



Report No.: SZ12120200W01



# FCC TEST REPORT

Issued to

**TCT Mobile Limited**

For

**Module**

Model Name: ONE TOUCH M70Y  
 Trade Name: ALCATEL  
 Brand Name: ALCATEL  
 FCC ID : RAD312  
 Standard: 47 CFR Part 22 Subpart H  
 47 CFR Part 24 Subpart E  
 Test date: 2012-12-31 to 2013-2-20  
 Issue date: 2013-2-20

By

**Shenzhen Morlab Communications Technology Co., Ltd.**

Tested by Nie Quan  
 Nie Quan  
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Date 2013. 2. 20

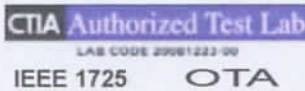
Approved by Wu Xian  
 Wu Xian  
 (Department Manager)

Date 2013. 2. 20



Reviewed by Peng Huarui  
 Peng Huarui  
 (Project Manager)

Date 2013. 2. 20



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Change History		
Issue	Date	Reason for change
1.0	Feb 20, 2013	First edition

## 1. GENERAL INFORMATION

### 1.1 EUT Description

EUT Type .....: Tablet  
Serial No.....: (n.a, marked #1 by test site)  
Hardware Version.....: V06  
Software Version .....: V1.5.8  
Applicant .....: TCT Mobile Limited  
5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech  
Park, Pudong Area Shanghai, P.R. China. 201203  
Manufacturer .....: TCL COMMUNICATION TECHNOLOGY HOLDINGS  
LIMITED.  
70 Huifeng 4rd,ZhongKai Hi-tech Development District ,  
Huizhou, Guangdong 516006 P.R.China  
Frequency Range.....: GSM 850MHz:  
Tx: 824.20 - 848.80MHz (at intervals of 200kHz);  
Rx: 869.20 - 893.80MHz (at intervals of 200kHz)  
GSM 1900MHz:  
Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz);  
Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz)  
WCDMA 850MHz  
Tx: 826.4 - 846.6MHz (at intervals of 200kHz);  
Rx: 871.4 - 891.6MHz (at intervals of 200kHz)  
WCDMA 1900MHz  
Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz);  
Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz)  
Modulation Type.....: GPRS Mode with GMSK Modulation  
EDGE Mode with 8PSK Modulation  
WCDMA Mode with QPSK Modulation  
HSDPA Mode with QPSK Modulation  
HSUPA Mode with QPSK Modulation  
HSPA+ Mode with QPSK Modulation  
Multislot Class.....: GPRS: Multislot Class12,EGPRS: Multislot Class12  
Antenna Type.....: PIFA Antenna  
Emission Designators .....: GPRS850:250KGXW,GPRS1900: 1900:248KG7W  
EGPRS850:246KG7W, EGPRS1900:247KG7W,  
WCDMA850:4M19F9W,WCDMA1900:4M20F9W  
HSDPA850:4M21F9W,HSDPA1900:4M20F9W  
HSUPA850:4M19F9W,HSUPA1900:4M19F9W  
HSPA+850:4M20F9W,HSPA+1900:4M19F9W

- Note 1:* The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula  $F(n)=824.2+0.2*(n-128)$ ,  $128 \leq n \leq 251$ ; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).
- Note 2:* The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula  $F(n)=1850.2+0.2*(n-512)$ ,  $512 \leq n \leq 810$ ; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).
- Note 3:* The transmitter (Tx) frequency arrangement of the WCDMA 850MHz band used by the EUT can be represented with the formula  $F(n)=826.4+0.2*(n-4132)$ ,  $4132 \leq n \leq 4233$ ; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4175(835MHz) and 4233 (846.6MHz).
- Note 4:* The transmitter (Tx) frequency arrangement of the WCDMA 1900MHz band used by the EUT can be represented with the formula  $F(n)=1852.4+0.2*(n-9262)$ ,  $9262 \leq n \leq 9538$ ; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).
- Note 5:* For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

## 1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22 and Part 24 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-09 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-09 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-09 Edition)	Personal Communications Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	2.1046	Conducted RF Output Power	PASS
2.	24.232(d)	Peak to average radio	PASS
2	2.1049 22.917 24.238	99% Occupied Bandwidth	PASS
3	2.1055 22.355 24.235	Frequency Stability	PASS
4	2.1051 2.1057 22.917 24.238	Conducted Out of Band Emissions	PASS
5	2.1051 2.1057 22.917 24.238	Band Edge	PASS
6	22.913 24.232	Transmitter Radiated Power (EIPR/ERP)	PASS
7	2.1053 2.1057 22.917 24.238	Radiated Out of Band Emissions	PASS

NOTE: Measurement method according to TIA/EIA 603.D-2010

### **1.3 Facilities and Accreditations**

#### **1.3.1 Facilities**

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572.

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, No.8 LongChang Road,Block 67, BaoAn District, ShenZhen, GuangDong Province,P. R. China 518101. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 695796.

#### **1.3.2 Test Environment Conditions**

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

## 2. 47 CFR PART 2, PART 22H & 24E REQUIREMENTS

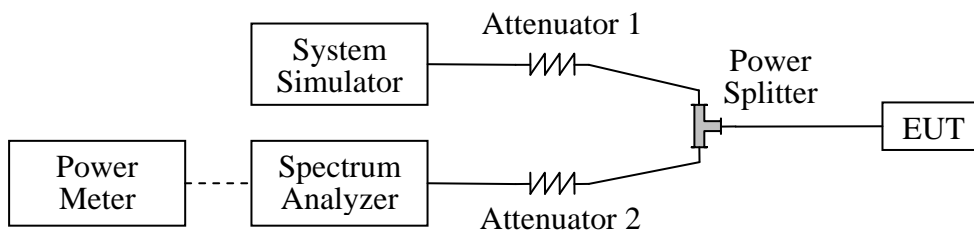
### 2.1 Conducted RF Output Power

#### 2.1.1 Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

#### 2.1.2 Test Description

##### 1. Test Setup:



The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

The Power Meter was just used for the Conducted RF Output Power test of WCDMA Model.

##### 2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2012.05	2013.05
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05	2013.05
Power Meter	Agilent	E4418B	GB43318055	2012.05	2013.05
Power Sensor	Agilent	8482A	MY41091706	2012.05	2013.05
Power Splitter	Weinschel	1506A	NW521	2012.05	2013.05
Attenuator 1	Resnet	20dB	(n.a.)	2012.05	2013.05
Attenuator 2	Resnet	3dB	(n.a.)	2012.05	2013.05

### 2.1.3 Test Results

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.

#### 1. GSM Model Test Verdict:

Band	Channel	Frequency (MHz)	Measured Output Power		Limit	Verdict
			dBm	Refer to Plot	dBm	
GPRS 850MHz	128	824.2	34.63	Plot A1 to A3 <sup>Note 1</sup>	35	PASS
	190	836.6	34.64			PASS
	251	848.8	34.81			PASS
GPRS 1900MHz	512	1850.2	31.37	Plot B1 to B3 <sup>Note 1</sup>	32	PASS
	661	1880.0	30.42			PASS
	810	1909.8	29.22			PASS
EGPRS 850MHz	128	824.2	34.51	Plot C1 to C3 <sup>Note 1</sup>	35	PASS
	190	836.6	34.82			PASS
	251	848.8	34.77			PASS
EGPRS 1900MHz	512	1850.2	31.56	Plot D1 to F3 <sup>Note 1</sup>	32	PASS
	661	1880.0	30.19			PASS
	810	1909.8	29.16			PASS

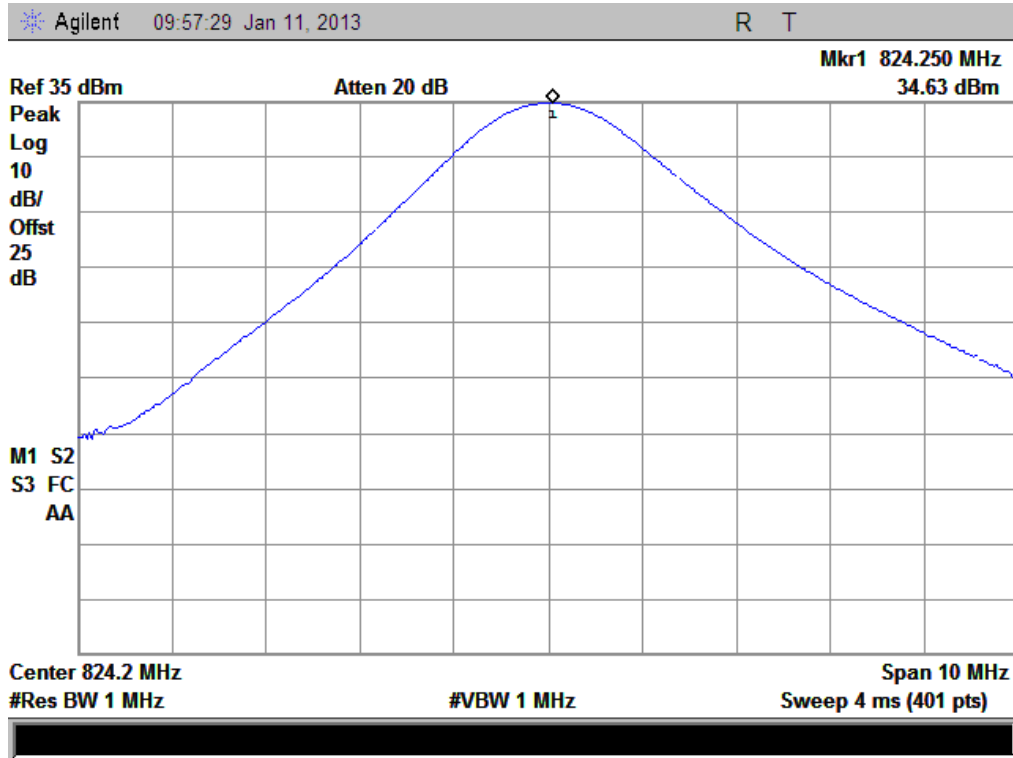
Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.

#### 2. WCDMA Model Test Verdict:

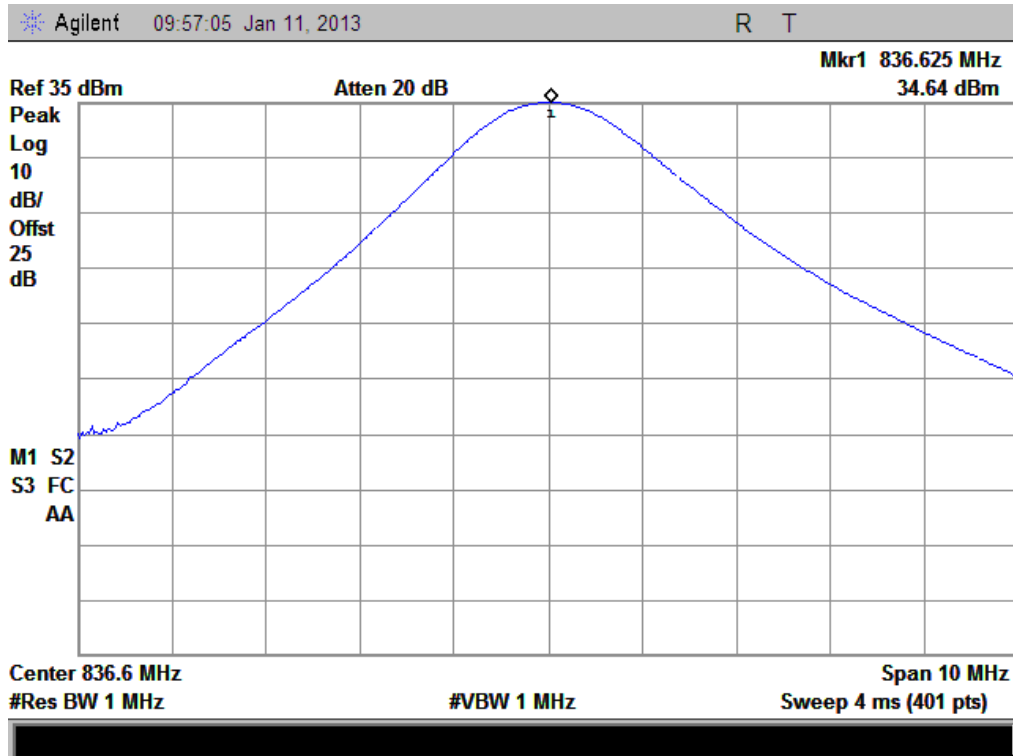
Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	21.41	21.21	21.25	21.55	22.1	22.49
HSDPA	1	21.38	21.19	21.22	21.53	22.07	22.47
	2	21.38	21.17	21.21	21.51	22.05	22.43
	3	20.85	20.67	20.75	21.02	21.58	21.95
	4	20.87	20.68	20.73	21.04	21.55	21.97
HSUPA	1	21.37	21.19	21.21	21.53	22.05	22.47
	2	19.33	19.17	19.23	19.51	20.07	20.45
	3	20.38	20.18	20.22	20.52	21.06	21.47
	4	19.32	19.18	19.22	19.49	20.07	20.47
	5	21.36	21.18	21.21	21.53	22.05	22.46
HSPA+	1	21.37	21.18	21.22	21.51	22.07	22.45
Note:	The Conducted RF Output Power test of WCDMA /HSDPA /HSUPA /HSPA+ was tested by power meter.						



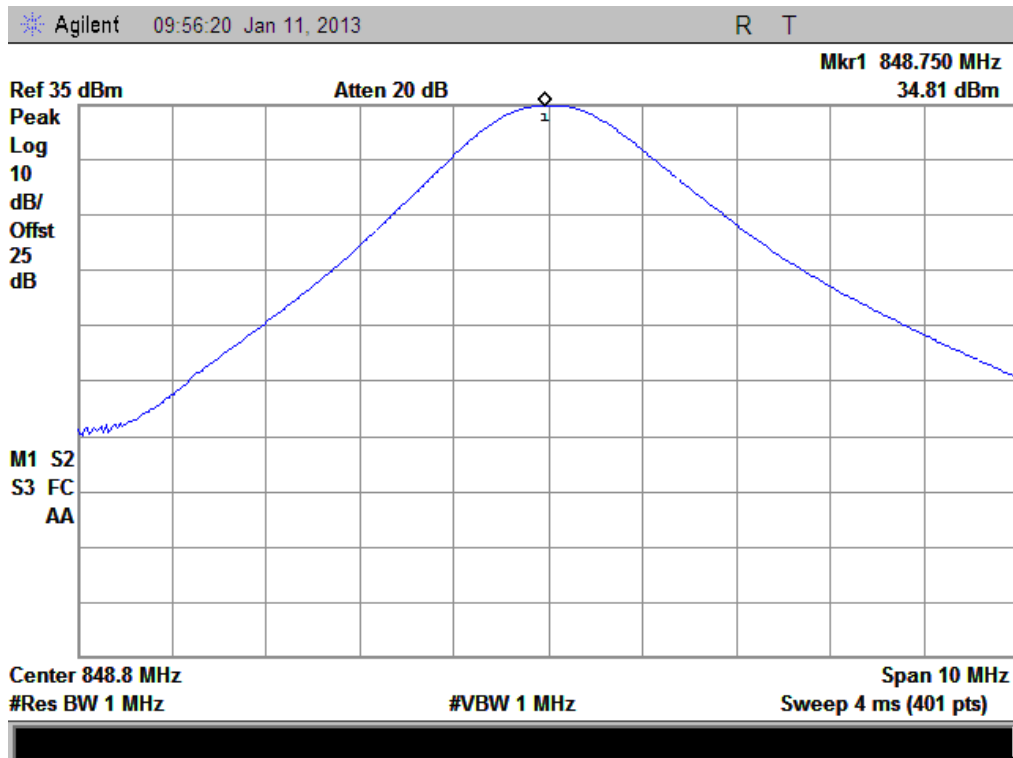
3. GSM Model Test Plots:



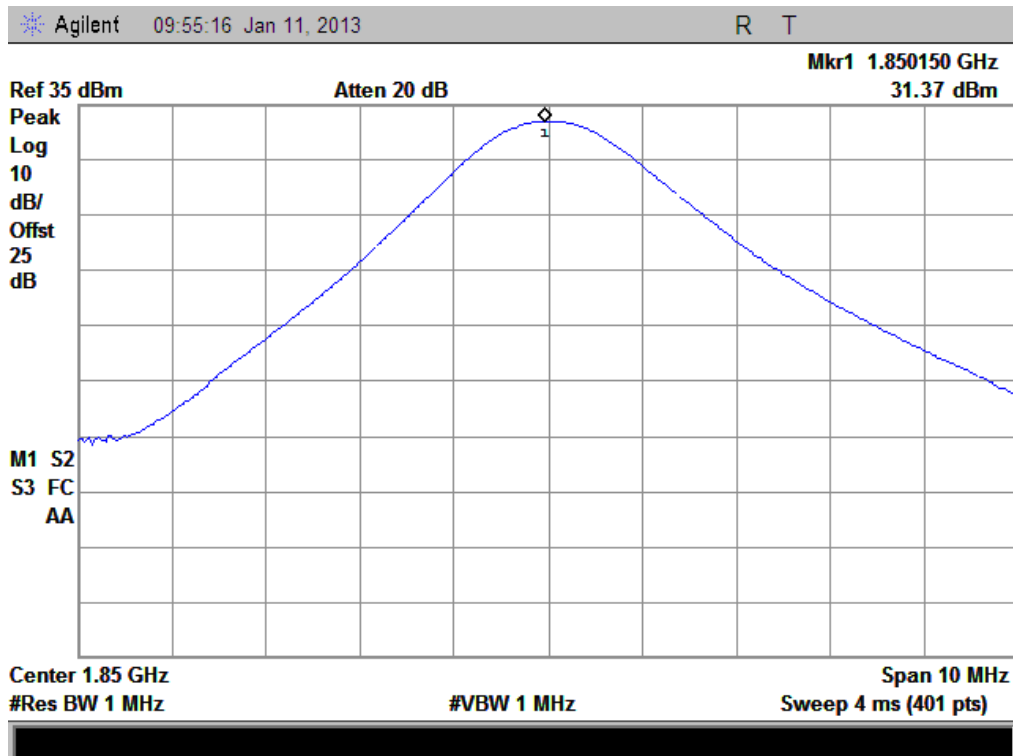
(Plot A1: GPRS 850MHz Channel = 128)



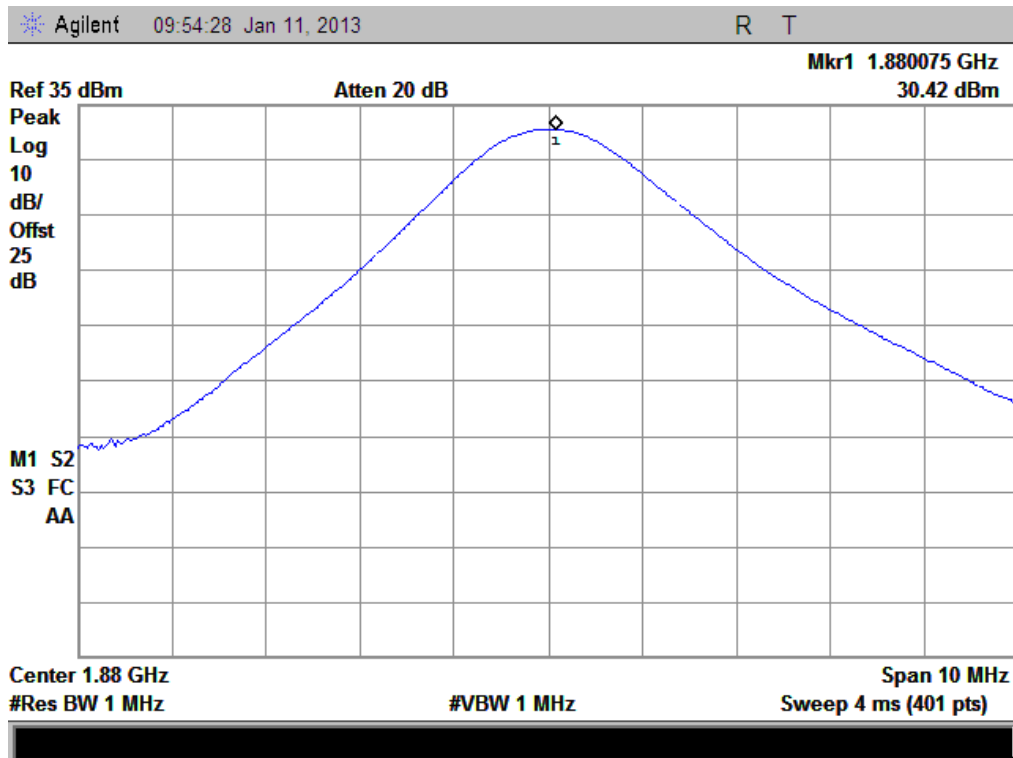
(Plot A2: GPRS 850MHz Channel = 190)



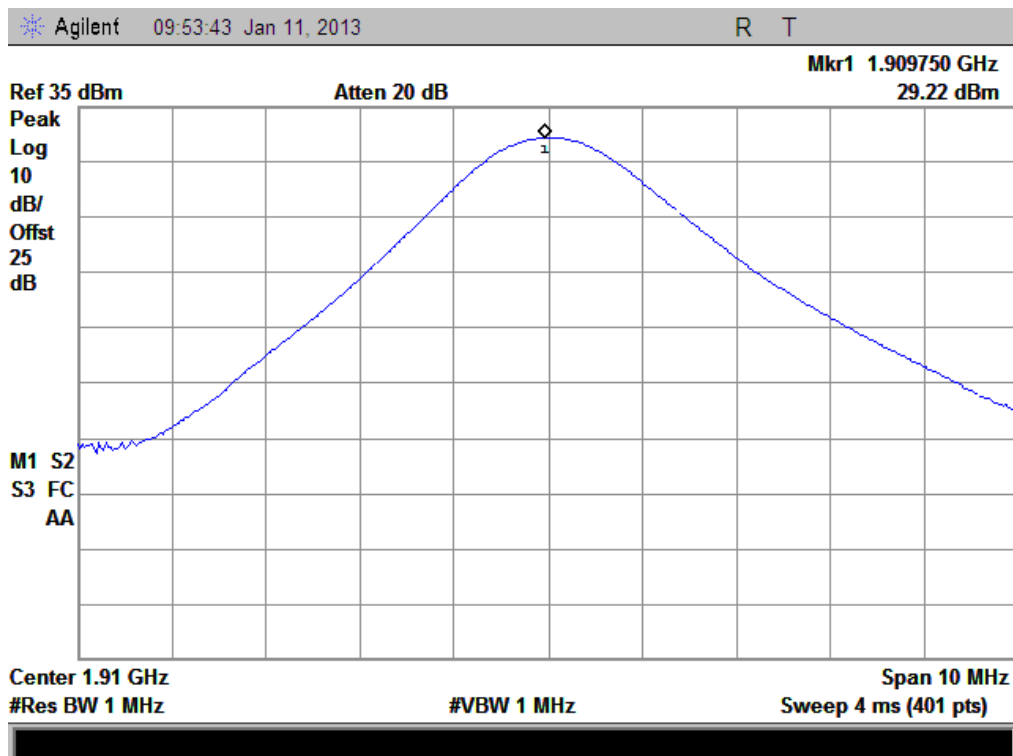
(Plot A3: GPRS 850MHz Channel = 251)



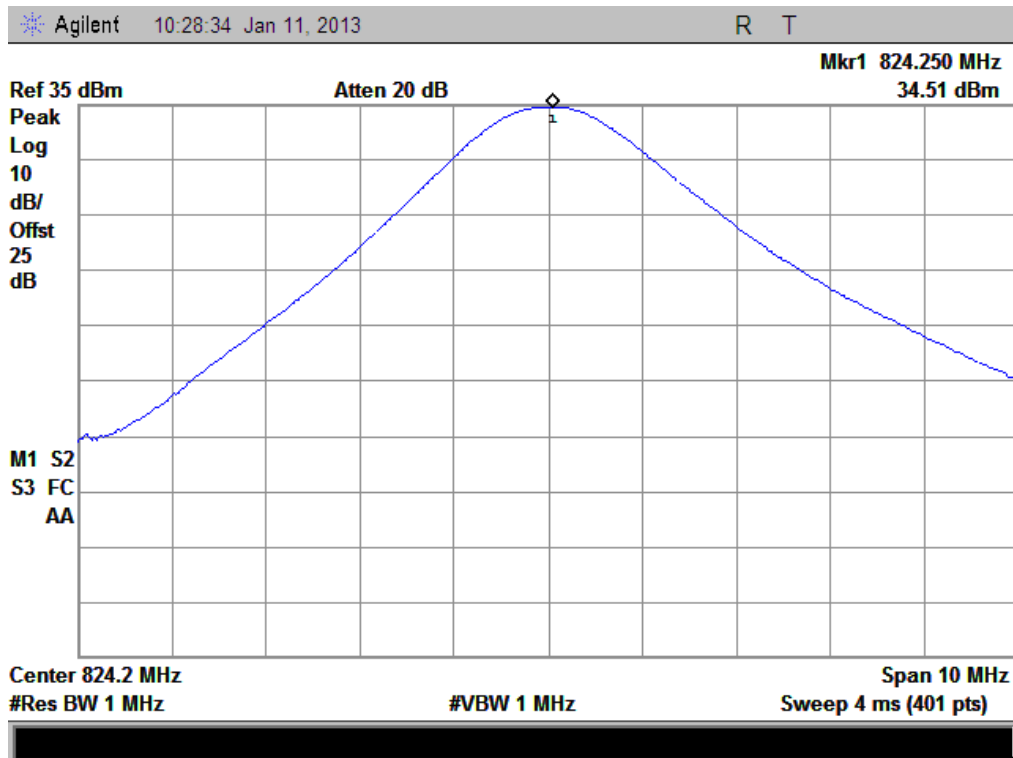
(Plot B1: GPRS 1900MHz Channel = 512)



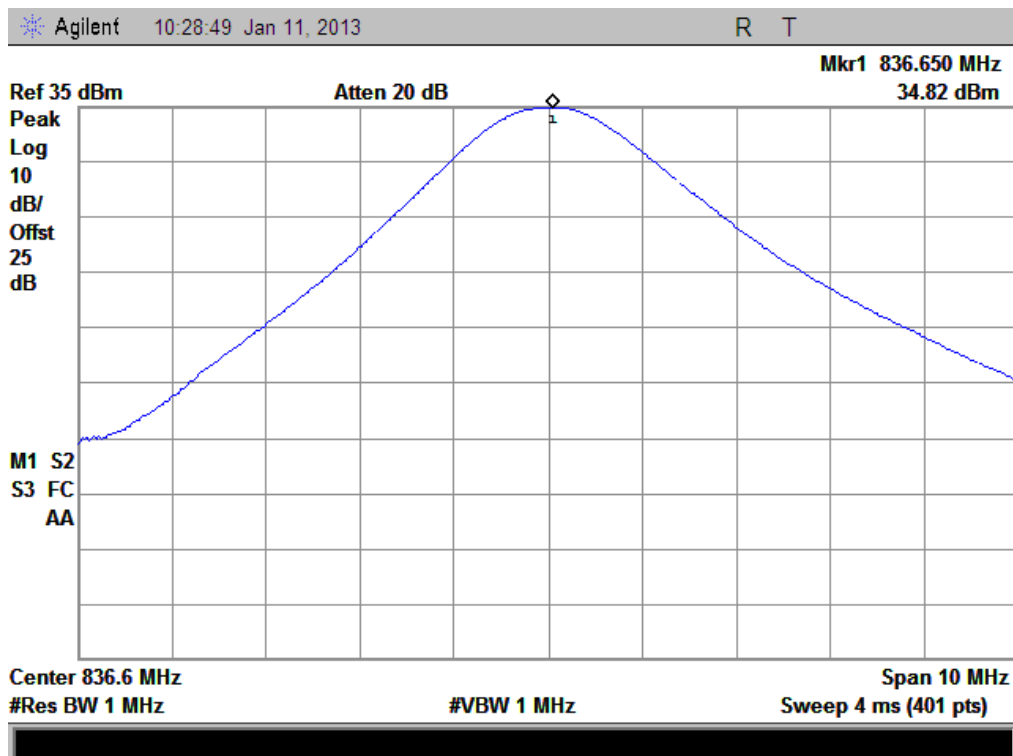
(Plot B2: GPRS 1900MHz Channel = 661)



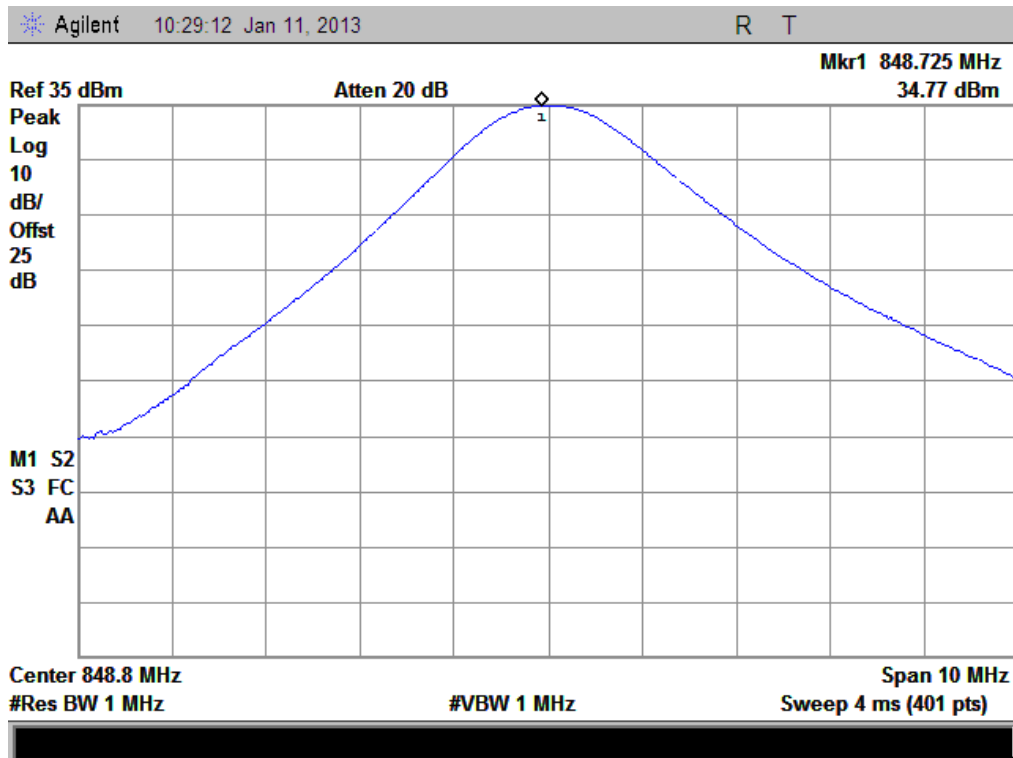
(Plot B3: GPRS 1900MHz Channel = 810)



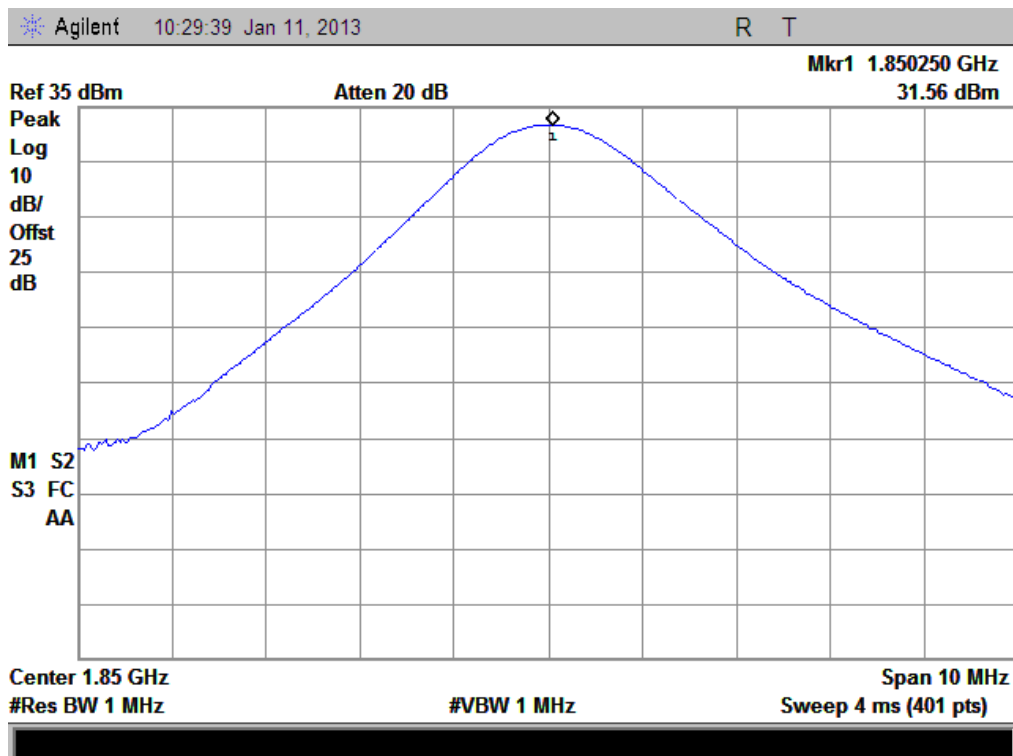
(Plot C1: EGPRS 850MHz Channel = 128)



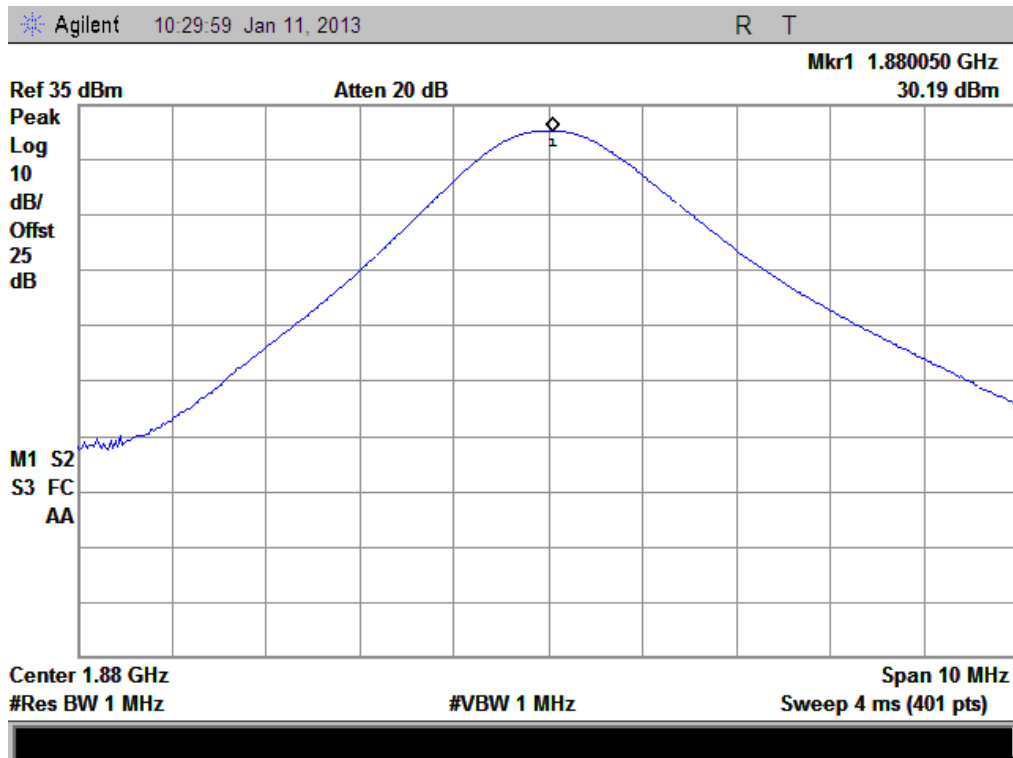
(Plot C2: EGPRS 850MHz Channel = 190)



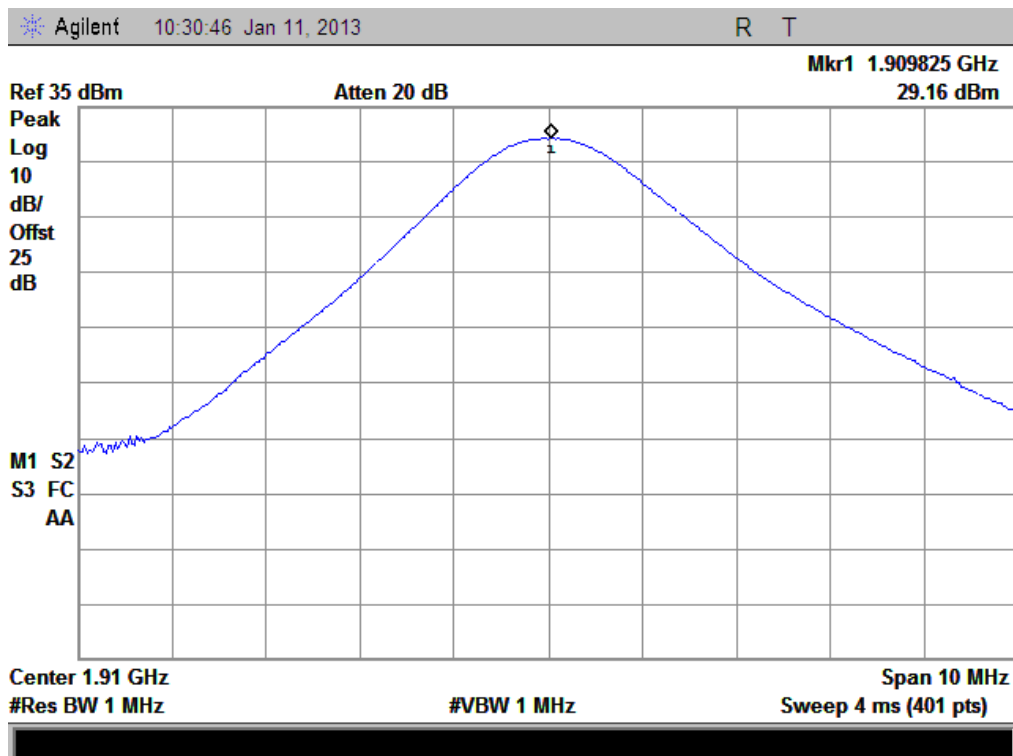
(Plot C3: EGPRS 850MHz Channel = 251)



(Plot D1: EGPRS 1900MHz Channel = 512)



(Plot D2: EGPRS 1900MHz Channel = 661)



(Plot D3: EGPRS 1900Hz Channel = 810)

## 2.2 Peak to Average Ratio

### 2.2.1 Definition

According to FCC section 2.1049 and FCC 24.232(d), the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### 2.2.2 Test Description

See section 2.1.2 of this report.

### 2.2.3 Test Verdict

Here the lowest, middle and highest channels are selected to perform testing to verify the peak-to-average ratio.

Test procedures:

A. For GSM/EGPRS operating mode:

- a. Set RBW=1MHz, VBW=1MHz, peak detector in spectrum analyzer.
- b. Set EUT in maximum output power, and triggered the bust signal.
- c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average ratio.

B. For UMTS operating mode:

- a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
- b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

1. Test Verdict:

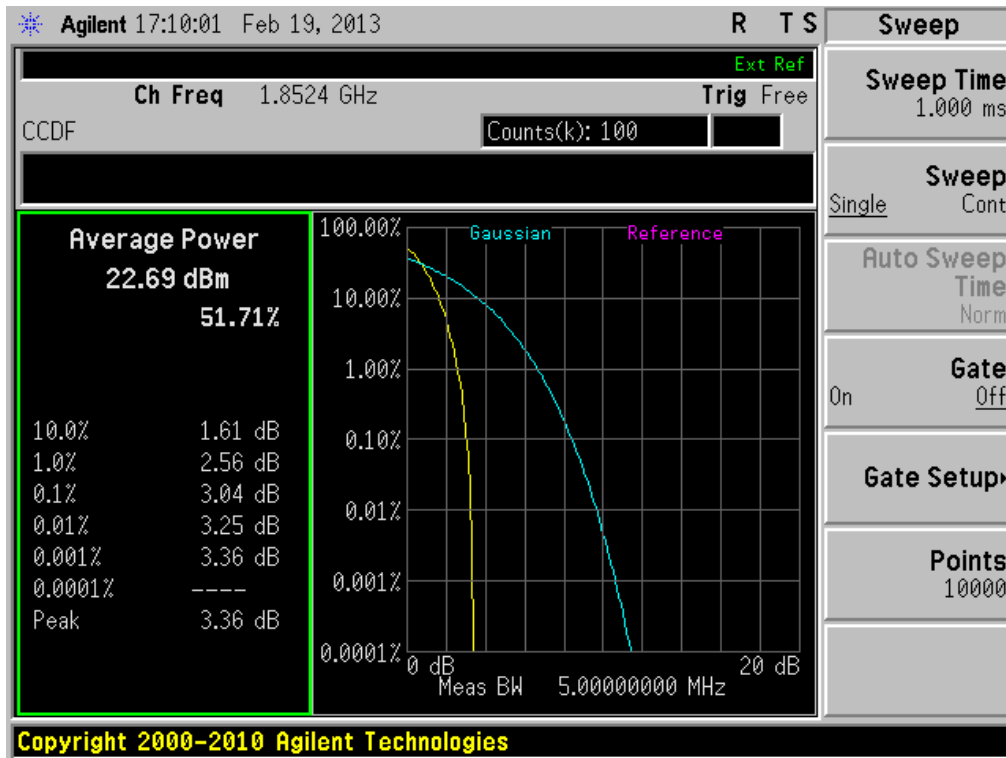
Band	Channel	Frequency (MHz)	Peak to Average ratio		Limit dBm	Verdict
			dBm	Refer to Plot		
GPRS 1900MHz	512	1850.2	0.83	Plot A1 to A3	13	PASS
	661	1880.0	0.85			PASS
	810	1909.8	0.78			PASS
EGPRS 1900MHz	512	1850.2	0.17	Plot B1 to B3	13	PASS
	661	1880.0	0.20			PASS
	810	1909.8	0.27			PASS
WCDMA 1900MHz	9262	1852.4	3.04	Plot C1 toC3	13	PASS
	9400	1880	2.97			PASS
	9538	1907.6	2.68			PASS



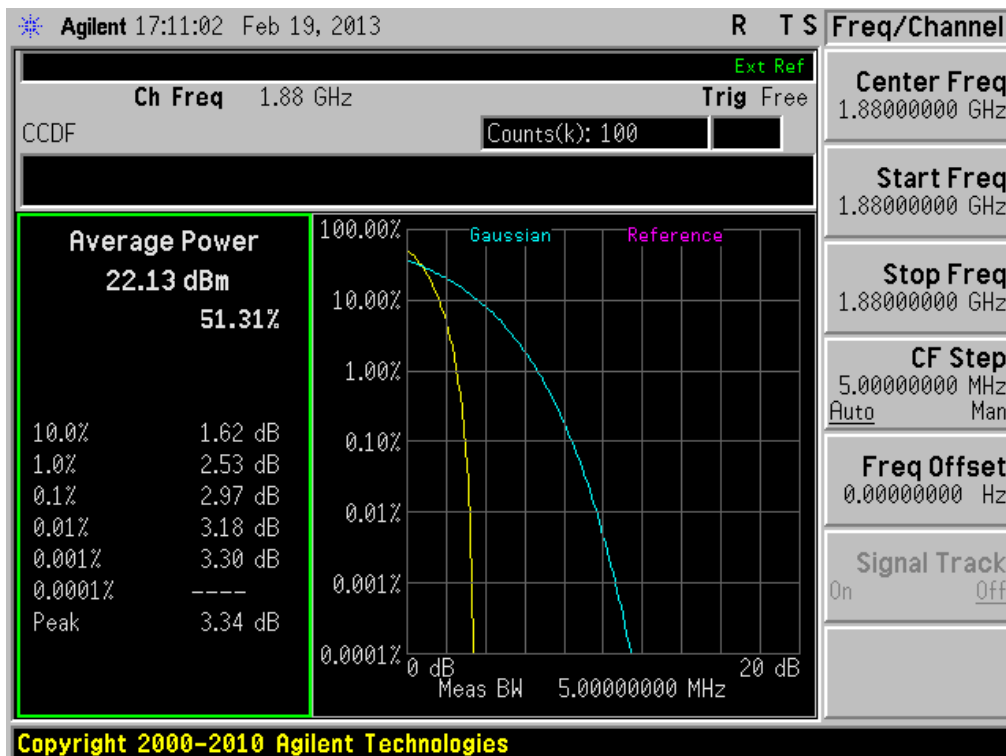




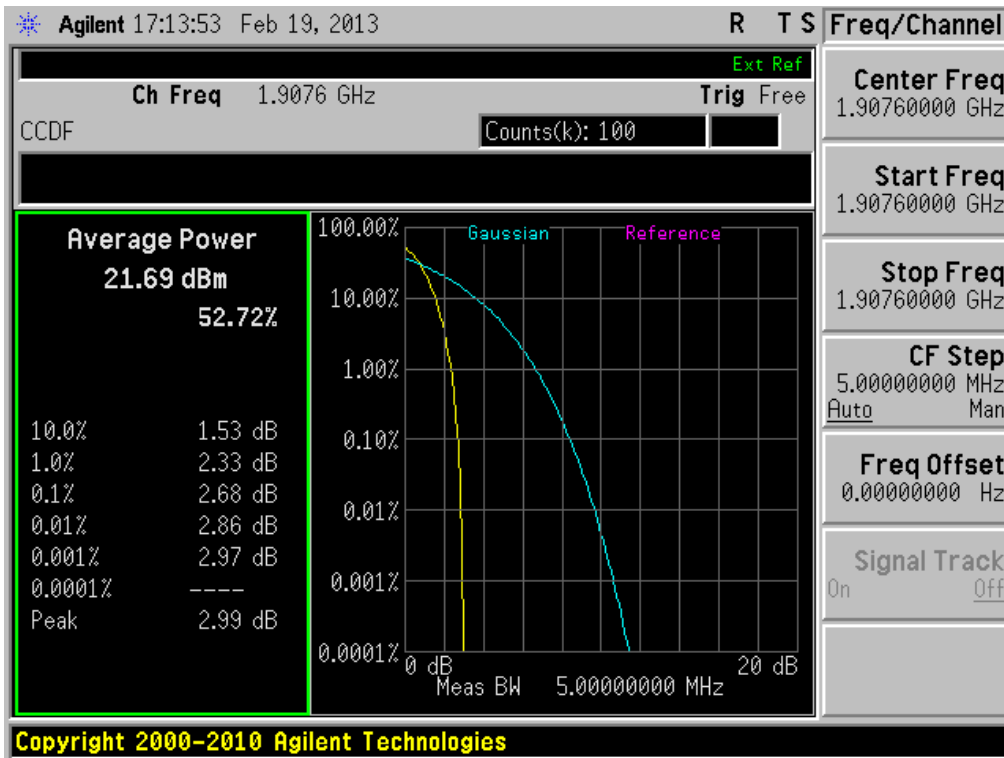




(Plot C1: WCDMA 1900MHz Channel = 9262)



(Plot C2: WCDMA 1900MHz Channel = 9400)



(Plot C3: WCDMA 1900MHz Channel = 9538)

## 2.3 99% Occupied Bandwidth

### 2.3.1 Definition

According to FCC section 2.1049 and FCC § 22.917 & 24.238, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth,

### 2.3.2 Test Description

See section 2.1.2 of this report.

### 2.3.3 Test Verdict

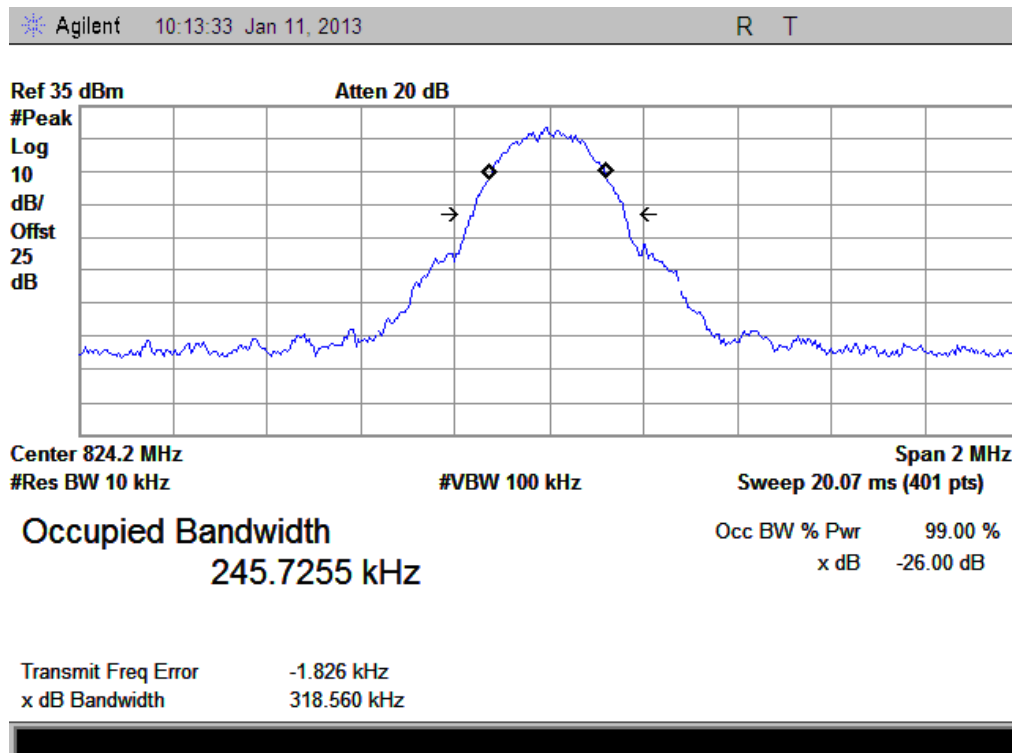
Here the lowest, middle and highest channels are selected to perform testing to verify the 99% occupied bandwidth.

#### 2. Test Verdict:

Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
EDGE 850MHz	128	824.2	318.560 KHz	245.7255 KHz	Plot A
	190	836.6	326.862 KHz	245.0246 KHz	Plot B
	251	848.8	321.132 KHz	246.3316 KHz	Plot C
EDGE 1900MHz	512	1850.2	328.617 KHz	246.7876 KHz	Plot D
	661	1880.0	319.795 KHz	246.2455 KHz	Plot E
	810	1909.8	322.654 KHz	246.0221 KHz	Plot F
WCDMA 850MHz	4132	826.4	4.725MHz	4.1912MHz	Plot G
	4175	835	4.702MHz	4.1768MHz	Plot H
	4233	846.6	4.728MHz	4.1759MHz	Plot I
WCDMA 1900MHz	9262	1852.4	4.723MHz	4.2058MHz	Plot J
	9400	1880	4.699MHz	4.1651MHz	Plot K
	9538	1907.6	4.690MHz	4.1963MHz	Plot L
HSDPA 850MHz	4132	826.4	4.725MHz	4.2096MHz	Plot M
	4175	835	4.705MHz	4.1953MHz	Plot N
	4233	846.6	4.719MHz	4.1878MHz	Plot O
HSDPA 1900MHz	9262	1852.4	4.722MHz	4.1938MHz	Plot P
	9400	1880	4.701MHz	4.1966MHz	Plot Q
	9538	1907.6	4.692MHz	4.1836MHz	Plot R
HSUPA 850MHz	4132	826.4	4.712MHz	4.1943MHz	Plot S
	4175	835	4.717MHz	4.1929MHz	Plot T
	4233	846.6	4.715MHz	4.1865MHz	Plot U
HSUPA 1900MHz	9262	1852.4	4.708MHz	4.1842MHz	Plot W

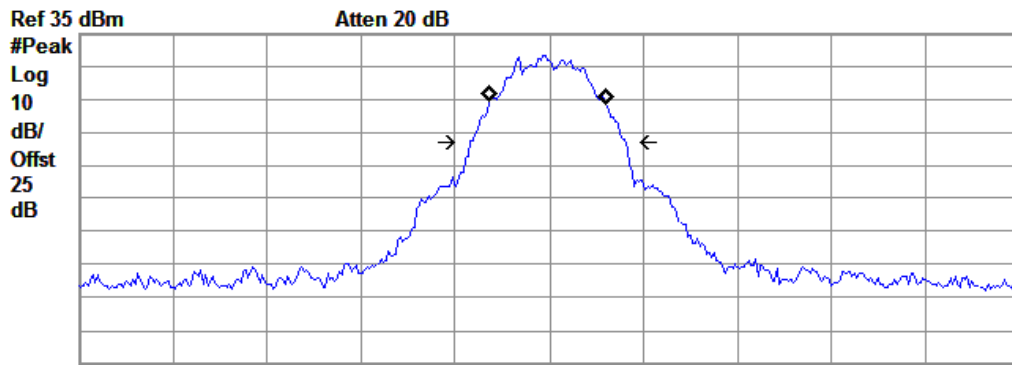
Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
	9400	1880	4.703MHz	4.1895MHz	Plot X
	9538	1907.6	4.706MHz	4.1932MHz	Plot Y
HSPA+ 850MHz	4132	826.4	4.714MHz	4.1856MHz	Plot Z
	4175	835	4.719MHz	4.1900MHz	Plot A1
	4233	846.6	4.730MHz	4.1995MHz	Plot B1
HSPA+ 1900MHz	9262	1852.4	4.707MHz	4.1872MHz	Plot C1
	9400	1880	4.711MHz	4.1911MHz	Plot D1
	9538	1907.6	4.719MHz	4.1818MHz	Plot E1
GPRS 850MHz	128	824.2	322.163 KHz	245.1542 KHz	Plot F1
	190	836.6	324.111 KHz	250.2657 KHz	Plot G1
	251	848.8	317.312 KHz	243.0737 KHz	Plot H1
GPRS 1900MHz	512	1850.2	323.133 KHz	248.0741 KHz	Plot I1
	661	1880.0	319.378 KHz	245.2423 KHz	Plot J1
	810	1909.8	317.550KHz	246.9551 KHz	Plot K1

## 3. Test Plots:



(Plot A: EGPRS 850MHz Channel = 128)

Agilent 10:14:07 Jan 11, 2013 R T



Center 836.6 MHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

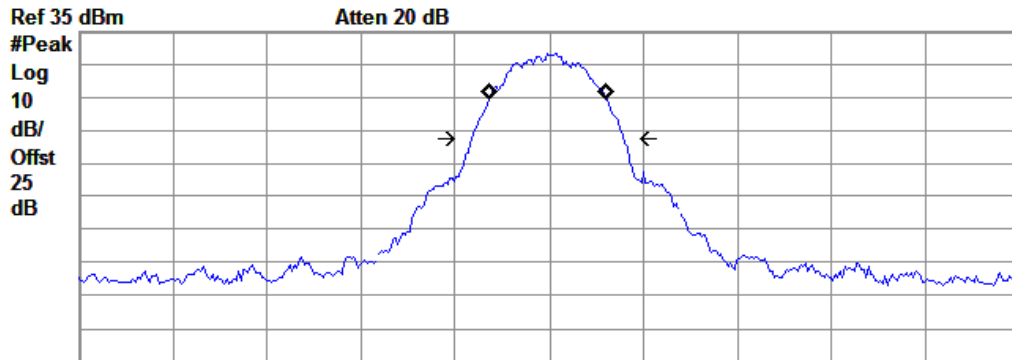
**Occupied Bandwidth**  
 245.0246 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -2.442 kHz  
 x dB Bandwidth 326.862 kHz

(Plot B: EGPRS 850MHz Channel = 190)

Agilent 10:15:06 Jan 11, 2013 R T



Center 848.8 MHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

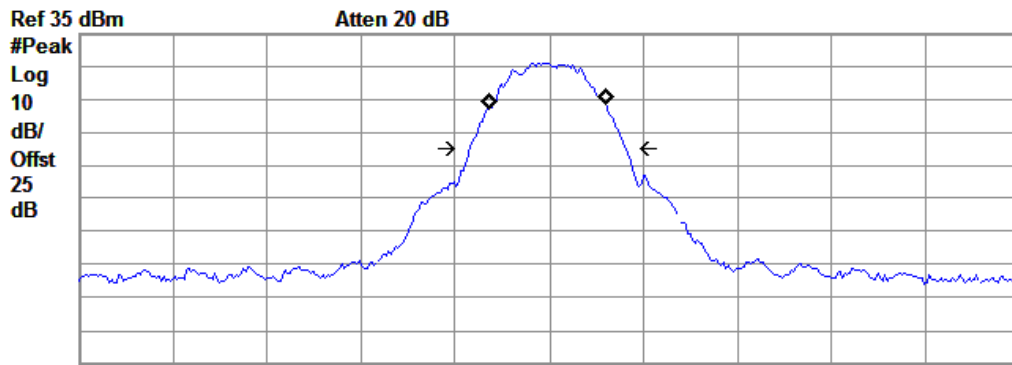
**Occupied Bandwidth**  
 246.3316 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -1.957 kHz  
 x dB Bandwidth 321.132 kHz

(Plot C: EGPRS 850MHz Channel = 251)

Agilent 10:18:02 Jan 11, 2013 R T



Center 1.85 GHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

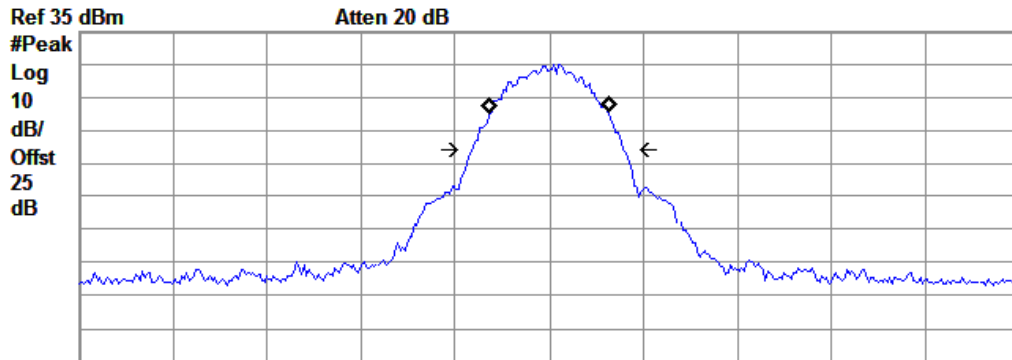
**Occupied Bandwidth**  
 246.7867 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -2.536 kHz  
 x dB Bandwidth 328.617 kHz

(Plot D: EGPRS1900MHz Channel = 512)

Agilent 10:18:42 Jan 11, 2013 R T



Center 1.88 GHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

**Occupied Bandwidth**  
 246.2455 kHz

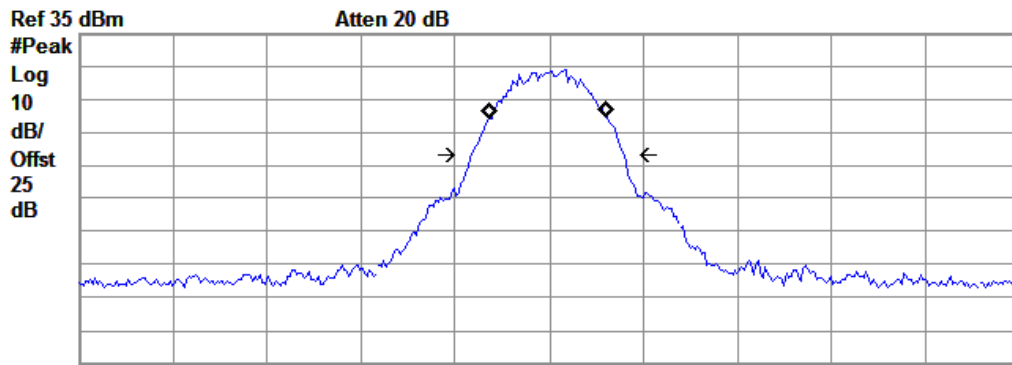
Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error 92.244 Hz  
 x dB Bandwidth 319.795 kHz

(Plot E: EGPRS1900MHz Channel = 661)



Agilent 10:19:31 Jan 11, 2013 R T



Center 1.91 GHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

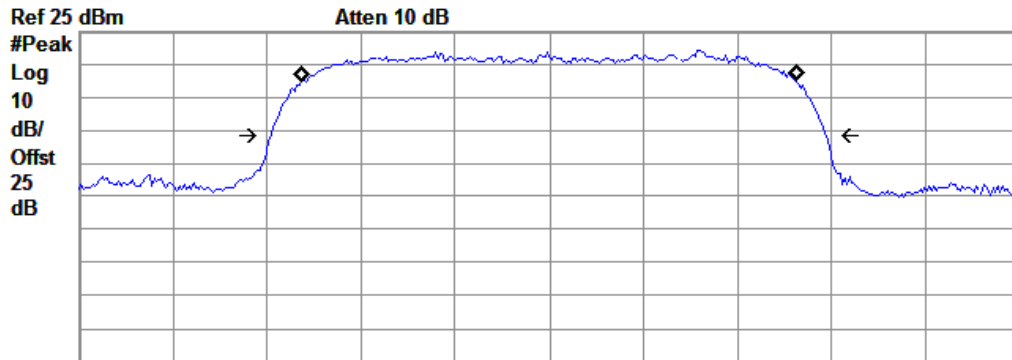
**Occupied Bandwidth**  
 246.0221 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -653.386 Hz  
 x dB Bandwidth 322.654 kHz

(Plot F: EGPRS 1900MHz Channel = 810)

Agilent 14:46:10 Jan 28, 2013 R T S



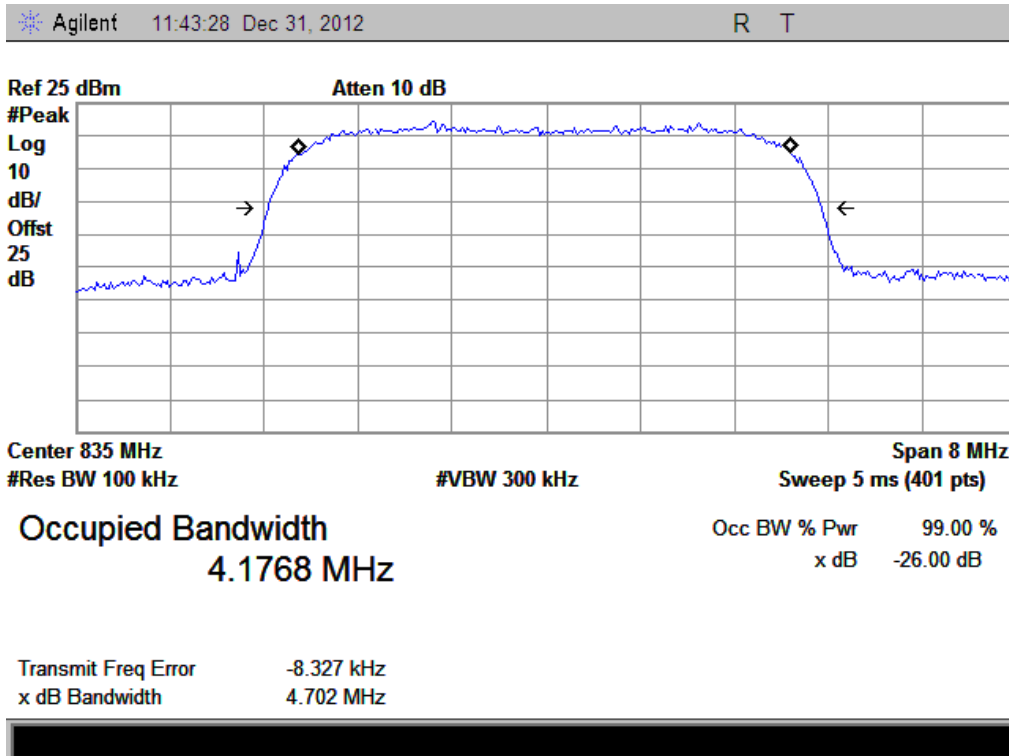
Center 826.4 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

**Occupied Bandwidth**  
 4.1912 MHz

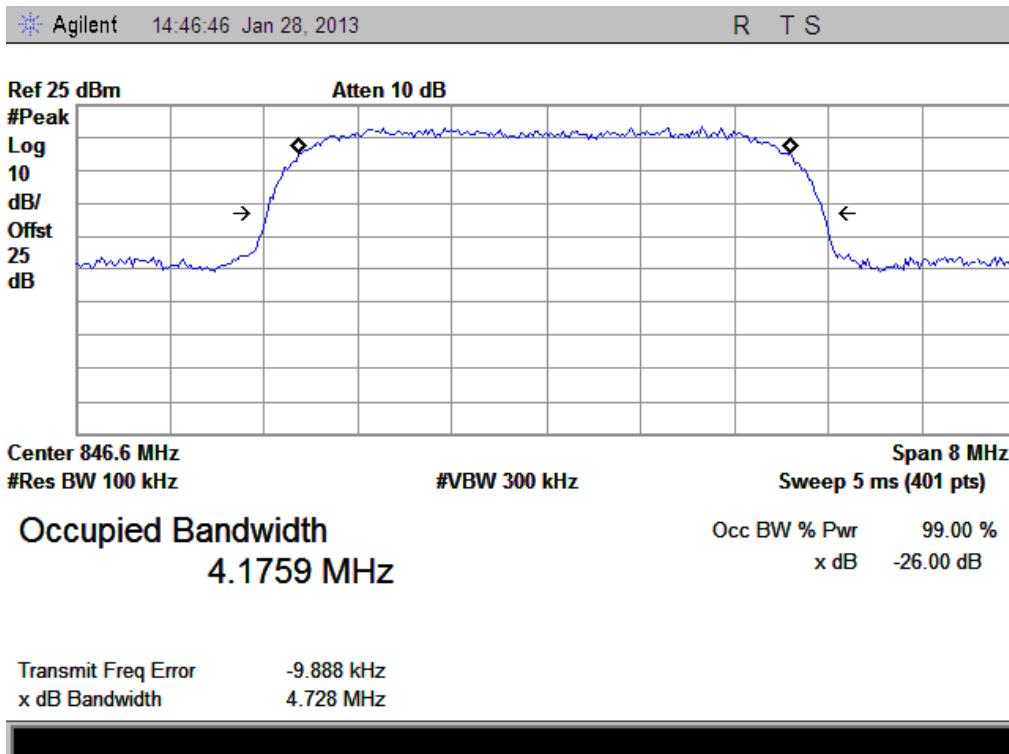
Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -2.343 kHz  
 x dB Bandwidth 4.725 MHz

(Plot G: WCDMA 850MHz Channel = 4132)

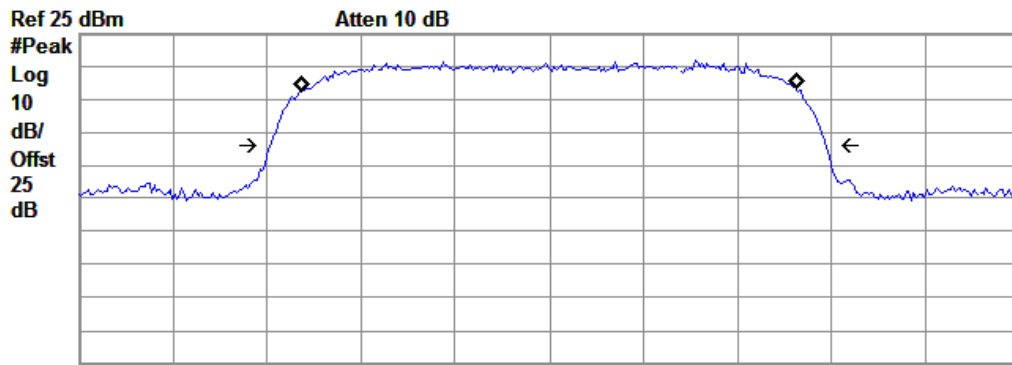


(Plot H: WCDMA 850 MHz Channel = 4175)



(Plot I: WCDMA 850MHz Channel = 4233)

Agilent 14:47:46 Jan 28, 2013 R T S



Center 1.852 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

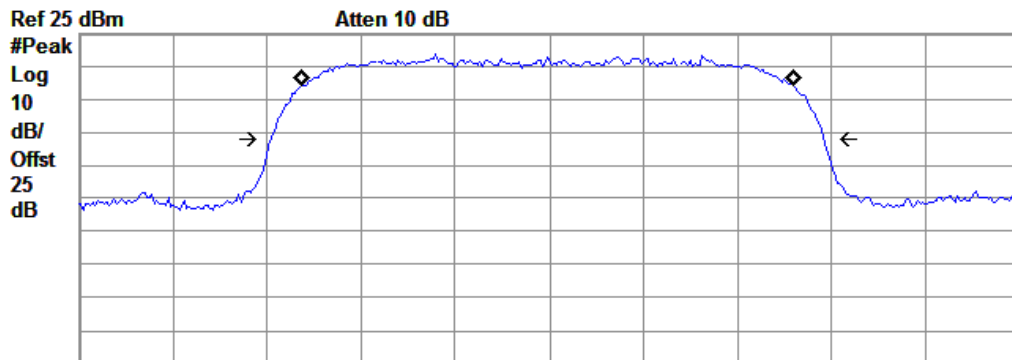
**Occupied Bandwidth**  
 4.2058 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -1.159 kHz  
 x dB Bandwidth 4.723 MHz

(Plot J: WCDMA 1900MHz Channel = 9262)

