MORLAB

FCC TEST REPORT

Issued to

Brightstar Corporation

For

Fixed Wireless Phone

Model Name:	FXP-862R & FXP-861R
Trade Name:	Motorola
Brand Name:	Motorola
FCC ID :	WVB-FXP86XR
Standard:	47 CFR Part 22 Subpart H
	47 CFR Part 24 Subpart E
Test date:	2013-1-17to 2013-2-20
Issue date:	2013-2-21

Shenzhen Morlab Communications Technology Co., Ltd.

Tested by *Nie Quan*

Nie Quan

(Test Engineer)

Date *2013.2.21*

Approved by
Wu Xueven
(Department Manager)

Date

Reviewed by

Peng Huarui

(Project Manager)

Date *2013.2.21*

CTIA Authorized Test Lab
LAB CODE 20061223-00
IEEE 1725   OTA

OFTA
電訊管理局

ilac-MRA

TAF
Testing Laboratory

GCF'
Official Observer of
Global Certification Forum

Bluetooth
BQTF

FCC
Reg. No.
695796

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Change History		
Issue	Date	Reason for change
1.0	Feb 21, 2013	First edition

1.   GENERAL INFORMATION

1.1   EUT Description

EUT Type ....: Fixed Wireless Phone

Serial No..............................: (n.a, marked #1 by test site)

Hardware Version ....: FXP862R_V0.2

Software Version ....: Z93A_LAKIA512_LAKIA_hspa_MT6276_S01.Z93A_LAKIA512

Applicant ....: Brightstar Corporation

9725 NW 117th Avenue, #300 Miami, FL 33178

Manufacturer ....: LAKIA Networks CO., LTD.

2/F,Unit A, Technology Service Building, Software Garden,
1phase, Xiamen, Fujian, China   Zip: 361005

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...................: GSM and GPRS Mode with GMSK Modulation

WCDMA Mode with QPSK Modulation

HSDPA Mode with QPSK Modulation

HSUPA Mode with QPSK Modulation

Multislot Class......................: GPRS: Multislot Class12

Antenna Type........................: TNC External antenna

Emission Designators ....: GSM850:253KGXW, GSM1900:248KGXW,

WCDMA850:4M18F9W,WCDMA1900:4M19F9W

HSDPA850:4M19F9W,HSDPA1900:4M18F9W

HSUPA850:4M18F9W,HSUPA1900:4M19F9W

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula $F(n)=824.2+0.2*(n-128)$, $128<=n<=251$; 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 $F(n)=1850.2+0.2*(n-512)$, $512<=n<=810$; 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 $F(n)=826.4+0.2*(n-4132)$, $4132<=n<=4233$; 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 $F(n)=1852.4+0.2*(n-9262)$, $9262<=n<=9538$; 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	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:
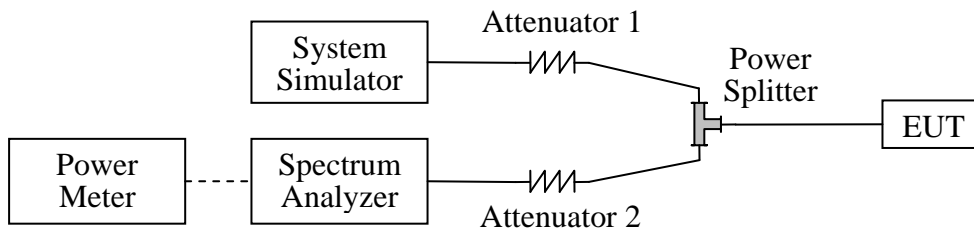
The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded 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 dBm	Verdict
			dBm	Refer to Plot		
GSM 850MHz	128	824.2	30.94	Plot A1 to A3	35	PASS
	190	836.6	31.36			PASS
	251	848.8	32.56			PASS
GSM 1900MHz	512	1850.2	29.35	Plot B1 to B3	32	PASS
	661	1880.0	28.04			PASS
	810	1909.8	27.43			PASS
GPRS 850MHz	128	824.2	30.5	Plot C1 to C3[Note 1]	35	PASS
	190	836.6	30.94			PASS
	251	848.8	31.34			PASS
GPRS 1900MHz	512	1850.2	28.9	Plot D1 to D3[Note 1]	32	PASS
	661	1880.0	27.55			PASS
	810	1909.8	26.94			PASS

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

GPRS Mode Conducted peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)			
			Slot 1	Slot 2	Slot 3	Slot 4
GSM 850	128	824.2	30.5	29.07	28.08	27.01
	190	836.6	30.94	29.58	28.06	26.95
	251	848.8	31.34	29.56	28.30	26.33
PCS 1900	512	1850.2	28.9	26.56	25.36	24.70
	661	1880.0	27.55	26.21	25.23	24.15
	810	1909.8	26.94	26.20	25.13	24.32

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	21.53	21.46	21.55	21.75	22.33	22.61
HSDPA	1	21.48	21.39	21.32	21.63	22.27	22.57
	2	21.49	21.37	21.31	21.61	22.25	22.53
	3	20.95	20.87	20.85	21.15	21.78	22.05
	4	20.97	20.88	20.83	21.12	21.77	22.07
HSUPA	1	21.47	21.37	21.30	21.62	22.25	22.52
	2	19.53	19.39	19.29	19.59	20.27	20.55
	3	20.48	20.38	20.29	20.61	21.26	21.53
	4	19.52	19.38	19.27	19.65	20.23	20.53
	5	21.46	21.35	21.27	21.61	22.25	22.51
Note:	The Conducted RF Output Power test of WCDMA /HSDPA /HSUPA /HSPA+ was tested by power meter.						

3. GSM Model Test Plots:
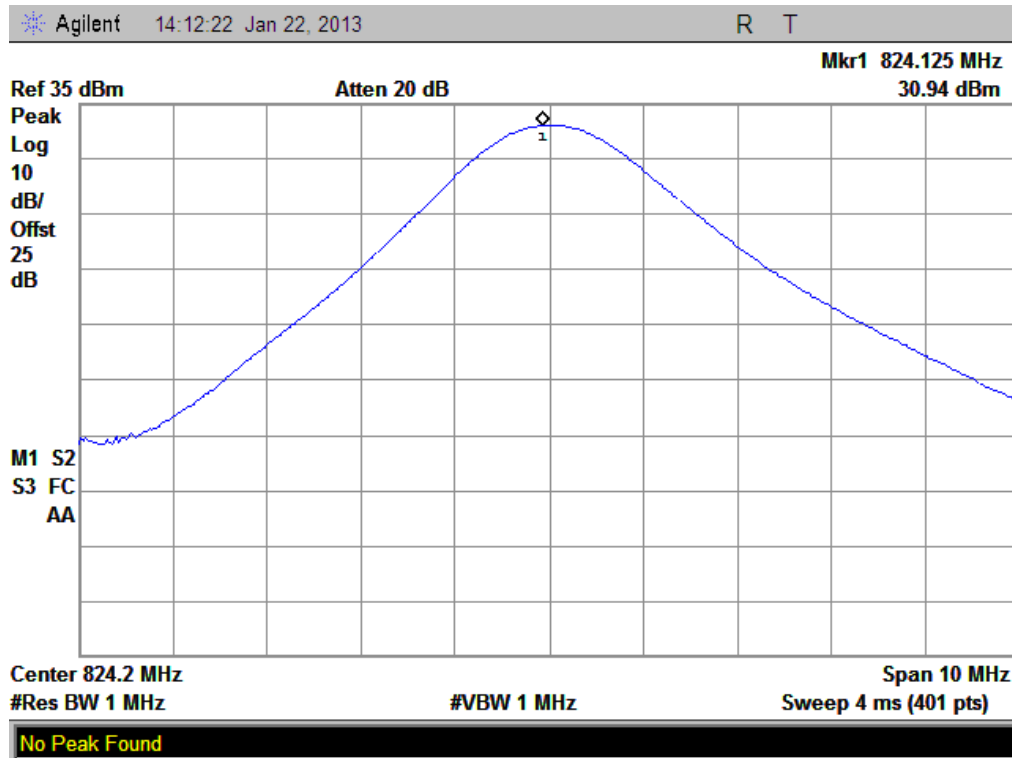
(Plot A1:   GSM 850MHz Channel = 128)
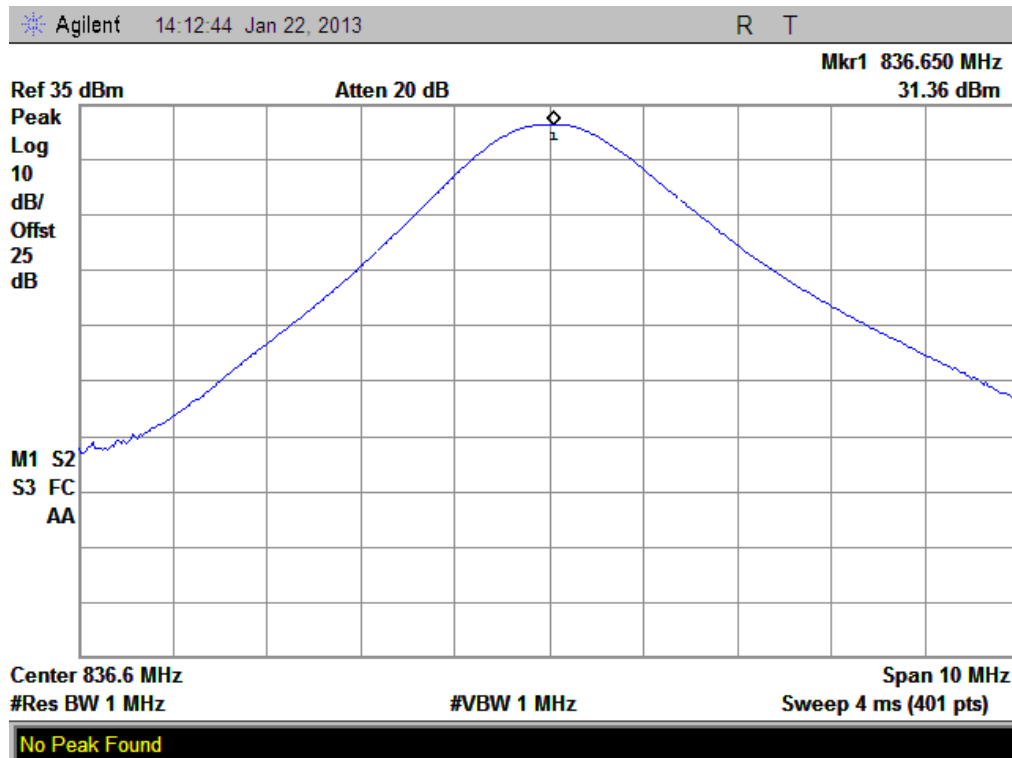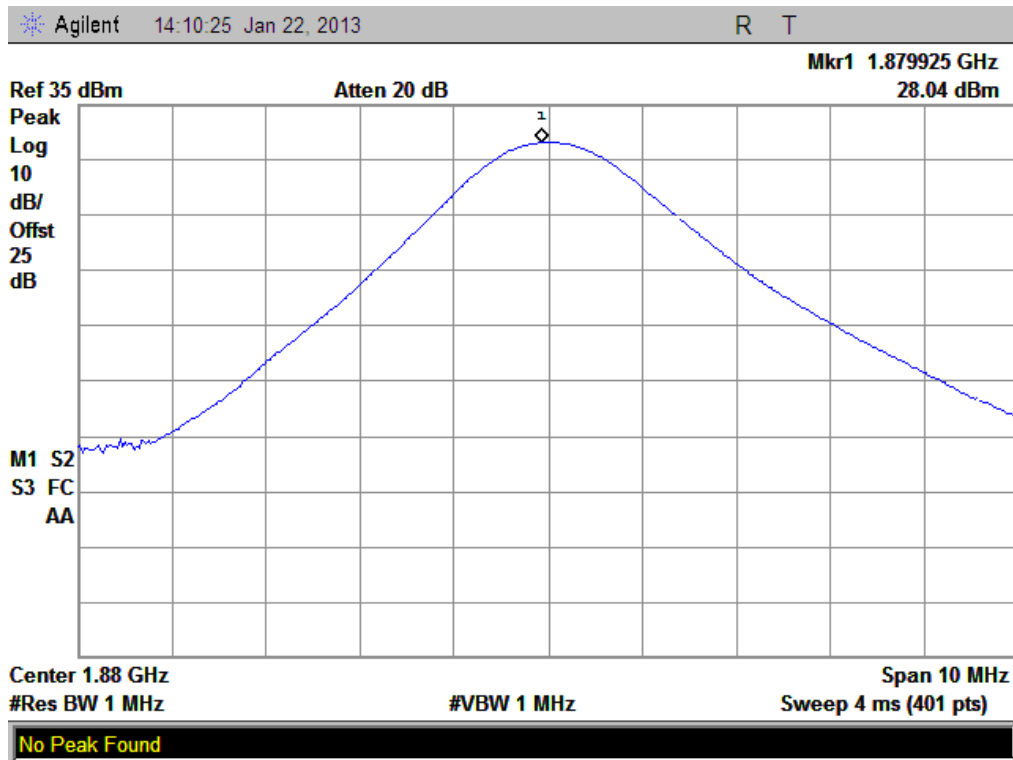

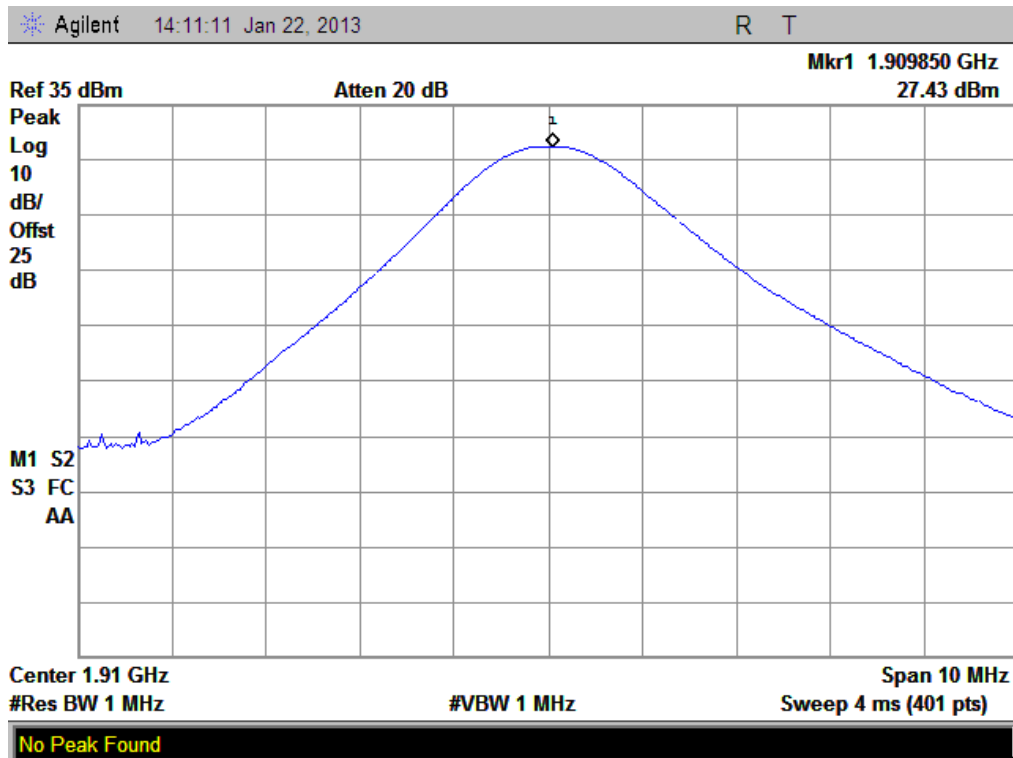(Plot A2:   GSM 850MHz Channel = 190)
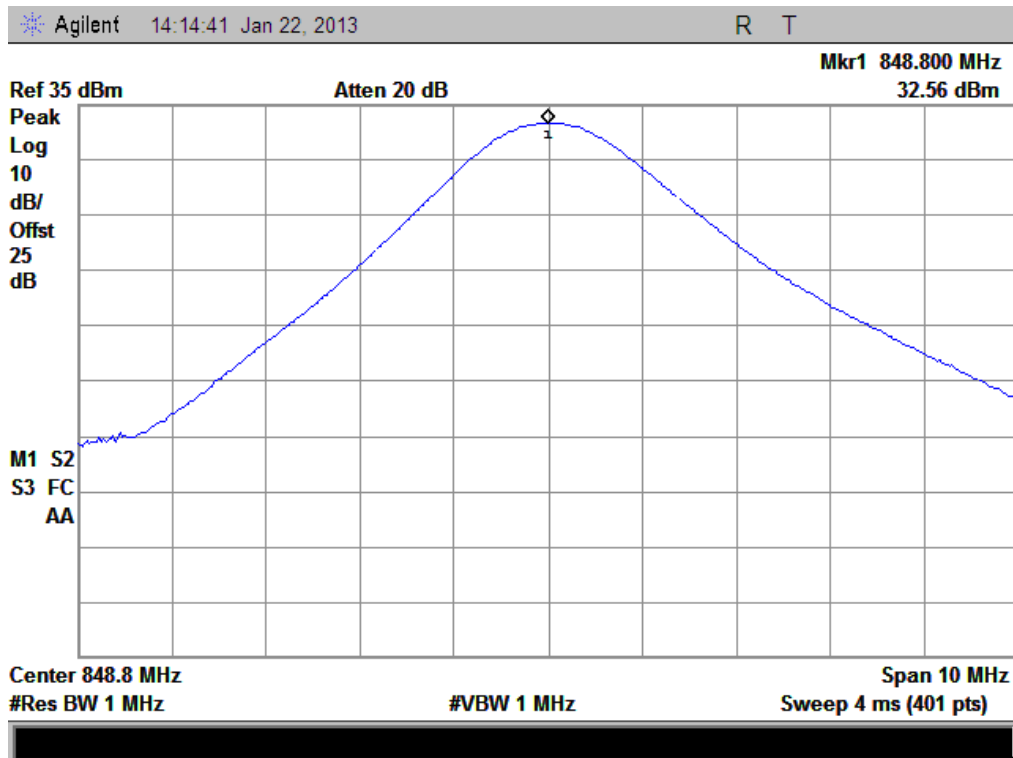
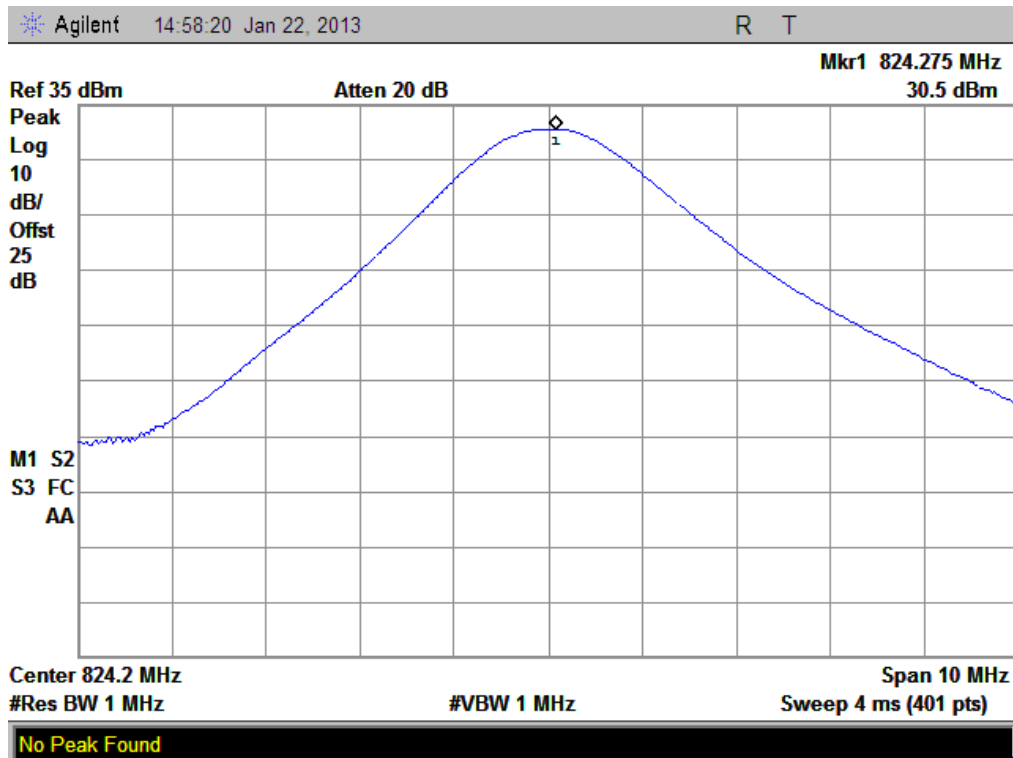(Plot A3:   GSM 850MHz Channel = 251)
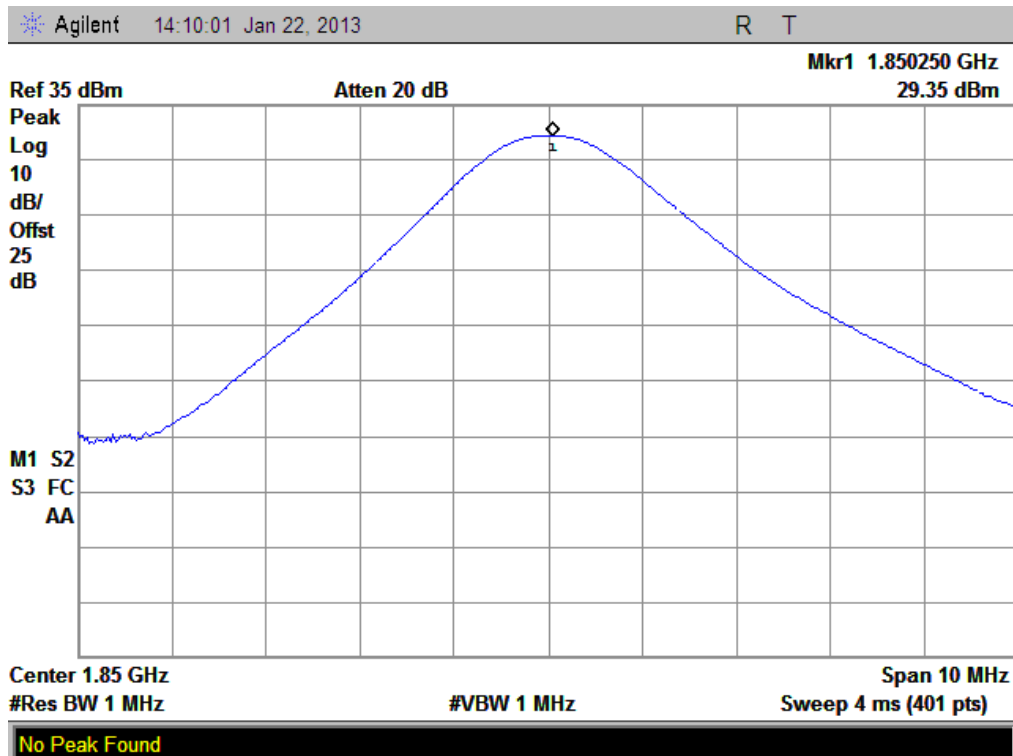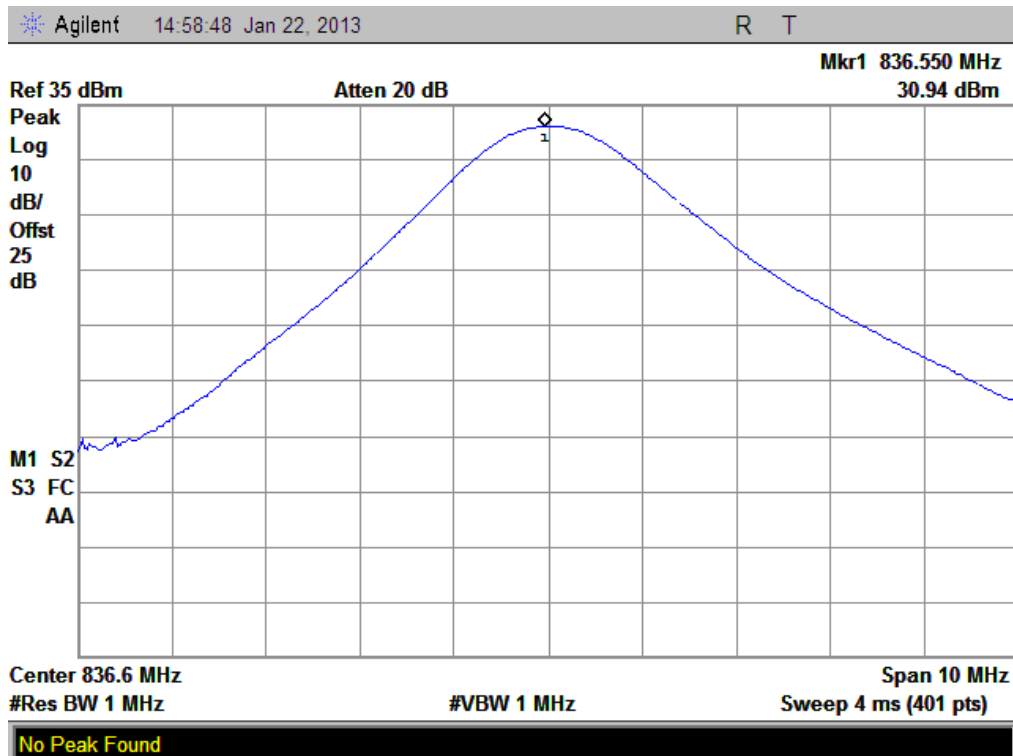

(Plot B1:   GSM 1900MHz Channel = 512)

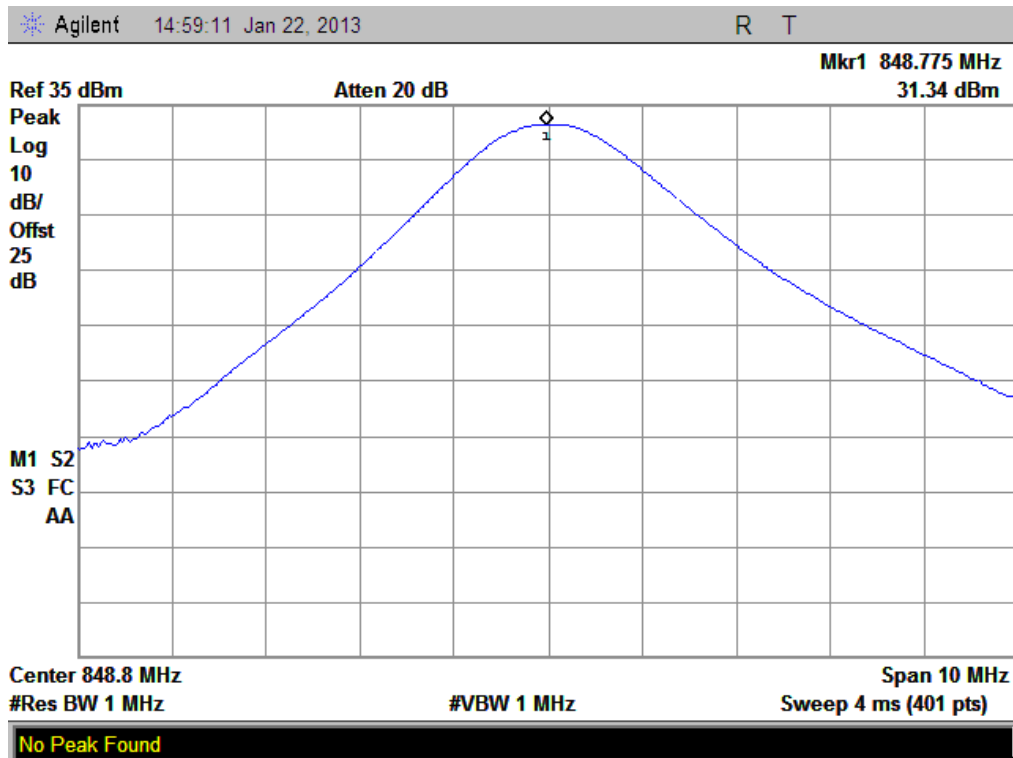(Plot B2: GSM 1900MHz Channel = 661)

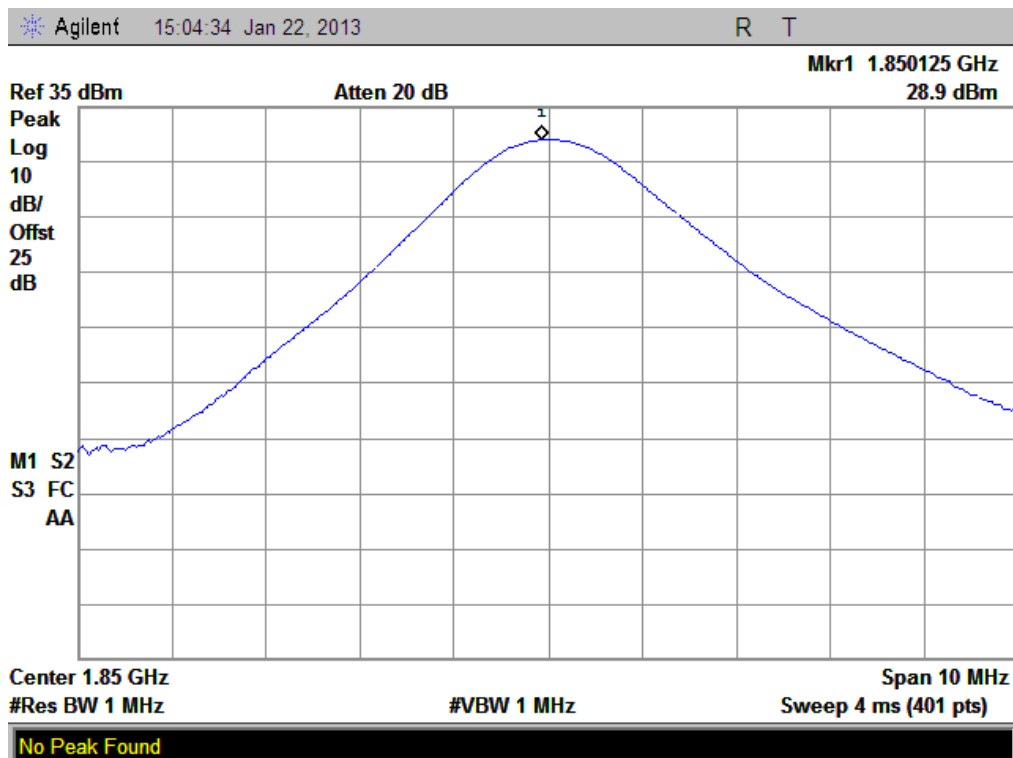(Plot B3: GSM 1900MHz Channel = 810)

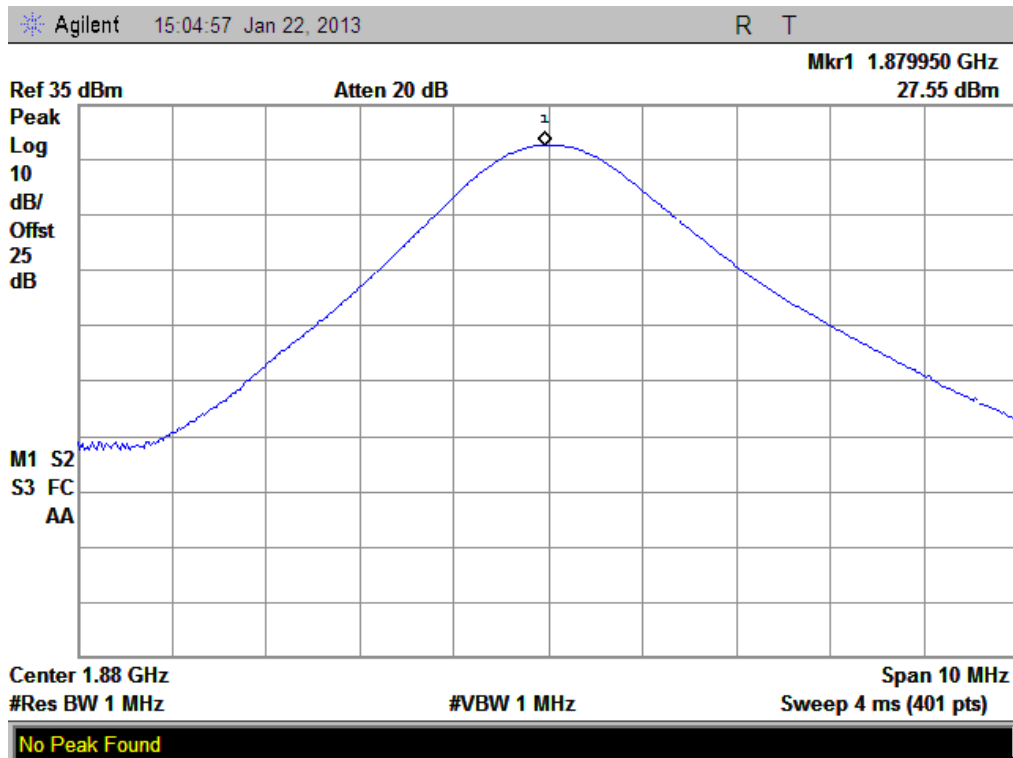(Plot C1:   GPRS 850MHz Channel = 128)

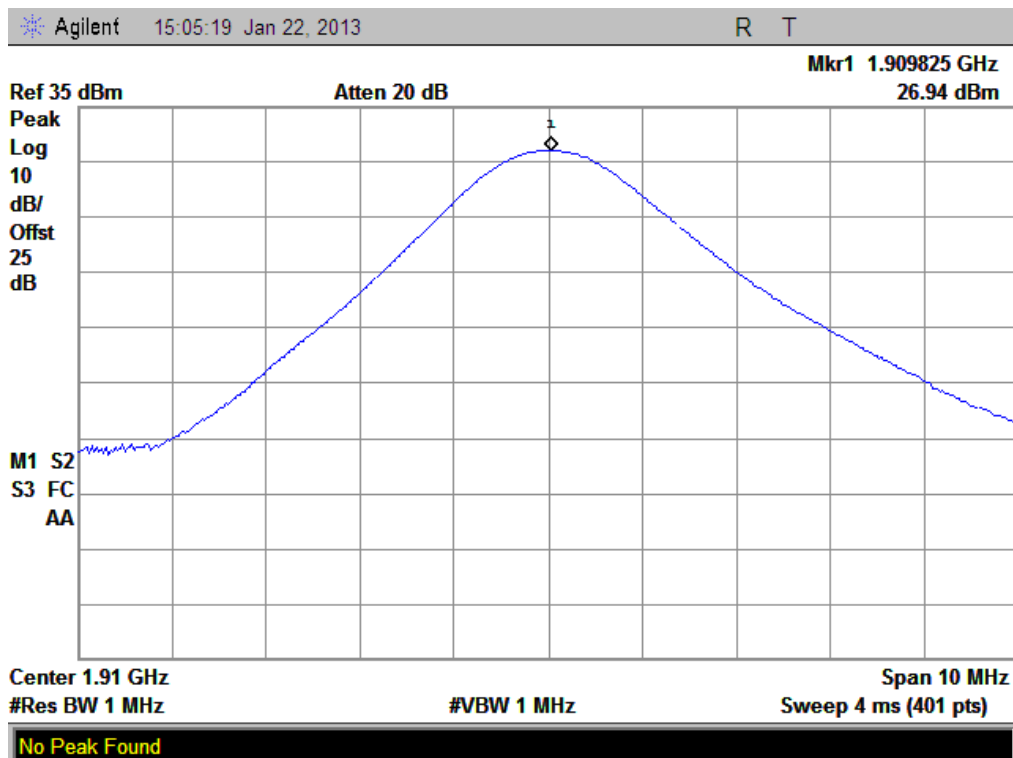(Plot C2:   GPRS 850MHz Channel = 190)

(Plot C3:   GPRS 850MHz Channel = 251)

(Plot D1:   GPRS 1900MHz Channel = 512)

(Plot D2:   GPRS 1900MHz Channel = 661)

(Plot D3:   GPRS 1900Hz Channel = 810)

2.2   99% Occupied Bandwidth

2.2.1   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,

2.2.2   Test Description

See section 2.1.2 of this report.

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

2.2.3 Test Verdict

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

1. Test Verdict:

Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
GSM 850MHz	128	824.2	320.001 KHz	247.8314 KHz	Plot A
	190	836.6	319.526 KHz	247.3138 KHz	Plot B
	251	848.8	320.396 KHz	253.3082 KHz	Plot C
GSM 1900MHz	512	1850.2	326.748 KHz	248.1931 KHz	Plot D
	661	1880.0	312.932 KHz	246.4121 KHz	Plot E
	810	1909.8	322.911 KHz	248.0847 KHz	Plot F
WCDMA 850MHz	4132	826.4	4.714MHz	4.1781MHz	Plot M
	4175	835	4.693MHz	4.1660MHz	Plot N
	4233	846.6	4.696MHz	4.1697MHz	Plot O
WCDMA 1900MHz	9262	1852.4	4.706MHz	4.1885MHz	Plot P
	9400	1880	4.713MHz	4.1662MHz	Plot Q
	9538	1907.6	4.709MHz	4.1816MHz	Plot R
HSDPA 850MHz	4132	826.4	4.692MHz	4.1892MHz	Plot S
	4175	835	4.696MHz	4.1612MHz	Plot T
	4233	846.6	4.710MHz	4.1678MHz	Plot U
HSDPA 1900MHz	9262	1852.4	4.730MHz	4.1745MHz	Plot W
	9400	1880	4.729MHz	4.1752MHz	Plot X
	9538	1907.6	4.704MHz	4.1774MHz	Plot Y
HSUPA 850MHz	4132	826.4	4.696MHz	4.1788MHz	Plot Z
	4175	835	4.717MHz	4.1773MHz	Plot A1
	4233	846.6	4.711MHz	4.1728MHz	Plot B1
HSUPA 1900MHz	9262	1852.4	4.715MHz	4.1906MHz	Plot C1
	9400	1880	4.726MHz	4.1786MHz	Plot D1
	9538	1907.6	4.733MHz	4.1856MHz	Plot E1
GPRS 850MHz	128	824.2	312.538KHz	249.4267KHz	Plot F1
	190	836.6	323.198KHz	236.0642KHz	Plot G1
	251	848.8	317.996KHz	250.1538KHz	Plot H1
GPRS 1900MHz	512	1850.2	314.825KHz	255.1501KHz	Plot I1
	661	1880.0	318.548KHz	245.9619KHz	Plot J1
	810	1909.8	316.679KHz	245.5760KHz	Plot K1

2. Test Plots:
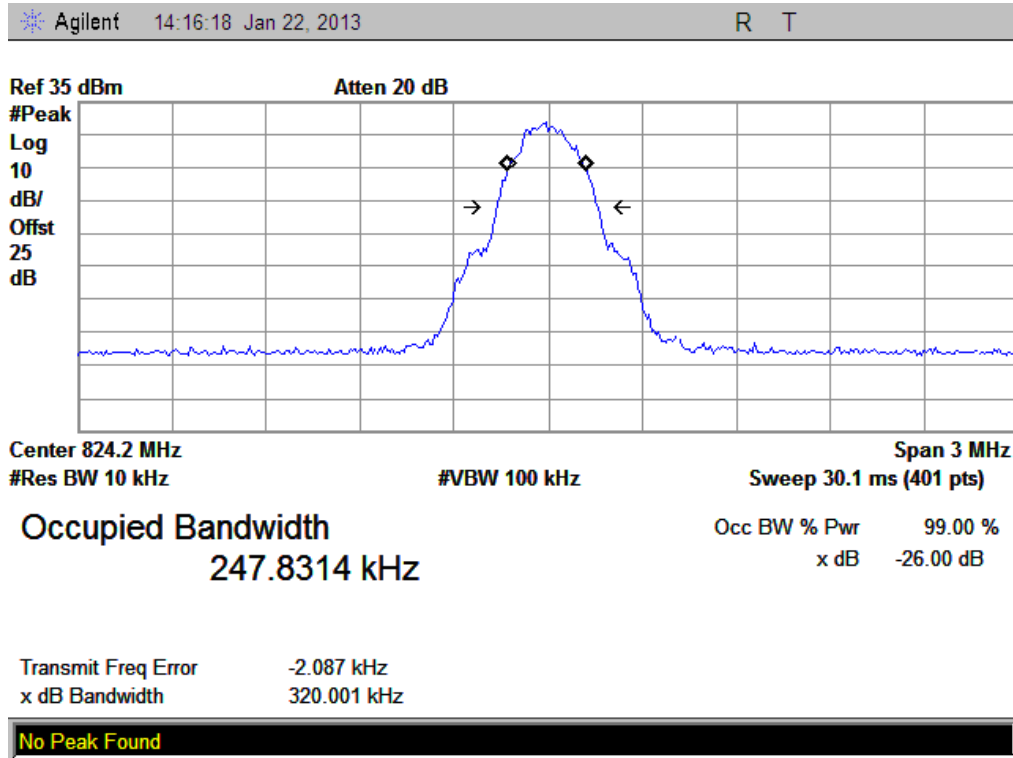
(Plot A: GSM 850MHz Channel = 128)
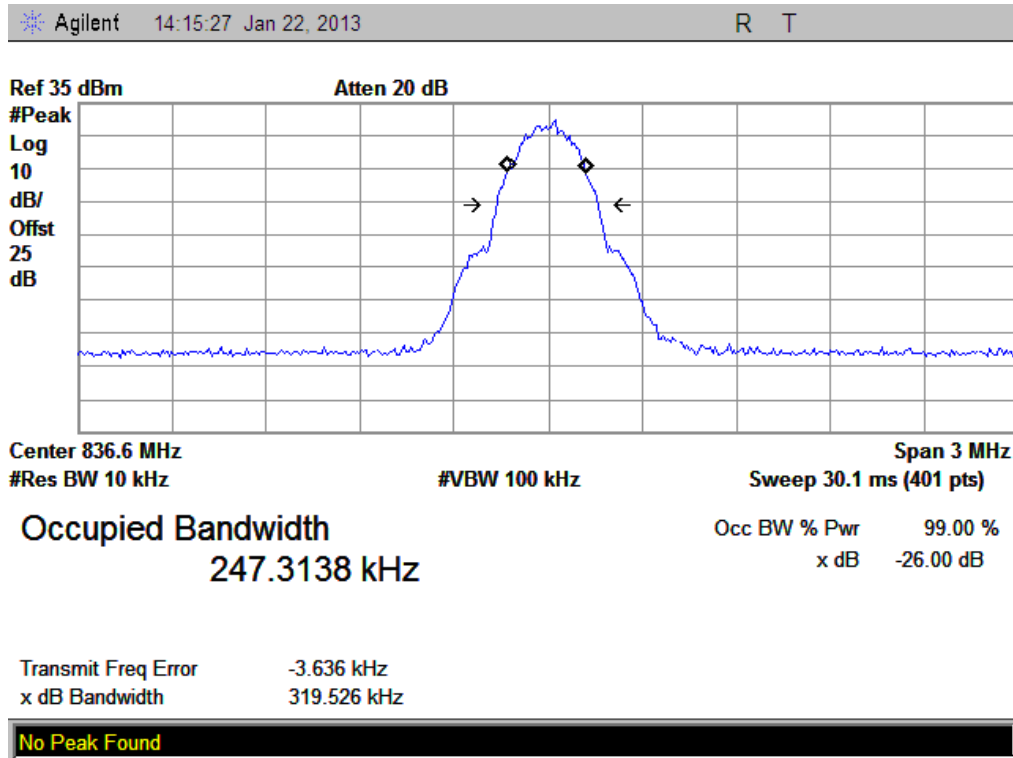
(Plot B: GSM 850MHz Channel = 190)

Agilent 14:17:02 Jan 22, 2013 R T

Ref 35 dBm   Atten 20 dB
#Peak
Log
10
dB/
Offst
25
dB
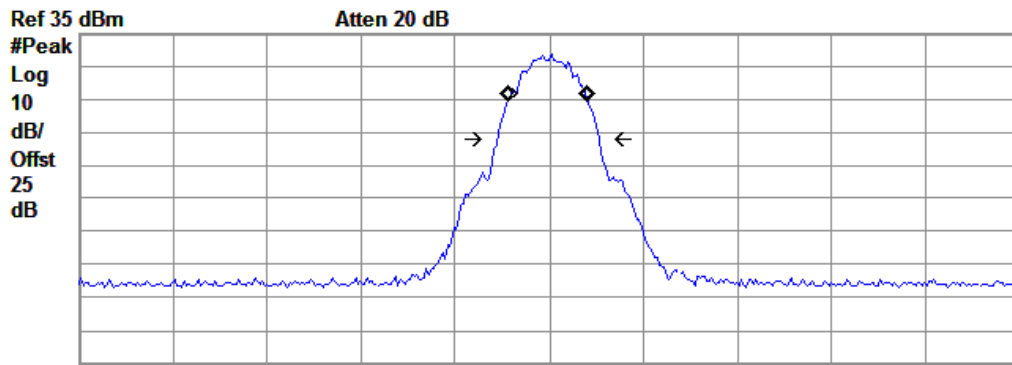
Center 848.8 MHz   Span 3 MHz
#Res BW 10 kHz   #VBW 100 kHz   Sweep 30.1 ms (401 pts)

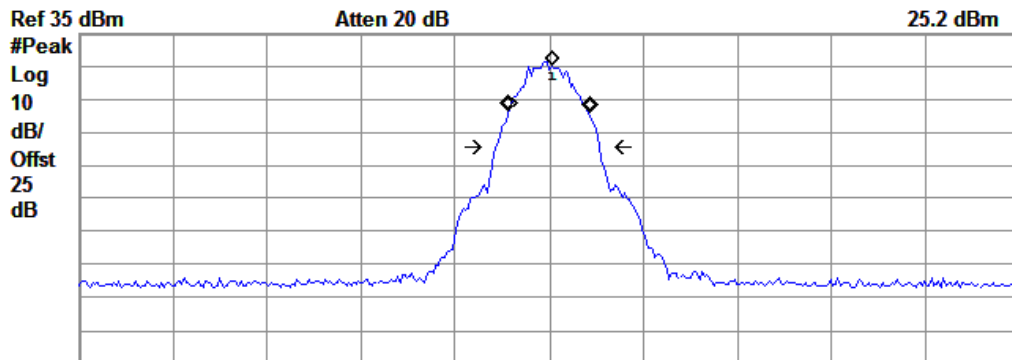Occupied Bandwidth   Occ BW % Pwr   99.00 %
        253.3082 kHz   x dB   -26.00 dB

Transmit Freq Error   -3.367 kHz
x dB Bandwidth   320.396 kHz
No Peak Found

(Plot C: GSM 850MHz Channel = 251)

Agilent 14:20:59 Jan 22, 2013 R T

                                    Mkr1 1.8502075 GHz
Ref 35 dBm   Atten 20 dB   25.2 dBm
#Peak
Log
10
dB/
Offst
25
dB

Center 1.85 GHz   Span 3 MHz
#Res BW 10 kHz   #VBW 100 kHz   Sweep 30.1 ms (401 pts)

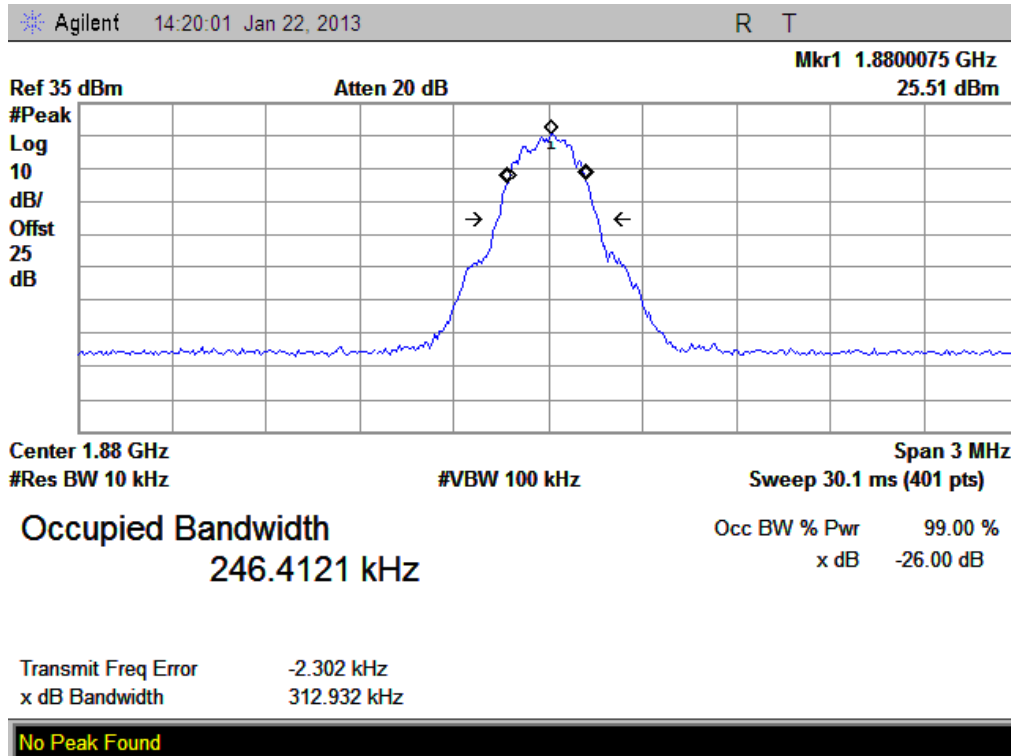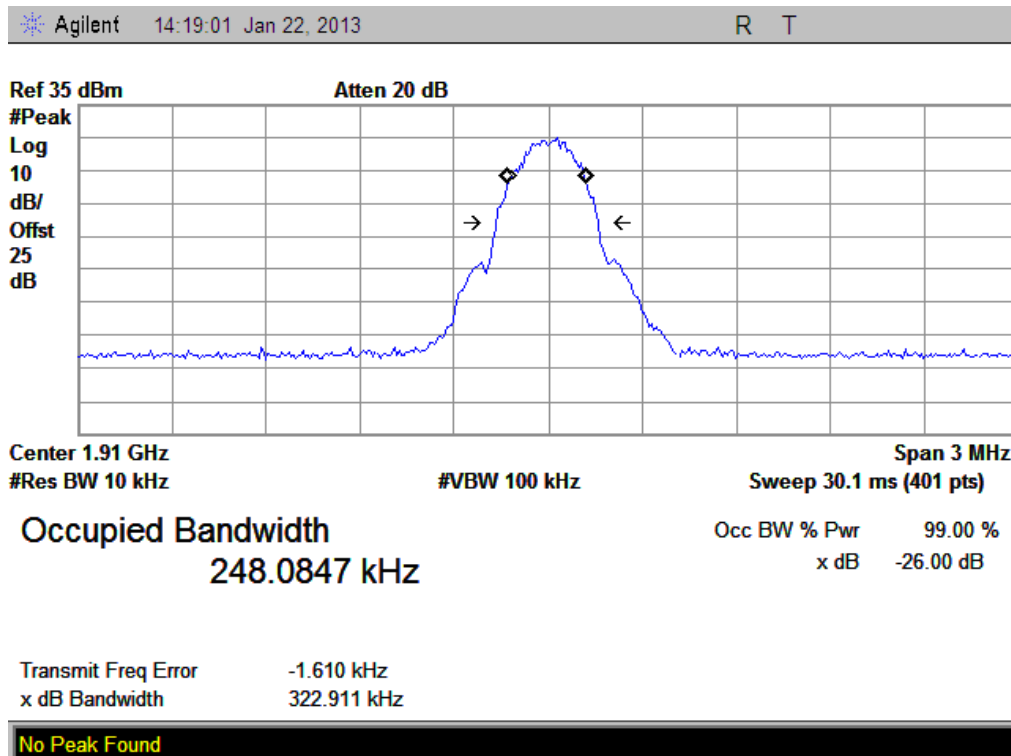Occupied Bandwidth   Occ BW % Pwr   99.00 %
        248.1931 kHz   x dB   -26.00 dB

Transmit Freq Error   -488.780 Hz
x dB Bandwidth   326.748 kHz
No Peak Found

(Plot D: GSM1900MHz Channel = 512)

Agilent   14:20:01 Jan 22, 2013   R   T

Mkr1 1.8800075 GHz

Ref 35 dBm   Atten 20 dB   25.51 dBm

#Peak
Log
10
dB/
Offst
25
dB

Center 1.88 GHz   Span 3 MHz
#Res BW 10 kHz   #VBW 100 kHz   Sweep 30.1 ms (401 pts)

