



REPORT No.: SZ15060079W01

FCC RF TEST REPORT

APPLICANT : ZTE Corporation
PRODUCT NAME : LTE Digital Mobile Phone Handset
MODEL NAME : ZTE Blade A475
TRADE NAME : ZTE
BRAND NAME : ZTE
FCC ID : SRQ-A475
STANDARD(S) : 47 CFR Part 22 Subpart H
47 CFR Part 24 Subpart E
ISSUE DATE : 2015-7-16



SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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Change History		
Issue	Date	Reason for change
1.0	2015-7-16	First edition



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TEST REPORT DECLARATION

Applicant	ZTE Corporation
Applicant Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China
Manufacturer	ZTE Corporation
Manufacturer Address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China
Product Name	LTE Digital Mobile Phone Handset
Model Name	ZTE Blade A475
Brand Name	ZTE
HW Version	A475_V1AMB
SW Version	A475_Z98_MX_7SSOH1I500H001
Test Standards	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
Test Date	2015-6-10 to 2015-7-13
Test Result	PASS

Tested by : Zou Jian
Zou Jian(Test Engineer)

Reviewed by : Qiu Xiaojun
Qiu Xiaojun(RF Manager)

Approved by : Zeng Dexin
Zeng Dexin (Chief Engineer)



1. GENERAL INFORMATION

1.1 EUT Description

EUT Type: LTE Digital Mobile Phone Handset
Serial No.: (n.a, marked #1 by test site)
Hardware Version: A475_V1AMB
Software Version: A475_Z98_MX_7SSOH1I500H001
Applicant: ZTE Corporation
ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan
District, Shenzhen, Guangdong, P.R.China
Manufacturer: ZTE Corporation
ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan
District, Shenzhen, Guangdong, 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
HSPA+ Mode with QPSK Modulation
Multislot Class.....: GPRS: Multislot Class12; EGPRS: Multislot Class12
Antenna Type: PIFA Antenna
Emission Designators: GSM 850:252KGXW,GSM 1900:251KGXW
EGPRS850:256KG7W, EGPRS1900:263KG7W,
WCDMA 850:4M22F9W ,WCDMA1900:4M24F9W



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 ratio	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 C63.7-2009, 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

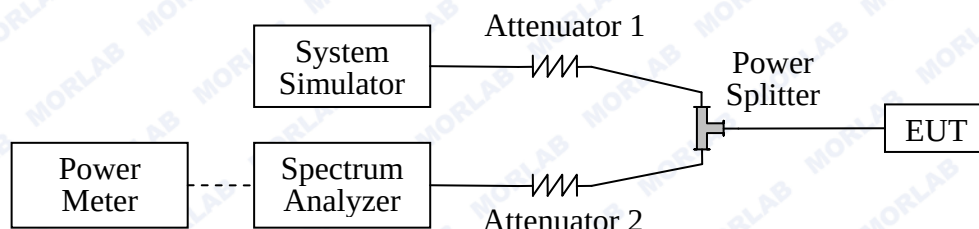
2.1 Conducted RF Output Power

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

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.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2015.02.26	2016.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2015.02.26	2016.02.25
Power Meter	Agilent	E4418B	GB43318055	2015.02.26	2016.02.25
Power Sensor	Agilent	8482A	MY41091706	2015.02.26	2016.02.25
Power Splitter	Weinschel	1506A	NW521	2015.02.26	2016.02.25
Attenuator 1	Resnet	20dB	(n.a.)	2015.02.26	2016.02.25
Attenuator 2	Resnet	3dB	(n.a.)	2015.02.26	2016.02.25



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.

GSM Model Test Verdict:

Band	Channel	Frequency (MHz)	Measured Output Power		Limit	Verdict
			dBm	Refer to Plot	dBm	
GSM 850MHz	128	824.2	33.39	Plot A1 to A3	35	PASS
	190	836.6	33.29			PASS
	251	848.8	33.27			PASS
GSM 1900MHz	512	1850.2	30.32	Plot B1 to B3	32	PASS
	661	1880.0	30.47			PASS
	810	1909.8	30.59			PASS
GPRS 850MHz	128	824.2	33.08	Plot C1 to C3 ^{Note 1}	35	PASS
	190	836.6	33.02			PASS
	251	848.8	32.99			PASS
GPRS 1900MHz	512	1850.2	29.86	Plot D1 to D3 ^{Note 1}	32	PASS
	661	1880.0	29.93			PASS
	810	1909.8	30.05			PASS
EGPRS 850MHz	128	824.2	30.34	Plot E1 to E3 ^{Note 1}	35	PASS
	190	836.6	30.61			PASS
	251	848.8	30.55			PASS
EGPRS 1900MHz	512	1850.2	29.05	Plot F1 to F3 ^{Note 1}	32	PASS
	661	1880.0	29.02			PASS
	810	1909.8	29.22			PASS

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

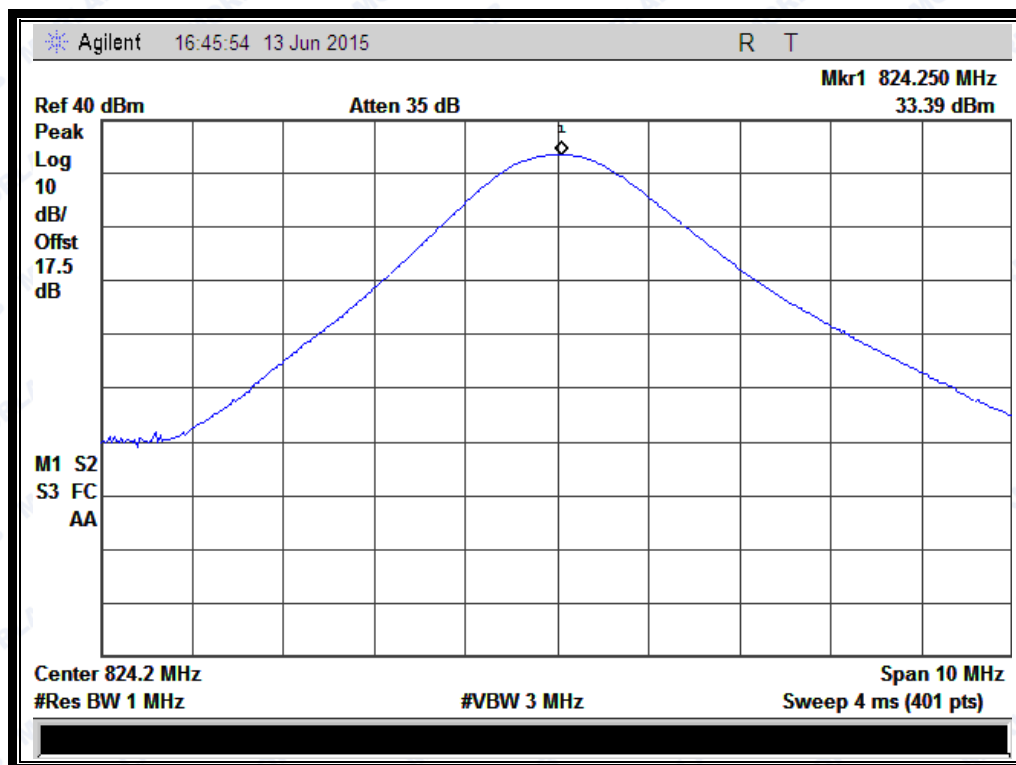


WCDMA Model Test Verdict:

Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	23.32	23.52	23.70	23.64	23.45	23.48
HSDPA	1	23.32	23.52	23.55	22.94	22.60	22.68
	2	23.30	23.50	23.51	22.92	22.59	22.66
	3	22.81	23.01	23.03	22.43	22.10	22.17
	4	22.80	23.02	23.03	22.42	22.09	22.16
HSUPA	1	23.77	23.49	23.61	22.99	22.68	22.68
	2	21.75	21.48	21.60	20.98	20.67	20.66
	3	22.76	22.47	22.60	21.97	21.65	21.66
	4	21.74	21.46	21.59	20.98	20.67	20.66
	5	23.76	23.48	23.60	22.98	22.67	22.64
HSPA+	1	23.39	23.65	23.73	22.20	22.85	22.88

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

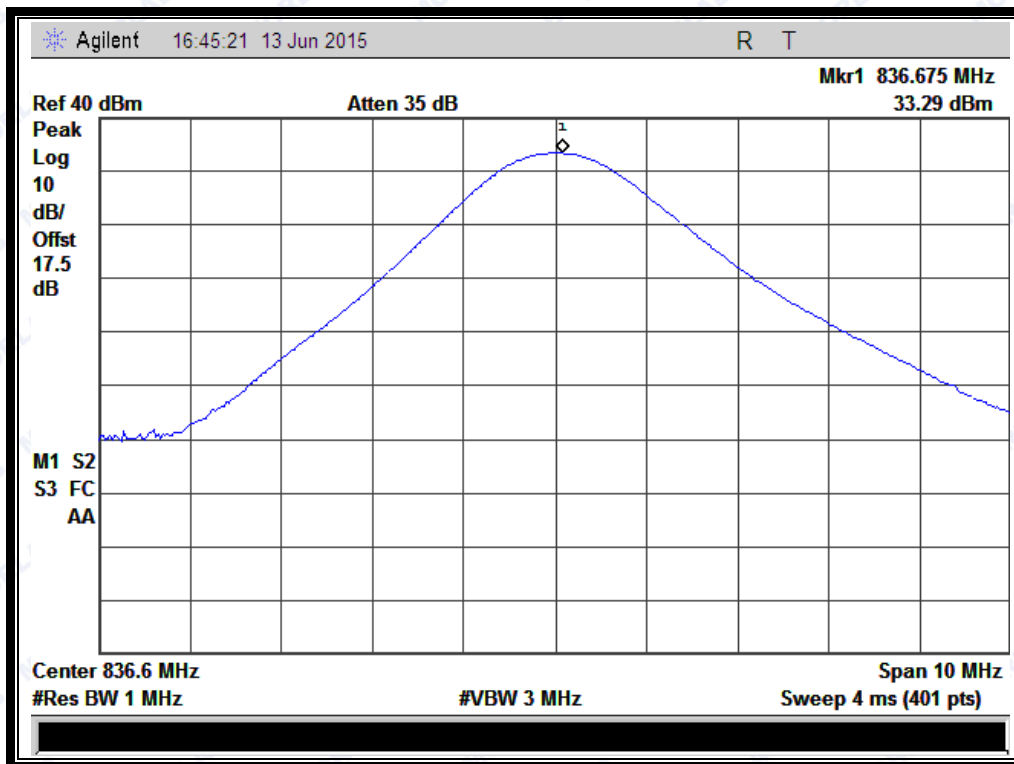
GSM Model Test Plots:



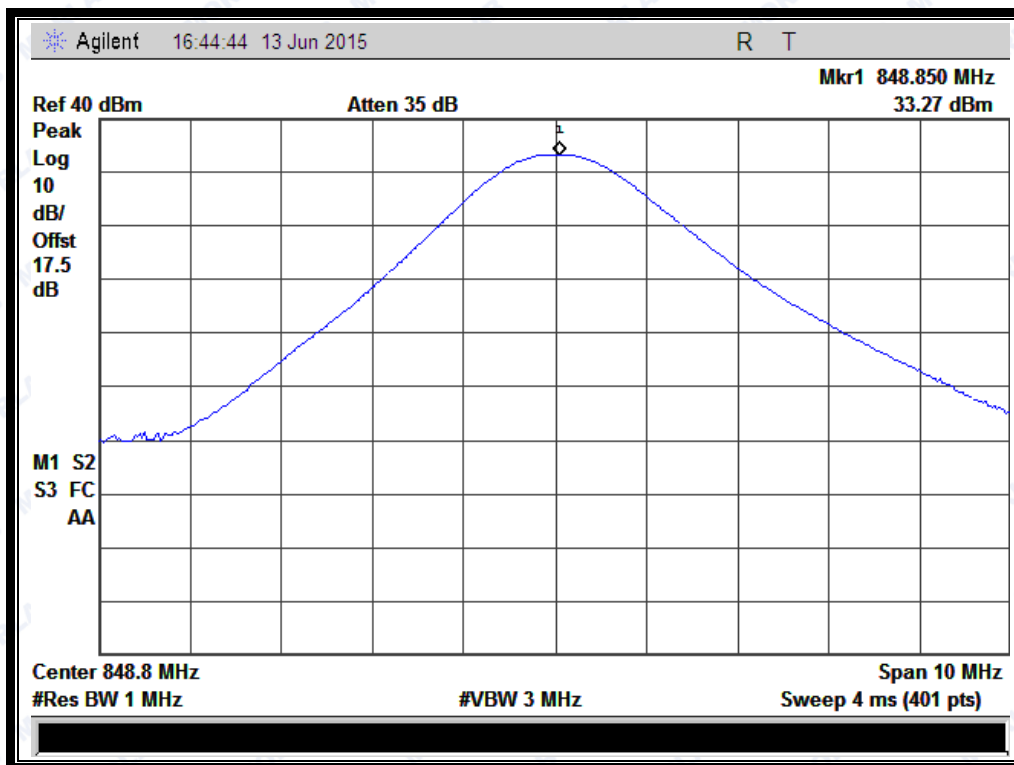
(Plot A1: GSM 850MHz Channel = 128)



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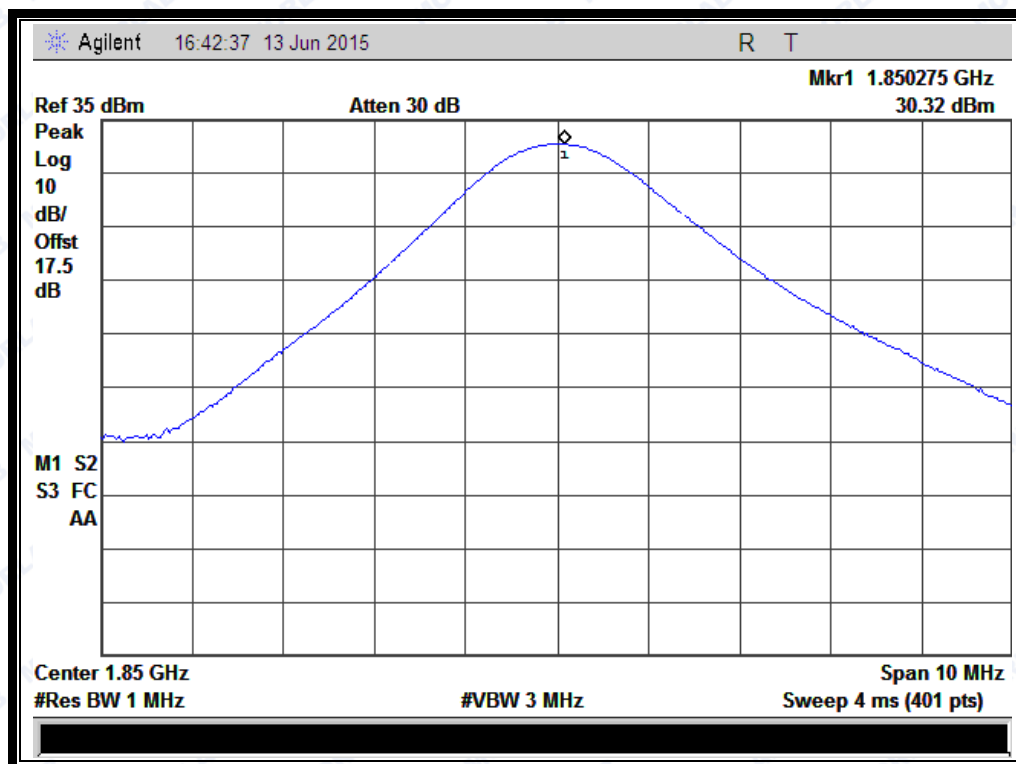
(Plot A2: GSM 850MHz Channel = 190)



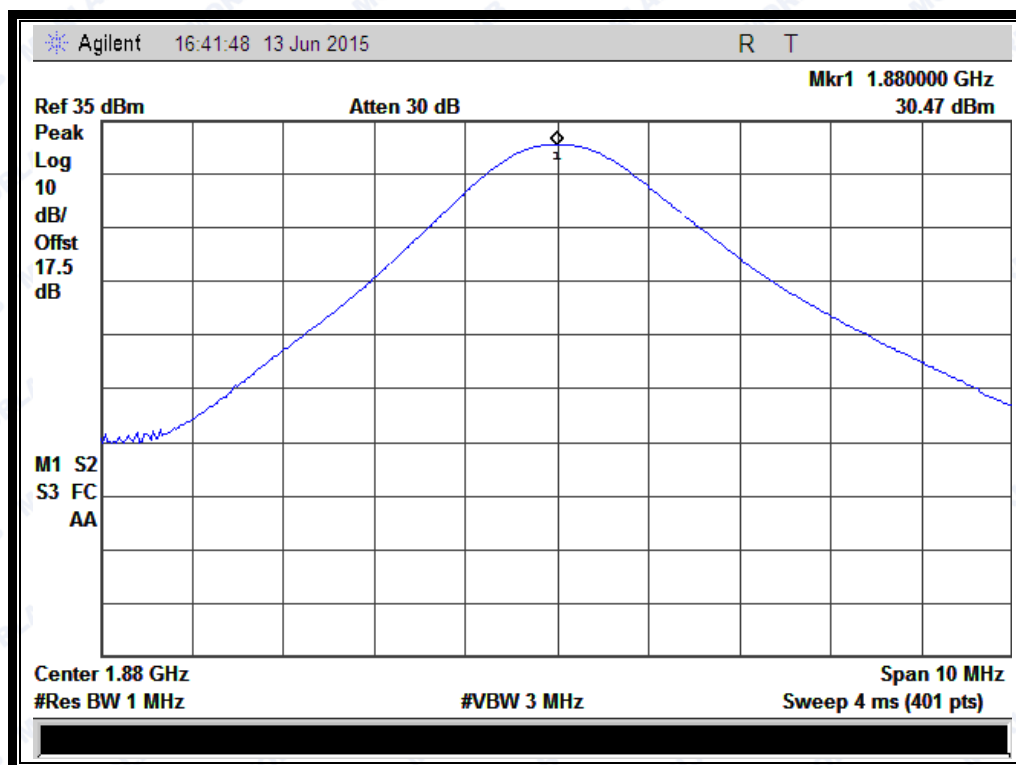
(Plot A3: GSM 850MHz Channel = 251)



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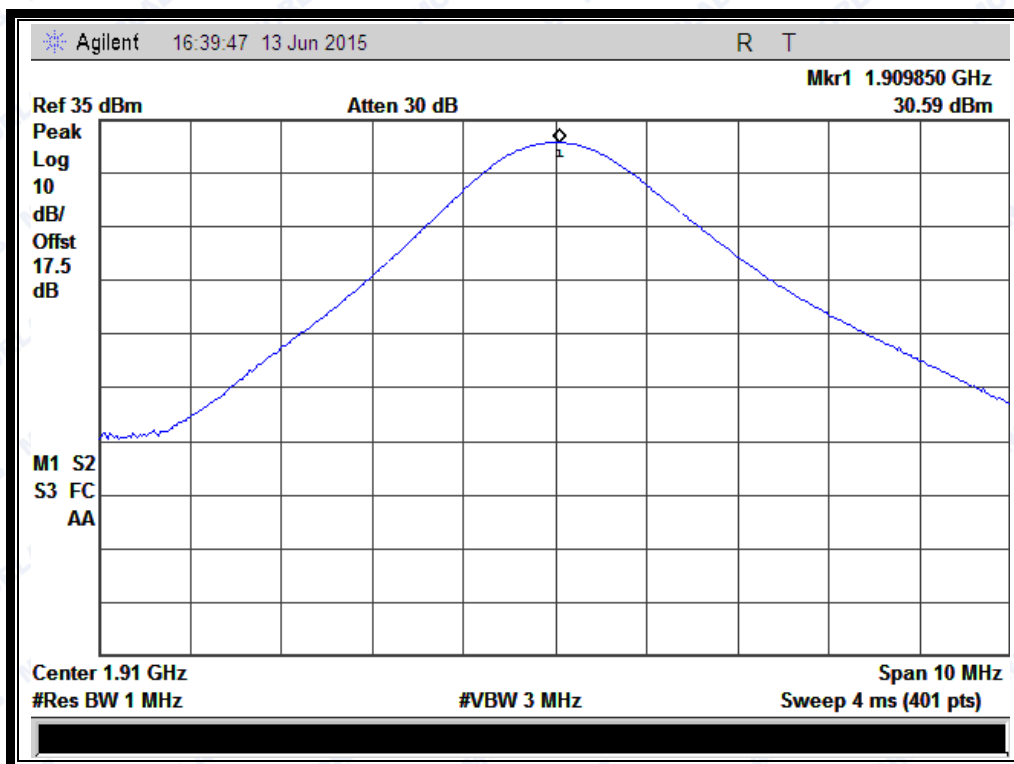
(Plot B1: GSM 1900MHz Channel = 512)



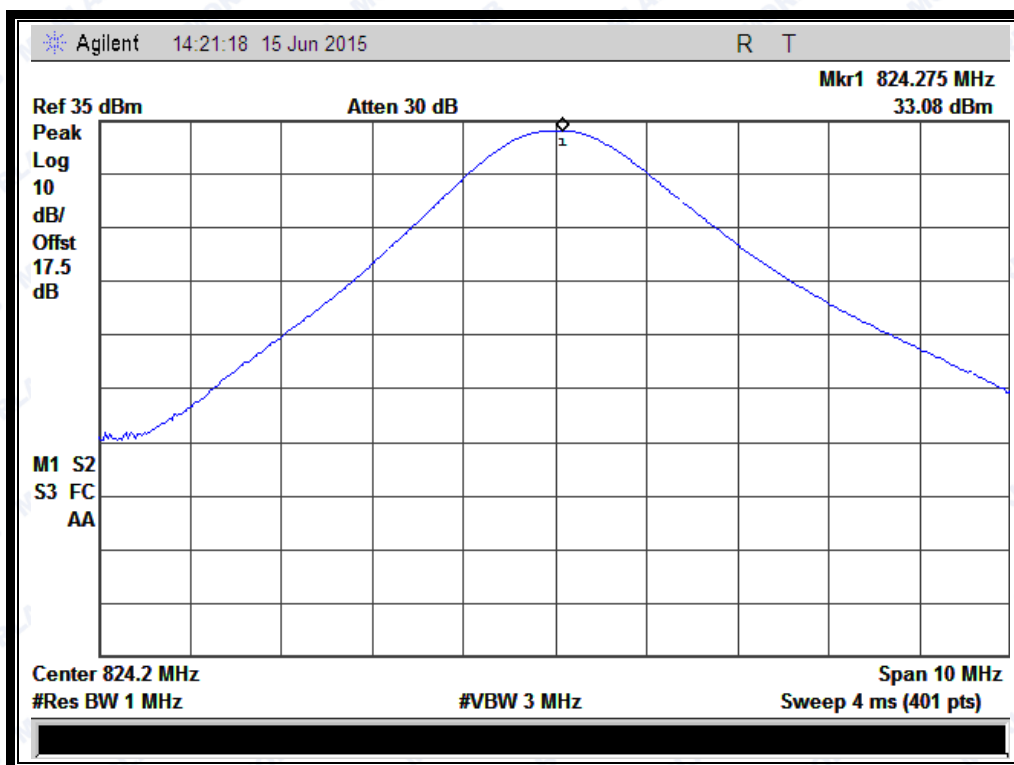
(Plot B2: GSM 1900MHz Channel = 661)



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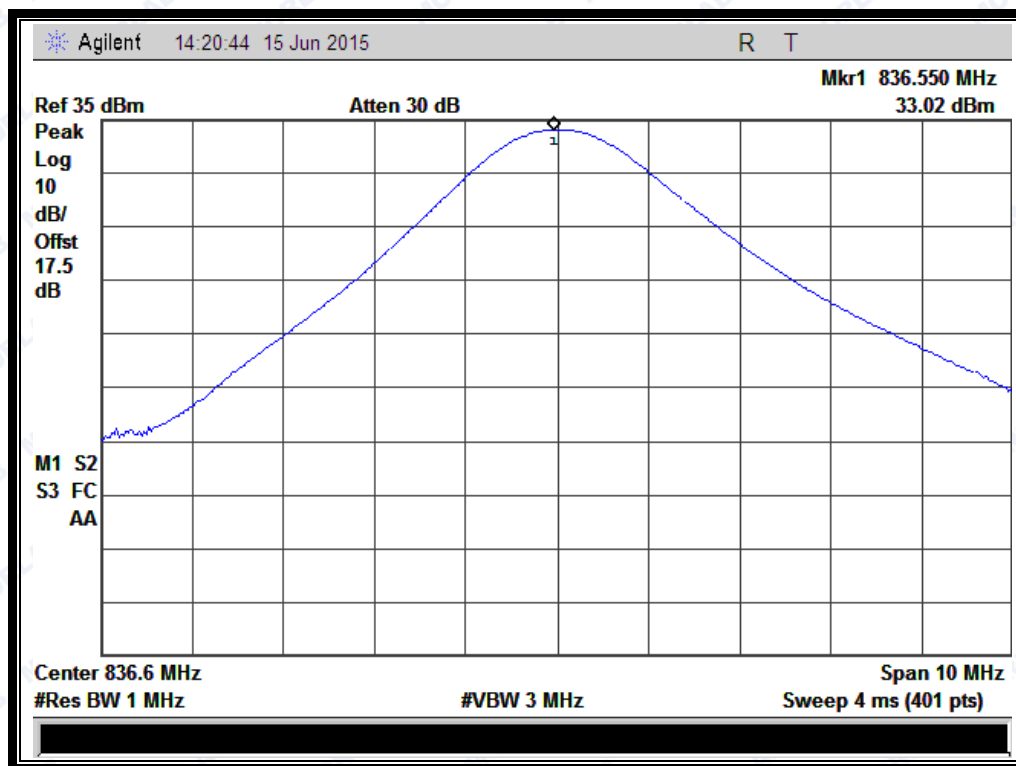
(Plot B3: GSM 1900Hz Channel = 810)



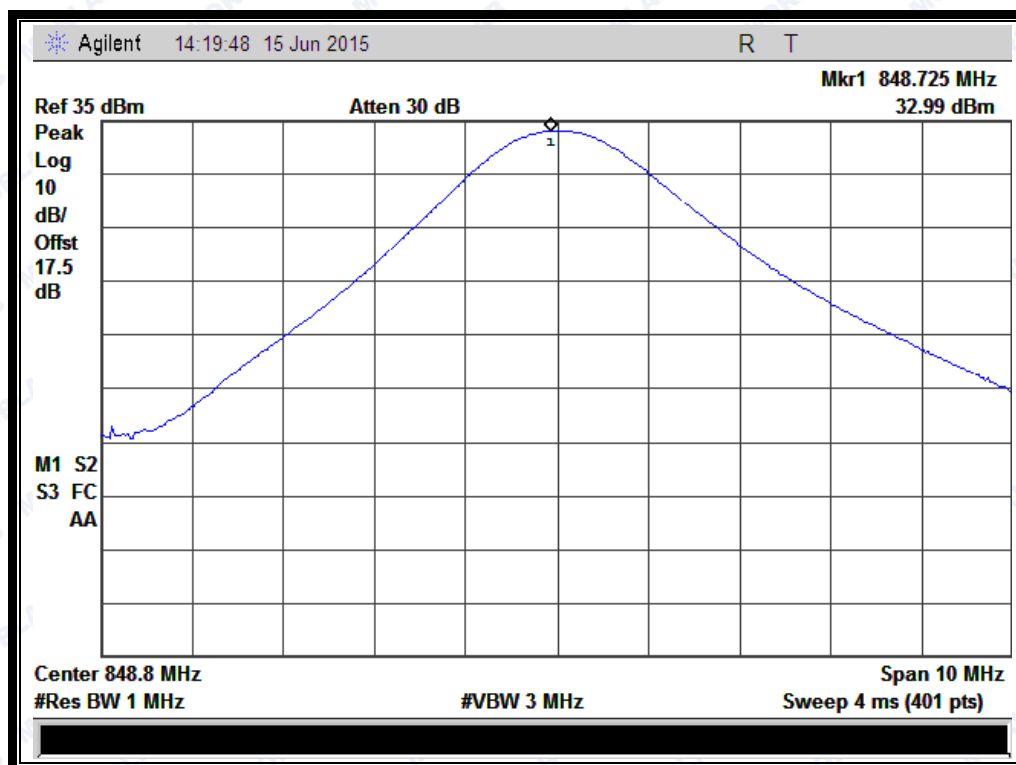
(Plot C1: GPRS 850MHz Channel = 128)



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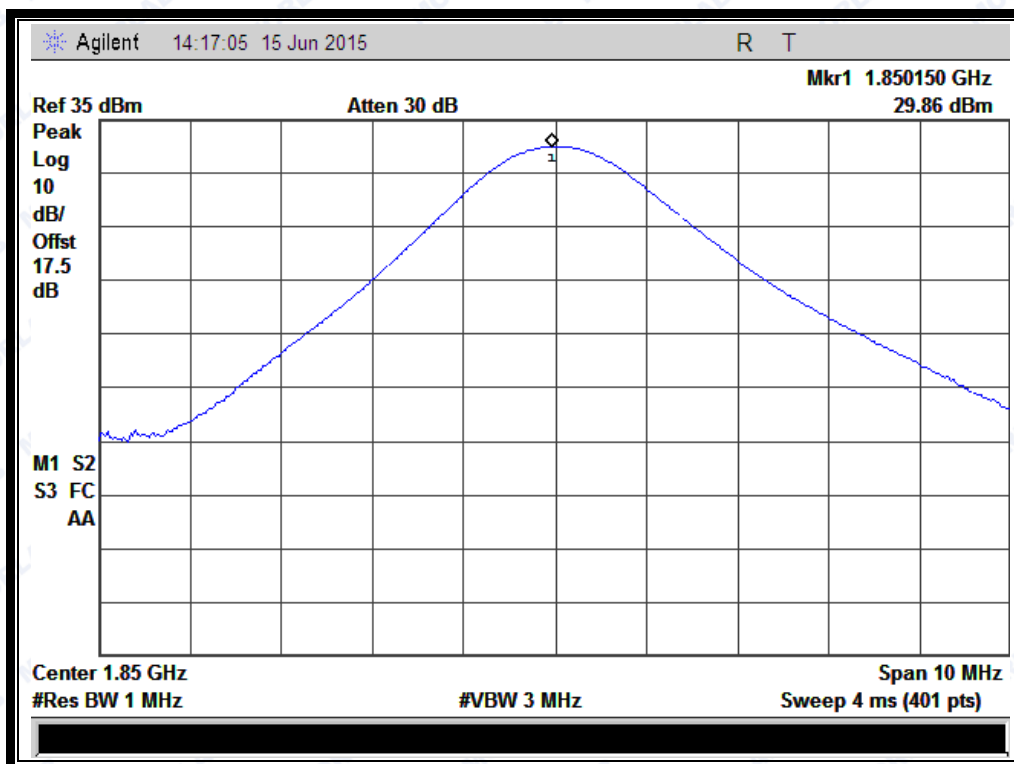
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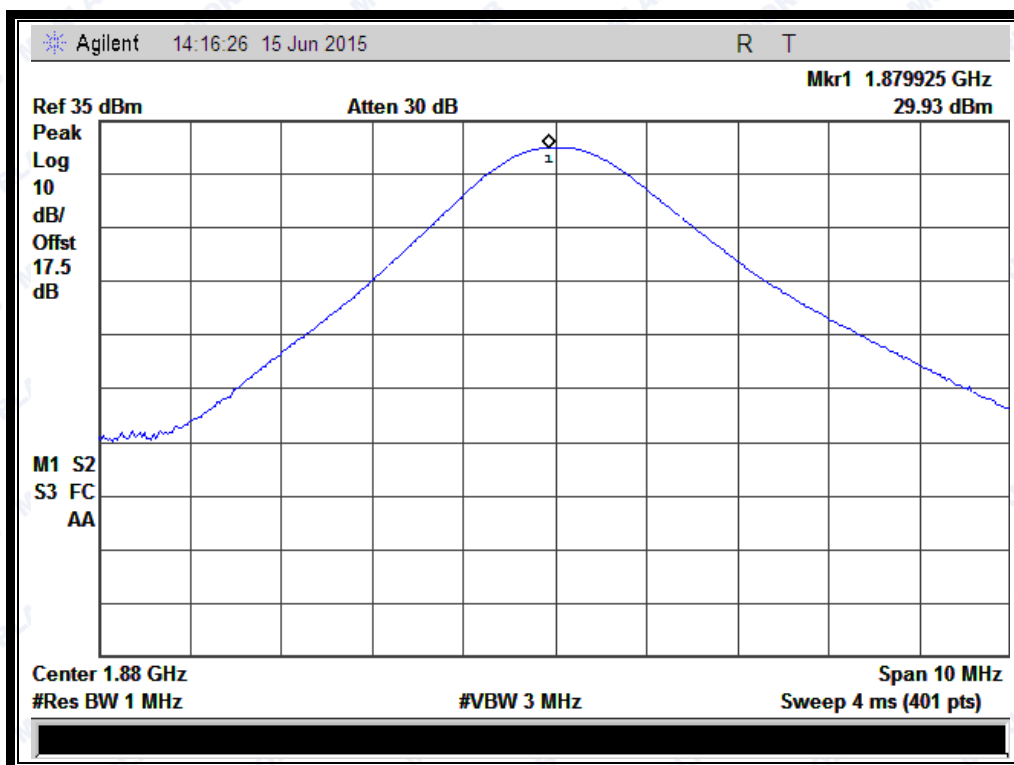
(Plot C3: GPRS 850MHz Channel = 251)



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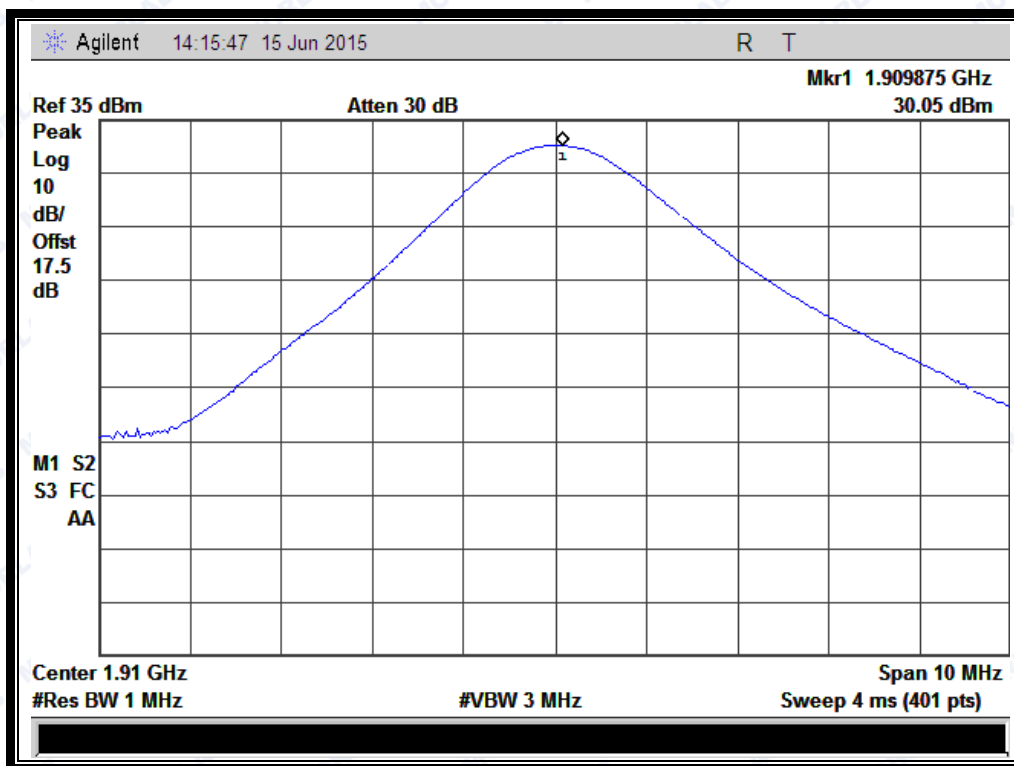
(Plot D1: GPRS 1900MHz Channel = 512)



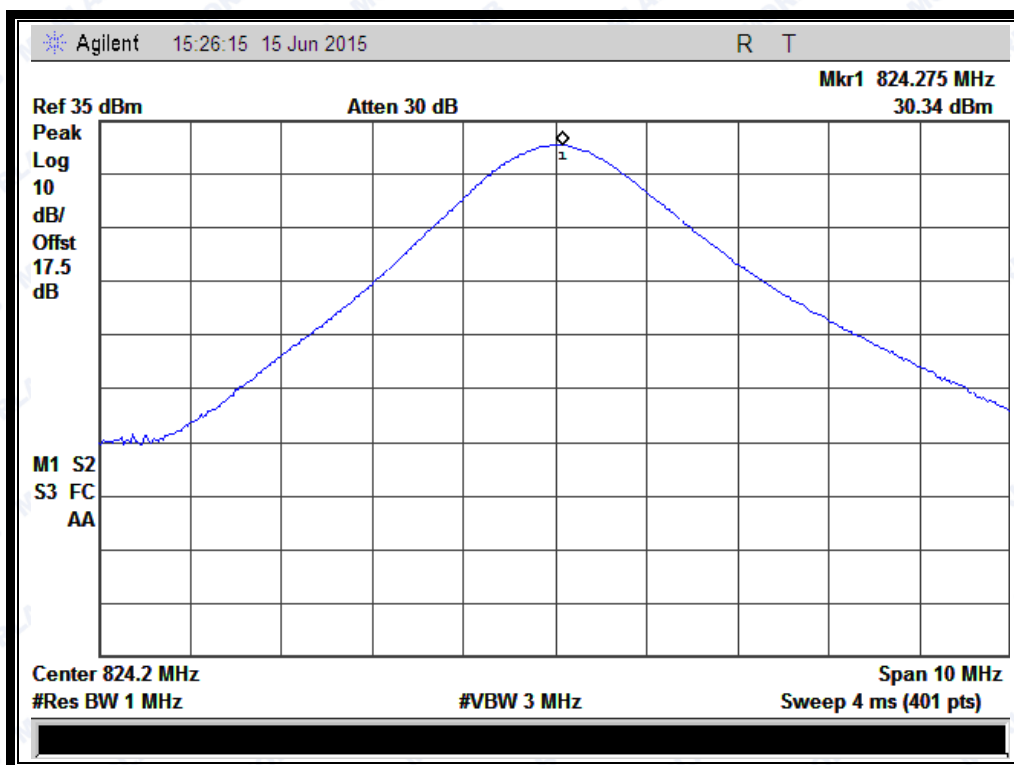
(Plot D2: GPRS 1900MHz Channel = 661)



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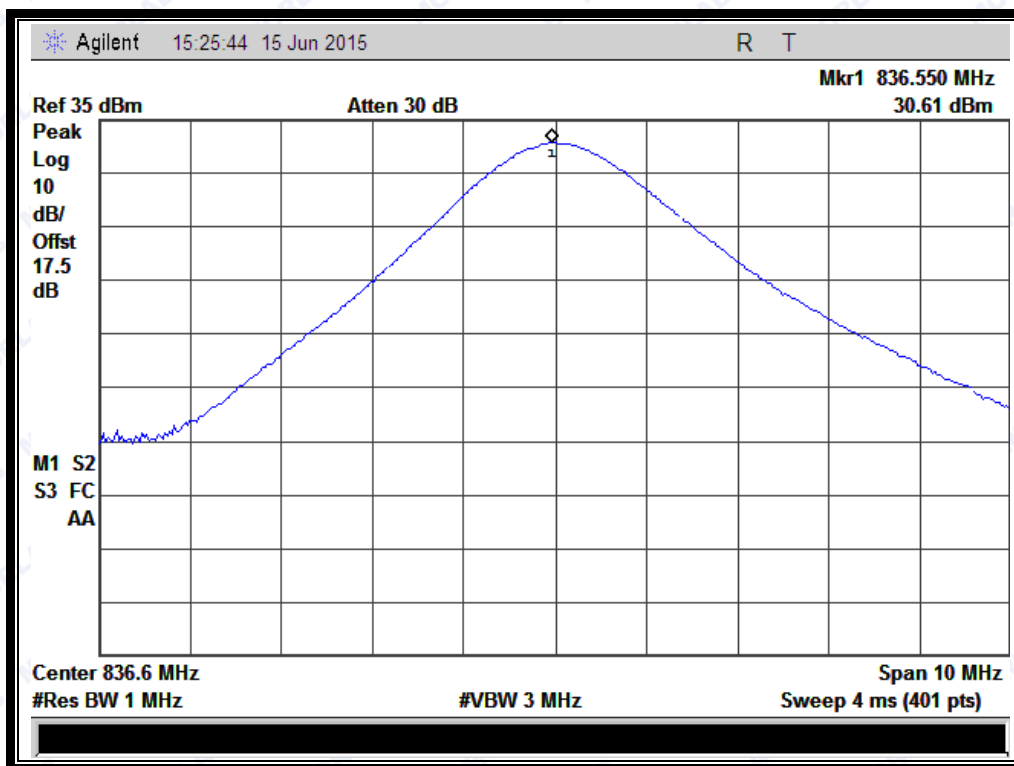
(Plot D3: GPRS 1900Hz Channel = 810)



