



Report No.: SZ13040143W01



FCC PART 22&24 TEST REPORT

Issued to

Corporativo Lanix S.A. de C.V.

For

Smartphone

Model Name: Ilium S115
 Trade Name: Lanix
 Brand Name: Lanix
 FCC ID: ZC4S115
 Standard: 47 CFR Part 22 Subpart H
 47 CFR Part 24 Subpart E
 Test date: 2013-04-22 to 2013-05-08
 Issue date: 2013-05-24

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Date 2013.5.24

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Date 2013.5.24



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Revision History		
Issue	Date	Reason for change
1.0	2013-05-08	Initial issue of report
2.0	2013-05-24	List the complete Version of ANSI C63.4 and ANSI C63.7 in Page 7; Correct some values in result tables in accordance with test plots; Make the calibrate data clear in day/month/year.

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type: Smartphone
Serial No.....: (n.a, marked #1 by test site)
Hardware Version: V1.0
Software Version: N/A
Applicant: Corporativo Lanix S.A. de C.V.
Carretera Internacional Hermosillo-Nogales Km 8.5,Hermosillo
Sonora, Mexico
Manufacturer: Tinno Mobile Technology Corp.
4/F, H-3 Building, OCT Eastern industrial Park, No.1 XiangShan
East Road., Nan Shan District, Shenzhen, P.R. China.
Frequency Range.....: GSM 850MHz:
Tx: 824.20 - 848.80MHz (at intervals of 200kHz);
Rx: 869.20 - 893.80MHz (at intervals of 200kHz)
GSM 1900MHz:
Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz);
Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz)
WCDMA 850MHz
Tx: 826.4 - 846.6MHz (at intervals of 200kHz);
Rx: 871.4 - 891.6MHz (at intervals of 200kHz)
WCDMA 1900MHz
Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz);
Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz)
Modulation Type.....: 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
Multislot Class.....: GPRS: Multislot Class12,EGPRS: Multislot Class12
Antenna Type.....: PIFA Antenna
Emission Designators: GSM 850:249KGXW,GSM 1900:248KGXW
EGPRS850:247KG7W, EGPRS1900:250KG7W,
WCDMA850:4M18F9W,WCDMA1900:4M17F9W

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula $F(n)=824.2+0.2*(n-128)$, $128 \leq n \leq 251$; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).

Note 2: The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can

be represented with the formula $F(n)=1850.2+0.2*(n-512)$, $512 \leq n \leq 810$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).

Note 3: The transmitter (Tx) frequency arrangement of the WCDMA 850MHz band used by the EUT can be represented with the formula $F(n)=826.4+0.2*(n-4132)$, $4132 \leq n \leq 4233$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4175(835MHz) and 4233 (846.6MHz).

Note 4: The transmitter (Tx) frequency arrangement of the WCDMA 1900MHz band used by the EUT can be represented with the formula $F(n)=1852.4+0.2*(n-9262)$, $9262 \leq n \leq 9538$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).

Note 5: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.2 Test Standards and Results

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

No	Identity	Document Title
1	47 CFR Part 2 (10-1-12 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-12 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-12 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 C63.7-2005, ANSI C63.4-2009 and CISPR Publication 22-2010; the FCC registration number is 695796.

1.3.2 Test Environment Conditions

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

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

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

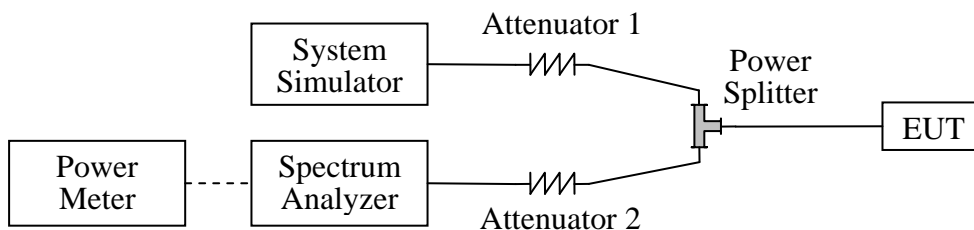
2.1 Conducted RF Output Power

2.1.1 Requirement

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

2.1.2 Test Description

1. Test Setup:



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

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

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2012.05.12	2013.05.11
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05.12	2013.05.11
Power Meter	Agilent	E4418B	GB43318055	2012.05.12	2013.05.11
Power Sensor	Agilent	8482A	MY41091706	2012.05.12	2013.05.11
Power Splitter	Weinschel	1506A	NW521	2012.05.12	2013.05.11
Attenuator 1	Resnet	20dB	(n.a.)	2012.05.12	2013.05.11
Attenuator 2	Resnet	3dB	(n.a.)	2012.05.12	2013.05.11

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:

Band	Channel	Frequency (MHz)	Measured Output Power		Limit dBm	Verdict
			dBm	Refer to Plot		
GSM 850MHz	128	824.2	29.93	Plot A1 to A3	35	PASS
	190	836.6	30.16			PASS
	251	848.8	30.27			PASS
GSM 1900MHz	512	1850.2	27.67	Plot B1 to B3	32	PASS
	661	1880.0	27.32			PASS
	810	1909.8	26.55			PASS
GPRS 850MHz	128	824.2	29.69	Plot C1 to C3 ^{Note1}	35	PASS
	190	836.6	29.91			PASS
	251	848.8	30.03			PASS
GPRS 1900MHz	512	1850.2	27.44	Plot D1 to D3 ^{Note1}	32	PASS
	661	1880.0	27.07			PASS
	810	1909.8	26.4			PASS
EGPRS 850MHz	128	824.2	29.99	Plot E1 to E3 ^{Note1}	35	PASS
	190	836.6	30.18			PASS
	251	848.8	30.33			PASS
EGPRS 1900MHz	512	1850.2	27.73	Plot F1 to F3 ^{Note1}	32	PASS
	661	1880.0	27.39			PASS
	810	1909.8	26.64			PASS

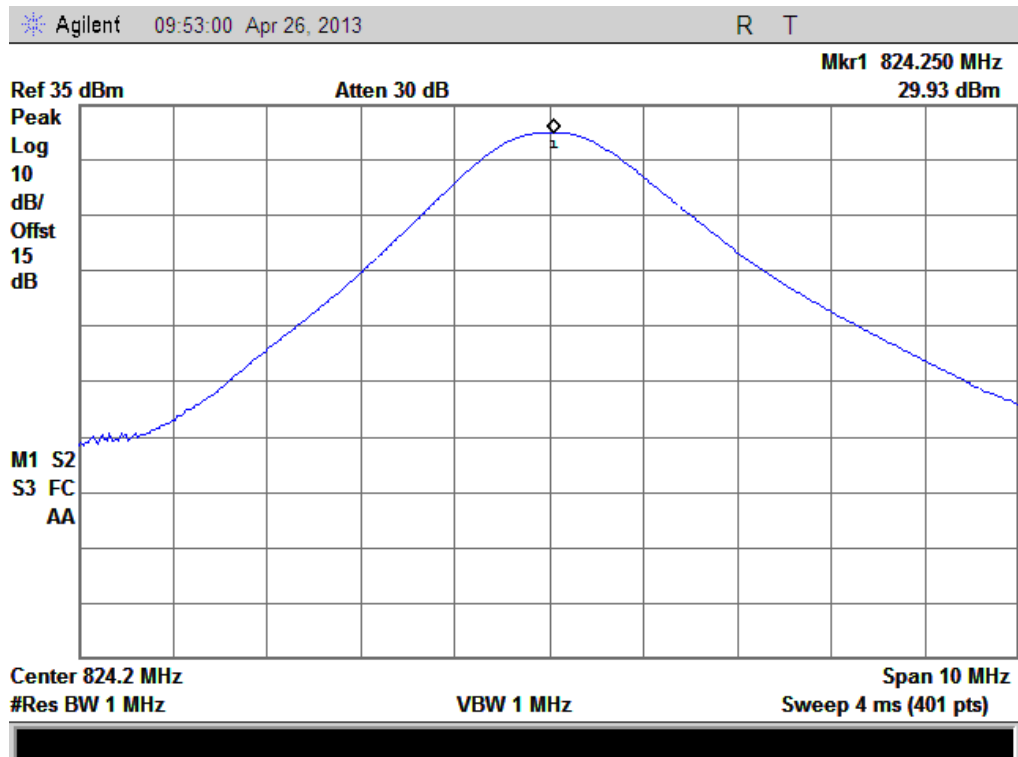
Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.

2. WCDMA Model:

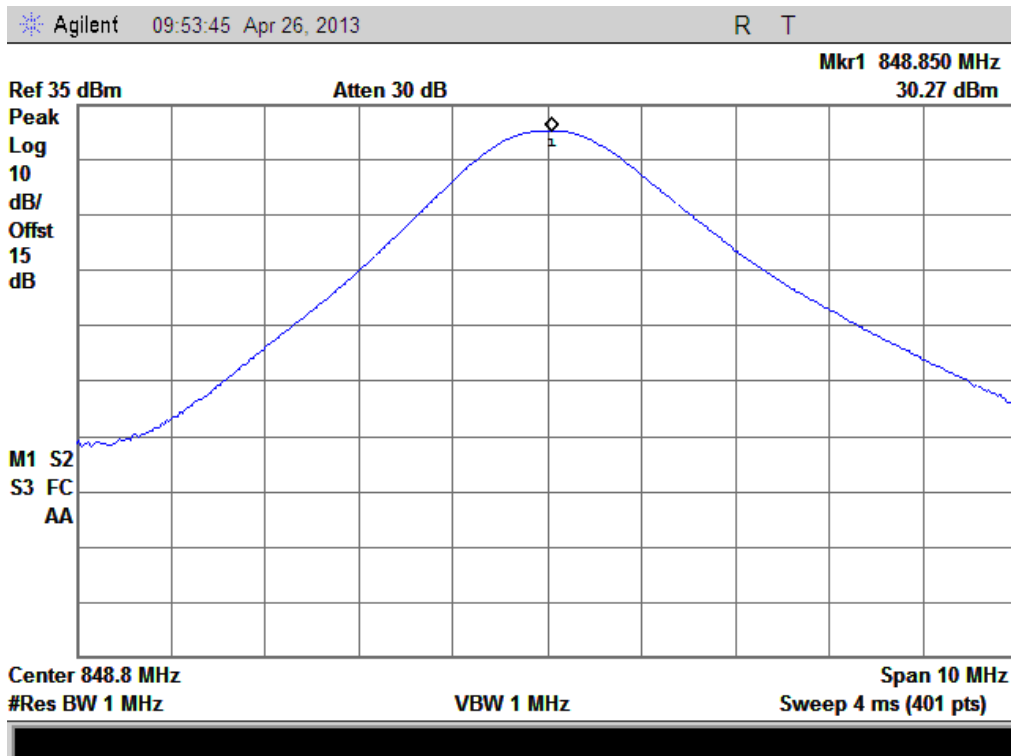
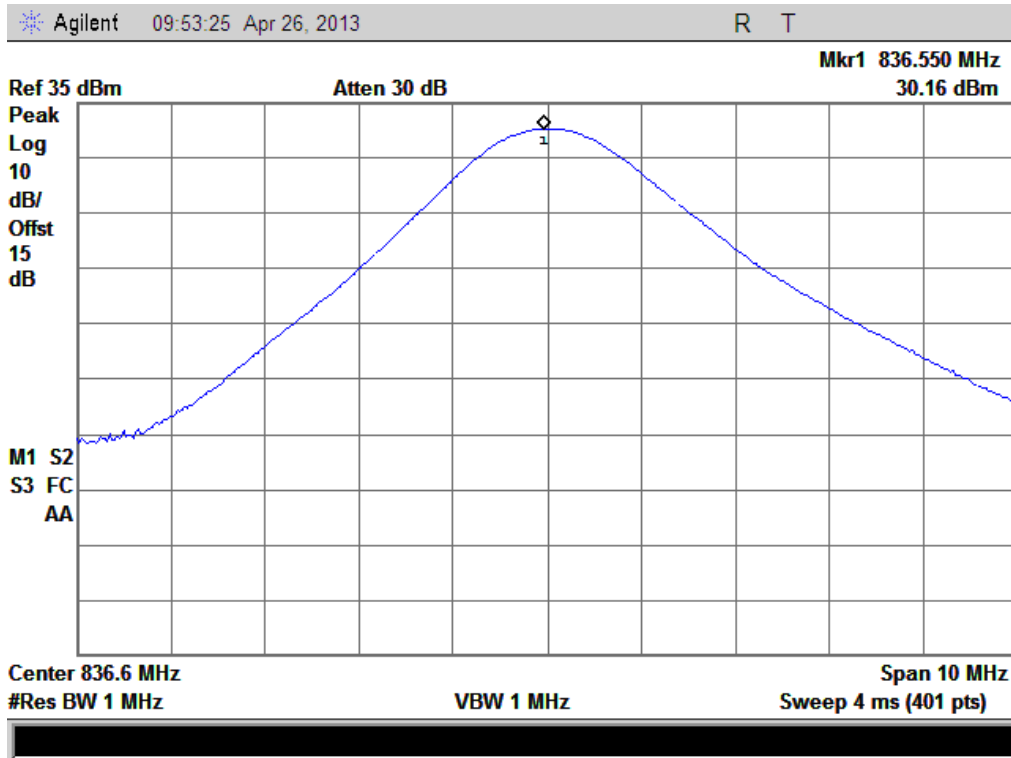
Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	23.56	23.67	23.62	24.49	24.45	24.66
HSDPA	1	23.48	23.59	23.57	24.43	24.39	24.57
	2	23.47	23.56	23.55	24.41	24.33	24.56
	3	22.93	23.07	23.08	23.95	23.88	24.05
	4	22.91	23.06	23.03	23.92	23.85	24.07
HSUPA	1	23.46	23.55	23.53	24.42	24.37	24.49
	2	21.43	21.57	21.51	22.51	22.39	22.45
	3	22.48	22.59	22.54	23.52	23.29	23.47
	4	21.44	21.57	21.51	22.49	22.37	22.43
	5	23.45	23.56	23.52	24.41	24.36	24.48

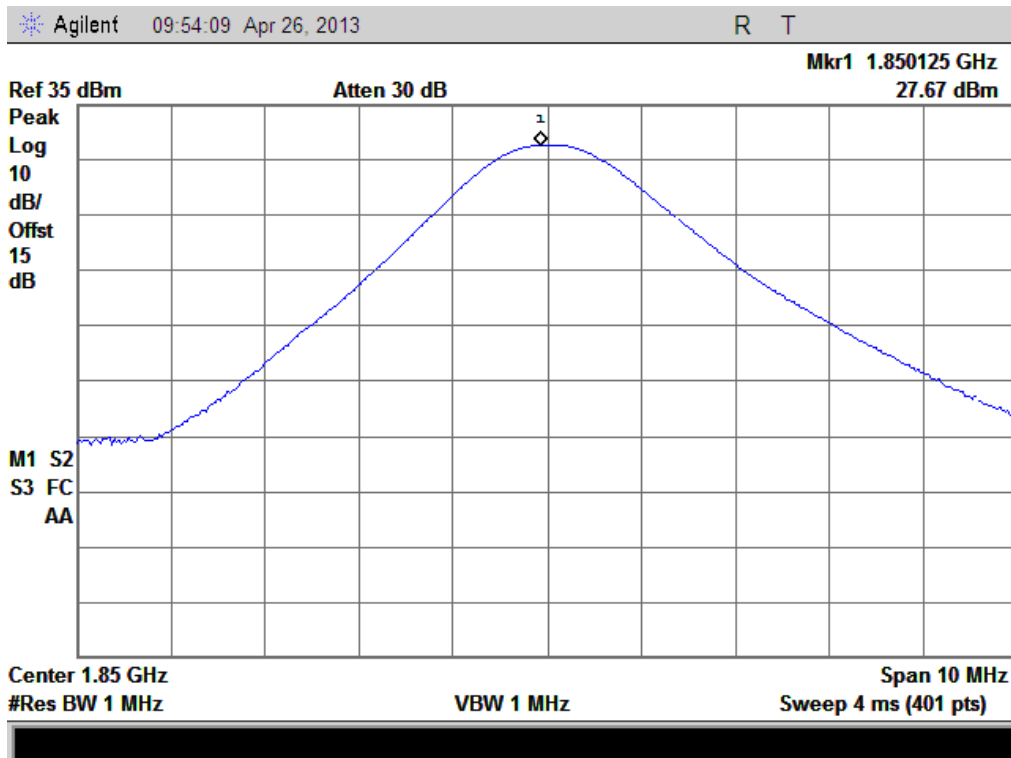
Note: The Conducted RF Output Power test of WCDMA /HSDPA /HSUPA was tested by power meter.

3. GSM Model Test Plots:

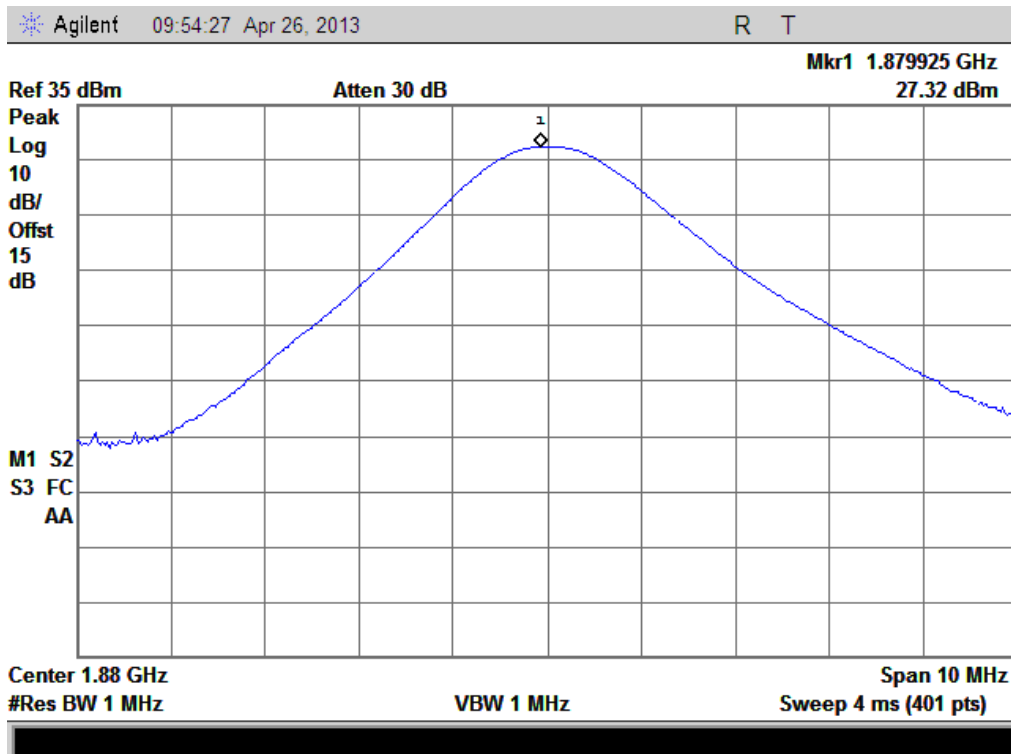


(Plot A1: GSM 850MHz Channel = 128)

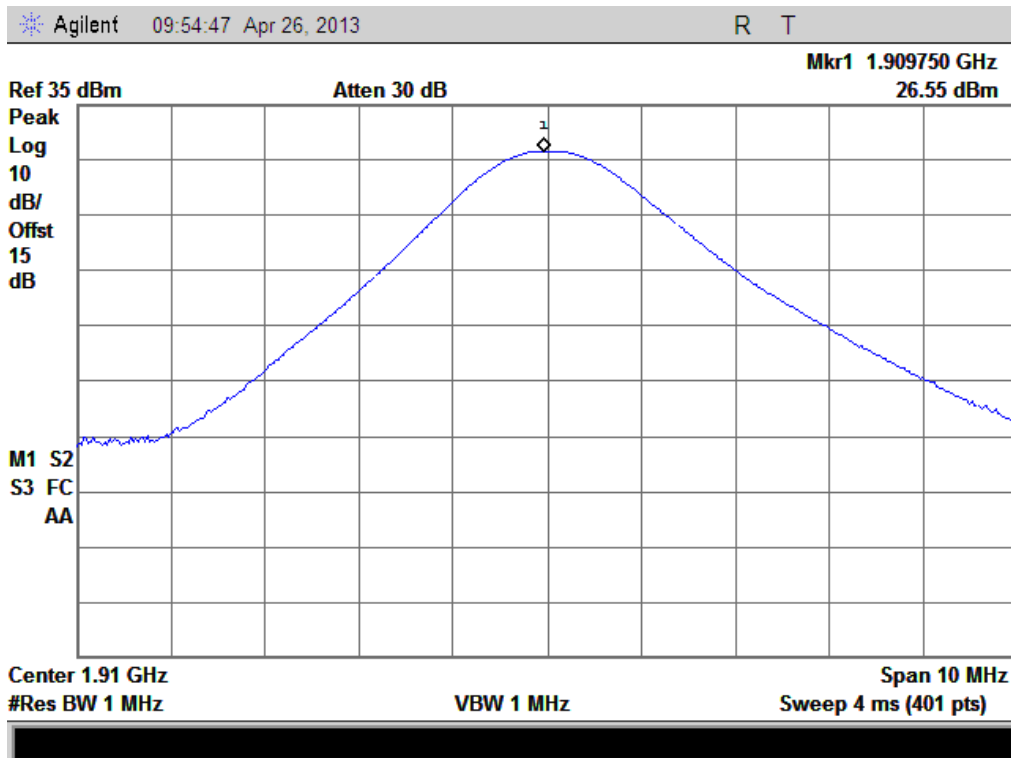




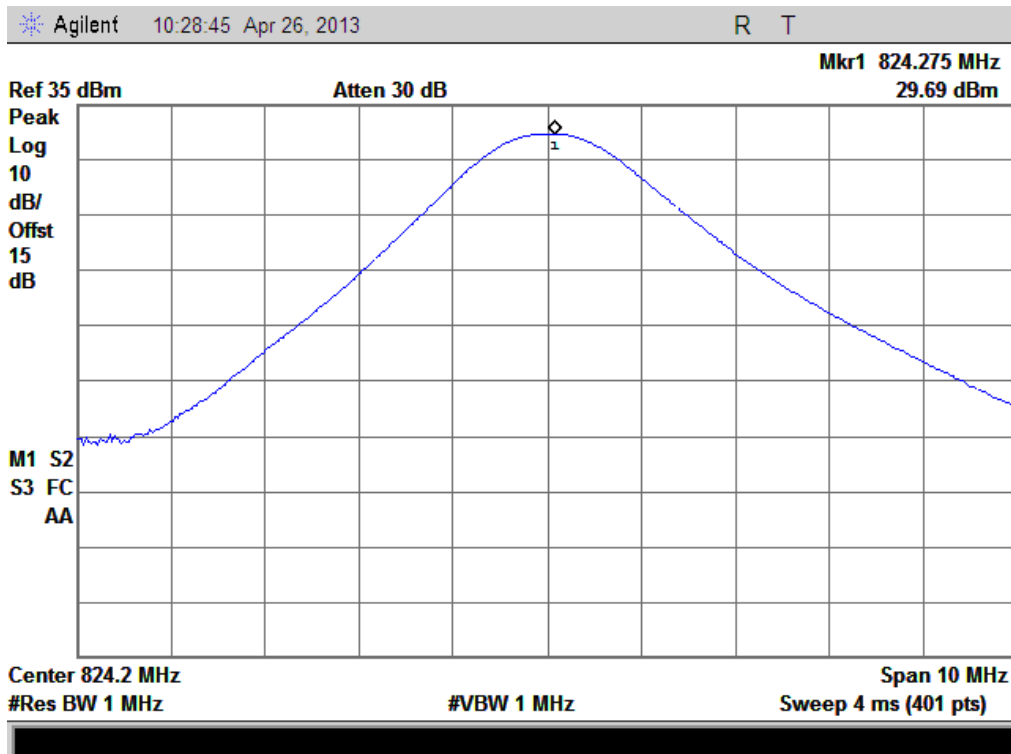
(Plot B1: GSM 1900MHz Channel = 512)



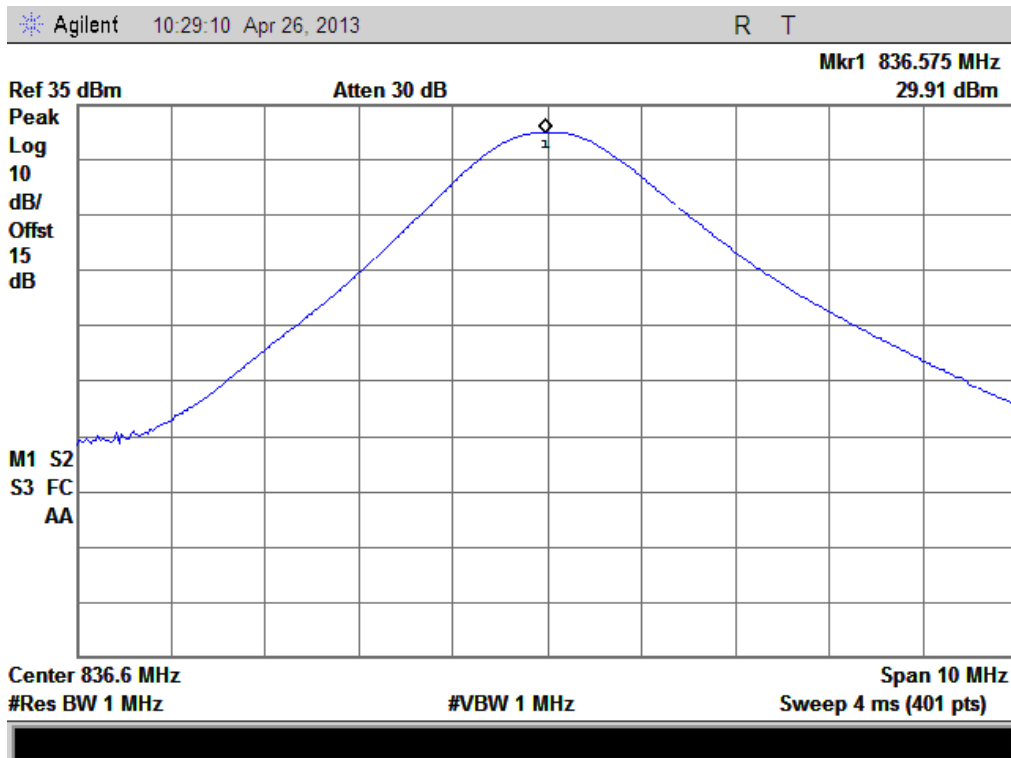
(Plot B2: GSM 1900MHz Channel = 661)



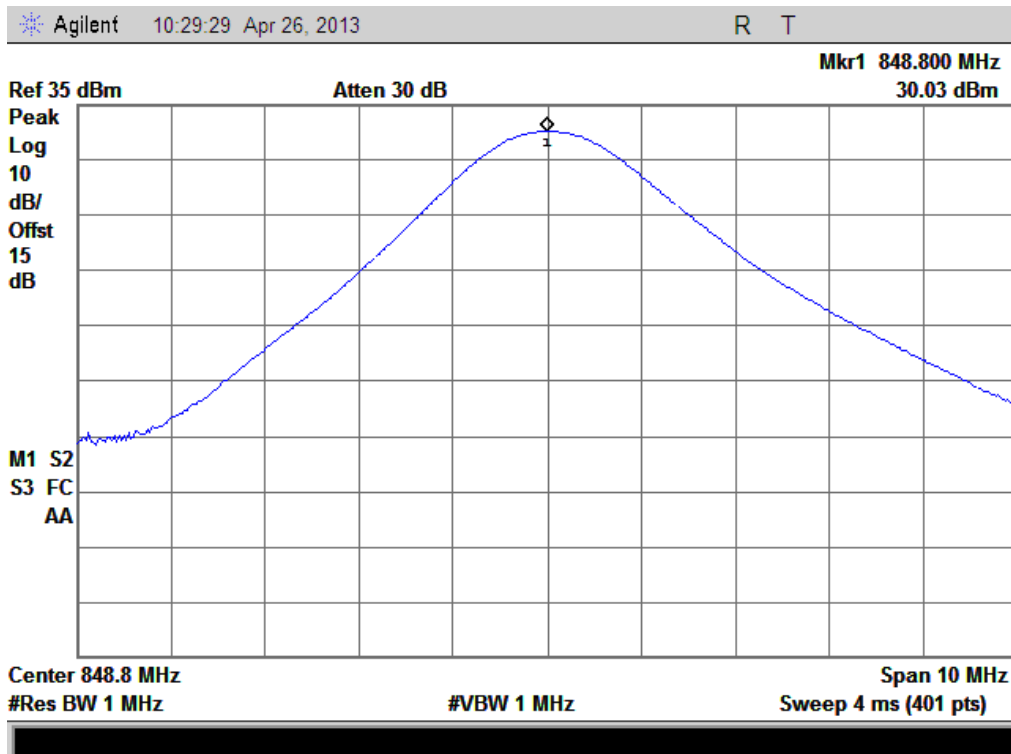
(Plot B3: GSM 1900Hz Channel = 810)



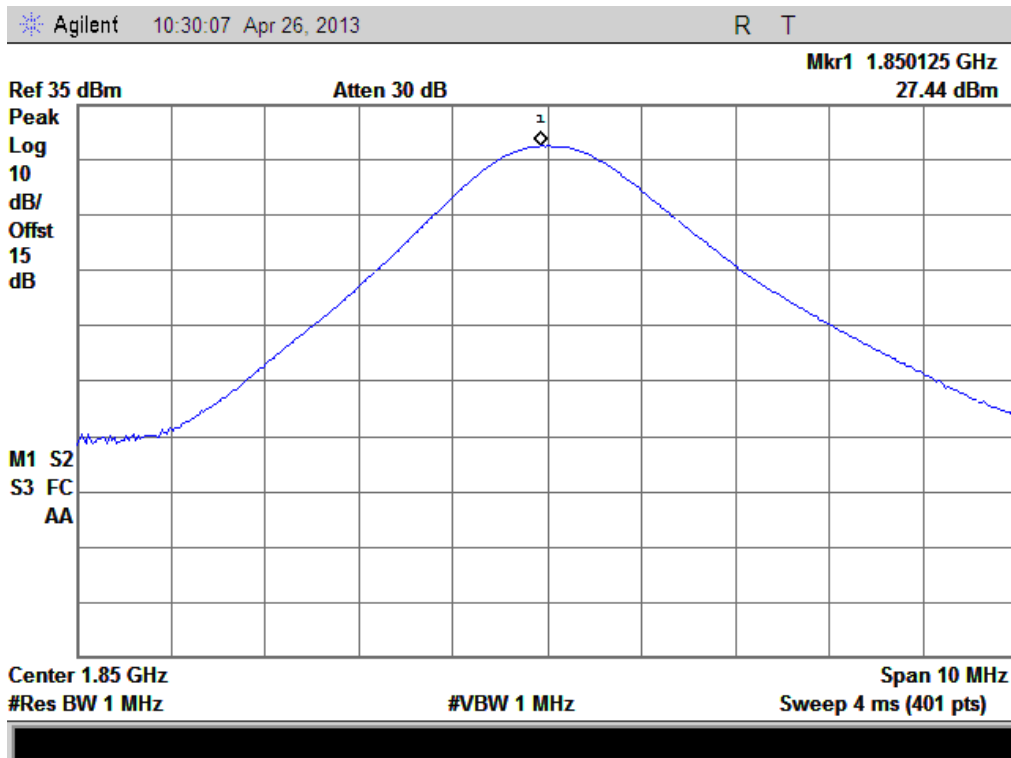
(Plot C 1: GPRS 850MHz Channel = 128)



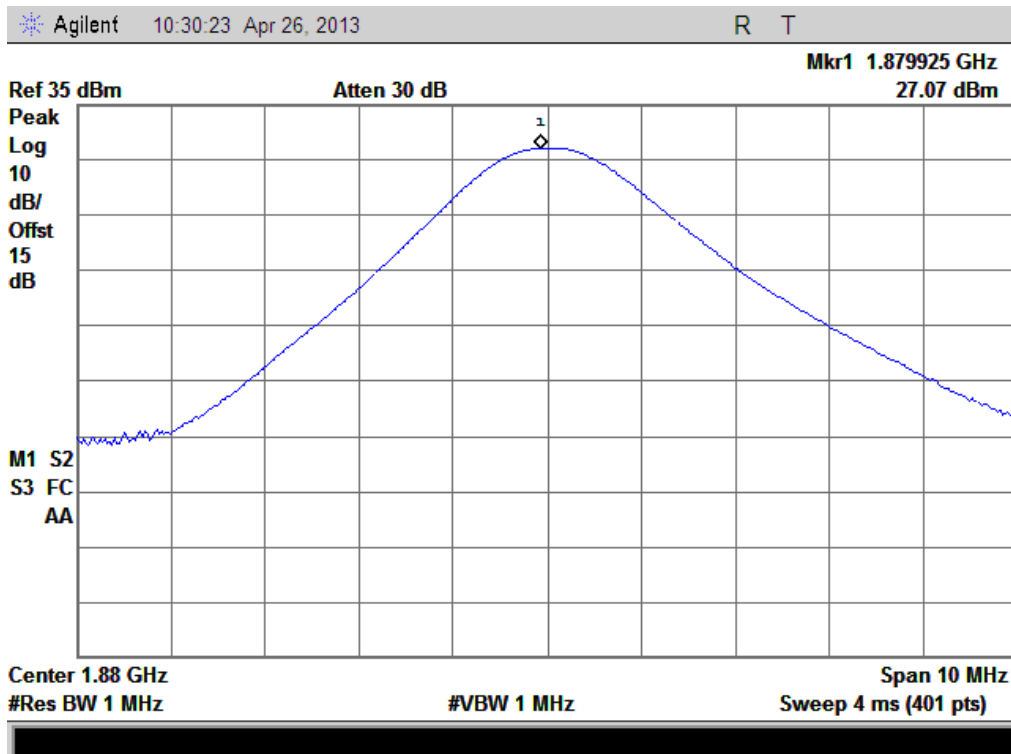
(Plot C 2: GPRS 850MHz Channel = 190)



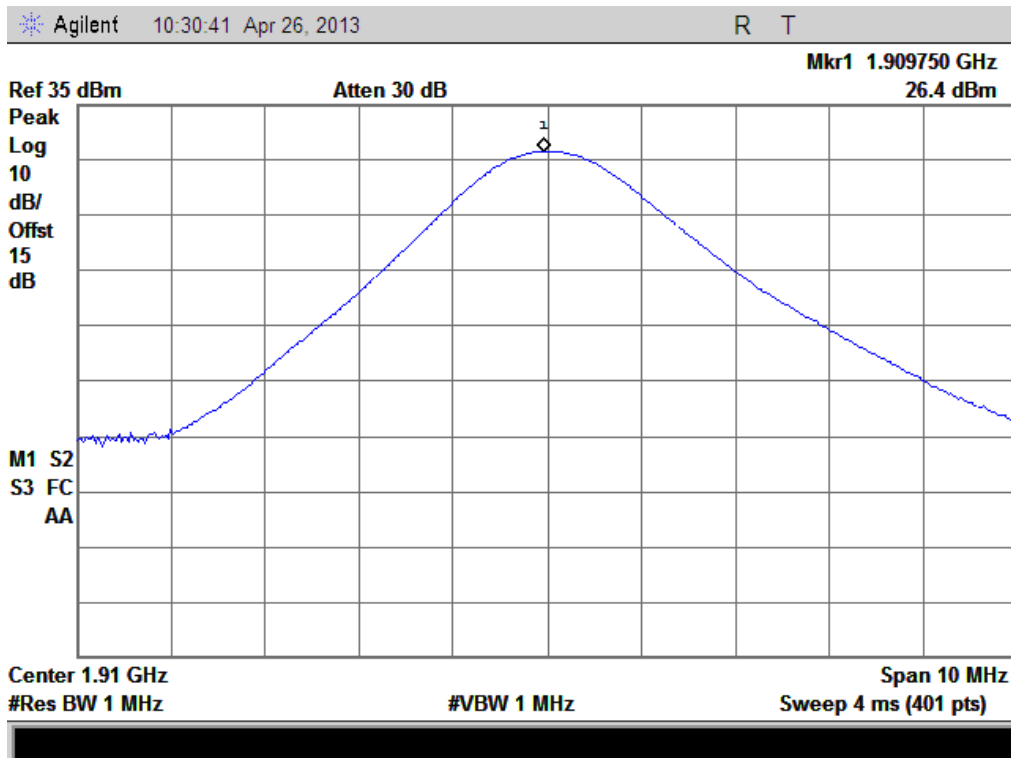
(Plot C 3: GPRS 850MHz Channel = 251)



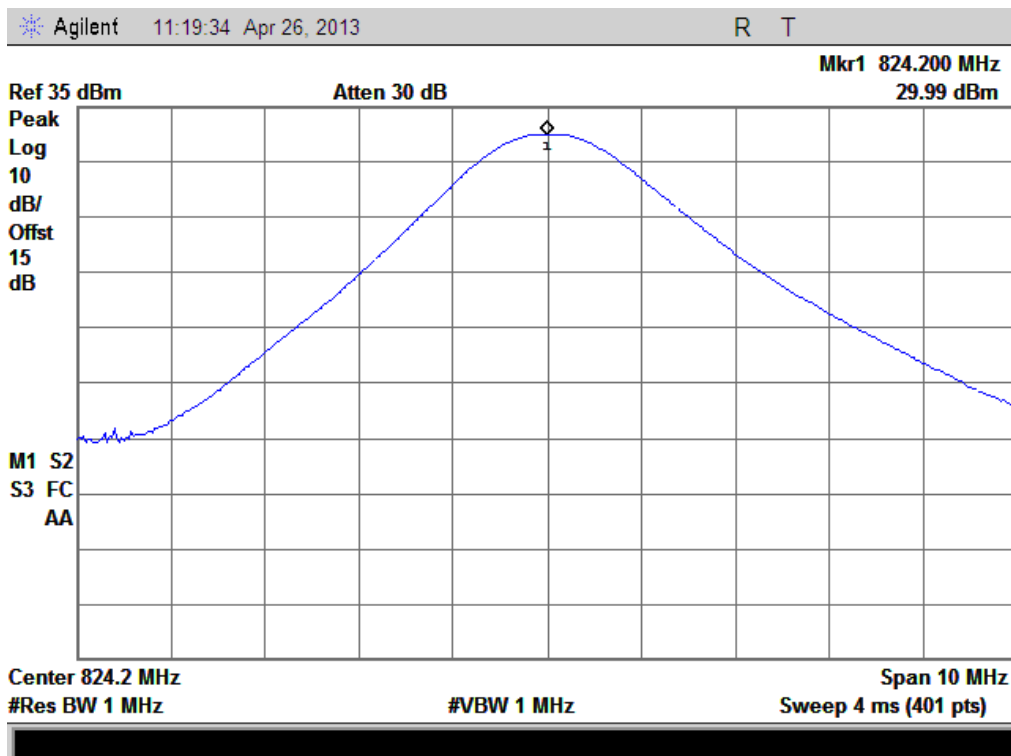
(Plot D 1: GPRS 1900MHz Channel = 512)



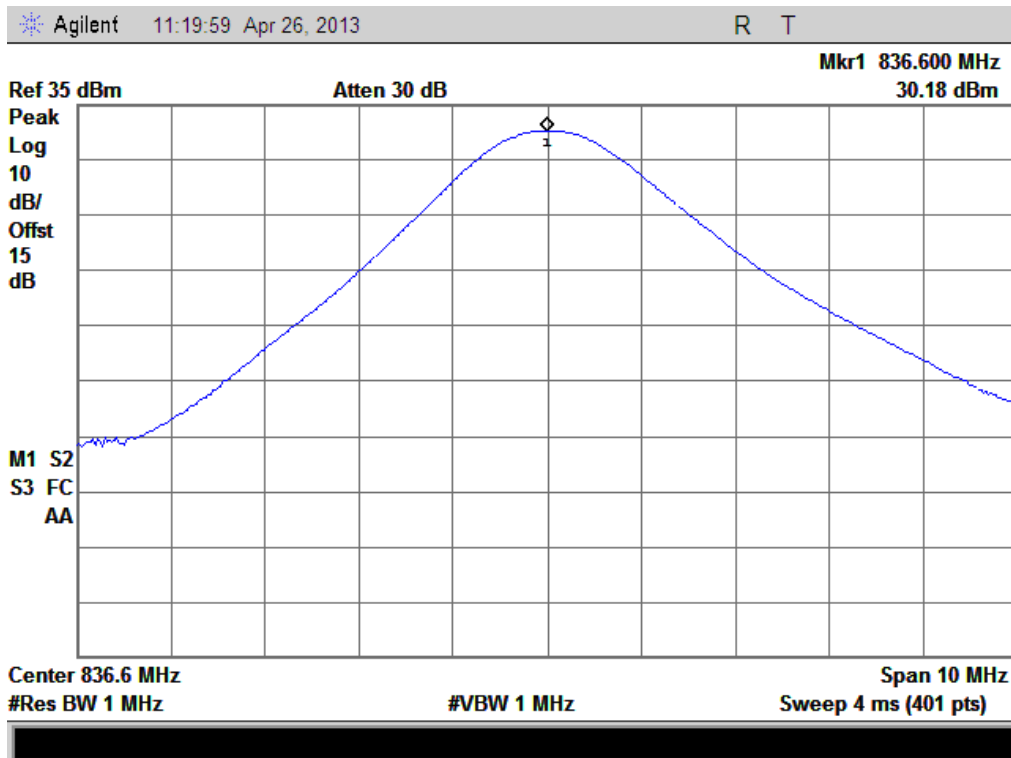
(Plot D 2: GPRS 1900MHz Channel = 661)



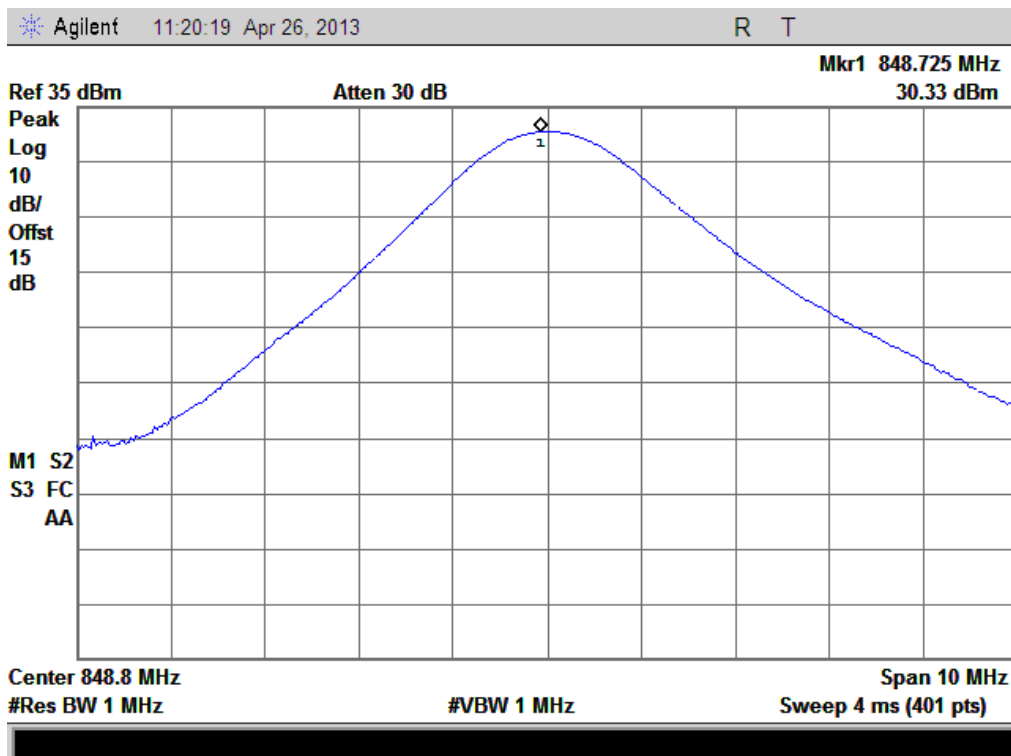
(Plot D 3: GPRS 1900MHz Channel = 810)



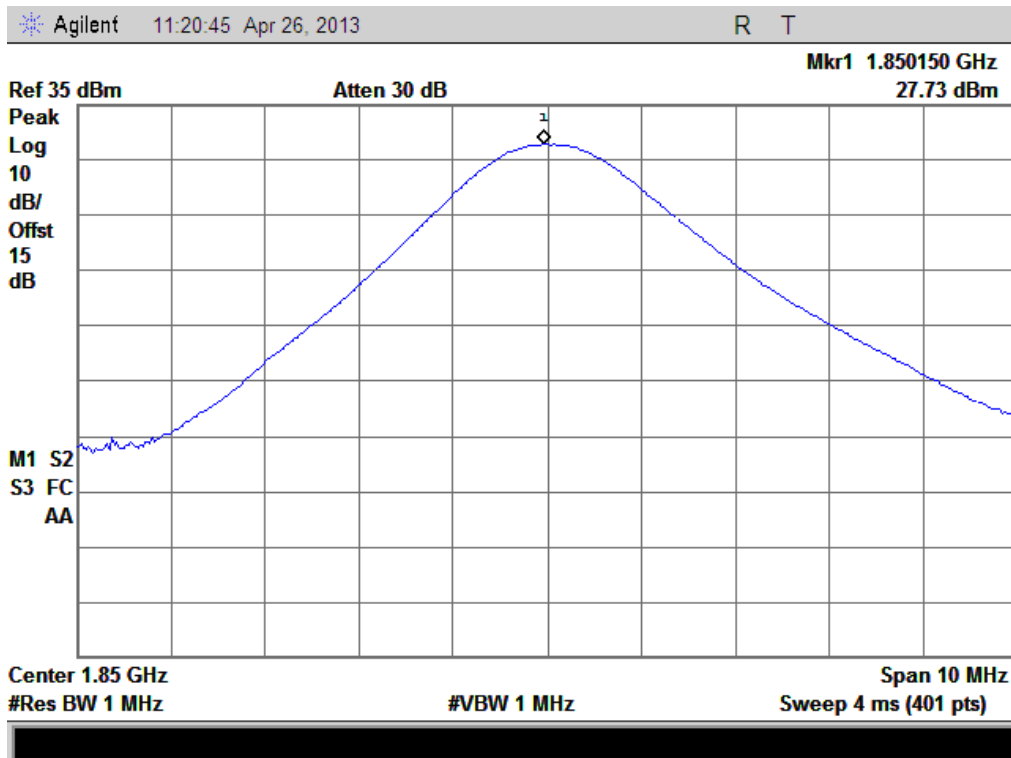
(Plot C 1: EGPRS 850MHz Channel = 128)



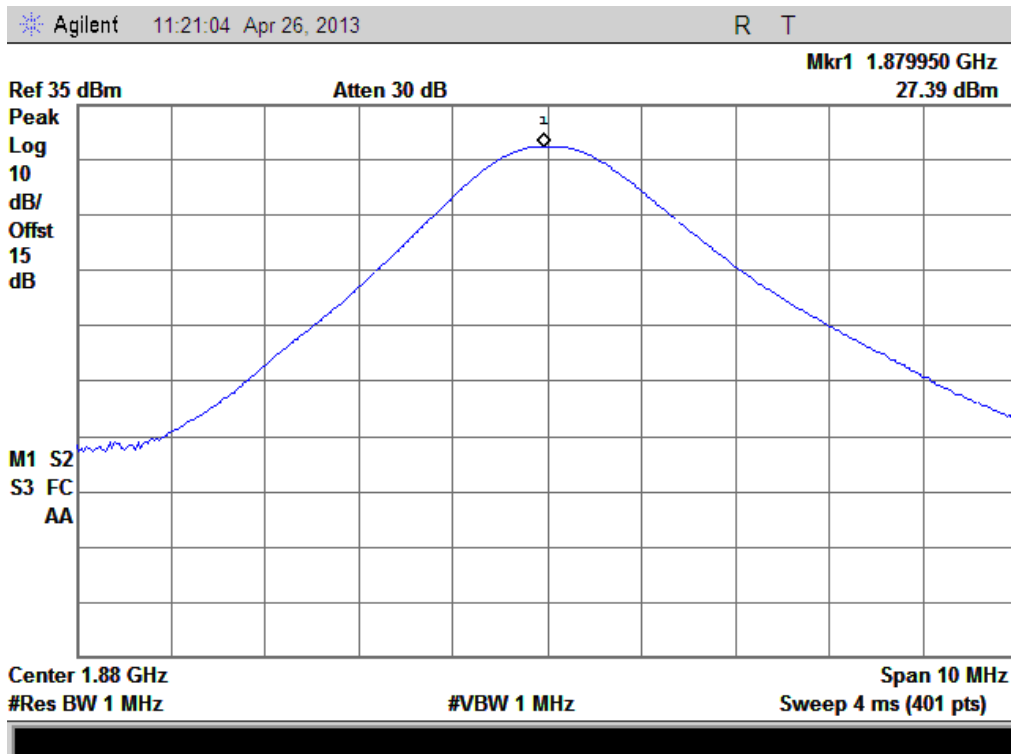
(Plot C 2: EGPRS 850MHz Channel = 190)



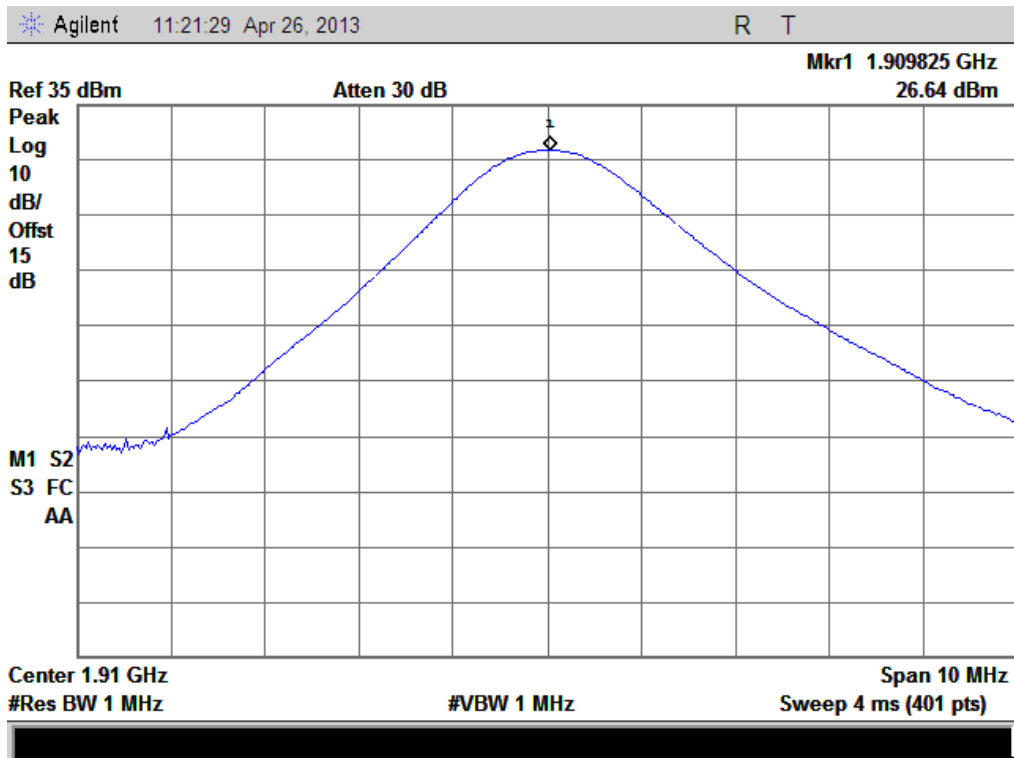
(Plot C 3: EGPRS 850MHz Channel = 251)



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



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



(Plot D 3: EGPRS 1900MHz Channel = 810)

2.2 Peak to Average Ratio

2.2.1 Requirement

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

2.2.2 Test Description

See section 2.1.2 of this report.