Agilent 11:42:18 Dec 31, 2012 R T



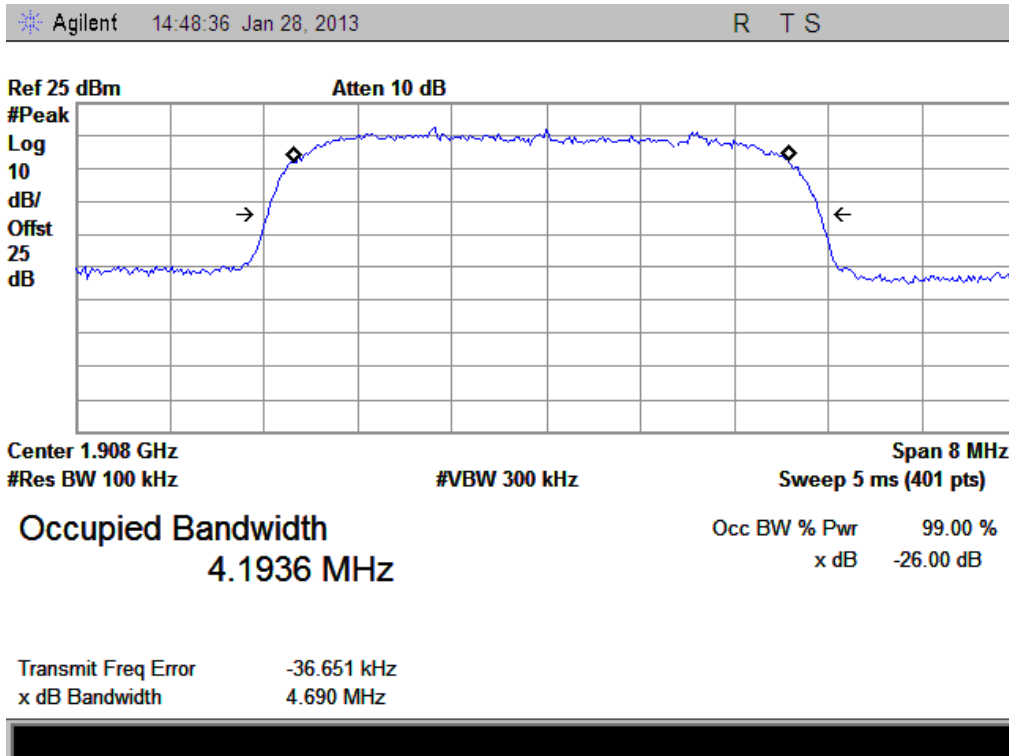
Center 1.88 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

**Occupied Bandwidth**  
 4.1651 MHz

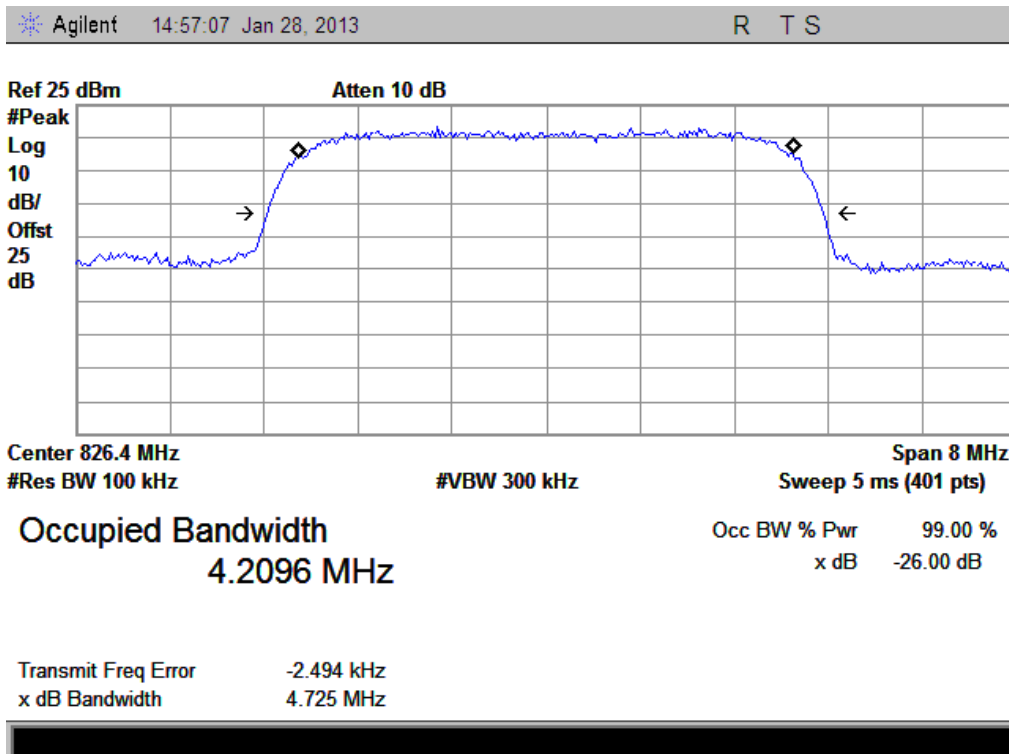
Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -11.726 kHz  
 x dB Bandwidth 4.699 MHz

(Plot K: WCDMA 1900 MHz Channel = 9400)

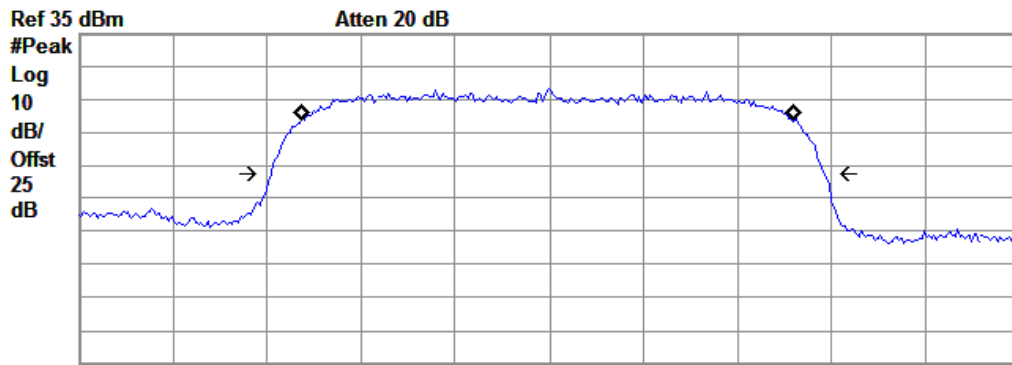


(Plot L: WCDMA1900MHz Channel = 9538)



(Plot M: HSDPA 850MHz Channel = 4132)

Agilent 14:47:17 Jan 11, 2013 R T



Center 835 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

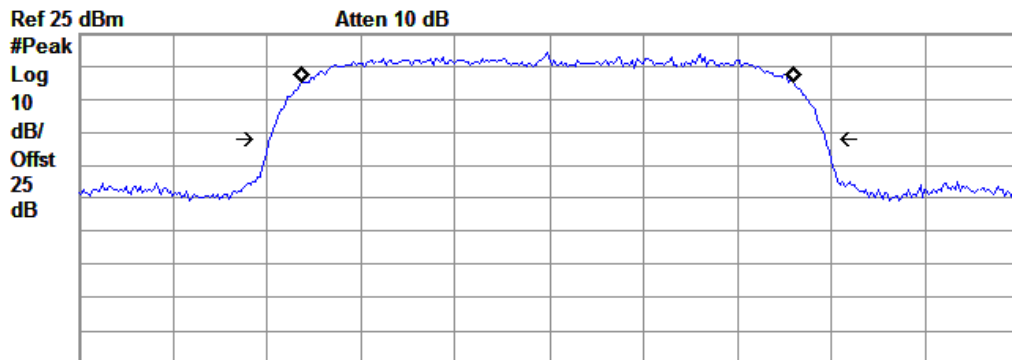
Occupied Bandwidth  
 4.1953 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -11.435 kHz  
 x dB Bandwidth 4.705 MHz

(Plot N: HSDPA850 MHz Channel = 4175)

Agilent 14:57:49 Jan 28, 2013 R T S



Center 846.6 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

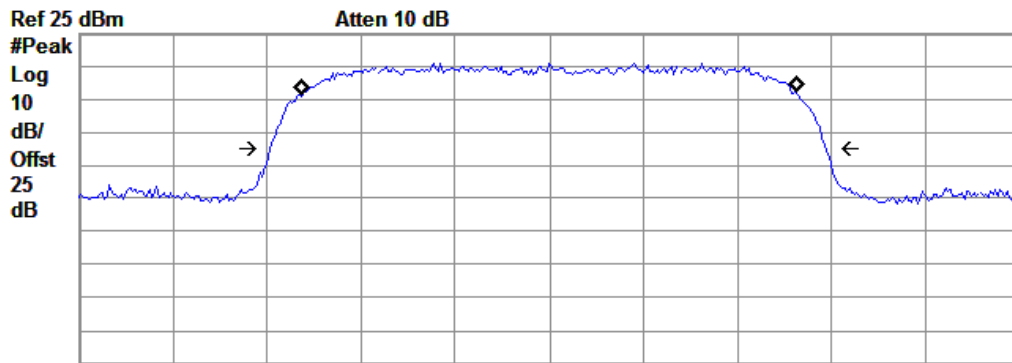
Occupied Bandwidth  
 4.1878 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -11.653 kHz  
 x dB Bandwidth 4.719 MHz

(Plot O: HSDPA 850 MHz Channel = 4233)

Agilent 14:56:29 Jan 28, 2013 R T S



Center 1.852 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

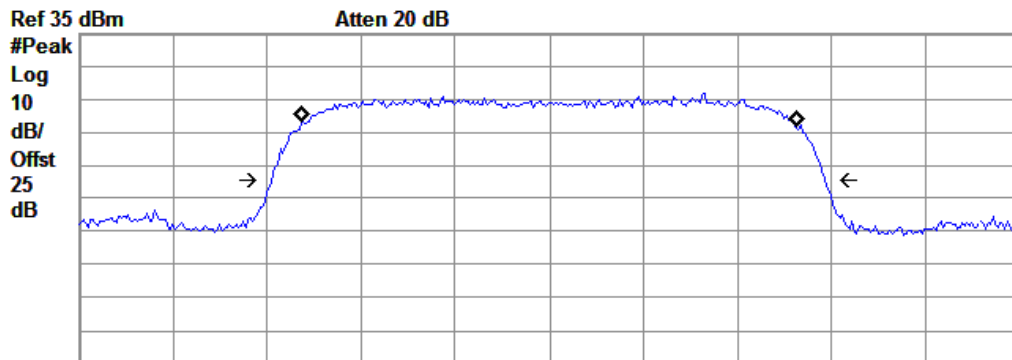
Occupied Bandwidth  
 4.1938 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -6.241 kHz  
 x dB Bandwidth 4.722 MHz

(Plot P: HSDPA1900 MHz Channel = 9262)

Agilent 14:47:52 Jan 11, 2013 R T



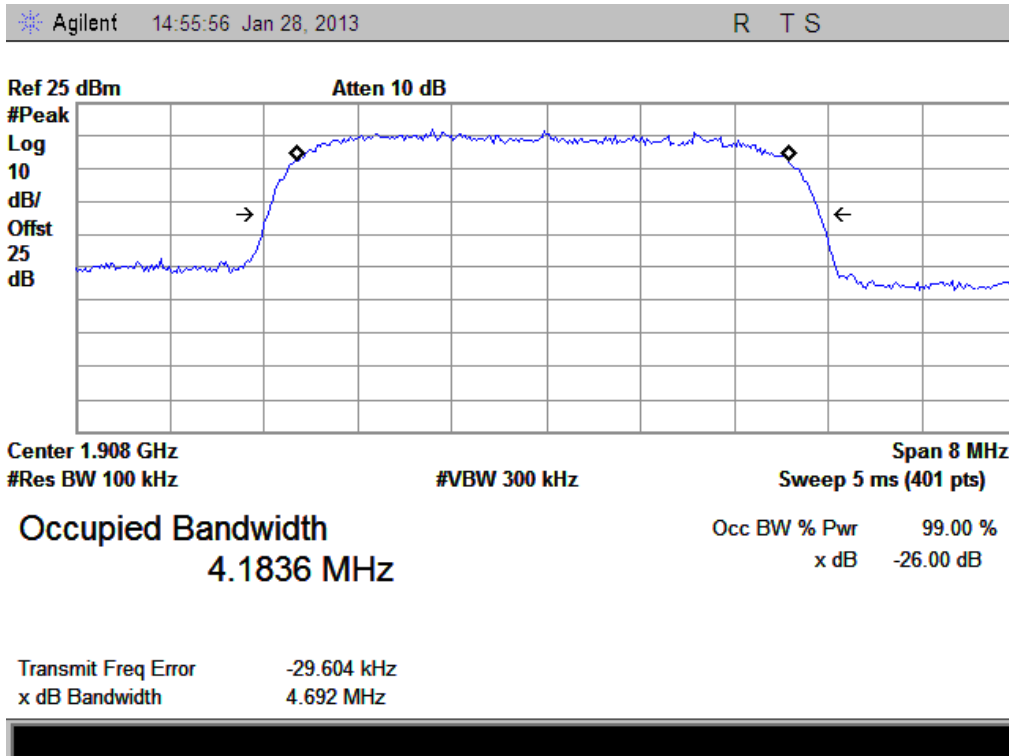
Center 1.88 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth  
 4.1966 MHz

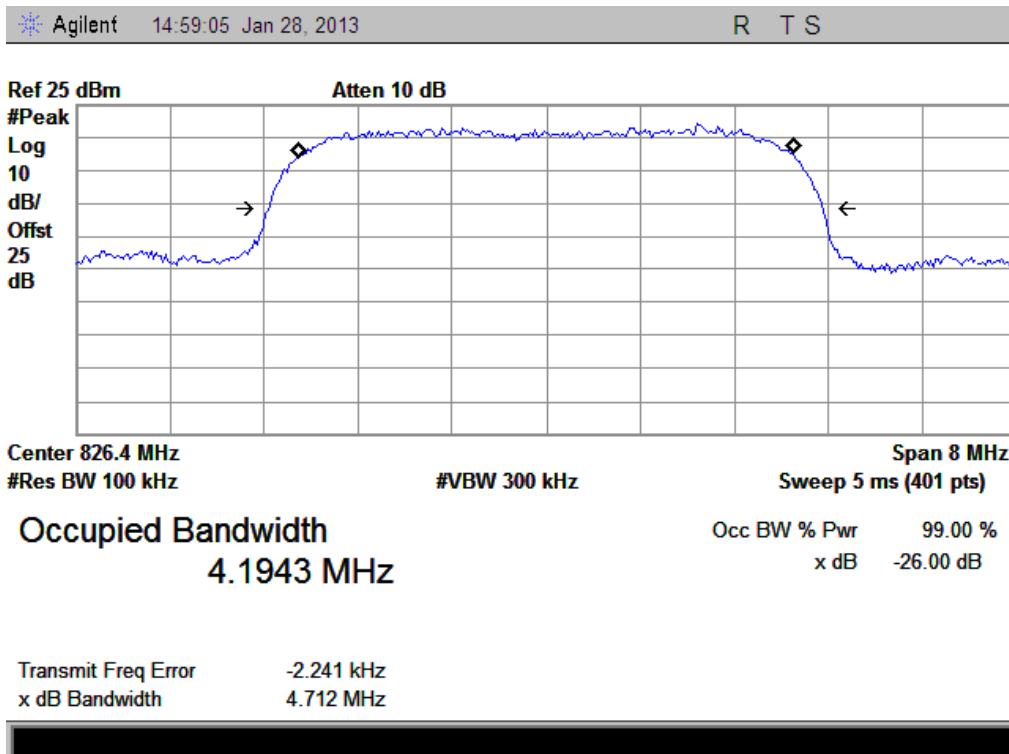
Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -1.050 kHz  
 x dB Bandwidth 4.701 MHz

(Plot Q: HSDPA1900 MHz Channel = 9400)

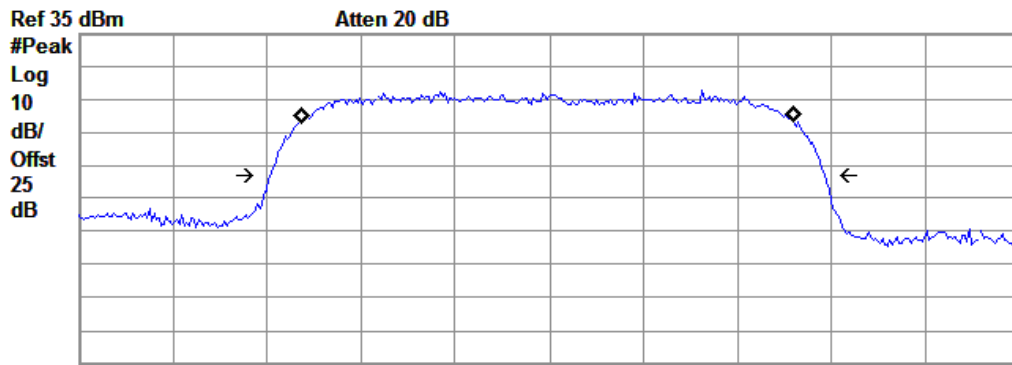


(Plot R: HSDPA1900 MHz Channel = 9538)



(Plot S: HSUPA850 MHz Channel = 4132)

Agilent 14:49:12 Jan 11, 2013 R T



Center 835 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

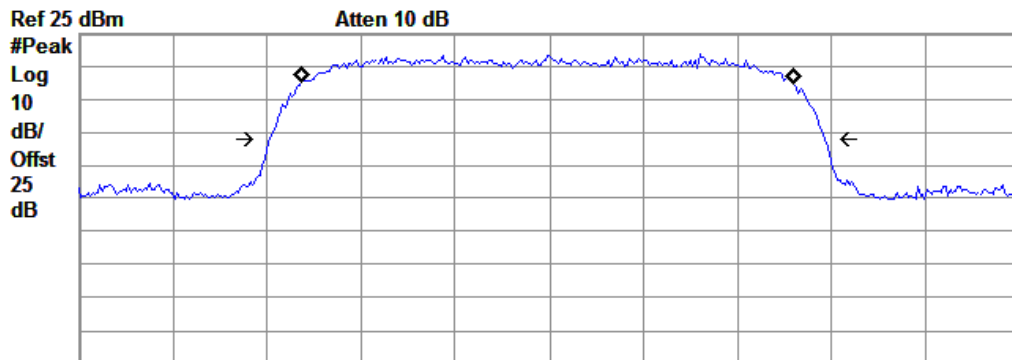
Occupied Bandwidth  
 4.1929 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -12.326 kHz  
 x dB Bandwidth 4.717 MHz

(Plot T: HSUPA850 MHz Channel = 4175)

Agilent 14:58:27 Jan 28, 2013 R T S



Center 846.6 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth  
 4.1865 MHz

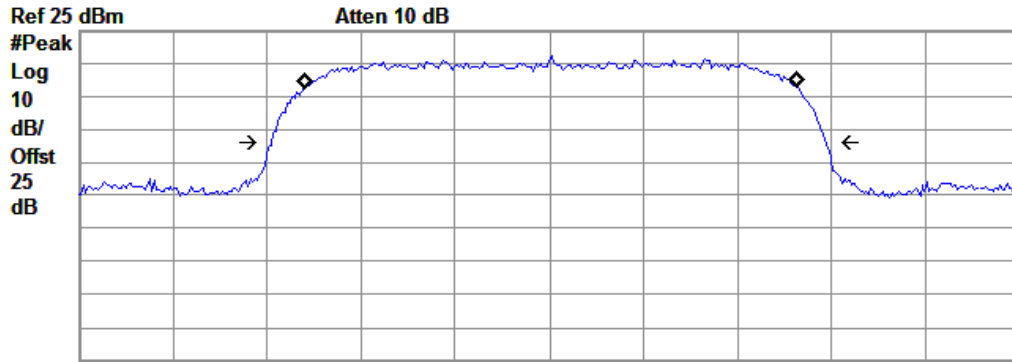
Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -10.878 kHz  
 x dB Bandwidth 4.715 MHz

(Plot U: HSUPA850 MHz Channel = 4233)



Agilent 14:59:58 Jan 28, 2013 R T S



Center 1.852 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

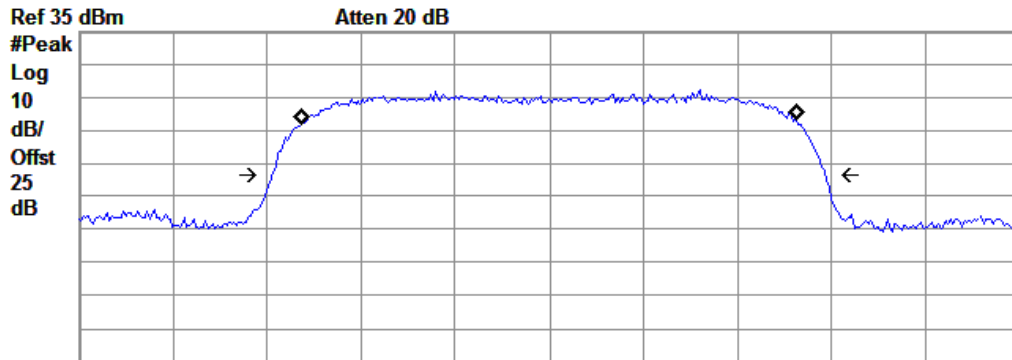
Occupied Bandwidth  
 4.1842 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error 6.324 kHz  
 x dB Bandwidth 4.708 MHz

(Plot W: HSUPA1900 MHz Channel = 9262)

Agilent 14:48:40 Jan 11, 2013 R T



Center 1.88 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

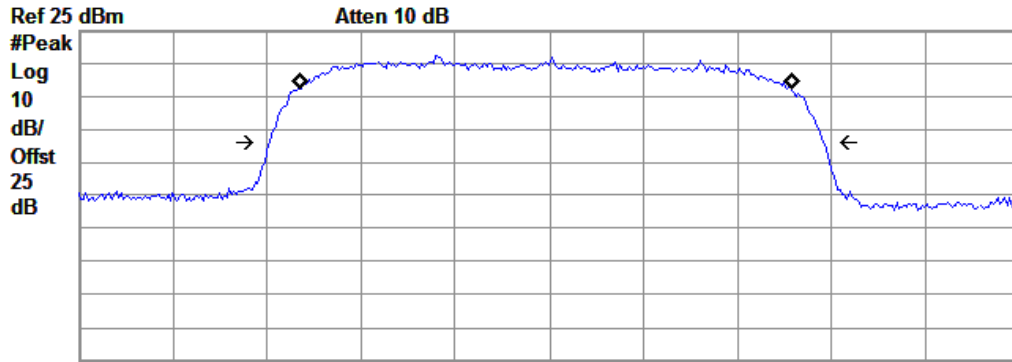
Occupied Bandwidth  
 4.1895 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error 2.108 kHz  
 x dB Bandwidth 4.703 MHz

(Plot X: HSUPA1900 MHz Channel = 9400)

Agilent 15:01:30 Jan 28, 2013 R T S



Center 1.908 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

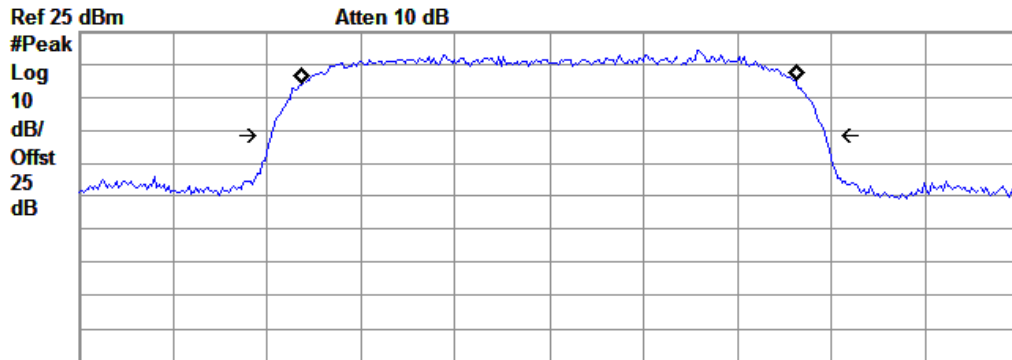
Occupied Bandwidth  
 4.1923 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -33.627 kHz  
 x dB Bandwidth 4.706 MHz

(Plot Y: HSUPA1900 MHz Channel = 9538)

Agilent 15:03:22 Jan 28, 2013 R T S



Center 826.4 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

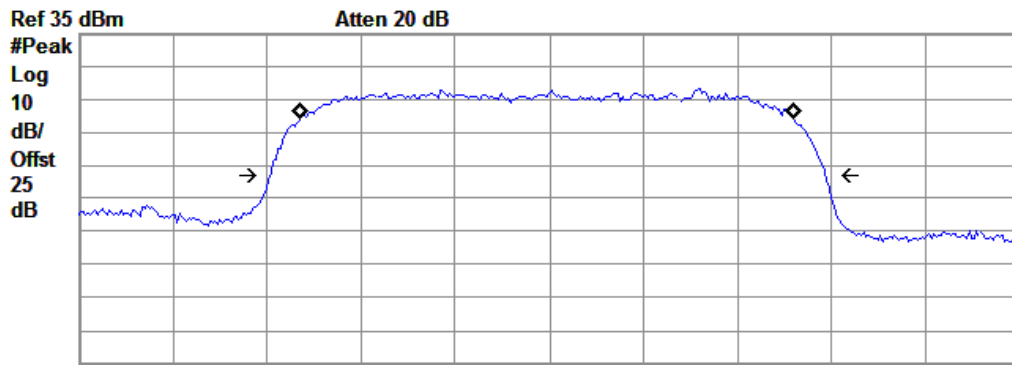
Occupied Bandwidth  
 4.1856 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -2.325 kHz  
 x dB Bandwidth 4.714 MHz

(Plot Z: HSPA+850 MHz Channel = 4132)

Agilent 16:18:39 Jan 11, 2013 R T



Center 835 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

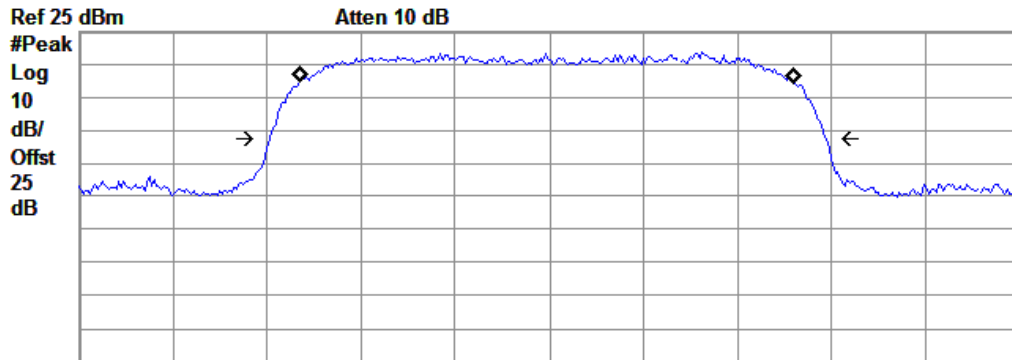
**Occupied Bandwidth**  
 4.1900 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -19.662 kHz  
 x dB Bandwidth 4.719 MHz

(Plot A1: HSPA+850 MHz Channel = 4175)

Agilent 15:04:07 Jan 28, 2013 R T S



Center 846.6 MHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

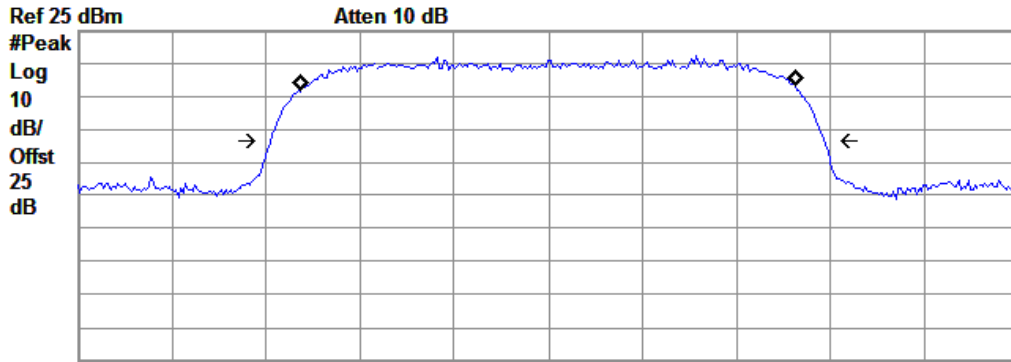
**Occupied Bandwidth**  
 4.1995 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -12.078 kHz  
 x dB Bandwidth 4.730 MHz

(Plot B1: HSPA+850 MHz Channel = 4233)

Agilent 15:02:50 Jan 28, 2013 R T S



Center 1.852 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

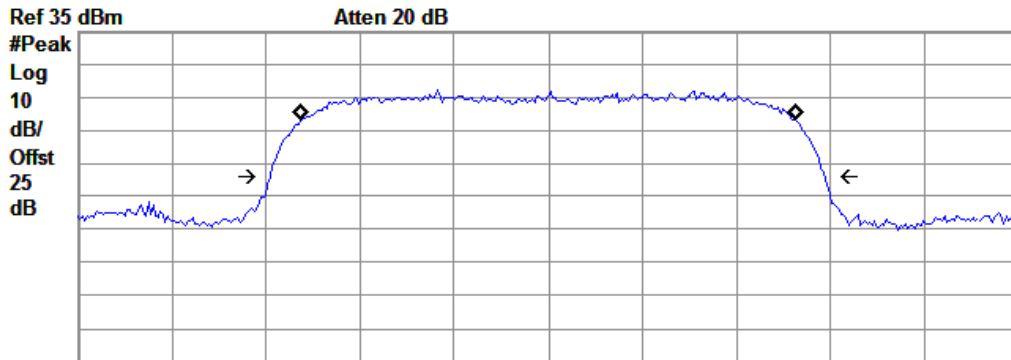
Occupied Bandwidth  
 4.1872 MHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error 693.914 Hz  
 x dB Bandwidth 4.707 MHz

(Plot C1: HSPA+1900 MHz Channel = 9262)

Agilent 16:19:23 Jan 11, 2013 R T



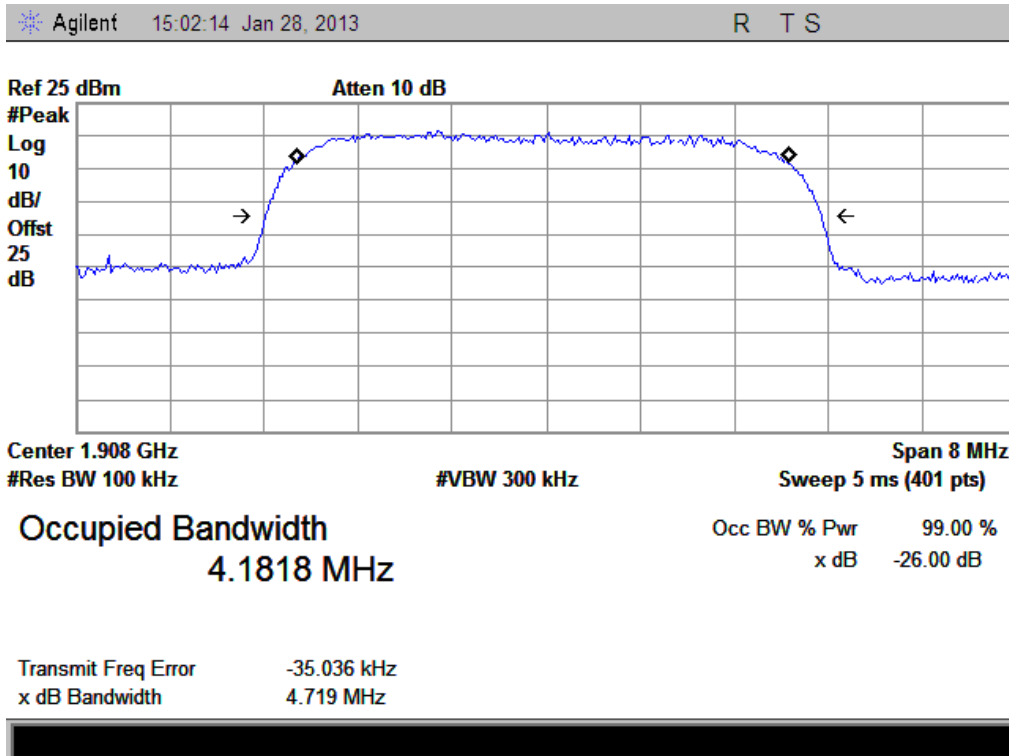
Center 1.88 GHz Span 8 MHz  
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth  
 4.1911 MHz

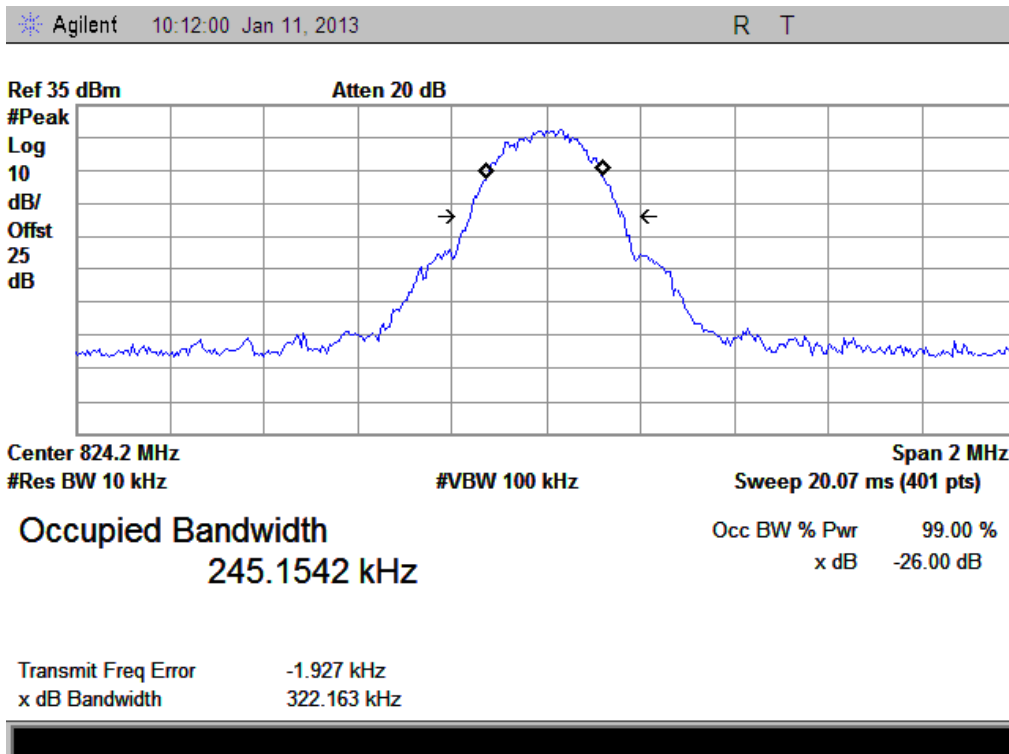
Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -232.198 Hz  
 x dB Bandwidth 4.711 MHz

(Plot D1: HSPA+1900 MHz Channel = 9400)

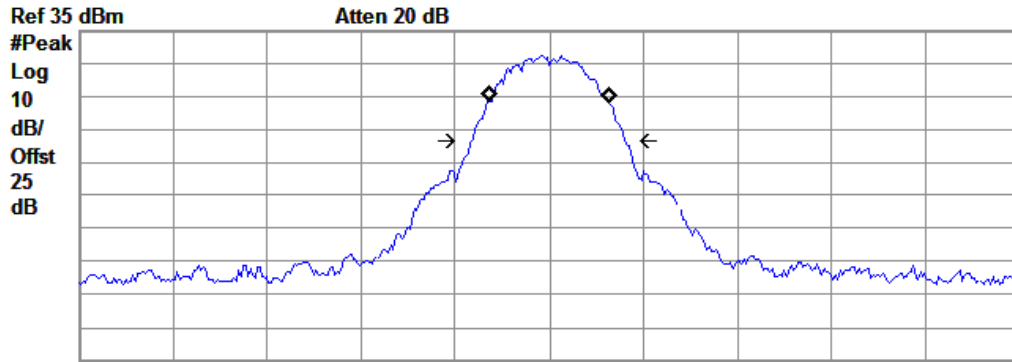


(Plot E1: HSPA+1900 MHz Channel = 9538)



(Plot F1: GPRS 850MHz Channel = 128)

Agilent 10:11:27 Jan 11, 2013 R T



Center 836.6 MHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

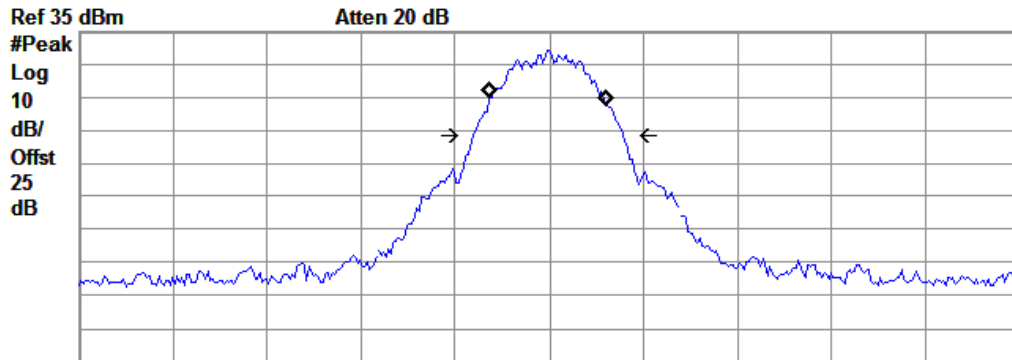
Occupied Bandwidth  
 250.2657 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -327.088 Hz  
 x dB Bandwidth 324.111 kHz

(Plot G1: GPRS 850MHz Channel = 190)

Agilent 10:10:34 Jan 11, 2013 R T



Center 848.8 MHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

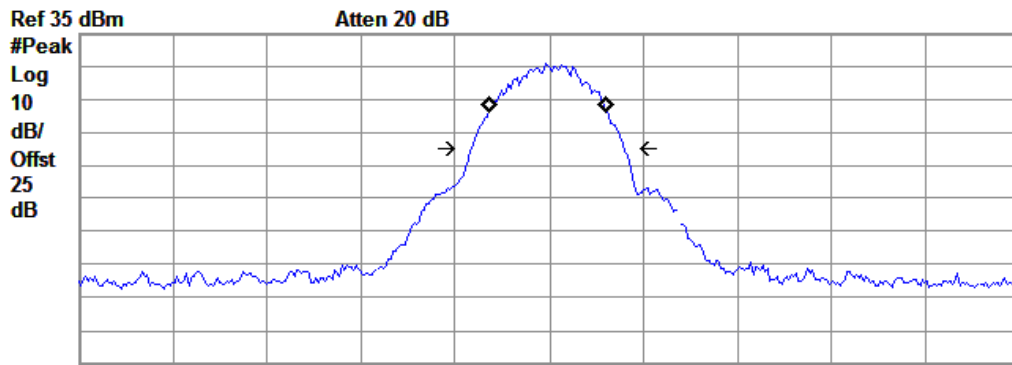
Occupied Bandwidth  
 243.0737 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -1.549 kHz  
 x dB Bandwidth 317.312 kHz

(Plot H1: GPRS 850MHz Channel = 251)

Agilent 10:09:28 Jan 11, 2013 R T



Center 1.85 GHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

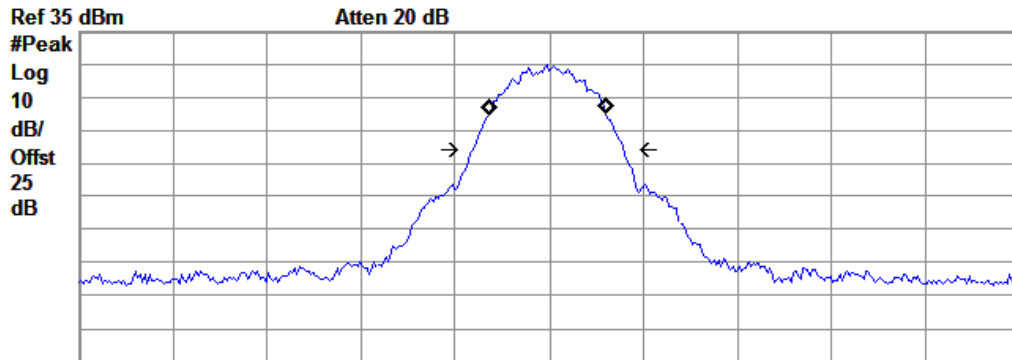
**Occupied Bandwidth**  
 248.0741 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -2.246 kHz  
 x dB Bandwidth 323.133 kHz

(Plot I1: GPRS 1900MHz Channel = 512)

Agilent 10:08:44 Jan 11, 2013 R T



Center 1.88 GHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

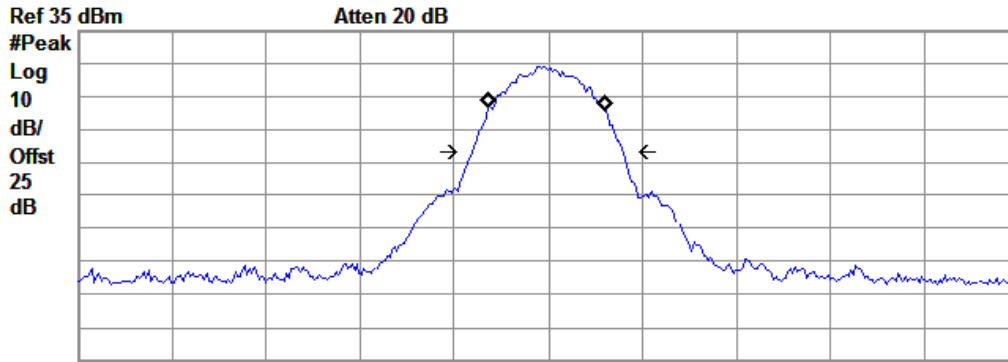
**Occupied Bandwidth**  
 245.2423 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -2.526 kHz  
 x dB Bandwidth 319.378 kHz

(Plot J1: GPRS 1900MHz Channel = 661)

Agilent 10:06:59 Jan 11, 2013 R T



Center 1.91 GHz Span 2 MHz  
 #Res BW 10 kHz #VBW 100 kHz Sweep 20.07 ms (401 pts)

**Occupied Bandwidth**  
 246.9551 kHz

Occ BW % Pwr 99.00 %  
 x dB -26.00 dB

Transmit Freq Error -2.037 kHz  
 x dB Bandwidth 317.550 kHz

(Plot K1: GPRS 1900MHz Channel = 810)



## 2.4 Frequency Stability

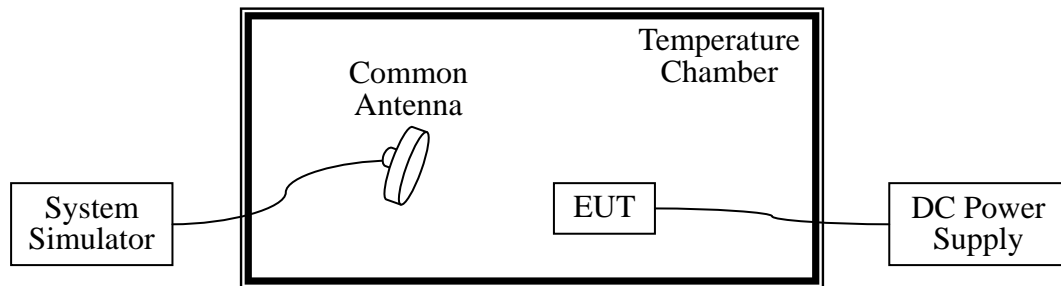
### 2.4.1 Requirement

According to FCC section 22.355 and FCC section 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

### 2.4.2 Test Description

#### 1. Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.

#### 2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2012.05	2013.05
DC Power Supply	Good Will	GPS-3030DD	EF920938	2012.05	2013.05
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2012.05	2013.05

### 2.4.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.7VDC, 4.2VDC and 3.6VDC, which are specified by the applicant; the normal temperature here used is  $25^{\circ}\text{C}$ . The frequency

deviation limit of 850MHz band is  $\pm 2.5\text{ppm}$ , and 1900MHz is  $\pm 1\text{ppm}$

### 1. EDGE 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-3.10	$\pm 2060.5$	23.12	$\pm 2091.5$	8.51	$\pm 2122$	PASS
	-20	38.28		11.33		-12.90		
	-10	-2.15		-17.55		12.66		
	0	40.06		38.10		5.05		
	+10	1.99		-22.06		3.02		
	+20	-19.86		-16.11		10.76		
	+30	39.56		17.76		-16.51		
	+40	46.60		15.64		-2.10		
+55	39.98	3.67	-12.99					
4.2	+25	-15.71	13.95	-7.53				
3.6	+25	-17.70	6.23	6.78				

### 2. EDGE 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 512 (1850.2MHz)		Channel = 661 (1880.0MHz)		Channel = 810 (1909.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-13.77	$\pm 1850.2$	23.62	$\pm 1880.0$	2.47	$\pm 1909.8$	PASS
	-20	0.62		7.23		-11.76		
	-10	1.65		-24.78		-12.21		
	0	2.47		-1.26		13.33		
	+10	-10.76		-18.68		5.33		
	+20	-2.11		-21.61		35.26		
	+30	13.33		14.58		-26.78		
	+40	5.33		-0.68		19.54		
+55	-2.56	36.87	-16.67					
4.2	+25	17.60	3.88	26.79				
3.6	+25	-8.09	13.12	19.93				

**3. WCDMA 850MHz Band**

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.7	-30	17.29	±2066	11.87	±2087.5	-1.20	±2116.5	PASS
	-20	-7.32		-0.59		-19.38		
	-10	-3.40		21.45		7.57		
	0	16.47		13.45		4.22		
	+10	30.18		1.31		-17.39		
	+20	32.07		-12.52		11.90		
	+30	-7.98		30.62		6.63		
	+40	26.21		13.45		28.93		
	+55	11.10		-12.52		19.66		
4.2	+25	-6.18	30.62	22.19				
3.6	+25	18.66	-18.00	-18.70				

**4. WCDMA 1900MHz Band**

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-4.75	±1852.4	-13.47	±1880.0	-8.99	±1907.6	PASS
	-20	18.85		12.18		23.60		
	-10	5.05		-14.06		14.81		
	0	19.62		18.79		-3.07		
	+10	30.40		22.39		17.42		
	+20	13.45		37.27		-10.39		
	+30	1.31		2.37		17.47		
	+40	-12.52		-13.47		27.84		
	+55	-13.55		-5.71		-2.53		
4.2	+25	23.21	14.58	20.95				
3.6	+25	22.00	26.37	-23.22				

## 5. HSDPA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.7	-30	27.46	±2066	-24.37	±2087.5	15.81	±2116.5	PASS
	-20	-8.56		-13.96		14.41		
	-10	20.65		35.23		21.57		
	0	12.88		-8.31		-24.37		
	+10	-14.75		-13.95		-13.96		
	+20	8.78		-24.37		35.23		
	+30	-1.49		12.88		-8.31		
	+40	17.14		-14.75		-13.95		
+55	-23.61	23.37	26.37					
4.2	+25	32.03	7.93	7.90				
3.6	+25	17.51	-31.21	1.78				

## 6. HSDPA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	11.87	±1852.4	-3.01	±1880	2.61	±1907.6	PASS
	-20	-16.65		21.71		-8.38		
	-10	20.12		14.37		-13.02		
	0	-3.01		-11.21		-8.51		
	+10	21.71		10.60		5.64		
	+20	20.12		-4.81		-3.85		
	+30	-15.01		34.31		9.57		
	+40	22.71		8.36		27.54		
+55	16.32	-25.88	-12.52					
4.2	+25	-11.28	29.43	-2.83				
3.6	+25	10.33	-2.27	14.42				

## 7. HSUPA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.7	-30	25.52	±2066	13.5	±2087.5	13.55	±2116.5	PASS
	-20	-16.20		-19.33		27.42		
	-10	-12.61		-11.79		37.01		
	0	-13.09		-0.44		-7.32		
	+10	-0.38		0.01		-4.91		
	+20	-11.85		-6.64		21.35		
	+30	29.57		24.25		-5.94		
	+40	-11.79		9.63		13.78		
+55	-0.44	23.76	28.45					
4.2	+25	1.71	-4.57	29.11				
3.6	+25	1.54	5.25	-7.70				

## 8. HSUPA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	31.57	±1852.4	-11.79	±1880	8.69	±1907.6	PASS
	-20	27.13		-0.44		2.01		
	-10	7.62		0.01		-4.75		
	0	2.31		13.82		16.38		
	+10	-4.73		-15.25		-1.76		
	+20	16.22		-11.79		23.52		
	+30	-1.55		-0.44		-0.38		
	+40	23.16		1.15		-11.85		
+55	13.79	-7.94	-5.91					
4.2	+25	-7.08	6.81	25.48				
3.6	+25	22.58	-1.83	-15.78				

## 9. HSPA+ 850MHz Band

Test Conditions		Frequency Deviation						Verdict	
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)			
		Hz	Limit	Hz	Limit	Hz	Limit		
3.7	-30	29.57	±2066	21.71	±2087.5	-16.65	±2116.5	PASS	
	-20	-6.20		20.12		20.12			
	-10	-12.61		-15.01		-3.01			
	0	-13.09		-5.94		21.71			
	+10	-0.38		13.78		20.12			
	+20	-11.85		-6.64		-15.01			-15.01
	+30	29.57		24.25		-5.94			
	+40	-11.79		9.63		15.72			
+55	-0.44	23.76	25.25						
4.2	+25	3.71	-4.57	23.11					
3.6	+25	2.24	6.35	-21.56					

## 10. HSPA+ 1900MHz Band

Test Conditions		Frequency Deviation						Verdict	
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)			
		Hz	Limits	Hz	Limits	Hz	Limits		
3.7	-30	12.11	±1852.4	-15.31	±1880	3.31	±1907.6	PASS	
	-20	20.15		-11.79		-5.73			
	-10	11.61		-0.44		18.22			
	0	3.31		0.01		-33.55			
	+10	-5.73		-15.31		3.31			
	+20	18.22		-11.79		-5.73			-5.73
	+30	-33.55		-0.44		19.21			
	+40	27.16		0.01		-31.05			
+55	23.79	-6.64	22.36						
4.2	+25	-37.01	24.25	3.31					
3.6	+25	22.58	9.63	-17.08					

**11. GPRS 850MHz Band**

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-3.10	±2060.5	22.72	±2091.5	27.51	±2122	PASS
	-20	38.28		17.35		-19.07		
	-10	-2.15		-17.82		13.67		
	0	40.06		31.16		25.05		
	+10	1.99		-27.56		33.02		
	+20	-19.86		-19.13		19.71		
	+30	39.56		17.72		-16.57		
	+40	46.60		15.63		-32.17		
	+55	39.98		33.65		-12.92		
4.2	+25	-15.71	13.92	-27.51				
3.6	+25	-17.70	26.21	26.73				

**12. GPRS 1900MHz Band**

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 512 (1850.2MHz)		Channel = 661 (1880.0MHz)		Channel = 810 (1909.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-14.67	±1850.2	23.62	±1880.0	2.47	±1909.8	PASS
	-20	21.33		7.23		-11.76		
	-10	21.62		-24.78		-12.21		
	0	12.45		-1.26		13.33		
	+10	-14.76		-18.68		5.33		
	+20	-22.17		-21.61		35.26		
	+30	14.39		14.58		-26.78		
	+40	25.32		-0.68		19.54		
	+55	-22.52		36.87		-16.67		
4.2	+25	19.62	3.88	26.79				
3.6	+25	-18.31	13.12	19.93				

## 2.5 Conducted Out of Band Emissions

### 2.5.1 Requirement

According to FCC section 22.917(a) and FCC 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.

### 2.5.2 Test Description

See section 2.1.2 of this report.

### 2.5.3 Test Result

The measurement frequency range is from 30MHz to the 10<sup>th</sup> harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

#### 1. Test Verdict:

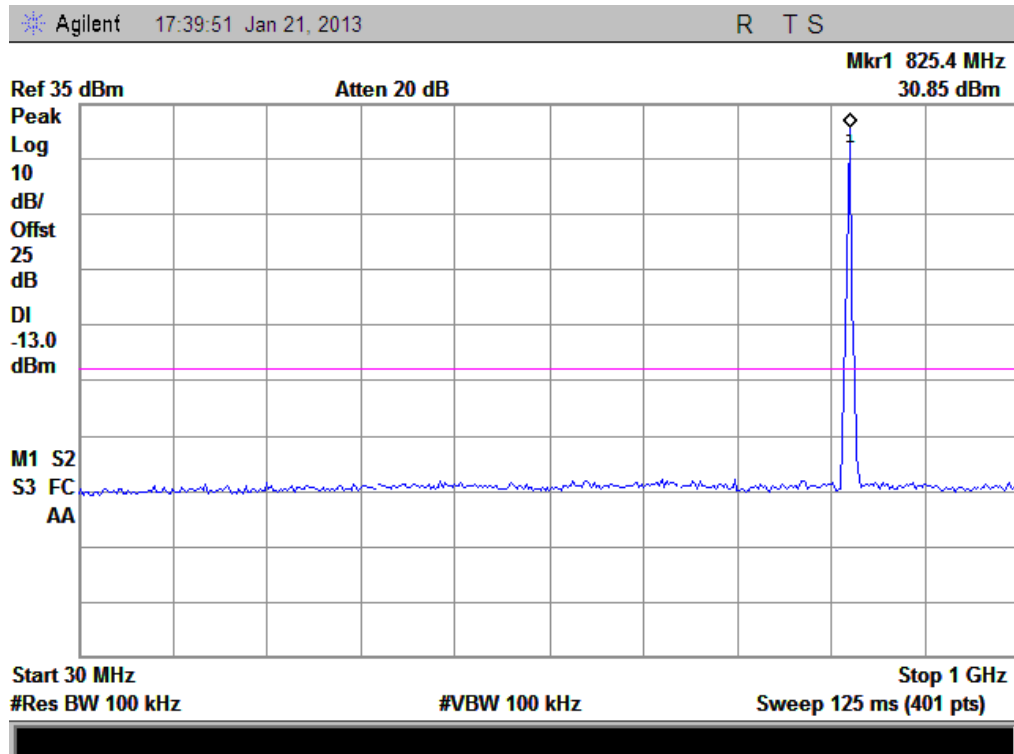
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GPRS 850MHz	128	824.2	-20.6	Plot A1toA1.1	-13	PASS
	190	836.6	-21.16	Plot A2toA2.1		PASS
	251	848.8	-20.74	Plot A3toA3.1		PASS
GPRS 1900MHz	512	1850.2	-20.44	Plot B1toB1.1	-13	PASS
	661	1880.0	-20.32	Plot B2toB2.1		PASS
	810	1909.8	-20.89	Plot B3toB3.1		PASS
EDGE 850MHz	128	824.2	-21.89	Plot C1toC1.1	-13	PASS
	190	836.6	-23.99	Plot C2toC2.1		PASS
	251	848.8	-21.65	Plot C3toC3.1		PASS
EDGE 1900MHz	512	1850.2	-22	Plot D1toD1.1	-13	PASS
	661	1880.0	-21.6	Plot D2toD2.1		PASS
	810	1909.8	< -25	Plot D3toD3.1		PASS
WCDMA 850MHz	4132	826.4	-22.69	Plot E1toE1.1	-13	PASS
	4175	835	-21.38	Plot E2toE2.1		PASS
	4233	846.6	-22.28	Plot E3toE3.1		PASS
WCDMA 1900MHz	9262	1852.4	-22.47	Plot F1toF1.1	-13	PASS
	9400	1880	-21.27	Plot F2toF2.1		PASS
	9538	1907.6	-21.43	Plot F3toF3.1		PASS
HSDPA 850MHz	4132	826.4	-21.79	Plot G1toG1.1	-13	PASS
	4175	835	-20.86	Plot G2toG2.1		PASS



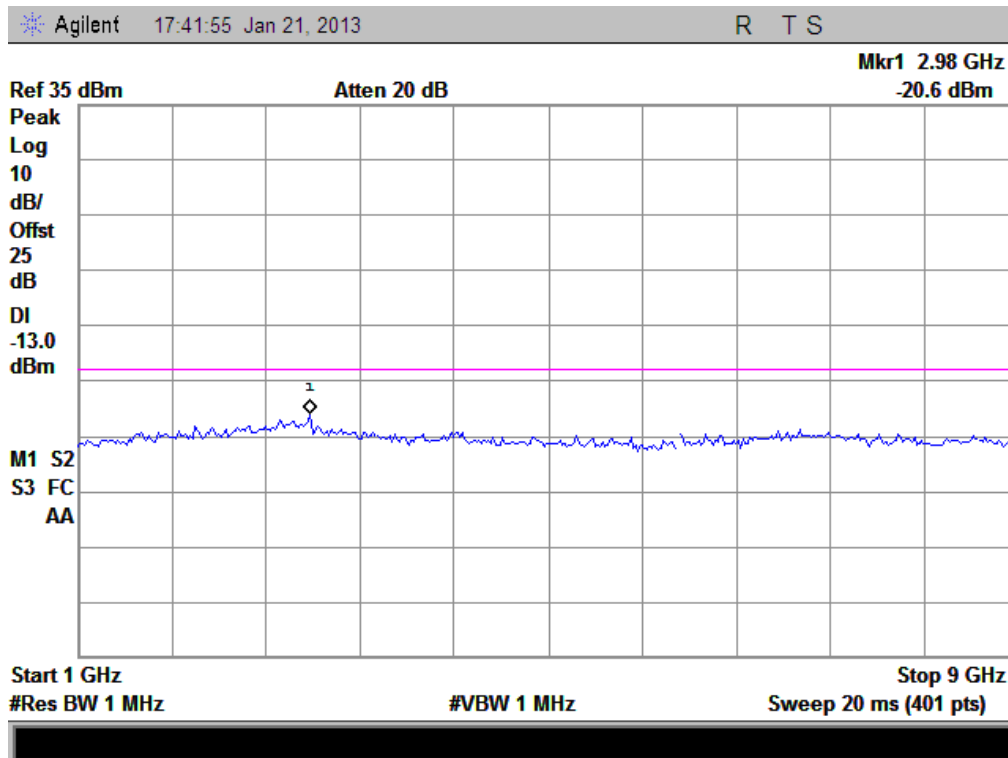
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
	4233	846.6	-21.04	Plot G3toG3.1		PASS
HSDPA 1900MHz	9262	1852.4	-22.26	Plot H1toH1.1	-13	PASS
	9400	1880	-21.86	Plot H2toH2.1		PASS
	9538	1907.6	-20.75	Plot H3toH3.1		PASS
HSUPA 850MHz	4132	826.4	-21.7	Plot I1toI1.1	-13	PASS
	4175	835	-21.51	Plot I2toI2.1		PASS
	4233	846.6	-22.39	Plot I3toI3.1		PASS
HSUPA 1900MHz	9262	1852.4	-21.54	Plot J1toJ1.1	-13	PASS
	9400	1880	-21.18	Plot J2toJ2.1		PASS
	9538	1907.6	-22.43	Plot J3toJ3.1		PASS
HSPA+ 850MHz	4132	826.4	-21.34	Plot K1toK1.1	-13	PASS
	4175	835	-22.01	Plot K2toK2.1		PASS
	4233	846.6	-21.57	Plot K3toK3.1		PASS
HSPA+ 1900MHz	9262	1852.4	-21.37	Plot L1toL1.1	-13	PASS
	9400	1880	-20.59	Plot L2toL2.1		PASS
	9538	1907.6	-21.72	Plot L3toL3.1		PASS

2. Test Plots for the Whole Measurement Frequency Range:

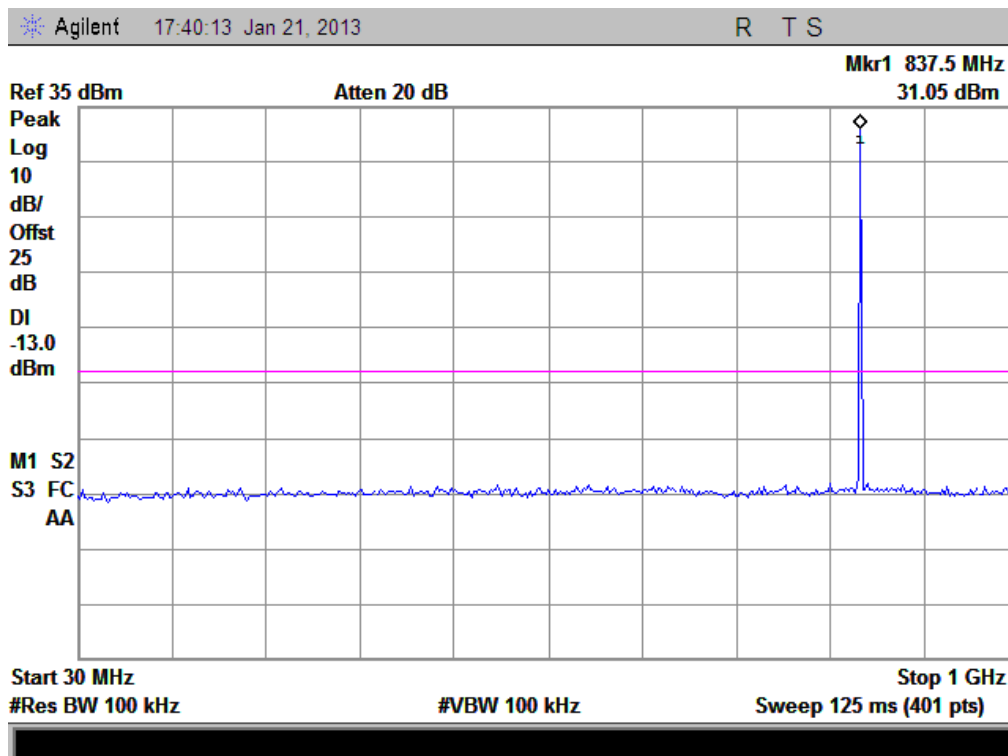
Note: the power of the EUT transmitting frequency should be ignored.



