

2.6 Band Edge

2.6.1 Requirement

According to FCC section 22.917(b) and FCC section 24.238(b) and IC RSS-GEN section 4.7 in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

2.6.2 Test Description

See section 2.1.2 of this report.

2.6.3 Test Result

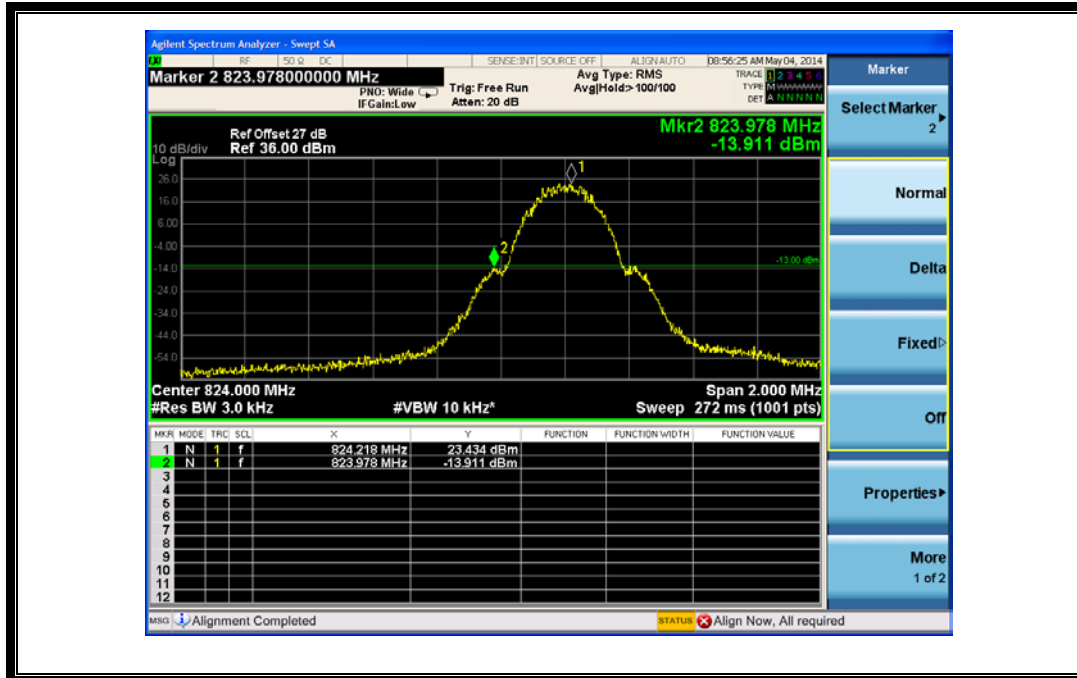
The lowest and highest channels are tested to verify the band edge emissions.

1. Test Verdict:

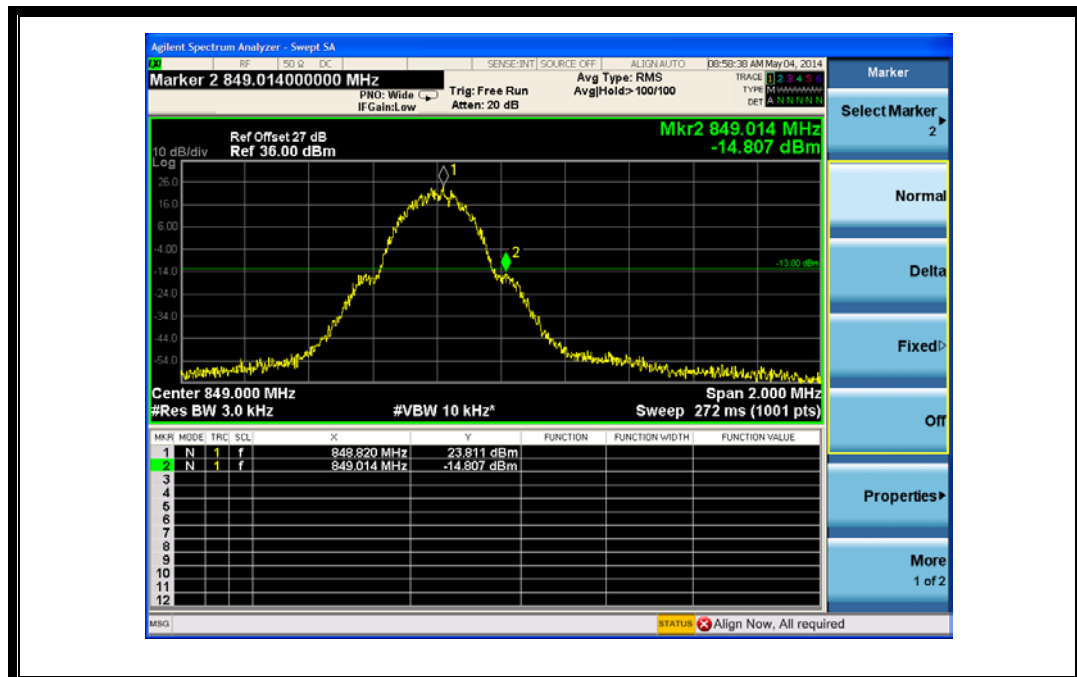
Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-13.911	Plat A	-13	<u>PASS</u>
	251	848.8	-14.807	Plot B		<u>PASS</u>
GSM 1900MHz	512	1850.2	-17.218	Plat C	-13	<u>PASS</u>
	810	1909.8	-14.789	Plot D		<u>PASS</u>
EDGE 850MHz	128	824.2	-24.844	Plat E	-13	<u>PASS</u>
	251	848.8	-23.847	Plot F		<u>PASS</u>
EDGE 1900MHz	512	1850.2	-26.392	Plat G	-13	<u>PASS</u>
	810	1909.8	-21.696	Plot H		<u>PASS</u>
WCDMA 850MHz	4132	826.4	-21.894	Plat I	-13	<u>PASS</u>
	4233	846.6	-22.537	Plot J		<u>PASS</u>
WCDMA 1900MHz	9262	1852.4	-24.253	Plat K	-13	<u>PASS</u>
	9538	1907.6	-22.449	Plot L		<u>PASS</u>
HSDPA 850MHz	4132	826.4	-23.384	Plat M	-13	<u>PASS</u>
	4233	846.6	-23.239	Plot N		<u>PASS</u>
HSDPA 1900MHz	9262	1852.4	-24.043	Plat O	-13	<u>PASS</u>
	9538	1907.6	-22.549	Plot P		<u>PASS</u>
HSUPA 850MHz	4132	826.4	-23.854	Plat Q	-13	<u>PASS</u>
	4233	846.6	-23.028	Plot R		<u>PASS</u>
HSUPA	9262	1852.4	-24.183	Plat S	-13	<u>PASS</u>

1900MHz	9538	1907.6	-22.141	Plot T		<u>PASS</u>
HSPA+ 850MHz	4132	826.4	-23.738	Plot U	-13	<u>PASS</u>
	4233	846.6	-28.288	Plot V		<u>PASS</u>
HSPA+ 1900MHz	9262	1852.4	-24.838	Plot W	-13	<u>PASS</u>
	9538	1907.6	-23.546	Plot X		<u>PASS</u>

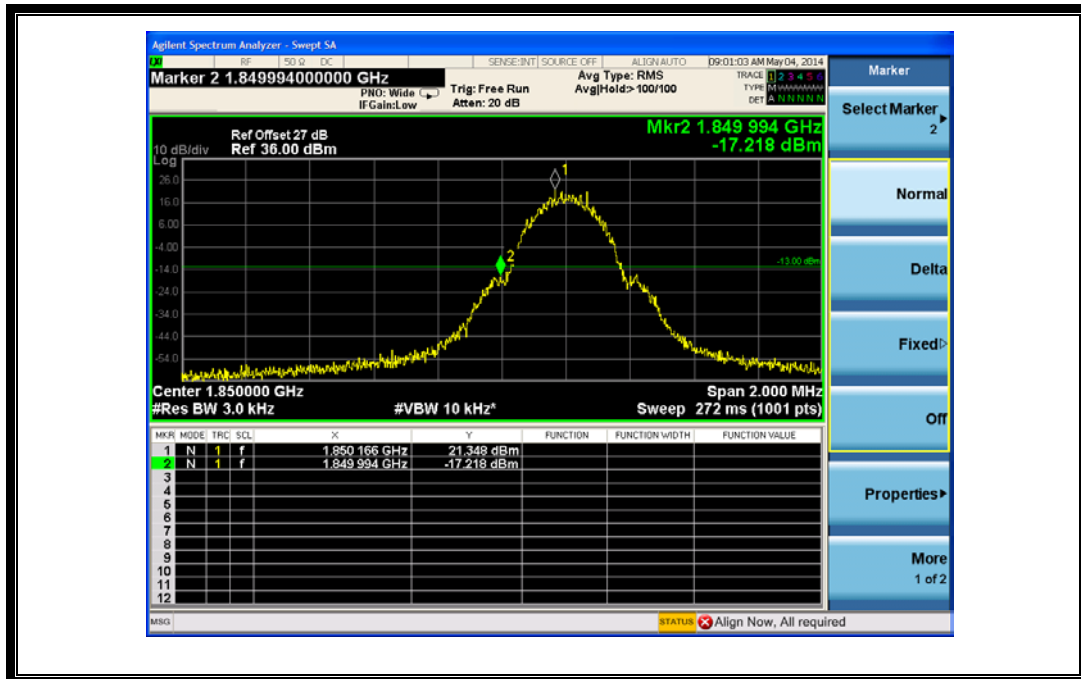
2. Test Plots:



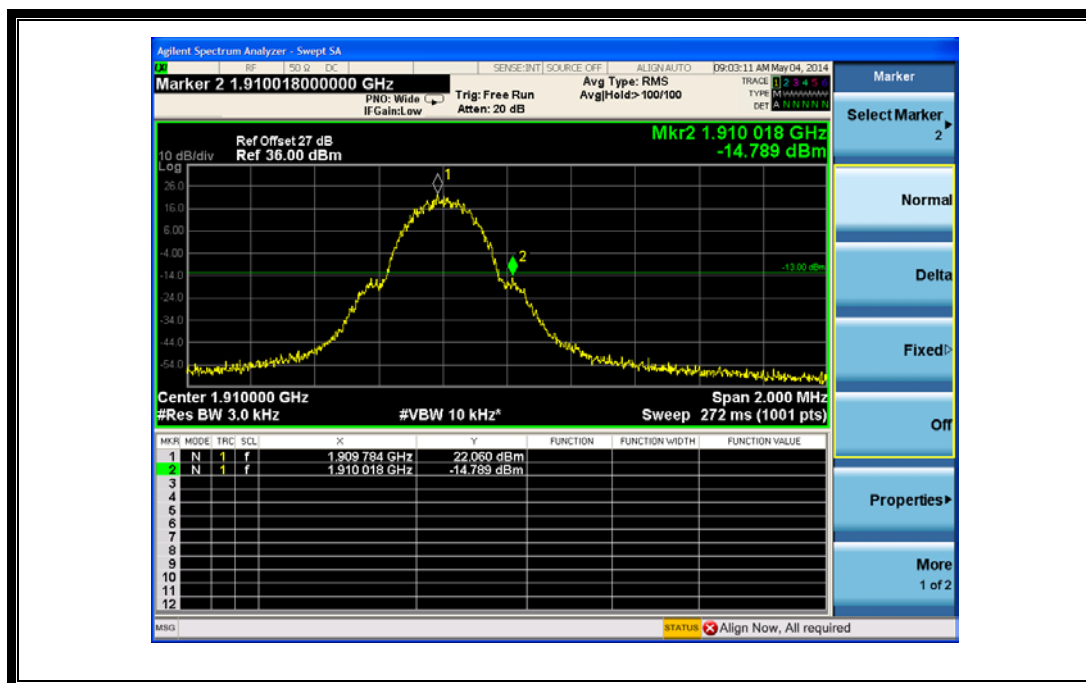
(Plot A: GSM 850 Channel = 128)



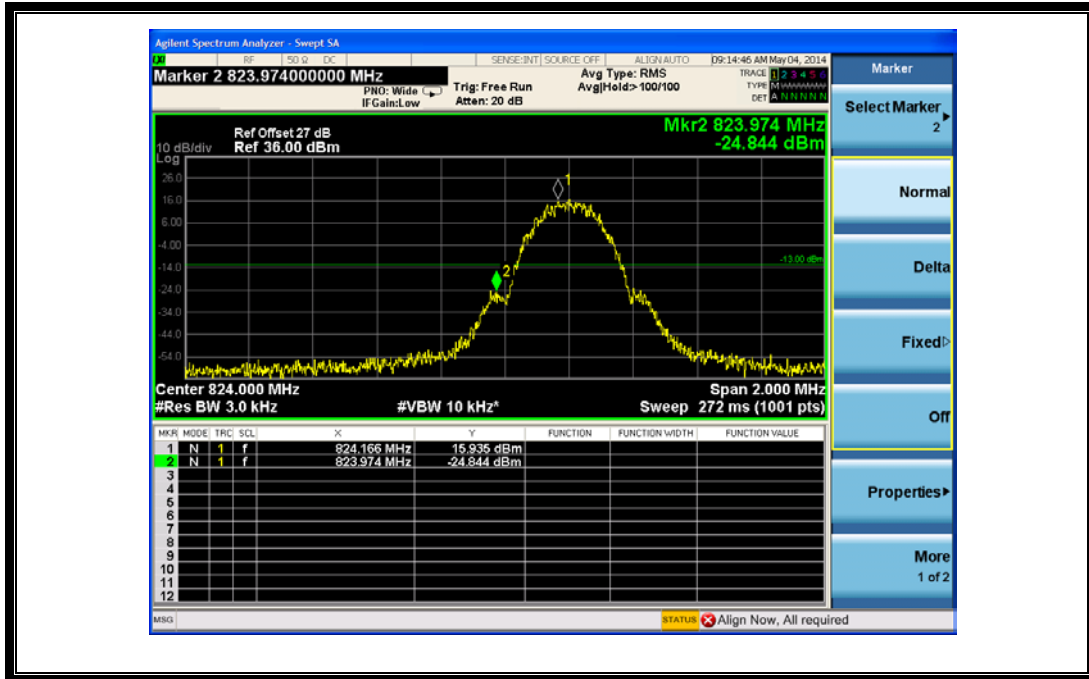
(Plot B: GSM 850 Channel = 251)



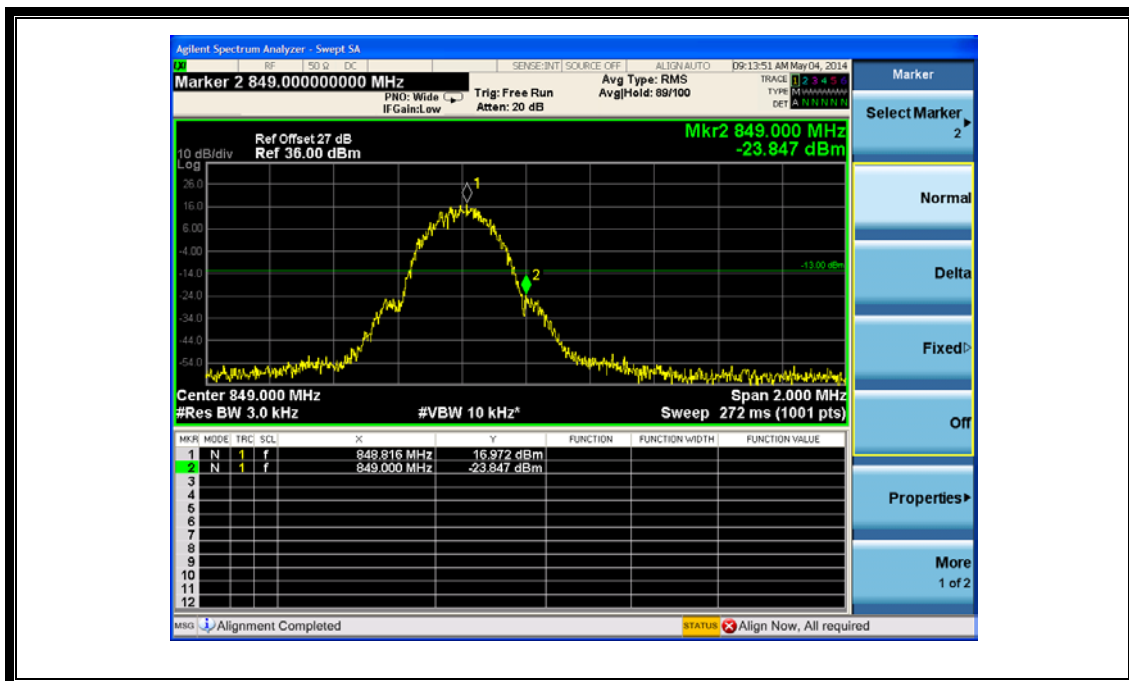
(Plot C: GSM 1900 Channel = 512)



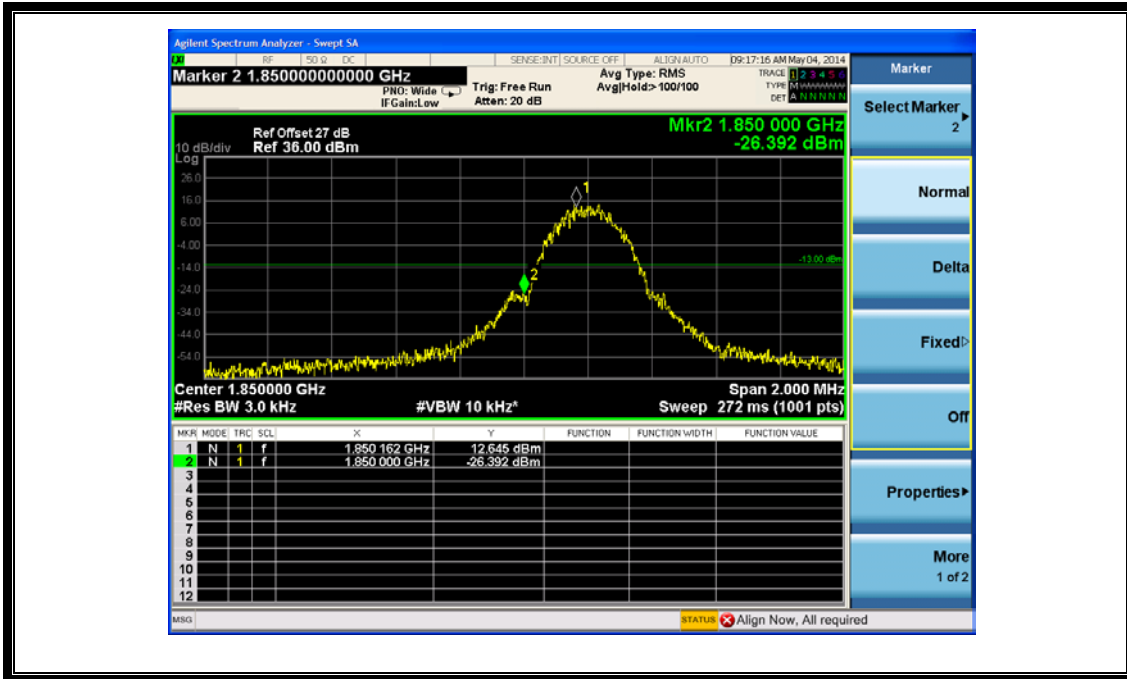
(Plot D: GSM 1900 Channel = 810)



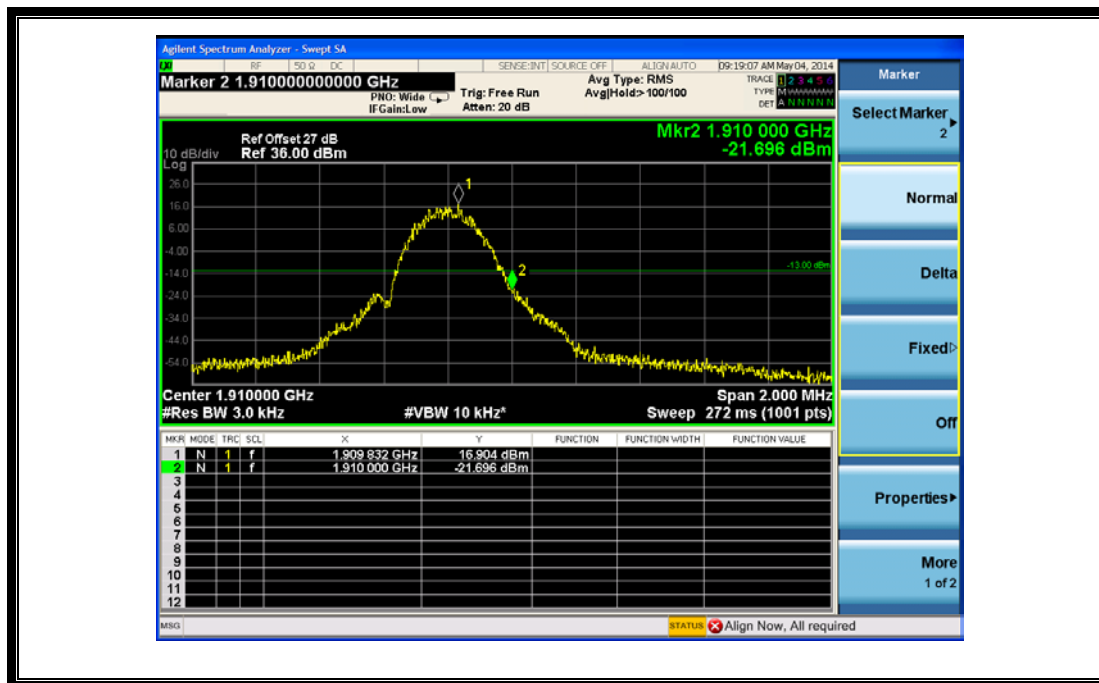
(Plot E: EGPRS 850 Channel = 128)



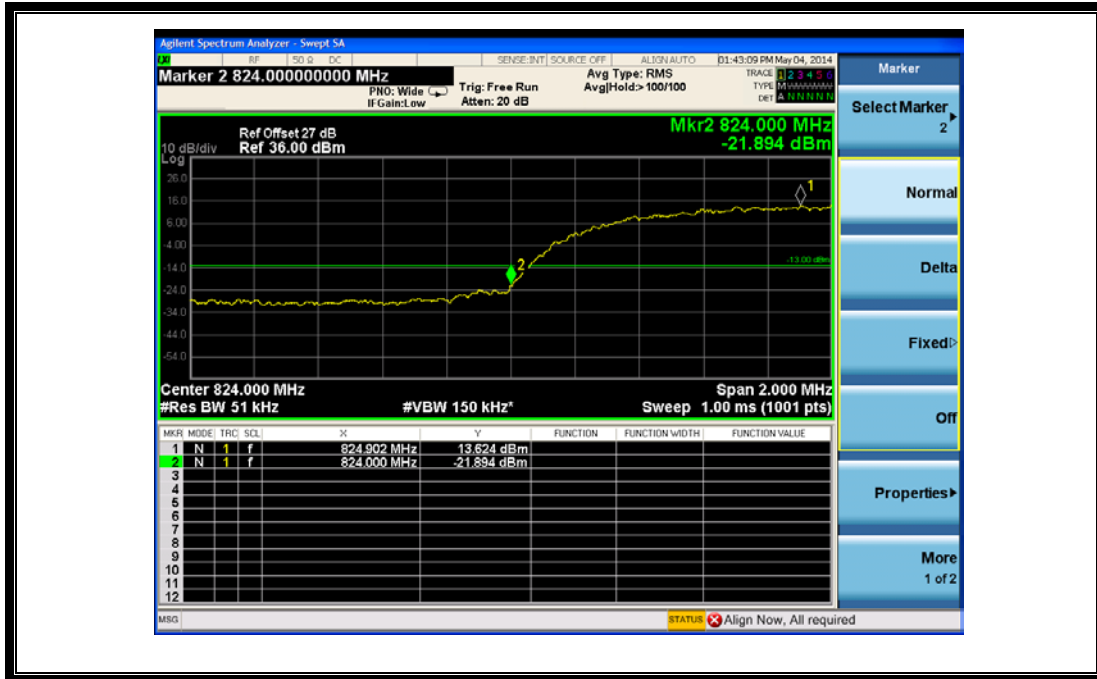
(Plot F: EGPRS 850 Channel = 251)



(Plot G: EGPRS 1900 Channel = 512)



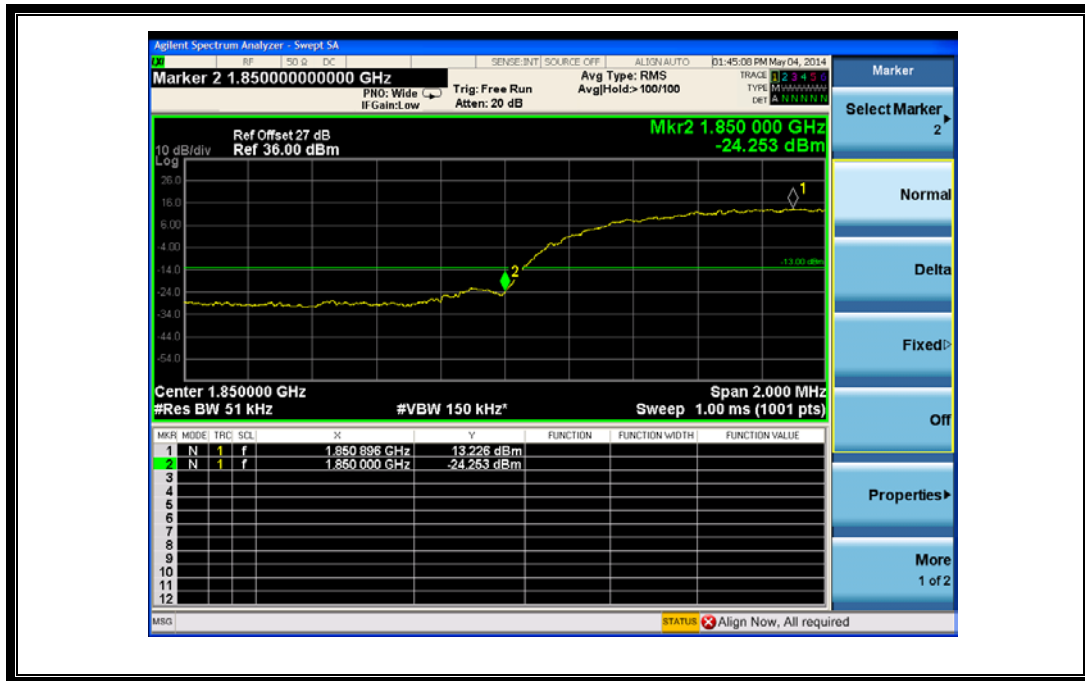
(Plot H: EGPRS 1900 Channel = 810)



(Plot I: WCDMA 850 Channel = 4132)



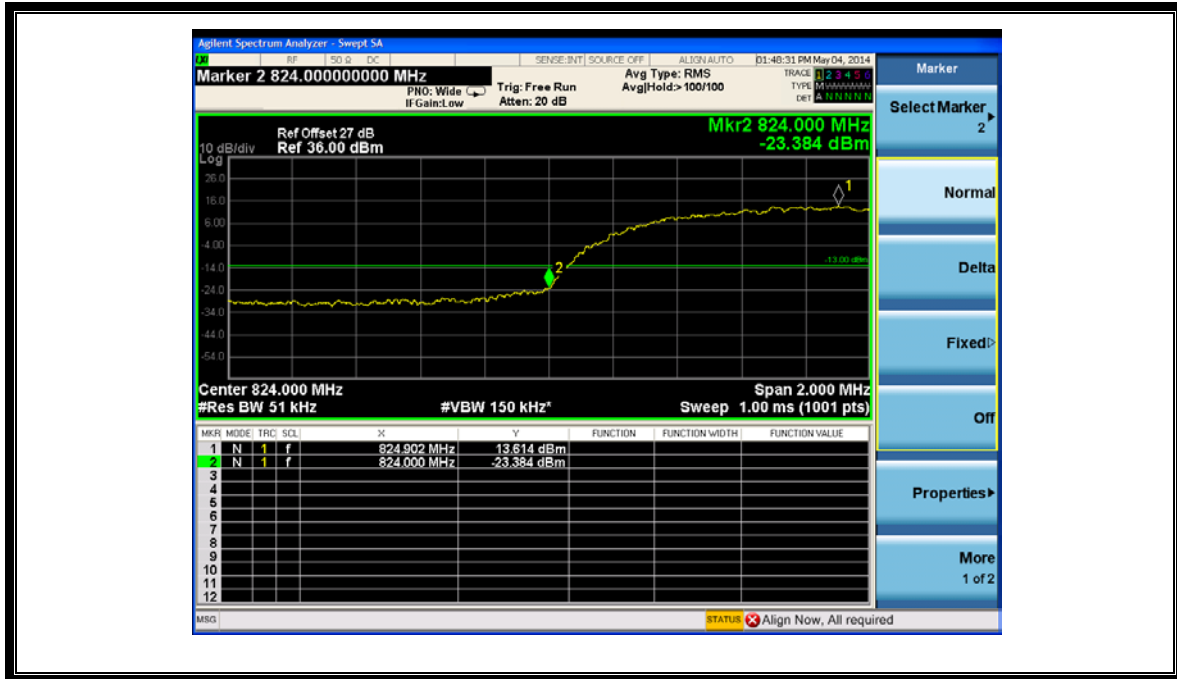
(Plot J: WCDMA 850 Channel = 4233)



(Plot K: WCDMA 1900 Channel = 9262)



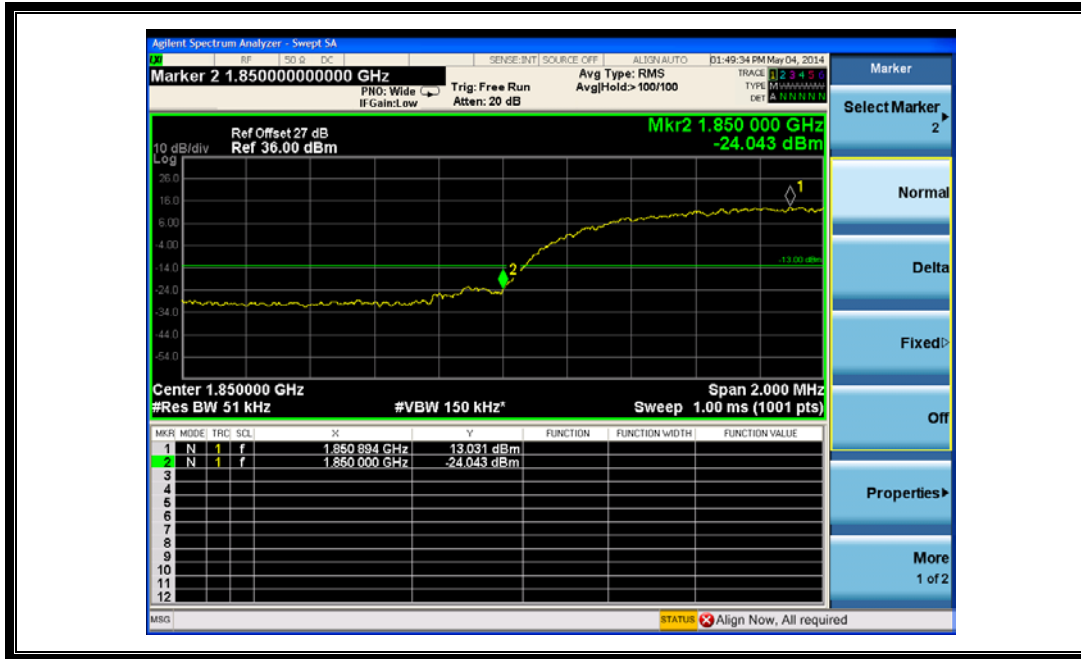
(Plot L: WCDMA 1900 Channel = 9538)



(Plot M: HSDPA 850 Channel = 4132)



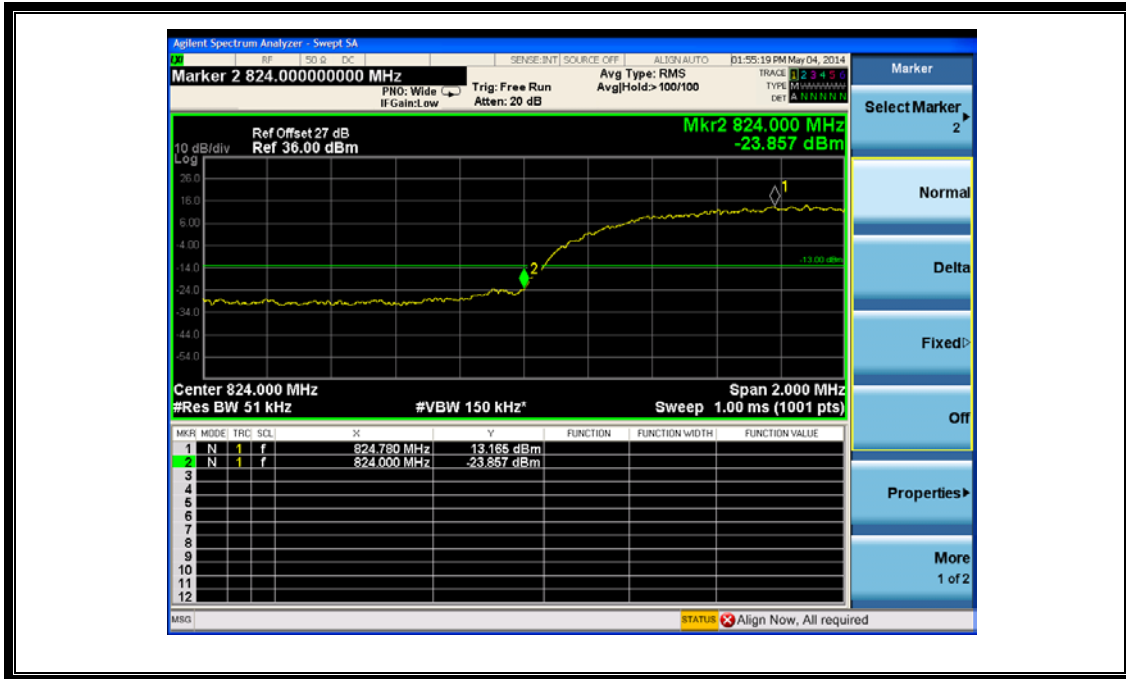
(Plot N: HSDPA850 Channel = 4233)



(Plot O: HSDPA 1900 Channel = 9262)



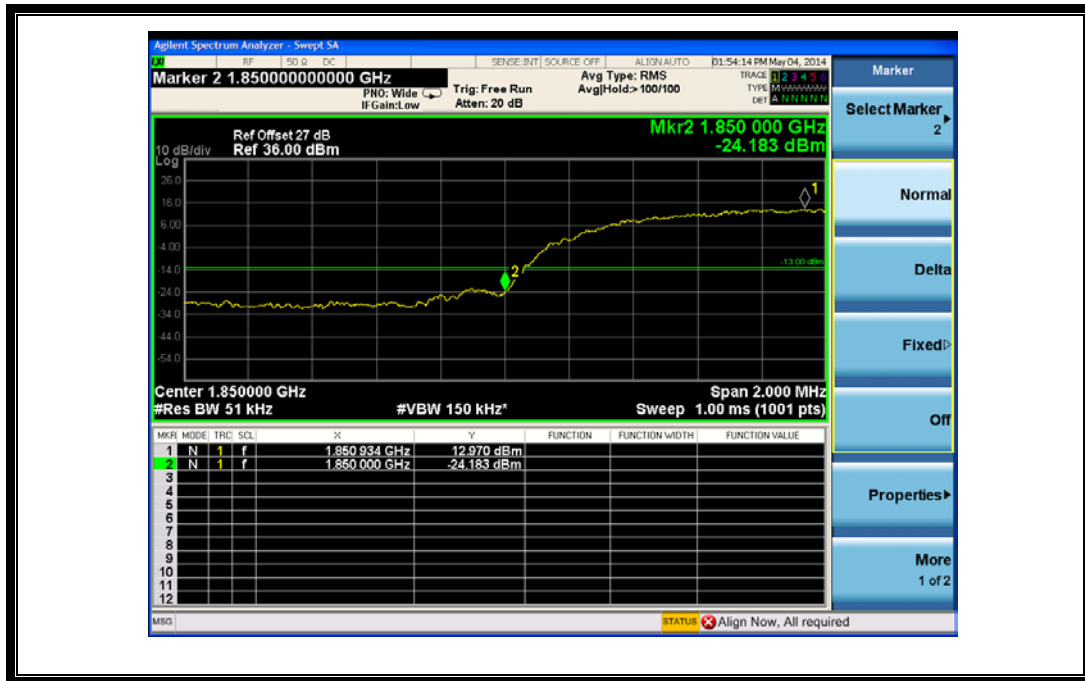
(Plot P: HSDPA 1900 Channel = 9538)



(Plot Q: HSUPA 850 Channel = 4132)



