FCC TEST REPORT

TESTING
CNAS L3572

Issued to

ZTE Corporation

For

WCDMA Digital Mobile Phone

Model Name:	NX501
Trade Name:	ZTE
Brand Name:	ZTE
FCC ID :	SRQ-NX501
Standard:	47 CFR Part 22 Subpart H
	47 CFR Part 24 Subpart E
Test date:	2013-8-9 to 2013-8-27
Issue date:	2013-8-28

By

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Nie Quan
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Date 2013.8.28

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Date 2013.8.28

CTIA Authorized Test Lab
LAB CODE 200612232-00
IEEE 1725   OTA

OFTA
電訊管理局

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Testing Laboratory
2030

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Bluetooth
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FCC
Reg. No.
695796

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Change History		
Issue	Date	Reason for change
1.0	2013-8-28	First edition

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type ....:	WCDMA Digital Mobile Phone
Serial No.............................:	(n.a, marked #1 by test site)
Hardware Version ....:	NX501_V1DMB_A
Software Version ....:	NX501_Z35_EN_XSRPL1DD00E102
Applicant ....:	ZTE Corporation
	ZTE Plaza, Keji Road South, Shenzhen, China
Manufacturer ....:	ZTE Corporation
	ZTE Plaza, Keji Road South, Shenzhen, China
Frequency Range ....:	GSM 850MHz:

> 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,GPRS Mode with GMSK Modulation
	EDGE Mode with 8PSK Modulation
	WCDMA Mode with QPSK Modulation
	HSDPA Mode with QPSK Modulation
	HSUPA Mode with QPSK Modulation
	HSPA+ Mode with QPSK Modulation
Multislot Class......................:	GPRS: Multislot Class12,EGPRS: Multislot Class12
Antenna Type.......................:	PIFA Antenna
Emission Designators ....:	GSM 850:252KGXW,GSM 1900:253KGXW
	EGPRS850:253KG7W, EGPRS1900:257KG7W,
	WCDMA 850:4M19F9W ,WCDMA1900:4M19F9W

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 the EUT FCC ID Certification:

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

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

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

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

1.3   Facilities and Accreditations

1.3.1   Facilities

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

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

1.3.2   Test Environment Conditions

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

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

2.   47 CFR PART 2, PART 22H 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:
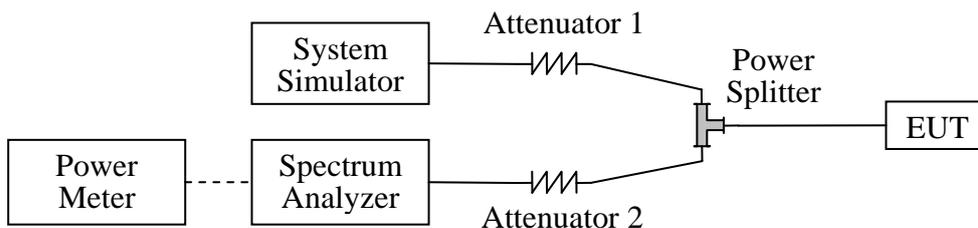
The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded 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	2014.05
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05	2014.05
Power Meter	Agilent	E4418B	GB43318055	2012.05	2014.05
Power Sensor	Agilent	8482A	MY41091706	2012.05	2014.05
Power Splitter	Weinschel	1506A	NW521	2012.05	2014.05
Attenuator 1	Resnet	20dB	(n.a.)	2012.05	2014.05
Attenuator 2	Resnet	3dB	(n.a.)	2012.05	2014.05

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	31.67	Plot A1 to A3	35	PASS
	190	836.6	31.87			PASS
	251	848.8	31.94			PASS
GSM 1900MHz	512	1850.2	30.70	Plot B1 to B3	32	PASS
	661	1880.0	30.47			PASS
	810	1909.8	30.05			PASS
GPRS 850MHz	128	824.2	31.54	Plot C1 to C3[Note 1]	35	PASS
	190	836.6	31.77			PASS
	251	848.8	31.77			PASS
GPRS 1900MHz	512	1850.2	30.18	Plot D1 to D3[Note 1]	32	PASS
	661	1880.0	29.54			PASS
	810	1909.8	28.90			PASS
EGPRS 850MHz	128	824.2	31.70	Plot E1 to E3[Note 1]	35	PASS
	190	836.6	31.91			PASS
	251	848.8	32.01			PASS
EGPRS 1900MHz	512	1850.2	30.33	Plot F1 to F3[Note 1]	32	PASS
	661	1880.0	29.62			PASS
	810	1909.8	28.93			PASS

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

2. WCDMA Model Test Verdict:

| Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	24.67	24.75	24.79	23.57	23.59	23.48
HSDPA	1	24.65	24.72	24.75	23.55	23.56	23.47
	2	24.63	24.71	24.74	23.52	23.53	23.43
	3	24.17	24.23	24.23	23.07	23.09	22.95
	4	24.13	24.27	24.25	23.05	23.02	22.94
HSUPA	1	24.52	24.66	24.69	23.51	23.52	23.45
	2	22.73	22.75	22.61	21.51	21.44	21.47
	3	23.55	23.69	23.66	22.53	22.56	22.49
	4	22.03	22.73	22.63	21.49	21.45	21.47
	5	24.49	24.65	24.63	23.49	23.51	23.41
HSPA+	1	24.35	24.58	24.65	23.47	23.48	23.38
Note:	The Conducted RF Output Power test of WCDMA /HSDPA /HSUPA /HSPA+ was tested by power meter.						

3.   GSM Model Test Plots:
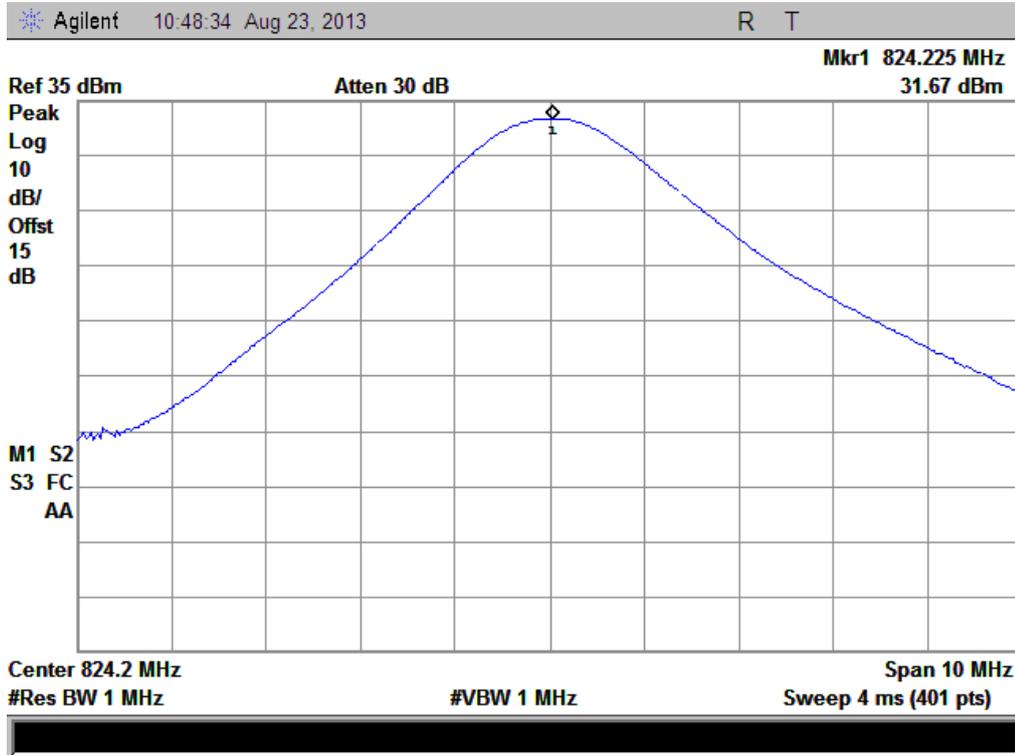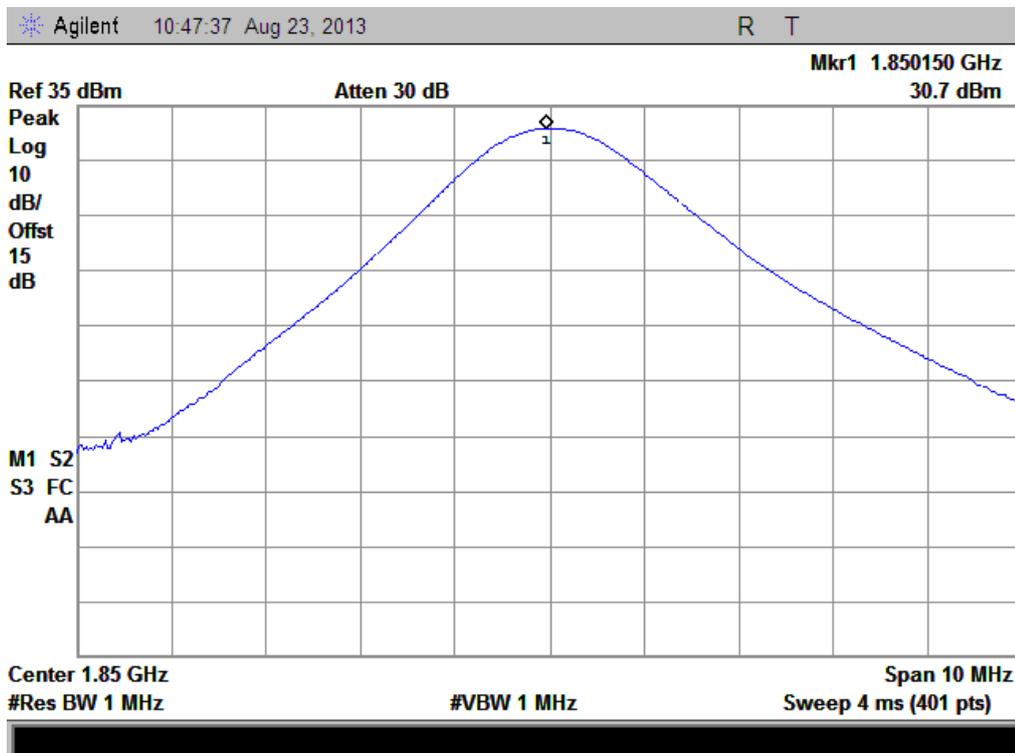

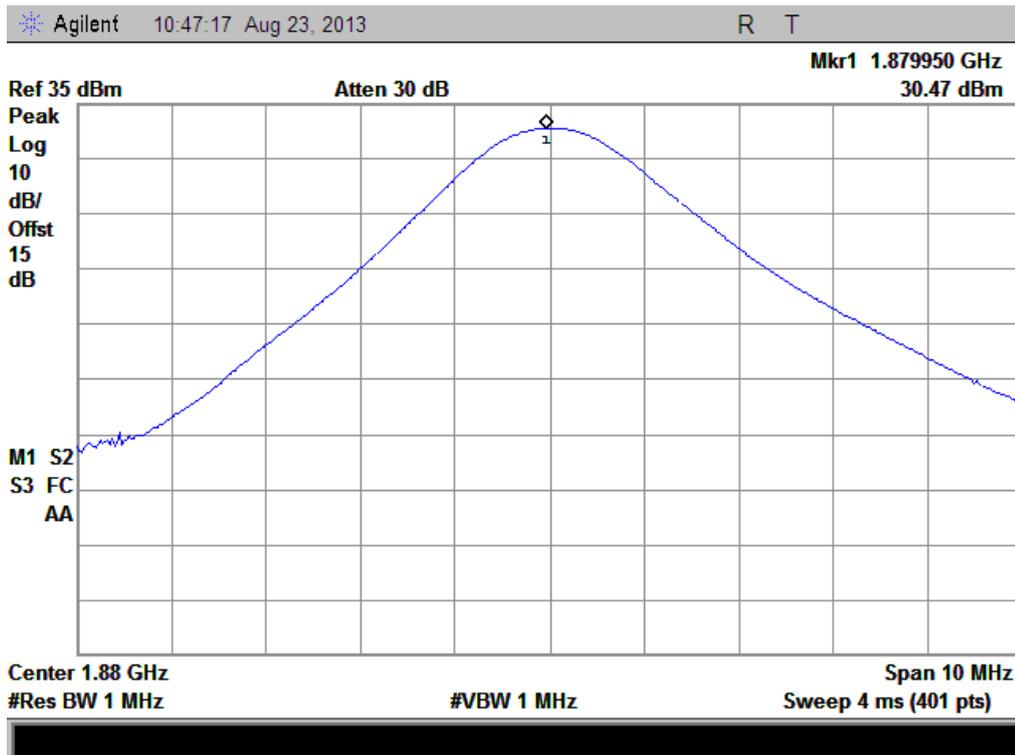(Plot A1:   GSM 850MHz Channel = 128)
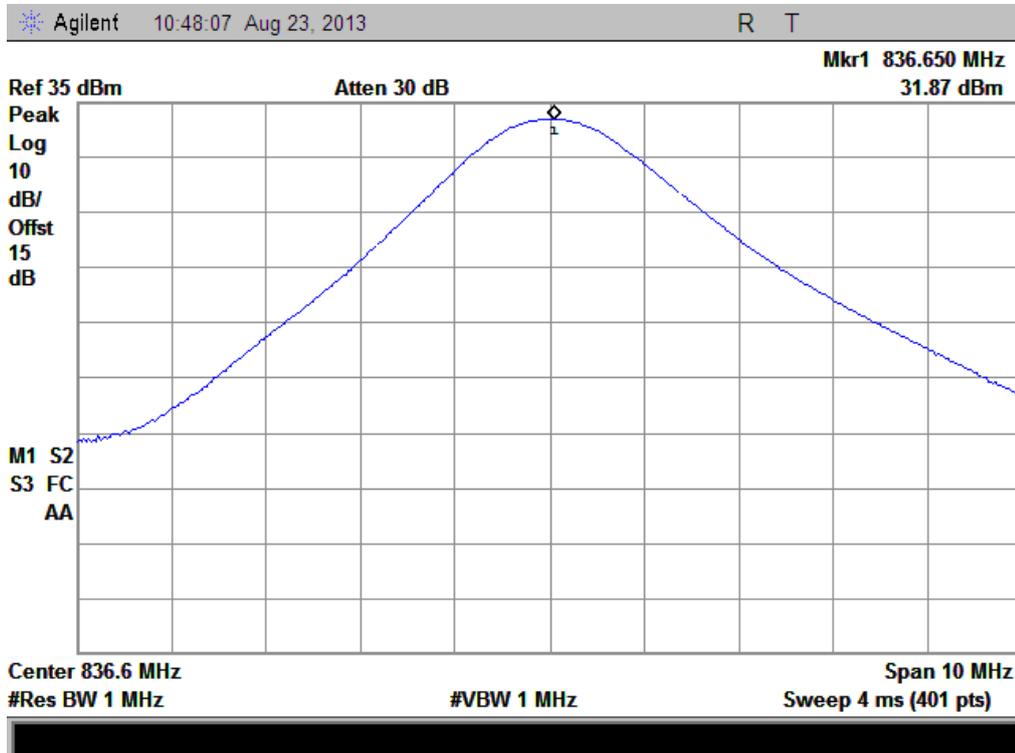
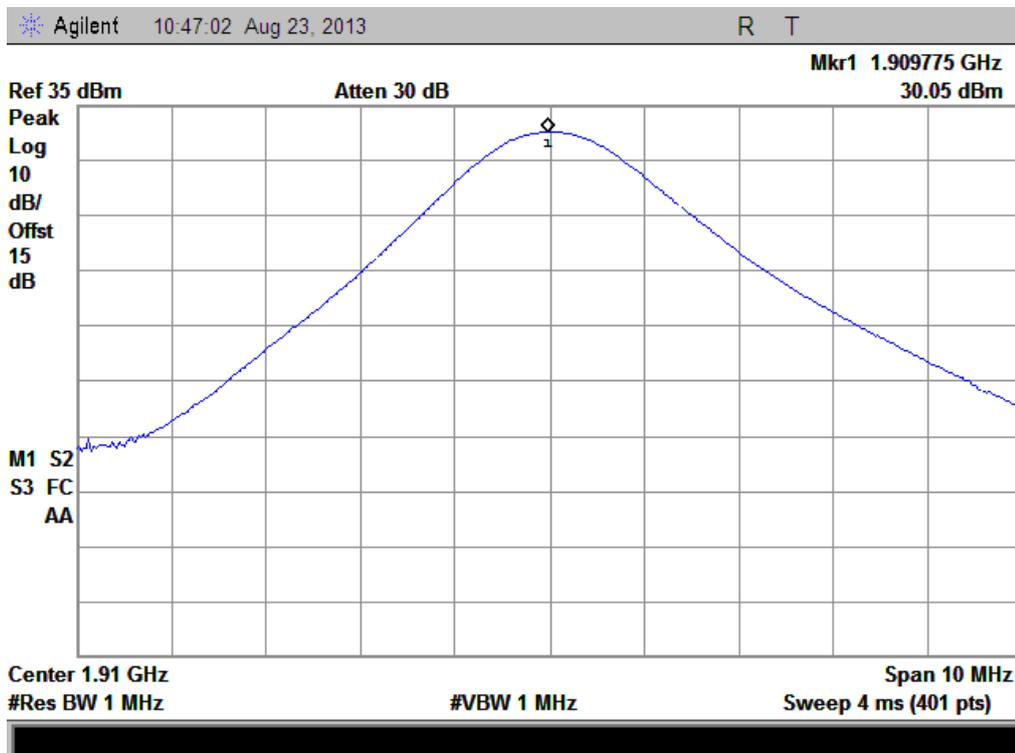(Plot A2:   GSM 850MHz Channel = 190)
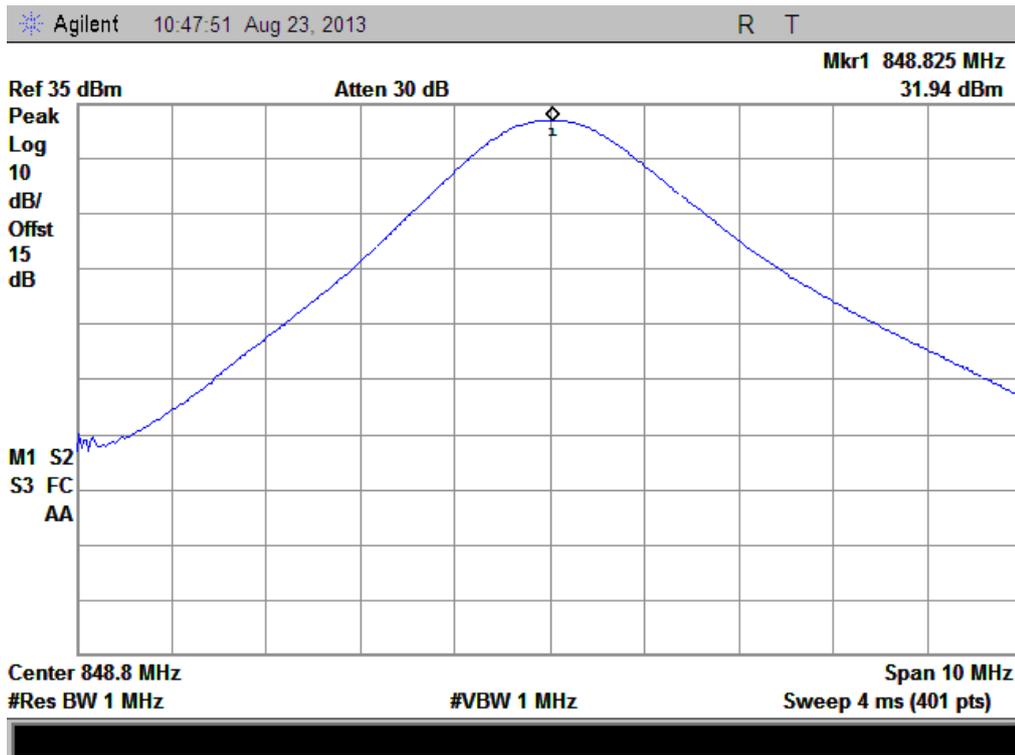
(Plot A3:   GSM 850MHz Channel = 251)
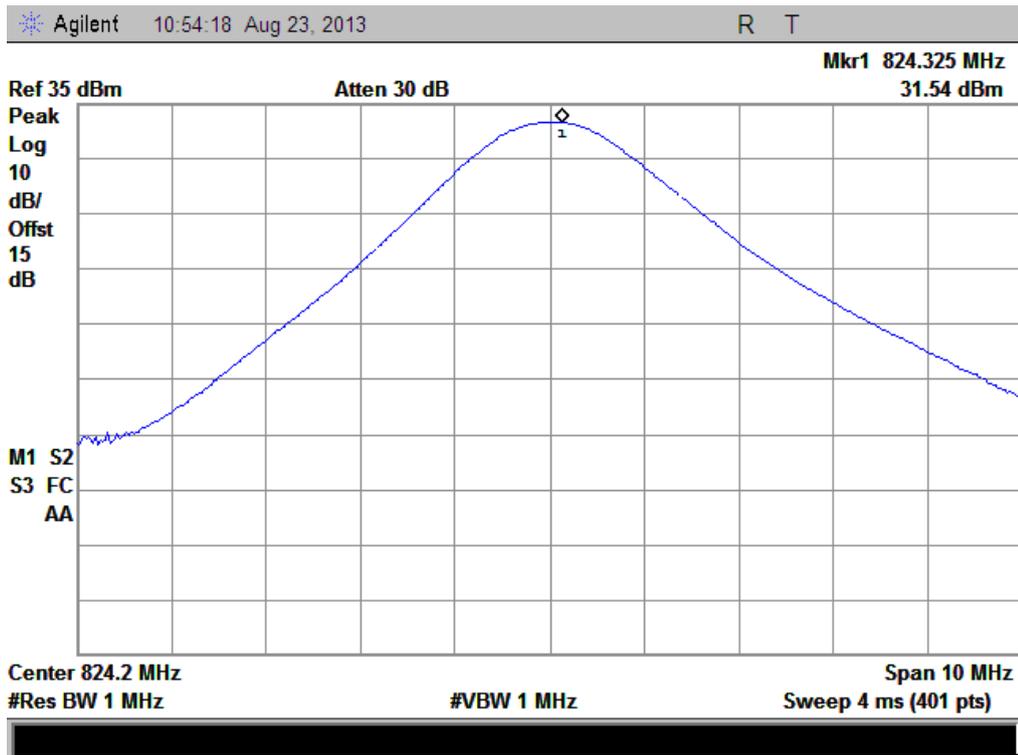

(Plot B1:   GSM 1900MHz Channel = 512)
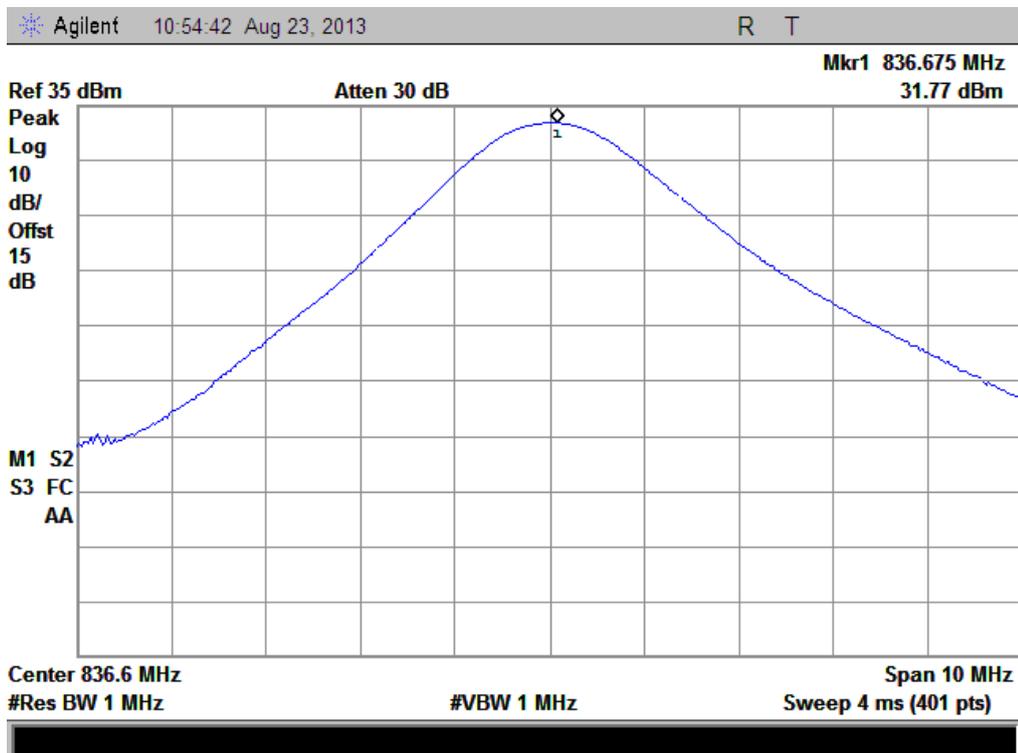
(Plot B2:   GSM 1900MHz Channel = 661)

(Plot B3:   GSM 1900Hz Channel = 810)

(Plot C 1:   GPRS 850MHz Channel = 128)

(Plot C 2:   GPRS 850MHz Channel = 190)

Agilent   10:55:03 Aug 23, 2013   R T

Mkr1 848.725 MHz
Ref 35 dBm   Atten 30 dB   31.77 dBm

Center 848.8 MHz   Span 10 MHz
#Res BW 1 MHz   #VBW 1 MHz   Sweep 4 ms (401 pts)

(Plot C 3:   GPRS 850MHz Channel = 251)

Agilent   10:55:26 Aug 23, 2013   R T

Mkr1 1.850175 GHz
Ref 35 dBm   Atten 30 dB   30.18 dBm

Center 1.85 GHz   Span 10 MHz
#Res BW 1 MHz   #VBW 1 MHz   Sweep 4 ms (401 pts)

(Plot D 1:   GPRS 1900MHz Channel = 512)

(Plot D 2:   GPRS 1900MHz Channel = 661)
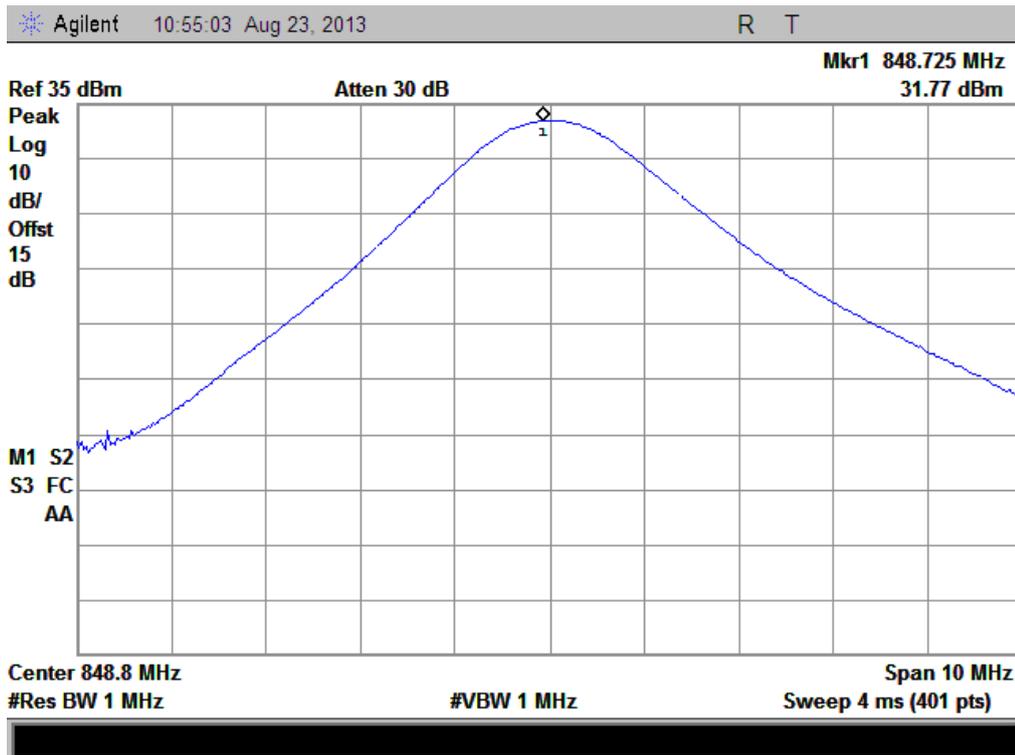

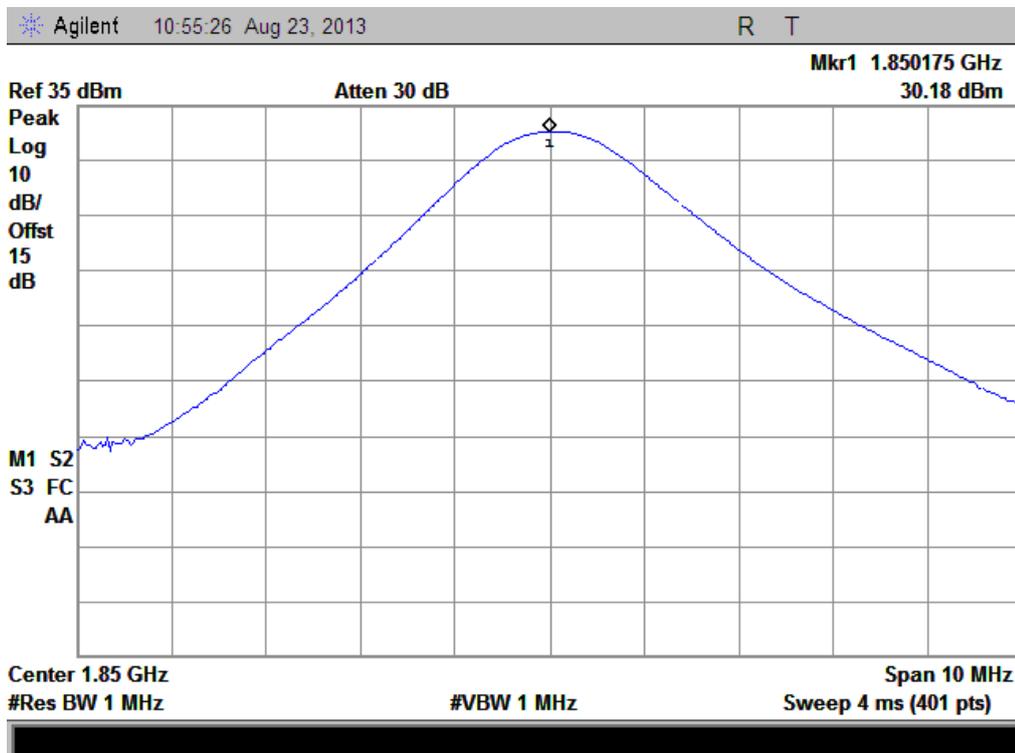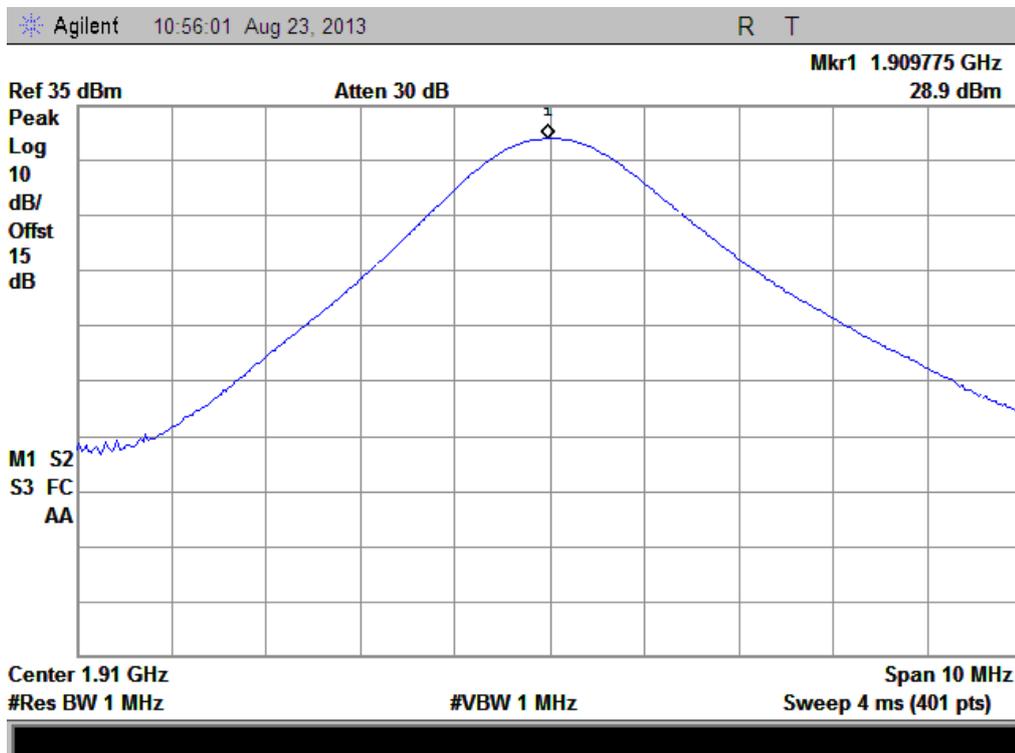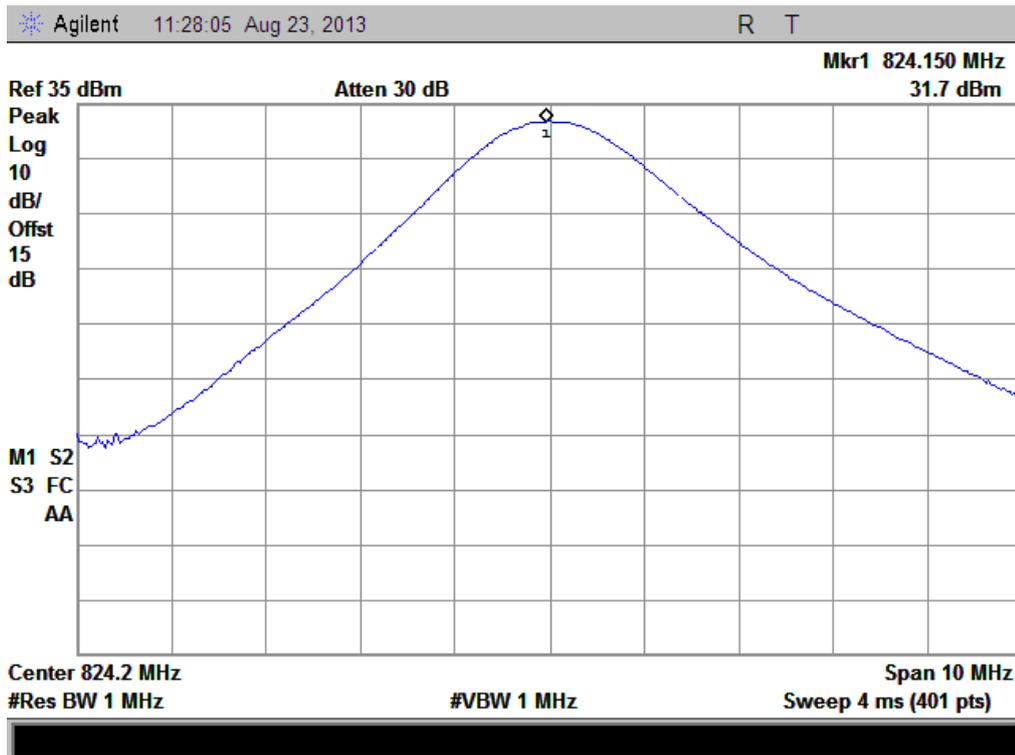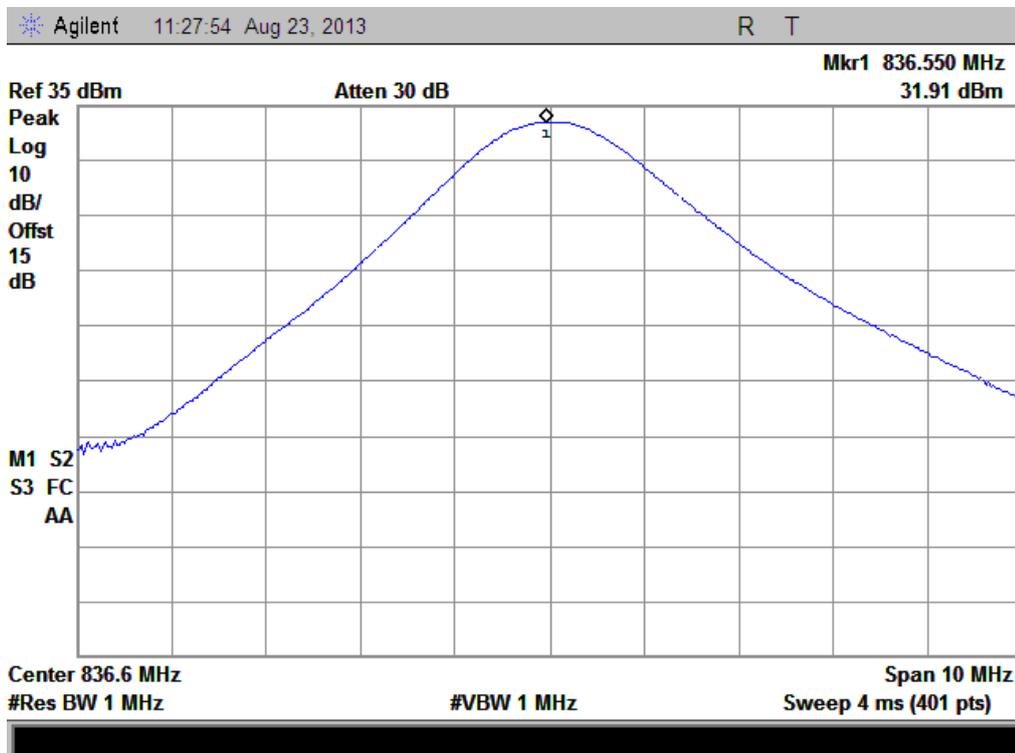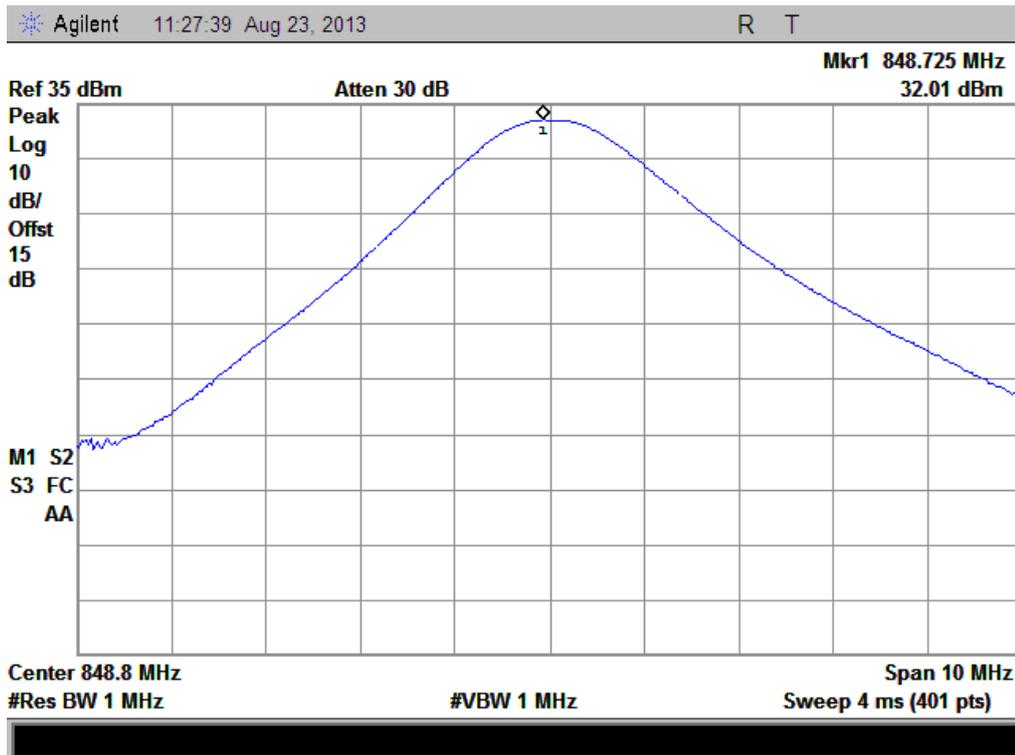(Plot D 3:   GPRS 1900MHz Channel = 810)
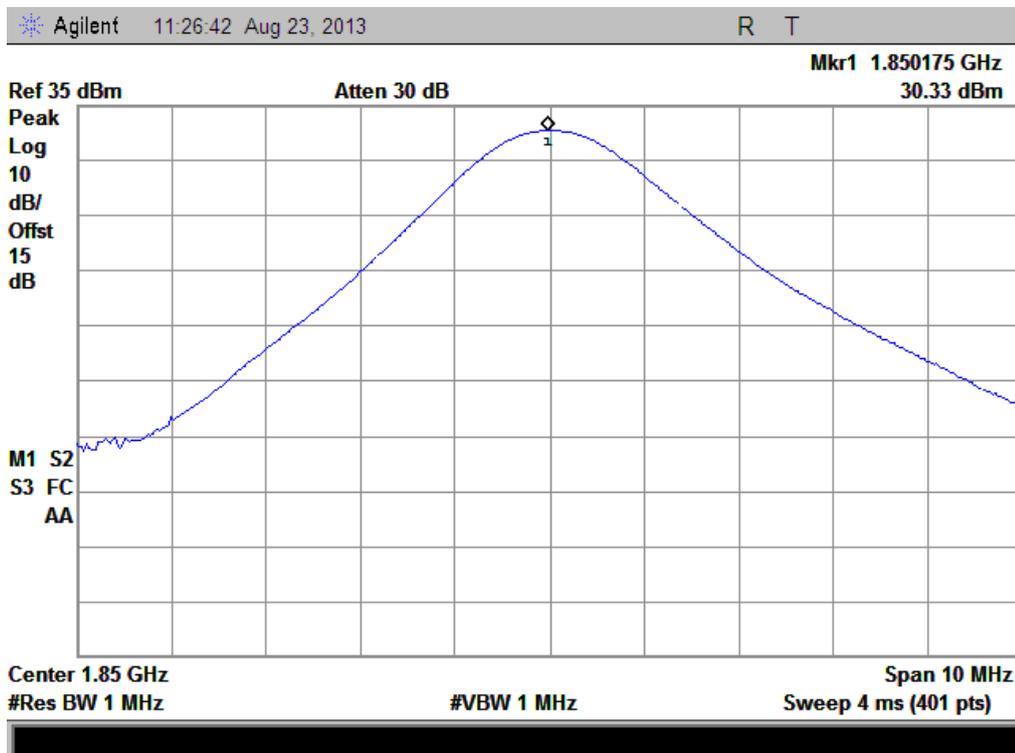
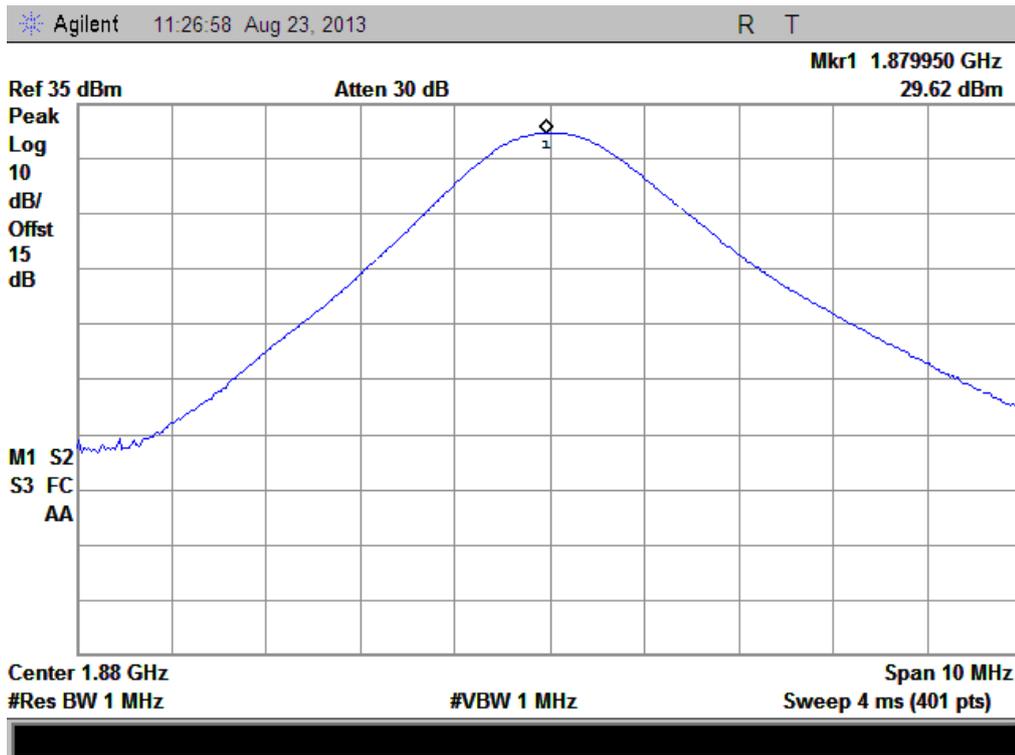(Plot E1:   EGPRS 850MHz Channel = 128)

(Plot E2:   EGPRS 850MHz Channel = 190)
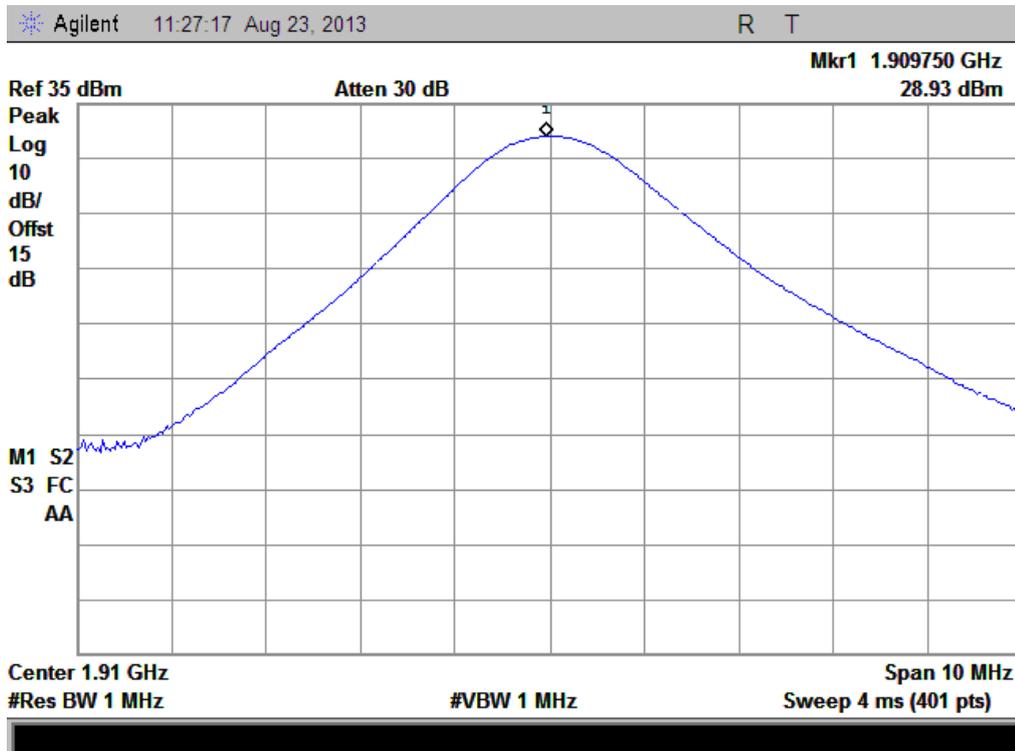
(Plot E3:   EGPRS 850MHz Channel = 251)

(Plot F1:   EGPRS 1900MHz Channel = 512)

(Plot F2:   EGPRS 1900MHz Channel = 661)

(Plot F3:   EGPRS 1900Hz Channel = 810)

2.2 Peak to Average Radio

2.2.1 Definition

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

2.2.2 Test Description

See section 2.1.2 of this report.

2.2.3 Test Verdict

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

Test procedures:

A .For GSM/EGPRS operating mode:

a. Set RBW=1MHz, VBW=1MHz, peak detector in spectrum analyzer.

b. Set EUT in maximum output power, and triggered the bust signal.

c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average radio.

B. For UMTS operating mode:

a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.

b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

1. Test Verdict:

Band	Channel	Frequency (MHz)	Peak to Average radio		Limit dBm	Verdict
			dBm	Refer to Plot		
GSM 1900MHz	512	1850.2	0.02	Plot A1 to A3	13	PASS
	661	1880.0	0.02			PASS
	810	1909.8	0.01			PASS
EGPRS 1900MHz	512	1850.2	0.02	Plot B1 to B3	13	PASS
	661	1880.0	0.02			PASS
	810	1909.8	0.02			PASS
WCDMA 1900MHz	9262	1852.4	3.17	Plot C1 toC3	13	PASS
	9400	1880	3.00			PASS
	9538	1907.6	3.06			PASS
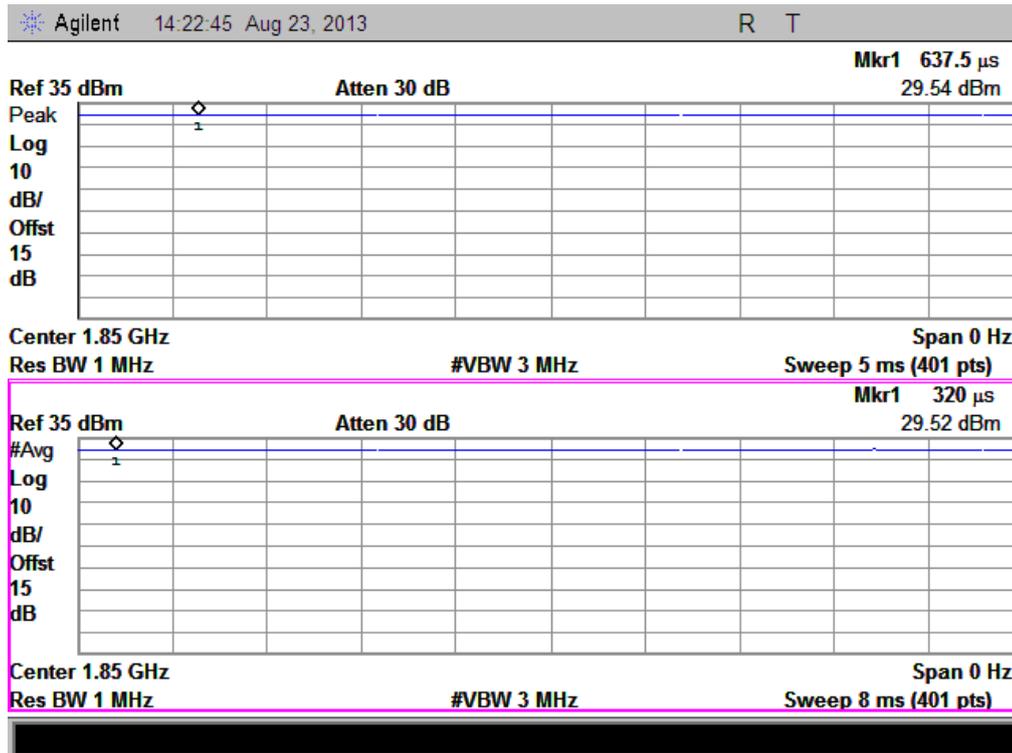
(Plot A1:   GSM 1900 MHz Channel = 512)

(Plot A2:   GSM 1900 MHz Channel = 661)

Agilent   14:25:27 Aug 23, 2013   R   T

Mkr1   3.038 ms
Ref 35 dBm   Atten 30 dB   29.48 dBm
Peak
Log
10
dB/
Offst
15
dB

Center 1.91 GHz   Span 0 Hz
Res BW 1 MHz   #VBW 3 MHz   Sweep 5 ms (401 pts)

Mkr1   4.9 ms
Ref 35 dBm   Atten 30 dB   29.47 dBm
#Avg
Log
10
dB/
Offst
15
dB

Center 1.91 GHz   Span 0 Hz
Res BW 1 MHz   #VBW 3 MHz   Sweep 8 ms (401 pts)

(Plot A3:   GSM 1900MHz Channel = 810)

Agilent   14:31:29 Aug 23, 2013   R   T

Mkr1   2.388 ms
Ref 35 dBm   Atten 30 dB   29.67 dBm
Peak
Log
10
dB/
Offst
15
dB

Center 1.85 GHz   Span 0 Hz
Res BW 1 MHz   #VBW 3 MHz   Sweep 5 ms (401 pts)

Mkr1   7.82 ms
Ref 35 dBm   Atten 30 dB   29.65 dBm
#Avg
Log
10
dB/
Offst
15
dB

Center 1.85 GHz   Span 0 Hz
Res BW 1 MHz   #VBW 3 MHz   Sweep 8 ms (401 pts)

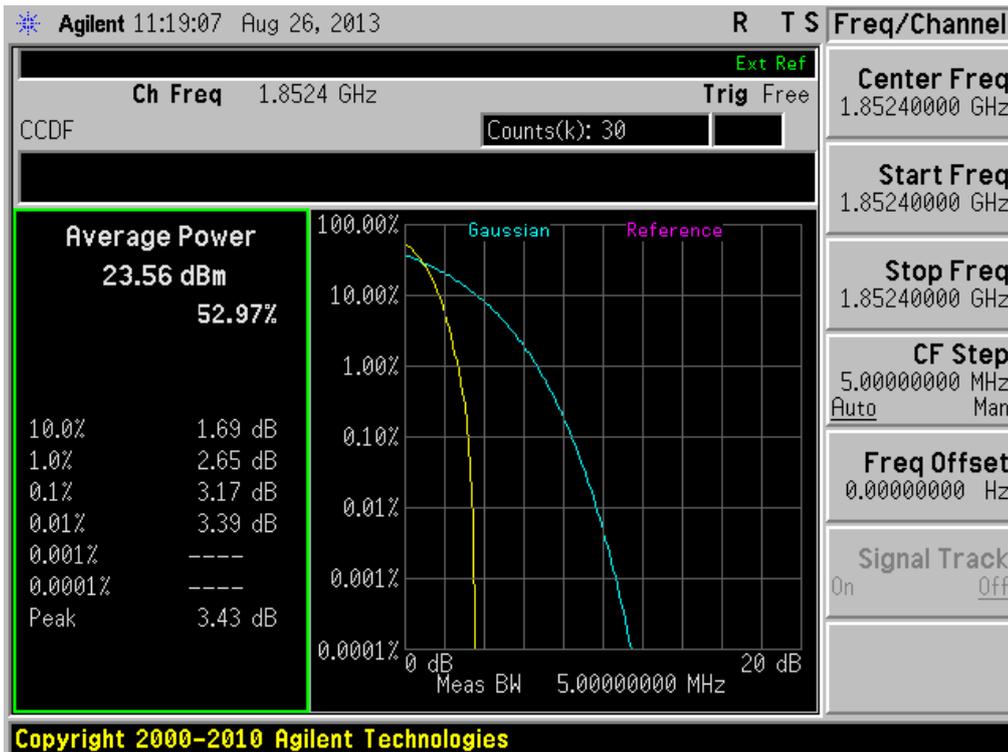(Plot B1:   EGPRS 1900MHz Channel = 512)

(Plot B2:   EGPRS 1900MHz Channel = 661)
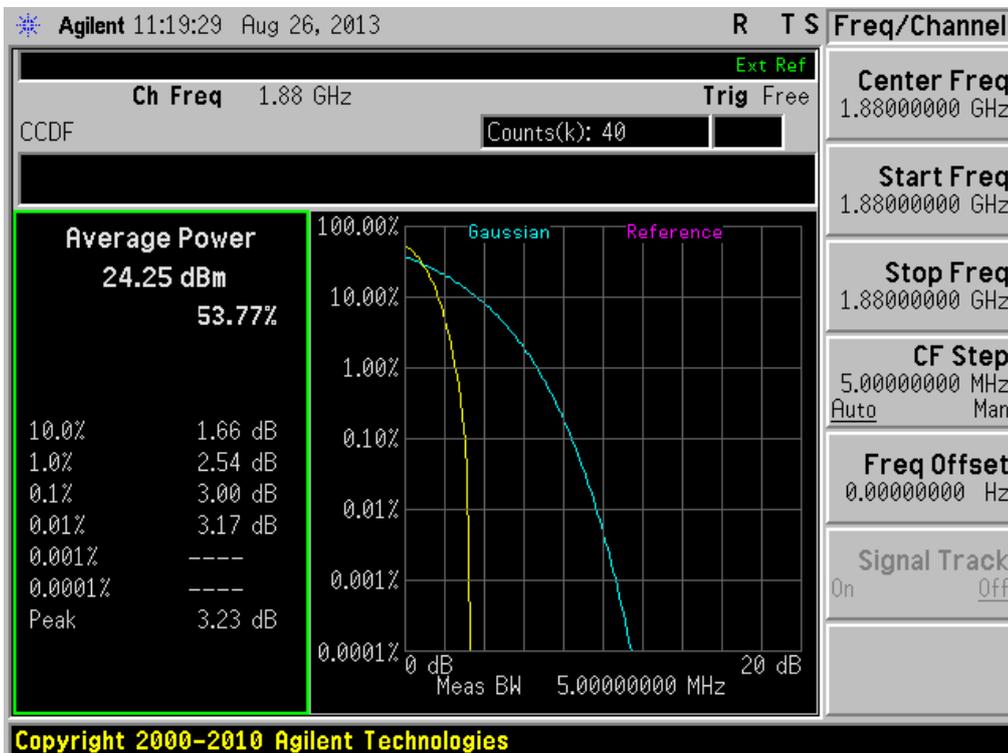

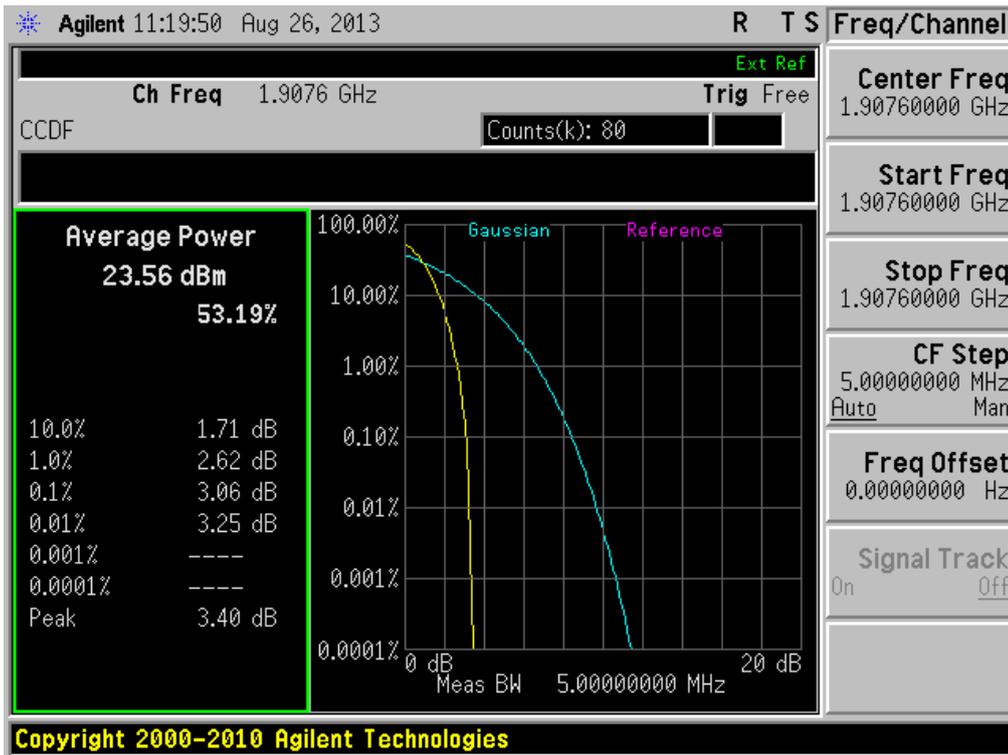(Plot B3:   EGPRS 1900MHz Channel = 810)

(Plot C1:   WCDMA 1900MHz Channel = 9262)

(Plot C2:   WCDMA 1900MHz Channel = 9400)

(Plot C3:   WCDMA 1900MHz Channel = 9538)

2.3　99% Occupied Bandwidth

2.3.1　Definition

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

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

2.3.2　Test Description

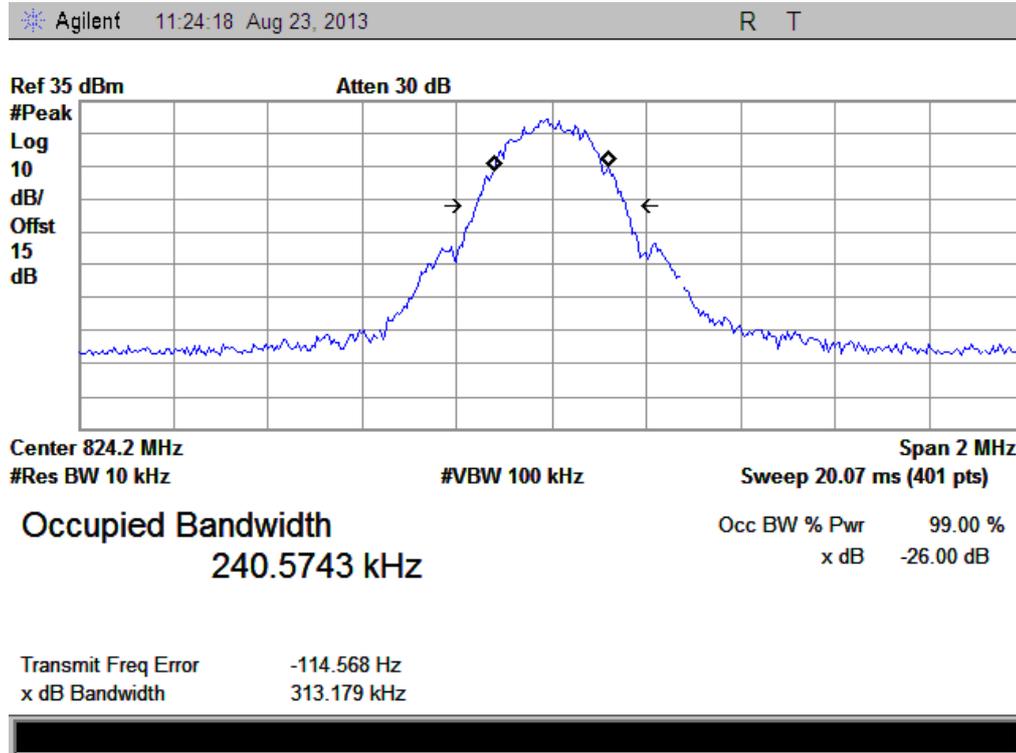See section 2.1.2 of this report.