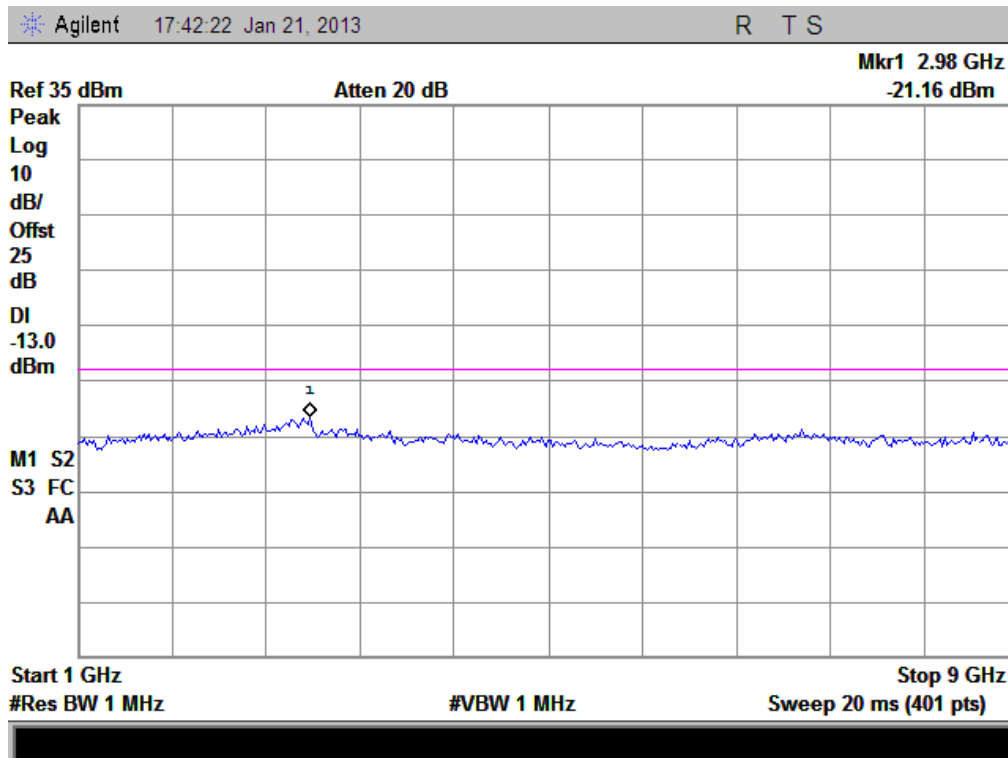
(Plot A1: GPRS 850MHz Channel = 128, 30MHz to 1GHz)



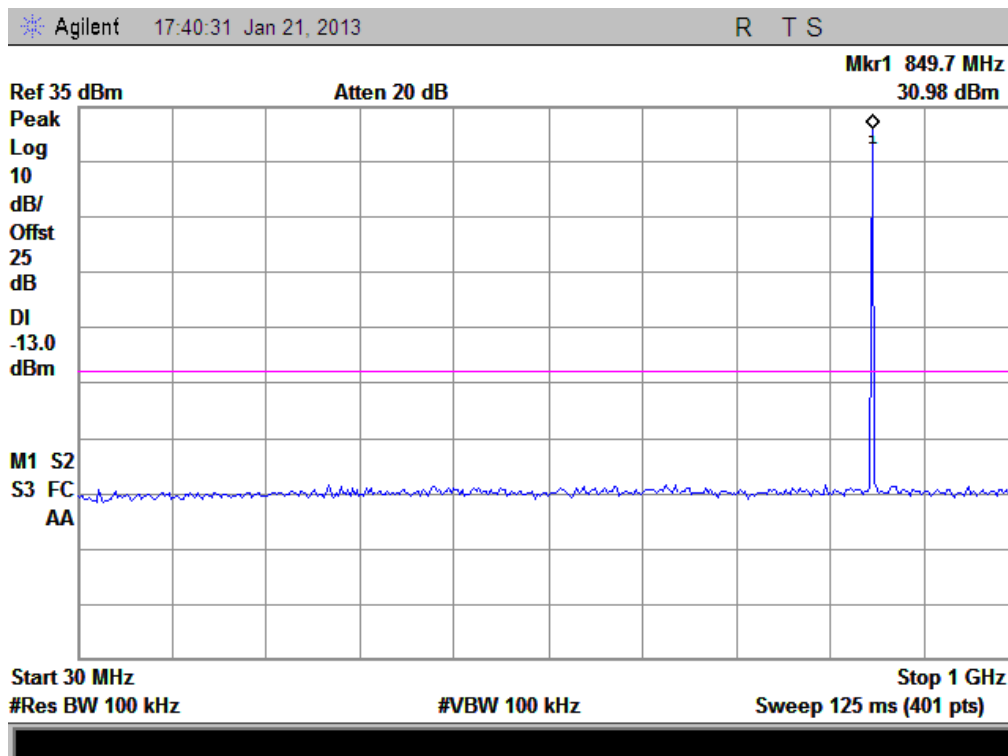
(Plot A1.1: GPRS 850MHz Channel = 128, 1GHz to 9GHz)



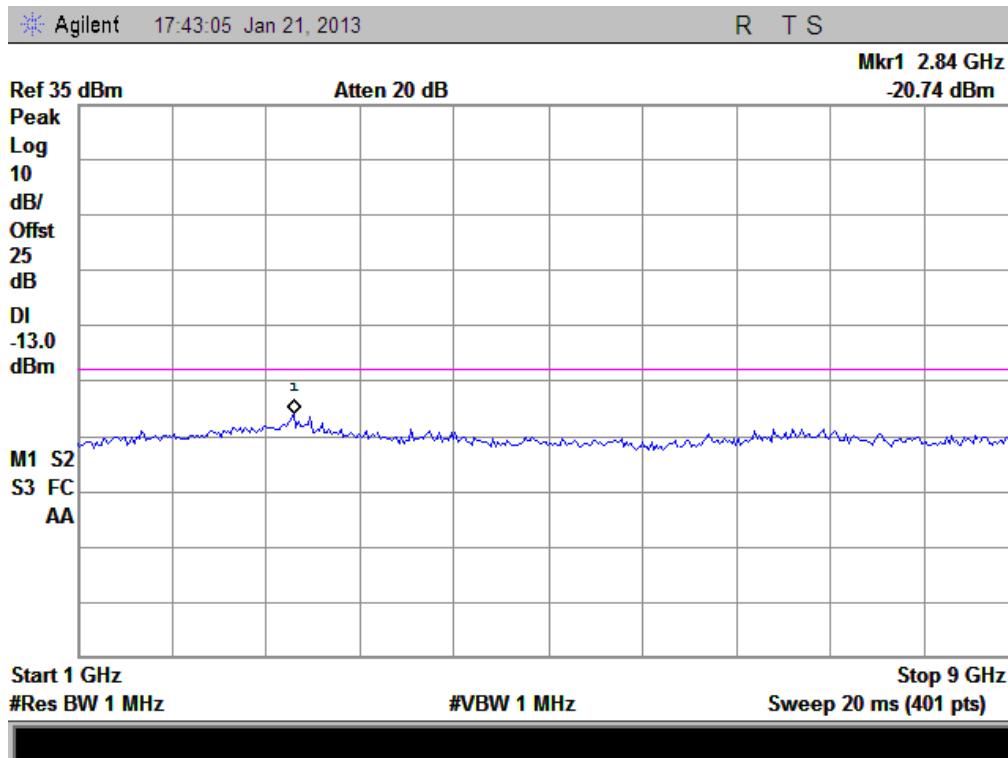
(Plot A2: GPRS 850MHz Channel = 190, 30MHz to 1GHz)



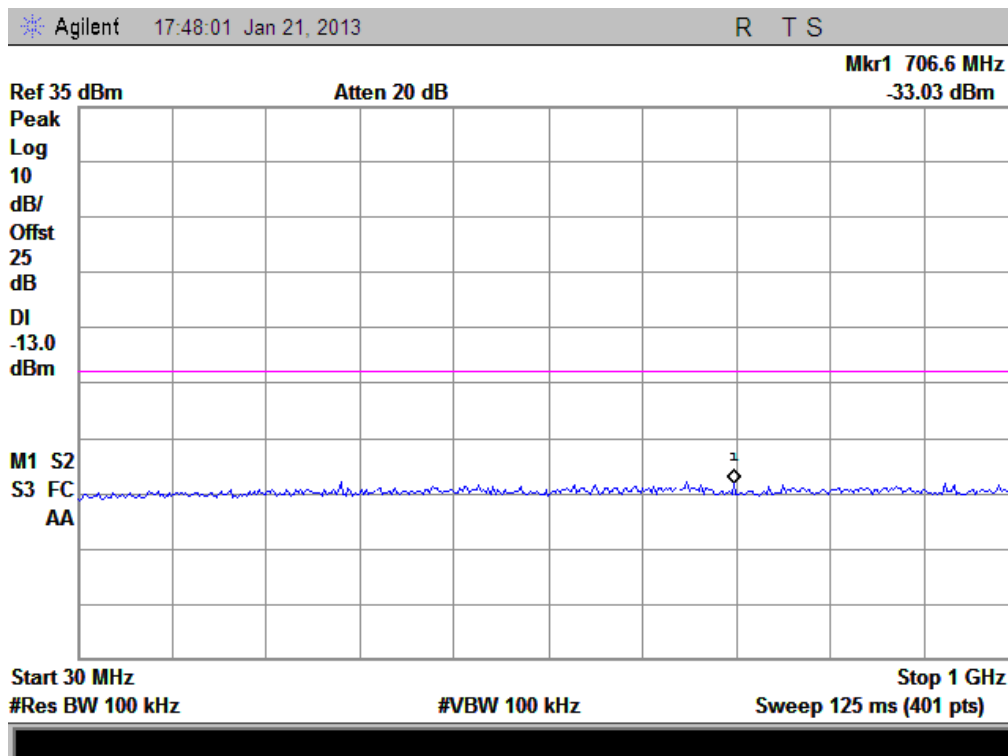
(Plot A2.1: GPRS 850MHz Channel = 190, 1GHz to 9GHz)



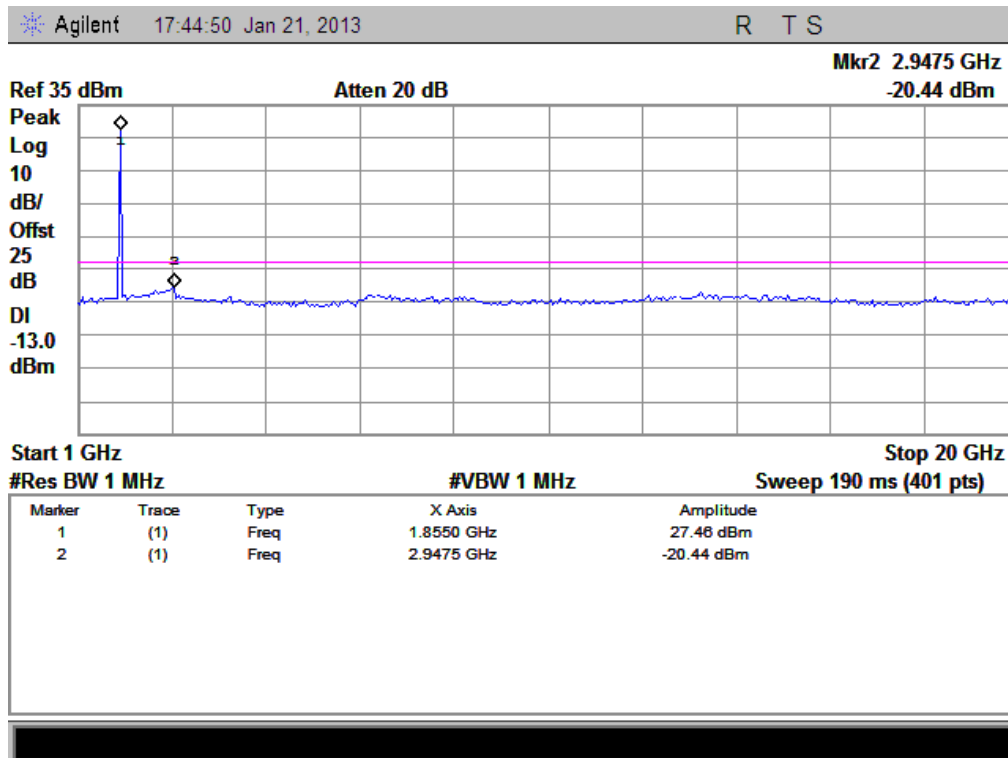
(Plot A3: GPRS 850MHz Channel = 251, 30MHz to 1GHz)



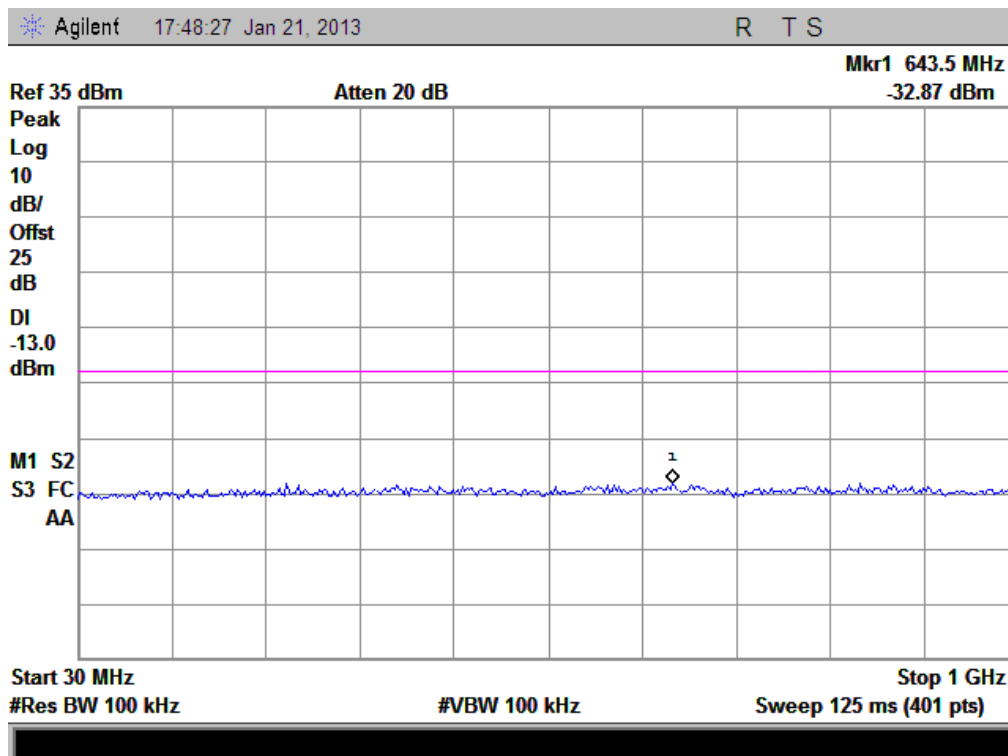
(Plot A3.1: GPRS 850MHz Channel = 251, 1GHz to 9GHz)



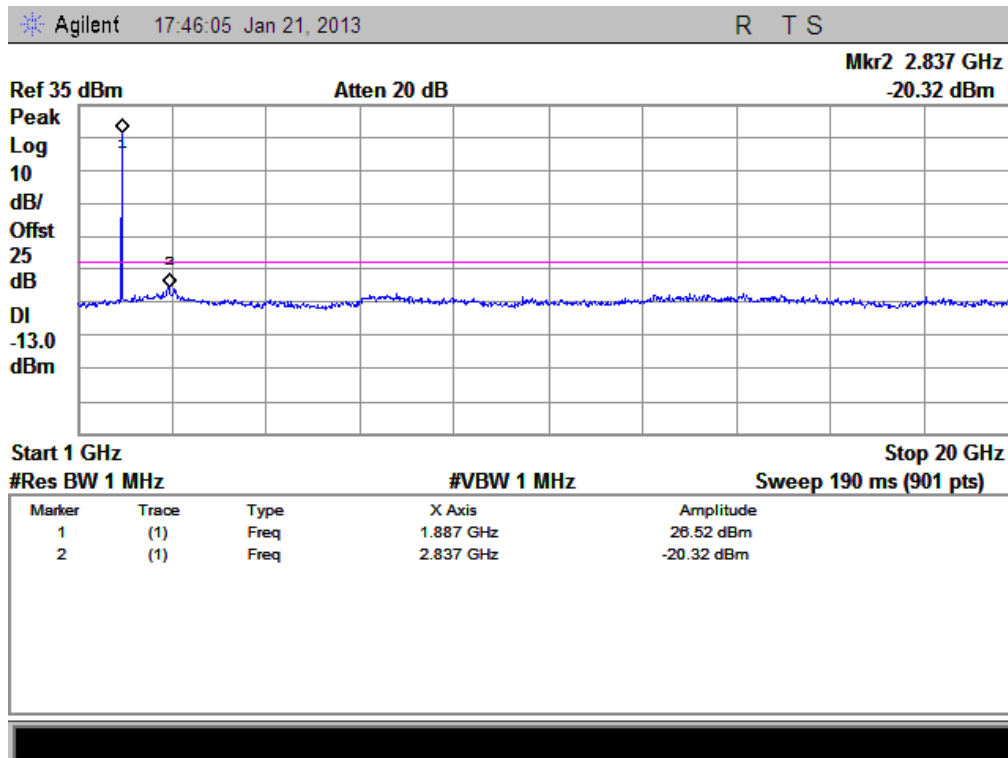
(Plot B1: GPRS 1900MHz Channel = 512, 30MHz to 1GHz)



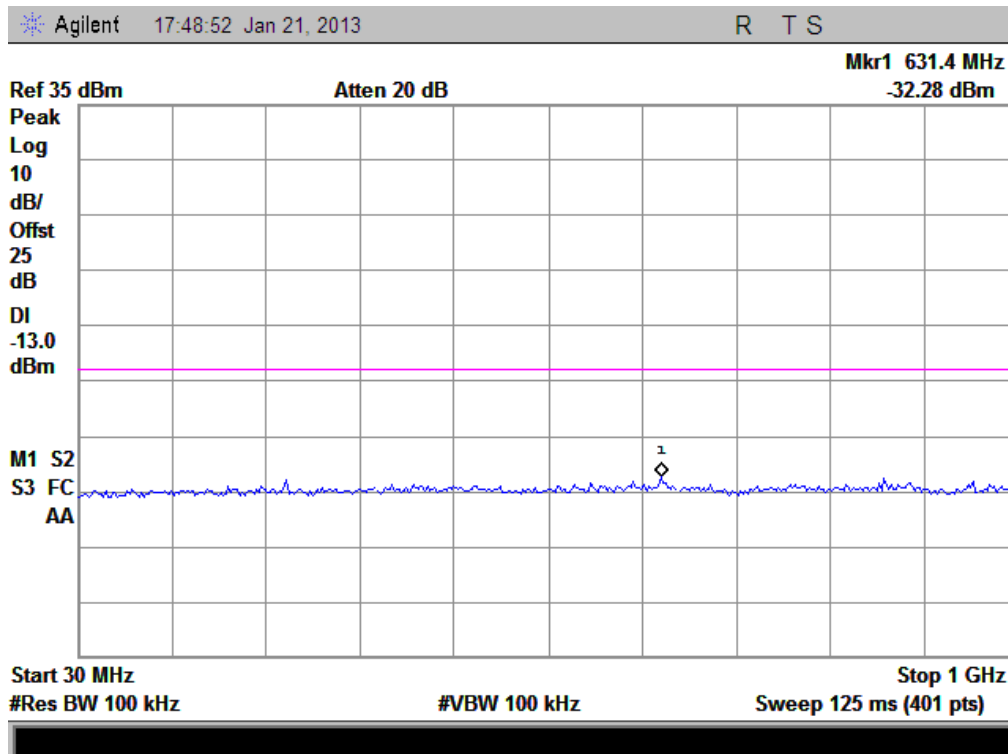
(Plot B1.1: GPRS 1900MHz Channel = 512, 1GHz to 20GHz)



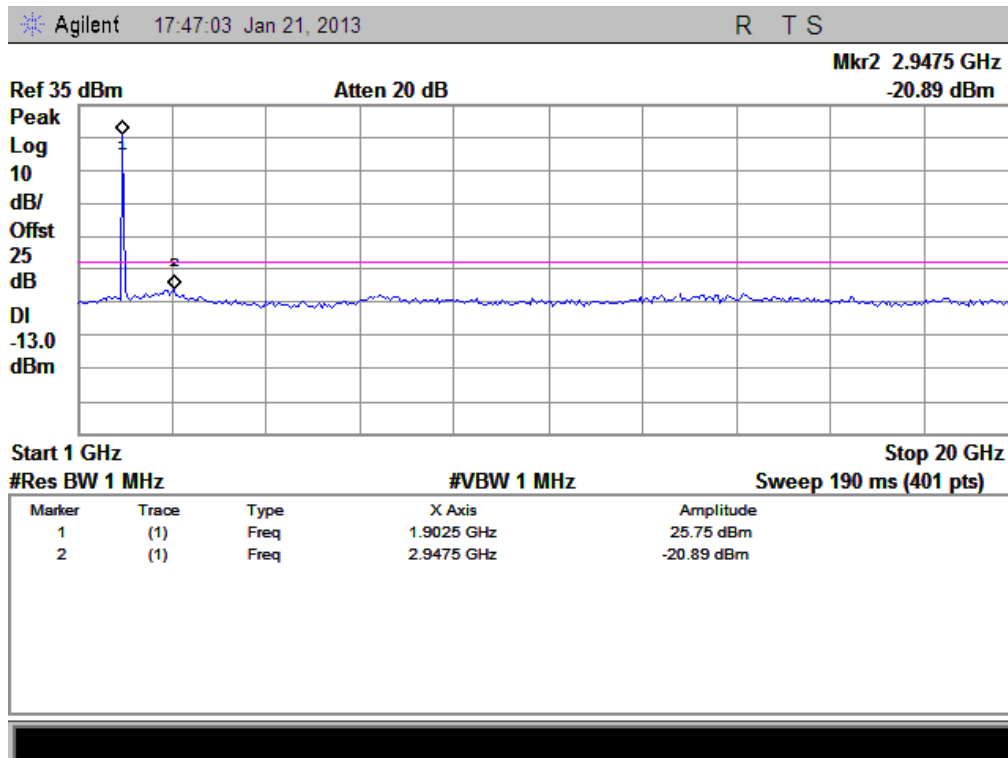
(Plot B2: GPRS 1900MHz Channel = 661, 30MHz to 1GHz)



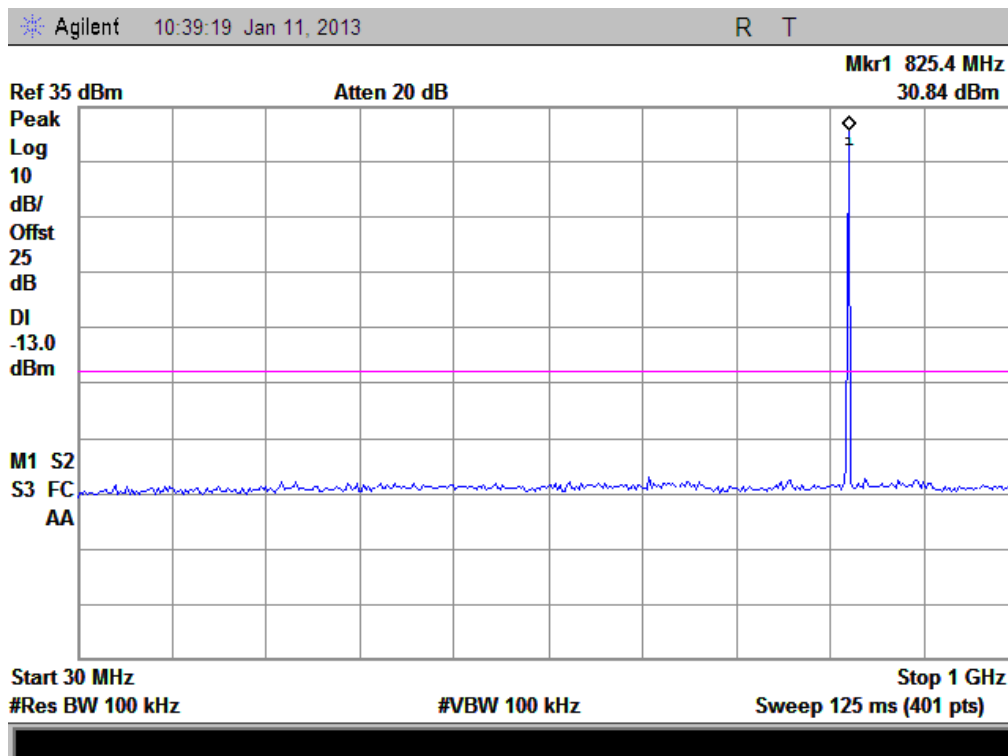
(Plot B2.1: GPRS 1900MHz Channel = 661, 1GHz to 20GHz)



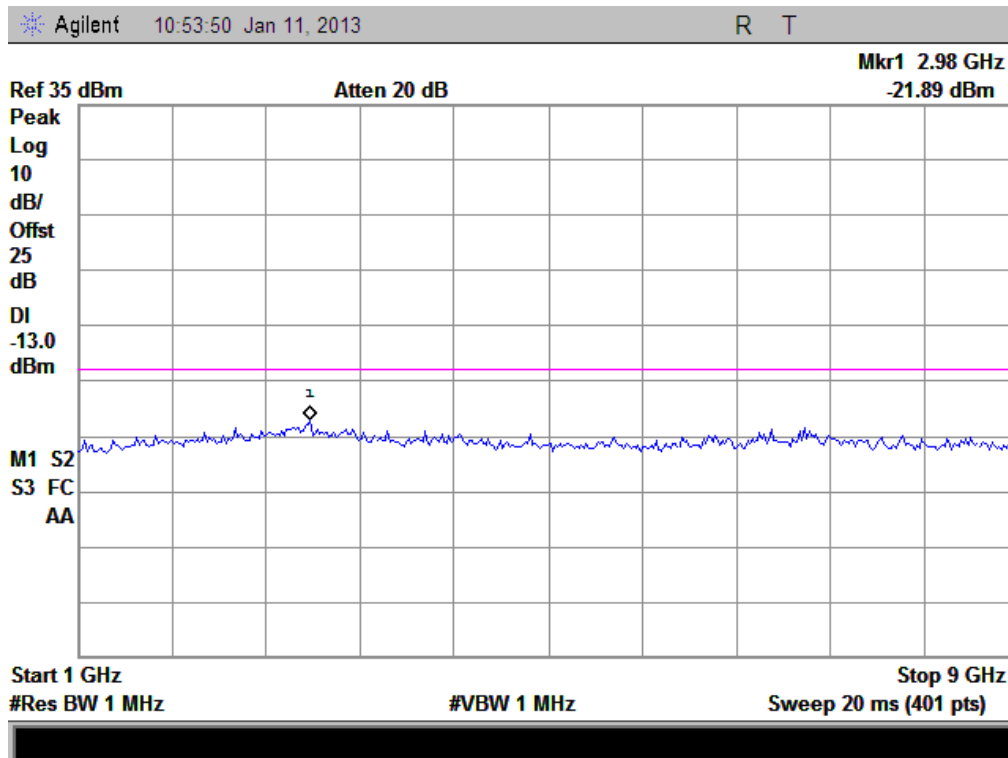
(Plot B3: GPRS 1900MHz Channel = 810, 30MHz to 1GHz)



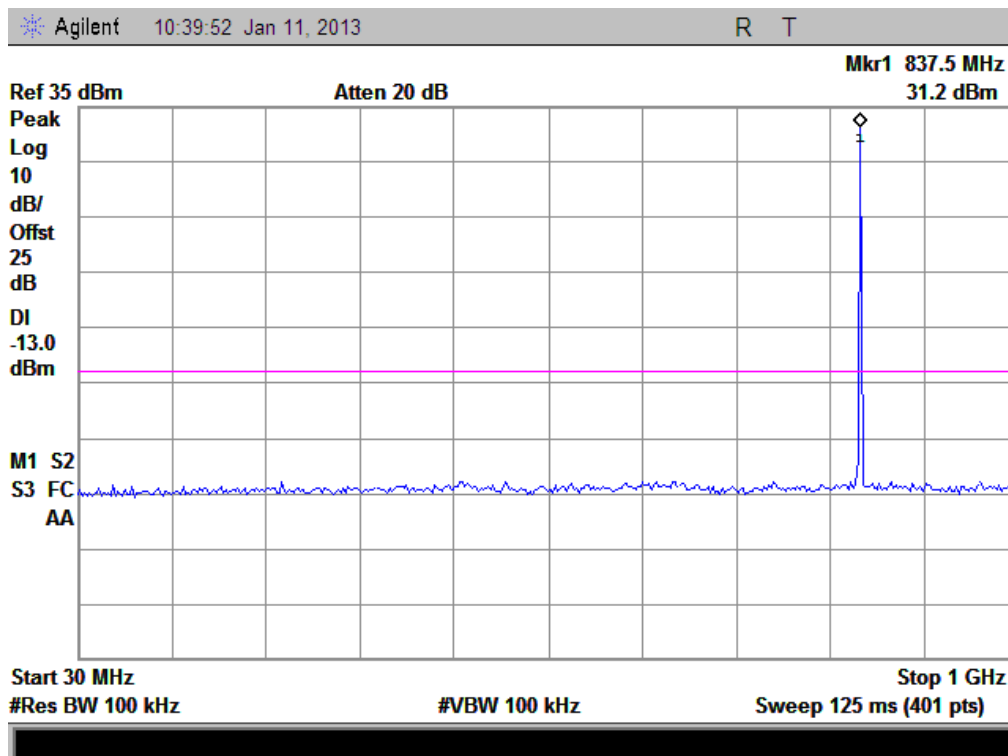
(Plot B3.1: GPRS 1900MHz Channel = 810, 1GHz to 20GHz)



(Plot C1: EDGE 850MHz Channel = 128, 30MHz to 1GHz)

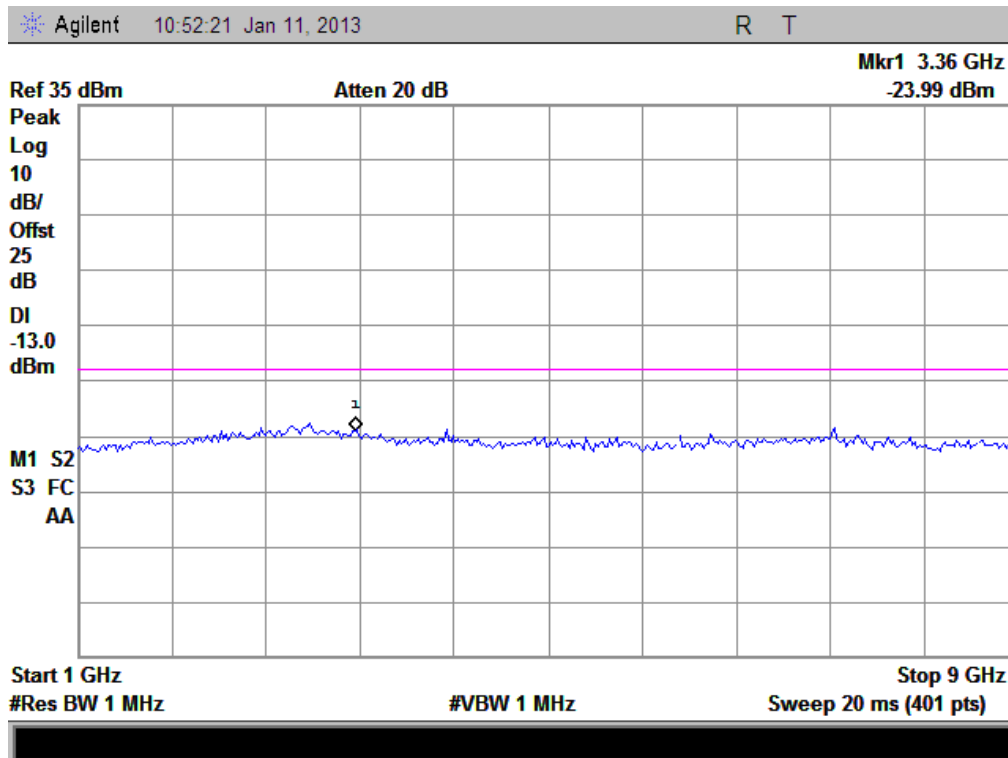


(Plot C1.1: EDGE 850MHz Channel = 128, 1GHz to 9GHz)

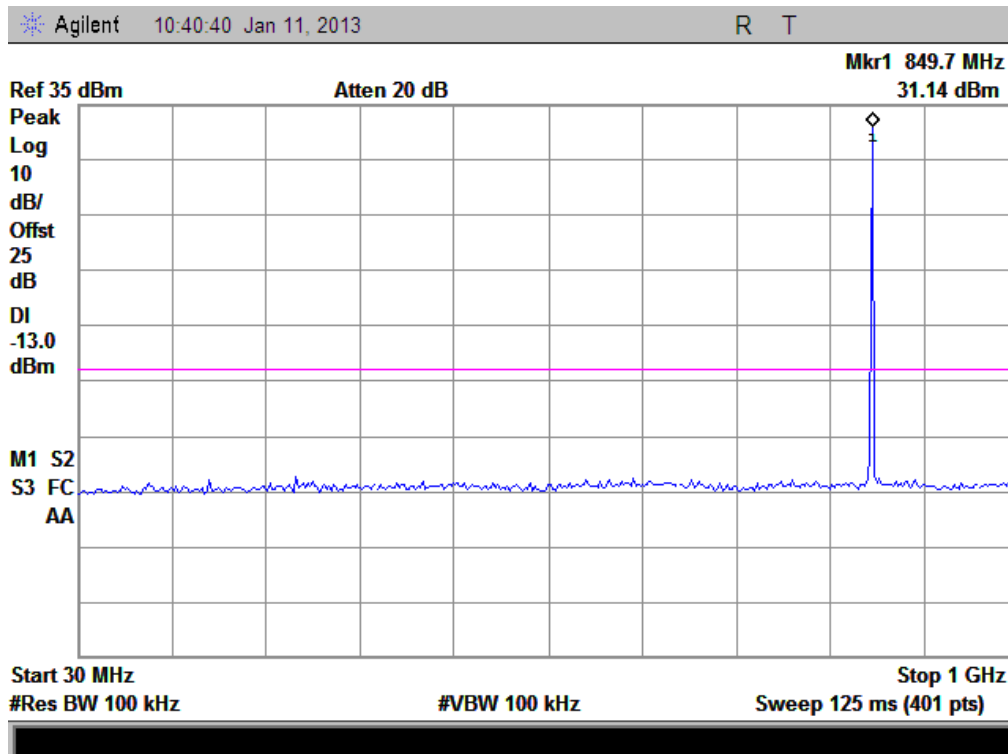


(Plot C2: EDGE 850MHz Channel = 190, 30MHz to 1GHz)

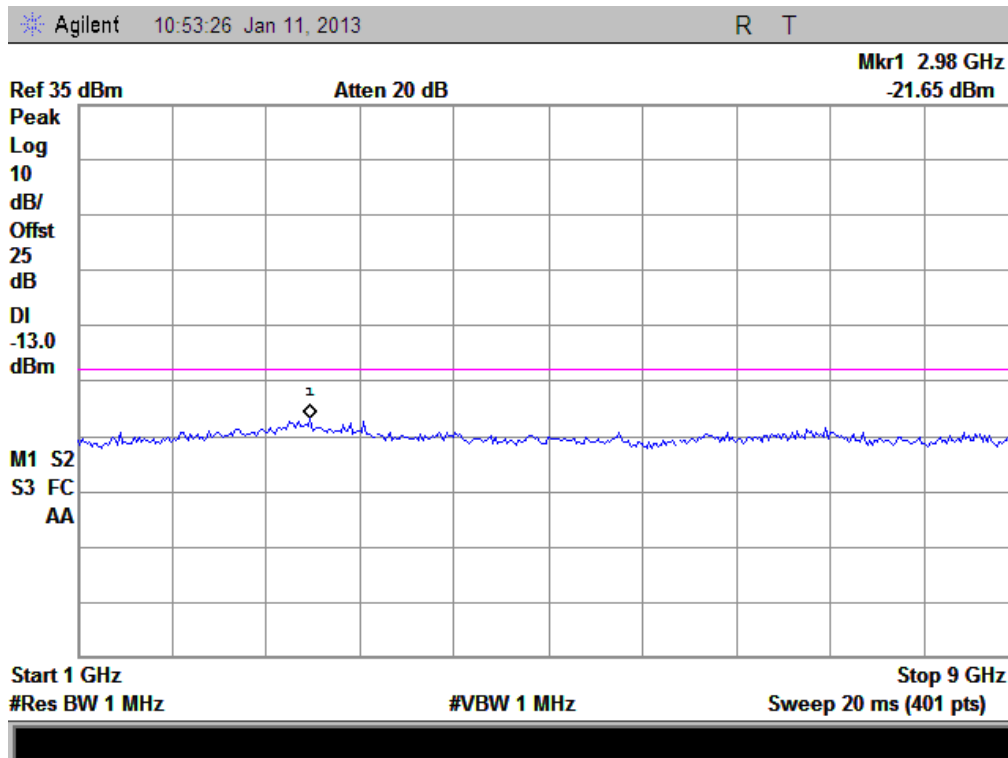




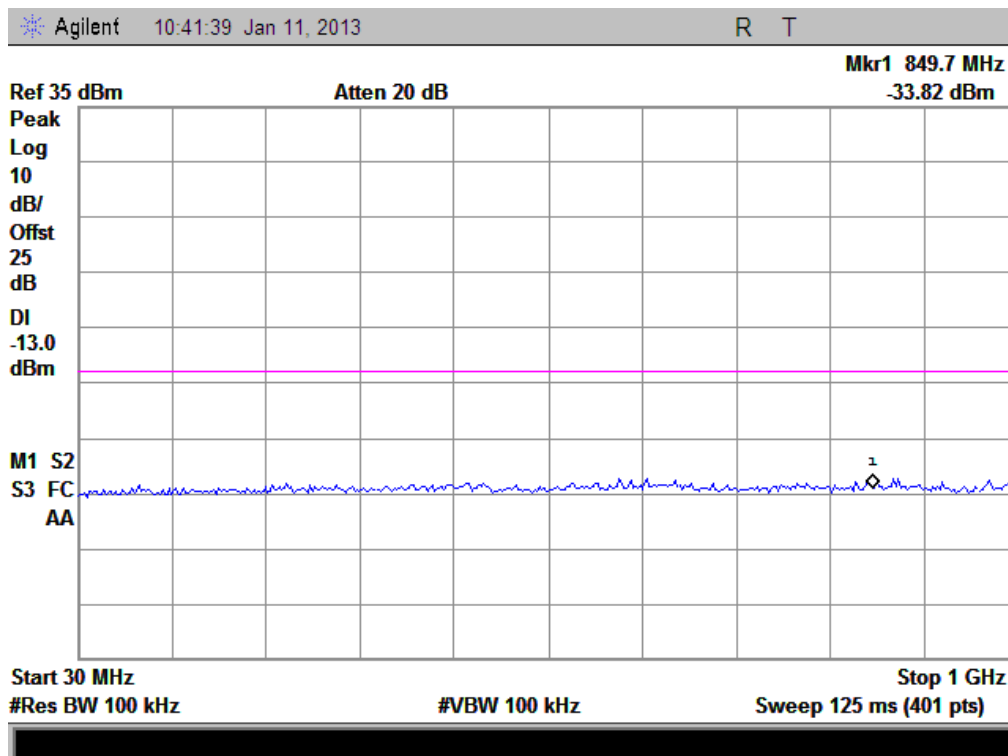
(Plot C2.1: EDGE 850MHz Channel = 190, 1GHz to 9GHz)



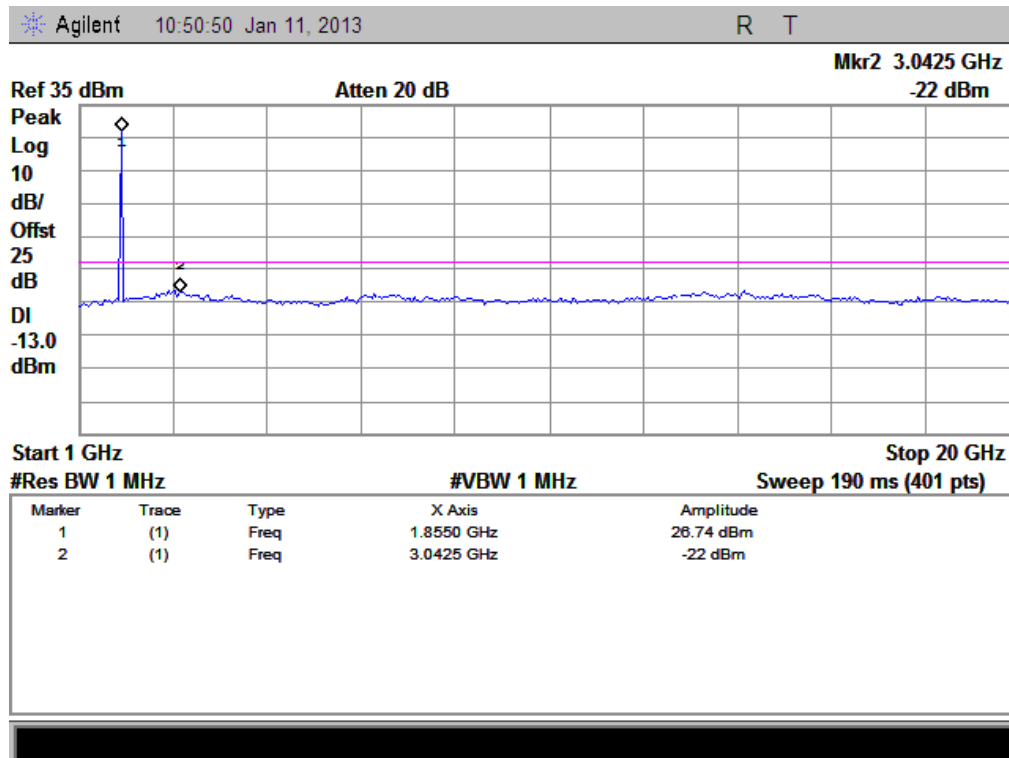
(Plot C3: EDGE 850MHz Channel = 251, 30MHz to 1GHz)



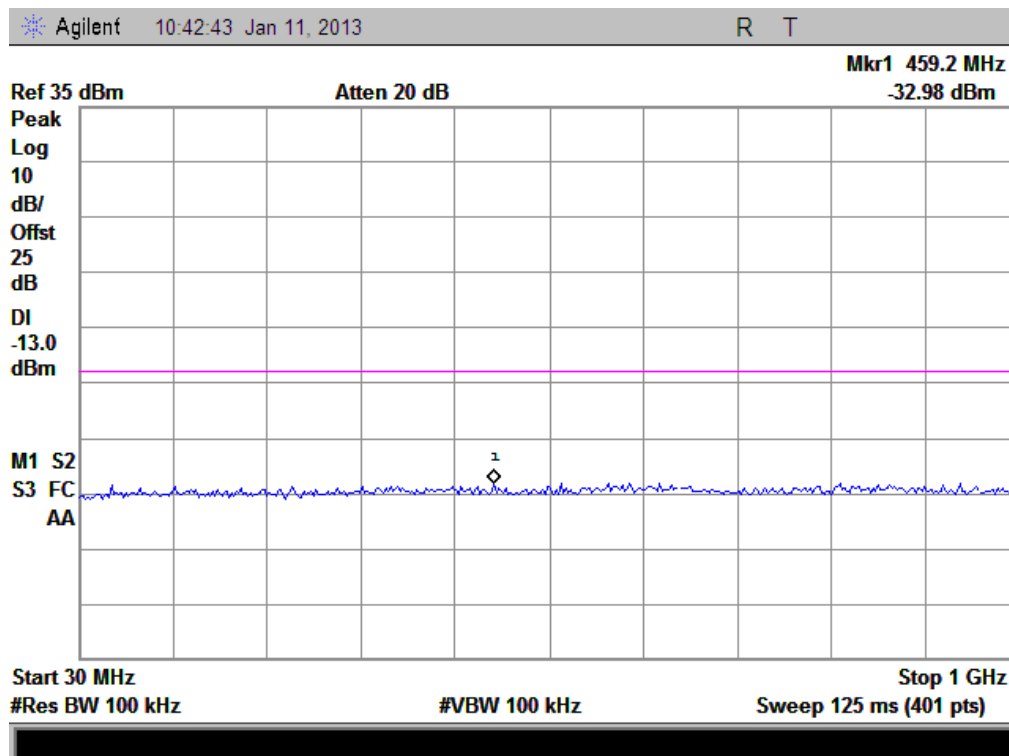
(Plot C3.1: EDGE 850MHz Channel = 251, 1GHz to 9GHz)



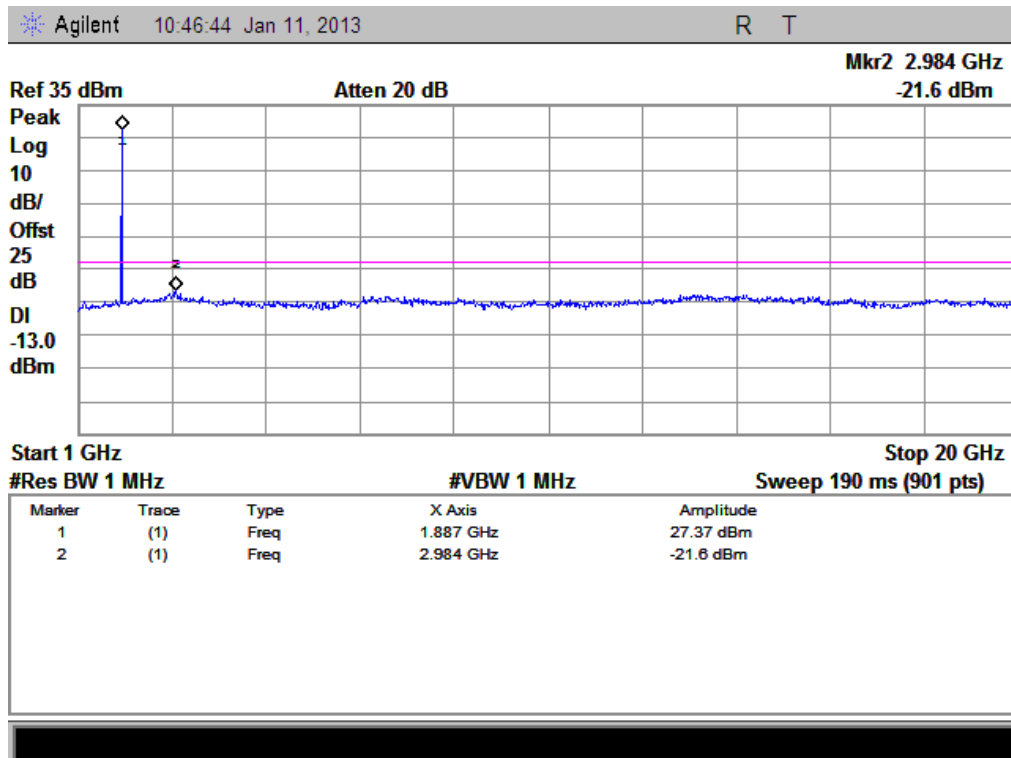
(Plot D1: EDGE 1900MHz Channel = 512, 30MHz to 1GHz)



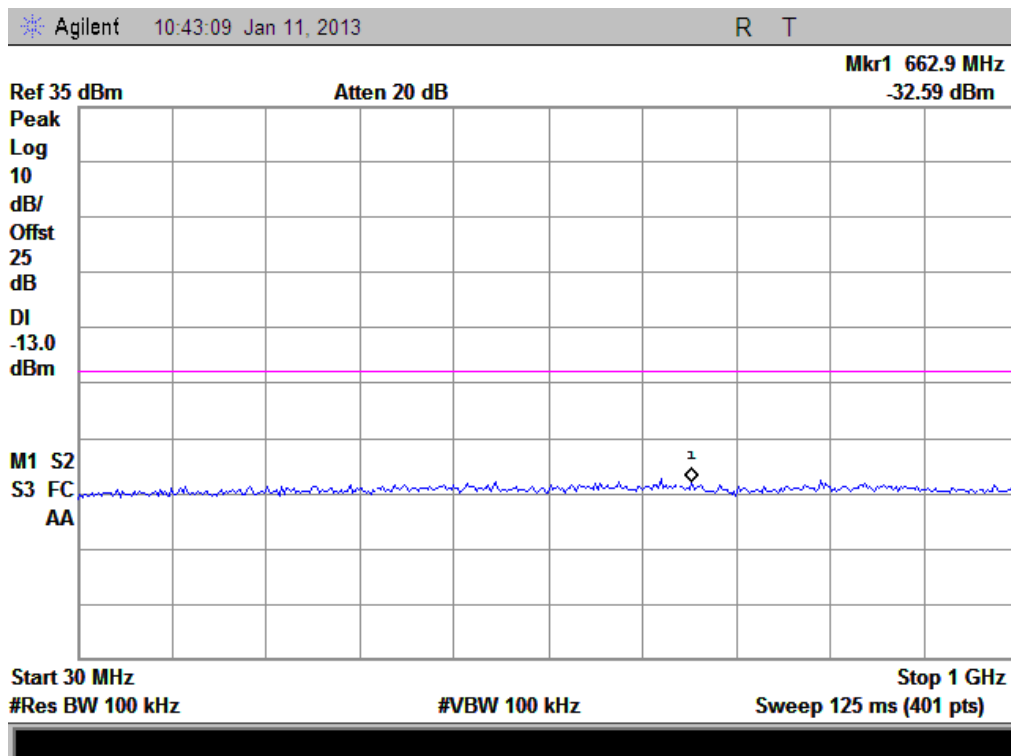
(Plot D1.1: EDGE 1900MHz Channel = 512, 1GHz to 20GHz)



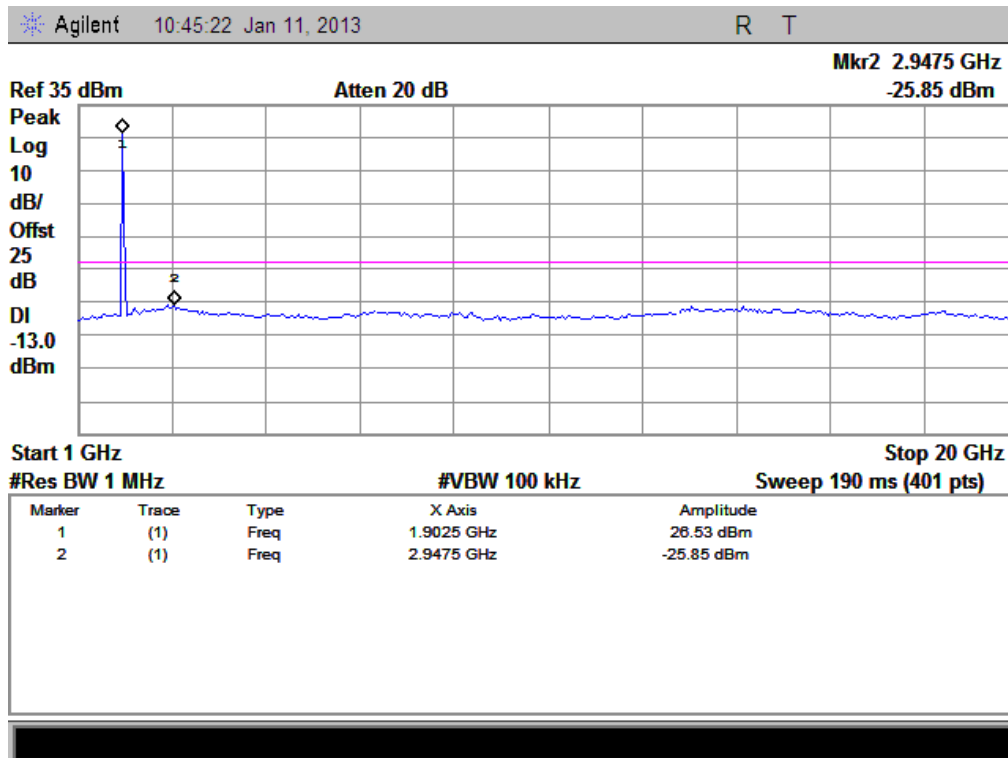
(Plot D2: EDGE 1900MHz Channel = 661, 30MHz to 1GHz)



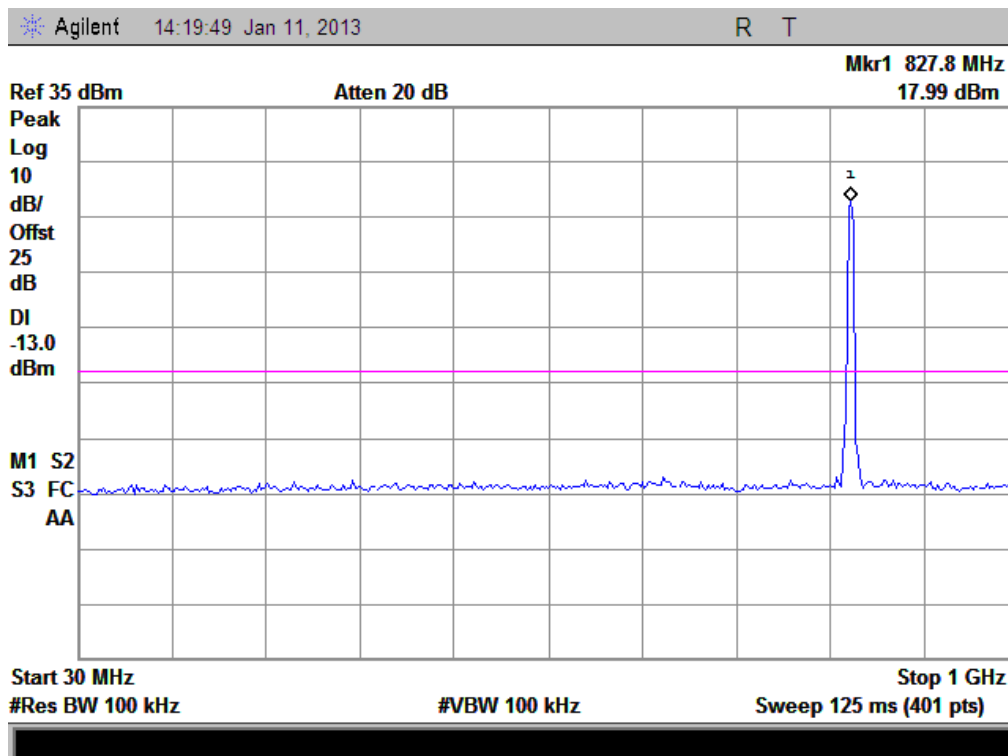
(Plot D2.1: EDGE 1900MHz Channel = 661,1GHz to 20GHz)



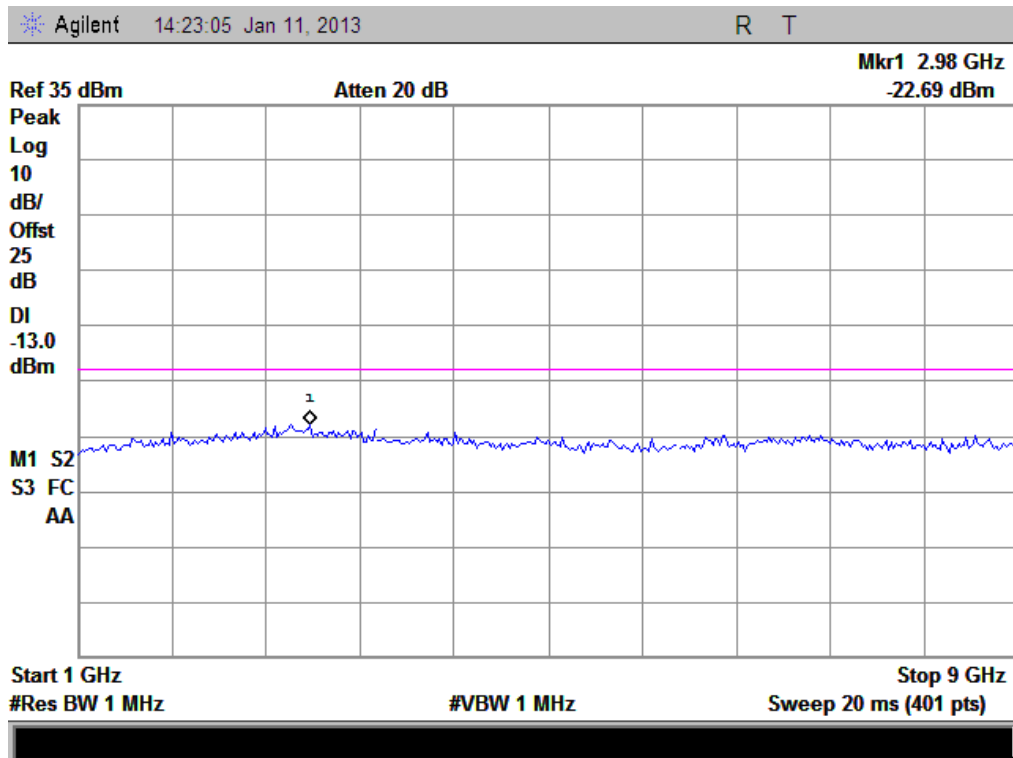
(Plot D3: EDGE 1900MHz Channel = 810, 30MHz to 1GHz)



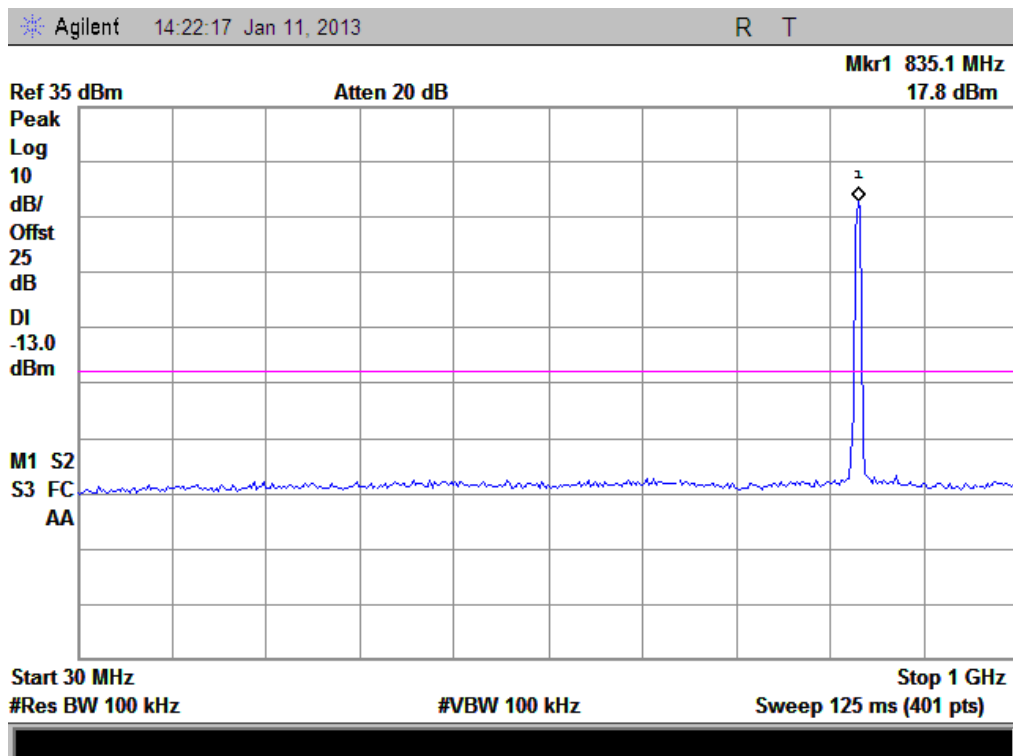
(Plot D3.1: EDGE 1900MHz Channel = 810, 1GHz to 20GHz)



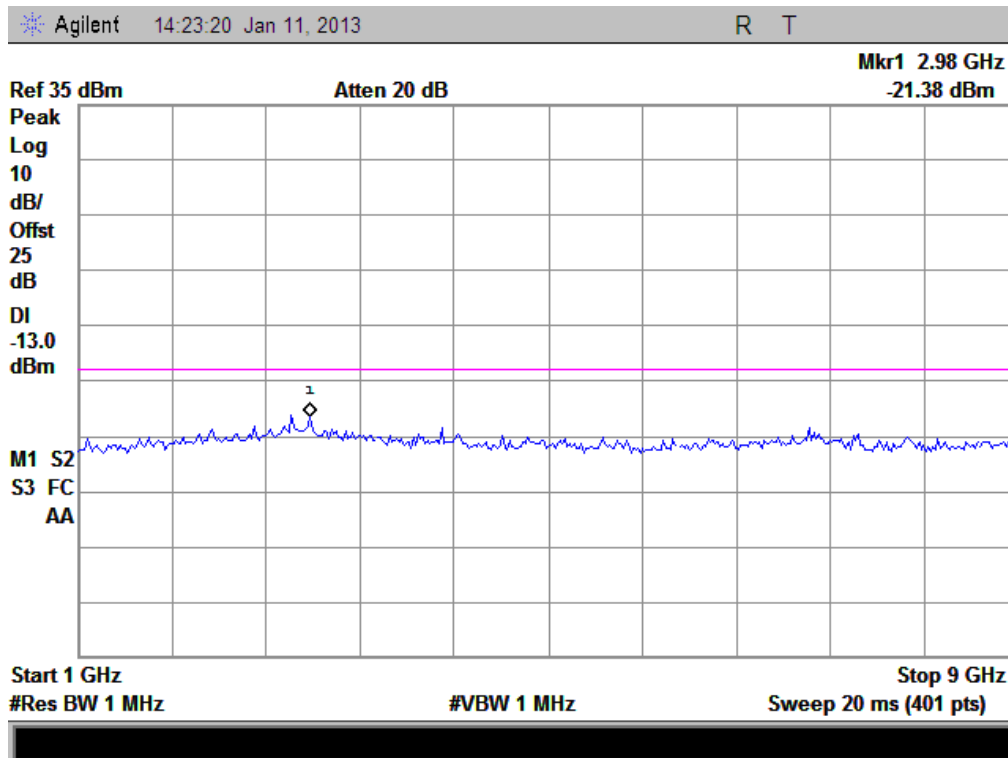
(Plot E1: WCDMA850MHz Channel = 4132, 30MHz to 1GHz)



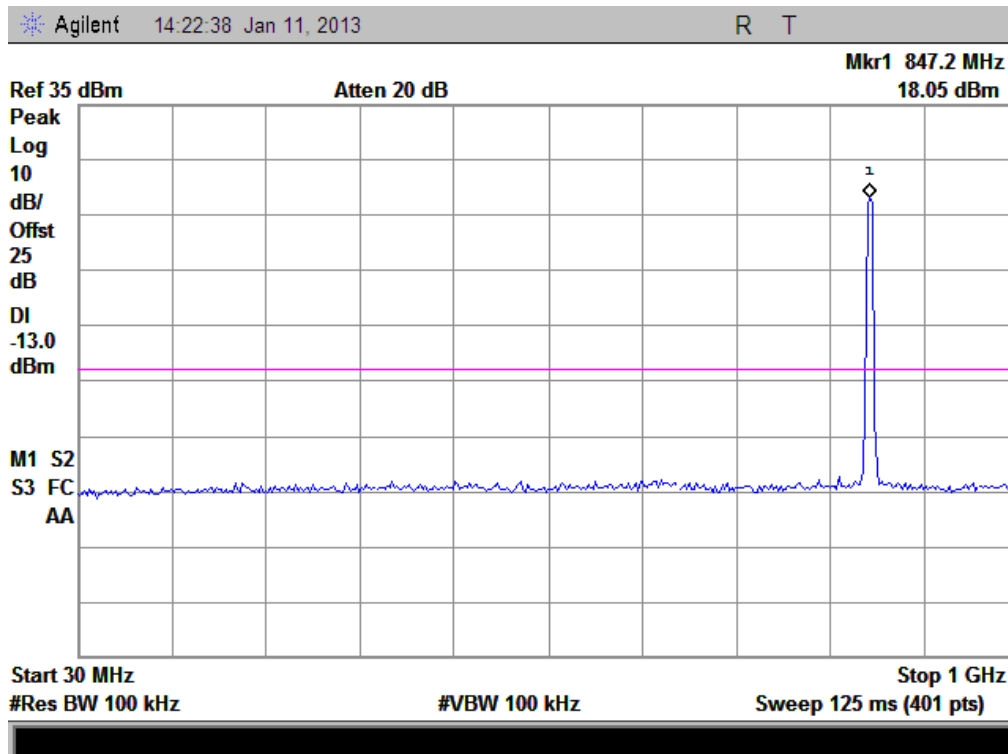
(Plot E1.1: WCDMA850MHz Channel = 4132, 1GHz to 9GHz)



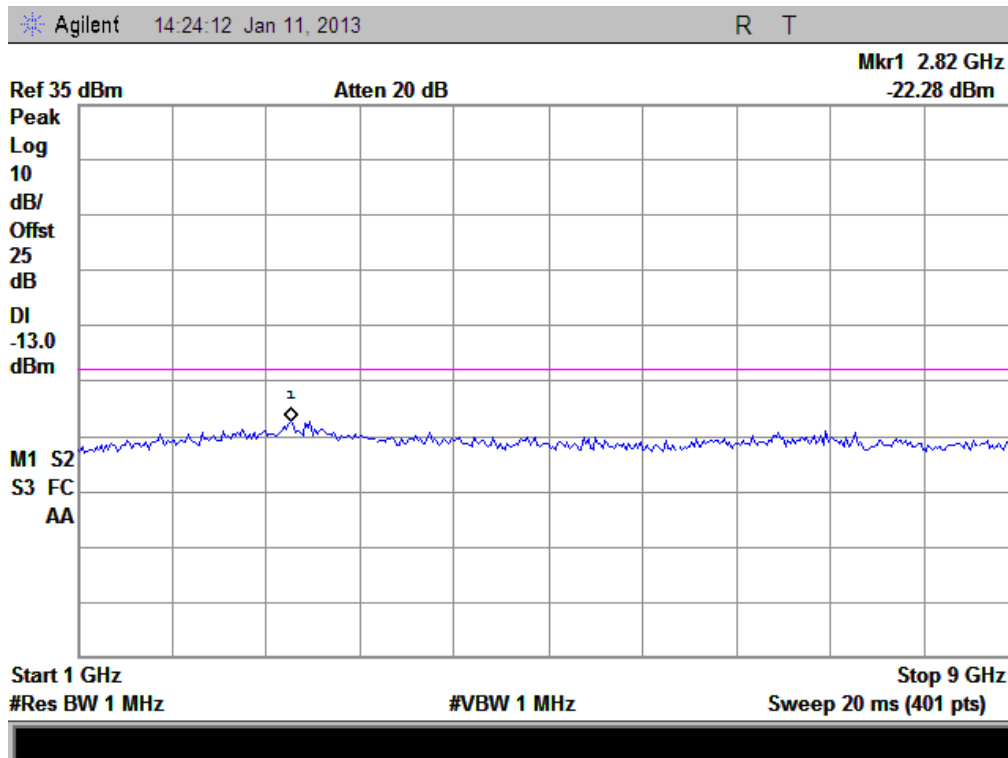
(Plot E2: WCDMA850MHz Channel = 4175, 30MHz to 1GHz)



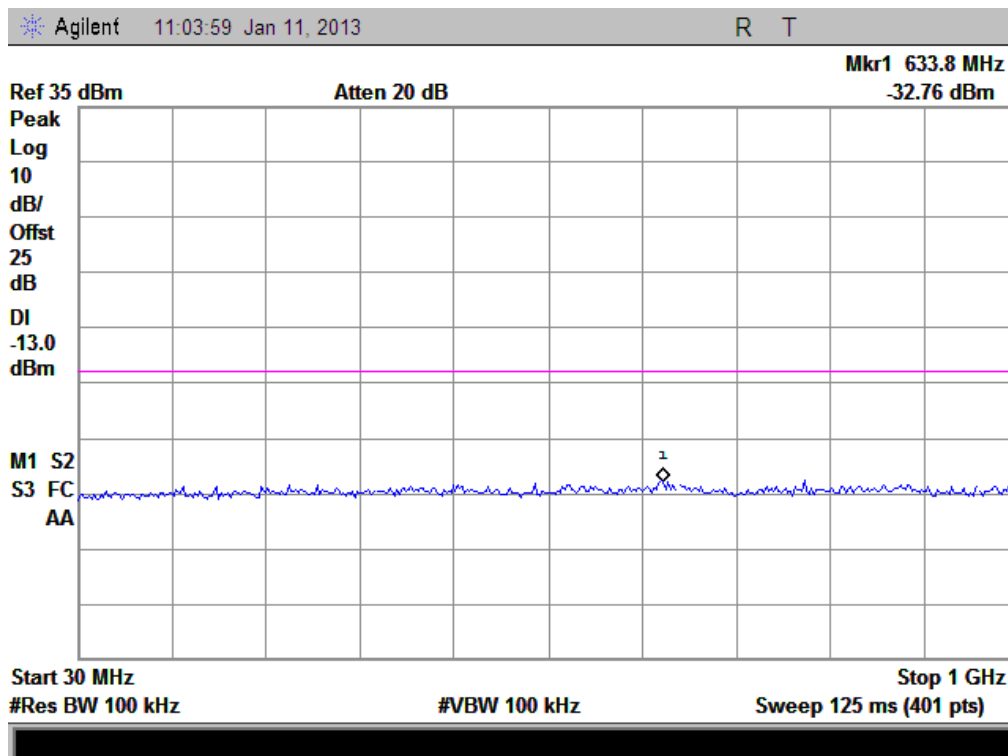
(Plot E2.1: WCDMA850MHz Channel = 4175, 1GHz to 9GHz)



(Plot E3: WCDMA850MHz Channel = 4233, 30MHz to 1GHz)

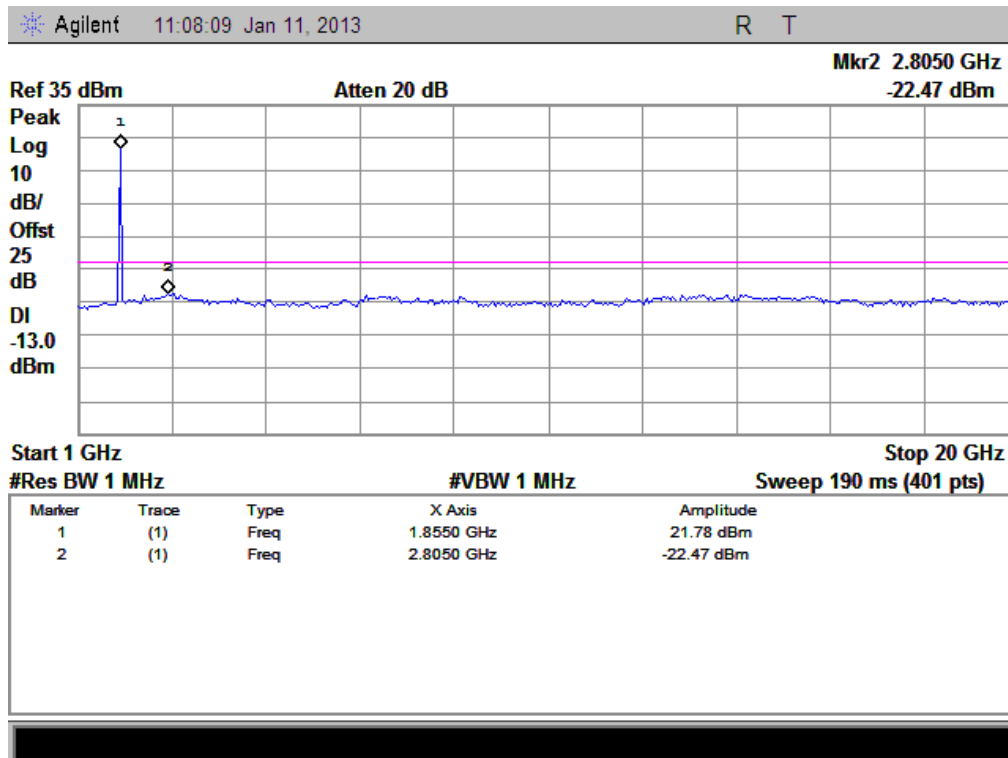


(Plot E3.1: WCDMA850MHz Channel = 4233, 1GHz to 9GHz)

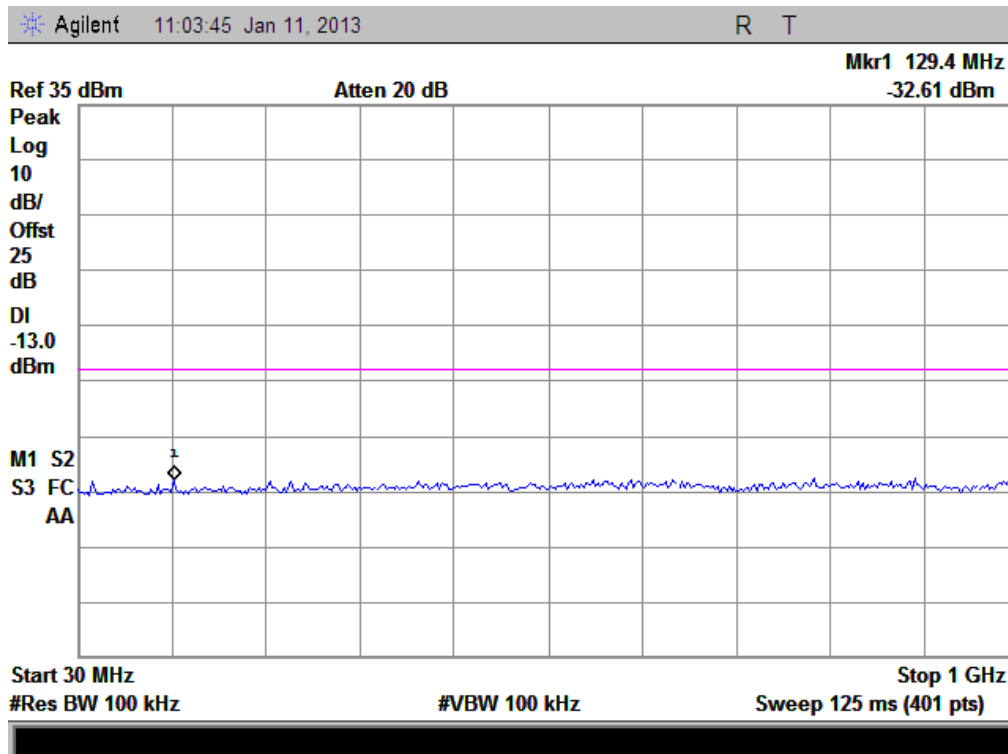


(Plot F1: WCDMA1900MHz Channel = 9262, 30MHz to 1GHz)

