

2.4 Frequency Stability

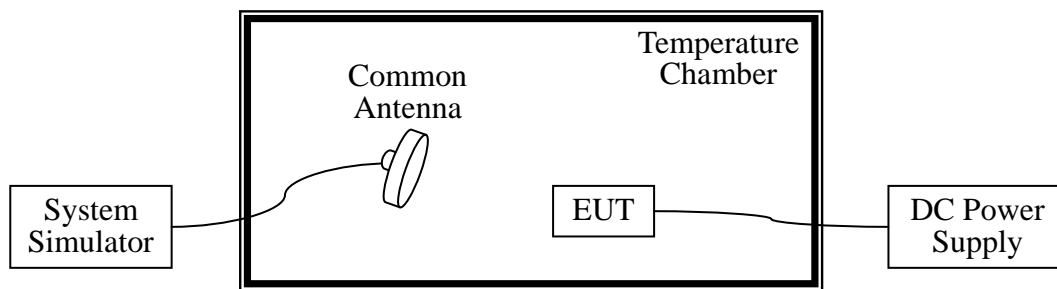
2.4.1 Requirement

According to FCC section 22.355 and FCC section 24.235, section 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.4.2 Test Description

1. Test Setup:



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

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2014.02.26	2015.02.25
DC Power Supply	Good Will	GPS-3030DD	EF920938	2014.02.26	2015.02.25
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2014.02.26	2015.02.25

2.4.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.35VDC and 3.6VDC, which are specified by the applicant; the normal temperature here used is 25°C. The frequency deviation limit of 850MHz band is ±2.5ppm, and 1900MHz is ±1ppm, 1700MHz ±1ppm.

1. GSM 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	12.18	±2060.5	20.17	±2091.5	17.22	±2122	
	-20	-14.06		11.13		-11.92		
	-10	18.79		-12.56		13.11		
	0	22.39		31.11		12.09		
	+10	37.27		-25.03		3.02		
	+20	2.37		-17.19		19.71		
	+30	31.26		19.36		-10.21		
	+40	40.55		19.64		-12.10		
4.35	+55	35.28	22.27	-12.99				
	+25	-14.73	28.95	-7.53				
3.6	+25	-11.13	31.21	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	
3.8	-30	5.05	±1850.2	22.63	±1880.0	22.15	±1909.8	
	-20	3.02		-21.25		-10.27		
	-10	10.76		-11.11		-13.22		
	0	-16.51		-13.30		15.31		
	+10	-2.10		-25.67		21.39		
	+20	-12.99		13.51		16.22		
	+30	5.05		-10.61		-21.29		
	+40	3.02		33.27		15.35		
4.35	+55	10.76	23.82	-14.28				
	+25	31.28	23.82	21.29				
3.6	+25	-18.01	11.37	18.95				

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	
3.8	-30	11.33	±2060.5	7.23	±2091.5	-11.72	±2122	
	-20	-17.55		-24.78				
	-10	38.10		-1.26		13.33		
	0	-22.06		-18.68		5.33		
	+10	-16.11		-21.61		35.26		
	+20	17.76		14.58		-26.78		
	+30	15.64		-0.68		19.54		
	+40	17.33		36.87		-16.67		
4.35	+55	-17.55	3.67	26.79				
	+25	-15.71	13.95	-11.76				
3.6	+25	-16.70	36.23	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	
3.8	-30	-0.59	±1850.2	16.41	±1880.0	-19.15	±1909.8	
	-20	21.45		30.18		27.02		
	-10	13.45		32.07		44.04		
	0	1.31		-7.98		-17.39		
	+10	-12.52		26.21		10.91		
	+20	30.62		11.10		6.63		
	+30	13.45		-6.17		28.93		
	+40	-12.52		-12.68		19.22		
4.35	+55	-0.59	36.87	22.19				
	+25	15.60	3.02	26.79				
3.6	+25	-38.01	13.19	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	
3.8	-30	18.05	±2066	12.18	±2087.5	14.87	±2116.5	<u>PASS</u>
	-20	25.25		-14.06		-13.07		
	-10	11.62		18.79		17.42		
	0	30.03		22.39		-10.39		
	+10	13.45		37.27		17.47		
	+20	1.31		2.37		27.84		
	+30	-12.52		-13.47		-2.53		
	+40	26.21		-5.71		20.95		
	+55	11.10		12.18		19.66		
4.35	+25	-6.18	-14.06	22.19				
3.6	+25	18.61	-18.11	-11.33				

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	
3.8	-30	-13.96	±1852.4	-13.43	±1880.0	-8.72	±1907.6	<u>PASS</u>
	-20	35.23		12.08		23.65		
	-10	-8.31		-14.03		14.81		
	0	-13.95		18.79		-3.07		
	+10	-24.37		22.39		17.46		
	+20	12.88		37.27		-10.39		
	+30	-14.75		2.57		17.47		
	+40	23.37		-13.49		27.84		
	+55	-13.96		-5.71		-2.57		
4.35	+25	23.51	14.58	20.95				
3.6	+25	22.00	26.37	-23.22				

7. HSDPA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	27.46	±2066	-24.37	±2087.5	15.81	±2116.5	<u>PASS</u>
	-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					
4.35	+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	
3.8	-30	11.87	±1852.4	-3.01	±1880	2.61	±1907.6	<u>PASS</u>
	-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					
4.35	+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	
3.8	-30	25.52	±2066	13.5	±2087.5	13.55	±2116.5	<u>PASS</u>
	-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					
4.35	+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	
3.8	-30	31.57	±1852.4	-11.79	±1880	8.69	±1907.6	<u>PASS</u>
	-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					
4.35	+25	-7.08		6.81		25.48		
3.6	+25	22.58		-1.83		-15.78		

11. HSPA+ 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	26.32	±2066	13.5	±2087.5	17.51	±2116.5	<u>PASS</u>
	-20	-17.20		-17.71		22.32		
	-10	-12.61		-2.44		31.05		
	0	-13.09		0.01		-17.22		
	+10	-0.38		-16.31		-14.51		
	+20	-11.85		-11.79		21.35		
	+30	29.57		-0.44		-5.94		
	+40	-11.79		0.01		13.78		
+55	-0.44	23.76	28.45					
4.35	+25	8.71		-4.57		29.11		
3.6	+25	11.54		15.25		-6.75		

12. HSPA+ 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	12.11	±1852.4	-15.31	±1880	3.31	±1907.6	<u>PASS</u>
	-20	20.15		-11.79		-5.73		
	-10	11.61		-0.44		18.22		
	0	3.31		0.01		-33.55		
	+10	-5.73		-15.31		3.31		
	+20	18.22		-11.79		-5.73		
	+30	-33.55		-0.44		19.21		
	+40	27.16		0.01		-31.05		
+55	23.79	-6.64	22.36					
4.35	+25	-37.01		24.25		3.31		
3.6	+25	22.58		9.63		-17.08		

13. WCDMA 1700MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 1312 (1712.4MHz)		Channel = 1412 (1732.4MHz)		Channel = 1513 (1752.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	-0.44	±4281	-2.49	±4331	-9.07	±4381.5	<u>PASS</u>
	-20	0.01		0.71		-21.84		
	-10	13.82		-16.31		20.59		
	0	-15.25		-11.71		22.91		
	+10	-11.79		-0.44		-2.65		
	+20	-0.44		0.01		18.30		
	+30	1.15		23.76		-12.57		
	+40	-7.94		-2.44		28.95		
+50	-0.49	0.01	19.06					
4.35	+25	-6.18	30.62	22.12				
3.6	+25	18.66	-18.00	-18.76				

14. HSDPA 1700MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 1312 (1712.4MHz)		Channel = 1412 (1732.4MHz)		Channel = 1513 (1752.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	15.02	±4281	11.02	±4331	-13.01	±4381.5	<u>PASS</u>
	-20	-11.35		-20.51		22.35		
	-10	-11.27		21.15		27.01		
	0	12.57		17.31		-12.61		
	+10	34.18		21.31		18.22		
	+20	21.09		-17.51		18.30		
	+30	-10.95		28.62		-19.53		
	+40	27.21		17.25		28.93		
+50	17.10	-19.52	19.61					
4.35	+25	-11.01	30.62	22.03				
3.6	+25	12.63	-18.33	-18.27				

15. HSUPA 1700MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 1312 (1712.4MHz)		Channel = 1412 (1732.4MHz)		Channel = 1513 (1752.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	-14.71	±4281	-18.56	±4331	-21.01	±4381.5	<u>PASS</u>
	-20	18.85		-13.47		-19.32		
	-10	5.05		12.18		22.35		
	0	19.62		-14.06		31.18		
	+10	30.40		18.79		-22.05		
	+20	13.45		22.39		19.33		
	+30	1.31		37.27		-12.57		
	+40	-12.52		2.37		28.93		
	+50	16.10		-11.52		15.62		
4.35	+25	-6.18	-5.41	22.19				
3.6	+25	18.66	12.65	-17.75				

16. HSPA+ 1700MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 1312 (1712.4MHz)		Channel = 1412 (1732.4MHz)		Channel = 1513 (1752.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	12.15	±4281	11.02	±4331	-16.33	±4381.5	<u>PASS</u>
	-20	-14.36		13.22		30.15		
	-10	18.71		31.01		15.66		
	0	22.39		20.05		16.09		
	+10	37.22		-6.21		26.11		
	+20	2.37		0.07		-0.07		
	+30	12.18		19.22		33.51		
	+40	-14.06		51.76		3.77		
	+50	21.93		29.11		5.05		
4.35	+25	40.91	52.02	15.39				
3.6	+25	11.66	38.01	17.01				

2.5 Conducted Out of Band Emissions

2.5.1 Requirement

According to FCC section 22.917(a) and FCC 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.

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:

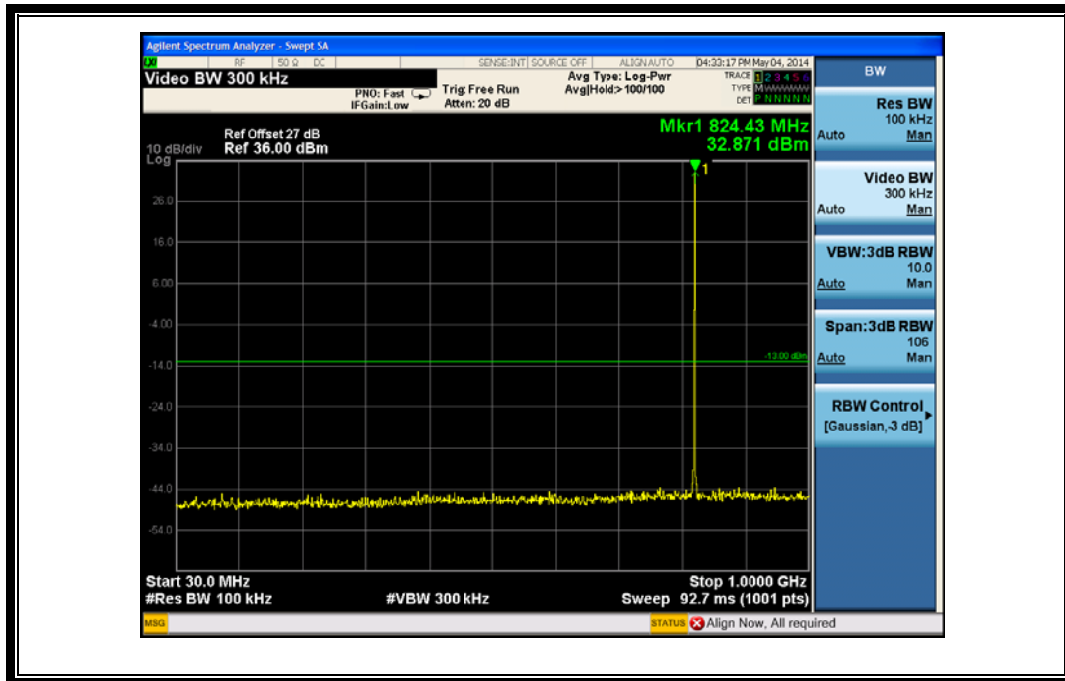
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	< -25	Plot A1toA1.1	-13	<u>PASS</u>
	190	836.6	< -25	Plot A2toA2.1		<u>PASS</u>
	251	848.8	< -25	Plot A3toA3.1		<u>PASS</u>
GSM 1900MHz	512	1850.2	< -25	Plot B1toB1.1	-13	<u>PASS</u>
	661	1880.0	< -25	Plot B2toB2.1		<u>PASS</u>
	810	1909.8	< -25	Plot B3toB3.1		<u>PASS</u>
EDGE 850MHz	128	824.2	< -25	Plot C1toC1.1	-13	<u>PASS</u>
	190	836.6	< -25	Plot C2toC2.1		<u>PASS</u>
	251	848.8	< -25	Plot C3toC3.1		<u>PASS</u>
EDGE 1900MHz	512	1850.2	< -25	Plot D1toD1.1	-13	<u>PASS</u>
	661	1880.0	< -25	Plot D2toD2.1		<u>PASS</u>
	810	1909.8	< -25	Plot D3toD3.1		<u>PASS</u>
WCDMA 850MHz	4132	826.4	< -25	Plot E1toE1.1	-13	<u>PASS</u>
	4175	835	< -25	Plot E2toE2.1		<u>PASS</u>
	4233	846.6	< -25	Plot E3toE3.1		<u>PASS</u>
WCDMA 1900MHz	9262	1852.4	< -25	Plot F1toF1.1	-13	<u>PASS</u>
	9400	1880	< -25	Plot F2toF2.1		<u>PASS</u>
	9538	1907.6	< -25	Plot F3toF3.1		<u>PASS</u>
HSDPA 850MHz	4132	826.4	< -25	Plot G1toG1.1	-13	<u>PASS</u>
	4175	835	< -25	Plot G2toG2.1		<u>PASS</u>



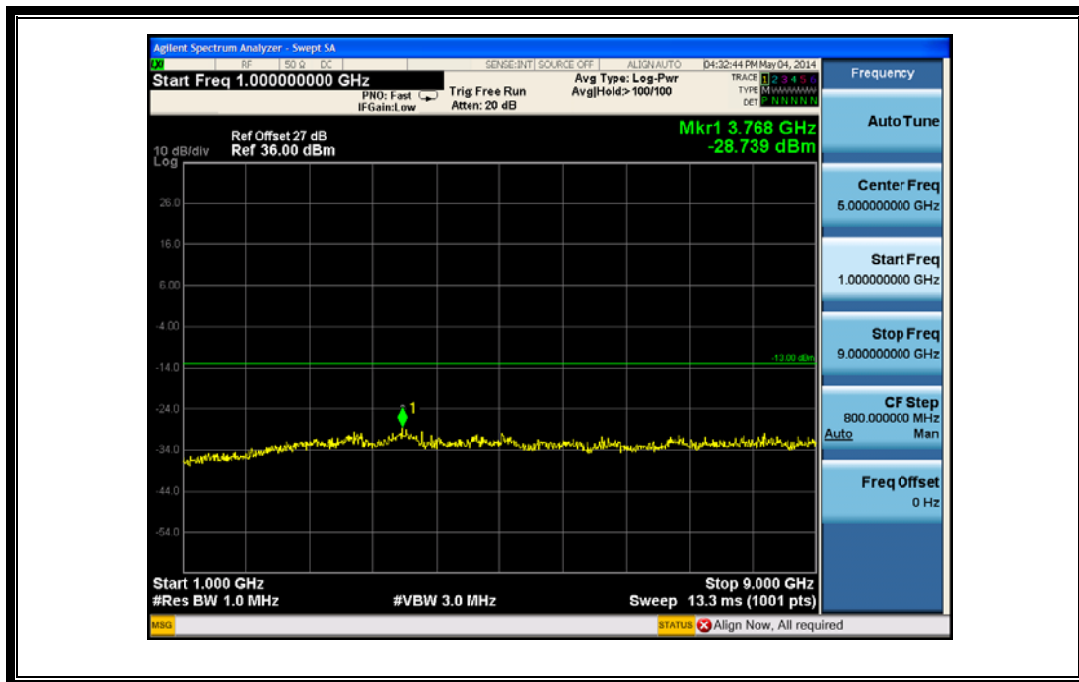
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
	4233	846.6	< -25	Plot G3toG3.1		<u>PASS</u>
HSDPA 1900MHz	9262	1852.4	< -25	Plot H1toH1.1	-13	<u>PASS</u>
	9400	1880	< -25	Plot H2toH2.1		<u>PASS</u>
	9538	1907.6	< -25	Plot H3toH3.1		<u>PASS</u>
HSUPA 850MHz	4132	826.4	< -25	Plot I1toI1.1	-13	<u>PASS</u>
	4175	835	< -25	Plot I2toI2.1		<u>PASS</u>
	4233	846.6	< -25	Plot I3toI3.1		<u>PASS</u>
HSUPA 1900MHz	9262	1852.4	< -25	Plot J1toJ1.1	-13	<u>PASS</u>
	9400	1880	< -25	Plot J2toJ2.1		<u>PASS</u>
	9538	1907.6	< -25	Plot J3toJ3.1		<u>PASS</u>
HSPA+ 850MHz	4132	826.4	< -25	Plot K1toK1.1	-13	<u>PASS</u>
	4175	835	< -25	Plot K2toK2.1		<u>PASS</u>
	4233	846.6	< -25	Plot K3toK3.1		<u>PASS</u>
HSPA+ 1900MHz	9262	1852.4	< -25	Plot L1toL1.1	-13	<u>PASS</u>
	9400	1880	< -25	Plot L2toL2.1		<u>PASS</u>
	9538	1907.6	< -25	Plot L3toL3.1		<u>PASS</u>
WCDMA 1700MHz	1312	1712.4	< -25	Plot M1toM1.1	-13	<u>PASS</u>
	1412	1732.4	< -25	Plot M2toM2.1		<u>PASS</u>
	1513	1752.6	< -25	Plot M3toM3.1		<u>PASS</u>
HSDPA 1700MHz	1312	1712.4	< -25	Plot N1toN1.1	-13	<u>PASS</u>
	1412	1732.4	< -25	Plot N2toN2.1		<u>PASS</u>
	1513	1752.6	< -25	Plot N3toN3.1		<u>PASS</u>
HSUPA 1700MHz	1312	1712.4	< -25	Plot O1toO1.1	-13	<u>PASS</u>
	1412	1732.4	< -25	Plot O2toO2.1		<u>PASS</u>
	1513	1752.6	< -25	Plot O3toO3.1		<u>PASS</u>
HSPA+ 1700MHz	1312	1712.4	< -25	Plot P1toP1.1	-13	<u>PASS</u>
	1412	1732.4	< -25	Plot P2toP2.1		<u>PASS</u>
	1513	1752.6	< -25	Plot P3toP3.1		<u>PASS</u>

2. Test Plots for the Whole Measurement Frequency Range:

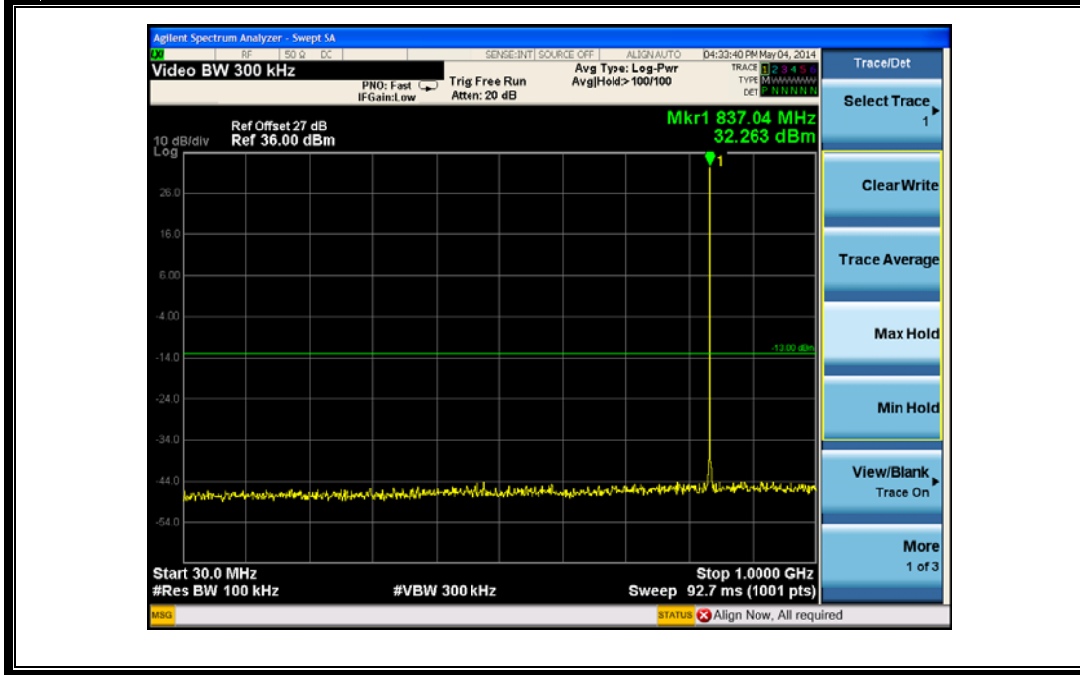
Note: the power of the EUT transmitting frequency should be ignored.