Occupied Bandwidth   Occ BW % Pwr   99.00 %
      246.4121 kHz   x dB   -26.00 dB

Transmit Freq Error   -2.302 kHz
x dB Bandwidth   312.932 kHz

No Peak Found

(Plot E: GSM 1900MHz Channel = 661)

Agilent   14:19:01 Jan 22, 2013   R   T

Ref 35 dBm   Atten 20 dB

#Peak
Log
10
dB/
Offst
25
dB

Center 1.91 GHz   Span 3 MHz
#Res BW 10 kHz   #VBW 100 kHz   Sweep 30.1 ms (401 pts)

Occupied Bandwidth   Occ BW % Pwr   99.00 %
      248.0847 kHz   x dB   -26.00 dB

Transmit Freq Error   -1.610 kHz
x dB Bandwidth   322.911 kHz

No Peak Found

(Plot F: GSM 1900MHz Channel = 810)

Agilent 15:16:25 Jan 28, 2013 R T S

Ref 25 dBm Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB
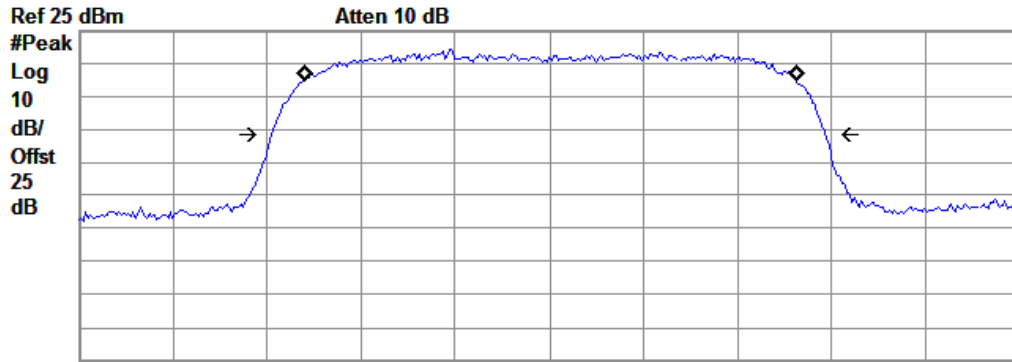
Center 826.4 MHz Span 8 MHz
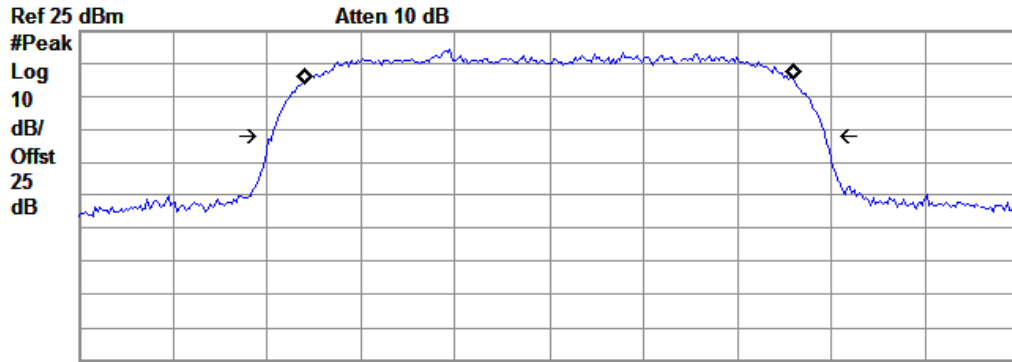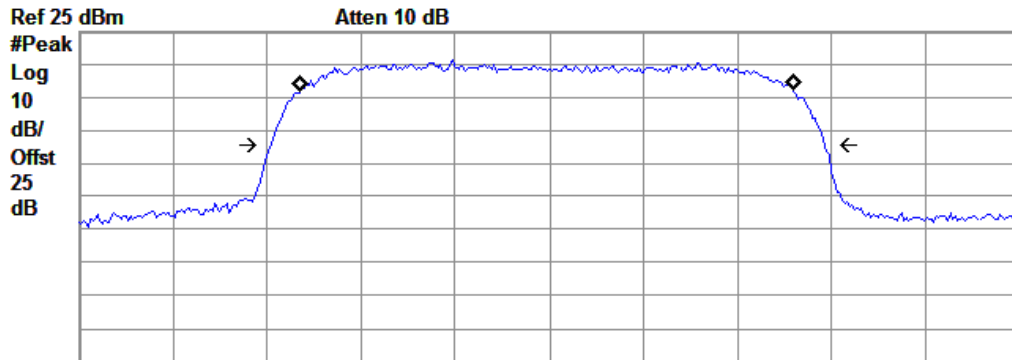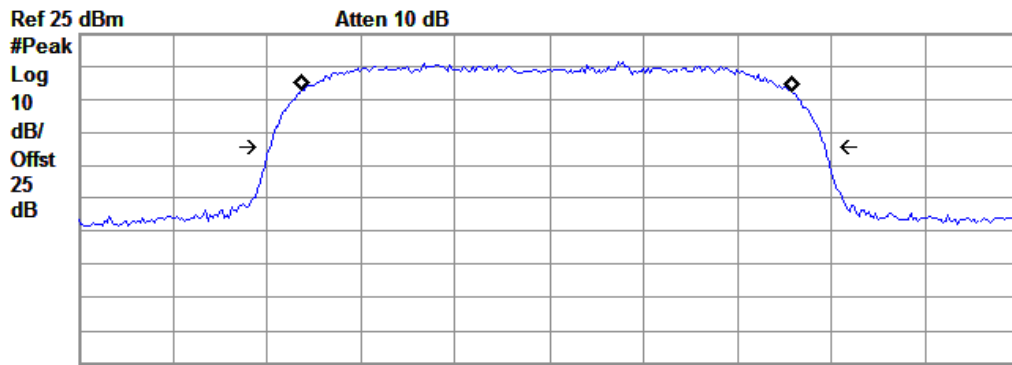#Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth
4.1781 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error 6.186 kHz
x dB Bandwidth 4.714 MHz

(Plot M: WCDMA 850MHz Channel = 4132)

Agilent 16:00:01 Jan 23, 2013 R T

Ref 25 dBm Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB
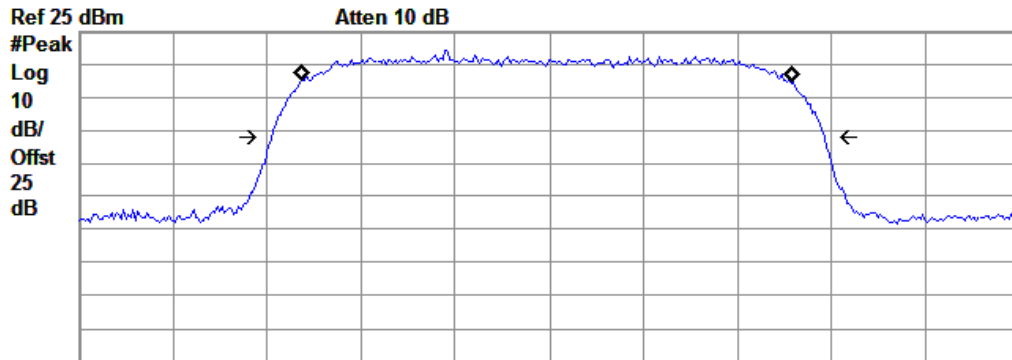
Center 835 MHz Span 8 MHz
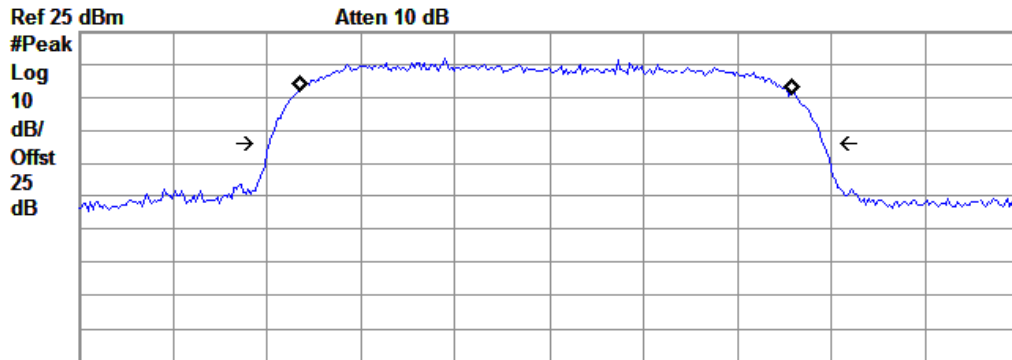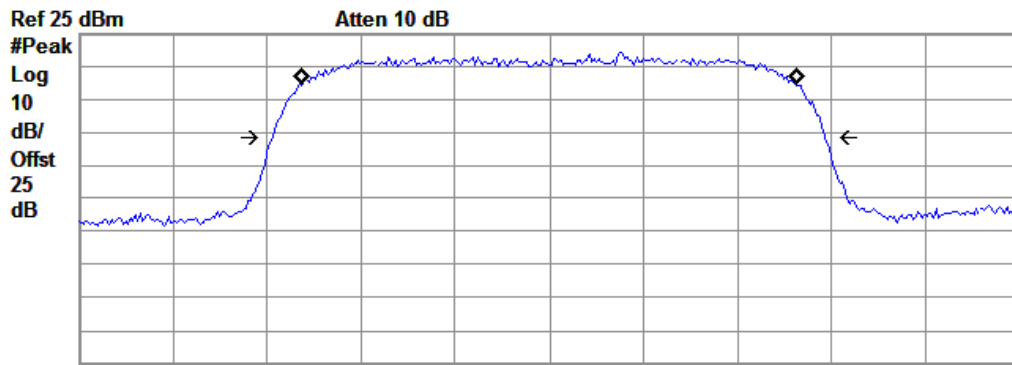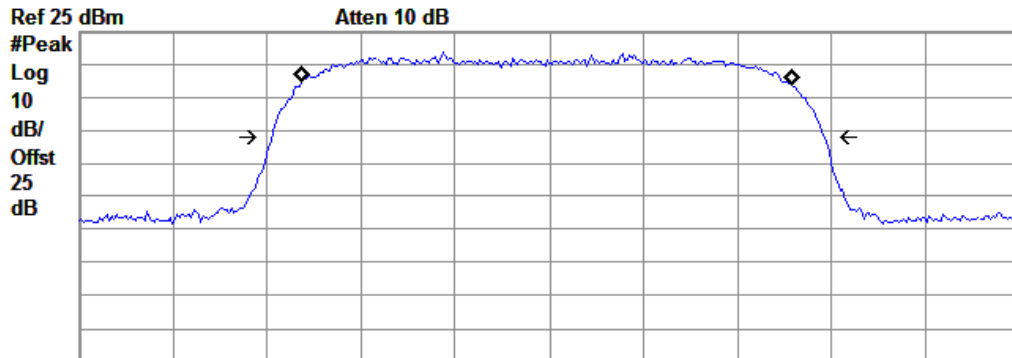#Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth
4.1660 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -18.427 kHz
x dB Bandwidth 4.693 MHz

(Plot N: WCDMA 850 MHz Channel = 4175)

Agilent	15:14:52 Jan 28, 2013	R T S

Ref 25 dBm   Atten 10 dB

#Peak
Log
10
dB/
Offst
25
dB

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

Occupied Bandwidth   Occ BW % Pwr 99.00 %
   4.1697 MHz   x dB -26.00 dB

Transmit Freq Error   -4.498 kHz
x dB Bandwidth   4.696 MHz

(Plot O: WCDMA 850 MHz Channel = 4233)

Agilent	15:18:28 Jan 28, 2013	R T S

Ref 25 dBm   Atten 10 dB

#Peak
Log
10
dB/
Offst
25
dB

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

Occupied Bandwidth   Occ BW % Pwr 99.00 %
   4.1885 MHz   x dB -26.00 dB

Transmit Freq Error   -17.768 kHz
x dB Bandwidth   4.706 MHz

(Plot P: WCDMA 1900 MHz Channel = 9262)

Agilent   16:01:08 Jan 23, 2013   R   T

Ref 25 dBm   Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
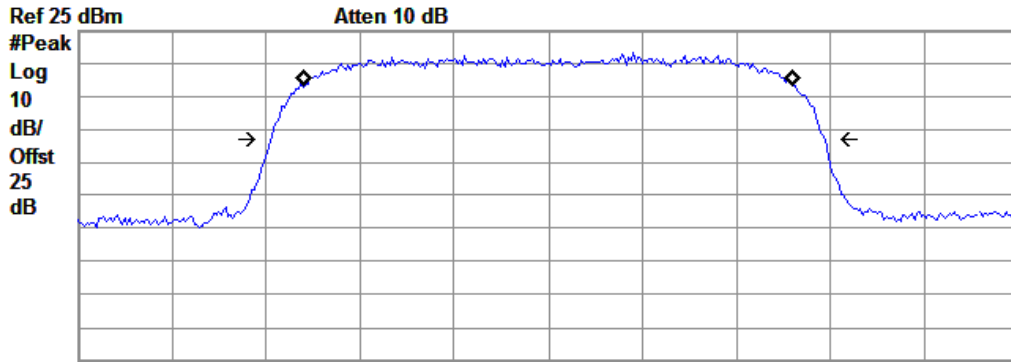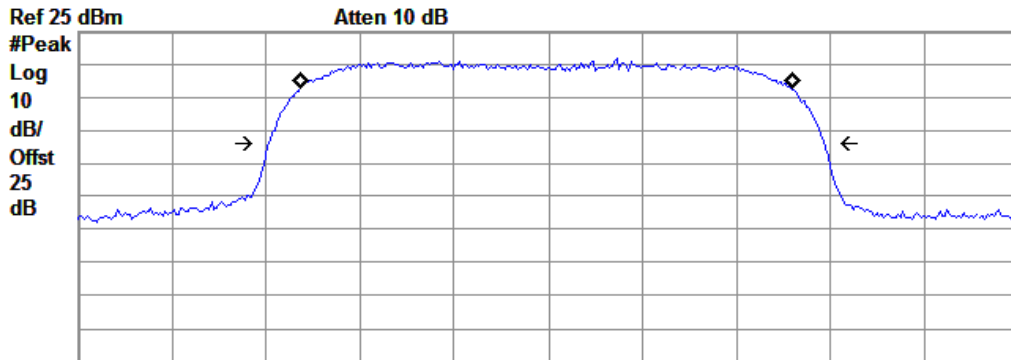   4.1662 MHz   x dB   -26.00 dB

Transmit Freq Error   -20.606 kHz
x dB Bandwidth   4.713 MHz

(Plot Q: WCDMA1900 MHz Channel = 9400)

Agilent   15:19:01 Jan 28, 2013   R   T S

Ref 25 dBm   Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB

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

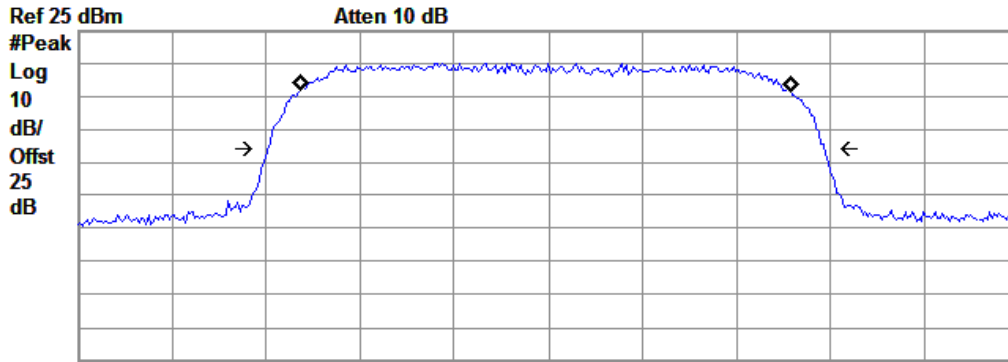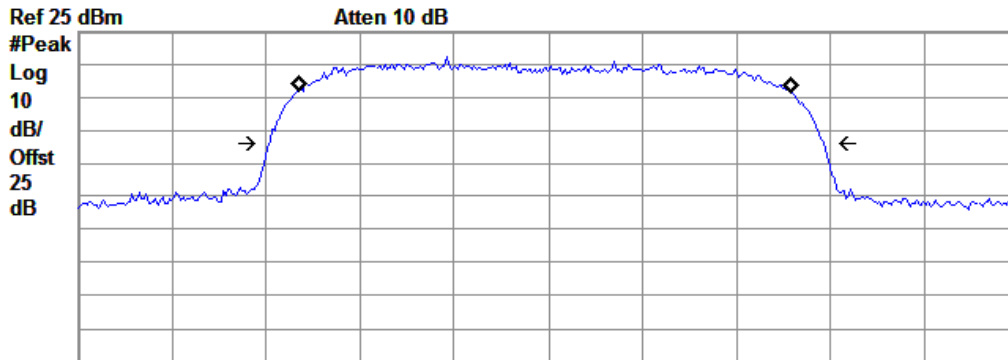Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1816 MHz   x dB   -26.00 dB

Transmit Freq Error   -30.921 kHz
x dB Bandwidth   4.709 MHz

(Plot R: WCDMA1900 MHz Channel = 9538)

(Plot S: HSDPA 850 MHz Channel = 4132)

(Plot T: HSDPA850 MHz Channel = 4175)

(Plot U: HSDPA850 MHz Channel = 4233)

(Plot W: HSDPA1900 MHz Channel = 9262)

(Plot X: HSDPA1900 MHz Channel = 9400)

(Plot Y: HSDPA1900 MHz Channel = 9538)

Agilent   15:24:50 Jan 28, 2013   R T S

Ref 25 dBm   Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1788 MHz   x dB   -26.00 dB

Transmit Freq Error   6.112 kHz
x dB Bandwidth   4.696 MHz

(Plot Z: HSPUA 850 MHz Channel = 4132)

Agilent   16:36:23 Jan 23, 2013   R T

Ref 25 dBm   Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB

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

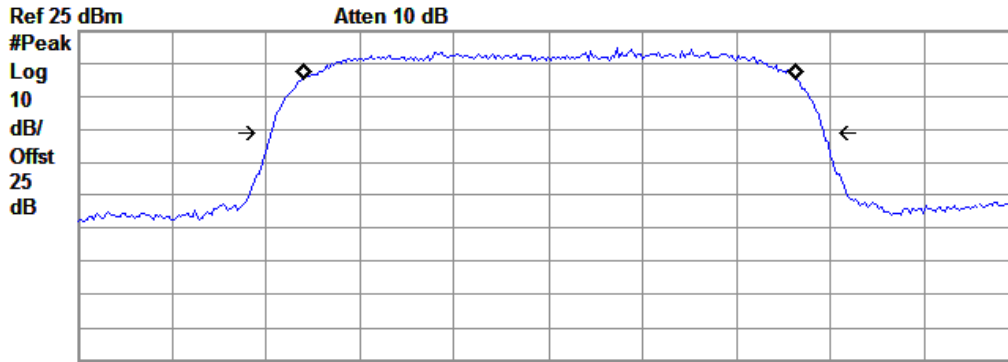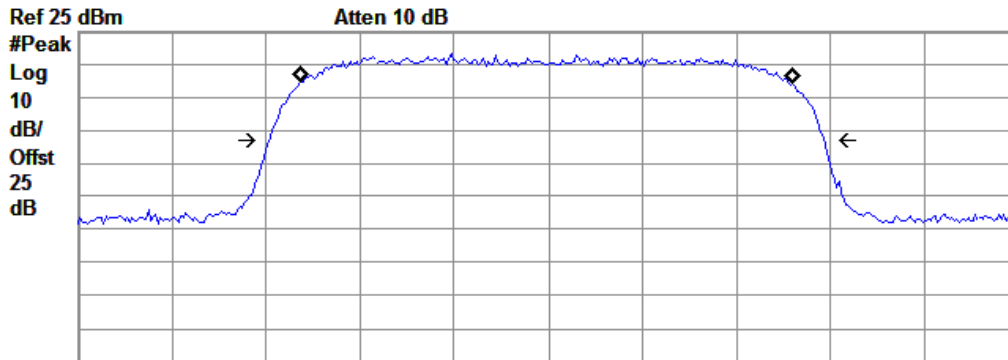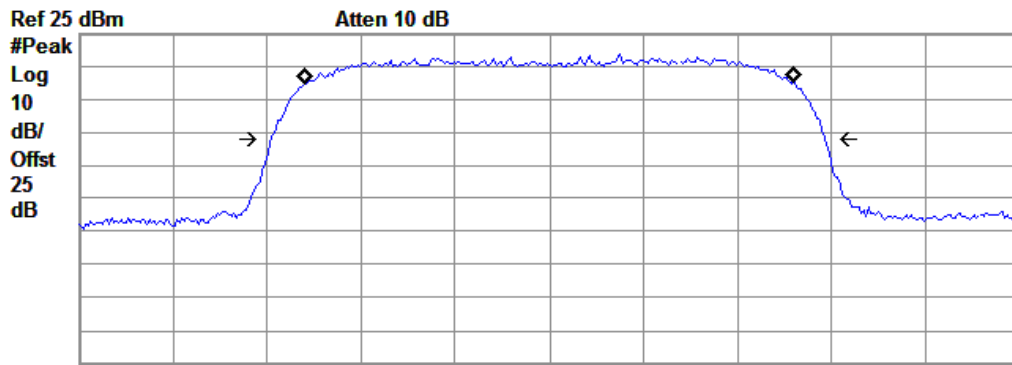Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1773 MHz   x dB   -26.00 dB

Transmit Freq Error   -12.376 kHz
x dB Bandwidth   4.717 MHz

(Plot A1:   HSPUA 850 MHz Channel = 4175)

(Plot B1: HSPUA 850 MHz Channel = 4233)

(Plot C1: HSPUA 1900 MHz Channel = 9262)

Agilent   16:36:56 Jan 23, 2013   R   T

Ref 25 dBm   Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
     4.1786 MHz   x dB   -26.00 dB

Transmit Freq Error   -20.787 kHz
x dB Bandwidth   4.726 MHz

(Plot D1:   HSPUA 1900 MHz Channel = 9400)

Agilent   15:25:58 Jan 28, 2013   R   T S

Ref 25 dBm   Atten 10 dB
#Peak
Log
10
dB/
Offst
25
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
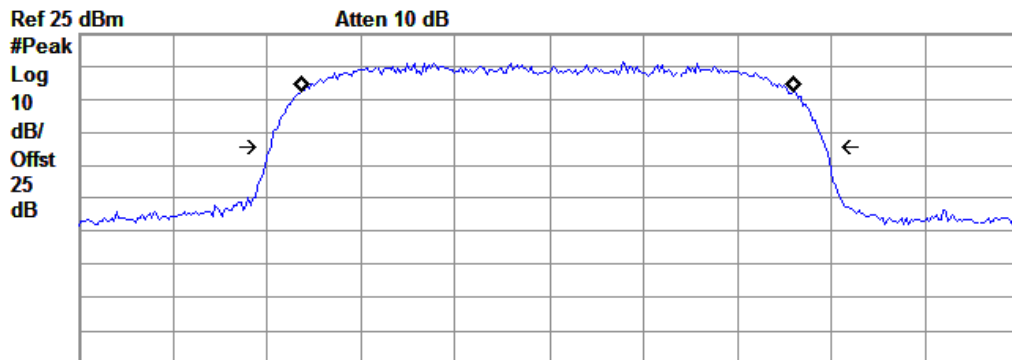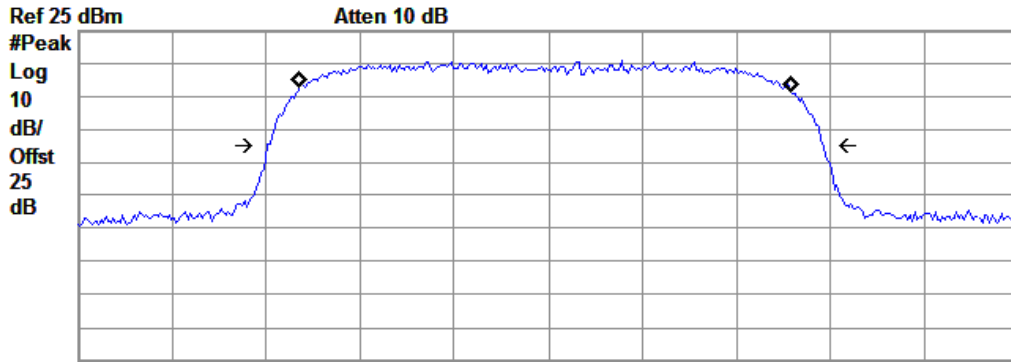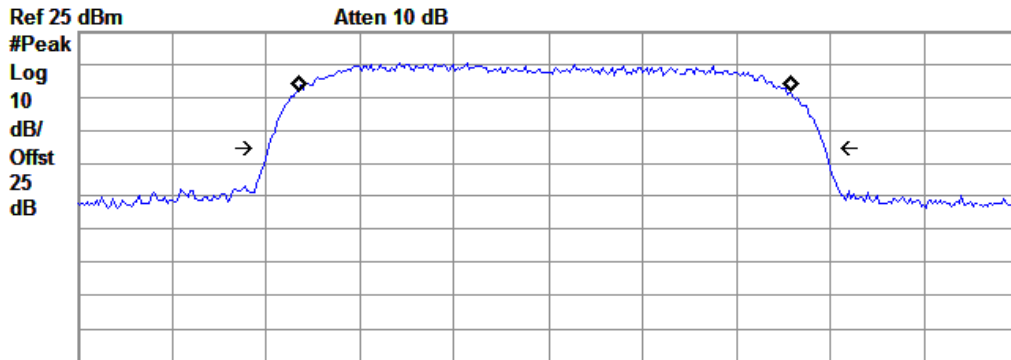   4.1856 MHz   x dB   -26.00 dB

Transmit Freq Error   -29.863 kHz
x dB Bandwidth   4.733 MHz

(Plot E1:   HSPUA 1900 MHz Channel = 9538)

(Plot F1:   GPRS 850MHz Channel = 128)

(Plot G1:   GPRS 850MHz Channel = 190)

Occupied Bandwidth 250.1538 kHz

Transmit Freq Error   -1.198 kHz
x dB Bandwidth   317.996 kHz

(Plot H1:   GPRS 850MHz Channel = 251)

Occupied Bandwidth 255.1501 kHz

Transmit Freq Error   356.457 Hz
x dB Bandwidth   314.825 kHz

(Plot I1: GPRS 1900MHz Channel = 512)

Agilent   11:51:27 Jan 14, 2013   R   T

Ref 35 dBm   Atten 20 dB
#Peak
Log
10
dB/
Offst
25
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
        245.9619 kHz   x dB   -26.00 dB

Transmit Freq Error   -3.958 kHz
x dB Bandwidth   318.548 kHz

(Plot J1: GPRS 1900MHz Channel = 661)

Agilent   11:50:33 Jan 14, 2013   R   T

Ref 35 dBm   Atten 20 dB
#Peak
Log
10
dB/
Offst
25
dB

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

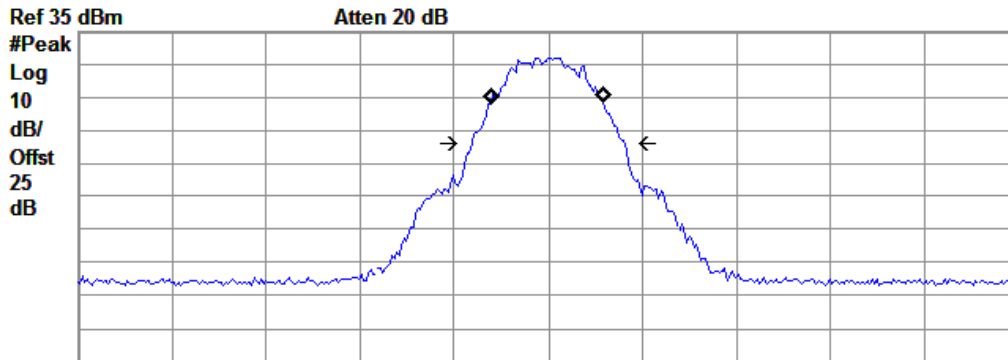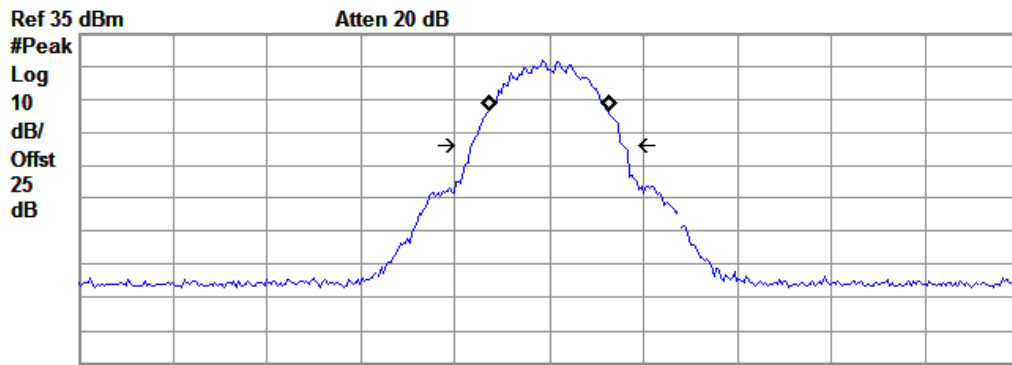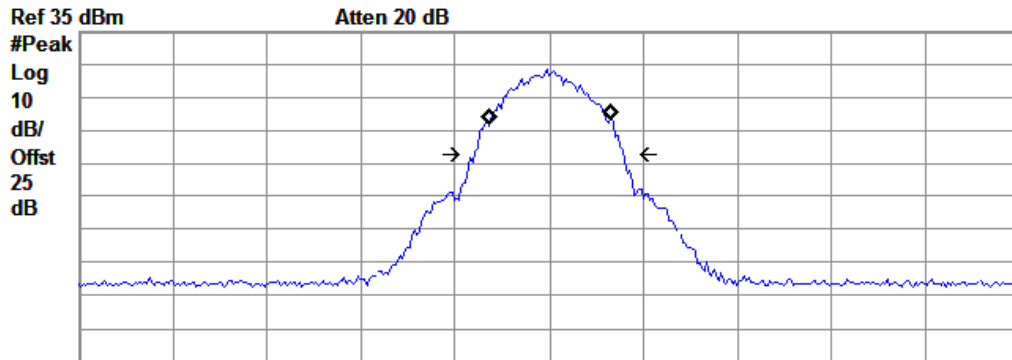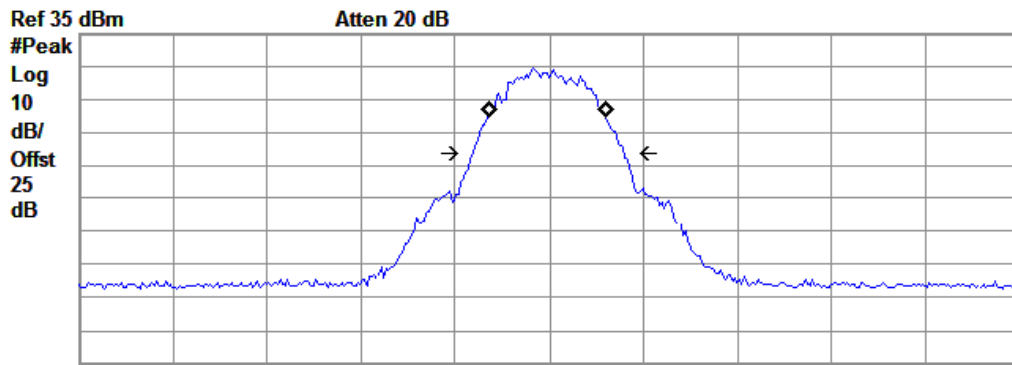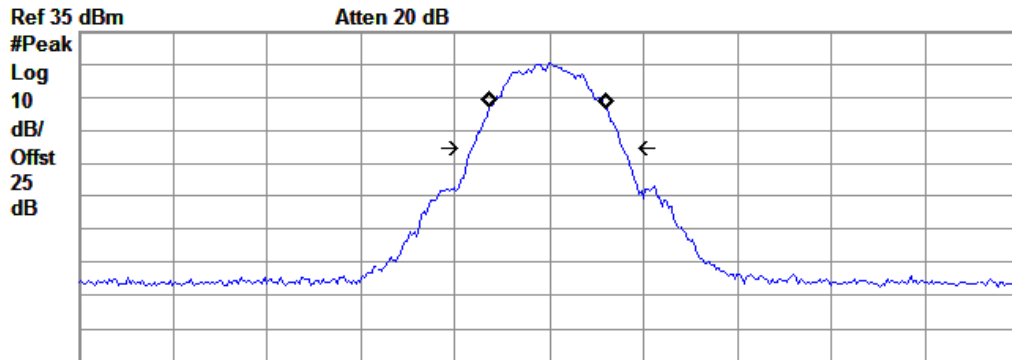Occupied Bandwidth   Occ BW % Pwr   99.00 %
        245.5760 kHz   x dB   -26.00 dB

Transmit Freq Error   -1.811 kHz
x dB Bandwidth   316.679 kHz

(Plot K1:   GPRS 1900MHz Channel = 810)

2.3   Frequency Stability

2.3.1   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°C to +50°C at intervals of not more than 10°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.

2.3.2   Test Description

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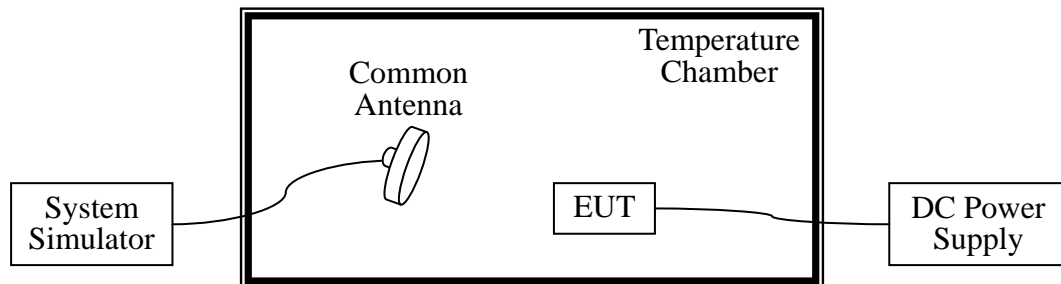
The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common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

2.3.3   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°C. The frequency

deviation limit of 850MHz band is ±2.5ppm, and 1900MHz is ±1ppm

1. GSM 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	19.73	±2060.5	-29.41	±2091.5	25.15	±2122	PASS
	-20	-13.12		-2.17		28.31		
	-10	17.28		33.06		-12.89		
	0	-23.03		1.99		12.66		
	+10	-13.02		-19.86		5.05		
	+20	-10.39		-2.32		3.02		
	+30	27.75		23.12		-13.01		
	+40	5.31		-2.15		0.51		
	+50	-22.19		35.31		-12.90		
4.2	+25	23.74		29.35		23.11		
3.6	+25	27.19		-27.15		-34.03		

2. GSM 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	-17.39	±1850.2	38.28	±1880.0	29.22	±1909.8	PASS
	-20	-3.10		-2.15		19.31		
	-10	38.28		35.06		-17.92		
	0	-2.15		1.99		17.36		
	+10	40.06		-19.86		5.05		
	+20	1.99		-2.32		3.02		
	+30	-19.86		23.12		-13.01		
	+40	39.56		11.33		0.51		
	+50	46.60		-17.55		21.45		
4.2	+25	26.05		38.10		-15.09		
3.6	+25	12.32		-21.07		-22.16		

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)		Verdict
		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)		Verdict
		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		

2.4 Conducted Out of Band Emissions

2.4.1 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.

2.4.2 Test Description

See section 2.1.2 of this report.

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

2.4.3 Test Result

The measurement frequency range is from 30MHz to the 10th 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
GSM 850MHz	128	824.2	-21.95	Plot A1toA1.1	-13	PASS
	190	836.6	-22.79	Plot A2toA2.1		PASS
	251	848.8	-22.82	Plot A3toA3.1		PASS
GSM 1900MHz	512	1850.2	-20.67	Plot B1toB1.1	-13	PASS
	661	1880.0	-20.57	Plot B2toB2.1		PASS
	810	1909.8	-20.42	Plot B3toB3.1		PASS
WCDMA 850MHz	4132	826.4	< -25	Plot E1toE1.1	-13	PASS
	4175	835	< -25	Plot E2toE2.1		PASS
	4233	846.6	< -25	Plot E3toE3.1		PASS
WCDMA	9262	1852.4	< -25	Plot F1toF1.1	-13	PASS

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
1900MHz	9400	1880	< -25	Plot F2toF2.1		PASS
	9538	1907.6	< -25	Plot F3toF3.1		PASS
HSDPA 850MHz	4132	826.4	< -25	Plot G1toG1.1	-13	PASS
	4175	835	< -25	Plot G2toG2.1		PASS
	4233	846.6	< -25	Plot G3toG3.1		PASS
HSDPA 1900MHz	9262	1852.4	< -25	Plot H1toH1.1	-13	PASS
	9400	1880	< -25	Plot H2toH2.1		PASS
	9538	1907.6	< -25	Plot H3toH3.1		PASS
HSUPA 850MHz	4132	826.4	< -25	Plot I1toI1.1	-13	PASS
	4175	835	< -25	Plot I2toI2.1		PASS
	4233	846.6	< -25	Plot I3toI3.1		PASS
HSUPA 1900MHz	9262	1852.4	< -25	Plot J1toJ1.1	-13	PASS
	9400	1880	< -25	Plot J2toJ2.1		PASS
	9538	1907.6	< -25	Plot J3toJ3.1		PASS
GPRS 850MHz	128	824.2	-21.88	Plot K1toK1.1	-13	PASS
	190	836.6	-21.45	Plot K2toK2.1		PASS
	251	848.8	-22.64	Plot K3toK3.1		PASS
GPRS 1900MHz	512	1850.2	-20.53	Plot L1toL1.1	-13	PASS
	661	1880.0	-21.41	Plot L2toL2.1		PASS
	810	1909.8	-21.64	Plot L3toL3.1		PASS