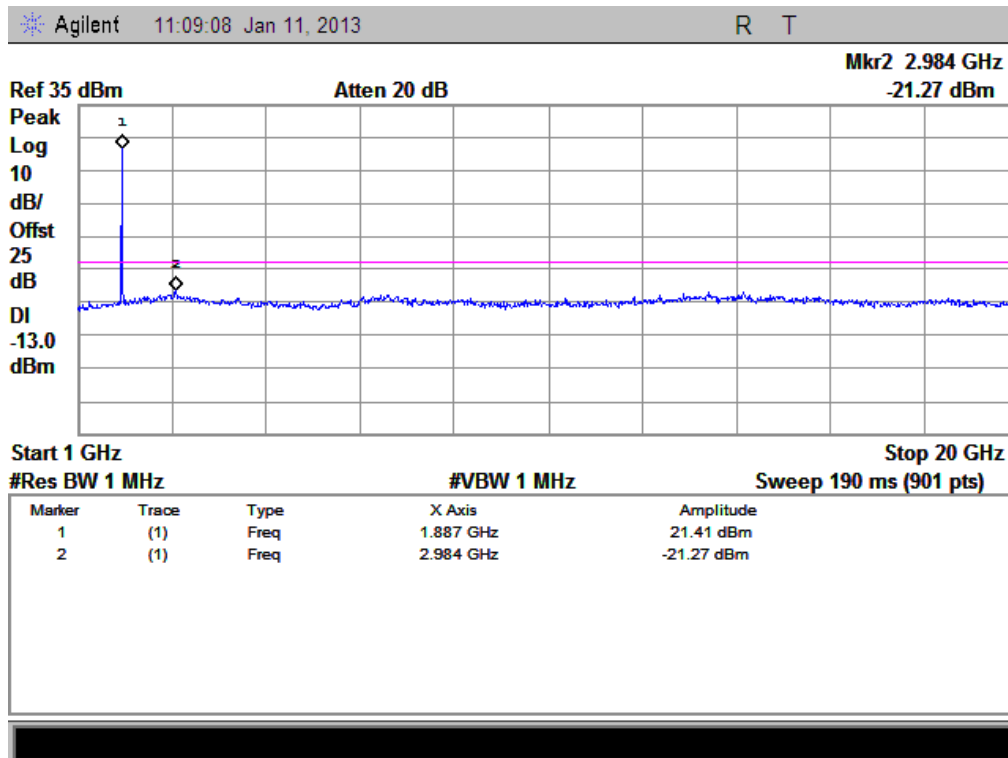




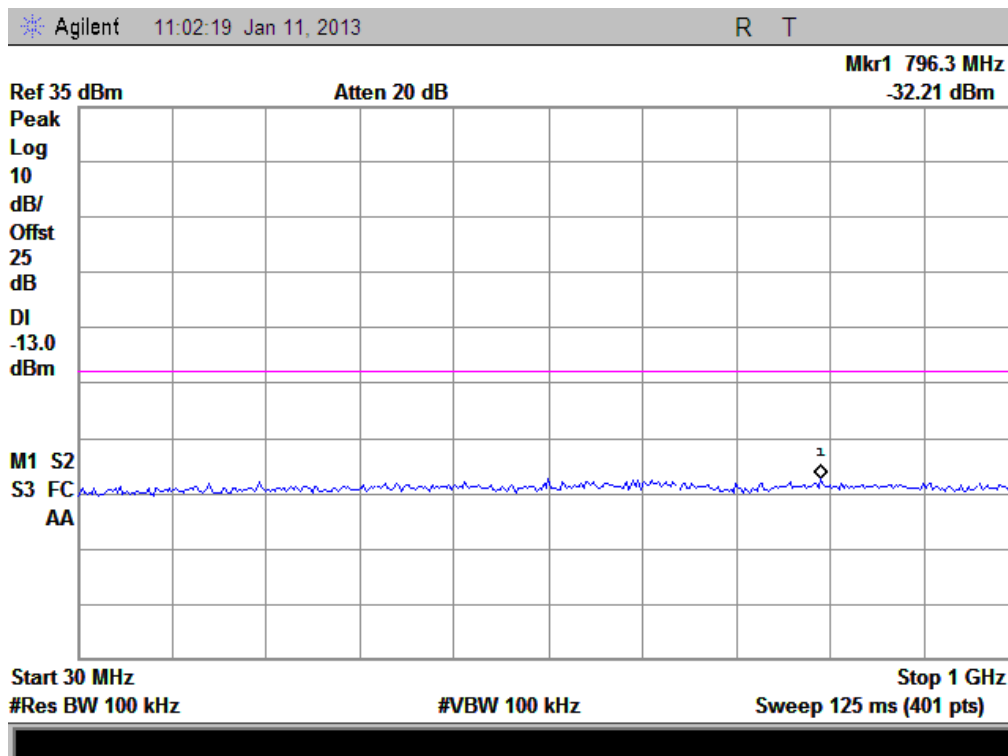
(Plot F1.1: WCDMA1900MHz Channel = 9262, 1GHz to 20GHz)



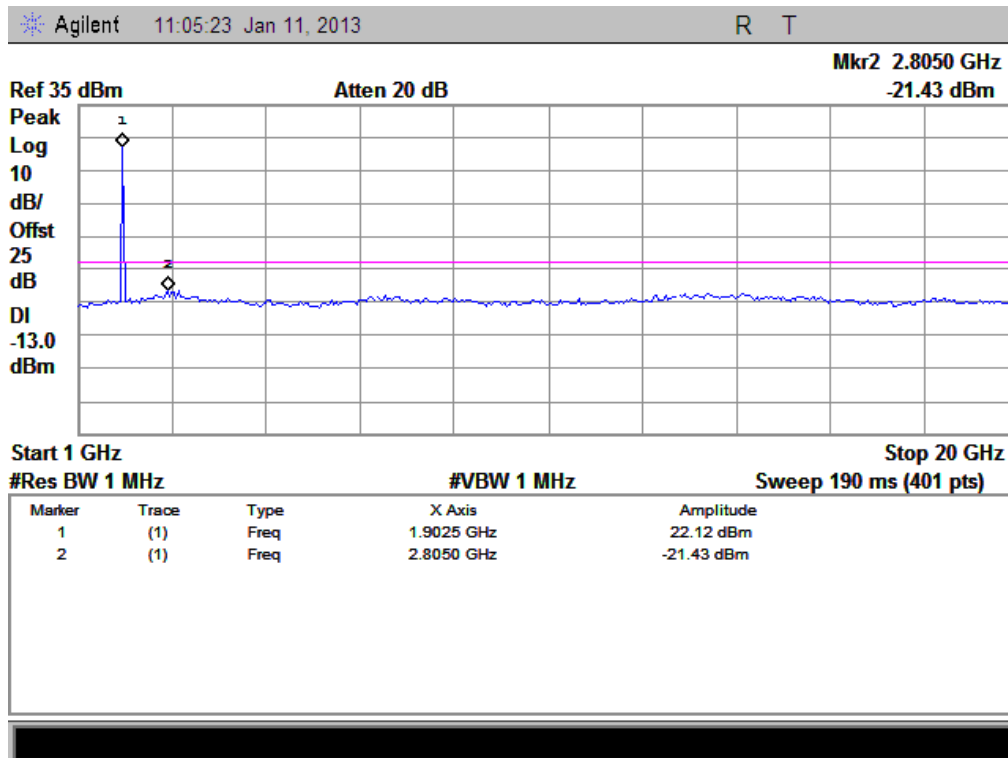
(Plot F2: WCDMA1900MHz Channel = 9400, 30MHz to 1GHz)



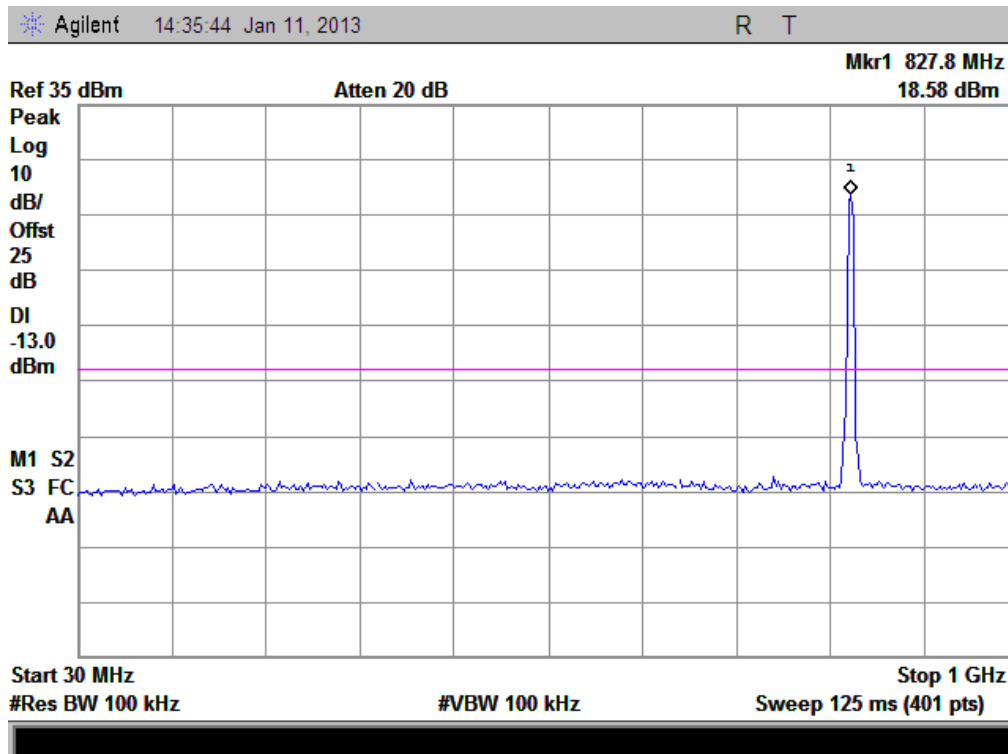
(Plot F2.1: WCDMA1900MHz Channel = 9400, 1GHz to 20GHz)



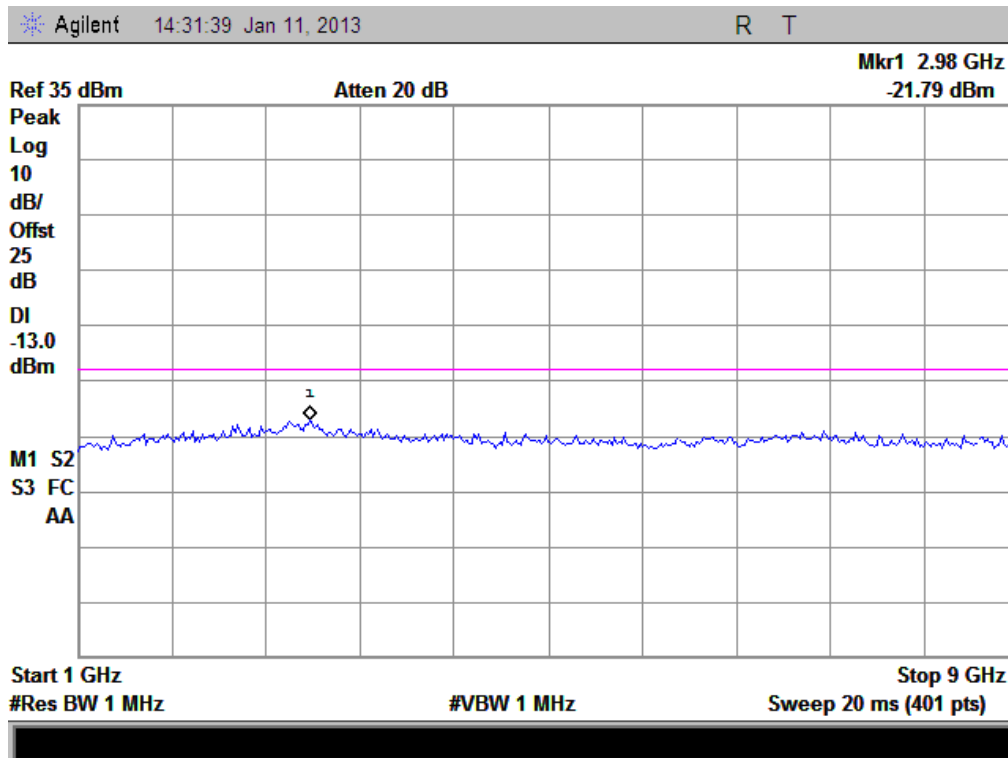
(Plot F3: WCDMA1900MHz Channel = 9538, 30MHz to 1GHz)



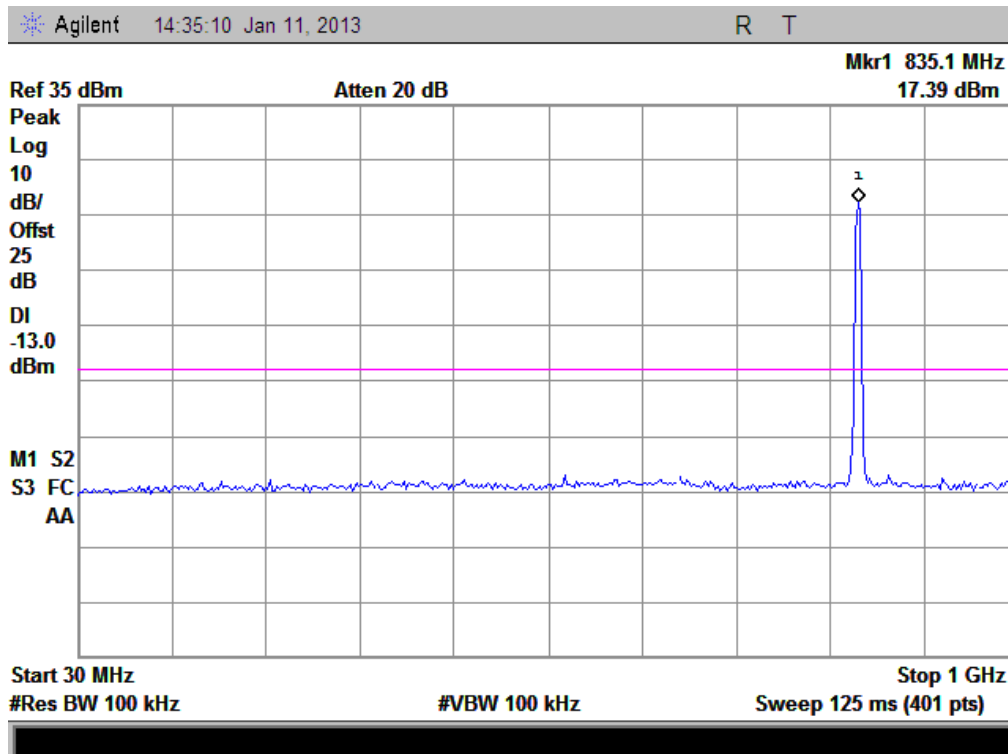
(Plot F3.1: WCDMA1900MHz Channel = 9538 1GHz to 20GHz)



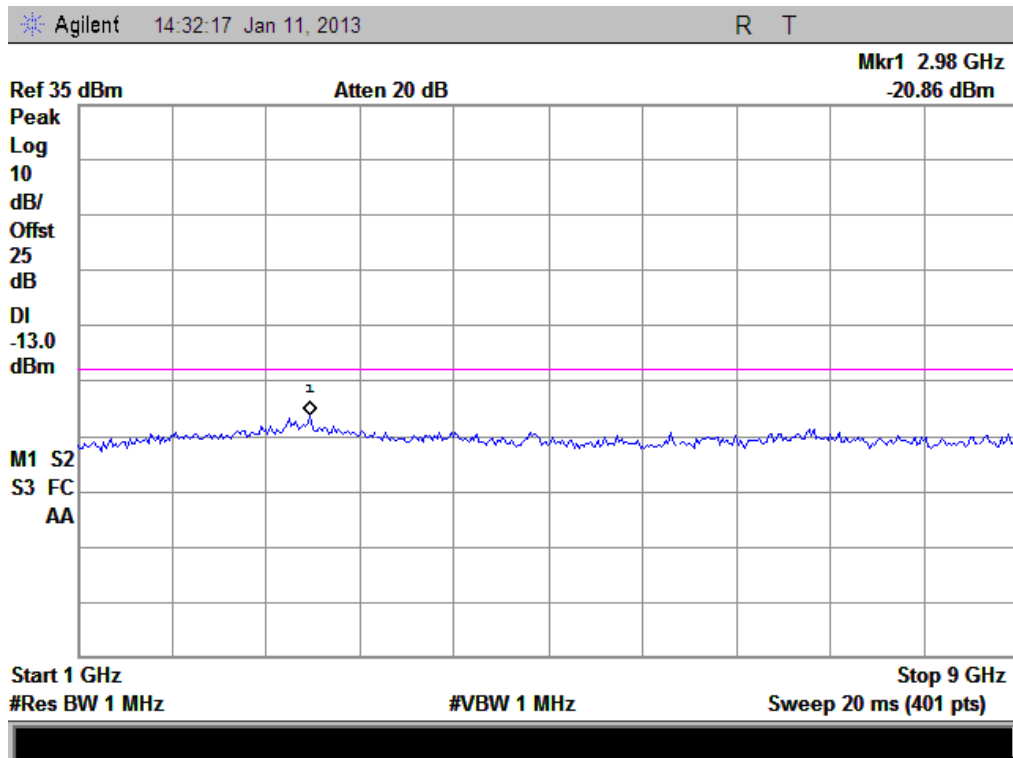
(Plot G1: HSDPA 850MHz Channel = 4132, 30MHz to 1GHz)



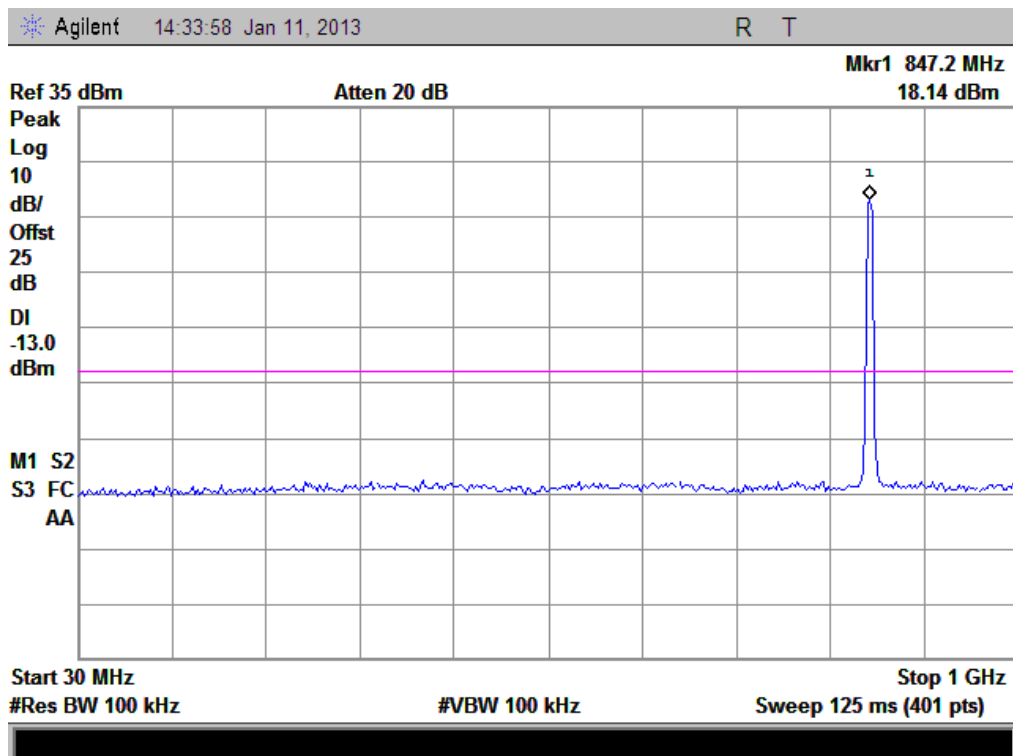
(Plot G1.1: HSDPA 850MHz Channel = 4132, 1GHz to 9GHz)



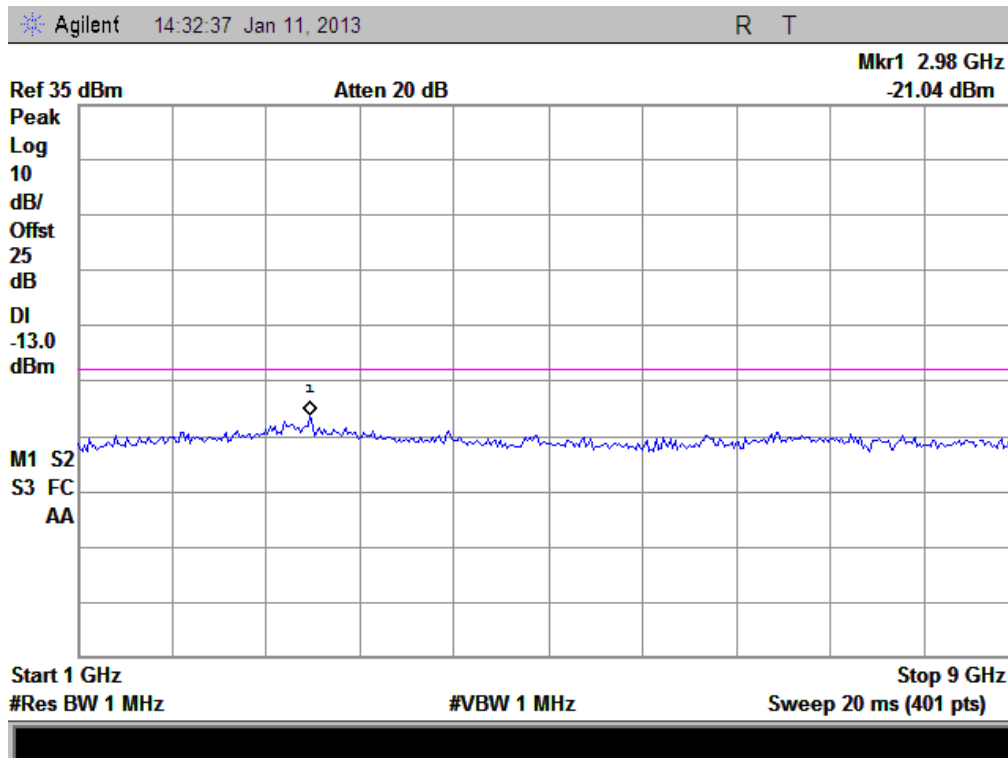
(Plot G2: HSDPA 850MHz Channel = 4175, 30MHz to 1GHz)



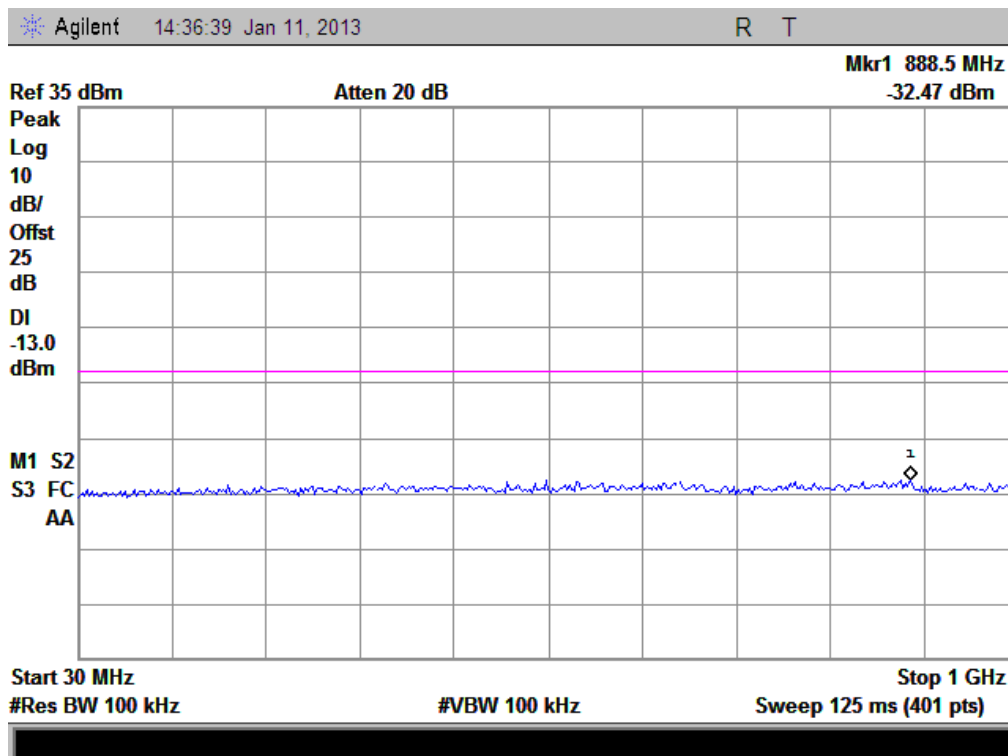
(Plot G2.1: HSDPA 850MHz Channel = 4175, 1GHz to 9GHz)



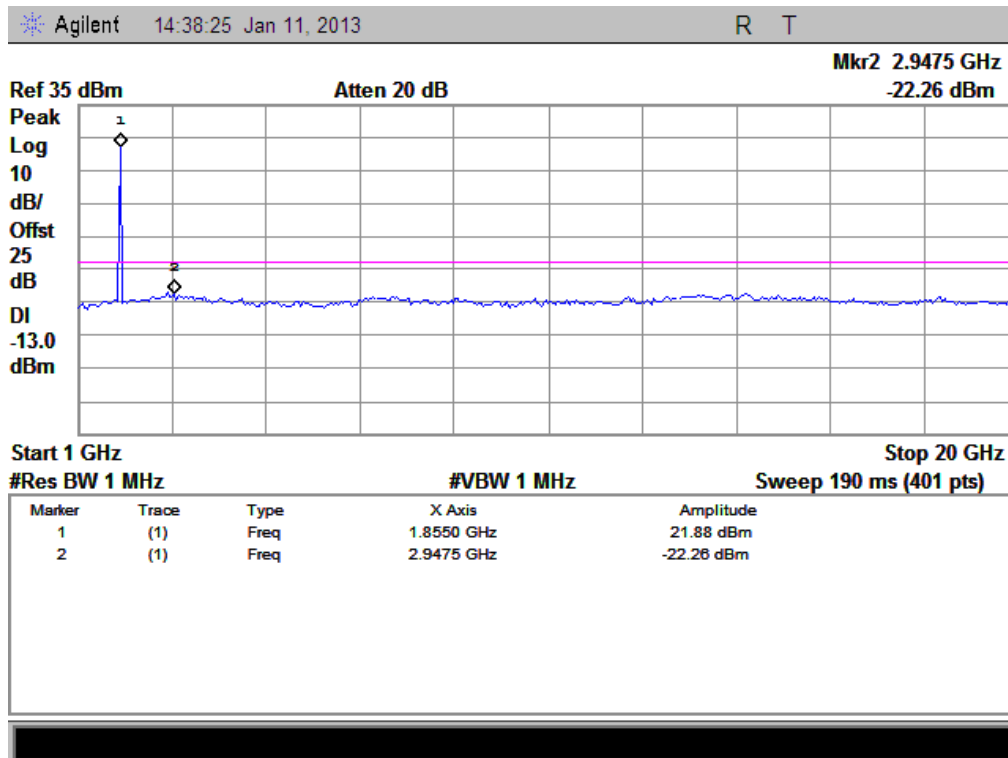
(Plot G3: HSDPA850MHz Channel = 4233, 30MHz to 1GHz)



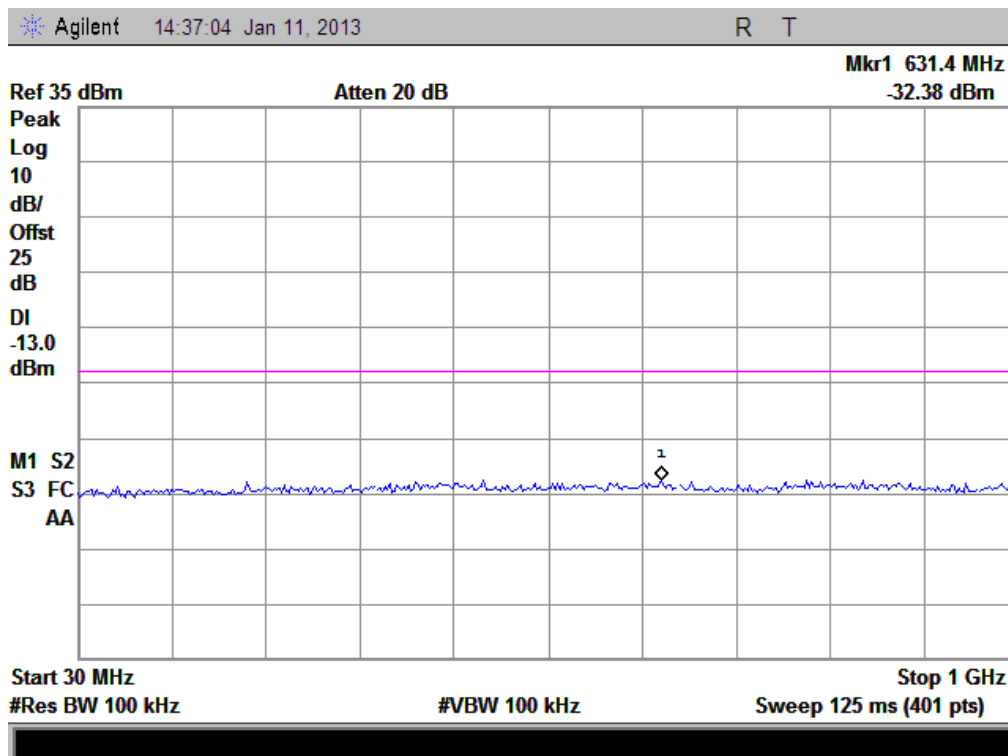
(Plot G3.1: HSDPA850MHz Channel = 4233, 1GHz to 9GHz)



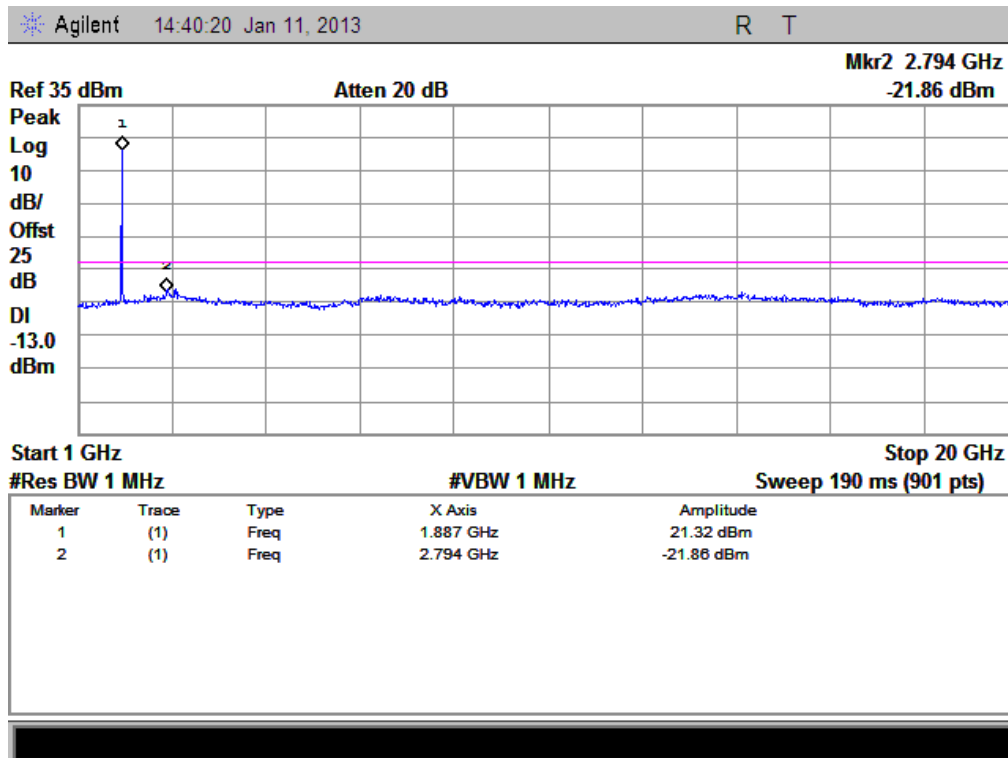
(Plot H1: HSDPA1900MHz Channel = 9262, 30MHz to 1GHz)



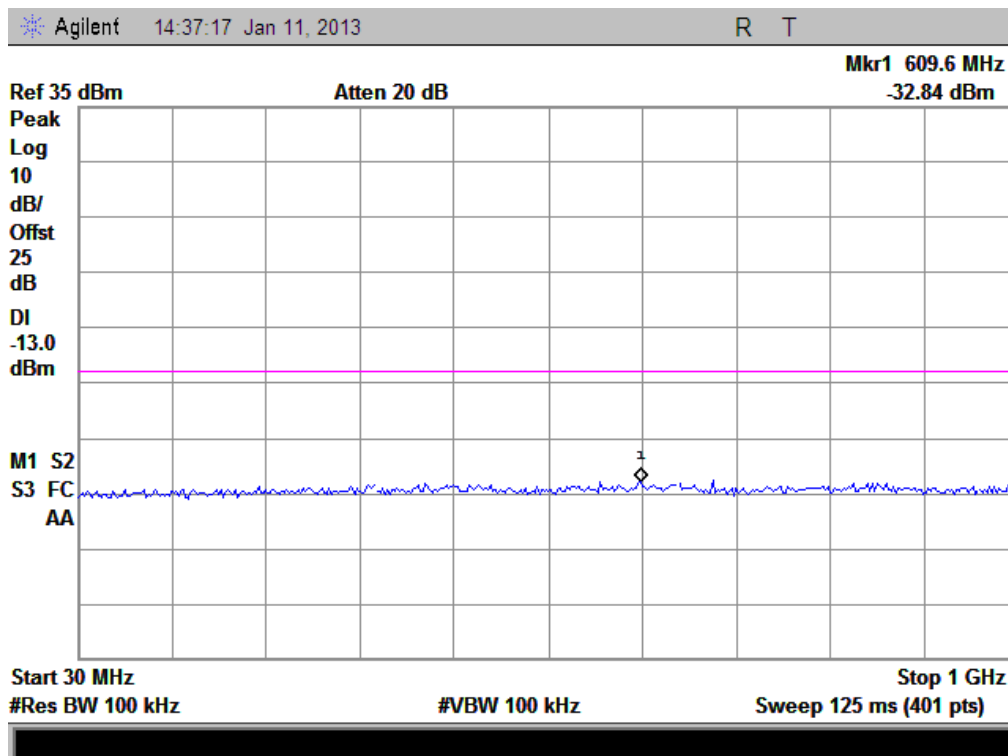
(Plot H1.1: HSDPA1900MHz Channel = 9262, 1GHz to 20GHz)



(Plot H2: HSDPA1900MHz Channel = 9400, 30MHz to 1GHz)

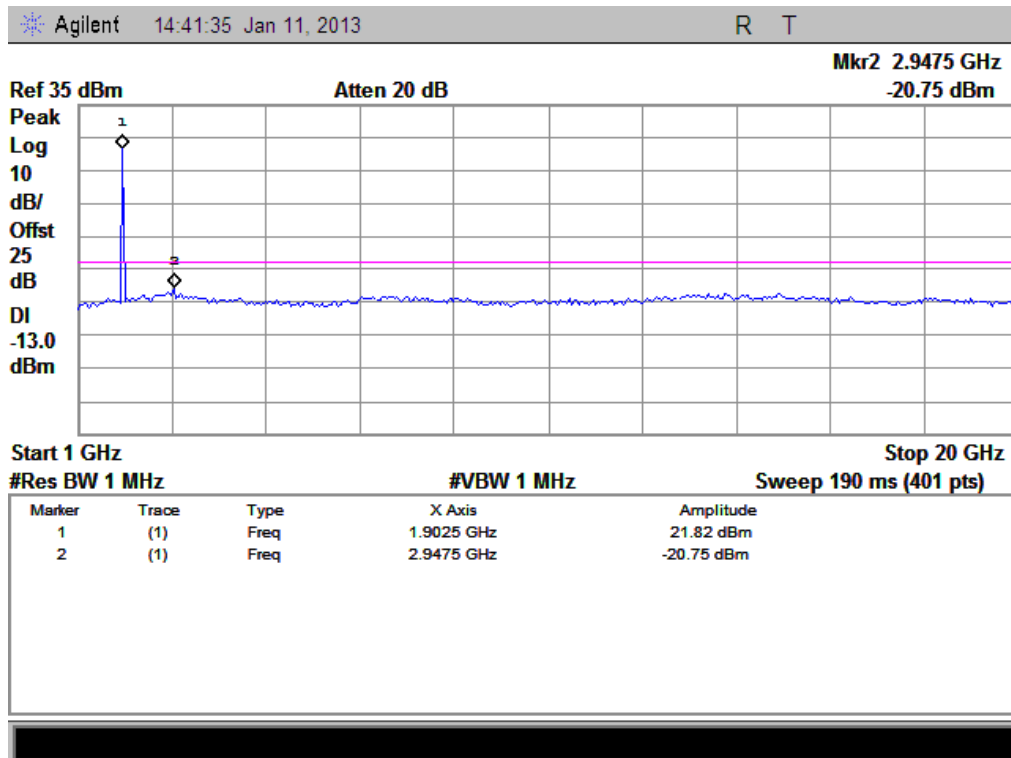


(Plot H2.1: HSDPA1900MHz Channel = 9400, 1GHz to 20GHz)

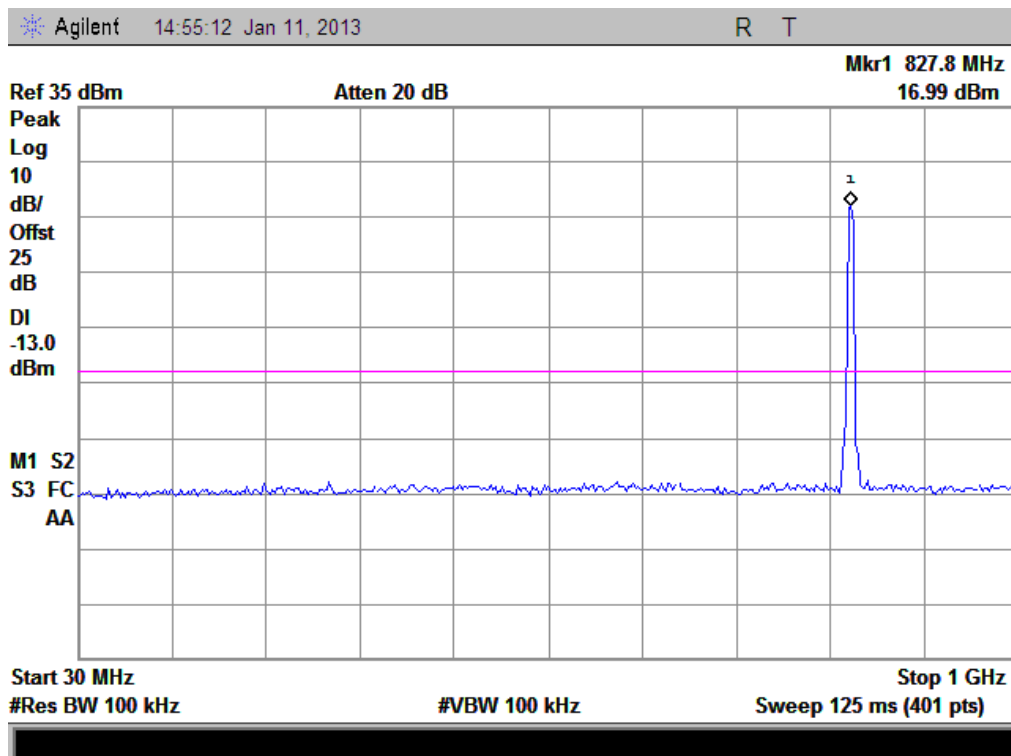


(Plot H3: HSDPA1900MHz Channel = 9538, 30MHz to 1GHz)

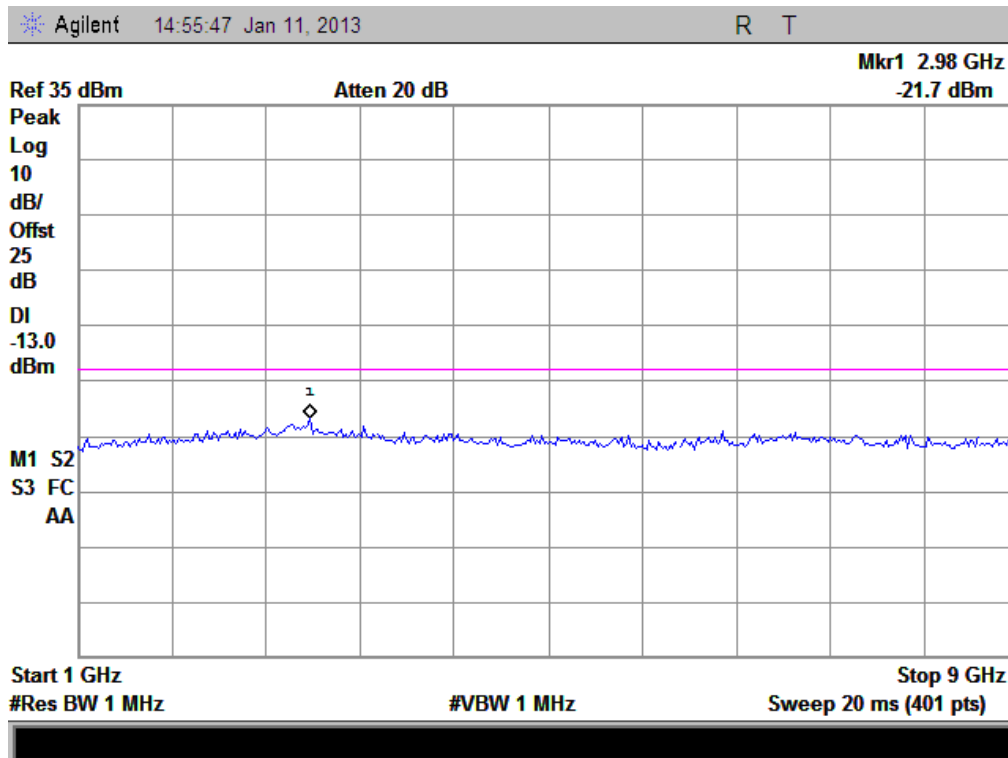




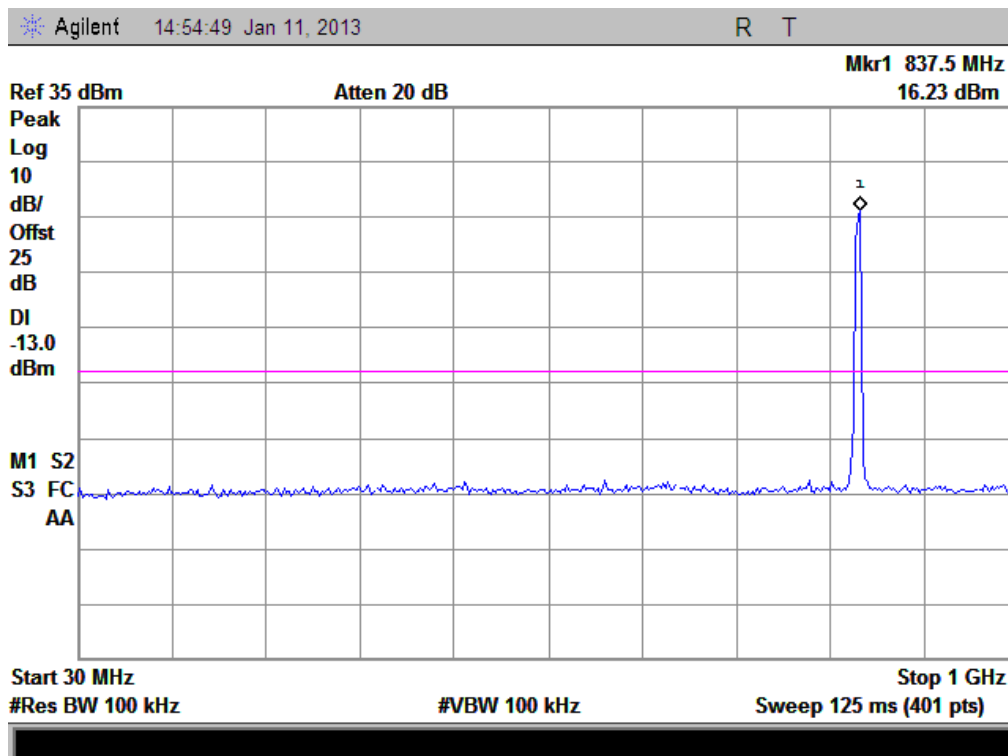
(Plot H3.1: HSDPA1900MHz Channel = 9538 1GHz to 20GHz)



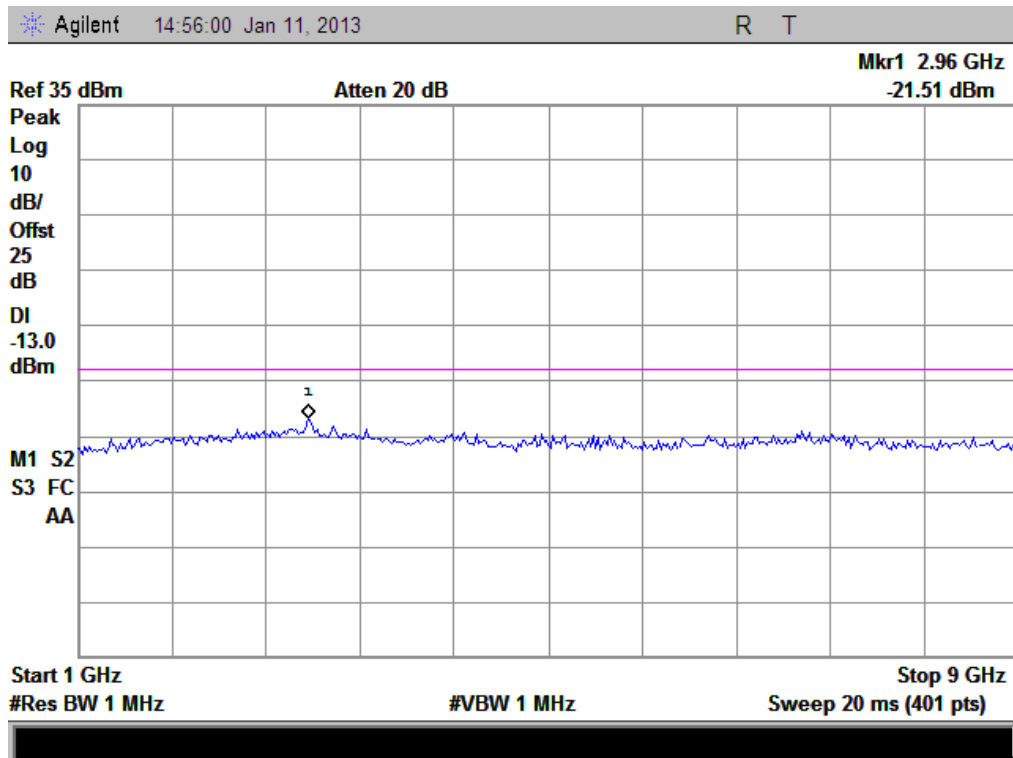
(Plot I 1: HSUPA 850MHz Channel = 4132, 30MHz to 1GHz)



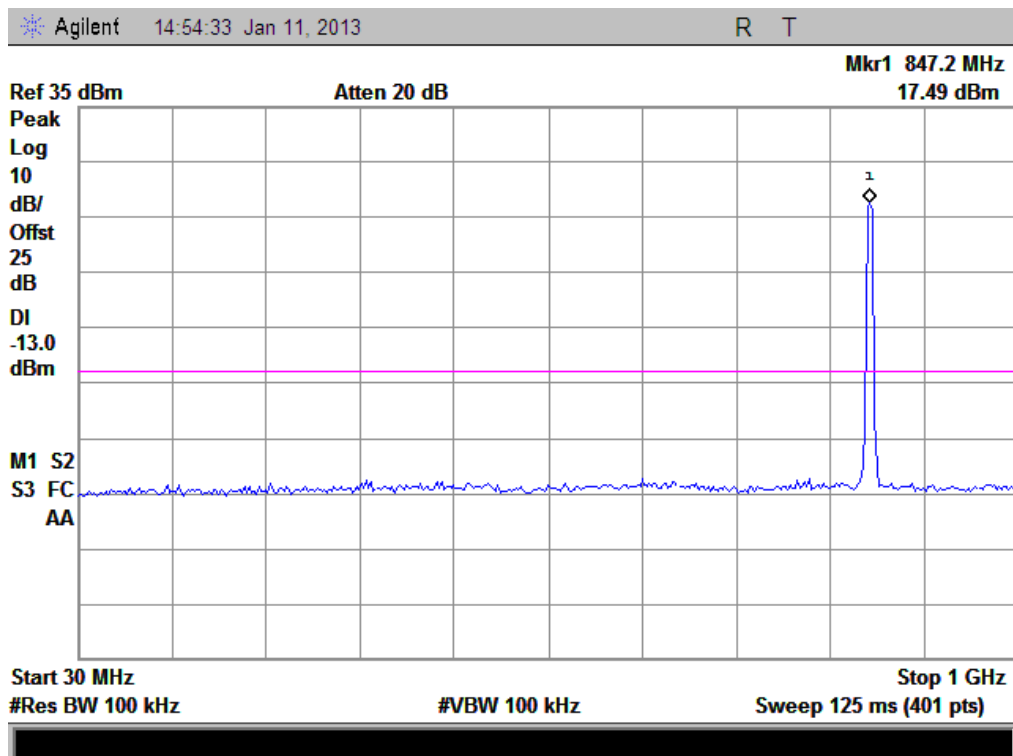
(Plot I1.1: HSUPA 850MHz Channel = 4132, 1GHz to 9GHz)



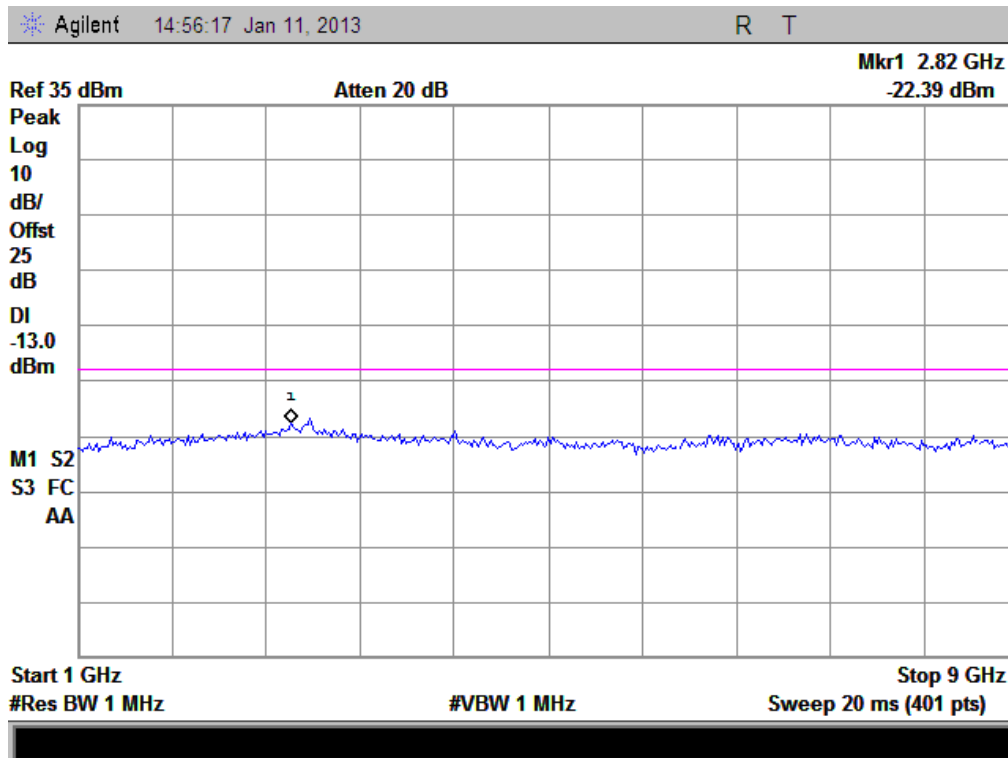
(Plot I 2: HSUPA 850MHz Channel = 4175, 30MHz to 1GHz)



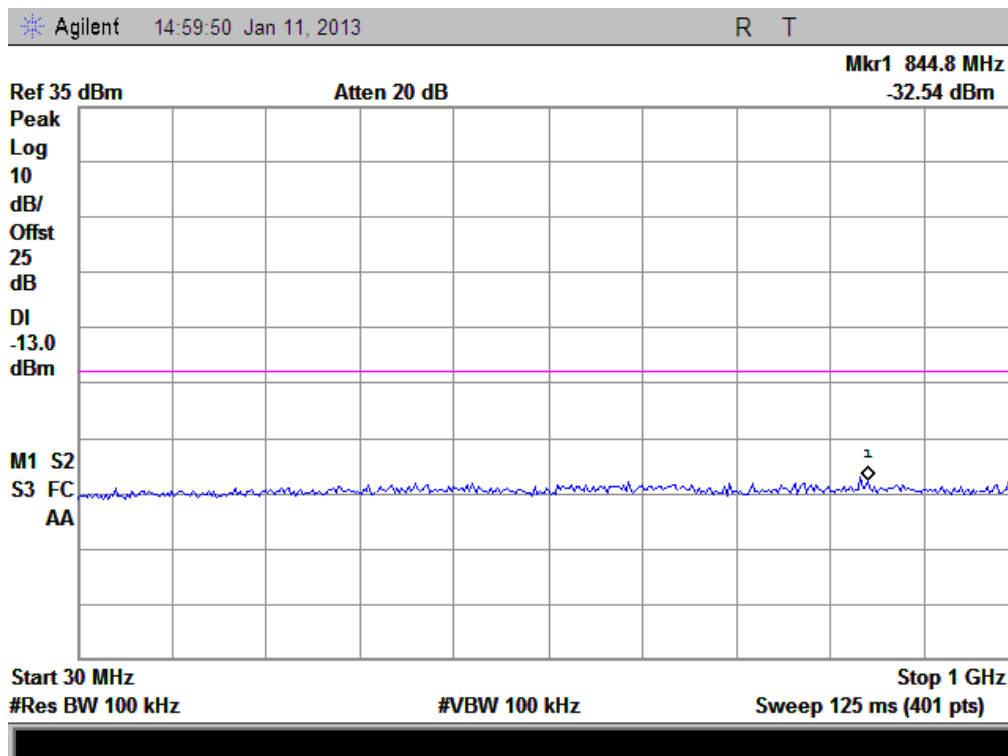
(Plot I2.1: HSUPA 850MHz Channel = 4175, 1GHz to 9GHz)



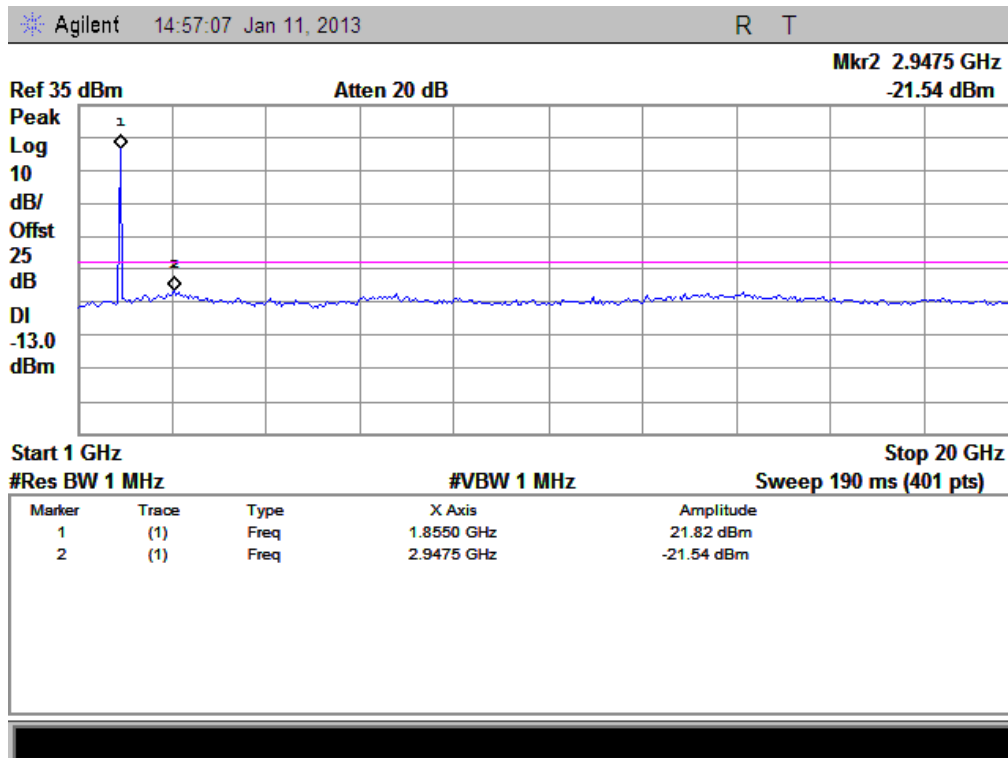
(Plot I 3: HSUPA850MHz Channel = 4233, 30MHz to 1GHz)



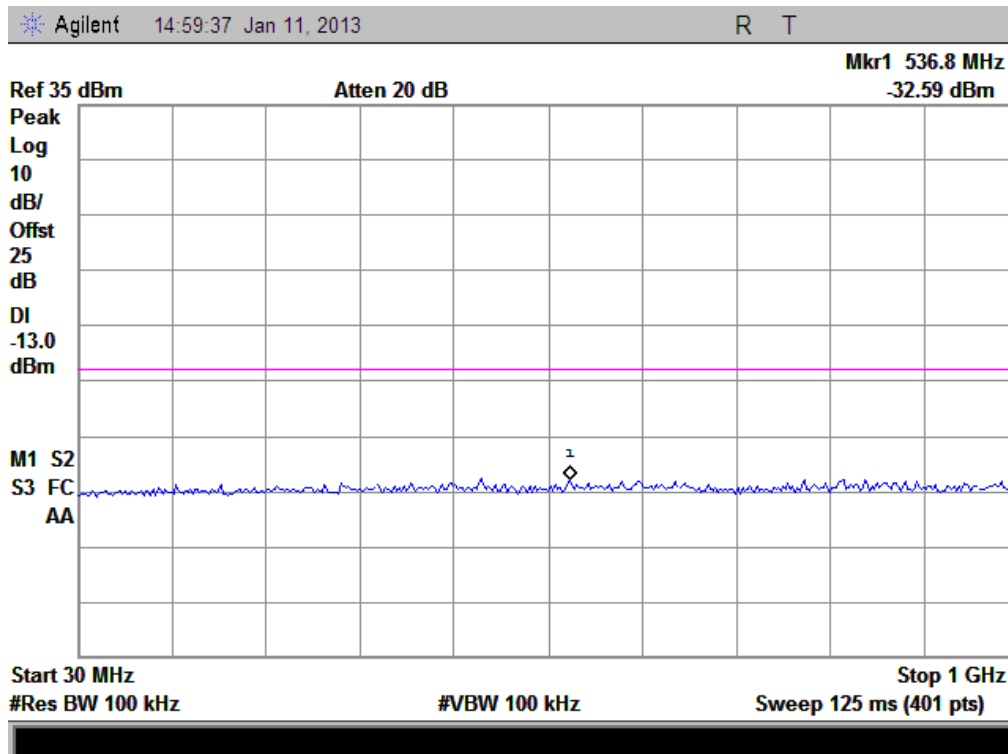
(Plot I3.1: HSUPA850MHz Channel = 4233, 1GHz to 9GHz)



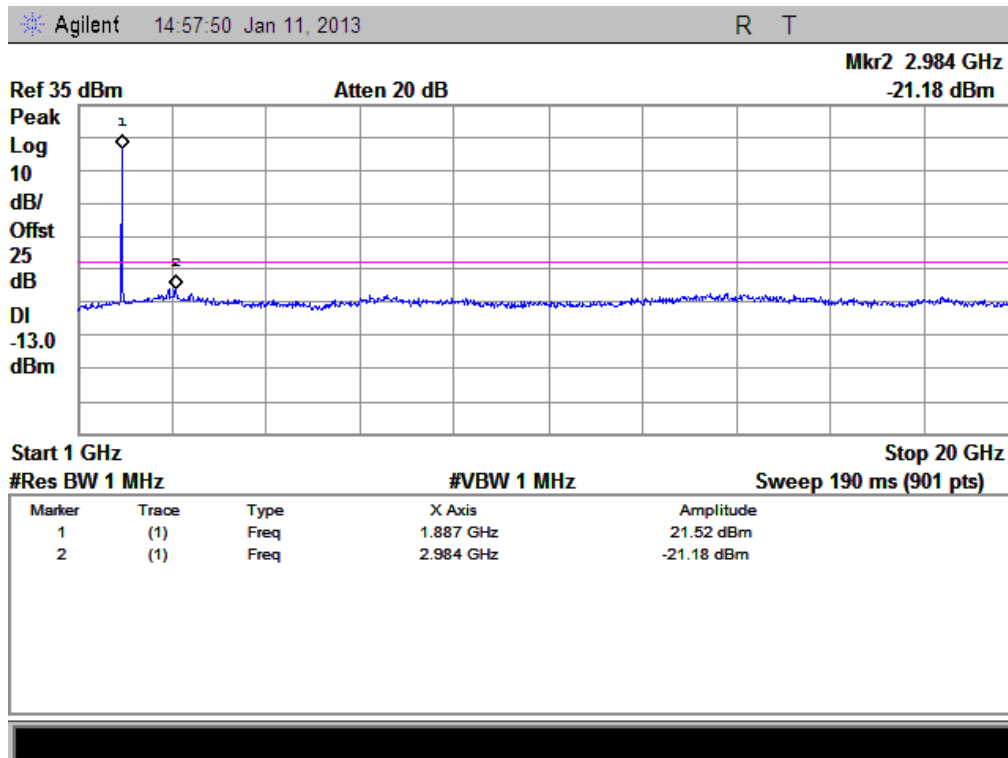
(Plot J 1: HSUPA1900MHz Channel = 9262, 30MHz to 1GHz)



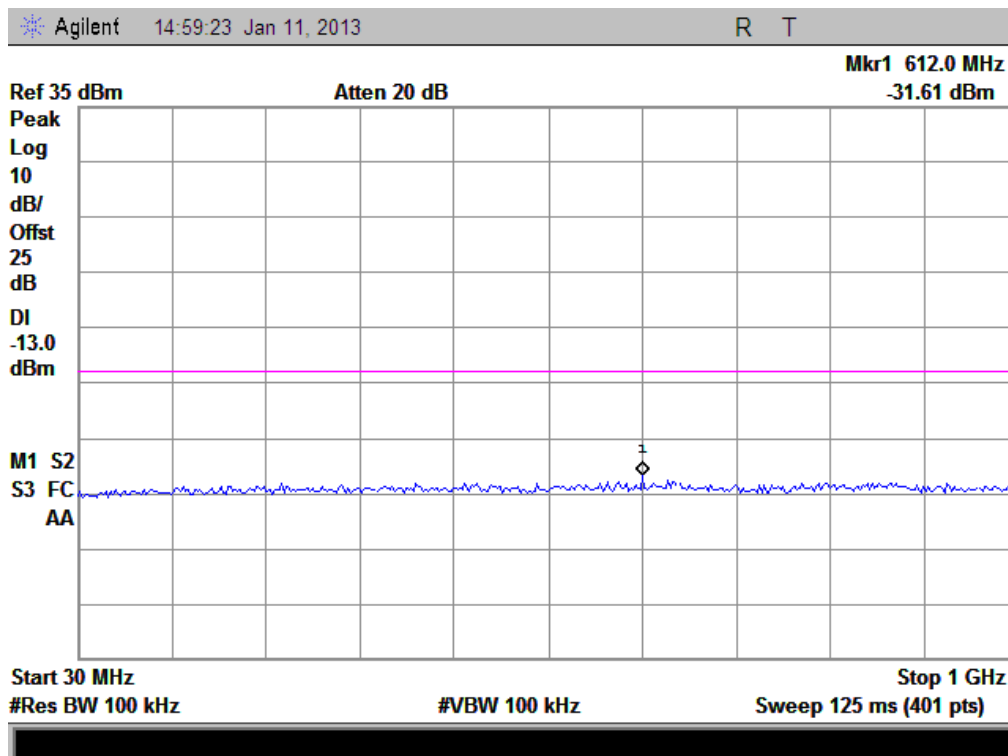
(Plot J1.1: HSUPA1900MHz Channel = 9262, 1GHz to 20GHz)



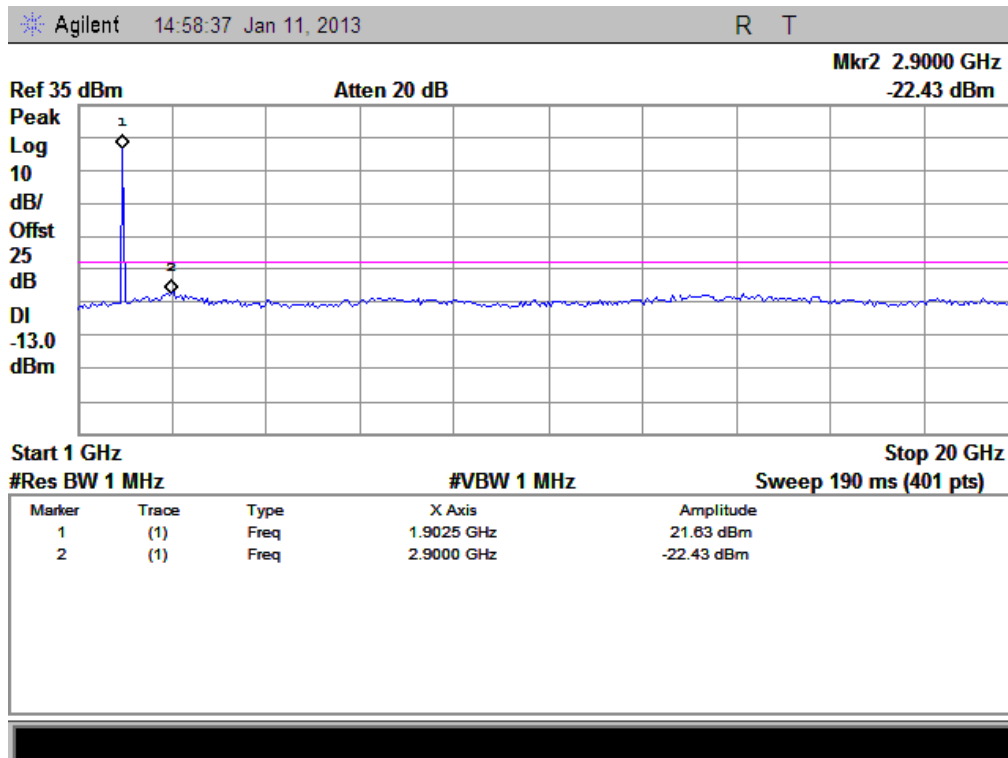
(Plot J 2: HSUPA1900MHz Channel = 9400, 30MHz to 1GHz)



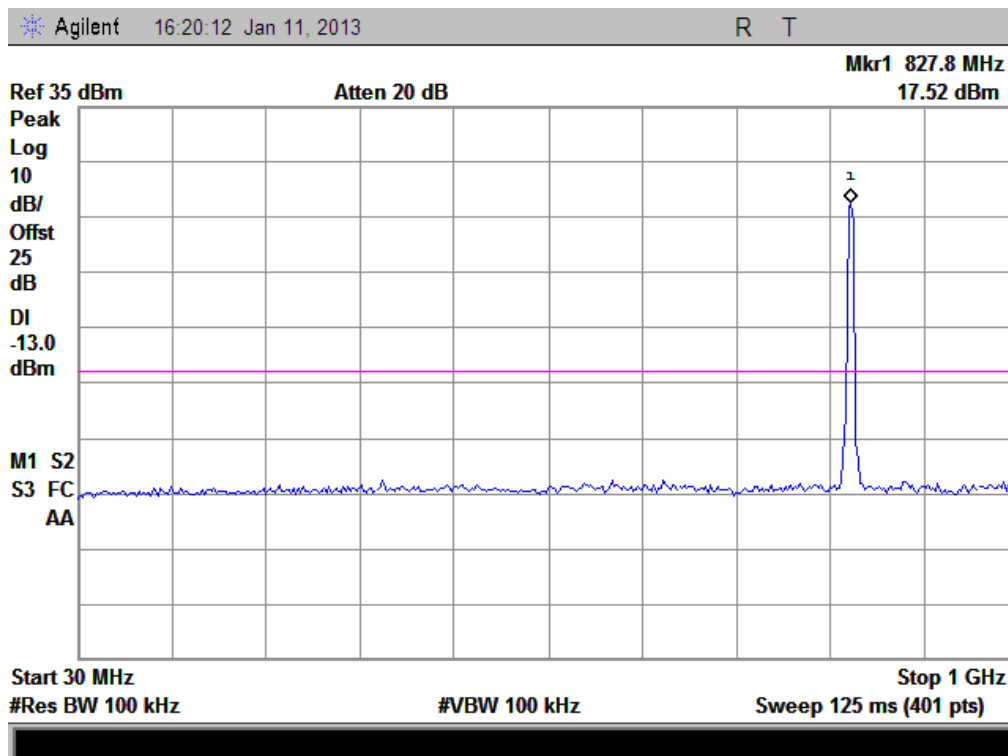
(Plot J2.1: HSUPA1900MHz Channel = 9400, 1GHz to 20GHz)