2.2.3 Test Verdict

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

Test procedures:

A. For GSM/EGPRS operating mode:

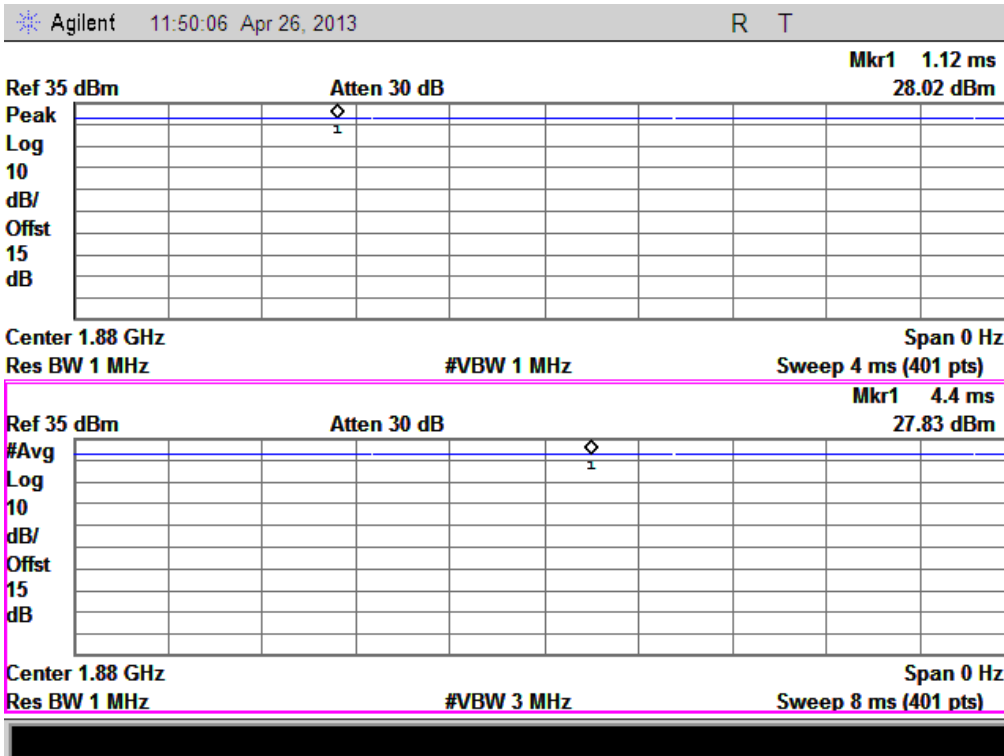
- a. Set RBW=1MHz, VBW=1MHz, peak detector in spectrum analyzer.
- b. Set EUT in maximum output power, and triggered the bust signal.
- c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average ratio.

B. For UMTS operating mode:

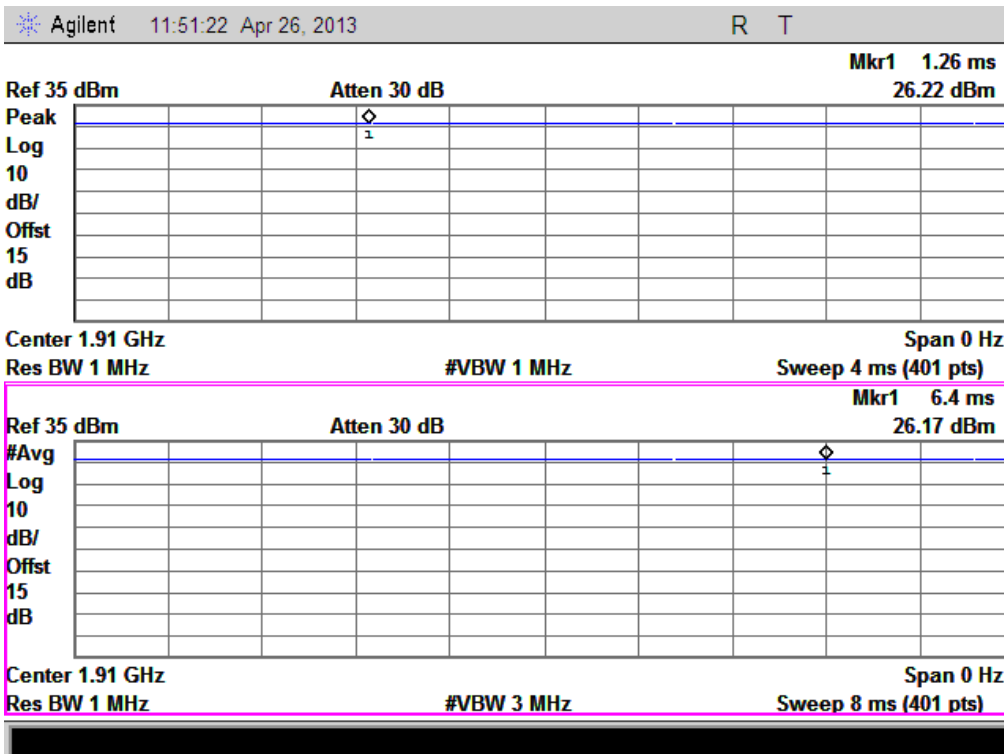
- a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
- b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

1. Test Verdict:

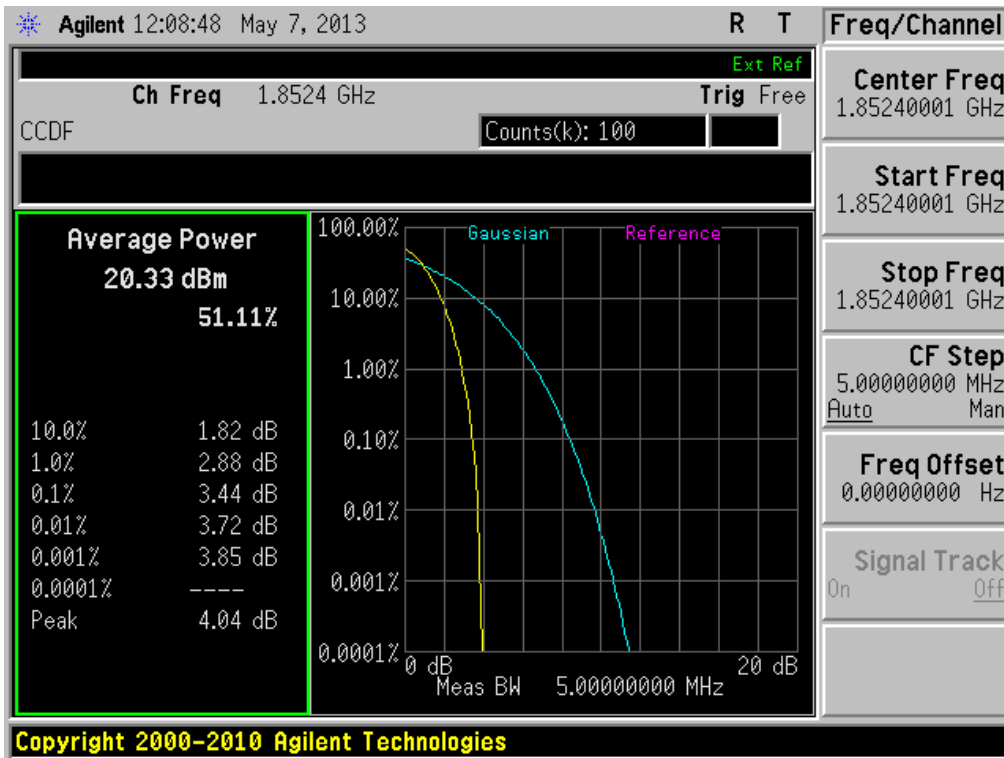
Band	Channel	Frequency (MHz)	Peak to Average ratio		Limit	Verdict
			dBm	Refer to Plot	dBm	
GSM 1900MHz	512	1850.2	0.05	Plot A1 to A3	13	PASS
	661	1880.0	0.04			PASS
	810	1909.8	0.03			PASS
EGPRS 1900MHz	512	1850.2	0.04	Plot B1 to B3	13	PASS
	661	1880.0	0.19			PASS
	810	1909.8	0.05			PASS
WCDMA 1900MHz	9262	1852.4	3.44	Plot C1 to C3	13	PASS
	9400	1880.0	3.35			PASS
	9538	1907.6	3.41			PASS



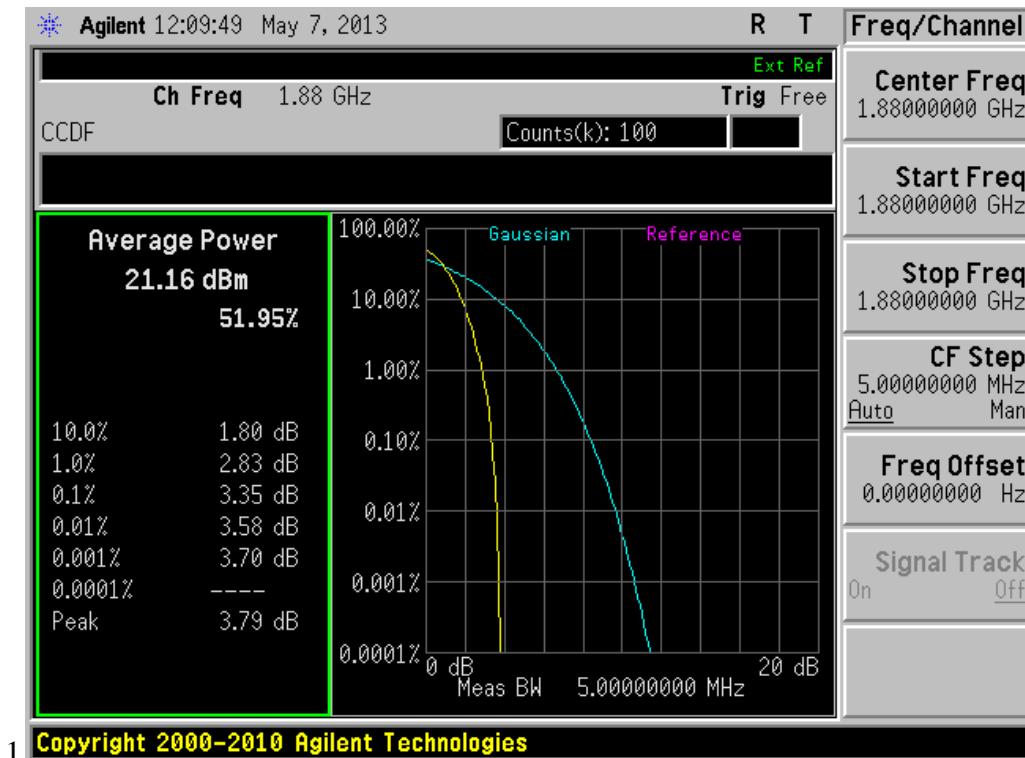
(Plot B2: EGPRS 1900MHz Channel = 661)



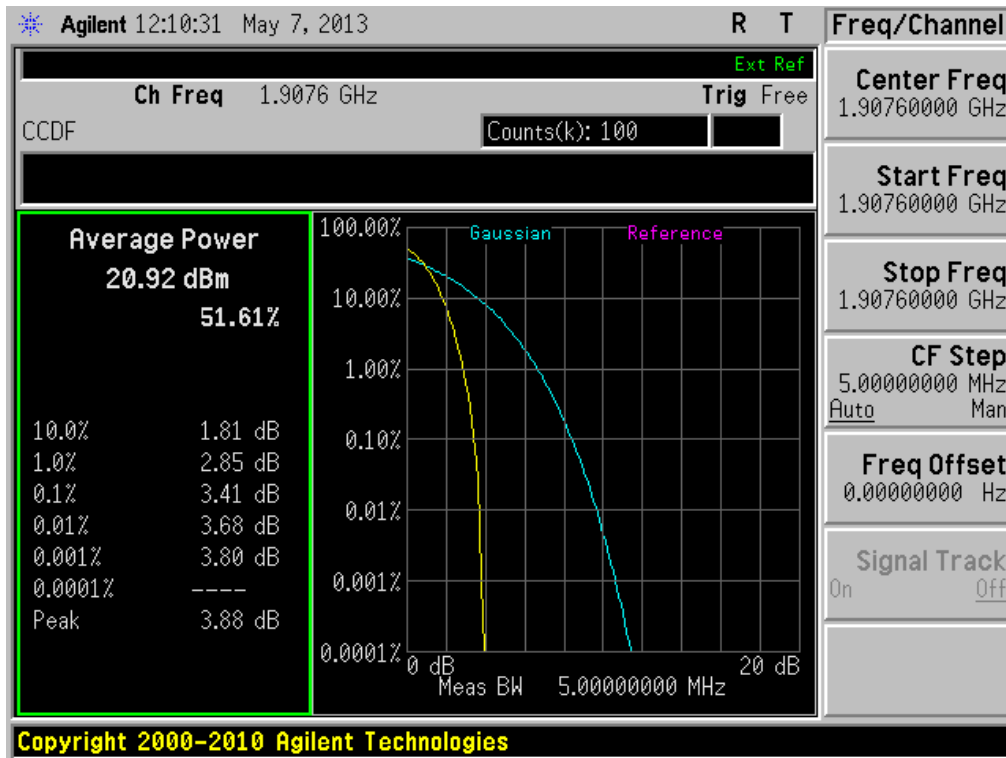
(Plot B3: EGPRS 1900MHz Channel = 810)



(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 Requirement

According to FCC section 2.1049 and FCC § 22.917 & 24.238 and 27.53(g), 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.

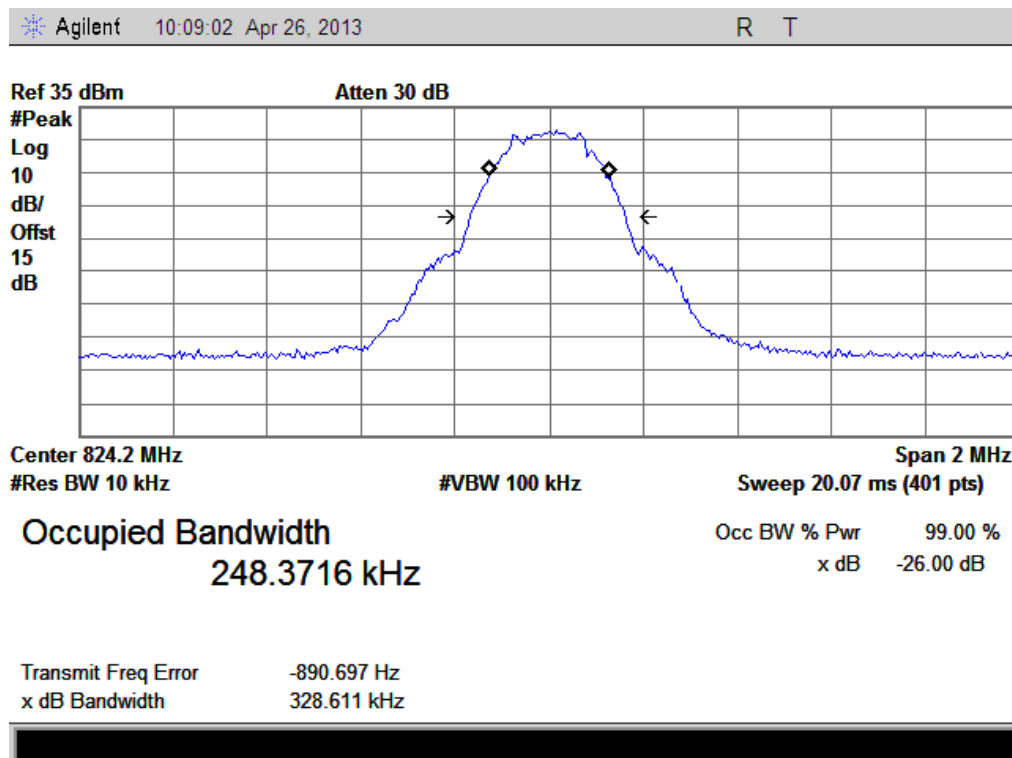
2.3.3 Test Verdict

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

Band		Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB bandwidth (kHz)	Refer to Plot
GSM	850MHz	128	824.2	248.3716	328.611	Plot A
		190	836.6	248.8773	324.791	Plot B
		251	848.8	246.6771	318.709	Plot C
	1900MHz	512	1850.2	247.3417	326.024	Plot D
		661	1880.0	247.9858	322.969	Plot E
		810	1909.8	247.8873	322.859	Plot F
EDGE	850MHz	128	824.2	246.2099	325.997	Plot G
		190	836.6	245.0487	324.645	Plot H
		251	848.8	247.1008	325.925	Plot I
	1900MHz	512	1850.2	248.2675	330.041	Plot J
		661	1880.0	248.6225	324.046	Plot K
		810	1909.8	249.6388	326.311	Plot L
Band		Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB bandwidth (MHz)	Refer to Plot
WCDMA	850MHz	4132	826.4	4.1815	4.711	Plot M
		4175	835.0	4.1727	4.708	Plot N
		4233	846.6	4.1784	4.714	Plot O
	1900MHz	9262	1852.4	4.1640	4.691	Plot P
		9400	1880.0	4.1676	4.680	Plot Q
		9538	1907.6	4.1739	4.703	Plot R
HSDPA	850MHz	4132	826.4	4.1819	4.716	Plot S
		4175	835.0	4.1631	4.715	Plot T
		4233	846.6	4.1842	4.714	Plot U

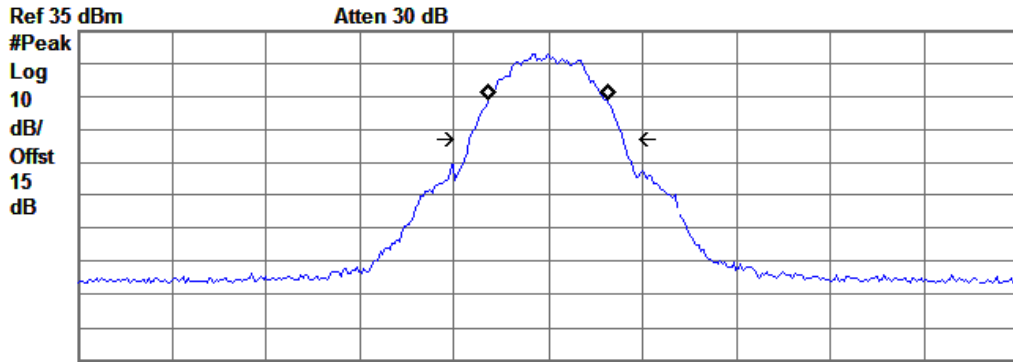
	1900MHz	9262	1852.4	4.1733	4.713	Plot V
		9400	1880.0	4.1759	4.698	Plot W
		9538	1907.6	4.1749	4.698	Plot X
HSUPA	850MHz	4132	826.4	4.1714	4.710	Plot Y
		4175	835.0	4.1645	4.716	Plot Z
		4233	846.6	4.1780	4.720	Plot A.1
	1900MHz	9262	1852.4	4.1678	4.693	Plot B.1
		9400	1880.0	4.1819	4.708	Plot C.1
		9538	1907.6	4.1792	4.689	Plot D.1

2. Test Plots:



(Plot A: GSM 850MHz Channel = 128)

Agilent 10:03:04 Apr 26, 2013 R T



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

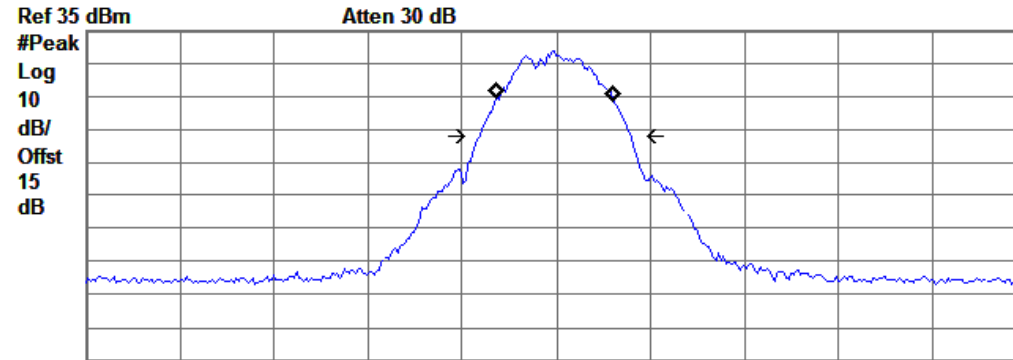
Occupied Bandwidth
 248.8773 kHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -577.116 Hz
 x dB Bandwidth 324.791 kHz

(Plot B: GSMS 850MHz Channel = 190)

Agilent 10:01:25 Apr 26, 2013 R T



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

Occupied Bandwidth
 246.6771 kHz

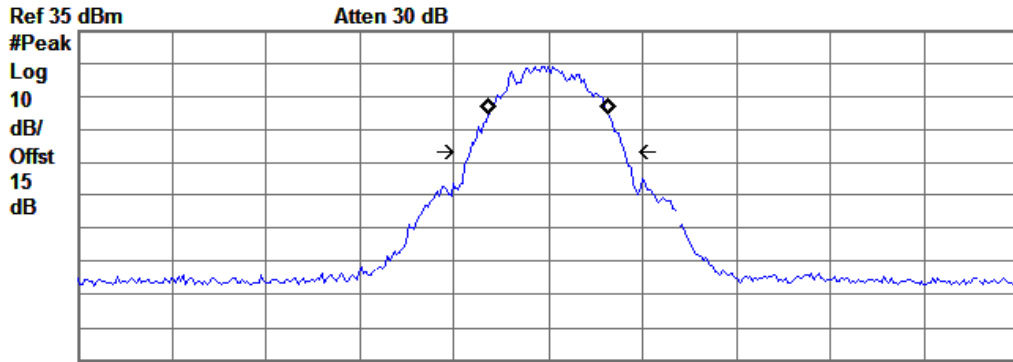
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -1.828 kHz
 x dB Bandwidth 318.709 kHz

1

(Plot C: GSM 850MHz Channel = 251)

Agilent 09:59:45 Apr 26, 2013 R T



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

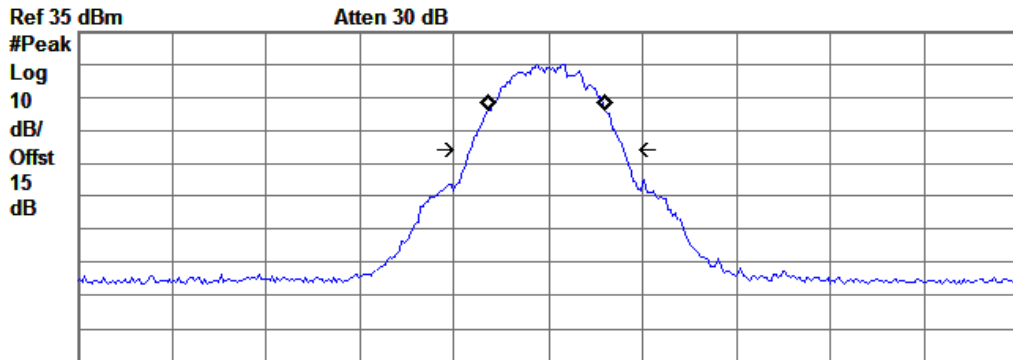
Occupied Bandwidth
 247.3417 kHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 567.702 Hz
 x dB Bandwidth 326.024 kHz

(Plot D: GSM 1900MHz Channel = 512)

Agilent 09:58:55 Apr 26, 2013 R T



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

Occupied Bandwidth
 247.9858 kHz

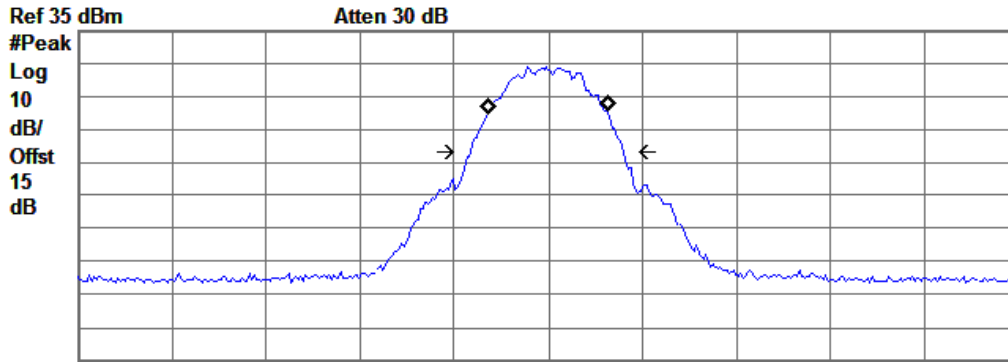
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -2.019 kHz
 x dB Bandwidth 322.969 kHz

(Plot E: GSM 1900MHz Channel = 661)



Agilent 09:57:30 Apr 26, 2013 R T



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

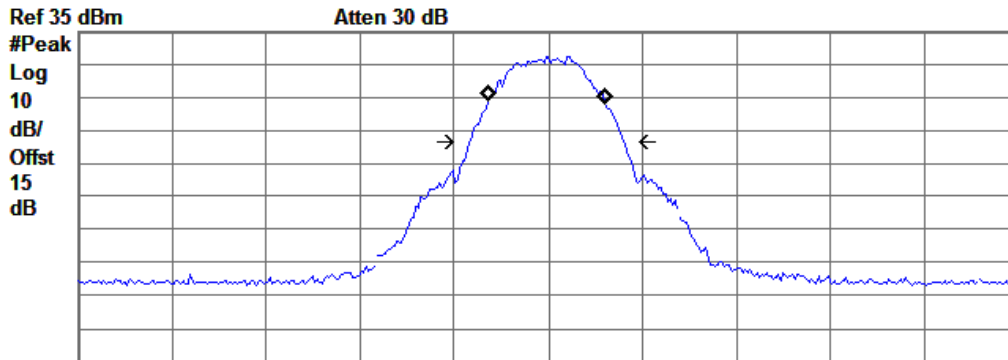
Occupied Bandwidth
247.8873 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.081 kHz
x dB Bandwidth 322.859 kHz

(Plot F: GSM 1900MHz Channel = 810)

Agilent 11:16:45 Apr 26, 2013 R T



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

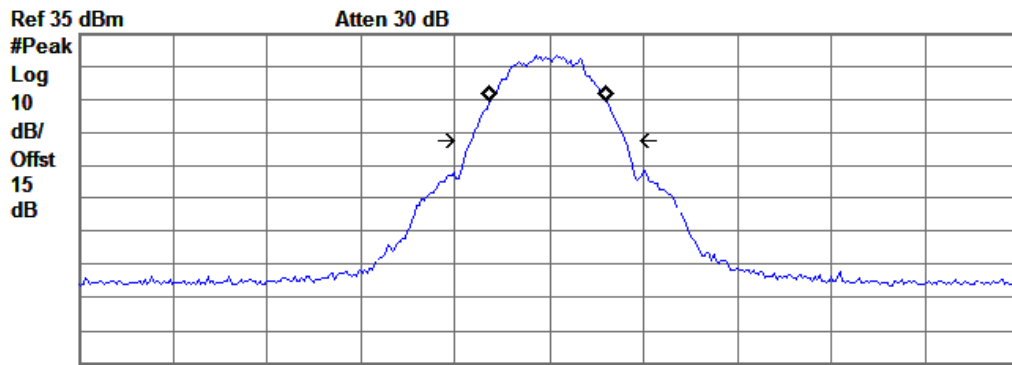
Occupied Bandwidth
246.2099 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -1.585 kHz
x dB Bandwidth 325.997 kHz

(Plot G: EDGE 850MHz Channel = 128)

Agilent 11:14:45 Apr 26, 2013 R T



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

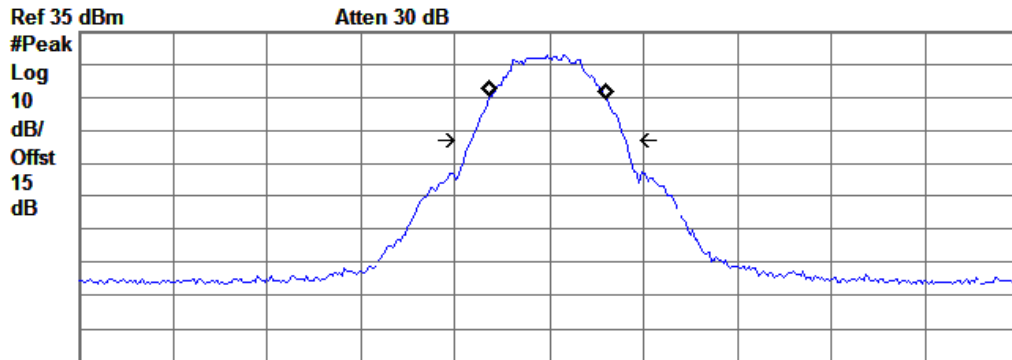
Occupied Bandwidth
 245.0487 kHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -1.361 kHz
 x dB Bandwidth 324.645 kHz

(Plot H: EDGE 850MHz Channel = 190)

Agilent 11:10:23 Apr 26, 2013 R T



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

Occupied Bandwidth
 247.1008 kHz

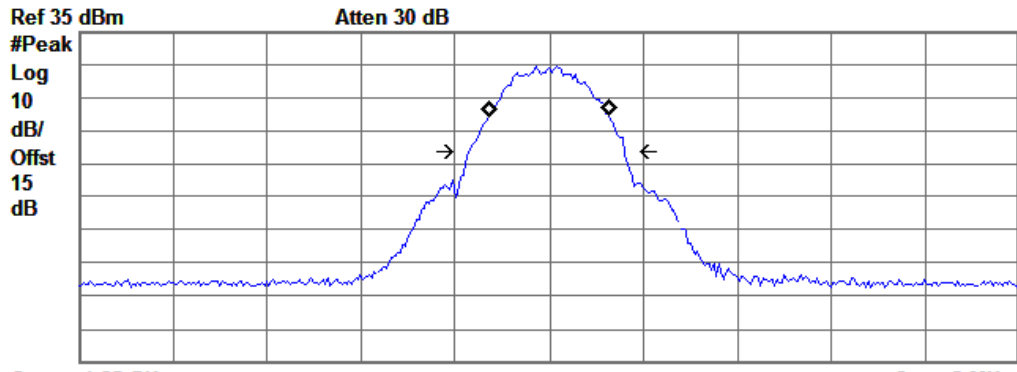
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -1.524 kHz
 x dB Bandwidth 325.925 kHz

(Plot I: EDGE 850MHz Channel = 251)



Agilent 11:06:42 Apr 26, 2013 R T



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

Occupied Bandwidth
 248.2675 kHz

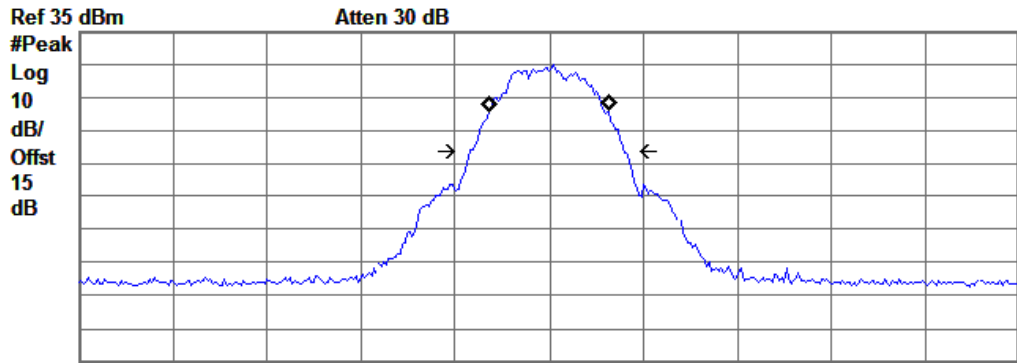
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -928.632 Hz
 x dB Bandwidth 330.041 kHz



(Plot J: EDGE 1900MHz Channel = 512)

Agilent 11:05:45 Apr 26, 2013 R T



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

Occupied Bandwidth
 248.6225 kHz

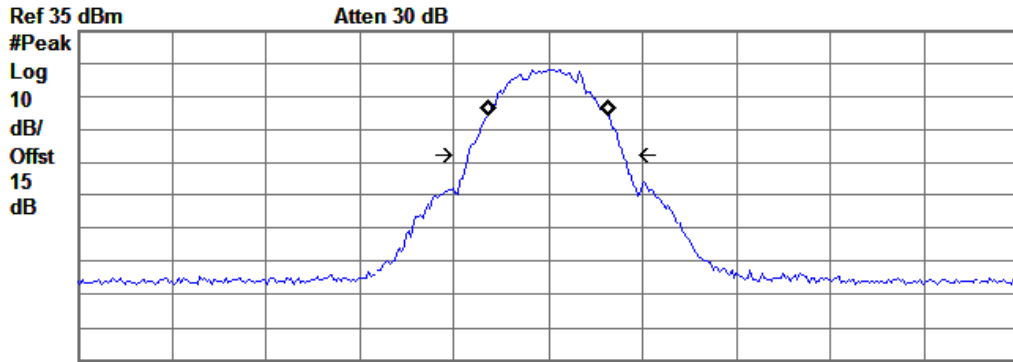
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -607.759 Hz
 x dB Bandwidth 324.046 kHz



(Plot K: EDGE 1900MHz Channel = 661)

Agilent 11:03:08 Apr 26, 2013 R T



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

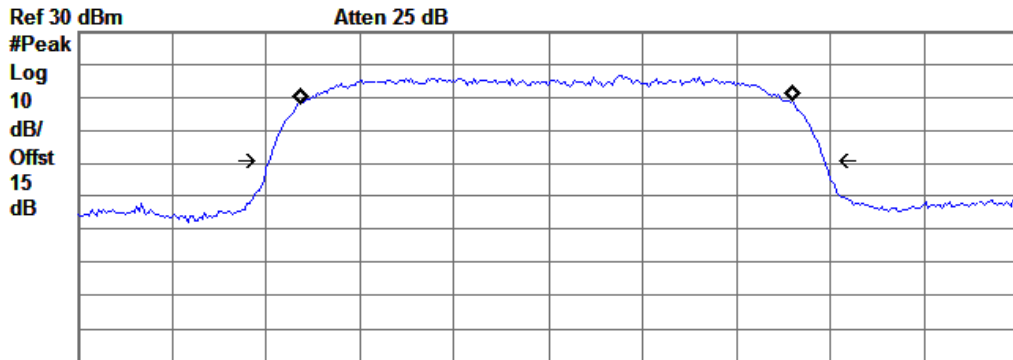
Occupied Bandwidth
 249.6388 kHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -982.361 Hz
 x dB Bandwidth 326.311 kHz

(Plot L: EDGE 1900MHz Channel = 810)

Agilent 11:12:14 May 7, 2013 R T



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

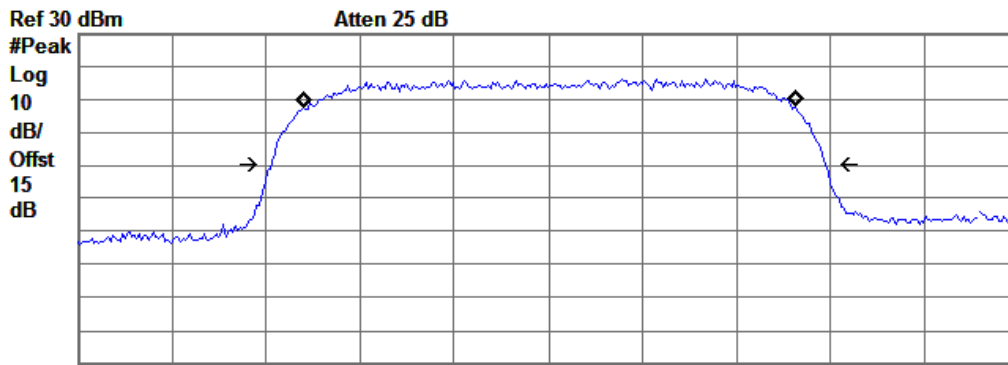
Occupied Bandwidth
 4.1815 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -11.774 kHz
 x dB Bandwidth 4.711 MHz

(Plot M: WCDMA 850MHz Channel = 4132)

Agilent 11:10:21 May 7, 2013 R T



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

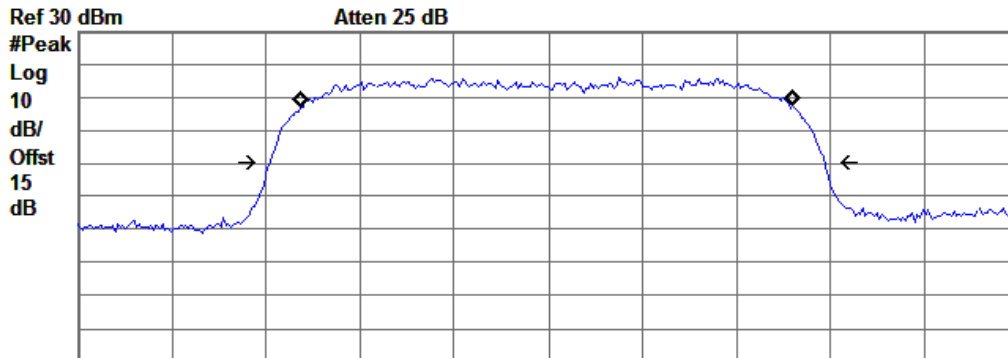
Occupied Bandwidth
 4.1727 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 6.238 kHz
 x dB Bandwidth 4.708 MHz

(Plot N: WCDMA 850 MHz Channel = 4175)

Agilent 11:09:38 May 7, 2013 R T



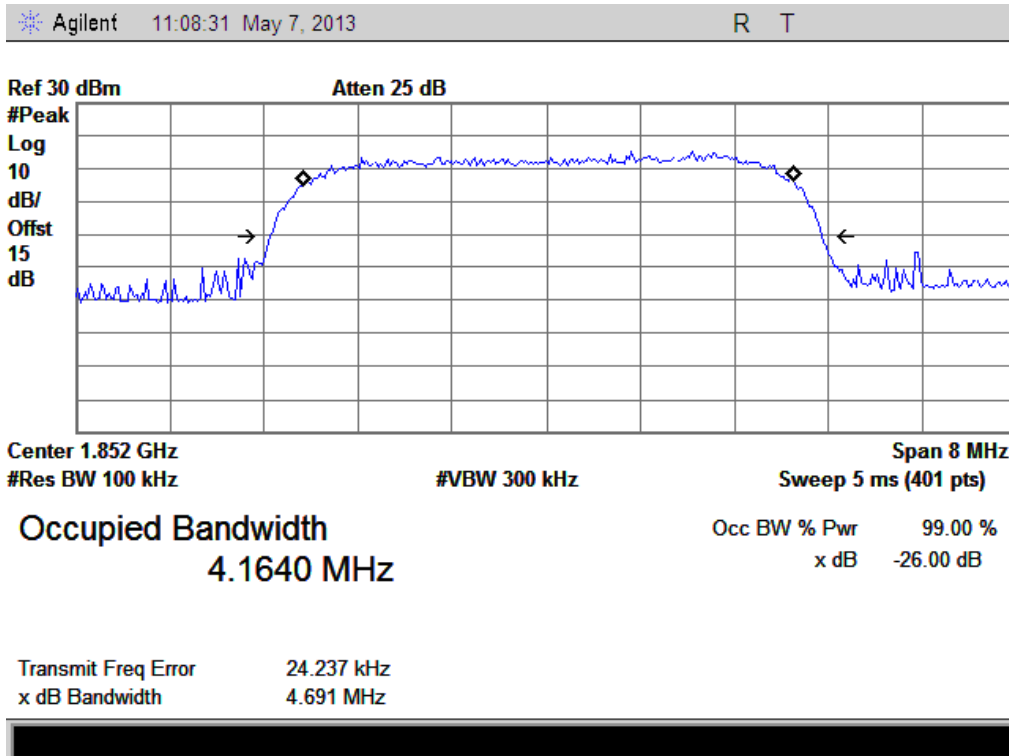
Center 846.6 MHz Span 8 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth
 4.1784 MHz

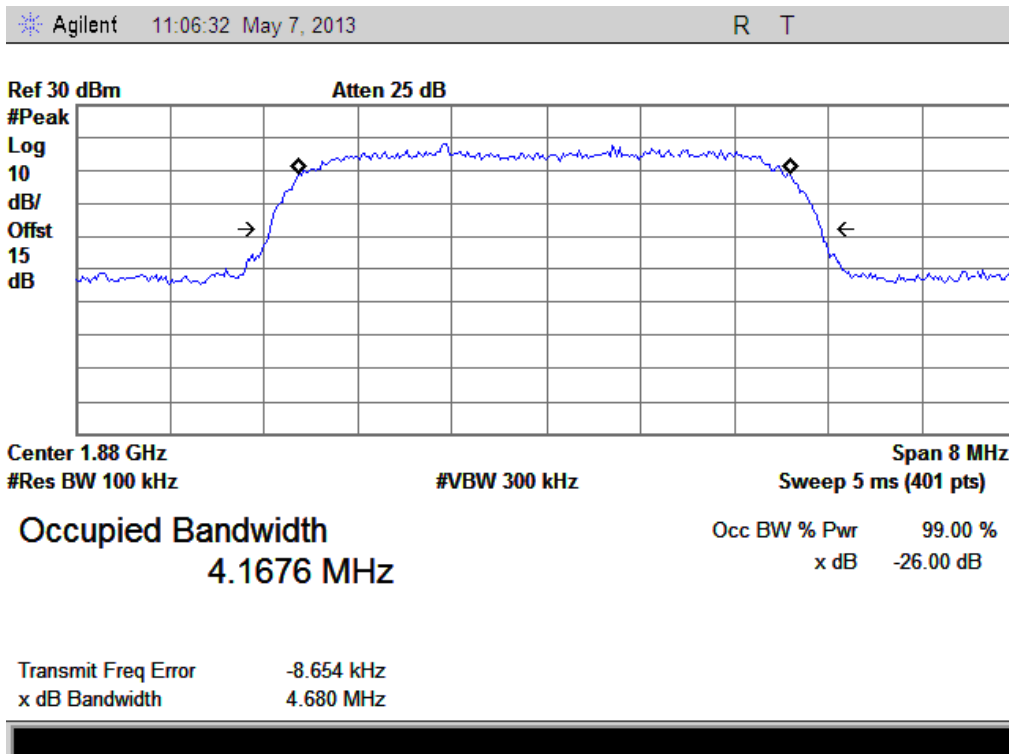
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -7.453 kHz
 x dB Bandwidth 4.714 MHz

(Plot O: WCDMA 850MHz Channel = 4233)

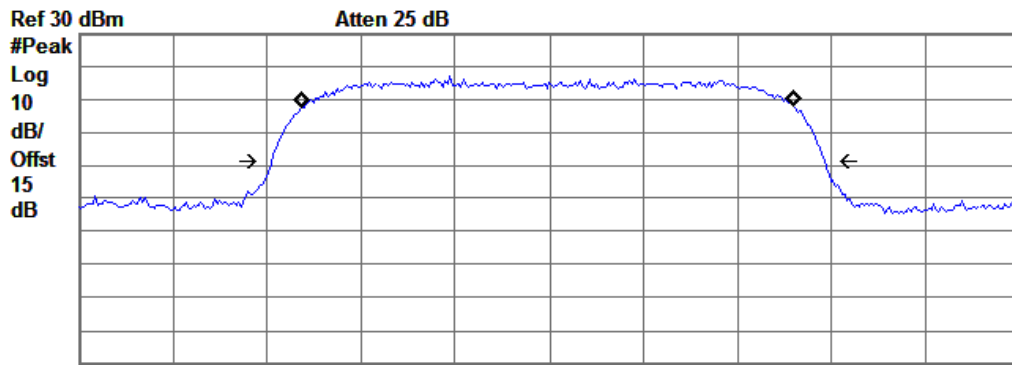


(Plot P: WCDMA 1900MHz Channel = 9262)



(Plot Q: WCDMA 1900 MHz Channel = 9400)

Agilent 11:05:58 May 7, 2013 R T



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

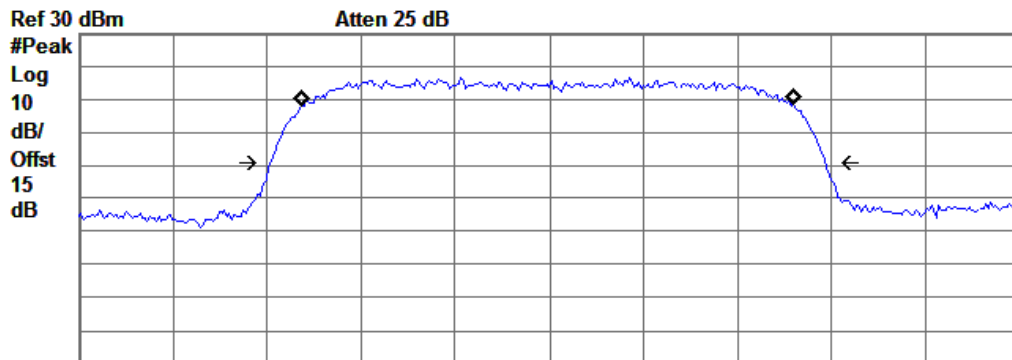
Occupied Bandwidth
 4.1739 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -4.098 kHz
 x dB Bandwidth 4.703 MHz

(Plot R: WCDMA1900MHz Channel = 9538)

Agilent 11:39:44 May 7, 2013 R T



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

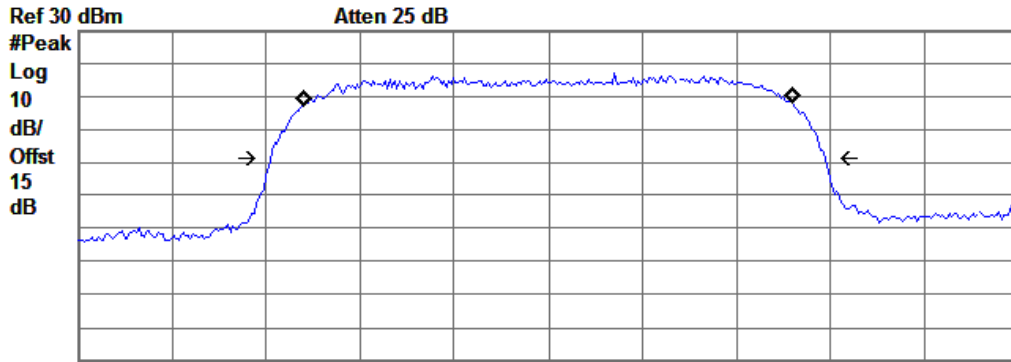
Occupied Bandwidth
 4.1819 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -5.260 kHz
 x dB Bandwidth 4.716 MHz

(Plot S: HSDPA 850MHz Channel = 4132)

Agilent 11:39:07 May 7, 2013 R T



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

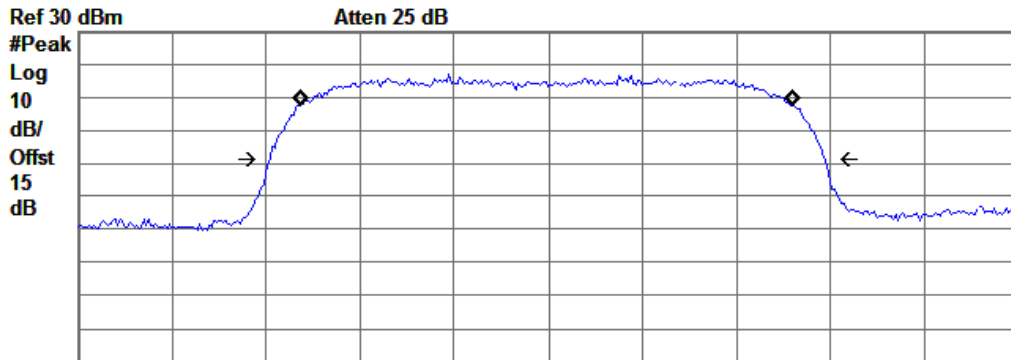
Occupied Bandwidth
 4.1631 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 4.810 kHz
 x dB Bandwidth 4.715 MHz

(Plot T: HSDPA850 MHz Channel = 4175)

Agilent 11:38:35 May 7, 2013 R T



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

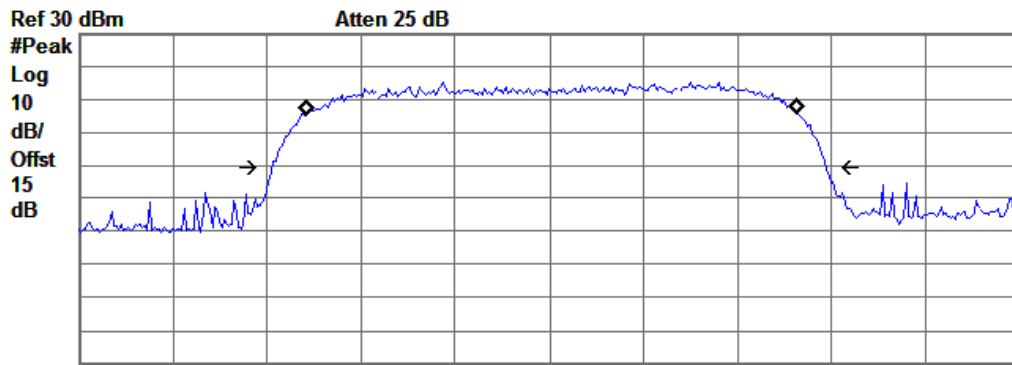
Occupied Bandwidth
 4.1842 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -5.475 kHz
 x dB Bandwidth 4.714 MHz

(Plot U: HSDPA 850 MHz Channel = 4233)