2.3.3　Test Verdict

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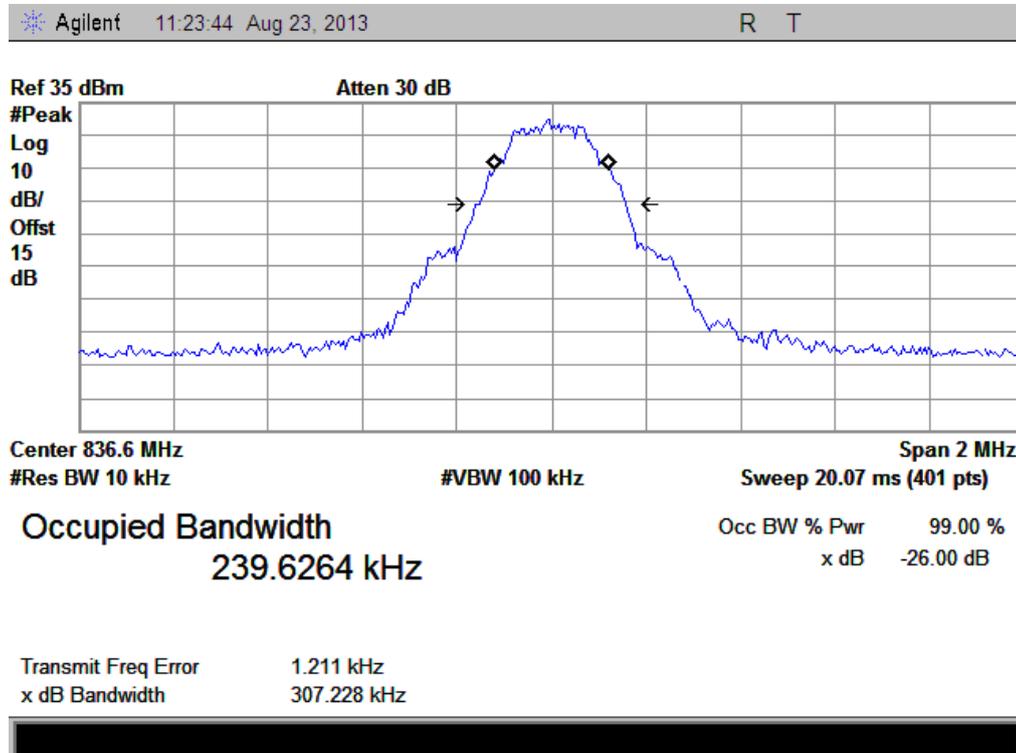
2.　Test Verdict:

Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
EDGE 850MHz	128	824.2	313.179 KHz	240.5743 KHz	Plot A
	190	836.6	307.228 KHz	239.6264 KHz	Plot B
	251	848.8	325.567 KHz	252.5951 KHz	Plot C
EDGE 1900MHz	512	1850.2	322.471 KHz	247.3066KHz	Plot D
	661	1880.0	328.728 KHz	256.9803 KHz	Plot E
	810	1909.8	327.729 KHz	245.1520 KHz	Plot F
WCDMA 850MHz	4132	826.4	4.719MHz	4.1667MHz	Plot G
	4175	835	4.692MHz	4.1697MHz	Plot H
	4233	846.6	4.699MHz	4.1651MHz	Plot I
WCDMA 1900MHz	9262	1852.4	4.695MHz	4.1561MHz	Plot J
	9400	1880	4.689MHz	4.1654MHz	Plot K
	9538	1907.6	4.697MHz	4.1619MHz	Plot L
HSDPA 850MHz	4132	826.4	4.707MHz	4.1794MHz	Plot M
	4175	835	4.725MHz	4.1906MHz	Plot N
	4233	846.6	4.695MHz	4.1799MHz	Plot O
HSDPA 1900MHz	9262	1852.4	4.714MHz	4.1708MHz	Plot P
	9400	1880	4.736MHz	4.1718MHz	Plot Q
	9538	1907.6	4.704MHz	4.1899MHz	Plot R
HSUPA 850MHz	4132	826.4	4.719MHz	4.1879MHz	Plot S
	4175	835	4.727MHz	4.1771MHz	Plot T
	4233	846.6	4.718MHz	4.1837MHz	Plot U
HSUPA 1900MHz	9262	1852.4	4.703MHz	4.1809MHz	Plot V

Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
	9400	1880	4.744MHz	4.1894MHz	Plot W
	9538	1907.6	4.738MHz	4.1746MHz	Plot X
HSPA+ 850MHz	4132	826.4	4.720MHz	4.1639MHz	Plot Y
HSPA+ 850MHz	4175	835	4.708MHz	4.1725MHz	Plot Z
HSPA+ 850MHz	4233	846.6	4.690MHz	4.1839MHz	Plot A1
HSPA+ 1900MHz	9262	1852.4	4.691MHz	4.1600MHz	Plot B1
HSPA+ 1900MHz	9400	1880	4.729MHz	4.1802MHz	Plot C1
HSPA+ 1900MHz	9538	1907.6	4.710MHz	4.1690MHz	Plot D1
GSM 850MHz	128	824.2	316.388 KHz	242.4973 KHz	Plot E1
GSM 850MHz	190	836.6	319.113 KHz	248.7376 KHz	Plot F1
GSM 850MHz	251	848.8	327.960 KHz	244.4436 KHz	Plot G1
GSM 1900MHz	512	1850.2	328.240 KHz	252.7460 KHz	Plot H1
GSM 1900MHz	661	1880.0	318.359 KHz	240.7897 KHz	Plot I1
GSM 1900MHz	810	1909.8	324.103 KHz	245.5824 KHz	Plot J1
GPRS 850MHz	128	824.2	322.605KHz	244.4814 KHz	Plot W1
GPRS 850MHz	190	836.6	320.102 KHz	243.4897 KHz	Plot X1
GPRS 850MHz	251	848.8	323.593 KHz	251.7987 KHz	Plot Y1
GPRS 1900MHz	512	1850.2	321.438 KHz	244.6203 KHz	Plot Z1
GPRS 1900MHz	661	1880.0	316.134 KHz	246.0322 KHz	Plot A2
GPRS 1900MHz	810	1909.8	319.313 KHz	242.2473 KHz	Plot B2

3. Test Plots:

Agilent   11:24:18 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

Center 824.2 MHz   Span 2 MHz
#Res BW 10 kHz   #VBW 100 kHz   Sweep 20.07 ms (401 pts)

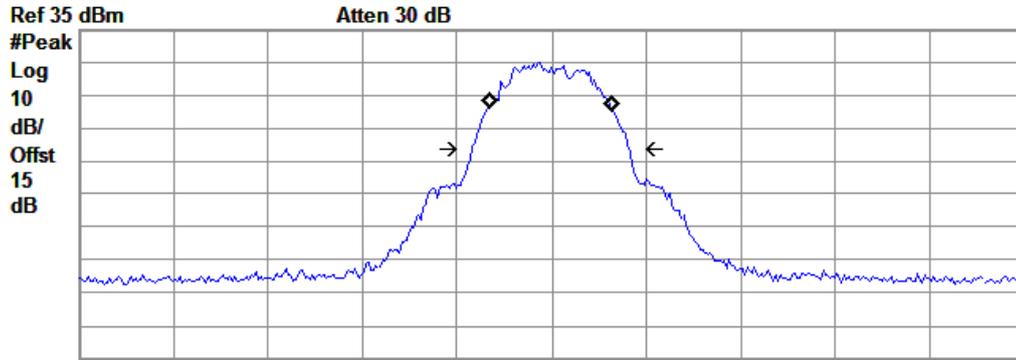Occupied Bandwidth   Occ BW % Pwr   99.00 %
        240.5743 kHz   x dB   -26.00 dB

Transmit Freq Error   -114.568 Hz
x dB Bandwidth   313.179 kHz

(Plot A: EGPRS 850MHz Channel = 128)

Agilent   11:23:44 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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

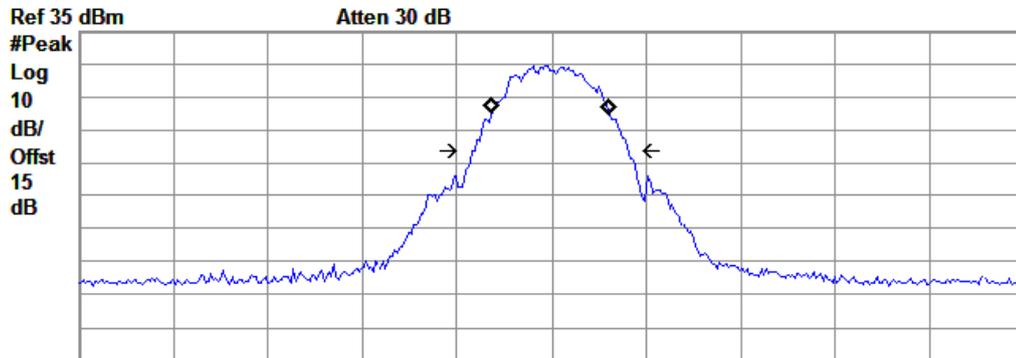Occupied Bandwidth   Occ BW % Pwr   99.00 %
        239.6264 kHz   x dB   -26.00 dB

Transmit Freq Error   1.211 kHz
x dB Bandwidth   307.228 kHz

(Plot B: EGPRS 850MHz Channel = 190)

(Plot C: EGPRS 850MHz Channel = 251)
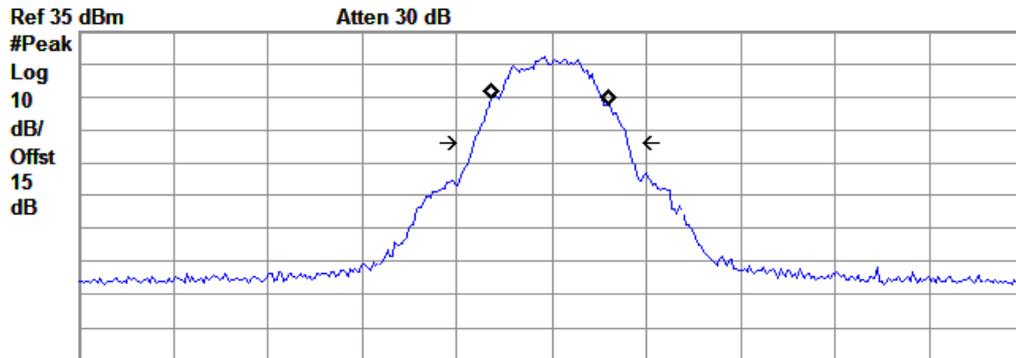
(Plot D: EGPRS1900MHz Channel = 512)

Occupied Bandwidth
256.9803 kHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	-2.759 kHz
x dB Bandwidth	328.728 kHz

(Plot E: EGPRS1900MHz Channel = 661)

Occupied Bandwidth
245.1520 kHz

Occ BW % Pwr	99.00 %
x dB	-26.00 dB

Transmit Freq Error	-989.054 Hz
x dB Bandwidth	327.729 kHz

(Plot F: EGPRS 1900MHz Channel = 810)

Agilent   17:19:37 Aug 21, 2013   R   T
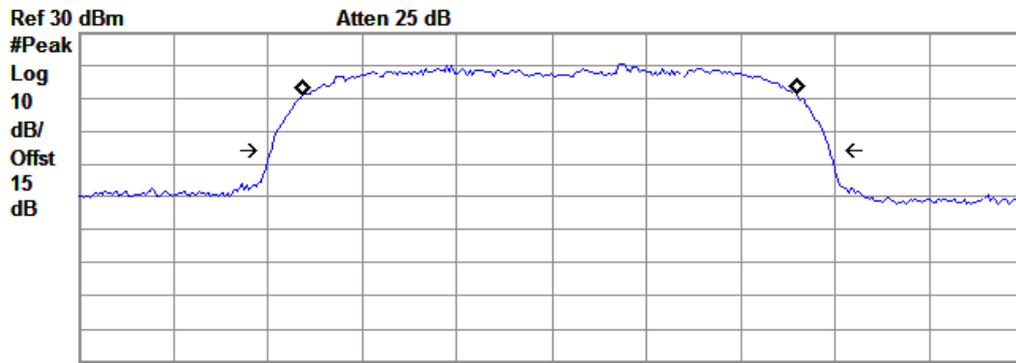
Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

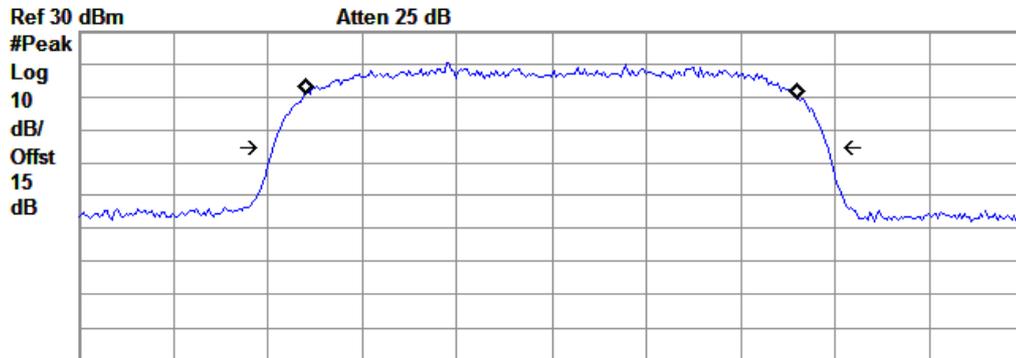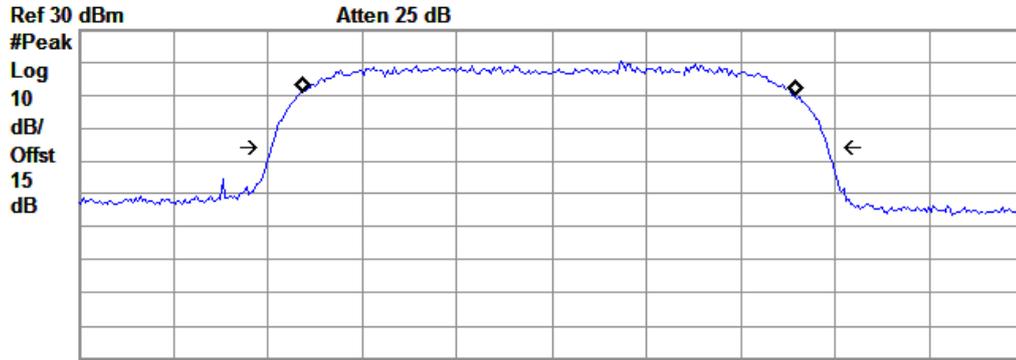Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1667 MHz   x dB   -26.00 dB

Transmit Freq Error   -8.181 kHz
x dB Bandwidth   4.719 MHz

(Plot G: WCDMA 850MHz Channel = 4132)

Agilent   17:20:28 Aug 21, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

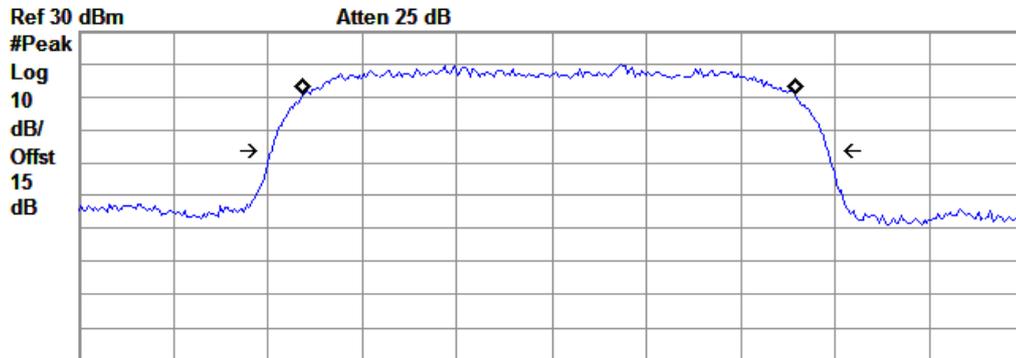Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1697 MHz   x dB   -26.00 dB

Transmit Freq Error   -1.330 kHz
x dB Bandwidth   4.692 MHz

(Plot H: WCDMA 850 MHz Channel = 4175)

(Plot I:　WCDMA 850MHz Channel = 4233)

(Plot J:　WCDMA 1900MHz Channel = 9262)

Ref 30 dBm | Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

Center 1.88 GHz | Span 8 MHz
#Res BW 100 kHz | #VBW 300 kHz | Sweep 5 ms (401 pts)
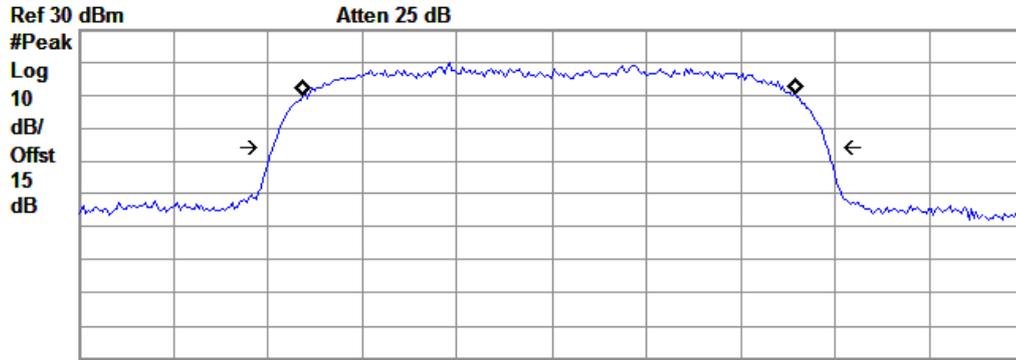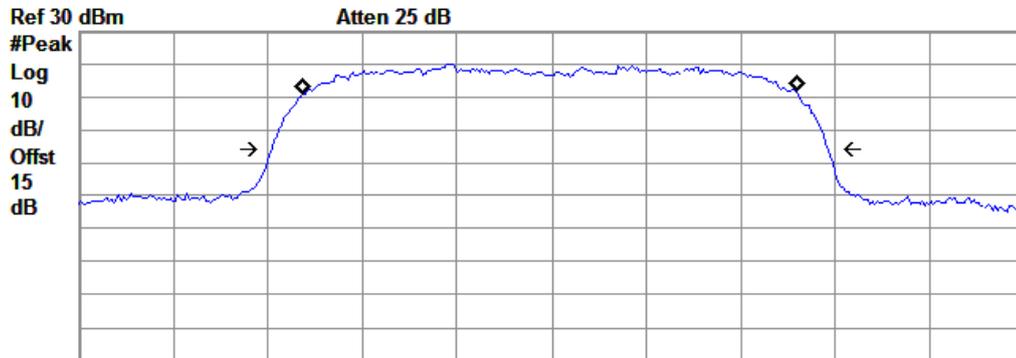
Occupied Bandwidth
4.1654 MHz

Occ BW % Pwr   99.00 %
x dB   -26.00 dB

Transmit Freq Error   -13.519 kHz
x dB Bandwidth   4.689 MHz

(Plot K: WCDMA 1900 MHz Channel = 9400)

Agilent   17:27:03 Aug 21, 2013   R   T

Ref 30 dBm | Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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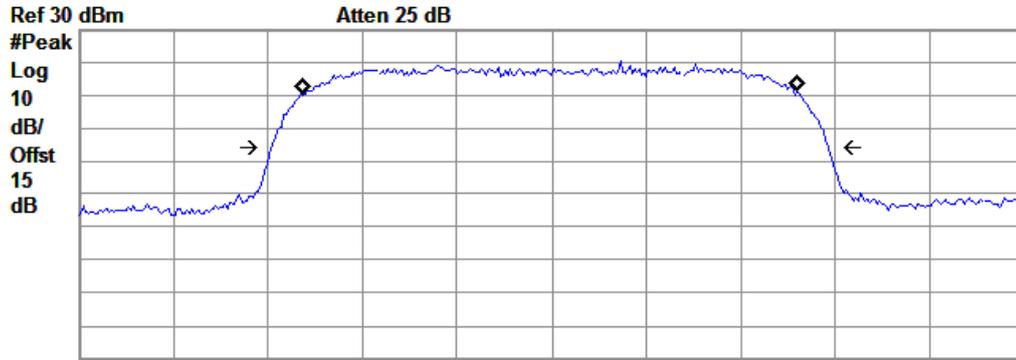#Res BW 100 kHz | #VBW 300 kHz | Sweep 5 ms (401 pts)

Occupied Bandwidth
4.1619 MHz

Occ BW % Pwr   99.00 %
x dB   -26.00 dB

Transmit Freq Error   -9.211 kHz
x dB Bandwidth   4.697 MHz

(Plot L: WCDMA1900MHz Channel = 9538)

※ Agilent   11:49:01 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
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 %
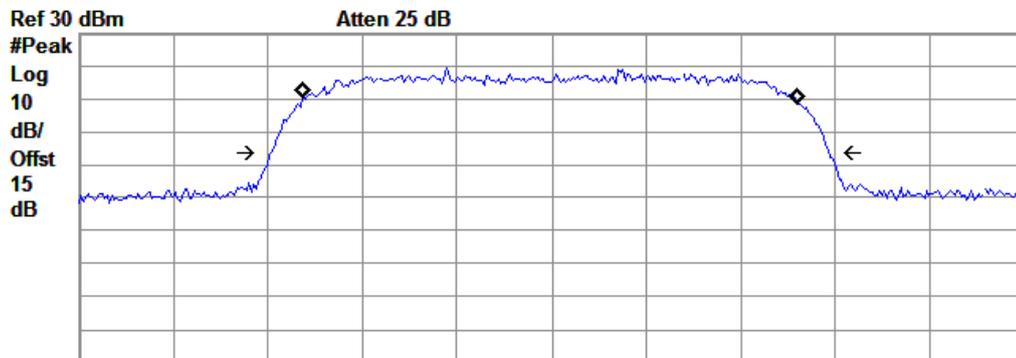   4.1794 MHz   x dB   -26.00 dB

Transmit Freq Error   -8.707 kHz
x dB Bandwidth   4.707 MHz

(Plot M: HSDPA 850MHz Channel = 4132)

※ Agilent   11:49:25 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
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 %
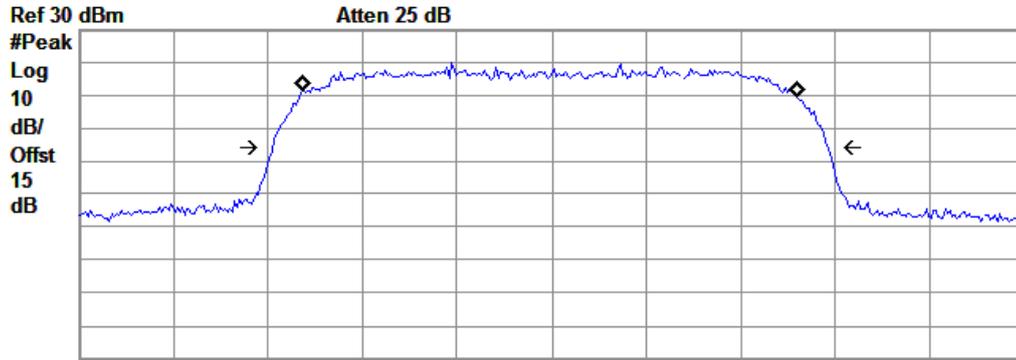   4.1906 MHz   x dB   -26.00 dB

Transmit Freq Error   -6.330 kHz
x dB Bandwidth   4.725 MHz

(Plot N: HSDPA850 MHz Channel = 4175)

Agilent   11:49:46 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

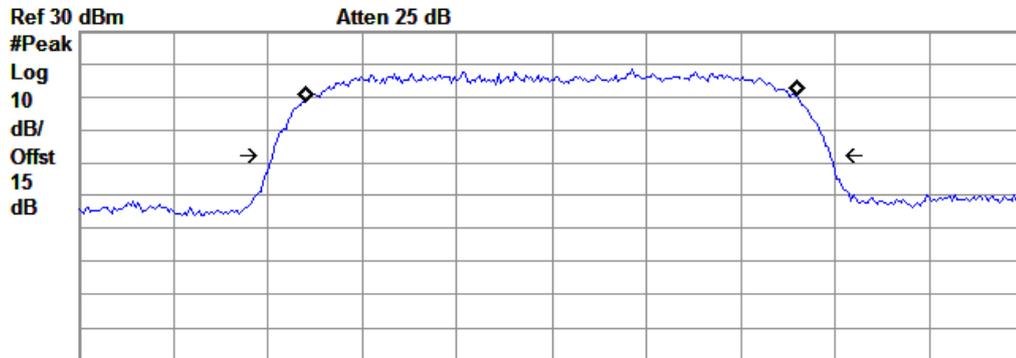Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1799 MHz   x dB   -26.00 dB

Transmit Freq Error   -13.415 kHz
x dB Bandwidth   4.695 MHz

(Plot O: HSDPA 850 MHz Channel = 4233)

Agilent   11:50:12 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

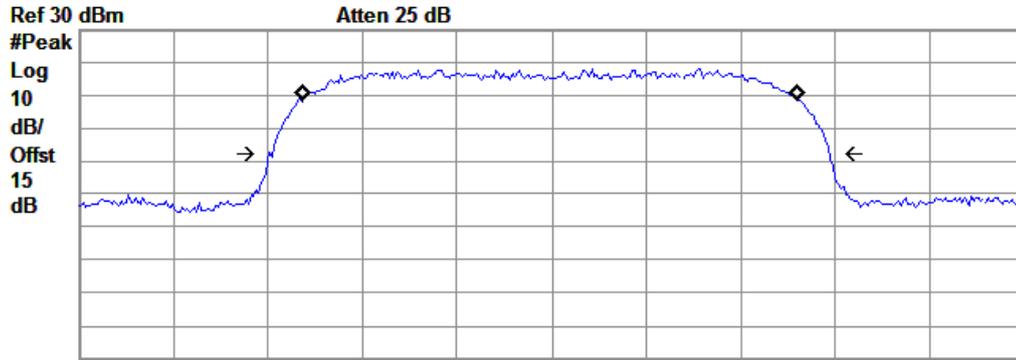Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1708 MHz   x dB   -26.00 dB

Transmit Freq Error   -437.565 Hz
x dB Bandwidth   4.714 MHz

(Plot P: HSDPA1900 MHz Channel = 9262)

(Plot Q: HSDPA1900 MHz Channel = 9400)

(Plot R: HSDPA 1900 MHz Channel = 9538)

Agilent   12:09:25 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

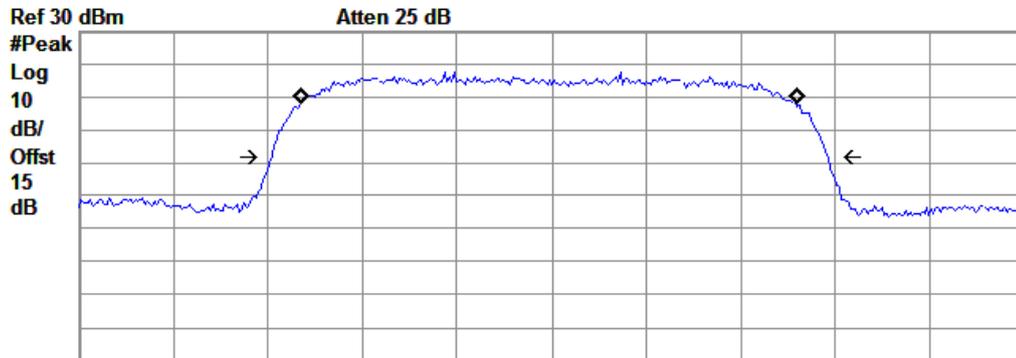Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1879 MHz   x dB   -26.00 dB

Transmit Freq Error   -10.089 kHz
x dB Bandwidth   4.719 MHz

(Plot S: HSUPA850 MHz Channel = 4132)

Agilent   12:09:02 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

Center 835 MHz   Span 8 MHz
#Res BW 100 kHz   #VBW 300 kHz   Sweep 5 ms (401 pts)
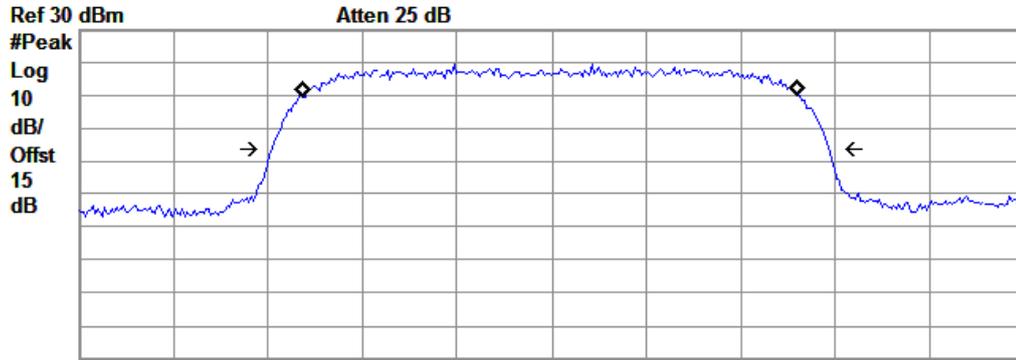
Occupied Bandwidth   Occ BW % Pwr   99.00 %
        4.1771 MHz   x dB   -26.00 dB

Transmit Freq Error   1.656 kHz
x dB Bandwidth   4.727 MHz

(Plot T: HSUPA850 MHz Channel = 4175)

Ref 30 dBm   Atten 25 dB

Center 846.6 MHz   Span 8 MHz
#Res BW 100 kHz   #VBW 300 kHz   Sweep 5 ms (401 pts)
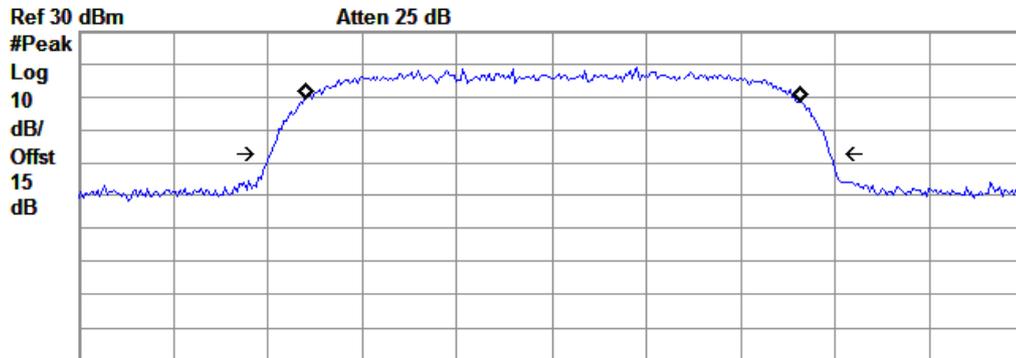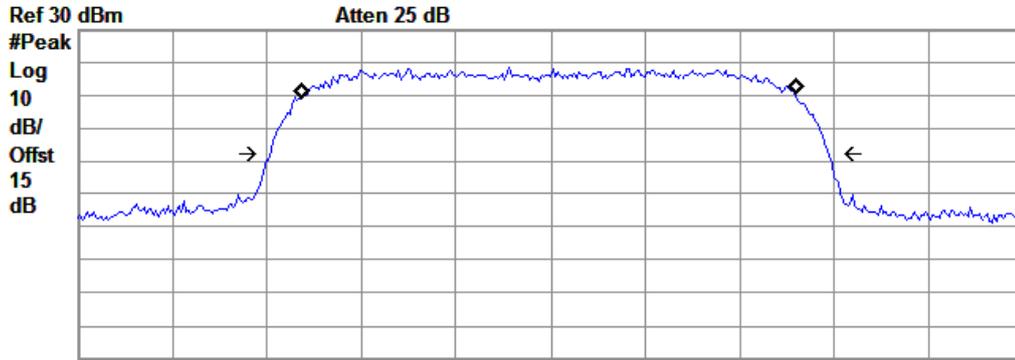
Occupied Bandwidth   Occ BW % Pwr   99.00 %
     4.1837 MHz   x dB   -26.00 dB

Transmit Freq Error   -14.357 kHz
x dB Bandwidth   4.718 MHz

(Plot U: HSUPA850 MHz Channel = 4233)

Ref 30 dBm   Atten 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 %
     4.1809 MHz   x dB   -26.00 dB

Transmit Freq Error   7.040 kHz
x dB Bandwidth   4.703 MHz

(Plot V: HSUPA1900 MHz Channel = 9262)

✳ Agilent   12:06:14 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

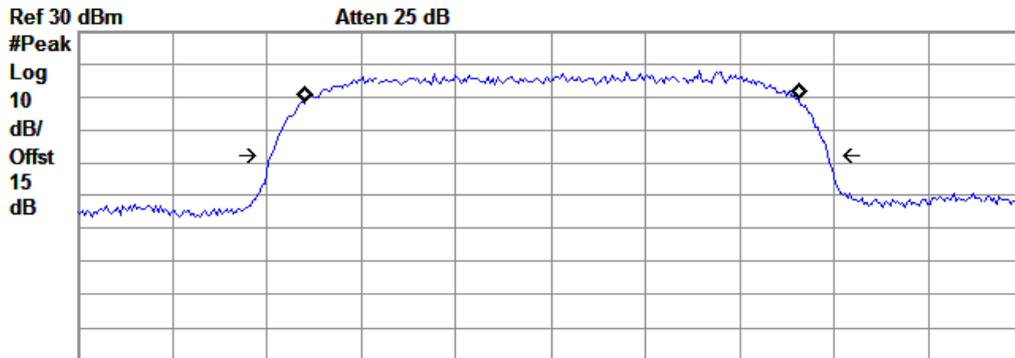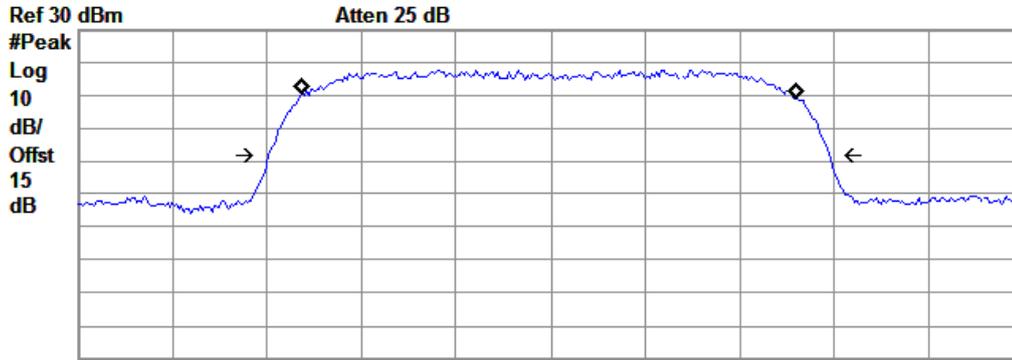Occupied Bandwidth   Occ BW % Pwr   99.00 %
     4.1894 MHz   x dB   -26.00 dB

Transmit Freq Error   -7.340 kHz
x dB Bandwidth   4.744 MHz

(Plot W: HSUPA1900 MHz Channel = 9400)

✳ Agilent   12:05:42 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

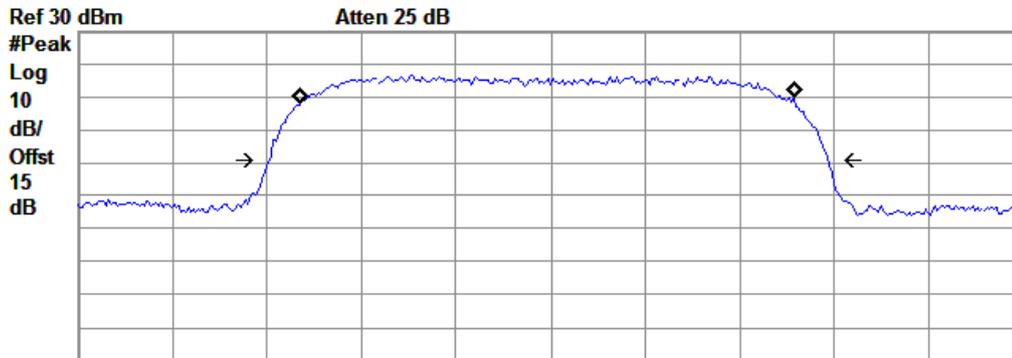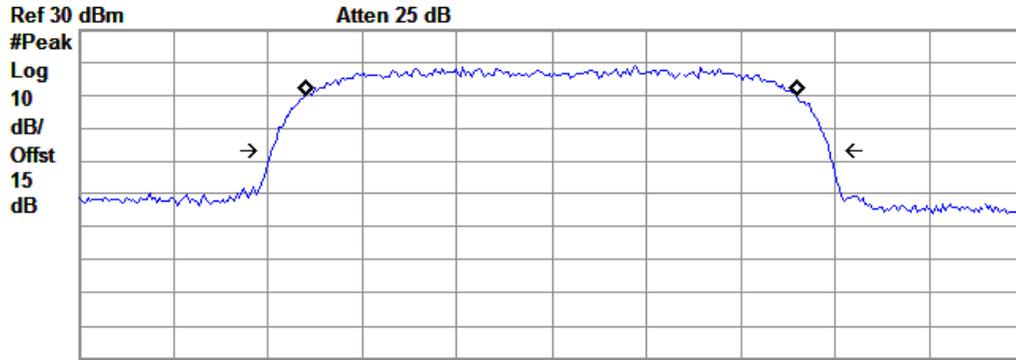Occupied Bandwidth   Occ BW % Pwr   99.00 %
     4.1746 MHz   x dB   -26.00 dB

Transmit Freq Error   -27.323 kHz
x dB Bandwidth   4.728 MHz

(Plot X: HSUPA1900 MHz Channel = 9538)

Agilent   14:13:17 Aug 26, 2013   R   T

Ref 30 dBm   Atten 25 dB

#Peak
Log
10
dB/
Offst
15
dB

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

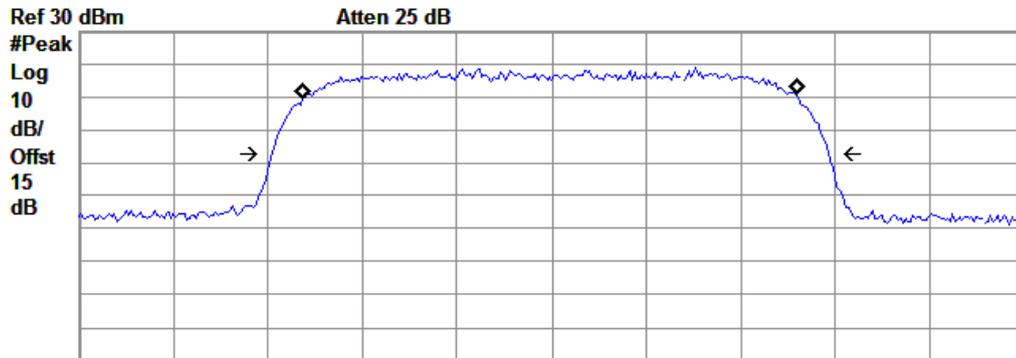Occupied Bandwidth   Occ BW % Pwr   99.00 %
    4.1639 MHz   x dB   -26.00 dB

Transmit Freq Error   -2.715 kHz
x dB Bandwidth   4.720 MHz

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

Agilent   14:13:45 Aug 26, 2013   R   T

Ref 30 dBm   Atten 25 dB

#Peak
Log
10
dB/
Offst
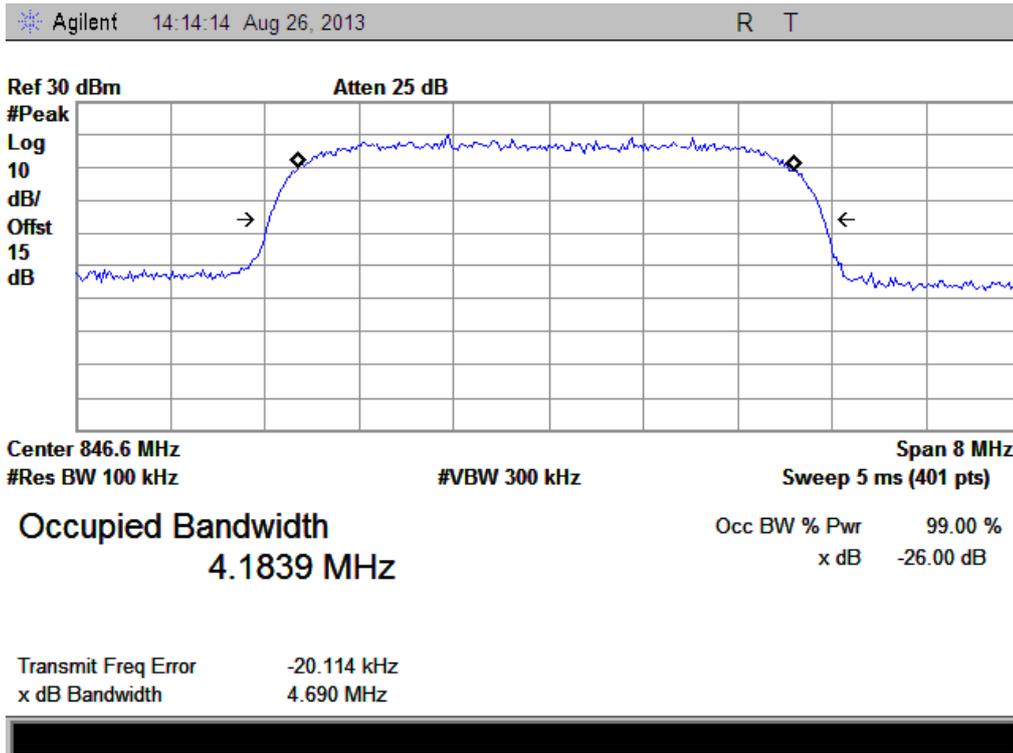15
dB

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

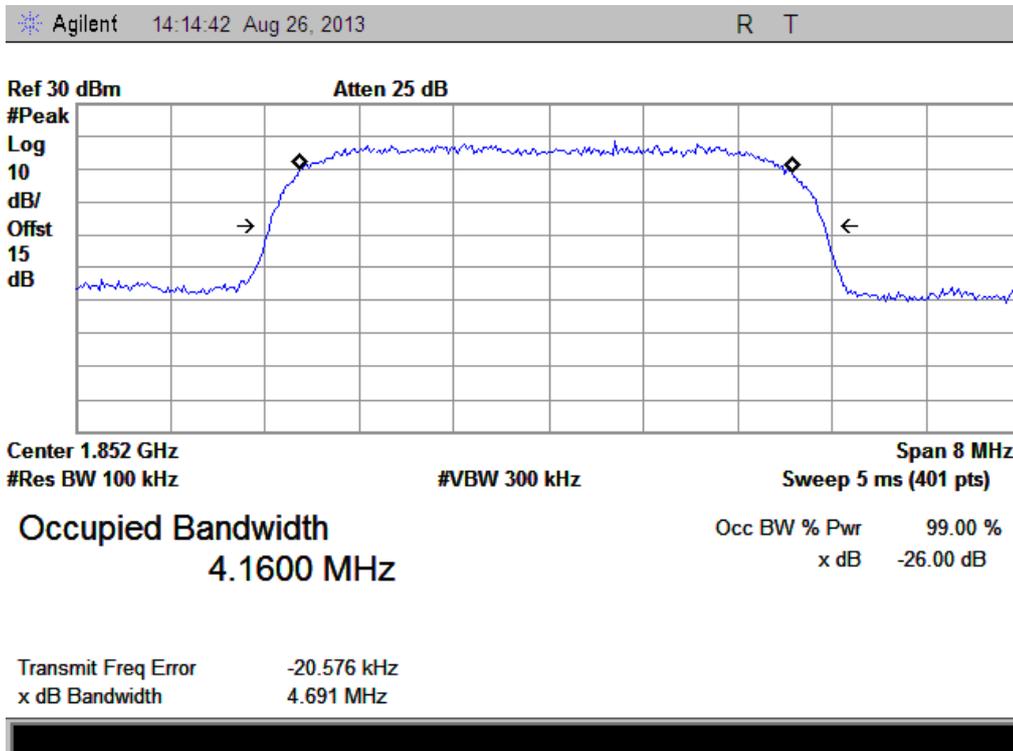Occupied Bandwidth   Occ BW % Pwr   99.00 %
    4.1725 MHz   x dB   -26.00 dB

Transmit Freq Error   -8.034 kHz
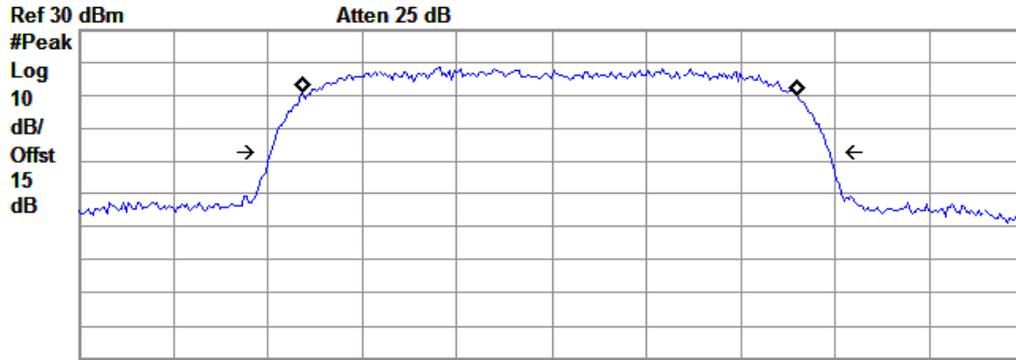x dB Bandwidth   4.708 MHz

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

❄ Agilent	14:14:14 Aug 26, 2013	R T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
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 %
       4.1839 MHz   x dB   -26.00 dB

Transmit Freq Error   -20.114 kHz
x dB Bandwidth   4.690 MHz

(Plot A1:   HSPA+ 850 MHz Channel = 4233)

❄ Agilent	14:14:42 Aug 26, 2013	R T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
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 %
       4.1600 MHz   x dB   -26.00 dB

Transmit Freq Error   -20.576 kHz
x dB Bandwidth   4.691 MHz

(Plot B1:   HSPA+1900 MHz Channel = 9262)

Agilent   14:15:07 Aug 26, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

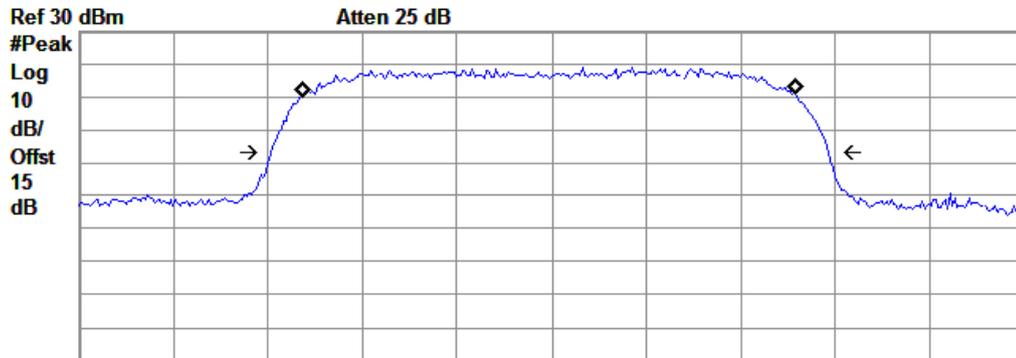Occupied Bandwidth   Occ BW % Pwr   99.00 %
       4.1802 MHz   x dB   -26.00 dB

Transmit Freq Error   -13.239 kHz
x dB Bandwidth   4.729 MHz

(Plot C1:   HSPA+1900 MHz Channel = 9400)

Agilent   14:15:36 Aug 26, 2013   R   T

Ref 30 dBm   Atten 25 dB
#Peak
Log
10
dB/
Offst
15
dB

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

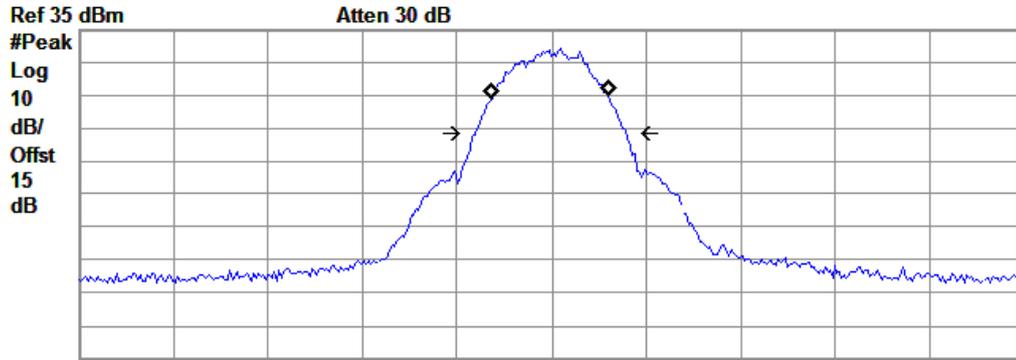Occupied Bandwidth   Occ BW % Pwr   99.00 %
       4.1690 MHz   x dB   -26.00 dB

Transmit Freq Error   -16.682 kHz
x dB Bandwidth   4.710 MHz

(Plot D1:   HSPA+1900 MHz Channel = 9538)

☀ Agilent   10:43:23 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

Center 824.2 MHz   Span 2 MHz
#Res BW 10 kHz   #VBW 100 kHz   Sweep 20.07 ms (401 pts)

Occupied Bandwidth   Occ BW % Pwr   99.00 %
         242.4973 kHz   x dB   -26.00 dB

Transmit Freq Error   -2.304 kHz
x dB Bandwidth   316.388 kHz

(Plot E1:   GSM 850MHz Channel = 128)

☀ Agilent   10:43:57 Aug 23, 2013   R   T
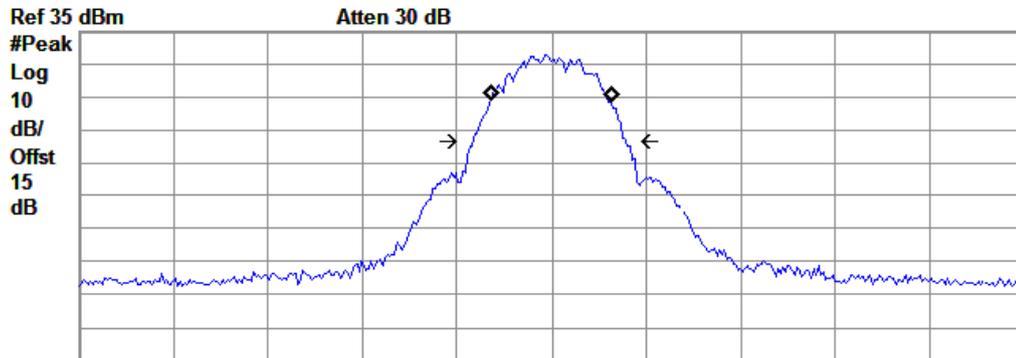
Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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

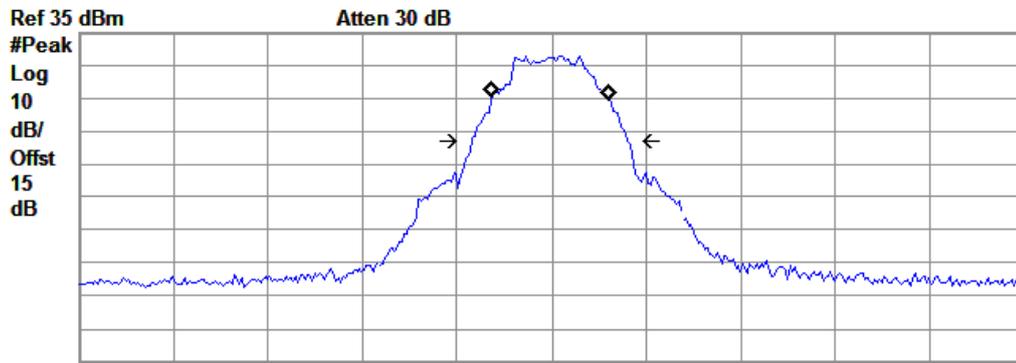Occupied Bandwidth   Occ BW % Pwr   99.00 %
   248.7376 kHz   x dB   -26.00 dB

Transmit Freq Error   -1.717 kHz
x dB Bandwidth   319.113 kHz

(Plot F1:   GSM 850MHz Channel = 190)

※ Agilent   10:44:35 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
      244.4435 kHz   x dB   -26.00 dB

Transmit Freq Error   -589.212 Hz
x dB Bandwidth   327.960 kHz

(Plot G1:   GSM 850MHz Channel = 251)

※ Agilent   10:45:09 Aug 23, 2013   R   T
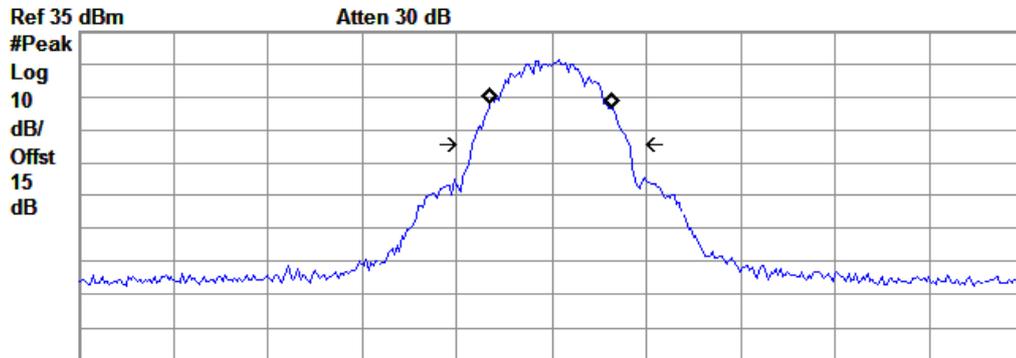
Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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

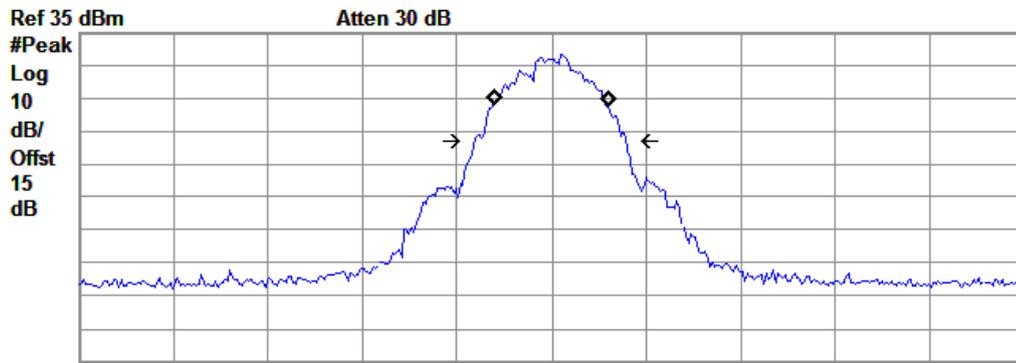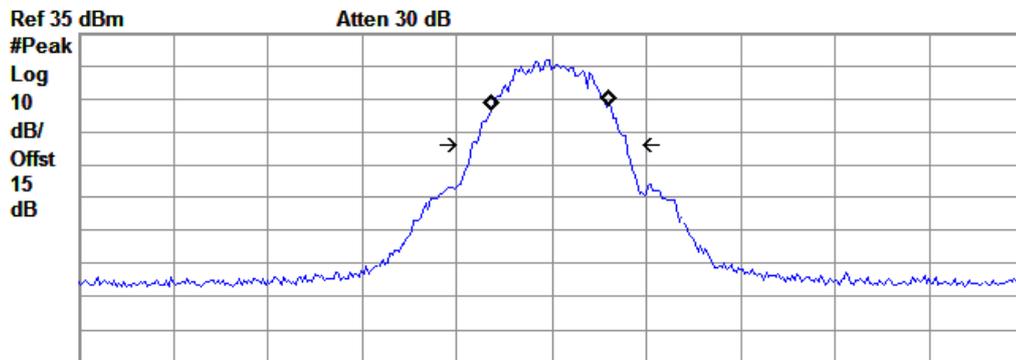Occupied Bandwidth   Occ BW % Pwr   99.00 %
      252.7460 kHz   x dB   -26.00 dB

Transmit Freq Error   -1.449 kHz
x dB Bandwidth   328.240 kHz

(Plot H1:   GSM 1900MHz Channel = 512)

Agilent   10:45:39 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
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 %
       240.7897 kHz   x dB   -26.00 dB

Transmit Freq Error   -1.638 kHz
x dB Bandwidth   318.359 kHz

(Plot I1: GSM 1900MHz Channel = 661)

Agilent   10:46:15 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
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 %
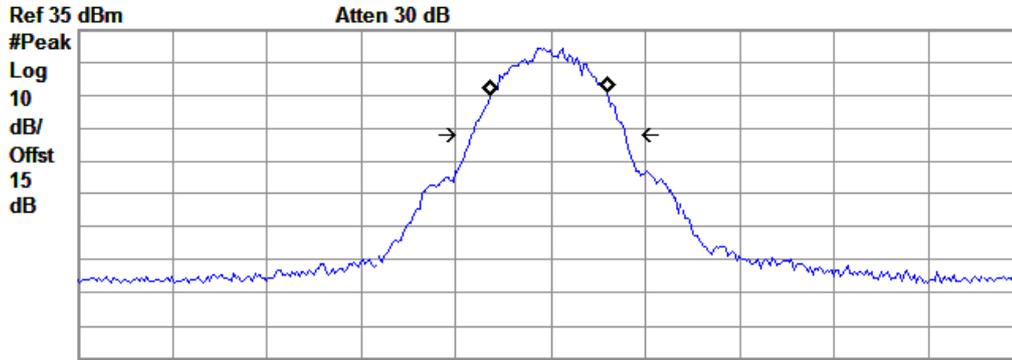   245.5824 kHz   x dB   -26.00 dB

Transmit Freq Error   -996.026 Hz
x dB Bandwidth   324.103 kHz

(Plot J1: GSM 1900MHz Channel = 810)

Agilent   10:59:14 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

Center 824.2 MHz   Span 2 MHz
#Res BW 10 kHz   #VBW 100 kHz   Sweep 20.07 ms (401 pts)

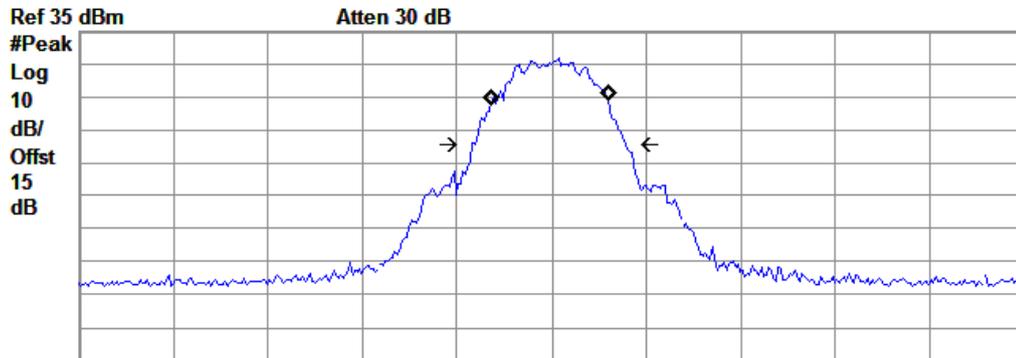Occupied Bandwidth   Occ BW % Pwr   99.00 %
      244.4814 kHz   x dB   -26.00 dB

Transmit Freq Error   -2.180 kHz
x dB Bandwidth   322.605 kHz

(Plot W1:   GPRS 850MHz Channel = 128)

Agilent   10:59:39 Aug 23, 2013   R   T
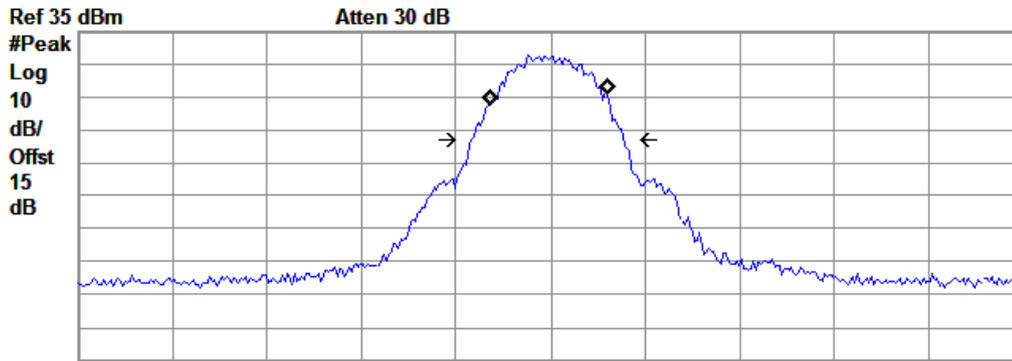
Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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

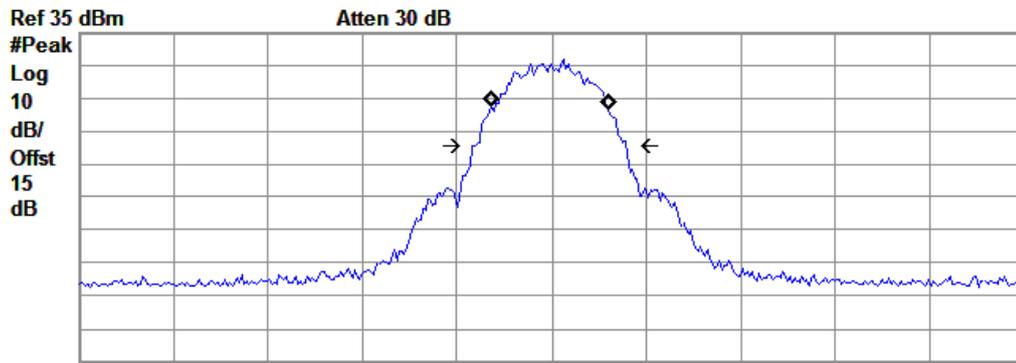Occupied Bandwidth   Occ BW % Pwr   99.00 %
      243.4897 kHz   x dB   -26.00 dB

Transmit Freq Error   -2.821 kHz
x dB Bandwidth   320.102 kHz

(Plot X1:   GPRS 850MHz Channel = 190)

Agilent   11:00:13 Aug 23, 2013   R   T
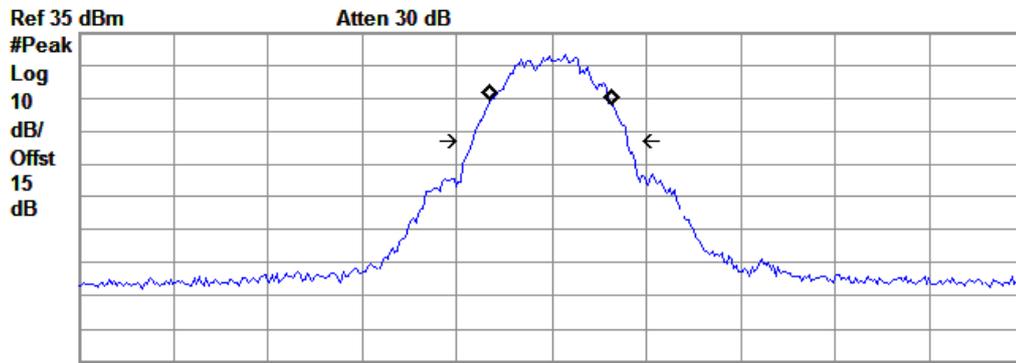
Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
        251.7987 kHz   x dB   -26.00 dB

Transmit Freq Error   -1.720 kHz
x dB Bandwidth   323.593 kHz

(PlotY1:GPRS850MHz Channel = 251)

Agilent   11:00:45 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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

Occupied Bandwidth   Occ BW % Pwr   99.00 %
        244.6203 kHz   x dB   -26.00 dB

Transmit Freq Error   -3.838 kHz
x dB Bandwidth   321.438 kHz

(Plot Z1:   GPRS 1900MHz Channel = 512)

※ Agilent   11:01:17 Aug 23, 2013   R   T

Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
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 %
        246.0322 kHz   x dB   -26.00 dB

Transmit Freq Error   -3.336 kHz
x dB Bandwidth   316.134 kHz

(Plot A2:   GPRS 1900MHz Channel = 661)

※ Agilent   11:01:49 Aug 23, 2013   R   T
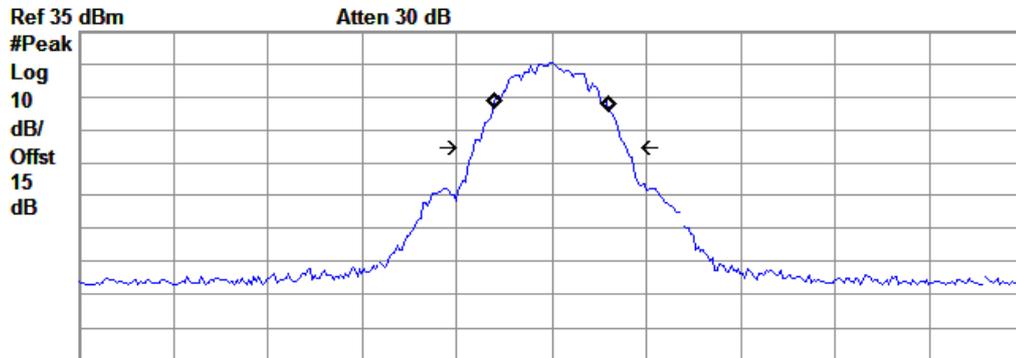
Ref 35 dBm   Atten 30 dB
#Peak
Log
10
dB/
Offst
15
dB

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 %
        242.2473 kHz   x dB   -26.00 dB

Transmit Freq Error   41.089 Hz
x dB Bandwidth   319.313 kHz

(Plot B2:   GPRS 1900MHz Channel = 810)

2.4 Frequency Stability

2.4.1 Requirement

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

(a) The temperature is varied from -30°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.

2.4.2 Test Description

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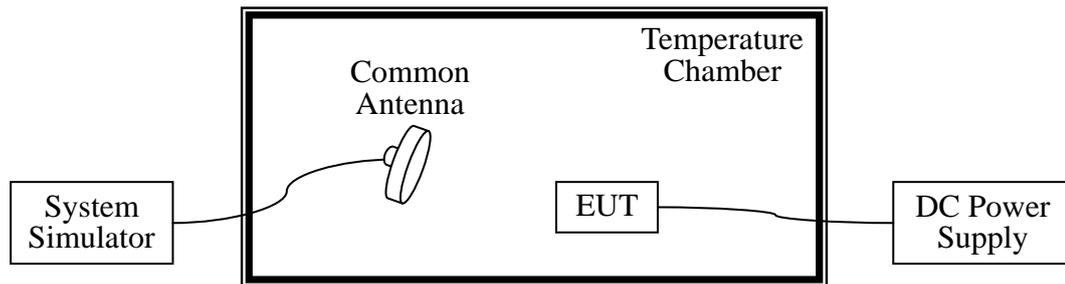
The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common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

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2012.05	2014.05
DC Power Supply	Good Will	GPS-3030DD	EF920938	2012.05	2014.05
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2012.05	2014.05

2.4.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 5.0VDC, 5.25VDC and 4.75VDC, 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)		Verdict
		Hz	Limits	Hz	Limits	Hz	Limits	
5.0	-30	-21.35		22.12		19.27		
	-20	28.21		11.33		-13.92		
	-10	-2.15		-17.56		15.16		
	0	30.16		32.11		5.05		
	+10	21.99		-25.03		3.02		
	+20	-19.16	±2060.5	-17.19	±2091.5	10.76	±2122	PASS
	+30	35.26		19.36		-16.51		
	+40	42.63		19.64		-2.10		
	+55	35.28		22.27		-12.99		
5.25	+25	-14.73		28.95		-7.53		
4.75	+25	-17.75		36.23		6.78		

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)		Verdict
		Hz	Limits	Hz	Limits	Hz	Limits	
5.0	-30	17.21		21.63		30.25		
	-20	38.28		-21.28		-17.78		
	-10	-2.15		-13.16		-16.28		
	0	40.06		-18.38		19.32		
	+10	1.99		-21.61		25.31		
	+20	-19.86	±1850.2	15.52	±1880.0	30.26	±1909.8	PASS
	+30	39.56		-0.68		-29.21		
	+40	46.60		33.27		19.33		
	+55	39.98		23.82		-19.27		
5.25	+25	38.28		23.82		26.29		
4.75	+25	-8.09		15.32		18.97		

3. EDGE 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		Verdict
		Hz	Limits	Hz	Limits	Hz	Limits	
5.0	-30	-32.10	±2060.5	25.12	±2091.5	8.51	±2122	PASS
	-20	38.28		11.33		-12.90		
	-10	-2.15		-17.55		12.66		
	0	40.06		38.10		5.05		
	+10	1.99		-22.06		3.02		
	+20	-19.86		-16.11		10.76		
	+30	39.56		17.76		-16.51		
	+40	46.60		15.64		-2.10		
	+55	39.98		3.67		-12.99		
5.25	+25	-15.71		13.95		-7.53		
4.75	+25	-17.70		6.23		6.78		

4. EDGE 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 512 (1850.2MHz)		Channel = 661 (1880.0MHz)		Channel = 810 (1909.8MHz)		Verdict
		Hz	Limits	Hz	Limits	Hz	Limits	
5.0	-30	-13.77	±1850.2	23.62	±1880.0	2.47	±1909.8	PASS
	-20	0.62		7.23		-11.76		
	-10	1.65		-24.78		-12.21		
	0	2.47		-1.26		13.33		
	+10	-10.76		-18.68		5.33		
	+20	-2.11		-21.61		35.26		
	+30	13.33		14.58		-26.78		
	+40	5.33		-0.68		19.54		
	+55	-2.56		36.87		-16.67		
5.25	+25	17.60		3.88		26.79		
4.75	+25	-8.09		13.12		19.93		

5. 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	
5.0	-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		
5.25	+25	-6.18		30.62		22.19		
4.75	+25	18.66		-18.00		-18.70		

6. 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	
5.0	-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		
5.25	+25	23.21		14.58		20.95		
4.75	+25	22.00		26.37		-23.22		

7. HSDPA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
5.0	-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		
5.25	+25	32.03		7.93		7.90		
4.75	+25	17.51		-31.21		1.78		

8. HSDPA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
5.0	-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		
5.25	+25	-11.28		29.43		-2.83		
4.75	+25	10.33		-2.27		14.42		

9. HSUPA 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	
5.0	-30	25.52		13.5		13.55		
	-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	±2066	-6.64	±2087.5	21.35	±2116.5	PASS
	+30	29.57		24.25		-5.94		
	+40	-11.79		9.63		13.78		
	+55	-0.44		23.76		28.45		
5.25	+25	1.71		-4.57		29.11		
4.75	+25	1.54		5.25		-7.70		

10. HSUPA 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	
5.0	-30	31.57		-11.79		8.69		
	-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	±1852.4	-11.79	±1880	23.52	±1907.6	PASS
	+30	-1.55		-0.44		-0.38		
	+40	23.16		1.15		-11.85		
	+55	13.79		-7.94		-5.91		
5.25	+25	-7.08		6.81		25.48		
4.75	+25	22.58		-1.83		-15.78		

11. HSPA+ 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	
5.0	-30	26.32	±2066	13.5	±2087.5	17.51	±2116.5	PASS
	-20	-17.20		-17.71		22.32		
	-10	-12.61		-2.44		31.05		
	0	-13.09		0.01		-17.22		
	+10	-0.38		-16.31		-14.51		
	+20	-11.85		-11.79		21.35		
	+30	29.57		-0.44		-5.94		
	+40	-11.79		0.01		13.78		
	+55	-0.44		23.76		28.45		
5.25	+25	8.71		-4.57		29.11		
4.75	+25	11.54		15.25		-6.75		

12. HSPA+ 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	
5.0	-30	12.11	±1852.4	-15.31	±1880	3.31	±1907.6	PASS
	-20	20.15		-11.79		-5.73		
	-10	11.61		-0.44		18.22		
	0	3.31		0.01		-33.55		
	+10	-5.73		-15.31		3.31		
	+20	18.22		-11.79		-5.73		
	+30	-33.55		-0.44		19.21		
	+40	27.16		0.01		-31.05		
	+55	23.79		-6.64		22.36		
5.25	+25	-37.01		24.25		3.31		
4.75	+25	22.58		9.63		-17.08		

2.5 Conducted Out of Band Emissions

2.5.1 Requirement

According to FCC section 22.917(a) and FCC section 24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

2.5.2 Test Description

See section 2.1.2 of this report.