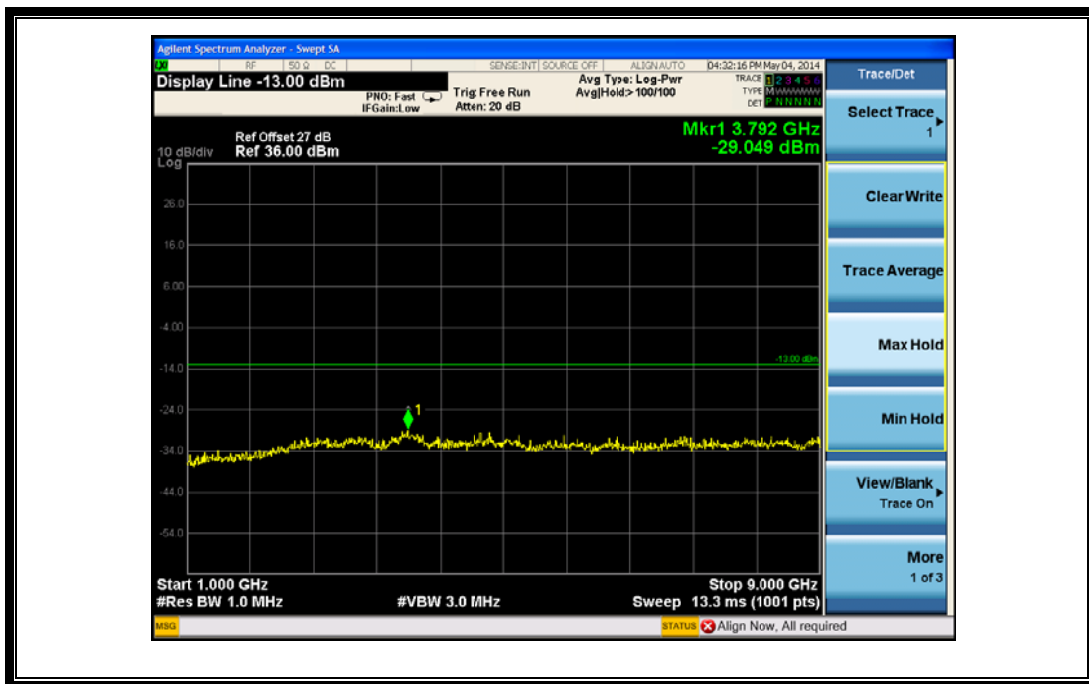
(Plot A1:GSM 850MHz Channel = 128, 30MHz to 1GHz)



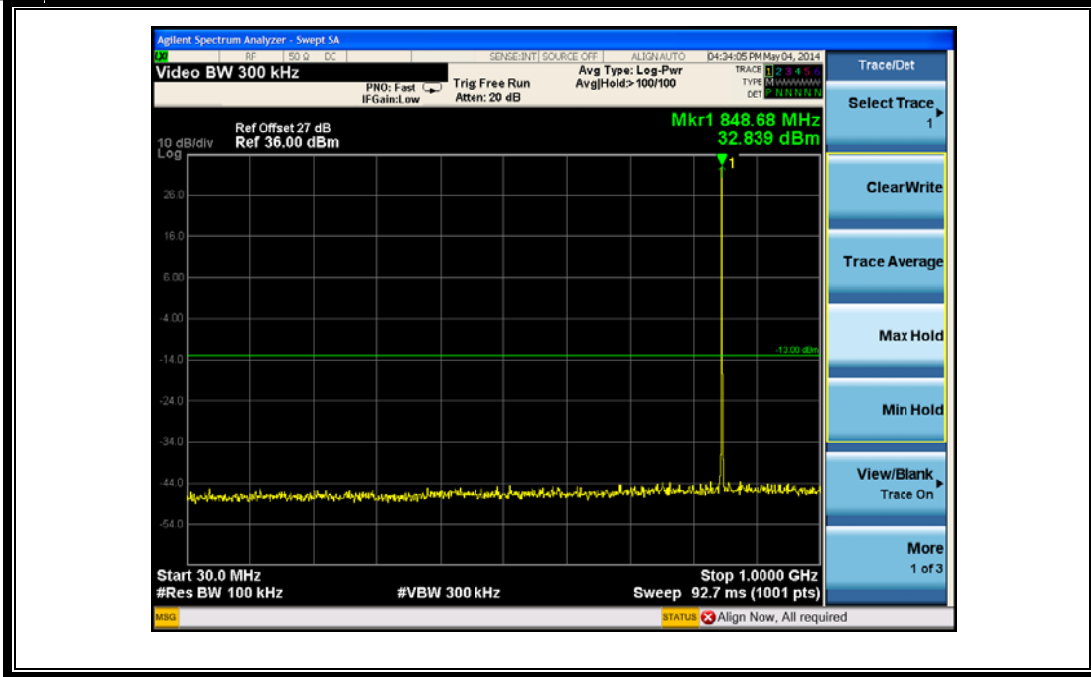
(Plot A1.1: GSM 850MHz Channel = 128, 1GHz to 9GHz)



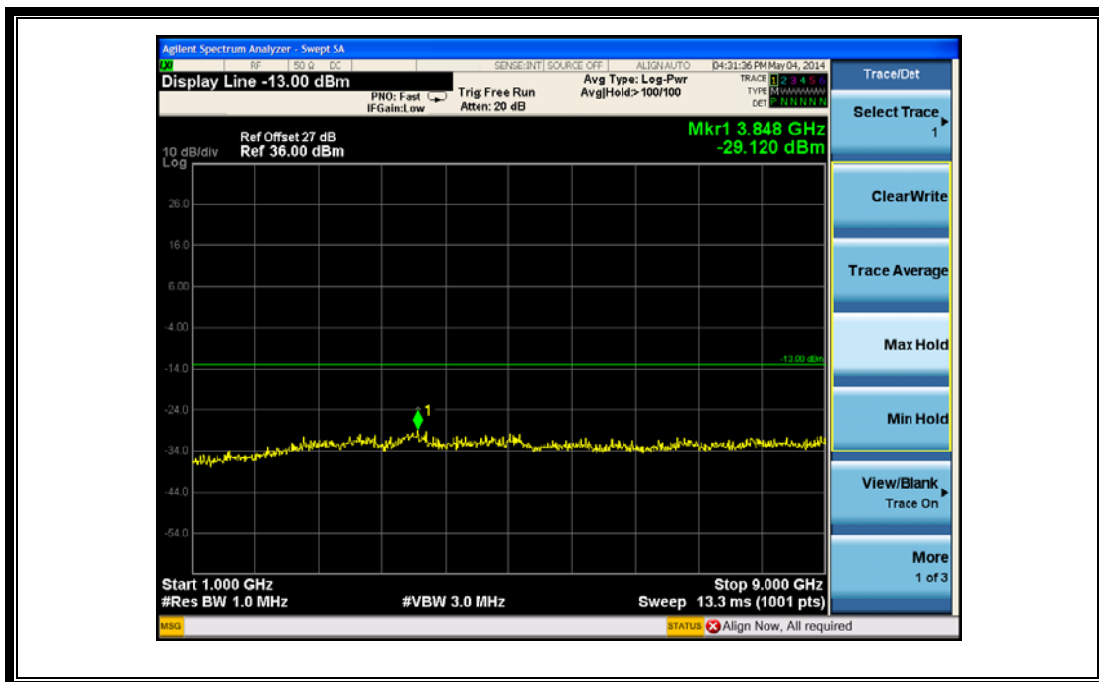
(Plot A2:GSM 850MHz Channel = 190, 30MHz to 1GHz)



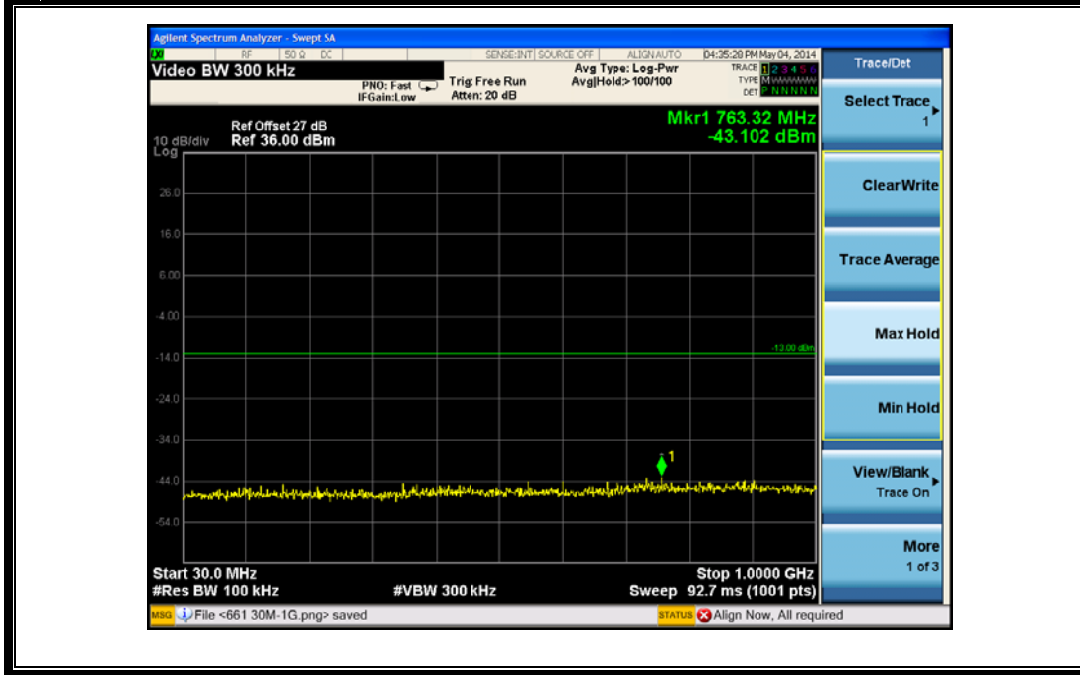
(Plot A2.1: GSM 850MHz Channel = 190, 1GHz to 9GHz)



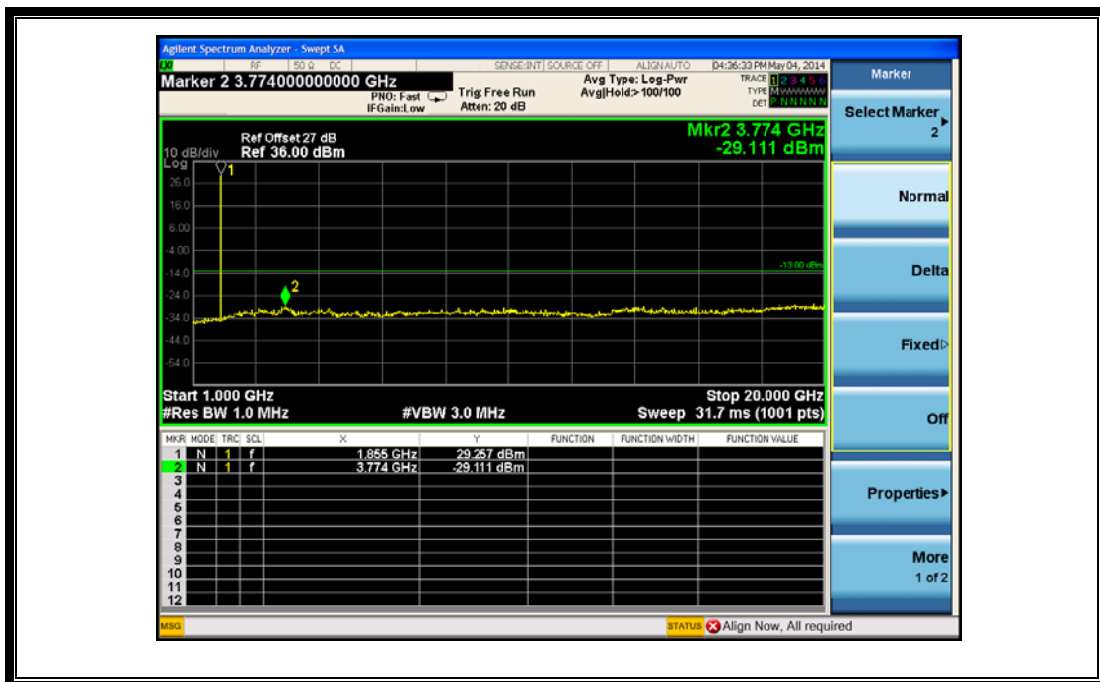
(Plot A3:GSM 850MHz Channel = 251, 30MHz to 1GHz)



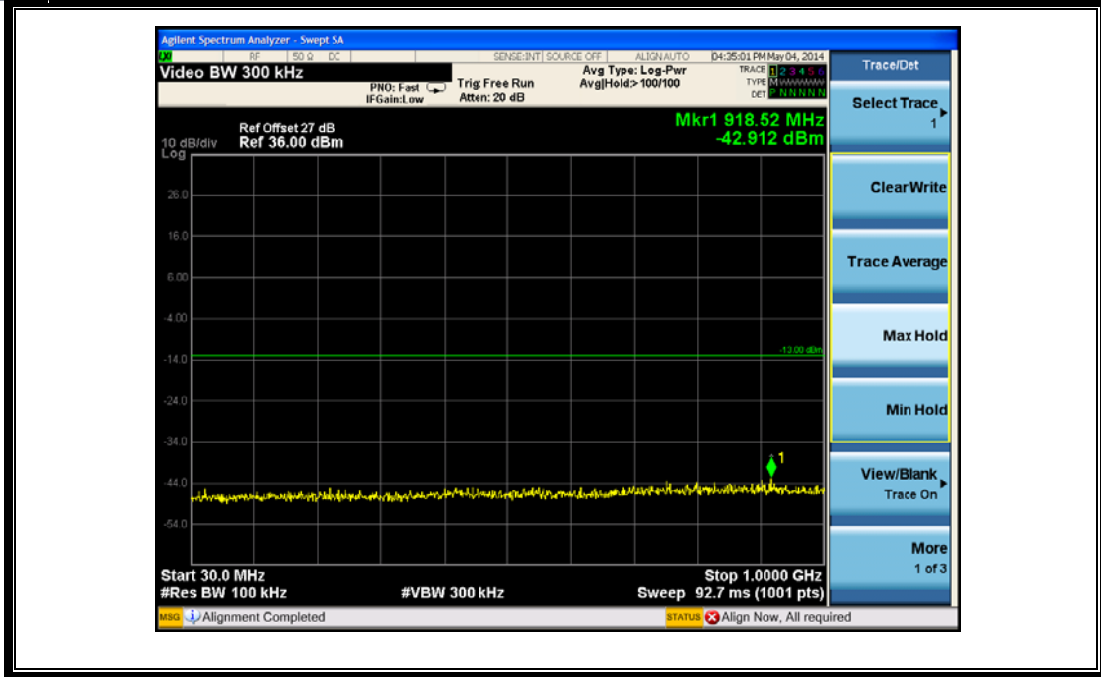
(Plot A3.1: GSM 850MHz Channel = 251, 1GHz to 9GHz)



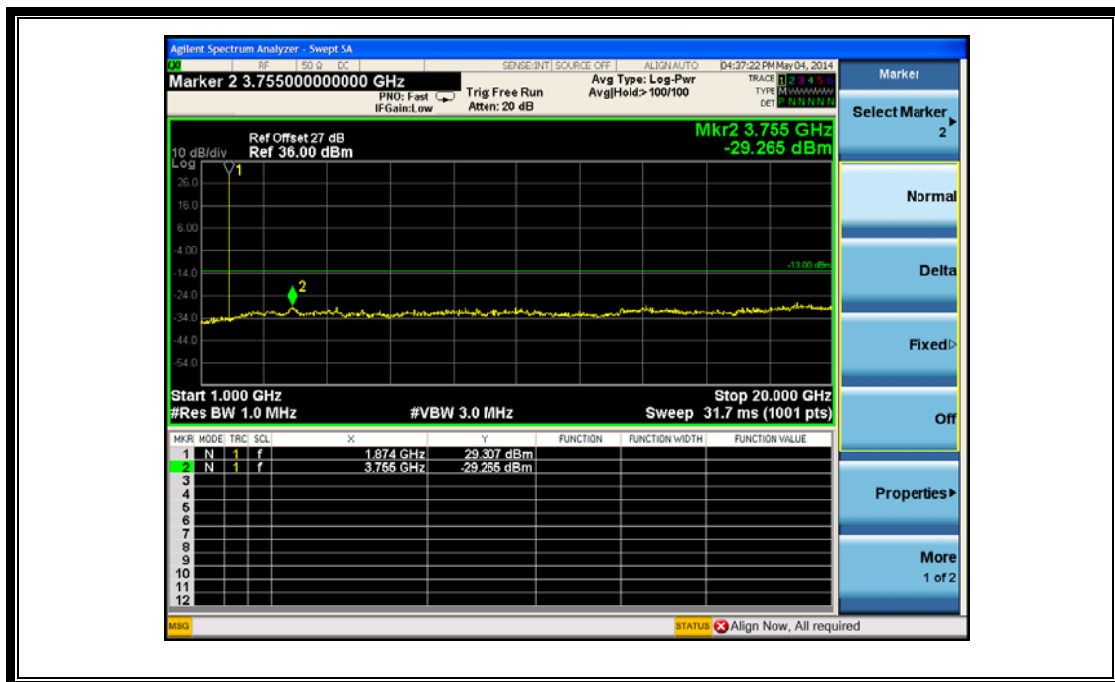
(Plot B1: GSM 1900MHz Channel = 512, 30MHz to 1GHz)



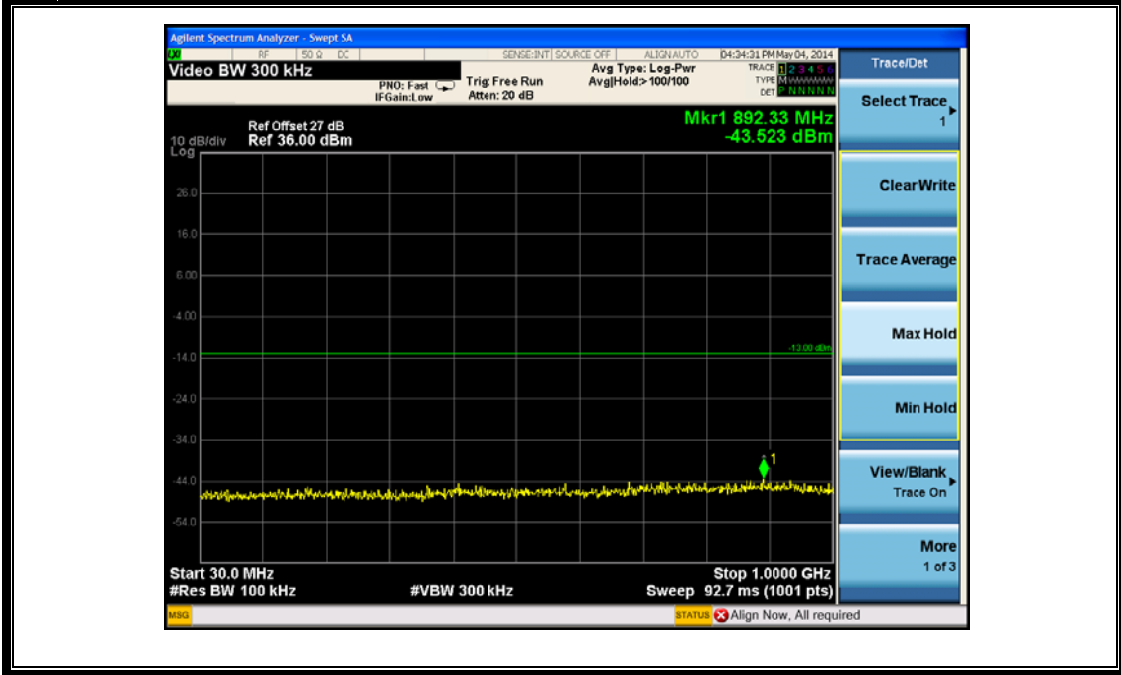
(Plot B1.1: GSM 1900MHz Channel = 512, 1GHz to 20GHz)



