

## 7 SPURIOUS EMISSIONS

**Applicable Standard:** FCC§15.407(b)

(a) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(b) Unwanted spurious emission fallen in restricted bands per FCC Part 15.205 shall comply with the general field limits set forth in §15.209 as below table,

| Frequency (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009-0.490     | 2400/F(kHz)                       | 300                           |
| 0.490-1.705     | 24000/F(kHz)                      | 30                            |

|            |     |    |
|------------|-----|----|
| 1.705-30.0 | 30  | 30 |
| 30-88      | 100 | 3  |
| 88-216     | 150 | 3  |
| 216-960    | 200 | 3  |
| Above 960  | 50  | 3  |

c) KDB789033 v01 G)2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27dBm/MHz or -17dBm/MHz peak emission limit.

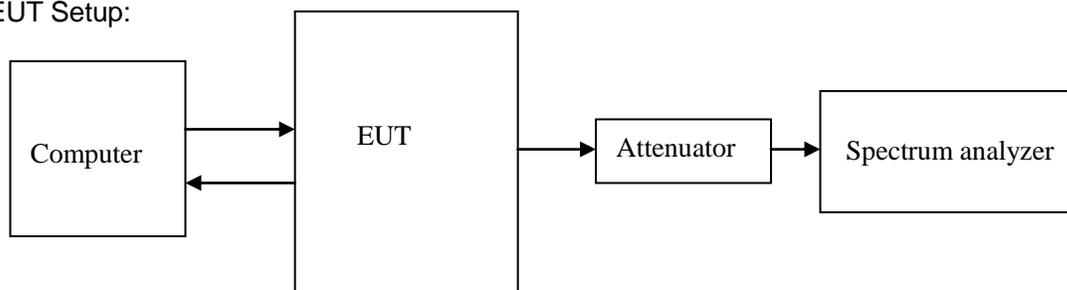
## Test Equipment List and Details

| Manufacturer | Description                  | Model      | Serial Number | Calibration Date | Calibration Due Date |
|--------------|------------------------------|------------|---------------|------------------|----------------------|
| Agilent      | MXA Series Spectrum Analyzer | N9020A     | MY51240300    | 2015.12.10       | 2016.12.10           |
| Agilent      | MXA Series Spectrum Analyze  | N9030A     | MY53310566    | 2015.06.28       | 2016.06.28           |
| Grentech     | 10dB Attenuator              | SGR-SJQ-10 | 09112005      | 2015.06.13       | 2016.06.13           |

**\*statement of traceability:** ZTE Corporation Reliability Testing Center attest that all calibration have been performed per the NVLAP requirements, traceable to NIST.

## Test Procedure

EUT Setup:



The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.

## Test Data Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 20 °C     |
| Relative Humidity: | 53 %      |
| ATM Pressure:      | 1009 mbar |

**Test Result:** Pass

**Test Mode:** Transmitting OFDM MIMO Access Point

## Test Data:

Channel Bandwidth: 20M

| Port | Carrier Freq. (MHz) | Spurious Emissions |        |           |        |        |           |        |        |           |
|------|---------------------|--------------------|--------|-----------|--------|--------|-----------|--------|--------|-----------|
|      |                     | QPSK               |        |           | 16QAM  |        |           | 64QAM  |        |           |
|      |                     | 30M-1G             | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G |
| 0    | 5160                | -63.75             | -54.18 | -56.51    | -63.94 | -54.17 | -56.61    | -63.42 | -54.55 | -56.12    |
| 1    |                     | -63.48             | -54.27 | -56.63    | -64.01 | -54.65 | -56.8     | -63.79 | -54.51 | -55.89    |
| 2    |                     | -63.66             | -54    | -56.24    | -63.9  | -54.45 | -56.22    | -63.87 | -54    | -55.37    |
| 3    |                     | -63.75             | -54.32 | -56.39    | -63.14 | -54.46 | -56.29    | -69.66 | -54.31 | -55.5     |
| 0    | 5200                | -64.32             | -54.53 | -52.77    | -63.34 | -53.88 | -52.2     | -63.9  | -54.84 | -51.89    |
| 1    |                     | -63.62             | -54.1  | -53.2     | -63.64 | -54.69 | -52.55    | -64.06 | -54.11 | -51.97    |
| 2    |                     | -64.22             | -54.92 | -52.64    | -63.35 | -54.17 | -51.96    | -63.61 | -54.43 | -51.66    |
| 3    |                     | -63.67             | -55.13 | -53.28    | -63.99 | -55.07 | -52.61    | -63.93 | -54.37 | -52.29    |
| 0    | 5240                | -64.13             | -54.45 | -50.9     | -64.13 | -54.51 | -50.69    | -63.7  | -54.75 | -50.19    |
| 1    |                     | -64.08             | -54.86 | -50.54    | -63.89 | -54.41 | -50.34    | -63.67 | -54.11 | -49.86    |
| 2    |                     | -63.96             | -54.58 | -50.45    | -63.57 | -54.07 | -50.31    | -63.4  | -54.3  | -50.25    |
| 3    |                     | -63.51             | -54.64 | -50.77    | -63.54 | -54.09 | -50.53    | -63.94 | -54.36 | -50.05    |