2.5.3 Test Result

The measurement frequency range is from 30MHz to the 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	-21.67	Plot A1toA1.1	-13	PASS
	190	836.6	-21.47	Plot A2toA2.1		PASS
	251	848.8	-21.19	Plot A3toA3.1		PASS
GSM 1900MHz	512	1850.2	-20.78	Plot B1toB1.1	-13	PASS
	661	1880.0	-21.28	Plot B2toB2.1		PASS
	810	1909.8	-21.09	Plot B3toB3.1		PASS
EDGE 850MHz	128	824.2	-21.3	Plot C1toC1.1	-13	PASS
	190	836.6	-21.67	Plot C2toC2.1		PASS
	251	848.8	-21.94	Plot C3toC3.1		PASS
EDGE 1900MHz	512	1850.2	-20.61	Plot D1toD1.1	-13	PASS
	661	1880.0	-20.26	Plot D2toD2.1		PASS
	810	1909.8	-19.67	Plot D3toD3.1		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 1900MHz	9262	1852.4	< -25	Plot F1toF1.1	-13	PASS
	9400	1880	< -25	Plot F2toF2.1		PASS
	9538	1907.6	< -25	Plot F3toF3.1		PASS
HSDPA	4132	826.4	< -25	Plot G1toG1.1	-13	PASS

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
850MHz	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
HSPA+ 850MHz	4132	826.4	< -25	Plot K1toK1.1	-13	PASS
	4175	835	< -25	Plot K2toK2.1		PASS
	4233	846.6	< -25	Plot K3toK3.1		PASS
HSPA+ 1900MHz	9262	1852.4	-24.51	Plot L1toL1.1	-13	PASS
	9400	1880	< -25	Plot L2toL2.1		PASS
	9538	1907.6	< -25	Plot L3toL3.1		PASS

2.   Test Plots for the Whole Measurement Frequency Range:

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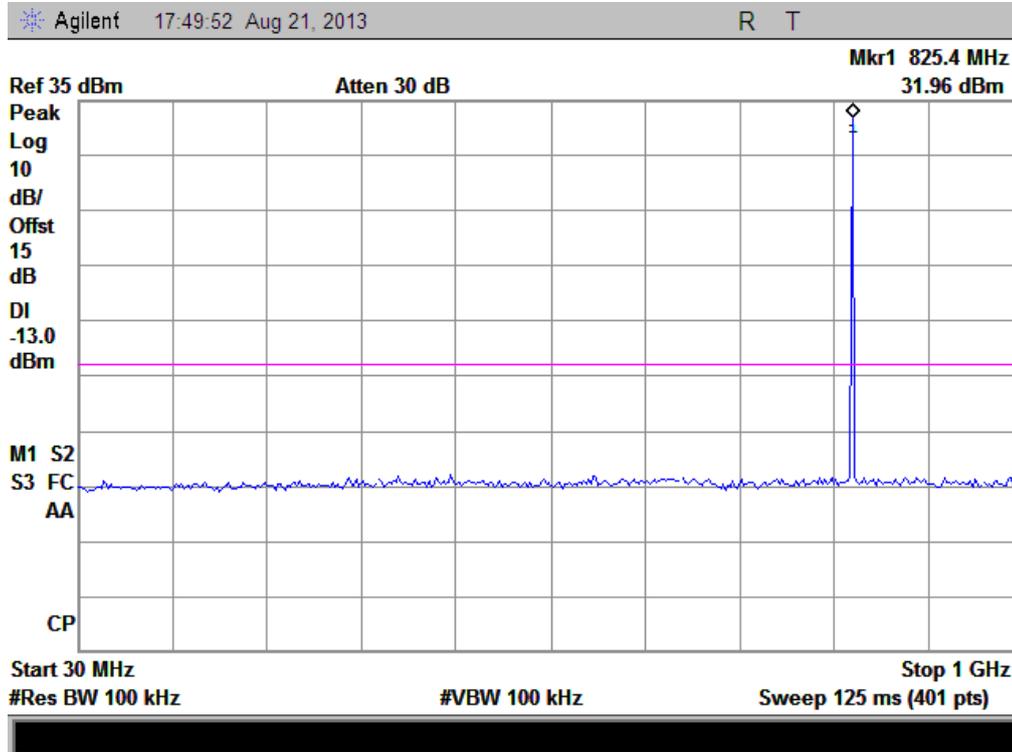
(Plot A1:   GSM 850MHz Channel = 128, 30MHz to 1GHz)
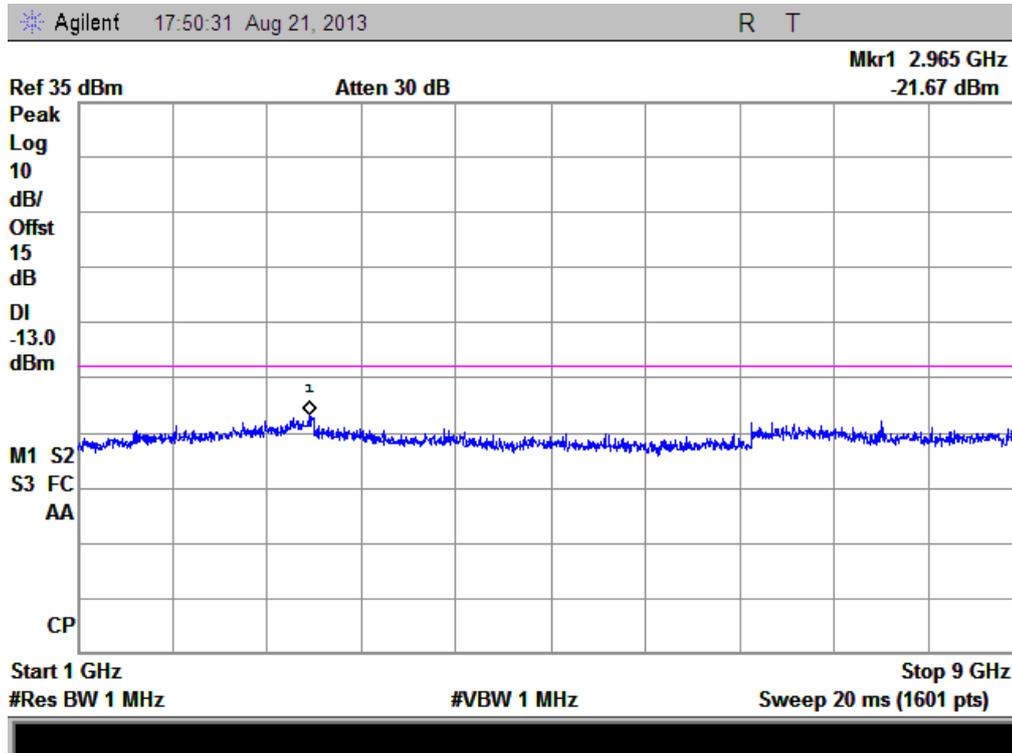
(Plot A1.1:   GSM 850MHz Channel = 128, 1GHz to 9GHz)

Agilent	17:49:35 Aug 21, 2013		R T

Mkr1 837.5 MHz
32.04 dBm

Ref 35 dBm   Atten 30 dB

Peak
Log
10
dB/
Offst
15
dB

DI
-13.0
dBm

M1 S2
S3 FC
AA

CP

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

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

Agilent	17:51:04 Aug 21, 2013		R T

Mkr1 2.790 GHz
-21.47 dBm

Ref 35 dBm   Atten 30 dB

Peak
Log
10
dB/
Offst
15
dB

DI
-13.0
dBm

M1 S2
S3 FC
AA

Start 1 GHz   Stop 9 GHz
#Res BW 1 MHz   #VBW 1 MHz   Sweep 20 ms (1601 pts)
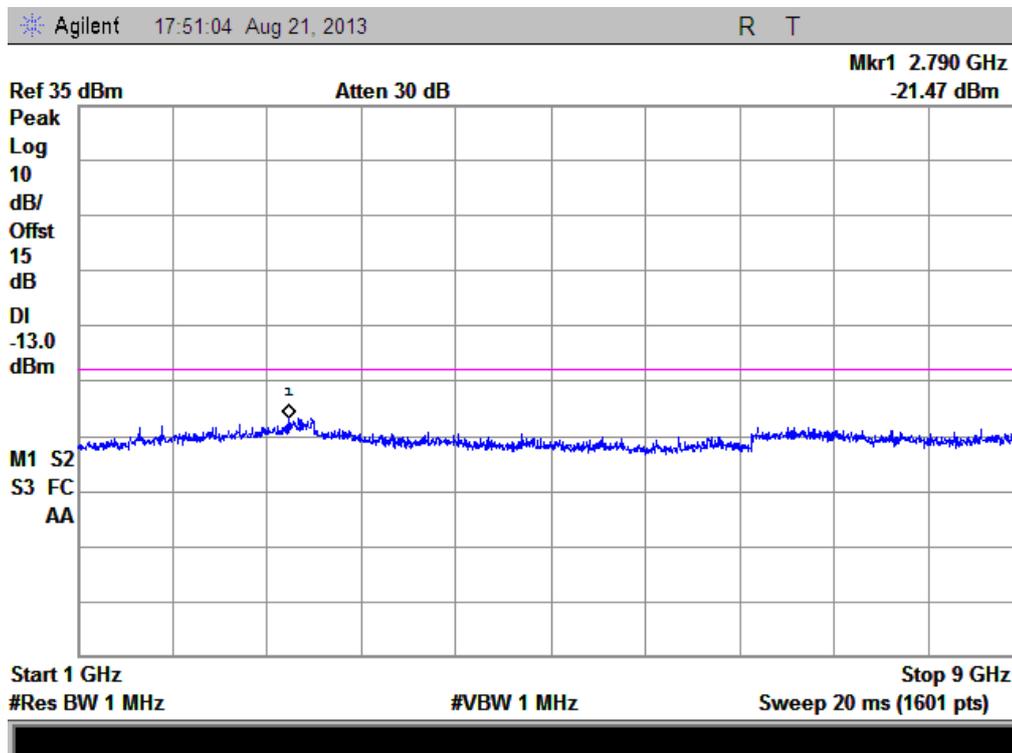
(Plot A2.1:   GSM 850MHz Channel = 190, 1GHz to 9GHz)
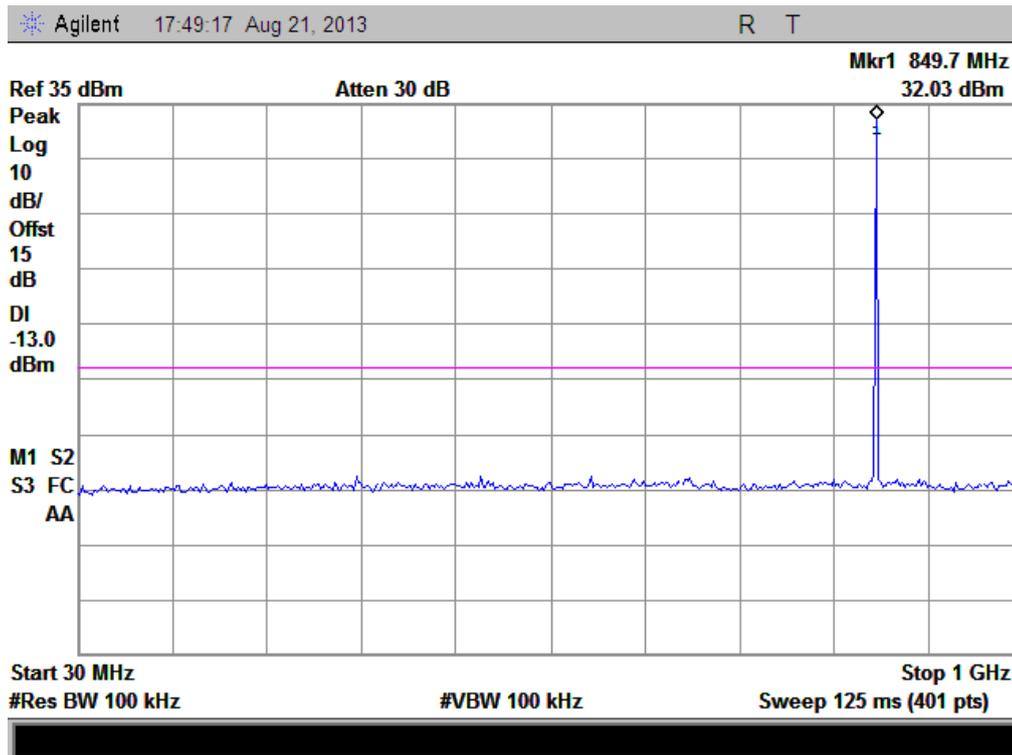
(Plot A3:   GSM 850MHz Channel = 251, 30MHz to 1GHz)
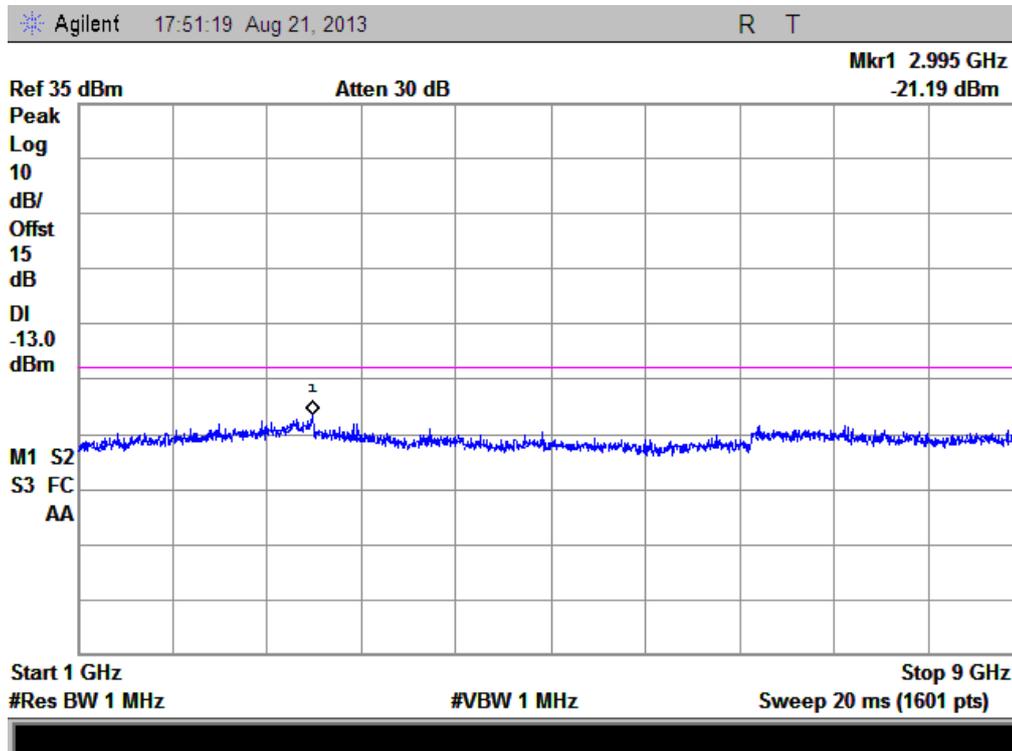
(Plot A3.1:   GSM 850MHz Channel = 251, 1GHz to 9GHz)
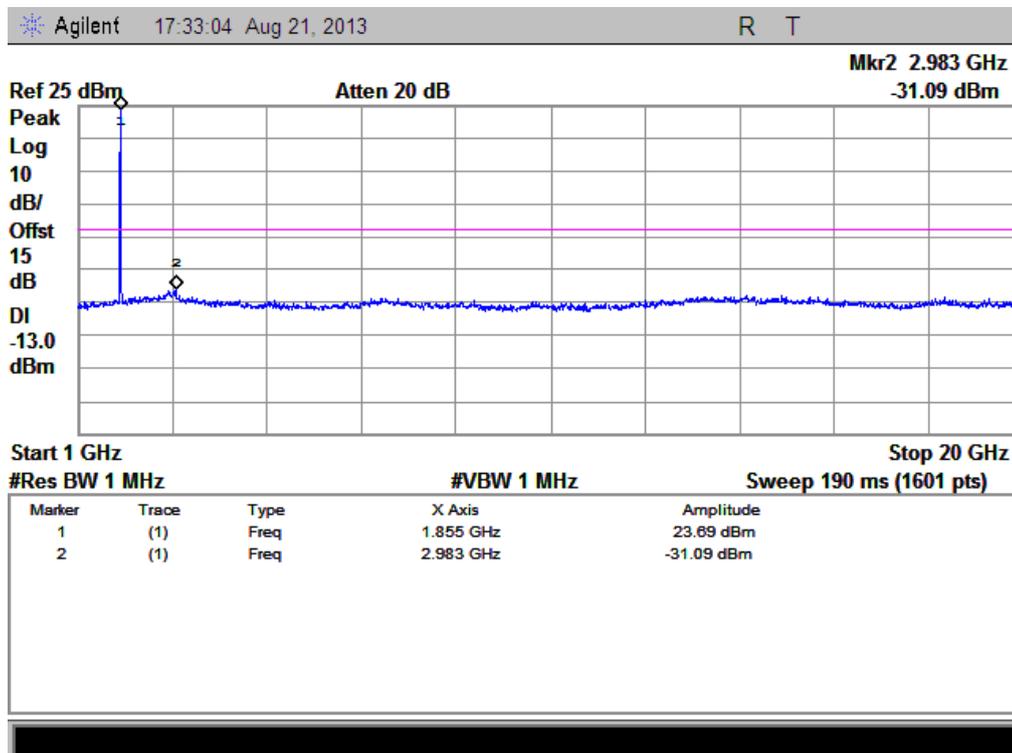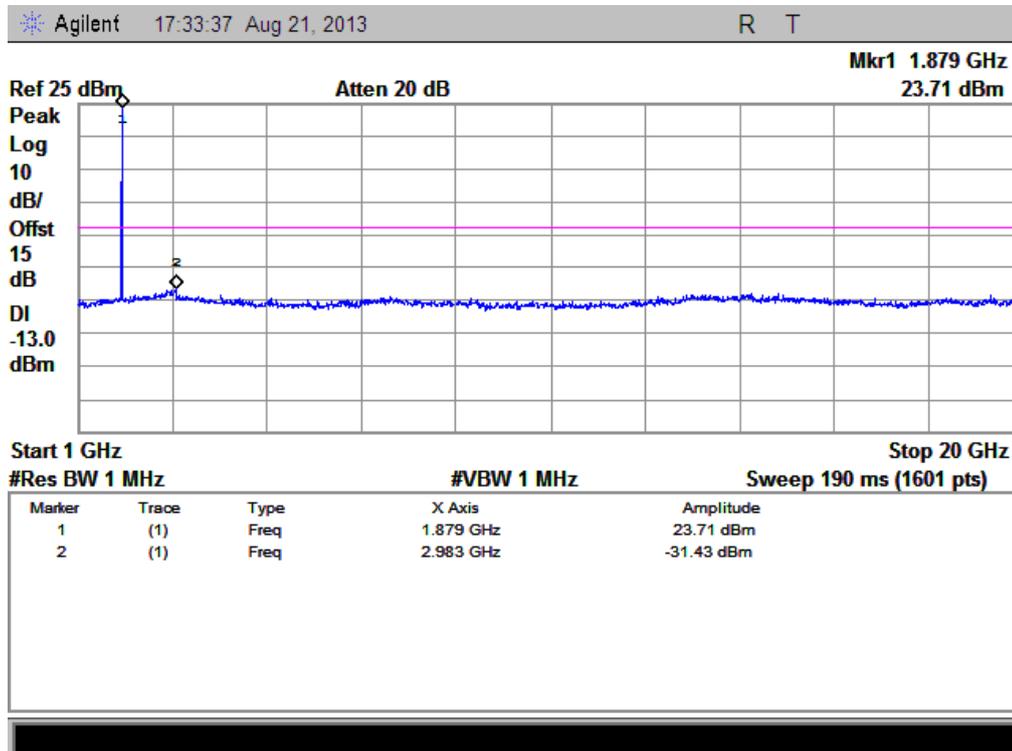
Agilent   17:56:02 Aug 21, 2013   R   T

Mkr1 856.9 MHz
-32.82 dBm

Ref 35 dBm   Atten 30 dB

Peak
Log
10
dB/
Offst
15
dB

DI
-13.0
dBm

M1 S2
S3 FC
    AA

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

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

Agilent   17:54:12 Aug 21, 2013   R   T

Mkr2 2.971 GHz
-20.78 dBm

Ref 35 dBm   Atten 30 dB

Peak
Log
10
dB/
Offst
15
dB

DI
-13.0
dBm

Start 1 GHz   Stop 20 GHz
#Res BW 1 MHz   #VBW 1 MHz   Sweep 190 ms (1601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.855 GHz	29.95 dBm
2	(1)	Freq	2.971 GHz	-20.78 dBm

(Plot B1.1:   GSM 1900MHz Channel = 512, 1GHz to 20GHz)
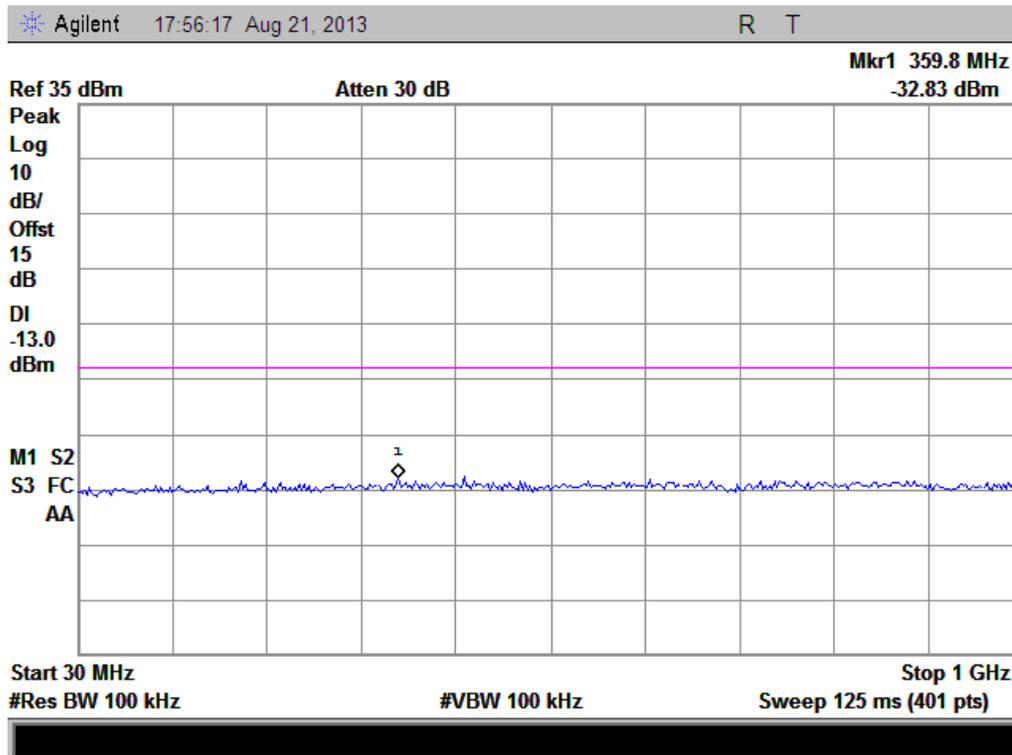
(Plot B2:   GSM 1900MHz Channel = 661, 30MHz to 1GHz)
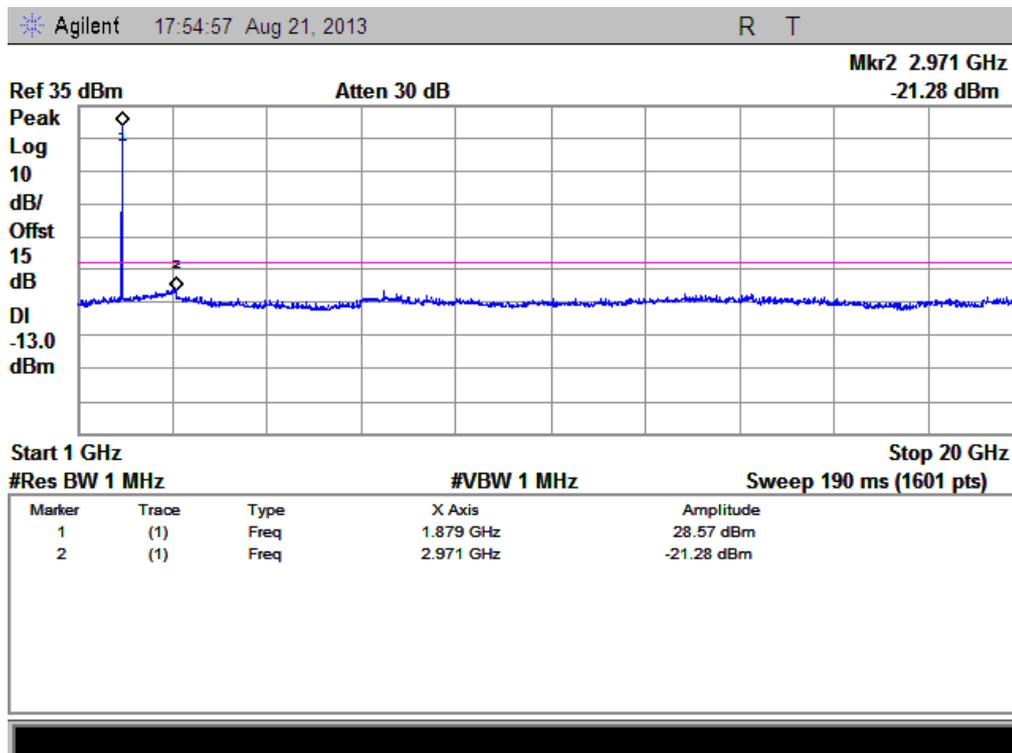
(Plot B2.1:   GSM 1900MHz Channel = 661, 1GHz to 20GHz)

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


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.914 GHz	28.27 dBm
2	(1)	Freq	2.971 GHz	-21.09 dBm
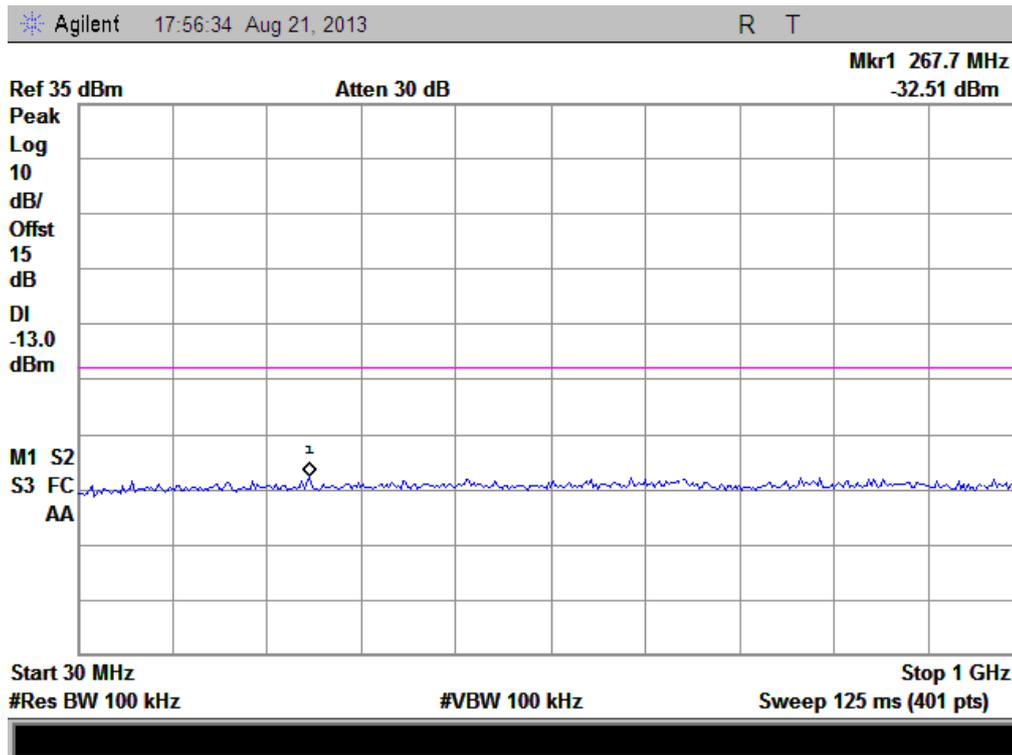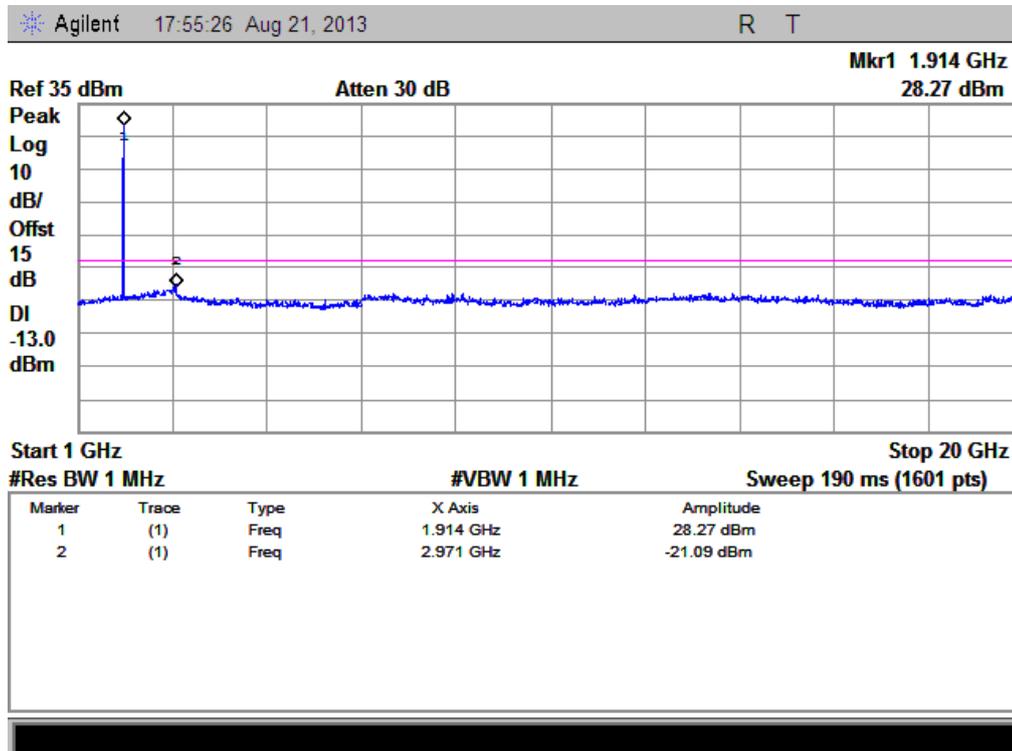
(Plot B3.1:   GSM 1900MHz Channel = 810, 1GHz to 20GHz)
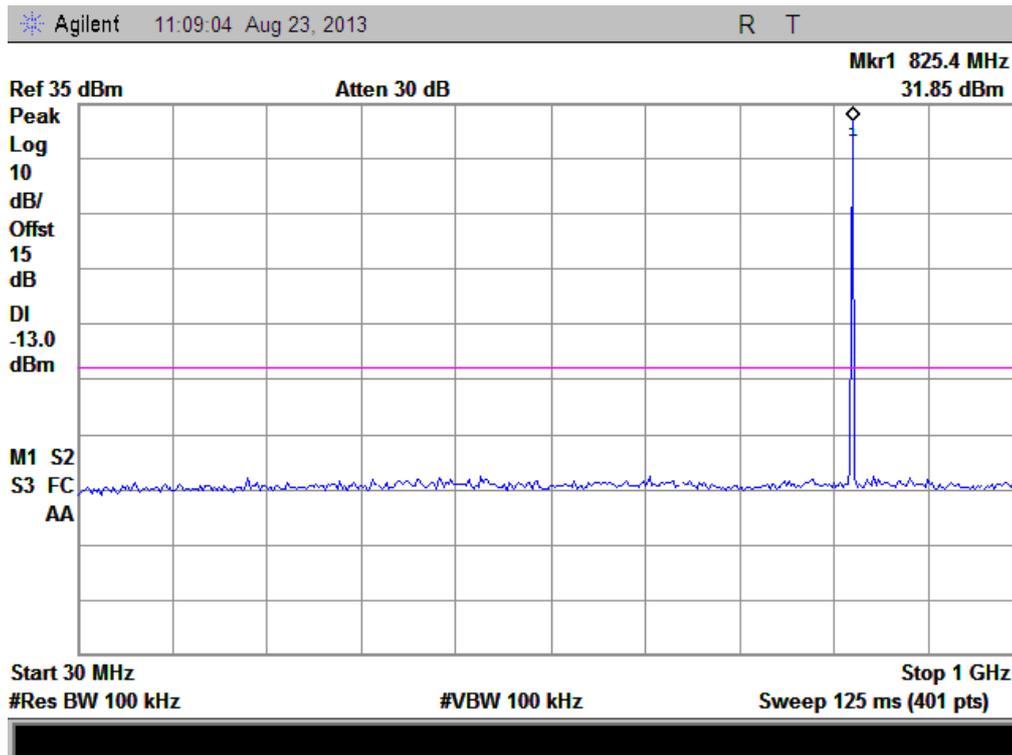
(Plot C1:   EDGE 850MHz Channel = 128, 30MHz to 1GHz)
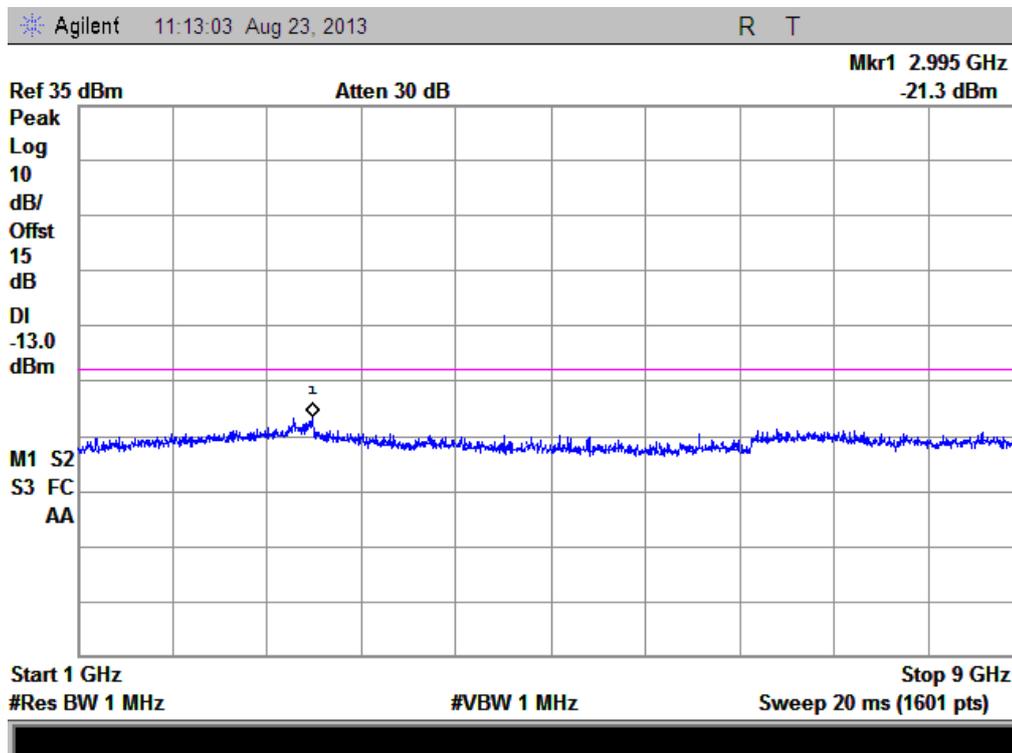

(Plot C1.1:   EDGE 850MHz Channel = 128, 1GHz to 9GHz)
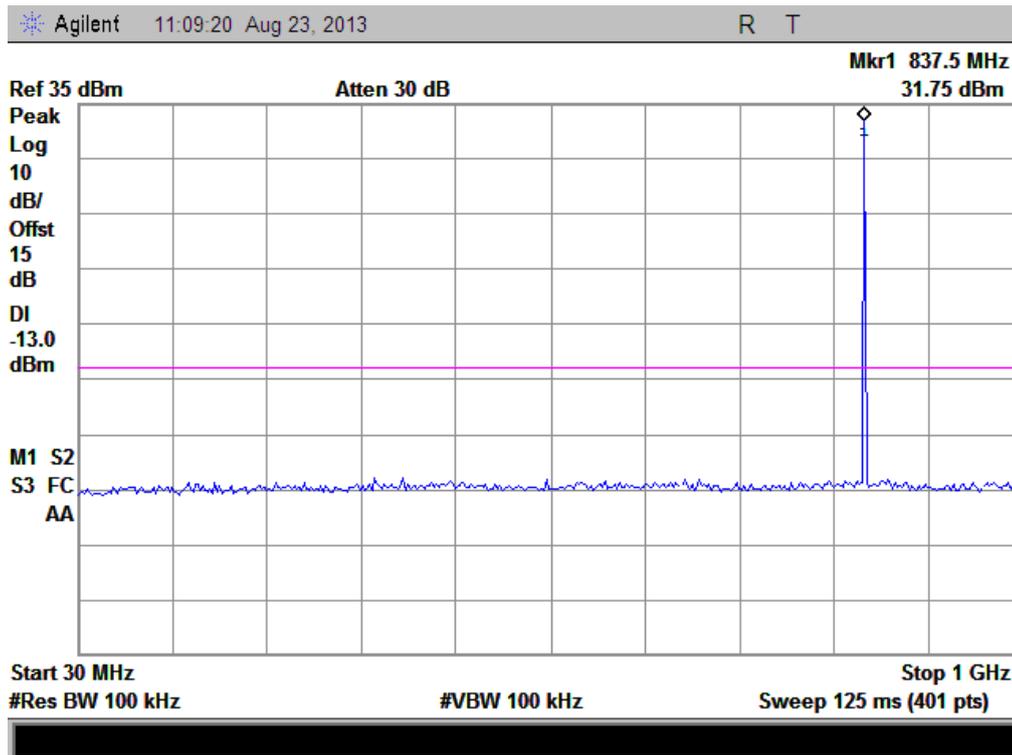
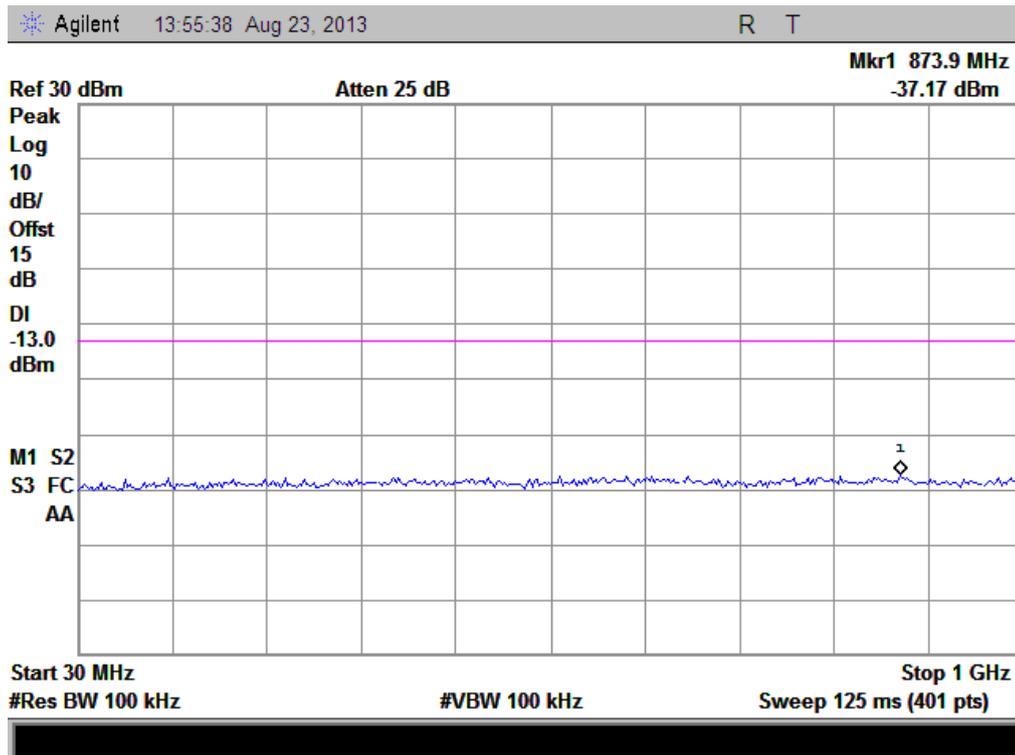(Plot C2:   EDGE 850MHz Channel = 190, 30MHz to 1GHz)
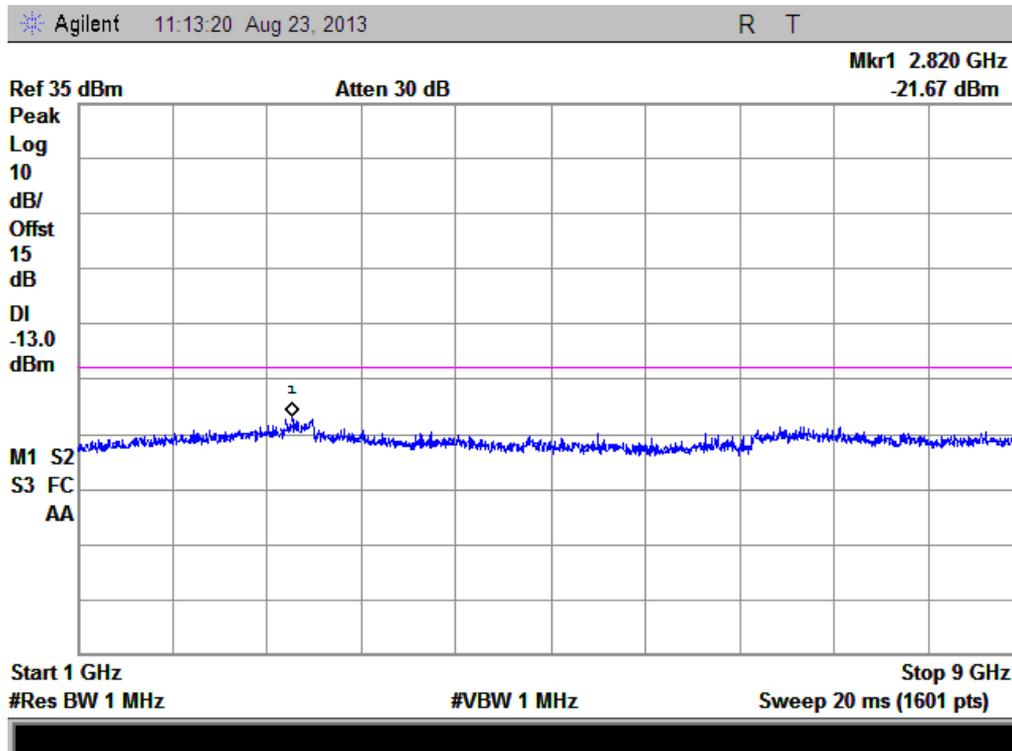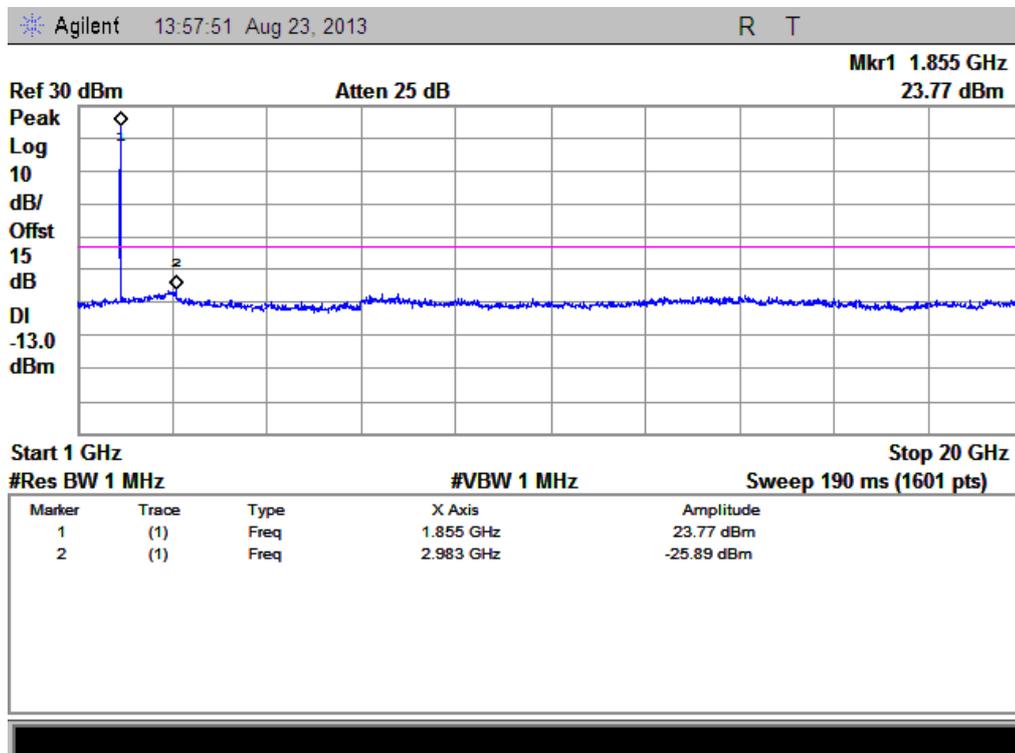

(Plot C2.1:   EDGE 850MHz Channel = 190, 1GHz to 9GHz)
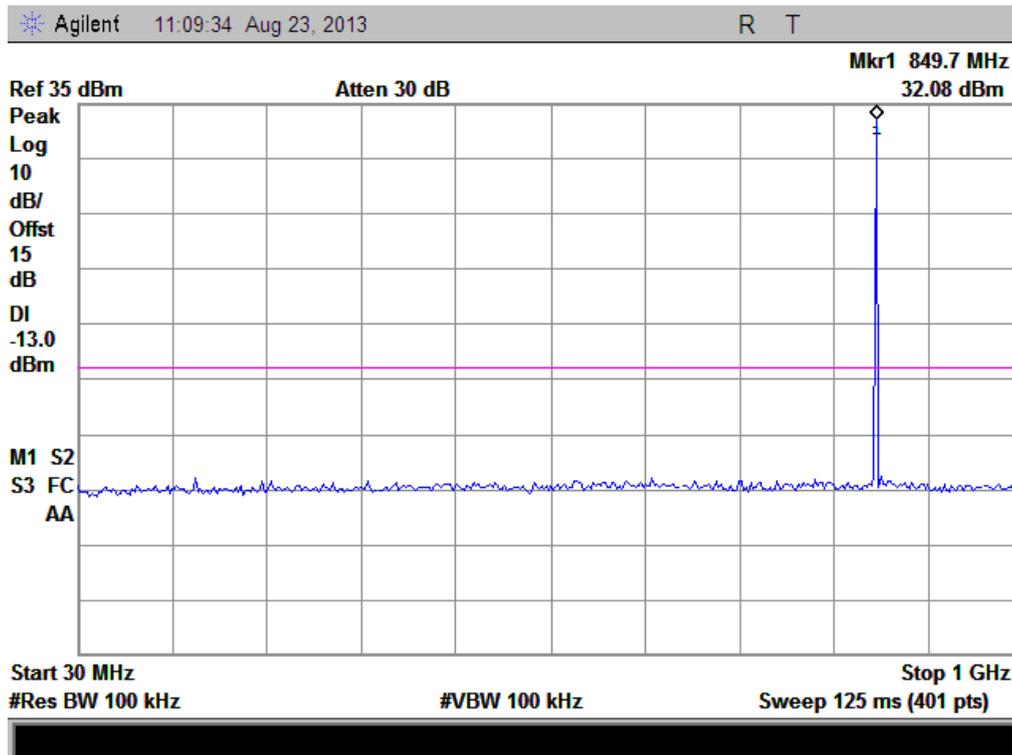
(Plot C3:   EDGE 850MHz Channel = 251, 30MHz to 1GHz)
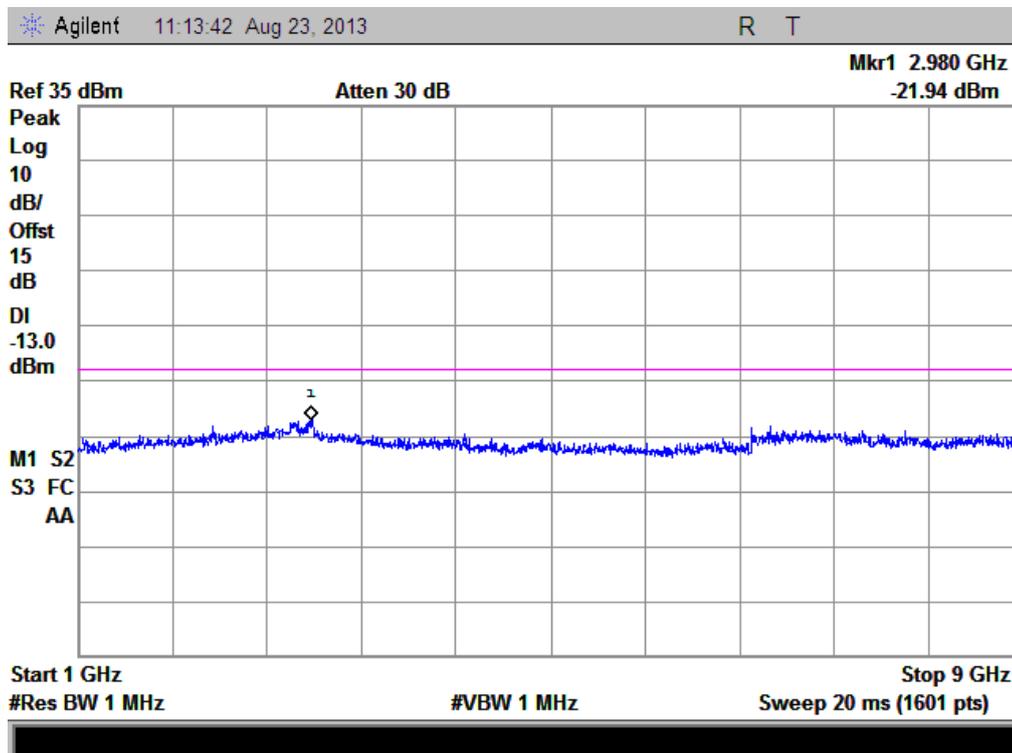
(Plot C3.1:   EDGE 850MHz Channel = 251, 1GHz to 9GHz)

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

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.855 GHz	30.4 dBm
2	(1)	Freq	2.971 GHz	-20.61 dBm
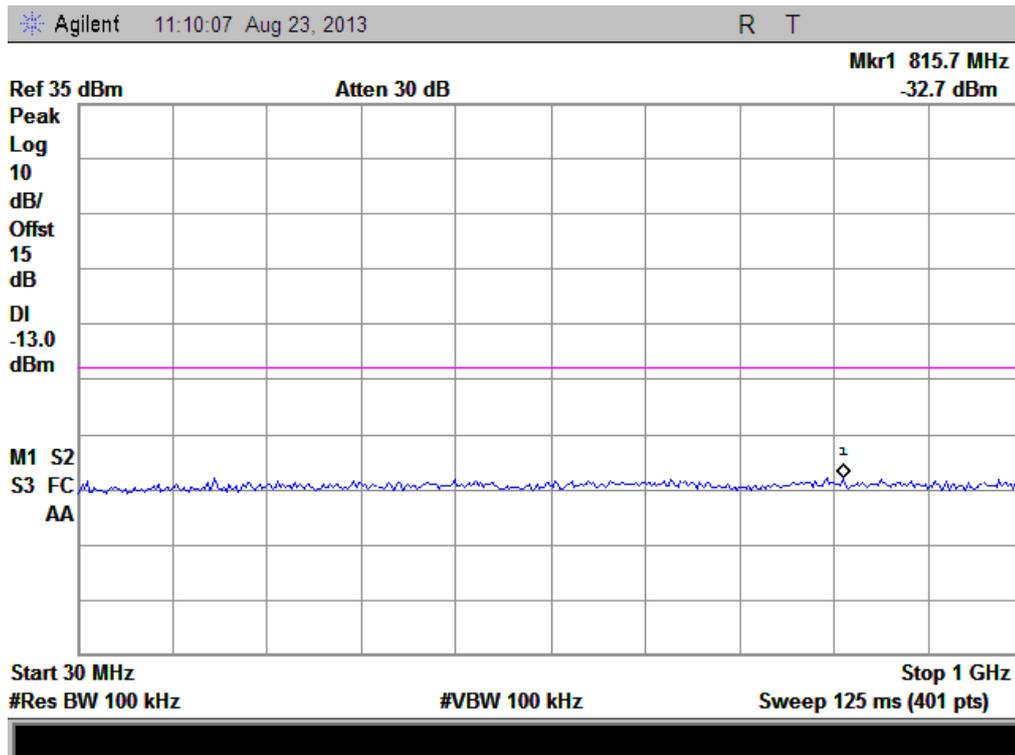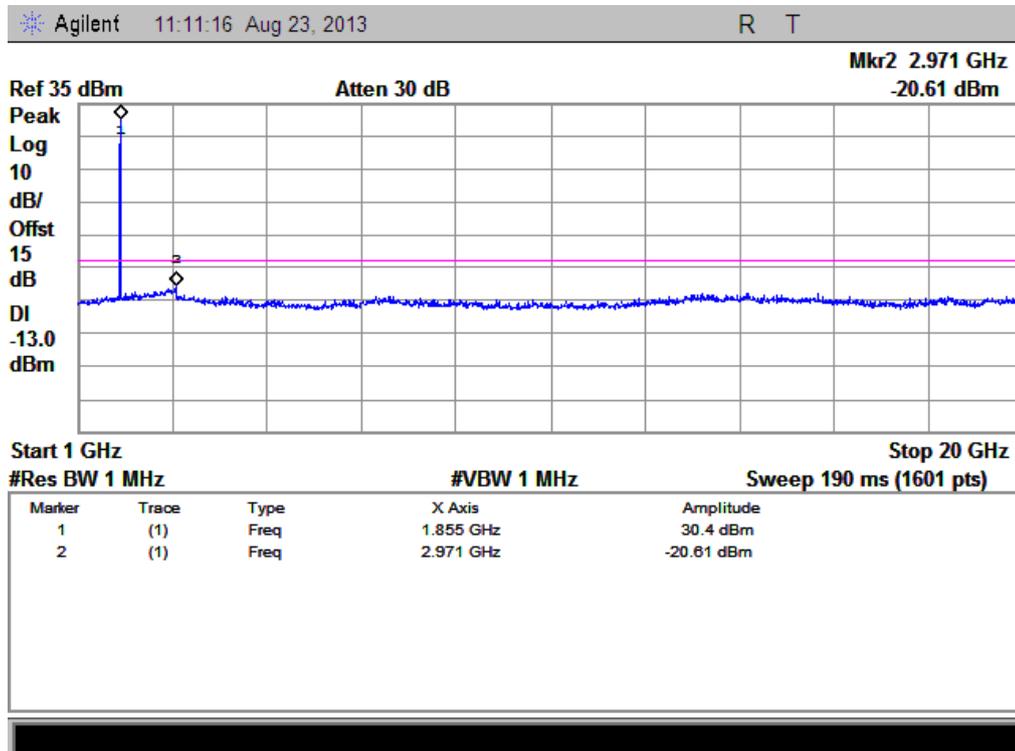
(Plot D1.1:   EDGE 1900MHz Channel = 512, 1GHz to 20GHz)
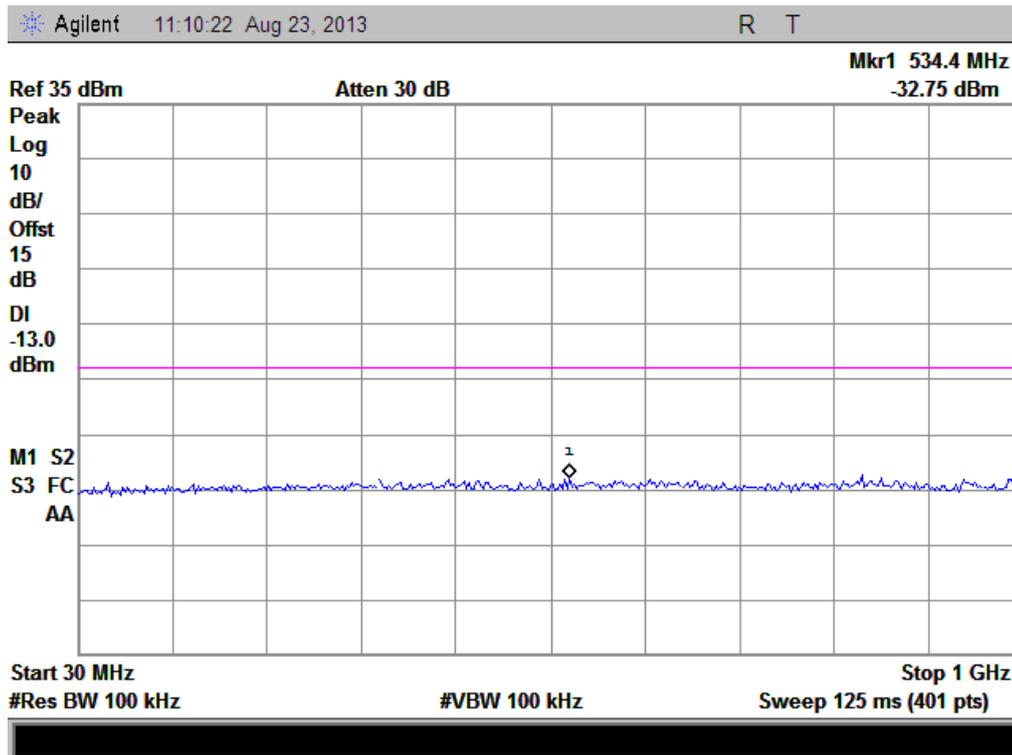
(Plot D2:   EDGE 1900MHz Channel = 661, 30MHz to 1GHz)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.879 GHz	29.74 dBm
2	(1)	Freq	2.971 GHz	-20.26 dBm
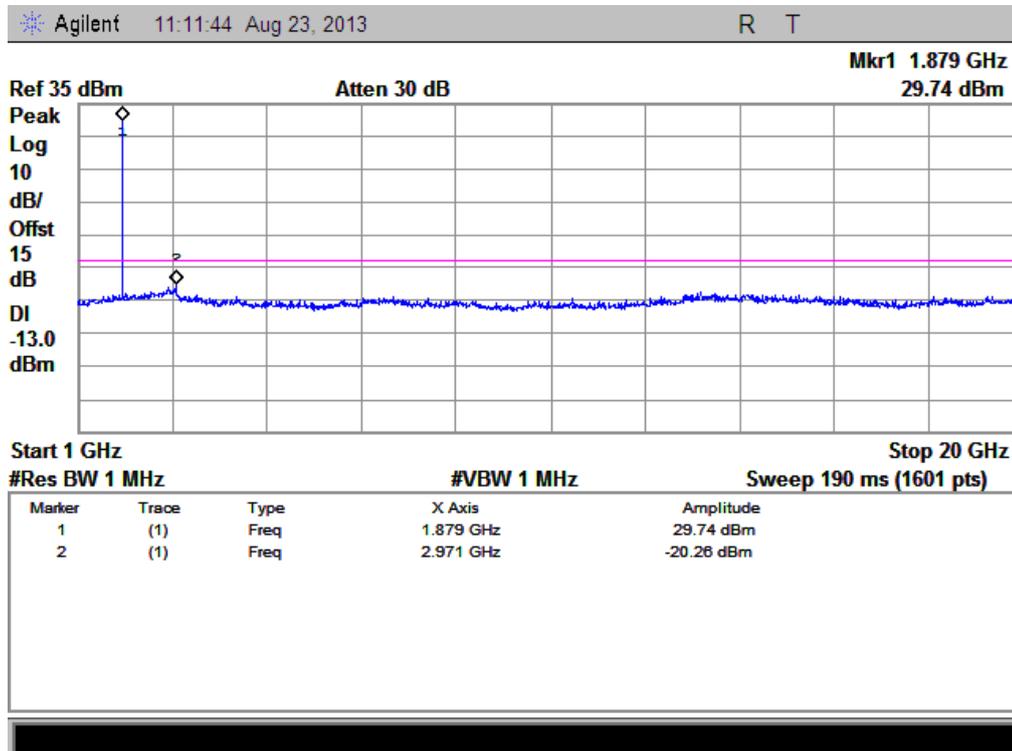
(Plot D2.1:   EDGE 1900MHz Channel = 661,1GHz to 20GHz)
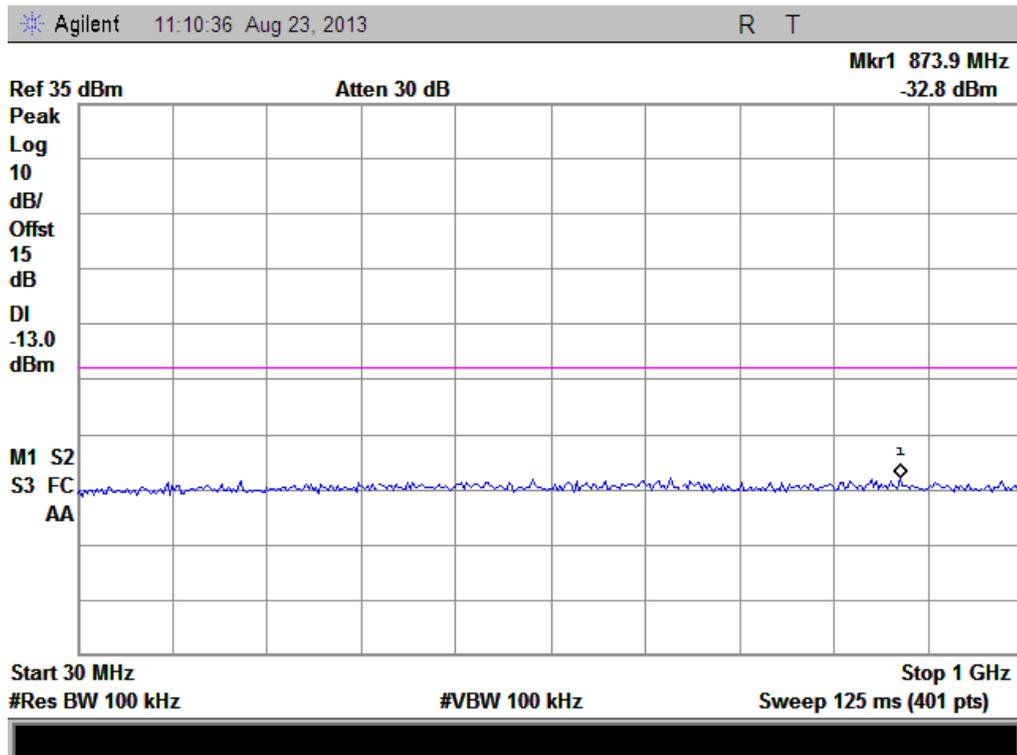
(Plot D3:   EDGE 1900MHz Channel = 810, 30MHz to 1GHz)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.914 GHz	29.02 dBm
2	(1)	Freq	2.983 GHz	-19.67 dBm
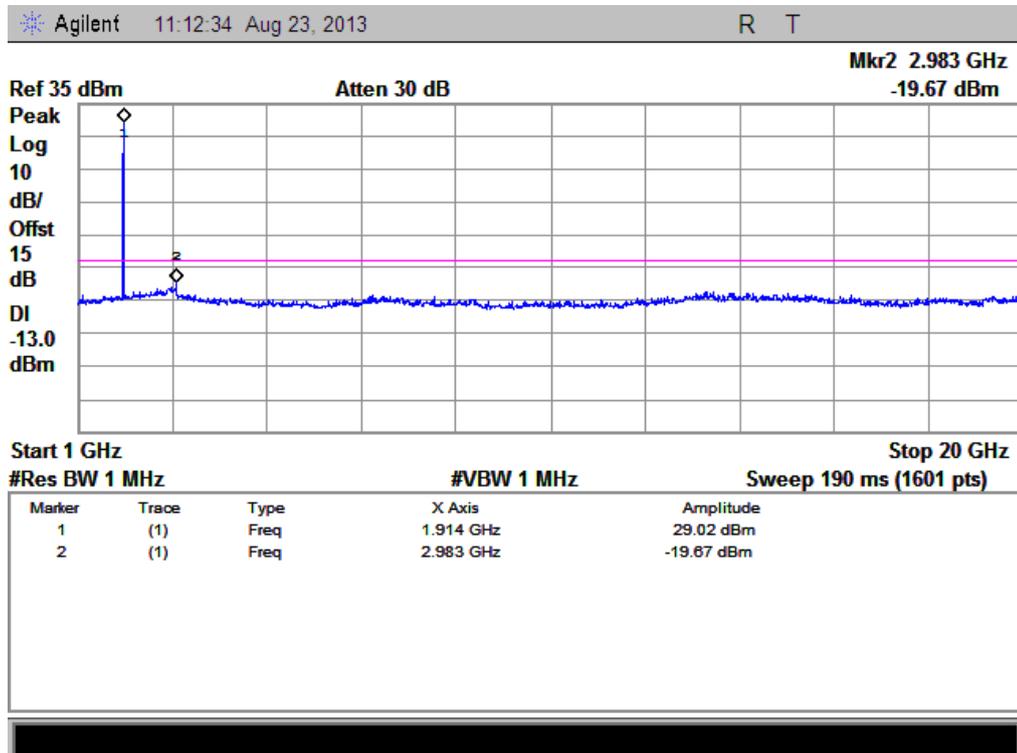
(Plot D3.1:   EDGE 1900MHz Channel = 810, 1GHz to 20GHz)
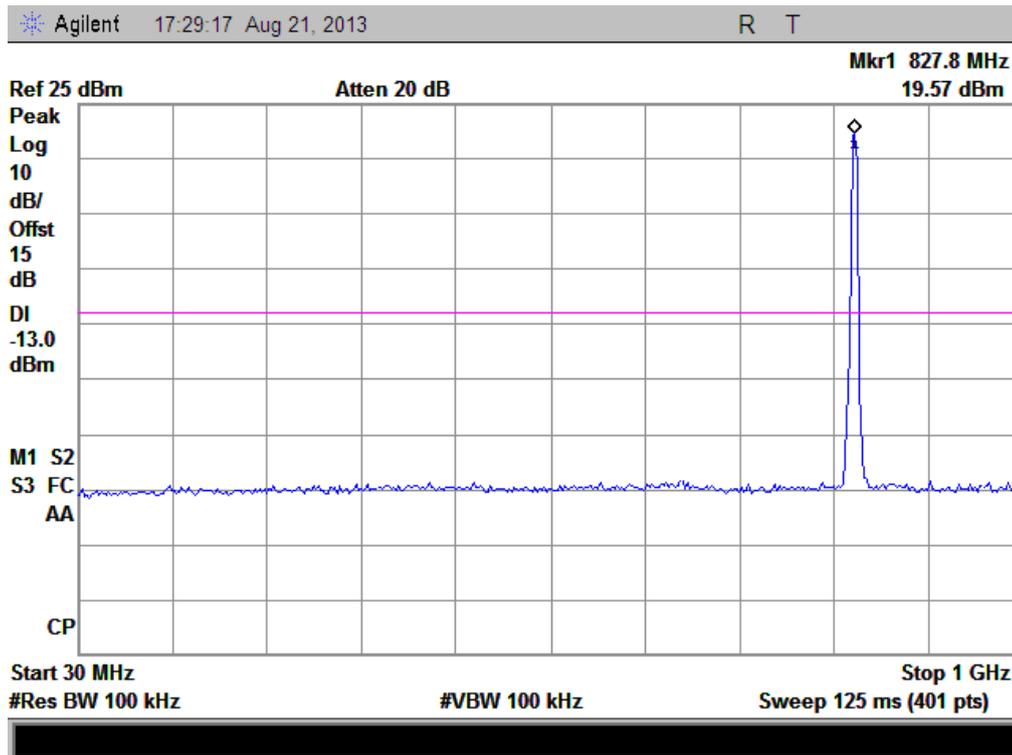
(Plot E1:   WCDMA850MHz Channel = 4132, 30MHz to 1GHz)
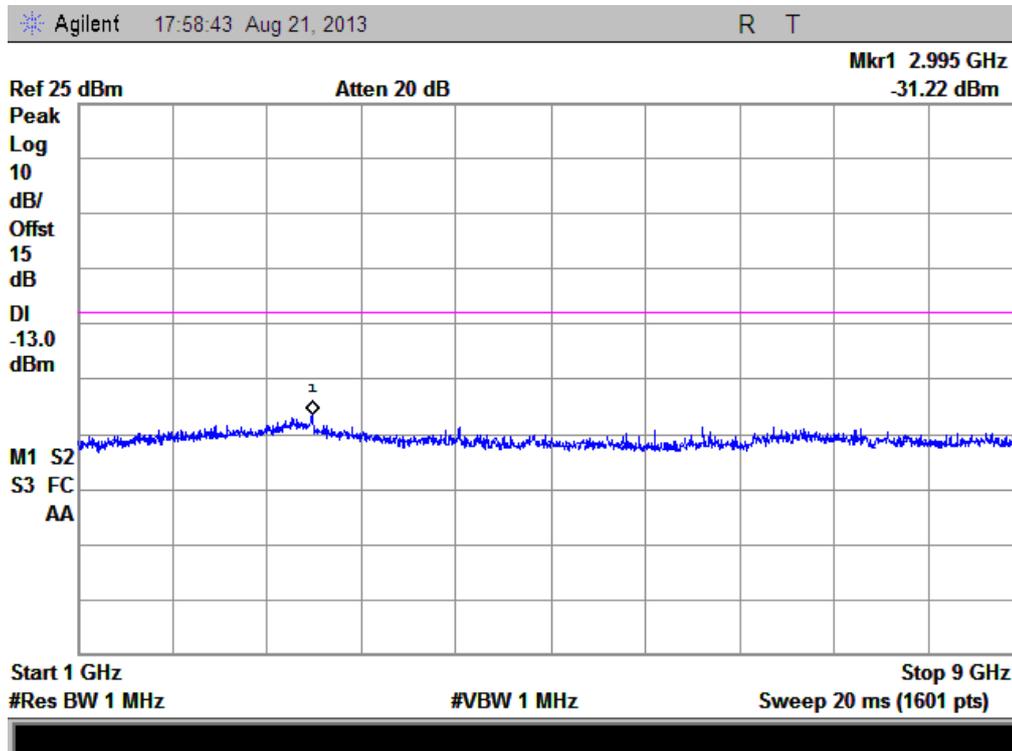
(Plot E1.1:   WCDMA850MHz Channel = 4132, 1GHz to 9GHz)
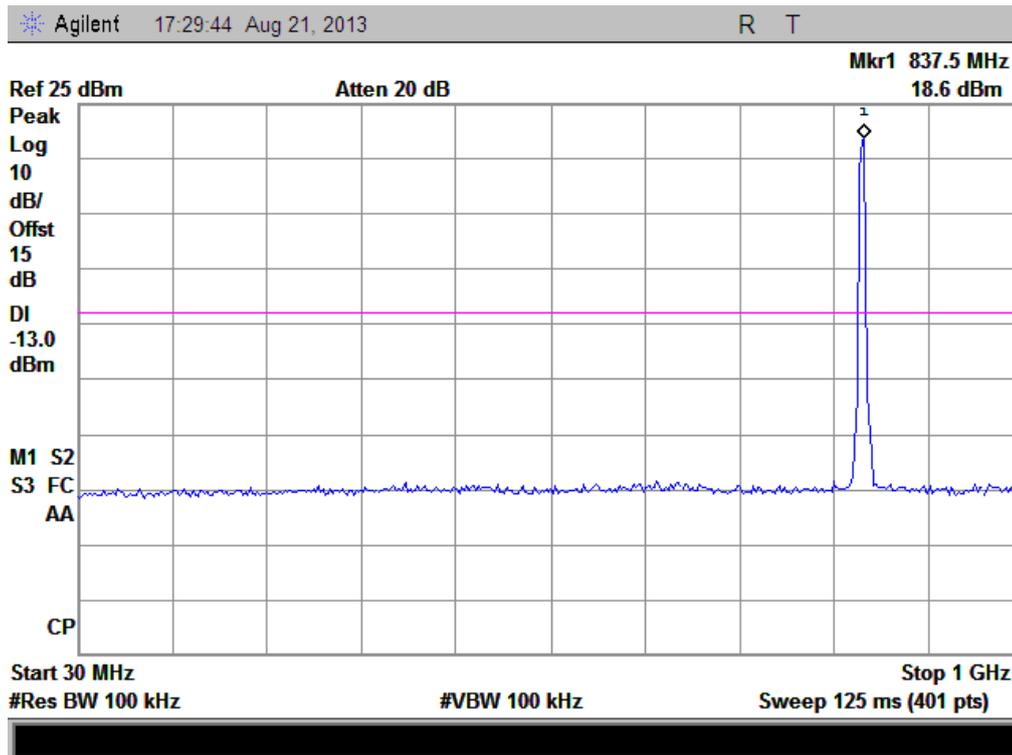
(Plot E2:   WCDMA850MHz Channel = 4175, 30MHz to 1GHz)
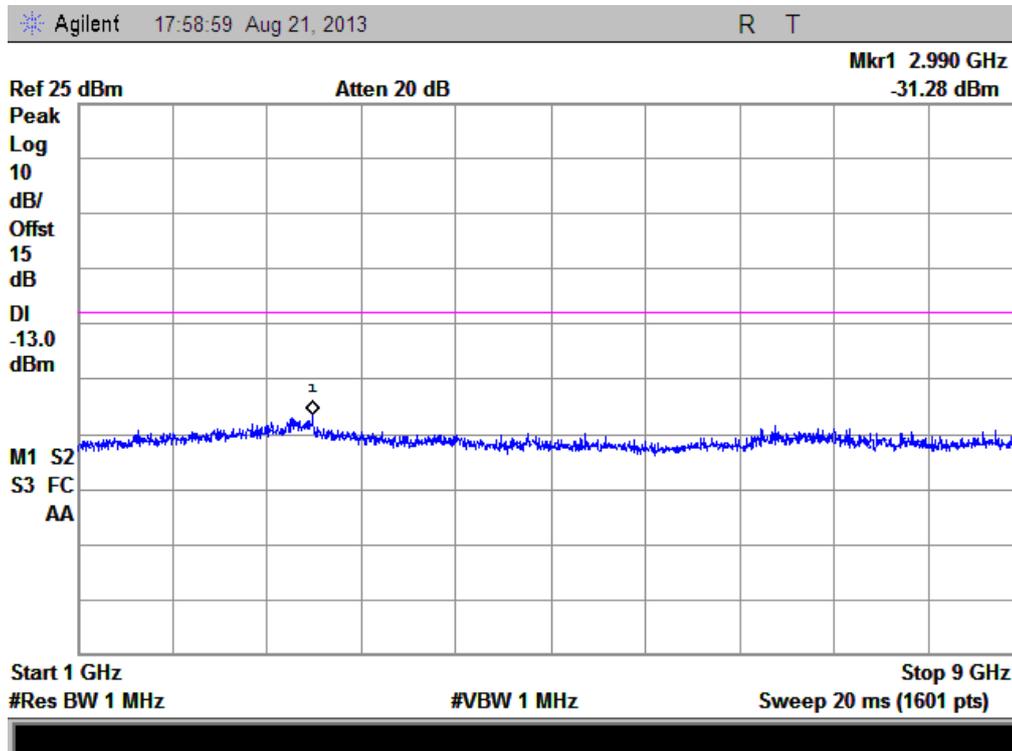
(Plot E2.1:   WCDMA850MHz Channel = 4175, 1GHz to 9GHz)
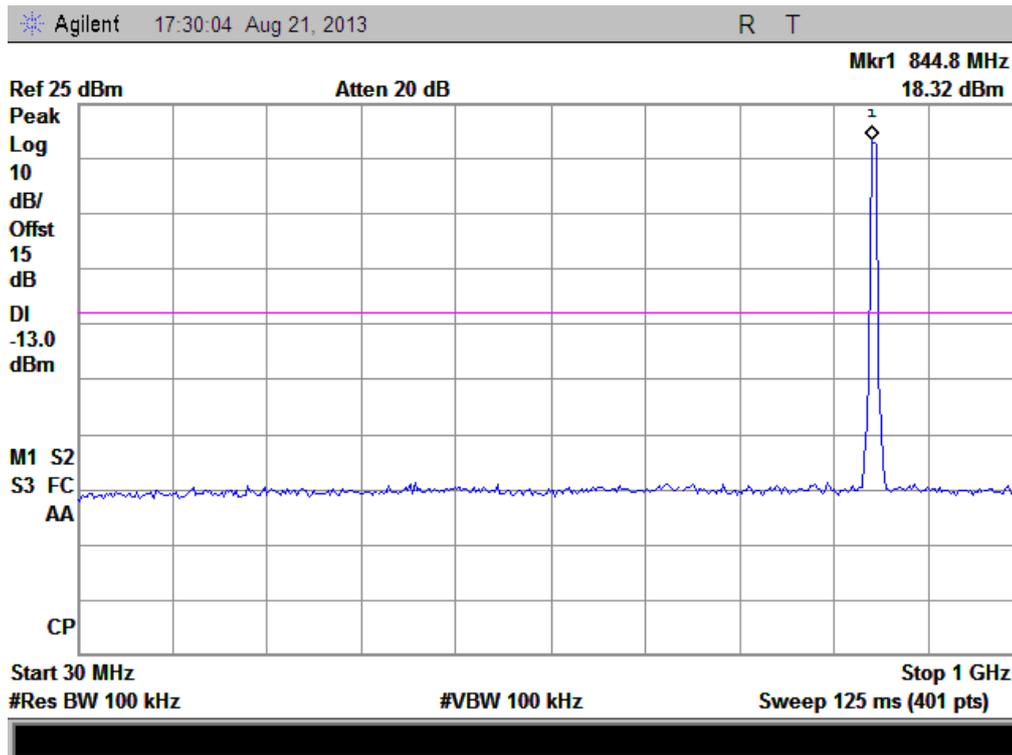
(Plot E3:   WCDMA850MHz Channel = 4233, 30MHz to 1GHz)
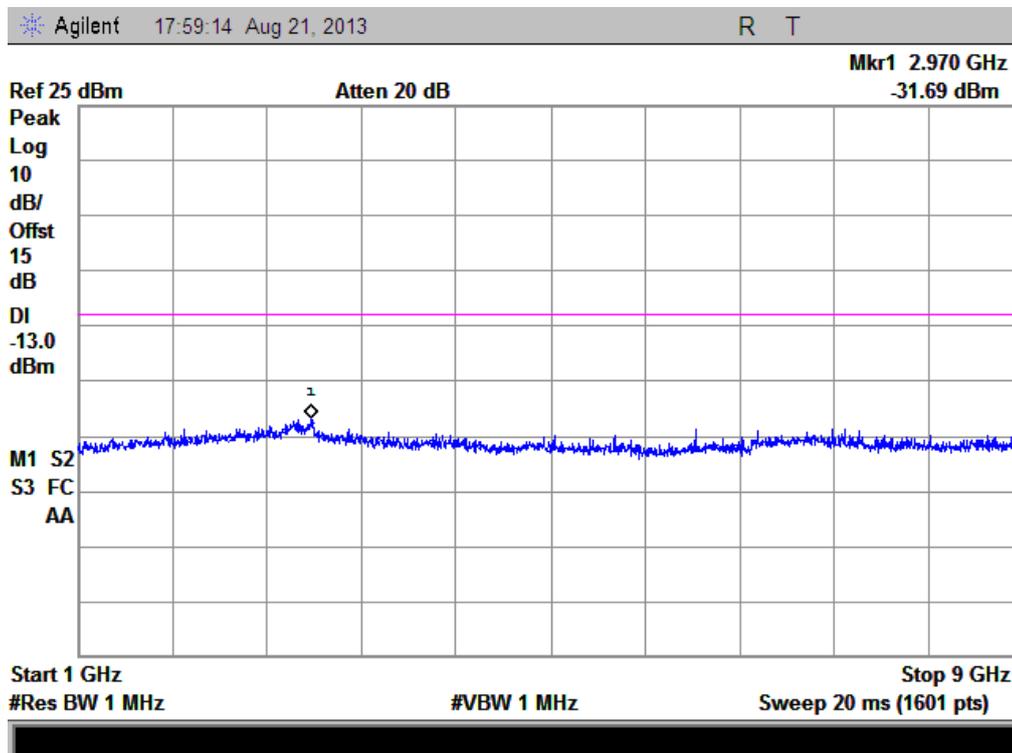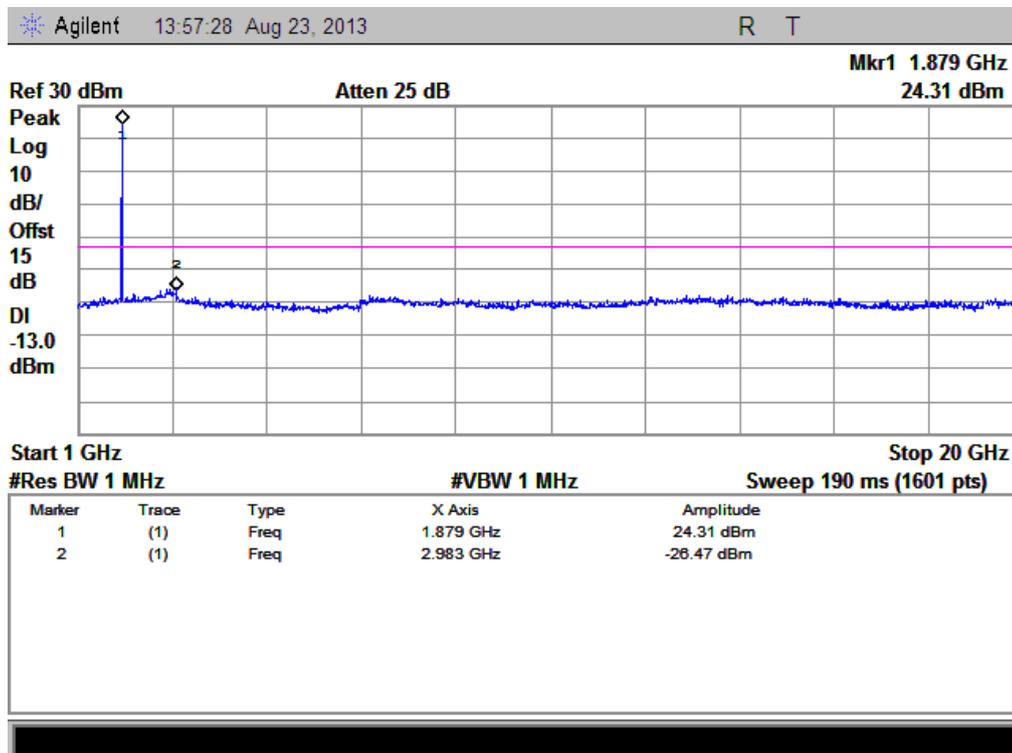