Agilent 11:37:39 May 7, 2013 R T



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

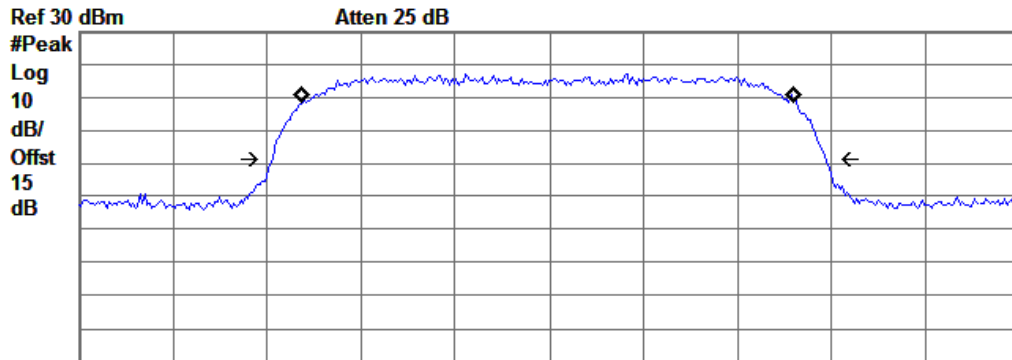
Occupied Bandwidth
 4.1733 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 17.734 kHz
 x dB Bandwidth 4.713 MHz

(Plot V: HSDPA1900 MHz Channel = 9262)

Agilent 11:36:40 May 7, 2013 R T



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

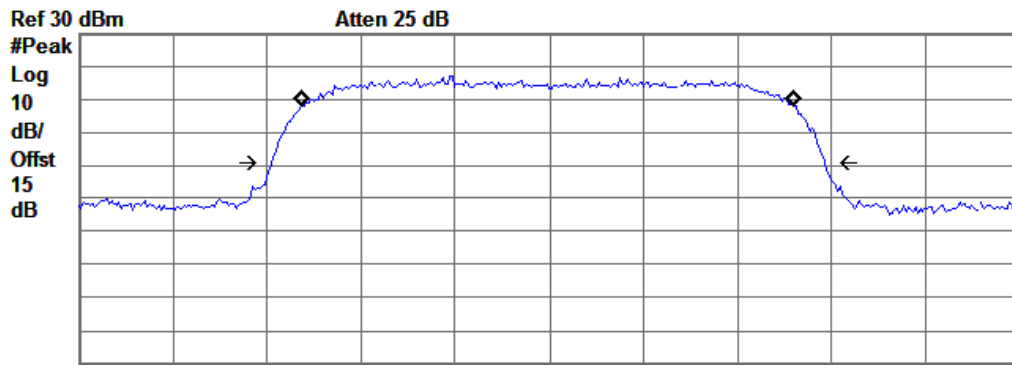
Occupied Bandwidth
 4.1759 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -3.371 kHz
 x dB Bandwidth 4.698 MHz

(Plot W: HSDPA1900 MHz Channel = 9400)

Agilent 11:36:12 May 7, 2013 R T



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

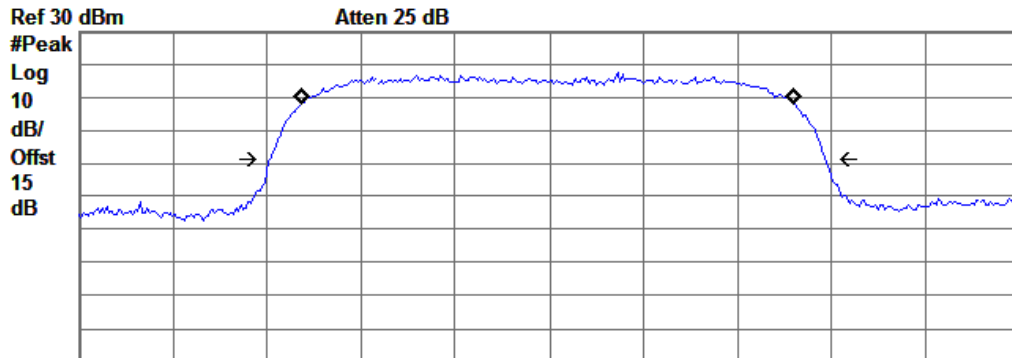
Occupied Bandwidth
 4.1749 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -7.055 kHz
 x dB Bandwidth 4.698 MHz

(Plot X: HSDPA1900 MHz Channel = 9538)

Agilent 11:40:43 May 7, 2013 R T



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

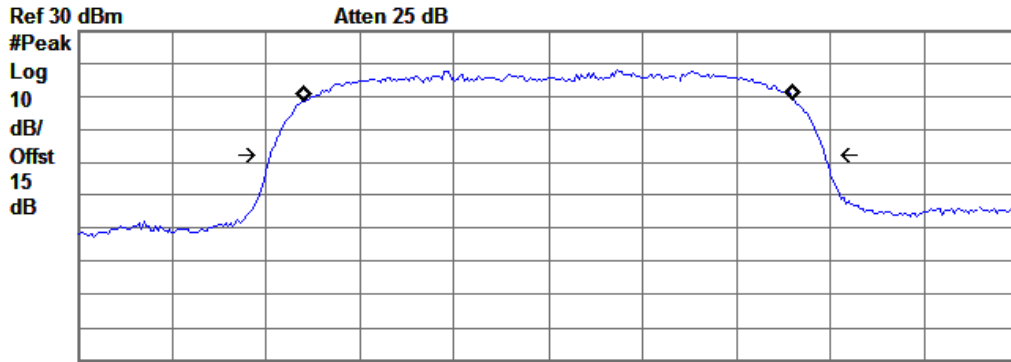
Occupied Bandwidth
 4.1714 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -9.684 kHz
 x dB Bandwidth 4.710 MHz

(Plot Y: HSUPA850 MHz Channel = 4132)

Agilent 11:42:58 May 7, 2013 R T



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

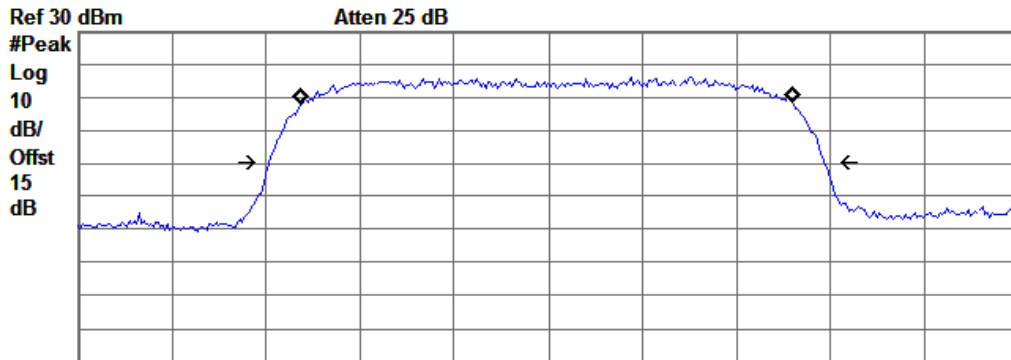
Occupied Bandwidth
 4.1645 MHz

Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error 7.331 kHz
 x dB Bandwidth 4.716 MHz

(Plot Z: HSUPA850 MHz Channel = 4175)

Agilent 11:43:41 May 7, 2013 R T



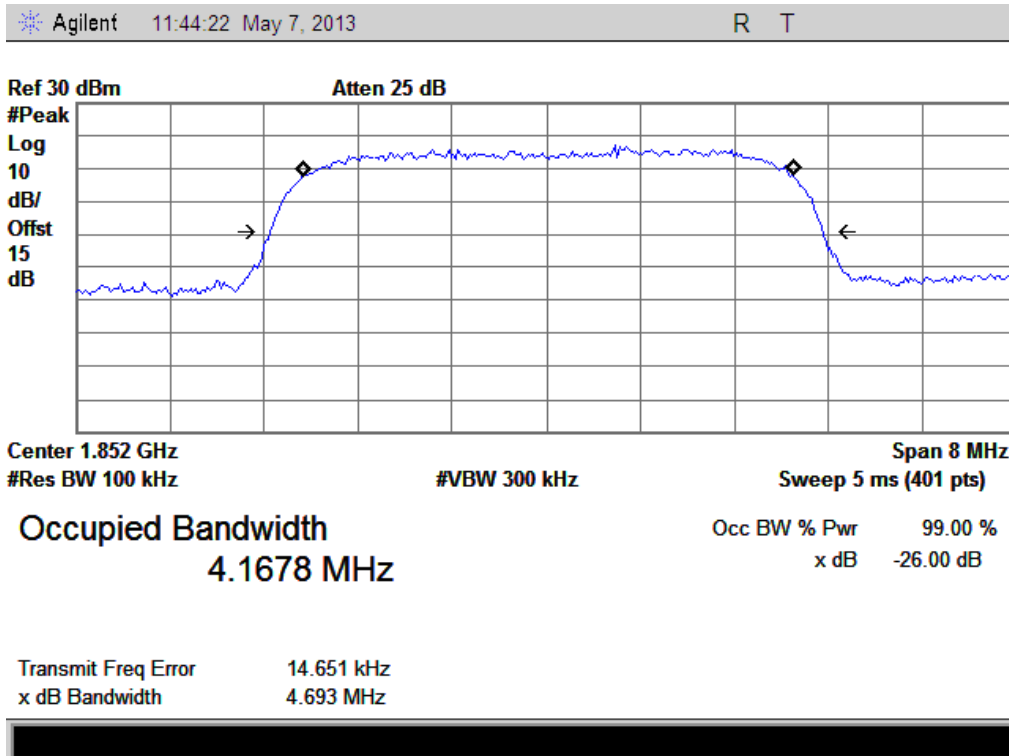
Center 846.6 MHz Span 8 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 5 ms (401 pts)

Occupied Bandwidth
 4.1780 MHz

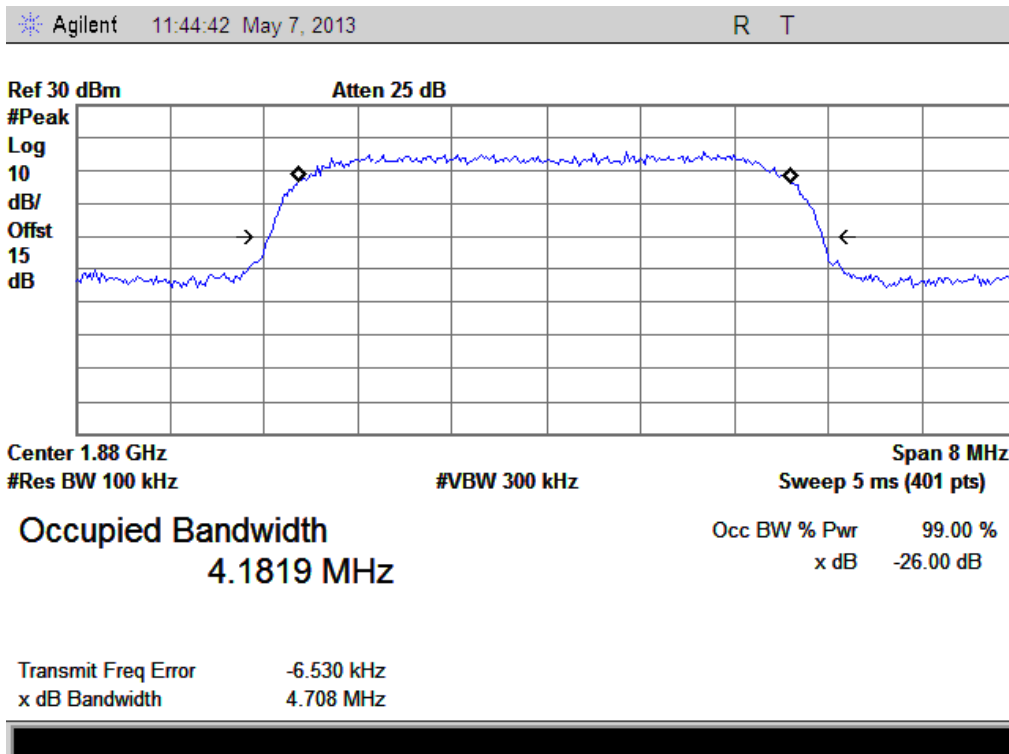
Occ BW % Pwr 99.00 %
 x dB -26.00 dB

Transmit Freq Error -3.678 kHz
 x dB Bandwidth 4.720 MHz

(Plot A.1: HSUPA850 MHz Channel = 4233)

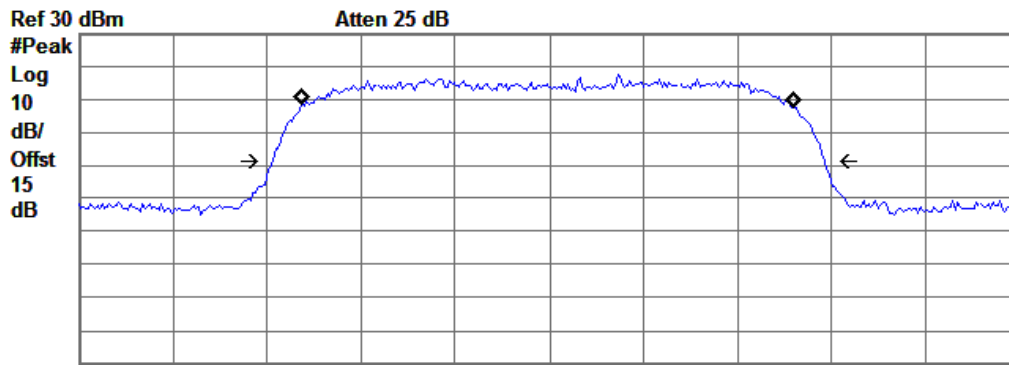


(Plot B.1: HSUPA1900 MHz Channel = 9262)



(Plot C.1: HSUPA1900 MHz Channel = 9400)

Agilent 11:45:08 May 7, 2013 R T



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

Occupied Bandwidth 4.1792 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB

Transmit Freq Error -4.128 kHz
x dB Bandwidth 4.689 MHz

(Plot D.1: HSUPA1900 MHz Channel = 9538)

2.4 Frequency Stability

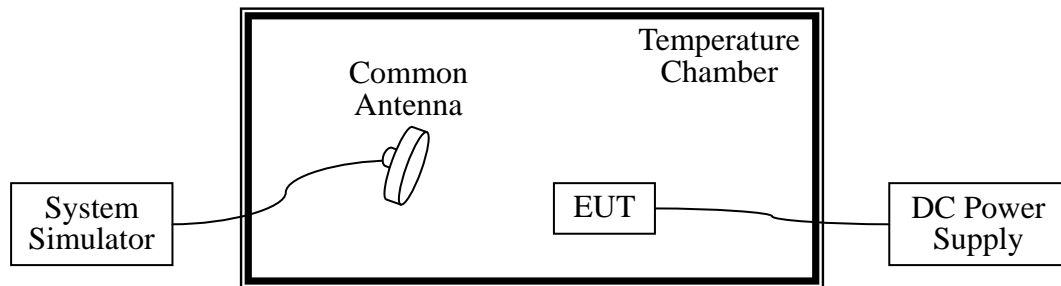
2.4.1 Requirement

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 $+50^{\circ}\text{C}$ 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	2012.05.12	2013.05.11
DC Power Supply	Good Will	GPS-3030DD	EF920938	2012.05.12	2013.05.11
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2012.05.12	2013.05.11

2.4.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.7VDC, 4.2VDC and 3.6VDC,

which are specified by the applicant; the normal temperature here used is 25°C. The frequency deviation limit of 850MHz band is ± 2.5 ppm, and 1900MHz is ± 1 ppm

1. GSM 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	-22.37	± 2060.5	23.17	± 2091.5	18.52	± 2122	PASS
	-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		-17.19		10.76		
	+30	35.26		19.36		-16.51		
	+40	42.63		19.64		-2.10		
	+55	35.28		22.27		-12.99		
4.2	+25	-14.73		28.95		-7.53		
3.6	+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)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	7.23	± 1850.2	23.62	± 1880.0	32.27	± 1909.8	PASS
	-20	-24.78		27.13		-19.71		
	-10	-1.26		-21.28		-18.28		
	0	-18.68		-13.16		17.33		
	+10	-21.61		-18.38		25.31		
	+20	14.58		-21.61		35.26		
	+30	-0.68		15.52		-23.28		
	+40	5.33		-0.68		19.33		
	+55	-2.56		33.27		-19.27		
4.2	+25	17.60		23.82		26.29		
3.6	+25	-8.09		15.32		18.93		

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)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-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					
4.2	+25	-15.71	13.95	-7.53				
3.6	+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)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-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					
4.2	+25	17.60	3.88	26.79				
3.6	+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	
3.7	-30	17.29	±2066	11.87	±2087.5	-1.20	±2116.5	PASS
	-20	-7.32		-0.59		-19.38		
	-10	-3.40		21.45		7.57		
	0	16.47		13.45		4.22		
	+10	30.18		1.31		-17.39		
	+20	32.07		-12.52		11.90		
	+30	-7.98		30.62		6.63		
	+40	26.21		13.45		28.93		
	+55	11.10		-12.52		19.66		
4.2	+25	-6.18	30.62	22.19				
3.6	+25	18.66	-18.00	-18.70				

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	
3.7	-30	-4.75	±1852.4	-13.47	±1880.0	-8.99	±1907.6	PASS
	-20	18.85		12.18		23.60		
	-10	5.05		-14.06		14.81		
	0	19.62		18.79		-3.07		
	+10	30.40		22.39		17.42		
	+20	13.45		37.27		-10.39		
	+30	1.31		2.37		17.47		
	+40	-12.52		-13.47		27.84		
	+55	-13.55		-5.71		-2.53		
4.2	+25	23.21	14.58	20.95				
3.6	+25	22.00	26.37	-23.22				

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	
3.7	-30	27.46	±2066	-24.37	±2087.5	15.81	±2116.5	PASS
	-20	-8.56		-13.96		14.41		
	-10	20.65		35.23		21.57		
	0	12.88		-8.31		-24.37		
	+10	-14.75		-13.95		-13.96		
	+20	8.78		-24.37		35.23		
	+30	-1.49		12.88		-8.31		
	+40	17.14		-14.75		-13.95		
+55	-23.61	23.37	26.37					
4.2	+25	32.03	7.93	7.90				
3.6	+25	17.51	-31.21	1.78				

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	
3.7	-30	11.87	±1852.4	-3.01	±1880	2.61	±1907.6	PASS
	-20	-16.65		21.71		-8.38		
	-10	20.12		14.37		-13.02		
	0	-3.01		-11.21		-8.51		
	+10	21.71		10.60		5.64		
	+20	20.12		-4.81		-3.85		
	+30	-15.01		34.31		9.57		
	+40	22.71		8.36		27.54		
+55	16.32	-25.88	-12.52					
4.2	+25	-11.28	29.43	-2.83				
3.6	+25	10.33	-2.27	14.42				

9. HSUPA 850MHz Band

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

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)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	31.57	±1852.4	-11.79	±1880	8.69	±1907.6	
	-20	27.13		-0.44		2.01		
	-10	7.62		0.01		-4.75		
	0	2.31		13.82		16.38		
	+10	-4.73		-15.25		-1.76		
	+20	16.22		-11.79		23.52		
	+30	-1.55		-0.44		-0.38		
	+40	23.16		1.15		-11.85		
	+55	13.79	-7.94	-5.91				
4.2	+25	-7.08		6.81		25.48		
3.6	+25	22.58		-1.83		-15.78		

2.5 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.

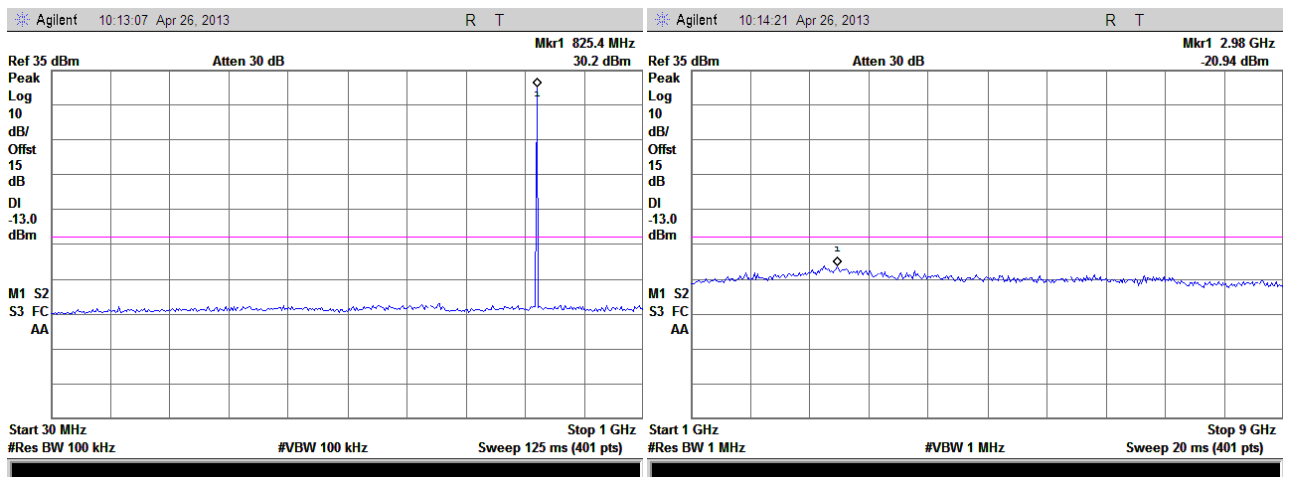
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-20.94	Plot A1toA1.1	-13	PASS
	190	836.6	-20.83	Plot A2toA2.1		PASS
	251	848.8	-20.46	Plot A3toA3.1		PASS
GSM 1900MHz	512	1850.2	-20.05	Plot B1toB1.1	-13	PASS
	661	1880.0	-20.37	Plot B2toB2.1		PASS
	810	1909.8	-19.44	Plot B3toB3.1		PASS
EDGE 850MHz	128	824.2	-20.68	Plot C1toC1.1	-13	PASS
	190	836.6	-21.3	Plot C2toC2.1		PASS
	251	848.8	< -25	Plot C3toC3.1		PASS
EDGE 1900MHz	512	1850.2	-20.25	Plot D1toD1.1	-13	PASS
	661	1880.0	-20.41	Plot D2toD2.1		PASS
	810	1909.8	-20.56	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 850MHz	4132	826.4	< -25	Plot G1toG1.1	-13	PASS
	4175	835	< -25	Plot G2toG2.1		PASS

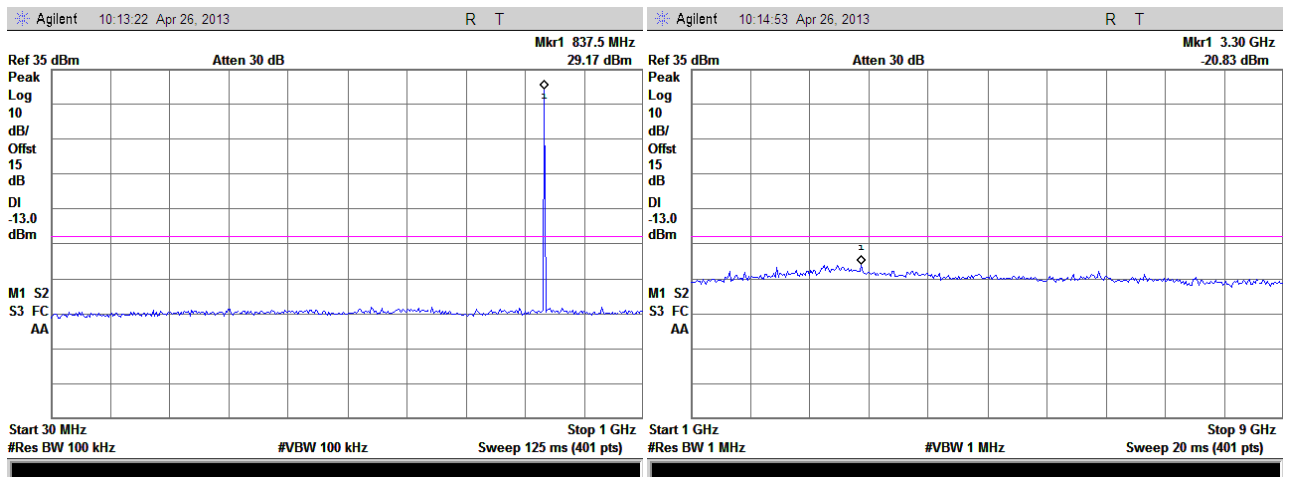
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
	4233	846.6	< -25	Plot G3toG3.1		PASS
HSDPA 1900MHz	9262	1852.4	< -25	Plot H1toH1.1	-13	PASS
	9400	1880	< -25	Plot H2toH2.1		PASS
	9538	1907.6	< -25	Plot H3toH3.1		PASS
HSUPA 850MHz	4132	826.4	< -25	Plot 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

2. Test Plots for the Whole Measurement Frequency Range:

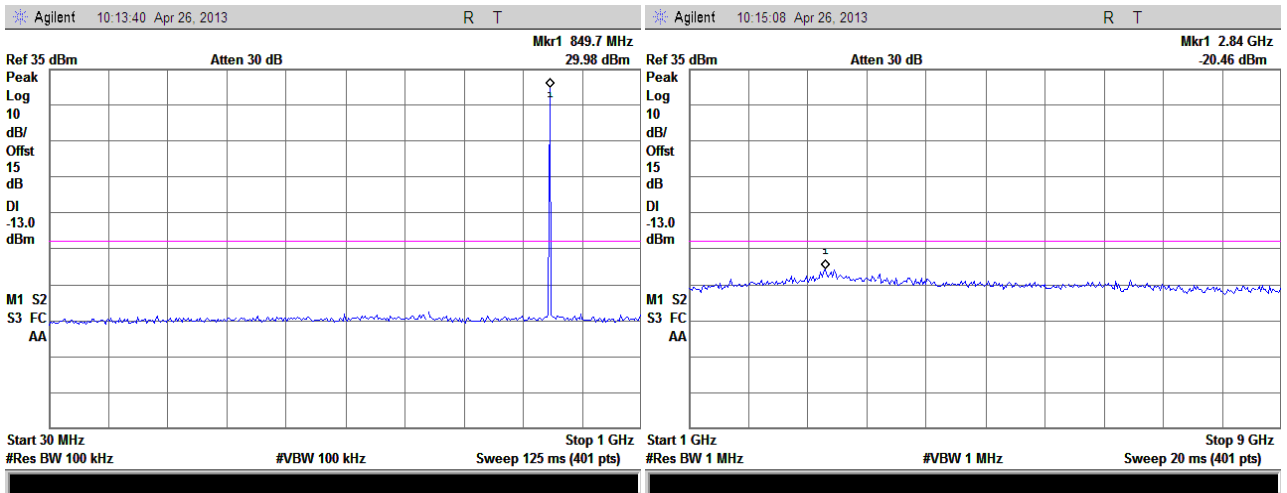
Note: the power of the EUT transmitting frequency should be ignored.



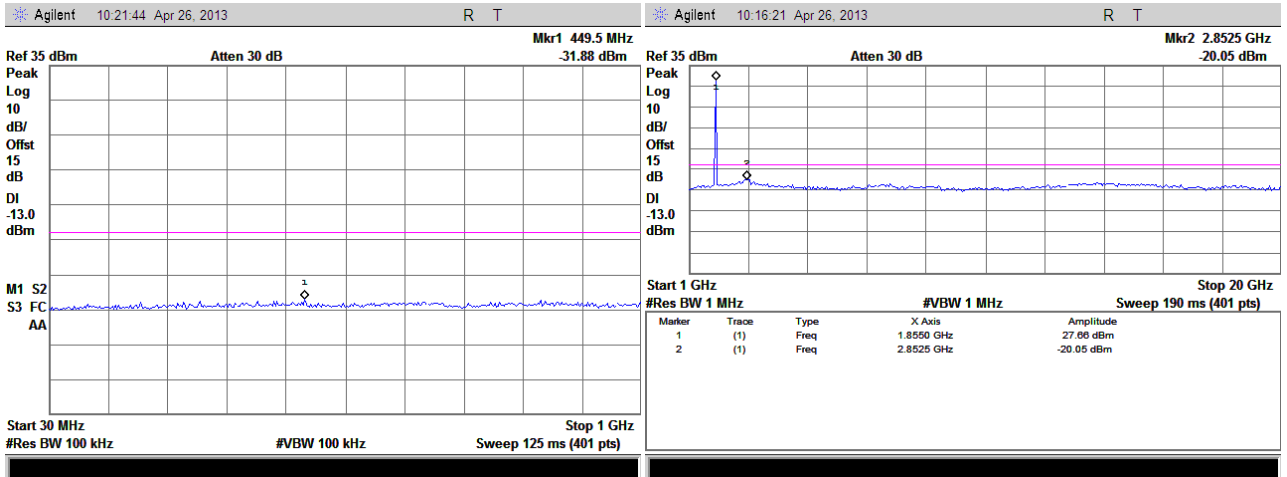
(Plot A1: GSM 850MHz Channel = 128, 30MHz to 9GHz)



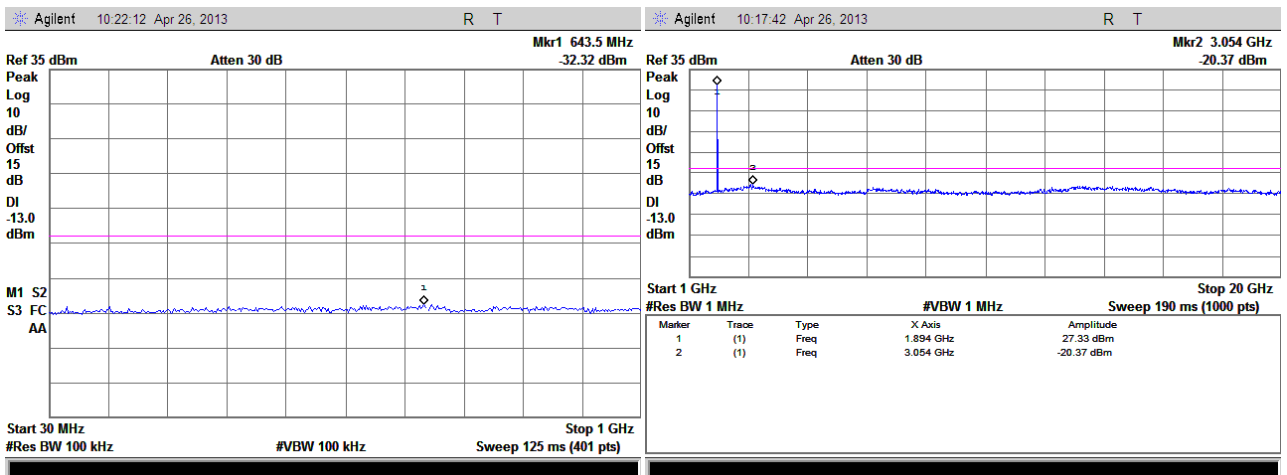
(Plot A2: GSM 850MHz Channel = 190, 30MHz to 9GHz)



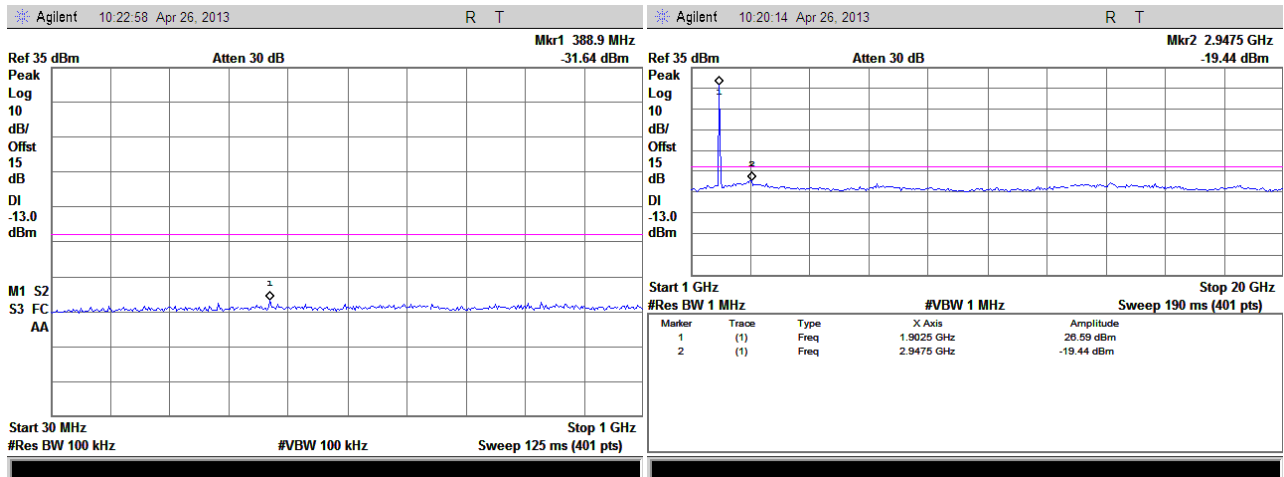
(Plot A3: GSM 850MHz Channel = 251, 30MHz to 9GHz)



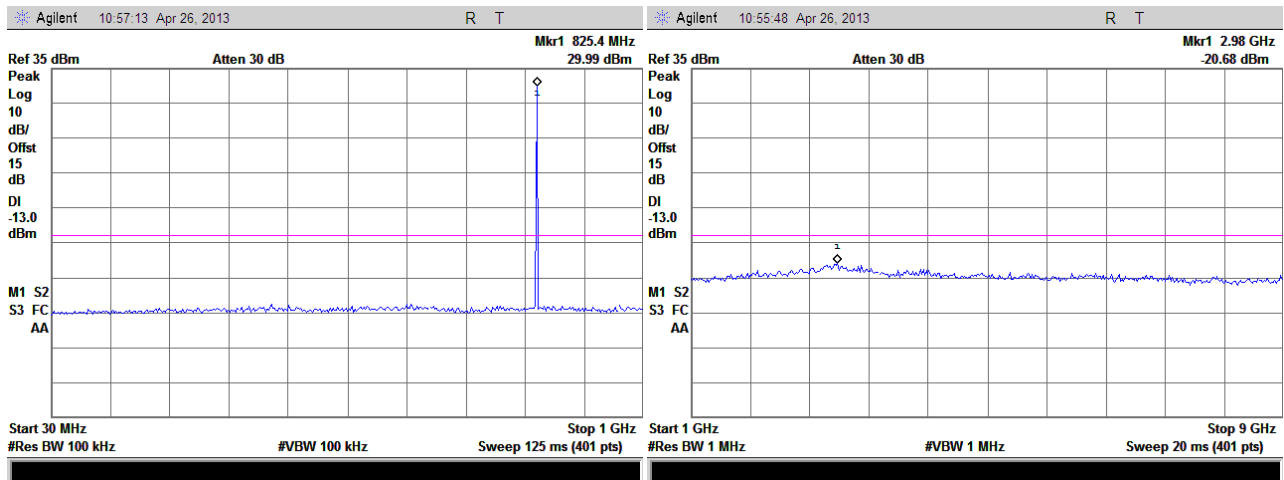
(Plot B1: GSM 1900MHz Channel = 512, 30MHz to 20GHz)



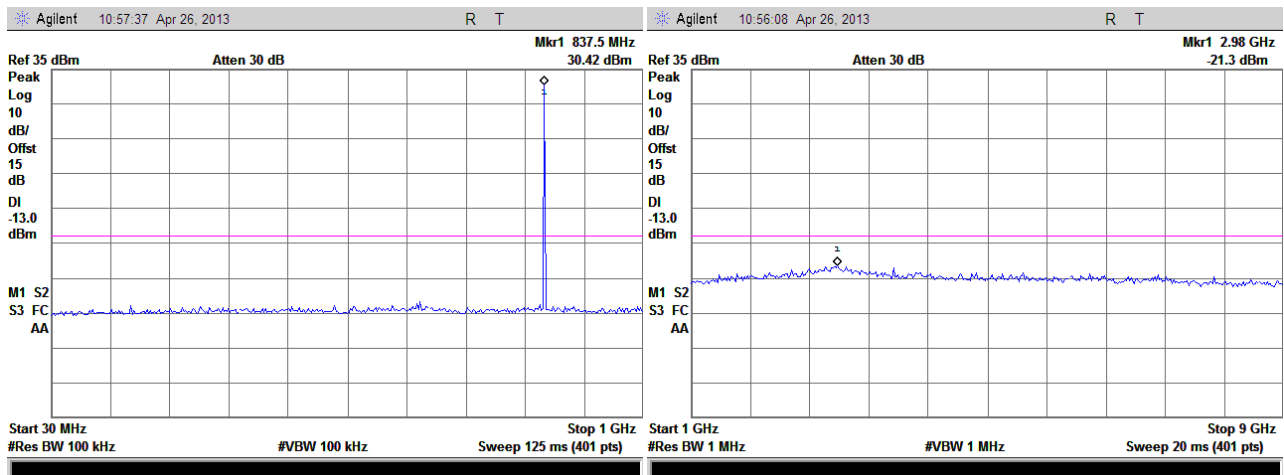
(Plot B2: GSM 1900MHz Channel = 661, 30MHz to 20GHz)



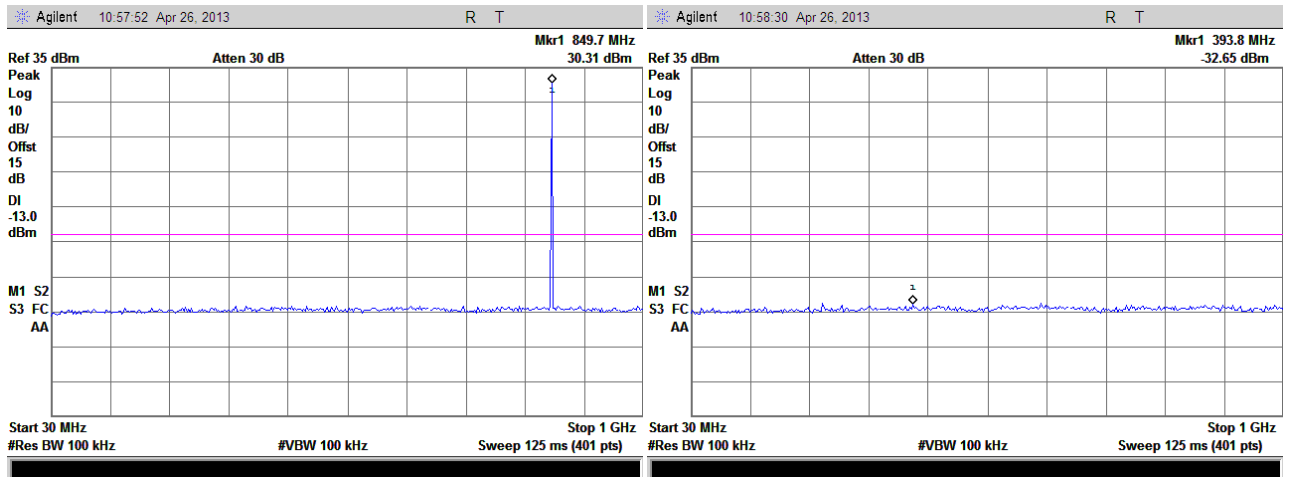
(Plot B3: GSM 1900MHz Channel = 810, 30MHz to 20GHz)



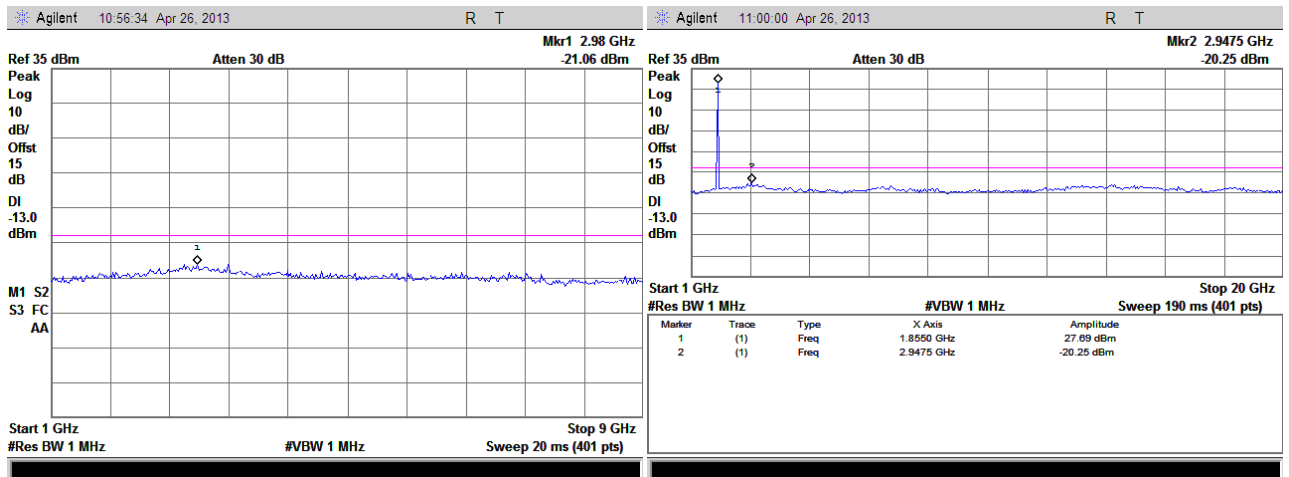
(Plot C1: EDGE 850MHz Channel = 128, 30MHz to 9GHz)



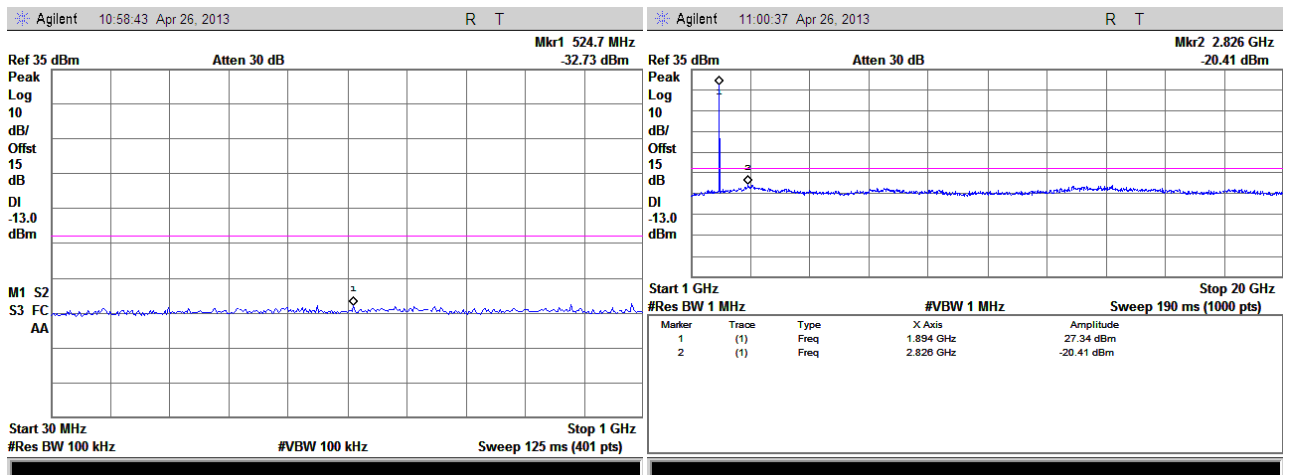
(Plot C2: EDGE 850MHz Channel = 190, 30MHz to 9GHz)



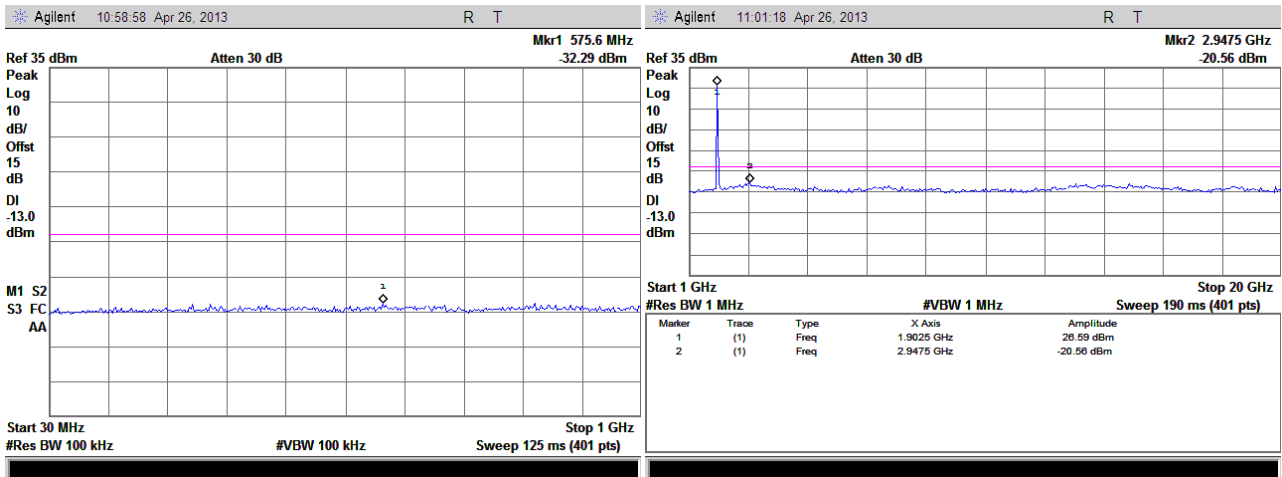
(Plot C3: EDGE 850MHz Channel = 251, 30MHz to 9GHz)



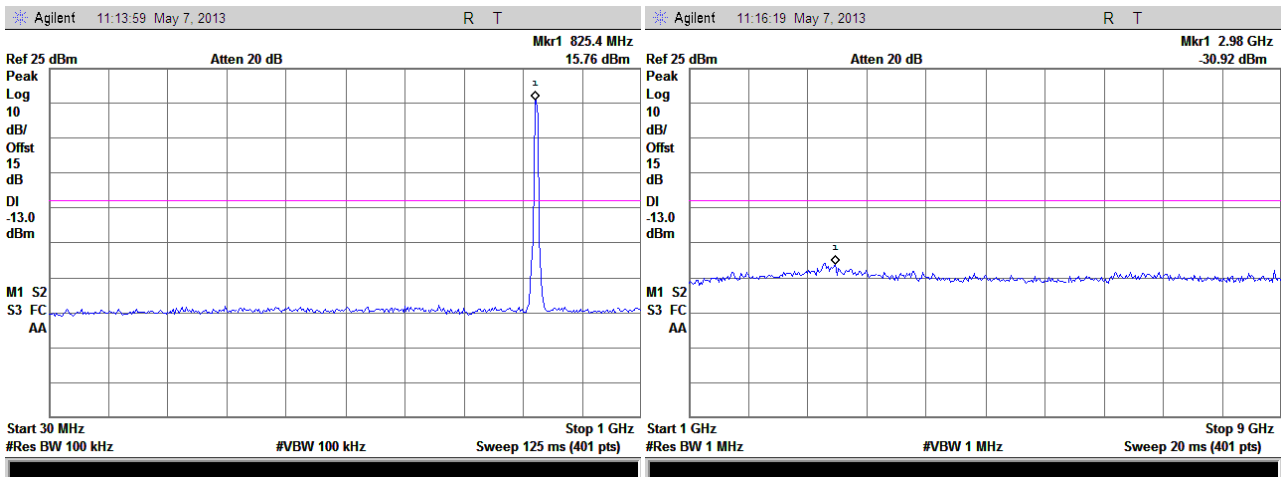
(Plot D1: EDGE 1900MHz Channel = 512, 30MHz to 20GHz)



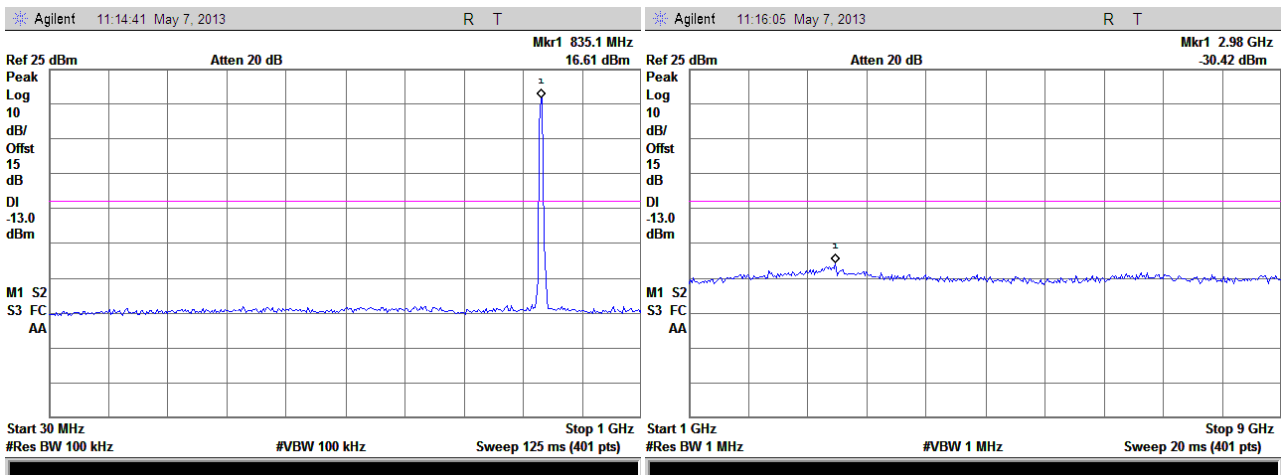
(Plot D2: EDGE 1900MHz Channel = 661, 30MHz to 20GHz)



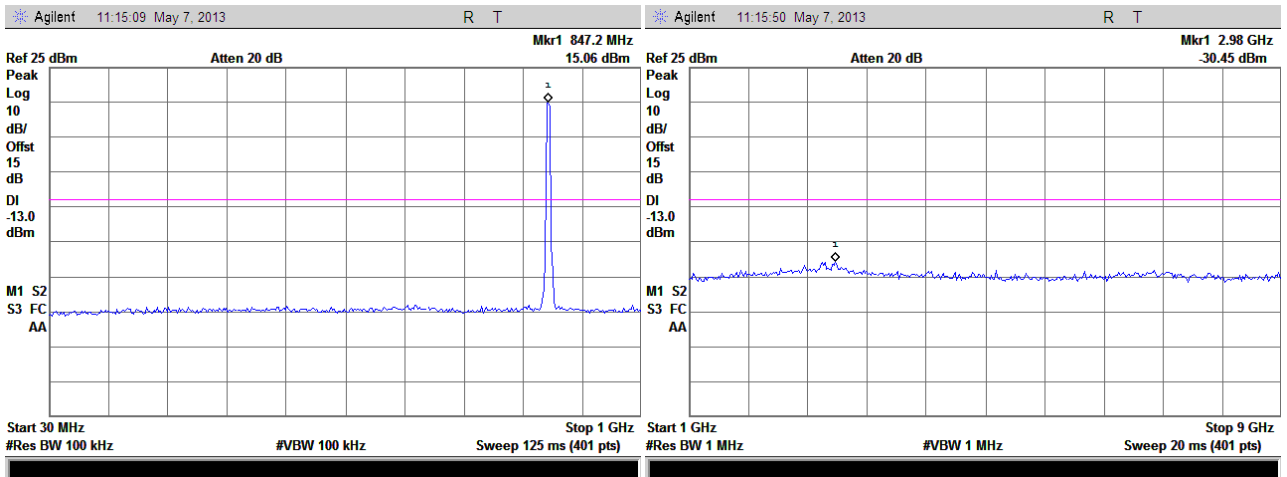
(Plot D3: EDGE 1900MHz Channel = 810, 30MHz to 20GHz)



