



Report No.: SZ13040143W06



FCC PART 22&24 TEST REPORT

Issued to

Corporativo Lanix S.A. de C.V.

For

Smartphone

Model Name: Ilium S500
Trade Name: Lanix
Brand Name: Lanix
FCC ID: ZC4S500
Standard: 47 CFR Part 22 Subpart H
47 CFR Part 24 Subpart E
Test date: 2013-04-22 to 2013-05-08
Issue date: 2013-05-28

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Change History		
Issue	Date	Reason for change
1.0	2013-05-28	First edition
2.0	2013-05-24	List the complete Version of ANSI C63.4 and ANSI C63.7 in Page 7; Correct the value in result table in page 74 in accordance with test plot; 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 1900:250KGXW EGPRS850:247KG7W, EGPRS1900:249KG7W, WCDMA850:4M19F9W,WCDMA1900:4M19F9W

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula $F(n)=824.2+0.2*(n-128)$, $128 \leq n \leq 251$; 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

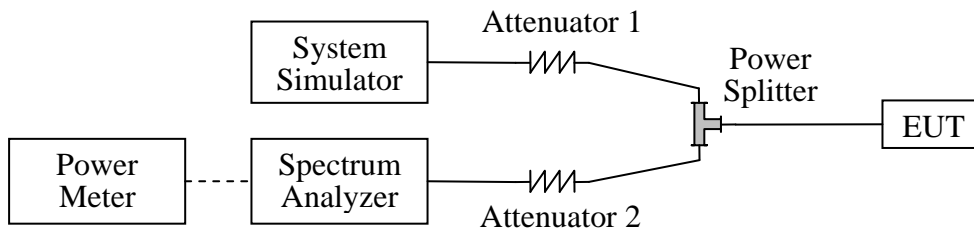
2.1 Conducted RF Output Power

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	32.03	Plot A1 to A3	35	PASS
	190	836.6	32.2			PASS
	251	848.8	32.23			PASS
GSM 1900MHz	512	1850.2	29.07	Plot B1 to B3	32	PASS
	661	1880.0	28.93			PASS
	810	1909.8	28.07			PASS
GPRS 850MHz	128	824.2	31.33	Plot C1 to C3 ^{Note1}	35	PASS
	190	836.6	31.6			PASS
	251	848.8	31.64			PASS
GPRS 1900MHz	512	1850.2	28.48	Plot D1 to D3 ^{Note1}	32	PASS
	661	1880.0	28.39			PASS
	810	1909.8	27.5			PASS
EGPRS 850MHz	128	824.2	32.12	Plot E1 to E3 ^{Note1}	35	PASS
	190	836.6	32.35			PASS
	251	848.8	32.38			PASS
EGPRS 1900MHz	512	1850.2	29.23	Plot F1 to F3 ^{Note1}	32	PASS
	661	1880.0	29.07			PASS
	810	1909.8	28.21			PASS

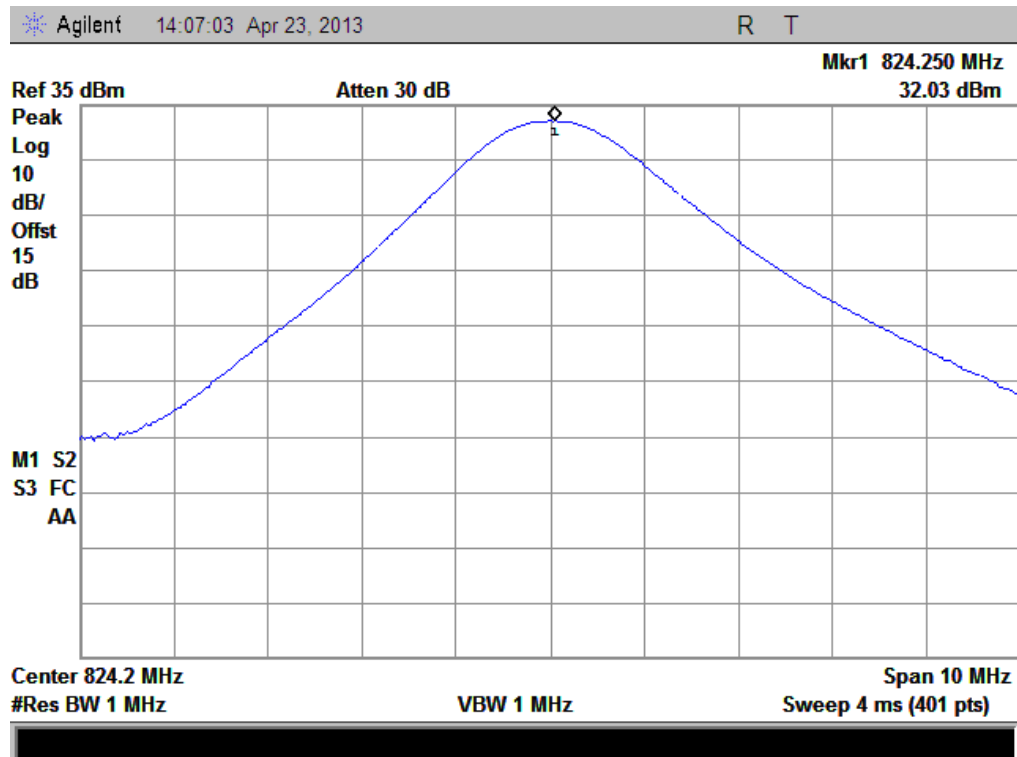
Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.

2. WCDMA Model:

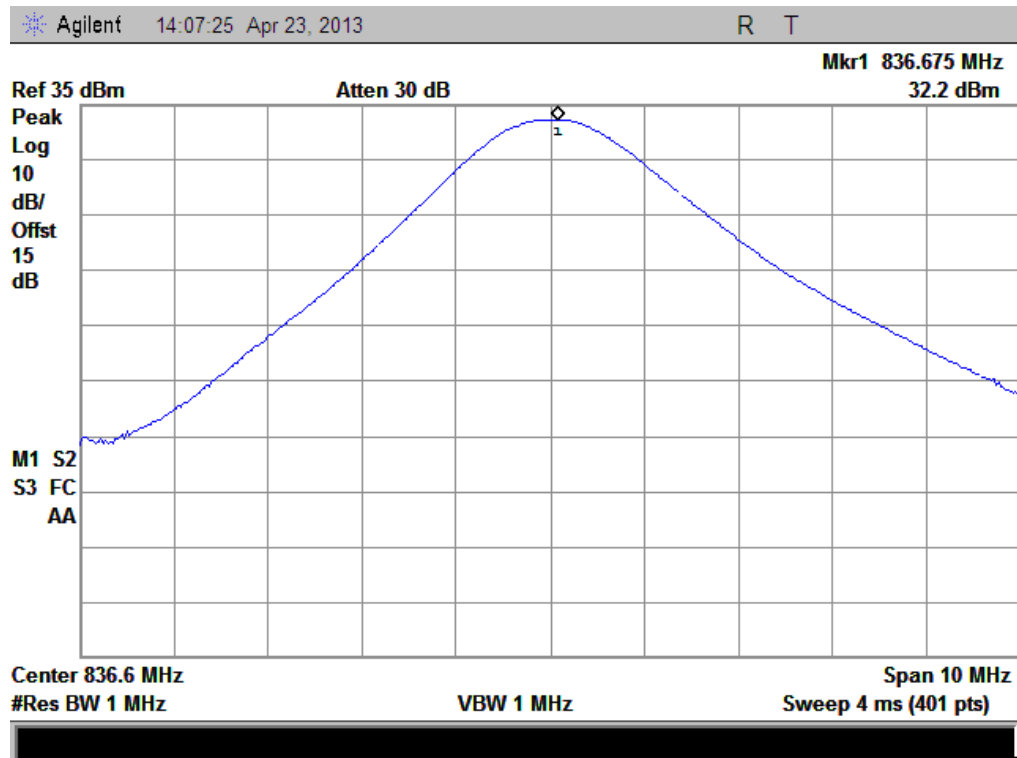
Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	24.63	24.57	24.46	23.69	23.57	23.66
HSDPA	1	24.47	24.31	24.36	23.63	23.55	23.63
	2	24.45	24.29	24.35	23.61	23.57	23.61
	3	23.95	23.79	23.87	23.15	23.08	23.15
	4	23.91	23.77	23.83	23.12	23.05	23.12
HSUPA	1	24.45	24.29	24.33	23.61	23.52	23.62
	2	22.43	22.27	22.31	21.59	21.57	21.65
	3	23.48	23.29	23.34	22.62	22.59	22.61
	4	22.41	22.27	22.33	21.58	21.57	21.62
	5	24.45	24.28	24.34	23.61	23.49	23.61

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

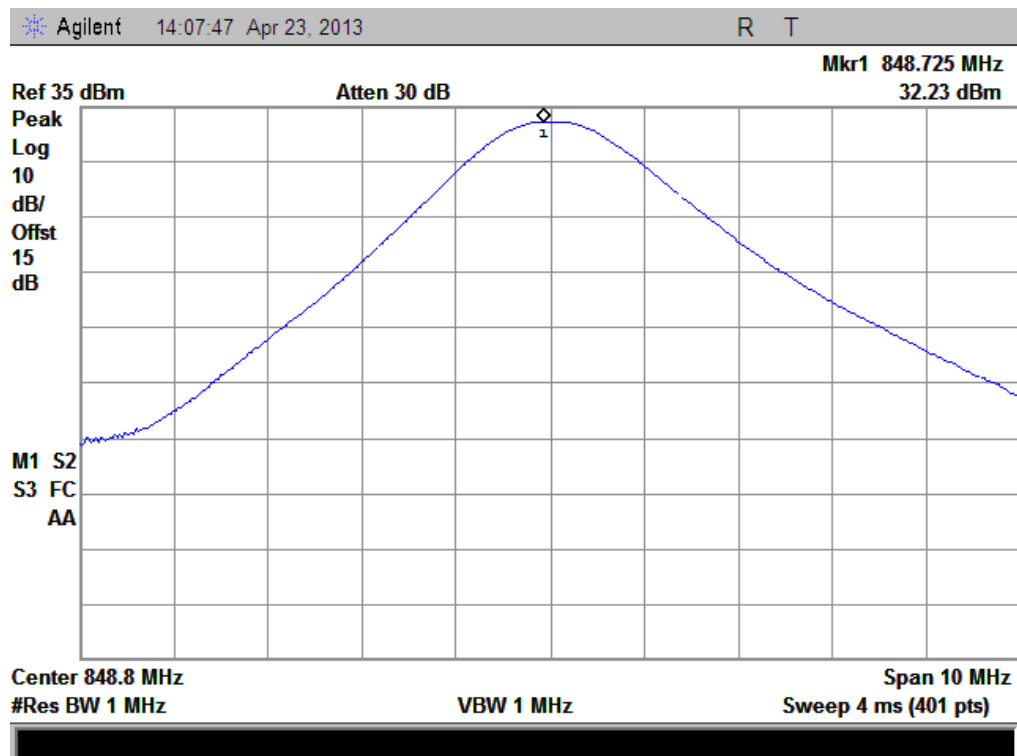
3. GSM Model Test Plots:



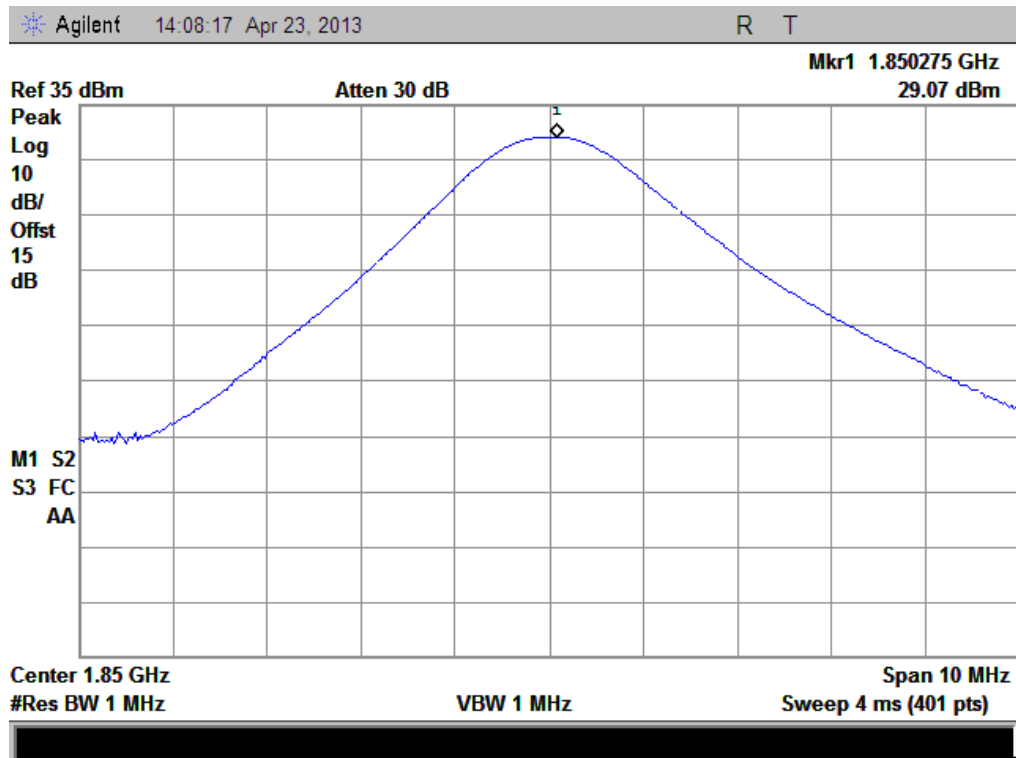
(Plot A1: GSM 850MHz Channel = 128)



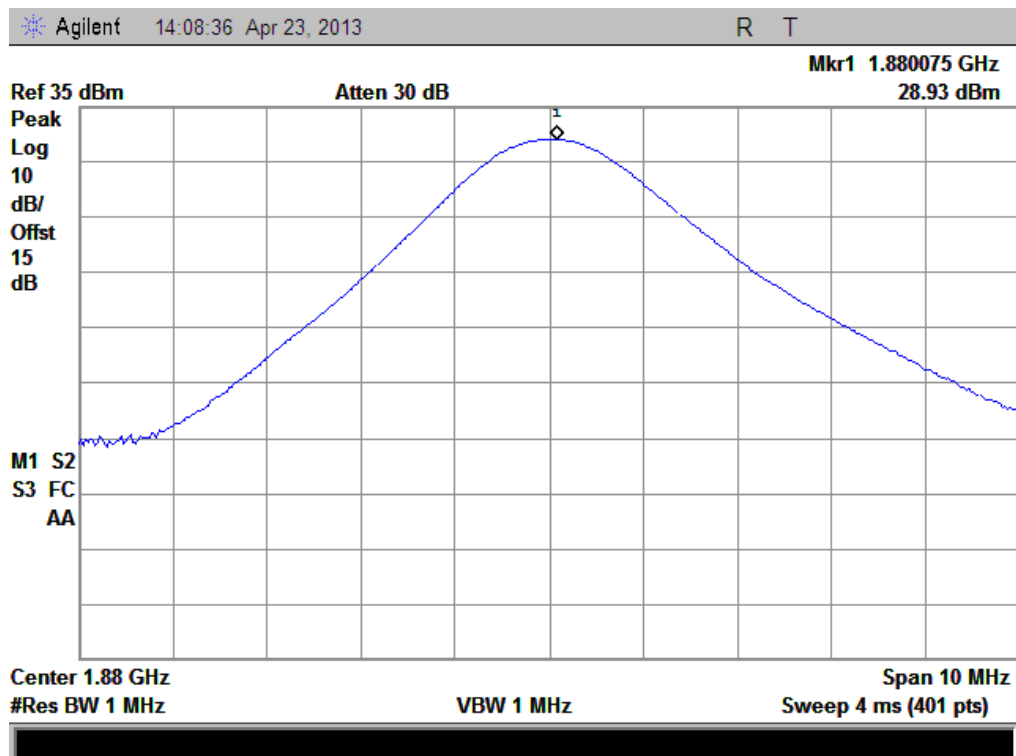
(Plot A2: GSM 850MHz Channel = 190)



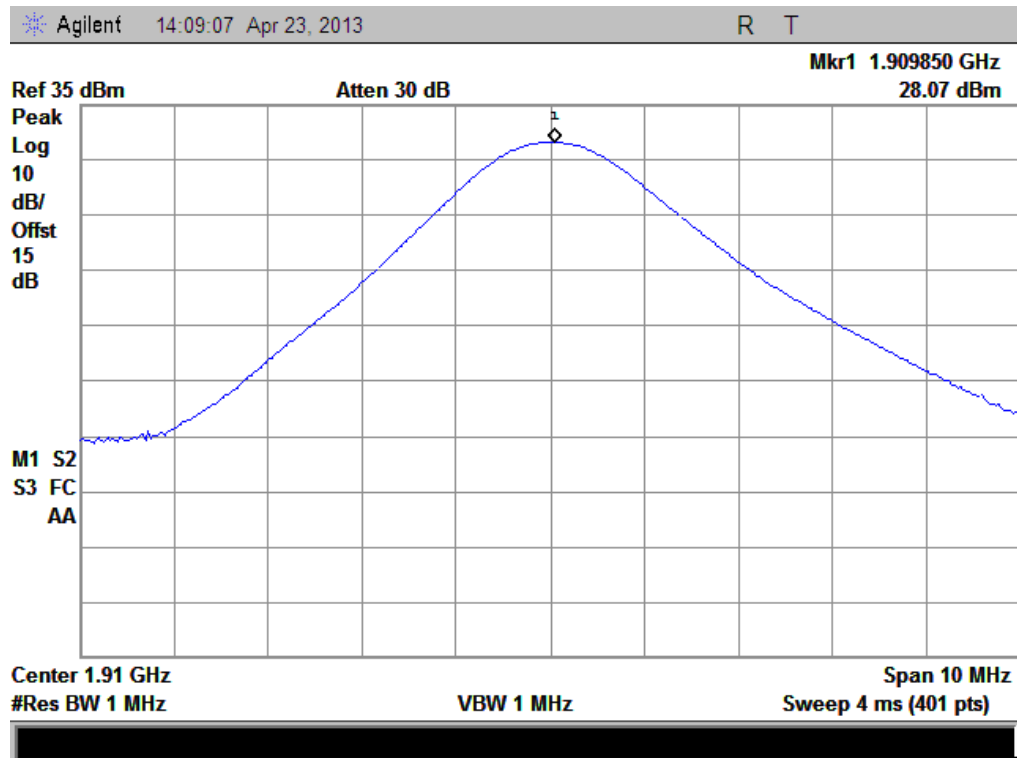
(Plot A3: GSM 850MHz Channel = 251)



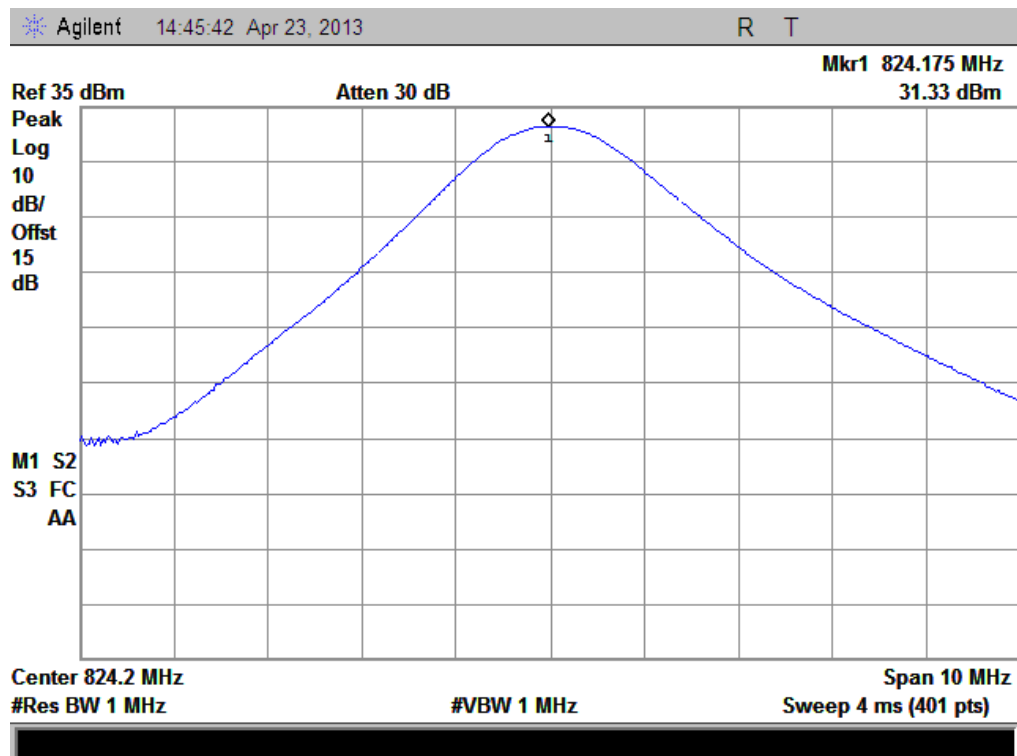
(Plot B1: GSM 1900MHz Channel = 512)



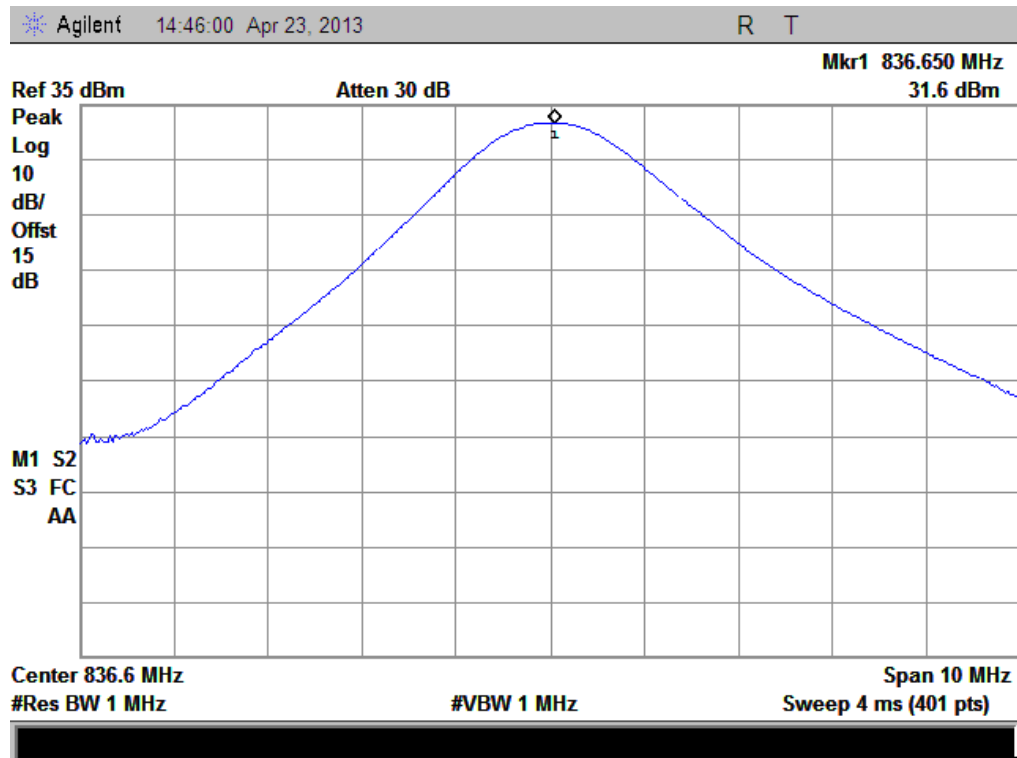
(Plot B2: GSM 1900MHz Channel = 661)



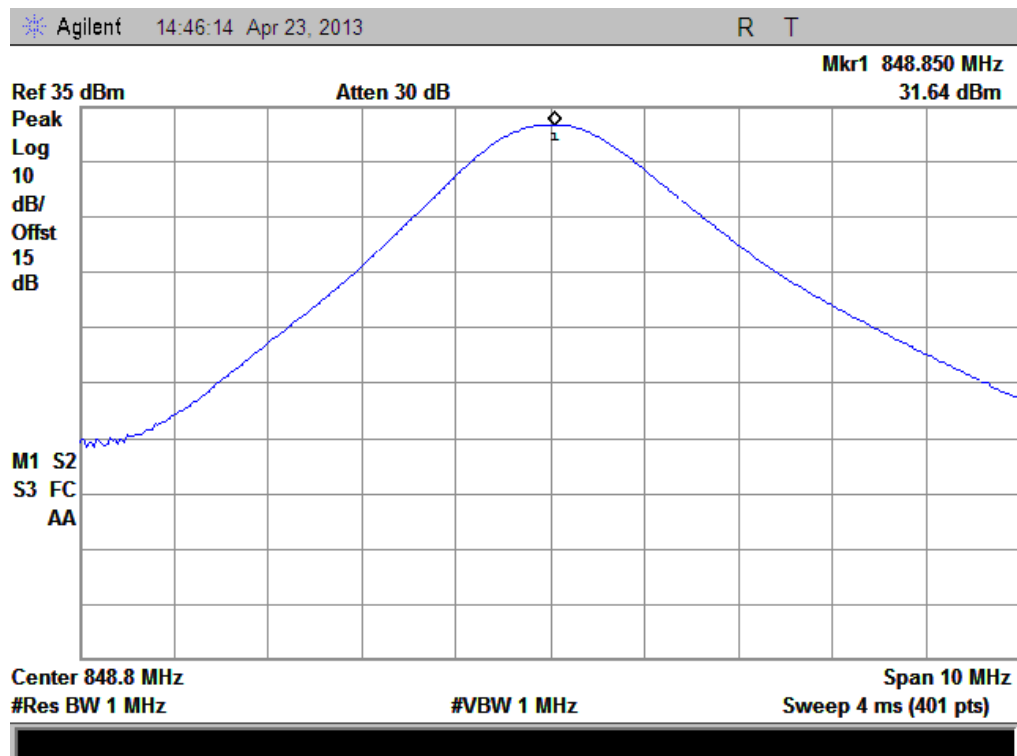
(Plot B3: GSM 1900Hz Channel = 810)



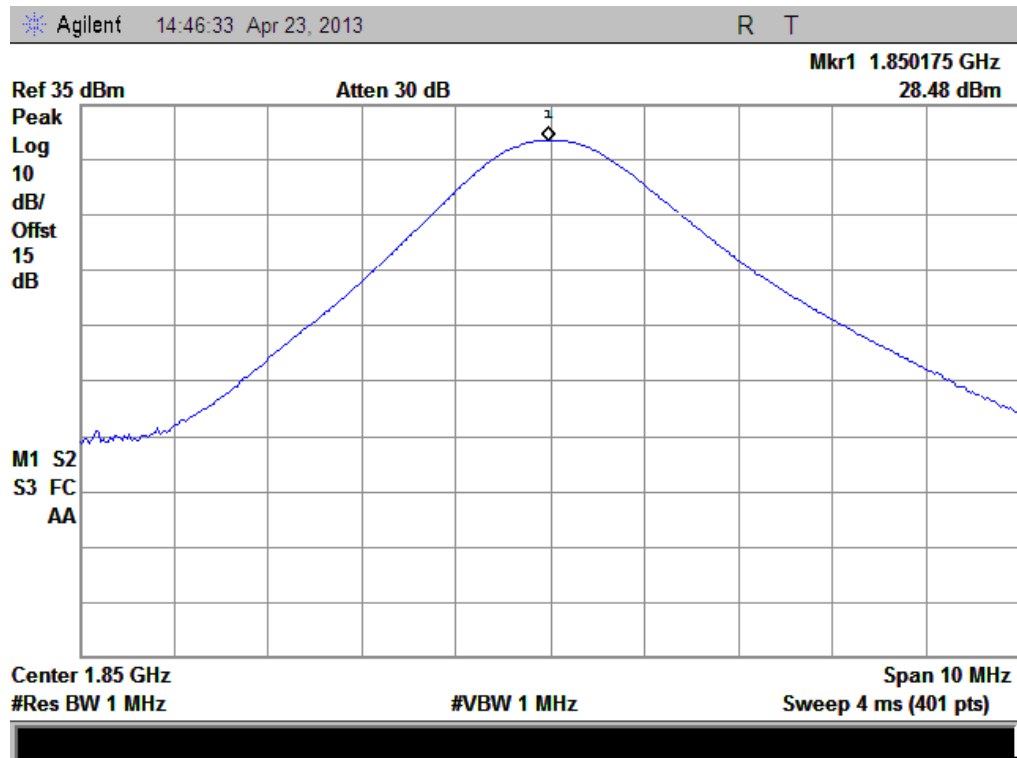
(Plot C 1: GPRS 850MHz Channel = 128)



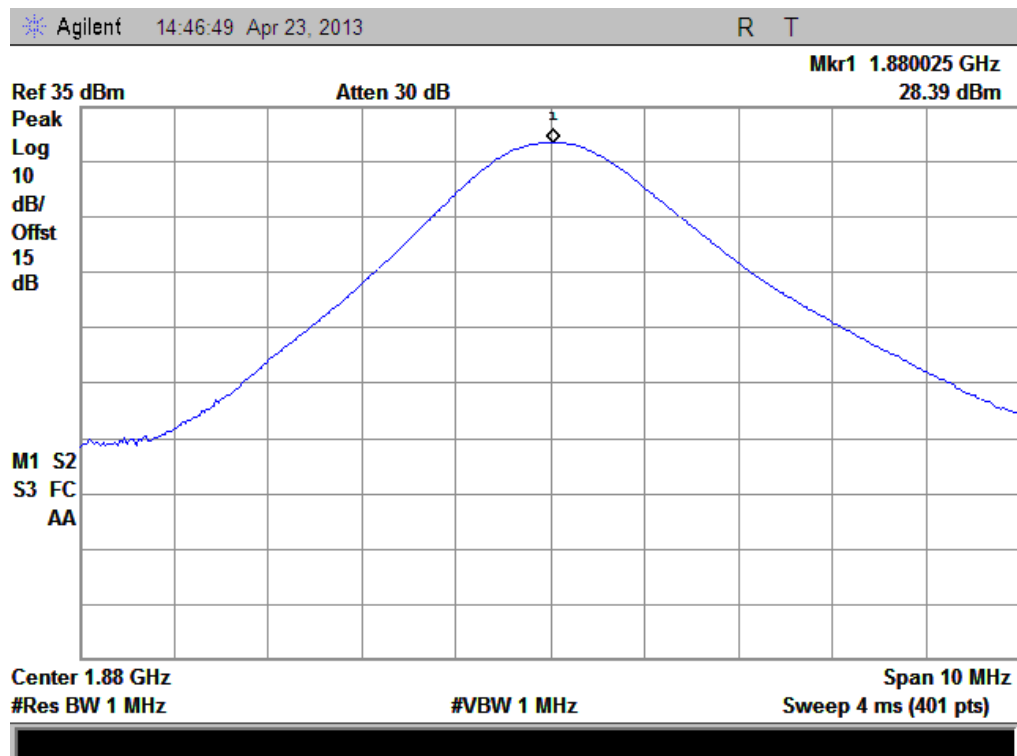
(Plot C 2: GPRS 850MHz Channel = 190)



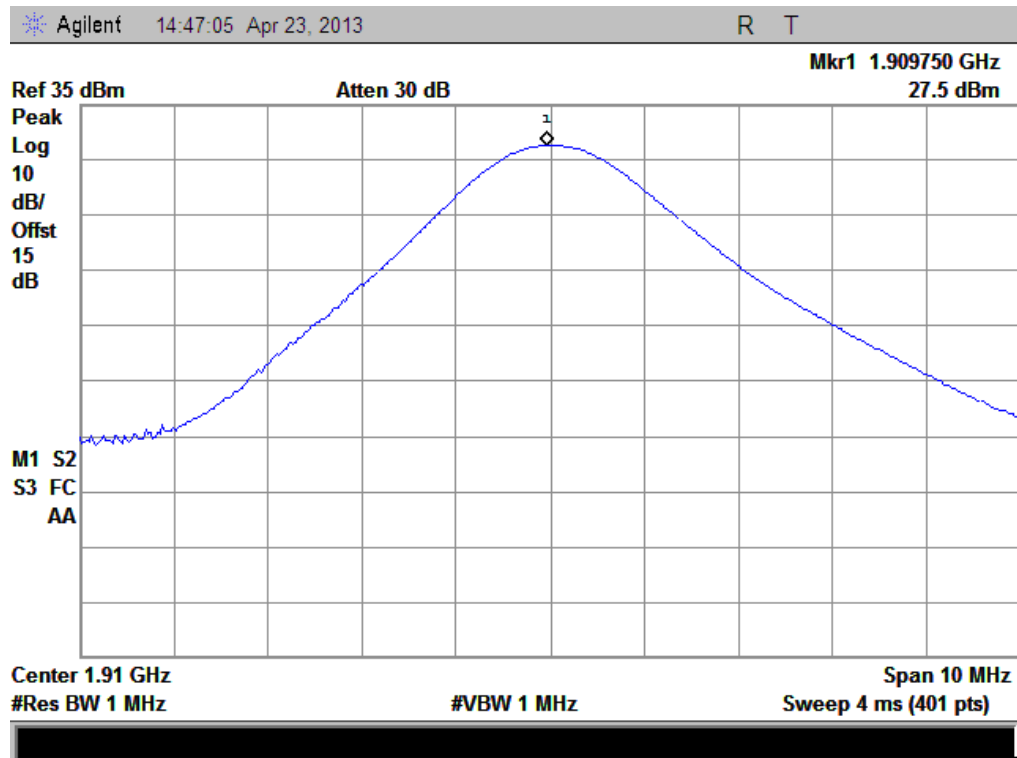
(Plot C 3: GPRS 850MHz Channel = 251)



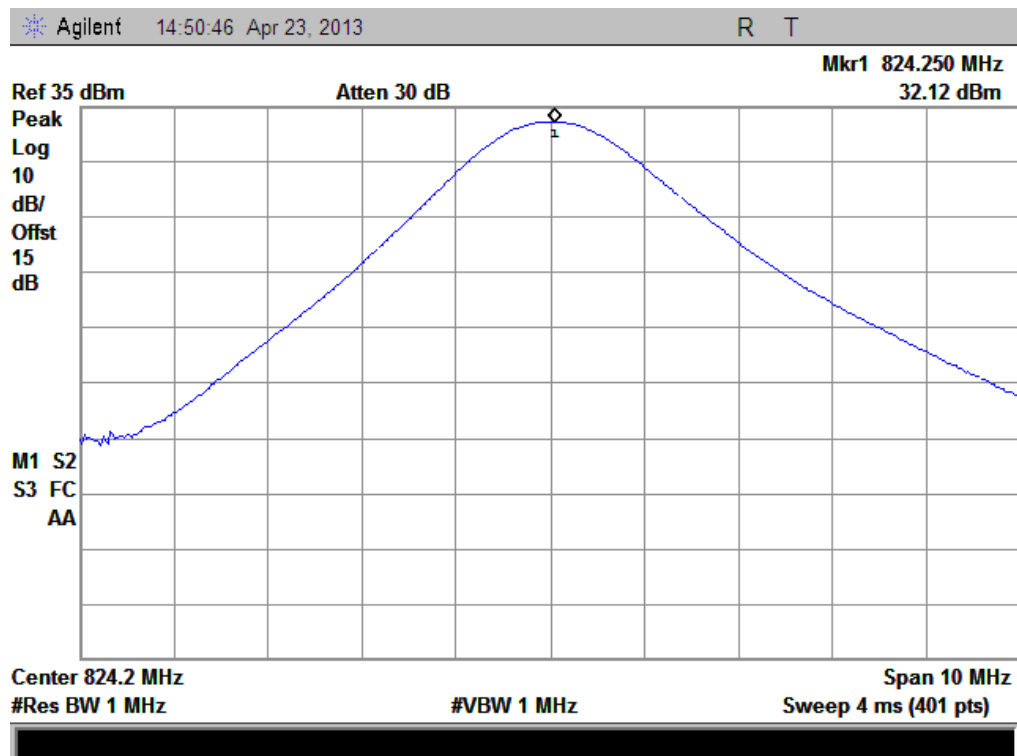
(Plot D 1: GPRS 1900MHz Channel = 512)



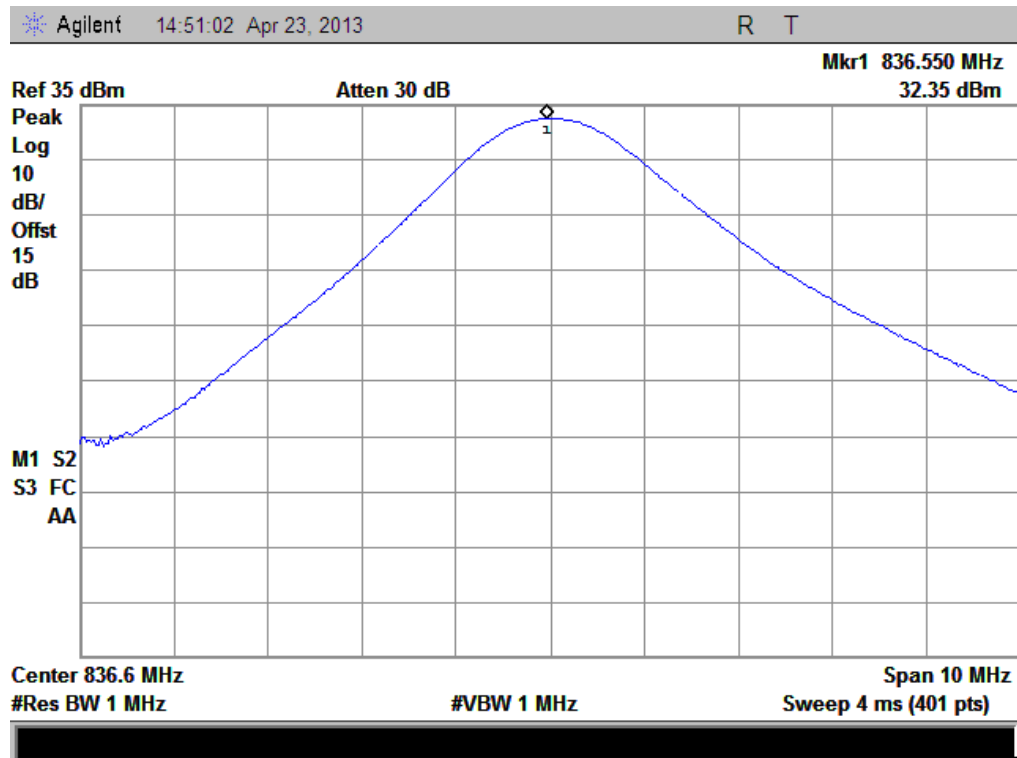
(Plot D 2: GPRS 1900MHz Channel = 661)



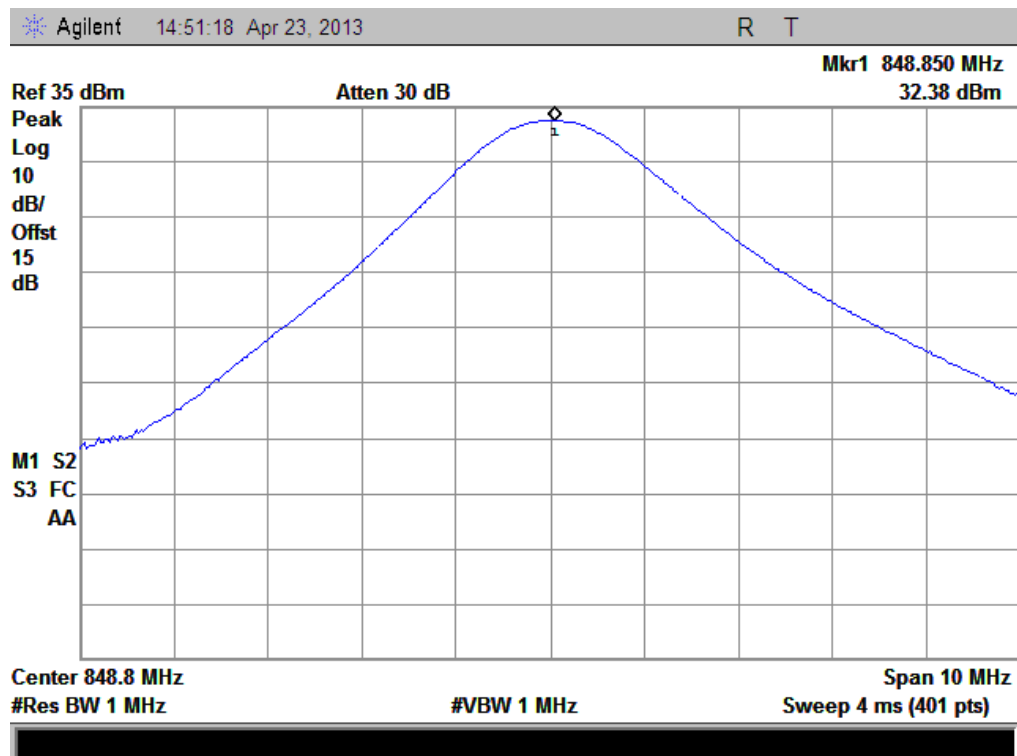
(Plot D 3: GPRS 1900MHz Channel = 810)



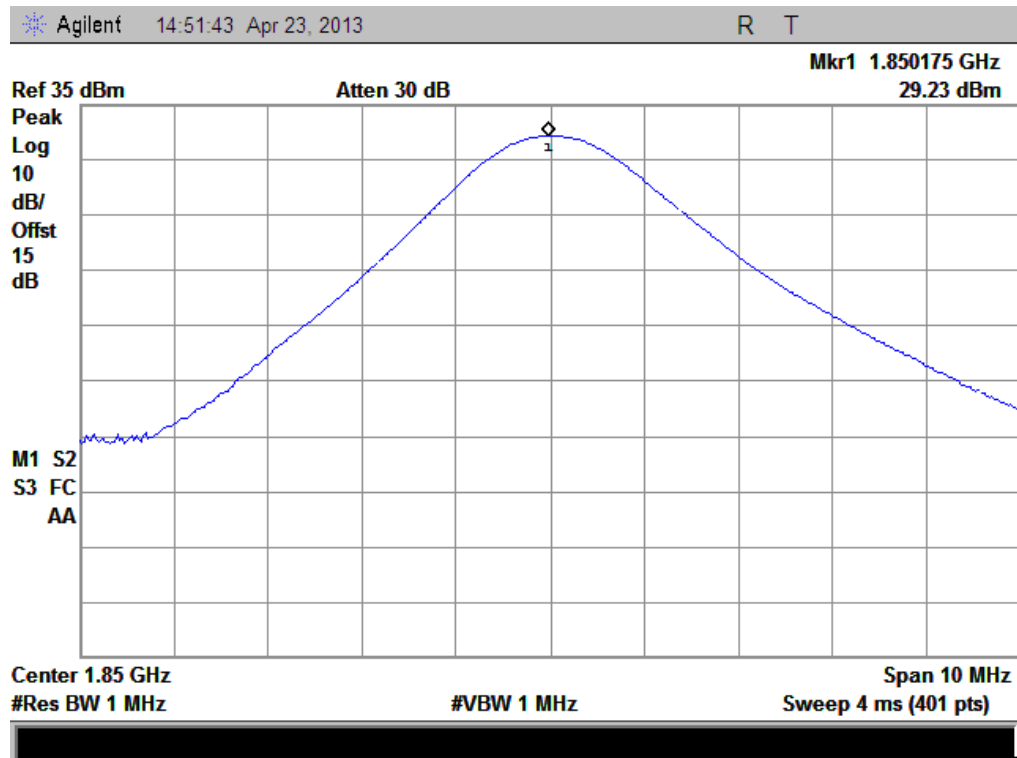
(Plot C 1: EGPRS 850MHz Channel = 128)



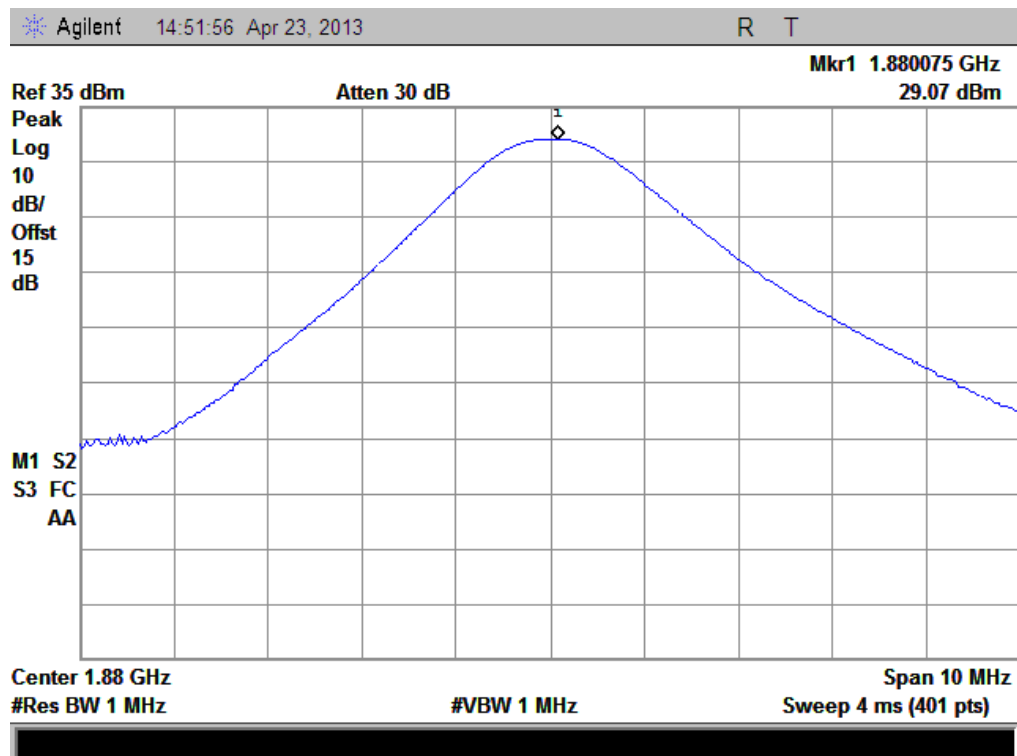
(Plot C 2: EGPRS 850MHz Channel = 190)



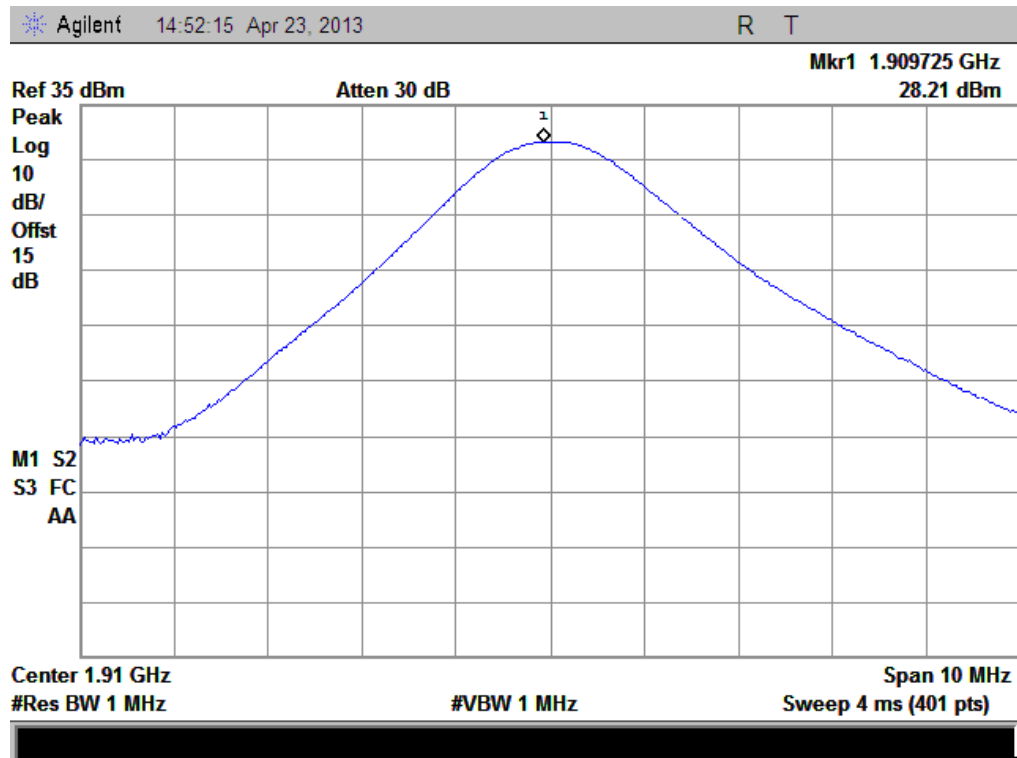
(Plot C 3: EGPRS 850MHz Channel = 251)



(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:

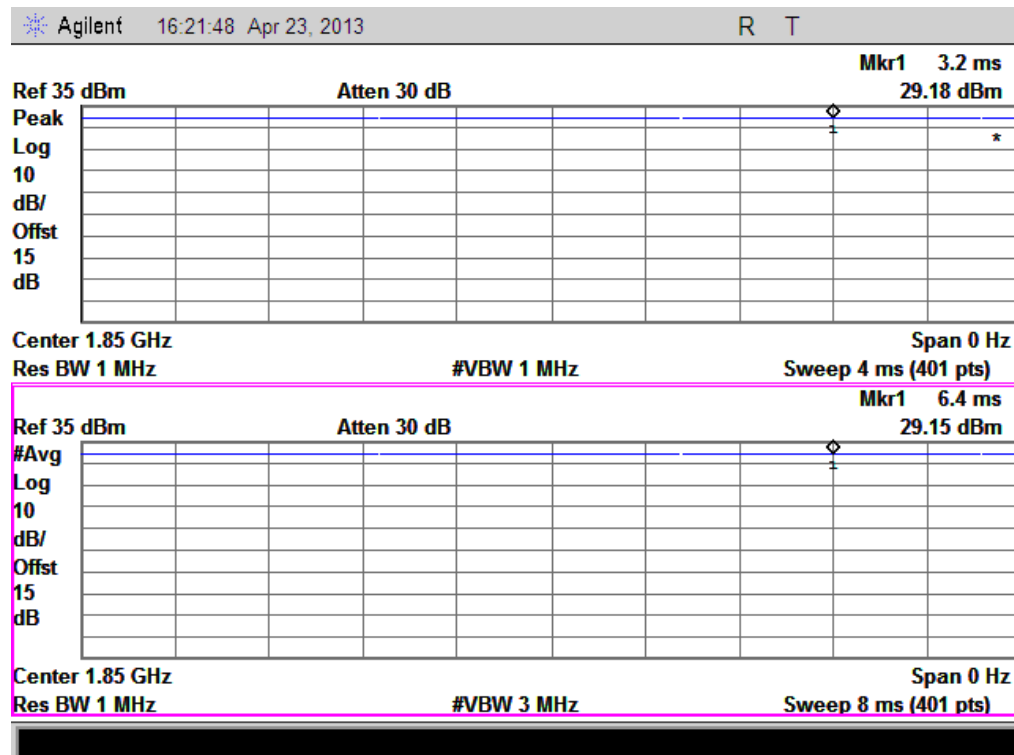
- Set RBW=1MHz, VBW=1MHz, peak detector in spectrum analyzer.
- Set EUT in maximum output power, and triggered the bust signal.
- Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average ratio.