2.   Test Plots for the Whole Measurement Frequency Range:

Note: the power of the EUT transmitting frequency should be ignored.
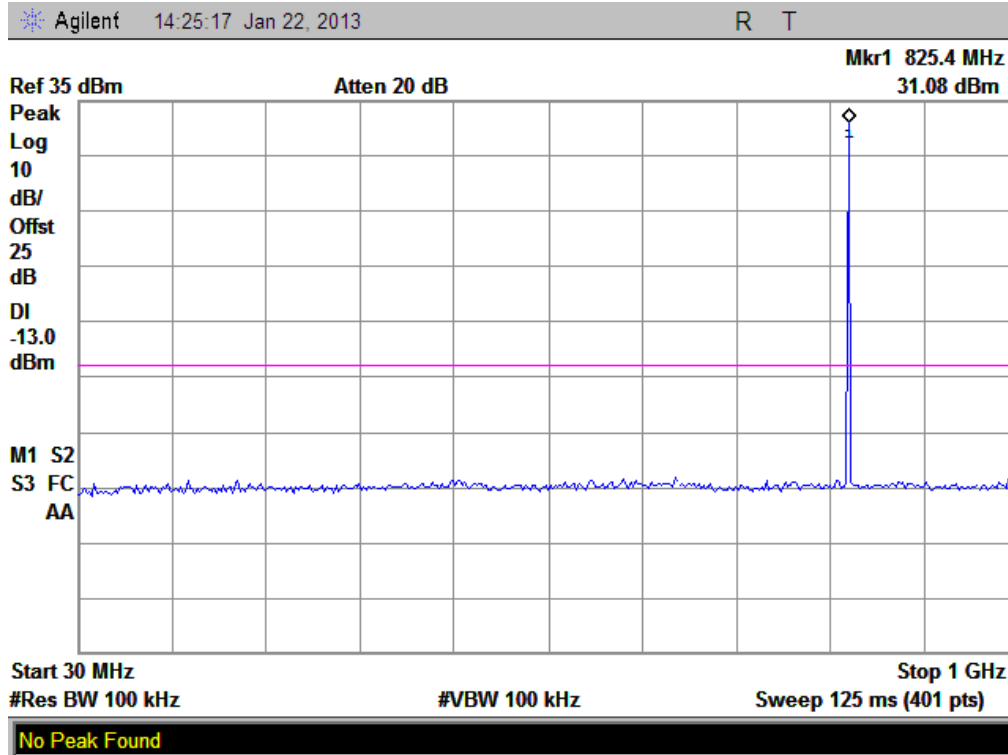
(Plot A1:   GSM850MHz Channel = 128, 30MHz to 1GHz)
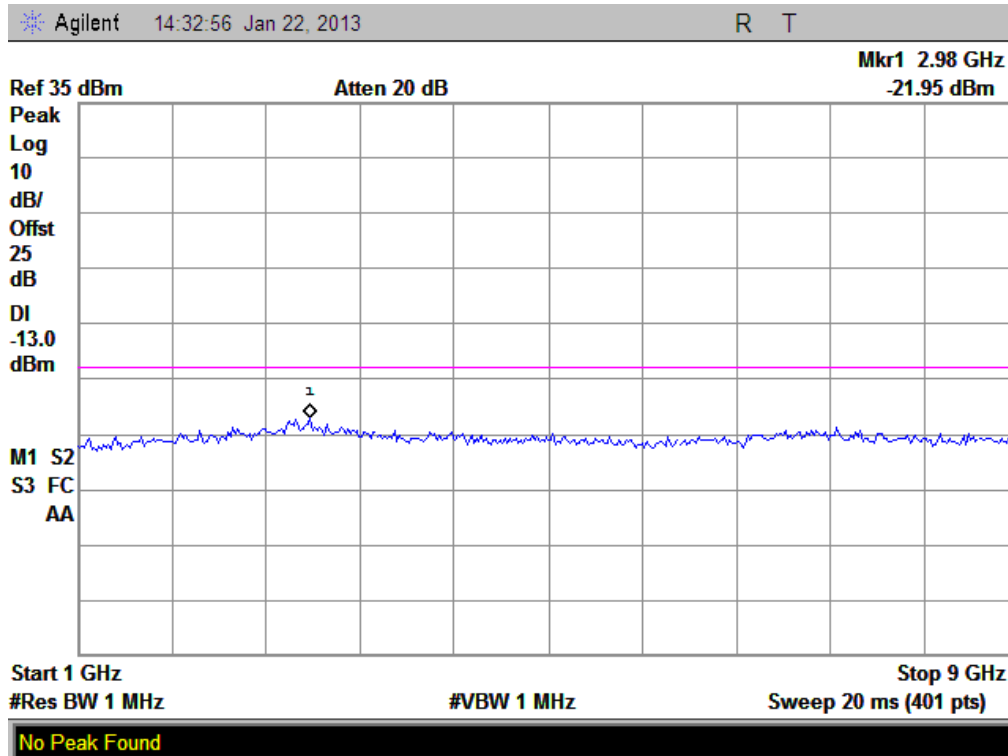
(Plot A1.1:   GSM 850MHz Channel = 128, 1GHz to 9GHz)
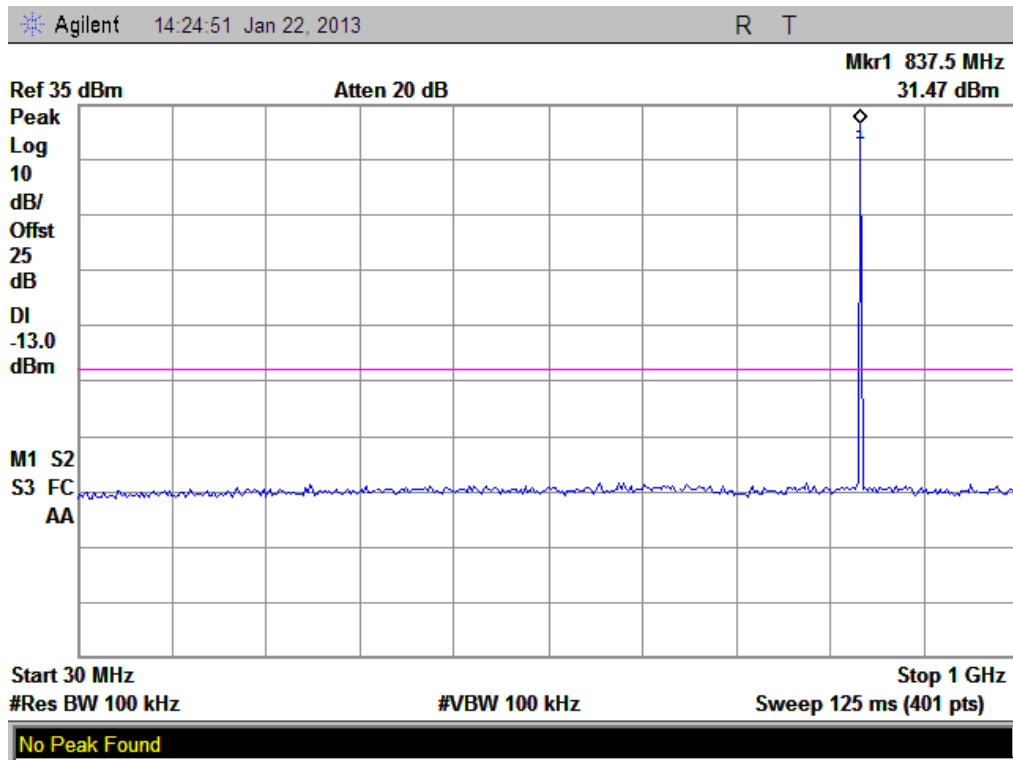
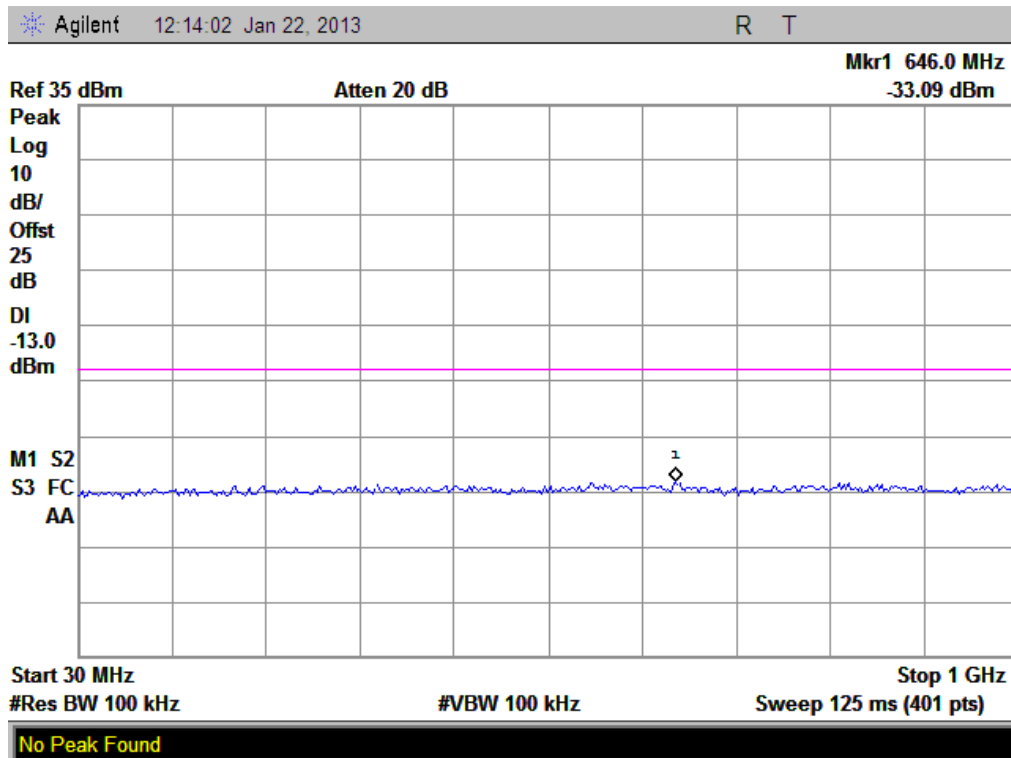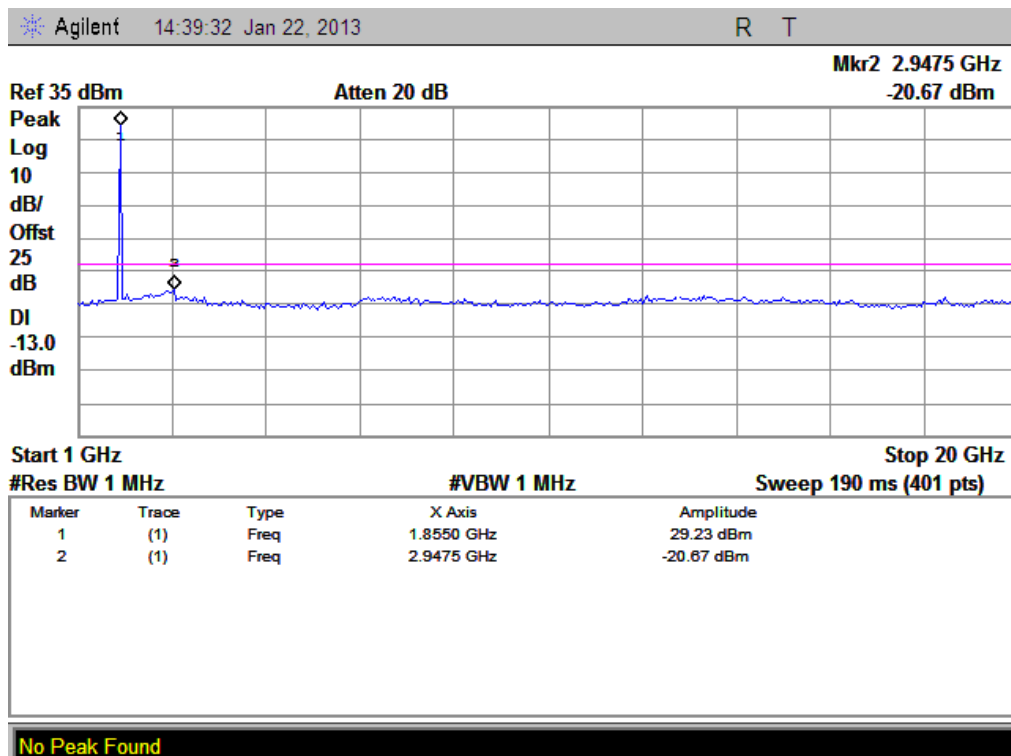(Plot A2:   GSM 850MHz Channel = 190, 30MHz to 1GHz)
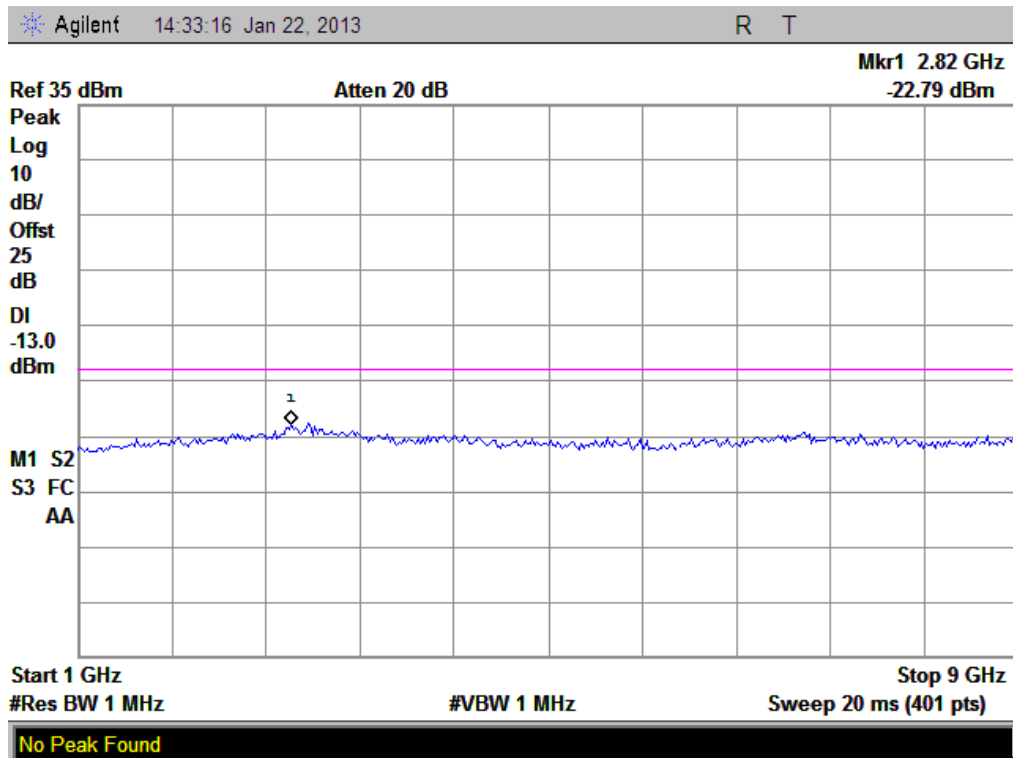
(Plot A2.1:   GSM 850MHz Channel = 190, 1GHz to 9GHz)
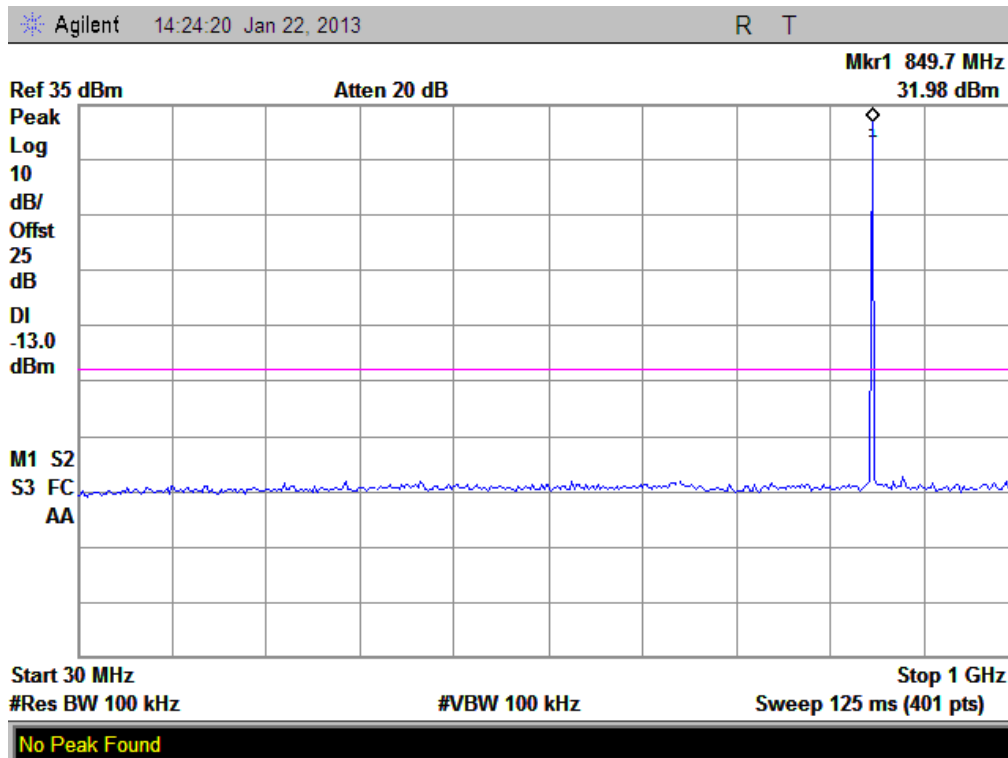
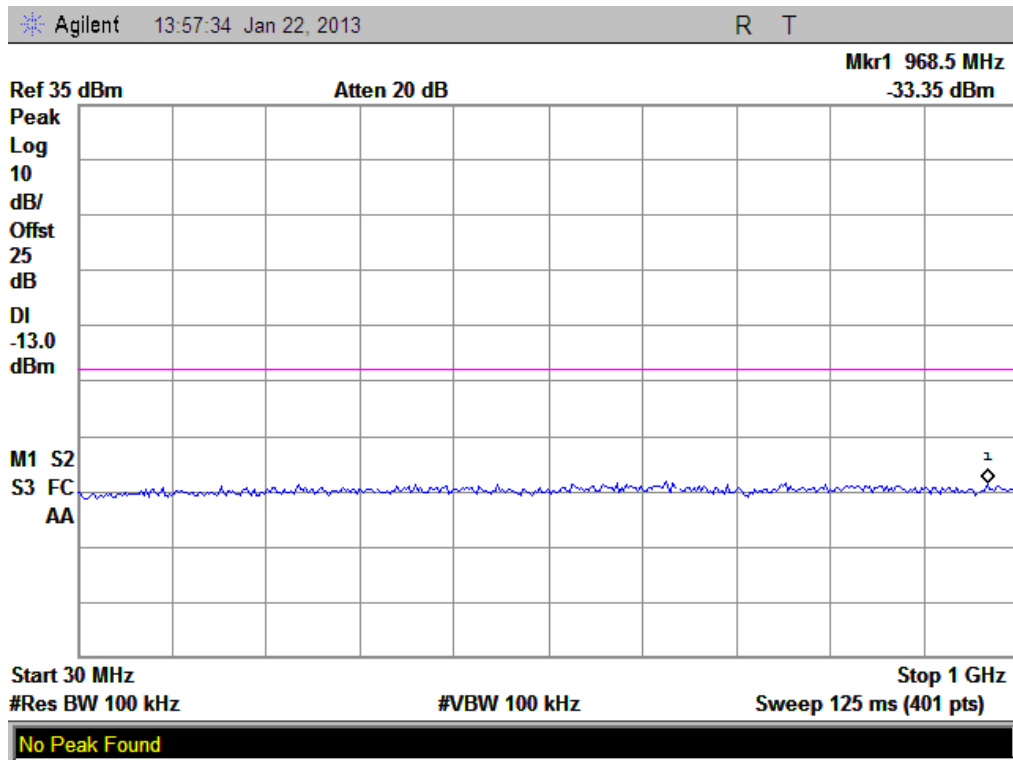(Plot A3: GSM 850MHz Channel = 251, 30MHz to 1GHz)
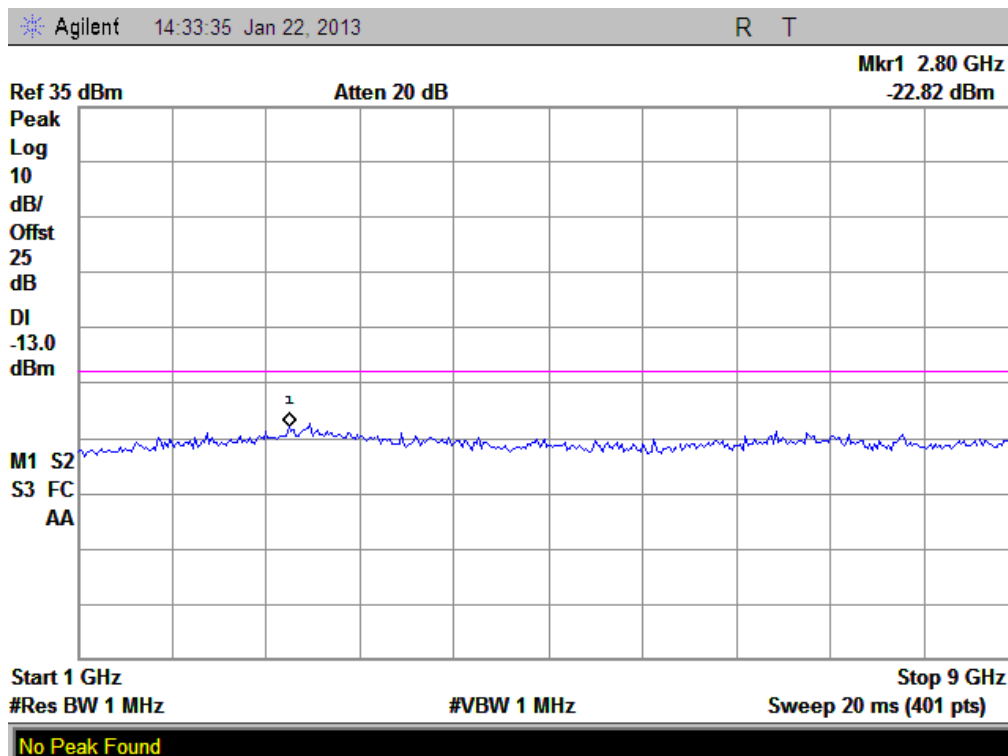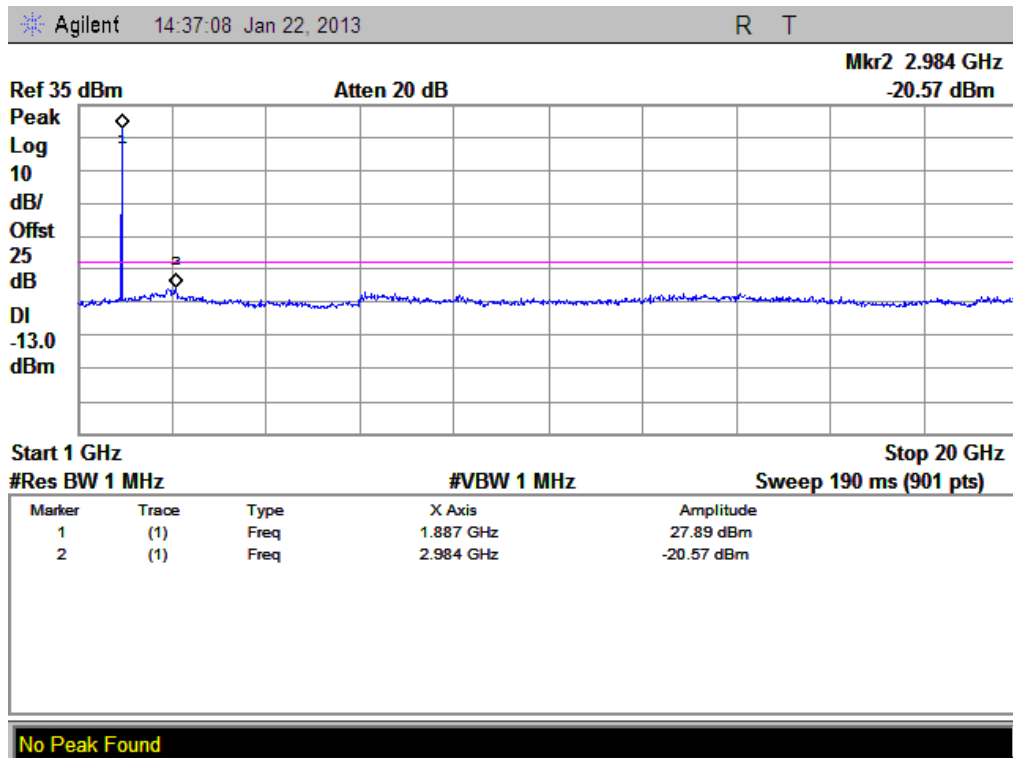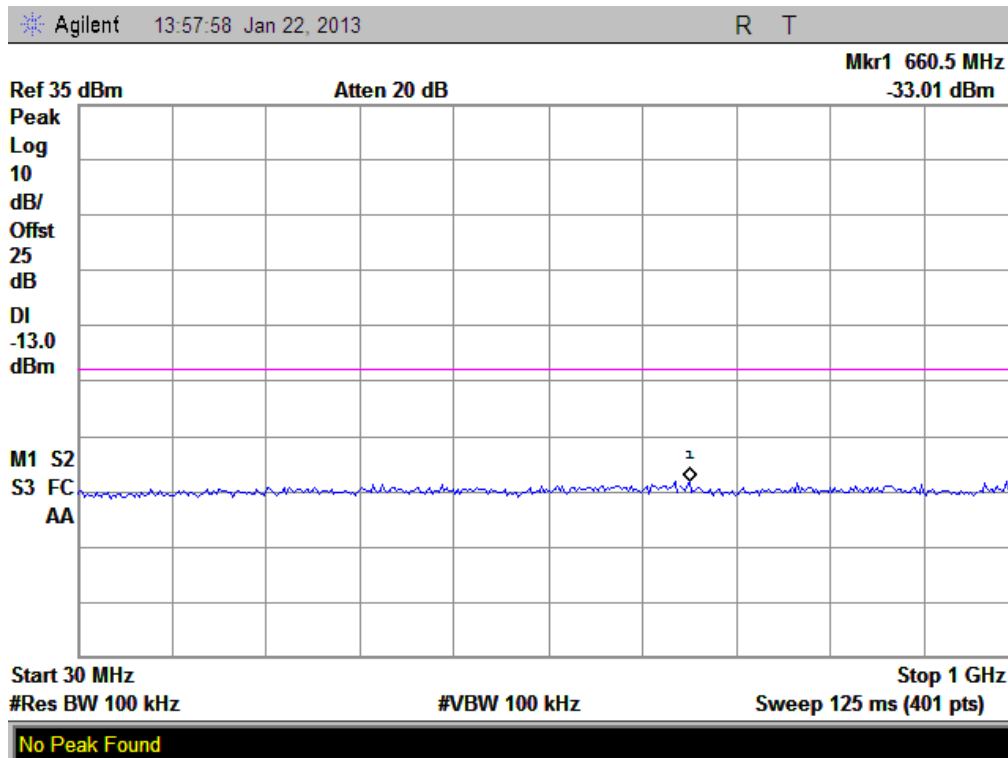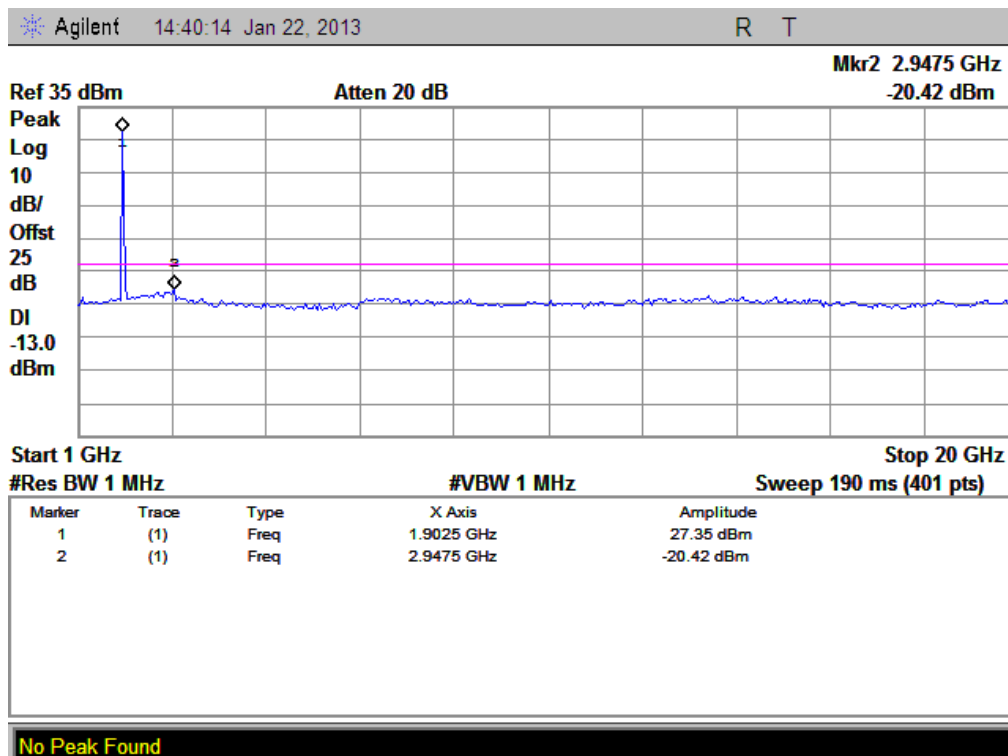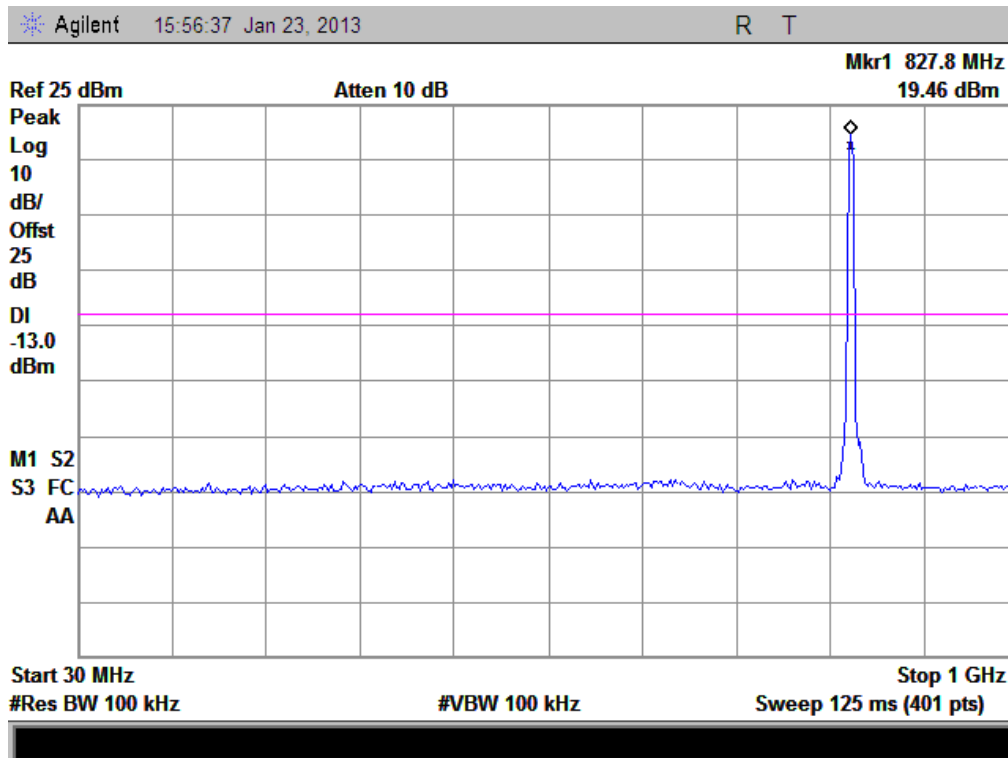

(Plot A3.1: GSM 850MHz Channel = 251, 1GHz to 9GHz)

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

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

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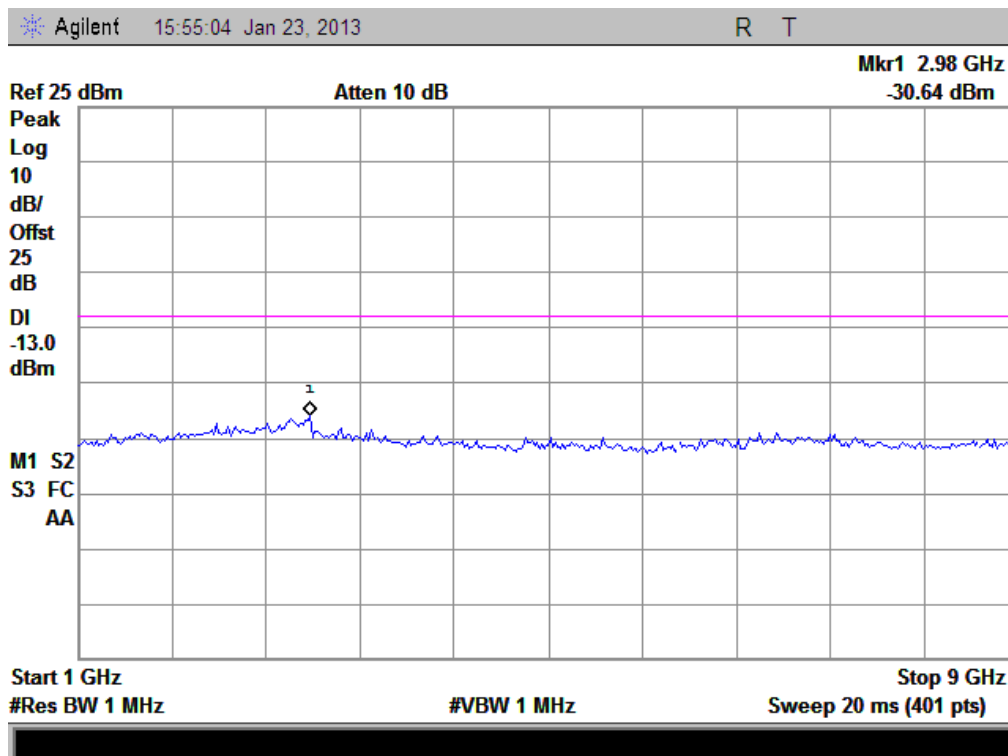

(Plot B2.1:   GSM 1900MHz Channel = 661, 1GHz to 20GHz)

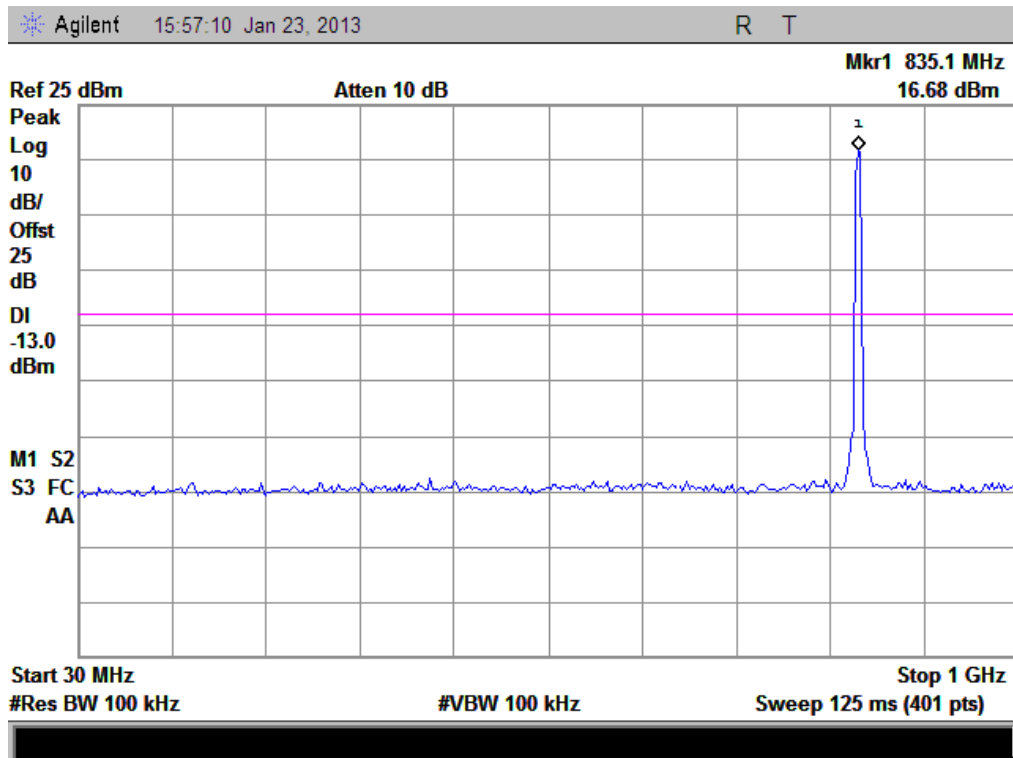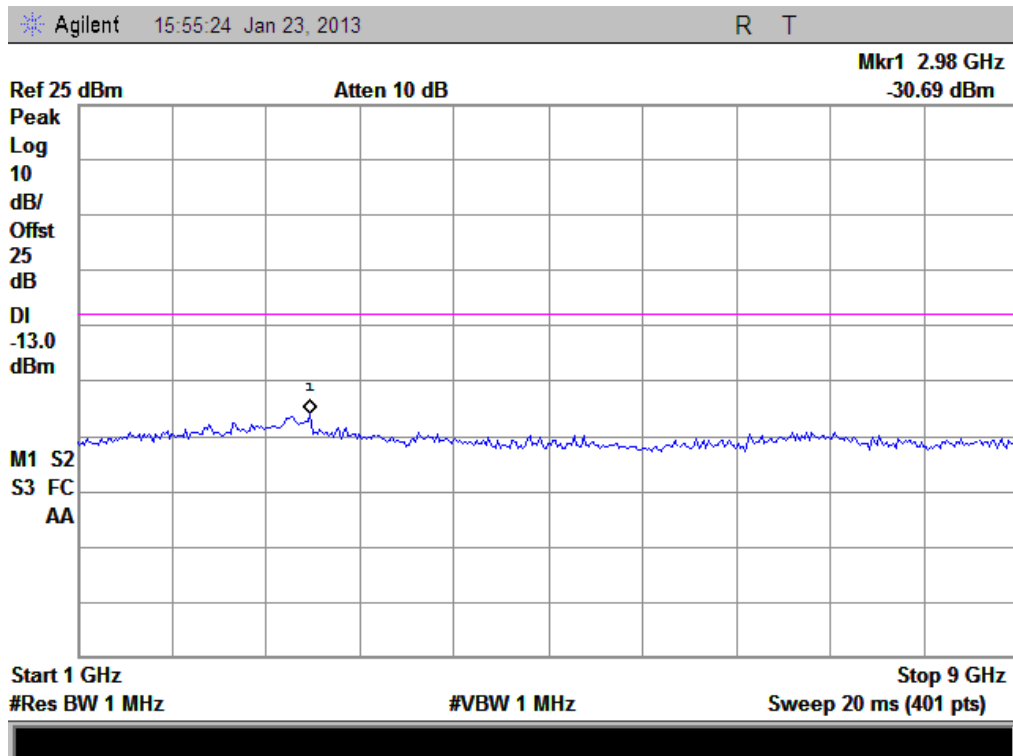(Plot B3:   GSM 1900MHz Channel = 810, 30MHz to 1GHz)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.9025 GHz	27.35 dBm
2	(1)	Freq	2.9475 GHz	-20.42 dBm

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

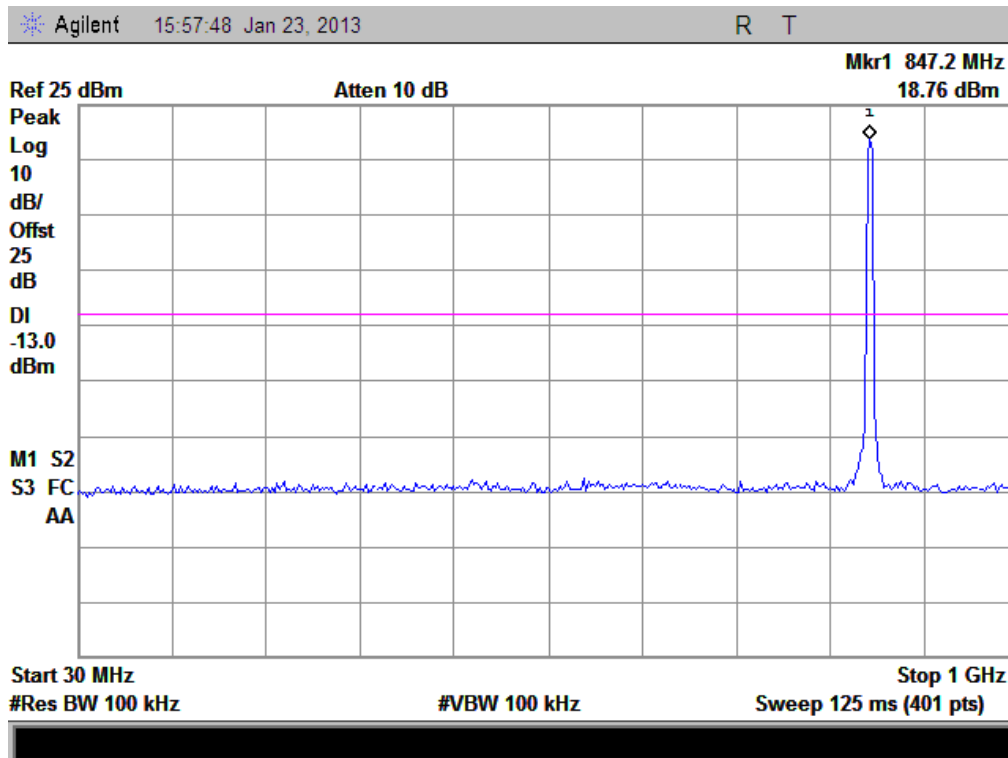(Plot E1:   WCDMA850MHz Channel = 4132, 30MHz to 1GHz)

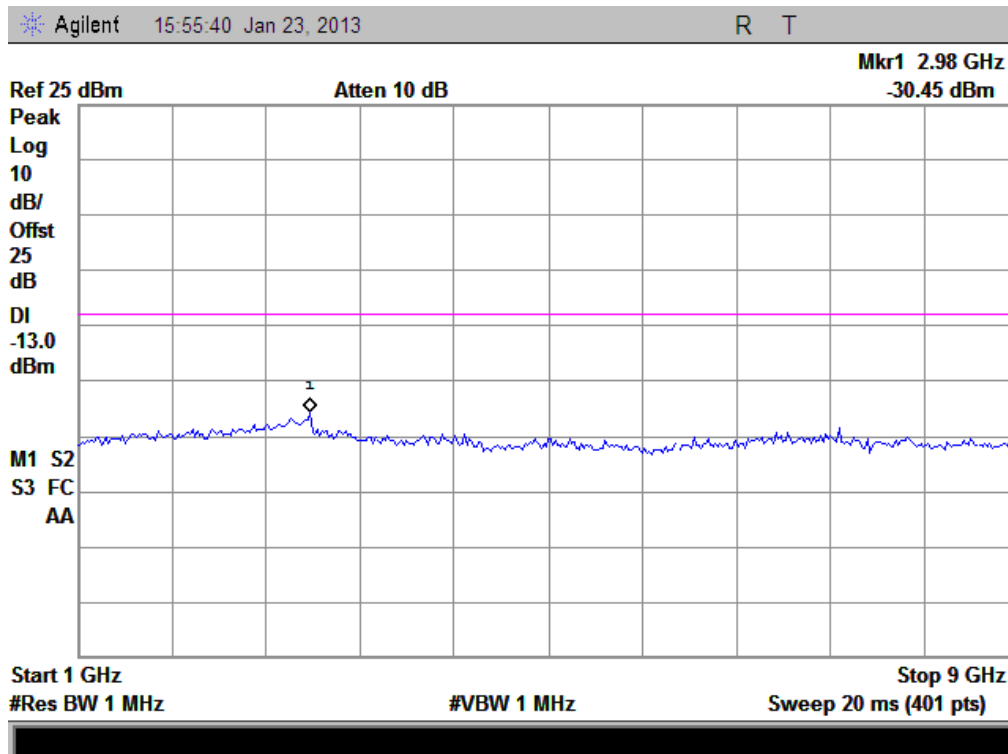(Plot E1.1:   WCDMA850MHz Channel = 4132, 1GHz to 9GHz)

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

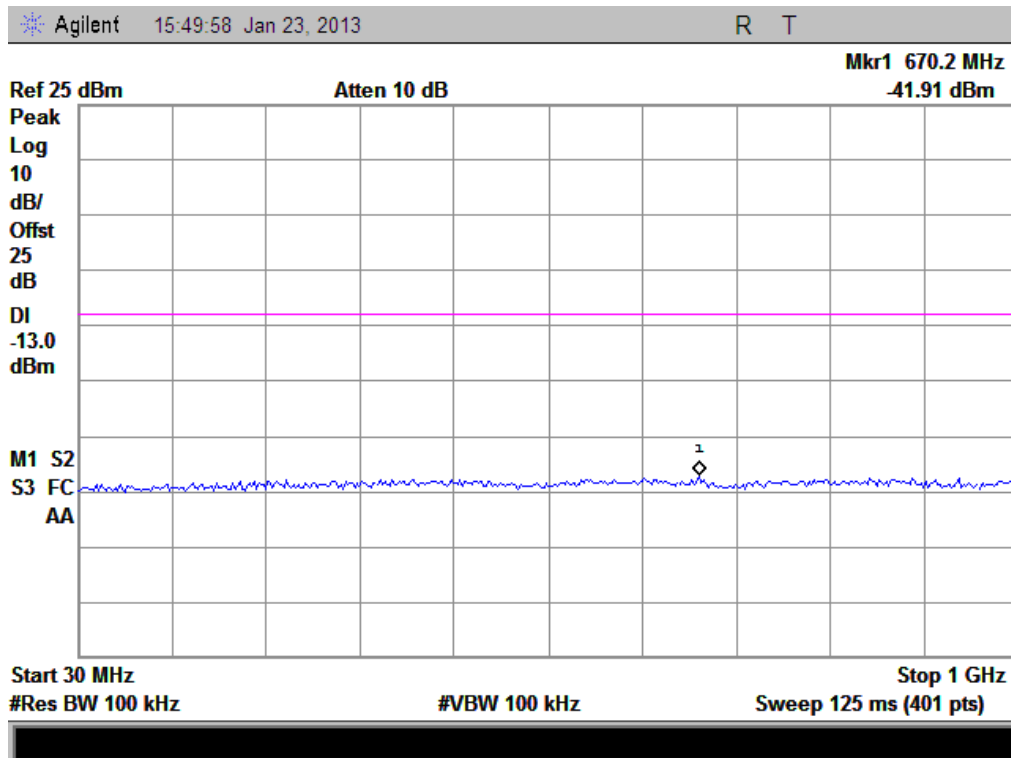(Plot E2.1:   WCDMA850MHz Channel = 4175, 1GHz to 9GHz)

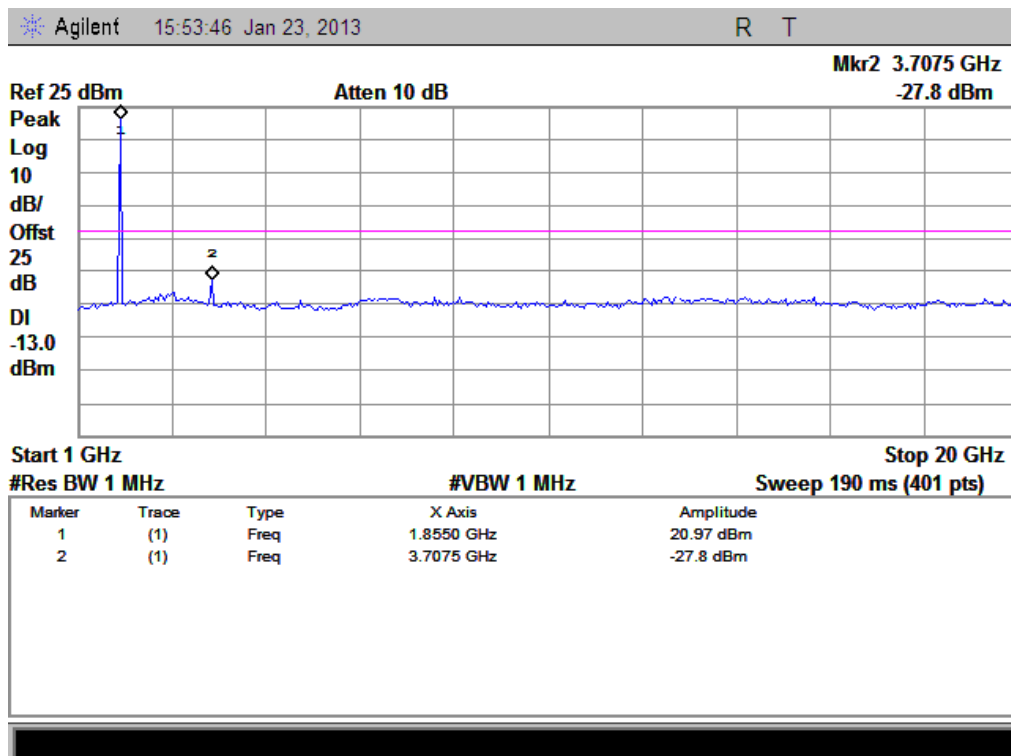(Plot E3:   WCDMA850MHz Channel = 4233, 30MHz to 1GHz)

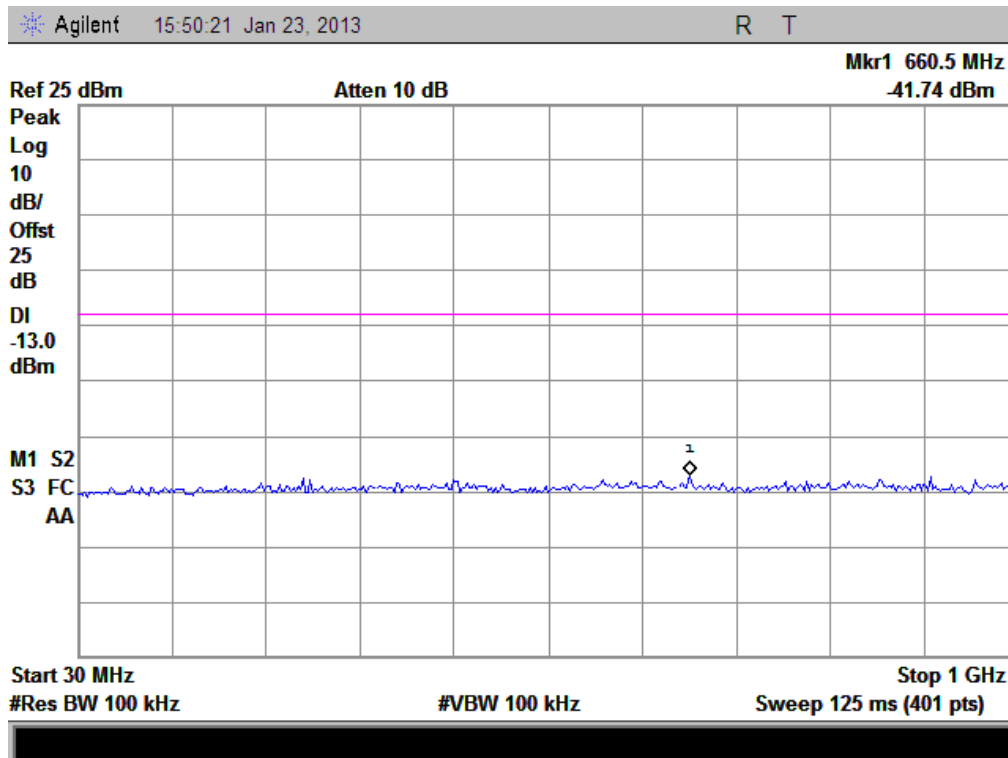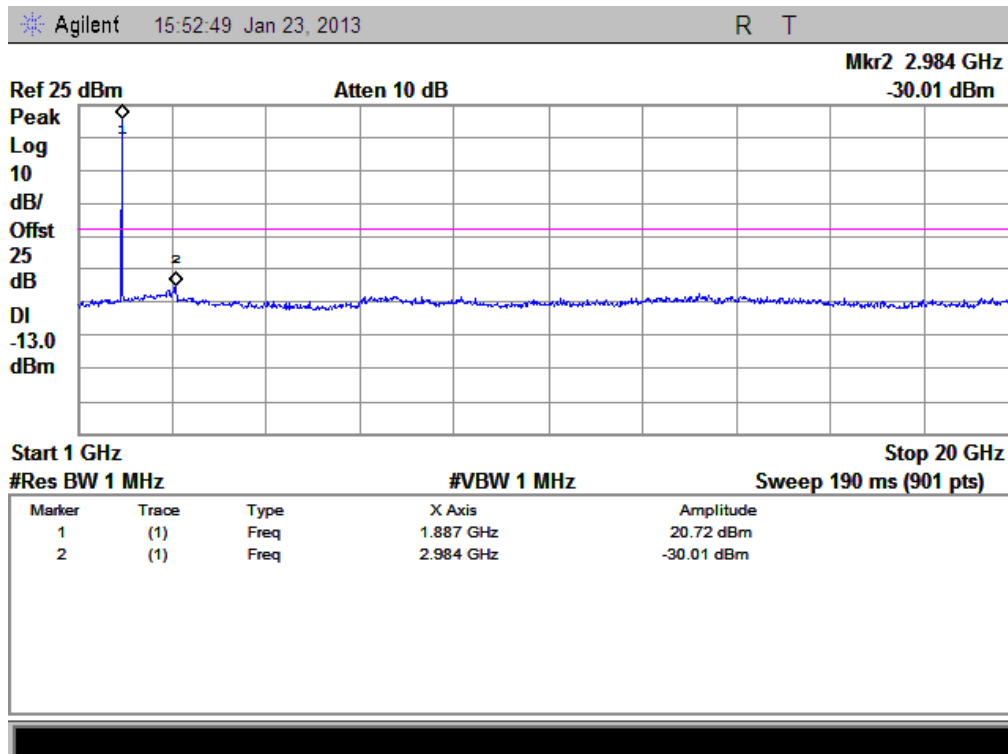(Plot E3.1:   WCDMA850MHz Channel = 4233, 1GHz to 9GHz)

(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)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.887 GHz	20.72 dBm
2	(1)	Freq	2.984 GHz	-30.01 dBm

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

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

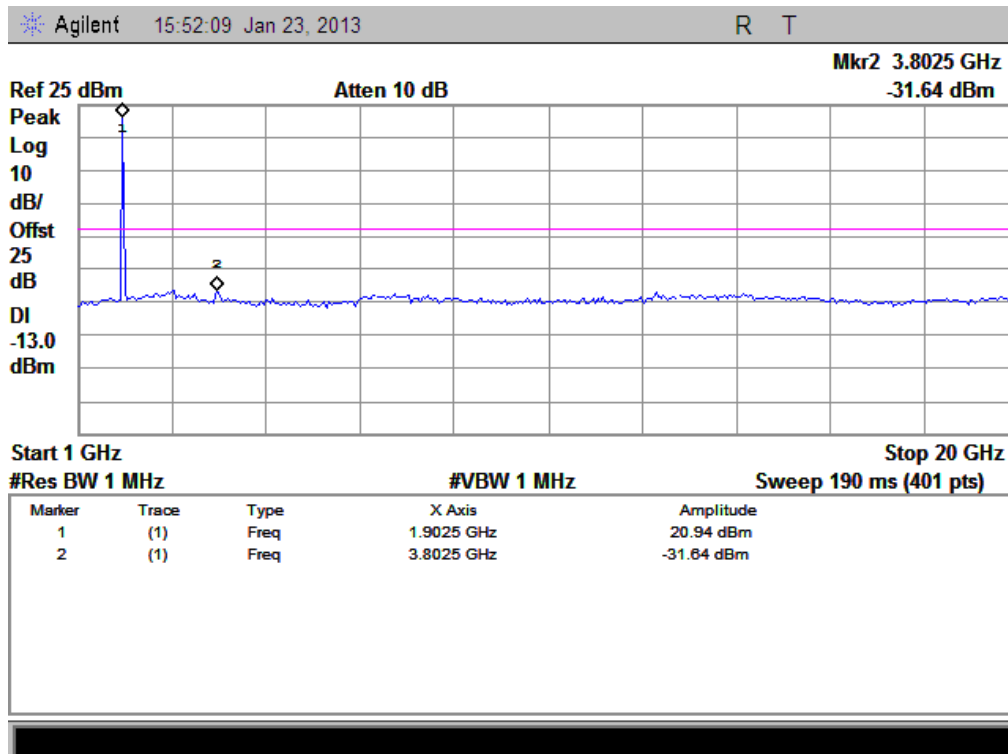| Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.9025 GHz	20.94 dBm
2	(1)	Freq	3.8025 GHz	-31.64 dBm
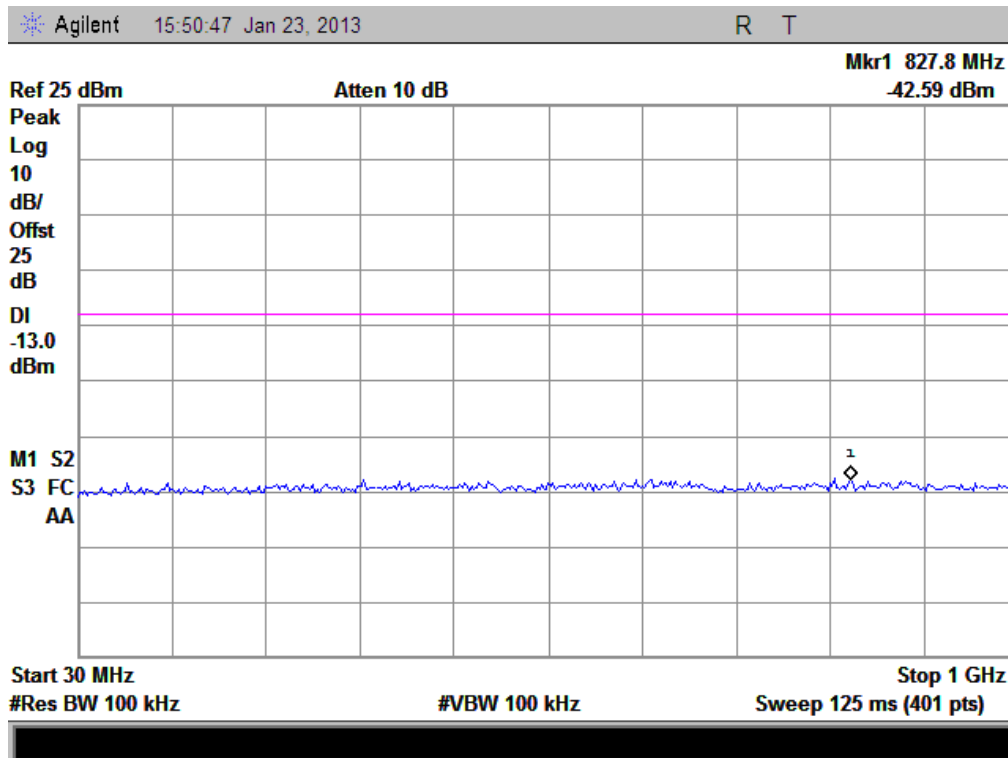
(Plot F3.1: WCDMA1900MHz Channel = 9538 1GHz to 20GHz)
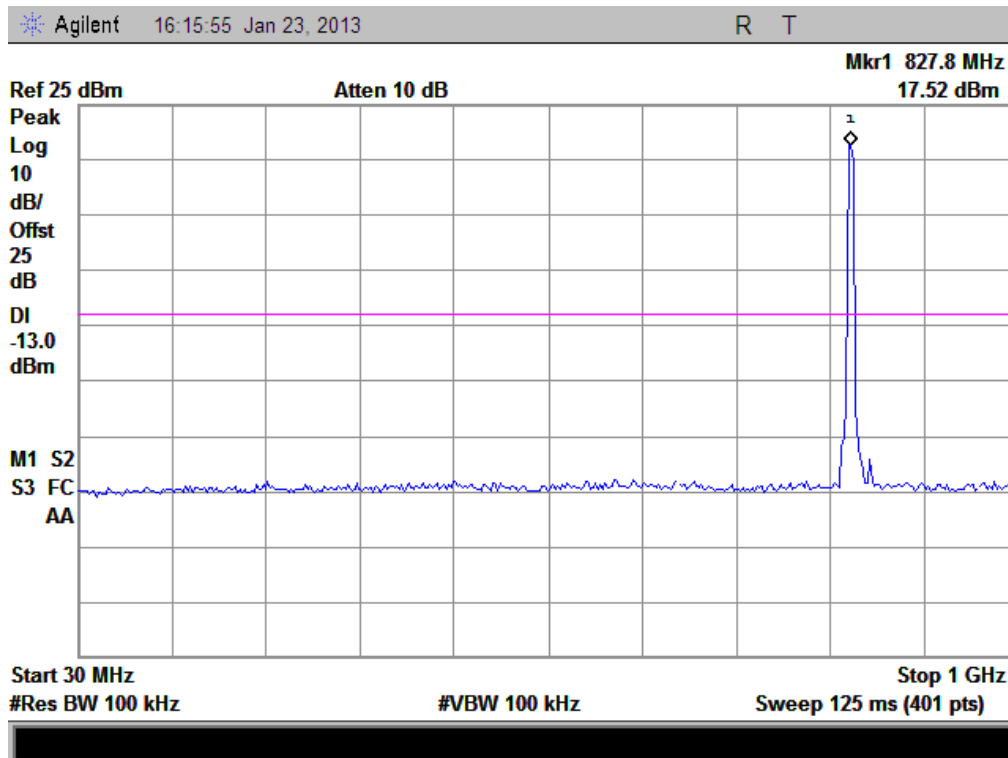
(Plot G1:   HSDPA 850MHz Channel = 4132, 30MHz to 1GHz)

(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)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.8550 GHz	20.99 dBm
2	(1)	Freq	3.7075 GHz	-28.96 dBm