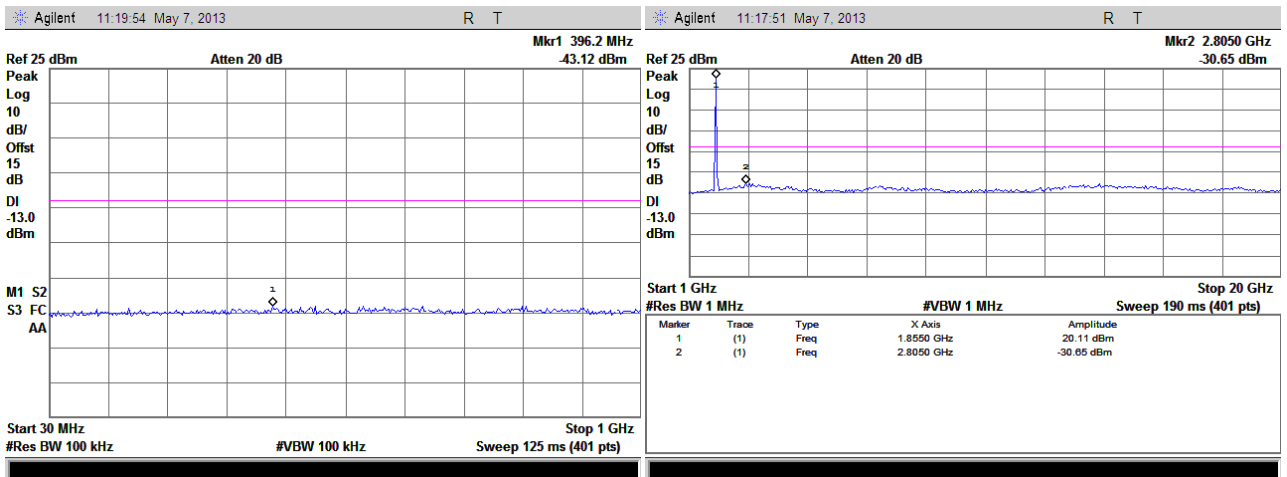
(Plot E1: WCDMA850MHz Channel = 4132, 30MHz to 9GHz)



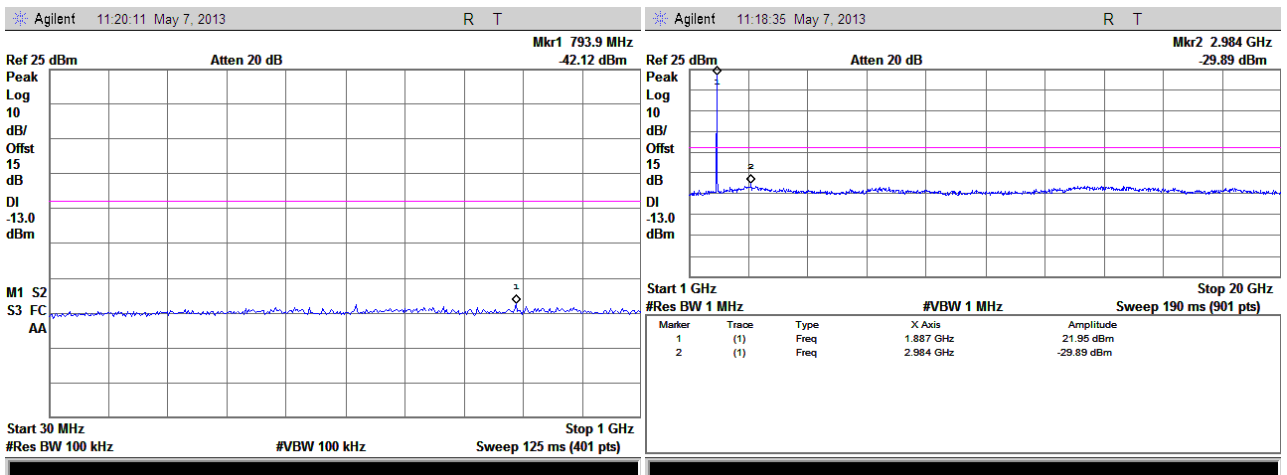
(Plot E2: WCDMA850MHz Channel = 4175, 30MHz to 9GHz)



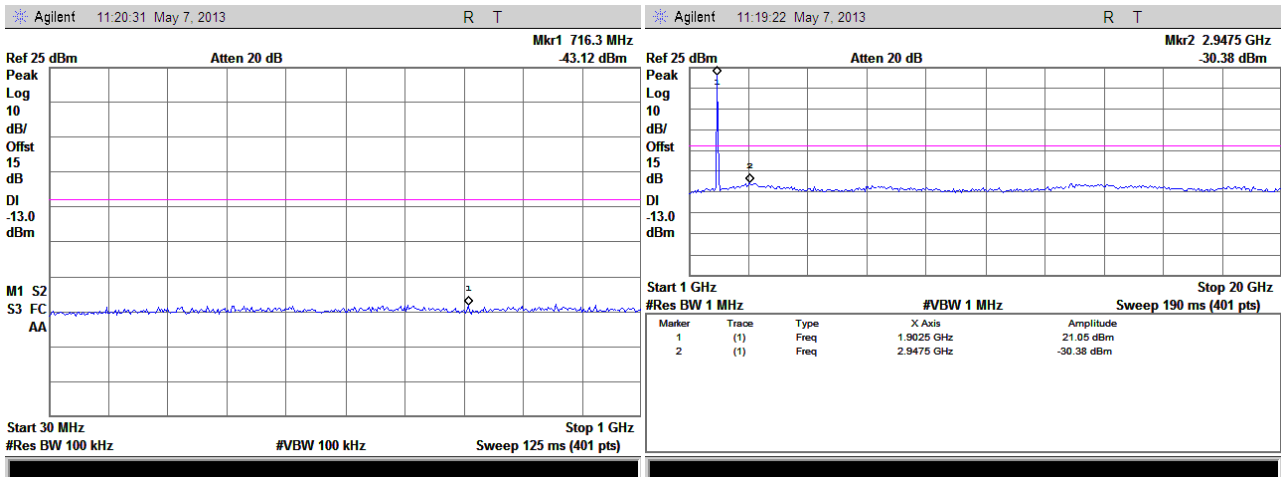
(Plot E3: WCDMA850MHz Channel = 4233, 30MHz to 9GHz)



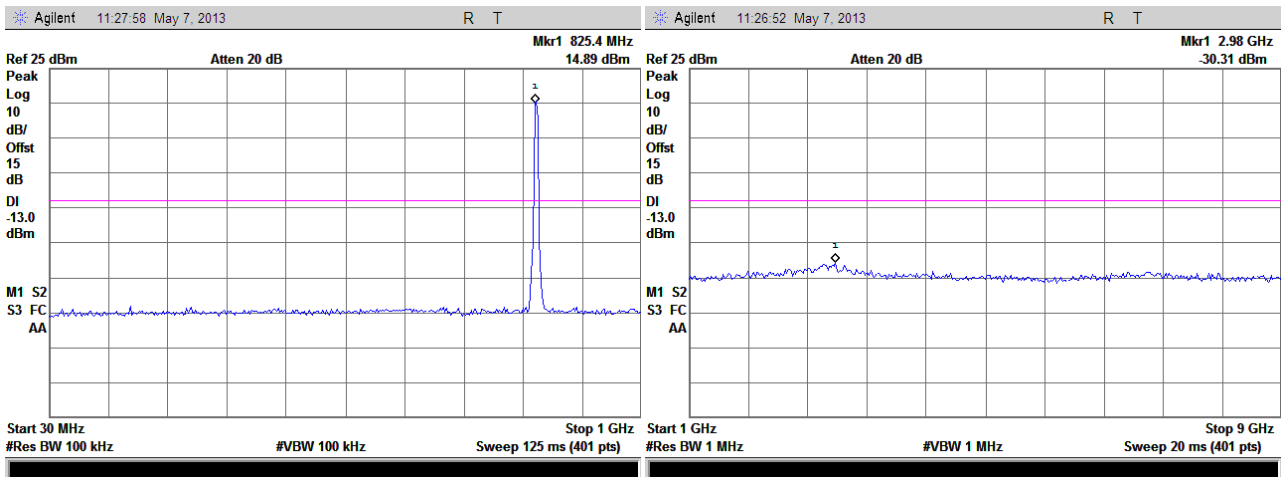
(Plot F1: WCDMA1900MHz Channel = 9262, 30MHz to 20GHz)



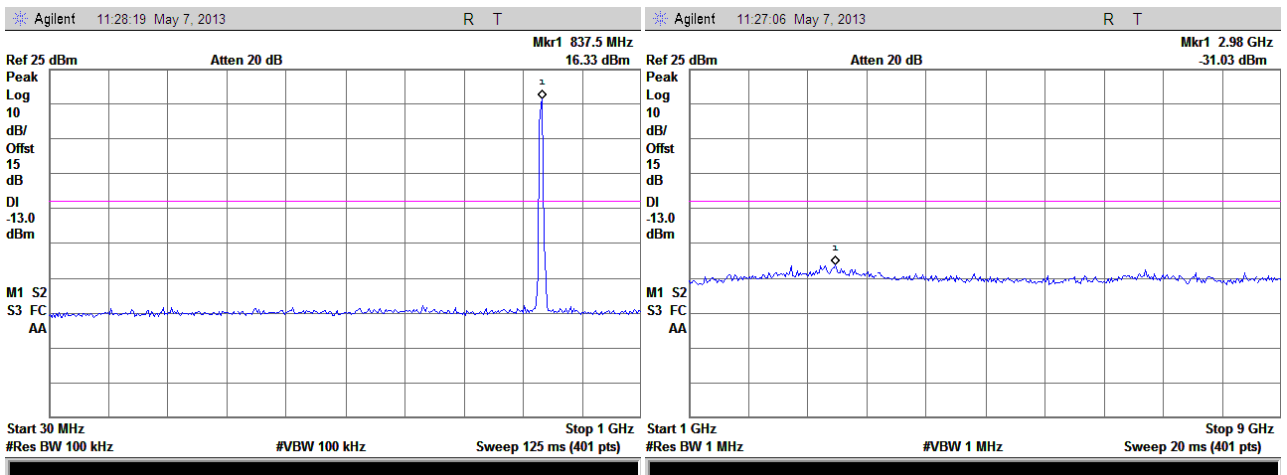
(Plot F2: WCDMA1900MHz Channel = 9400, 30MHz to 20GHz)



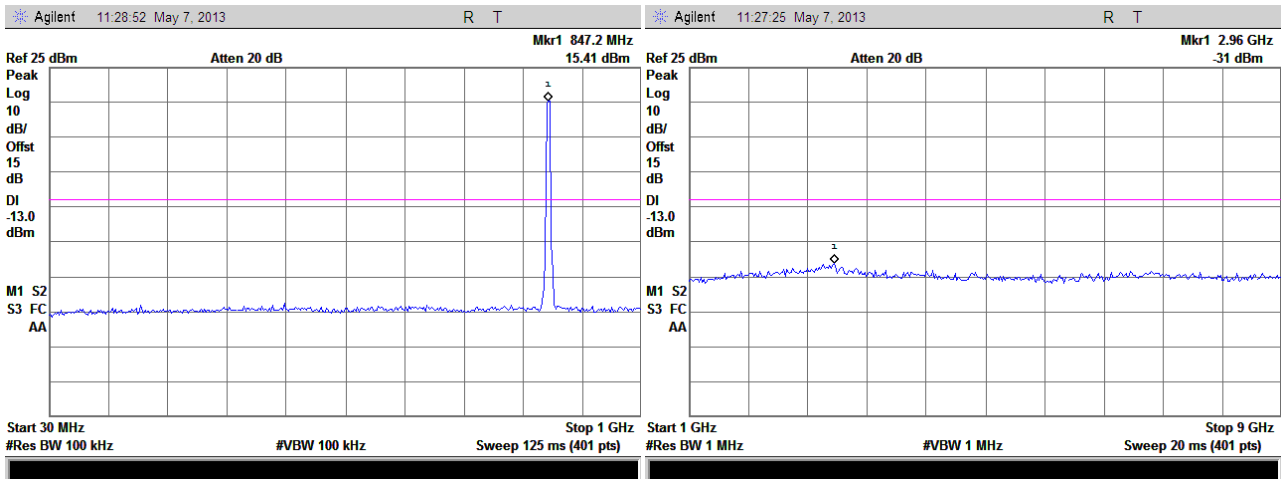
(Plot F3: WCDMA1900MHz Channel = 9538, 30MHz to 20GHz)



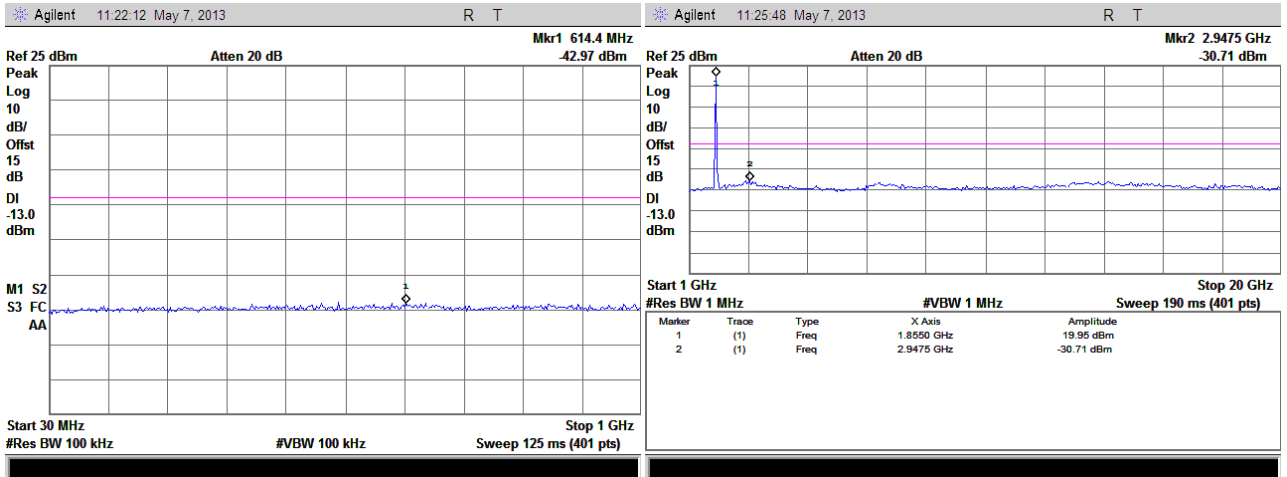
(Plot G1: HSDPA 850MHz Channel = 4132, 30MHz to 9GHz)



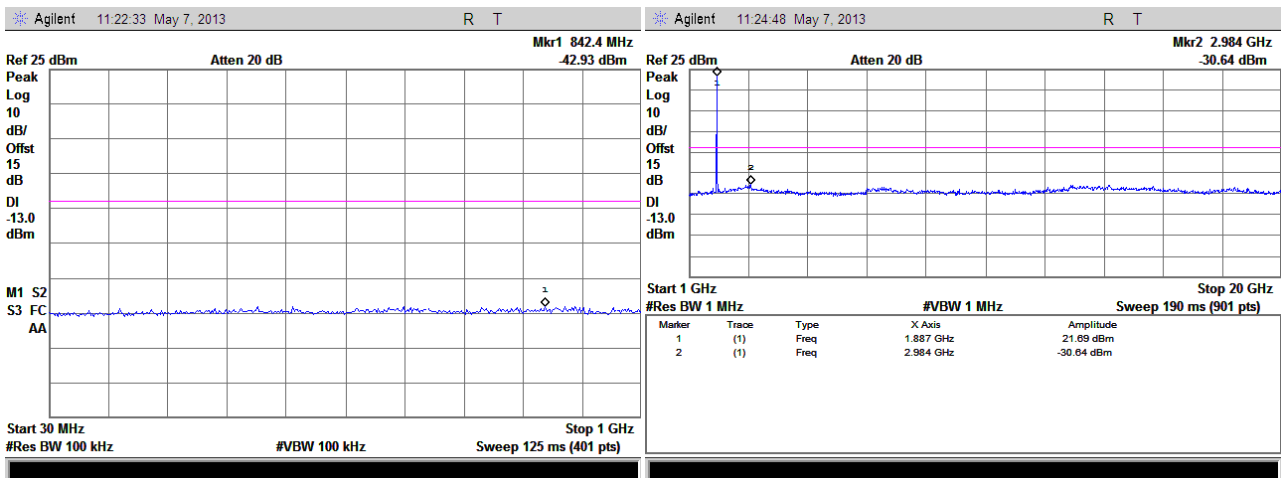
(Plot G2: HSDPA 850MHz Channel = 4175, 30MHz to 9GHz)



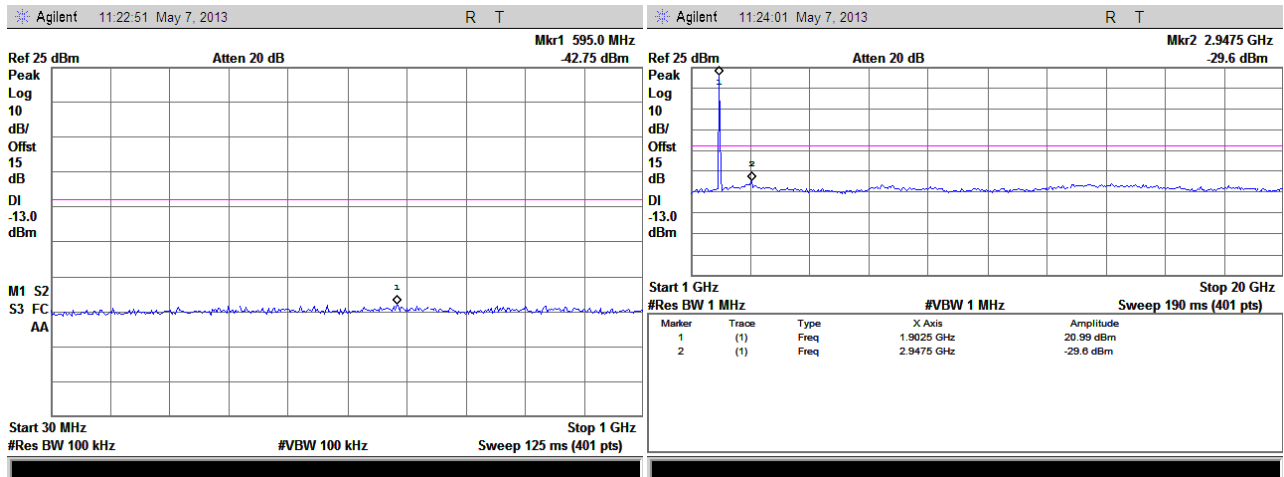
(Plot G3: HSDPA850MHz Channel = 4233, 30MHz to 9GHz)



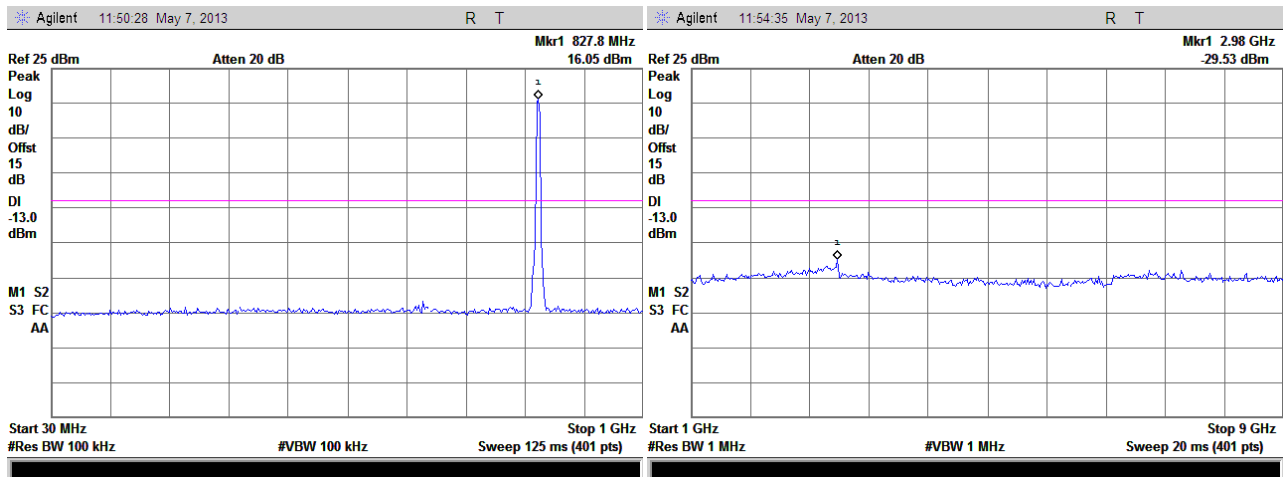
(Plot H1: HSDPA1900MHz Channel = 9262, 30MHz to 20GHz)



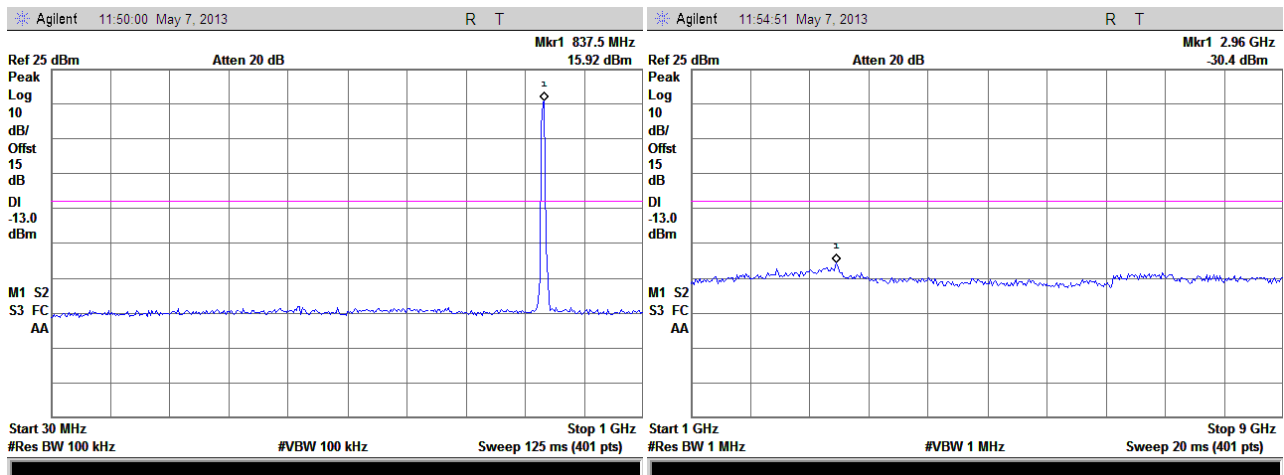
(Plot H2: HSDPA1900MHz Channel = 9400, 30MHz to 20GHz)



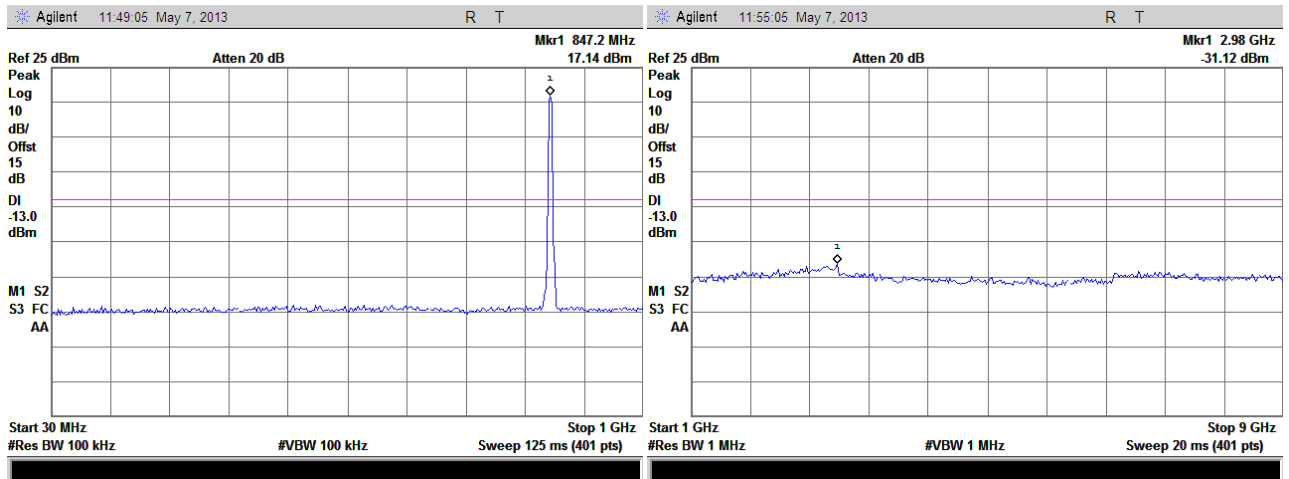
(Plot H3: HSDPA1900MHz Channel = 9538, 30MHz to 20GHz)



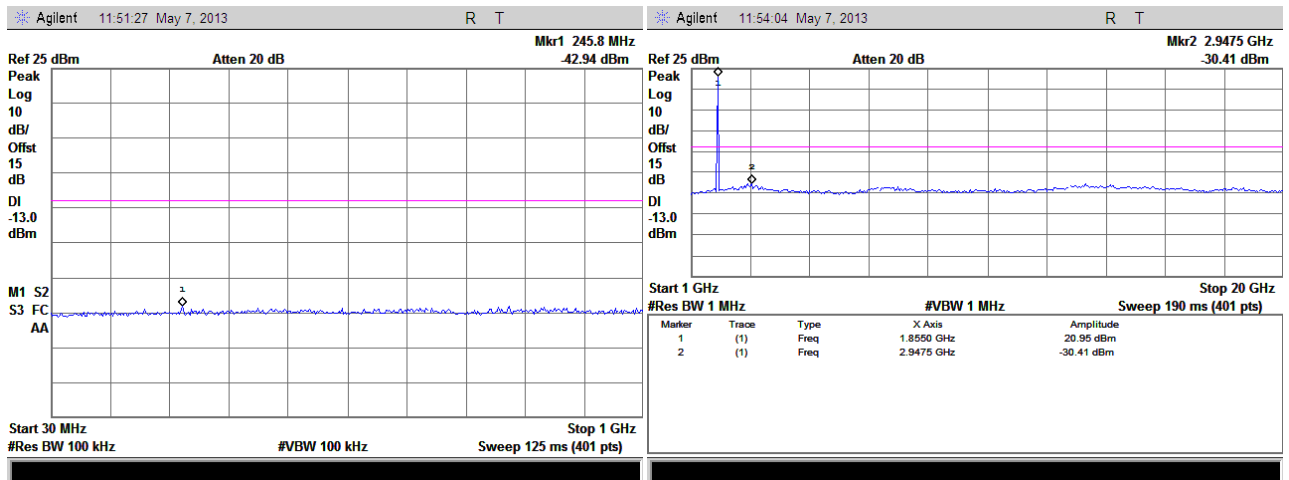
(Plot I 1: HSUPA 850MHz Channel = 4132, 30MHz to 9GHz)



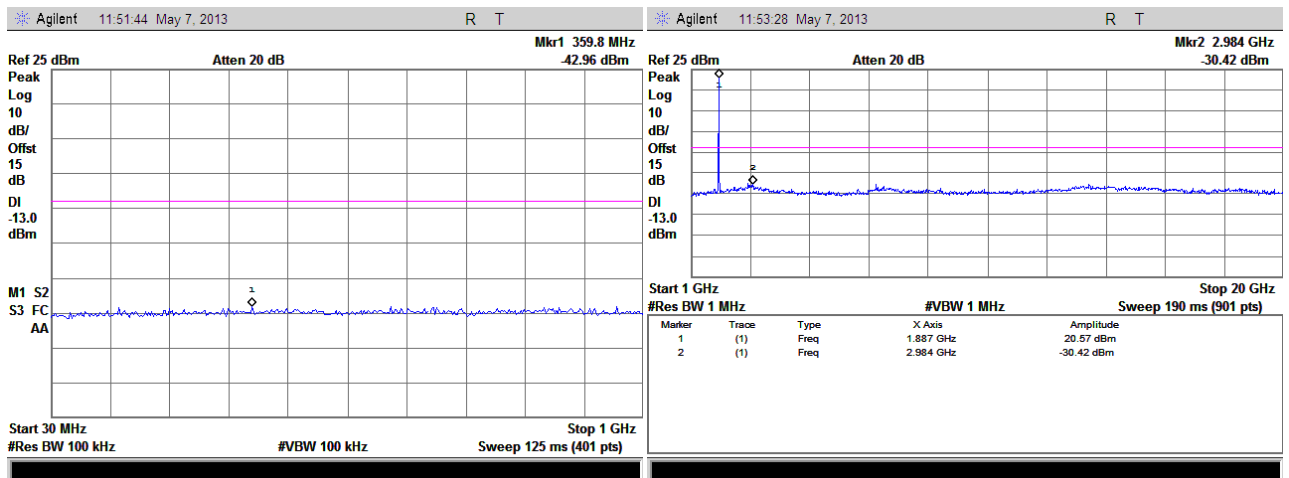
(Plot I 2: HSUPA 850MHz Channel = 4175, 30MHz to 9GHz)



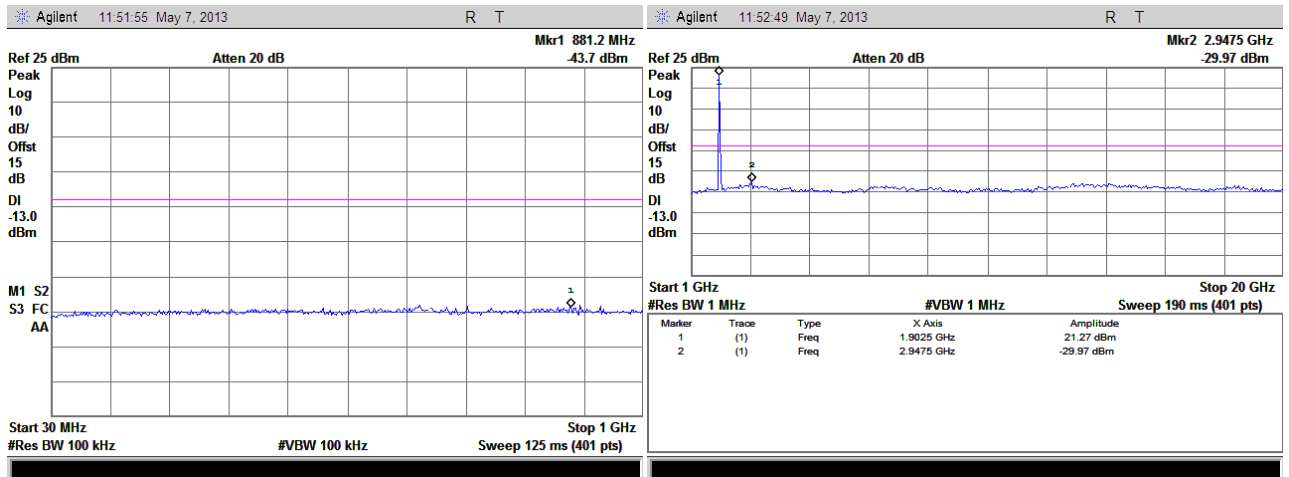
(Plot I 3: HSUPA850MHz Channel = 4233, 30MHz to 9GHz)



(Plot J 1: HSUPA1900MHz Channel = 9262, 30MHz to 20GHz)



(Plot J 2: HSUPA1900MHz Channel = 9400, 30MHz to 20GHz)



(Plot J 3: HSUPA1900MHz Channel = 9538, 30MHz to 20GHz)

2.6 Band Edge

2.6.1 Requirement

According to FCC section 22.917(b) and FCC section 24.238(b), 27.53(g)(h) 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.

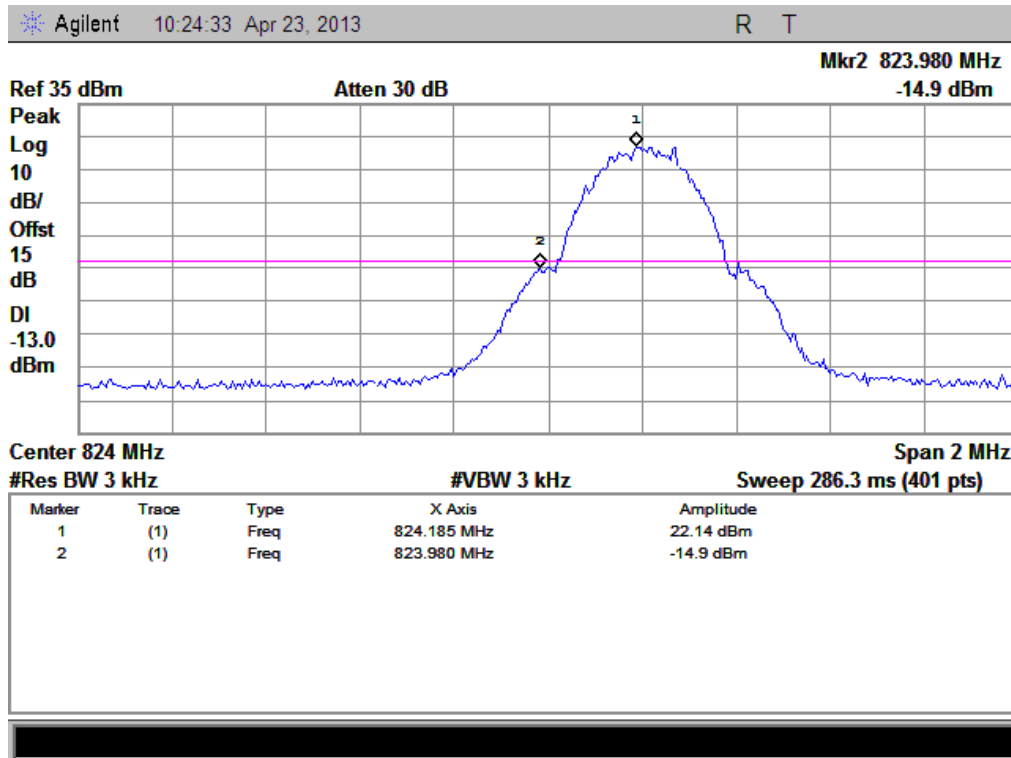
2.6.3 Test Result

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

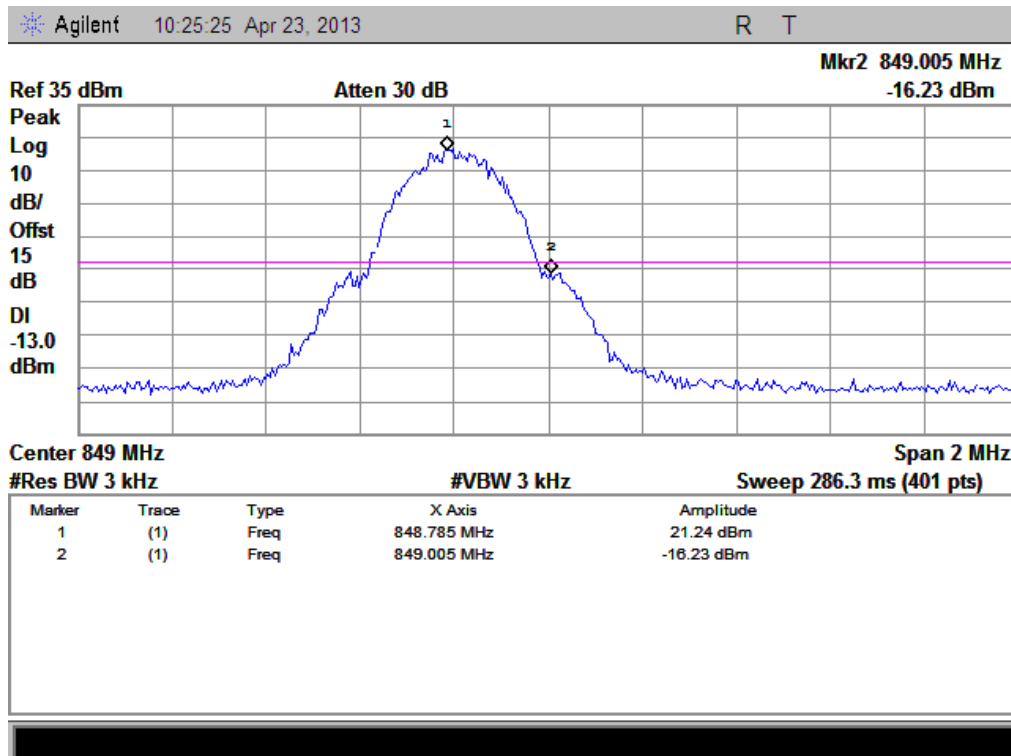
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-14.90	Plat A	-13	PASS
	251	848.8	-16.23	Plot B		PASS
GSM 1900MHz	512	1850.2	-16.62	Plat C	-13	PASS
	810	1909.8	-17.22	Plot D		PASS
EDGE 850MHz	128	824.2	-15.21	Plat E	-13	PASS
	251	848.8	-14.43	Plot F		PASS
EDGE 1900MHz	512	1850.2	-17.00	Plat G	-13	PASS
	810	1909.8	-17.29	Plot H		PASS
WCDMA 850MHz	4132	826.4	-15.96	Plat I	-13	PASS
	4233	846.6	-16.00	Plot J		PASS
WCDMA 1900MHz	9262	1852.4	-15.6	Plat K	-13	PASS
	9538	1907.6	-15.18	Plot L		PASS
HSDPA 850MHz	4132	826.4	-16.31	Plat M	-13	PASS
	4233	846.6	-15.85	Plot N		PASS
HSDPA 1900MHz	9262	1852.4	-15.63	Plat O	-13	PASS
	9538	1907.6	-16.13	Plot P		PASS
HSUPA 850MHz	4132	826.4	-17.29	Plat Q	-13	PASS
	4233	846.6	-17.66	Plot R		PASS
HSUPA 1900MHz	9262	1852.4	-18.13	Plat S	-13	PASS
	9538	1907.6	-14.71	Plot T		PASS

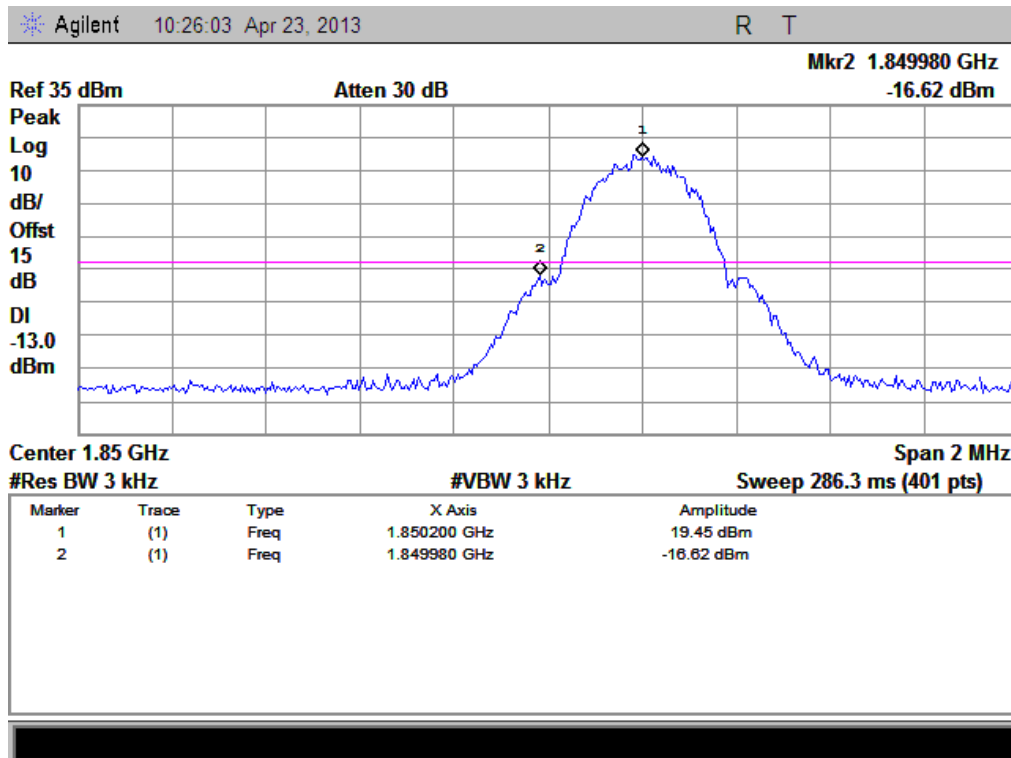
2. Test Plots:



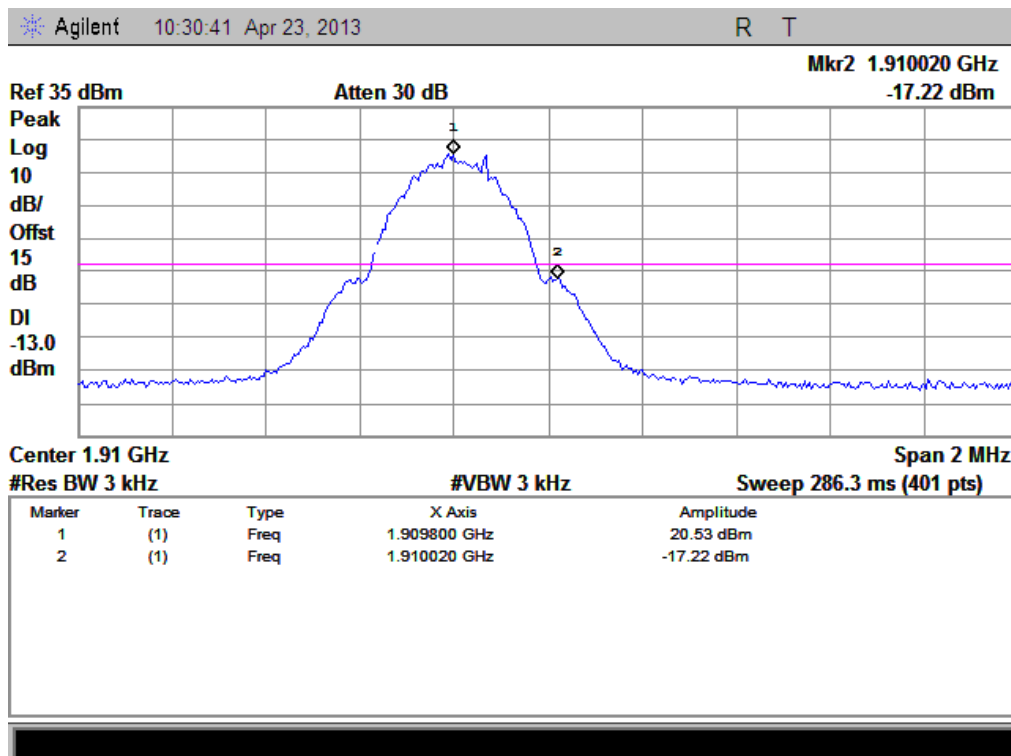
(Plot A: GSM 850 Channel = 128)



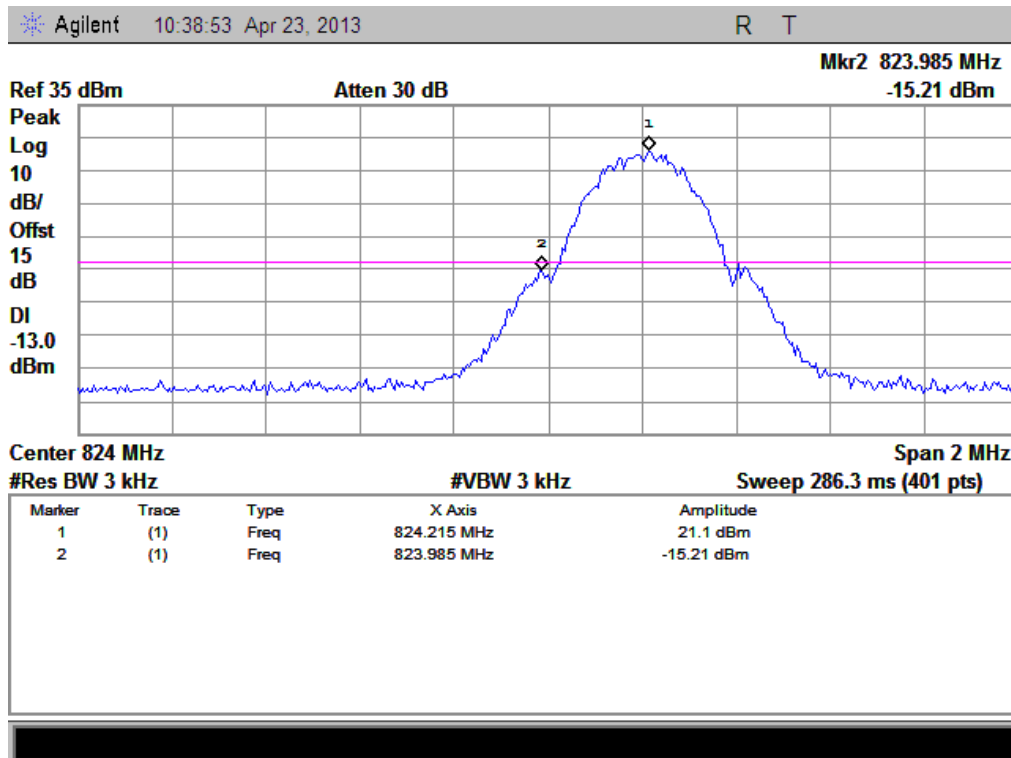
(Plot B: GSM 850 Channel = 251)



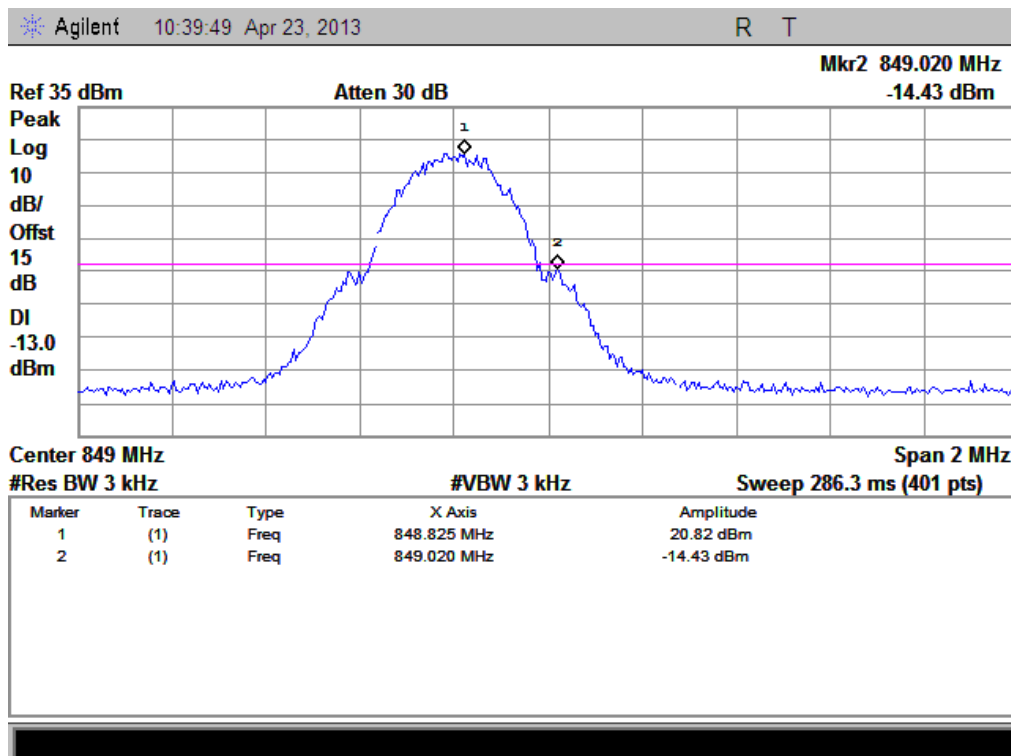
(Plot C: GSM 1900 Channel = 512)



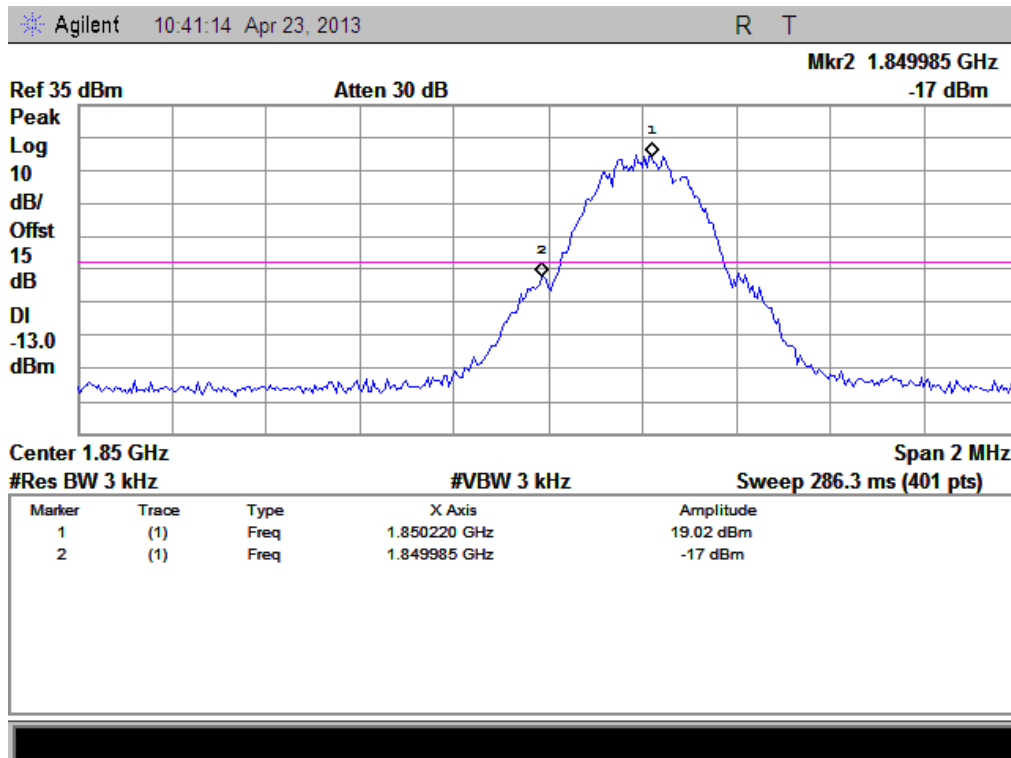
(Plot D: GSM 1900 Channel = 810)