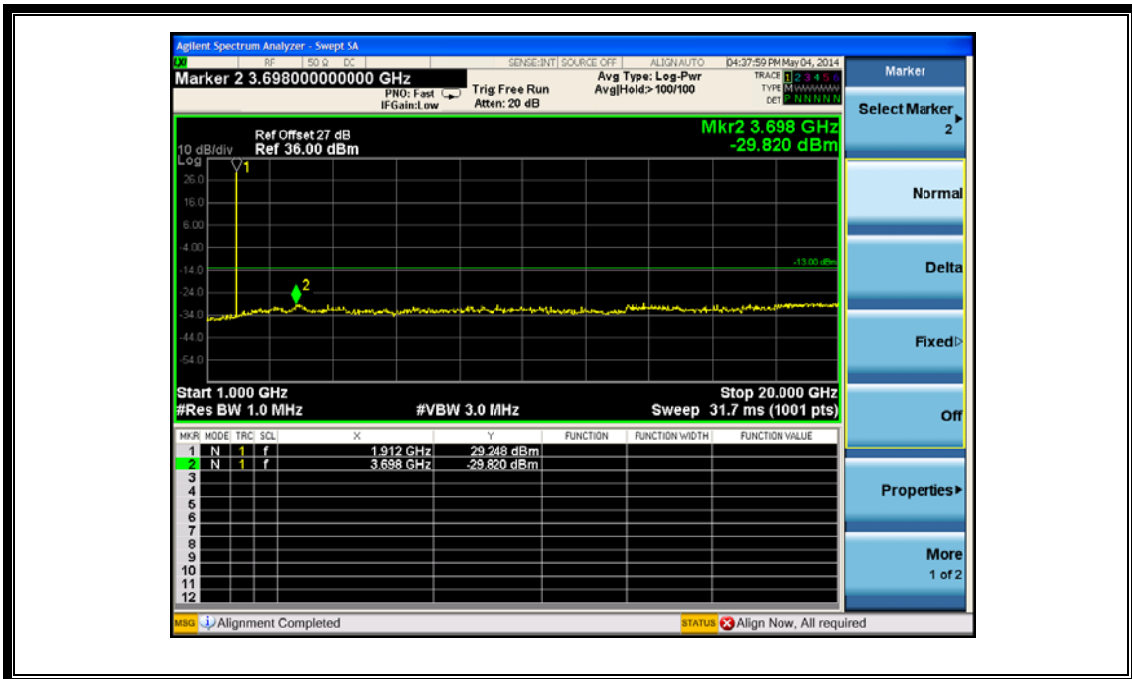
(Plot B2: GSM 1900MHz Channel = 661, 30MHz to 1GHz)



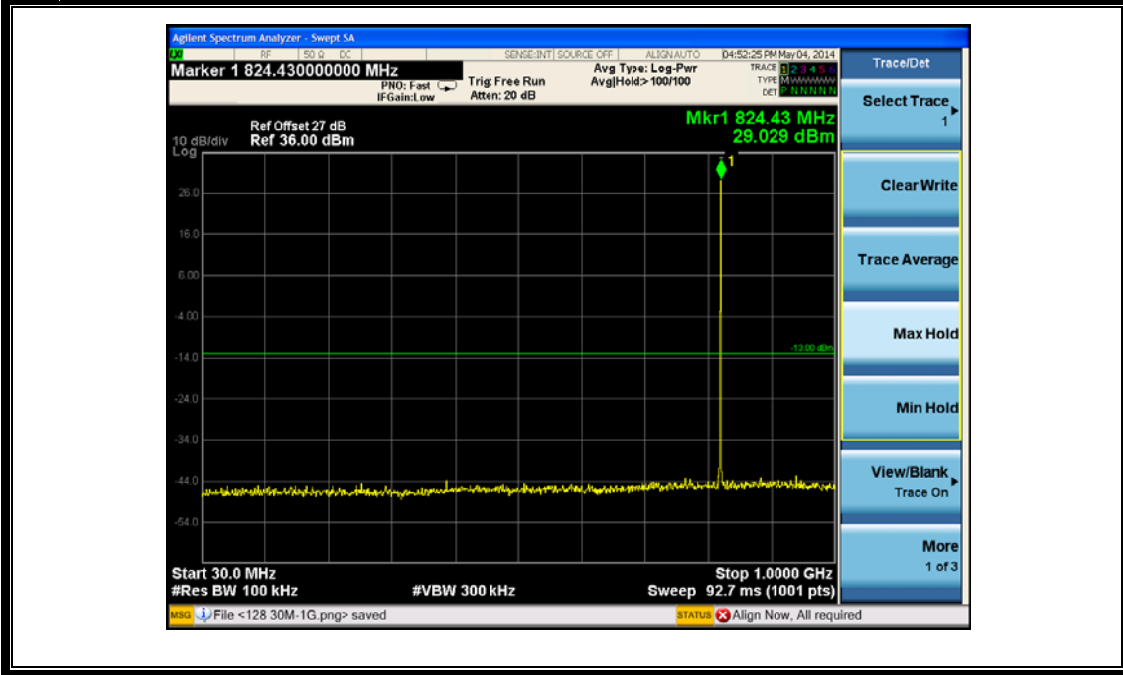
(Plot B2.1: GSM 1900MHz Channel = 661, 1GHz to 20GHz)



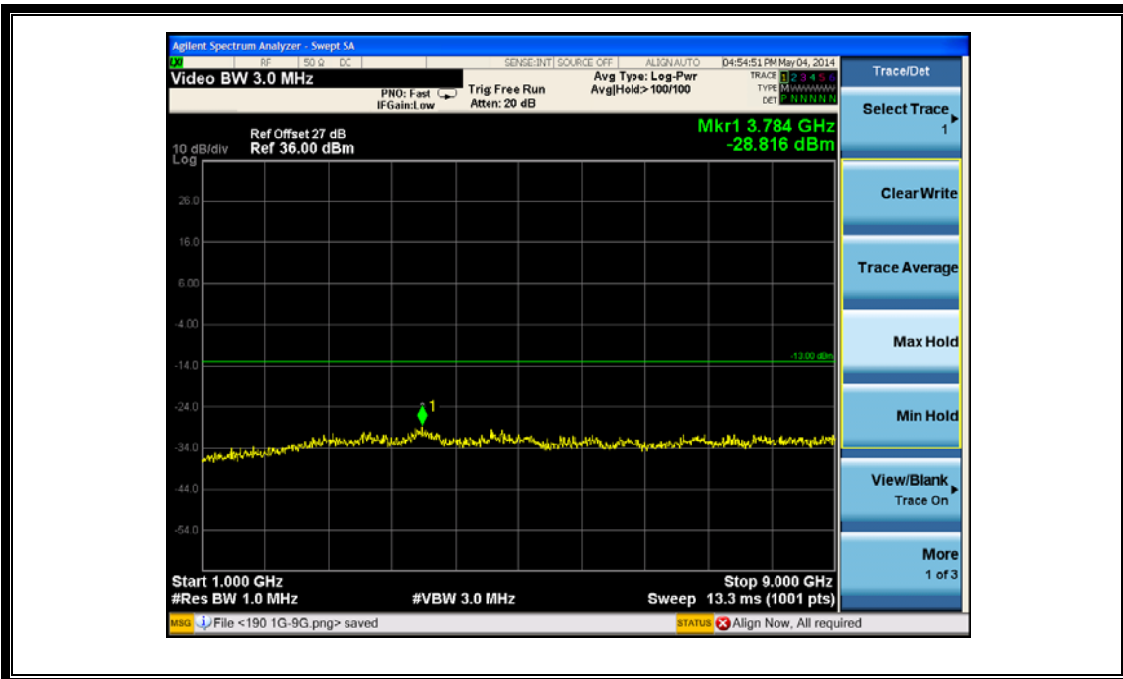
(Plot B3: GSM 1900MHz Channel = 810, 30MHz to 1GHz)



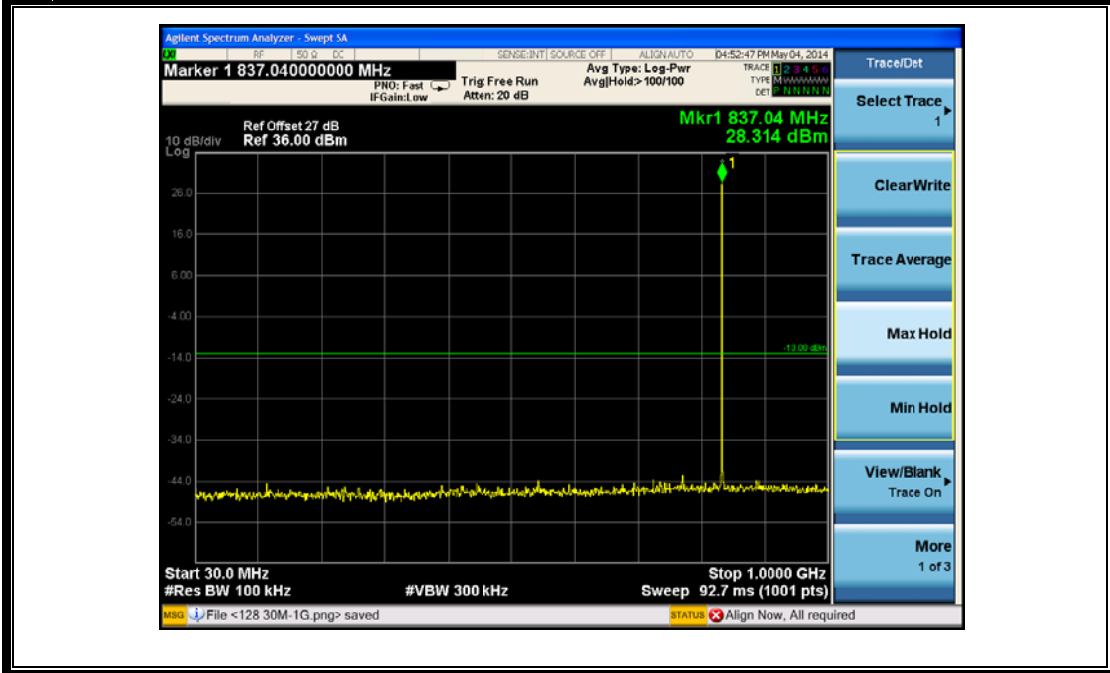
(Plot B3.1: GSM 1900MHz Channel = 810, 1GHz to 20GHz)



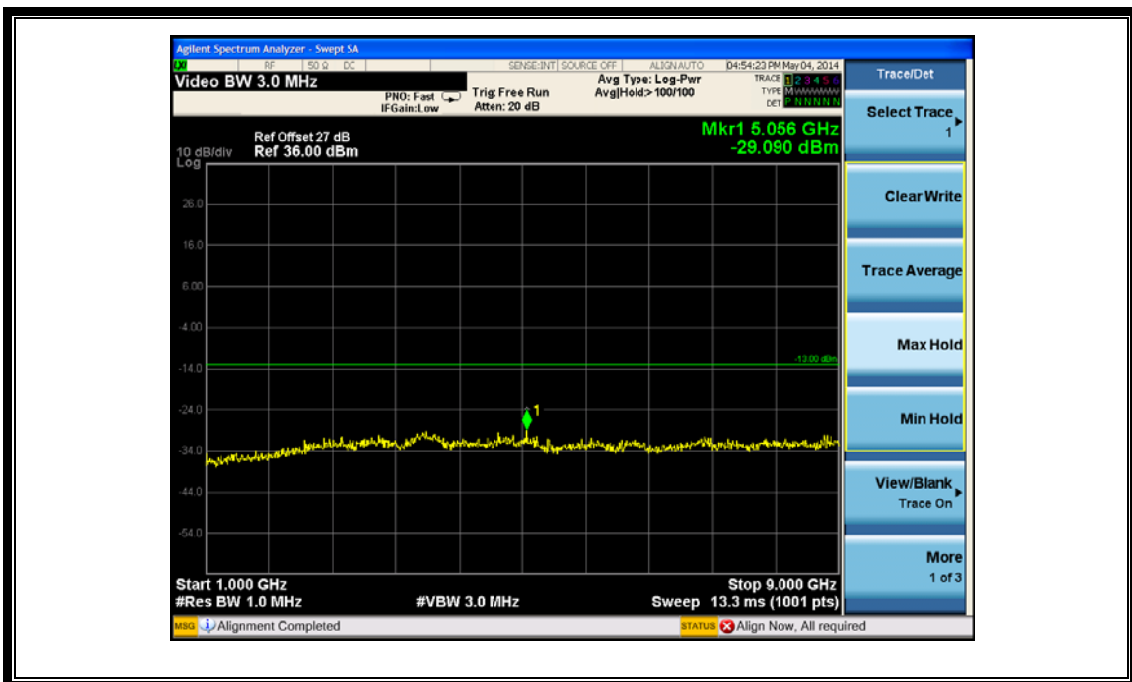
(Plot C1: EDGE 850MHz Channel = 128, 30MHz to 1GHz)



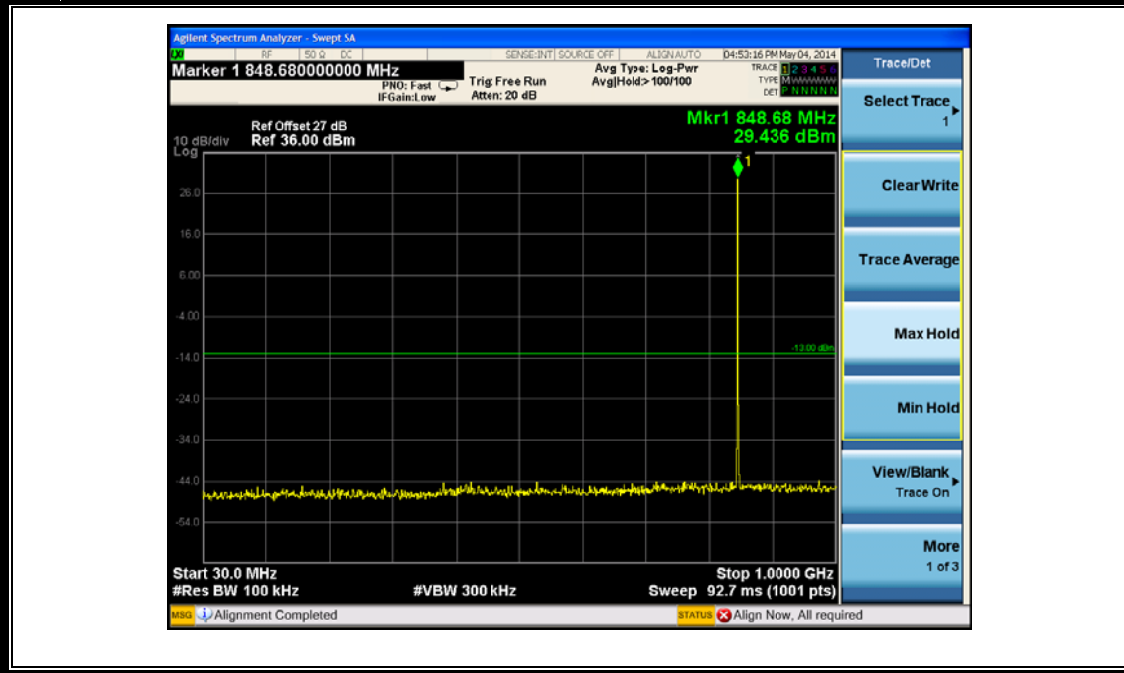
(Plot C1.1: EDGE 850MHz Channel = 128, 1GHz to 9GHz)



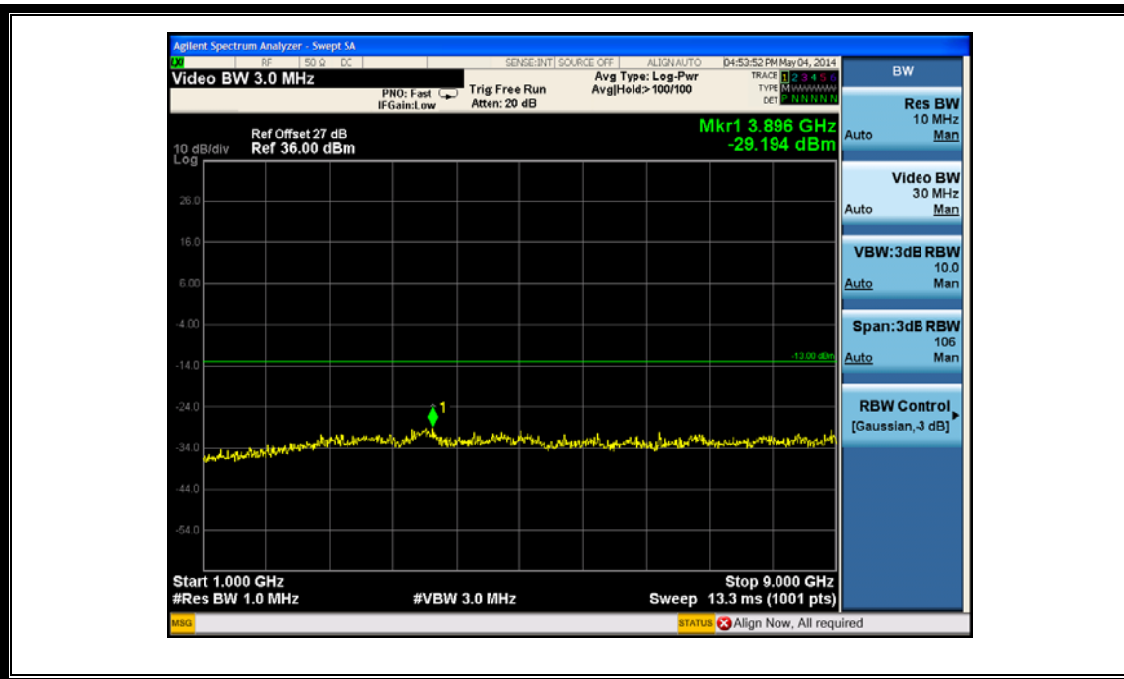
(Plot C2: EDGE 850MHz Channel = 190, 30MHz to 1GHz)



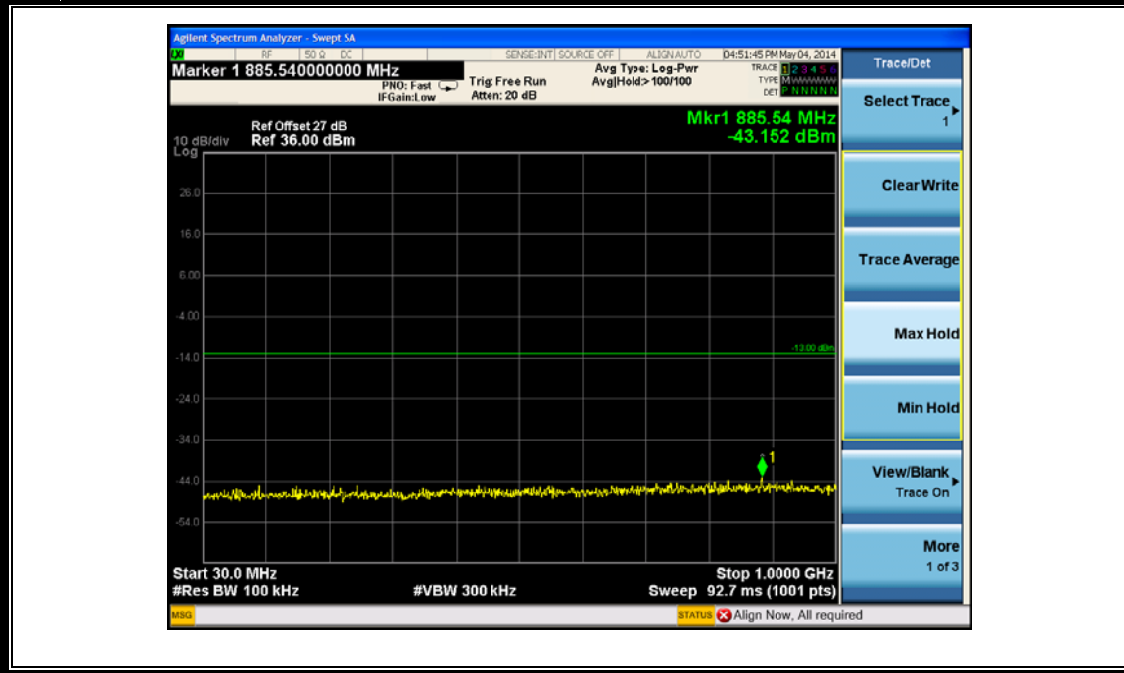
(Plot C2.1: EDGE 850MHz Channel = 190, 1GHz to 9GHz)