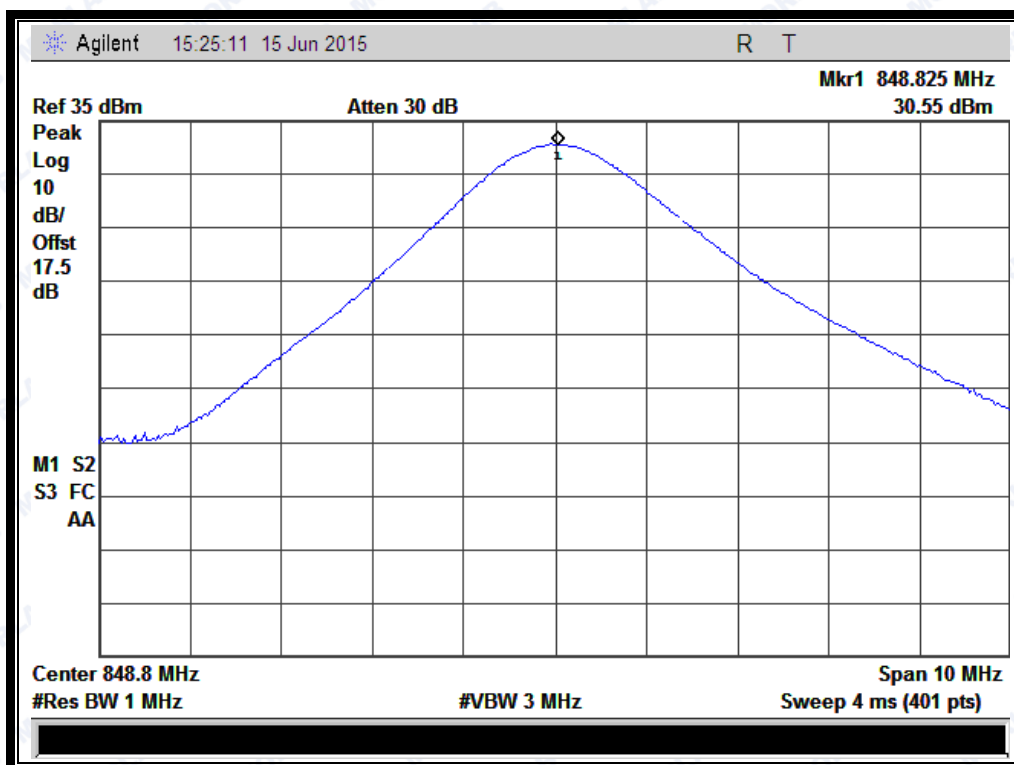
(Plot E1: EGPRS 850MHz Channel = 128)



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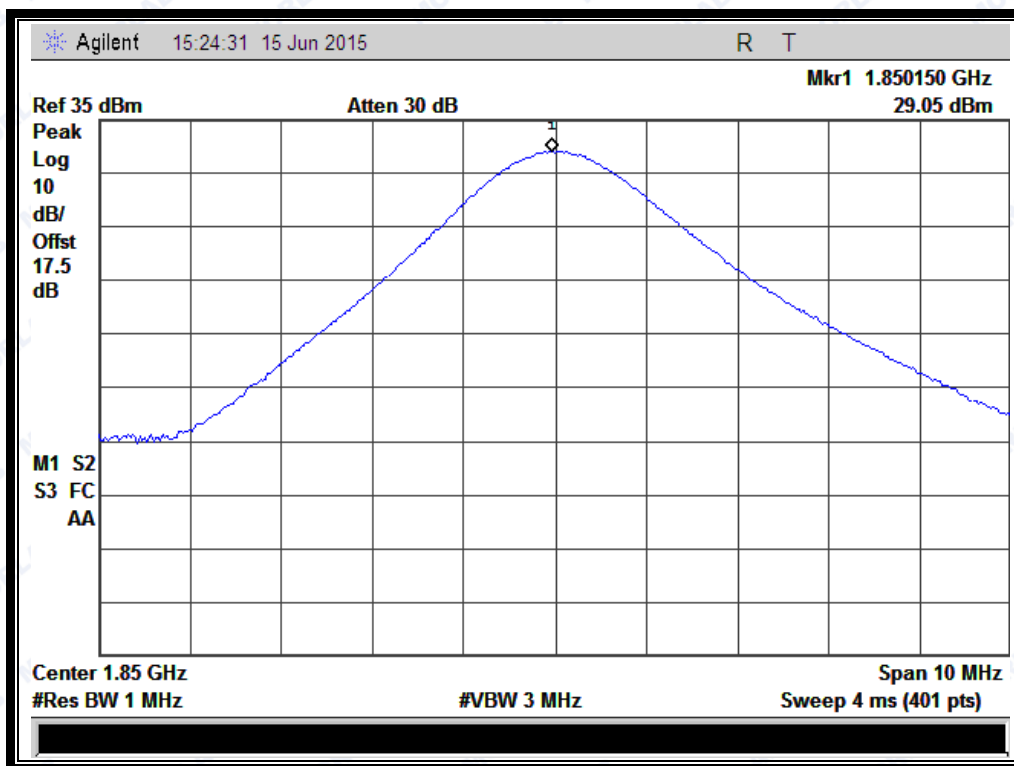
(Plot E2: EGPRS 850MHz Channel = 190)



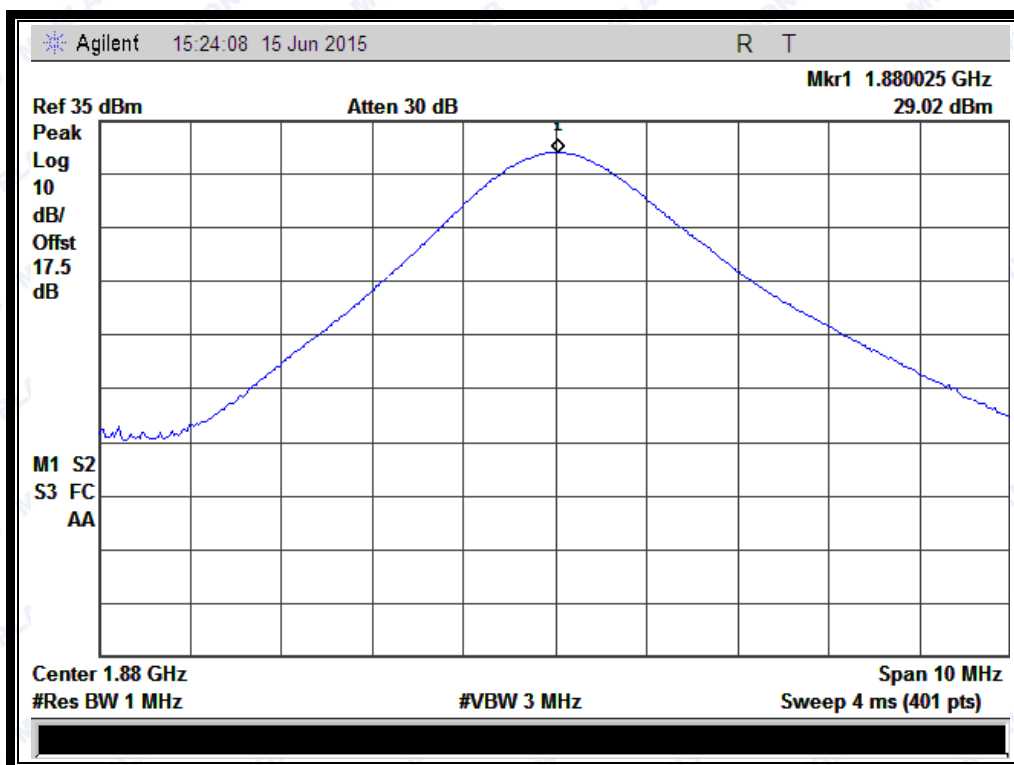
(Plot E3: EGPRS 850MHz Channel = 251)



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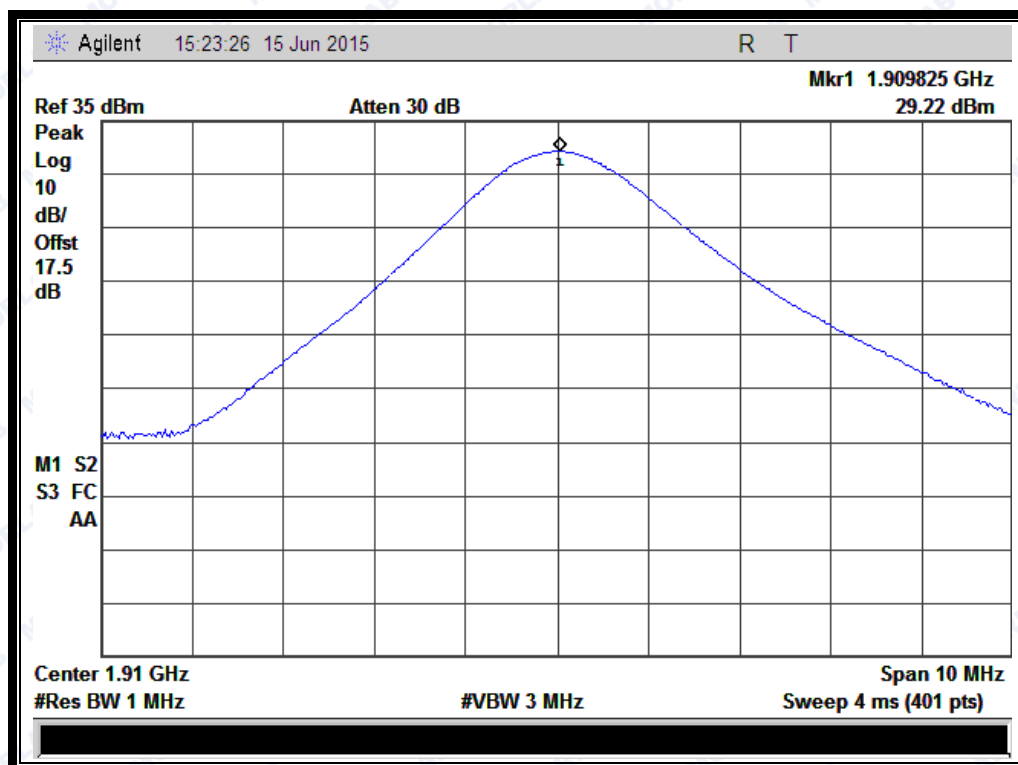
(Plot F1: EGPRS 1900MHz Channel = 512)



(Plot F2: EGPRS 1900MHz Channel = 661)



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(Plot F3: EGPRS 1900Hz Channel = 810)



2.2 Peak to Average Ratio

2.2.1 Definition

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

2.2.2 Test Description

See section 2.1.2 of this report.

2.2.3 Test Verdict

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

Test procedures:

A .For GSM/EGPRS operating mode:

- Set RBW=1MHz, VBW=3MHz, 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 radio.

B. For UMTS operating mode:

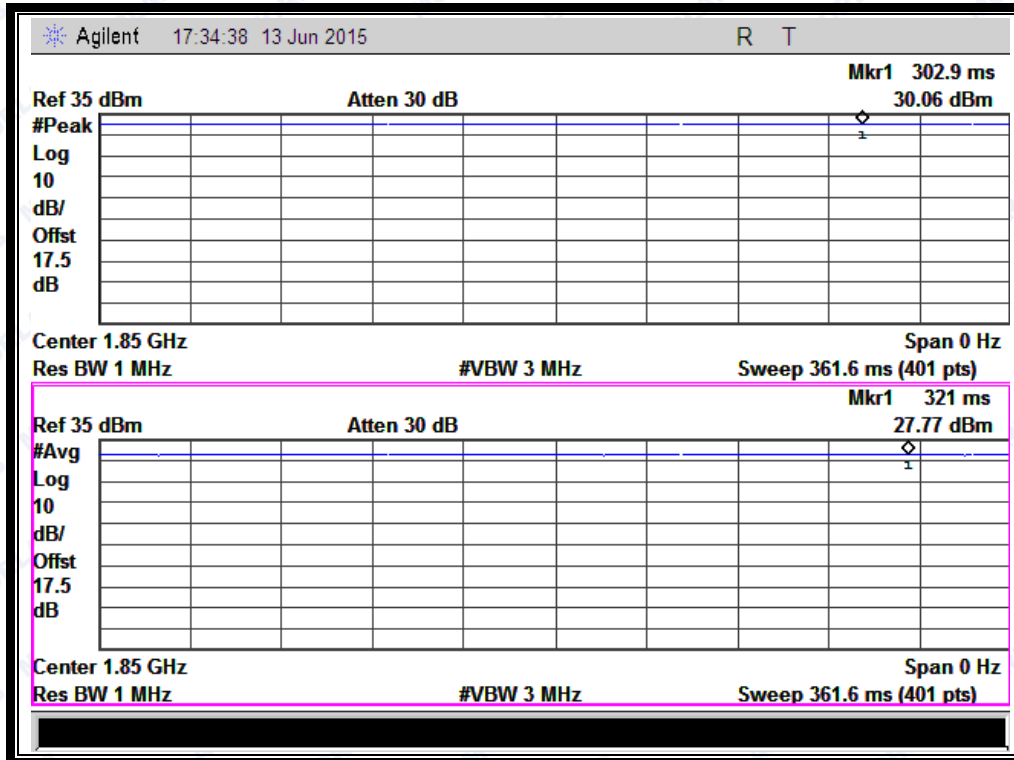
- Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
- The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

Test Verdict:

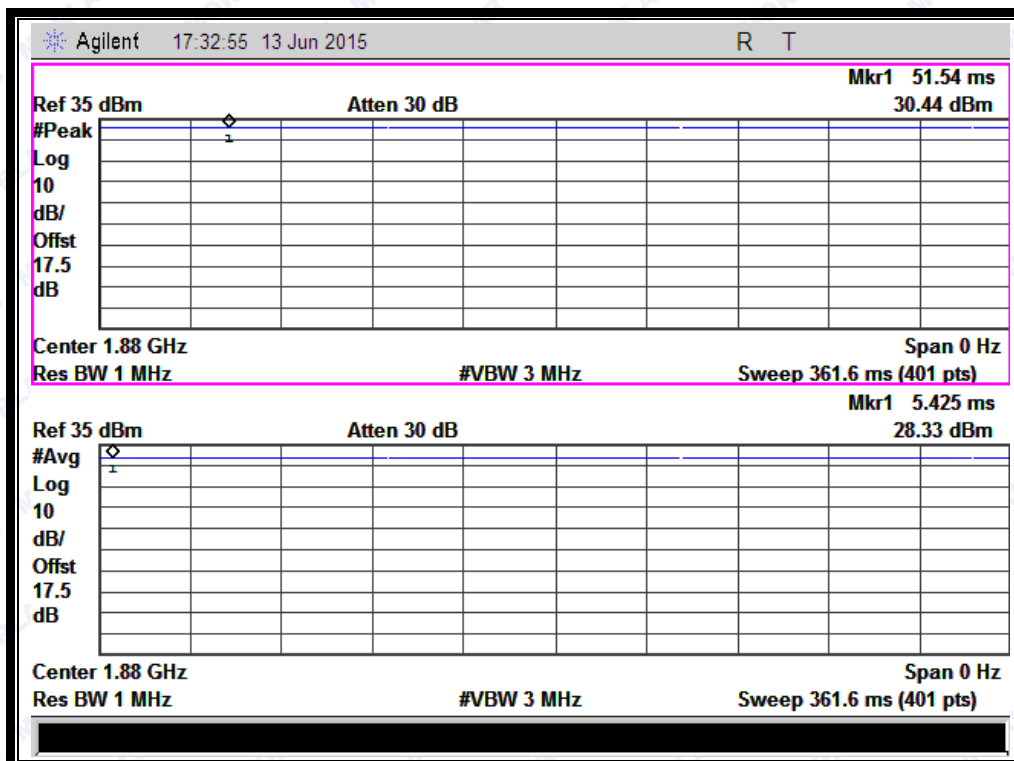
Band	Channel	Frequency (MHz)	Peak to Average radio		Limit	Verdict
			dB	Refer to Plot	dB	
GSM 1900MHz	512	1850.2	2.29	Plot A1 to A3	13	PASS
	661	1880.0	2.11			PASS
	810	1909.8	2.23			PASS
EGPRS 1900MHz	512	1850.2	0.06	Plot B1 to B3	13	PASS
	661	1880.0	0.04			PASS
	810	1909.8	0.02			PASS
WCDMA 1900MHz	9262	1852.4	2.71	Plot C1 to C3	13	PASS
	9400	1880.0	2.50			PASS
	9538	1907.6	2.15			PASS



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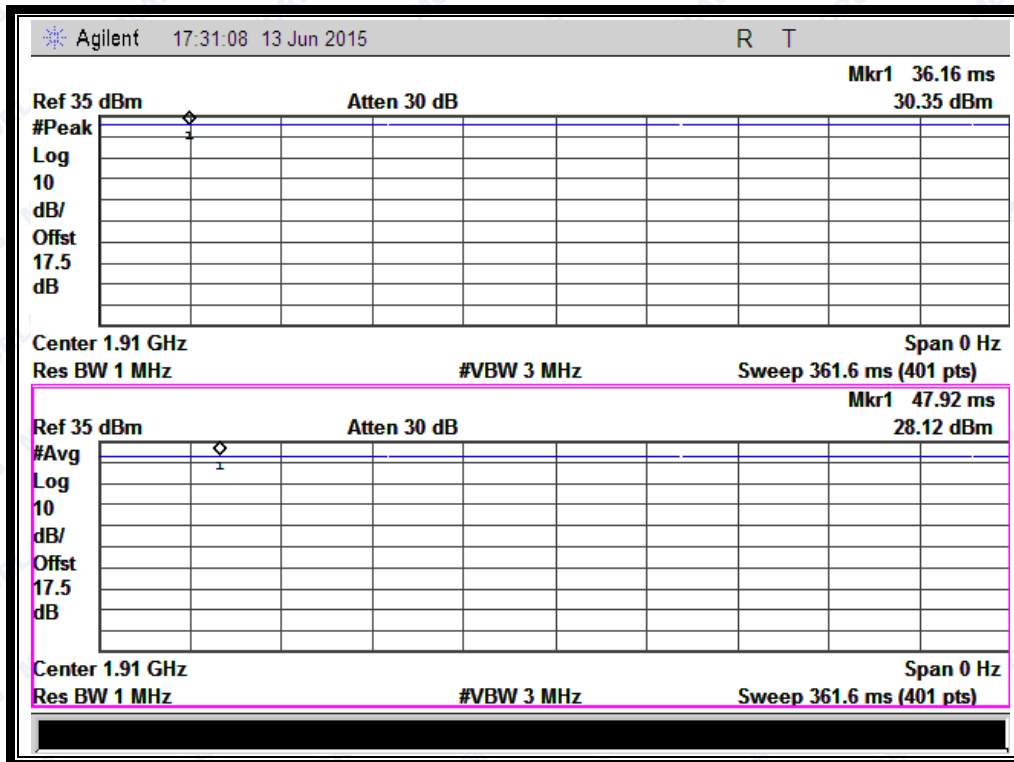
(Plot A1: GSM 1900 MHz Channel = 512)



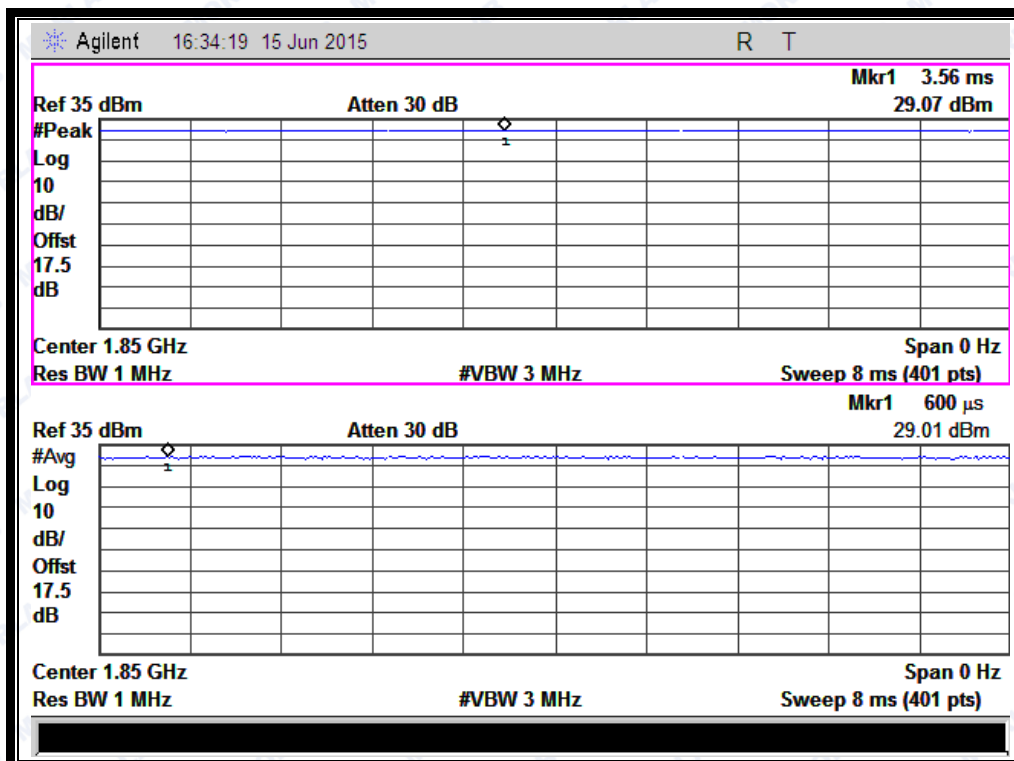
(Plot A2: GSM 1900 MHz Channel = 661)



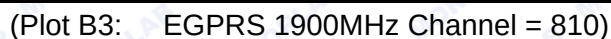
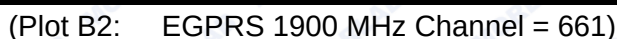
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(Plot A3: GSM 1900MHz Channel = 810)



(Plot B1: EGPRS 1900 MHz Channel = 512)

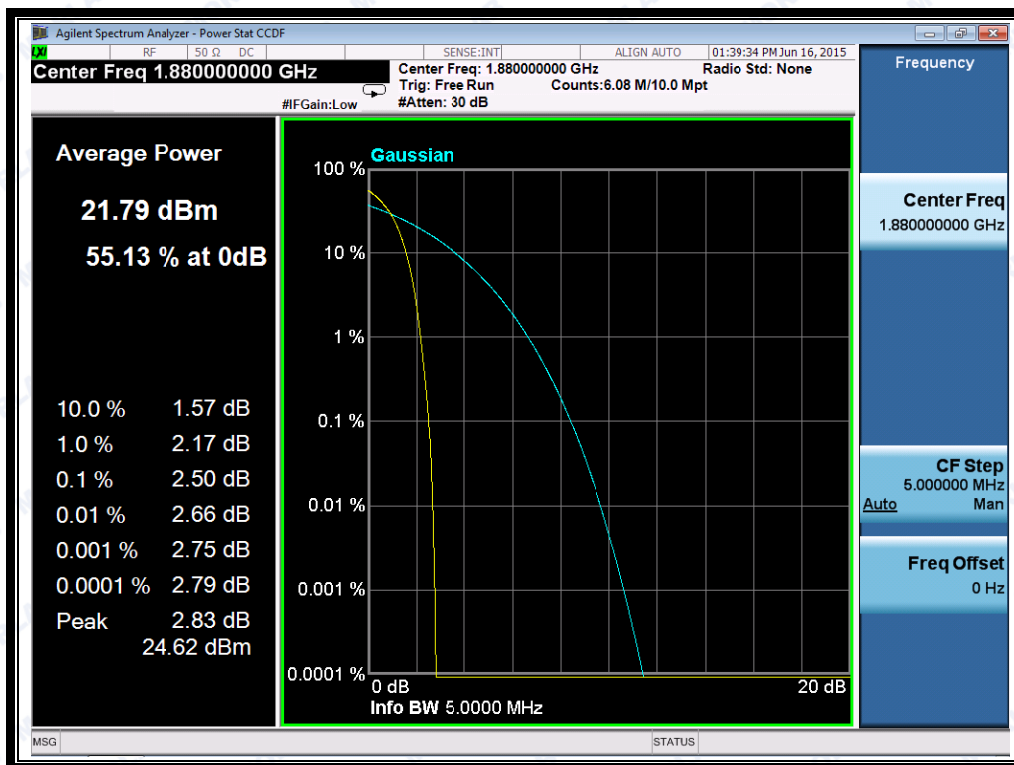




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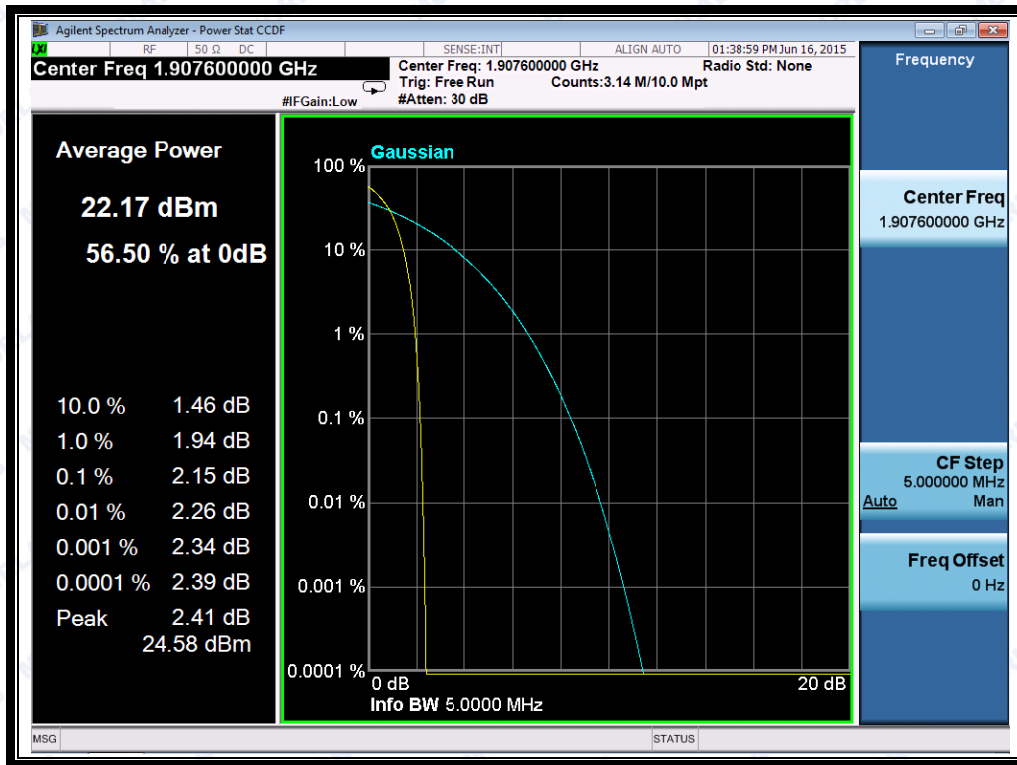
(Plot C1: WCDMA 1900MHz Channel = 9262)



(Plot C2: WCDMA 1900MHz Channel = 9400)



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(Plot C3: WCDMA 1900MHz Channel = 9538)



2.3 99% Occupied Bandwidth

2.3.1 Definition

According to FCC section 2.1049 and FCC § 22.917 & 24.238, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

2.3.2 Test Description

See section 2.1.2 of this report.

2.3.3 Test Verdict

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

Test Verdict:

Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
GSM 850MHz	128	824.2	319.094 KHz	244.5399 KHz	Plot A1 to A3
	190	836.6	320.722 KHz	248.5062 KHz	
	251	848.8	310.019 KHz	252.0127 KHz	
GSM 1900MHz	512	1850.2	319.560 KHz	250.5766 KHz	Plot B1 to B3
	661	1880.0	315.500 KHz	243.8772 KHz	
	810	1909.8	325.377 KHz	250.0656 KHz	
GPRS 850MHz	128	824.2	319.846 KHz	248.0661 KHz	Plot C1 to C3
	190	836.6	319.825 KHz	248.0810 KHz	
	251	848.8	321.506 KHz	246.2868 KHz	
GPRS 1900MHz	512	1850.2	321.842 KHz	243.9650 KHz	Plot D1 to D3
	661	1880.0	316.260 KHz	245.1888 KHz	
	810	1909.8	313.106 KHz	243.3199 KHz	
EGPRS 850MHz	128	824.2	326.502 KHz	255.5778 KHz	Plot E1 to E3
	190	836.6	330.179 KHz	250.5252 KHz	
	251	848.8	328.342 KHz	253.4019 KHz	
EGPRS 1900MHz	512	1850.2	315.422 KHz	249.9359 KHz	Plot F1 to F3
	661	1880.0	325.012 KHz	248.9019 KHz	
	810	1909.8	334.398 KHz	263.2780 KHz	
WCDMA 850MHz	4132	826.4	4.869 MHz	4.2187 MHz	Plot G1 to G3
	4175	835.0	4.846 MHz	4.2073 MHz	
	4233	846.6	4.837 MHz	4.2102 MHz	



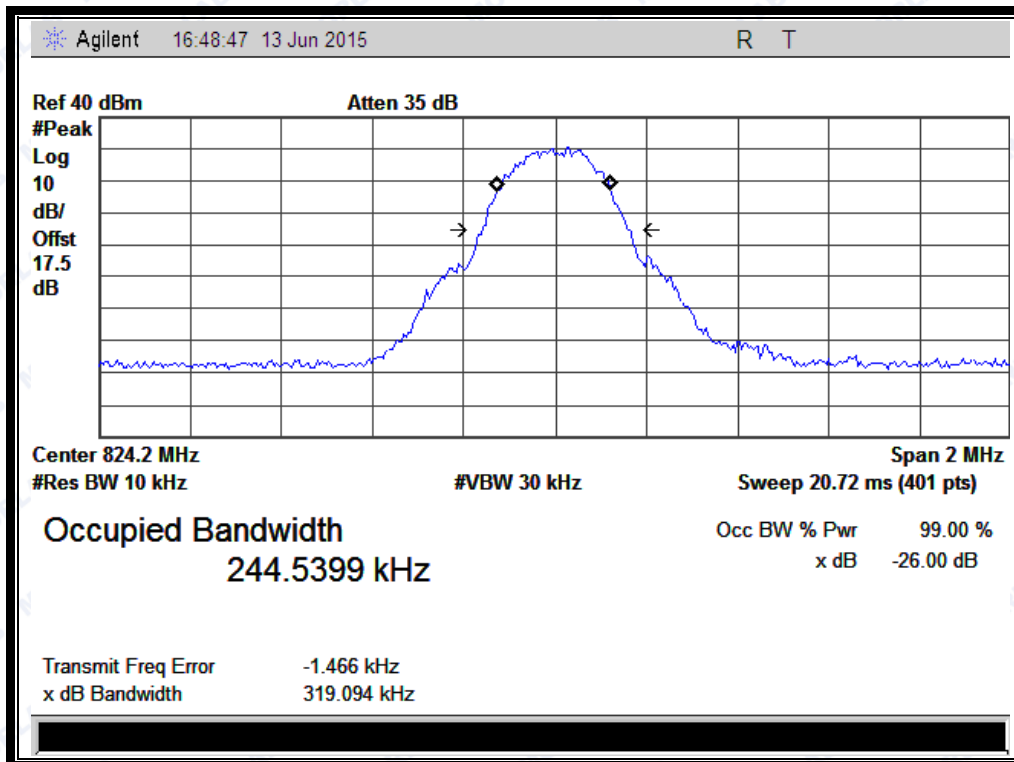
REPORT No.: SZ15060079W01

Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
WCDMA 1900MHz	9262	1852.4	4.853 MHz	4.1990 MHz	Plot H1 to H3
	9400	1880.0	4.871 MHz	4.2287 MHz	
	9538	1907.6	4.937 MHz	4.2380 MHz	
HSDPA 850MHz	4132	826.4	4.875 MHz	4.2243 MHz	Plot I1 to I3
	4175	835.0	4.828 MHz	4.2143 MHz	
	4233	846.6	4.848 MHz	4.2162 MHz	
HSDPA 1900MHz	9262	1852.4	4.840 MHz	4.2156 MHz	Plot J1 to J3
	9400	1880.0	4.878 MHz	4.2177 MHz	
	9538	1907.6	4.916 MHz	4.2266 MHz	
HSUPA 850MHz	4132	826.4	4.870 MHz	4.2145 MHz	Plot K1 to K3
	4175	835.0	4.838 MHz	4.2127 MHz	
	4233	846.6	4.826 MHz	4.2096 MHz	
HSUPA 1900MHz	9262	1852.4	4.813 MHz	4.1996 MHz	Plot L1 to L3
	9400	1880.0	4.837 MHz	4.2072 MHz	
	9538	1907.6	4.912 MHz	4.2367 MHz	
HSPA+ 850MHz	4132	826.4	4.875 MHz	4.2214 MHz	Plot M1 to M3
	4175	835.0	4.829 MHz	4.2066 MHz	
	4233	846.6	4.839 MHz	4.2043 MHz	
HSPA+ 1900MHz	9262	1852.4	4.844 MHz	4.2139 MHz	Plot N1 to N3
	9400	1880.0	4.867 MHz	4.2183 MHz	
	9538	1907.6	4.904 MHz	4.2424 MHz	

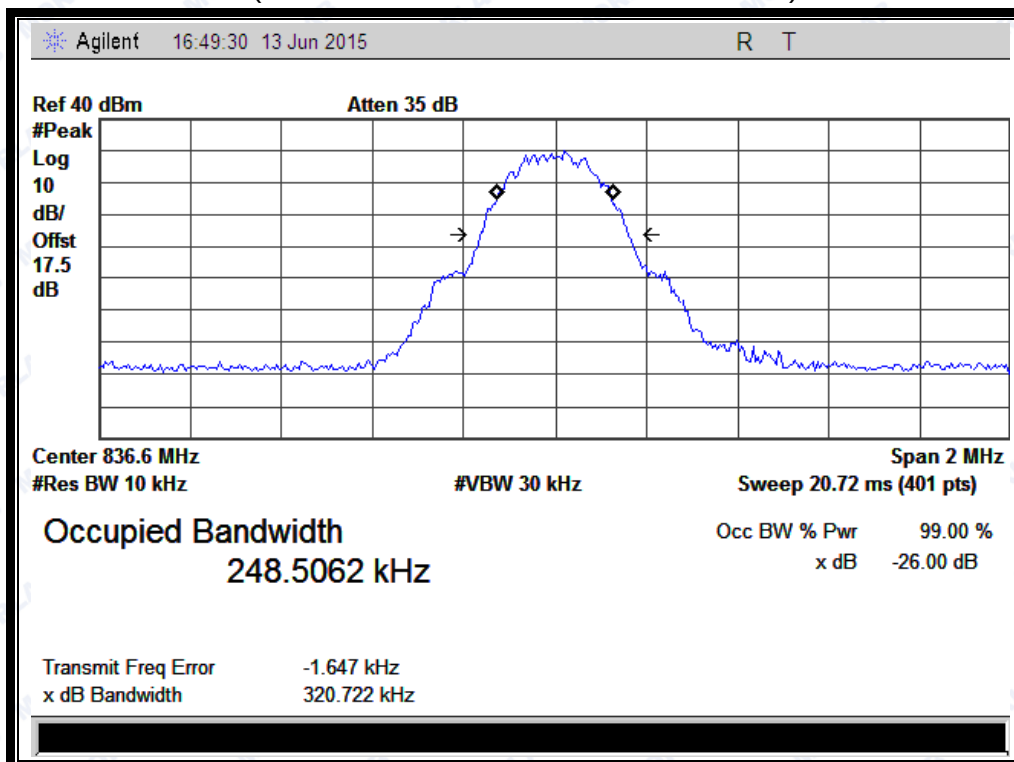


REPORT No.: SZ15060079W01

Test Plots:



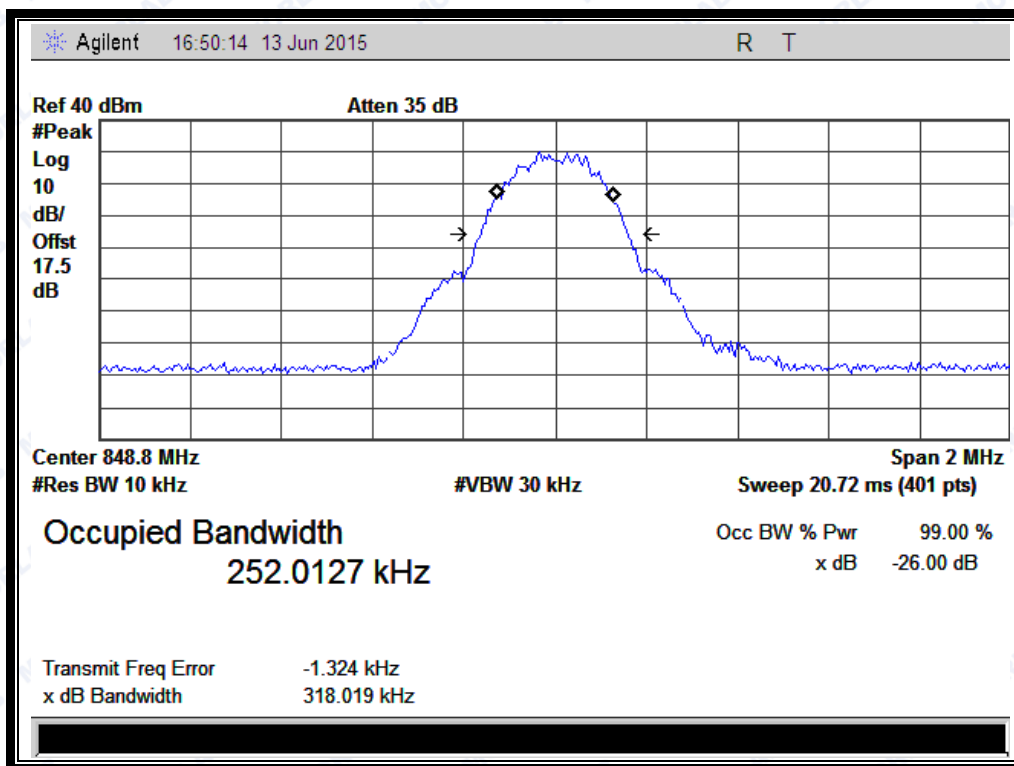
(Plot A1: GSM 850MHz Channel = 128)