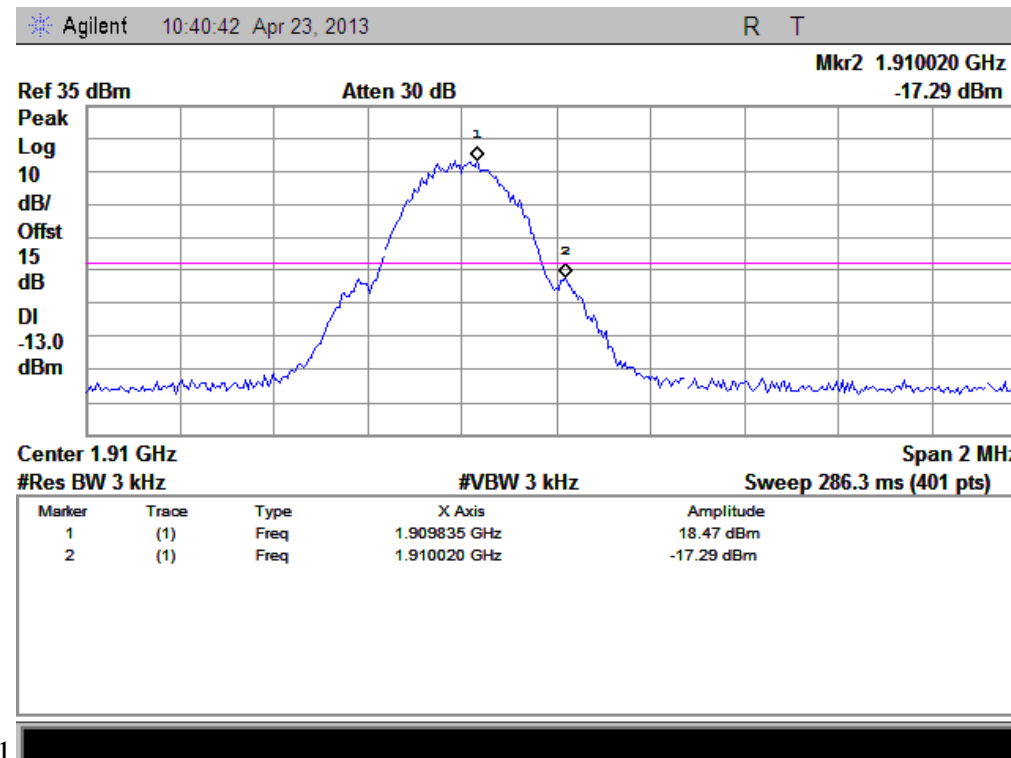
(Plot E: EDGE 850 Channel = 128)



(Plot F: EDGE 850 Channel = 251)

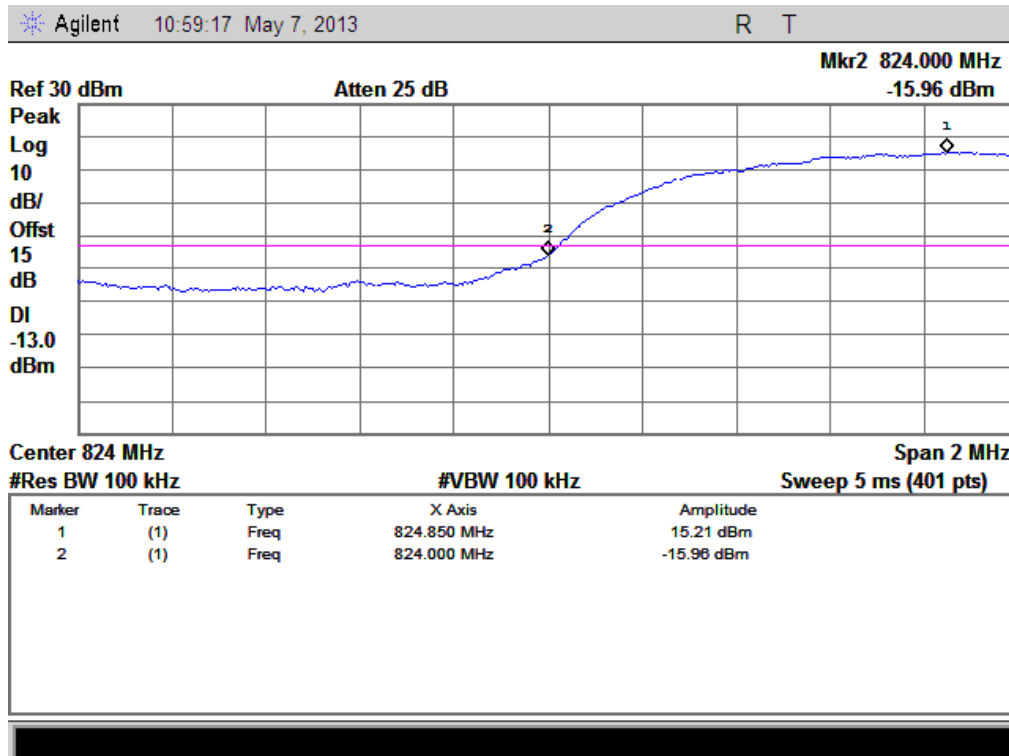


(Plot G: EDGE 1900 Channel = 512)

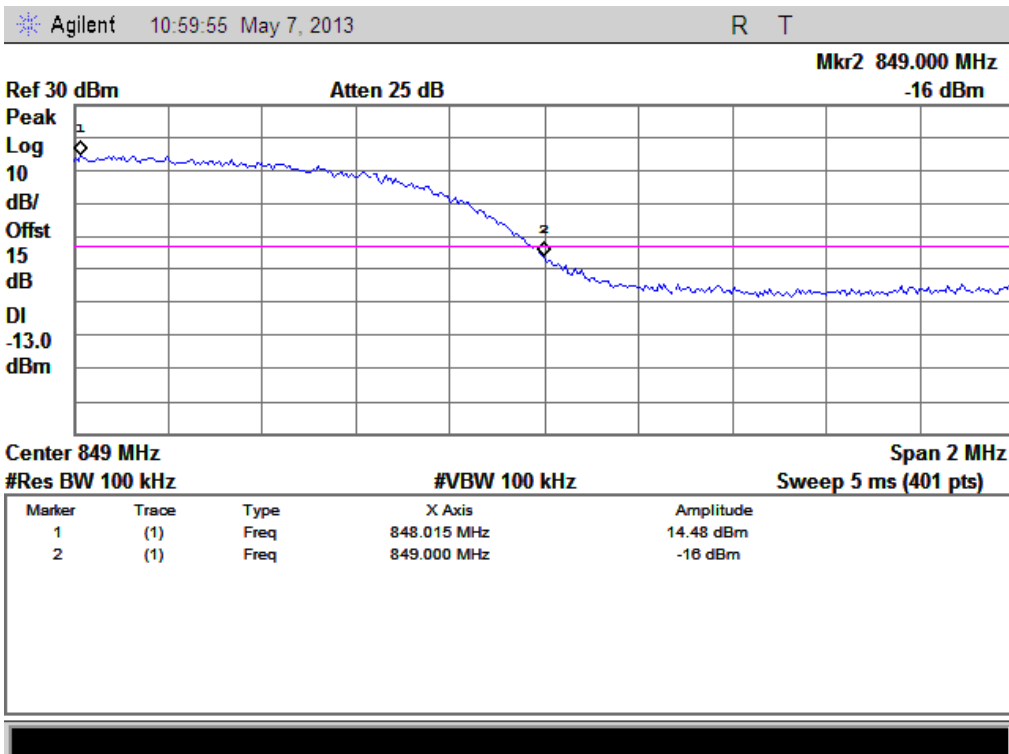


1

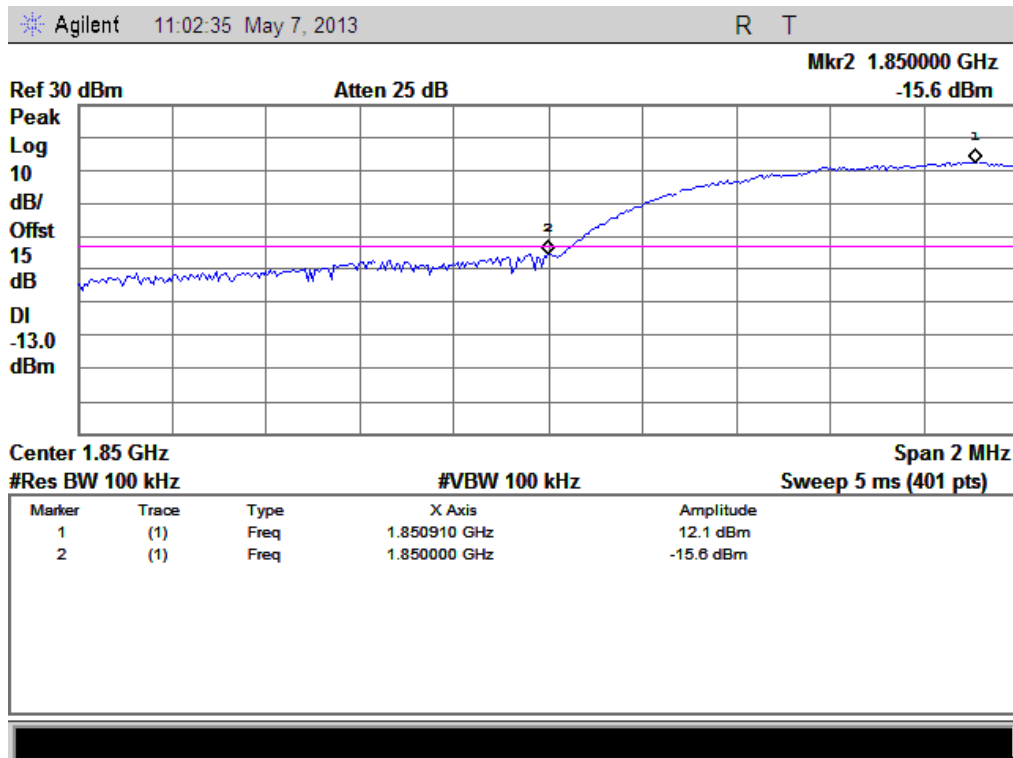
(Plot H: EDGE 1900 Channel = 810)



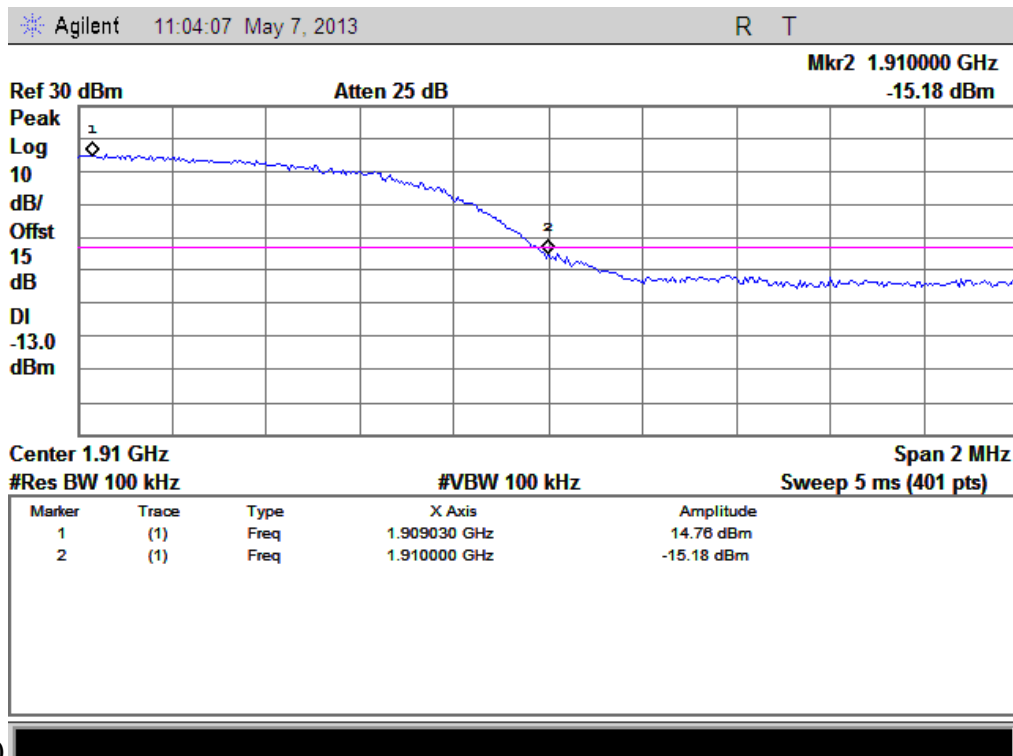
(Plot I: WCDMA 850 Channel = 4132)



(Plot J: WCDMA 850 Channel = 4233)

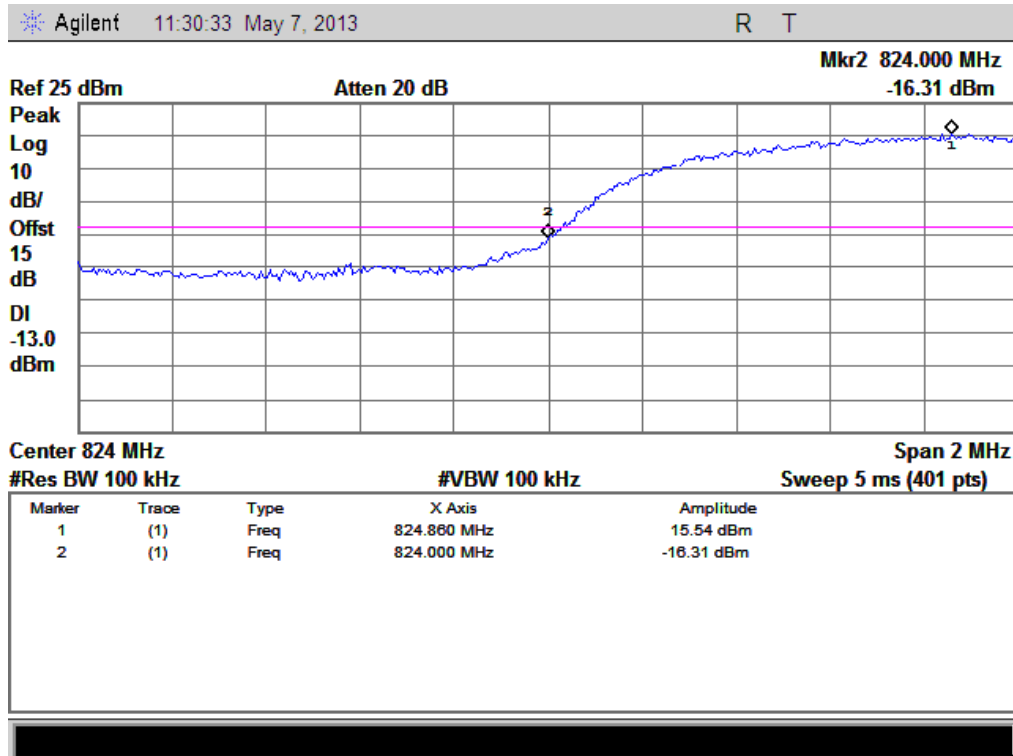


(Plot K: WCDMA 1900 Channel = 9262)

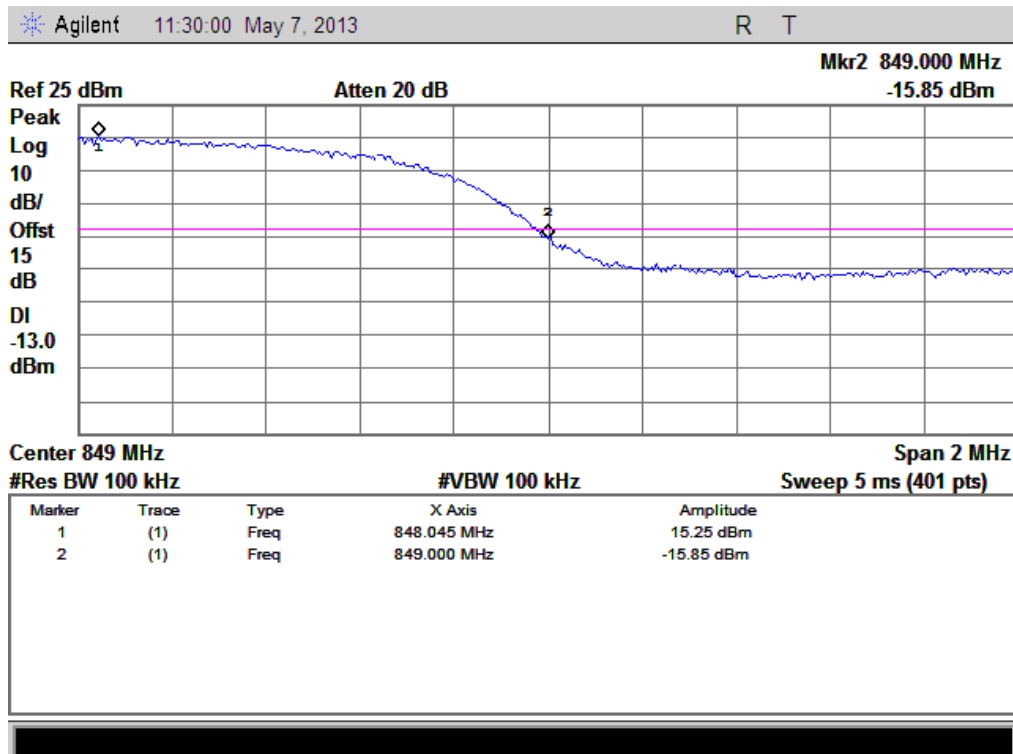


10

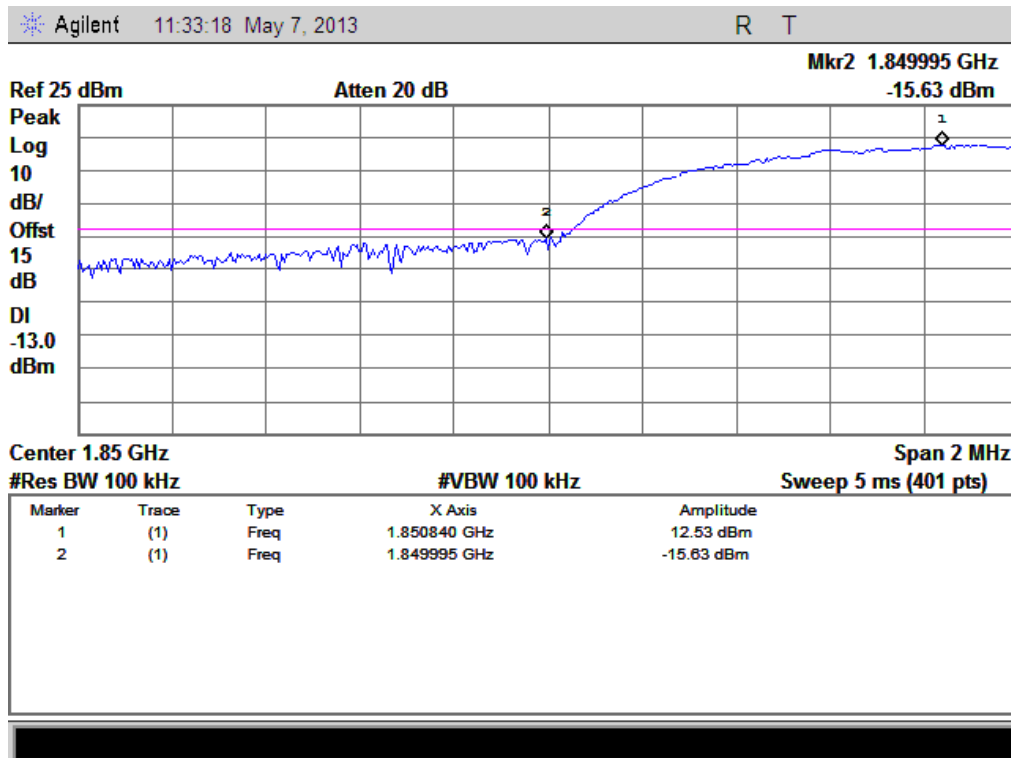
(Plot L: WCDMA 1900 Channel = 9538)



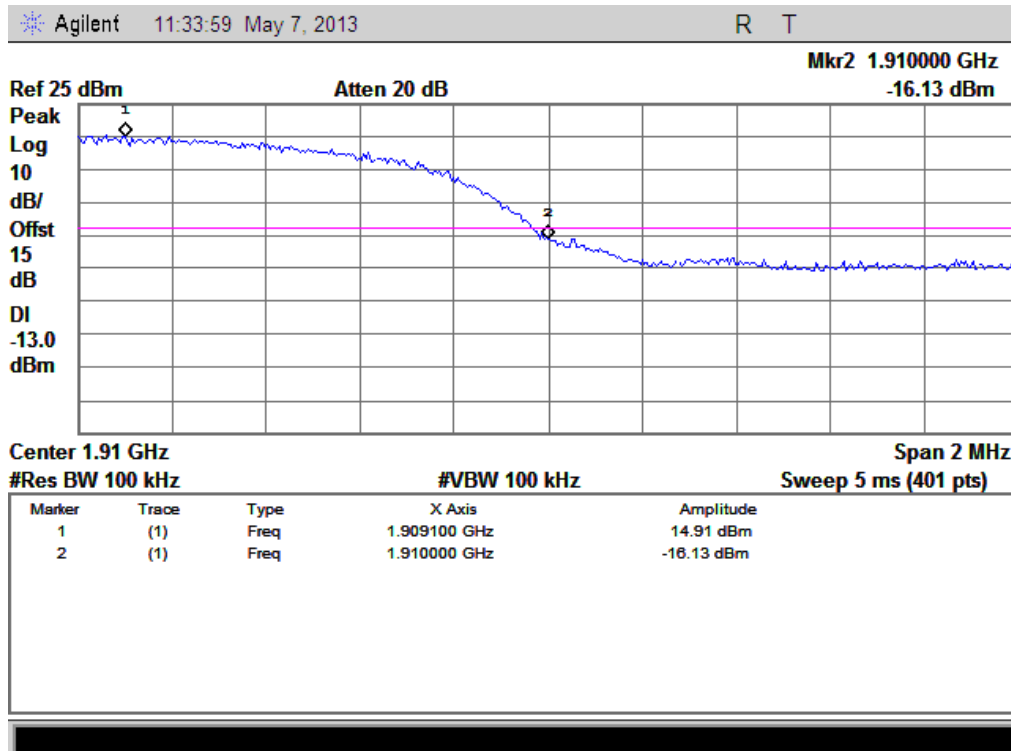
(Plot M: HSDPA 850 Channel = 4132)



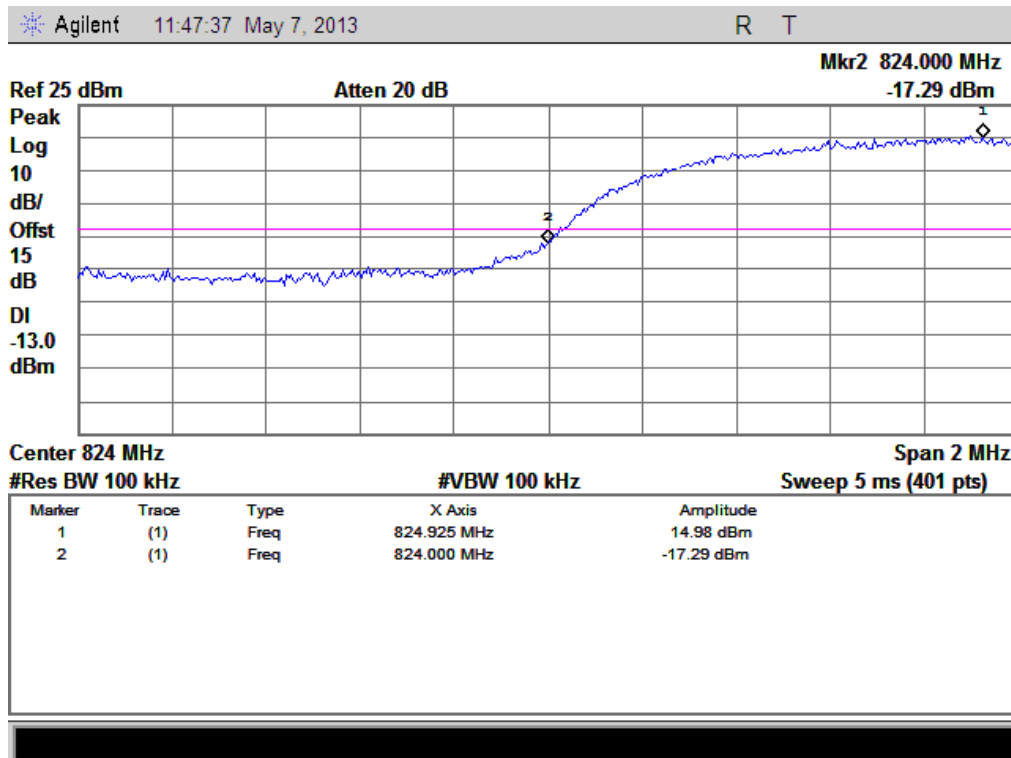
(Plot N: HSDPA850 Channel = 4233)



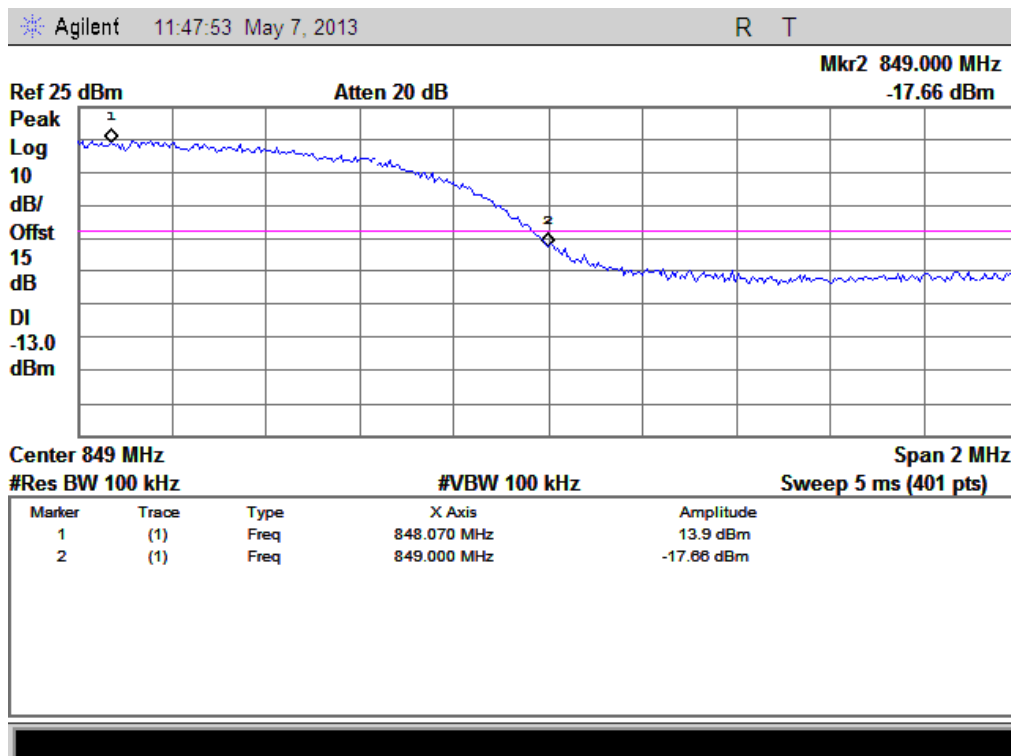
(Plot O: HSDPA 1900 Channel = 9262)



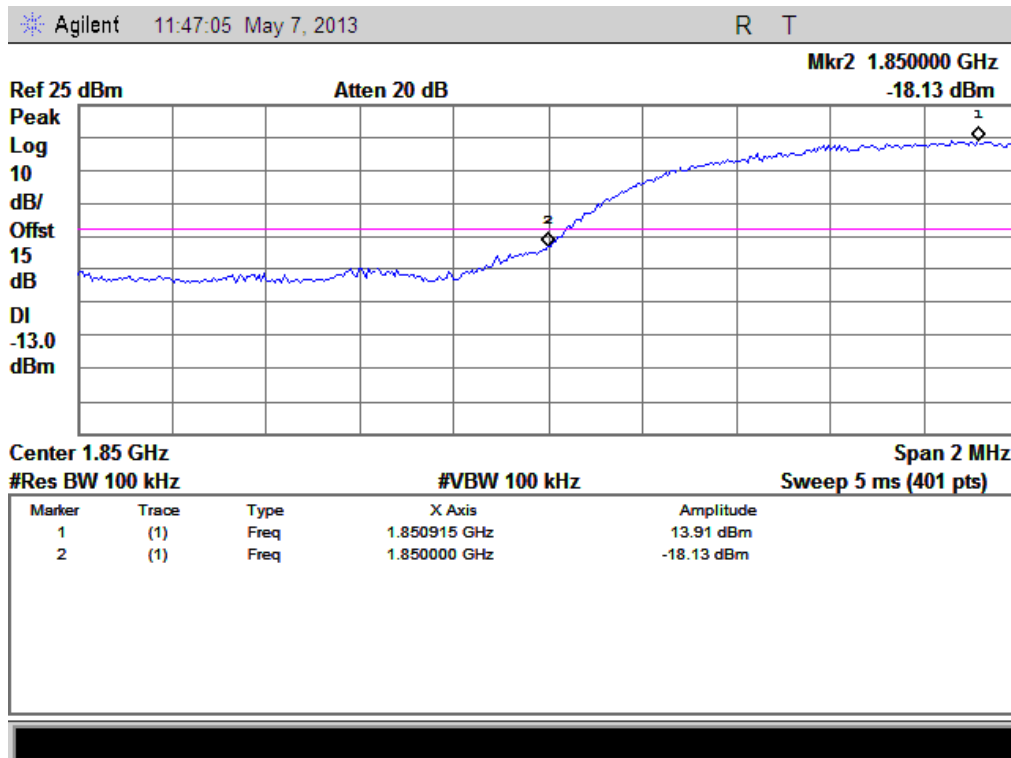
(Plot P: HSDPA 1900 Channel = 9538)



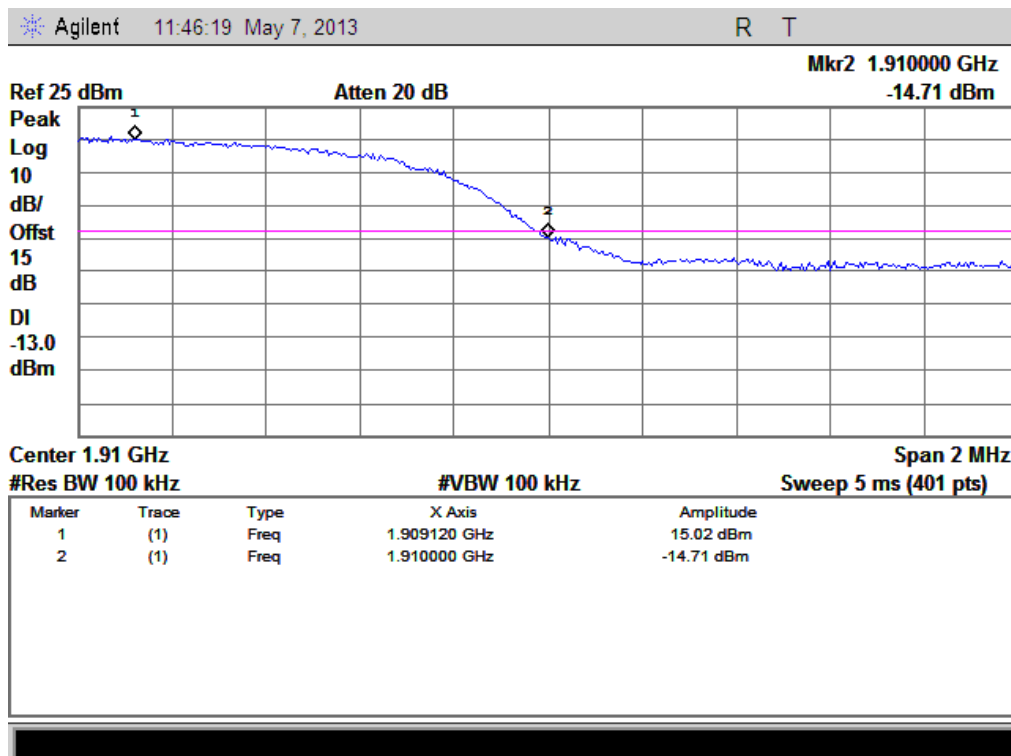
(Plot Q: HSUPA 850 Channel = 4132)



(Plot R: HSUPA850 Channel = 4233)



(Plot S: HSUPA 1900 Channel = 9262)



(Plot T: HSUPA 1900 Channel = 9538)

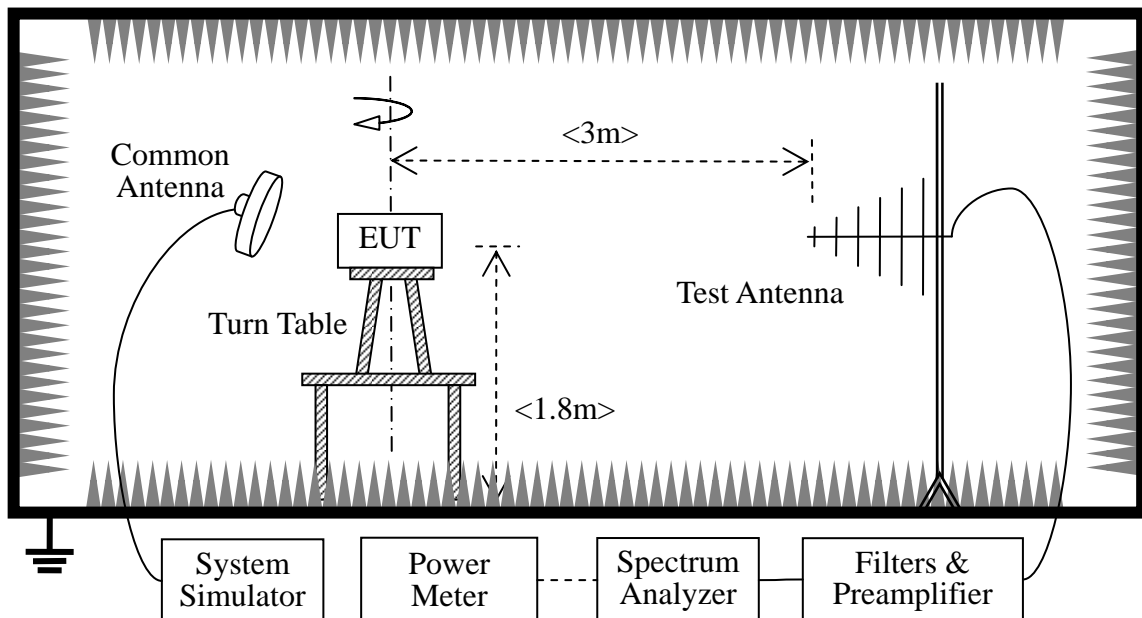
2.7 Transmitter Radiated Power (EIRP/ERP)

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 32.74dBm, GSM 1900 28.56dBm, EGPRS 850 32.73dBm, EGPRS 28.58. WCDMA 850 23.63 dBm, WCDMA 1900 23.66 dBm, Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

- Minimum RF power: GSM 850 3.0dBm, GSM 1900 0.27dBm, EGPRS 850 3.1dBm, EGPRS 1900

0.21dBm ,WCDMA 850 2.03dBm, 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	2012.05.12	2013.05.11
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05.12	2013.05.11
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05.12	2013.05.11
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2012.05.12	2013.05.11
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2012.05.12	2013.05.11
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2012.05.12	2013.05.11
Pre-AMPs	lucix	S10M100L380 2	S020180L32 03	2012.05.12	2013.05.11
Notch Filter	COM-MW	ZBSF-C836.5- 25-X	NA	2012.05.12	2013.05.11
Notch Filter	COM-MW	ZBSF-C1747.5 -75-X2	NA	2012.05.12	2013.05.11
Notch Filter	COM-MW	ZBSF-C1880- 60-X2	NA	2012.05.12	2013.05.11

2.7.3 Test Result

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

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

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

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

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

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

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

A_{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	30.86	1.219	Plot A ^{Note 1}	38.5	7	PASS
	190	836.60	5	31.21	1.321				PASS
	251	848.80	5	32.13	1.633				PASS
GPRS 850MHz	128	824.20	5	29.84	0.964	Plot B ^{Note 1}	38.5	7	PASS
	190	836.60	5	29.97	0.993				PASS
	251	848.80	5	30.35	1.084				PASS
EGPRS 850MHz	128	824.20	5	30.8	1.202	Plot C ^{Note 1}	38.5	7	PASS
	190	836.60	5	31.22	1.324				PASS
	251	848.80	5	32.1	1.622				PASS

Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 1900MHz	512	1850.2	0	28.2	0.661	Plot D ^{Note 1}	33	2	PASS
	661	1880.0	0	28.45	0.700				PASS
	810	1909.8	0	28.32	0.679				PASS
GPRS 1900MHz	512	1850.2	0	27.58	0.573	Plot E ^{Note 1}	33	2	PASS
	661	1880.0	0	27.17	0.521				PASS
	810	1909.8	0	26.69	0.467				PASS
EGPRS 1900MHz	512	1850.2	0	28.18	0.658	Plot F ^{Note 1}	33	2	PASS
	661	1880.0	0	28.45	0.700				PASS
	810	1909.8	0	28.31	0.678				PASS

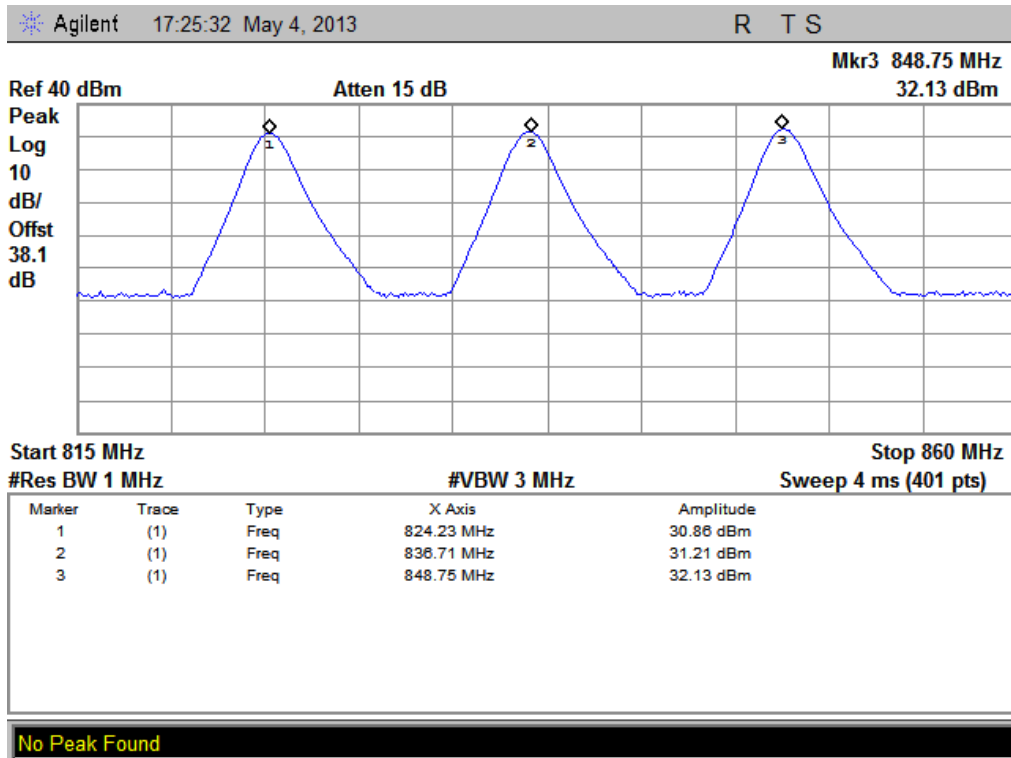
Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.

2. WCDMA Model Test Verdict:

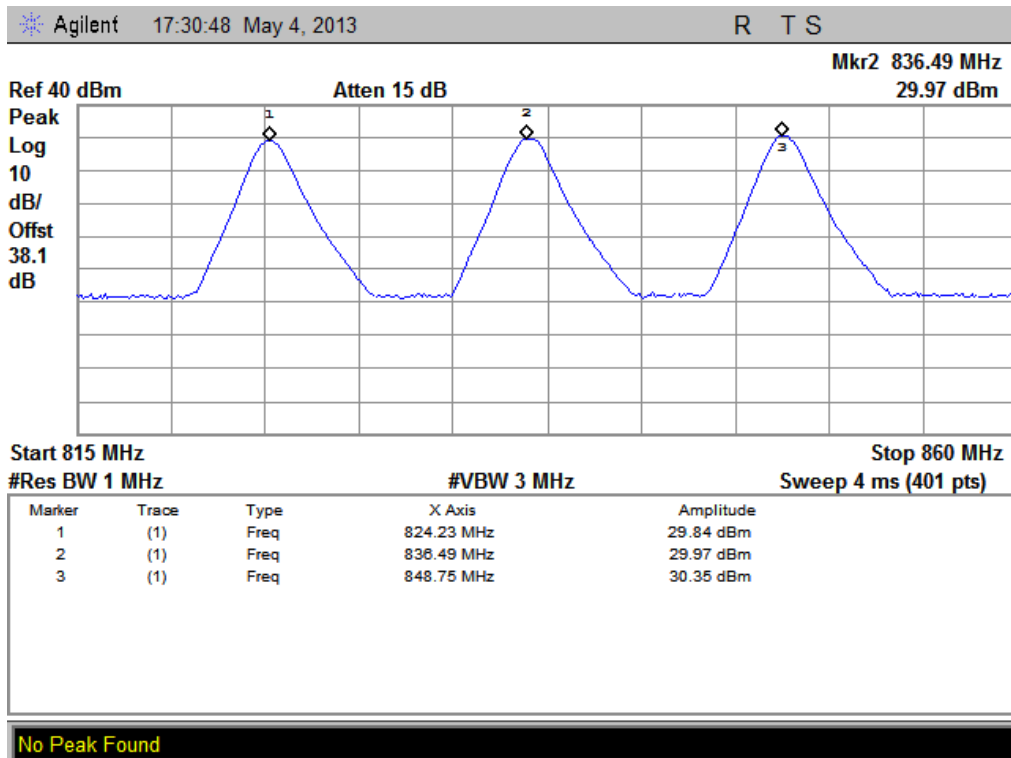
Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	25.11	0.324	Plot G	38.5	7	PASS
	4175	835	24.6	0.288				PASS
	4233	846.6	25.05	0.320				PASS
HSDPA 850MHz	4132	826.4	25.07	0.321	Plot H	38.5	7	PASS
	4175	835	24.69	0.294				PASS
	4233	846.6	24.97	0.314				PASS
HSUPA 850MHz	4132	826.4	25.24	0.334	Plot I	38.5	7	PASS
	4175	835	24.74	0.298				PASS
	4233	846.6	24.73	0.297				PASS

Band	Channel	Frequency (MHz)	Measured EIRP			Limit		Verdict
			dBm	W		dBm	W	
WCDMA 1900MHz	9262	1852.4	25.85	0.385	Plot J	33	2	PASS
	9400	1880	26.26	0.423				PASS
	9538	1907.6	26.91	0.491				PASS
HSDPA 1900MHz	9262	1852.4	25.93	0.392	Plot K	33	2	PASS
	9400	1880	26.05	0.403				PASS
	9538	1907.6	27.04	0.506				PASS
HSUPA 1900MHz	9262	1852.4	25.85	0.385	Plot L	33	2	PASS
	9400	1880	26.04	0.402				PASS
	9538	1907.6	26.95	0.495				PASS

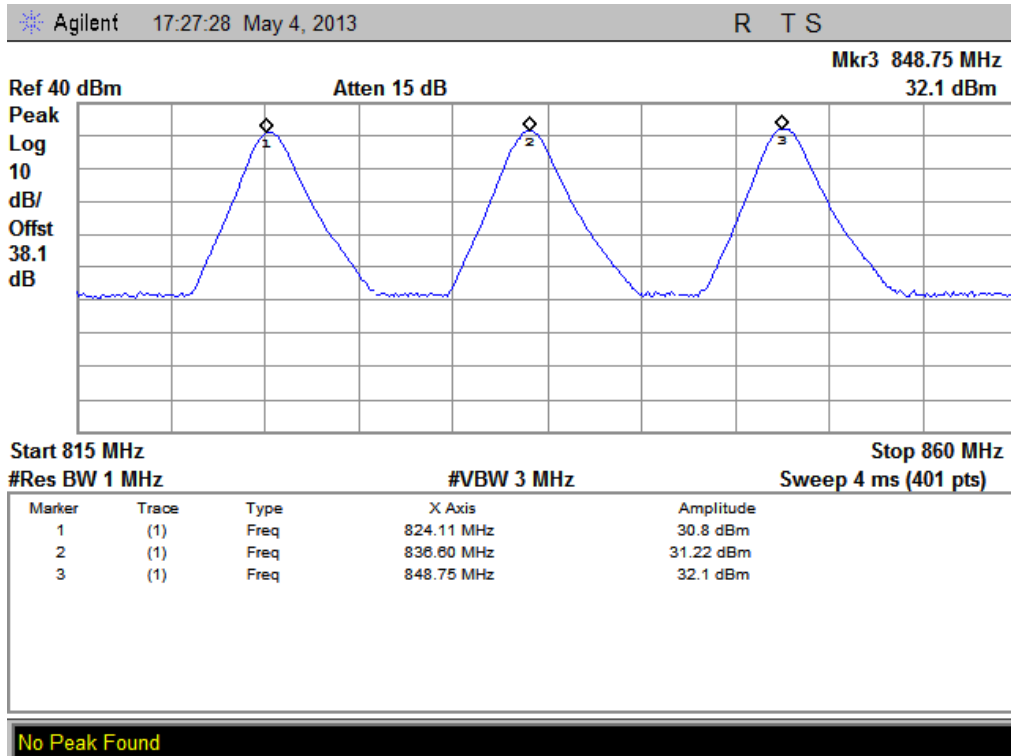
3. Test Plots:



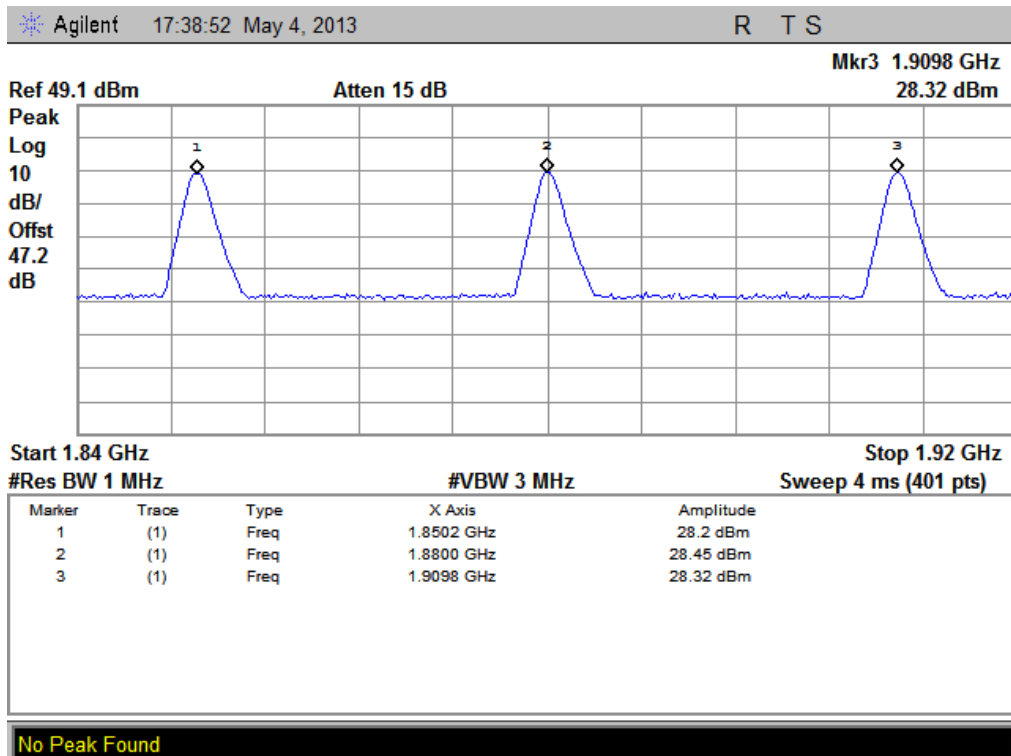
(Plot A: GSM 850MHz Channel = 128, 190, 251)



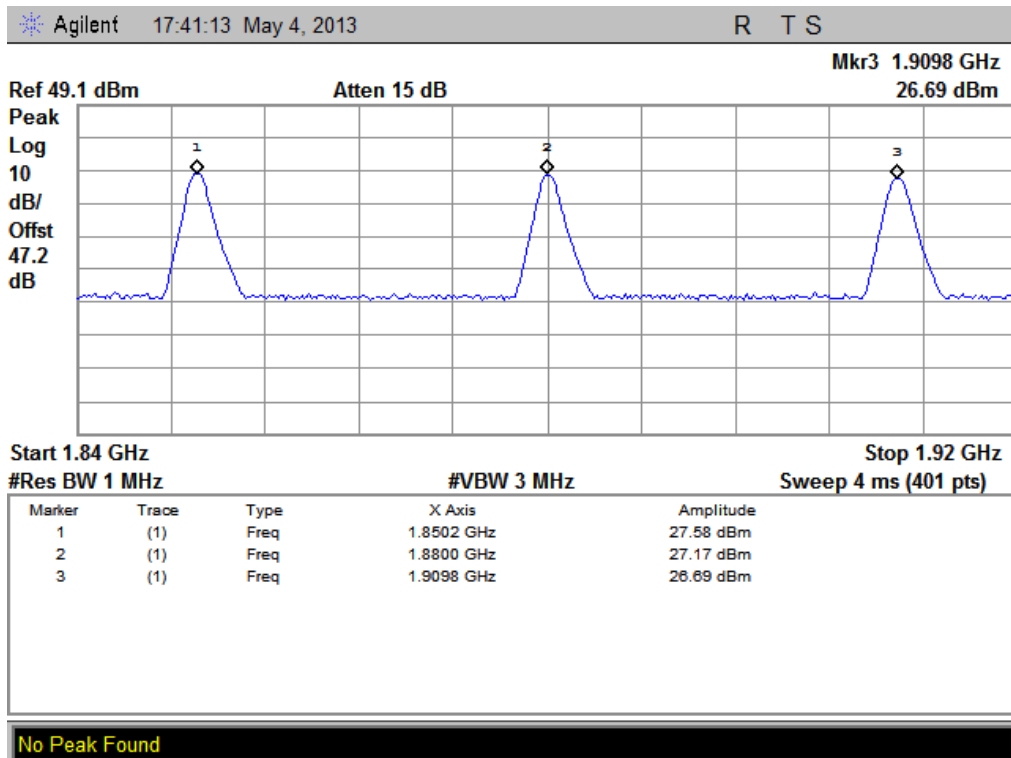
(Plot B: GPRS 850MHz Channel = 128, 190, 251)