(Plot E3.1:   WCDMA850MHz Channel = 4233, 1GHz to 9GHz)
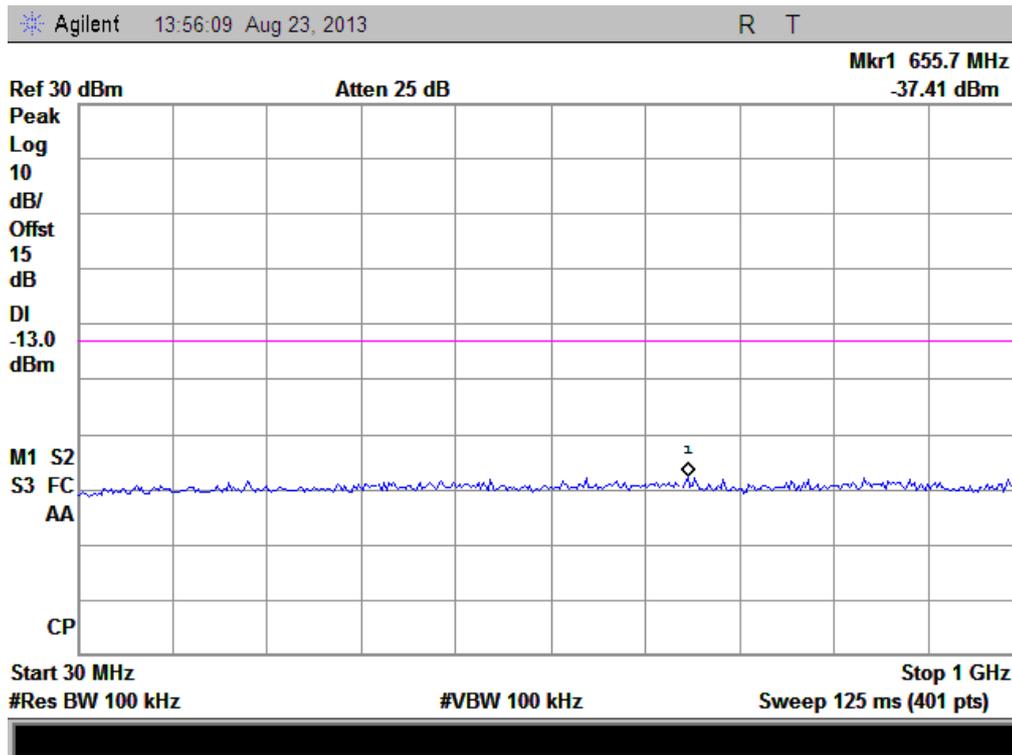
(Plot F1:   WCDMA1900MHz Channel = 9262, 30MHz to 1GHz)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.855 GHz	23.69 dBm
2	(1)	Freq	2.983 GHz	-31.09 dBm
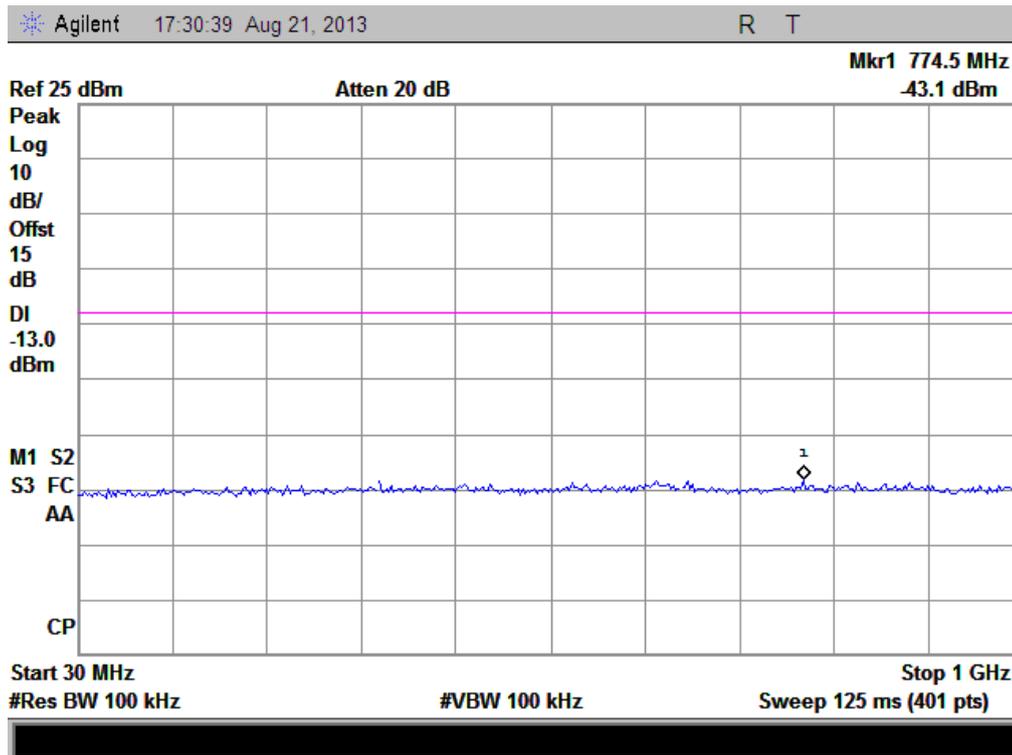
(Plot F1.1:   WCDMA1900MHz Channel = 9262, 1GHz to 20GHz)

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

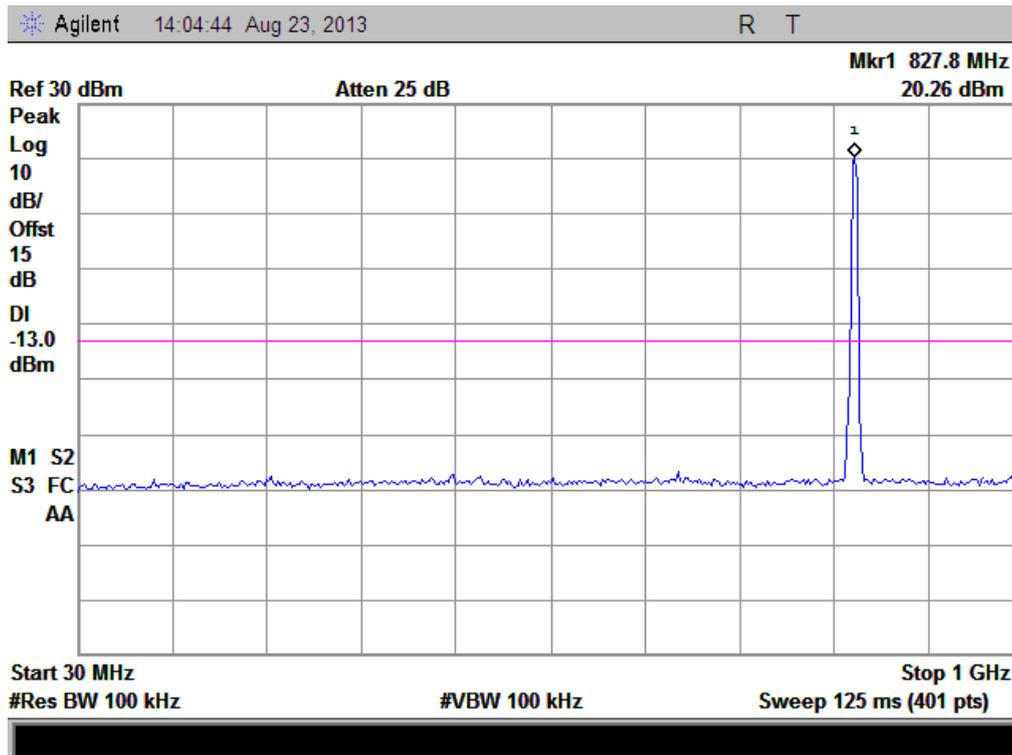| Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.879 GHz	23.71 dBm
2	(1)	Freq	2.983 GHz	-31.43 dBm

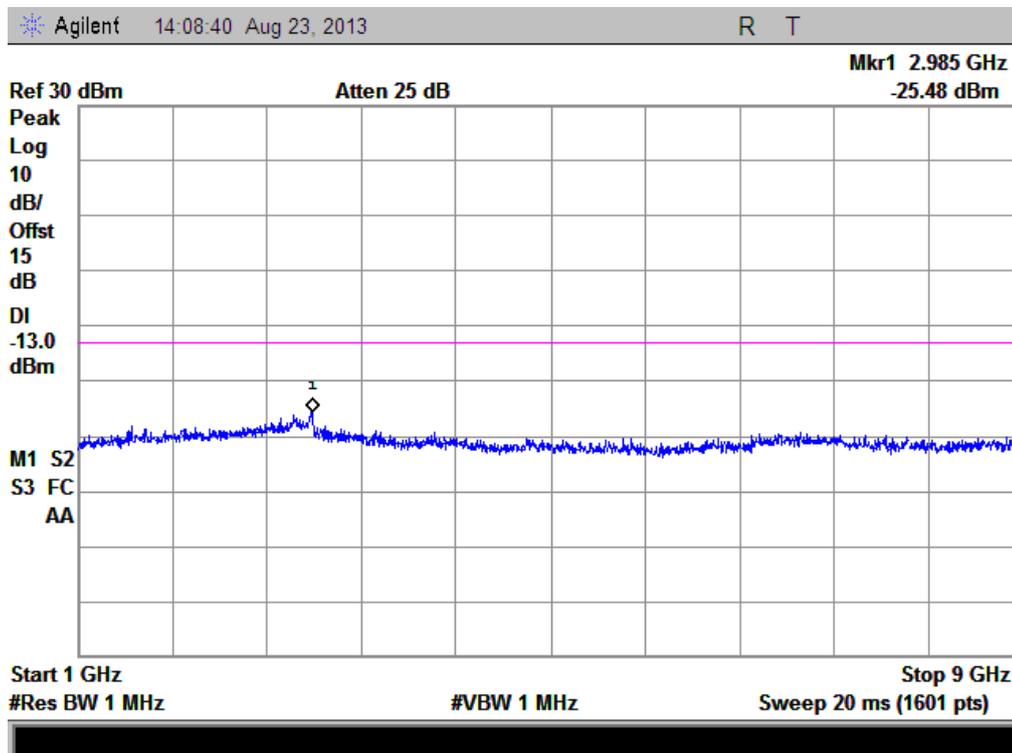(Plot F2.1:   WCDMA1900MHz Channel = 9400, 1GHz to 20GHz)
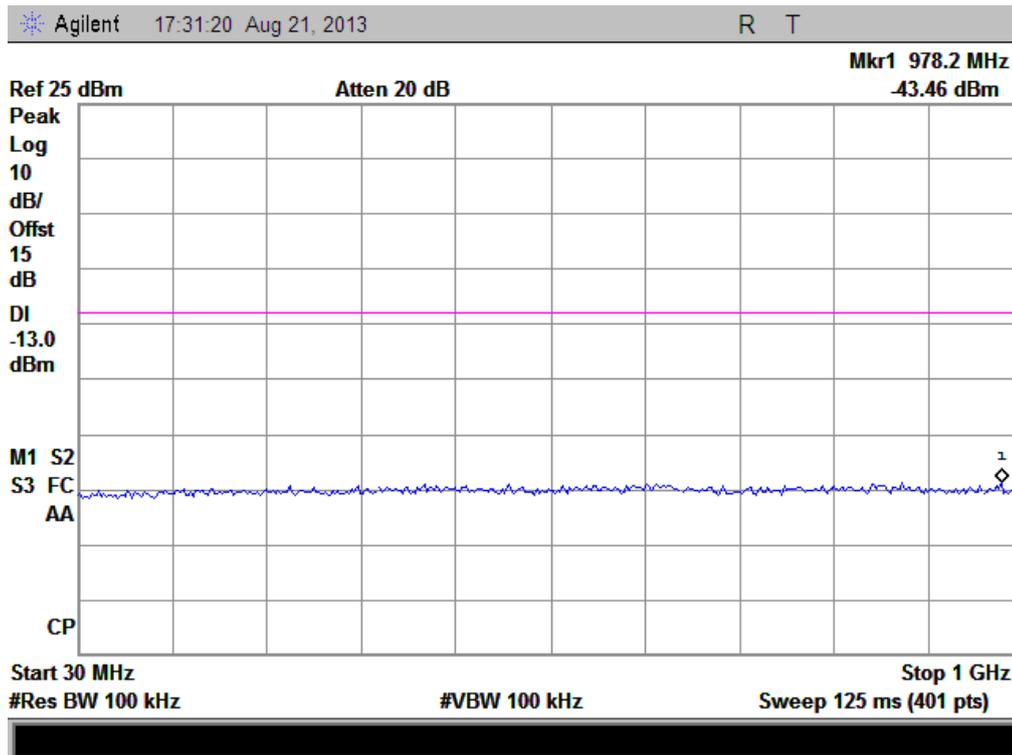
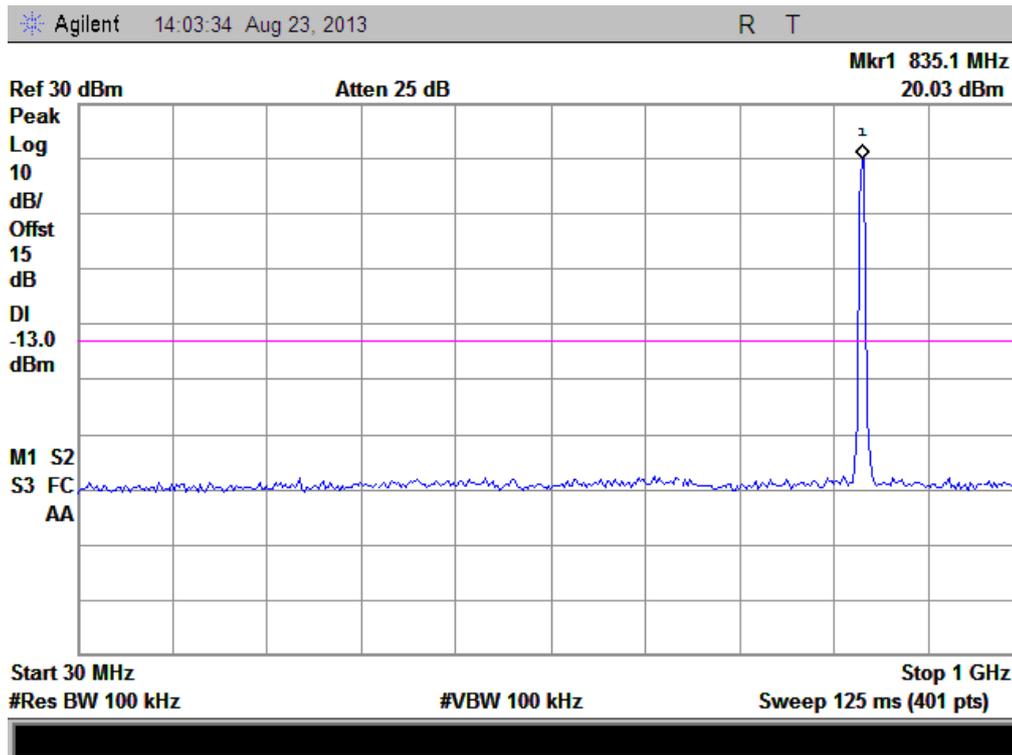(Plot F3:   WCDMA1900MHz Channel = 9538, 30MHz to 1GHz)
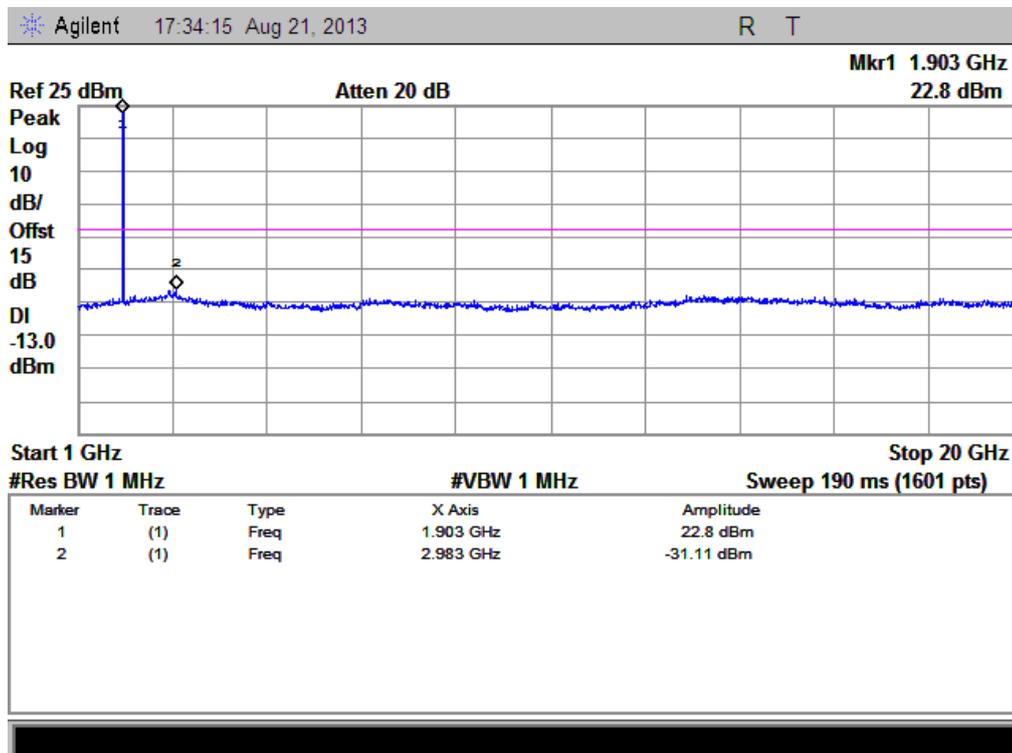
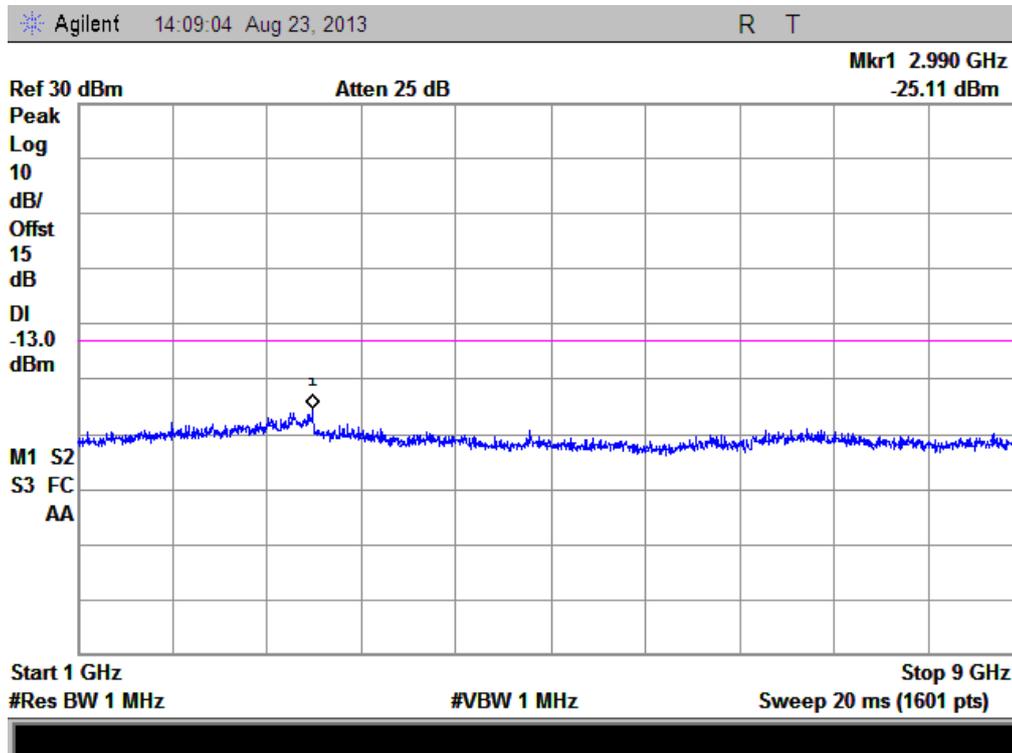(Plot F3.1:   WCDMA1900MHz Channel = 9538 1GHz to 20GHz)
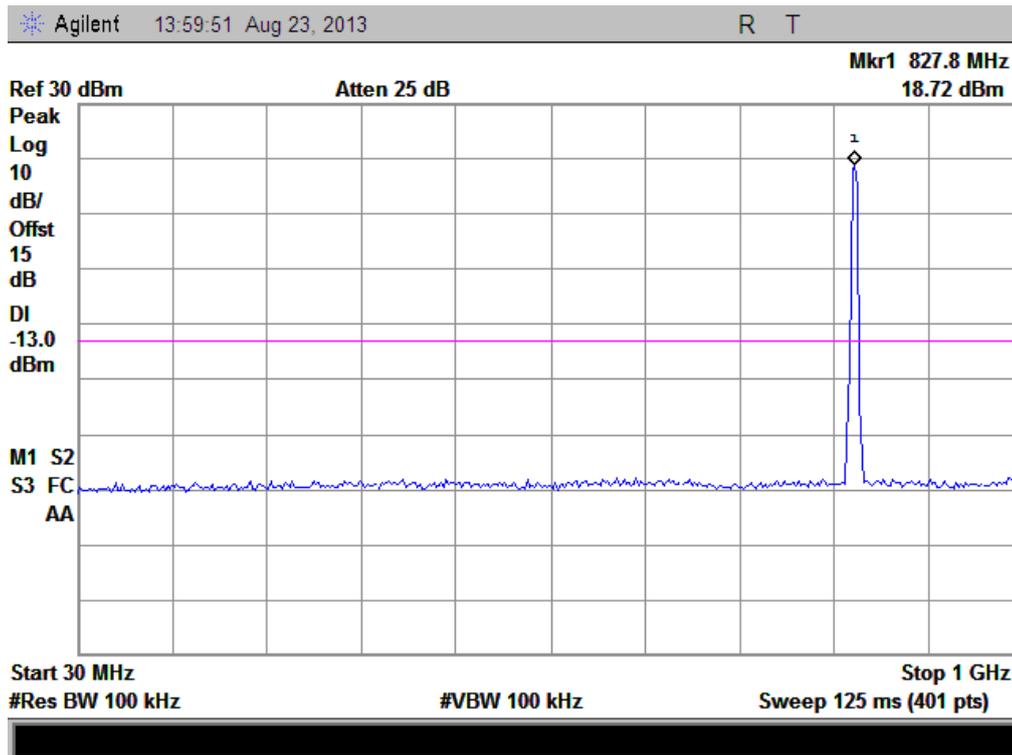
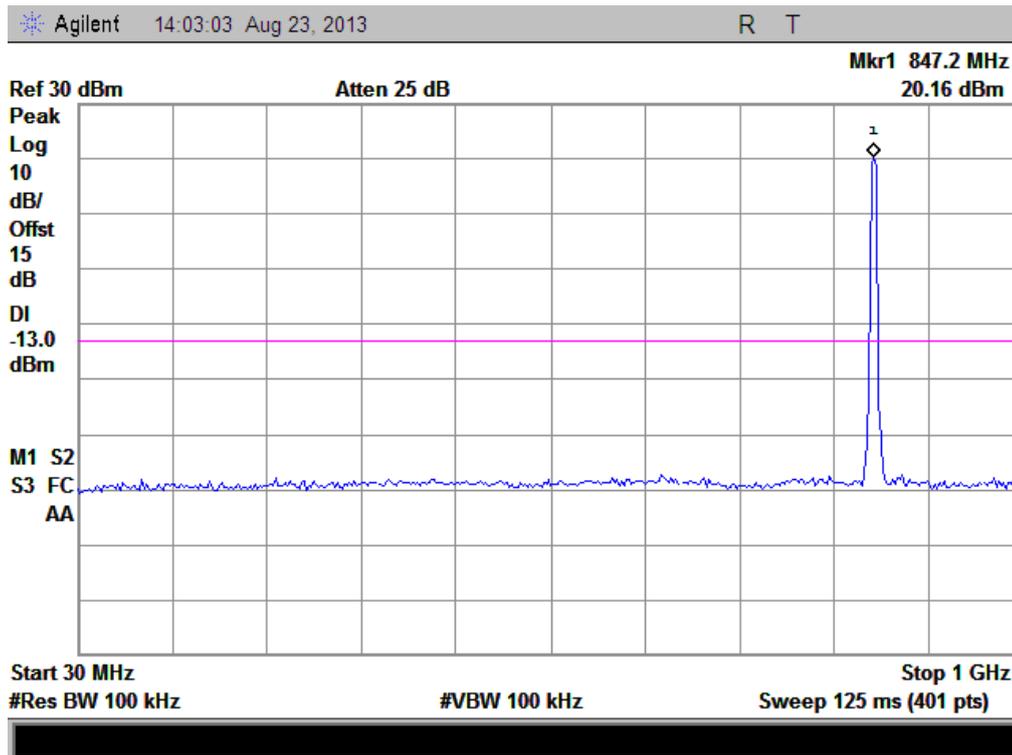(Plot G1:   HSDPA 850MHz Channel = 4132, 30MHz to 1GHz)
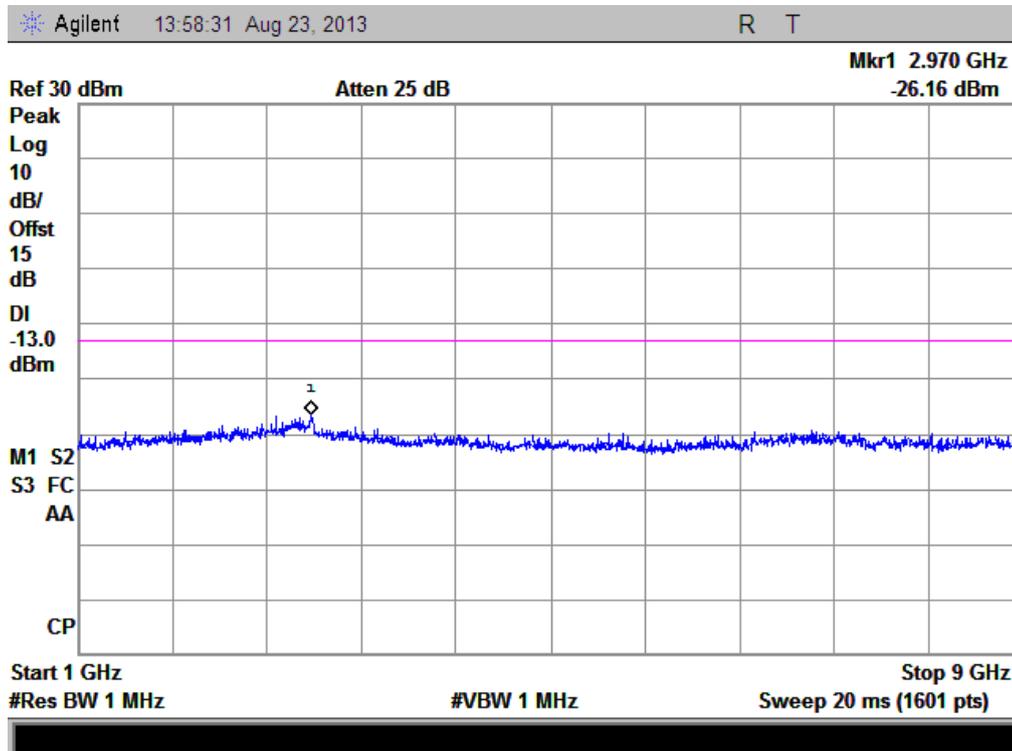
(Plot G1.1:   HSDPA 850MHz Channel = 4132, 1GHz to 9GHz)
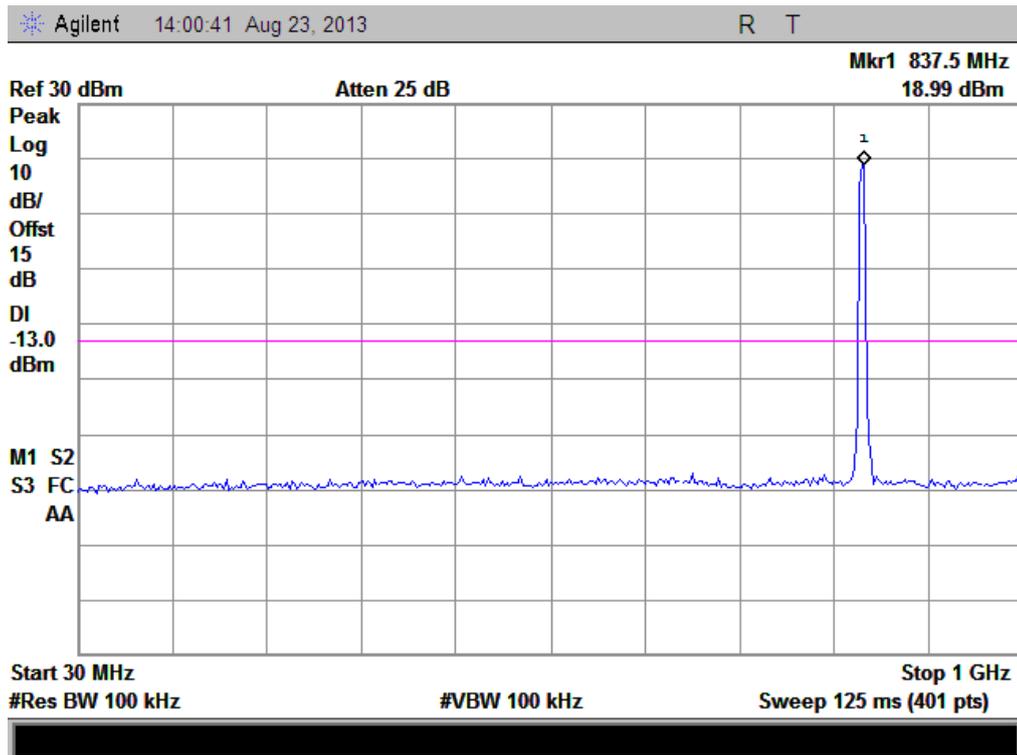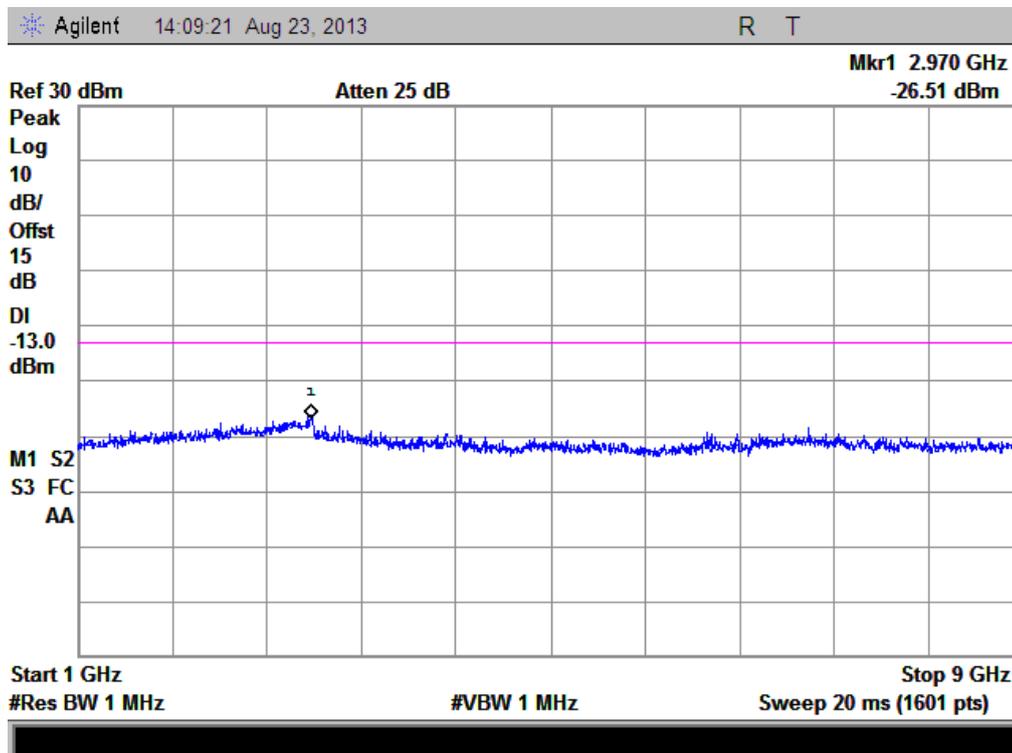
(Plot G2:   HSDPA 850MHz Channel = 4175, 30MHz to 1GHz)
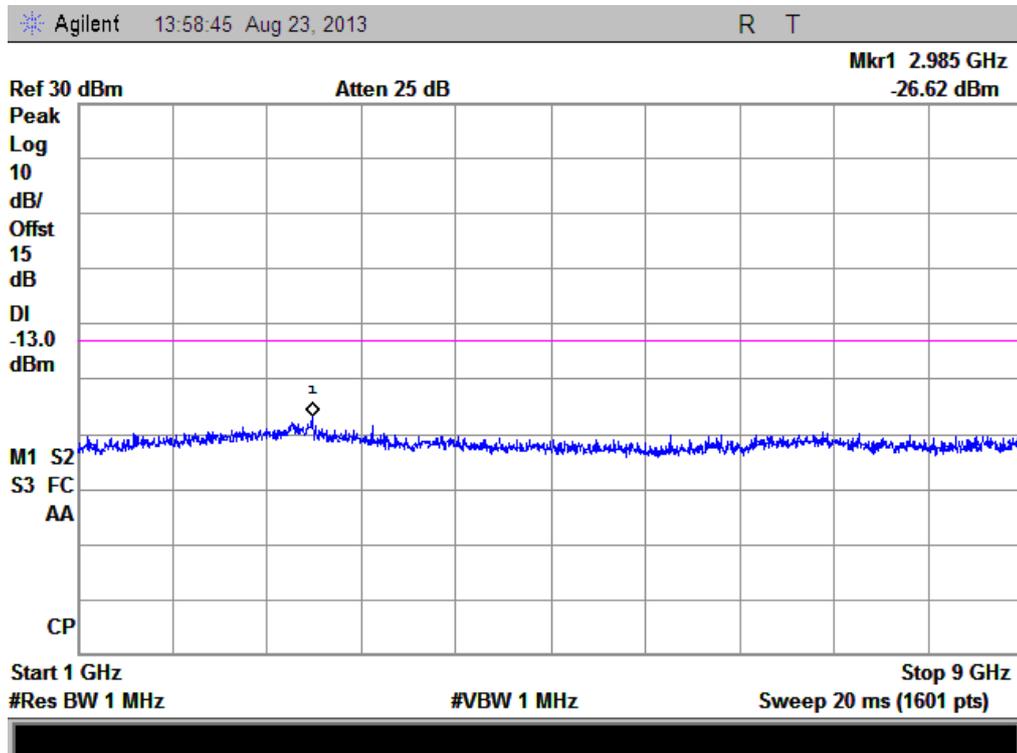
(Plot G2.1:   HSDPA 850MHz Channel = 4175, 1GHz to 9GHz)
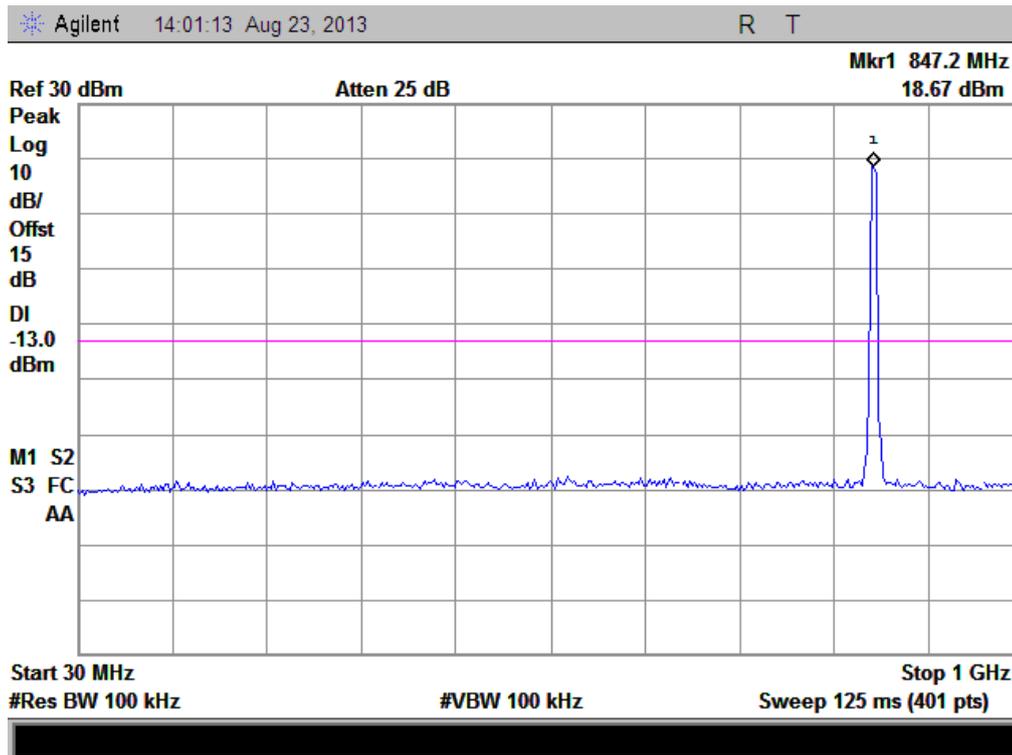
(Plot G3:   HSDPA850MHz Channel = 4233, 30MHz to 1GHz)
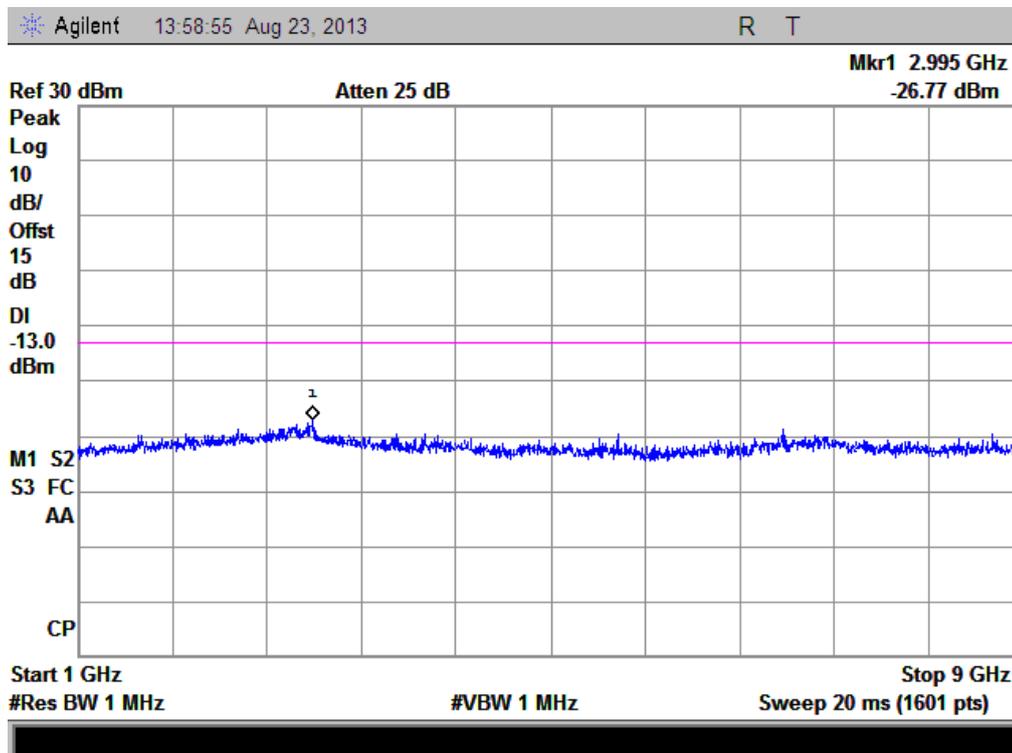
(Plot G3.1:   HSDPA850MHz Channel = 4233, 1GHz to 9GHz)

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


Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.855 GHz	23.77 dBm
2	(1)	Freq	2.983 GHz	-25.89 dBm

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

Agilent   13:55:57 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB

Mkr1 371.9 MHz
-37.43 dBm

Peak
Log
10
dB/
Offst
15
dB

DI
-13.0
dBm

M1 S2
S3 FC
AA

CP

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

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

Agilent   13:57:28 Aug 23, 2013   R   T

Ref 30 dBm   Atten 25 dB

Mkr1 1.879 GHz
24.31 dBm

Peak
Log
10
dB/
Offst
15
dB

DI
-13.0
dBm

Start 1 GHz   Stop 20 GHz
#Res BW 1 MHz   #VBW 1 MHz   Sweep 190 ms (1601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.879 GHz	24.31 dBm
2	(1)	Freq	2.983 GHz	-26.47 dBm
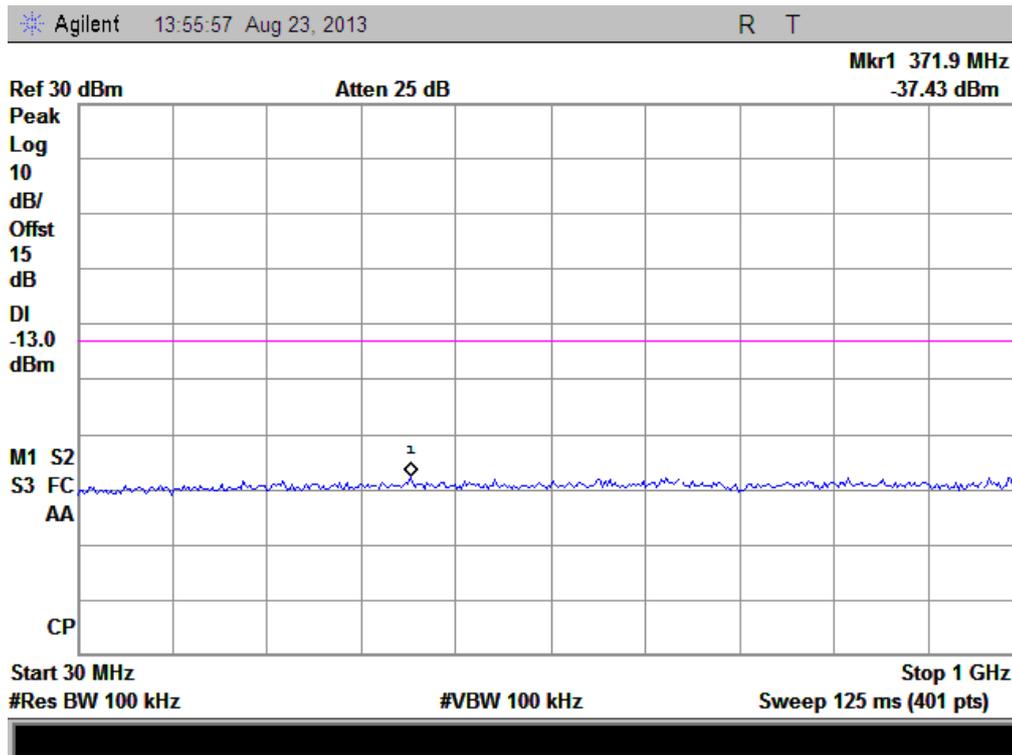
(Plot H2.1:   HSDPA1900MHz Channel = 9400, 1GHz to 20GHz)

Agilent   13:56:09 Aug 23, 2013   R T

Mkr1 655.7 MHz
-37.41 dBm

Ref 30 dBm   Atten 25 dB

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

M1 S2
S3 FC
AA

CP

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

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

Agilent   13:56:59 Aug 23, 2013   R T

Mkr2 2.983 GHz
-25.74 dBm

Ref 30 dBm   Atten 25 dB

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

Start 1 GHz   Stop 20 GHz
#Res BW 1 MHz   #VBW 1 MHz   Sweep 190 ms (1601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.903 GHz	23.47 dBm
2	(1)	Freq	2.983 GHz	-25.74 dBm
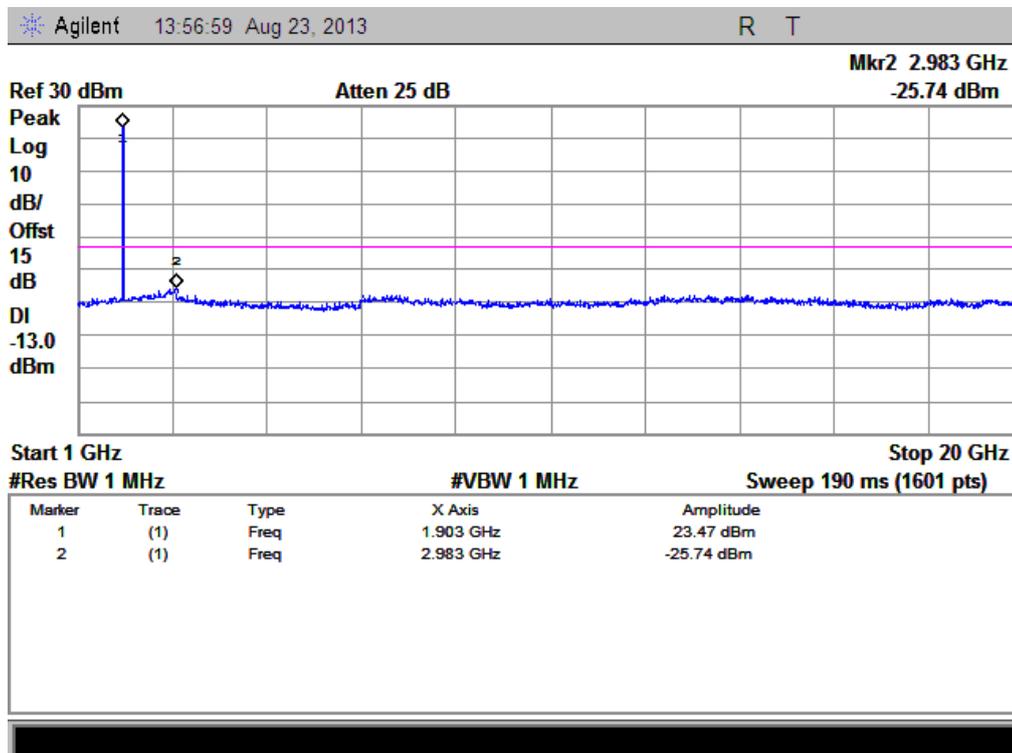
(Plot H3.1:   HSDPA1900MHz Channel = 9538 1GHz to 20GHz)

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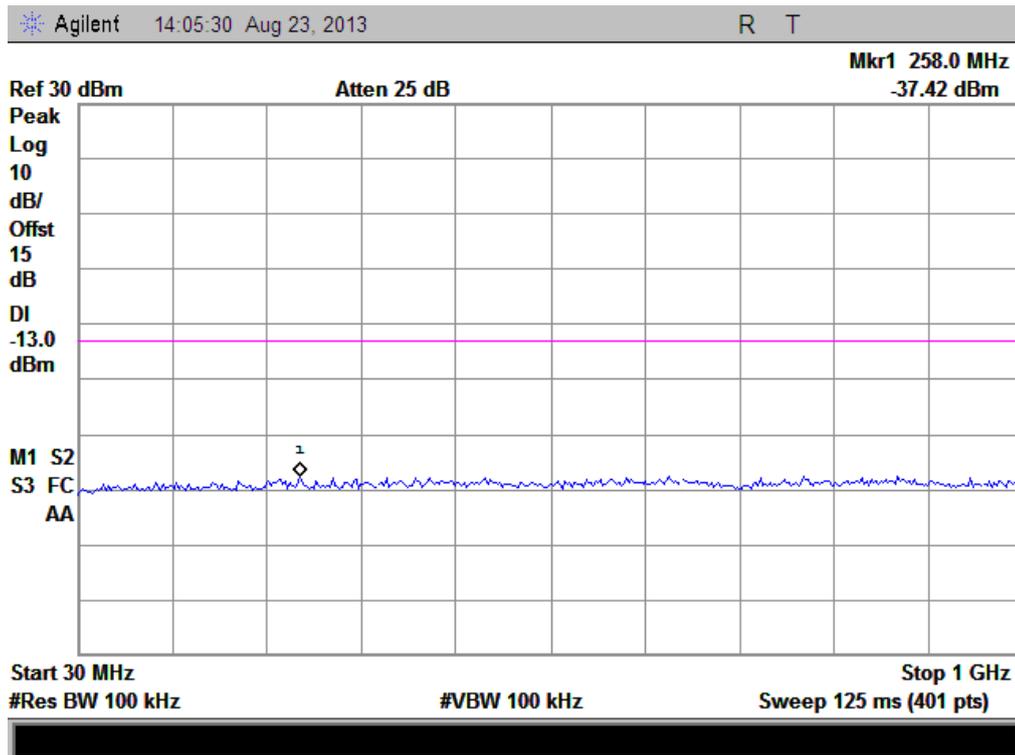
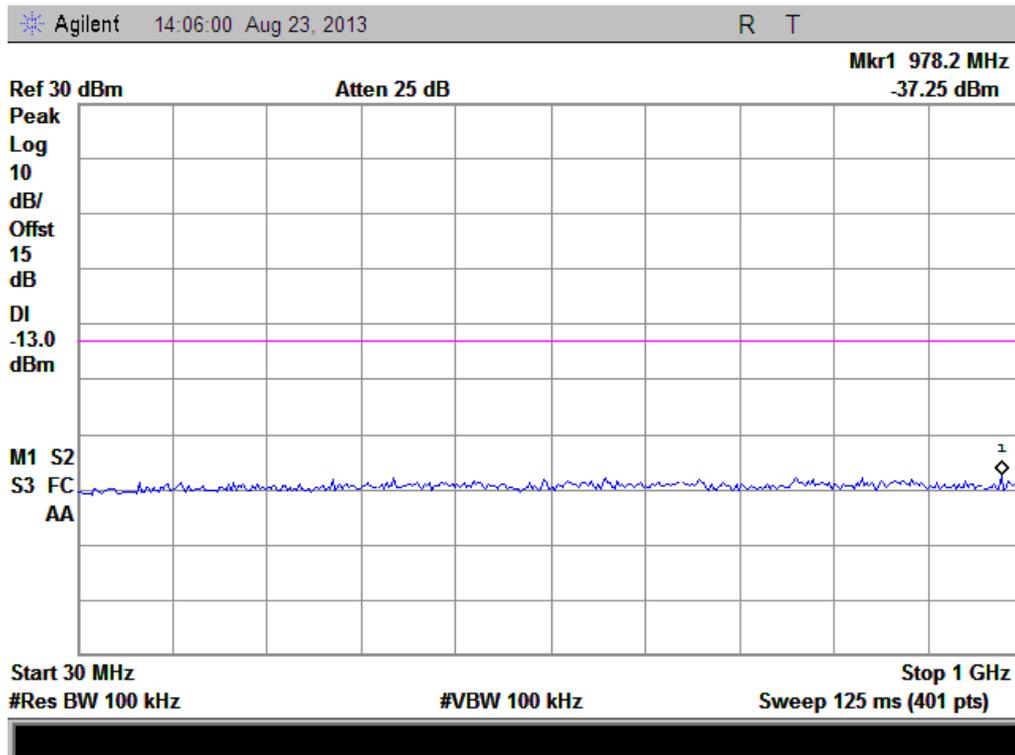(Plot J 1:   HSUPA1900MHz Channel = 9262, 30MHz to 1GHz)
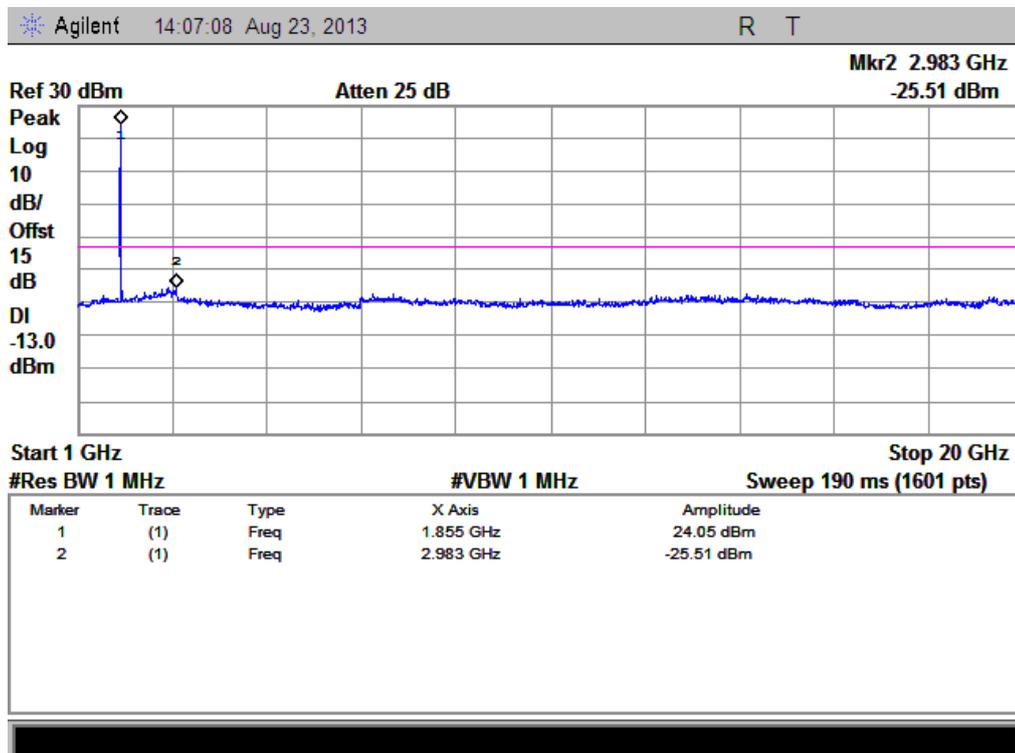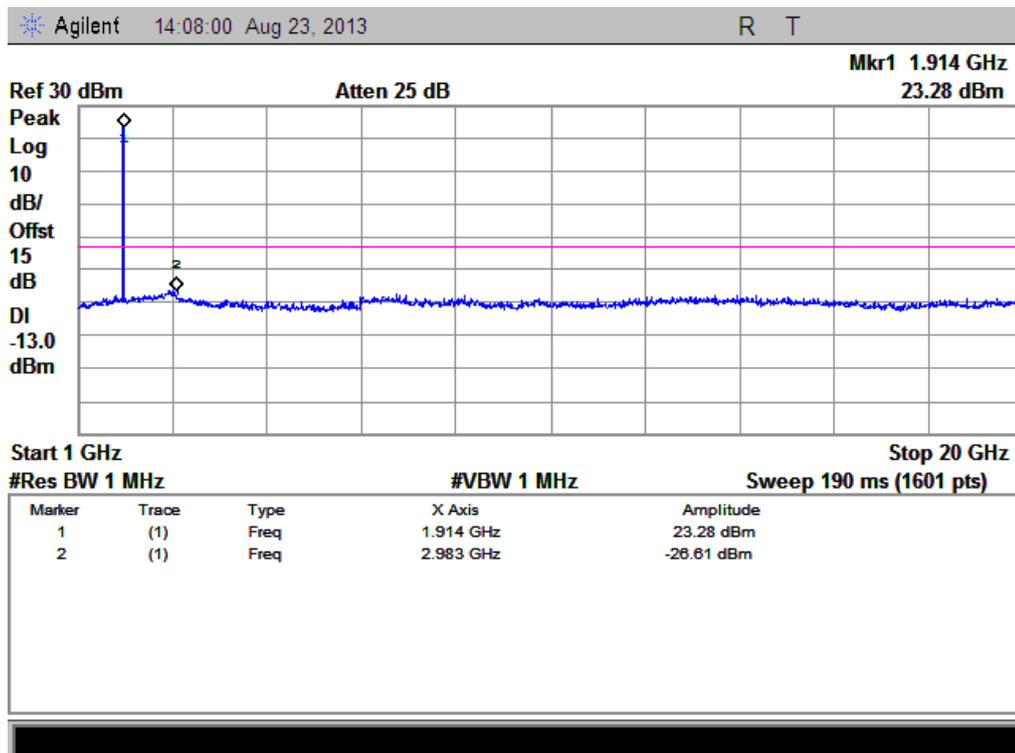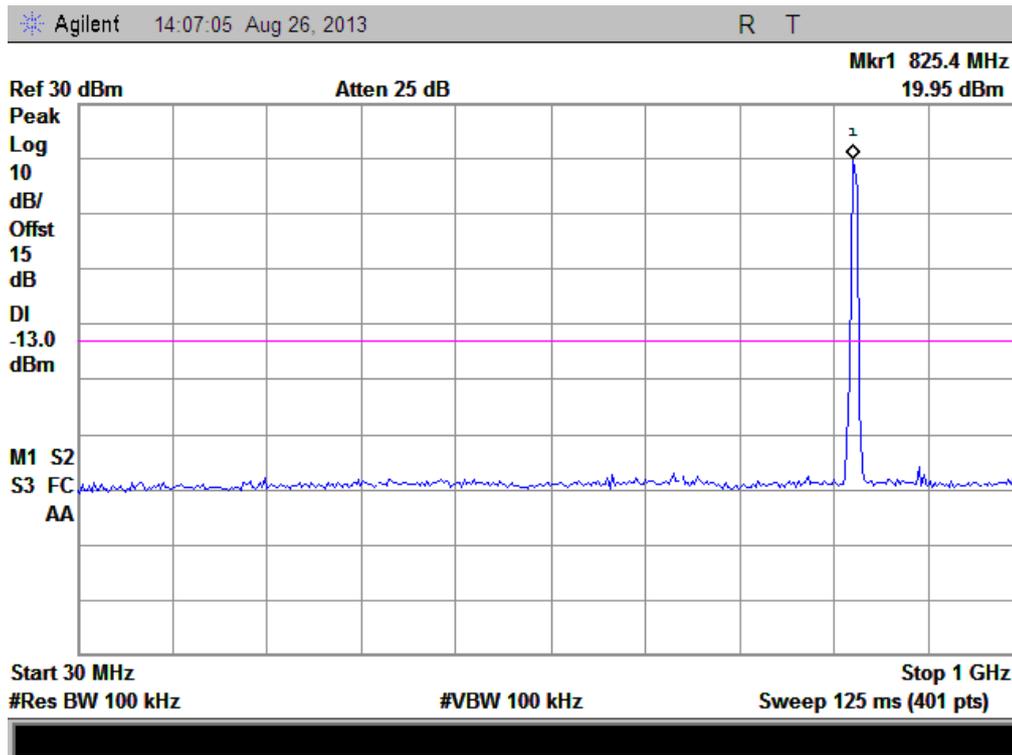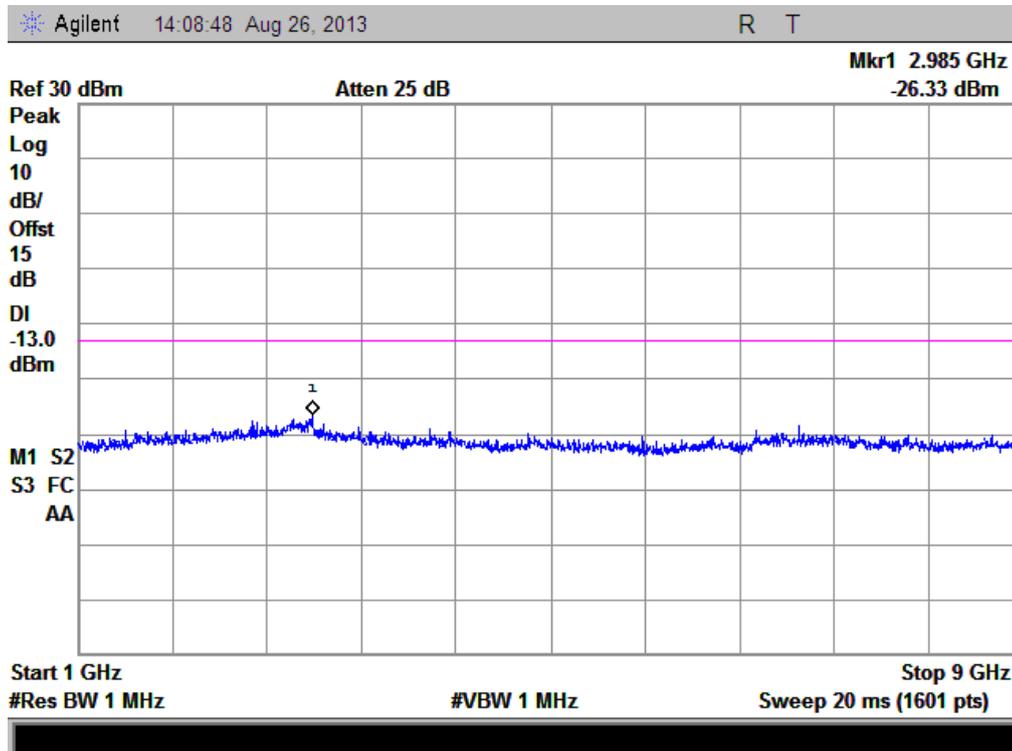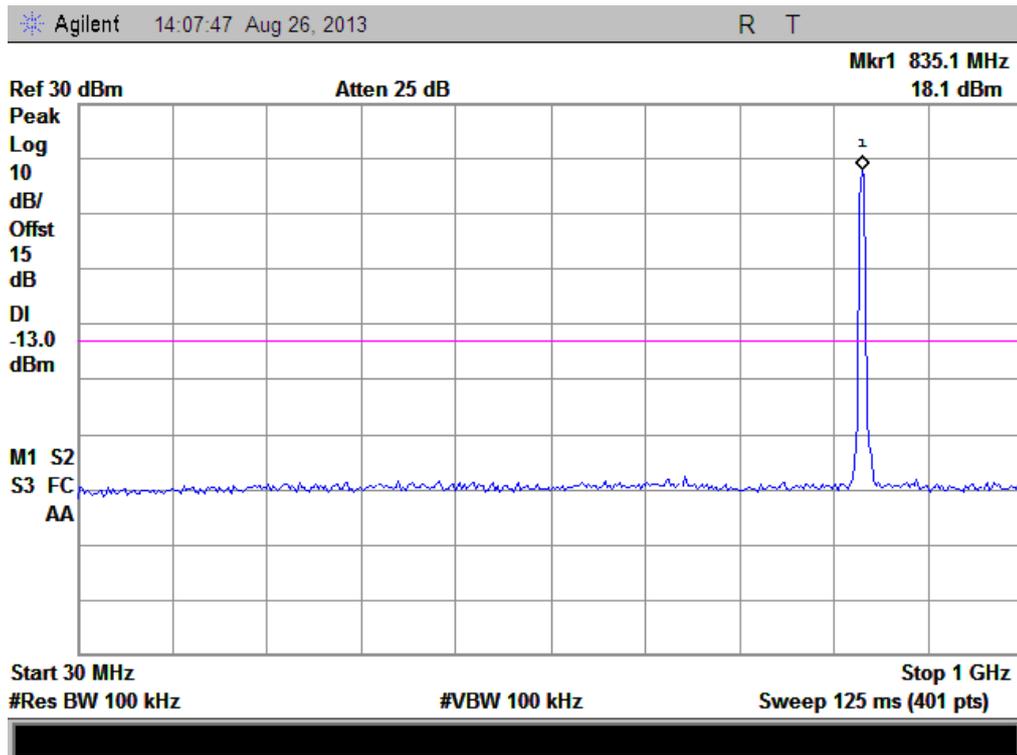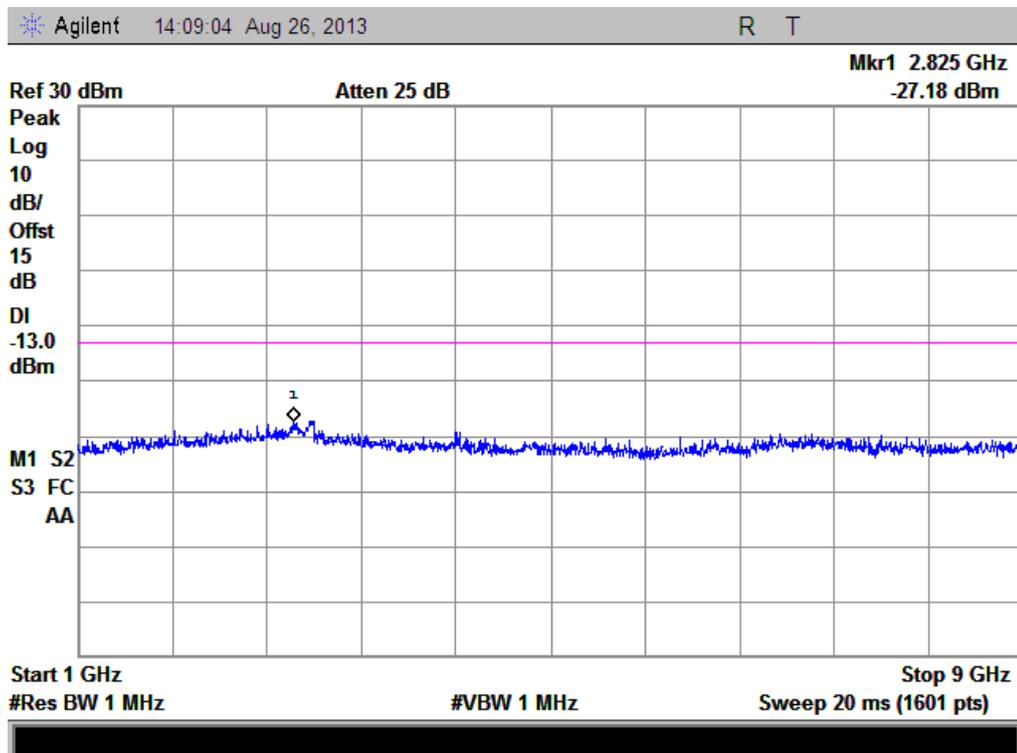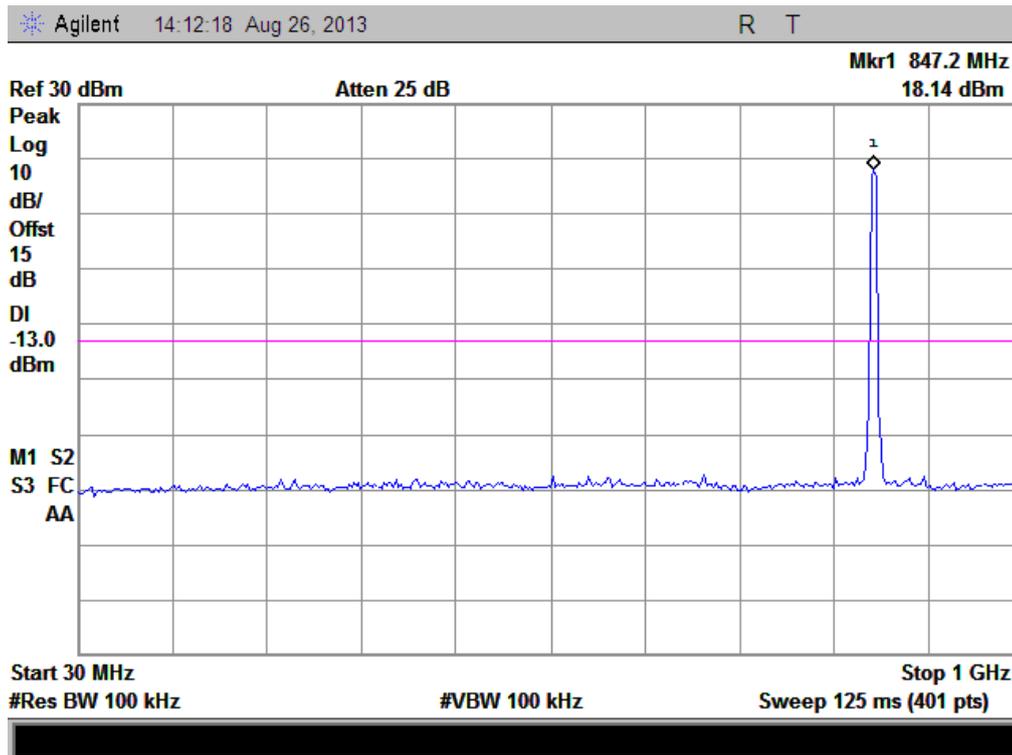