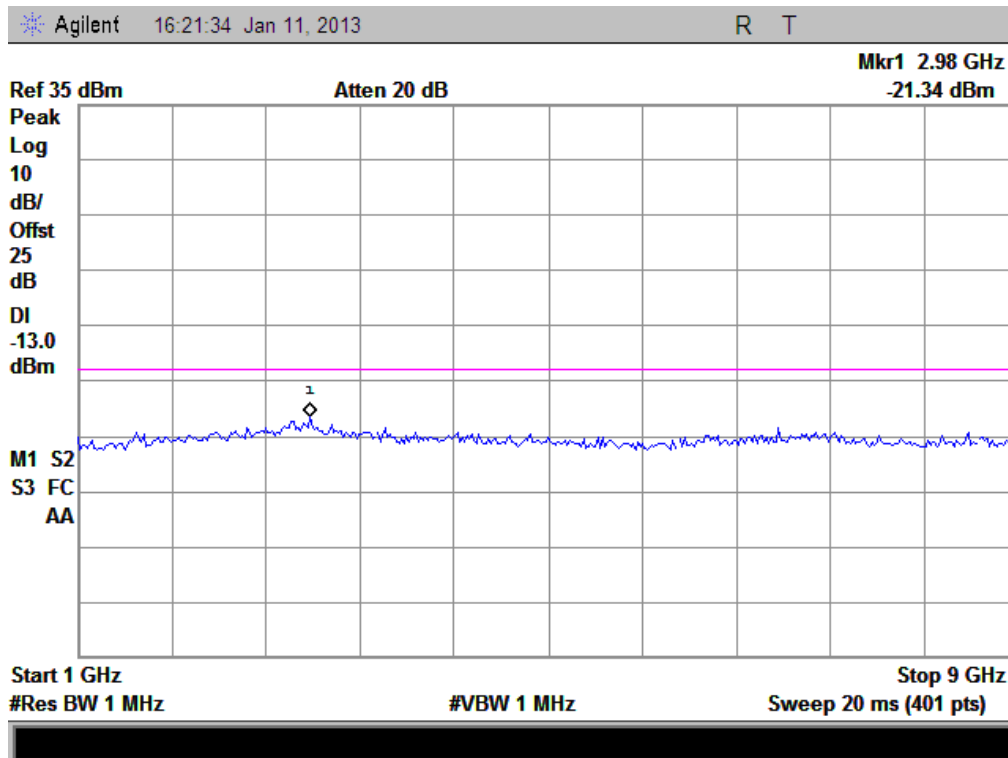
(Plot J 3: HSUPA1900MHz Channel = 9538, 30MHz to 1GHz)



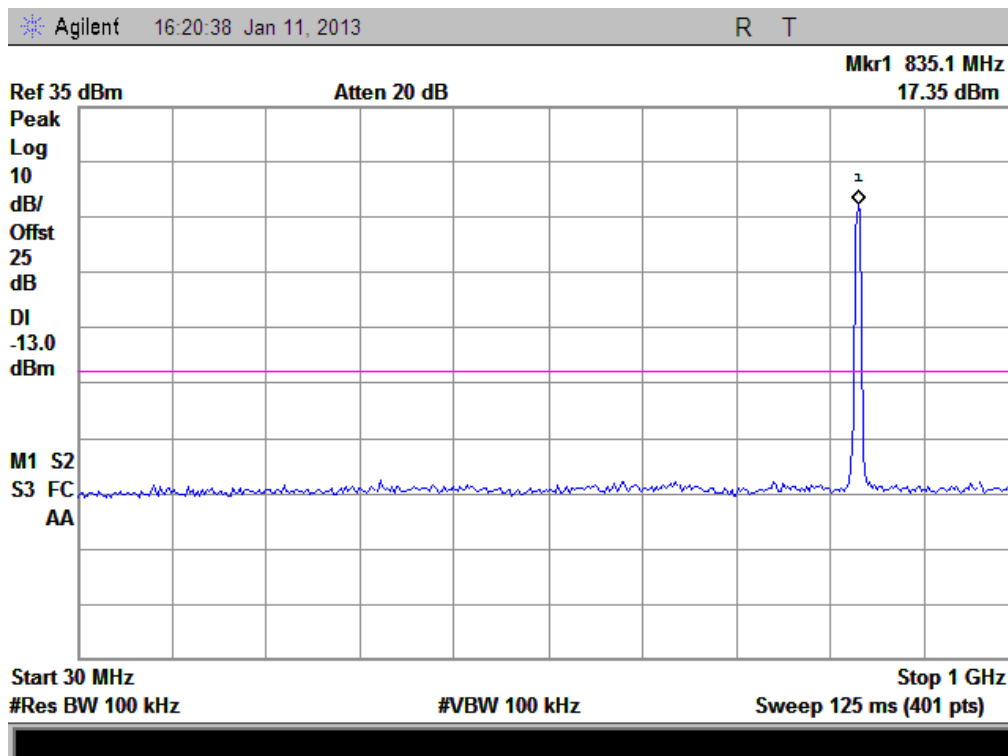
(Plot J3.1: HSUPA1900MHz Channel = 9538 1GHz to 20GHz)



(Plot K 1: HSPA+ 850MHz Channel = 4132, 30MHz to 1GHz)

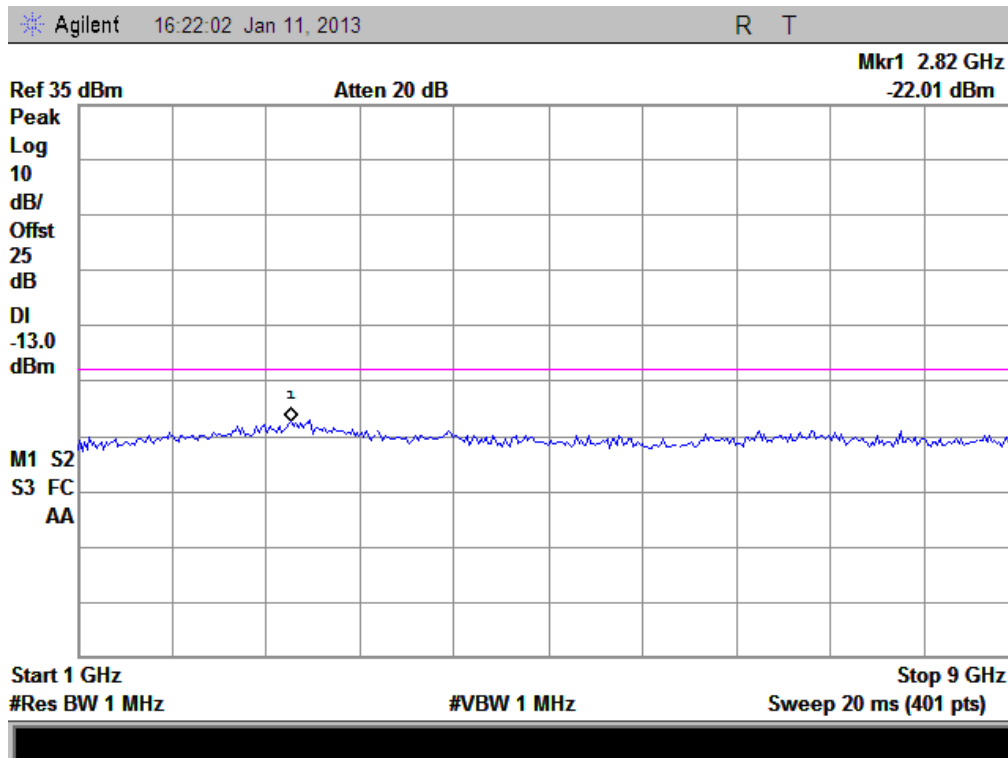


(Plot K 1.1: HSPA+ 850MHz Channel = 4132, 1GHz to 9GHz)

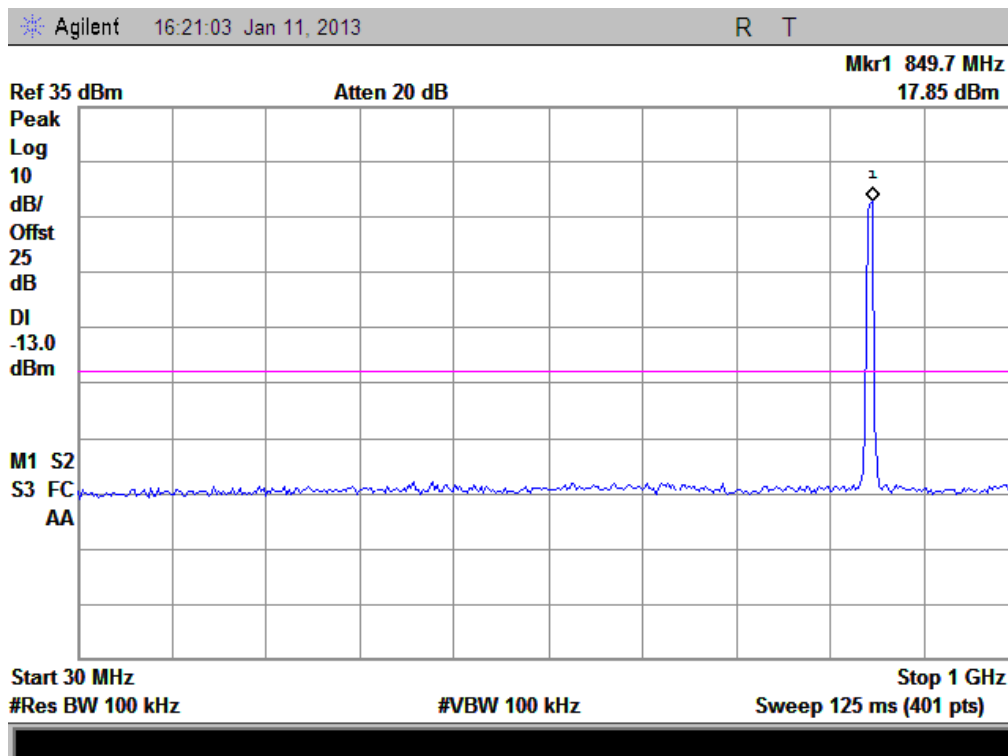


(Plot K 2: HSPA+ 850MHz Channel = 4175, 30MHz to 1GHz)

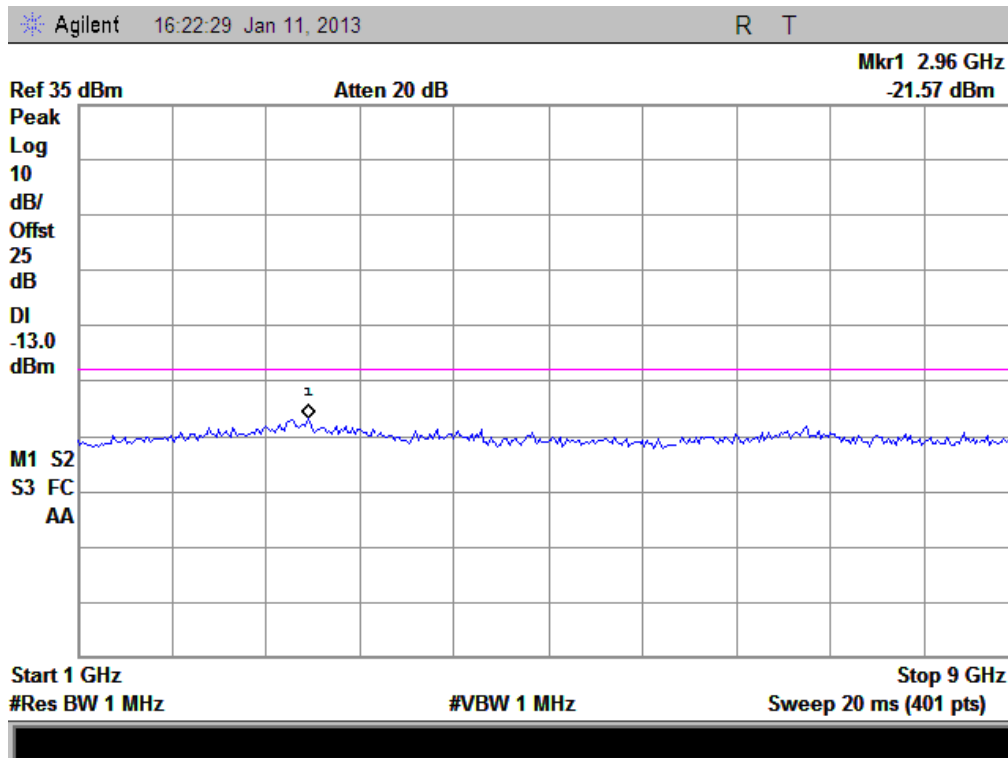




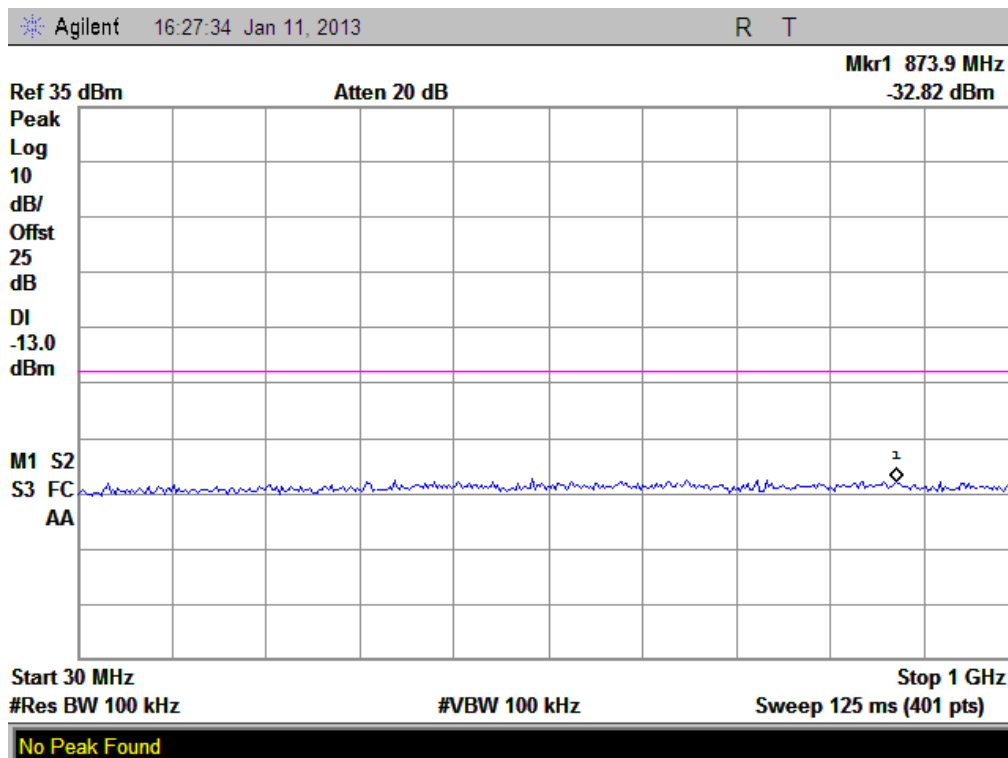
(Plot K2.1: HSPA+ 850MHz Channel = 4175, 1GHz to 9GHz)



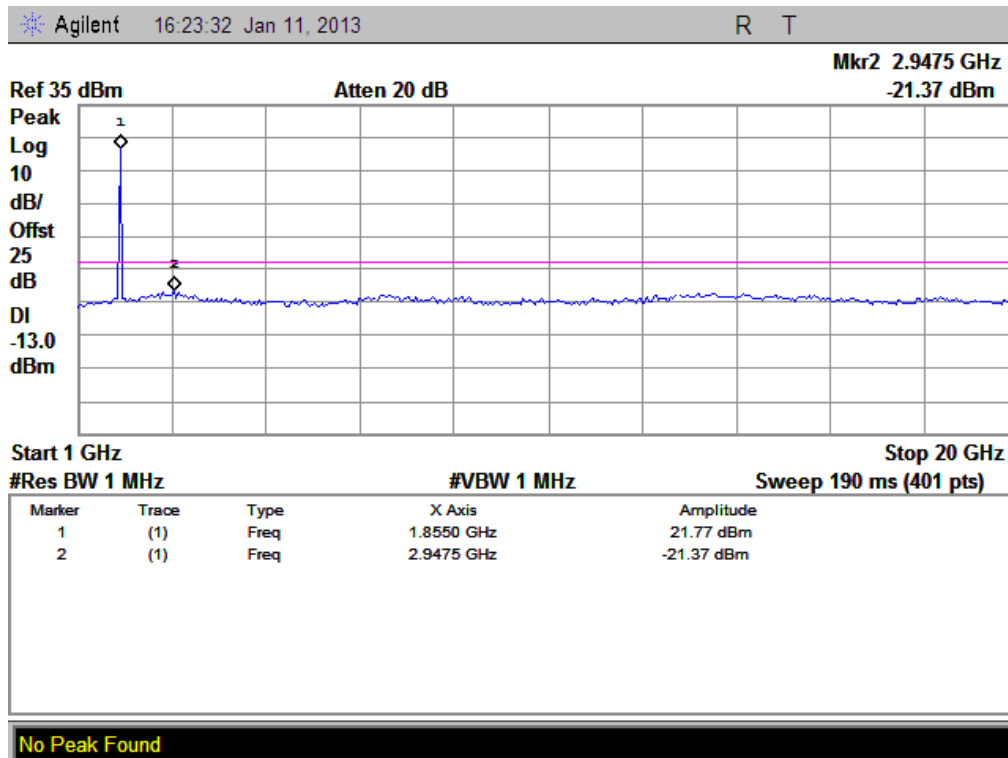
(Plot K 3: HSPA+850MHz Channel = 4233, 30MHz to 1GHz)



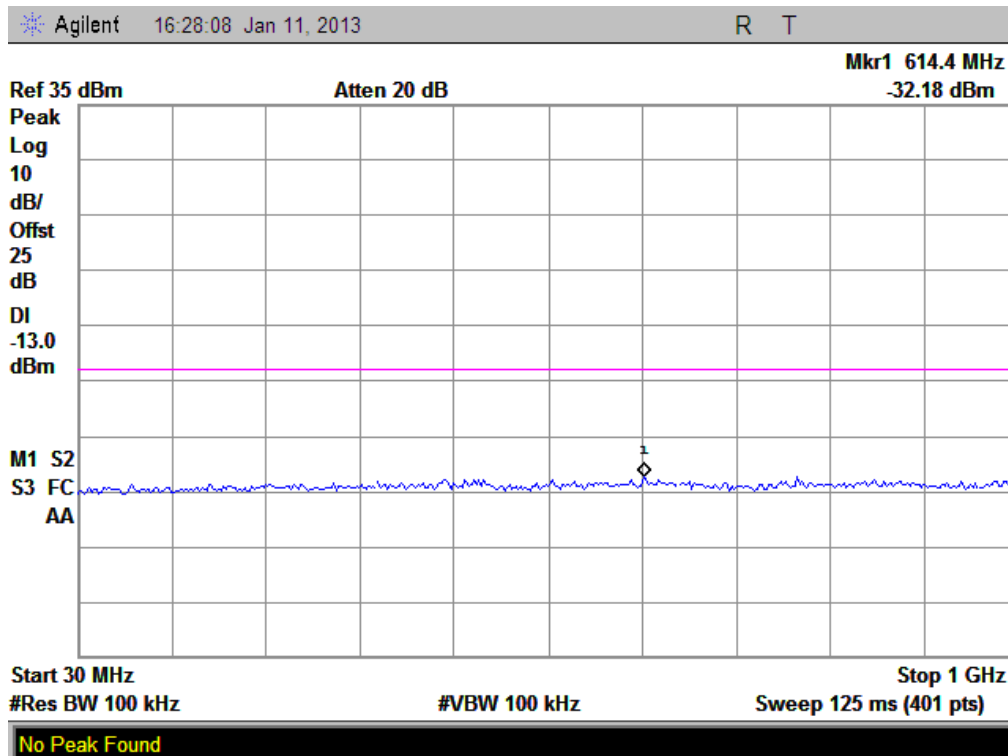
(Plot K3.1: HSPA+850MHz Channel = 4233, 1GHz to 9GHz)



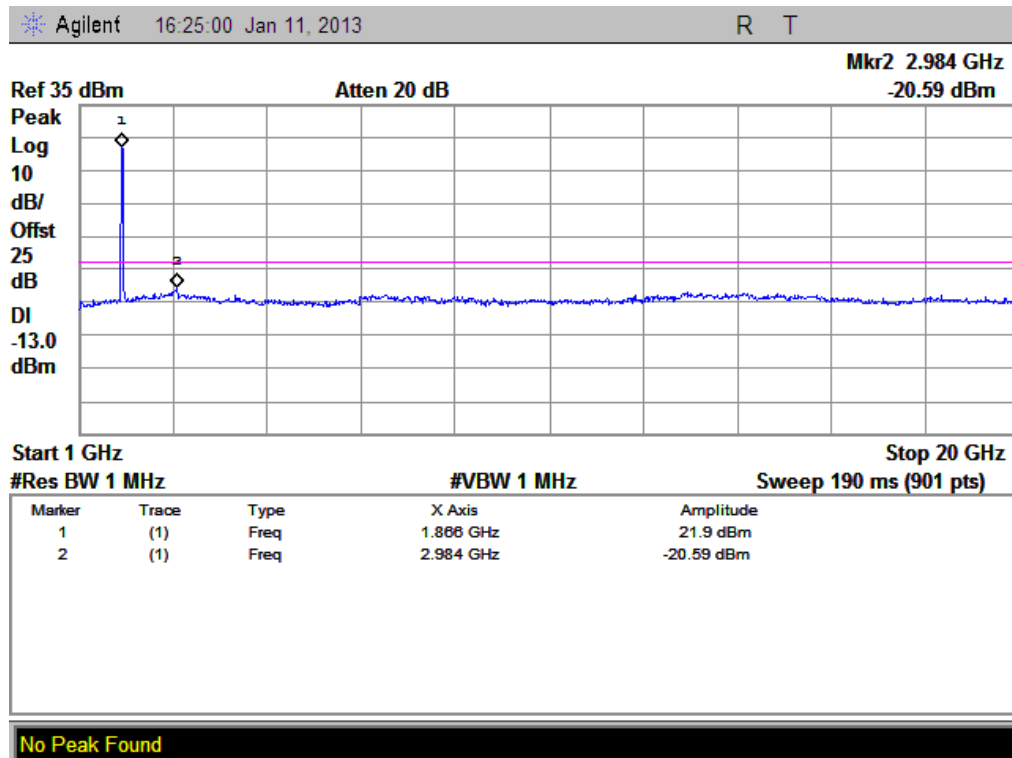
(Plot L 1: HSPA+1900MHz Channel = 9262, 30MHz to 1GHz)



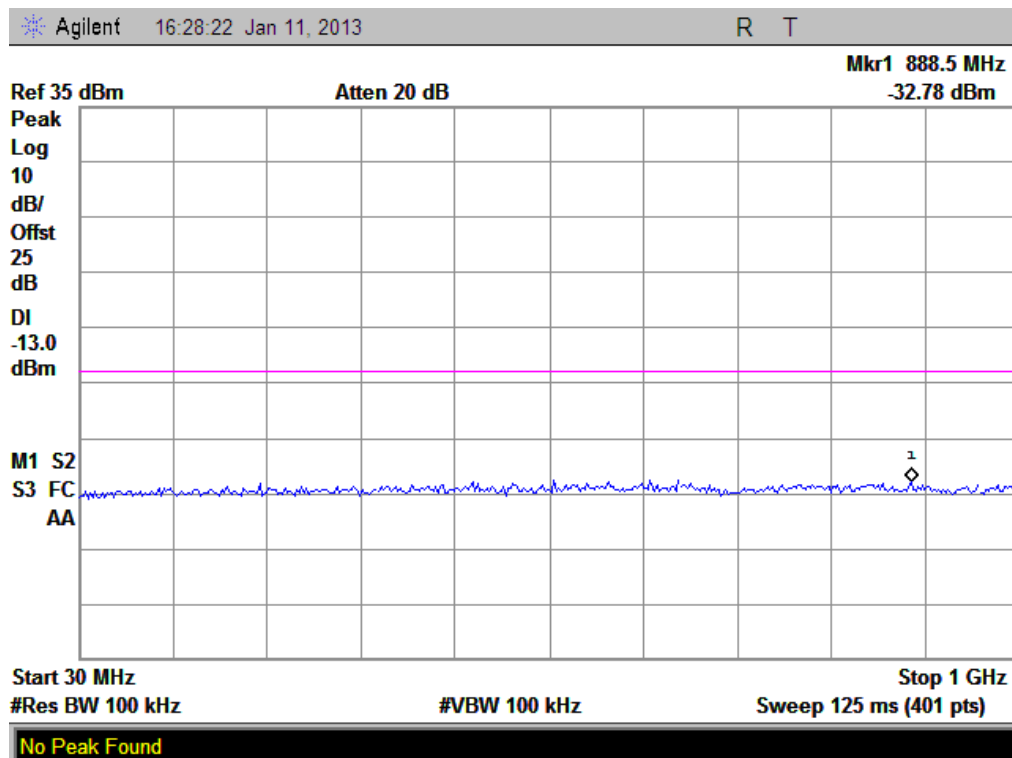
(Plot L1.1: HSPA+1900MHz Channel = 9262, 1GHz to 20GHz)



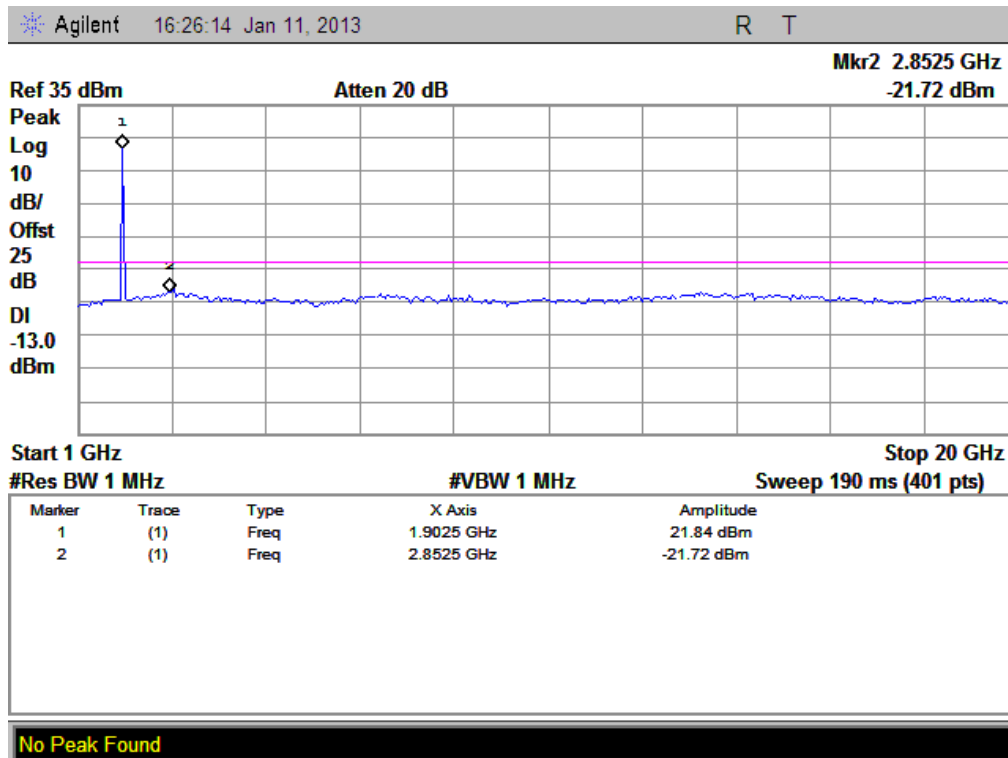
(Plot L 2: HSPA+1900MHz Channel = 9400, 30MHz to 1GHz)



(Plot L2.1: HSPA+1900MHz Channel = 9400, 1GHz to 20GHz)



(Plot L 3: HSPA+1900MHz Channel = 9538, 30MHz to 1GHz)



(Plot L3.1: HSPA+1900MHz Channel = 9538 1GHz to 20GHz)

## 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

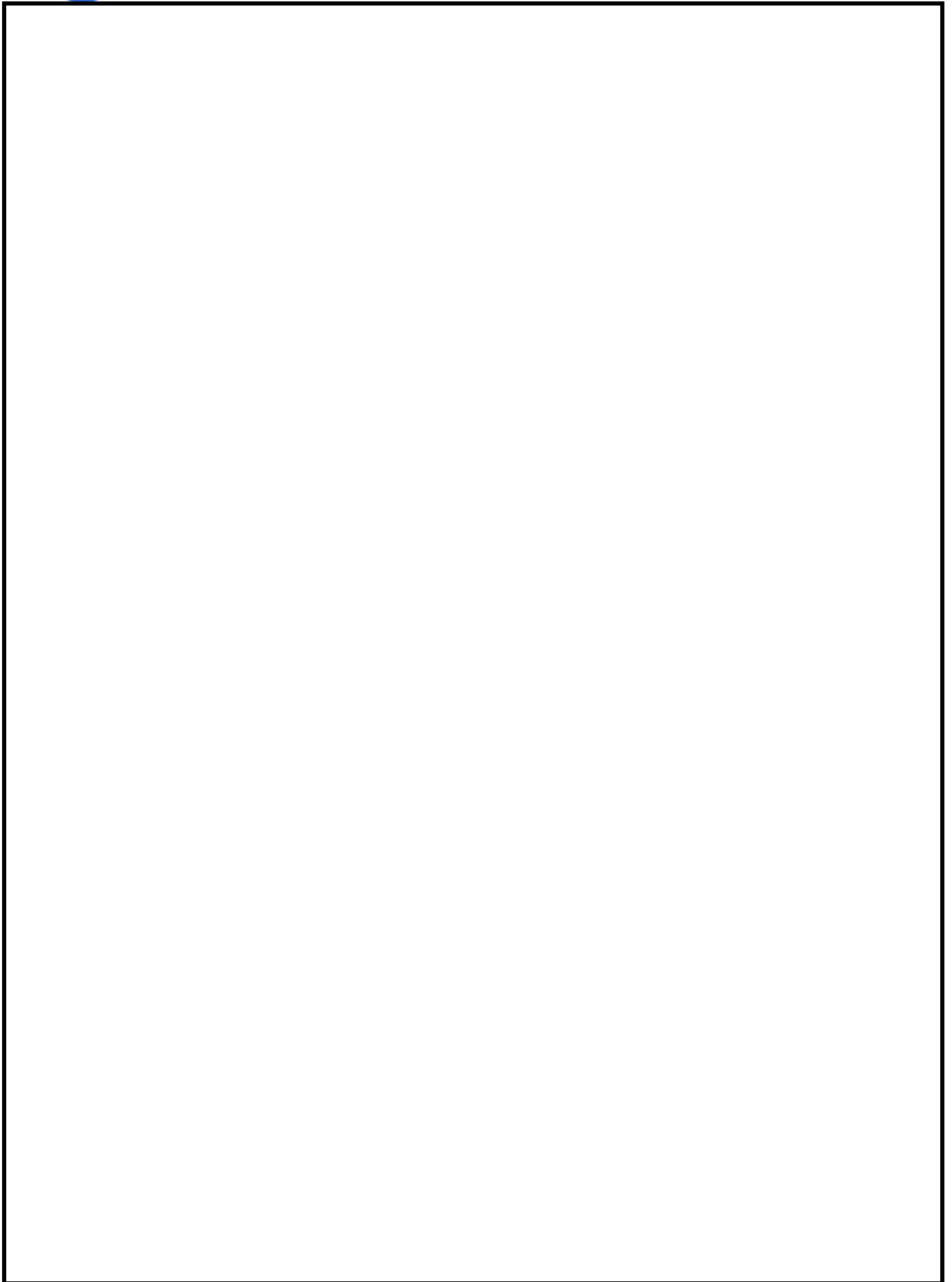
See section 2.1.2 of this report.

### 2.6.3 Test Result

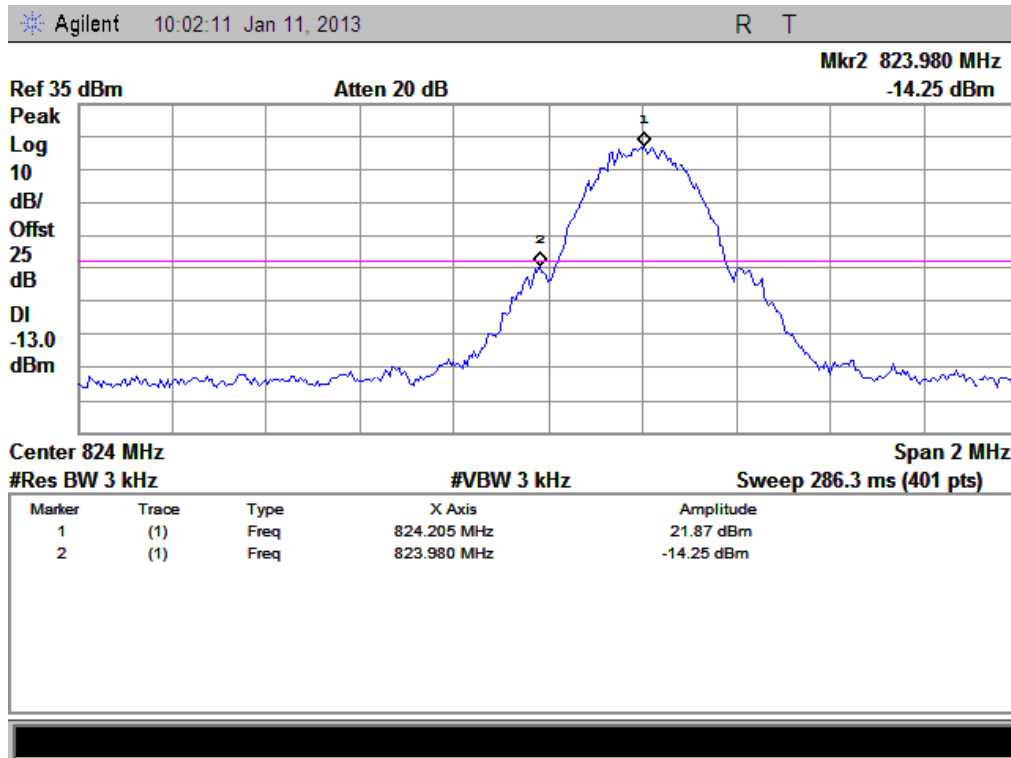
The lowest and highest channels are tested to verify the band edge emissions.

#### 1. Test Verdict:

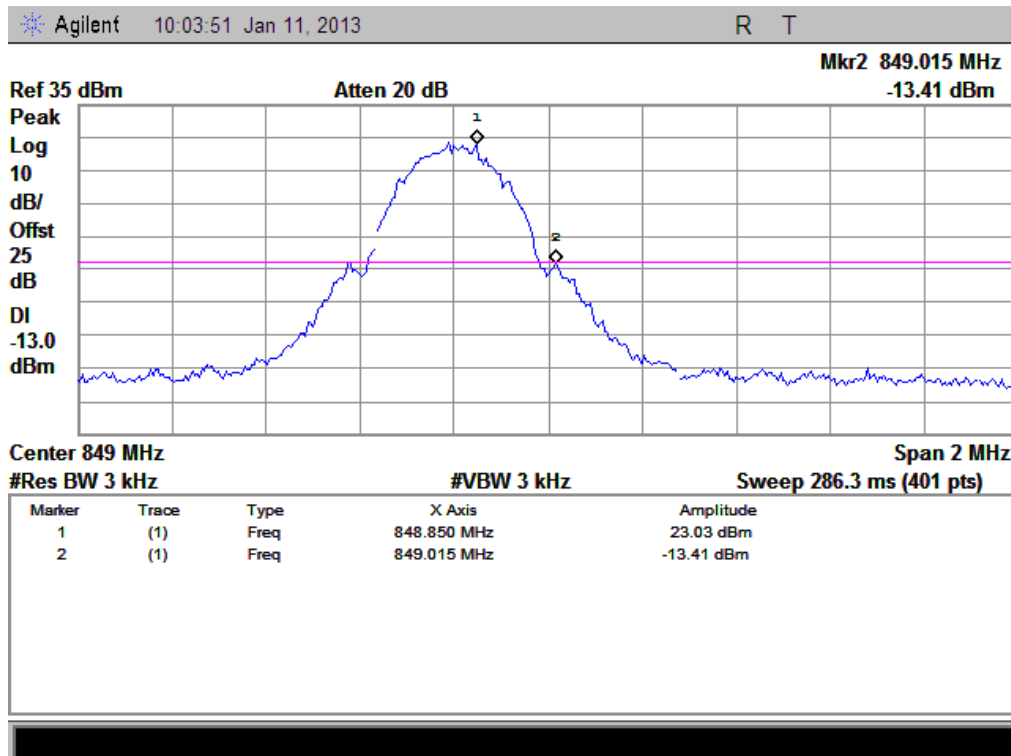
Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GPRS 850MHz	128	824.2	-14.25	Plat A	-13	PASS
	251	848.8	-13.41	Plot B		PASS
GPRS 1900MHz	512	1850.2	-16.63	Plat C	-13	PASS
	810	1909.8	-17.65	Plot D		PASS
EDGE 850MHz	128	824.2	-13.84	Plat E	-13	PASS
	251	848.8	-15.23	Plot F		PASS
EDGE 1900MHz	512	1850.2	-13.6	Plat G	-13	PASS
	810	1909.8	-15.77	Plot H		PASS
WCDMA 850MHz	4132	826.4	-17.94	Plat I	-13	PASS
	4233	846.6	-18.41	Plot J		PASS
WCDMA 1900MHz	9262	1852.4	-16.19	Plat K	-13	PASS
	9538	1907.6	-16.54	Plot L		PASS
HSDPA 850MHz	4132	826.4	-14.02	Plat M	-13	PASS
	4233	846.6	-14.03	Plot N		PASS
HSDPA 1900MHz	9262	1852.4	-15.69	Plat O	-13	PASS
	9538	1907.6	-16.69	Plot P		PASS
HSUPA 850MHz	4132	826.4	-14.2	Plat Q	-13	PASS
	4233	846.6	-13.6	Plot R		PASS



## 2. Test Plots:

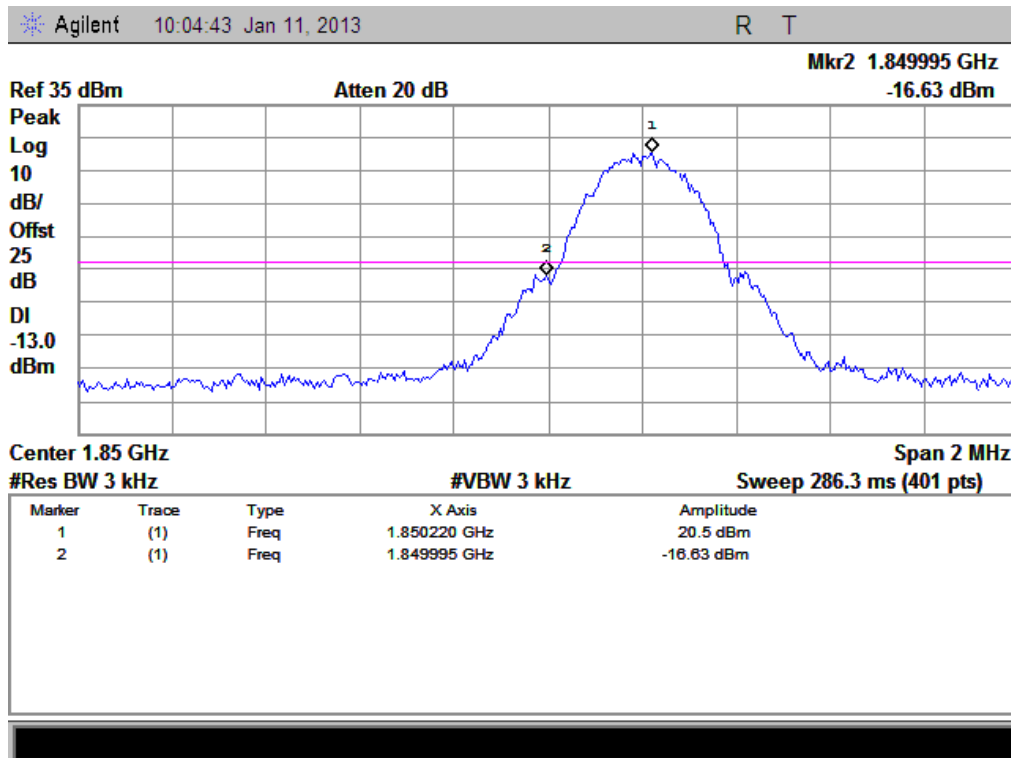


(Plot A: GPRS 850 Channel = 128)

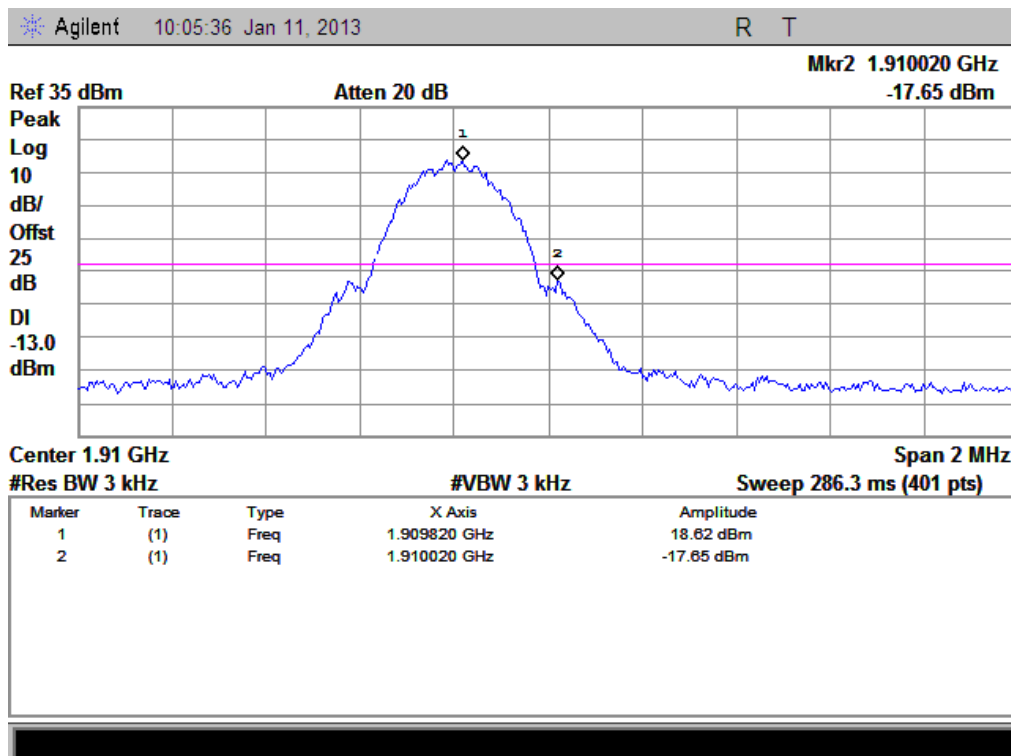


(Plot B: GPRS 850 Channel = 251)

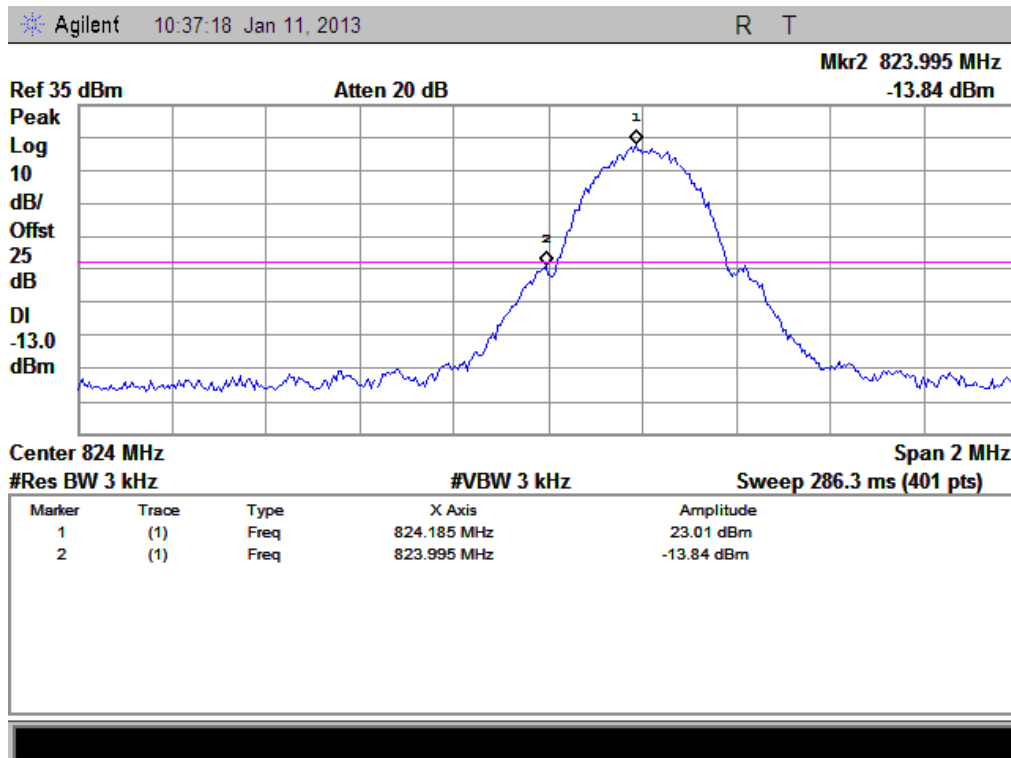




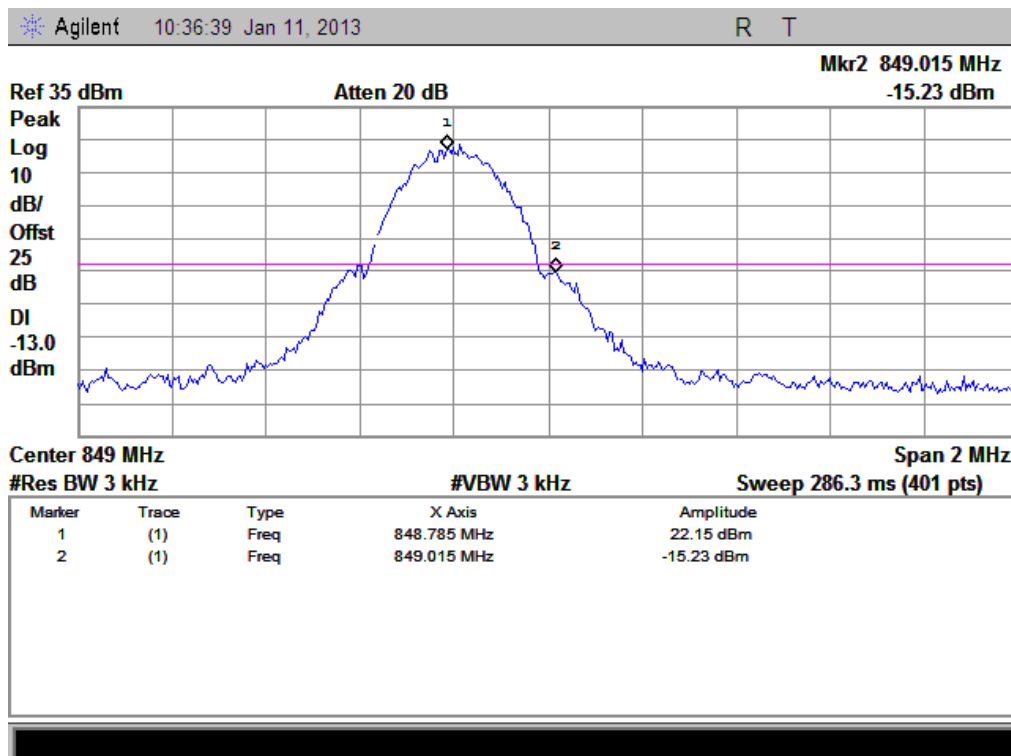
(Plot C: GPRS 1900 Channel = 512)



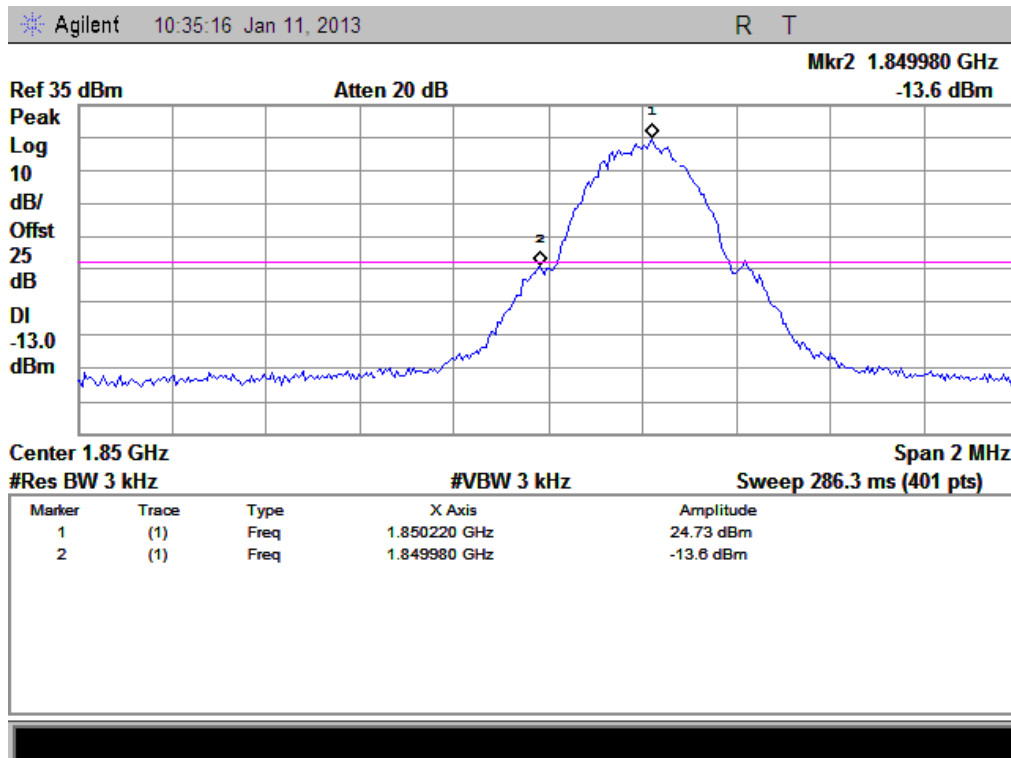
(Plot D: GPRS 1900 Channel = 810)



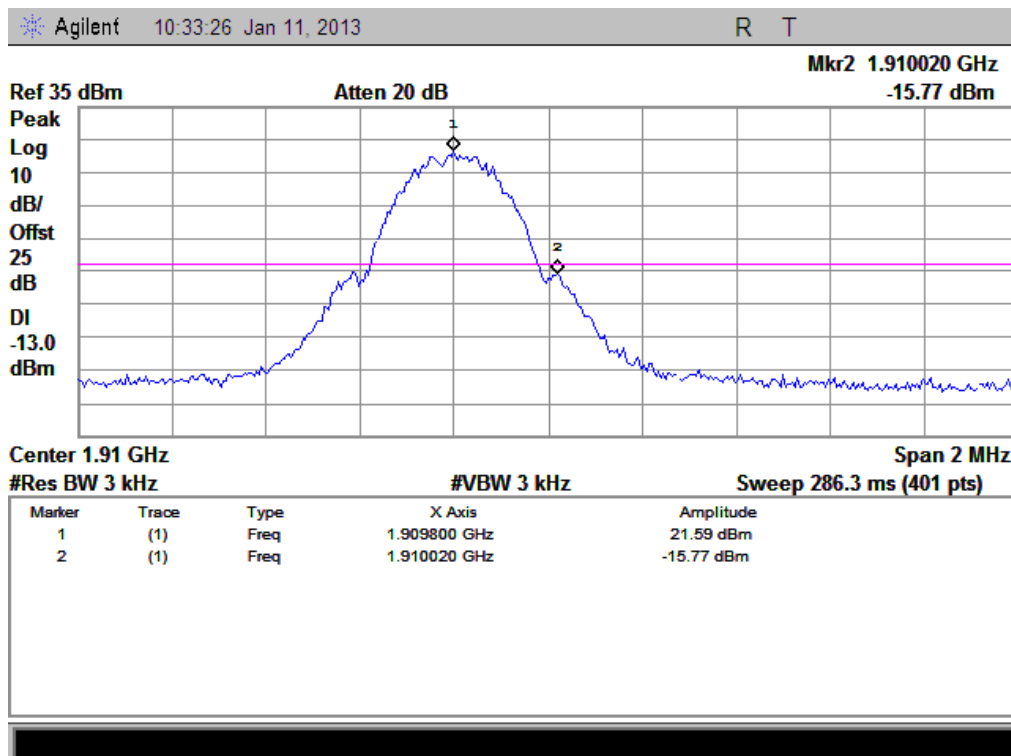
(Plot E: EDGE 850 Channel = 128)



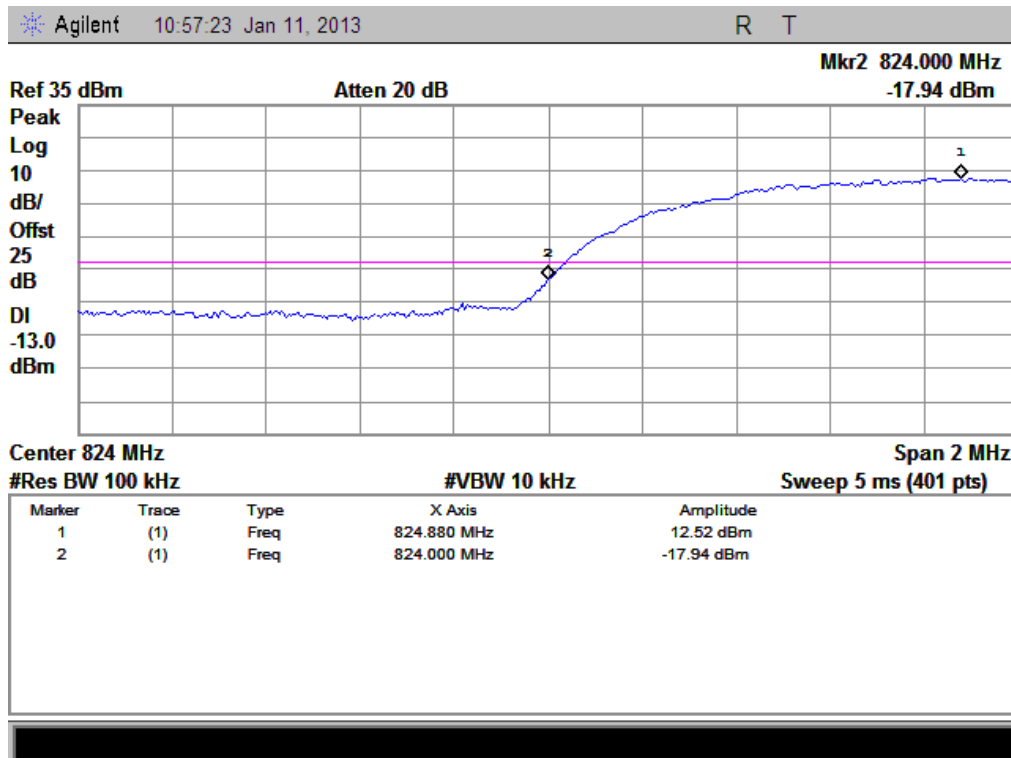
(Plot F: EDGE 850 Channel = 251)



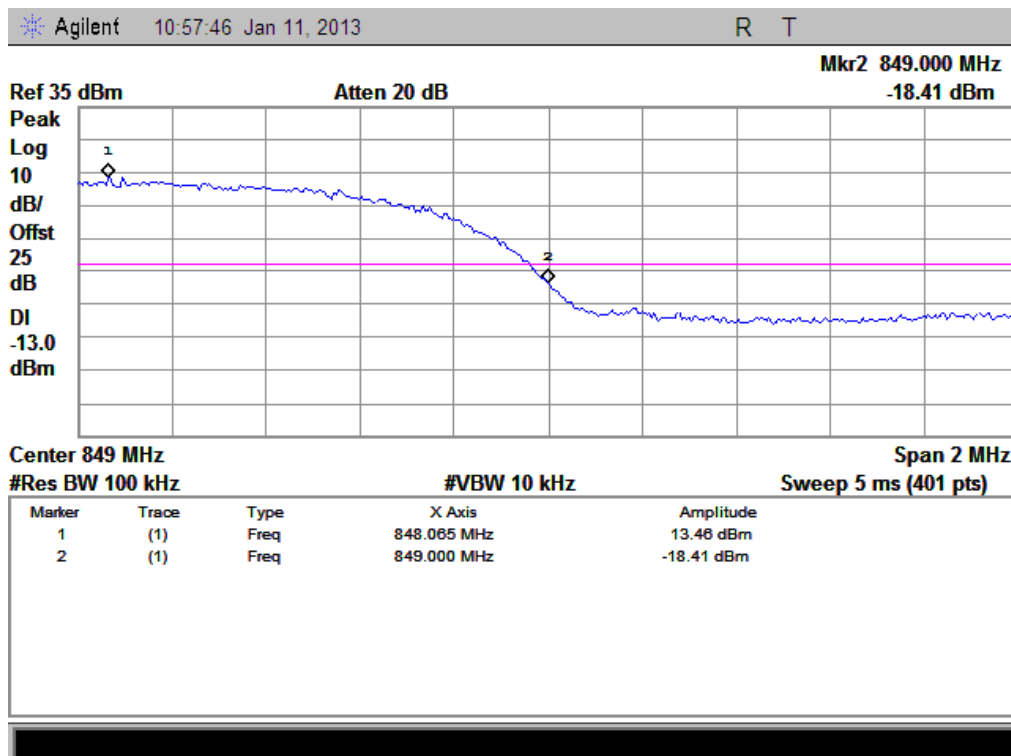
(Plot G: EDGE 1900 Channel = 512)



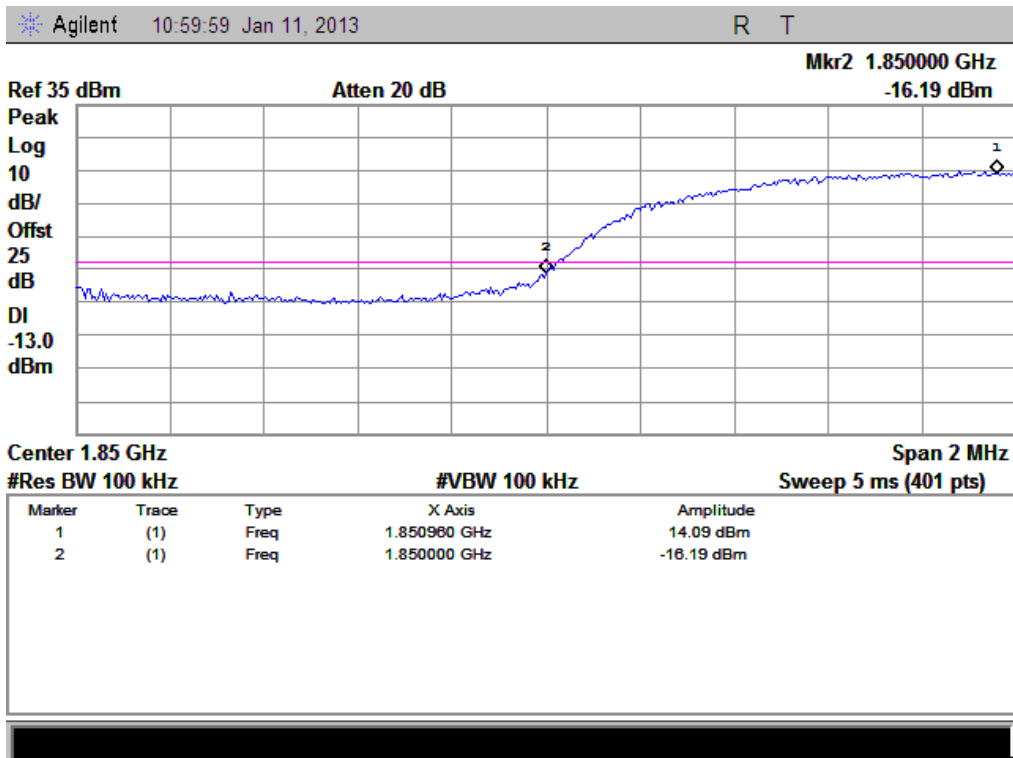
(Plot H: EDGE 1900 Channel = 810)



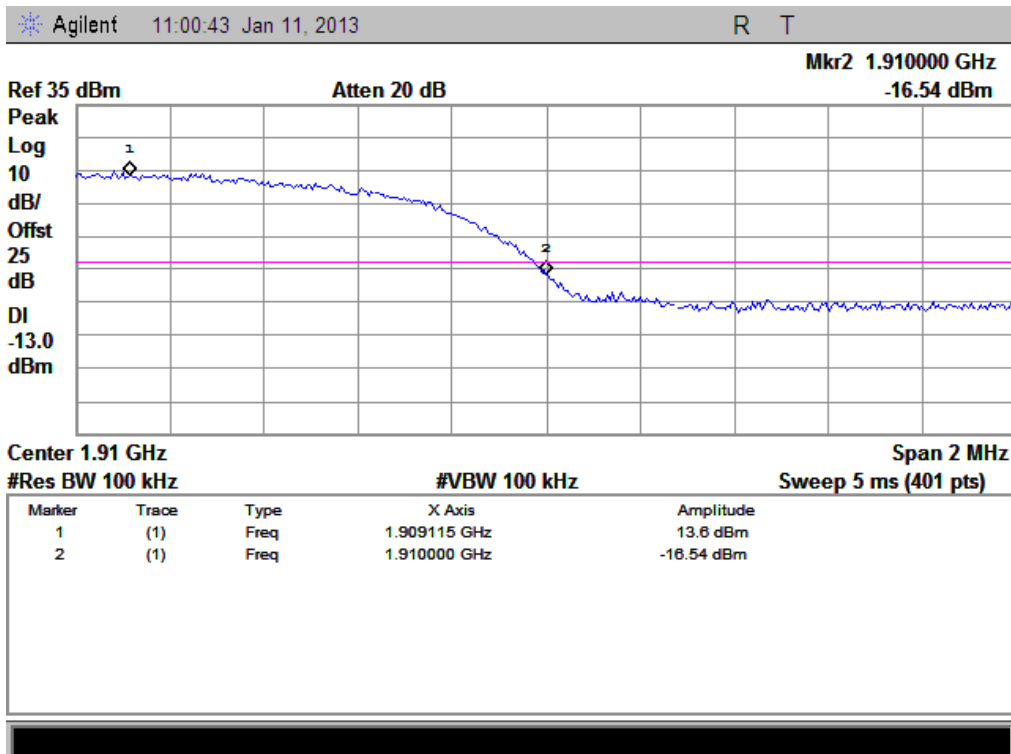
(Plot I: WCDMA 850 Channel = 4132)



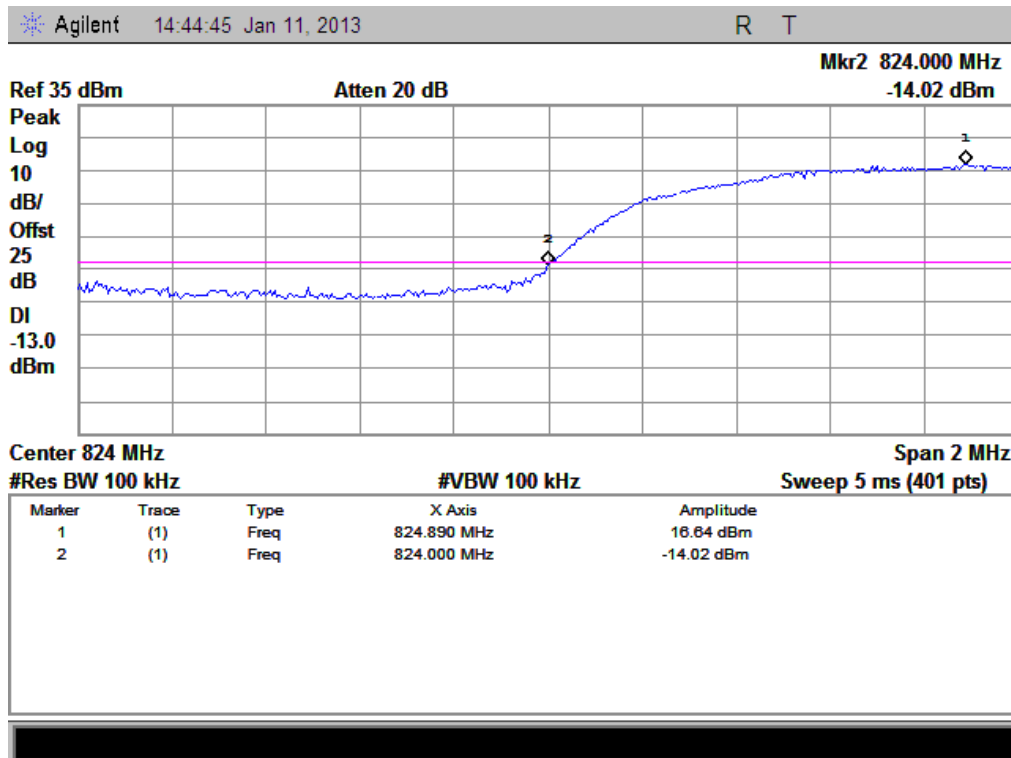
(Plot J: WCDMA 850 Channel = 4233)



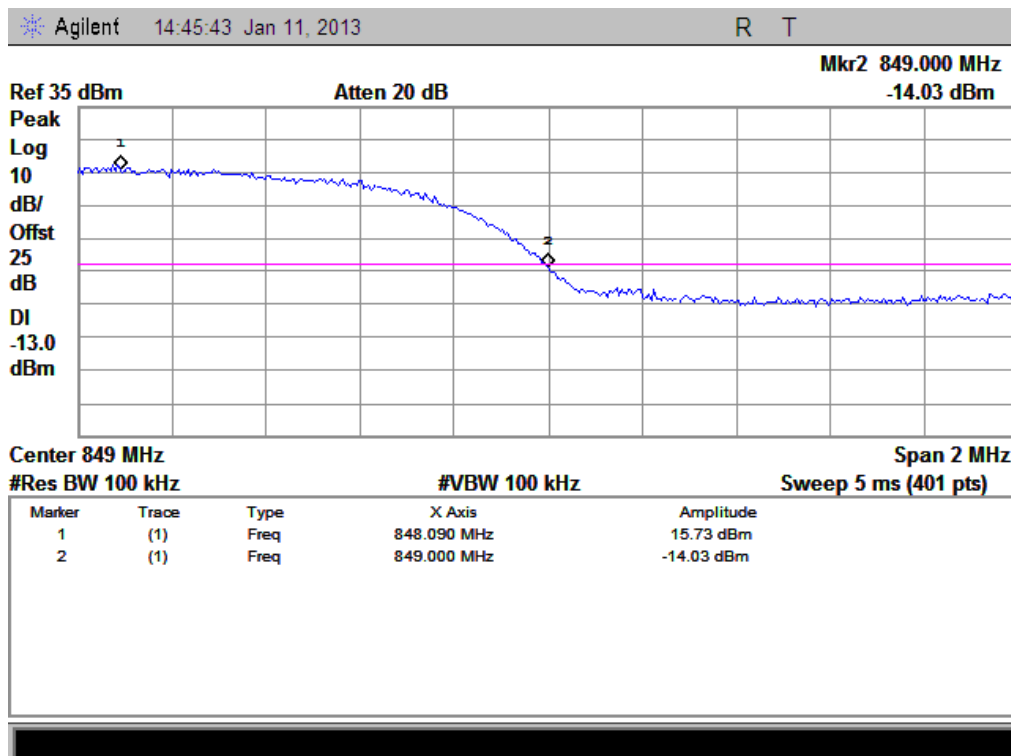
(Plot K: WCDMA 1900 Channel = 9262)



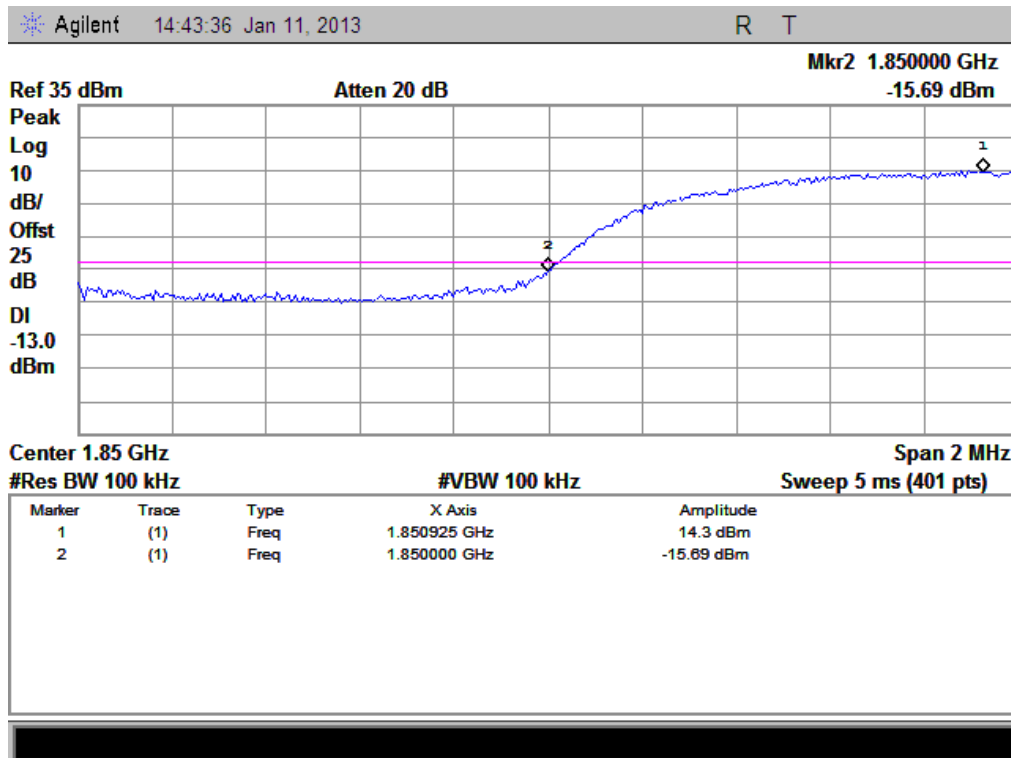
(Plot L: WCDMA 1900 Channel = 9538)



