.5 |

**LTE Band 4**

| Middle Channel, $f_O$ = 1732.5 MHz | | | | |
|---|---|---|---|---|
| **Temperature (℃)** | **Power Supplied** | **Frequency Error (Hz)** | **Frequency Error (ppm)** | **Limit (ppm)** |
| -10 | 3.7 | -0.14 | -0.000083 | ±2.5 |
| 0 | | -0.33 | -0.000190 | ±2.5 |
| 10 | | 0.27 | 0.000157 | ±2.5 |
| 20 | | -0.34 | -0.000198 | ±2.5 |
| 30 | | 0.27 | 0.000157 | ±2.5 |
| 40 | | -0.34 | -0.000198 | ±2.5 |
| 50 | | -0.76 | -0.000438 | ±2.5 |
| 55 | | -1.00 | -0.000578 | ±2.5 |

| | | | | |
|---|---|---|---|---|
| - 25 | 4.2 | -0.43 | -0.000248 | ±2.5 |
| | 3.5 | -0.92 | -0.000528 | ±2.5 |

**LTE Band 12**

| Middle Channel, $f_O$ = 707.5 MHz | | | | |
|---|---|---|---|---|
| **Temperature (℃)** | **Power Supplied** | **Frequency Error (Hz)** | **Frequency Error (ppm)** | **Limit (ppm)** |
| -10 | 3.7 | -0.59 | -0.000829 | ±2.5 |
| 0 | | -0.83 | -0.001173 | ±2.5 |
| 10 | | -0.37 | -0.000526 | ±2.5 |
| 20 | | -0.13 | -0.000182 | ±2.5 |
| 30 | | -0.59 | -0.000829 | ±2.5 |
| 40 | | -0.84 | -0.001193 | ±2.5 |
| 50 | | -1.39 | -0.001961 | ±2.5 |
| 55 | | -0.87 | -0.001233 | ±2.5 |
| - 25 | 4.2 | 0.01 | 0.000020 | ±2.5 |
| | 3.5 | -0.86 | -0.001213 | ±2.5 |

**LTE Band 17**

| Middle Channel, $f_O$ = 710 MHz | | | | |
|---|---|---|---|---|
| **Temperature (℃)** | **Power Supplied** | **Frequency Error (Hz)** | **Frequency Error (ppm)** | **Limit (ppm)** |
| -10 | 3.7 | -1.56 | -0.002196 | ±2.5 |
| 0 | | 0.16 | 0.000222 | ±2.5 |
| 10 | | -0.13 | -0.000181 | ±2.5 |
| 20 | | -0.06 | -0.000081 | ±2.5 |
| 30 | | 0.41 | 0.000584 | ±2.5 |
| 40 | | 0.03 | 0.000040 | ±2.5 |
| 50 | | -0.64 | -0.000907 | ±2.5 |
| 55 | | -0.57 | -0.000806 | ±2.5 |
| 25 | 4.2 | -0.64 | -0.000907 | ±2.5 |
| | 3.5 | -0.31 | -0.000443 | ±2.5 |

Note: The EUT doesn't work below -10℃

# 9. OCCUPIED BANDWIDTH

## 9.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

## 9.2 PROVISIONS APPLICABLE

The emission bandwidth is defined as two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power

## 9.3 MEASUREMENT RESULT

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

**LTE Band 2**

**Channel Bandwidth: 1.4 MHz**

| Channel Bandwidth: 1.4 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 6 | 0 | 1.0782 | PASS |
| | MCH | 6 | 0 | 1.0787 | PASS |
| | HCH | 6 | 0 | 1.0777 | PASS |
| 16QAM | LCH | 6 | 0 | 1.0823 | PASS |
| | MCH | 6 | 0 | 1.0825 | PASS |
| | HCH | 6 | 0 | 1.0818 | PASS |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 15 | 0 | 2.6861 | PASS |
| | MCH | 15 | 0 | 2.6858 | PASS |
| | HCH | 15 | 0 | 2.6857 | PASS |
| 16QAM | LCH | 15 | 0 | 2.6852 | PASS |
| | MCH | 15 | 0 | 2.6842 | PASS |
| | HCH | 15 | 0 | 2.6840 | PASS |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |

| | | | | | |
|---|---|---|---|---|---|
| QPSK | LCH | 25 | 0 | 4.4802 | PASS |
| | MCH | 25 | 0 | 4.4752 | PASS |
| | HCH | 25 | 0 | 4.4835 | PASS |
| 16QAM | LCH | 25 | 0 | 4.4833 | PASS |
| | MCH | 25 | 0 | 4.4825 | PASS |
| | HCH | 25 | 0 | 4.4792 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 8.9463 | PASS |
| | MCH | 50 | 0 | 8.9378 | PASS |
| | HCH | 50 | 0 | 8.9484 | PASS |
| 16QAM | LCH | 50 | 0 | 8.9529 | PASS |
| | MCH | 50 | 0 | 8.9459 | PASS |
| | HCH | 50 | 0 | 8.9342 | PASS |

**Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 75 | 0 | 13.424 | PASS |
| | MCH | 75 | 0 | 13.417 | PASS |
| | HCH | 75 | 0 | 13.411 | PASS |
| 16QAM | LCH | 75 | 0 | 13.404 | PASS |
| | MCH | 75 | 0 | 13.406 | PASS |
| | HCH | 75 | 0 | 13.391 | PASS |

**Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 100 | 0 | 17.852 | PASS |
| | MCH | 100 | 0 | 17.856 | PASS |
| | HCH | 100 | 0 | 17.831 | PASS |
| 16QAM | LCH | 100 | 0 | 17.872 | PASS |
| | MCH | 100 | 0 | 17.867 | PASS |
| | HCH | 100 | 0 | 17.845 | PASS |

**LTE Band 4**

**Channel Bandwidth: 1.4 MHz**

| Channel Bandwidth: 1.4 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 6 | 0 | 1.0782 | PASS |
| | MCH | 6 | 0 | 1.0752 | PASS |
| | HCH | 6 | 0 | 1.0797 | PASS |
| 16QAM | LCH | 6 | 0 | 1.0785 | PASS |
| | MCH | 6 | 0 | 1.0776 | PASS |
| | HCH | 6 | 0 | 1.0761 | PASS |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 15 | 0 | 2.6790 | PASS |
| | MCH | 15 | 0 | 2.6843 | PASS |
| | HCH | 15 | 0 | 2.6844 | PASS |
| 16QAM | LCH | 15 | 0 | 2.6852 | PASS |
| | MCH | 15 | 0 | 2.6844 | PASS |
| | HCH | 15 | 0 | 2.6866 | PASS |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 25 | 0 | 4.4822 | PASS |
| | MCH | 25 | 0 | 4.4824 | PASS |
| | HCH | 25 | 0 | 4.4748 | PASS |
| 16QAM | LCH | 25 | 0 | 4.4728 | PASS |
| | MCH | 25 | 0 | 4.4819 | PASS |
| | HCH | 25 | 0 | 4.4826 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 8.9397 | PASS |

| | | | | | |
|---|---|---|---|---|---|
| | MCH | 50 | 0 | 8.9524 | PASS |
| | HCH | 50 | 0 | 8.9477 | PASS |
| 16QAM | LCH | 50 | 0 | 8.9344 | PASS |
| | MCH | 50 | 0 | 8.9532 | PASS |
| | HCH | 50 | 0 | 8.9589 | PASS |

**Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 75 | 0 | 13.383 | PASS |
| | MCH | 75 | 0 | 13.415 | PASS |
| | HCH | 75 | 0 | 13.396 | PASS |
| 16QAM | LCH | 75 | 0 | 13.380 | PASS |
| | MCH | 75 | 0 | 13.406 | PASS |
| | HCH | 75 | 0 | 13.408 | PASS |

**Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 100 | 0 | 17.849 | PASS |
| | MCH | 100 | 0 | 17.866 | PASS |
| | HCH | 100 | 0 | 17.813 | PASS |
| 16QAM | LCH | 100 | 0 | 17.846 | PASS |
| | MCH | 100 | 0 | 17.869 | PASS |
| | HCH | 100 | 0 | 17.804 | PASS |