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

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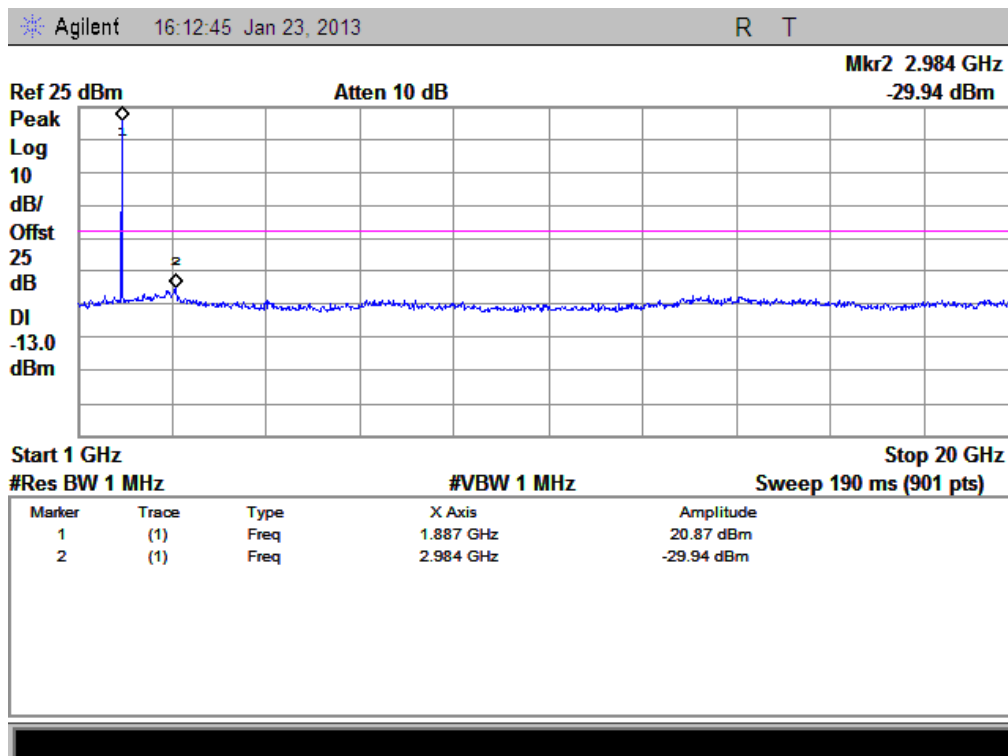
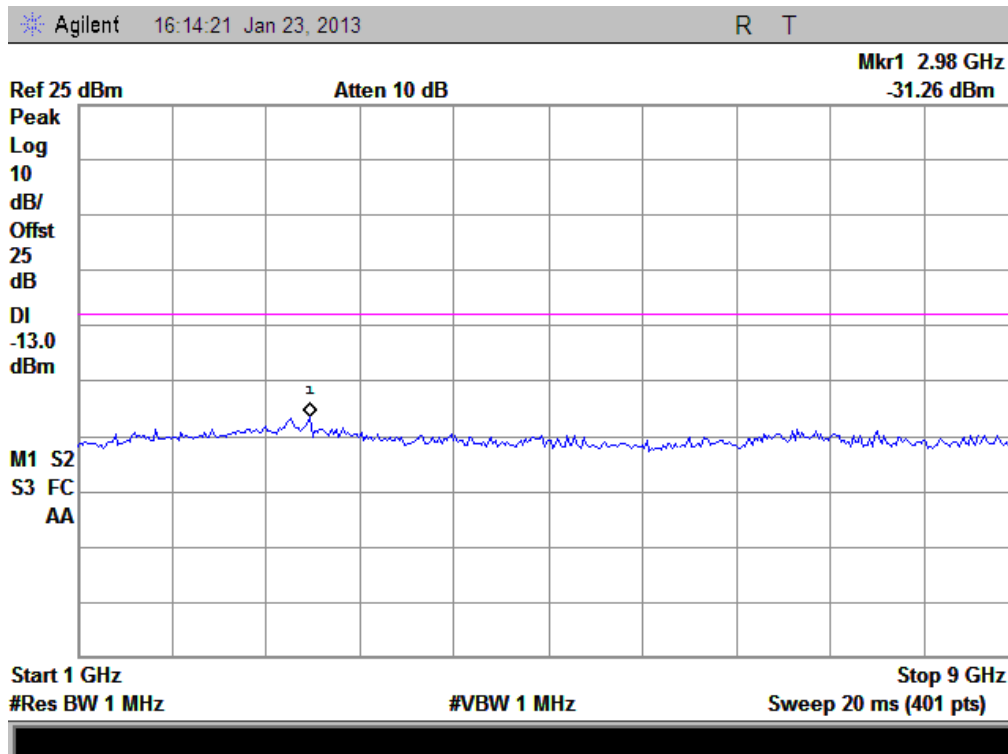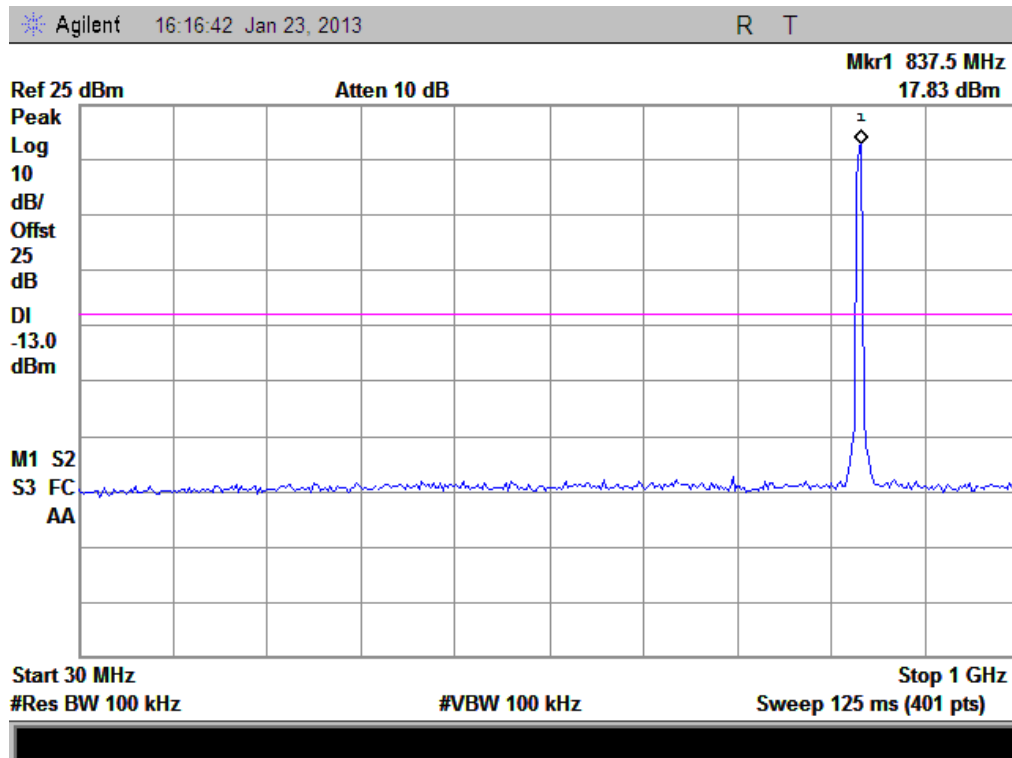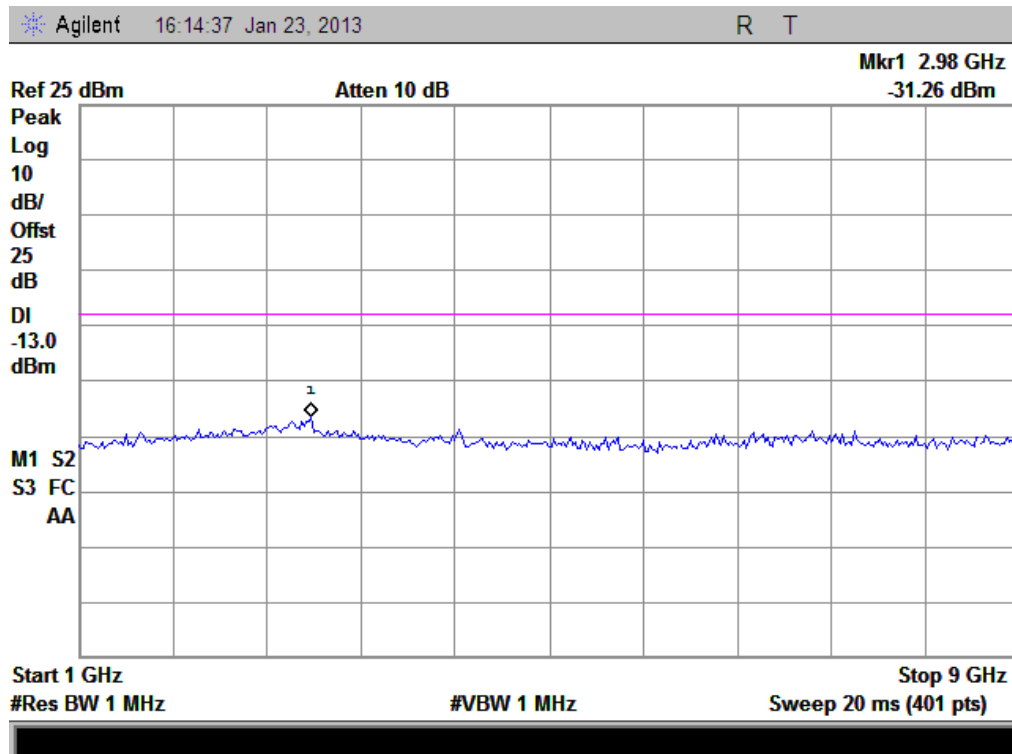

(Plot H2.1:   HSDPA1900MHz Channel = 9400, 1GHz to 20GHz)

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

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.9025 GHz	20.95 dBm
2	(1)	Freq	2.9475 GHz	-31.41 dBm
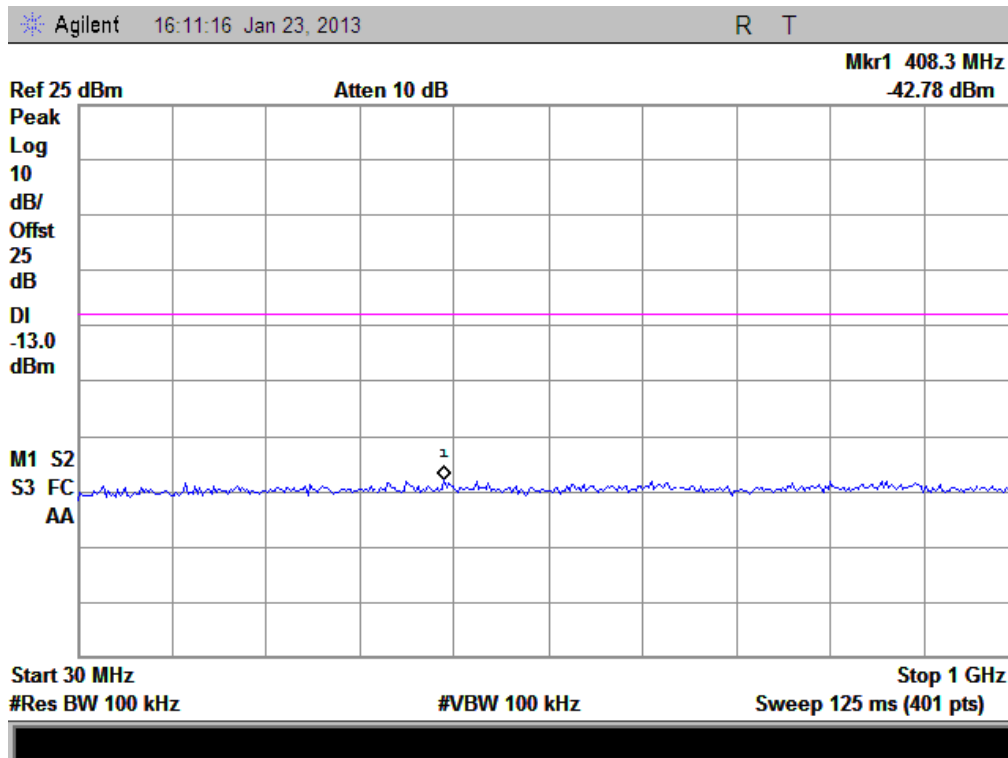
(Plot H3.1:   HSDPA1900MHz Channel = 9538 1GHz to 20GHz)
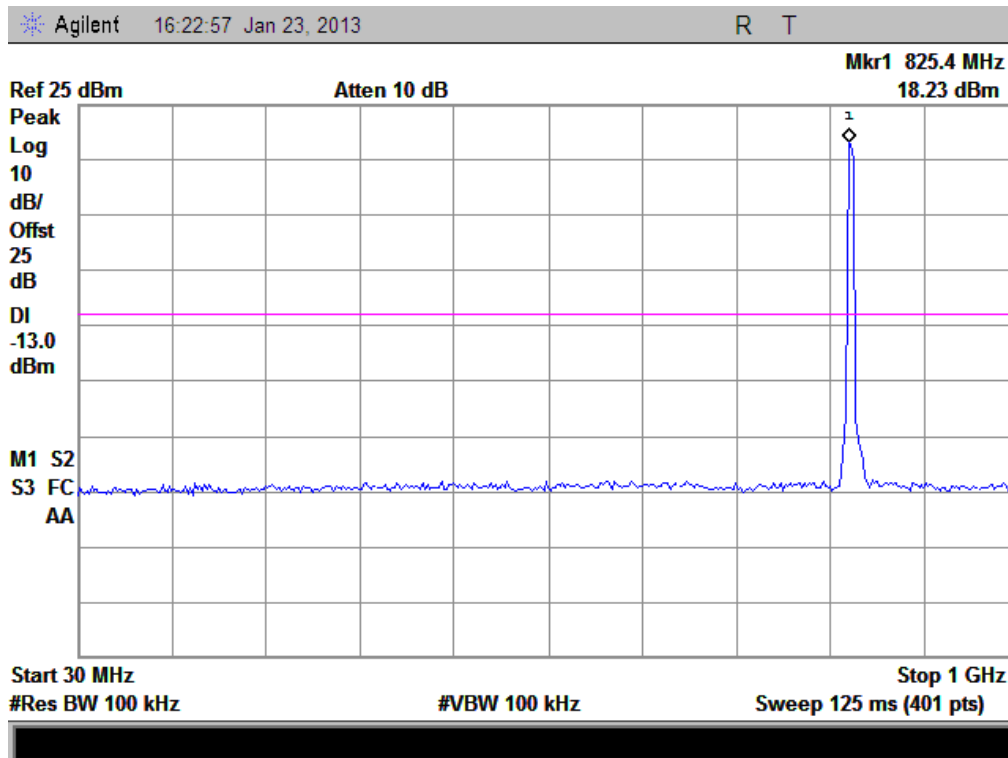
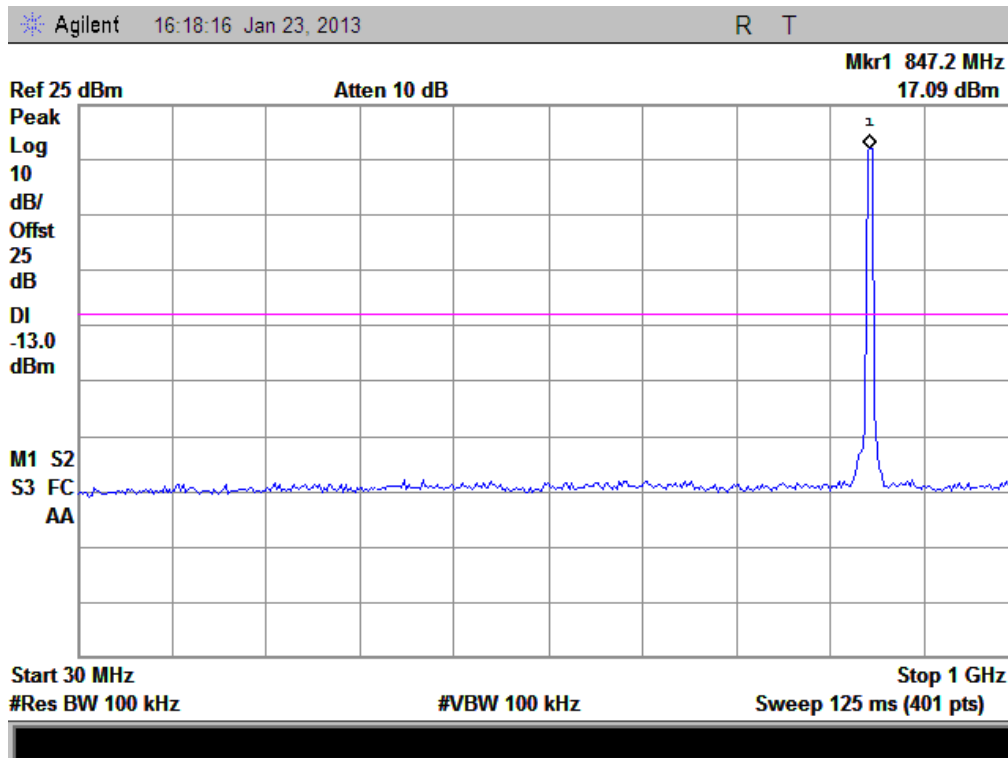(Plot I 1:   HSUPA 850MHz Channel = 4132, 30MHz to 1GHz)
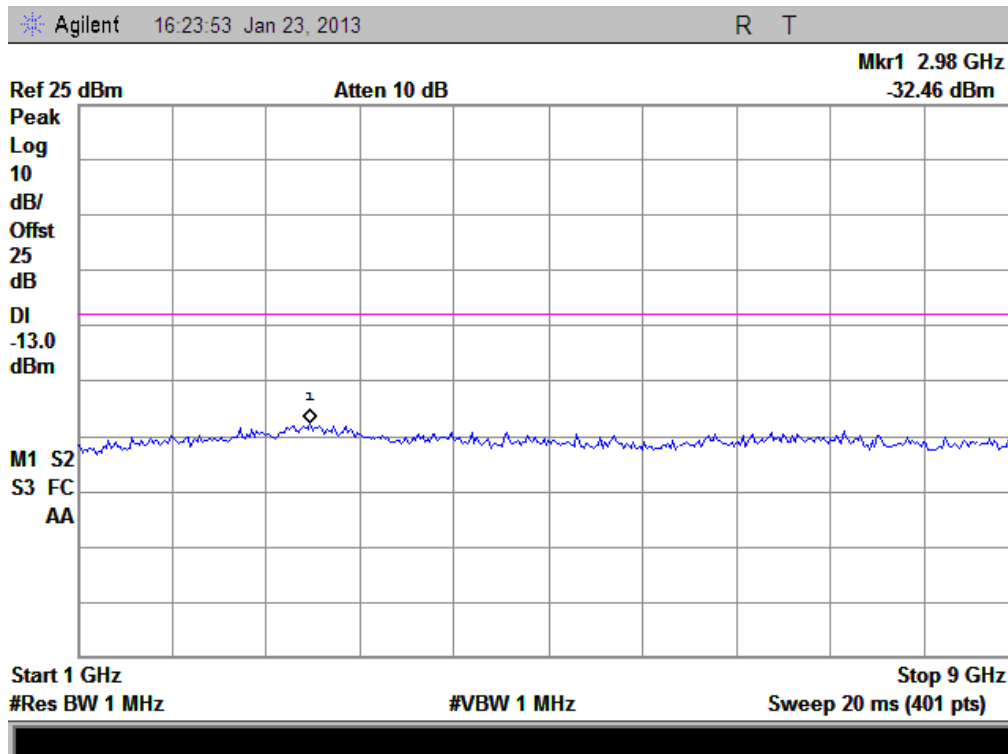
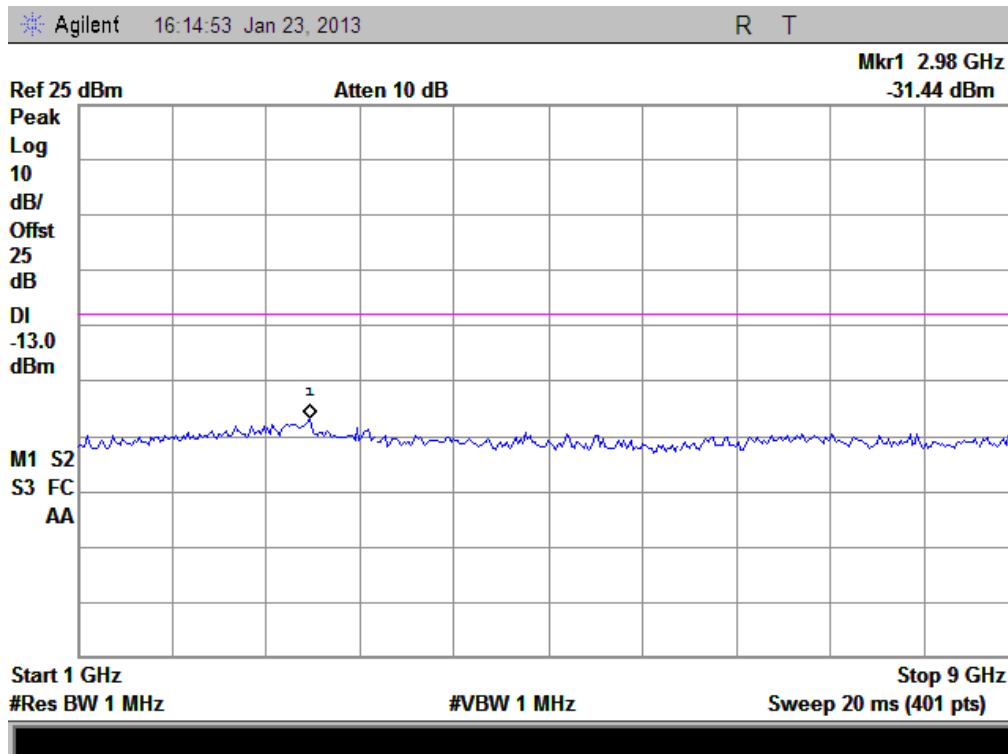(Plot I1.1:   HSUPA 850MHz Channel = 4132, 1GHz to 9GHz)
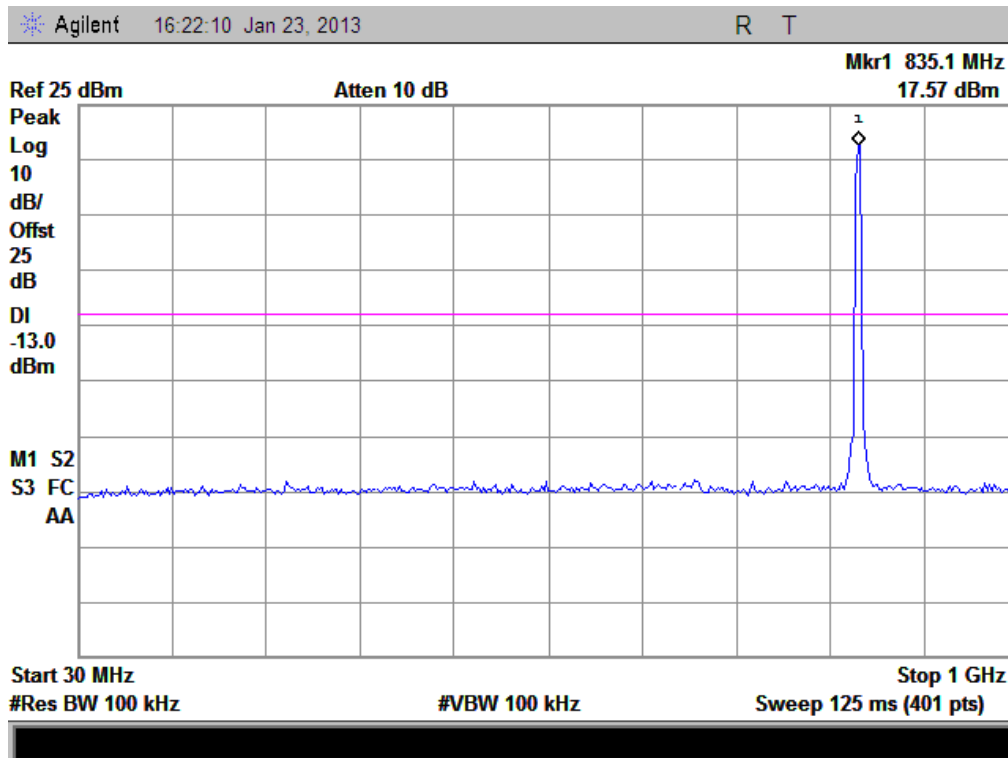
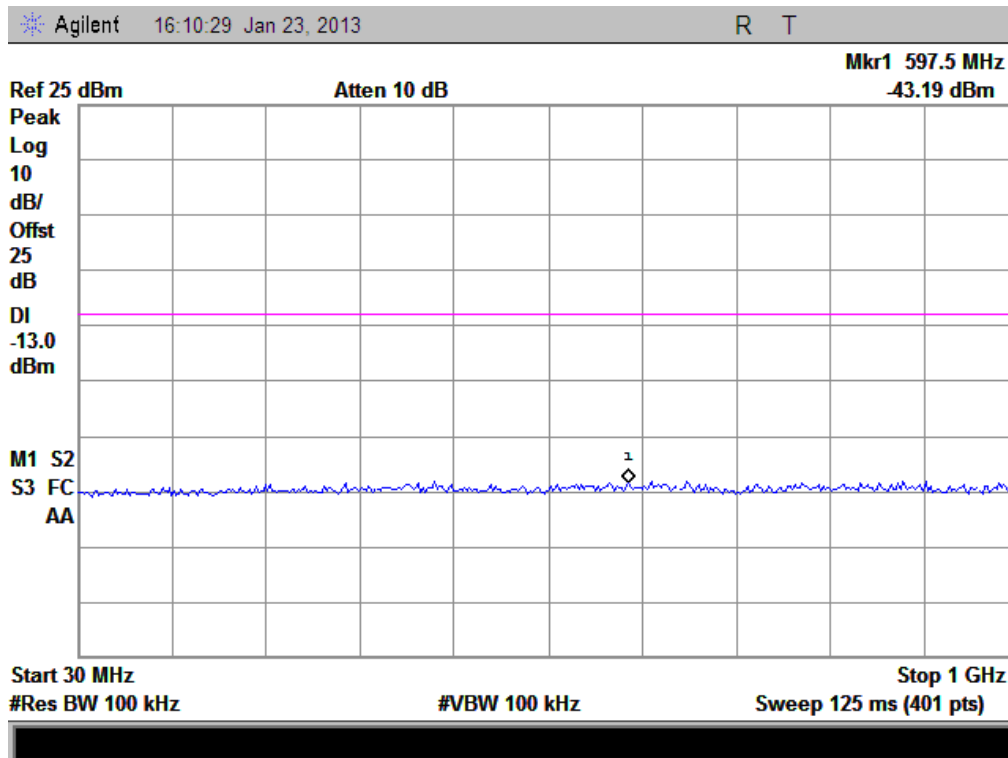(Plot I 2:   HSUPA 850MHz Channel = 4175, 30MHz to 1GHz)
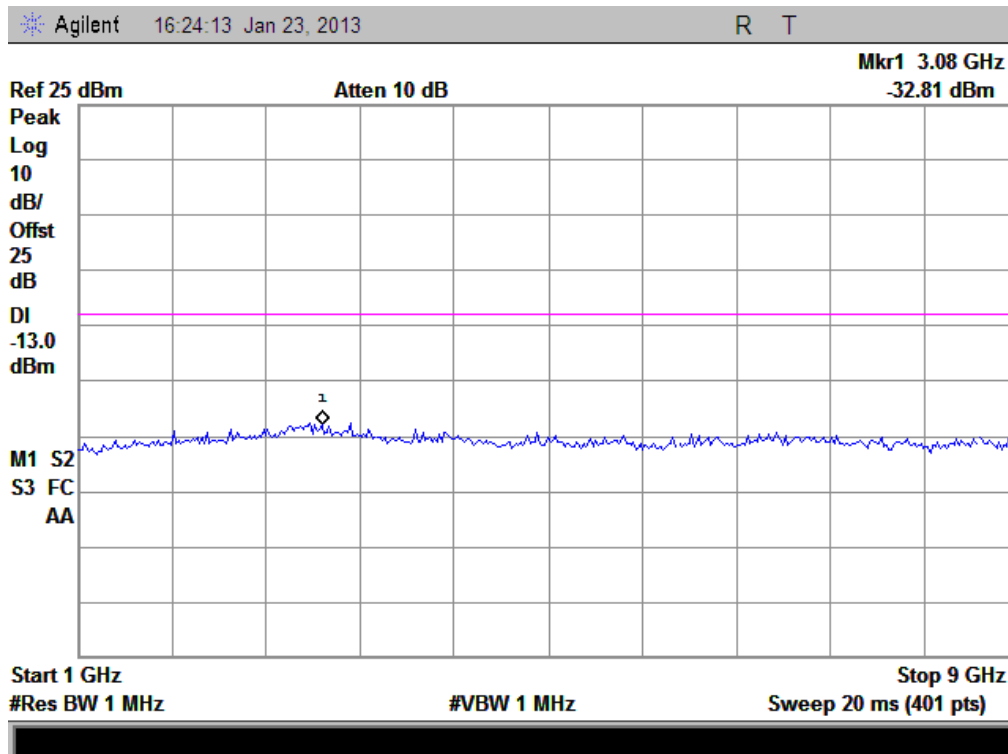
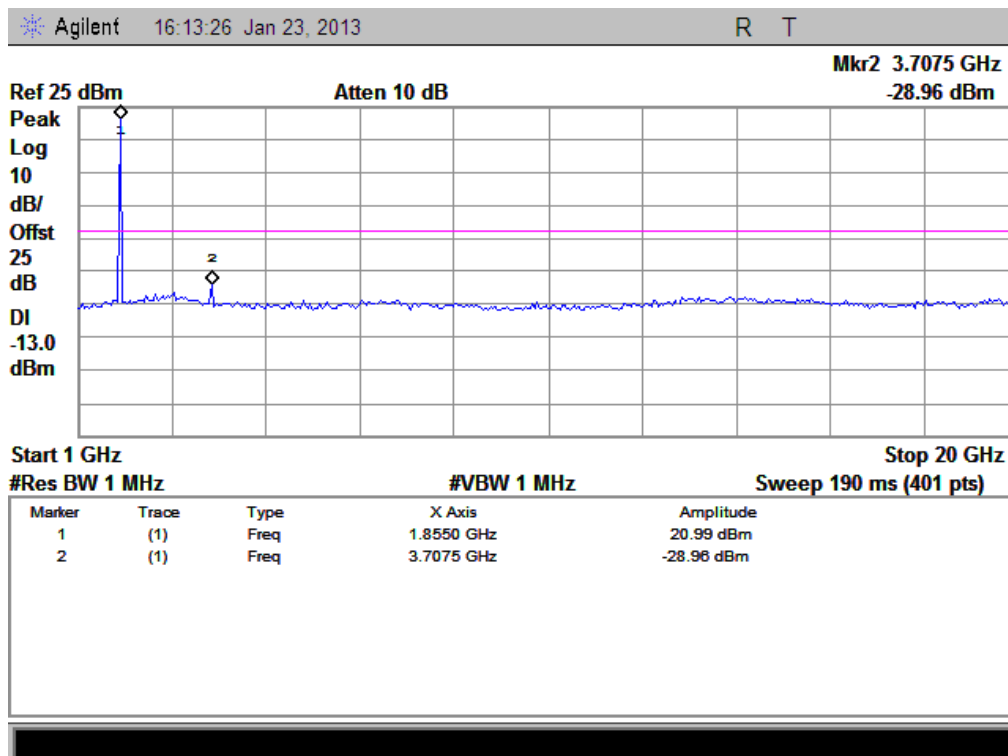

(Plot I2.1:   HSUPA 850MHz Channel = 4175, 1GHz to 9GHz)
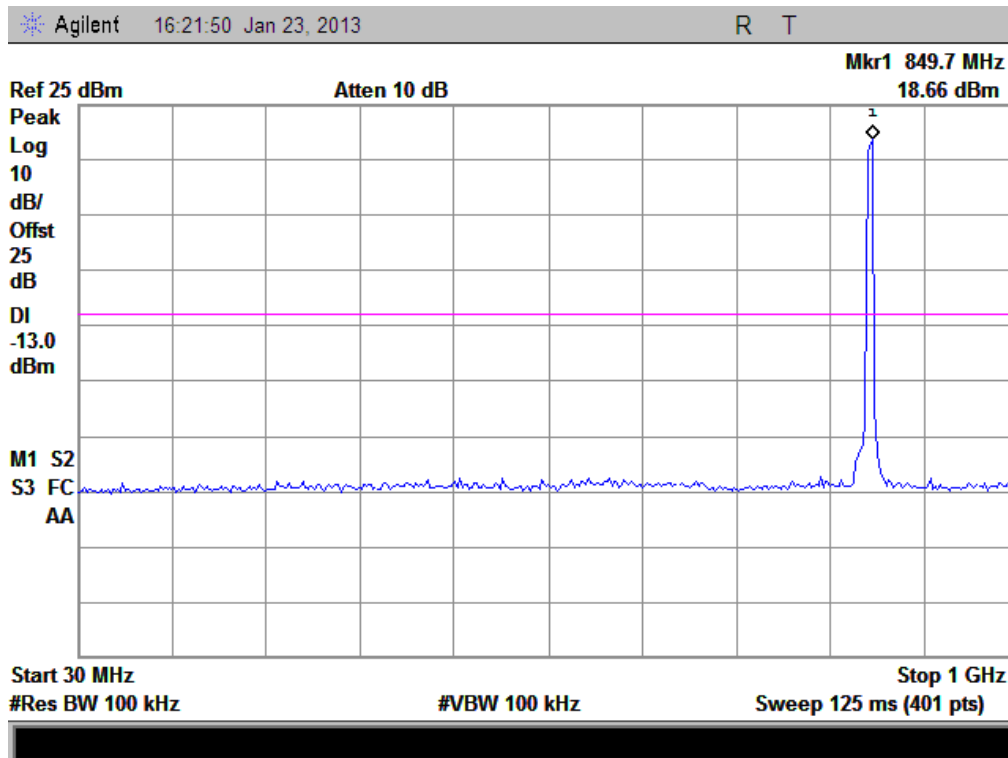
(Plot I 3:   HSUPA850MHz Channel = 4233, 30MHz to 1GHz)

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

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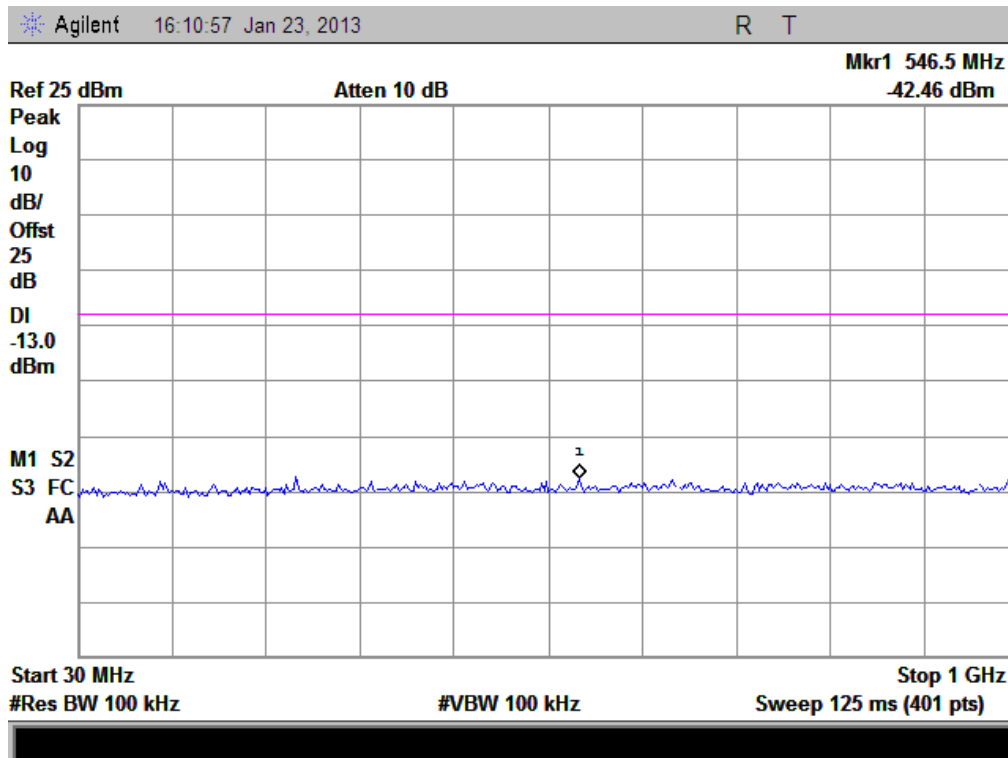

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.8550 GHz	21.12 dBm
2	(1)	Freq	3.7075 GHz	-28.78 dBm
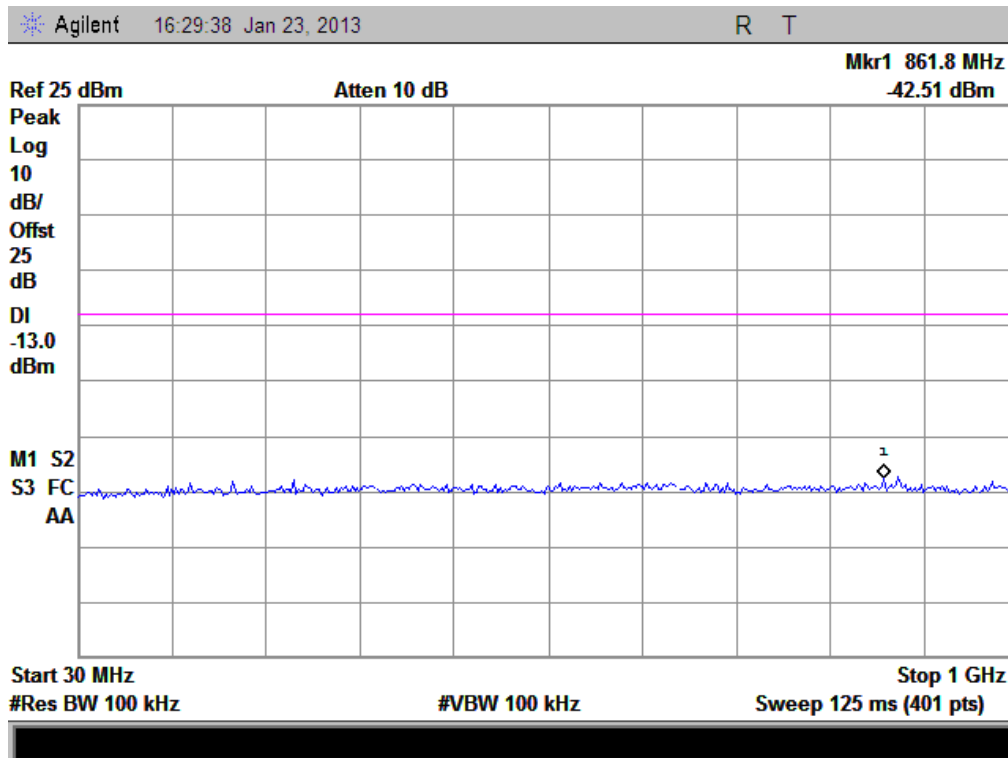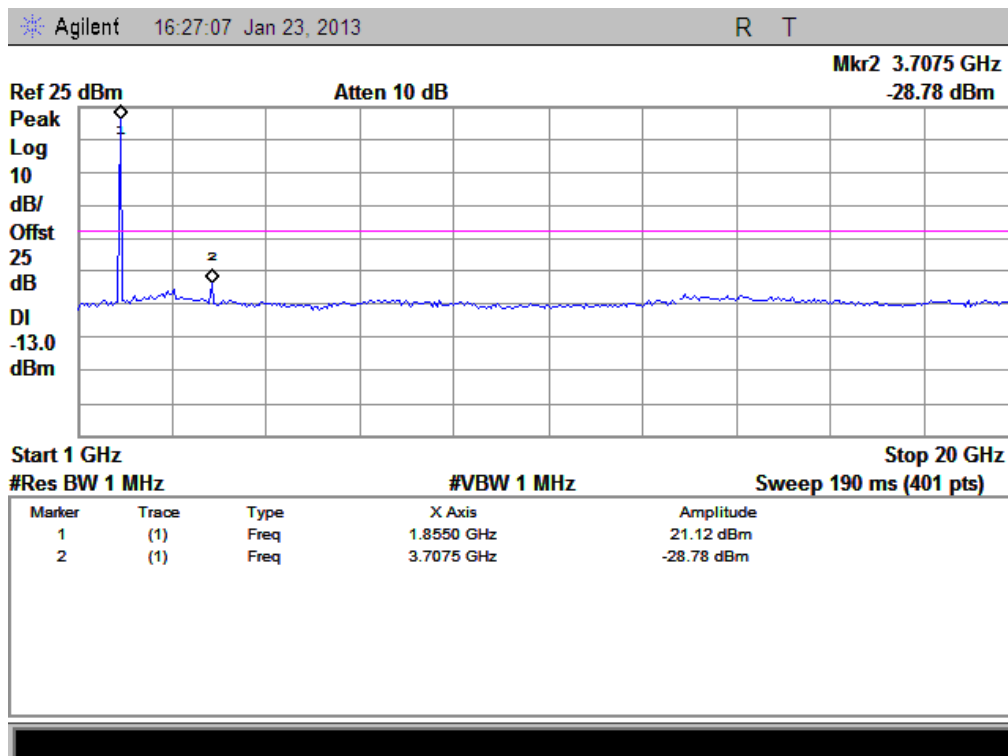
(Plot J1.1:   HSUPA1900MHz Channel = 9262, 1GHz to 20GHz)

Agilent   16:29:52 Jan 23, 2013   R T

Mkr1 367.1 MHz
Ref 25 dBm   Atten 10 dB   -42.84 dBm

Start 30 MHz   Stop 1 GHz
#Res BW 100 kHz   #VBW 100 kHz   Sweep 125 ms (401 pts)

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

Agilent   16:28:12 Jan 23, 2013   R T

Mkr2 2.984 GHz
Ref 25 dBm   Atten 10 dB   -30.7 dBm

Start 1 GHz   Stop 20 GHz
#Res BW 1 MHz   #VBW 1 MHz   Sweep 190 ms (901 pts)

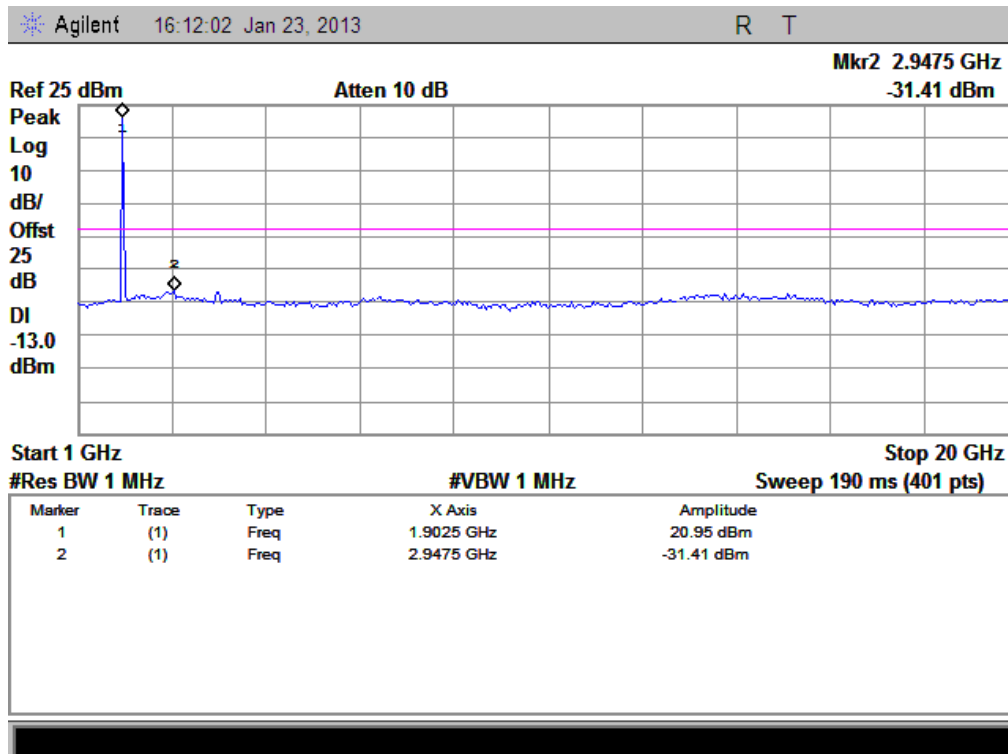| Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.887 GHz	20.81 dBm
2	(1)	Freq	2.984 GHz	-30.7 dBm
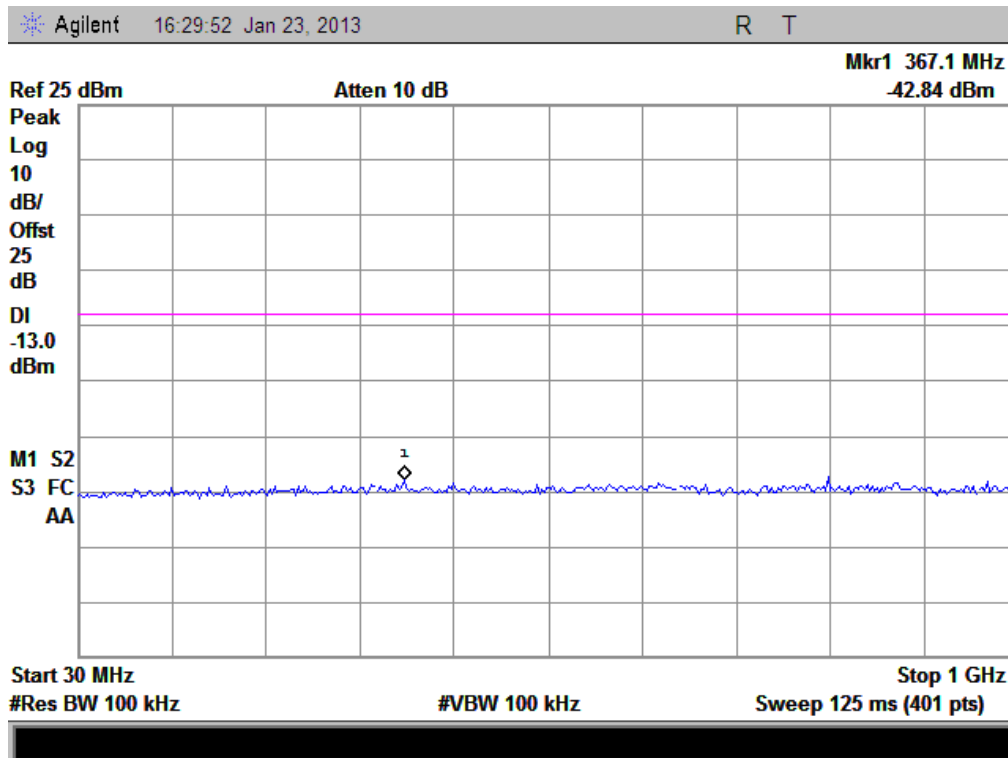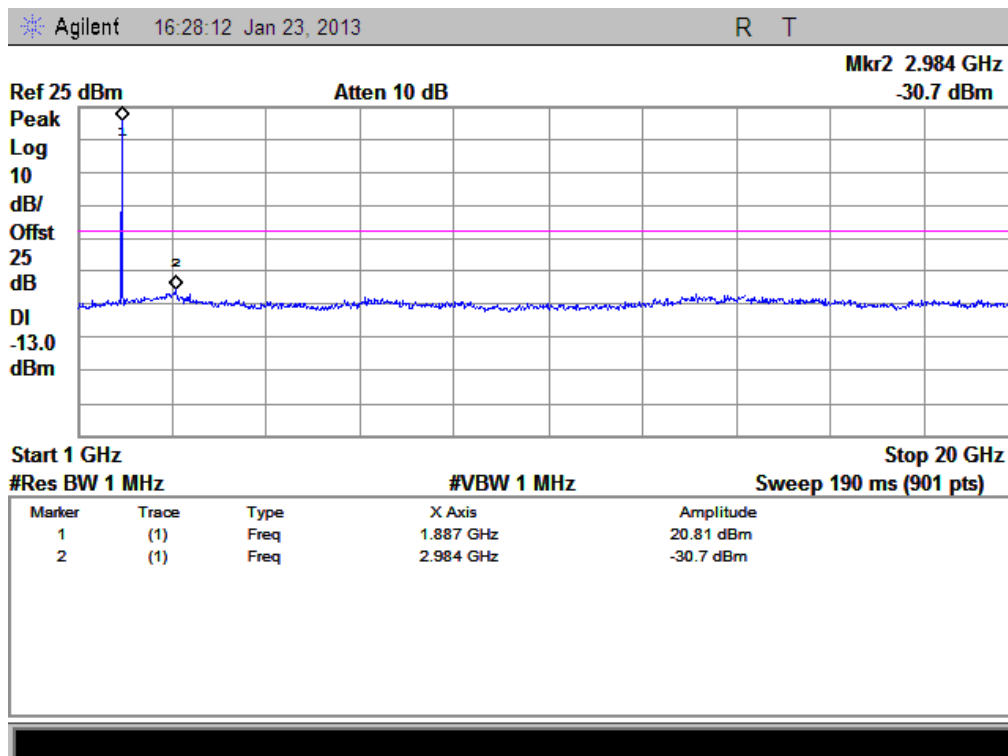
(Plot J2.1:   HSUPA1900MHz Channel = 9400, 1GHz to 20GHz)