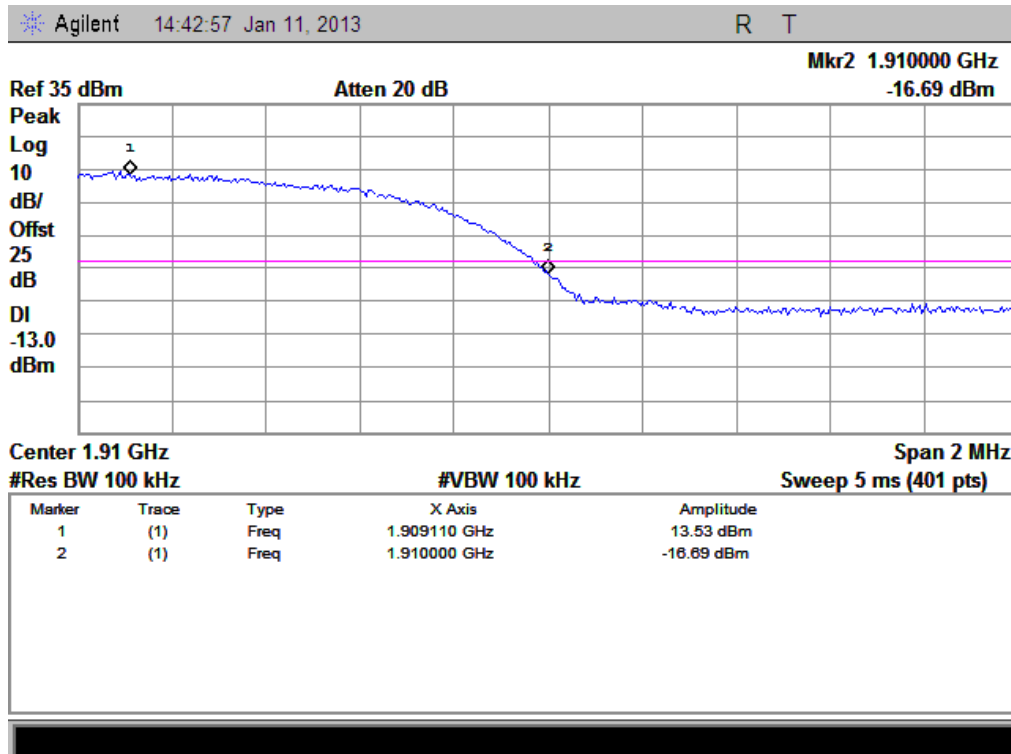
(Plot M: HSDPA 850 Channel = 4132)



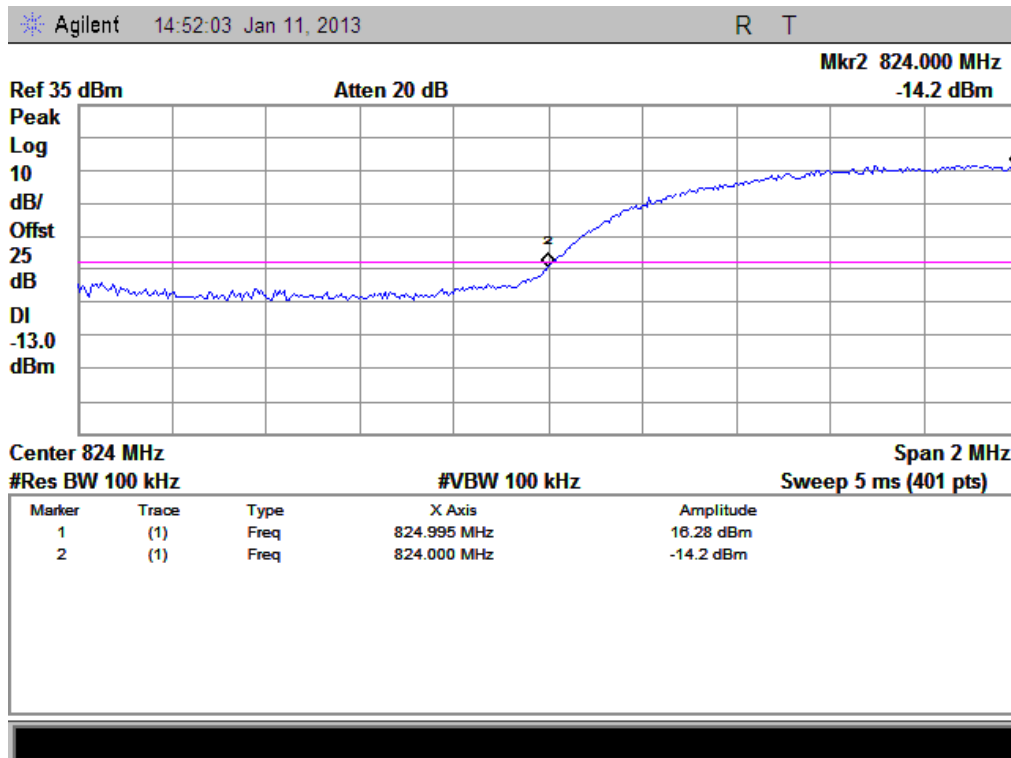
(Plot N: HSDPA850 Channel = 4233)



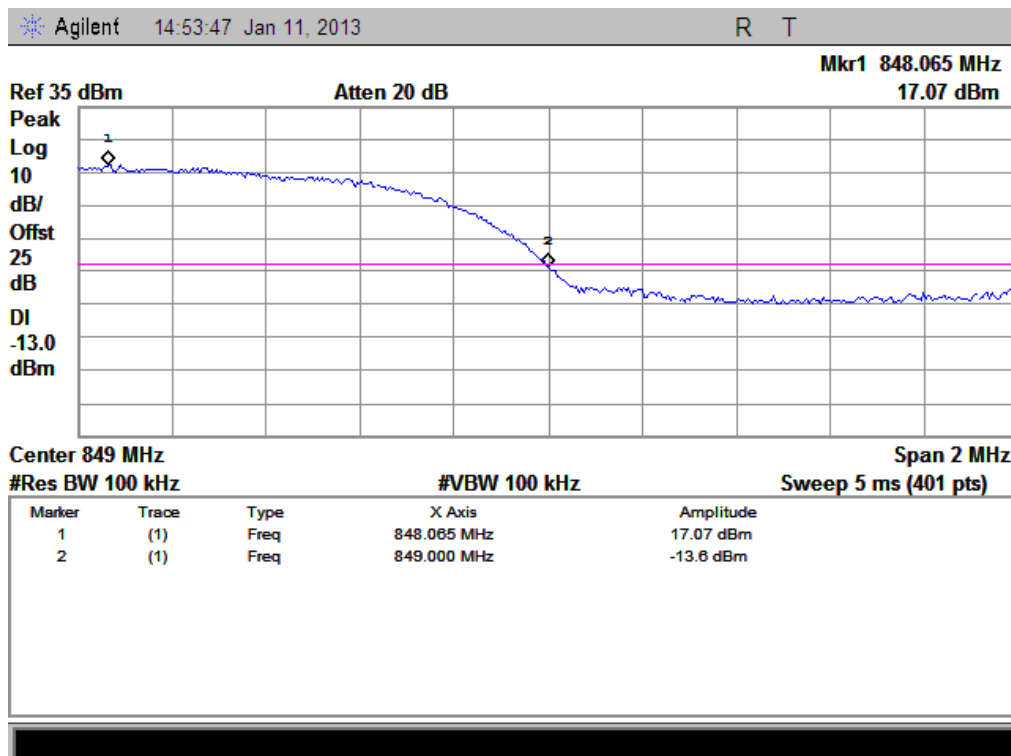
(Plot O: HSDPA 1900 Channel = 9262)



(Plot P: HSDPA 1900 Channel = 9538)

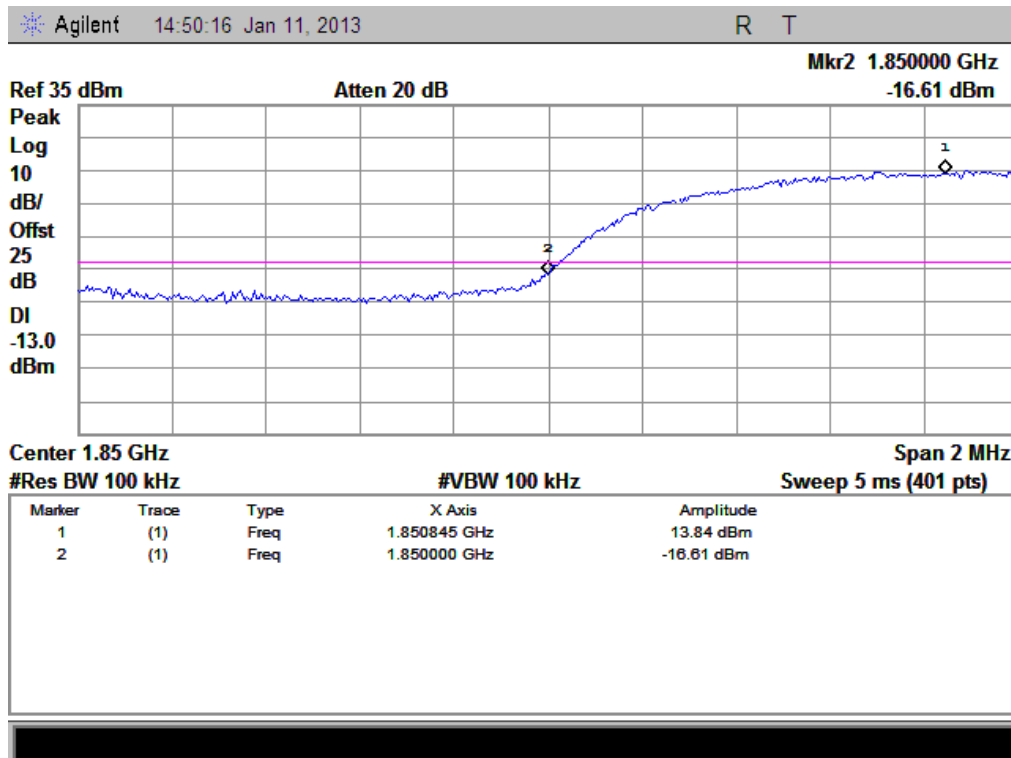


(Plot Q: HSUPA 850 Channel = 4132)

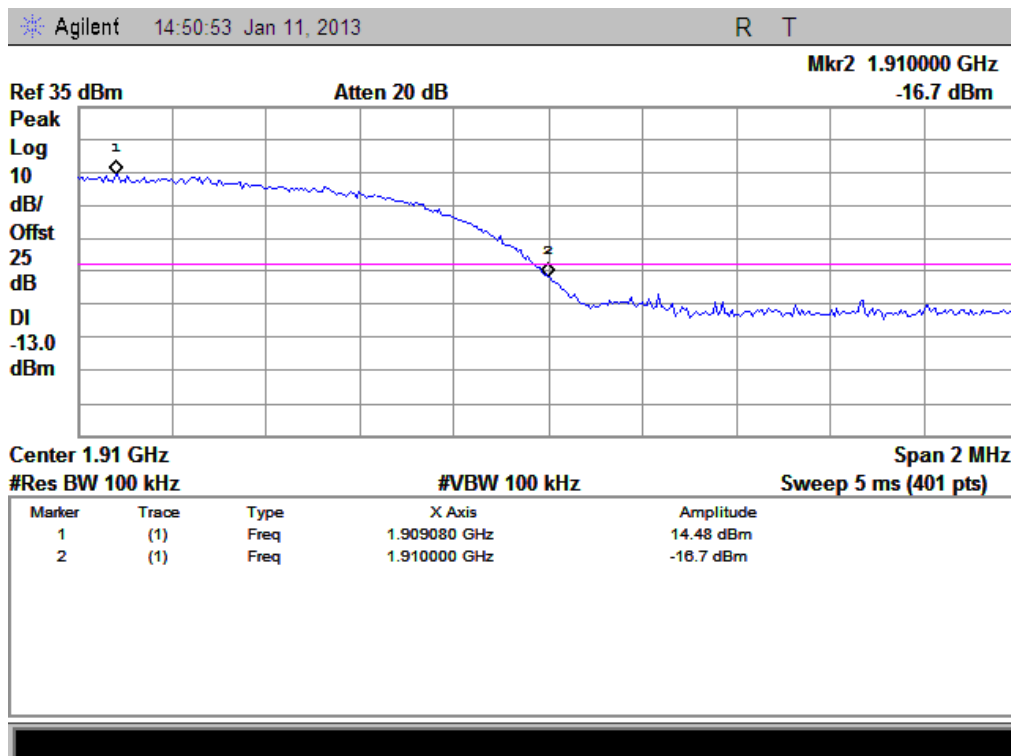


(Plot R: HSUPA850 Channel = 4233)

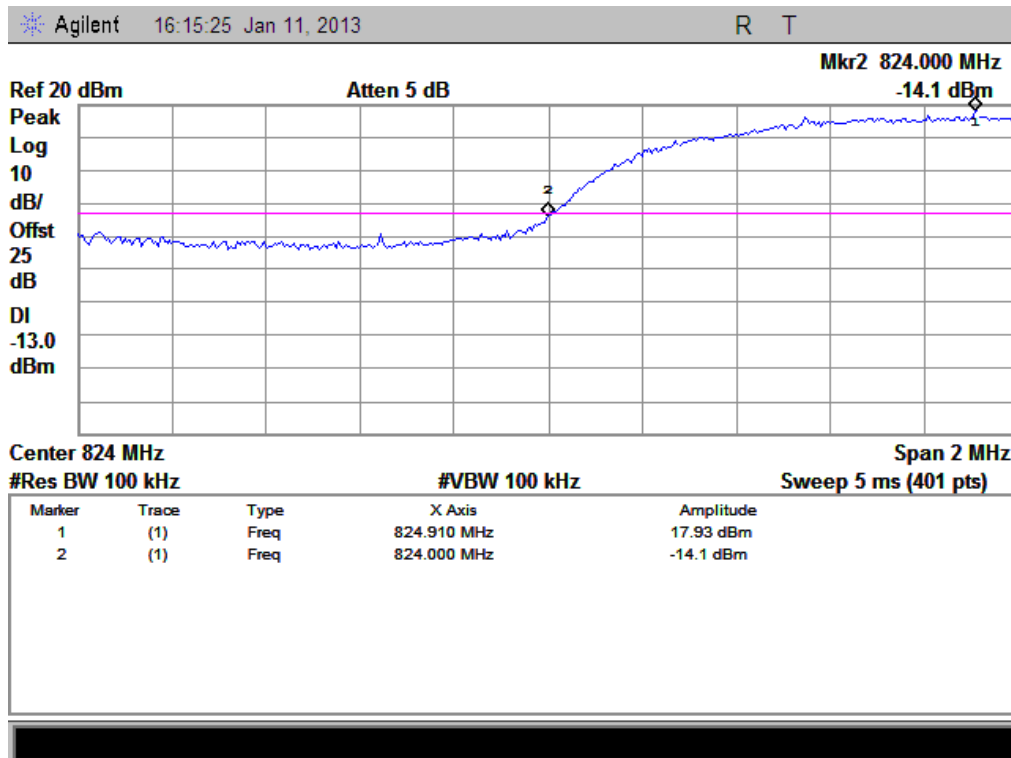




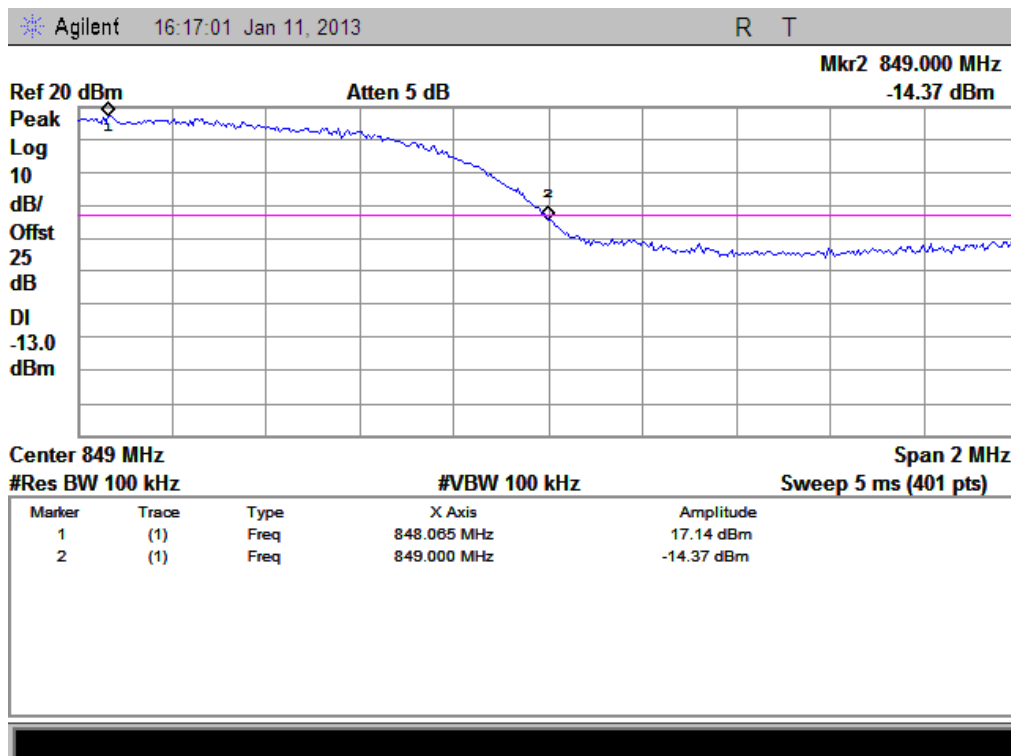
(Plot S: HSUPA 1900 Channel = 9262)



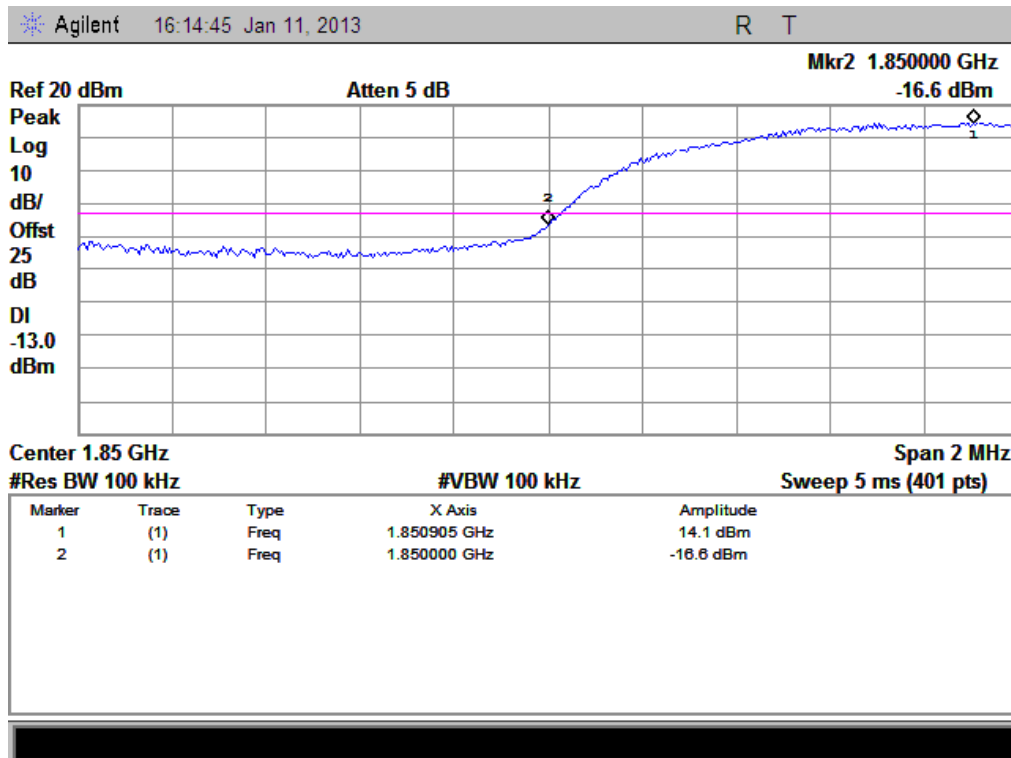
(Plot T: HSUPA 1900 Channel = 9538)



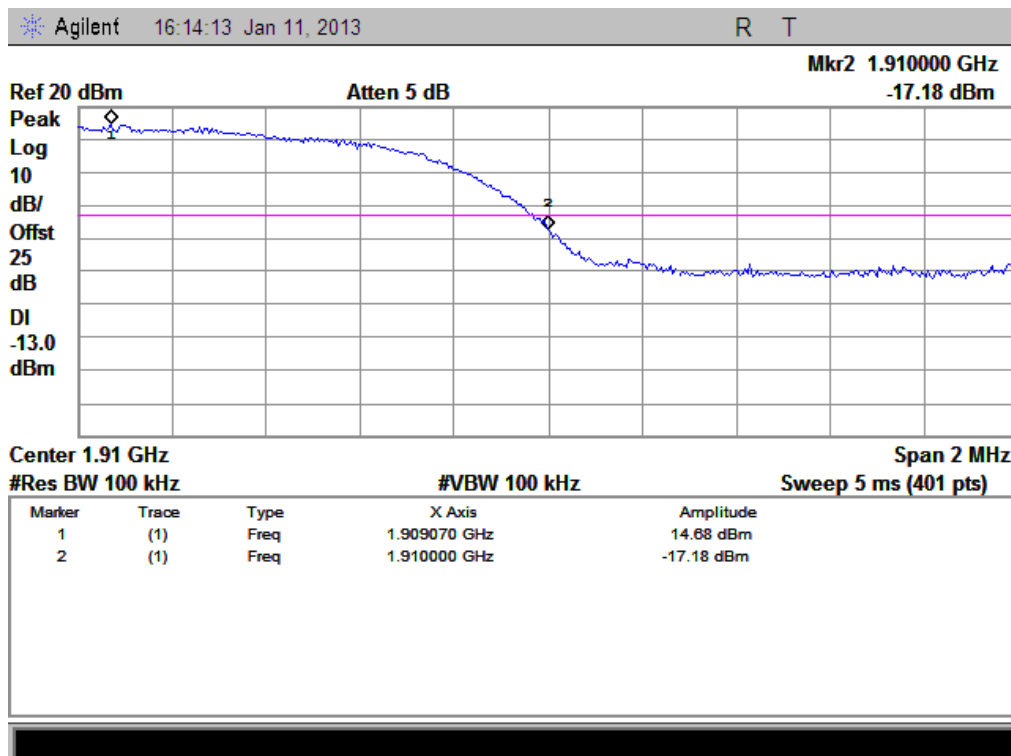
(Plot U: HSPA+ 850 Channel = 4132)



(Plot V: HSPA+850 Channel = 4233)



(Plot W: HSPA+ 1900 Channel = 9262)



(Plot X: HSPA+ 1900 Channel = 9538)

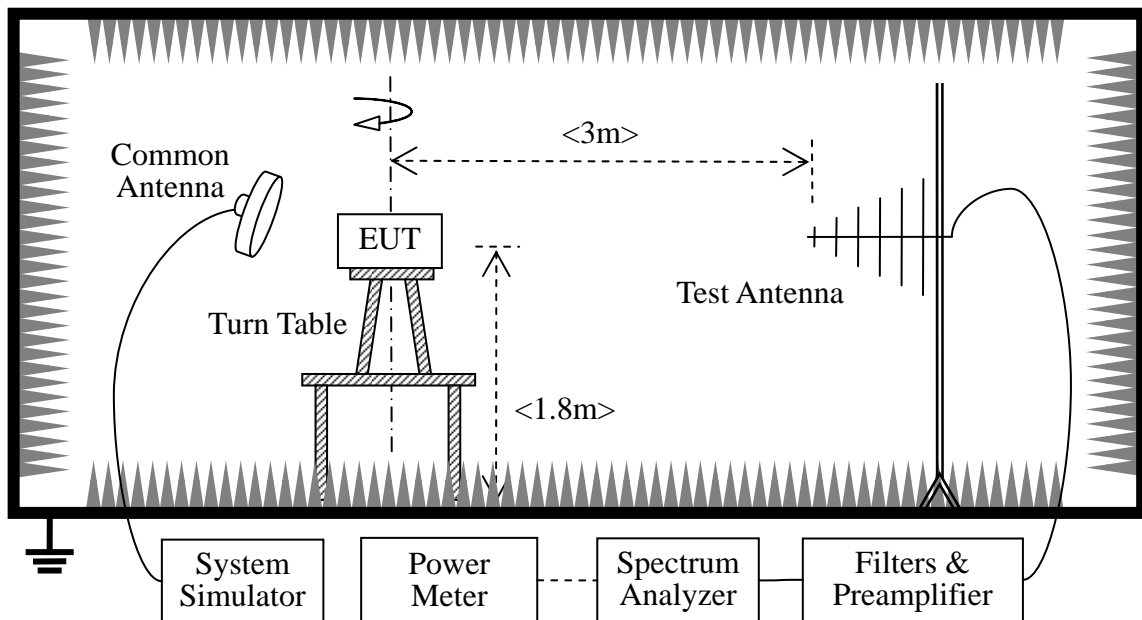
## 2.7 Transmitter Radiated Power (EIRP/ERP)

### 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: GSM850 33.27dBm, GSM 1900 29.72dBm, WCDMA 850 22.2, WCDMA 1900 21.98, Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

- Minimum RF power: GSM850 3.1dBm, GSM 1900 0.3dBm, WCDMA 850 2.09dBm, 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	2012.05	2013.05
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05	2013.05
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05	2013.05
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2012.05	2013.05
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2012.05	2013.05

### 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	
GPRS 850MHz	128	824.20	5	31.33	1.358	Plot A	38.5	7	PASS
	190	836.60	5	32.74	1.879				PASS
	251	848.80	5	33.2	2.089				PASS
EGPRS 850MHz	128	824.20	5	28.98	0.791	Plot B <sup>Note 1</sup>	38.5	7	PASS
	190	836.60	5	29.3	0.851				PASS
	251	848.80	5	29.22	0.836				PASS

Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GPRS 1900MHz	512	1850.2	0	28.5	0.708	Plot C <sup>Note 1</sup>	33	2	PASS
	661	1880.0	0	29.18	0.828				PASS
	810	1909.8	0	29.21	0.834				PASS
EGPRS 1900MHz	512	1850.2	0	29	0.794	Plot D <sup>Note 1</sup>	33	2	PASS
	661	1880.0	0	29.12	0.817				PASS
	810	1909.8	0	28.1	0.646				PASS

Note 1: For the GPRS and EGPRS mode, all the slots were tested and just the worst data was record in this report

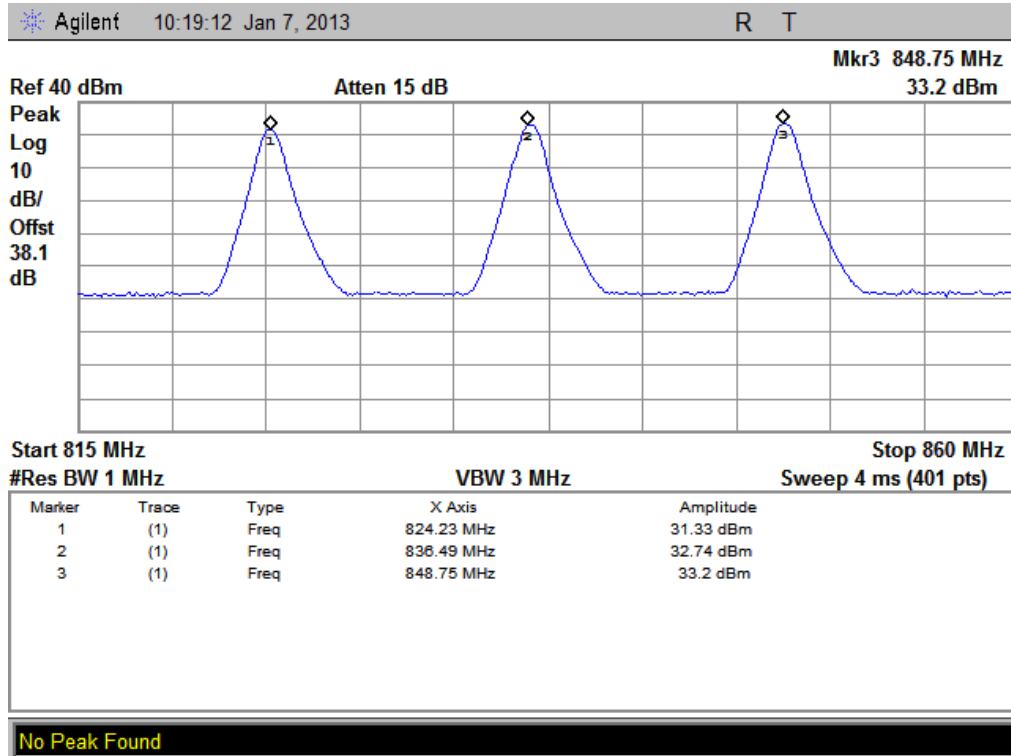
## 2. WCDMA Model Test Verdict:

Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA 850MHz	4132	826.4	21.36	0.137	38.5	7	PASS
	4175	835	21.17	0.131			PASS
	4233	846.6	21.19	0.132			PASS
HSDPA 850MHz	4132	826.4	21.32	0.136	38.5	7	PASS
	4175	835	21.15	0.130			PASS
	4233	846.6	21.17	0.131			PASS
HSUPA 850MHz	4132	826.4	21.32	0.136	38.5	7	PASS
	4175	835	21.11	0.129			PASS
	4233	846.6	21.13	0.130			PASS
HSPA+ 850MHz	4132	826.4	21.31	0.135	38.5	7	PASS
	4175	835	21.15	0.130			PASS
	4233	846.6	21.19	0.132			PASS

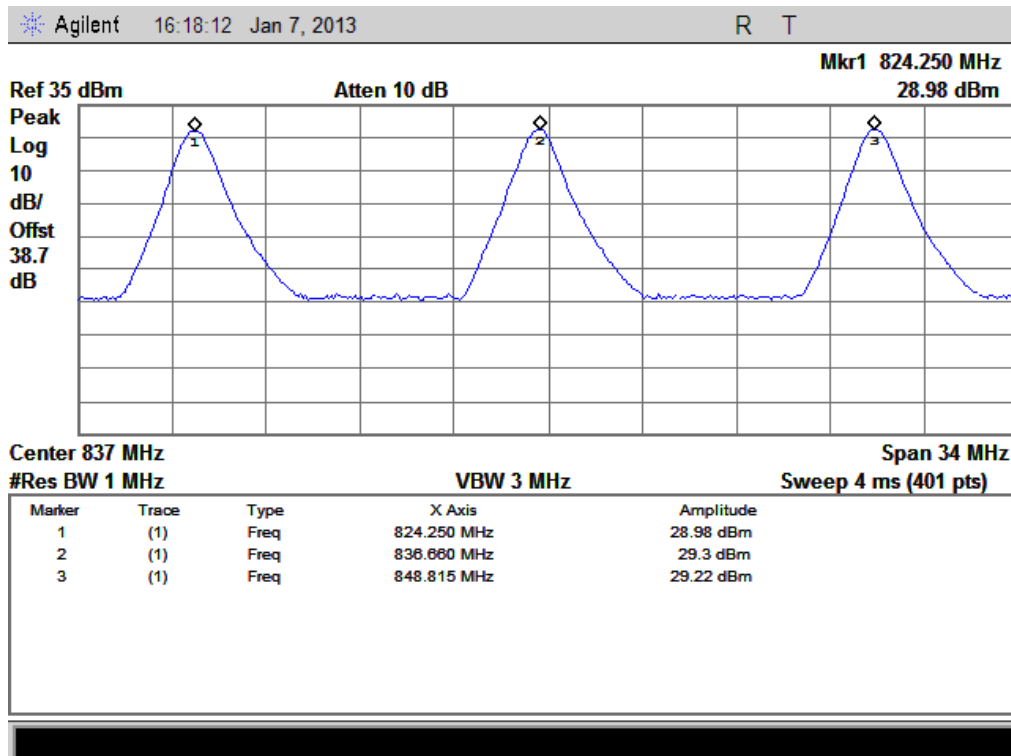
Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA 1900MHz	9262	1852.4	21.51	0.142	33	2	PASS
	9400	1880	21.79	0.151			PASS
	9538	1907.6	22.43	0.175			PASS
HSDPA 1900MHz	9262	1852.4	21.51	0.142	33	2	PASS
	9400	1880	21.77	0.150			PASS
	9538	1907.6	22.39	0.173			PASS
HSUPA 1900MHz	9262	1852.4	21.49	0.141	33	2	PASS
	9400	1880	21.69	0.148			PASS
	9538	1907.6	22.32	0.171			PASS
HSPA+ 1900MHz	9262	1852.4	21.45	0.140	33	2	PASS
	9400	1880	21.57	0.144			PASS
	9538	1907.6	22.32	0.171			PASS

Note2: For the WCDMA and HSDPA test band, the measured output power was calculated by the reading of the Power Meter.

## 3. Test Plots:

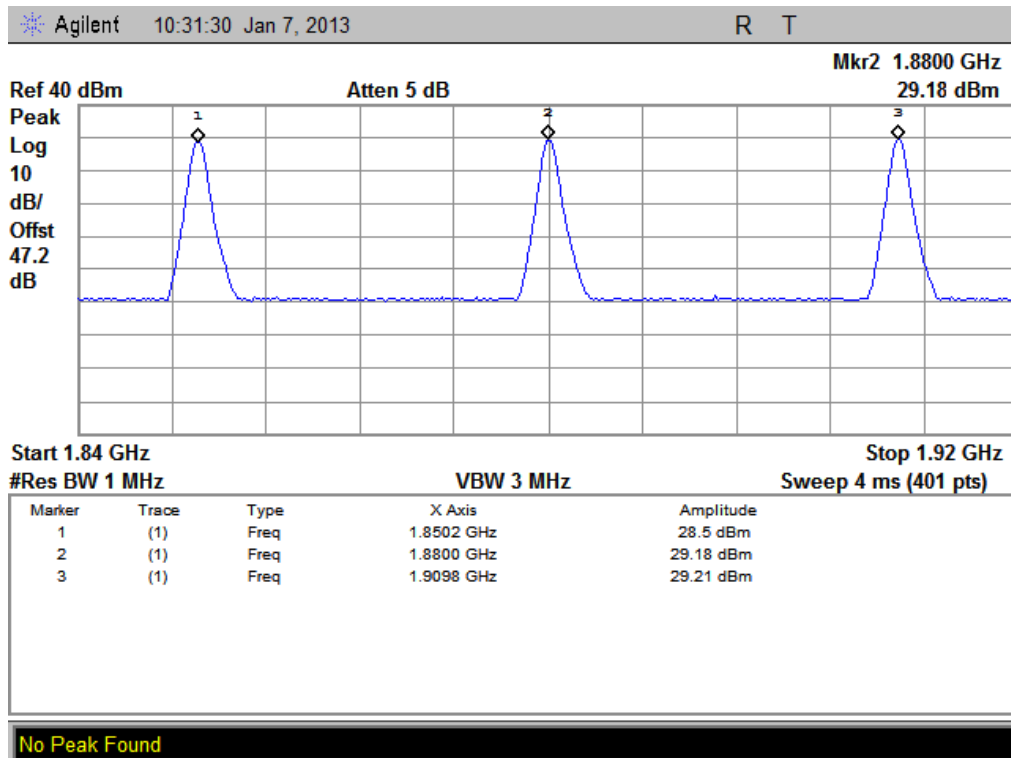


(Plot A: GPRS 850MHz Channel = 128, 190, 251)

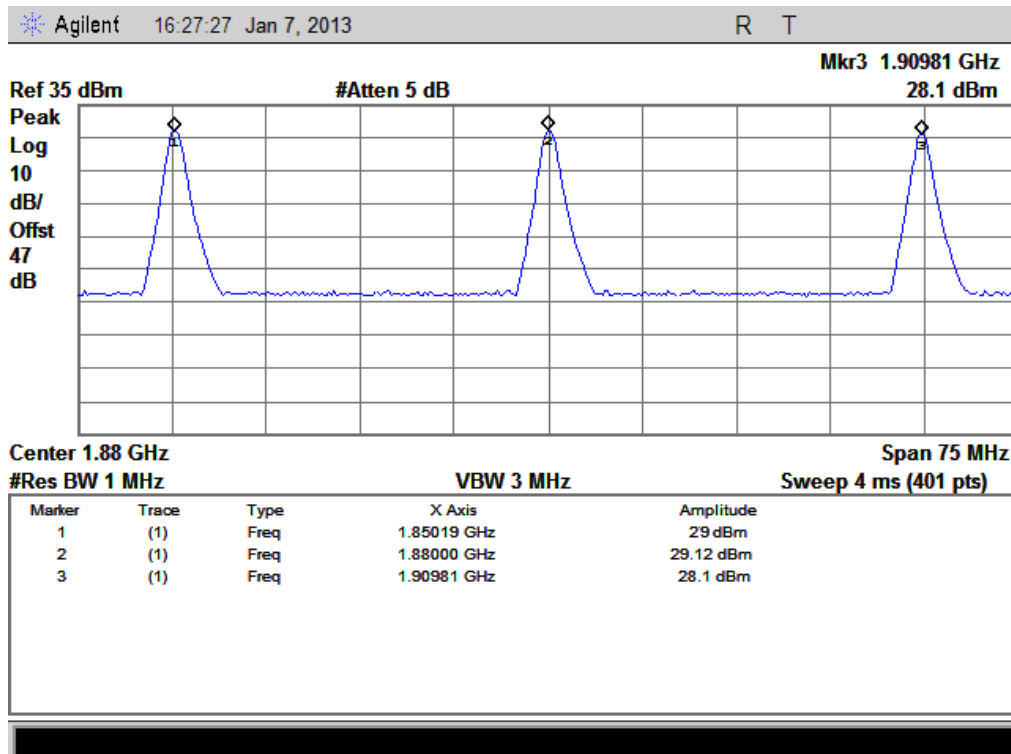


(Plot B: EGPRS 850MHz Channel = 128, 190, 251)





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



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

## 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.

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:

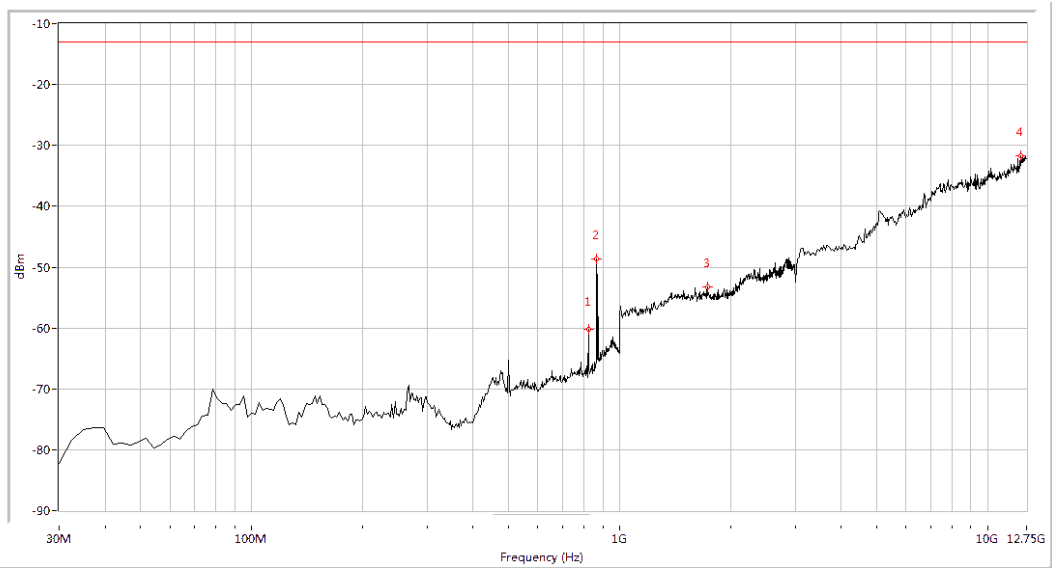
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
GPRS 850MHz	128	824.2	< -25	< -25	Plot A.1/A.2	-13	PASS
	190	836.6	< -25	< -25	Plot A.3/A.4		PASS
	251	848.8	< -25	< -25	Plot A.5/A.6		PASS
GPRS 1900MHz	512	1850.2	< -25	< -25	Plot B.1/B.2	-13	PASS
	661	1880.0	-20.8	< -25	Plot B.3/B.4		PASS
	810	1909.8	< -25	< -25	Plot B.5/B.6		PASS
EDGE 850MHz	128	824.2	< -25	< -25	Plot C.1/C.2	-13	PASS
	190	836.6	< -25	< -25	Plot C.3/C.4		PASS
	251	848.8	< -25	< -25	Plot C.5/C.6		PASS
EDGE 1900MHz	512	1850.2	< -25	< -25	Plot D.1/D.2	-13	PASS
	661	1880.0	< -25	< -25	Plot D.3/D.4		PASS
	810	1909.8	< -25	< -25	Plot D.5/D.6		PASS

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
WCDMA 850MHz	4132	826.4	< -25	< -25	Plot E.1/E.2	-13	PASS
	4175	835	< -25	< -25	Plot E.3/E.4		PASS
	4233	846.6	< -25	< -25	Plot E.5/E.6		PASS
WCDMA 1900MHz	9262	1852.4	< -25	< -25	Plot F.1/F.2	-13	PASS
	9400	1880	< -25	< -25	Plot F.3/F.4		PASS
	9538	1907.6	< -25	< -25	Plot F.5/F.6		PASS
HSDPA 850MHz	4132	826.4	< -25	< -25	Plot G.1/G.2	-13	PASS
	4175	835	< -25	< -25	Plot G.3/G.4		PASS
	4233	846.6	< -25	< -25	Plot G.5/G.6		PASS
HSDPA 1900MHz	9262	1852.4	< -25	< -25	Plot H.1/H.2	-13	PASS
	9400	1880	< -25	< -25	Plot H.3/H.4		PASS
	9538	1907.6	< -25	< -25	Plot H.5/H.6		PASS
HSUPA 850MHz	4132	826.4	< -25	< -25	Plot I.1/I.2	-13	PASS
	4175	835	< -25	< -25	Plot I.3/I.4		PASS
	4233	846.6	< -25	< -25	Plot I.5/I.6		PASS
HSUPA 1900MHz	9262	1852.4	< -25	< -25	Plot J.1/J.2	-13	PASS
	9400	1880	< -25	< -25	Plot J.3/J.4		PASS
	9538	1907.6	< -25	< -25	Plot J.5/J.6		PASS
HSPA+ 850MHz	4357	826.4	< -25	< -25	Plot K.1/K.2	-13	PASS
	4400	835	< -25	< -25	Plot K.3/K.4		PASS
	4458	846.6	< -25	< -25	Plot K.5/K.6		PASS
HSPA+ 1900MHz	9662	1852.4	< -25	< -25	Plot L.1/L.2	-13	PASS
	9800	1880	< -25	< -25	Plot L.3/L.4		PASS
	9938	1907.6	< -25	< -25	Plot L.5/L.6		PASS

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

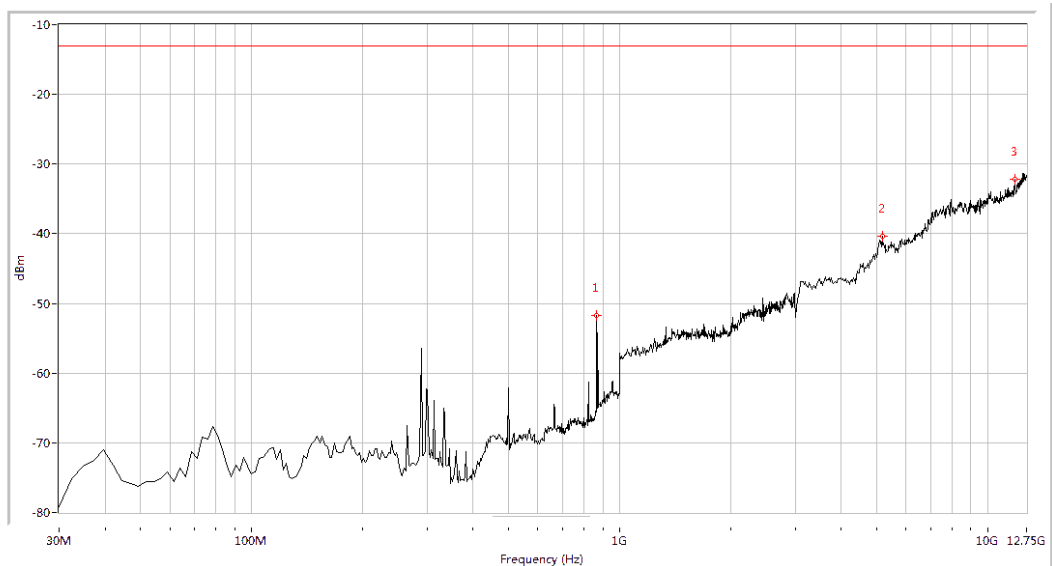
Note1: the power of the EUT transmitting frequency should be ignored.

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.



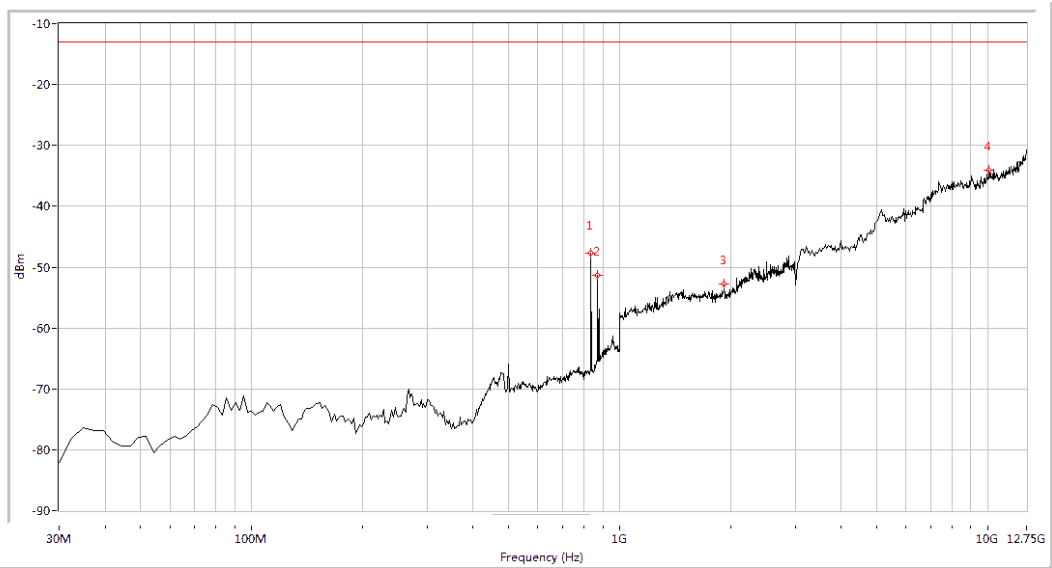
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
823.416	-60.15	-13.0	47.1	0.0	Horizontal	PASS
866.958	-48.63	-13.0	35.6	0.0	Horizontal	PASS
1733.167	-53.22	-13.0	40.2	0.0	Horizontal	PASS
12312.344	-31.68	-13.0	18.7	0.0	Horizontal	PASS

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



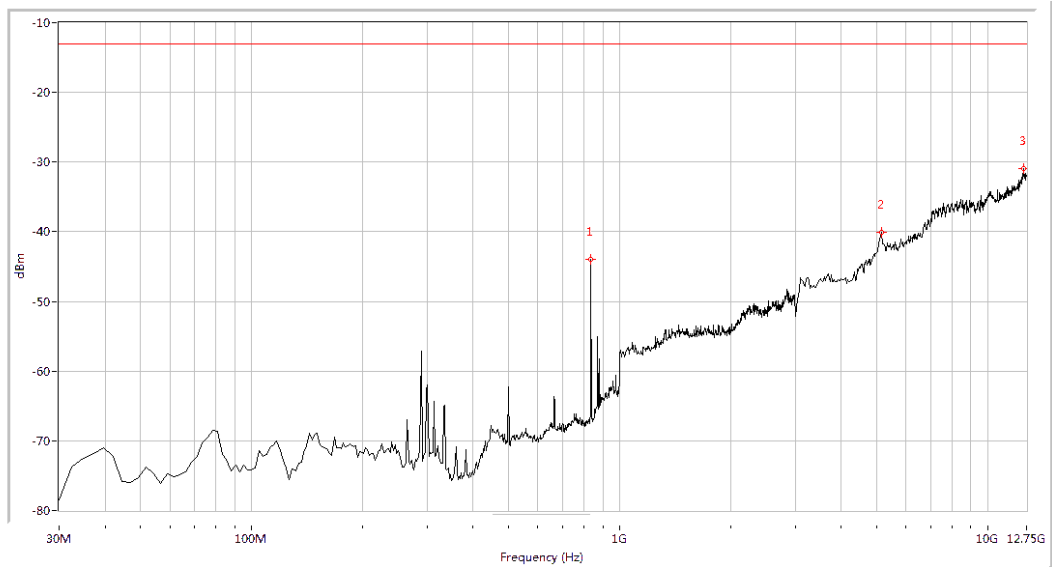
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
866.958	-51.78	-13.0	38.8	147.4	Vertical	PASS
5163.965	-40.38	-13.0	27.4	33.9	Vertical	PASS
11850.374	-32.22	-13.0	19.2	213.6	Vertical	PASS

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



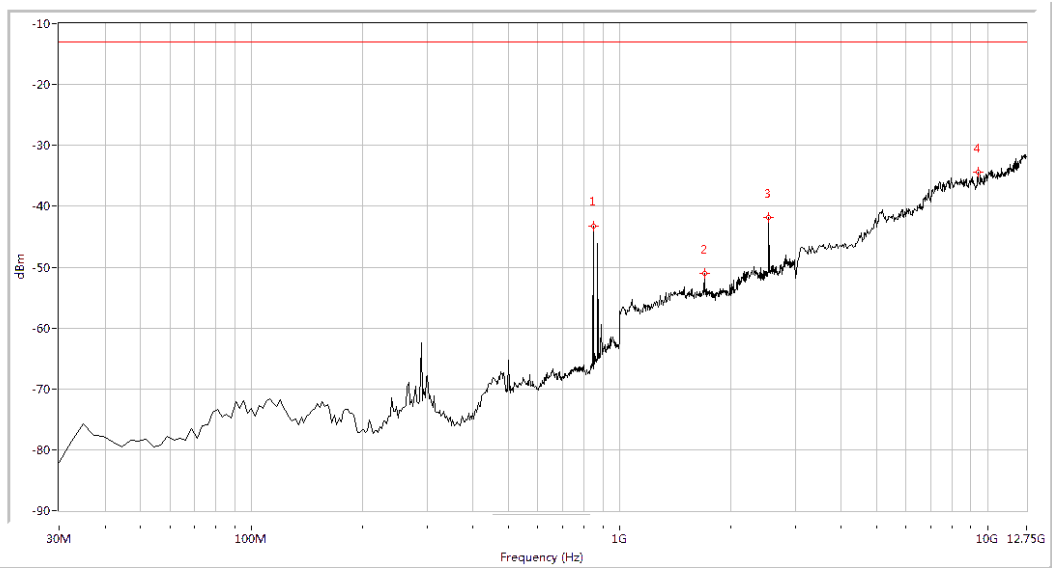
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-47.70	-13.0	34.7	0.0	Horizontal	PASS
871.796	-51.28	-13.0	38.3	0.0	Horizontal	PASS
1922.693	-52.82	-13.0	39.8	0.0	Horizontal	PASS
10099.751	-34.04	-13.0	21.0	0.0	Horizontal	PASS

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



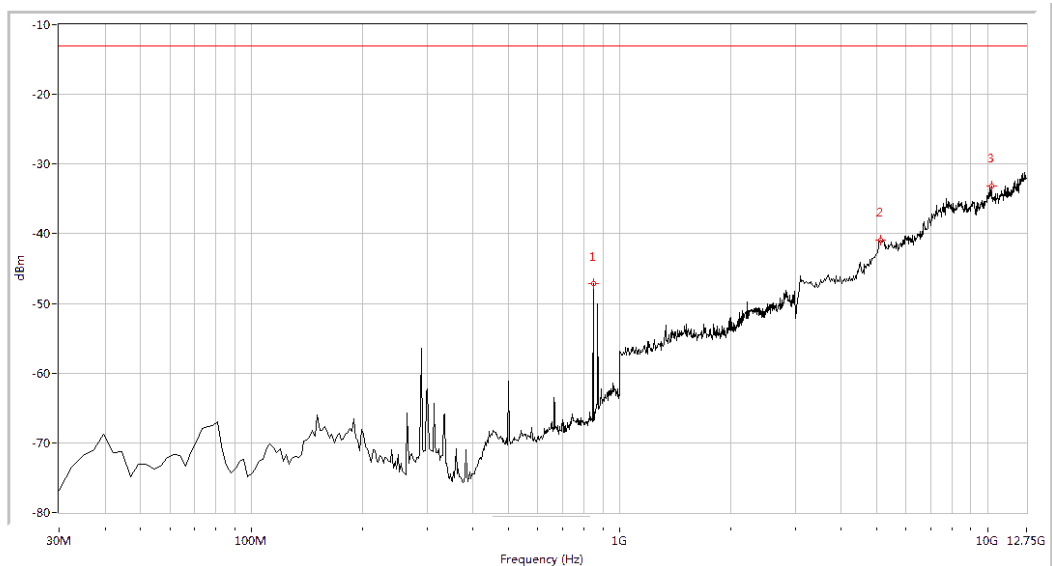
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-44.00	-13.0	31.0	174.5	Vertical	PASS
5139.651	-40.05	-13.0	27.1	31.3	Vertical	PASS
12531.172	-30.99	-13.0	18.0	296.8	Vertical	PASS

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



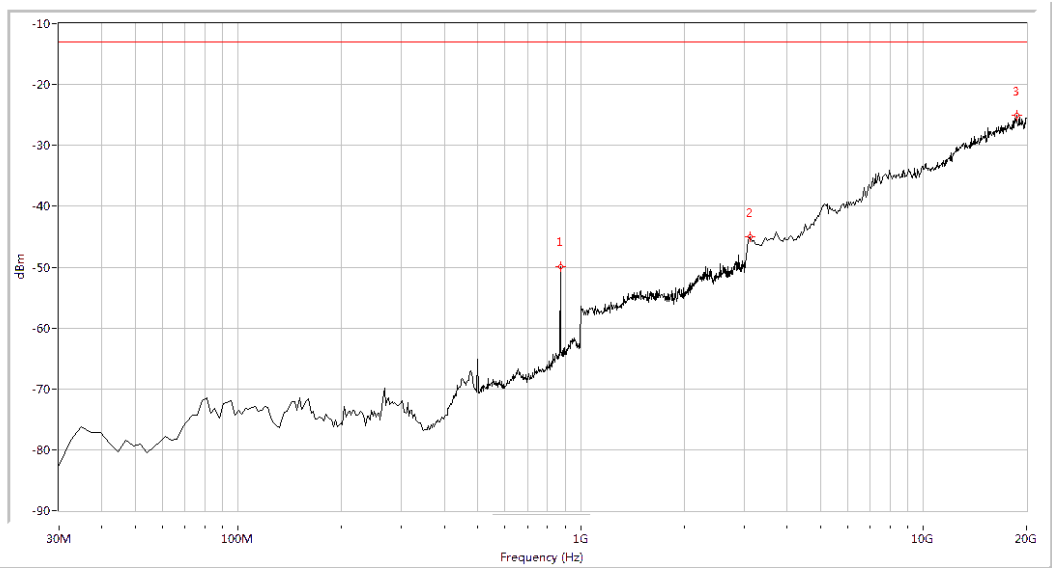
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-43.28	-13.0	30.3	146.8	Horizontal	PASS
1698.254	-51.06	-13.0	38.1	158.5	Horizontal	PASS
2541.147	-41.78	-13.0	28.8	145.1	Horizontal	PASS
9418.953	-34.44	-13.0	21.4	166.2	Horizontal	PASS

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



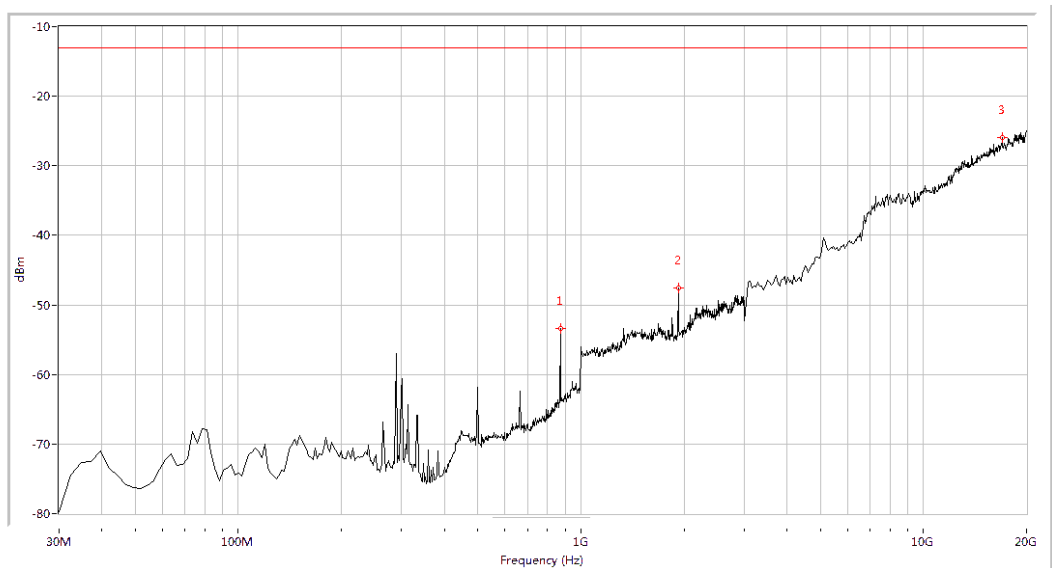
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-47.11	-13.0	34.1	191.8	Vertical	PASS
5115.337	-40.91	-13.0	27.9	109.2	Vertical	PASS
10245.636	-33.21	-13.0	20.2	1.0	Vertical	PASS

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



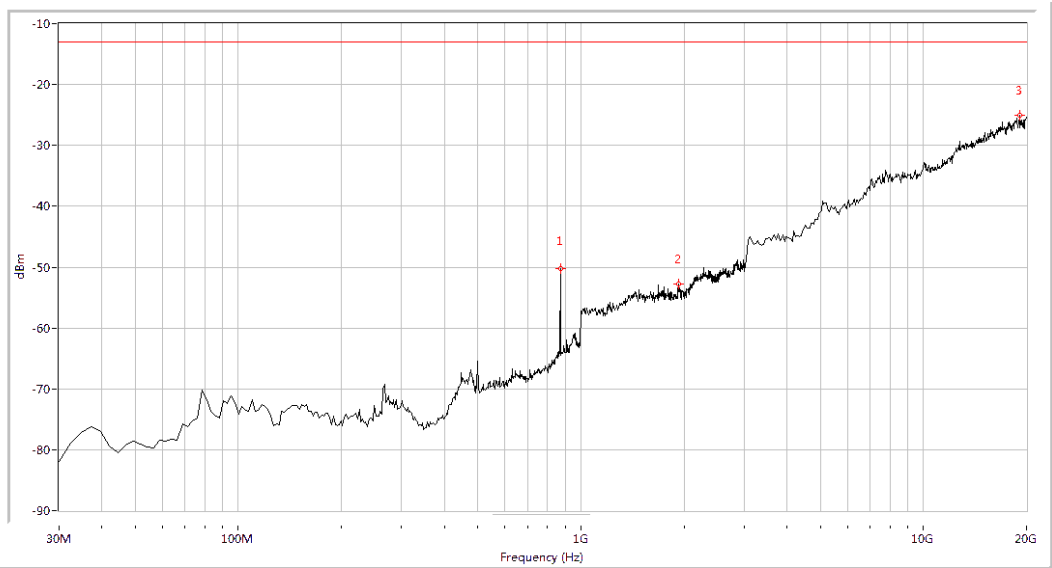
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.90	-13.0	36.9	0.0	Horizontal	PASS
3127.182	-45.01	-13.0	32.0	0.0	Horizontal	PASS
18728.180	-25.02	-13.0	12.0	0.0	Horizontal	PASS

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



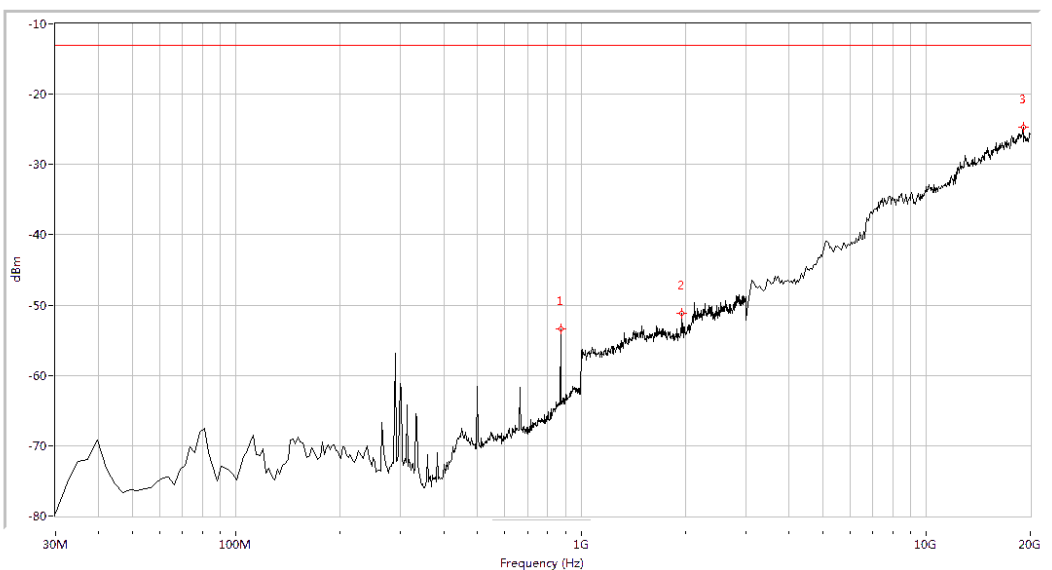
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.40	-13.0	40.4	233.2	Vertical	PASS
1927.681	-47.60	-13.0	34.6	358.0	Vertical	PASS
16990.025	-25.97	-13.0	13.0	130.7	Vertical	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-50.19	-13.0	37.2	0.0	Horizontal	PASS
1927.681	-52.81	-13.0	39.8	0.0	Horizontal	PASS
19109.726	-25.11	-13.0	12.1	0.0	Horizontal	PASS

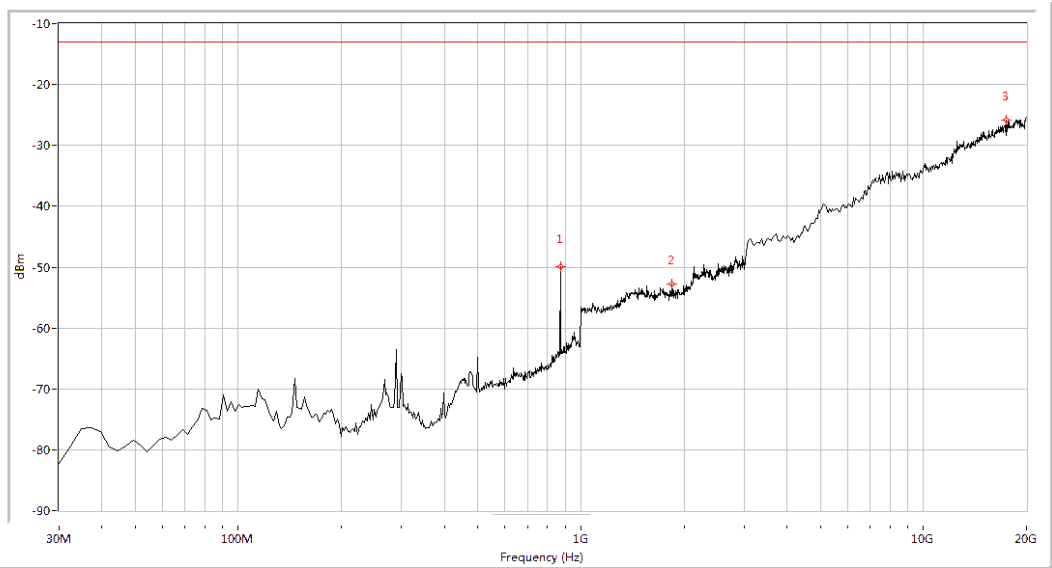
(Plot B.3: GPRS 1900MHz Channel = 661, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.41	-13.0	40.4	360.0	Vertical	PASS
1957.606	-51.15	-13.0	38.2	251.7	Vertical	PASS
19109.726	-24.63	-13.0	11.6	300.9	Vertical	PASS

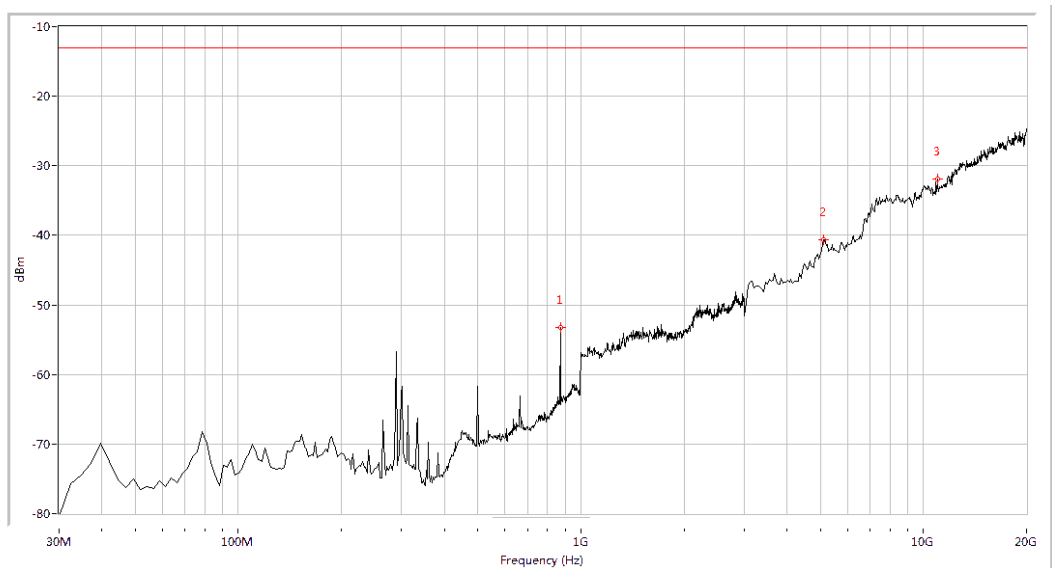
(Plot B.4: GPRS 1900MHz Channel = 661, Test Antenna Vertical)





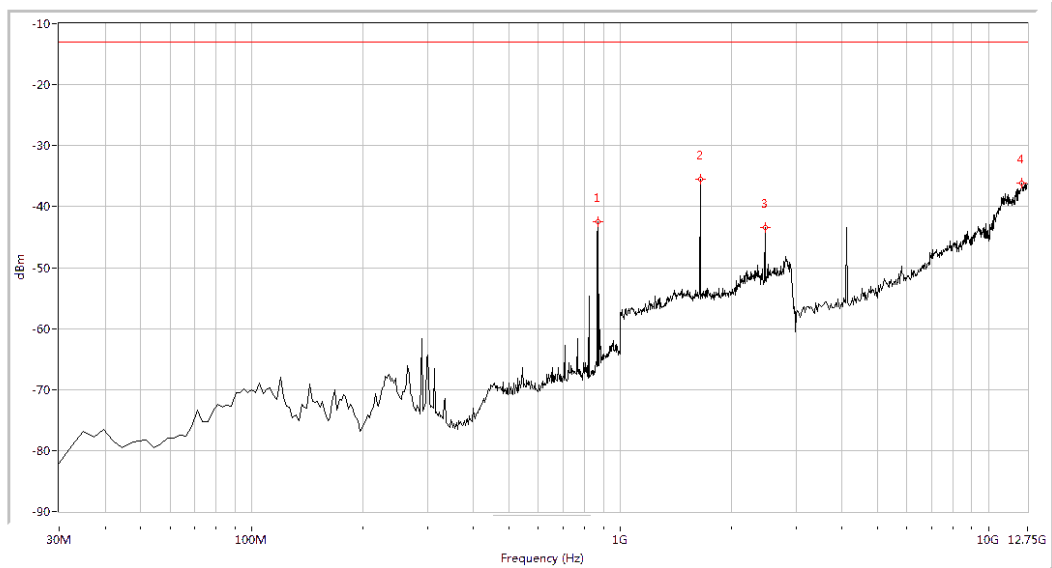
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.99	-13.0	37.0	348.9	Horizontal	PASS
1847.880	-52.77	-13.0	39.8	30.4	Horizontal	PASS
17413.965	-25.78	-13.0	12.8	91.2	Horizontal	PASS