**LTE Band 12**

**Channel Bandwidth: 1.4 MHz**

| Channel Bandwidth: 1.4 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 6 | 0 | 1.0783 | PASS |
| | MCH | 6 | 0 | 1.0782 | PASS |
| | HCH | 6 | 0 | 1.0772 | PASS |
| 16QAM | LCH | 6 | 0 | 1.0811 | PASS |
| | MCH | 6 | 0 | 1.0812 | PASS |
| | HCH | 6 | 0 | 1.0796 | PASS |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 15 | 0 | 2.6860 | PASS |
| | MCH | 15 | 0 | 2.6855 | PASS |
| | HCH | 15 | 0 | 2.6868 | PASS |
| 16QAM | LCH | 15 | 0 | 2.6862 | PASS |
| | MCH | 15 | 0 | 2.6842 | PASS |
| | HCH | 15 | 0 | 2.6842 | PASS |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 25 | 0 | 4.4744 | PASS |
| | MCH | 25 | 0 | 4.4793 | PASS |
| | HCH | 25 | 0 | 4.4752 | PASS |
| 16QAM | LCH | 25 | 0 | 4.4677 | PASS |
| | MCH | 25 | 0 | 4.4790 | PASS |
| | HCH | 25 | 0 | 4.4673 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 8.9334 | PASS |
| | MCH | 50 | 0 | 8.9728 | PASS |
| | HCH | 50 | 0 | 8.9634 | PASS |
| 16QAM | LCH | 50 | 0 | 8.9145 | PASS |
| | MCH | 50 | 0 | 8.9569 | PASS |
| | HCH | 50 | 0 | 8.9475 | PASS |

**LTE Band 17**

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 25 | 0 | 4.4844 | PASS |
| | MCH | 25 | 0 | 4.4898 | PASS |
| | HCH | 25 | 0 | 4.4770 | PASS |
| 16QAM | LCH | 25 | 0 | 4.4800 | PASS |
| | MCH | 25 | 0 | 4.4797 | PASS |
| | HCH | 25 | 0 | 4.4707 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Occupied Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 8.9719 | PASS |
| | MCH | 50 | 0 | 8.9725 | PASS |
| | HCH | 50 | 0 | 8.9510 | PASS |
| 16QAM | LCH | 50 | 0 | 8.9671 | PASS |
| | MCH | 50 | 0 | 8.9477 | PASS |
| | HCH | 50 | 0 | 8.9473 | PASS |

Note: Please refers to Appendix B for compliance test plots for Occupied Bandwidth (99%)

# 10. EMISSION BANDWIDTH

## 10.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

## 10.2 PROVISIONS APPLICABLE

The emission bandwidth is defined as two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power

## 10.3 MEASUREMENT RESULT

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

**LTE Band 2**

**Channel Bandwidth: 1.4 MHz**

| Channel Bandwidth: 1.4 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 6 | 0 | 1.254 | PASS |
| | MCH | 6 | 0 | 1.258 | PASS |
| | HCH | 6 | 0 | 1.260 | PASS |
| 16QAM | LCH | 6 | 0 | 1.258 | PASS |
| | MCH | 6 | 0 | 1.219 | PASS |
| | HCH | 6 | 0 | 1.290 | PASS |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 15 | 0 | 2.911 | PASS |
| | MCH | 15 | 0 | 2.892 | PASS |
| | HCH | 15 | 0 | 2.913 | PASS |
| 16QAM | LCH | 15 | 0 | 2.900 | PASS |
| | MCH | 15 | 0 | 2.893 | PASS |
| | HCH | 15 | 0 | 2.903 | PASS |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |

| | | | | | |
|---|---|---|---|---|---|
| QPSK | LCH | 25 | 0 | 4.790 | PASS |
| | MCH | 25 | 0 | 4.819 | PASS |
| | HCH | 25 | 0 | 4.799 | PASS |
| 16QAM | LCH | 25 | 0 | 4.816 | PASS |
| | MCH | 25 | 0 | 4.799 | PASS |
| | HCH | 25 | 0 | 4.816 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 9.598 | PASS |
| | MCH | 50 | 0 | 9.552 | PASS |
| | HCH | 50 | 0 | 9.430 | PASS |
| 16QAM | LCH | 50 | 0 | 9.610 | PASS |
| | MCH | 50 | 0 | 9.515 | PASS |
| | HCH | 50 | 0 | 9.511 | PASS |

**Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 75 | 0 | 14.36 | PASS |
| | MCH | 75 | 0 | 14.15 | PASS |
| | HCH | 75 | 0 | 14.06 | PASS |
| 16QAM | LCH | 75 | 0 | 14.15 | PASS |
| | MCH | 75 | 0 | 14.13 | PASS |
| | HCH | 75 | 0 | 13.97 | PASS |

**Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 100 | 0 | 18.67 | PASS |
| | MCH | 100 | 0 | 18.65 | PASS |
| | HCH | 100 | 0 | 18.62 | PASS |
| 16QAM | LCH | 100 | 0 | 18.71 | PASS |
| | MCH | 100 | 0 | 18.69 | PASS |
| | HCH | 100 | 0 | 18.58 | PASS |

**LTE Band 4**

**Channel Bandwidth: 1.4 MHz**

| Channel Bandwidth: 1.4 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 6 | 0 | 1.215 | PASS |
| | MCH | 6 | 0 | 1.233 | PASS |
| | HCH | 6 | 0 | 1.213 | PASS |
| 16QAM | LCH | 6 | 0 | 1.235 | PASS |
| | MCH | 6 | 0 | 1.233 | PASS |
| | HCH | 6 | 0 | 1.231 | PASS |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 15 | 0 | 2.881 | PASS |
| | MCH | 15 | 0 | 2.895 | PASS |
| | HCH | 15 | 0 | 2.905 | PASS |
| 16QAM | LCH | 15 | 0 | 2.894 | PASS |
| | MCH | 15 | 0 | 2.882 | PASS |
| | HCH | 15 | 0 | 2.909 | PASS |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 25 | 0 | 4.775 | PASS |
| | MCH | 25 | 0 | 4.835 | PASS |
| | HCH | 25 | 0 | 4.791 | PASS |
| 16QAM | LCH | 25 | 0 | 4.830 | PASS |
| | MCH | 25 | 0 | 4.820 | PASS |
| | HCH | 25 | 0 | 4.870 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 9.532 | PASS |
| | MCH | 50 | 0 | 9.481 | PASS |

| | | | | | |
|---|---|---|---|---|---|
| | HCH | 50 | 0 | 9.468 | PASS |
| 16QAM | LCH | 50 | 0 | 9.558 | PASS |
| | MCH | 50 | 0 | 9.484 | PASS |
| | HCH | 50 | 0 | 9.430 | PASS |

**Channel Bandwidth: 15 MHz**

| Channel Bandwidth: 15 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 75 | 0 | 14.07 | PASS |
| | MCH | 75 | 0 | 14.09 | PASS |
| | HCH | 75 | 0 | 14.08 | PASS |
| 16QAM | LCH | 75 | 0 | 13.99 | PASS |
| | MCH | 75 | 0 | 13.99 | PASS |
| | HCH | 75 | 0 | 13.98 | PASS |

**Channel Bandwidth: 20 MHz**

| Channel Bandwidth: 20 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 100 | 0 | 18.60 | PASS |
| | MCH | 100 | 0 | 18.59 | PASS |
| | HCH | 100 | 0 | 18.53 | PASS |
| 16QAM | LCH | 100 | 0 | 18.59 | PASS |
| | MCH | 100 | 0 | 18.62 | PASS |
| | HCH | 100 | 0 | 18.52 | PASS |

**LTE Band 12**

**Channel Bandwidth: 1.4 MHz**

| Channel Bandwidth: 1.4 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| - QPSK | LCH | 6 | 0 | 1.234 | PASS |
| | MCH | 6 | 0 | 1.226 | PASS |
| | HCH | 6 | 0 | 1.235 | PASS |
| 16QAM | LCH | 6 | 0 | 1.240 | PASS |
| | MCH | 6 | 0 | 1.239 | PASS |
| | HCH | 6 | 0 | 1.245 | PASS |