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

| Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.9025 GHz	21.05 dBm
2	(1)	Freq	3.8500 GHz	-32.23 dBm
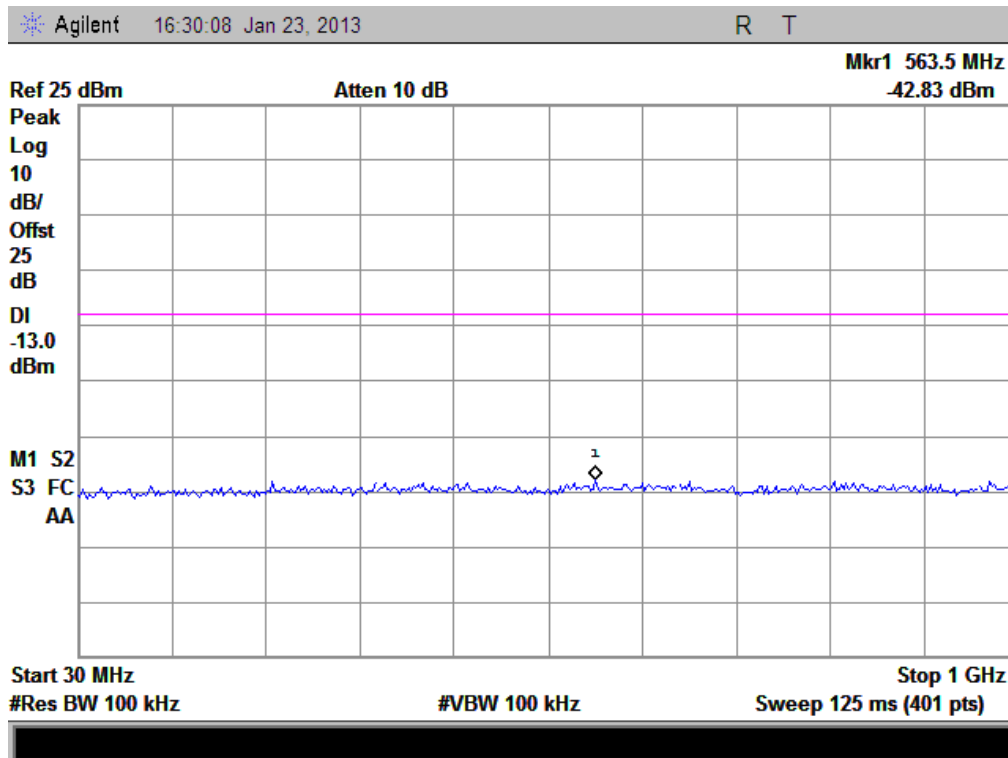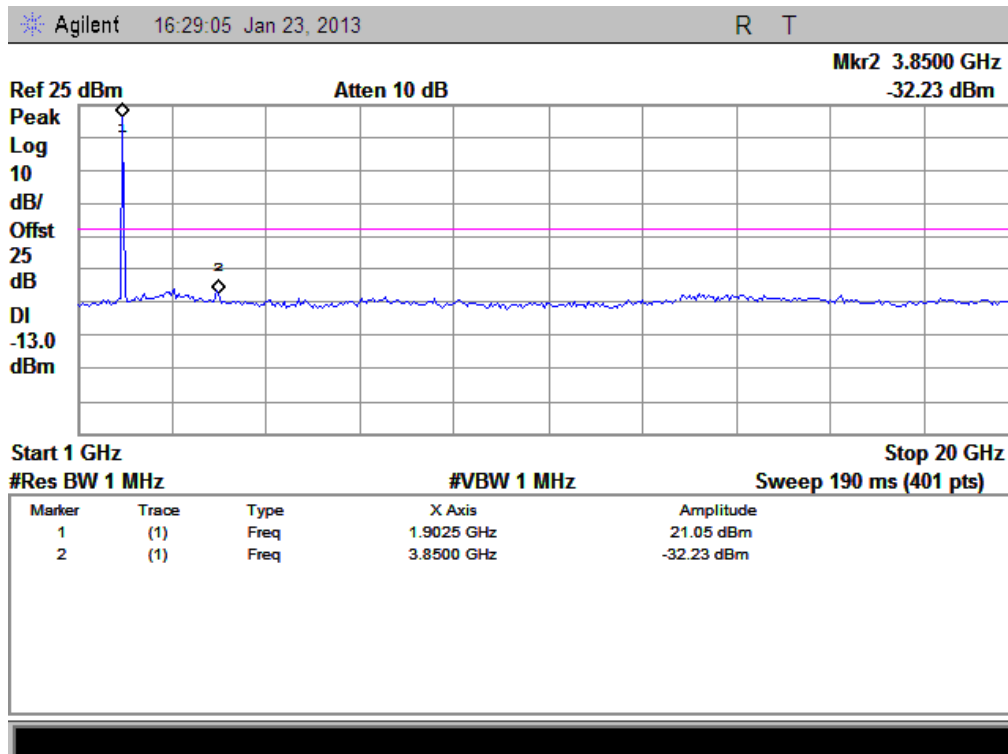
(Plot J3.1:   HSUPA1900MHz Channel = 9538 1GHz to 20GHz)
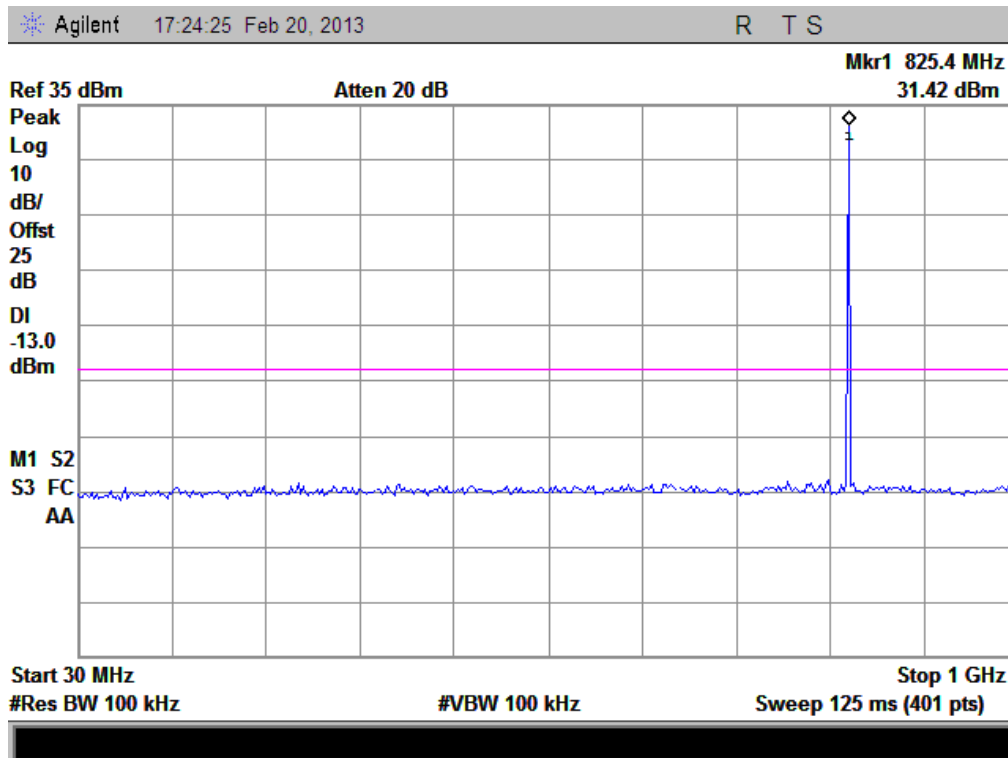
(Plot K1:   GPRS 850MHz Channel = 128, 30MHz to 1GHz)
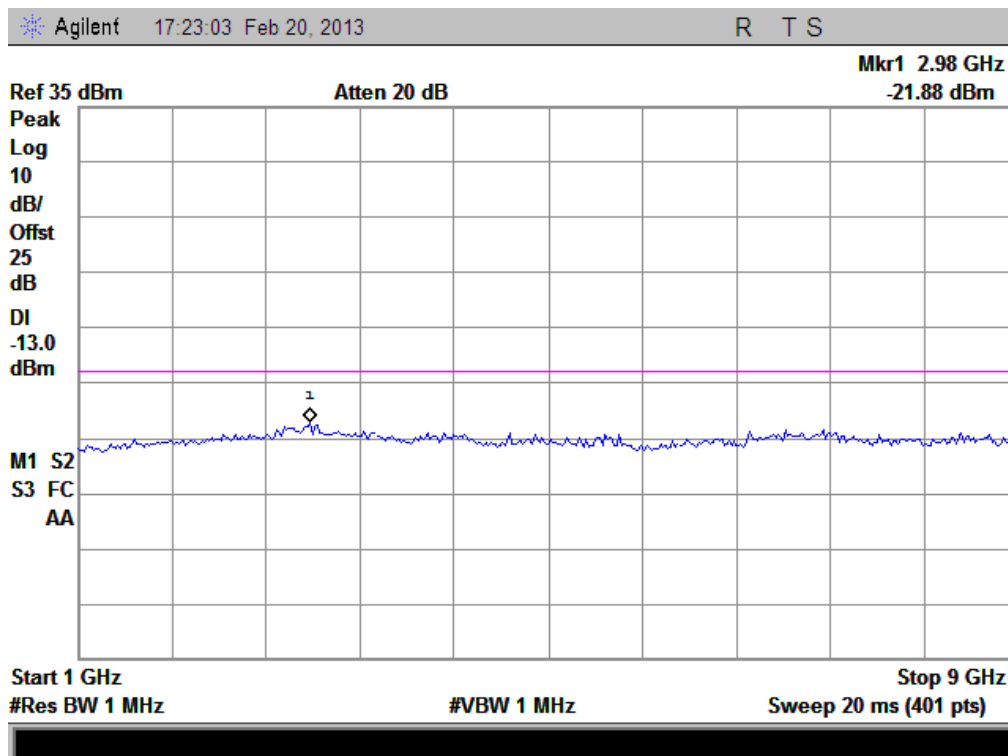
(Plot K1.1:   GPRS 850MHz Channel = 128, 1GHz to 9GHz)
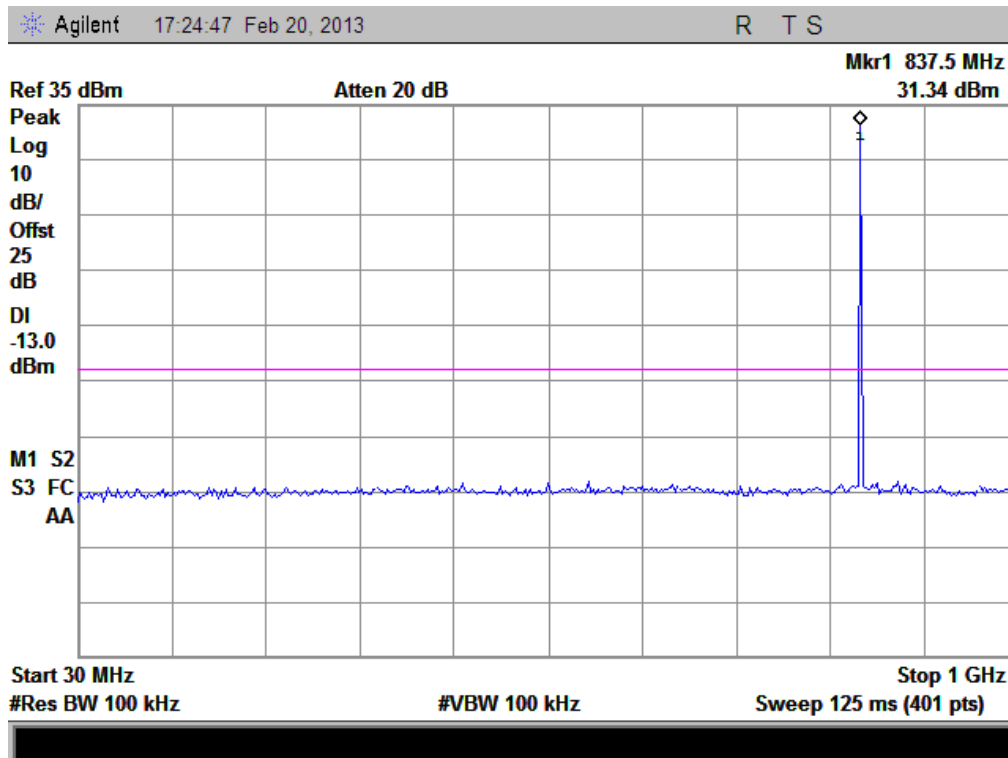
(Plot K2:   GPRS 850MHz Channel = 190, 30MHz to 1GHz)
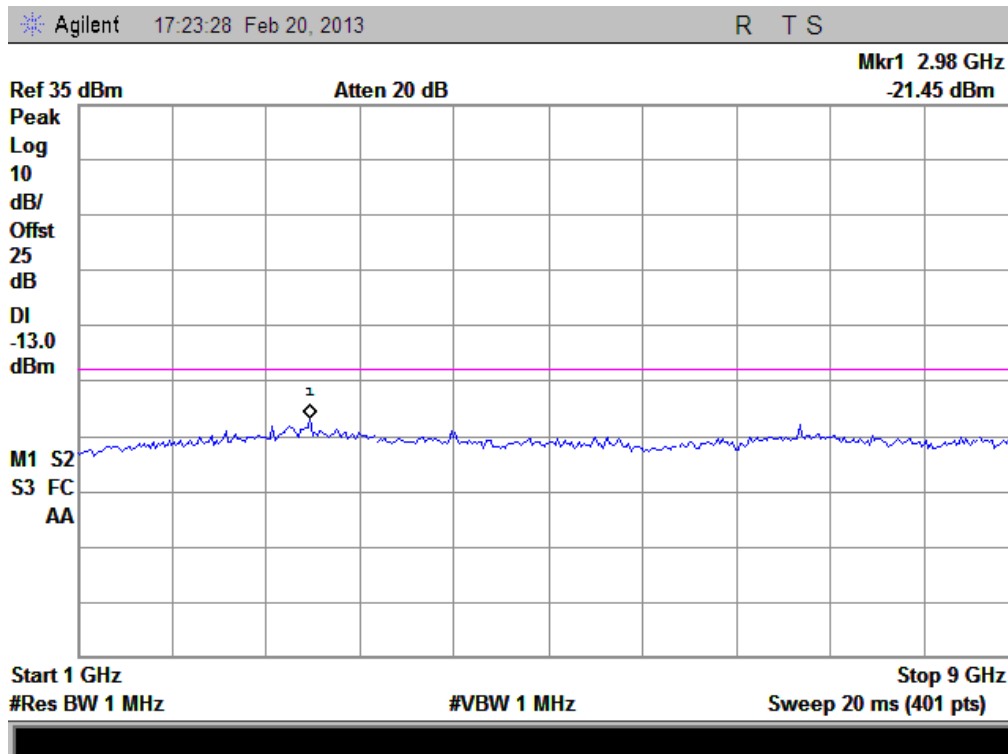
(Plot K2.1:   GPRS 850MHz Channel = 190, 1GHz to 9GHz)
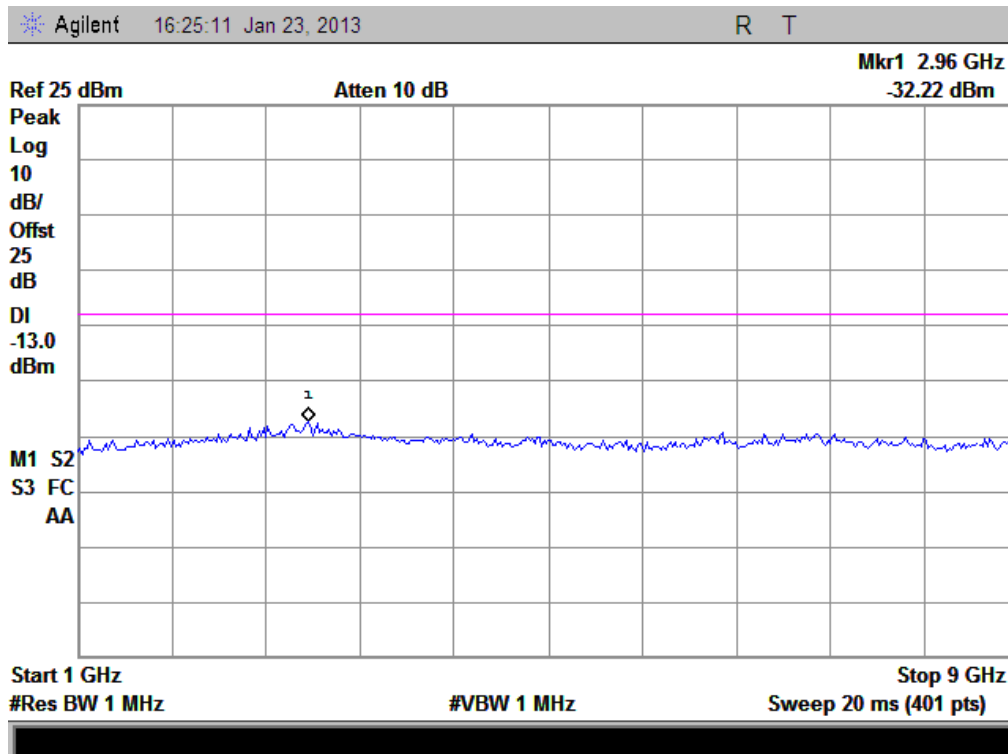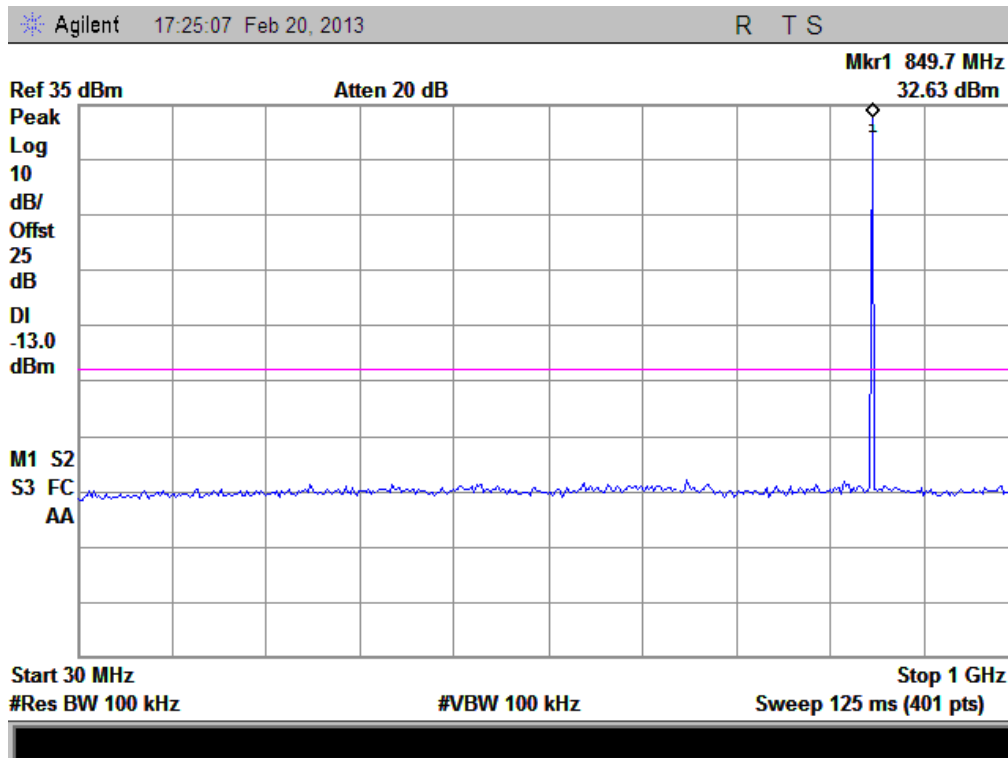
(Plot K3:   GPRS 850MHz Channel = 251, 30MHz to 1GHz)
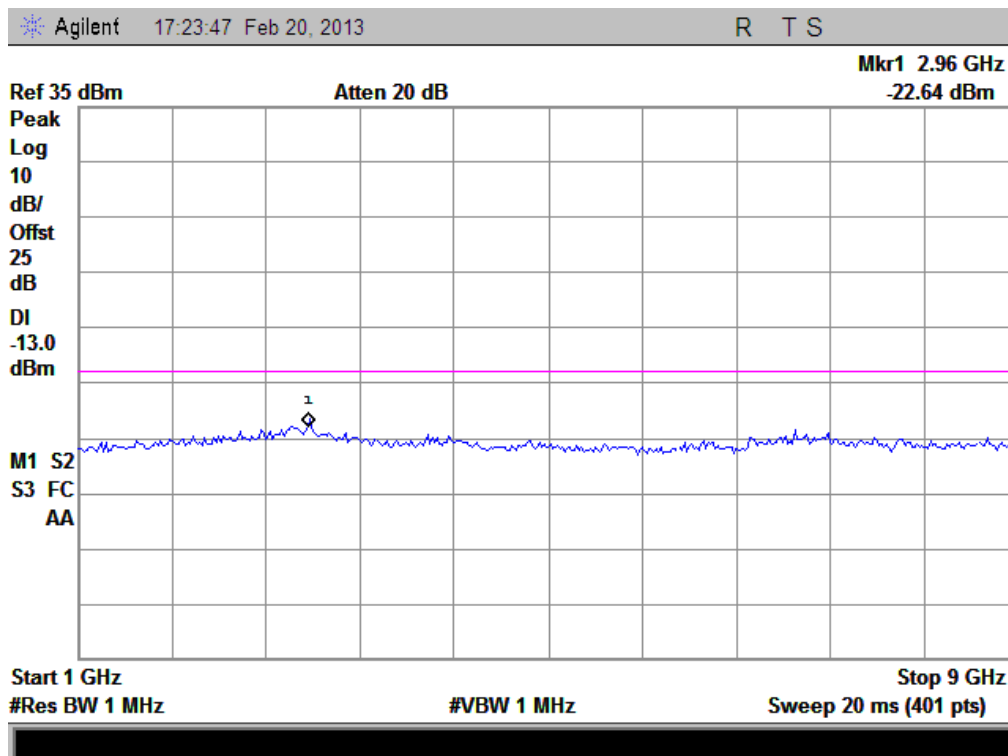
(Plot K3.1:   GPRS 850MHz Channel = 251, 1GHz to 9GHz)

(Plot L1:   GPRS 1900MHz Channel = 512, 30MHz to 1GHz)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.8550 GHz	28.31 dBm
2	(1)	Freq	2.9475 GHz	-20.53 dBm
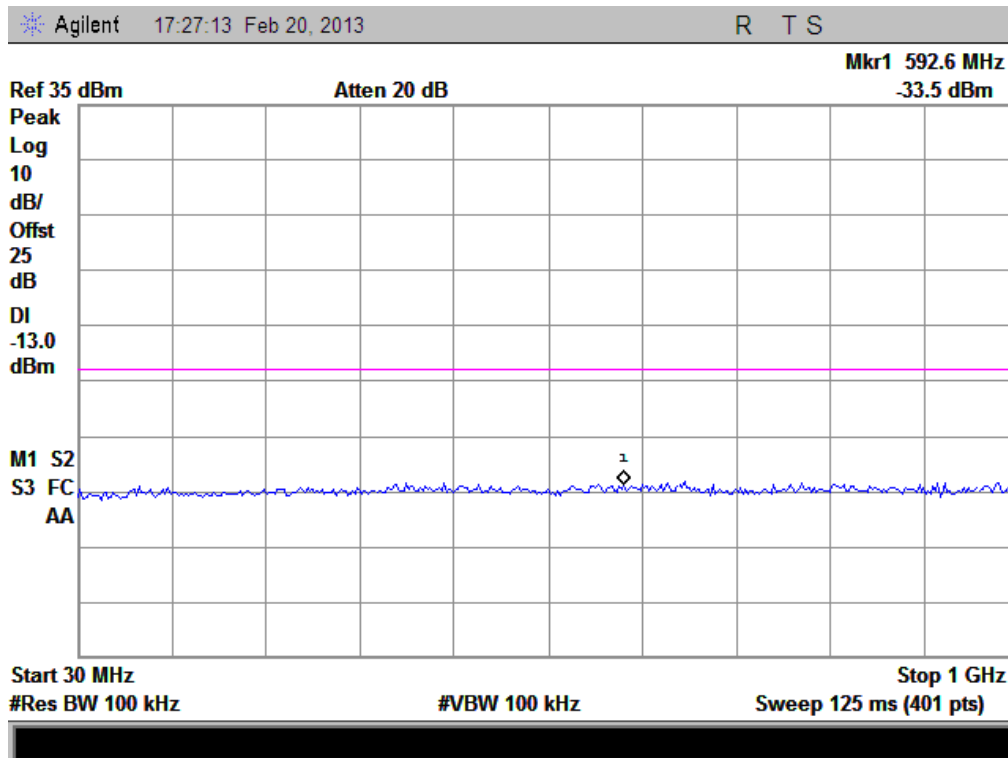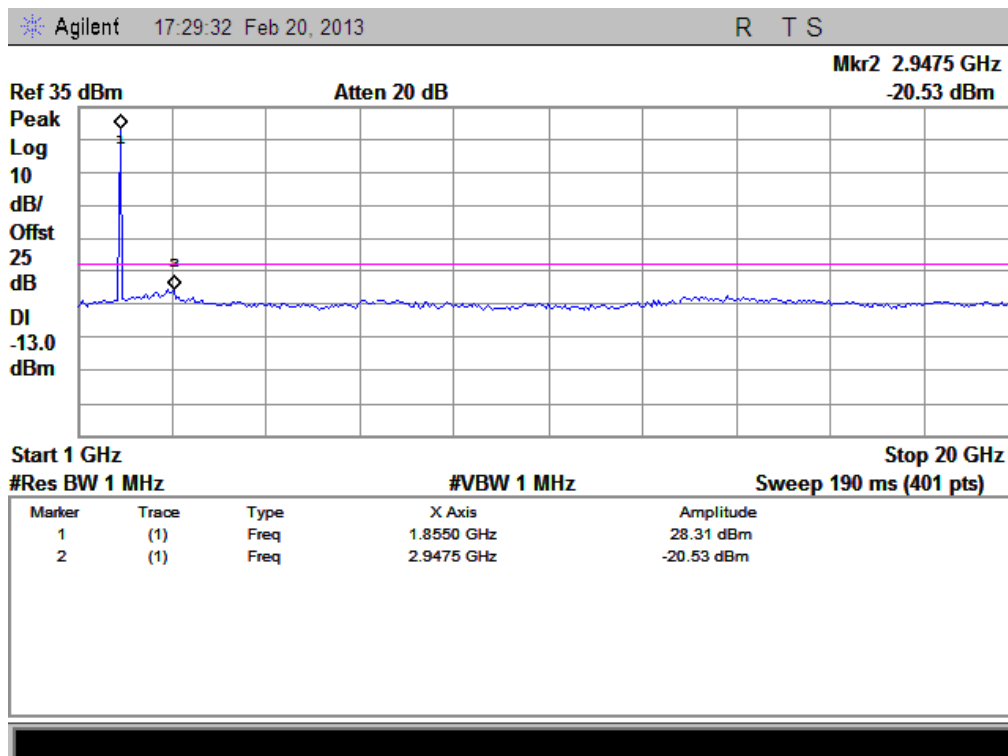
(Plot L1.1:   GPRS 1900MHz Channel = 512, 1GHz to 20GHz)

(Plot L2:   GPRS 1900MHz Channel = 661, 30MHz to 1GHz)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.887 GHz	27.42 dBm
2	(1)	Freq	2.984 GHz	-21.41 dBm
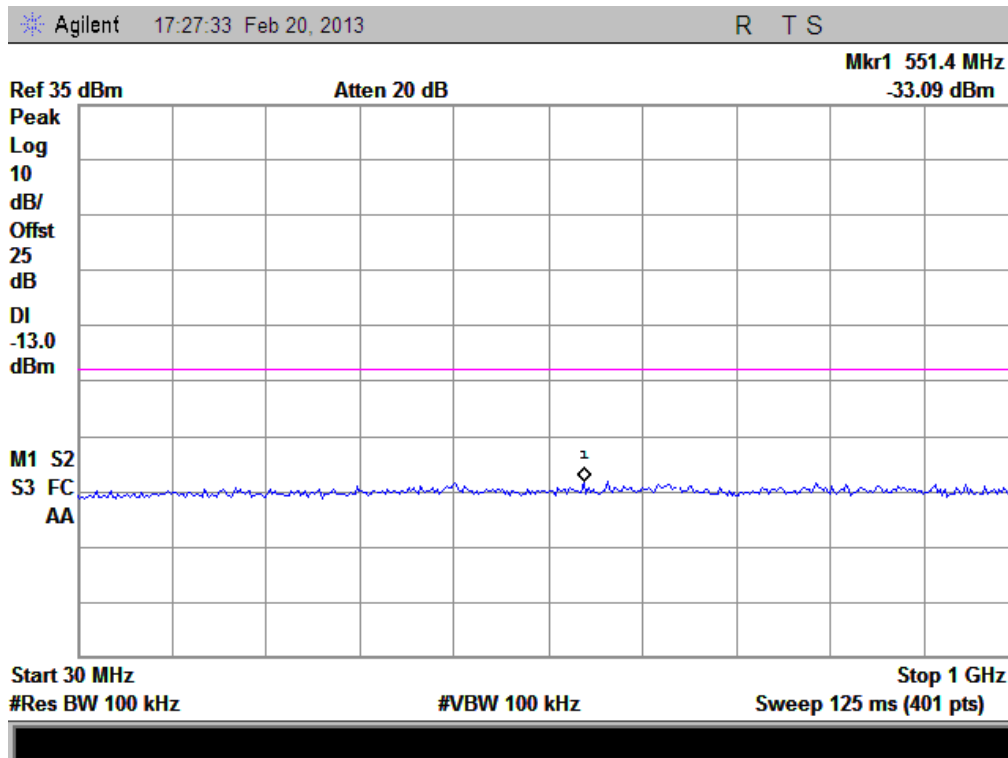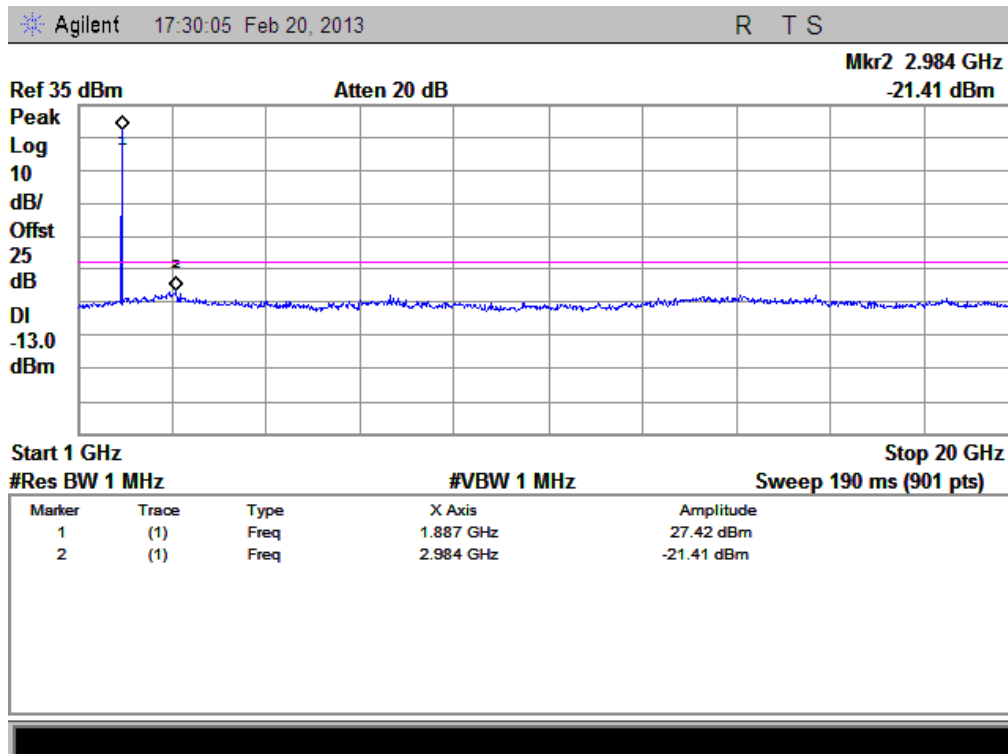
(Plot L2.1:   GPRS 1900MHz Channel = 661, 1GHz to 20GHz)
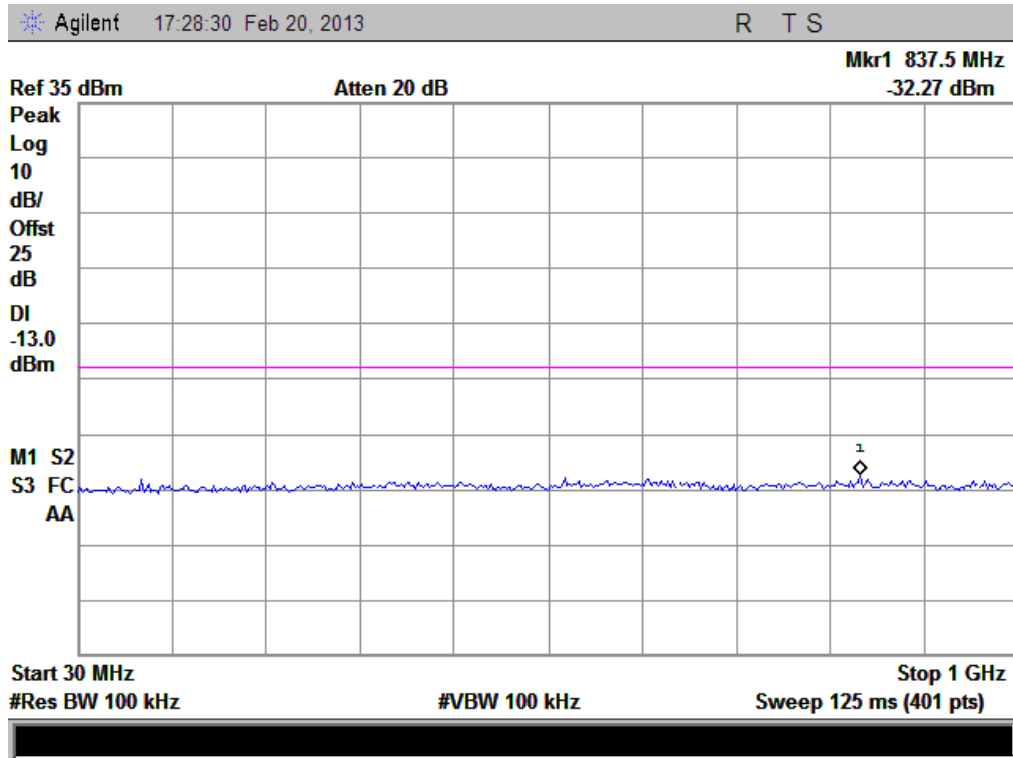
(Plot L3:　　GPRS 1900MHz Channel = 810, 30MHz to 1GHz)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.9025 GHz	27.5 dBm
2	(1)	Freq	2.9475 GHz	-21.64 dBm
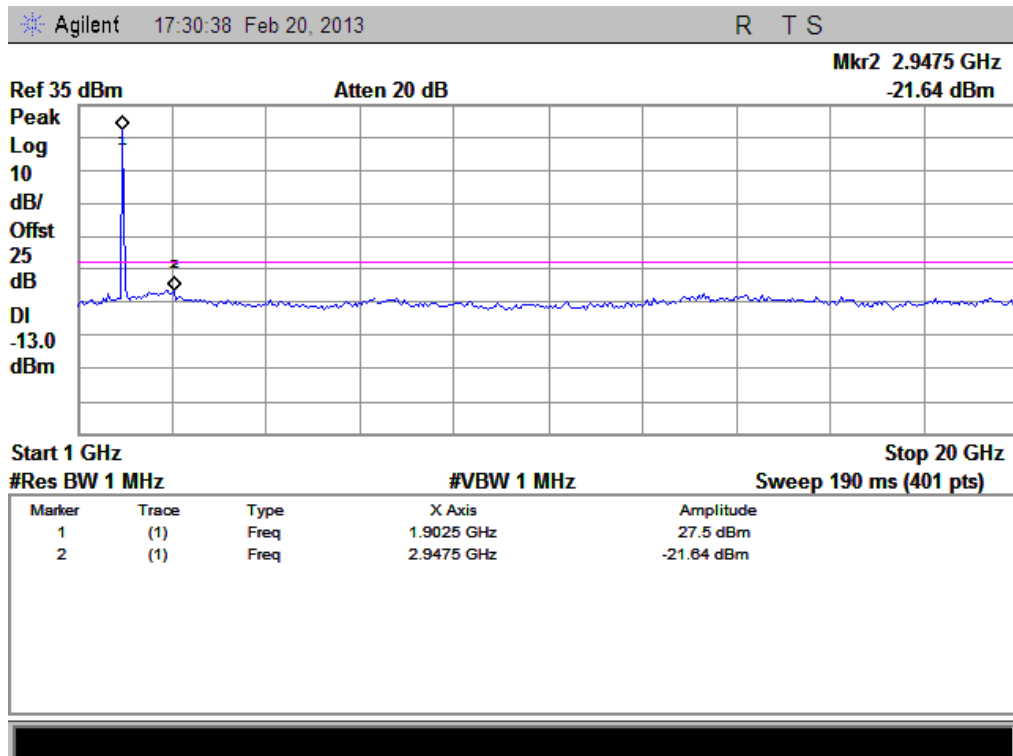
(Plot L3.1:　GPRS 1900MHz Channel = 810, 1GHz to 20GHz)

2.5   Band Edge

2.5.1   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.

2.5.2   Test Description

See section 2.1.2 of this report.

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

2.5.3   Test Result

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

1.   Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM	128	824.2	-13.79	Plat A	-13	PASS
850MHz	251	848.8	-14.36	Plot B		PASS
GSM	512	1850.2	-17.08	Plat C	-13	PASS
1900MHz	810	1909.8	-18.31	Plot D		PASS
WCDMA	4132	826.4	-14.25	Plat I	-13	PASS
850MHz	4233	846.6	-14.92	Plot J		PASS
WCDMA	9262	1852.4	-15.6	Plat K	-13	PASS
1900MHz	9538	1907.6	-16.81	Plot L		PASS
HSDPA	4132	826.4	-13.90	Plat M	-13	PASS
850MHz	4233	846.6	-15.29	Plot N		PASS

HSDPA	9262	1852.4	-16.22	Plat O	-13	PASS
1900MHz	9538	1907.6	-16.31	Plot P		PASS
HSUPA	4132	826.4	-14.73	Plat Q	-13	PASS
850MHz	4233	846.6	-15.06	Plot R		PASS
HSUPA	9262	1852.4	-15.29	Plat S	-13	PASS
1900MHz	9538	1907.6	-17.47	Plot T		PASS
GPRS	128	824.2	-14.45	Plat U	-13	PASS
850MHz	251	848.8	-13.76	Plot V		PASS
GPRS	512	1850.2	-16.12	Plat W	-13	PASS
1900MHz	810	1909.8	-18.88	Plot X		PASS

2. Test Plots:
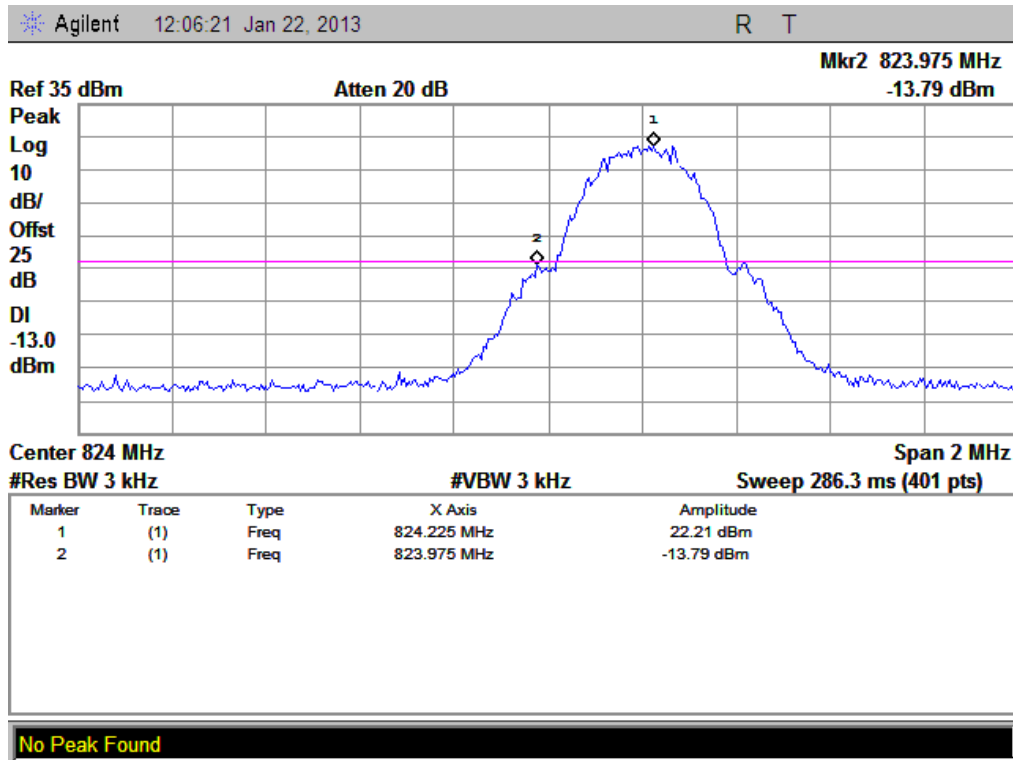
(Plot A: GSM 850 Channel = 128)
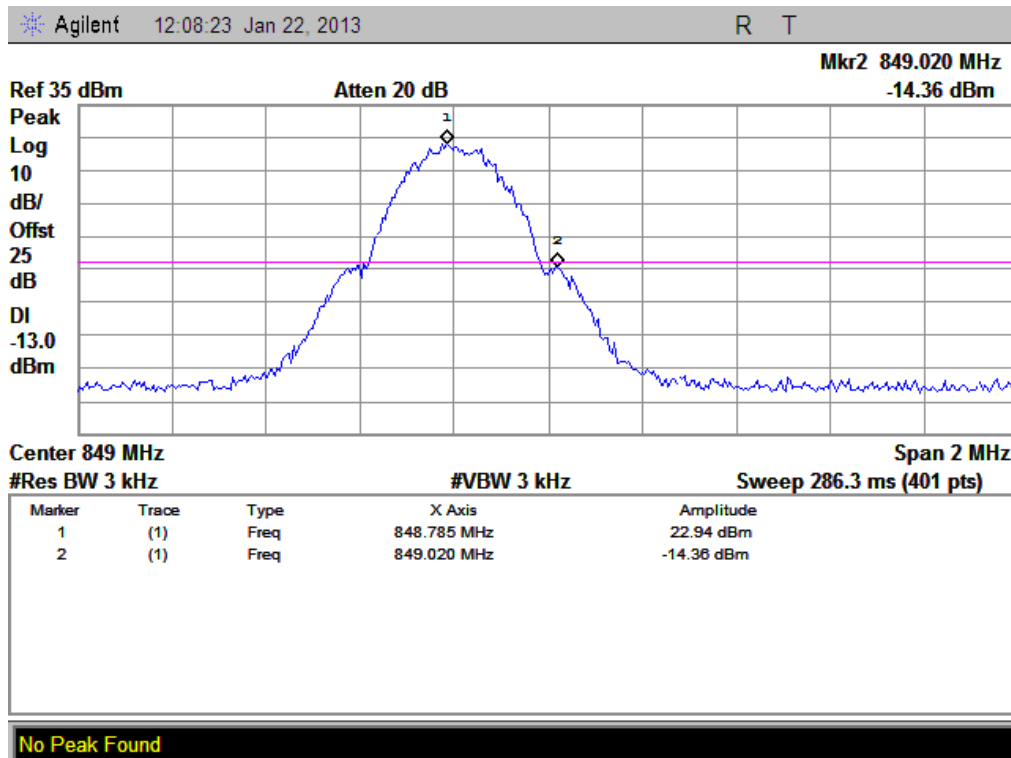
(Plot B: GSM 850 Channel = 251)

(Plot C: GSM 1900 Channel = 512)
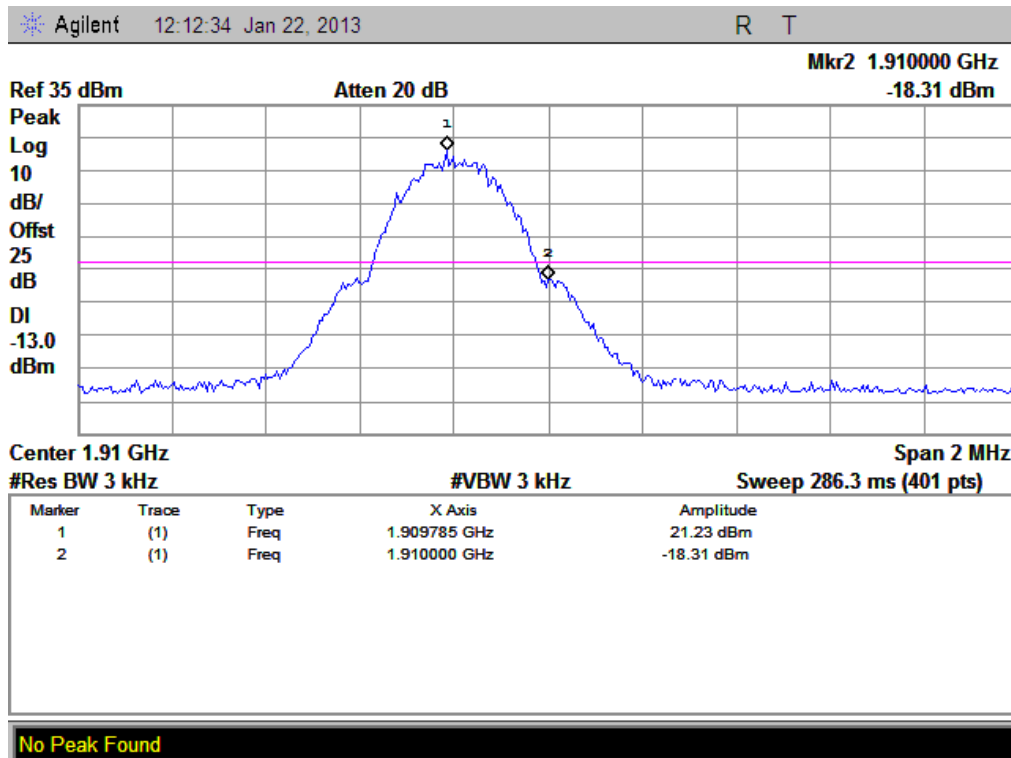
(Plot D: GSM 1900 Channel = 810)

(Plot I: WCDMA 850 Channel = 4132)
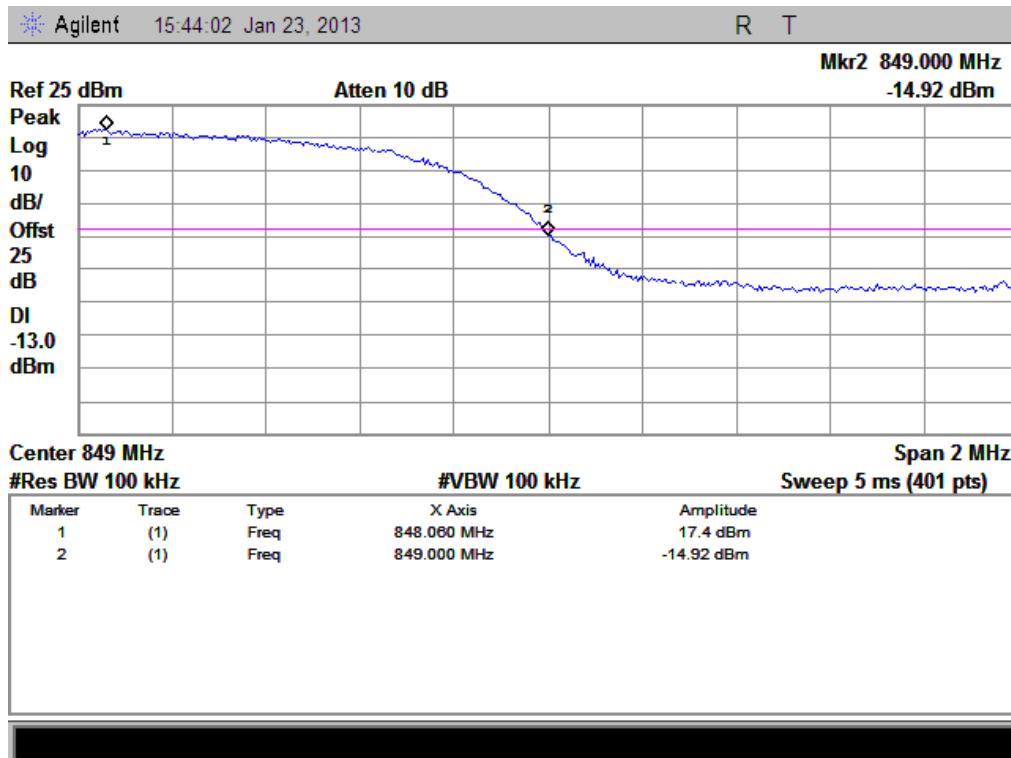
(Plot J: WCDMA 850 Channel = 4233)

(Plot K: WCDMA 1900 Channel = 9262)

※ Agilent   15:46:48 Jan 23, 2013   R   T

Mkr3 1.910000 GHz

Ref 25 dBm   Atten 10 dB   -16.81 dBm

Center 1.91 GHz   Span 2 MHz
#Res BW 100 kHz   #VBW 100 kHz   Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.909080 GHz	14.31 dBm
3	(1)	Freq	1.910000 GHz	-16.81 dBm

(Plot L: WCDMA 1900 Channel = 9538)

※ Agilent   16:07:08 Jan 23, 2013   R   T

Mkr2 824.000 MHz

Ref 25 dBm   Atten 10 dB   -13.9 dBm

Center 824 MHz   Span 2 MHz
#Res BW 100 kHz   #VBW 100 kHz   Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	824.915 MHz	16.99 dBm
2	(1)	Freq	824.000 MHz	-13.9 dBm

(Plot M: HSDPA 850 Channel = 4132)

Agilent	16:07:44 Jan 23, 2013	R T

Mkr2 849.000 MHz
-15.29 dBm

Ref 25 dBm   Atten 10 dB

Center 849 MHz   Span 2 MHz
#Res BW 100 kHz   #VBW 100 kHz   Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	848.055 MHz	17.26 dBm
2	(1)	Freq	849.000 MHz	-15.29 dBm

(Plot N: HSDPA850 Channel = 4233)