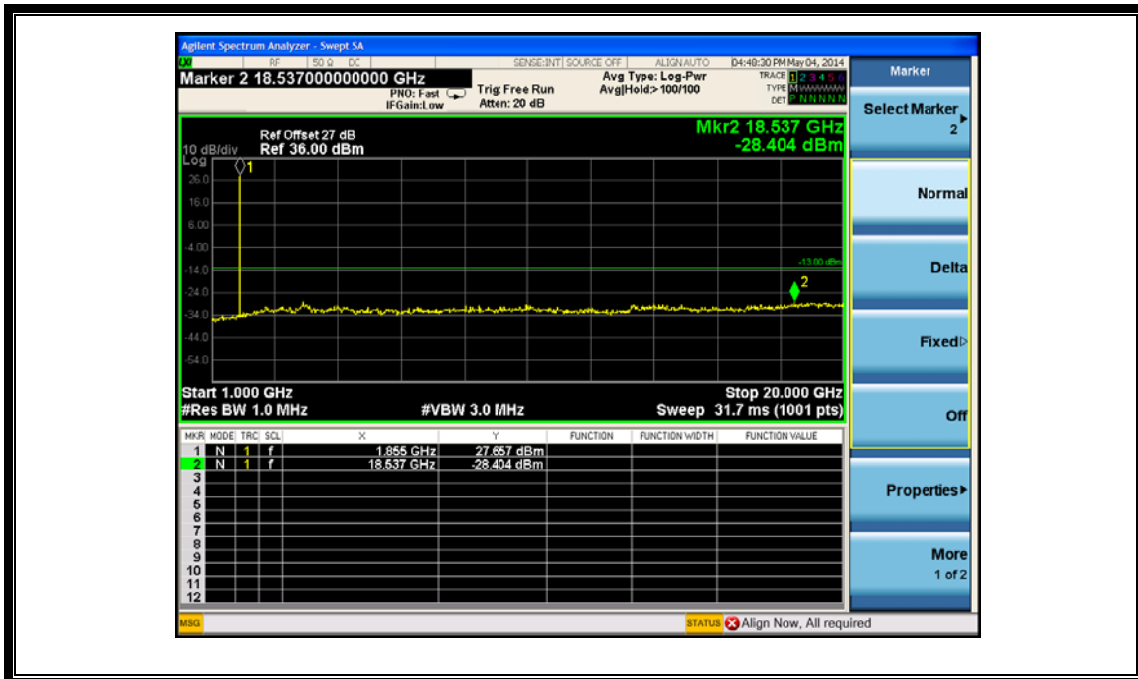
(Plot C3: EDGE 850MHz Channel = 251, 30MHz to 1GHz)



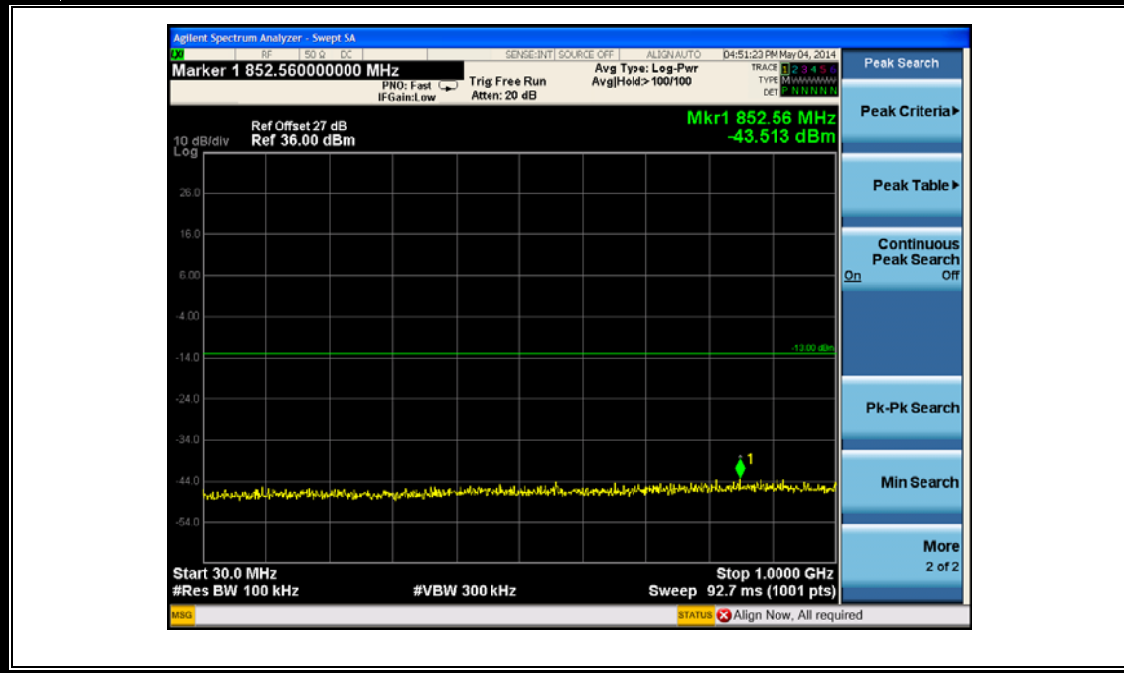
(Plot C3.1: EDGE 850MHz Channel = 251, 1GHz to 9GHz)



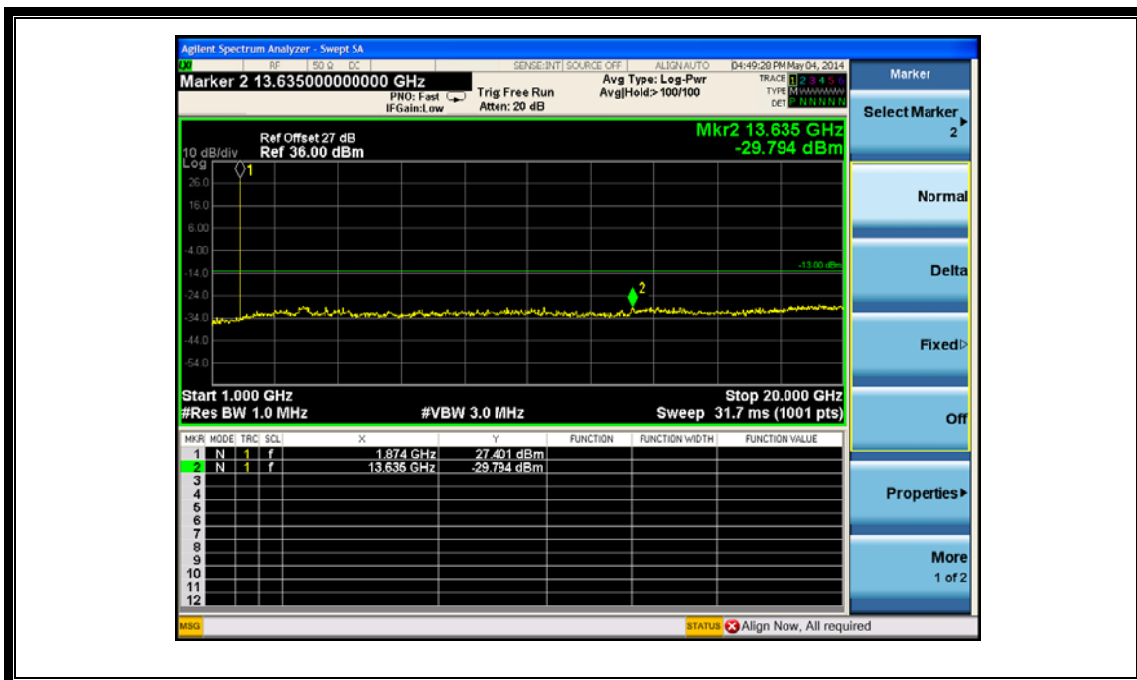
(Plot D1: EDGE 1900MHz Channel = 512, 30MHz to 1GHz)



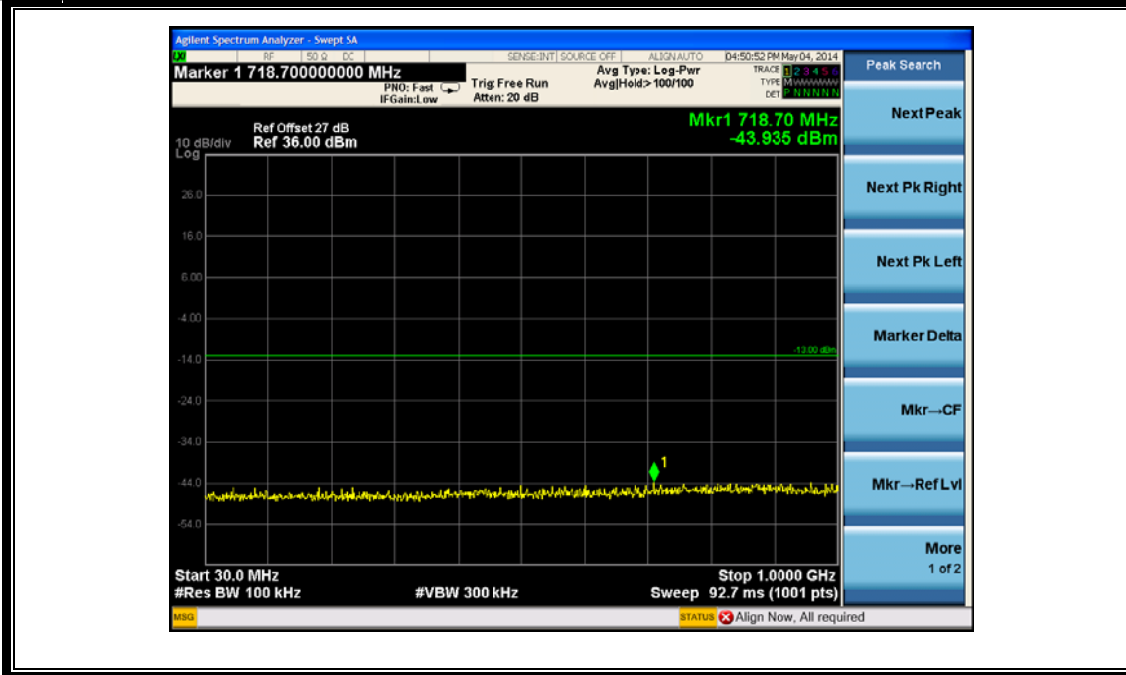
(Plot D1.1: EDGE 1900MHz Channel = 512, 1GHz to 20GHz)



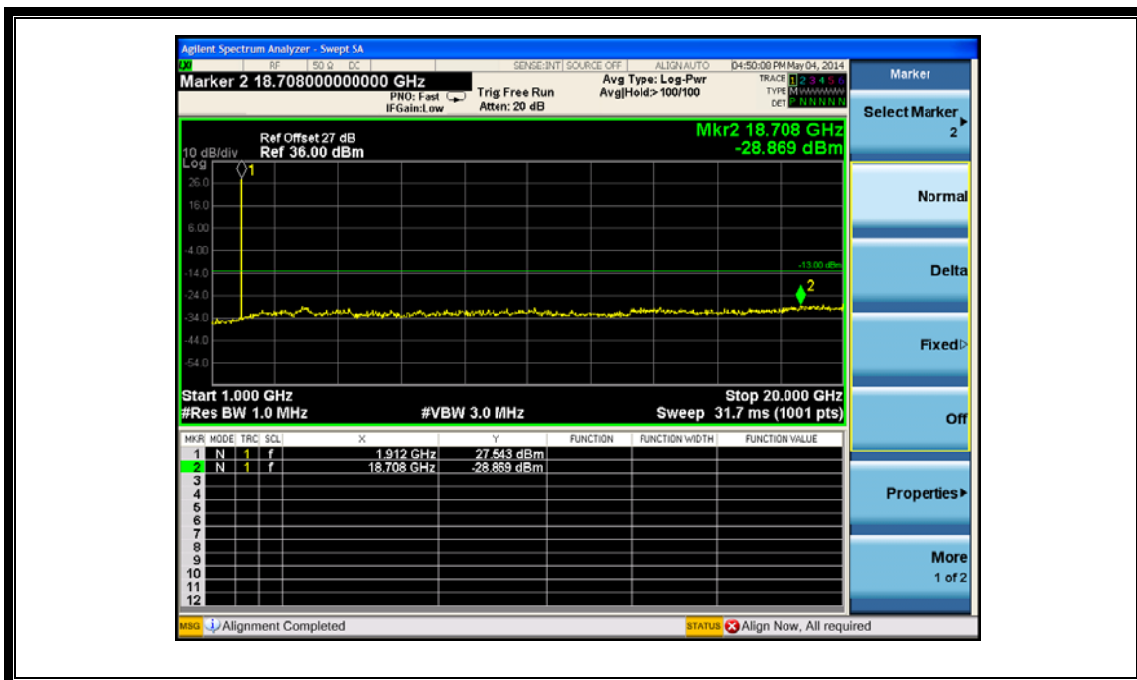
(Plot D2: EDGE 1900MHz Channel = 661, 30MHz to 1GHz)



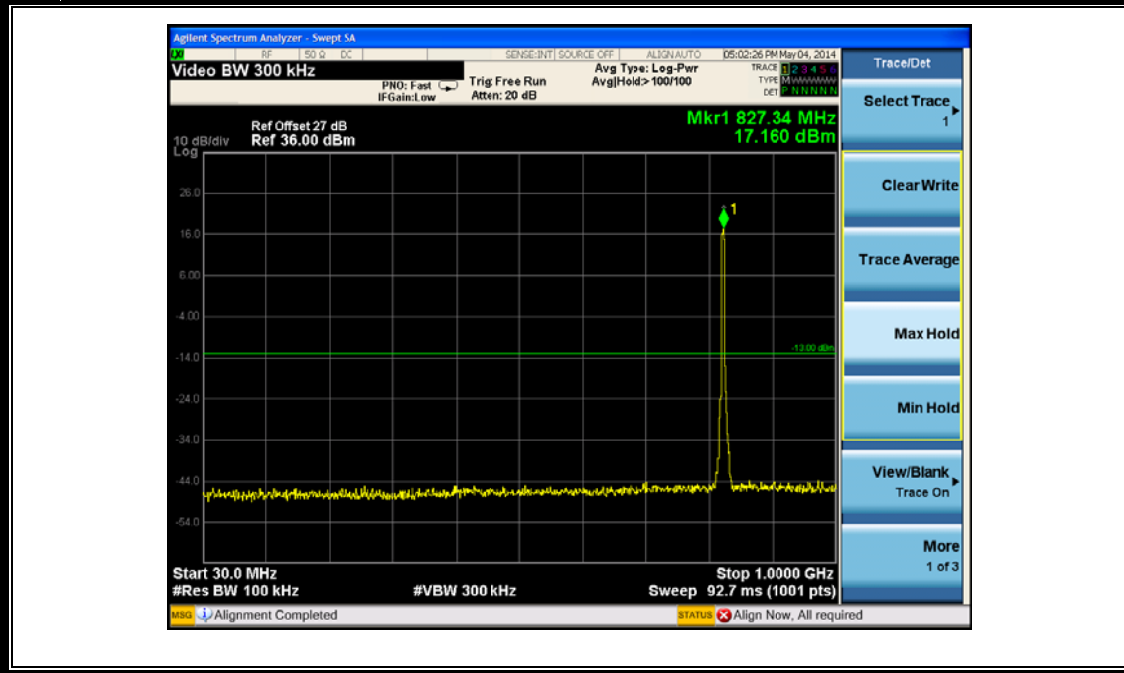
(Plot D2.1: EDGE 1900MHz Channel = 661, 1GHz to 20GHz)



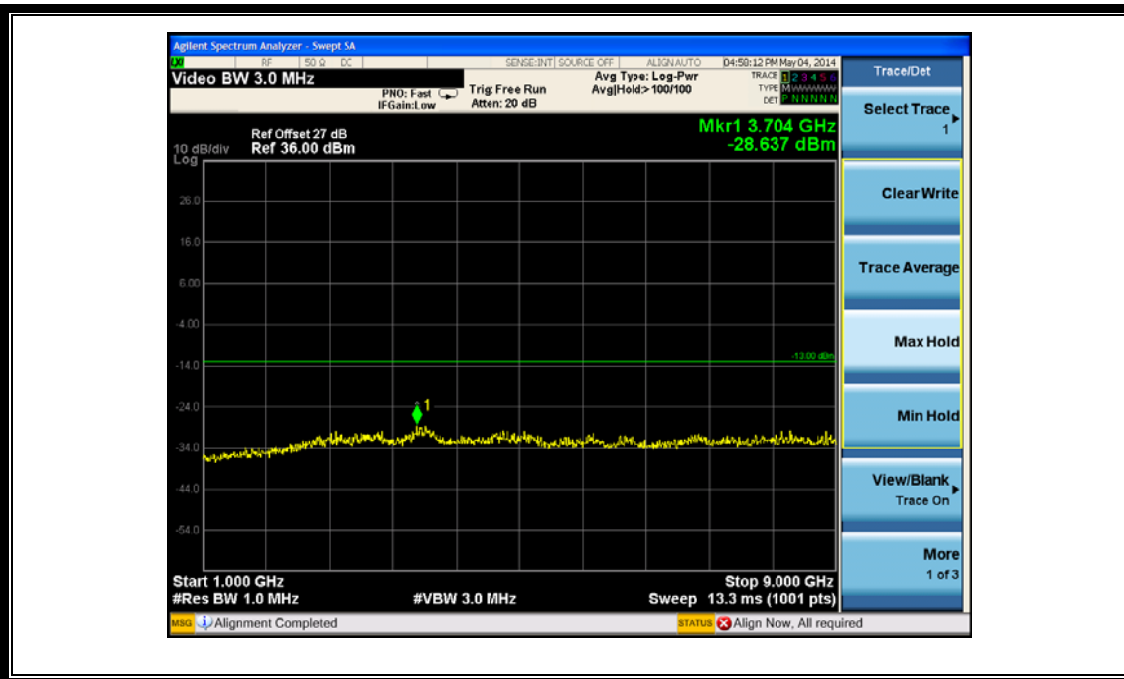
(Plot D3: EDGE 1900MHz Channel = 810, 30MHz to 1GHz)



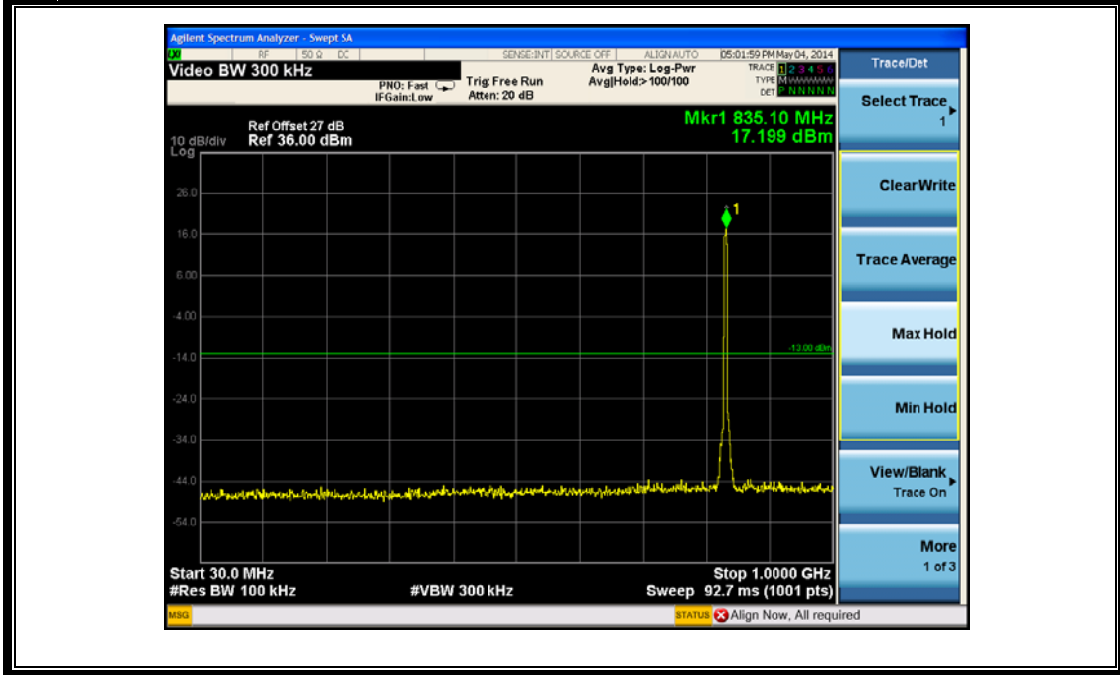
(Plot D3.1: EDGE 1900MHz Channel = 810, 1GHz to 20GHz)



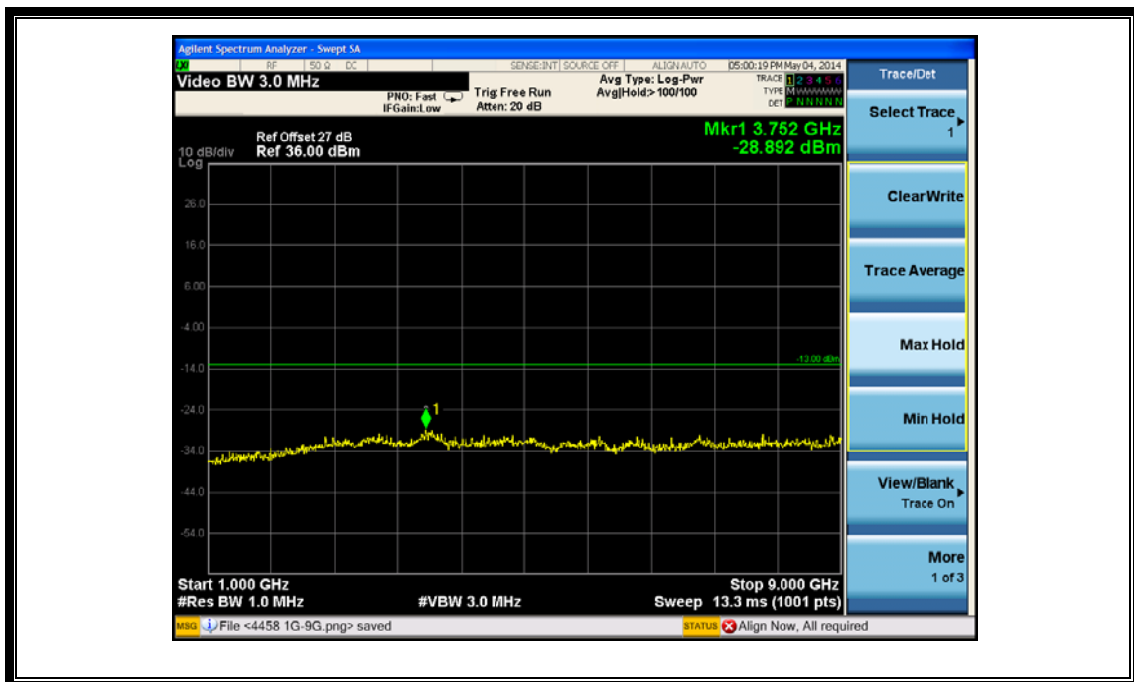
(Plot E1: WCDMA850MHz Channel = 4132, 30MHz to 1GHz)