B. For UMTS operating mode:

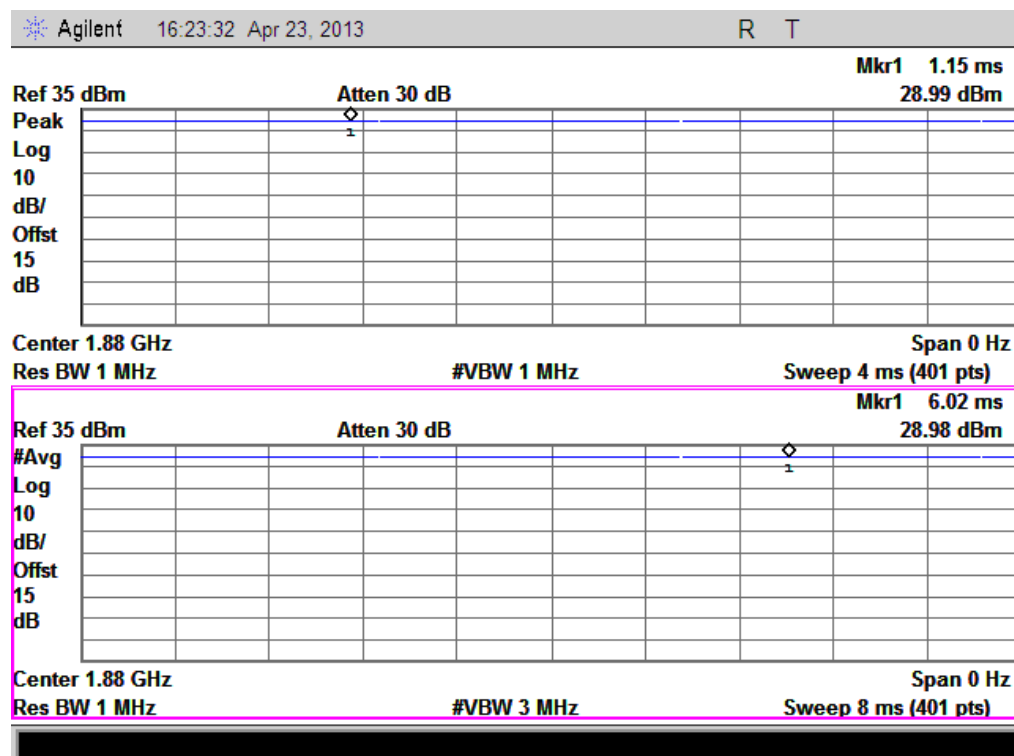
- Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
- The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

1. Test Verdict:

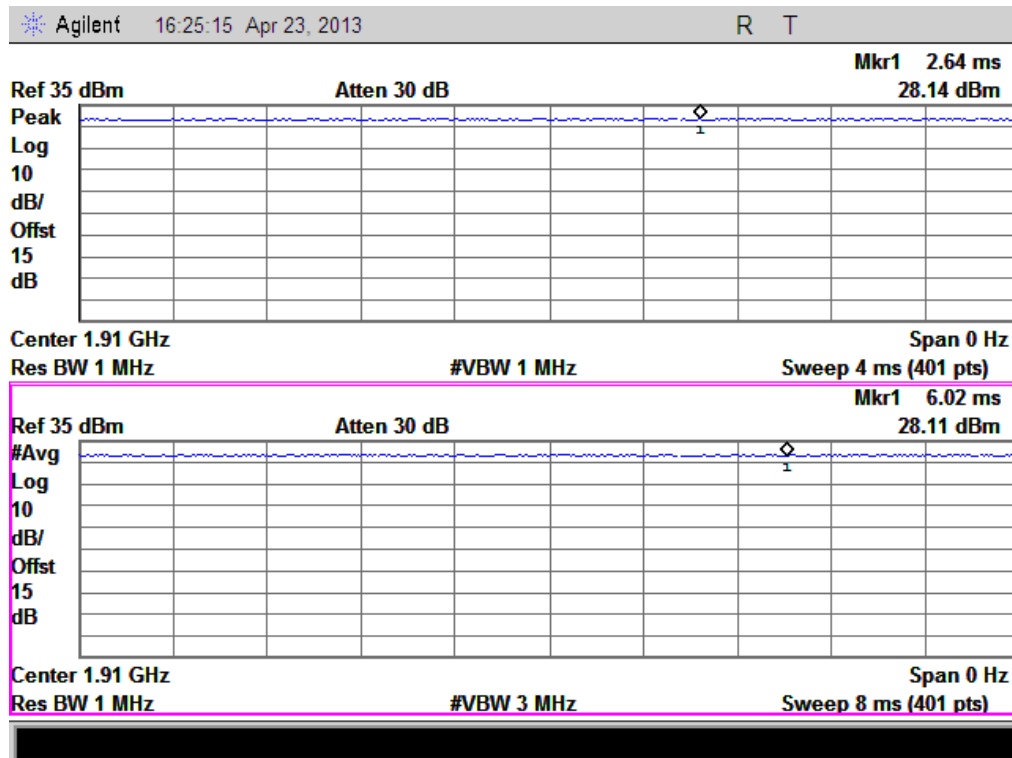
Band	Channel	Frequency (MHz)	Peak to Average ratio		Limit	Verdict
			dBm	Refer to Plot	dBm	
GSM 1900MHz	512	1850.2	0.03	Plot A1 to A3	13	PASS
	661	1880.0	0.01			PASS
	810	1909.8	0.03			PASS
EGPRS 1900MHz	512	1850.2	0.03	Plot B1 to B3	13	PASS
	661	1880.0	0.03			PASS
	810	1909.8	0.02			PASS
WCDMA 1900MHz	9262	1852.4	3.28	Plot C1 to C3	13	PASS
	9400	1880	2.73			PASS
	9538	1907.6	2.77			PASS



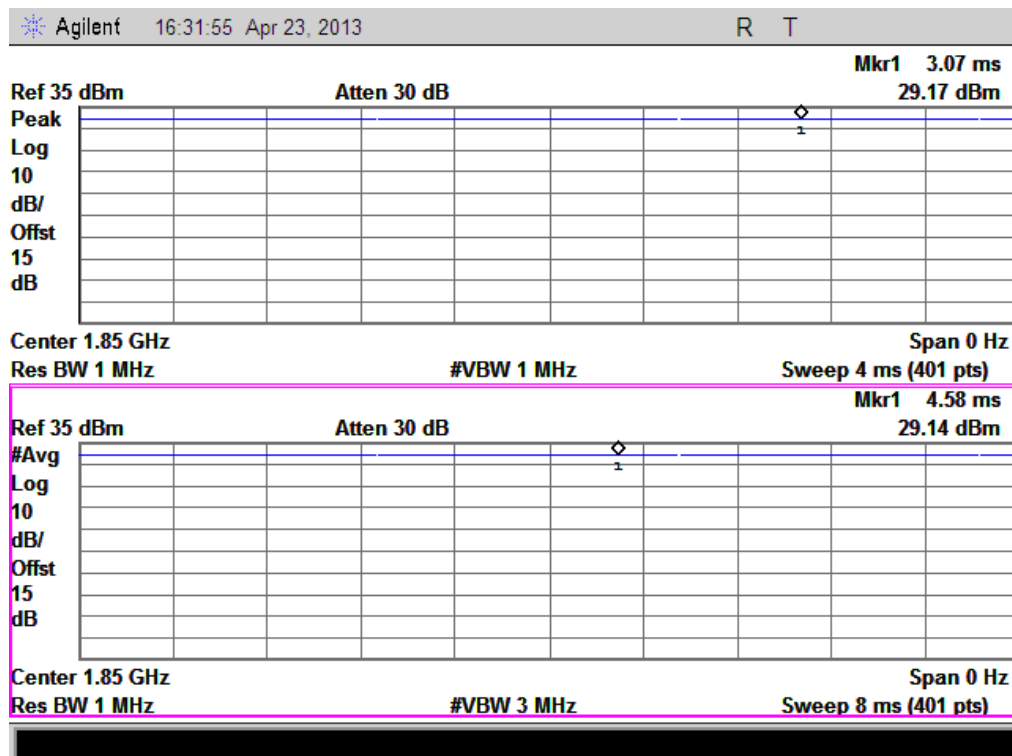
(Plot A1: GSM 1900 MHz Channel = 512)



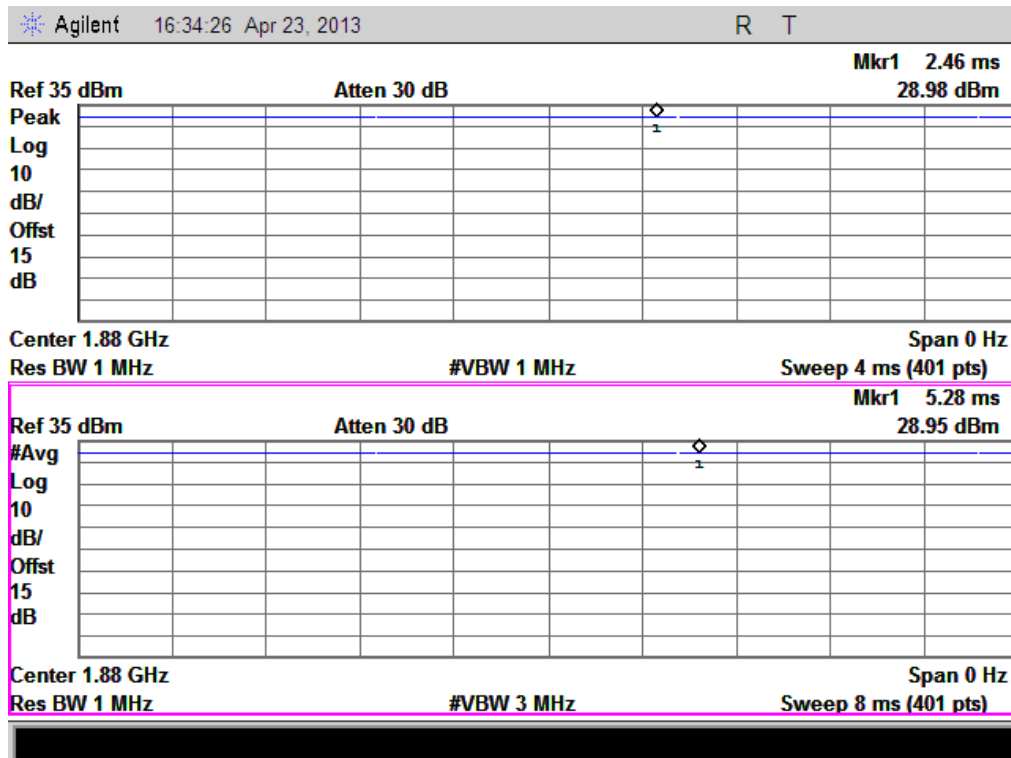
(Plot A2: GSM 1900 MHz Channel = 661)



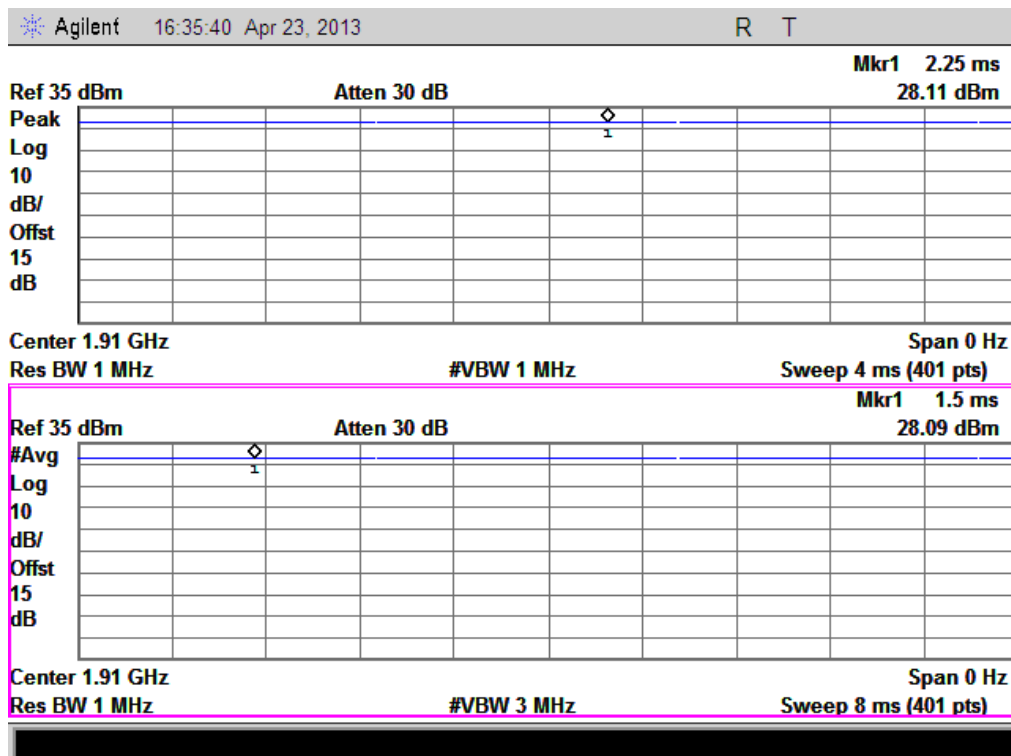
(Plot A3: GSM 1900MHz Channel = 810)



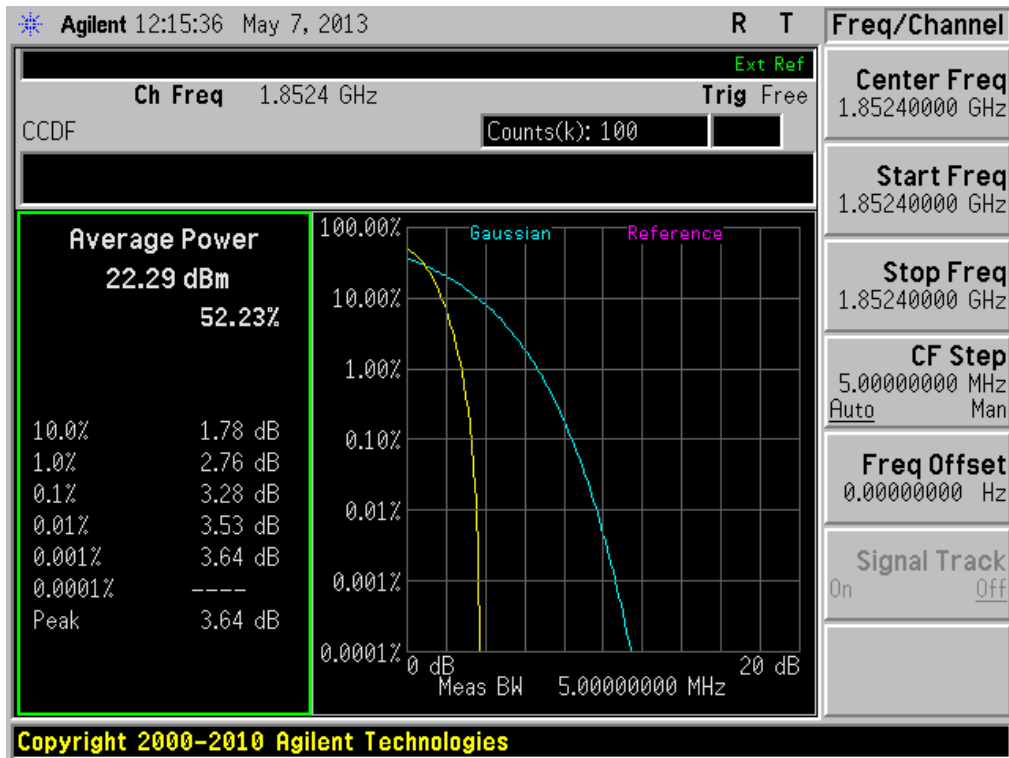
(Plot B1: EGPRS 1900MHz Channel = 512)



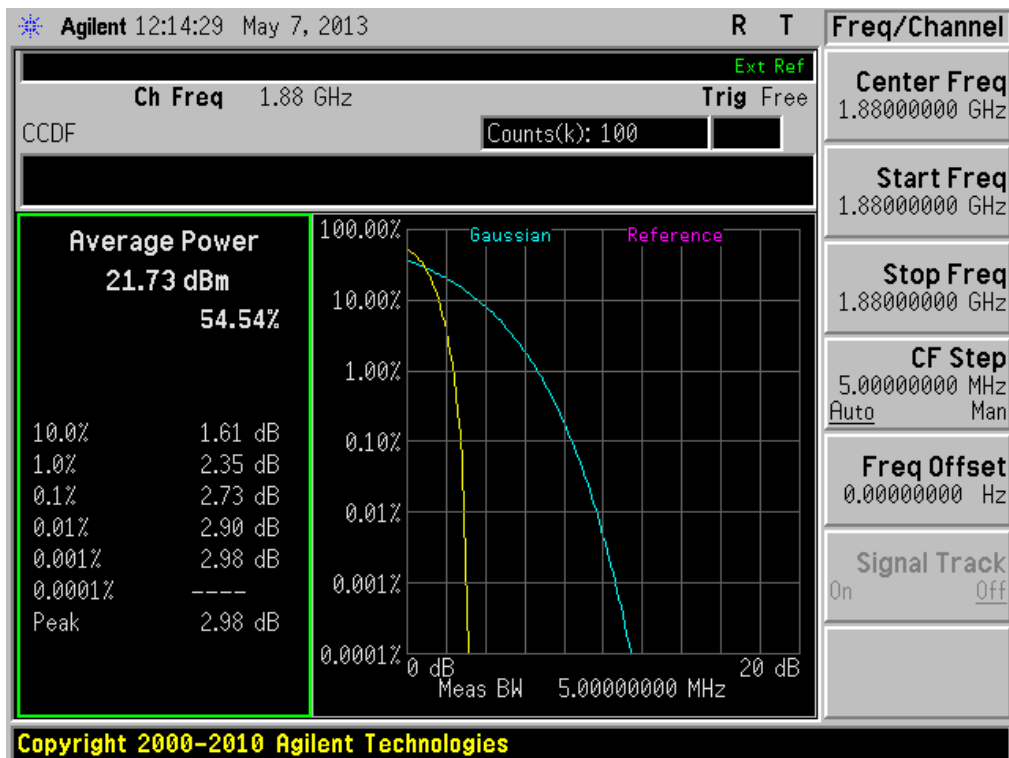
(Plot B2: EGPRS 1900MHz Channel = 661)



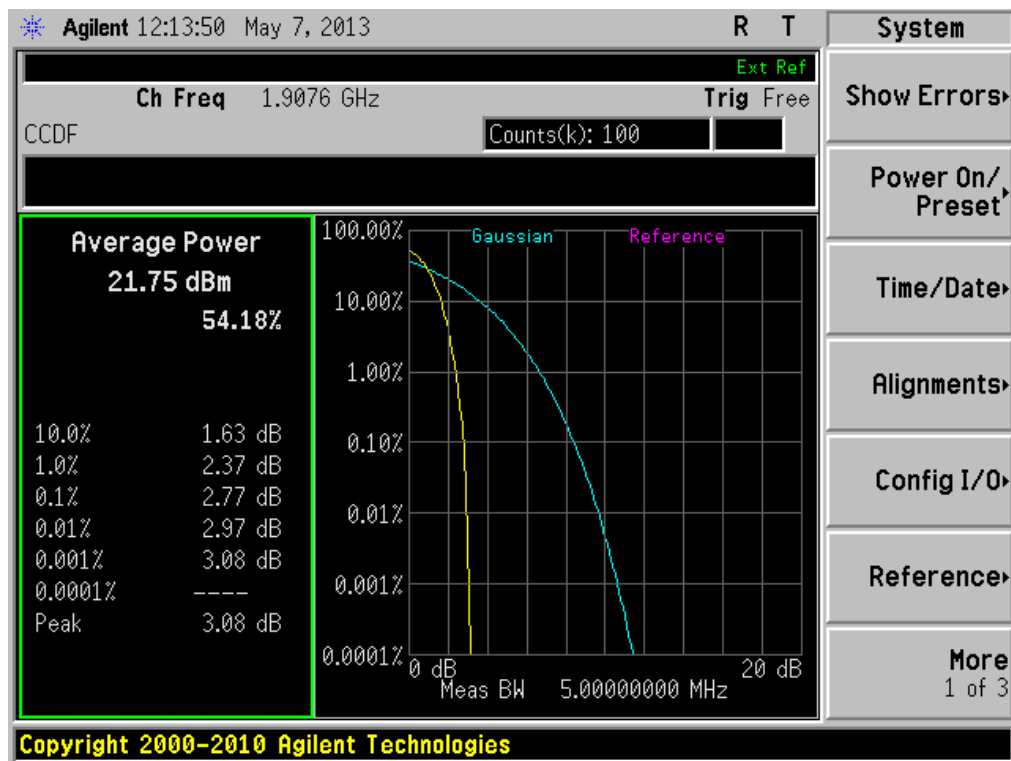
(Plot B3: EGPRS 1900MHz Channel = 810)



(Plot C1: WCDMA 1900MHz Channel = 9262)



(Plot C2: WCDMA 1900MHz Channel = 9400)



(Plot C3: WCDMA 1900MHz Channel = 9538)

2.3 99% Occupied Bandwidth

2.3.1 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.

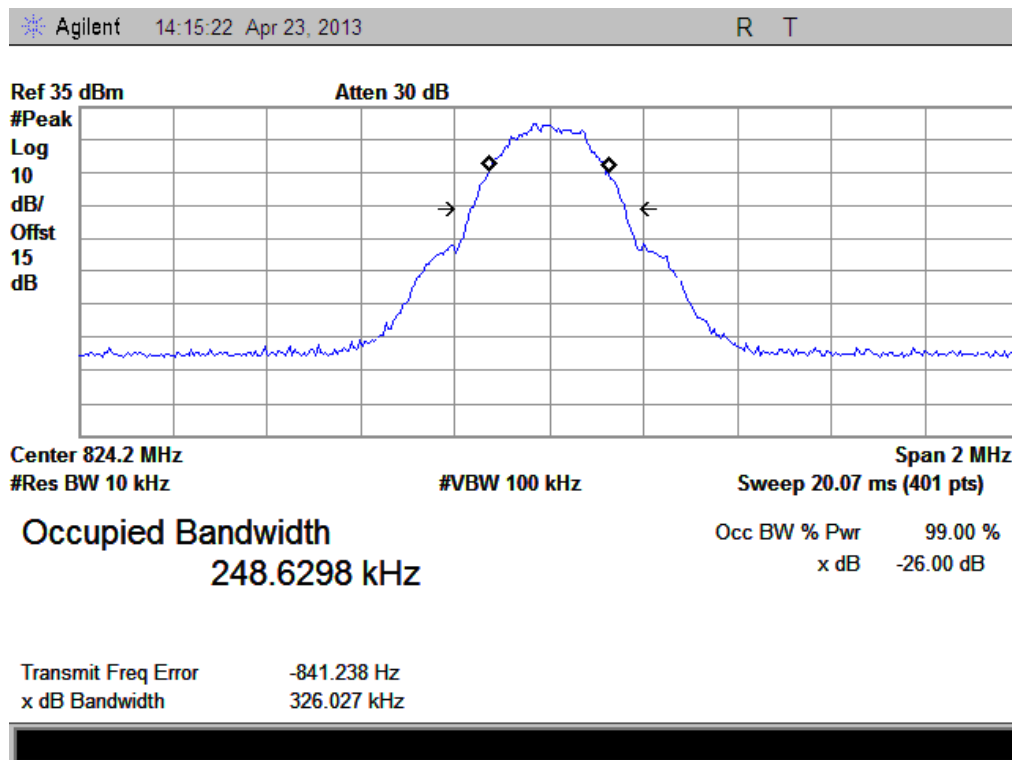
2.3.3 Test Verdict

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

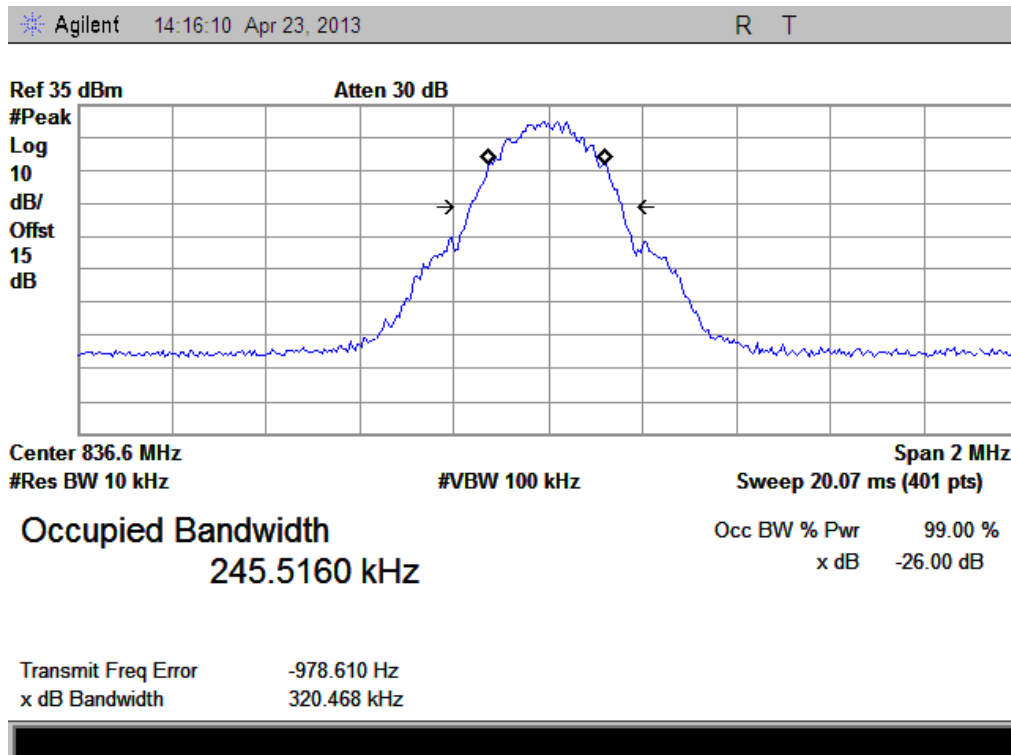
Band		Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB bandwidth (kHz)	Refer to Plot
GSM	850MHz	128	824.2	248.6298	326.027	Plot A
		190	836.6	245.516	320.468	Plot B
		251	848.8	246.5756	318.556	Plot C
	1900MHz	512	1850.2	247.919	322.609	Plot D
		661	1880.0	249.7499	328.053	Plot E
		810	1909.8	247.1705	321.823	Plot F
EDGE	850MHz	128	824.2	244.4316	319.527	Plot G
		190	836.6	246.7671	322.545	Plot H
		251	848.8	247.1143	323.864	Plot I
	1900MHz	512	1850.2	248.9675	324.186	Plot J
		661	1880.0	247.2579	325.334	Plot K
		810	1909.8	248.2706	328.008	Plot L
Band		Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB bandwidth (MHz)	Refer to Plot
WCDMA	850MHz	4132	826.4	4.1746	4.709	Plot M
		4175	835	4.185	4.73	Plot N
		4233	846.6	4.1801	4.709	Plot O
	1900MHz	9262	1852.4	4.1725	4.723	Plot P
		9400	1880	4.1933	4.705	Plot Q
		9538	1907.6	4.1841	4.727	Plot R
HSDPA	850MHz	4132	826.4	4.1739	4.712	Plot S
		4175	835	4.1801	4.75	Plot T
		4233	846.6	4.1795	4.727	Plot U

HSUPA	1900MHz	9262	1852.4	4.1681	4.707	Plot V
		9400	1880	4.1829	4.73	Plot W
		9538	1907.6	4.1873	4.733	Plot X
	850MHz	4132	826.4	4.1689	4.692	Plot Y
		4175	835	4.1732	4.743	Plot Z
		4233	846.6	4.1705	4.734	Plot A.1
	1900MHz	9262	1852.4	4.1753	4.683	Plot B.1
		9400	1880	4.1784	4.733	Plot C.1
		9538	1907.6	4.1874	4.736	Plot D.1

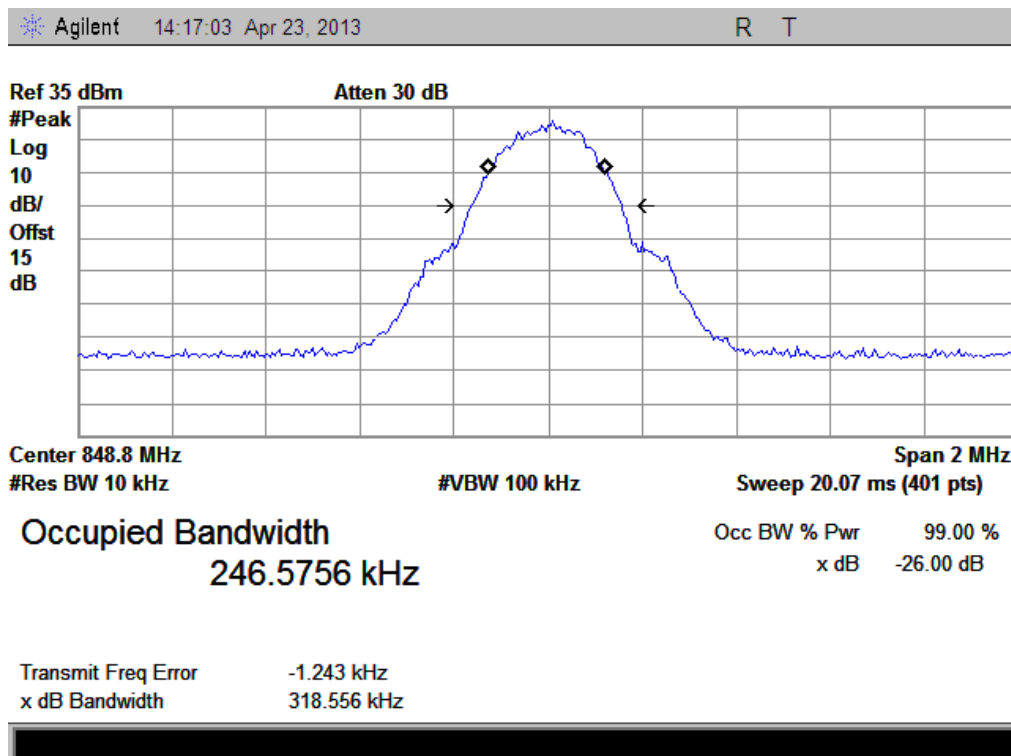
2. Test Plots:



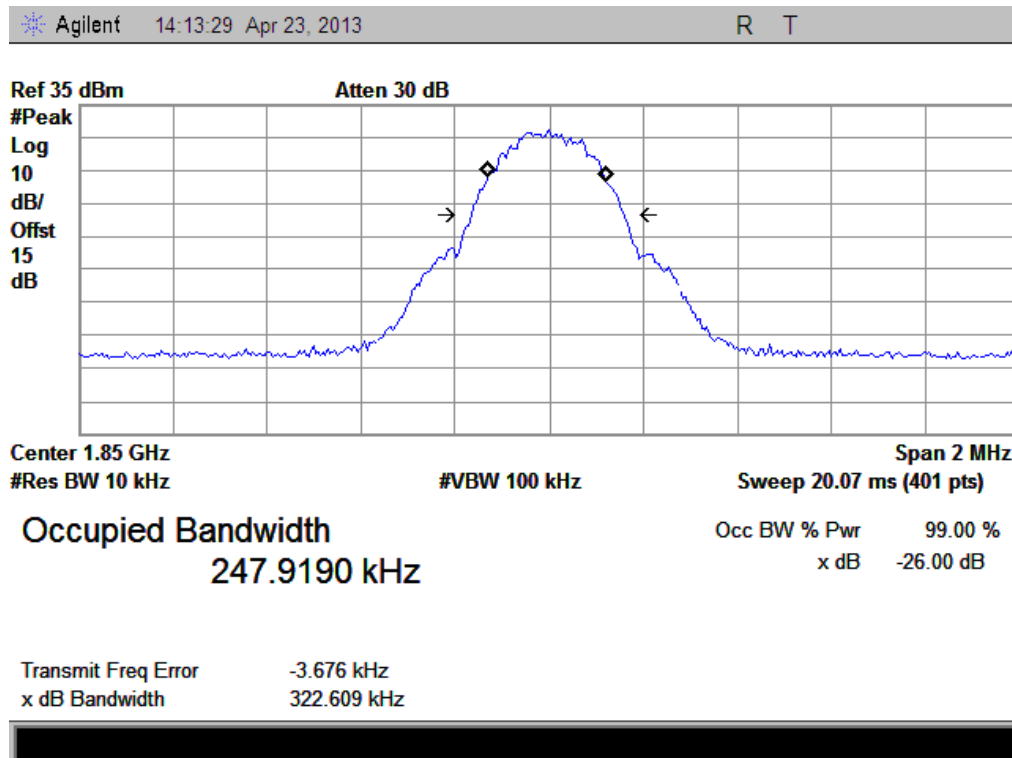
(Plot A: GSM 850MHz Channel = 128)



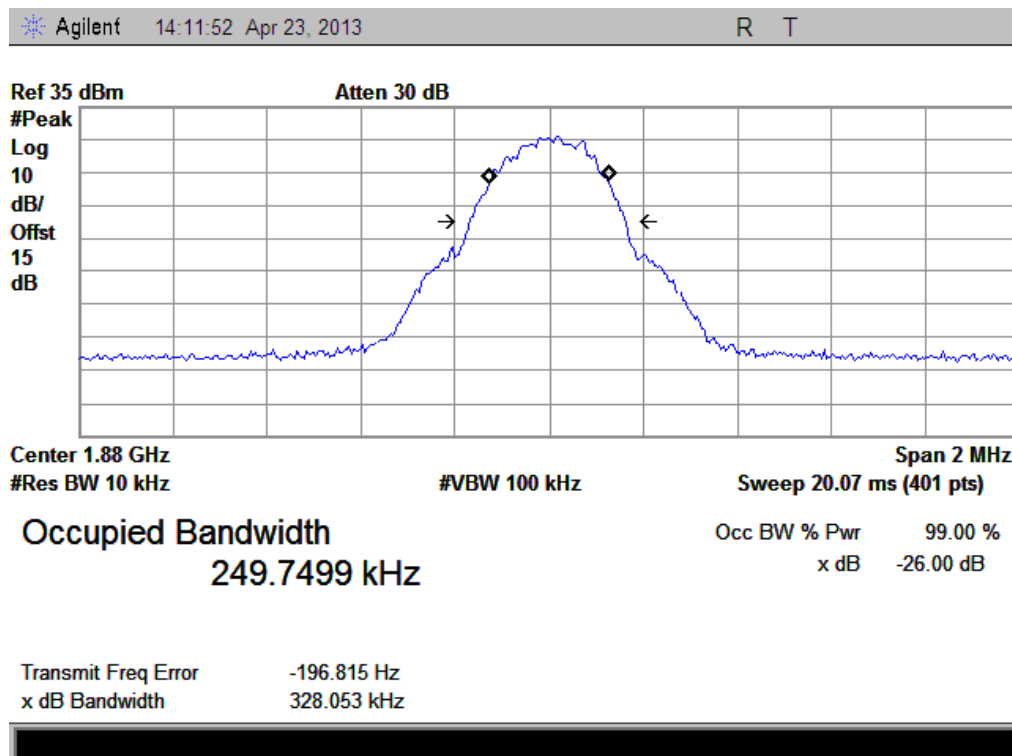
(Plot B: GSM 850MHz Channel = 190)



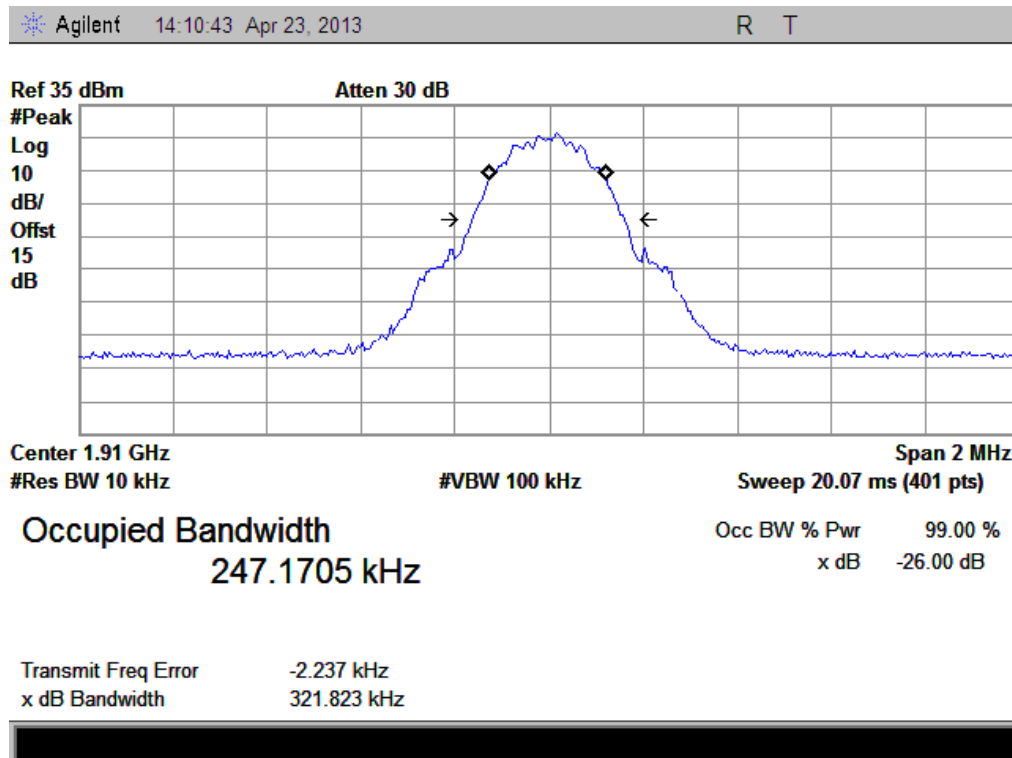
(Plot C: GSM 850MHz Channel = 251)



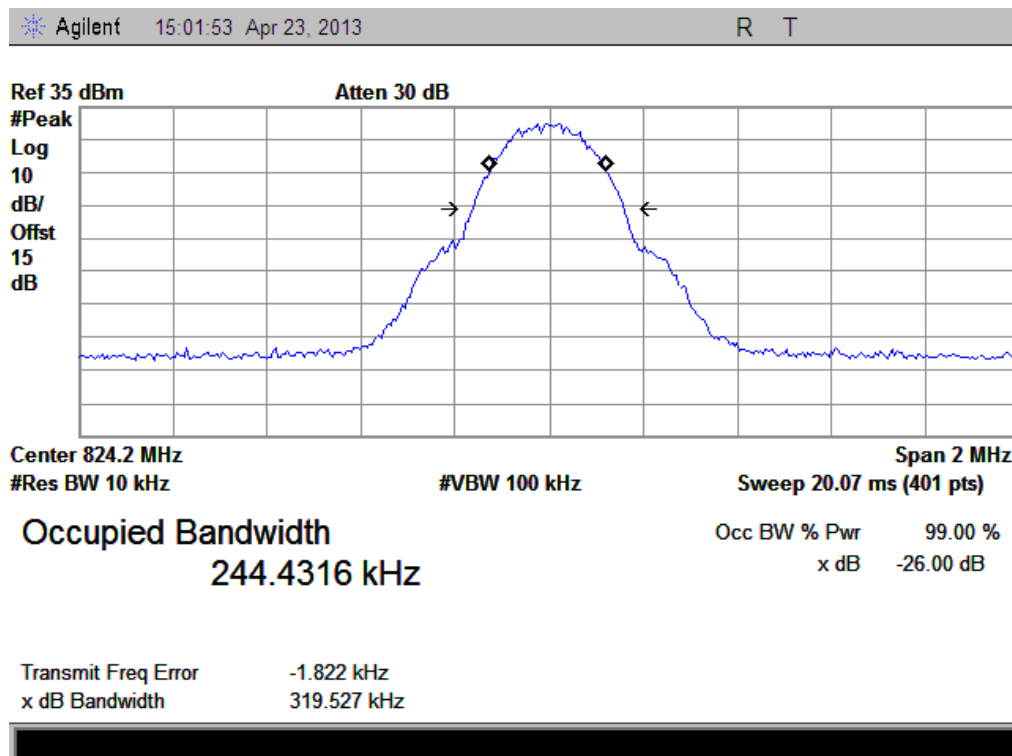
(Plot D: GSM 1900MHz Channel = 512)



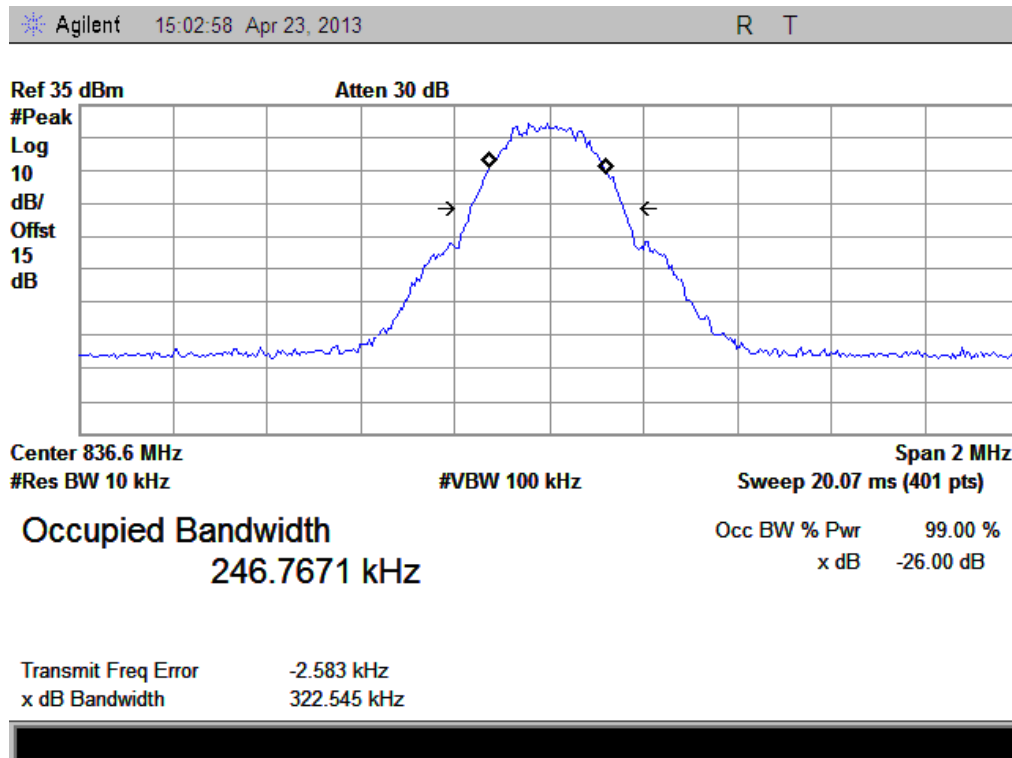
(Plot E: GSM 1900MHz Channel = 661)



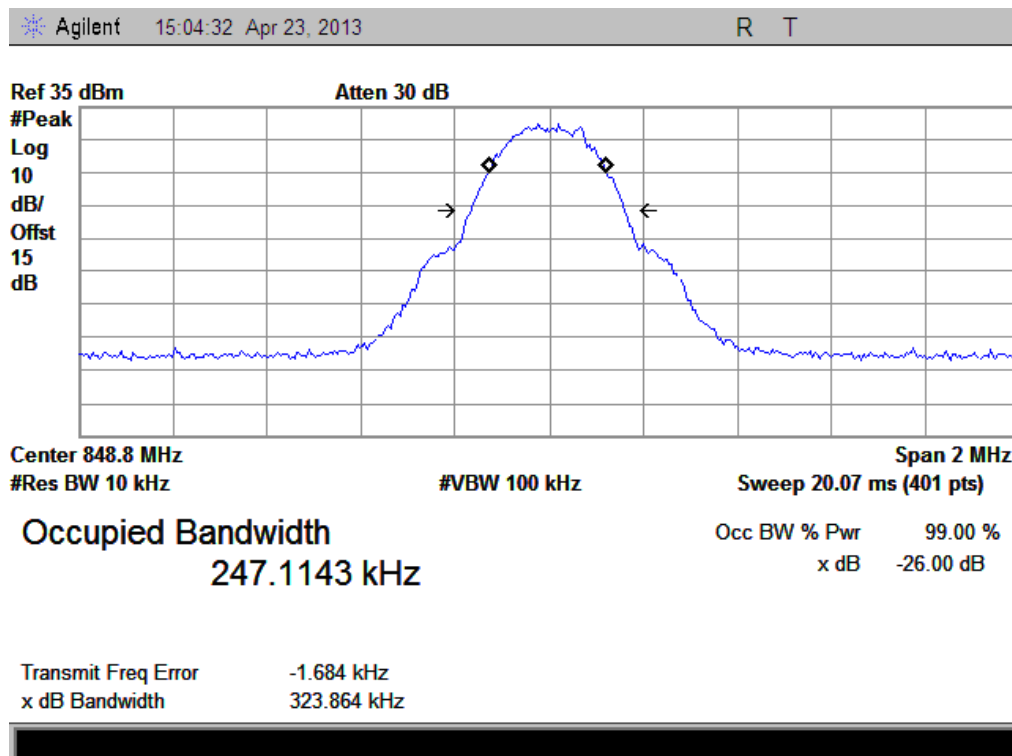
(Plot F: GSM 1900MHz Channel = 810)



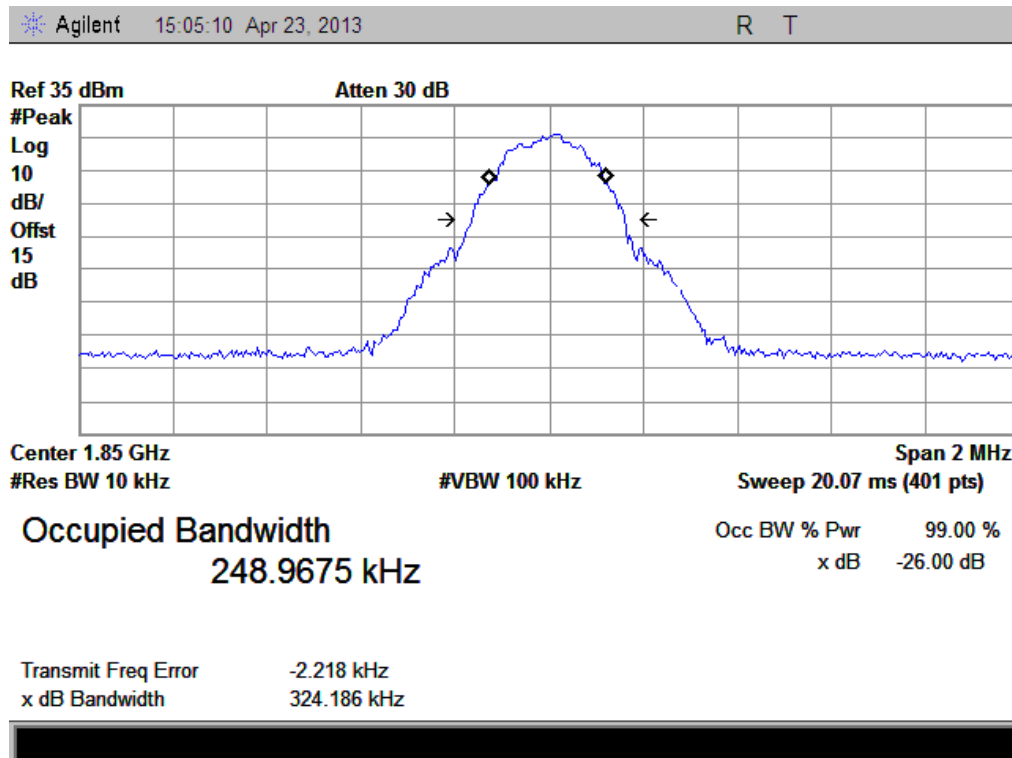
(Plot G: EDGE 850MHz Channel = 128)



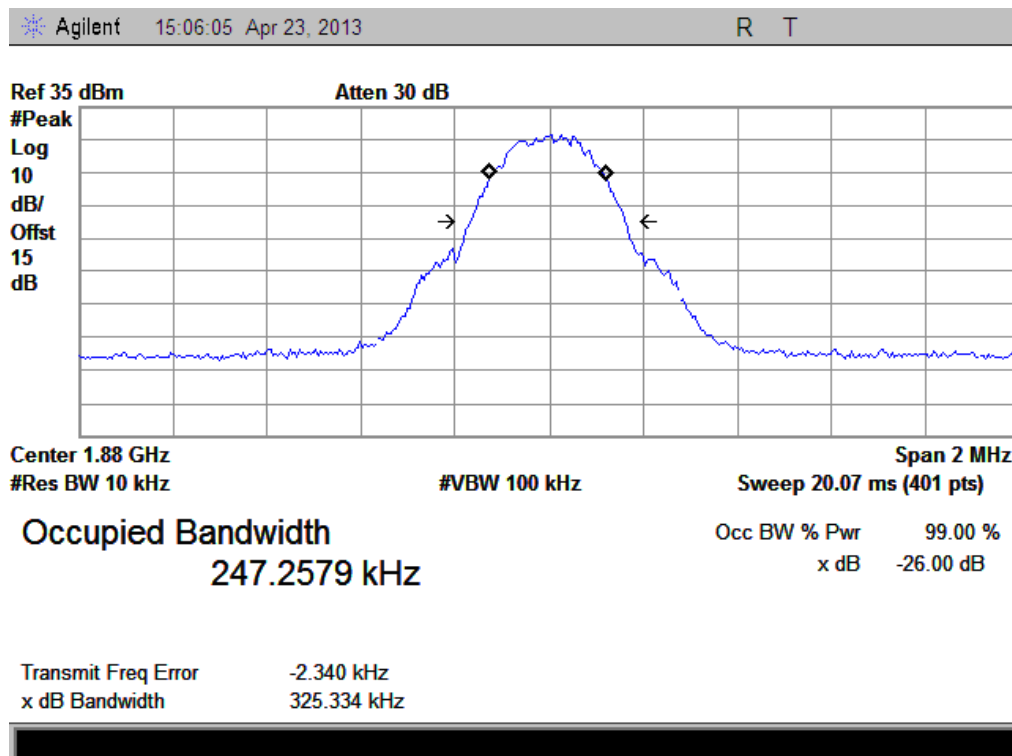
(Plot H: EDGE 850MHz Channel = 190)



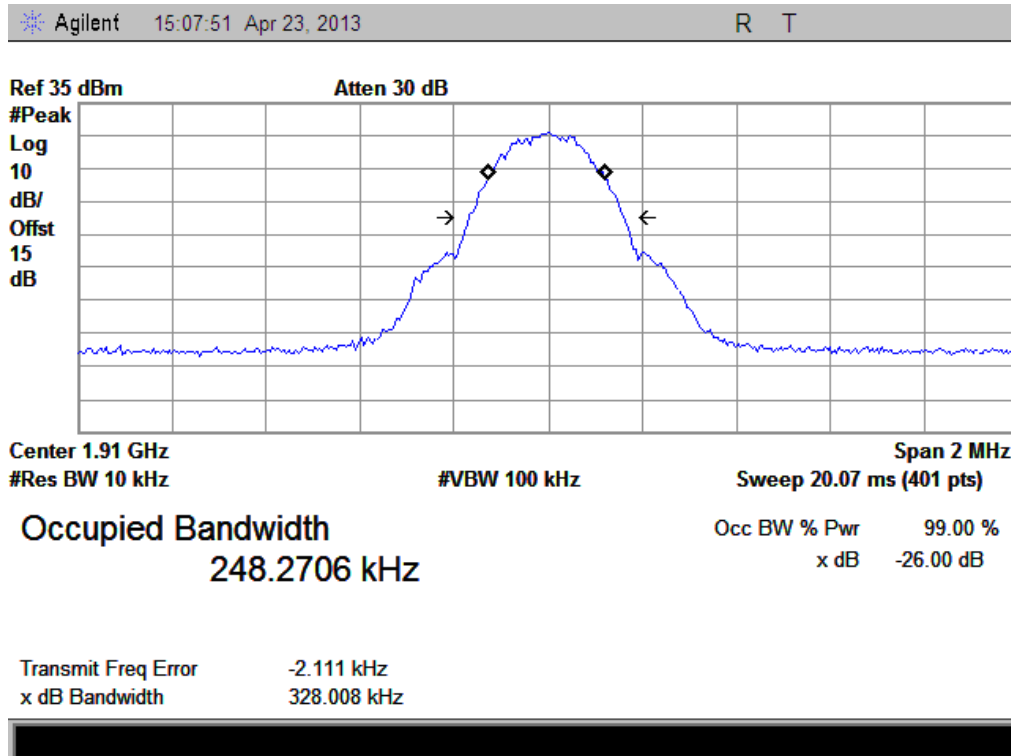
(Plot I: EDGE 850MHz Channel = 251)



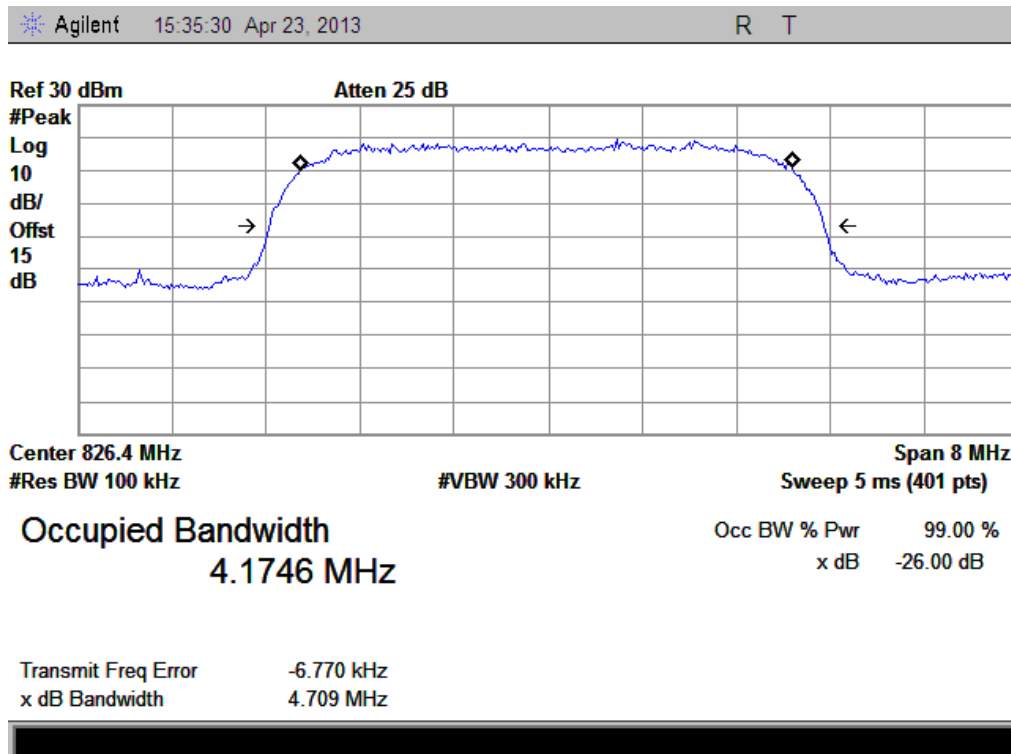
(Plot J: EDGE 1900MHz Channel = 512)



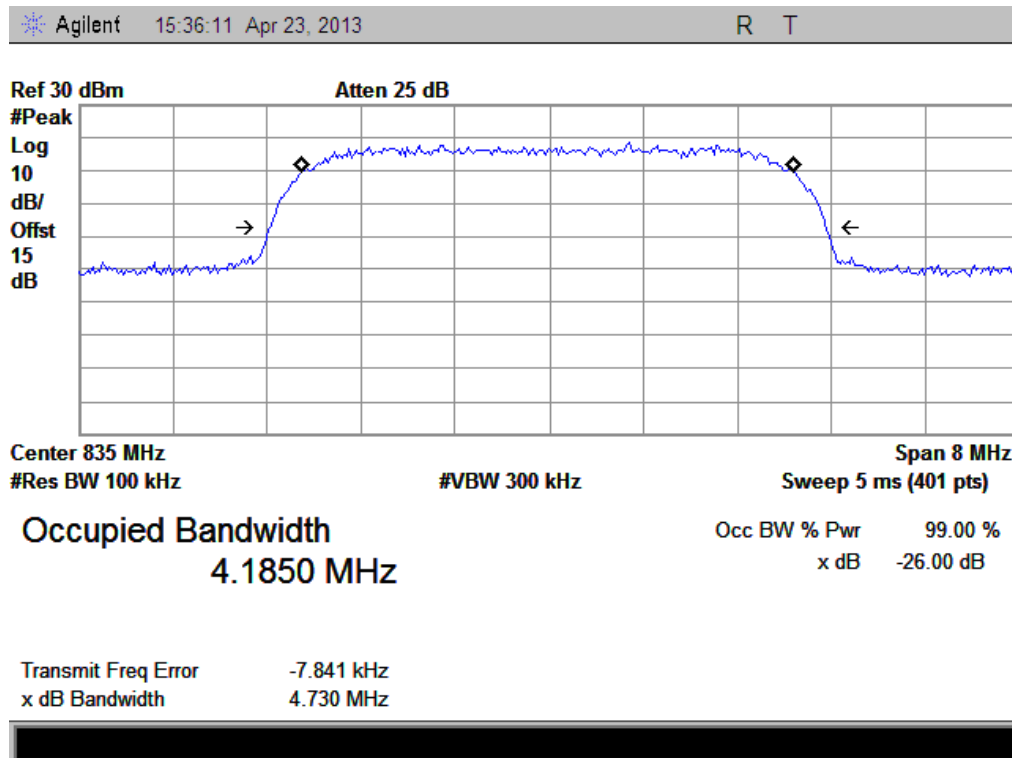
(Plot K: EDGE 1900MHz Channel = 661)