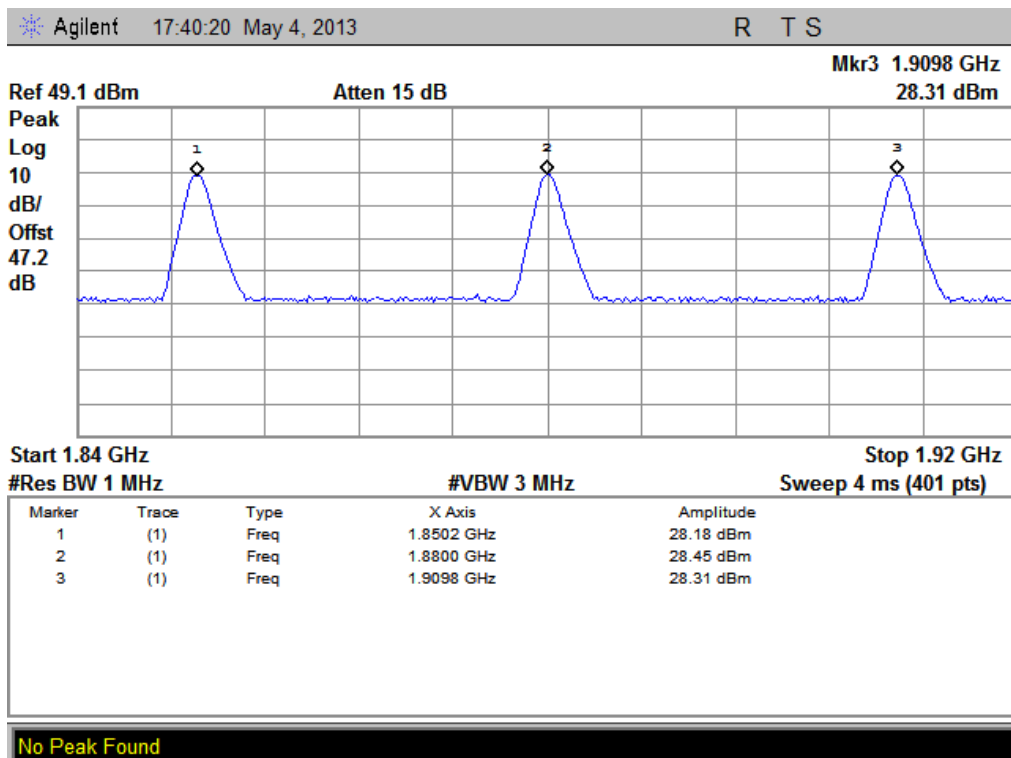
(Plot C: EGPRS 850 MHz Channel = 128, 190, 251)



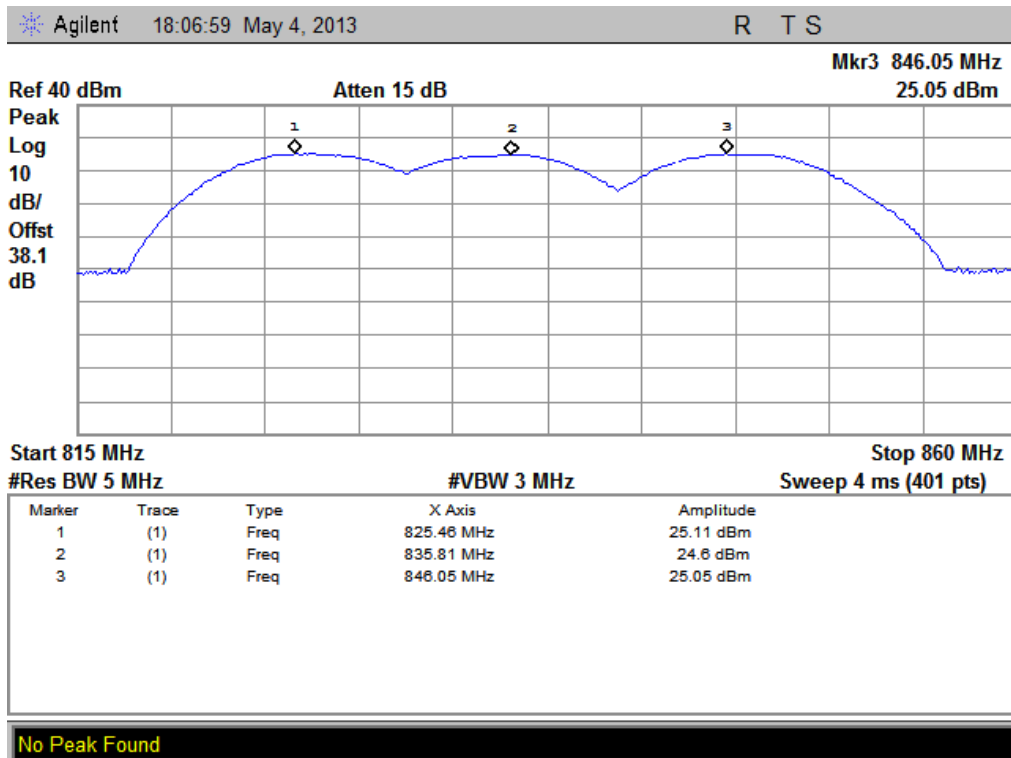
(Plot D: GSM 1900MHz Channel = 512, 661, 810)



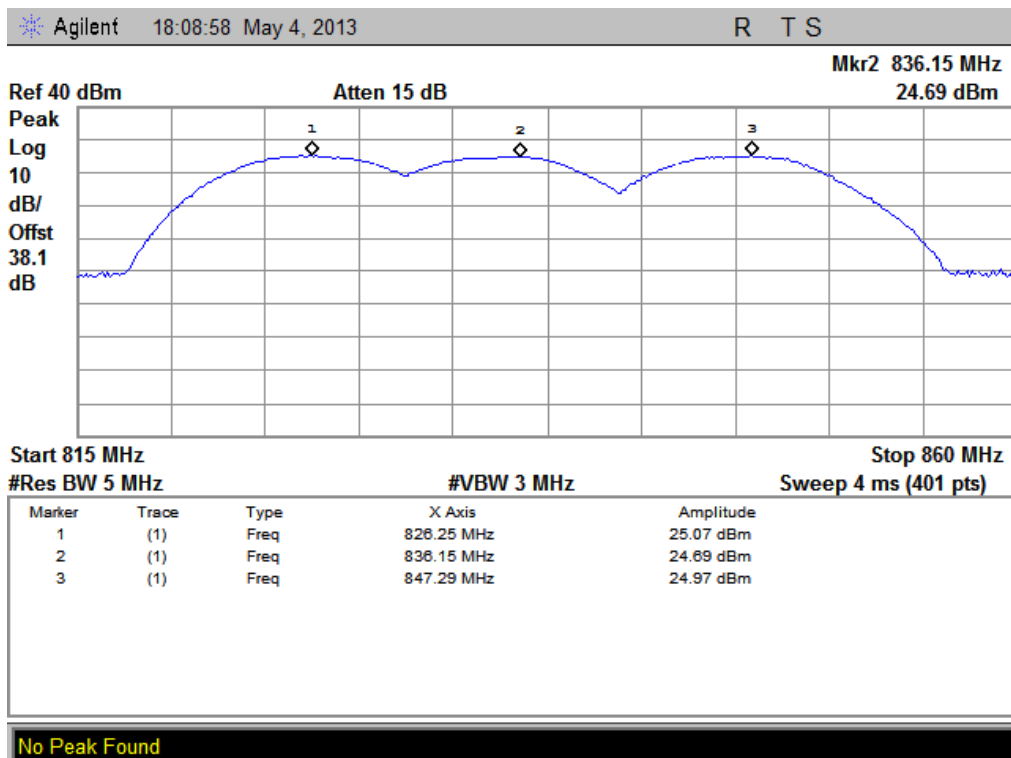
(Plot E: GPRS 1900MHz Channel = 512, 661, 810)



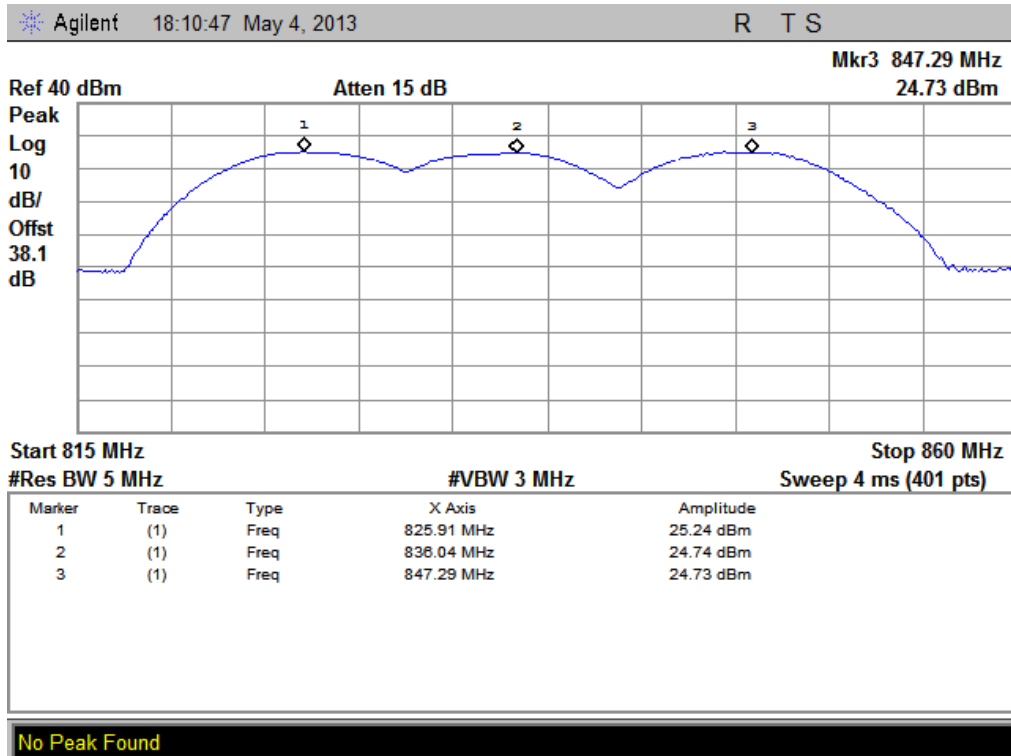
(Plot F: EGPRS 1900MHz Channel = 512, 661, 810)



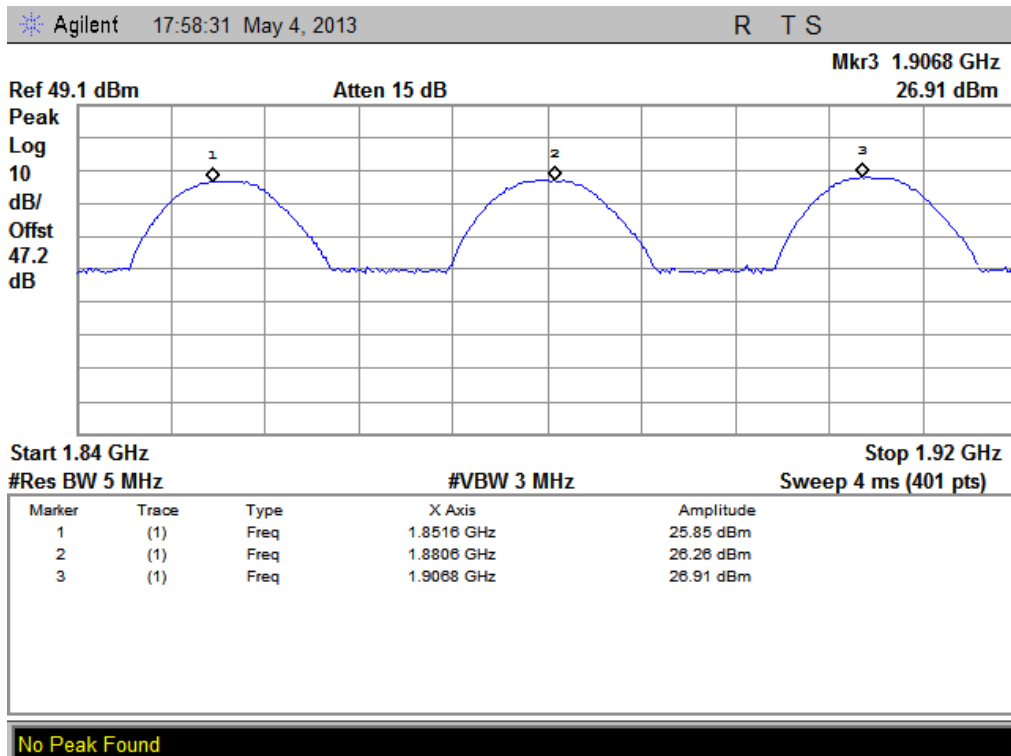
(Plot G: WCDMA 850 MHz Channel = 4132, 4175, 4233)



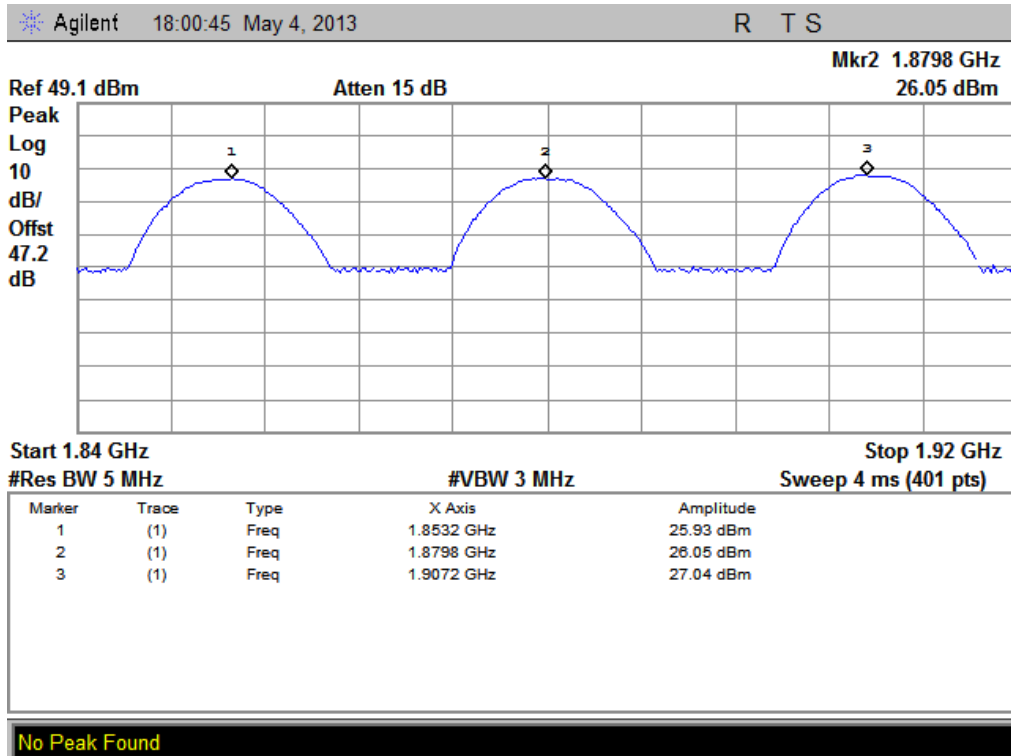
(Plot H: HSDPA 850 MHz Channel = 4132, 4175, 4233)



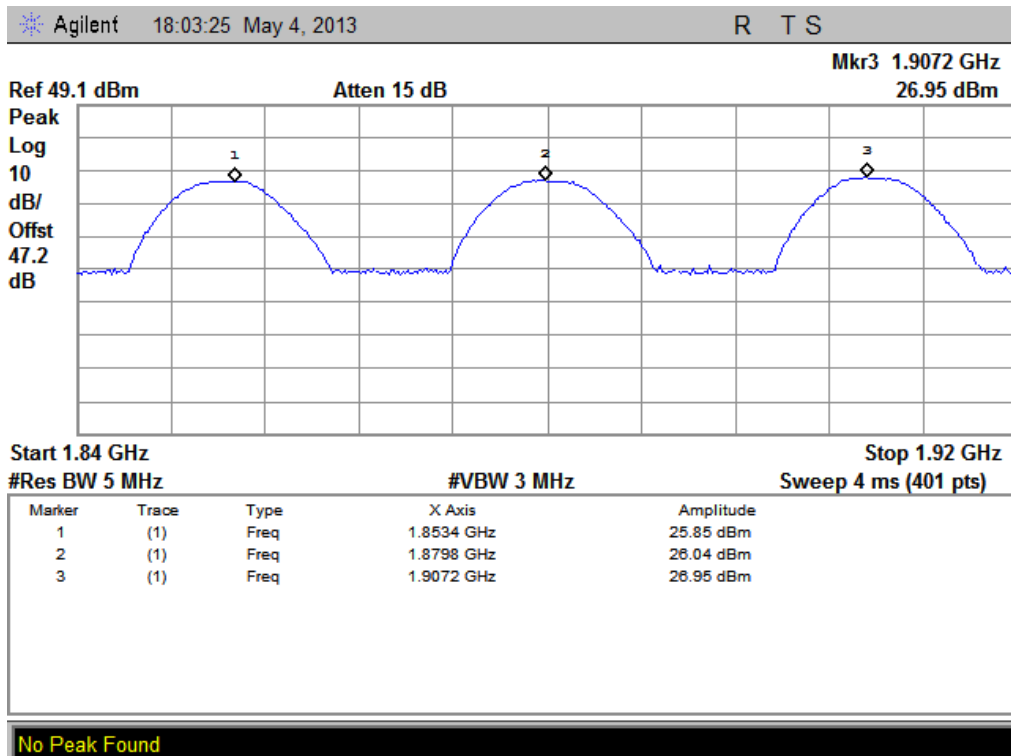
(Plot I: HSUPA 850 MHz Channel = 4132, 4175, 4233)



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



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



(Plot L: HSUPA1900 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), 27.53(g) 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. 12	2013.05. 11
Spectrum Analyzer	Agilent	E7405A	US44210471	2012.05. 12	2013.05. 11
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2012.05. 12	2013.05. 11
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2012.05. 12	2013.05. 11
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2012.05. 12	2013.05. 11
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2012.05. 12	2013.05. 11
Pre-AMPs	lucix	S10M100L3802	S020180L32 03	2012.05. 12	2013.05. 11
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2012.05. 12	2013.05. 11
Notch Filter	COM-MW	ZBSF-C1747.5-75- X2	NA	2012.05. 12	2013.05. 11
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2012.05. 12	2013.05. 11

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.

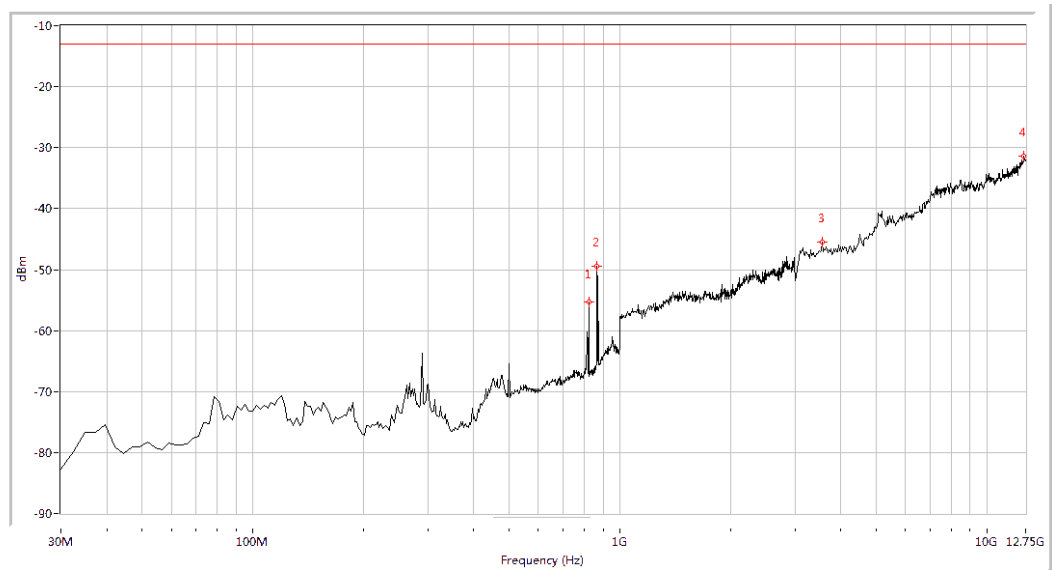
1. Test Verdict:

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

2. Test Plots for the Whole Measurement Frequency Range:

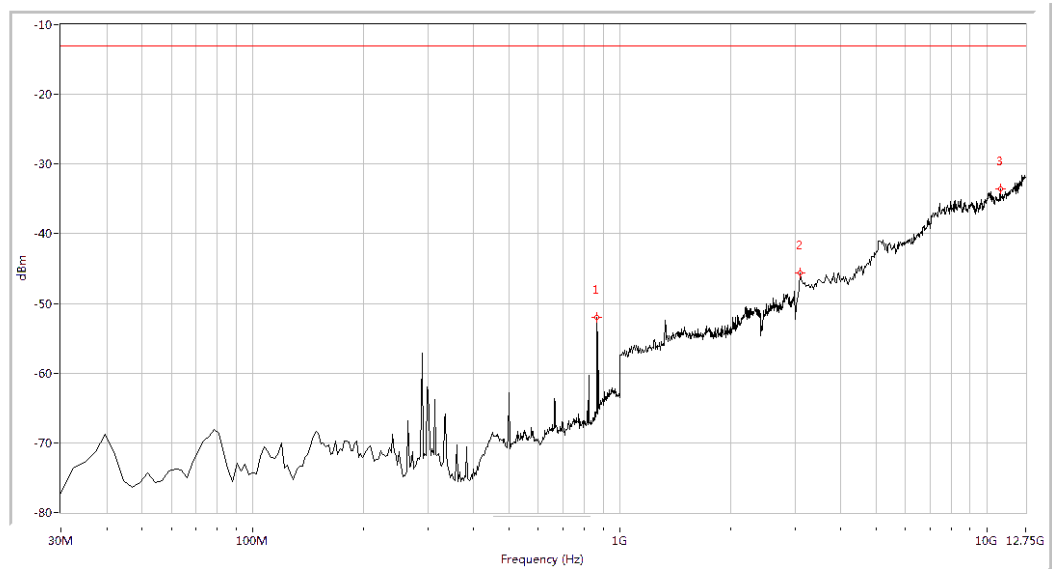
Note1: the power of the EUT transmitting frequency should be ignored.

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



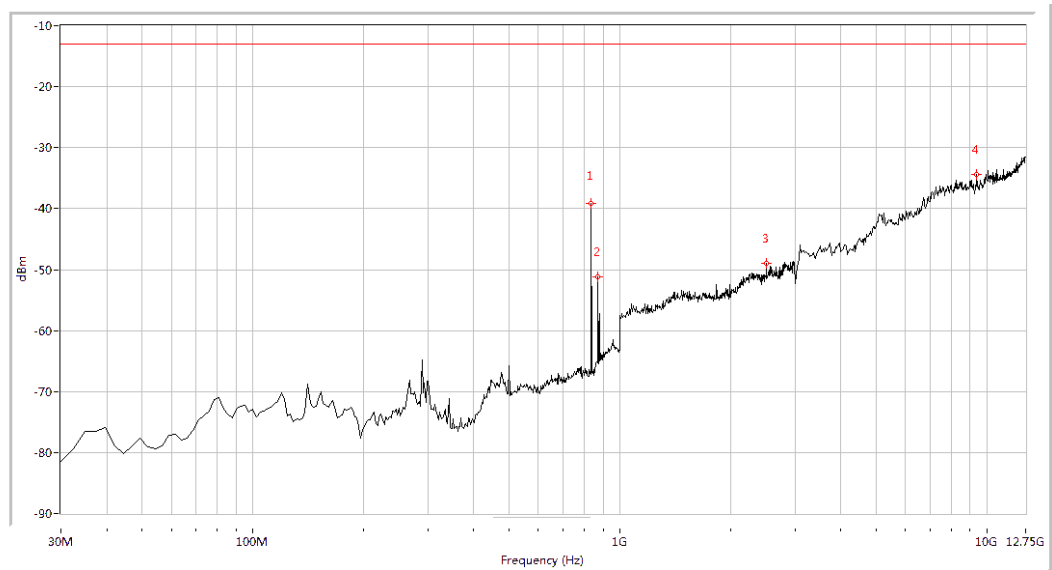
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
823.416	-55.38	-13.0	42.4	193.1	Horizontal	PASS
866.958	-49.51	-13.0	36.5	51.8	Horizontal	PASS
3559.227	-45.51	-13.0	32.5	4.2	Horizontal	PASS
12604.115	-31.32	-13.0	18.3	43.3	Horizontal	PASS

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



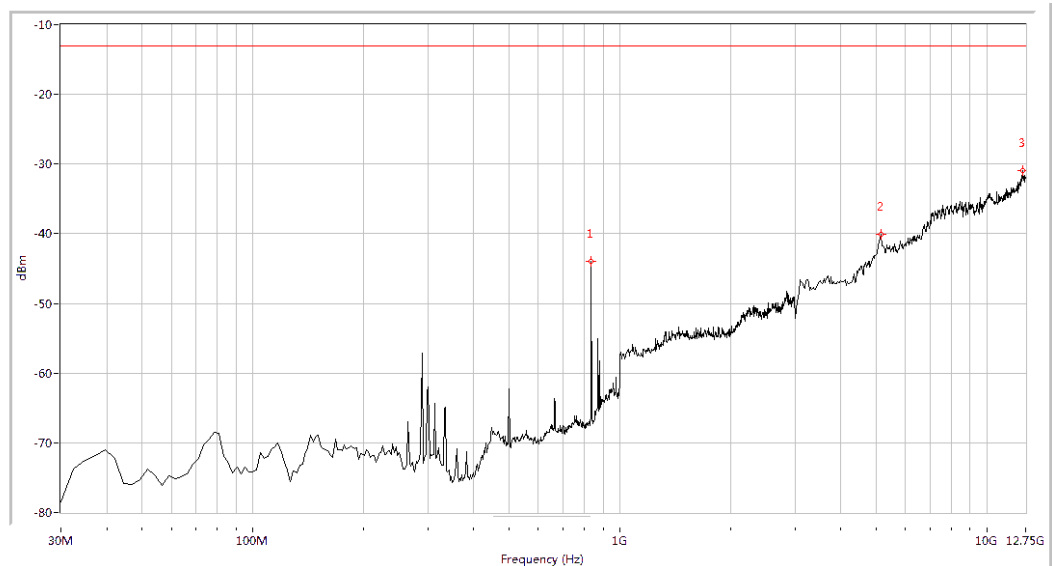
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
866.958	-52.02	-13.0	39.0	347.3	Vertical	PASS
3097.257	-45.62	-13.0	32.6	-0.0	Vertical	PASS
10877.805	-33.51	-13.0	20.5	341.7	Vertical	PASS

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



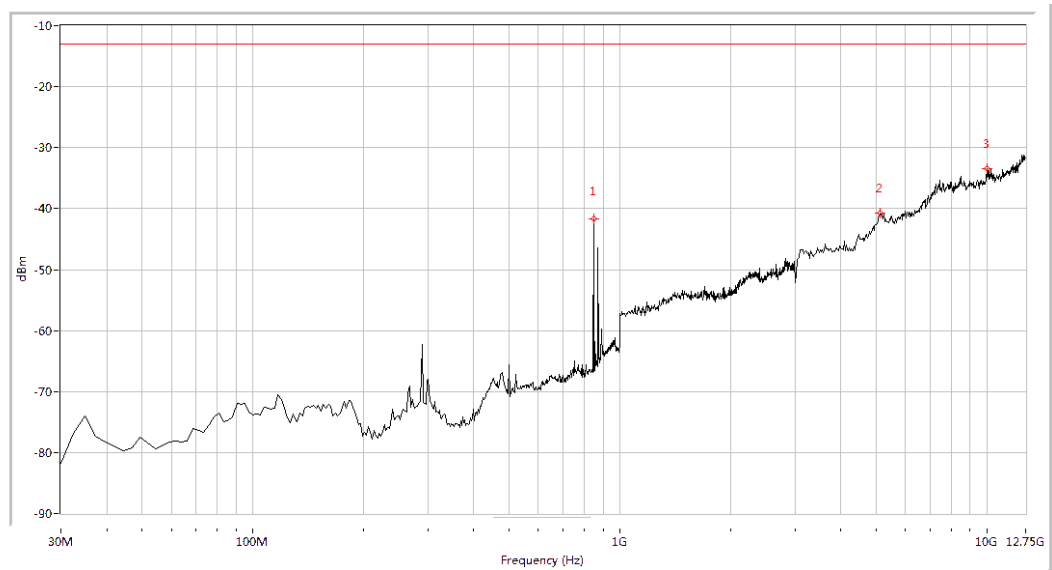
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-39.20	-13.0	26.2	81.6	Horizontal	PASS
871.796	-51.20	-13.0	38.2	-0.0	Horizontal	PASS
2506.234	-48.96	-13.0	36.0	360.0	Horizontal	PASS
9370.324	-34.43	-13.0	21.4	111.0	Horizontal	PASS

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



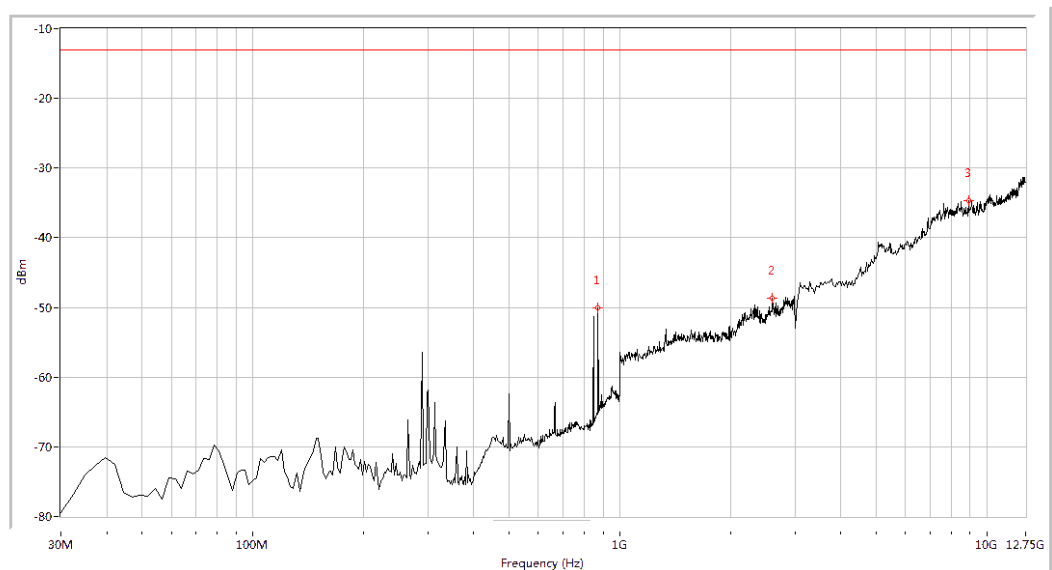
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-44.00	-13.0	31.0	106.6	Vertical	PASS
5139.651	-40.05	-13.0	27.1	278.8	Vertical	PASS
12531.172	-30.99	-13.0	18.0	101.1	Vertical	PASS

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



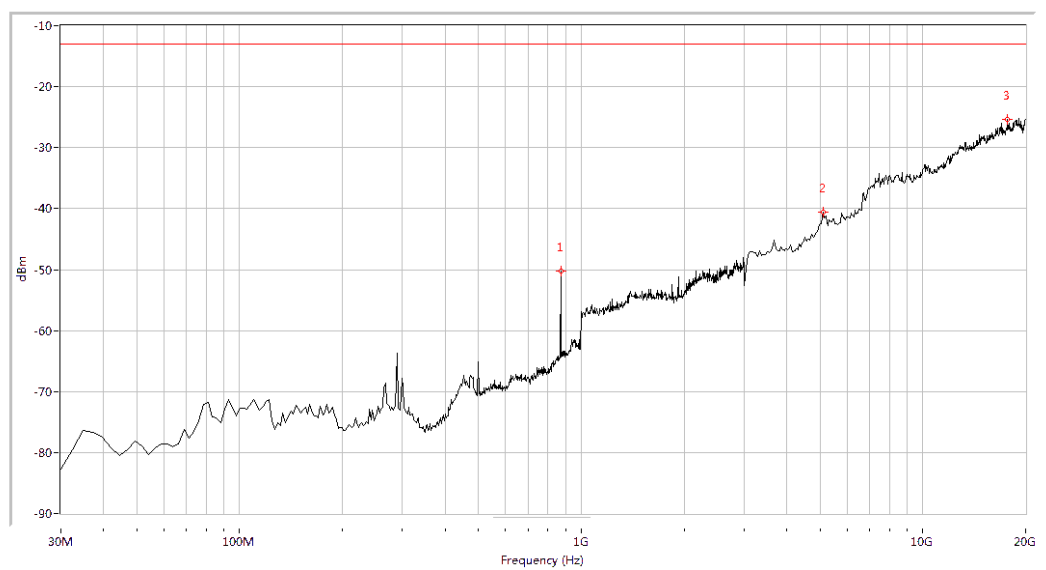
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-41.63	-13.0	28.6	123.9	Horizontal	PASS
5115.337	-40.67	-13.0	27.7	253.7	Horizontal	PASS
10026.808	-33.50	-13.0	20.5	37.3	Horizontal	PASS

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



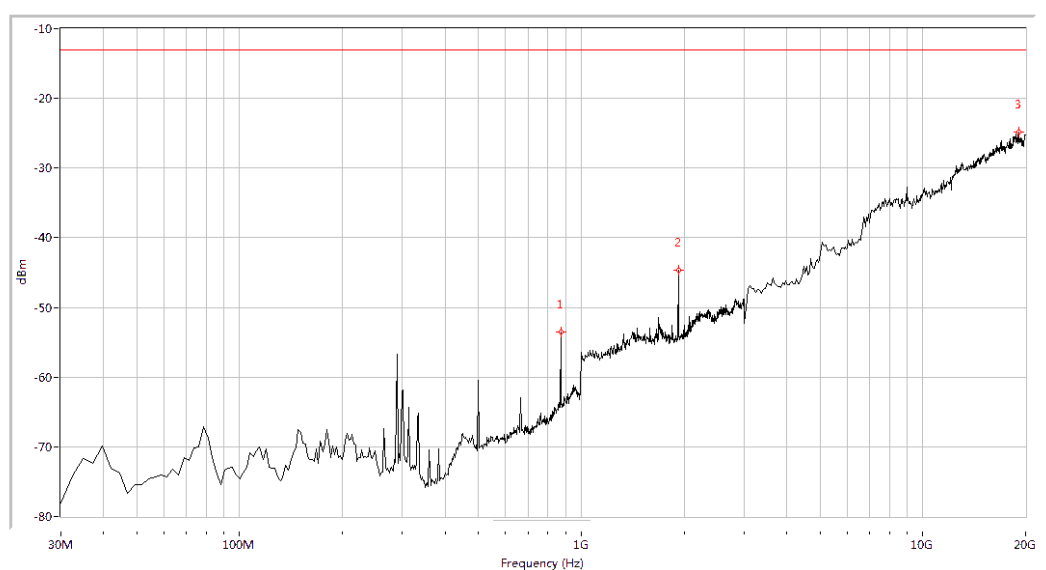
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-50.09	-13.0	37.1	144.2	Vertical	PASS
2605.985	-48.70	-13.0	35.7	292.3	Vertical	PASS
8908.354	-34.73	-13.0	21.7	82.4	Vertical	PASS
11874.688	-36.02	-13.0	23.0	90.5	Vertical	PASS

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



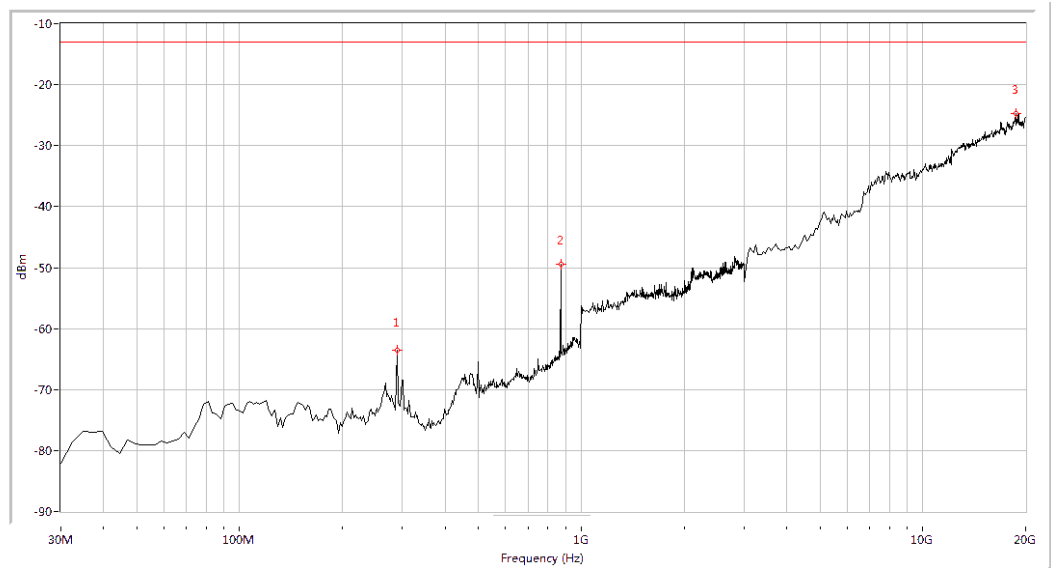
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-50.23	-13.0	37.2	356.6	Horizontal	PASS
5119.701	-40.64	-13.0	27.6	16.8	Horizontal	PASS
17710.723	-25.31	-13.0	12.3	318.3	Horizontal	PASS

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



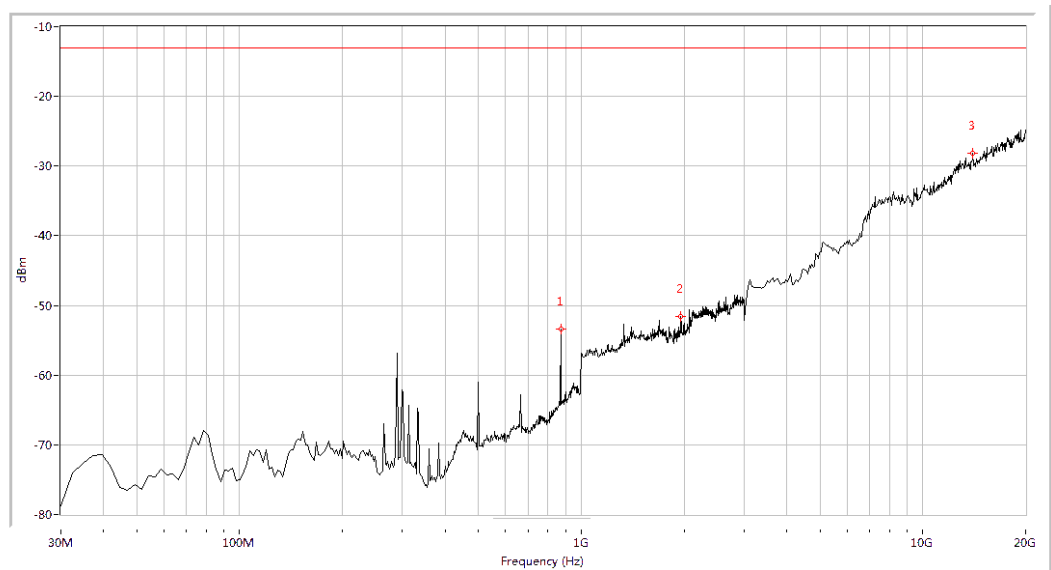
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.48	-13.0	40.5	352.6	Vertical	PASS
1927.681	-44.72	-13.0	31.7	179.7	Vertical	PASS
19067.332	-24.87	-13.0	11.9	349.5	Vertical	PASS

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



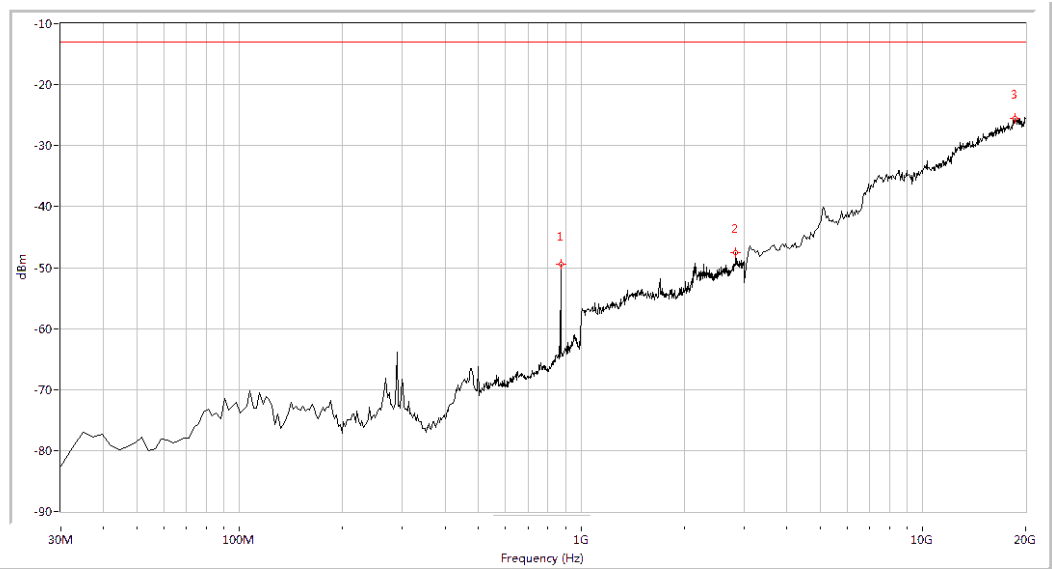
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
288.828	-63.61	-13.0	50.6	247.2	Horizontal	PASS
871.796	-49.41	-13.0	36.4	323.5	Horizontal	PASS
18685.786	-24.75	-13.0	11.7	163.2	Horizontal	PASS

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



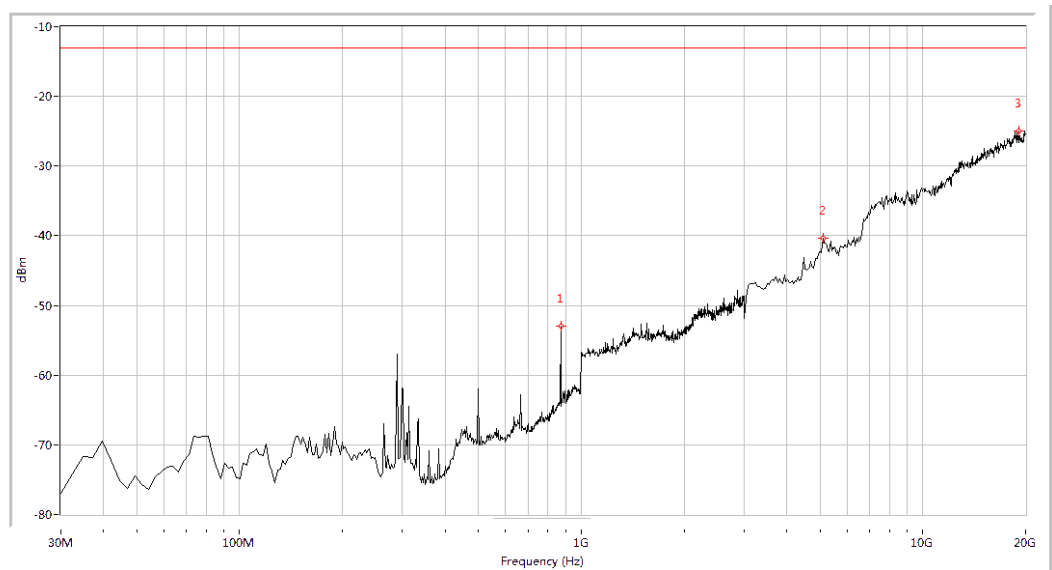
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.45	-13.0	40.4	343.9	Vertical	PASS
1957.606	-51.58	-13.0	38.6	286.8	Vertical	PASS
14022.444	-28.10	-13.0	15.1	204.1	Vertical	PASS

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



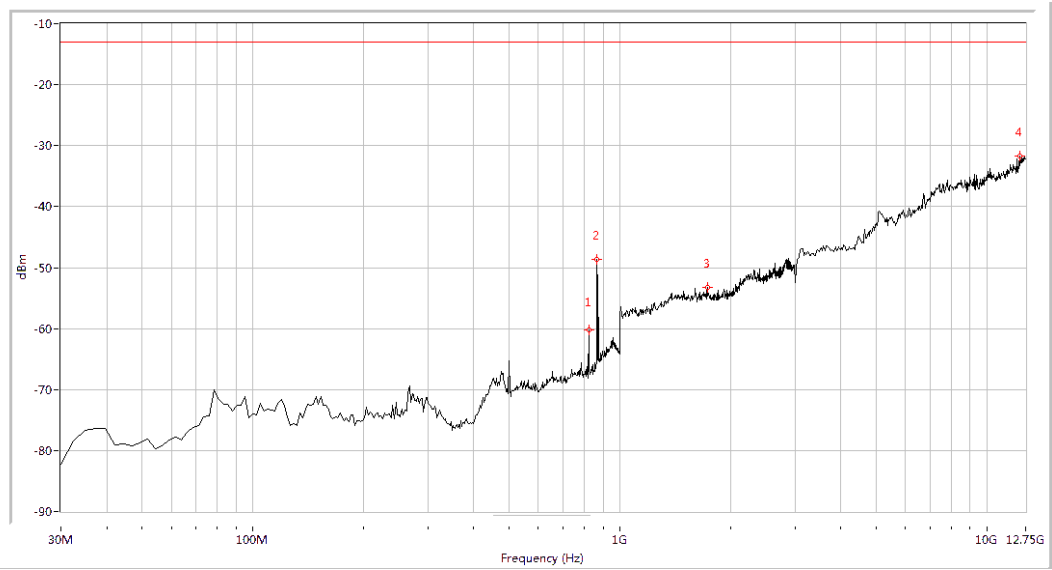
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.46	-13.0	36.5	327.2	Horizontal	PASS
2835.411	-47.53	-13.0	34.5	179.7	Horizontal	PASS
18643.392	-25.51	-13.0	12.5	358.7	Horizontal	PASS

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



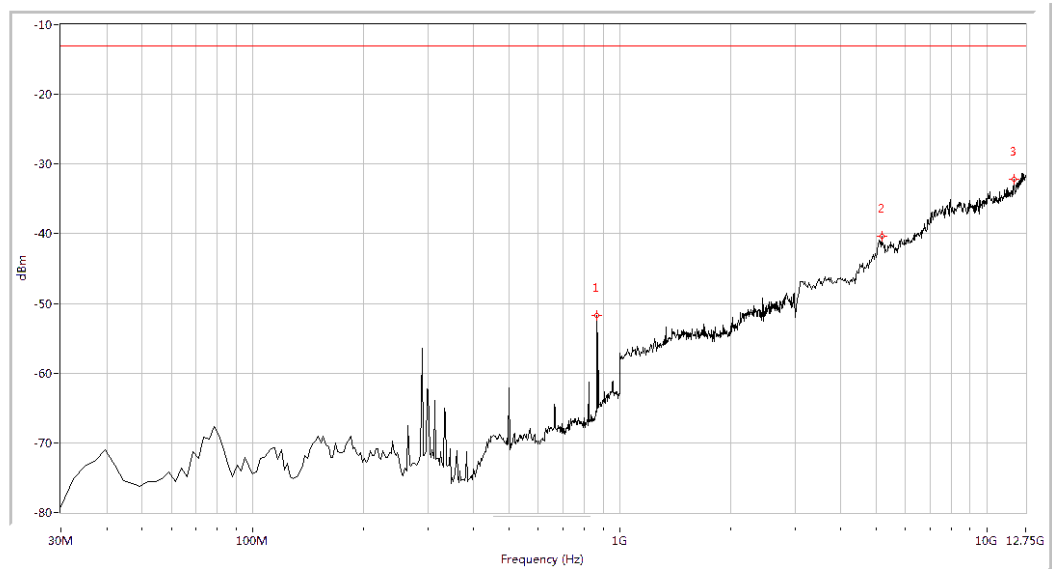
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.00	-13.0	40.0	226.4	Vertical	PASS
5119.701	-40.42	-13.0	27.4	341.3	Vertical	PASS
19109.726	-24.96	-13.0	12.0	171.7	Vertical	PASS