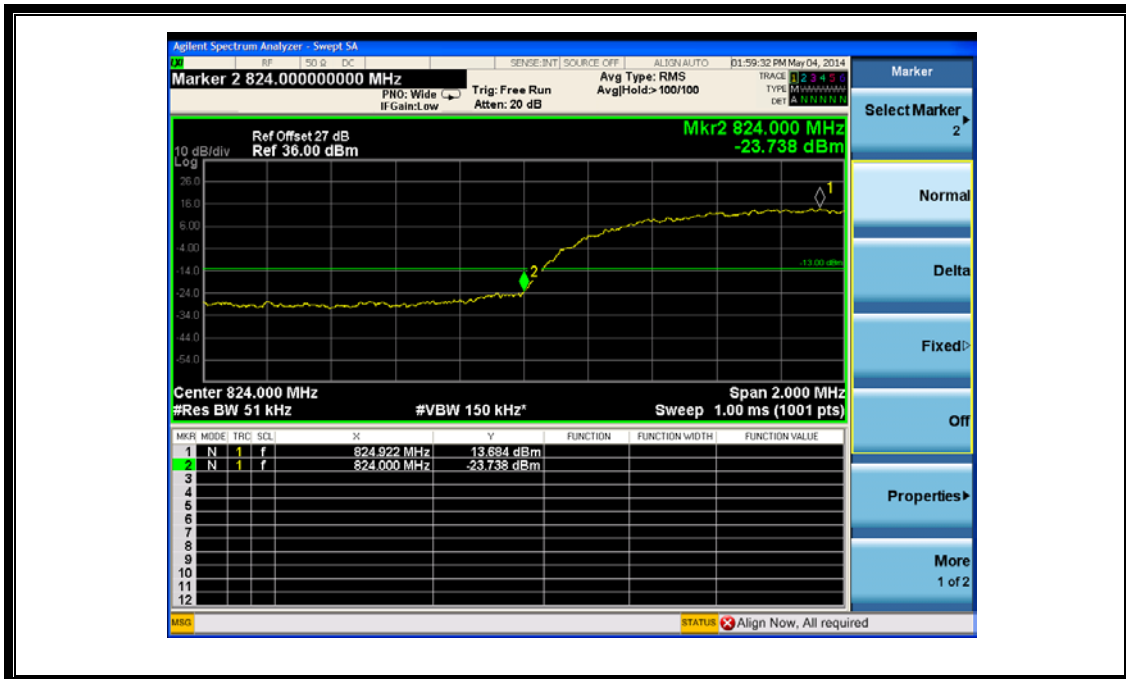
(Plot R: HSUPA850 Channel = 4233)



(Plot S: HSUPA 1900 Channel = 9262)



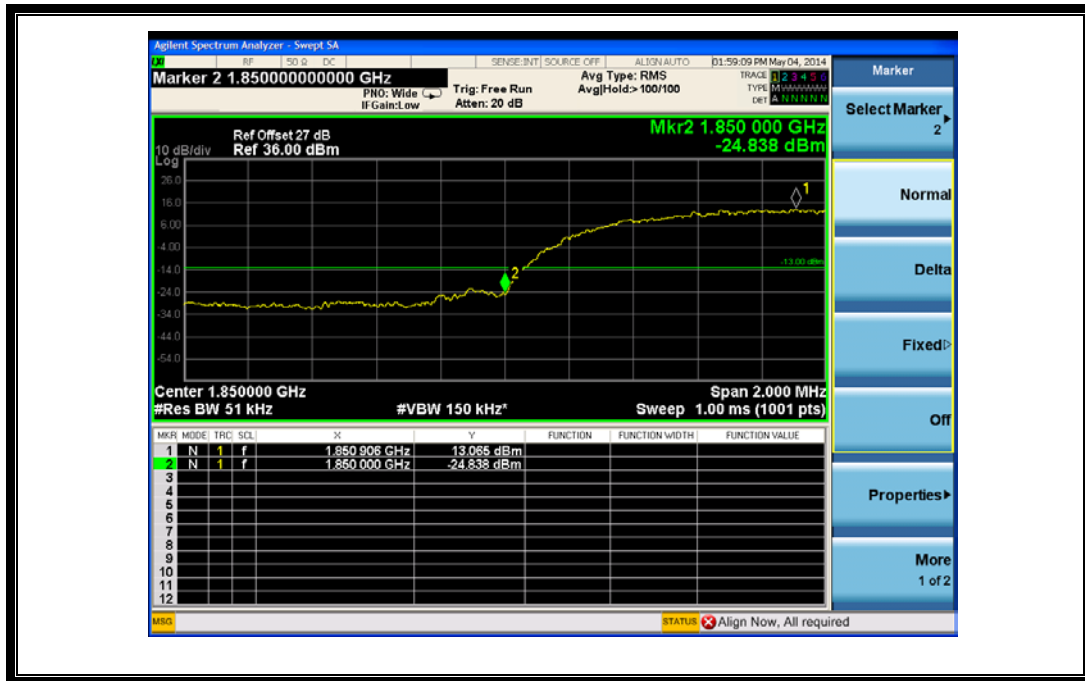
(Plot T: HSUPA 1900 Channel = 9538)



(Plot U: HSPA+ 850 Channel = 4132)



(Plot V: HSPA+ 850 Channel = 4233)



(Plot W: HSPA+ 1900 Channel = 9262)



(Plot X: HSPA+ 1900 Channel = 9538)

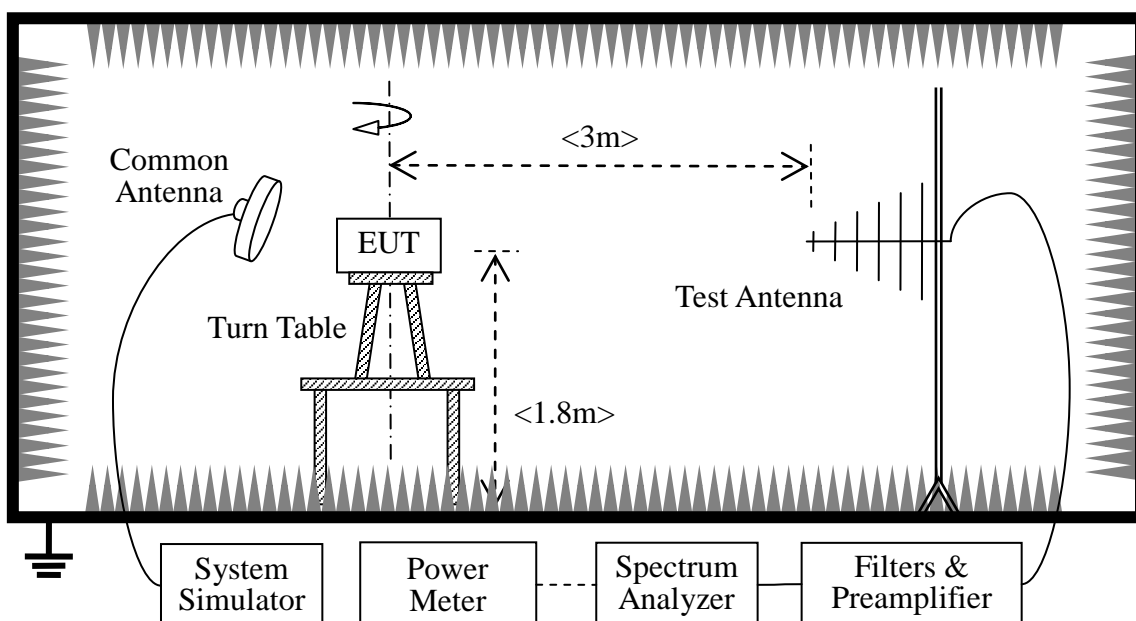
2.7 Transmitter Radiated Power (EIRP/ERP)

2.7.1 Requirement

According to FCC section 22.913 and IC RSS-GEN section 4.7 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 32.891dBm, GSM 1900 30.635dBm, EGPRS 850 29.928dBm, EGPRS 1900 28.790 dBm, WCDMA 850 23.48dBm, WCDMA 1900 23.30 dBm, Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

- Minimum RF power: GSM 850 3.1dBm, GSM 1900 0.3dBm, EGPRS 850 3.1dBm, EGPRS 1900

0.21dBm ,WCDMA 850 0.39dBm ,WCDMA 1900 0.5dBm.

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

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Pre-AMPs	lucix	S10M100L3802	S020180L3203	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1747.5-75-X2	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2014.02.26	2015.02.25

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:

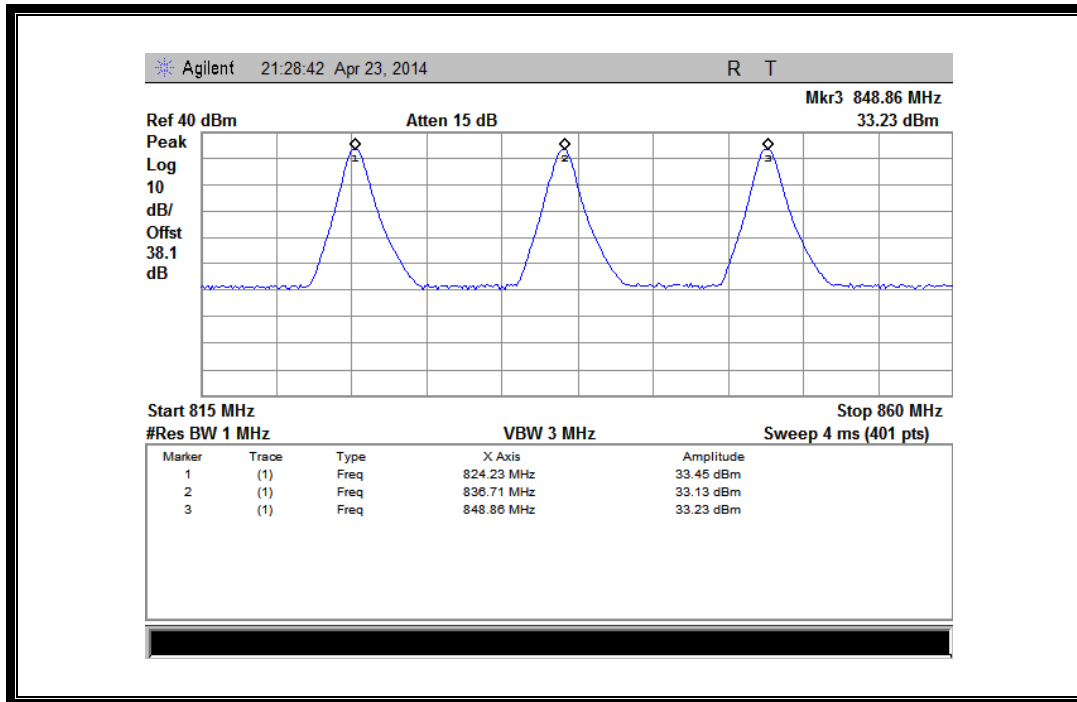
Band	Channel	Frequency (MHz)	PCL	Measured ERP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 850MHz	128	824.20	5	33.45	2.213	Plot A	38.5	7	PASS
	190	836.60	5	33.13	2.056				PASS
	251	848.80	5	33.23	2.104				PASS
GPRS 850MHz	128	824.20	5	33.37	2.173	Plot B ^{Note 1}	38.5	7	PASS
	190	836.60	5	33.07	2.028				PASS
	251	848.80	5	33.51	2.244				PASS
EGPRS 850MHz	128	824.20	5	33.14	2.061	Plot C ^{Note 1}	38.5	7	PASS
	190	836.60	5	33.12	2.051				PASS
	251	848.80	5	33.41	2.193				PASS
Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 1900MHz	512	1850.2	0	31.29	1.346	Plot D	33	2	PASS
	661	1880.0	0	31.17	1.309				PASS
	810	1909.8	0	31.6	1.445				PASS
GPRS 1900MHz	512	1850.2	0	31.71	1.483	Plot E ^{Note 1}	33	2	PASS
	661	1880.0	0	31.17	1.309				PASS
	810	1909.8	0	31.42	1.387				PASS
EGPRS 1900MHz	512	1850.2	0	31.18	1.312	Plot F ^{Note 1}	33	2	PASS
	661	1880.0	0	31.14	1.300				PASS
	810	1909.8	0	31.66	1.466				PASS
Note 1:	For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.								

2. WCDMA Model Test Verdict:

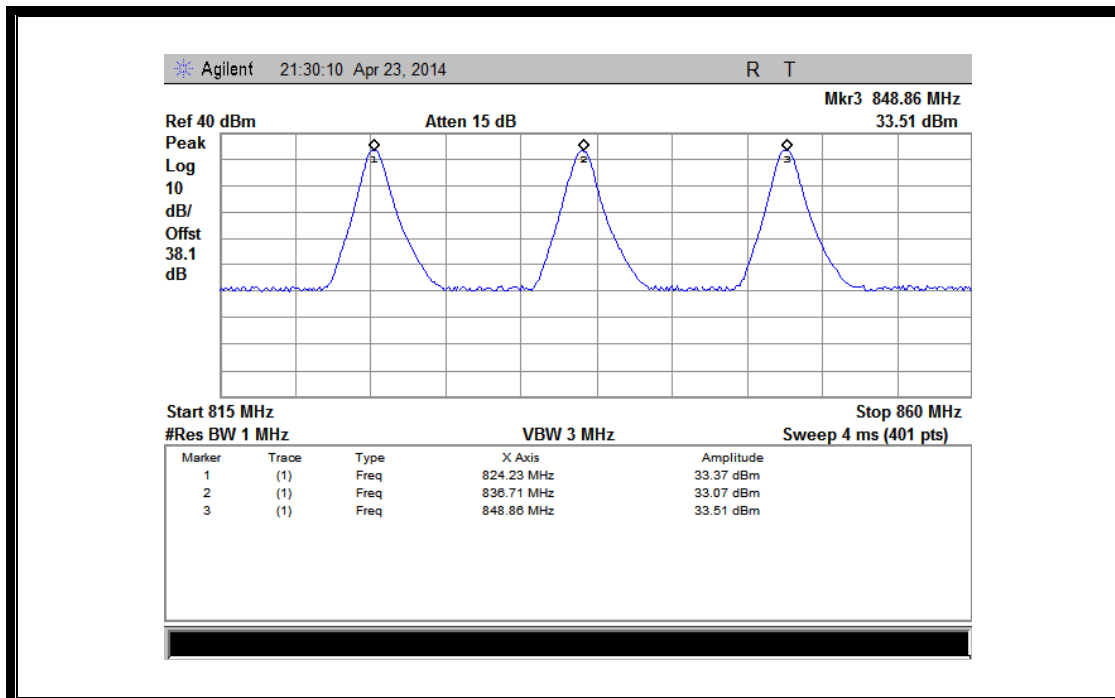
Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	25.68	0.370	Plot G	38.5	7	PASS
	4175	835	25.89	0.388				PASS
	4233	846.6	26.38	0.435				PASS
HSDPA 850MHz	4132	826.4	25.57	0.361	Plot H	38.5	7	PASS
	4175	835	26.01	0.399				PASS
	4233	846.6	26.47	0.444				PASS
HSUPA 850MHz	4132	826.4	25.56	0.360	Plot I	38.5	7	PASS
	4175	835	25.97	0.395				PASS
	4233	846.6	26.45	0.442				PASS
HSPA+ 850MHz	4132	826.4	25.6	0.363	Plot J	38.5	7	PASS
	4175	835	25.99	0.397				PASS
	4233	846.6	26.33	0.430				PASS

Band	Channel	Frequency (MHz)	Measured EIRP			Limit		Verdict
			dBm	W		dBm	W	
WCDMA 1900MHz	9262	1852.4	25.57	0.361	Plot K	33	2	PASS
	9400	1880	24.55	0.285				PASS
	9538	1907.6	25.03	0.318				PASS
HSDPA 1900MHz	9262	1852.4	25.6	0.363	Plot L	33	2	PASS
	9400	1880	24.38	0.274				PASS
	9538	1907.6	24.95	0.313				PASS
HSUPA 1900MHz	9262	1852.4	25.75	0.376	Plot M	33	2	PASS
	9400	1880	24.44	0.278				PASS
	9538	1907.6	24.71	0.296				PASS
HSPA+ 1900MHz	9262	1852.4	24.4	0.275	Plot N	33	2	PASS
	9400	1880	24.57	0.286				PASS
	9538	1907.6	25.4	0.347				PASS

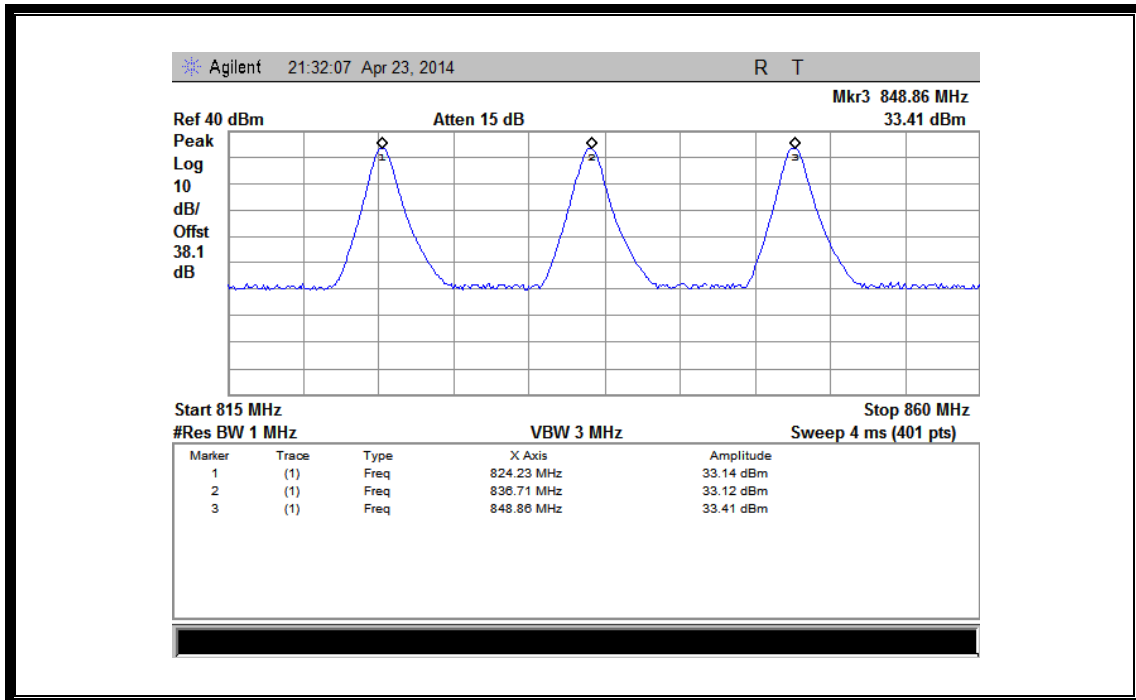
3. Test Plots:



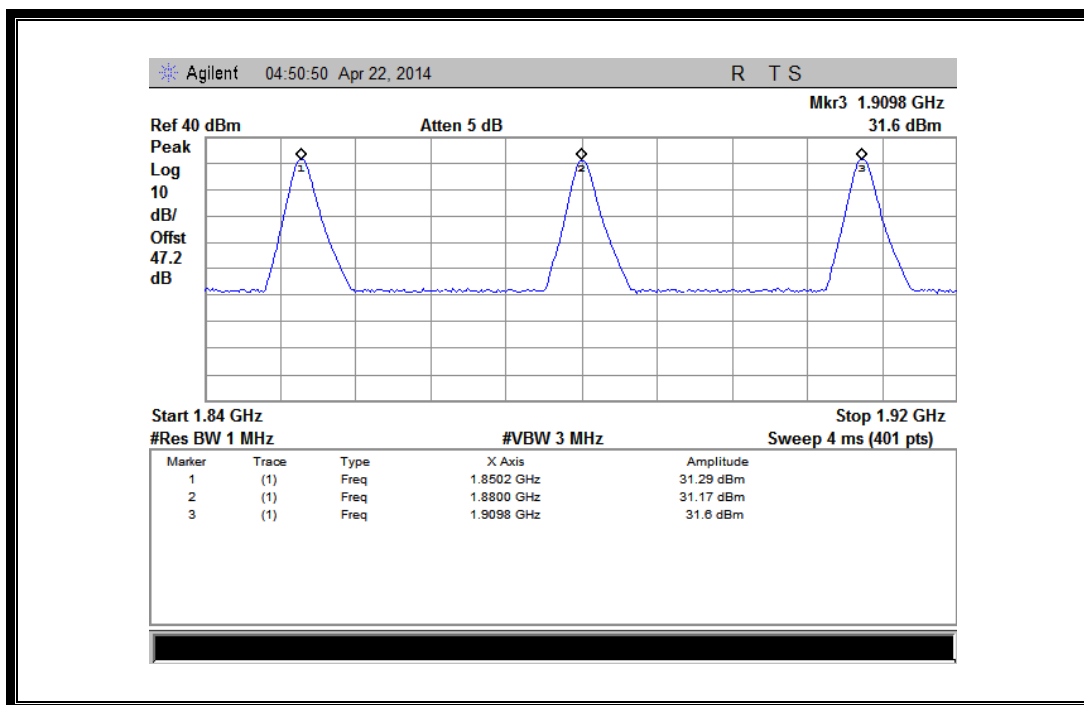
(Plot A: GSM 850MHz Channel = 128, 190, 251)



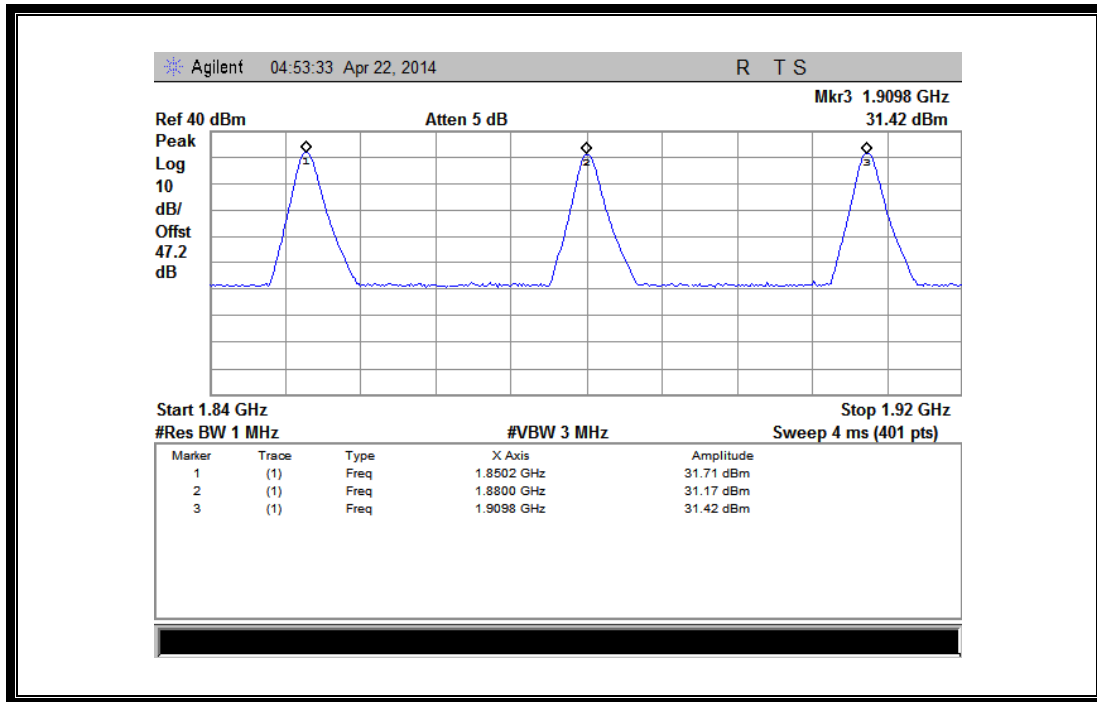
(Plot B: GPRS 850MHz Channel = 128, 190, 251)



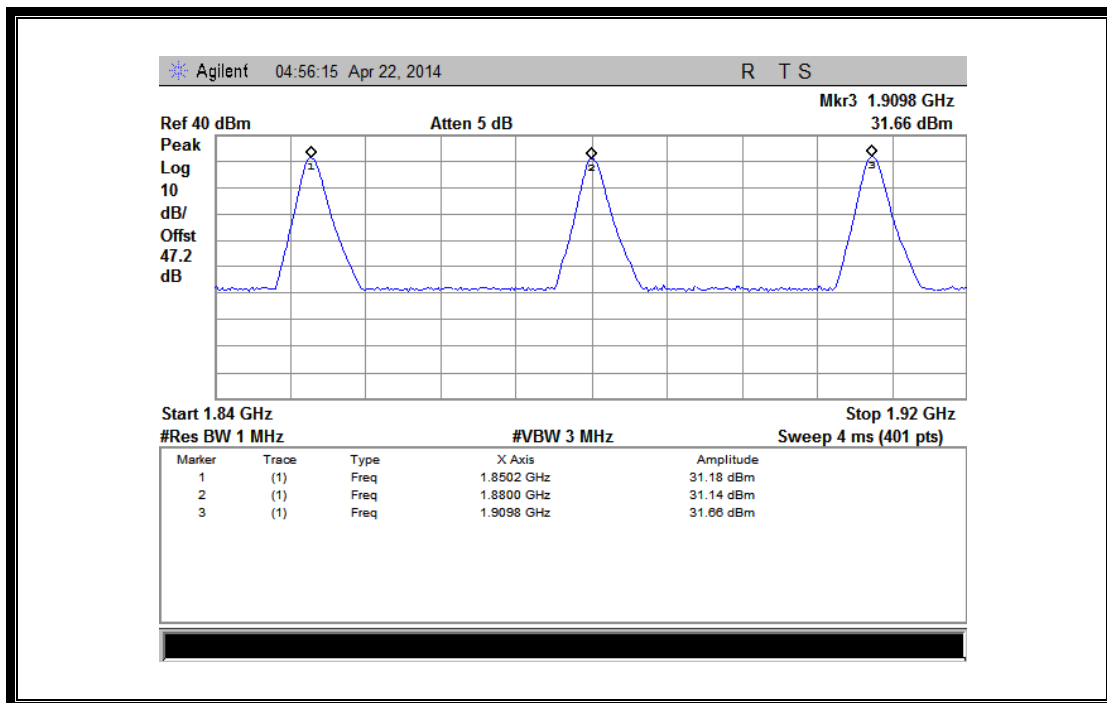
(Plot C: EGPRS 850MHz Channel = 128, 190, 251)



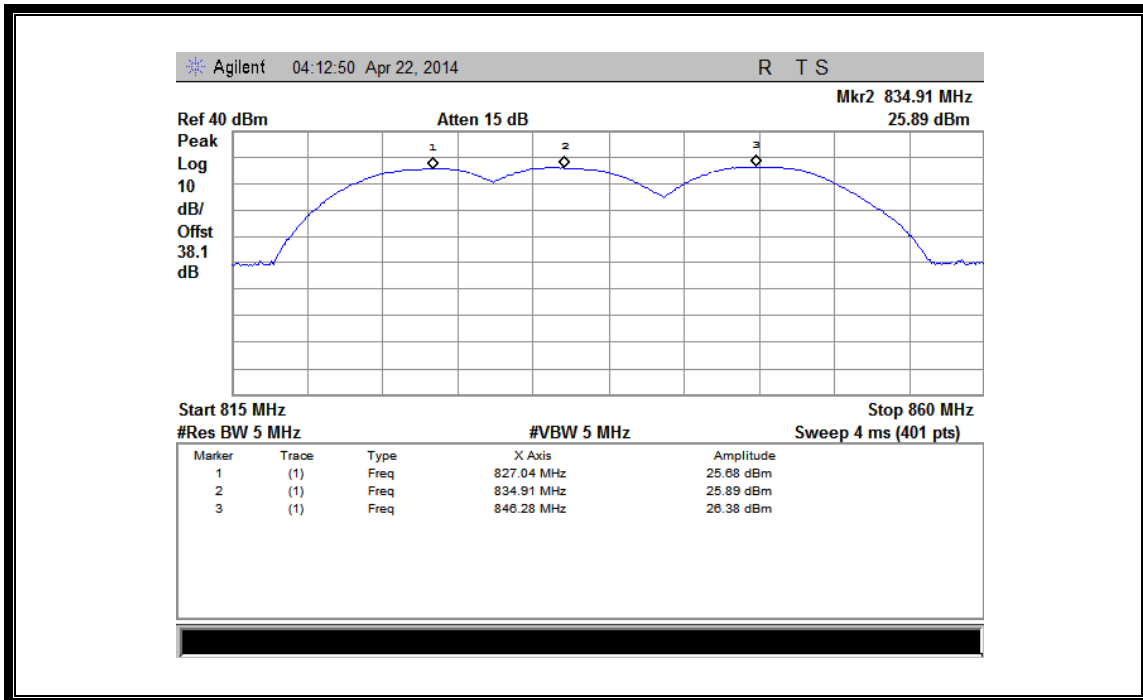
(Plot D: GSM 1900MHz Channel = 512, 661, 810)



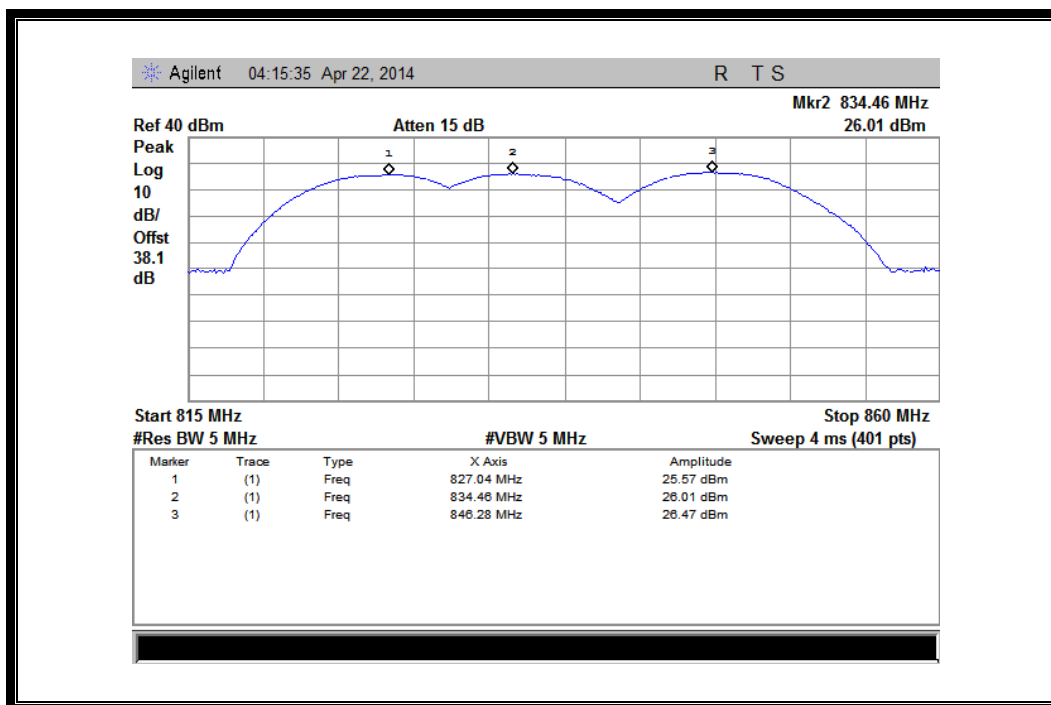
(Plot E: GPRS 1900MHz Channel = 512, 661, 810)



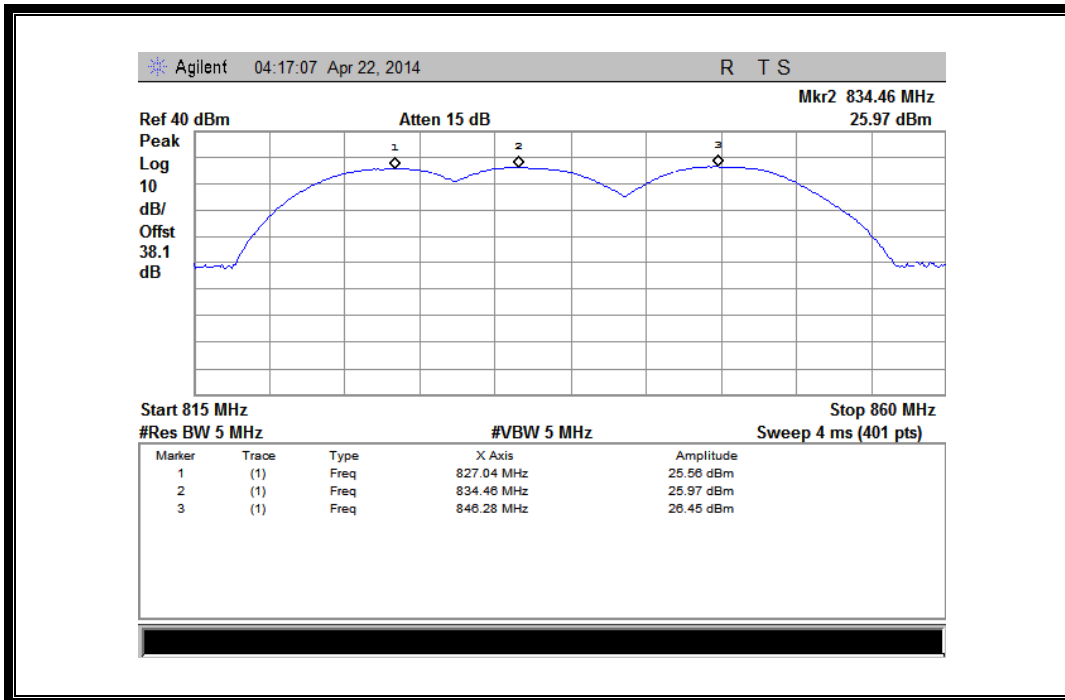
(Plot F: EGPRS 1900MHz Channel = 512, 661, 810)



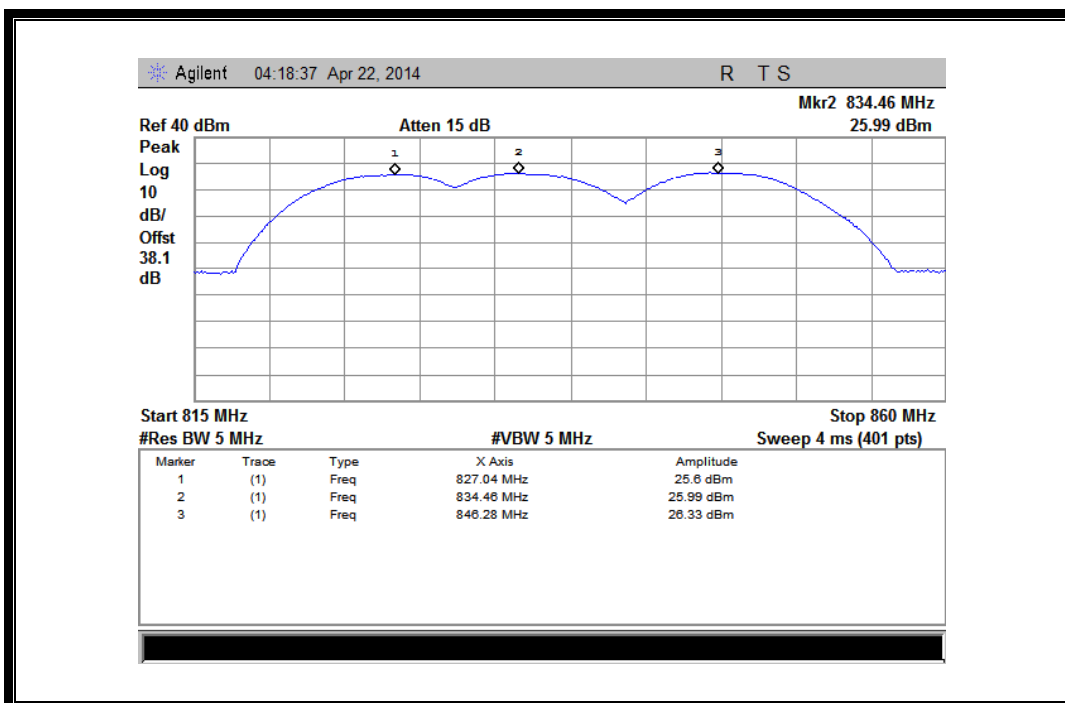
(Plot G: WCDMA 850 MHz Channel = 4132, 4175, 4233)



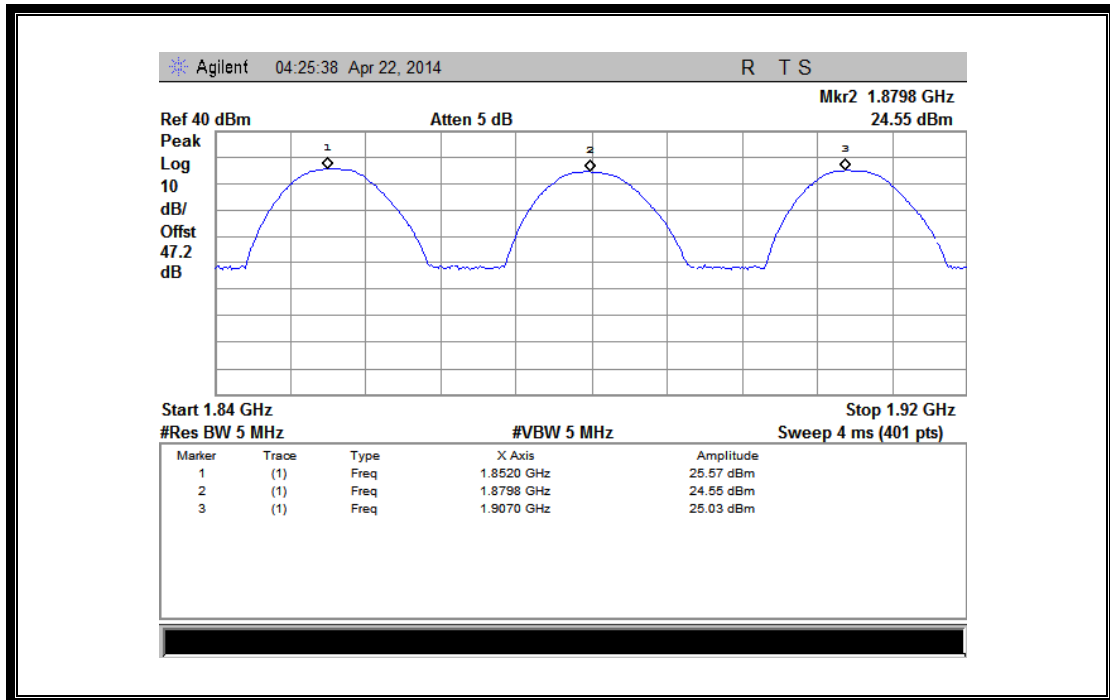
(Plot H: HSDPA 850 MHz Channel = 4132, 4175, 4233)