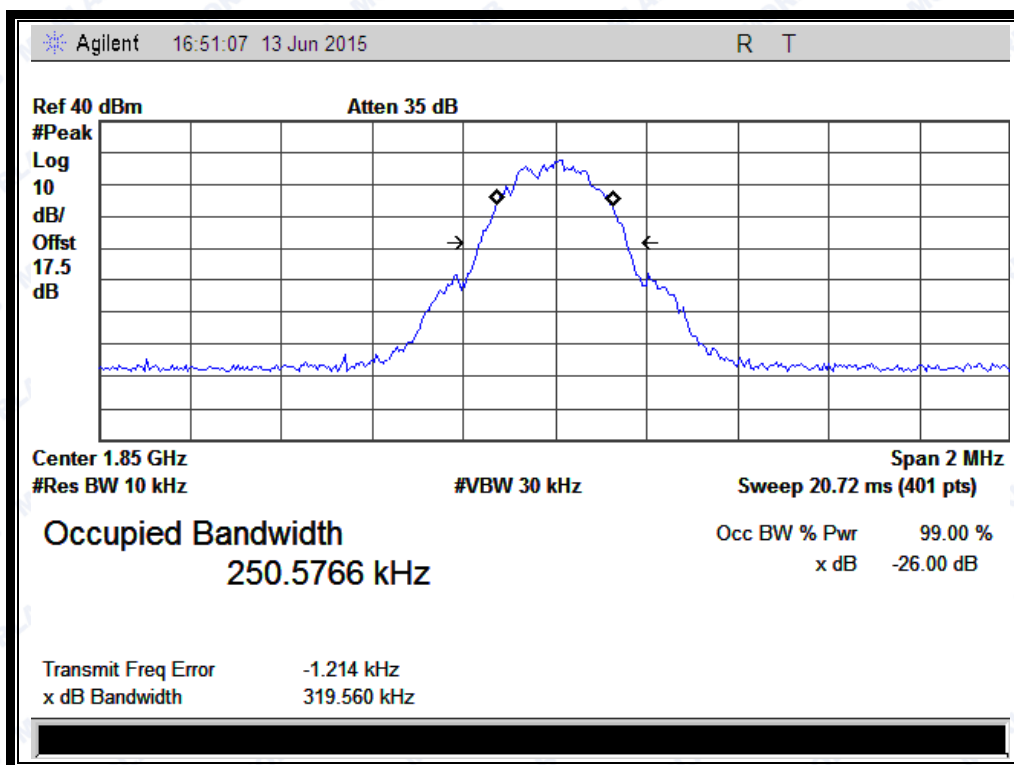
(Plot A2: GSM 850MHz Channel = 190)



REPORT No.: SZ15060079W01



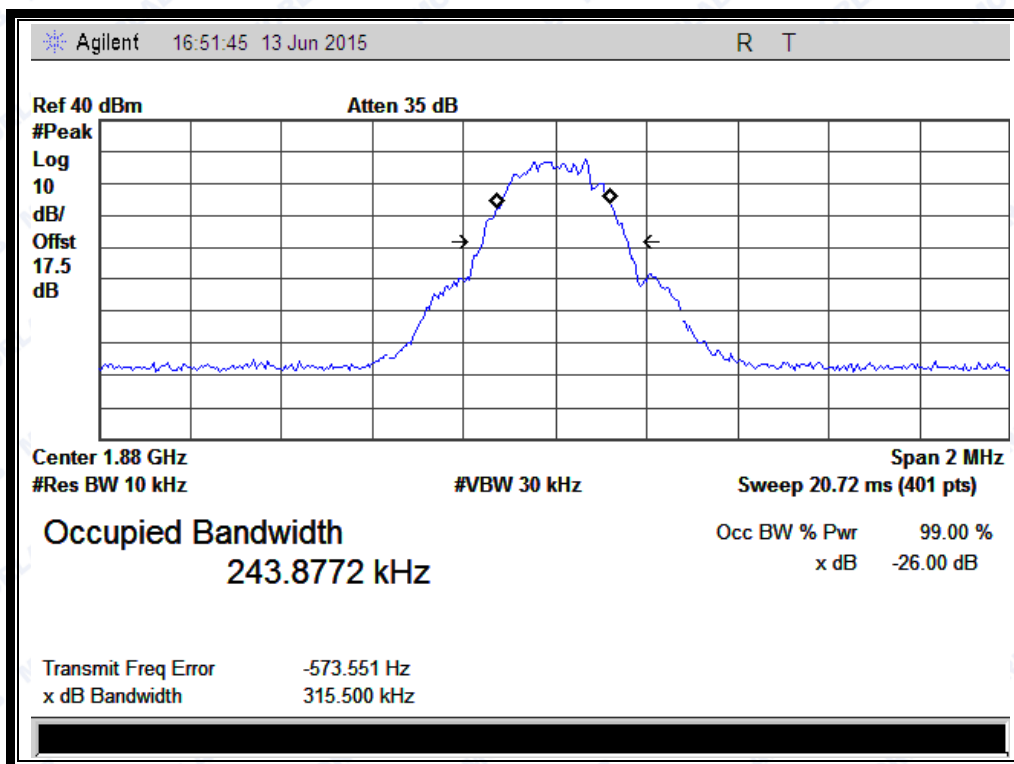
(Plot A3: GSM 850MHz Channel = 251)



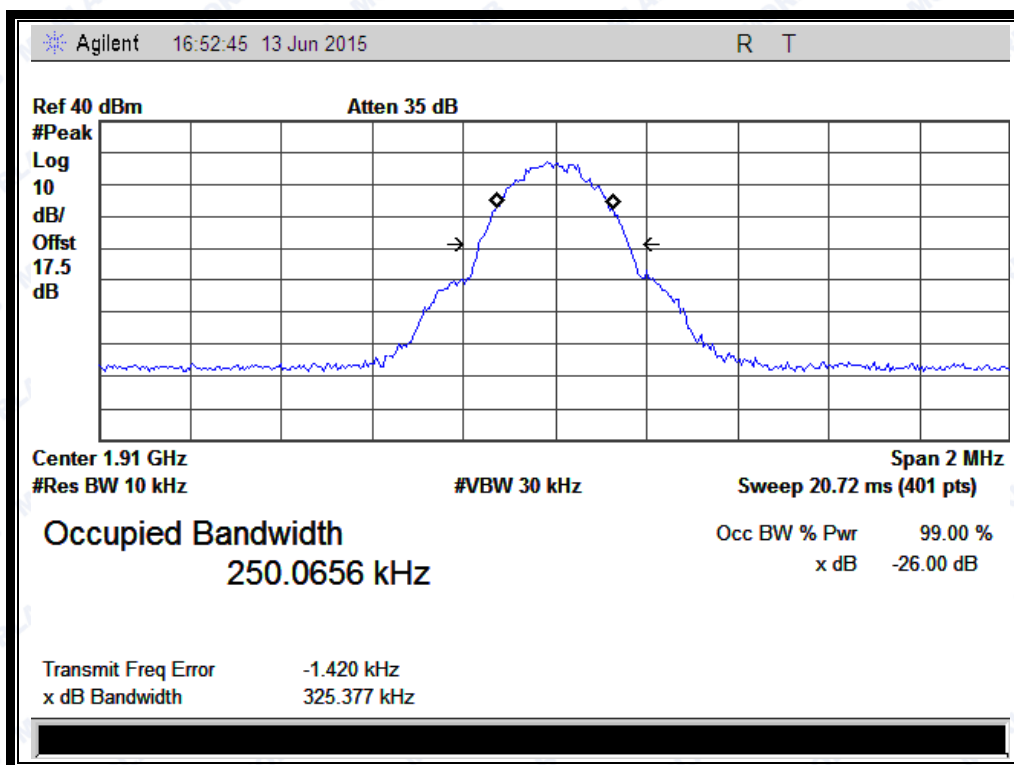
(Plot B1: GSM1900MHz Channel = 512)



REPORT No.: SZ15060079W01



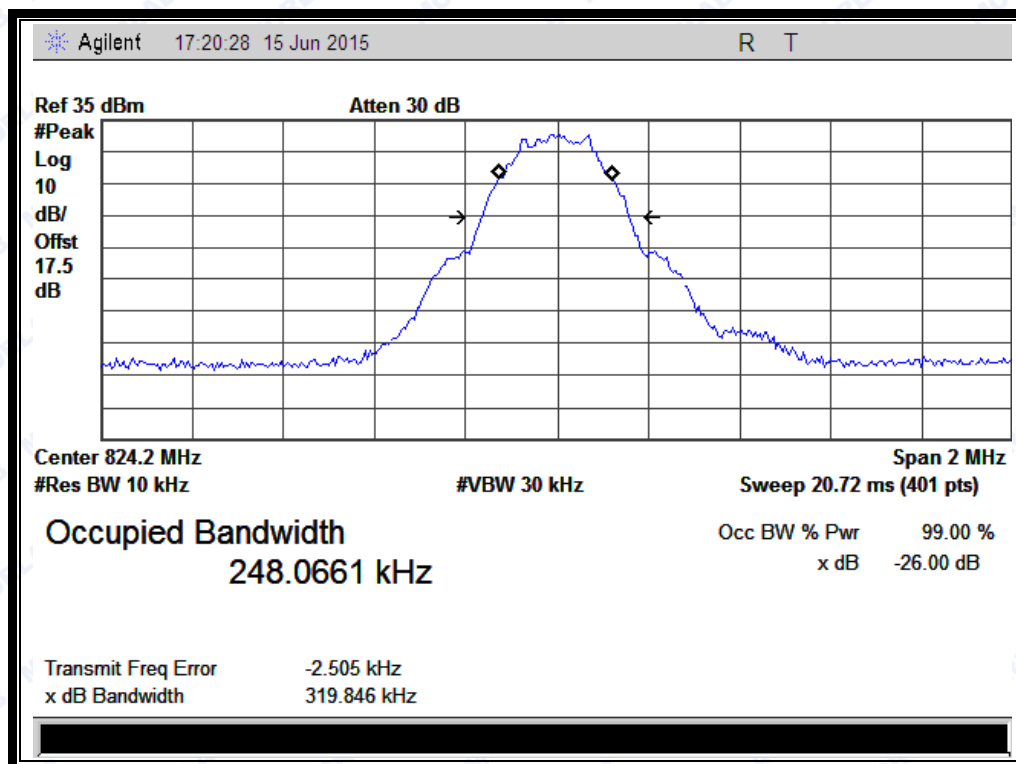
(Plot B2: GSM1900MHz Channel = 661)



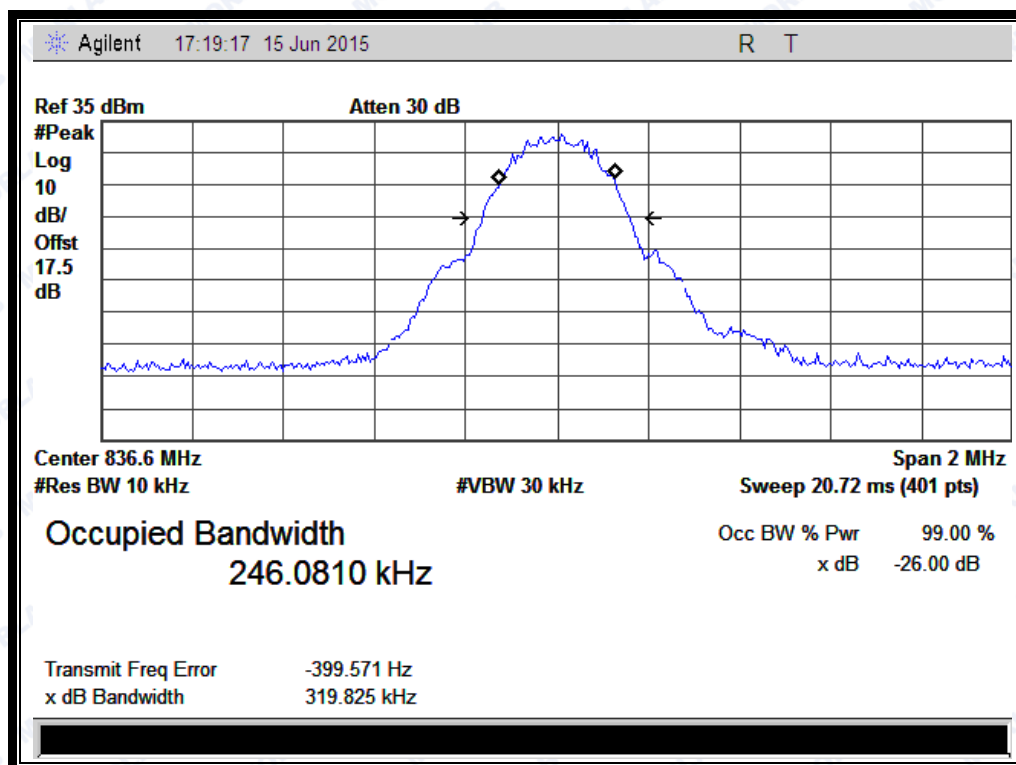
(Plot B3: GSM 1900MHz Channel = 810)



REPORT No.: SZ15060079W01



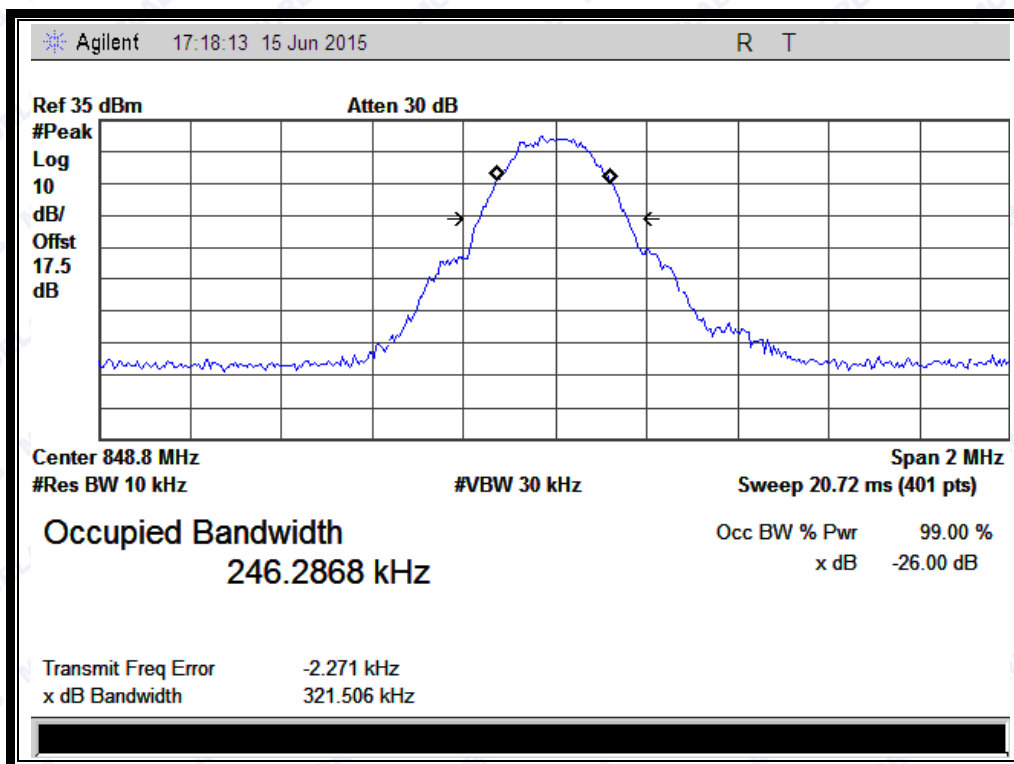
(Plot C1: GPRS 850MHz Channel = 128)



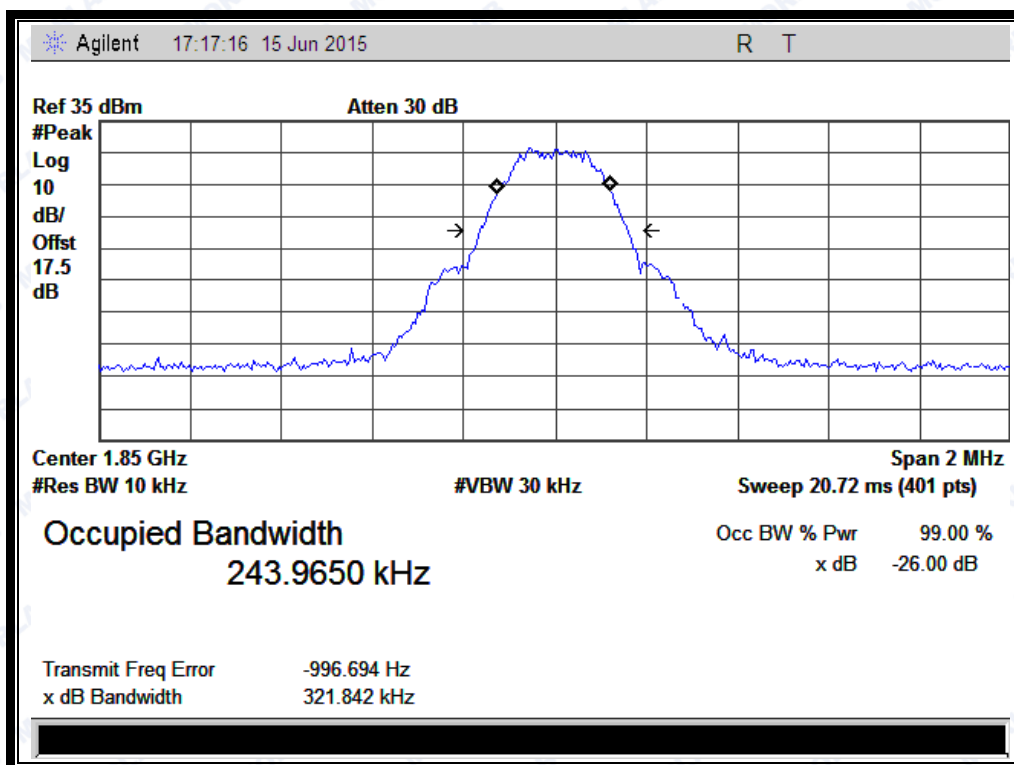
(Plot C2: GPRS 850MHz Channel = 190)



REPORT No.: SZ15060079W01



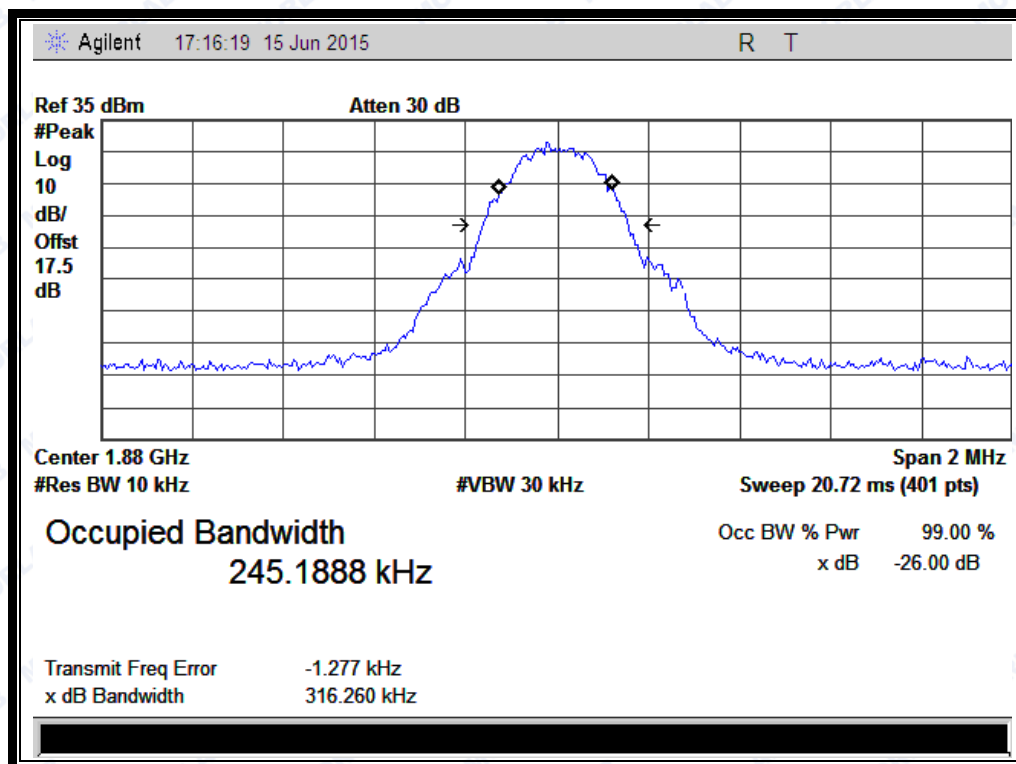
(Plot C3: GPRS 850MHz Channel = 251)



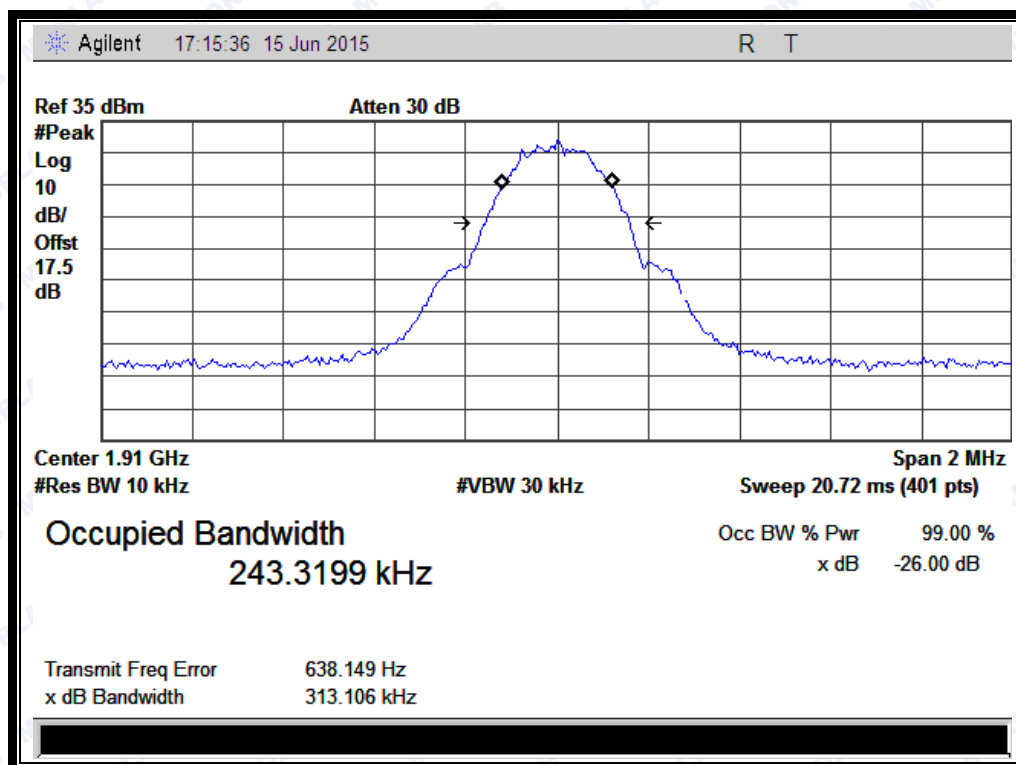
(Plot D1: GPRS1900MHz Channel = 512)



REPORT No.: SZ15060079W01



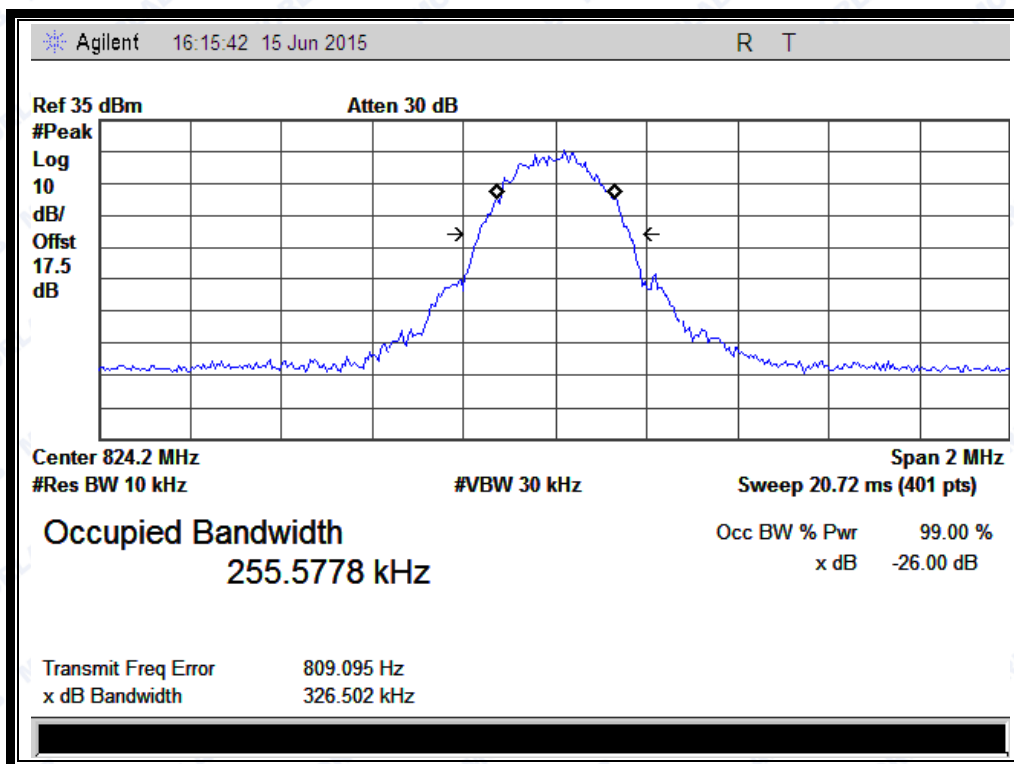
(Plot D2: GPRS1900MHz Channel = 661)



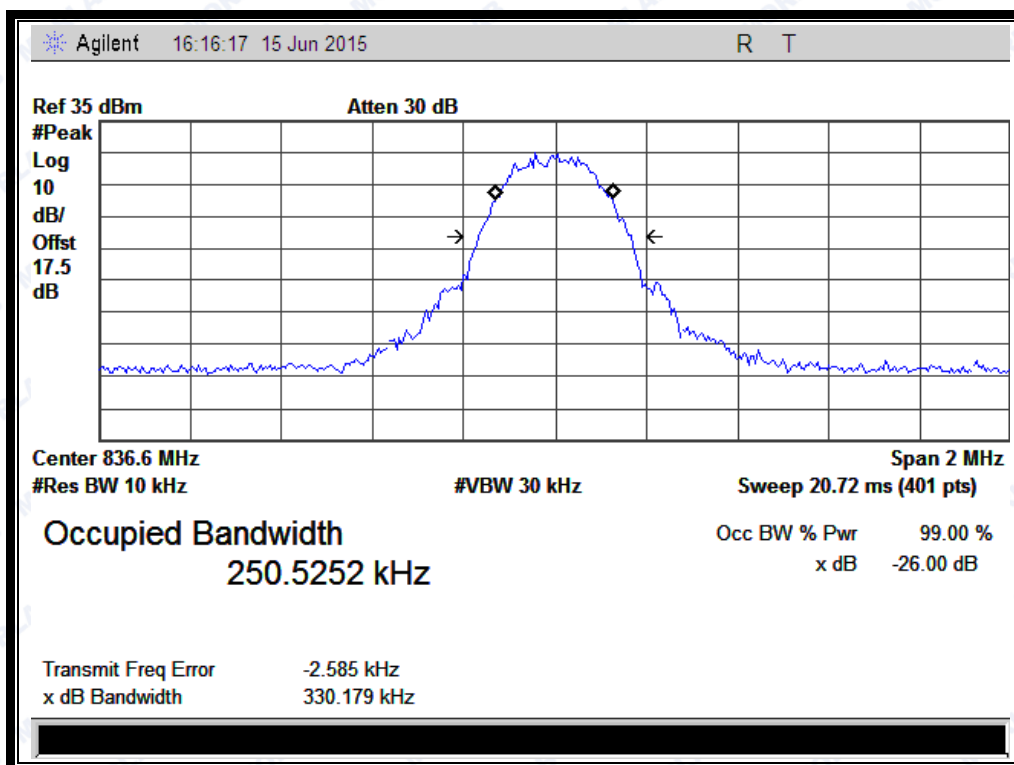
(Plot D3: GPRS 1900MHz Channel = 810)



REPORT No.: SZ15060079W01



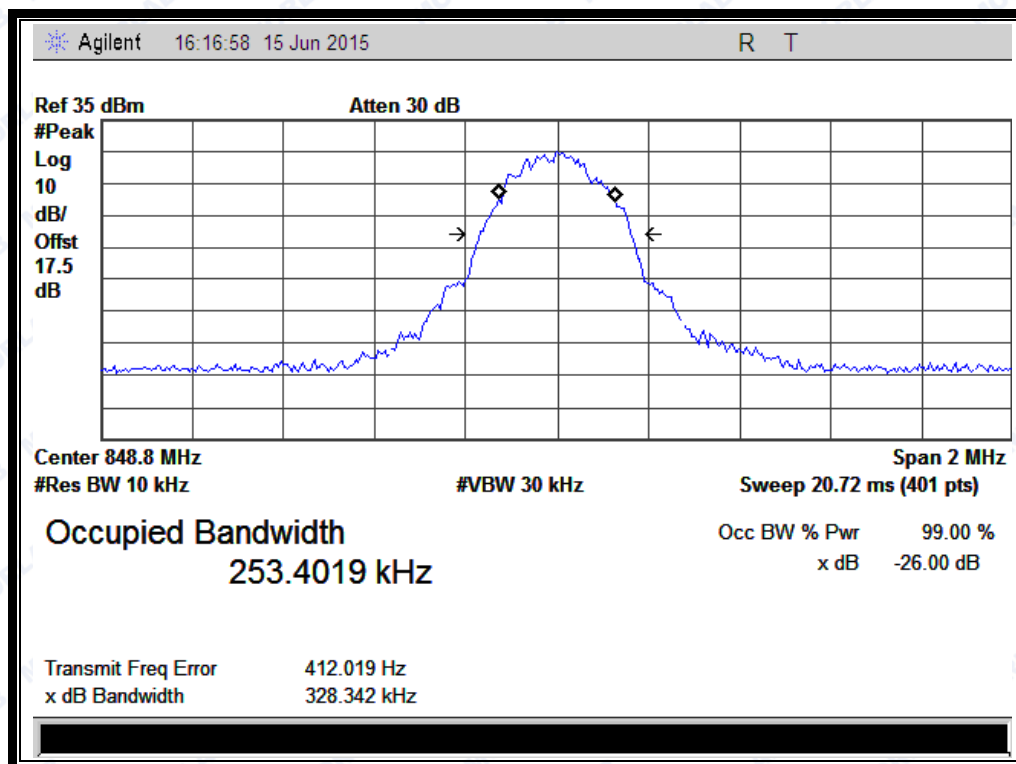
(Plot E1: EGPRS 850MHz Channel = 128)



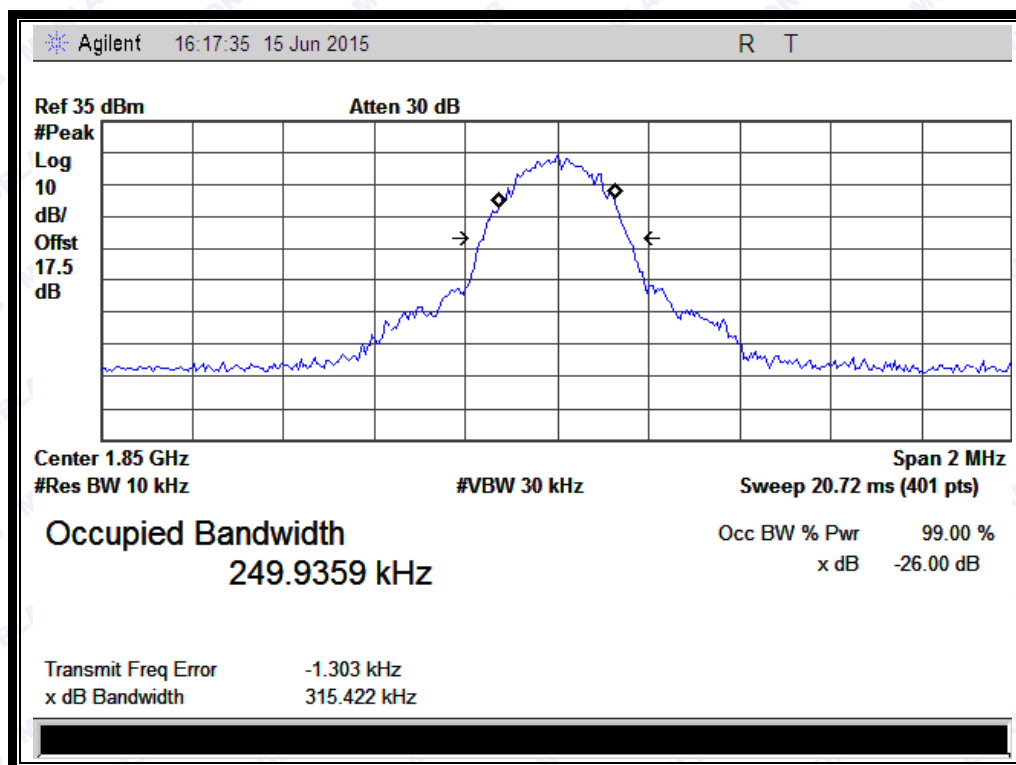
(Plot E2: EGPRS 850MHz Channel = 190)



REPORT No.: SZ15060079W01



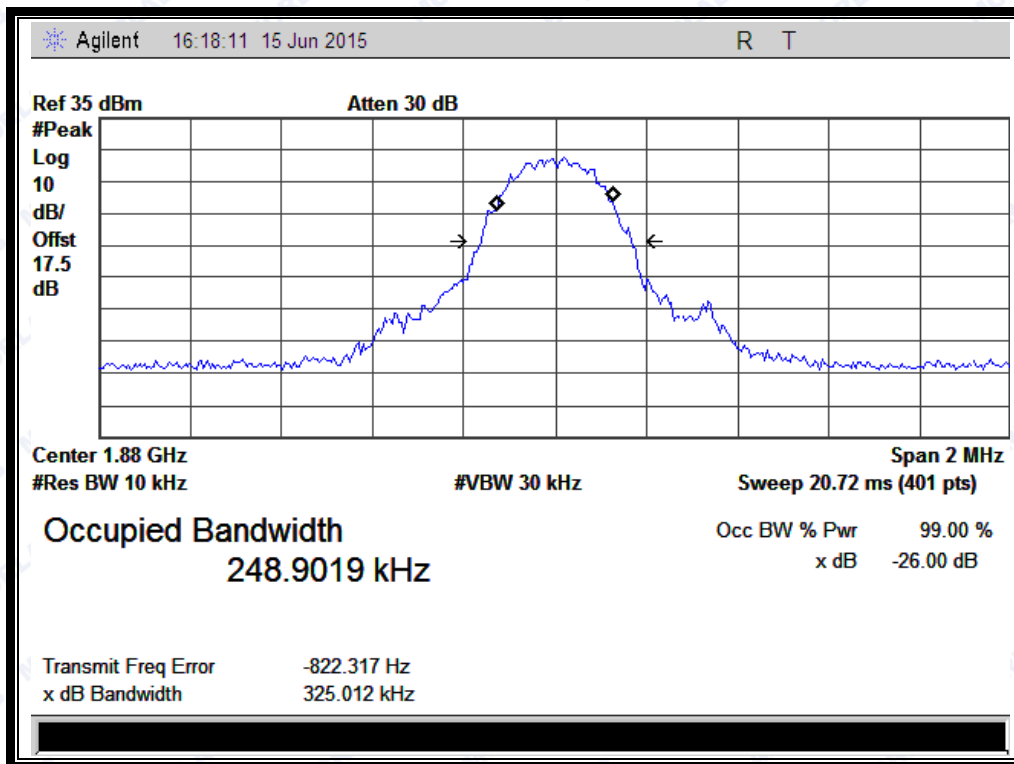
(Plot E3: EGPRS 850MHz Channel = 251)



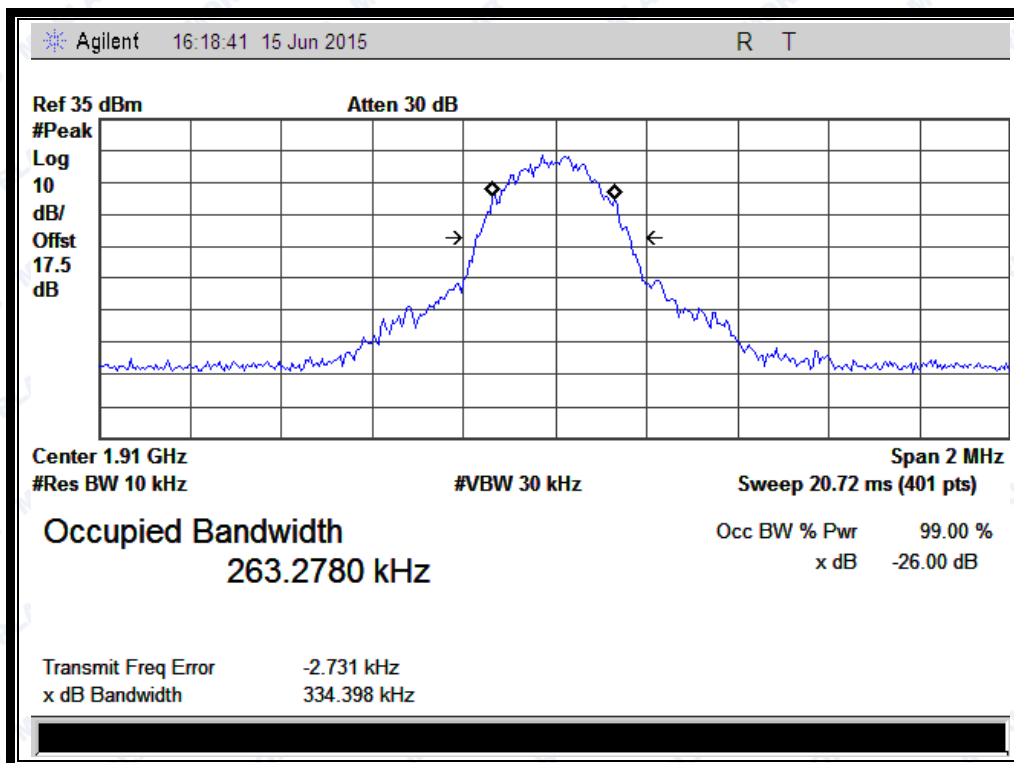
(Plot F1: EGPRS1900MHz Channel = 512)



REPORT No.: SZ15060079W01



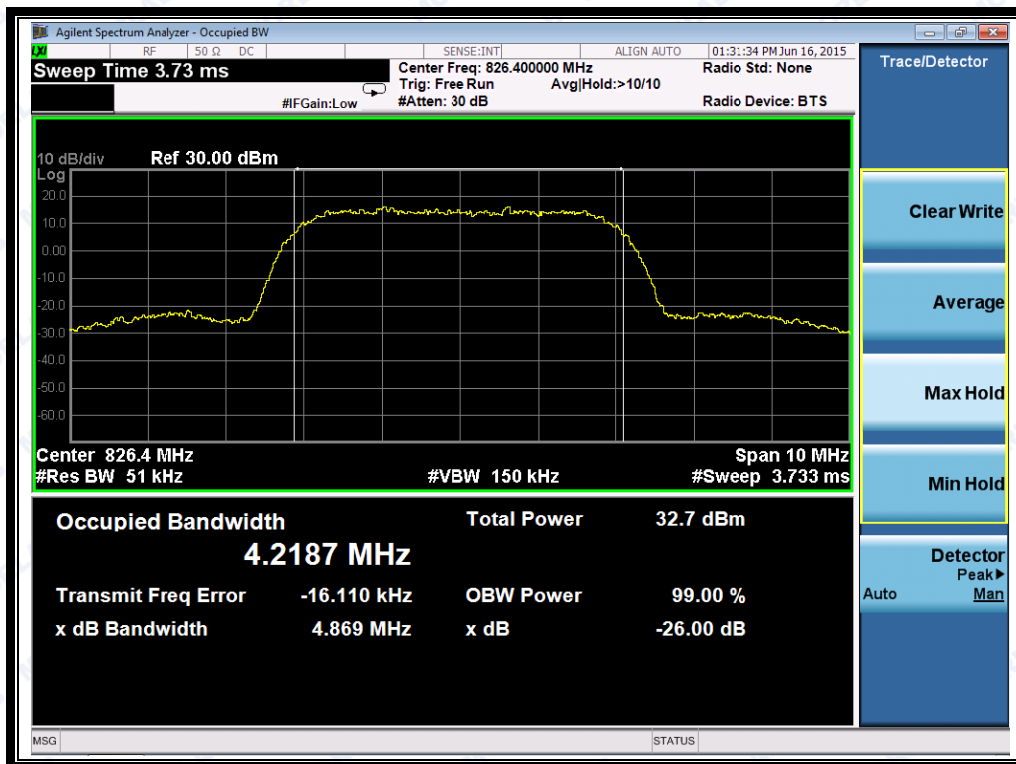
(Plot F2: EGPRS1900MHz Channel = 661)