**Channel Bandwidth: 3 MHz**

| Channel Bandwidth: 3 MHz |
|---|

| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
|---|---|---|---|---|---|
| | | Size | Offset | | |
| QPSK | LCH | 15 | 0 | 2.893 | PASS |
| | MCH | 15 | 0 | 2.902 | PASS |
| | HCH | 15 | 0 | 2.886 | PASS |
| 16QAM | LCH | 15 | 0 | 2.893 | PASS |
| | MCH | 15 | 0 | 2.893 | PASS |
| | HCH | 15 | 0 | 2.897 | PASS |

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 25 | 0 | 4.771 | PASS |
| | MCH | 25 | 0 | 4.826 | PASS |
| | HCH | 25 | 0 | 4.791 | PASS |
| 16QAM | LCH | 25 | 0 | 4.810 | PASS |
| | MCH | 25 | 0 | 4.826 | PASS |
| | HCH | 25 | 0 | 4.830 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 9.480 | PASS |
| | MCH | 50 | 0 | 9.573 | PASS |
| | HCH | 50 | 0 | 9.456 | PASS |
| 16QAM | LCH | 50 | 0 | 9.422 | PASS |
| | MCH | 50 | 0 | 9.524 | PASS |
| | HCH | 50 | 0 | 9.454 | PASS |

**LTE Band 17**

**Channel Bandwidth: 5 MHz**

| Channel Bandwidth: 5 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth(MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 25 | 0 | 4.782 | PASS |
| | MCH | 25 | 0 | 4.810 | PASS |
| | HCH | 25 | 0 | 4.810 | PASS |
| 16QAM | LCH | 25 | 0 | 4.829 | PASS |

| | | | | | |
|---|---|---|---|---|---|
| | MCH | 25 | 0 | 4.824 | PASS |
| | HCH | 25 | 0 | 4.836 | PASS |

**Channel Bandwidth: 10 MHz**

| Channel Bandwidth: 10 MHz | | | | | |
|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | 26dB Bandwidth (MHz) | Verdict |
| | | Size | Offset | | |
| QPSK | LCH | 50 | 0 | 9.588 | PASS |
| | MCH | 50 | 0 | 9.523 | PASS |
| | HCH | 50 | 0 | 9.556 | PASS |
| 16QAM | LCH | 50 | 0 | 9.467 | PASS |
| | MCH | 50 | 0 | 9.482 | PASS |
| | HCH | 50 | 0 | 9.482 | PASS |

Note: Please refers to Appendix B for compliance test plots for emission bandwidth (-26dBc)

# 11. BAND EDGE

## 11.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

## 11.2 PROVISIONS APPLICABLE

As Specified in FCC rules of §2.1051 §24.238(a) §27.53(e) §27.53(g)
KDB 971168 v02r01 – Section 6.0

## 11.3 MEASUREMENT RESULT

All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequency. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.
The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.
Please refers to Appendix III for compliance test plots for band edge

# 12. MAINS CONDUCTED EMISSION

## 12.1 MEASUREMENT METHOD

The measurement procedure specified in ANSI/TIA-603-D-2010 was used for testing. Conducted Emission was measured with travel charger.

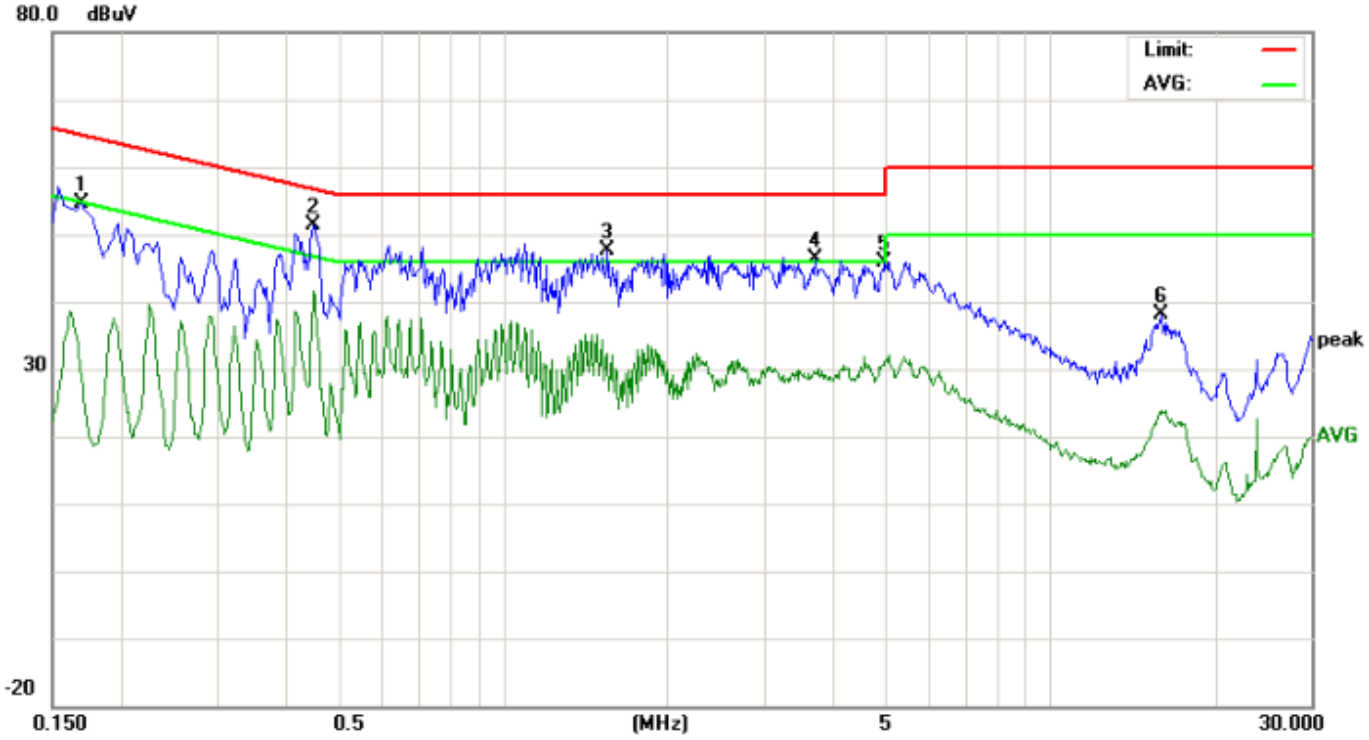
## 12.2 PROVISIONS APPLICABLE

| Frequency of Emission (MHz) | Conducted Limit(dBuV) | |
|---|---|---|
| | Quasi-Peak | Average |
| 0.15 – 0.5 | 66 to 56 * | 56 to 46 * |
| 0.5 – 5 | 56 | 46 |
| 5 – 30 | 60 | 50 |
| *Decreases with the logarithm of the frequency.<br>*The lower limit shall apply at the transition frequency. | | |