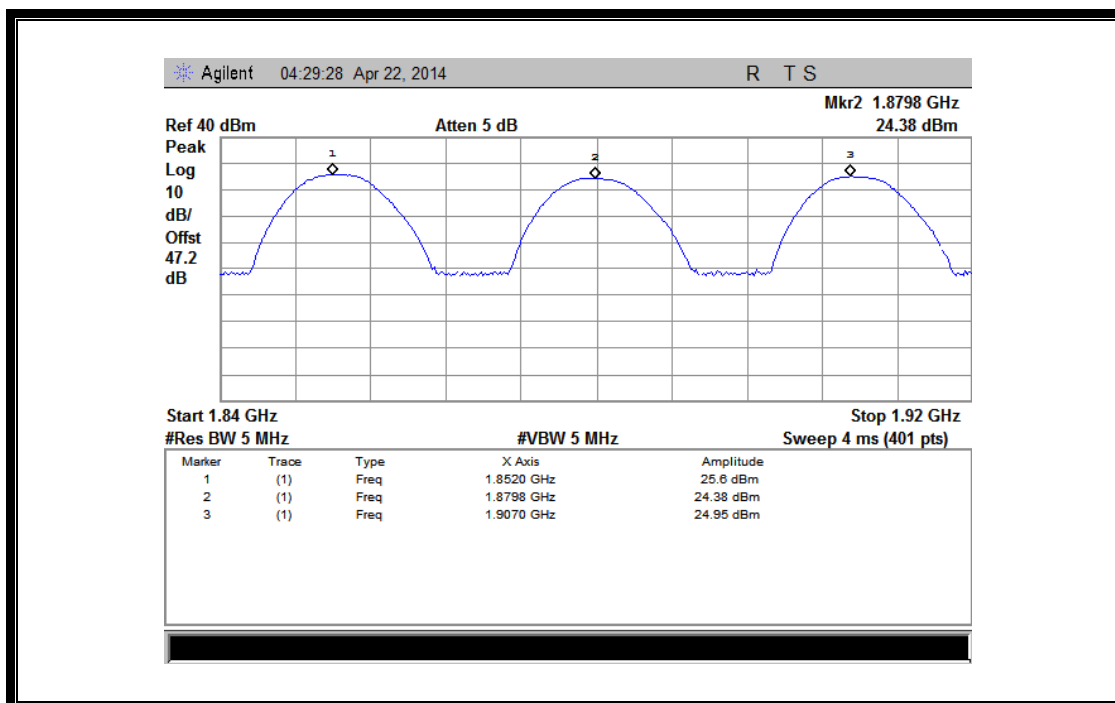
(Plot I: HSUPA 850 MHz Channel = 4132, 4175, 4233)



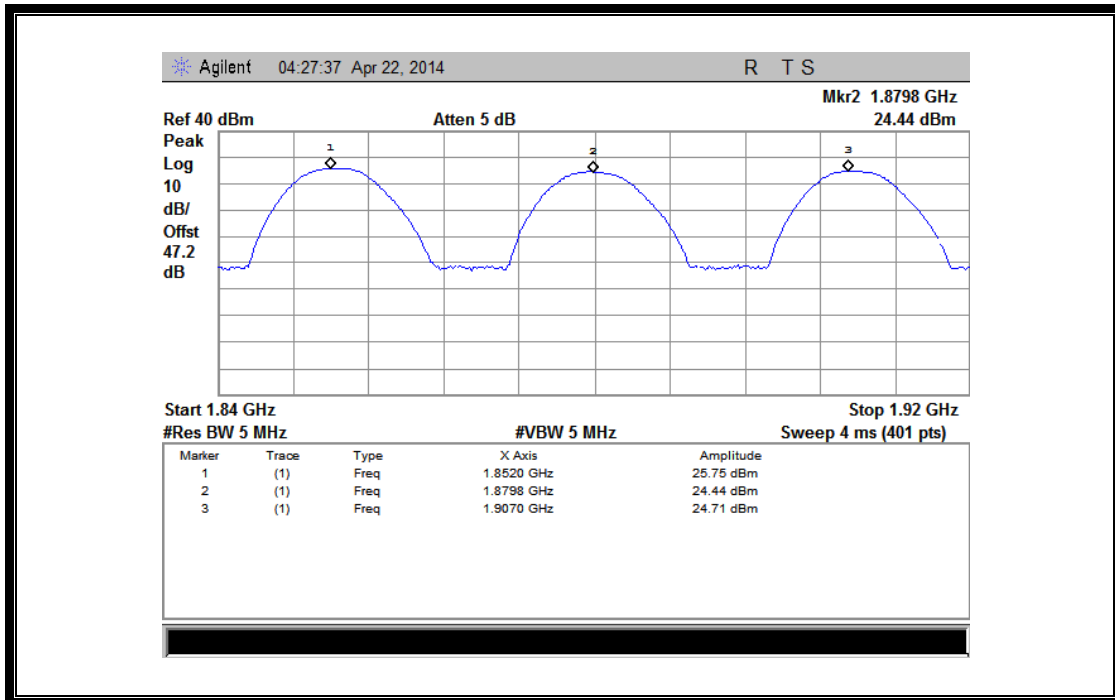
(Plot J: HSPA+ 850 MHz Channel = 4132, 4175, 4233)



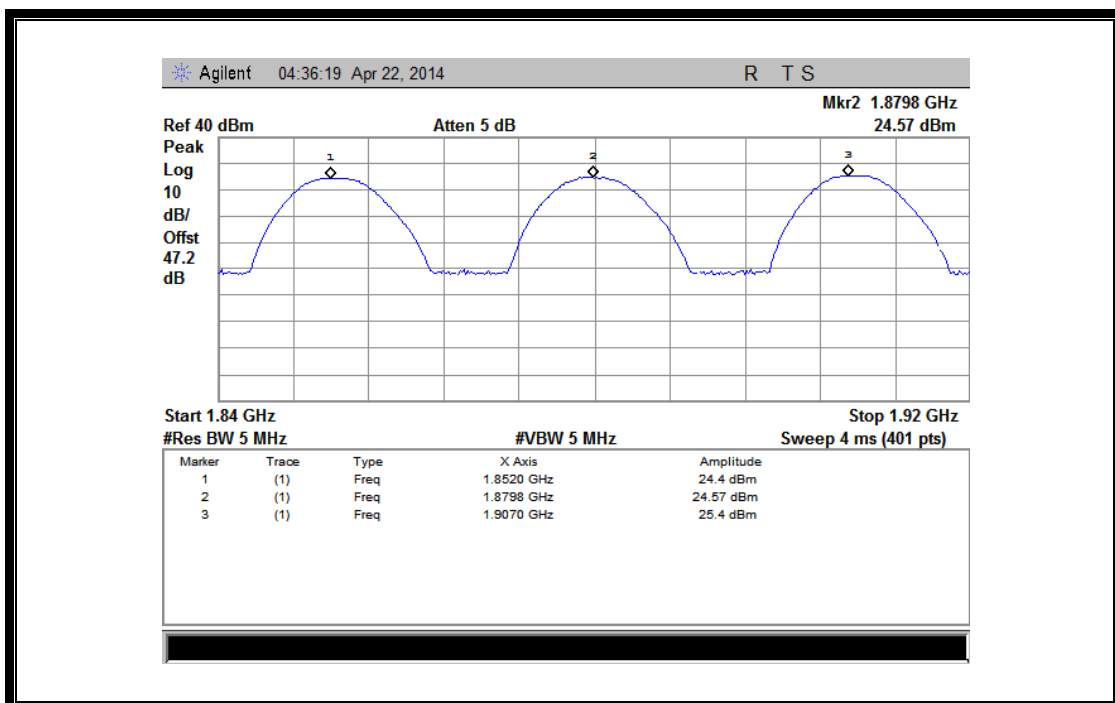
(Plot K: WCDMA 1900 MHz Channel = 9262, 9400, 9538)



(Plot L: HSDPA 1900 MHz Channel = 9262, 9400, 9538)



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



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

2.8 Radiated Out of Band Emissions

2.8.1 Requirement

According to FCC section 22.917(a) and section 24.238(a) and IC RSS-GEN section 4.7 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	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Pre-AMPs	lucix	S10M100L3802	S020180L3203	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1747.5-75-X2	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2014.02.26	2015.02.25

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:

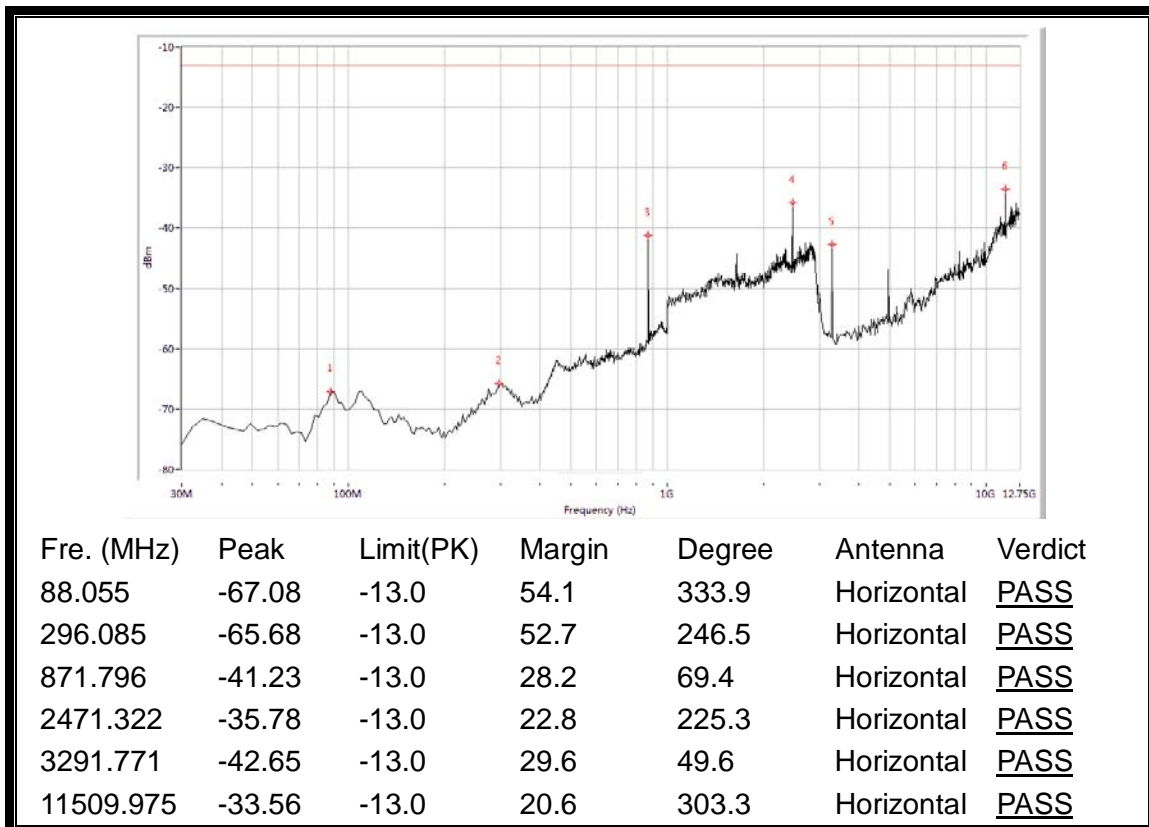
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
GSM 850MHz	128	824.2	< -25	< -25	Plot A.1/A.2	-13	<u>PASS</u>
	190	836.6	< -25	< -25	Plot A.3/A.4		<u>PASS</u>
	251	848.8	< -25	< -25	Plot A.5/A.6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

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
	9538	1907.6	< -25	< -25	Plot L.5/L.6		<u>PASS</u>

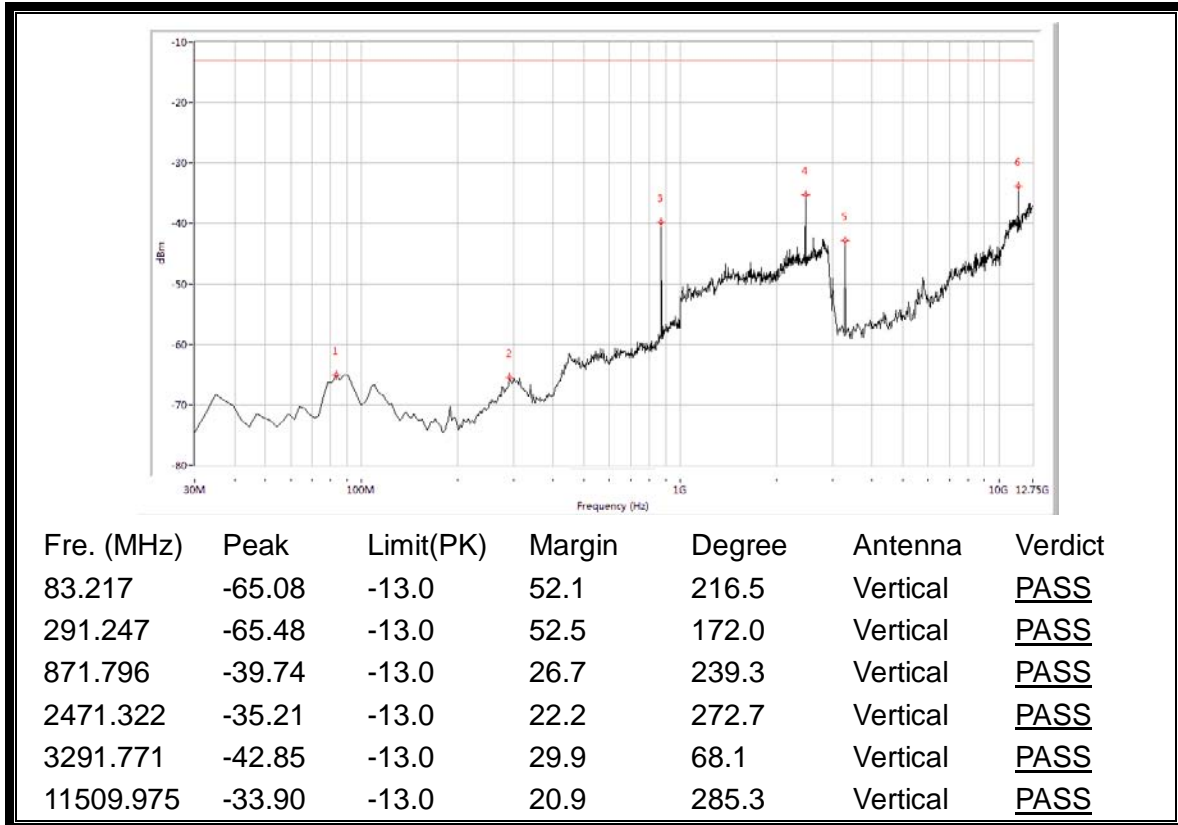
2. Test Plots for the Whole Measurement Frequency Range:

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

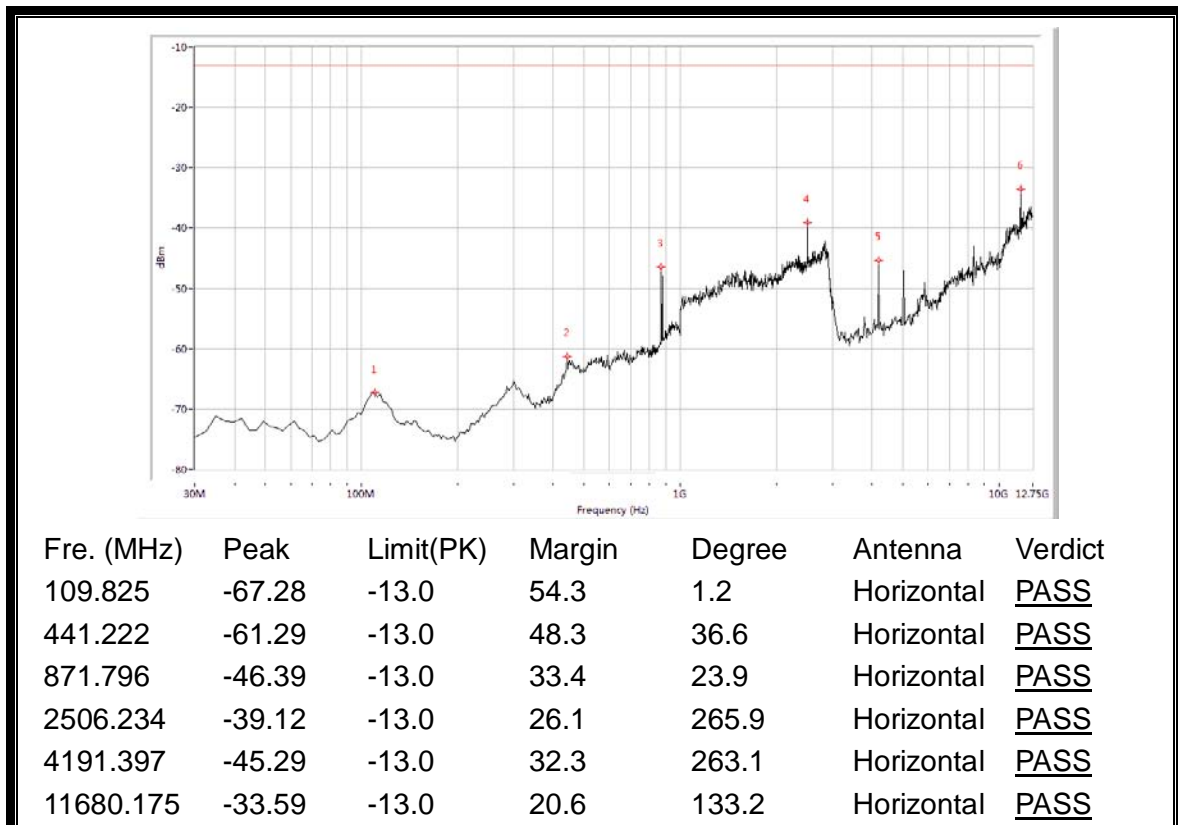
Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.



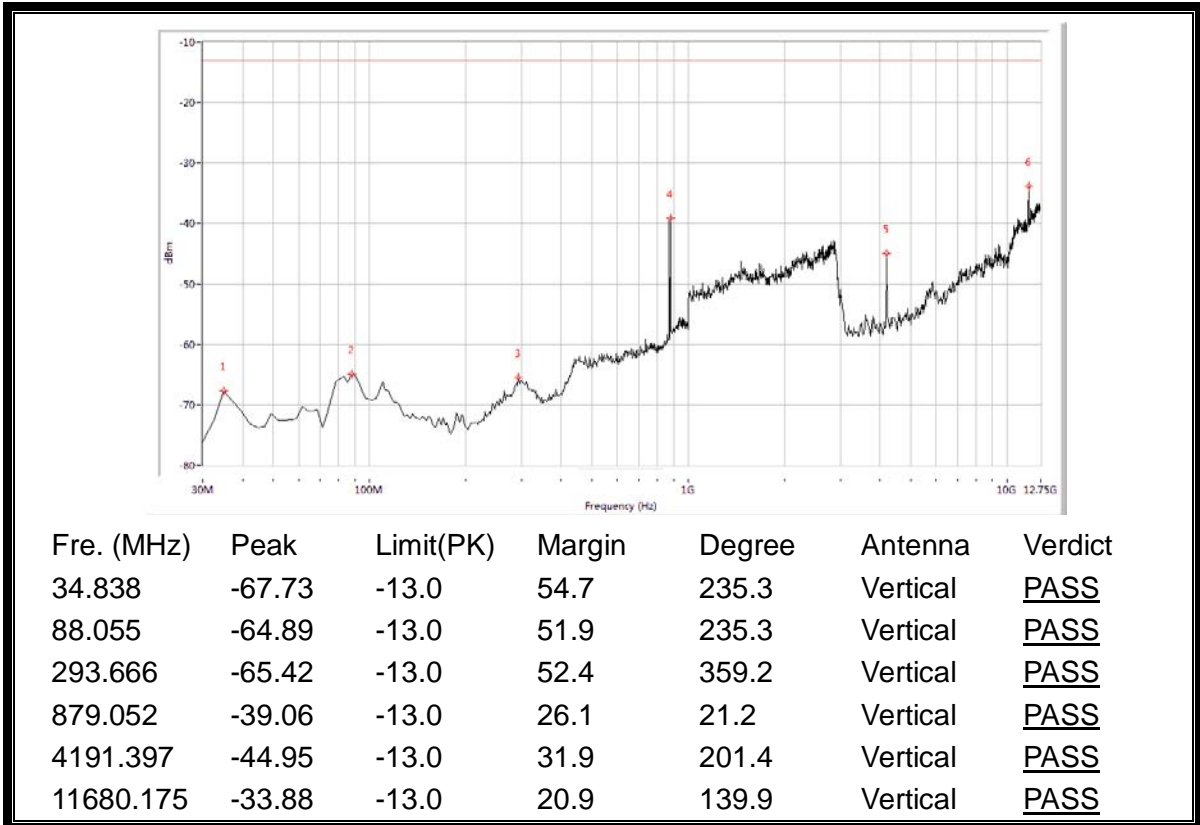
(Plot A.1: GSM 850MHz Channel = 128, Test Antenna Horizontal)



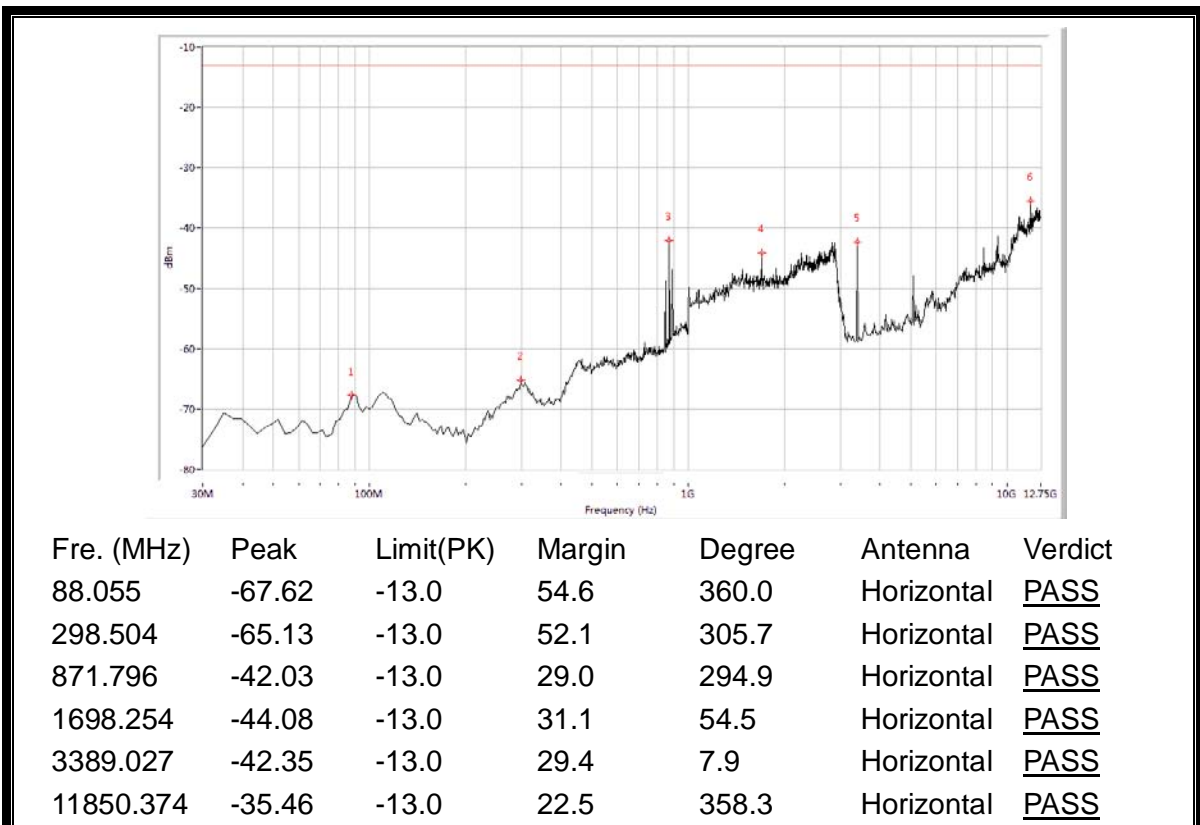
(Plot A.2: GSM 850MHz Channel = 128, Test Antenna Vertical)



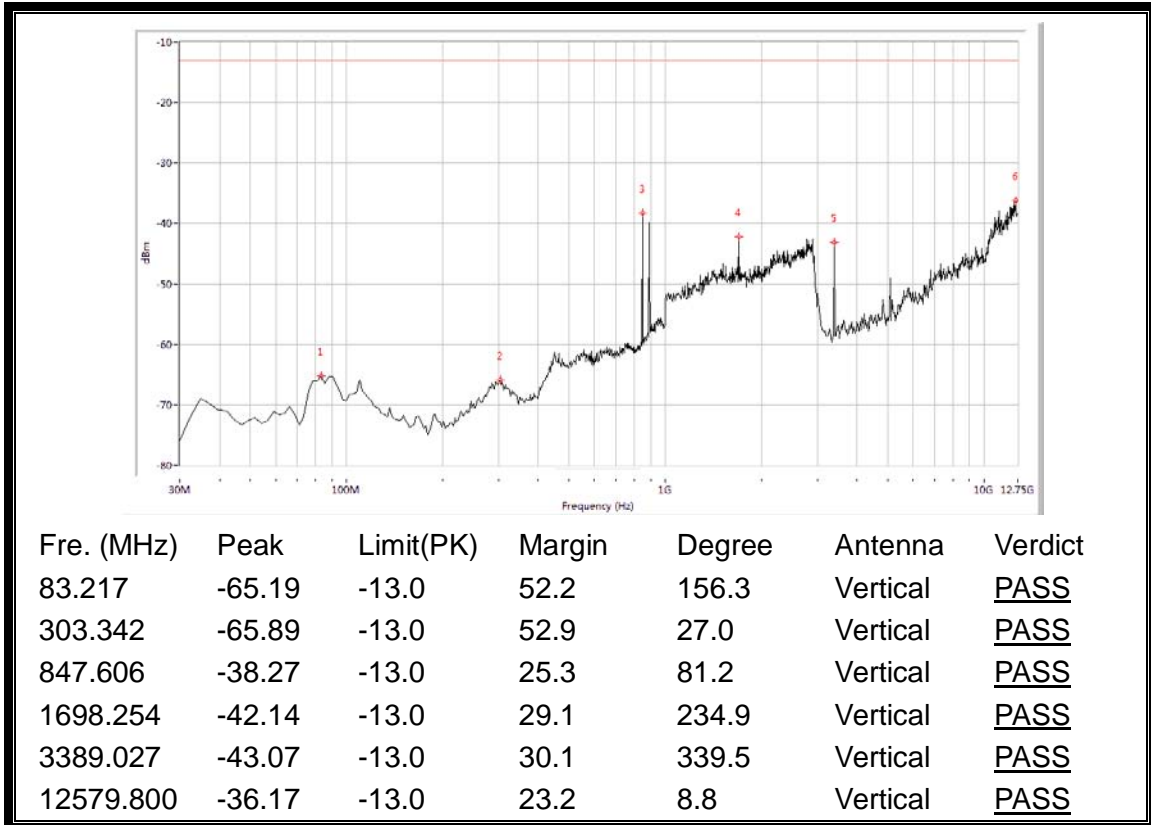
(Plot A.3: GSM 850MHz Channel = 190, Test Antenna Horizontal)



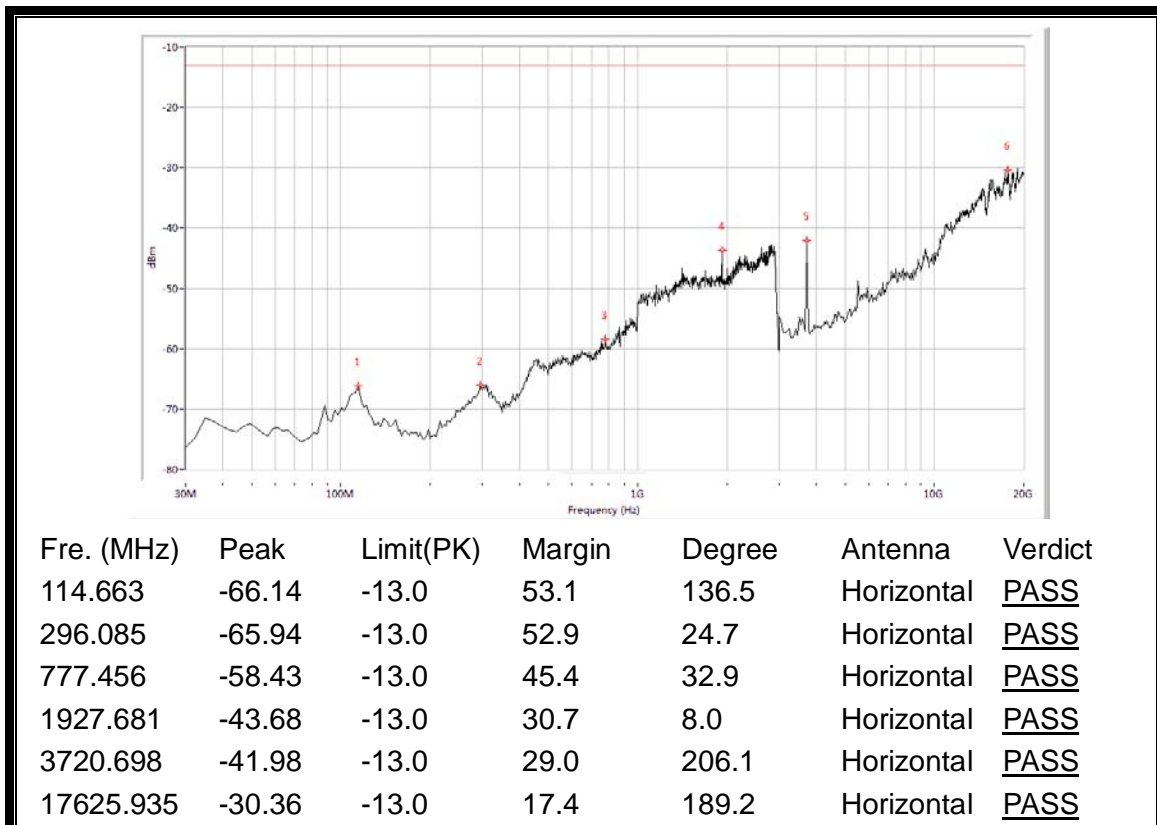
(Plot A.4: GSM 850MHz Channel = 190, Test Antenna Vertical)



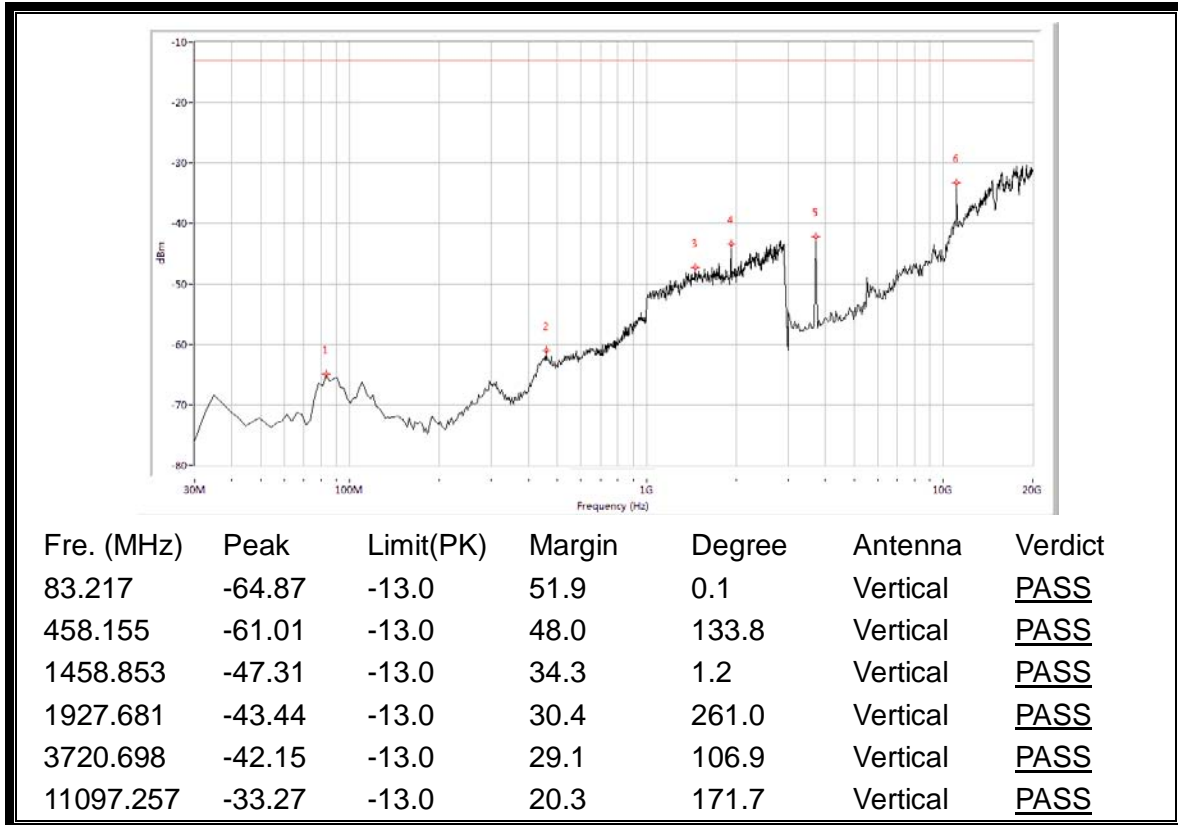
(Plot A.5: GSM 850MHz Channel = 251, Test Antenna Horizontal)



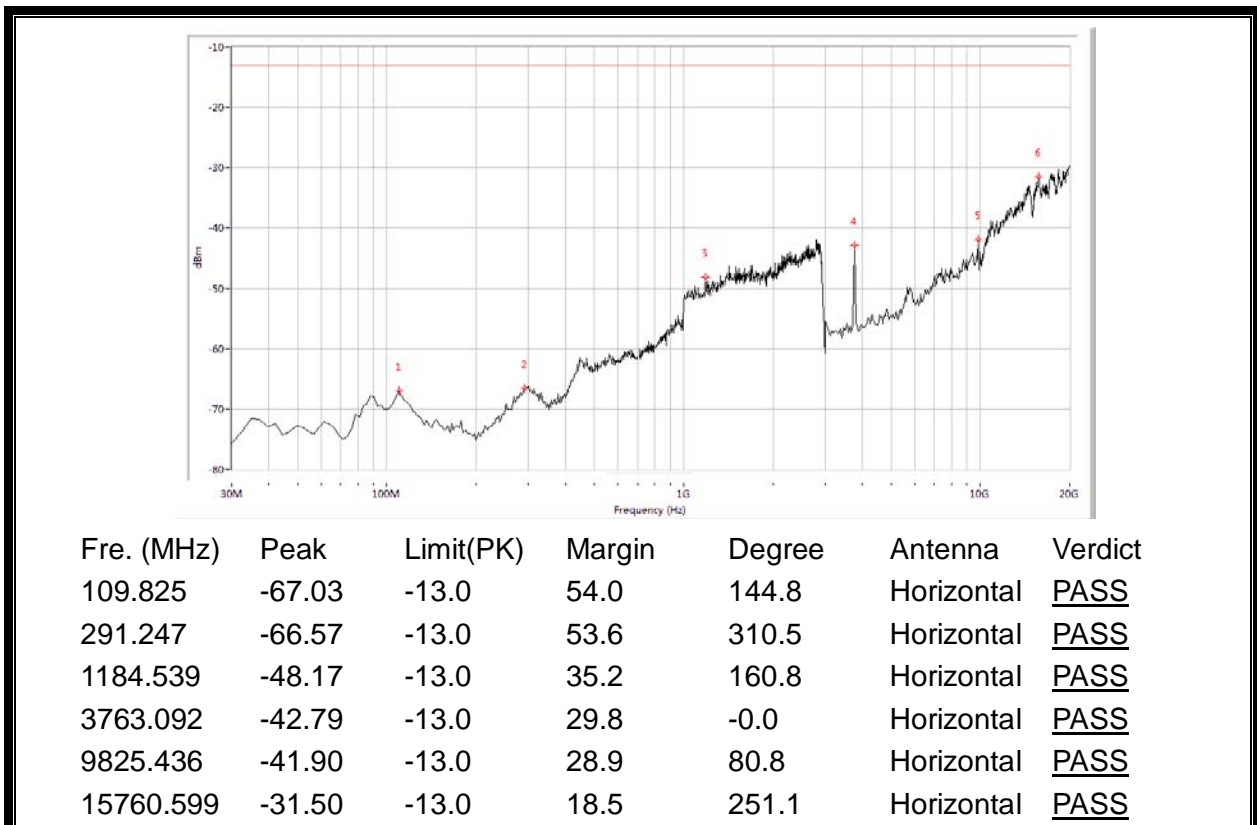
(Plot A.6: GSM 850MHz Channel = 251, Test Antenna Vertical)