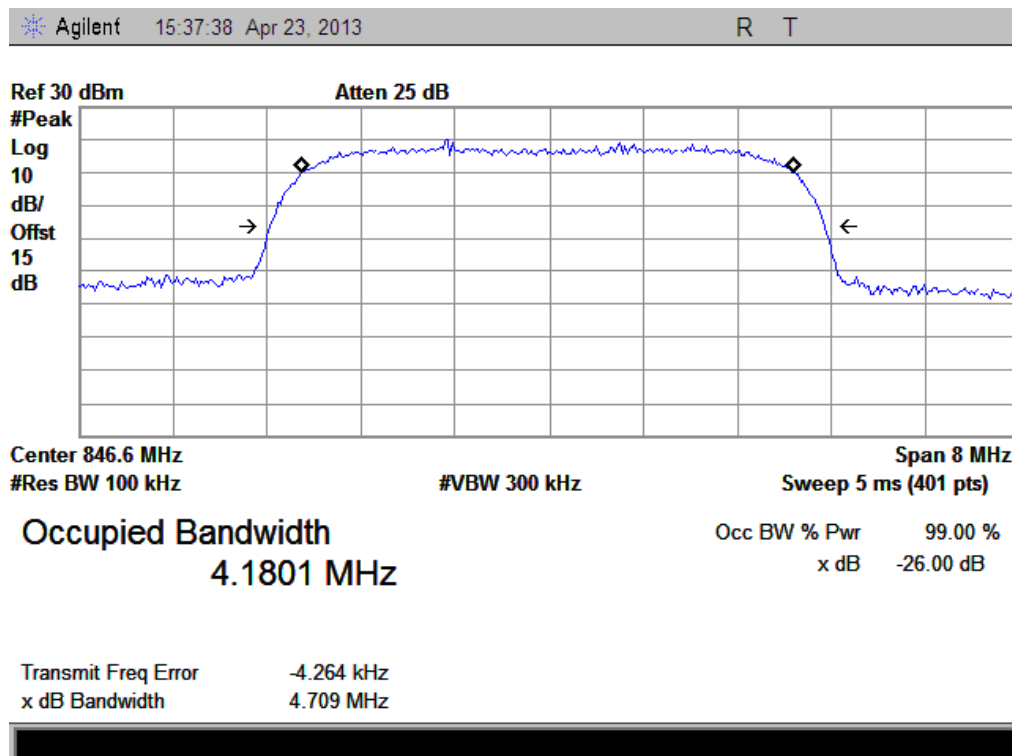
(Plot L: EDGE 1900MHz Channel = 810)



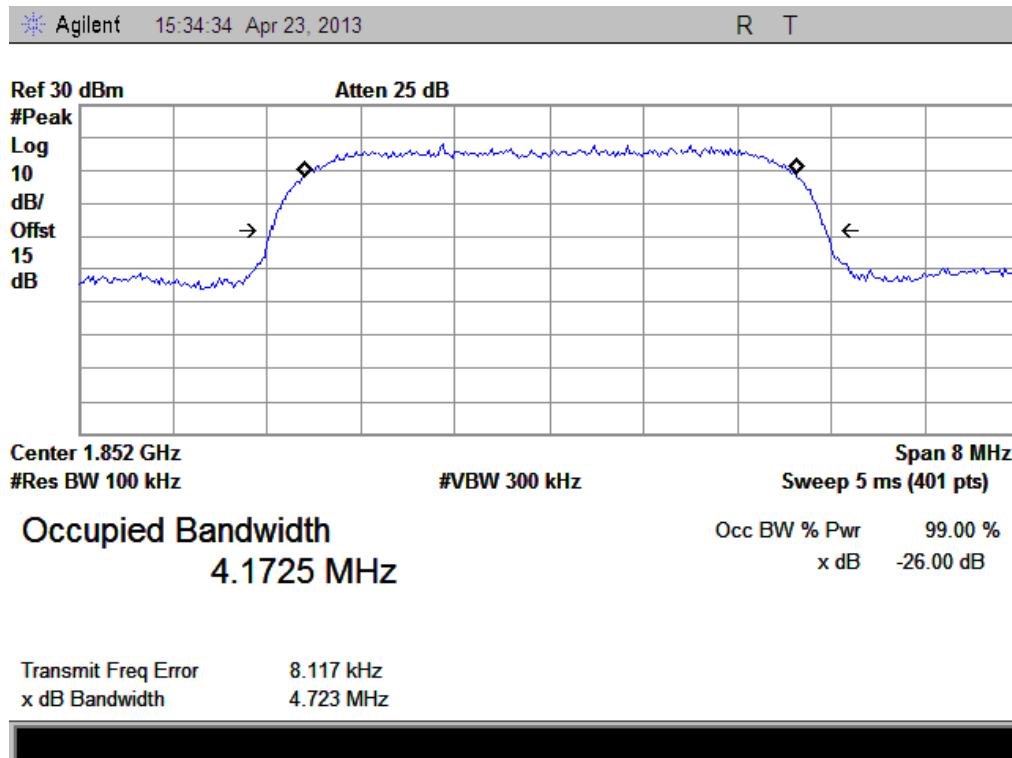
(Plot M: WCDMA 850MHz Channel = 4132)



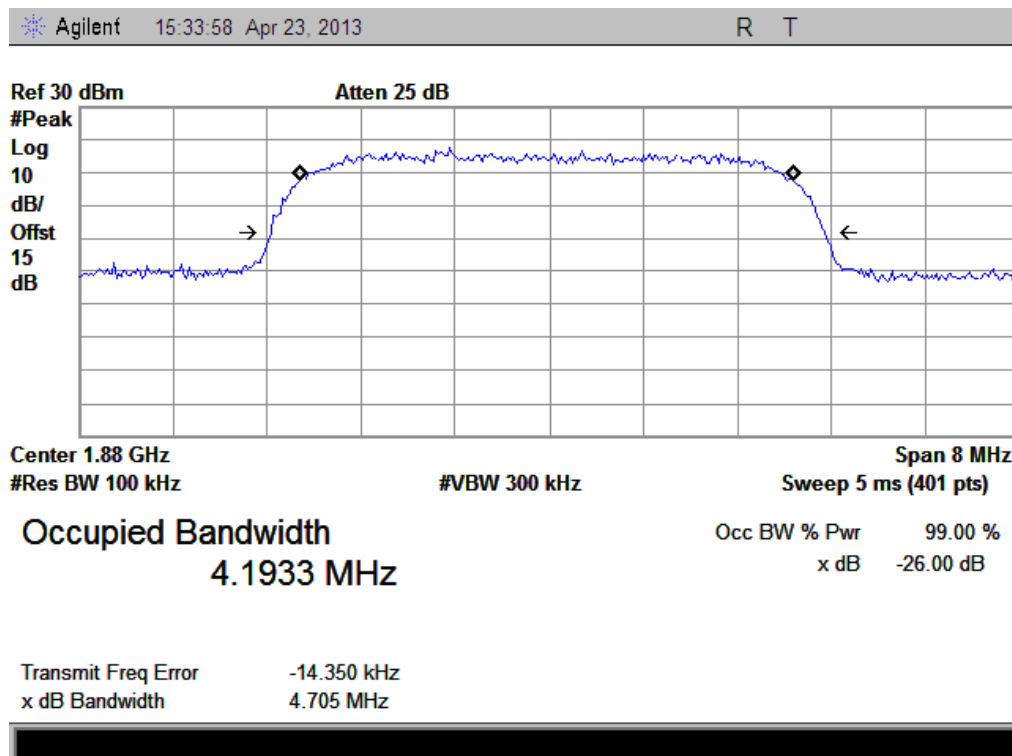
(Plot N: WCDMA 850 MHz Channel = 4175)



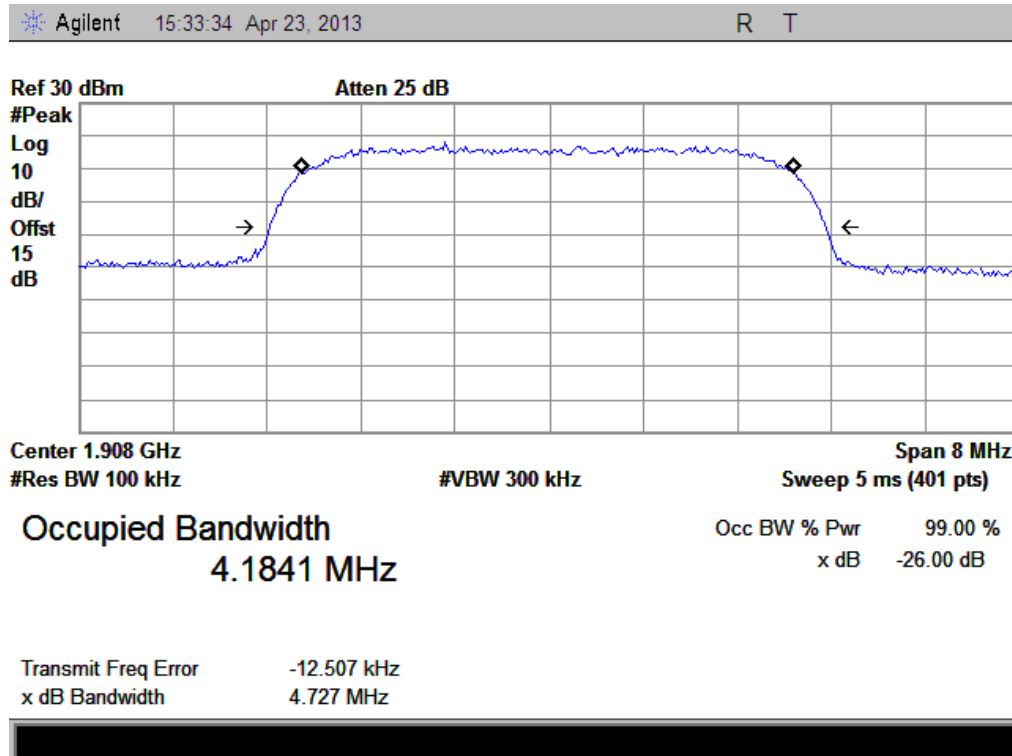
(Plot O: WCDMA 850MHz Channel = 4233)



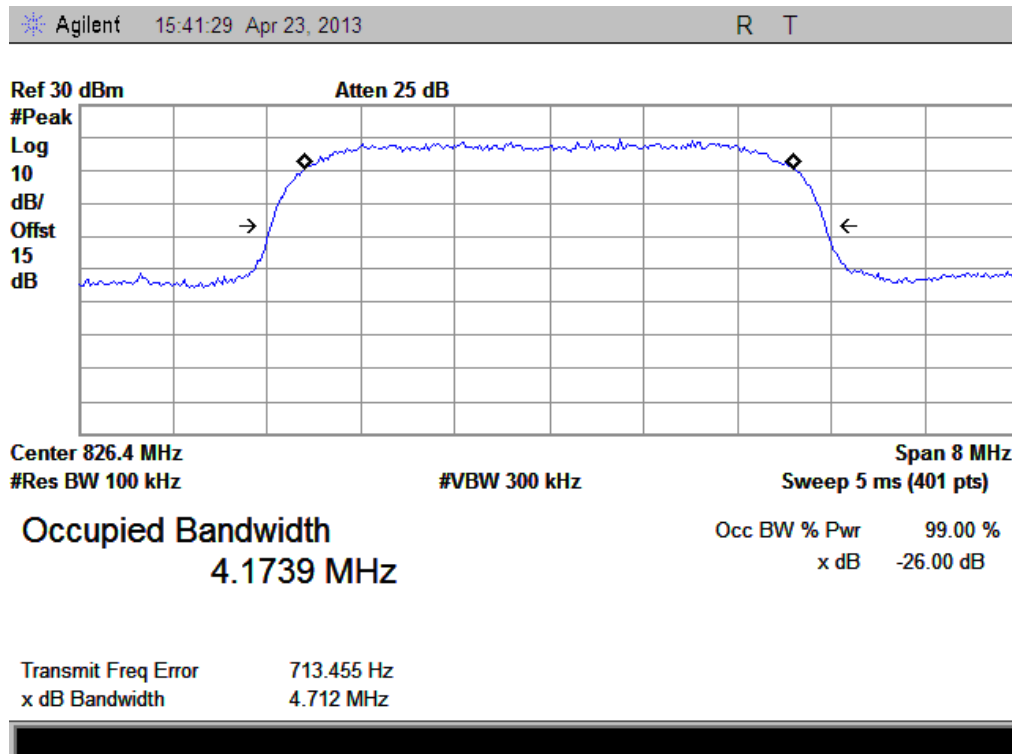
(Plot P: WCDMA 1900MHz Channel = 9262)



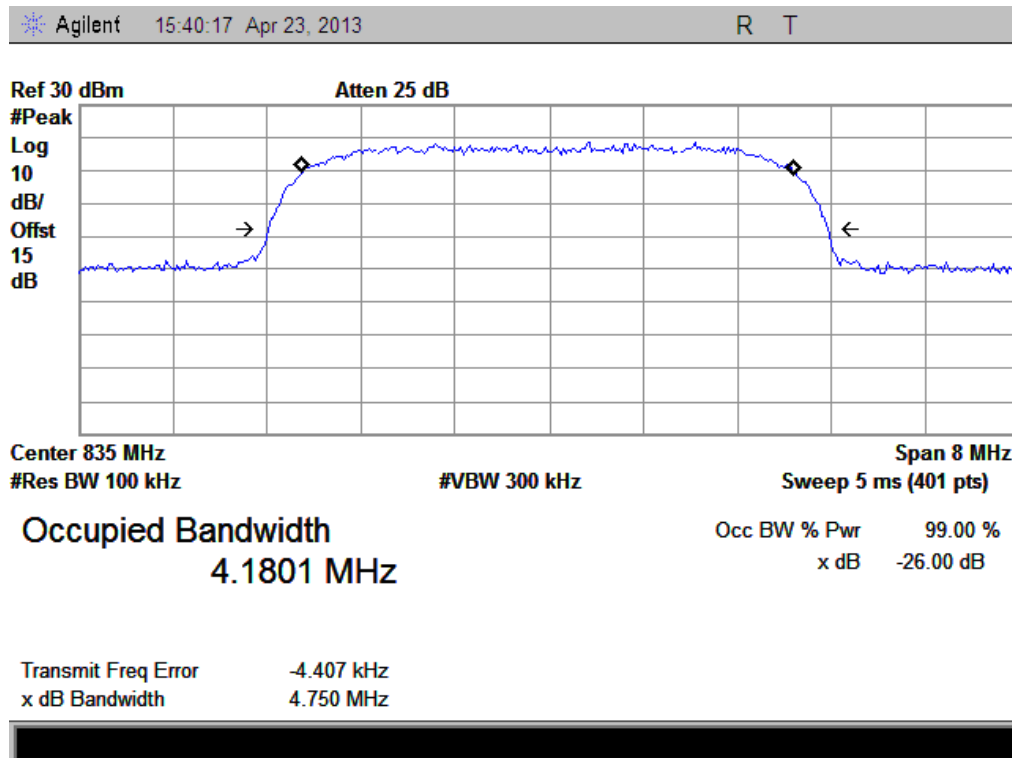
(Plot Q: WCDMA 1900 MHz Channel = 9400)



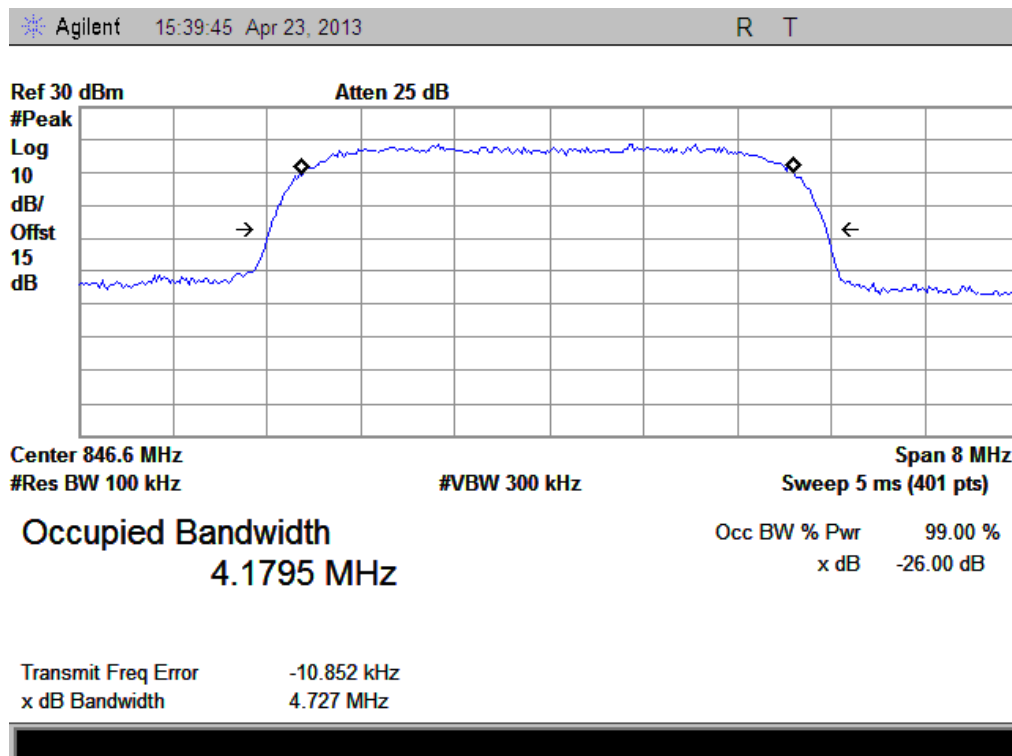
(Plot R: WCDMA1900MHz Channel = 9538)



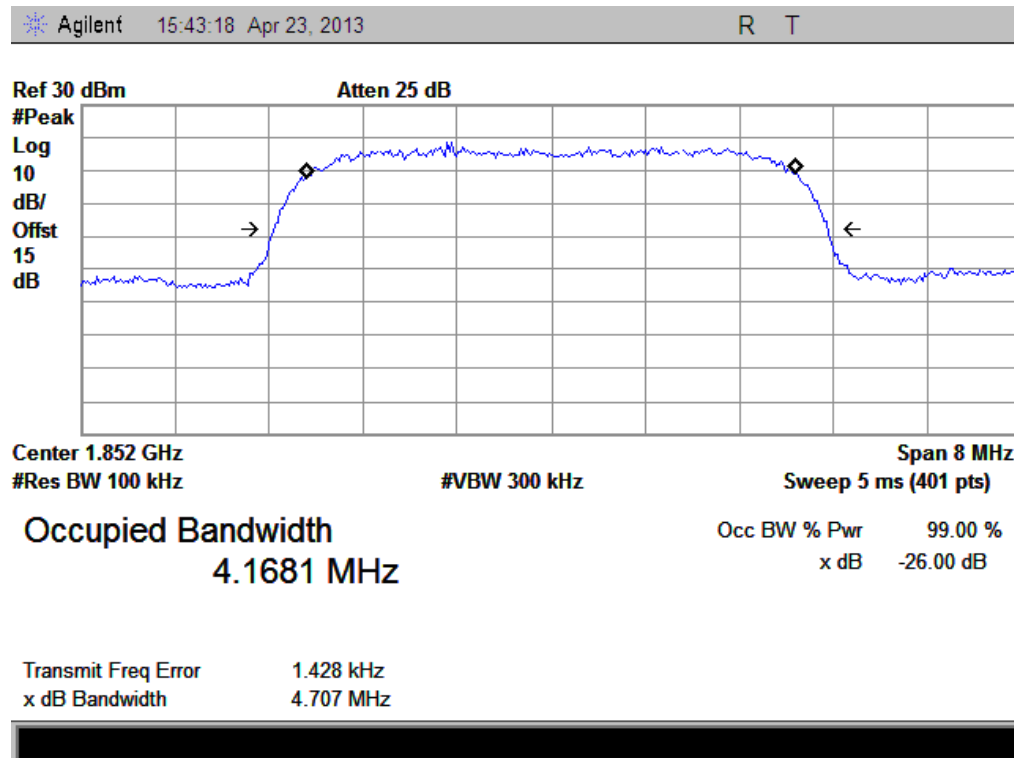
(Plot S: HSDPA 850MHz Channel = 4132)



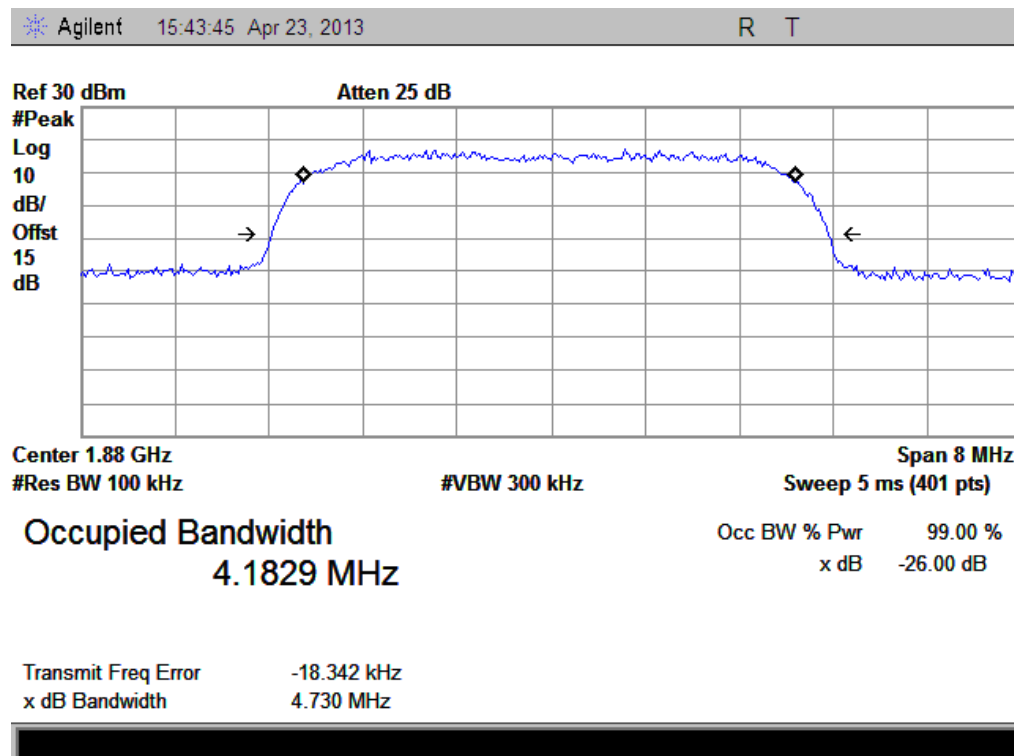
(Plot T: HSDPA850 MHz Channel = 4175)



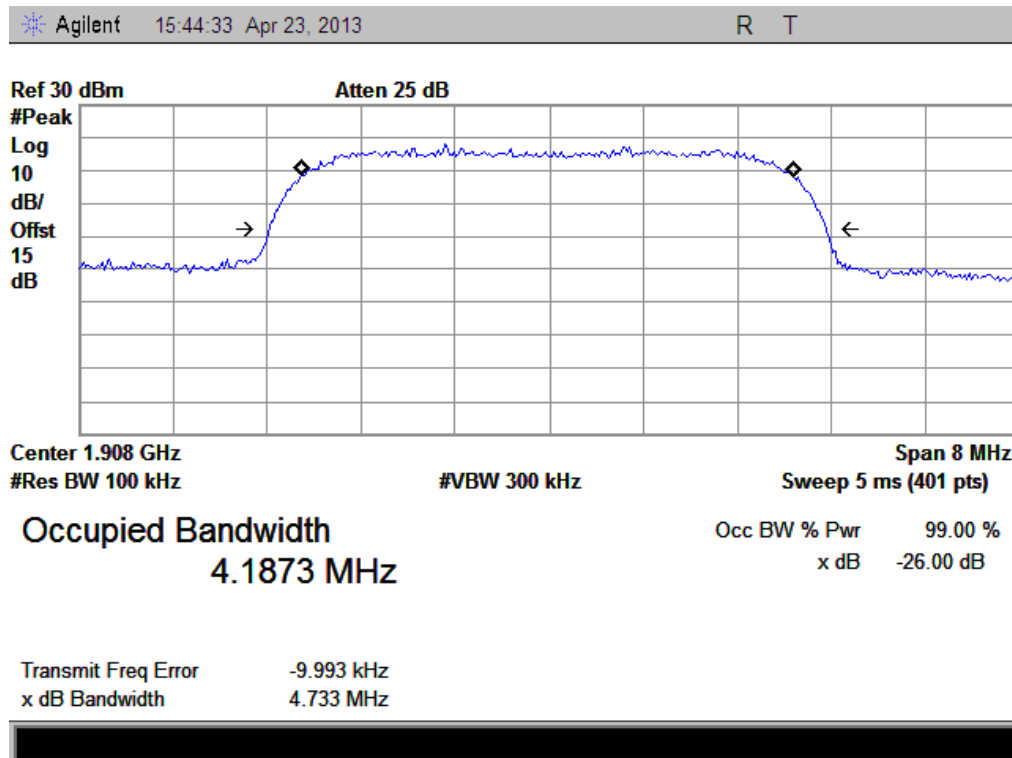
(Plot U: HSDPA 850 MHz Channel = 4233)



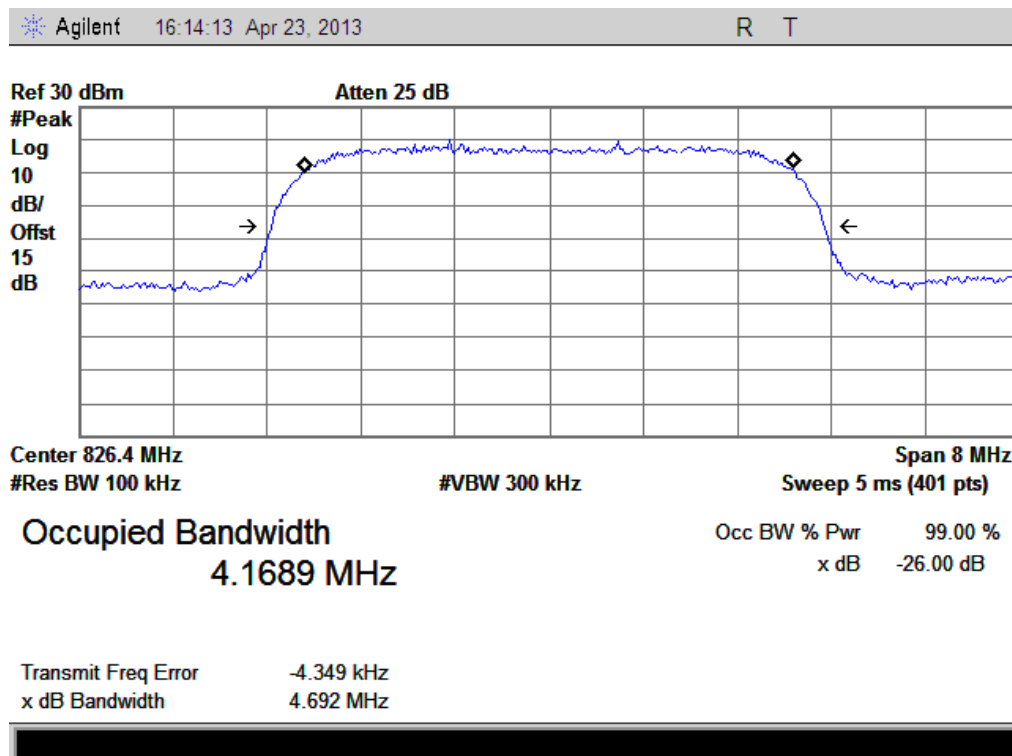
(Plot V: HSDPA1900 MHz Channel = 9262)



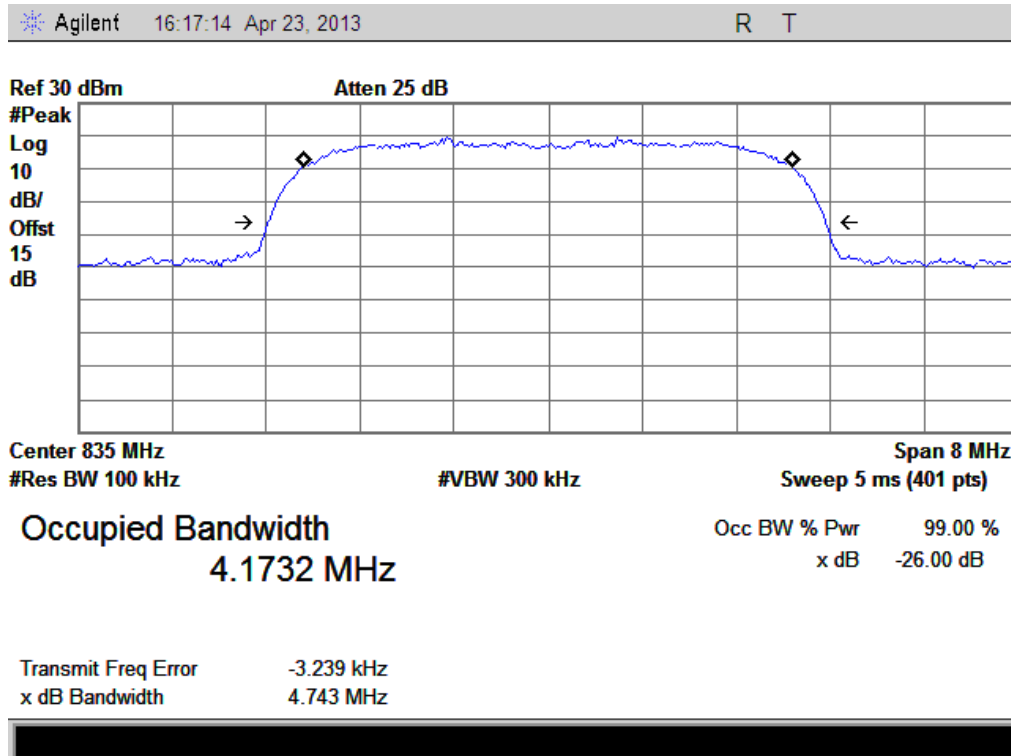
(Plot W: HSDPA1900 MHz Channel = 9400)



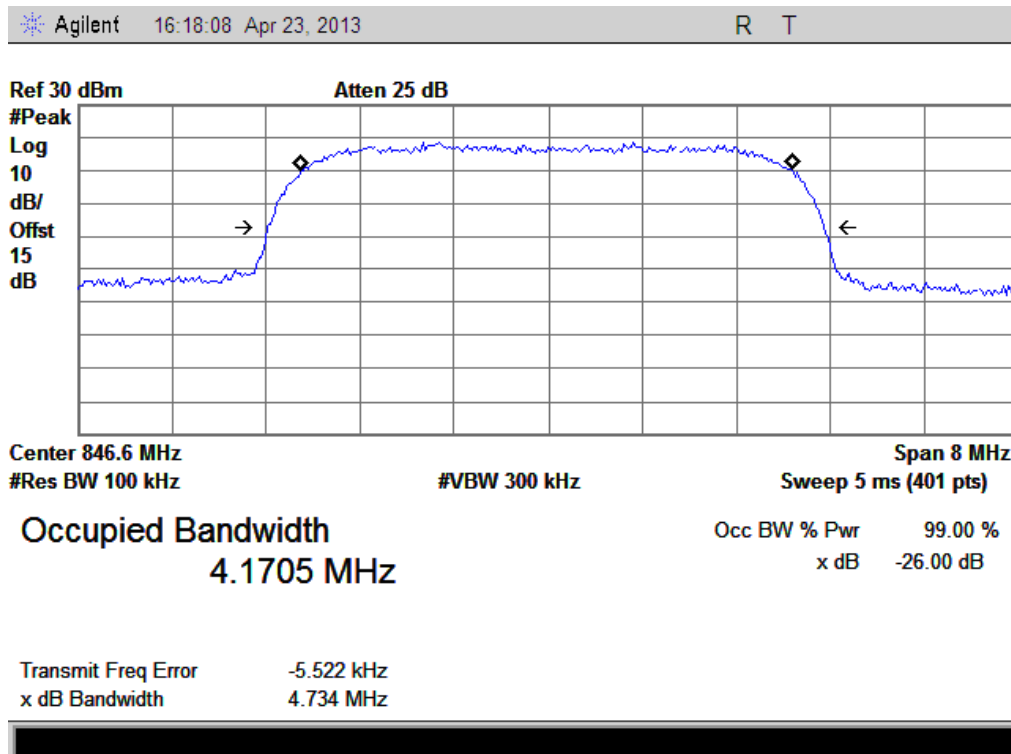
(Plot X: HSDPA1900 MHz Channel = 9538)



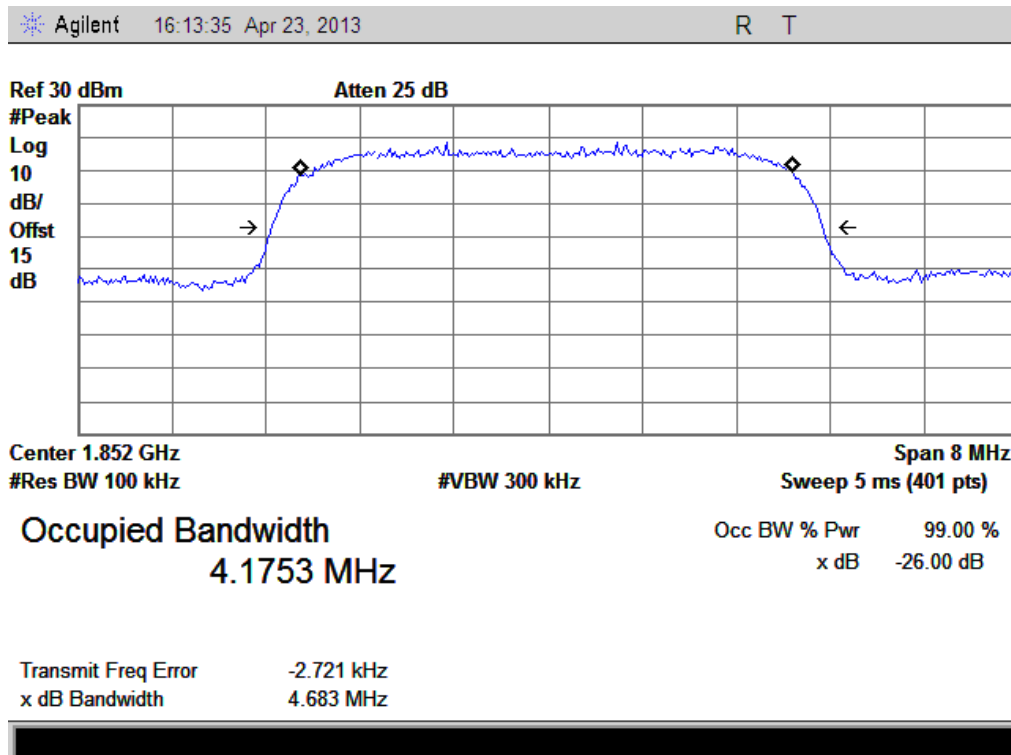
(Plot Y: HSUPA850 MHz Channel = 4132)



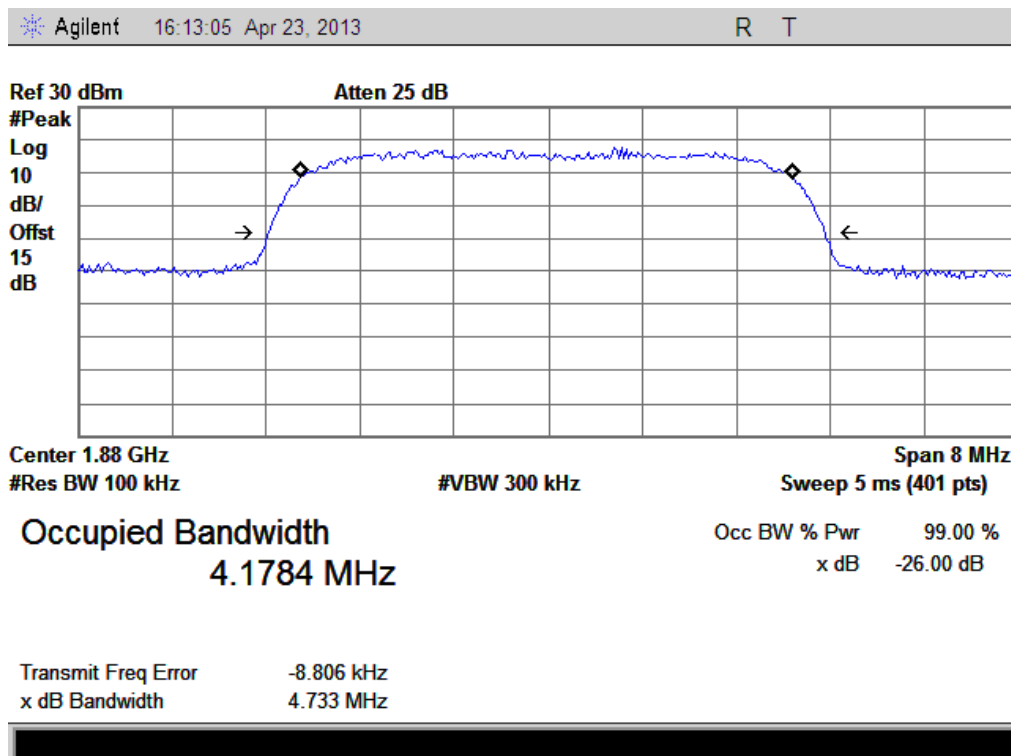
(Plot Z: HSUPA850 Hz Channel = 4175)



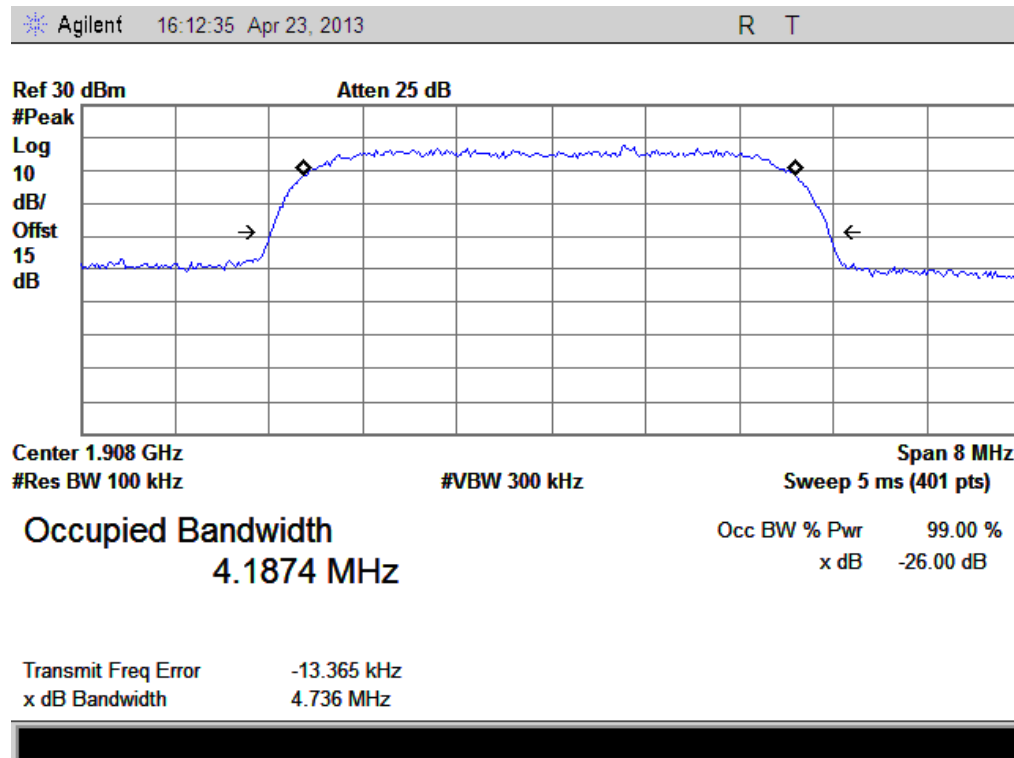
(Plot A.1: HSUPA850 MHz Channel = 4233)



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



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



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

2.4 Frequency Stability

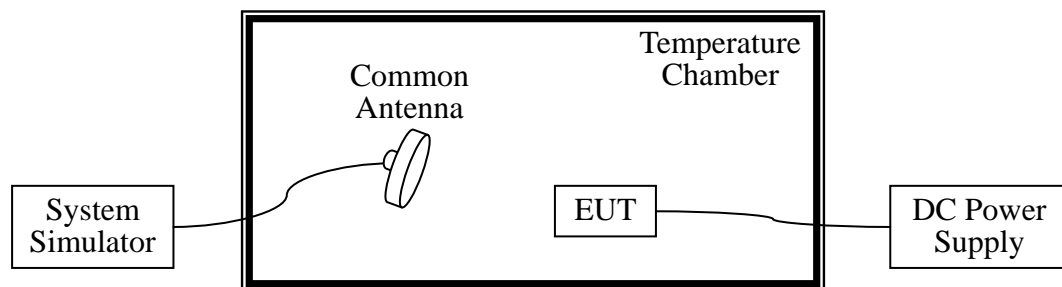
2.4.1 Requirement

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:

- The temperature is varied from -30°C to $+50^{\circ}\text{C}$ at intervals of not more than 10°C .
- 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	±2066	30.62	±2087.5	22.19	±2116.5	PASS
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	±1852.4	14.58	±1880.0	20.95	±1907.6	PASS
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	PASS
	-20	-16.20		-19.33		27.42		
	-10	-12.61		-11.79		37.01		
	0	-13.09		-0.44		-7.32		
	+10	-0.38		0.01		-4.91		
	+20	-11.85		-6.64		21.35		
	+30	29.57		24.25		-5.94		
	+40	-11.79		9.63		13.78		
	+55	-0.44		23.76		28.45		
4.2	+25	1.71		-4.57		29.11		
3.6	+25	1.54		5.25		-7.70		

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	PASS
	-20	27.13		-0.44		2.01		
	-10	7.62		0.01		-4.75		
	0	2.31		13.82		16.38		
	+10	-4.73		-15.25		-1.76		
	+20	16.22		-11.79		23.52		
	+30	-1.55		-0.44		-0.38		
	+40	23.16		1.15		-11.85		
	+55	13.79		-7.94		-5.91		
4.2	+25	-7.08		6.81		25.48		
3.6	+25	22.58		-1.83		-15.78		

2.5 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

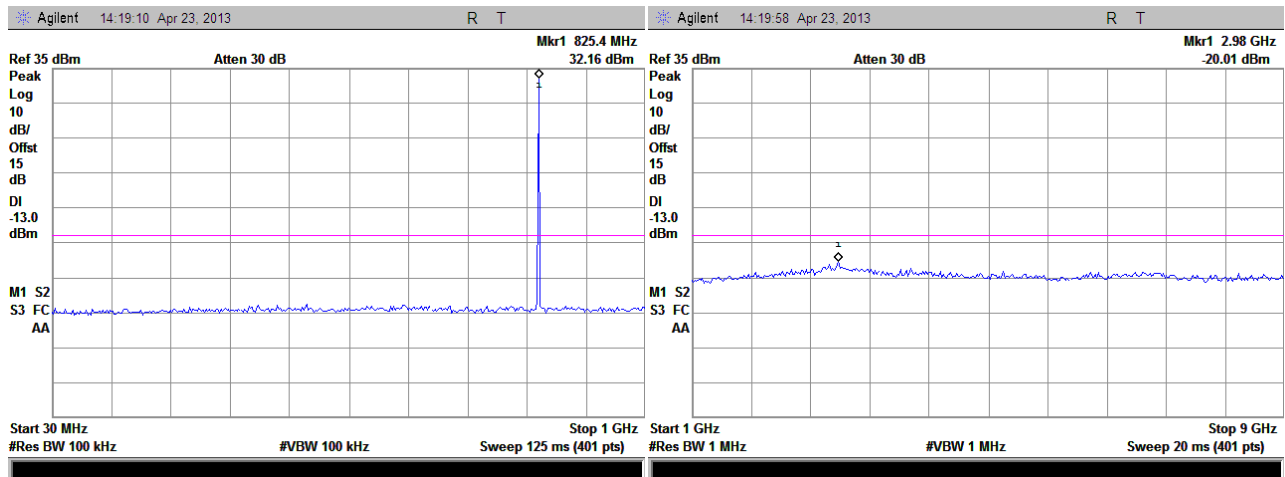
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

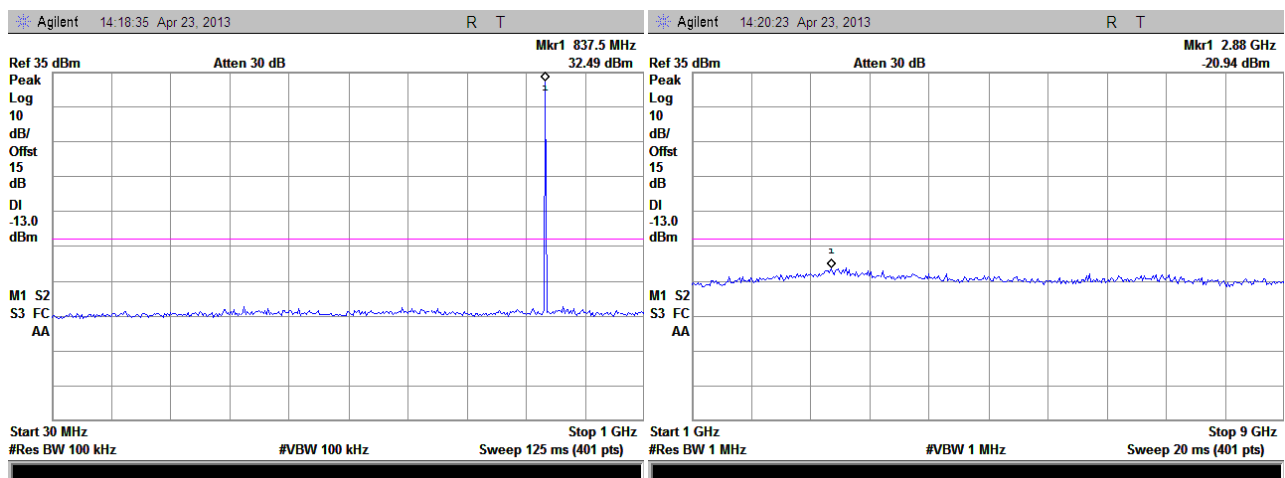
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-20.01	Plot A1toA1.1	-13	PASS
	190	836.6	-20.94	Plot A2toA2.1		PASS
	251	848.8	-20.34	Plot A3toA3.1		PASS
GSM 1900MHz	512	1850.2	-19.37	Plot B1toB1.1	-13	PASS
	661	1880.0	-20.71	Plot B2toB2.1		PASS
	810	1909.8	-19.58	Plot B3toB3.1		PASS
EDGE 850MHz	128	824.2	-21.72	Plot C1toC1.1	-13	PASS
	190	836.6	-21.86	Plot C2toC2.1		PASS
	251	848.8	-20.17	Plot C3toC3.1		PASS
EDGE 1900MHz	512	1850.2	-21.56	Plot D1toD1.1	-13	PASS
	661	1880.0	-19.87	Plot D2toD2.1		PASS
	810	1909.8	-21.37	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	-24.97	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

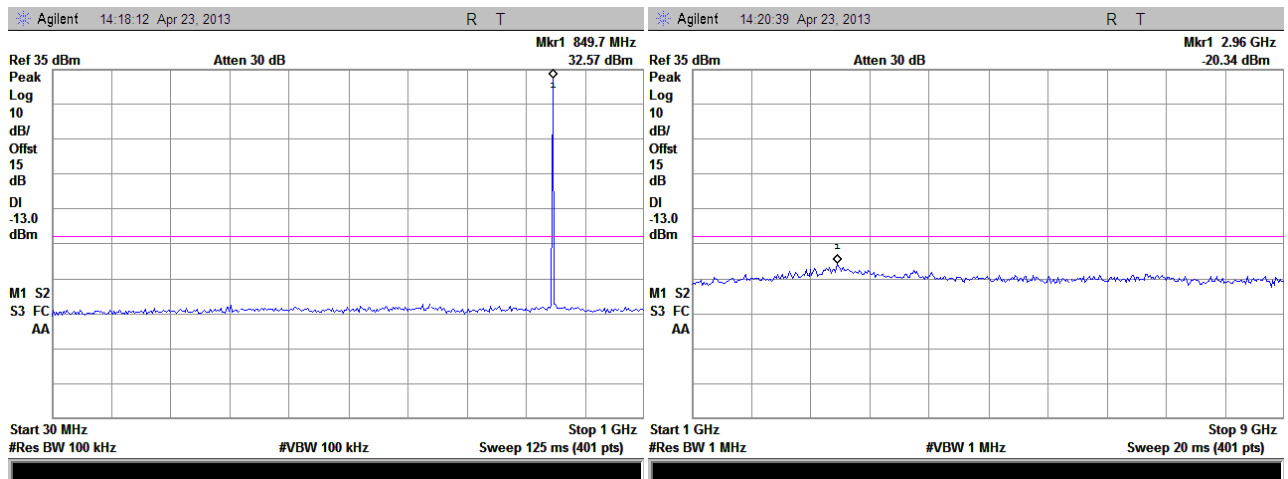
2. Test Plots for the Whole Measurement Frequency Range: Note: the power of the EUT transmitting frequency should be ignored.