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



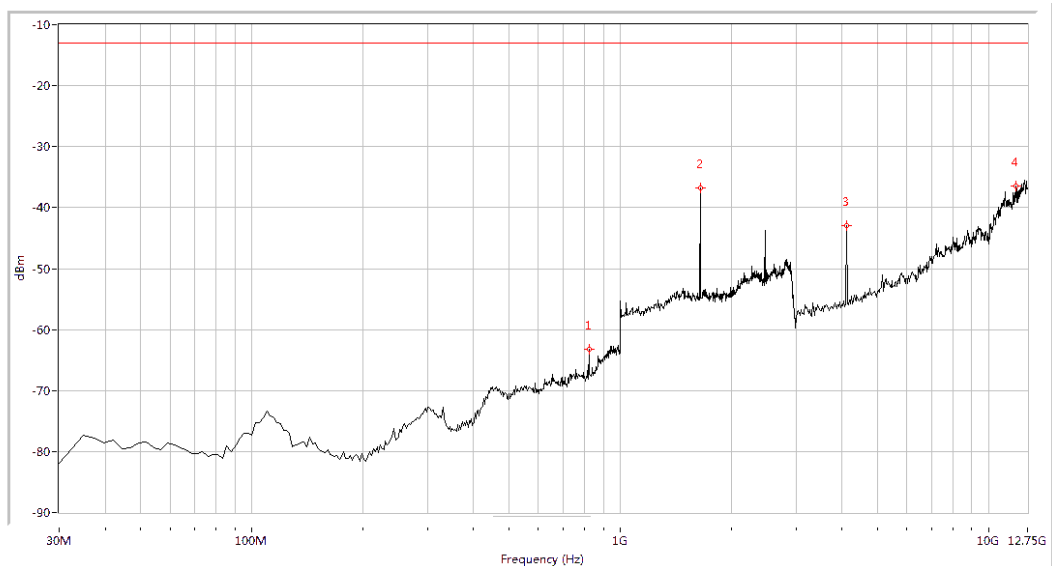
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.30	-13.0	40.3	360.0	Vertical	PASS
5119.701	-40.69	-13.0	27.7	189.0	Vertical	PASS
10970.075	-31.97	-13.0	19.0	123.2	Vertical	PASS

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



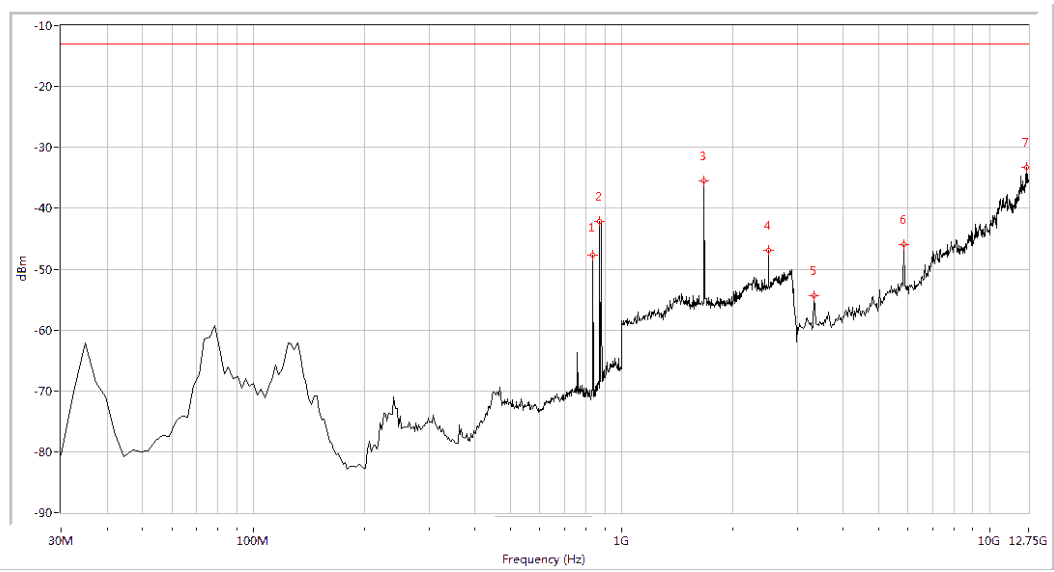
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.54	-13.0	29.5	116.6	Horizontal	PASS
1648.379	-33.56	-13.0	22.6	23.9	Horizontal	PASS
2471.322	-43.41	-13.0	30.4	359.2	Horizontal	PASS
12288.030	-36.17	-13.0	23.2	359.1	Horizontal	PASS

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



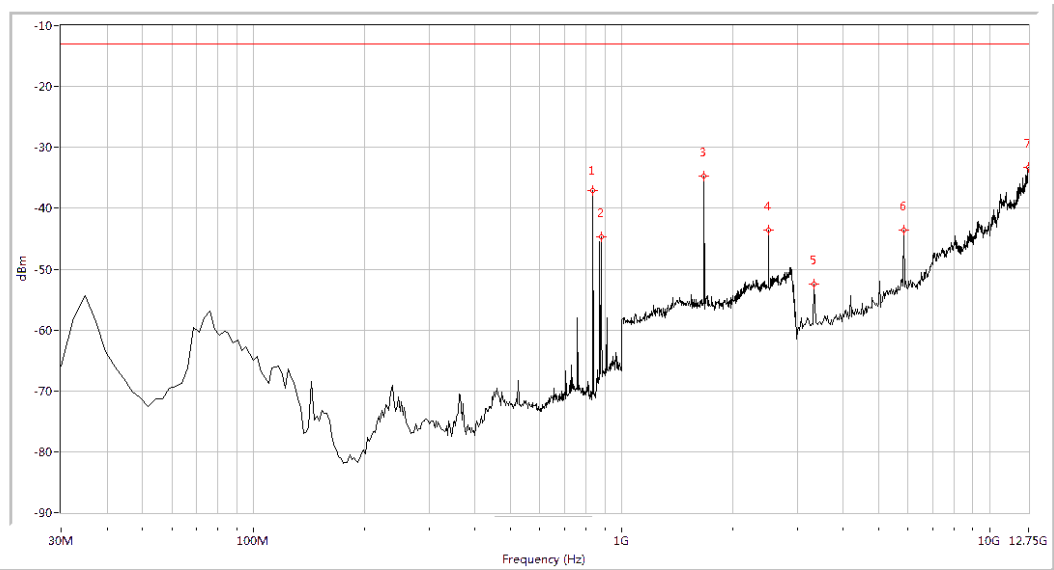
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
823.416	-63.23	-13.0	50.2	106.8	Vertical	PASS
1648.379	-36.77	-13.0	23.8	197.4	Vertical	PASS
4118.454	-43.00	-13.0	30.0	8.8	Vertical	PASS
11874.688	-36.44	-13.0	23.4	350.8	Vertical	PASS

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



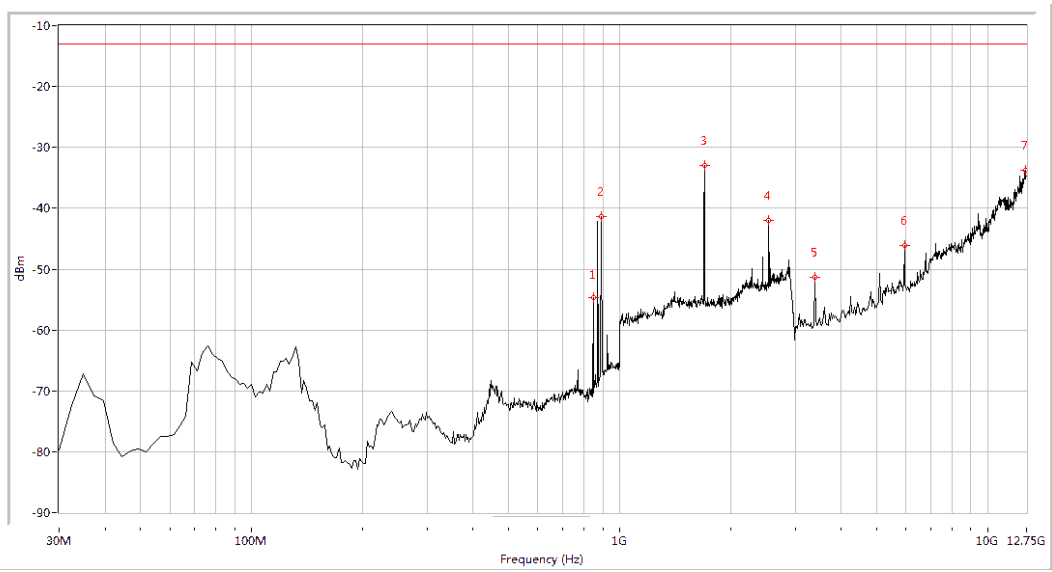
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-47.68	-13.0	34.7	1.9	Horizontal	PASS
871.796	-42.17	-13.0	29.2	99.2	Horizontal	PASS
1673.317	-35.50	-13.0	22.5	91.9	Horizontal	PASS
2506.234	-46.91	-13.0	33.9	291.6	Horizontal	PASS
3340.399	-54.37	-13.0	41.4	1.6	Horizontal	PASS
5844.763	-45.98	-13.0	33.0	105.4	Horizontal	PASS
12579.800	-33.36	-13.0	20.4	9.1	Horizontal	PASS

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



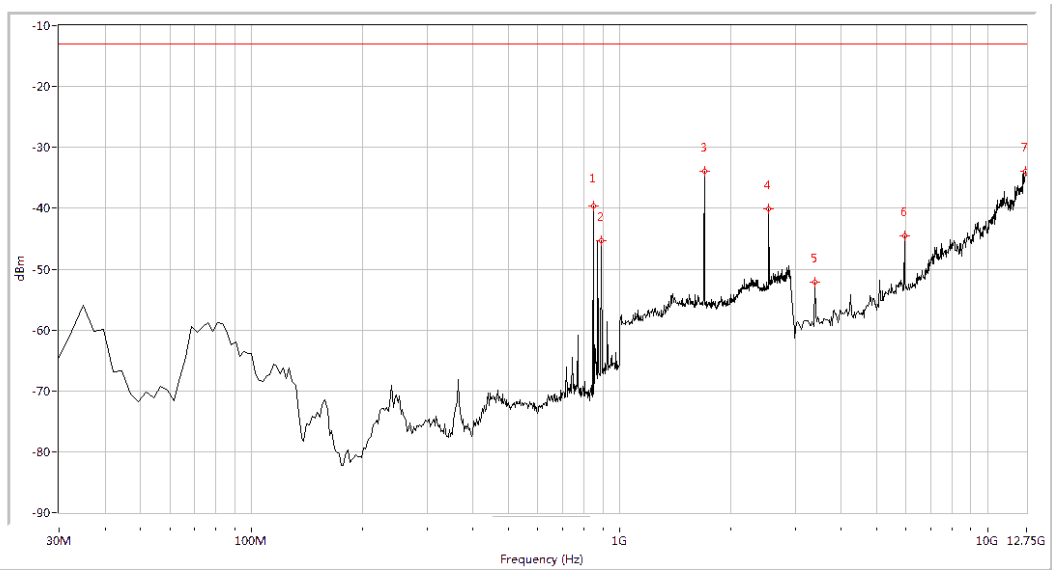
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-37.15	-13.0	24.1	247.2	Vertical	PASS
879.052	-44.66	-13.0	31.7	229.8	Vertical	PASS
1673.317	-34.64	-13.0	21.6	25.0	Vertical	PASS
2506.234	-43.51	-13.0	30.5	161.5	Vertical	PASS
3340.399	-52.43	-13.0	39.4	14.7	Vertical	PASS
5844.763	-43.53	-13.0	30.5	351.5	Vertical	PASS
12725.686	-33.32	-13.0	20.3	297.8	Vertical	PASS

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



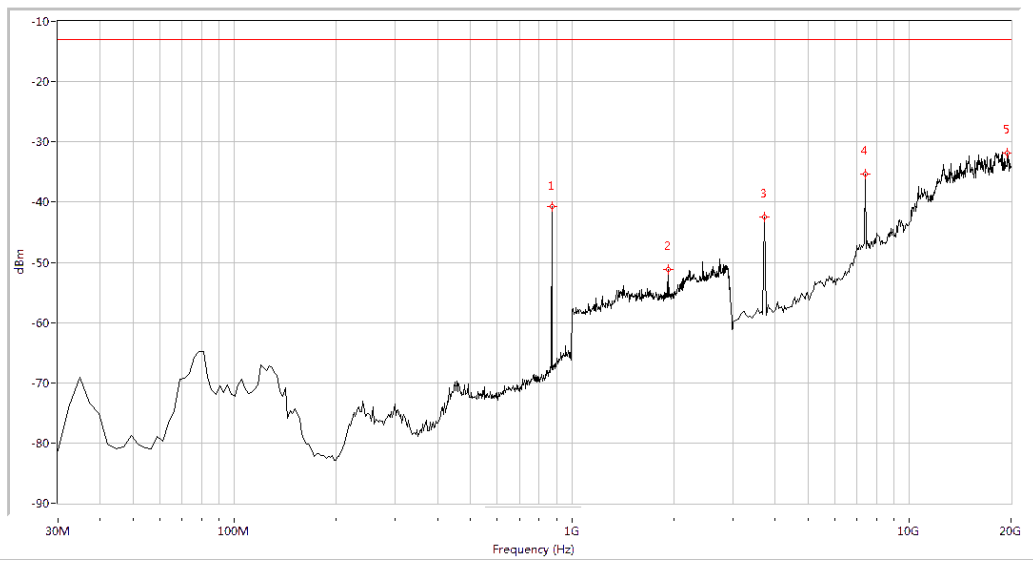
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-54.70	-13.0	41.7	332.7	Horizontal	PASS
891.147	-41.35	-13.0	28.4	187.7	Horizontal	PASS
1698.254	-32.91	-13.0	19.9	73.7	Horizontal	PASS
2541.147	-42.03	-13.0	29.0	176.0	Horizontal	PASS
3389.027	-51.37	-13.0	38.4	184.0	Horizontal	PASS
5942.020	-46.09	-13.0	33.1	307.1	Horizontal	PASS
12677.057	-33.70	-13.0	20.7	239.5	Horizontal	PASS

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



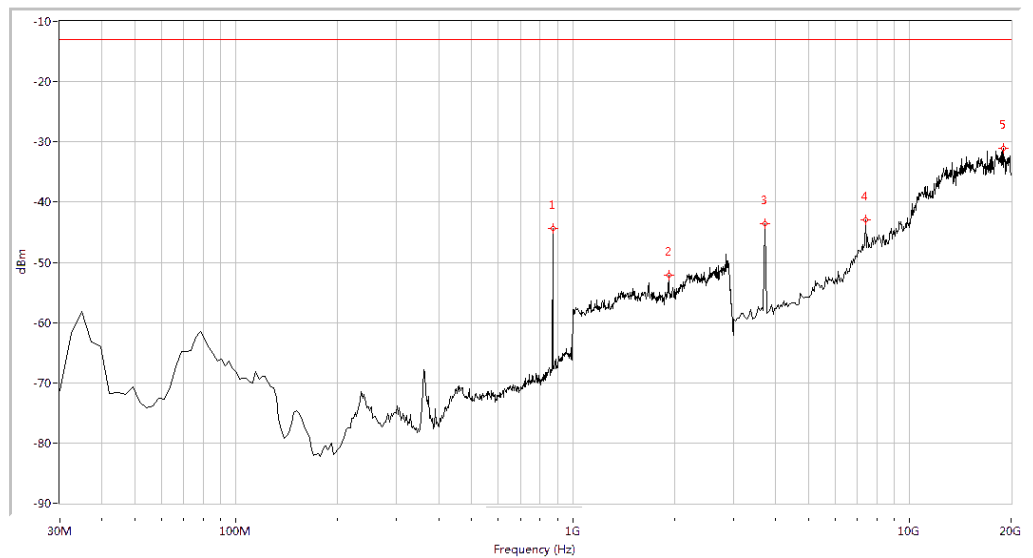
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-39.57	-13.0	26.6	219.9	Vertical	PASS
891.147	-45.28	-13.0	32.3	219.9	Vertical	PASS
1698.254	-33.87	-13.0	20.9	25.0	Vertical	PASS
2541.147	-40.08	-13.0	27.1	85.3	Vertical	PASS
3389.027	-52.17	-13.0	39.2	201.7	Vertical	PASS
5942.020	-44.52	-13.0	31.5	324.4	Vertical	PASS
12652.743	-33.97	-13.0	21.0	337.1	Vertical	PASS

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



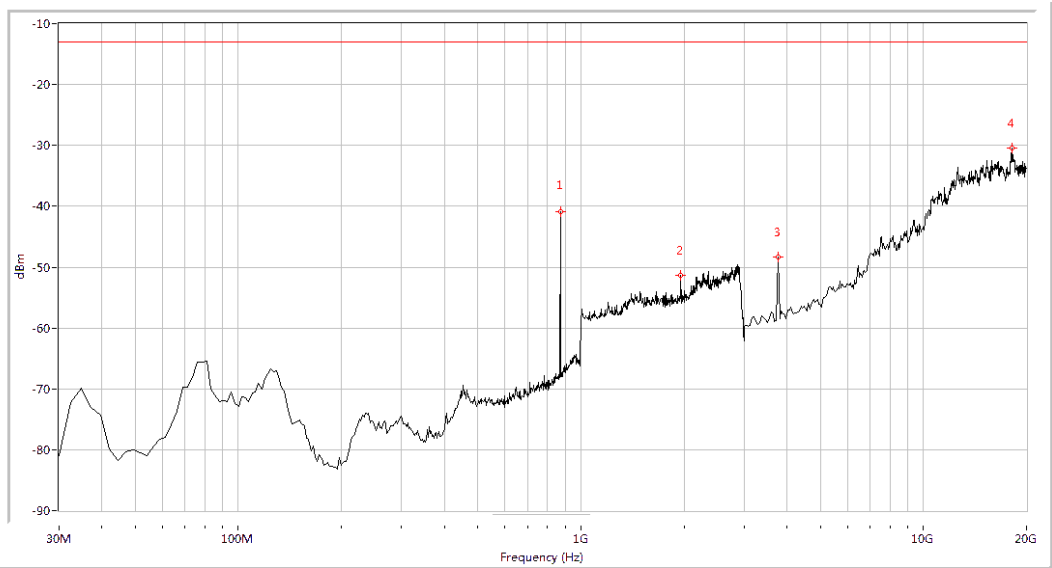
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-40.74	-13.0	27.7	84.1	Horizontal	PASS
1927.681	-51.25	-13.0	38.3	148.6	Horizontal	PASS
3720.698	-42.41	-13.0	29.4	360.0	Horizontal	PASS
7408.978	-35.34	-13.0	22.3	148.5	Horizontal	PASS
19533.666	-31.84	-13.0	18.8	189.0	Horizontal	PASS

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



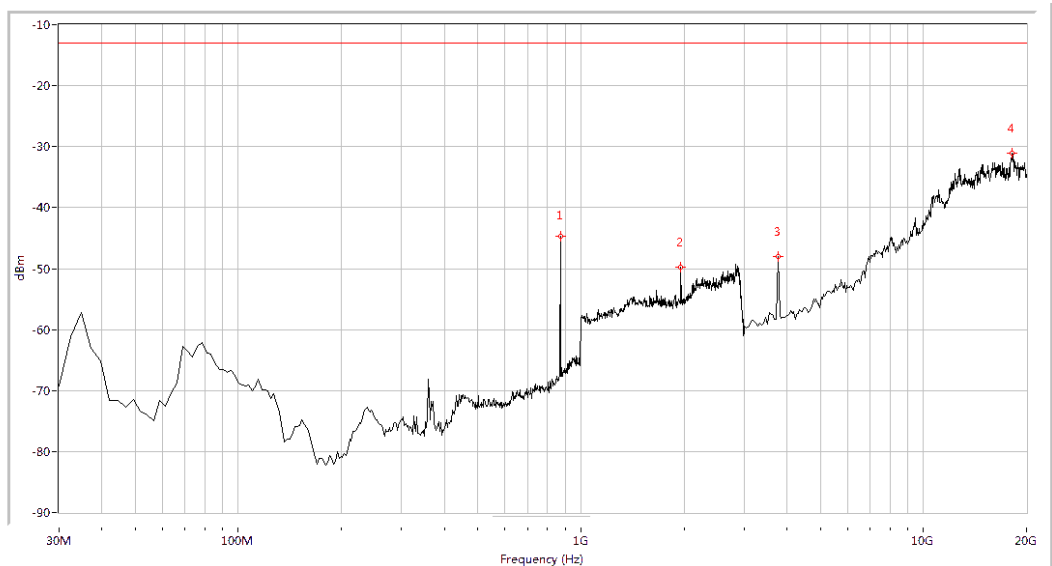
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-44.40	-13.0	31.4	230.4	Vertical	PASS
1927.681	-52.18	-13.0	39.2	340.7	Vertical	PASS
3720.698	-43.60	-13.0	30.6	268.1	Vertical	PASS
7408.978	-42.95	-13.0	29.9	193.0	Vertical	PASS
18940.150	-31.12	-13.0	18.1	41.6	Vertical	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-40.96	-13.0	28.0	196.4	Horizontal	PASS
1957.606	-51.29	-13.0	38.3	189.2	Horizontal	PASS
3763.092	-48.28	-13.0	35.3	353.0	Horizontal	PASS
18177.057	-30.43	-13.0	17.4	360.0	Horizontal	PASS

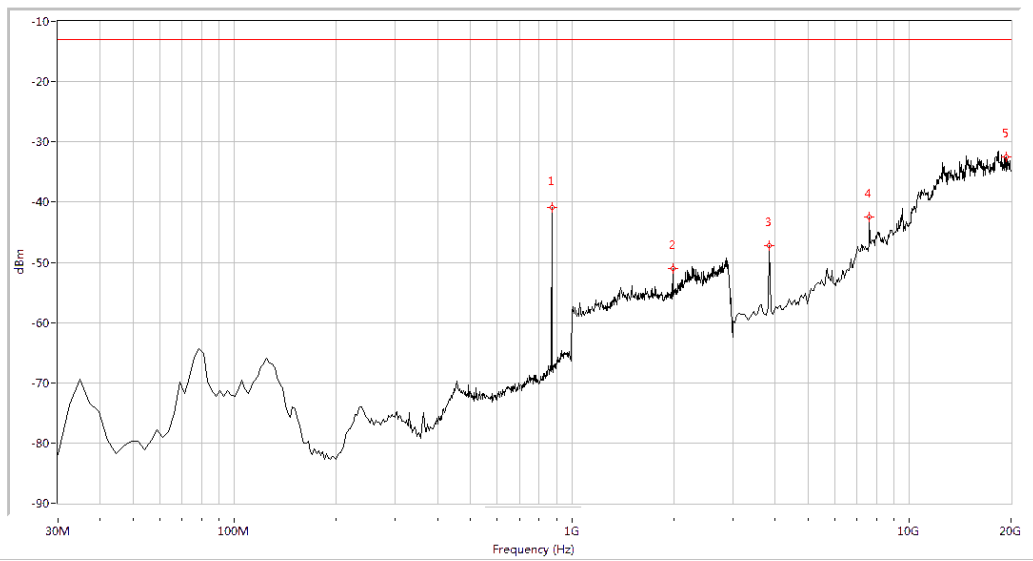
(Plot D.3: EGPRS 1900MHz Channel = 661, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-44.69	-13.0	31.7	325.4	Vertical	PASS
1957.606	-49.83	-13.0	36.8	62.7	Vertical	PASS
3763.092	-48.09	-13.0	35.1	117.6	Vertical	PASS
18092.269	-31.10	-13.0	18.1	83.4	Vertical	PASS

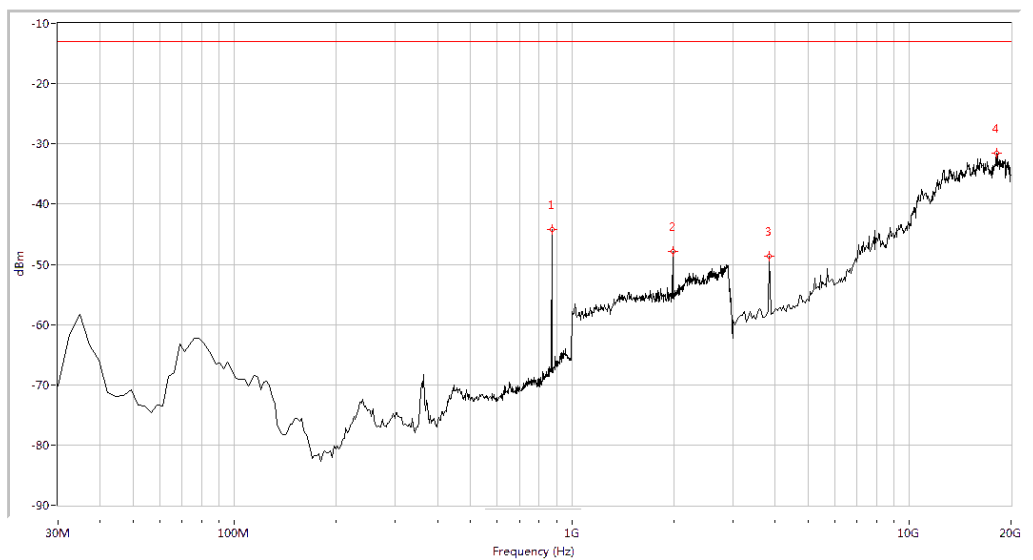
(Plot D.4: EGPRS 1900MHz Channel = 661, Test Antenna Vertical)





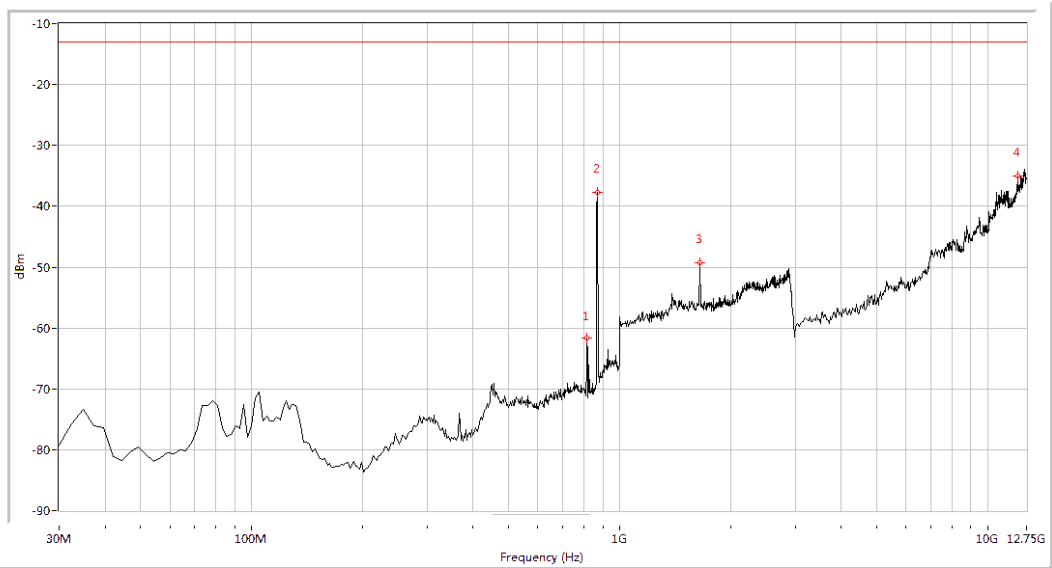
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-40.93	-13.0	27.9	282.5	Horizontal	PASS
1987.531	-50.95	-13.0	38.0	188.9	Horizontal	PASS
3847.880	-47.30	-13.0	34.3	358.7	Horizontal	PASS
7620.948	-42.45	-13.0	29.5	19.3	Horizontal	PASS
19364.090	-32.42	-13.0	19.4	0.0	Horizontal	PASS

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



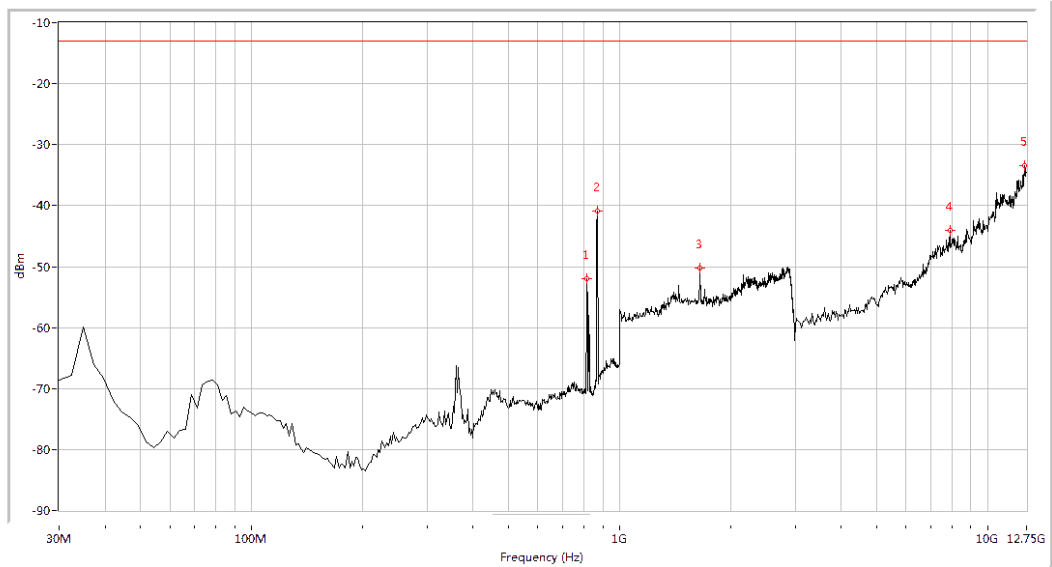
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-44.19	-13.0	31.2	236.1	Vertical	PASS
1987.531	-47.90	-13.0	34.9	360.0	Vertical	PASS
3847.880	-48.59	-13.0	35.6	251.0	Vertical	PASS
18092.269	-31.48	-13.0	18.5	217.8	Vertical	PASS

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



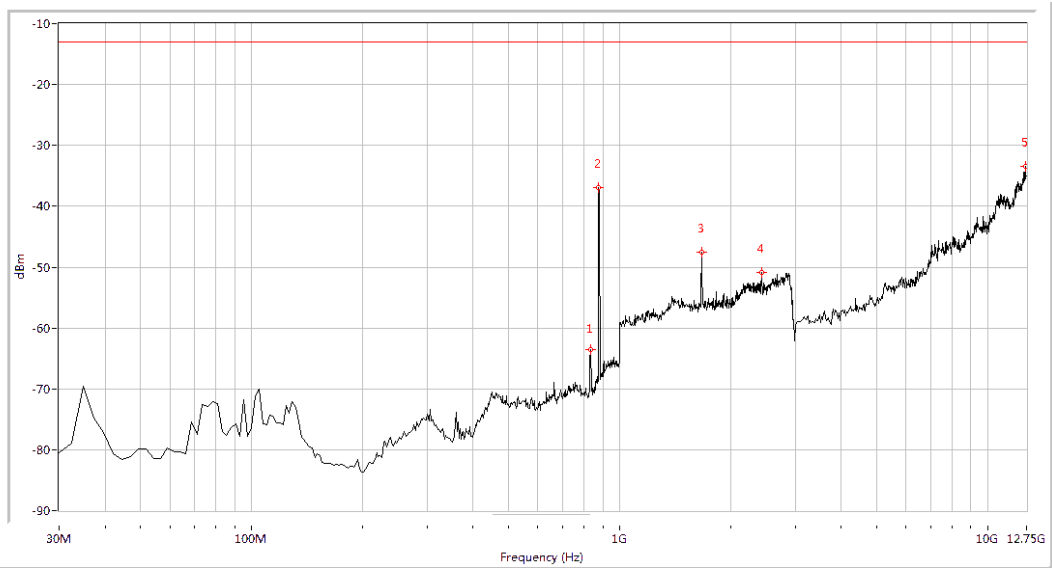
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-61.61	-13.0	48.6	-0.0	Horizontal	PASS
869.377	-37.76	-13.0	24.8	263.5	Horizontal	PASS
1653.367	-49.27	-13.0	36.3	267.5	Horizontal	PASS
12069.202	-35.02	-13.0	22.0	355.3	Horizontal	PASS

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



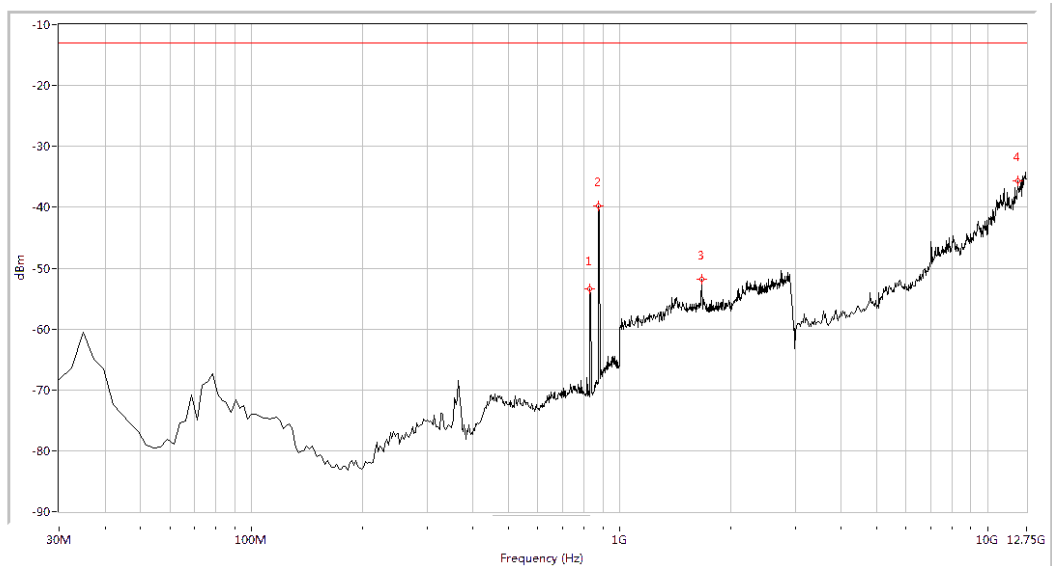
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-52.05	-13.0	39.1	310.8	Vertical	PASS
869.377	-40.90	-13.0	27.9	236.7	Vertical	PASS
1653.367	-50.21	-13.0	37.2	20.9	Vertical	PASS
7887.157	-44.03	-13.0	31.0	53.7	Vertical	PASS
12628.429	-33.37	-13.0	20.4	351.5	Vertical	PASS

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



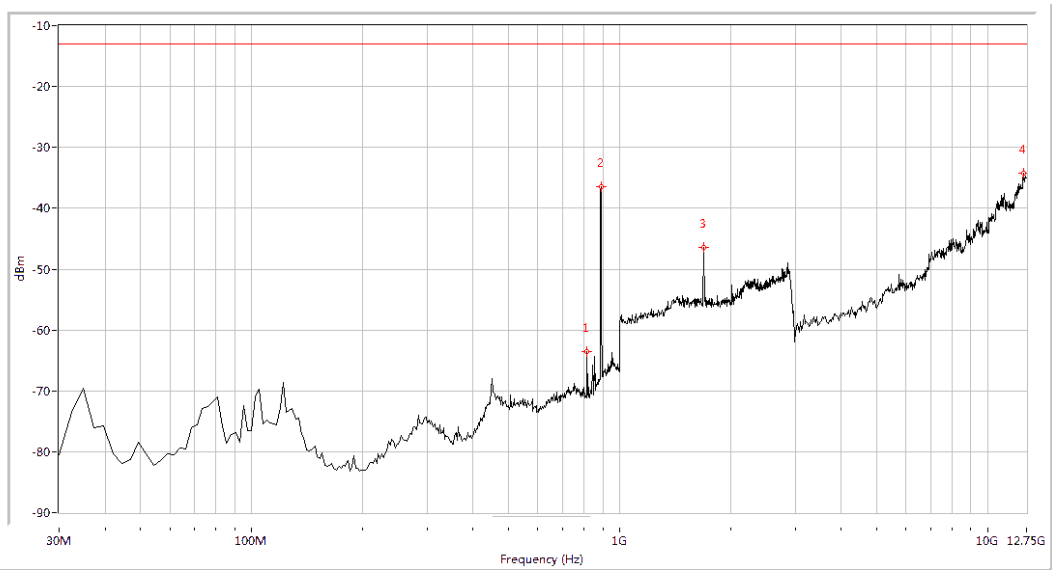
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-63.51	-13.0	50.5	360.0	Horizontal	PASS
876.633	-36.96	-13.0	24.0	17.2	Horizontal	PASS
1668.329	-47.51	-13.0	34.5	273.2	Horizontal	PASS
2431.421	-50.92	-13.0	37.9	75.3	Horizontal	PASS
12677.057	-33.44	-13.0	20.4	49.6	Horizontal	PASS

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



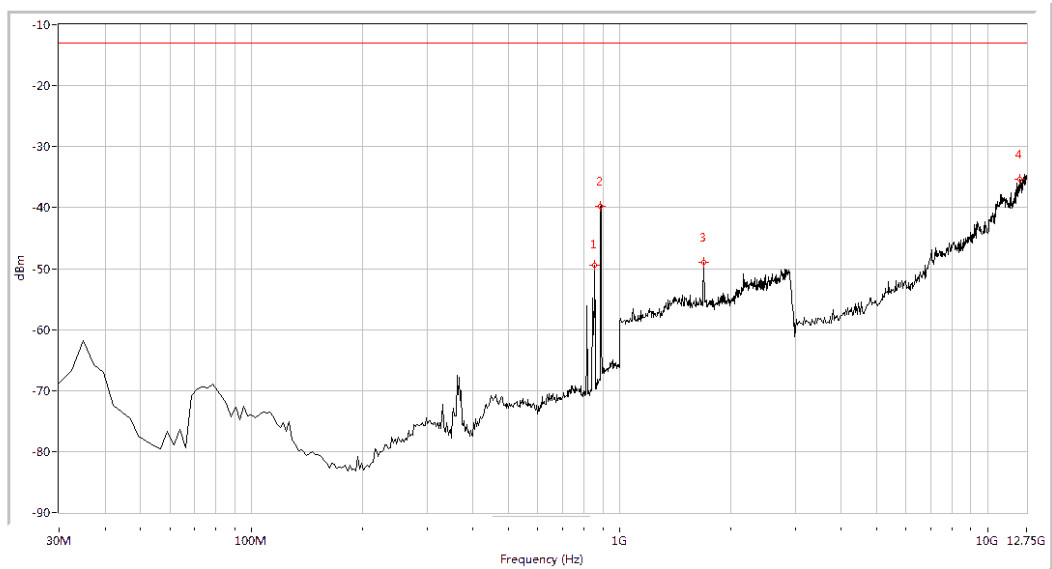
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
830.673	-53.43	-13.0	40.4	253.7	Vertical	PASS
876.633	-39.76	-13.0	26.8	0.8	Vertical	PASS
1668.329	-51.84	-13.0	38.8	28.4	Vertical	PASS
12069.202	-35.67	-13.0	22.7	271.6	Vertical	PASS

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



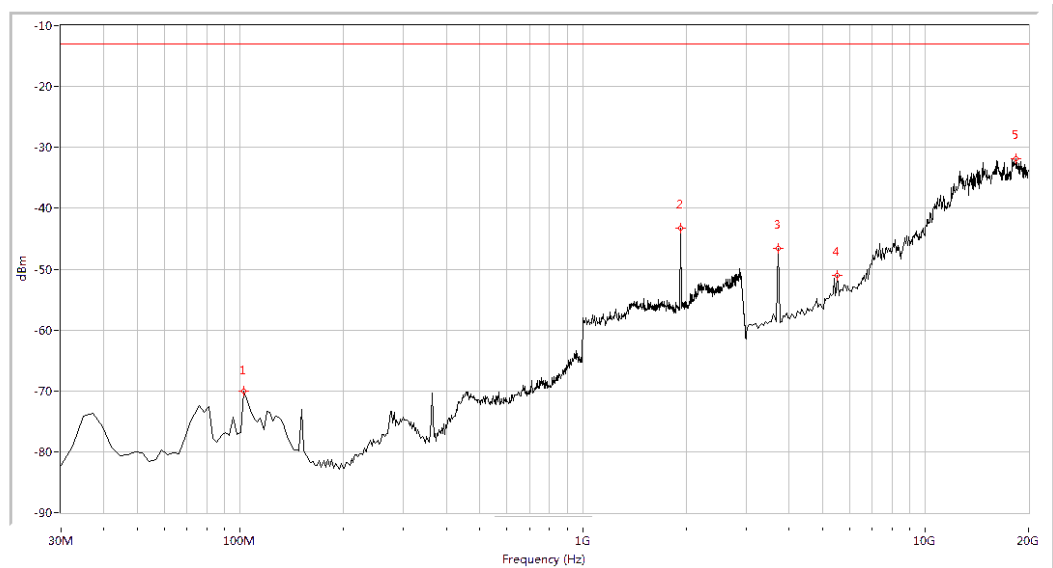
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-63.58	-13.0	50.6	356.5	Horizontal	PASS
891.147	-36.40	-13.0	23.4	280.3	Horizontal	PASS
1688.279	-46.51	-13.0	33.5	271.3	Horizontal	PASS
12531.172	-34.25	-13.0	21.3	107.0	Horizontal	PASS

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



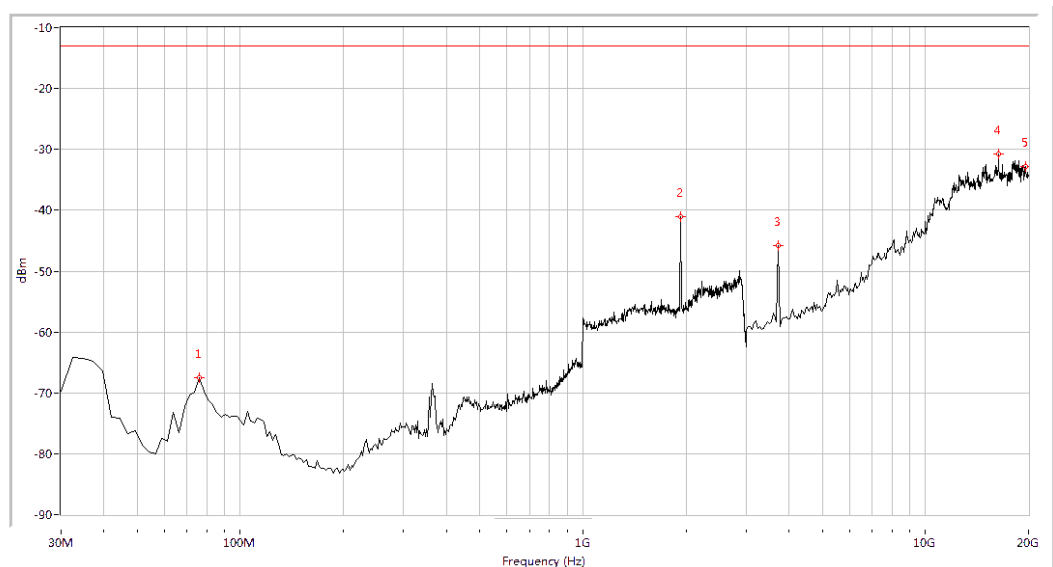
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-49.45	-13.0	36.4	324.7	Vertical	PASS
888.728	-39.81	-13.0	26.8	183.0	Vertical	PASS
1693.267	-48.93	-13.0	35.9	264.0	Vertical	PASS
12239.401	-35.31	-13.0	22.3	360.0	Vertical	PASS

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



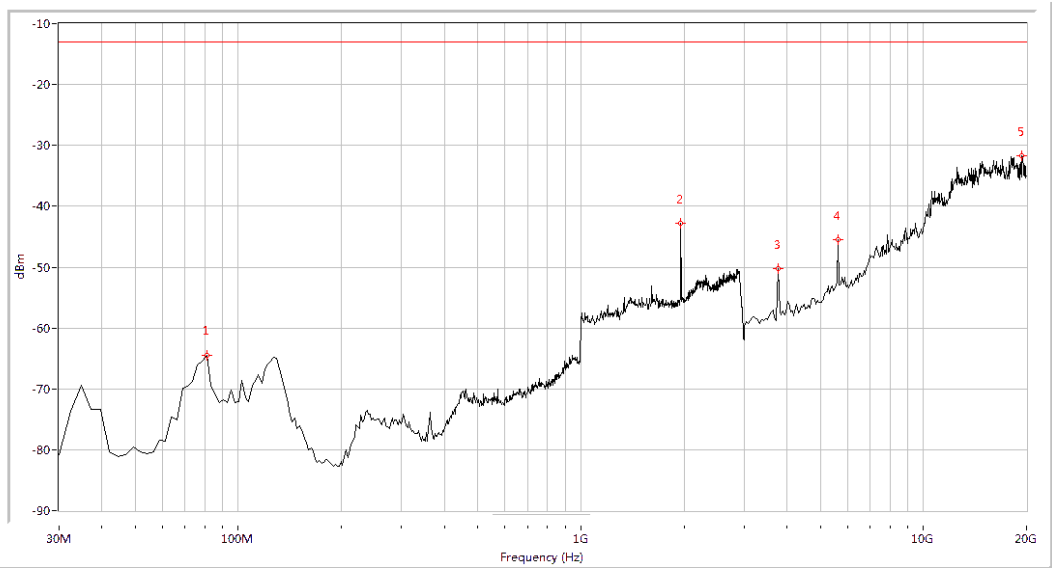
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
102.569	-69.99	-13.0	57.0	42.8	Horizontal	PASS
1932.668	-43.27	-13.0	30.3	6.2	Horizontal	PASS
3720.698	-46.67	-13.0	33.7	360.0	Horizontal	PASS
5543.641	-50.95	-13.0	38.0	47.3	Horizontal	PASS
18431.421	-31.84	-13.0	18.8	97.5	Horizontal	PASS

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



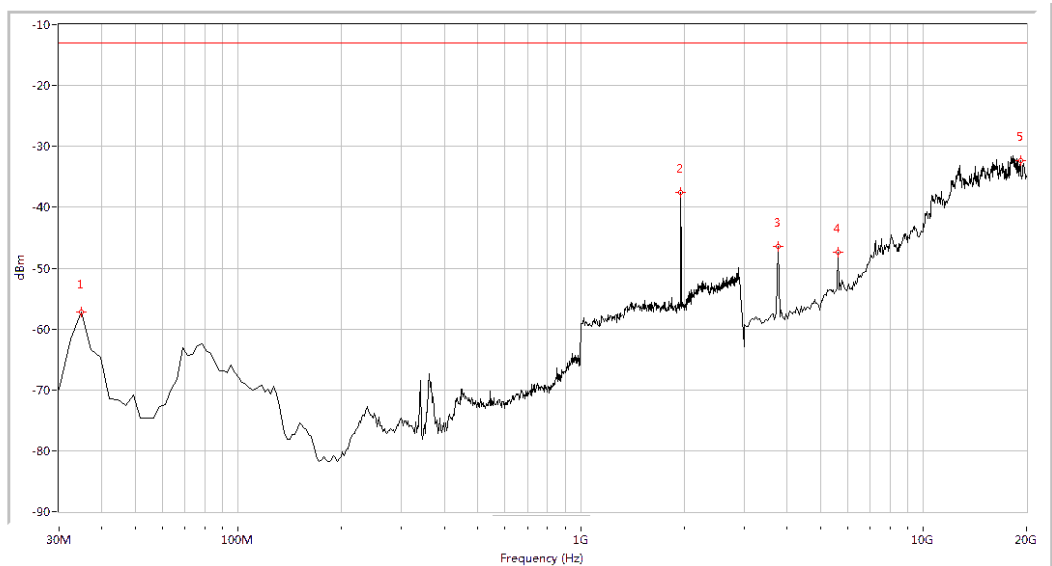
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
75.960	-67.52	-13.0	54.5	351.5	Vertical	PASS
1927.681	-40.97	-13.0	28.0	299.7	Vertical	PASS
3720.698	-45.83	-13.0	32.8	263.7	Vertical	PASS
16354.115	-30.79	-13.0	17.8	358.7	Vertical	PASS
19576.060	-32.85	-13.0	19.9	75.2	Vertical	PASS

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



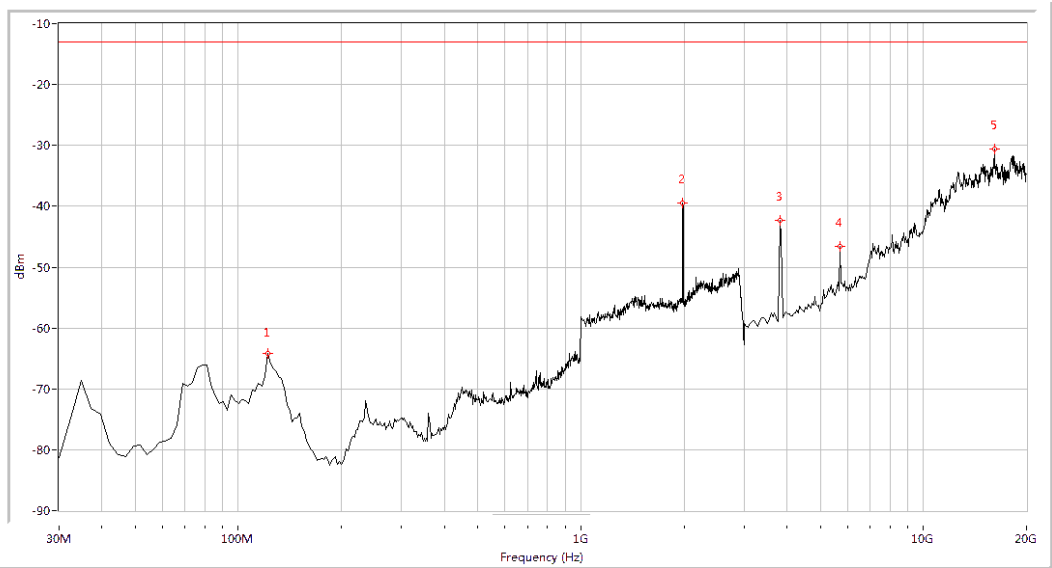
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
80.798	-64.48	-13.0	51.5	155.4	Horizontal	PASS
1957.606	-42.86	-13.0	29.9	194.5	Horizontal	PASS
3763.092	-50.17	-13.0	37.2	-0.0	Horizontal	PASS
5628.429	-45.45	-13.0	32.4	49.3	Horizontal	PASS
19406.484	-31.69	-13.0	18.7	2.9	Horizontal	PASS

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



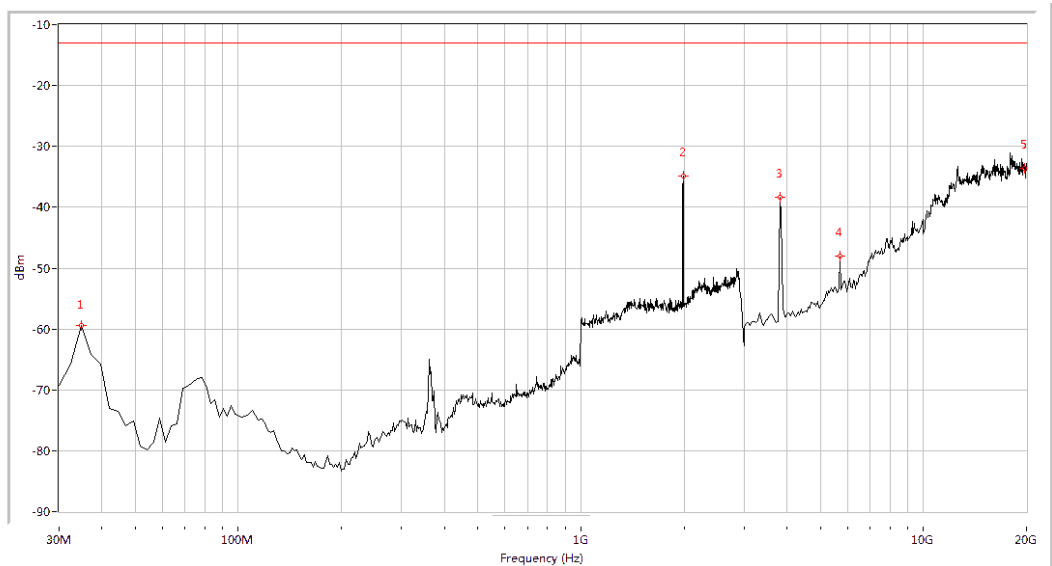
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-57.24	-13.0	44.2	115.9	Vertical	PASS
1957.606	-37.50	-13.0	24.5	59.9	Vertical	PASS
3763.092	-46.37	-13.0	33.4	140.1	Vertical	PASS
5628.429	-47.46	-13.0	34.5	173.9	Vertical	PASS
19236.908	-32.32	-13.0	19.3	55.7	Vertical	PASS

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



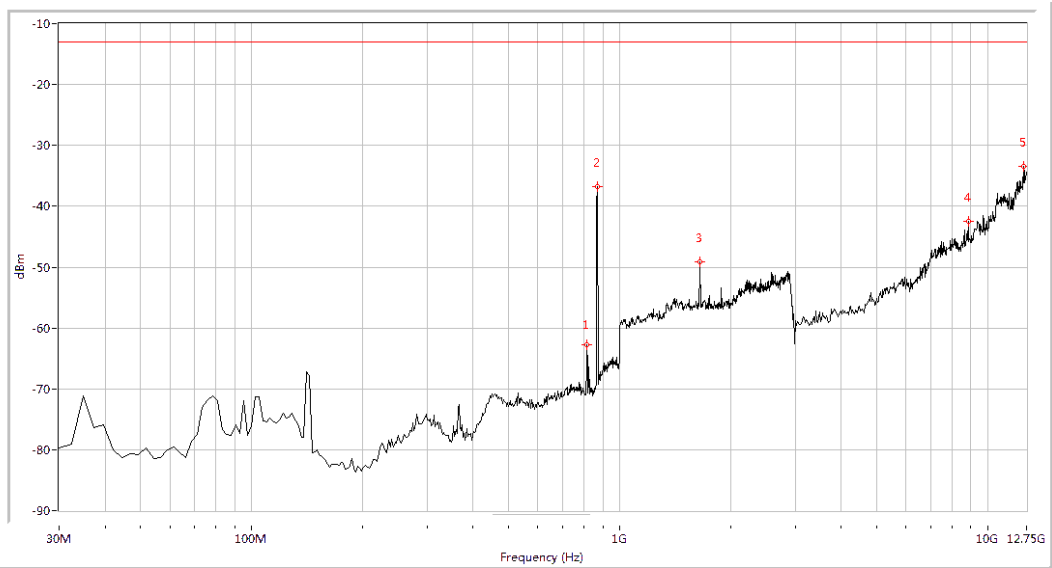
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
121.920	-64.17	-13.0	51.2	69.9	Horizontal	PASS
1982.544	-39.48	-13.0	26.5	248.1	Horizontal	PASS
3805.486	-42.39	-13.0	29.4	139.3	Horizontal	PASS
5713.217	-46.53	-13.0	33.5	48.6	Horizontal	PASS
16099.751	-30.63	-13.0	17.6	0.6	Horizontal	PASS

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



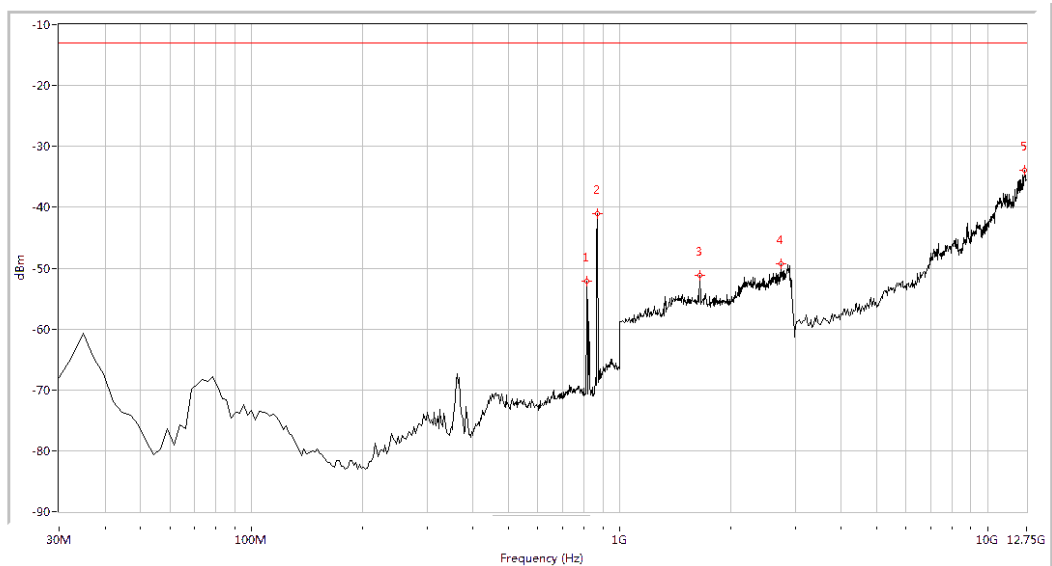
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-59.41	-13.0	46.4	334.0	Vertical	PASS
1987.531	-34.85	-13.0	21.9	316.4	Vertical	PASS
3805.486	-38.40	-13.0	25.4	143.6	Vertical	PASS
5713.217	-47.99	-13.0	35.0	168.1	Vertical	PASS
19703.242	-33.61	-13.0	20.6	85.3	Vertical	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-62.79	-13.0	49.8	0.7	Horizontal	PASS
871.796	-36.77	-13.0	23.8	360.0	Horizontal	PASS
1653.367	-49.18	-13.0	36.2	147.5	Horizontal	PASS
8859.726	-42.51	-13.0	29.5	209.4	Horizontal	PASS
12555.486	-33.39	-13.0	20.4	360.0	Horizontal	PASS

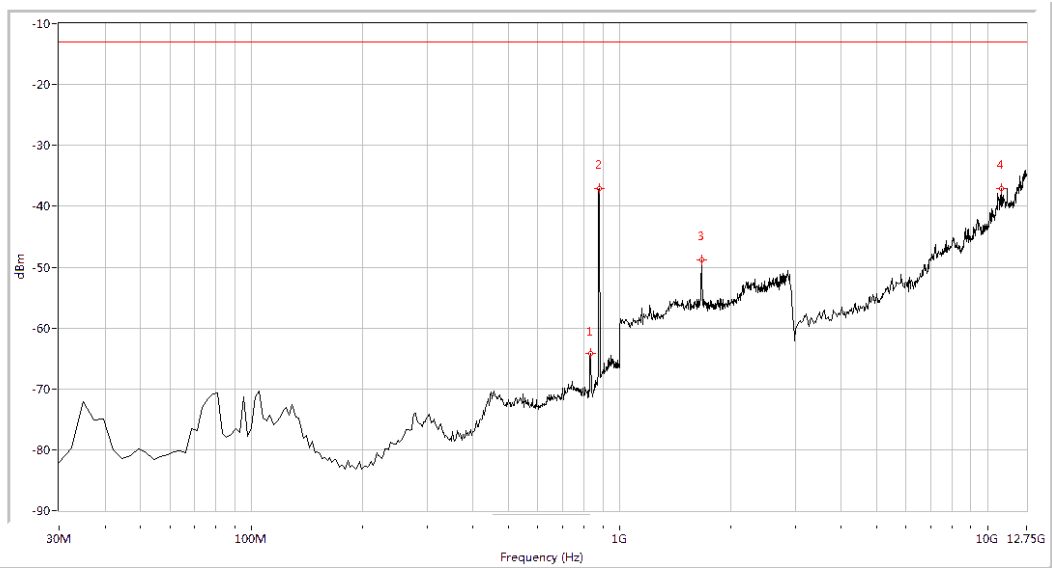
(Plot G.1: HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-52.08	-13.0	39.1	244.8	Vertical	PASS
871.796	-41.10	-13.0	28.1	310.2	Vertical	PASS
1648.379	-51.23	-13.0	38.2	10.2	Vertical	PASS
2740.648	-49.21	-13.0	36.2	167.3	Vertical	PASS
12604.115	-33.93	-13.0	20.9	41.4	Vertical	PASS

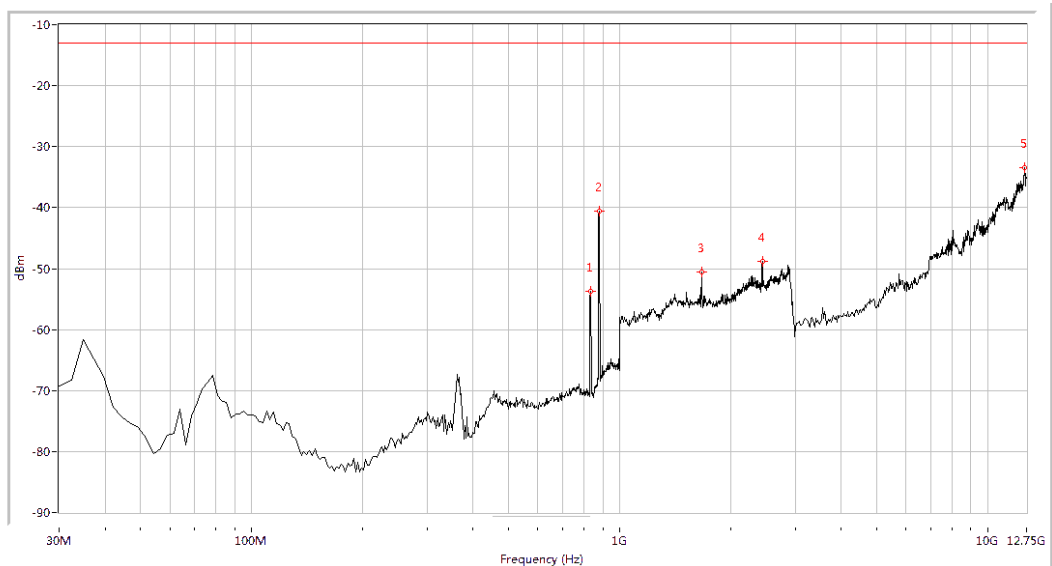
(Plot G.2: HSDPA 850MHz Channel = 4132, Test Antenna Vertical)





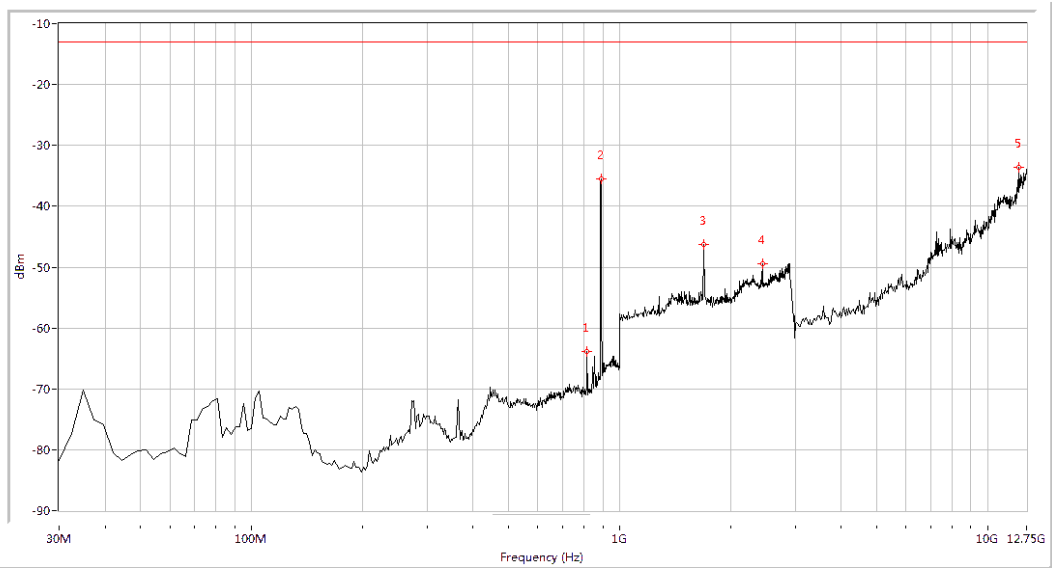
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
833.092	-64.12	-13.0	51.1	-0.0	Horizontal	PASS
879.052	-37.13	-13.0	24.1	146.4	Horizontal	PASS
1668.329	-48.88	-13.0	35.9	264.9	Horizontal	PASS
10877.805	-37.13	-13.0	24.1	350.2	Horizontal	PASS

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



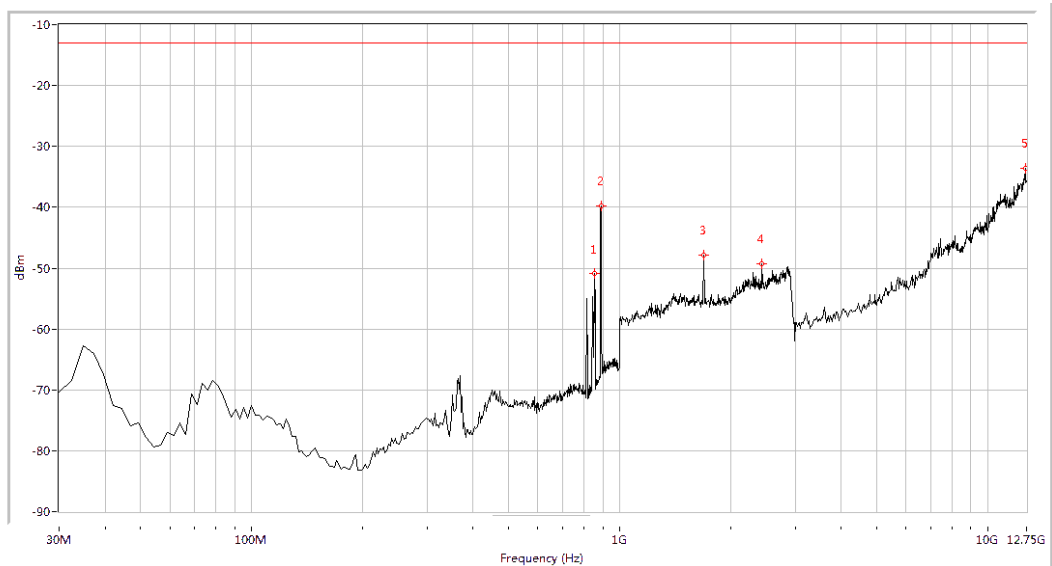
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
833.092	-53.70	-13.0	40.7	149.7	Vertical	PASS
879.052	-40.55	-13.0	27.6	4.6	Vertical	PASS
1668.329	-50.63	-13.0	37.6	26.9	Vertical	PASS
2441.397	-48.78	-13.0	35.8	-0.0	Vertical	PASS
12628.429	-33.46	-13.0	20.5	359.6	Vertical	PASS

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



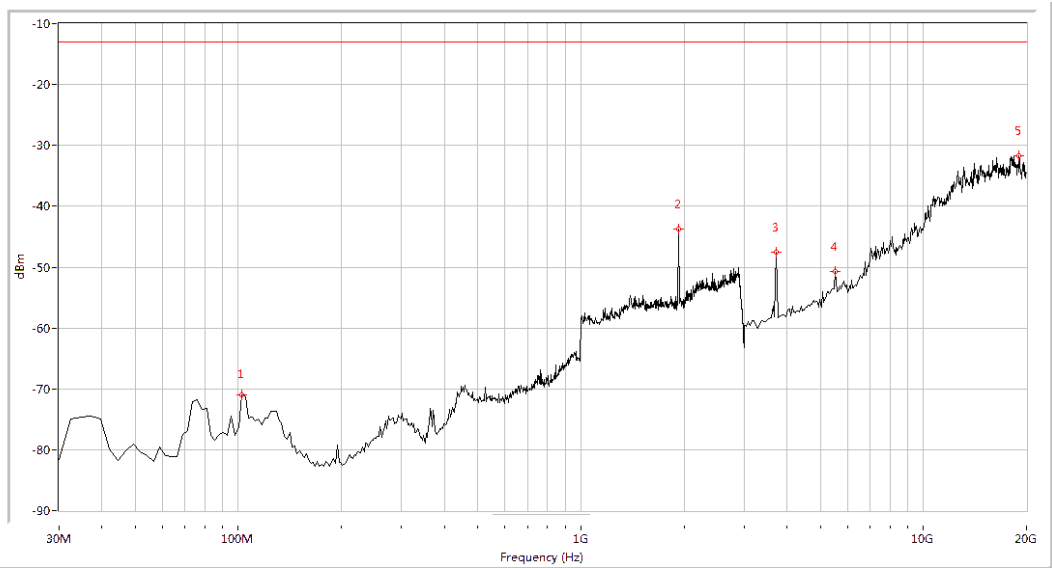
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-63.89	-13.0	50.9	360.0	Horizontal	PASS
891.147	-35.55	-13.0	22.5	76.3	Horizontal	PASS
1693.267	-46.35	-13.0	33.4	271.4	Horizontal	PASS
2441.397	-49.43	-13.0	36.4	359.5	Horizontal	PASS
12117.830	-33.58	-13.0	20.6	68.1	Horizontal	PASS