**Note:** The FDD Band 2 mode is the worst condition and the test result as following:

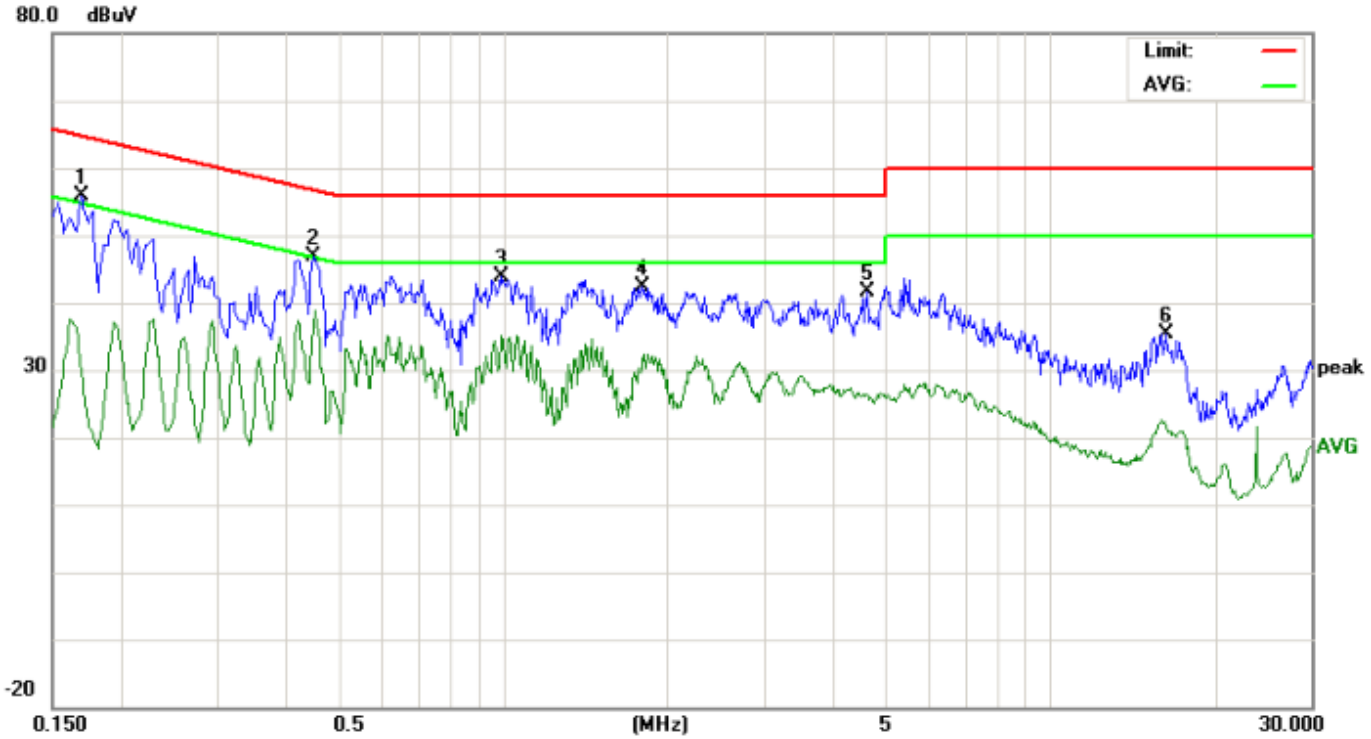
## 12.3 MEASUREMENT RESULT

LINE CONDUCTED EMISSION – L




| No. | Freq. (MHz) | Reading_Level (dBuV) | | | Correct Factor | Measurement (dBuV) | | | Limit (dBuV) | | Margin (dB) | | P/F | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Peak | QP | AVG | dB | Peak | QP | AVG | QP | AVG | QP | AVG | | |
| 1 | 0.1700 | 44.40 | | 18.27 | 10.18 | 54.58 | | 28.45 | 64.96 | 54.96 | -10.38 | -26.51 | P | |
| 2 | 0.4500 | 41.08 | | 31.20 | 10.37 | 51.45 | | 41.57 | 56.87 | 46.87 | -5.42 | -5.30 | P | |
| 3 | 1.5540 | 37.18 | | 20.91 | 10.36 | 47.54 | | 31.27 | 56.00 | 46.00 | -8.46 | -14.73 | P | |
| 4 | 3.7260 | 35.83 | | 18.78 | 10.47 | 46.30 | | 29.25 | 56.00 | 46.00 | -9.70 | -16.75 | P | |
| 5 | 4.9860 | 35.72 | | 20.72 | 10.24 | 45.96 | | 30.96 | 56.00 | 46.00 | -10.04 | -15.04 | P | |
| 6 | 16.0300 | 28.02 | | 13.29 | 10.11 | 38.13 | | 23.40 | 60.00 | 50.00 | -21.87 | -26.60 | P | |

LINE CONDUCTED EMISSION – N



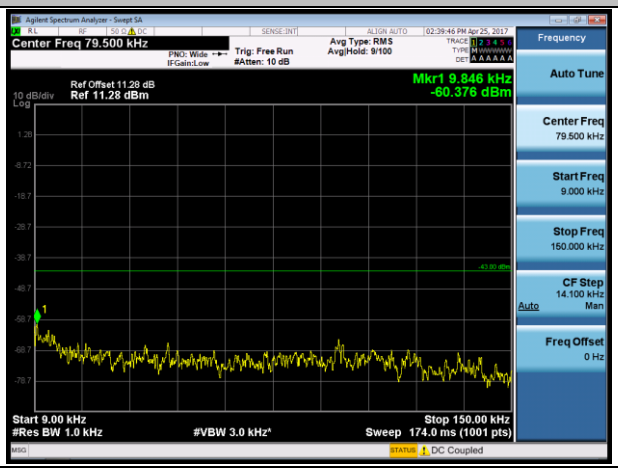
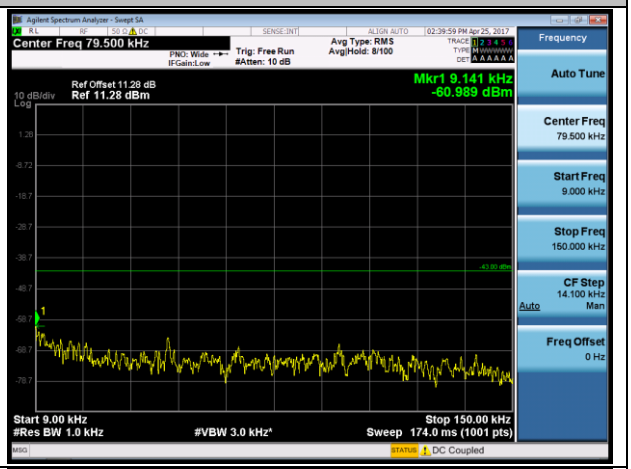
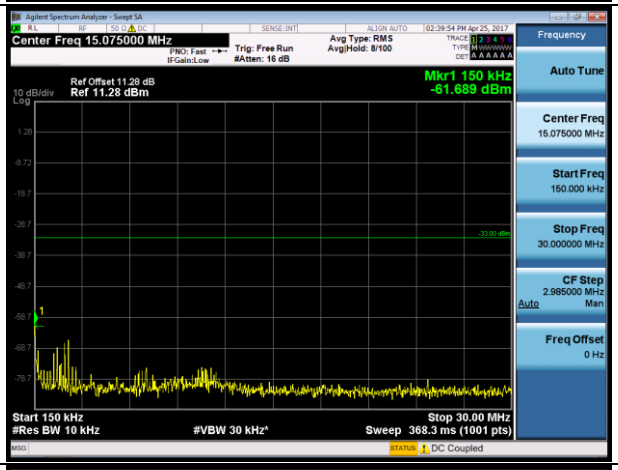
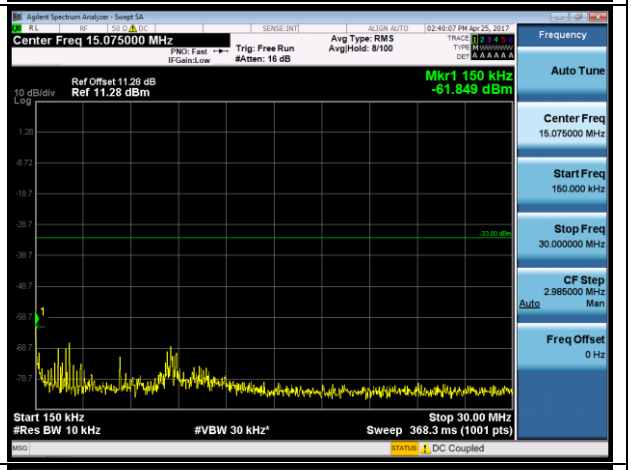

| No. | Freq. (MHz) | Reading_Level (dBuV) | | | Correct Factor | Measurement (dBuV) | | | Limit (dBuV) | | Margin (dB) | | P/F | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Peak | QP | AVG | dB | Peak | QP | AVG | QP | AVG | QP | AVG | | |
| 1 | 0.1700 | 45.61 | | 19.09 | 10.18 | 55.79 | | 29.27 | 64.96 | 54.96 | -9.17 | -25.69 | P | |
| 2 | 0.4500 | 36.60 | | 27.04 | 10.37 | 46.97 | | 37.41 | 56.87 | 46.87 | -9.90 | -9.46 | P | |
| 3 | 0.9940 | 33.44 | | 24.66 | 10.37 | 43.81 | | 35.03 | 56.00 | 46.00 | -12.19 | -10.97 | P | |
| 4 | 1.7980 | 32.22 | | 20.15 | 10.28 | 42.50 | | 30.43 | 56.00 | 46.00 | -13.50 | -15.57 | P | |
| 5 | 4.6380 | 31.51 | | 16.24 | 10.22 | 41.73 | | 26.46 | 56.00 | 46.00 | -14.27 | -19.54 | P | |
| 6 | 16.3500 | 25.32 | | 11.55 | 10.12 | 35.44 | | 21.67 | 60.00 | 50.00 | -24.56 | -28.33 | P | |