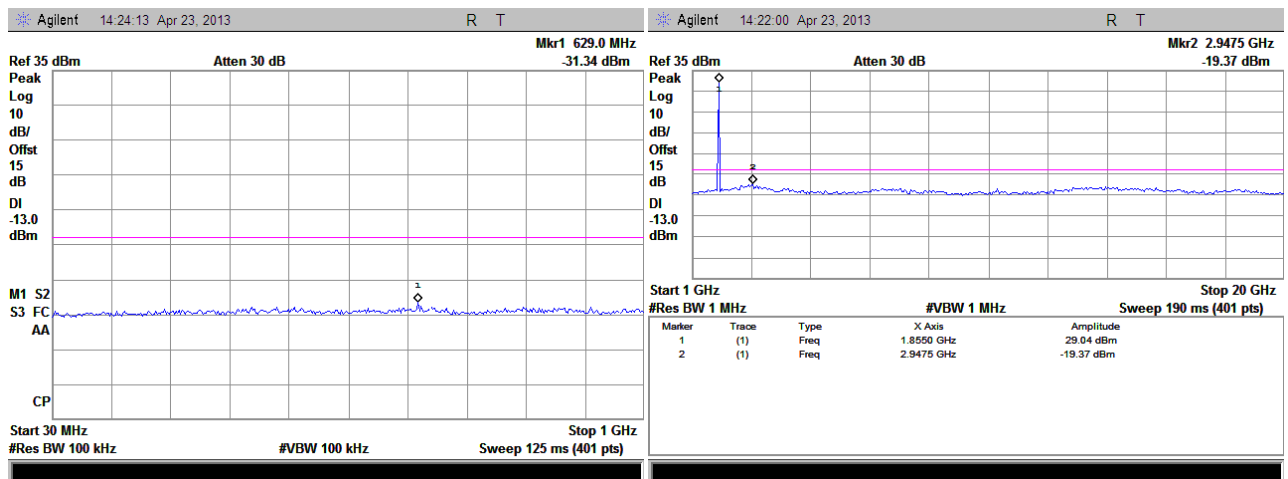
(Plot A1: GSM 850MHz Channel = 128, 30MHz to 9GHz)



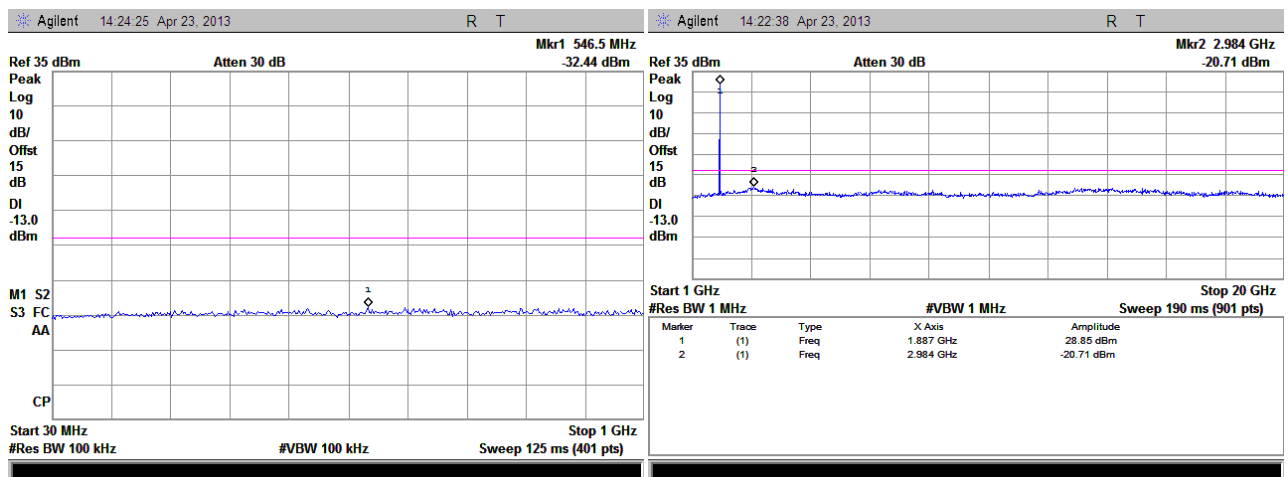
(Plot A2: GSM 850MHz Channel = 190, 30MHz to 9GHz)



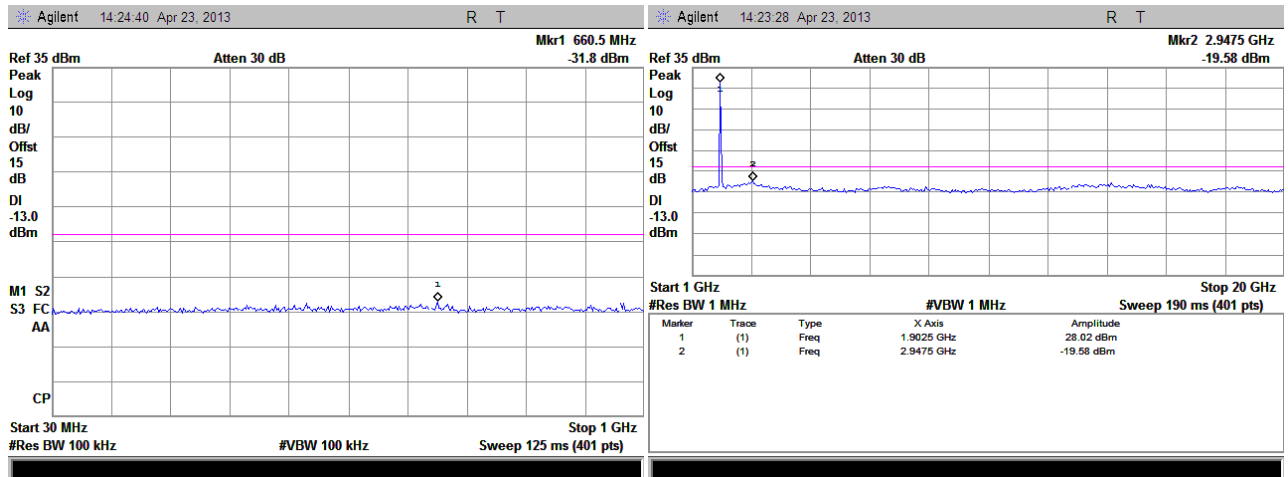
(Plot A3: GSM 850MHz Channel = 251, 30MHz to 9GHz)



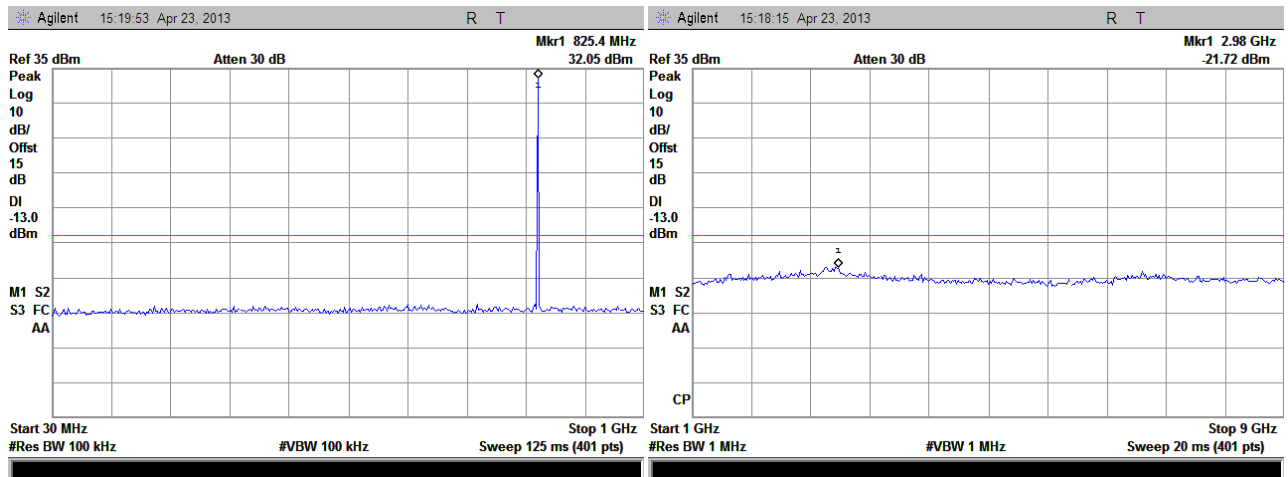
(Plot B1: GSM 1900MHz Channel = 512, 30MHz to 20GHz)



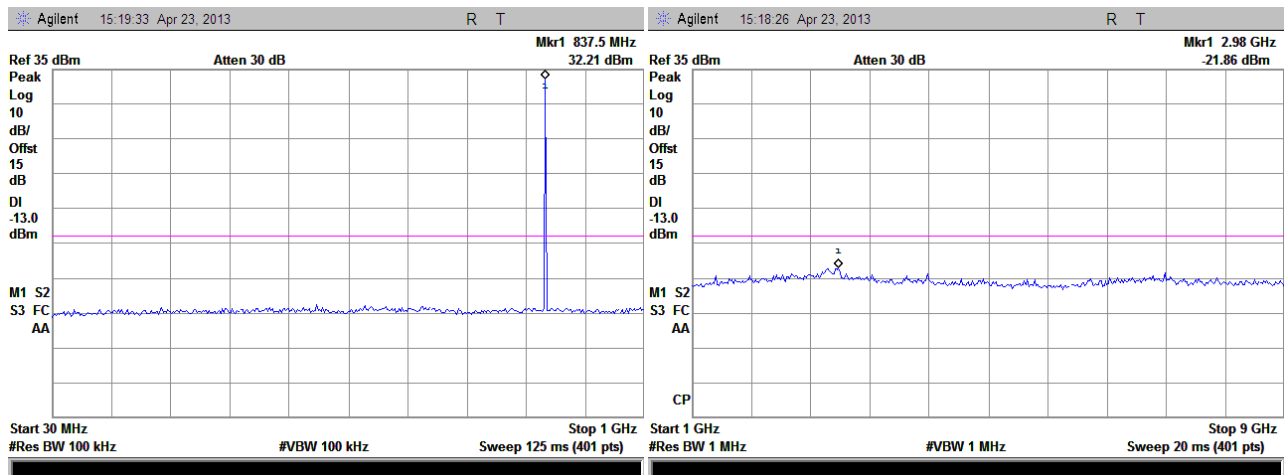
(Plot B2: GSM 1900MHz Channel = 661, 30MHz to 20GHz)



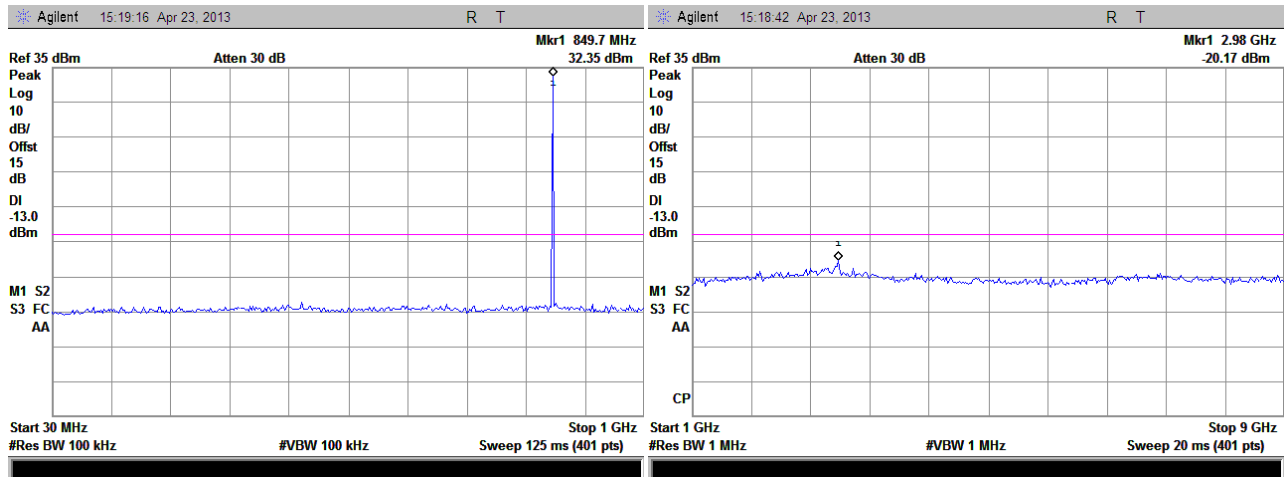
(Plot B3: GSM 1900MHz Channel = 810, 30MHz to 20GHz)



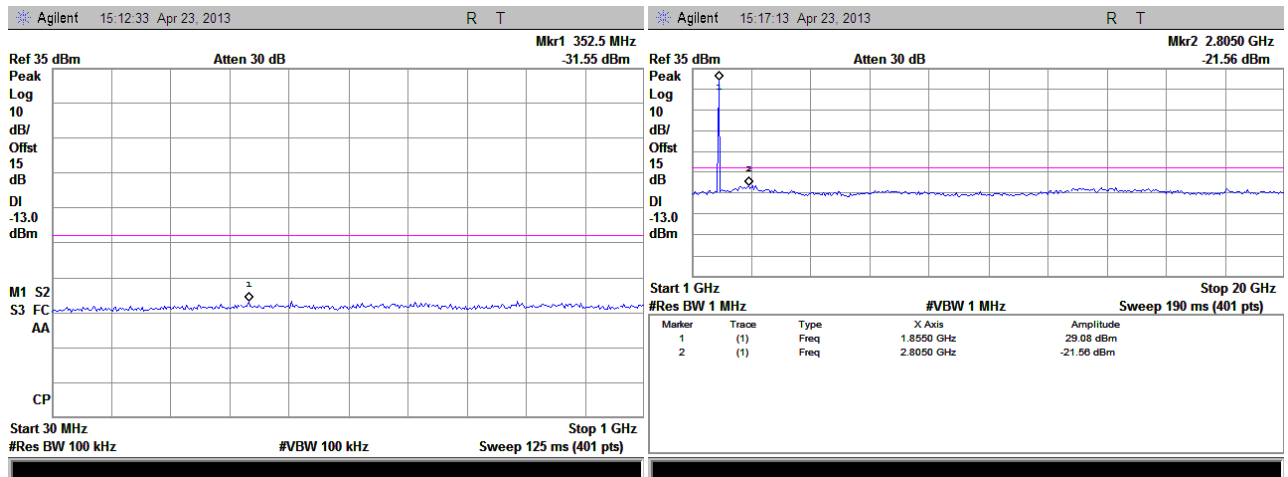
(Plot C1: EDGE 850MHz Channel = 128, 30MHz to 9GHz)



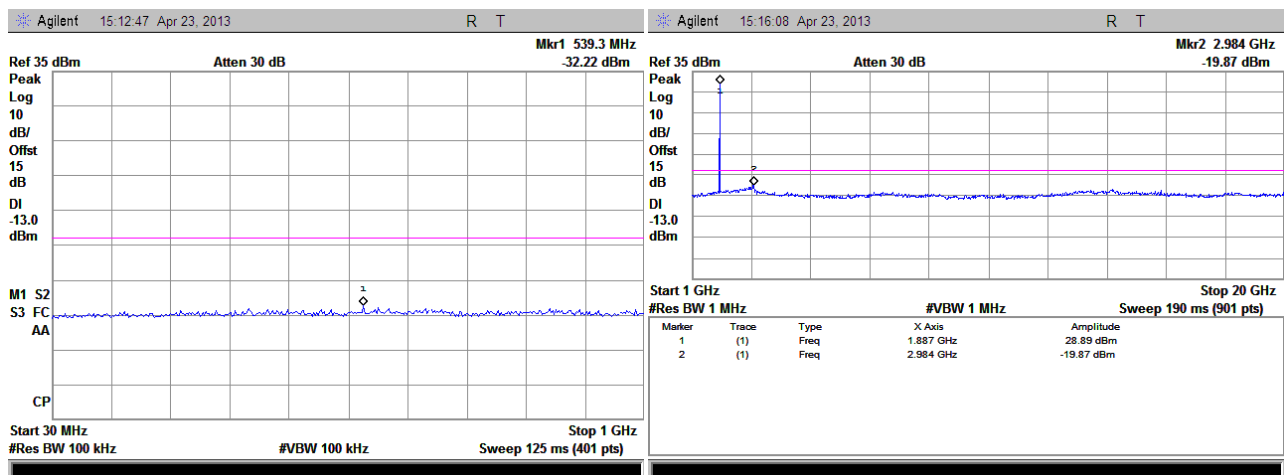
(Plot C2: EDGE 850MHz Channel = 190, 30MHz to 9GHz)



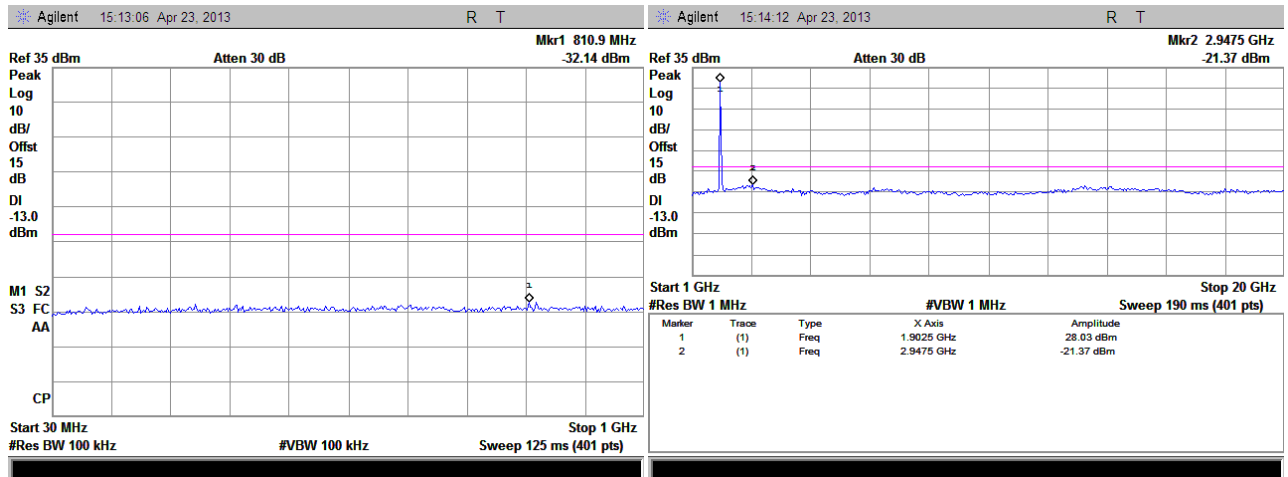
(Plot C3: EDGE 850MHz Channel = 251, 30MHz to 9GHz)



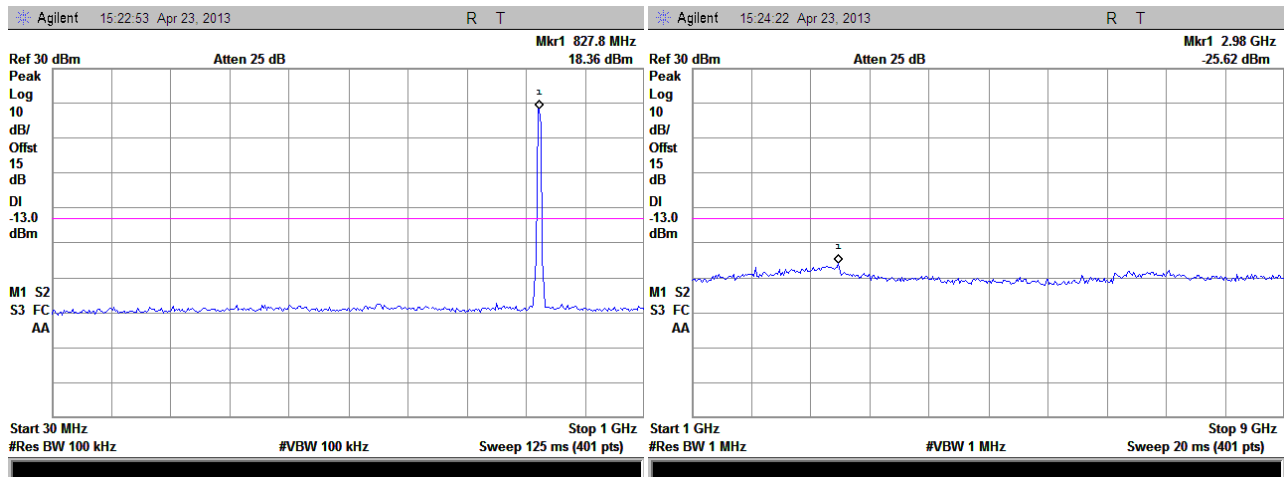
(Plot D1: EDGE 1900MHz Channel = 512, 30MHz to 20GHz)



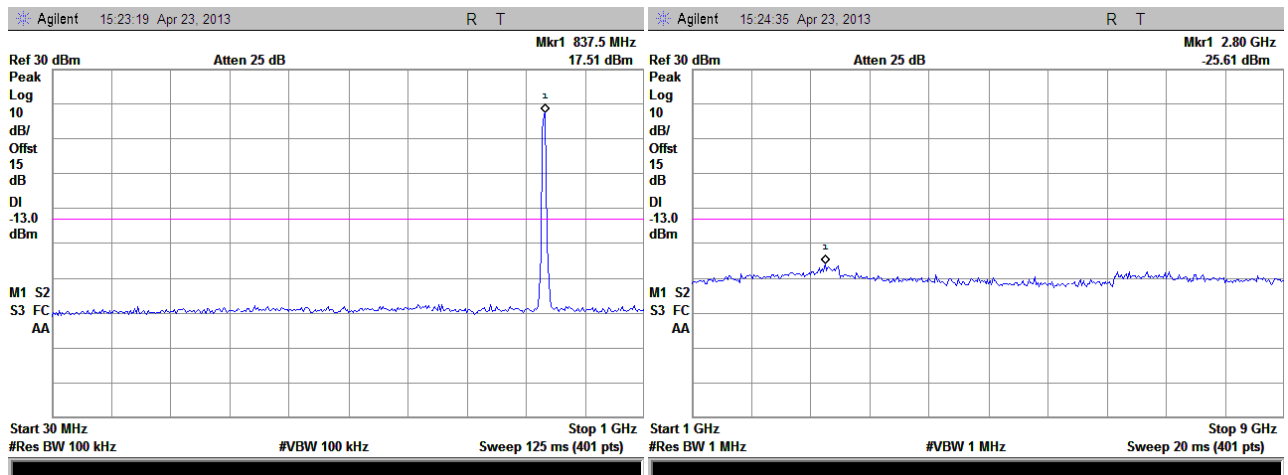
(Plot D2: EDGE 1900MHz Channel = 661, 30MHz to 20GHz)



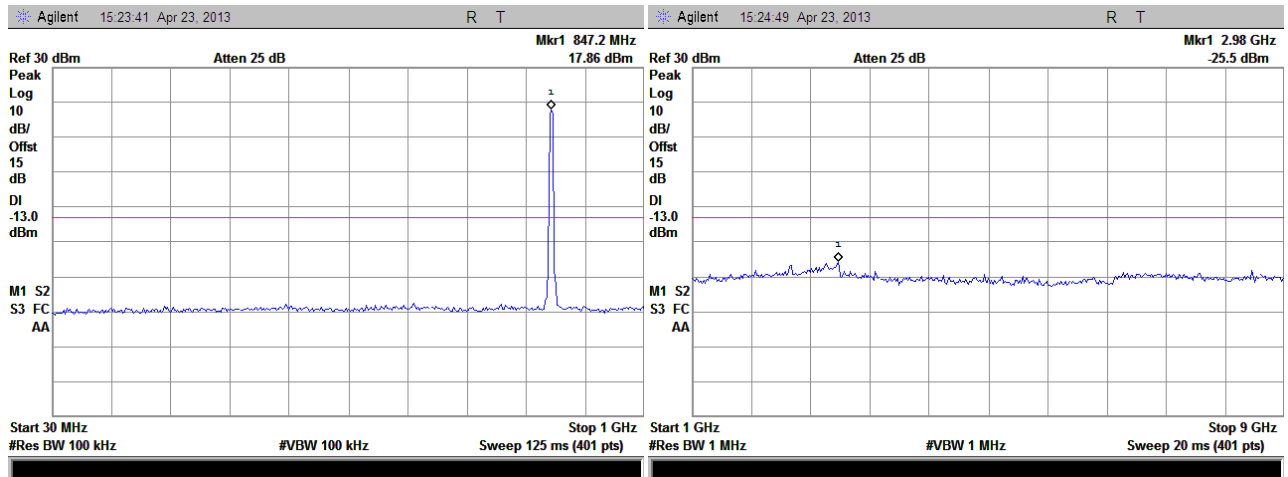
(Plot D3: EDGE 1900MHz Channel = 810, 30MHz to 20GHz)



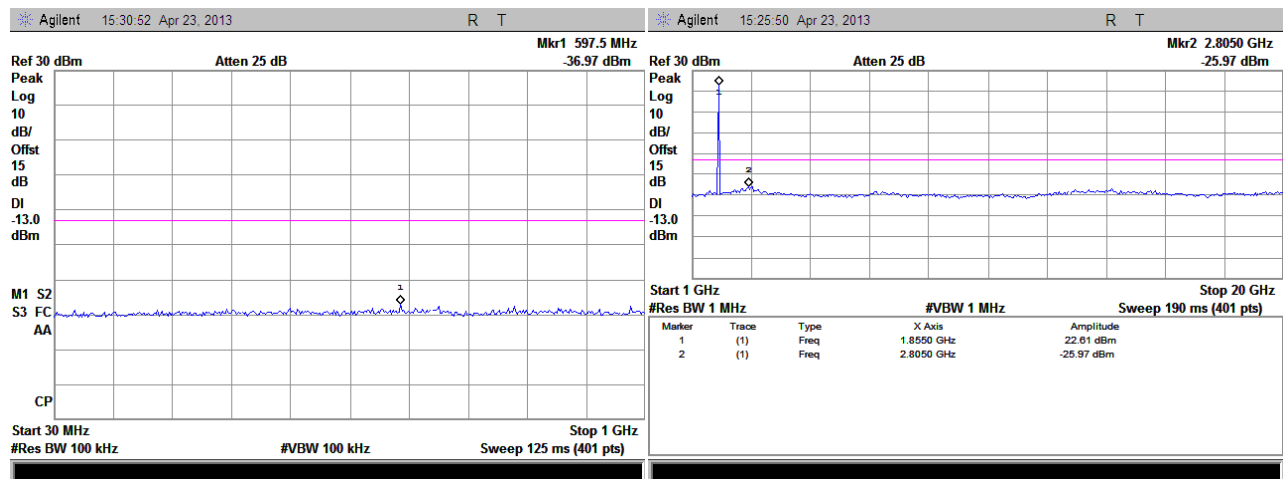
(Plot E1: WCDMA850MHz Channel = 4132, 30MHz to 9GHz)



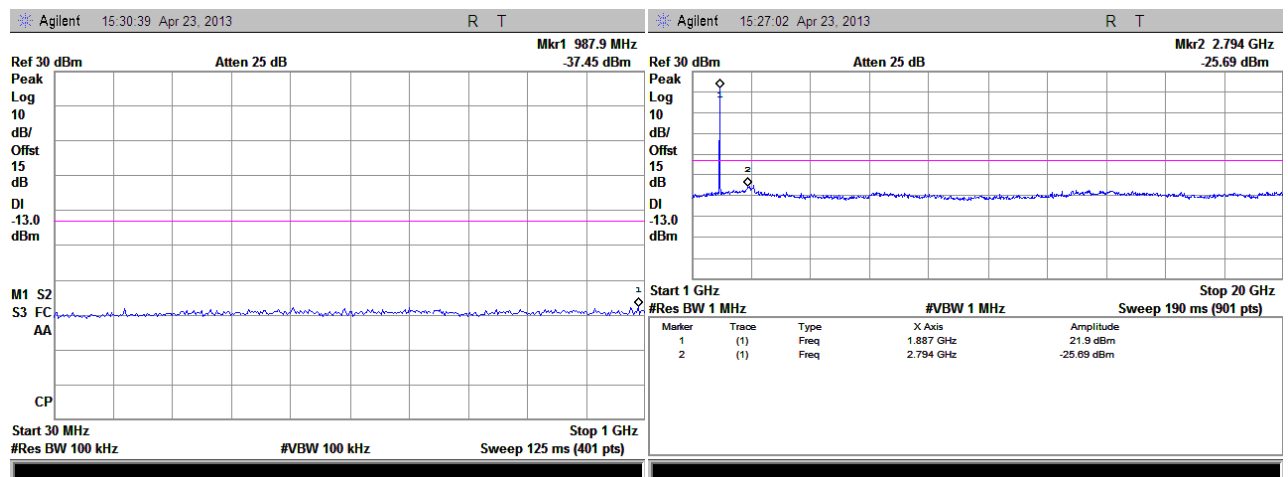
(Plot E2: WCDMA850MHz Channel = 4175, 30MHz to 9GHz)



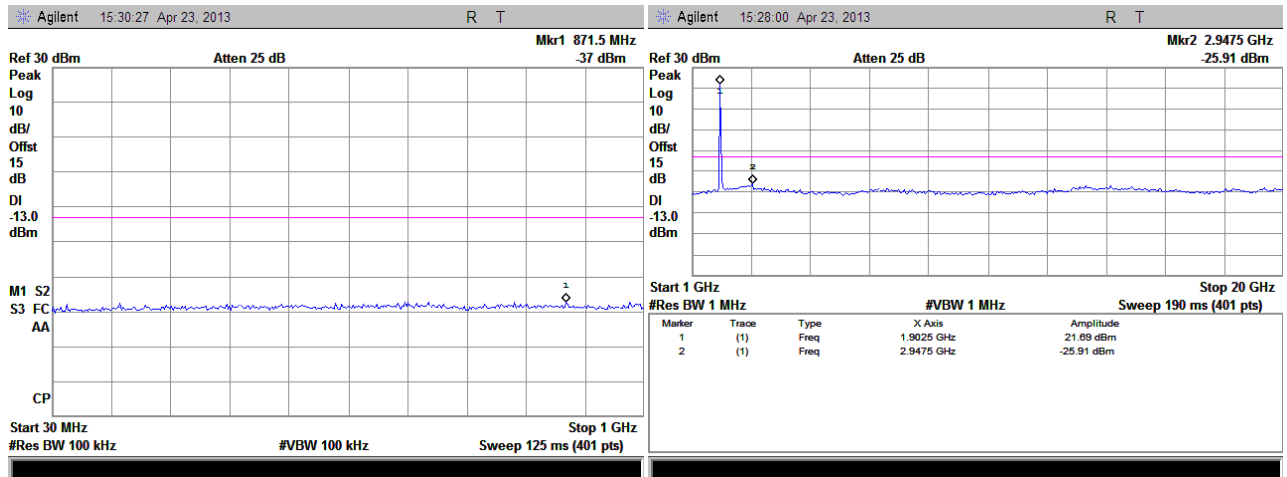
(Plot E3: WCDMA850MHz Channel = 4233, 30MHz to 9GHz)



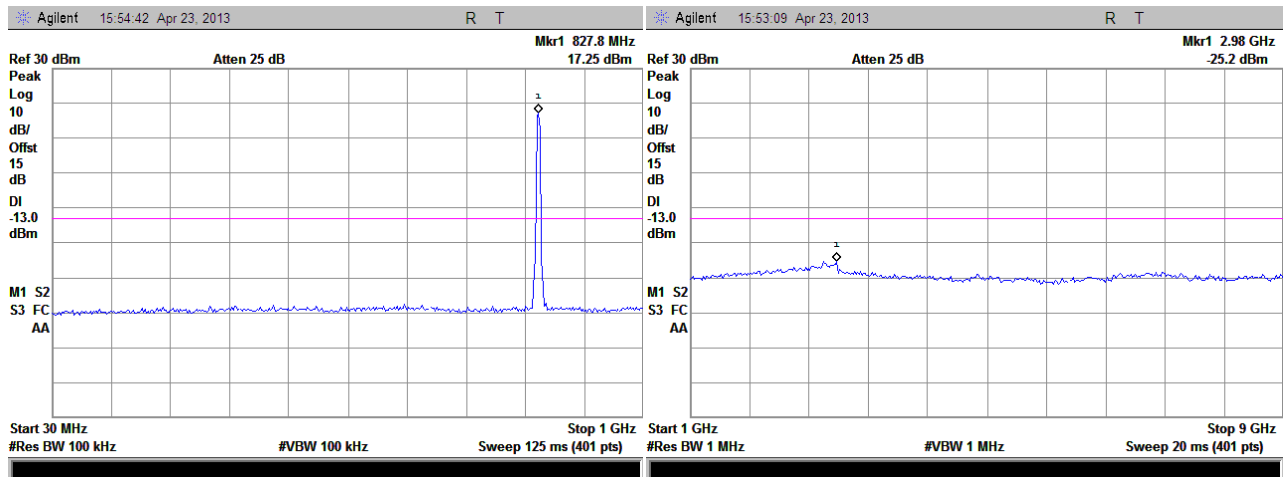
(Plot F1: WCDMA1900MHz Channel = 9262, 30MHz to 20GHz)



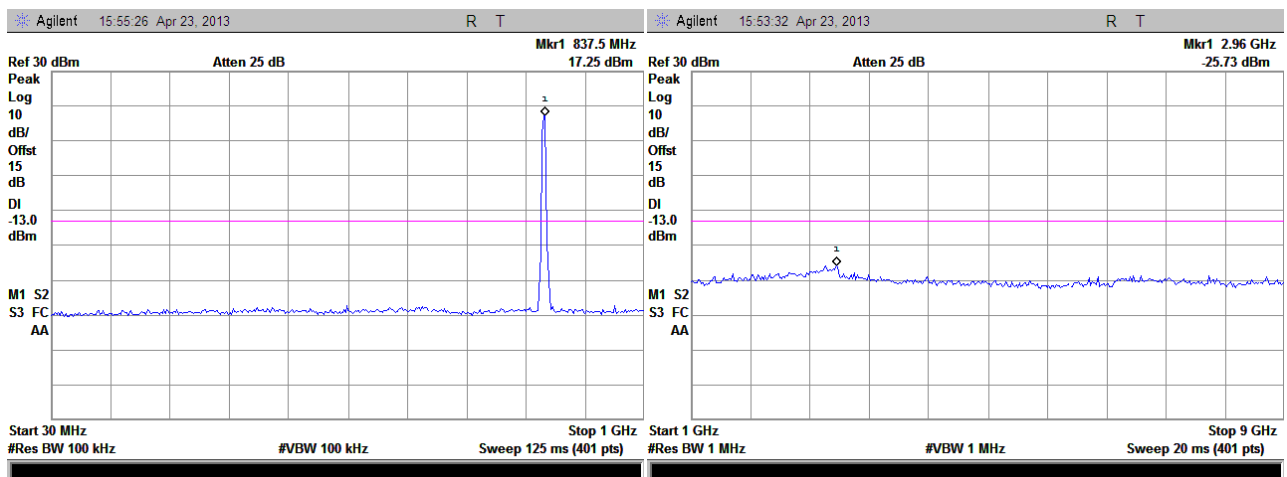
(Plot F2: WCDMA1900MHz Channel = 9400, 30MHz to 20GHz)



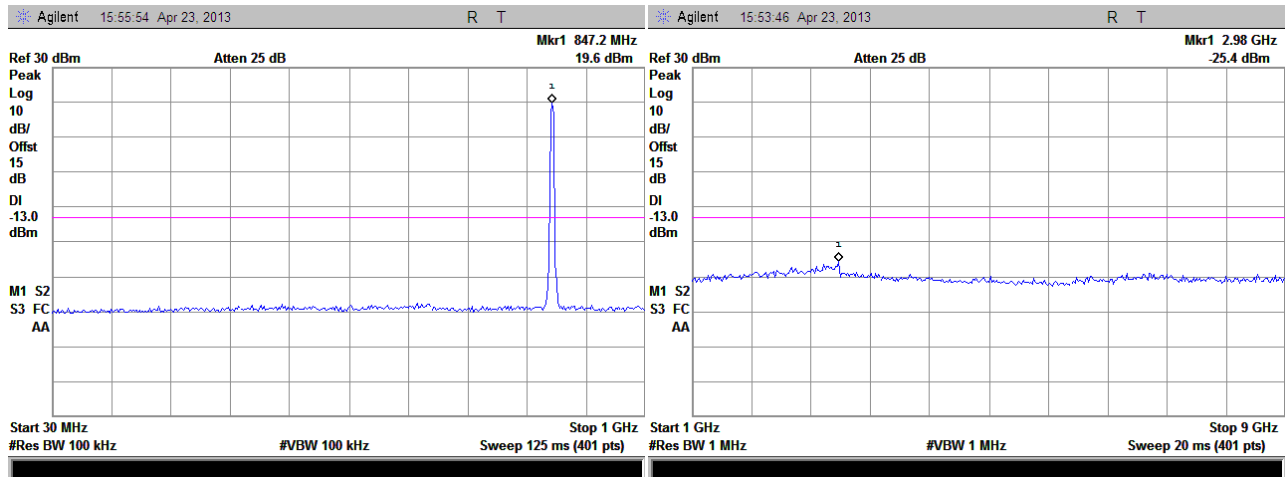
(Plot F3: WCDMA1900MHz Channel = 9538, 30MHz to 20GHz)



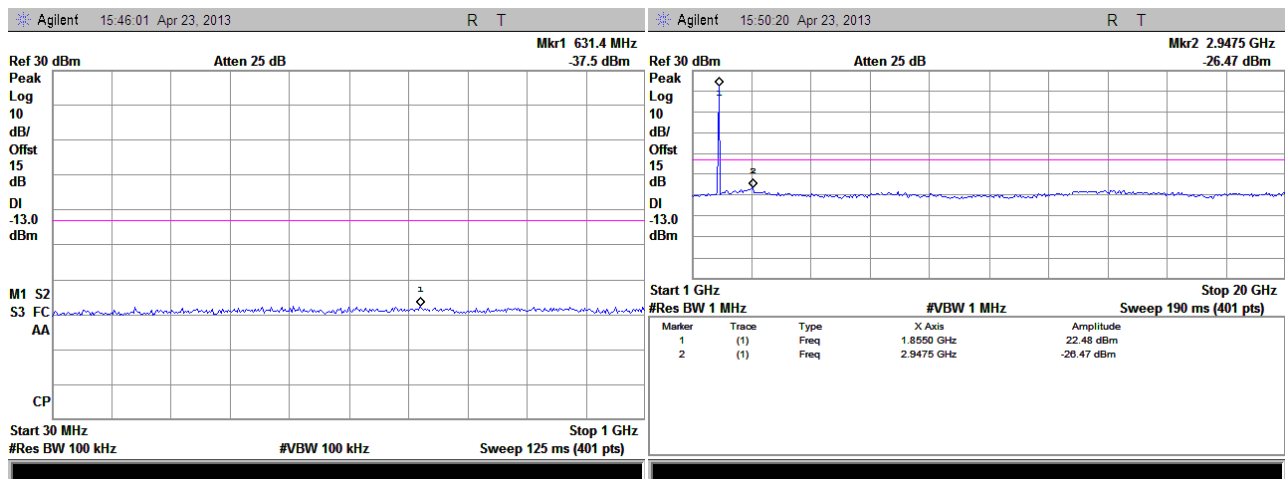
(Plot G1: HSDPA 850MHz Channel = 4132, 30MHz to 9GHz)



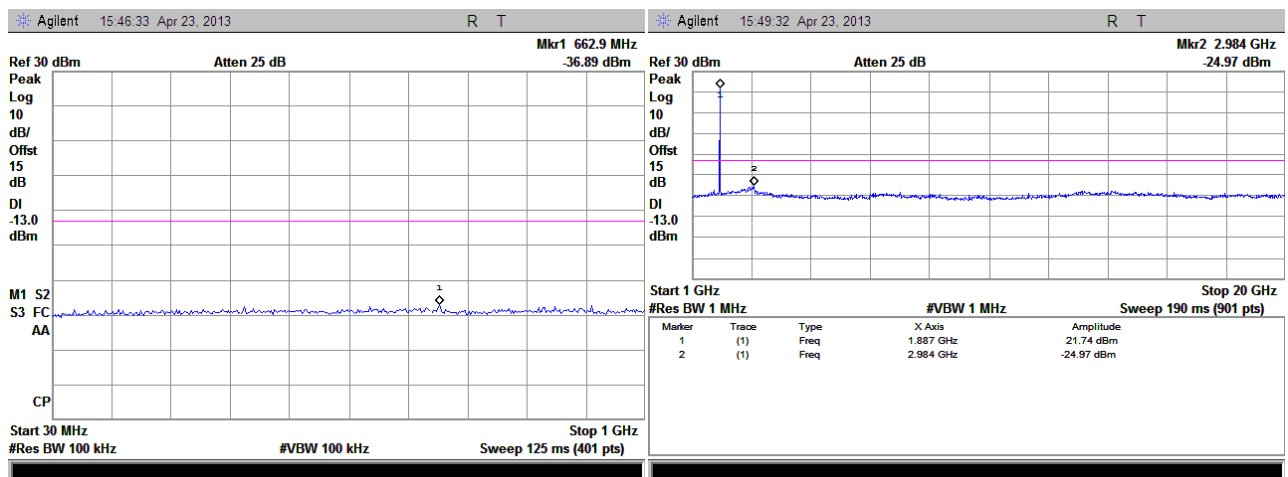
(Plot G2: HSDPA 850MHz Channel = 4175, 30MHz to 9GHz)



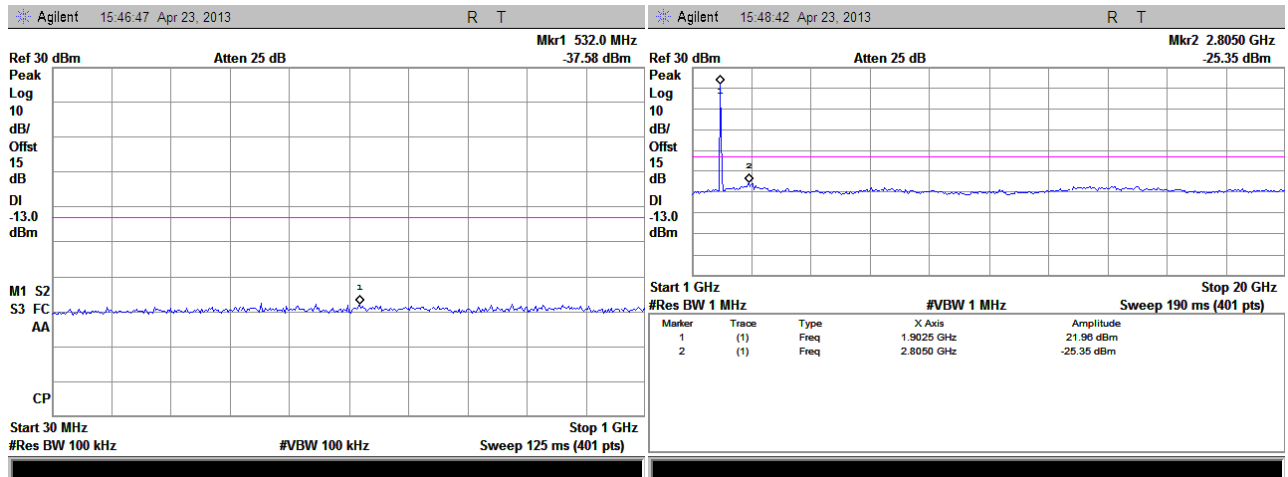
(Plot G3: HSDPA850MHz Channel = 4233, 30MHz to 9GHz)



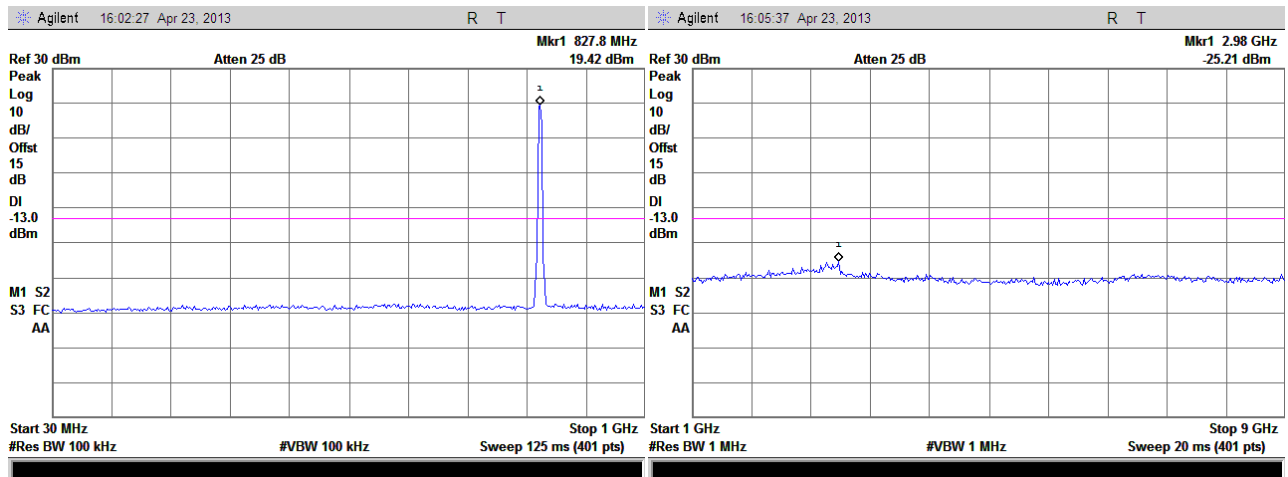
(Plot H1: HSDPA1900MHz Channel = 9262, 30MHz to 20GHz)



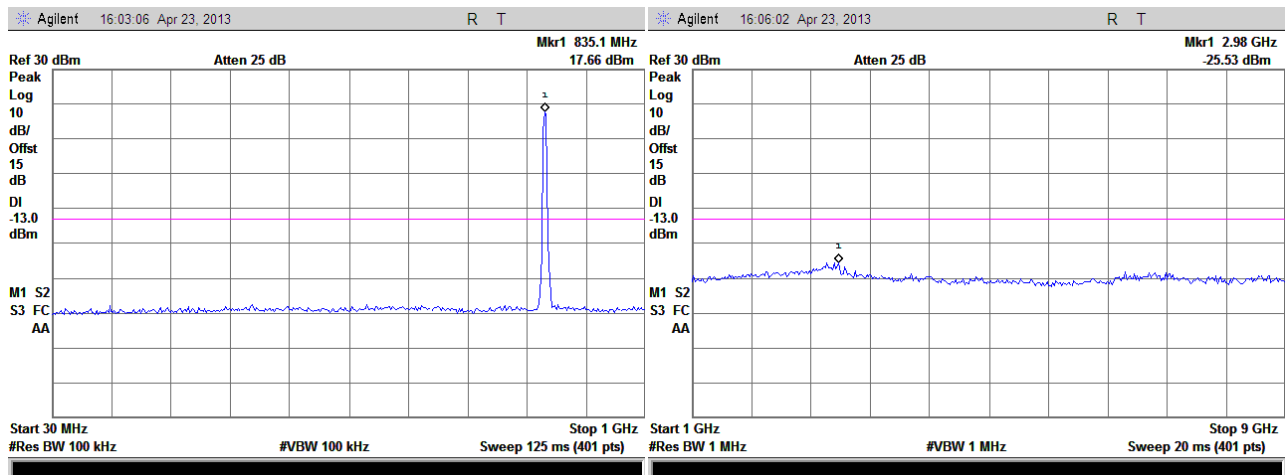
(Plot H2: HSDPA1900MHz Channel = 9400, 30MHz to 20GHz)



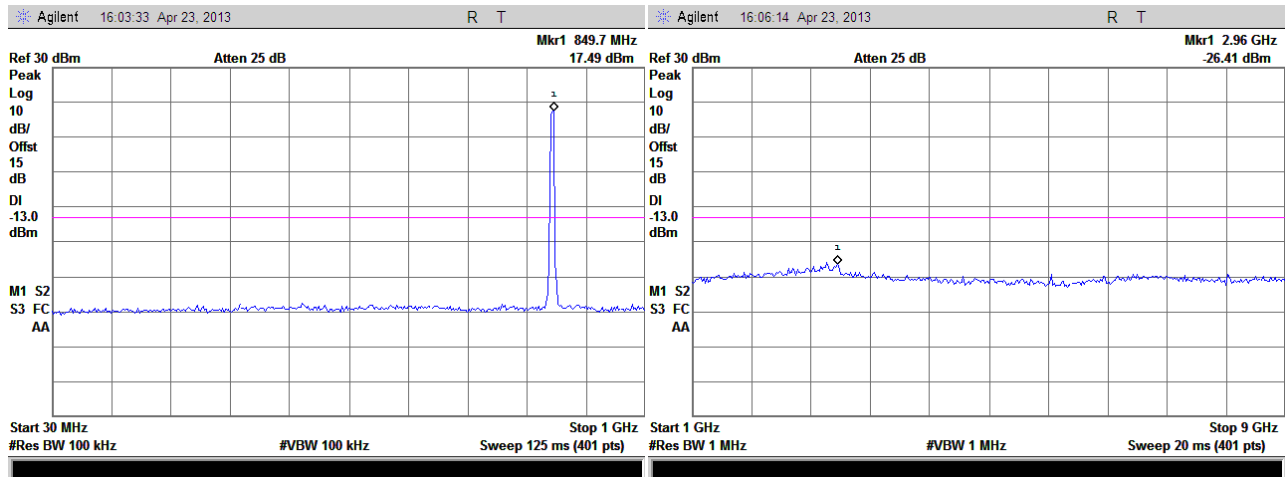
(Plot H3: HSDPA1900MHz Channel = 9538, 30MHz to 20GHz)



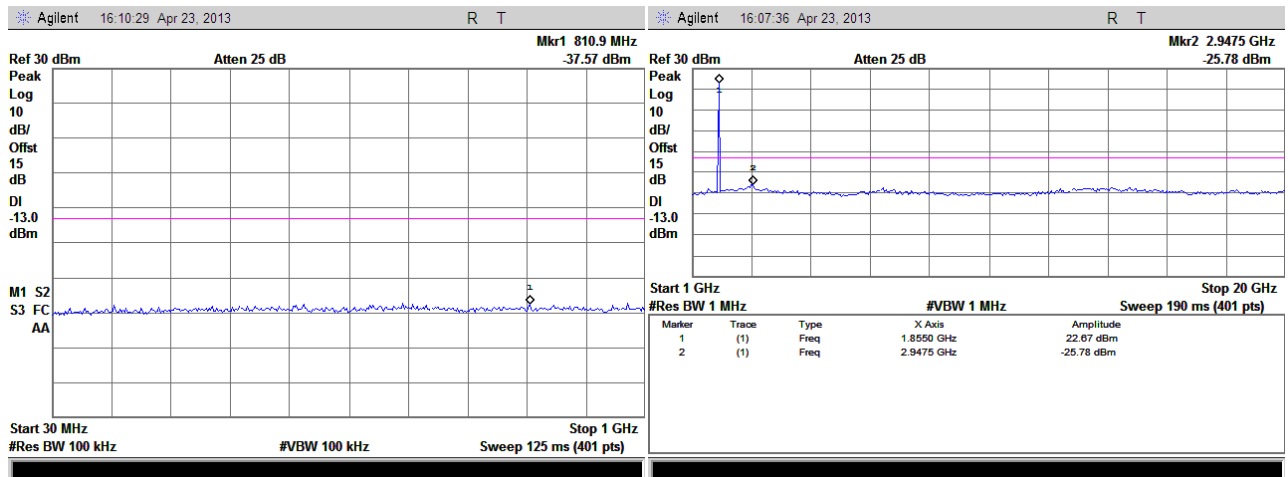
(Plot I 1: HSUPA 850MHz Channel = 4132, 30MHz to 9GHz)



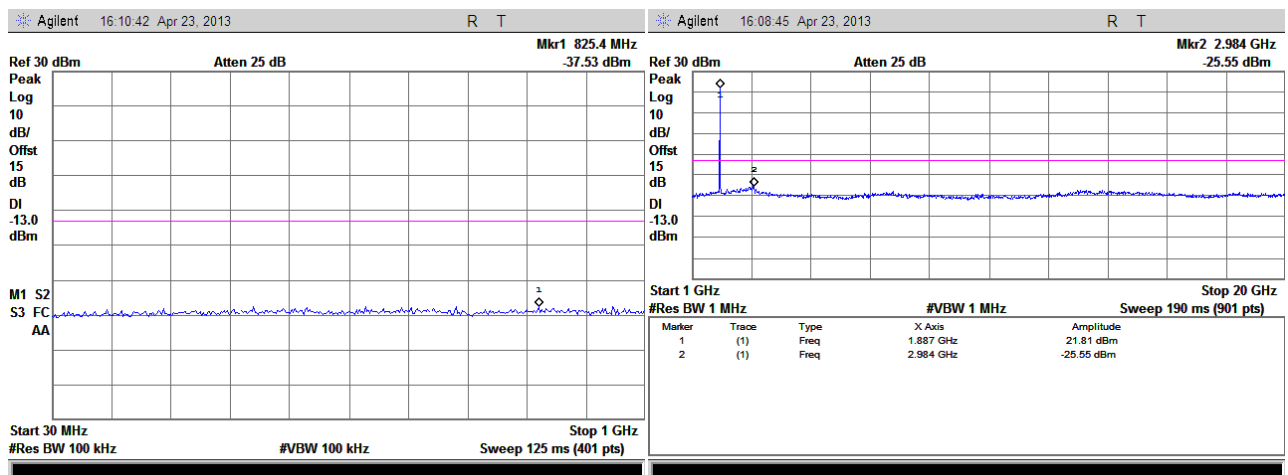
(Plot I 2: HSUPA 850MHz Channel = 4175, 30MHz to 9GHz)



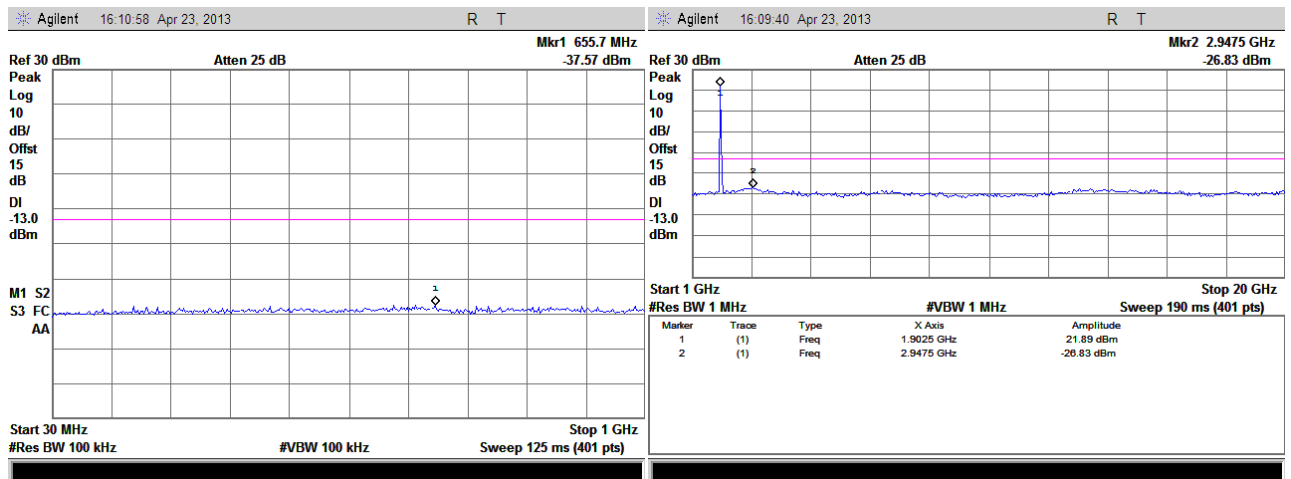
(Plot I 3: HSUPA850MHz Channel = 4233, 30MHz to 9GHz)



(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.