(Plot J1.1:   HSUPA1900MHz Channel = 9262, 1GHz to 20GHz)
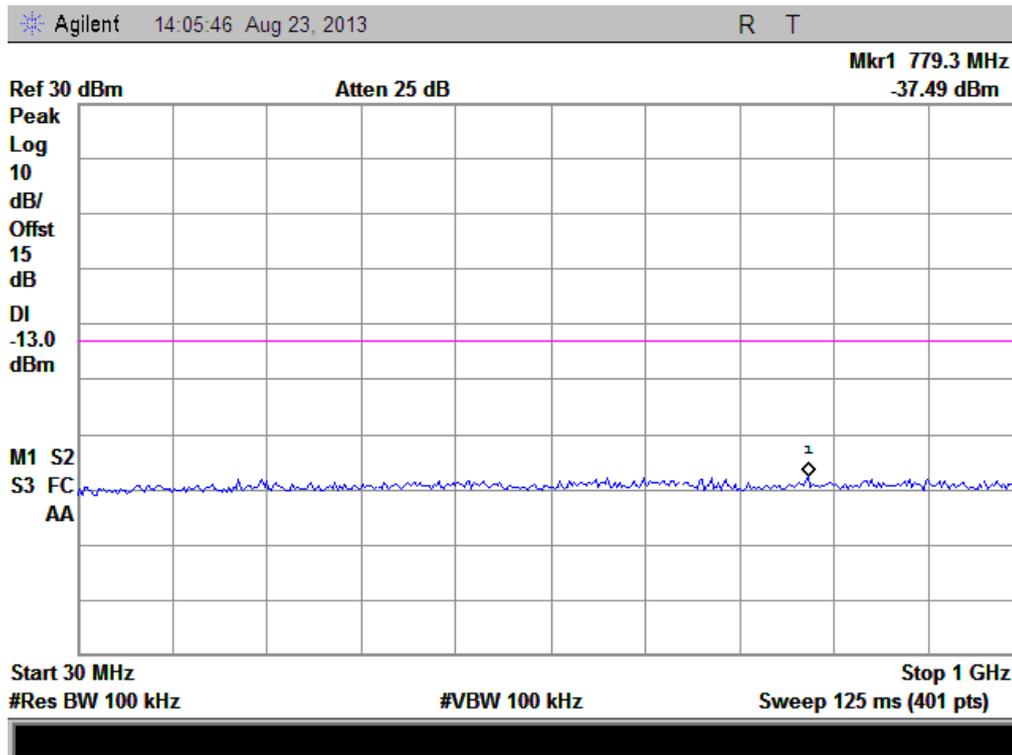
(Plot J 2:   HSUPA1900MHz Channel = 9400, 30MHz to 1GHz)
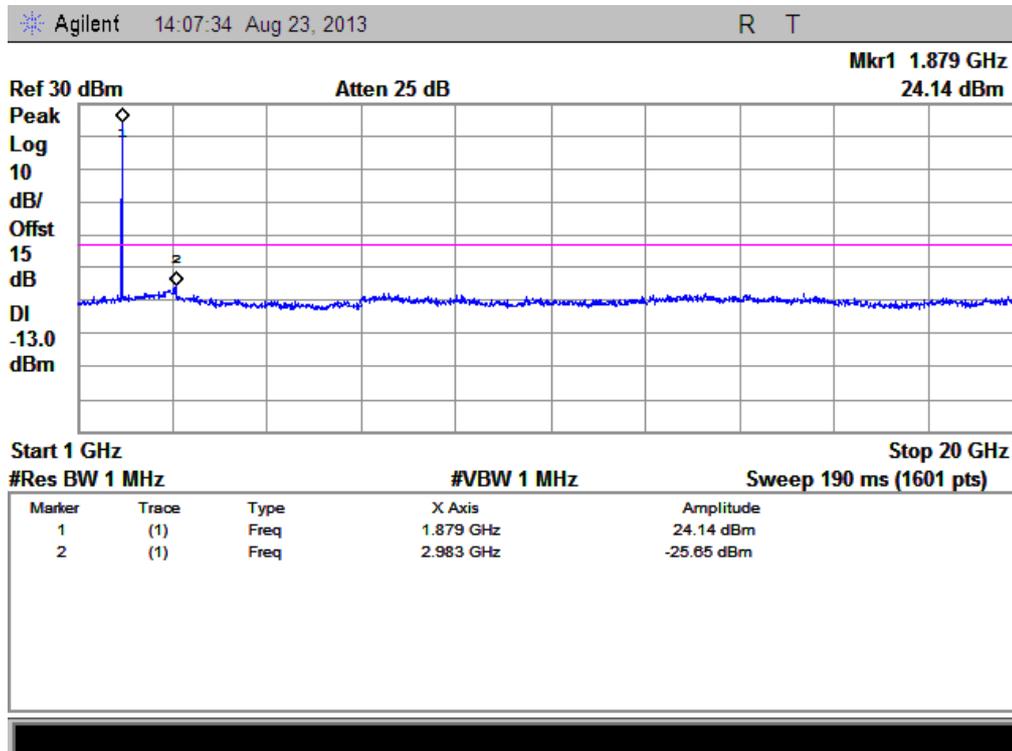
(Plot J2.1:   HSUPA1900MHz Channel = 9400, 1GHz to 20GHz)

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

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.914 GHz	23.28 dBm
2	(1)	Freq	2.983 GHz	-26.61 dBm

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

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

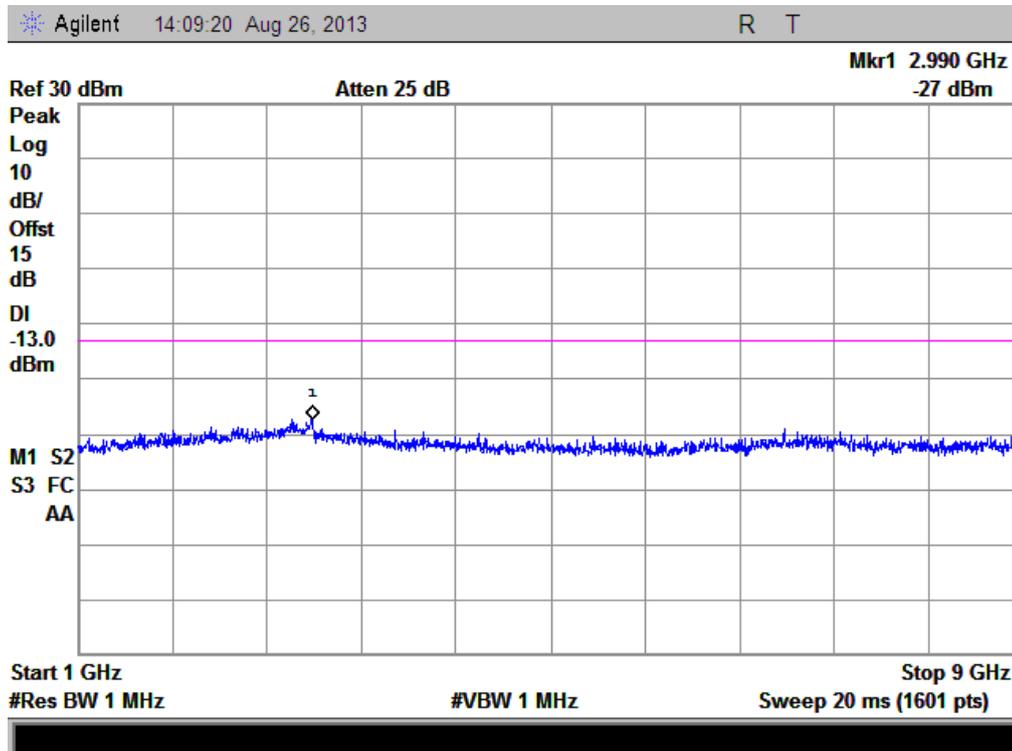(Plot K1.1:　HSPA+ 850MHz Channel = 4132, 1GHz to 9GHz)

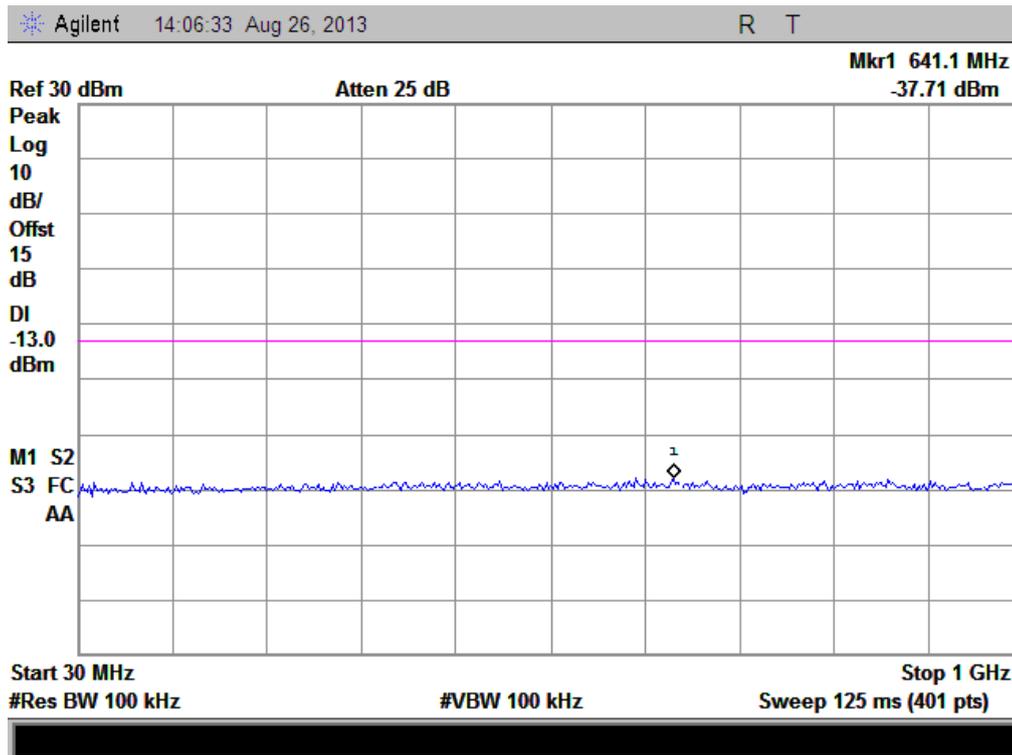(Plot K 2:   HSPA+ 850MHz Channel = 4175, 30MHz to 1GHz)

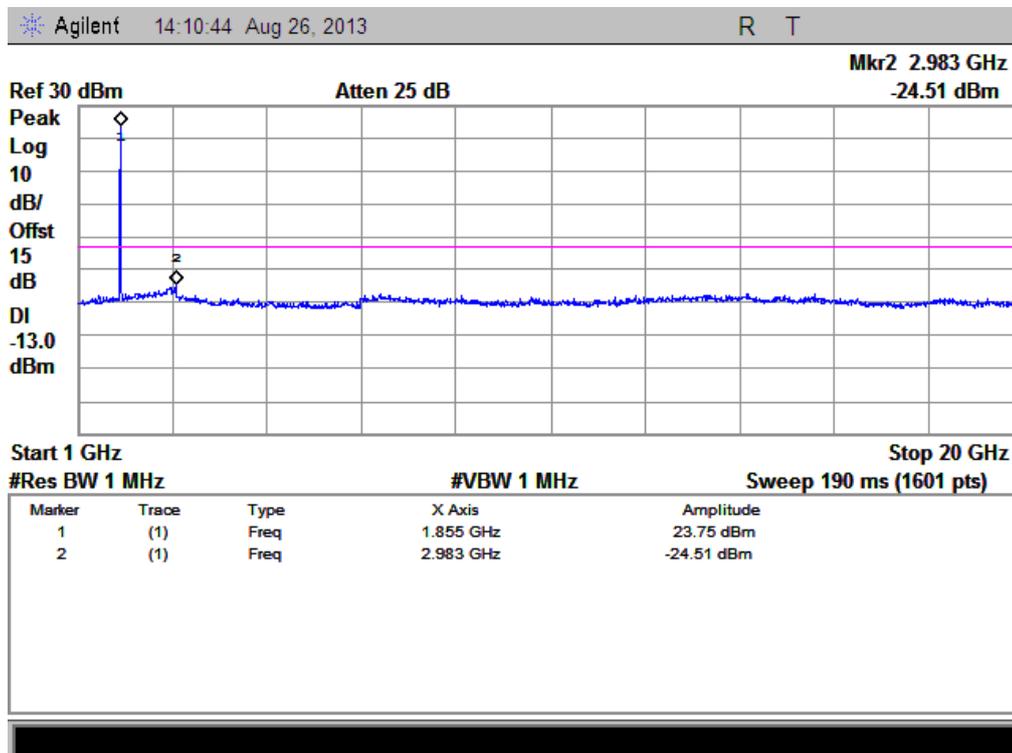(Plot K2.1:   HSPA+ 850MHz Channel = 4175, 1GHz to 9GHz)

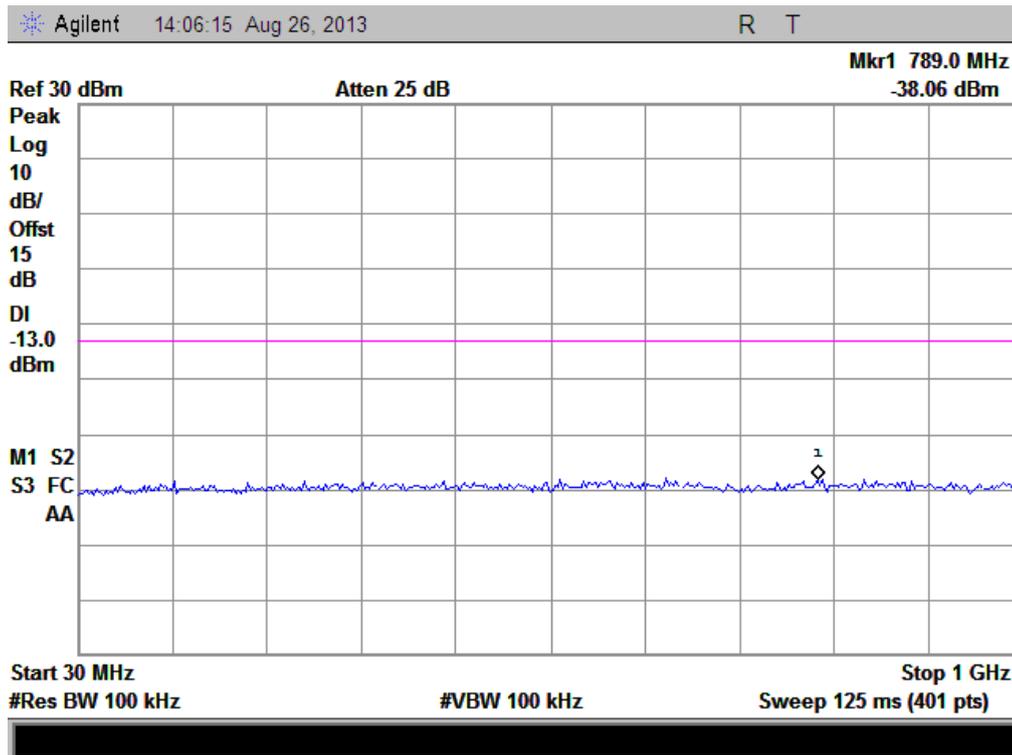(Plot K 3:   HUPA+ 850MHz Channel = 4233, 30MHz to 1GHz)

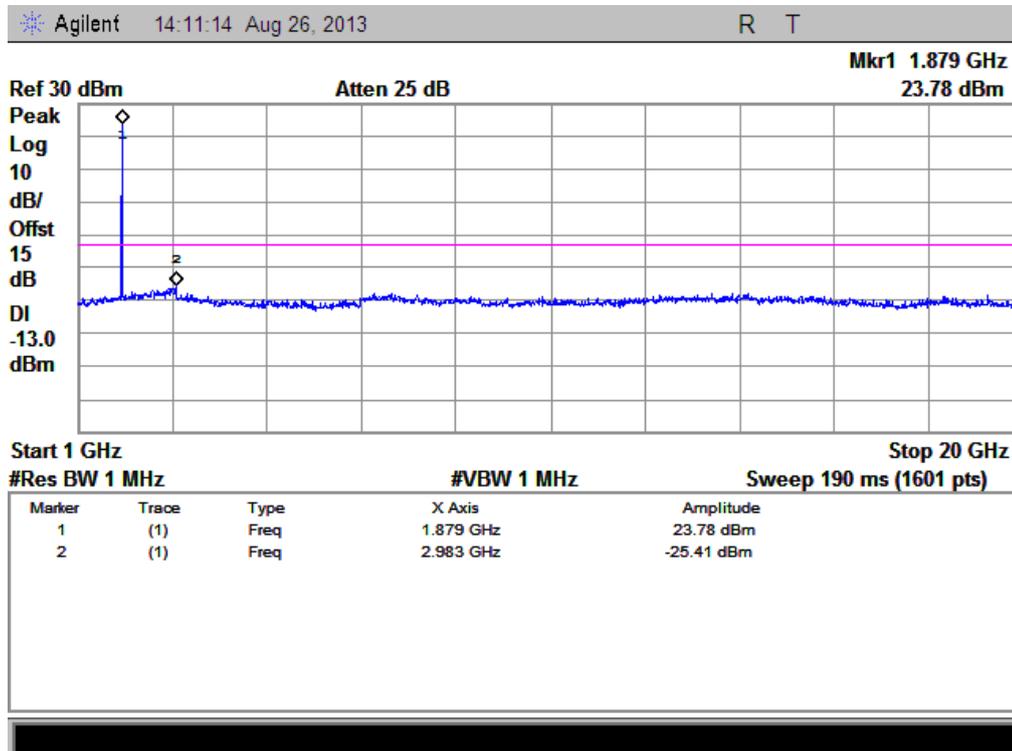(Plot K3.1:   HSPA+ 850MHz Channel = 4233, 1GHz to 9GHz)

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

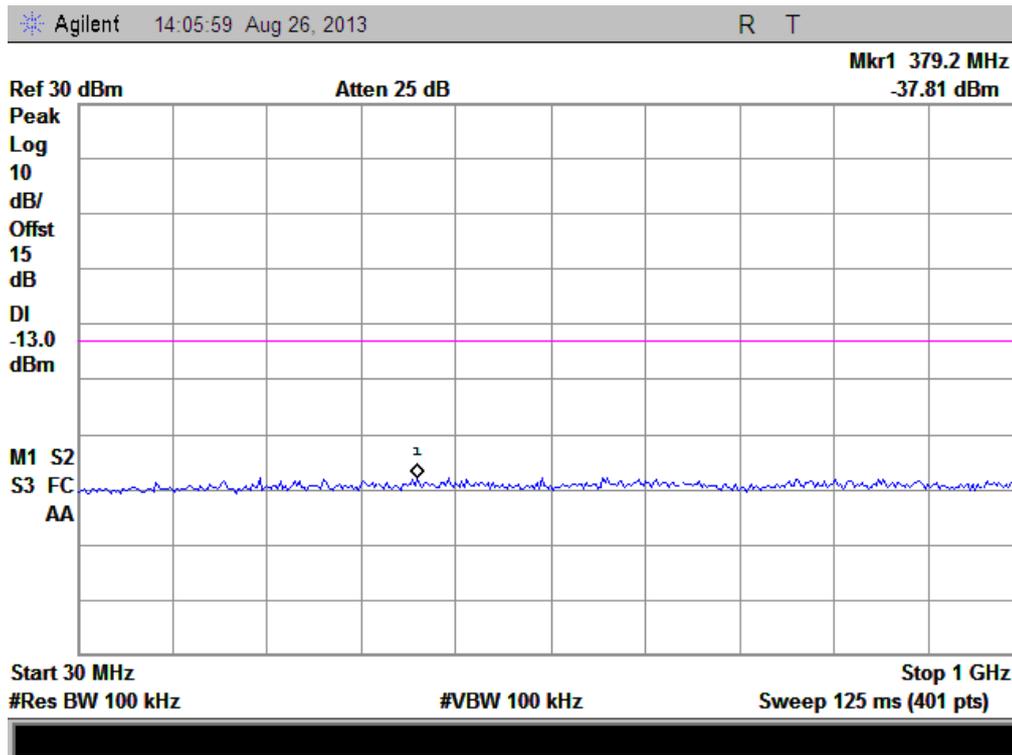| Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.855 GHz	23.75 dBm
2	(1)	Freq	2.983 GHz	-24.51 dBm

(Plot L1.1:   HSPA+1900MHz Channel = 9262, 1GHz to 20GHz)
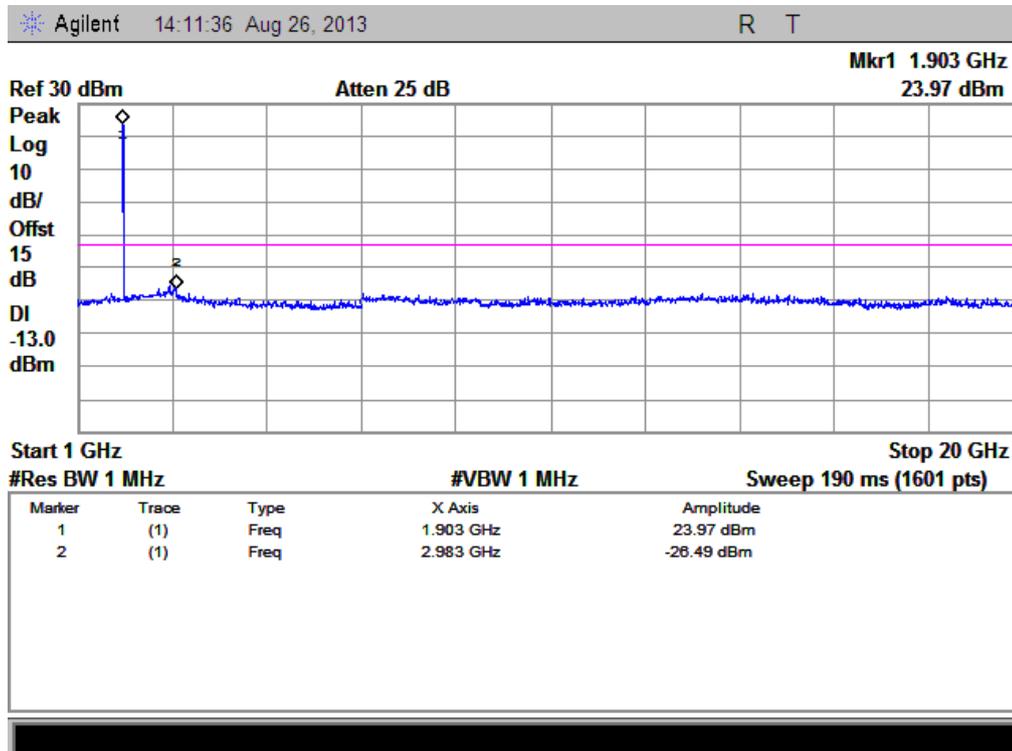
(Plot L 2:   HSPA+1900MHz Channel = 9400, 30MHz to 1GHz)

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

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

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.903 GHz	23.97 dBm
2	(1)	Freq	2.983 GHz	-26.49 dBm

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

2.6 Band Edge

2.6.1 Requirement

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

2.6.2 Test Description

See section 2.1.2 of this report.

2.6.3 Test Result

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

1.   Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-13.66	Plat A	-13	PASS
	251	848.8	-13.98	Plot B		PASS
GSM 1900MHz	512	1850.2	-16.32	Plat C	-13	PASS
	810	1909.8	-15.3	Plot D		PASS
EDGE 850MHz	128	824.2	-14.3	Plat E	-13	PASS
	251	848.8	-13.71	Plot F		PASS
EDGE 1900MHz	512	1850.2	-15.33	Plat G	-13	PASS
	810	1909.8	-16.63	Plot H		PASS
WCDMA 850MHz	4132	826.4	-13.32	Plat I	-13	PASS
	4233	846.6	-14.37	Plot J		PASS
WCDMA 1900MHz	9262	1852.4	-14.11	Plat K	-13	PASS
	9538	1907.6	-13.82	Plot L		PASS
HSDPA 850MHz	4132	826.4	-13.32	Plat M	-13	PASS
	4233	846.6	-14.23	Plot N		PASS
HSDPA 1900MHz	9262	1852.4	-15	Plat O	-13	PASS
	9538	1907.6	-14.24	Plot P		PASS
HSUPA 850MHz	4132	826.4	-13.53	Plat Q	-13	PASS
	4233	846.6	-14.1	Plot R		PASS
HSUPA	9262	1852.4	-14	Plat S	-13	PASS

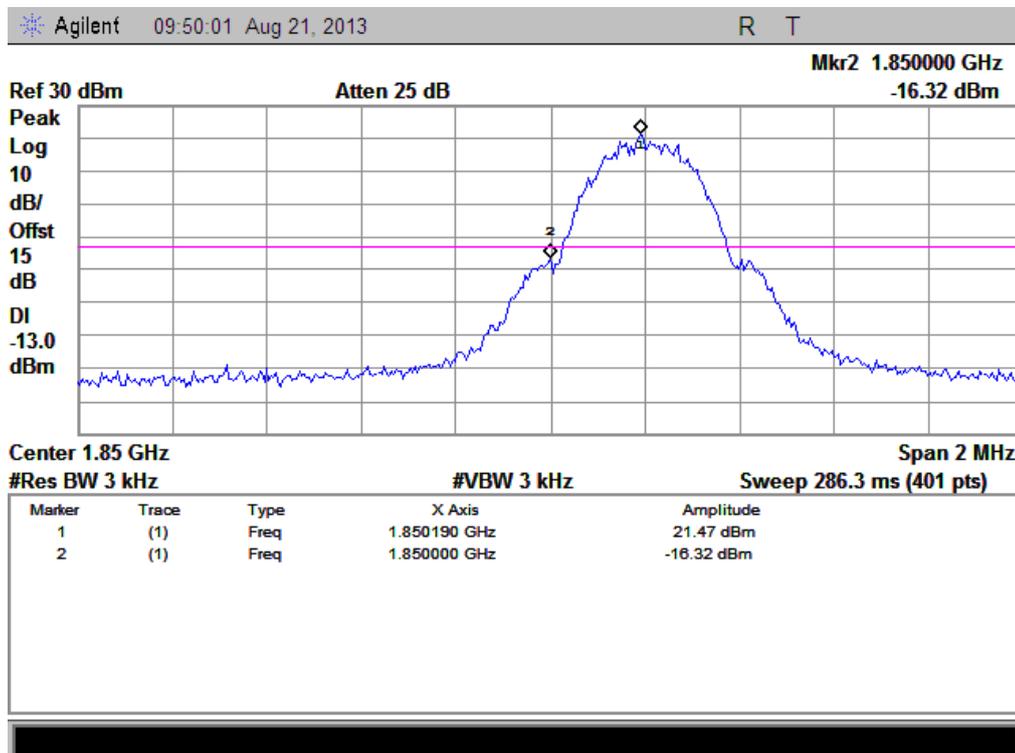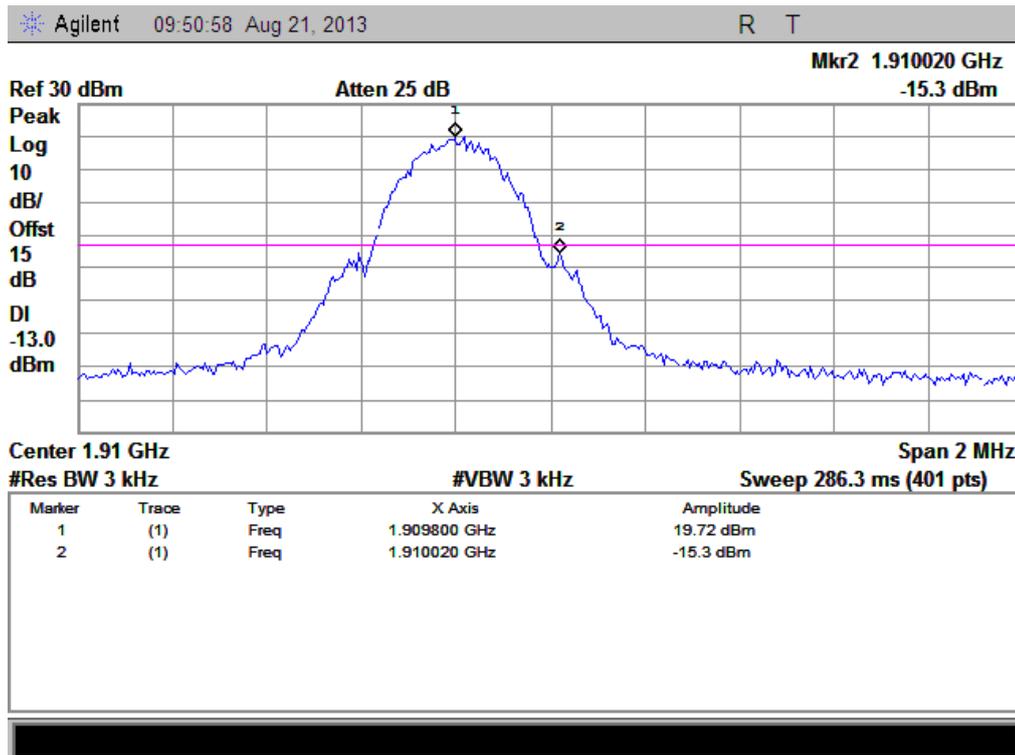| 1900MHz	9538	1907.6	-14.05	Plot T		PASS
HSPA+	4132	826.4	-13.83	Plat U	-13	PASS
850MHz	4233	846.6	-14.77	Plot V		PASS
HSPA+	9262	1852.4	-15.23	Plat W	-13	PASS
1900MHz	9538	1907.6	-14.02	Plot X		PASS

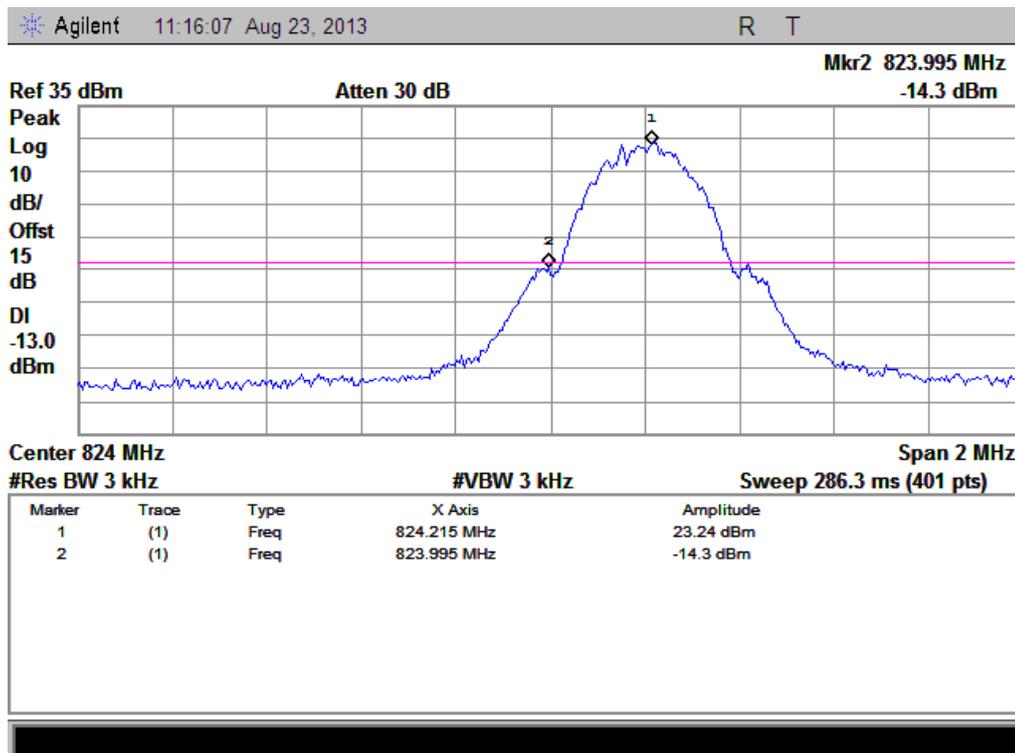2. Test Plots:
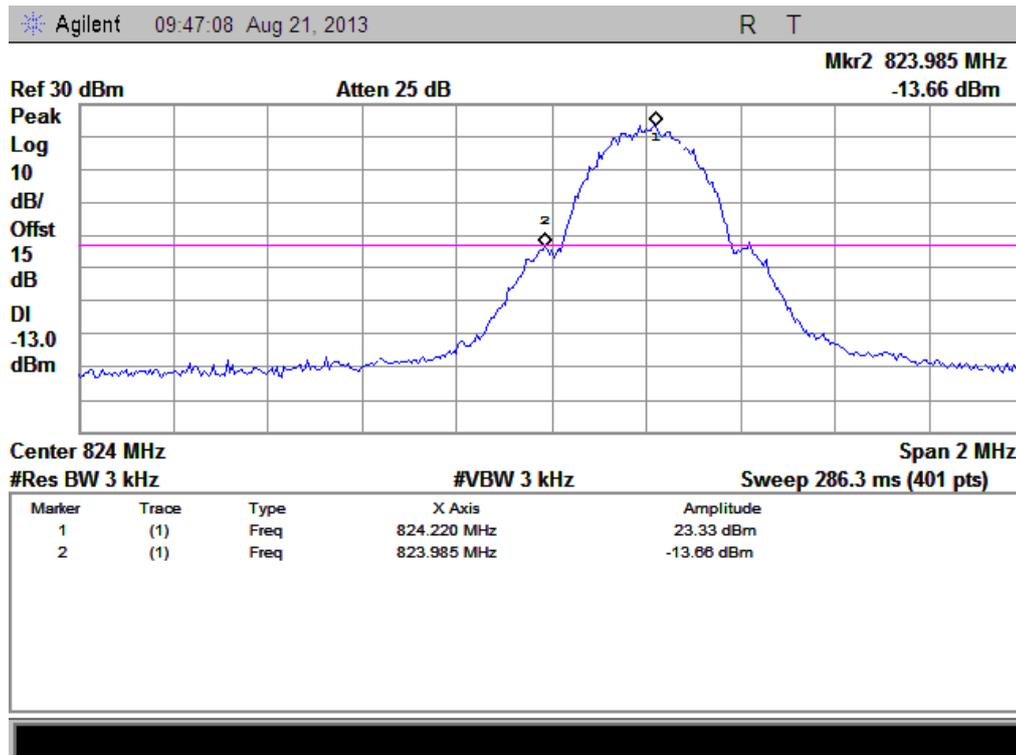
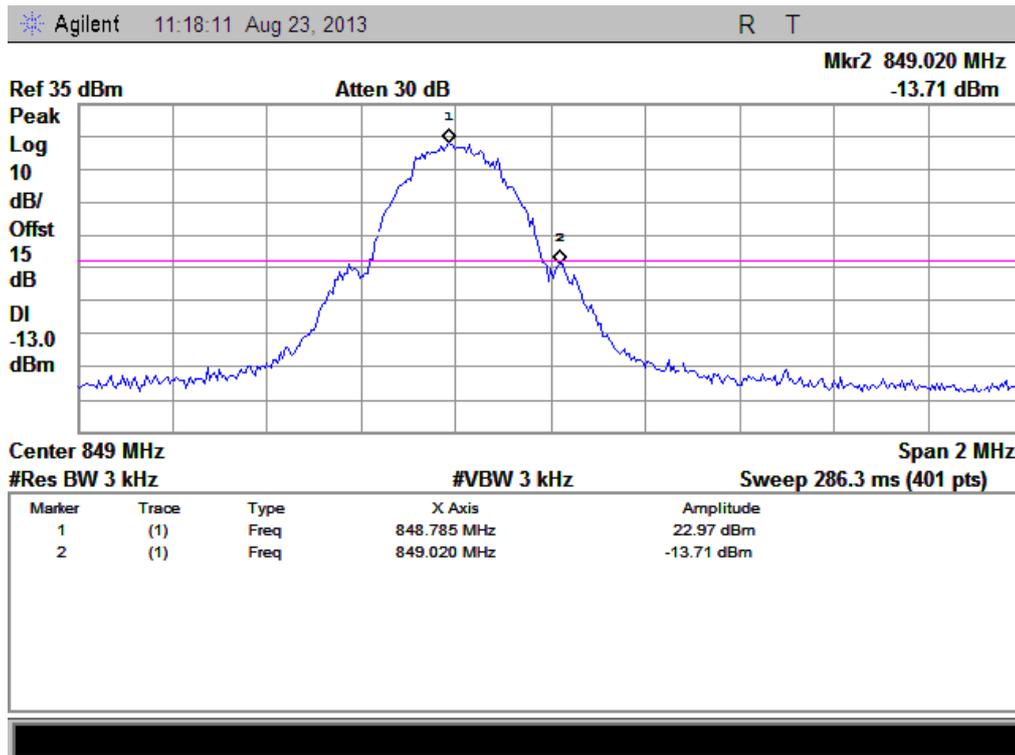(Plot A: GSM 850 Channel = 128)
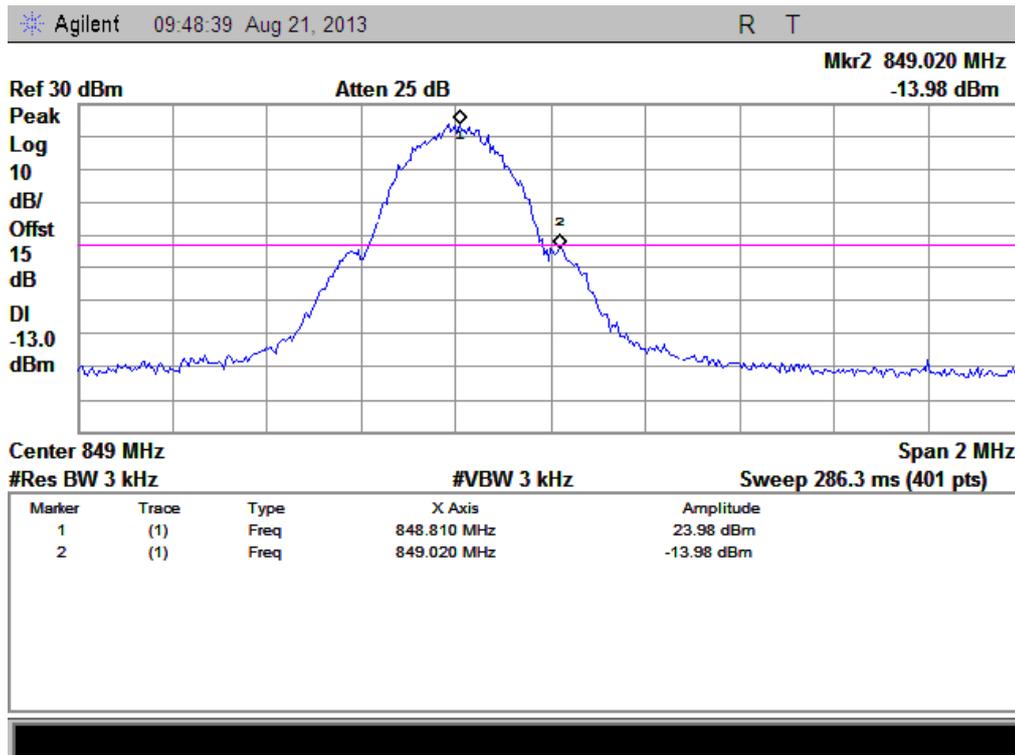
(Plot B: GSM 850 Channel = 251)

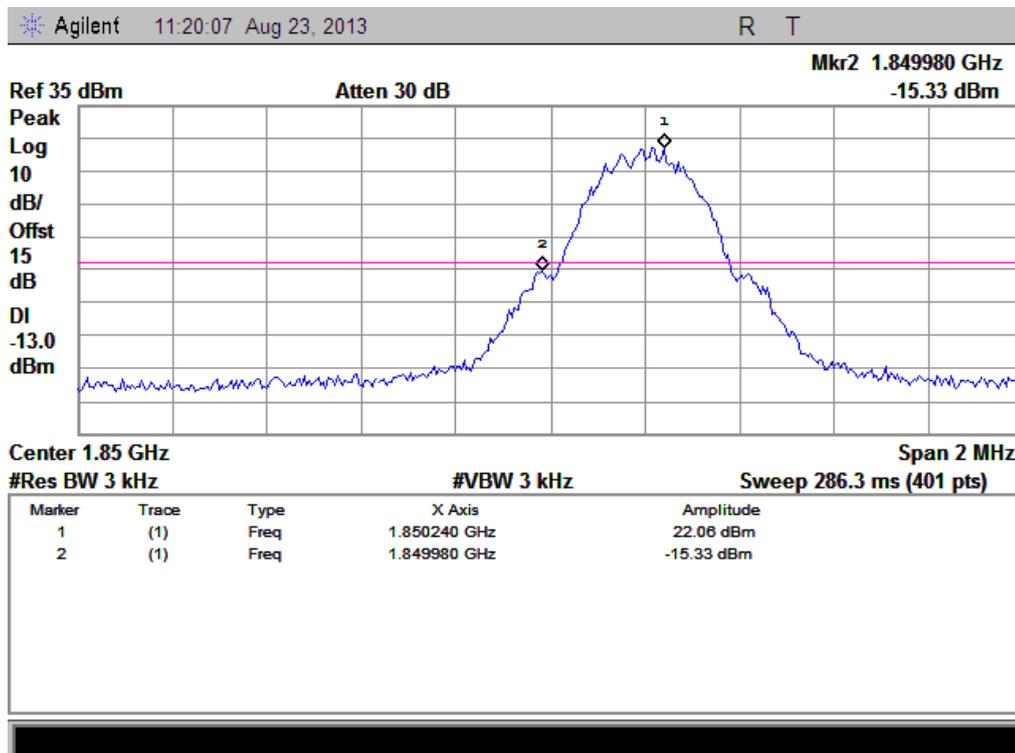(Plot C: GSM 1900 Channel = 512)

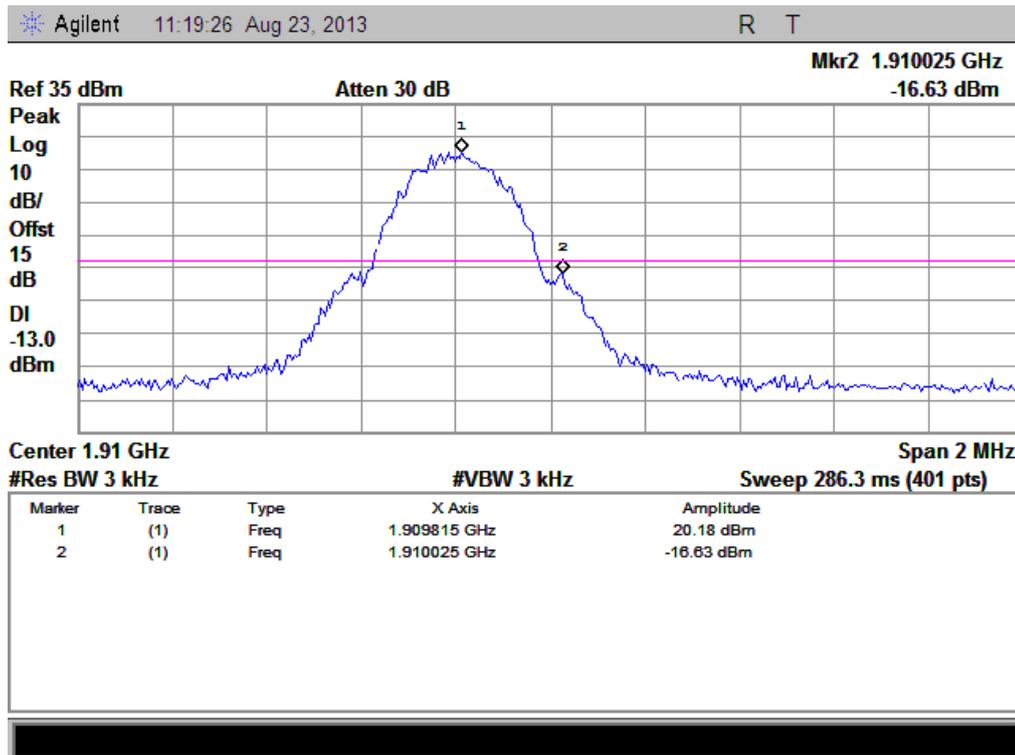(Plot D: GSM 1900 Channel = 810)
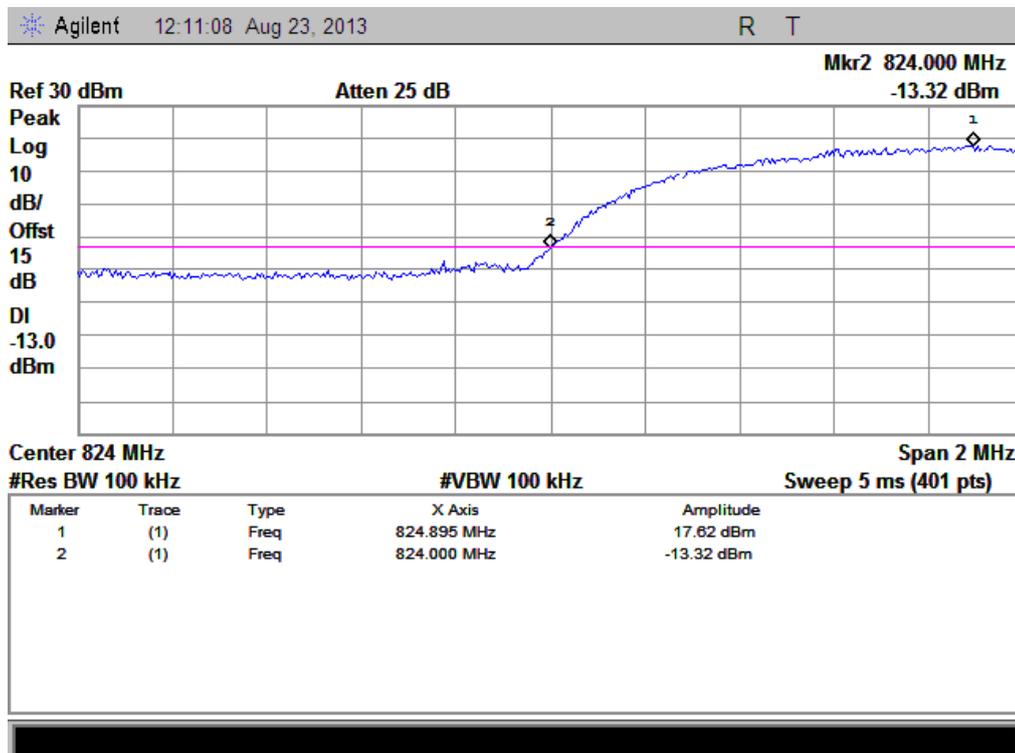

(Plot E: EGPRS 850 Channel = 128)

(Plot F: EGPRS 850 Channel = 251)

(Plot G: EGPRS 1900 Channel = 512)

(Plot H: EGPRS 1900 Channel = 810)

(Plot I: WCDMA 850 Channel = 4132)

Agilent   12:11:39 Aug 23, 2013   R   T

Mkr2 849.000 MHz

Ref 30 dBm   Atten 25 dB   -14.37 dBm

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

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	848.000 MHz	17.68 dBm
2	(1)	Freq	849.000 MHz	-14.37 dBm
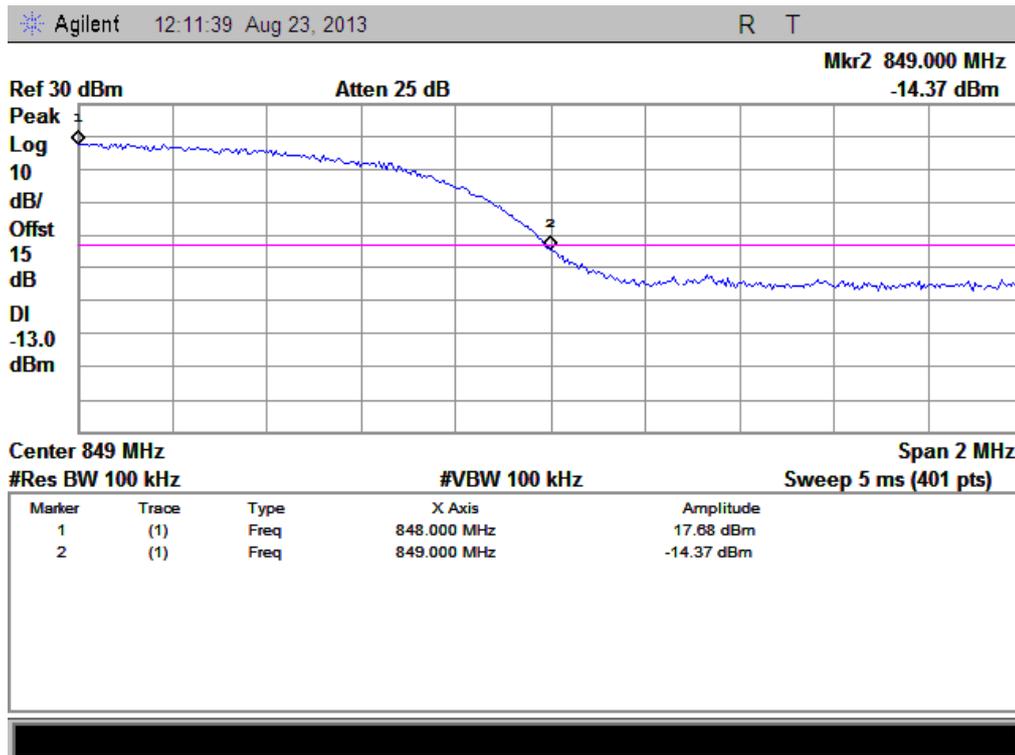
(Plot J: WCDMA 850 Channel = 4233)

Agilent   12:09:32 Aug 23, 2013   R   T

Mkr2 1.850000 GHz

Ref 30 dBm   Atten 25 dB   -14.11 dBm

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

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	1.850900 GHz	17.86 dBm
2	(1)	Freq	1.850000 GHz	-14.11 dBm
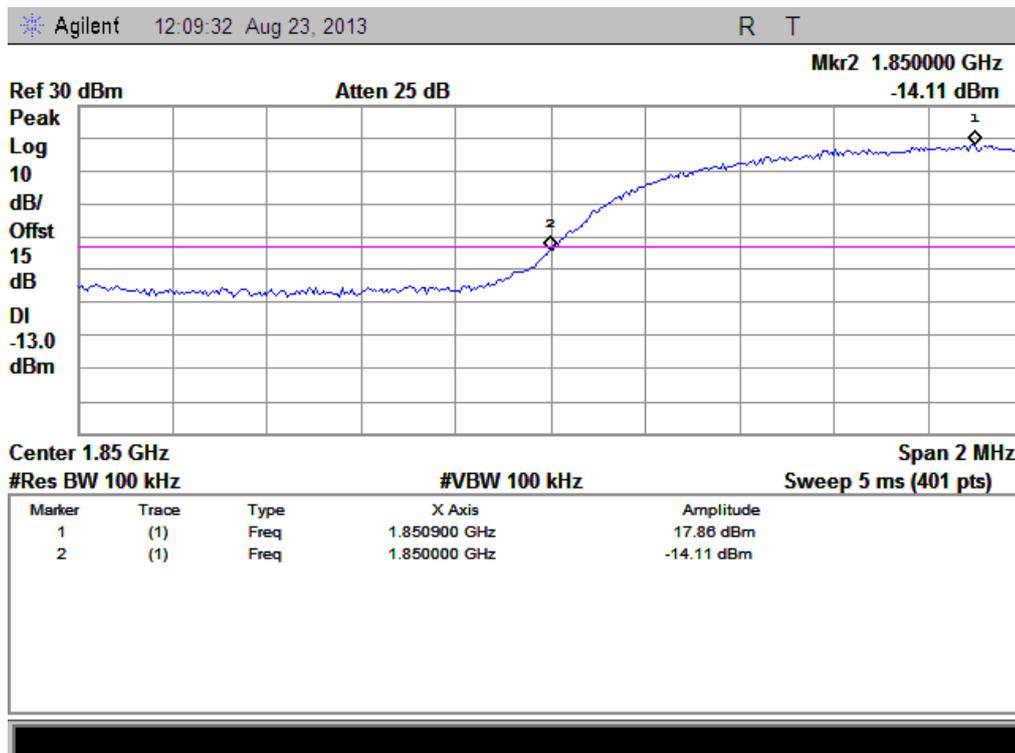
(Plot K: WCDMA 1900 Channel = 9262)

(Plot L: WCDMA 1900 Channel = 9538)

(Plot M: HSDPA 850 Channel = 4132)

※ Agilent   12:14:48 Aug 23, 2013   R   T

Mkr2 849.000 MHz

Ref 30 dBm   Atten 25 dB   -14.23 dBm

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

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	848.045 MHz	17.69 dBm
2	(1)	Freq	849.000 MHz	-14.23 dBm

(Plot N: HSDPA850 Channel = 4233)

※ Agilent   12:19:26 Aug 23, 2013   R   T

Mkr2 1.850000 GHz

Ref 30 dBm   Atten 25 dB   -15 dBm

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

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	1.850925 GHz	17.56 dBm
2	(1)	Freq	1.850000 GHz	-15 dBm

(Plot O: HSDPA 1900 Channel = 9262)
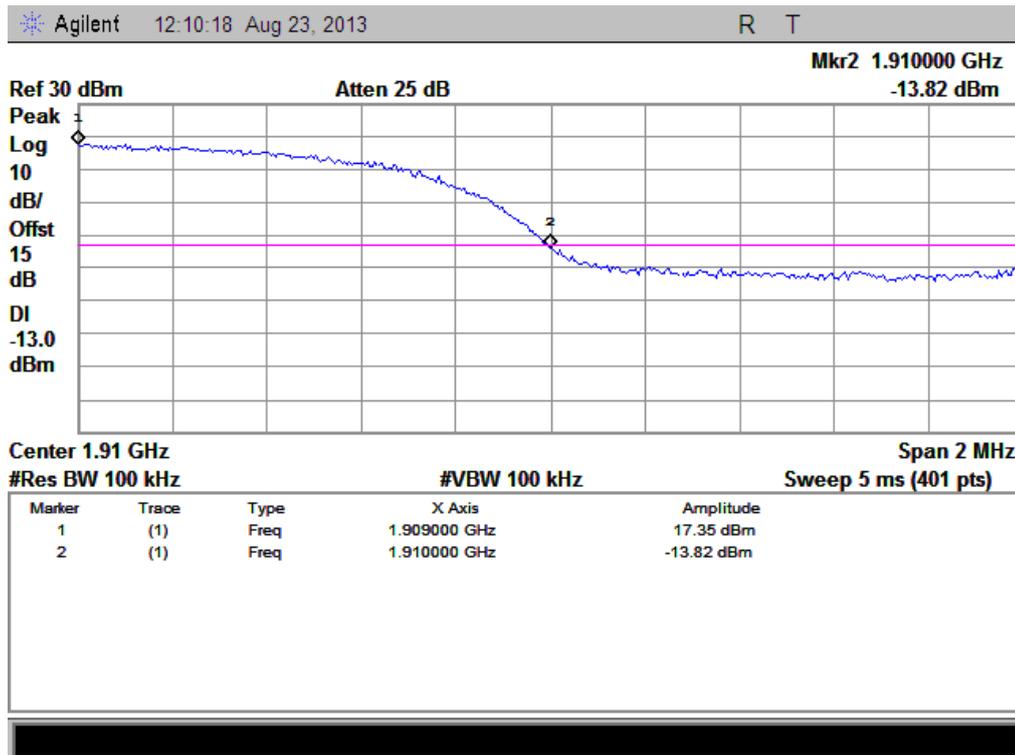
(Plot P: HSDPA 1900 Channel = 9538)
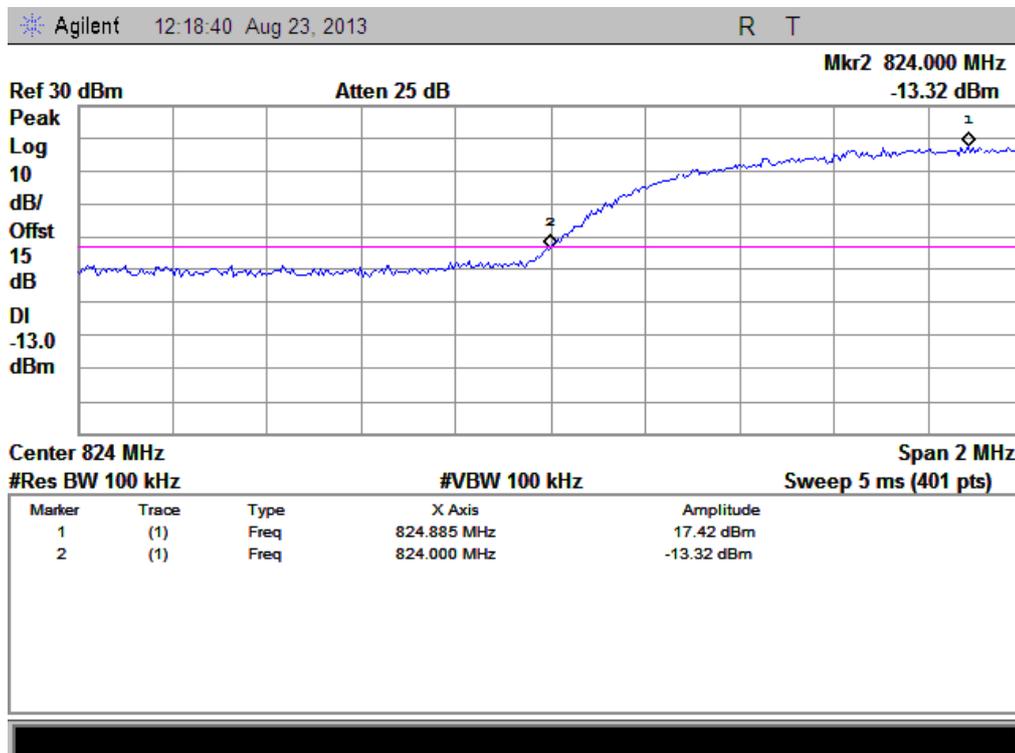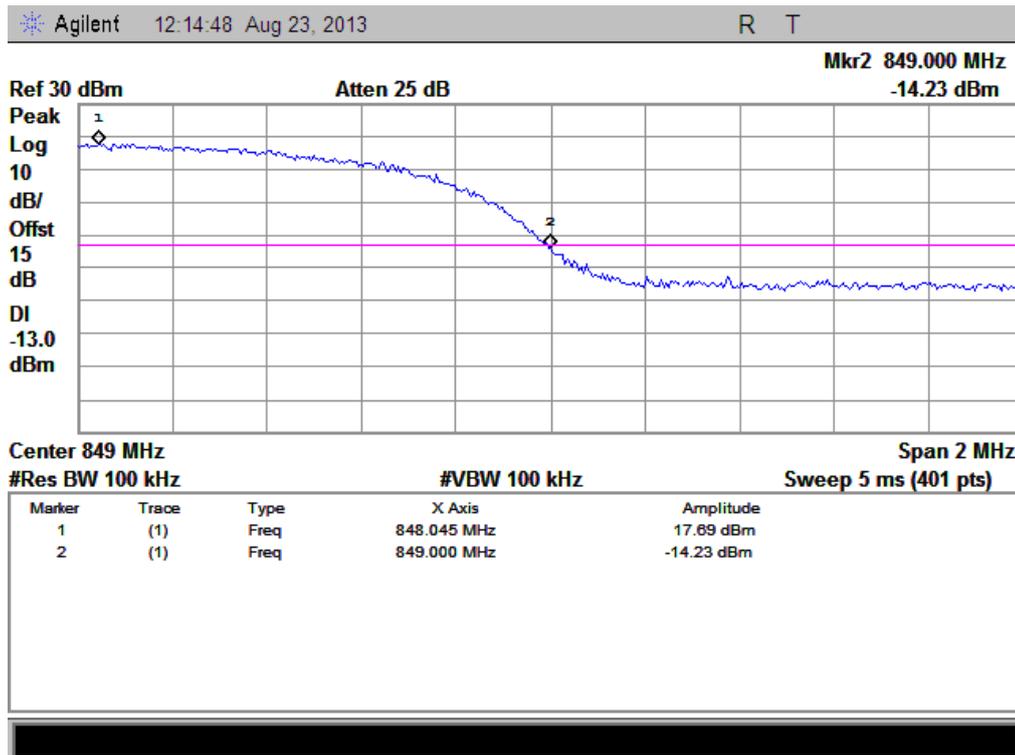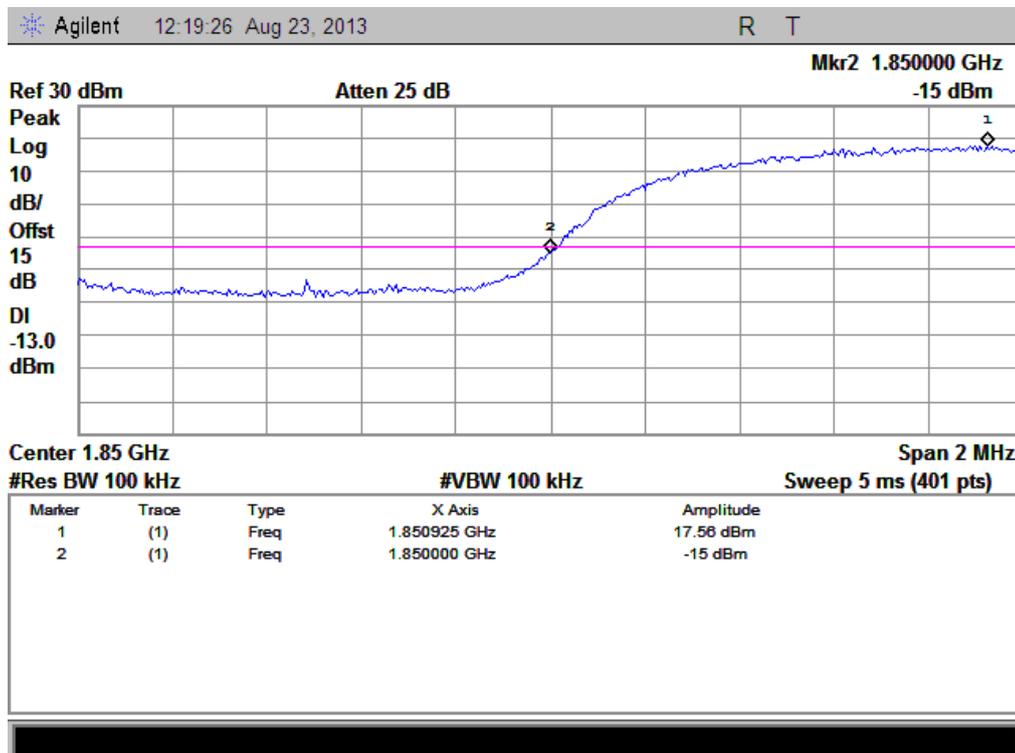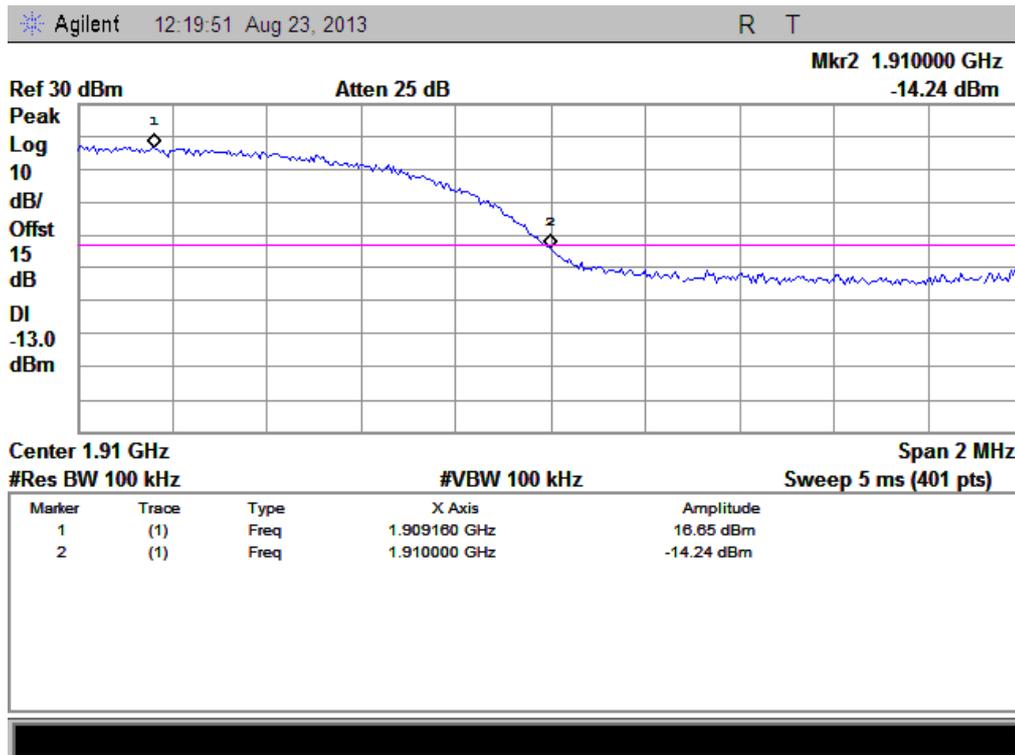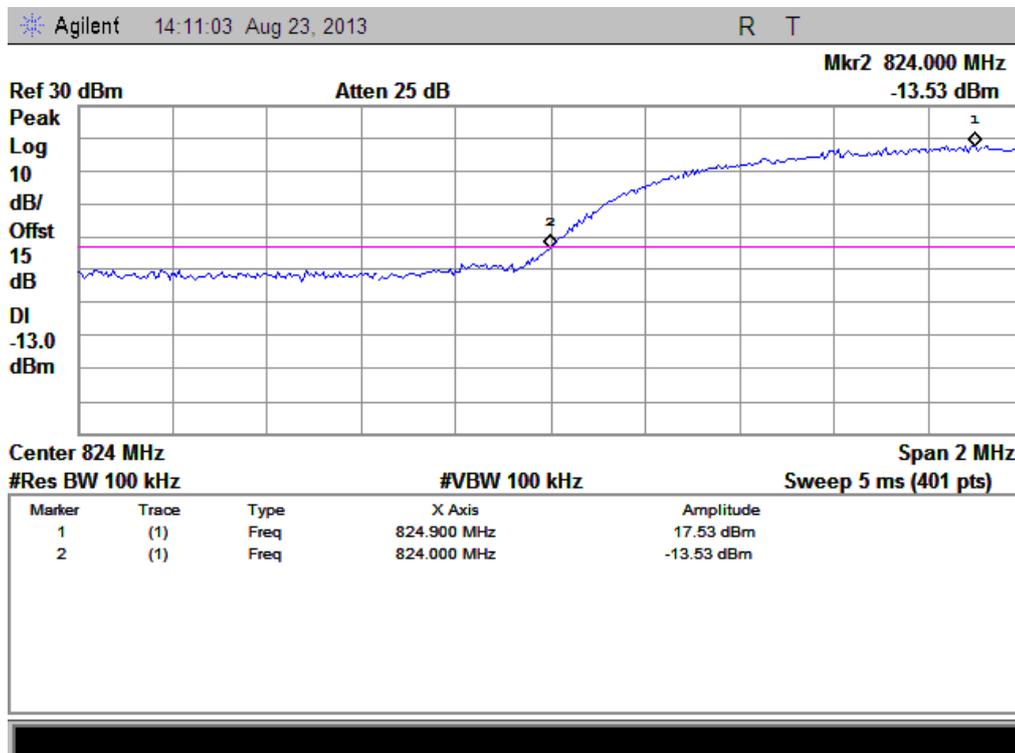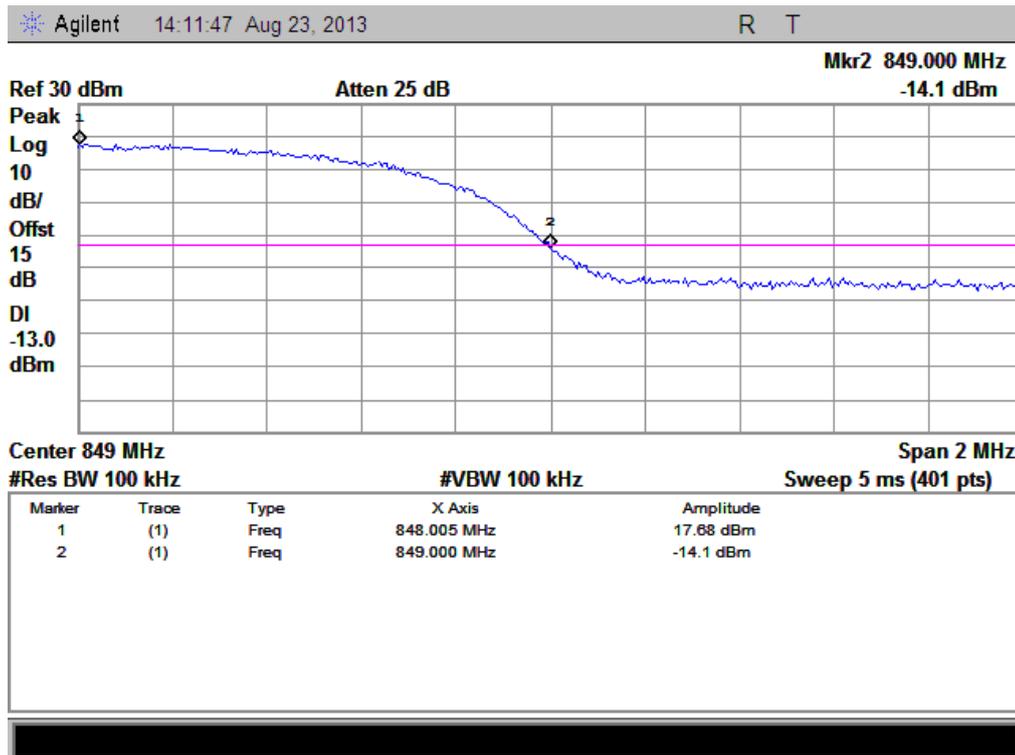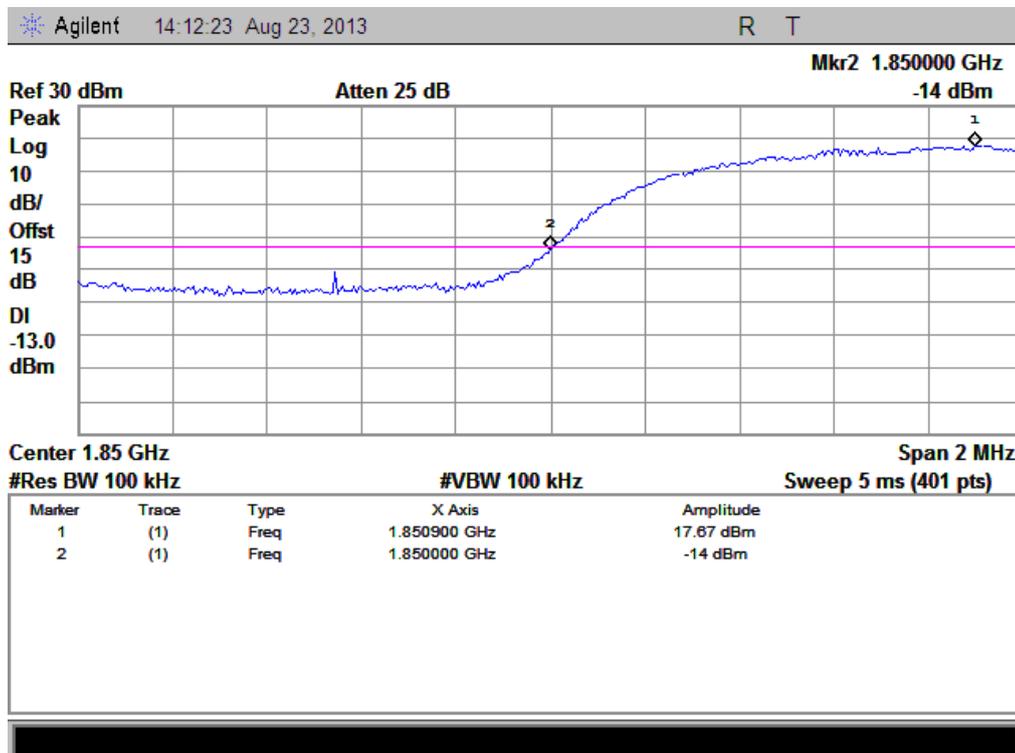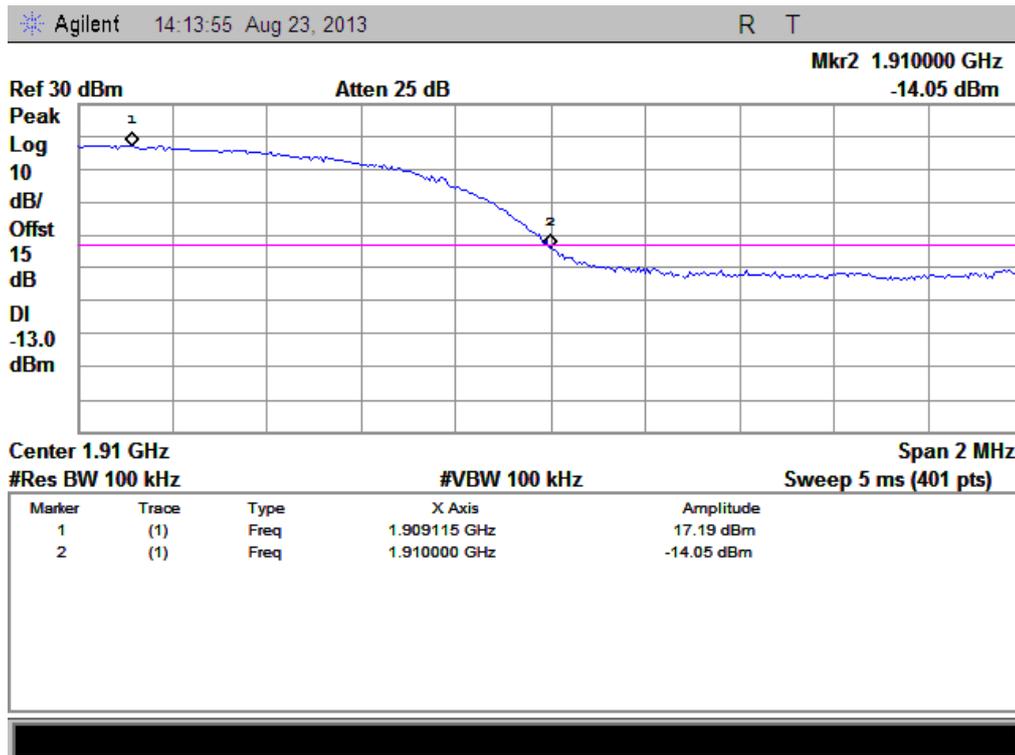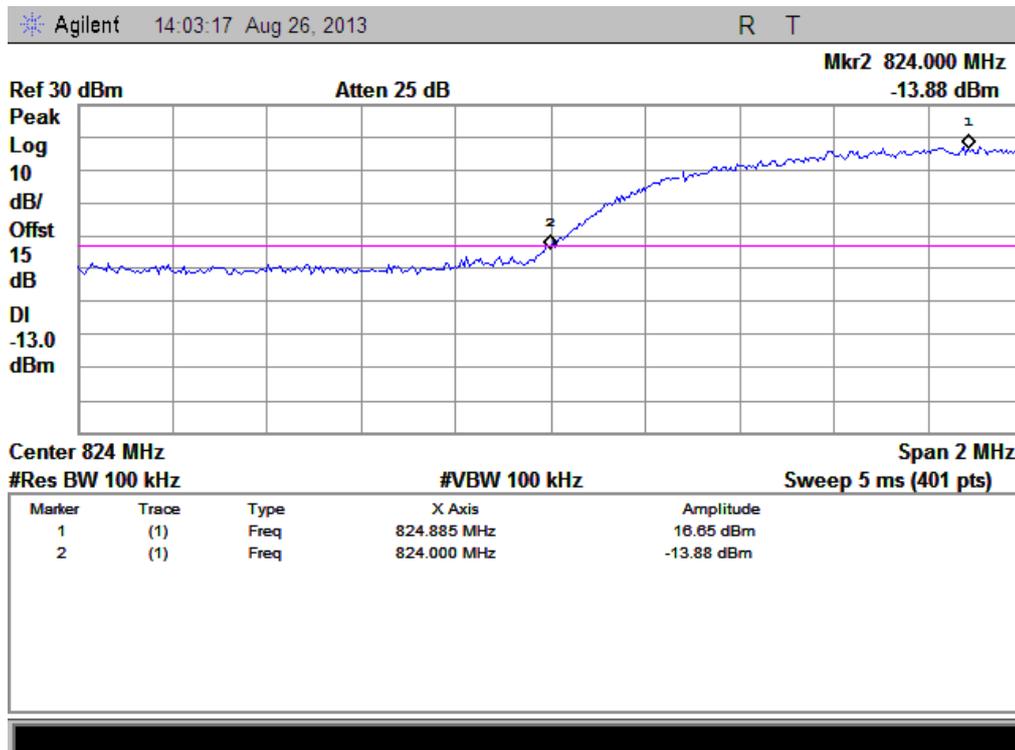