Agilent	16:08:30 Jan 23, 2013	R T

Mkr2 1.850000 GHz
-16.22 dBm

Ref 25 dBm   Atten 10 dB

Center 1.85 GHz   Span 2 MHz
#Res BW 100 kHz   #VBW 100 kHz   Sweep 5 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.850890 GHz	14.9 dBm
2	(1)	Freq	1.850000 GHz	-16.22 dBm
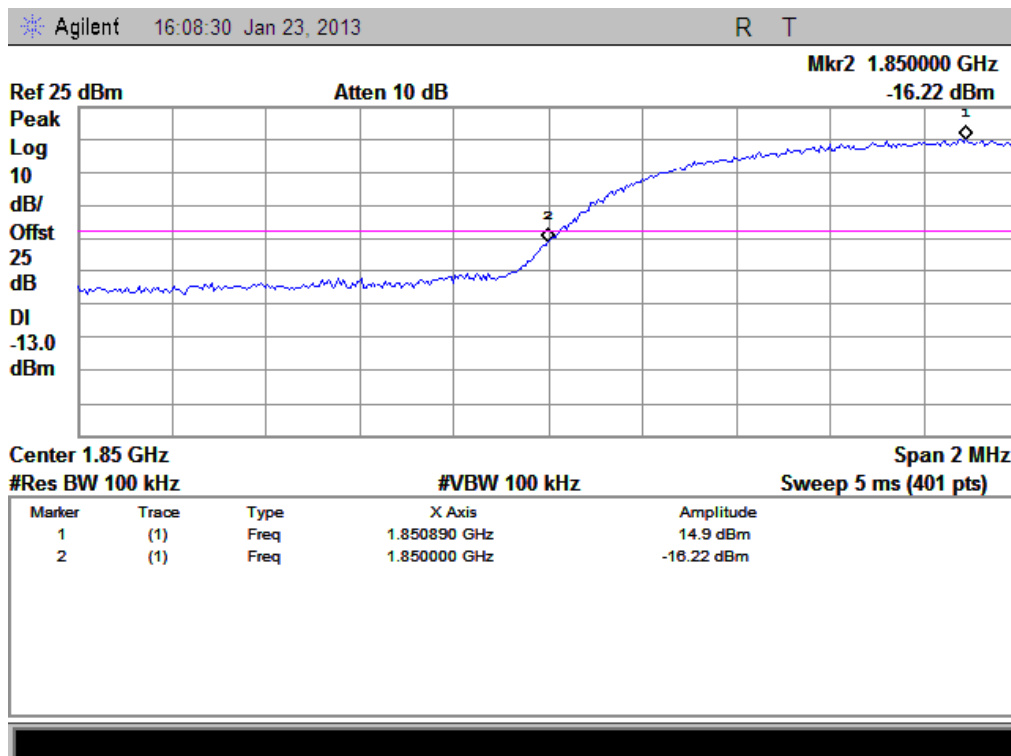
(Plot O: HSDPA 1900 Channel = 9262)
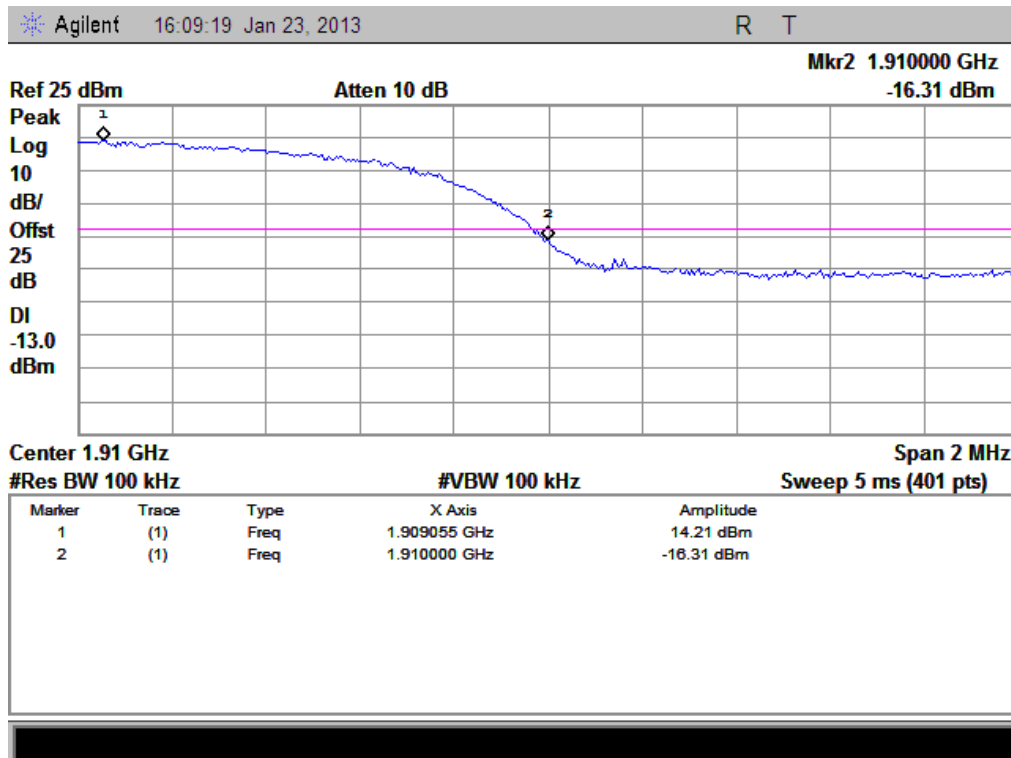
(Plot P: HSDPA 1900 Channel = 9538)
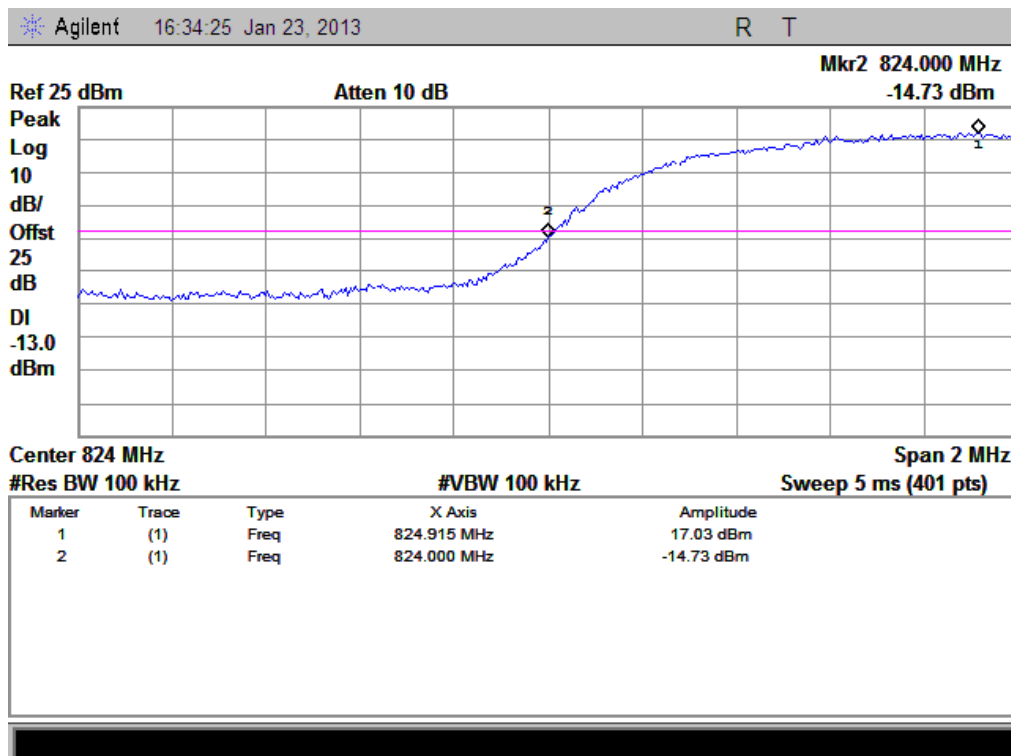
(Plot Q: HSUPA 850 Channel = 4132)
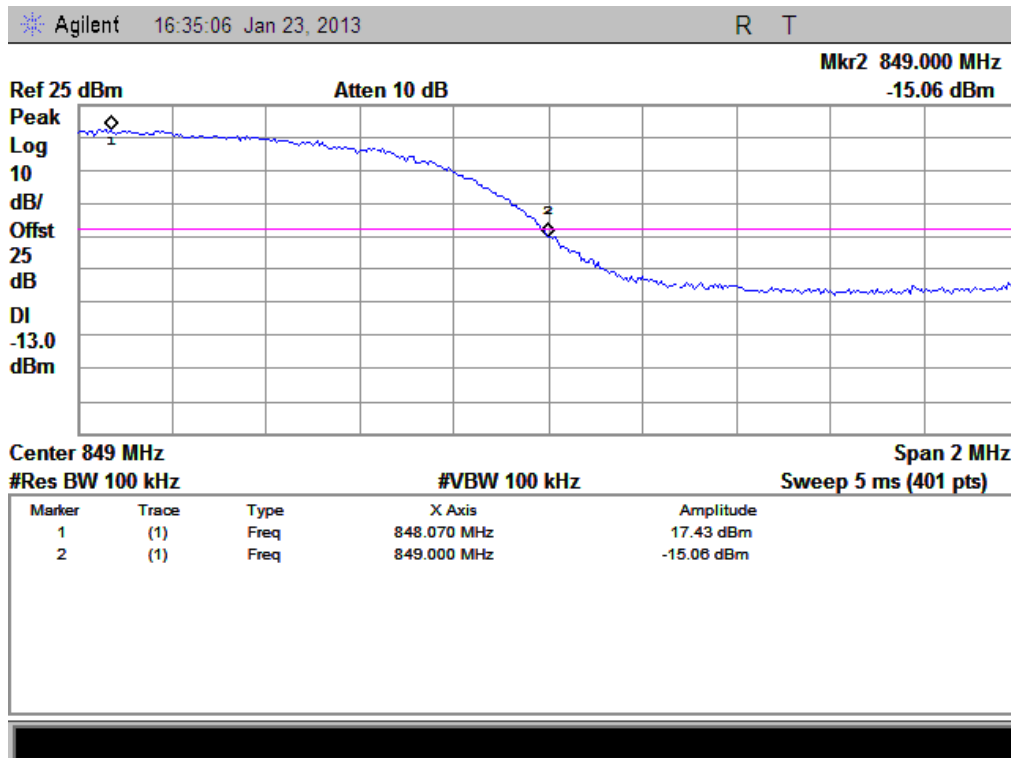
(Plot R: HSUPA850 Channel = 4233)
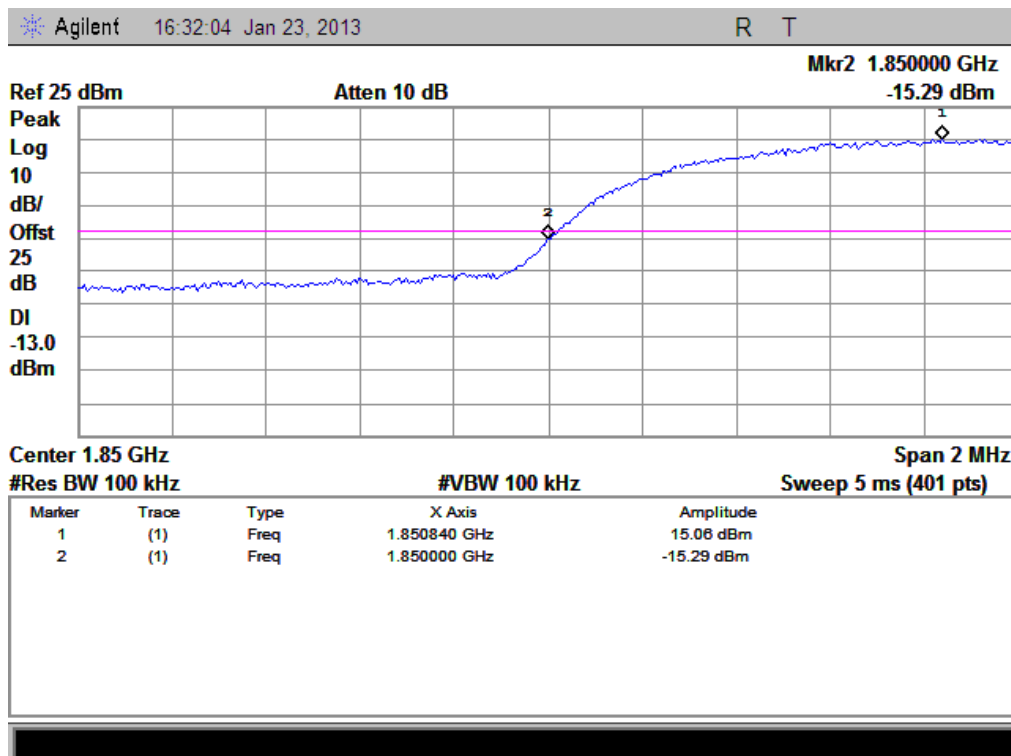
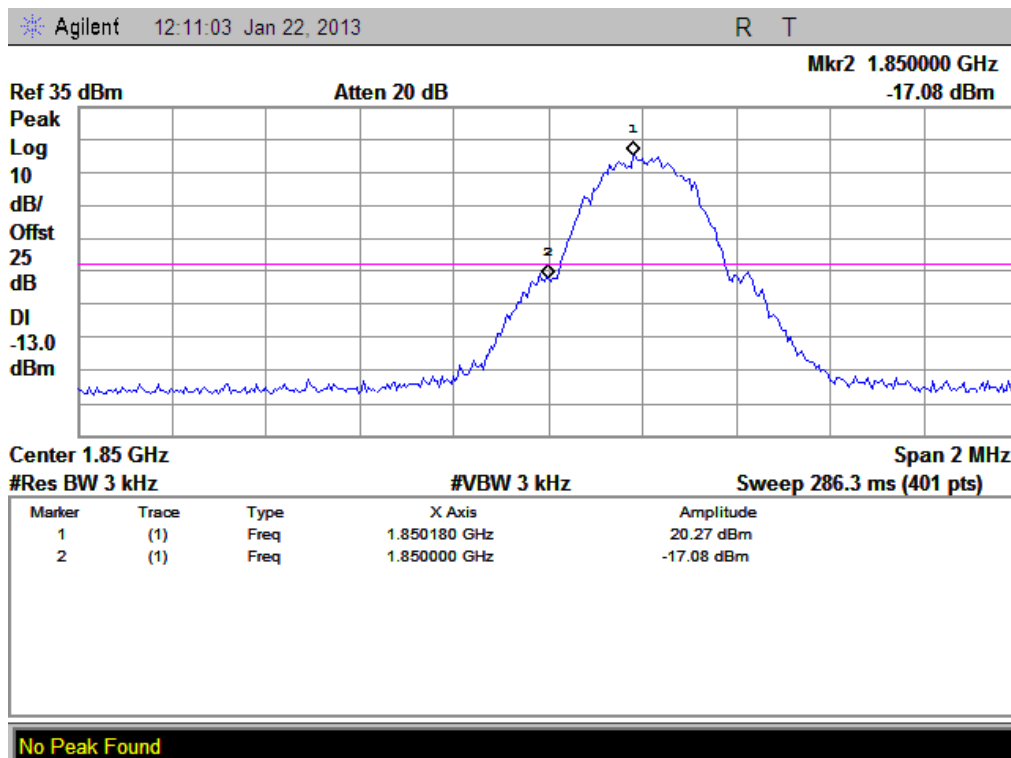(Plot S: HSUPA 1900 Channel = 9262)
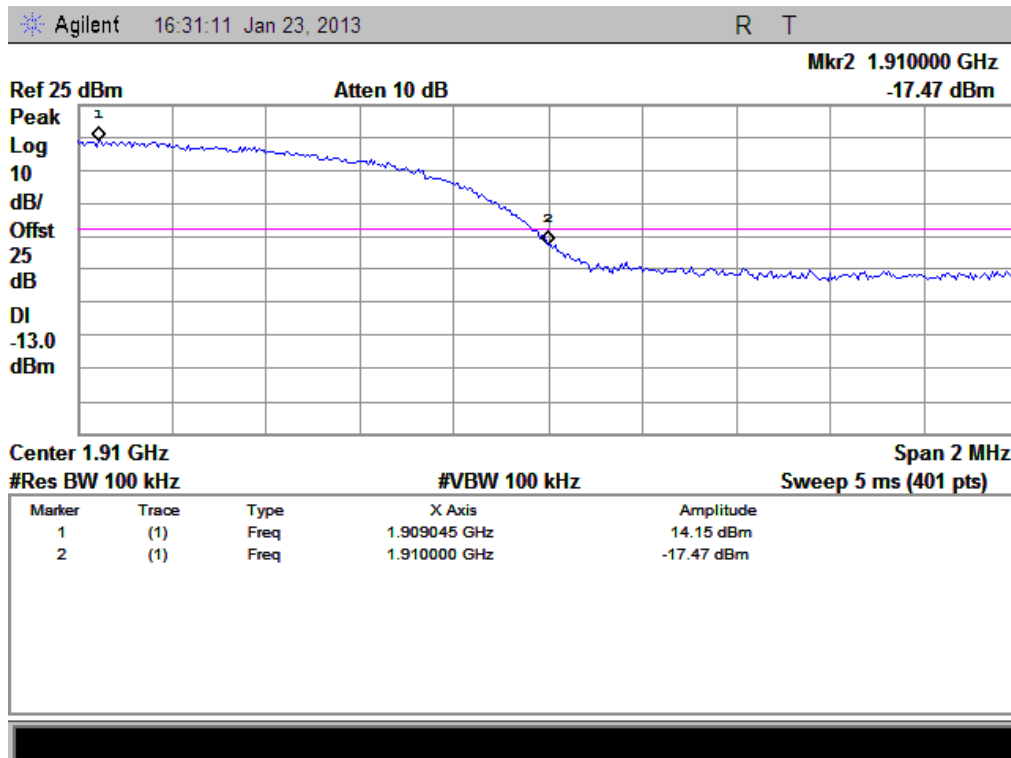
(Plot T: HSUPA 1900 Channel = 9538)
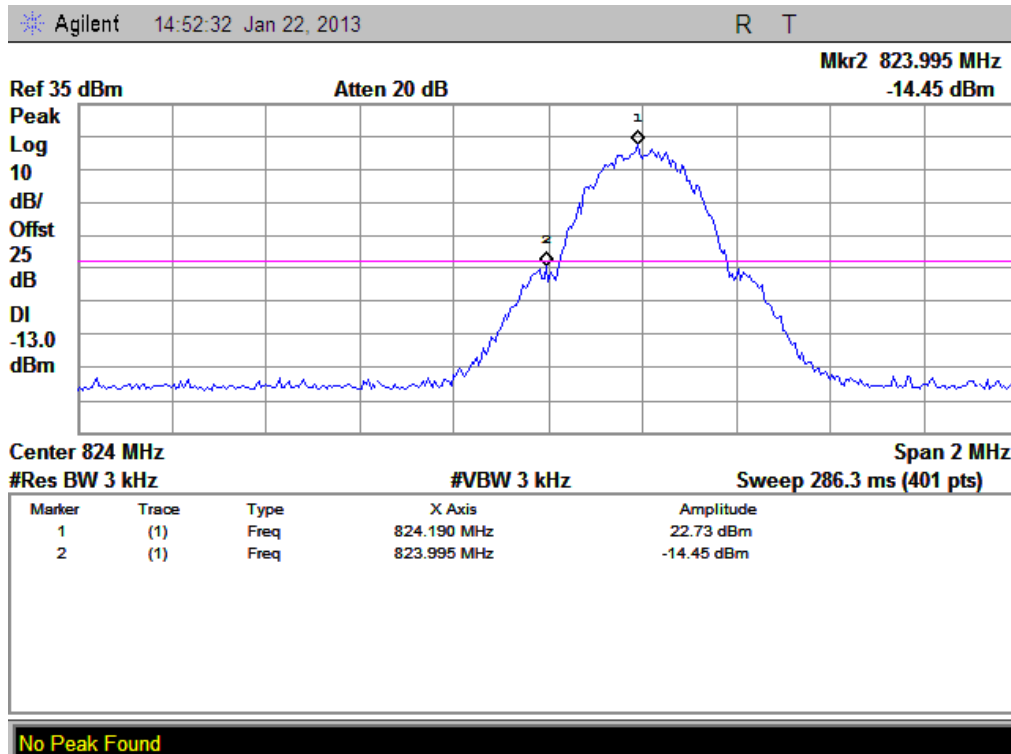
(Plot U: GPRS 850 Channel = 128)
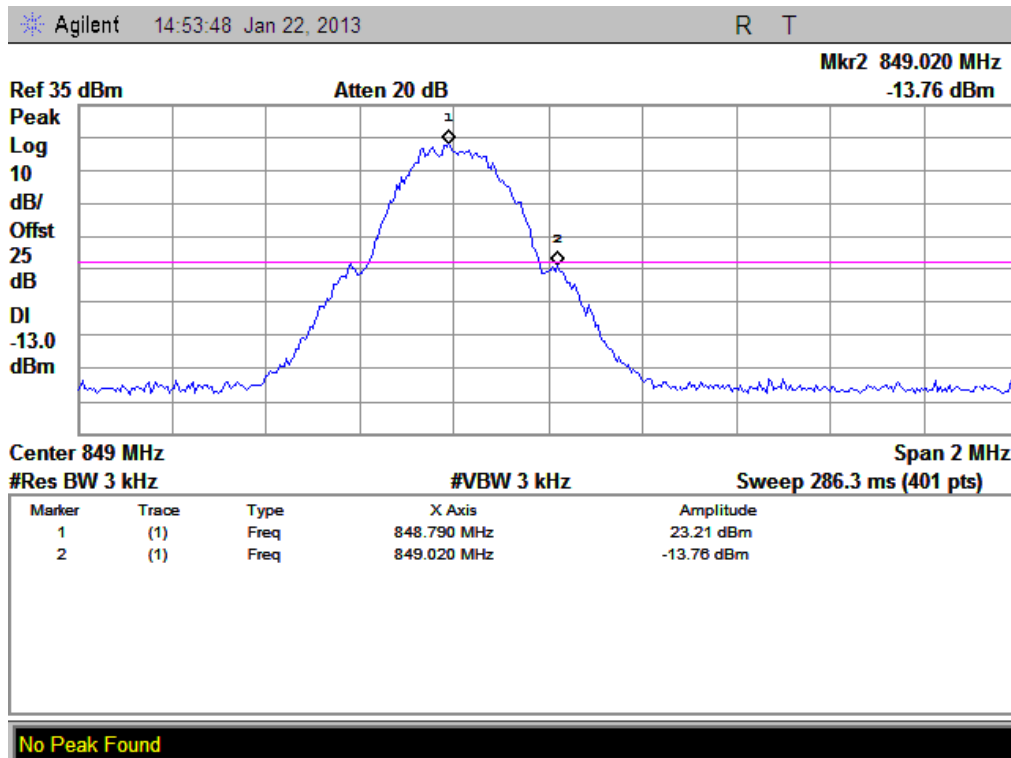
(Plot V: GPRS 850 Channel = 251)
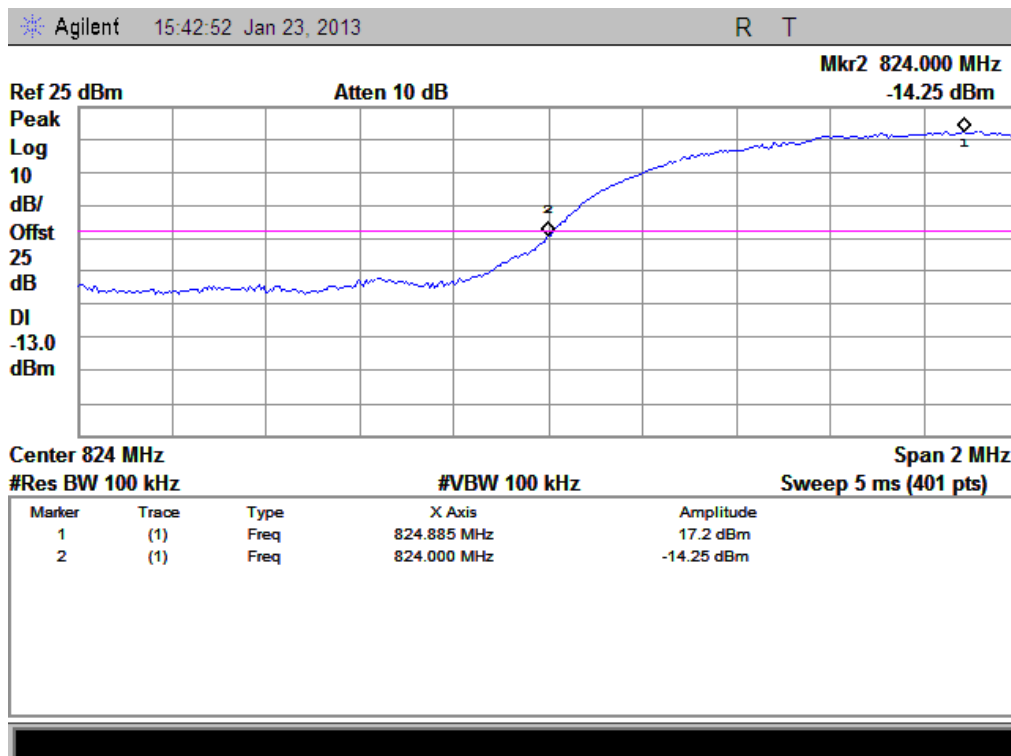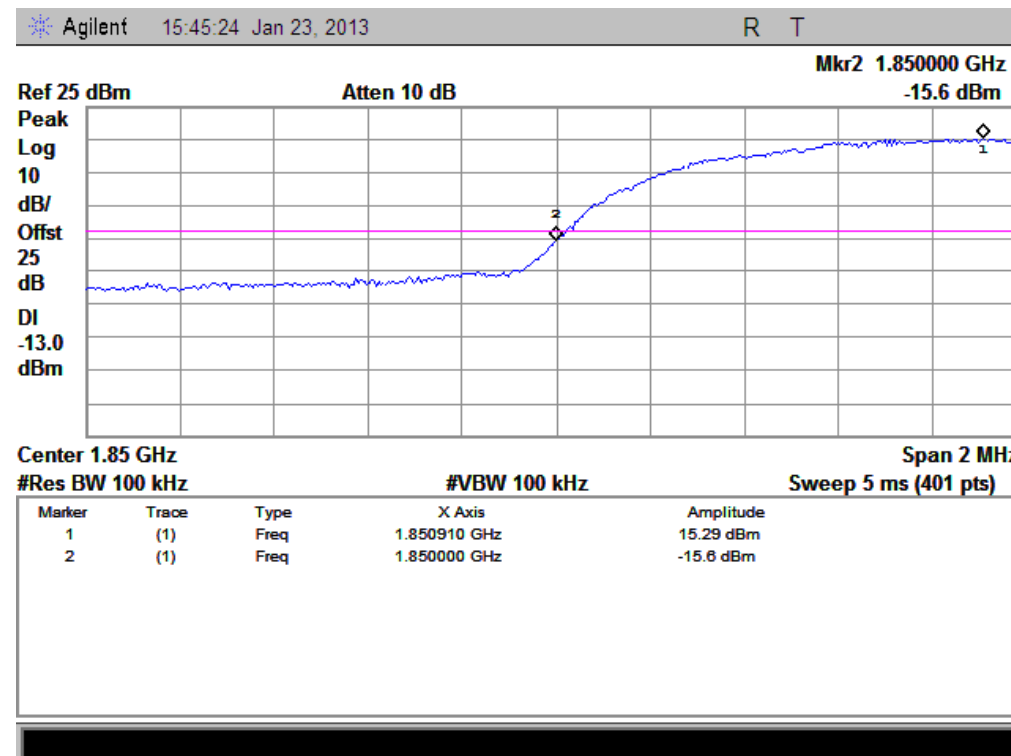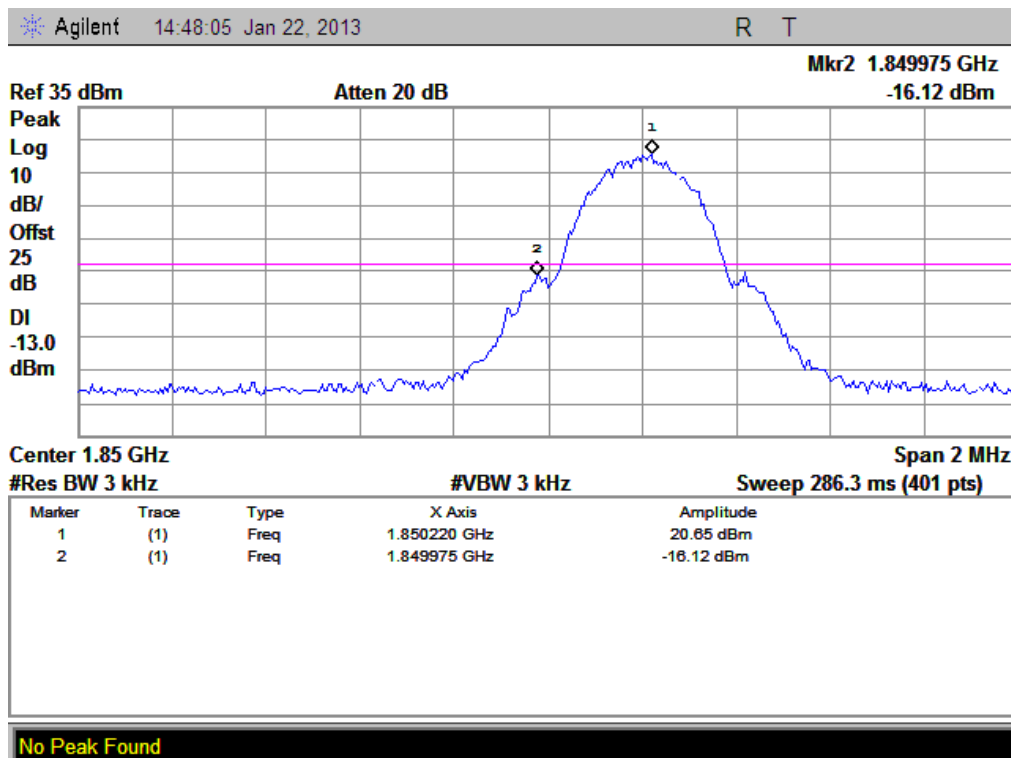

(Plot W: GPRS 1900 Channel = 512)
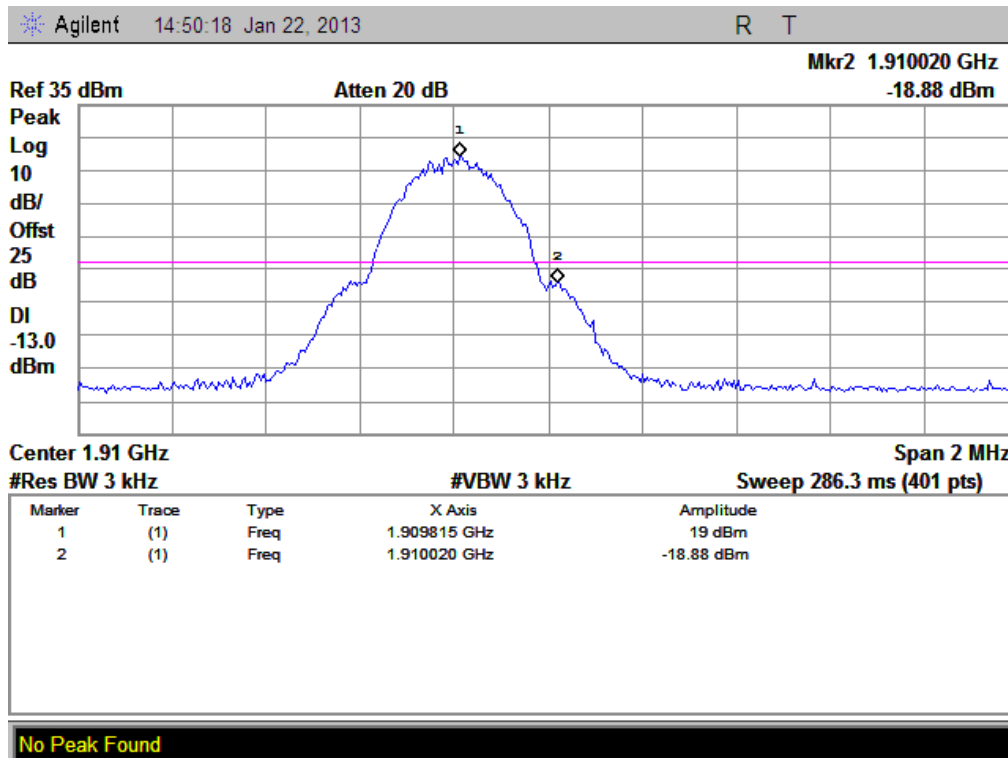
(Plot X: GPRS 1900 Channel = 810)
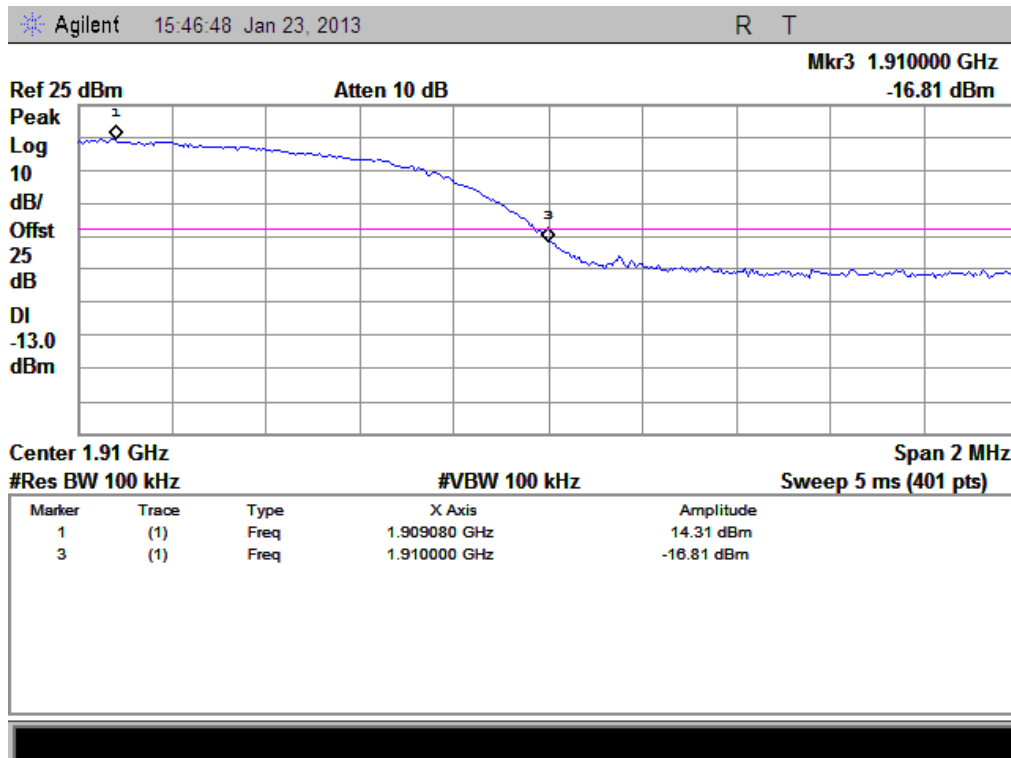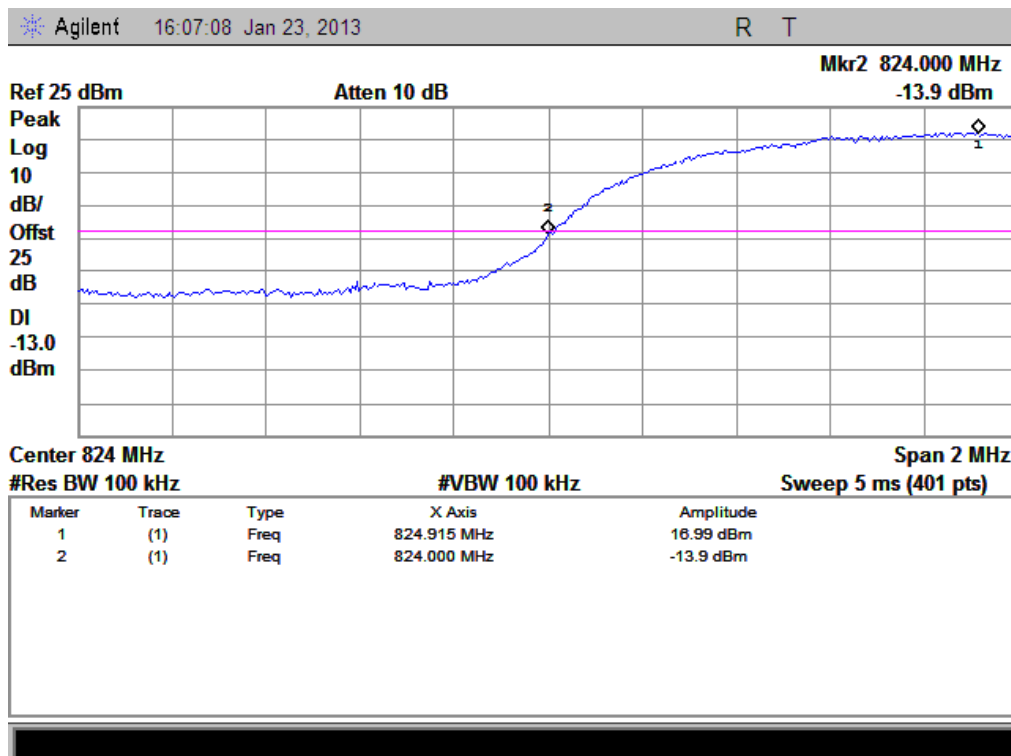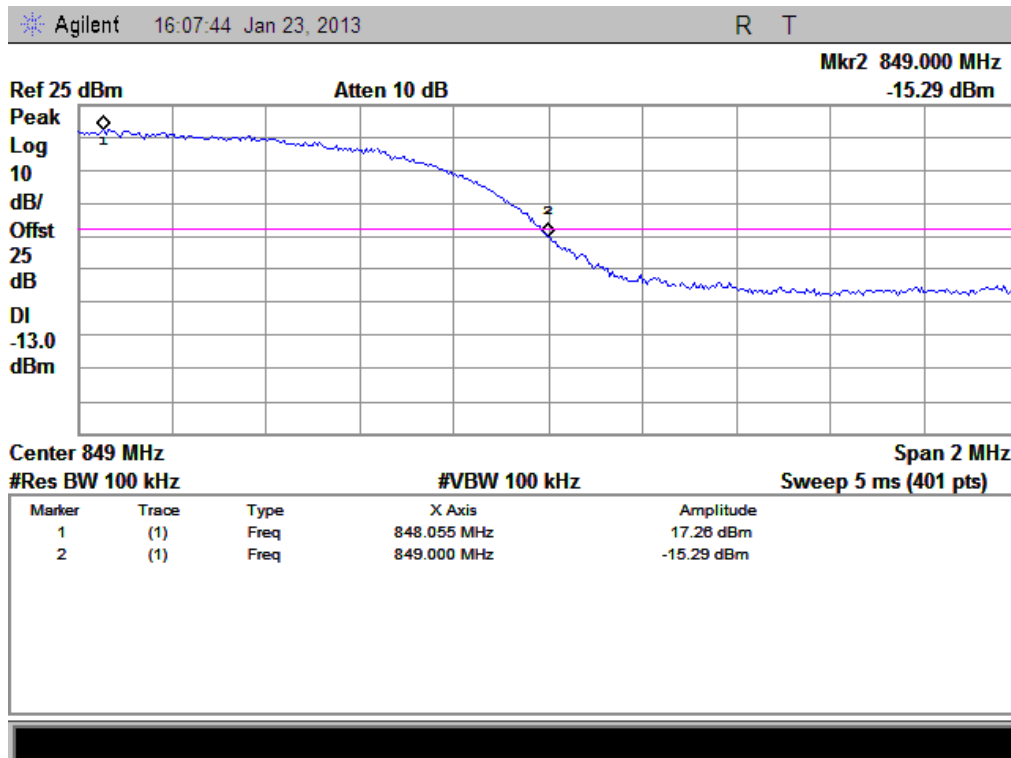
2.6   Transmitter Radiated Power (EIRP/ERP)

2.6.1   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.

2.6.2   Test Description

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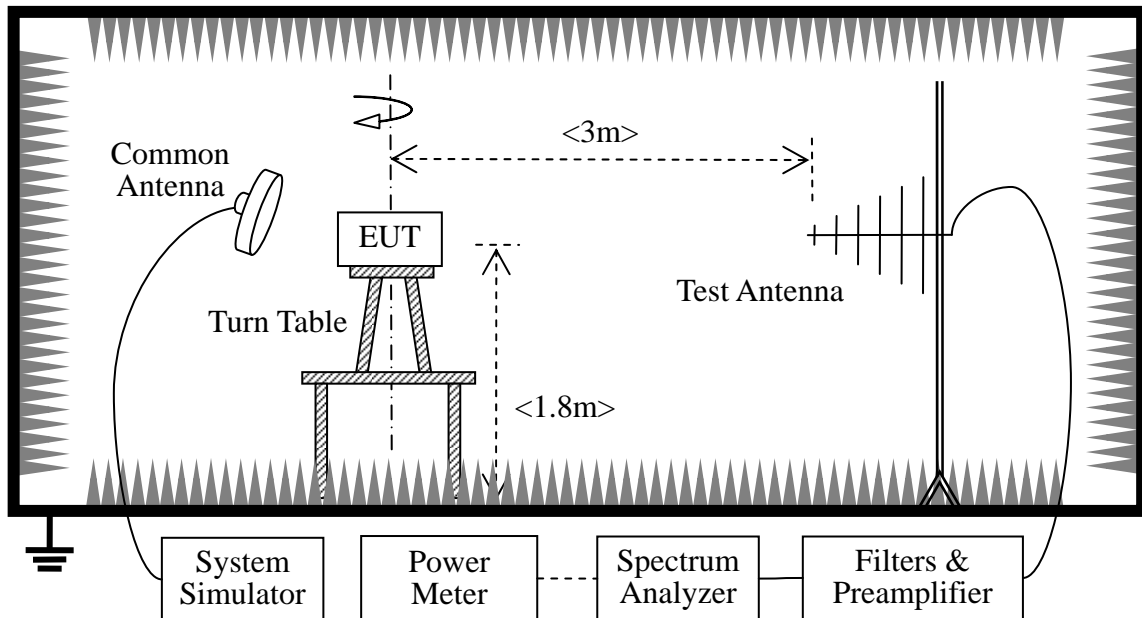
The EUT, which is powered by the Battery charged with the AC Adapter, is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

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

2.6.3 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:

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

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

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

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

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

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

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

1. GSM Model Test Verdict:

Band	Channel	Frequency (MHz)	PCL	Measured ERP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 850MHz	128	824.20	5	32.57	1.807	Plot A	38.5	7	PASS
	190	836.60	5	32.95	1.972				PASS
	251	848.80	5	33.94	2.477				PASS
GPRS 850MHz	128	824.20	5	30.84	1.214	Plot B [Note 1]	38.5	7	PASS
	190	836.60	5	31.20	1.318				PASS
	251	848.80	5	31.71	1.483				PASS

Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 1900MHz	512	1850.2	0	28.13	0.650	Plot D	33	2	PASS
	661	1880.0	0	27.31	0.538				PASS
	810	1909.8	0	27.34	0.542				PASS
GPRS 1900MHz	512	1850.2	0	27.00	0.501	Plot E [Note 1]	33	2	PASS
	661	1880.0	0	27.12	0.515				PASS
	810	1909.8	0	26.10	0.407				PASS
Note1	For the GPRS model, all the slots were tested and just the worst data was record in this report.								

2. WCDMA Model Test Verdict:

Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA 850MHz	4132	826.4	21.72	0.149	38.5	7	PASS
	4175	835	21.63	0.146			PASS
	4233	846.6	21.79	0.151			PASS
HSDPA 850MHz	4132	826.4	21.52	0.142	38.5	7	PASS
	4175	835	21.69	0.148			PASS
	4233	846.6	21.67	0.147			PASS
HSUPA 850MHz	4132	826.4	21.52	0.142	38.5	7	PASS
	4175	835	21.65	0.146			PASS
	4233	846.6	21.53	0.142			PASS

Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA 1900MHz	9262	1852.4	21.86	0.153	33	2	PASS
	9400	1880	22.61	0.182			PASS
	9538	1907.6	22.82	0.191			PASS
HSDPA 1900MHz	9262	1852.4	21.71	0.148	33	2	PASS
	9400	1880	22.57	0.181			PASS
	9538	1907.6	22.79	0.190			PASS
HSUPA 1900MHz	9262	1852.4	21.69	0.148	33	2	PASS
	9400	1880	22.47	0.177			PASS
	9538	1907.6	22.62	0.183			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:
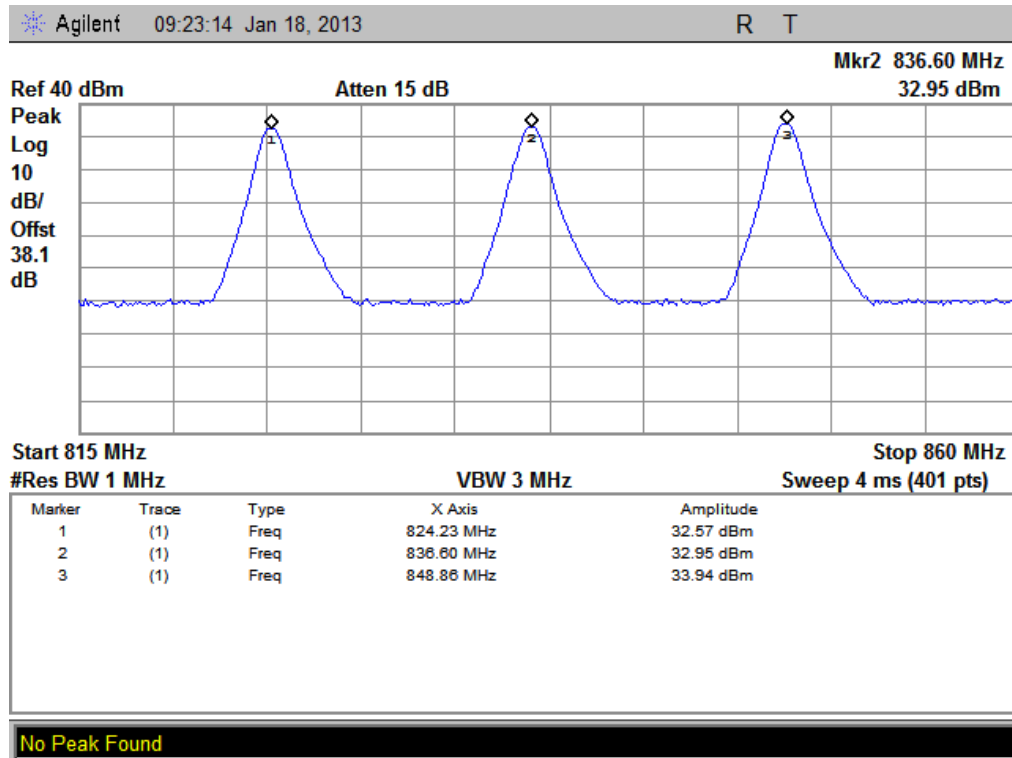
(Plot A: GSM 850MHz Channel = 128, 190, 251)
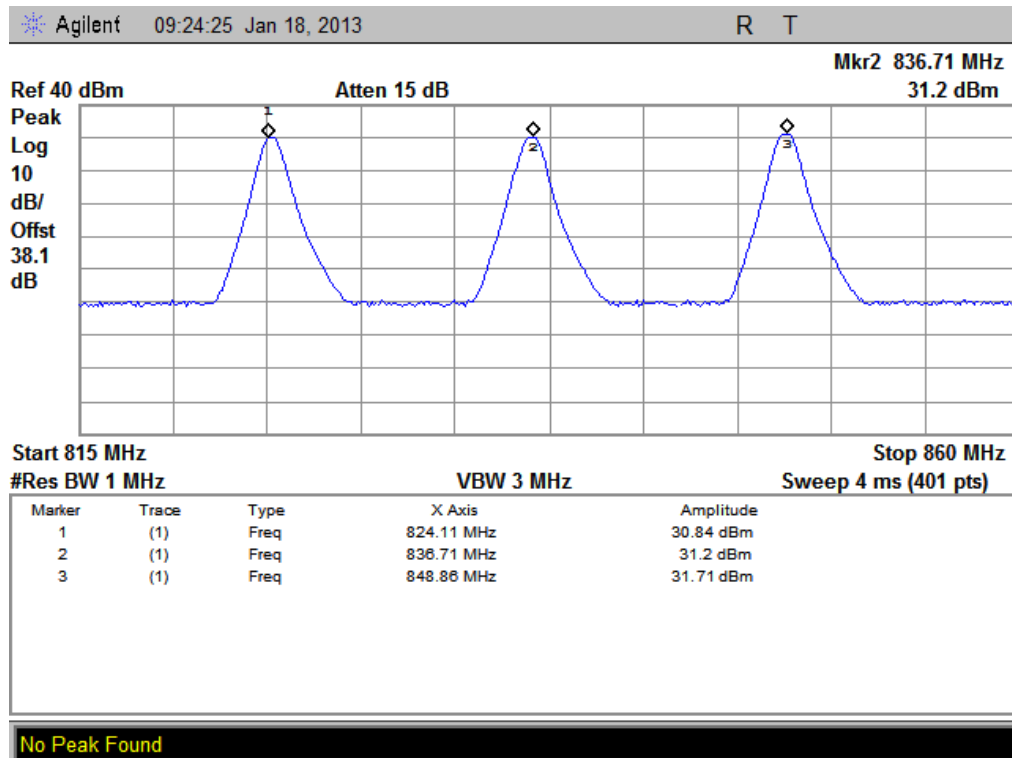
(Plot B: GPRS 850MHz Channel = 128, 190, 251)
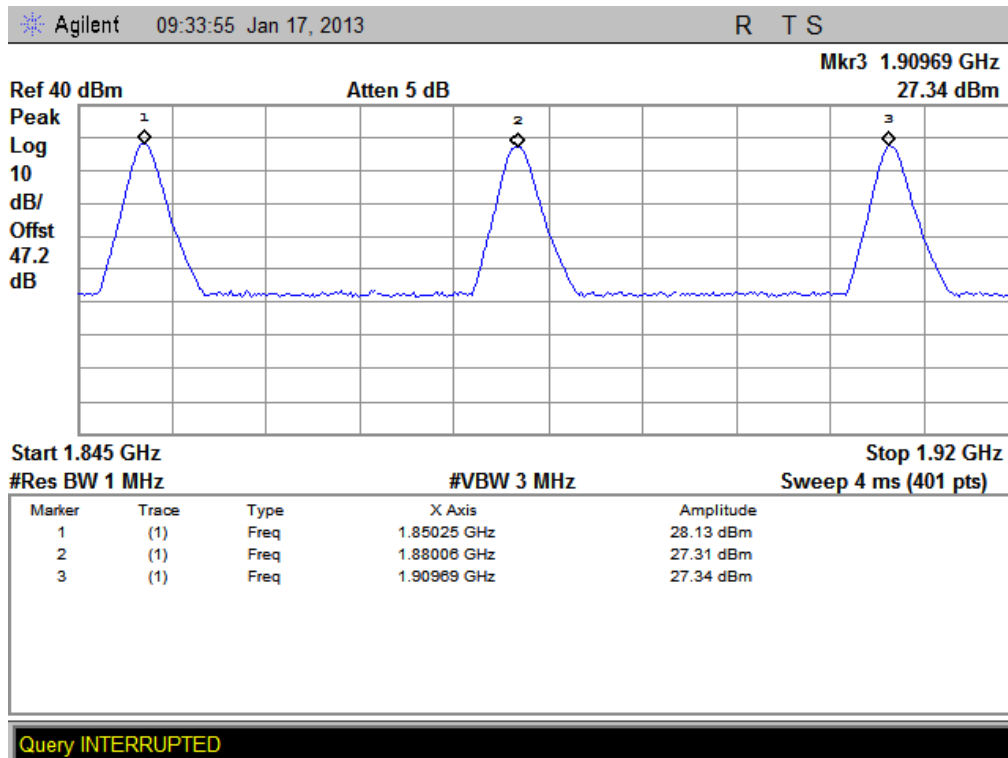
(Plot D: GSM1900MHz Channel = 512, 661, 810)
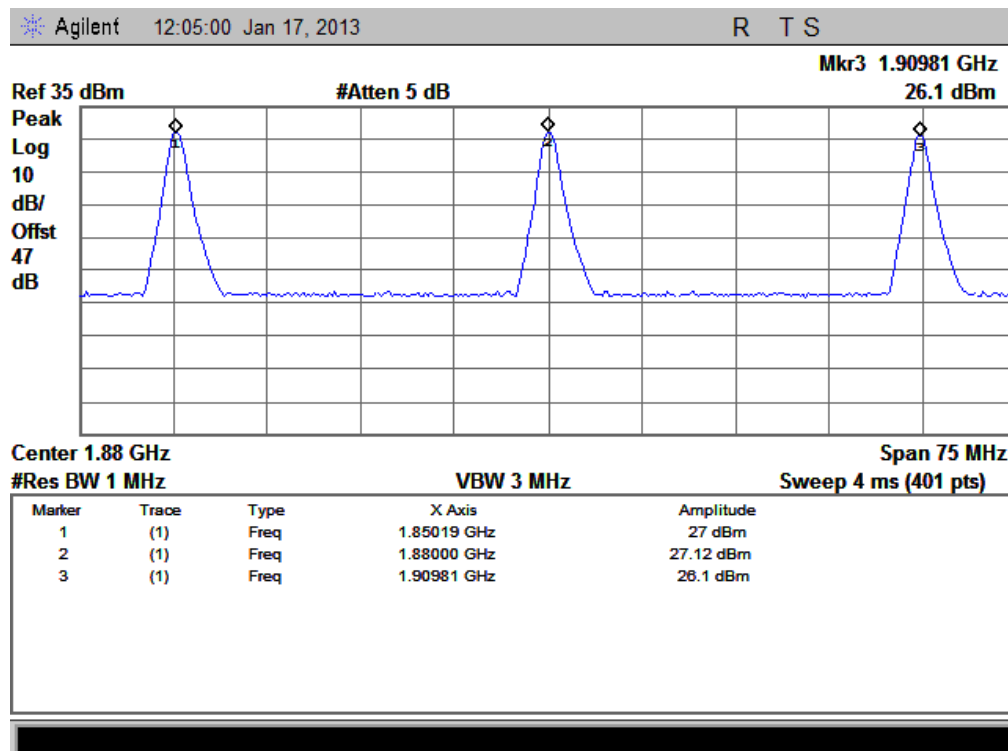
(Plot E: GPRS 1900MHz Channel = 512, 661, 810)

2.7　Radiated Out of Band Emissions

2.7.1　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.

2.7.2　Test Description

See section 2.6.2 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.