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



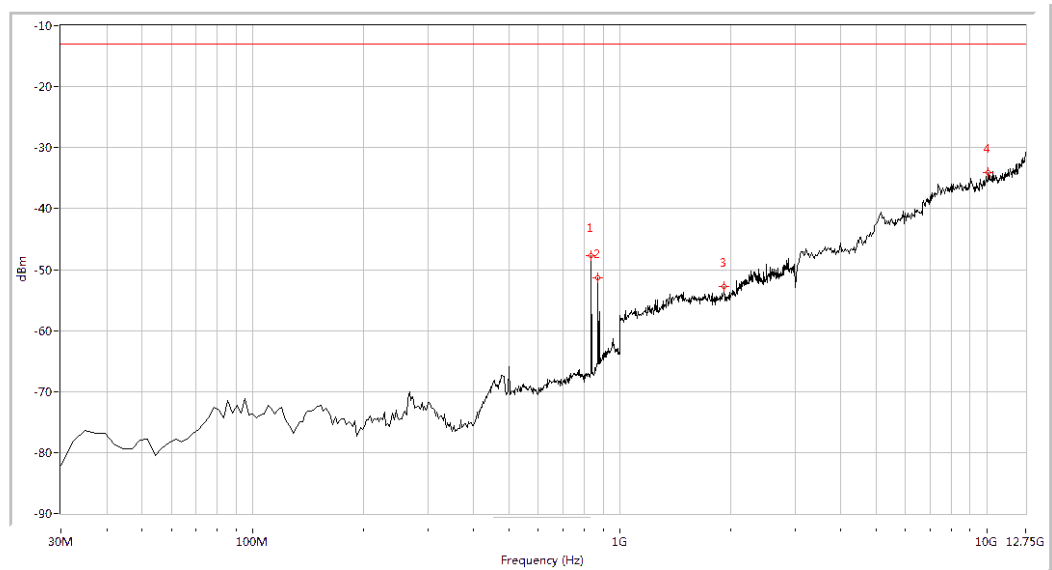
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
823.416	-60.15	-13.0	47.1	0.0	Horizontal	PASS
866.958	-48.63	-13.0	35.6	0.0	Horizontal	PASS
1733.167	-53.22	-13.0	40.2	0.0	Horizontal	PASS
12312.344	-31.68	-13.0	18.7	0.0	Horizontal	PASS

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



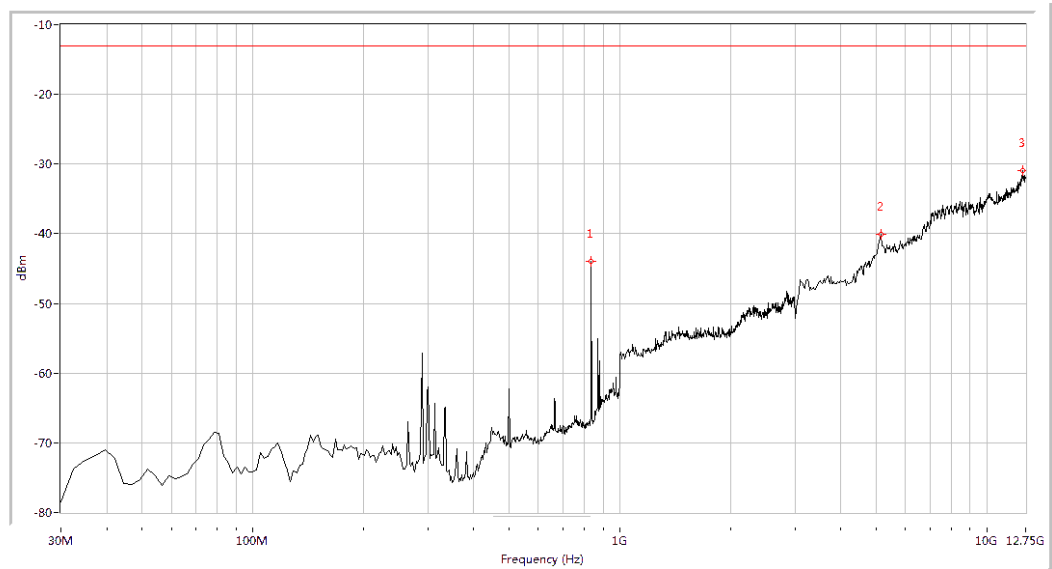
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
866.958	-51.78	-13.0	38.8	147.4	Vertical	PASS
5163.965	-40.38	-13.0	27.4	33.9	Vertical	PASS
11850.374	-32.22	-13.0	19.2	213.6	Vertical	PASS

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



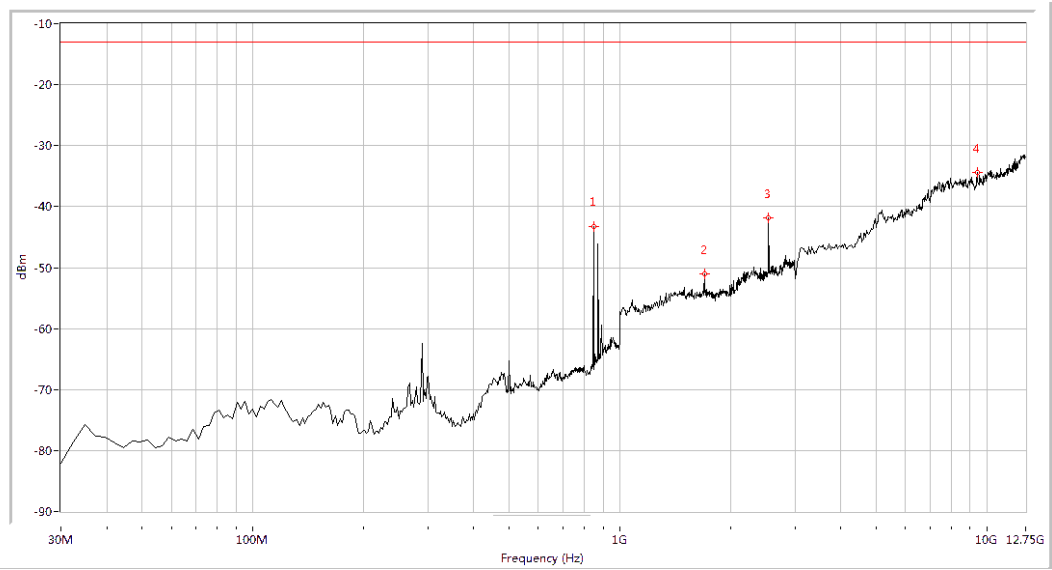
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-47.70	-13.0	34.7	0.0	Horizontal	PASS
871.796	-51.28	-13.0	38.3	0.0	Horizontal	PASS
1922.693	-52.82	-13.0	39.8	0.0	Horizontal	PASS
10099.751	-34.04	-13.0	21.0	0.0	Horizontal	PASS

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



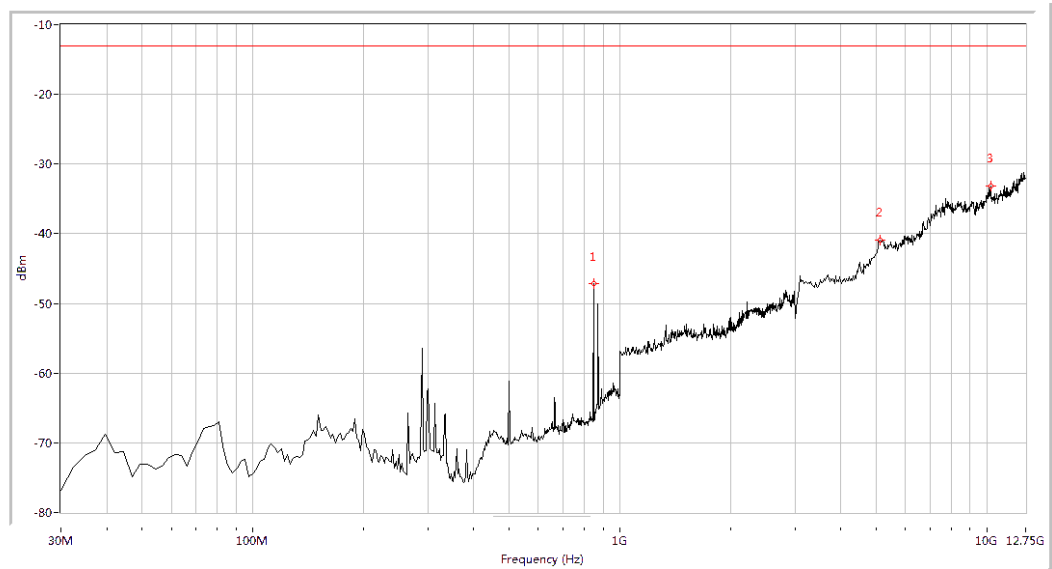
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-44.00	-13.0	31.0	174.5	Vertical	PASS
5139.651	-40.05	-13.0	27.1	31.3	Vertical	PASS
12531.172	-30.99	-13.0	18.0	296.8	Vertical	PASS

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



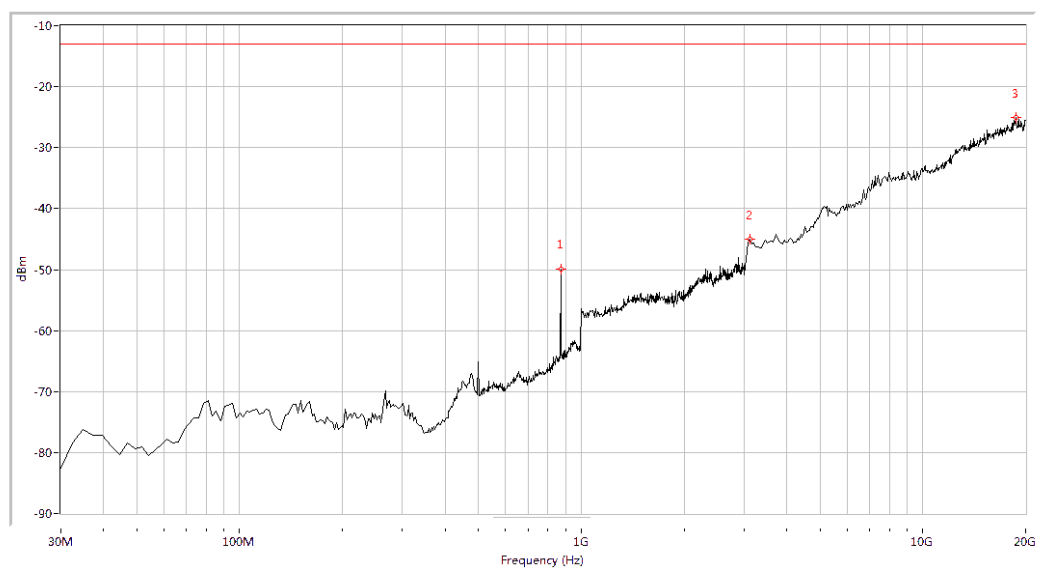
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-43.28	-13.0	30.3	146.8	Horizontal	PASS
1698.254	-51.06	-13.0	38.1	158.5	Horizontal	PASS
2541.147	-41.78	-13.0	28.8	145.1	Horizontal	PASS
9418.953	-34.44	-13.0	21.4	166.2	Horizontal	PASS

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



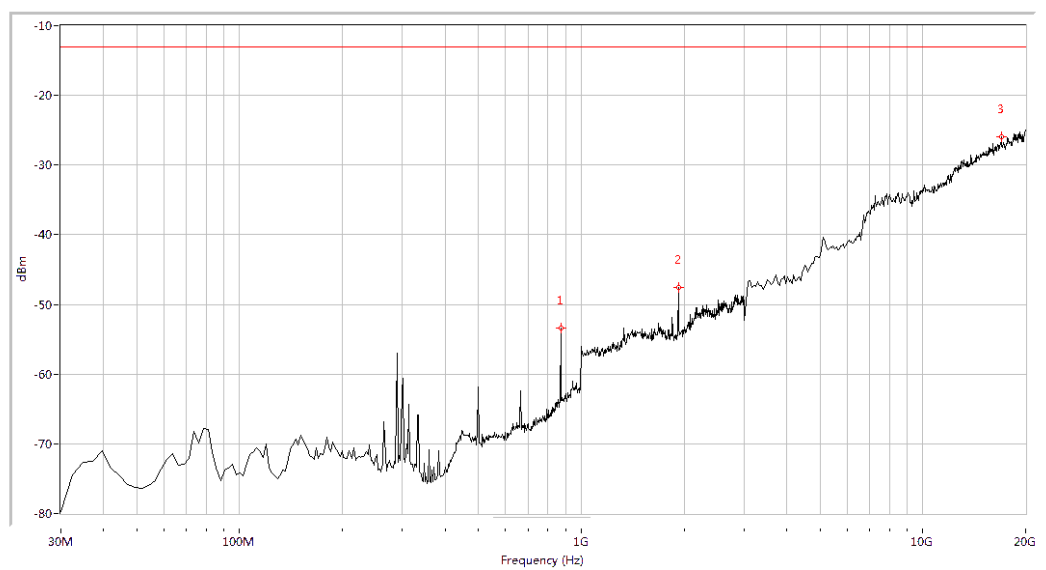
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-47.11	-13.0	34.1	191.8	Vertical	PASS
5115.337	-40.91	-13.0	27.9	109.2	Vertical	PASS
10245.636	-33.21	-13.0	20.2	1.0	Vertical	PASS

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



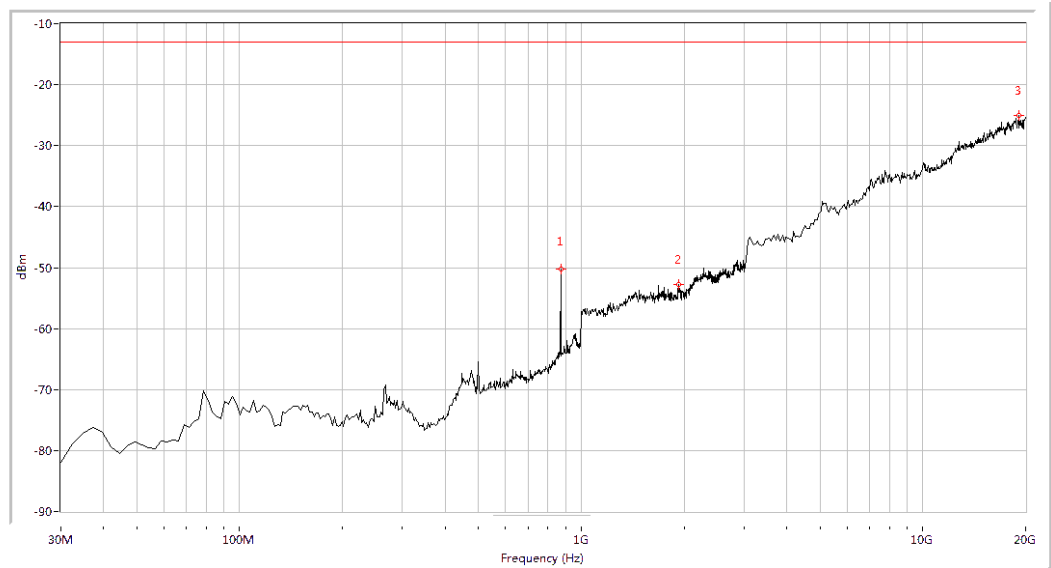
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.90	-13.0	36.9	0.0	Horizontal	PASS
3127.182	-45.01	-13.0	32.0	0.0	Horizontal	PASS
18728.180	-25.02	-13.0	12.0	0.0	Horizontal	PASS

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



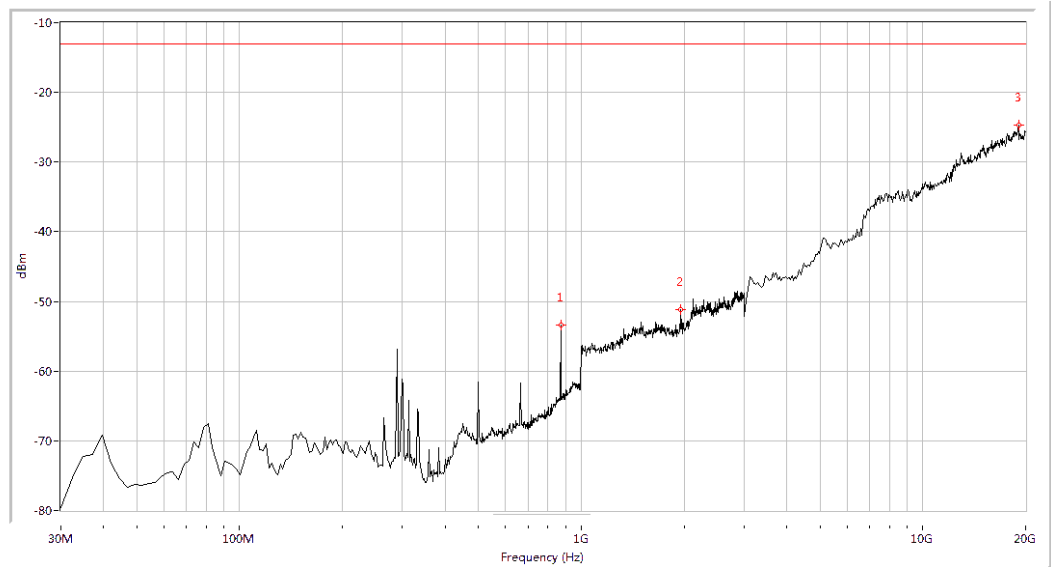
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.40	-13.0	40.4	233.2	Vertical	PASS
1927.681	-47.60	-13.0	34.6	358.0	Vertical	PASS
16990.025	-25.97	-13.0	13.0	130.7	Vertical	PASS

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



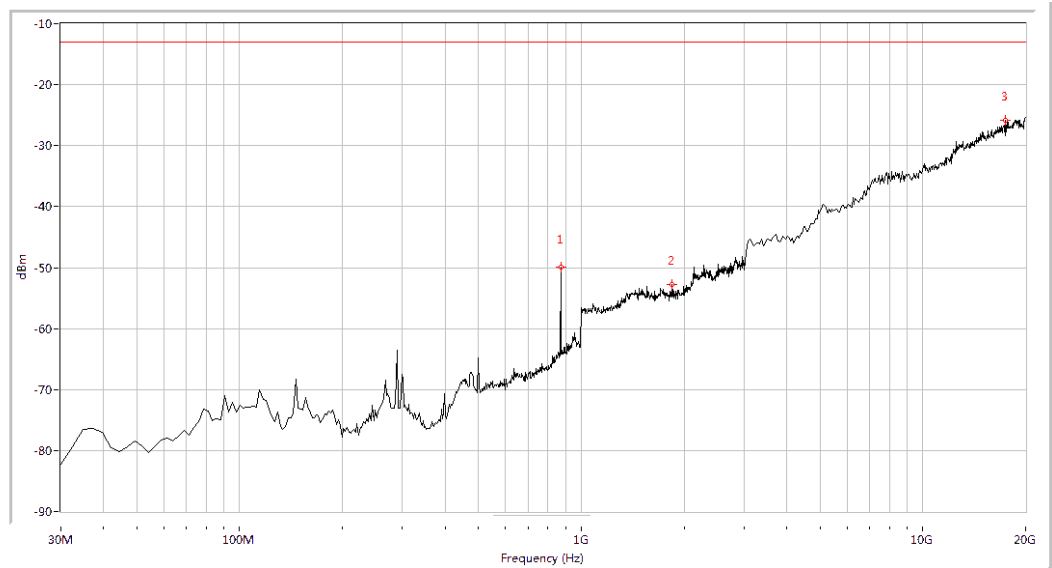
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-50.19	-13.0	37.2	0.0	Horizontal	PASS
1927.681	-52.81	-13.0	39.8	0.0	Horizontal	PASS
19109.726	-25.11	-13.0	12.1	0.0	Horizontal	PASS
16014.963	-29.23	-13.0	16.2	65.7	Horizontal	PASS

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



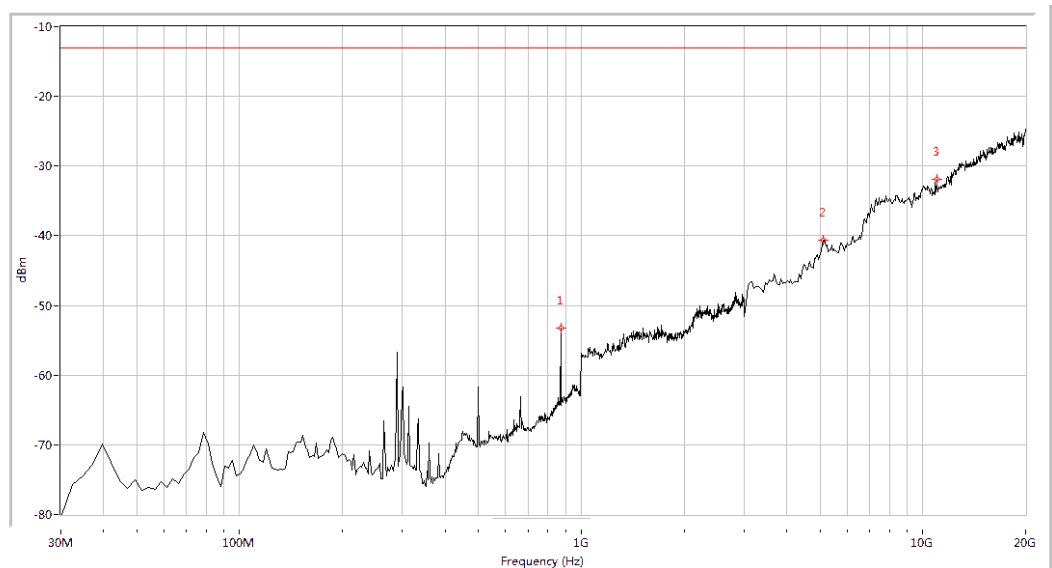
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.41	-13.0	40.4	360.0	Vertical	PASS
1957.606	-51.15	-13.0	38.2	251.7	Vertical	PASS
19109.726	-24.63	-13.0	11.6	300.9	Vertical	PASS

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



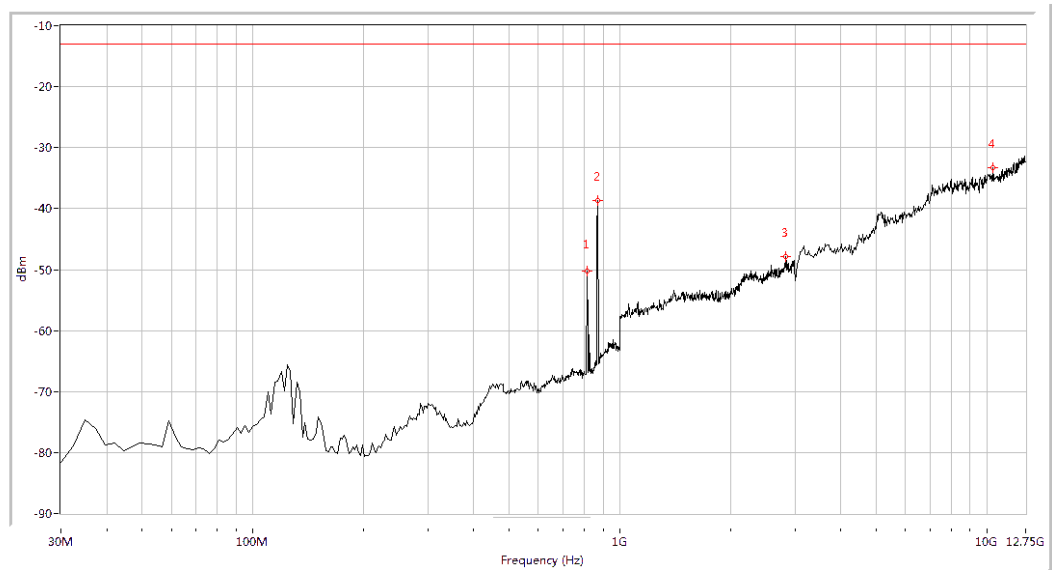
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.99	-13.0	37.0	348.9	Horizontal	PASS
1847.880	-52.77	-13.0	39.8	30.4	Horizontal	PASS
17413.965	-25.78	-13.0	12.8	91.2	Horizontal	PASS

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



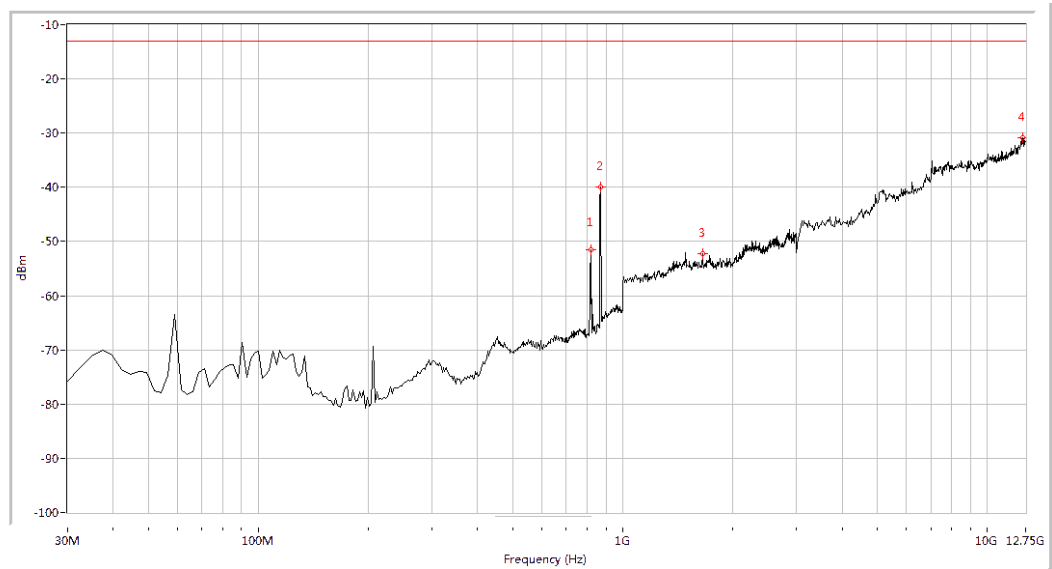
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-53.30	-13.0	40.3	360.0	Vertical	PASS
5119.701	-40.69	-13.0	27.7	189.0	Vertical	PASS
10970.075	-31.97	-13.0	19.0	123.2	Vertical	PASS

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



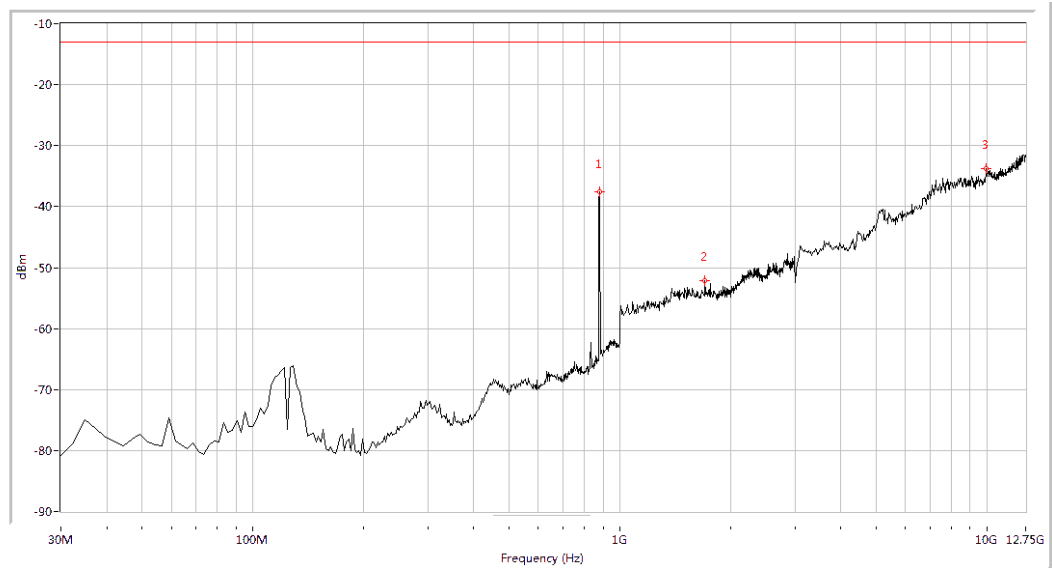
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
825.835	-46.09	-13.0	33.1	28.4	Horizontal	PASS
1743.142	-51.66	-13.0	38.7	295.1	Horizontal	PASS
4847.880	-46.56	-13.0	33.6	30.4	Horizontal	PASS
12701.372	-35.29	-13.0	22.3	264.1	Horizontal	PASS

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



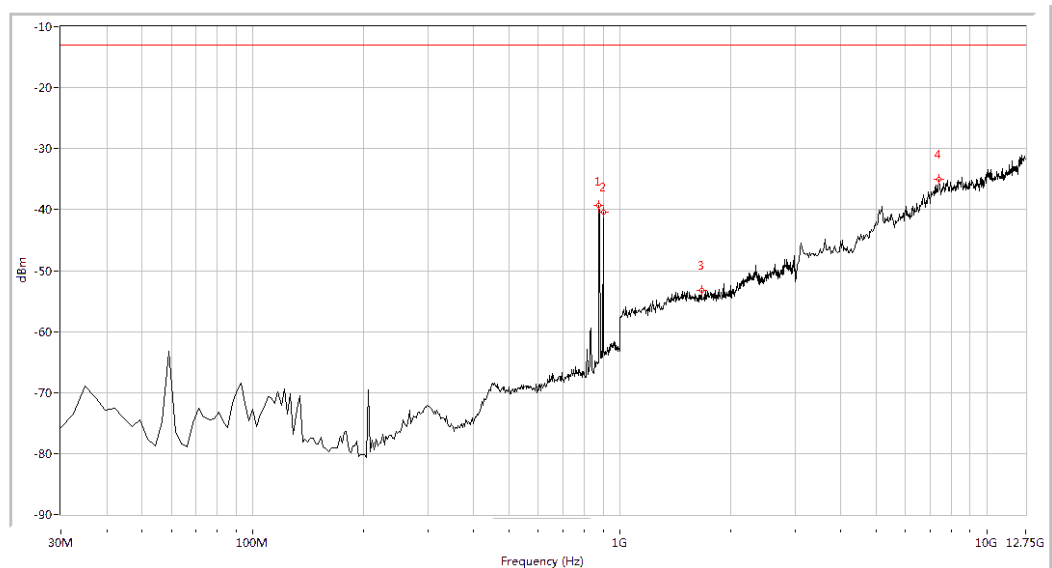
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-51.58	-13.0	38.6	156.8	Vertical	PASS
869.377	-40.02	-13.0	27.0	233.1	Vertical	PASS
1653.367	-52.15	-13.0	39.2	10.1	Vertical	PASS
12482.544	-30.80	-13.0	17.8	12.5	Vertical	PASS

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



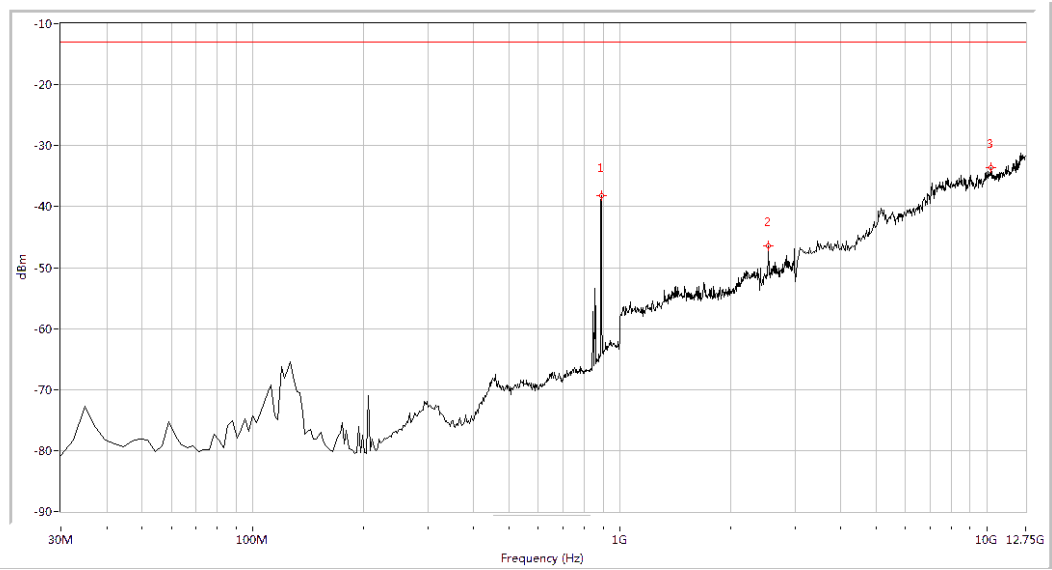
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-37.61	-13.0	24.6	201.3	Horizontal	PASS
1703.242	-52.15	-13.0	39.2	55.5	Horizontal	PASS
9953.865	-33.76	-13.0	20.8	95.0	Horizontal	PASS

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



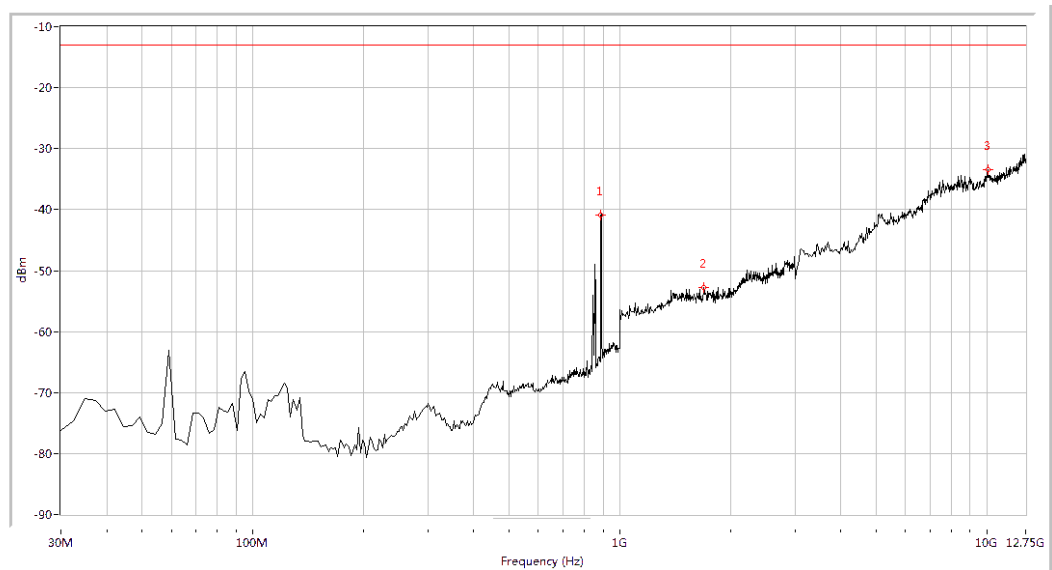
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-39.33	-13.0	26.3	233.1	Vertical	PASS
900.823	-40.38	-13.0	27.4	8.4	Vertical	PASS
1668.329	-53.23	-13.0	40.2	21.7	Vertical	PASS
7400.873	-35.09	-13.0	22.1	242.0	Vertical	PASS

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



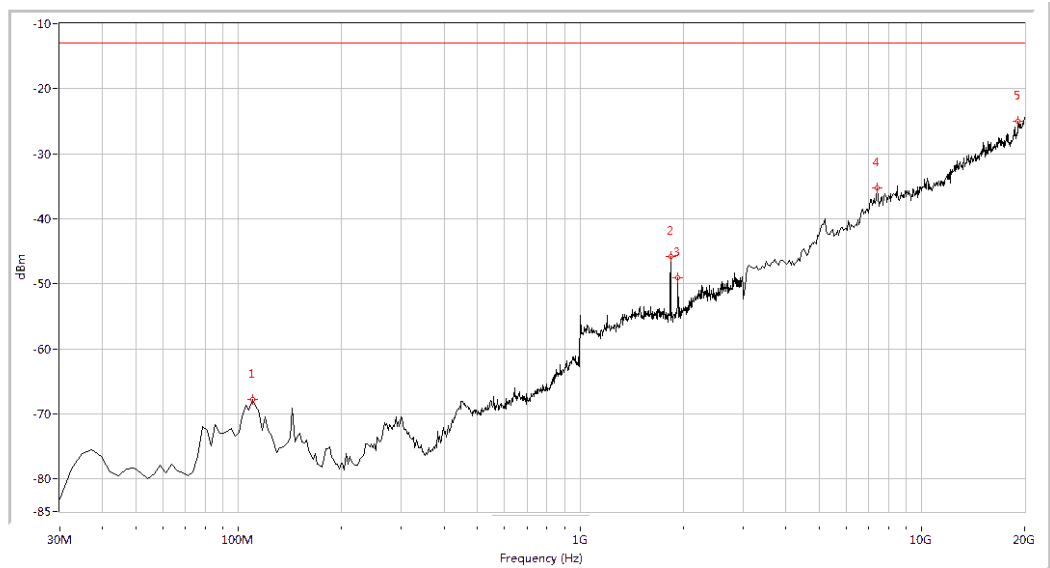
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-38.13	-13.0	25.1	359.2	Horizontal	PASS
2541.147	-46.50	-13.0	33.5	204.5	Horizontal	PASS
10269.950	-33.56	-13.0	20.6	56.6	Horizontal	PASS

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



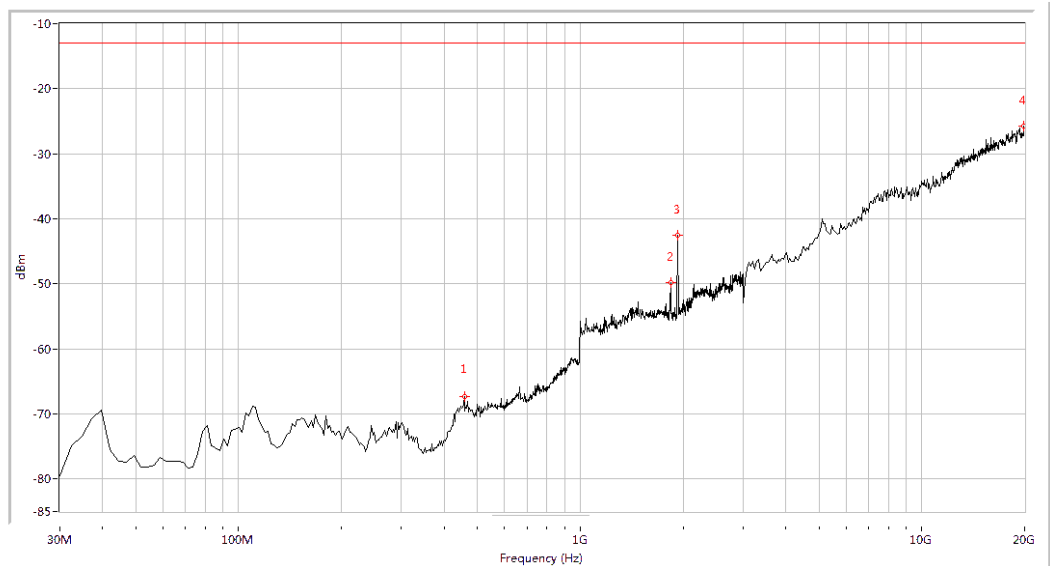
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
888.728	-40.84	-13.0	27.8	34.1	Vertical	PASS
1693.267	-52.84	-13.0	39.8	221.8	Vertical	PASS
10051.122	-33.44	-13.0	20.4	217.5	Vertical	PASS

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



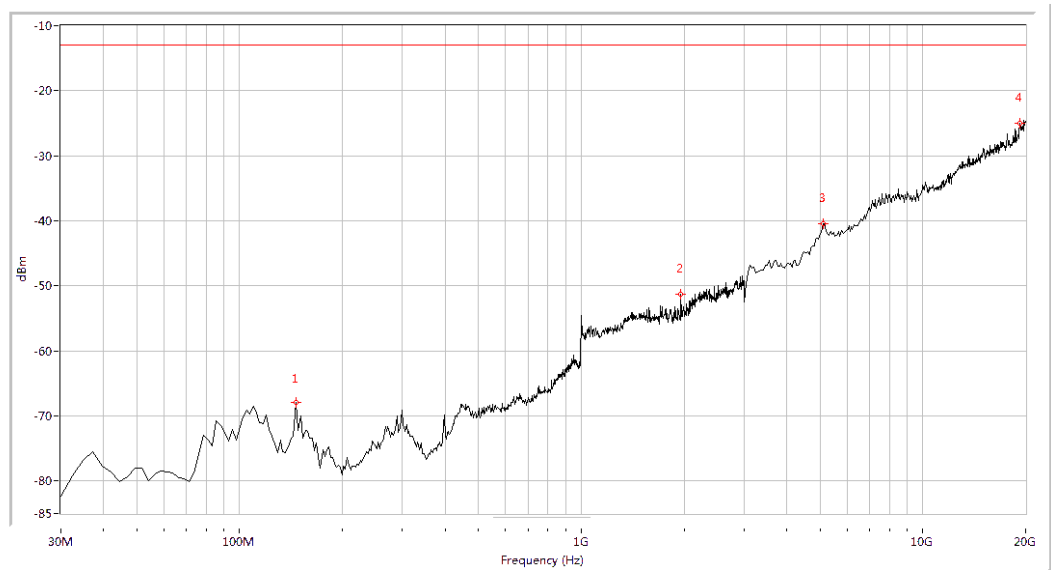
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.82	-13.0	54.8	94.7	Horizontal	PASS
1837.905	-45.82	-13.0	32.8	41.7	Horizontal	PASS
1932.668	-49.03	-13.0	36.0	67.0	Horizontal	PASS
7408.978	-35.32	-13.0	22.3	74.6	Horizontal	PASS
19152.120	-24.93	-13.0	11.9	2.8	Horizontal	PASS

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



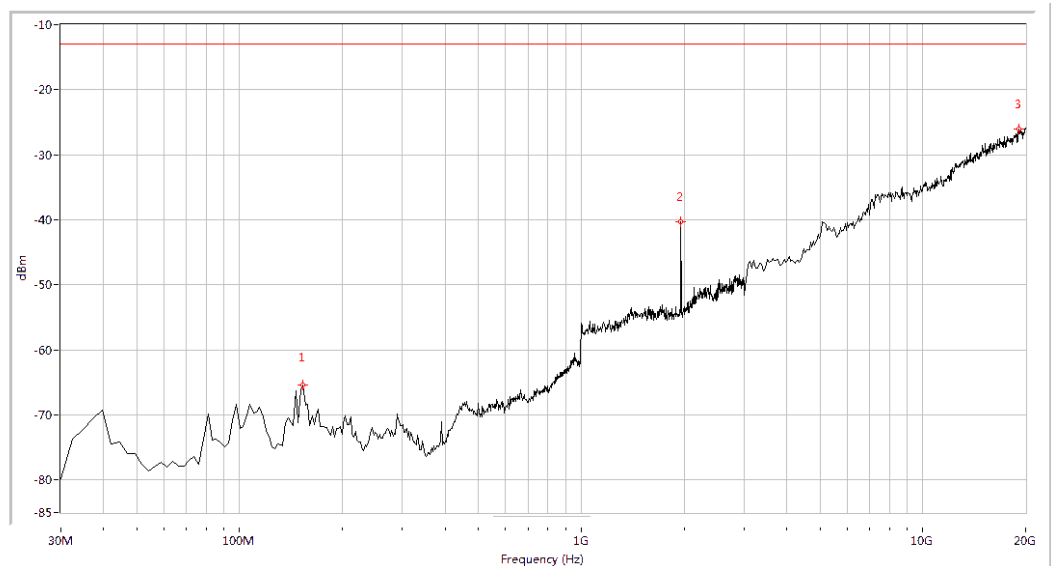
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
458.155	-67.30	-13.0	54.3	247.6	Vertical	PASS
1837.905	-49.74	-13.0	36.7	247.3	Vertical	PASS
1932.668	-42.48	-13.0	29.5	278.6	Vertical	PASS
19915.212	-25.77	-13.0	12.8	175.1	Vertical	PASS

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



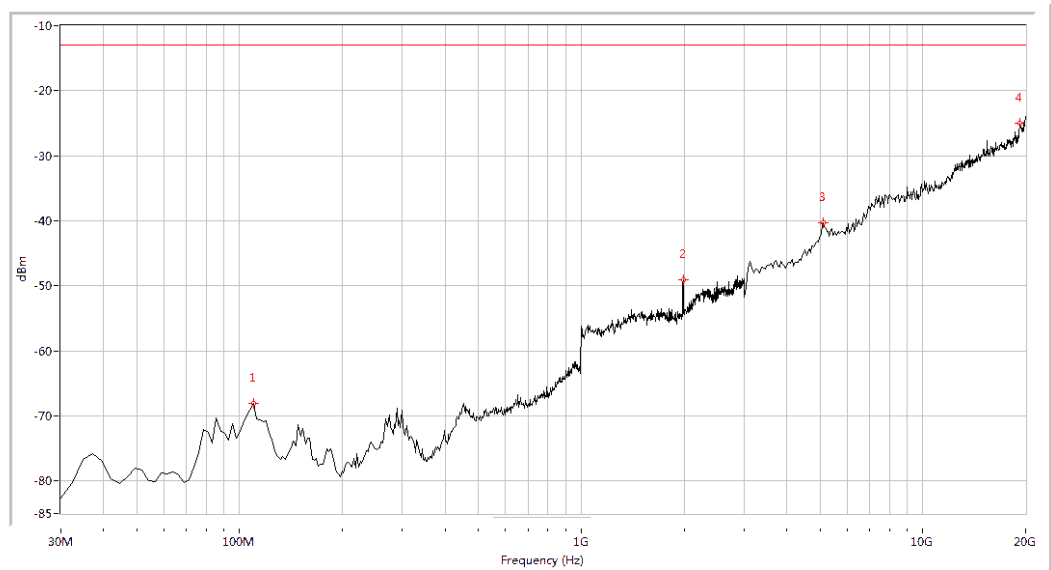
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
146.110	-67.97	-13.0	55.0	360.0	Horizontal	PASS
1957.606	-51.25	-13.0	38.3	239.4	Horizontal	PASS
5119.701	-40.49	-13.0	27.5	71.5	Horizontal	PASS
19279.302	-25.01	-13.0	12.0	37.3	Horizontal	PASS

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



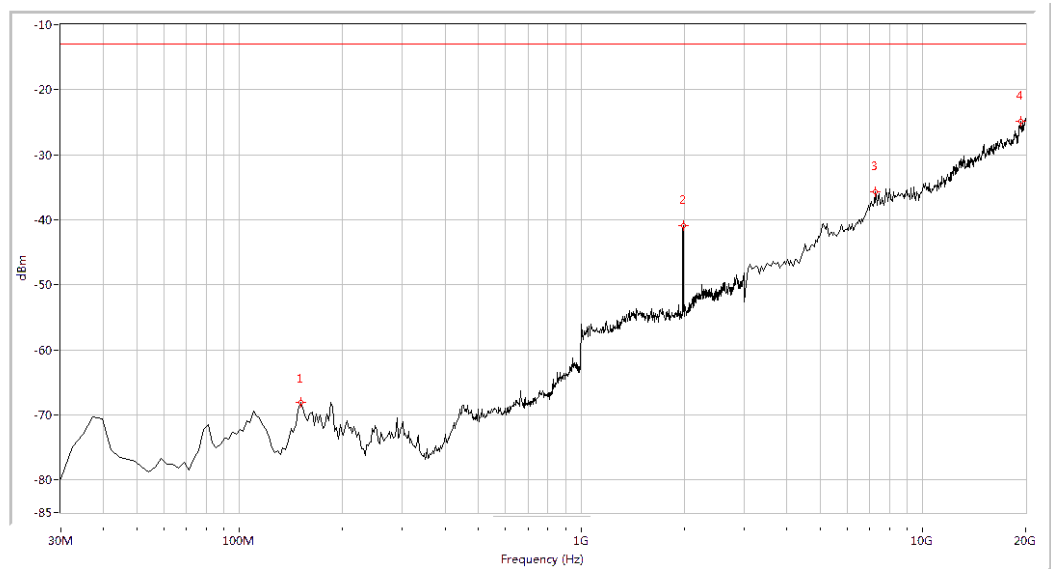
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
153.367	-65.39	-13.0	52.4	169.7	Vertical	PASS
1957.606	-40.30	-13.0	27.3	82.4	Vertical	PASS
19067.332	-26.08	-13.0	13.1	1.4	Vertical	PASS

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



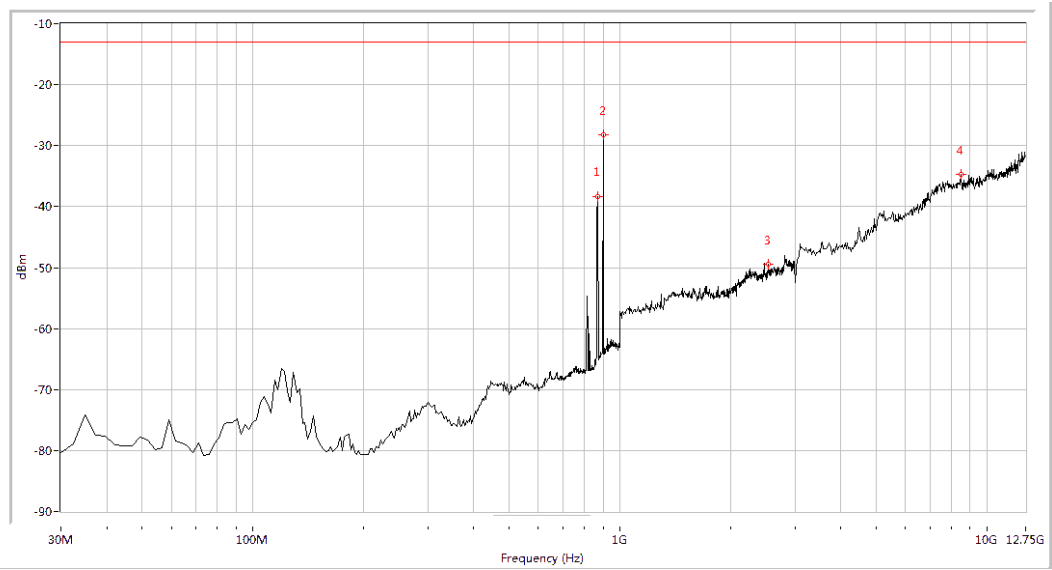
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-68.01	-13.0	55.0	117.3	Horizontal	PASS
1987.531	-49.08	-13.0	36.1	15.3	Horizontal	PASS
5119.701	-40.29	-13.0	27.3	360.0	Horizontal	PASS
19236.908	-24.94	-13.0	11.9	56.3	Horizontal	PASS

