

## 2.6 Band Edge

### 2.6.1 Requirement

According to FCC section 22.917(b) and FCC section 24.238(b) in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

### 2.6.2 Test Description

See section 2.1.2 of this report.

### 2.6.3 Test Result

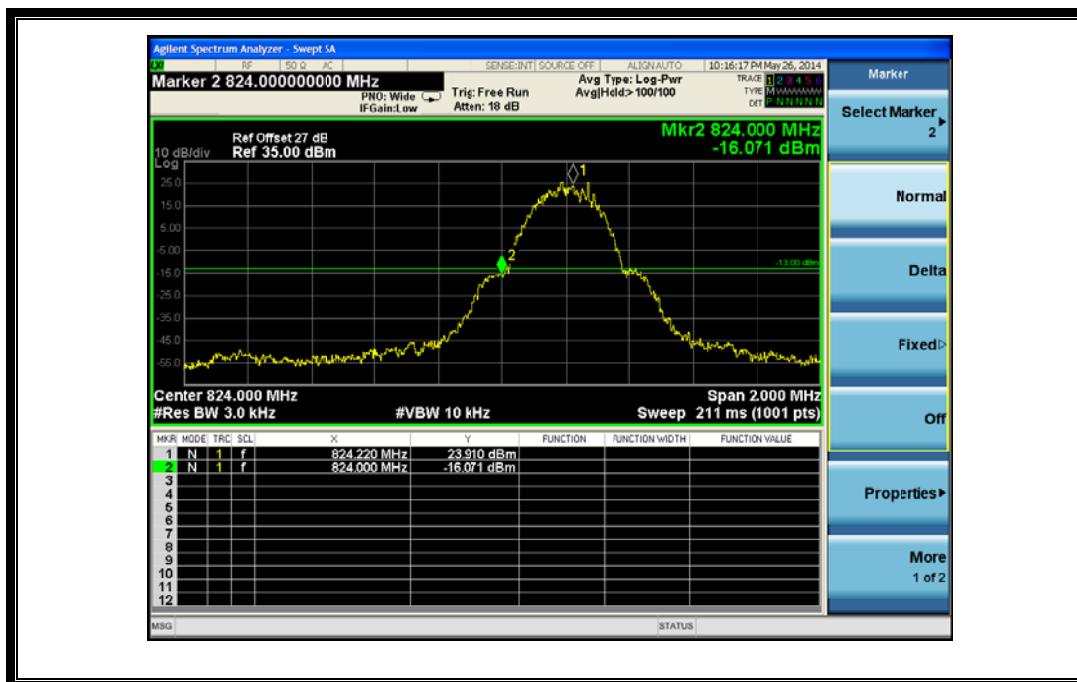
The lowest and highest channels are tested to verify the band edge emissions.

#### 1. Test Verdict:

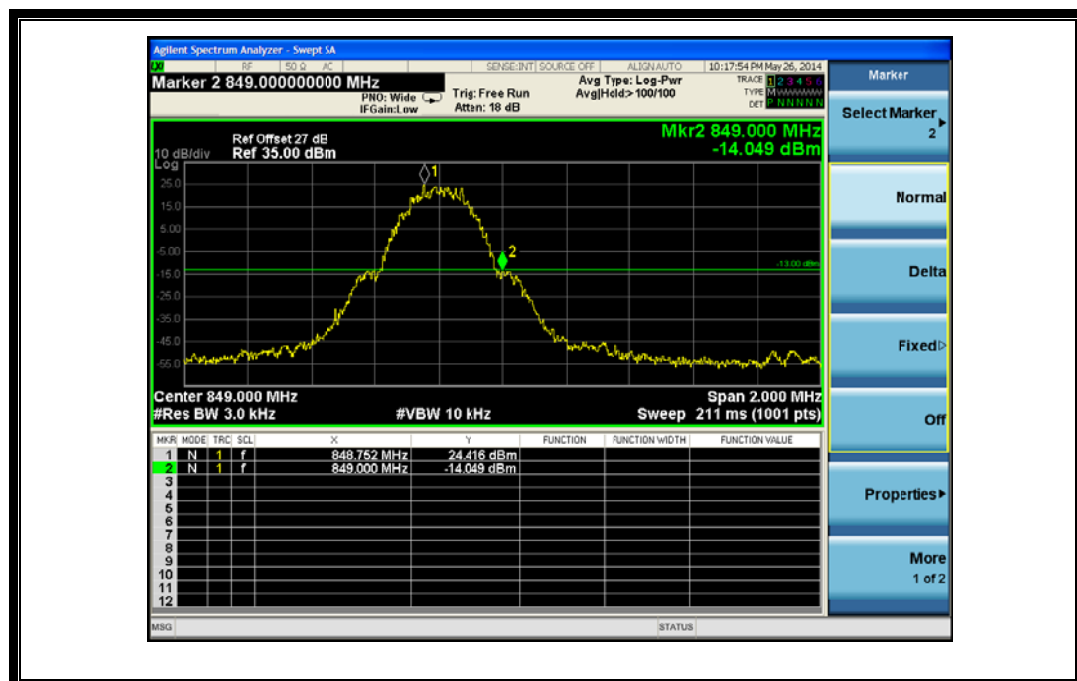
| Band          | Channel | Frequency (MHz) | Measured Max. Band Edge Emission (dBm) | Refer to Plot | Limit (dBm) | Verdict     |
|---------------|---------|-----------------|----------------------------------------|---------------|-------------|-------------|
| GSM 850MHz    | 128     | 824.2           | -16.07                                 | Plat A        | -13         | <u>PASS</u> |
|               | 251     | 848.8           | -14.05                                 | Plot B        |             | <u>PASS</u> |
| GSM 1900MHz   | 512     | 1850.2          | -14.53                                 | Plat C        | -13         | <u>PASS</u> |
|               | 810     | 1909.8          | -15.07                                 | Plot D        |             | <u>PASS</u> |
| EDGE 850MHz   | 128     | 824.2           | -13.72                                 | Plat E        | -13         | <u>PASS</u> |
|               | 251     | 848.8           | -13.76                                 | Plot F        |             | <u>PASS</u> |
| EDGE 1900MHz  | 512     | 1850.2          | -16.75                                 | Plat G        | -13         | <u>PASS</u> |
|               | 810     | 1909.8          | -17.59                                 | Plot H        |             | <u>PASS</u> |
| WCDMA 850MHz  | 4132    | 826.4           | -23.820                                | Plat I        | -13         | <u>PASS</u> |
|               | 4233    | 846.6           | -22.736                                | Plot J        |             | <u>PASS</u> |
| WCDMA 1900MHz | 9262    | 1852.4          | -21.991                                | Plat K        | -13         | <u>PASS</u> |
|               | 9538    | 1907.6          | -21.478                                | Plot L        |             | <u>PASS</u> |
| HSDPA 850MHz  | 4132    | 826.4           | -24.029                                | Plat M        | -13         | <u>PASS</u> |
|               | 4233    | 846.6           | -23.772                                | Plot N        |             | <u>PASS</u> |
| HSDPA 1900MHz | 9262    | 1852.4          | -23.021                                | Plat O        | -13         | <u>PASS</u> |
|               | 9538    | 1907.6          | -21.379                                | Plot P        |             | <u>PASS</u> |
| HSUPA 850MHz  | 4132    | 826.4           | -22.478                                | Plat Q        | -13         | <u>PASS</u> |
|               | 4233    | 846.6           | -23.520                                | Plot R        |             | <u>PASS</u> |
| HSUPA         | 9262    | 1852.4          | -22.161                                | Plat S        | -13         | <u>PASS</u> |

|         |      |        |         |        |     |             |
|---------|------|--------|---------|--------|-----|-------------|
| 1900MHz | 9538 | 1907.6 | -21.156 | Plot T |     | <u>PASS</u> |
| HSPA+   | 4132 | 826.4  | -22.890 | Plot U | -13 | <u>PASS</u> |
| 850MHz  | 4233 | 846.6  | -23.407 | Plot V |     | <u>PASS</u> |
| HSPA+   | 9262 | 1852.4 | -22.104 | Plot W | -13 | <u>PASS</u> |
| 1900MHz | 9538 | 1907.6 | -21.210 | Plot X |     | <u>PASS</u> |

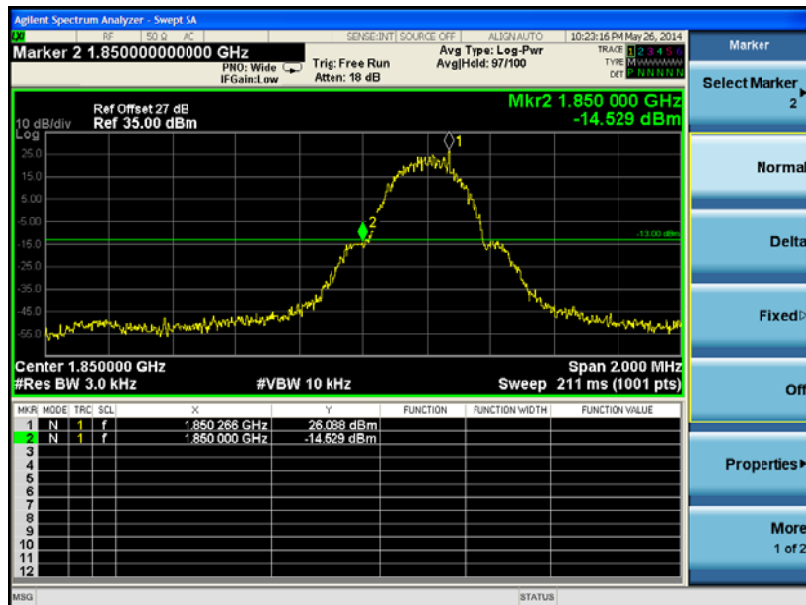
## 2. Test Plots:



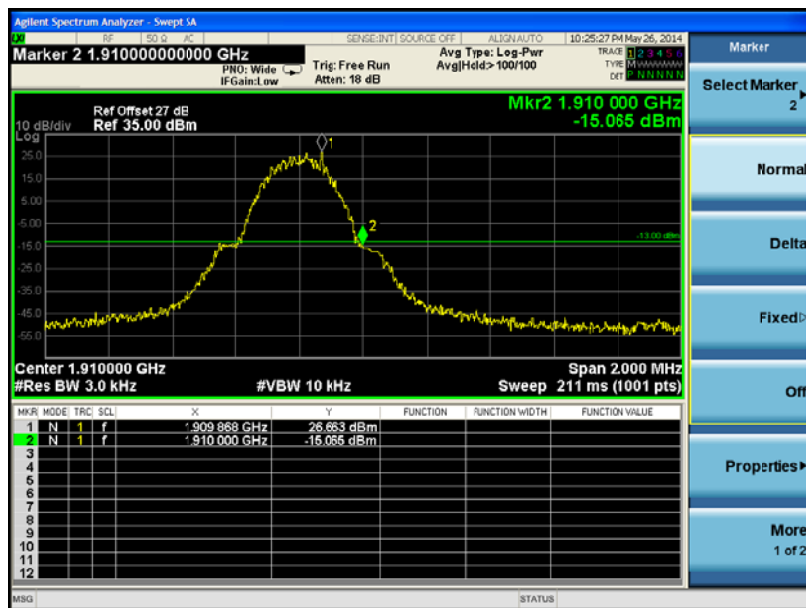
(Plot A: GSM 850 Channel = 128)



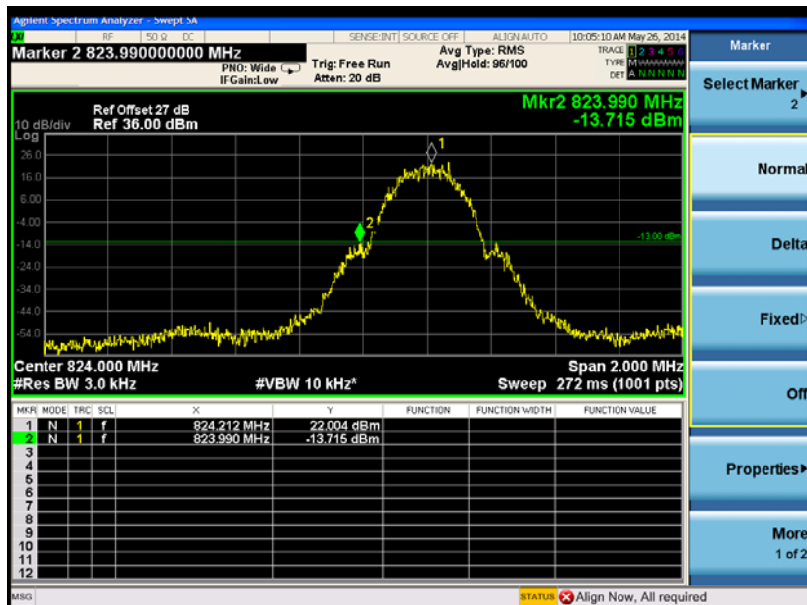
(Plot B: GSM 850 Channel = 251)



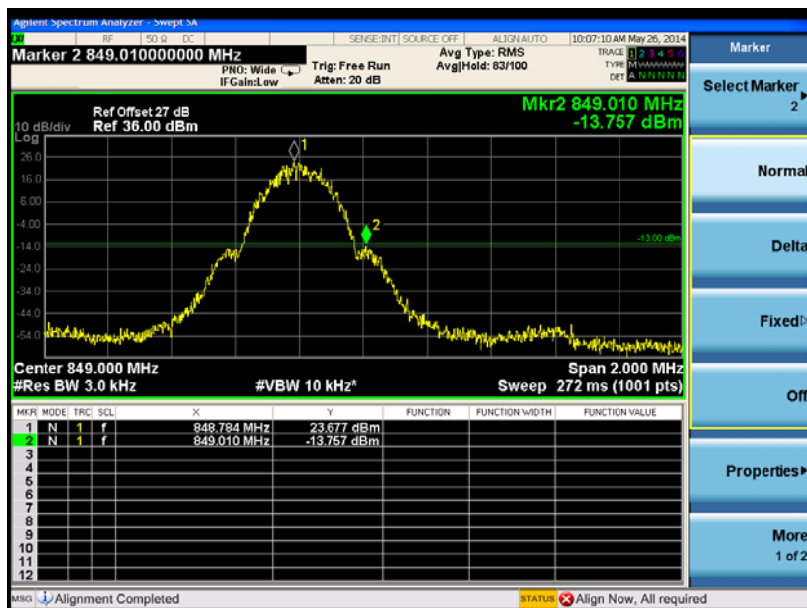
(Plot C: GSM 1900 Channel = 512)



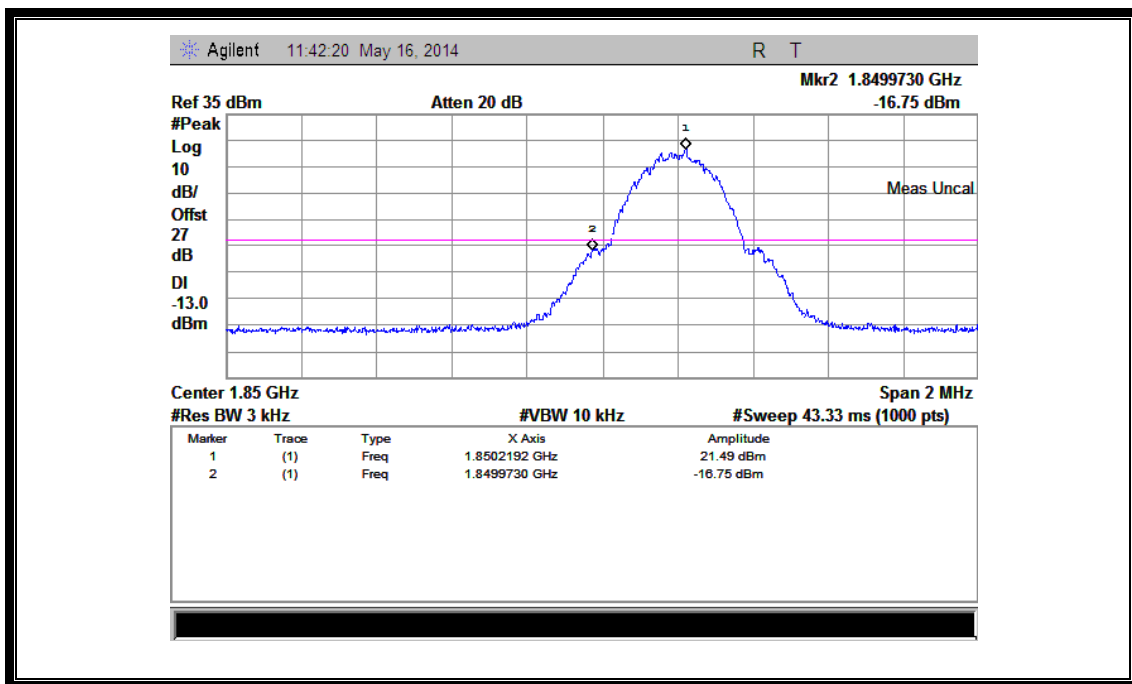
(Plot D: GSM 1900 Channel = 810)



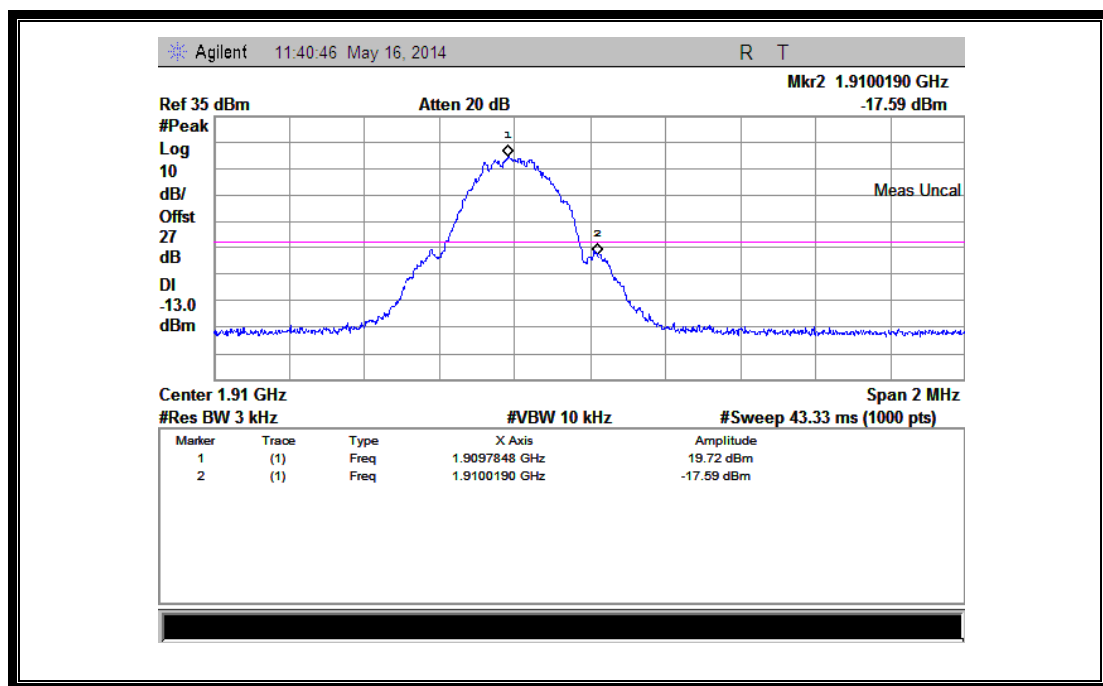
(Plot E: EGPRS 850 Channel = 128)



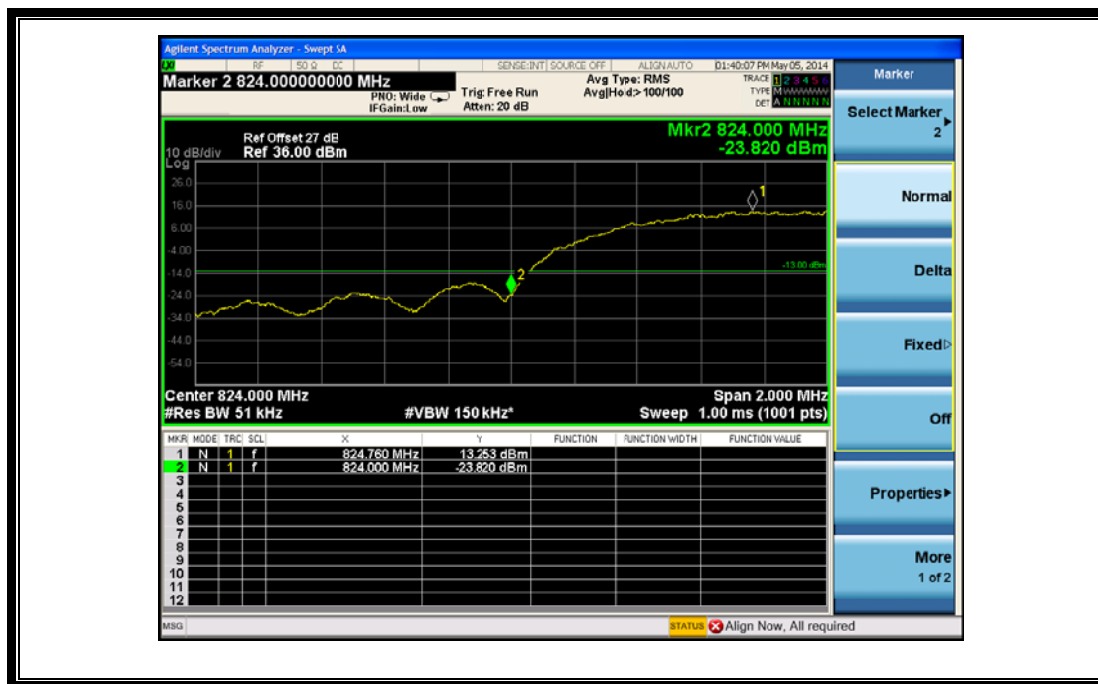
(Plot F: EGPRS 850 Channel = 251)



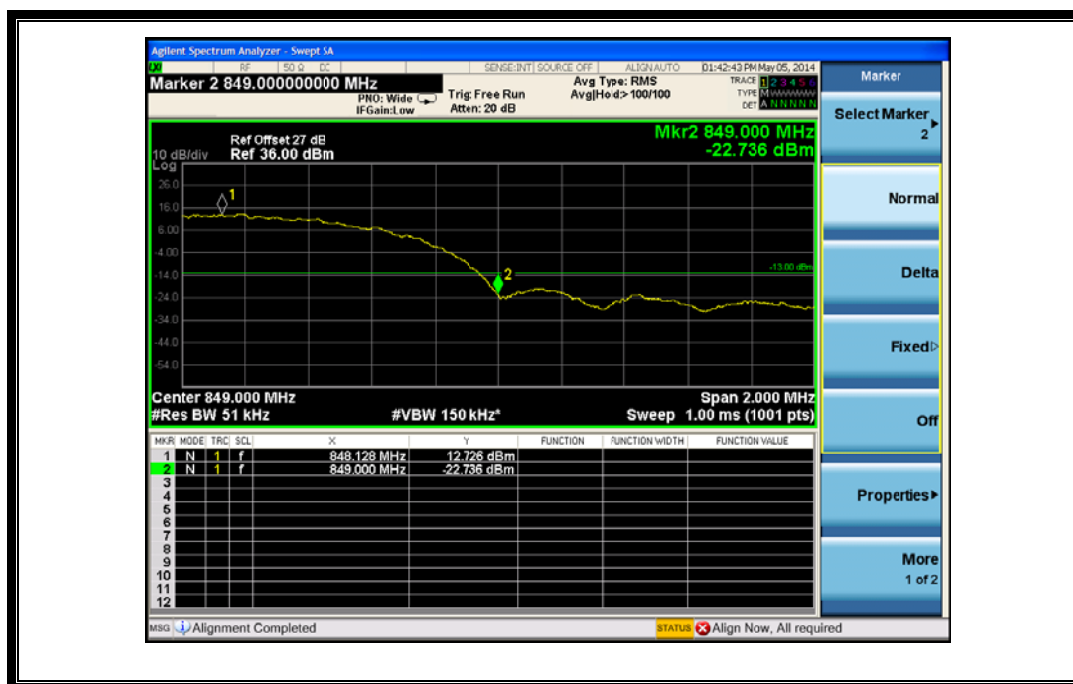
(Plot G: EGPRS 1900 Channel = 512)



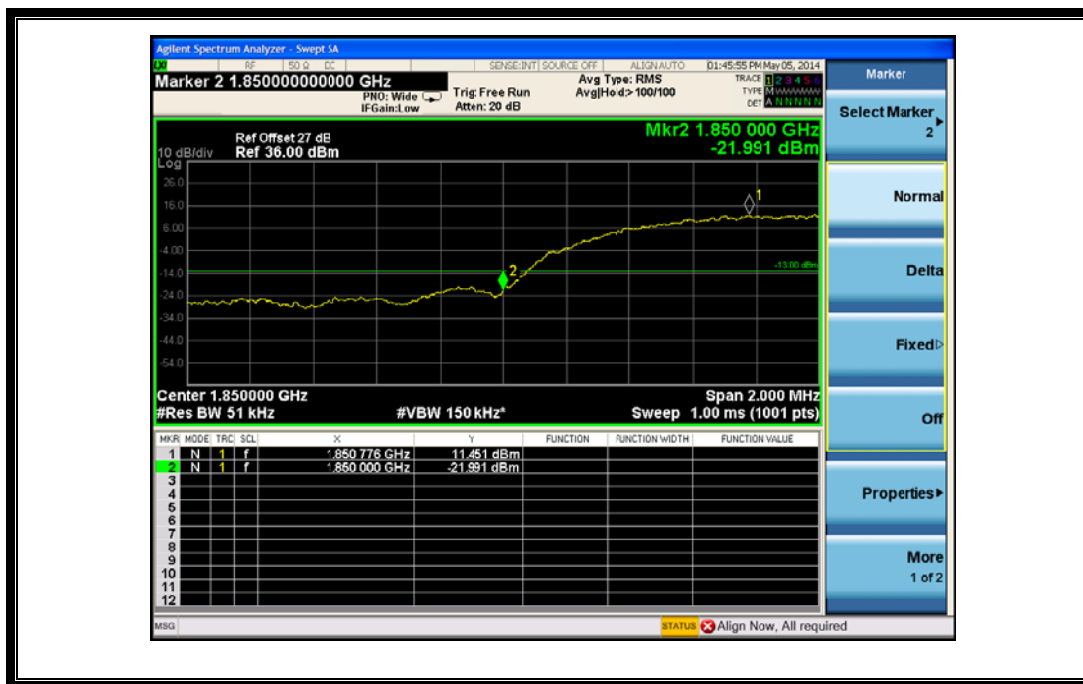
(Plot H: EGPRS 1900 Channel = 810)



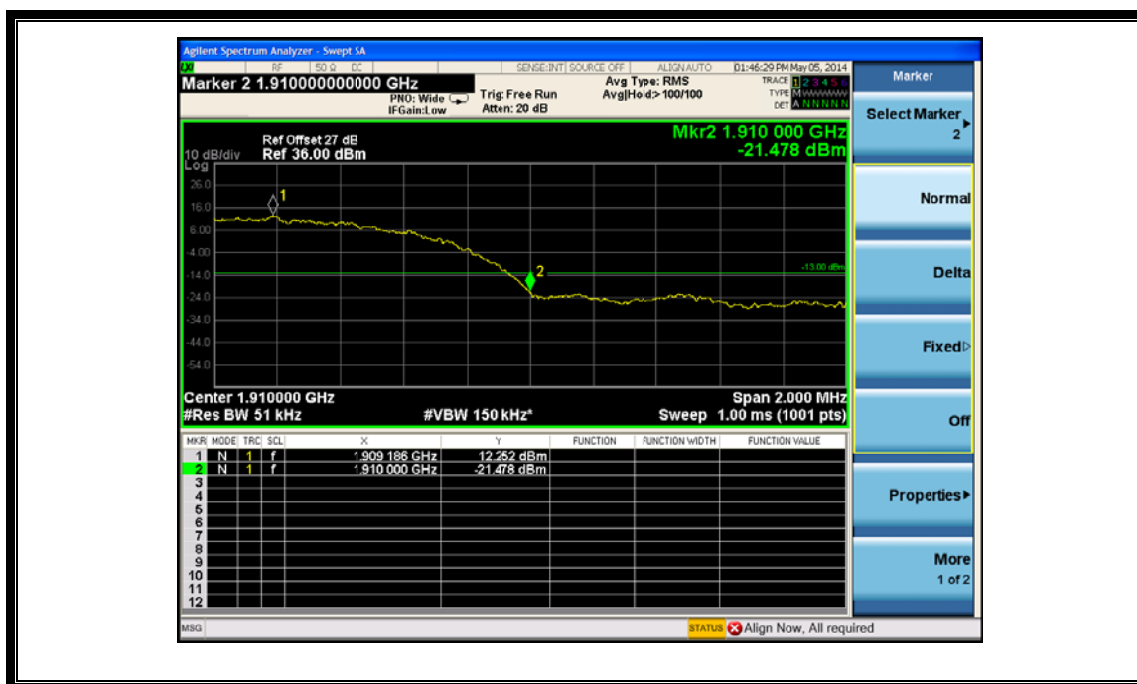
(Plot I: WCDMA 850 Channel = 4132)



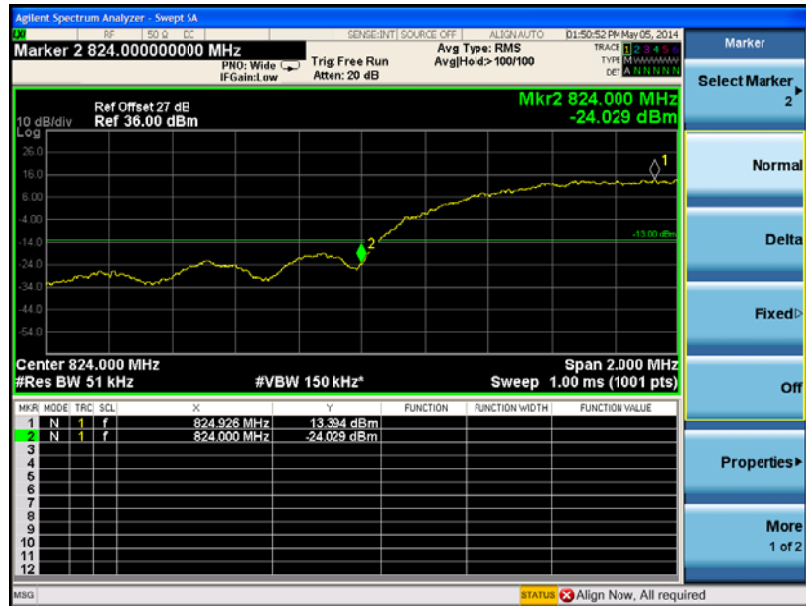
(Plot J: WCDMA 850 Channel = 4233)



(Plot K: WCDMA 1900 Channel = 9262)



(Plot L: WCDMA 1900 Channel = 9538)



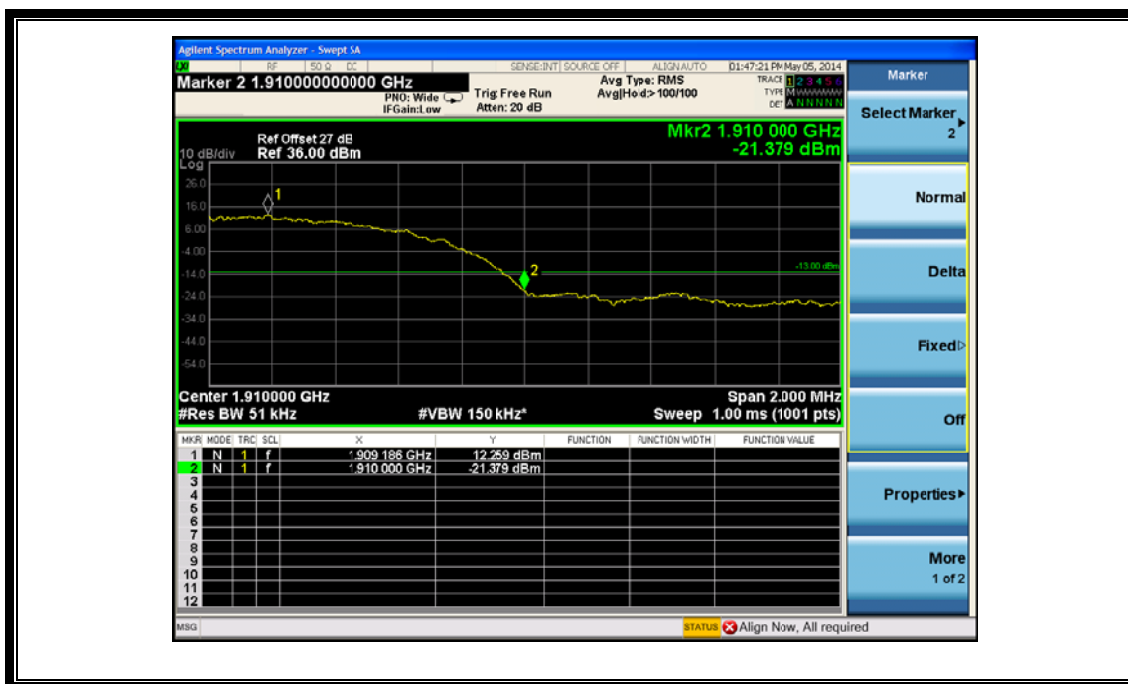
(Plot M: HSDPA 850 Channel = 4132)