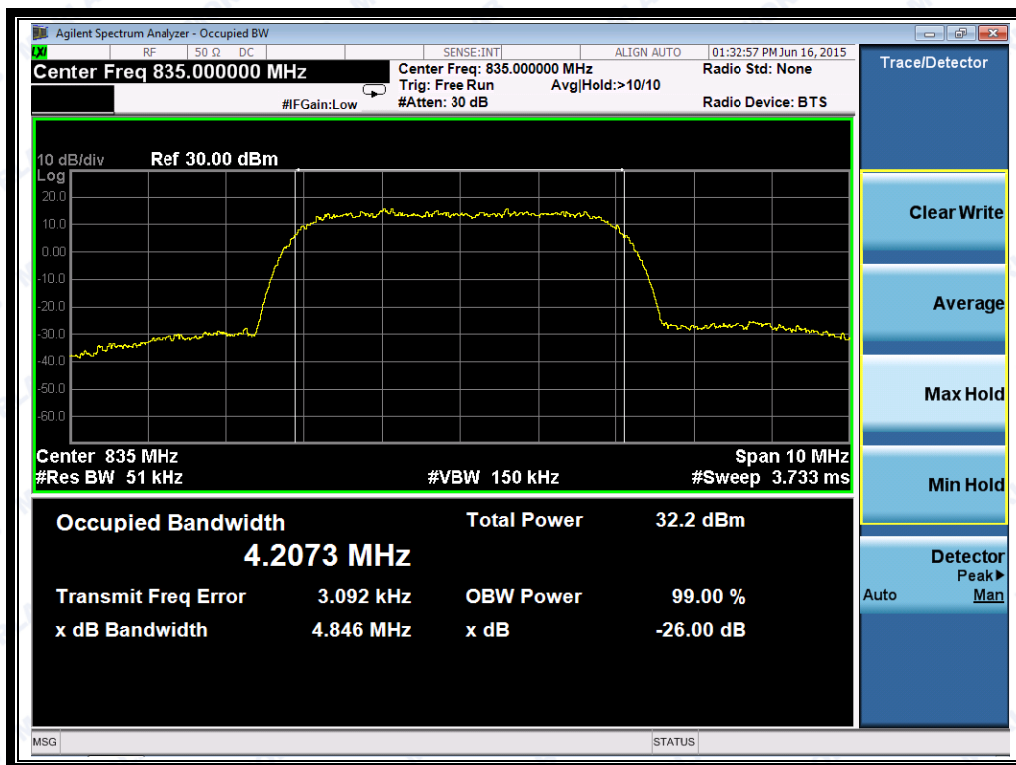
(Plot F3: EGPRS 1900MHz Channel = 810)



REPORT No.: SZ15060079W01



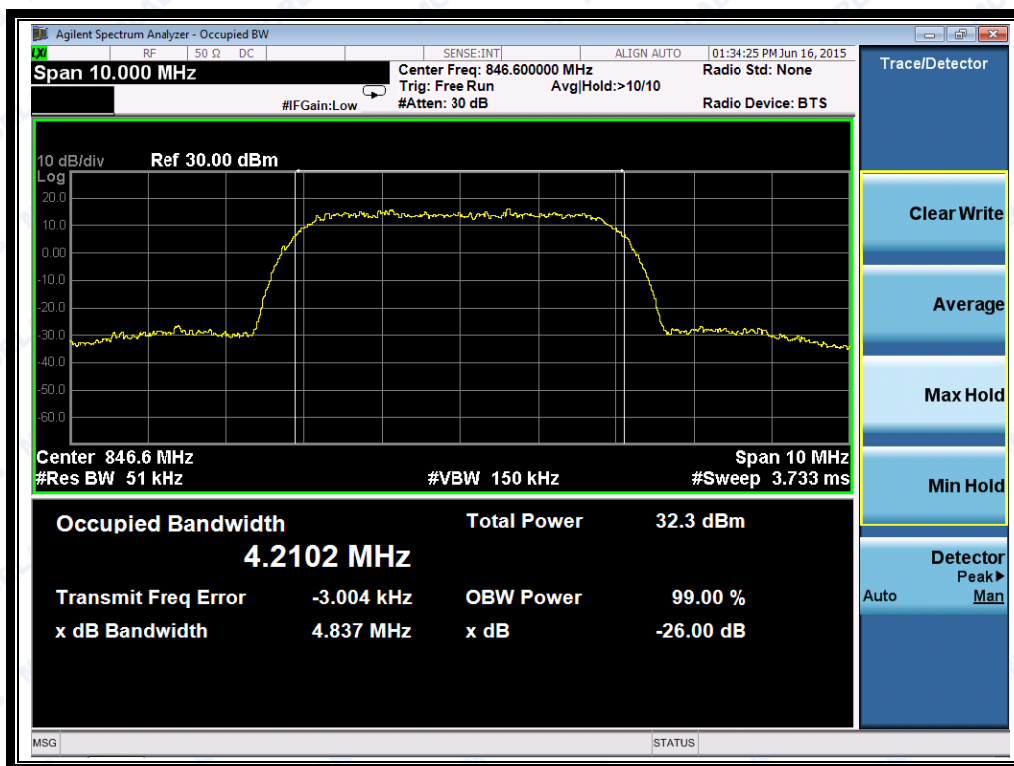
(Plot G1: WCDMA 850MHz Channel = 4132)



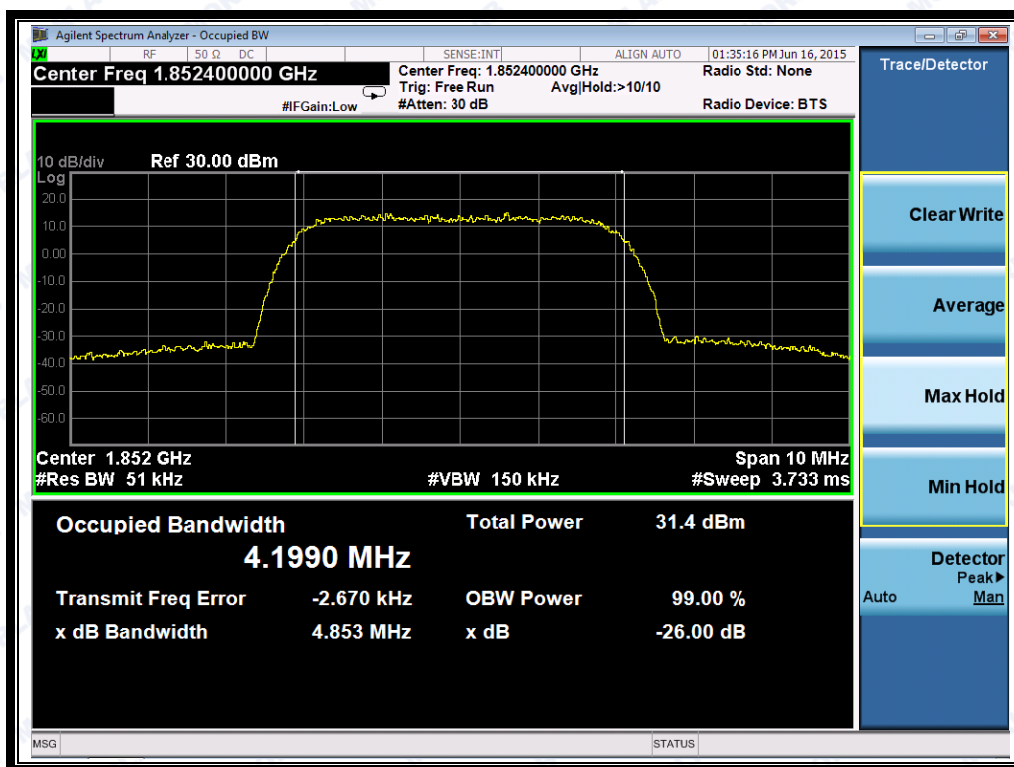
(Plot G2: WCDMA 850 MHz Channel = 4175)



REPORT No.: SZ15060079W01



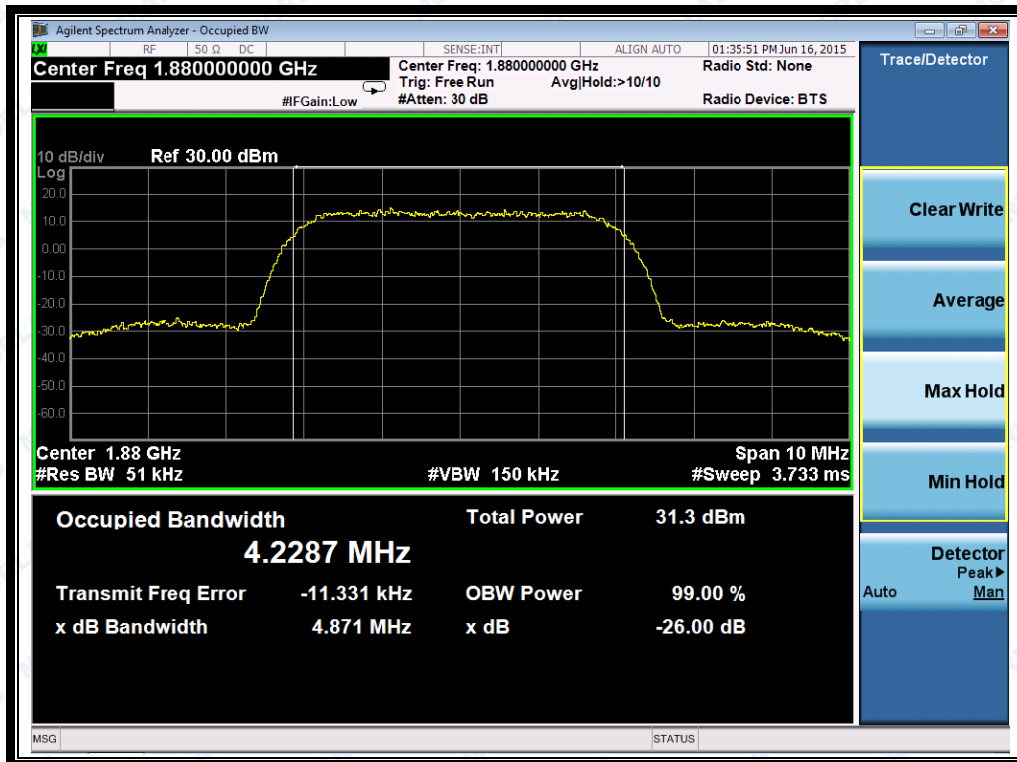
(Plot G3: WCDMA 850MHz Channel = 4233)



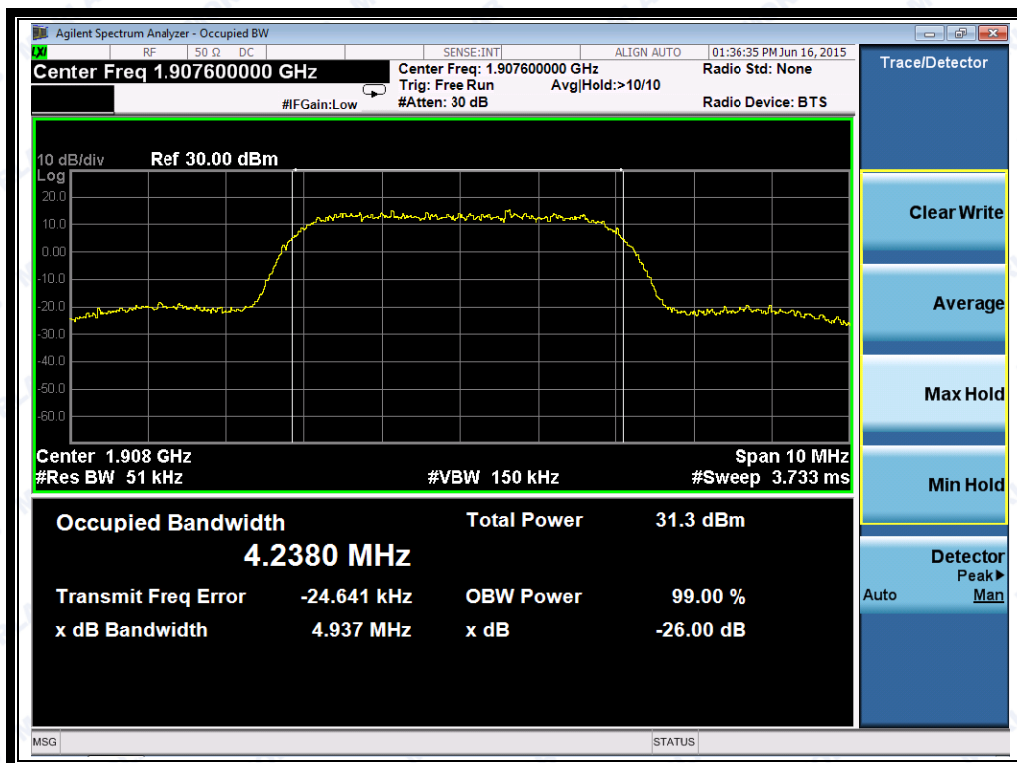
(Plot H1: WCDMA 1900MHz Channel = 9262)



REPORT No.: SZ15060079W01



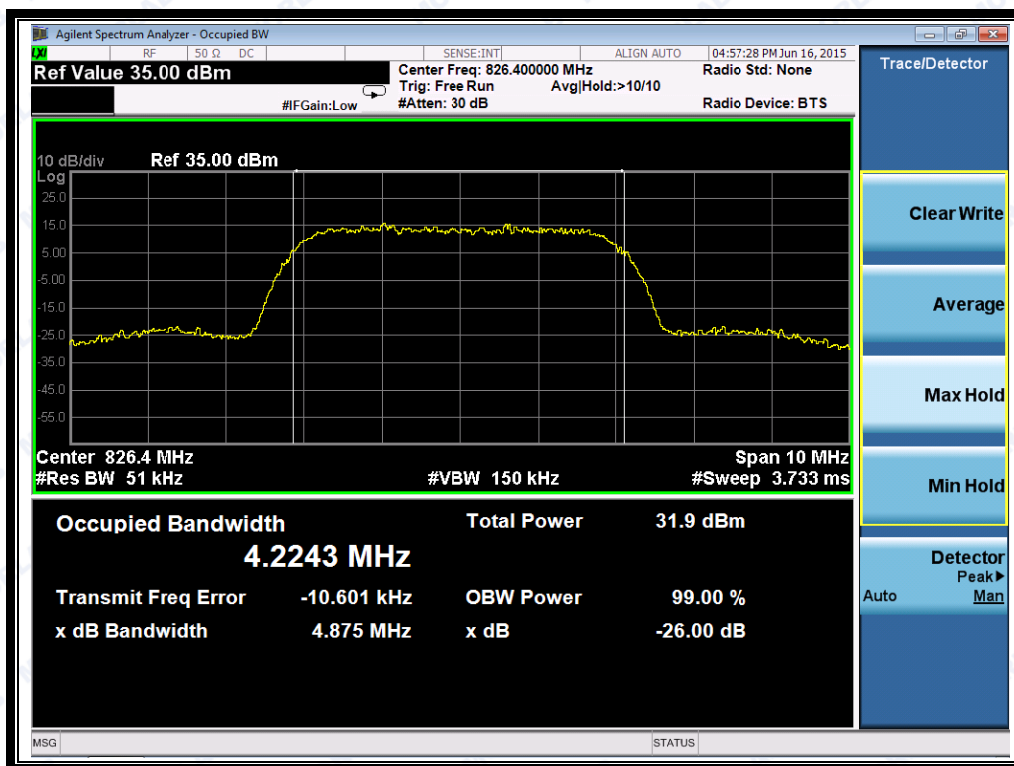
(Plot H2: WCDMA 1900 MHz Channel = 9400)



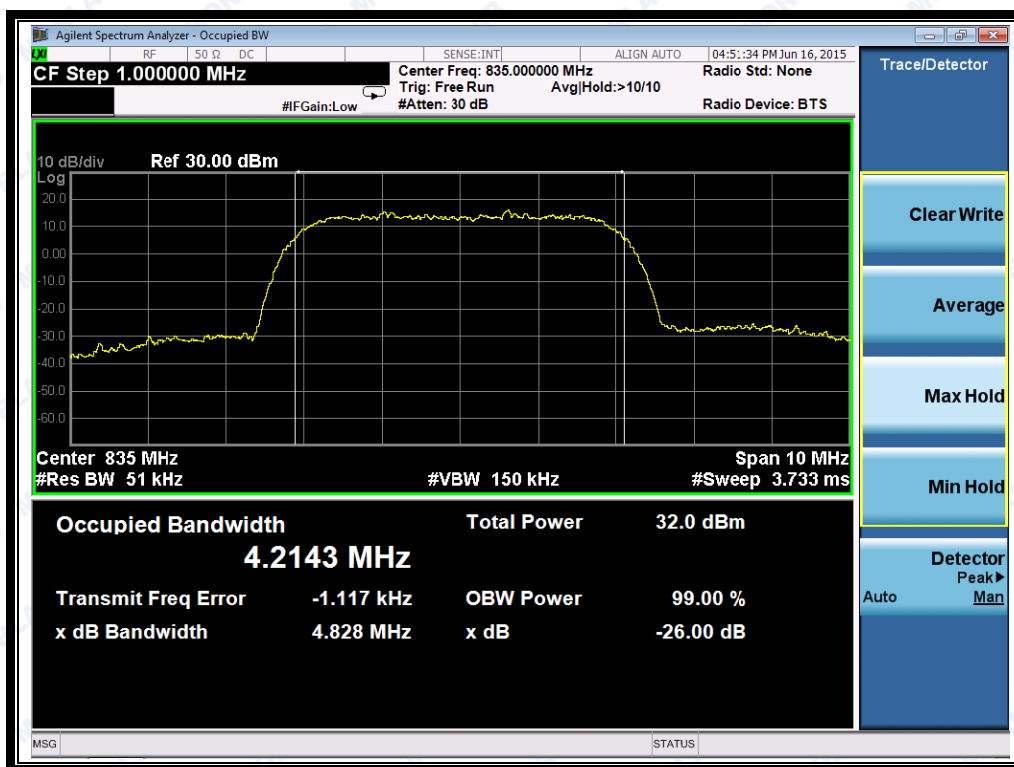
(Plot H3: WCDMA1900MHz Channel = 9538)



REPORT No.: SZ15060079W01



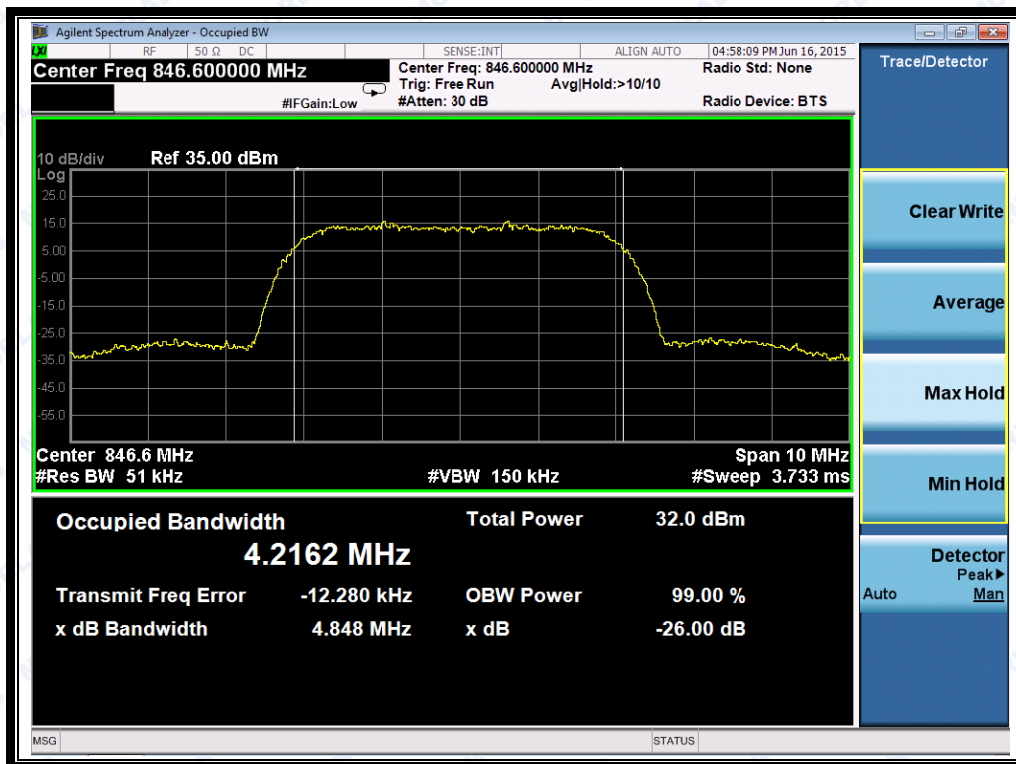
(Plot I1: HSDPA 850MHz Channel = 4132)



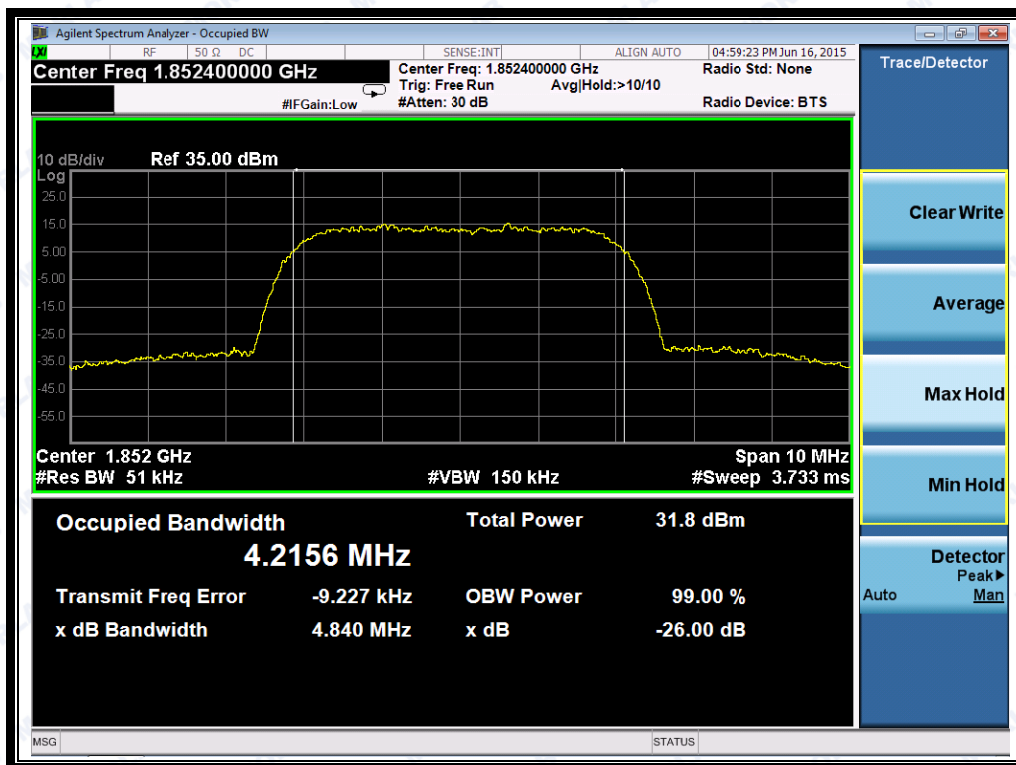
(Plot I2: HSDPA 850 MHz Channel = 4175)



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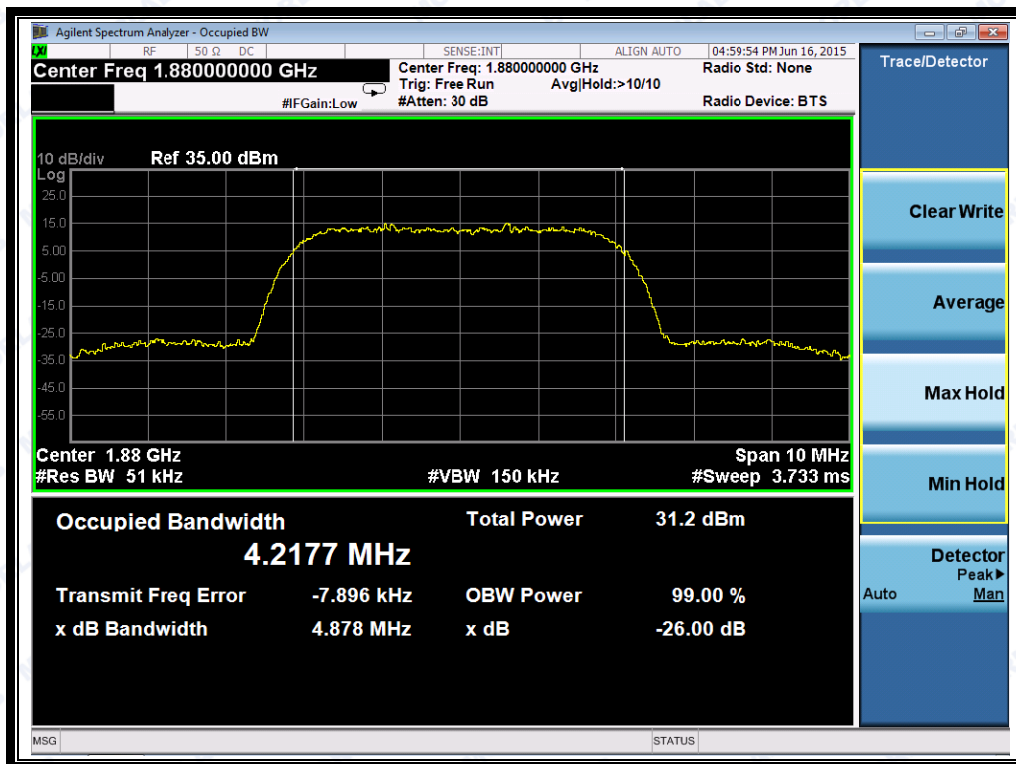
(Plot I3: HSDPA 850MHz Channel = 4233)



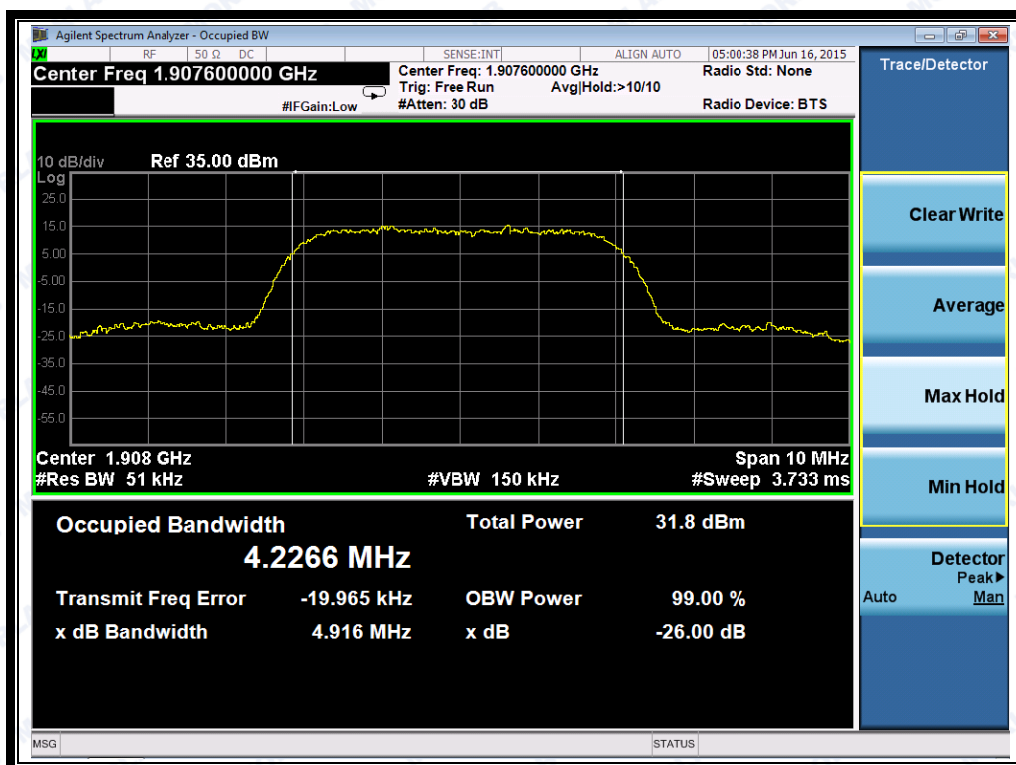
(Plot J1: HSDPA 1900MHz Channel = 9262)



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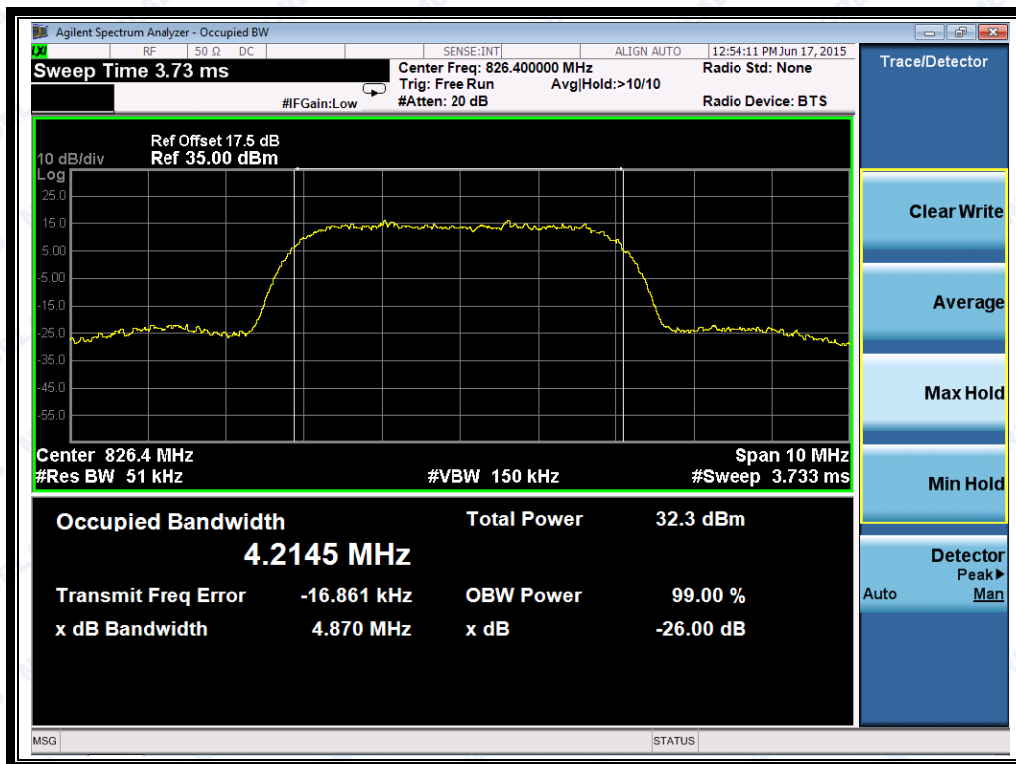
(Plot J2: HSDPA 1900 MHz Channel = 9400)



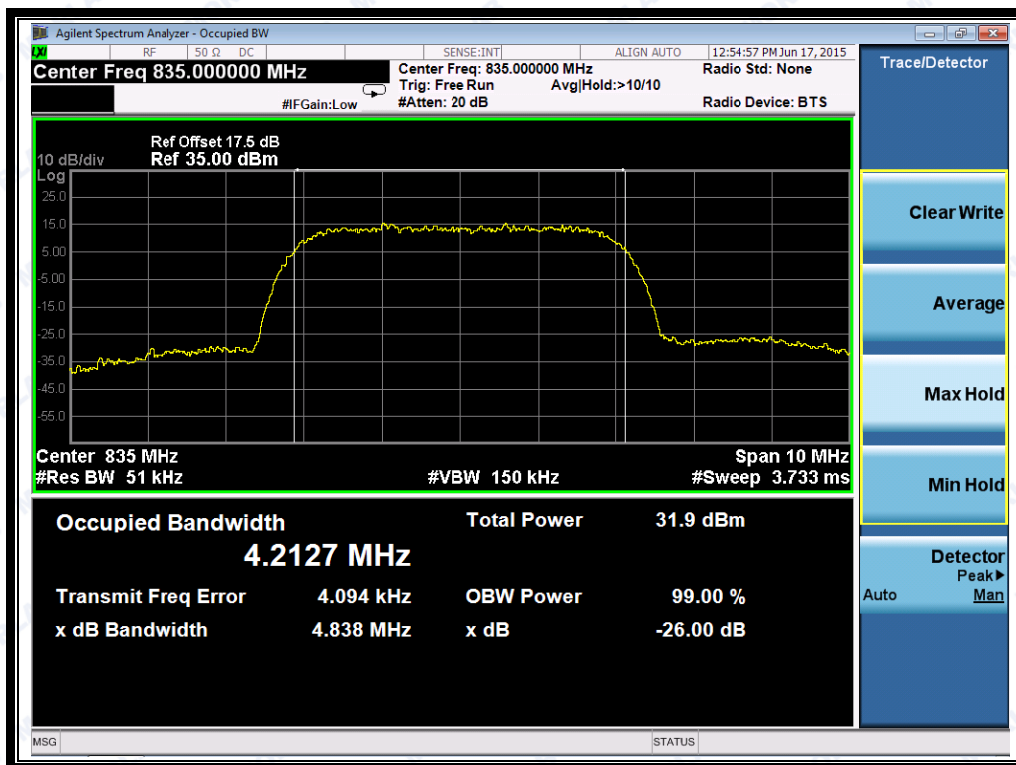
(Plot J3: HSDPA 1900MHz Channel = 9538)



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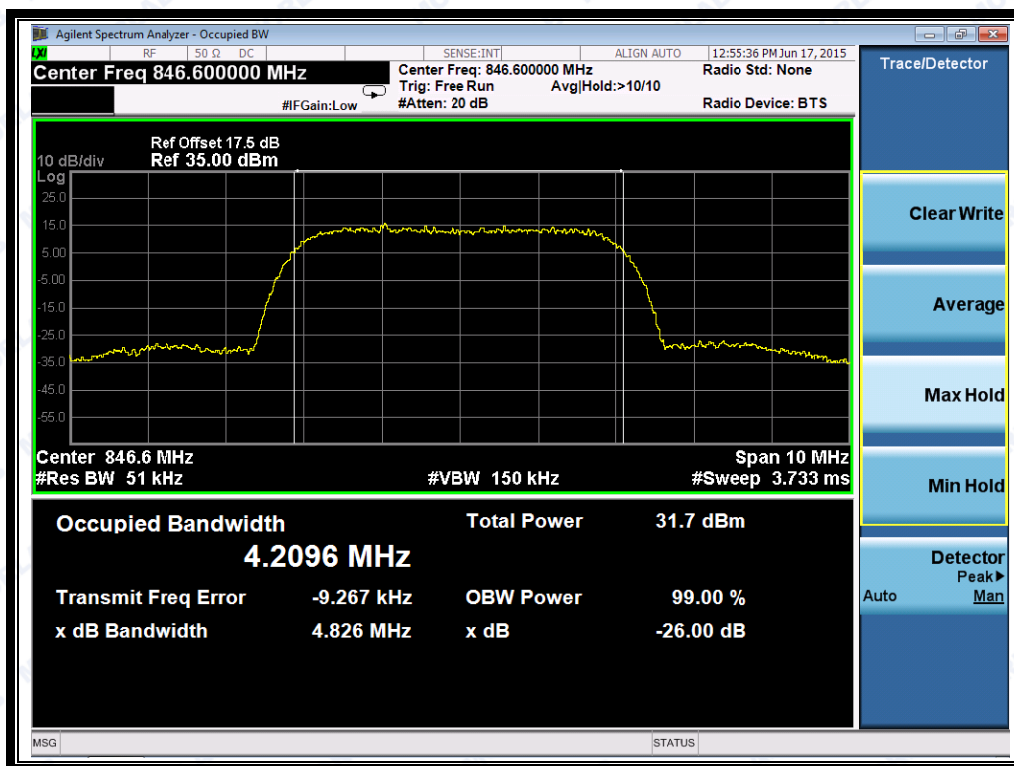
(Plot K1: HSUPA 850MHz Channel = 4132)



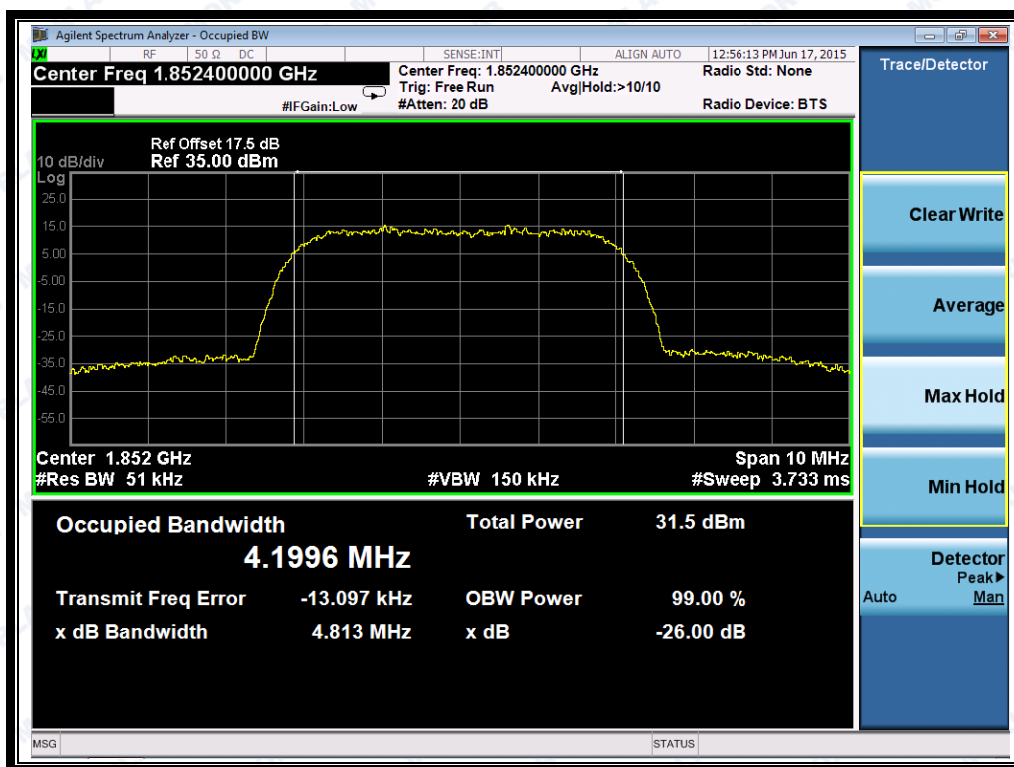
(Plot K2: HSUPA 850 MHz Channel = 4175)