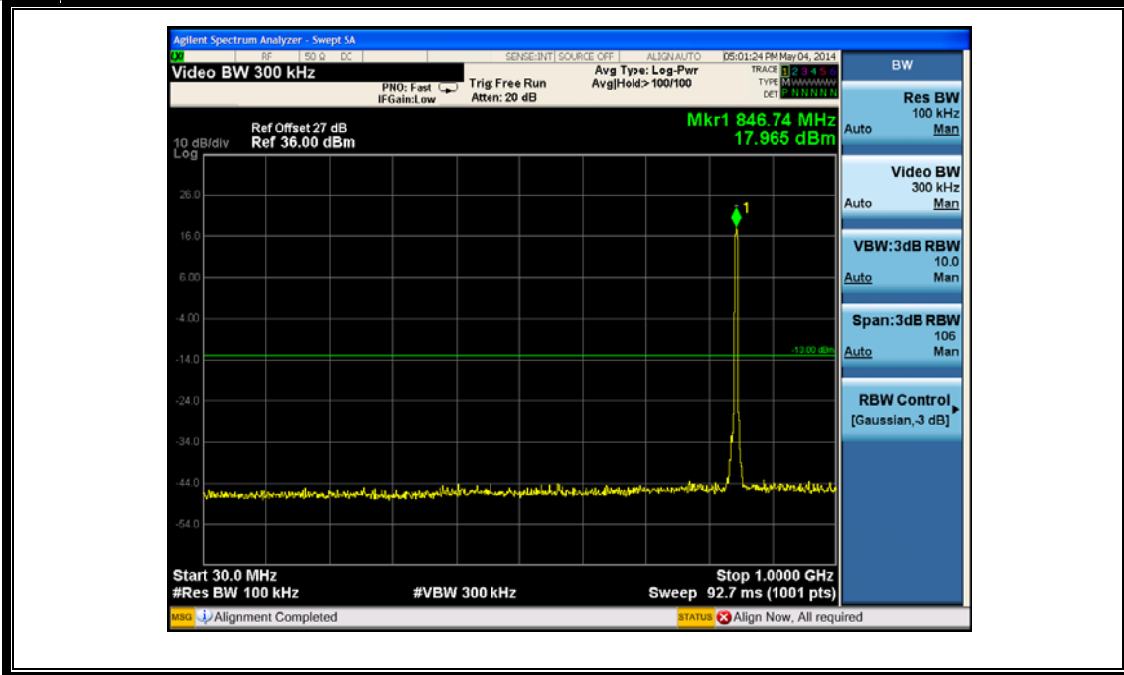
(Plot E1.1: WCDMA850MHz Channel = 4132, 1GHz to 9GHz)



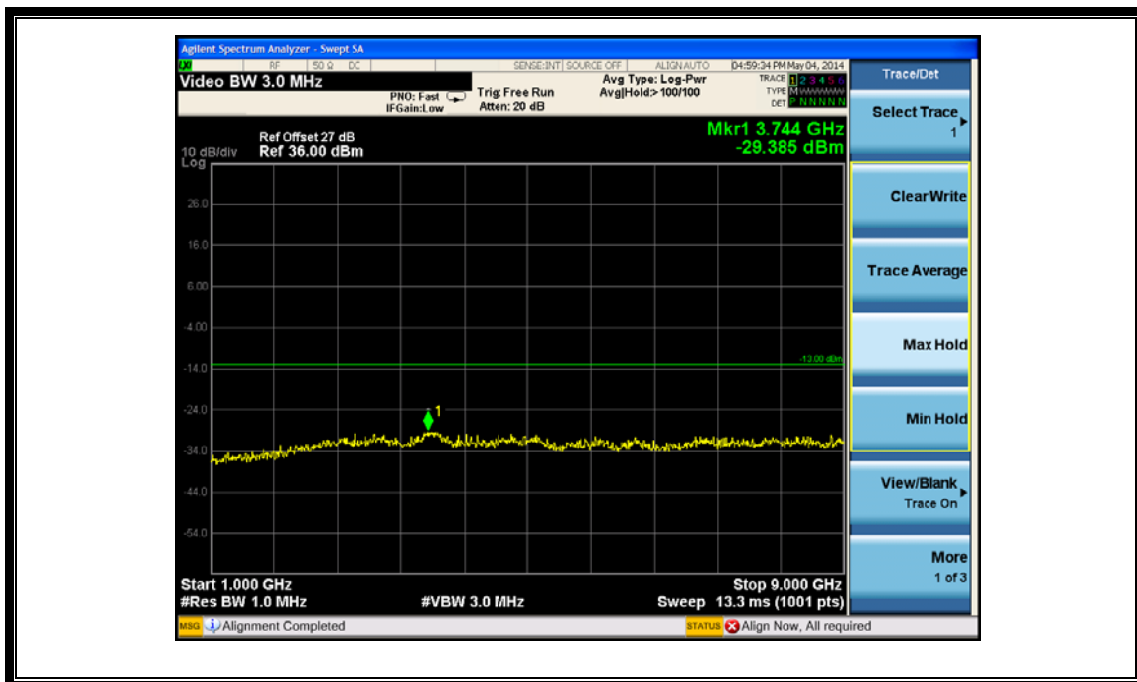
(Plot E2: WCDMA850MHz Channel = 4175, 30MHz to 1GHz)



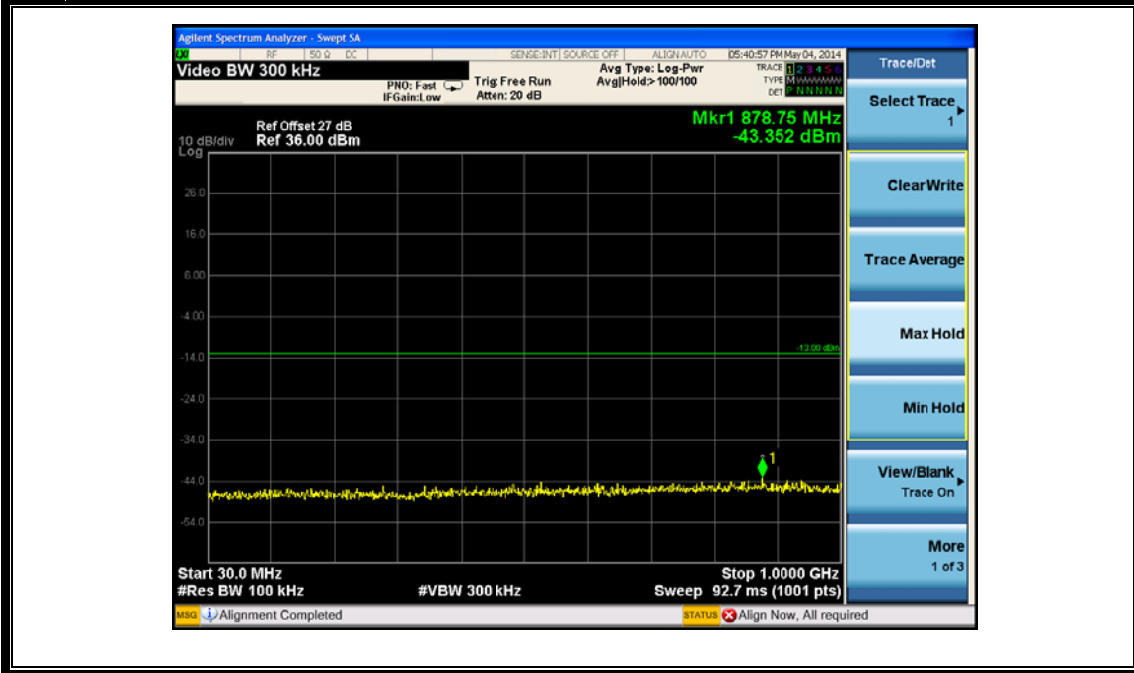
(Plot E2.1: WCDMA850MHz Channel = 4175, 1GHz to 9GHz)



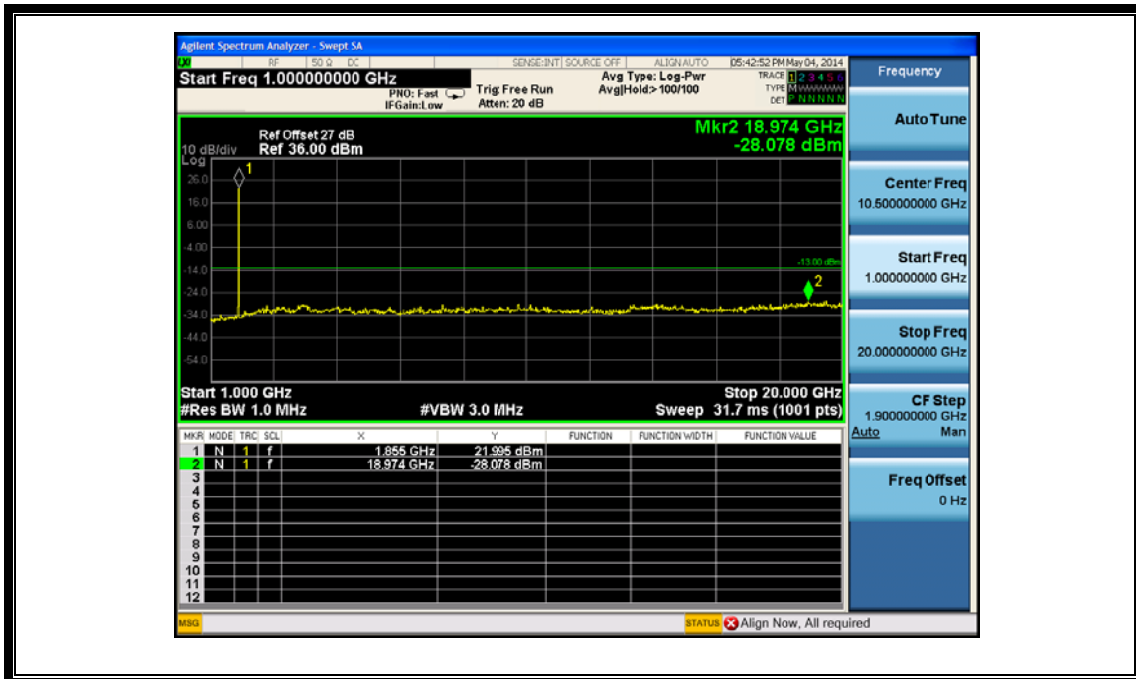
(Plot E3: WCDMA850MHz Channel = 4233, 30MHz to 1GHz)



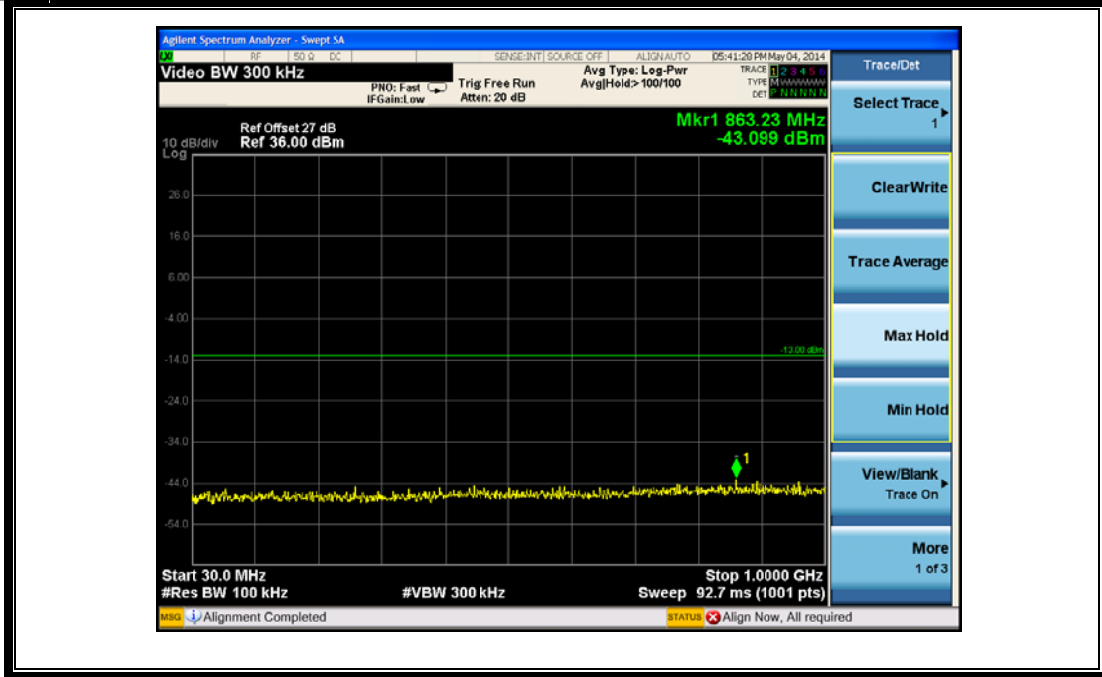
(Plot E3.1: WCDMA850MHz Channel = 4233, 1GHz to 9GHz)



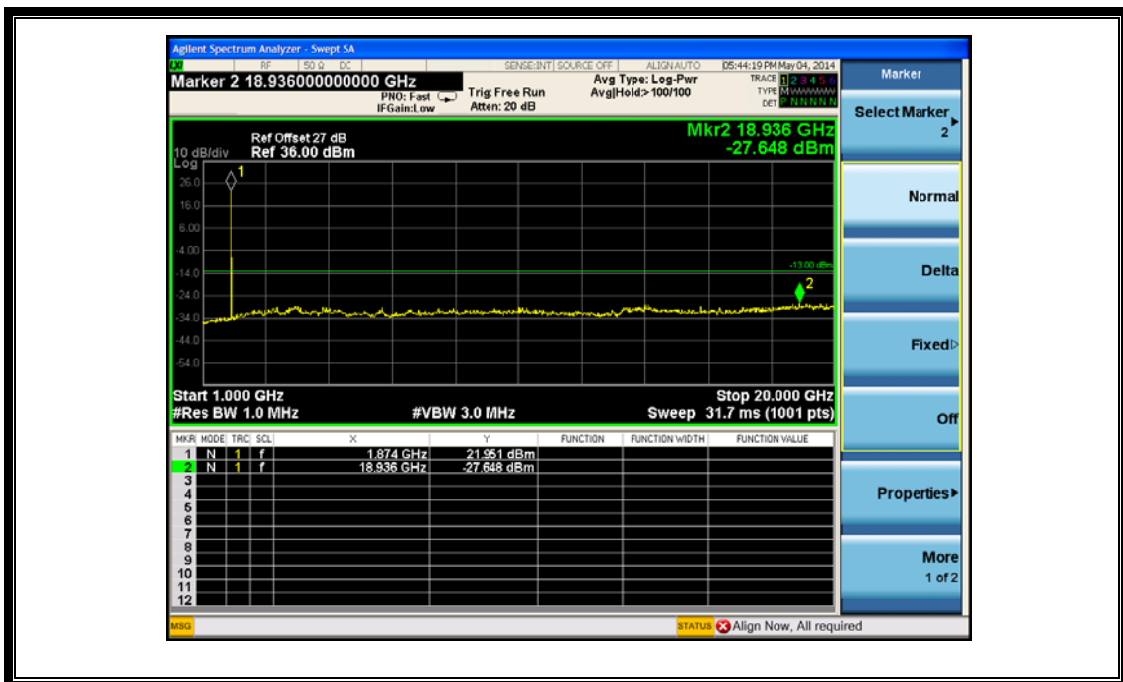
(Plot F1:WCDMA1900MHz Channel = 9262, 30MHz to 1GHz)



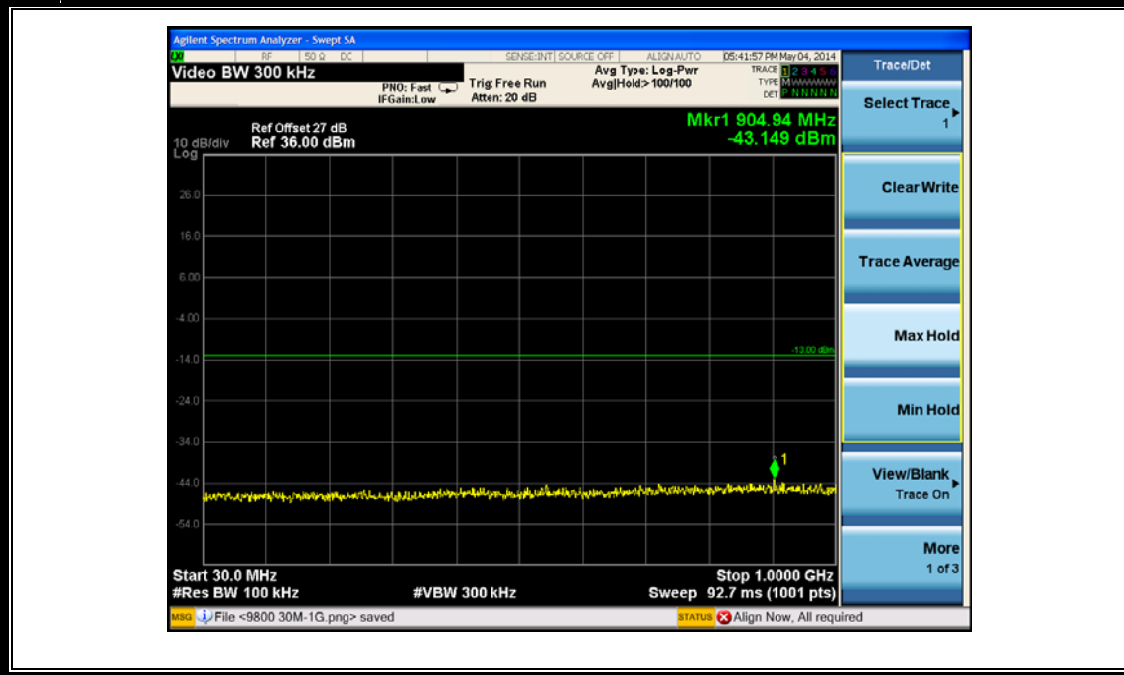
(Plot F1.1: WCDMA1900MHz Channel = 9262, 1GHz to 20GHz)



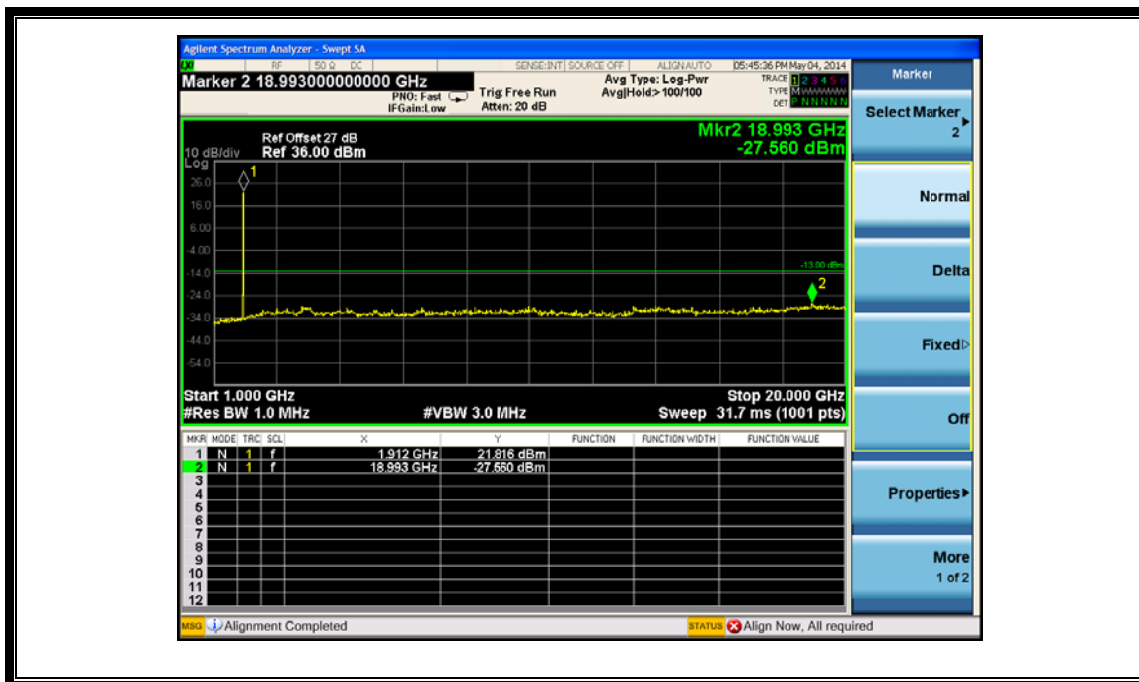
(Plot F2:WCDMA1900MHz Channel = 9400, 30MHz to 1GHz)