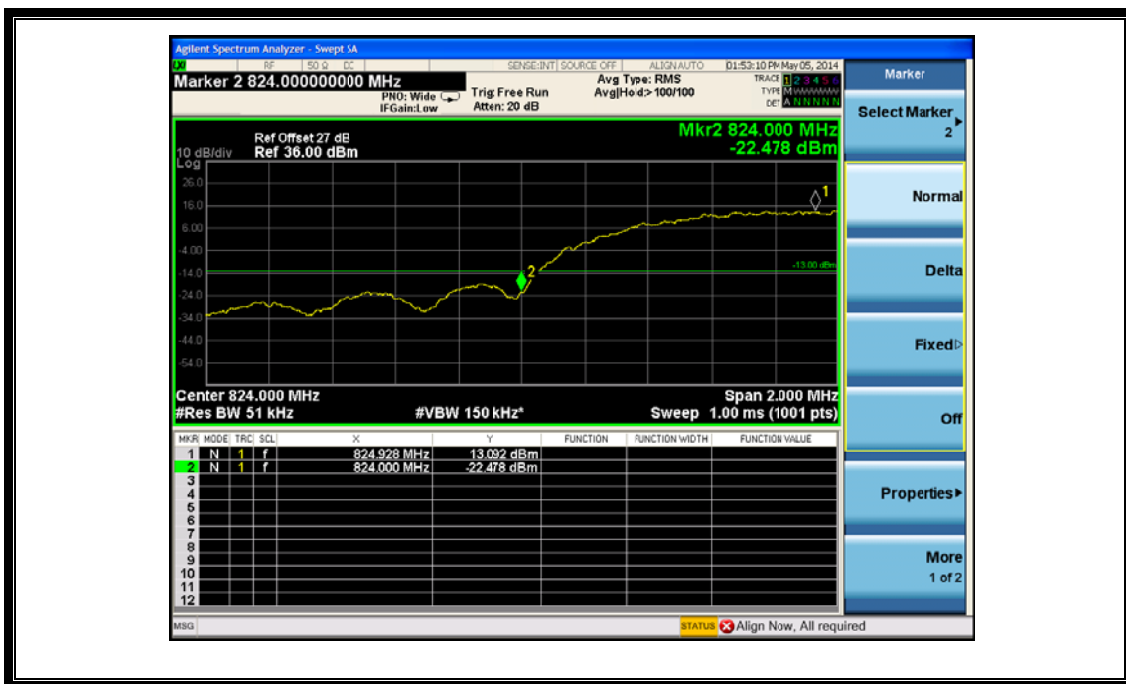
(Plot N: HSDPA850 Channel = 4233)



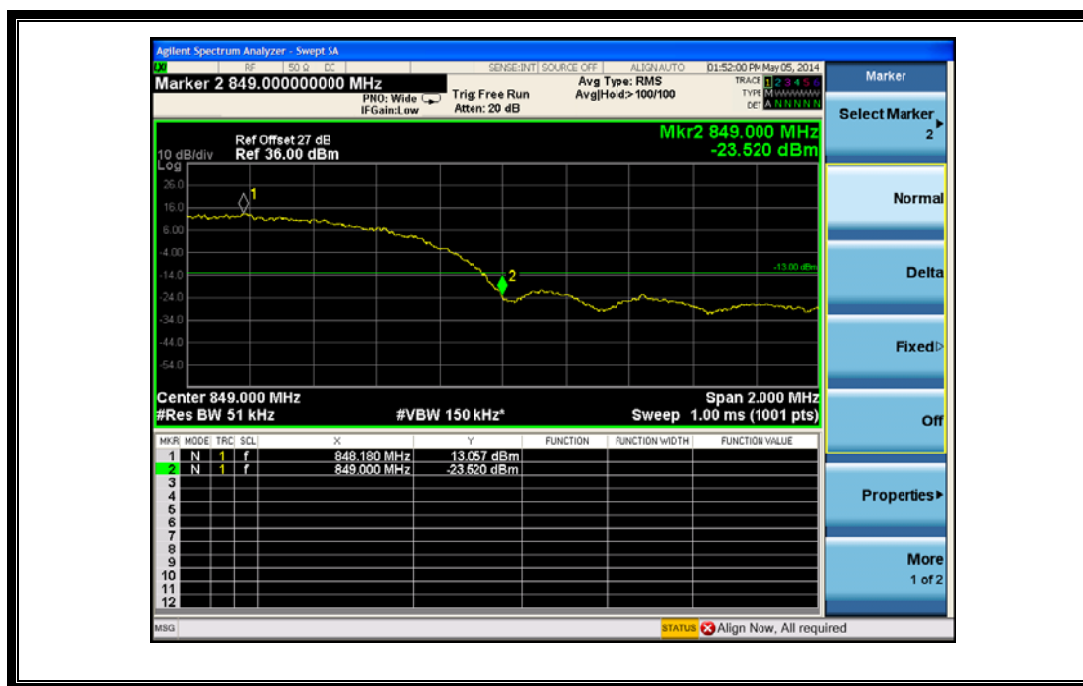
(Plot O: HSDPA 1900 Channel = 9262)



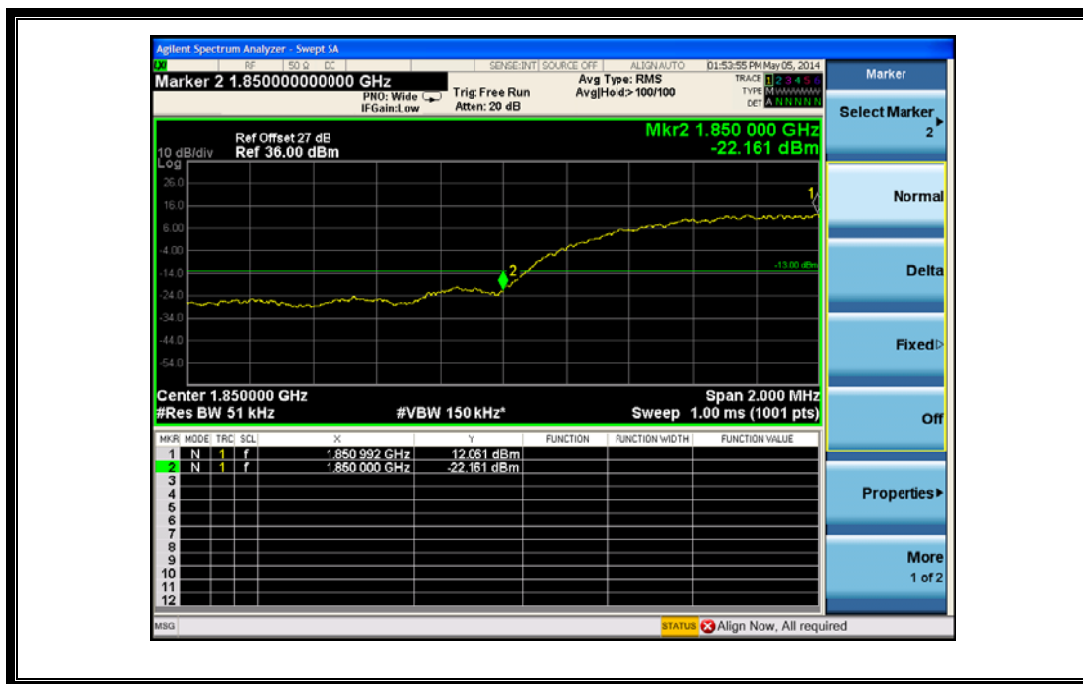
(Plot P: HSDPA 1900 Channel = 9538)



(Plot Q: HSUPA 850 Channel = 4132)



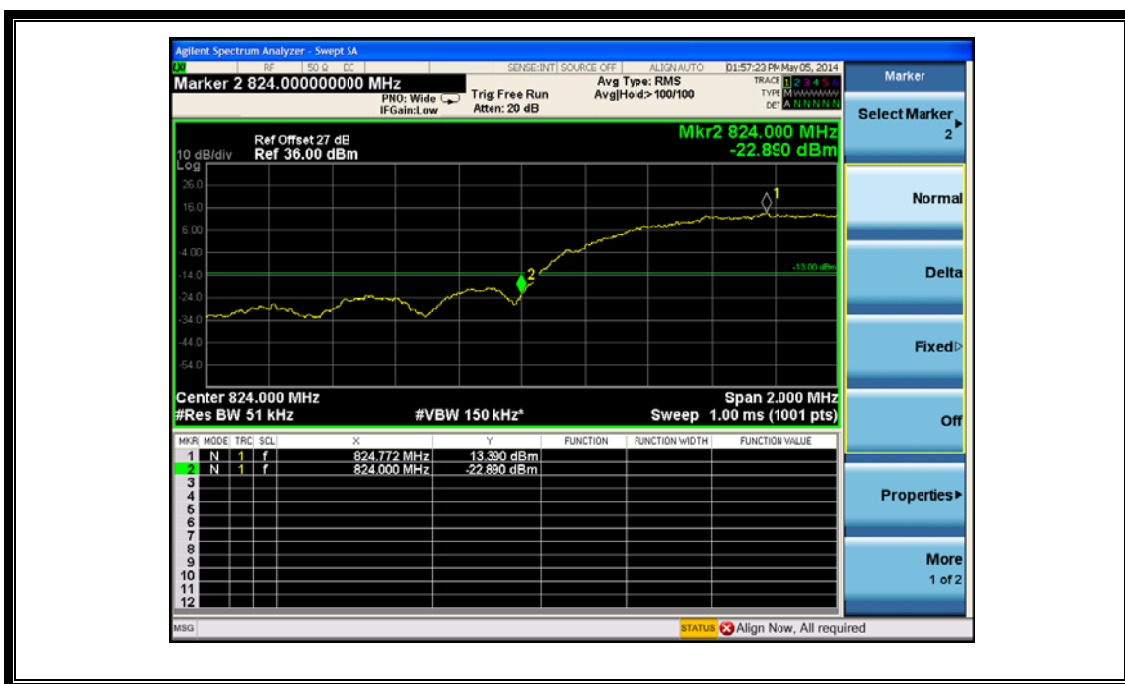
(Plot R: HSUPA850 Channel = 4233)



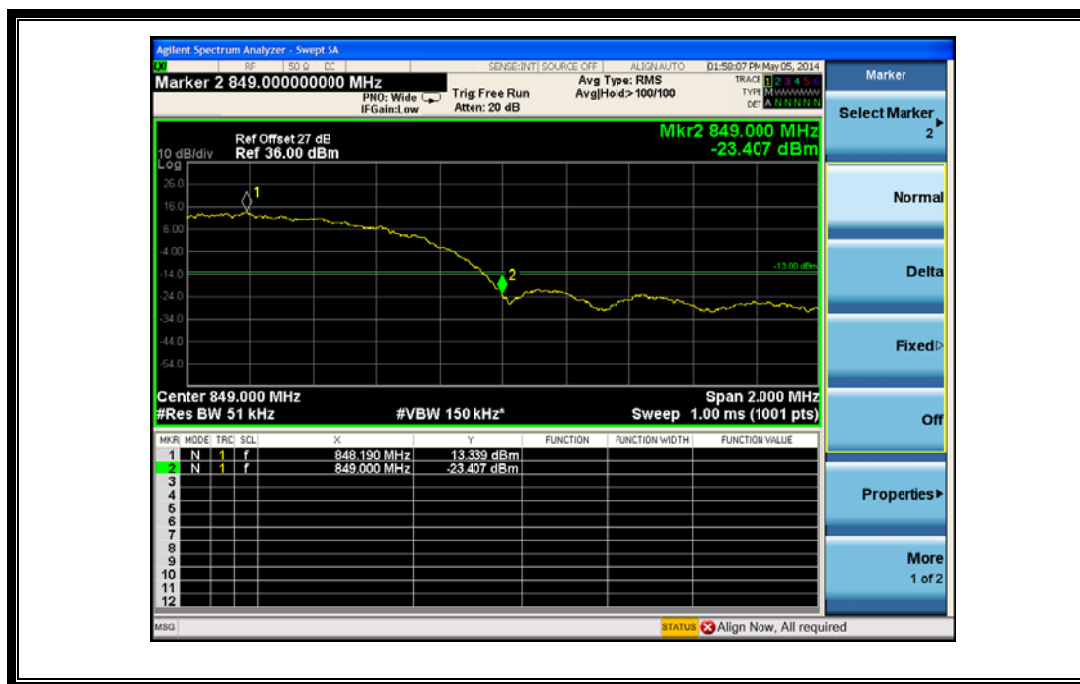
(Plot S: HSUPA 1900 Channel = 9262)



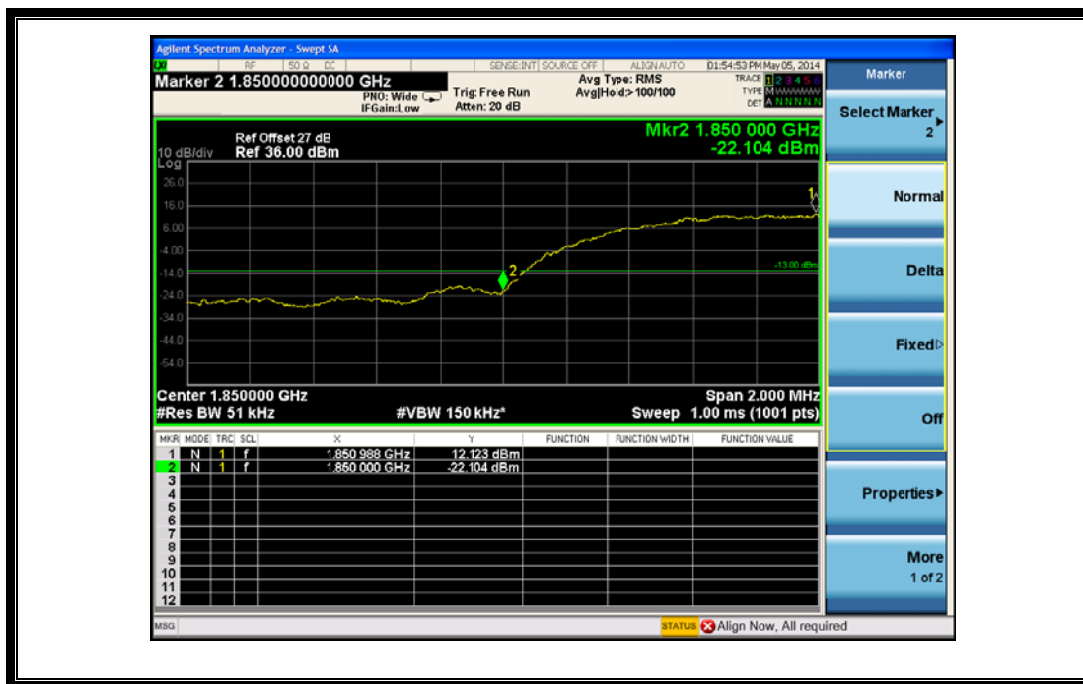
(Plot T: HSUPA 1900 Channel = 9538)



(Plot U: HSPA+ 850 Channel = 4132)



(Plot V: HSPA+ 850 Channel = 4233)



(Plot W: HSPA+ 1900 Channel = 9262)



(Plot X: HSPA+ 1900 Channel = 9538)

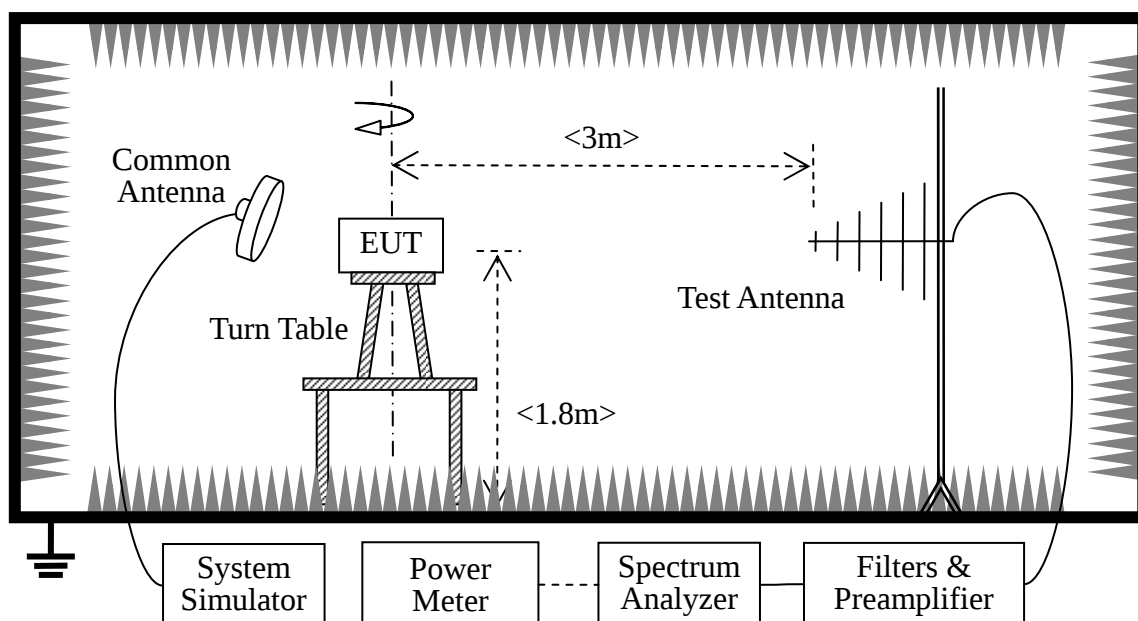
## 2.7 Transmitter Radiated Power (EIRP/ERP)

### 2.7.1 Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power

### 2.7.2 Test Description

#### 1. Test Setup:



The EUT, which is powered by the Battery charged with the AC Adapter, is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded.

- GSM Maximum RF output power: GSM 850 33.18dBm, GSM 1900 29.25dBm, EGPRS 850 31.83dBm, EGPRS 1900 27.41dBm, WCDMA 850 23.30dBm, WCDMA 1900 24.45dBm, Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

- Minimum RF power: GSM 850 3.1dBm, GSM 1900 0.3dBm, EGPRS 850 3.1dBm, EGPRS 1900

0.21dBm ,WCDMA 850 0.39dBm ,WCDMA 1900 0.5dBm.

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), and it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

## 2. Equipments List:

| Description           | Manufacturer | Model              | Serial No.   | Cal. Date  | Cal. Due   |
|-----------------------|--------------|--------------------|--------------|------------|------------|
| System Simulator      | Agilent      | E5515C             | GB43130131   | 2014.02.26 | 2015.02.25 |
| Spectrum Analyzer     | Agilent      | E7405A             | US44210471   | 2014.02.26 | 2015.02.25 |
| Full-Anechoic Chamber | Albatross    | 9m*6m*6m           | (n.a.)       | 2014.02.26 | 2015.02.25 |
| Test Antenna - Bi-Log | Schwarzbeck  | VULB 9163          | 9163-274     | 2014.02.26 | 2015.02.25 |
| Test Antenna - Horn   | Schwarzbeck  | BBHA 9120C         | 9120C-384    | 2014.02.26 | 2015.02.25 |
| Substitution Antenna  | Schwarzbeck  | BBHA 9120C         | 9120C-384    | 2014.02.26 | 2015.02.25 |
| Pre-AMPs              | lucix        | S10M100L3802       | S020180L3203 | 2014.02.26 | 2015.02.25 |
| Notch Filter          | COM-MW       | ZBSF-C836.5-25-X   | NA           | 2014.02.26 | 2015.02.25 |
| Notch Filter          | COM-MW       | ZBSF-C1747.5-75-X2 | NA           | 2014.02.26 | 2015.02.25 |
| Notch Filter          | COM-MW       | ZBSF-C1880-60-X2   | NA           | 2014.02.26 | 2015.02.25 |

### 2.7.3 Test Result

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST\_TX}} - P_{\text{SUBST\_RX}} - L_{\text{SUBST\_CABLES}} + G_{\text{SUBST\_TX\_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where  $A_{\text{SUBST}}$  is the final substitution correction including receive antenna gain.

$P_{\text{SUBST\_TX}}$  is signal generator level,

$P_{\text{SUBST\_RX}}$  is receiver level,

$L_{\text{SUBST\_CABLES}}$  is cable losses including TX cable,

$G_{\text{SUBST\_TX\_ANT}}$  is substitution antenna gain.

$A_{\text{TOT}}$  is total correction factor including cable loss and substitution correction

During the test, the data of  $A_{\text{TOT}}$  was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of  $A_{\text{TOT}}$ .

## 1. GSM Model Test Verdict:

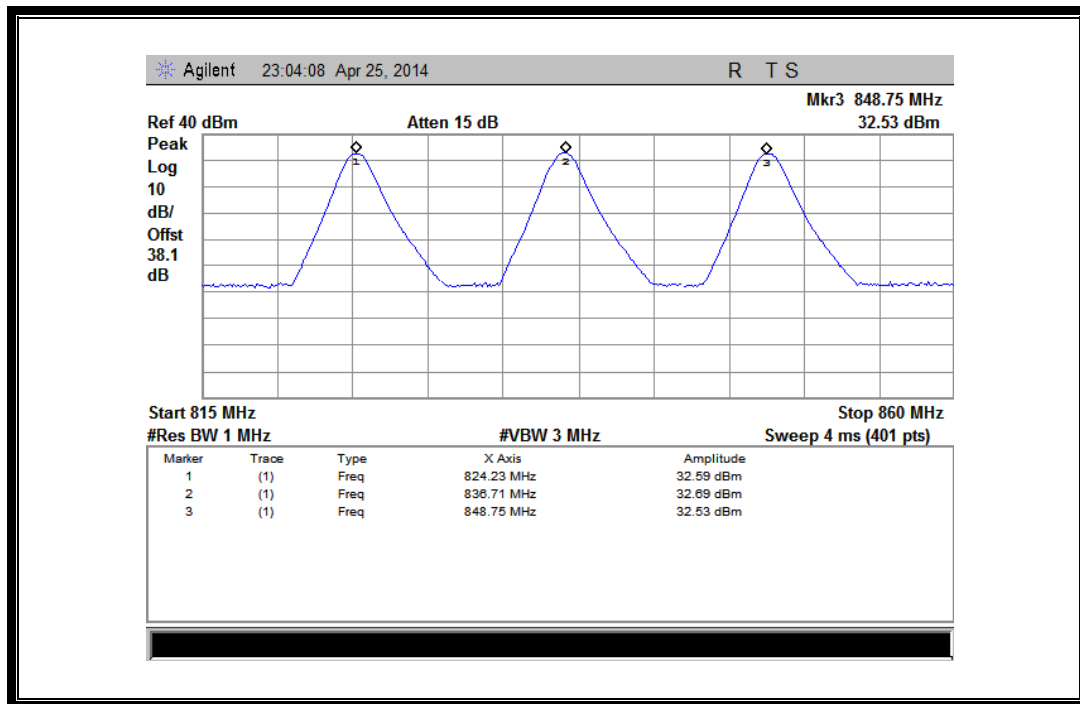
| Band          | Channel                                                                                                    | Frequency (MHz) | PCL | Measured ERP  |       |                          | Limit |   | Verdict |
|---------------|------------------------------------------------------------------------------------------------------------|-----------------|-----|---------------|-------|--------------------------|-------|---|---------|
|               |                                                                                                            |                 |     | dBm           | W     | Refer to Plot            | dBm   | W |         |
| GSM 850MHz    | 128                                                                                                        | 824.20          | 5   | 32.59         | 1.816 | Plot A                   | 38.5  | 7 | PASS    |
|               | 190                                                                                                        | 836.60          | 5   | 32.69         | 1.858 |                          |       |   | PASS    |
|               | 251                                                                                                        | 848.80          | 5   | 32.53         | 1.791 |                          |       |   | PASS    |
| GPRS 850MHz   | 128                                                                                                        | 824.20          | 5   | 30.79         | 1.199 | Plot B <sup>Note 1</sup> | 38.5  | 7 | PASS    |
|               | 190                                                                                                        | 836.60          | 5   | 31.20         | 1.318 |                          |       |   | PASS    |
|               | 251                                                                                                        | 848.80          | 5   | 30.90         | 1.230 |                          |       |   | PASS    |
| EGPRS 850MHz  | 128                                                                                                        | 824.20          | 5   | 31.40         | 1.380 | Plot C <sup>Note 1</sup> | 38.5  | 7 | PASS    |
|               | 190                                                                                                        | 836.60          | 5   | 31.40         | 1.380 |                          |       |   | PASS    |
|               | 251                                                                                                        | 848.80          | 5   | 31.31         | 1.352 |                          |       |   | PASS    |
|               |                                                                                                            |                 |     |               |       |                          |       |   |         |
| Band          | Channel                                                                                                    | Frequency (MHz) | PCL | Measured EIRP |       |                          | Limit |   | Verdict |
|               |                                                                                                            |                 |     | dBm           | W     | Refer to Plot            | dBm   | W |         |
| GSM 1900MHz   | 512                                                                                                        | 1850.2          | 0   | 29.87         | 0.971 | Plot D                   | 33    | 2 | PASS    |
|               | 661                                                                                                        | 1880.0          | 0   | 30.00         | 1.000 |                          |       |   | PASS    |
|               | 810                                                                                                        | 1909.8          | 0   | 30.00         | 1.000 |                          |       |   | PASS    |
| GPRS 1900MHz  | 512                                                                                                        | 1850.2          | 0   | 28.67         | 0.736 | Plot E <sup>Note 1</sup> | 33    | 2 | PASS    |
|               | 661                                                                                                        | 1880.0          | 0   | 28.45         | 0.600 |                          |       |   | PASS    |
|               | 810                                                                                                        | 1909.8          | 0   | 28.63         | 0.729 |                          |       |   | PASS    |
| EGPRS 1900MHz | 512                                                                                                        | 1850.2          | 0   | 28.96         | 0.787 | Plot F <sup>Note 1</sup> | 33    | 2 | PASS    |
|               | 661                                                                                                        | 1880.0          | 0   | 28.75         | 0.750 |                          |       |   | PASS    |
|               | 810                                                                                                        | 1909.8          | 0   | 28.78         | 0.755 |                          |       |   | PASS    |
| Note 1:       | For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report. |                 |     |               |       |                          |       |   |         |

## 2. WCDMA Model Test Verdict:

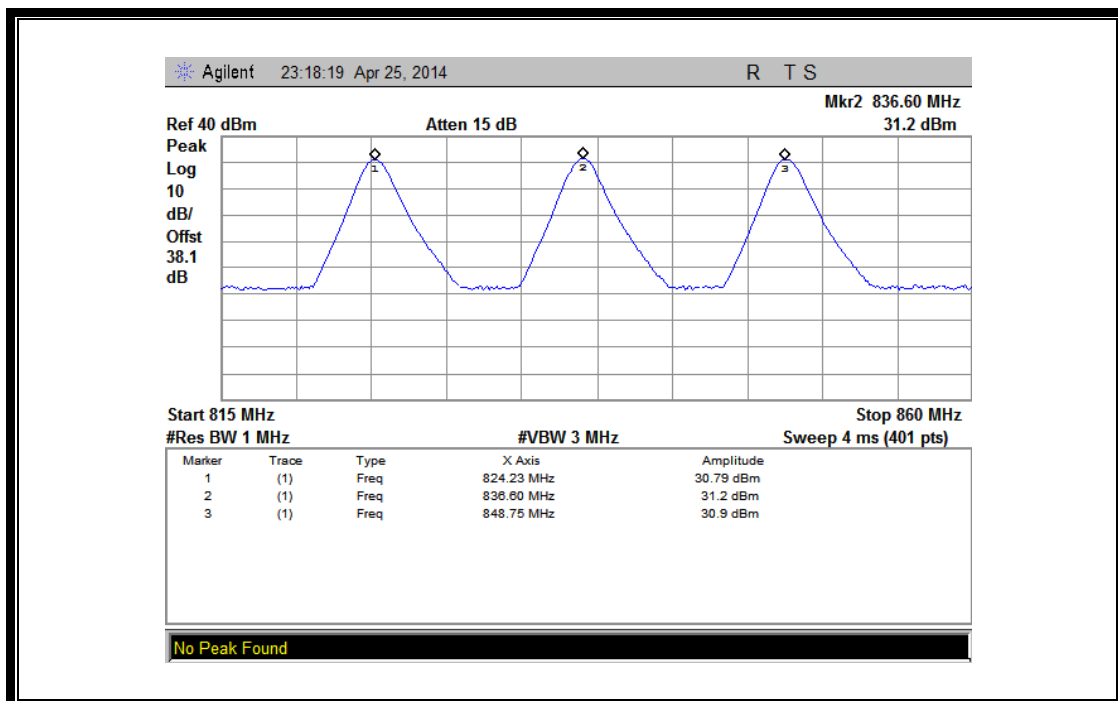
| Band         | Channel | Frequency (MHz) | Measured ERP |       |               | Limit |   | Verdict |
|--------------|---------|-----------------|--------------|-------|---------------|-------|---|---------|
|              |         |                 | dBm          | W     | Refer to Plot | dBm   | W |         |
| WCDMA 850MHz | 4132    | 826.4           | 29.72        | 0.938 | Plot G        | 38.5  | 7 | PASS    |
|              | 4175    | 835             | 29.75        | 0.944 |               |       |   | PASS    |
|              | 4233    | 846.6           | 29.38        | 0.867 |               |       |   | PASS    |
| HSDPA 850MHz | 4132    | 826.4           | 29.31        | 0.853 | Plot H        | 38.5  | 7 | PASS    |
|              | 4175    | 835             | 29.46        | 0.883 |               |       |   | PASS    |
|              | 4233    | 846.6           | 29.12        | 0.817 |               |       |   | PASS    |
| HSUPA 850MHz | 4132    | 826.4           | 29.33        | 0.857 | Plot I        | 38.5  | 7 | PASS    |
|              | 4175    | 835             | 29.47        | 0.885 |               |       |   | PASS    |
|              | 4233    | 846.6           | 29.28        | 0.847 |               |       |   | PASS    |
| HSPA+ 850MHz | 4132    | 826.4           | 29.42        | 0.875 | Plot J        | 38.5  | 7 | PASS    |
|              | 4175    | 835             | 29.36        | 0.863 |               |       |   | PASS    |
|              | 4233    | 846.6           | 29.33        | 0.857 |               |       |   | PASS    |

| Band          | Channel | Frequency (MHz) | Measured EIRP |       |        | Limit |   | Verdict |
|---------------|---------|-----------------|---------------|-------|--------|-------|---|---------|
|               |         |                 | dBm           | W     |        | dBm   | W |         |
| WCDMA 1900MHz | 9262    | 1852.4          | 28.32         | 0.679 | Plot K | 33    | 2 | PASS    |
|               | 9400    | 1880            | 28.27         | 0.671 |        |       |   | PASS    |
|               | 9538    | 1907.6          | 28.21         | 0.662 |        |       |   | PASS    |
| HSDPA 1900MHz | 9262    | 1852.4          | 28.34         | 0.682 | Plot L | 33    | 2 | PASS    |
|               | 9400    | 1880            | 28.23         | 0.665 |        |       |   | PASS    |
|               | 9538    | 1907.6          | 28.30         | 0.676 |        |       |   | PASS    |
| HSUPA 1900MHz | 9262    | 1852.4          | 28.68         | 0.738 | Plot M | 33    | 2 | PASS    |
|               | 9400    | 1880            | 28.20         | 0.661 |        |       |   | PASS    |
|               | 9538    | 1907.6          | 28.26         | 0.670 |        |       |   | PASS    |
| HSPA+ 1900MHz | 9262    | 1852.4          | 28.31         | 0.678 | Plot N | 33    | 2 | PASS    |
|               | 9400    | 1880            | 28.22         | 0.664 |        |       |   | PASS    |
|               | 9538    | 1907.6          | 28.13         | 0.650 |        |       |   | PASS    |