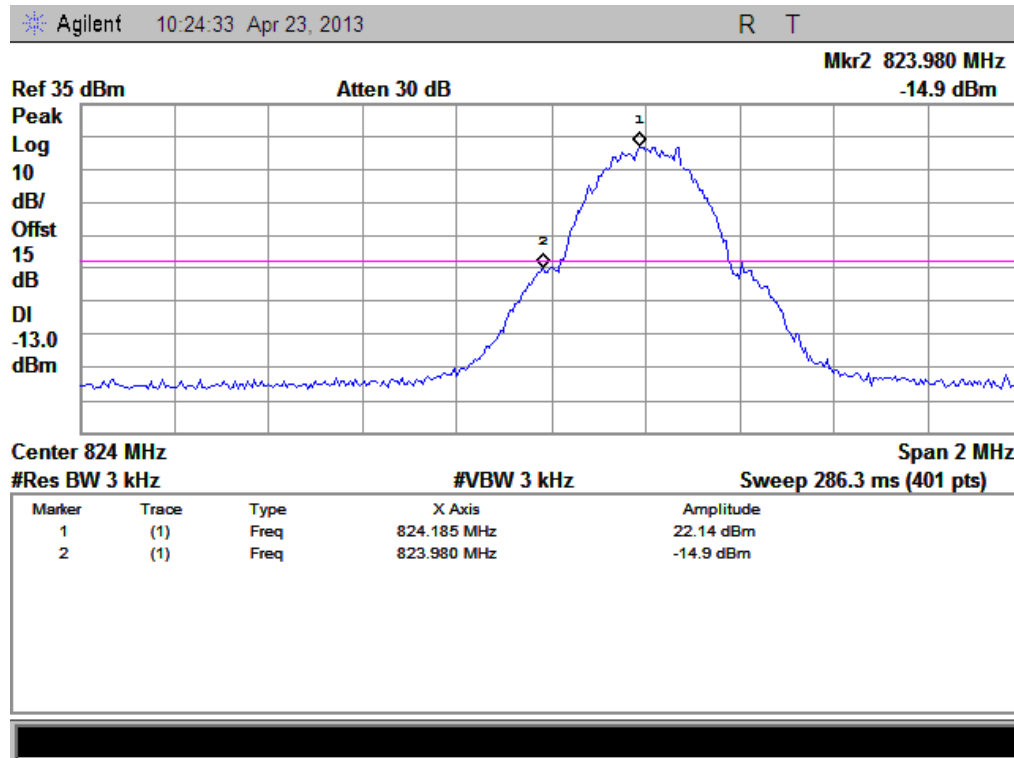
2.6.3 Test Result

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

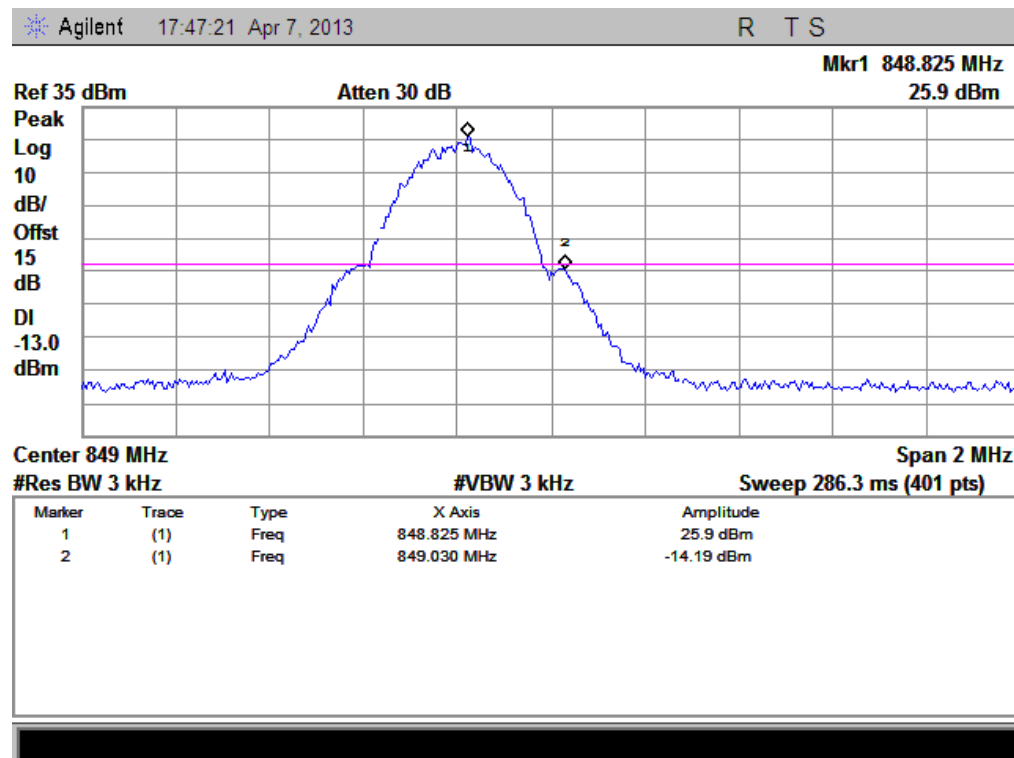
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-14.9	Plat A	-13	PASS
	251	848.8	-14.19	Plot B		PASS
GSM 1900MHz	512	1850.2	-15.09	Plat C	-13	PASS
	810	1909.8	-16.68	Plot D		PASS
EDGE 850MHz	128	824.2	-13.92	Plat E	-13	PASS
	251	848.8	-13.69	Plot F		PASS
EDGE 1900MHz	512	1850.2	-16.89	Plat G	-13	PASS
	810	1909.8	-16.1	Plot H		PASS
WCDMA 850MHz	4132	826.4	-13.66	Plat I	-13	PASS
	4233	846.6	-14.39	Plot J		PASS
WCDMA 1900MHz	9262	1852.4	-15.78	Plat K	-13	PASS
	9538	1907.6	-14.66	Plot L		PASS
HSDPA 850MHz	4132	826.4	-13.82	Plat M	-13	PASS
	4233	846.6	-15.04	Plot N		PASS
HSDPA 1900MHz	9262	1852.4	-15.75	Plat O	-13	PASS
	9538	1907.6	-14.95	Plot P		PASS
HSUPA 850MHz	4132	826.4	-14.09	Plat Q	-13	PASS
	4233	846.6	-14.12	Plot R		PASS
HSUPA 1900MHz	9262	1852.4	-16.55	Plat S	-13	PASS
	9538	1907.6	-15.01	Plot T		PASS

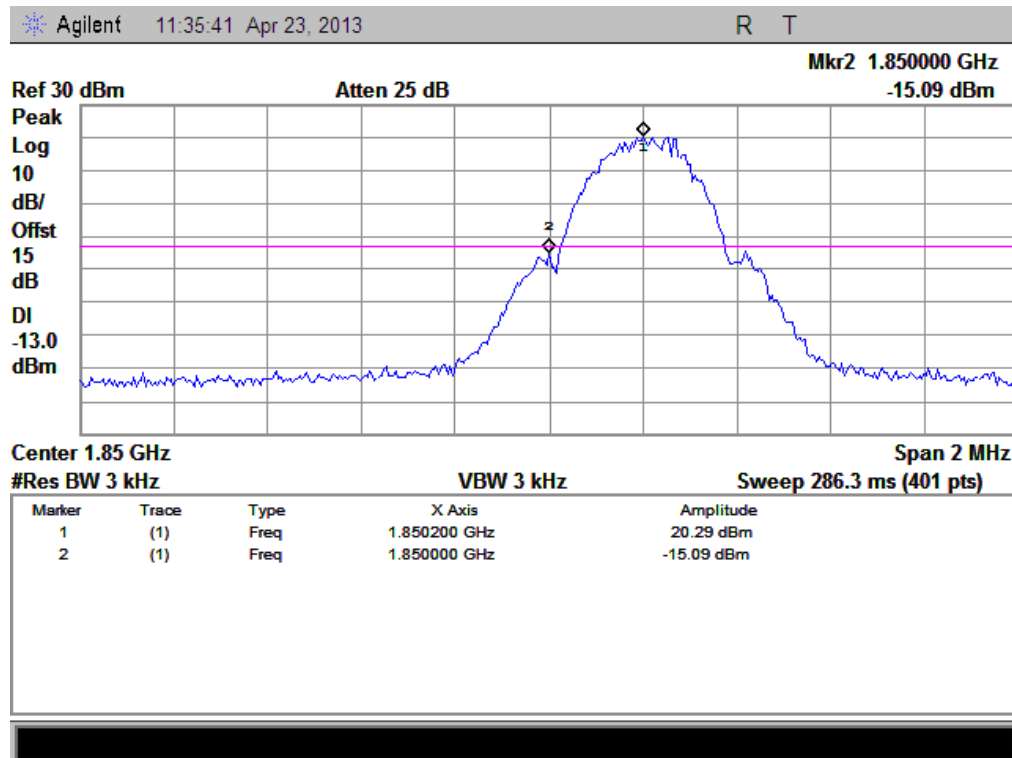
2. Test Plots:



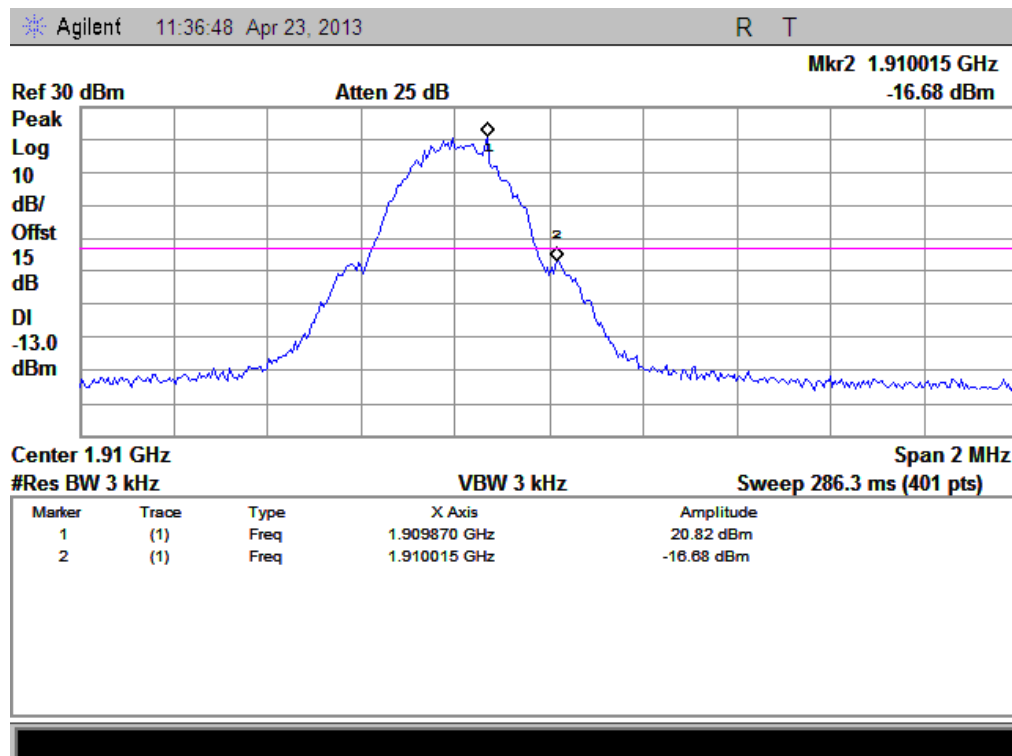
(Plot A: GSM 850 Channel = 128)



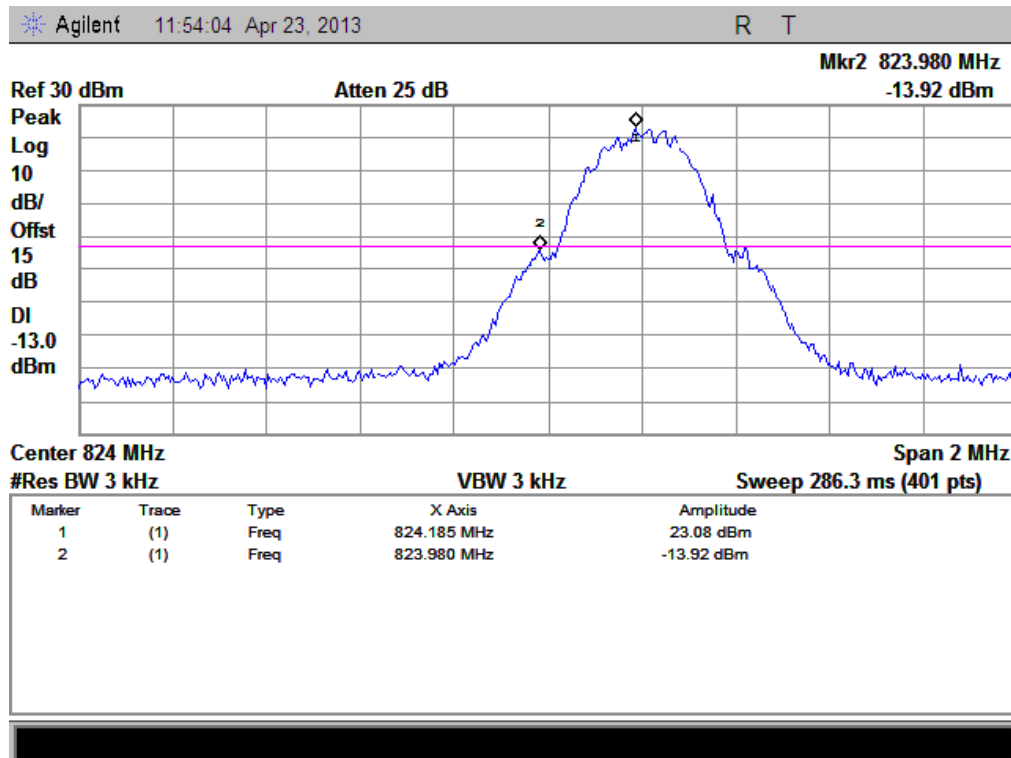
(Plot B: GSM 850 Channel = 251)



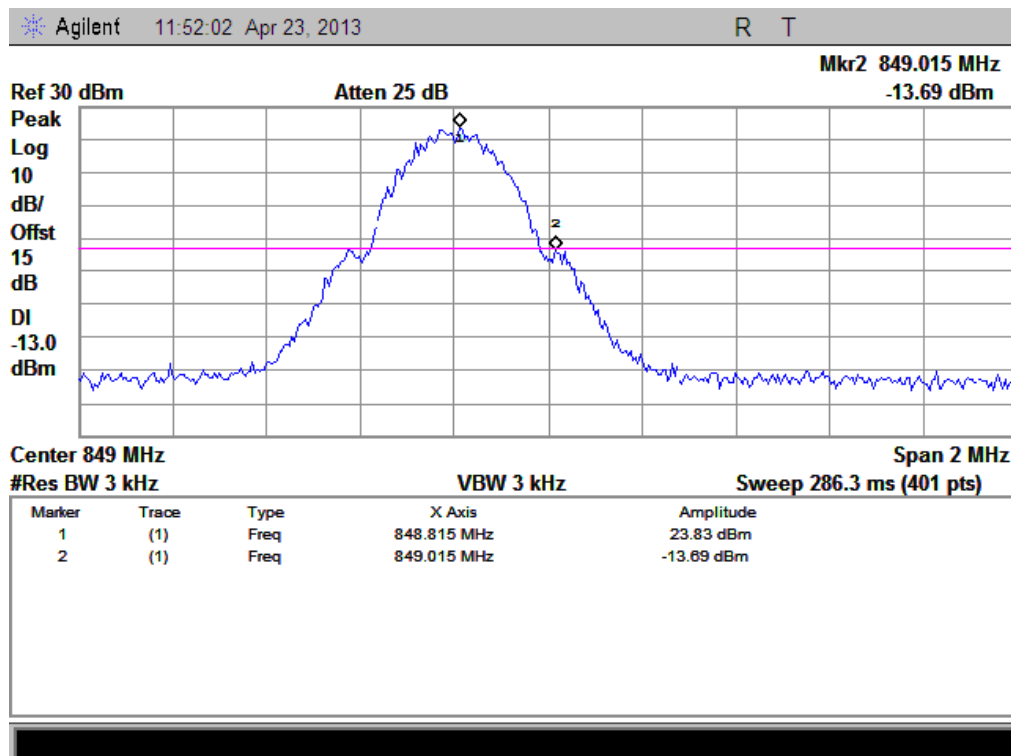
(Plot C: GSM 1900 Channel = 512)



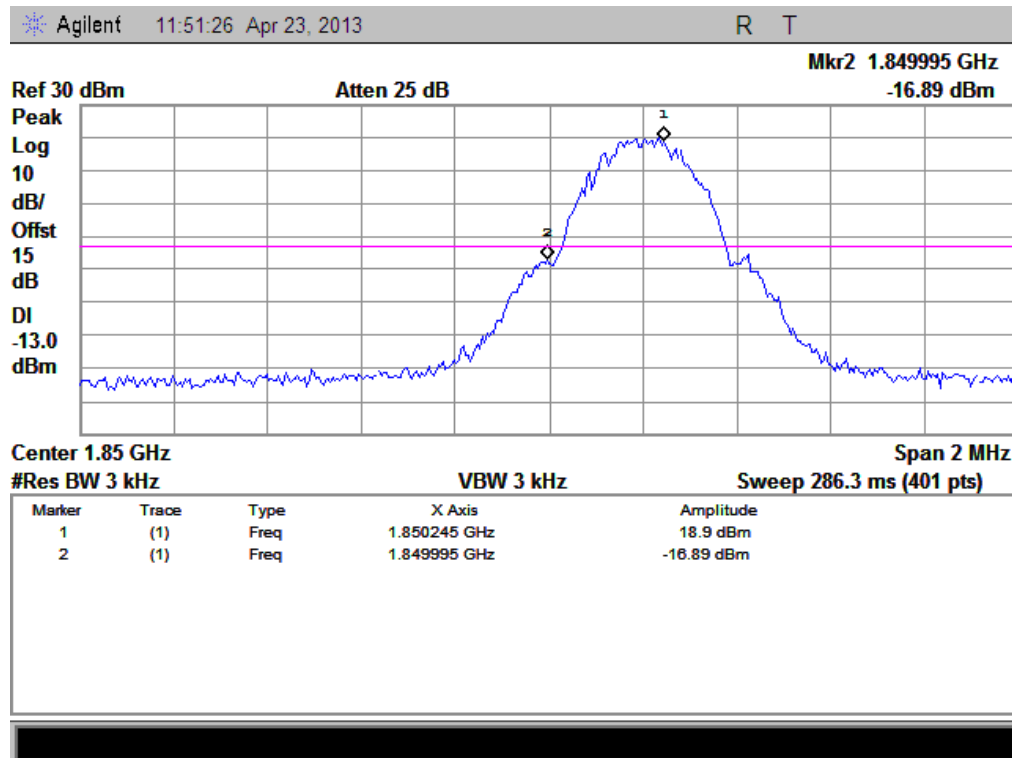
(Plot D: GSM 1900 Channel = 810)



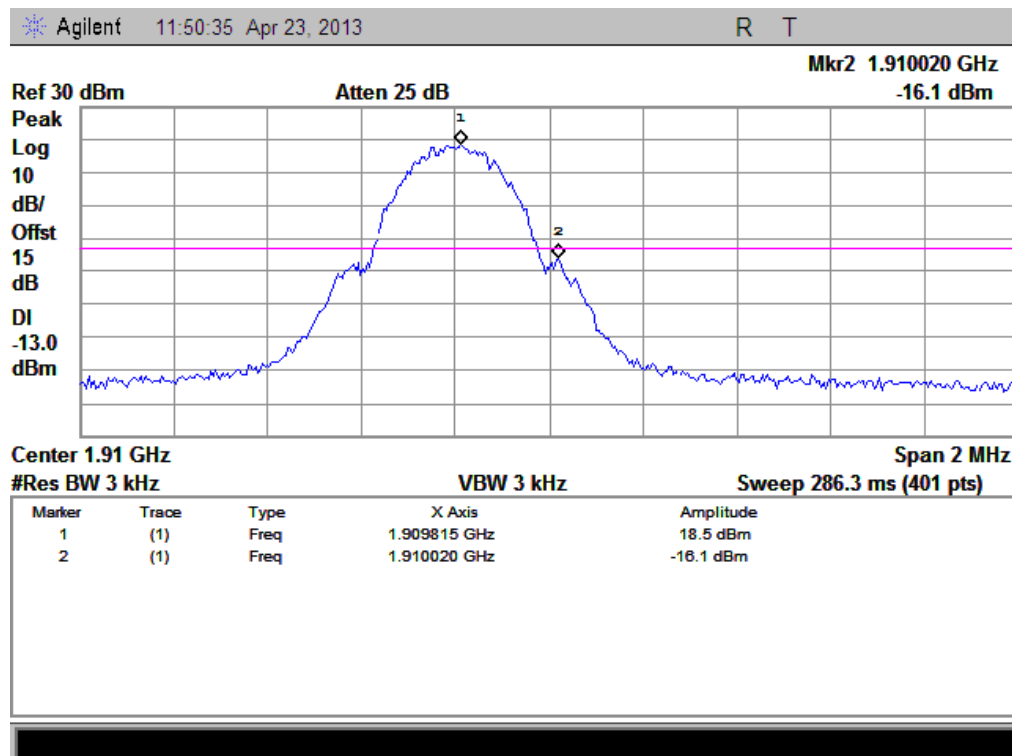
(Plot E: EDGE 850 Channel = 128)



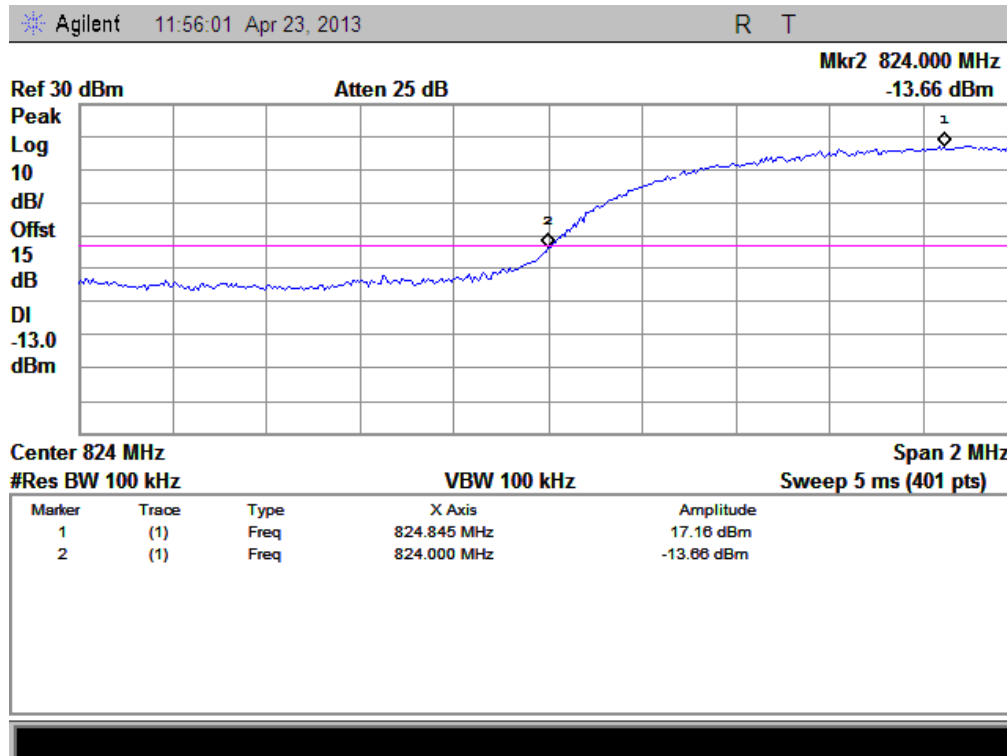
(Plot F: EDGE 850 Channel = 251)



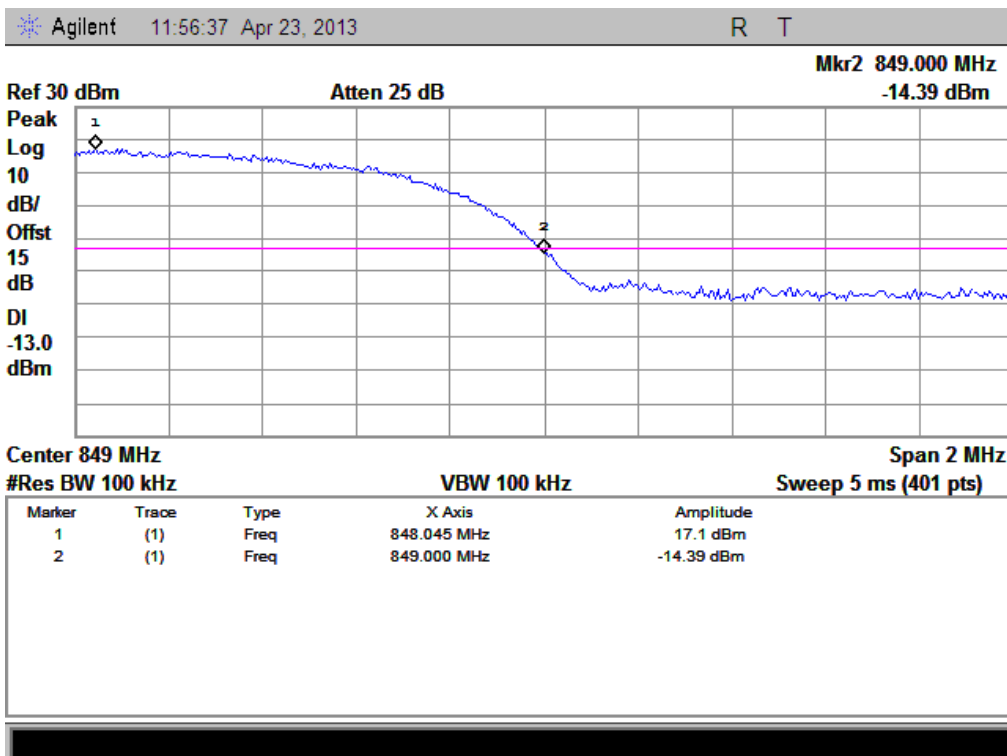
(Plot G: EDGE 1900 Channel = 512)



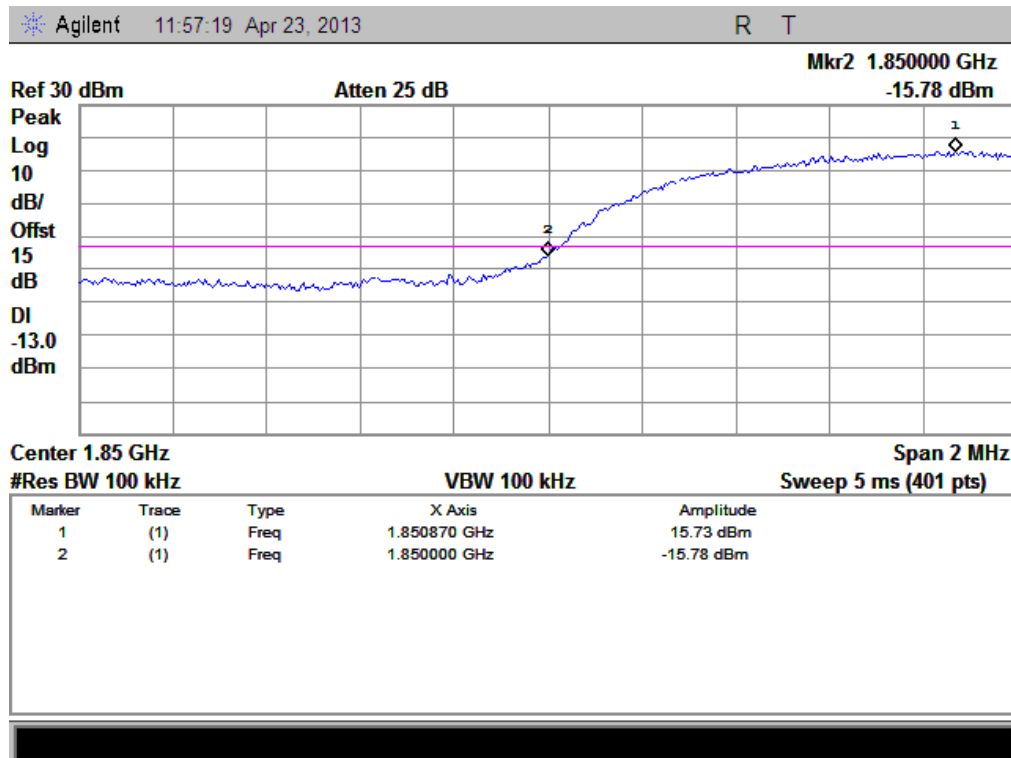
(Plot H: EDGE 1900 Channel = 810)



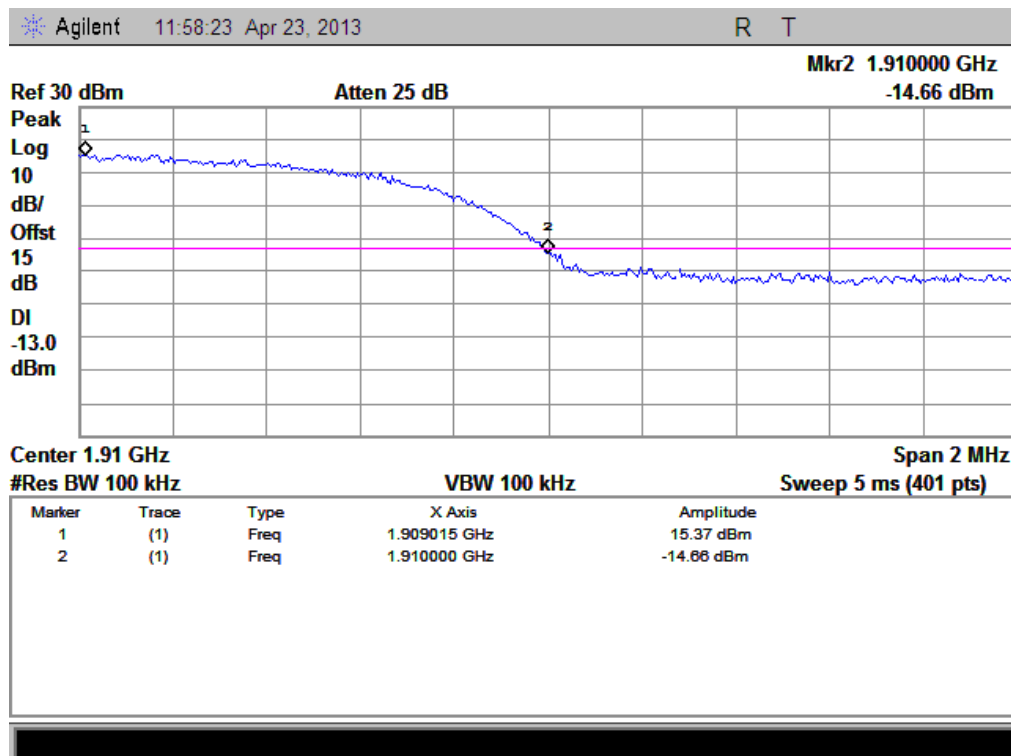
(Plot I: WCDMA 850 Channel = 4132)



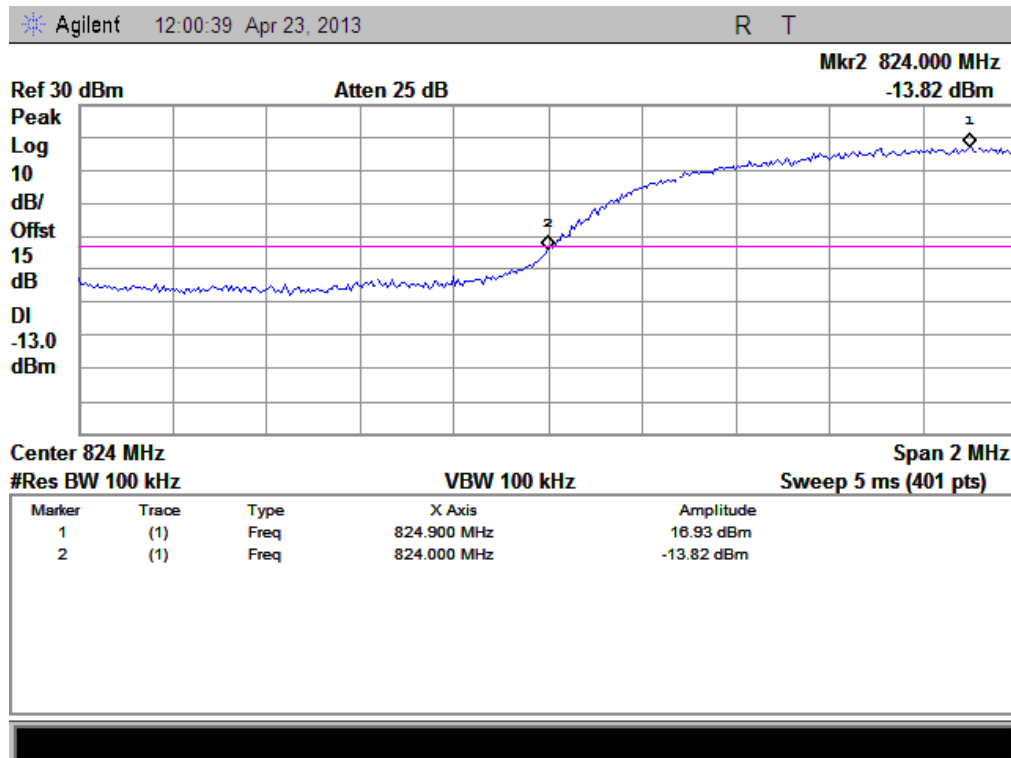
(Plot J: WCDMA 850 Channel = 4233)



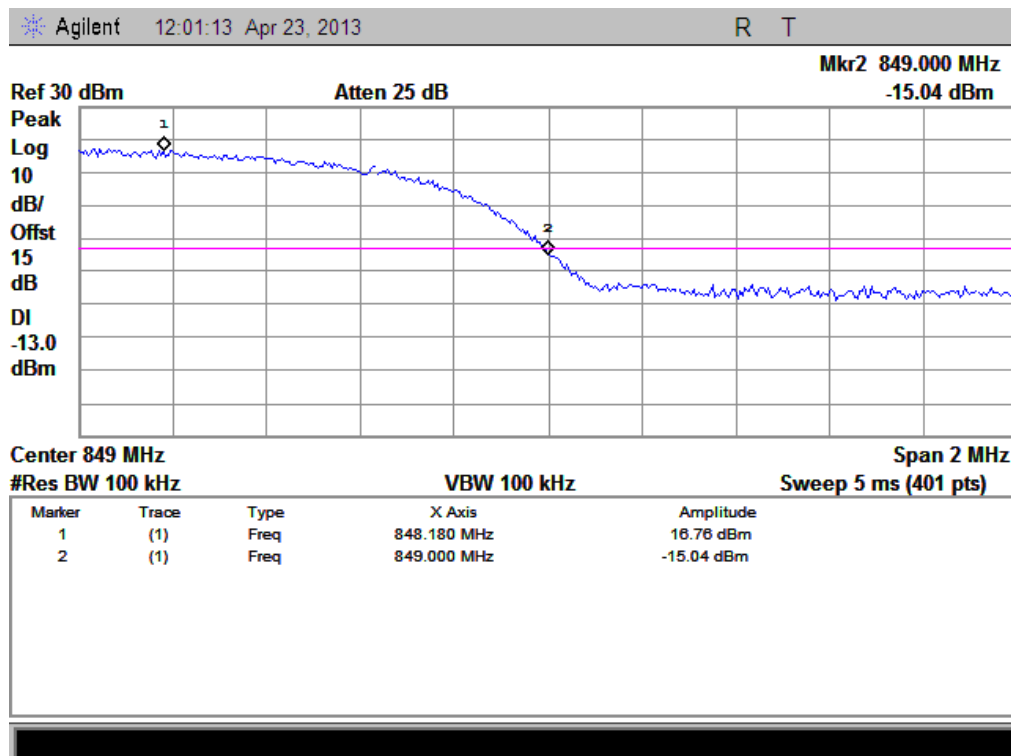
(Plot K: WCDMA 1900 Channel = 9262)



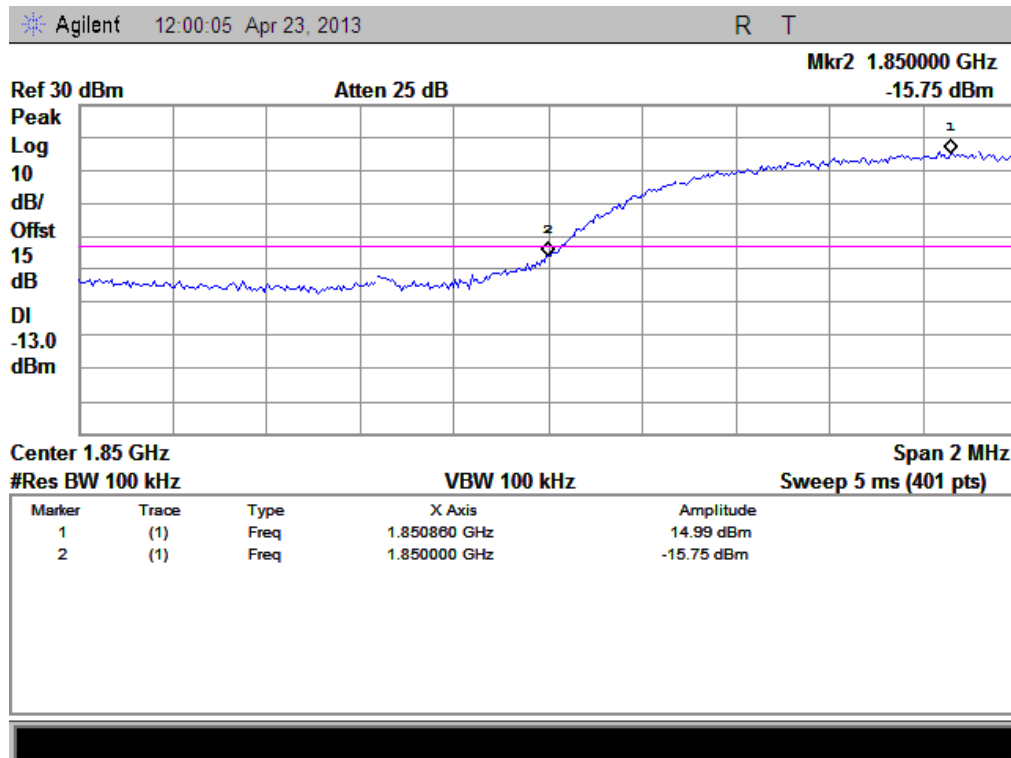
(Plot L: WCDMA 1900 Channel = 9538)



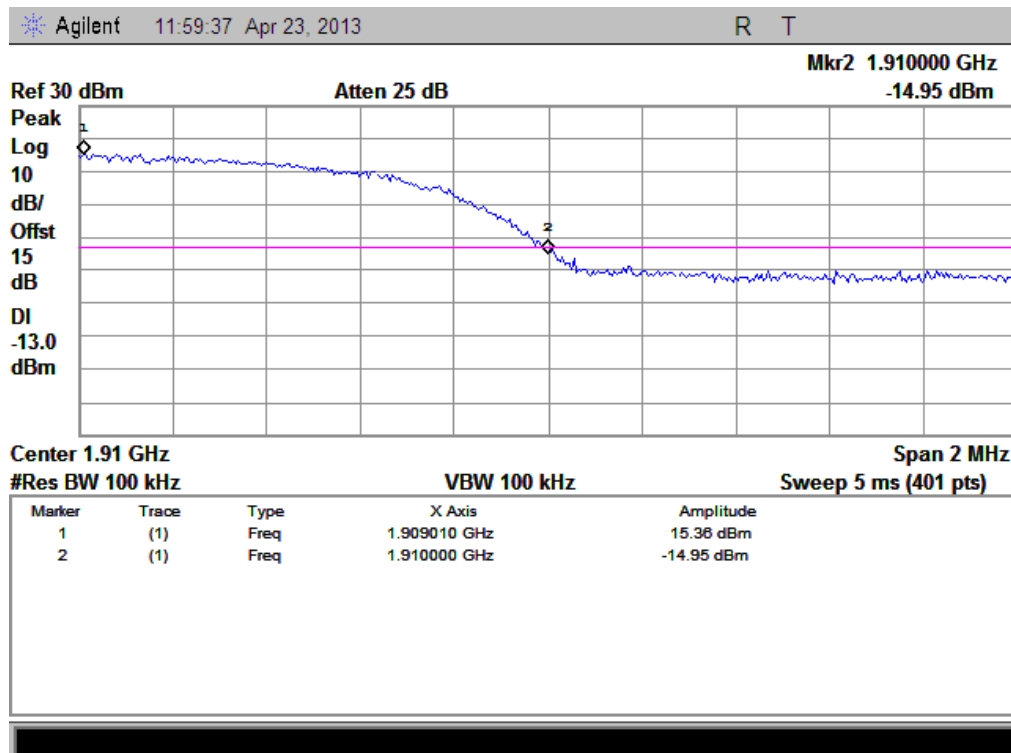
(Plot M: HSDPA 850 Channel = 4132)



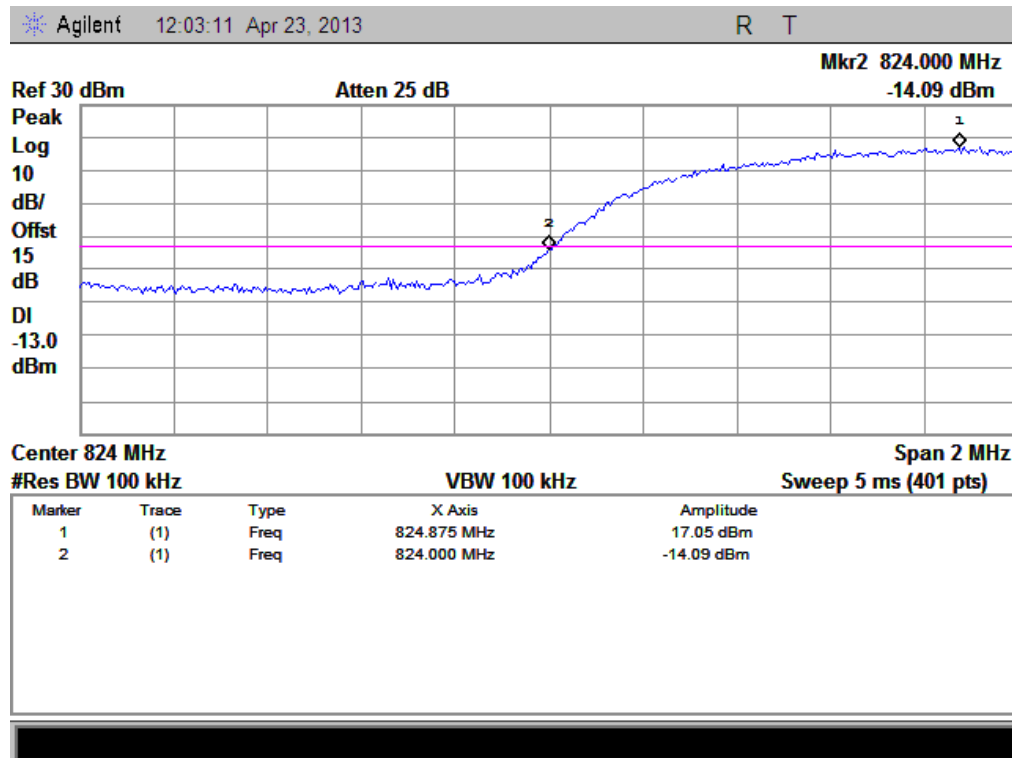
(Plot N: HSDPA850 Channel = 4233)



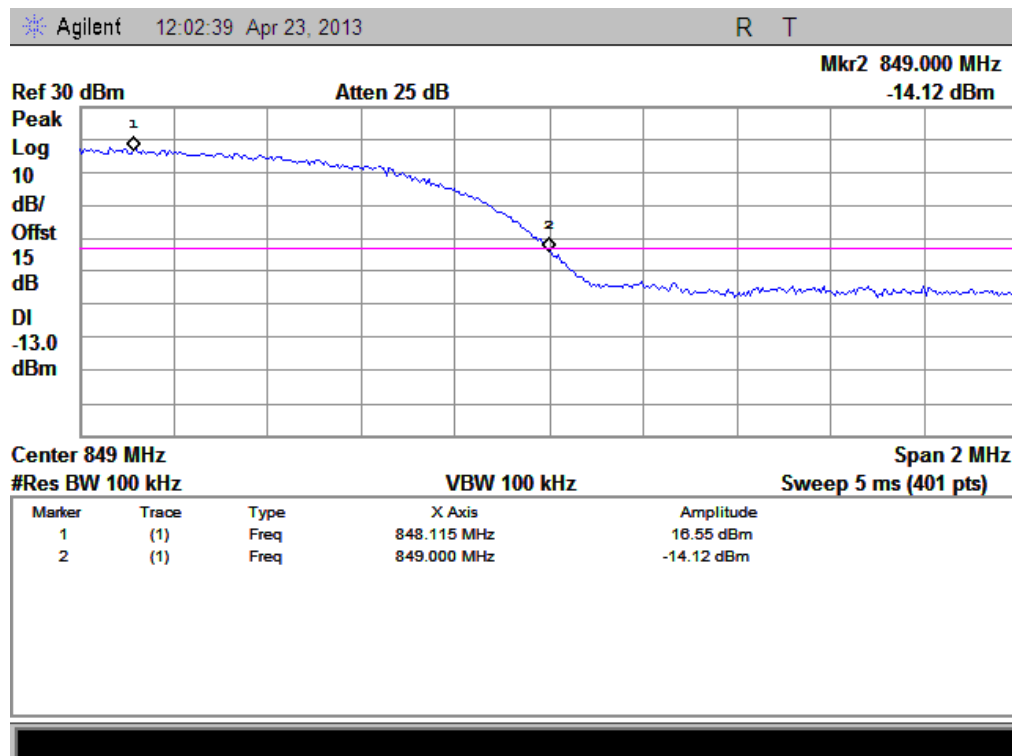
(Plot O: HSDPA 1900 Channel = 9262)



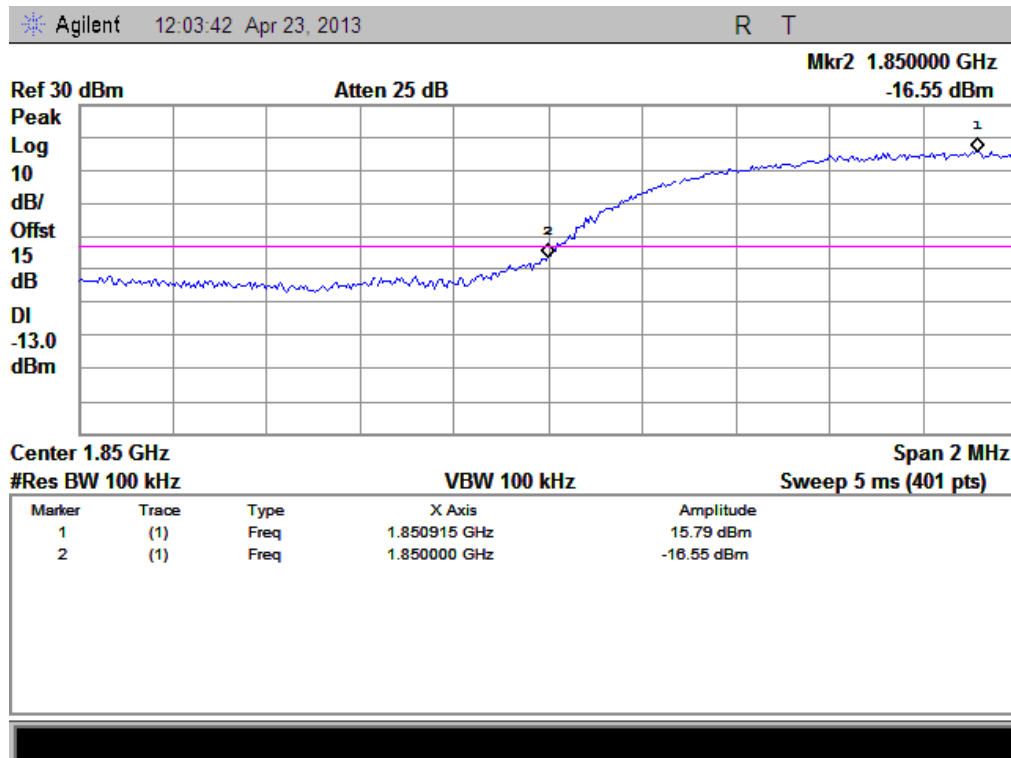
(Plot P: HSDPA 1900 Channel = 9538)



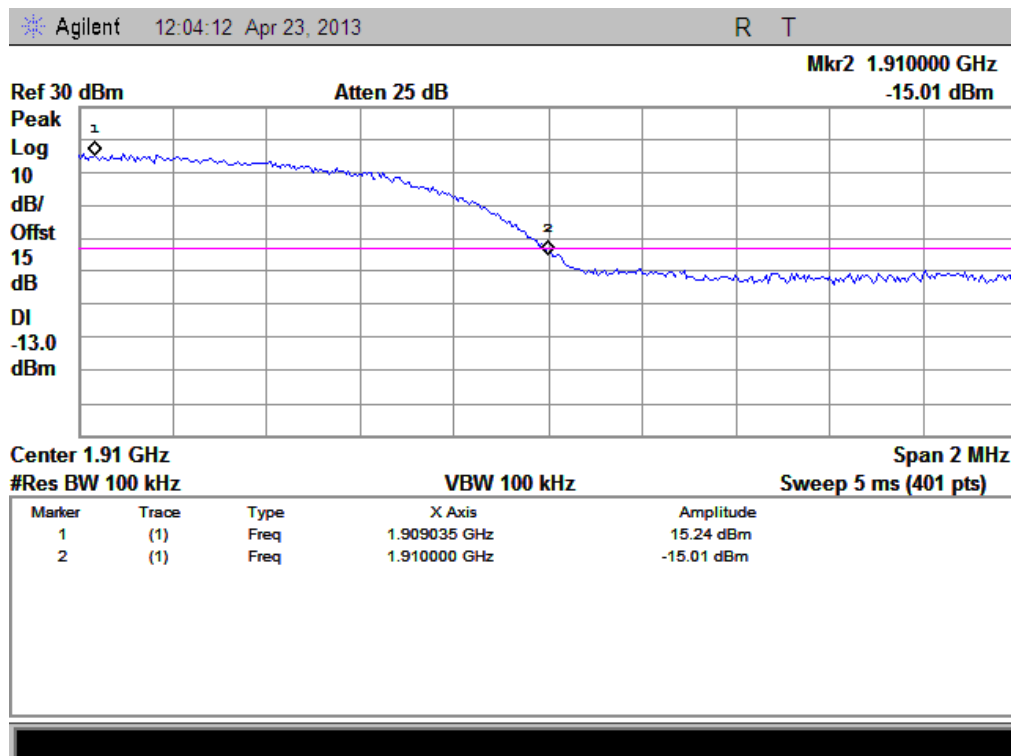
(Plot Q: HSUPA 850 Channel = 4132)



(Plot R: HSUPA850 Channel = 4233)



(Plot S: HSUPA 1900 Channel = 9262)



(Plot T: HSUPA 1900 Channel = 9538)

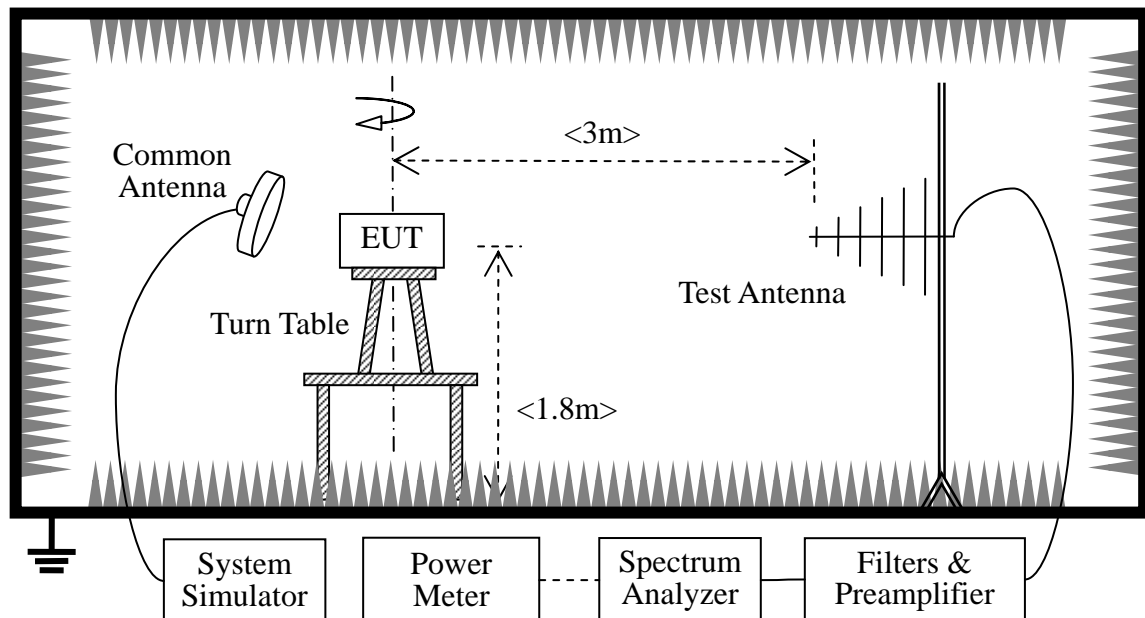
2.7 Transmitter Radiated Power (EIRP/ERP)

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	31.78	1.506607	Plot A ^{Note 1}	38.5	7	PASS
	190	836.60	5	32.02	1.592209				PASS
	251	848.80	5	32.09	1.61808				PASS
GPRS 850MHz	128	824.20	5	30.31	1.073989	Plot B ^{Note 1}	38.5	7	PASS
	190	836.60	5	31.02	1.264736				PASS
	251	848.80	5	31.65	1.273503				PASS
EGPRS 850MHz	128	824.20	5	29.49	0.889201	Plot C ^{Note 1}	38.5	7	PASS
	190	836.60	5	29.73	0.939723				PASS
	251	848.80	5	30.1	1.023293				PASS

Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 1900MHz	512	1850.2	0	27.86	0.610942	Plot D ^{Note 1}	33	2	PASS
	661	1880.0	0	28.1	0.645654				PASS
	810	1909.8	0	28.02	0.63387				PASS
GPRS 1900MHz	512	1850.2	0	27.86	0.610942	Plot E ^{Note 1}	33	2	PASS
	661	1880.0	0	27.1	0.512861				PASS
	810	1909.8	0	28.48	0.704693				PASS
EGPRS 1900MHz	512	1850.2	0	27.86	0.610942	Plot F ^{Note 1}	33	2	PASS
	661	1880.0	0	28.11	0.647143				PASS
	810	1909.8	0	28.47	0.703072				PASS

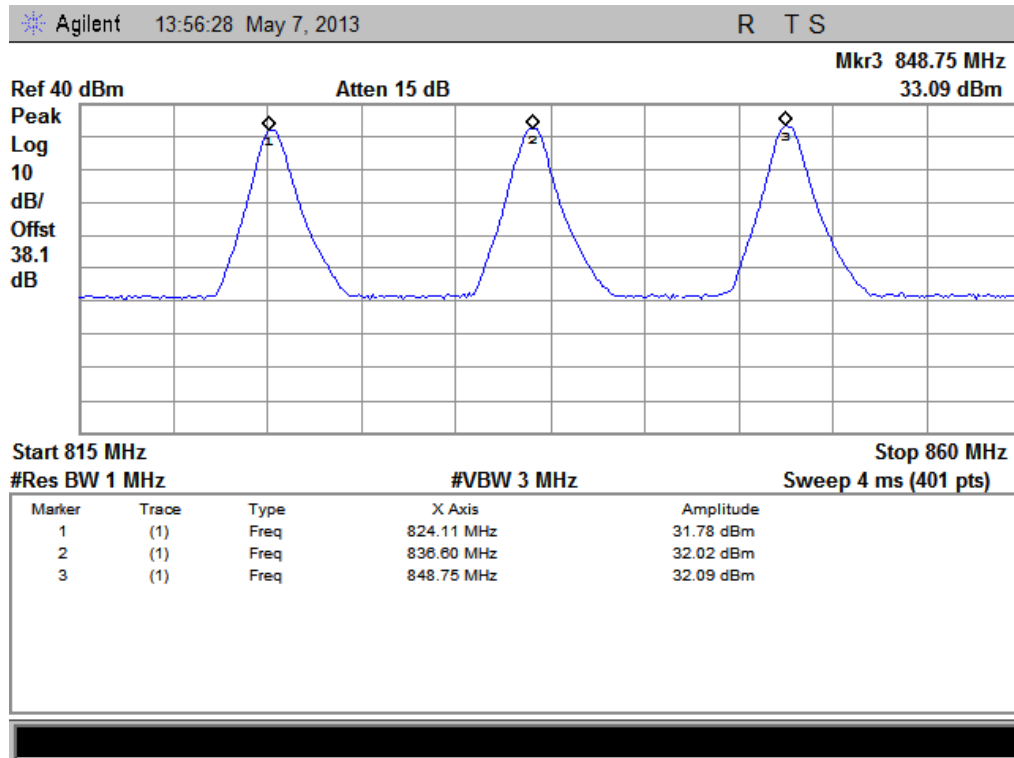
Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.