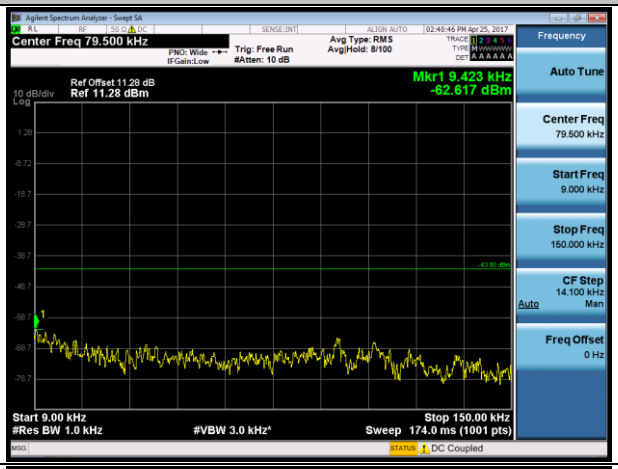
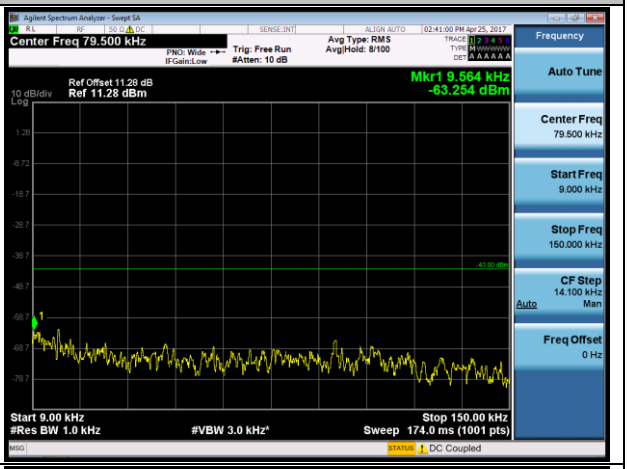
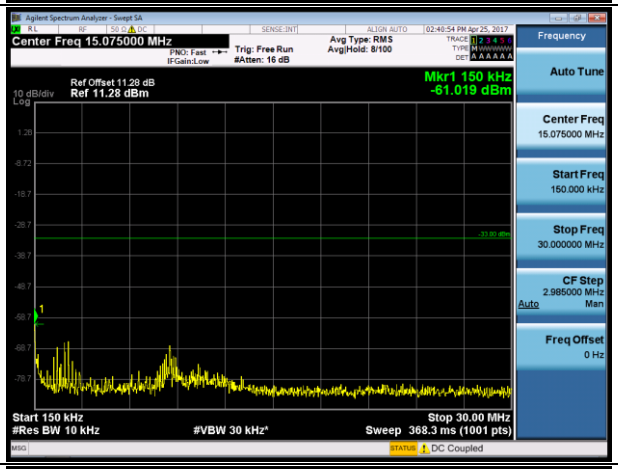
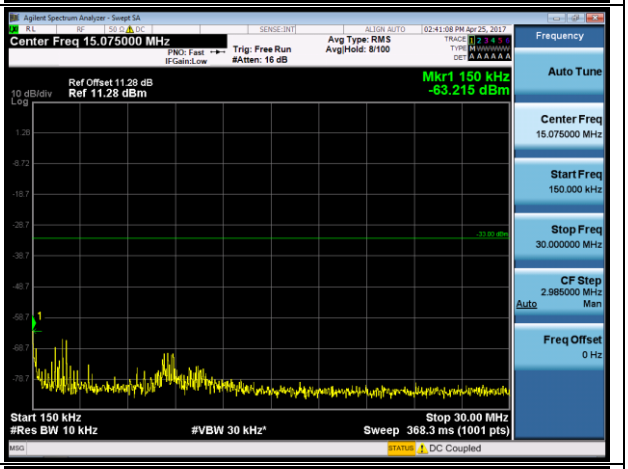
**Note:** The FDD Band 2 mode is the worst condition.

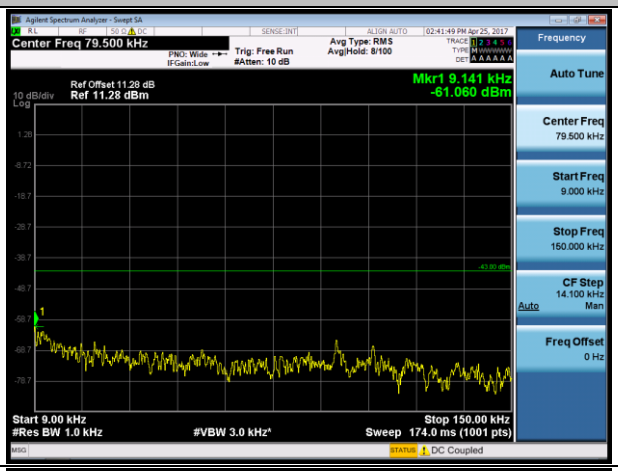
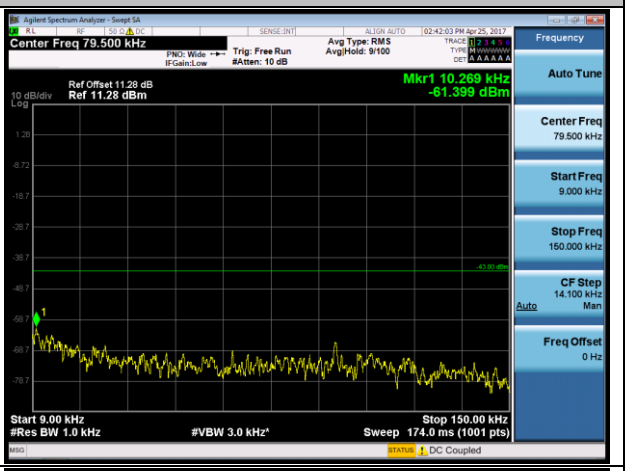
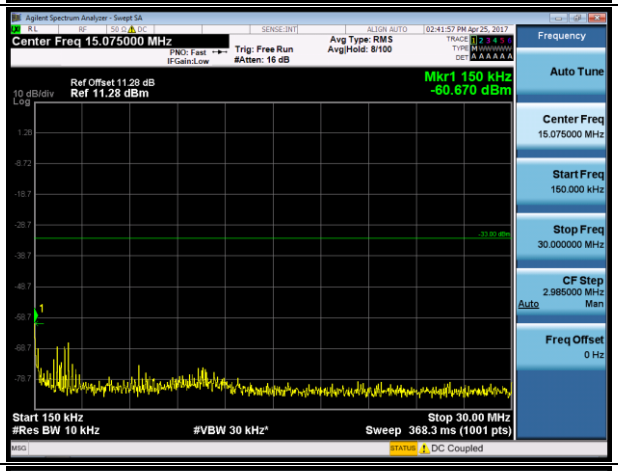
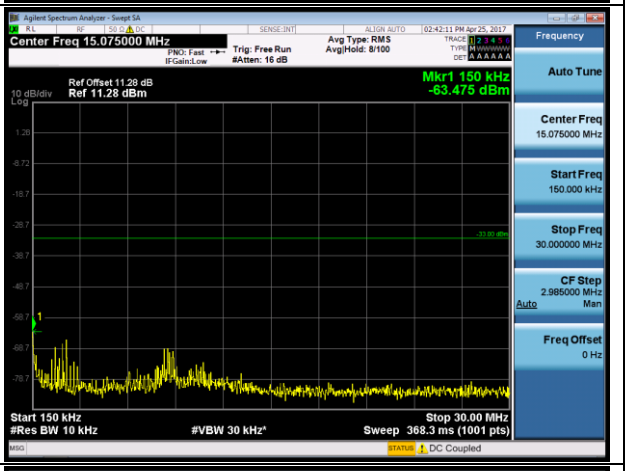
# APPENDIX A