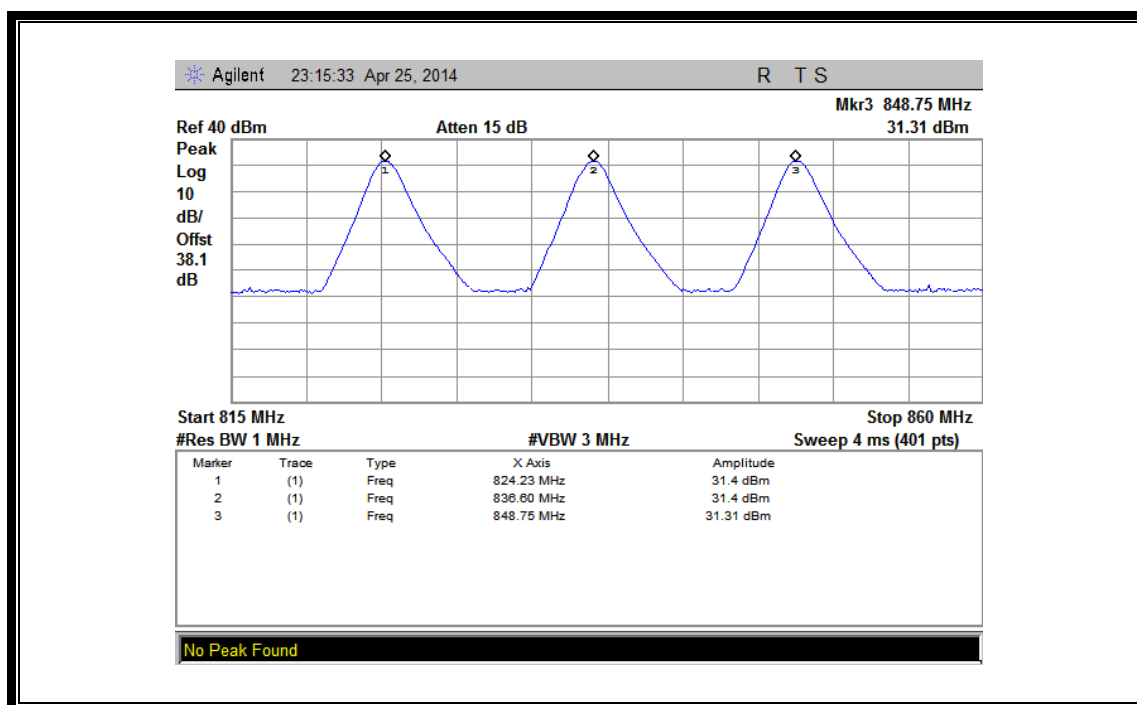
### 3. Test Plots:



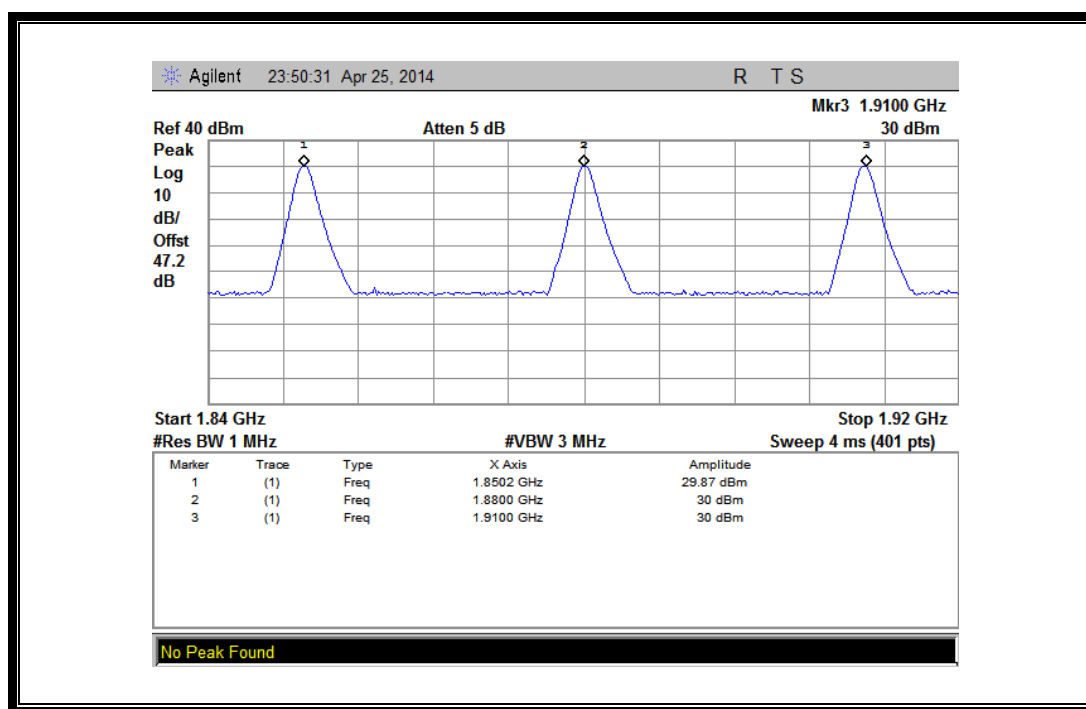
(Plot A: GSM 850MHz Channel = 128, 190, 251)



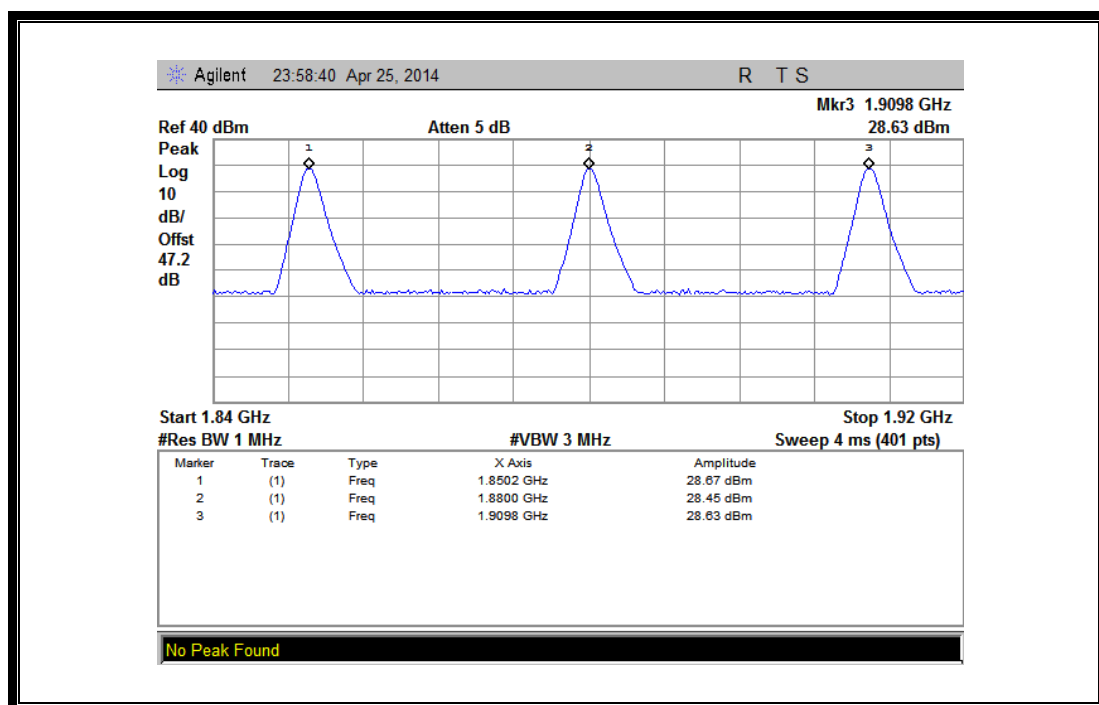
(Plot B: GPRS 850MHz Channel = 128, 190, 251)



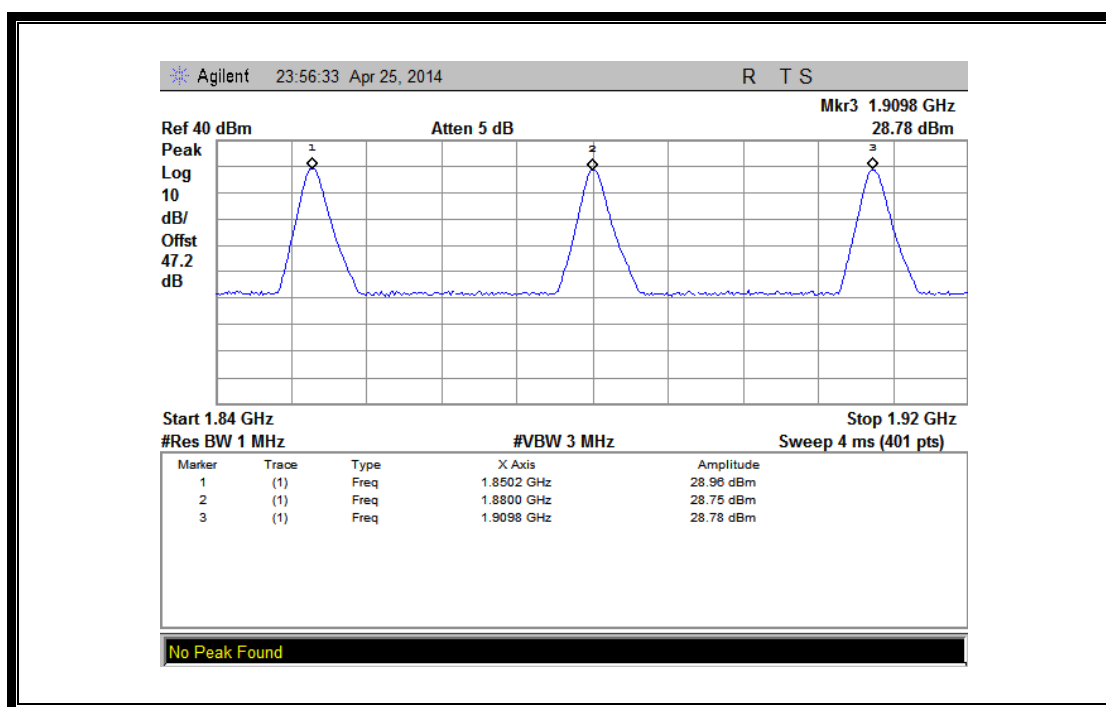
(Plot C: EGPRS 850MHz Channel = 128, 190, 251)



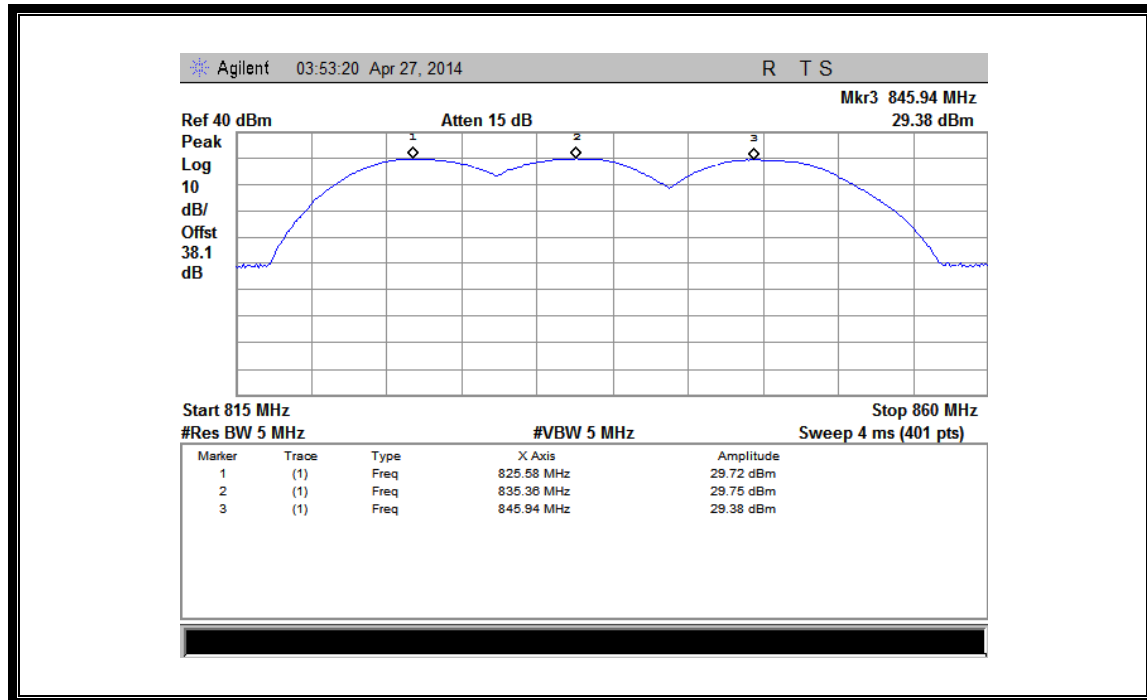
(Plot D: GSM 1900MHz Channel = 512, 661, 810)



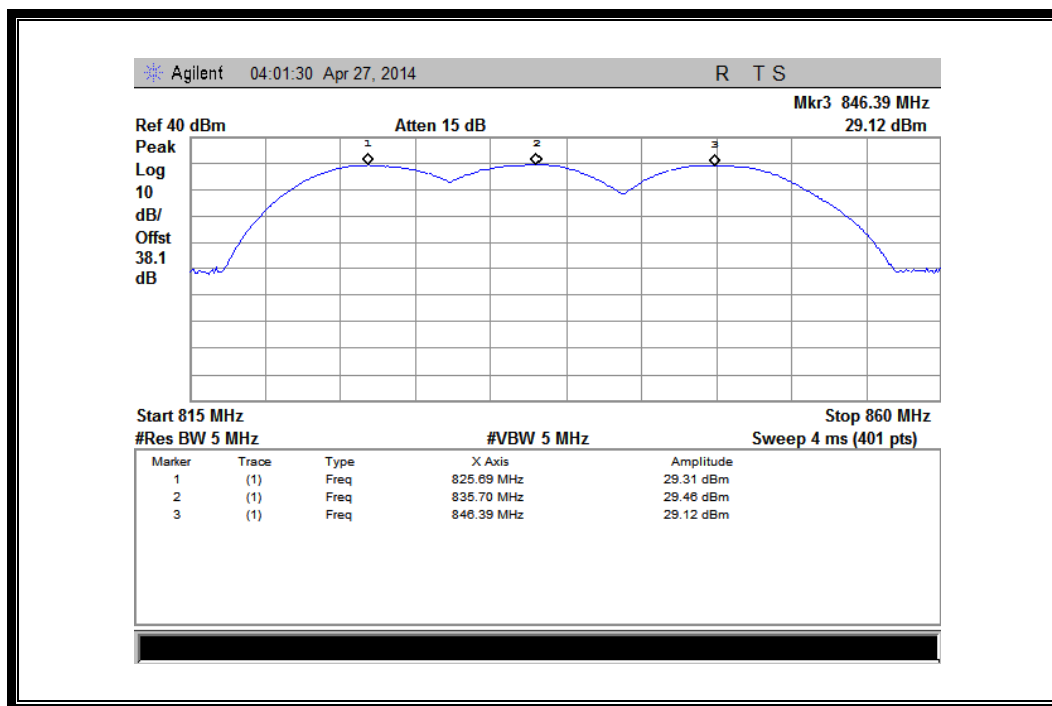
(Plot E: GPRS 1900MHz Channel = 512, 661, 810)



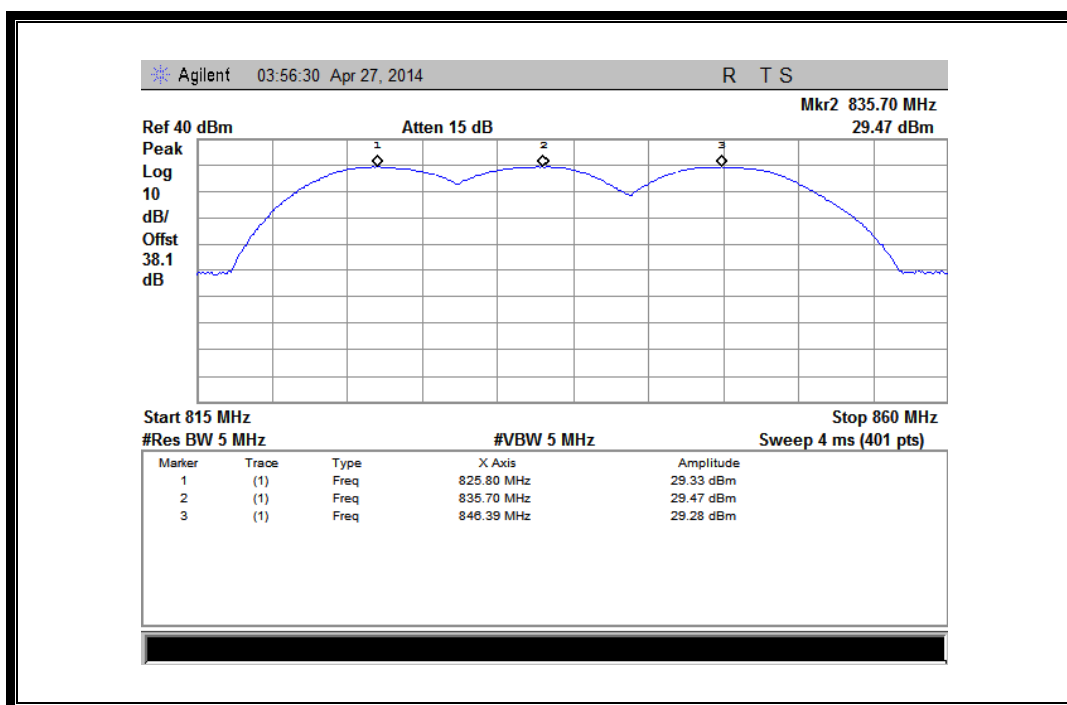
(Plot F: EGPRS 1900MHz Channel = 512, 661, 810)



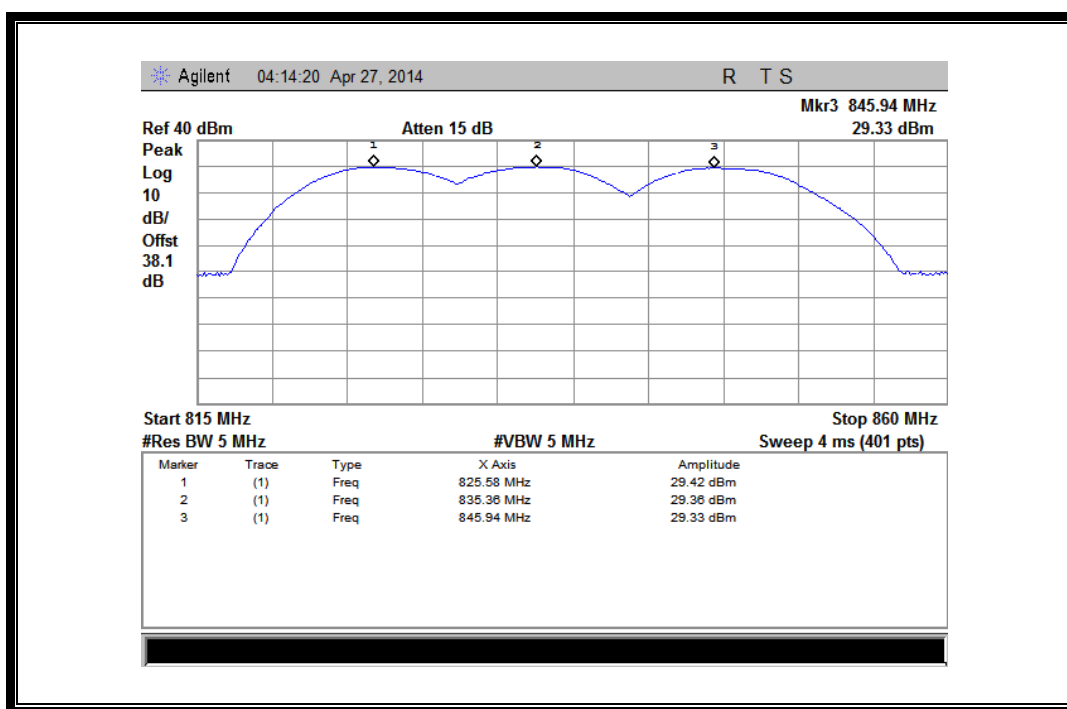
(Plot G: WCDMA 850 MHz Channel = 4132, 4175, 4233)



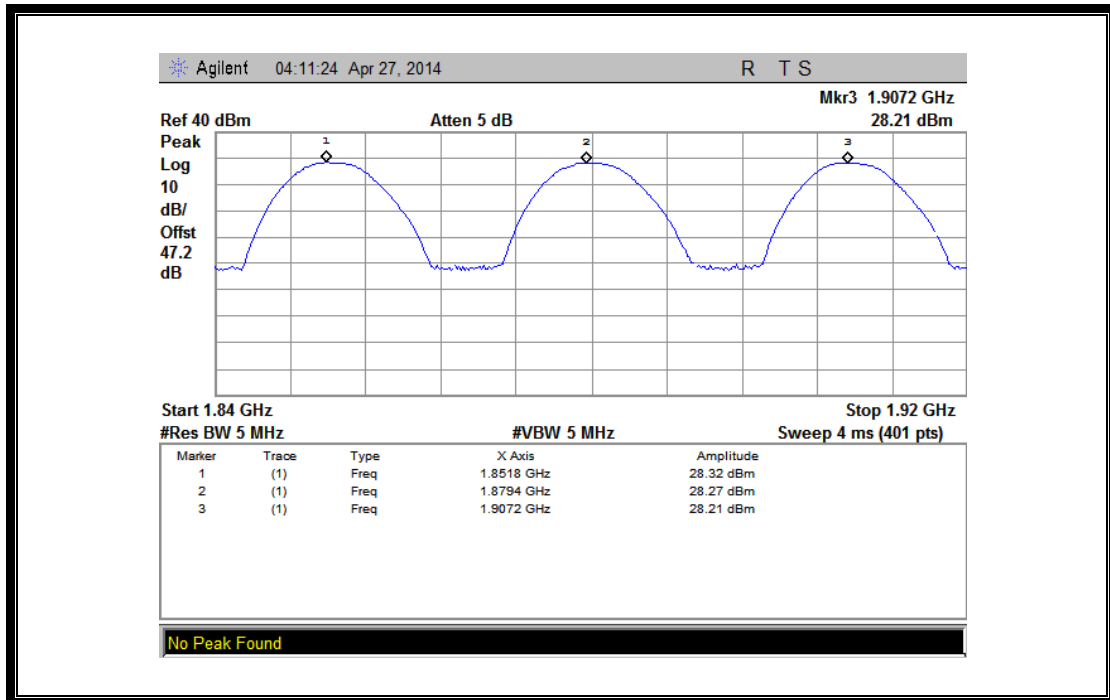
(Plot H: HSDPA 850 MHz Channel = 4132, 4175, 4233)



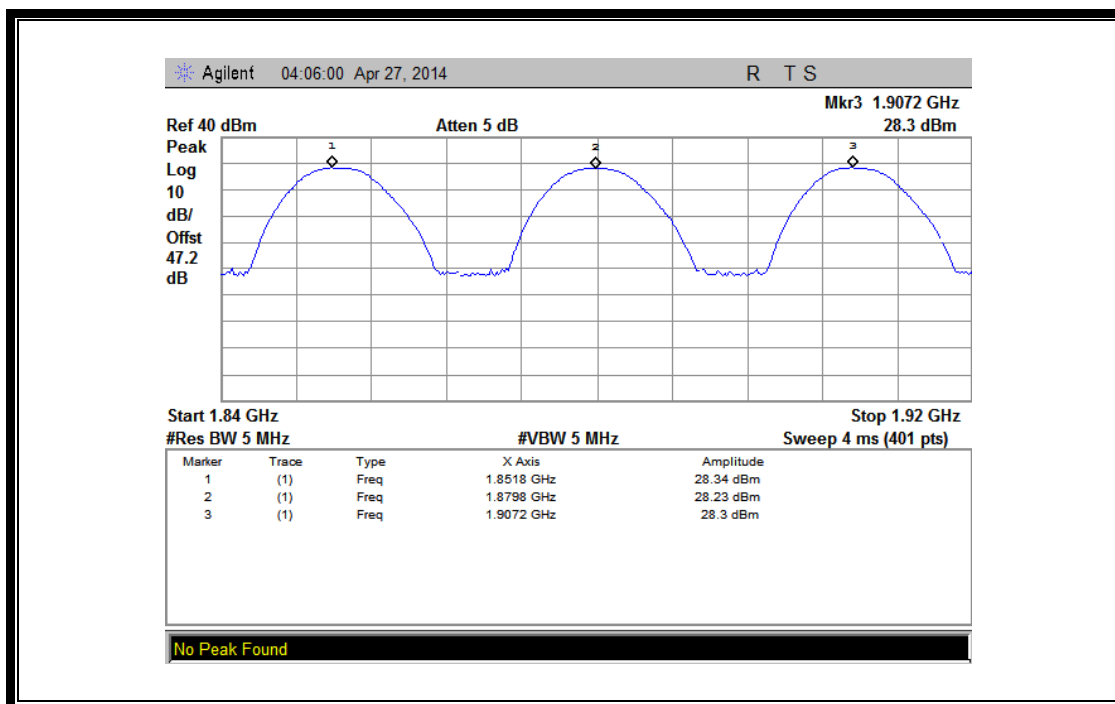
(Plot I: HSUPA 850 MHz Channel = 4132, 4175, 4233)



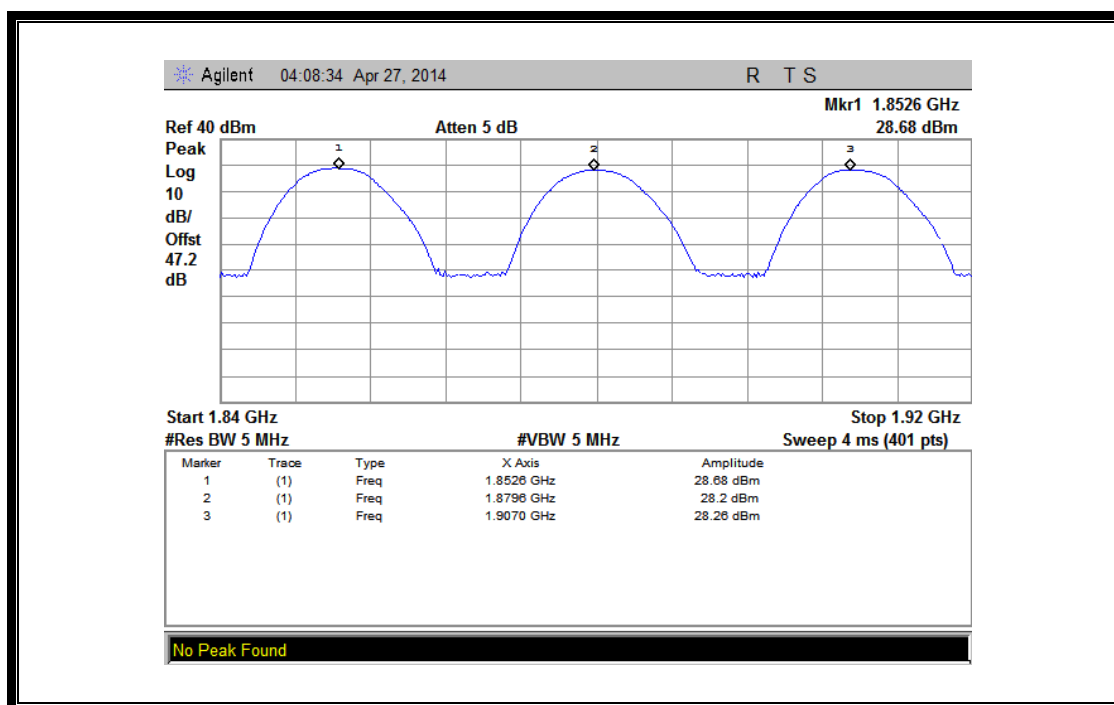
(Plot J: HSPA+ 850 MHz Channel = 4132, 4175, 4233)



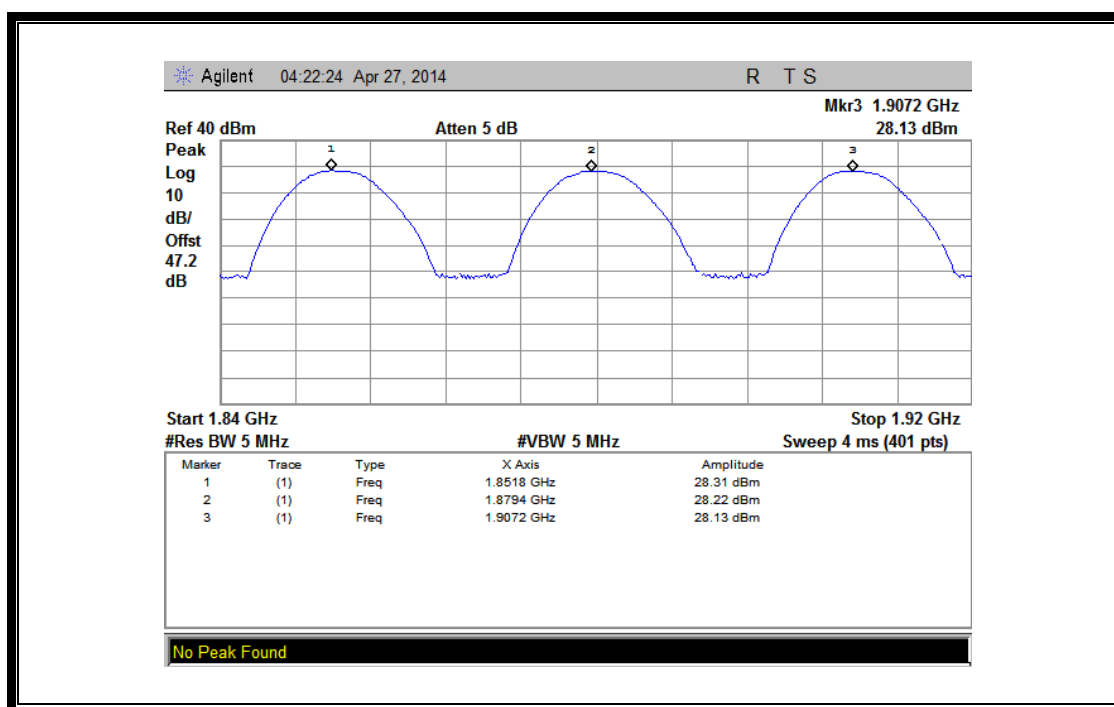
(Plot K: WCDMA 1900 MHz Channel = 9262, 9400, 9538)



(Plot L: HSDPA1900 MHz Channel = 9262, 9400, 9538)



(Plot M: HSUPA1900 MHz Channel = 9262, 9400, 9538)



(Plot N: HSPA+ 1900 MHz Channel = 9262, 9400, 9538)

## 2.8 Radiated Out of Band Emissions

### 2.8.1 Requirement

According to FCC section 22.917(a) and section 24.238(a) 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. This calculated to be -13dBm.

The spurious emission with frequency band 1900 according to FCC section 2.1057.

### 2.8.2 Test Description

See section 2.7.2 of this report.