2. WCDMA Model Test Verdict:

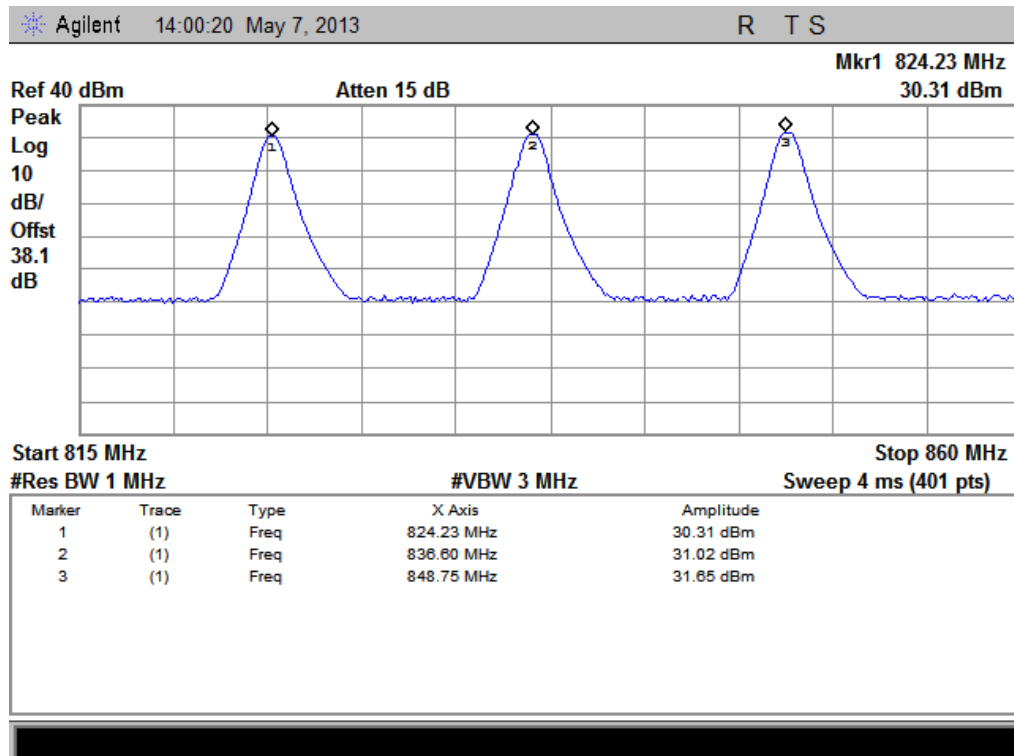
Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	24.48	0.280543	Plot G	38.5	7	PASS
	4175	835	23.67	0.232809				PASS
	4233	846.6	23.14	0.206063				PASS
HSDPA 850MHz	4132	826.4	24.43	0.277332	Plot H	38.5	7	PASS
	4175	835	23.82	0.240991				PASS
	4233	846.6	23.12	0.205116				PASS
HSUPA 850MHz	4132	826.4	24.33	0.271019	Plot I	38.5	7	PASS
	4175	835	23.99	0.250611				PASS
	4233	846.6	23.22	0.209894				PASS

Band	Channel	Frequency (MHz)	Measured EIRP			Limit		Verdict
			dBm	W		dBm	W	
WCDMA 1900MHz	9262	1852.4	26.74	0.472063	Plot J	33	2	PASS
	9400	1880	27.39	0.548277				PASS
	9538	1907.6	27.83	0.606736				PASS
HSDPA 1900MHz	9262	1852.4	26.53	0.44978	Plot K	33	2	PASS
	9400	1880	27.51	0.563638				PASS
	9538	1907.6	27.8	0.60256				PASS
HSUPA 1900MHz	9262	1852.4	26.59	0.456037	Plot L	33	2	PASS
	9400	1880	27.43	0.55335				PASS
	9538	1907.6	27.86	0.610942				PASS

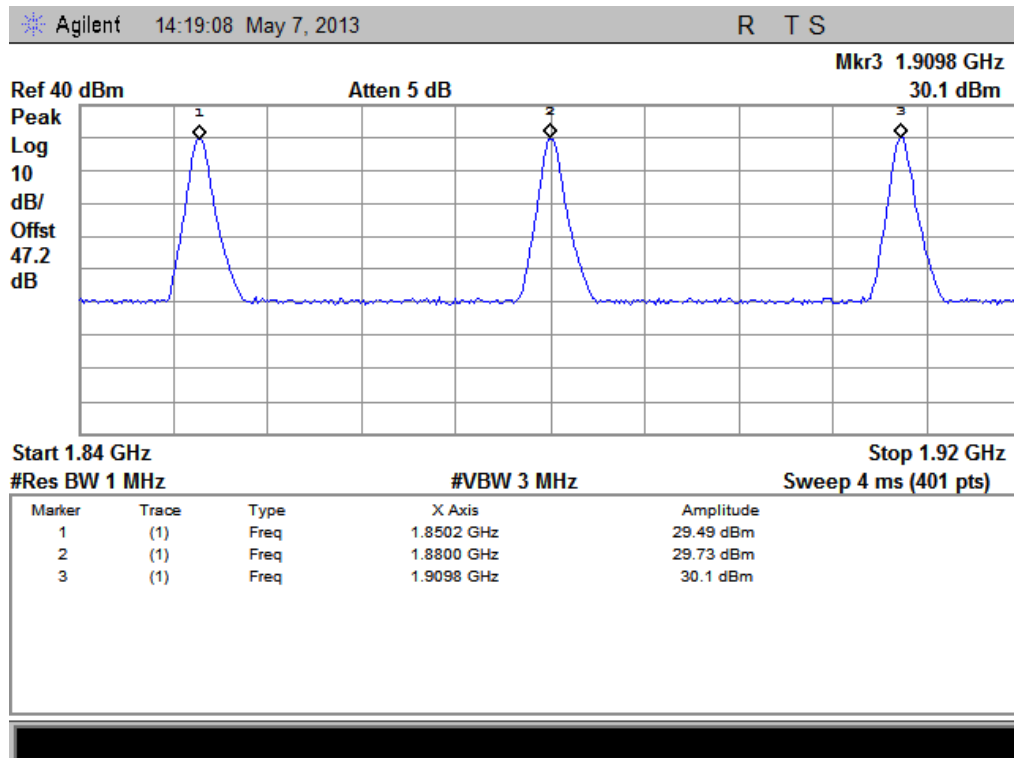
3. Test Plots:



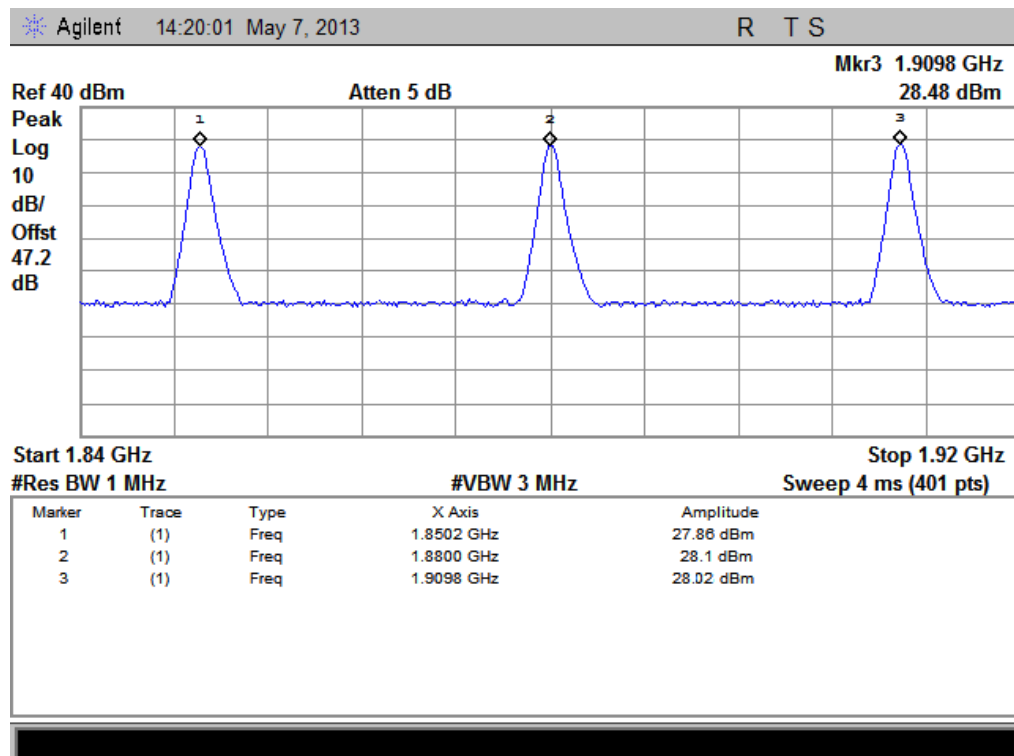
(Plot A: GSM 850MHz Channel = 128, 190, 251)



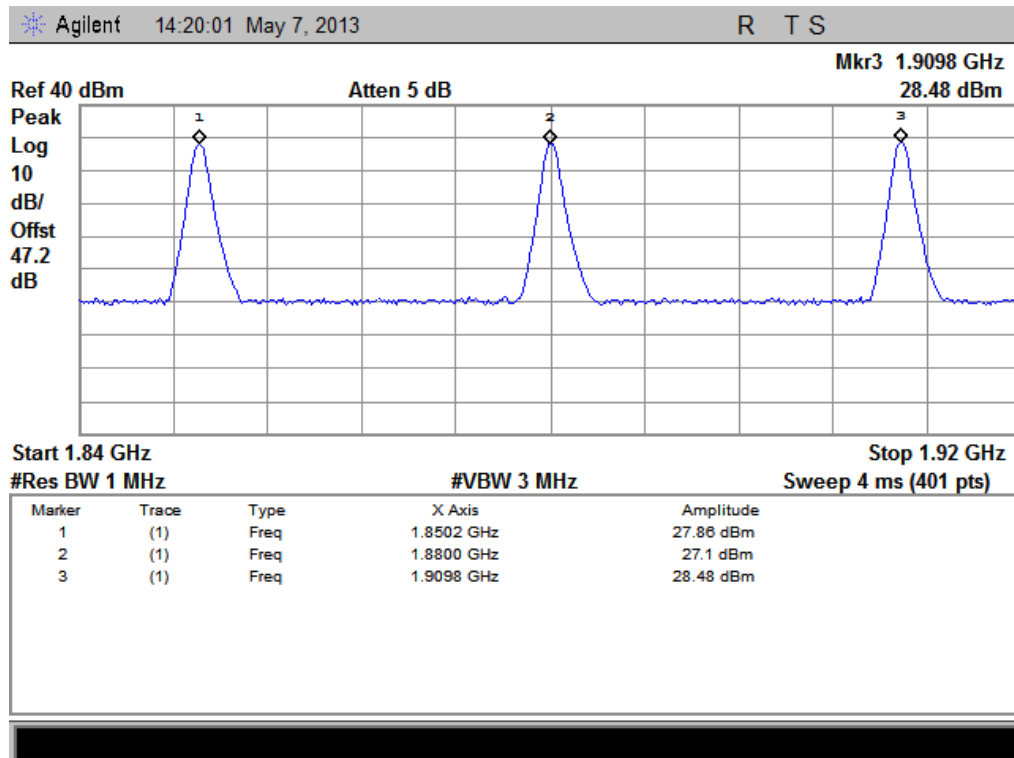
(Plot B: GPRS 850MHz Channel = 128, 190, 251)



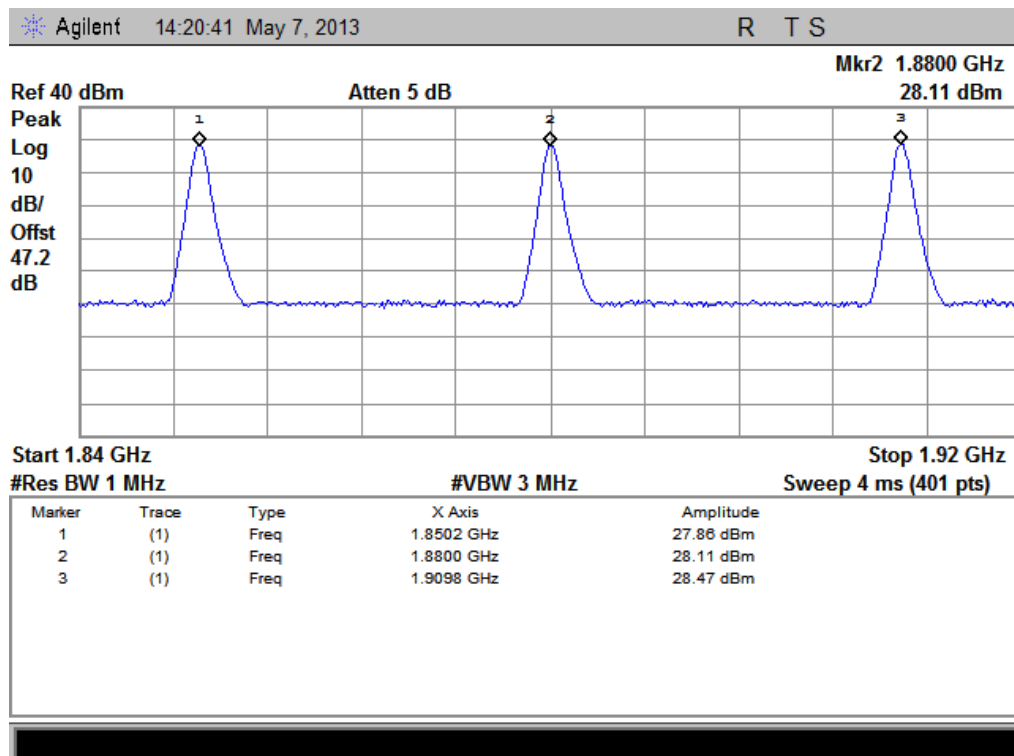
(Plot C: EGPRS 850 MHz Channel = 128, 190, 251)



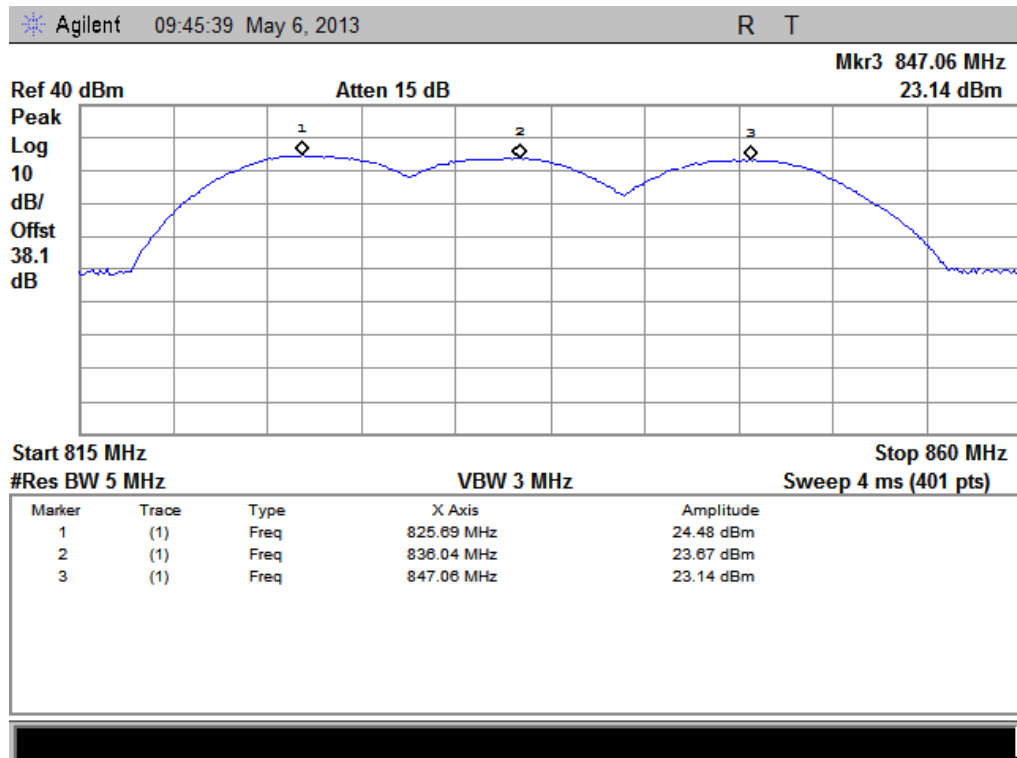
(Plot D: GSM 1900MHz Channel = 512, 661, 810)



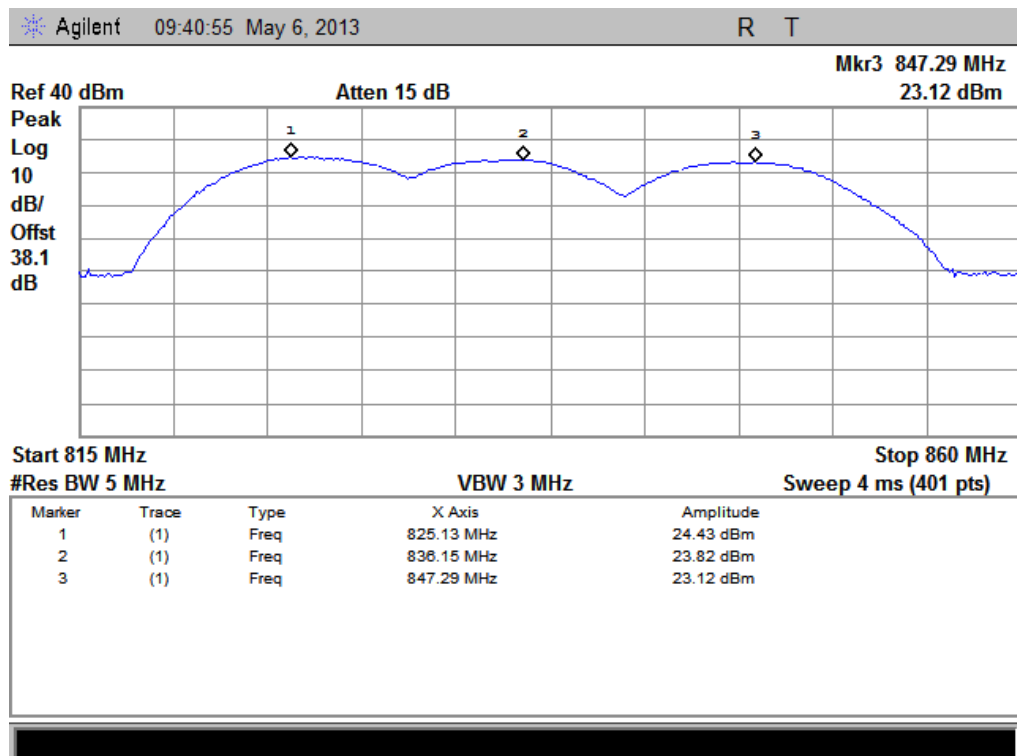
(Plot E: GPRS 1900MHz Channel = 512, 661, 810)



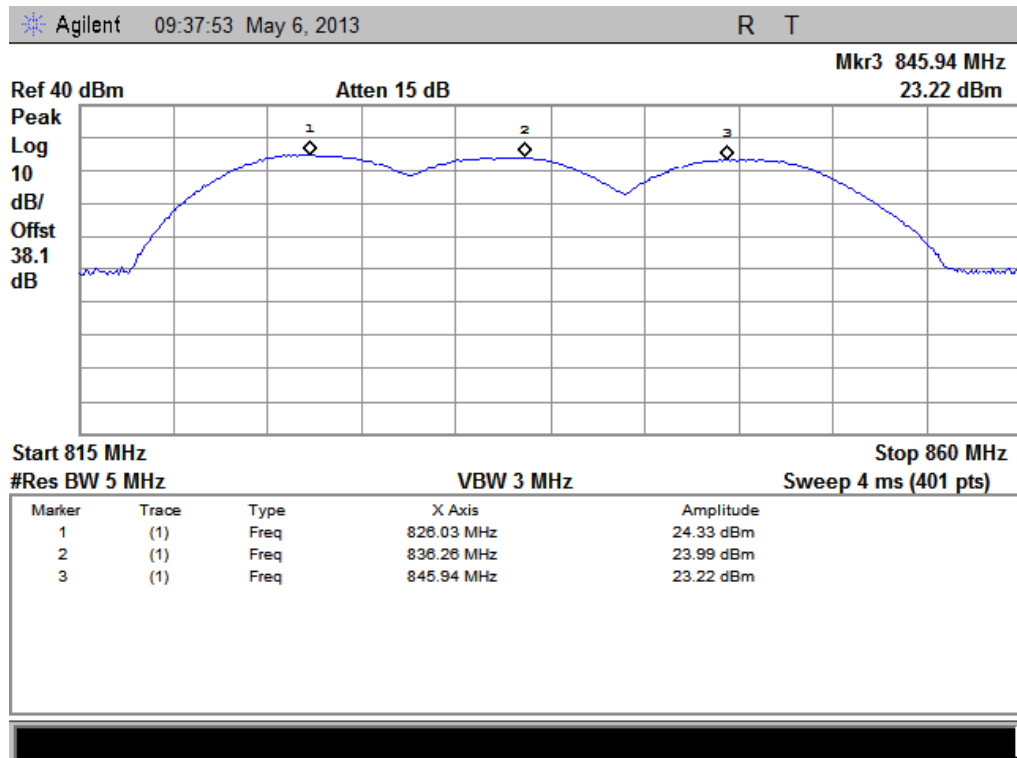
(Plot F: EGPRS 1900MHz Channel = 512, 661, 810)



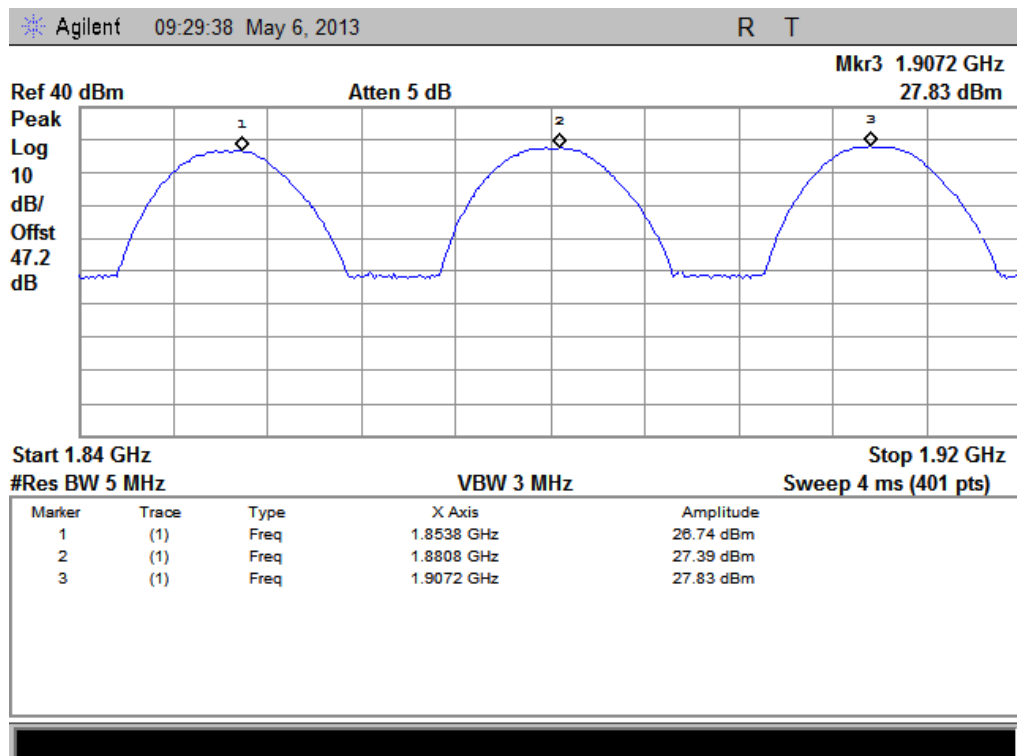
(Plot G: WCDMA 850 MHz Channel = 4132, 4175, 4233)



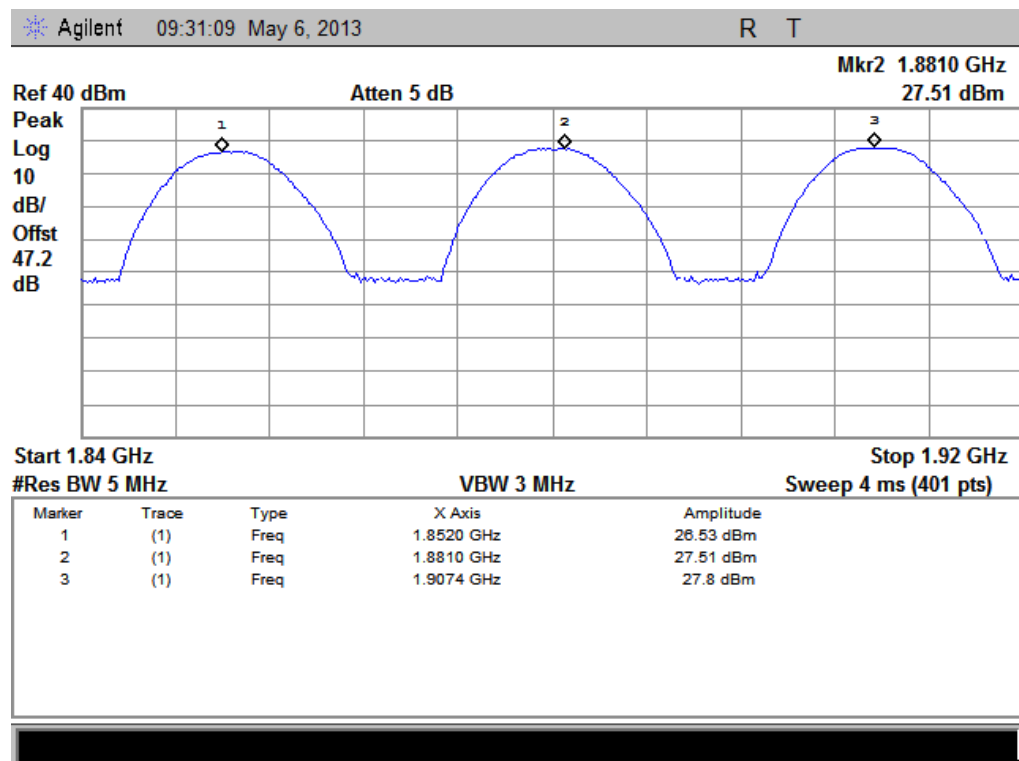
(Plot H: HSDPA 850 MHz Channel = 4132, 4175, 4233)



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



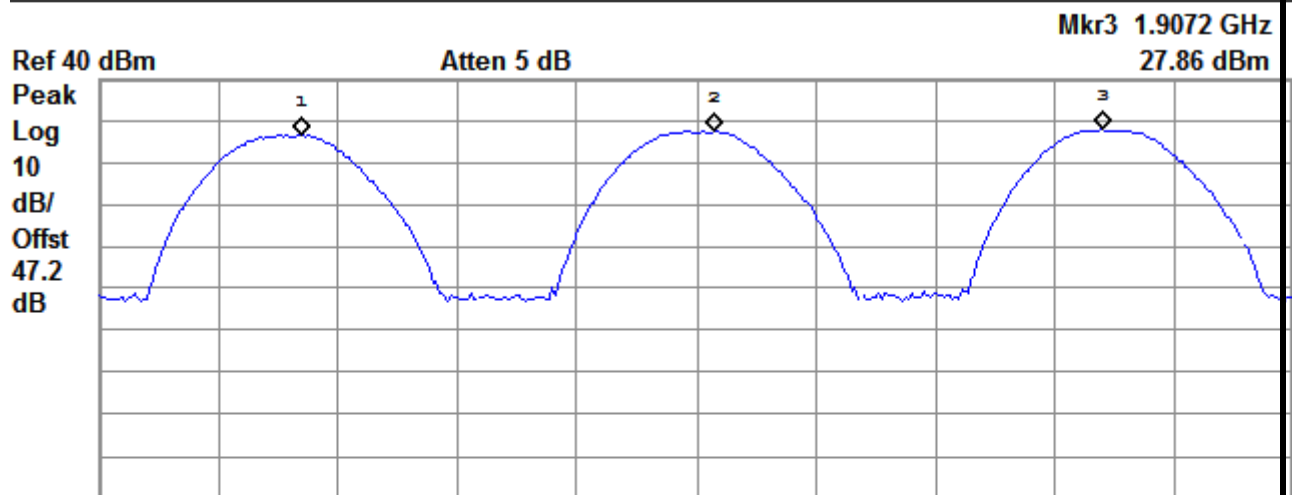
(Plot J: WCDMA 1900 MHz Channel = 9262, 9400, 9538)



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

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Start 1.84 GHz Stop 1.92 GHz

#Res BW 5 MHz VBW 3 MHz Sweep 4 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	1.8536 GHz	26.59 dBm
2	(1)	Freq	1.8812 GHz	27.43 dBm
3	(1)	Freq	1.9072 GHz	27.86 dBm

(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.

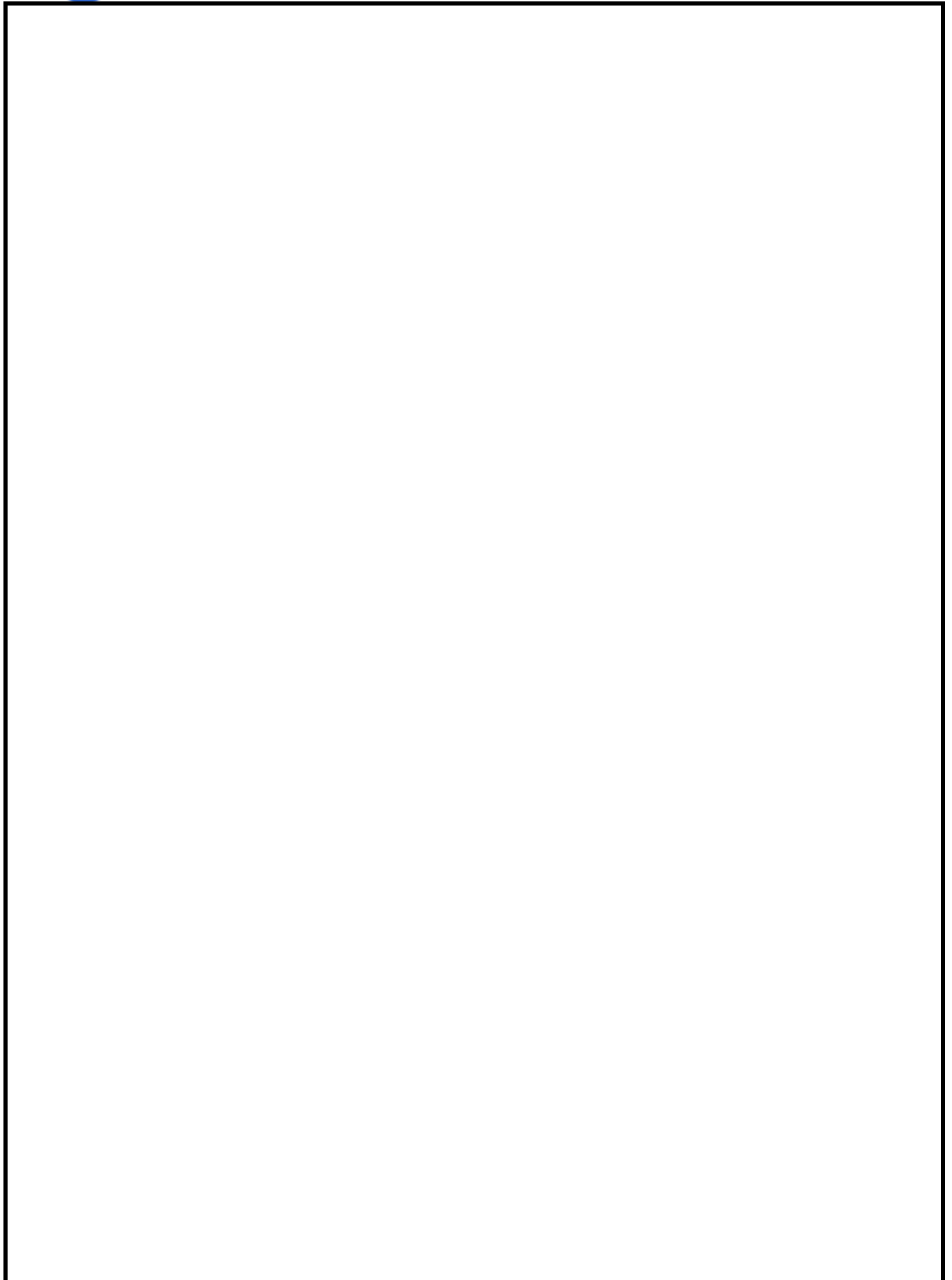
Equipment List:

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	S020180L3203	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.



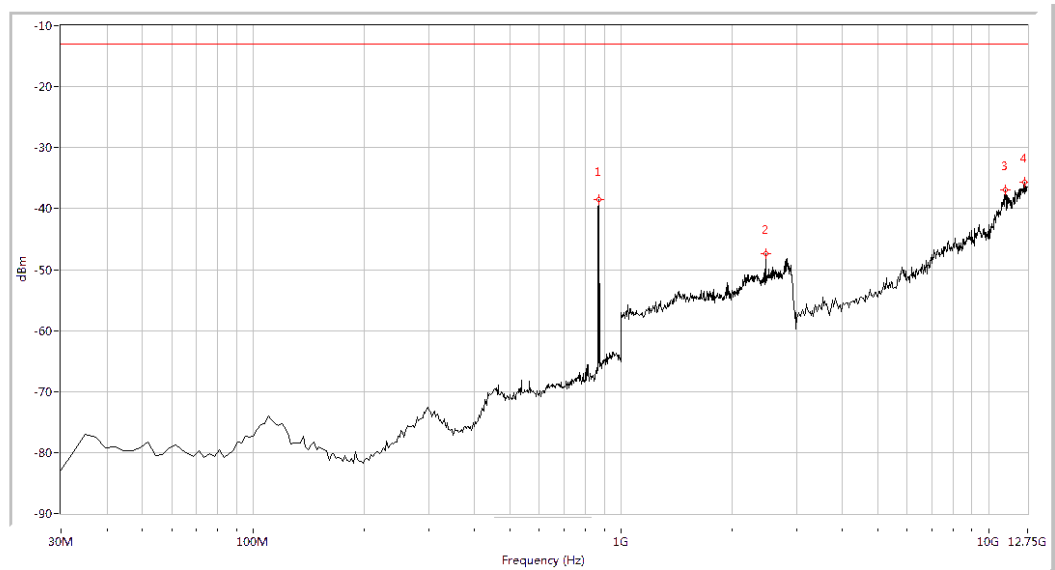
1. Test Verdict:

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

2. Test Plots for the Whole Measurement Frequency Range:

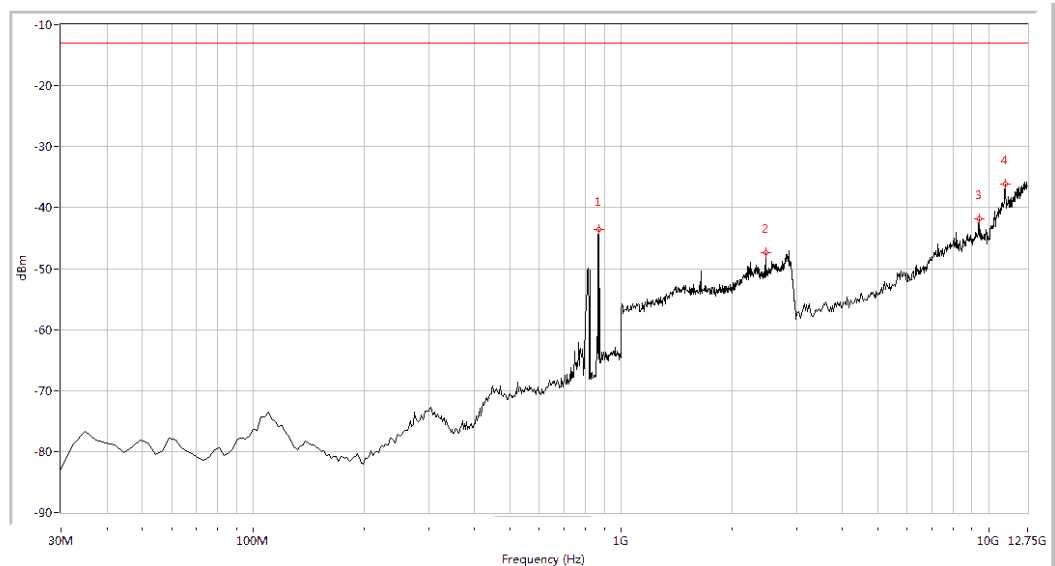
Note1: the power of the EUT transmitting frequency should be ignored.

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



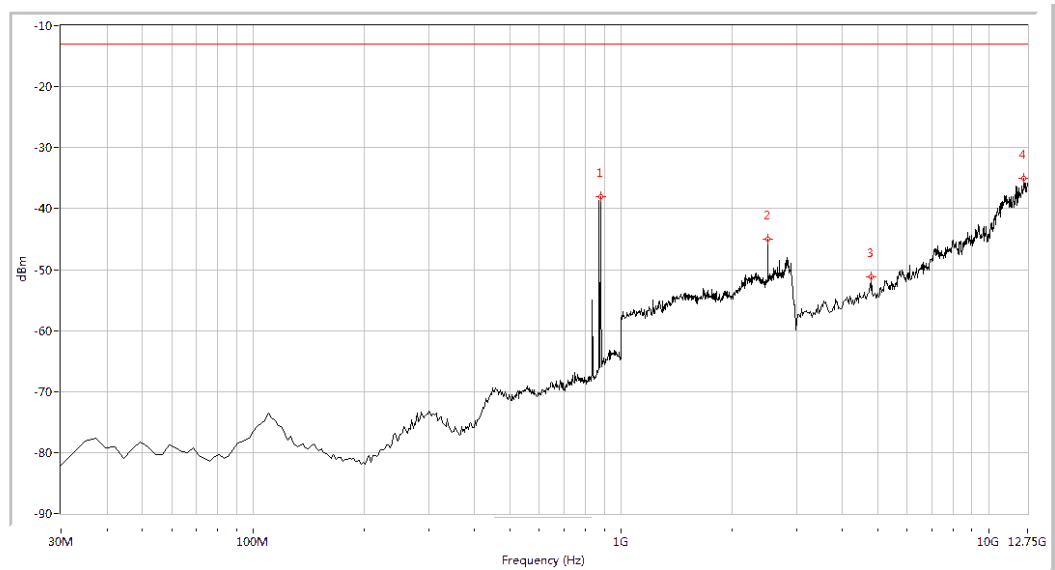
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-38.53	-13.0	25.5	319.5	Horizontal	PASS
2471.322	-47.38	-13.0	34.4	252.0	Horizontal	PASS
11096.633	-36.91	-13.0	23.9	358.9	Horizontal	PASS
12531.172	-35.74	-13.0	22.7	186.7	Horizontal	PASS

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



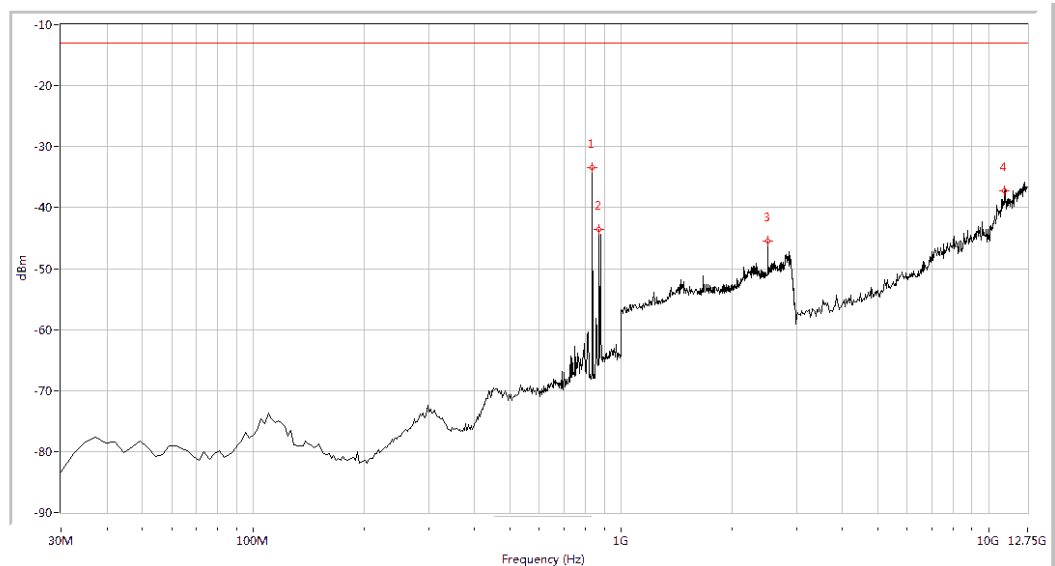
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-43.65	-13.0	30.6	47.9	Vertical	PASS
2471.322	-47.43	-13.0	34.4	160.3	Vertical	PASS
9443.267	-41.84	-13.0	28.8	198.5	Vertical	PASS
11072.319	-36.08	-13.0	23.1	-0.0	Vertical	PASS

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



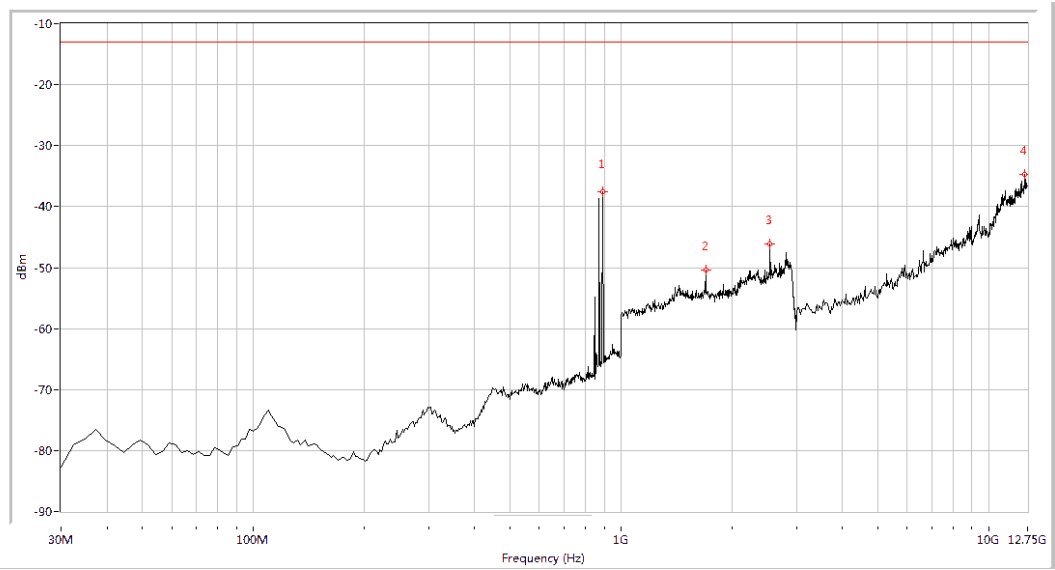
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-37.99	-13.0	25.0	333.1	Horizontal	PASS
2506.234	-45.02	-13.0	32.0	242.9	Horizontal	PASS
4799.252	-51.27	-13.0	38.3	-0.0	Horizontal	PASS
12458.229	-35.07	-13.0	22.1	270.6	Horizontal	PASS

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



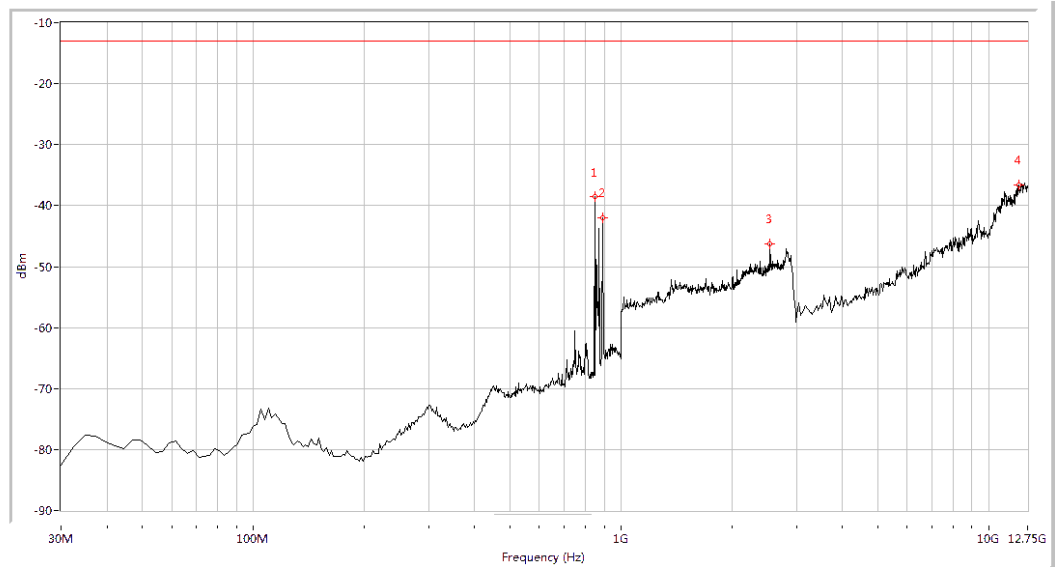
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-33.40	-13.0	20.4	70.0	Vertical	PASS
871.796	-43.51	-13.0	30.5	54.3	Vertical	PASS
2506.234	-45.55	-13.0	32.6	186.2	Vertical	PASS
11048.005	-37.20	-13.0	24.2	132.8	Vertical	PASS

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



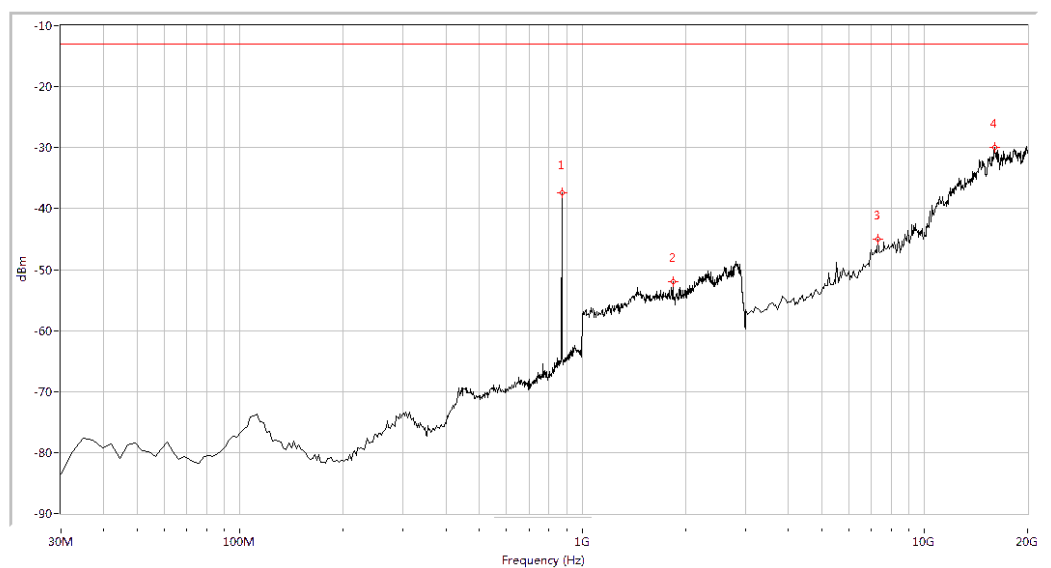
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-37.58	-13.0	24.6	310.2	Horizontal	PASS
1698.254	-50.33	-13.0	37.3	-0.0	Horizontal	PASS
2541.147	-46.07	-13.0	33.1	246.8	Horizontal	PASS
12555.486	-34.75	-13.0	21.8	22.0	Horizontal	PASS

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



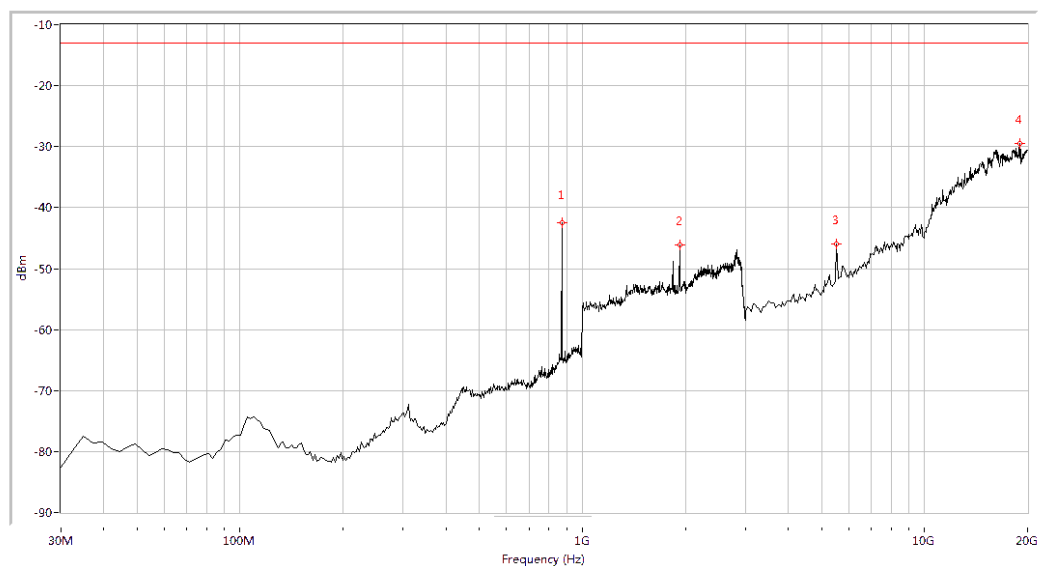
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-38.55	-13.0	25.6	72.3	Vertical	PASS
891.147	-42.05	-13.0	29.0	42.2	Vertical	PASS
2541.147	-46.31	-13.0	33.3	106.4	Vertical	PASS
12044.888	-36.55	-13.0	23.5	-0.0	Vertical	PASS

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



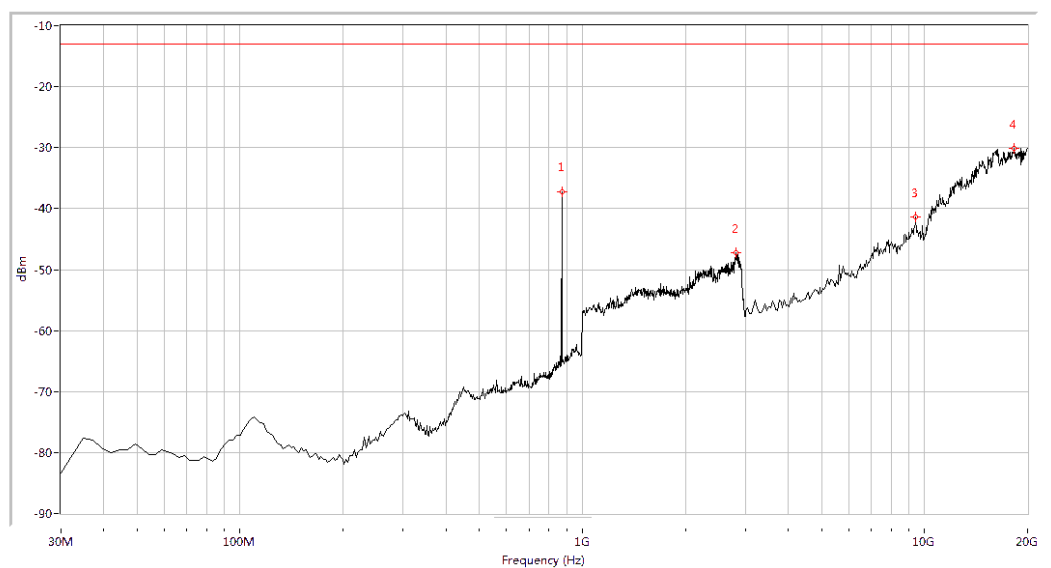
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-37.40	-13.0	24.4	323.8	Horizontal	PASS
1837.905	-51.98	-13.0	39.0	188.3	Horizontal	PASS
7324.190	-45.08	-13.0	32.1	356.0	Horizontal	PASS
16014.963	-29.96	-13.0	17.0	237.5	Horizontal	PASS

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



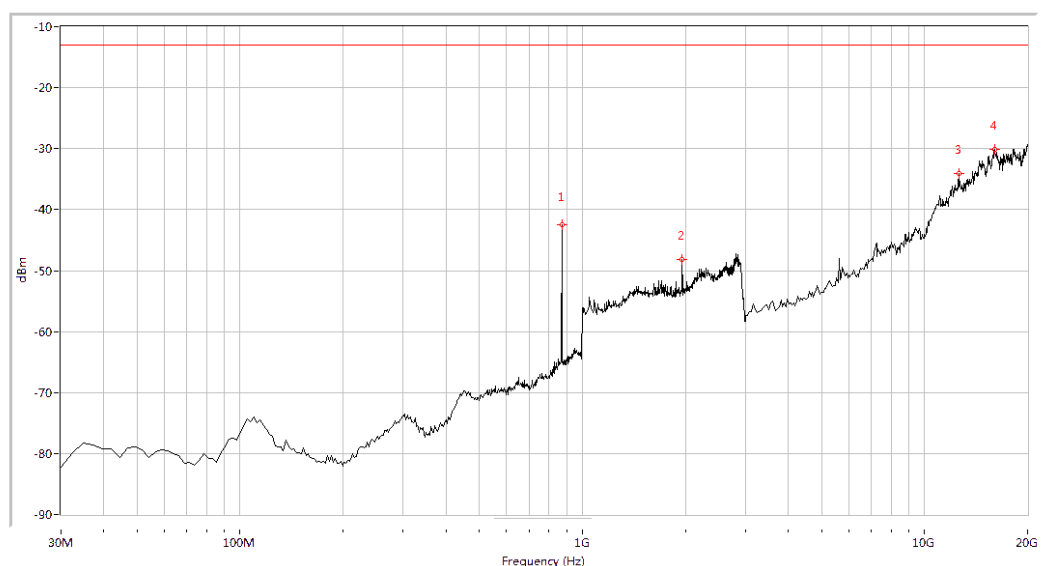
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.49	-13.0	29.5	51.4	Vertical	PASS
1927.681	-46.07	-13.0	33.1	60.4	Vertical	PASS
5543.641	-45.95	-13.0	33.0	176.4	Vertical	PASS
18982.544	-29.52	-13.0	16.5	23.9	Vertical	PASS