2.7.3　Test Result

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

1. Test Verdict:

| Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
GSM 850MHz	128	824.2	< -25	< -23.94	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
GSM 1900MHz	512	1850.2	< -25	< -25	Plot B.1/B.2	-13	PASS
	661	1880.0	< -25	< -25	Plot B.3/B.4		PASS
	810	1909.8	< -25	< -25	Plot B.5/B.6		PASS
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

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
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

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.
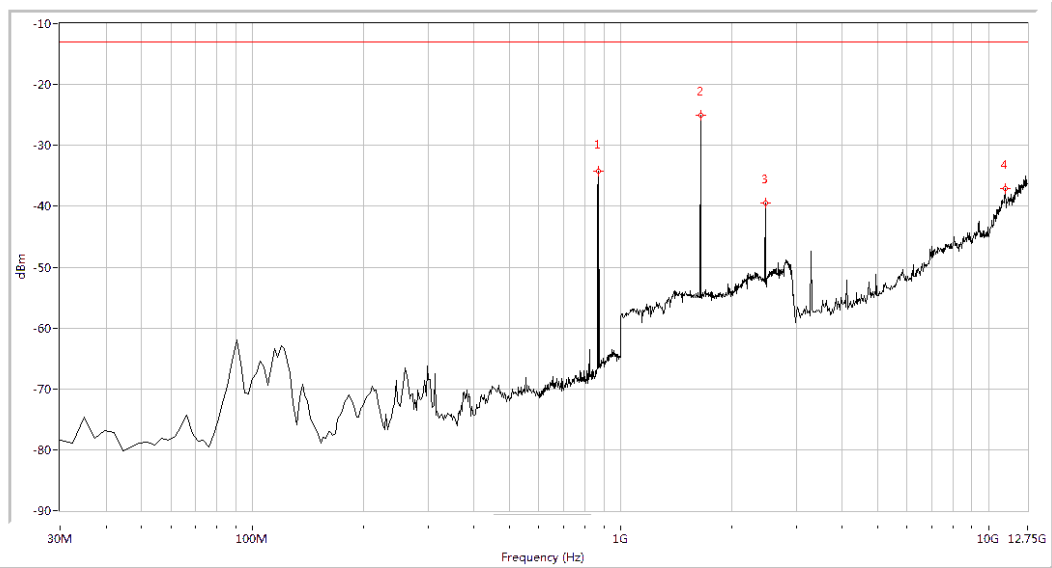
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-34.25	-13.0	21.3	319.7	Horizontal	PASS
1648.379	-25.13	-13.0	12.0	196.9	Horizontal	PASS
2471.322	-39.47	-13.0	26.5	0.5	Horizontal	PASS
11096.633	-37.05	-13.0	24.1	360.0	Horizontal	PASS

(Plot A.1:   GSM 850MHz Channel = 128, Test Antenna Horizontal)
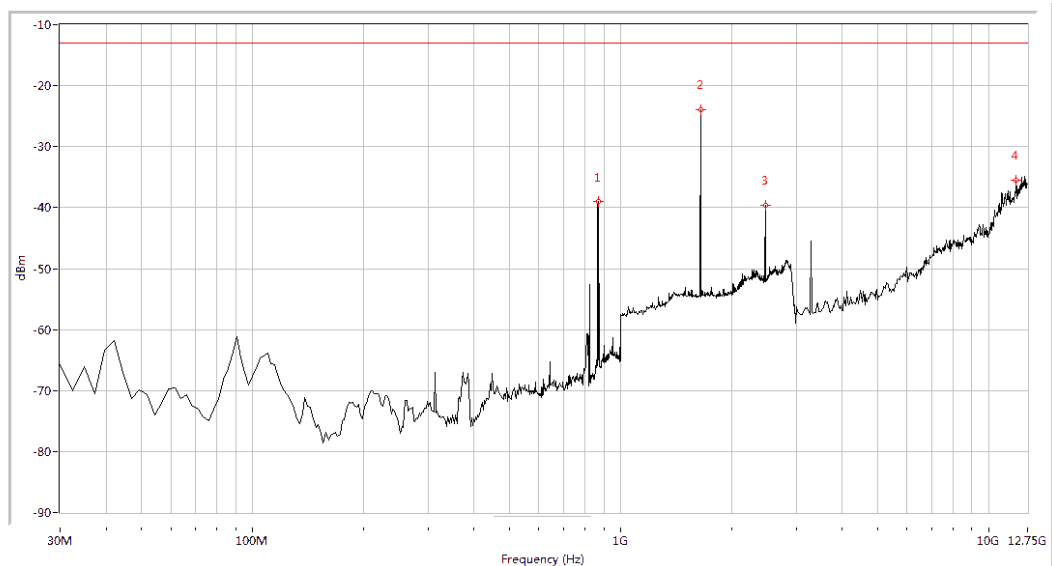
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-39.00	-13.0	26.0	360.0	Vertical	PASS
1648.379	-23.94	-13.0	10.9	124.1	Vertical	PASS
2471.322	-39.62	-13.0	26.6	319.8	Vertical	PASS
11874.688	-35.54	-13.0	22.5	103.1	Vertical	PASS

(Plot A.2:   GSM 850MHz Channel = 128, Test Antenna Vertical)
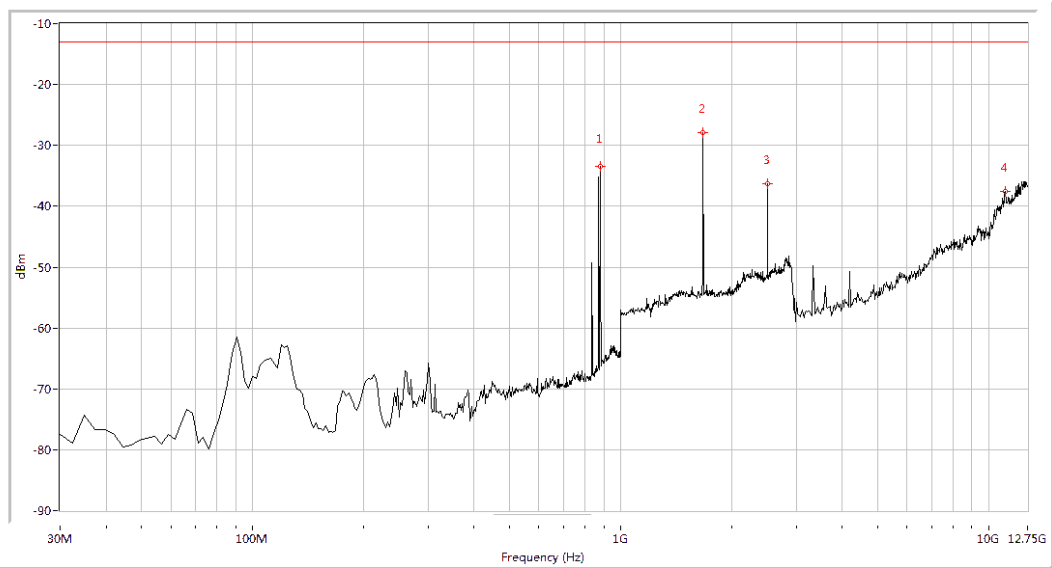
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-33.38	-13.0	20.4	320.7	Horizontal	PASS
1673.317	-27.92	-13.0	14.9	139.3	Horizontal	PASS
2506.234	-36.22	-13.0	23.2	131.1	Horizontal	PASS
11072.319	-37.52	-13.0	24.5	257.5	Horizontal	PASS

(Plot A.3:   GSM 850MHz Channel = 190, Test Antenna Horizontal)
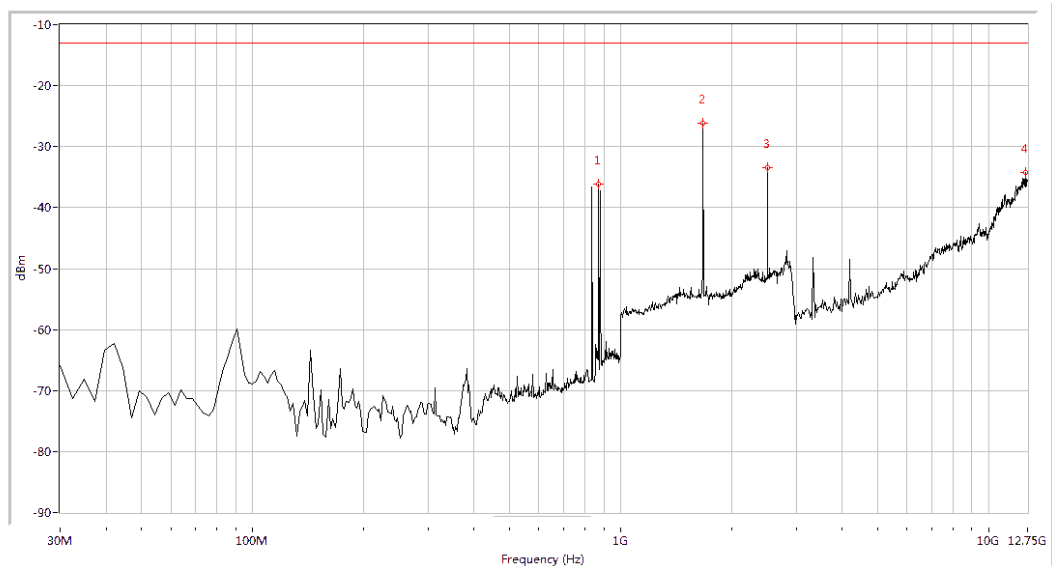
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-36.18	-13.0	23.2	227.4	Vertical	PASS
1673.317	-26.12	-13.0	13.1	350.9	Vertical	PASS
2506.234	-33.51	-13.0	20.5	59.2	Vertical	PASS
12628.429	-34.31	-13.0	21.3	357.5	Vertical	PASS

(Plot A.4:   GSM 850MHz Channel = 190, Test Antenna Vertical)
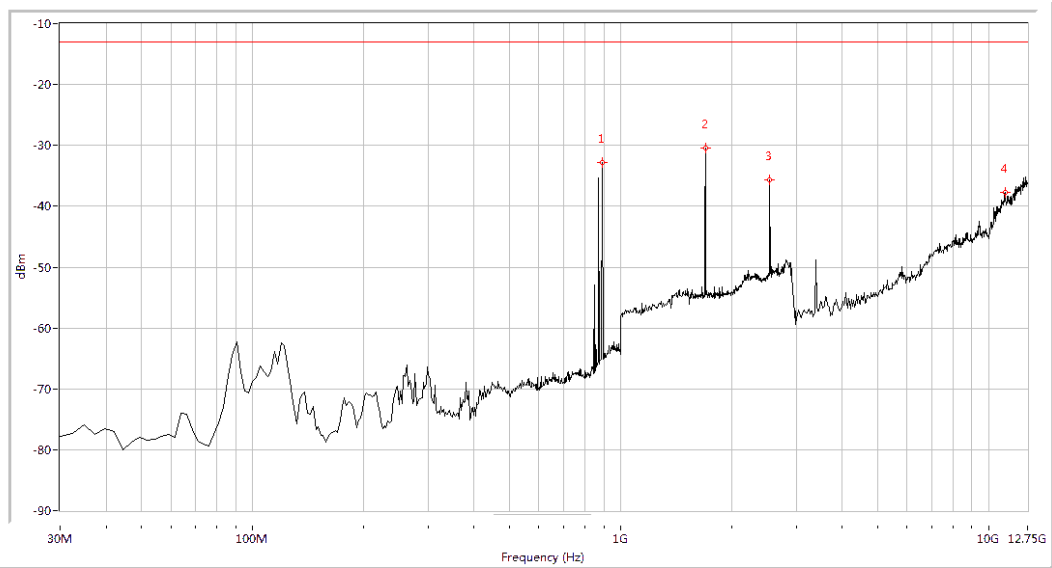
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-32.81	-13.0	19.8	312.5	Horizontal	PASS
1698.254	-30.50	-13.0	17.5	20.9	Horizontal	PASS
2541.147	-35.61	-13.0	22.6	124.4	Horizontal	PASS
11072.319	-37.78	-13.0	24.8	335.7	Horizontal	PASS

(Plot A.5:   GSM MHz Channel = 251, Test Antenna Horizontal)
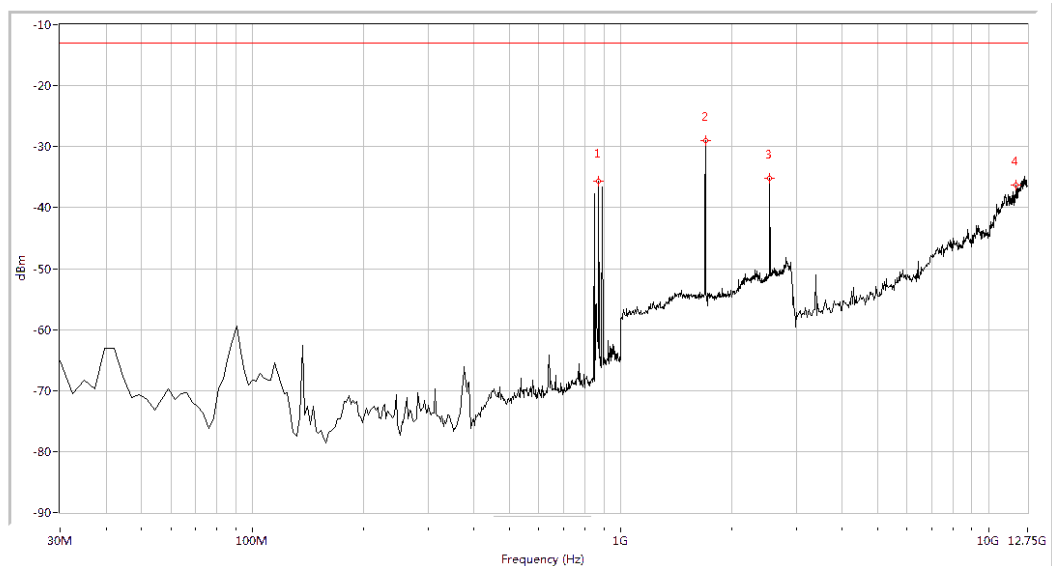
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-35.74	-13.0	22.7	50.0	Vertical	PASS
1698.254	-28.99	-13.0	16.0	317.5	Vertical	PASS
2541.147	-35.13	-13.0	22.1	63.0	Vertical	PASS
11874.688	-36.36	-13.0	23.4	0.9	Vertical	PASS

(Plot A.6:   GSM 850MHz Channel = 251, Test Antenna Vertical)
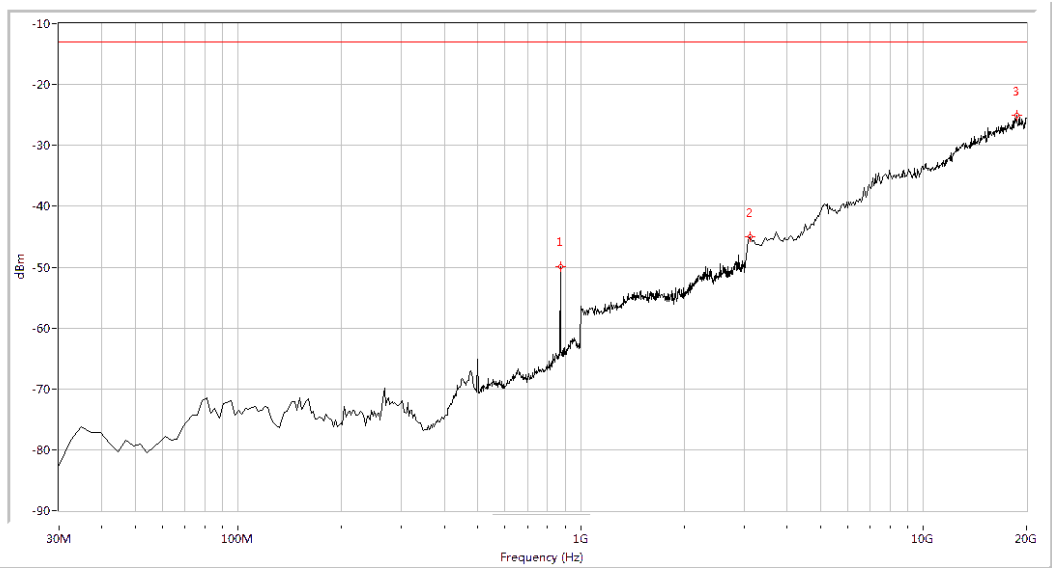
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.90	-13.0	36.9	0.0	Horizontal	PASS
3127.182	-45.01	-13.0	32.0	0.0	Horizontal	PASS
18728.180	-25.02	-13.0	12.0	0.0	Horizontal	PASS

(Plot B.1:   GSM 1900MHz Channel = 512, Test Antenna Horizontal)
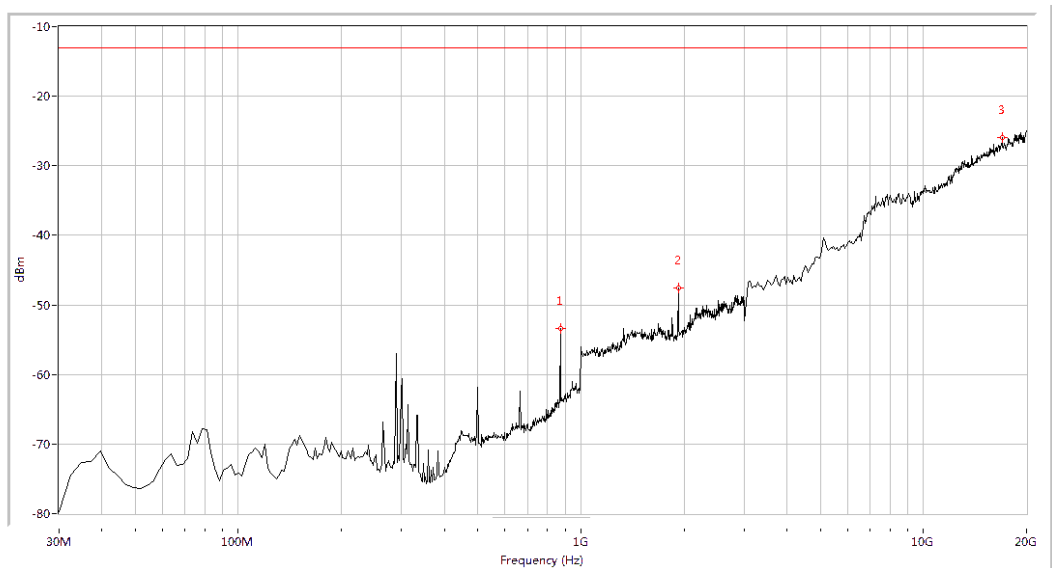
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.40	-13.0	40.4	233.2	Vertical	PASS
1927.681	-47.60	-13.0	34.6	358.0	Vertical	PASS
16990.025	-25.97	-13.0	13.0	130.7	Vertical	PASS

(Plot B.2:   GSM 1900MHz Channel = 512, Test Antenna Vertical)
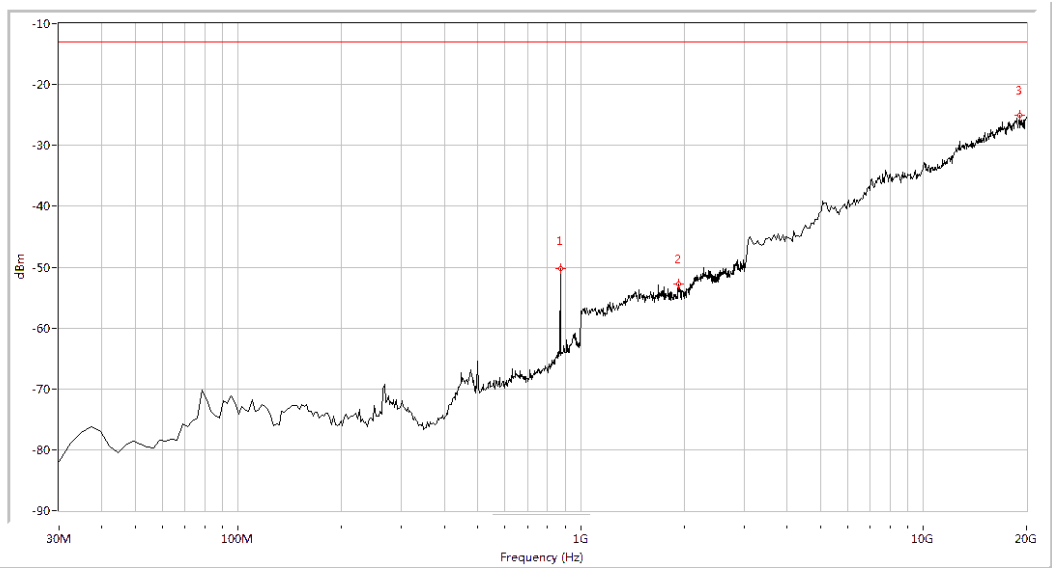
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-50.19	-13.0	37.2	0.0	Horizontal	PASS
1927.681	-52.81	-13.0	39.8	0.0	Horizontal	PASS
19109.726	-25.11	-13.0	12.1	0.0	Horizontal	PASS

(Plot B.3:   GSM 1900MHz Channel = 661, Test Antenna Horizontal)
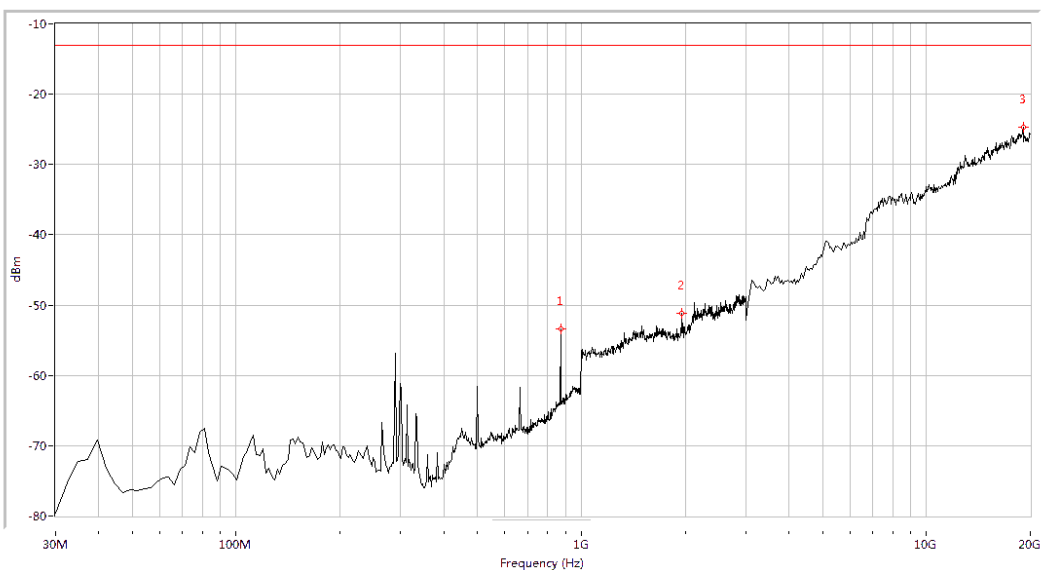
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.41	-13.0	40.4	360.0	Vertical	PASS
1957.606	-51.15	-13.0	38.2	251.7	Vertical	PASS
19109.726	-24.63	-13.0	11.6	300.9	Vertical	PASS

(Plot B.4:   GSM 1900MHz Channel = 661, Test Antenna Vertical)
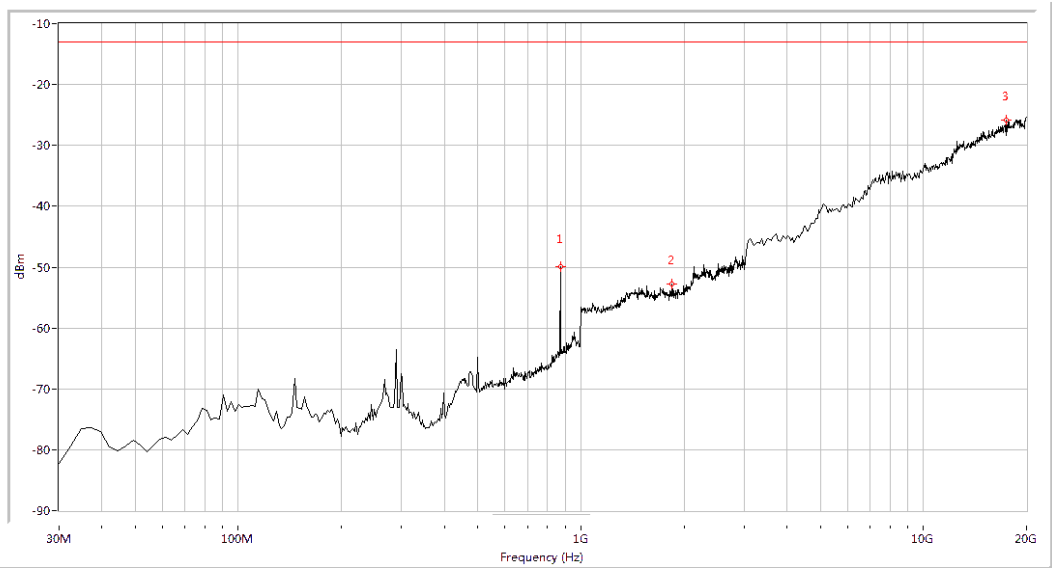
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.99	-13.0	37.0	348.9	Horizontal	PASS
1847.880	-52.77	-13.0	39.8	30.4	Horizontal	PASS
17413.965	-25.78	-13.0	12.8	91.2	Horizontal	PASS

(Plot B.5:   GSM 1900MHz Channel = 810, Test Antenna Horizontal)
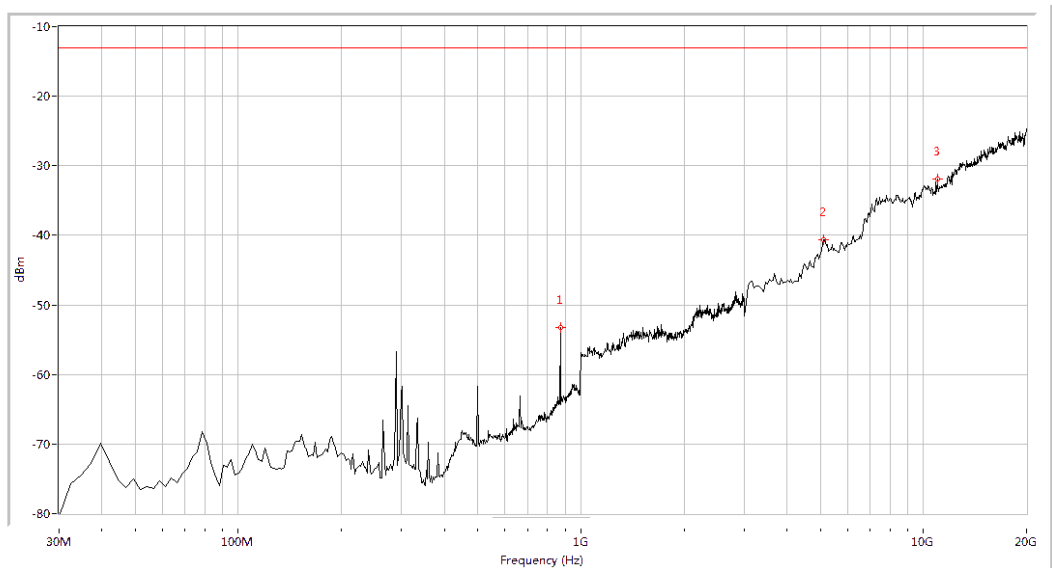
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.30	-13.0	40.3	360.0	Vertical	PASS
5119.701	-40.69	-13.0	27.7	189.0	Vertical	PASS
10970.075	-31.97	-13.0	19.0	123.2	Vertical	PASS

(PlotB.6:   GSM 1900MHz Channel = 810, Test Antenna Vertical)
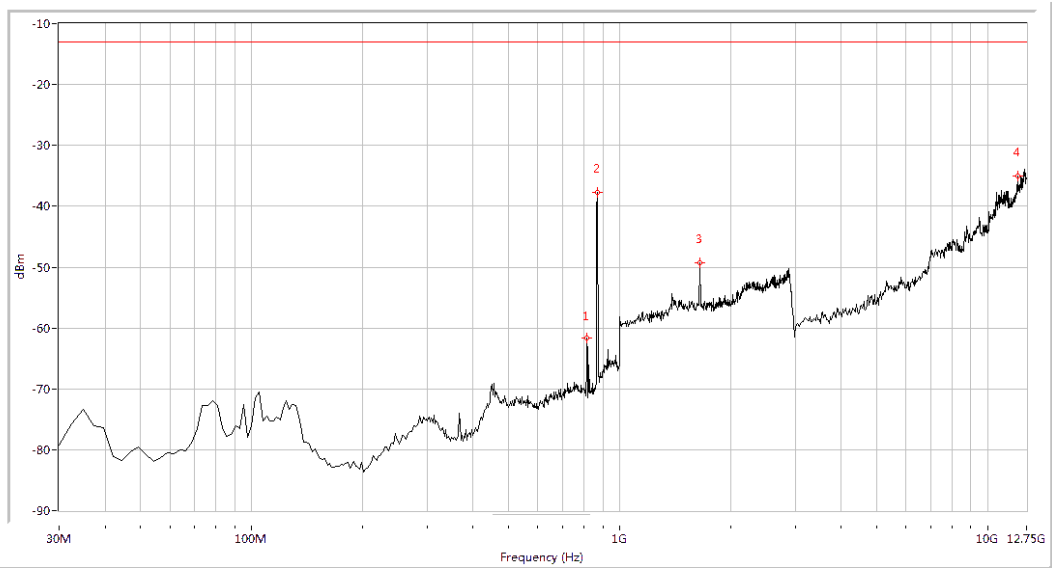
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-61.61	-13.0	48.6	-0.0	Horizontal	PASS
869.377	-37.76	-13.0	24.8	263.5	Horizontal	PASS
1653.367	-49.27	-13.0	36.3	267.5	Horizontal	PASS
12069.202	-35.02	-13.0	22.0	355.3	Horizontal	PASS

(Plot E.1:   WCDMA 850MHz Channel = 4132, Test Antenna Horizontal)
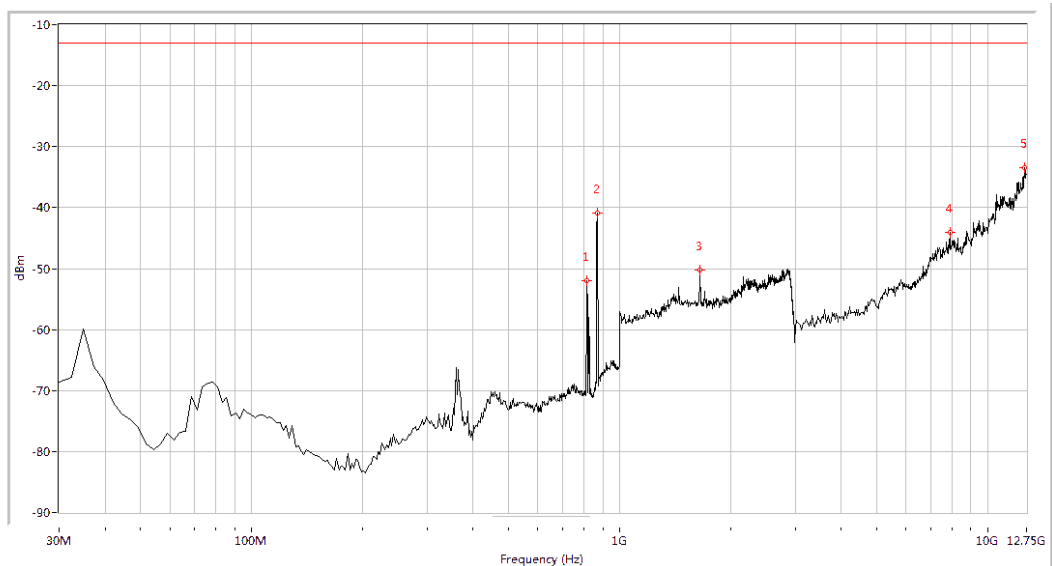
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-52.05	-13.0	39.1	310.8	Vertical	PASS
869.377	-40.90	-13.0	27.9	236.7	Vertical	PASS
1653.367	-50.21	-13.0	37.2	20.9	Vertical	PASS
7887.157	-44.03	-13.0	31.0	53.7	Vertical	PASS
12628.429	-33.37	-13.0	20.4	351.5	Vertical	PASS

(Plot E.2:   WCDMA 850MHz Channel = 4132, Test Antenna Vertical)
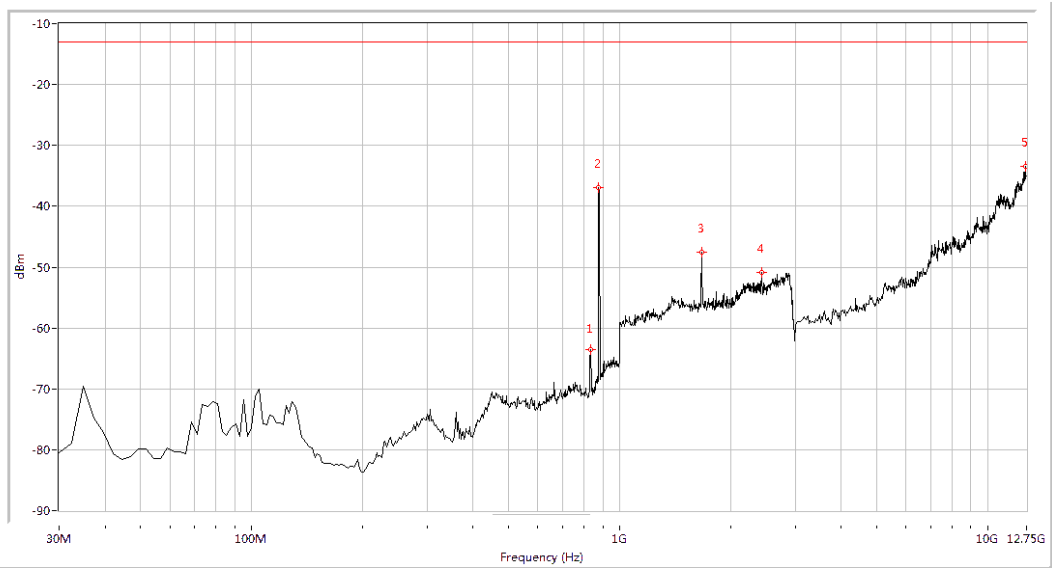
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-63.51	-13.0	50.5	360.0	Horizontal	PASS
876.633	-36.96	-13.0	24.0	17.2	Horizontal	PASS
1668.329	-47.51	-13.0	34.5	273.2	Horizontal	PASS
2431.421	-50.92	-13.0	37.9	75.3	Horizontal	PASS
12677.057	-33.44	-13.0	20.4	49.6	Horizontal	PASS

(Plot E.3:   WCDMA 850MHz Channel = 4175, Test Antenna Horizontal)
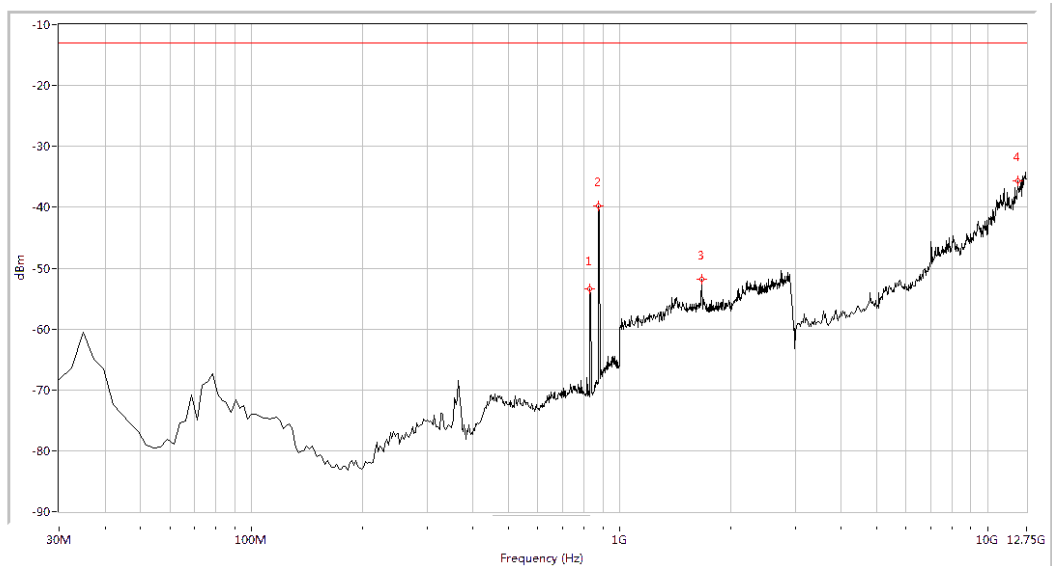
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
830.673	-53.43	-13.0	40.4	253.7	Vertical	PASS
876.633	-39.76	-13.0	26.8	0.8	Vertical	PASS
1668.329	-51.84	-13.0	38.8	28.4	Vertical	PASS
12069.202	-35.67	-13.0	22.7	271.6	Vertical	PASS

(Plot E.4:   WCDMA 850MHz Channel = 4175, Test Antenna Vertical)
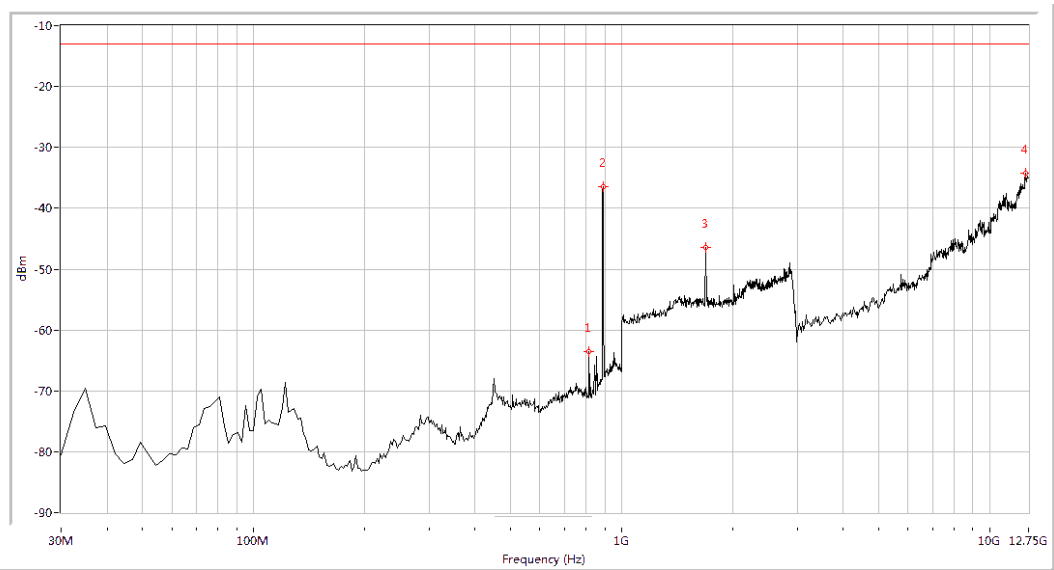
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-63.58	-13.0	50.6	356.5	Horizontal	PASS
891.147	-36.40	-13.0	23.4	280.3	Horizontal	PASS
1688.279	-46.51	-13.0	33.5	271.3	Horizontal	PASS
12531.172	-34.25	-13.0	21.3	107.0	Horizontal	PASS

(Plot E.5:　WCDMA 850MHz Channel = 4233, Test Antenna Horizontal)
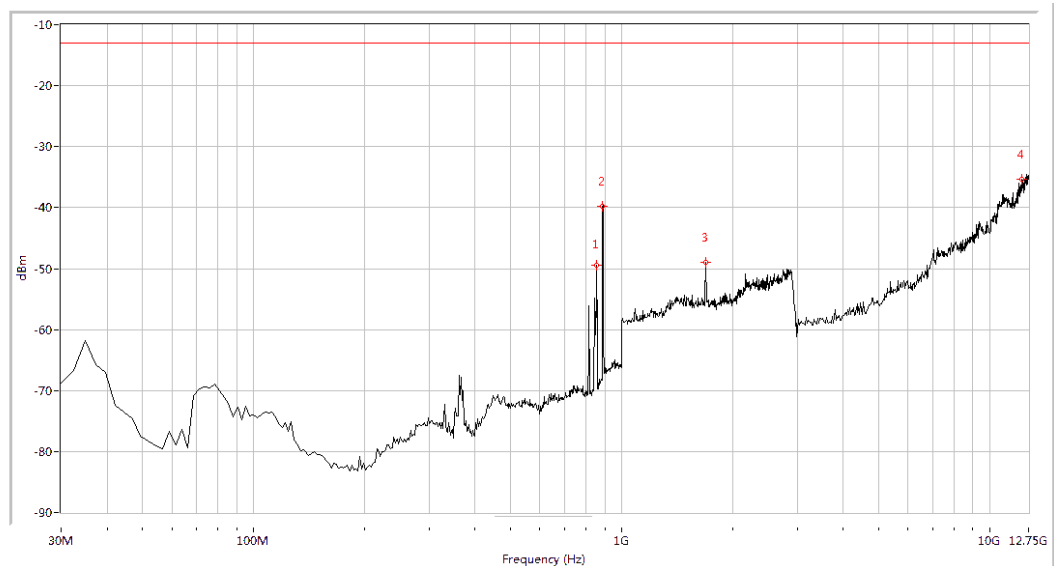
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-49.45	-13.0	36.4	324.7	Vertical	PASS
888.728	-39.81	-13.0	26.8	183.0	Vertical	PASS
1693.267	-48.93	-13.0	35.9	264.0	Vertical	PASS
12239.401	-35.31	-13.0	22.3	360.0	Vertical	PASS

(Plot E.6:　WCDMA 850MHz Channel = 4233, Test Antenna Vertical)
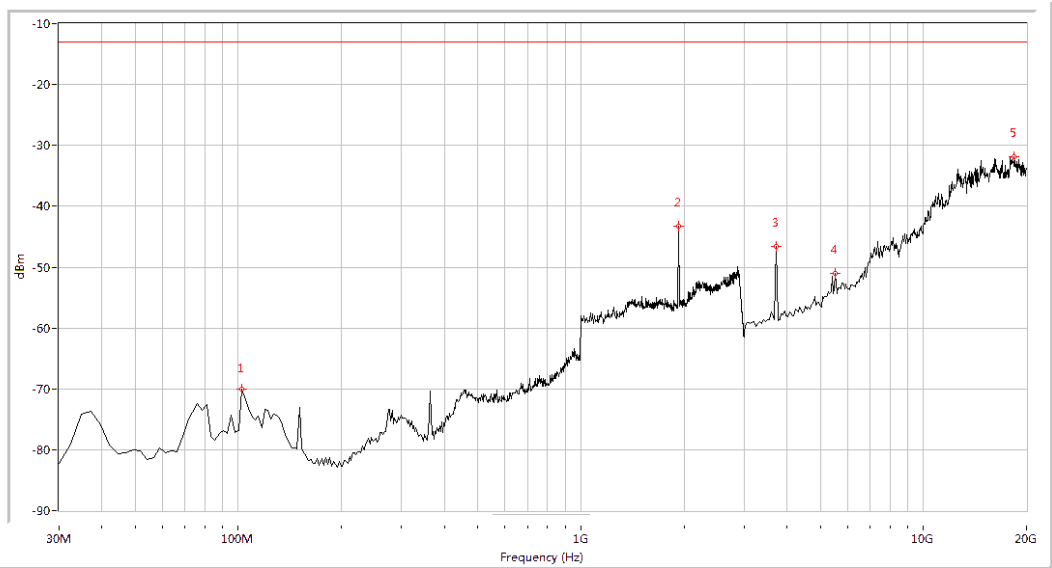
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
102.569	-69.99	-13.0	57.0	42.8	Horizontal	PASS
1932.668	-43.27	-13.0	30.3	6.2	Horizontal	PASS
3720.698	-46.67	-13.0	33.7	360.0	Horizontal	PASS
5543.641	-50.95	-13.0	38.0	47.3	Horizontal	PASS
18431.421	-31.84	-13.0	18.8	97.5	Horizontal	PASS

(Plot F.1:   WCDMA 1900MHz Channel = 9262, Test Antenna Horizontal)
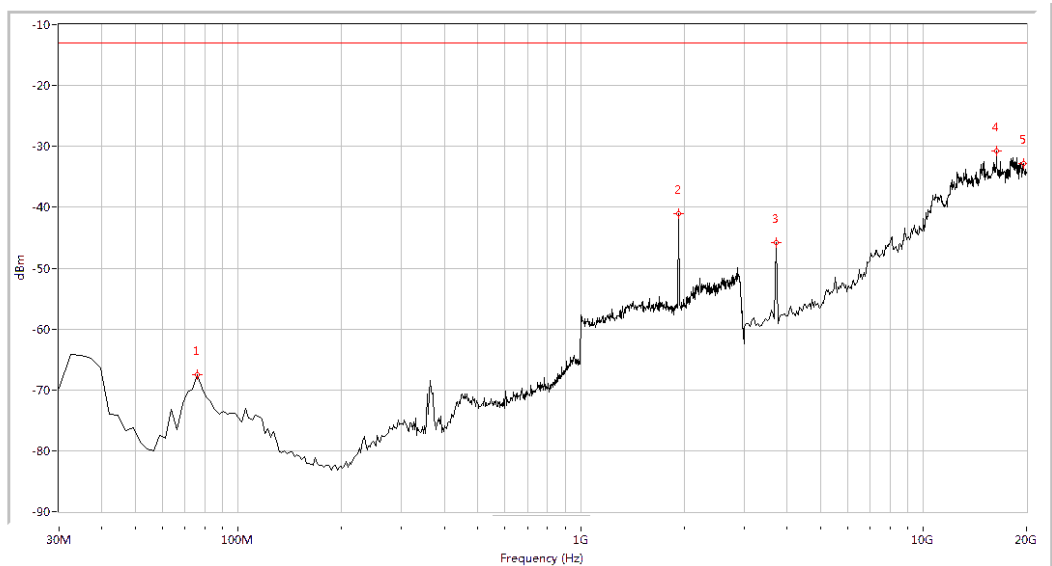
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
75.960	-67.52	-13.0	54.5	351.5	Vertical	PASS
1927.681	-40.97	-13.0	28.0	299.7	Vertical	PASS
3720.698	-45.83	-13.0	32.8	263.7	Vertical	PASS
16354.115	-30.79	-13.0	17.8	358.7	Vertical	PASS
19576.060	-32.85	-13.0	19.9	75.2	Vertical	PASS

(Plot F.2:   WCDMA 1900MHz Channel = 9262, Test Antenna Vertical)
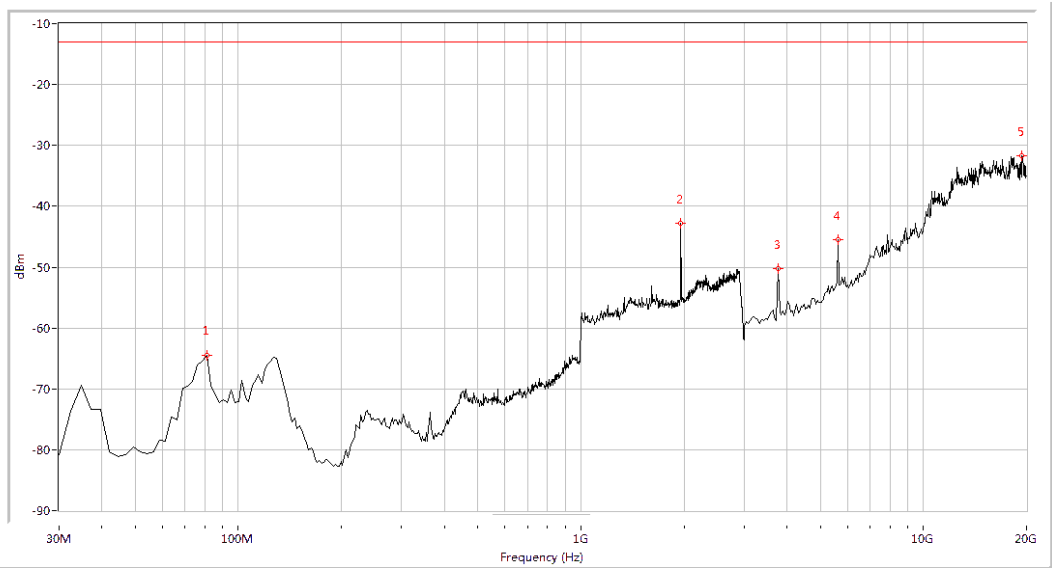
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
80.798	-64.48	-13.0	51.5	155.4	Horizontal	PASS
1957.606	-42.86	-13.0	29.9	194.5	Horizontal	PASS
3763.092	-50.17	-13.0	37.2	-0.0	Horizontal	PASS
5628.429	-45.45	-13.0	32.4	49.3	Horizontal	PASS
19406.484	-31.69	-13.0	18.7	2.9	Horizontal	PASS

(Plot F.3:   WCDMA 1900MHz Channel = 9400, Test Antenna Horizontal)
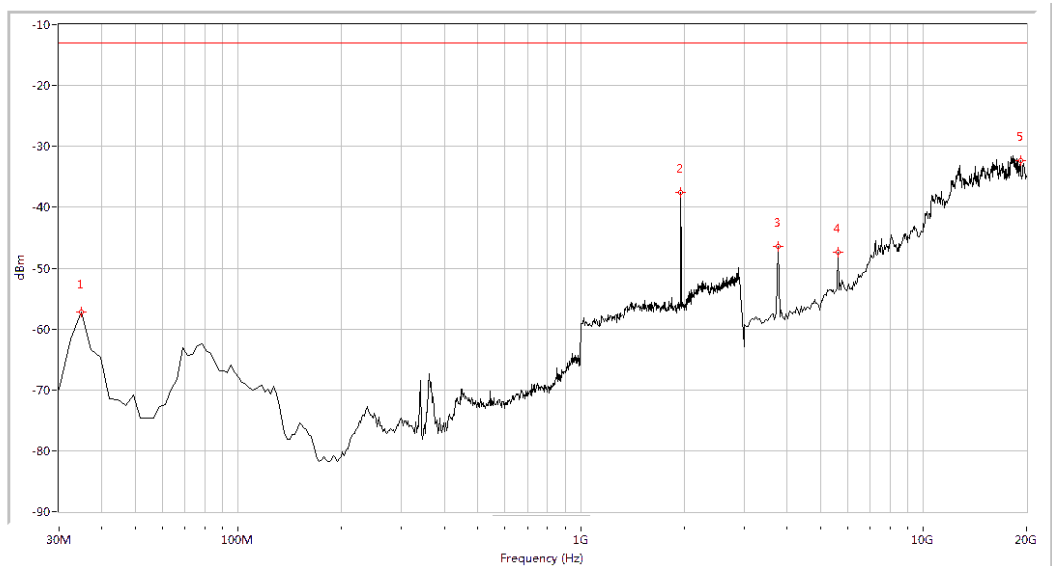
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-57.24	-13.0	44.2	115.9	Vertical	PASS
1957.606	-37.50	-13.0	24.5	59.9	Vertical	PASS
3763.092	-46.37	-13.0	33.4	140.1	Vertical	PASS
5628.429	-47.46	-13.0	34.5	173.9	Vertical	PASS
19236.908	-32.32	-13.0	19.3	55.7	Vertical	PASS

(Plot F.4:   WCDMA 1900MHz Channel = 9400, Test Antenna Vertical)
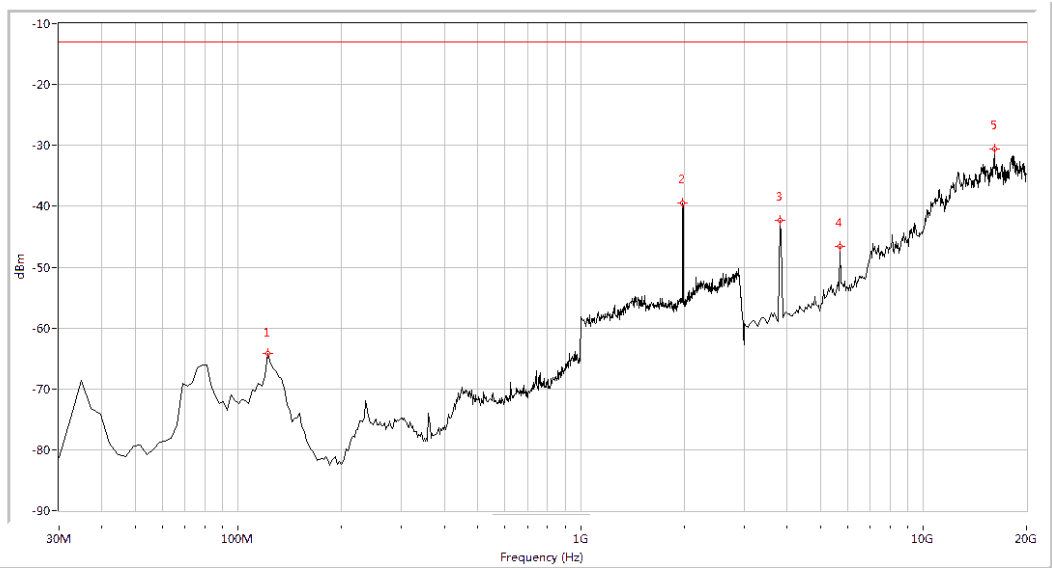
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
121.920	-64.17	-13.0	51.2	69.9	Horizontal	PASS
1982.544	-39.48	-13.0	26.5	248.1	Horizontal	PASS
3805.486	-42.39	-13.0	29.4	139.3	Horizontal	PASS
5713.217	-46.53	-13.0	33.5	48.6	Horizontal	PASS
16099.751	-30.63	-13.0	17.6	0.6	Horizontal	PASS

(Plot F.5:   WCDMA 1900MHz Channel = 9538, Test Antenna Horizontal)
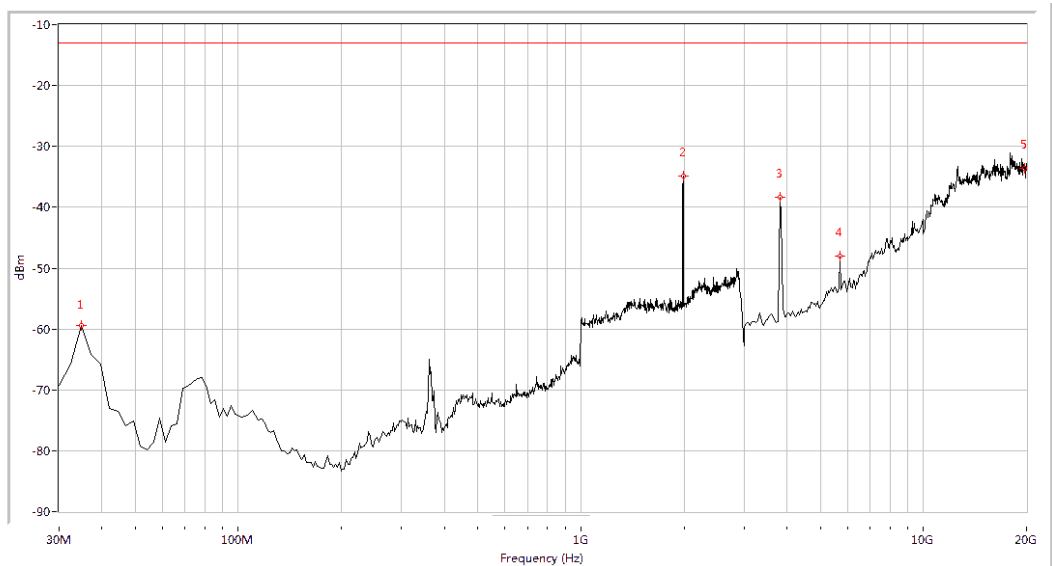
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-59.41	-13.0	46.4	334.0	Vertical	PASS
1987.531	-34.85	-13.0	21.9	316.4	Vertical	PASS
3805.486	-38.40	-13.0	25.4	143.6	Vertical	PASS
5713.217	-47.99	-13.0	35.0	168.1	Vertical	PASS
19703.242	-33.61	-13.0	20.6	85.3	Vertical	PASS

(Plot F.6:   WCDMA 1900MHz Channel = 9538, Test Antenna Vertical)
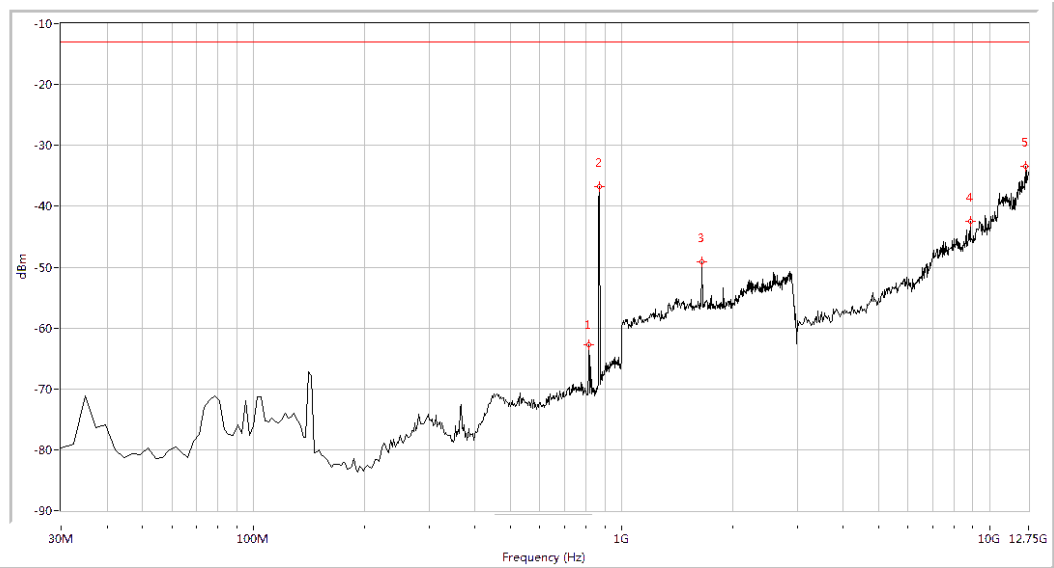
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-62.79	-13.0	49.8	0.7	Horizontal	PASS
871.796	-36.77	-13.0	23.8	360.0	Horizontal	PASS
1653.367	-49.18	-13.0	36.2	147.5	Horizontal	PASS
8859.726	-42.51	-13.0	29.5	209.4	Horizontal	PASS
12555.486	-33.39	-13.0	20.4	360.0	Horizontal	PASS