REPORT No.: SZ15060079W01



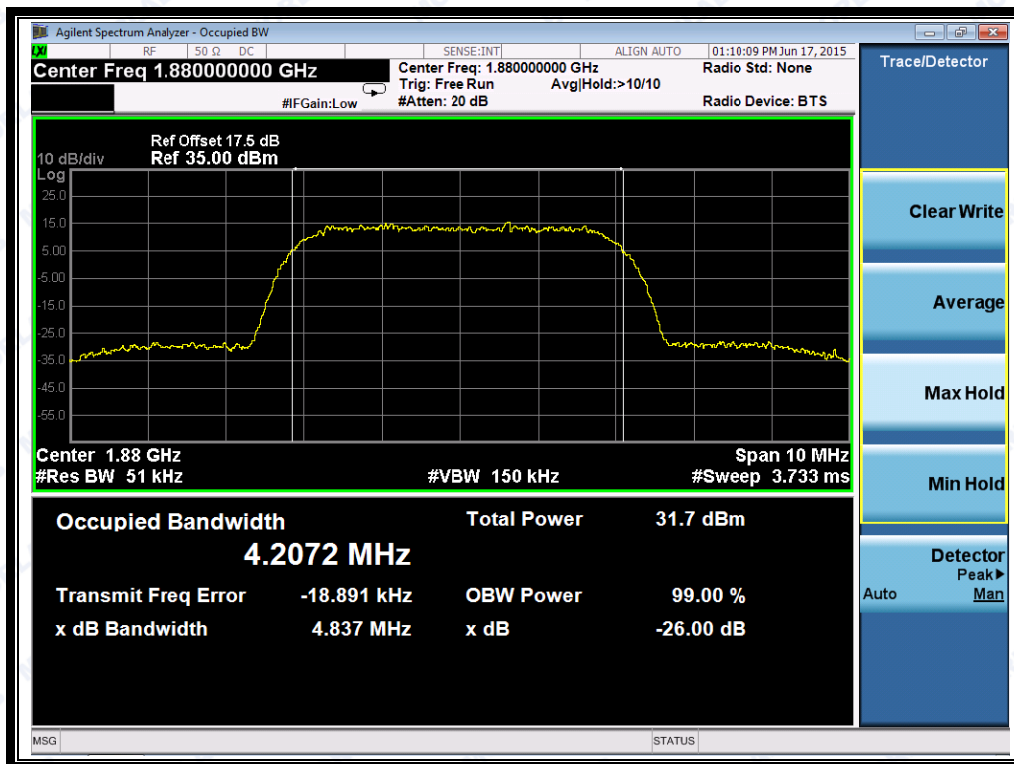
(Plot K3: HSUPA 850MHz Channel = 4233)



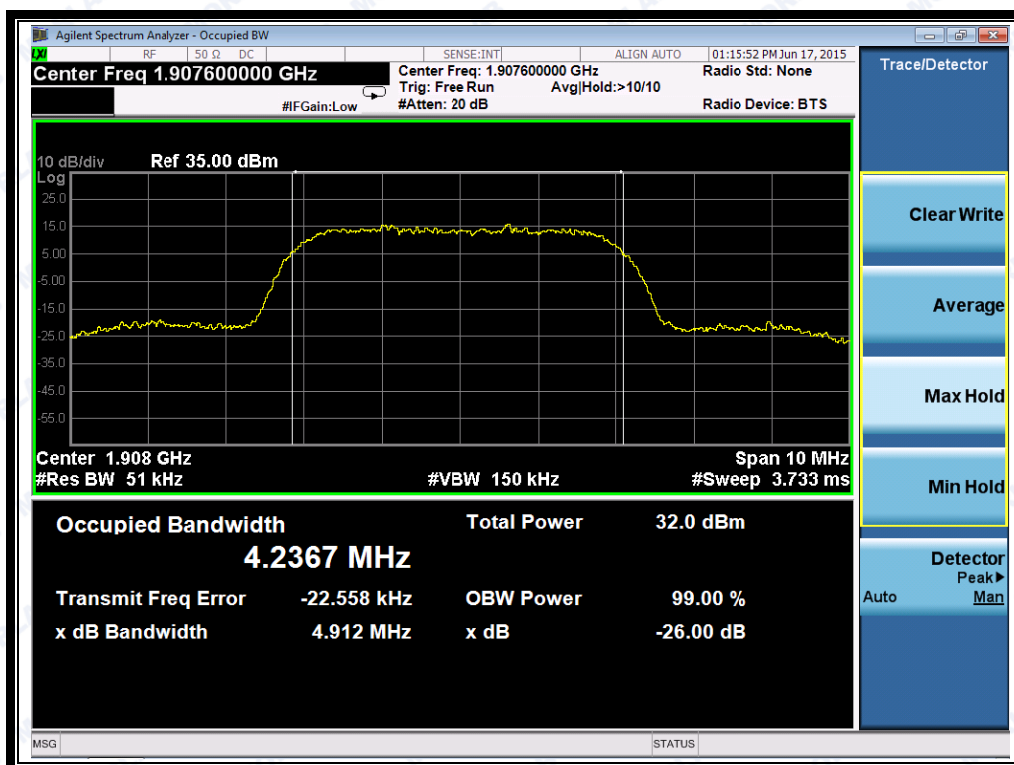
(Plot L1: HSUPA 1900MHz Channel = 9262)



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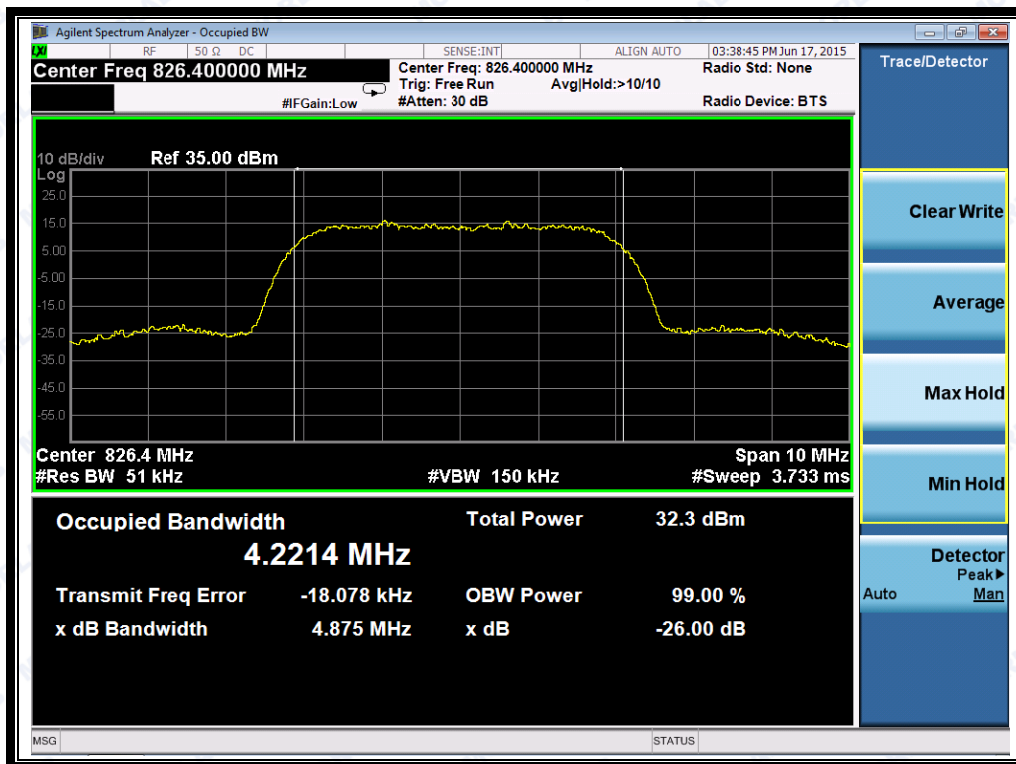
(Plot L2: HSUPA 1900 MHz Channel = 9400)



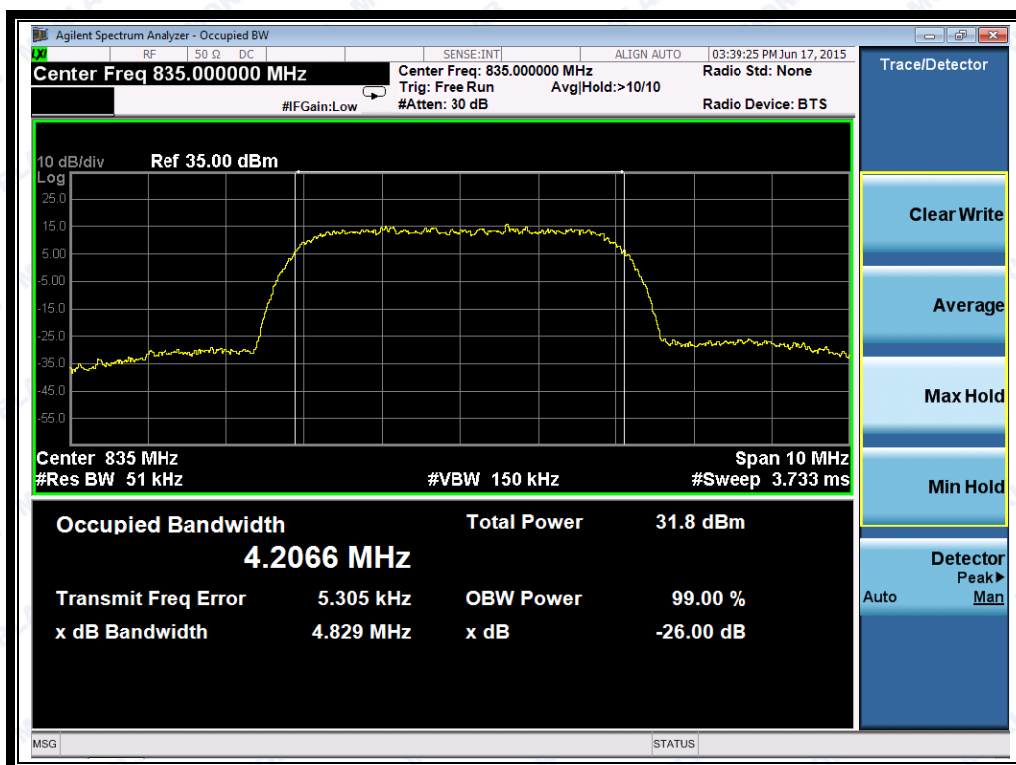
(Plot L3: HSUPA 1900MHz Channel = 9538)



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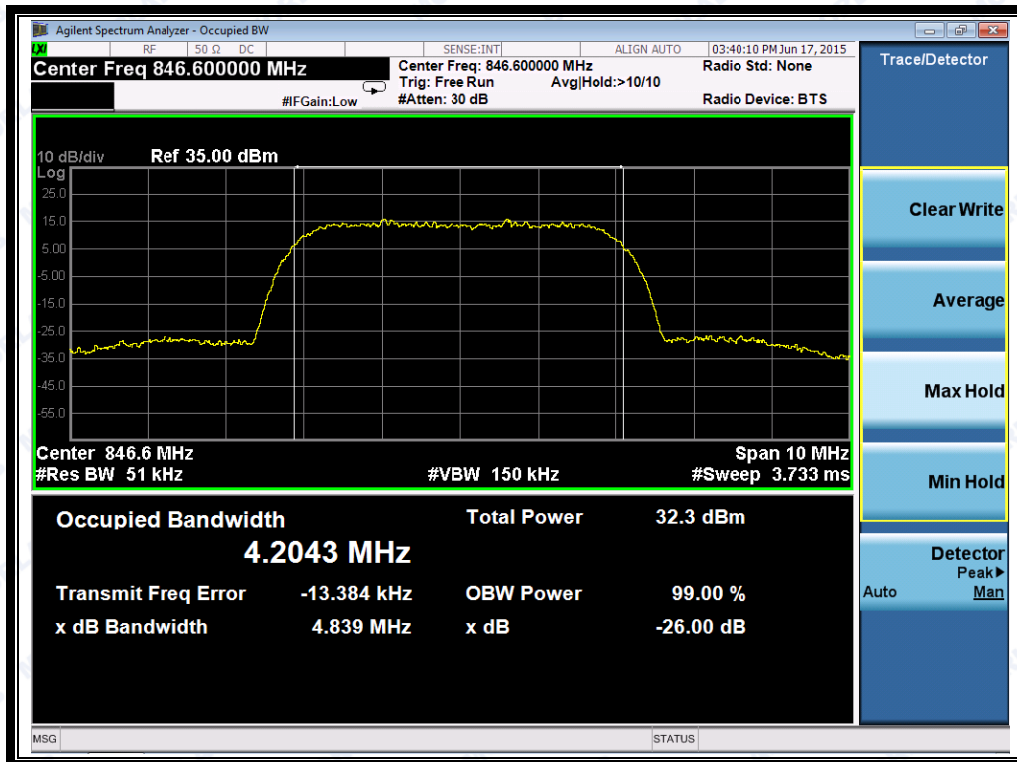
(Plot M1: HSPA+ 850MHz Channel = 4132)



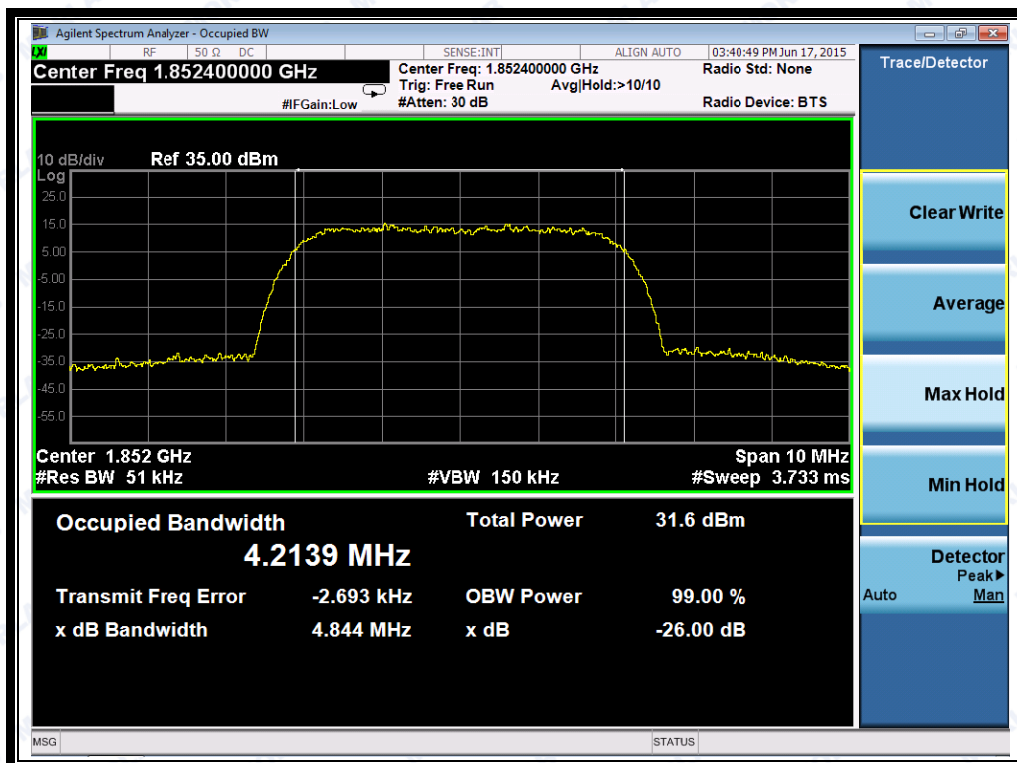
(Plot M2: HSPA+ 850 MHz Channel = 4175)



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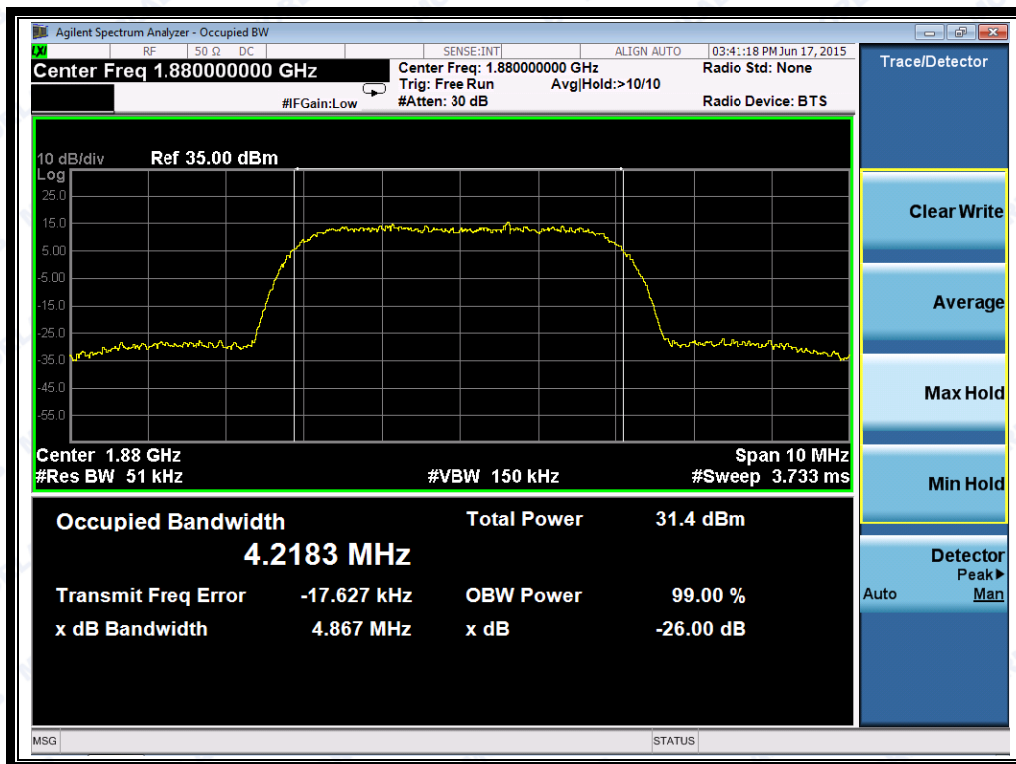
(Plot M3: HSPA+ 850MHz Channel = 4233)



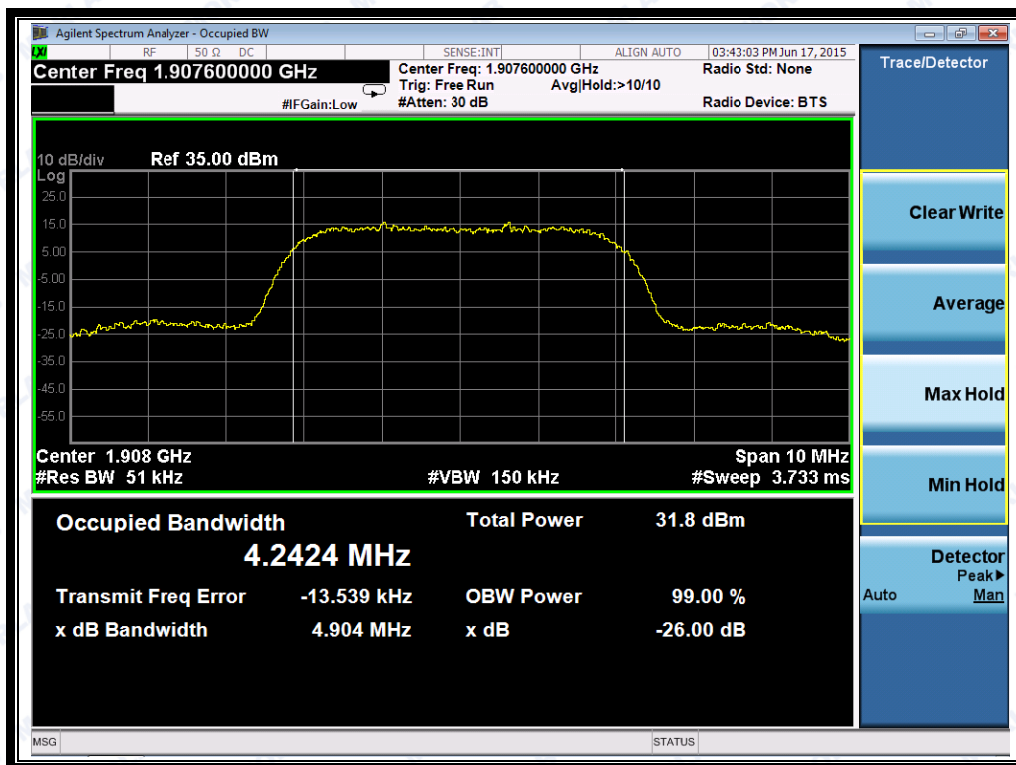
(Plot N1: HSPA+ 1900MHz Channel = 9262)



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(Plot N2: HSPA+ 1900 MHz Channel = 9400)



(Plot N3: HSPA+ 1900MHz Channel = 9538)

2.4 Frequency Stability

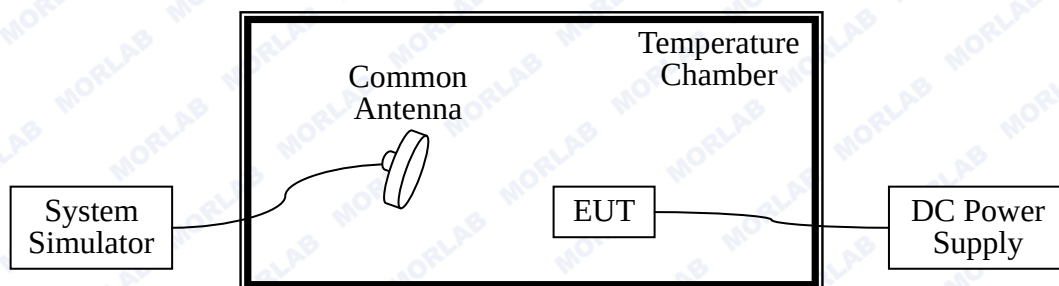
2.4.1 Requirement

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°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

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.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2015.02.26	2016.02.25
DC Power Supply	Good Will	GPS -3030DD	EF920938	2015.02.26	2016.02.25
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2015.02.26	2016.02.25



2.4.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.2VDC and 3.45VDC, 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	
3.8	-30	4.44	±2060.5	35	±2091.5	-9.46	±2122	PASS
	-20	-0.24		30.56		0.99		
	-10	-8		10.05		1.34		
	0	13.13		4.74		15.15		
	+10	-5.01		-2.3		-13.92		
	+20	20.27		18.65		-10.46		
	+30	-3.63		0.88		0.89		
	+40	-15.1		25.59		2.48		
	+55	-9.16		16.22		-6.61		
4.2	+25	22.23		-4.65		8.14		
3.45	+25	-20.03		24.01		-1.5		

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	15.83	±1850.2	27.75	±1880.0	15.26	±1909.8	PASS
	-20	-16.38		-14.77		19.07		
	-10	-1.11		-10.18		27.8		
	0	1.34		-10.66		-20.47		
	+10	-14.98		2.05		-17.76		
	+20	-10.46		-9.42		18.1		
	+30	0.89		32		-9.19		
	+40	1.34		-9.36		10.53		
	+55	25.09		1.99		25.2		
4.2	+25	-3.24		11.14		25.86		
3.45	+25	17.58		14.97		-11		



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	13.54	±2060.5	0.06	±2091.5	-12.98	±2122	<u>PASS</u>
	-20	22.58		-8.98		-10.46		
	-10	14.04		14.97		0.89		
	0	5.74		-36.8		1.34		
	+10	-3.3		0.06		-13.98		
	+20	20.65		-8.98		-10.46		
	+30	-31.12		15.96		0.89		
	+40	29.59		-34.3		1.34		
	+55	26.22		19.11		-5.31		
4.2	+25	-34.58		0.06		25.58		
3.45	+25	24.01		-19.33		8.96		

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	10.46	±1850.2	-13.36	±1880.0	17.37	±1909.8	<u>PASS</u>
	-20	1.4		39.81		-4.15		
	-10	-11.83		-20.4		11.11		
	0	-3.18		-14.45		14		
	+10	12.26		19.42		12.15		
	+20	4.26		17.3		9.54		
	+30	-3.63		5.33		-17.73		
	+40	9.54		15.61		-3.32		
	+55	11.44		-15.89		-14.21		
4.2	+25	10.46		15.61		-8.75		
3.45	+25	-18.84		17.88		14.85		



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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	-16.99	±2066	31.34	±2087.5	13.92	±2116.5	PASS
	-20	29.88		16.85		14.84		
	-10	11.28		28.85		5.78		
	0	47.46		-7.58		-7.45		
	+10	63.19		14.45		1.2		
	+20	-3.37		13.07		16.64		
	+30	3.73		20.69		8.64		
	+40	1.39		14.89		8.64		
	+55	1.45		17.45		0.75		
4.2	+25	9.69		30.74		20.91		
3.45	+25	8.42		15.82		-14.7		

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	-14.38	±1852.4	9.15	±1880	16.25	±1907.6	PASS
	-20	-11.87		-19.86		-13.53		
	-10	11.67		1.66		42.12		
	0	3.67		-15.76		-18.04		
	+10	33.6		-18.69		-12.09		
	+20	-28.44		17.5		21.78		
	+30	17.88		2.24		19.66		
	+40	-18.33		39.79		21.35		
	+55	25.13		6.59		-13.53		
4.2	+25	-12.42		19.87		-12.69		
3.45	+25	6.12		38.15		-11.68		



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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	-19.43	±2066	2.81	±2087.5	18.71	±2116.5	PASS
	-20	26.74		24.85		34.48		
	-10	42.76		18.85		35.37		
	0	-18.67		5.71		-4.68		
	+10	9.63		-8.12		29.51		
	+20	5.35		35.02		14.4		
	+30	27.65		17.85		-2.87		
	+40	17.94		-8.12		-9.38		
	+55	20.91		3.81	40.17			
4.2	+25	25.51		20	6.32			
3.45	+25	17.65		-32.61	16.49			

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	-12.25	±1852.4	-9.02	±1880	9.94	±1907.6	PASS
	-20	1.39		34.5		19.73		
	-10	26.11		-5.01		-16.61		
	0	24.52		-10.65		-15.24		
	+10	-10.69		-21.01		33.93		
	+20	27.11		16.15		-9.59		
	+30	20.72		-11.45		-15.2		
	+40	-6.87		26.67		13.13		
	+55	14.73		20.32		20.27		
4.2	+25	1.39		38.53		-25.65		
3.45	+25	26.13		-14.77		9.74		



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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	8.33	±2066	11.45	±2087.5	10.74	±2116.5	PASS
	-20	-14.3		-11.18		-11.89		
	-10	-9.79		-6.67		-7.38		
	0	4.36		7.48		6.77		
	+10	-5.13		-2.01		-2.72		
	+20	8.29		11.41		10.7		
	+30	26.26		29.38		28.67		
	+40	-13.8		-10.68		-11.39		
	+55	-4.11		-0.99		-1.7		
4.2	+25	-14.3		-11.18		-11.89		
3.45	+25	-9.79		-6.67		-7.38		

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	16.65	±1852.4	-22.07	±1880	27.74	±1907.6	PASS
	-20	17.25		-11.66		-8.28		
	-10	23.41		38.53		21.93		
	0	-22.53		-5.01		14.16		
	+10	-12.12		-10.65		-13.47		
	+20	37.07		-21.07		10.06		
	+30	-6.47		16.18		-0.21		
	+40	-12.11		-11.45		18.42		
	+55	28.21		26.67		-22.33		
4.2	+25	9.76		11.23		31.31		
3.45	+25	4.62		-28.91		19.79		



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	-5.09	±2066	13.3	±2087.5	2.77	±2116.5	PASS
	-20	20.63		-14.12		-9.42		
	-10	13.29		22.55		-13.86		
	0	-12.29		-0.58		-9.35		
	+10	9.52		24.14		4.8		
	+20	-5.89		22.55		-4.69		
	+30	33.23		-12.58		8.73		
	+40	7.28		25.14		26.7		
	+55	-26.96		18.75		-13.36		
4.2	+25	28.45	-7.85	-3.67				
3.45	+25	-3.45	13.06	15.58				

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	28.24	±1852.4	14.42	±1880	13.72	±1907.6	PASS
	-20	-15.48		28.29		-18.41		
	-10	-10.89		36.88		-12.87		
	0	-11.37		-7.45		-1.52		
	+10	1.34		-5.04		-1.07		
	+20	-10.13		21.22		-7.72		
	+30	31.29		-6.07		23.17		
	+40	-10.07		13.65		8.55		
	+55	1.28		28.32		22.68		
4.2	+25	3.43		28.98		-5.65		
3.45	+25	3.36		-7.93		3.97		



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. Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2015.02.26	2016.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2015.02.26	2016.02.25
Power Meter	Agilent	E4418B	GB43318055	2015.02.26	2016.02.25
Power Sensor	Agilent	8482A	MY41091706	2015.02.26	2016.02.25
Power Splitter	Weinschel	1506A	NW521	2015.02.26	2016.02.25
Attenuator 1	Resnet	20dB	(n.a.)	2015.02.26	2016.02.25
Attenuator 2	Resnet	3dB	(n.a.)	2015.02.26	2016.02.25

2. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-24.39	Plot A1 to A1.1	-13	PASS
	190	836.6	-24.73	Plot A2 to A2.1		PASS
	251	848.8	-24.44	Plot A3 to A3.1		PASS
GSM 1900MHz	512	1850.2	-19.91	Plot B1 to B1.1	-13	PASS
	661	1880.0	-20.72	Plot B2 to B2.1		PASS
	810	1909.8	-21.10	Plot B3 to B3.1		PASS
EGPRS 850MHz	128	824.2	-19.18	Plot E1 to E1.1	-13	PASS
	190	836.6	-19.64	Plot E2 to E2.1		PASS
	251	848.8	-19.87	Plot E3 to E3.1		PASS
EGPRS 1900MHz	512	1850.2	-19.13	Plot F1 to F1.1	-13	PASS
	661	1880.0	-19.60	Plot F2 to F2.1		PASS
	810	1909.8	-18.63	Plot F3 to F3.1		PASS



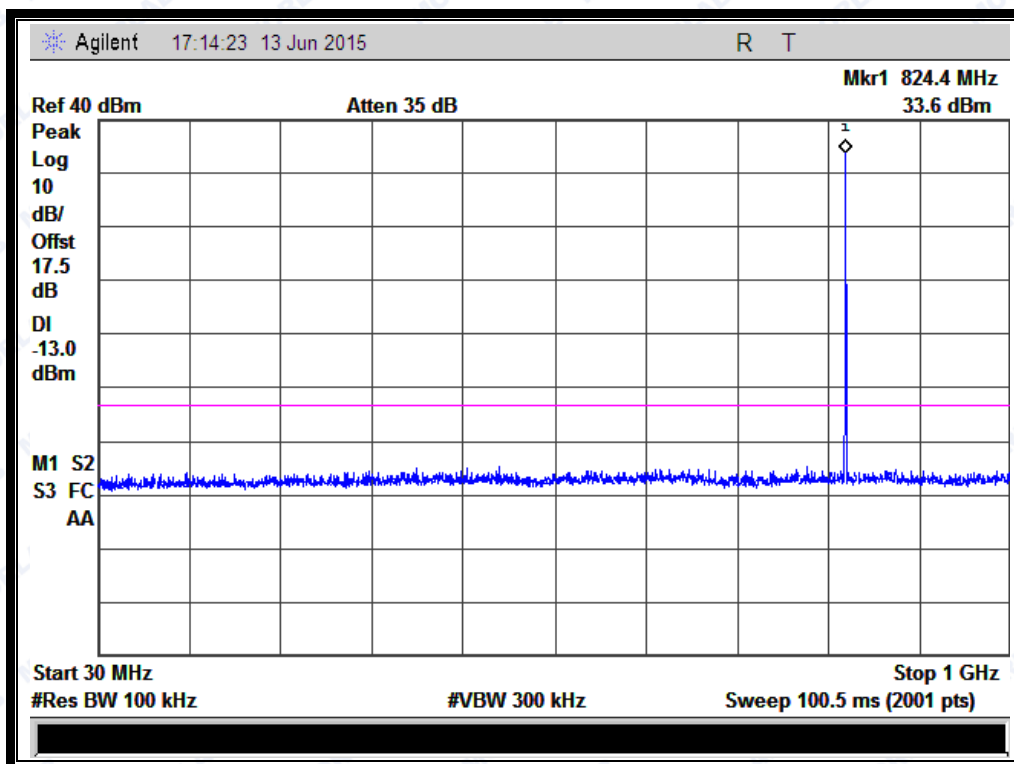
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
WCDMA 850MHz	4132	826.4	< -25	Plot G1 to G1.1	-13	PASS
	4175	835.0	< -25	Plot G2 to G2.1		PASS
	4233	846.6	< -25	Plot G3 to G3.1		PASS
WCDMA 1900MHz	9262	1852.4	< -25	Plot H1 to H1.1	-13	PASS
	9400	1880.0	< -25	Plot H2 to H2.1		PASS
	9538	1907.6	< -25	Plot H3 to H3.1		PASS
HSDPA 850MHz	4132	826.4	< -25	Plot I1 to I1.1	-13	PASS
	4175	835.0	< -25	Plot I2 to I2.1		PASS
	4233	846.6	< -25	Plot I3 to I3.1		PASS
HSDPA 1900MHz	9262	1852.4	< -25	Plot J1 to J1.1	-13	PASS
	9400	1880.0	< -25	Plot J2 to J2.1		PASS
	9538	1907.6	< -25	Plot J3 to J3.1		PASS
HSUPA 850MHz	4132	826.4	< -25	Plot K1 to K1.1	-13	PASS
	4175	835.0	< -25	Plot K2 to K2.1		PASS
	4233	846.6	< -25	Plot K3 to K3.1		PASS
HSUPA 1900MHz	9262	1852.4	< -25	Plot L1 to L1.1	-13	PASS
	9400	1880.0	< -25	Plot L2 to L2.1		PASS
	9538	1907.6	< -25	Plot L3 to L3.1		PASS
HSPA+ 850MHz	4132	826.4	< -25	Plot M1 to M1.1	-13	PASS
	4175	835.0	< -25	Plot M2 to M2.1		PASS
	4233	846.6	< -25	Plot M3 to M3.1		PASS
HSPA+ 1900MHz	9262	1852.4	< -25	Plot N1 to N1.1	-13	PASS
	9400	1880.0	< -25	Plot N2 to N2.1		PASS
	9538	1907.6	< -25	Plot N3 to N3.1		PASS

Test Plots for the Whole Measurement Frequency Range:

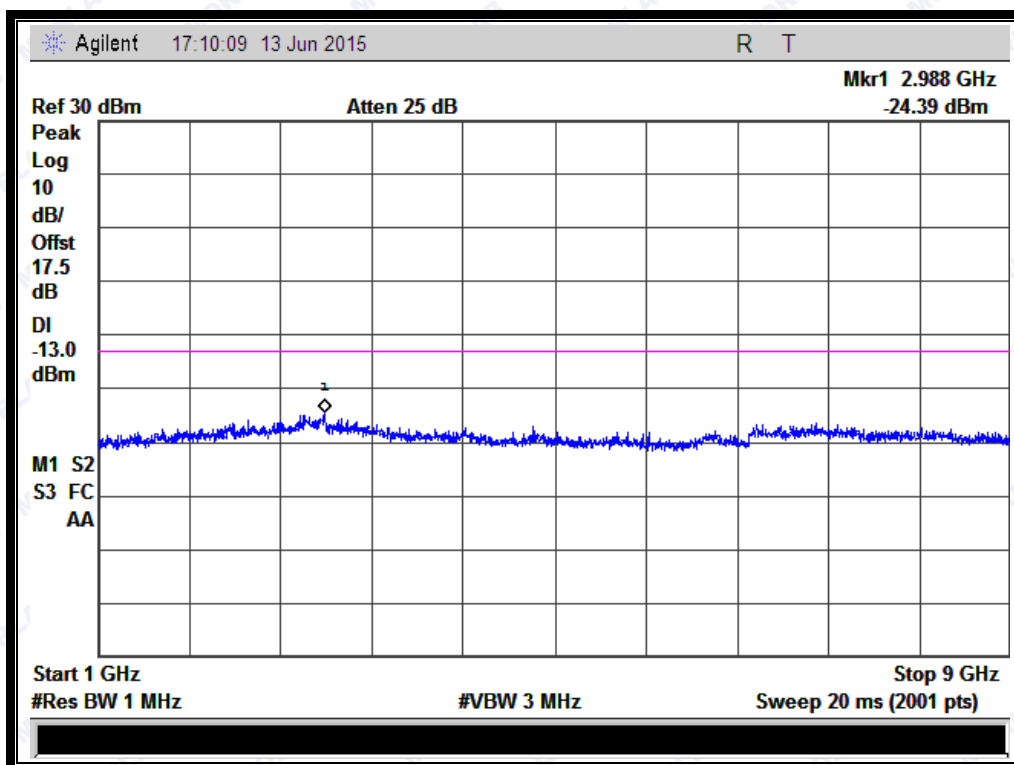
Note: the power of the EUT transmitting frequency should be ignored.