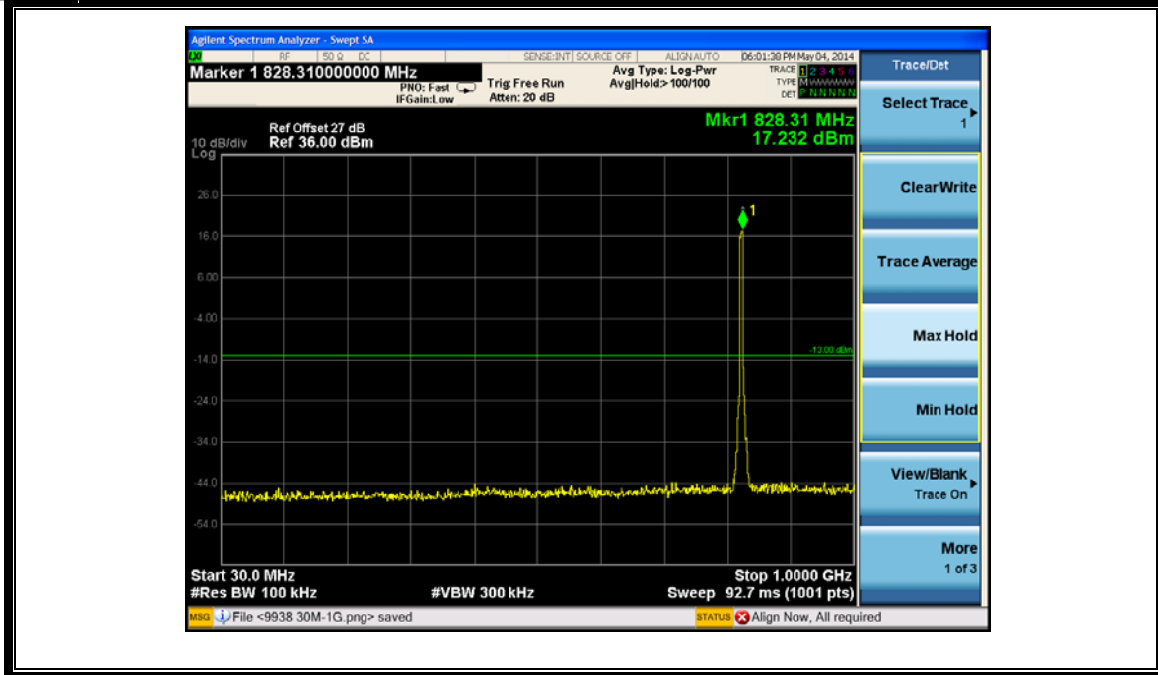
(Plot F2.1: WCDMA1900MHz Channel = 9400, 1GHz to 20GHz)



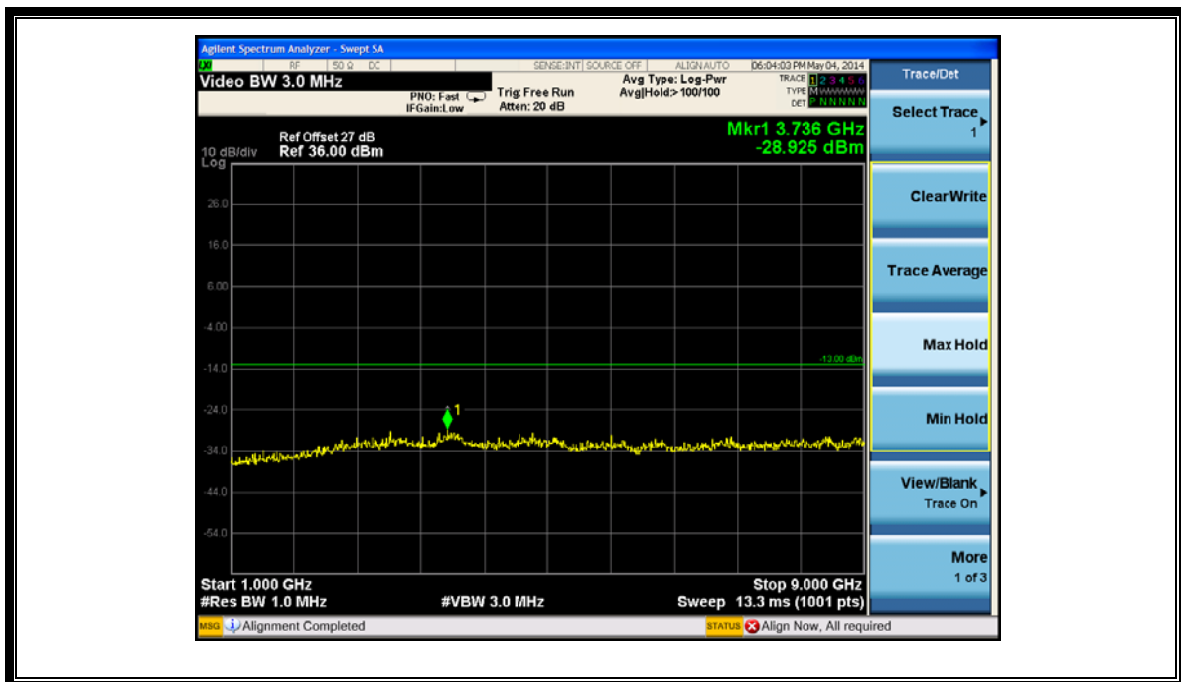
(Plot F3:WCDMA1900MHz Channel = 9538, 30MHz to 1GHz)



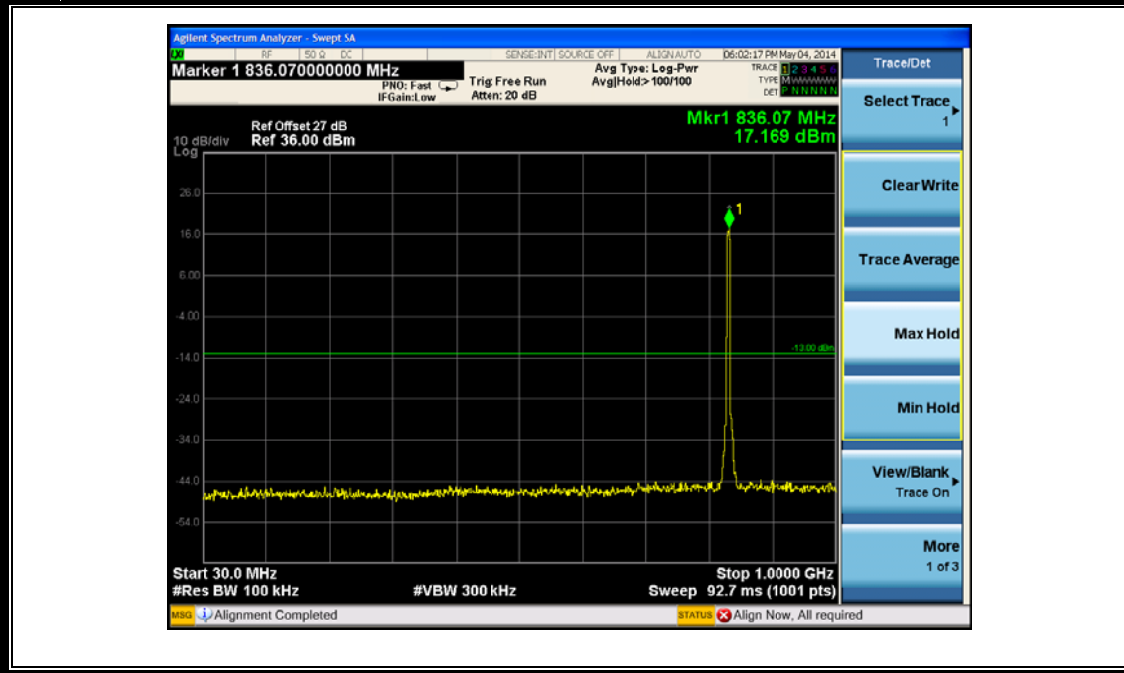
(Plot F3.1: WCDMA1900MHz Channel = 9538 1GHz to 20GHz)



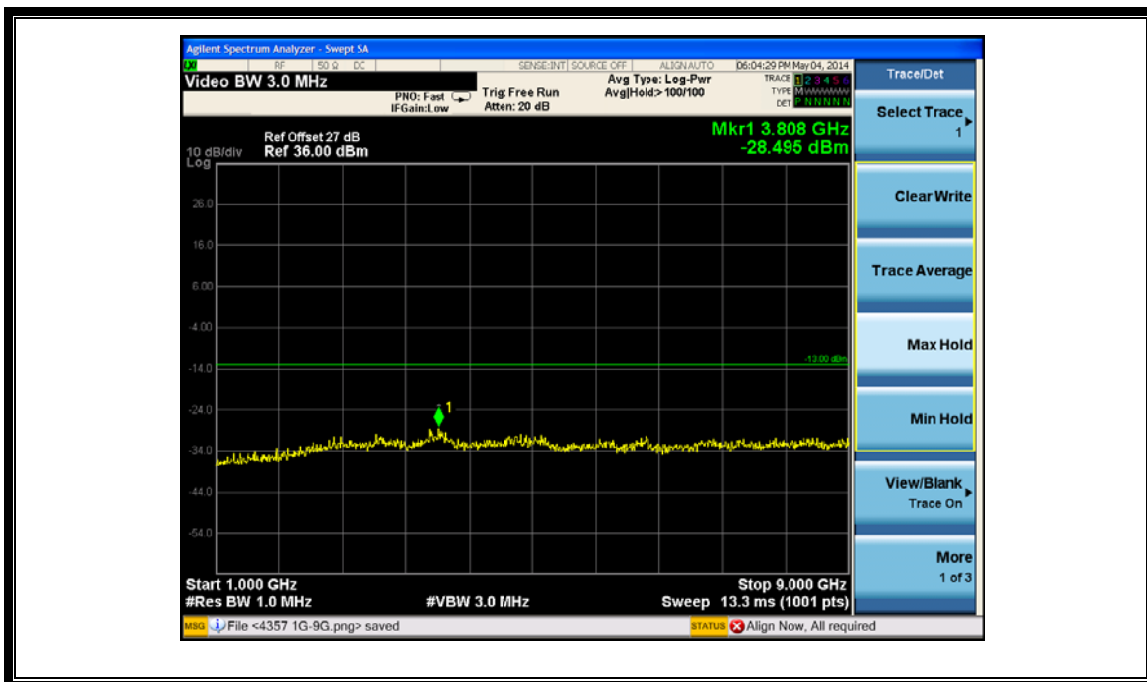
(Plot G1: HSDPA 850MHz Channel = 4132, 30MHz to 1GHz)



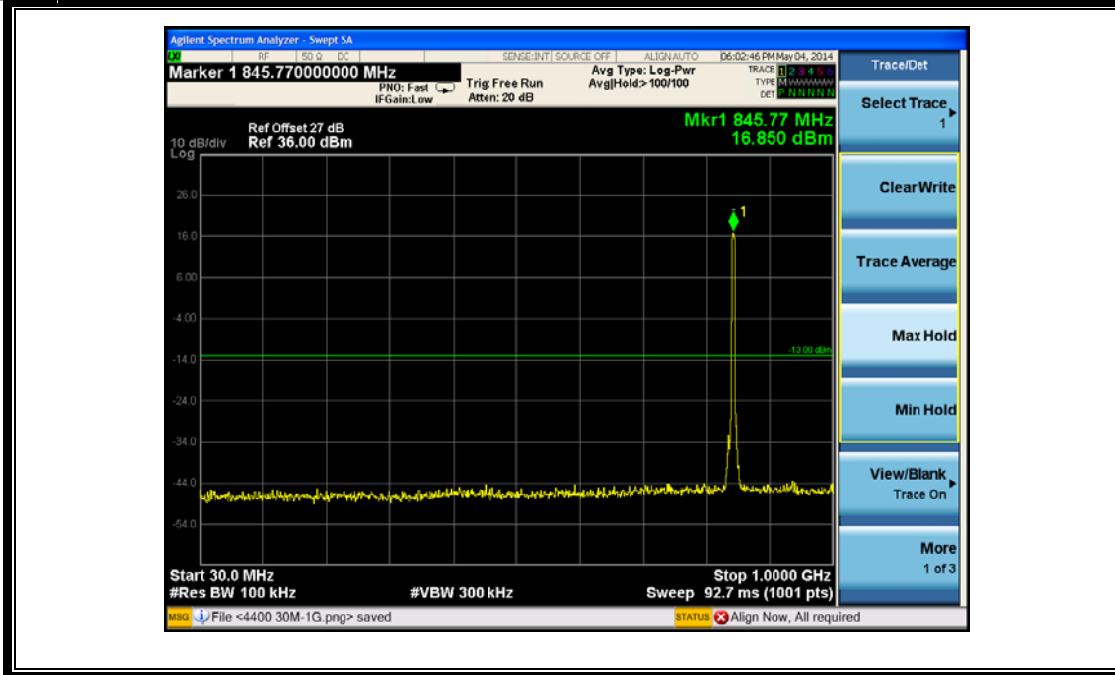
(Plot G1.1: HSDPA 850MHz Channel = 4132, 1GHz to 9GHz)



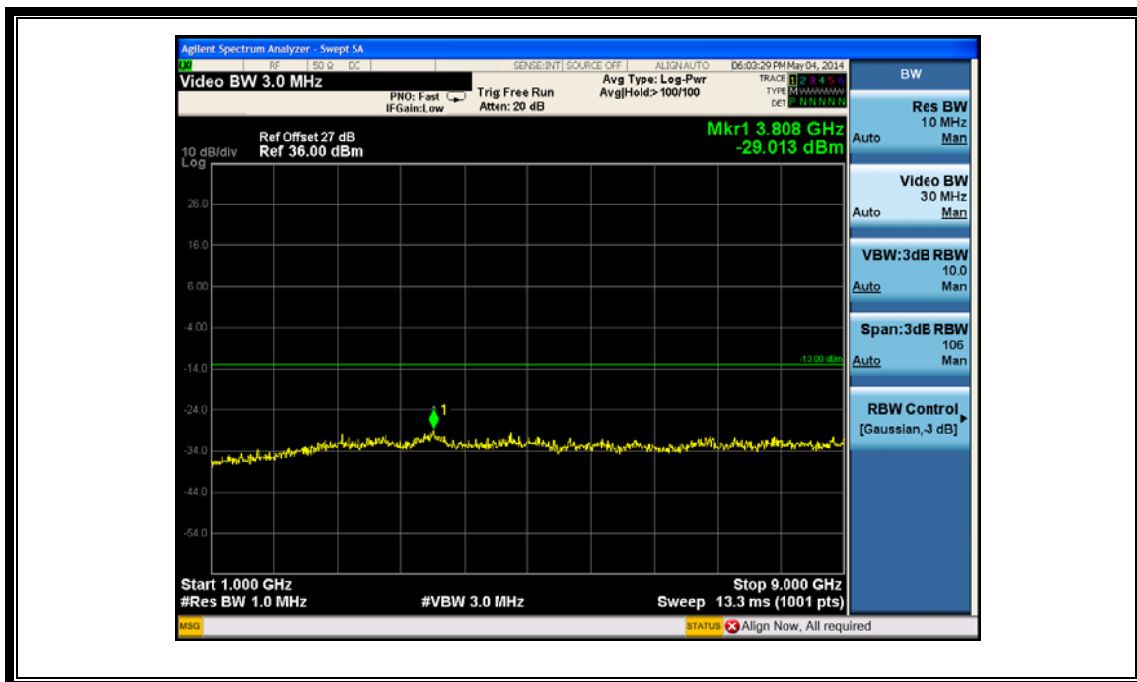
(Plot G2: HSDPA 850MHz Channel = 4175, 30MHz to 1GHz)



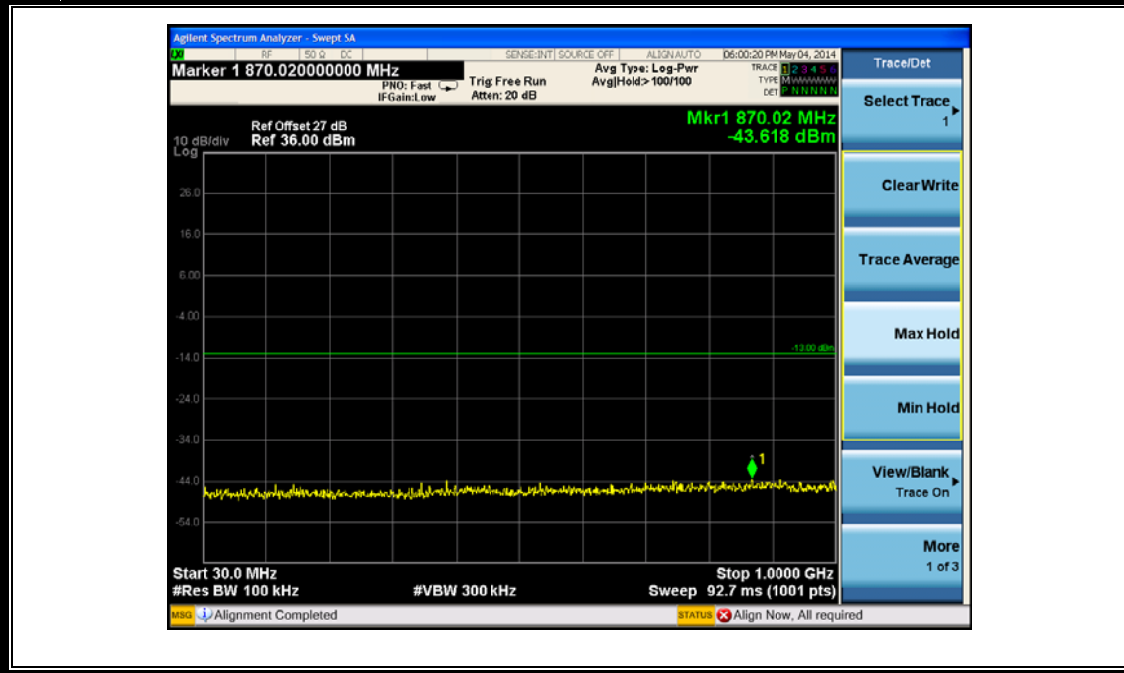
(Plot G2.1: HSDPA 850MHz Channel = 4175, 1GHz to 9GHz)



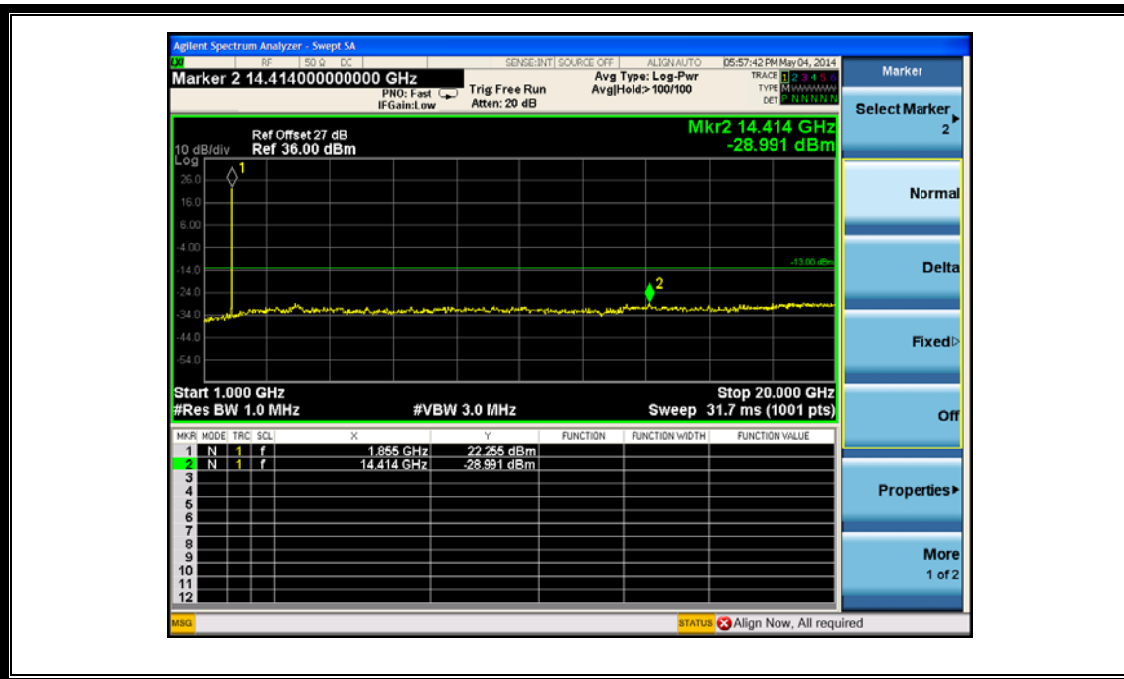
(Plot G3: HSDPA850MHz Channel = 4233, 30MHz to 1GHz)