Channel Bandwidth: 20M

| Port | Carrier Freq. (MHz) | Spurious Emissions |         |           |         |           |         |
|------|---------------------|--------------------|---------|-----------|---------|-----------|---------|
|      |                     | QPSK               |         | 16QAM     |         | 64QAM     |         |
|      |                     | BAND EDGE          |         | BAND EDGE |         | BAND EDGE |         |
|      |                     | 5150MHz            | 5350MHz | 5150MHz   | 5350MHz | 5150MHz   | 5350MHz |
| 0    | 5160                | -51.34             | -57.67  | -50.48    | -56.3   | -52.03    | -58.36  |
| 1    |                     | -51.95             | -59.19  | -50.92    | -56.87  | -52.98    | -58.64  |
| 2    |                     | -50.62             | -55.86  | -50.74    | -56.08  | -51.64    | -56.67  |
| 3    |                     | -50.14             | -56.06  | -51.25    | -56.58  | -51.82    | -57.12  |
| 0    | 5200                | -57.62             | -56.21  | -58.95    | -56.59  | -57.68    | -56.27  |
| 1    |                     | -58.21             | -56.1   | -58.76    | -56.79  | -58.4     | -55.4   |
| 2    |                     | -55.66             | -55.28  | -56.71    | -54.15  | -56.38    | -54.89  |
| 3    |                     | -56.37             | -55.47  | -57.19    | -55.2   | -57.47    | -55.23  |
| 0    | 5240                | -58.05             | -57.34  | -58.95    | -56.79  | -58.27    | -55.93  |
| 1    |                     | -57.56             | -55.81  | -57.14    | -55.82  | -58.83    | -56.6   |
| 2    |                     | -55.45             | -55.27  | -55.98    | -55.36  | -55.75    | -54.86  |
| 3    |                     | -57.64             | -55.52  | -55.97    | -54.8   | -56.87    | -56.16  |