Equipment List:

| Description           | Manufacturer | Model              | Serial No.   | Cal. Date  | Cal. Due   |
|-----------------------|--------------|--------------------|--------------|------------|------------|
| System Simulator      | Agilent      | E5515C             | GB43130131   | 2014.02.26 | 2015.02.25 |
| Spectrum Analyzer     | Agilent      | E7405A             | US44210471   | 2014.02.26 | 2015.02.25 |
| Full-Anechoic Chamber | Albatross    | 9m*6m*6m           | (n.a.)       | 2014.02.26 | 2015.02.25 |
| Test Antenna - Bi-Log | Schwarzbeck  | VULB 9163          | 9163-274     | 2014.02.26 | 2015.02.25 |
| Test Antenna - Horn   | Schwarzbeck  | BBHA 9120C         | 9120C-384    | 2014.02.26 | 2015.02.25 |
| Substitution Antenna  | Schwarzbeck  | BBHA 9120C         | 9120C-384    | 2014.02.26 | 2015.02.25 |
| Pre-AMPs              | lucix        | S10M100L3802       | S020180L3203 | 2014.02.26 | 2015.02.25 |
| Notch Filter          | COM-MW       | ZBSF-C836.5-25-X   | NA           | 2014.02.26 | 2015.02.25 |
| Notch Filter          | COM-MW       | ZBSF-C1747.5-75-X2 | NA           | 2014.02.26 | 2015.02.25 |
| Notch Filter          | COM-MW       | ZBSF-C1880-60-X2   | NA           | 2014.02.26 | 2015.02.25 |

**Note:** when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

### 2.8.3 Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

## 1. Test Verdict:

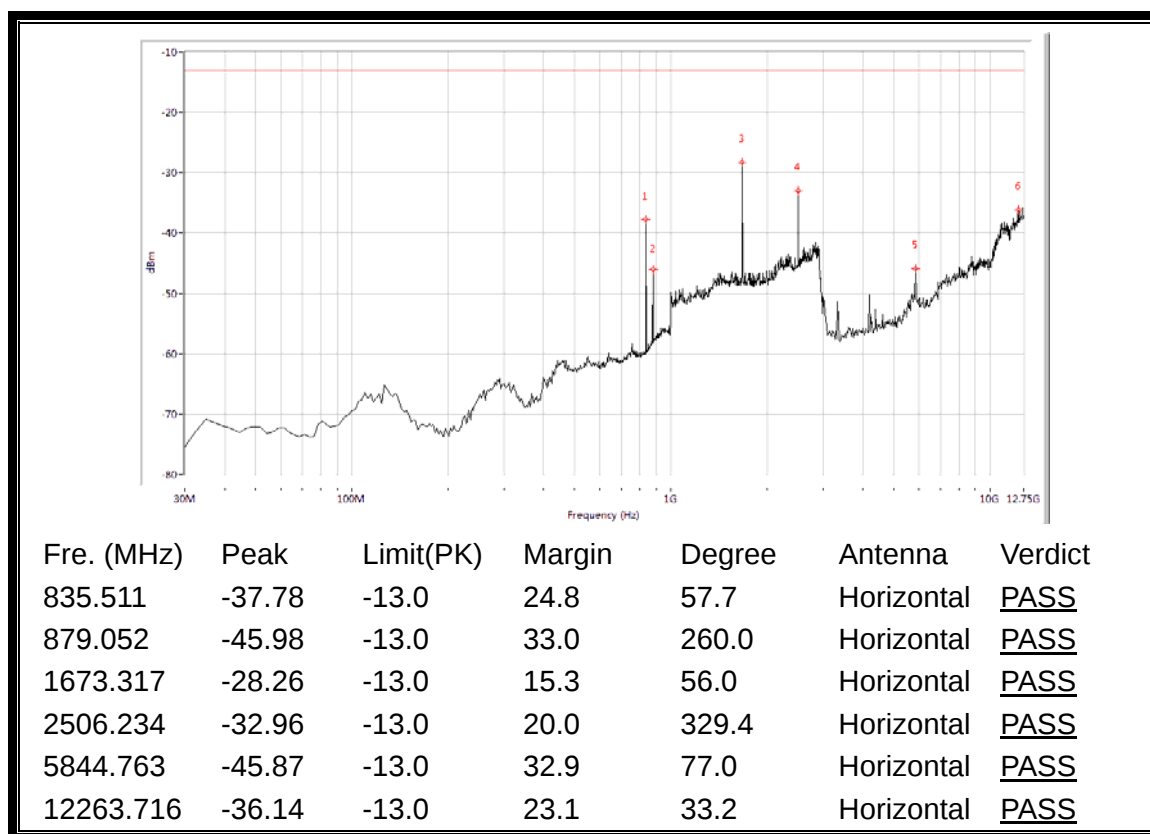
| Band          | Channel | Frequency (MHz) | Measured Max. Spurious Emission (dBm) |                       | Refer to Plot | Limit (dBm) | Verdict     |
|---------------|---------|-----------------|---------------------------------------|-----------------------|---------------|-------------|-------------|
|               |         |                 | Test Antenna Horizontal               | Test Antenna Vertical |               |             |             |
| GSM 850MHz    | 128     | 824.2           | < -25                                 | < -25                 | Plot A.1/A.2  | -13         | <u>PASS</u> |
|               | 190     | 836.6           | < -25                                 | < -25                 | Plot A.3/A.4  |             | <u>PASS</u> |
|               | 251     | 848.8           | < -25                                 | < -25                 | Plot A.5/A.6  |             | <u>PASS</u> |
| GSM 1900MHz   | 512     | 1850.2          | < -25                                 | < -25                 | Plot B.1/B.2  | -13         | <u>PASS</u> |
|               | 661     | 1880.0          | < -25                                 | < -25                 | Plot B.3/B.4  |             | <u>PASS</u> |
|               | 810     | 1909.8          | < -25                                 | < -25                 | Plot B.5/B.6  |             | <u>PASS</u> |
| EDGE 850MHz   | 128     | 824.2           | < -25                                 | < -25                 | Plot C.1/C.2  | -13         | <u>PASS</u> |
|               | 190     | 836.6           | < -25                                 | < -25                 | Plot C.3/C.4  |             | <u>PASS</u> |
|               | 251     | 848.8           | < -25                                 | < -25                 | Plot C.5/C.6  |             | <u>PASS</u> |
| EDGE 1900MHz  | 512     | 1850.2          | < -25                                 | < -25                 | Plot D.1/D.2  | -13         | <u>PASS</u> |
|               | 661     | 1880.0          | < -25                                 | < -25                 | Plot D.3/D.4  |             | <u>PASS</u> |
|               | 810     | 1909.8          | < -25                                 | < -25                 | Plot D.5/D.6  |             | <u>PASS</u> |
| WCDMA 850MHz  | 4132    | 826.4           | < -25                                 | < -25                 | Plot E.1/E.2  | -13         | <u>PASS</u> |
|               | 4175    | 835             | < -25                                 | < -25                 | Plot E.3/E.4  |             | <u>PASS</u> |
|               | 4233    | 846.6           | < -25                                 | < -25                 | Plot E.5/E.6  |             | <u>PASS</u> |
| WCDMA 1900MHz | 9262    | 1852.4          | < -25                                 | < -25                 | Plot F.1/F.2  | -13         | <u>PASS</u> |
|               | 9400    | 1880            | < -25                                 | < -25                 | Plot F.3/F.4  |             | <u>PASS</u> |
|               | 9538    | 1907.6          | < -25                                 | < -25                 | Plot F.5/F.6  |             | <u>PASS</u> |
| HSDPA 850MHz  | 4132    | 826.4           | < -25                                 | < -25                 | Plot G.1/G.2  | -13         | <u>PASS</u> |
|               | 4175    | 835             | < -25                                 | < -25                 | Plot G.3/G.4  |             | <u>PASS</u> |
|               | 4233    | 846.6           | < -25                                 | < -25                 | Plot G.5/G.6  |             | <u>PASS</u> |
| HSDPA 1900MHz | 9262    | 1852.4          | < -25                                 | < -25                 | Plot H.1/H.2  | -13         | <u>PASS</u> |
|               | 9400    | 1880            | < -25                                 | < -25                 | Plot H.3/H.4  |             | <u>PASS</u> |
|               | 9538    | 1907.6          | < -25                                 | < -25                 | Plot H.5/H.6  |             | <u>PASS</u> |
| HSUPA 850MHz  | 4132    | 826.4           | < -25                                 | < -25                 | Plot I.1/I.2  | -13         | <u>PASS</u> |
|               | 4175    | 835             | < -25                                 | < -25                 | Plot I.3/I.4  |             | <u>PASS</u> |
|               | 4233    | 846.6           | < -25                                 | < -25                 | Plot I.5/I.6  |             | <u>PASS</u> |
| HSUPA 1900MHz | 9262    | 1852.4          | < -25                                 | < -25                 | Plot J.1/J.2  | -13         | <u>PASS</u> |
|               | 9400    | 1880            | < -25                                 | < -25                 | Plot J.3/J.4  |             | <u>PASS</u> |
|               | 9538    | 1907.6          | < -25                                 | < -25                 | Plot J.5/J.6  |             | <u>PASS</u> |
| HSPA+ 850MHz  | 4132    | 826.4           | < -25                                 | < -25                 | Plot K.1/K.2  | -13         | <u>PASS</u> |
|               | 4175    | 835             | < -25                                 | < -25                 | Plot K.3/K.4  |             | <u>PASS</u> |
|               | 4233    | 846.6           | < -25                                 | < -25                 | Plot K.5/K.6  |             | <u>PASS</u> |
| HSPA+ 1900MHz | 9262    | 1852.4          | < -25                                 | < -25                 | Plot L.1/L.2  | -13         | <u>PASS</u> |
|               | 9400    | 1880            | < -25                                 | < -25                 | Plot L.3/L.4  |             | <u>PASS</u> |

| Band | Channel | Frequency (MHz) | Measured Max. Spurious Emission (dBm) |                       | Refer to Plot | Limit (dBm) | Verdict     |
|------|---------|-----------------|---------------------------------------|-----------------------|---------------|-------------|-------------|
|      |         |                 | Test Antenna Horizontal               | Test Antenna Vertical |               |             |             |
|      | 9538    | 1907.6          | < -25                                 | < -25                 | Plot L.5/L.6  |             | <u>PASS</u> |

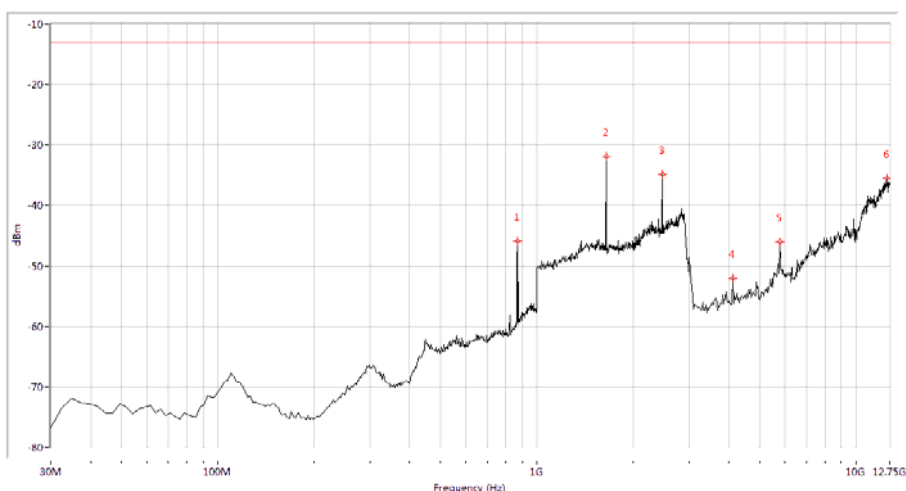
## 2. Test Plots for the Whole Measurement Frequency Range:

Note1: the power of the EUT transmitting frequency should be ignored.

Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

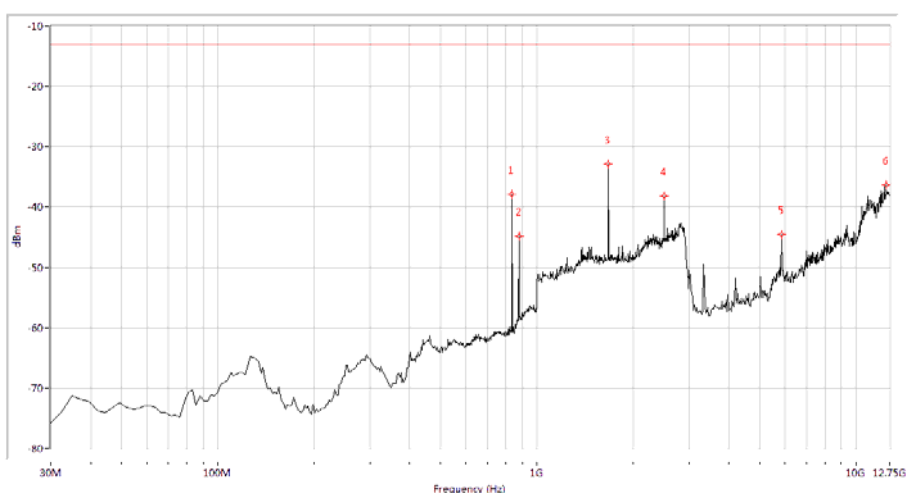


(Plot A.1: GSM 850MHz Channel = 128, Test Antenna Horizontal)



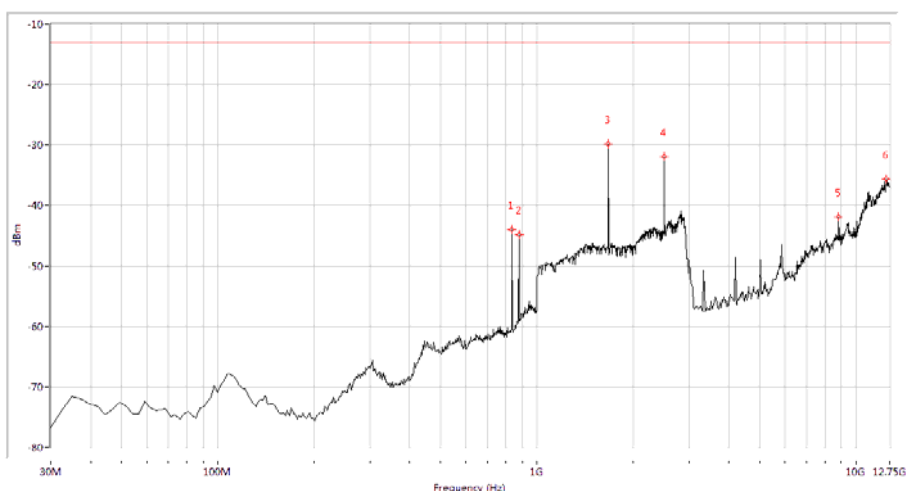
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 871.796    | -45.86 | -13.0     | 32.9   | 60.9   | Vertical | <u>PASS</u> |
| 1648.379   | -31.84 | -13.0     | 18.8   | 62.2   | Vertical | <u>PASS</u> |
| 2471.322   | -34.83 | -13.0     | 21.8   | 242.1  | Vertical | <u>PASS</u> |
| 4118.454   | -52.03 | -13.0     | 39.0   | 352.6  | Vertical | <u>PASS</u> |
| 5771.820   | -46.01 | -13.0     | 33.0   | 355.6  | Vertical | <u>PASS</u> |
| 12531.172  | -35.57 | -13.0     | 22.6   | 355.6  | Vertical | <u>PASS</u> |

(Plot A.2: GSM 850MHz Channel = 128, Test Antenna Vertical)



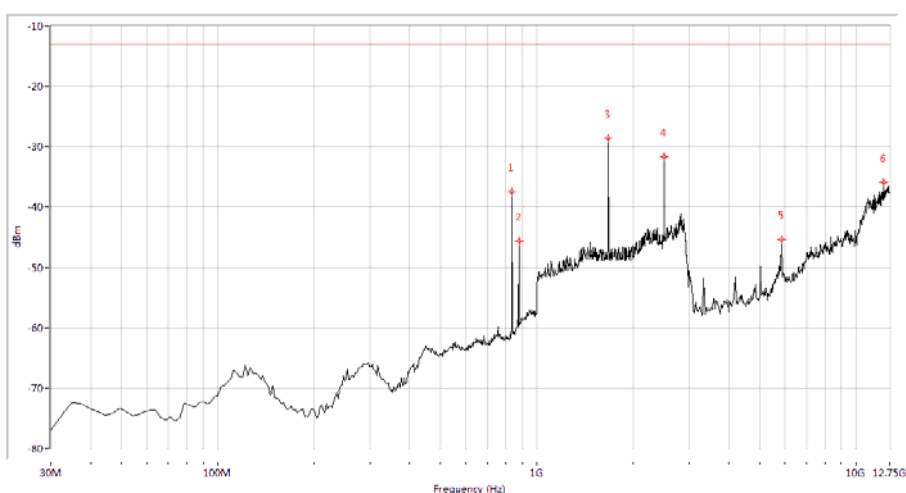
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -37.84 | -13.0     | 24.8   | 172.1  | Horizontal | <u>PASS</u> |
| 879.052    | -44.81 | -13.0     | 31.8   | 323.9  | Horizontal | <u>PASS</u> |
| 1673.317   | -32.85 | -13.0     | 19.9   | 17.0   | Horizontal | <u>PASS</u> |
| 2506.234   | -38.08 | -13.0     | 25.1   | 335.4  | Horizontal | <u>PASS</u> |
| 5844.763   | -44.53 | -13.0     | 31.5   | 45.3   | Horizontal | <u>PASS</u> |
| 12458.229  | -36.40 | -13.0     | 23.4   | 145.2  | Horizontal | <u>PASS</u> |

(Plot A.3: GSM 850MHz Channel = 190, Test Antenna Horizontal)



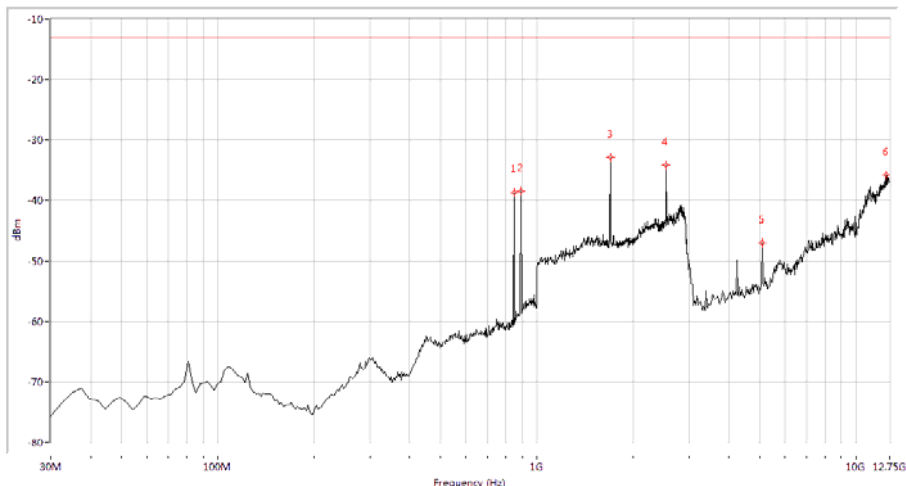
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 835.511    | -43.90 | -13.0     | 30.9   | 20.2   | Vertical | <u>PASS</u> |
| 879.052    | -44.78 | -13.0     | 31.8   | 15.3   | Vertical | <u>PASS</u> |
| 1673.317   | -29.79 | -13.0     | 16.8   | 27.8   | Vertical | <u>PASS</u> |
| 2506.234   | -31.86 | -13.0     | 18.9   | 324.9  | Vertical | <u>PASS</u> |
| 8835.411   | -41.83 | -13.0     | 28.8   | 134.2  | Vertical | <u>PASS</u> |
| 12458.229  | -35.61 | -13.0     | 22.6   | 61.4   | Vertical | <u>PASS</u> |

(Plot A.4: GSM 850MHz Channel = 190, Test Antenna Vertical)



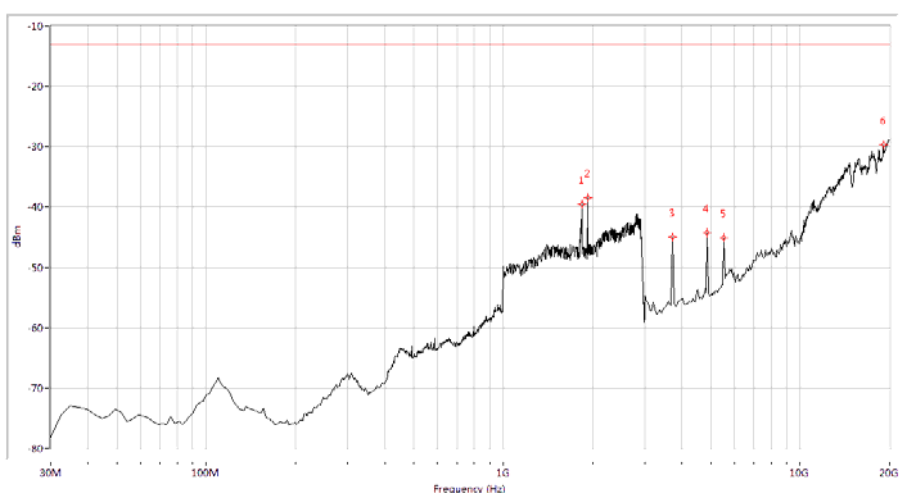
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -37.38 | -13.0     | 24.4   | 116.2  | Horizontal | <u>PASS</u> |
| 879.052    | -45.61 | -13.0     | 32.6   | 126.6  | Horizontal | <u>PASS</u> |
| 1673.317   | -28.58 | -13.0     | 15.6   | 60.5   | Horizontal | <u>PASS</u> |
| 2506.234   | -31.64 | -13.0     | 18.6   | 326.8  | Horizontal | <u>PASS</u> |
| 5844.763   | -45.33 | -13.0     | 32.3   | 332.1  | Horizontal | <u>PASS</u> |
| 12239.401  | -35.94 | -13.0     | 22.9   | 2.2    | Horizontal | <u>PASS</u> |

(Plot A.5: GSM 850MHz Channel = 251, Test Antenna Horizontal)



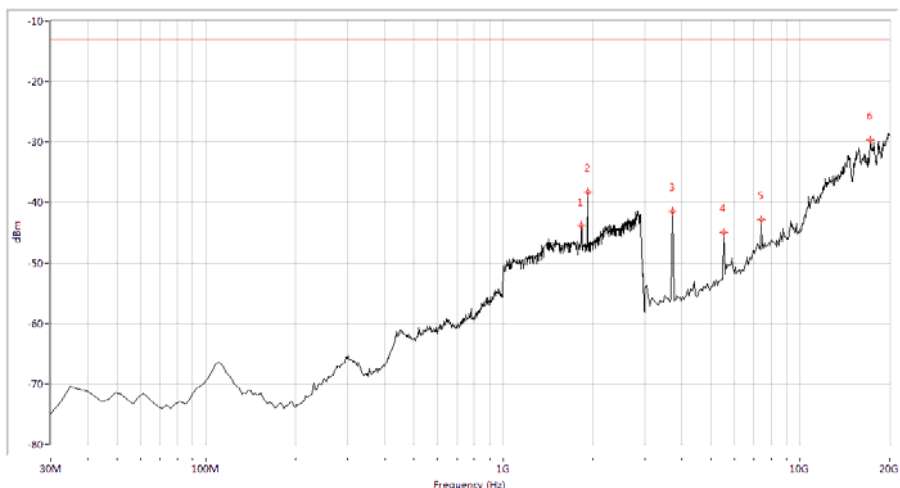
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 847.606    | -38.76 | -13.0     | 25.8   | -0.0   | Vertical | <u>PASS</u> |
| 891.147    | -38.41 | -13.0     | 25.4   | 96.4   | Vertical | <u>PASS</u> |
| 1698.254   | -32.91 | -13.0     | 19.9   | 33.3   | Vertical | <u>PASS</u> |
| 2541.147   | -34.06 | -13.0     | 21.1   | 243.9  | Vertical | <u>PASS</u> |
| 5091.022   | -47.00 | -13.0     | 34.0   | 297.1  | Vertical | <u>PASS</u> |
| 12409.601  | -35.77 | -13.0     | 22.8   | 220.2  | Vertical | <u>PASS</u> |

(Plot A.6: GSM 850MHz Channel = 251, Test Antenna Vertical)



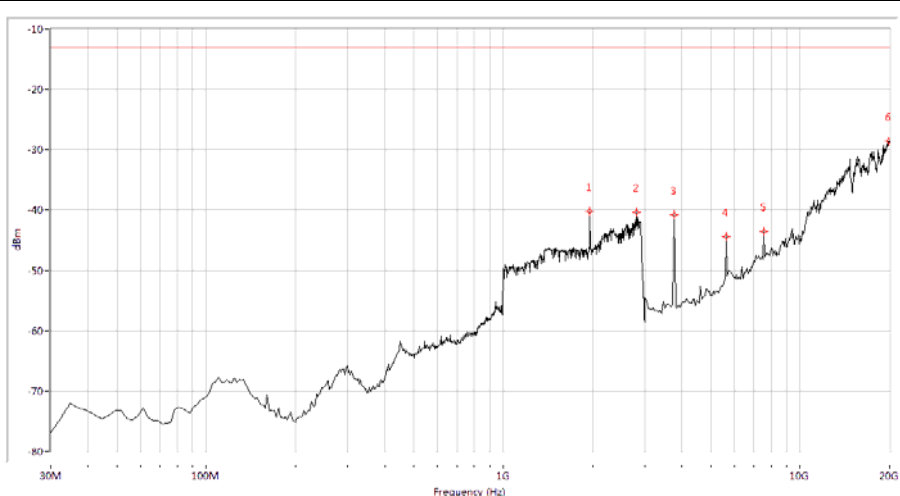
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 1837.905   | -39.49 | -13.0     | 26.5   | 142.3  | Horizontal | <u>PASS</u> |
| 1927.681   | -38.42 | -13.0     | 25.4   | 56.1   | Horizontal | <u>PASS</u> |
| 3720.698   | -44.91 | -13.0     | 31.9   | -0.0   | Horizontal | <u>PASS</u> |
| 4865.337   | -44.20 | -13.0     | 31.2   | 338.2  | Horizontal | <u>PASS</u> |
| 5543.641   | -45.09 | -13.0     | 32.1   | 287.6  | Horizontal | <u>PASS</u> |
| 19067.332  | -29.62 | -13.0     | 16.6   | 353.8  | Horizontal | <u>PASS</u> |

(Plot B.1: GSM 1900MHz Channel = 512, Test Antenna Horizontal)



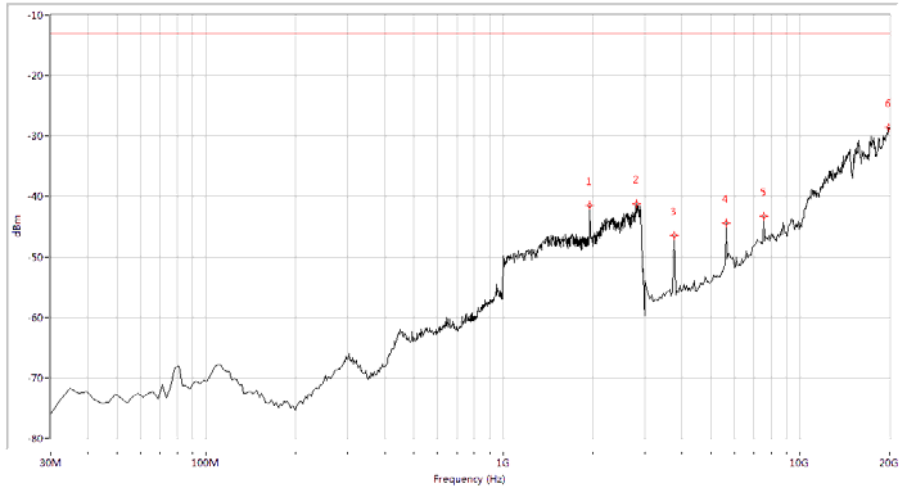
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 1832.918   | -43.76 | -13.0     | 30.8   | 130.6  | Vertical | <u>PASS</u> |
| 1927.681   | -38.34 | -13.0     | 25.3   | 48.4   | Vertical | <u>PASS</u> |
| 3720.698   | -41.42 | -13.0     | 28.4   | 231.2  | Vertical | <u>PASS</u> |
| 5543.641   | -44.87 | -13.0     | 31.9   | -0.0   | Vertical | <u>PASS</u> |
| 7408.978   | -42.83 | -13.0     | 29.8   | 149.0  | Vertical | <u>PASS</u> |
| 17244.389  | -29.72 | -13.0     | 16.7   | 114.8  | Vertical | <u>PASS</u> |

(Plot B.2: GSM 1900MHz Channel = 512, Test Antenna Vertical)



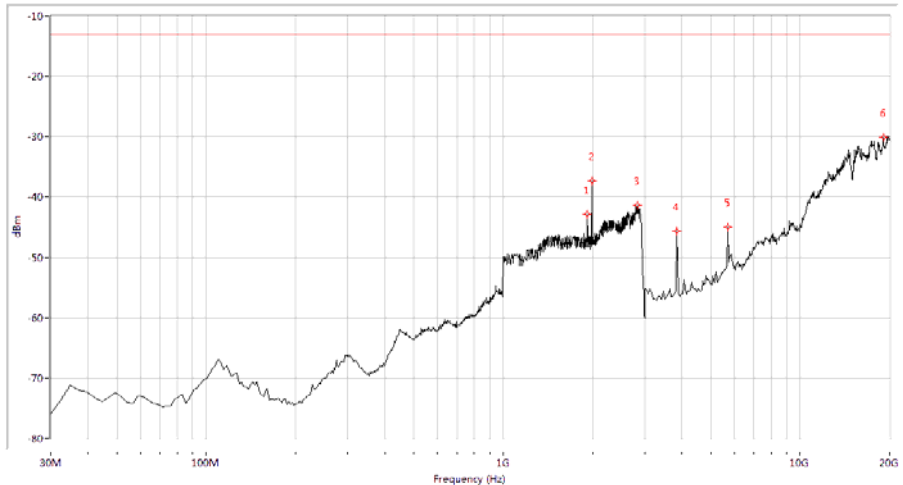
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 1957.606   | -40.17 | -13.0     | 27.2   | 50.6   | Horizontal | <u>PASS</u> |
| 2810.474   | -40.36 | -13.0     | 27.4   | 284.4  | Horizontal | <u>PASS</u> |
| 3763.092   | -40.80 | -13.0     | 27.8   | 249.4  | Horizontal | <u>PASS</u> |
| 5628.429   | -44.34 | -13.0     | 31.3   | 275.1  | Horizontal | <u>PASS</u> |
| 7536.160   | -43.53 | -13.0     | 30.5   | 291.8  | Horizontal | <u>PASS</u> |
| 19830.424  | -28.55 | -13.0     | 15.6   | 132.6  | Horizontal | <u>PASS</u> |

(Plot B.3: GSM 1900MHz Channel = 661, Test Antenna Horizontal)



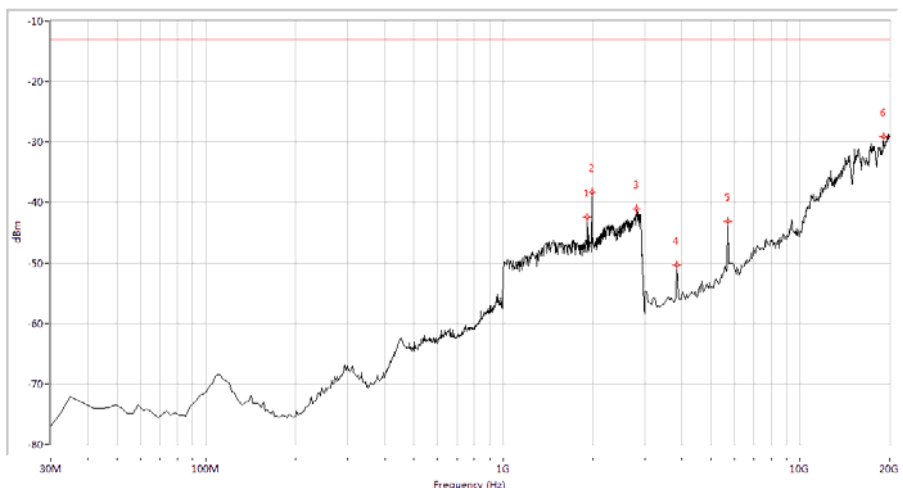
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 1957.606   | -41.45 | -13.0     | 28.5   | 139.5  | Vertical | <u>PASS</u> |
| 2815.461   | -41.17 | -13.0     | 28.2   | 176.7  | Vertical | <u>PASS</u> |
| 3763.092   | -46.52 | -13.0     | 33.5   | -0.0   | Vertical | <u>PASS</u> |
| 5628.429   | -44.43 | -13.0     | 31.4   | 300.0  | Vertical | <u>PASS</u> |
| 7536.160   | -43.26 | -13.0     | 30.3   | 291.1  | Vertical | <u>PASS</u> |
| 19830.424  | -28.61 | -13.0     | 15.6   | 300.0  | Vertical | <u>PASS</u> |

(Plot B.4: GSM 1900MHz Channel = 661, Test Antenna Vertical)



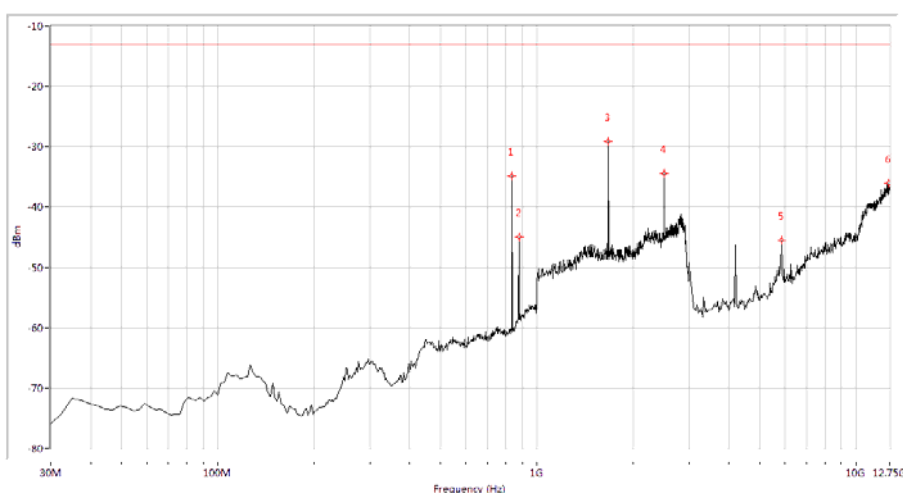
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 1922.693   | -42.91 | -13.0     | 29.9   | 360.0  | Horizontal | <u>PASS</u> |
| 1987.531   | -37.29 | -13.0     | 24.3   | 137.0  | Horizontal | <u>PASS</u> |
| 2825.436   | -41.37 | -13.0     | 28.4   | 299.8  | Horizontal | <u>PASS</u> |
| 3847.880   | -45.58 | -13.0     | 32.6   | 256.8  | Horizontal | <u>PASS</u> |
| 5713.217   | -44.98 | -13.0     | 32.0   | 356.1  | Horizontal | <u>PASS</u> |
| 19109.726  | -30.06 | -13.0     | 17.1   | -0.0   | Horizontal | <u>PASS</u> |

(Plot B.5: GSM 1900MHz Channel = 810, Test Antenna Horizontal)