## TEST PLOTS FOR CONDUCTED SPURIOUS EMISSION

### LTE BAND 2

| LCH_QPSK_1RB#0 | LCH_QPSK_1RB#24 |
|---|---|
|  |  |
|  |  |
|  |  |

| MCH_QPSK_1RB#0 | MCH_QPSK_1RB#24 |
|---|---|
|  |  |
|  |  |
|  |  |

| HCH_QPSK_1RB#0 | HCH_QPSK_1RB#24 |
| --- | --- |
|  |  |
|  |  |
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## LTE BAND 4

| LCH_QPSK_1RB#0 | LCH_QPSK_1RB#24 |
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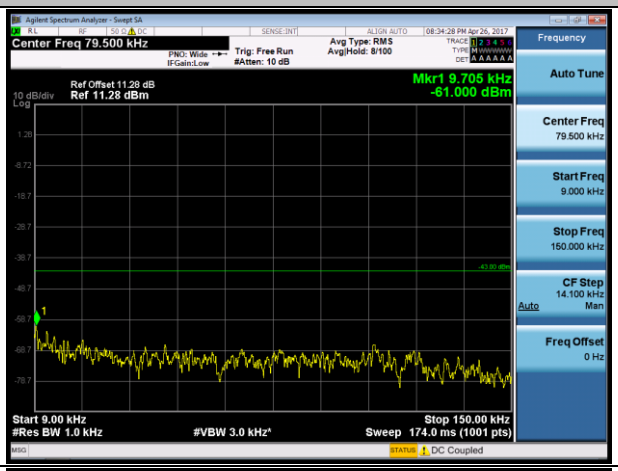
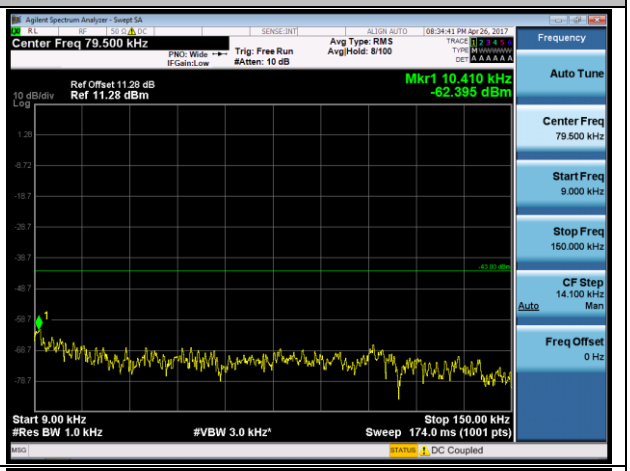
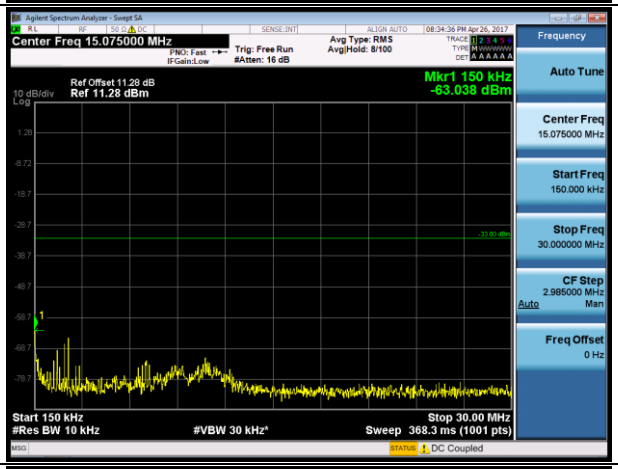
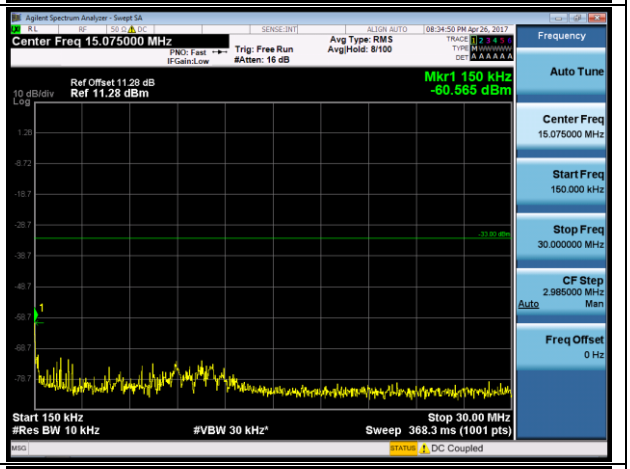
|  |  |
|  |  |
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| MCH_QPSK_1RB#0 | MCH_QPSK_1RB#24 |