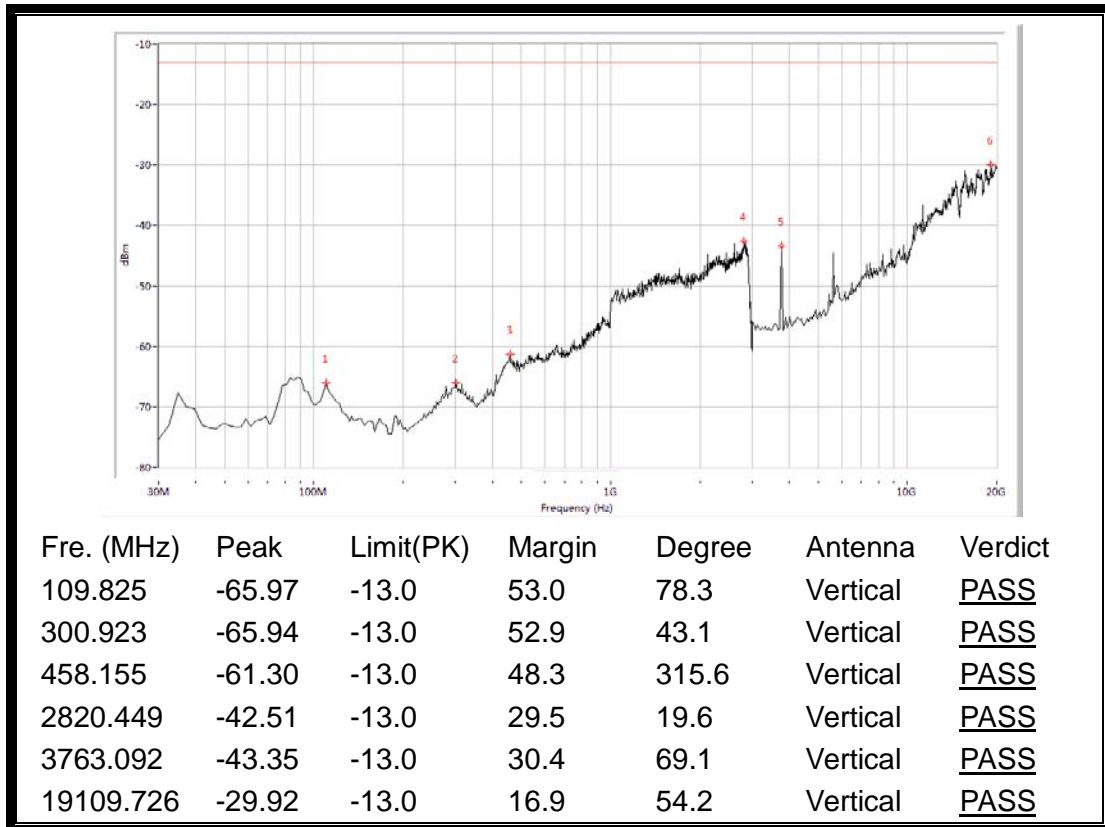
(Plot B.1: GSM 1900MHz Channel = 512, Test Antenna Horizontal)



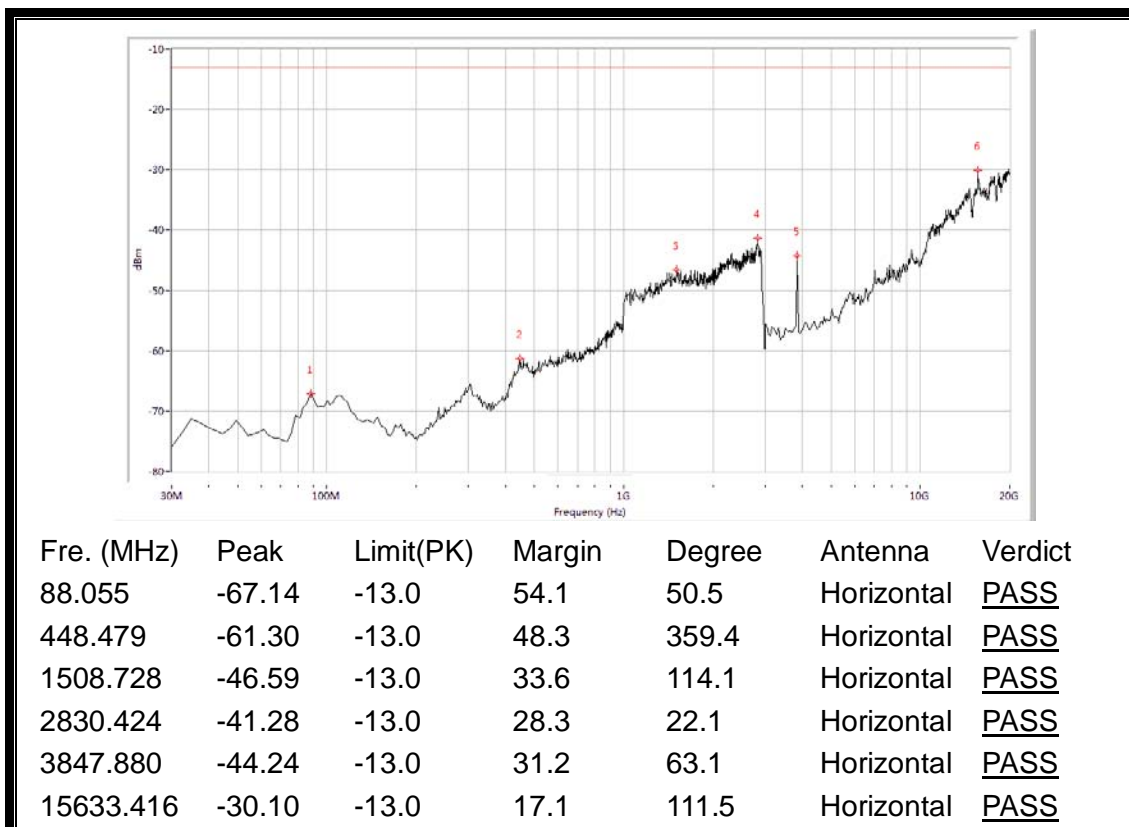
(Plot B.2: GSM 1900MHz Channel = 512, Test Antenna Vertical)



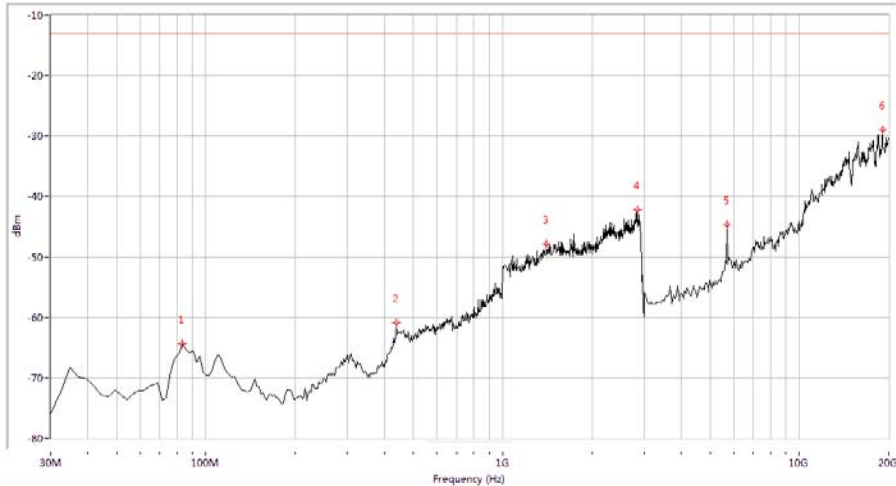
(Plot B.3: GSM 1900MHz Channel = 661, Test Antenna Horizontal)



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

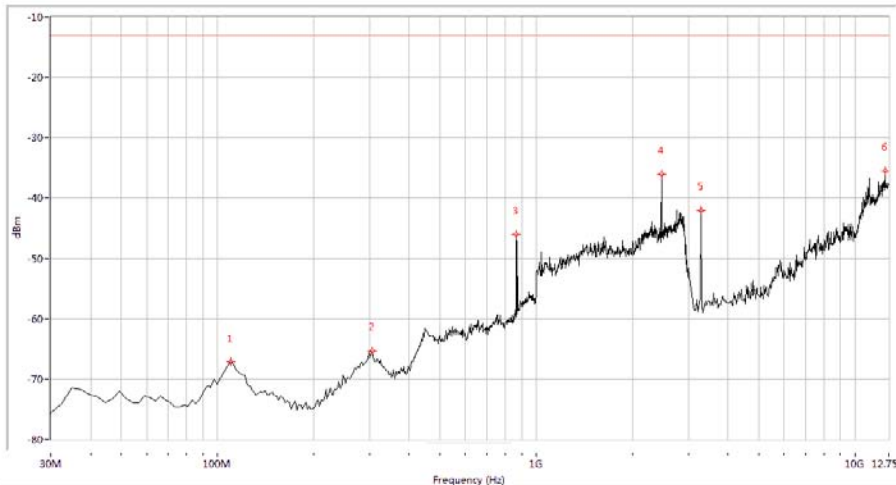


(Plot B.5: GSM 1900MHz Channel = 810, Test Antenna Horizontal)



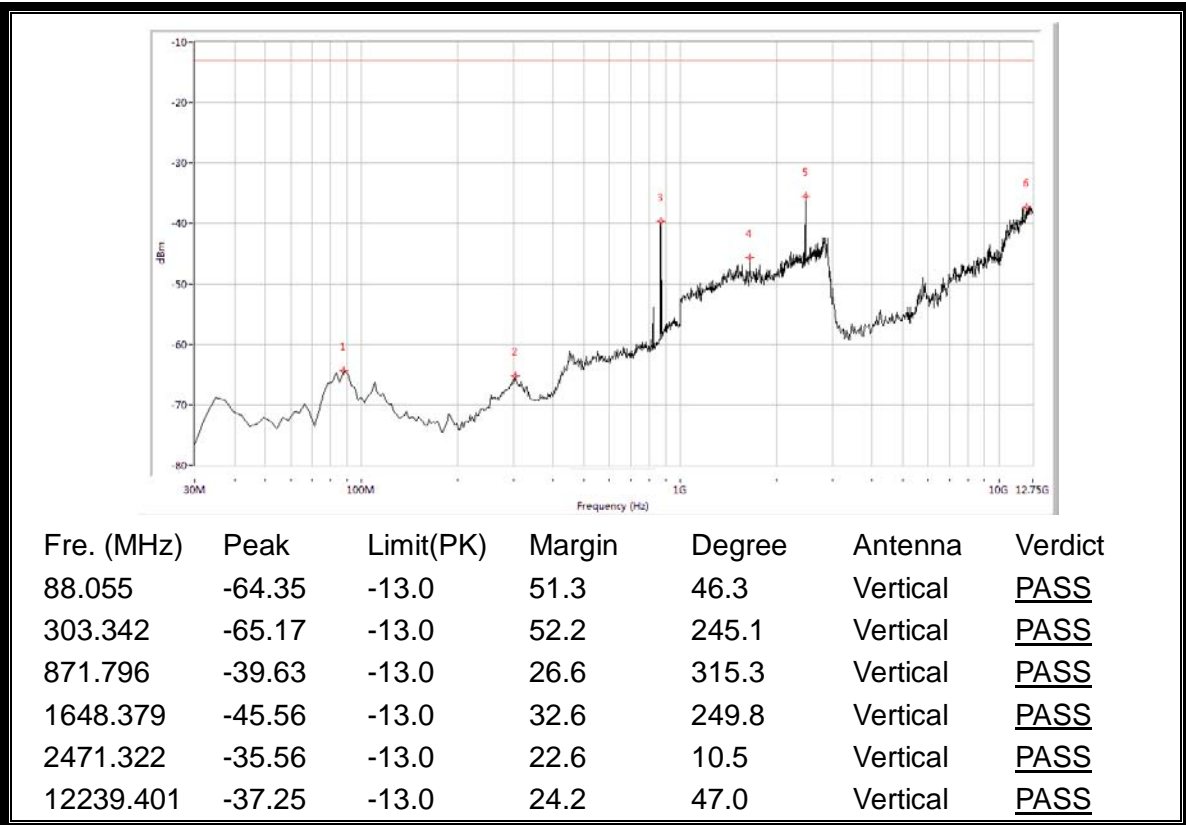
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
83.217	-64.33	-13.0	51.3	122.0	Vertical	<u>PASS</u>
438.803	-60.82	-13.0	47.8	101.2	Vertical	<u>PASS</u>
1403.990	-47.82	-13.0	34.8	360.0	Vertical	<u>PASS</u>
2840.399	-42.20	-13.0	29.2	195.1	Vertical	<u>PASS</u>
5713.217	-44.72	-13.0	31.7	286.3	Vertical	<u>PASS</u>
19067.332	-29.03	-13.0	16.0	-0.0	Vertical	<u>PASS</u>

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

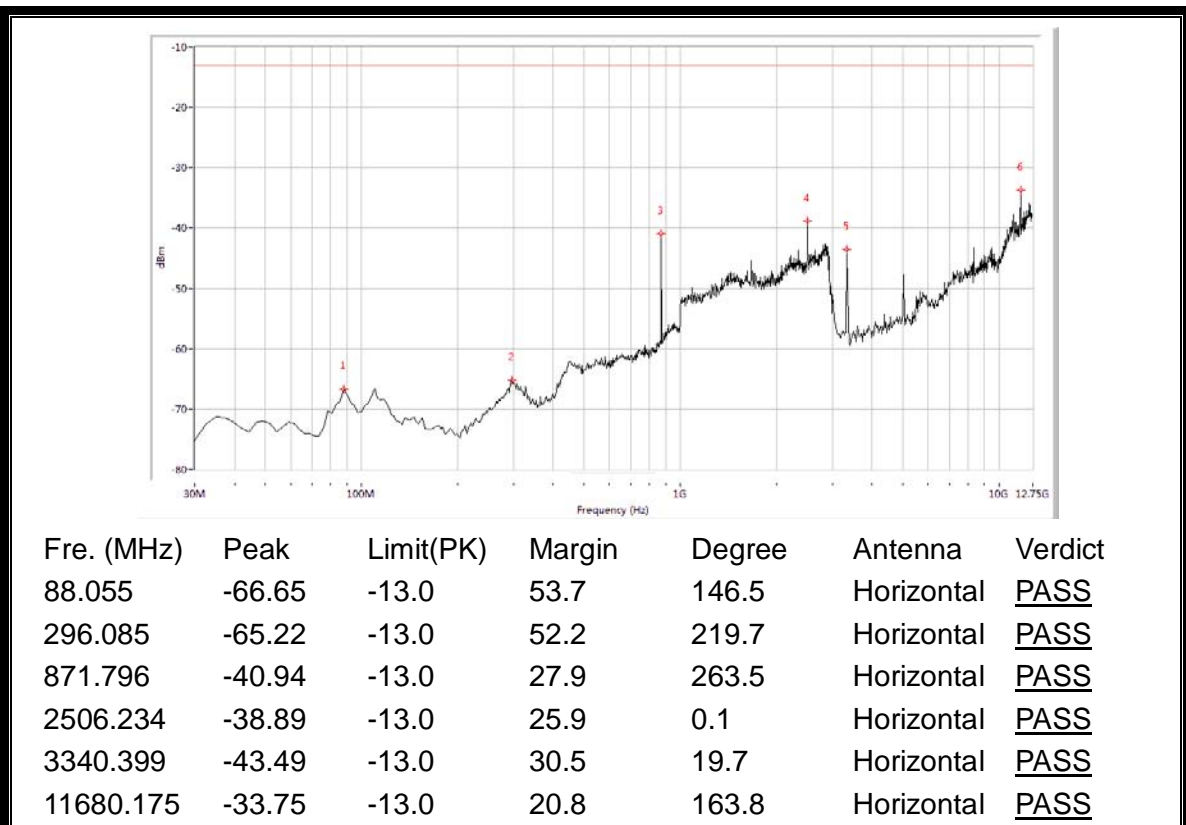


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.17	-13.0	54.2	256.7	Horizontal	<u>PASS</u>
305.761	-65.27	-13.0	52.3	294.1	Horizontal	<u>PASS</u>
866.958	-46.08	-13.0	33.1	214.5	Horizontal	<u>PASS</u>
2471.322	-36.05	-13.0	23.0	75.3	Horizontal	<u>PASS</u>
3291.771	-42.05	-13.0	29.0	231.5	Horizontal	<u>PASS</u>
12409.601	-35.52	-13.0	22.5	49.6	Horizontal	<u>PASS</u>

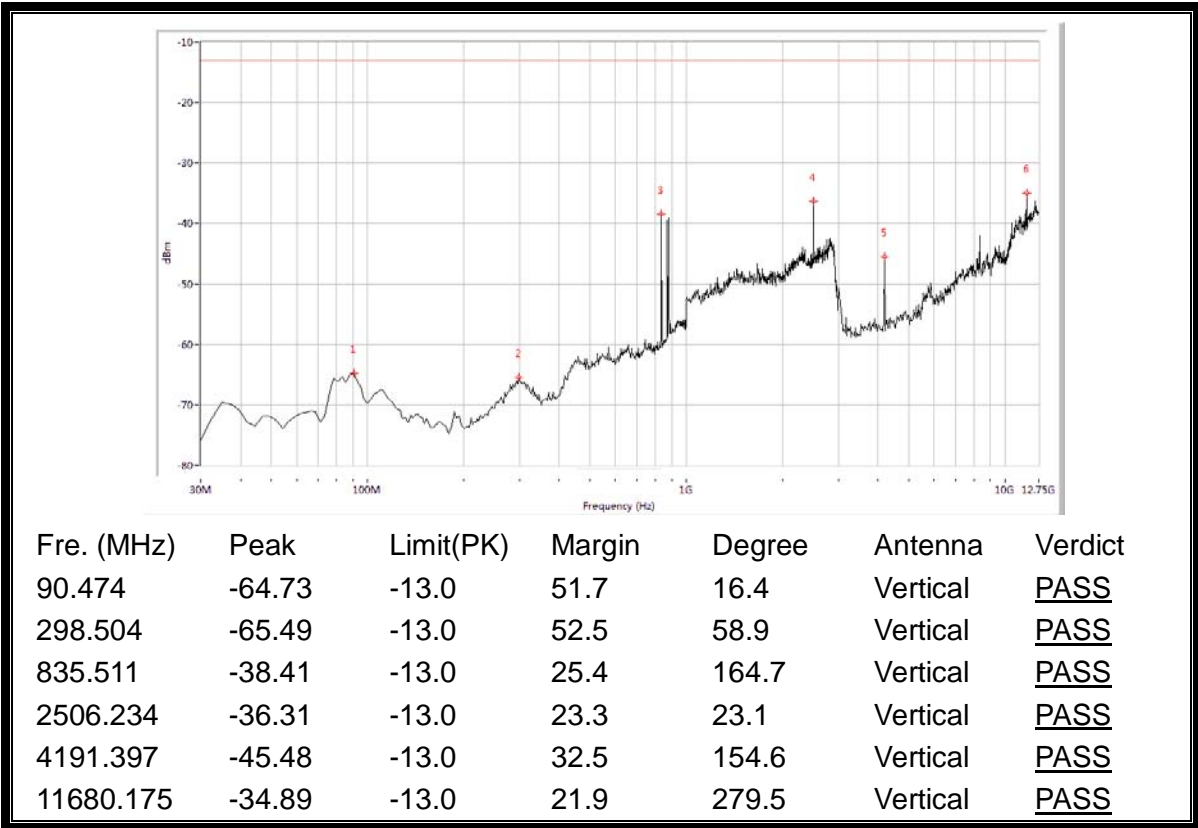
(Plot C.1: EGPRS 850MHz Channel = 128, Test Antenna Horizontal)



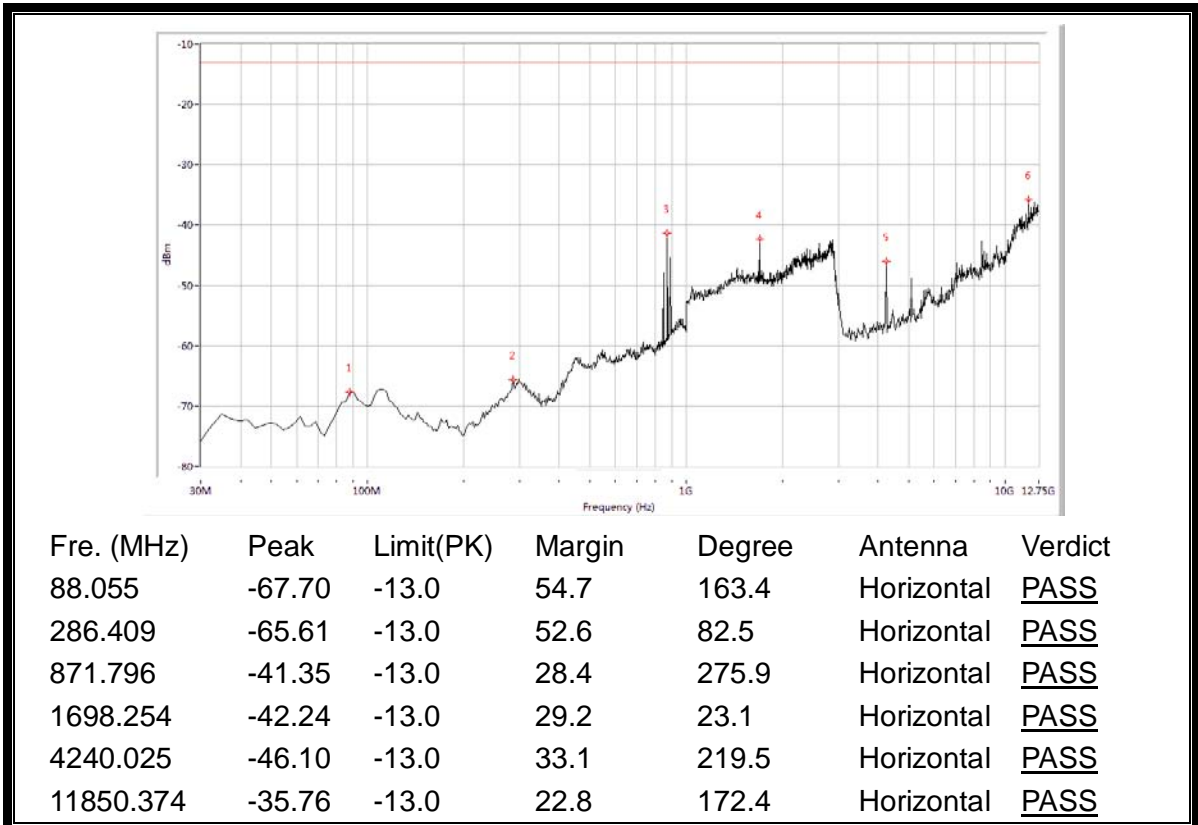
(Plot C.2: EGPRS 850MHz Channel = 128, Test Antenna Vertical)



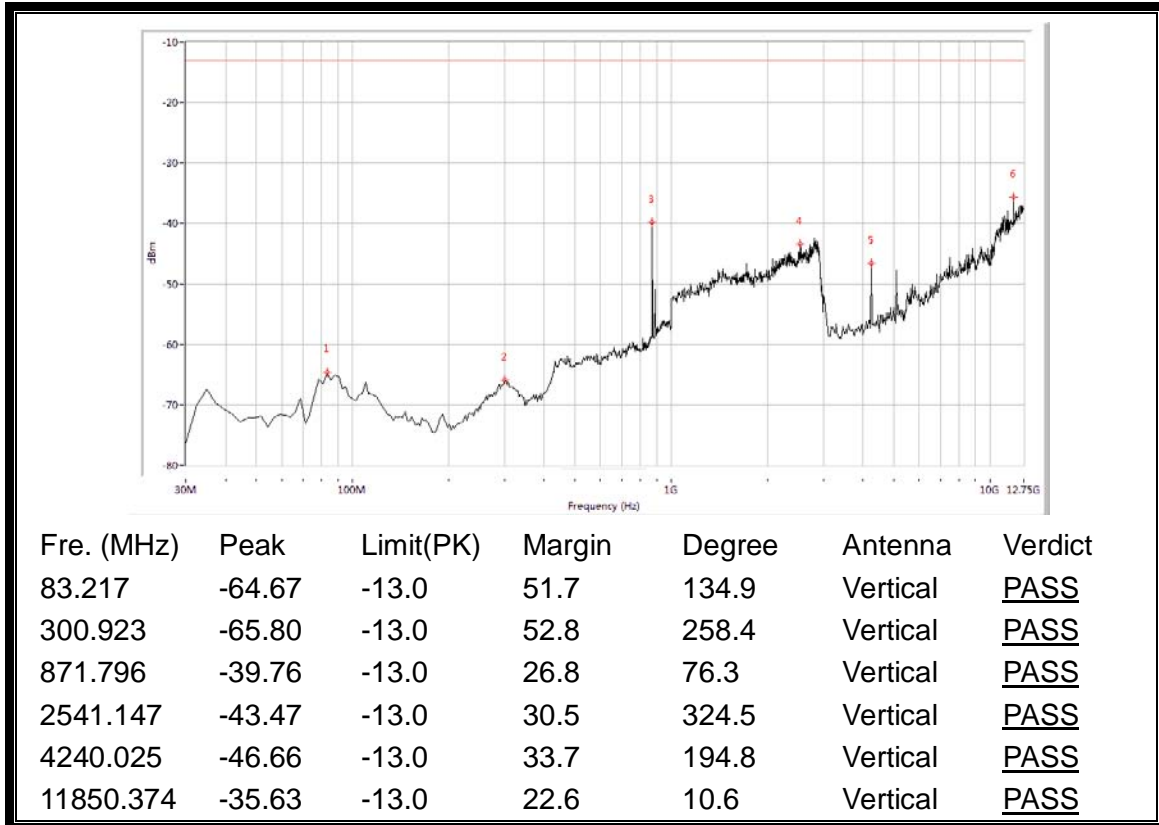
(Plot C.3: EGPRS 850MHz Channel = 190, Test Antenna Horizontal)



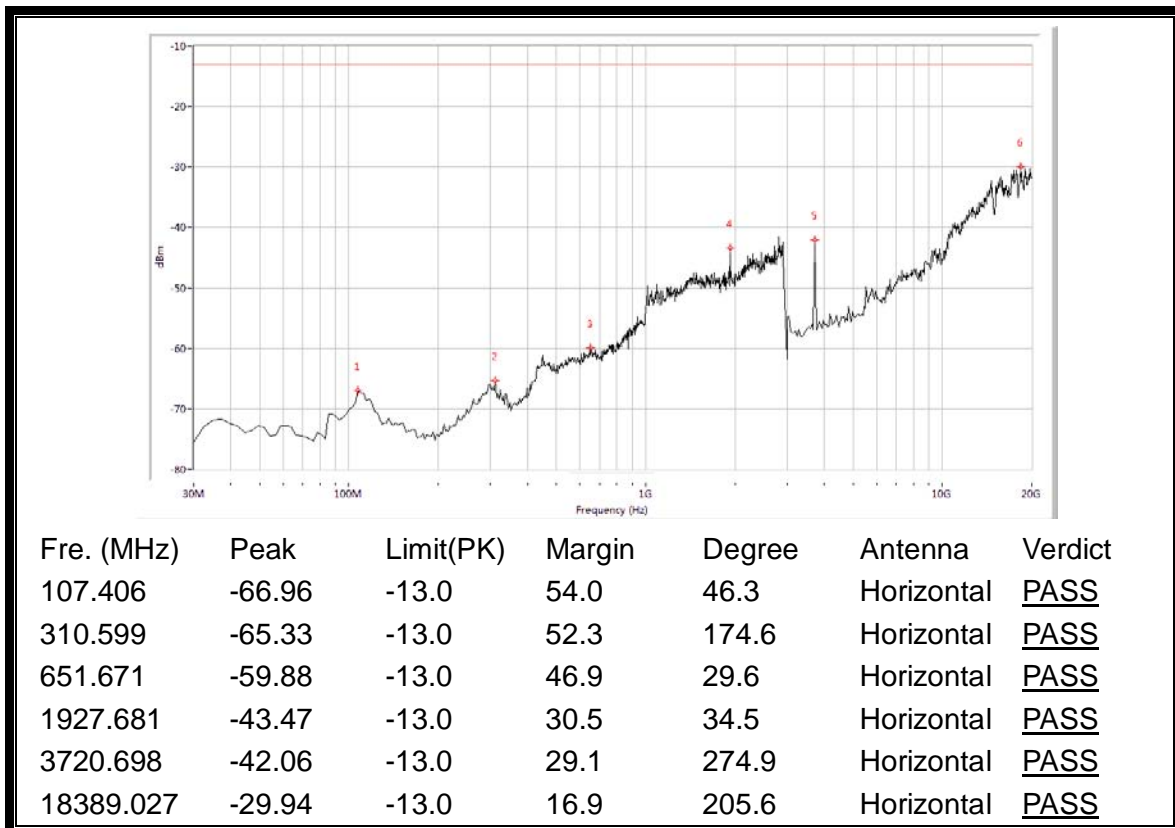
(Plot C.4: EGPRS 850MHz Channel = 190, Test Antenna Vertical)



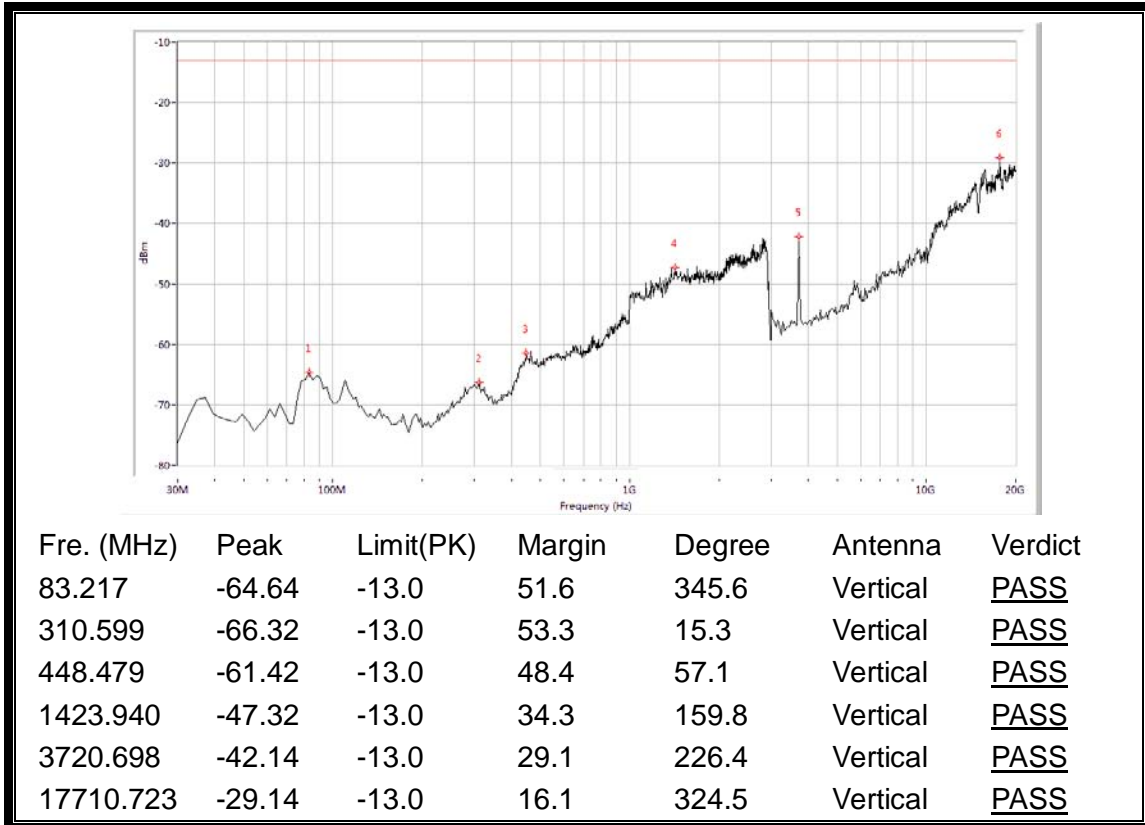
(Plot C.5: EGPRS 850MHz Channel = 251, Test Antenna Horizontal)



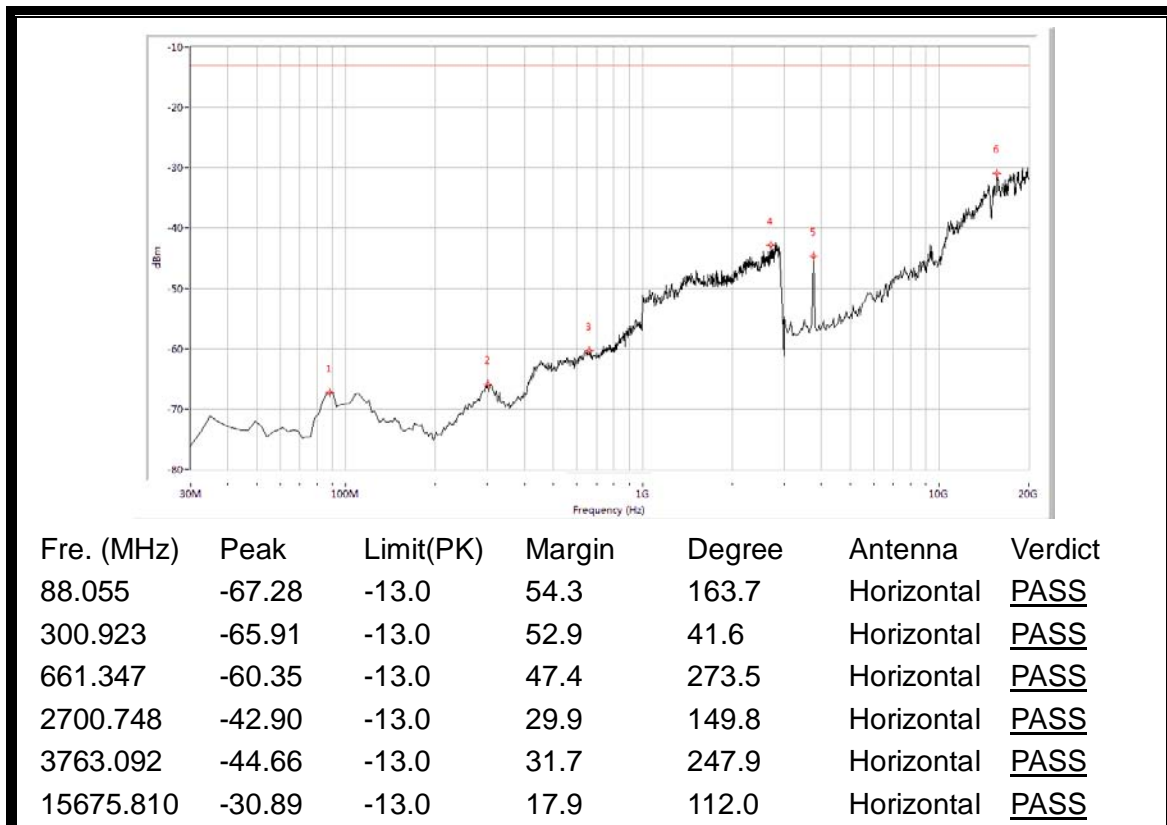
(Plot C.6: EGPRS 850MHz Channel = 251, Test Antenna Vertical)



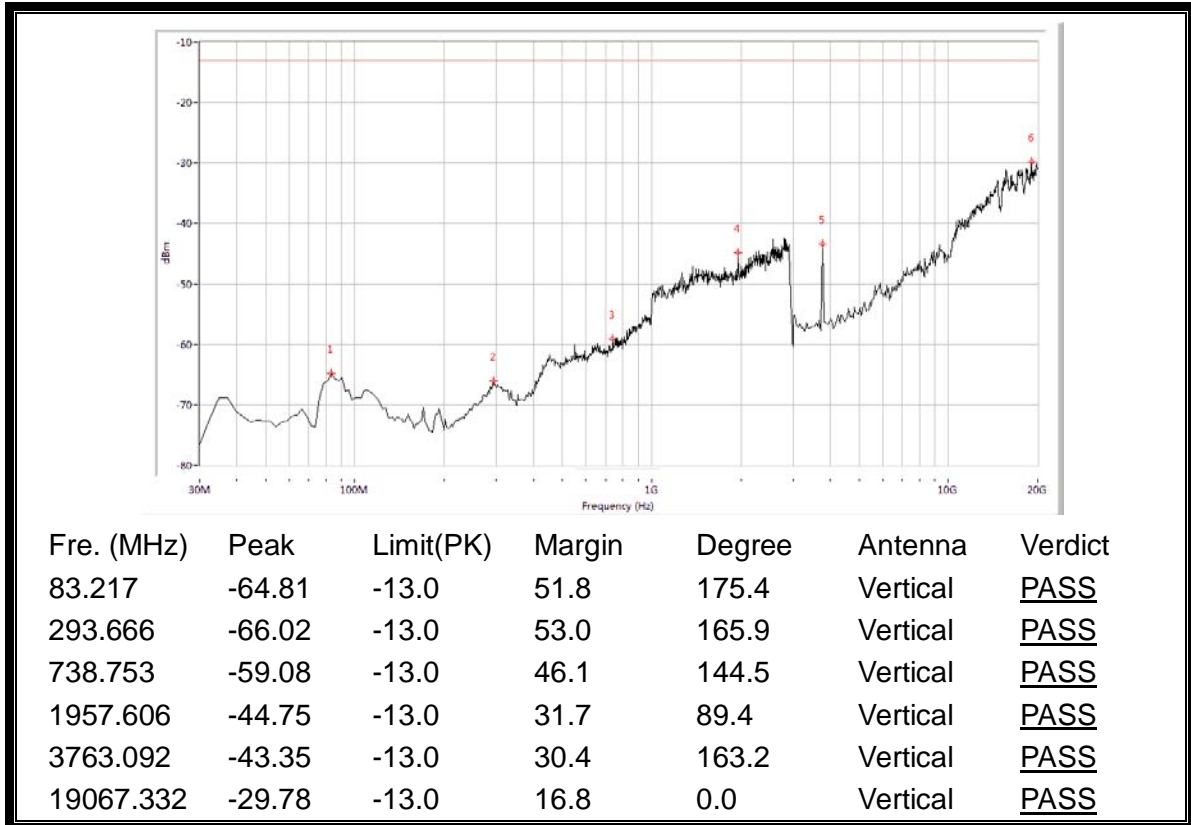
(Plot D.1: EGPRS 1900MHz Channel = 512, Test Antenna Horizontal)