Channel Bandwidth: 20+20+20+20M

| Port | Carrier Freq. (MHz) | Spurious Emissions |        |           |        |        |           |        |        |           |
|------|---------------------|--------------------|--------|-----------|--------|--------|-----------|--------|--------|-----------|
|      |                     | QPSK               |        |           | 16QAM  |        |           | 64QAM  |        |           |
|      |                     | 30M-1G             | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G |
| 0    | 5160+5180+5200+5220 | -63.73             | -54.56 | -56.28    | -63.15 | -55.38 | -56.34    | -62.75 | -54.95 | -56.91    |
| 1    |                     | -62.28             | -54.3  | -56.7     | -62.67 | -54.01 | -56.56    | -63.45 | -54.7  | -56.53    |
| 2    |                     | -62.49             | -54.24 | -56.53    | -63.46 | -53.9  | -56.57    | -63.17 | -54.32 | -56.2     |
| 3    |                     | -62.22             | -54.59 | -57.58    | -63.24 | -54.65 | -57.83    | -62.82 | -54.01 | -57.29    |
| 0    | 5170+5190+5210+5230 | -62.97             | -54.63 | -58.04    | -63.13 | -54.37 | -57.87    | -63.28 | -54.59 | -58.06    |
| 1    |                     | -63.09             | -54.36 | -58.58    | -63.28 | -54.47 | -58.31    | -62.72 | -54.28 | -57.37    |
| 2    |                     | -63.36             | -54.43 | -58.47    | -62.99 | -53.8  | -57.92    | -62.57 | -54.25 | -57.75    |
| 3    |                     | -62.42             | -54.33 | -58.7     | -63.47 | -54.45 | -58.57    | -63.13 | -54.62 | -58.32    |
| 0    | 5180+5200+5220+5240 | -63.08             | -54.08 | -57.51    | -62.61 | -54.45 | -57.83    | -62.88 | -54.07 | -57.81    |
| 1    |                     | -62.67             | -54.35 | -57.41    | -62.82 | -54.49 | -57.39    | -63.25 | -54.36 | -57.42    |
| 2    |                     | -63.44             | -54.03 | -56.35    | -62.62 | -54.23 | -56.33    | -63.13 | -54.35 | -57.68    |
| 3    |                     | -63.22             | -54.99 | -57.69    | -63.14 | -53.82 | -57.6     | -62.72 | -54.37 | -57.85    |
| 0    | 5160+5180+5220+5240 | -63.68             | -54.17 | -56.69    | -63.57 | -54.19 | -56.06    | -64.05 | -54.47 | -56.41    |
| 1    |                     | -64.33             | -53.96 | -57.57    | -63.81 | -54.55 | -57.21    | -63.97 | -54.87 | -57.63    |
| 2    |                     | -63.06             | -54.39 | -57.05    | -63.67 | -54.69 | -56.73    | -63.99 | -54.7  | -56.97    |
| 3    |                     | -63.13             | -54.87 | -56.91    | -63.54 | -54.69 | -56.5     | -63.8  | -54.6  | -56.75    |

Channel Bandwidth: 20+20+20+20M

| Port | Carrier Freq. (MHz) | Spurious Emissions |         |           |         |           |         |
|------|---------------------|--------------------|---------|-----------|---------|-----------|---------|
|      |                     | QPSK               |         | 16QAM     |         | 64QAM     |         |
|      |                     | BAND EDGE          |         | BAND EDGE |         | BAND EDGE |         |
|      |                     | 5150MHz            | 5350MHz | 5150MHz   | 5350MHz | 5150MHz   | 5350MHz |
| 0    | 5160+5180+5200+5220 | -53.42             | -55.41  | -53.39    | -54.6   | -53.01    | -53.84  |
| 1    |                     | -53.07             | -53.22  | -53.4     | -54.12  | -54.84    | -55.15  |
| 2    |                     | -54.03             | -53.62  | -52.61    | -53.41  | -54.86    | -53.21  |
| 3    |                     | -54.15             | -53.49  | -53.05    | -53.89  | -54.09    | -52.29  |
| 0    | 5170+5190+5210+5230 | -53.77             | -55.32  | -55.54    | -54.59  | -54.81    | -54.95  |
| 1    |                     | -53.12             | -54.99  | -54.25    | -54.14  | -54.85    | -53.07  |
| 2    |                     | -55.65             | -53.72  | -55.7     | -55.84  | -56.13    | -55.38  |
| 3    |                     | -54.82             | -53.67  | -54.68    | -53.32  | -54.52    | -53.94  |
| 0    | 5180+5200+5220+5240 | -56.26             | -54.22  | -55.94    | -54.96  | -55.43    | -55.28  |
| 1    |                     | -55.84             | -55.11  | -55.13    | -54.1   | -55.7     | -53.95  |
| 2    |                     | -53.9              | -53.93  | -54.06    | -53.07  | -54.1     | -52.94  |
| 3    |                     | -56.28             | -52.5   | -53.87    | -53.58  | -56.61    | -52.99  |
| 0    | 5160+5180+5220+5240 | -52.67             | -51.74  | -53.81    | -51.85  | -55.7     | -52.67  |
| 1    |                     | -54.14             | -53.45  | -53.69    | -52.96  | -55       | -53.45  |
| 2    |                     | -53.93             | -53.98  | -53.67    | -54.55  | -53.95    | -52.88  |
| 3    |                     | -53.69             | -54.2   | -54.55    | -55.24  | -53.99    | -53.24  |