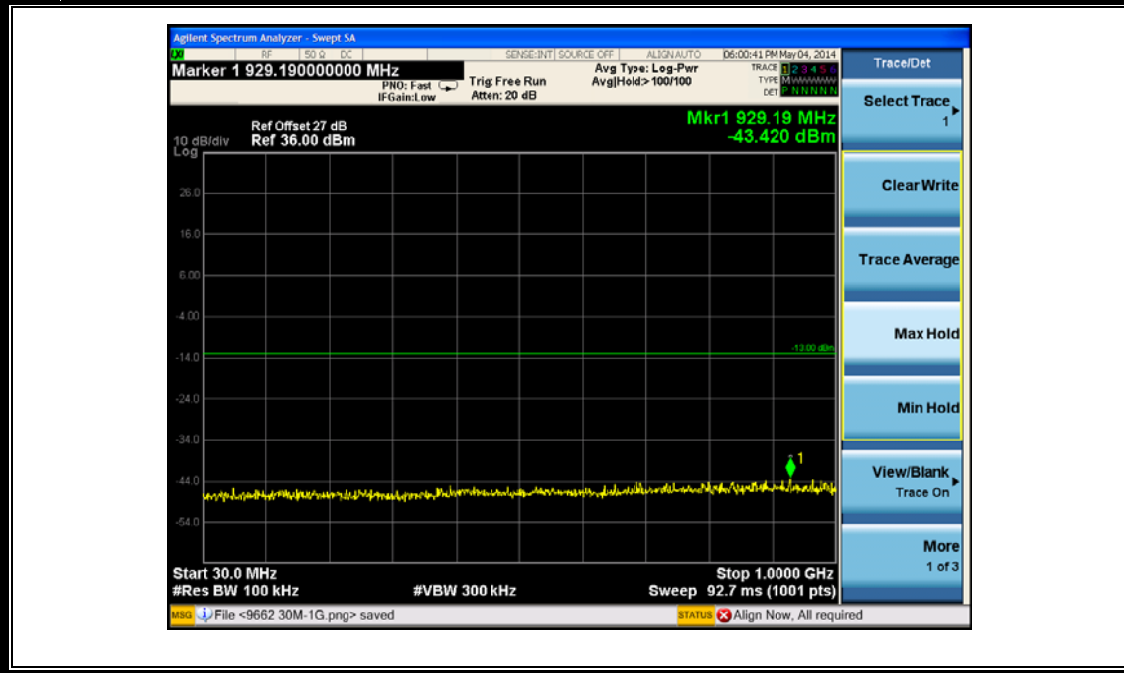
(Plot G3.1: HSDPA850MHz Channel = 4233, 1GHz to 9GHz)



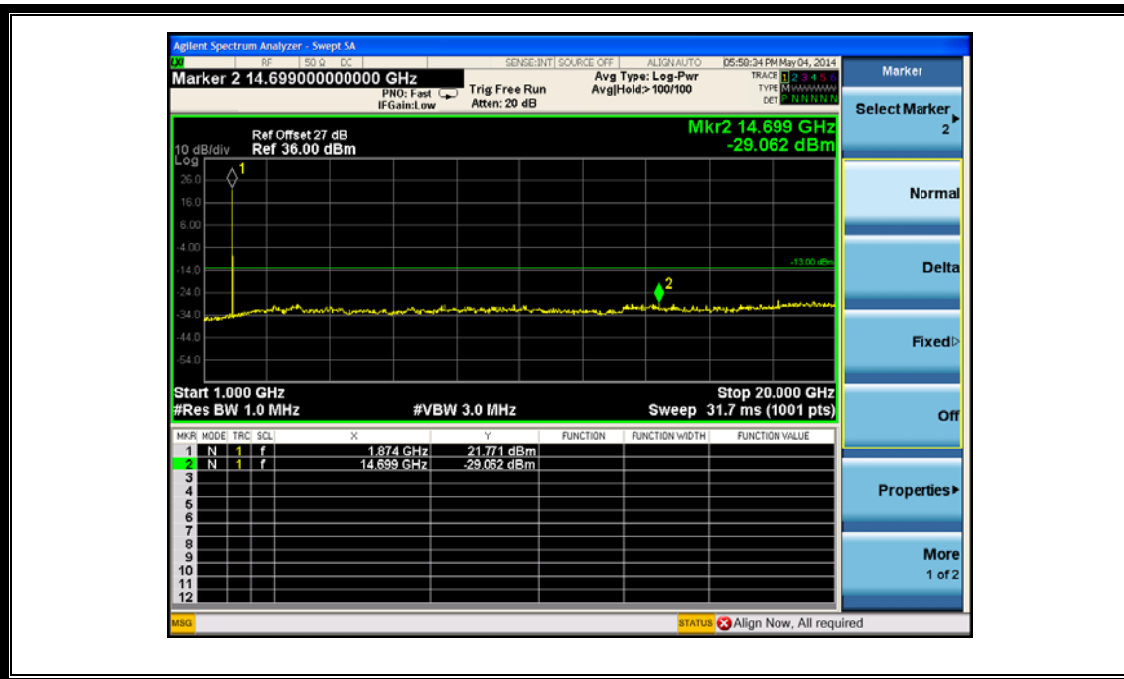
(Plot H1: HSDPA1900MHz Channel = 9262, 30MHz to 1GHz)



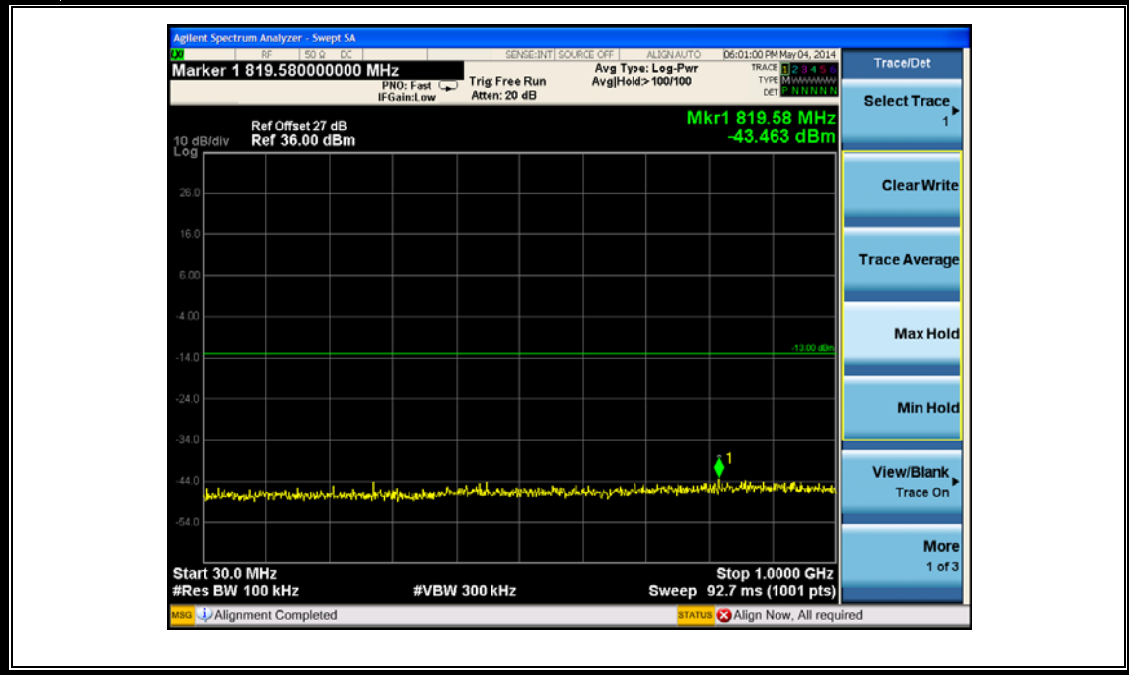
(Plot H1.1: HSDPA1900MHz Channel = 9262, 1GHz to 20GHz)



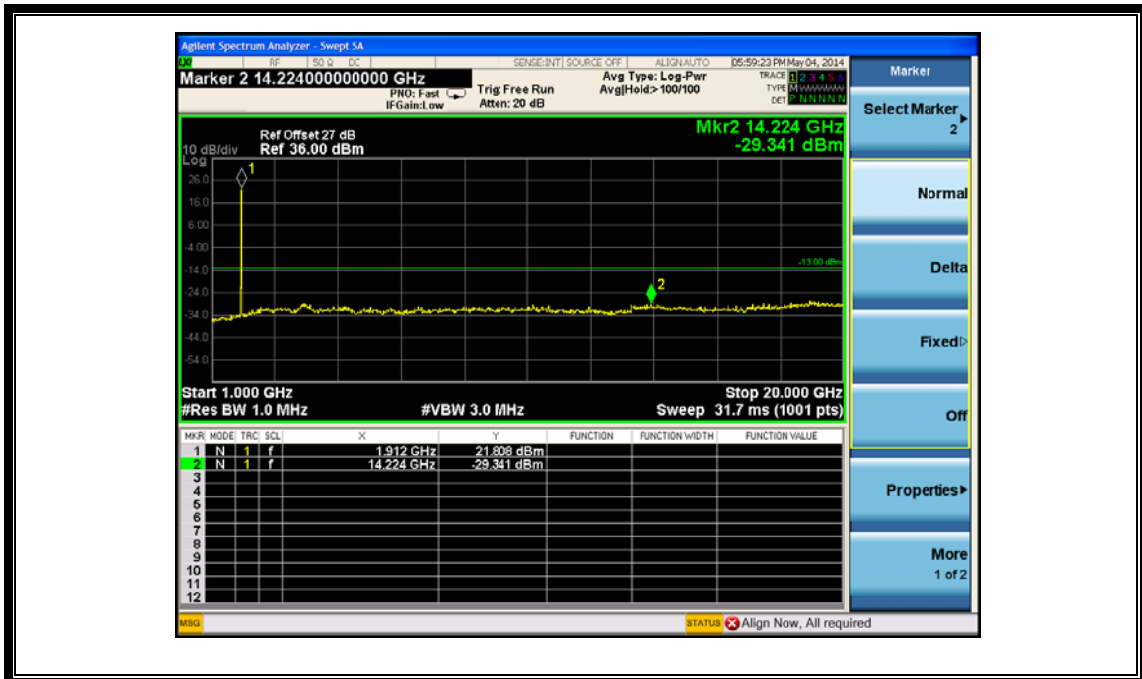
(Plot H2: HSDPA1900MHz Channel = 9400, 30MHz to 1GHz)



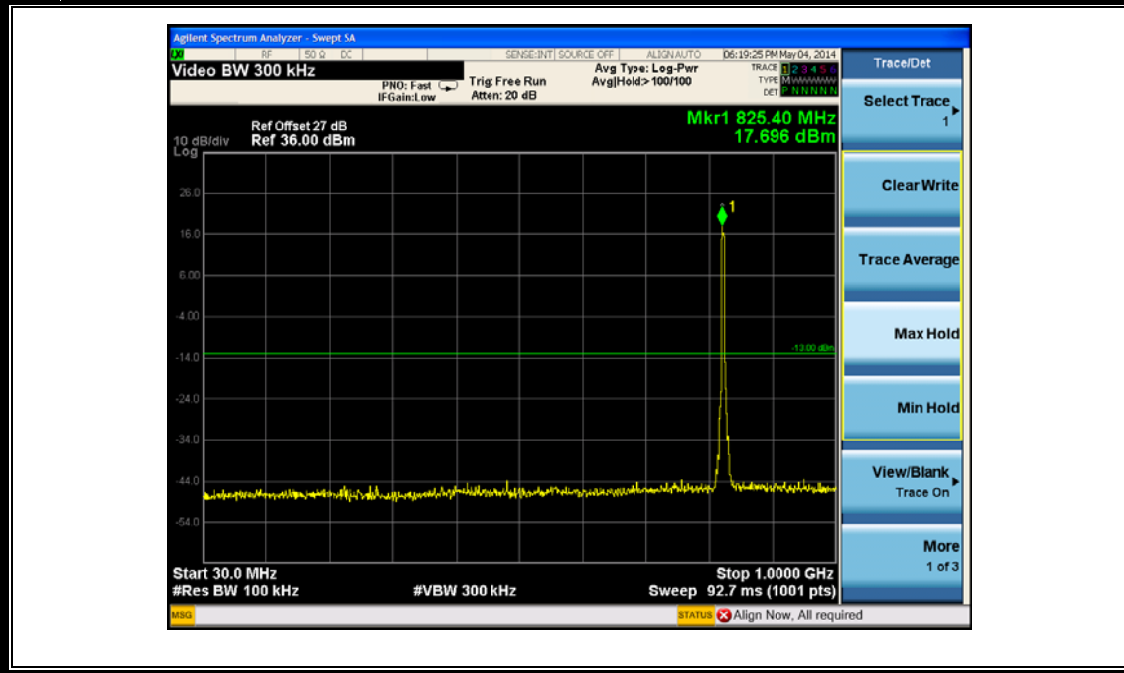
(Plot H2.1: HSDPA1900MHz Channel = 9400, 1GHz to 20GHz)



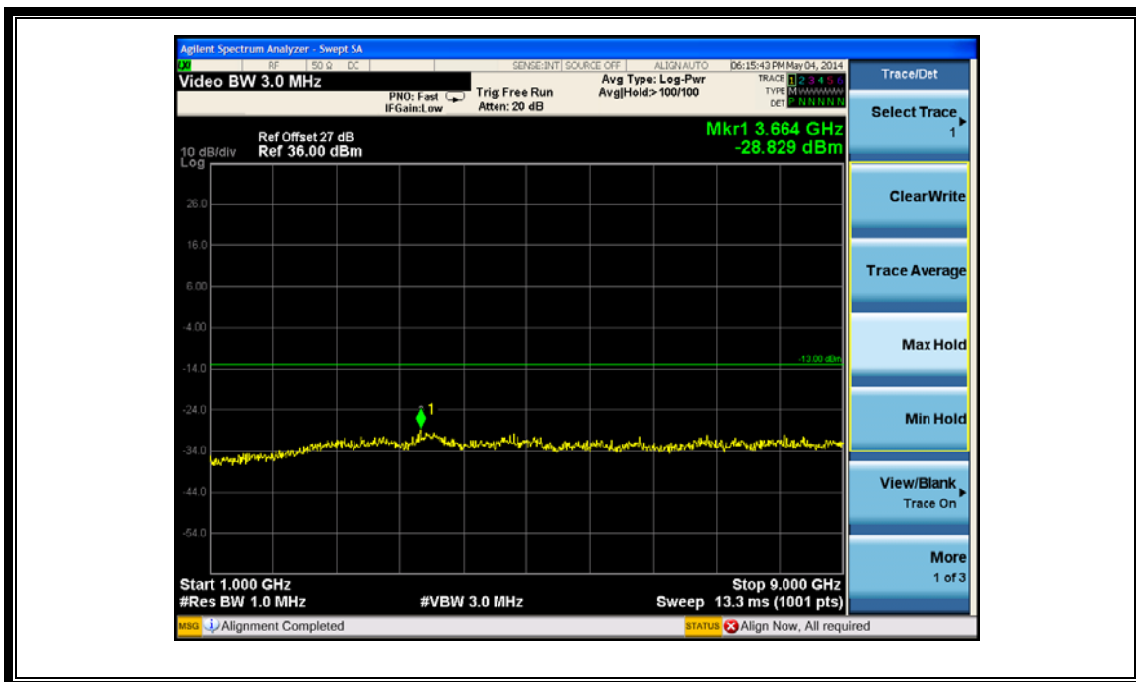
(Plot H3: HSDPA1900MHz Channel = 9538, 30MHz to 1GHz)



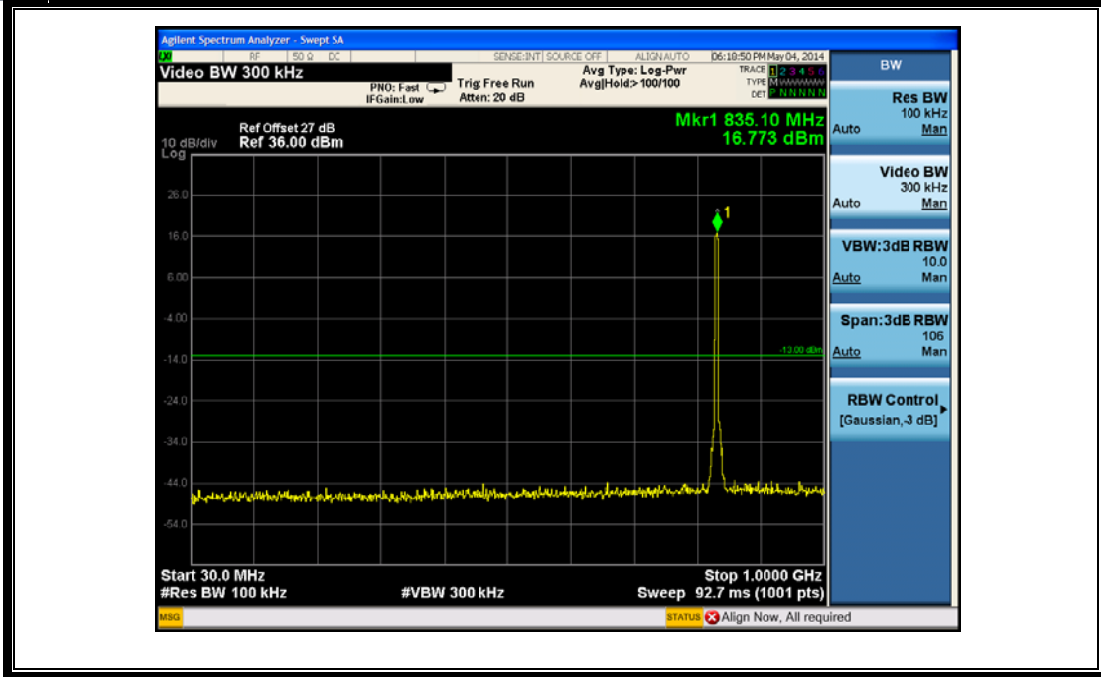
(Plot H3.1: HSDPA1900MHz Channel = 9538 1GHz to 20GHz)



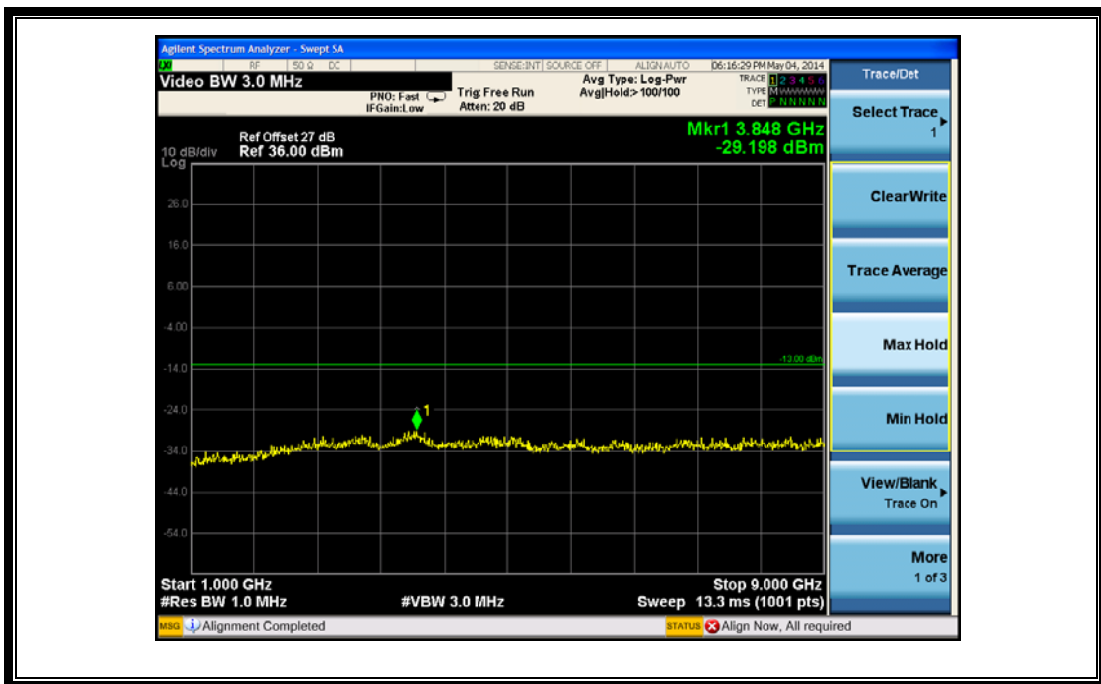
(Plot I 1: HSUPA 850MHz Channel = 4132, 30MHz to 1GHz)