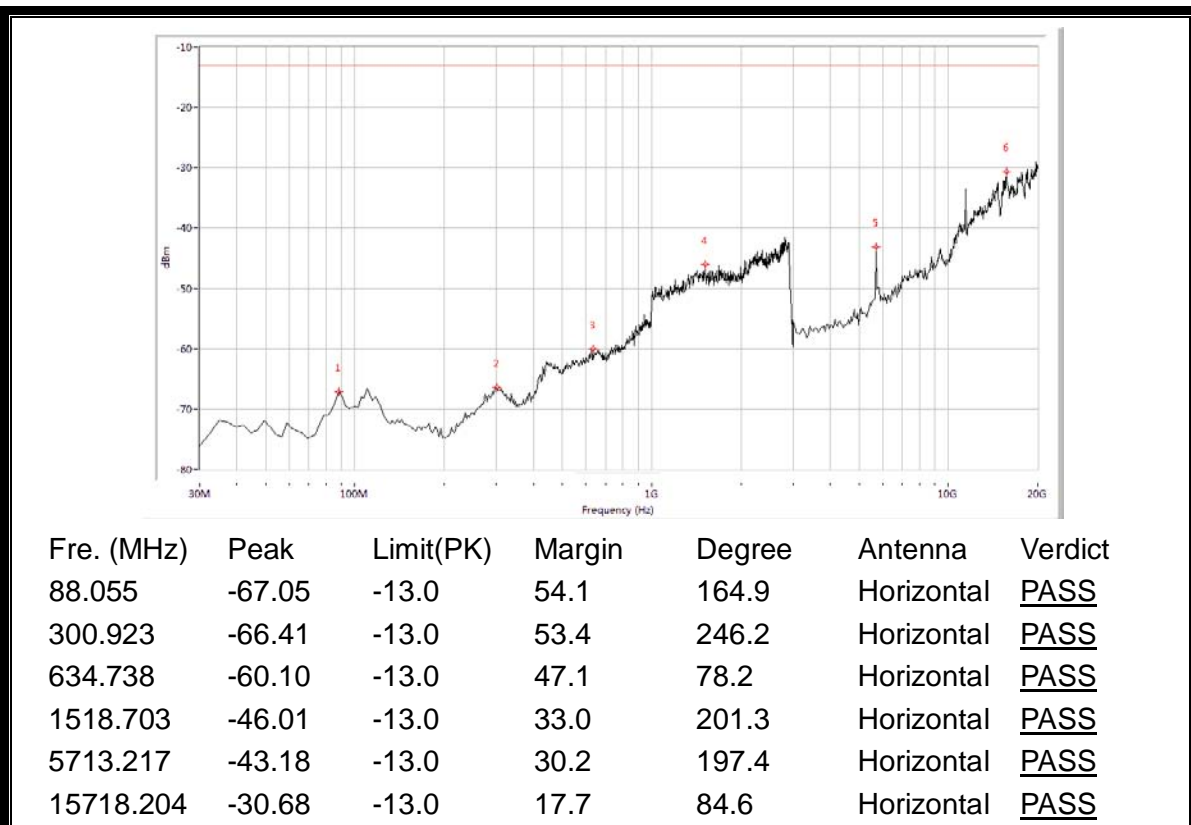
(Plot D.2: EGPRS 1900MHz Channel = 512, Test Antenna Vertical)



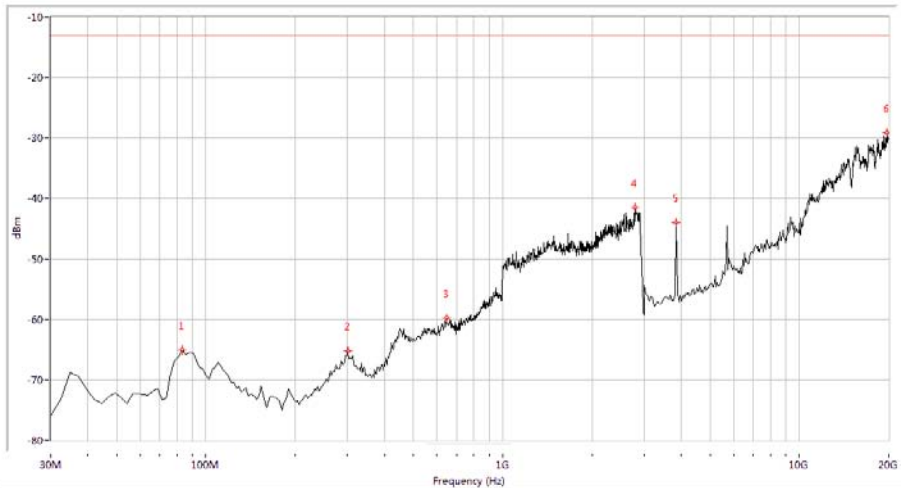
(Plot D.3: EGPRS 1900MHz Channel = 661, Test Antenna Horizontal)



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

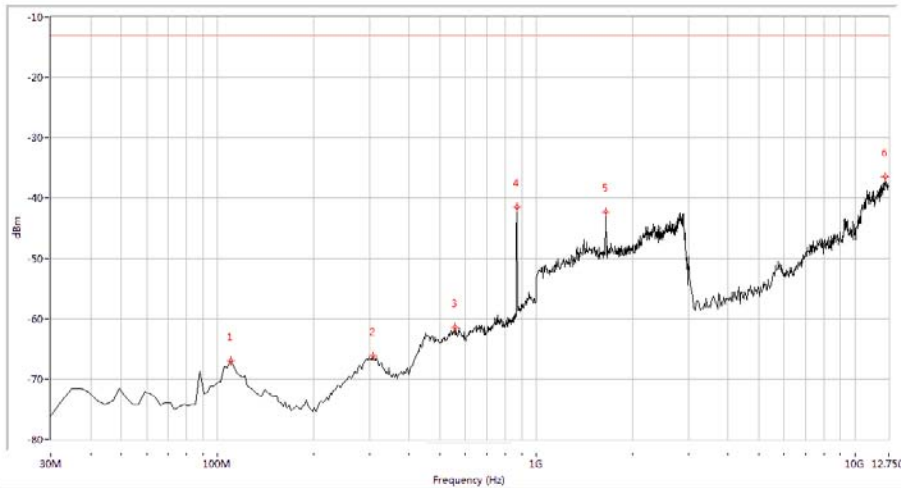


(Plot D.5: EGPRS 1900MHz Channel = 810, Test Antenna Horizontal)



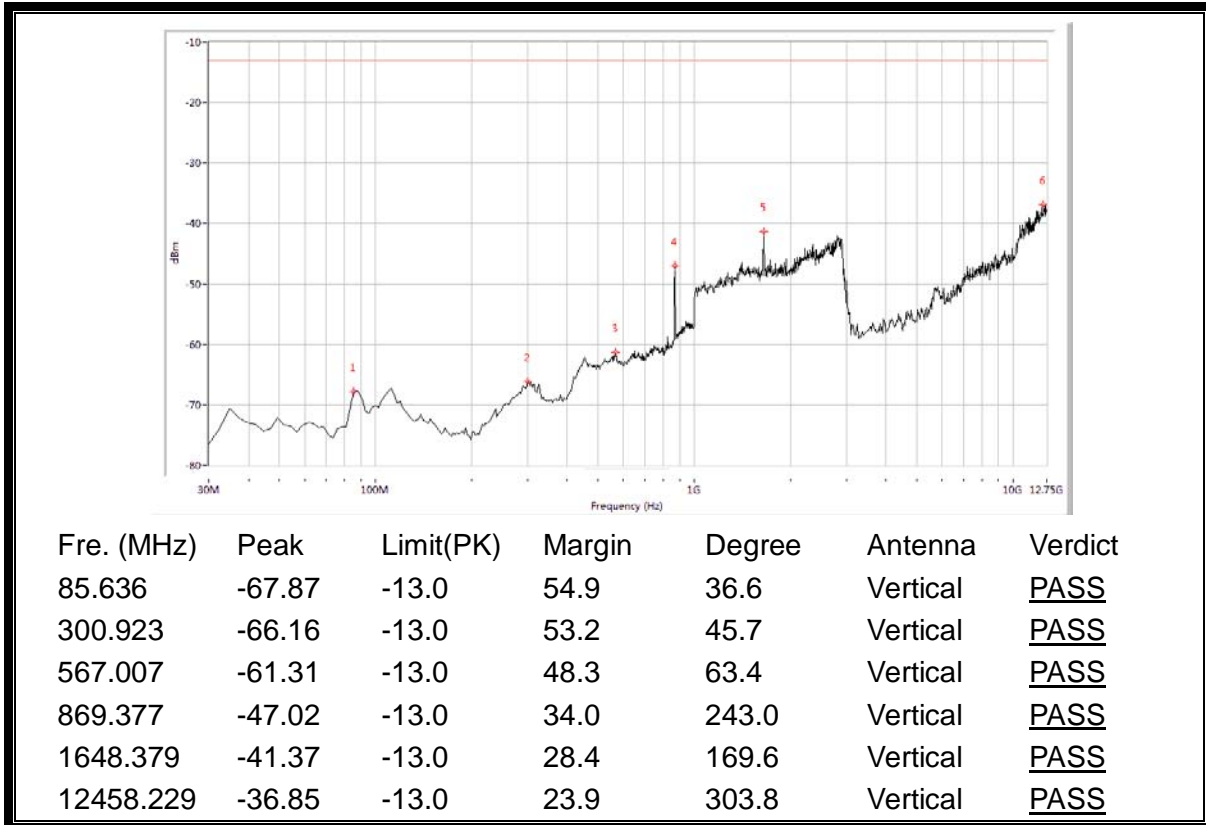
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
83.217	-64.98	-13.0	52.0	175.9	Vertical	<u>PASS</u>
300.923	-65.15	-13.0	52.1	297.7	Vertical	<u>PASS</u>
646.833	-59.78	-13.0	46.8	143.2	Vertical	<u>PASS</u>
2795.511	-41.43	-13.0	28.4	185.5	Vertical	<u>PASS</u>
3847.880	-44.01	-13.0	31.0	197.9	Vertical	<u>PASS</u>
19745.636	-29.14	-13.0	16.1	29.1	Vertical	<u>PASS</u>

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

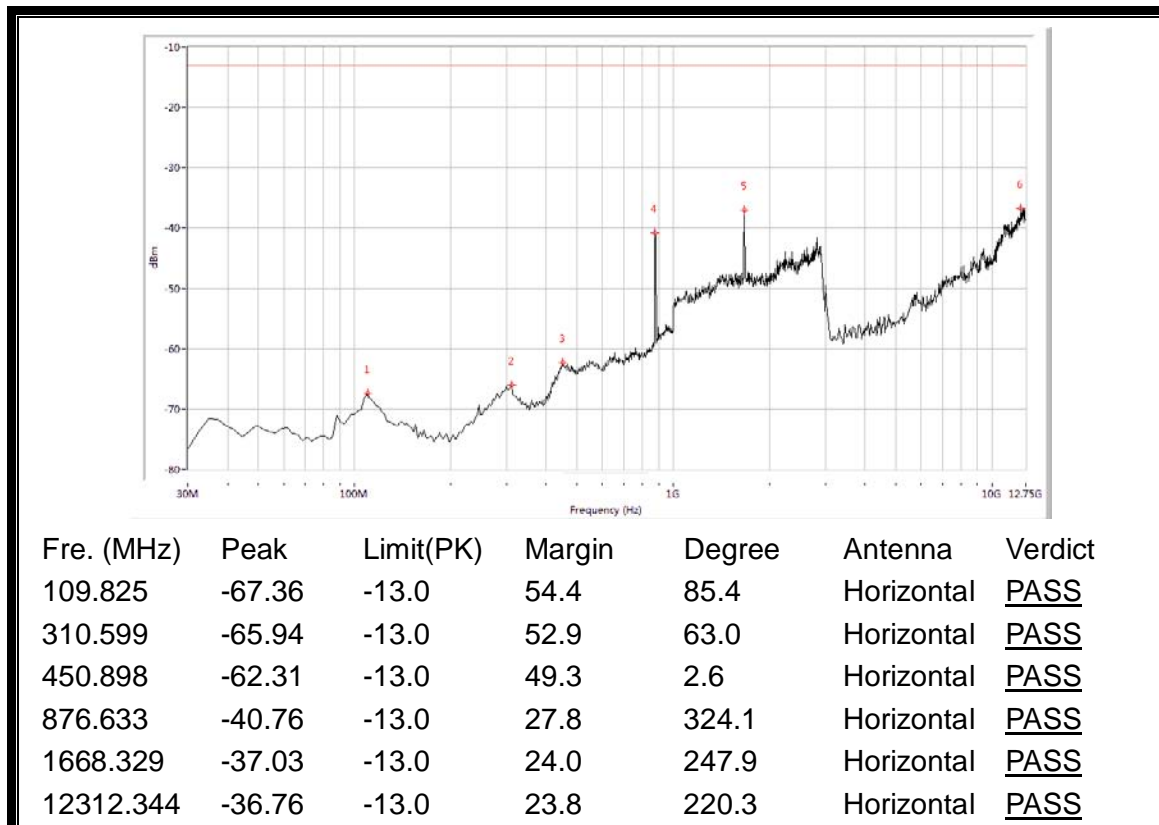


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-66.94	-13.0	53.9	63.5	Horizontal	<u>PASS</u>
308.180	-66.09	-13.0	53.1	42.1	Horizontal	<u>PASS</u>
557.332	-61.42	-13.0	48.4	78.9	Horizontal	<u>PASS</u>
869.377	-41.51	-13.0	28.5	324.5	Horizontal	<u>PASS</u>
1653.367	-42.25	-13.0	29.3	210.0	Horizontal	<u>PASS</u>
12433.915	-36.44	-13.0	23.4	269.8	Horizontal	<u>PASS</u>

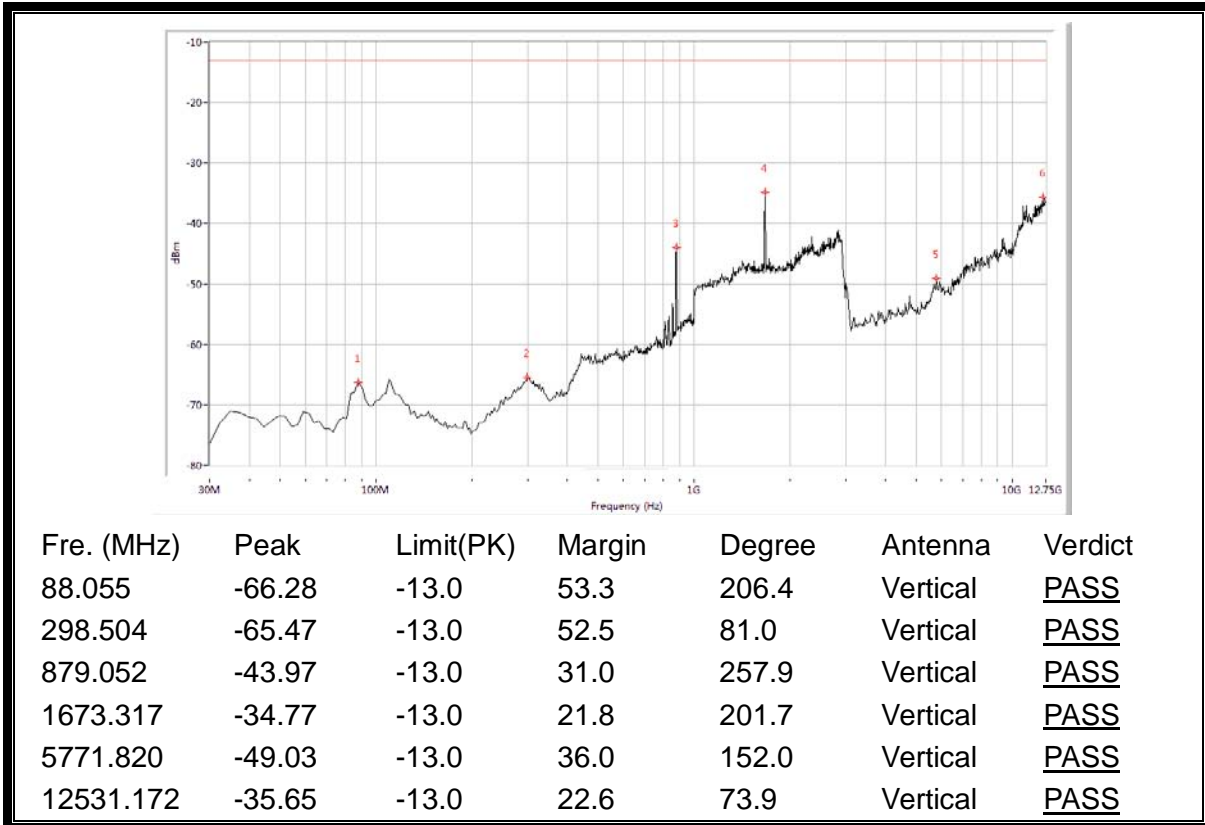
(Plot E.1: WCDMA 850MHz Channel = 4132, Test Antenna Horizontal)



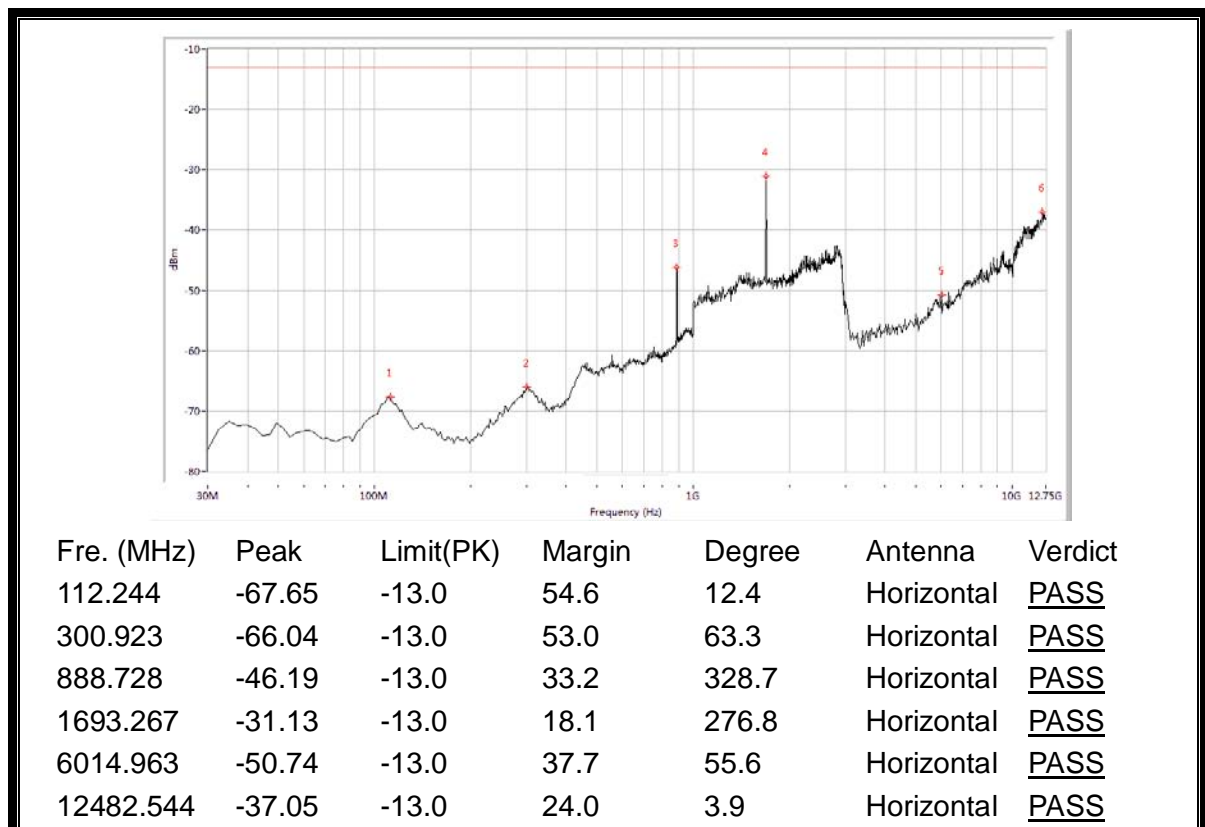
(Plot E.2: WCDMA 850MHz Channel = 4132, Test Antenna Vertical)



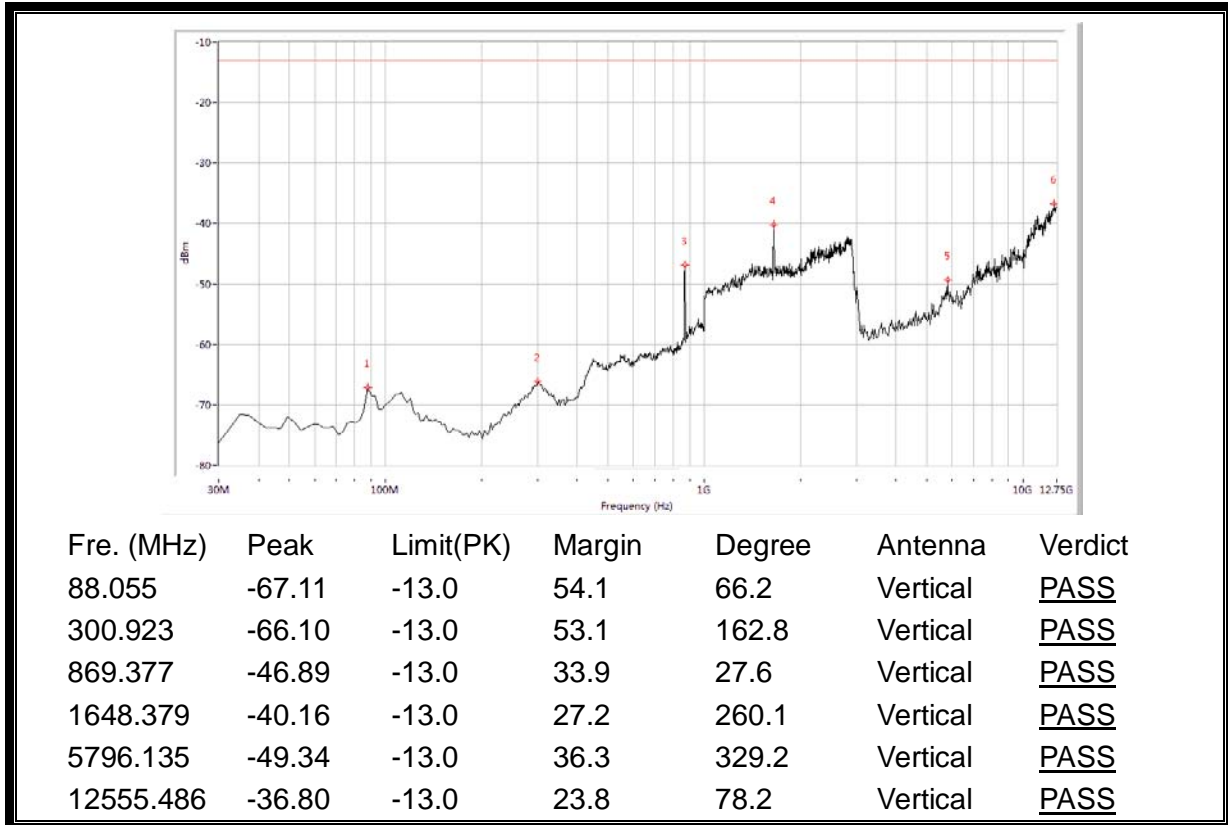
(Plot E.3: WCDMA 850MHz Channel = 4175, Test Antenna Horizontal)



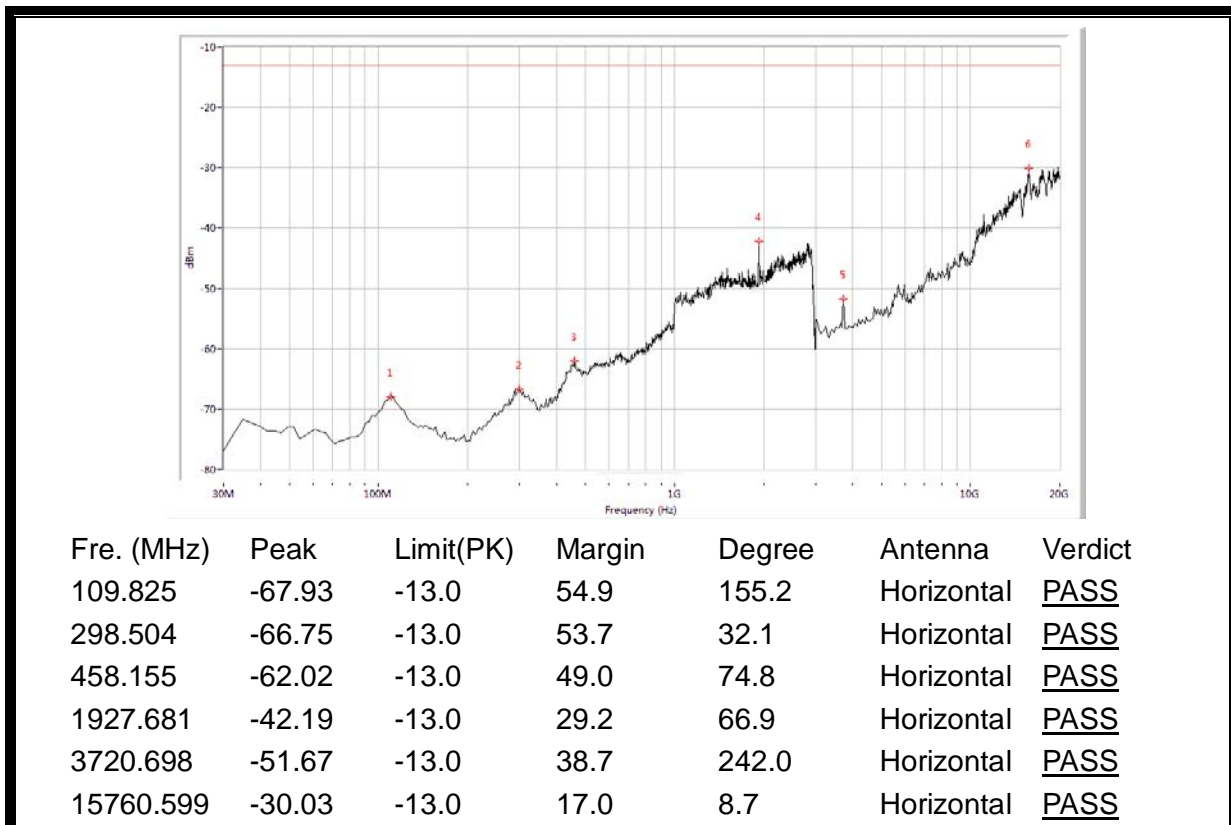
(Plot E.4: WCDMA 850MHz Channel = 4175, Test Antenna Vertical)



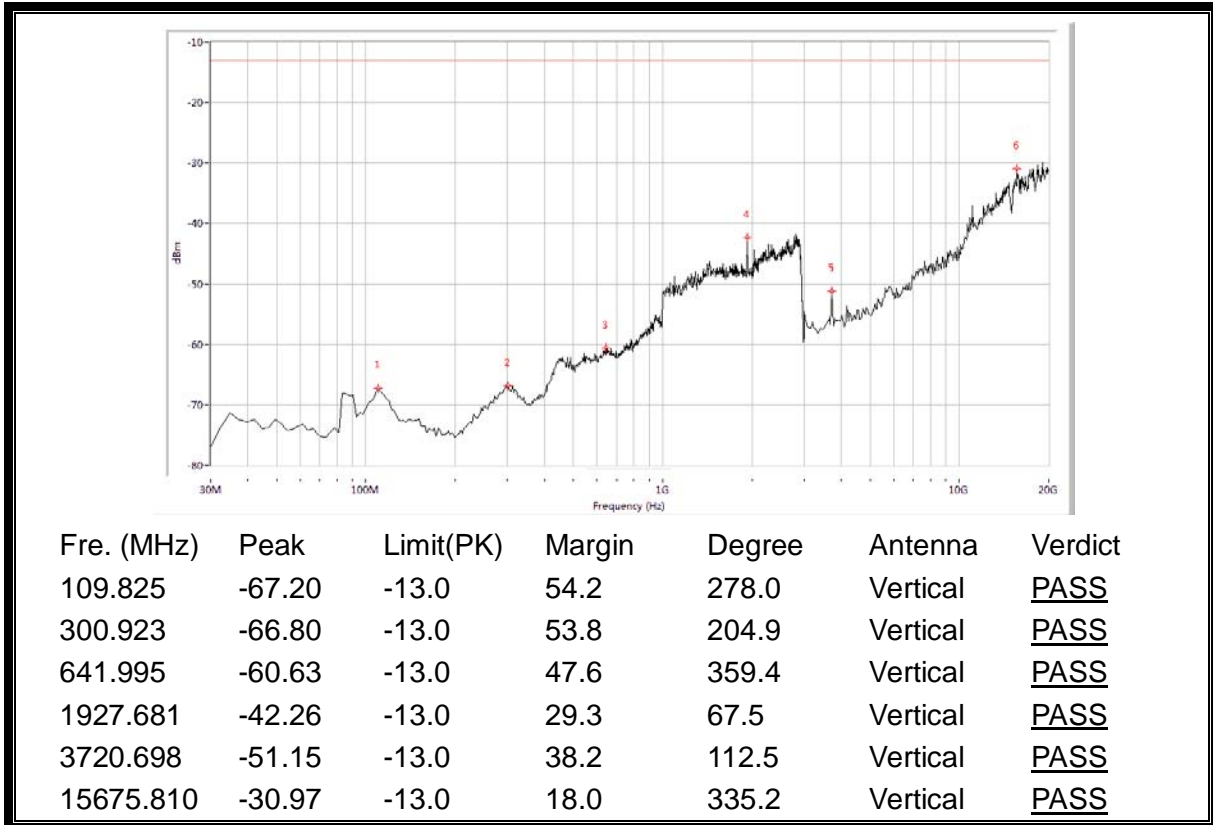
(Plot E.5: WCDMA 850MHz Channel = 4233, Test Antenna Horizontal)



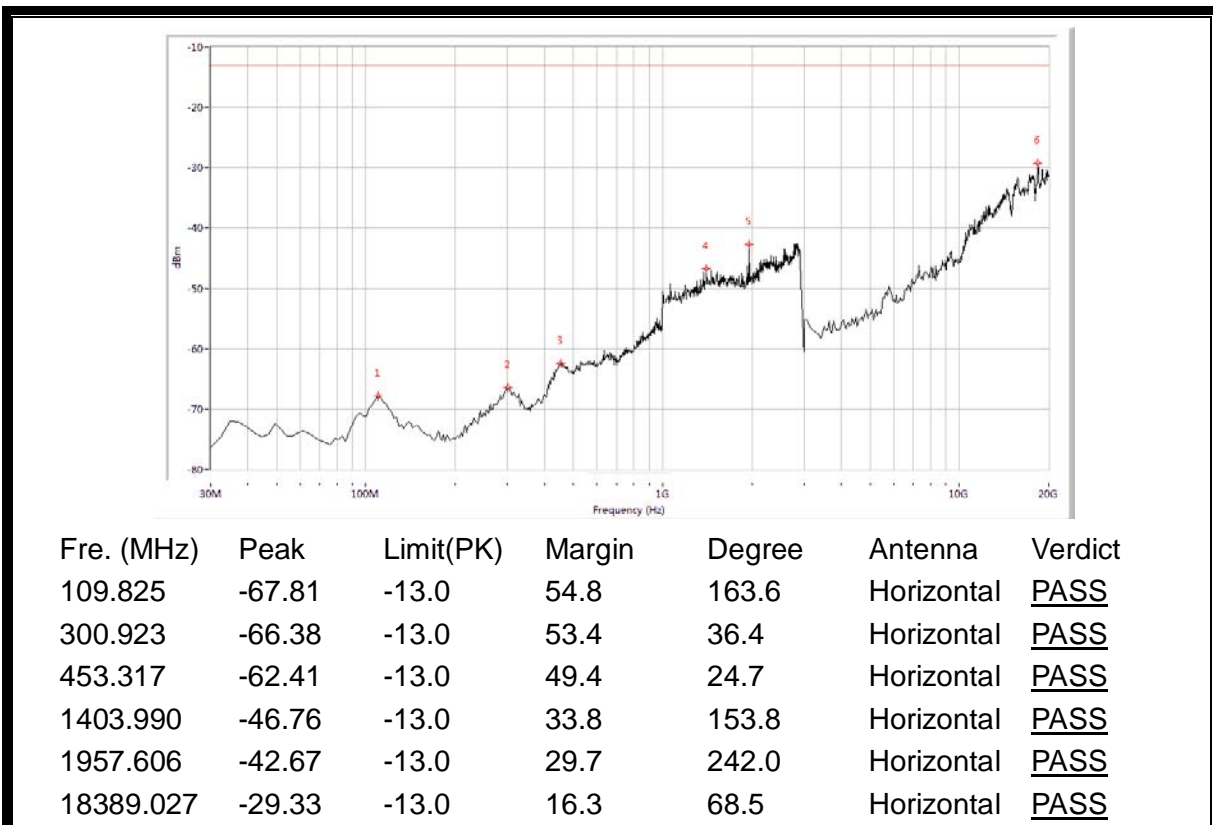
(Plot E.6: WCDMA 850MHz Channel = 4233, Test Antenna Vertical)



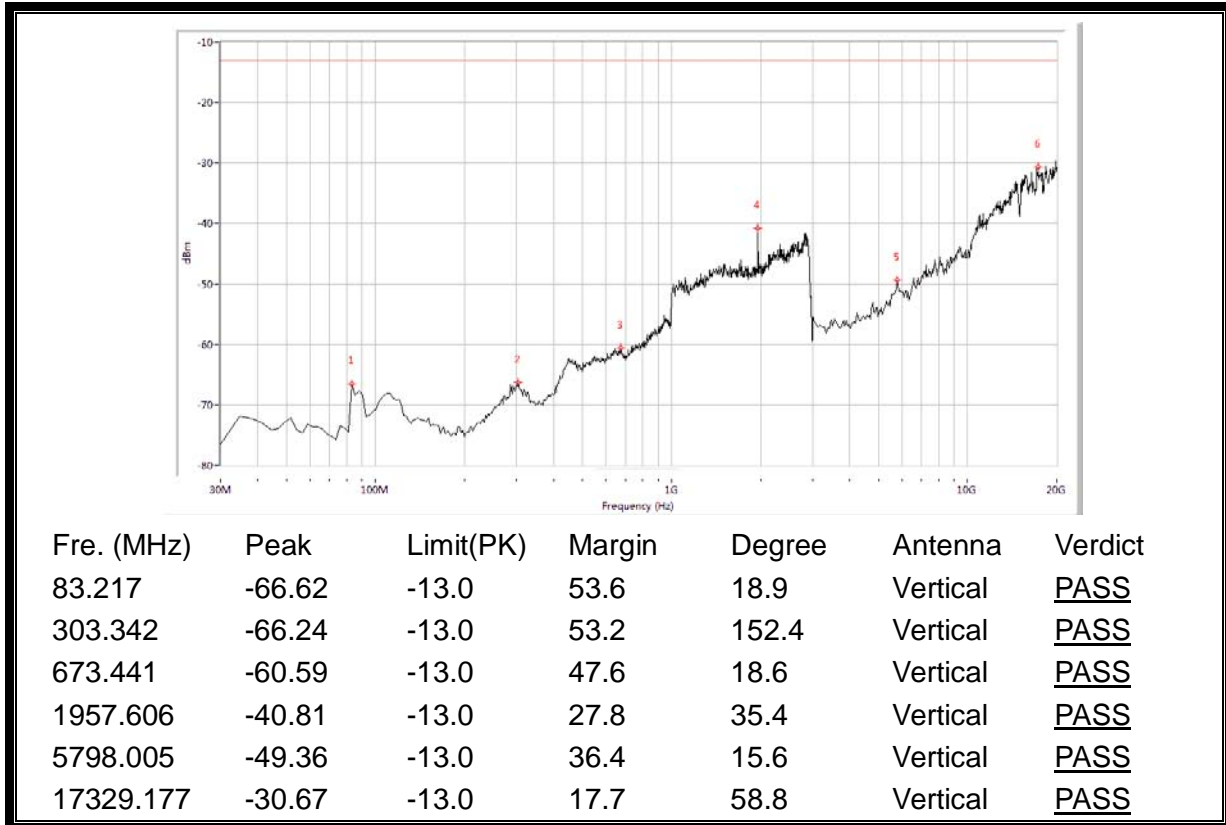
(Plot F.1: WCDMA 1900MHz Channel = 9262, Test Antenna Horizontal)