(Plot Q: HSUPA 850 Channel = 4132)

(Plot R: HSUPA850 Channel = 4233)

(Plot S: HSUPA 1900 Channel = 9262)

(Plot T: HSUPA 1900 Channel = 9538)

(Plot U: HSPA+ 850 Channel = 4132)

※ Agilent   14:04:02 Aug 26, 2013   R T

Mkr2 849.000 MHz

Ref 30 dBm   Atten 25 dB   -14.77 dBm

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

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	848.035 MHz	17.36 dBm
2	(1)	Freq	849.000 MHz	-14.77 dBm
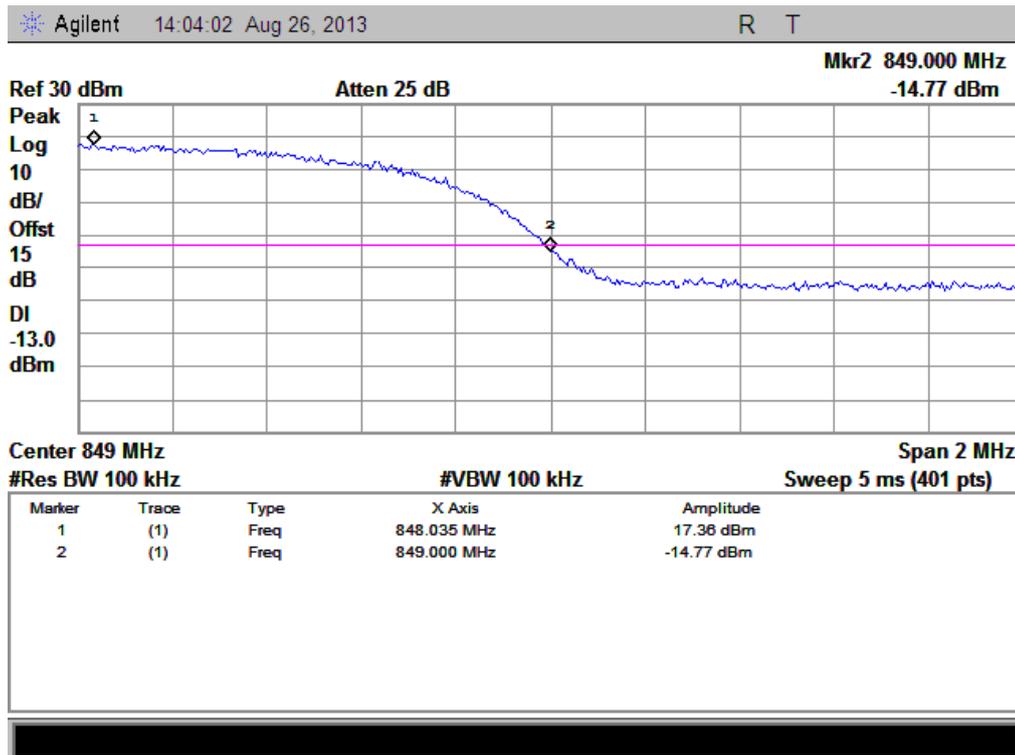
(Plot V: HSPA+ 850 Channel = 4233)

※ Agilent   14:04:36 Aug 26, 2013   R T

Mkr2 1.850000 GHz

Ref 30 dBm   Atten 25 dB   -15.23 dBm

Peak
Log
10
dB/
Offst
15
dB
DI
-13.0
dBm

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	1.850895 GHz	16.97 dBm
2	(1)	Freq	1.850000 GHz	-15.23 dBm
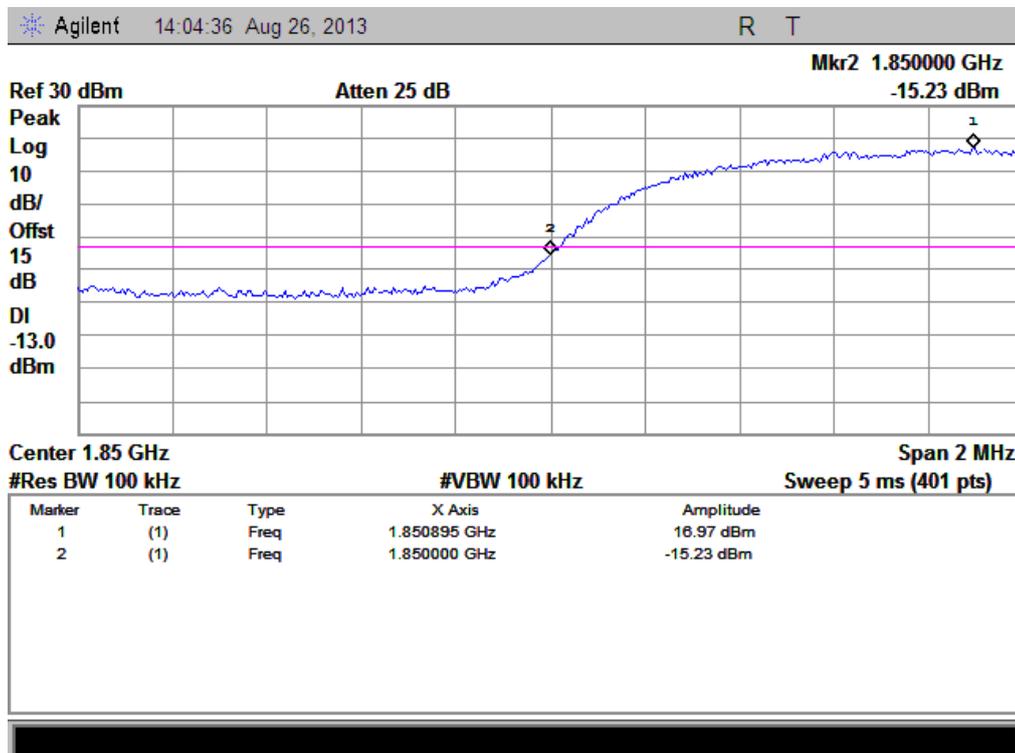
(Plot W: HSPA+ 1900 Channel = 9262)
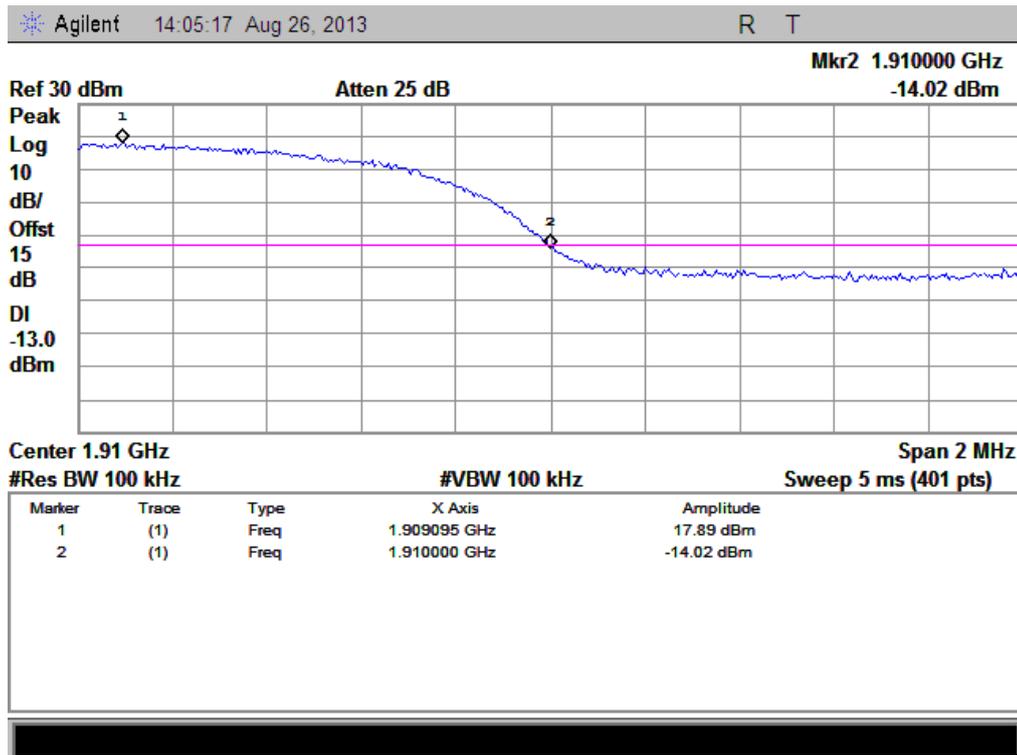
(Plot X: HSPA+ 1900 Channel = 9538)

2.7 Transmitter Radiated Power (EIRP/ERP)

2.7.1 Requirement

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

2.7.2 Test Description

1. Test Setup:

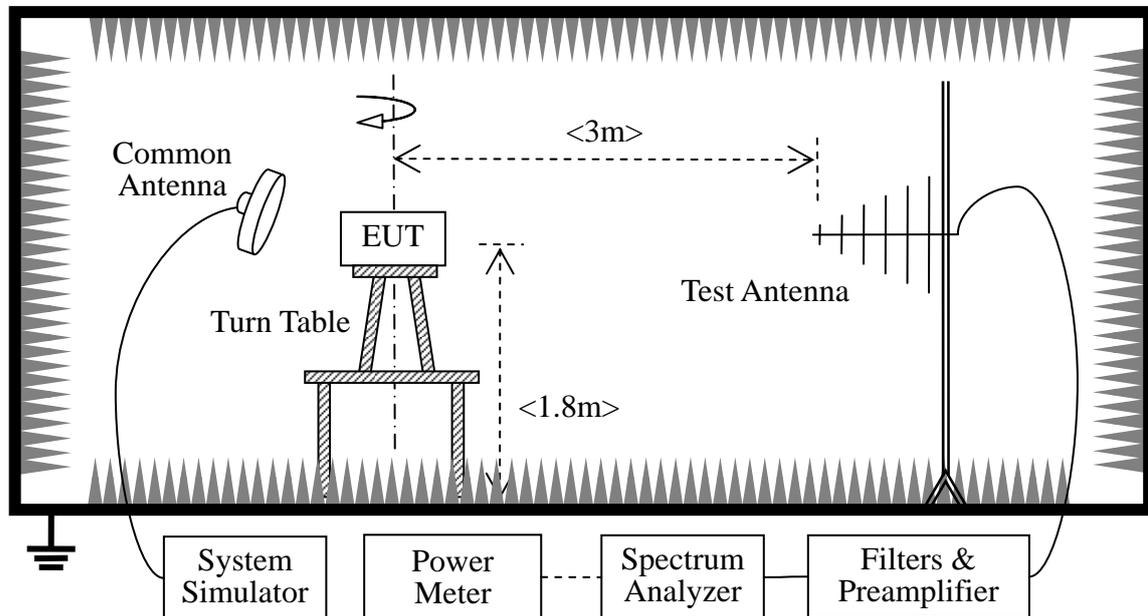The EUT, which is powered by the Battery charged with the AC Adapter, is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

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

- GSM Maximum RF output power: GSM 850 33.52dBm, GSM 1900 28.38dBm, EGPRS 850 33.50dBm，EGPRS 28.51.WCDMA 850 22.83dBm, WCDMA 1900 23.68 dBm, Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

- Minimum RF power: GSM 850 3.1dBm, GSM 1900 0.3dBm，EGPRS 850 3.1dBm, EGPRS 1900 0.21dBm ,WCDMA 850 0.39dBm ,WCDMA 1900 0.5dBm.

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

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2012.05	2014.05
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05	2014.05

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05	2014.05
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2012.05	2014.05
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2012.05	2014.05
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2012.05	2014.05
Pre-AMPs	lucix	S10M100L3802	S020180L32 03	2012.05	2014.05
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2012.05	2014.05
Notch Filter	COM-MW	ZBSF-C1747.5-75-X2	NA	2012.05	2014.05
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2012.05	2014.05

2.7.3   Test Result

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

The substitution corrections are obtained as described below:

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

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

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	29.13	0.818	Plot A	38.5	7	PASS
	190	836.60	5	29.59	0.911				PASS
	251	848.80	5	29.53	0.897				PASS
GPRS 850MHz	128	824.20	5	28.65	0.733	Plot B Note 1	38.5	7	PASS
	190	836.60	5	29.75	0.944				PASS
	251	848.80	5	29.84	0.964				PASS
EGPRS 850MHz	128	824.20	5	28.58	0.721	Plot C Note 1	38.5	7	PASS
	190	836.60	5	29.56	0.904				PASS
	251	848.80	5	29.90	0.977				PASS

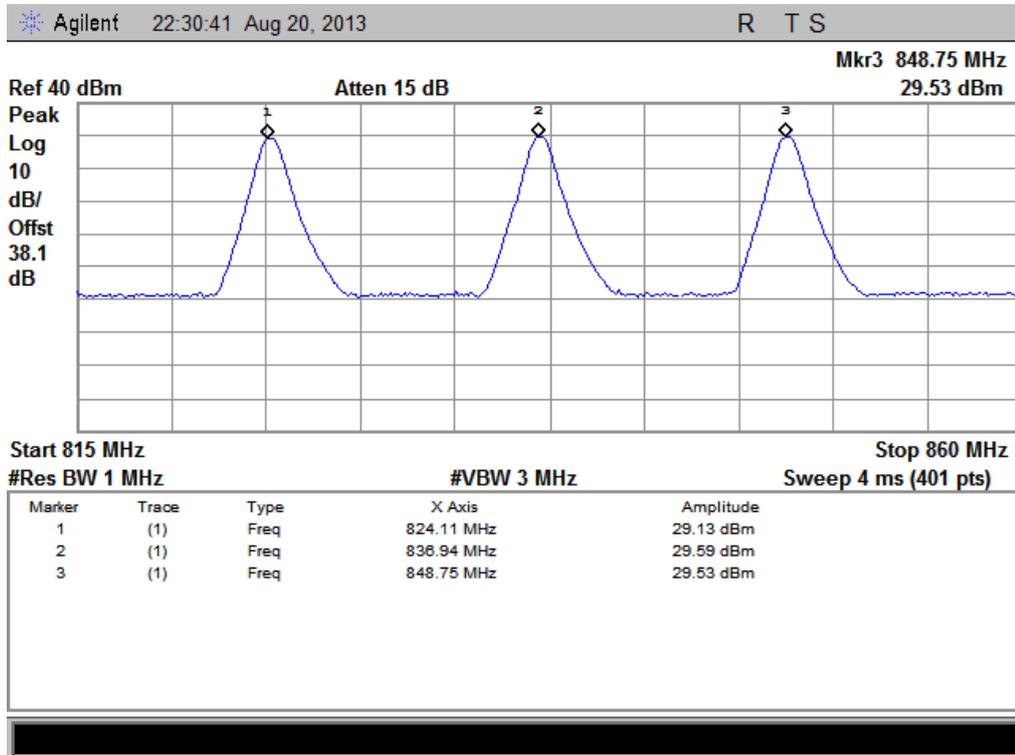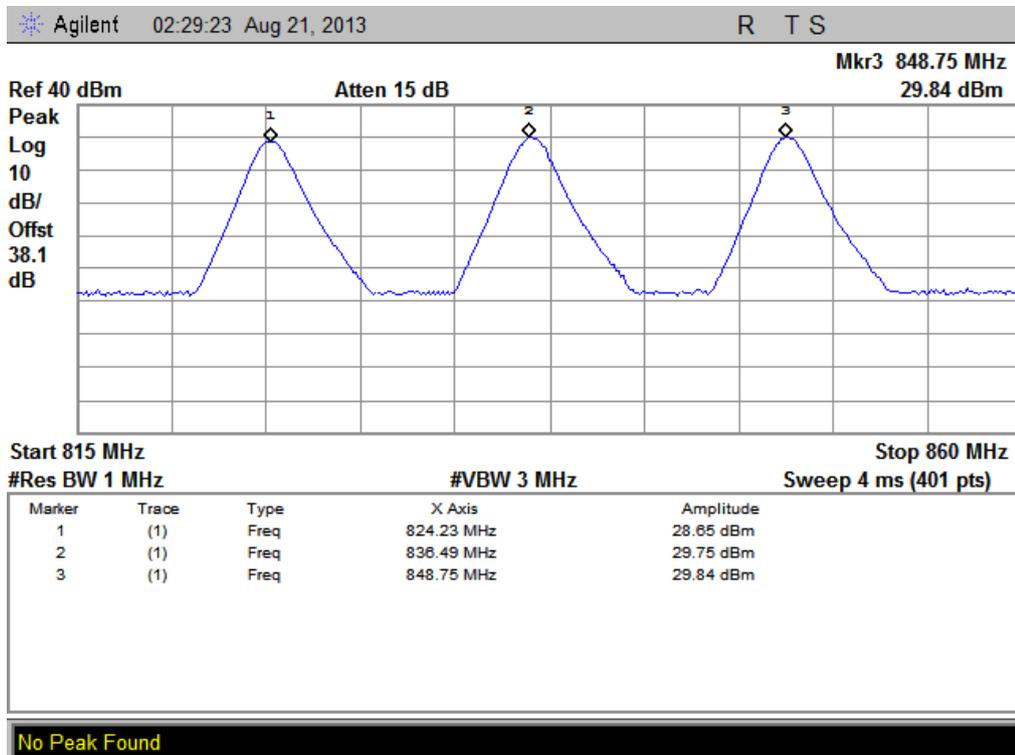| Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 1900MHz	512	1850.2	0	29.60	0.912	Plot D	33	2	PASS
	661	1880.0	0	29.01	0.796				PASS
	810	1909.8	0	28.82	0.762				PASS
GPRS 1900MHz	512	1850.2	0	30.14	1.033	Plot E Note 1	33	2	PASS
	661	1880.0	0	29.48	0.887				PASS
	810	1909.8	0	28.52	0.711				PASS
EGPRS 1900MHz	512	1850.2	0	29.51	0.893	Plot F Note 1	33	2	PASS
	661	1880.0	0	29.19	0.831				PASS
	810	1909.8	0	28.48	0.705				PASS
Note 1:	For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.								

2. WCDMA Model Test Verdict:

Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	27.38	0.547	Plot G	38.5	7	PASS
	4175	835	27.45	0.556				PASS
	4233	846.6	27.00	0.501				PASS
HSDPA 850MHz	4132	826.4	27.43	0.553	Plot H	38.5	7	PASS
	4175	835	27.49	0.561				PASS
	4233	846.6	27.22	0.527				PASS
HSUPA 850MHz	4132	826.4	27.58	0.573	Plot I	38.5	7	PASS
	4175	835	27.40	0.550				PASS
	4233	846.6	27.21	0.526				PASS
HSPA+ 850MHz	4132	826.4	26.66	0.463	Plot J	38.5	7	PASS
	4175	835	27.05	0.507				PASS
	4233	846.6	27.50	0.562				PASS

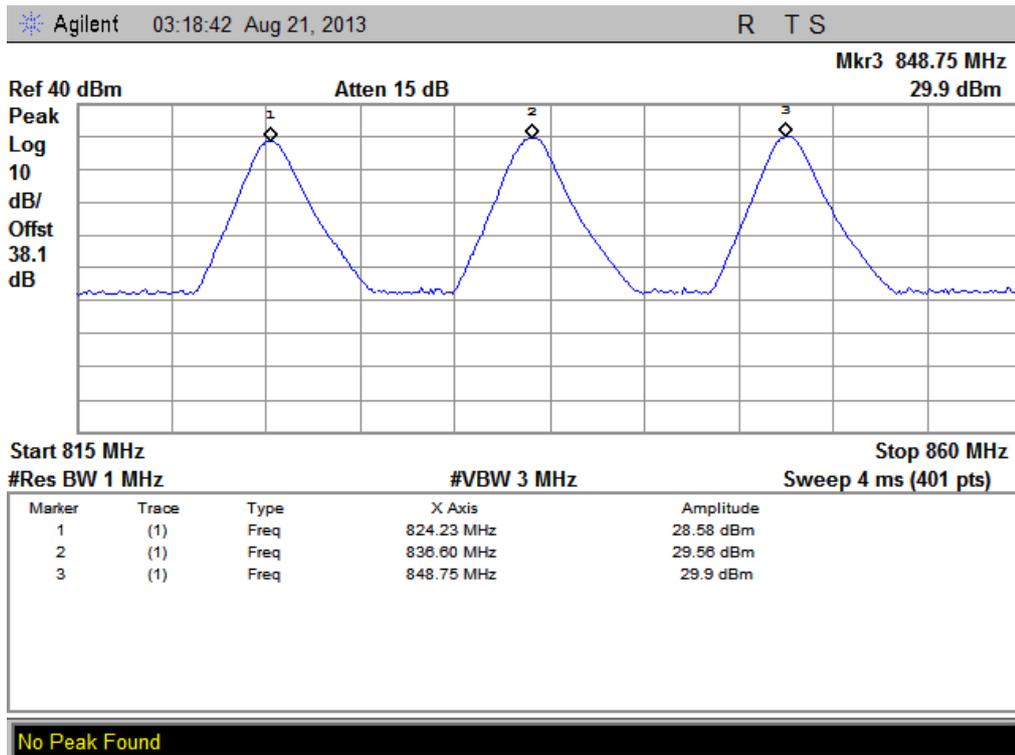| Band	Channel	Frequency (MHz)	Measured EIRP			Limit		Verdict
			dBm	W		dBm	W	
WCDMA 1900MHz	9262	1852.4	26.24	0.421	Plot K	33	2	PASS
	9400	1880	26.41	0.438				PASS
	9538	1907.6	26.68	0.466				PASS
HSDPA 1900MHz	9262	1852.4	25.22	0.333	Plot L	33	2	PASS
	9400	1880	25.90	0.389				PASS
	9538	1907.6	26.17	0.414				PASS
HSUPA 1900MHz	9262	1852.4	25.53	0.357	Plot M	33	2	PASS
	9400	1880	25.87	0.386				PASS
	9538	1907.6	26.08	0.406				PASS
HSPA+ 1900MHz	9262	1852.4	24.81	0.303	Plot N	33	2	PASS
	9400	1880	24.50	0.282				PASS
	9538	1907.6	24.13	0.259				PASS

3. Test Plots:

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

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

❋ Agilent   03:18:42 Aug 21, 2013   R T S

Mkr3 848.75 MHz

Ref 40 dBm   Atten 15 dB   29.9 dBm

Peak
Log
10
dB/
Offst
38.1
dB

Start 815 MHz   Stop 860 MHz
#Res BW 1 MHz   #VBW 3 MHz   Sweep 4 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	824.23 MHz	28.58 dBm
2	(1)	Freq	836.60 MHz	29.56 dBm
3	(1)	Freq	848.75 MHz	29.9 dBm

No Peak Found

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

❋ Agilent   22:23:34 Aug 20, 2013   R T S

Mkr1 1.8502 GHz

Ref 40 dBm   Atten 5 dB   29.6 dBm

Peak
Log
10
dB/
Offst
47.2
dB

Start 1.84 GHz   Stop 1.92 GHz
#Res BW 1 MHz   #VBW 3 MHz   Sweep 4 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.8502 GHz	29.6 dBm
2	(1)	Freq	1.8800 GHz	29.01 dBm
3	(1)	Freq	1.9098 GHz	28.82 dBm

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

Start 1.84 GHz   Stop 1.92 GHz

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.8502 GHz	30.14 dBm
2	(1)	Freq	1.8800 GHz	29.48 dBm
3	(1)	Freq	1.9098 GHz	28.52 dBm

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

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.8502 GHz	29.51 dBm
2	(1)	Freq	1.8800 GHz	29.19 dBm
3	(1)	Freq	1.9098 GHz	28.46 dBm

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

(Plot G: WCDMA 850 MHz Channel = 4132, 4175, 4233)
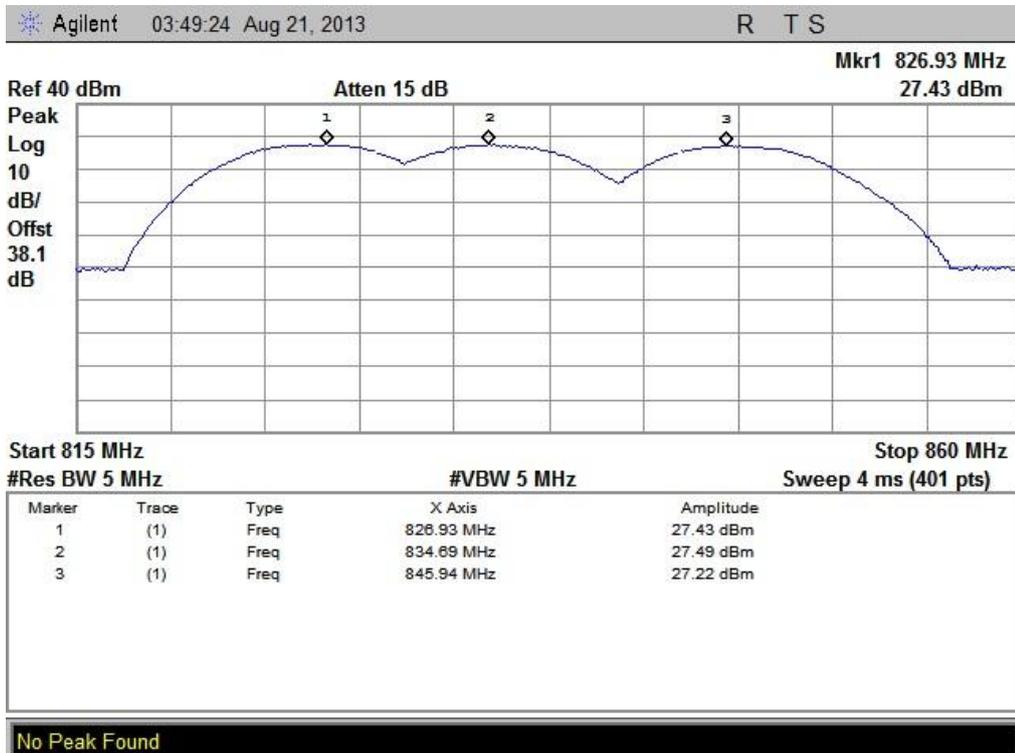
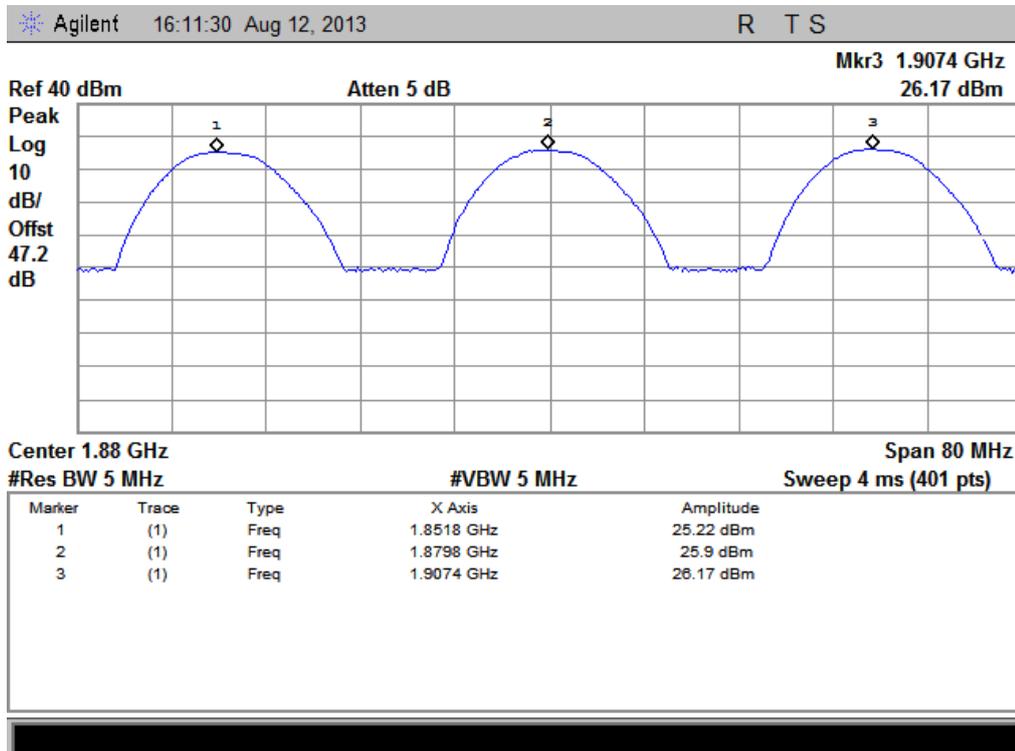(Plot H: HSDPA 850 MHz Channel = 4132, 4175, 4233)
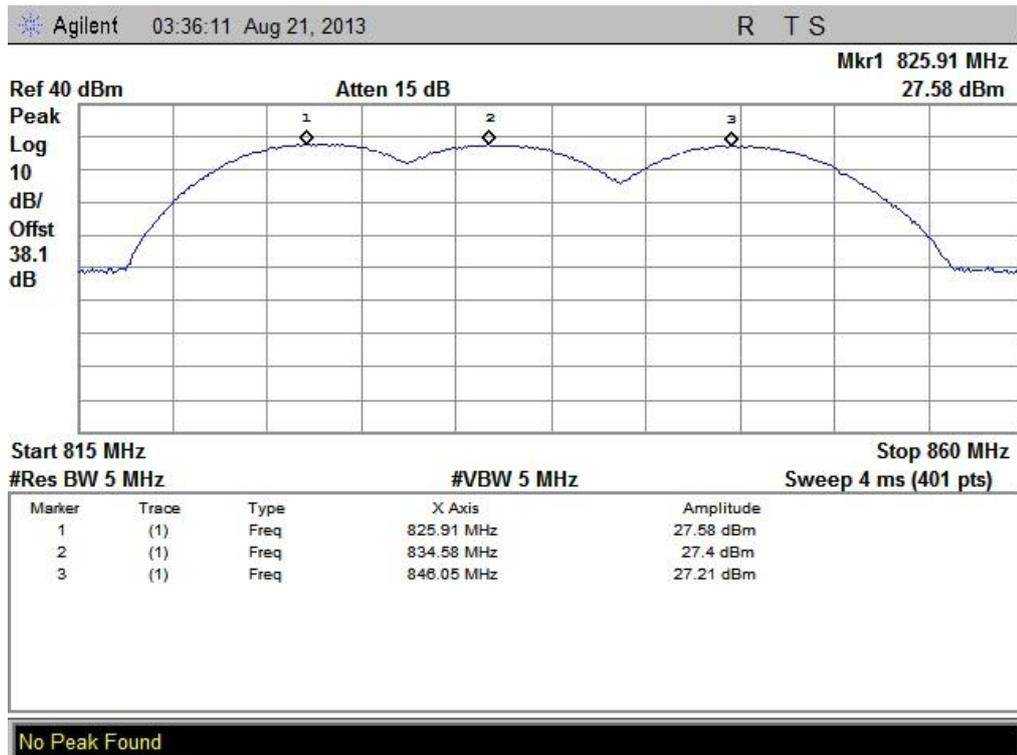
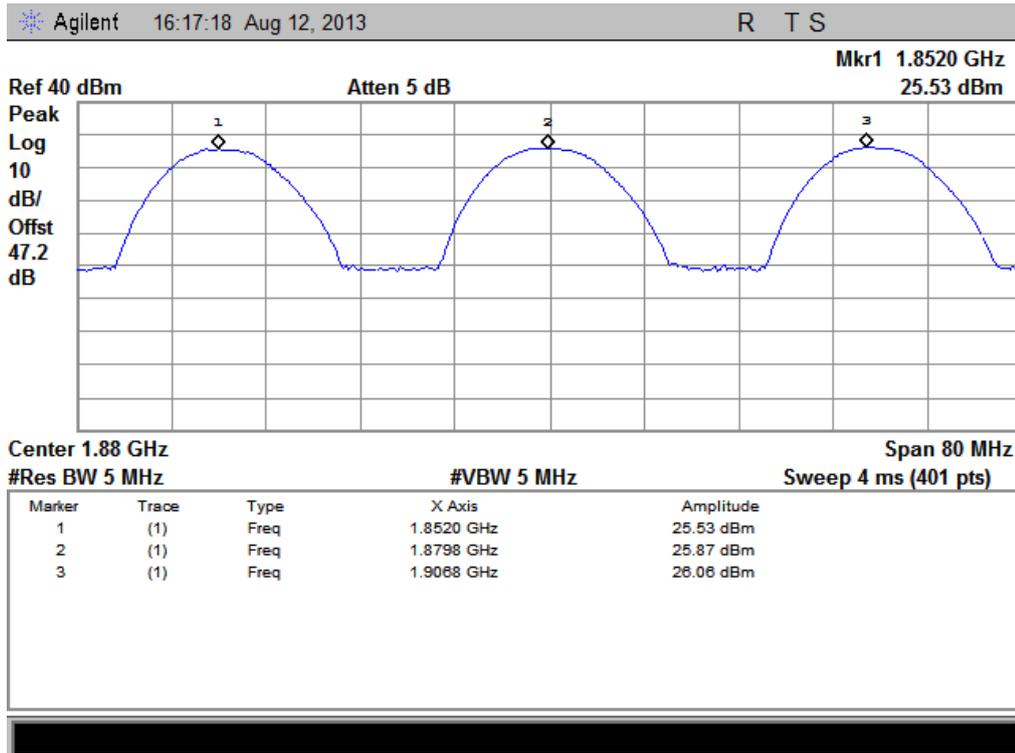(Plot I: HSUPA 850 MHz Channel = 4132, 4175, 4233)
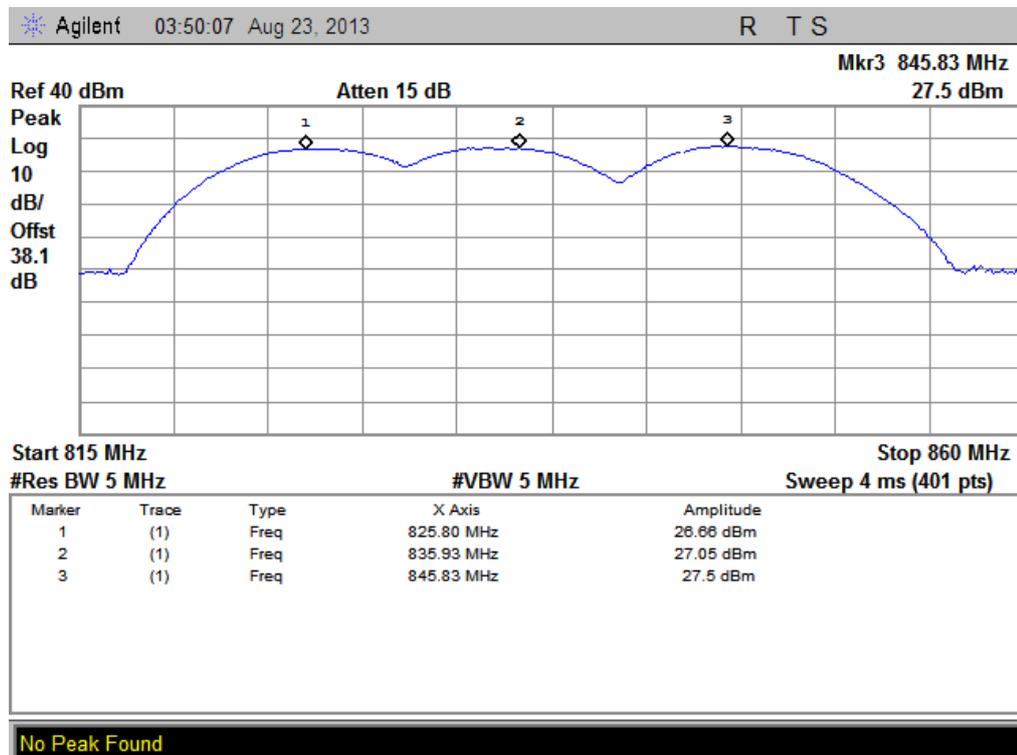
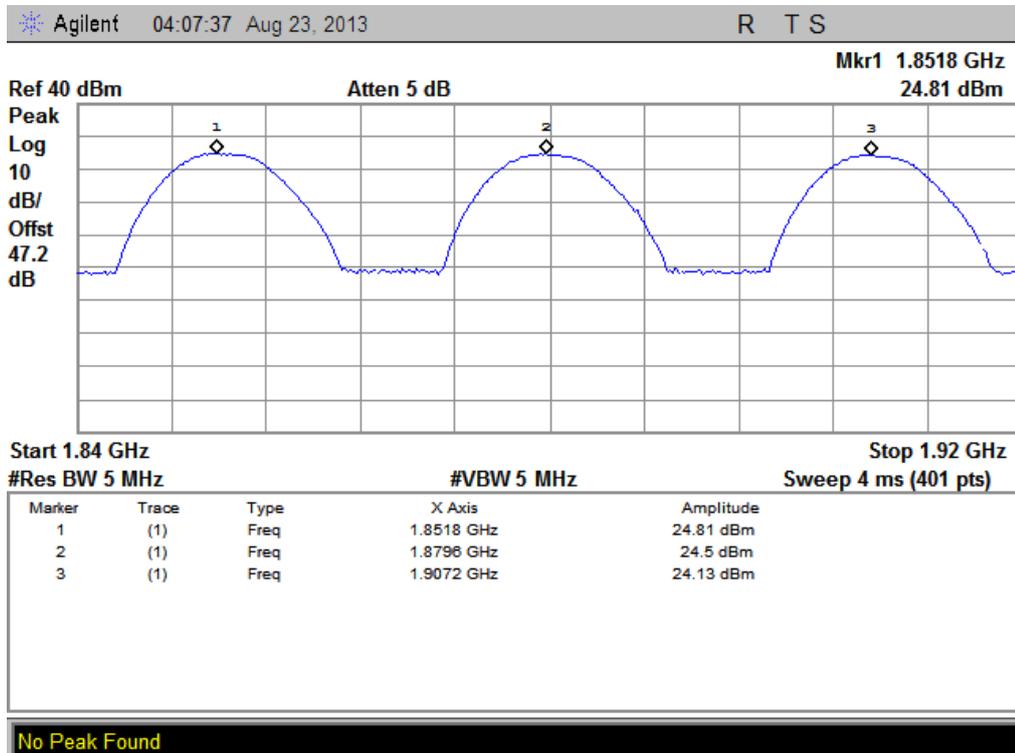
(Plot J: HSPA+ 850 MHz Channel = 4132, 4175, 4233)
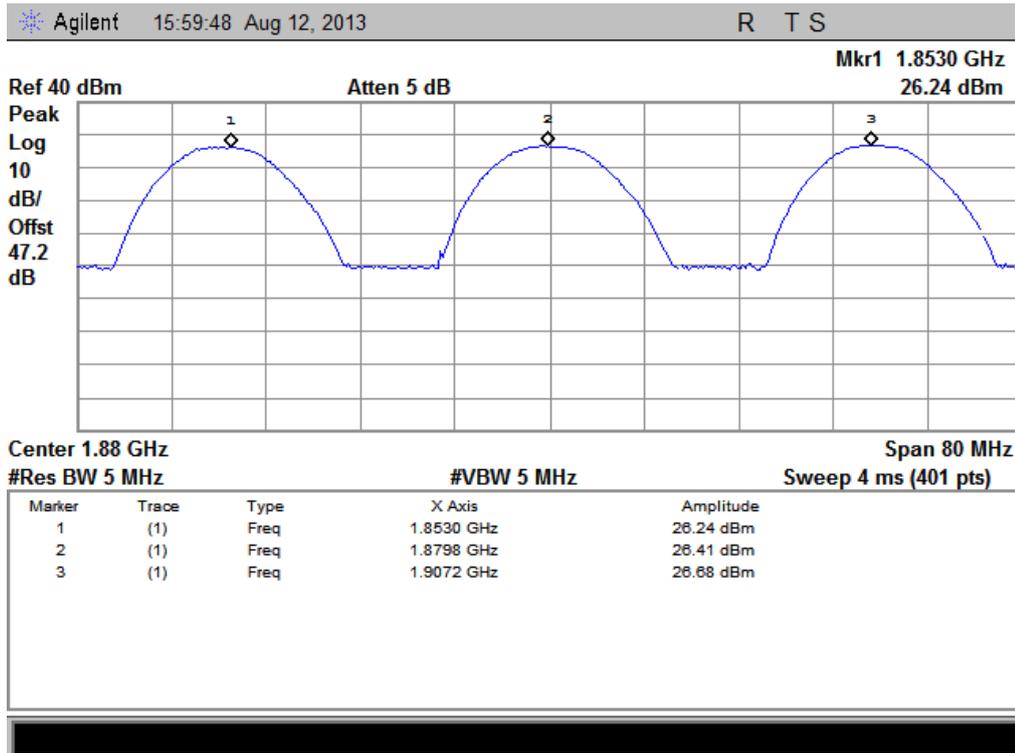
(Plot K: WCDMA 1900 MHz Channel = 9262, 9400, 9538)

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

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

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

2.8 Radiated Out of Band Emissions

2.8.1 Requirement

According to FCC section 22.917(a) and section 24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

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

2.8.2 Test Description

See section 2.7.2 of this report.

Equipment List：

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2012.05	2014.05
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05	2014.05
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05	2014.05
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2012.05	2014.05
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2012.05	2014.05
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2012.05	2014.05
Pre-AMPs	lucix	S10M100L3802	S020180L3203	2012.05	2014.05
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2012.05	2014.05
Notch Filter	COM-MW	ZBSF-C1747.5-75-X2	NA	2012.05	2014.05
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2012.05	2014.05

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

2.8.3 Test Result

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

1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
GSM 850MHz	128	824.2	< -25	< -25	Plot A.1/A.2	-13	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
EDGE 850MHz	128	824.2	< -25	< -25	Plot C.1/C.2	-13	PASS
	190	836.6	< -25	< -25	Plot C.3/C.4		PASS
	251	848.8	< -25	< -25	Plot C.5/C.6		PASS
EDGE 1900MHz	512	1850.2	< -25	< -25	Plot D.1/D.2	-13	PASS
	661	1880.0	< -25	< -25	Plot D.3/D.4		PASS
	810	1909.8	< -25	< -25	Plot D.5/D.6		PASS
WCDMA 850MHz	4132	826.4	< -25	< -25	Plot E.1/E.2	-13	PASS
	4175	835	< -25	< -25	Plot E.3/E.4		PASS
	4233	846.6	< -25	< -25	Plot E.5/E.6		PASS
WCDMA 1900MHz	9262	1852.4	< -25	< -25	Plot F.1/F.2	-13	PASS
	9400	1880	< -25	< -25	Plot F.3/F.4		PASS
	9538	1907.6	< -25	< -25	Plot F.5/F.6		PASS
HSDPA 850MHz	4132	826.4	< -25	< -25	Plot G.1/G.2	-13	PASS
	4175	835	< -25	< -25	Plot G.3/G.4		PASS
	4233	846.6	< -25	< -25	Plot G.5/G.6		PASS
HSDPA 1900MHz	9262	1852.4	< -25	< -25	Plot H.1/H.2	-13	PASS
	9400	1880	< -25	< -25	Plot H.3/H.4		PASS
	9538	1907.6	< -25	< -25	Plot H.5/H.6		PASS
HSUPA 850MHz	4132	826.4	< -25	< -25	Plot I.1/I.2	-13	PASS
	4175	835	< -25	< -25	Plot I.3/I.4		PASS
	4233	846.6	< -25	< -25	Plot I.5/I.6		PASS
HSUPA 1900MHz	9262	1852.4	< -25	< -25	Plot J.1/J.2	-13	PASS
	9400	1880	< -25	< -25	Plot J.3/J.4		PASS
	9538	1907.6	< -25	< -25	Plot J.5/J.6		PASS
HSPA+ 850MHz	4132	826.4	< -25	< -25	Plot K.1/K.2	-13	PASS
	4175	835	< -25	< -25	Plot K.3/K.4		PASS
	4233	846.6	< -25	< -25	Plot K.5/K.6		PASS
HSPA+ 1900MHz	9662	1852.4	< -25	< -25	Plot L.1/L.2	-13	PASS
	9800	1880	< -25	< -25	Plot L.3/L.4		PASS
	9938	1907.6	< -25	< -25	Plot L.5/L.6		PASS

2. Test Plots for the Whole Measurement Frequency Range:

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

Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.
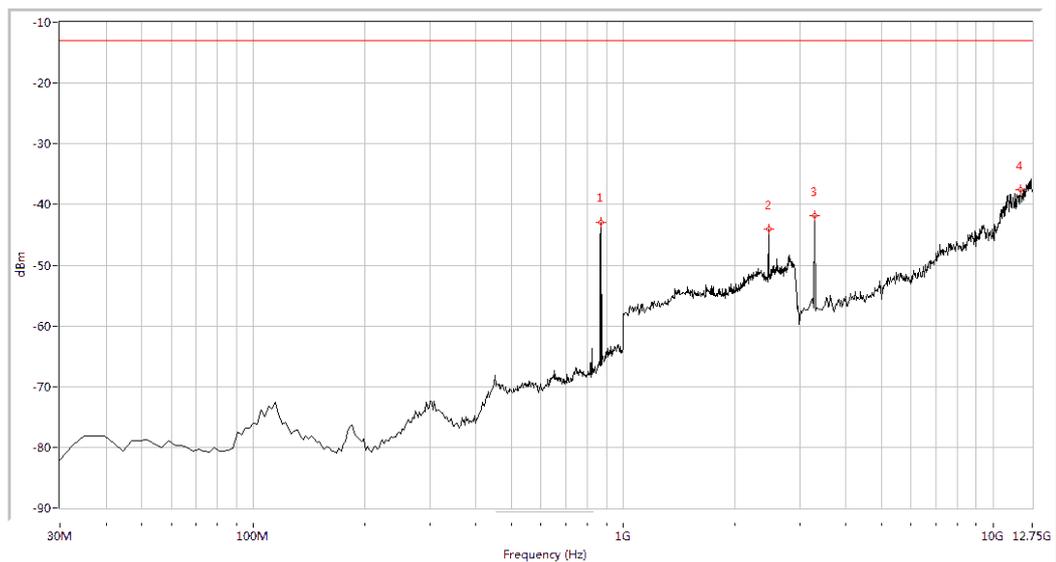
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-43.01	-13.0	30.0	114.3	Horizontal	PASS
2471.322	-44.06	-13.0	31.1	79.7	Horizontal	PASS
3291.771	-41.86	-13.0	28.9	318.6	Horizontal	PASS
11850.374	-37.55	-13.0	24.5	203.6	Horizontal	PASS

(Plot A.1: GSM 850MHz Channel = 128, Test Antenna Horizontal)
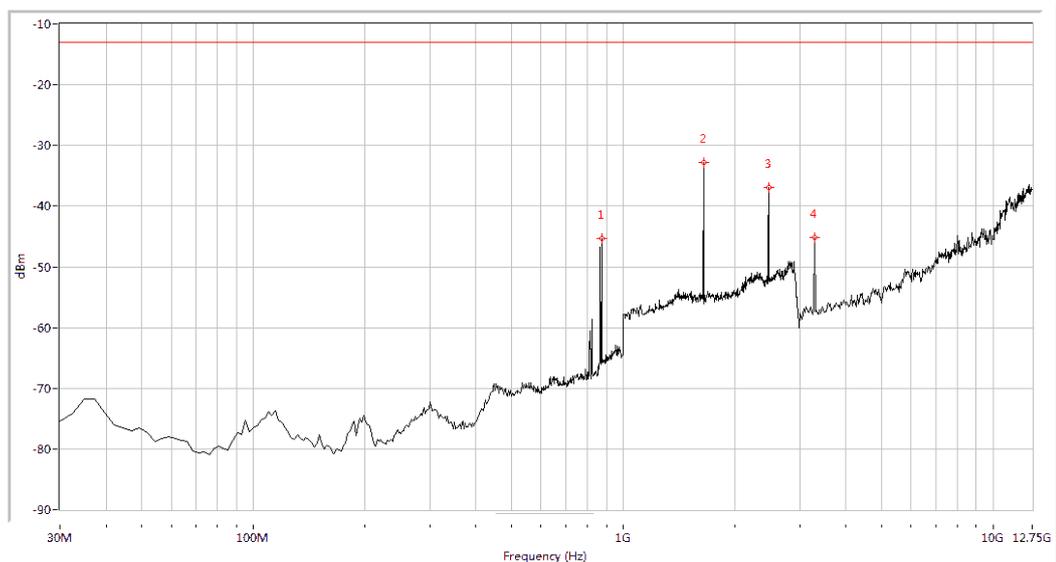
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
874.214	-45.39	-13.0	32.4	311.6	Vertical	PASS
1648.379	-32.76	-13.0	19.8	323.3	Vertical	PASS

2471.322	-36.88	-13.0	23.9	14.2	Vertical	PASS
3291.771	-45.19	-13.0	32.2	360.0	Vertical	PASS

(Plot A.2:   GSM 850MHz Channel = 128, Test Antenna Vertical)
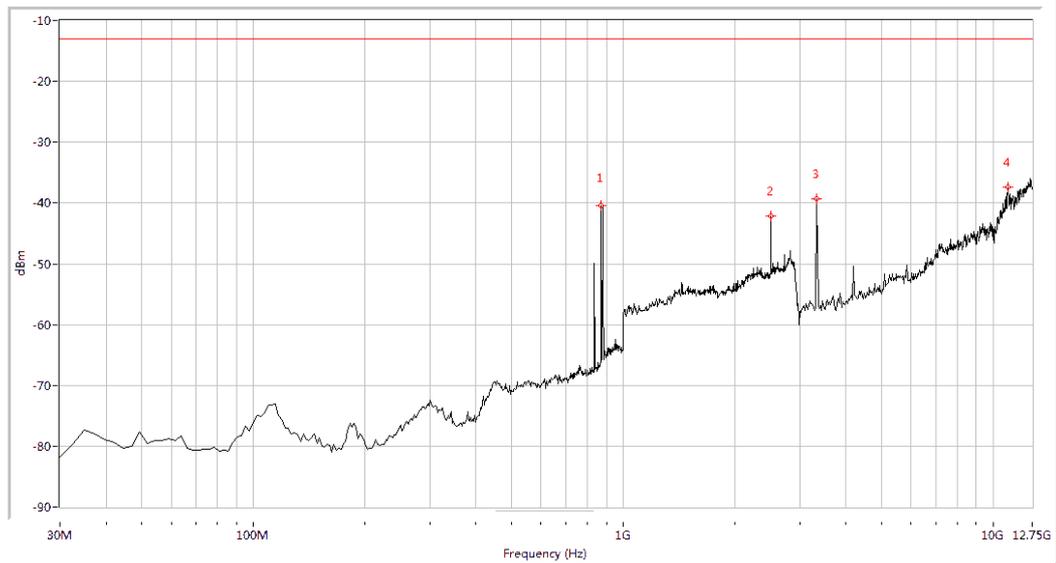
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-40.40	-13.0	27.4	356.2	Horizontal	PASS
2506.234	-42.22	-13.0	29.2	40.3	Horizontal	PASS
3340.399	-39.33	-13.0	26.3	55.2	Horizontal	PASS
10950.748	-37.44	-13.0	24.4	91.3	Horizontal	PASS

(Plot A.3:   GSM 850MHz Channel = 190, Test Antenna Horizontal)
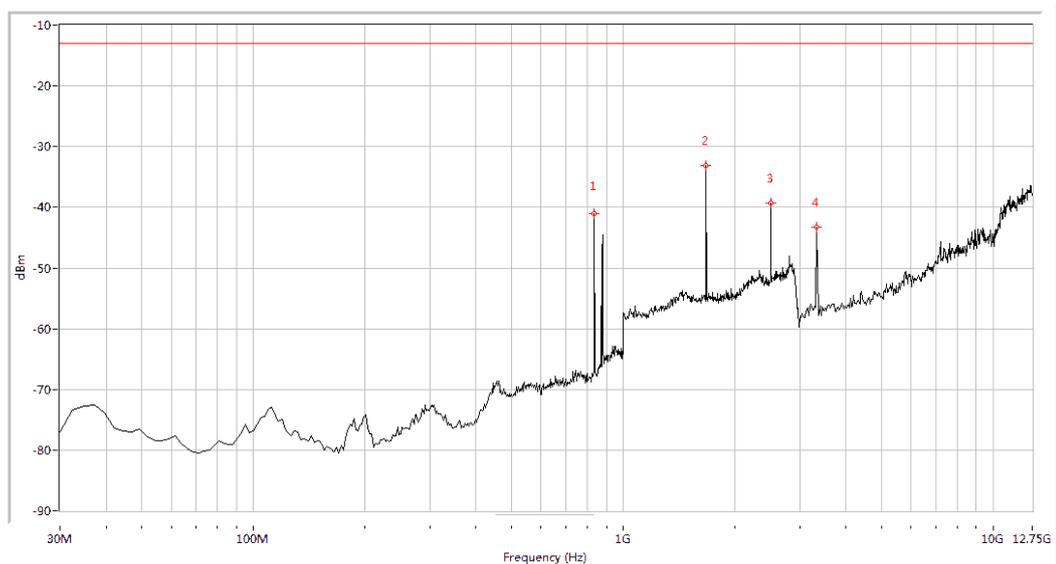
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-41.00	-13.0	28.0	202.1	Vertical	PASS
1673.317	-33.09	-13.0	20.1	304.1	Vertical	PASS
2506.234	-39.28	-13.0	26.3	10.5	Vertical	PASS

| 3340.399 | -43.31 | -13.0 | 30.3 | 22.0 | Vertical | PASS |

(Plot A.4:   GSM 850MHz Channel = 190, Test Antenna Vertical)
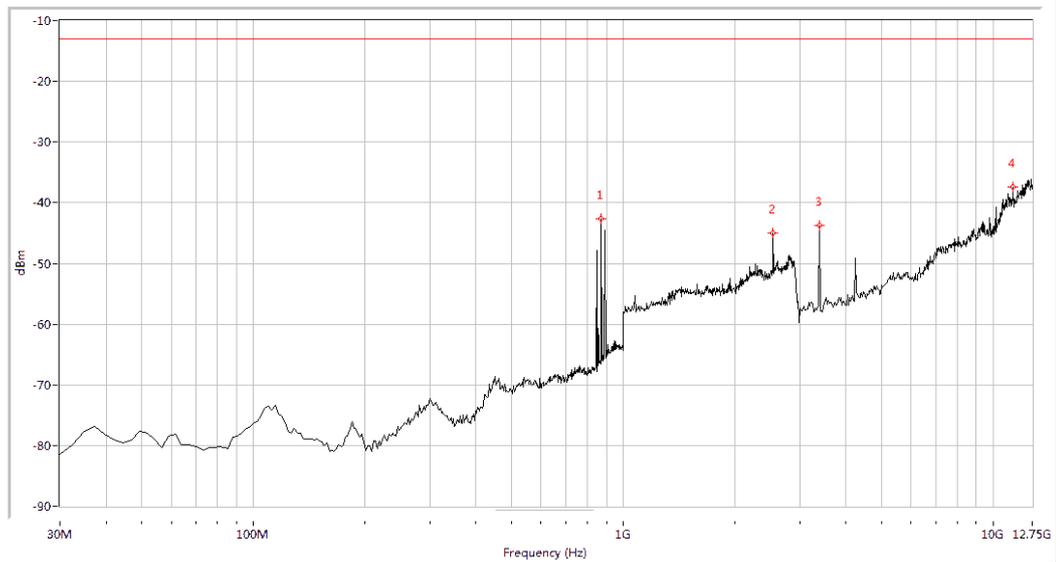
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.66	-13.0	29.7	25.1	Horizontal	PASS
2541.147	-44.96	-13.0	32.0	283.1	Horizontal	PASS
3389.027	-43.81	-13.0	30.8	55.6	Horizontal	PASS
11291.147	-37.46	-13.0	24.5	346.9	Horizontal	PASS

(Plot A.5:   GSM 850MHz Channel = 251, Test Antenna Horizontal)
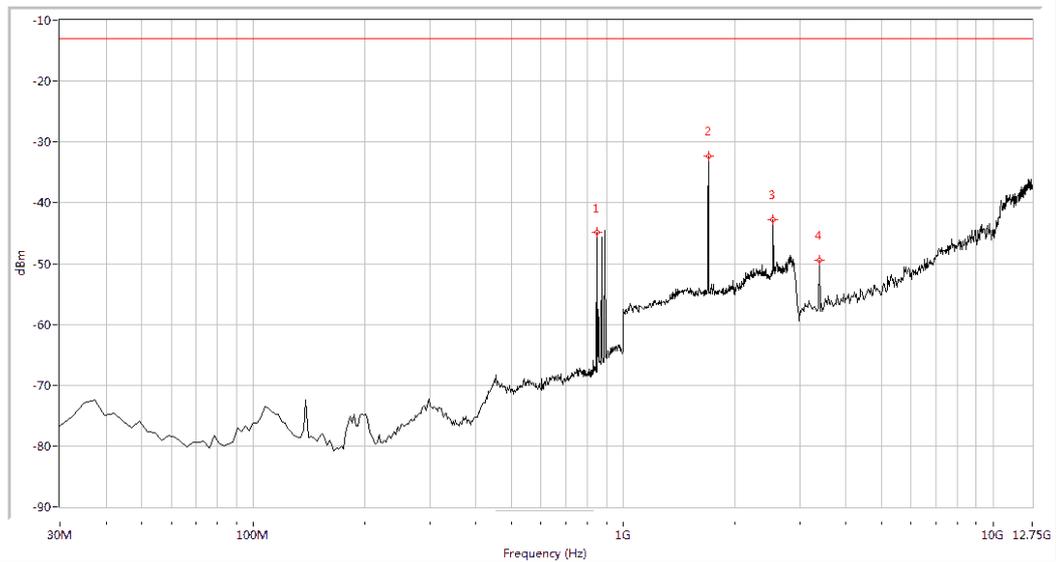
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-44.79	-13.0	31.8	255.0	Vertical	PASS
1698.254	-32.38	-13.0	19.4	314.1	Vertical	PASS
2541.147	-42.79	-13.0	29.8	68.9	Vertical	PASS
3389.027	-49.37	-13.0	36.4	333.2	Vertical	PASS

(Plot A.6:   GSM 850MHz Channel = 251, Test Antenna Vertical)
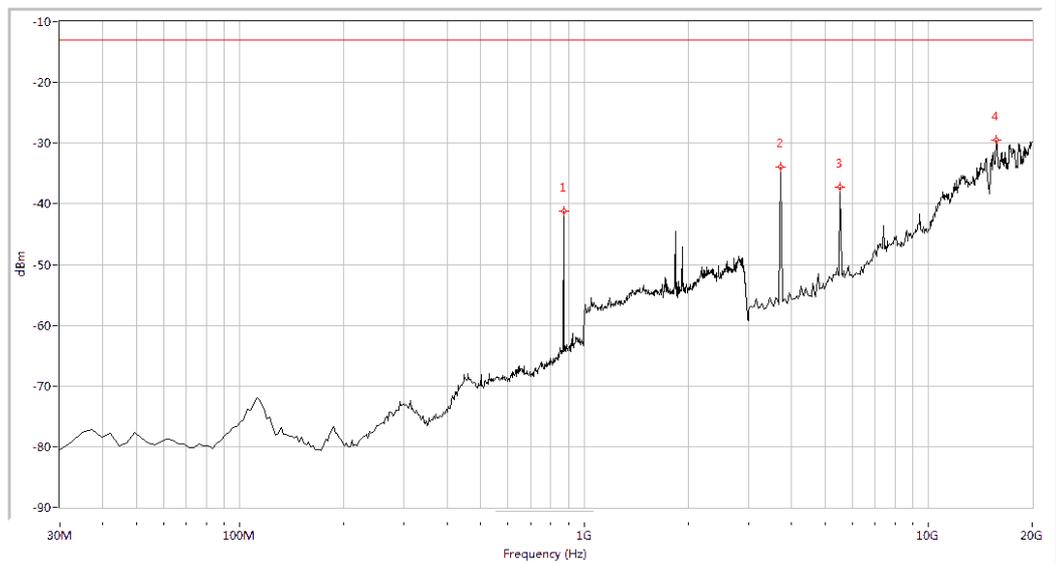
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.17	-13.0	28.2	27.7	Horizontal	PASS
3720.698	-33.87	-13.0	20.9	64.5	Horizontal	PASS
5543.641	-37.21	-13.0	24.2	64.5	Horizontal	PASS
15760.599	-29.54	-13.0	16.5	71.9	Horizontal	PASS

(Plot B.1:   GSM 1900MHz Channel = 512, Test Antenna Horizontal)
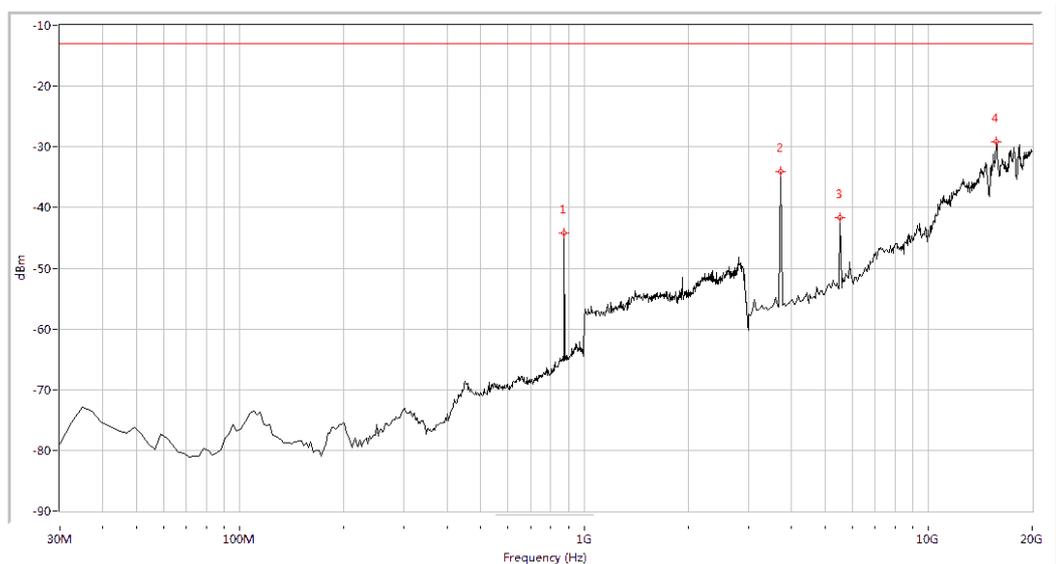
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
874.214	-44.26	-13.0	31.3	165.6	Vertical	PASS
3720.698	-34.02	-13.0	21.0	1.1	Vertical	PASS
5543.641	-41.74	-13.0	28.7	33.9	Vertical	PASS
15760.599	-29.21	-13.0	16.2	91.2	Vertical	PASS

(Plot B.2:   GSM 1900MHz Channel = 512, Test Antenna Vertical)
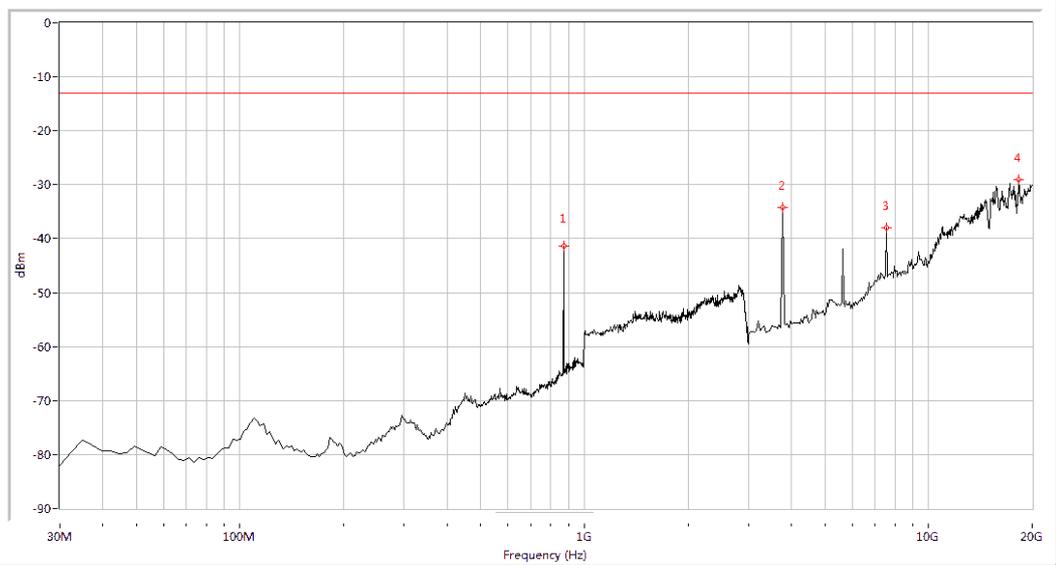
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.29	-13.0	28.3	118.1	Horizontal	PASS
3763.092	-34.16	-13.0	21.2	48.5	Horizontal	PASS
7536.160	-37.95	-13.0	24.9	-0.0	Horizontal	PASS
18304.239	-29.10	-13.0	16.1	294.5	Horizontal	PASS

(Plot B.3:   GSM 1900MHz Channel = 661, Test Antenna Horizontal)
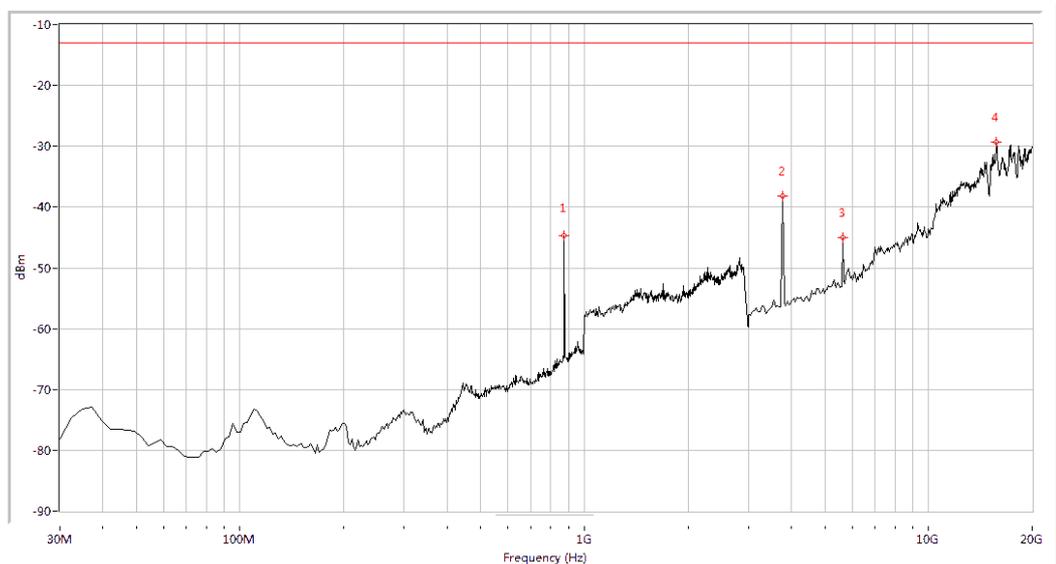
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
874.214	-44.68	-13.0	31.7	304.3	Vertical	PASS
3763.092	-38.26	-13.0	25.3	42.5	Vertical	PASS
5628.429	-45.03	-13.0	32.0	68.9	Vertical	PASS
15760.599	-29.35	-13.0	16.4	315.5	Vertical	PASS