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



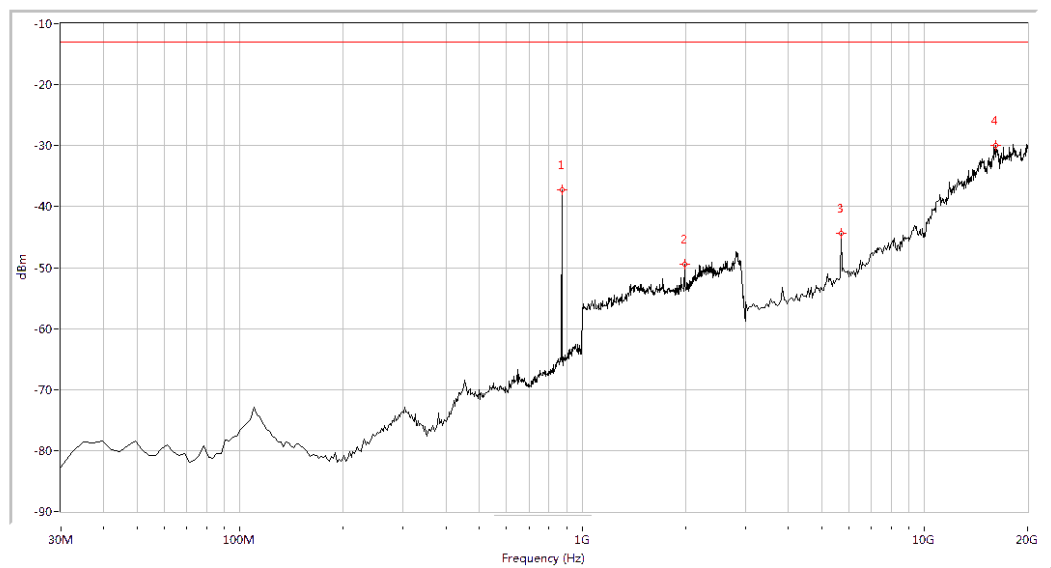
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-37.24	-13.0	24.2	308.0	Horizontal	PASS
2805.486	-47.22	-13.0	34.2	161.3	Horizontal	PASS
9443.890	-41.32	-13.0	28.3	124.3	Horizontal	PASS
18304.239	-30.19	-13.0	17.2	108.3	Horizontal	PASS

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



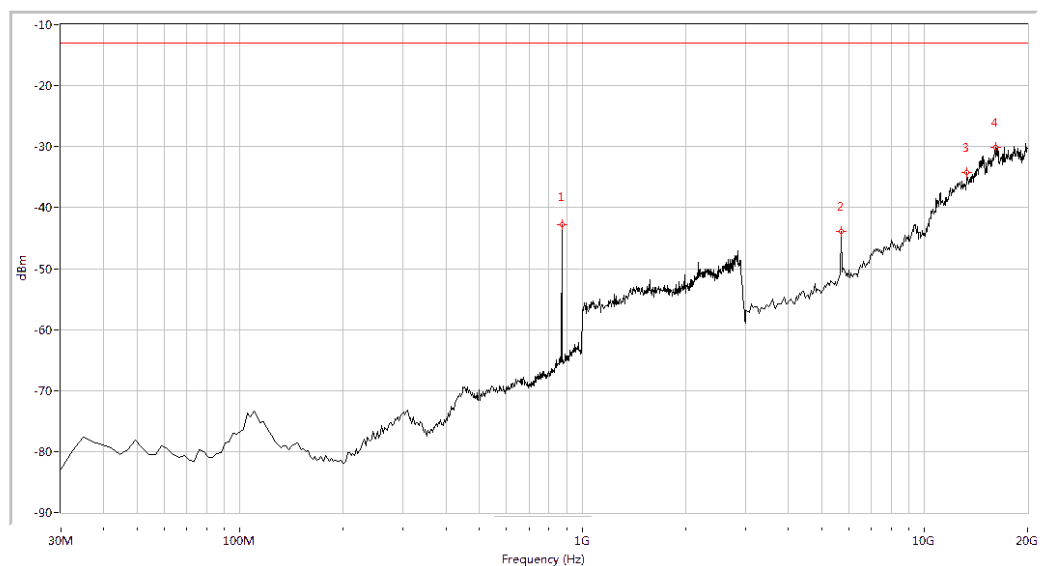
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.54	-13.0	29.5	56.8	Vertical	PASS
1957.606	-48.14	-13.0	35.1	159.3	Vertical	PASS
12581.047	-34.05	-13.0	21.1	104.4	Vertical	PASS
16014.963	-30.16	-13.0	17.2	56.7	Vertical	PASS

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



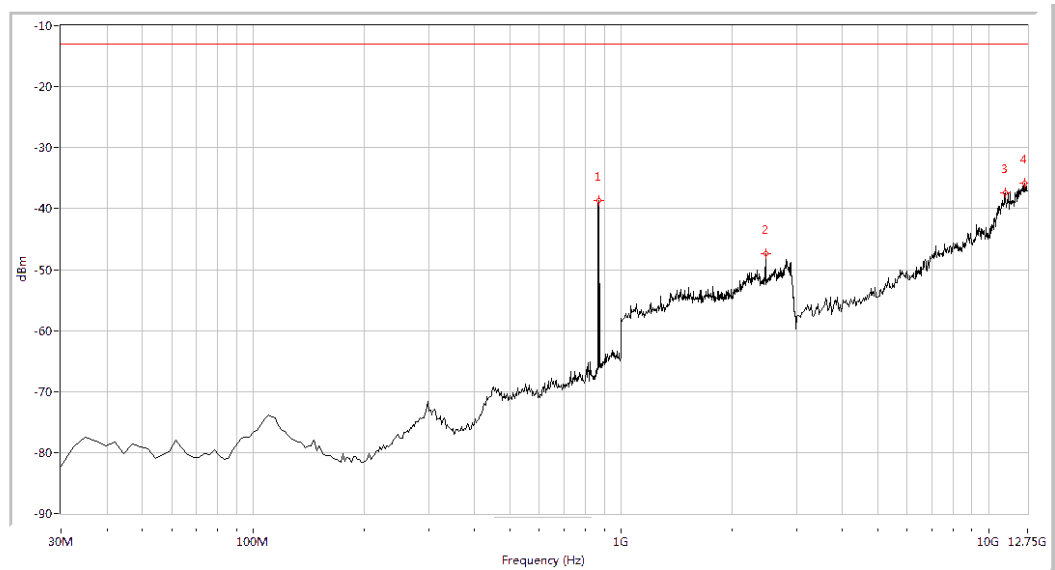
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-37.17	-13.0	24.2	309.7	Horizontal	PASS
1987.531	-49.48	-13.0	36.5	241.1	Horizontal	PASS
5713.217	-44.38	-13.0	31.4	-0.0	Horizontal	PASS
16099.751	-29.91	-13.0	16.9	284.4	Horizontal	PASS

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



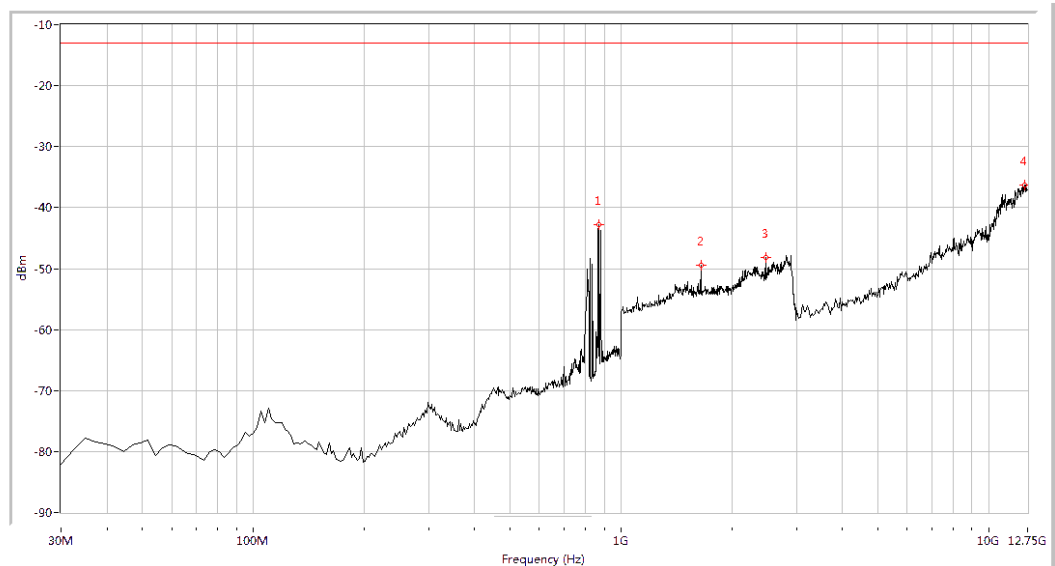
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.79	-13.0	29.8	46.9	Vertical	PASS
5713.217	-43.89	-13.0	30.9	170.4	Vertical	PASS
13301.746	-34.31	-13.0	21.3	285.4	Vertical	PASS
16099.751	-30.12	-13.0	17.1	360.0	Vertical	PASS

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



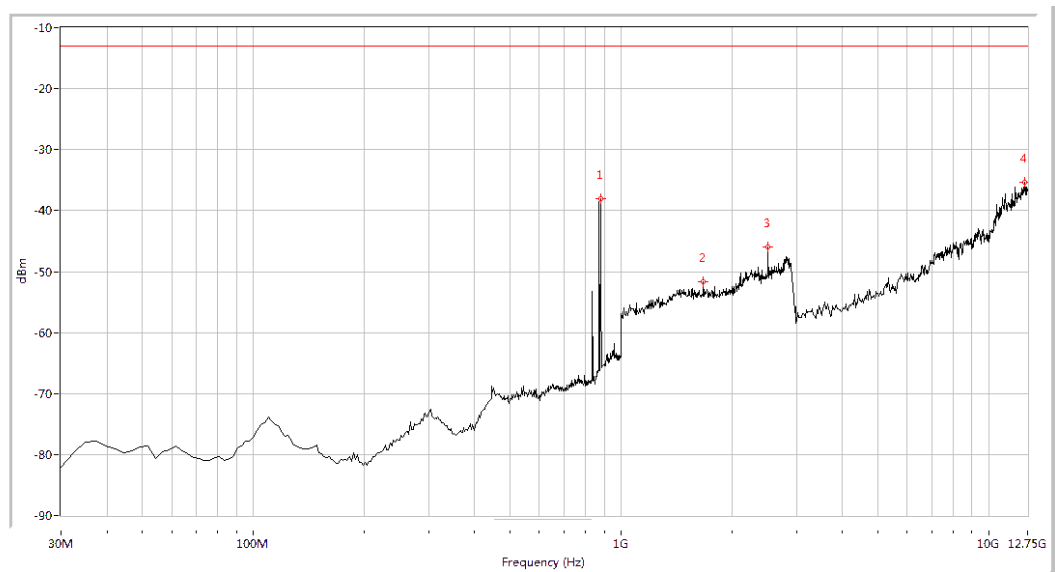
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-38.63	-13.0	25.6	323.5	Horizontal	PASS
2471.322	-47.41	-13.0	34.4	257.0	Horizontal	PASS
11072.319	-37.42	-13.0	24.4	352.6	Horizontal	PASS
12555.486	-35.83	-13.0	22.8	147.1	Horizontal	PASS

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



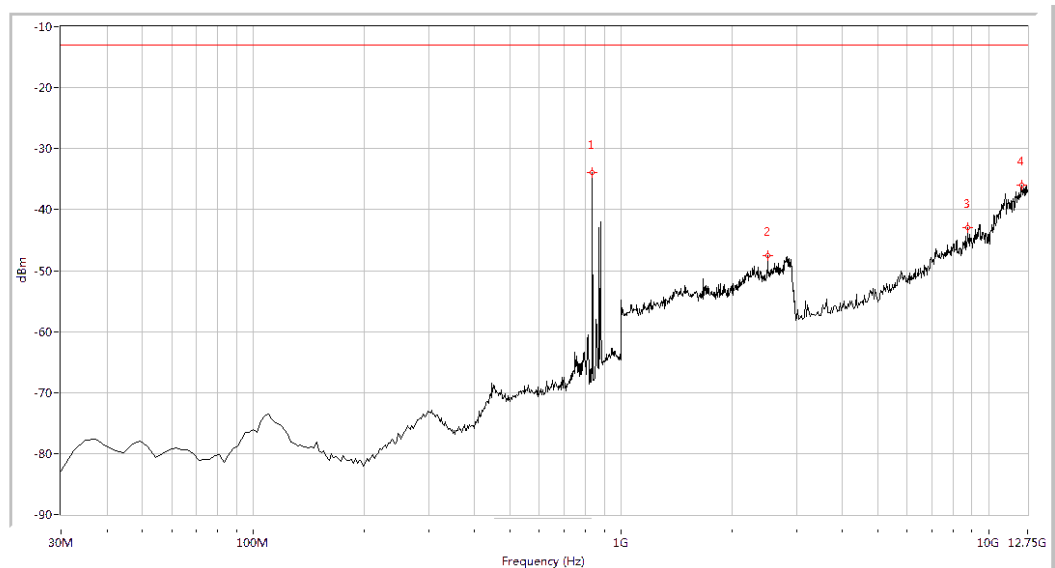
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-42.73	-13.0	29.7	131.9	Vertical	PASS
1648.379	-49.51	-13.0	36.5	327.7	Vertical	PASS
2471.322	-48.15	-13.0	35.1	355.4	Vertical	PASS
12555.486	-36.35	-13.0	23.4	250.9	Vertical	PASS

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



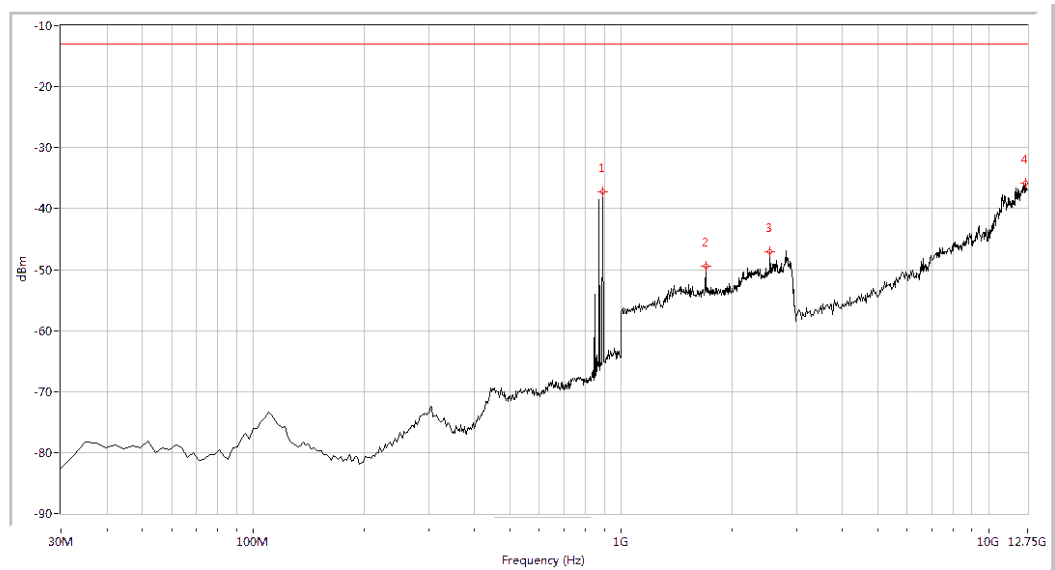
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-38.05	-13.0	25.1	325.8	Horizontal	PASS
1673.317	-51.67	-13.0	38.7	12.0	Horizontal	PASS
2506.234	-45.90	-13.0	32.9	245.7	Horizontal	PASS
12555.486	-35.30	-13.0	22.3	170.0	Horizontal	PASS

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



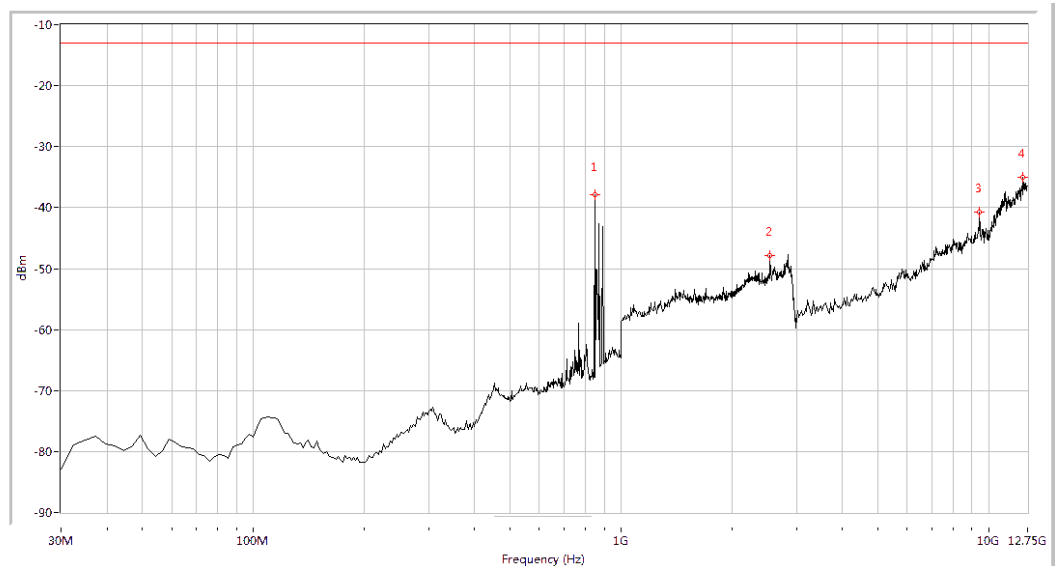
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
835.511	-33.85	-13.0	20.9	55.5	Vertical	PASS
2506.234	-47.55	-13.0	34.6	10.6	Vertical	PASS
8762.469	-42.89	-13.0	29.9	78.9	Vertical	PASS
12288.030	-35.93	-13.0	22.9	220.9	Vertical	PASS

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



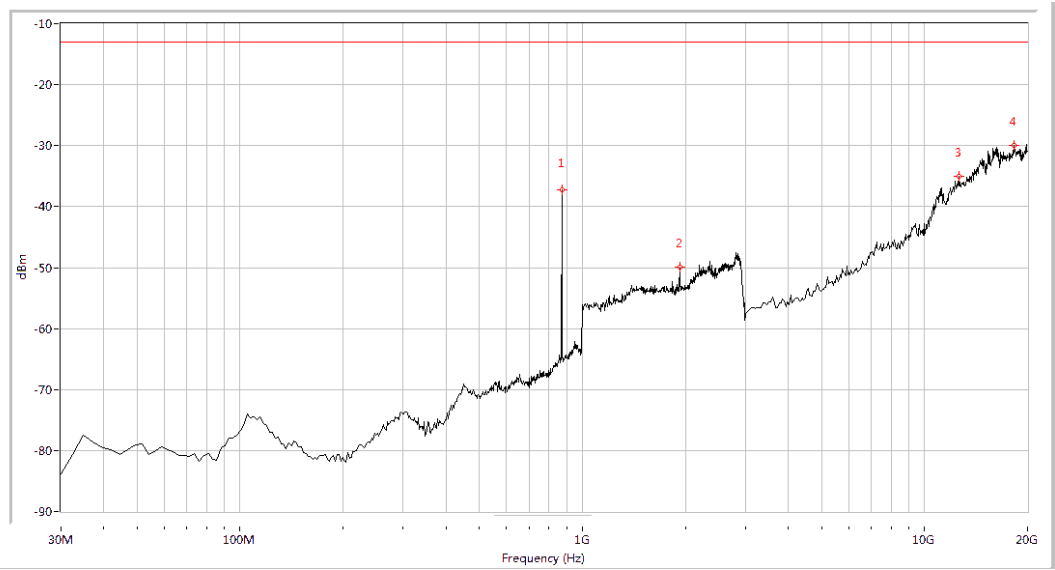
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-37.30	-13.0	24.3	297.8	Horizontal	PASS
1698.254	-49.40	-13.0	36.4	-0.0	Horizontal	PASS
2541.147	-47.07	-13.0	34.1	83.4	Horizontal	PASS
12579.800	-35.89	-13.0	22.9	250.2	Horizontal	PASS

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



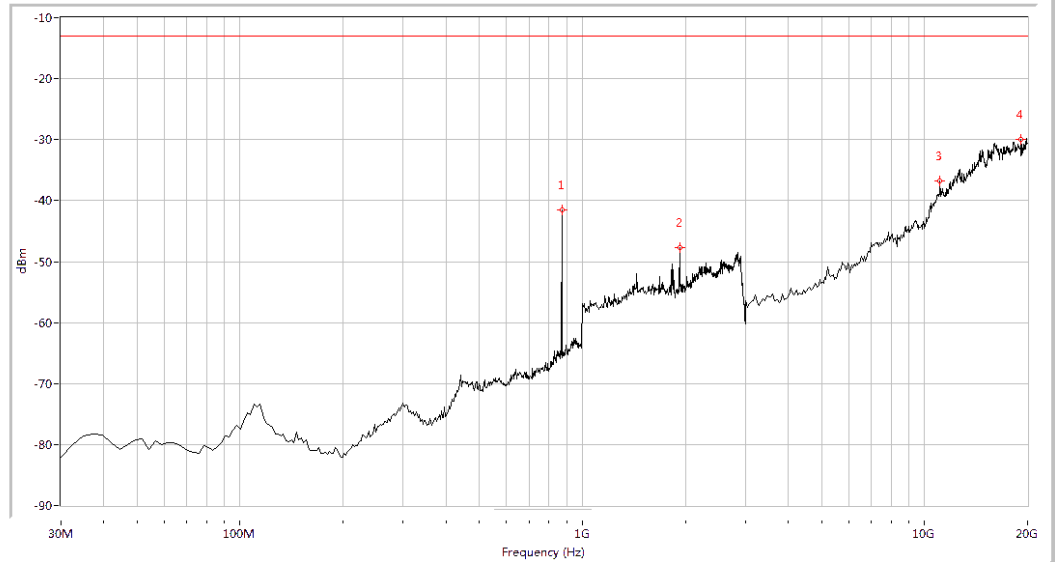
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
847.606	-37.93	-13.0	24.9	118.2	Vertical	PASS
2541.147	-47.94	-13.0	34.9	223.6	Vertical	PASS
9443.267	-40.77	-13.0	27.8	218.9	Vertical	PASS
12385.287	-34.96	-13.0	22.0	126.3	Vertical	PASS

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



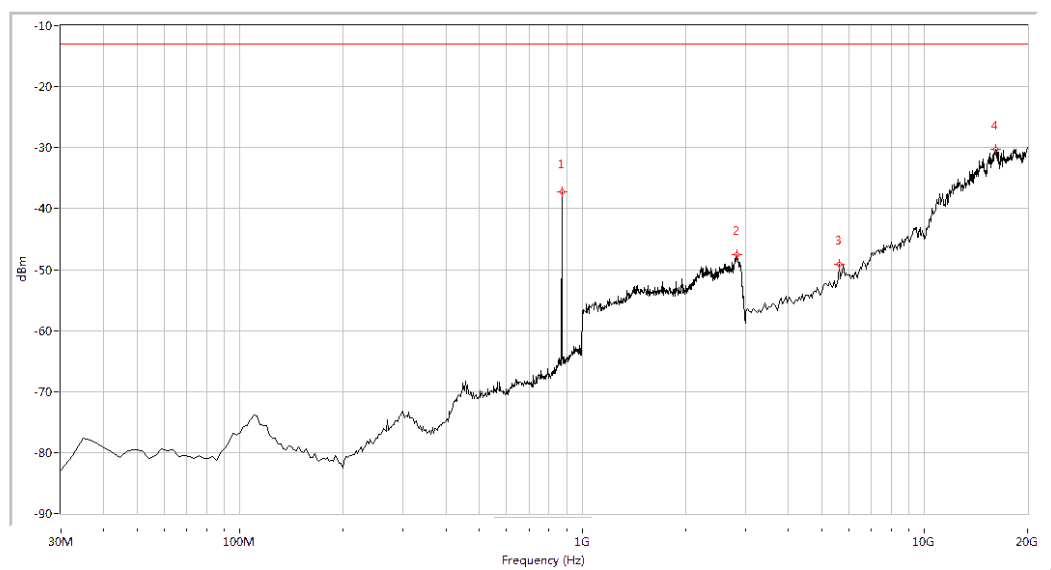
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-37.27	-13.0	24.3	329.0	Horizontal	PASS
1927.681	-49.98	-13.0	37.0	155.3	Horizontal	PASS
12581.047	-35.11	-13.0	22.1	155.9	Horizontal	PASS
18304.239	-30.03	-13.0	17.0	101.6	Horizontal	PASS

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



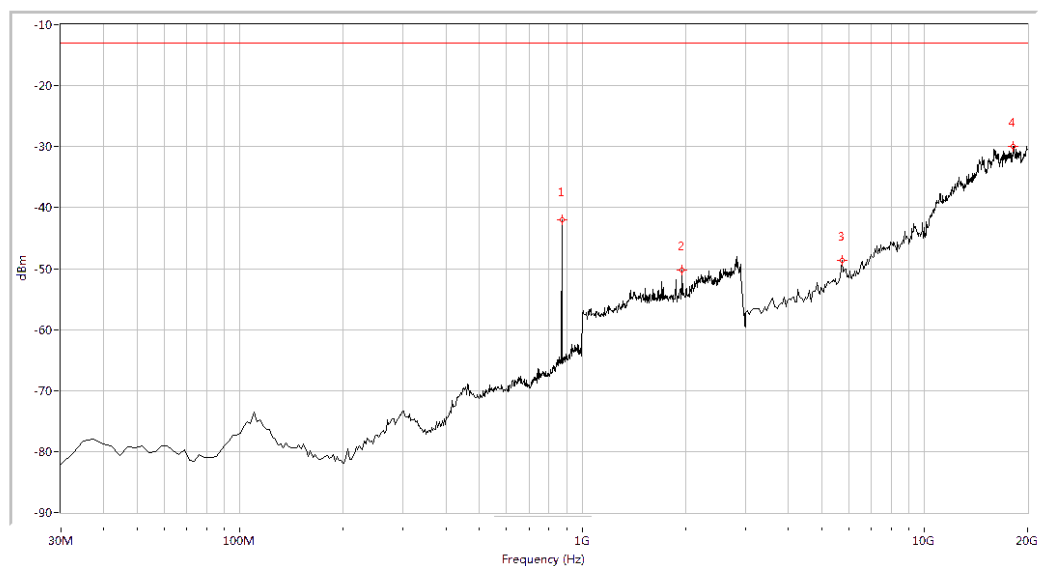
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.60	-13.0	28.6	134.7	Vertical	PASS
1927.681	-47.75	-13.0	34.7	156.8	Vertical	PASS
11097.257	-36.72	-13.0	23.7	68.9	Vertical	PASS
19109.726	-30.03	-13.0	17.0	86.0	Vertical	PASS

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



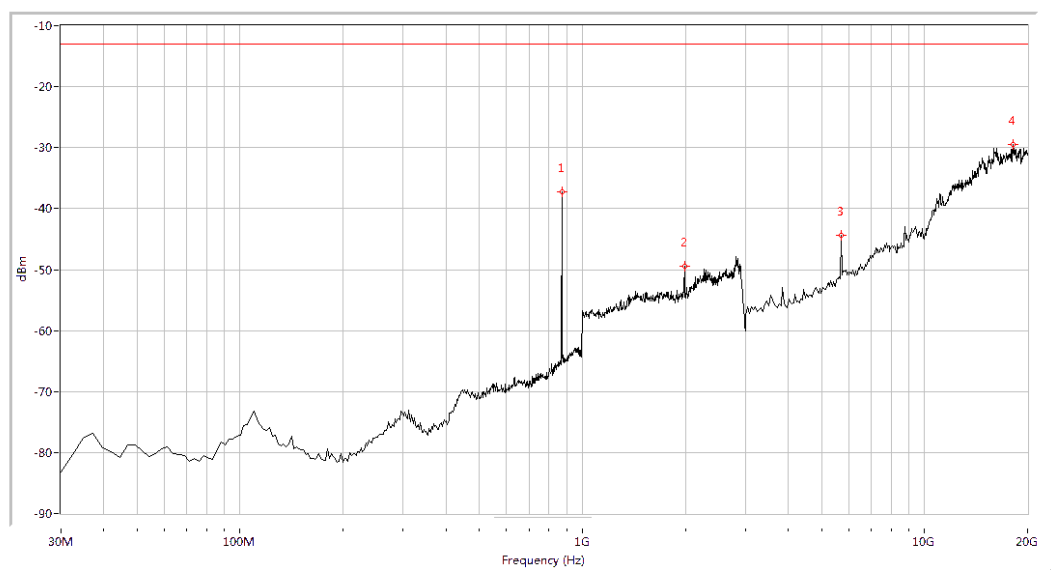
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-37.31	-13.0	24.3	314.5	Horizontal	PASS
2825.436	-47.55	-13.0	34.5	220.6	Horizontal	PASS
5628.429	-49.05	-13.0	36.1	-0.0	Horizontal	PASS
16099.751	-30.23	-13.0	17.2	281.1	Horizontal	PASS

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



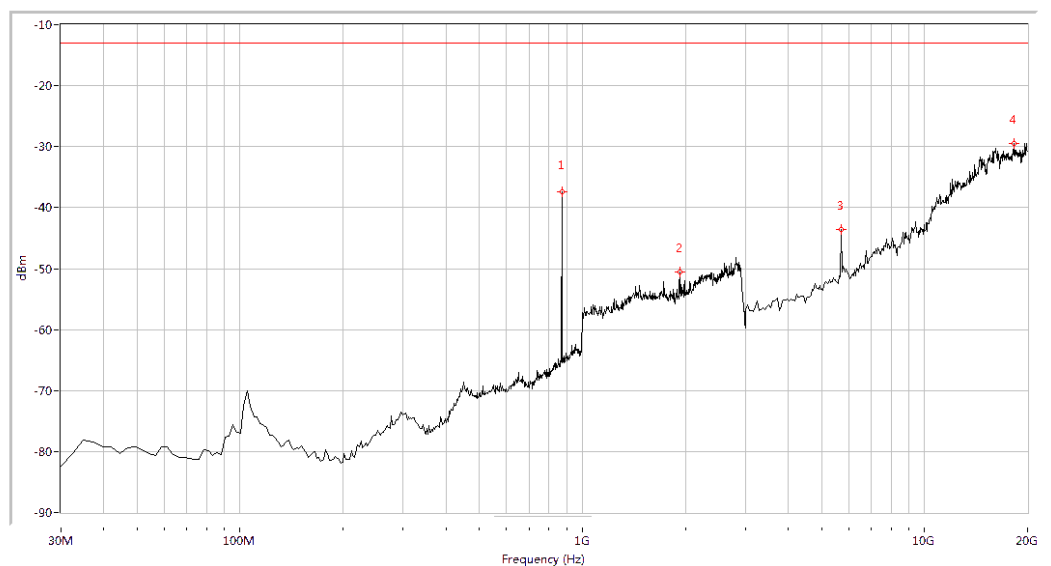
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-41.97	-13.0	29.0	135.1	Vertical	PASS
1957.606	-50.32	-13.0	37.3	204.1	Vertical	PASS
5755.611	-48.67	-13.0	35.7	254.0	Vertical	PASS
18177.057	-30.00	-13.0	17.0	213.1	Vertical	PASS

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



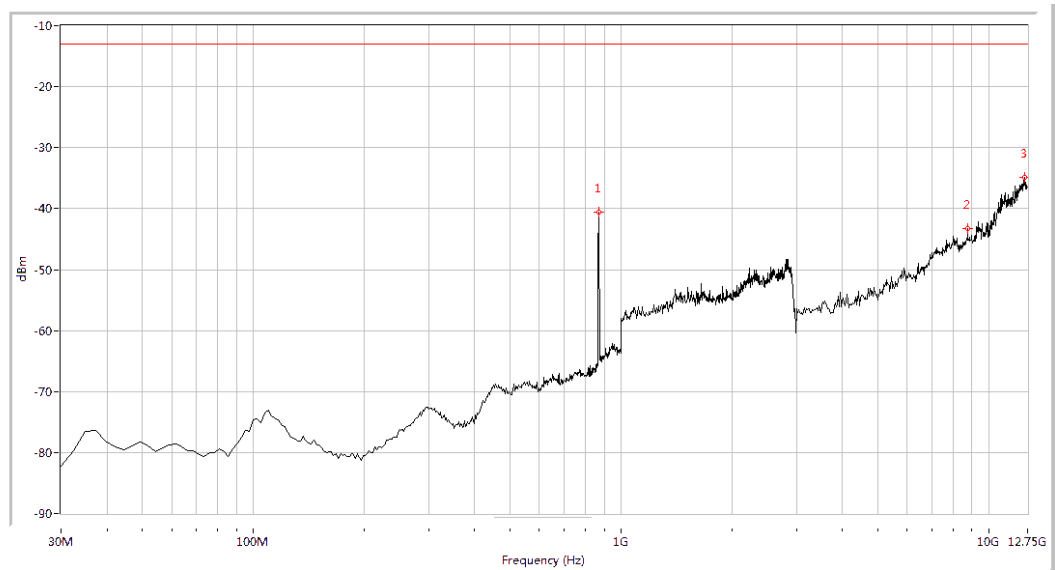
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-37.28	-13.0	24.3	321.8	Horizontal	PASS
1987.531	-49.45	-13.0	36.5	242.8	Horizontal	PASS
5713.217	-44.42	-13.0	31.4	360.0	Horizontal	PASS
18177.057	-29.50	-13.0	16.5	350.3	Horizontal	PASS

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



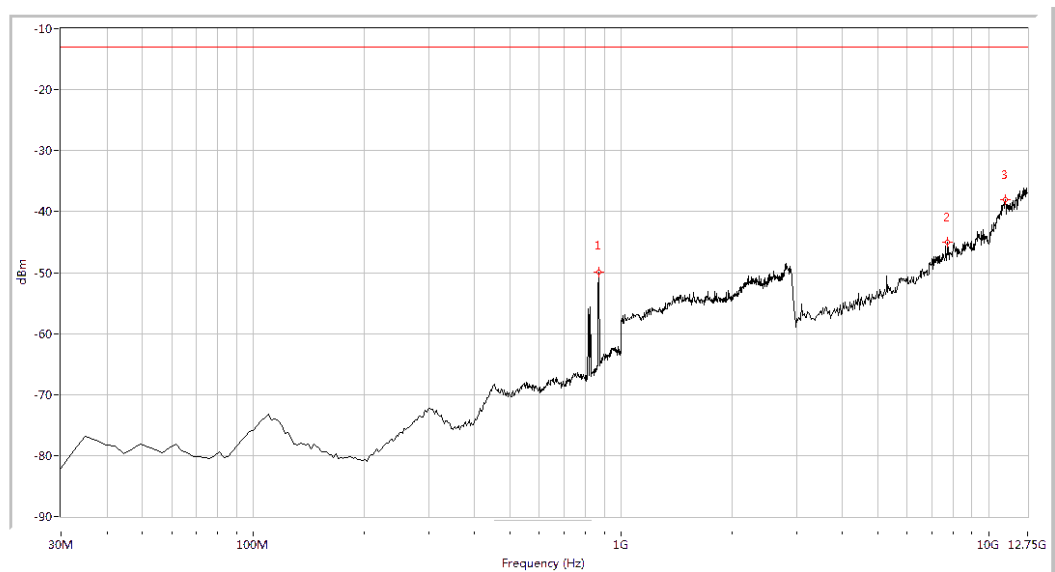
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-37.48	-13.0	24.5	311.6	Horizontal	PASS
1927.681	-50.56	-13.0	37.6	287.1	Horizontal	PASS
5713.217	-43.65	-13.0	30.7	-0.0	Horizontal	PASS
18304.239	-29.52	-13.0	16.5	282.9	Horizontal	PASS

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



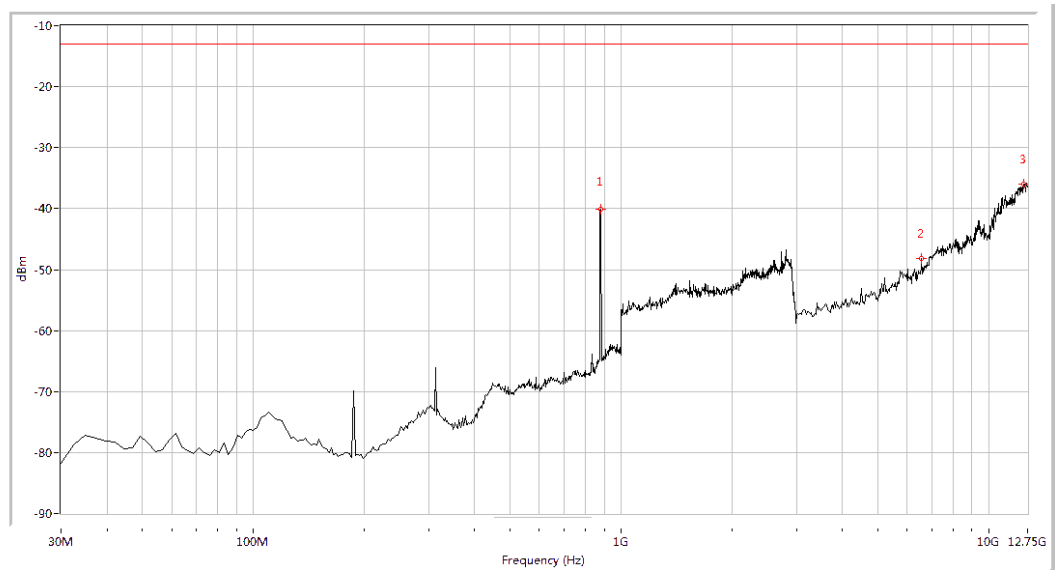
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-40.50	-13.0	27.5	181.5	Horizontal	PASS
8762.469	-43.20	-13.0	30.2	-0.0	Horizontal	PASS
12555.486	-34.89	-13.0	21.9	245.1	Horizontal	PASS

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



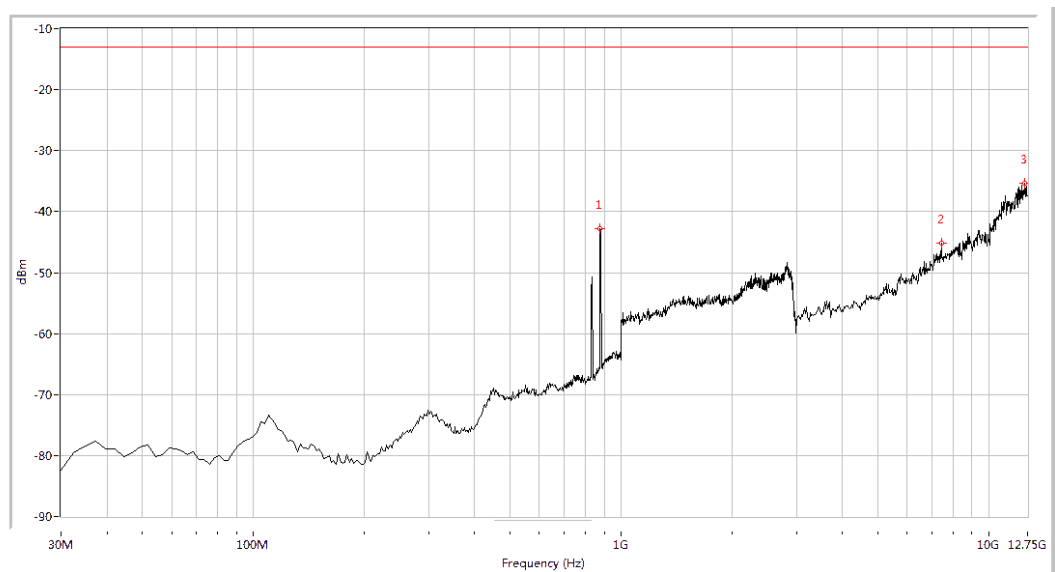
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
871.796	-49.94	-13.0	36.9	197.9	Vertical	PASS
7741.272	-45.02	-13.0	32.0	290.1	Vertical	PASS
11120.948	-37.96	-13.0	25.0	158.5	Vertical	PASS

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



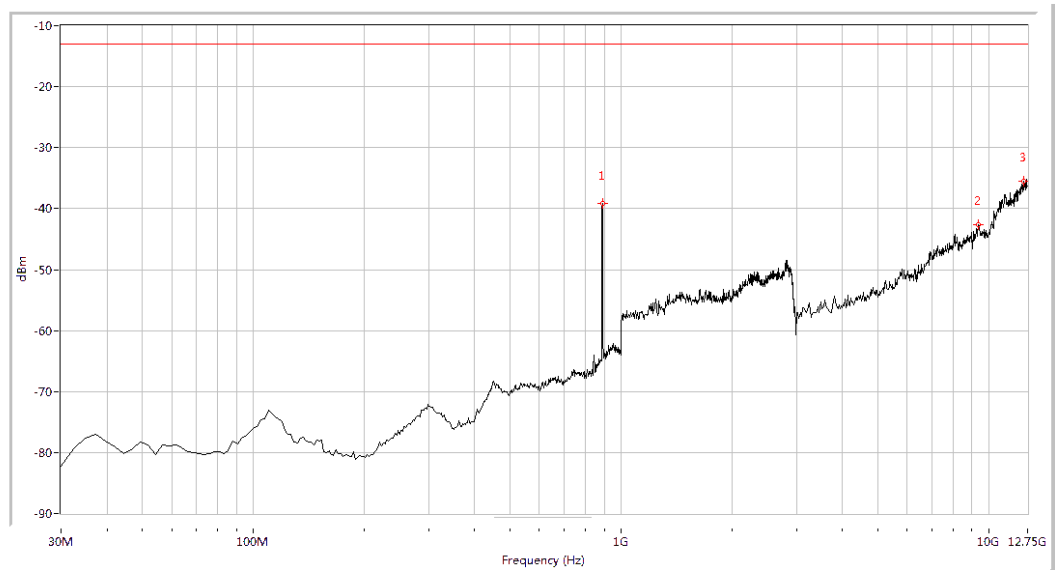
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-40.17	-13.0	27.2	290.8	Horizontal	PASS
6574.190	-48.23	-13.0	35.2	350.5	Horizontal	PASS
12482.544	-36.00	-13.0	23.0	206.3	Horizontal	PASS

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



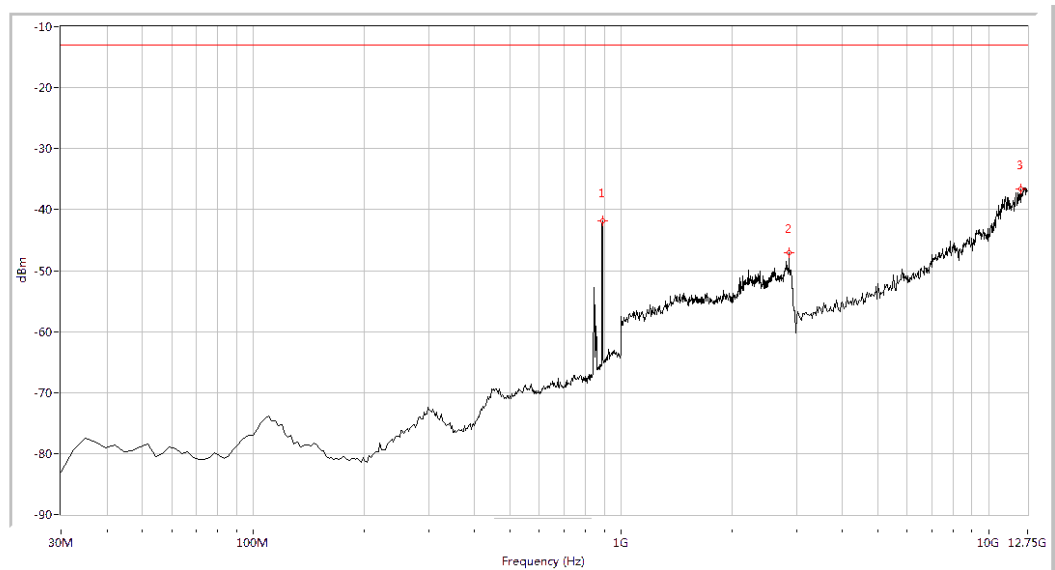
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-42.82	-13.0	29.8	190.3	Vertical	PASS
7425.187	-45.16	-13.0	32.2	114.8	Vertical	PASS
12555.486	-35.29	-13.0	22.3	67.6	Vertical	PASS

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



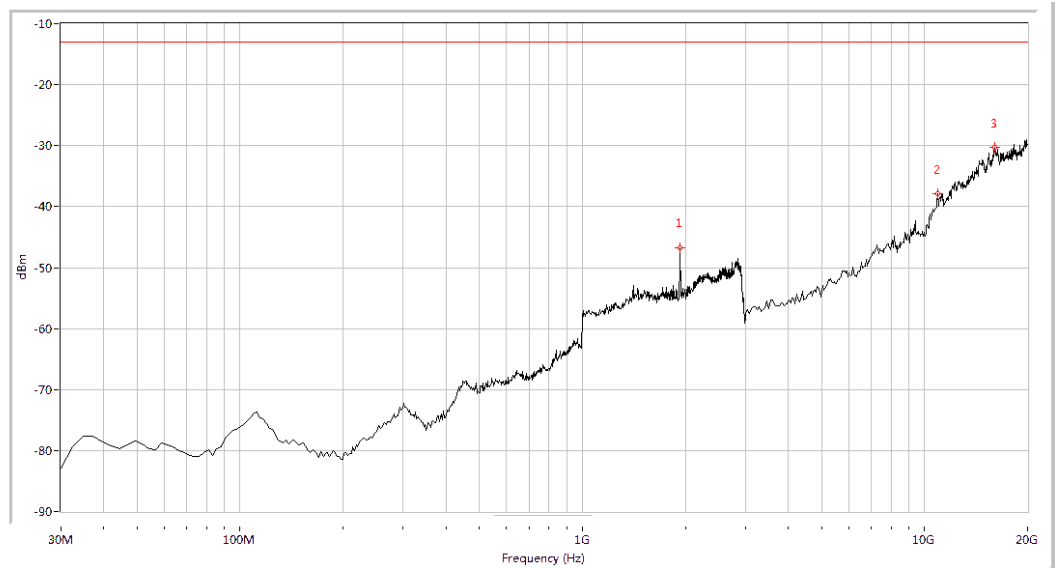
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-39.21	-13.0	26.2	347.3	Horizontal	PASS
9346.010	-42.60	-13.0	29.6	114.8	Horizontal	PASS
12409.601	-35.51	-13.0	22.5	22.6	Horizontal	PASS

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



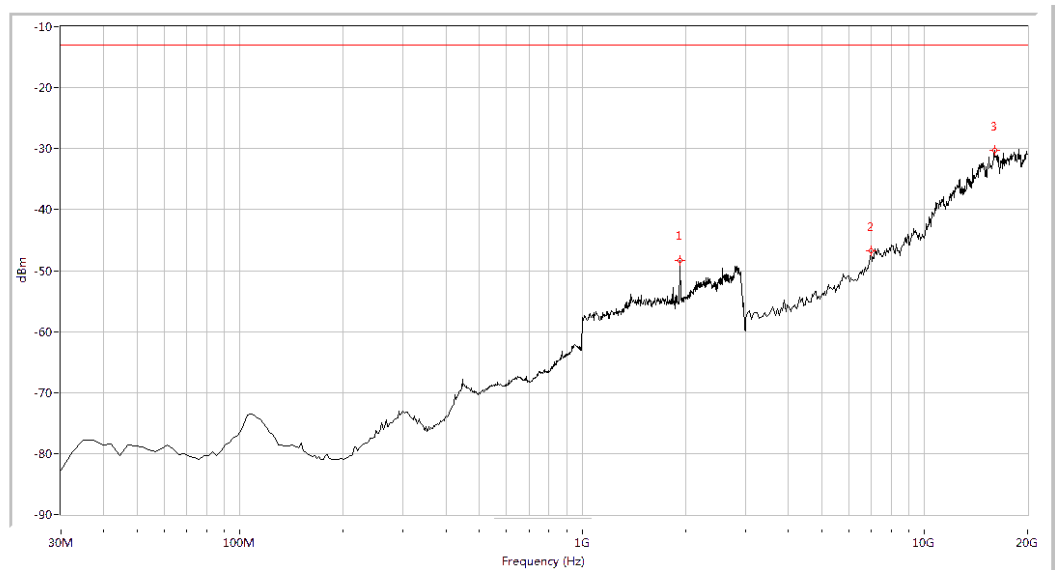
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-41.85	-13.0	28.9	120.1	Vertical	PASS
2860.349	-47.14	-13.0	34.1	28.8	Vertical	PASS
12215.087	-36.62	-13.0	23.6	67.4	Vertical	PASS

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



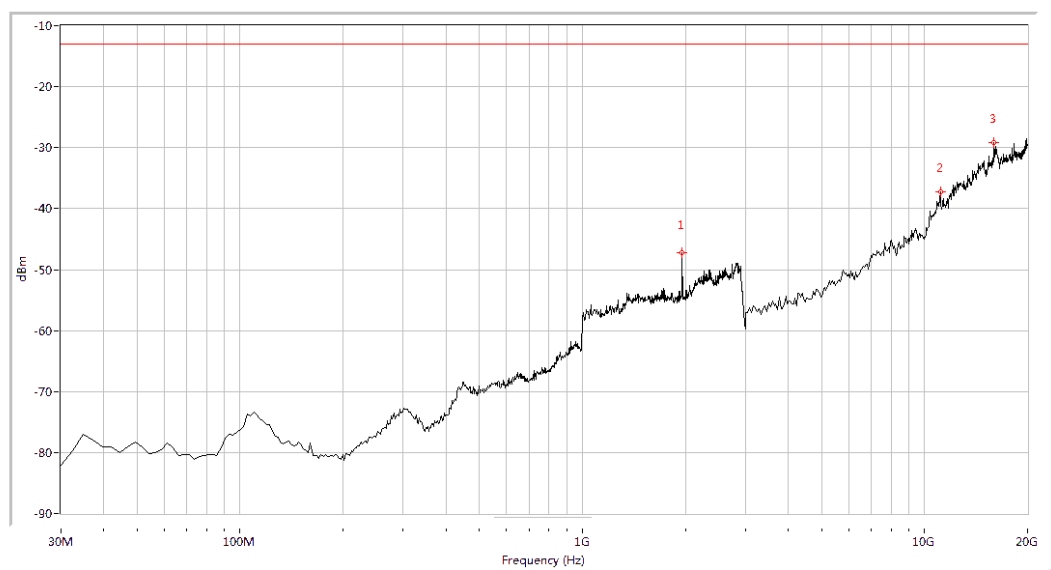
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1932.668	-46.77	-13.0	33.8	347.7	Horizontal	PASS
10927.681	-37.95	-13.0	24.9	158.6	Horizontal	PASS
16057.357	-30.34	-13.0	17.3	360.0	Horizontal	PASS

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



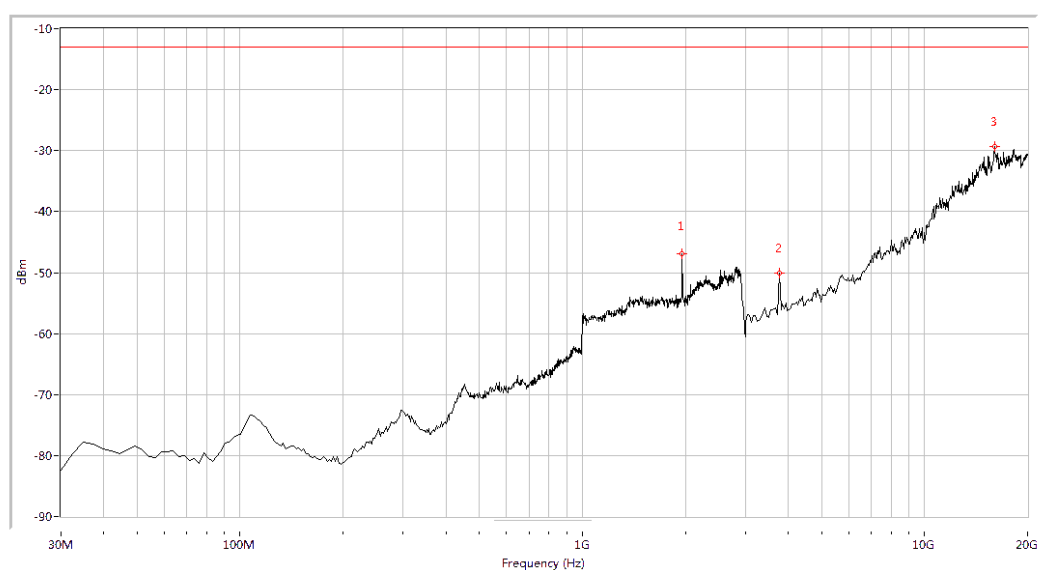
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1932.668	-48.34	-13.0	35.3	62.3	Vertical	PASS
6985.037	-46.83	-13.0	33.8	115.7	Vertical	PASS
16014.963	-30.33	-13.0	17.3	124.3	Vertical	PASS

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



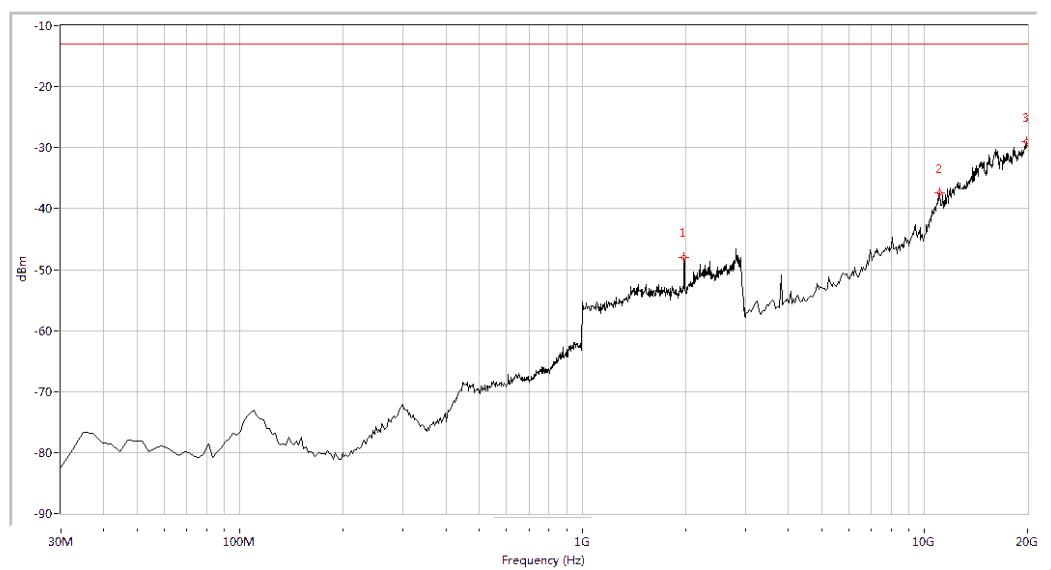
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1957.606	-47.24	-13.0	34.2	240.2	Horizontal	PASS
11139.651	-37.21	-13.0	24.2	360.0	Horizontal	PASS
15972.569	-29.12	-13.0	16.1	47.7	Horizontal	PASS