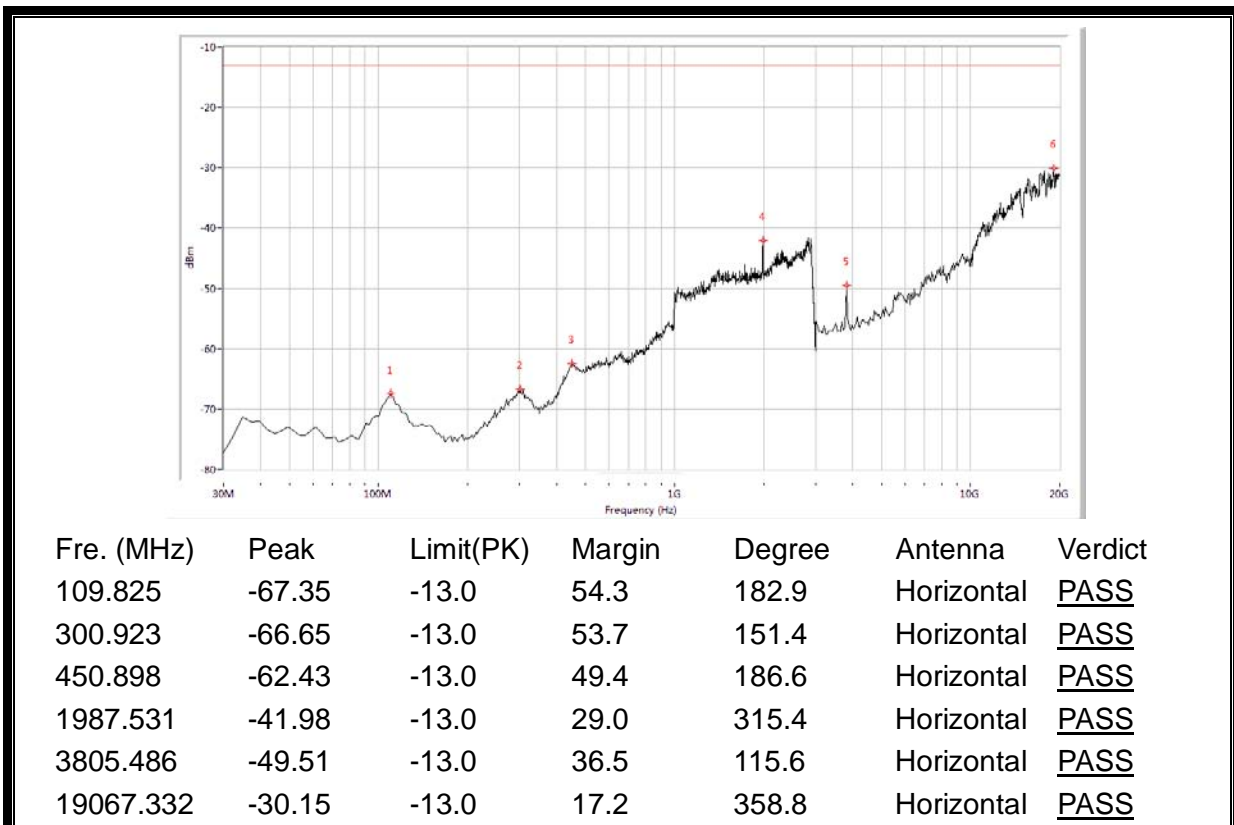
(Plot F.2: WCDMA 1900MHz Channel = 9262, Test Antenna Vertical)



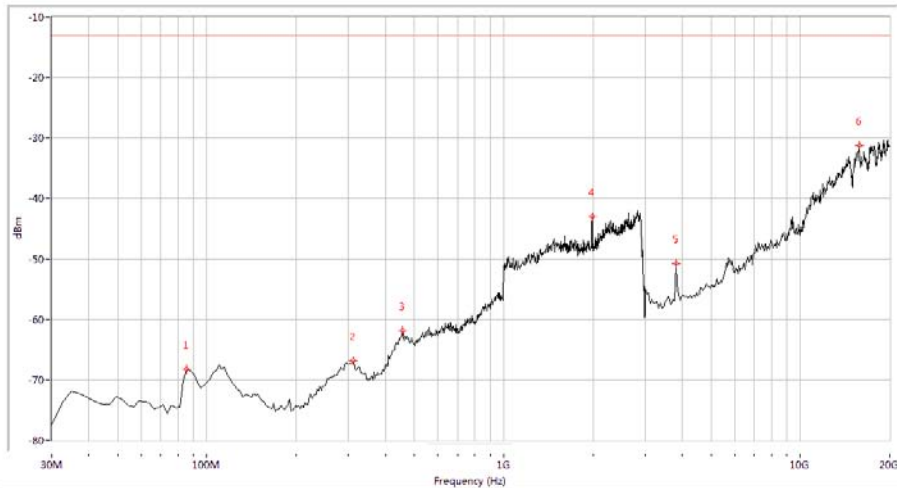
(Plot F.3: WCDMA 1900MHz Channel = 9400, Test Antenna Horizontal)



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

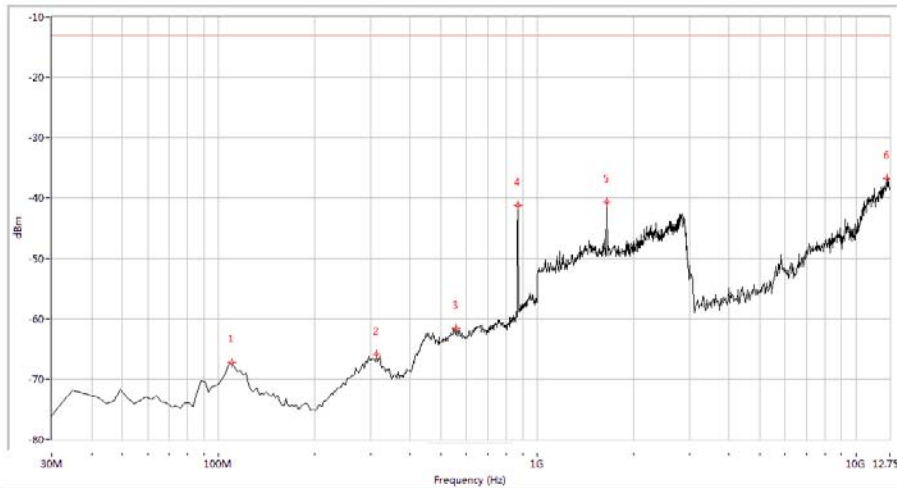


(Plot F.5: WCDMA 1900MHz Channel = 9538, Test Antenna Horizontal)



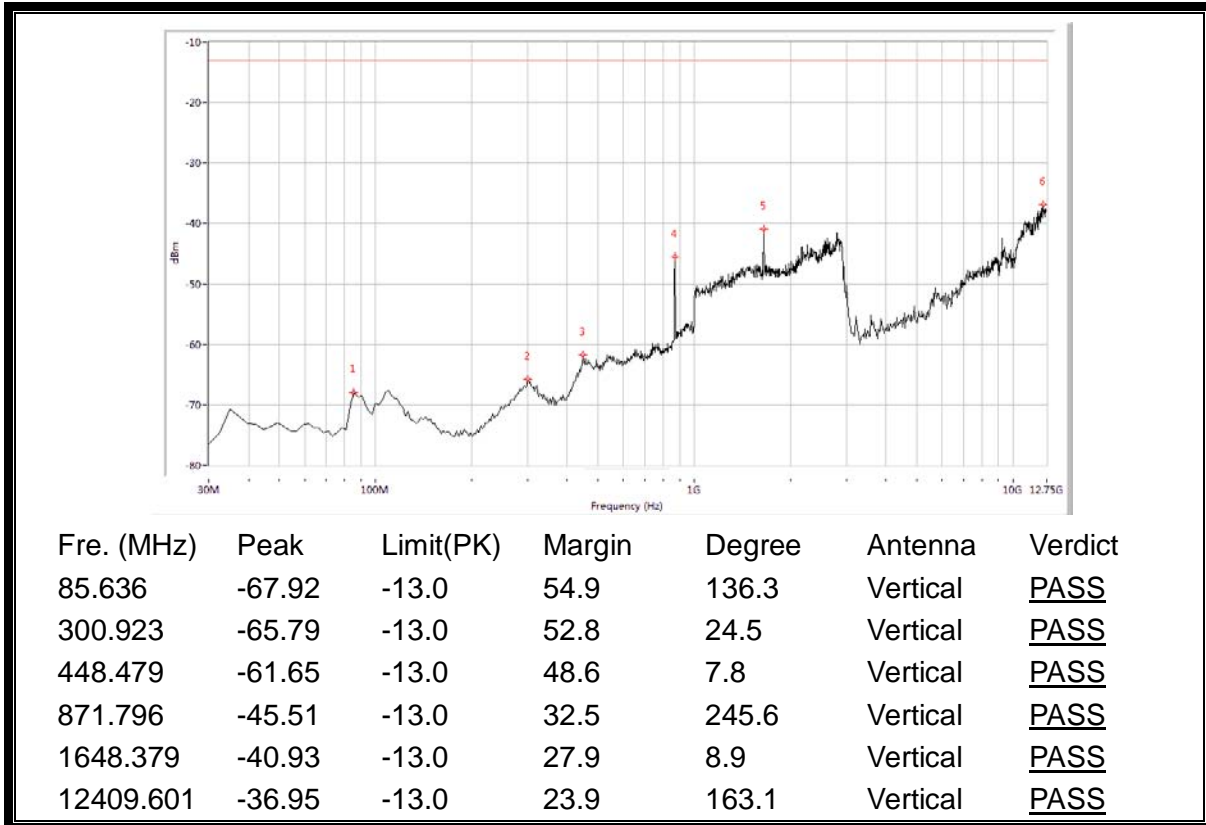
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
85.636	-68.22	-13.0	55.2	314.6	Vertical	<u>PASS</u>
310.599	-66.89	-13.0	53.9	25.7	Vertical	<u>PASS</u>
455.736	-61.90	-13.0	48.9	69.4	Vertical	<u>PASS</u>
1987.531	-42.95	-13.0	30.0	84.2	Vertical	<u>PASS</u>
3805.486	-50.76	-13.0	37.8	263.4	Vertical	<u>PASS</u>
15802.993	-31.28	-13.0	18.3	10.5	Vertical	<u>PASS</u>

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

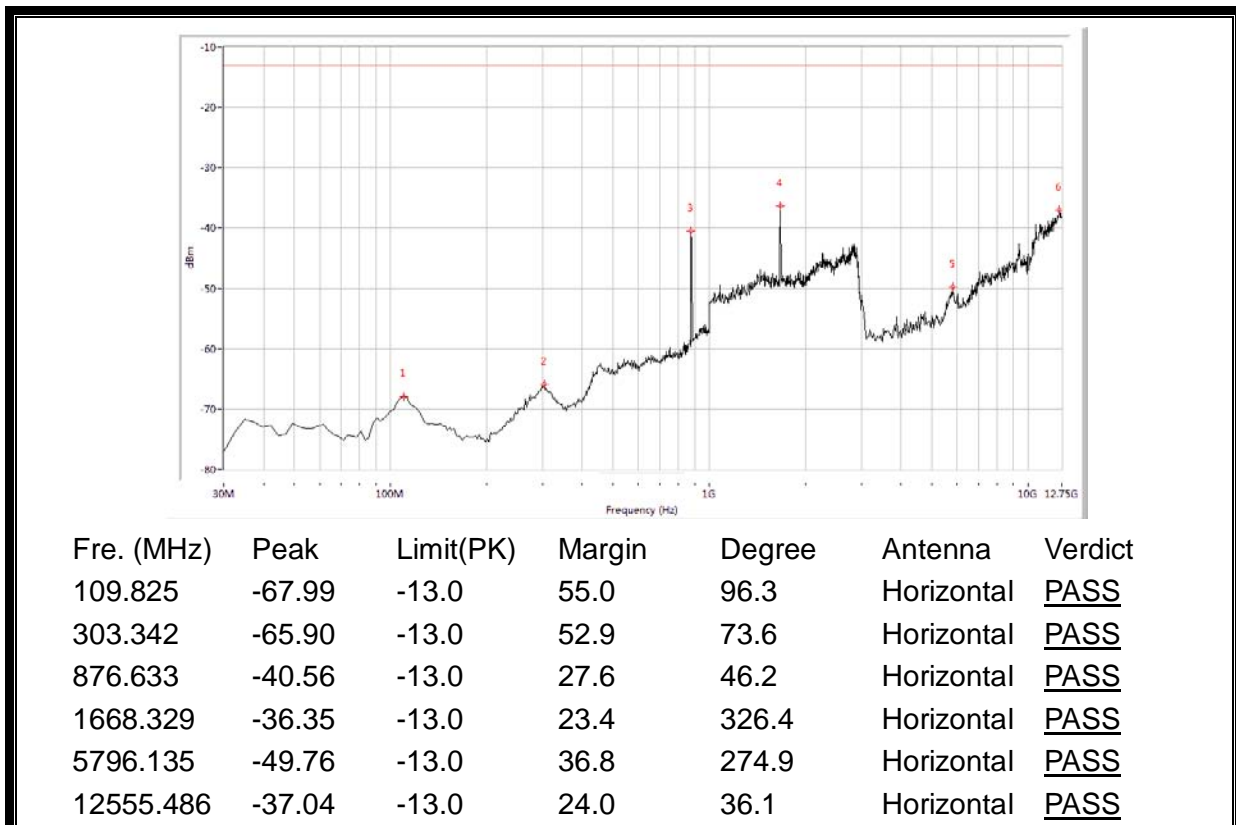


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.18	-13.0	54.2	136.2	Horizontal	<u>PASS</u>
313.017	-65.89	-13.0	52.9	24.5	Horizontal	<u>PASS</u>
557.332	-61.60	-13.0	48.6	247.0	Horizontal	<u>PASS</u>
869.377	-41.23	-13.0	28.2	9.9	Horizontal	<u>PASS</u>
1653.367	-40.60	-13.0	27.6	56.2	Horizontal	<u>PASS</u>
12555.486	-36.79	-13.0	23.8	332.8	Horizontal	<u>PASS</u>

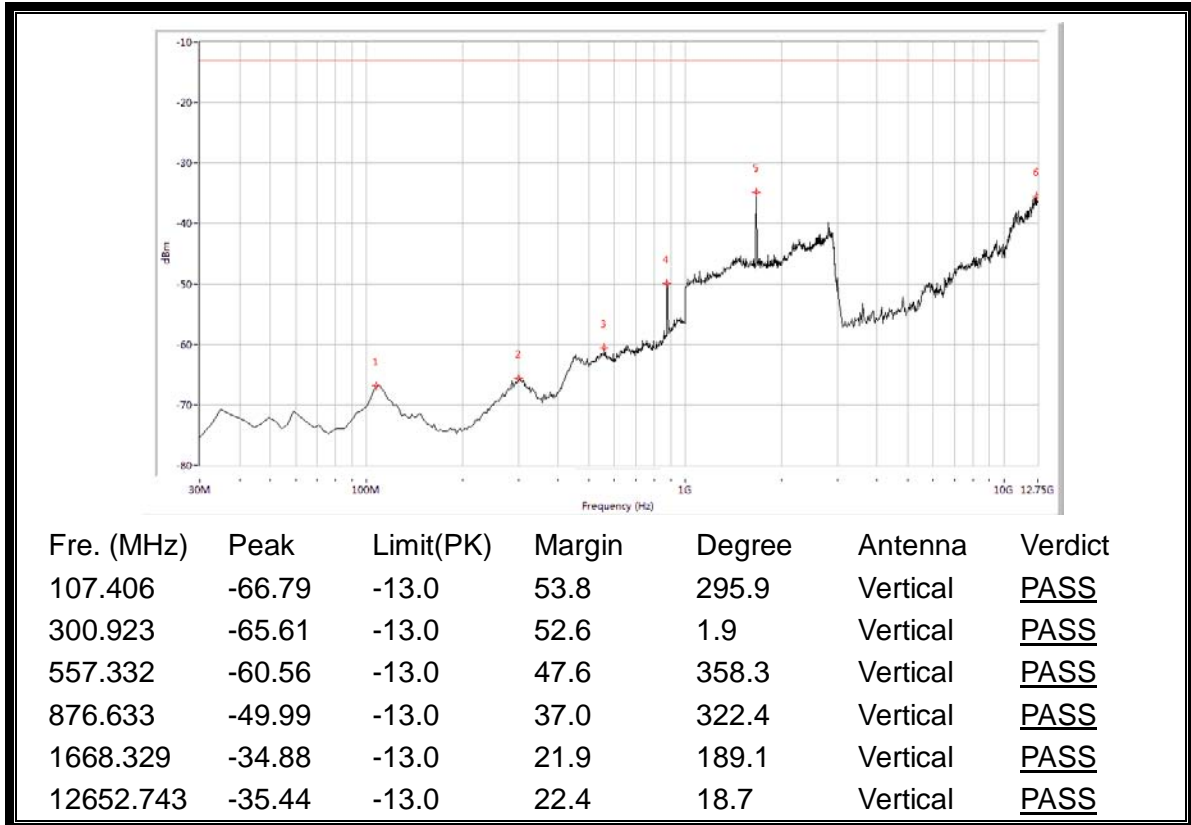
(Plot G.1: HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)



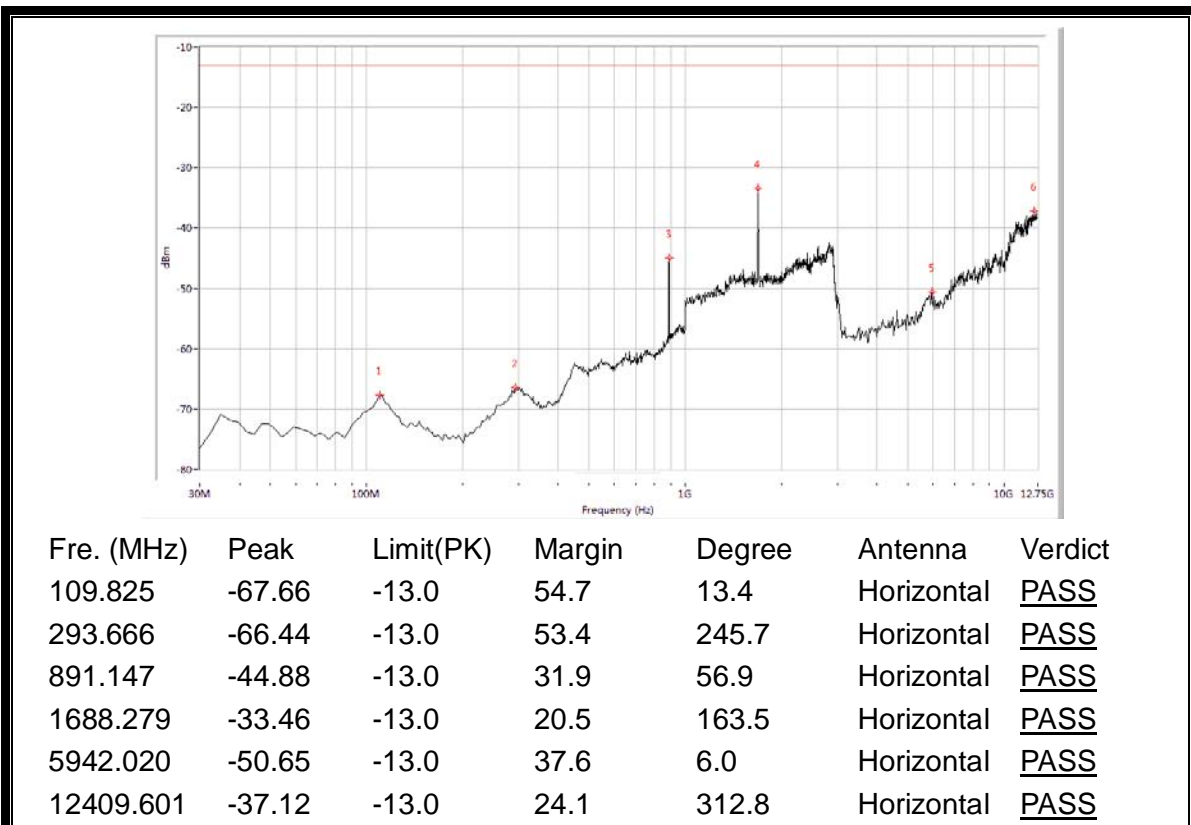
(Plot G.2: HSDPA 850MHz Channel = 4132, Test Antenna Vertical)



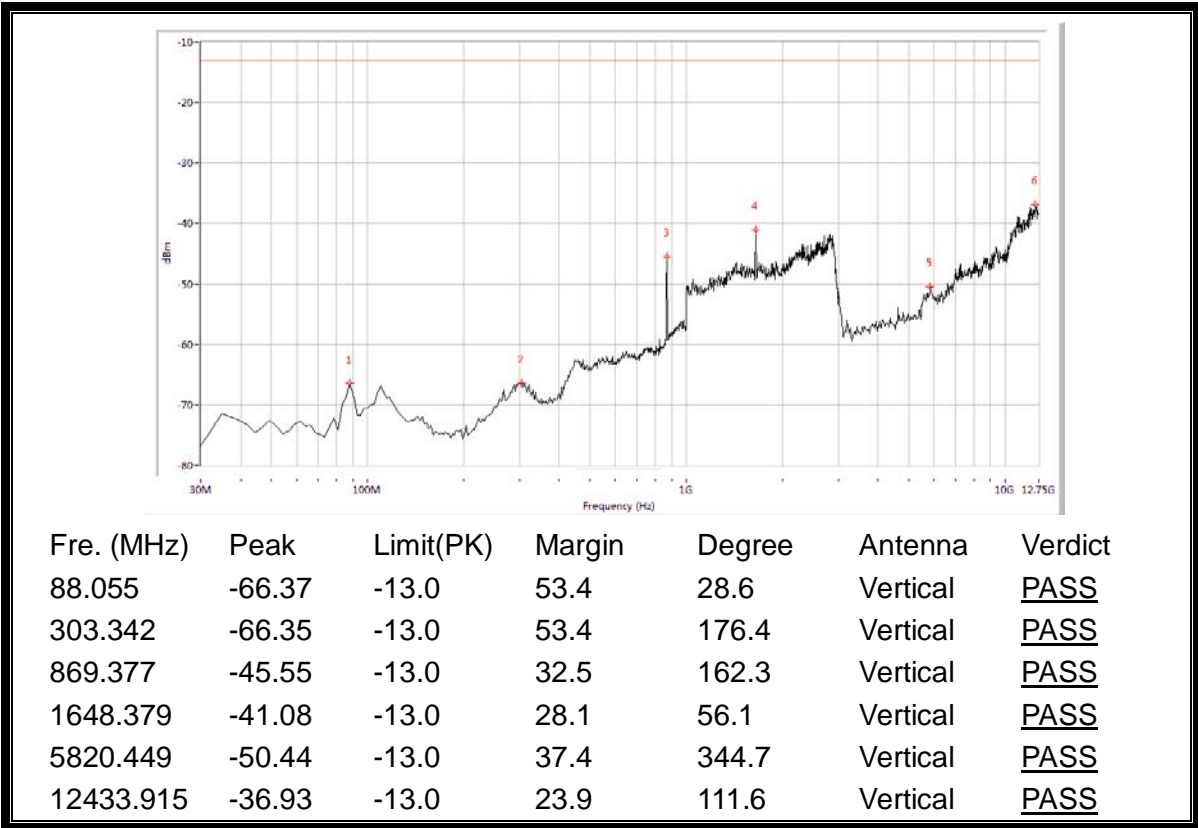
(Plot G.3: HSDPA 850MHz Channel = 4175, Test Antenna Horizontal)



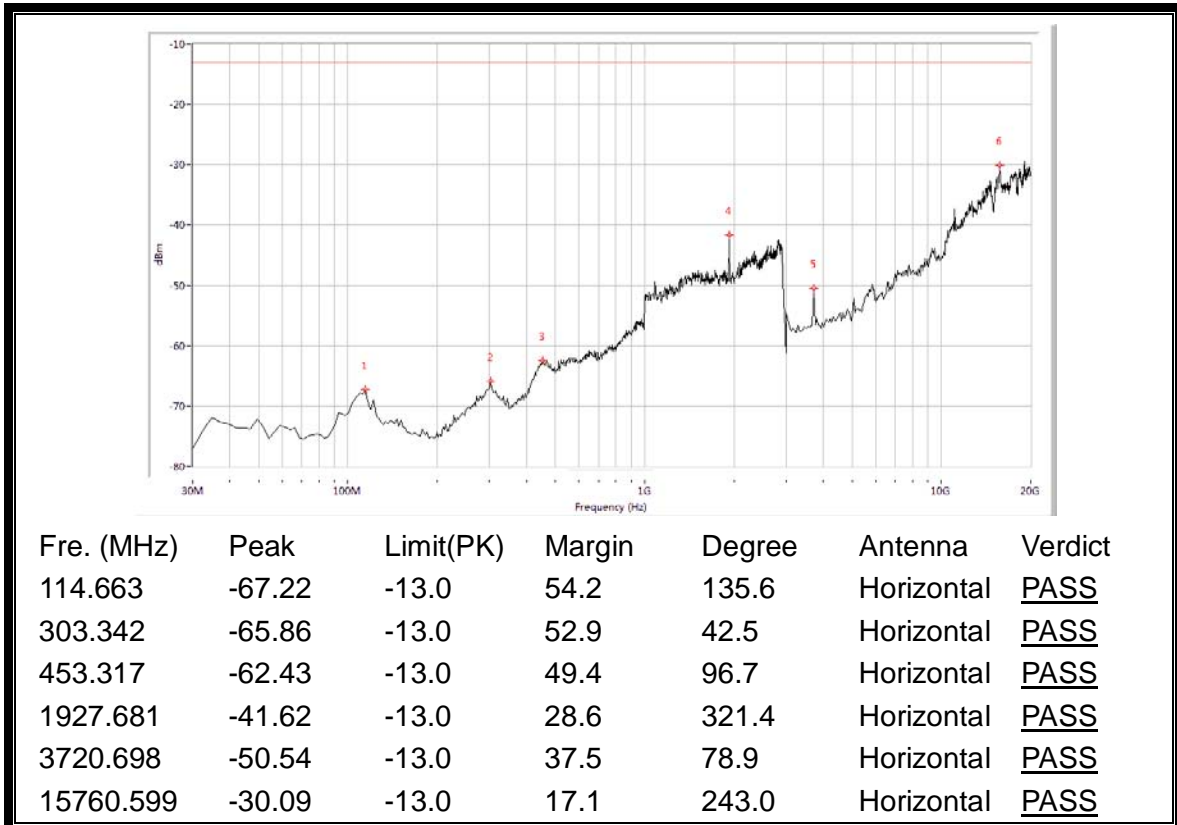
(Plot G.4: HSDPA 850MHz Channel = 4175, Test Antenna Vertical)



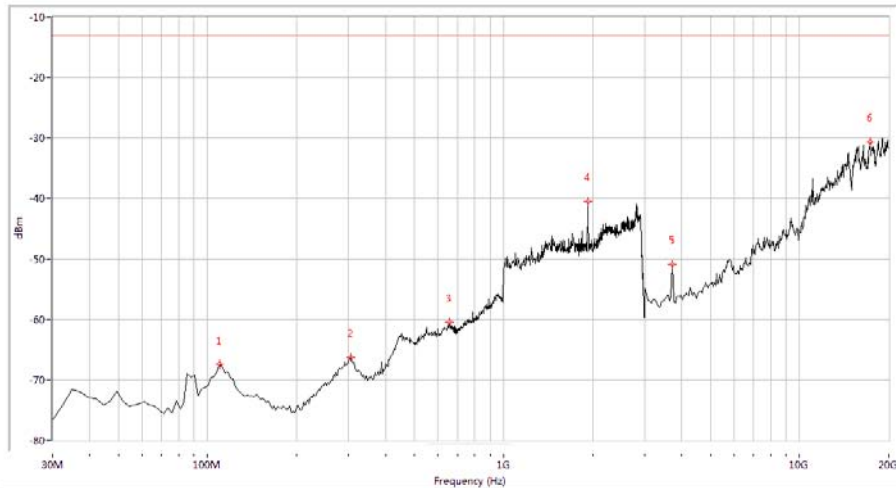
(Plot G.5: HSDPA 850MHz Channel = 4233, Test Antenna Horizontal)



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

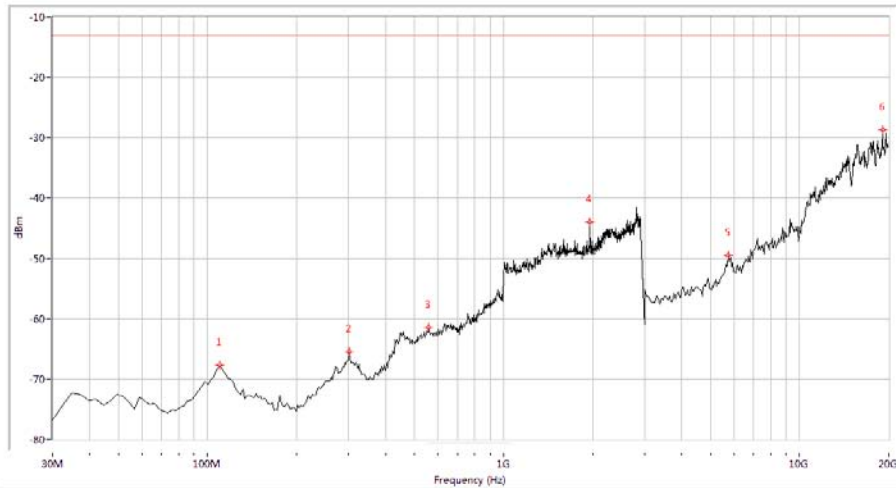


(Plot H.1: HSDPA 1900 MHz Channel = 9262, Test Antenna Horizontal)



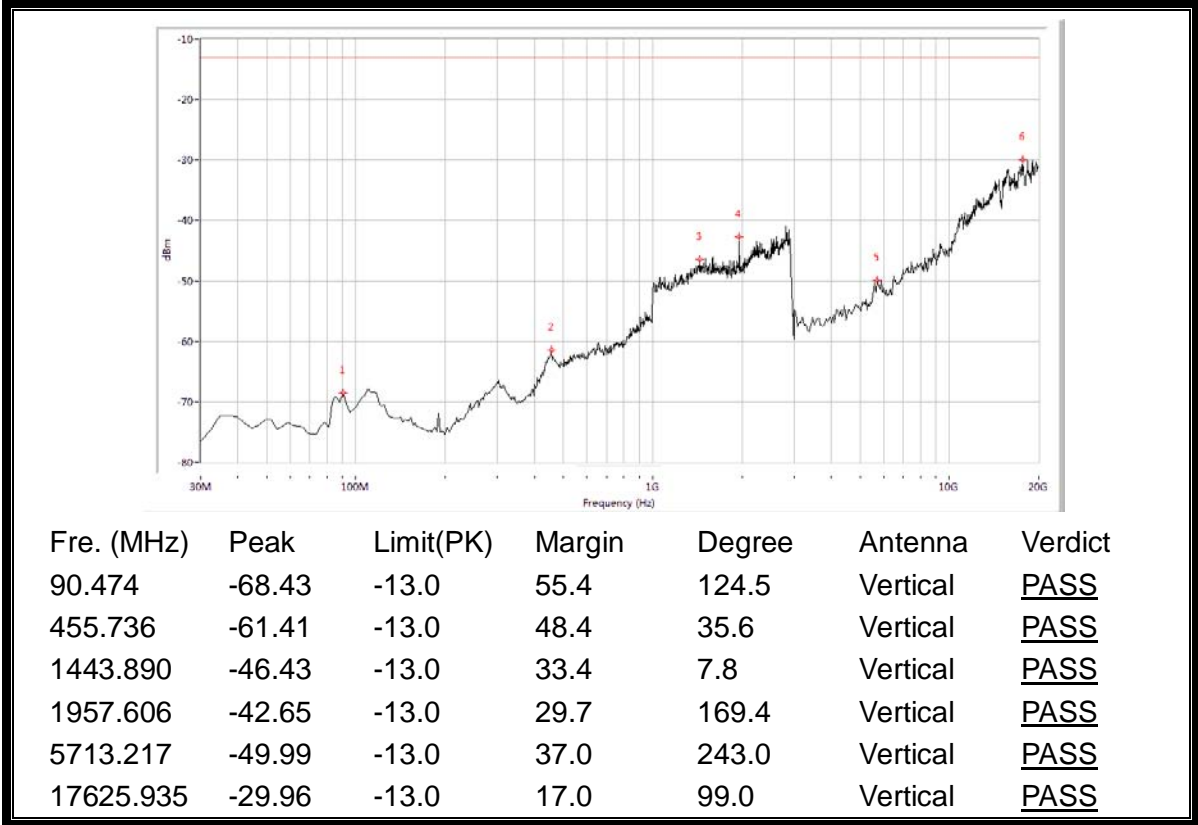
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.38	-13.0	54.4	328.9	Vertical	<u>PASS</u>
305.761	-66.28	-13.0	53.3	157.6	Vertical	<u>PASS</u>
656.509	-60.48	-13.0	47.5	42.0	Vertical	<u>PASS</u>
1927.681	-40.55	-13.0	27.6	173.2	Vertical	<u>PASS</u>
3720.698	-50.87	-13.0	37.9	9.8	Vertical	<u>PASS</u>
17286.783	-30.65	-13.0	17.6	213.8	Vertical	<u>PASS</u>

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

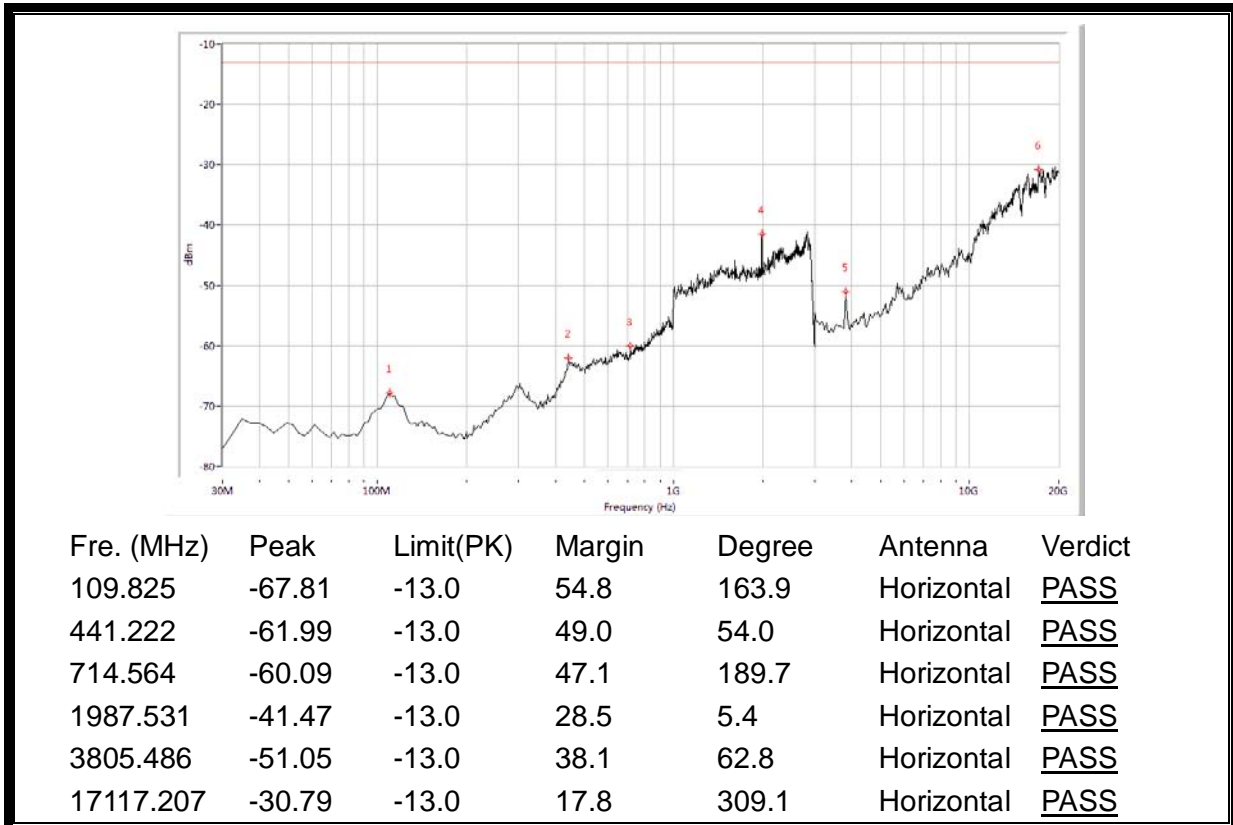


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.64	-13.0	54.6	134.5	Horizontal	<u>PASS</u>
300.923	-65.49	-13.0	52.5	6.2	Horizontal	<u>PASS</u>
559.751	-61.47	-13.0	48.5	78.9	Horizontal	<u>PASS</u>
1957.606	-44.02	-13.0	31.0	243.6	Horizontal	<u>PASS</u>
5755.611	-49.45	-13.0	36.5	9.7	Horizontal	<u>PASS</u>
19109.726	-28.77	-13.0	15.8	343.0	Horizontal	<u>PASS</u>

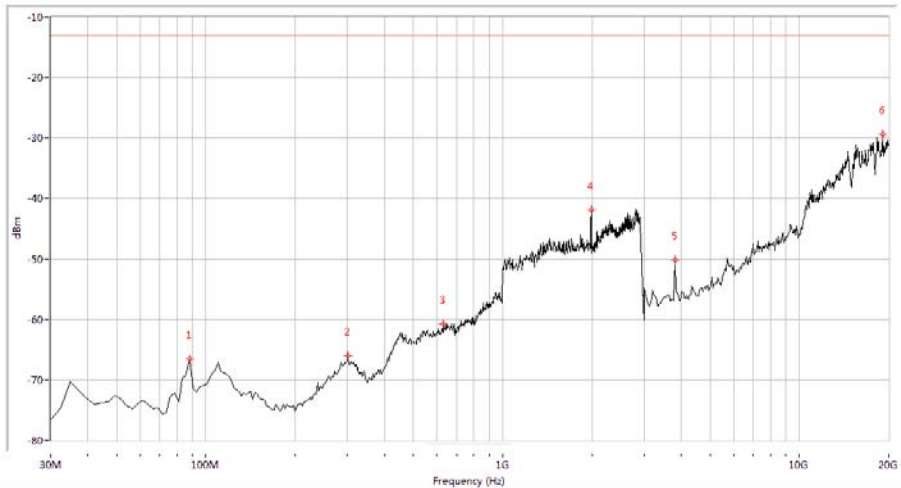
(Plot H.3: HSDPA 1900 MHz Channel = 9400, Test Antenna Horizontal)