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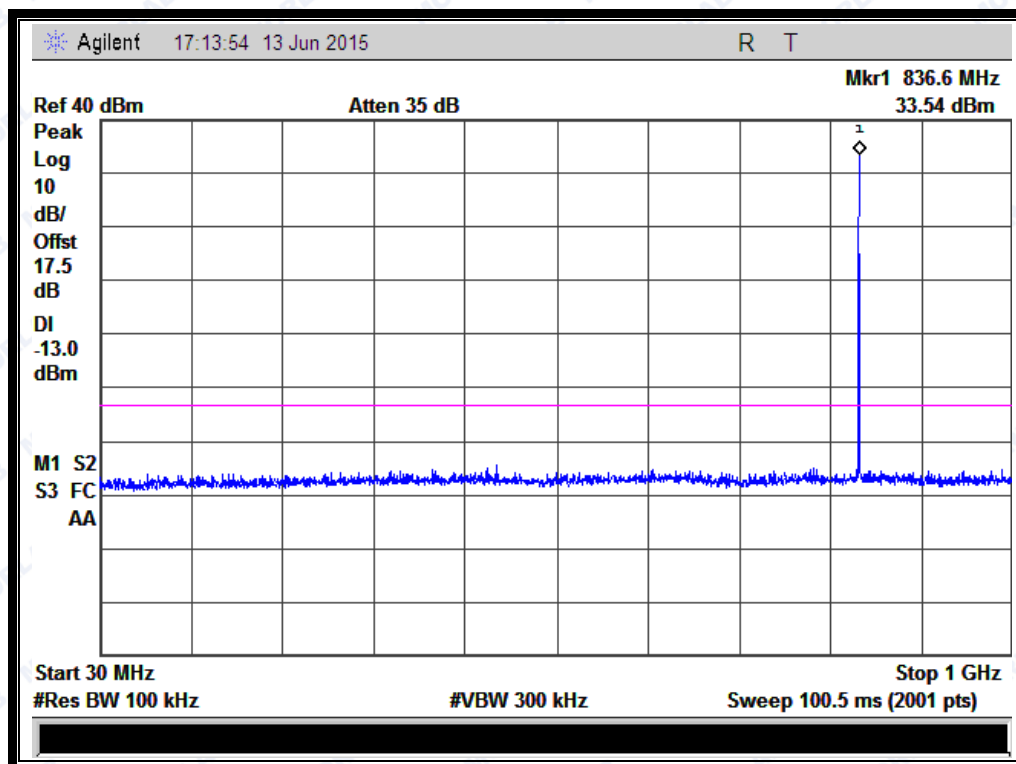
(Plot A1: GSM 850MHz Channel = 128, 30MHz to 1GHz)



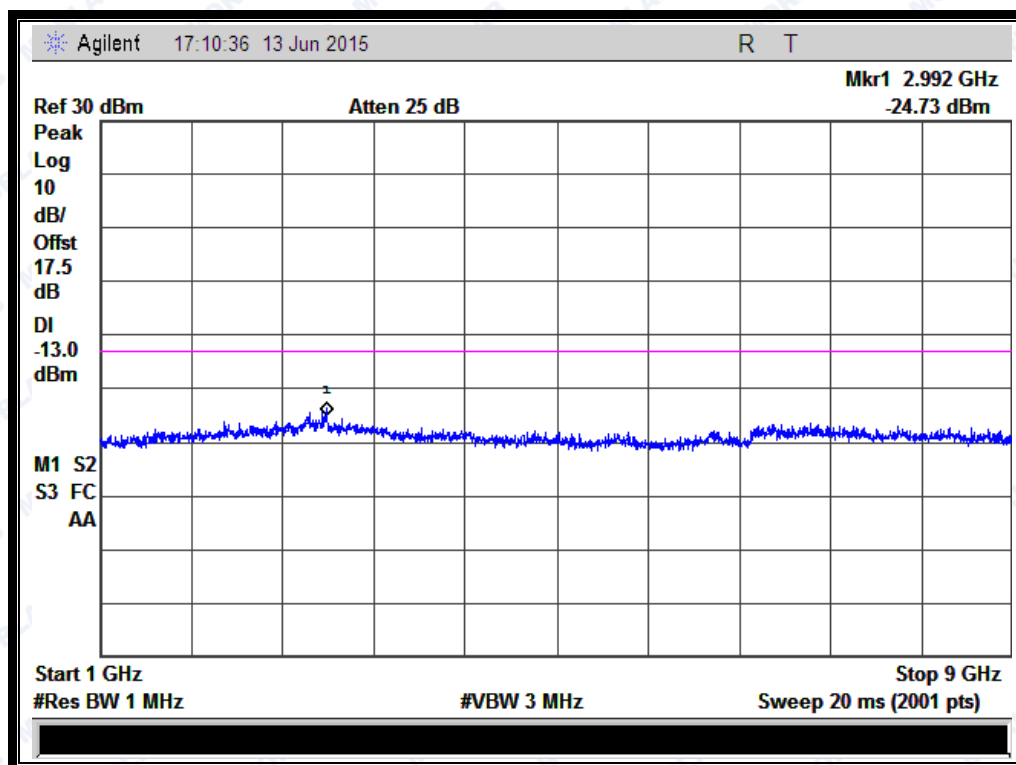
(Plot A1.1: GSM 850MHz Channel = 128, 1GHz to 9GHz)



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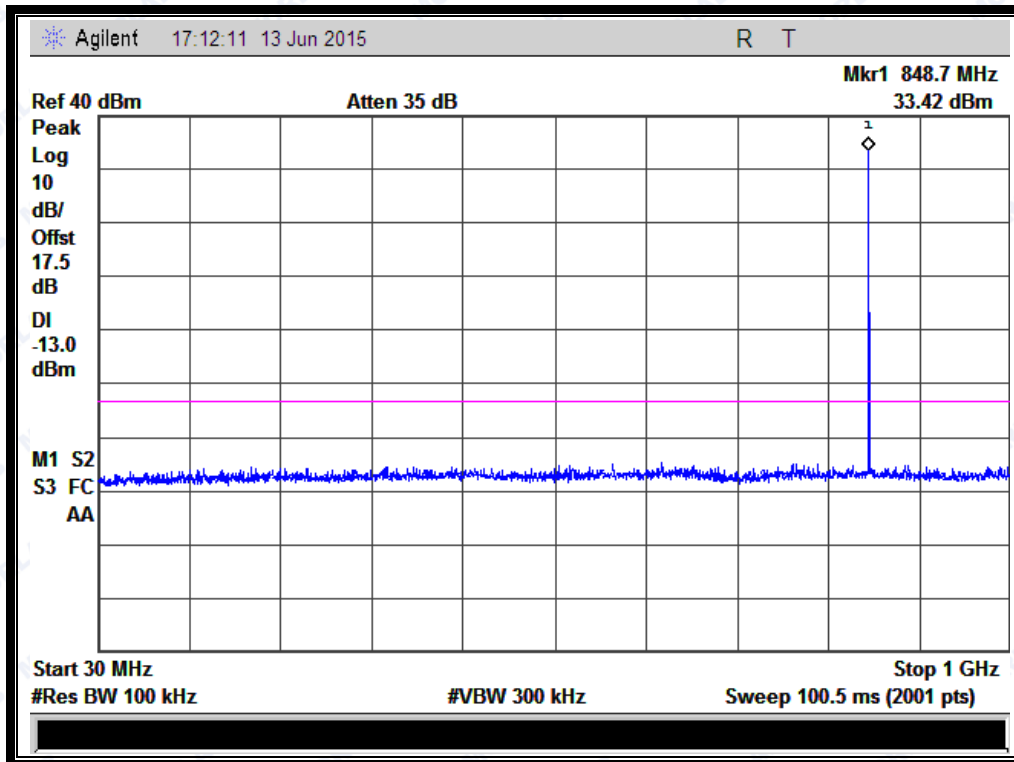
(Plot A2: GSM 850MHz Channel = 190, 30MHz to 1GHz)



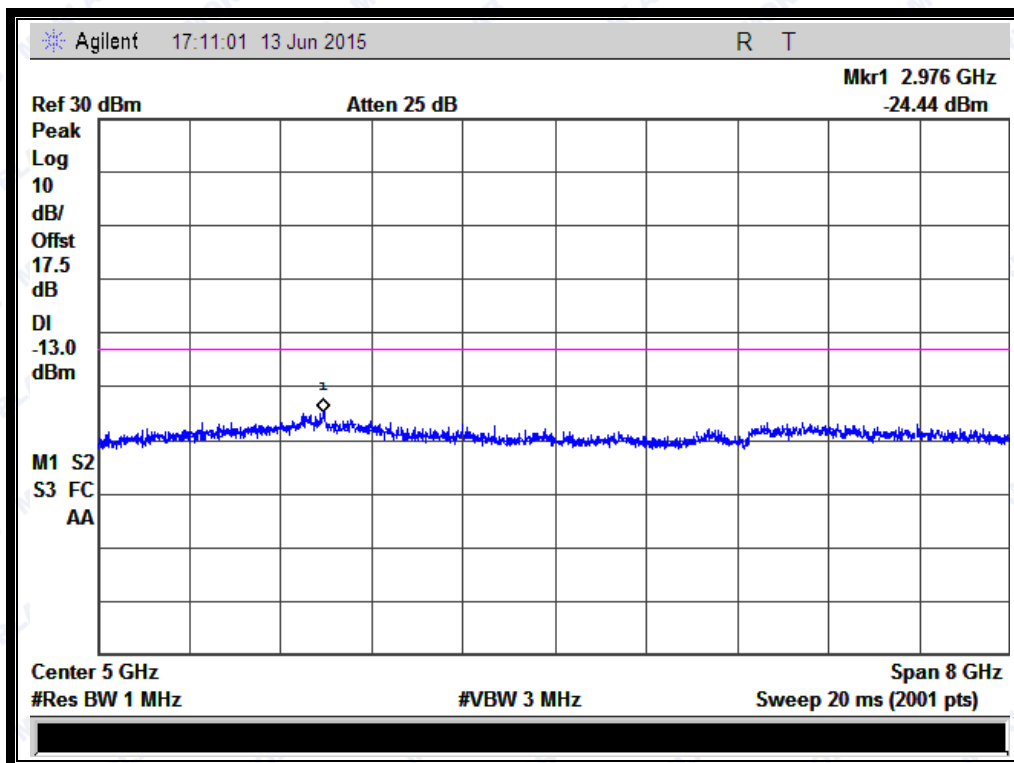
(Plot A2.1: GSM 850MHz Channel = 190, 1GHz to 9GHz)



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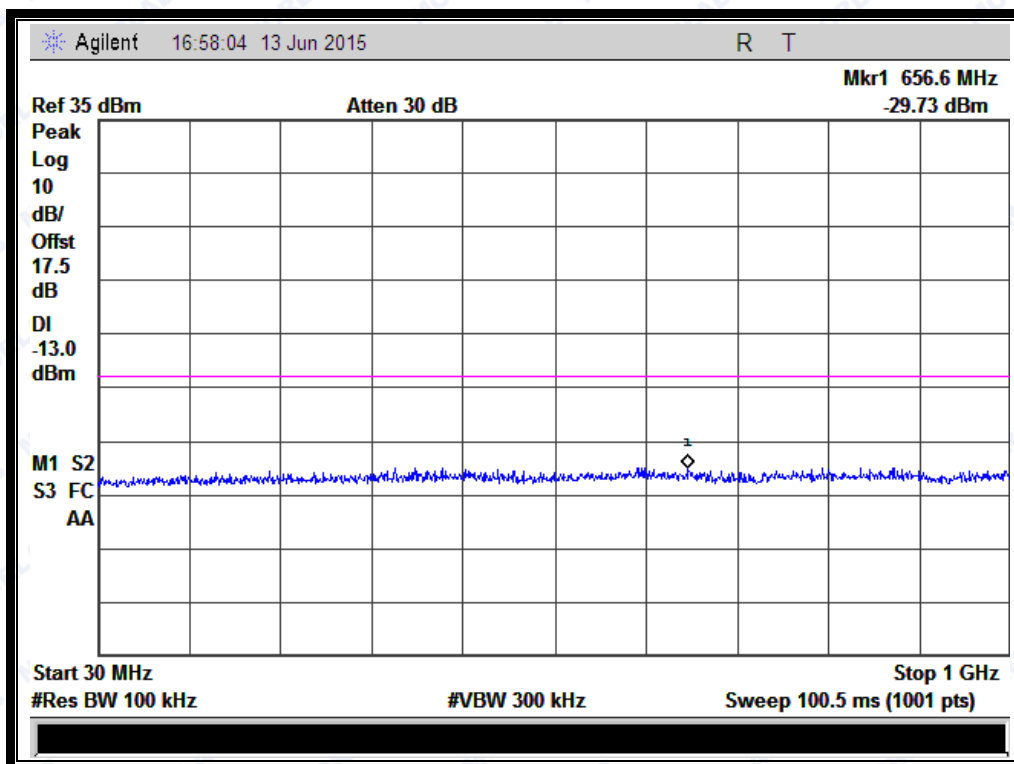
(Plot A3: GSM 850MHz Channel = 251, 30MHz to 1GHz)



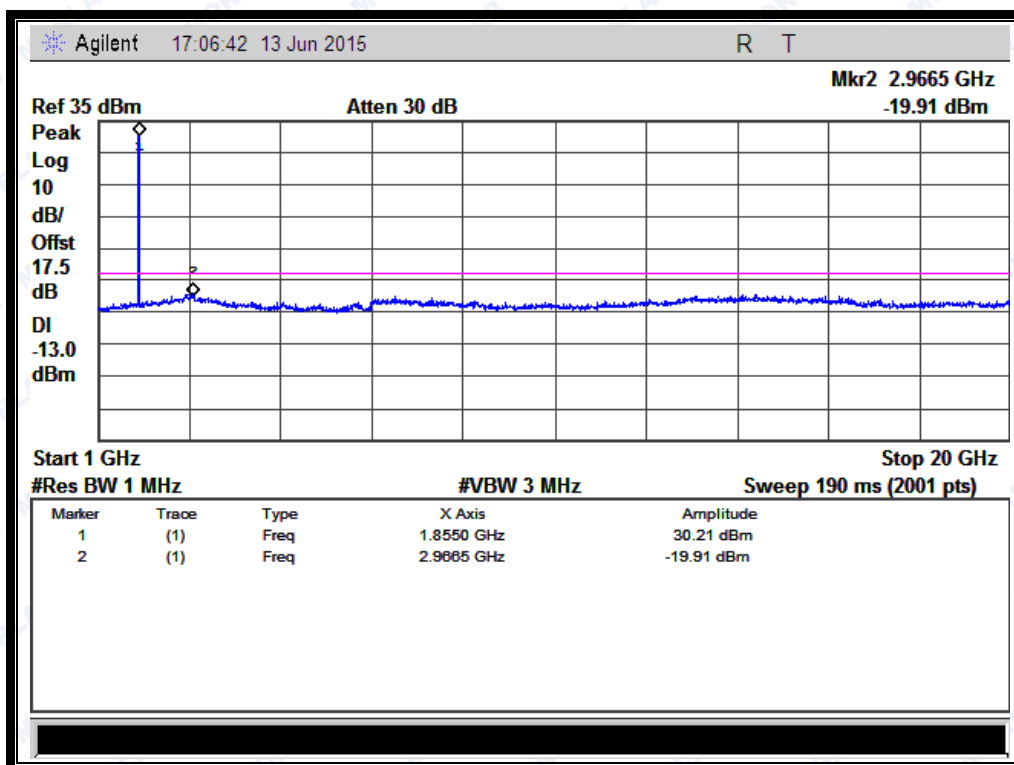
(Plot A3.1: GSM 850MHz Channel = 251, 1GHz to 9GHz)



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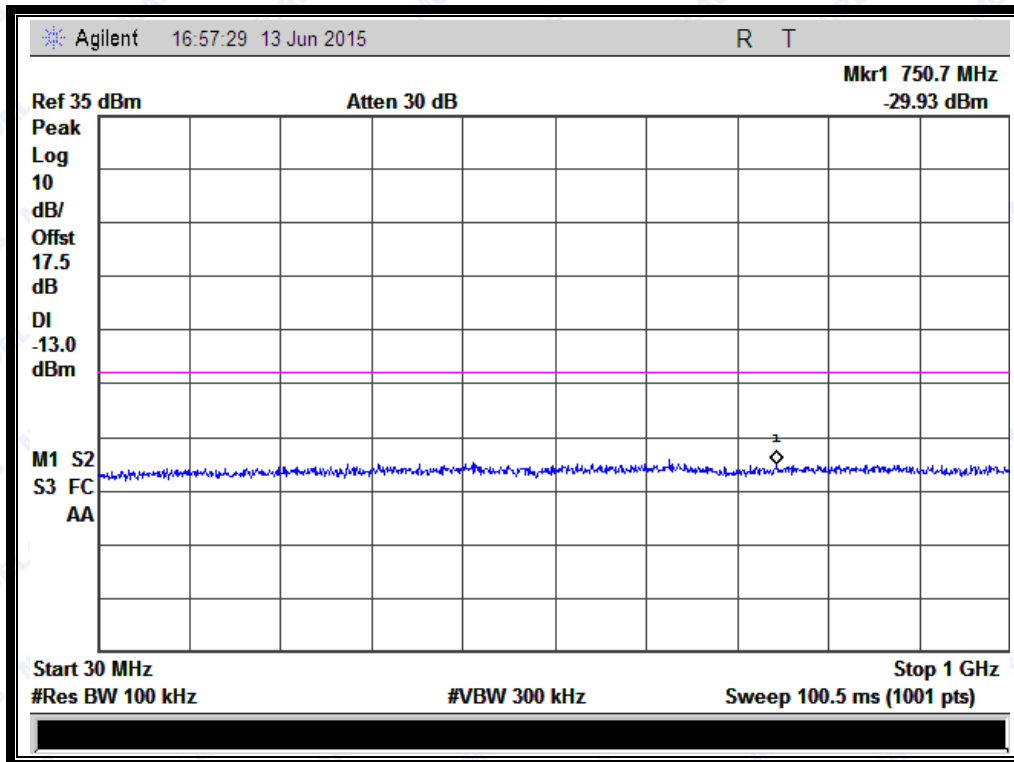
(Plot B1: GSM 1900MHz Channel = 512, 30MHz to 1GHz)



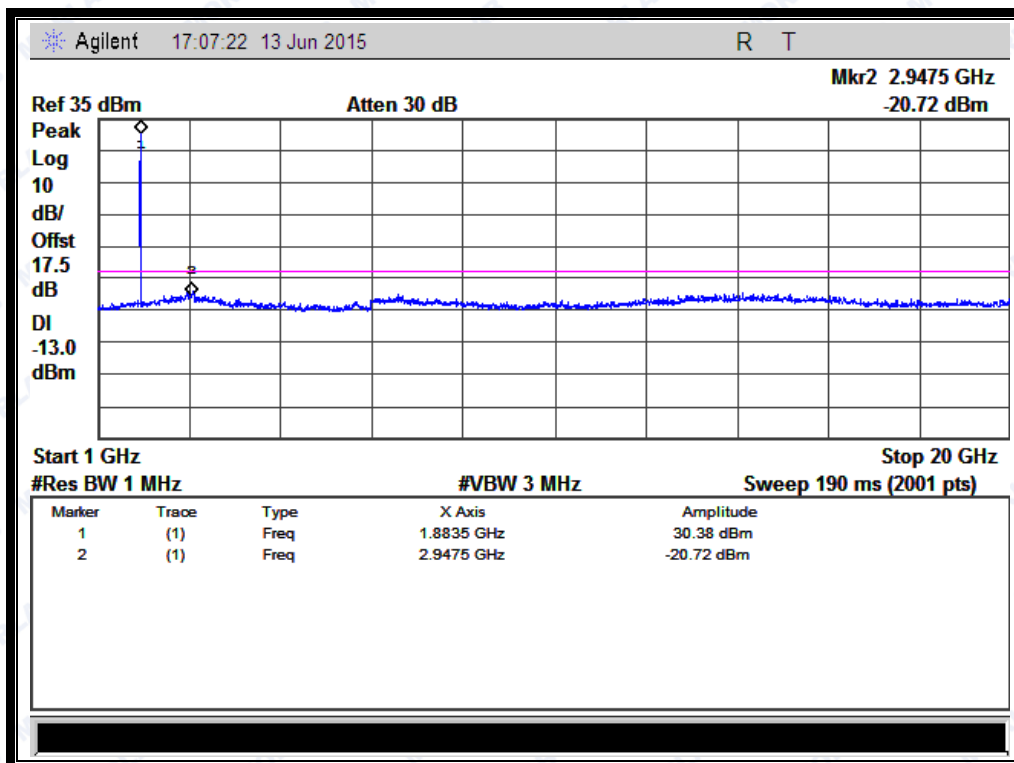
(Plot B1.1: GSM 1900MHz Channel = 512, 1GHz to 20GHz)



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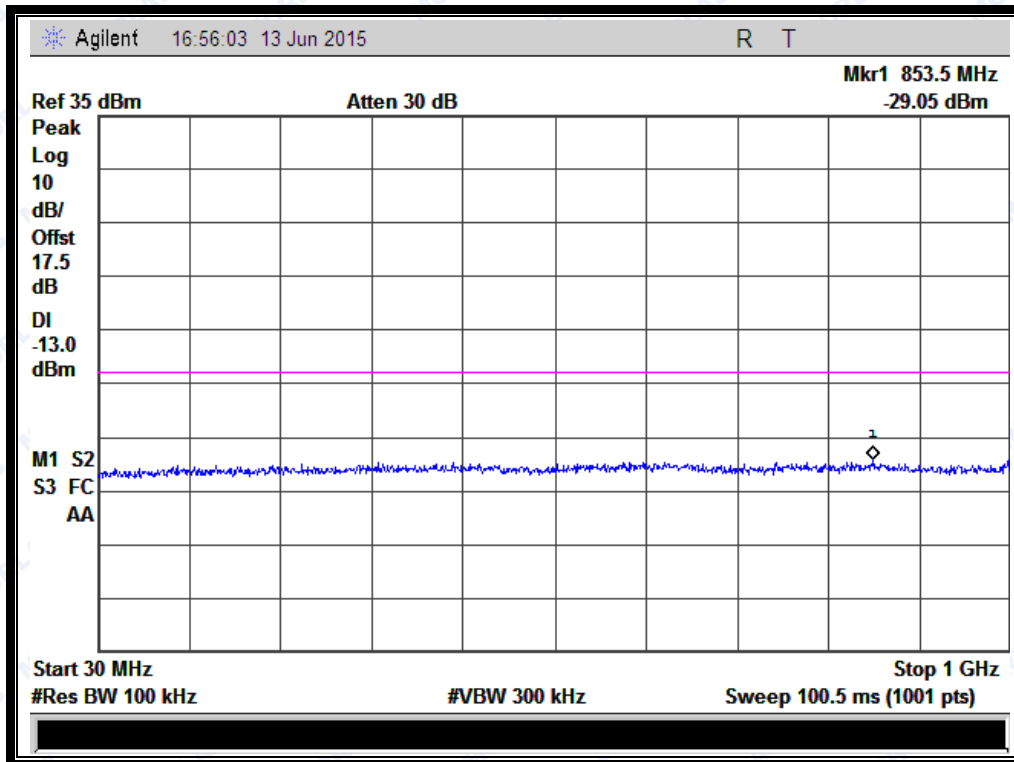
(Plot B2: GSM 1900MHz Channel = 661, 30MHz to 1GHz)



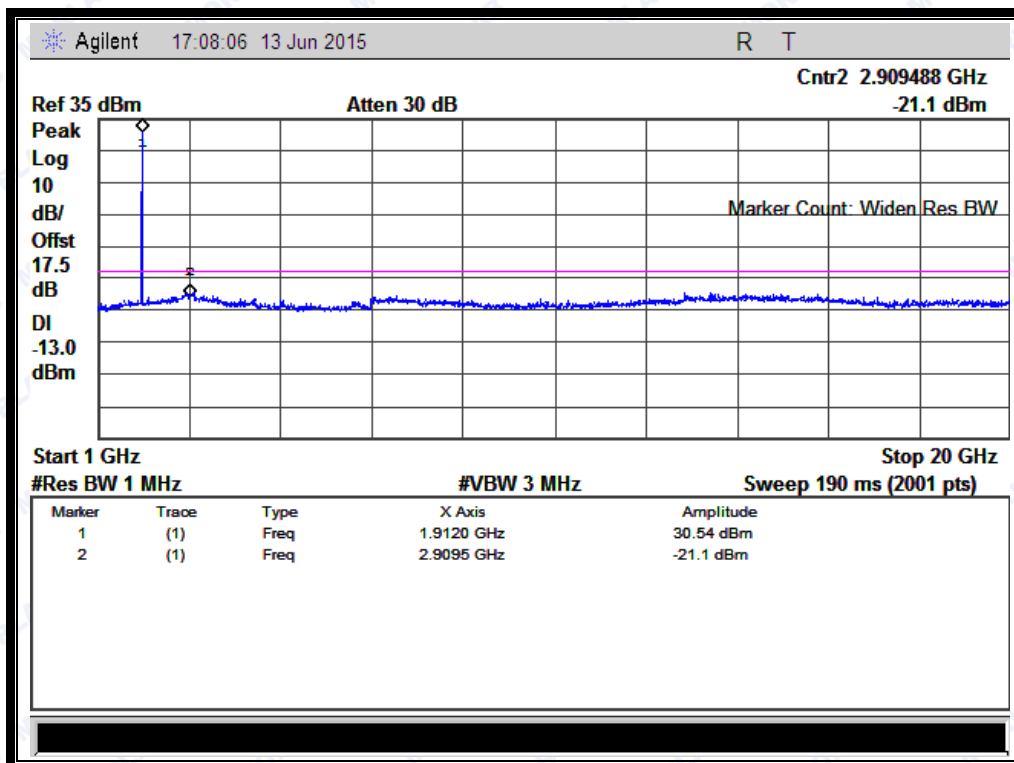
(Plot B2.1: GSM 1900MHz Channel = 661, 1GHz to 20GHz)



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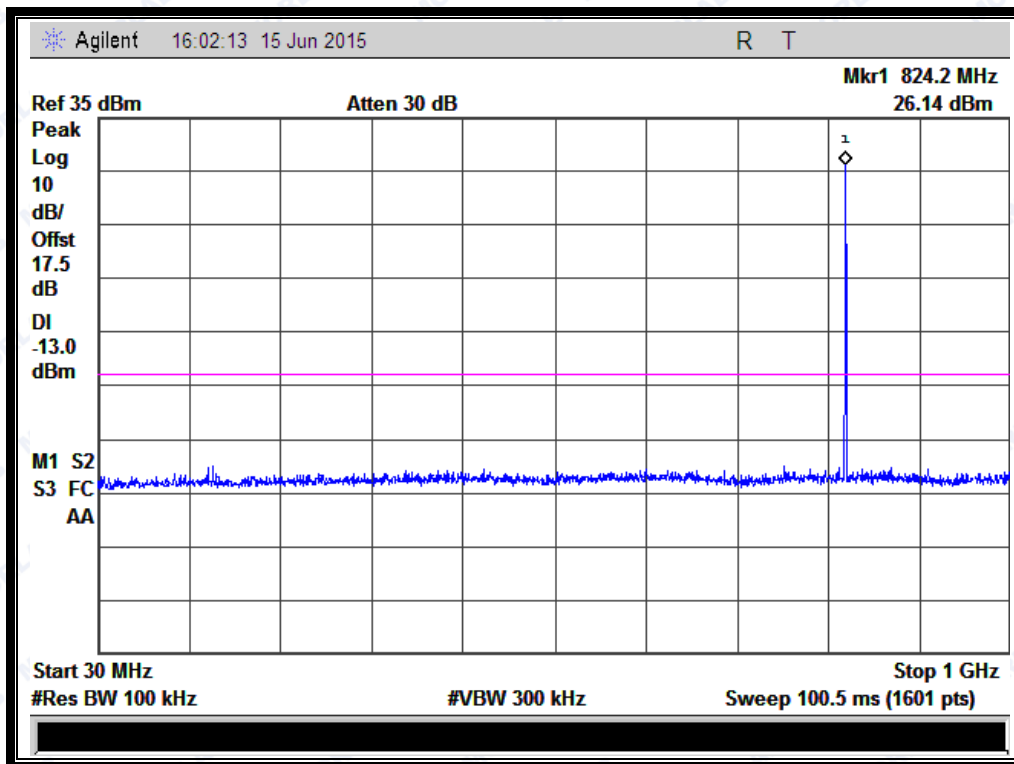
(Plot B3: GSM 1900MHz Channel = 810, 30MHz to 1GHz)



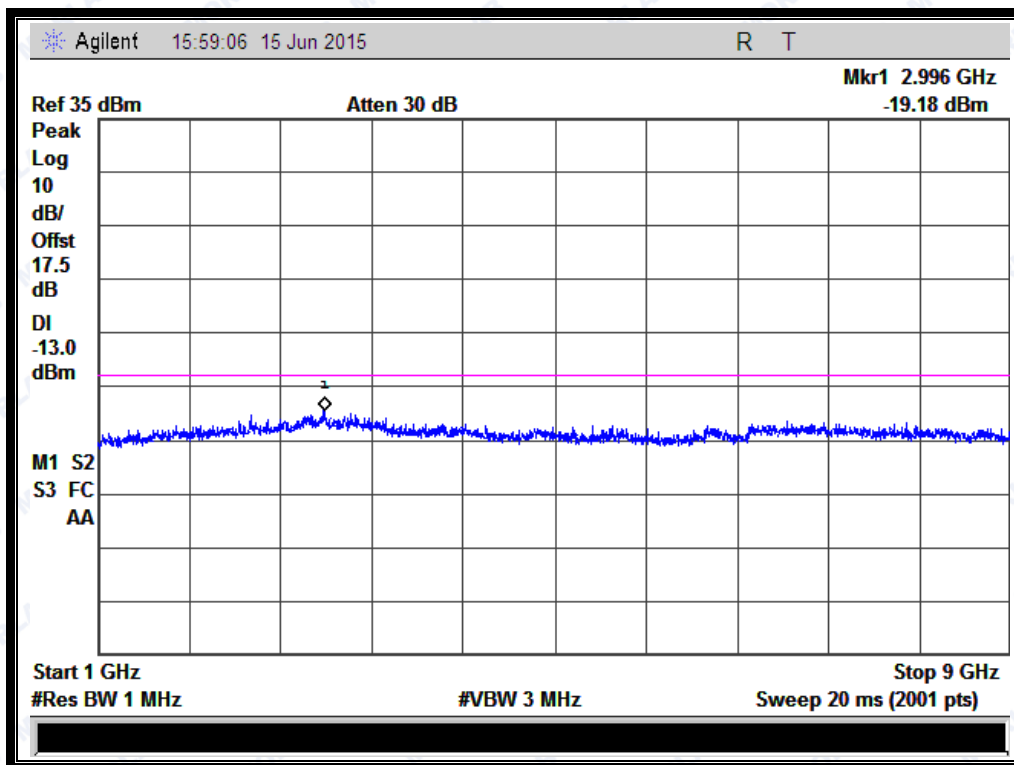
(Plot B3.1: GSM 1900MHz Channel = 810, 1GHz to 20GHz)



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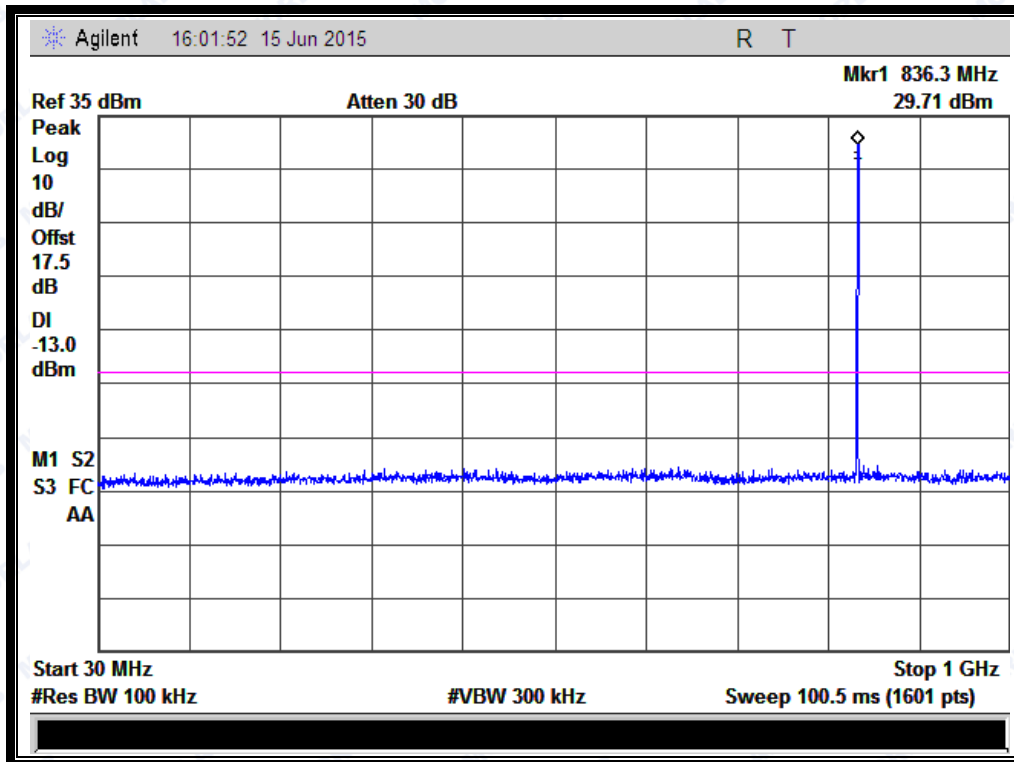
(Plot E1: EGPRS 850MHz Channel = 128, 30MHz to 1GHz)



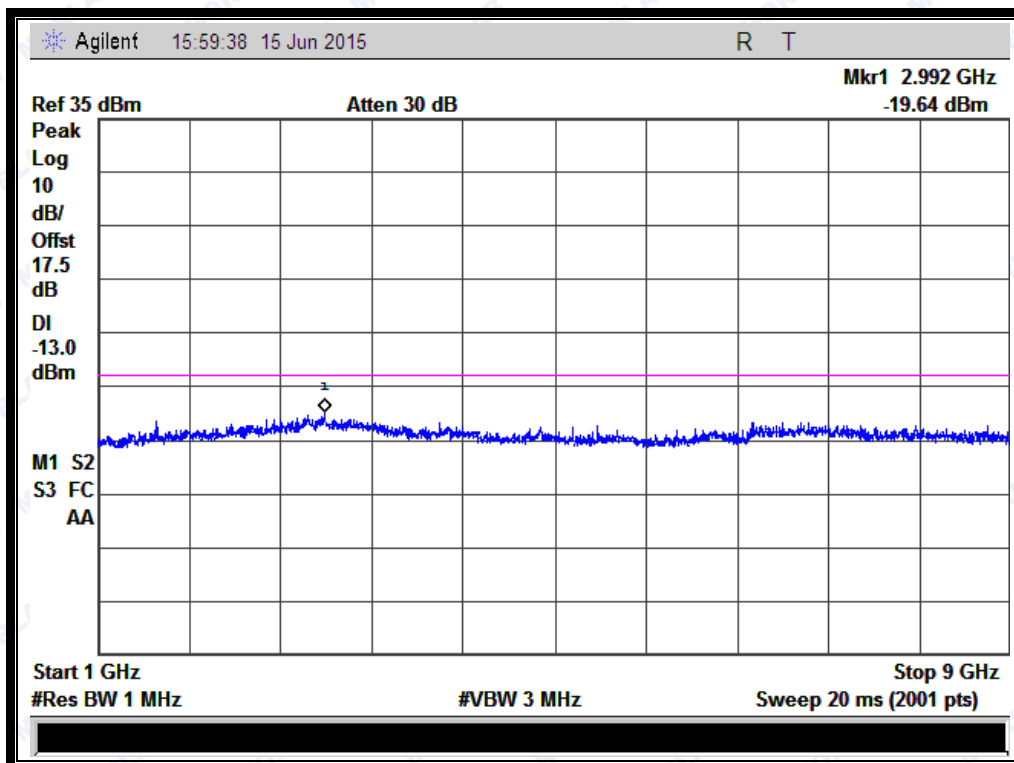
(Plot E1.1: EGPRS 850MHz Channel = 128, 1GHz to 9GHz)



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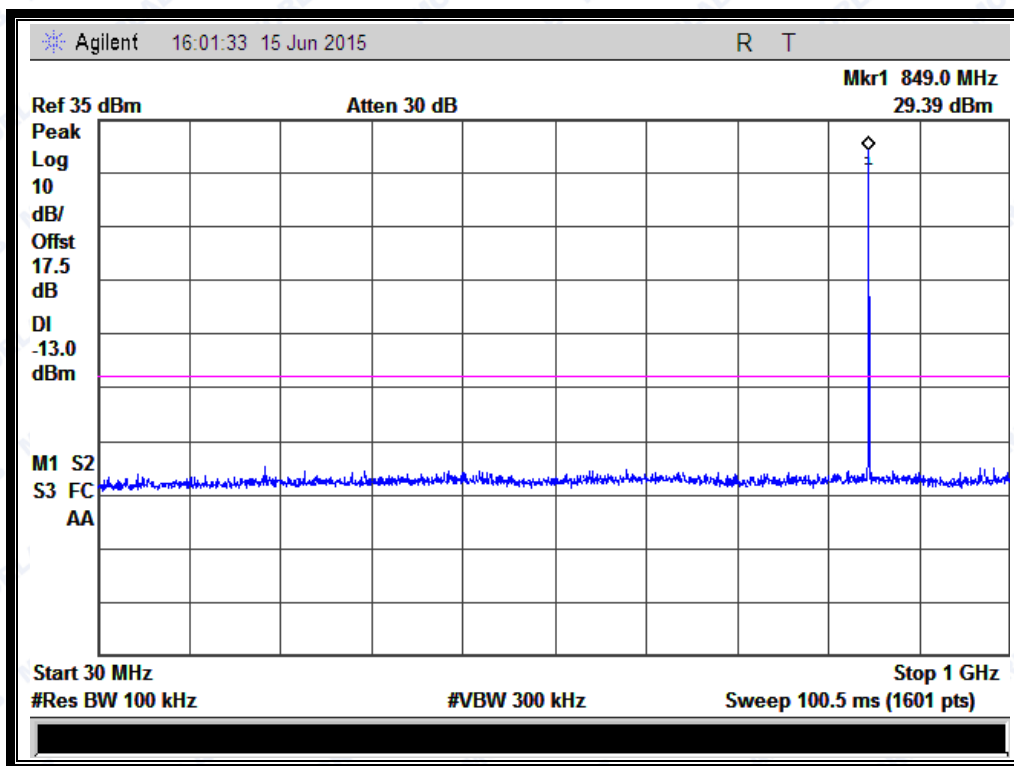
(Plot E2: EGPRS 850MHz Channel = 190, 30MHz to 1GHz)



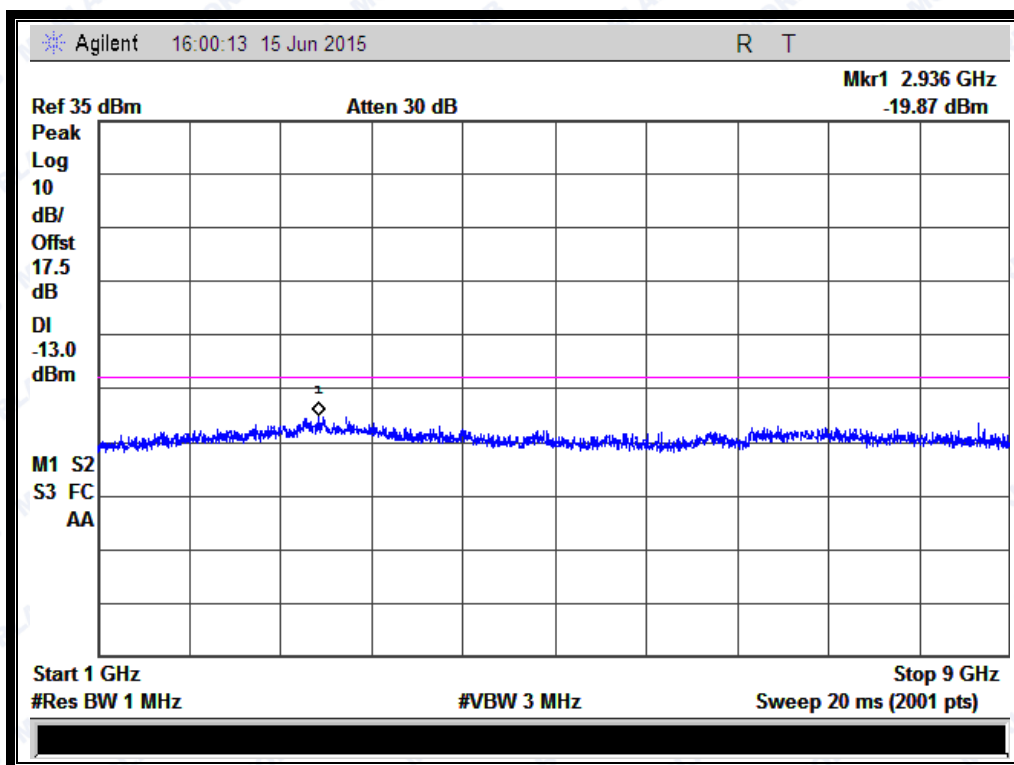
(Plot E2.1: EGPRS 850MHz Channel = 190, 1GHz to 9GHz)



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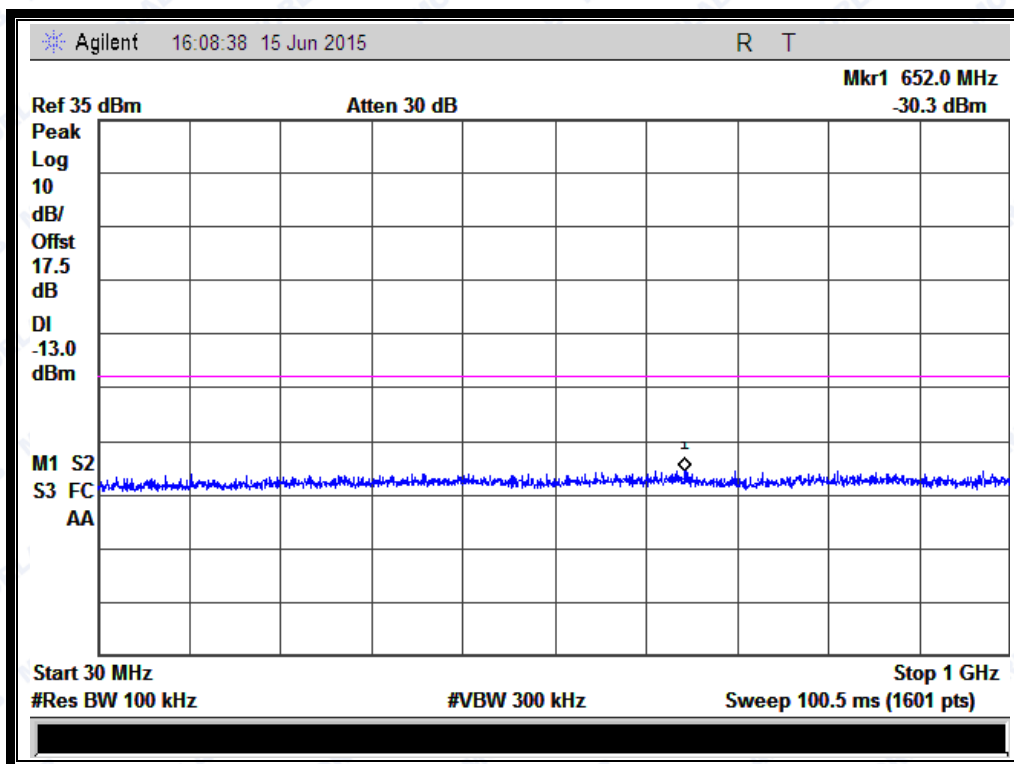
(Plot E3: EGPRS 850MHz Channel = 251, 30MHz to 1GHz)