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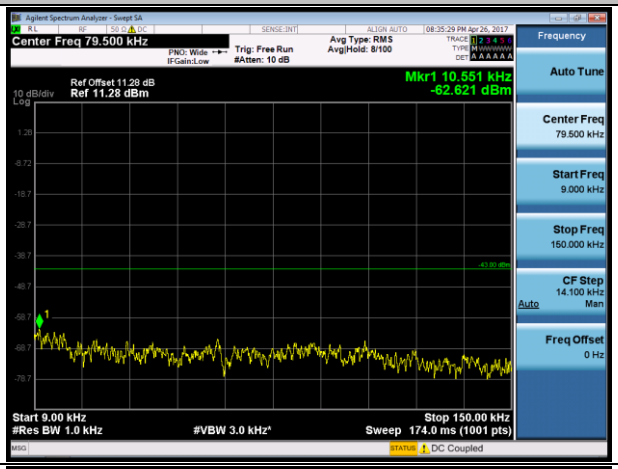
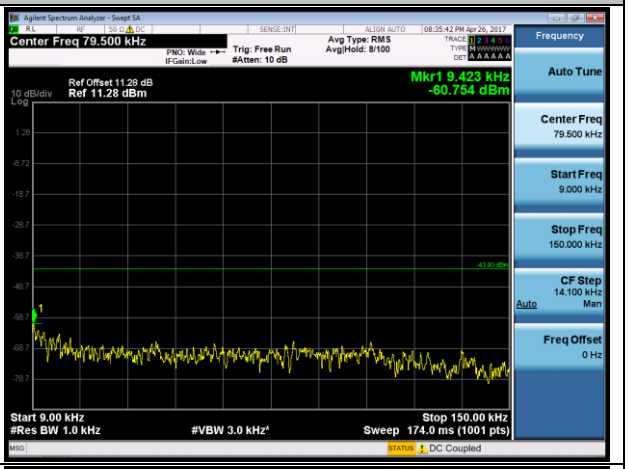
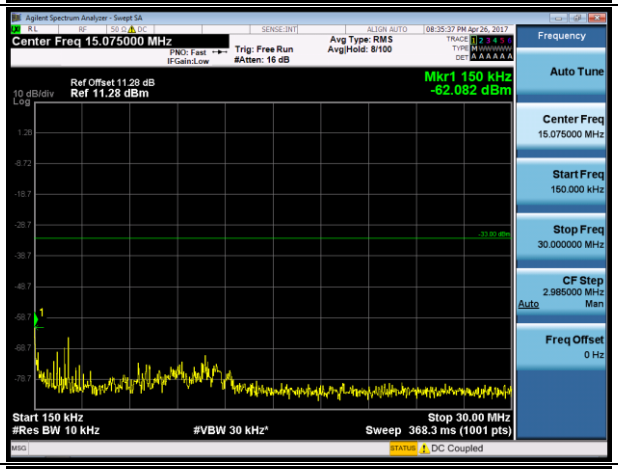
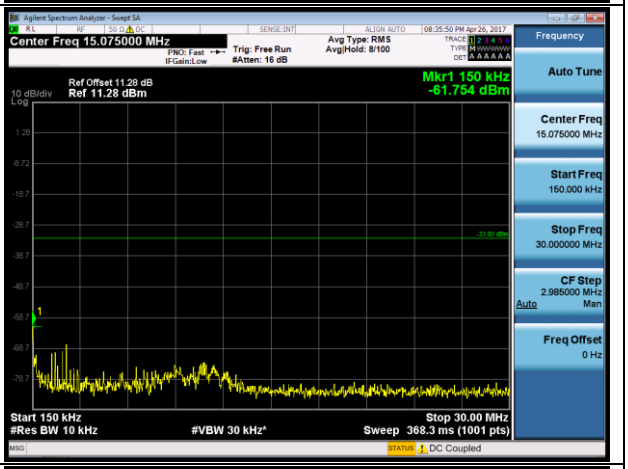
|  |  |
|  |  |
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| HCH_QPSK_1RB#0 | HCH_QPSK_1RB#24 |
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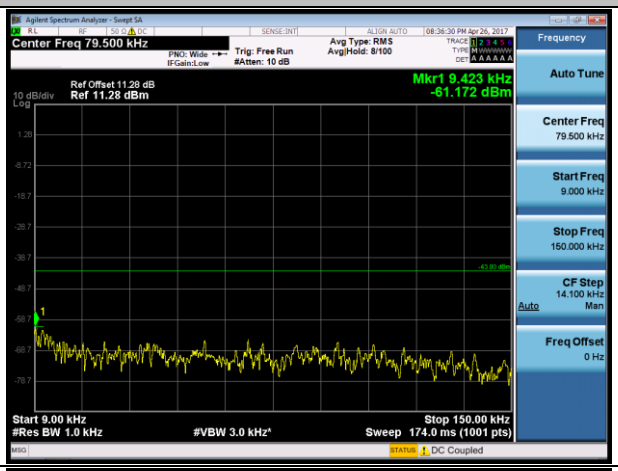
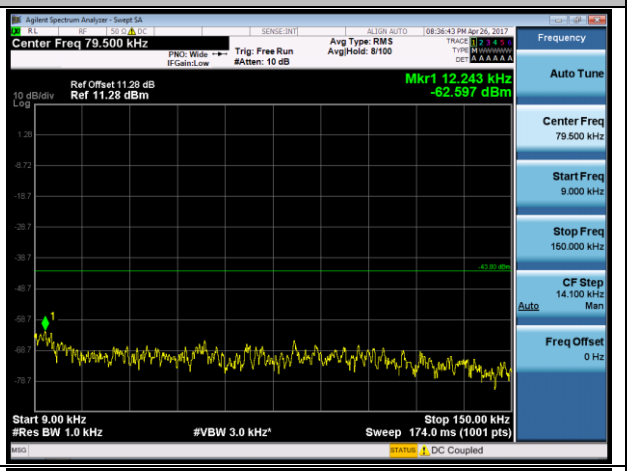
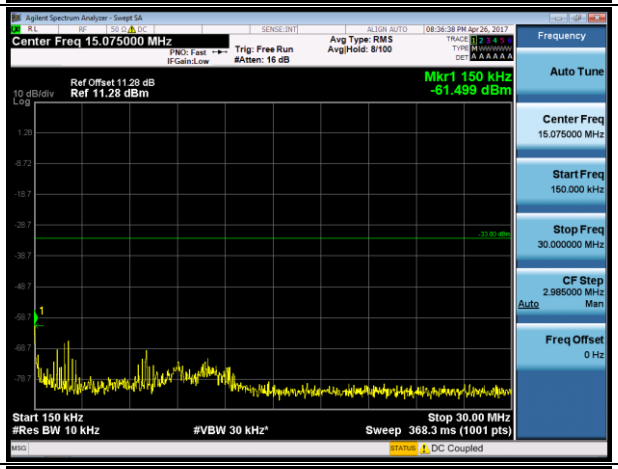
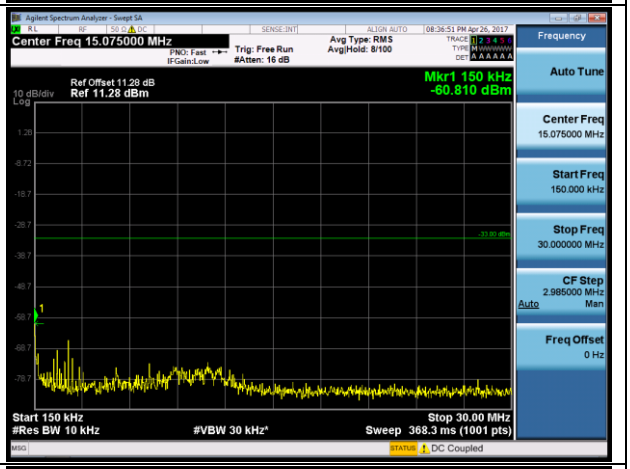
|  |  |
|  |  |
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## LTE BAND 12