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



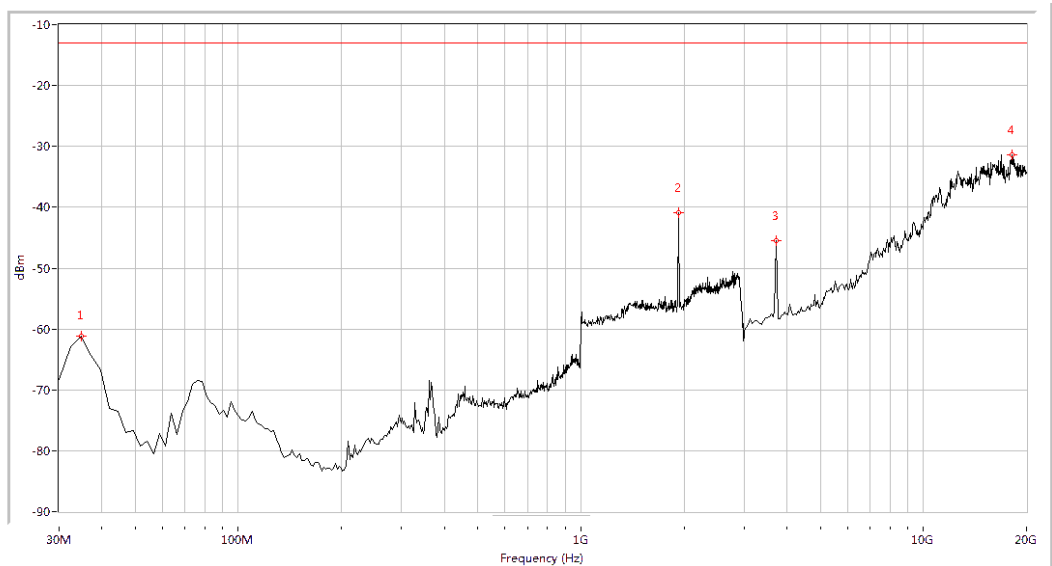
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-50.91	-13.0	37.9	241.3	Vertical	PASS
891.147	-39.75	-13.0	26.8	156.5	Vertical	PASS
1693.267	-47.90	-13.0	34.9	30.6	Vertical	PASS
2436.409	-49.29	-13.0	36.3	134.3	Vertical	PASS
12652.743	-33.55	-13.0	20.5	339.1	Vertical	PASS

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



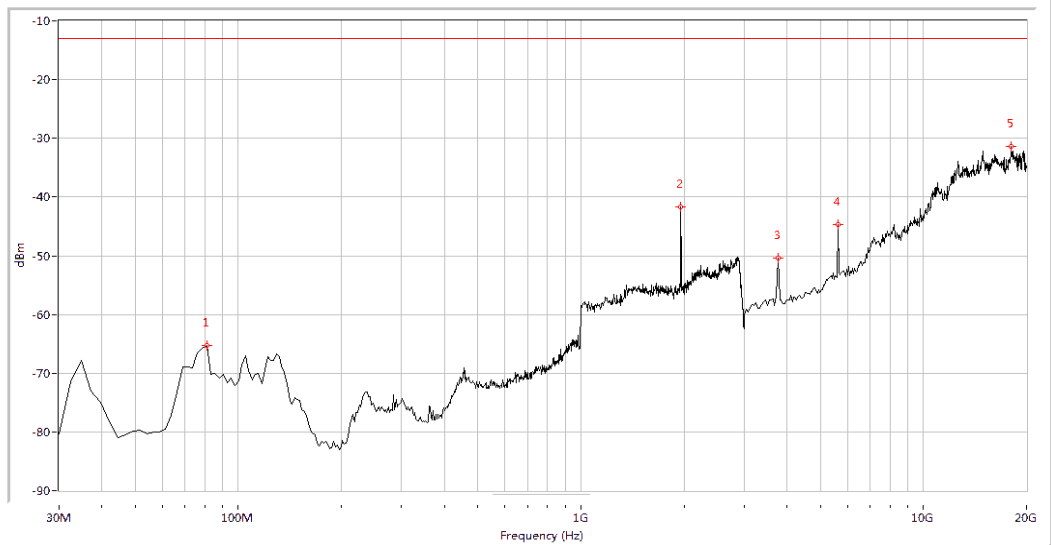
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
102.569	-70.95	-13.0	58.0	309.7	Horizontal	PASS
1927.681	-43.70	-13.0	30.7	45.0	Horizontal	PASS
3720.698	-47.56	-13.0	34.6	351.2	Horizontal	PASS
5543.641	-50.74	-13.0	37.7	52.7	Horizontal	PASS
19024.938	-31.77	-13.0	18.8	226.0	Horizontal	PASS

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



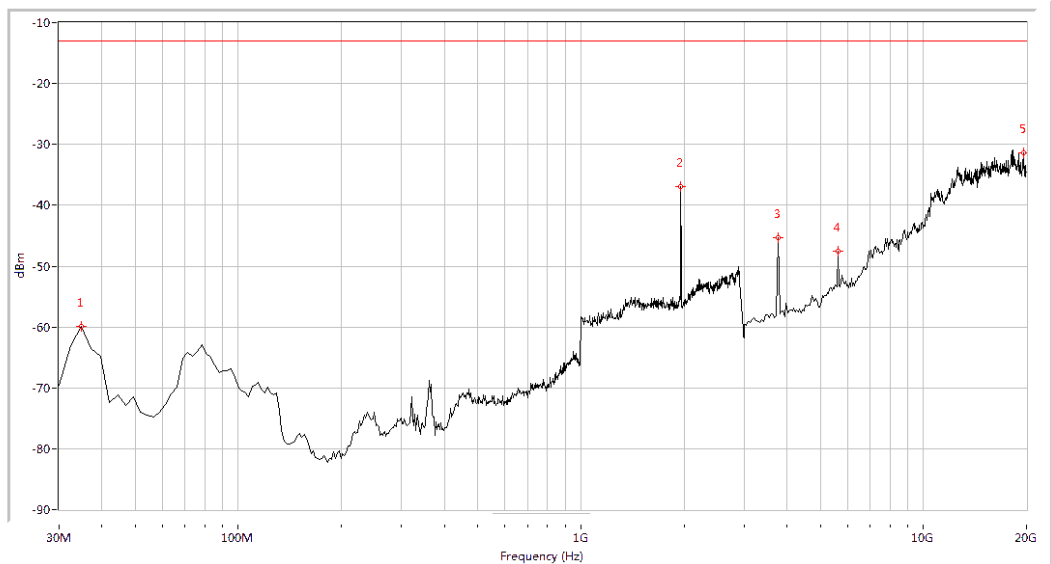
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-61.16	-13.0	48.2	205.9	Vertical	PASS
1927.681	-40.86	-13.0	27.9	51.4	Vertical	PASS
3720.698	-45.44	-13.0	32.4	265.1	Vertical	PASS
18092.269	-31.45	-13.0	18.4	3.2	Vertical	PASS

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



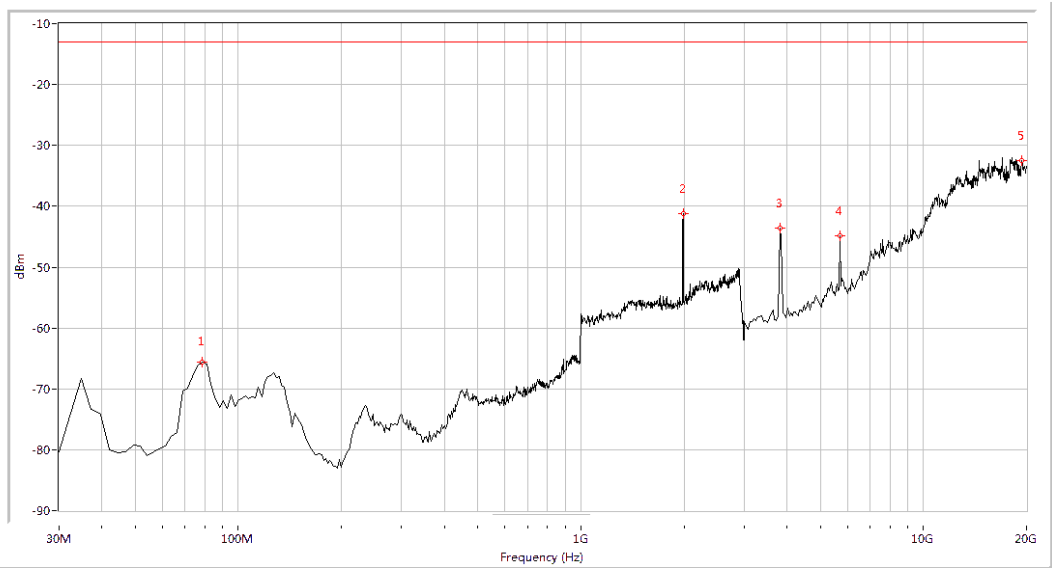
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
80.798	-65.29	-13.0	52.3	155.1	Horizontal	PASS
1957.606	-41.62	-13.0	28.6	244.2	Horizontal	PASS
3763.092	-50.45	-13.0	37.4	76.0	Horizontal	PASS
5628.429	-44.62	-13.0	31.6	58.8	Horizontal	PASS
18049.875	-31.45	-13.0	18.4	331.7	Horizontal	PASS

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



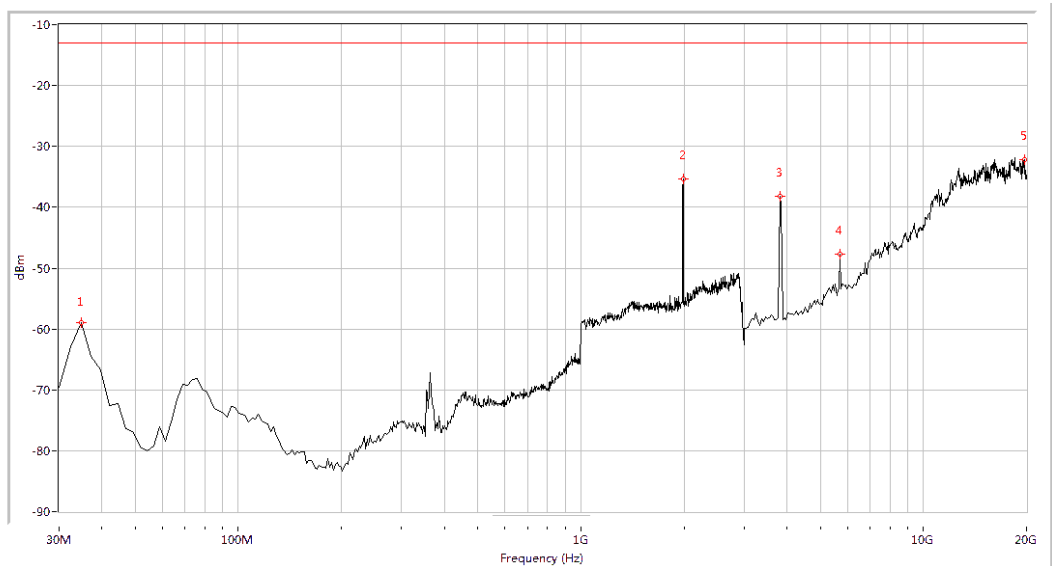
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-59.94	-13.0	46.9	46.9	Vertical	PASS
1957.606	-36.85	-13.0	23.9	-0.0	Vertical	PASS
3763.092	-45.40	-13.0	32.4	125.8	Vertical	PASS
5628.429	-47.52	-13.0	34.5	159.2	Vertical	PASS
19576.060	-31.31	-13.0	18.3	335.5	Vertical	PASS

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



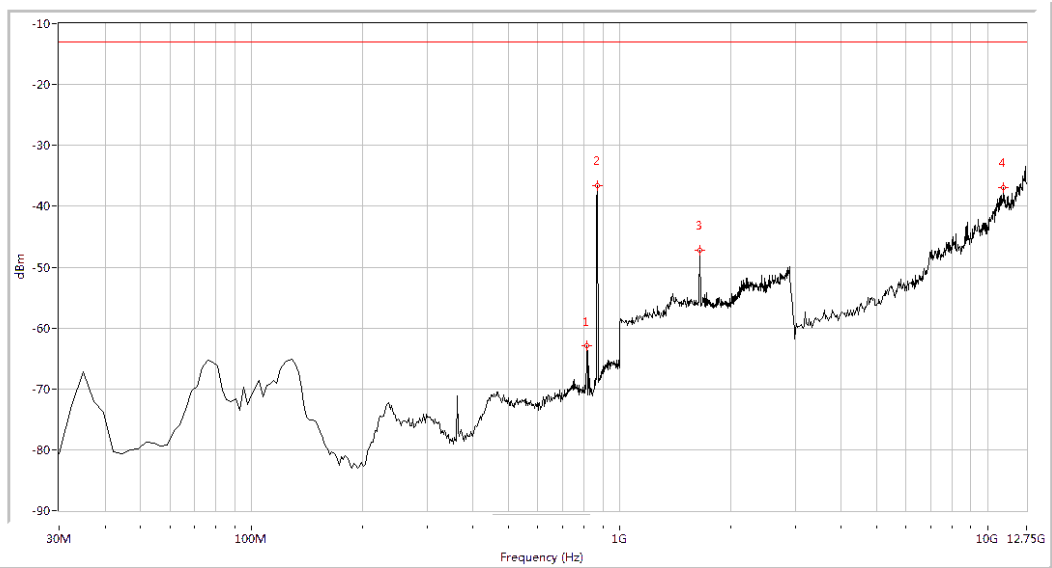
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
78.379	-65.56	-13.0	52.6	134.3	Horizontal	PASS
1987.531	-41.21	-13.0	28.2	113.6	Horizontal	PASS
3805.486	-43.51	-13.0	30.5	9.4	Horizontal	PASS
5713.217	-44.85	-13.0	31.9	9.4	Horizontal	PASS
19321.696	-32.44	-13.0	19.4	158.1	Horizontal	PASS

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



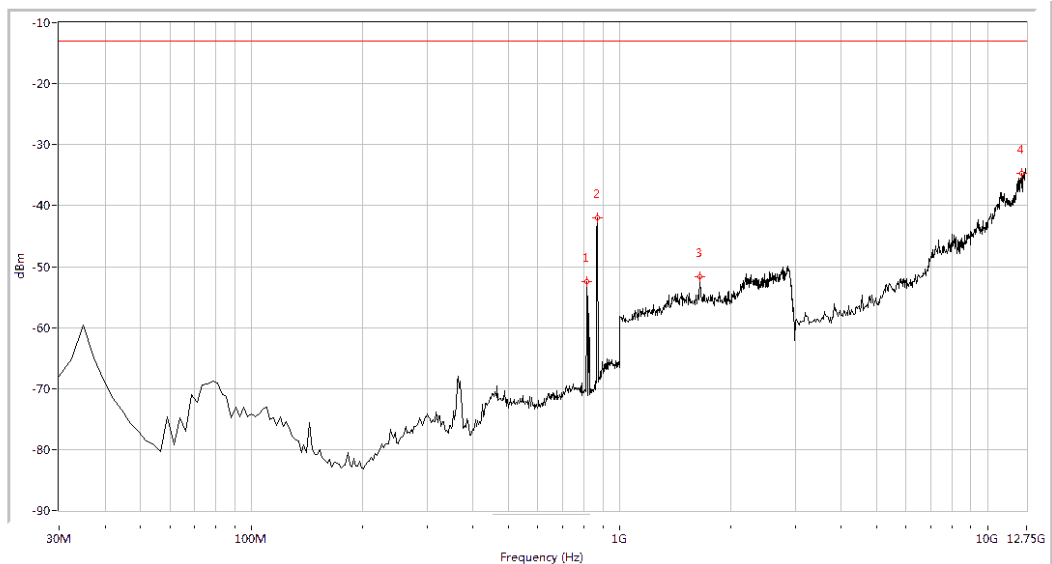
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-58.95	-13.0	45.9	334.0	Vertical	PASS
1987.531	-35.41	-13.0	22.4	316.4	Vertical	PASS
3805.486	-38.21	-13.0	25.2	143.6	Vertical	PASS
5713.217	-47.72	-13.0	34.7	168.1	Vertical	PASS
19703.242	-32.16	-13.0	19.2	85.3	Vertical	PASS

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



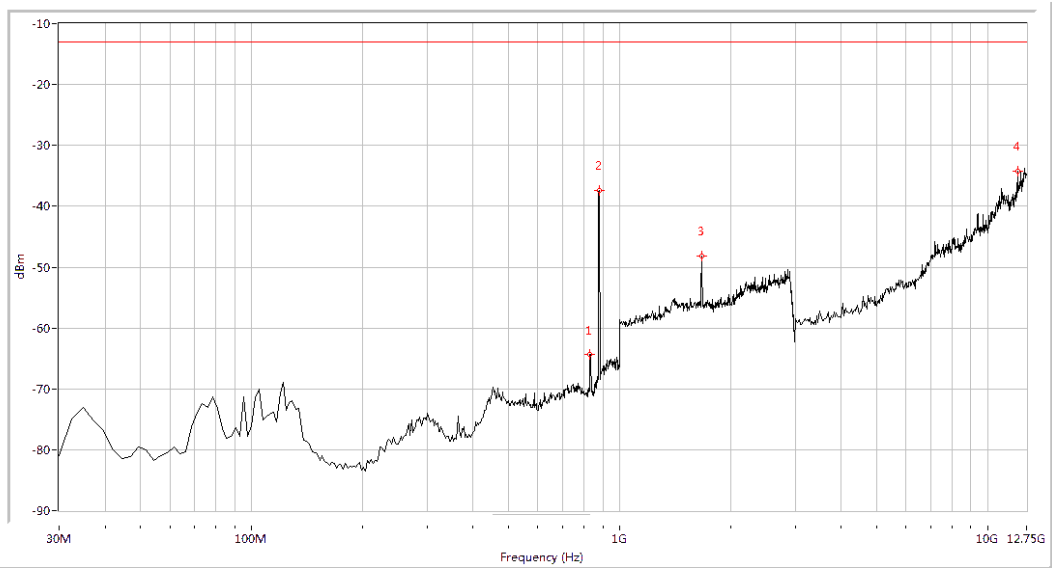
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-62.90	-13.0	49.9	360.0	Horizontal	PASS
869.377	-36.63	-13.0	23.6	92.7	Horizontal	PASS
1648.379	-47.17	-13.0	34.2	278.5	Horizontal	PASS
11023.691	-36.97	-13.0	24.0	341.4	Horizontal	PASS

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



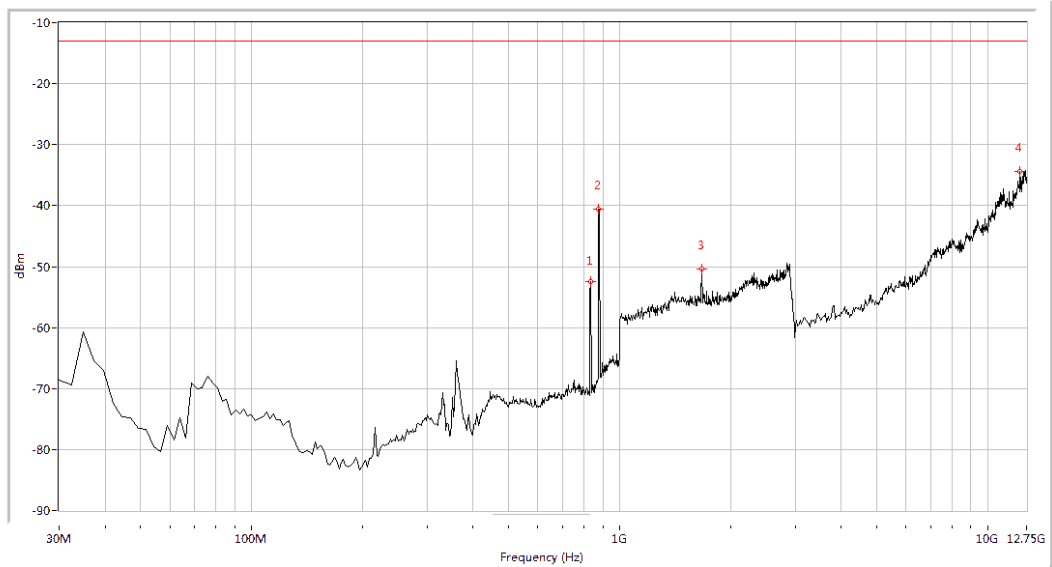
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-52.51	-13.0	39.5	159.0	Vertical	PASS
869.377	-41.99	-13.0	29.0	266.9	Vertical	PASS
1653.367	-51.66	-13.0	38.7	25.4	Vertical	PASS
12385.287	-34.69	-13.0	21.7	277.0	Vertical	PASS

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



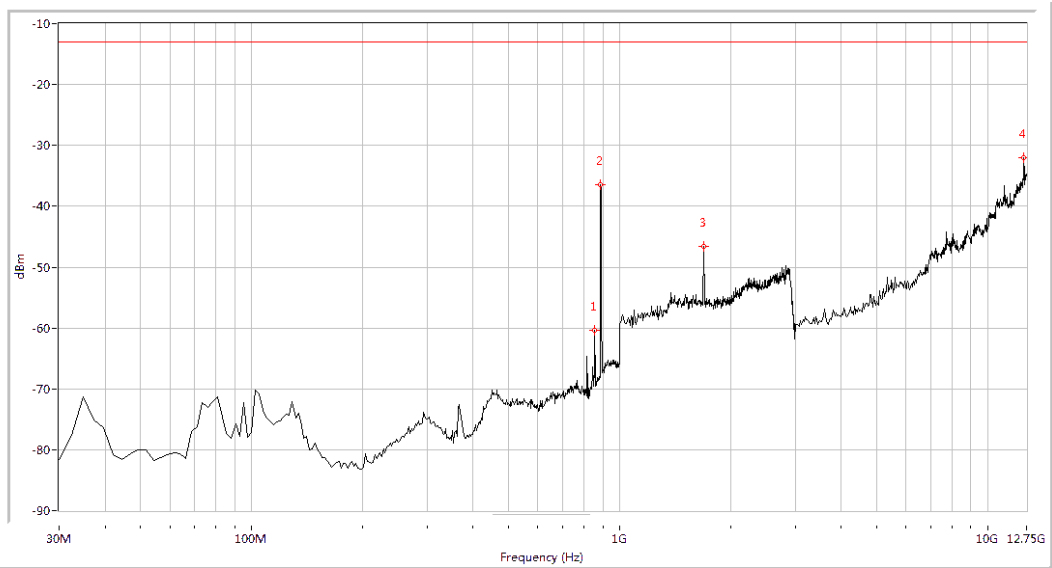
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
830.673	-64.35	-13.0	51.4	356.5	Horizontal	PASS
879.052	-37.48	-13.0	24.5	360.0	Horizontal	PASS
1668.329	-48.20	-13.0	35.2	264.3	Horizontal	PASS
12044.888	-34.19	-13.0	21.2	155.2	Horizontal	PASS

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



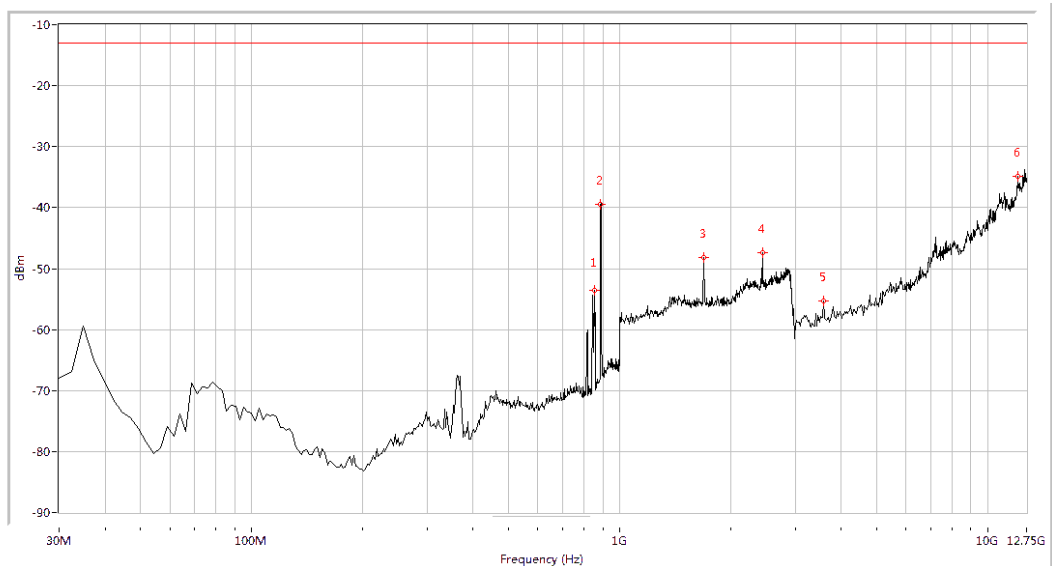
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
833.092	-52.43	-13.0	39.4	219.9	Vertical	PASS
876.633	-40.63	-13.0	27.6	325.9	Vertical	PASS
1668.329	-50.43	-13.0	37.4	186.2	Vertical	PASS
12239.401	-34.46	-13.0	21.5	350.4	Vertical	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-60.39	-13.0	47.4	272.9	Horizontal	PASS
888.728	-36.41	-13.0	23.4	0.3	Horizontal	PASS
1688.279	-46.63	-13.0	33.6	278.2	Horizontal	PASS
12555.486	-32.08	-13.0	19.1	160.5	Horizontal	PASS

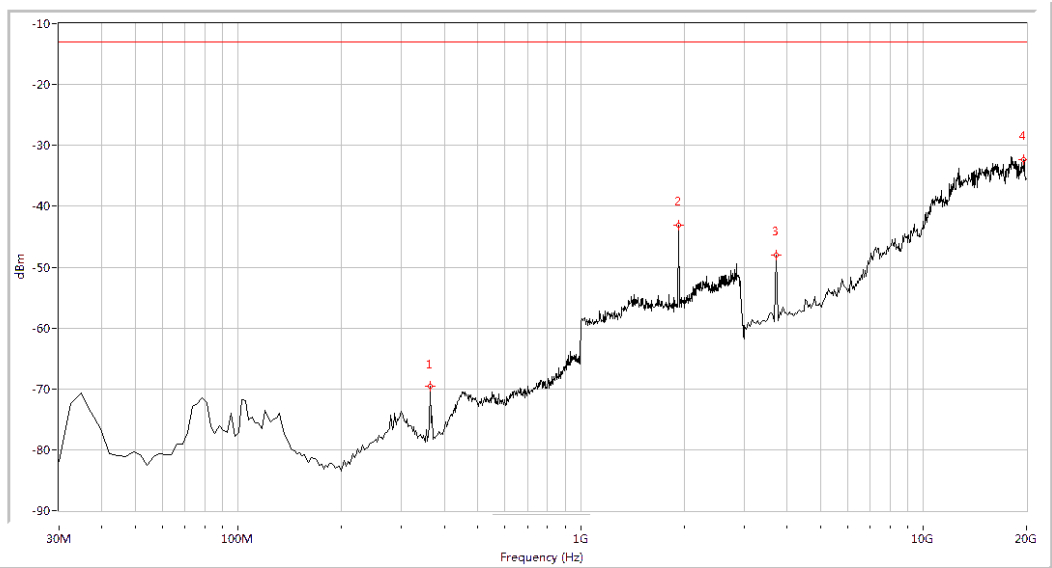
(Plot I.5: HSUPA 850MHz Channel = 4233, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-53.62	-13.0	40.6	194.9	Vertical	PASS
888.728	-39.48	-13.0	26.5	142.1	Vertical	PASS
1688.279	-48.21	-13.0	35.2	43.3	Vertical	PASS
2441.397	-47.46	-13.0	34.5	358.1	Vertical	PASS
3583.541	-55.24	-13.0	42.2	359.9	Vertical	PASS
12069.202	-34.90	-13.0	21.9	234.0	Vertical	PASS

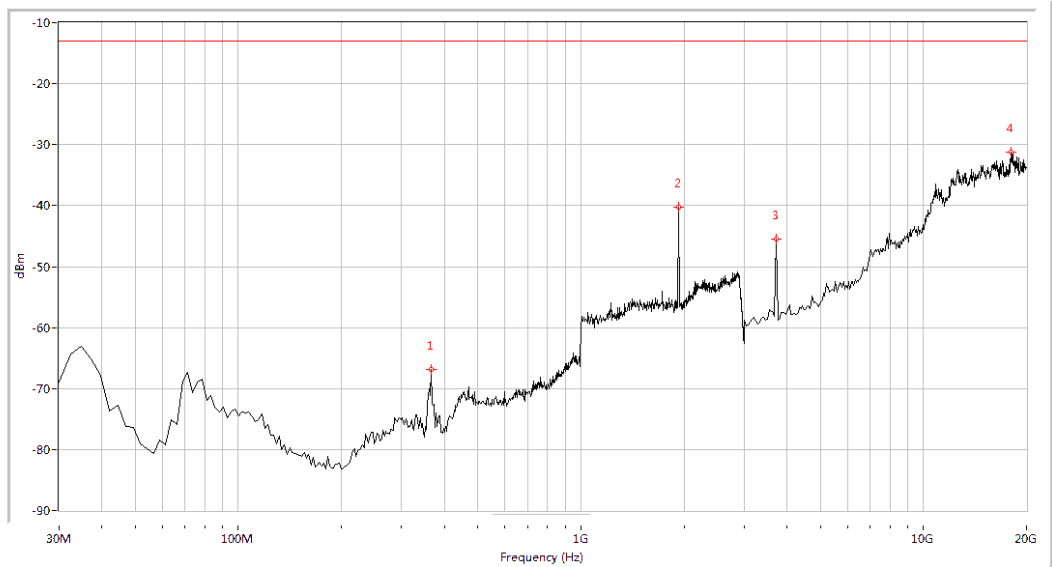
(Plot I.6: HSUPA 850MHz Channel = 4233, Test Antenna Vertical)





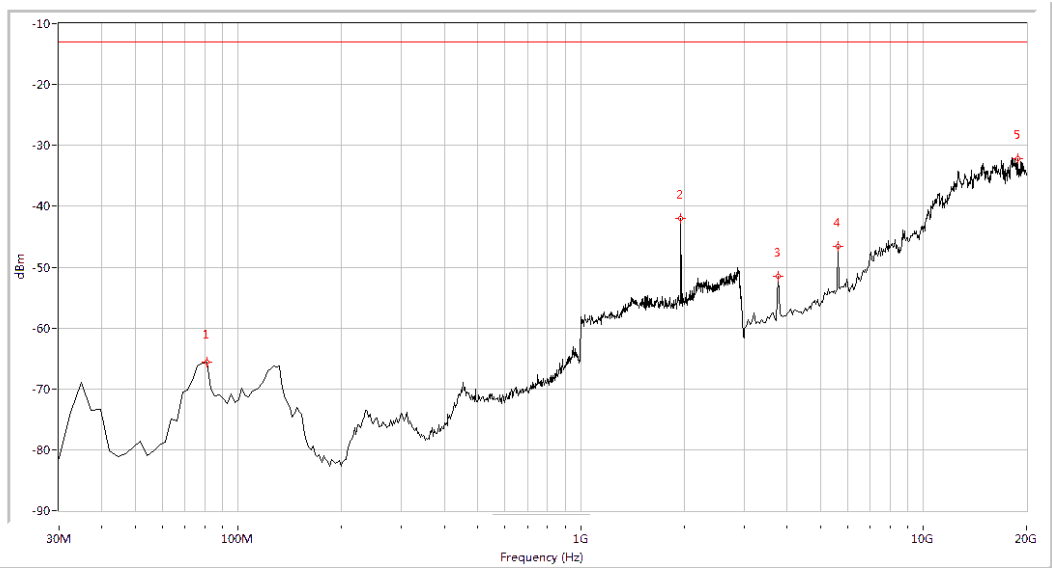
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
363.815	-69.53	-13.0	56.5	54.8	Horizontal	PASS
1932.668	-43.12	-13.0	30.1	77.7	Horizontal	PASS
3720.698	-47.96	-13.0	35.0	-0.0	Horizontal	PASS
19618.454	-32.31	-13.0	19.3	158.1	Horizontal	PASS

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



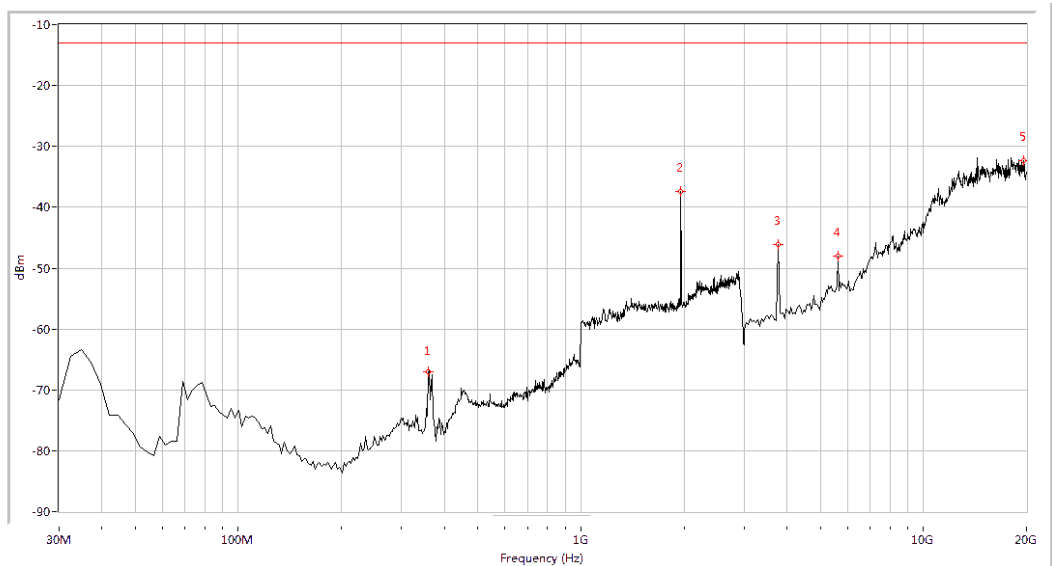
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
366.234	-66.82	-13.0	53.8	69.6	Vertical	PASS
1932.668	-40.26	-13.0	27.3	234.2	Vertical	PASS
3720.698	-45.46	-13.0	32.5	257.8	Vertical	PASS
18049.875	-31.25	-13.0	18.2	91.9	Vertical	PASS

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



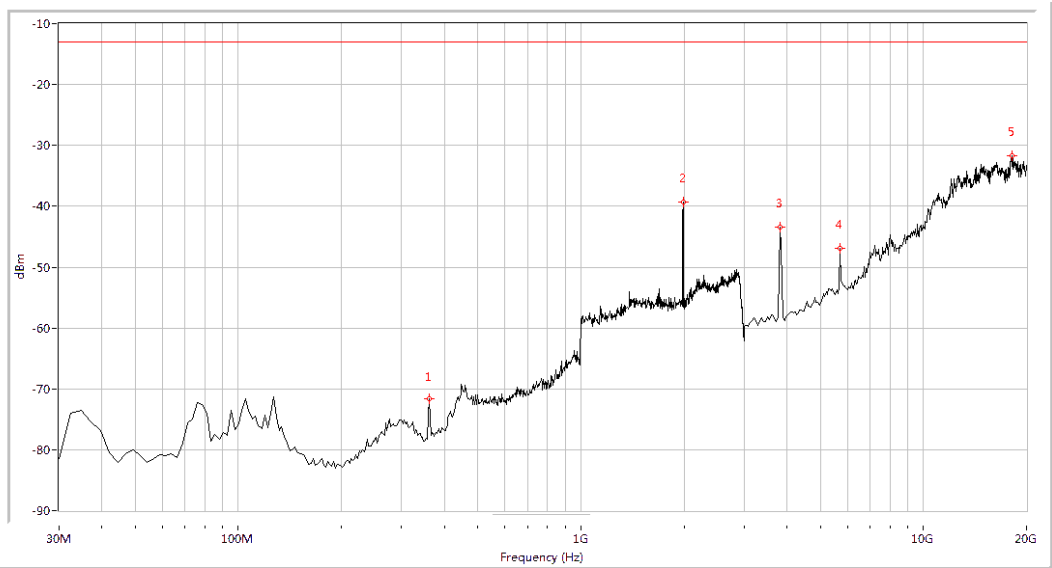
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
80.798	-65.54	-13.0	52.5	136.1	Horizontal	PASS
1957.606	-42.01	-13.0	29.0	240.3	Horizontal	PASS
3763.092	-51.54	-13.0	38.5	81.3	Horizontal	PASS
5628.429	-46.63	-13.0	33.6	48.2	Horizontal	PASS
18812.968	-32.20	-13.0	19.2	-0.0	Horizontal	PASS

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



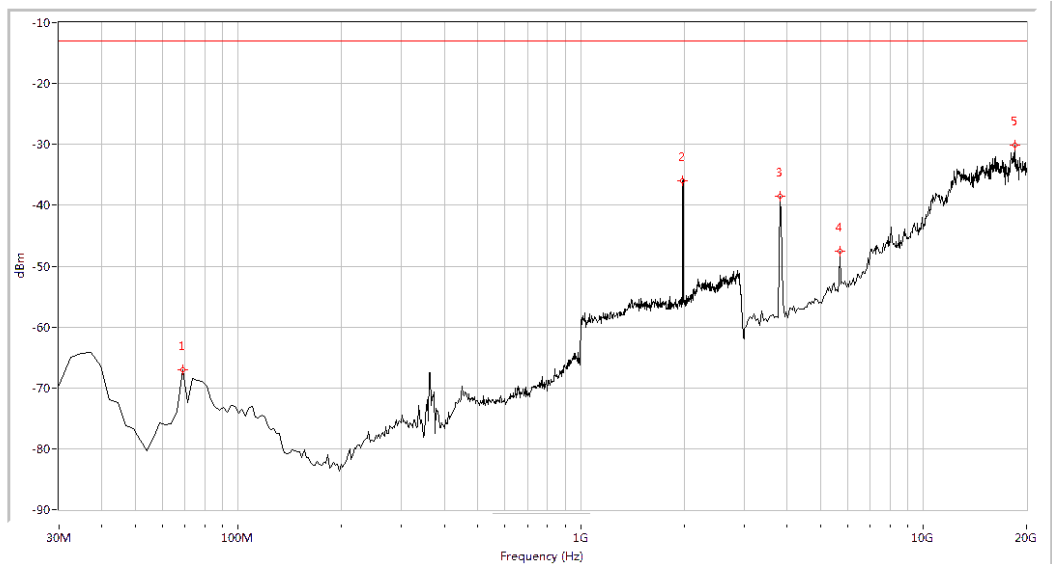
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
358.978	-67.02	-13.0	54.0	253.9	Vertical	PASS
1957.606	-37.37	-13.0	24.4	286.5	Vertical	PASS
3763.092	-46.08	-13.0	33.1	142.3	Vertical	PASS
5628.429	-47.99	-13.0	35.0	191.0	Vertical	PASS
19660.848	-32.27	-13.0	19.3	200.3	Vertical	PASS

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



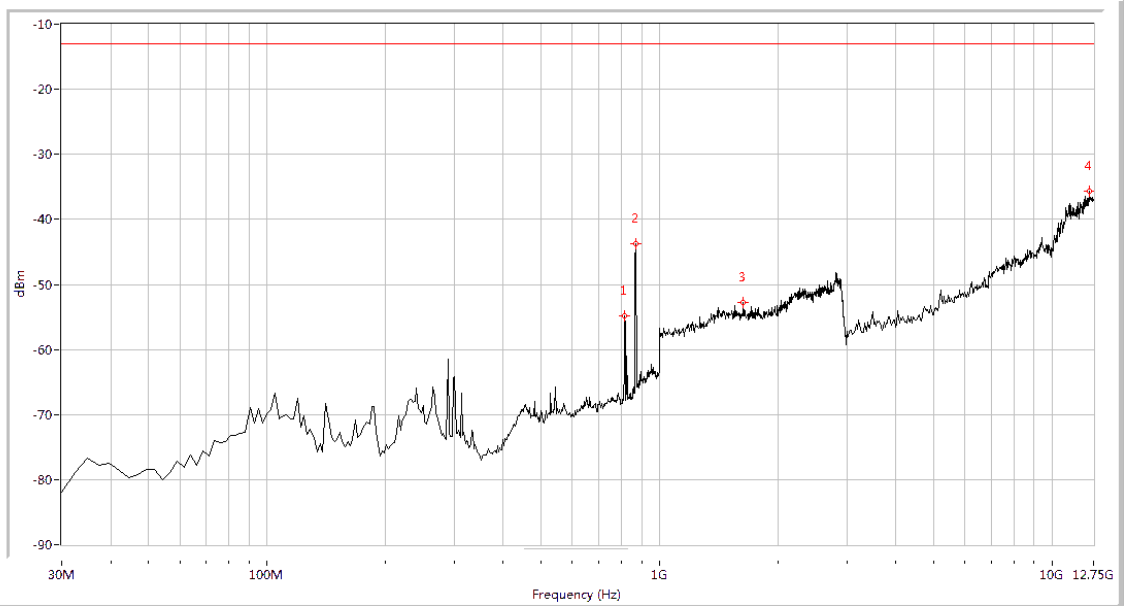
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
361.397	-71.61	-13.0	58.6	60.5	Horizontal	PASS
1987.531	-39.28	-13.0	26.3	182.7	Horizontal	PASS
3805.486	-43.50	-13.0	30.5	226.7	Horizontal	PASS
5713.217	-46.87	-13.0	33.9	3.0	Horizontal	PASS
18092.269	-31.72	-13.0	18.7	134.1	Horizontal	PASS

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



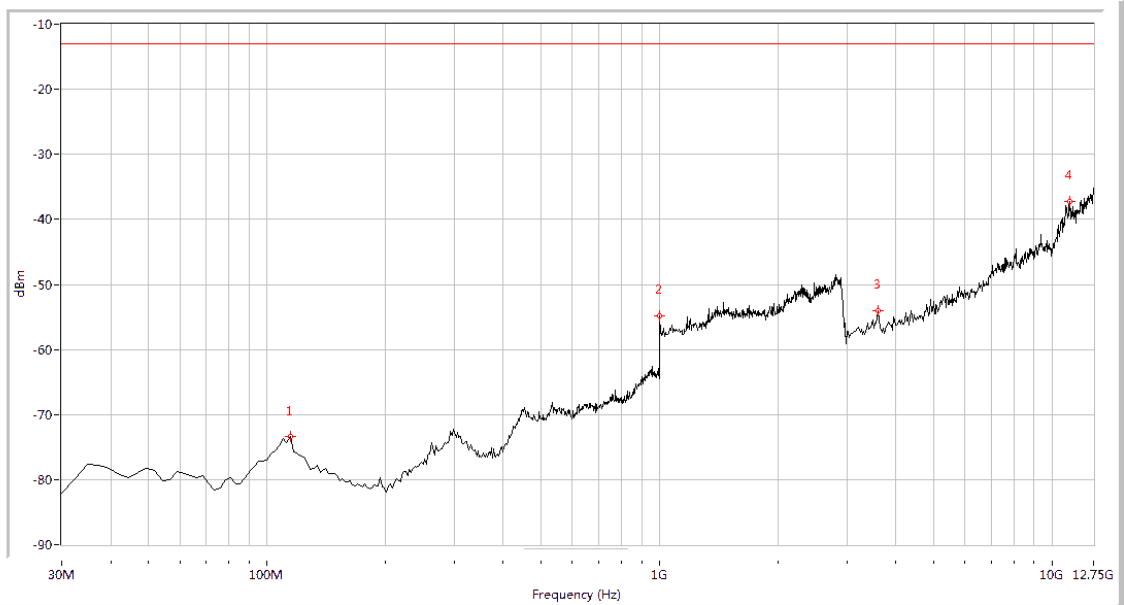
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
68.703	-67.11	-13.0	54.1	359.1	Vertical	PASS
1982.544	-36.06	-13.0	23.1	61.8	Vertical	PASS
3805.486	-38.52	-13.0	25.5	135.6	Vertical	PASS
5713.217	-47.57	-13.0	34.6	192.5	Vertical	PASS
18473.815	-30.15	-13.0	17.2	94.7	Vertical	PASS

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



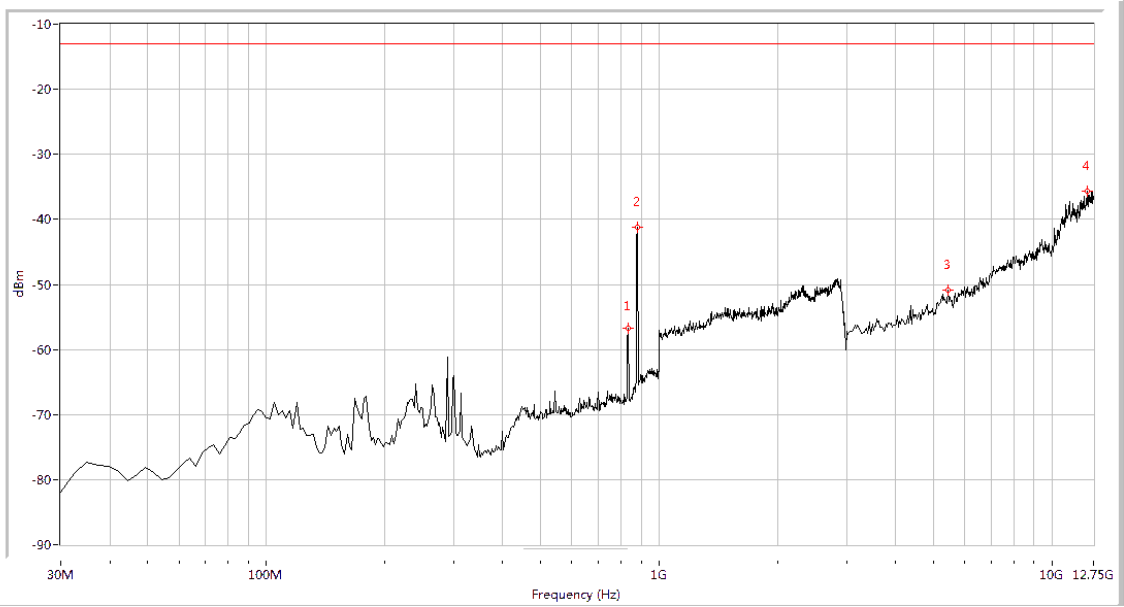
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-54.79	-13.0	41.8	175.8	Horizontal	PASS
871.796	-43.74	-13.0	30.7	197.7	Horizontal	PASS
1633.416	-52.82	-13.0	39.8	287.1	Horizontal	PASS
12458.229	-35.61	-13.0	22.6	351.5	Horizontal	PASS

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



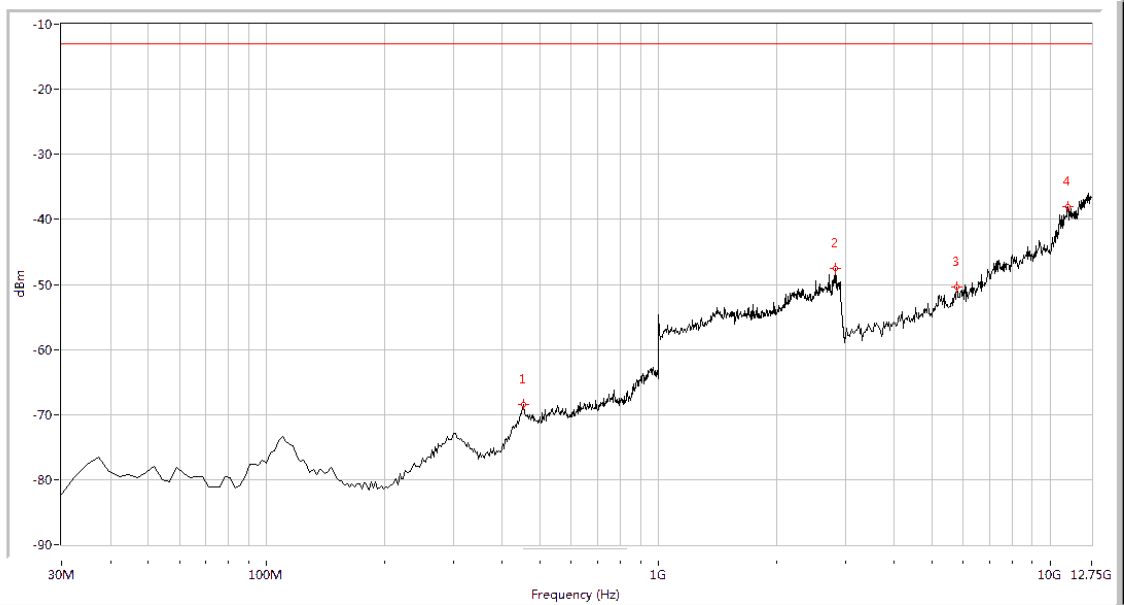
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
114.663	-73.44	-13.0	60.4	336.9	Vertical	PASS
1000.000	-54.86	-13.0	41.9	204.0	Vertical	PASS
3607.855	-53.99	-13.0	41.0	31.9	Vertical	PASS
11120.948	-37.20	-13.0	24.2	80.6	Vertical	PASS

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



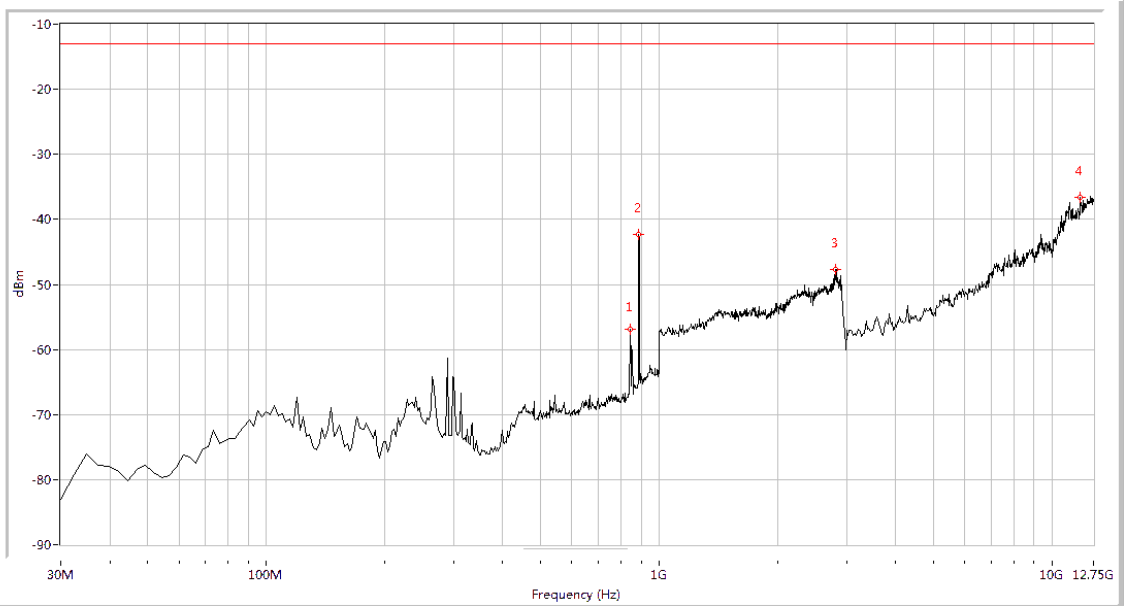
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
833.092	-56.78	-13.0	43.8	184.3	Horizontal	PASS
879.052	-41.16	-13.0	28.2	19.5	Horizontal	PASS
5431.421	-50.92	-13.0	37.9	120.3	Horizontal	PASS
12263.716	-35.74	-13.0	22.7	241.2	Horizontal	PASS

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



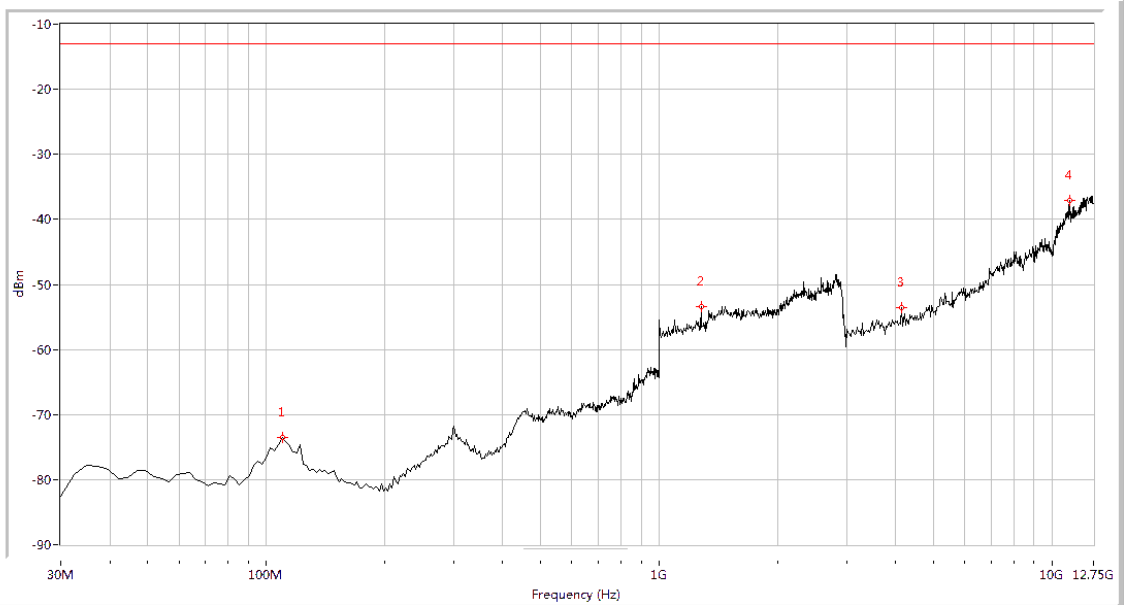
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
453.317	-68.53	-13.0	55.5	83.0	Vertical	PASS
2835.411	-47.54	-13.0	34.5	355.5	Vertical	PASS
5771.820	-50.47	-13.0	37.5	299.8	Vertical	PASS
11072.319	-38.01	-13.0	25.0	252.2	Vertical	PASS

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



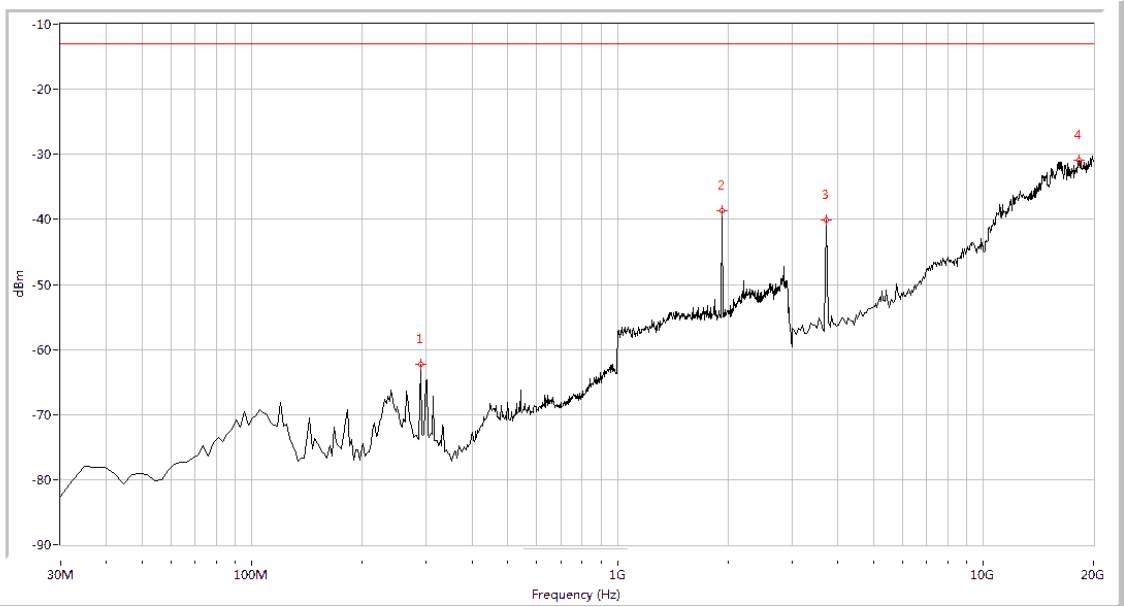
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
845.187	-56.91	-13.0	43.9	123.4	Horizontal	PASS
888.728	-42.34	-13.0	29.3	9.9	Horizontal	PASS
2805.486	-47.76	-13.0	34.8	185.6	Horizontal	PASS
11801.746	-36.67	-13.0	23.7	41.9	Horizontal	PASS

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



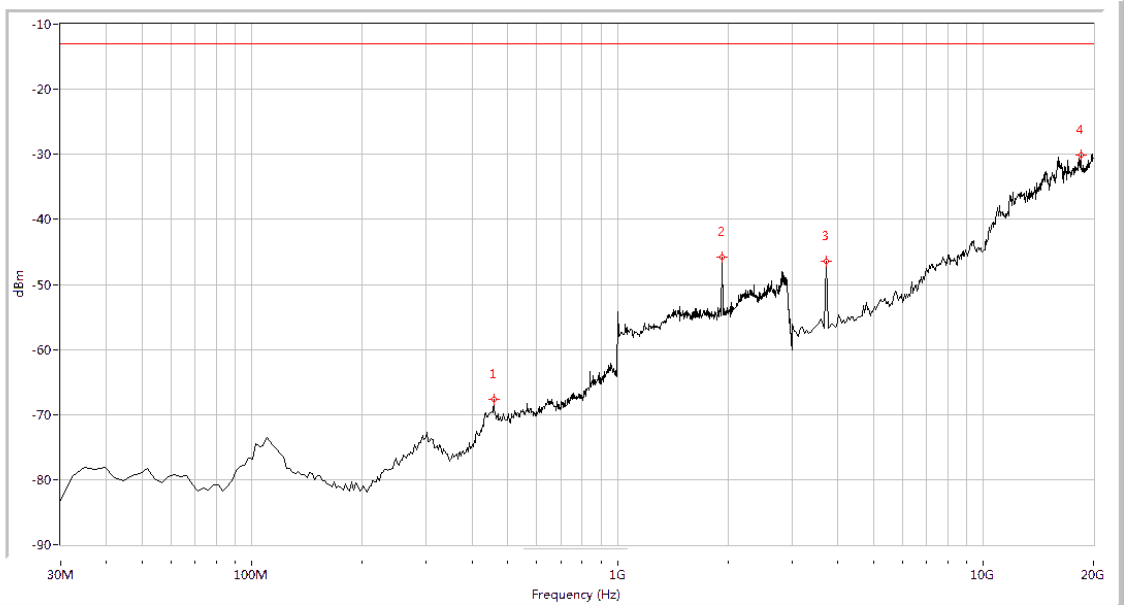
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-73.57	-13.0	60.6	357.6	Vertical	PASS
1279.302	-53.48	-13.0	40.5	114.6	Vertical	PASS
4142.768	-53.64	-13.0	40.6	242.7	Vertical	PASS
11072.319	-37.11	-13.0	24.1	30.8	Vertical	PASS

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



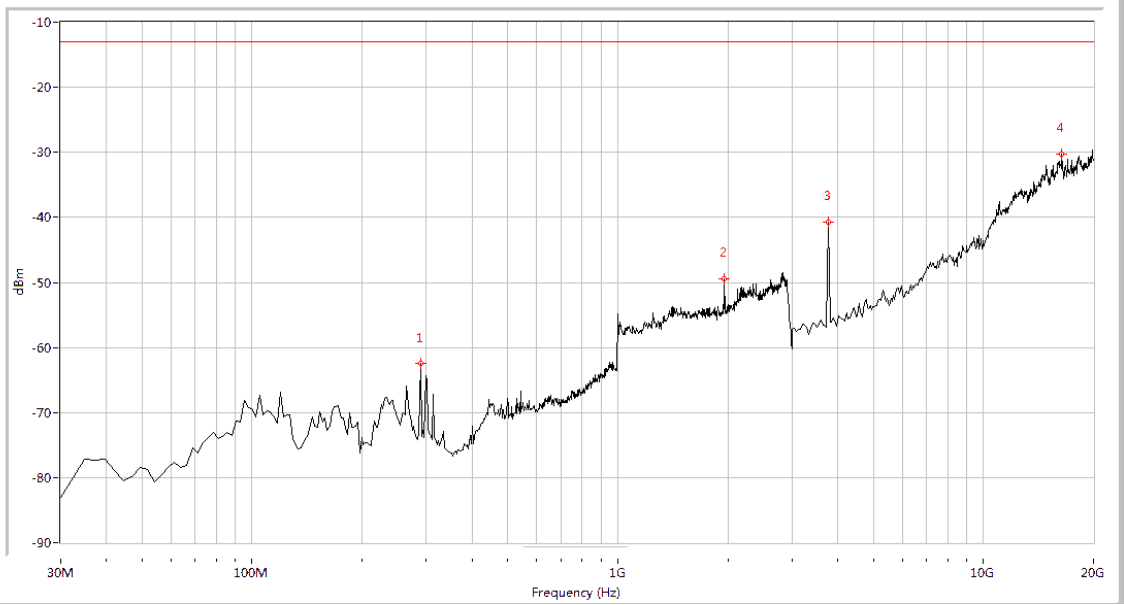
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-62.26	-13.0	49.3	239.4	Horizontal	PASS
1927.681	-38.70	-13.0	25.7	53.6	Horizontal	PASS
3720.698	-40.05	-13.0	27.0	237.9	Horizontal	PASS
18219.451	-30.91	-13.0	17.9	31.8	Horizontal	PASS

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



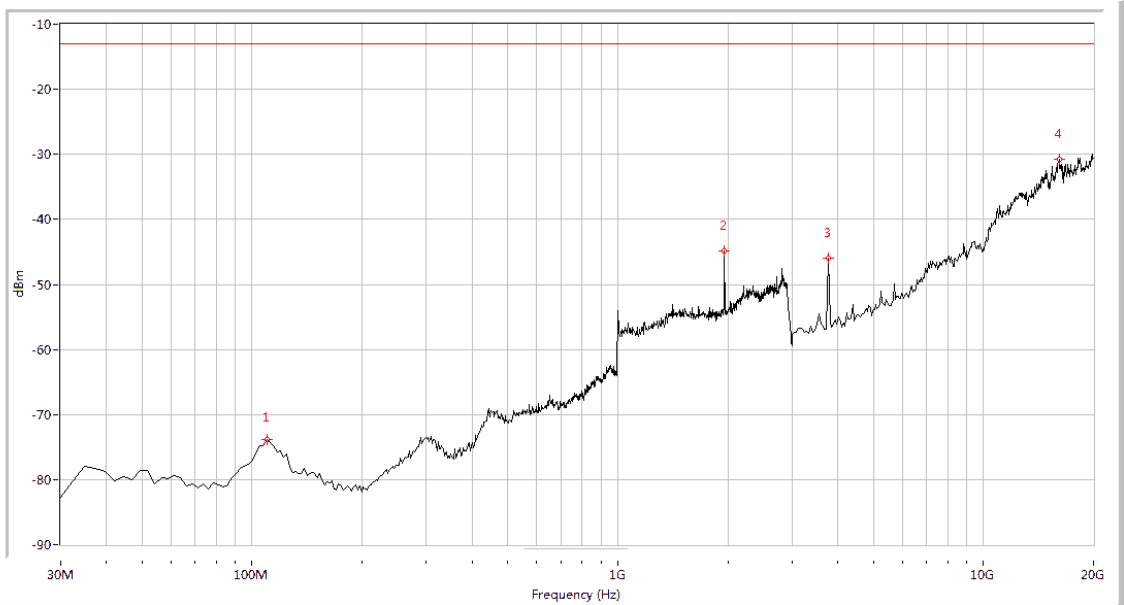
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
458.155	-67.62	-13.0	54.6	349.5	Vertical	PASS
1932.668	-45.81	-13.0	32.8	80.4	Vertical	PASS
3720.698	-46.46	-13.0	33.5	45.6	Vertical	PASS
18473.815	-30.07	-13.0	17.1	356.5	Vertical	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-62.43	-13.0	49.4	256.5	Horizontal	PASS
1957.606	-49.52	-13.0	36.5	173.4	Horizontal	PASS
3763.092	-40.76	-13.0	27.8	245.0	Horizontal	PASS
16396.509	-30.31	-13.0	17.3	303.0	Horizontal	PASS

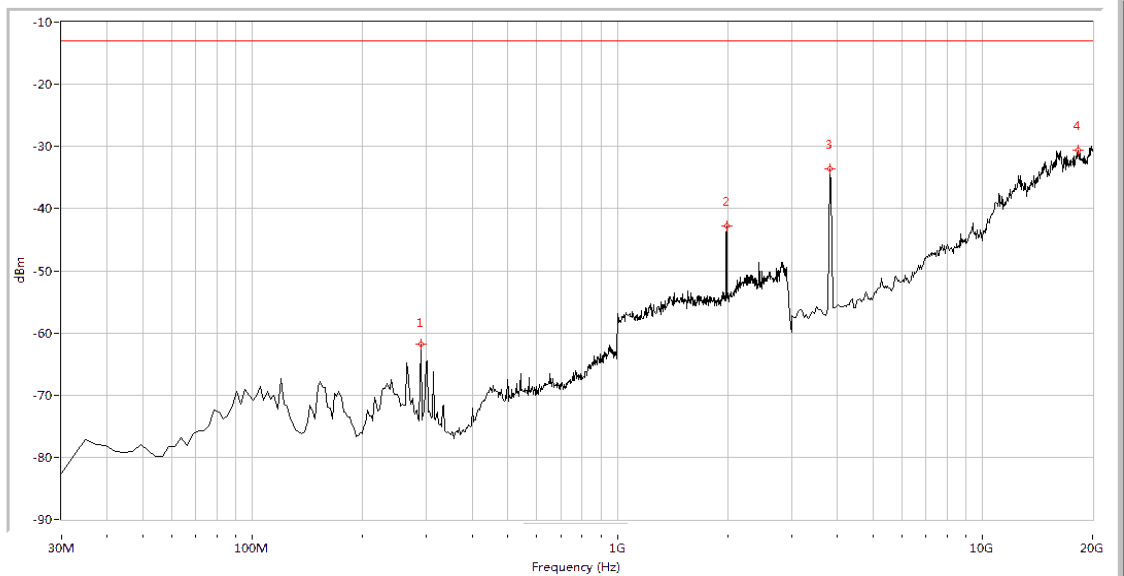
(Plot K.3: HSPA+ 1900 MHz Channel = 9400, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-73.79	-13.0	60.8	229.4	Vertical	PASS
1957.606	-44.91	-13.0	31.9	236.6	Vertical	PASS
3763.092	-45.95	-13.0	33.0	291.1	Vertical	PASS
16099.751	-30.69	-13.0	17.7	224.1	Vertical	PASS

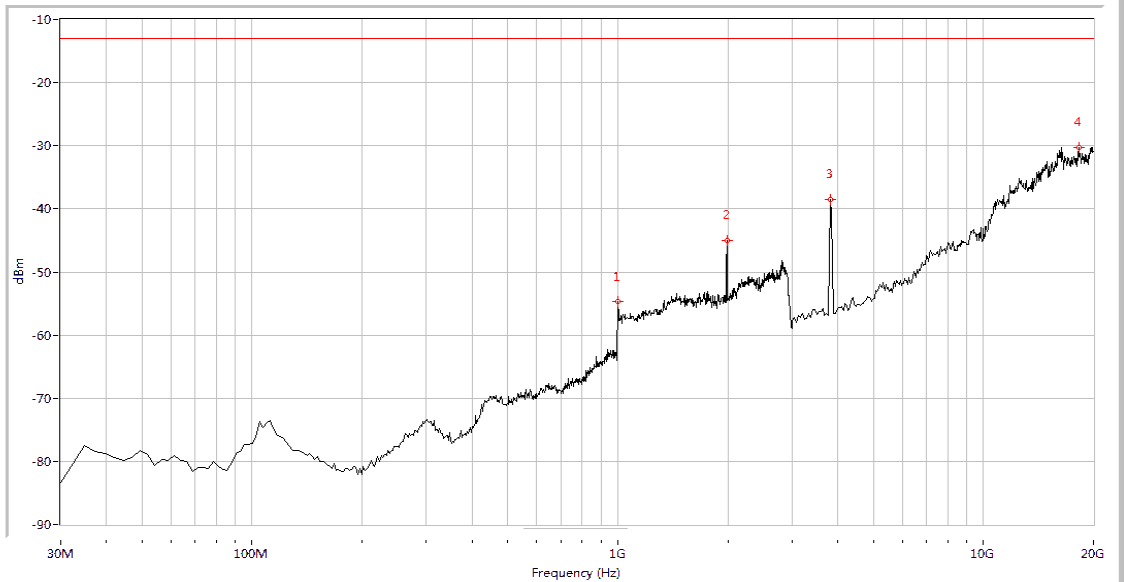
(Plot K.4: HSPA+ 850 MHz Channel = 9400, Test Antenna Vertical)





Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-61.79	-13.0	48.8	243.5	Horizontal	PASS
1987.531	-42.75	-13.0	29.8	20.9	Horizontal	PASS
3805.486	-33.65	-13.0	20.6	249.8	Horizontal	PASS
18304.239	-30.53	-13.0	17.5	226.4	Horizontal	PASS

(Plot K.5: HSPA+ 850 MHz Channel = 9538, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1000.000	-54.68	-13.0	41.7	217.6	Vertical	PASS
1987.531	-44.95	-13.0	32.0	110.1	Vertical	PASS
3805.486	-38.44	-13.0	25.4	28.4	Vertical	PASS
18219.451	-30.24	-13.0	17.2	196.9	Vertical	PASS

(Plot K.6: HSPA+ 850 MHz Channel = 9538, Test Antenna Vertical)

\*\* END OF REPORT \*\*