(Plot G.1:   HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)
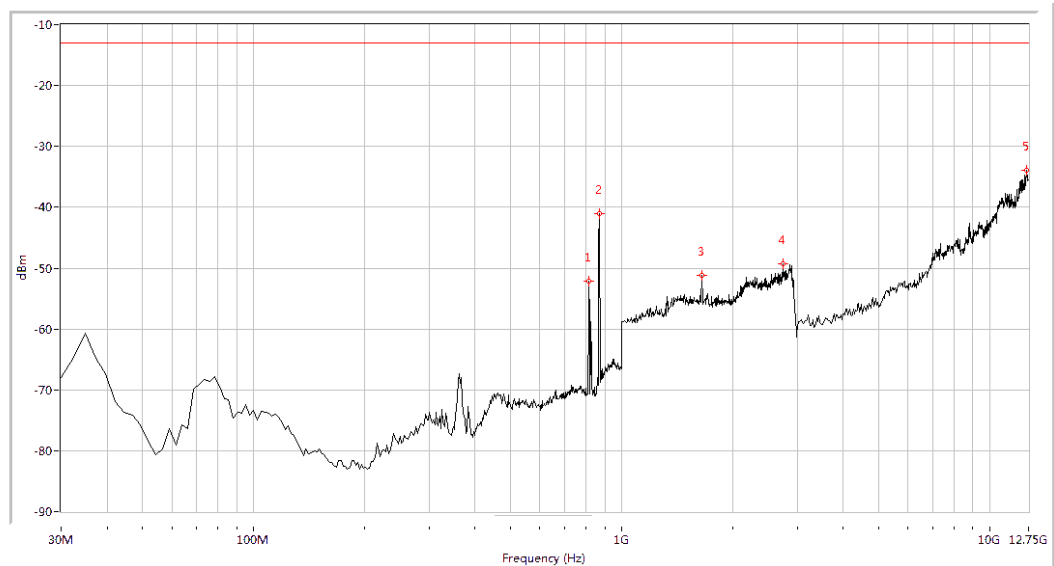
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-52.08	-13.0	39.1	244.8	Vertical	PASS
871.796	-41.10	-13.0	28.1	310.2	Vertical	PASS
1648.379	-51.23	-13.0	38.2	10.2	Vertical	PASS
2740.648	-49.21	-13.0	36.2	167.3	Vertical	PASS
12604.115	-33.93	-13.0	20.9	41.4	Vertical	PASS

(Plot G.2:   HSDPA 850MHz Channel = 4132, Test Antenna Vertical)
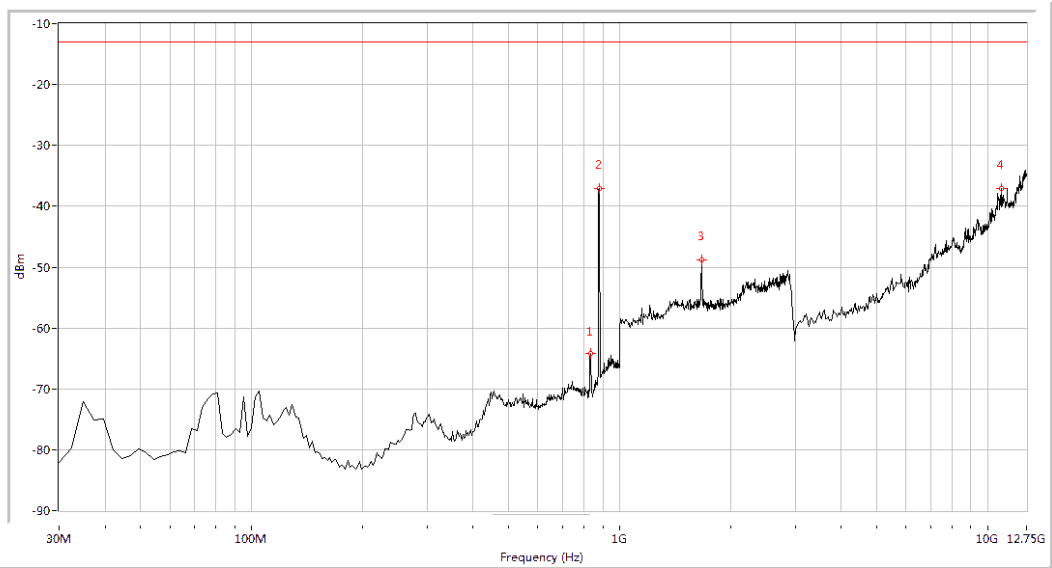
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
833.092	-64.12	-13.0	51.1	-0.0	Horizontal	PASS
879.052	-37.13	-13.0	24.1	146.4	Horizontal	PASS
1668.329	-48.88	-13.0	35.9	264.9	Horizontal	PASS
10877.805	-37.13	-13.0	24.1	350.2	Horizontal	PASS

(Plot G.3:   HSDPA 850MHz Channel = 4175, Test Antenna Horizontal)
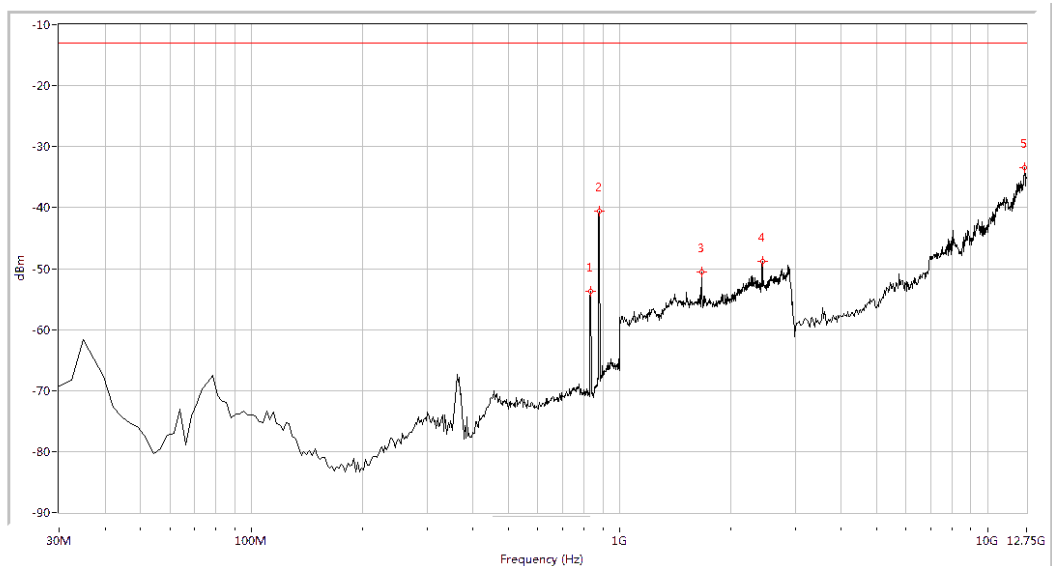
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
833.092	-53.70	-13.0	40.7	149.7	Vertical	PASS
879.052	-40.55	-13.0	27.6	4.6	Vertical	PASS
1668.329	-50.63	-13.0	37.6	26.9	Vertical	PASS
2441.397	-48.78	-13.0	35.8	-0.0	Vertical	PASS
12628.429	-33.46	-13.0	20.5	359.6	Vertical	PASS

(Plot G.4:   HSDPA 850MHz Channel = 4175, Test Antenna Vertical)
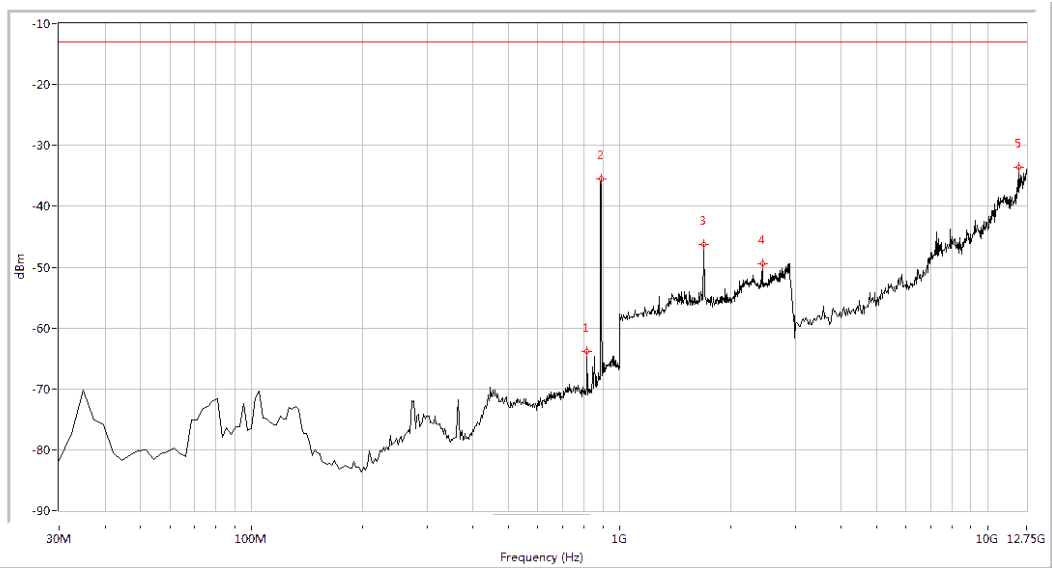
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-63.89	-13.0	50.9	360.0	Horizontal	PASS
891.147	-35.55	-13.0	22.5	76.3	Horizontal	PASS
1693.267	-46.35	-13.0	33.4	271.4	Horizontal	PASS
2441.397	-49.43	-13.0	36.4	359.5	Horizontal	PASS
12117.830	-33.58	-13.0	20.6	68.1	Horizontal	PASS

(Plot G.5:   HSDPA 850MHz Channel = 4233, Test Antenna Horizontal)
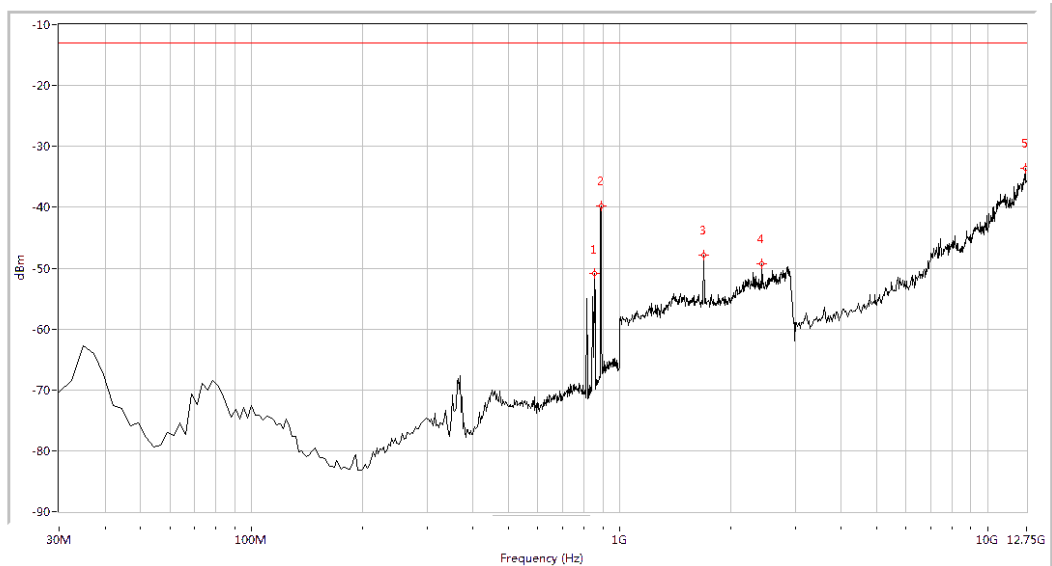
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-50.91	-13.0	37.9	241.3	Vertical	PASS
891.147	-39.75	-13.0	26.8	156.5	Vertical	PASS
1693.267	-47.90	-13.0	34.9	30.6	Vertical	PASS
2436.409	-49.29	-13.0	36.3	134.3	Vertical	PASS
12652.743	-33.55	-13.0	20.5	339.1	Vertical	PASS

(Plot G.6:   HSDPA 850MHz Channel = 4233, Test Antenna Vertical)
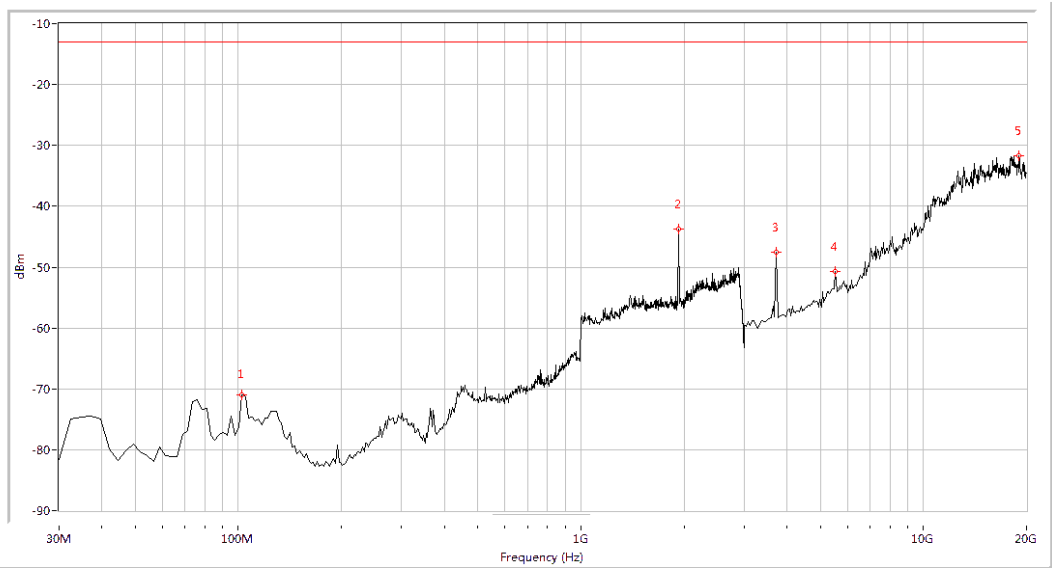
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
102.569	-70.95	-13.0	58.0	309.7	Horizontal	PASS
1927.681	-43.70	-13.0	30.7	45.0	Horizontal	PASS
3720.698	-47.56	-13.0	34.6	351.2	Horizontal	PASS
5543.641	-50.74	-13.0	37.7	52.7	Horizontal	PASS
19024.938	-31.77	-13.0	18.8	226.0	Horizontal	PASS

(Plot H.1:   HSDPA 1900 MHz Channel = 9262, Test Antenna Horizontal)
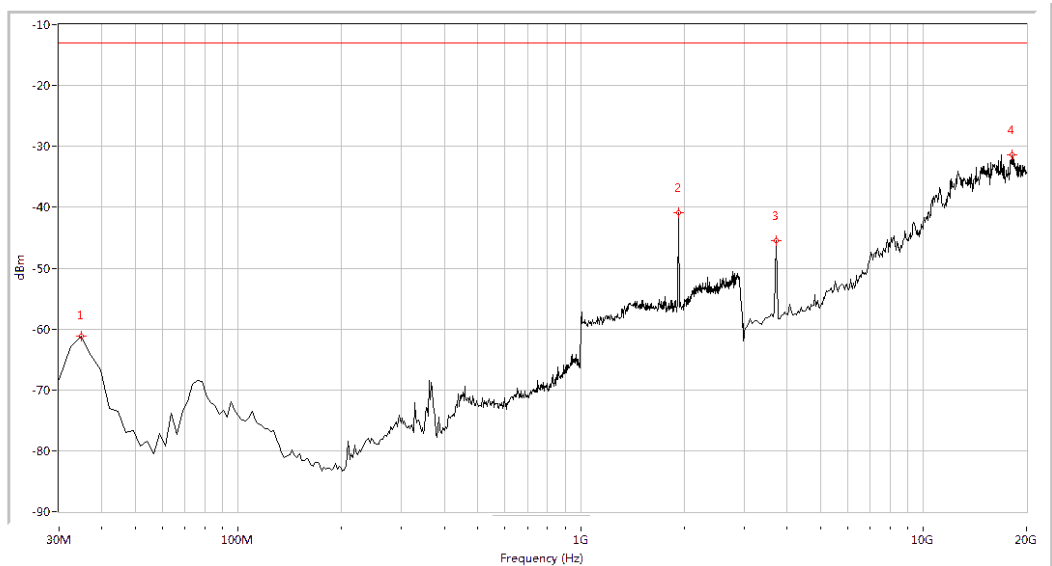
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-61.16	-13.0	48.2	205.9	Vertical	PASS
1927.681	-40.86	-13.0	27.9	51.4	Vertical	PASS
3720.698	-45.44	-13.0	32.4	265.1	Vertical	PASS
18092.269	-31.45	-13.0	18.4	3.2	Vertical	PASS

(Plot H.2:   HSDPA 1900 MHz Channel = 9262, Test Antenna Vertical)
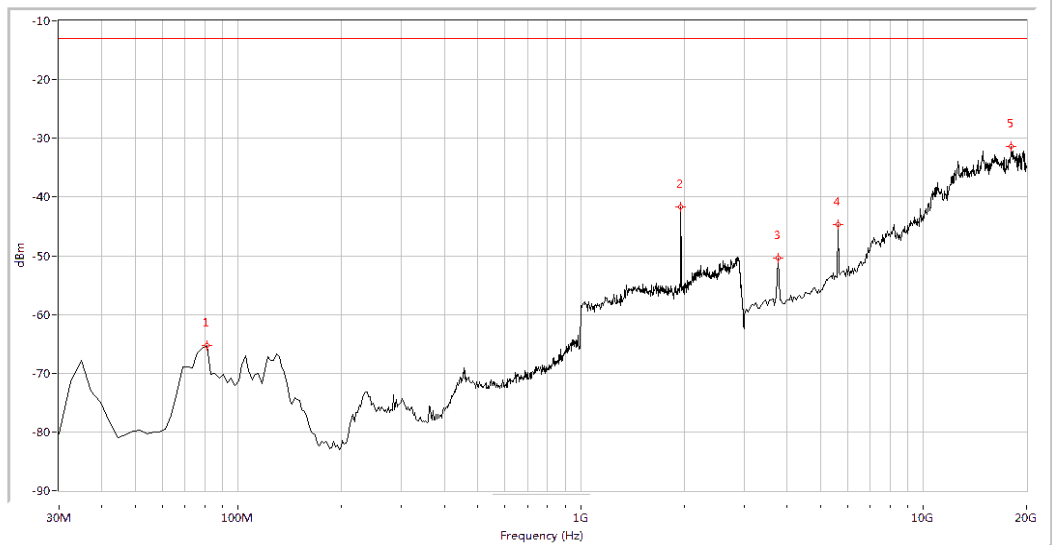
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
80.798	-65.29	-13.0	52.3	155.1	Horizontal	PASS
1957.606	-41.62	-13.0	28.6	244.2	Horizontal	PASS
3763.092	-50.45	-13.0	37.4	76.0	Horizontal	PASS
5628.429	-44.62	-13.0	31.6	58.8	Horizontal	PASS
18049.875	-31.45	-13.0	18.4	331.7	Horizontal	PASS

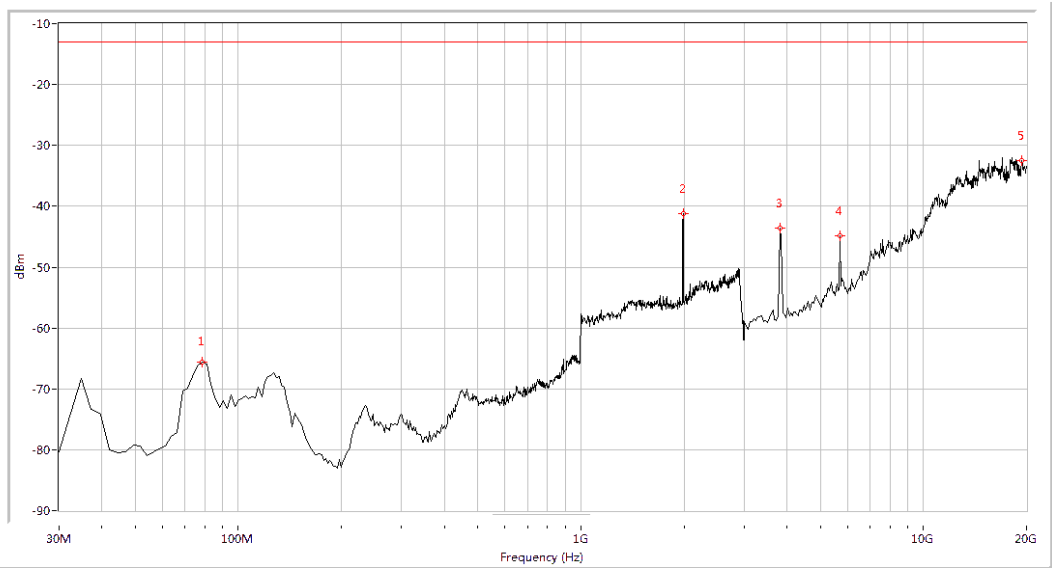(Plot H.3:   HSDPA 1900 MHz Channel = 9400, Test Antenna Horizontal)
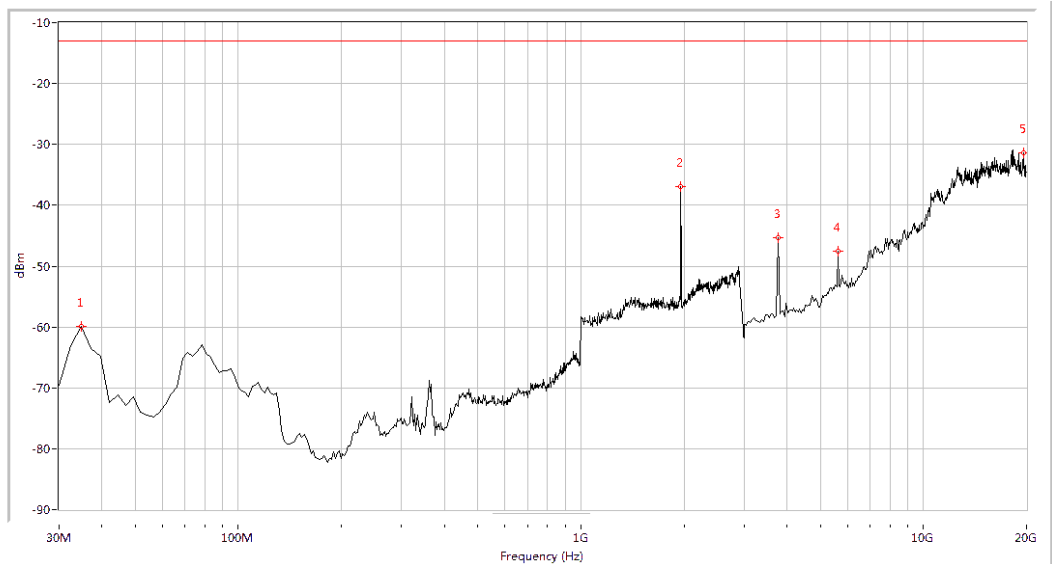
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-59.94	-13.0	46.9	46.9	Vertical	PASS
1957.606	-36.85	-13.0	23.9	-0.0	Vertical	PASS
3763.092	-45.40	-13.0	32.4	125.8	Vertical	PASS
5628.429	-47.52	-13.0	34.5	159.2	Vertical	PASS
19576.060	-31.31	-13.0	18.3	335.5	Vertical	PASS

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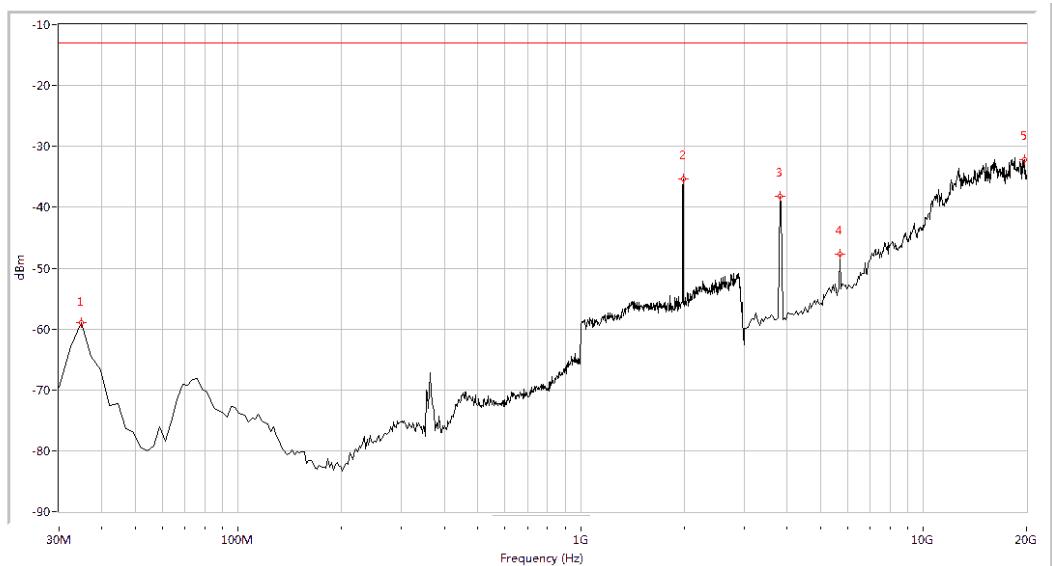
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-58.95	-13.0	45.9	334.0	Vertical	PASS
1987.531	-35.41	-13.0	22.4	316.4	Vertical	PASS
3805.486	-38.21	-13.0	25.2	143.6	Vertical	PASS
5713.217	-47.72	-13.0	34.7	168.1	Vertical	PASS
19703.242	-32.16	-13.0	19.2	85.3	Vertical	PASS

(Plot H.6:   HSDPA 1900 MHz Channel = 9538, Test Antenna Vertical)
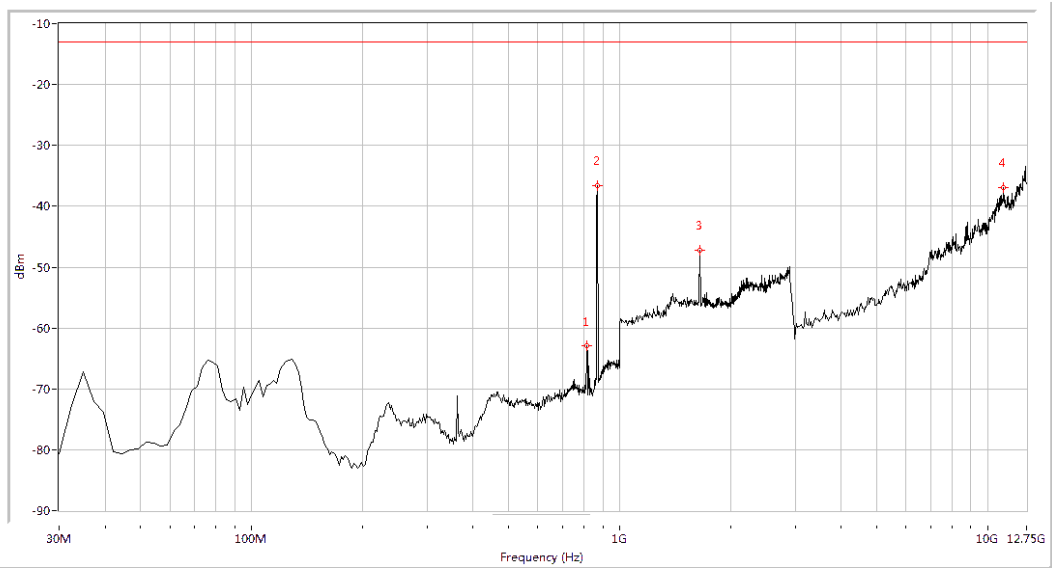
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-62.90	-13.0	49.9	360.0	Horizontal	PASS
869.377	-36.63	-13.0	23.6	92.7	Horizontal	PASS
1648.379	-47.17	-13.0	34.2	278.5	Horizontal	PASS
11023.691	-36.97	-13.0	24.0	341.4	Horizontal	PASS

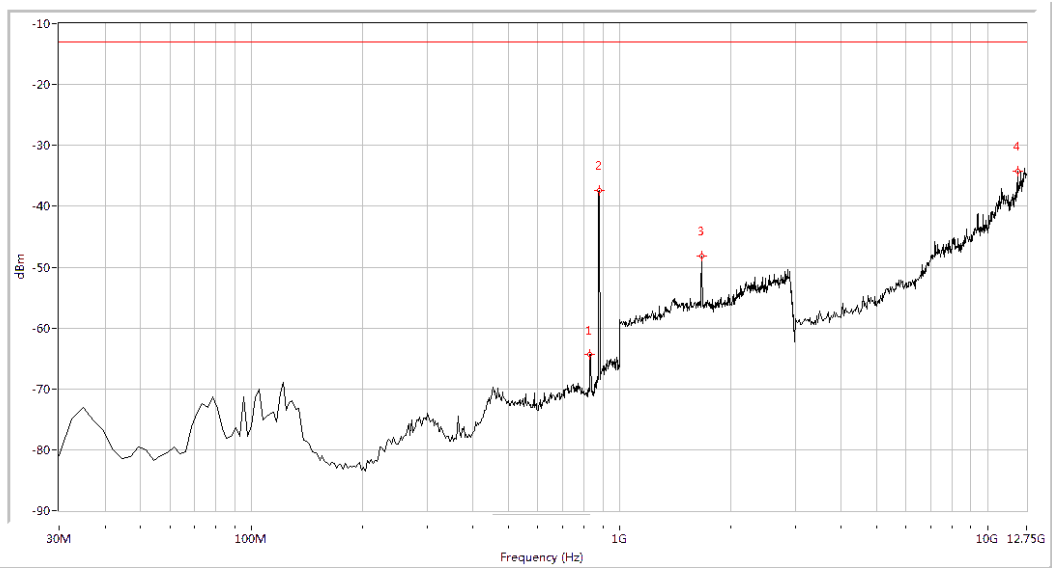(Plot I.1:   HSUPA 850MHz Channel = 4132, Test Antenna Horizontal)
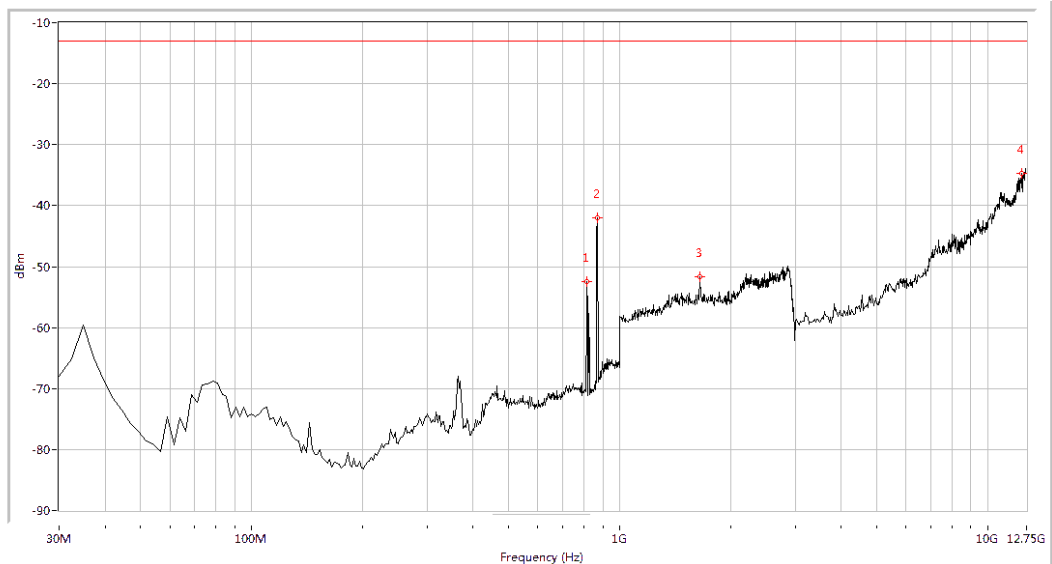
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-52.51	-13.0	39.5	159.0	Vertical	PASS
869.377	-41.99	-13.0	29.0	266.9	Vertical	PASS
1653.367	-51.66	-13.0	38.7	25.4	Vertical	PASS
12385.287	-34.69	-13.0	21.7	277.0	Vertical	PASS

(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

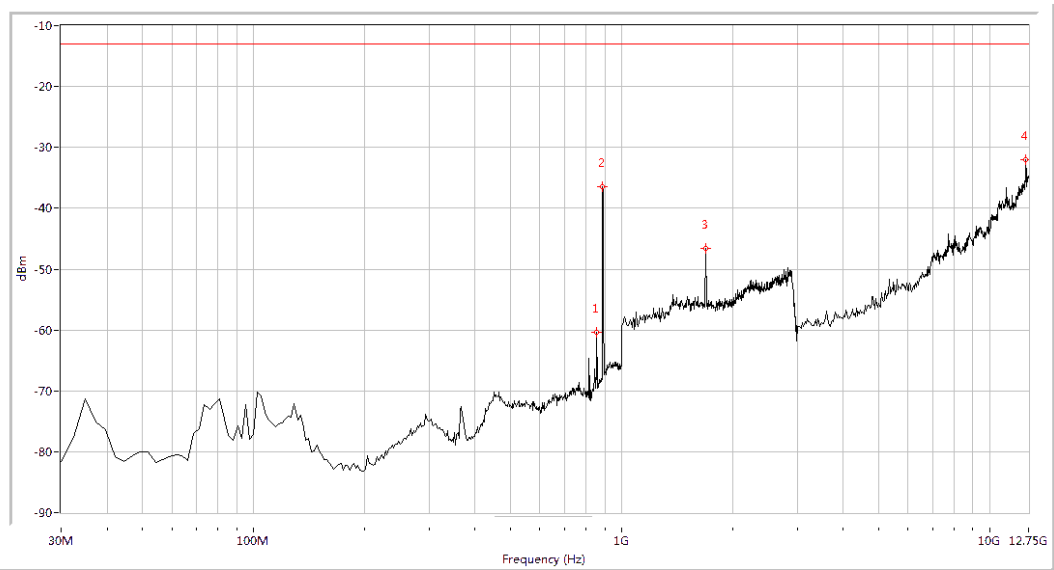(Plot I.3:   HSUPA 850MHz Channel = 4175, Test Antenna Horizontal)
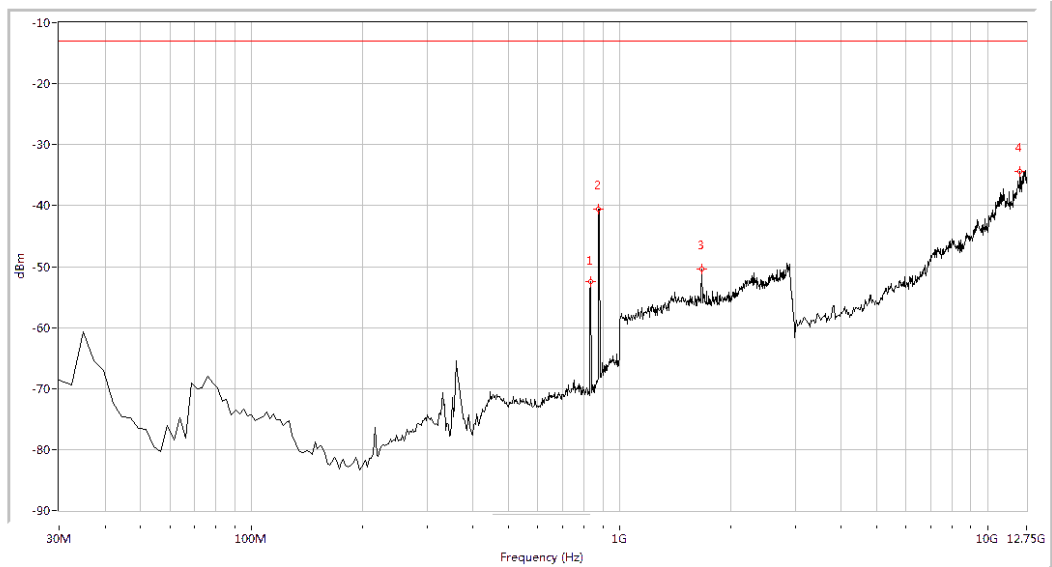
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
833.092	-52.43	-13.0	39.4	219.9	Vertical	PASS
876.633	-40.63	-13.0	27.6	325.9	Vertical	PASS
1668.329	-50.43	-13.0	37.4	186.2	Vertical	PASS
12239.401	-34.46	-13.0	21.5	350.4	Vertical	PASS

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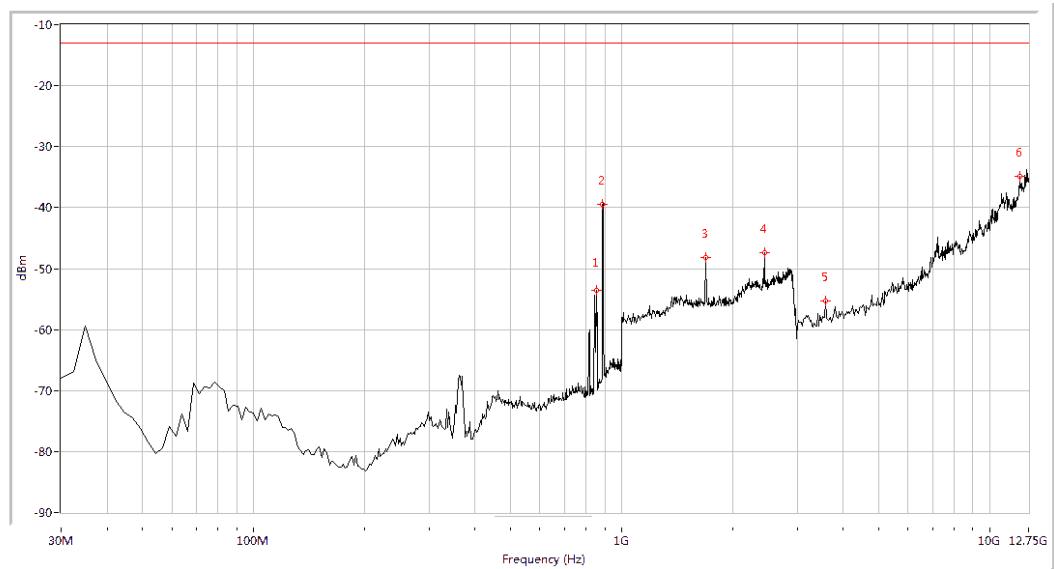
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-53.62	-13.0	40.6	194.9	Vertical	PASS
888.728	-39.48	-13.0	26.5	142.1	Vertical	PASS
1688.279	-48.21	-13.0	35.2	43.3	Vertical	PASS
2441.397	-47.46	-13.0	34.5	358.1	Vertical	PASS
3583.541	-55.24	-13.0	42.2	359.9	Vertical	PASS
12069.202	-34.90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

(Plot I.6:   HSUPA 850MHz Channel = 4233, Test Antenna Vertical)
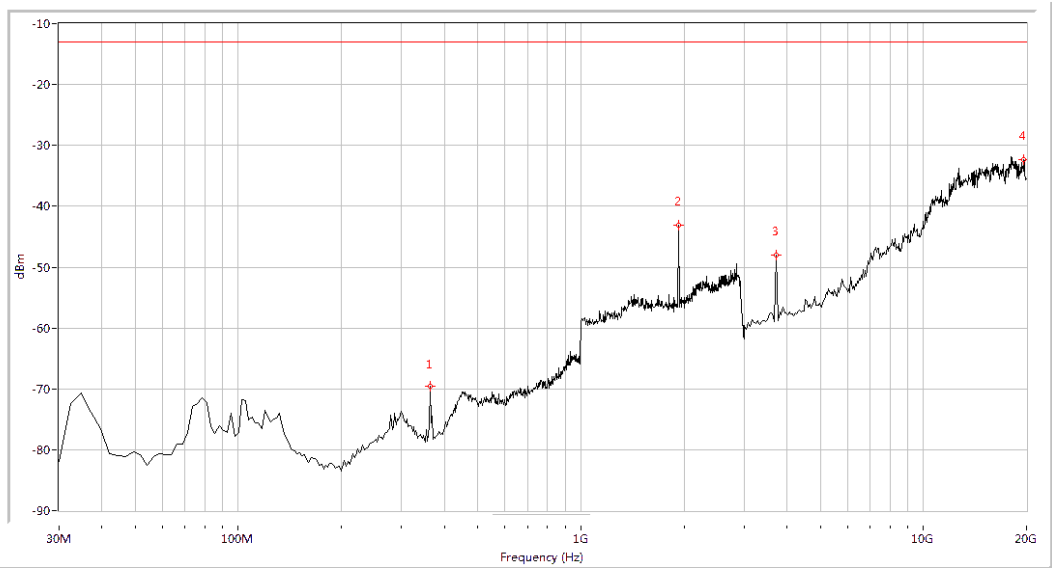
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
363.815	-69.53	-13.0	56.5	54.8	Horizontal	PASS
1932.668	-43.12	-13.0	30.1	77.7	Horizontal	PASS
3720.698	-47.96	-13.0	35.0	-0.0	Horizontal	PASS
19618.454	-32.31	-13.0	19.3	158.1	Horizontal	PASS

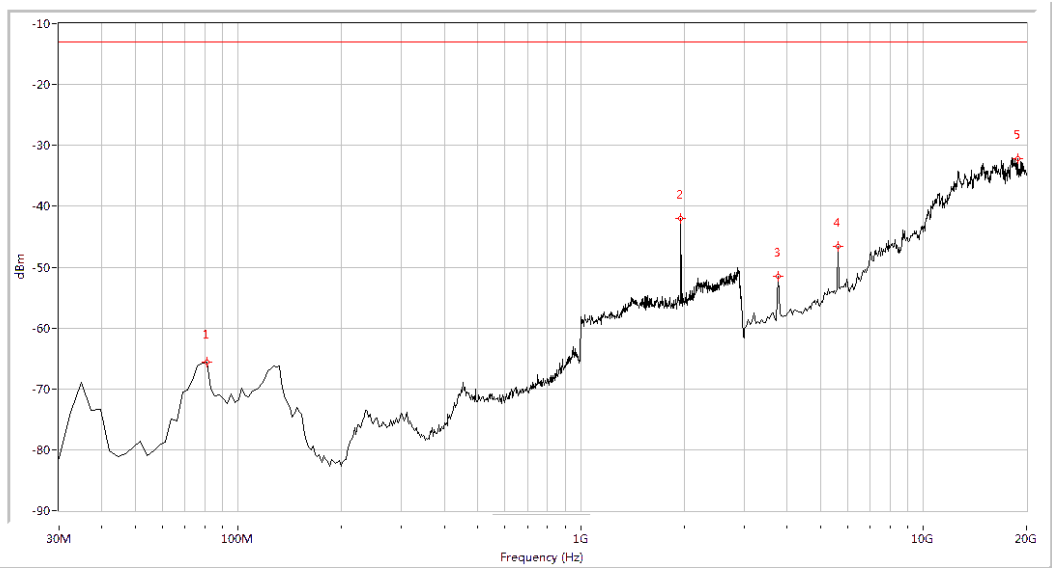(Plot J.1:   HSUPA 1900 MHz Channel = 9262, Test Antenna Horizontal)
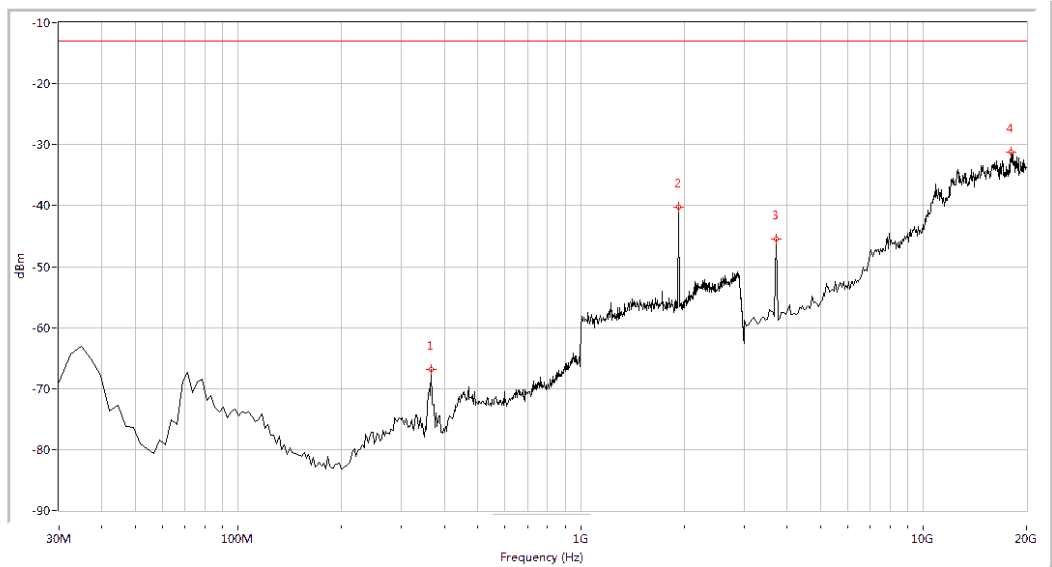
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
366.234	-66.82	-13.0	53.8	69.6	Vertical	PASS
1932.668	-40.26	-13.0	27.3	234.2	Vertical	PASS
3720.698	-45.46	-13.0	32.5	257.8	Vertical	PASS
18049.875	-31.25	-13.0	18.2	91.9	Vertical	PASS

(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

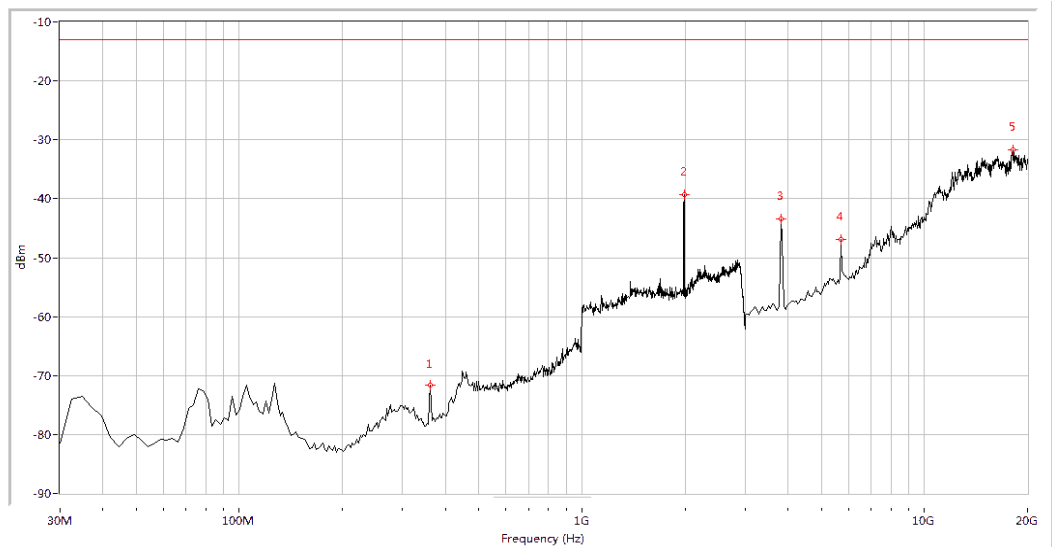(Plot J.3: HSUPA 1900 MHz Channel = 9400, Test Antenna Horizontal)
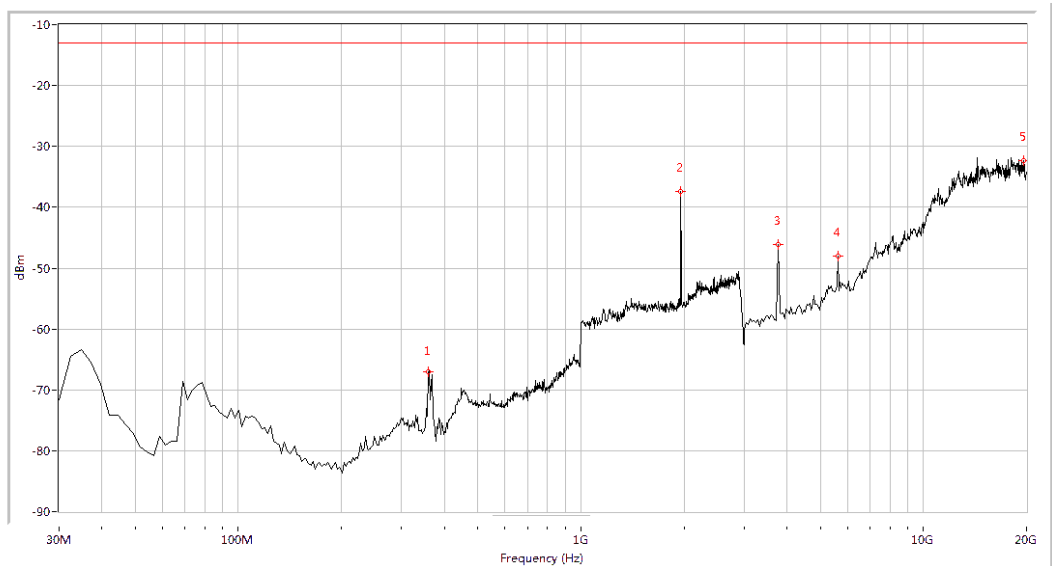
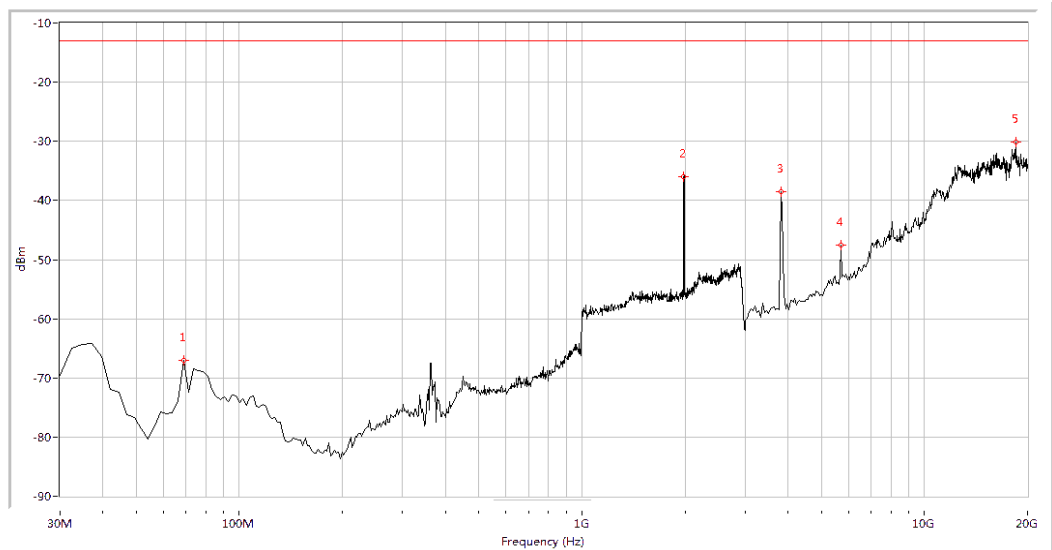| Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
358.978	-67.02	-13.0	54.0	253.9	Vertical	PASS
1957.606	-37.37	-13.0	24.4	286.5	Vertical	PASS
3763.092	-46.08	-13.0	33.1	142.3	Vertical	PASS
5628.429	-47.99	-13.0	35.0	191.0	Vertical	PASS
19660.848	-32.27	-13.0	19.3	200.3	Vertical	PASS

(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)

** END OF REPORT **