| LCH_QPSK_1RB#0 | LCH_QPSK_1RB#24 |
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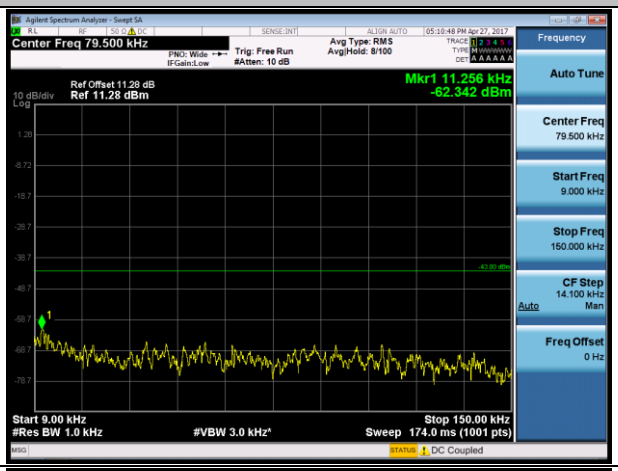
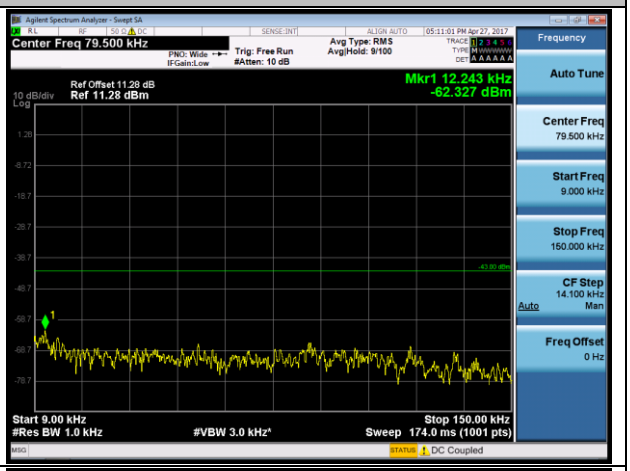
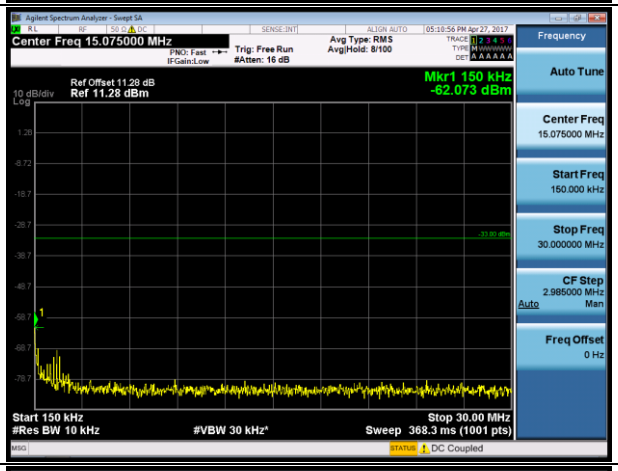
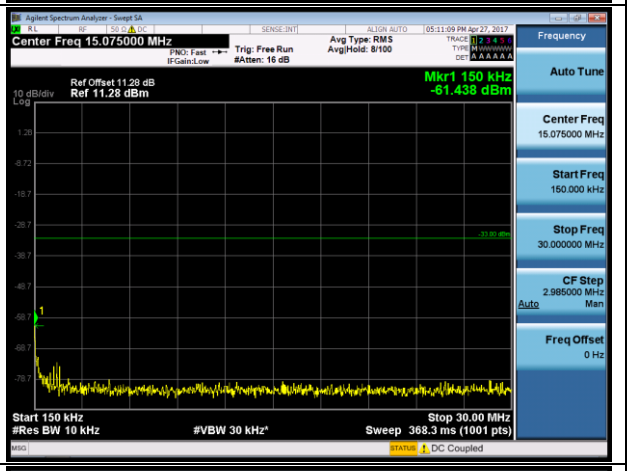
|  |  |
|  |  |
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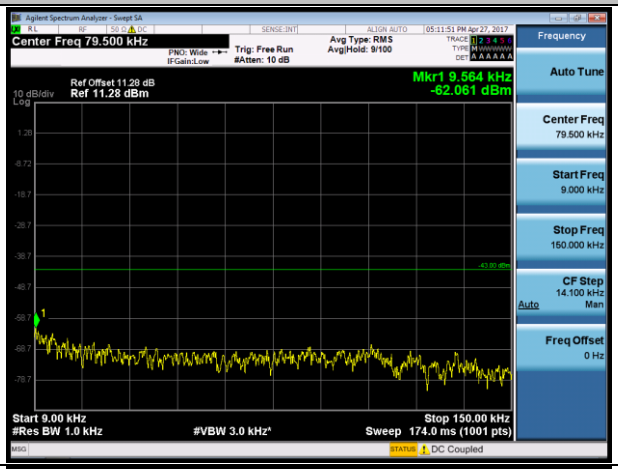
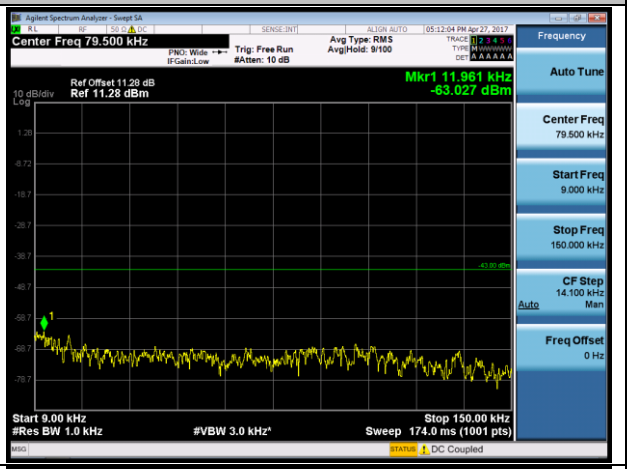
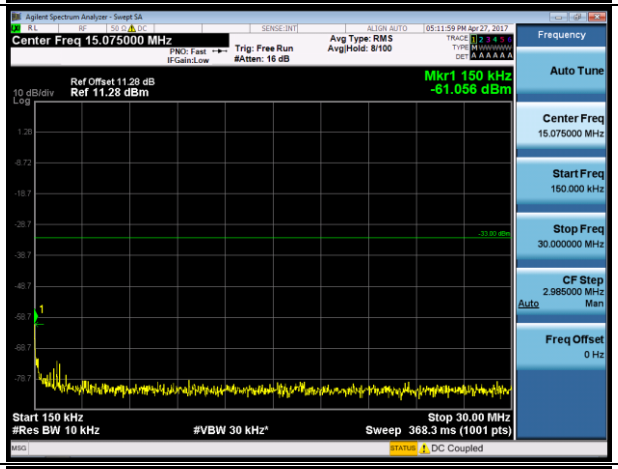
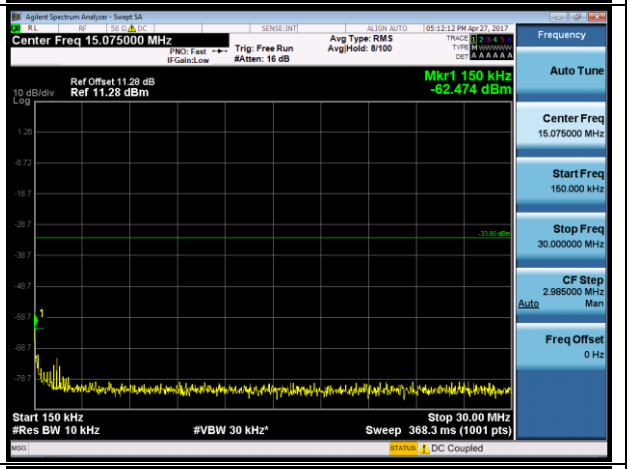
| MCH_QPSK_1RB#0 | MCH_QPSK_1RB#24 |
| --- | --- |
|  |  |
|  |  |
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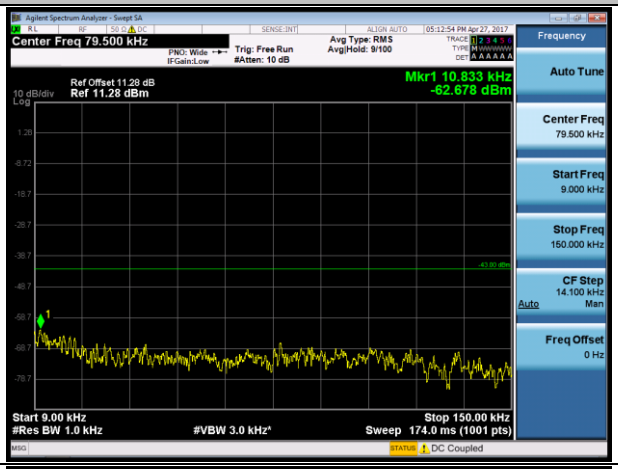
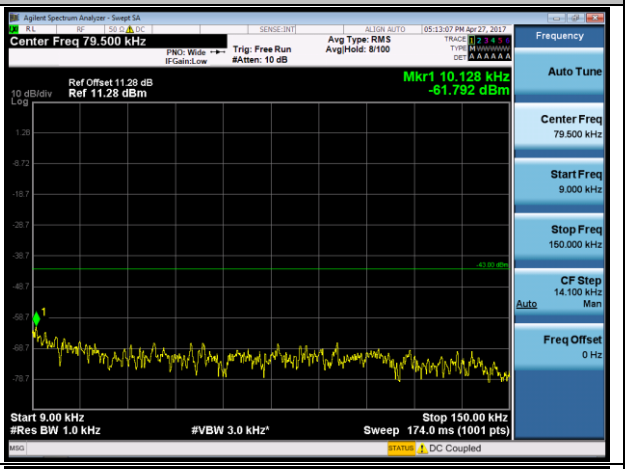
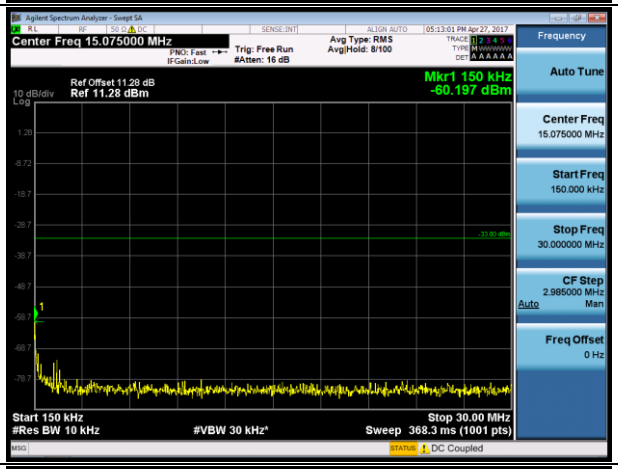
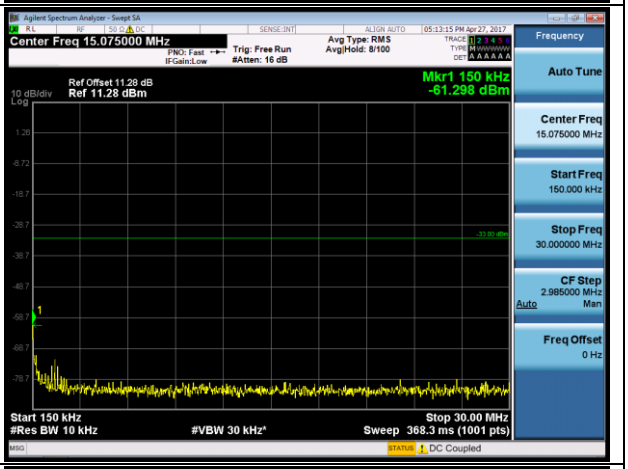
| HCH_QPSK_1RB#0 | HCH_QPSK_1RB#24 |
| --- | --- |
|  |  |
|  |  |
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