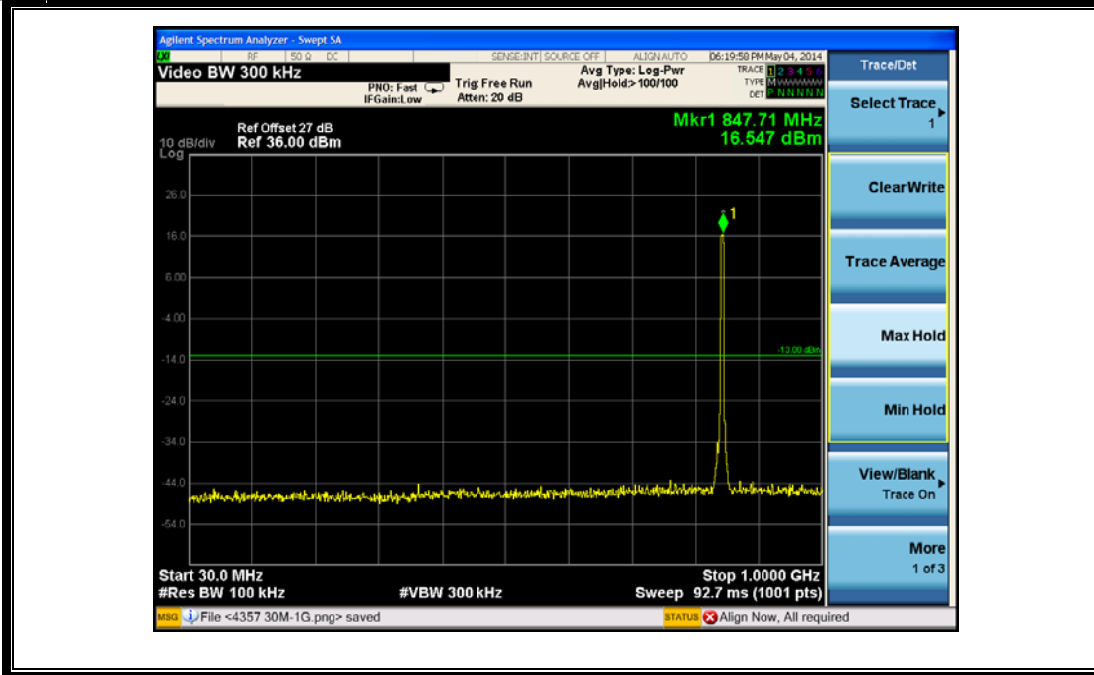
(Plot I1.1: HSUPA 850MHz Channel = 4132, 1GHz to 9GHz)



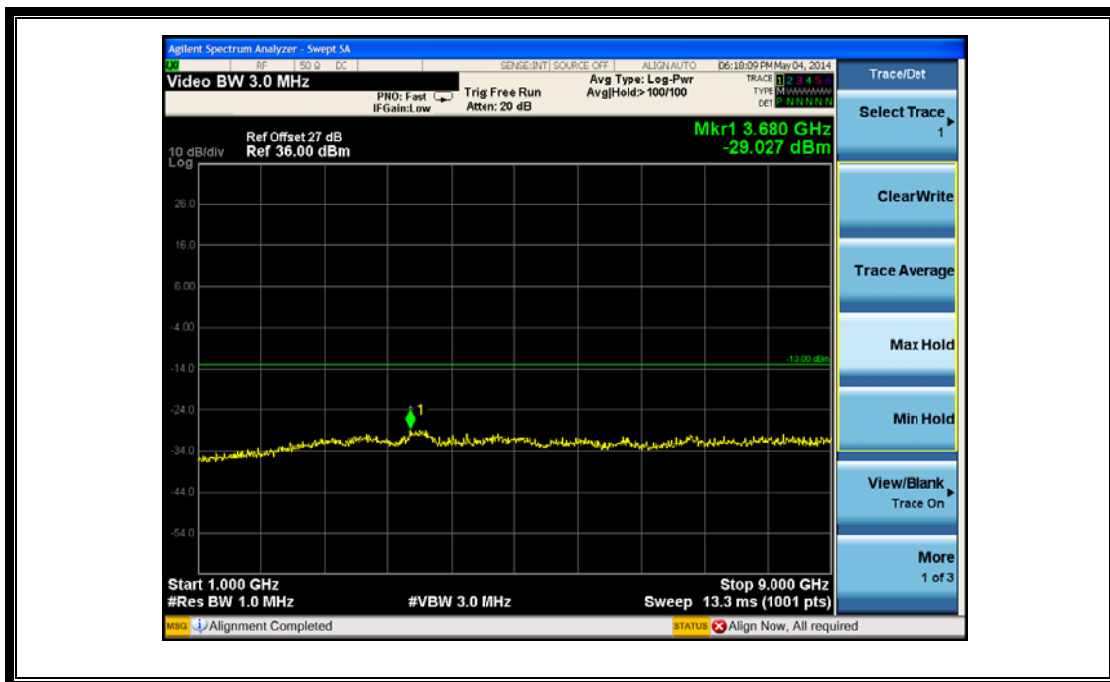
(Plot I 2: HSUPA 850MHz Channel = 4175, 30MHz to 1GHz)



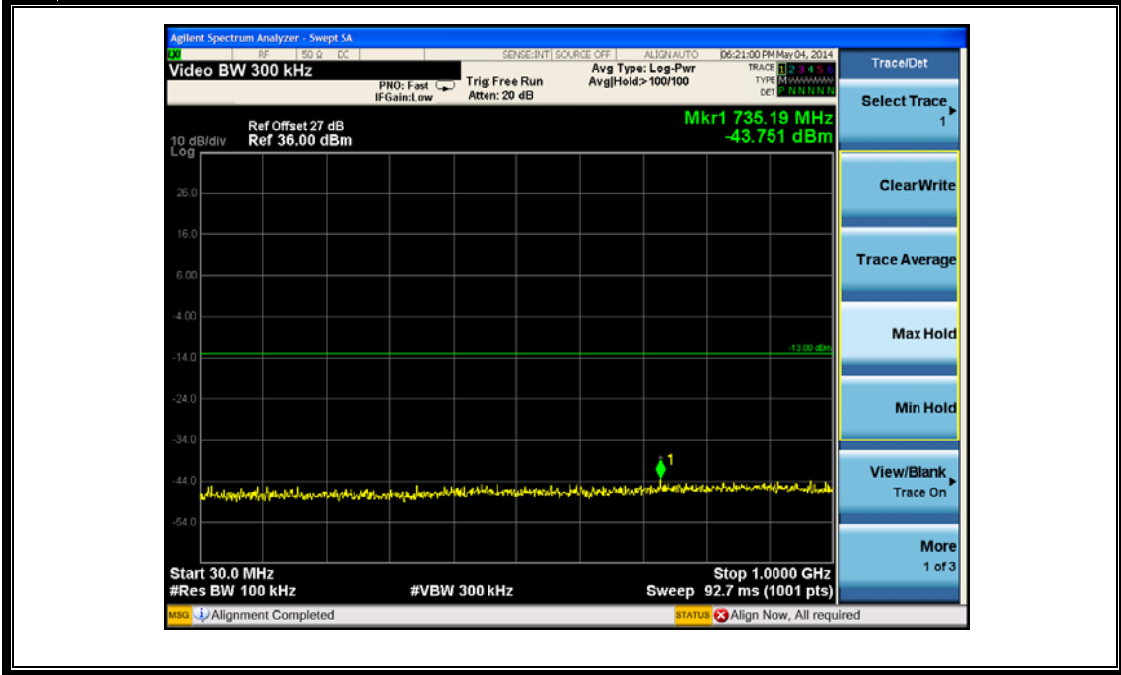
(Plot I2.1: HSUPA 850MHz Channel = 4175, 1GHz to 9GHz)



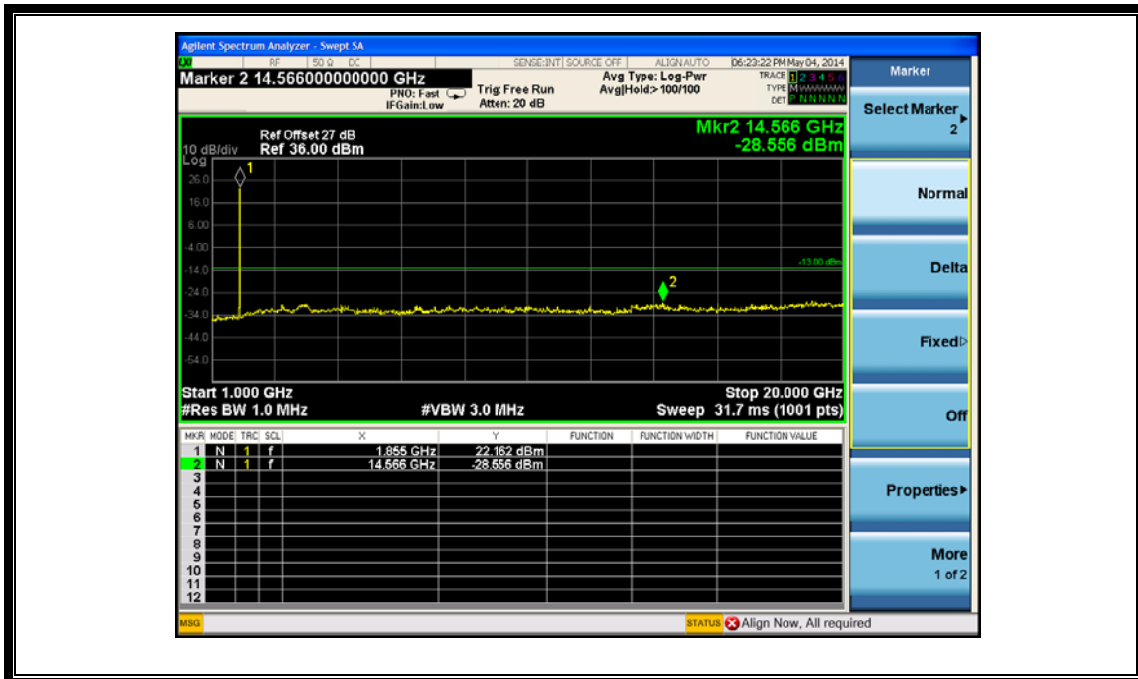
(Plot I 3: HSUPA850MHz Channel = 4233, 30MHz to 1GHz)



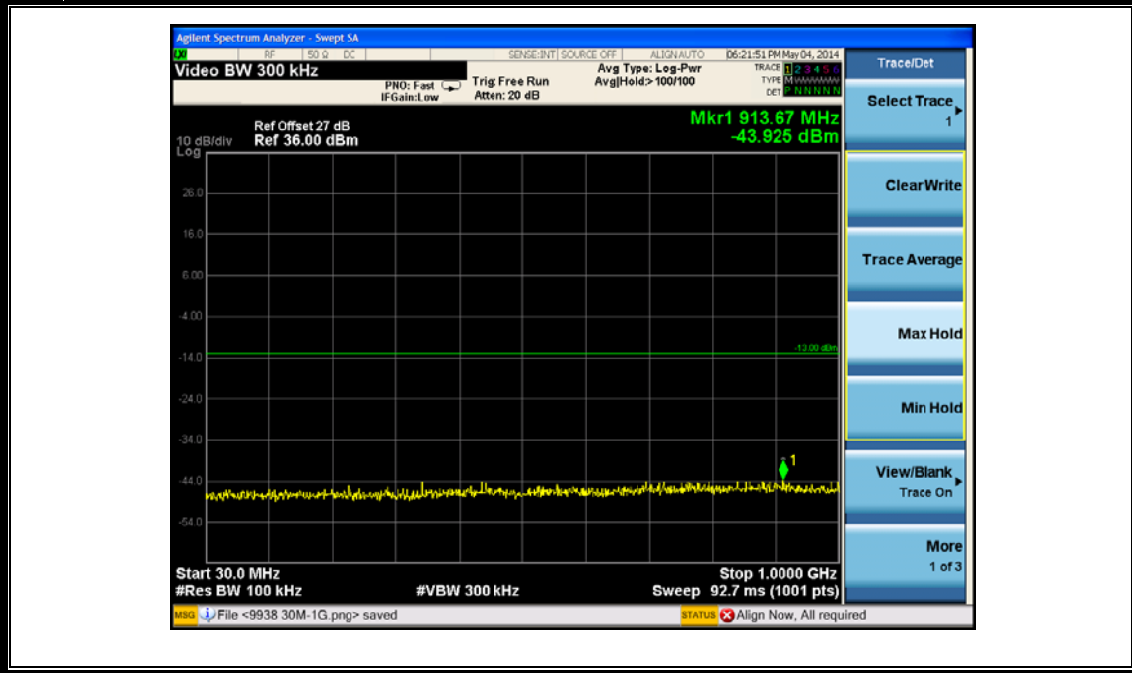
(Plot I3.1: HSUPA850MHz Channel = 4233, 1GHz to 9GHz)



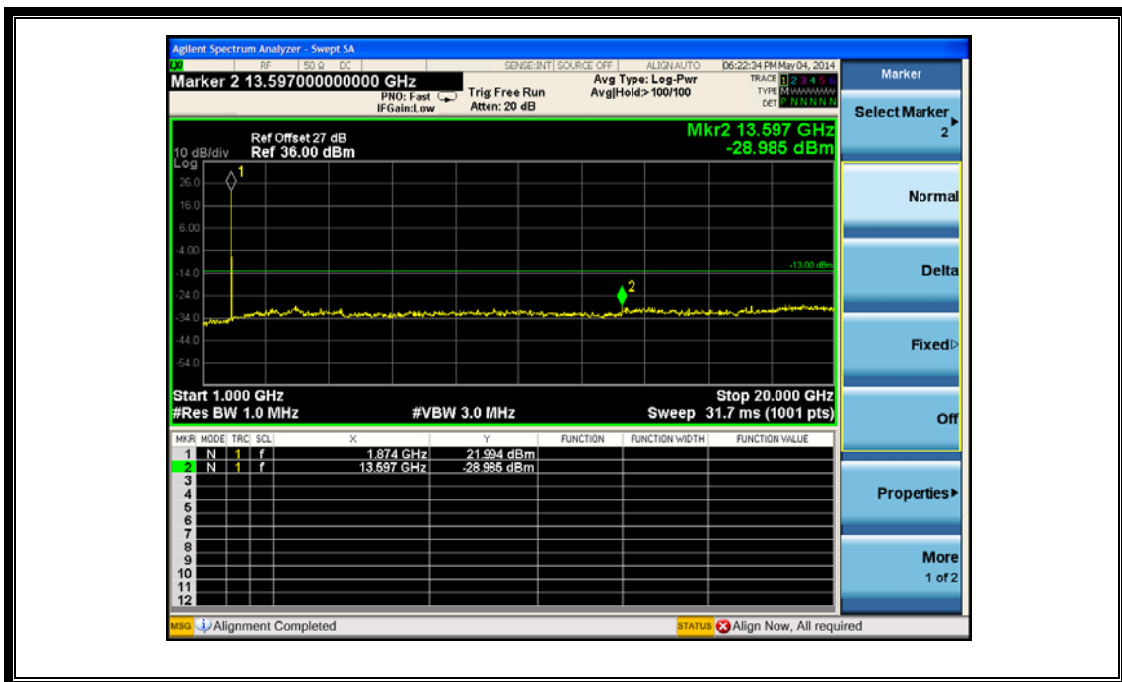
(Plot J 1: HSUPA1900MHz Channel = 9262, 30MHz to 1GHz)



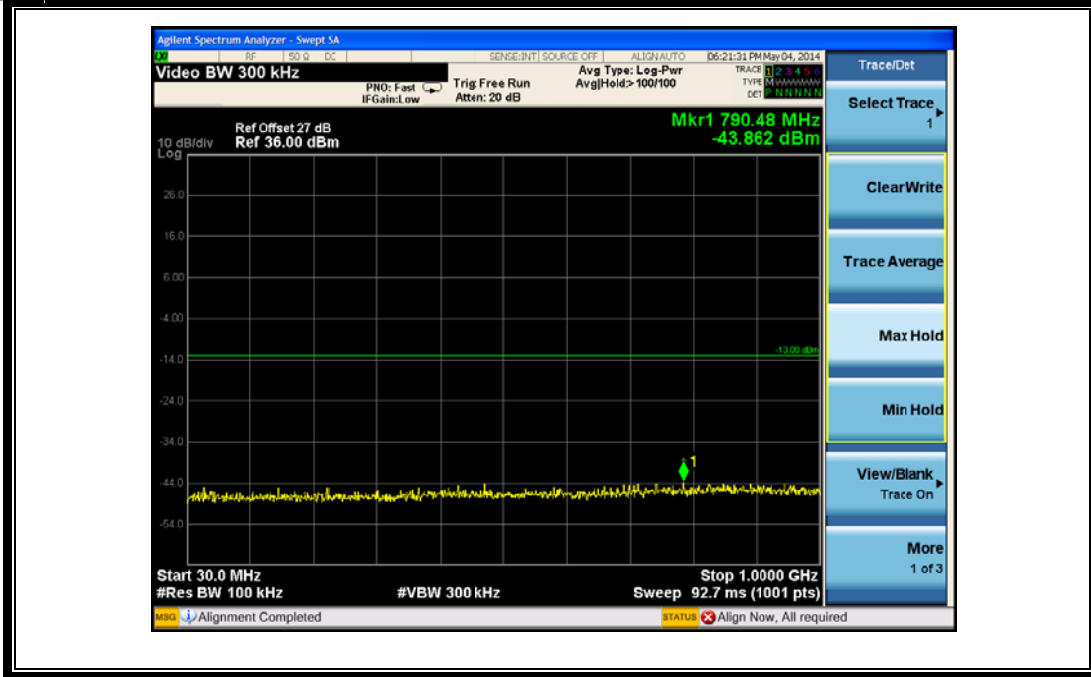
(Plot J1.1: HSUPA1900MHz Channel = 9262, 1GHz to 20GHz)



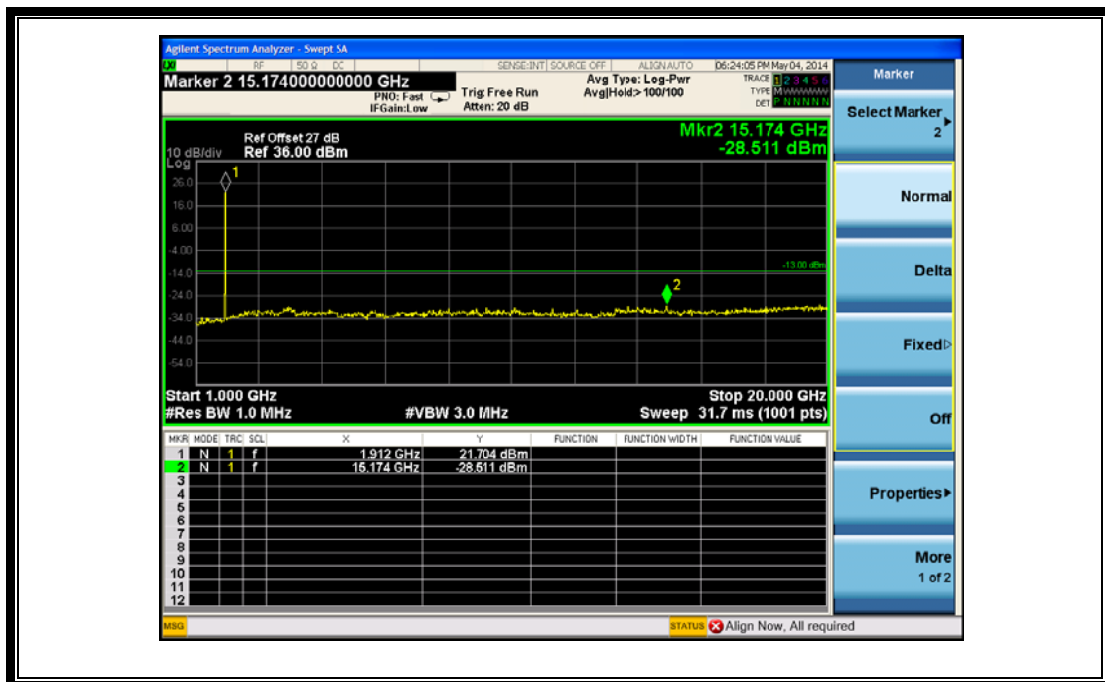
(Plot J 2: HSUPA1900MHz Channel = 9400, 30MHz to 1GHz)



(Plot J2.1: HSUPA1900MHz Channel = 9400, 1GHz to 20GHz)



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



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