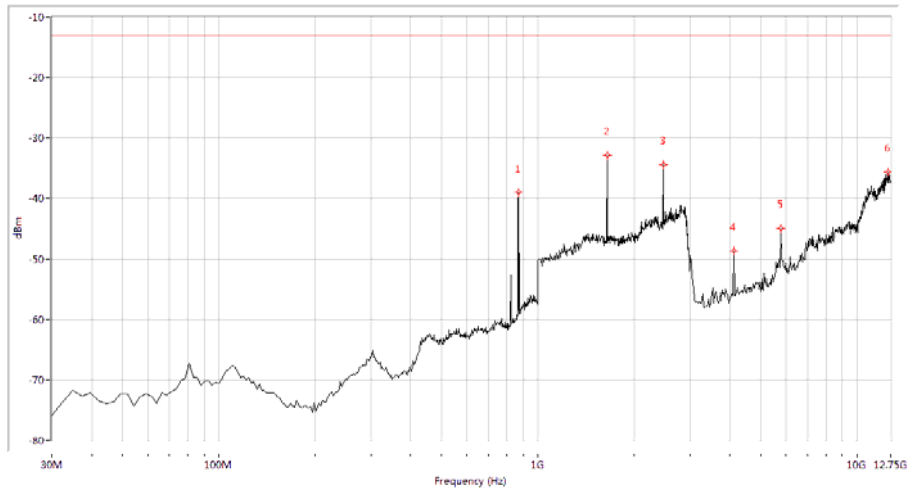
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 1922.693   | -42.45 | -13.0     | 29.4   | 126.8  | Vertical | <u>PASS</u> |
| 1987.531   | -38.24 | -13.0     | 25.2   | 135.0  | Vertical | <u>PASS</u> |
| 2805.486   | -41.12 | -13.0     | 28.1   | 279.7  | Vertical | <u>PASS</u> |
| 3847.880   | -50.27 | -13.0     | 37.3   | 235.4  | Vertical | <u>PASS</u> |
| 5713.217   | -43.15 | -13.0     | 30.1   | 60.9   | Vertical | <u>PASS</u> |
| 19067.332  | -29.15 | -13.0     | 16.2   | 103.3  | Vertical | <u>PASS</u> |

(Plot B.6: GSM 1900MHz Channel = 810, Test Antenna Vertical)



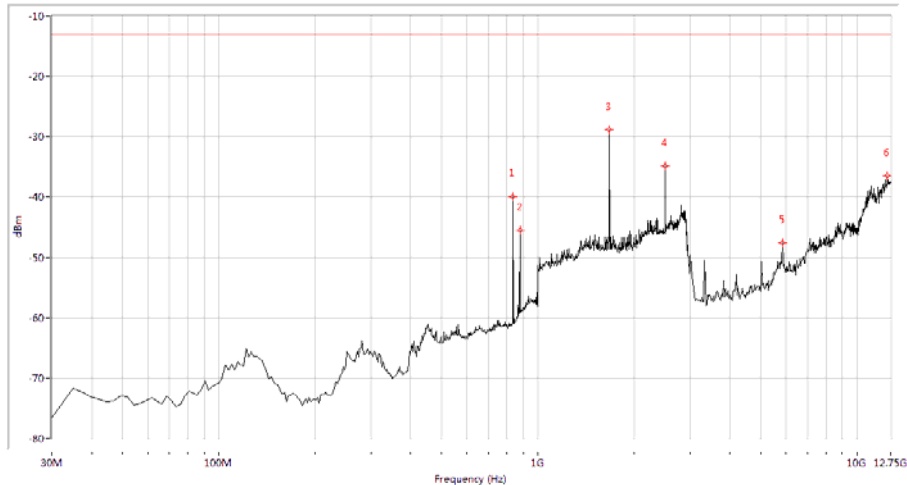
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -34.83 | -13.0     | 21.8   | 189.9  | Horizontal | <u>PASS</u> |
| 879.052    | -44.98 | -13.0     | 32.0   | 140.4  | Horizontal | <u>PASS</u> |
| 1673.317   | -29.16 | -13.0     | 16.2   | 61.9   | Horizontal | <u>PASS</u> |
| 2506.234   | -34.38 | -13.0     | 21.4   | 239.9  | Horizontal | <u>PASS</u> |
| 5844.763   | -45.42 | -13.0     | 32.4   | 326.4  | Horizontal | <u>PASS</u> |
| 12677.057  | -36.05 | -13.0     | 23.0   | 176.9  | Horizontal | <u>PASS</u> |

(Plot C.1: EGPRS 850MHz Channel = 128, Test Antenna Horizontal)



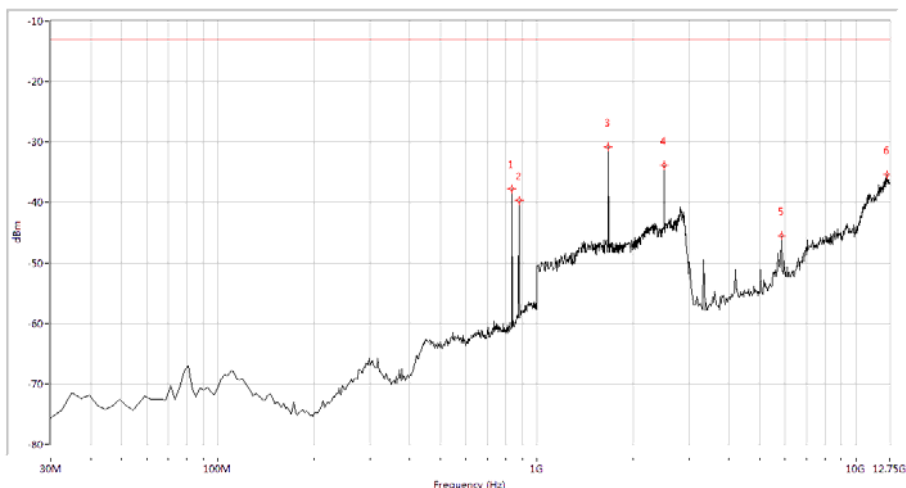
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 871.796    | -38.92 | -13.0     | 25.9   | 59.2   | Vertical | <u>PASS</u> |
| 1648.379   | -32.85 | -13.0     | 19.8   | 21.0   | Vertical | <u>PASS</u> |
| 2471.322   | -34.43 | -13.0     | 21.4   | 245.7  | Vertical | <u>PASS</u> |
| 4118.454   | -48.67 | -13.0     | 35.7   | 83.3   | Vertical | <u>PASS</u> |
| 5771.820   | -45.00 | -13.0     | 32.0   | 44.7   | Vertical | <u>PASS</u> |
| 12555.486  | -35.69 | -13.0     | 22.7   | 259.6  | Vertical | <u>PASS</u> |

(Plot C.2: EGPRS 850MHz Channel = 128, Test Antenna Vertical)



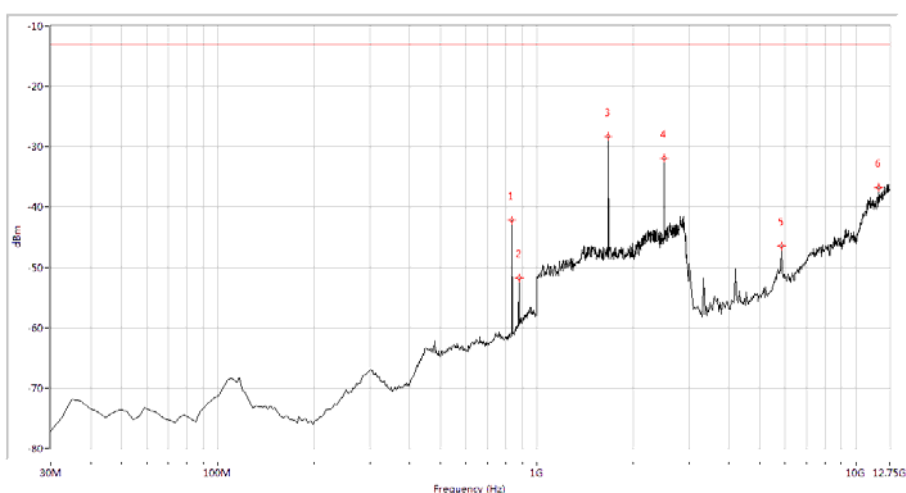
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -39.87 | -13.0     | 26.9   | -0.0   | Horizontal | <u>PASS</u> |
| 879.052    | -45.50 | -13.0     | 32.5   | 191.8  | Horizontal | <u>PASS</u> |
| 1673.317   | -28.82 | -13.0     | 15.8   | 60.3   | Horizontal | <u>PASS</u> |
| 2506.234   | -34.83 | -13.0     | 21.8   | 238.8  | Horizontal | <u>PASS</u> |
| 5844.763   | -47.55 | -13.0     | 34.5   | -0.0   | Horizontal | <u>PASS</u> |
| 12433.915  | -36.54 | -13.0     | 23.5   | 41.5   | Horizontal | <u>PASS</u> |

(Plot C.3: EGPRS 850MHz Channel = 190, Test Antenna Horizontal)



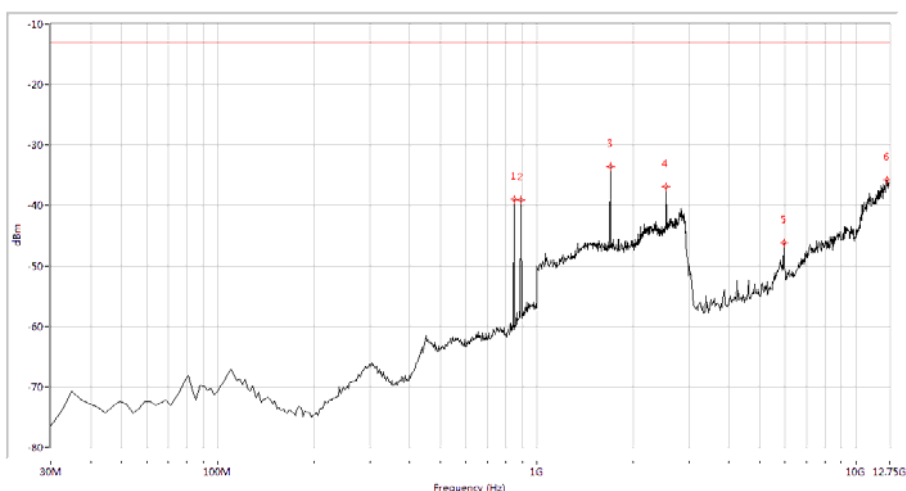
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 835.511    | -37.65 | -13.0     | 24.7   | 52.6   | Vertical | <u>PASS</u> |
| 879.052    | -39.65 | -13.0     | 26.6   | -0.0   | Vertical | <u>PASS</u> |
| 1673.317   | -30.84 | -13.0     | 17.8   | 58.5   | Vertical | <u>PASS</u> |
| 2506.234   | -33.79 | -13.0     | 20.8   | 329.2  | Vertical | <u>PASS</u> |
| 5844.763   | -45.45 | -13.0     | 32.4   | 339.8  | Vertical | <u>PASS</u> |
| 12506.858  | -35.38 | -13.0     | 22.4   | 27.5   | Vertical | <u>PASS</u> |

(Plot C.4: EGPRS 850MHz Channel = 190, Test Antenna Vertical)



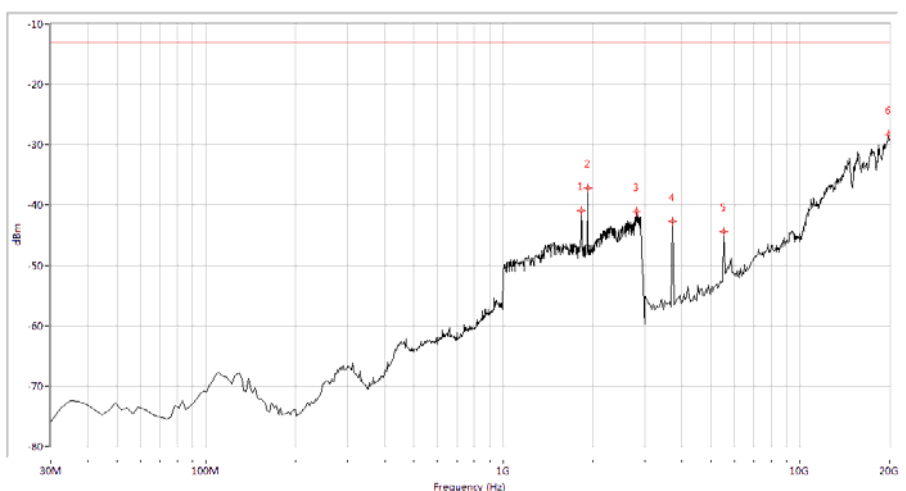
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -42.22 | -13.0     | 29.2   | 177.3  | Horizontal | <u>PASS</u> |
| 879.052    | -51.69 | -13.0     | 38.7   | 310.4  | Horizontal | <u>PASS</u> |
| 1673.317   | -28.34 | -13.0     | 15.3   | 55.5   | Horizontal | <u>PASS</u> |
| 2506.234   | -31.90 | -13.0     | 18.9   | 320.6  | Horizontal | <u>PASS</u> |
| 5844.763   | -46.40 | -13.0     | 33.4   | 41.6   | Horizontal | <u>PASS</u> |
| 11801.746  | -36.78 | -13.0     | 23.8   | 357.8  | Horizontal | <u>PASS</u> |

(Plot C.5: EGPRS 850MHz Channel = 251, Test Antenna Horizontal)



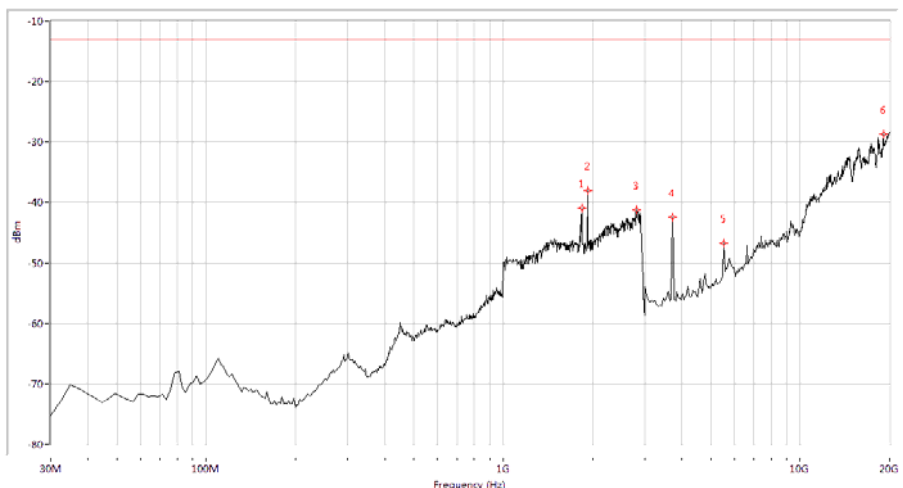
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 847.606    | -38.95 | -13.0     | 26.0   | 16.6   | Vertical | <u>PASS</u> |
| 891.147    | -39.13 | -13.0     | 26.1   | 192.2  | Vertical | <u>PASS</u> |
| 1698.254   | -33.63 | -13.0     | 20.6   | 28.3   | Vertical | <u>PASS</u> |
| 2541.147   | -36.83 | -13.0     | 23.8   | 173.7  | Vertical | <u>PASS</u> |
| 5942.020   | -46.17 | -13.0     | 33.2   | 58.2   | Vertical | <u>PASS</u> |
| 12531.172  | -35.81 | -13.0     | 22.8   | 114.4  | Vertical | <u>PASS</u> |

(Plot C.6: EGPRS 850MHz Channel = 251, Test Antenna Vertical)



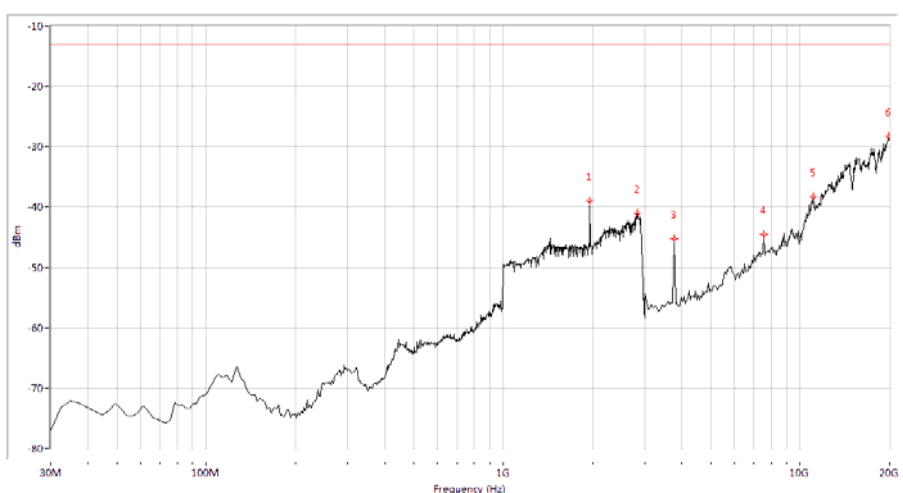
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 1832.918   | -40.87 | -13.0     | 27.9   | 88.2   | Horizontal | <u>PASS</u> |
| 1927.681   | -37.19 | -13.0     | 24.2   | 48.8   | Horizontal | <u>PASS</u> |
| 2805.486   | -41.00 | -13.0     | 28.0   | 90.8   | Horizontal | <u>PASS</u> |
| 3720.698   | -42.71 | -13.0     | 29.7   | 214.9  | Horizontal | <u>PASS</u> |
| 5543.641   | -44.37 | -13.0     | 31.4   | 291.1  | Horizontal | <u>PASS</u> |
| 19830.424  | -28.36 | -13.0     | 15.4   | 132.3  | Horizontal | <u>PASS</u> |

(Plot D.1: EGPRS 1900MHz Channel = 512, Test Antenna Horizontal)



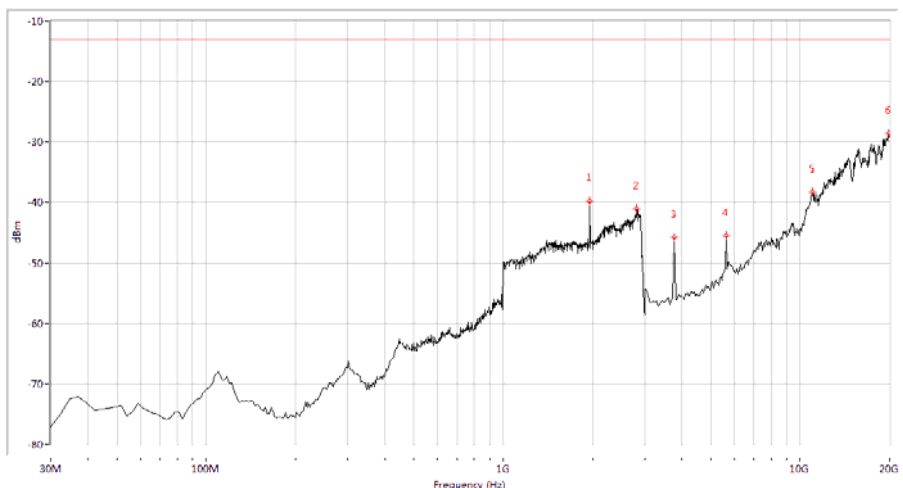
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 1837.905   | -40.95 | -13.0     | 27.9   | 17.0   | Vertical | <u>PASS</u> |
| 1927.681   | -37.96 | -13.0     | 25.0   | 53.4   | Vertical | <u>PASS</u> |
| 2820.449   | -41.19 | -13.0     | 28.2   | 237.2  | Vertical | <u>PASS</u> |
| 3720.698   | -42.38 | -13.0     | 29.4   | 258.4  | Vertical | <u>PASS</u> |
| 5543.641   | -46.68 | -13.0     | 33.7   | 3.7    | Vertical | <u>PASS</u> |
| 19067.332  | -28.71 | -13.0     | 15.7   | 105.3  | Vertical | <u>PASS</u> |

(Plot D.2: EGPRS 1900MHz Channel = 512, Test Antenna Vertical)



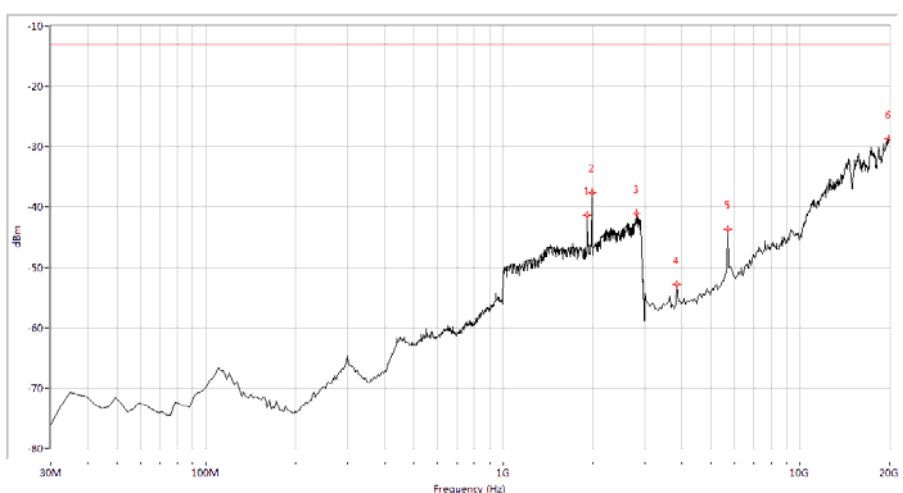
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 1957.606   | -38.95 | -13.0     | 26.0   | 51.2   | Horizontal | <u>PASS</u> |
| 2825.436   | -41.12 | -13.0     | 28.1   | 84.6   | Horizontal | <u>PASS</u> |
| 3763.092   | -45.24 | -13.0     | 32.2   | 211.6  | Horizontal | <u>PASS</u> |
| 7536.160   | -44.50 | -13.0     | 31.5   | 332.1  | Horizontal | <u>PASS</u> |
| 11054.863  | -38.27 | -13.0     | 25.3   | 360.0  | Horizontal | <u>PASS</u> |
| 19830.424  | -28.32 | -13.0     | 15.3   | 110.1  | Horizontal | <u>PASS</u> |

(Plot D.3: EGPRS 1900MHz Channel = 661, Test Antenna Horizontal)



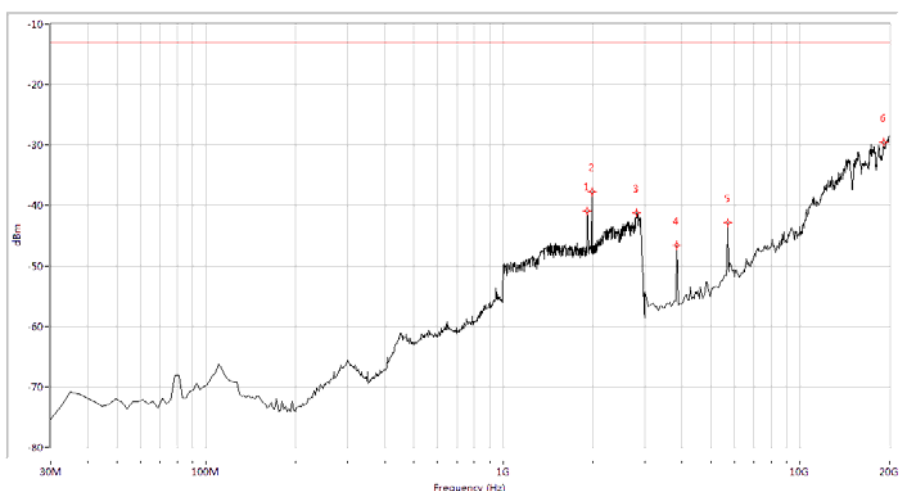
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 1957.606   | -39.81 | -13.0     | 26.8   | 136.7  | Vertical | <u>PASS</u> |
| 2815.461   | -41.08 | -13.0     | 28.1   | 156.1  | Vertical | <u>PASS</u> |
| 3763.092   | -45.81 | -13.0     | 32.8   | 8.8    | Vertical | <u>PASS</u> |
| 5628.429   | -45.55 | -13.0     | 32.5   | 249.2  | Vertical | <u>PASS</u> |
| 11012.469  | -38.22 | -13.0     | 25.2   | 360.0  | Vertical | <u>PASS</u> |
| 19872.818  | -28.60 | -13.0     | 15.6   | 209.8  | Vertical | <u>PASS</u> |

(Plot D.4: EGPRS 1900MHz Channel = 661, Test Antenna Vertical)



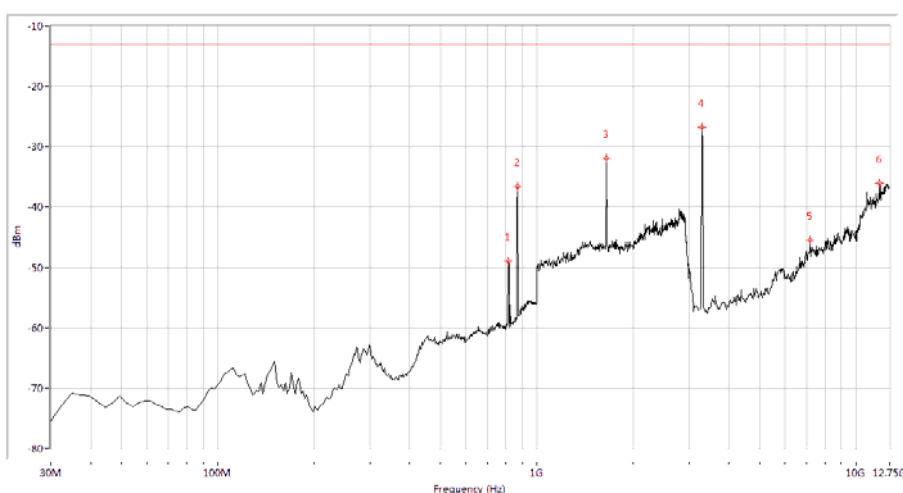
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 1922.693   | -41.33 | -13.0     | 28.3   | 233.4  | Horizontal | <u>PASS</u> |
| 1987.531   | -37.58 | -13.0     | 24.6   | 139.6  | Horizontal | <u>PASS</u> |
| 2815.461   | -41.01 | -13.0     | 28.0   | 265.1  | Horizontal | <u>PASS</u> |
| 3847.880   | -52.89 | -13.0     | 39.9   | 83.0   | Horizontal | <u>PASS</u> |
| 5713.217   | -43.62 | -13.0     | 30.6   | 41.7   | Horizontal | <u>PASS</u> |
| 19830.424  | -28.75 | -13.0     | 15.8   | 83.0   | Horizontal | <u>PASS</u> |

(Plot D.5: EGPRS 1900MHz Channel = 810, Test Antenna Horizontal)



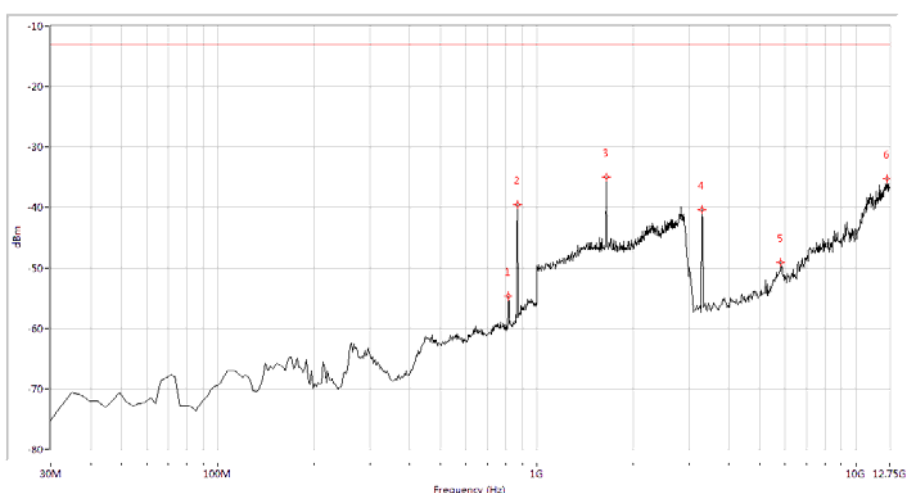
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 1922.693   | -40.85 | -13.0     | 27.9   | 11.8   | Vertical | <u>PASS</u> |
| 1987.531   | -37.72 | -13.0     | 24.7   | 139.4  | Vertical | <u>PASS</u> |
| 2805.486   | -41.20 | -13.0     | 28.2   | 174.7  | Vertical | <u>PASS</u> |
| 3847.880   | -46.66 | -13.0     | 33.7   | 268.1  | Vertical | <u>PASS</u> |
| 5713.217   | -42.85 | -13.0     | 29.9   | 325.8  | Vertical | <u>PASS</u> |
| 19067.332  | -29.48 | -13.0     | 16.5   | 37.3   | Vertical | <u>PASS</u> |

(Plot D.6: EGPRS 1900MHz Channel = 810, Test Antenna Vertical)



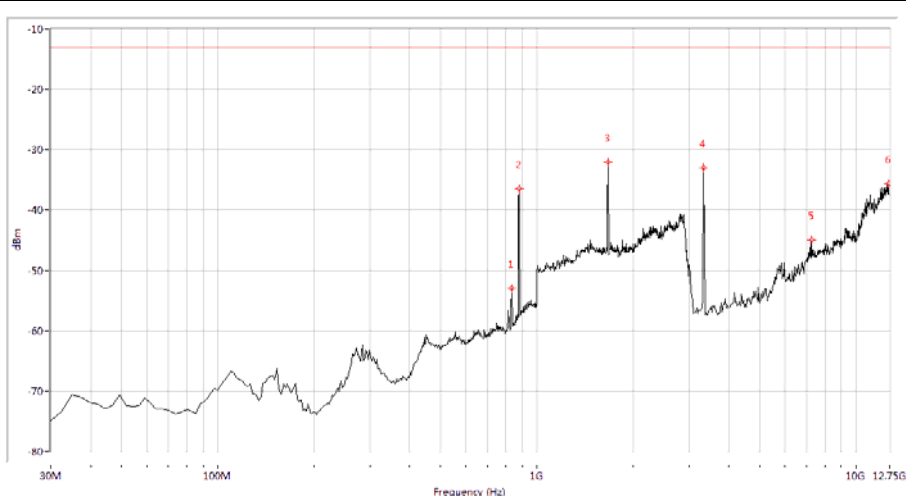
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 816.160    | -48.99 | -13.0     | 36.0   | 69.4   | Horizontal | <u>PASS</u> |
| 869.377    | -36.60 | -13.0     | 23.6   | 316.0  | Horizontal | <u>PASS</u> |
| 1653.367   | -31.94 | -13.0     | 18.9   | 89.5   | Horizontal | <u>PASS</u> |
| 3291.771   | -26.80 | -13.0     | 13.8   | 284.5  | Horizontal | <u>PASS</u> |
| 7182.045   | -45.49 | -13.0     | 32.5   | 73.2   | Horizontal | <u>PASS</u> |
| 11874.688  | -36.08 | -13.0     | 23.1   | 229.0  | Horizontal | <u>PASS</u> |

(Plot E.1: WCDMA 850MHz Channel = 4132, Test Antenna Horizontal)



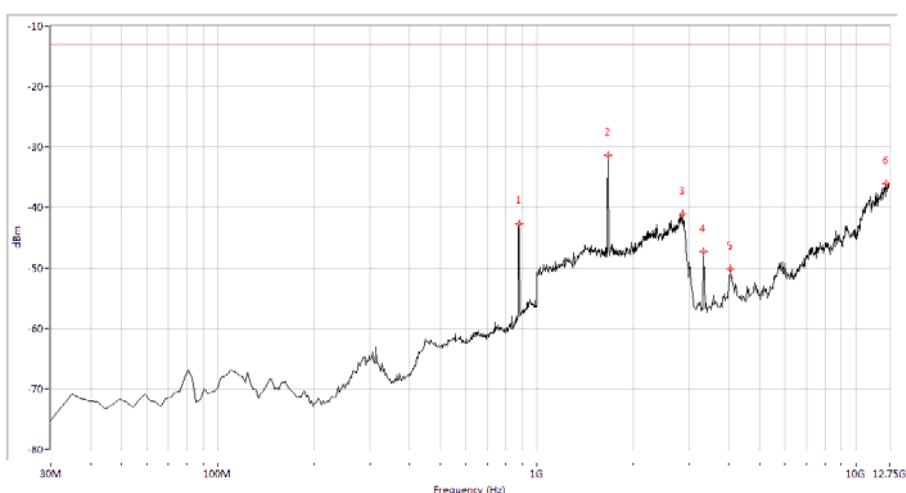
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 816.160    | -54.60 | -13.0     | 41.6   | 184.5  | Vertical | <u>PASS</u> |
| 869.377    | -39.47 | -13.0     | 26.5   | 17.5   | Vertical | <u>PASS</u> |
| 1648.379   | -34.99 | -13.0     | 22.0   | 203.0  | Vertical | <u>PASS</u> |
| 3291.771   | -40.37 | -13.0     | 27.4   | 164.1  | Vertical | <u>PASS</u> |
| 5820.449   | -49.10 | -13.0     | 36.1   | 307.3  | Vertical | <u>PASS</u> |
| 12531.172  | -35.26 | -13.0     | 22.3   | 355.6  | Vertical | <u>PASS</u> |

(Plot E.2: WCDMA 850MHz Channel = 4132, Test Antenna Vertical)