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



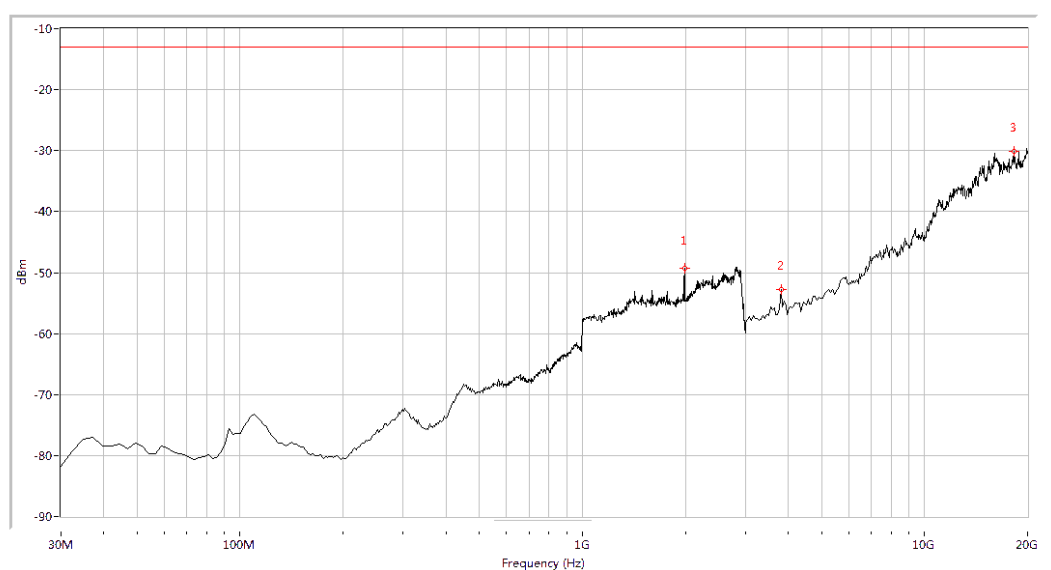
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1957.606	-46.92	-13.0	33.9	67.4	Vertical	PASS
3763.092	-50.09	-13.0	37.1	123.3	Vertical	PASS
16014.963	-29.31	-13.0	16.3	355.8	Vertical	PASS

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



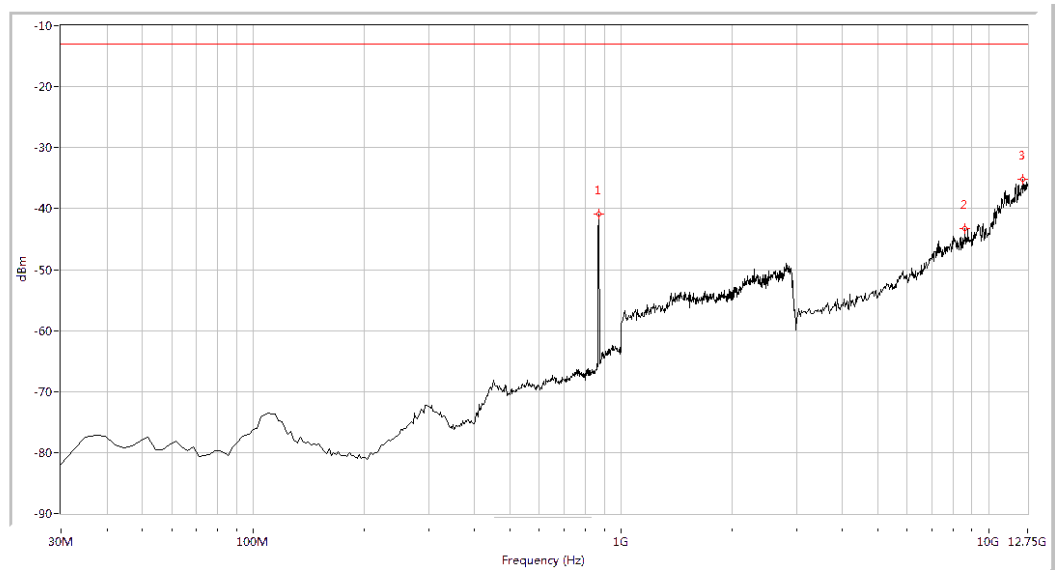
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1982.544	-48.04	-13.0	35.0	59.4	Horizontal	PASS
11097.257	-37.44	-13.0	24.4	84.9	Horizontal	PASS
18972.818	-29.01	-13.0	16.0	132.1	Horizontal	PASS

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



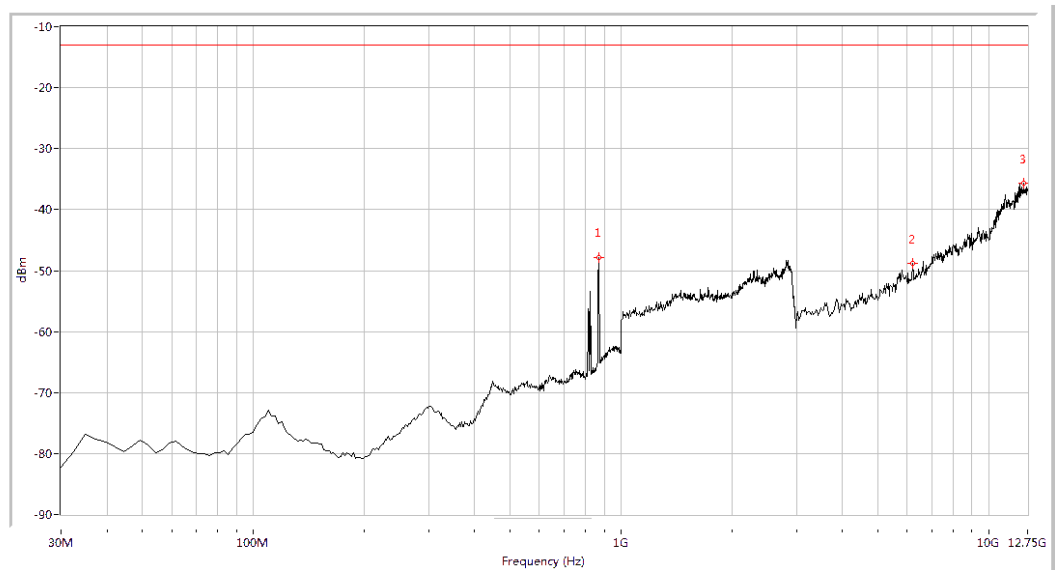
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1987.531	-49.33	-13.0	36.3	218.7	Vertical	PASS
3805.486	-52.70	-13.0	39.7	123.7	Vertical	PASS
18304.239	-30.19	-13.0	17.2	7.4	Vertical	PASS

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



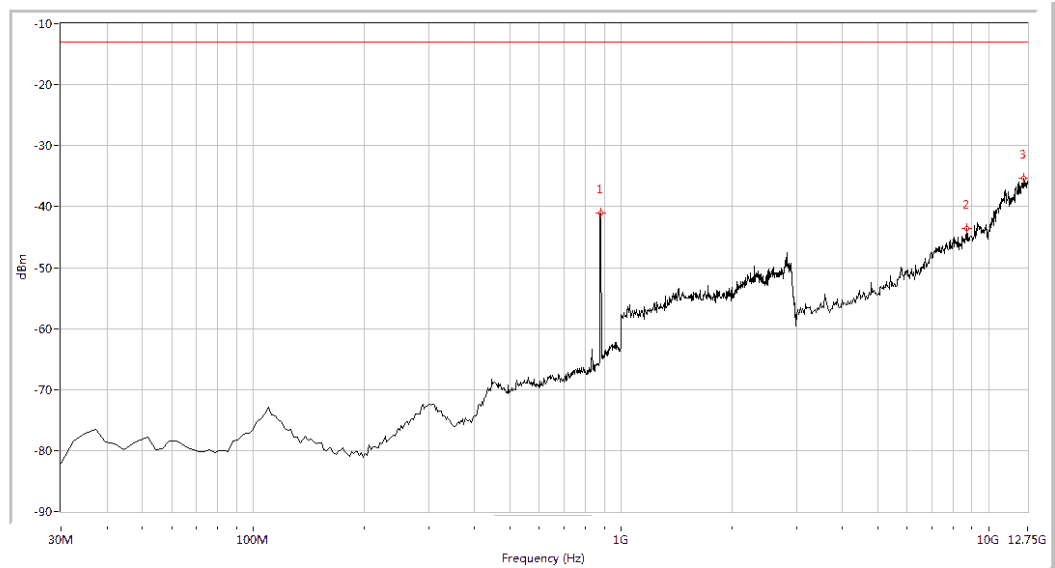
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-40.92	-13.0	27.9	318.4	Horizontal	PASS
8616.584	-43.23	-13.0	30.2	65.9	Horizontal	PASS
12385.287	-35.12	-13.0	22.1	231.4	Horizontal	PASS

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



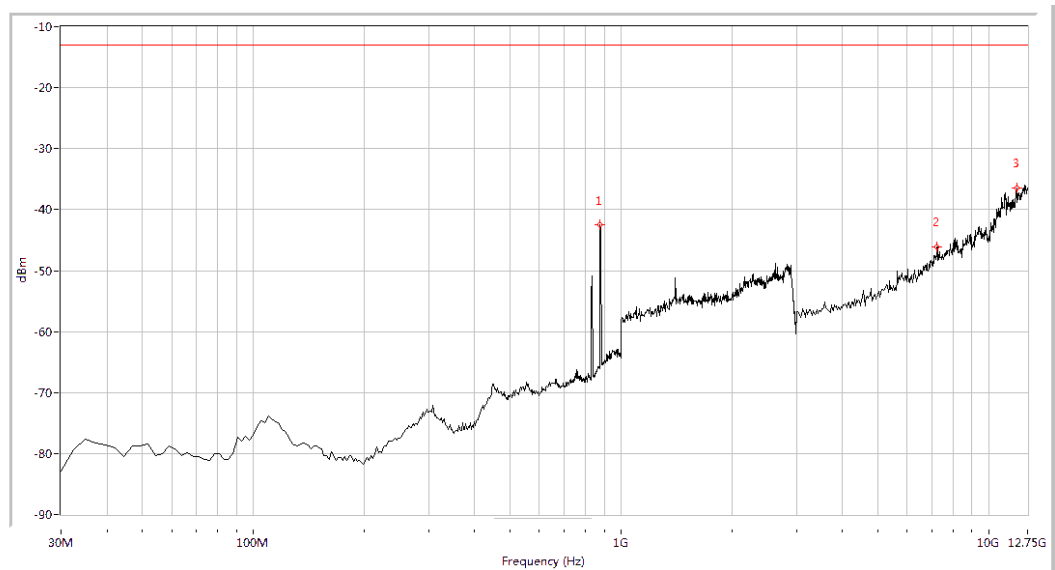
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-47.90	-13.0	34.9	126.7	Vertical	PASS
6209.476	-48.74	-13.0	35.7	239.8	Vertical	PASS
12458.229	-35.61	-13.0	22.6	1.6	Vertical	PASS

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



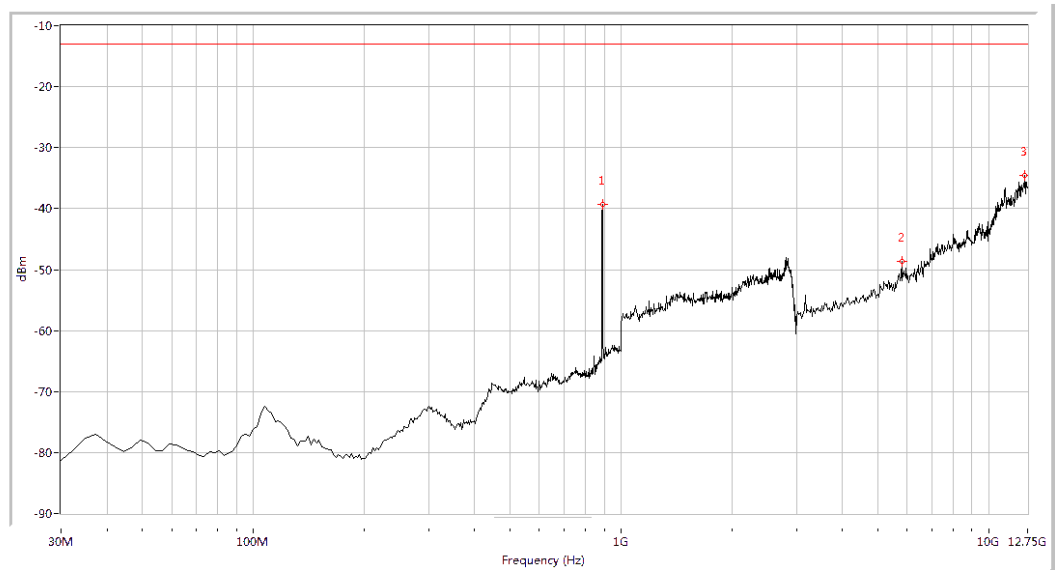
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-41.02	-13.0	28.0	67.9	Horizontal	PASS
8689.526	-43.55	-13.0	30.6	260.3	Horizontal	PASS
12482.544	-35.32	-13.0	22.3	180.7	Horizontal	PASS

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



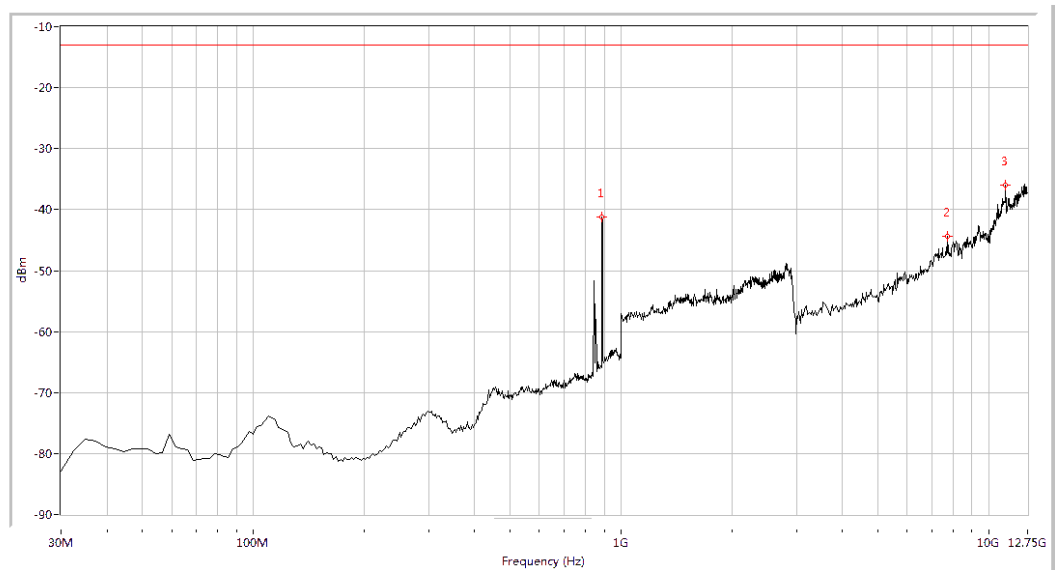
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-42.45	-13.0	29.5	135.4	Vertical	PASS
7230.673	-46.18	-13.0	33.2	348.8	Vertical	PASS
11899.002	-36.45	-13.0	23.5	300.1	Vertical	PASS

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



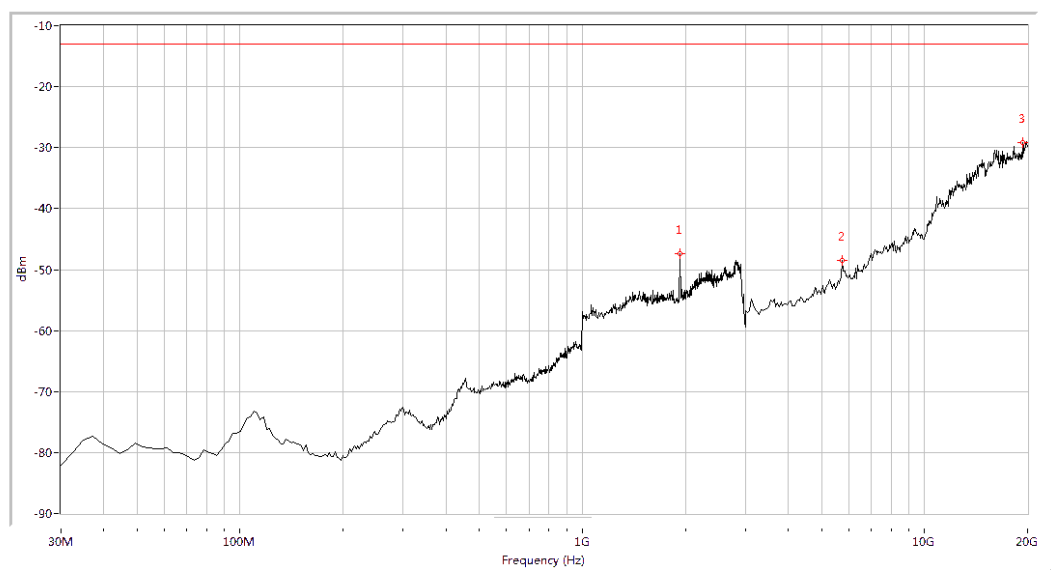
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-39.33	-13.0	26.3	133.6	Horizontal	PASS
5796.135	-48.62	-13.0	35.6	154.4	Horizontal	PASS
12555.486	-34.60	-13.0	21.6	84.9	Horizontal	PASS

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



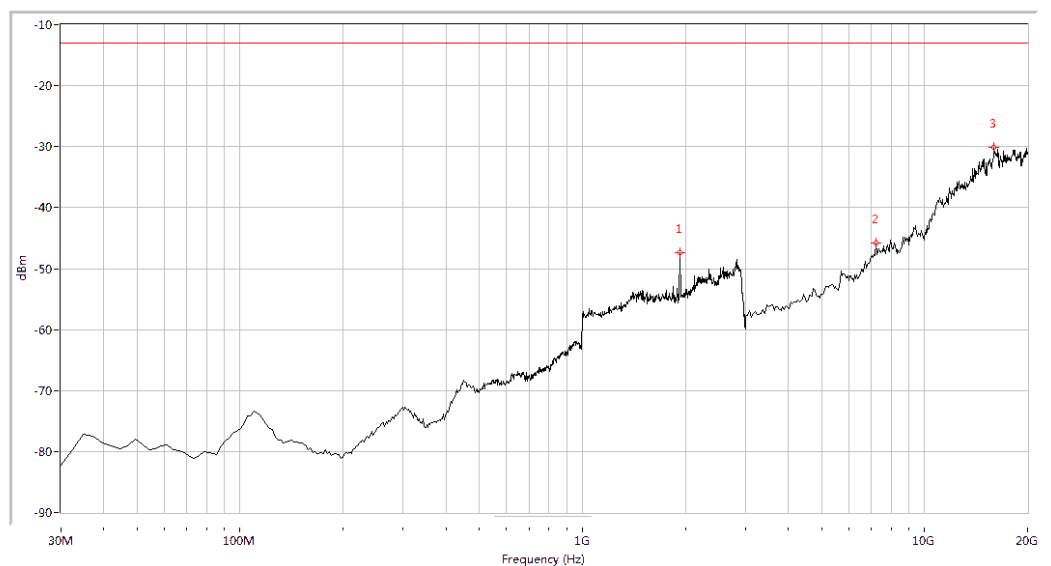
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
888.728	-41.19	-13.0	28.2	251.8	Vertical	PASS
7741.272	-44.41	-13.0	31.4	236.2	Vertical	PASS
11096.633	-36.00	-13.0	23.0	29.8	Vertical	PASS

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



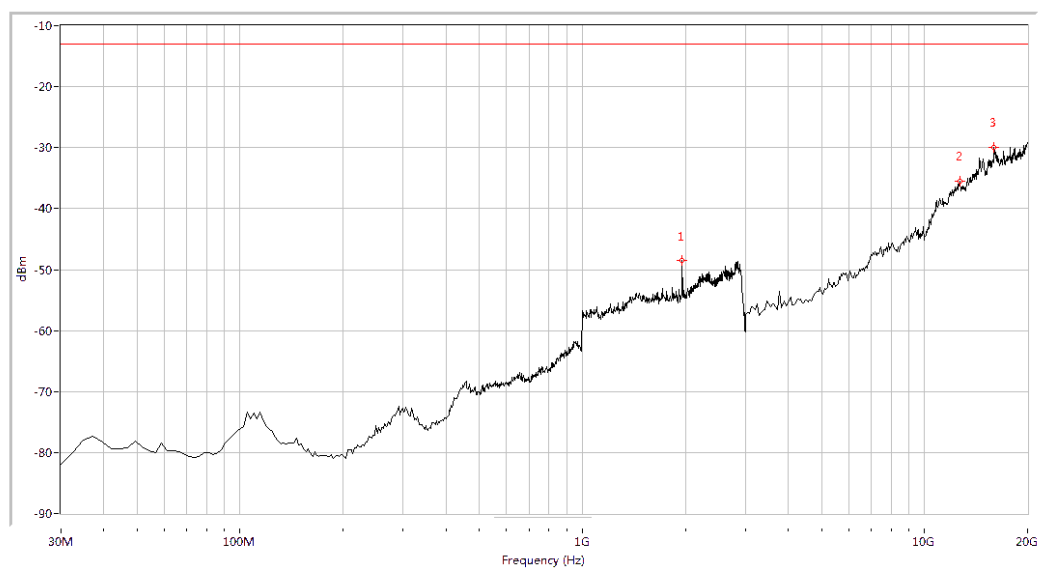
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1927.681	-47.42	-13.0	34.4	239.1	Horizontal	PASS
5755.611	-48.54	-13.0	35.5	76.7	Horizontal	PASS
19406.484	-29.22	-13.0	16.2	46.6	Horizontal	PASS
19194.514	-24.96	-13.0	12.0	1.5	Horizontal	PASS

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



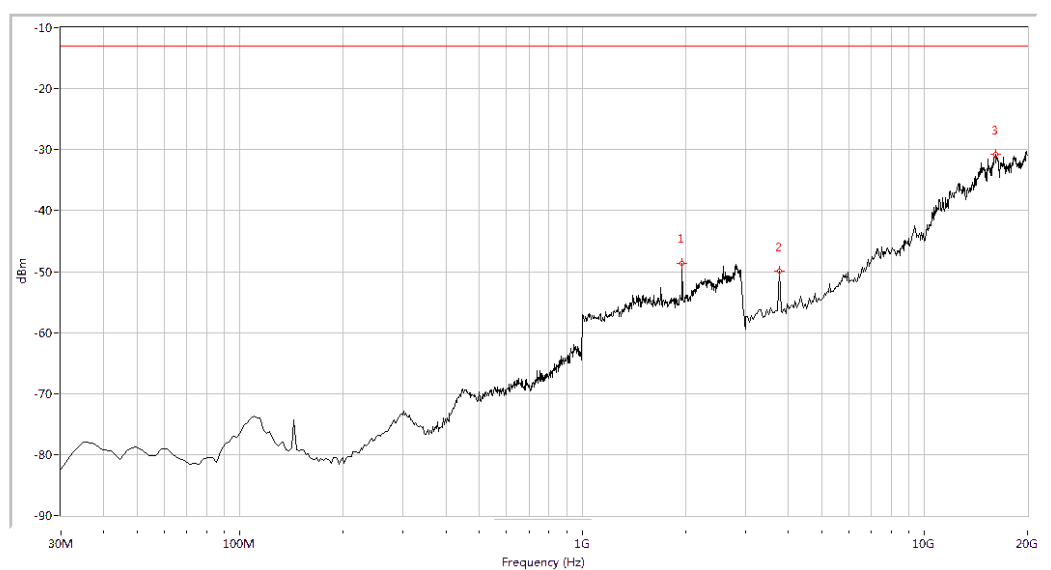
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1932.668	-47.46	-13.0	34.5	153.2	Vertical	PASS
7197.007	-45.88	-13.0	32.9	295.0	Vertical	PASS
15930.175	-30.12	-13.0	17.1	-0.0	Vertical	PASS

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



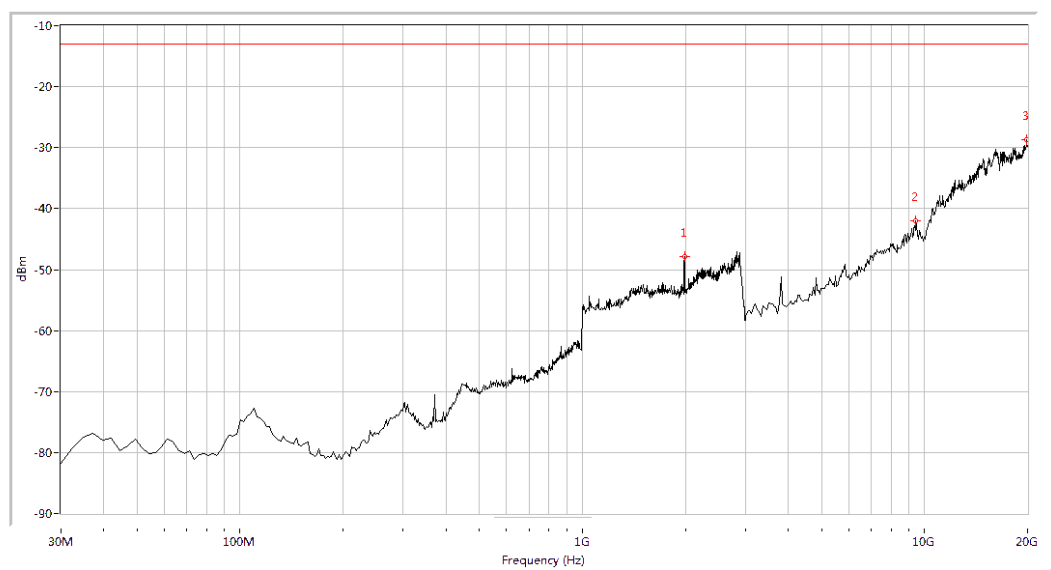
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1957.606	-48.57	-13.0	35.6	242.4	Horizontal	PASS
12665.835	-35.56	-13.0	22.6	71.4	Horizontal	PASS
15972.569	-29.93	-13.0	16.9	39.5	Horizontal	PASS

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



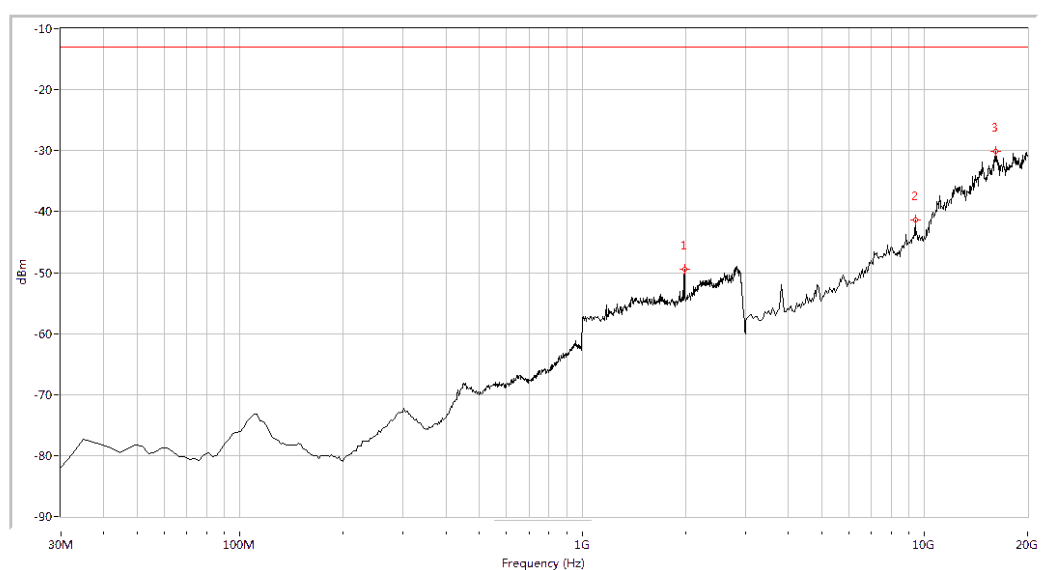
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1957.606	-48.60	-13.0	35.6	348.0	Vertical	PASS
3763.092	-49.96	-13.0	37.0	108.3	Vertical	PASS
16184.539	-30.77	-13.0	17.8	52.5	Vertical	PASS

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



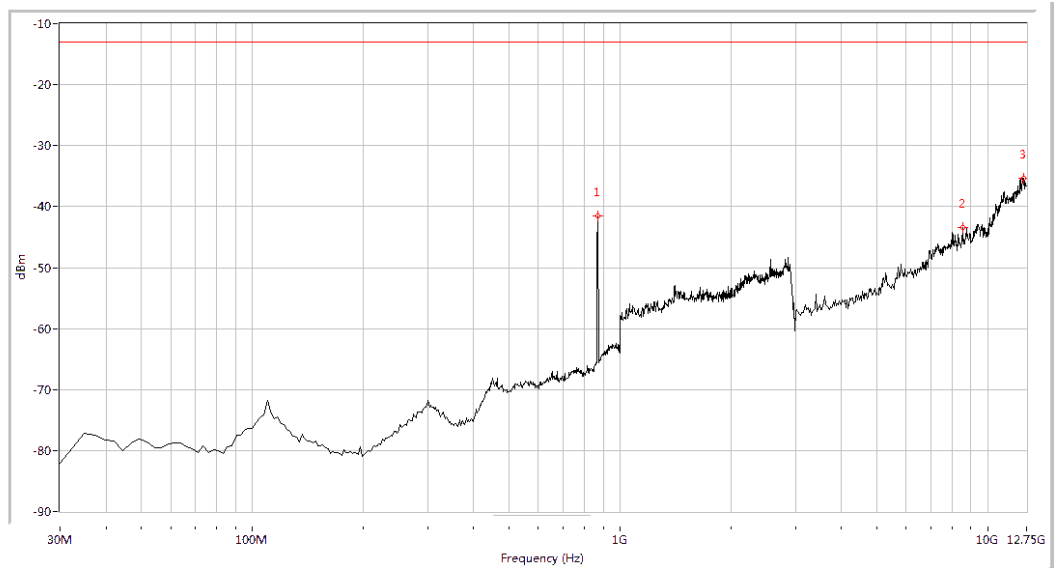
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1987.531	-47.78	-13.0	34.8	59.9	Horizontal	PASS
9443.890	-42.02	-13.0	29.0	-0.0	Horizontal	PASS
19872.818	-28.65	-13.0	15.7	268.1	Horizontal	PASS

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



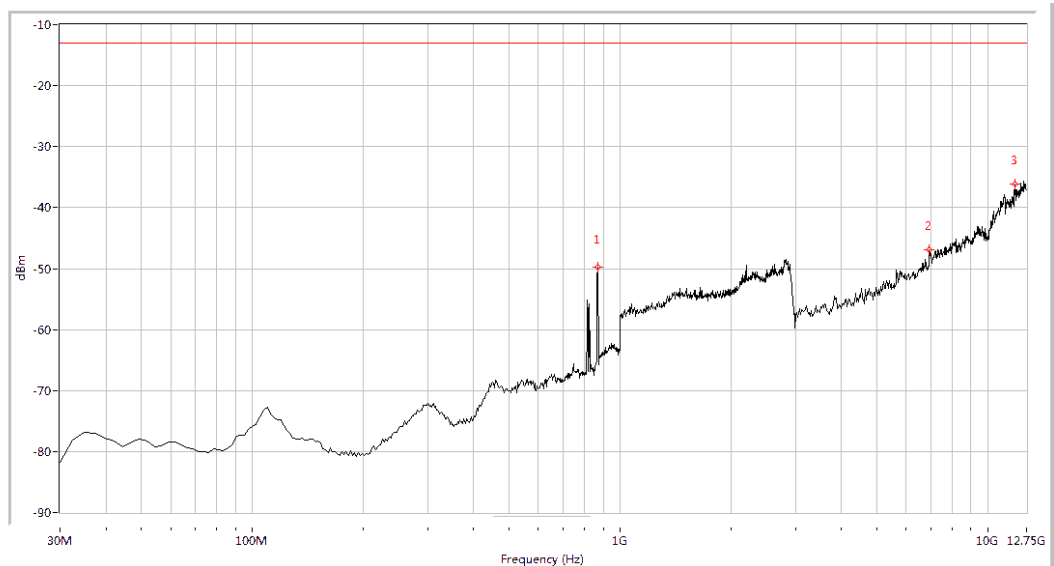
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1987.531	-49.44	-13.0	36.4	350.2	Vertical	PASS
9401.496	-41.39	-13.0	28.4	275.7	Vertical	PASS
16099.751	-30.05	-13.0	17.0	132.5	Vertical	PASS

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



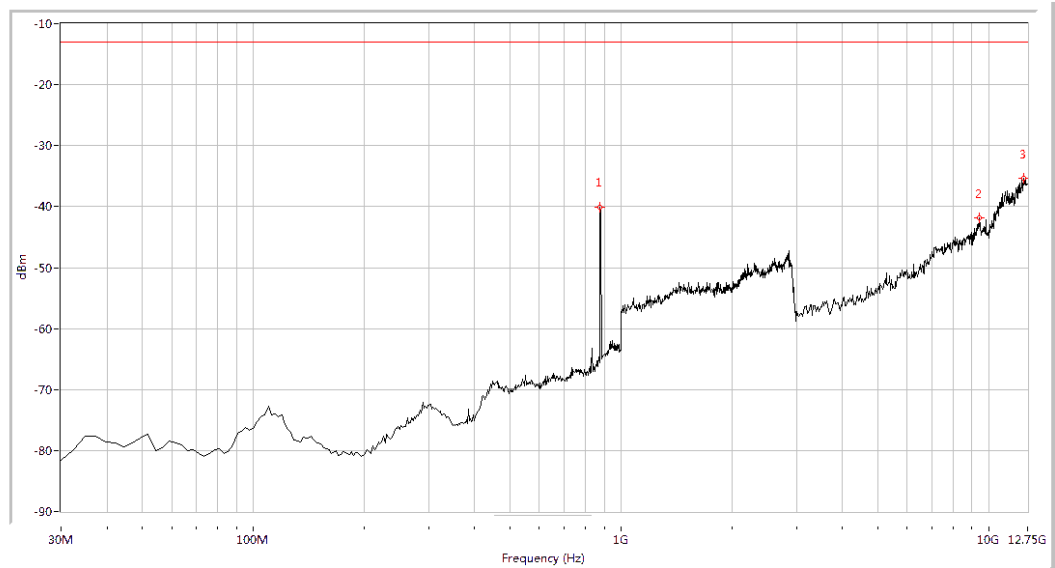
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-41.56	-13.0	28.6	299.3	Horizontal	PASS
8543.641	-43.49	-13.0	30.5	100.2	Horizontal	PASS
12531.172	-35.38	-13.0	22.4	343.2	Horizontal	PASS
869.377	-41.56	-13.0	28.6	299.3	Horizontal	PASS

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



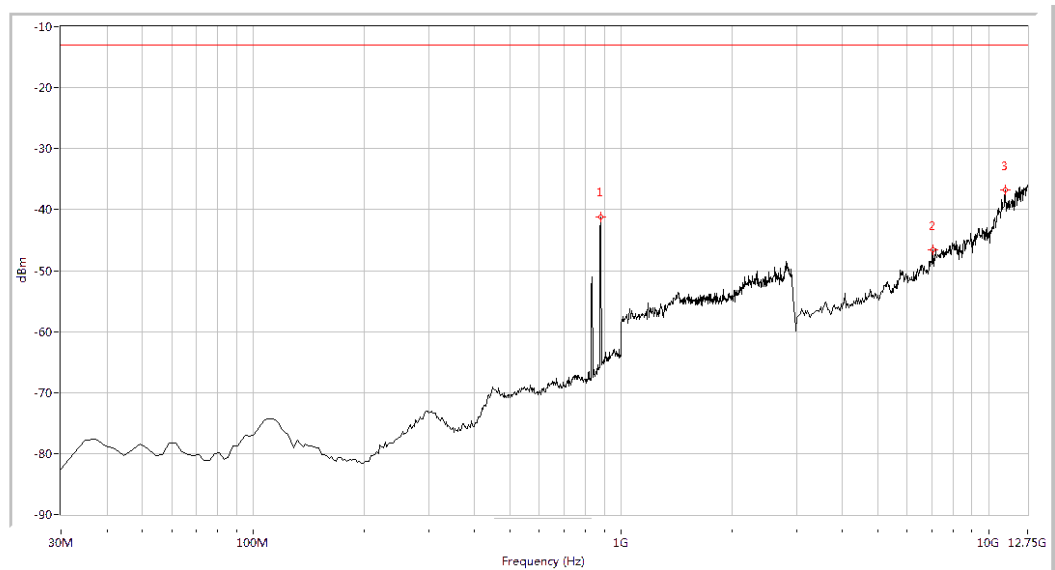
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
869.377	-49.77	-13.0	36.8	144.8	Vertical	PASS
6938.903	-46.93	-13.0	33.9	276.0	Vertical	PASS
11850.374	-36.14	-13.0	23.1	67.8	Vertical	PASS

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



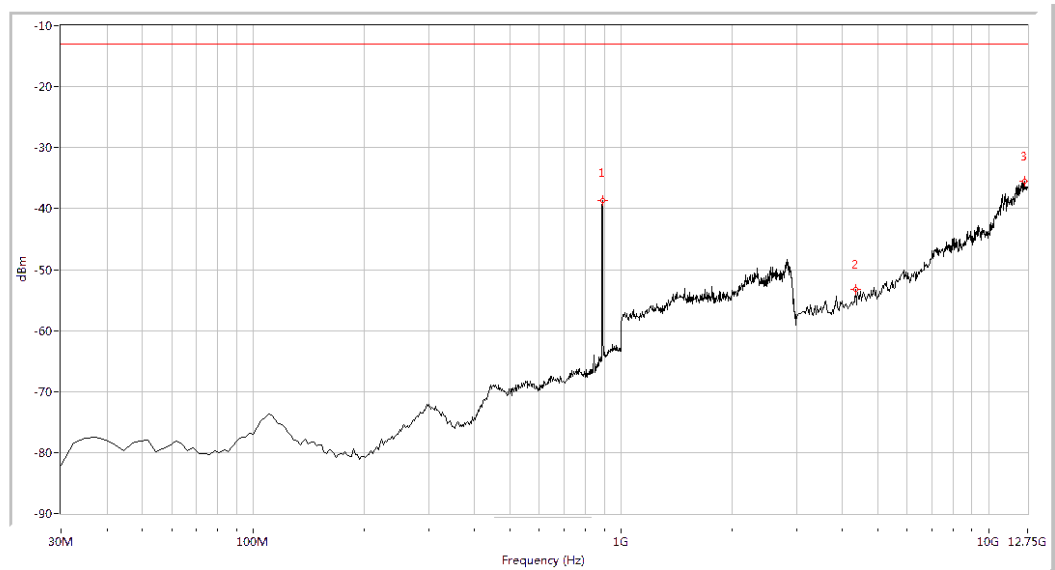
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
876.633	-40.13	-13.0	27.1	171.1	Horizontal	PASS
9443.267	-41.81	-13.0	28.8	226.9	Horizontal	PASS
12409.601	-35.27	-13.0	22.3	-0.0	Horizontal	PASS

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



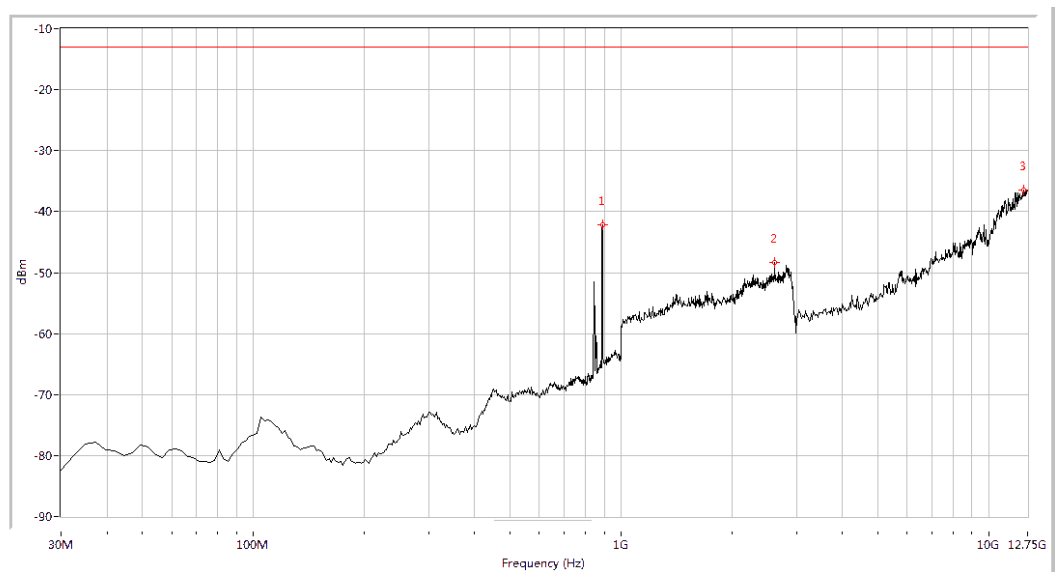
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
879.052	-41.15	-13.0	28.1	52.6	Vertical	PASS
7036.160	-46.58	-13.0	33.6	23.7	Vertical	PASS
11072.319	-36.83	-13.0	23.8	102.2	Vertical	PASS

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



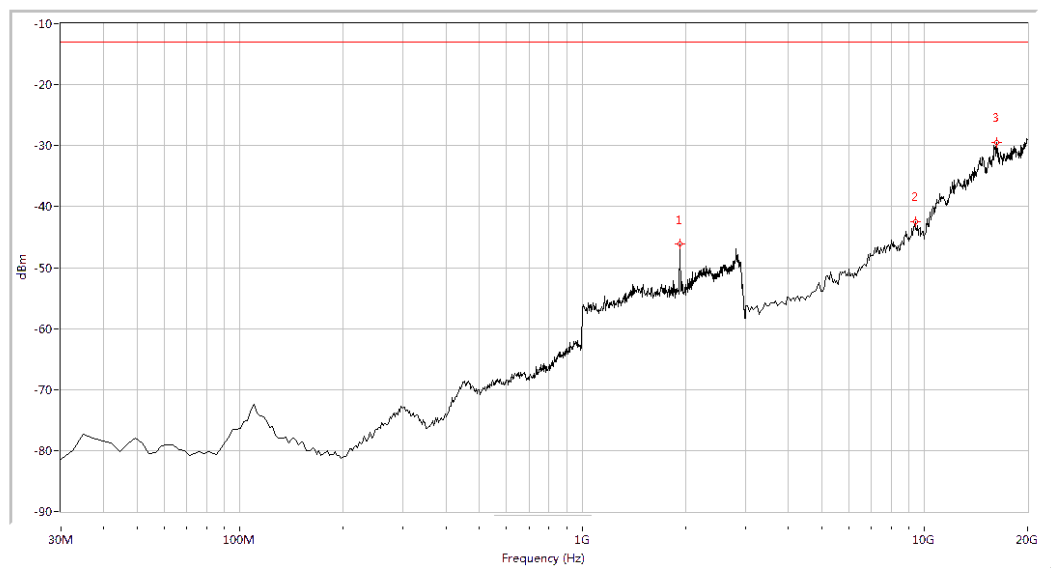
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-38.74	-13.0	25.7	105.8	Horizontal	PASS
4337.282	-53.22	-13.0	40.2	-0.0	Horizontal	PASS
12531.172	-35.45	-13.0	22.4	42.2	Horizontal	PASS

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



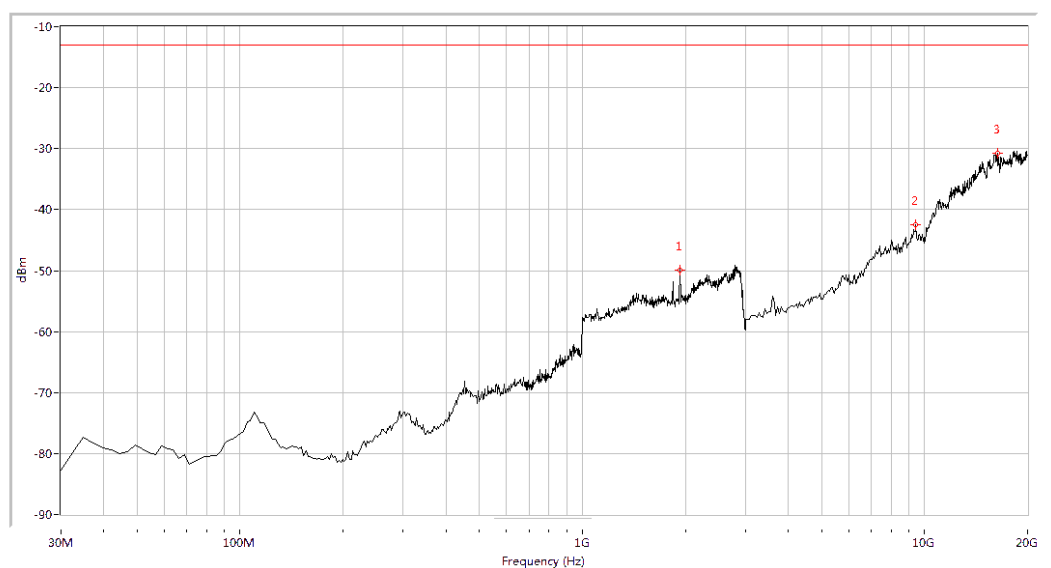
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
891.147	-42.24	-13.0	29.2	185.5	Vertical	PASS
2615.960	-48.33	-13.0	35.3	289.8	Vertical	PASS
12409.601	-36.51	-13.0	23.5	176.9	Vertical	PASS

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



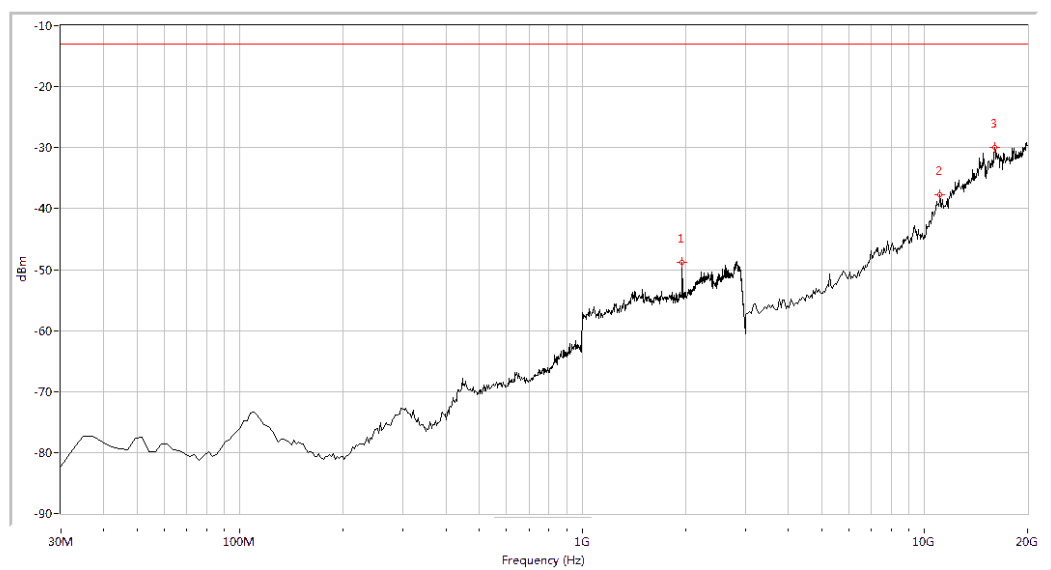
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1927.681	-46.17	-13.0	33.2	239.8	Horizontal	PASS
9401.496	-42.47	-13.0	29.5	49.0	Horizontal	PASS
16269.327	-29.55	-13.0	16.6	26.6	Horizontal	PASS

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



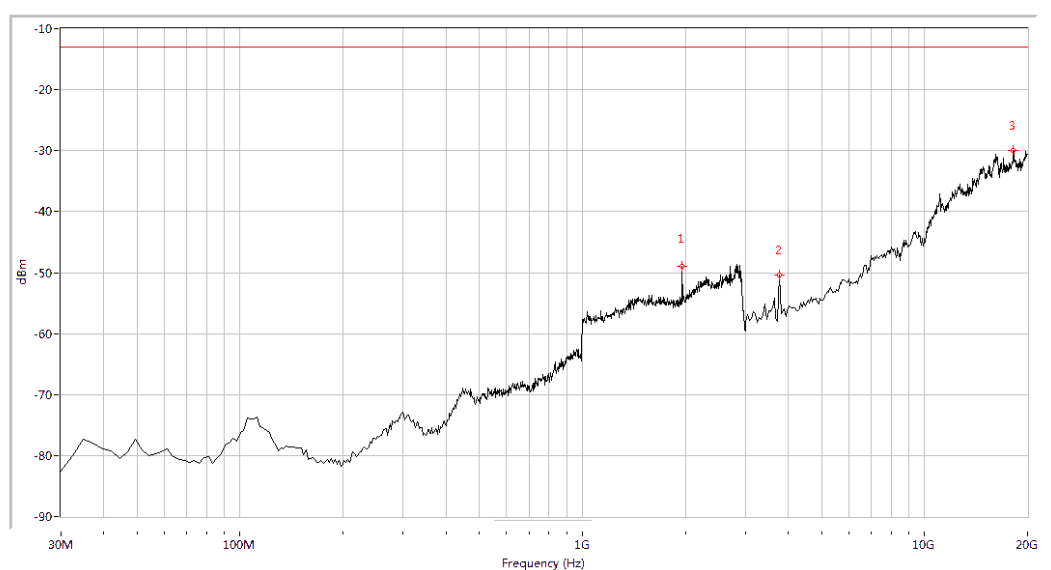
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1932.668	-49.85	-13.0	36.8	23.9	Vertical	PASS
9443.890	-42.46	-13.0	29.5	146.1	Vertical	PASS
16396.509	-30.69	-13.0	17.7	332.7	Vertical	PASS

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



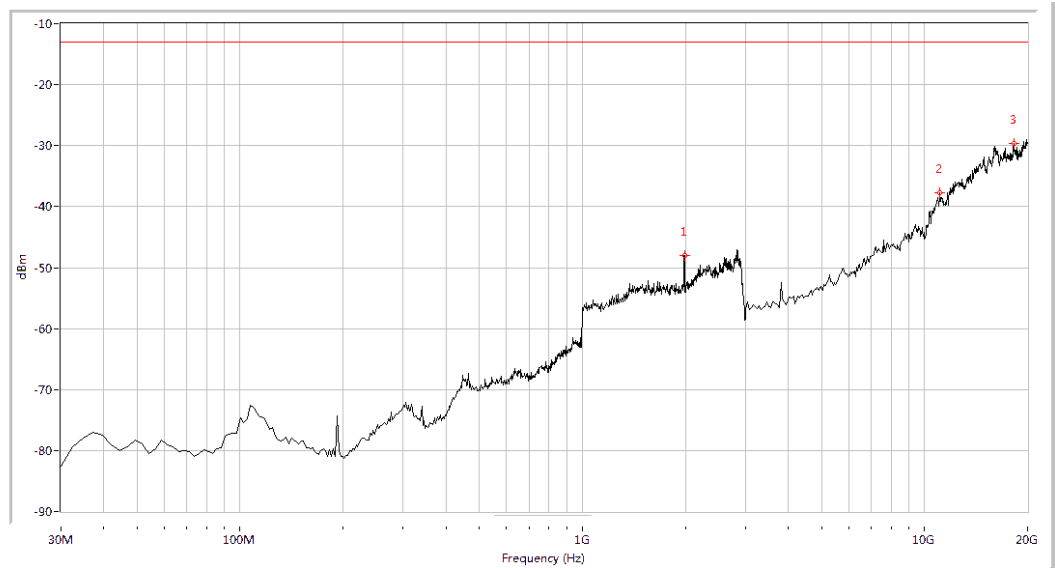
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1957.606	-48.86	-13.0	35.9	150.0	Horizontal	PASS
11097.257	-37.72	-13.0	24.7	203.7	Horizontal	PASS
16057.357	-29.98	-13.0	17.0	234.2	Horizontal	PASS

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



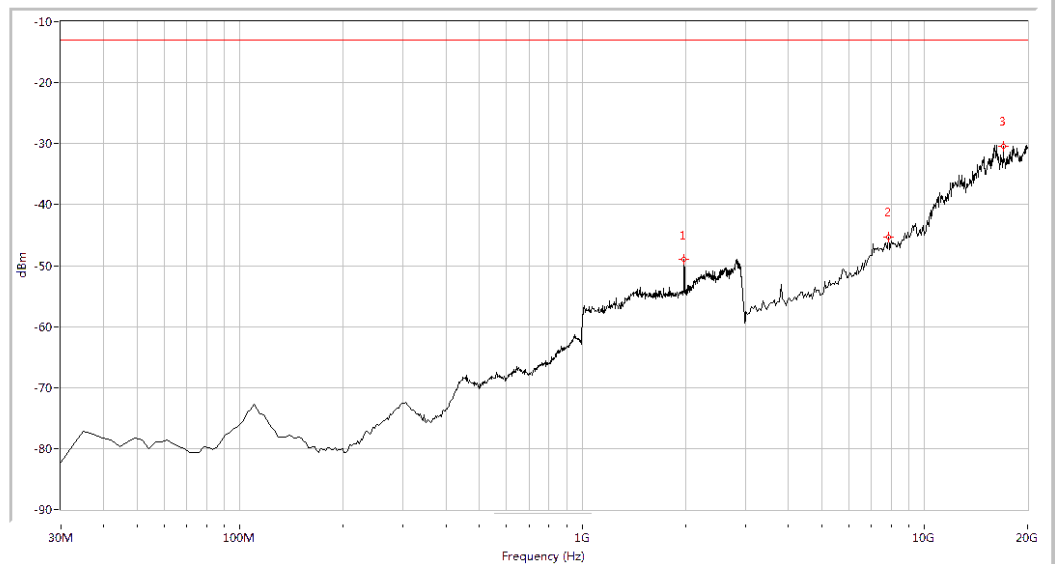
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1957.606	-49.02	-13.0	36.0	313.6	Vertical	PASS
3763.092	-50.34	-13.0	37.3	117.4	Vertical	PASS
18134.663	-29.95	-13.0	17.0	0.1	Vertical	PASS

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
1987.531	-48.01	-13.0	35.0	60.9	Horizontal	PASS
11097.257	-37.78	-13.0	24.8	213.4	Horizontal	PASS
18219.451	-29.72	-13.0	16.7	198.2	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
1982.544	-48.98	-13.0	36.0	333.8	Vertical	PASS
7832.918	-45.33	-13.0	32.3	292.2	Vertical	PASS
16990.025	-30.51	-13.0	17.5	66.4	Vertical	PASS

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

** END OF REPORT **