Channel Bandwidth: 20M (4 port)

| Carrier Freq. (MHz) | Spurious Emissions(EIRP) |        |           |        |        |           |        |        |           | Limit (dBm/MHz) |
|---------------------|--------------------------|--------|-----------|--------|--------|-----------|--------|--------|-----------|-----------------|
|                     | QPSK                     |        |           | 16QAM  |        |           | 64QAM  |        |           |                 |
|                     | 30M-1G                   | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G |                 |
| 5160                | -51.64                   | -42.17 | -44.42    | -51.71 | -42.41 | -44.45    | -52.57 | -42.32 | -43.69    | <-27            |
| 5200                | -51.93                   | -42.63 | -40.94    | -51.55 | -42.41 | -40.30    | -51.85 | -42.41 | -39.93    |                 |
| 5240                | -51.89                   | -42.61 | -38.64    | -51.76 | -42.25 | -38.44    | -51.65 | -42.35 | -38.06    |                 |

Channel Bandwidth: 20M (4 port)

| Carrier Freq. (MHz) | Spurious Emissions(EIRP) |         |           |         |           |         | Limit (dBm/MHz) |
|---------------------|--------------------------|---------|-----------|---------|-----------|---------|-----------------|
|                     | QPSK                     |         | 16QAM     |         | 64QAM     |         |                 |
|                     | BAND EDGE                |         | BAND EDGE |         | BAND EDGE |         |                 |
|                     | 5150MHz                  | 5350MHz | 5150MHz   | 5350MHz | 5150MHz   | 5350MHz |                 |
| 5160                | -38.94                   | -44.98  | -38.82    | -44.43  | -40.07    | -45.60  | <-27            |
| 5200                | -44.83                   | -43.73  | -45.77    | -43.53  | -45.40    | -43.40  |                 |
| 5240                | -45.03                   | -43.89  | -44.83    | -43.61  | -45.24    | -43.82  |                 |

Channel Bandwidth: 20+20+20+20M (4 port)

| Carrier Freq. (MHz)             | Spurious Emissions(EIRP) |        |           |        |        |           |        |        |           | Limit (dBm /MHz) |
|---------------------------------|--------------------------|--------|-----------|--------|--------|-----------|--------|--------|-----------|------------------|
|                                 | QPSK                     |        |           | 16QAM  |        |           | 64QAM  |        |           |                  |
|                                 | 30M-1G                   | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G | 30M-1G | 1G-10G | 10G-26.5G |                  |
| 5160<br>+5180<br>+5200<br>+5220 | -50.62                   | -42.40 | -44.73    | -51.10 | -42.43 | -44.77    | -51.02 | -42.46 | -44.69    | <-27             |
| 5170<br>+5190<br>+5210<br>+5230 | -50.93                   | -42.42 | -46.42    | -51.19 | -42.24 | -46.14    | -50.89 | -42.41 | -45.84    |                  |
| 5180<br>+5200<br>+5220<br>+5240 | -51.07                   | -42.33 | -45.19    | -50.77 | -42.22 | -45.23    | -50.97 | -42.27 | -45.67    |                  |
| 5160<br>+5180<br>+5220<br>+5240 | -51.50                   | -42.31 | -45.02    | -51.63 | -42.50 | -44.58    | -51.93 | -42.64 | -44.90    |                  |

Channel Bandwidth: 20+20+20+20M (4 port)

| Carrier Freq. (MHz) | Spurious Emissions(EIRP) |         |           |         |           |         | Limit (dBm/MHz) |
|---------------------|--------------------------|---------|-----------|---------|-----------|---------|-----------------|
|                     | QPSK                     |         | 16QAM     |         | 64QAM     |         |                 |
|                     | BAND EDGE                |         | BAND EDGE |         | BAND EDGE |         |                 |
|                     | 5150MHz                  | 5350MHz | 5150MHz   | 5350MHz | 5150MHz   | 5350MHz |                 |
| 5160+5180+5200+5220 | -41.62                   | -41.83  | -41.08    | -41.96  | -42.11    | -41.48  | <-27            |
| 5170+5190+5210+5230 | -42.21                   | -42.34  | -42.98    | -42.36  | -43.01    | -42.22  |                 |
| 5180+5200+5220+5240 | -43.43                   | -41.82  | -42.65    | -41.85  | -43.34    | -41.67  |                 |
| 5160+5180+5220+5240 | -41.55                   | -41.21  | -41.89    | -41.43  | -42.58    | -41.03  |                 |