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

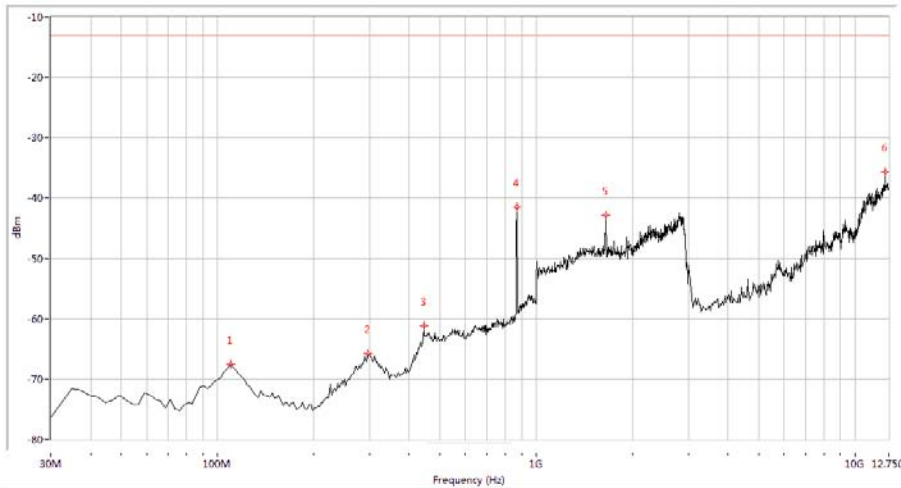


(Plot H.5: HSDPA 1900 MHz Channel = 9538, Test Antenna Horizontal)



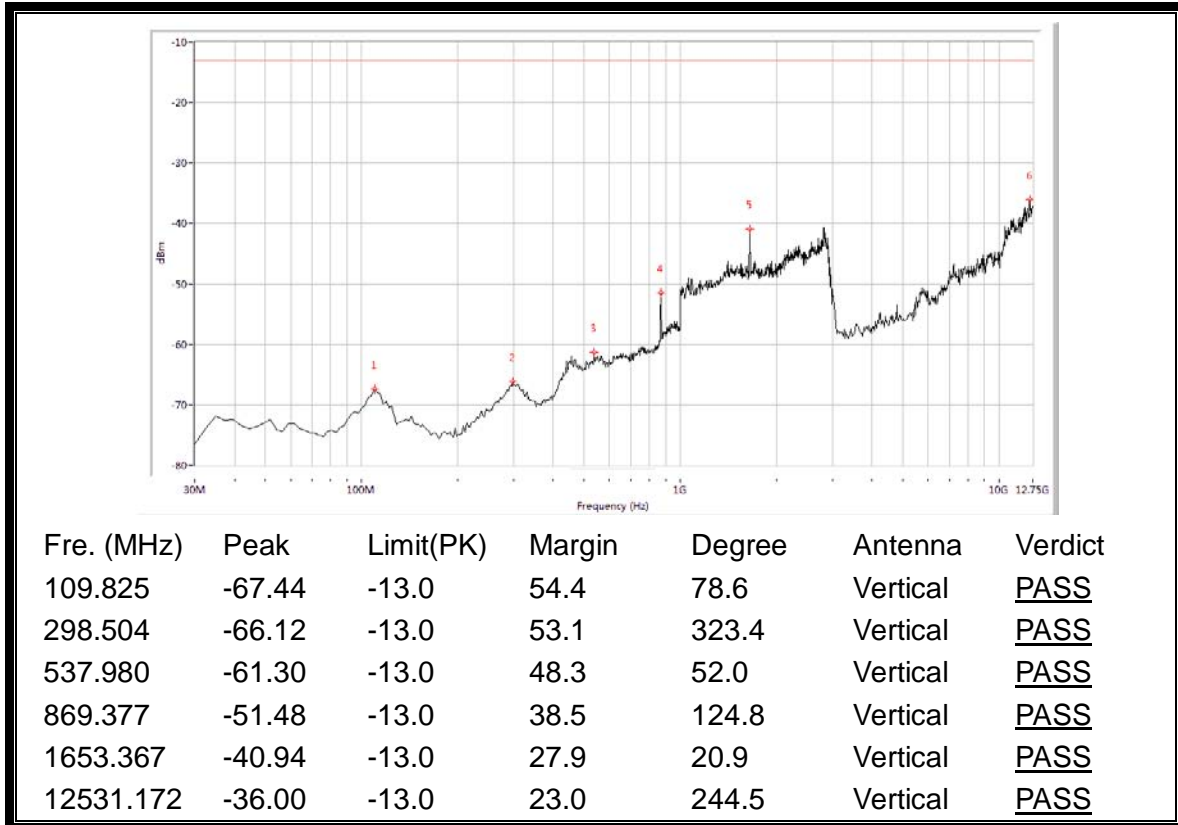
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
88.055	-66.61	-13.0	53.6	136.9	Vertical	<u>PASS</u>
300.923	-65.99	-13.0	53.0	52.0	Vertical	<u>PASS</u>
629.900	-60.72	-13.0	47.7	8.7	Vertical	<u>PASS</u>
1987.531	-41.94	-13.0	28.9	199.4	Vertical	<u>PASS</u>
3805.486	-50.24	-13.0	37.2	24.2	Vertical	<u>PASS</u>
19109.726	-29.46	-13.0	16.5	61.6	Vertical	<u>PASS</u>

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

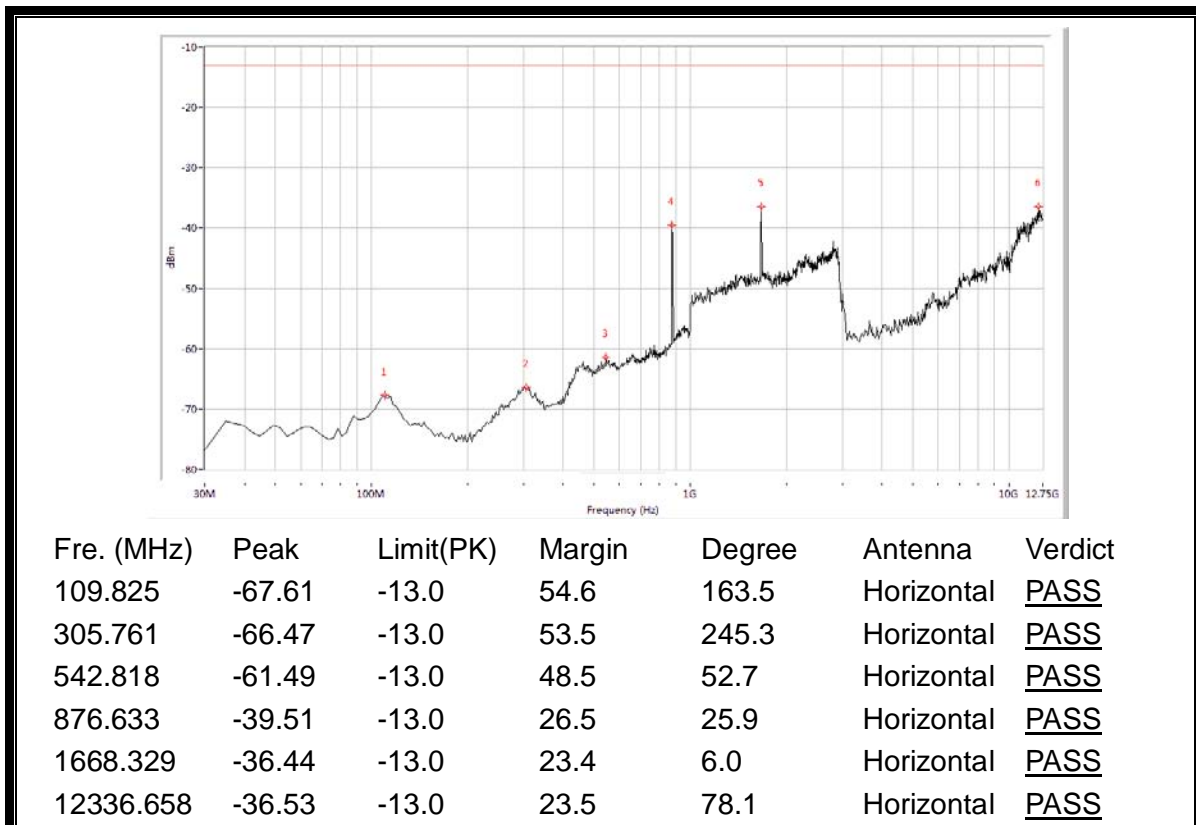


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-67.50	-13.0	54.5	36.9	Horizontal	<u>PASS</u>
296.085	-65.67	-13.0	52.7	43.3	Horizontal	<u>PASS</u>
443.641	-61.21	-13.0	48.2	122.0	Horizontal	<u>PASS</u>
869.377	-41.44	-13.0	28.4	78.8	Horizontal	<u>PASS</u>
1648.379	-42.86	-13.0	29.9	242.1	Horizontal	<u>PASS</u>
12458.229	-35.69	-13.0	22.7	9.6	Horizontal	<u>PASS</u>

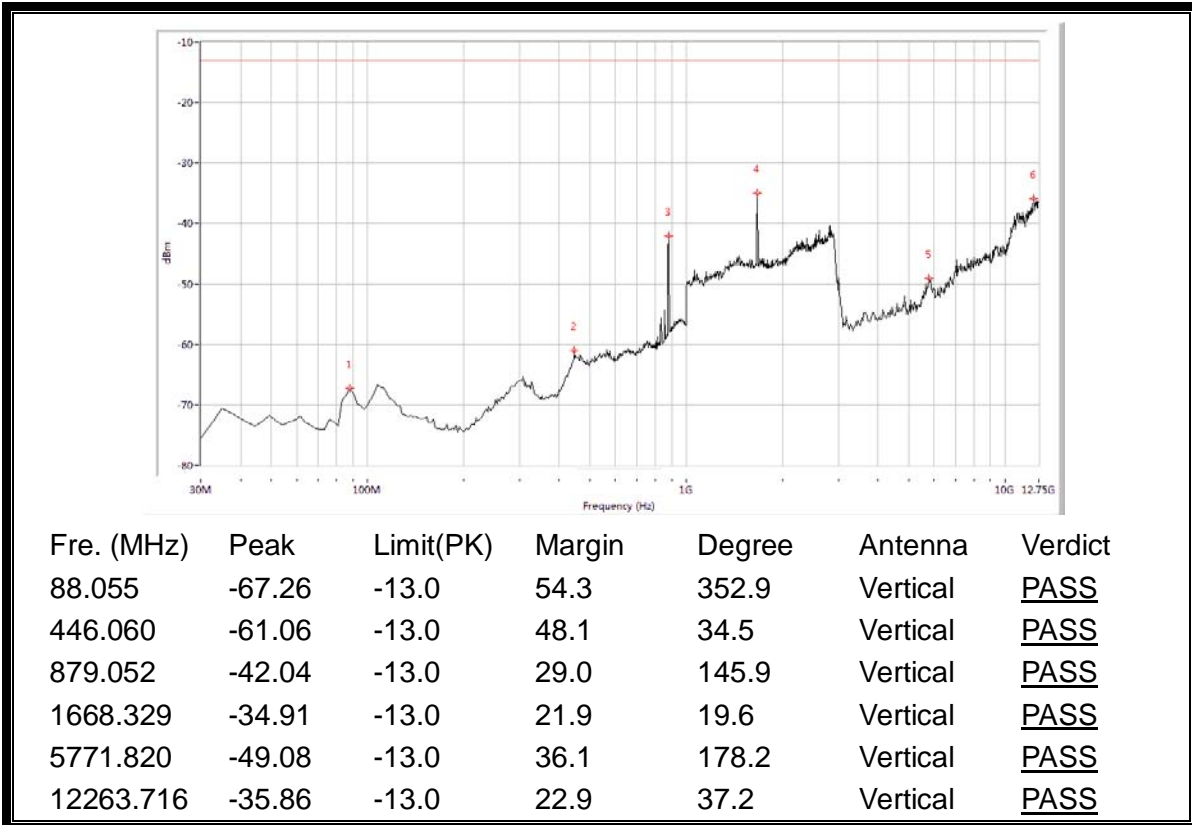
(Plot I.1: HSUPA 850MHz Channel = 4132, Test Antenna Horizontal)



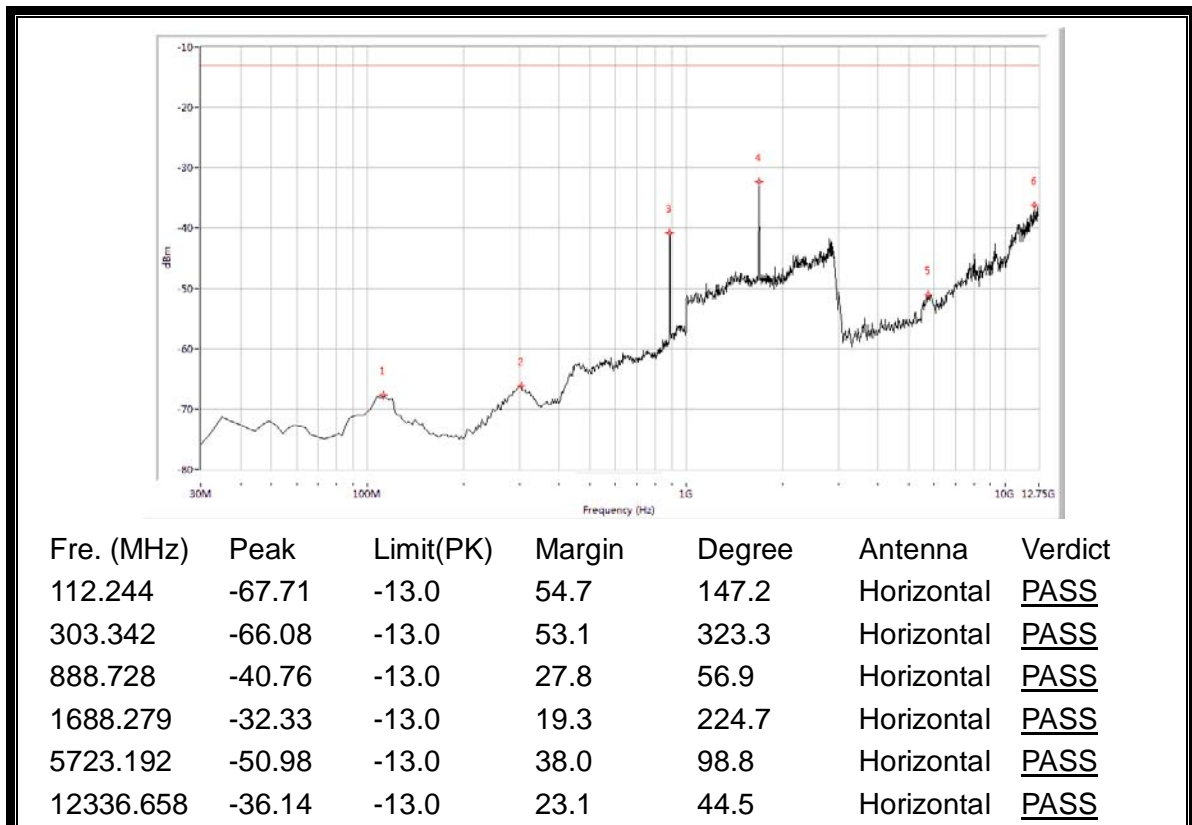
(Plot I.2: HSUPA 850 MHz Channel = 4132, Test Antenna Vertical)



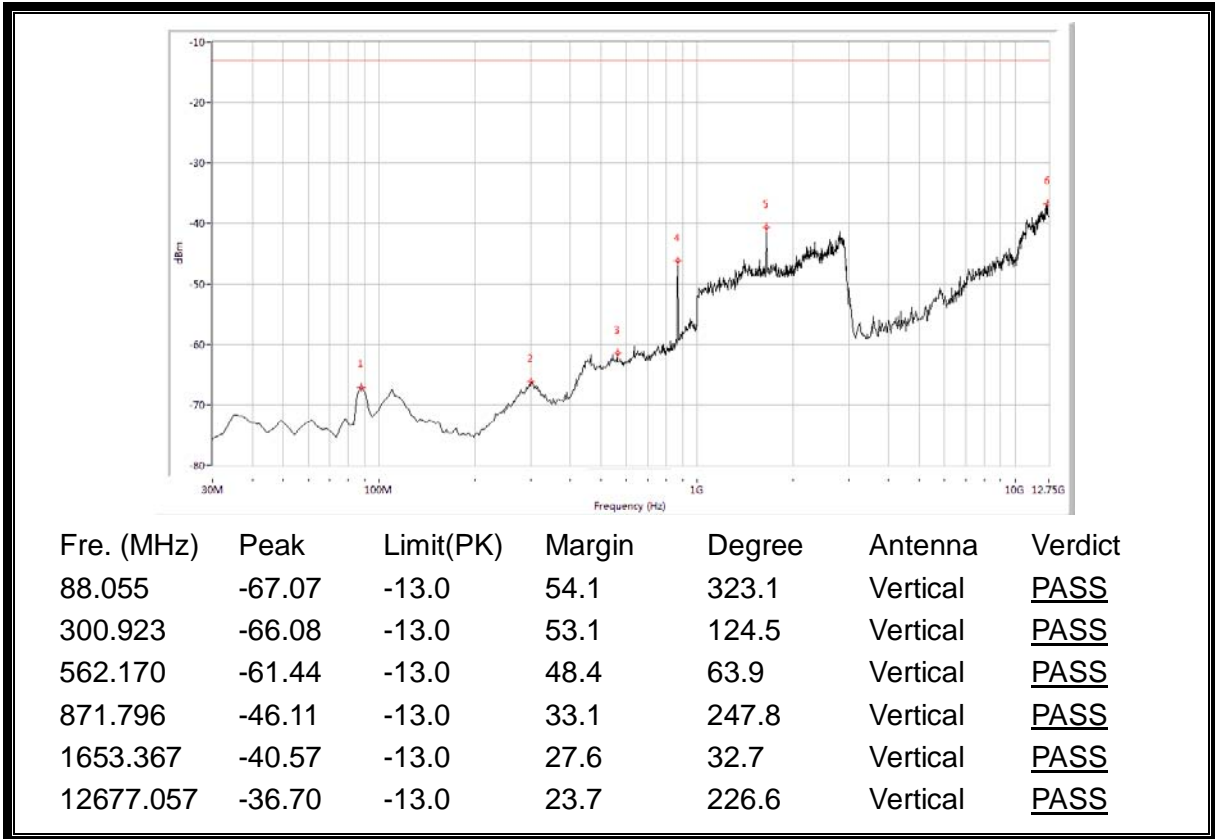
(Plot I.3: HSUPA 850MHz Channel = 4175, Test Antenna Horizontal)



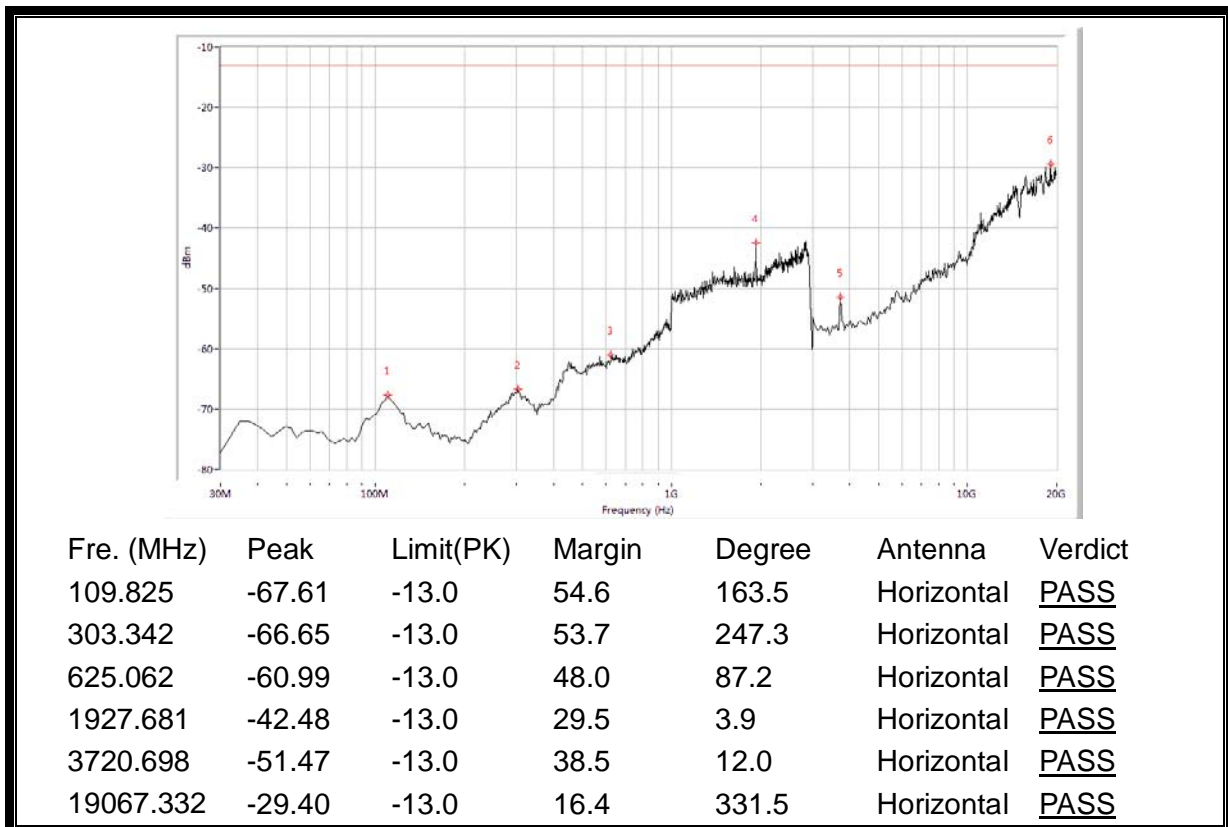
(Plot I.4: HSUPA 850MHz Channel = 4175, Test Antenna Vertical)



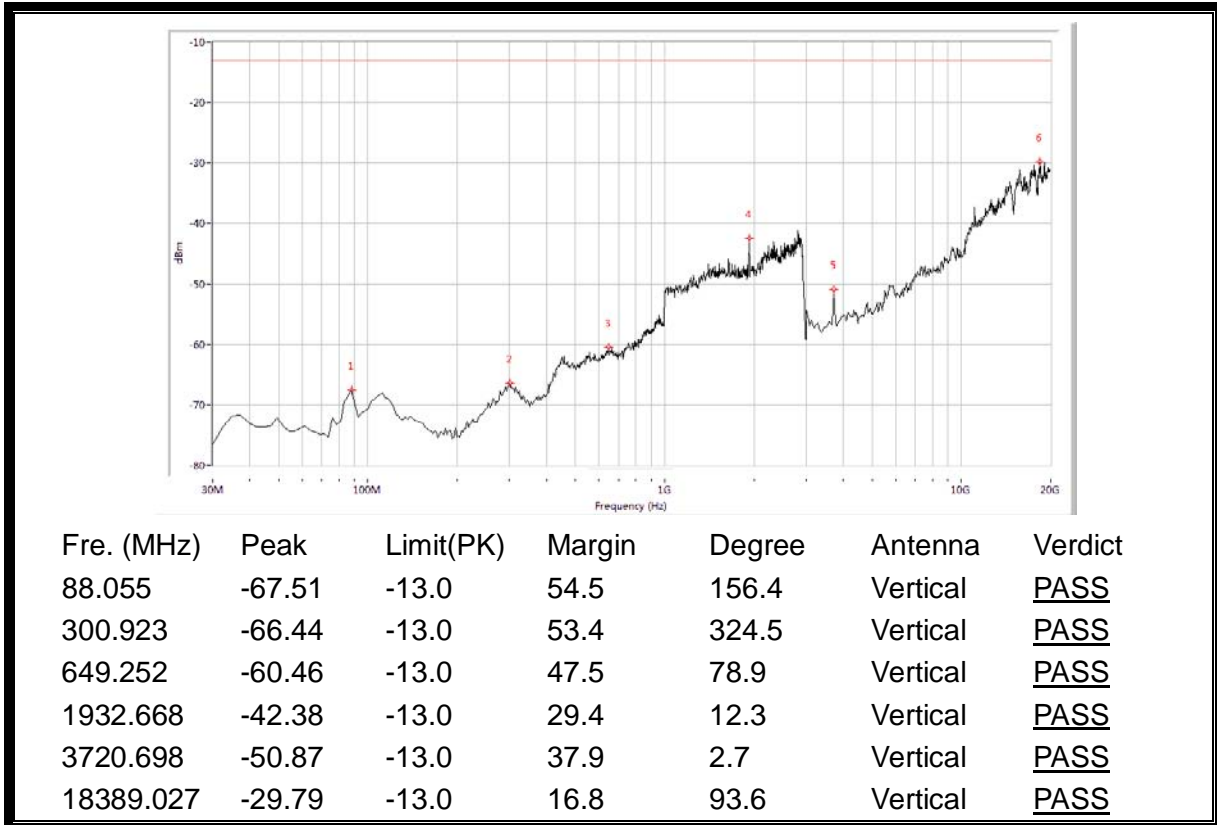
(Plot I.5: HSUPA 850MHz Channel = 4233, Test Antenna Horizontal)



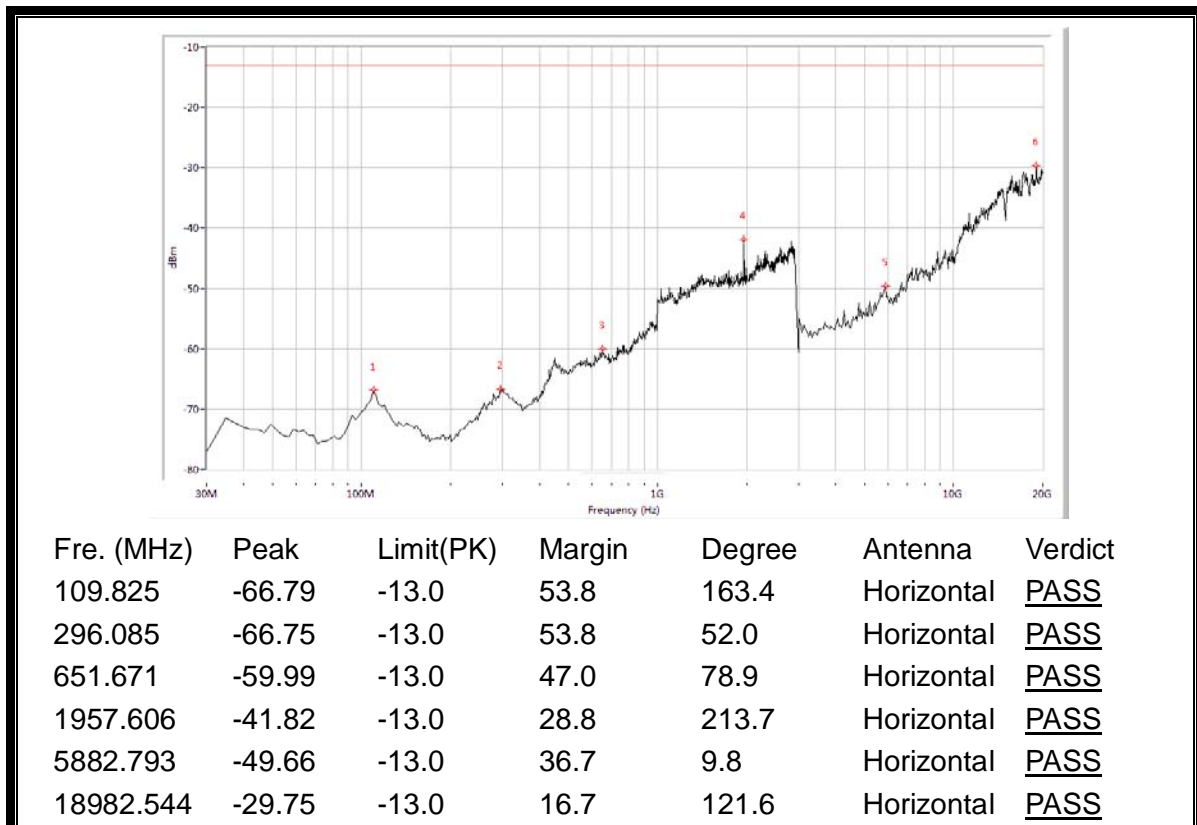
(Plot I.6: HSUPA 850MHz Channel = 4233, Test Antenna Vertical)



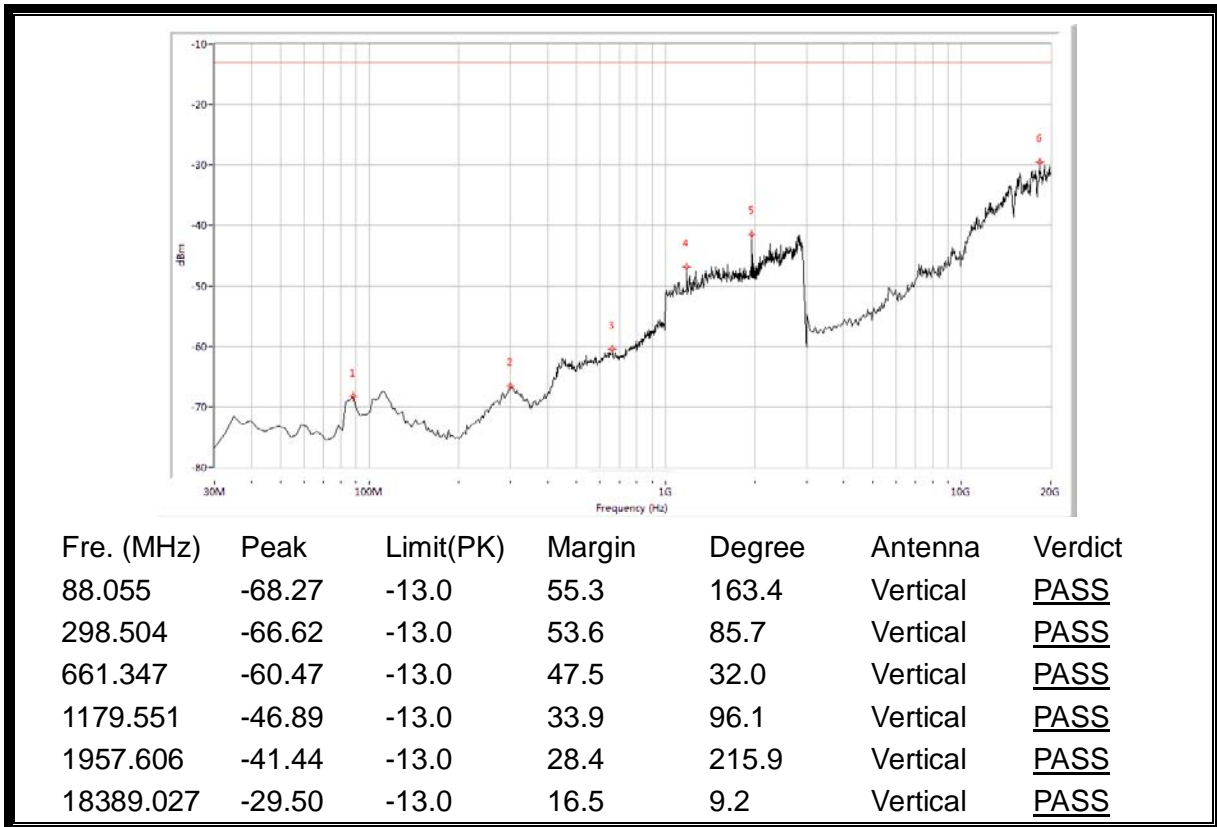
(Plot J.1: HSUPA 1900 MHz Channel = 9262, Test Antenna Horizontal)



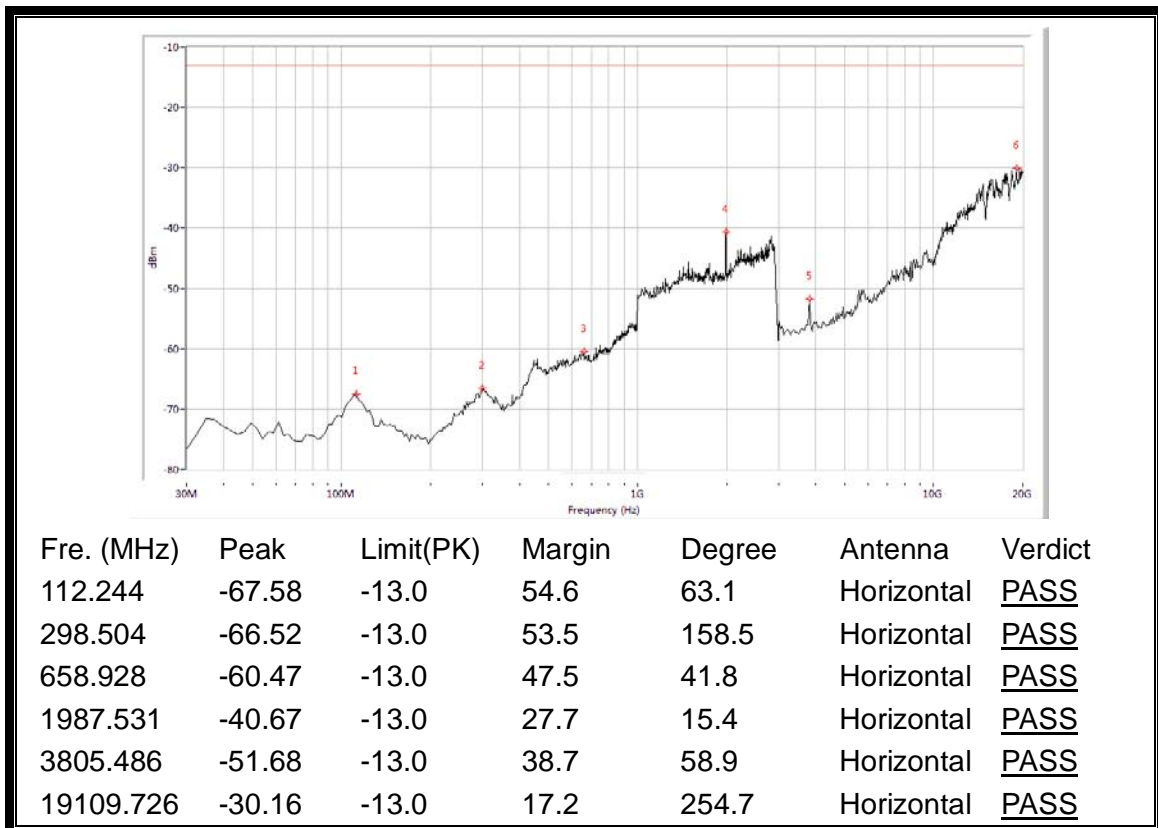
(Plot J.2: HSUPA 1900 MHz Channel = 9262, Test Antenna Vertical)



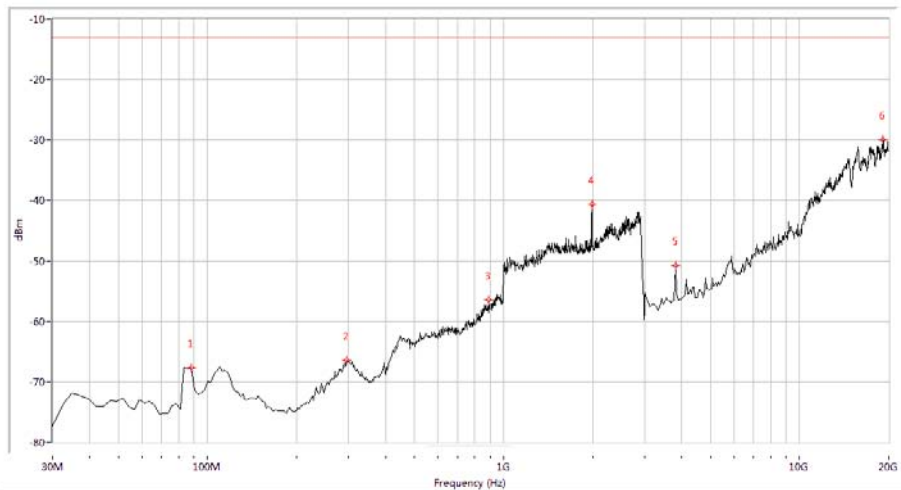
(Plot J.3: HSUPA 1900 MHz Channel = 9400, Test Antenna Horizontal)