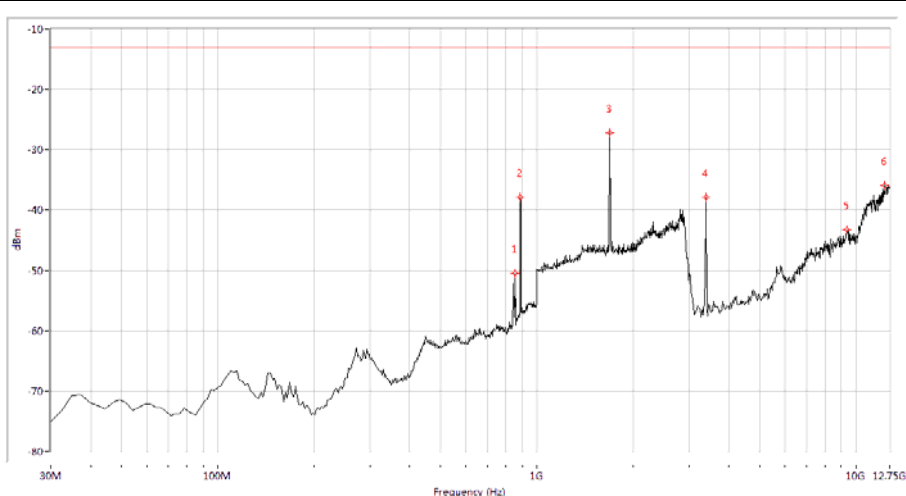
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -52.98 | -13.0     | 40.0   | 69.3   | Horizontal | <u>PASS</u> |
| 879.052    | -36.46 | -13.0     | 23.5   | 319.6  | Horizontal | <u>PASS</u> |
| 1668.329   | -31.97 | -13.0     | 19.0   | 84.6   | Horizontal | <u>PASS</u> |
| 3340.399   | -33.05 | -13.0     | 20.0   | 299.2  | Horizontal | <u>PASS</u> |
| 7254.988   | -44.96 | -13.0     | 32.0   | 211.4  | Horizontal | <u>PASS</u> |
| 12652.743  | -35.61 | -13.0     | 22.6   | 25.0   | Horizontal | <u>PASS</u> |

(Plot E.3: WCDMA 850MHz Channel = 4175, Test Antenna Horizontal)



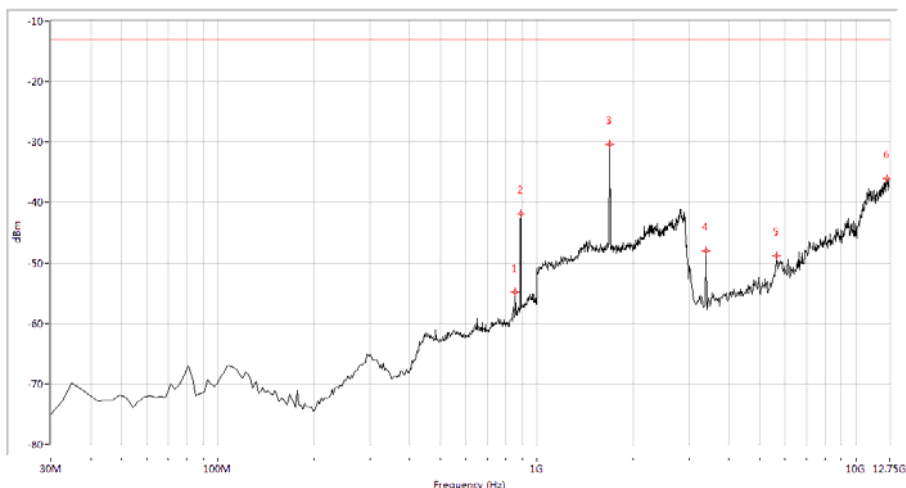
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 879.052    | -42.69 | -13.0     | 29.7   | 125.1  | Vertical | <u>PASS</u> |
| 1668.329   | -31.31 | -13.0     | 18.3   | 37.4   | Vertical | <u>PASS</u> |
| 2865.337   | -41.05 | -13.0     | 28.1   | 24.8   | Vertical | <u>PASS</u> |
| 3340.399   | -47.23 | -13.0     | 34.2   | 2.2    | Vertical | <u>PASS</u> |
| 4045.511   | -50.15 | -13.0     | 37.1   | 129.5  | Vertical | <u>PASS</u> |
| 12458.229  | -36.07 | -13.0     | 23.1   | 325.4  | Vertical | <u>PASS</u> |

(Plot E.4: WCDMA 850MHz Channel = 4175, Test Antenna Vertical)



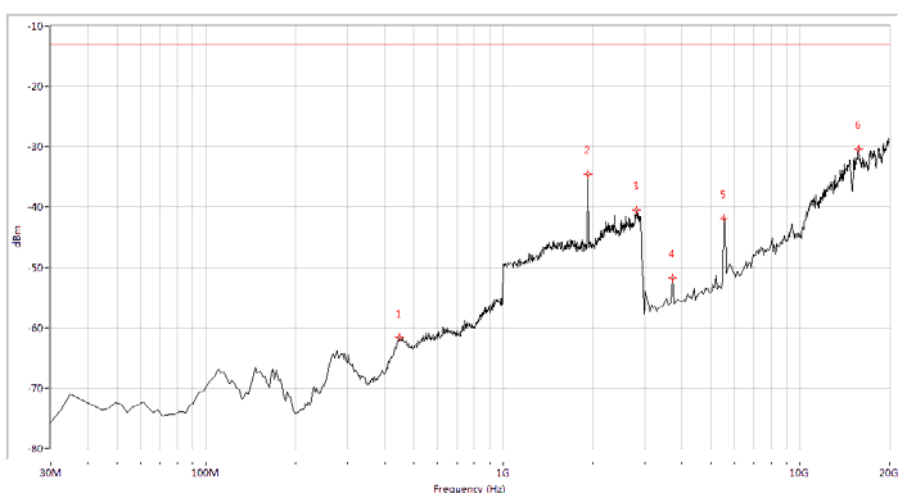
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 854.863    | -50.41 | -13.0     | 37.4   | 73.8   | Horizontal | <u>PASS</u> |
| 888.728    | -37.91 | -13.0     | 24.9   | 319.4  | Horizontal | <u>PASS</u> |
| 1693.267   | -27.22 | -13.0     | 14.2   | 92.3   | Horizontal | <u>PASS</u> |
| 3389.027   | -37.93 | -13.0     | 24.9   | 311.2  | Horizontal | <u>PASS</u> |
| 9346.010   | -43.28 | -13.0     | 30.3   | -0.0   | Horizontal | <u>PASS</u> |
| 12263.716  | -35.96 | -13.0     | 23.0   | 327.2  | Horizontal | <u>PASS</u> |

(Plot E.5: WCDMA 850MHz Channel = 4233, Test Antenna Horizontal)



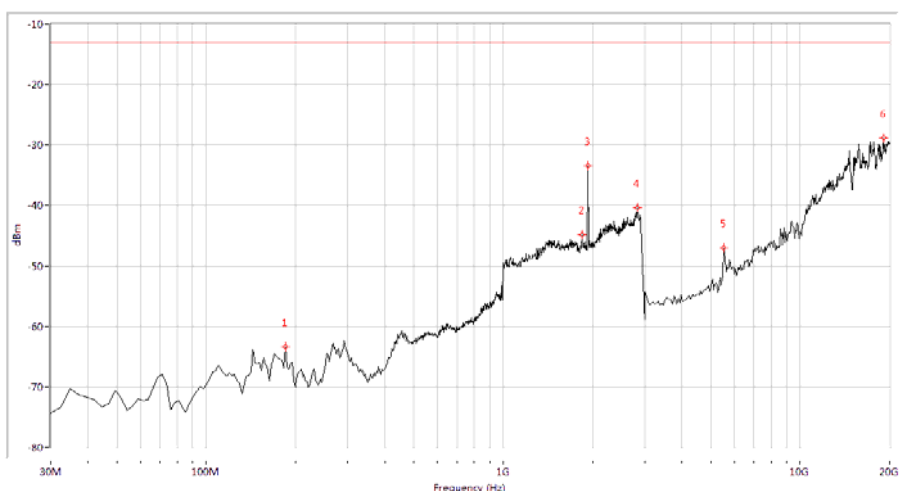
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 854.863    | -54.81 | -13.0     | 41.8   | 139.7  | Vertical | <u>PASS</u> |
| 891.147    | -41.82 | -13.0     | 28.8   | 108.5  | Vertical | <u>PASS</u> |
| 1693.267   | -30.39 | -13.0     | 17.4   | 35.4   | Vertical | <u>PASS</u> |
| 3389.027   | -47.91 | -13.0     | 34.9   | -0.0   | Vertical | <u>PASS</u> |
| 5650.249   | -48.84 | -13.0     | 35.8   | 188.1  | Vertical | <u>PASS</u> |
| 12531.172  | -36.08 | -13.0     | 23.1   | 141.9  | Vertical | <u>PASS</u> |

(Plot E.6: WCDMA 850MHz Channel = 4233, Test Antenna Vertical)



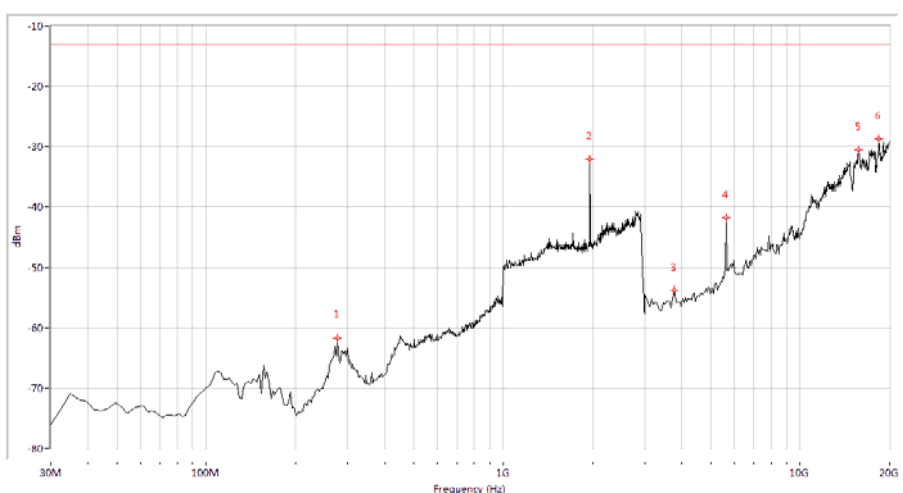
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 448.479    | -61.50 | -13.0     | 48.5   | 101.2  | Horizontal | <u>PASS</u> |
| 1927.681   | -34.57 | -13.0     | 21.6   | 291.8  | Horizontal | <u>PASS</u> |
| 2820.449   | -40.55 | -13.0     | 27.5   | 301.1  | Horizontal | <u>PASS</u> |
| 3720.698   | -51.75 | -13.0     | 38.8   | 93.4   | Horizontal | <u>PASS</u> |
| 5543.641   | -41.91 | -13.0     | 28.9   | 315.7  | Horizontal | <u>PASS</u> |
| 15718.204  | -30.31 | -13.0     | 17.3   | 3.7    | Horizontal | <u>PASS</u> |

(Plot F.1: WCDMA 1900MHz Channel = 9262, Test Antenna Horizontal)



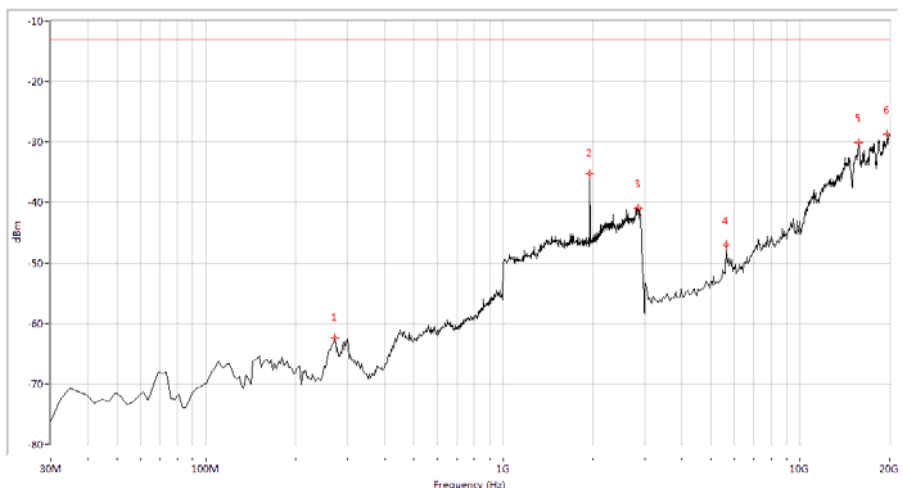
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 184.813    | -63.39 | -13.0     | 50.4   | 332.4  | Vertical | <u>PASS</u> |
| 1837.905   | -44.76 | -13.0     | 31.8   | 64.7   | Vertical | <u>PASS</u> |
| 1932.668   | -33.40 | -13.0     | 20.4   | 277.7  | Vertical | <u>PASS</u> |
| 2830.424   | -40.32 | -13.0     | 27.3   | 11.6   | Vertical | <u>PASS</u> |
| 5543.641   | -47.02 | -13.0     | 34.0   | 127.1  | Vertical | <u>PASS</u> |
| 19109.726  | -28.89 | -13.0     | 15.9   | 50.1   | Vertical | <u>PASS</u> |

(Plot F.2: WCDMA 1900MHz Channel = 9262, Test Antenna Vertical)



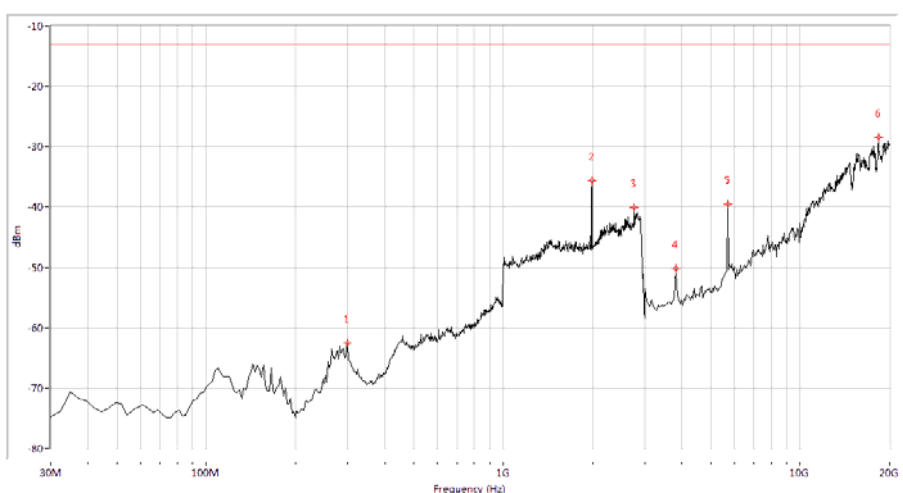
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 276.733    | -61.77 | -13.0     | 48.8   | 307.5  | Horizontal | <u>PASS</u> |
| 1957.606   | -32.05 | -13.0     | 19.1   | 55.5   | Horizontal | <u>PASS</u> |
| 3763.092   | -53.84 | -13.0     | 40.8   | 94.0   | Horizontal | <u>PASS</u> |
| 5628.429   | -41.78 | -13.0     | 28.8   | 321.6  | Horizontal | <u>PASS</u> |
| 15760.599  | -30.53 | -13.0     | 17.5   | 110.0  | Horizontal | <u>PASS</u> |
| 18431.421  | -28.70 | -13.0     | 15.7   | 203.7  | Horizontal | <u>PASS</u> |

(Plot F.3: WCDMA 1900MHz Channel = 9400, Test Antenna Horizontal)



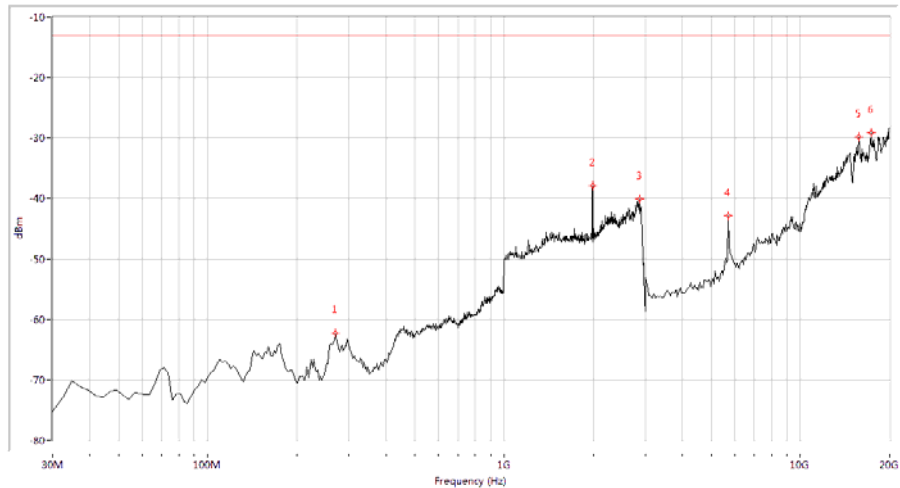
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 271.895    | -62.35 | -13.0     | 49.4   | 171.3  | Vertical | <u>PASS</u> |
| 1957.606   | -35.28 | -13.0     | 22.3   | 269.3  | Vertical | <u>PASS</u> |
| 2840.399   | -40.98 | -13.0     | 28.0   | 278.3  | Vertical | <u>PASS</u> |
| 5628.429   | -47.05 | -13.0     | 34.0   | 131.2  | Vertical | <u>PASS</u> |
| 15760.599  | -30.08 | -13.0     | 17.1   | 146.1  | Vertical | <u>PASS</u> |
| 19660.848  | -28.75 | -13.0     | 15.7   | 139.1  | Vertical | <u>PASS</u> |

(Plot F.4: WCDMA 1900MHz Channel = 9400, Test Antenna Vertical)



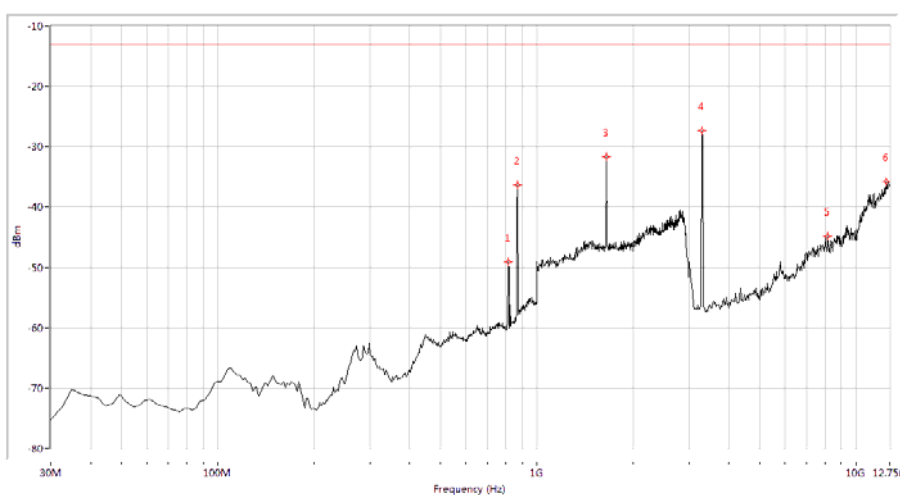
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 298.504    | -62.58 | -13.0     | 49.6   | 240.3  | Horizontal | <u>PASS</u> |
| 1987.531   | -35.67 | -13.0     | 22.7   | 148.6  | Horizontal | <u>PASS</u> |
| 2765.586   | -40.07 | -13.0     | 27.1   | 185.8  | Horizontal | <u>PASS</u> |
| 3805.486   | -50.25 | -13.0     | 37.2   | 333.2  | Horizontal | <u>PASS</u> |
| 5713.217   | -39.55 | -13.0     | 26.5   | 295.3  | Horizontal | <u>PASS</u> |
| 18389.027  | -28.40 | -13.0     | 15.4   | 63.0   | Horizontal | <u>PASS</u> |

(Plot F.5: WCDMA 1900MHz Channel = 9538, Test Antenna Horizontal)



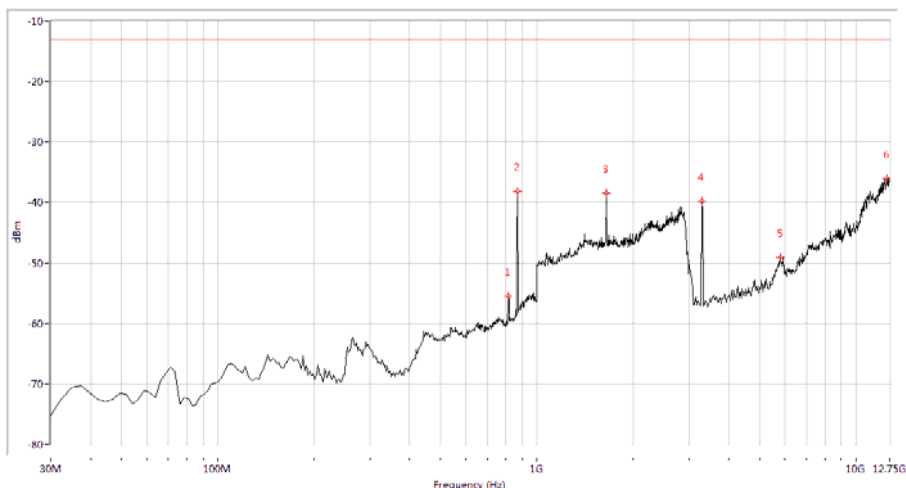
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 269.476    | -62.27 | -13.0     | 49.3   | 96.8   | Vertical | <u>PASS</u> |
| 1987.531   | -37.89 | -13.0     | 24.9   | 203.0  | Vertical | <u>PASS</u> |
| 2860.349   | -40.11 | -13.0     | 27.1   | 94.0   | Vertical | <u>PASS</u> |
| 5713.217   | -42.91 | -13.0     | 29.9   | 126.5  | Vertical | <u>PASS</u> |
| 15760.599  | -29.88 | -13.0     | 16.9   | 203.2  | Vertical | <u>PASS</u> |
| 17286.783  | -29.17 | -13.0     | 16.2   | 251.5  | Vertical | <u>PASS</u> |

(Plot F.6: WCDMA 1900MHz Channel = 9538, Test Antenna Vertical)



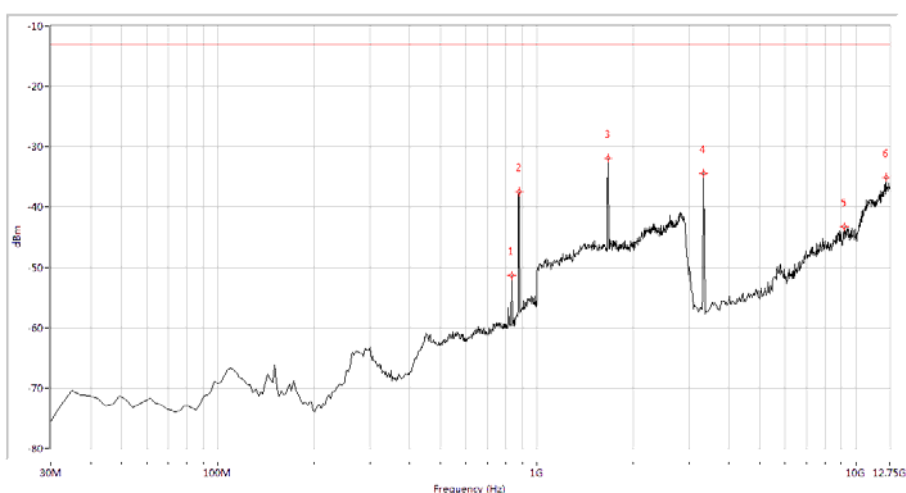
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 816.160    | -49.07 | -13.0     | 36.1   | 63.4   | Horizontal | <u>PASS</u> |
| 869.377    | -36.36 | -13.0     | 23.4   | 142.7  | Horizontal | <u>PASS</u> |
| 1653.367   | -31.60 | -13.0     | 18.6   | 90.5   | Horizontal | <u>PASS</u> |
| 3291.771   | -27.32 | -13.0     | 14.3   | 322.4  | Horizontal | <u>PASS</u> |
| 8154.613   | -44.83 | -13.0     | 31.8   | 294.4  | Horizontal | <u>PASS</u> |
| 12458.229  | -35.78 | -13.0     | 22.8   | 142.0  | Horizontal | <u>PASS</u> |

(Plot G.1: HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)



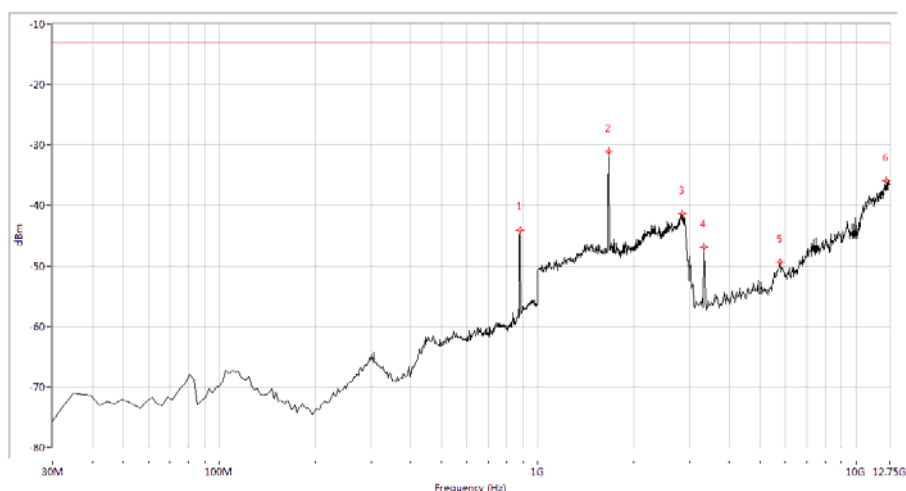
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 816.160    | -55.41 | -13.0     | 42.4   | 188.7  | Vertical | <u>PASS</u> |
| 871.796    | -38.12 | -13.0     | 25.1   | 56.2   | Vertical | <u>PASS</u> |
| 1653.367   | -38.45 | -13.0     | 25.5   | 202.9  | Vertical | <u>PASS</u> |
| 3291.771   | -39.78 | -13.0     | 26.8   | 166.3  | Vertical | <u>PASS</u> |
| 5796.135   | -49.09 | -13.0     | 36.1   | 1.7    | Vertical | <u>PASS</u> |
| 12506.858  | -35.99 | -13.0     | 23.0   | 206.5  | Vertical | <u>PASS</u> |

(Plot G.2: HSDPA 850MHz Channel = 4132, Test Antenna Vertical)



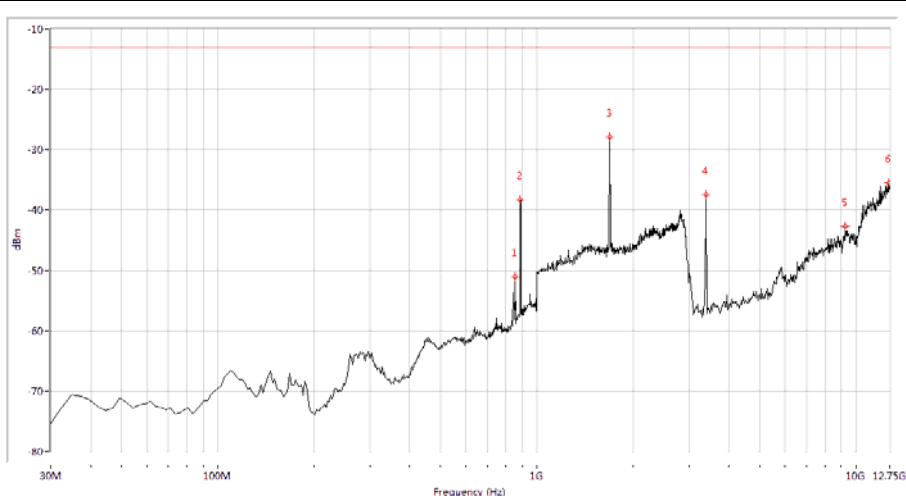
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -51.34 | -13.0     | 38.3   | 70.3   | Horizontal | <u>PASS</u> |
| 879.052    | -37.38 | -13.0     | 24.4   | 159.2  | Horizontal | <u>PASS</u> |
| 1668.329   | -31.95 | -13.0     | 19.0   | 85.0   | Horizontal | <u>PASS</u> |
| 3340.399   | -34.45 | -13.0     | 21.4   | 287.8  | Horizontal | <u>PASS</u> |
| 9175.810   | -43.20 | -13.0     | 30.2   | 147.3  | Horizontal | <u>PASS</u> |
| 12409.601  | -35.10 | -13.0     | 22.1   | 10.9   | Horizontal | <u>PASS</u> |

(Plot G.3: HSDPA 850MHz Channel = 4175, Test Antenna Horizontal)



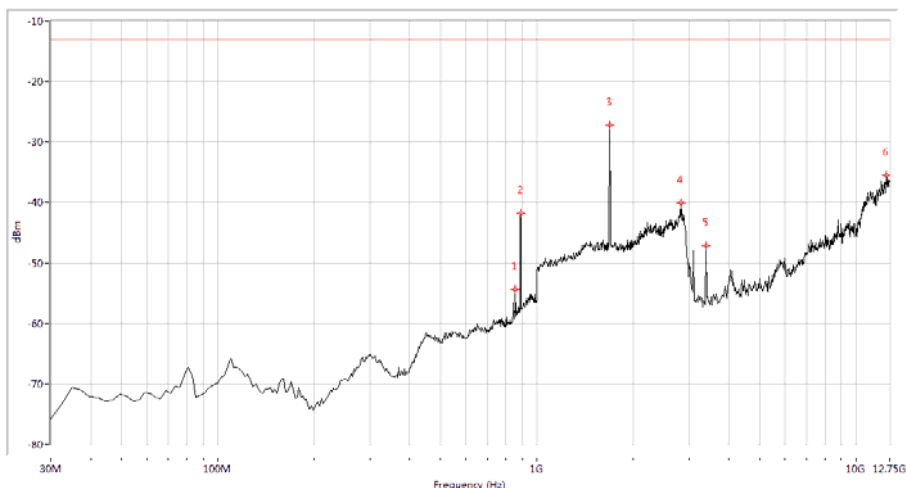
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 879.052    | -44.11 | -13.0     | 31.1   | 131.6  | Vertical | <u>PASS</u> |
| 1668.329   | -31.05 | -13.0     | 18.0   | 35.3   | Vertical | <u>PASS</u> |
| 2840.399   | -41.37 | -13.0     | 28.4   | 360.0  | Vertical | <u>PASS</u> |
| 3340.399   | -46.88 | -13.0     | 33.9   | 358.7  | Vertical | <u>PASS</u> |
| 5771.820   | -49.41 | -13.0     | 36.4   | 189.6  | Vertical | <u>PASS</u> |
| 12482.544  | -35.88 | -13.0     | 22.9   | 312.4  | Vertical | <u>PASS</u> |

(Plot G.4: HSDPA 850MHz Channel = 4175, Test Antenna Vertical)



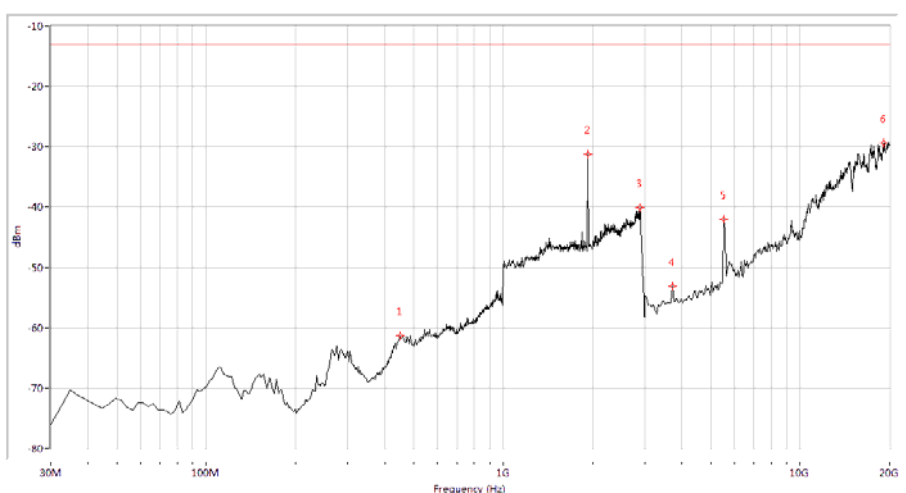
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 854.863    | -51.01 | -13.0     | 38.0   | 131.7  | Horizontal | <u>PASS</u> |
| 888.728    | -38.25 | -13.0     | 25.2   | 102.3  | Horizontal | <u>PASS</u> |
| 1693.267   | -27.93 | -13.0     | 14.9   | 93.8   | Horizontal | <u>PASS</u> |
| 3389.027   | -37.48 | -13.0     | 24.5   | 313.4  | Horizontal | <u>PASS</u> |
| 9273.067   | -42.71 | -13.0     | 29.7   | 360.0  | Horizontal | <u>PASS</u> |
| 12701.372  | -35.46 | -13.0     | 22.5   | 260.2  | Horizontal | <u>PASS</u> |

(Plot G.5: HSDPA 850MHz Channel = 4233, Test Antenna Horizontal)