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



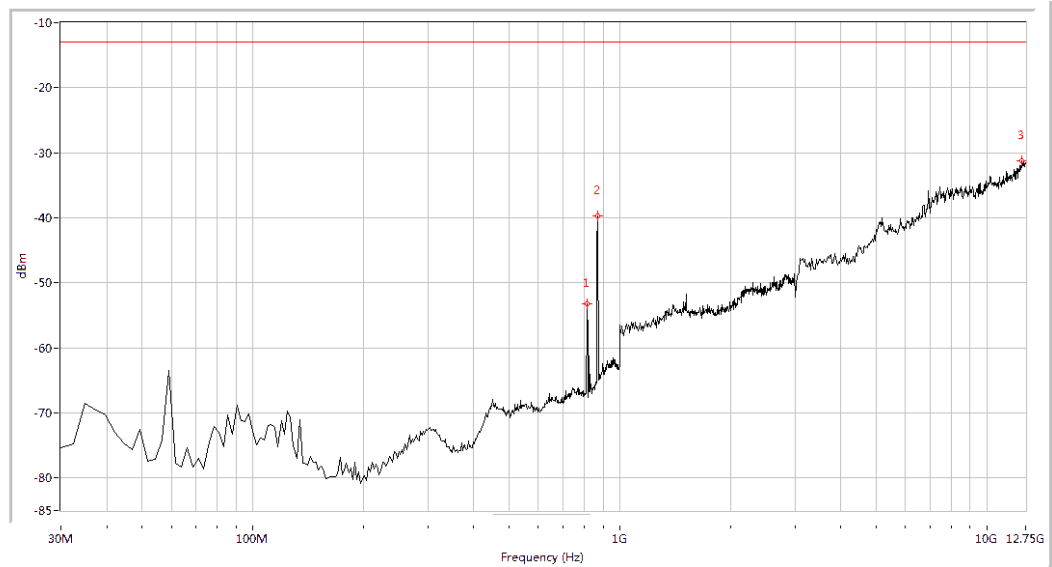
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
150.948	-68.02	-13.0	55.0	128.4	Vertical	PASS
1987.531	-40.93	-13.0	27.9	58.9	Vertical	PASS
7239.401	-35.66	-13.0	22.7	9.8	Vertical	PASS
19321.696	-24.87	-13.0	11.9	52.2	Vertical	PASS

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



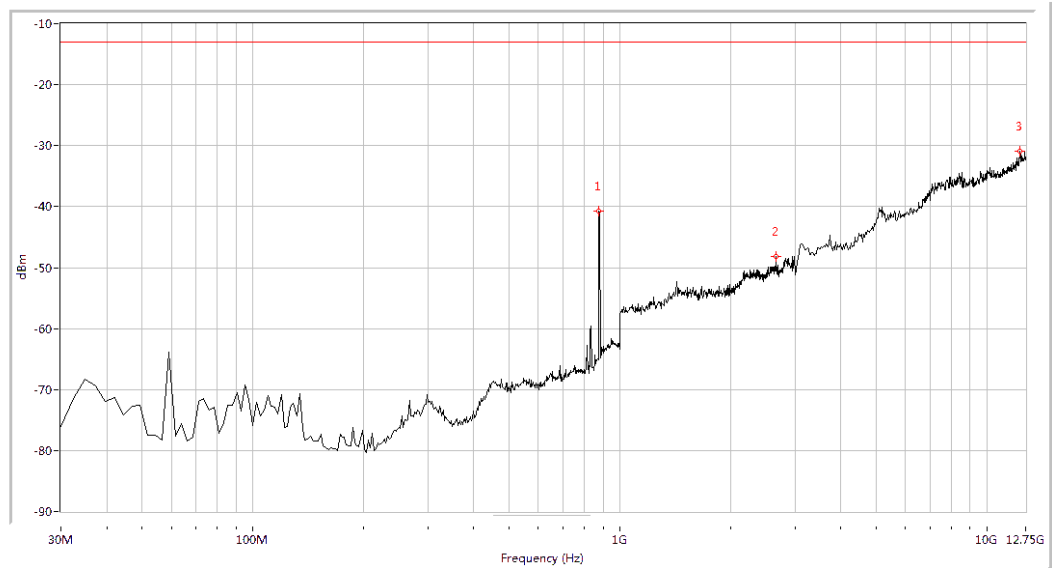
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-38.41	-13.0	25.4	216.9	Horizontal	PASS
900.823	-28.21	-13.0	15.2	133.2	Horizontal	PASS
2531.172	-49.50	-13.0	36.5	355.8	Horizontal	PASS
8495.012	-34.76	-13.0	21.8	176.8	Horizontal	PASS

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



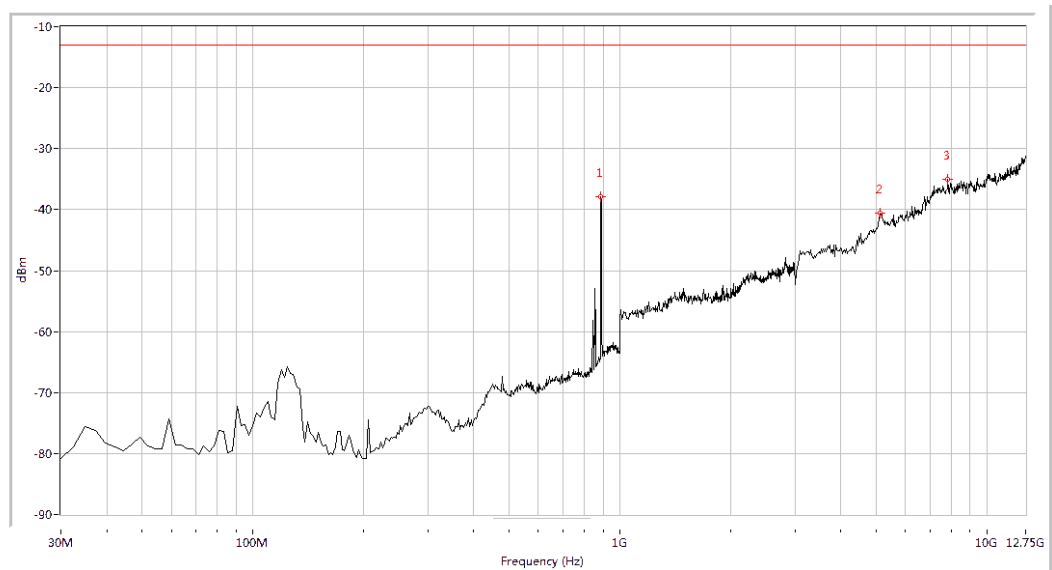
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-53.21	-13.0	40.2	158.9	Vertical	PASS
869.377	-39.75	-13.0	26.7	235.9	Vertical	PASS
12482.544	-31.18	-13.0	18.2	218.8	Vertical	PASS

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



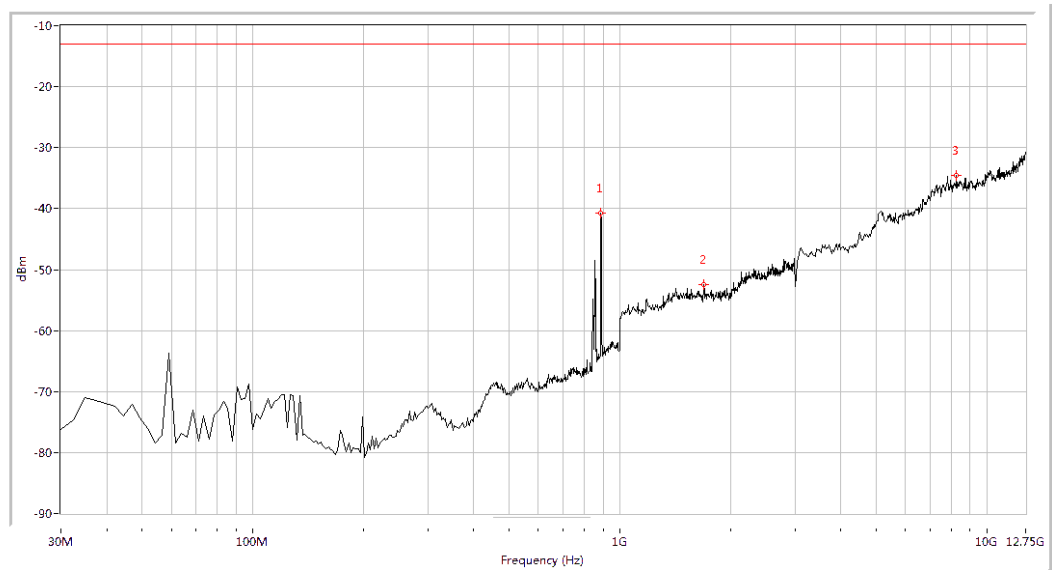
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-40.66	-13.0	27.7	69.3	Vertical	PASS
2665.835	-48.15	-13.0	35.1	0.4	Vertical	PASS
12312.344	-30.97	-13.0	18.0	43.2	Vertical	PASS

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



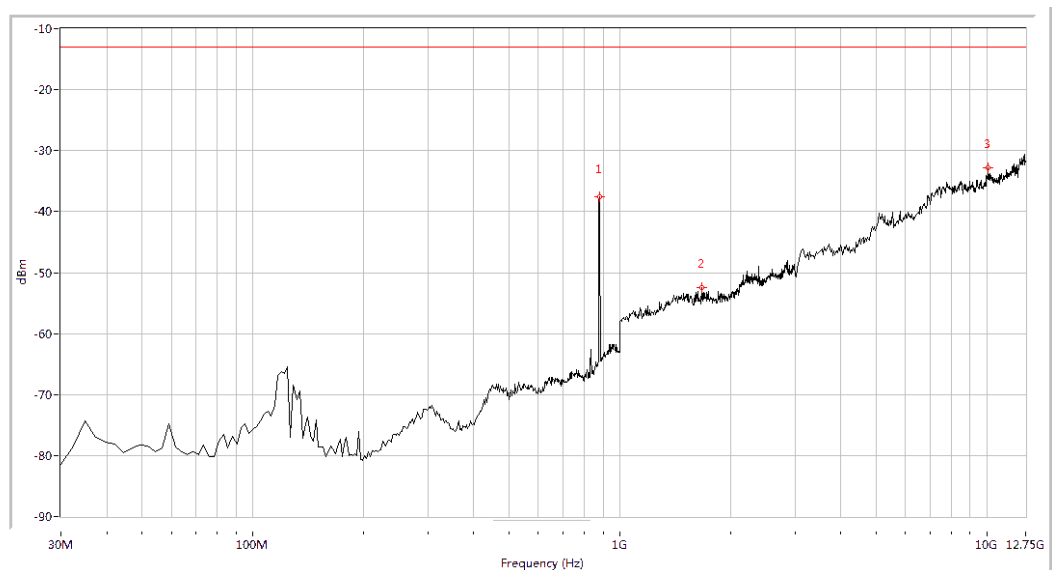
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
888.728	-37.82	-13.0	24.8	178.5	Horizontal	PASS
5115.337	-40.62	-13.0	27.6	337.4	Horizontal	PASS
7814.214	-35.09	-13.0	22.1	149.9	Horizontal	PASS

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



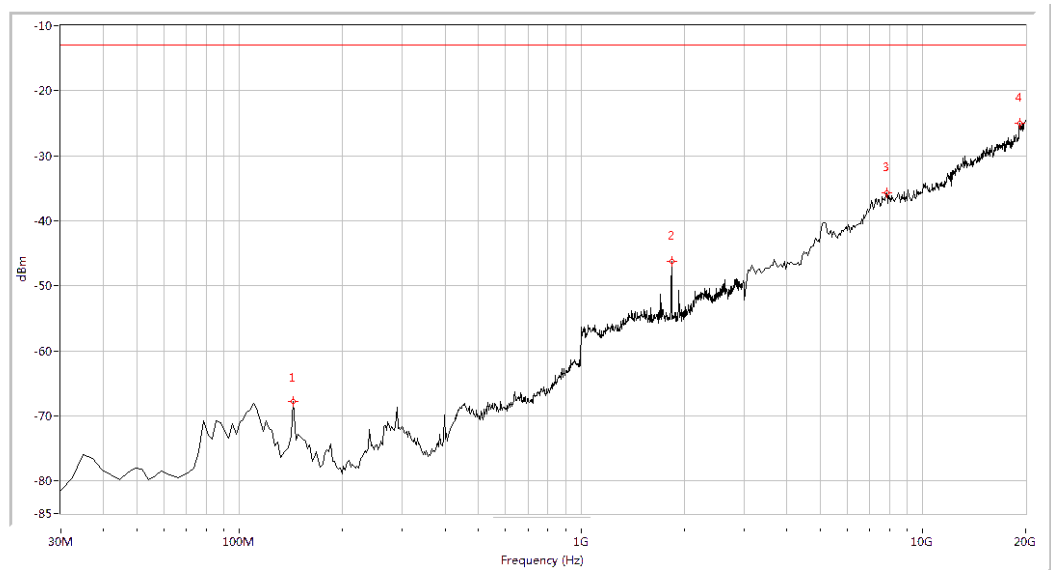
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
888.728	-40.77	-13.0	27.8	21.8	Vertical	PASS
1693.267	-52.38	-13.0	39.4	238.4	Vertical	PASS
8251.870	-34.55	-13.0	21.5	357.6	Vertical	PASS

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



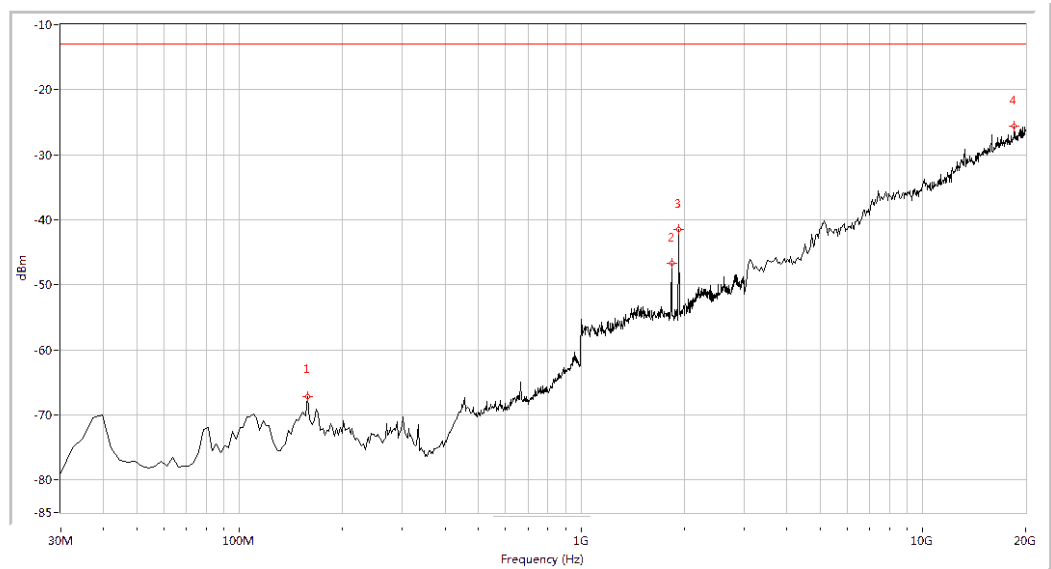
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-37.64	-13.0	24.6	139.6	Horizontal	PASS
1668.329	-52.47	-13.0	39.5	3.8	Horizontal	PASS
10099.751	-32.84	-13.0	19.8	99.7	Horizontal	PASS

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



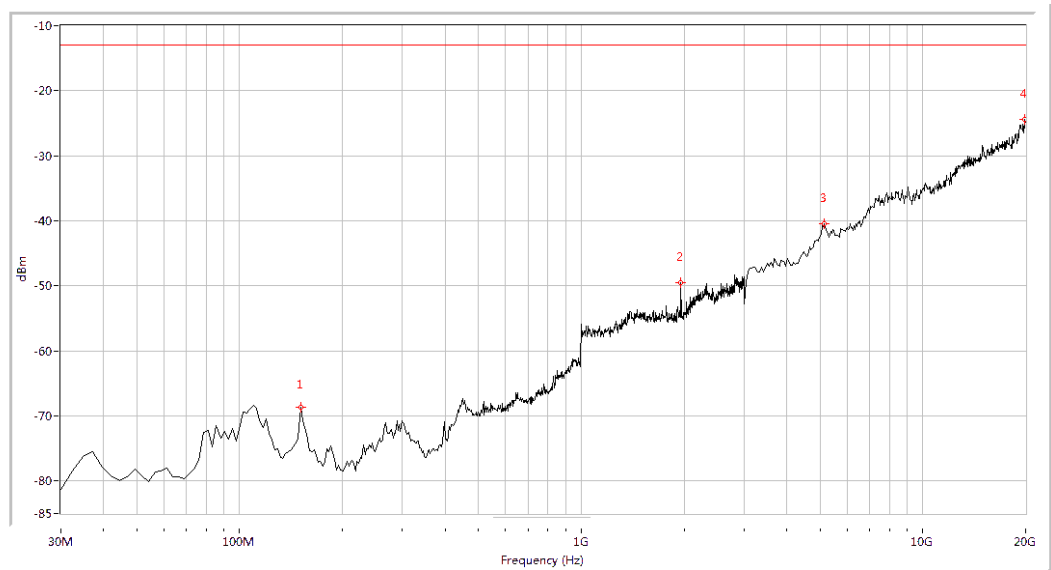
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
143.691	-67.74	-13.0	54.7	235.7	Horizontal	PASS
1837.905	-46.27	-13.0	33.3	100.2	Horizontal	PASS
7832.918	-35.76	-13.0	22.8	177.5	Horizontal	PASS
19194.514	-24.96	-13.0	12.0	1.5	Horizontal	PASS

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



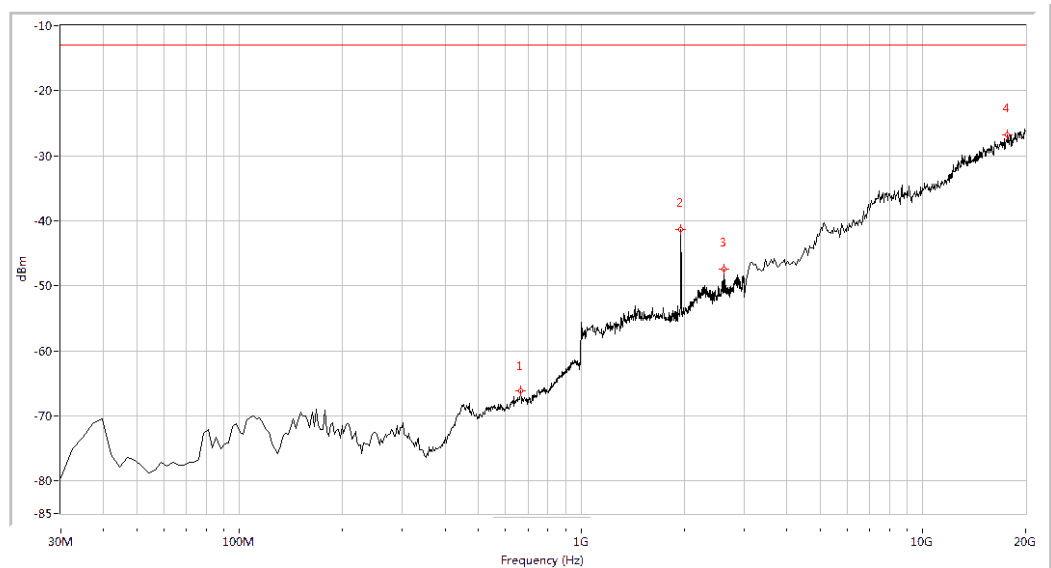
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
158.204	-67.24	-13.0	54.2	206.1	Vertical	PASS
1837.905	-46.73	-13.0	33.7	289.3	Vertical	PASS
1932.668	-41.47	-13.0	28.5	360.0	Vertical	PASS
18558.603	-25.64	-13.0	12.6	4.2	Vertical	PASS

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



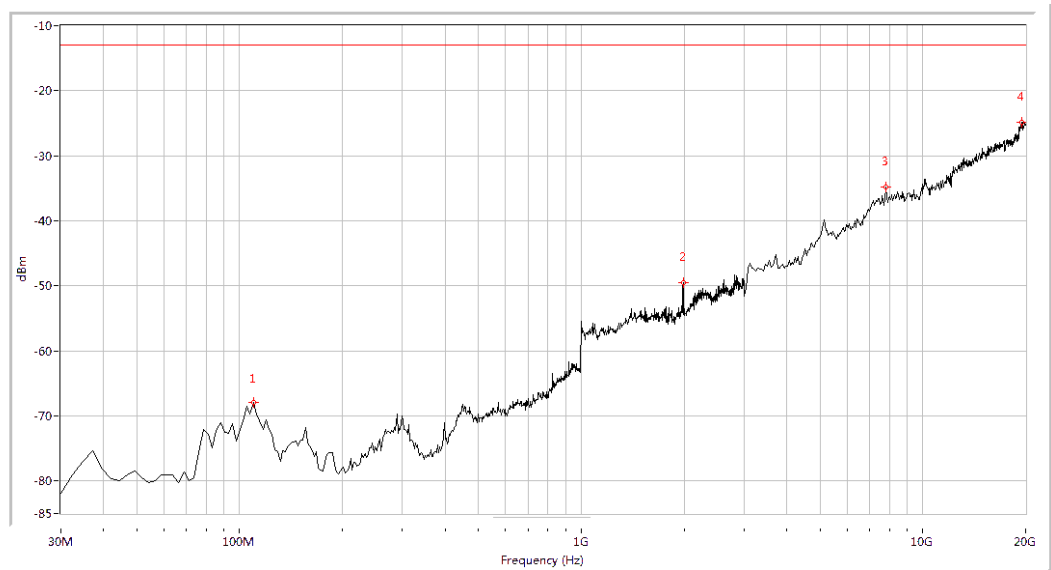
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
150.948	-68.72	-13.0	55.7	226.4	Horizontal	PASS
1957.606	-49.46	-13.0	36.5	67.7	Horizontal	PASS
5162.095	-40.38	-13.0	27.4	97.4	Horizontal	PASS
19872.818	-24.37	-13.0	11.4	149.4	Horizontal	PASS

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



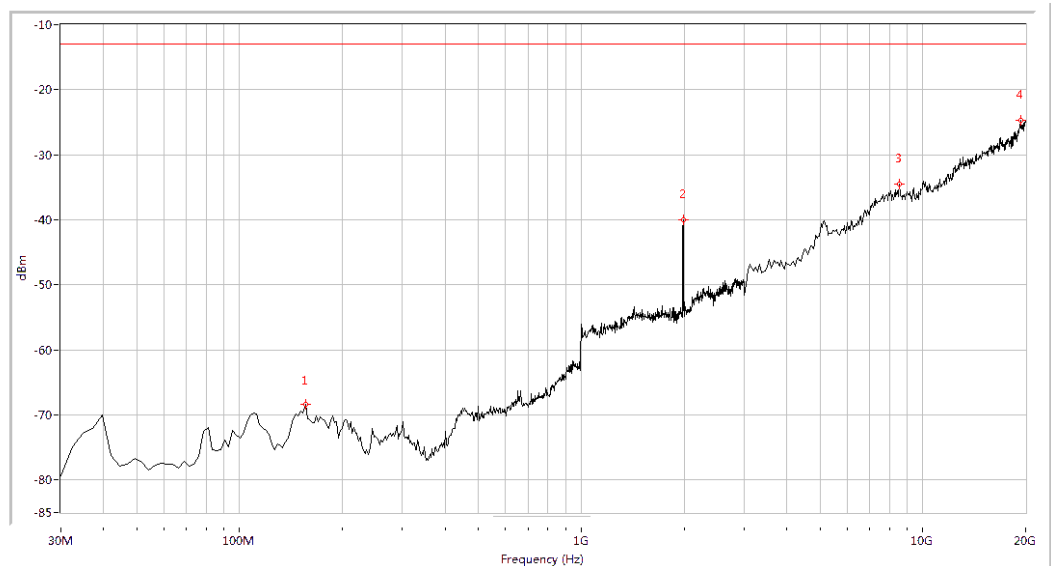
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
666.185	-66.09	-13.0	53.1	194.0	Vertical	PASS
1957.606	-41.29	-13.0	28.3	201.6	Vertical	PASS
2625.935	-47.40	-13.0	34.4	149.6	Vertical	PASS
17710.723	-26.84	-13.0	13.8	243.1	Vertical	PASS
19576.060	-31.31	-13.0	18.3	335.5	Vertical	PASS

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



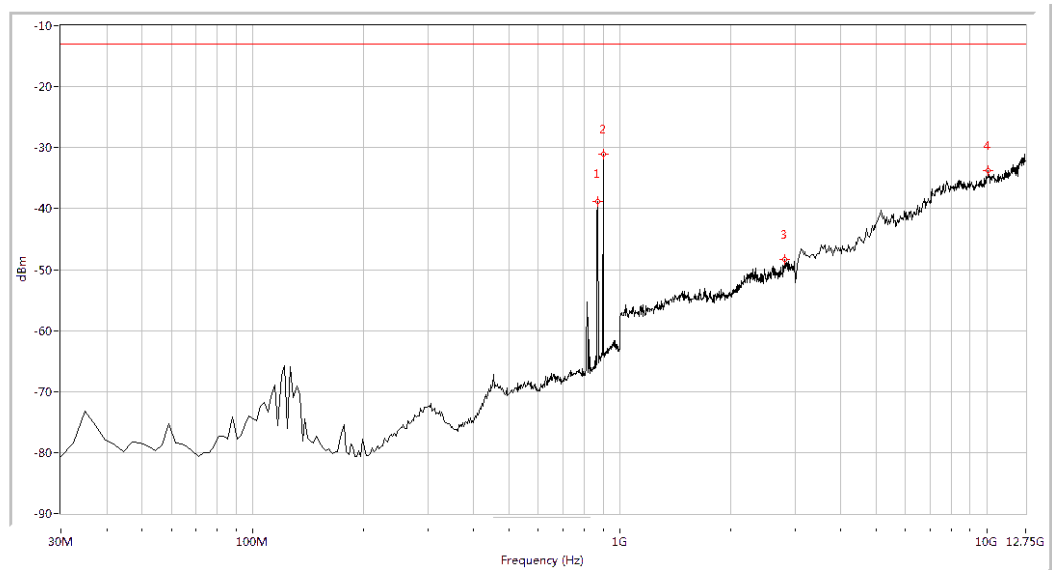
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.96	-13.0	55.0	93.0	Horizontal	PASS
1987.531	-49.56	-13.0	36.6	263.6	Horizontal	PASS
7790.524	-34.83	-13.0	21.8	145.5	Horizontal	PASS
19491.272	-24.87	-13.0	11.9	145.5	Horizontal	PASS

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



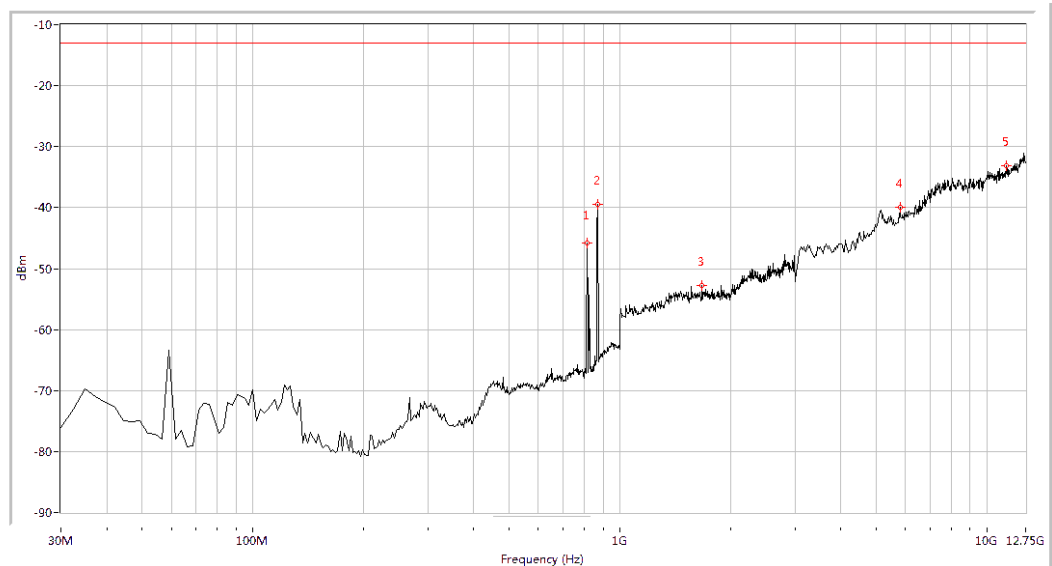
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
155.786	-68.32	-13.0	55.3	115.2	Vertical	PASS
1987.531	-40.03	-13.0	27.0	192.0	Vertical	PASS
8553.616	-34.46	-13.0	21.5	45.5	Vertical	PASS
19406.484	-24.70	-13.0	11.7	71.6	Vertical	PASS

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



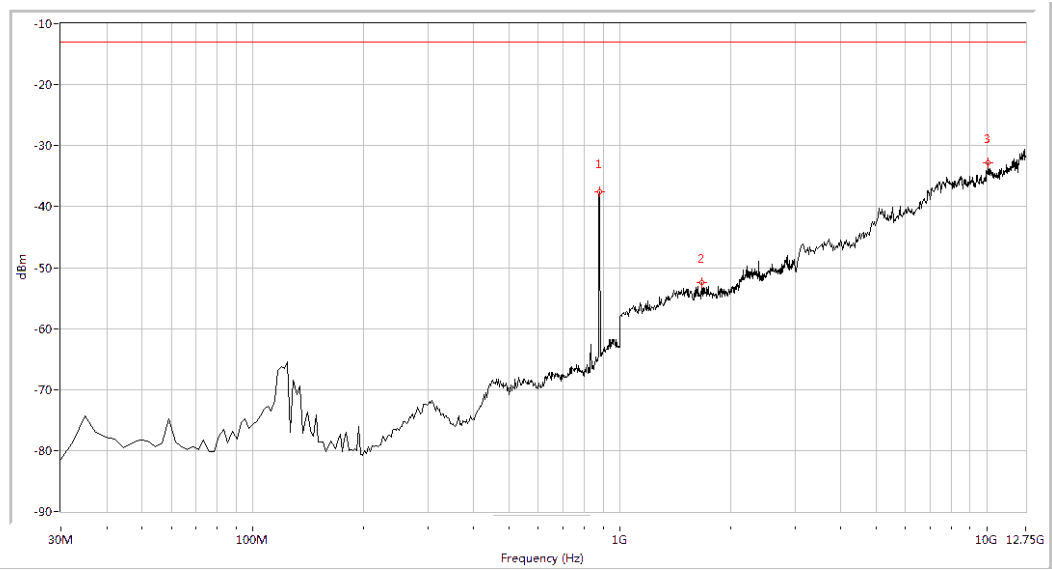
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-38.78	-13.0	25.8	209.2	Horizontal	PASS
900.823	-31.12	-13.0	18.1	229.7	Horizontal	PASS
2820.449	-48.37	-13.0	35.4	135.2	Horizontal	PASS
10099.751	-33.84	-13.0	20.8	44.9	Horizontal	PASS

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



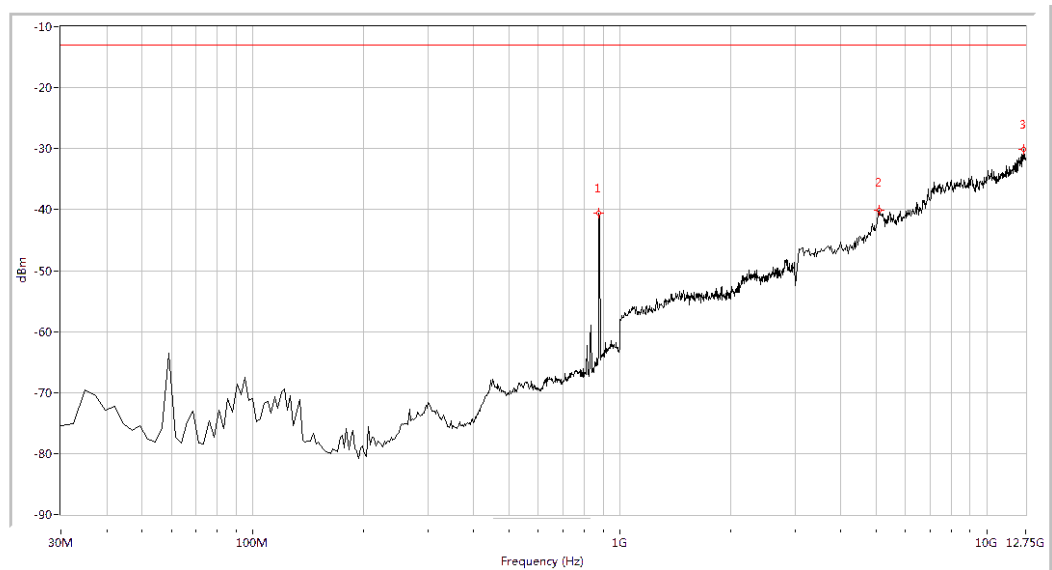
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
816.160	-45.73	-13.0	32.7	353.1	Vertical	PASS
869.377	-39.47	-13.0	26.5	294.1	Vertical	PASS
1673.317	-52.81	-13.0	39.8	360.0	Vertical	PASS
5796.135	-39.95	-13.0	27.0	135.6	Vertical	PASS
11315.461	-33.17	-13.0	20.2	58.6	Vertical	PASS

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



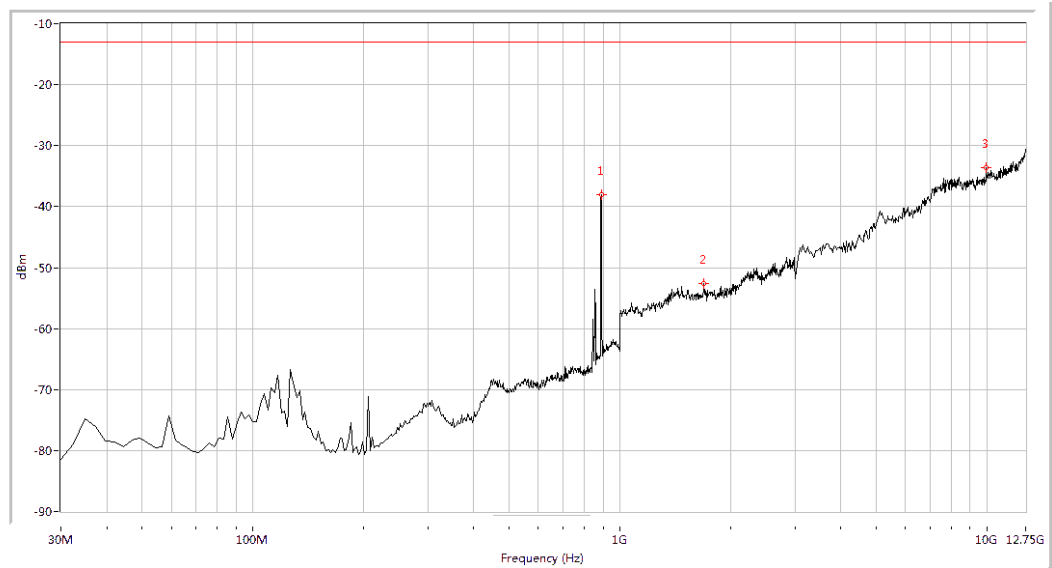
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-37.64	-13.0	24.6	139.6	Horizontal	PASS
1668.329	-52.47	-13.0	39.5	3.8	Horizontal	PASS
10099.751	-32.84	-13.0	19.8	99.7	Horizontal	PASS

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



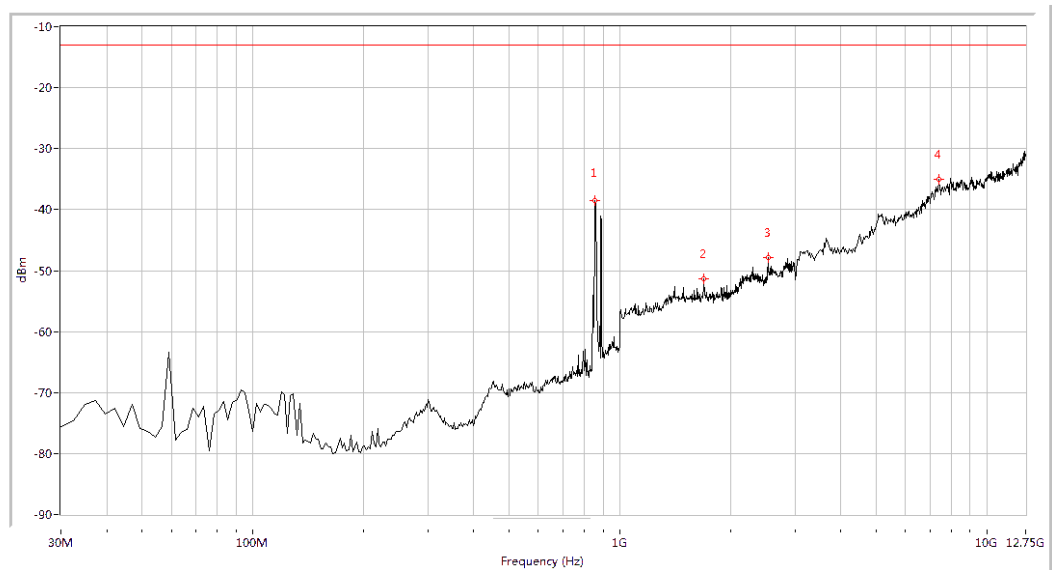
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-40.58	-13.0	27.6	204.8	Vertical	PASS
5091.022	-40.18	-13.0	27.2	192.9	Vertical	PASS
12604.115	-30.16	-13.0	17.2	22.2	Vertical	PASS

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



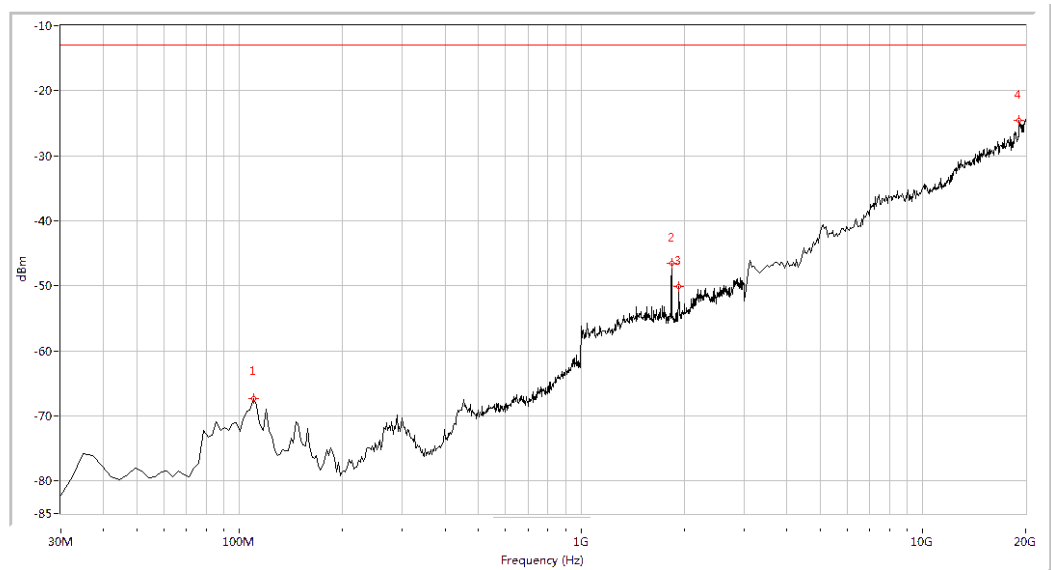
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-38.06	-13.0	25.1	220.1	Horizontal	PASS
1693.267	-52.68	-13.0	39.7	61.8	Horizontal	PASS
9953.865	-33.55	-13.0	20.6	33.0	Horizontal	PASS

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



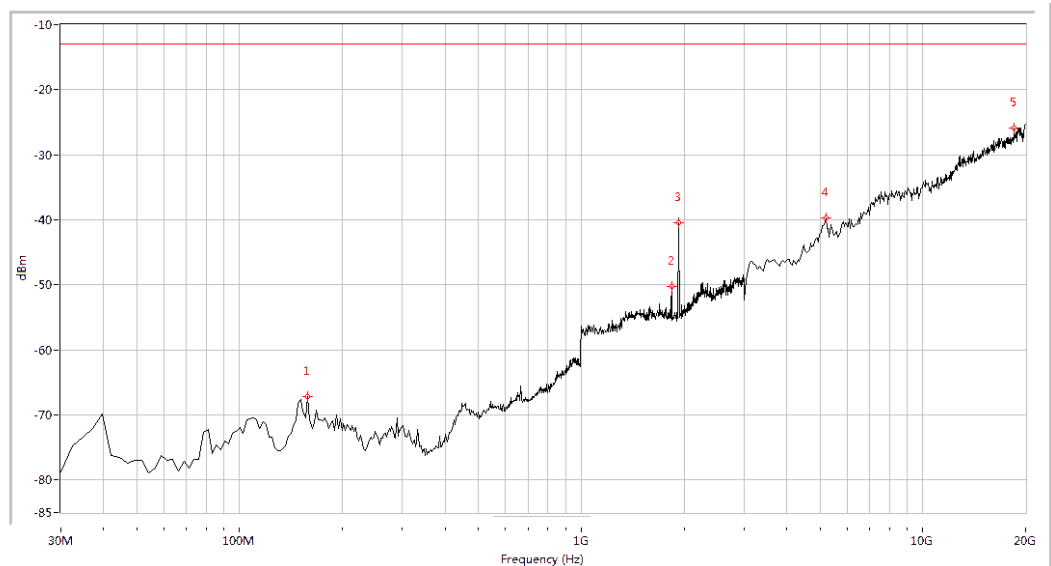
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
854.863	-38.54	-13.0	25.5	360.0	Vertical	PASS
1693.267	-51.32	-13.0	38.3	39.6	Vertical	PASS
2531.172	-47.84	-13.0	34.8	6.6	Vertical	PASS
7400.873	-35.02	-13.0	22.0	312.8	Vertical	PASS

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



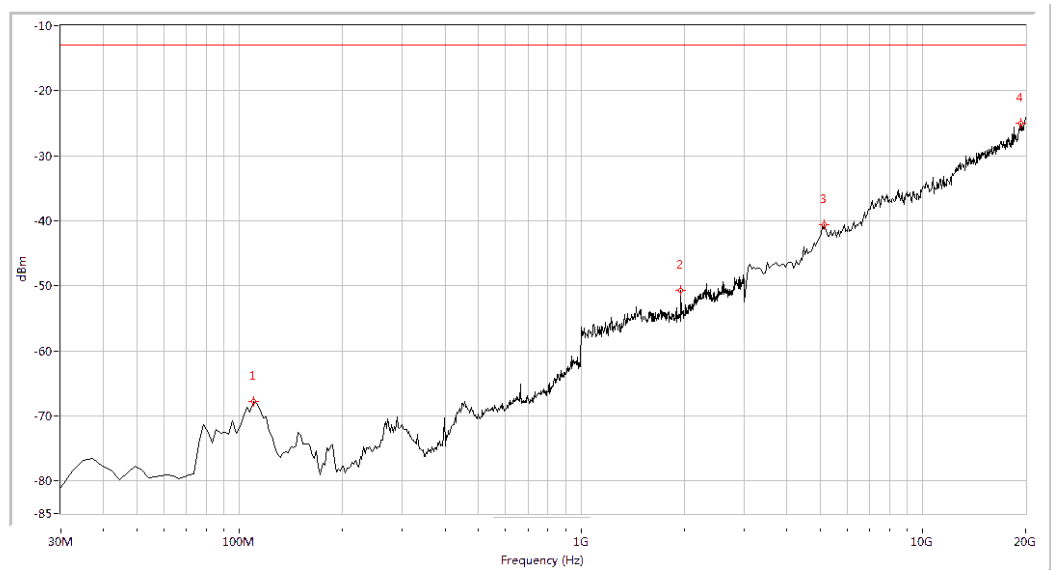
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.27	-13.0	54.3	137.8	Horizontal	PASS
1837.905	-46.51	-13.0	33.5	78.9	Horizontal	PASS
1932.668	-50.04	-13.0	37.0	66.7	Horizontal	PASS
19152.120	-24.53	-13.0	11.5	93.2	Horizontal	PASS

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



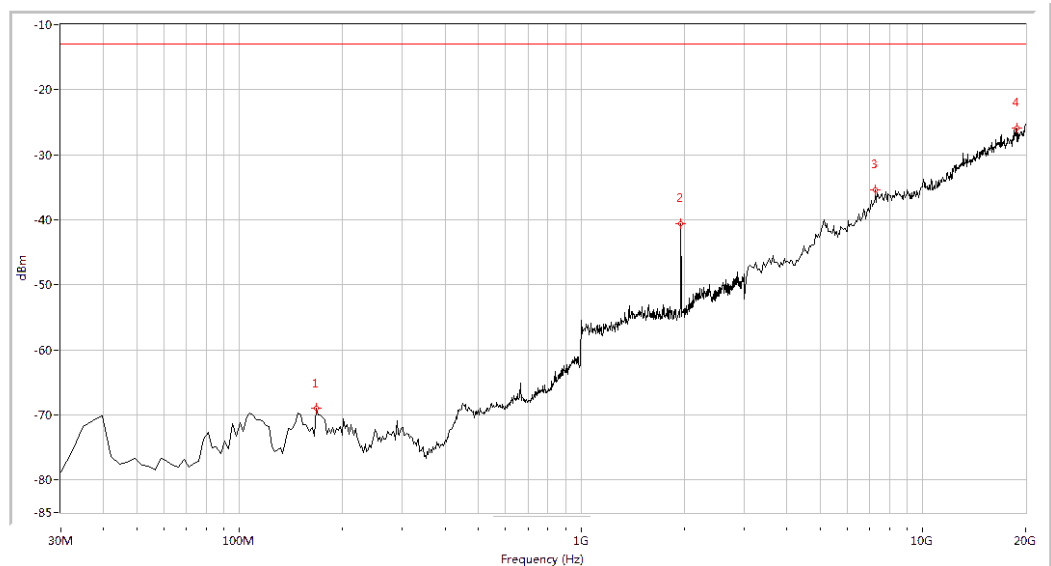
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
158.204	-67.22	-13.0	54.2	173.6	Vertical	PASS
1837.905	-50.21	-13.0	37.2	69.6	Vertical	PASS
1932.668	-40.50	-13.0	27.5	4.0	Vertical	PASS
5204.489	-39.71	-13.0	26.7	-0.0	Vertical	PASS
18516.209	-25.82	-13.0	12.8	325.7	Vertical	PASS

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



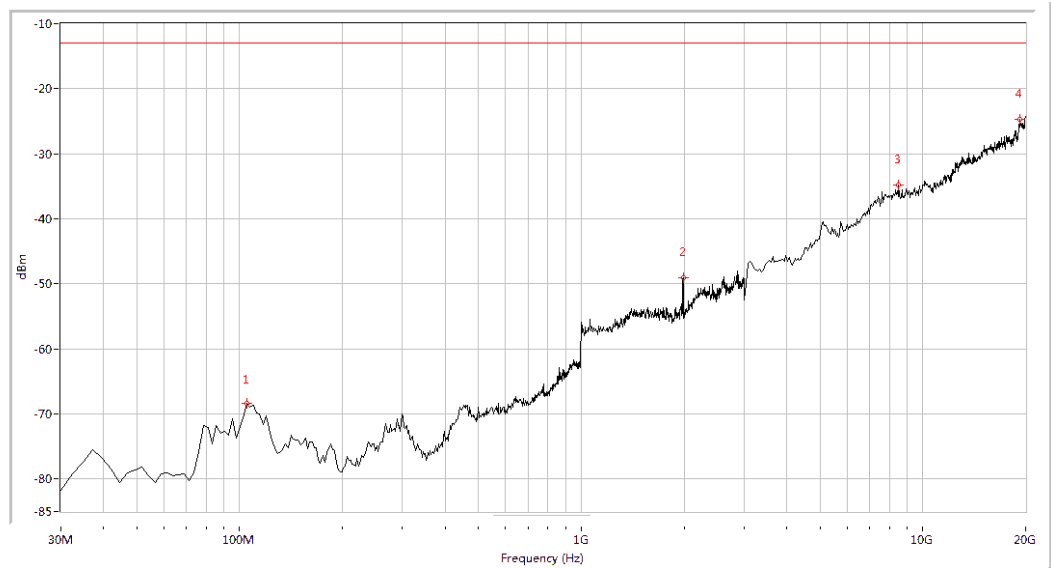
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.72	-13.0	54.7	102.3	Horizontal	PASS
1957.606	-50.74	-13.0	37.7	63.8	Horizontal	PASS
5162.095	-40.67	-13.0	27.7	360.0	Horizontal	PASS
19406.484	-25.04	-13.0	12.0	-0.0	Horizontal	PASS

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



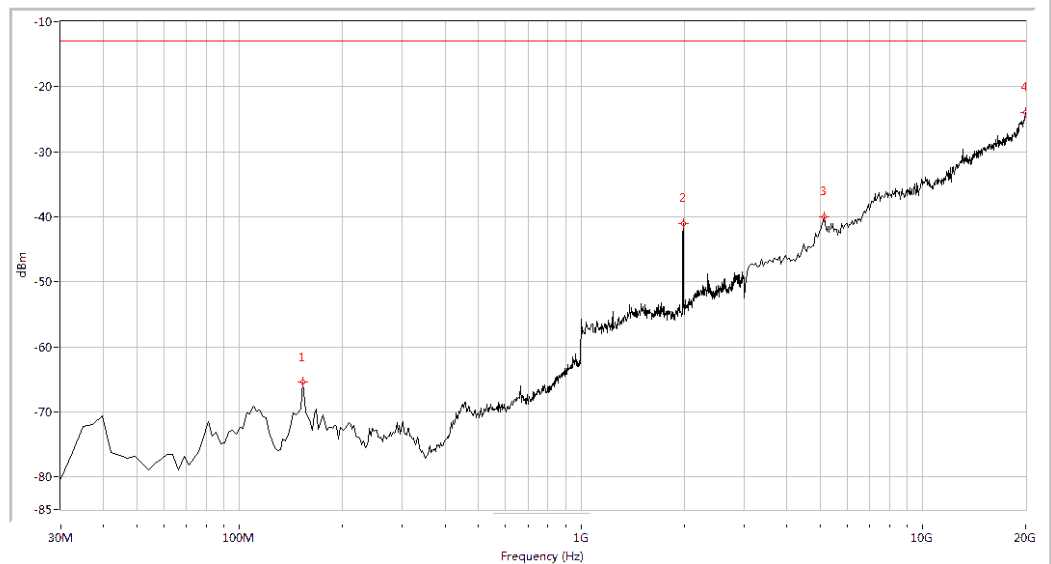
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
167.880	-68.90	-13.0	55.9	205.0	Vertical	PASS
1957.606	-40.56	-13.0	27.6	-0.0	Vertical	PASS
7281.796	-35.46	-13.0	22.5	-0.0	Vertical	PASS
18855.362	-25.84	-13.0	12.8	210.2	Vertical	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-68.35	-13.0	55.3	172.0	Horizontal	PASS
1987.531	-49.10	-13.0	36.1	226.5	Horizontal	PASS
8511.222	-34.84	-13.0	21.8	144.2	Horizontal	PASS
19194.514	-24.77	-13.0	11.8	284.1	Horizontal	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
153.367	-65.44	-13.0	52.4	190.1	Vertical	PASS
1987.531	-41.07	-13.0	28.1	106.5	Vertical	PASS
5162.095	-40.06	-13.0	27.1	258.8	Vertical	PASS
19957.606	-24.02	-13.0	11.0	-0.0	Vertical	PASS

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

** END OF REPORT **