(Plot B.4:   GSM 1900MHz Channel = 661, Test Antenna Vertical)
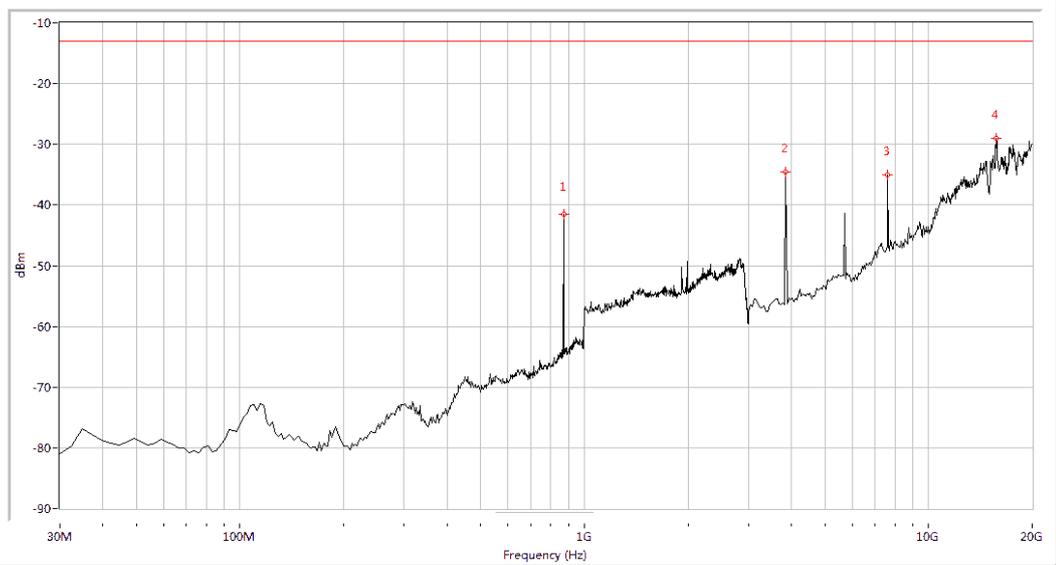
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.54	-13.0	28.5	29.5	Horizontal	PASS
3847.880	-34.63	-13.0	21.6	360.0	Horizontal	PASS
7620.948	-35.06	-13.0	22.1	67.8	Horizontal	PASS
15760.599	-29.08	-13.0	16.1	360.0	Horizontal	PASS

(Plot B.5: GSM 1900MHz Channel = 810, Test Antenna Horizontal)
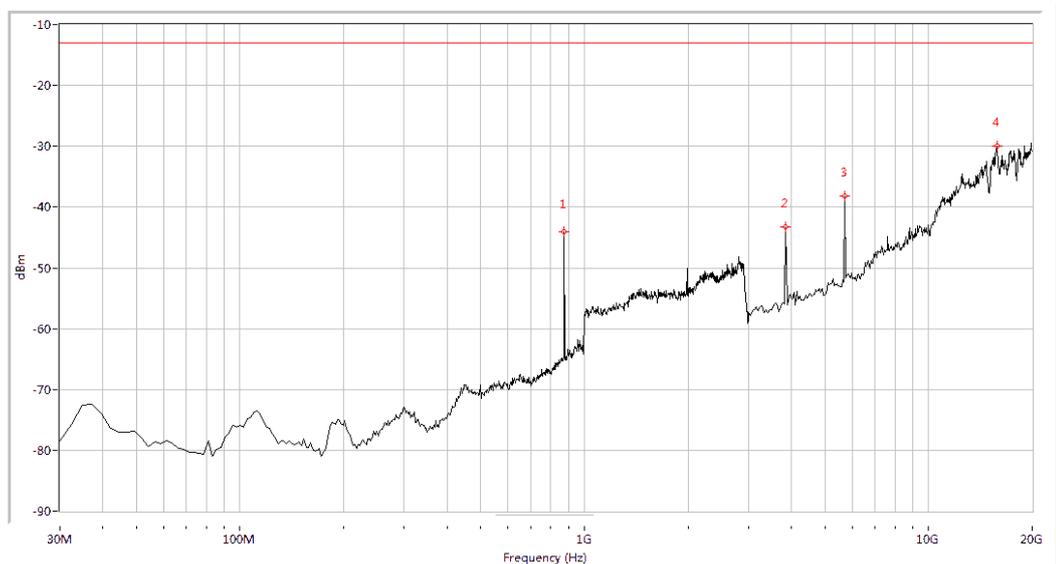
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
874.214	-44.07	-13.0	31.1	308.6	Vertical	PASS
3847.880	-43.29	-13.0	30.3	-0.0	Vertical	PASS
5713.217	-38.24	-13.0	25.2	360.0	Vertical	PASS
15802.993	-30.02	-13.0	17.0	128.1	Vertical	PASS

(PlotB.6: GSM 1900MHz Channel = 810, Test Antenna Vertical)
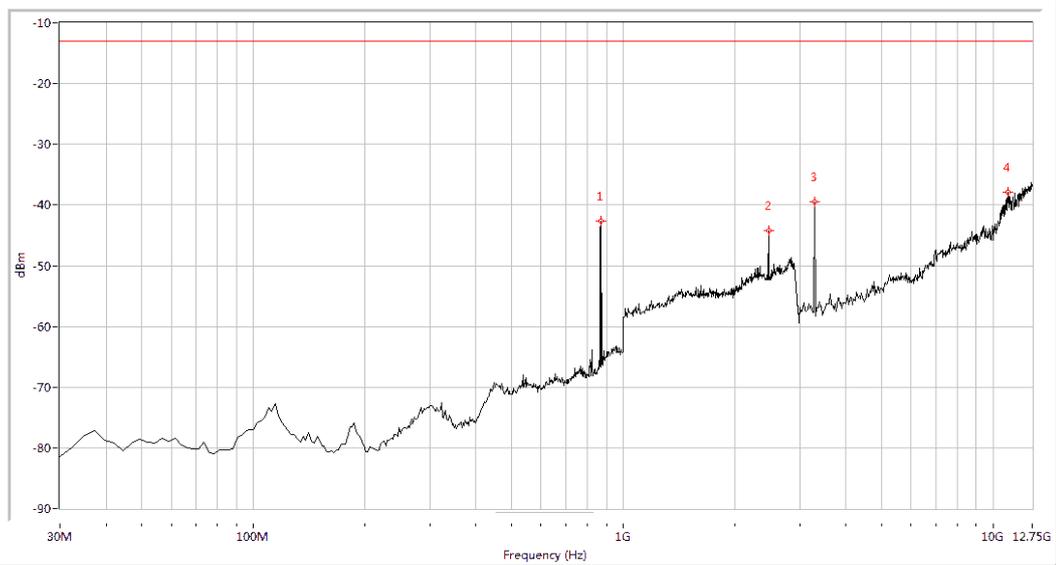
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.61	-13.0	29.6	26.1	Horizontal	PASS
2471.322	-44.24	-13.0	31.2	173.1	Horizontal	PASS
3291.771	-39.43	-13.0	26.4	66.0	Horizontal	PASS
10975.062	-37.90	-13.0	24.9	96.8	Horizontal	PASS

(Plot C.1:   EGPRS 850MHz Channel = 128, Test Antenna Horizontal)
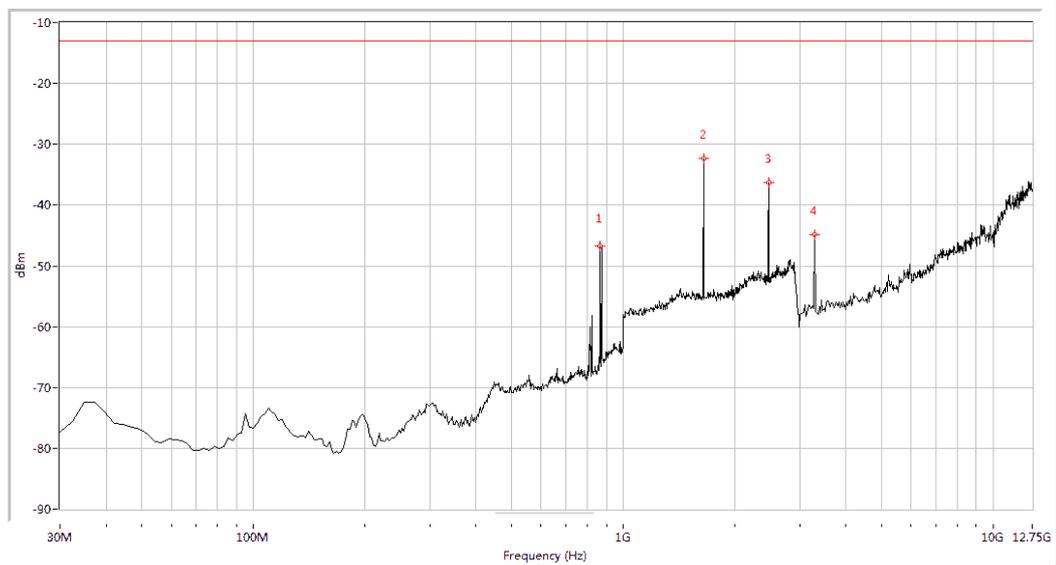
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
866.958	-46.83	-13.0	33.8	76.0	Vertical	PASS
1648.379	-32.40	-13.0	19.4	327.2	Vertical	PASS
2471.322	-36.34	-13.0	23.3	17.6	Vertical	PASS
3291.771	-44.84	-13.0	31.8	20.9	Vertical	PASS

(Plot C.2:   EGPRS 850MHz Channel = 128, Test Antenna Vertical)
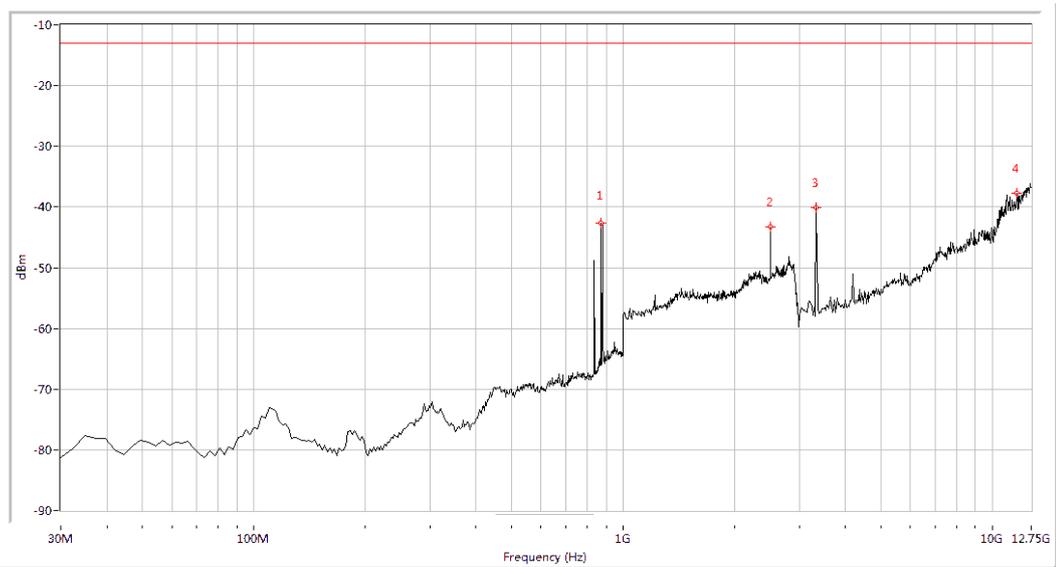
\Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.64	-13.0	29.6	28.0	Horizontal	PASS
2506.234	-43.34	-13.0	30.3	352.4	Horizontal	PASS
3340.399	-40.09	-13.0	27.1	38.8	Horizontal	PASS
11655.860	-37.76	-13.0	24.8	294.7	Horizontal	PASS

(Plot C.3:   EGPRS 850MHz Channel = 190, Test Antenna Horizontal)
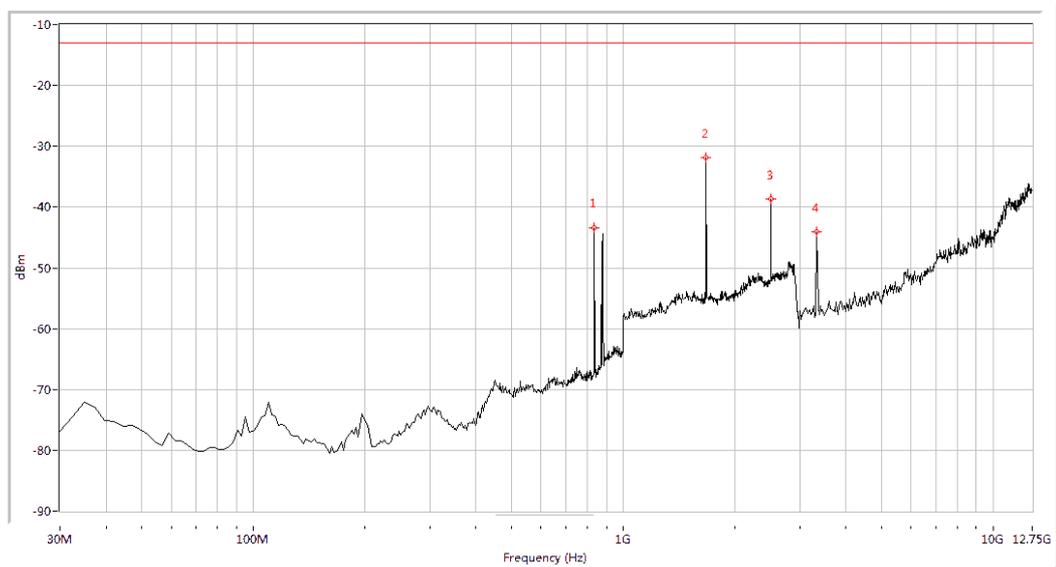
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-43.49	-13.0	30.5	345.5	Vertical	PASS
1673.317	-31.84	-13.0	18.8	317.3	Vertical	PASS
2506.234	-38.63	-13.0	25.6	64.8	Vertical	PASS
3340.399	-44.02	-13.0	31.0	1.4	Vertical	PASS

(Plot C.4:   EGPRS 850MHz Channel = 190, Test Antenna Vertical)
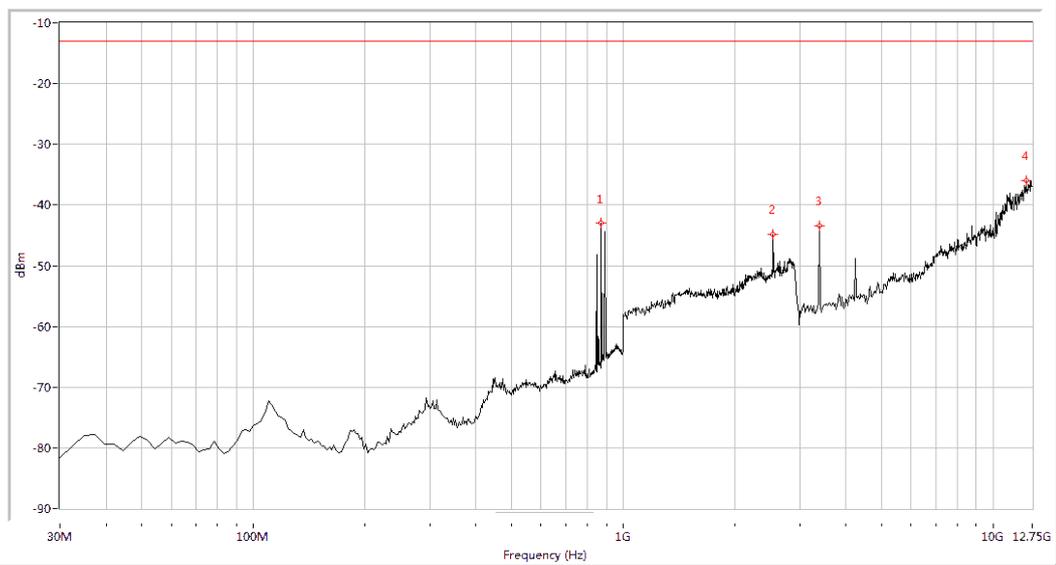
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.94	-13.0	29.9	26.1	Horizontal	PASS
2541.147	-44.78	-13.0	31.8	305.6	Horizontal	PASS
3389.027	-43.37	-13.0	30.4	49.2	Horizontal	PASS
12263.716	-35.95	-13.0	23.0	283.9	Horizontal	PASS

(Plot C.5: EGPRS 850MHz Channel = 251, Test Antenna Horizontal)
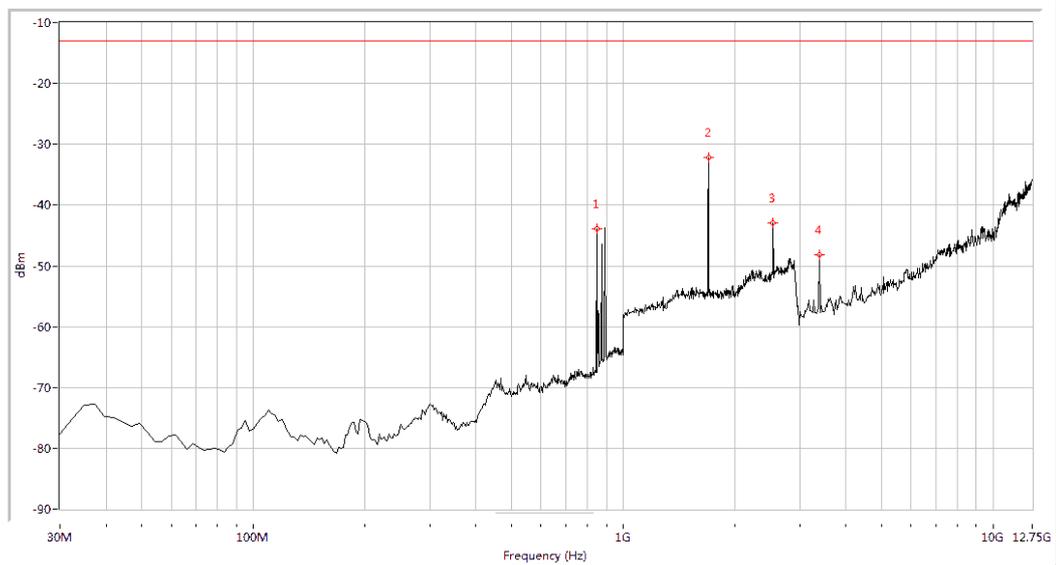
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-43.95	-13.0	30.9	241.6	Vertical	PASS
1698.254	-32.25	-13.0	19.2	319.2	Vertical	PASS
2541.147	-42.91	-13.0	29.9	83.0	Vertical	PASS
3389.027	-48.23	-13.0	35.2	30.1	Vertical	PASS

(Plot C.6: EGPRS 850MHz Channel = 251, Test Antenna Vertical)
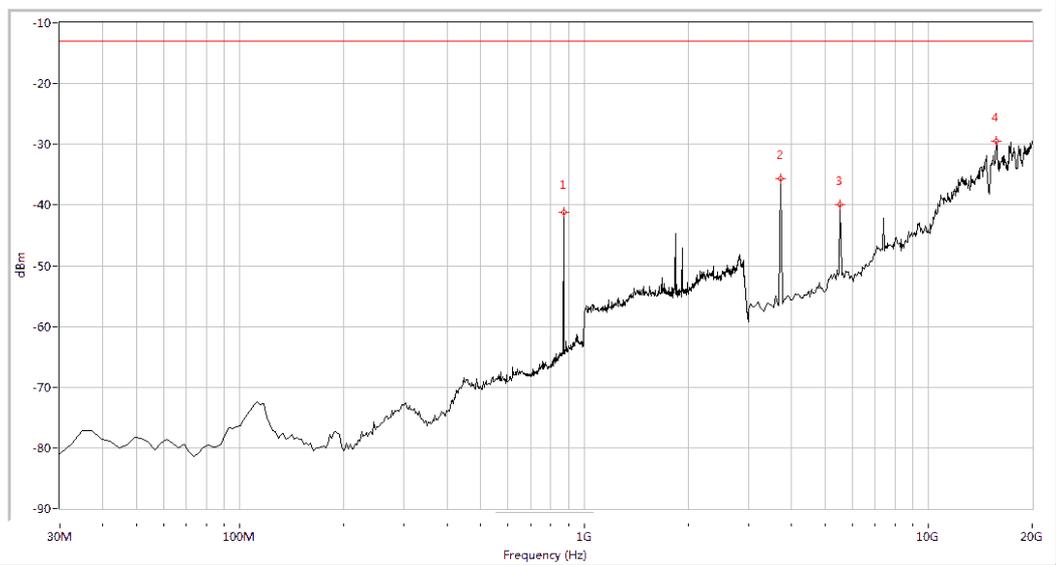
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.24	-13.0	28.2	25.0	Horizontal	PASS
3720.698	-35.65	-13.0	22.6	33.2	Horizontal	PASS
5543.641	-40.01	-13.0	27.0	360.0	Horizontal	PASS
15760.599	-29.46	-13.0	16.5	270.9	Horizontal	PASS

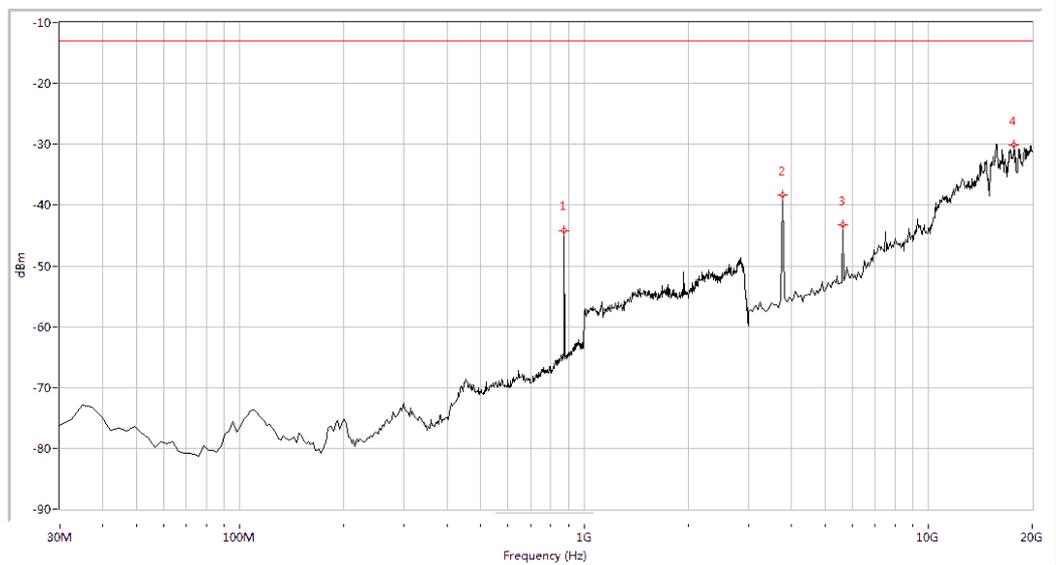(Plot D.1:   EGPRS 1900MHz Channel = 512, Test Antenna Horizontal)
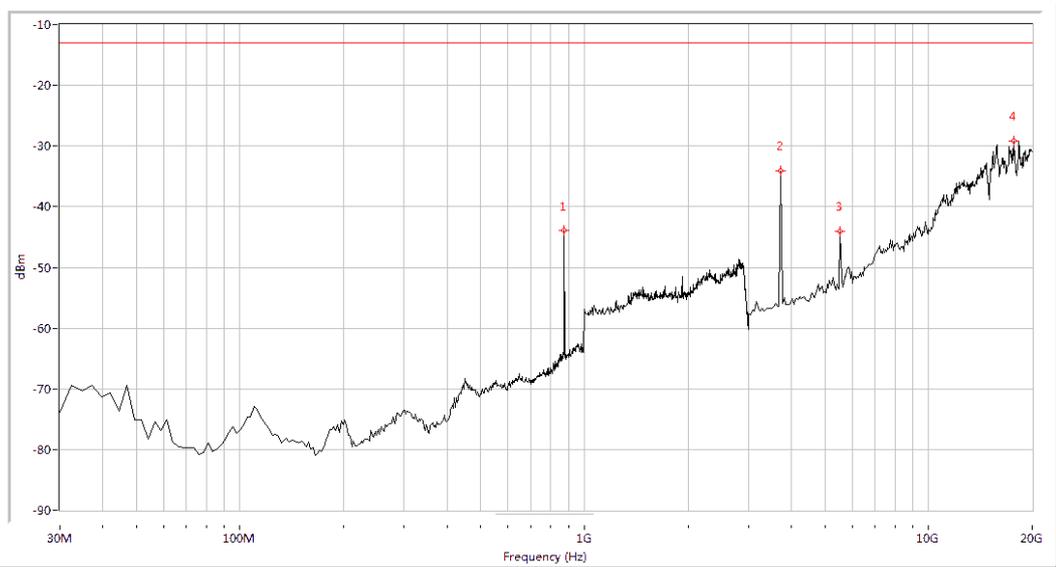
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
874.214	-43.84	-13.0	30.8	297.4	Vertical	PASS
3720.698	-34.12	-13.0	21.1	-0.0	Vertical	PASS
5543.641	-43.99	-13.0	31.0	13.5	Vertical	PASS
17625.935	-29.20	-13.0	16.2	0.3	Vertical	PASS

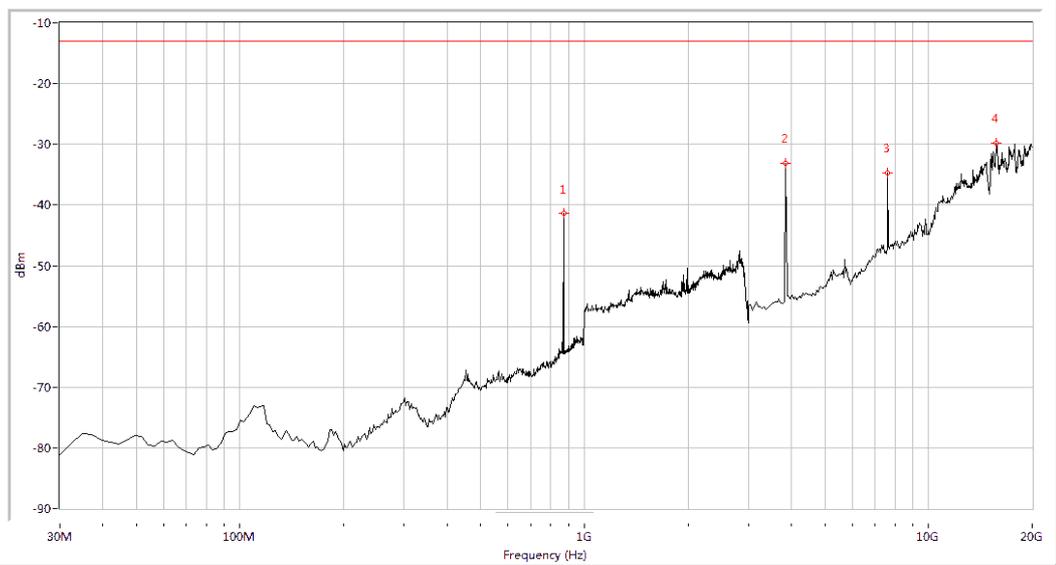(Plot D.2:   EGPRS 1900MHz Channel = 512, Test Antenna Vertical)
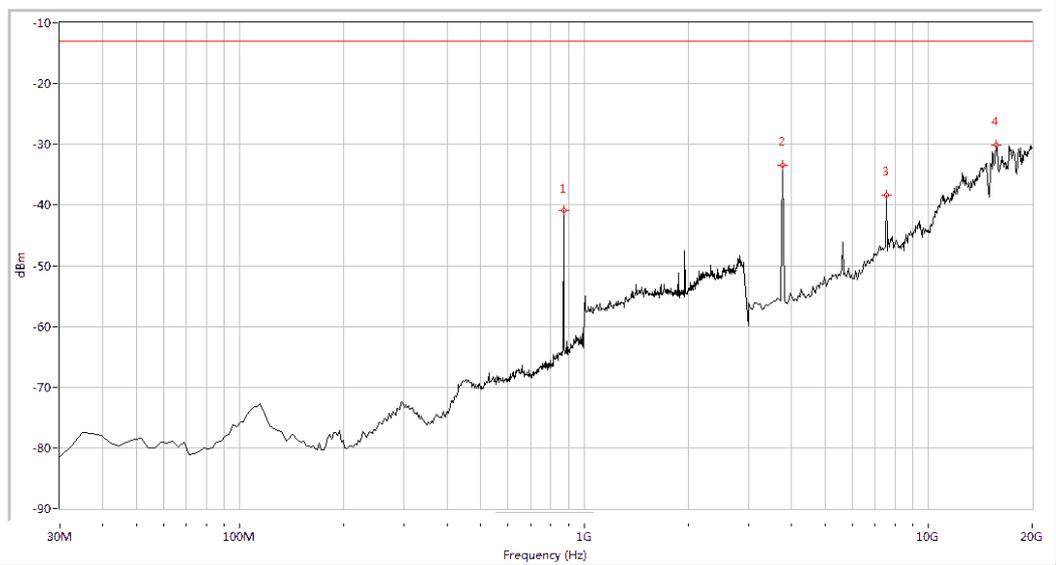
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-40.97	-13.0	28.0	20.6	Horizontal	PASS
3763.092	-33.49	-13.0	20.5	48.8	Horizontal	PASS
7536.160	-38.39	-13.0	25.4	360.0	Horizontal	PASS
15760.599	-30.19	-13.0	17.2	193.9	Horizontal	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
874.214	-44.16	-13.0	31.2	282.2	Vertical	PASS
3763.092	-38.37	-13.0	25.4	356.5	Vertical	PASS
5628.429	-43.27	-13.0	30.3	39.6	Vertical	PASS
17710.723	-30.18	-13.0	17.2	174.3	Vertical	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.35	-13.0	28.4	25.4	Horizontal	PASS
3847.880	-33.11	-13.0	20.1	64.2	Horizontal	PASS
7620.948	-34.69	-13.0	21.7	22.5	Horizontal	PASS
15760.599	-29.80	-13.0	16.8	237.6	Horizontal	PASS

(Plot D.5: EGPRS 1900MHz Channel = 810, Test Antenna Horizontal)
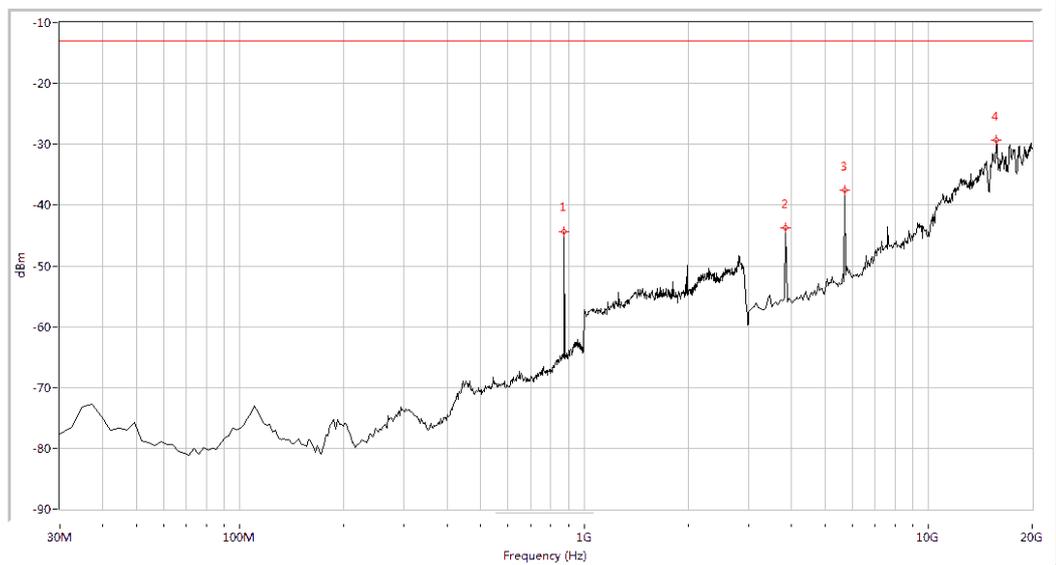
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
874.214	-44.37	-13.0	31.4	163.7	Vertical	PASS
3847.880	-43.72	-13.0	30.7	360.0	Vertical	PASS
5713.217	-37.61	-13.0	24.6	9.1	Vertical	PASS
15760.599	-29.25	-13.0	16.3	91.6	Vertical	PASS

(Plot D.6: EGPRS 1900MHz Channel = 810, Test Antenna Vertical)
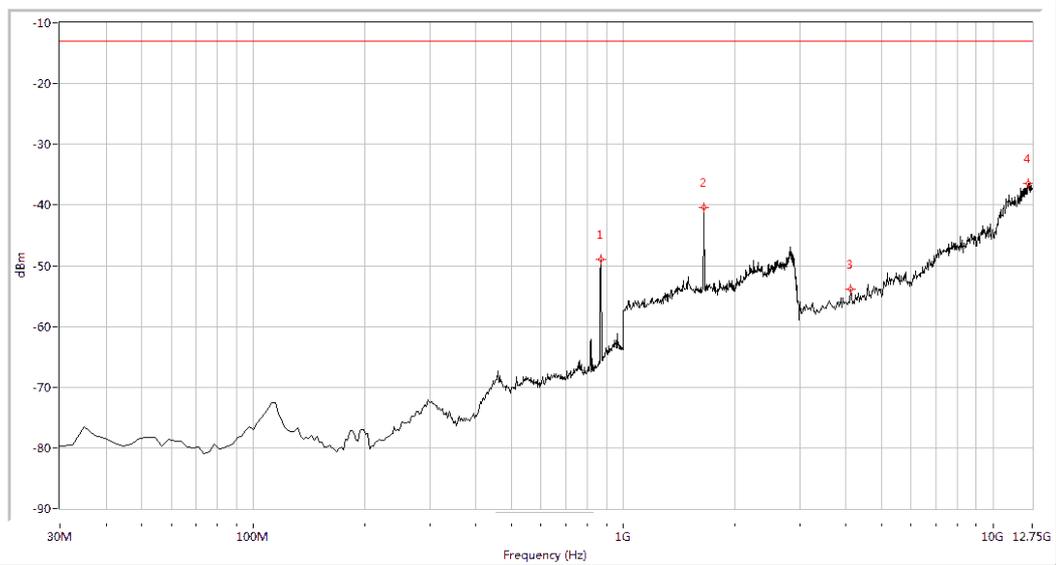
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-48.94	-13.0	35.9	122.5	Horizontal	PASS
1653.367	-40.46	-13.0	27.5	357.6	Horizontal	PASS
4118.454	-53.81	-13.0	40.8	248.7	Horizontal	PASS
12458.229	-36.53	-13.0	23.5	149.4	Horizontal	PASS

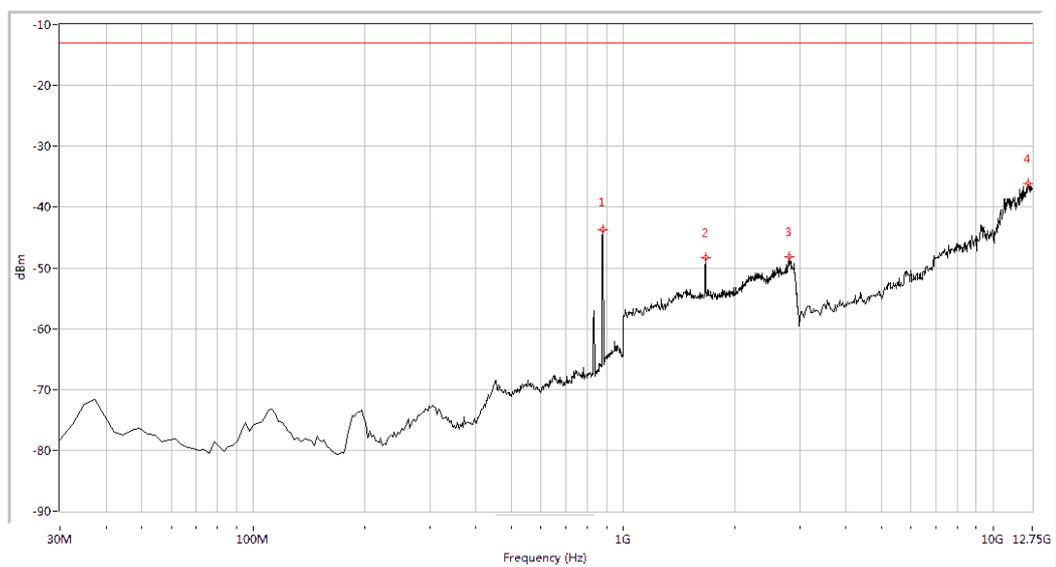(Plot E.1:   WCDMA 850MHz Channel = 4132, Test Antenna Horizontal)
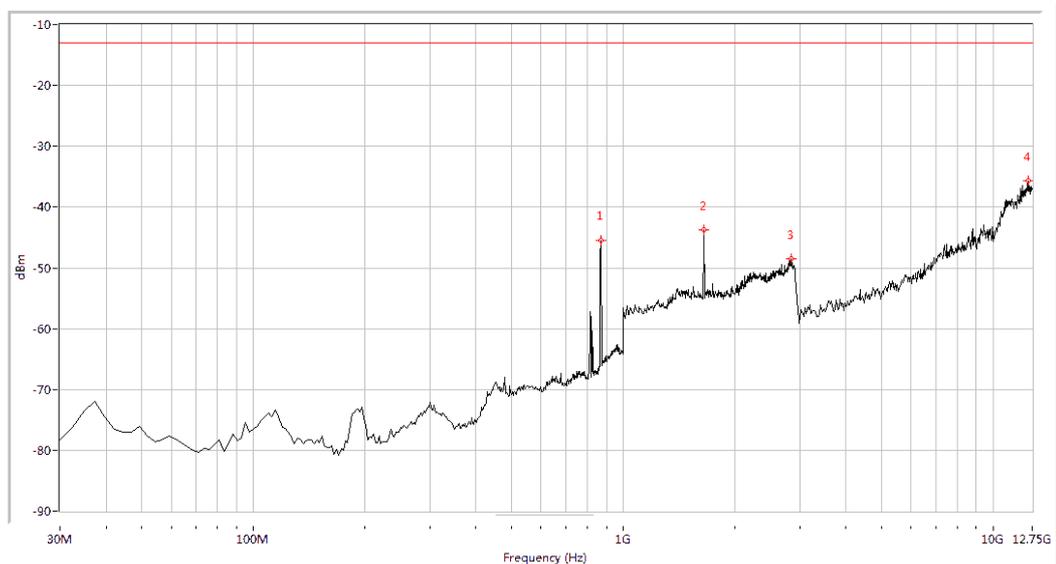
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-45.42	-13.0	32.4	338.5	Vertical	PASS
1653.367	-43.75	-13.0	30.7	333.6	Vertical	PASS
2840.399	-48.43	-13.0	35.4	217.1	Vertical	PASS
12409.601	-35.70	-13.0	22.7	151.1	Vertical	PASS

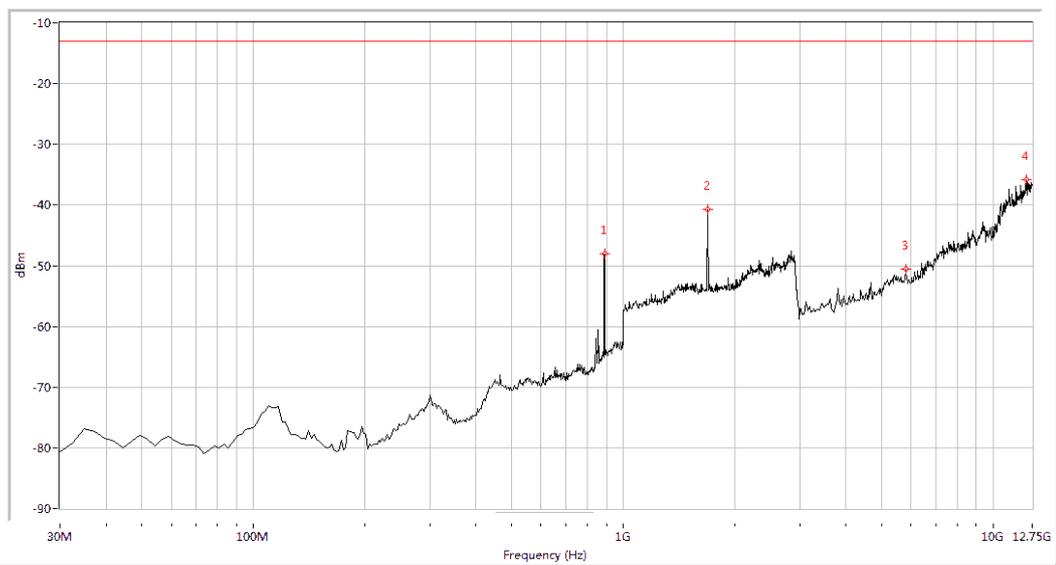(Plot E.2:   WCDMA 850MHz Channel = 4132, Test Antenna Vertical)
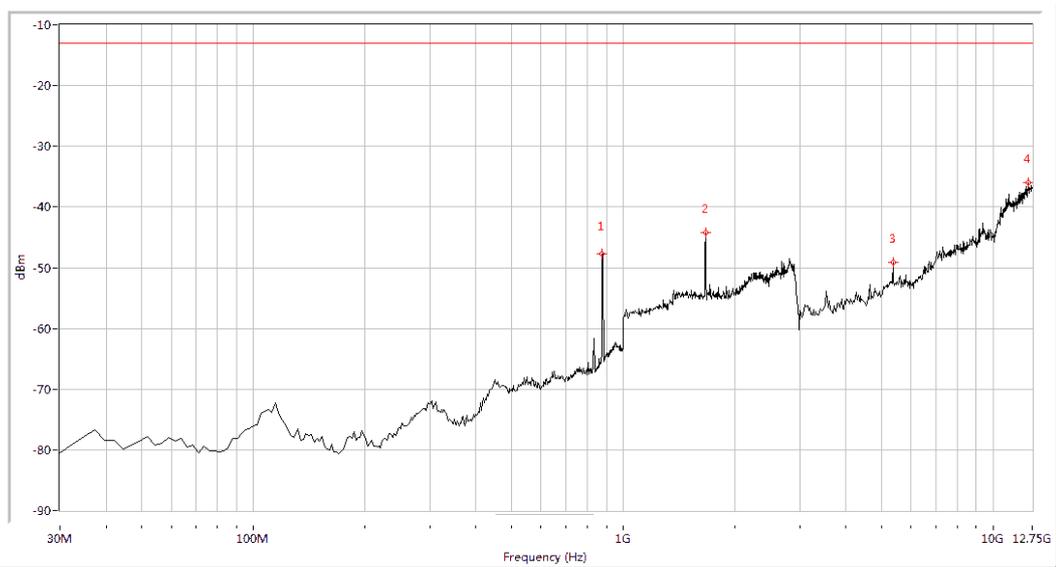
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-47.77	-13.0	34.8	31.5	Horizontal	PASS
1668.329	-44.17	-13.0	31.2	24.2	Horizontal	PASS
5358.479	-49.10	-13.0	36.1	25.1	Horizontal	PASS
12433.915	-36.02	-13.0	23.0	4.7	Horizontal	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-43.73	-13.0	30.7	3.5	Vertical	PASS
1668.329	-48.30	-13.0	35.3	296.9	Vertical	PASS
2820.449	-48.24	-13.0	35.2	356.9	Vertical	PASS
12458.229	-36.10	-13.0	23.1	-0.0	Vertical	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-48.03	-13.0	35.0	30.2	Horizontal	PASS
1688.279	-40.67	-13.0	27.7	0.8	Horizontal	PASS
5796.135	-50.55	-13.0	37.5	17.6	Horizontal	PASS
12312.344	-35.79	-13.0	22.8	359.5	Horizontal	PASS

(Plot E.5:   WCDMA 850MHz Channel = 4233, Test Antenna Horizontal)
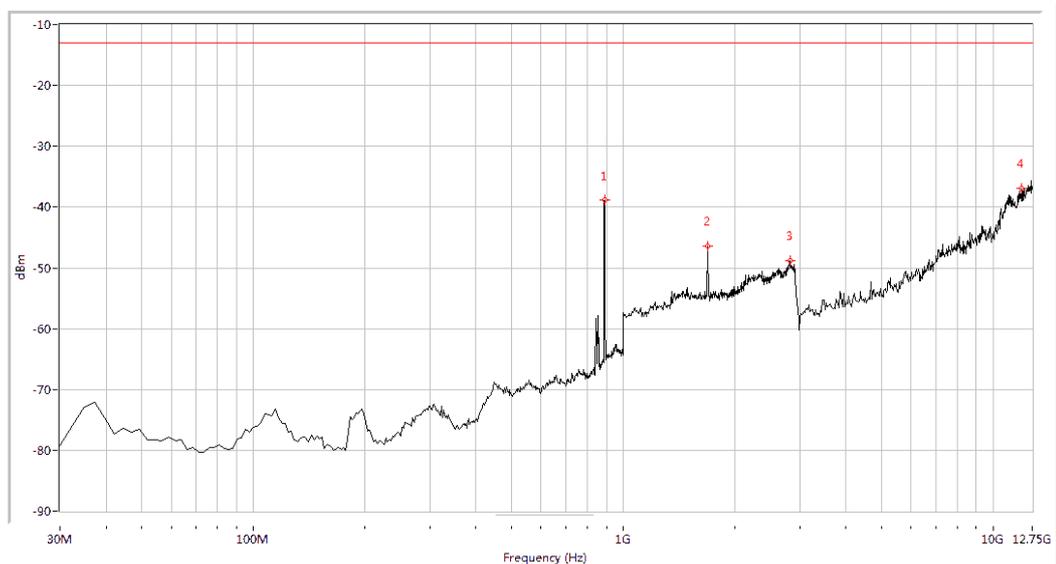
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-38.84	-13.0	25.8	349.5	Vertical	PASS
1688.279	-46.46	-13.0	33.5	309.2	Vertical	PASS
2830.424	-48.76	-13.0	35.8	176.0	Vertical	PASS
11923.317	-36.87	-13.0	23.9	147.1	Vertical	PASS

(Plot E.6:   WCDMA 850MHz Channel = 4233, Test Antenna Vertical)
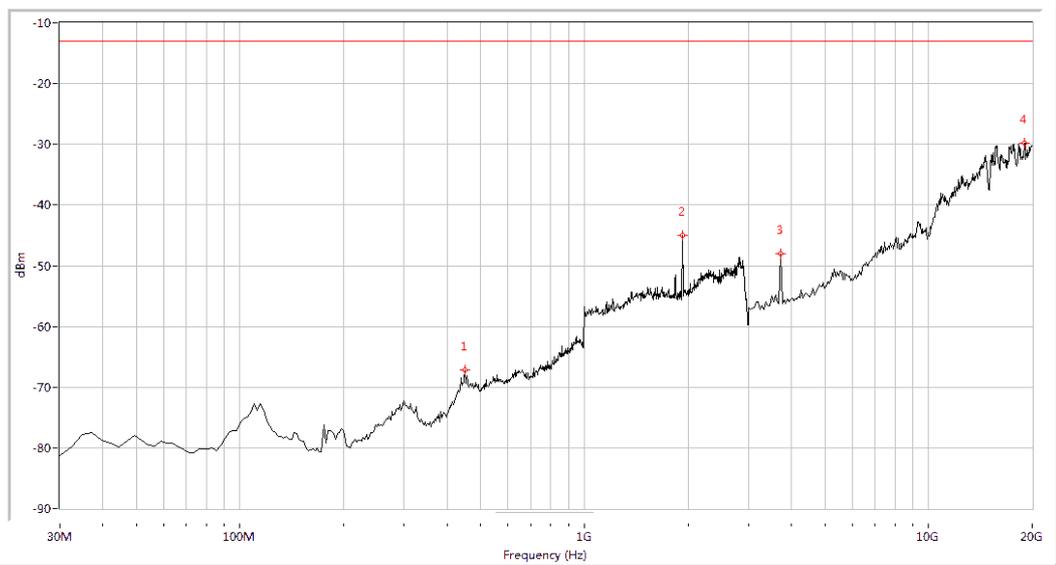
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
450.898	-67.19	-13.0	54.2	180.2	Horizontal	PASS
1932.668	-45.04	-13.0	32.0	51.8	Horizontal	PASS
3720.698	-47.96	-13.0	35.0	48.8	Horizontal	PASS
18982.544	-29.78	-13.0	16.8	145.9	Horizontal	PASS

(Plot F.1:　WCDMA 1900MHz Channel = 9262, Test Antenna Horizontal)
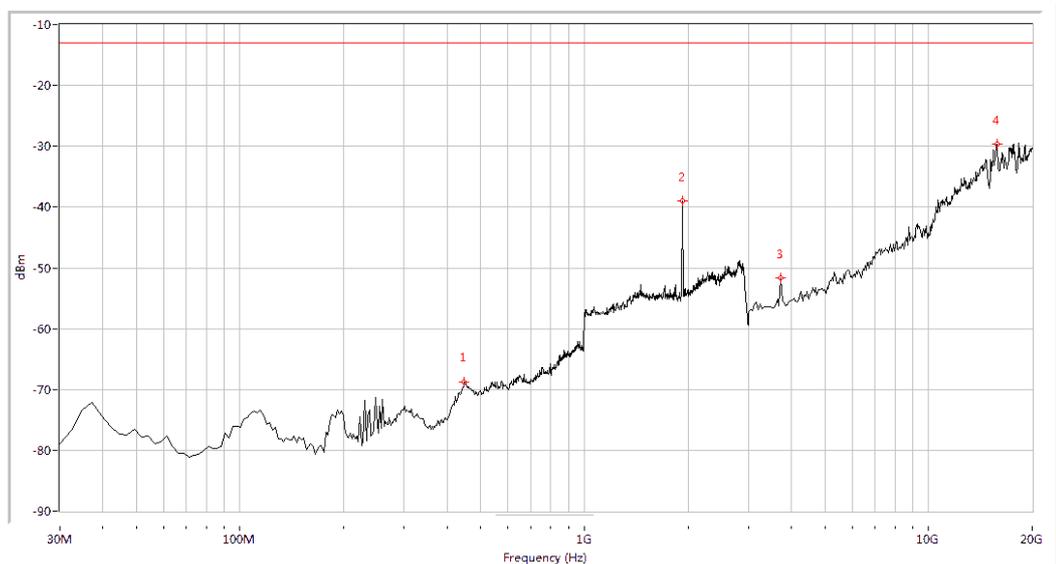
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
448.479	-68.72	-13.0	55.7	154.9	Vertical	PASS
1927.681	-39.03	-13.0	26.0	116.6	Vertical	PASS
3720.698	-51.69	-13.0	38.7	327.5	Vertical	PASS
15802.993	-29.59	-13.0	16.6	-0.0	Vertical	PASS

(Plot F.2:　WCDMA 1900MHz Channel = 9262, Test Antenna Vertical)
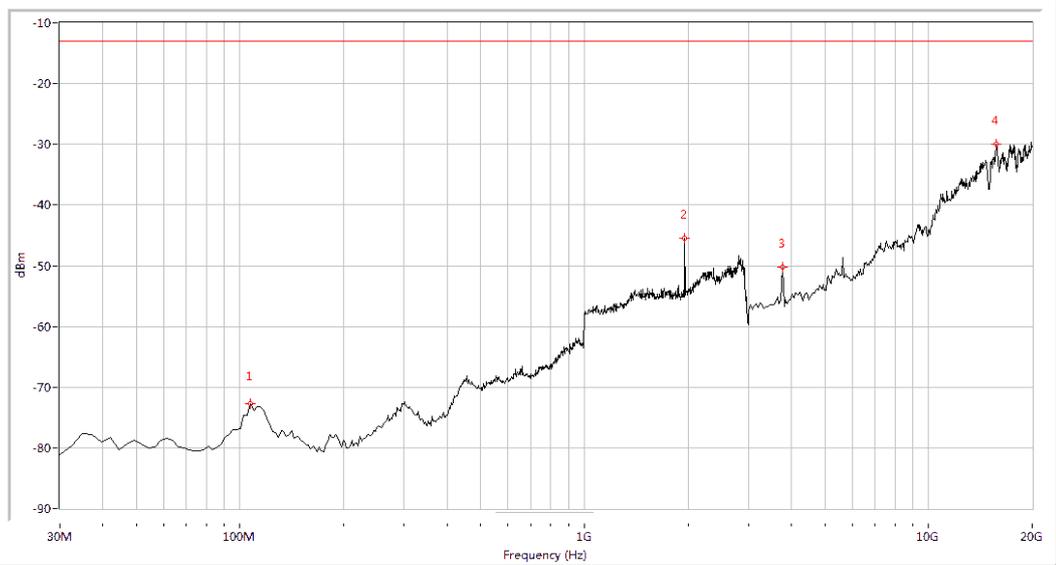
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
107.406	-72.69	-13.0	59.7	305.8	Horizontal	PASS
1957.606	-45.50	-13.0	32.5	39.8	Horizontal	PASS
3763.092	-50.26	-13.0	37.3	359.7	Horizontal	PASS
15760.599	-30.03	-13.0	17.0	216.6	Horizontal	PASS

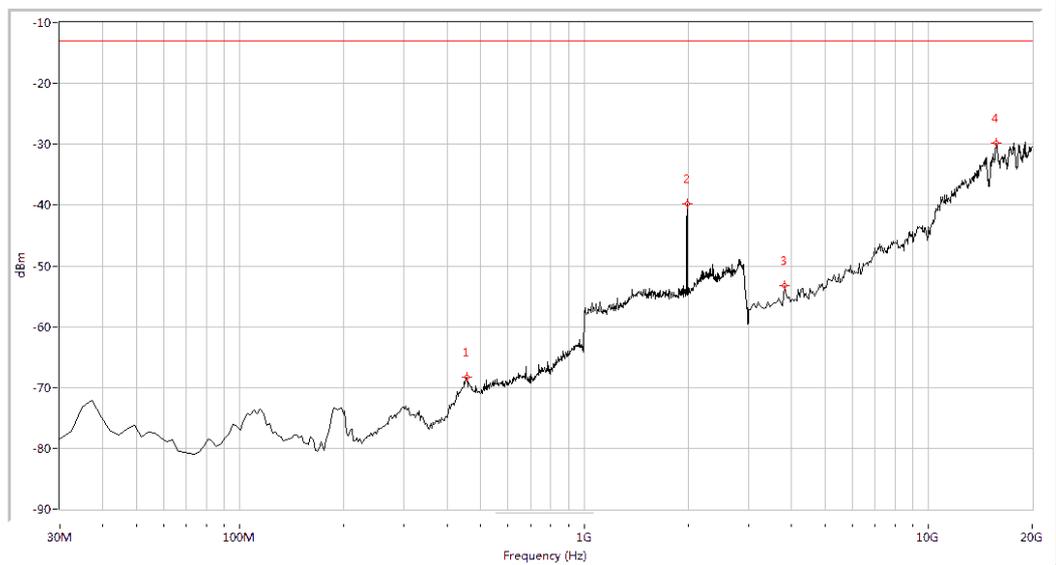(Plot F.3:   WCDMA 1900MHz Channel = 9400, Test Antenna Horizontal)
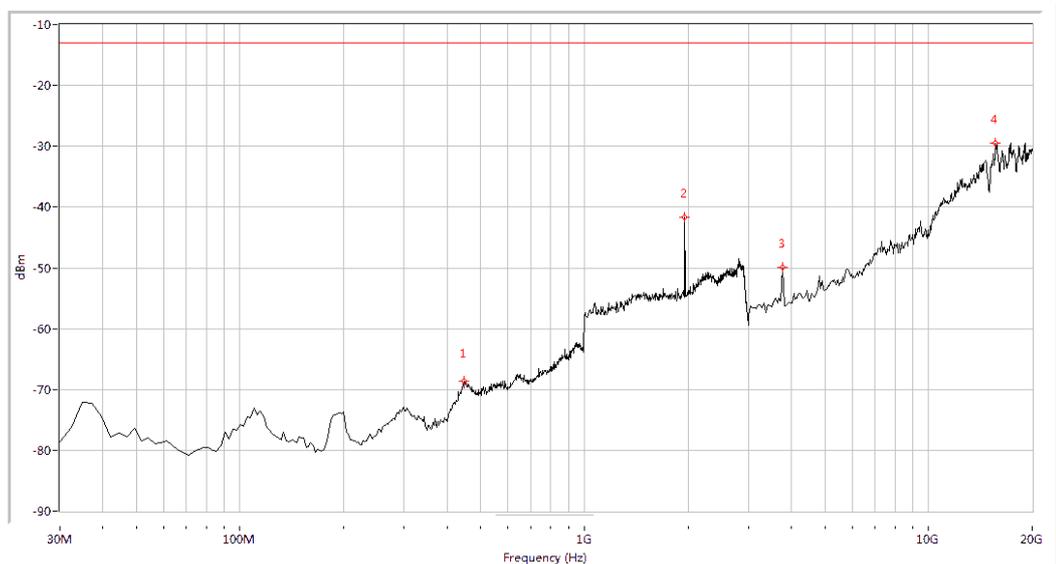
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
446.060	-68.69	-13.0	55.7	360.0	Vertical	PASS
1957.606	-41.74	-13.0	28.7	138.9	Vertical	PASS
3763.092	-49.94	-13.0	36.9	356.2	Vertical	PASS
15675.810	-29.49	-13.0	16.5	360.0	Vertical	PASS

(Plot F.4:   WCDMA 1900MHz Channel = 9400, Test Antenna Vertical)
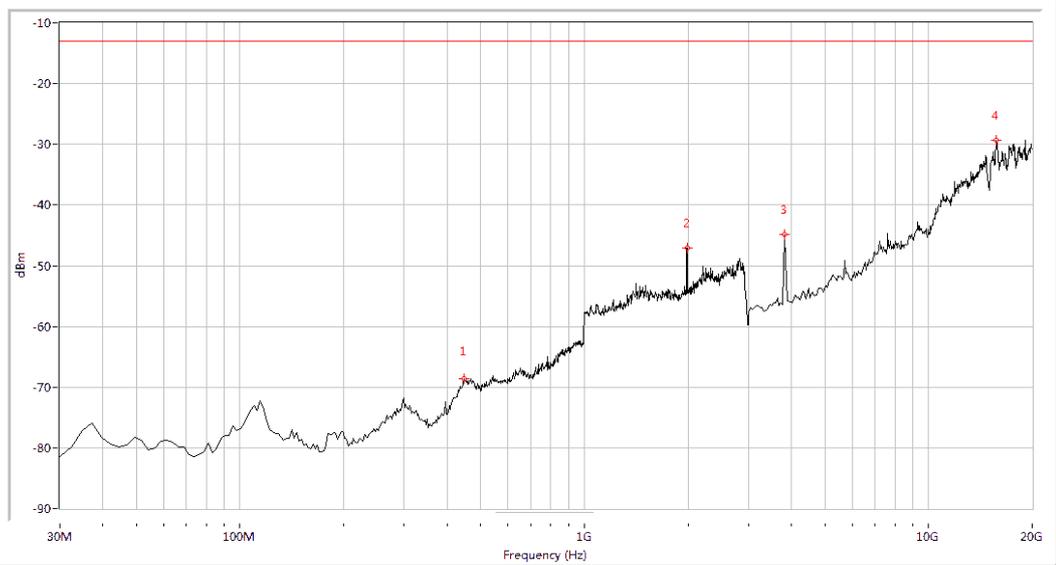
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
446.060	-68.61	-13.0	55.6	227.9	Horizontal	PASS
1987.531	-47.12	-13.0	34.1	221.0	Horizontal	PASS
3805.486	-44.92	-13.0	31.9	-0.0	Horizontal	PASS
15760.599	-29.36	-13.0	16.4	358.9	Horizontal	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
455.736	-68.35	-13.0	55.4	308.8	Vertical	PASS
1987.531	-39.81	-13.0	26.8	210.0	Vertical	PASS
3805.486	-53.32	-13.0	40.3	3.7	Vertical	PASS
15760.599	-29.75	-13.0	16.7	82.2	Vertical	PASS

(Plot F.6:   WCDMA 1900MHz Channel = 9538, Test Antenna Vertical)
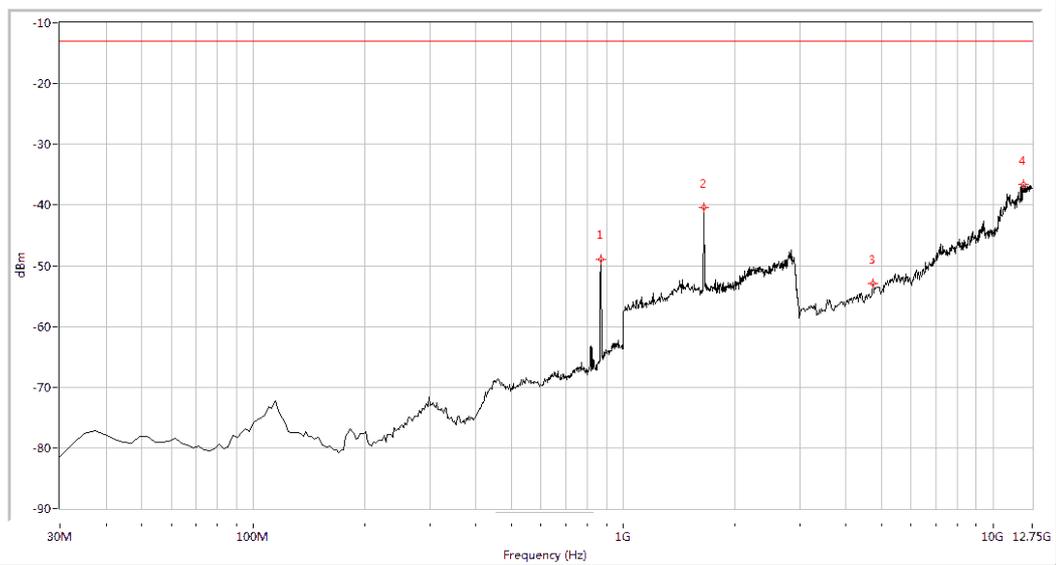
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.05	-13.0	36.0	360.0	Horizontal	PASS
1653.367	-40.42	-13.0	27.4	348.8	Horizontal	PASS
4726.309	-52.96	-13.0	40.0	151.1	Horizontal	PASS
12044.888	-36.56	-13.0	23.6	254.1	Horizontal	PASS

(Plot G.1:   HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)
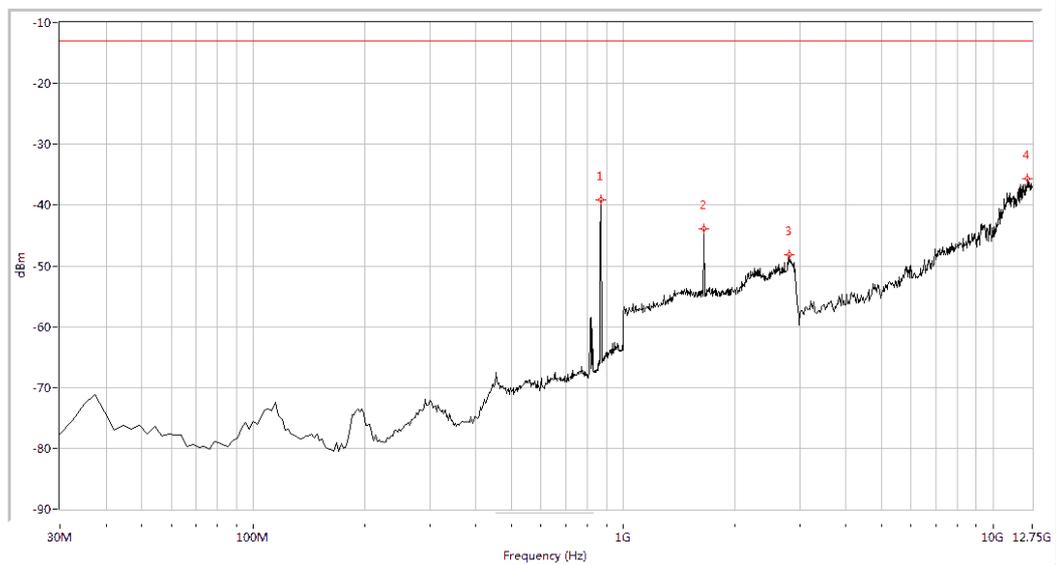
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-39.13	-13.0	26.1	332.7	Vertical	PASS
1653.367	-43.84	-13.0	30.8	320.6	Vertical	PASS
2810.474	-48.13	-13.0	35.1	234.0	Vertical	PASS
12385.287	-35.66	-13.0	22.7	359.2	Vertical	PASS

(Plot G.2:   HSDPA 850MHz Channel = 4132, Test Antenna Vertical)
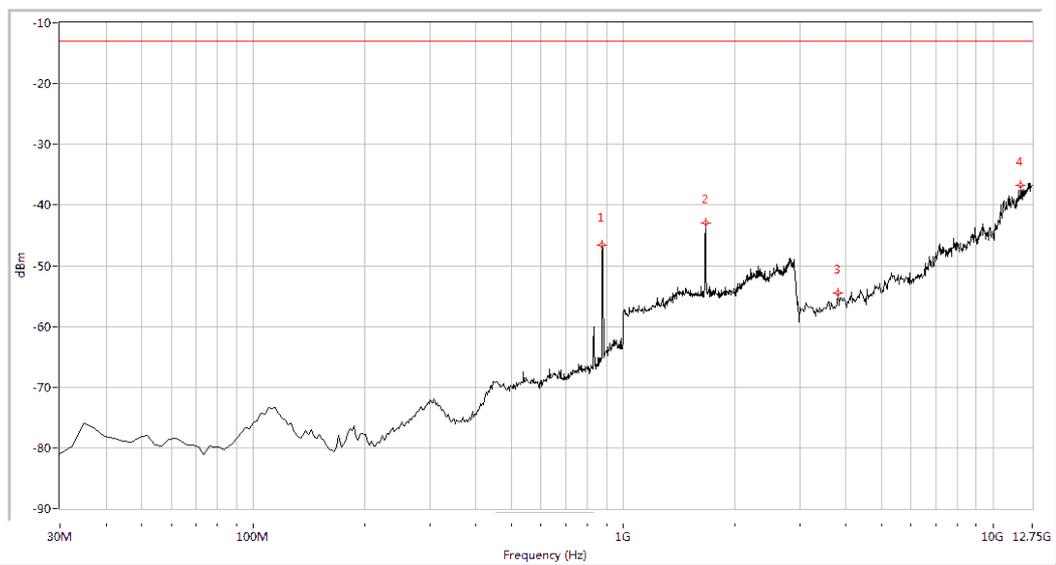
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-46.64	-13.0	33.6	32.8	Horizontal	PASS
1668.329	-42.90	-13.0	29.9	358.9	Horizontal	PASS
3802.369	-54.56	-13.0	41.6	216.3	Horizontal	PASS
11874.688	-36.73	-13.0	23.7	129.3	Horizontal	PASS

(Plot G.3: HSDPA 850MHz Channel = 4175, Test Antenna Horizontal)
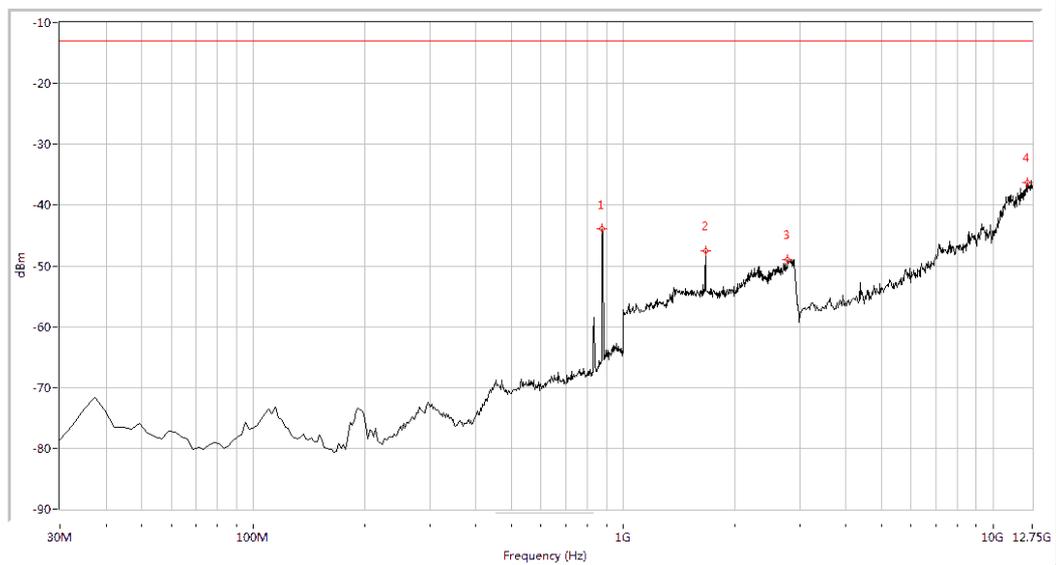
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-43.84	-13.0	30.8	151.9	Vertical	PASS
1668.329	-47.58	-13.0	34.6	301.7	Vertical	PASS
2780.549	-49.01	-13.0	36.0	244.0	Vertical	PASS
12385.287	-36.28	-13.0	23.3	360.0	Vertical	PASS

(Plot G.4: HSDPA 850MHz Channel = 4175, Test Antenna Vertical)
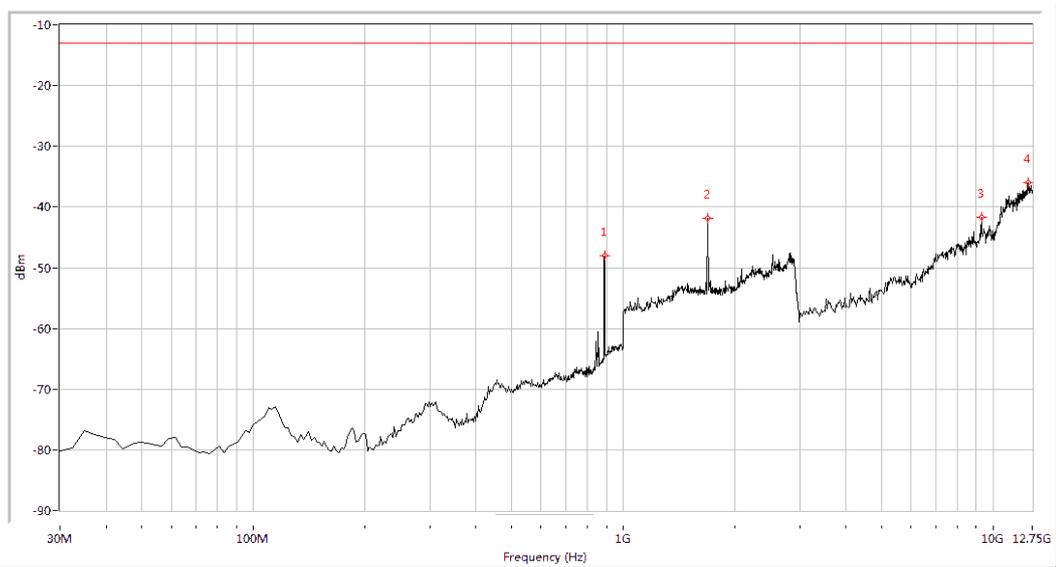
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-47.96	-13.0	35.0	2.6	Horizontal	PASS
1688.279	-41.78	-13.0	28.8	6.4	Horizontal	PASS
9297.382	-41.75	-13.0	28.8	322.0	Horizontal	PASS
12409.601	-35.96	-13.0	23.0	261.0	Horizontal	PASS