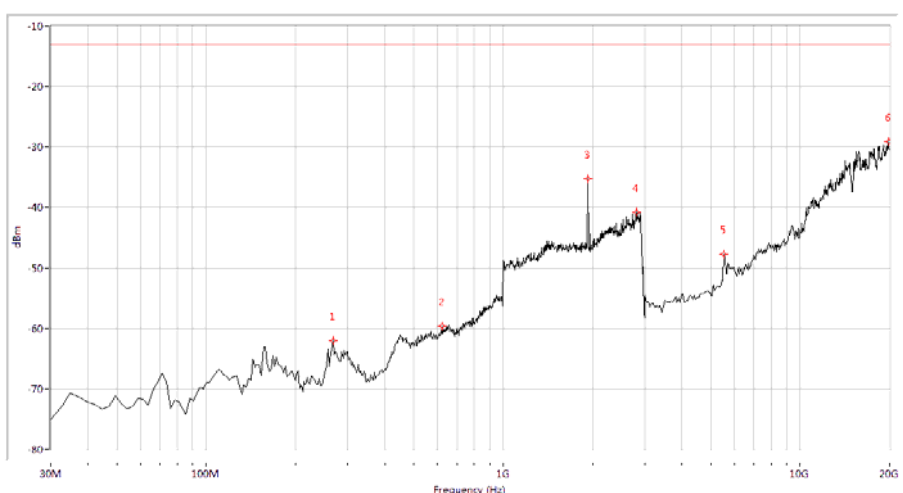
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 854.863    | -54.30 | -13.0     | 41.3   | 78.3   | Vertical | <u>PASS</u> |
| 891.147    | -41.68 | -13.0     | 28.7   | 324.9  | Vertical | <u>PASS</u> |
| 1688.279   | -27.26 | -13.0     | 14.3   | 36.2   | Vertical | <u>PASS</u> |
| 2835.411   | -40.13 | -13.0     | 27.1   | 325.9  | Vertical | <u>PASS</u> |
| 3389.027   | -47.12 | -13.0     | 34.1   | 153.1  | Vertical | <u>PASS</u> |
| 12482.544  | -35.46 | -13.0     | 22.5   | -0.0   | Vertical | <u>PASS</u> |

(Plot G.6: HSDPA 850MHz Channel = 4233, Test Antenna Vertical)



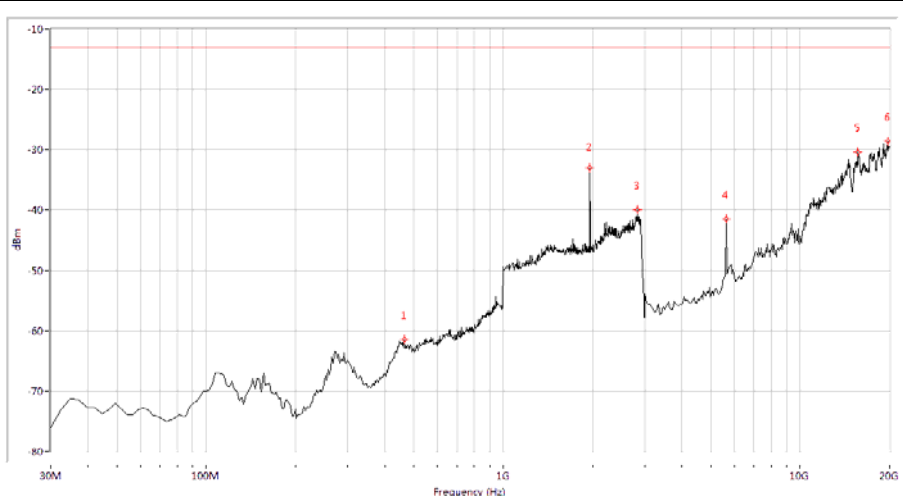
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 450.898    | -61.35 | -13.0     | 48.4   | 217.9  | Horizontal | <u>PASS</u> |
| 1927.681   | -31.16 | -13.0     | 18.2   | 174.5  | Horizontal | <u>PASS</u> |
| 2895.262   | -40.13 | -13.0     | 27.1   | 360.0  | Horizontal | <u>PASS</u> |
| 3720.698   | -53.16 | -13.0     | 40.2   | 74.6   | Horizontal | <u>PASS</u> |
| 5543.641   | -42.03 | -13.0     | 29.0   | 303.7  | Horizontal | <u>PASS</u> |
| 19067.332  | -29.41 | -13.0     | 16.4   | 295.9  | Horizontal | <u>PASS</u> |

(Plot H.1: HSDPA 1900 MHz Channel = 9262, Test Antenna Horizontal)



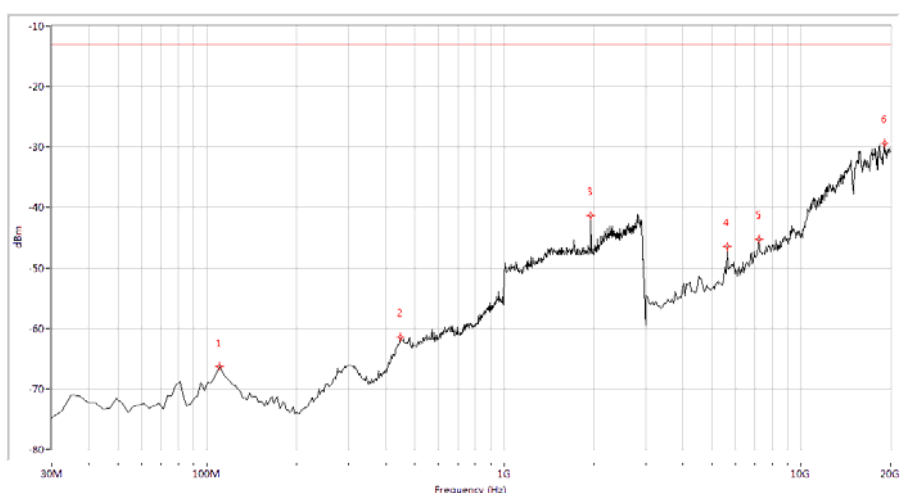
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 267.057    | -61.98 | -13.0     | 49.0   | 153.7  | Vertical | <u>PASS</u> |
| 625.062    | -59.68 | -13.0     | 46.7   | 331.7  | Vertical | <u>PASS</u> |
| 1927.681   | -35.23 | -13.0     | 22.2   | 32.8   | Vertical | <u>PASS</u> |
| 2815.461   | -40.84 | -13.0     | 27.8   | 119.0  | Vertical | <u>PASS</u> |
| 5543.641   | -47.73 | -13.0     | 34.7   | 125.0  | Vertical | <u>PASS</u> |
| 19830.424  | -29.18 | -13.0     | 16.2   | 254.0  | Vertical | <u>PASS</u> |

(Plot H.2: HSDPA 1900 MHz Channel = 9262, Test Antenna Vertical)



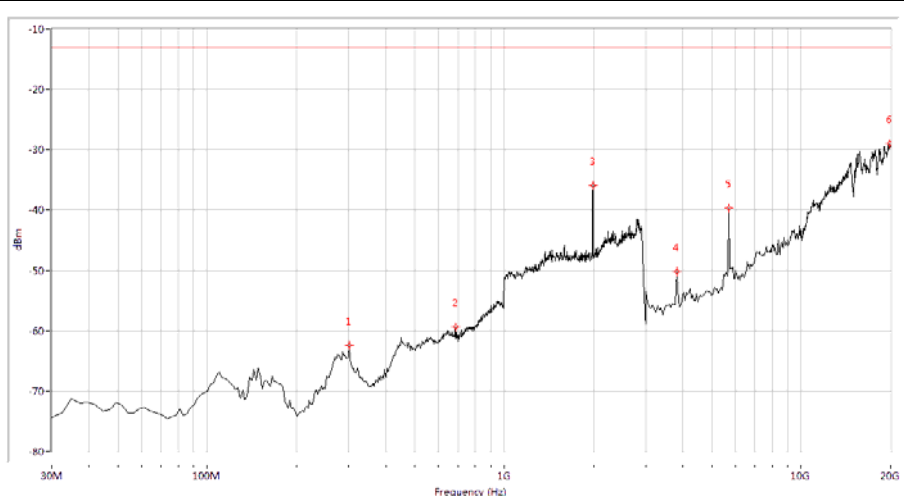
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 465.411    | -61.45 | -13.0     | 48.4   | 290.8  | Horizontal | <u>PASS</u> |
| 1957.606   | -32.96 | -13.0     | 20.0   | 52.1   | Horizontal | <u>PASS</u> |
| 2830.424   | -39.95 | -13.0     | 27.0   | 200.9  | Horizontal | <u>PASS</u> |
| 5628.429   | -41.47 | -13.0     | 28.5   | 320.1  | Horizontal | <u>PASS</u> |
| 15675.810  | -30.36 | -13.0     | 17.4   | 312.3  | Horizontal | <u>PASS</u> |
| 19745.636  | -28.63 | -13.0     | 15.6   | 28.5   | Horizontal | <u>PASS</u> |

(Plot H.3: HSDPA 1900 MHz Channel = 9400, Test Antenna Horizontal)



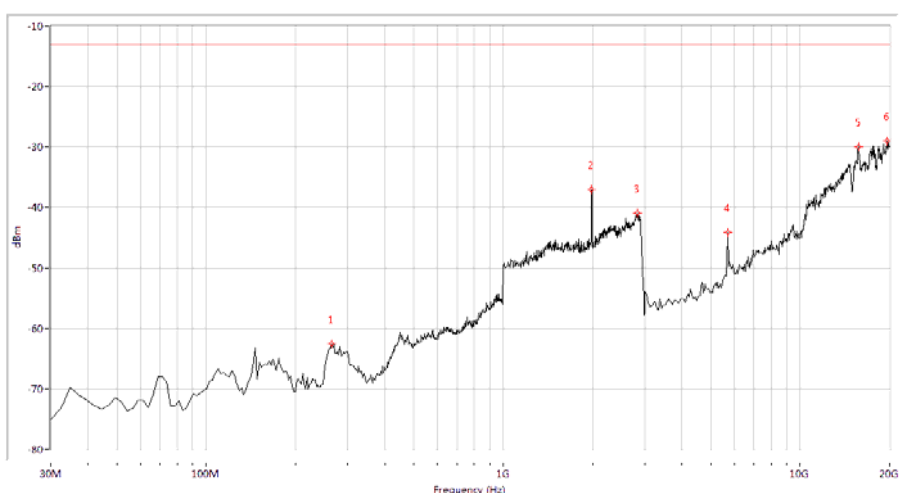
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 109.825    | -66.33 | -13.0     | 53.3   | 81.2   | Vertical | <u>PASS</u> |
| 446.060    | -61.41 | -13.0     | 48.4   | 48.4   | Vertical | <u>PASS</u> |
| 1957.606   | -41.35 | -13.0     | 28.4   | 203.3  | Vertical | <u>PASS</u> |
| 5628.429   | -46.45 | -13.0     | 33.5   | 170.0  | Vertical | <u>PASS</u> |
| 7197.007   | -45.26 | -13.0     | 32.3   | 80.7   | Vertical | <u>PASS</u> |
| 19109.726  | -29.44 | -13.0     | 16.4   | 284.1  | Vertical | <u>PASS</u> |

(Plot H.4: HSDPA 1900 MHz Channel = 9400, Test Antenna Vertical)



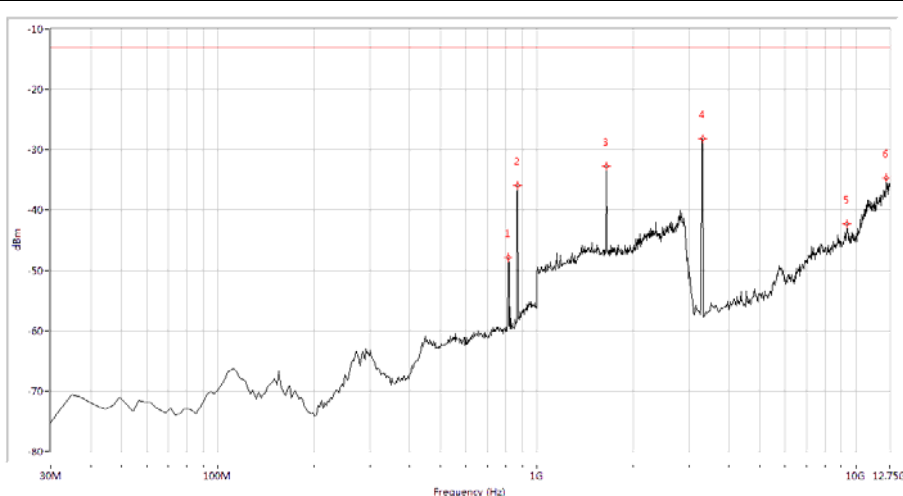
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 300.923    | -62.35 | -13.0     | 49.4   | 108.5  | Horizontal | <u>PASS</u> |
| 685.536    | -59.39 | -13.0     | 46.4   | 212.5  | Horizontal | <u>PASS</u> |
| 1987.531   | -35.90 | -13.0     | 22.9   | 56.6   | Horizontal | <u>PASS</u> |
| 3805.486   | -50.27 | -13.0     | 37.3   | 231.4  | Horizontal | <u>PASS</u> |
| 5713.217   | -39.67 | -13.0     | 26.7   | 310.4  | Horizontal | <u>PASS</u> |
| 19915.212  | -28.92 | -13.0     | 15.9   | 360.0  | Horizontal | <u>PASS</u> |

(Plot H.5: HSDPA 1900 MHz Channel = 9538, Test Antenna Horizontal)



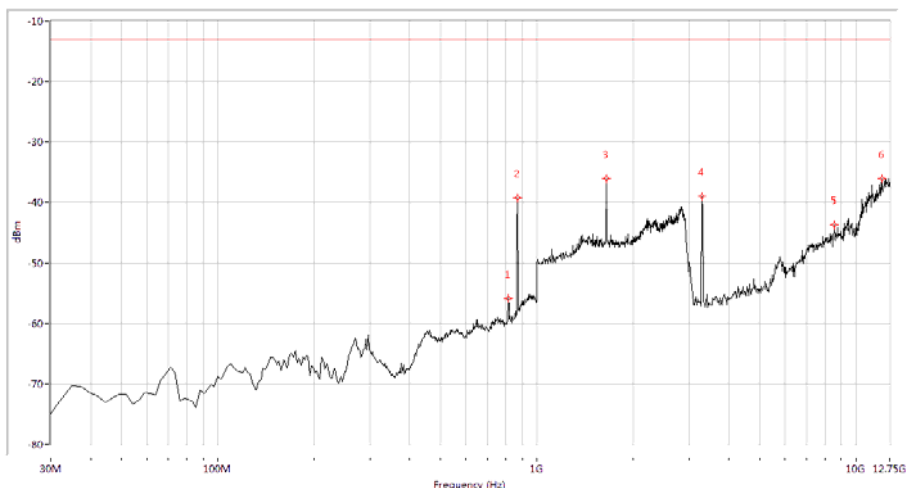
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 264.638    | -62.48 | -13.0     | 49.5   | 102.8  | Vertical | <u>PASS</u> |
| 1982.544   | -37.02 | -13.0     | 24.0   | 272.9  | Vertical | <u>PASS</u> |
| 2830.424   | -40.94 | -13.0     | 27.9   | 74.9   | Vertical | <u>PASS</u> |
| 5713.217   | -44.12 | -13.0     | 31.1   | 117.2  | Vertical | <u>PASS</u> |
| 15718.204  | -29.97 | -13.0     | 17.0   | 360.0  | Vertical | <u>PASS</u> |
| 19576.060  | -28.94 | -13.0     | 15.9   | 186.7  | Vertical | <u>PASS</u> |

(Plot H.6: HSDPA 1900 MHz Channel = 9538, Test Antenna Vertical)



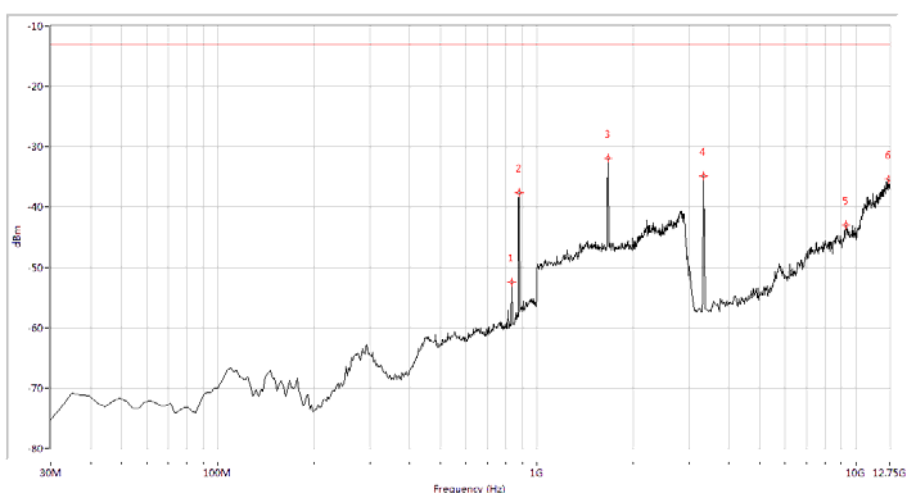
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 816.160    | -47.79 | -13.0     | 34.8   | 74.5   | Horizontal | <u>PASS</u> |
| 869.377    | -35.91 | -13.0     | 22.9   | 223.9  | Horizontal | <u>PASS</u> |
| 1653.367   | -32.78 | -13.0     | 19.8   | 69.0   | Horizontal | <u>PASS</u> |
| 3316.085   | -28.14 | -13.0     | 15.1   | 301.7  | Horizontal | <u>PASS</u> |
| 9394.638   | -42.33 | -13.0     | 29.3   | 307.7  | Horizontal | <u>PASS</u> |
| 12458.229  | -34.63 | -13.0     | 21.6   | 345.6  | Horizontal | <u>PASS</u> |

(Plot I.1: HSUPA 850MHz Channel = 4132, Test Antenna Horizontal)



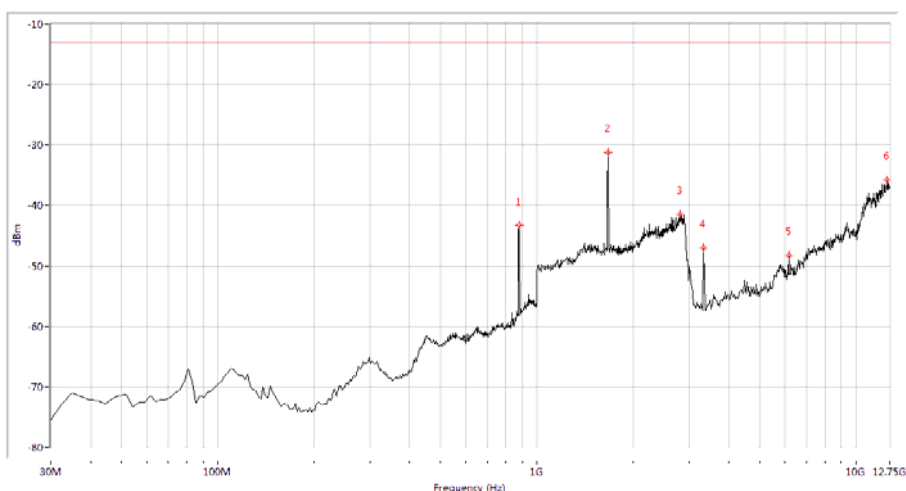
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 816.160    | -55.84 | -13.0     | 42.8   | 21.8   | Vertical | <u>PASS</u> |
| 871.796    | -39.20 | -13.0     | 26.2   | 263.2  | Vertical | <u>PASS</u> |
| 1648.379   | -36.00 | -13.0     | 23.0   | 197.6  | Vertical | <u>PASS</u> |
| 3291.771   | -39.00 | -13.0     | 26.0   | 172.1  | Vertical | <u>PASS</u> |
| 8567.955   | -43.62 | -13.0     | 30.6   | 132.7  | Vertical | <u>PASS</u> |
| 12044.888  | -36.04 | -13.0     | 23.0   | 38.3   | Vertical | <u>PASS</u> |

(Plot I.2: HSUPA 850 MHz Channel = 4132, Test Antenna Vertical)



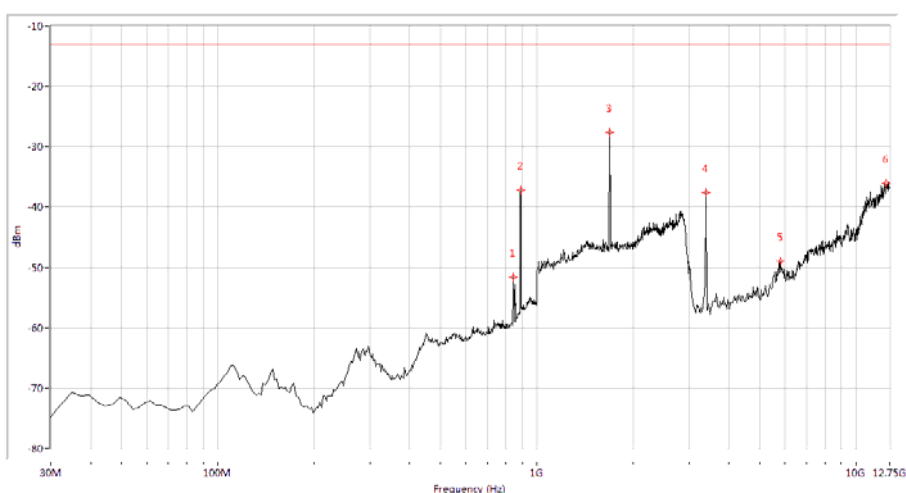
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 835.511    | -52.36 | -13.0     | 39.4   | 78.0   | Horizontal | <u>PASS</u> |
| 879.052    | -37.61 | -13.0     | 24.6   | 158.7  | Horizontal | <u>PASS</u> |
| 1668.329   | -31.92 | -13.0     | 18.9   | 89.7   | Horizontal | <u>PASS</u> |
| 3340.399   | -34.79 | -13.0     | 21.8   | 316.4  | Horizontal | <u>PASS</u> |
| 9297.382   | -42.98 | -13.0     | 30.0   | 120.0  | Horizontal | <u>PASS</u> |
| 12701.372  | -35.37 | -13.0     | 22.4   | -0.0   | Horizontal | <u>PASS</u> |

(Plot I.3: HSUPA 850MHz Channel = 4175, Test Antenna Horizontal)



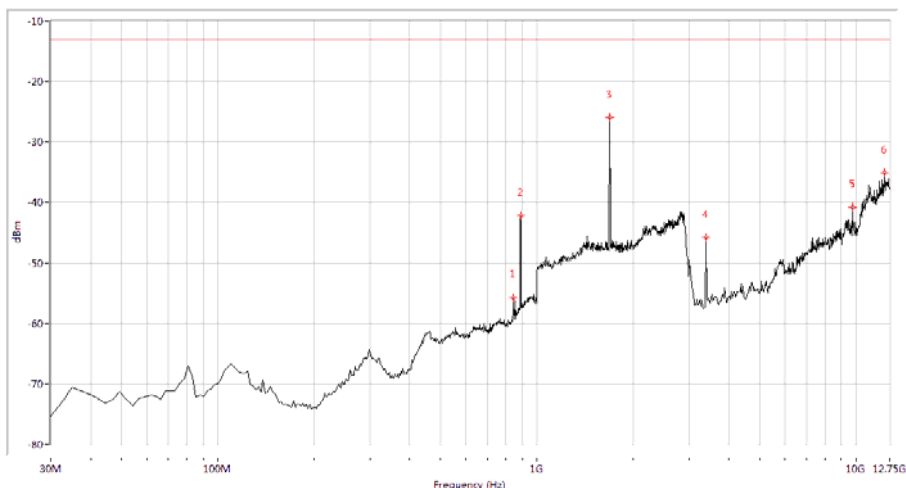
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 879.052    | -43.32 | -13.0     | 30.3   | 61.2   | Vertical | <u>PASS</u> |
| 1668.329   | -31.27 | -13.0     | 18.3   | 34.3   | Vertical | <u>PASS</u> |
| 2815.461   | -41.45 | -13.0     | 28.5   | 355.6  | Vertical | <u>PASS</u> |
| 3340.399   | -47.01 | -13.0     | 34.0   | -0.0   | Vertical | <u>PASS</u> |
| 6160.848   | -48.23 | -13.0     | 35.2   | 333.9  | Vertical | <u>PASS</u> |
| 12555.486  | -35.77 | -13.0     | 22.8   | 194.4  | Vertical | <u>PASS</u> |

(Plot I.4: HSUPA 850MHz Channel = 4175, Test Antenna Vertical)



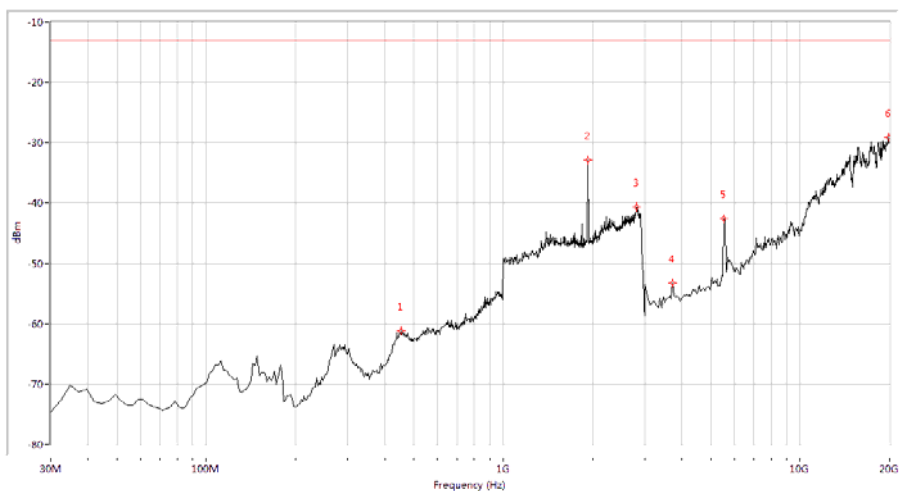
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 845.187    | -51.65 | -13.0     | 38.6   | 134.3  | Horizontal | <u>PASS</u> |
| 891.147    | -37.14 | -13.0     | 24.1   | 91.9   | Horizontal | <u>PASS</u> |
| 1693.267   | -27.60 | -13.0     | 14.6   | 122.3  | Horizontal | <u>PASS</u> |
| 3389.027   | -37.60 | -13.0     | 24.6   | 314.3  | Horizontal | <u>PASS</u> |
| 5796.135   | -48.96 | -13.0     | 36.0   | 314.3  | Horizontal | <u>PASS</u> |
| 12458.229  | -36.09 | -13.0     | 23.1   | 70.4   | Horizontal | <u>PASS</u> |

(Plot I.5: HSUPA 850MHz Channel = 4233, Test Antenna Horizontal)



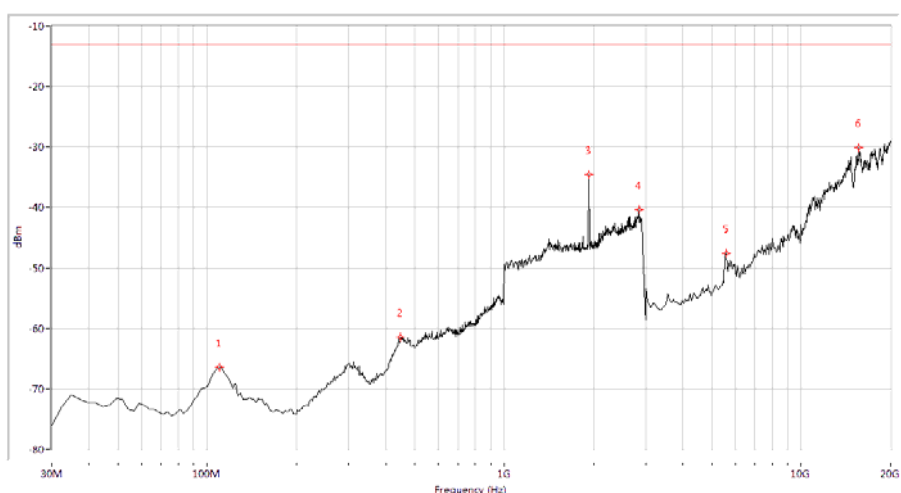
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 845.187    | -55.78 | -13.0     | 42.8   | 66.3   | Vertical | <u>PASS</u> |
| 891.147    | -42.09 | -13.0     | 29.1   | 32.8   | Vertical | <u>PASS</u> |
| 1693.267   | -25.95 | -13.0     | 12.9   | 35.3   | Vertical | <u>PASS</u> |
| 3389.027   | -45.82 | -13.0     | 32.8   | 142.0  | Vertical | <u>PASS</u> |
| 9759.352   | -40.78 | -13.0     | 27.8   | 30.9   | Vertical | <u>PASS</u> |
| 12288.030  | -35.09 | -13.0     | 22.1   | 148.7  | Vertical | <u>PASS</u> |

(Plot I.6: HSUPA 850MHz Channel = 4233, Test Antenna Vertical)



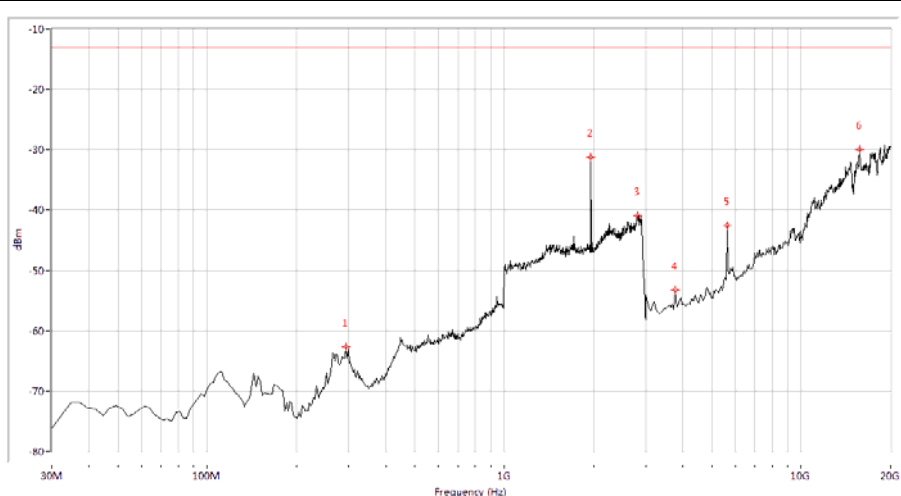
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 453.317    | -61.15 | -13.0     | 48.2   | 360.0  | Horizontal | <u>PASS</u> |
| 1932.668   | -32.93 | -13.0     | 19.9   | 45.9   | Horizontal | <u>PASS</u> |
| 2820.449   | -40.67 | -13.0     | 27.7   | 360.0  | Horizontal | <u>PASS</u> |
| 3720.698   | -53.29 | -13.0     | 40.3   | 328.4  | Horizontal | <u>PASS</u> |
| 5543.641   | -42.56 | -13.0     | 29.6   | 303.5  | Horizontal | <u>PASS</u> |
| 19830.424  | -29.18 | -13.0     | 16.2   | 303.5  | Horizontal | <u>PASS</u> |

(Plot J.1: HSUPA 1900 MHz Channel = 9262, Test Antenna Horizontal)



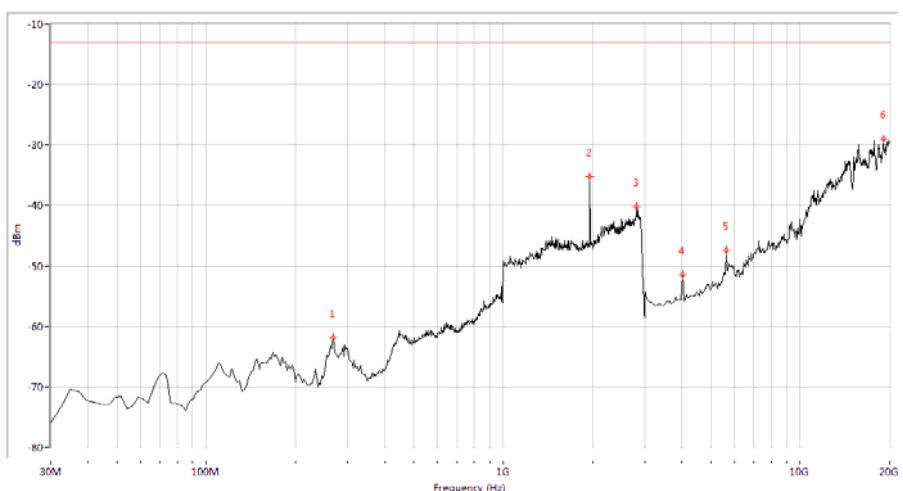
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 109.825    | -66.46 | -13.0     | 53.5   | 163.1  | Vertical | <u>PASS</u> |
| 448.479    | -61.49 | -13.0     | 48.5   | 168.3  | Vertical | <u>PASS</u> |
| 1932.668   | -34.49 | -13.0     | 21.5   | 289.8  | Vertical | <u>PASS</u> |
| 2845.387   | -40.39 | -13.0     | 27.4   | 274.6  | Vertical | <u>PASS</u> |
| 5586.035   | -47.51 | -13.0     | 34.5   | 128.2  | Vertical | <u>PASS</u> |
| 15675.810  | -30.04 | -13.0     | 17.0   | 281.1  | Vertical | <u>PASS</u> |

(Plot J.2: HSUPA 1900 MHz Channel = 9262, Test Antenna Vertical)