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

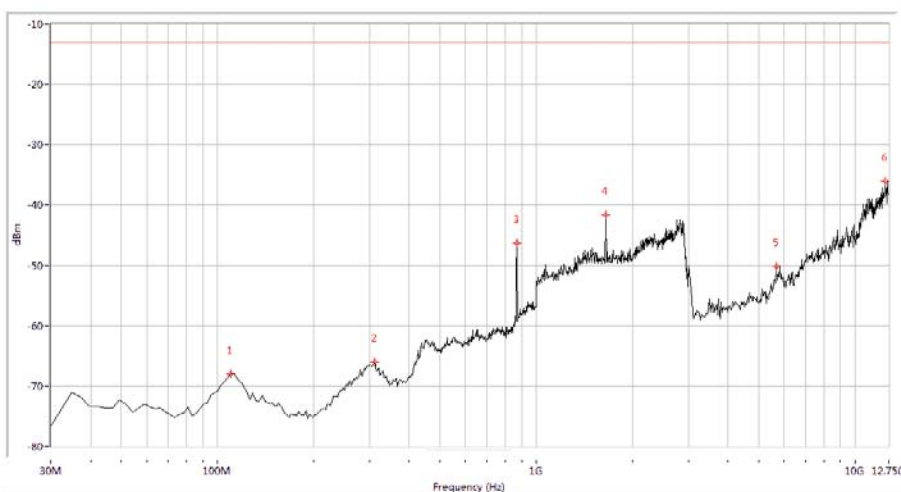


(Plot J.5: HSUPA 1900 MHz Channel = 9538, Test Antenna Horizontal)



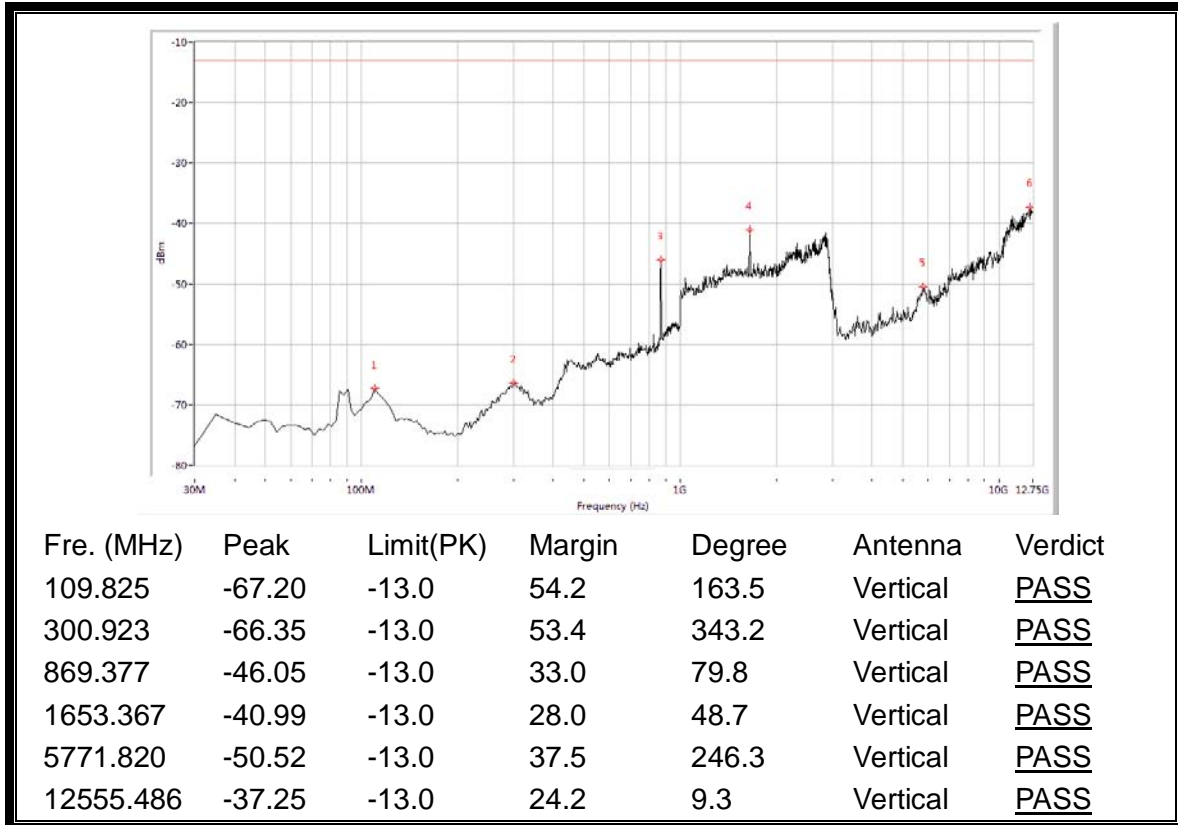
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
88.055	-67.69	-13.0	54.7	318.4	Vertical	<u>PASS</u>
296.085	-66.43	-13.0	53.4	52.4	Vertical	<u>PASS</u>
893.566	-56.43	-13.0	43.4	156.7	Vertical	<u>PASS</u>
1987.531	-40.70	-13.0	27.7	0.1	Vertical	<u>PASS</u>
3805.486	-50.77	-13.0	37.8	89.7	Vertical	<u>PASS</u>
19109.726	-29.99	-13.0	17.0	214.6	Vertical	<u>PASS</u>

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

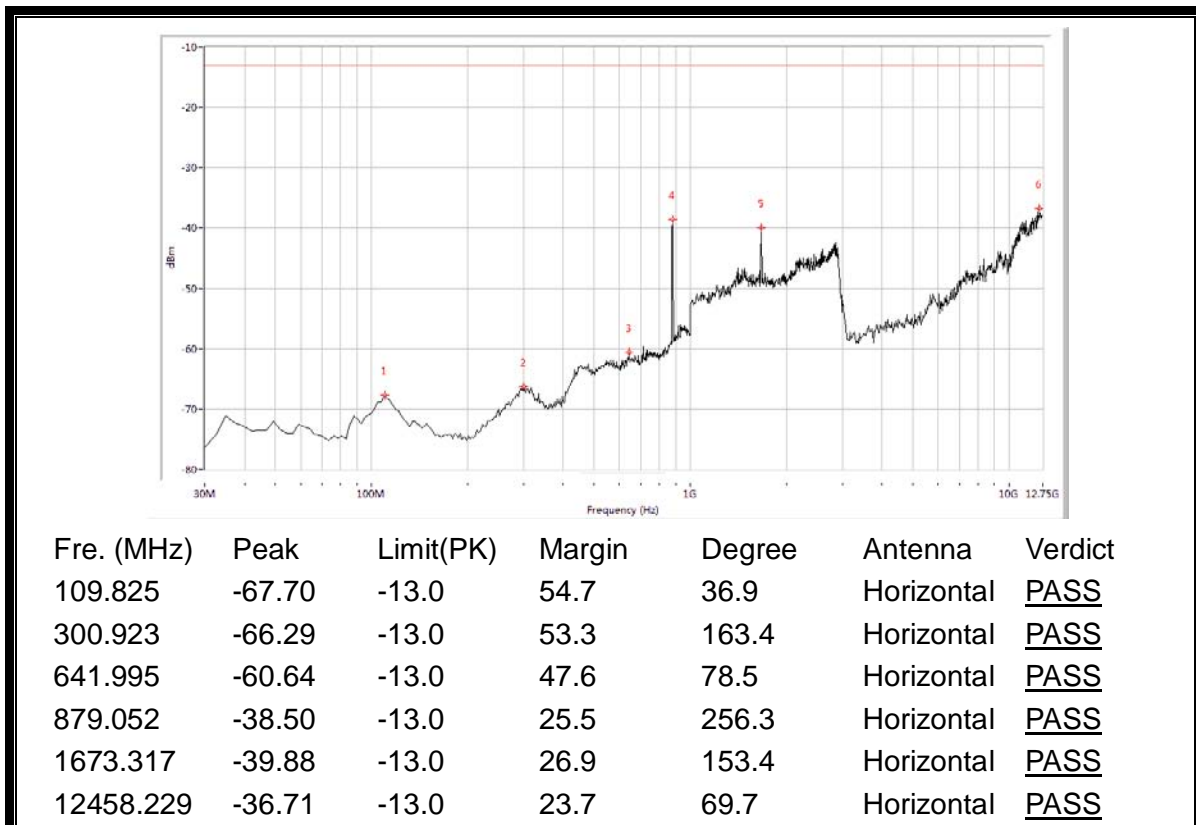


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-68.00	-13.0	55.0	36.6	Horizontal	<u>PASS</u>
310.599	-66.03	-13.0	53.0	253.2	Horizontal	<u>PASS</u>
869.377	-46.25	-13.0	33.3	132.4	Horizontal	<u>PASS</u>
1653.367	-41.63	-13.0	28.6	7.8	Horizontal	<u>PASS</u>
5674.564	-50.13	-13.0	37.1	321.3	Horizontal	<u>PASS</u>
12458.229	-36.00	-13.0	23.0	98.7	Horizontal	<u>PASS</u>

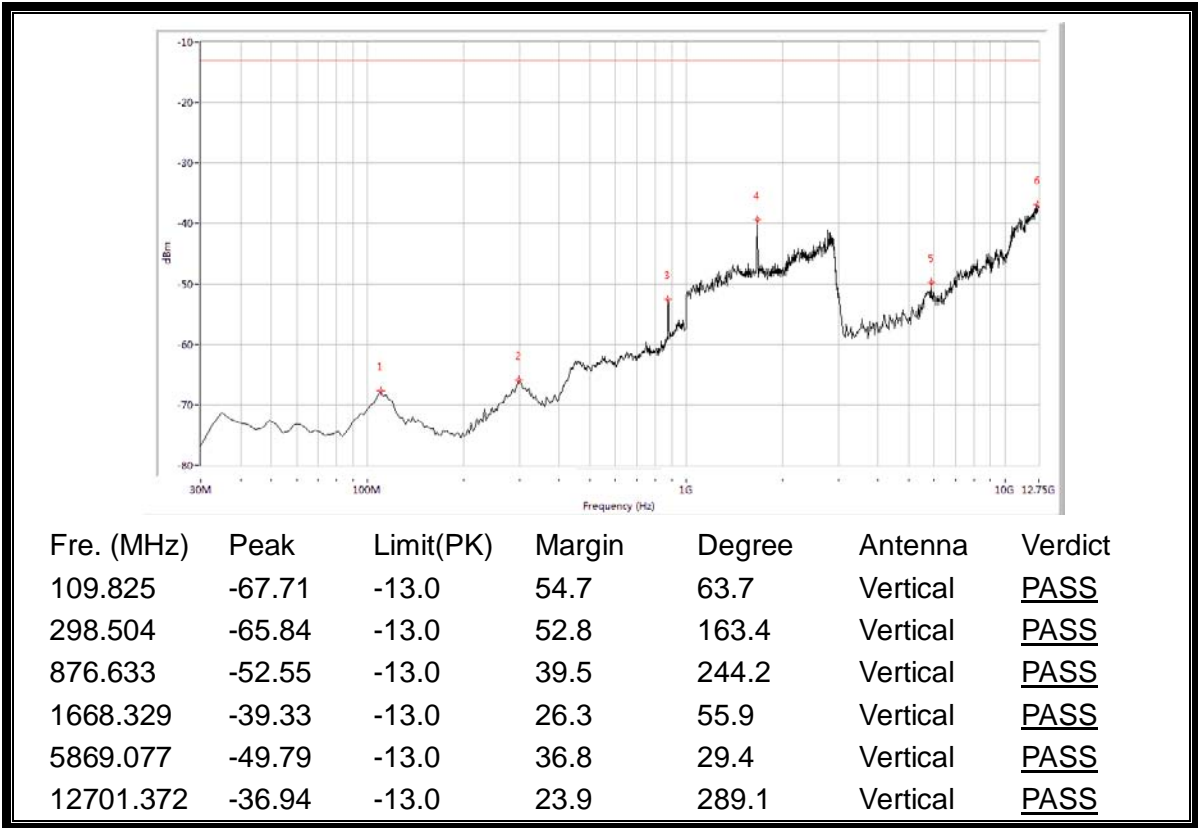
(Plot K.1: HSPA+ 850MHz Channel = 4132, Test Antenna Horizontal)



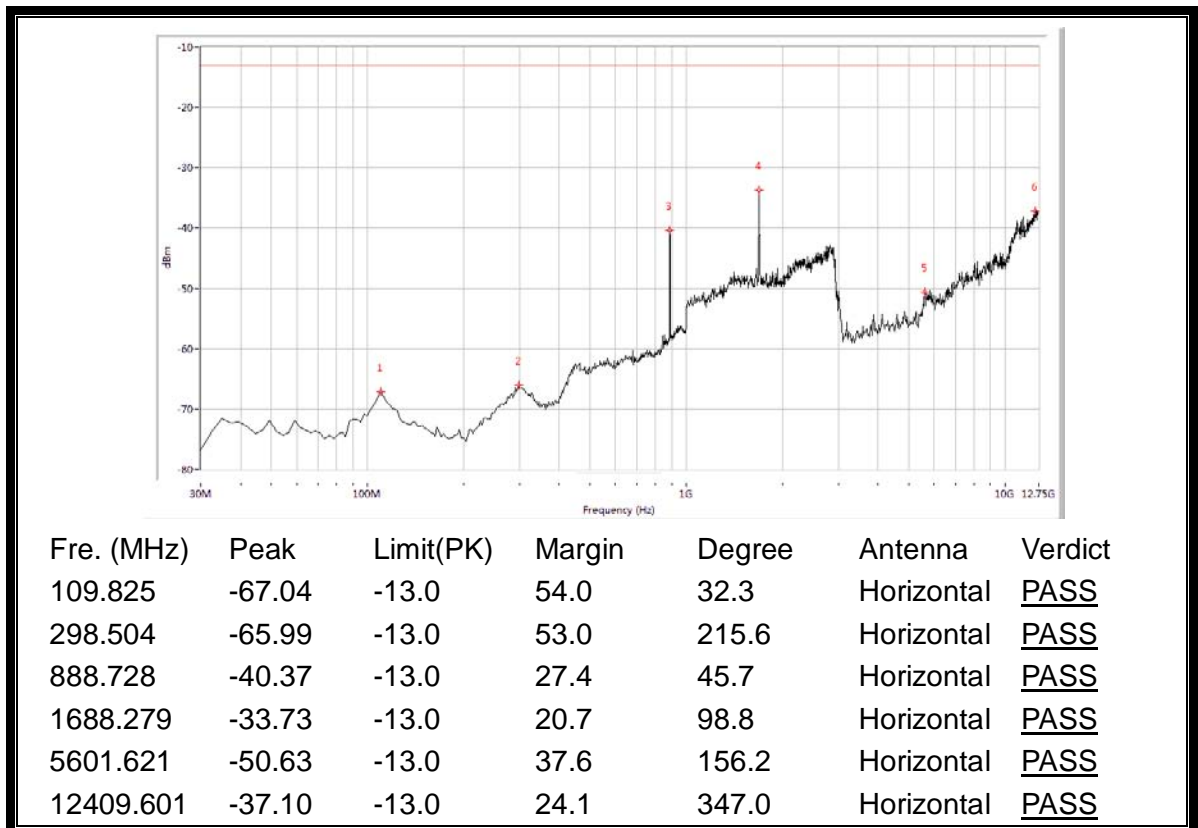
(Plot K.2: HSPA+ 850 MHz Channel = 4132, Test Antenna Vertical)



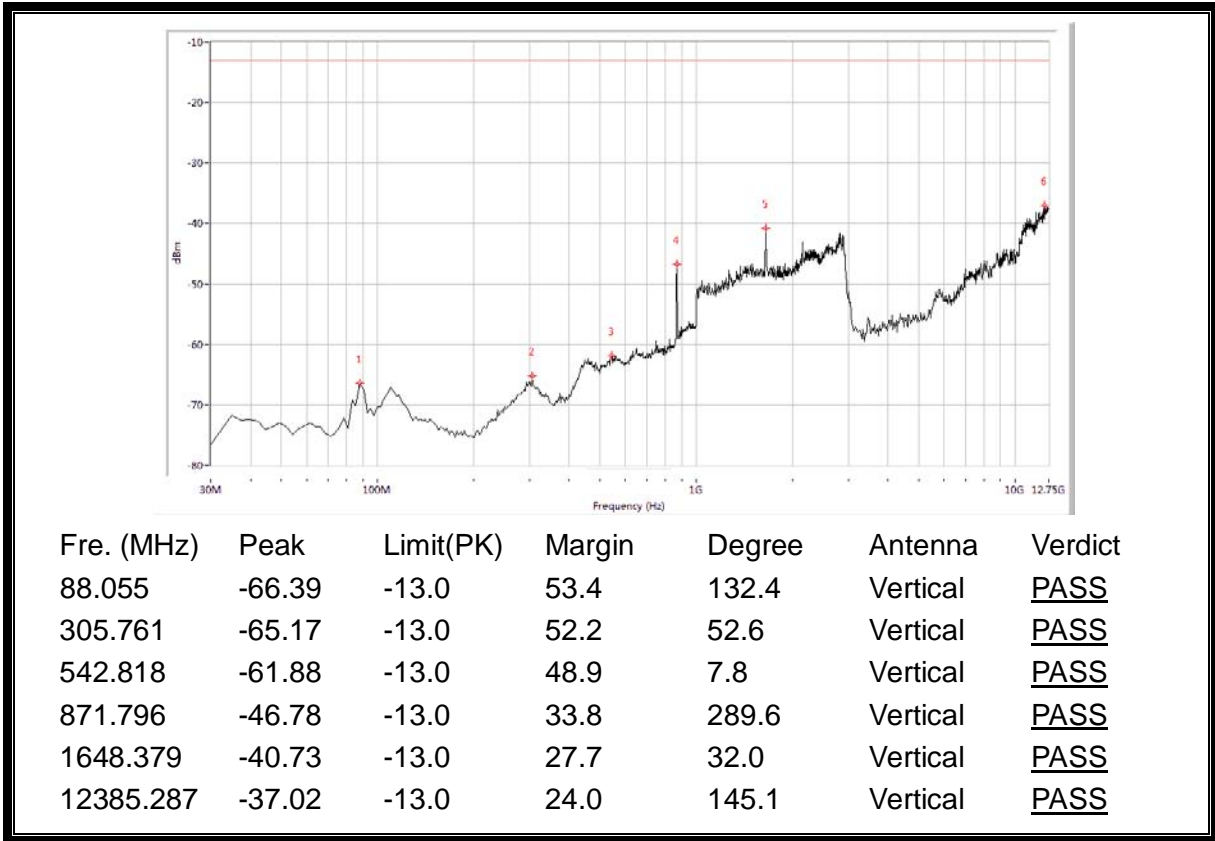
(Plot K.3: HSPA+ 850MHz Channel = 4175, Test Antenna Horizontal)



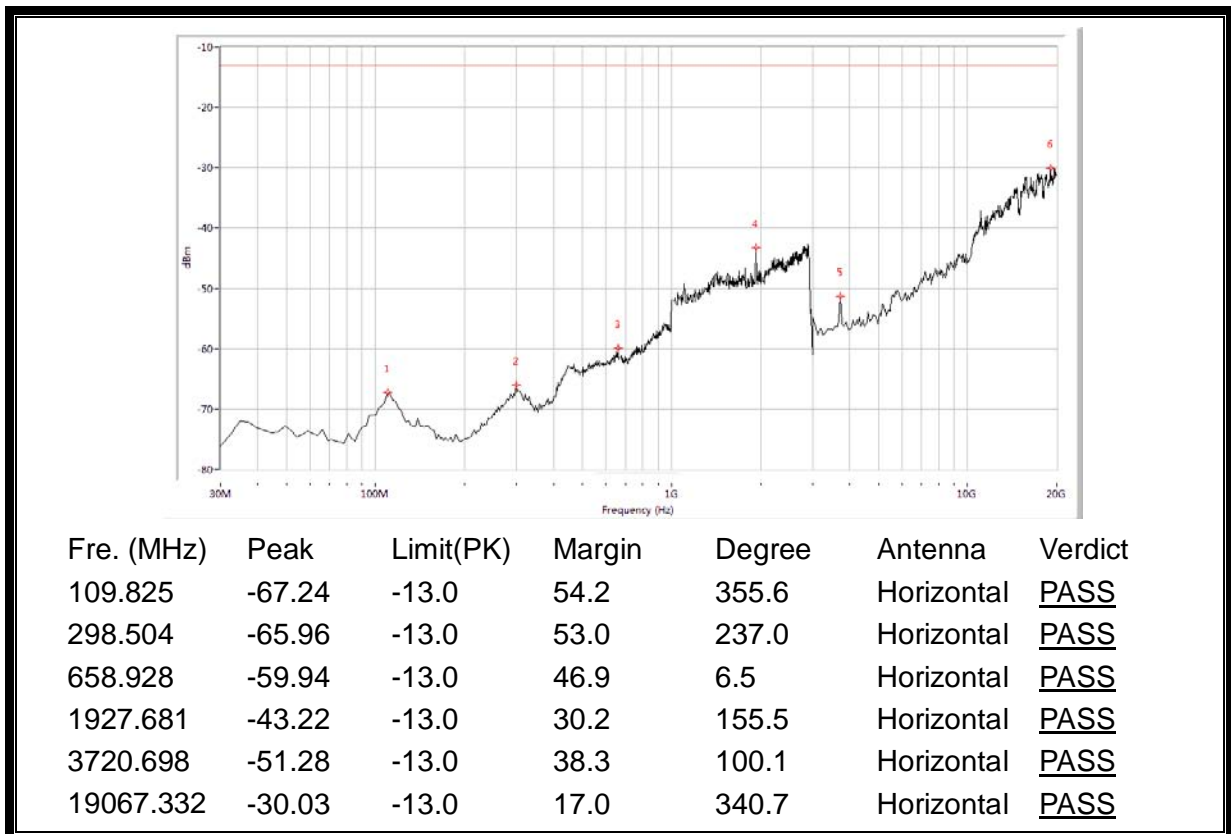
(Plot K.4: HSPA+ 850MHz Channel = 4175, Test Antenna Vertical)



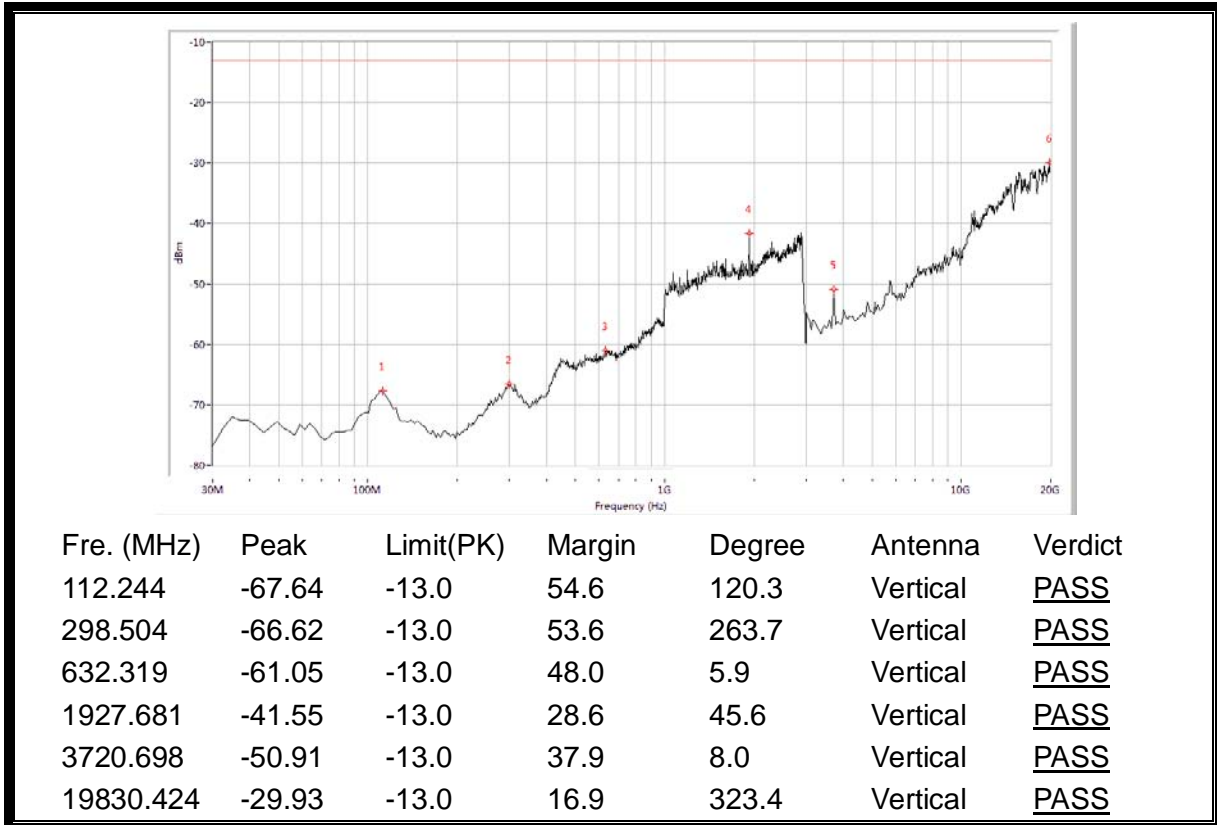
(Plot K.5: HSPA+ 850MHz Channel = 4233, Test Antenna Horizontal)



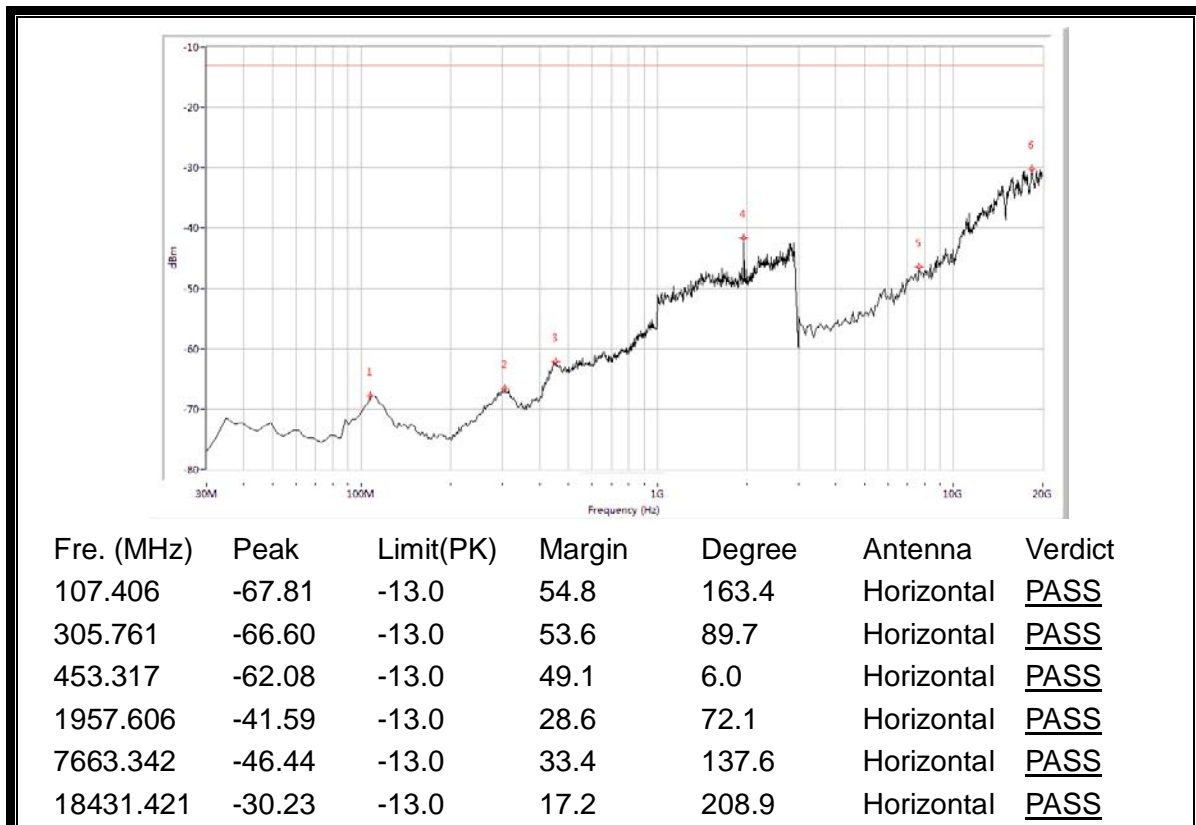
(Plot K.6: HSPA+ 850MHz Channel = 4233, Test Antenna Vertical)



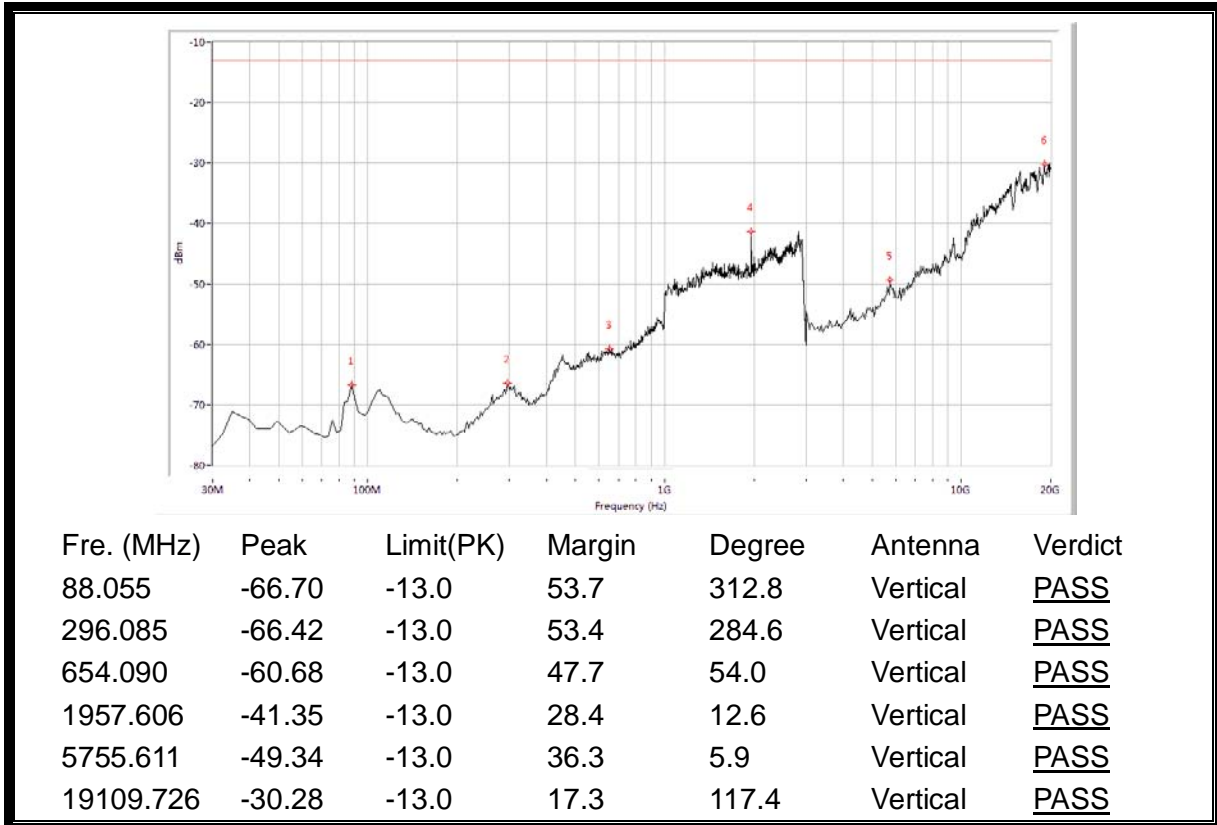
(Plot L.1: HSPA+ 1900 MHz Channel = 9262, Test Antenna Horizontal)



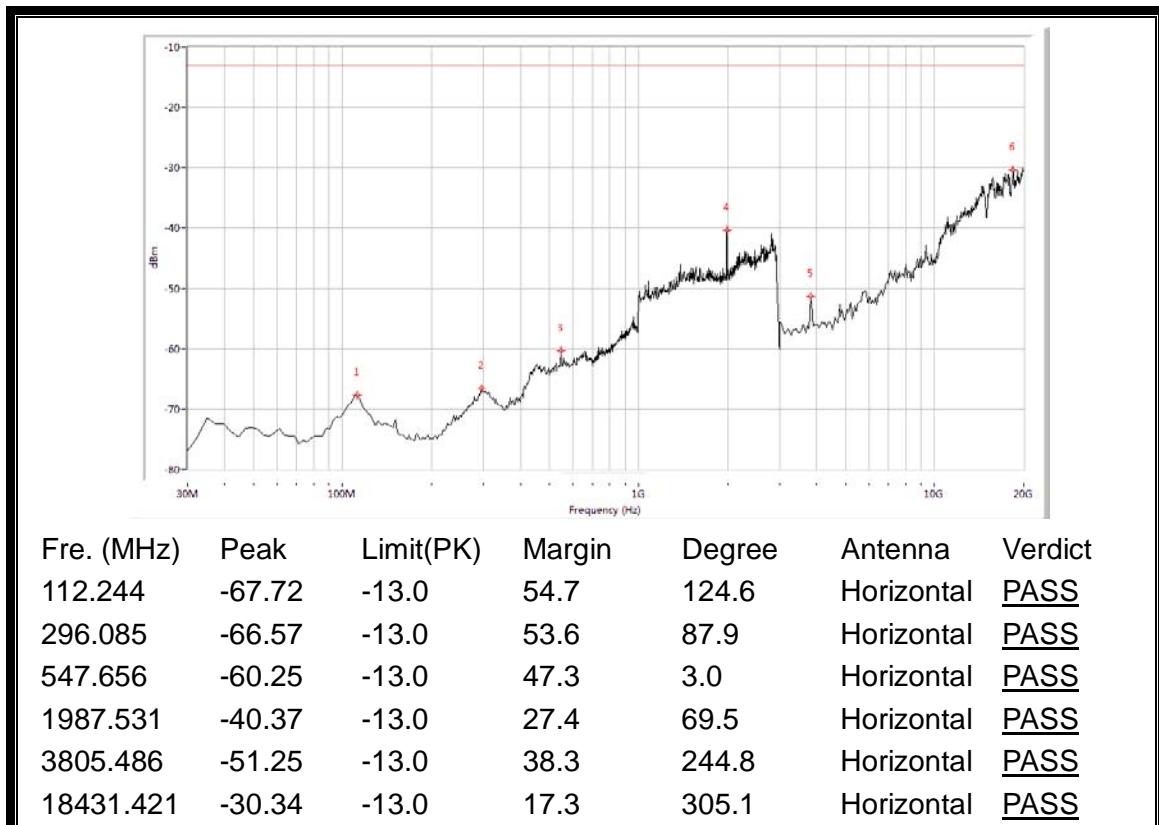
(Plot L.2: HSPA+ 1900 MHz Channel = 9262, Test Antenna Vertical)



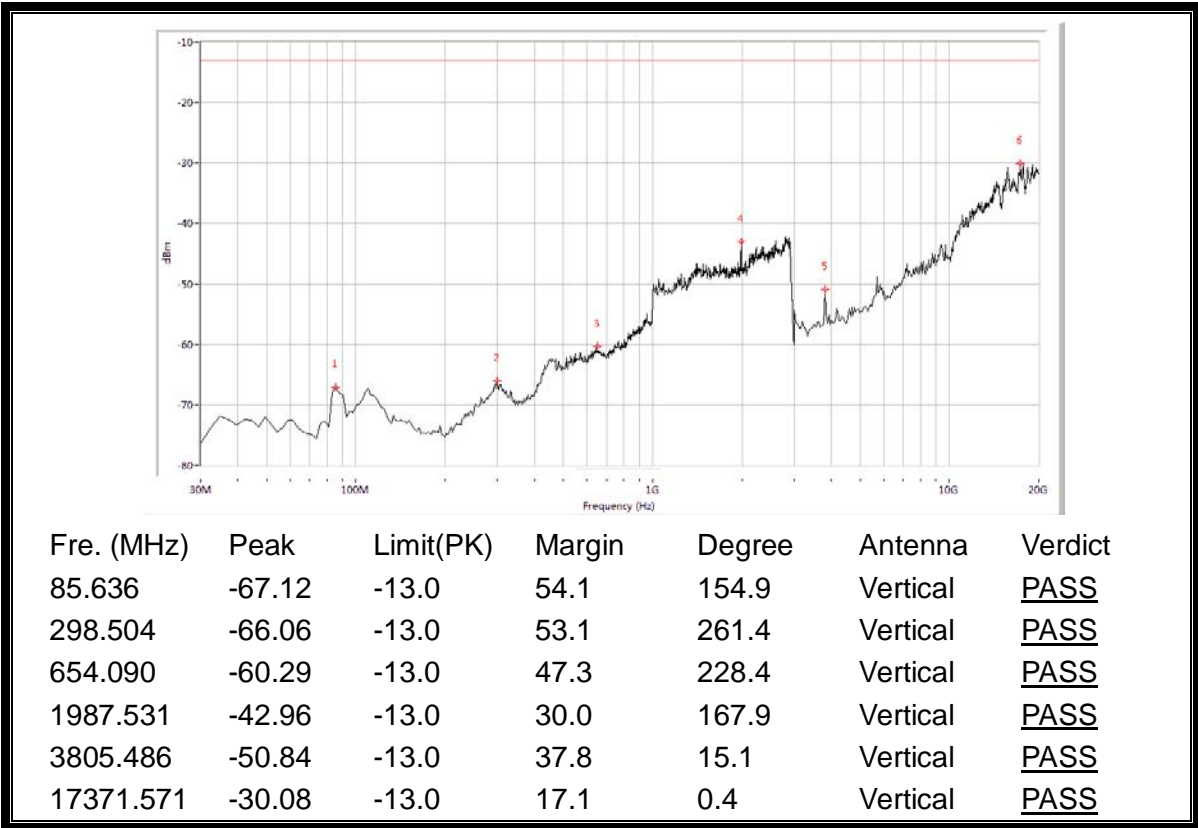
(Plot L.3: HSPA+ 1900 MHz Channel = 9400, Test Antenna Horizontal)



(Plot L.4: HSPA+ 1900 MHz Channel = 9400, Test Antenna Vertical)



(Plot L.5: HSPA+ 1900 MHz Channel = 9538, Test Antenna Horizontal)



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

** END OF REPORT **