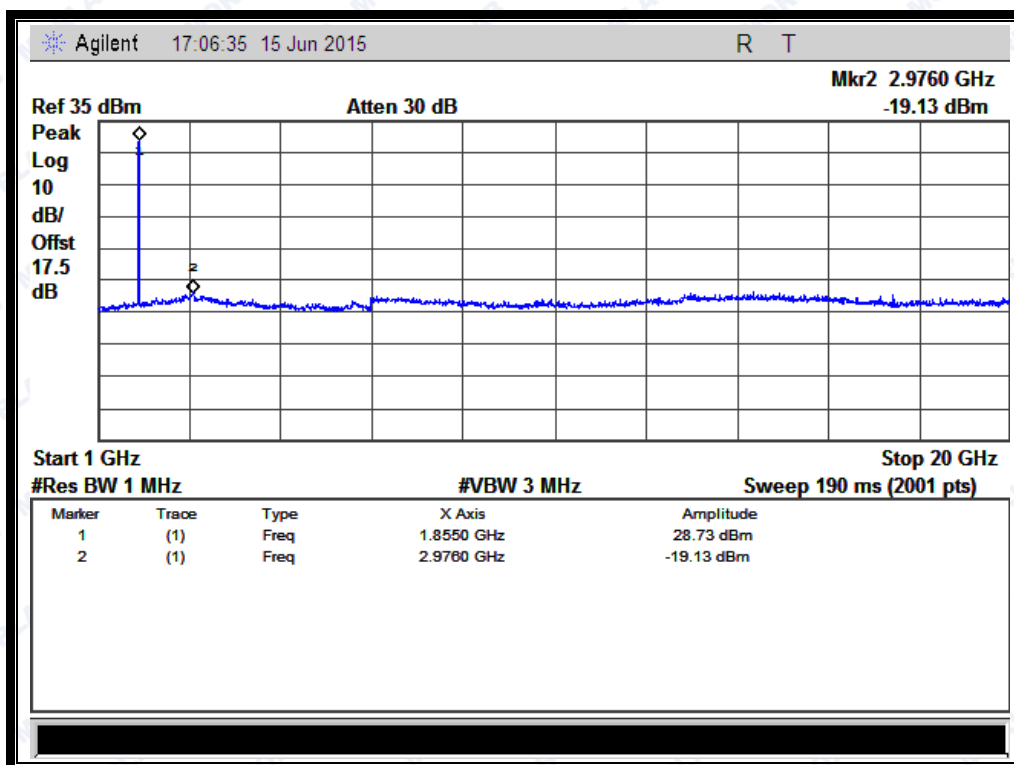
(Plot E3.1: EGPRS 850MHz Channel = 251, 1GHz to 9GHz)



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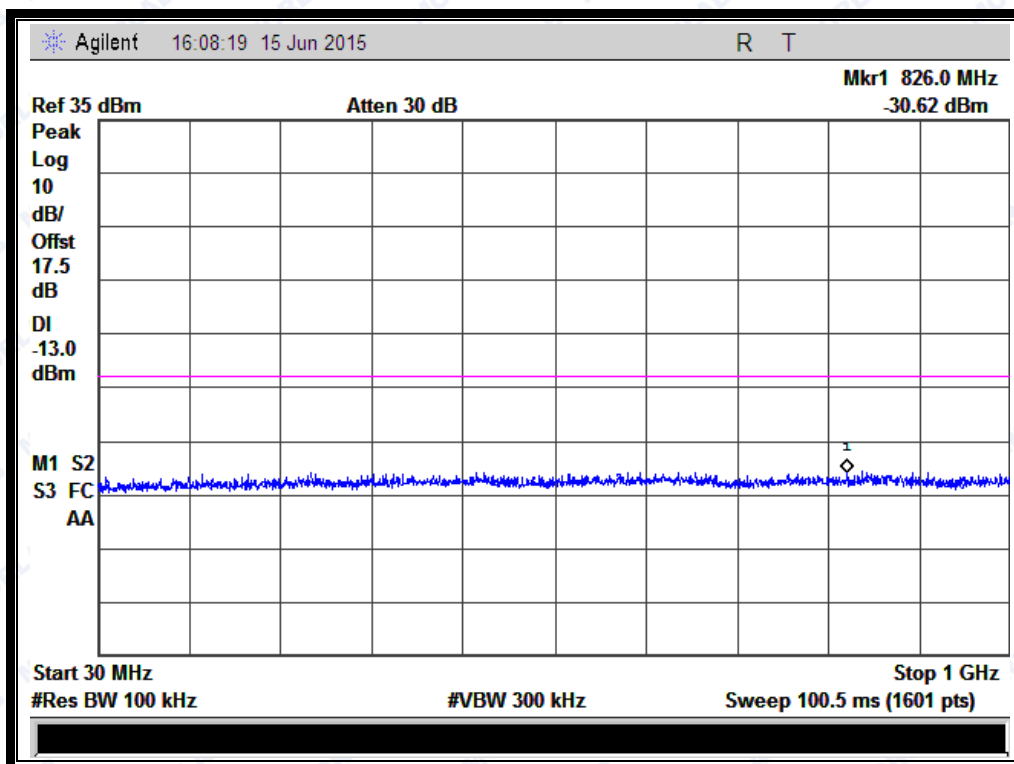
(Plot F1: EGPRS 1900MHz Channel = 512, 30MHz to 1GHz)



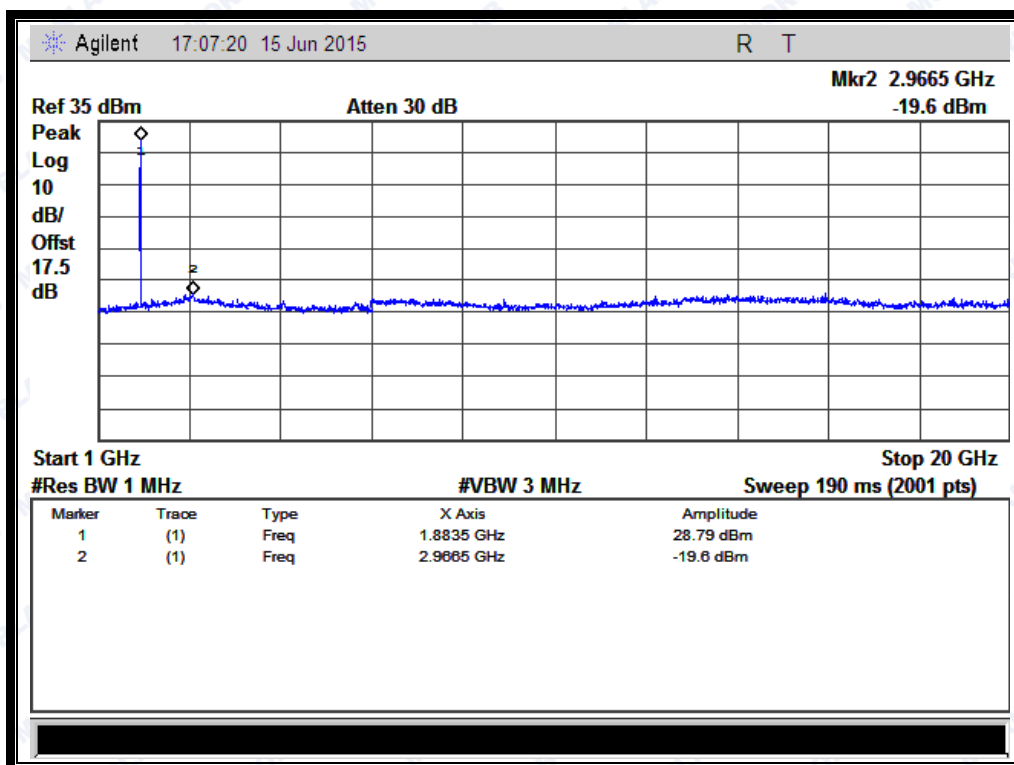
(Plot F1.1: EGPRS 1900MHz Channel = 512, 1GHz to 20GHz)



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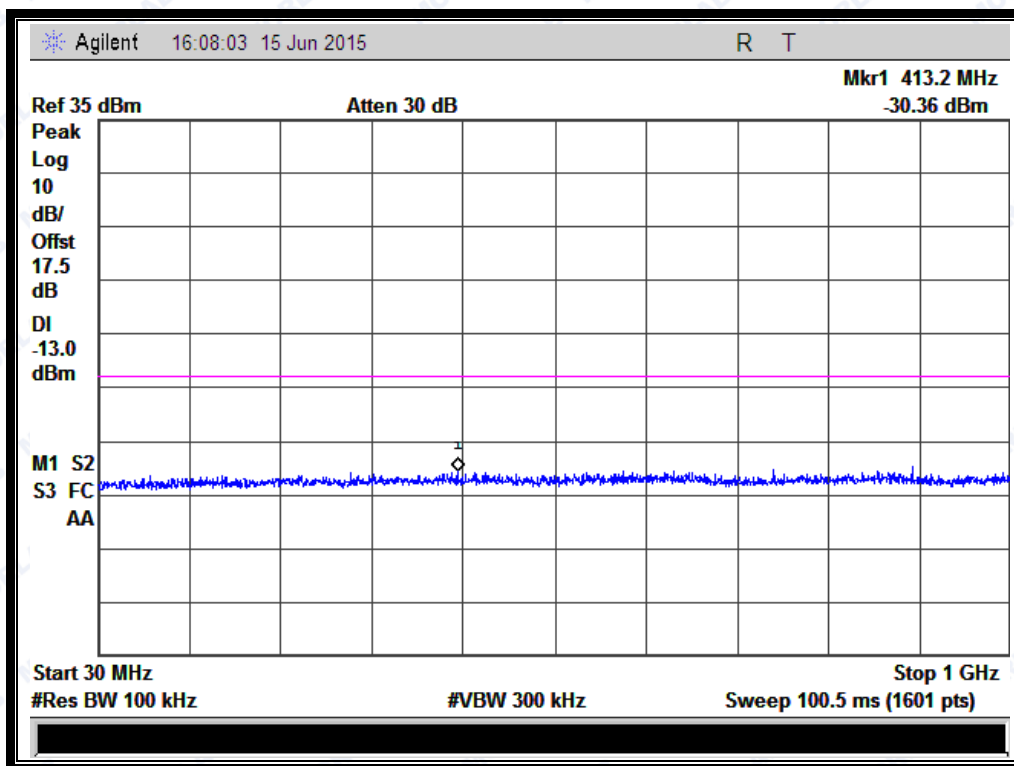
(Plot F2: EGPRS 1900MHz Channel = 661, 30MHz to 1GHz)



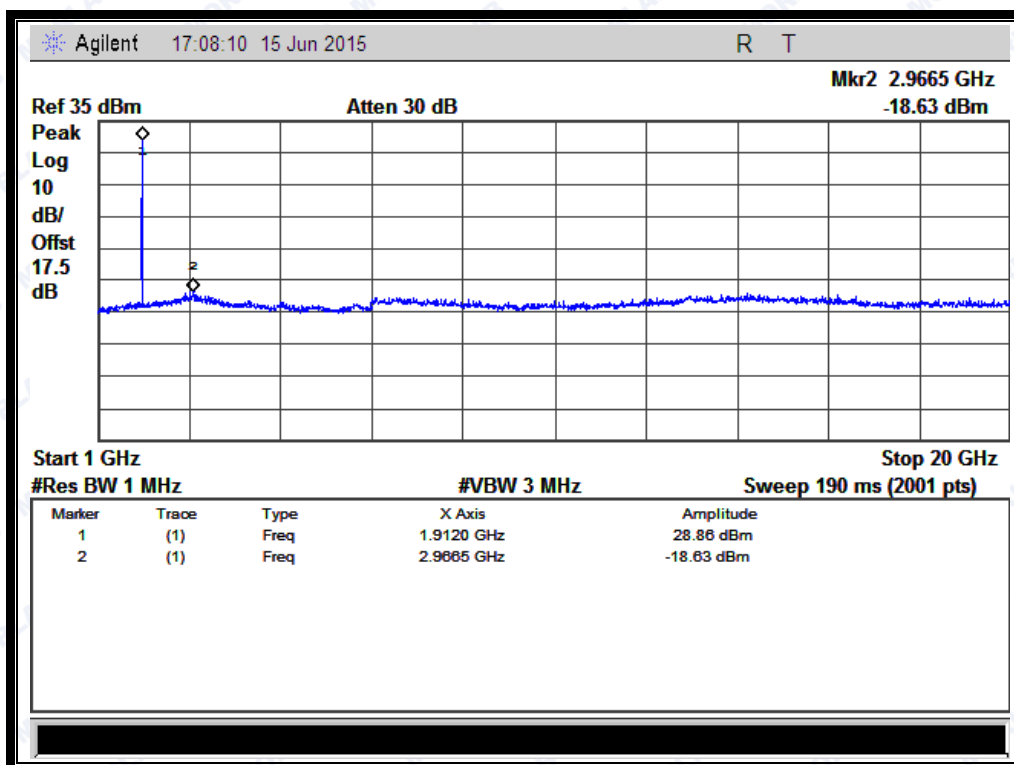
(Plot F2.1: EGPRS 1900MHz Channel = 661, 1GHz to 20GHz)



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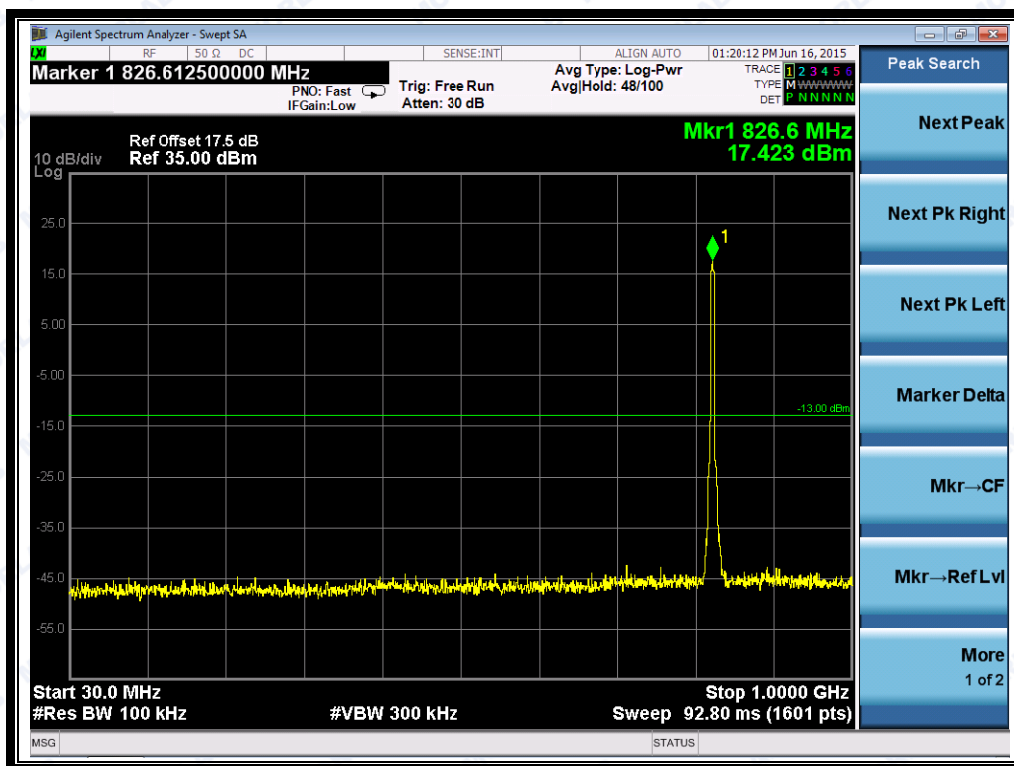
(Plot F3: EGPRS 1900MHz Channel = 810, 30MHz to 1GHz)



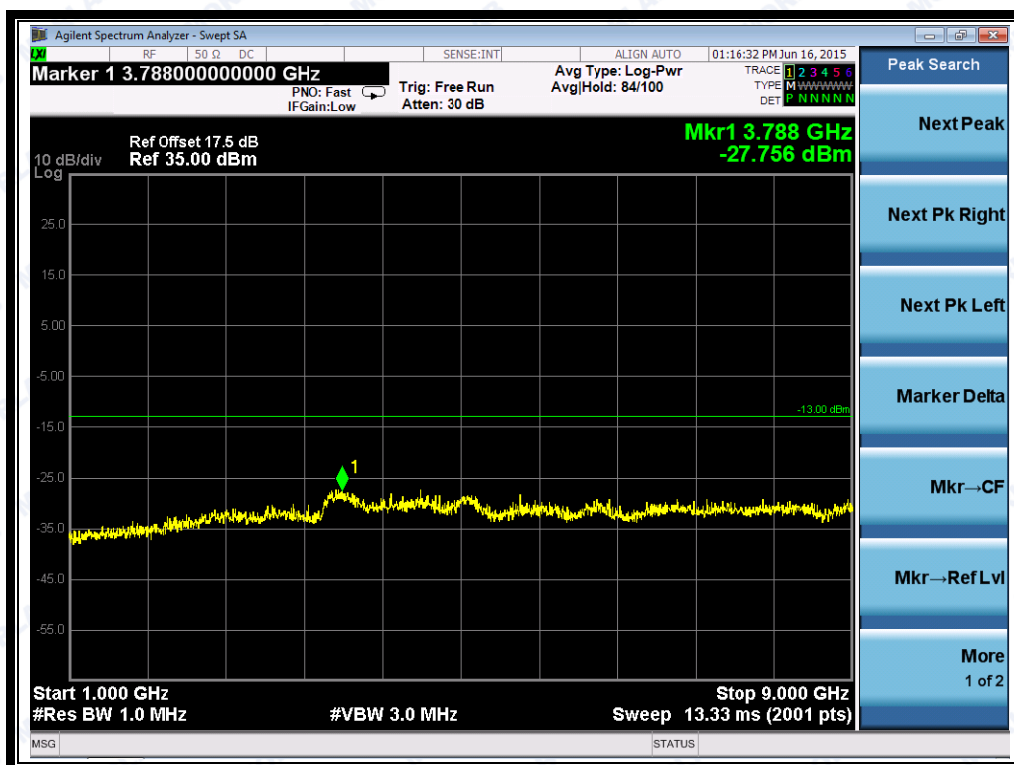
(Plot F3.1: EGPRS 1900MHz Channel = 810, 1GHz to 20GHz)



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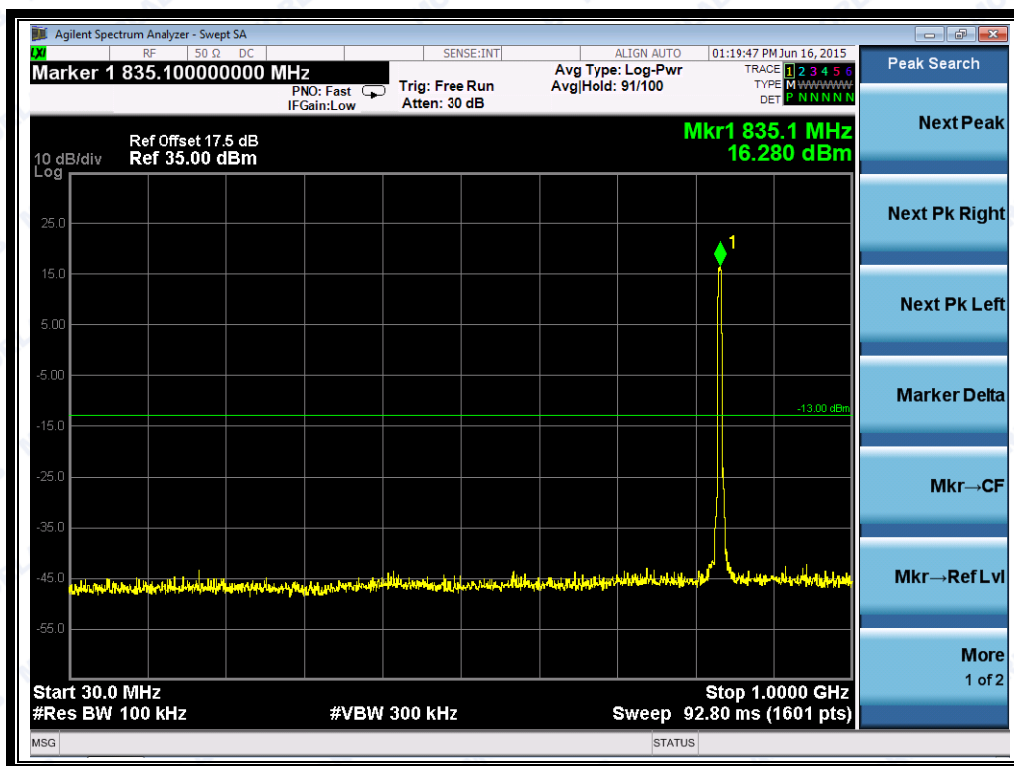
(Plot G1: WCDMA850MHz Channel = 4132, 30MHz to 1GHz)



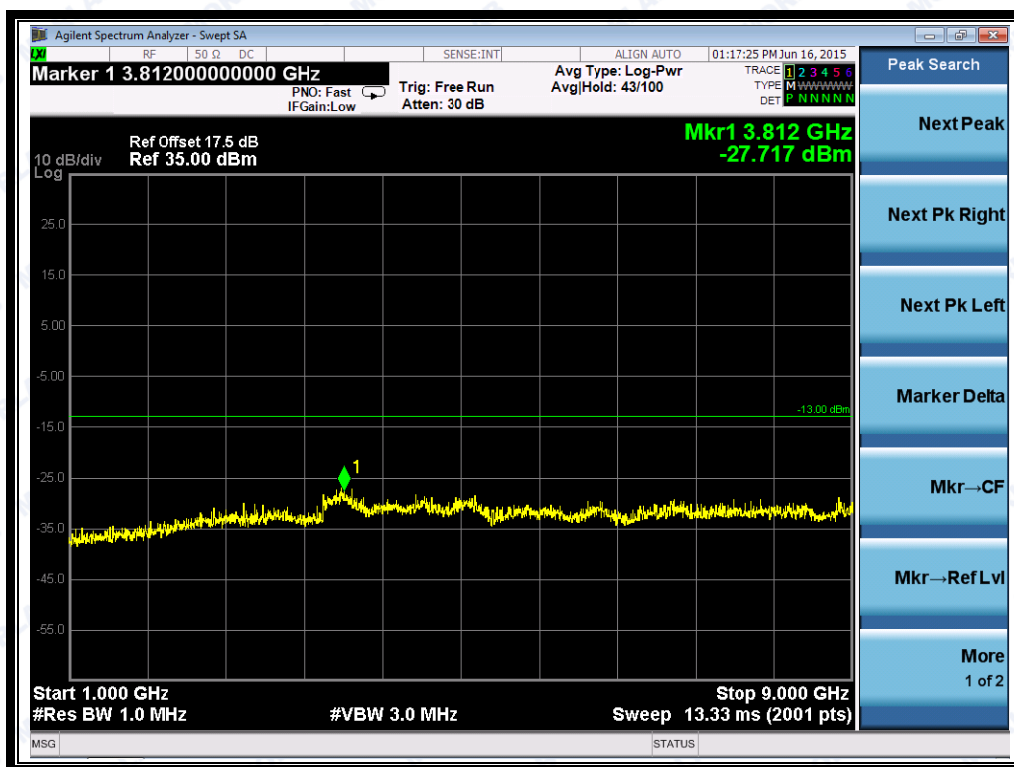
(Plot G1.1: WCDMA850MHz Channel = 4132, 1GHz to 9GHz)



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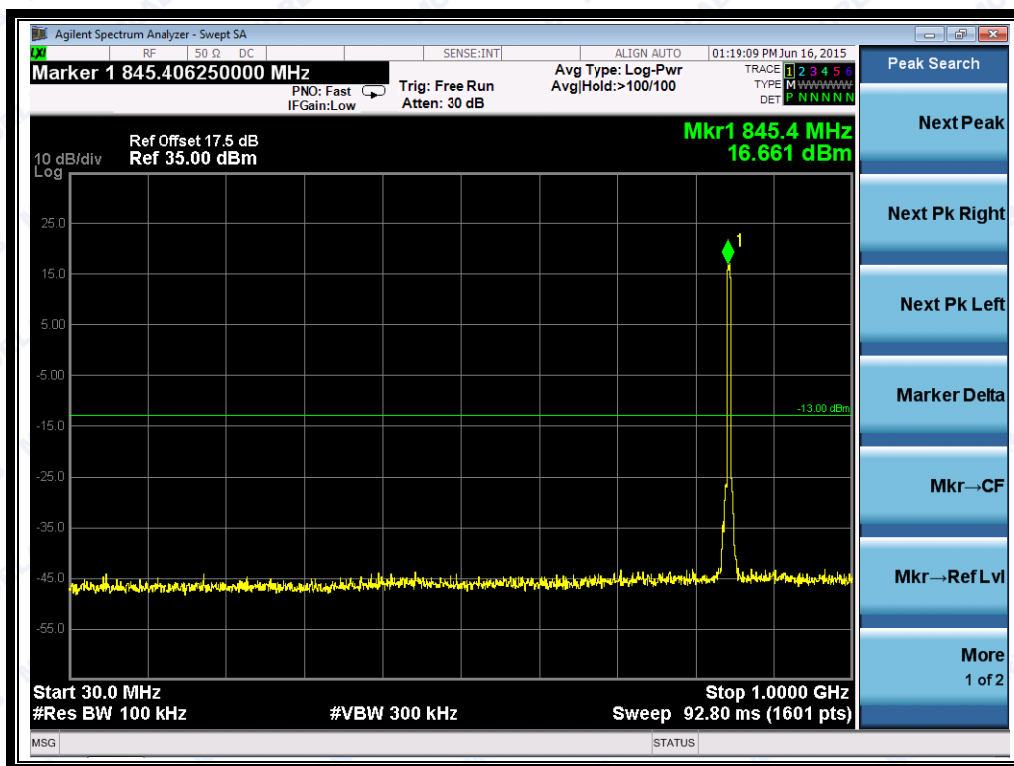
(Plot G2: WCDMA850MHz Channel = 4175, 30MHz to 1GHz)



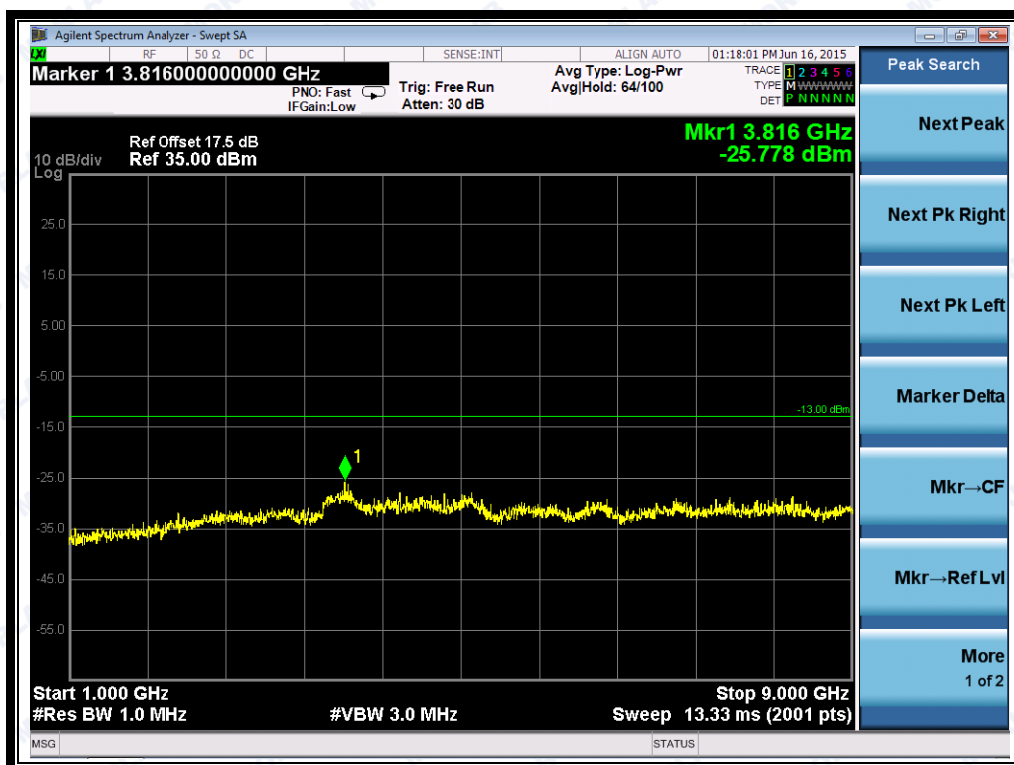
(Plot G2.1: WCDMA850MHz Channel = 4175, 1GHz to 9GHz)



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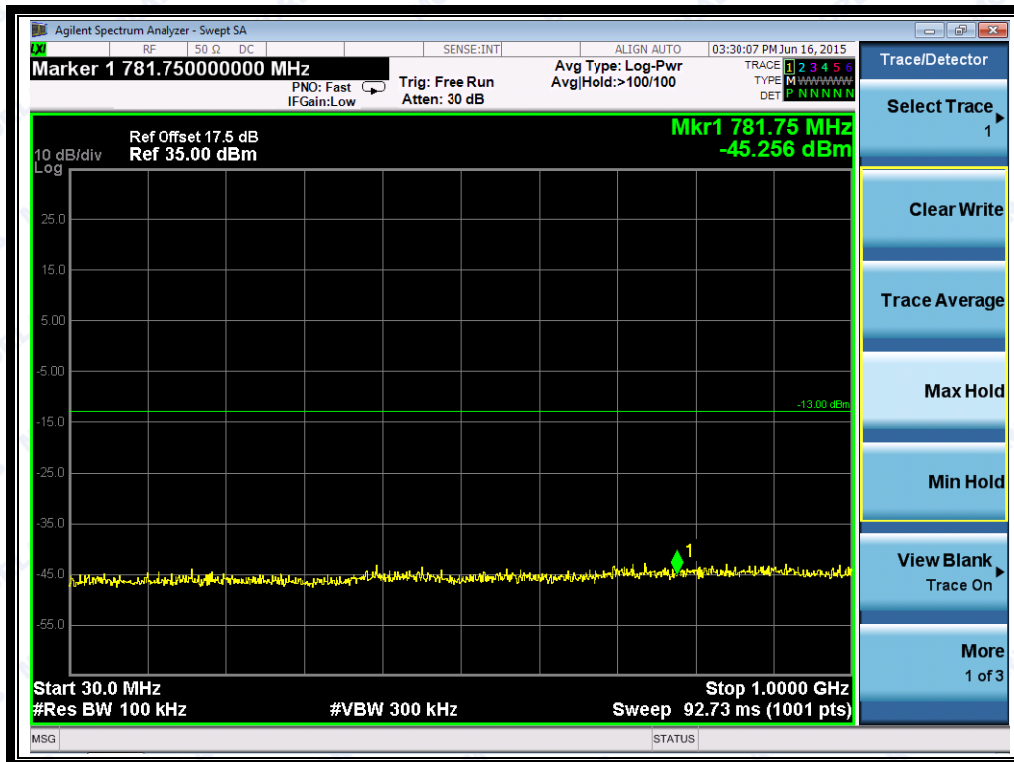
(Plot G3: WCDMA850MHz Channel = 4233, 30MHz to 1GHz)



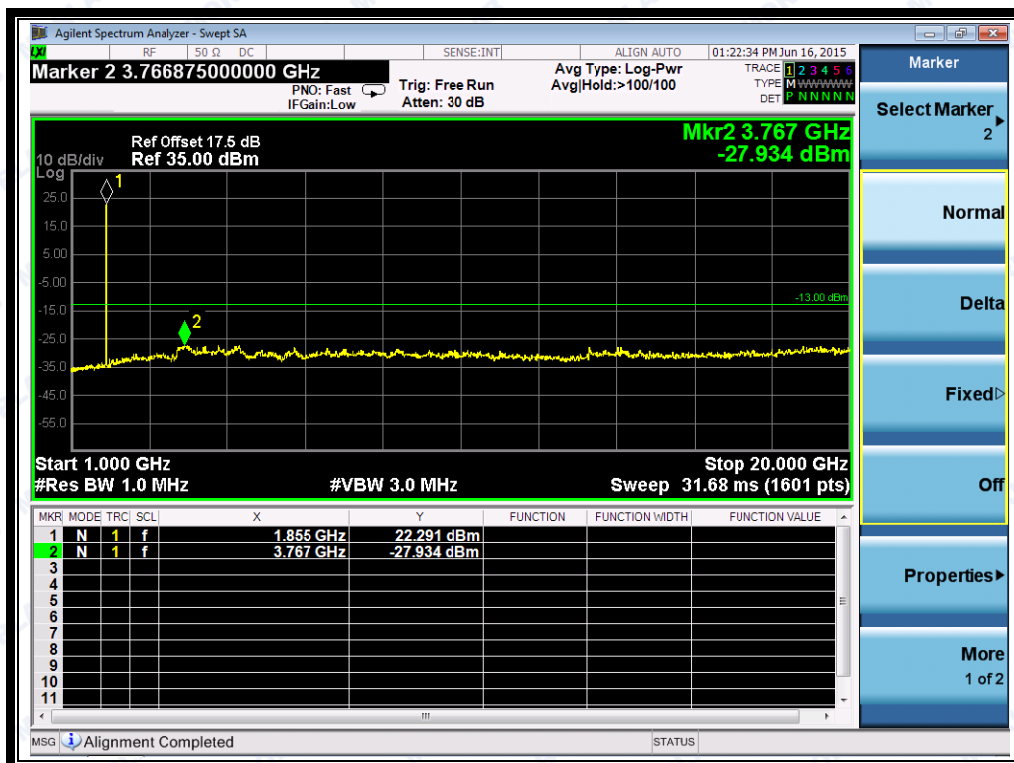
(Plot G3.1: WCDMA850MHz Channel = 4233, 1GHz to 9GHz)



REPORT No.: SZ15060079W01



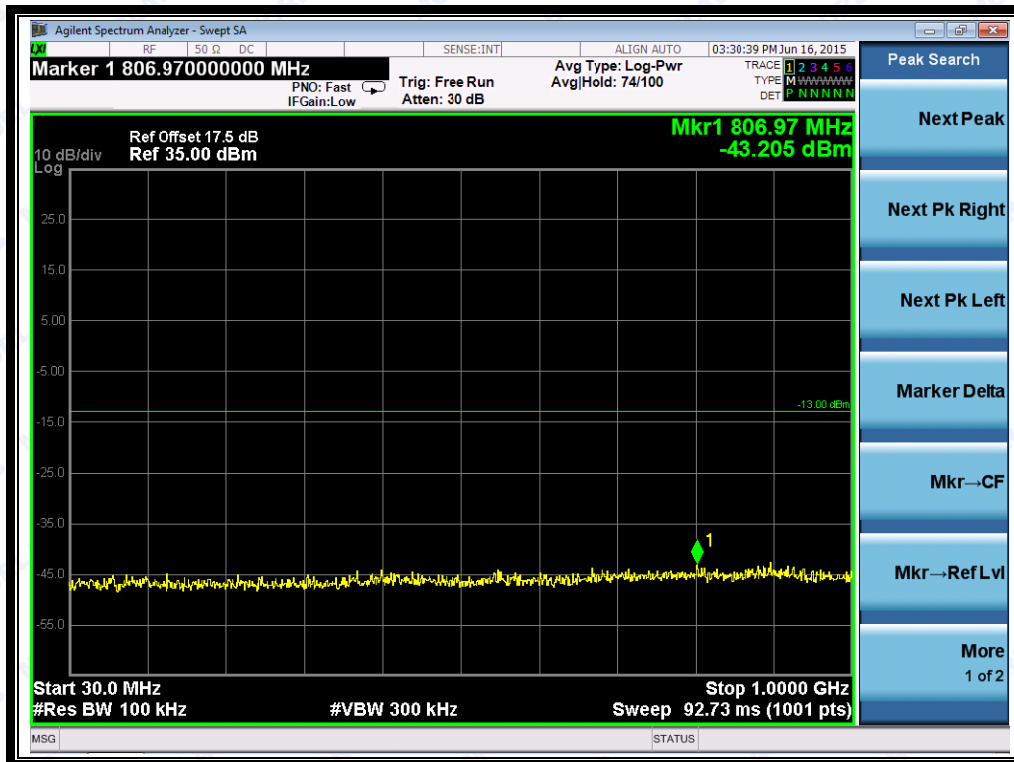
(Plot H1: WCDMA1900MHz Channel = 9262, 30MHz to 1GHz)



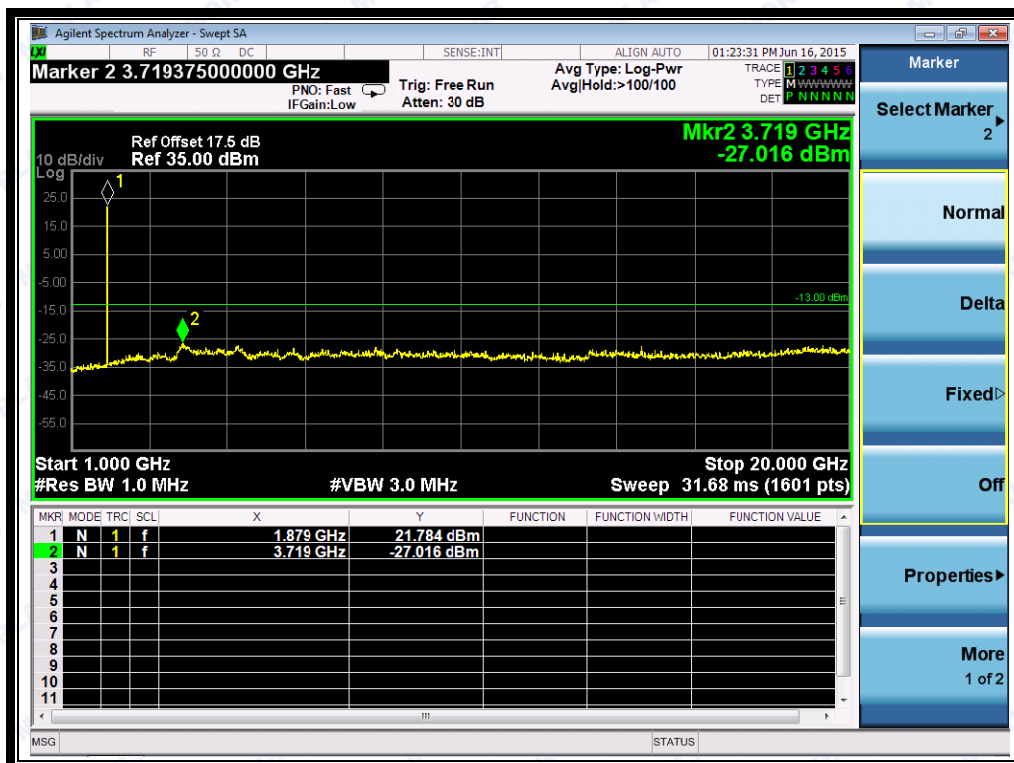
(Plot H1.1: WCDMA1900MHz Channel = 9262, 1GHz to 20GHz)



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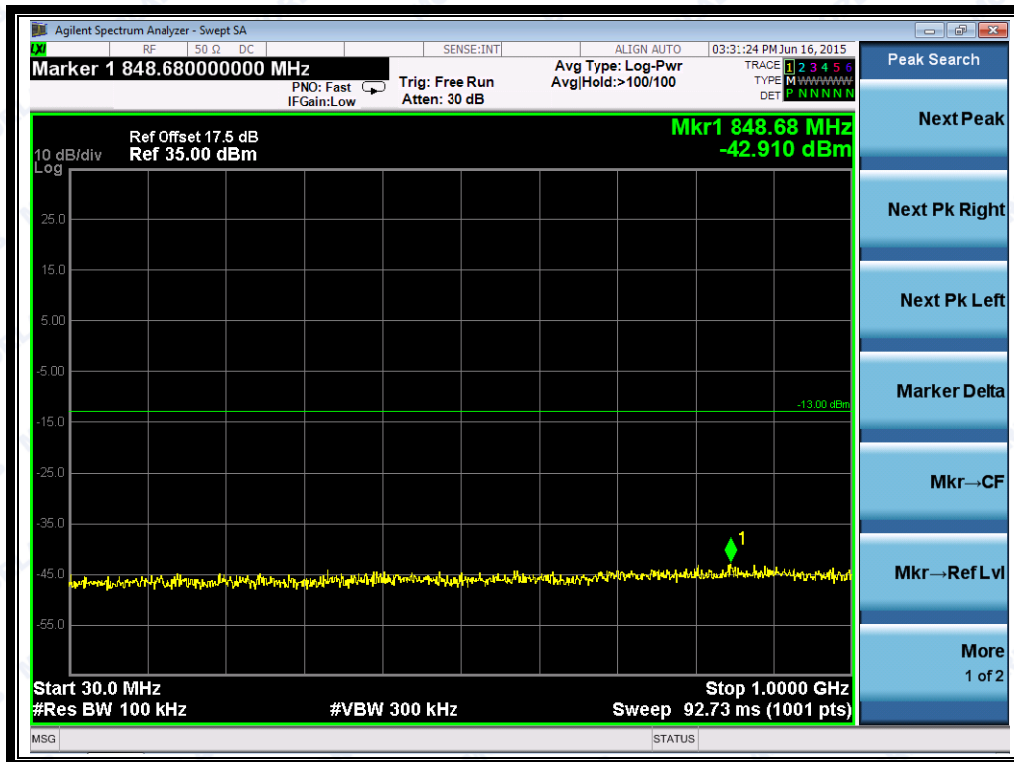
(Plot H2: WCDMA1900MHz Channel = 9400, 30MHz to 1GHz)