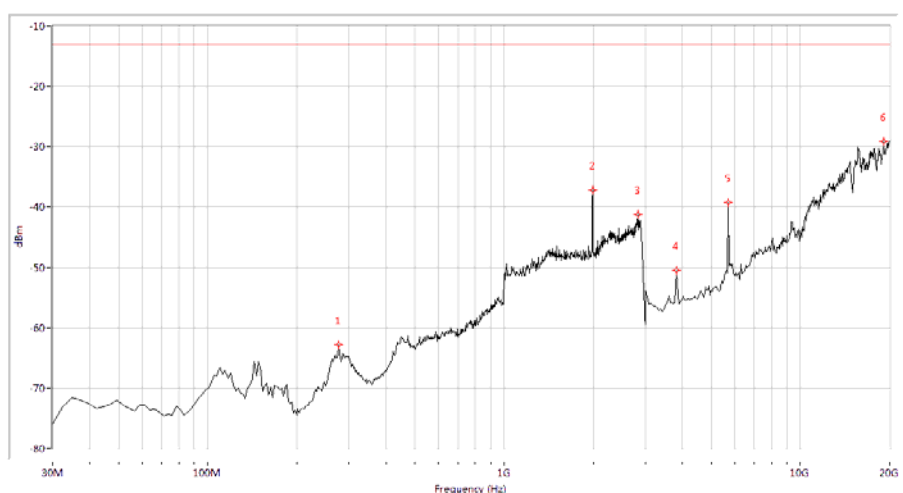
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 293.666    | -62.60 | -13.0     | 49.6   | 143.2  | Horizontal | <u>PASS</u> |
| 1957.606   | -31.25 | -13.0     | 18.3   | 152.0  | Horizontal | <u>PASS</u> |
| 2815.461   | -40.94 | -13.0     | 27.9   | 152.0  | Horizontal | <u>PASS</u> |
| 3763.092   | -53.28 | -13.0     | 40.3   | 311.3  | Horizontal | <u>PASS</u> |
| 5628.429   | -42.60 | -13.0     | 29.6   | 319.1  | Horizontal | <u>PASS</u> |
| 15718.204  | -29.98 | -13.0     | 17.0   | 37.6   | Horizontal | <u>PASS</u> |

(Plot J.3: HSUPA 1900 MHz Channel = 9400, Test Antenna Horizontal)



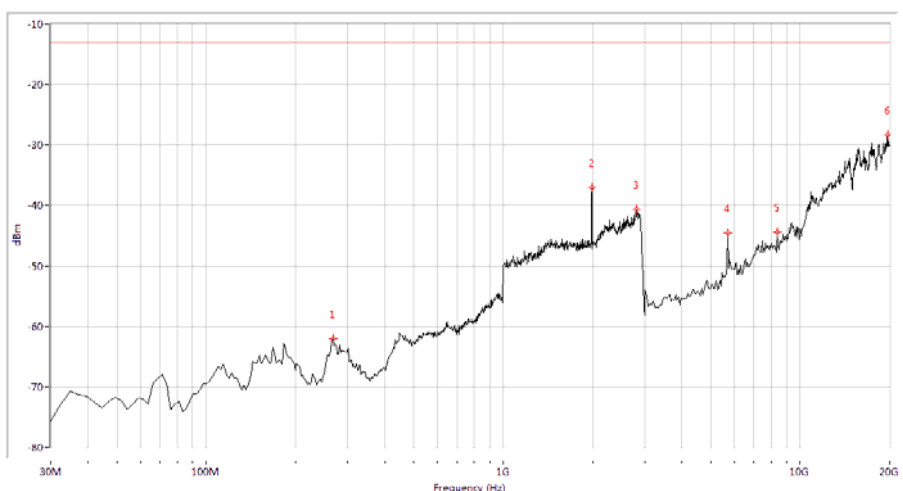
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 267.057    | -61.80 | -13.0     | 48.8   | 201.7  | Vertical | <u>PASS</u> |
| 1957.606   | -35.17 | -13.0     | 22.2   | 333.9  | Vertical | <u>PASS</u> |
| 2820.449   | -40.18 | -13.0     | 27.2   | 1.6    | Vertical | <u>PASS</u> |
| 4017.456   | -51.50 | -13.0     | 38.5   | 160.4  | Vertical | <u>PASS</u> |
| 5628.429   | -47.42 | -13.0     | 34.4   | 119.1  | Vertical | <u>PASS</u> |
| 19067.332  | -29.03 | -13.0     | 16.0   | 110.5  | Vertical | <u>PASS</u> |

(Plot J.4: HSUPA 1900 MHz Channel = 9400, Test Antenna Vertical)



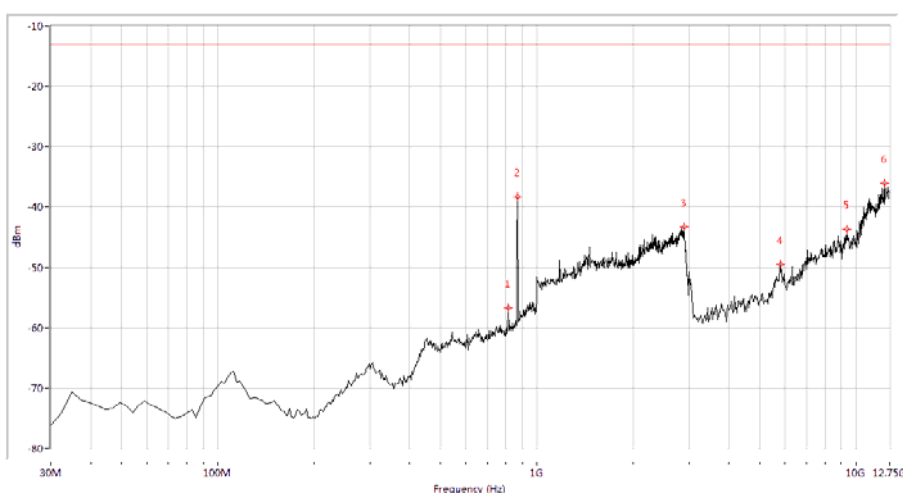
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 276.733    | -62.86 | -13.0     | 49.9   | 342.1  | Horizontal | <u>PASS</u> |
| 1987.531   | -37.12 | -13.0     | 24.1   | 59.5   | Horizontal | <u>PASS</u> |
| 2825.436   | -41.24 | -13.0     | 28.2   | 165.9  | Horizontal | <u>PASS</u> |
| 3805.486   | -50.48 | -13.0     | 37.5   | 235.0  | Horizontal | <u>PASS</u> |
| 5713.217   | -39.25 | -13.0     | 26.3   | 320.9  | Horizontal | <u>PASS</u> |
| 19109.726  | -29.11 | -13.0     | 16.1   | 156.8  | Horizontal | <u>PASS</u> |

(Plot J.5: HSUPA 1900 MHz Channel = 9538, Test Antenna Horizontal)



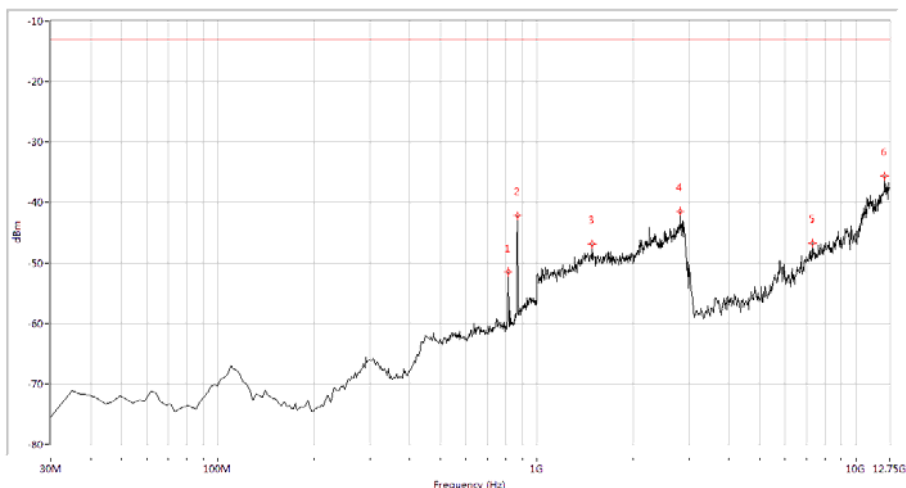
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 267.057    | -61.95 | -13.0     | 48.9   | 145.7  | Vertical | <u>PASS</u> |
| 1987.531   | -37.02 | -13.0     | 24.0   | 82.2   | Vertical | <u>PASS</u> |
| 2820.449   | -40.58 | -13.0     | 27.6   | 337.7  | Vertical | <u>PASS</u> |
| 5713.217   | -44.53 | -13.0     | 31.5   | 153.9  | Vertical | <u>PASS</u> |
| 8384.040   | -44.41 | -13.0     | 31.4   | 303.8  | Vertical | <u>PASS</u> |
| 19788.030  | -28.29 | -13.0     | 15.3   | 303.8  | Vertical | <u>PASS</u> |

(Plot J.6: HSUPA 1900 MHz Channel = 9538, Test Antenna Vertical)



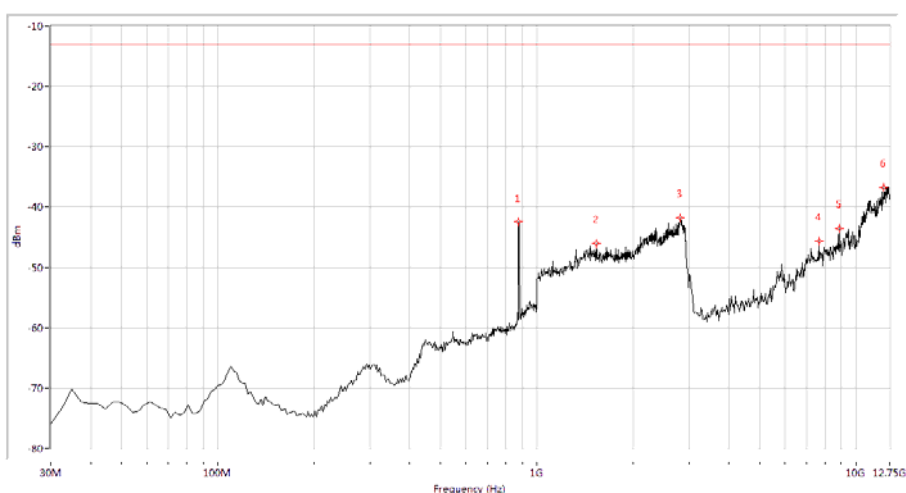
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 813.741    | -56.66 | -13.0     | 43.7   | 36.6   | Horizontal | <u>PASS</u> |
| 871.796    | -38.22 | -13.0     | 25.2   | 253.2  | Horizontal | <u>PASS</u> |
| 2890.274   | -43.30 | -13.0     | 30.3   | 132.4  | Horizontal | <u>PASS</u> |
| 5820.449   | -49.52 | -13.0     | 36.5   | 7.8    | Horizontal | <u>PASS</u> |
| 9394.638   | -43.68 | -13.0     | 30.7   | 321.3  | Horizontal | <u>PASS</u> |
| 12263.716  | -36.07 | -13.0     | 23.1   | 98.7   | Horizontal | <u>PASS</u> |

(Plot K.1: HSPA+ 850MHz Channel = 4132, Test Antenna Horizontal)



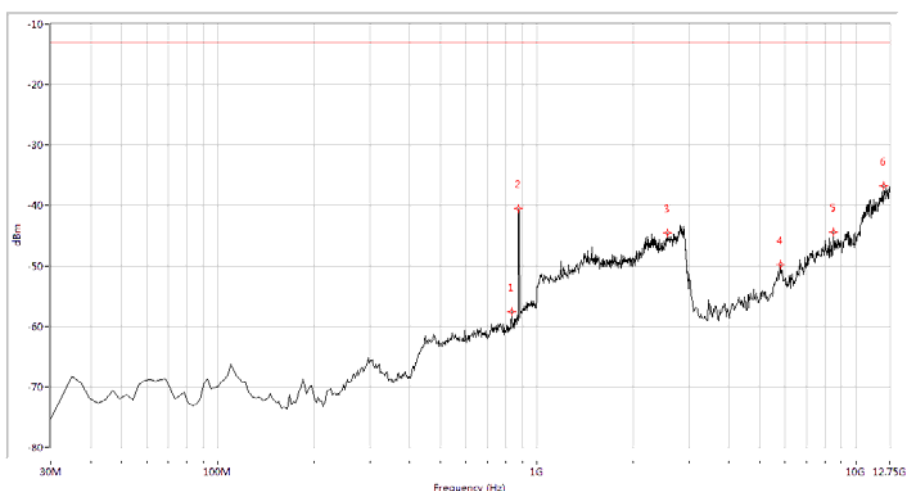
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 813.741    | -51.42 | -13.0     | 38.4   | 163.5  | Vertical | <u>PASS</u> |
| 871.796    | -42.15 | -13.0     | 29.1   | 343.2  | Vertical | <u>PASS</u> |
| 1493.766   | -46.90 | -13.0     | 33.9   | 79.8   | Vertical | <u>PASS</u> |
| 2815.461   | -41.48 | -13.0     | 28.5   | 48.7   | Vertical | <u>PASS</u> |
| 7327.930   | -46.73 | -13.0     | 33.7   | 246.3  | Vertical | <u>PASS</u> |
| 12312.344  | -35.65 | -13.0     | 22.6   | 9.3    | Vertical | <u>PASS</u> |

(Plot K.2: HSPA+ 850 MHz Channel = 4132, Test Antenna Vertical)



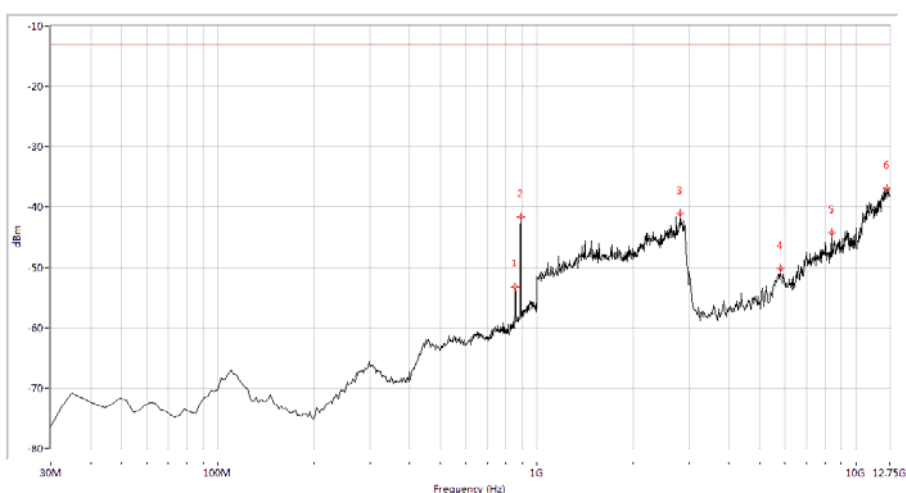
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 876.633    | -42.40 | -13.0     | 29.4   | 36.9   | Horizontal | <u>PASS</u> |
| 1538.653   | -45.98 | -13.0     | 33.0   | 163.4  | Horizontal | <u>PASS</u> |
| 2820.449   | -41.71 | -13.0     | 28.7   | 78.5   | Horizontal | <u>PASS</u> |
| 7668.329   | -45.60 | -13.0     | 32.6   | 256.3  | Horizontal | <u>PASS</u> |
| 8859.726   | -43.55 | -13.0     | 30.6   | 153.4  | Horizontal | <u>PASS</u> |
| 12239.401  | -36.70 | -13.0     | 23.7   | 69.7   | Horizontal | <u>PASS</u> |

(Plot K.3: HSPA+ 850MHz Channel = 4175, Test Antenna Horizontal)



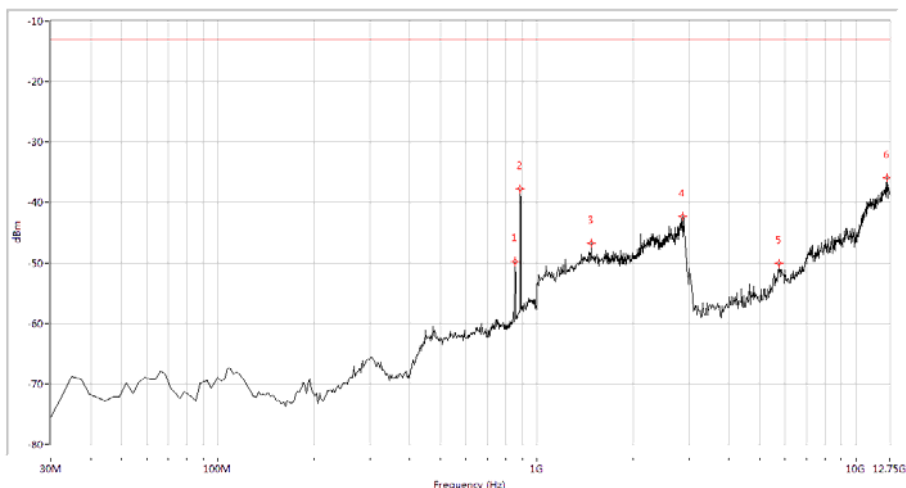
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 833.092    | -57.61 | -13.0     | 44.6   | 63.7   | Vertical | <u>PASS</u> |
| 876.633    | -40.49 | -13.0     | 27.5   | 163.4  | Vertical | <u>PASS</u> |
| 2571.072   | -44.47 | -13.0     | 31.5   | 244.2  | Vertical | <u>PASS</u> |
| 5796.135   | -49.81 | -13.0     | 36.8   | 55.9   | Vertical | <u>PASS</u> |
| 8519.327   | -44.35 | -13.0     | 31.3   | 29.4   | Vertical | <u>PASS</u> |
| 12239.401  | -36.74 | -13.0     | 23.7   | 289.1  | Vertical | <u>PASS</u> |

(Plot K.4: HSPA+ 850MHz Channel = 4175, Test Antenna Vertical)



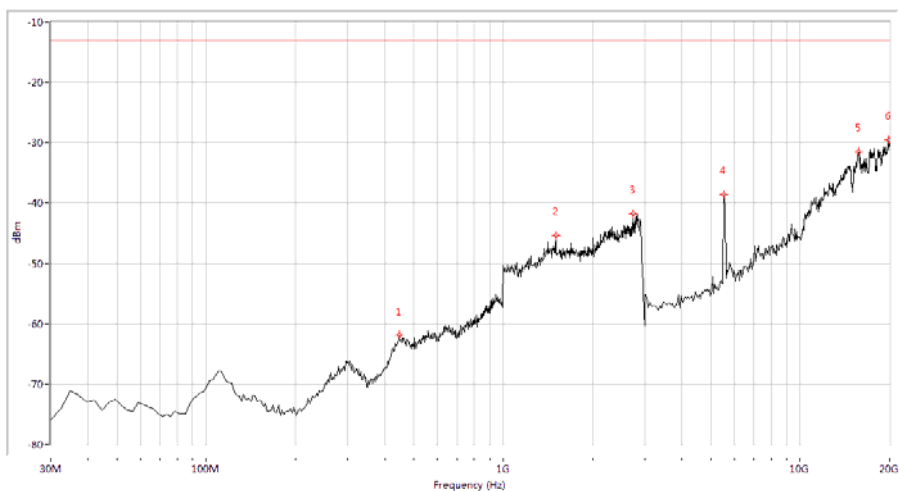
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 854.863    | -53.25 | -13.0     | 40.3   | 32.3   | Horizontal | <u>PASS</u> |
| 891.147    | -41.61 | -13.0     | 28.6   | 215.6  | Horizontal | <u>PASS</u> |
| 2820.449   | -41.10 | -13.0     | 28.1   | 45.7   | Horizontal | <u>PASS</u> |
| 5796.135   | -50.22 | -13.0     | 37.2   | 98.8   | Horizontal | <u>PASS</u> |
| 8397.756   | -44.19 | -13.0     | 31.2   | 156.2  | Horizontal | <u>PASS</u> |
| 12506.858  | -36.86 | -13.0     | 23.9   | 347.0  | Horizontal | <u>PASS</u> |

(Plot K.5: HSPA+ 850MHz Channel = 4233, Test Antenna Horizontal)



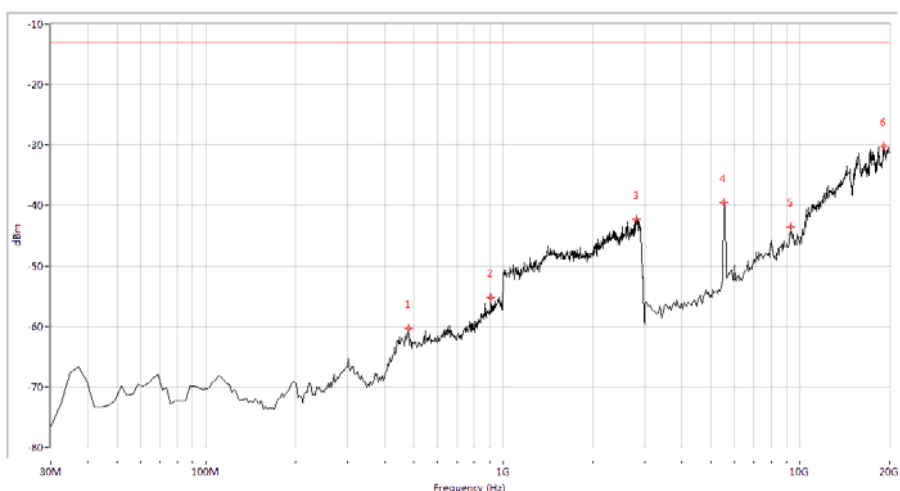
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 854.863    | -49.84 | -13.0     | 36.8   | 132.4  | Vertical | <u>PASS</u> |
| 888.728    | -37.73 | -13.0     | 24.7   | 52.6   | Vertical | <u>PASS</u> |
| 1478.803   | -46.80 | -13.0     | 33.8   | 7.8    | Vertical | <u>PASS</u> |
| 2865.337   | -42.31 | -13.0     | 29.3   | 289.6  | Vertical | <u>PASS</u> |
| 5723.192   | -50.05 | -13.0     | 37.1   | 32.0   | Vertical | <u>PASS</u> |
| 12555.486  | -35.94 | -13.0     | 22.9   | 145.1  | Vertical | <u>PASS</u> |

(Plot K.6: HSPA+ 850MHz Channel = 4233, Test Antenna Vertical)



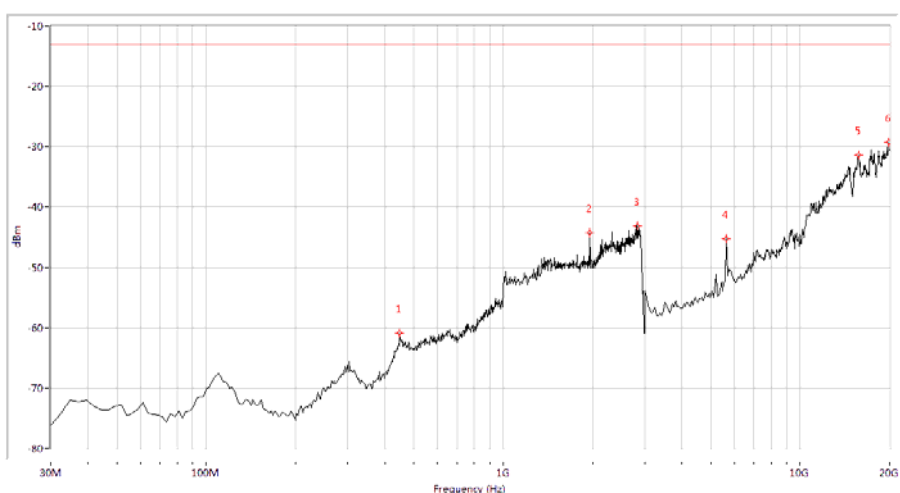
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 446.060    | -61.80 | -13.0     | 48.8   | 355.6  | Horizontal | <u>PASS</u> |
| 1503.741   | -45.38 | -13.0     | 32.4   | 237.0  | Horizontal | <u>PASS</u> |
| 2745.636   | -41.77 | -13.0     | 28.8   | 6.5    | Horizontal | <u>PASS</u> |
| 5543.641   | -38.60 | -13.0     | 25.6   | 155.5  | Horizontal | <u>PASS</u> |
| 15718.204  | -31.49 | -13.0     | 18.5   | 100.1  | Horizontal | <u>PASS</u> |
| 19872.818  | -29.55 | -13.0     | 16.6   | 340.7  | Horizontal | <u>PASS</u> |

(Plot L.1: HSPA+ 1900 MHz Channel = 9262, Test Antenna Horizontal)



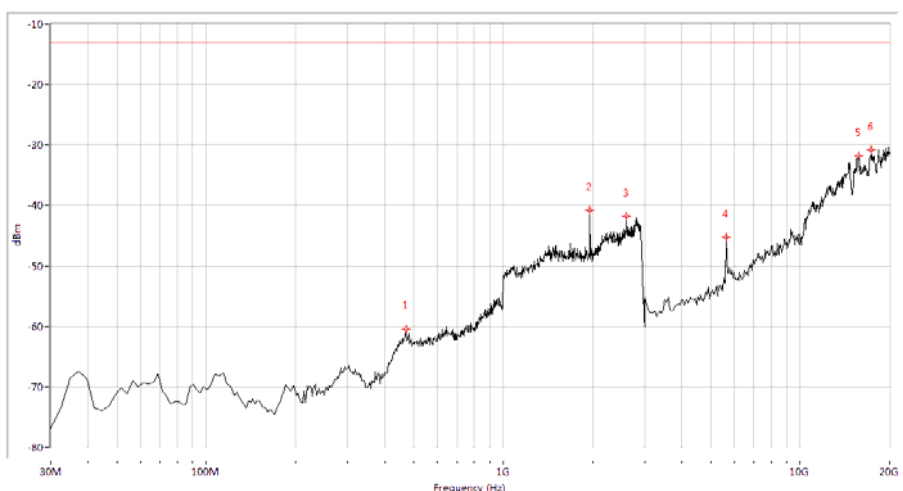
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 479.925    | -60.27 | -13.0     | 47.3   | 120.3  | Vertical | <u>PASS</u> |
| 910.499    | -55.23 | -13.0     | 42.2   | 263.7  | Vertical | <u>PASS</u> |
| 2810.474   | -42.24 | -13.0     | 29.2   | 5.9    | Vertical | <u>PASS</u> |
| 5543.641   | -39.48 | -13.0     | 26.5   | 45.6   | Vertical | <u>PASS</u> |
| 9274.314   | -43.54 | -13.0     | 30.5   | 8.0    | Vertical | <u>PASS</u> |
| 19067.332  | -30.29 | -13.0     | 17.3   | 323.4  | Vertical | <u>PASS</u> |

(Plot L.2: HSPA+ 1900 MHz Channel = 9262, Test Antenna Vertical)



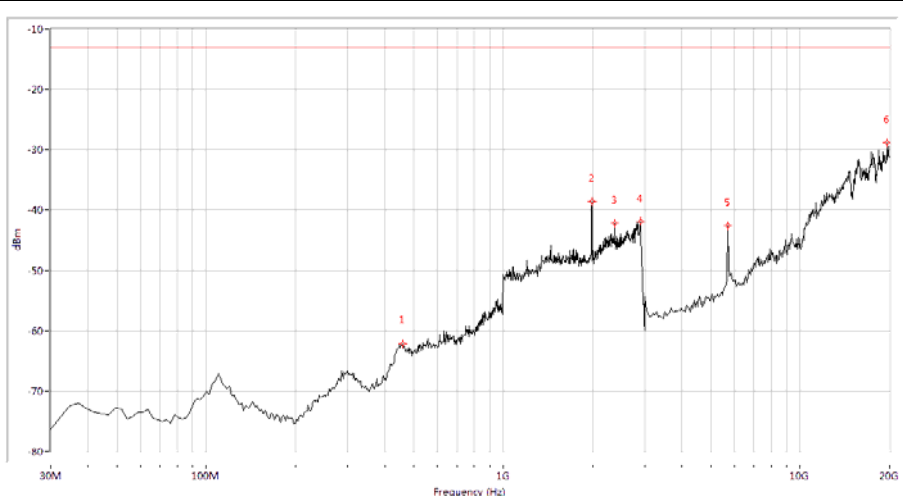
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 448.479    | -60.92 | -13.0     | 47.9   | 163.4  | Horizontal | <u>PASS</u> |
| 1957.606   | -44.24 | -13.0     | 31.2   | 89.7   | Horizontal | <u>PASS</u> |
| 2830.424   | -43.16 | -13.0     | 30.2   | 6.0    | Horizontal | <u>PASS</u> |
| 5628.429   | -45.28 | -13.0     | 32.3   | 72.1   | Horizontal | <u>PASS</u> |
| 15718.204  | -31.34 | -13.0     | 18.3   | 137.6  | Horizontal | <u>PASS</u> |
| 19872.818  | -29.27 | -13.0     | 16.3   | 208.9  | Horizontal | <u>PASS</u> |

(Plot L.3: HSPA+ 1900 MHz Channel = 9400, Test Antenna Horizontal)



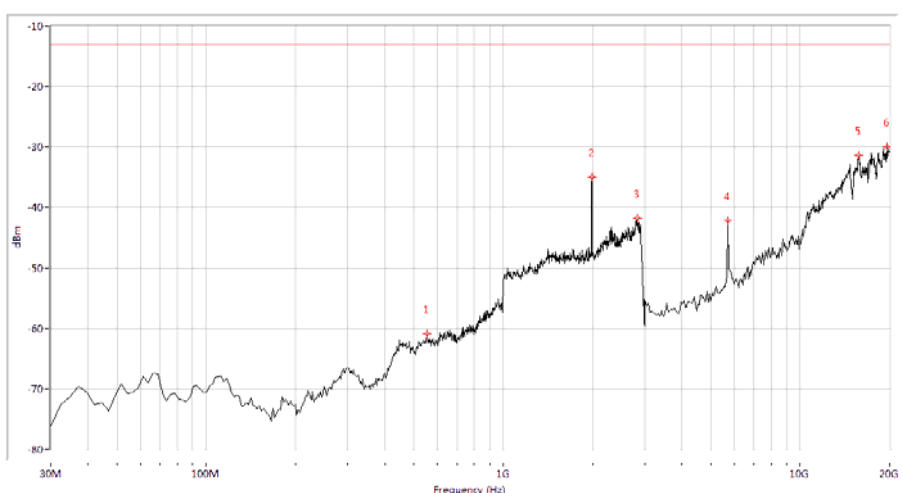
| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 470.249    | -60.42 | -13.0     | 47.4   | 312.8  | Vertical | <u>PASS</u> |
| 1957.606   | -40.70 | -13.0     | 27.7   | 284.6  | Vertical | <u>PASS</u> |
| 2605.985   | -41.81 | -13.0     | 28.8   | 54.0   | Vertical | <u>PASS</u> |
| 5628.429   | -45.14 | -13.0     | 32.1   | 12.6   | Vertical | <u>PASS</u> |
| 15760.599  | -31.76 | -13.0     | 18.8   | 5.9    | Vertical | <u>PASS</u> |
| 17329.177  | -30.78 | -13.0     | 17.8   | 117.4  | Vertical | <u>PASS</u> |

(Plot L.4: HSPA+ 1900 MHz Channel = 9400, Test Antenna Vertical)



| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna    | Verdict     |
|------------|--------|-----------|--------|--------|------------|-------------|
| 458.155    | -62.17 | -13.0     | 49.2   | 124.6  | Horizontal | <u>PASS</u> |
| 1987.531   | -38.61 | -13.0     | 25.6   | 87.9   | Horizontal | <u>PASS</u> |
| 2376.559   | -42.12 | -13.0     | 29.1   | 3.0    | Horizontal | <u>PASS</u> |
| 2900.249   | -41.90 | -13.0     | 28.9   | 69.5   | Horizontal | <u>PASS</u> |
| 5713.217   | -42.56 | -13.0     | 29.6   | 244.8  | Horizontal | <u>PASS</u> |
| 19660.848  | -28.90 | -13.0     | 15.9   | 305.1  | Horizontal | <u>PASS</u> |

(Plot L.5: HSPA+ 1900 MHz Channel = 9538, Test Antenna Horizontal)



| Fre. (MHz) | Peak   | Limit(PK) | Margin | Degree | Antenna  | Verdict     |
|------------|--------|-----------|--------|--------|----------|-------------|
| 554.913    | -60.88 | -13.0     | 47.9   | 154.9  | Vertical | <u>PASS</u> |
| 1987.531   | -34.95 | -13.0     | 22.0   | 261.4  | Vertical | <u>PASS</u> |
| 2830.424   | -41.80 | -13.0     | 28.8   | 228.4  | Vertical | <u>PASS</u> |
| 5713.217   | -42.19 | -13.0     | 29.2   | 167.9  | Vertical | <u>PASS</u> |
| 15760.599  | -31.34 | -13.0     | 18.3   | 15.1   | Vertical | <u>PASS</u> |
| 19618.454  | -29.91 | -13.0     | 16.9   | 0.4    | Vertical | <u>PASS</u> |

(Plot L.6: HSPA+ 1900 MHz Channel = 9538, Test Antenna Vertical)

\*\* END OF REPORT \*\*