(Plot G.5: HSDPA 850MHz Channel = 4233, Test Antenna Horizontal)
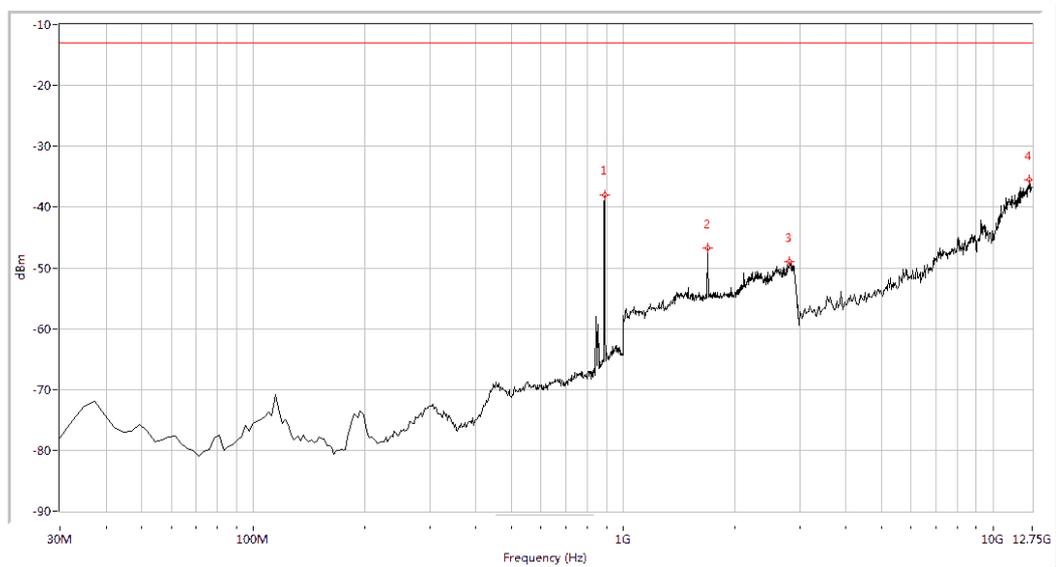
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-38.10	-13.0	25.1	132.2	Vertical	PASS
1688.279	-46.81	-13.0	33.8	294.1	Vertical	PASS
2810.474	-48.95	-13.0	35.9	284.8	Vertical	PASS
12555.486	-35.53	-13.0	22.5	205.8	Vertical	PASS

(Plot G.6: HSDPA 850MHz Channel = 4233, Test Antenna Vertical)
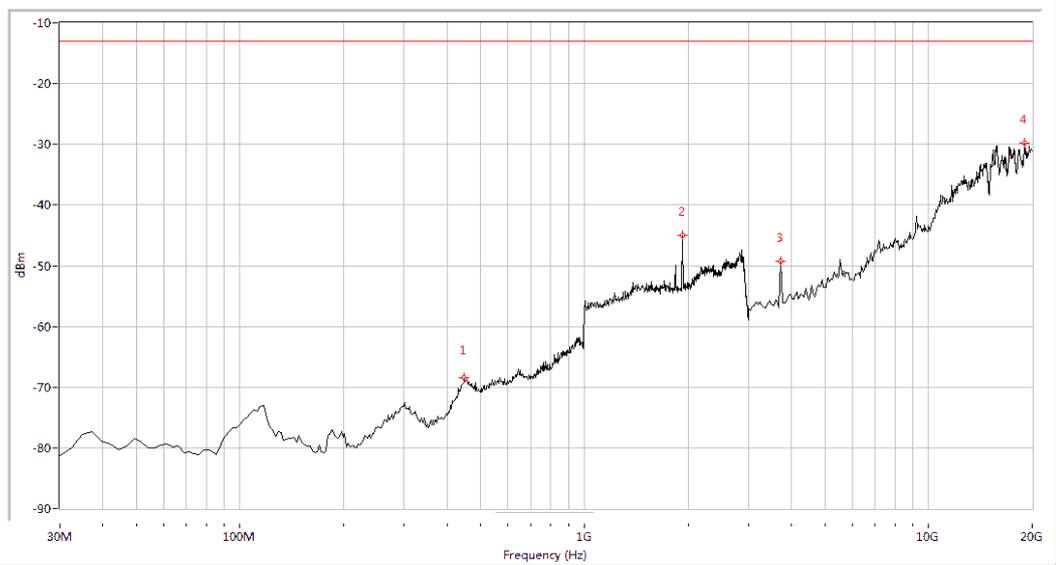
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
448.479	-68.39	-13.0	55.4	351.9	Horizontal	PASS
1927.681	-45.02	-13.0	32.0	56.7	Horizontal	PASS
3720.698	-49.36	-13.0	36.4	60.4	Horizontal	PASS
19024.938	-29.81	-13.0	16.8	306.5	Horizontal	PASS

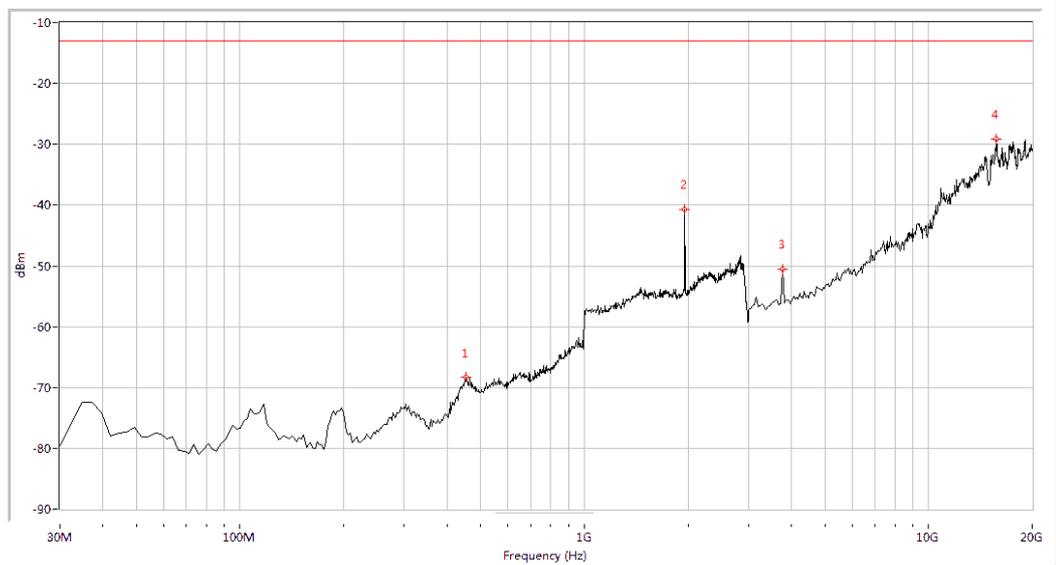(Plot H.1:   HSDPA 1900 MHz Channel = 9262, Test Antenna Horizontal)
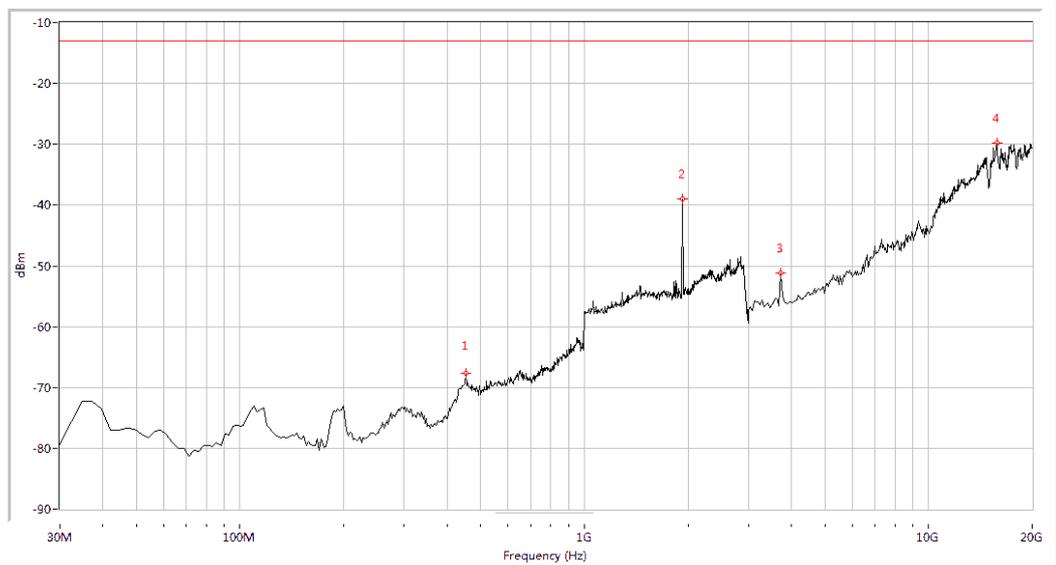
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
453.317	-67.60	-13.0	54.6	16.0	Vertical	PASS
1932.668	-38.97	-13.0	26.0	151.1	Vertical	PASS
3720.698	-51.15	-13.0	38.1	344.7	Vertical	PASS
15802.993	-29.74	-13.0	16.7	222.6	Vertical	PASS

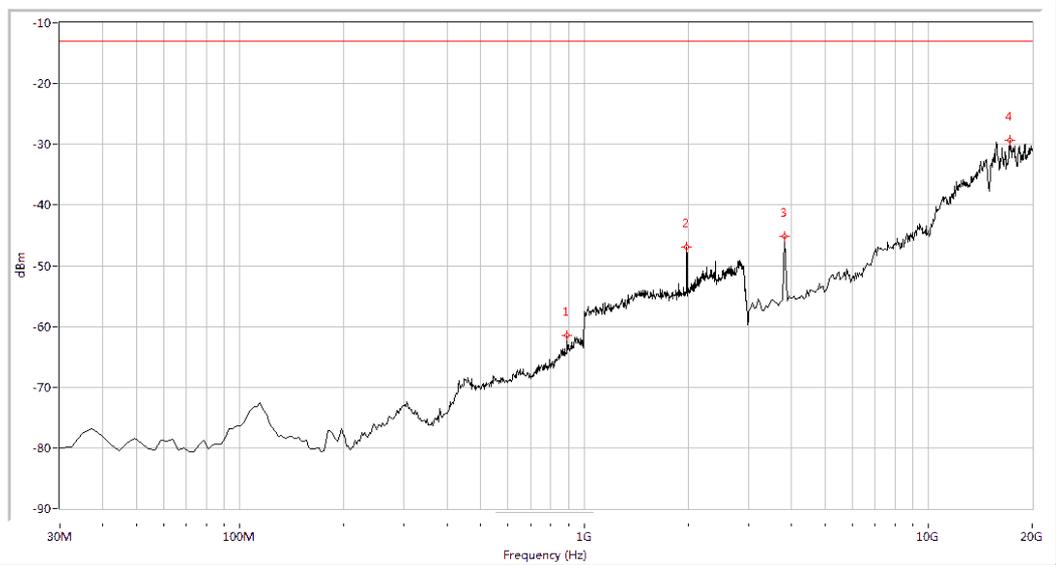(Plot H.2:   HSDPA 1900 MHz Channel = 9262, Test Antenna Vertical)
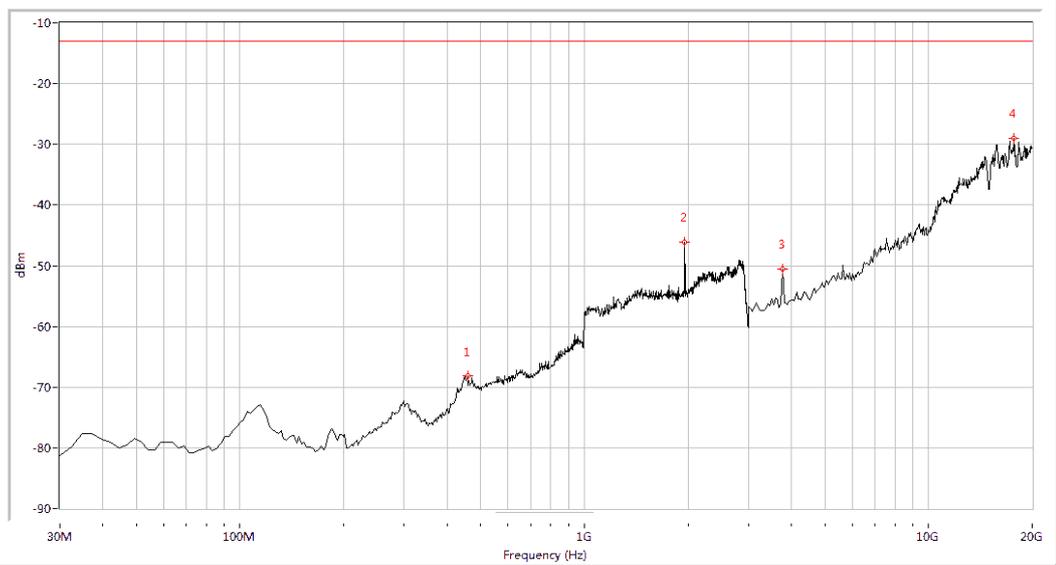
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
458.155	-68.21	-13.0	55.2	162.6	Horizontal	PASS
1957.606	-46.16	-13.0	33.2	303.0	Horizontal	PASS
3763.092	-50.54	-13.0	37.5	32.1	Horizontal	PASS
17710.723	-29.02	-13.0	16.0	229.6	Horizontal	PASS

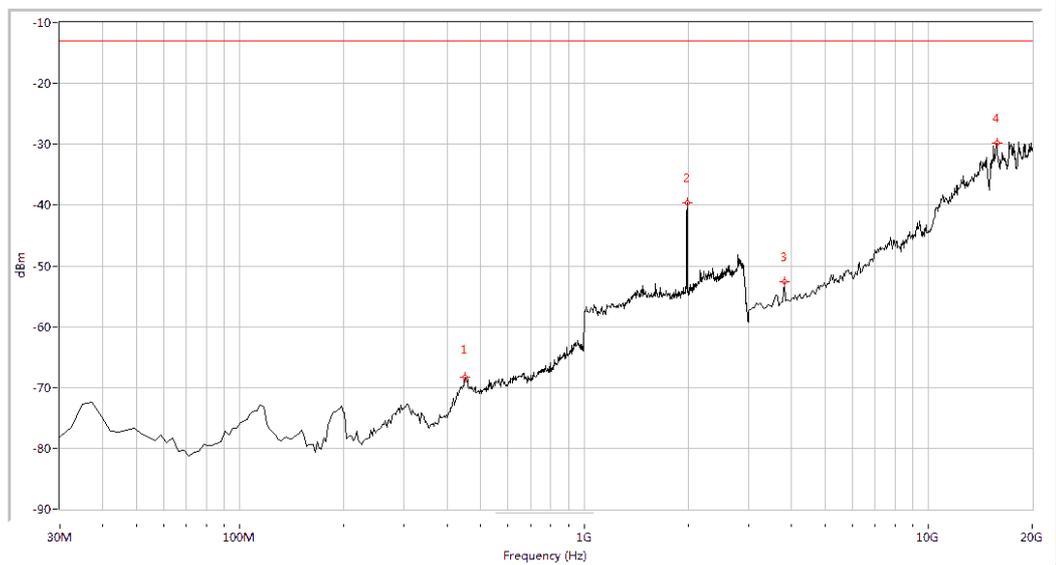(Plot H.3:   HSDPA 1900 MHz Channel = 9400, Test Antenna Horizontal)

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
453.317	-68.26	-13.0	55.3	270.9	Vertical	PASS
1957.606	-40.67	-13.0	27.7	142.7	Vertical	PASS
3763.092	-50.62	-13.0	37.6	15.4	Vertical	PASS
15760.599	-29.19	-13.0	16.2	307.3	Vertical	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-61.48	-13.0	48.5	358.3	Horizontal	PASS
1982.544	-46.87	-13.0	33.9	224.8	Horizontal	PASS
3805.486	-45.24	-13.0	32.2	56.7	Horizontal	PASS
17201.995	-29.35	-13.0	16.4	185.9	Horizontal	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
450.898	-68.36	-13.0	55.4	-0.0	Vertical	PASS
1987.531	-39.58	-13.0	26.6	181.7	Vertical	PASS
3805.486	-52.60	-13.0	39.6	360.0	Vertical	PASS
15802.993	-29.87	-13.0	16.9	259.7	Vertical	PASS

(Plot H.6:   HSDPA 1900 MHz Channel = 9538, Test Antenna Vertical)
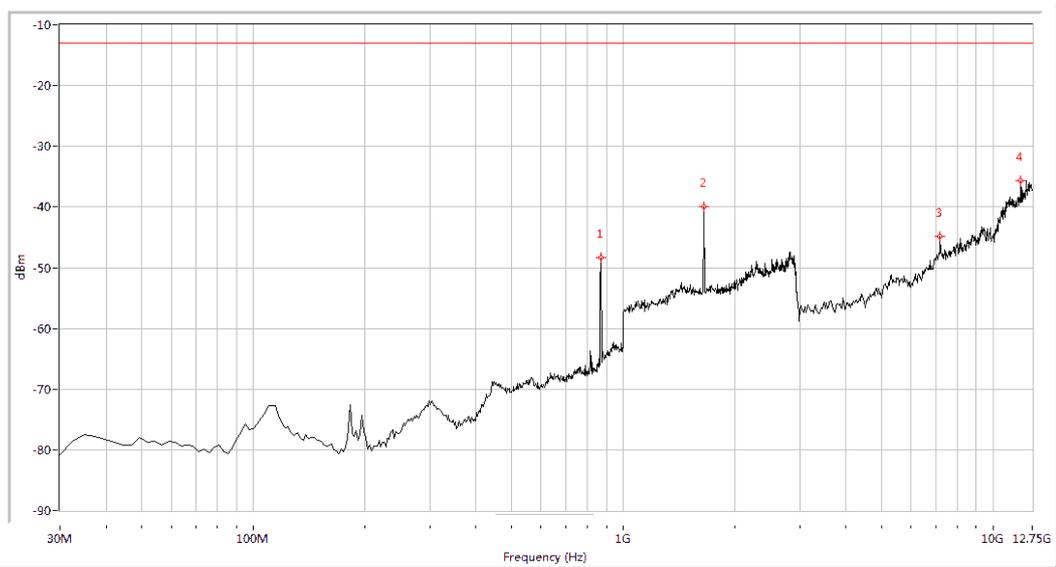
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-48.35	-13.0	35.4	33.2	Horizontal	PASS
1653.367	-39.98	-13.0	27.0	-0.0	Horizontal	PASS
7182.045	-44.79	-13.0	31.8	360.0	Horizontal	PASS
11874.688	-35.72	-13.0	22.7	304.5	Horizontal	PASS

(Plot I.1:   HSUPA 850MHz Channel = 4132, Test Antenna Horizontal)
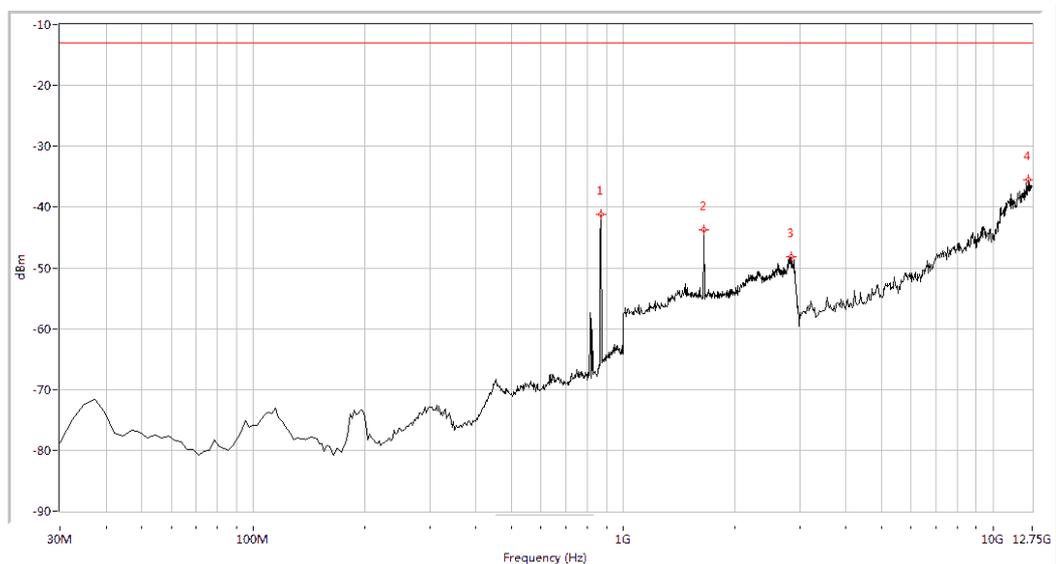
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.24	-13.0	28.2	73.7	Vertical	PASS
1653.367	-43.67	-13.0	30.7	322.3	Vertical	PASS
2840.399	-48.18	-13.0	35.2	101.6	Vertical	PASS
12482.544	-35.48	-13.0	22.5	346.8	Vertical	PASS

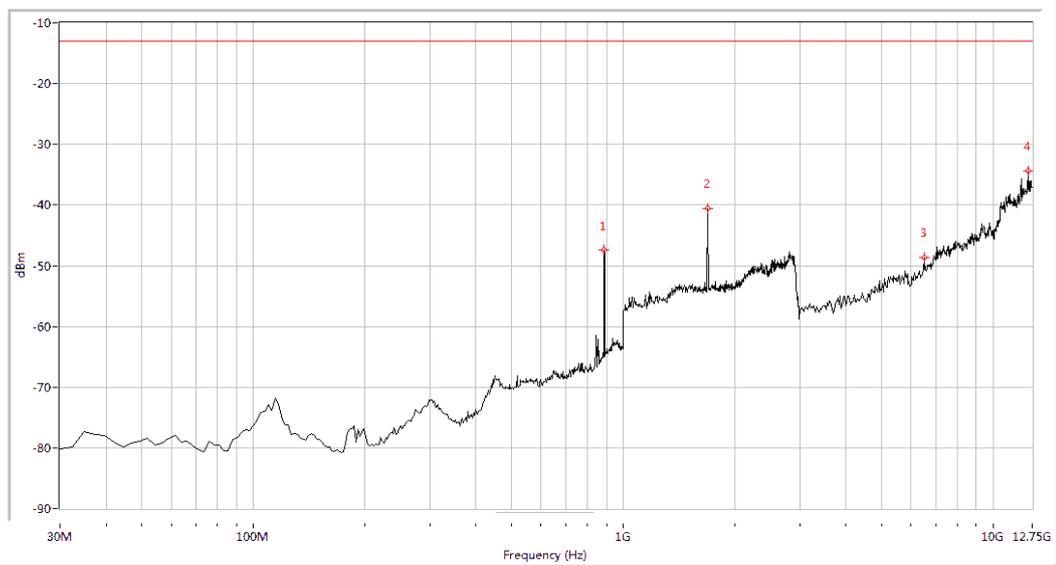(Plot I.2:   HSUPA 850 MHz Channel = 4132, Test Antenna Vertical)
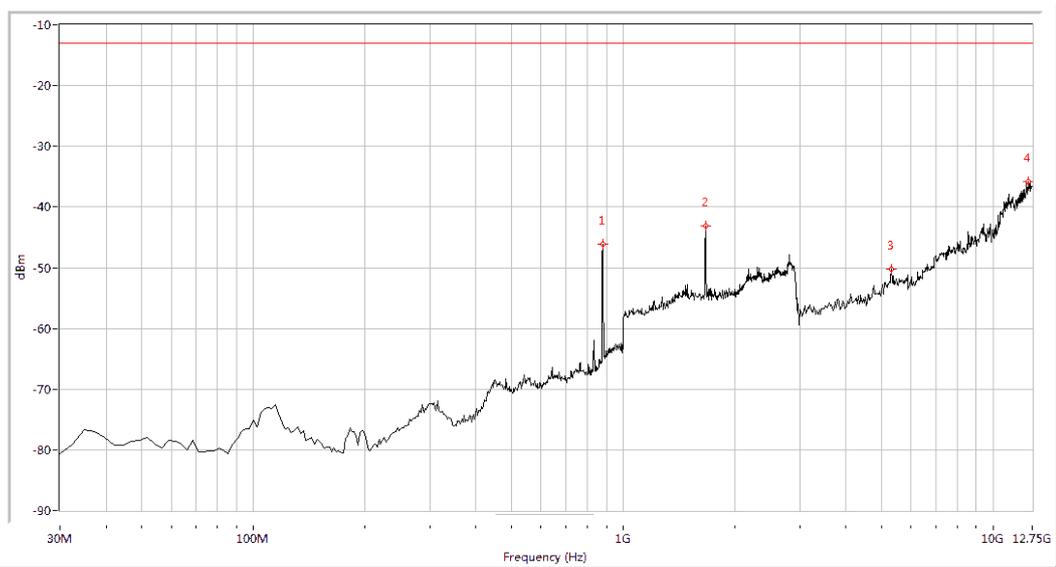
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-46.12	-13.0	33.1	26.9	Horizontal	PASS
1668.329	-43.09	-13.0	30.1	-0.0	Horizontal	PASS
5309.850	-50.19	-13.0	37.2	131.0	Horizontal	PASS
12458.229	-35.78	-13.0	22.8	311.0	Horizontal	PASS

(Plot I.3:   HSUPA 850MHz Channel = 4175, Test Antenna Horizontal)
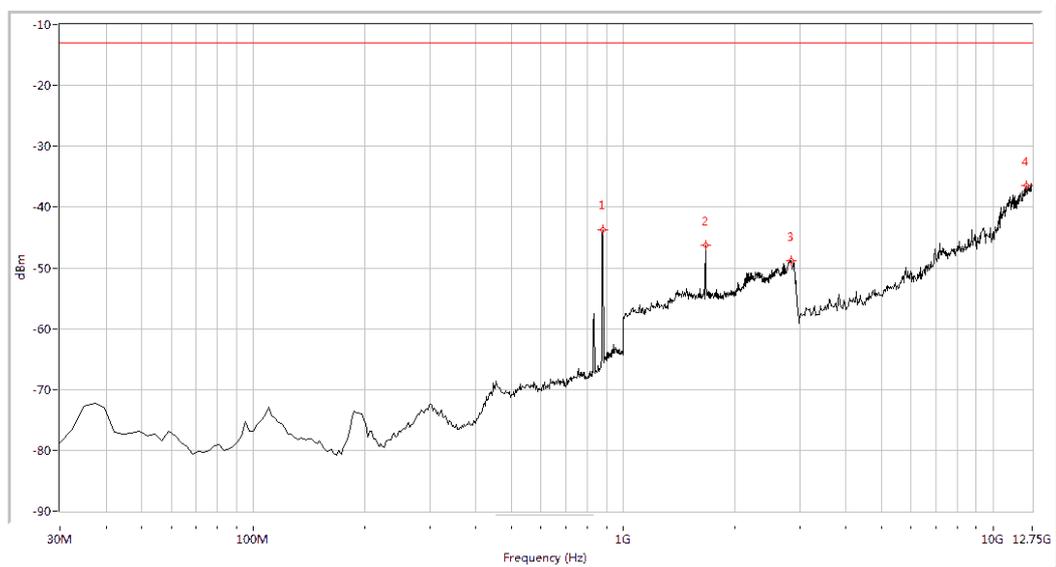
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-43.68	-13.0	30.7	335.0	Vertical	PASS
1668.329	-46.33	-13.0	33.3	325.7	Vertical	PASS
2840.399	-48.77	-13.0	35.8	213.0	Vertical	PASS
12288.030	-36.52	-13.0	23.5	316.3	Vertical	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
888.728	-47.41	-13.0	34.4	28.0	Horizontal	PASS
1688.279	-40.63	-13.0	27.6	359.2	Horizontal	PASS
6501.247	-48.63	-13.0	35.6	50.7	Horizontal	PASS
12482.544	-34.44	-13.0	21.4	194.7	Horizontal	PASS

(Plot I.5:   HSUPA 850MHz Channel = 4233, Test Antenna Horizontal)
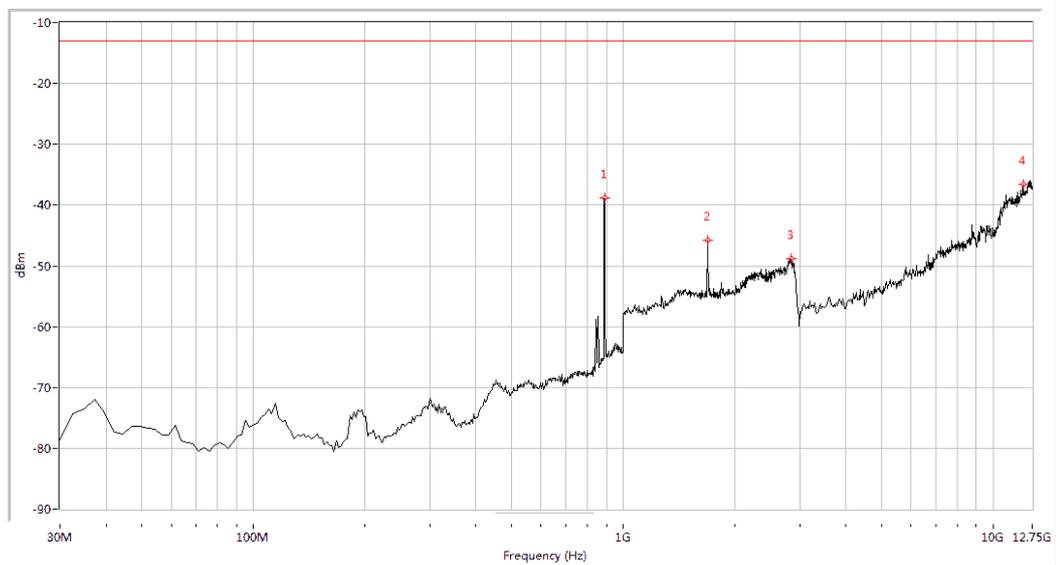
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-38.87	-13.0	25.9	78.9	Vertical	PASS
1688.279	-45.85	-13.0	32.9	311.4	Vertical	PASS
2840.399	-48.79	-13.0	35.8	251.9	Vertical	PASS
12044.888	-36.64	-13.0	23.6	102.5	Vertical	PASS

(Plot I.6:   HSUPA 850MHz Channel = 4233, Test Antenna Vertical)
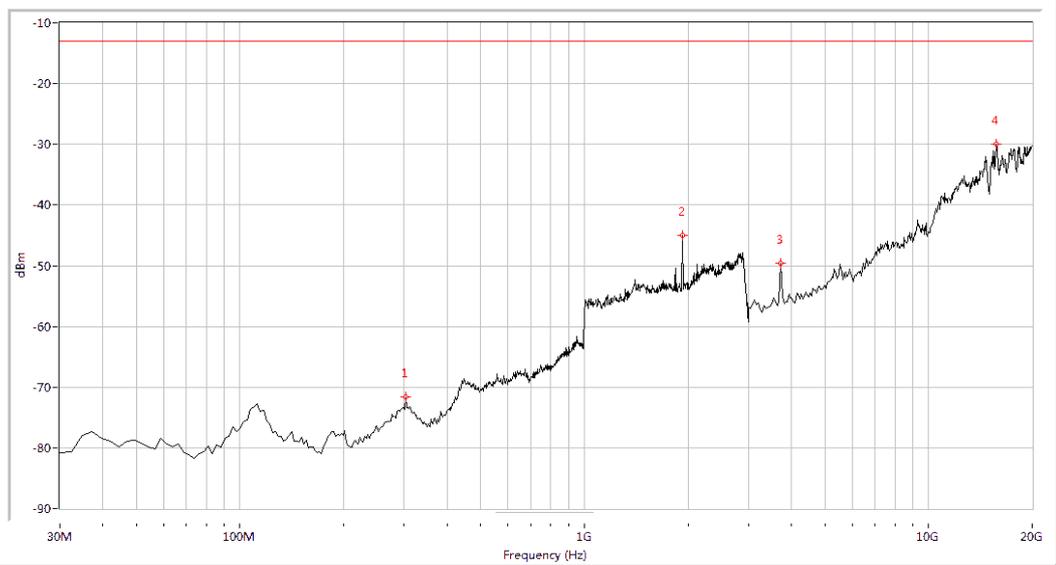
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
303.342	-71.70	-13.0	58.7	238.6	Horizontal	PASS
1927.681	-45.00	-13.0	32.0	181.9	Horizontal	PASS
3720.698	-49.58	-13.0	36.6	52.6	Horizontal	PASS
15760.599	-30.01	-13.0	17.0	360.0	Horizontal	PASS

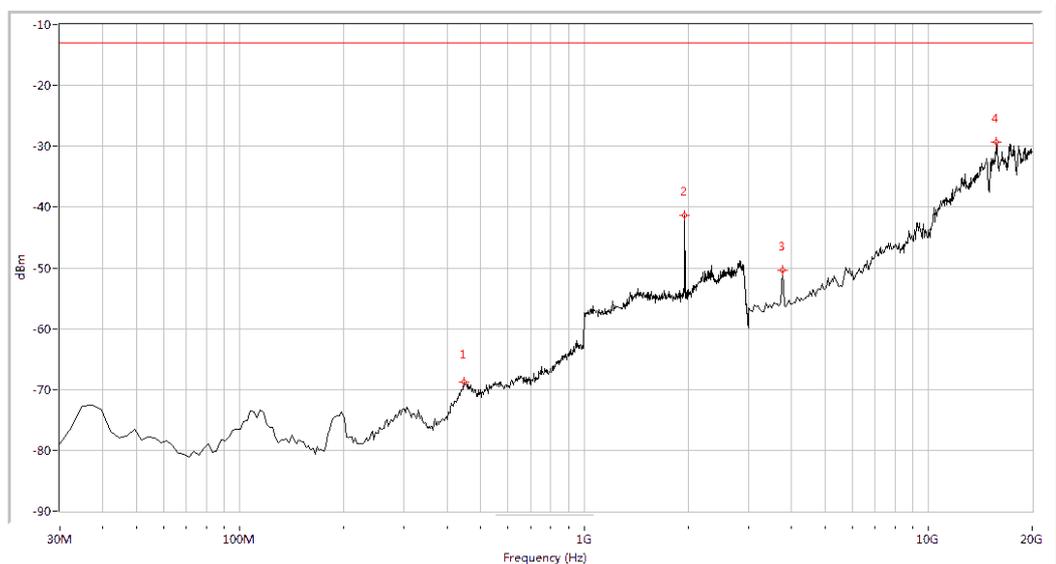(Plot J.1:   HSUPA 1900 MHz Channel = 9262, Test Antenna Horizontal)
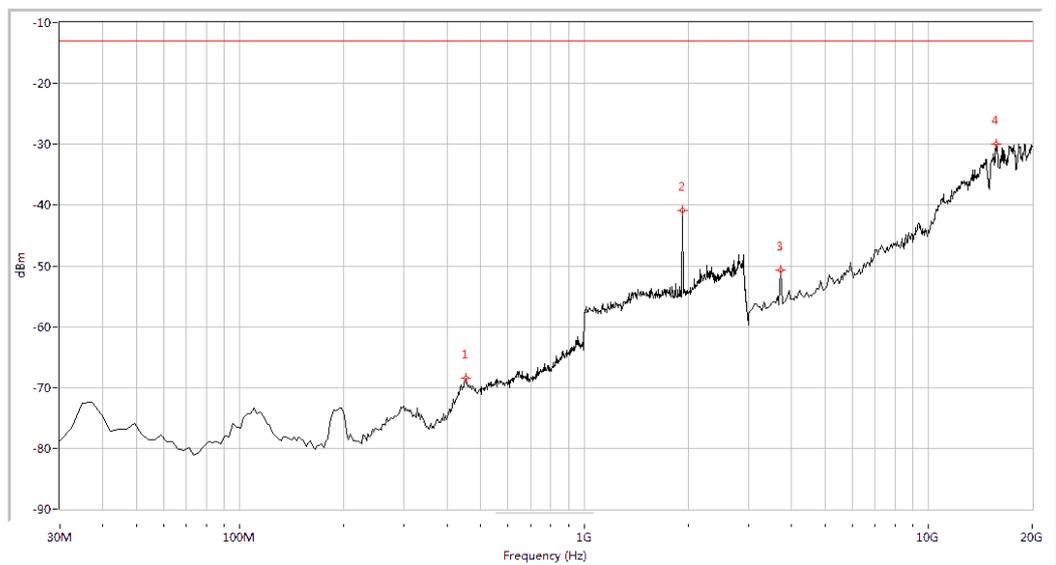
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
453.317	-68.50	-13.0	55.5	218.4	Vertical	PASS
1927.681	-40.91	-13.0	27.9	150.5	Vertical	PASS
3720.698	-50.75	-13.0	37.8	320.3	Vertical	PASS
15760.599	-30.01	-13.0	17.0	41.0	Vertical	PASS

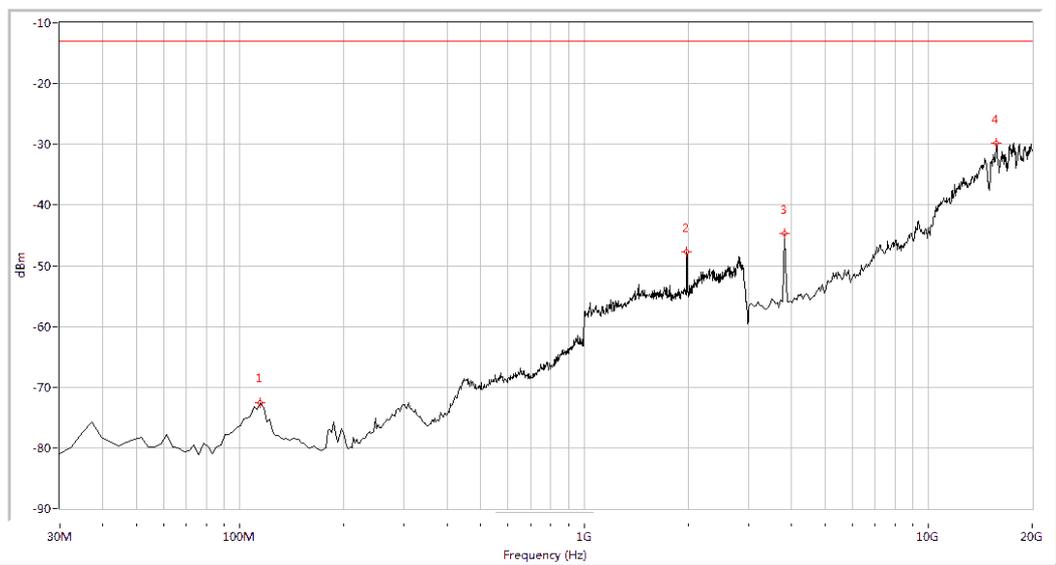(Plot J.2:   HSUPA 1900 MHz Channel = 9262, Test Antenna Vertical)
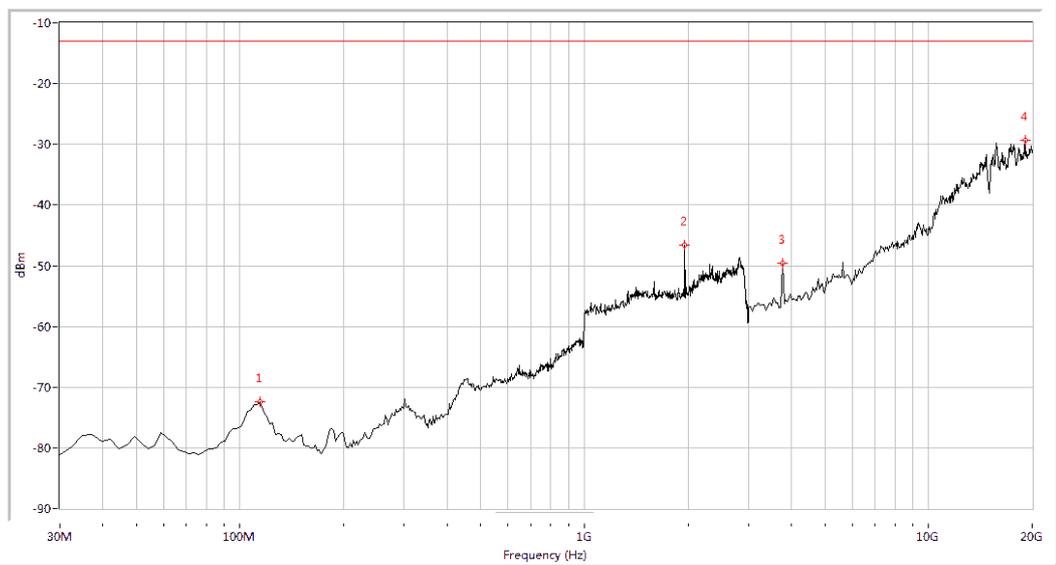
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
114.663	-72.41	-13.0	59.4	240.1	Horizontal	PASS
1957.606	-46.63	-13.0	33.6	187.5	Horizontal	PASS
3763.092	-49.60	-13.0	36.6	358.6	Horizontal	PASS
19067.332	-29.32	-13.0	16.3	296.6	Horizontal	PASS

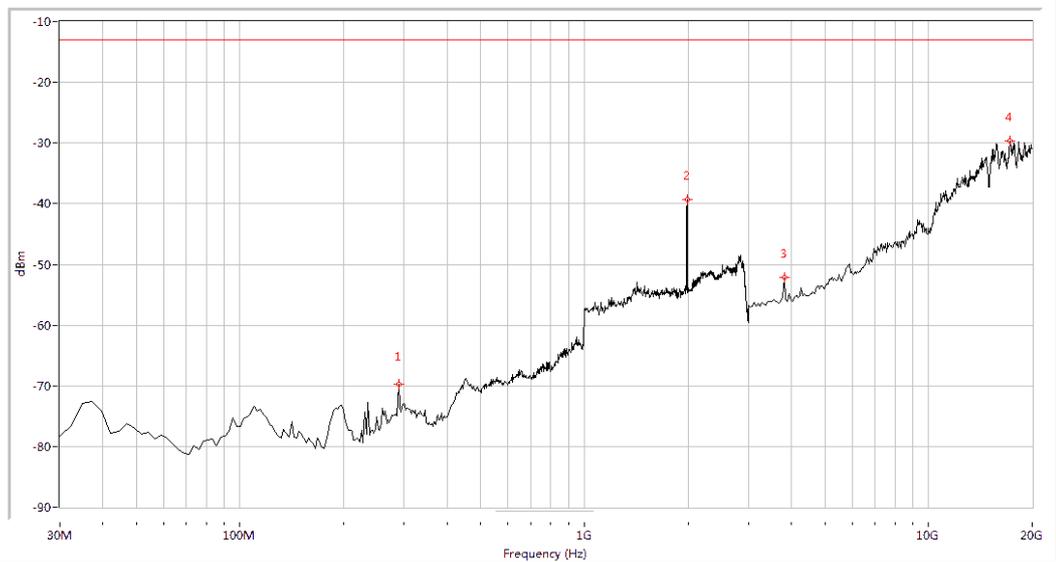(Plot J.3:   HSUPA 1900 MHz Channel = 9400, Test Antenna Horizontal)

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
446.060	-68.78	-13.0	55.8	33.2	Vertical	PASS
1957.606	-41.43	-13.0	28.4	44.0	Vertical	PASS
3763.092	-50.44	-13.0	37.4	-0.0	Vertical	PASS
15760.599	-29.38	-13.0	16.4	268.4	Vertical	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
114.663	-72.63	-13.0	59.6	78.2	Horizontal	PASS
1982.544	-47.74	-13.0	34.7	38.1	Horizontal	PASS
3805.486	-44.71	-13.0	31.7	38.0	Horizontal	PASS
15760.599	-29.85	-13.0	16.8	341.1	Horizontal	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-69.69	-13.0	56.7	88.3	Vertical	PASS
1987.531	-39.38	-13.0	26.4	181.3	Vertical	PASS
3805.486	-52.19	-13.0	39.2	2.4	Vertical	PASS
17244.389	-29.60	-13.0	16.6	64.1	Vertical	PASS

(Plot J.6:   HSUPA 1900 MHz Channel = 9538, Test Antenna Vertical)
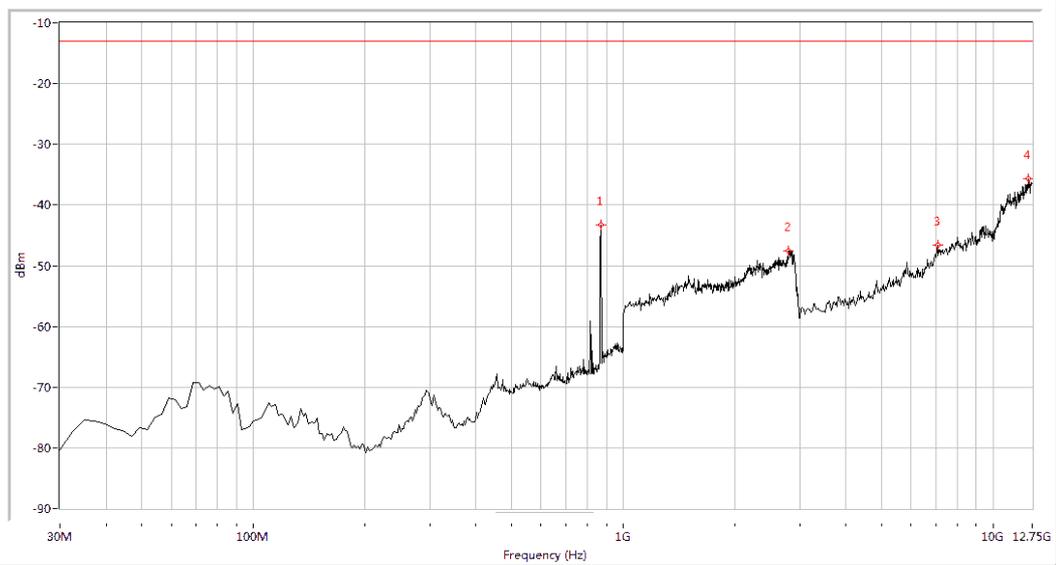
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-43.23	-13.0	30.2	119.1	Horizontal	PASS
2800.499	-47.55	-13.0	34.6	46.1	Horizontal	PASS
7109.102	-46.58	-13.0	33.6	295.0	Horizontal	PASS
12409.601	-35.61	-13.0	22.6	193.2	Horizontal	PASS

(Plot K.1:   HSPA+ 850MHz Channel = 4132, Test Antenna Horizontal)
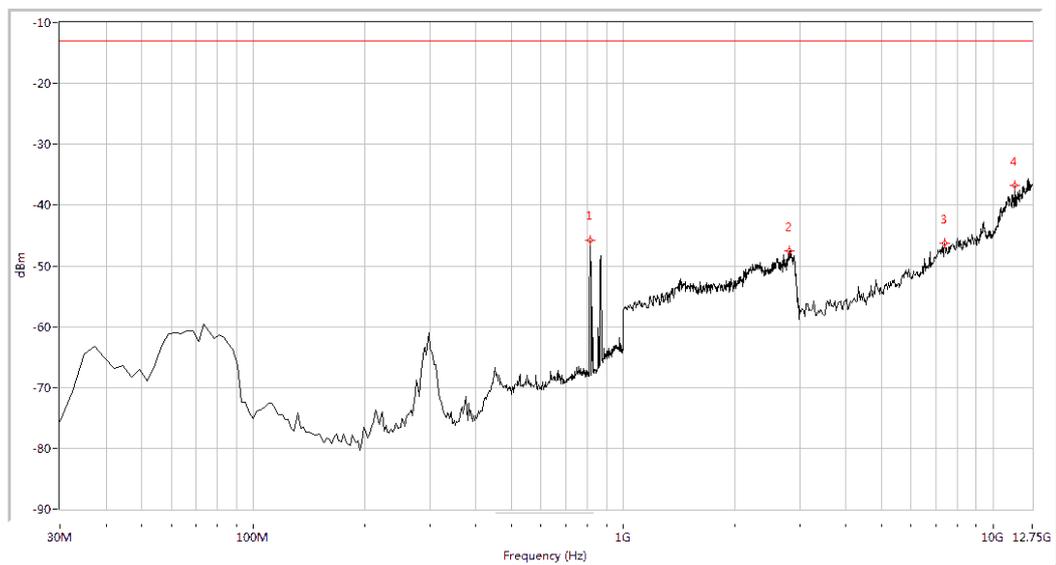
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-45.81	-13.0	32.8	171.4	Vertical	PASS
2805.486	-47.50	-13.0	34.5	172.7	Vertical	PASS
7400.873	-46.25	-13.0	33.2	355.3	Vertical	PASS
11461.347	-36.83	-13.0	23.8	0.3	Vertical	PASS

(Plot K.2:   HSPA+ 850 MHz Channel = 4132, Test Antenna Vertical)
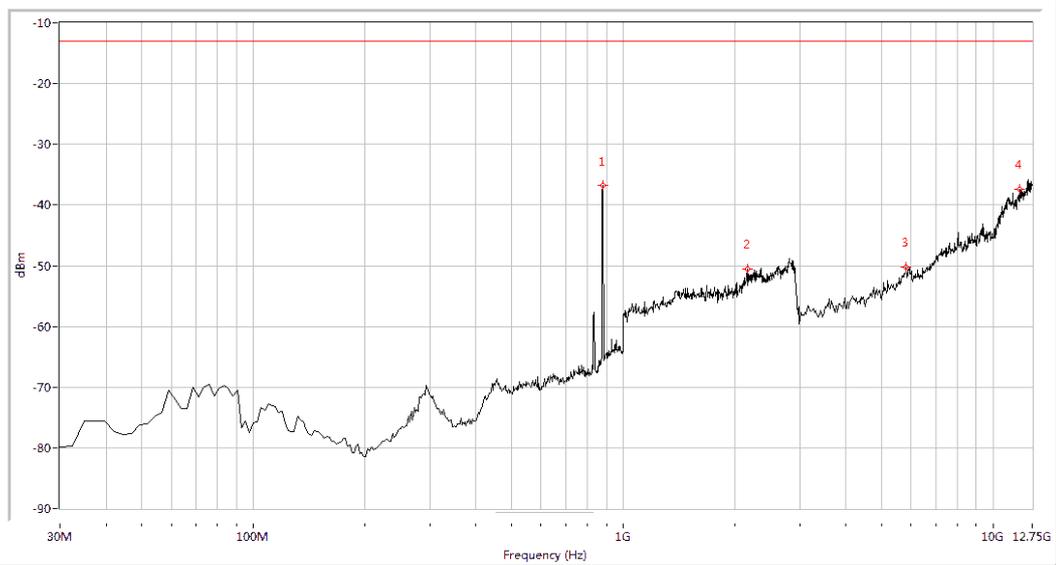
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-36.80	-13.0	23.8	149.3	Horizontal	PASS
2162.095	-50.63	-13.0	37.6	243.0	Horizontal	PASS
5820.449	-50.22	-13.0	37.2	360.0	Horizontal	PASS
11801.746	-37.34	-13.0	24.3	179.5	Horizontal	PASS

(Plot K.3:   HSPA+ 850MHz Channel = 4175, Test Antenna Horizontal)
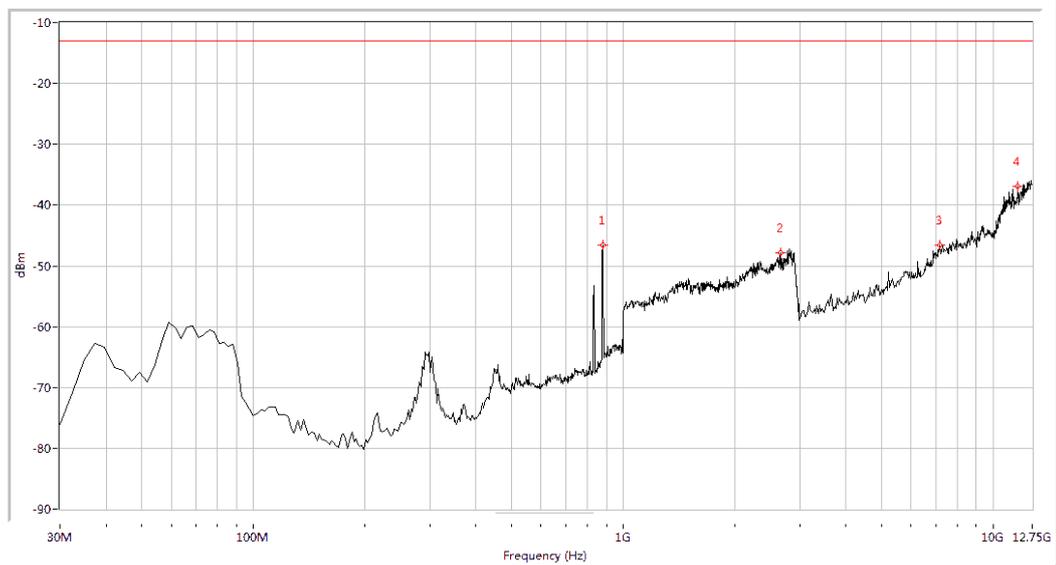
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-46.63	-13.0	33.6	263.8	Vertical	PASS
2670.823	-47.90	-13.0	34.9	70.8	Vertical	PASS
7157.731	-46.59	-13.0	33.6	281.2	Vertical	PASS
11655.860	-36.88	-13.0	23.9	310.2	Vertical	PASS

(Plot K.4:   HSPA+ 850MHz Channel = 4175, Test Antenna Vertical)
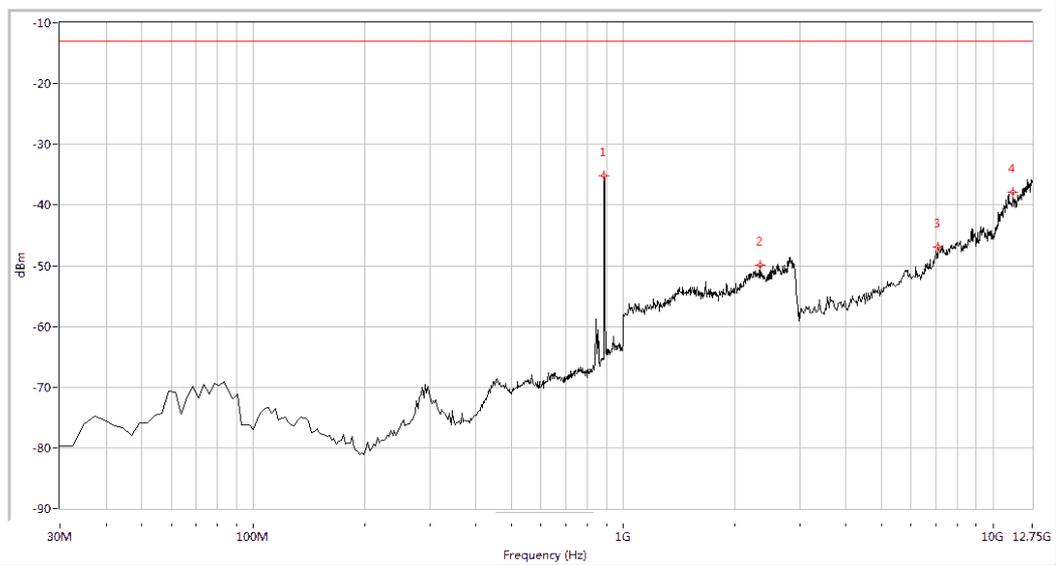
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
888.728	-35.18	-13.0	22.2	213.6	Horizontal	PASS
2341.646	-49.90	-13.0	36.9	150.8	Horizontal	PASS
7109.102	-46.93	-13.0	33.9	294.3	Horizontal	PASS
11291.147	-37.92	-13.0	24.9	329.2	Horizontal	PASS

(Plot K.5:   HSPA+ 850MHz Channel = 4233, Test Antenna Horizontal)
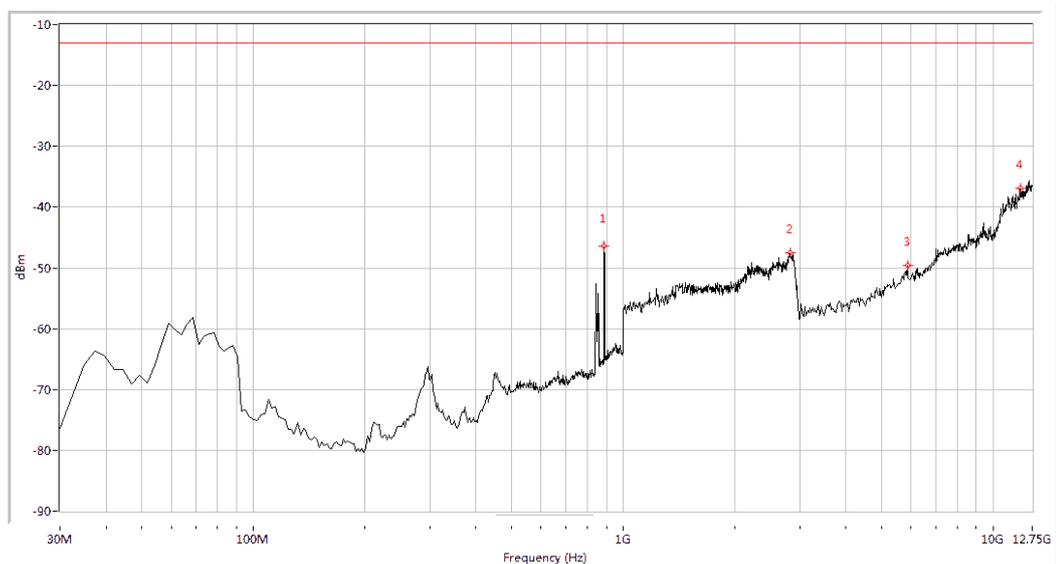
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
888.728	-46.41	-13.0	33.4	293.3	Vertical	PASS
2830.424	-47.54	-13.0	34.5	20.9	Vertical	PASS
5869.077	-49.65	-13.0	36.6	192.9	Vertical	PASS
11850.374	-36.93	-13.0	23.9	101.3	Vertical	PASS

(Plot K.6:   HSPA+ 850MHz Channel = 4233, Test Antenna Vertical)
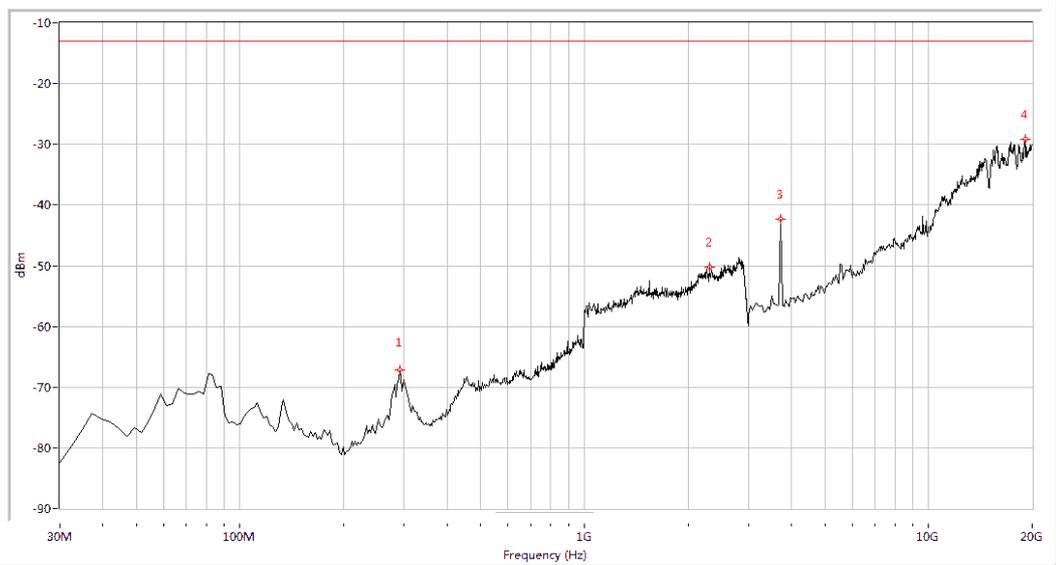
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
291.247	-67.21	-13.0	54.2	67.1	Horizontal	PASS
2316.708	-50.23	-13.0	37.2	240.2	Horizontal	PASS
3720.698	-42.31	-13.0	29.3	92.0	Horizontal	PASS
19067.332	-29.15	-13.0	16.2	83.4	Horizontal	PASS

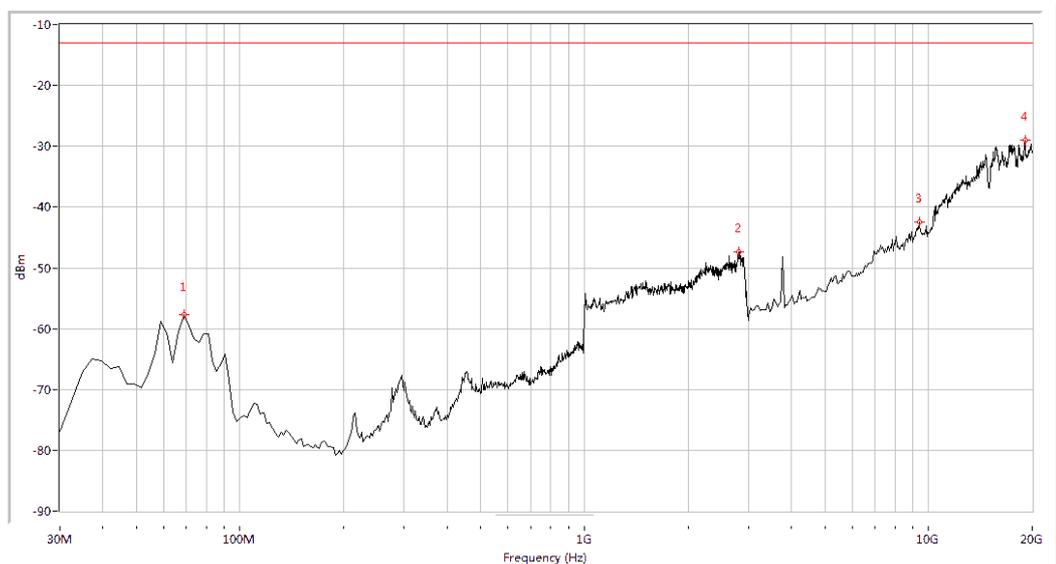(Plot L.1:   HSPA+ 1900 MHz Channel = 9262, Test Antenna Horizontal)
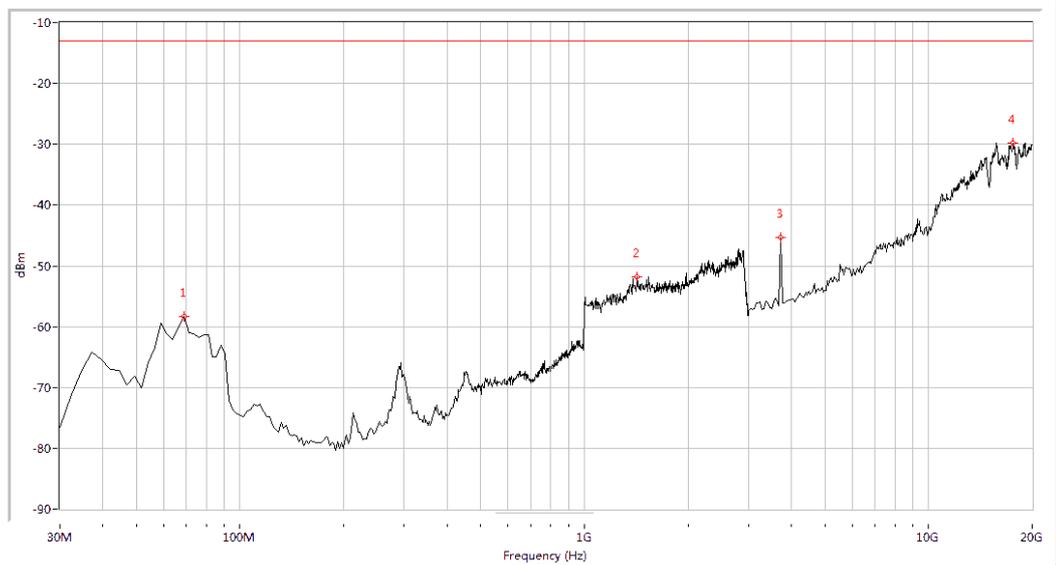
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
68.703	-58.26	-13.0	45.3	-0.0	Vertical	PASS
1423.940	-51.87	-13.0	38.9	105.4	Vertical	PASS
3720.698	-45.35	-13.0	32.4	279.4	Vertical	PASS
17583.541	-29.82	-13.0	16.8	147.8	Vertical	PASS

(Plot L.2:   HSPA+ 1900 MHz Channel = 9262, Test Antenna Vertical)
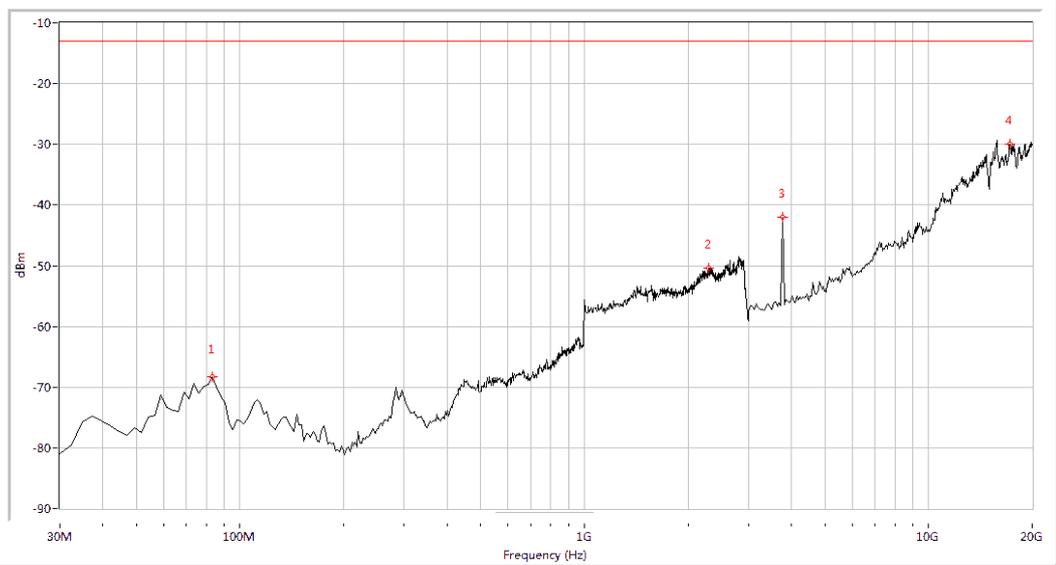
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
83.217	-68.27	-13.0	55.3	194.0	Horizontal	PASS
2296.758	-50.42	-13.0	37.4	225.5	Horizontal	PASS
3763.092	-41.98	-13.0	29.0	58.1	Horizontal	PASS
17201.995	-30.00	-13.0	17.0	344.3	Horizontal	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
68.703	-57.74	-13.0	44.7	-0.0	Vertical	PASS
2810.474	-47.40	-13.0	34.4	224.1	Vertical	PASS
9401.496	-42.43	-13.0	29.4	148.6	Vertical	PASS
19067.332	-29.09	-13.0	16.1	204.8	Vertical	PASS

(Plot L.4:   HSPA+ 1900 MHz Channel = 9400, Test Antenna Vertical)
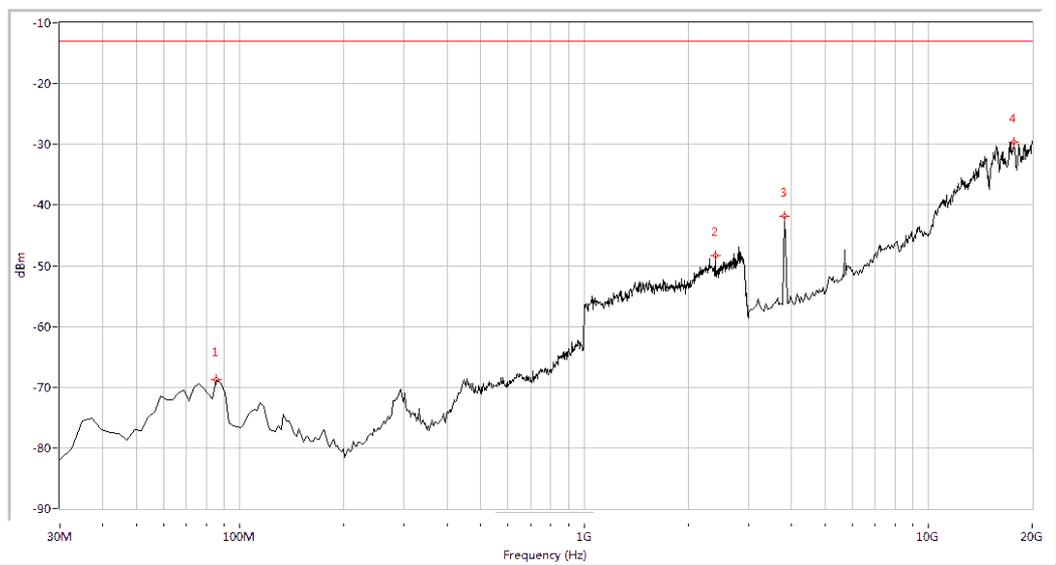
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
85.636	-68.79	-13.0	55.8	180.2	Horizontal	PASS
2401.496	-48.33	-13.0	35.3	124.7	Horizontal	PASS
3805.486	-41.91	-13.0	28.9	358.8	Horizontal	PASS
17710.723	-29.62	-13.0	16.6	174.3	Horizontal	PASS

(Plot L.5:   HSPA+ 1900 MHz Channel = 9538, Test Antenna Horizontal)
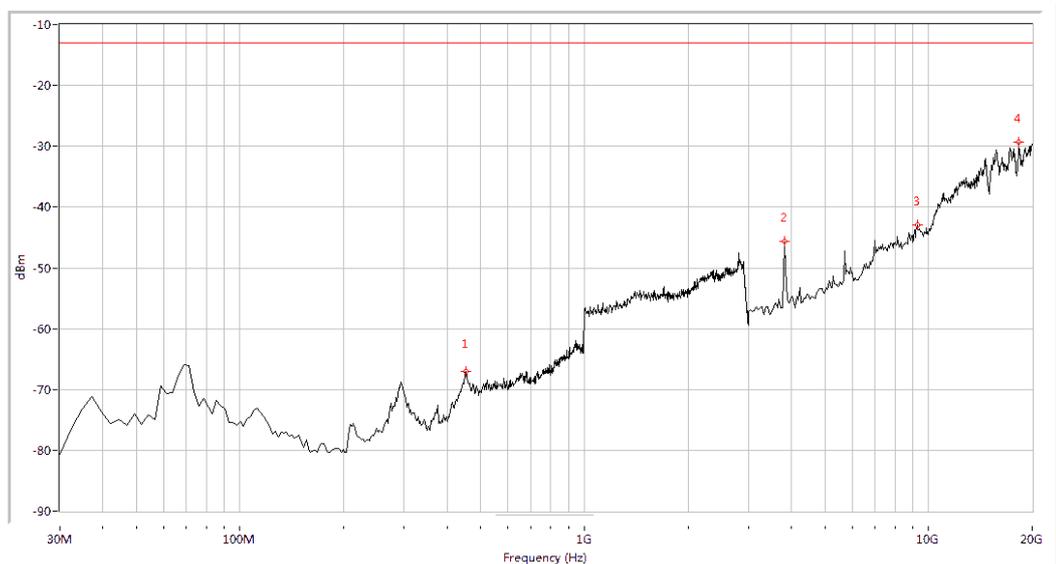
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
453.317	-67.07	-13.0	54.1	359.5	Vertical	PASS
3805.486	-45.68	-13.0	32.7	280.2	Vertical	PASS
9274.314	-42.97	-13.0	30.0	118.0	Vertical	PASS
18304.239	-29.34	-13.0	16.3	1.4	Vertical	PASS

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

** END OF REPORT **