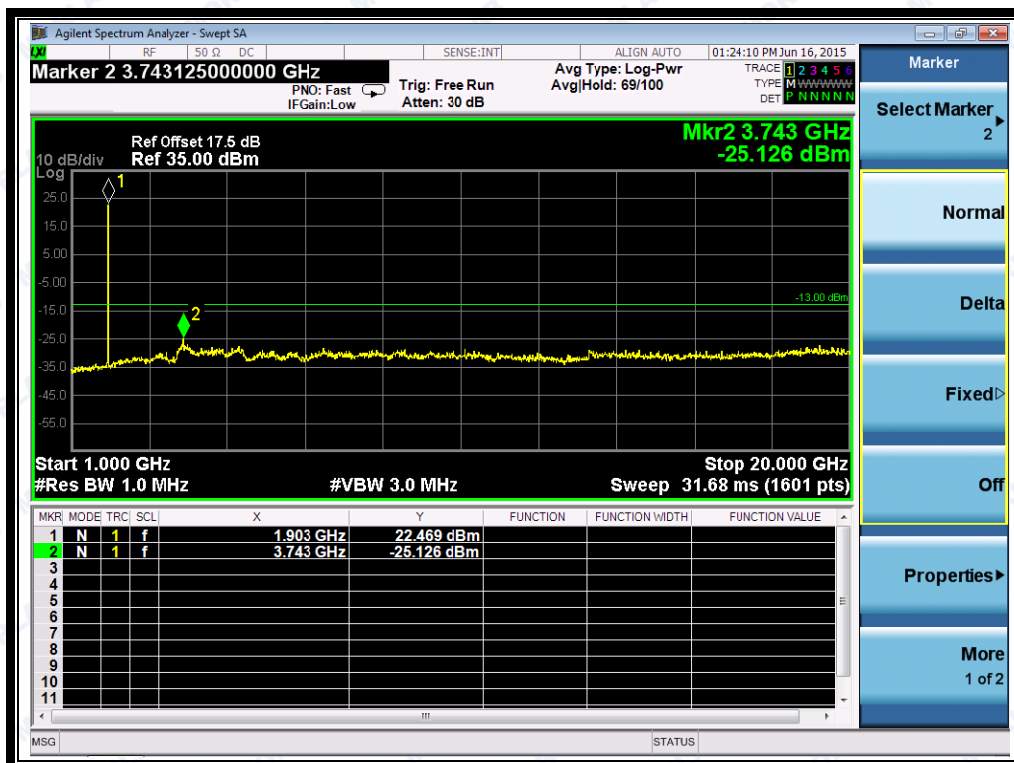
(Plot H2.1: WCDMA1900MHz Channel = 9400, 1GHz to 20GHz)



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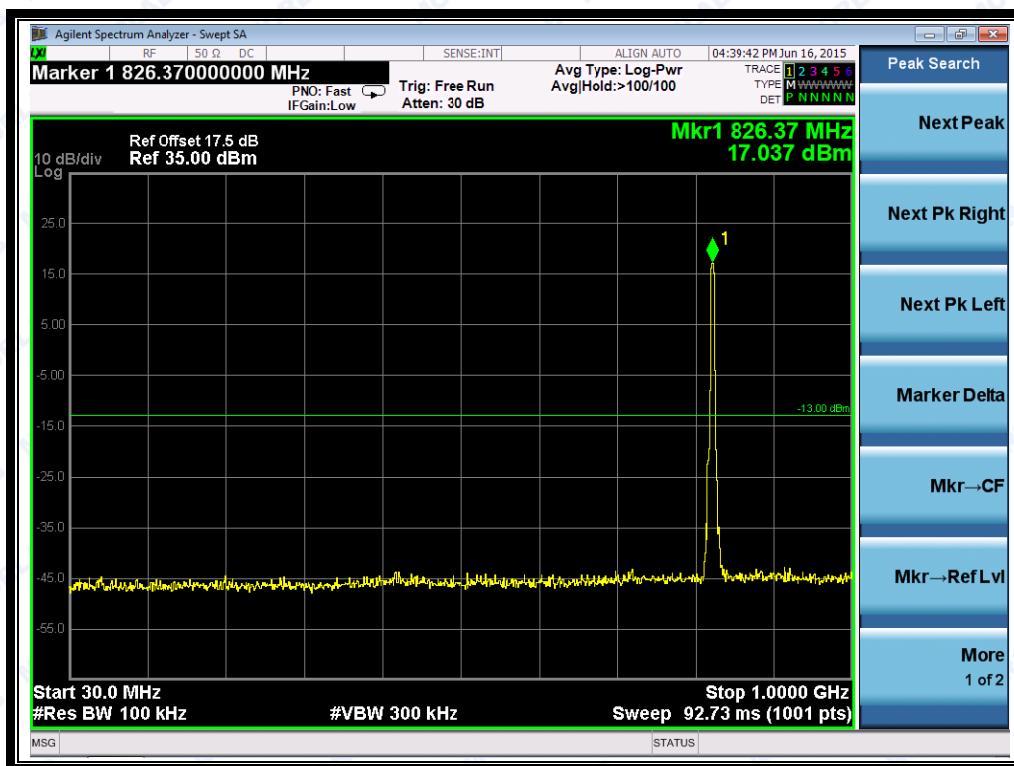
(Plot H3: WCDMA1900MHz Channel = 9538, 30MHz to 1GHz)



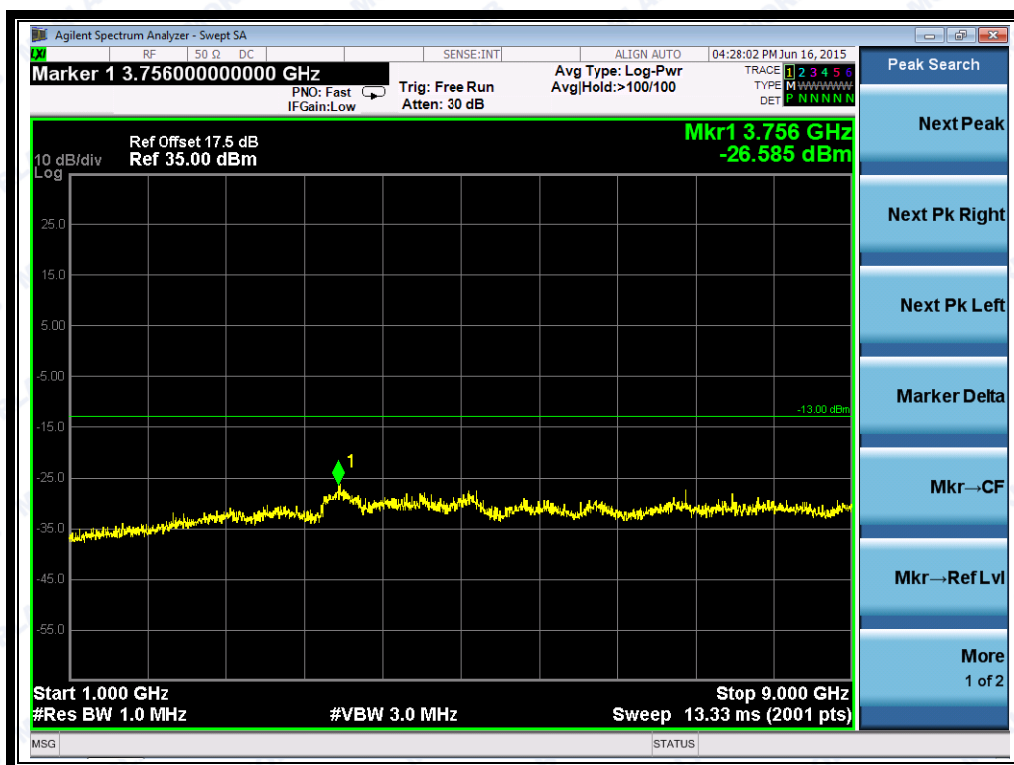
(Plot H3.1: WCDMA1900MHz Channel = 9538 1GHz to 20GHz)



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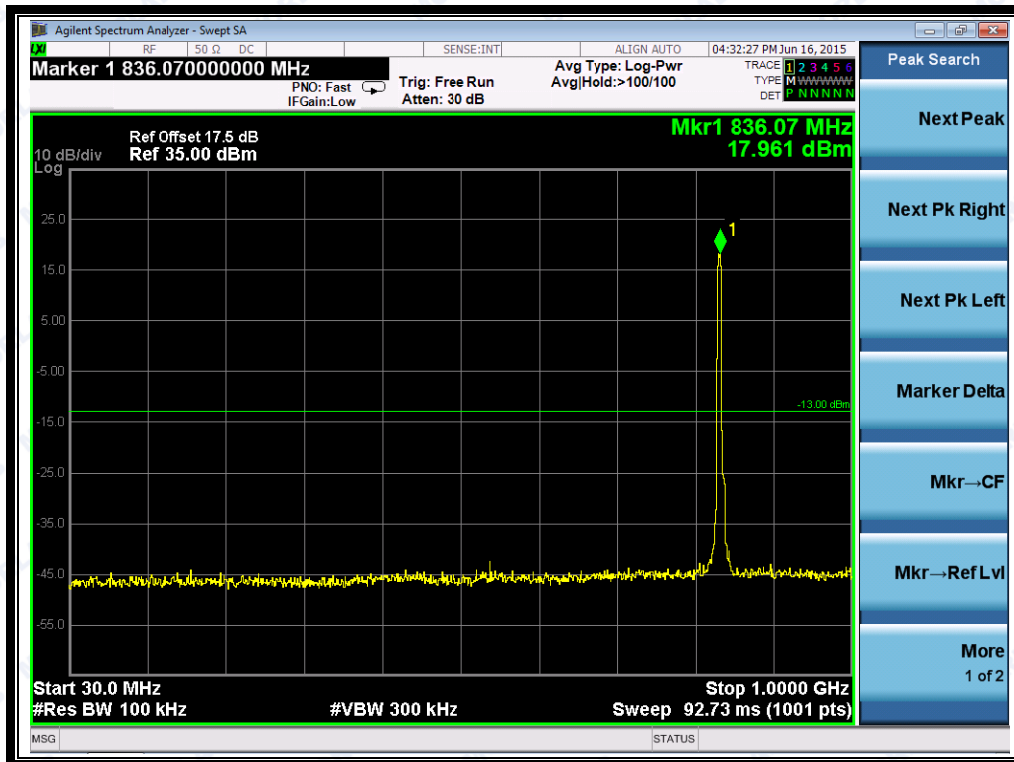
(Plot I1: HSDPA 850MHz Channel = 4132, 30MHz to 1GHz)



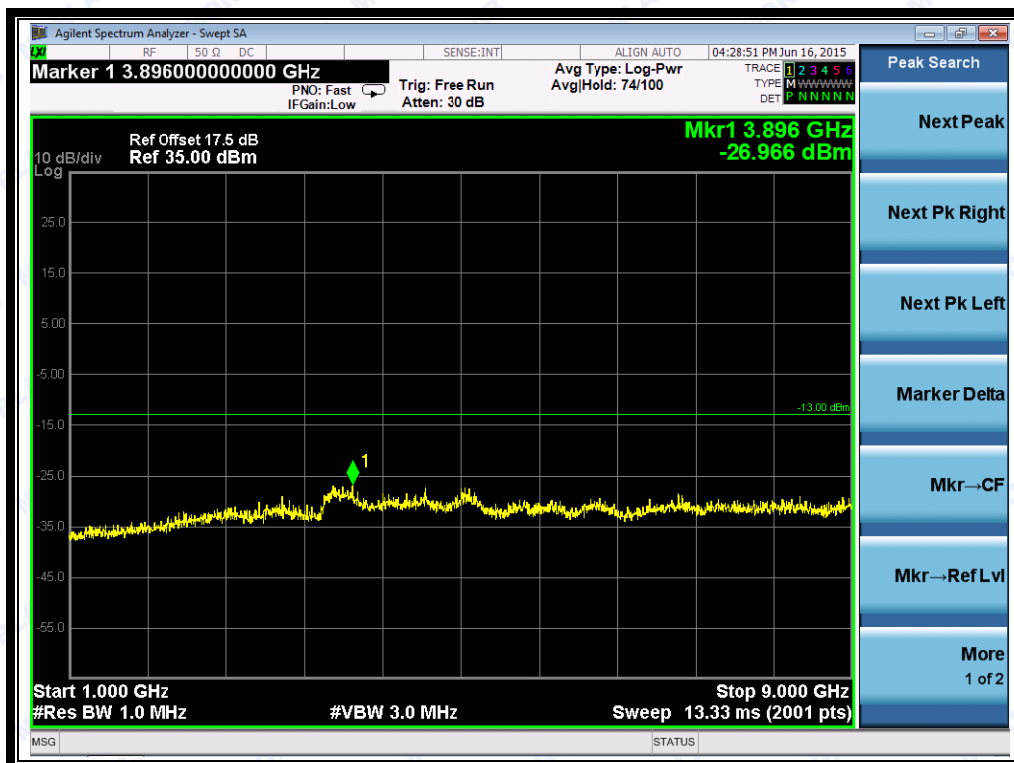
(Plot I1.1: HSDPA 850MHz Channel = 4132, 1GHz to 9GHz)



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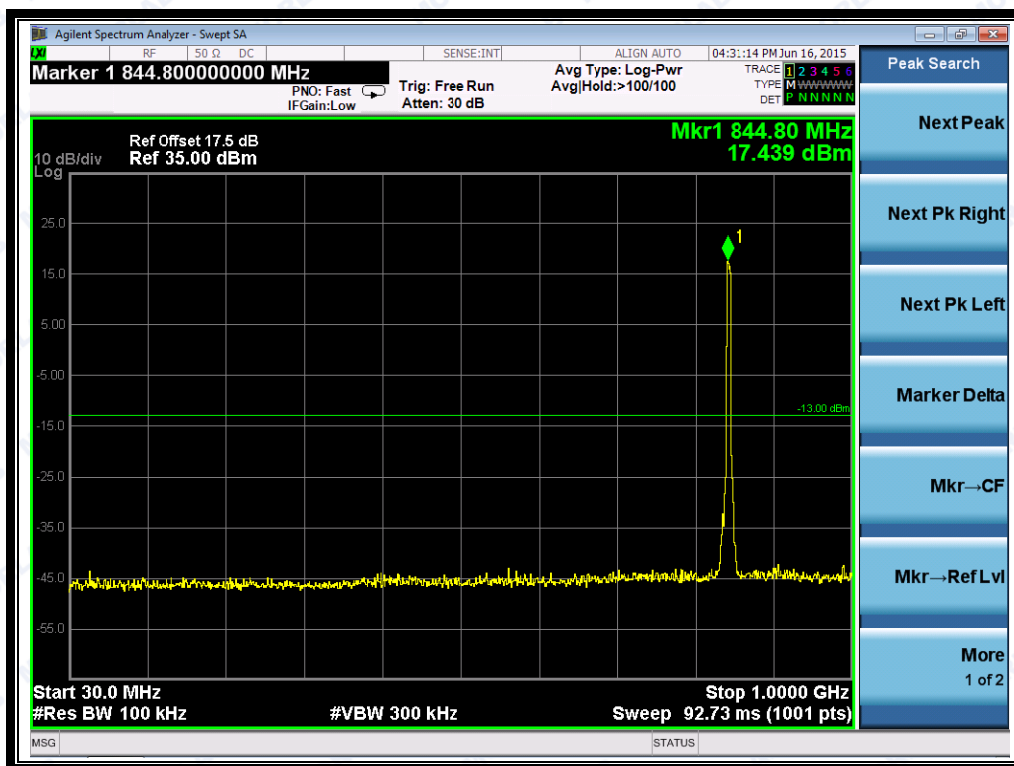
(Plot I2: HSDPA 850MHz Channel = 4175, 30MHz to 1GHz)



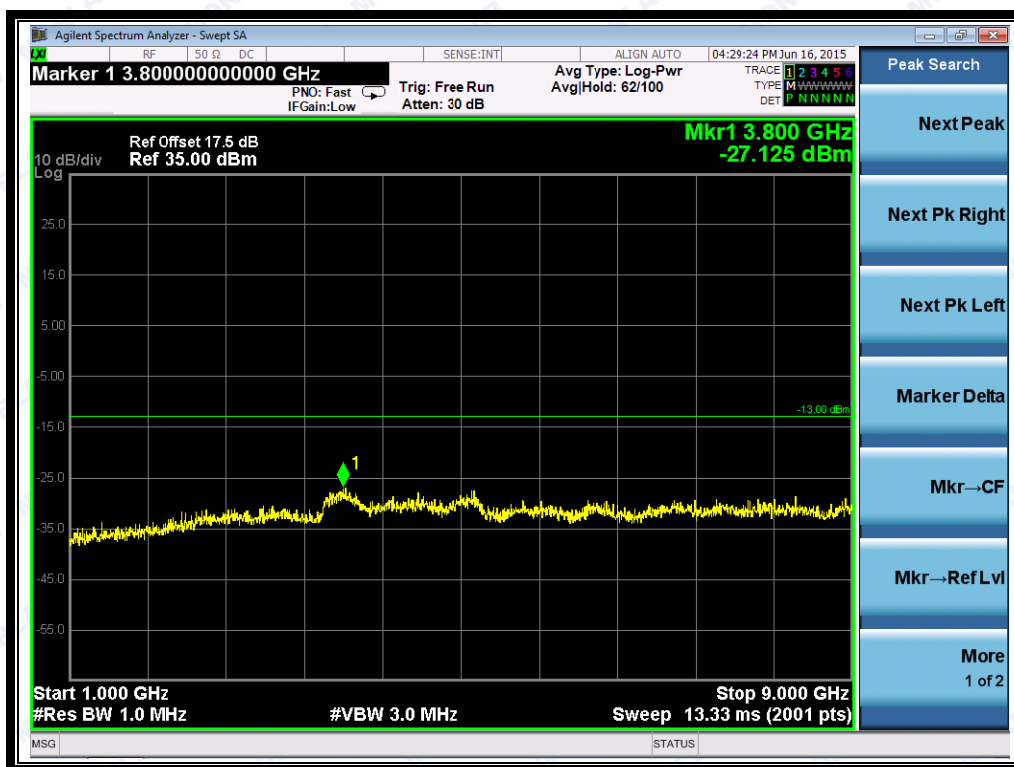
(Plot I2.1: HSDPA 850MHz Channel = 4175, 1GHz to 9GHz)



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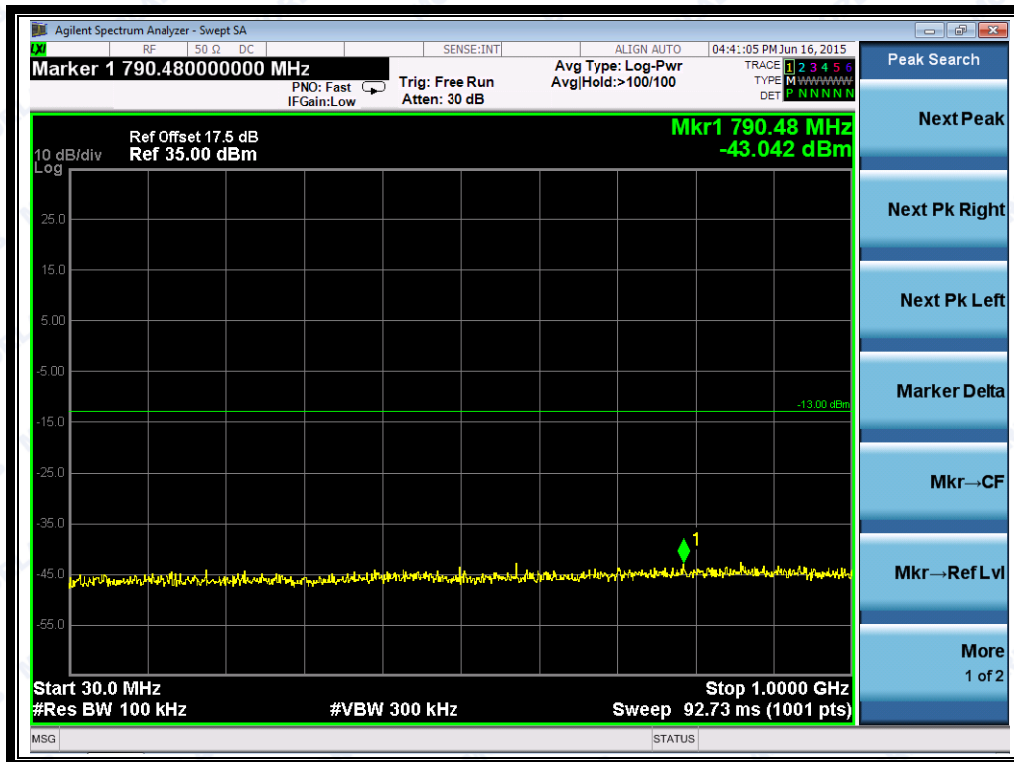
(Plot I3: HSDPA 850MHz Channel = 4233, 30MHz to 1GHz)



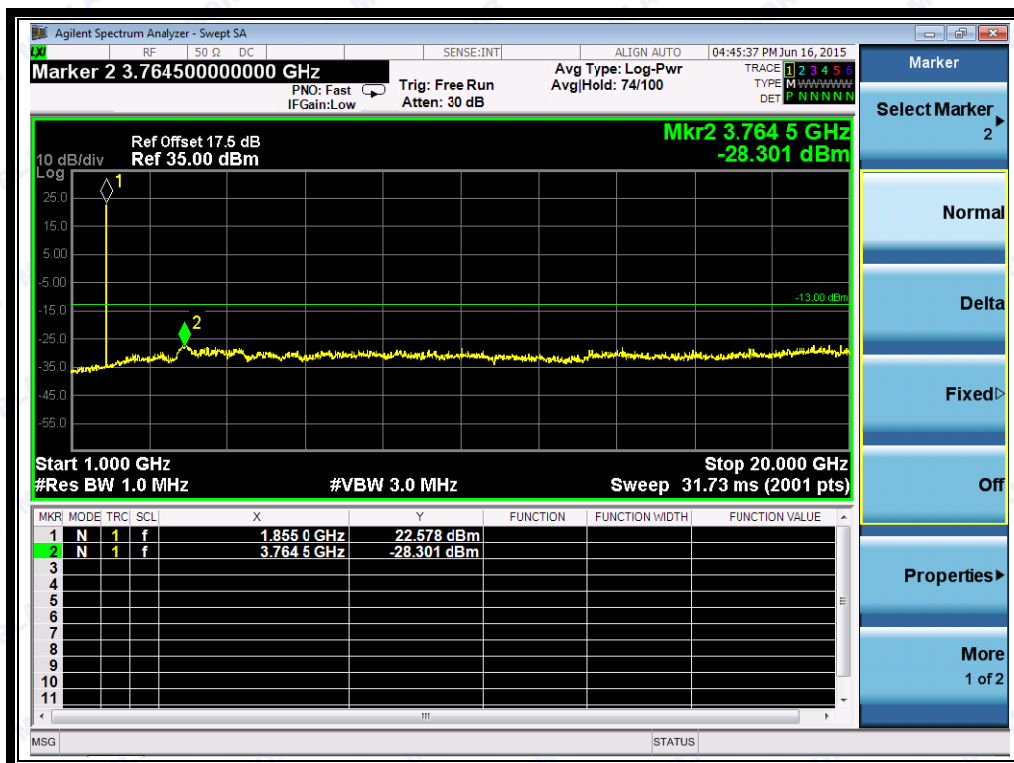
(Plot I3.1: HSDPA 850MHz Channel = 4233, 1GHz to 9GHz)



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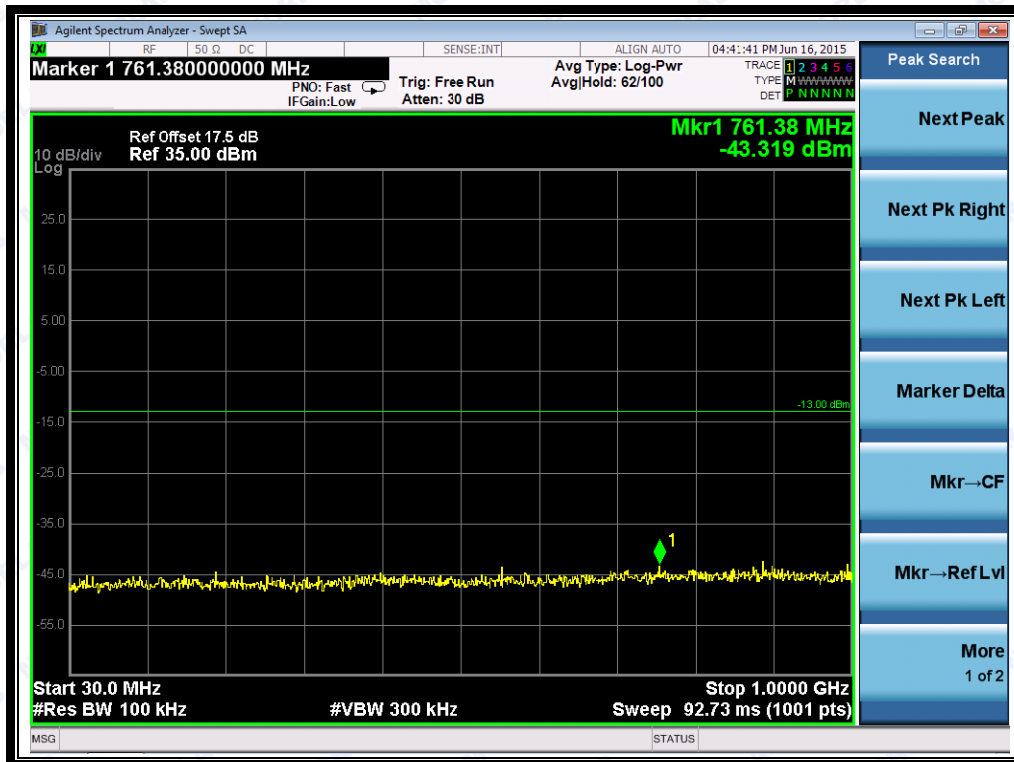
(Plot J1: HSDPA 1900MHz Channel = 9262, 30MHz to 1GHz)



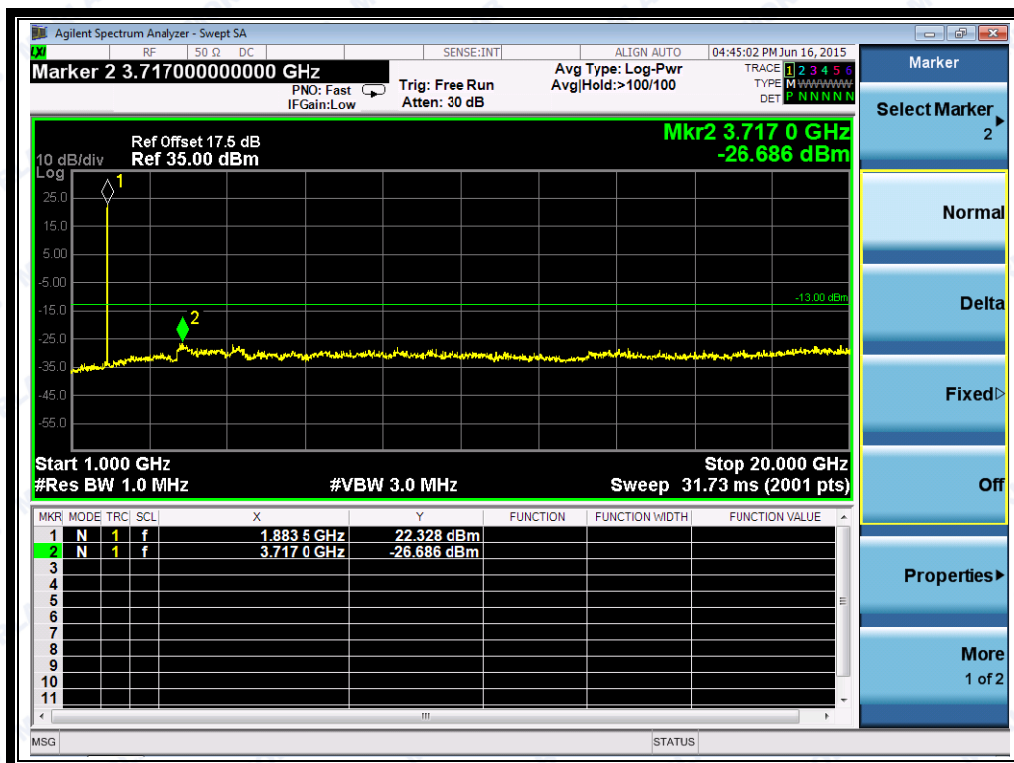
(Plot J1.1: HSDPA 1900MHz Channel = 9262, 1GHz to 20GHz)



REPORT No.: SZ15060079W01



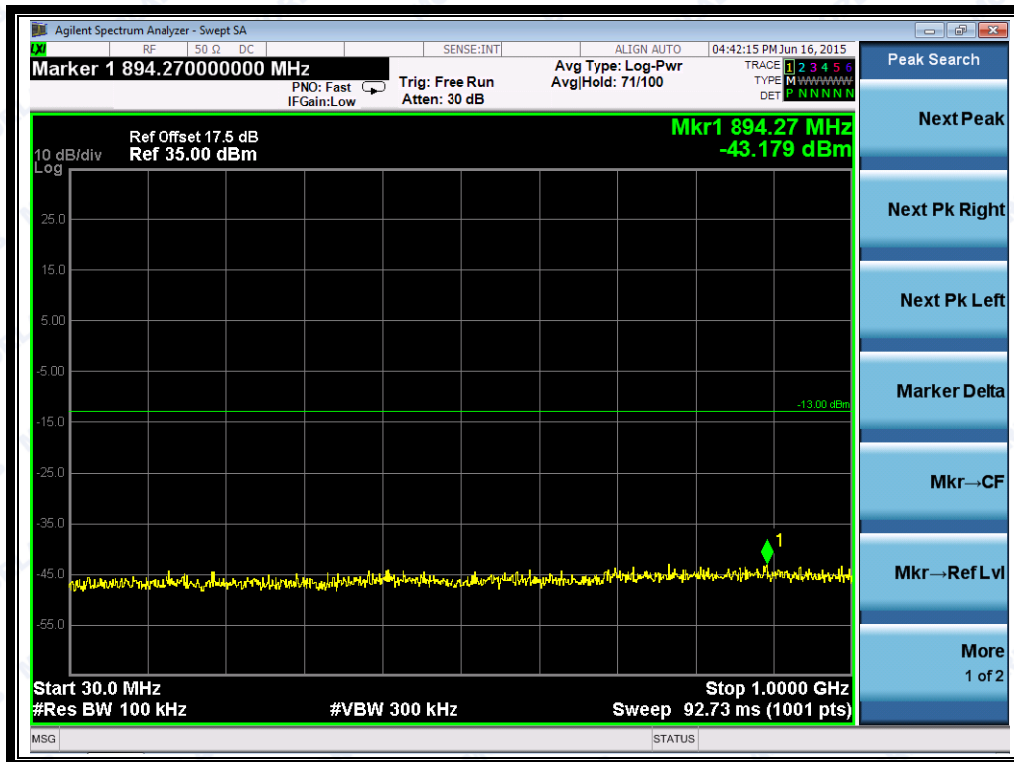
(Plot J2: HSDPA 1900MHz Channel = 9400, 30MHz to 1GHz)



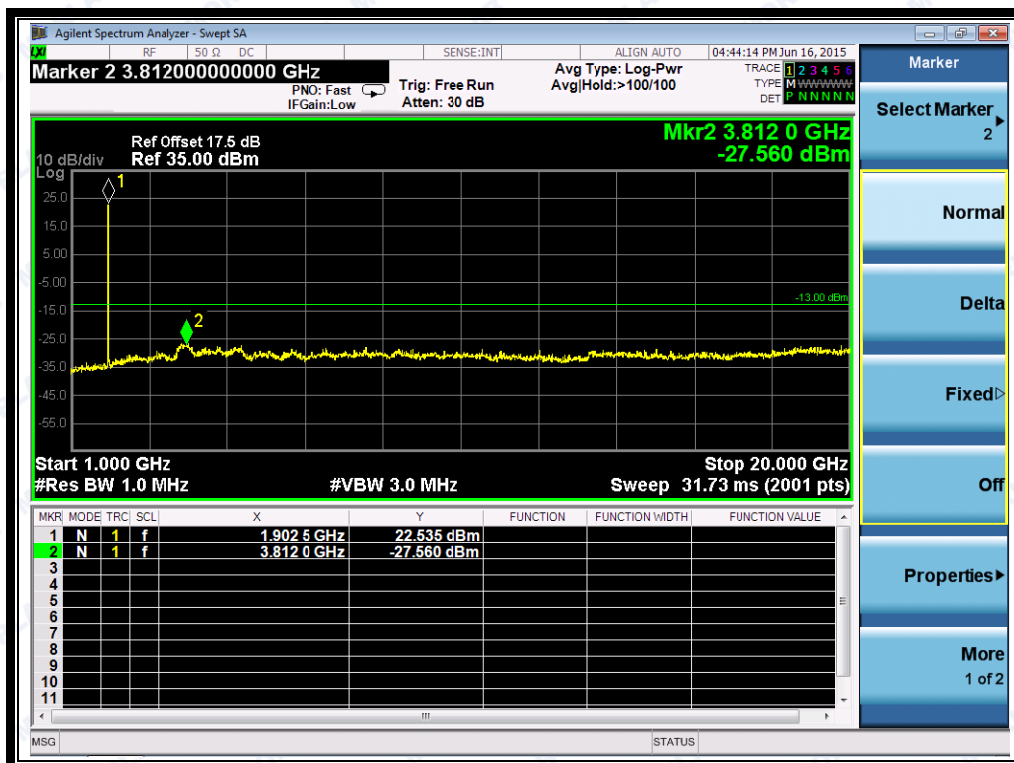
(Plot J2.1: HSDPA1900MHz Channel = 9400, 1GHz to 20GHz)



REPORT No.: SZ15060079W01



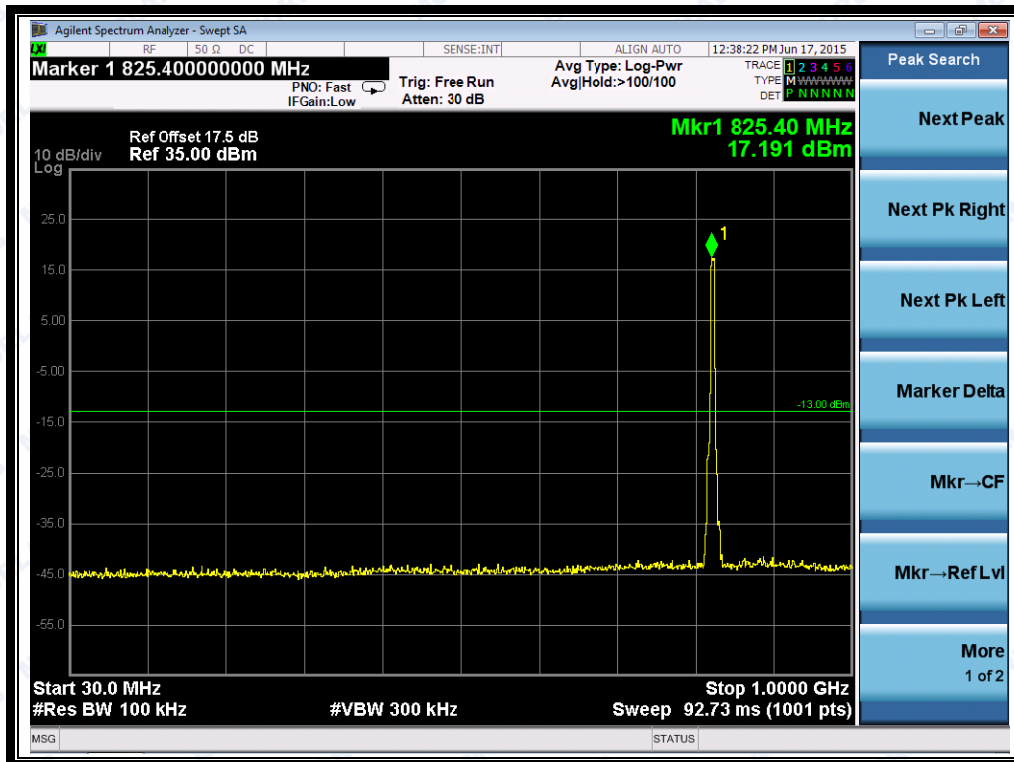
(Plot J3: HSDPA1900MHz Channel = 9538, 30MHz to 1GHz)



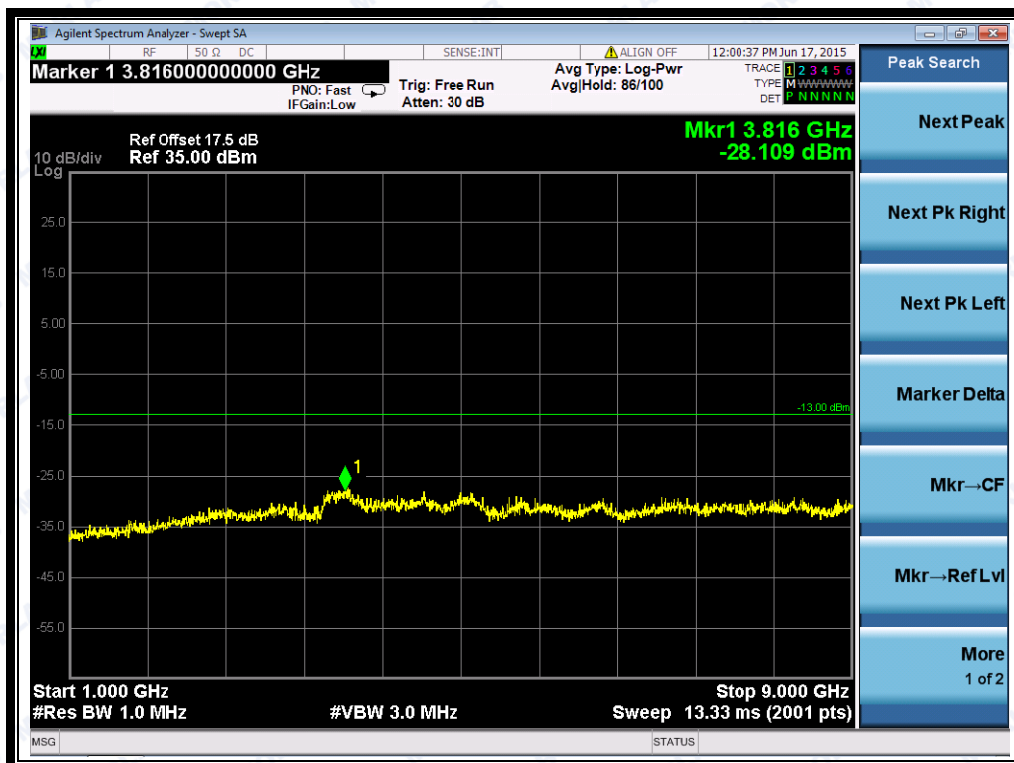
(Plot J3.1: HSDPA1900MHz Channel = 9538 1GHz to 20GHz)



REPORT No.: SZ15060079W01



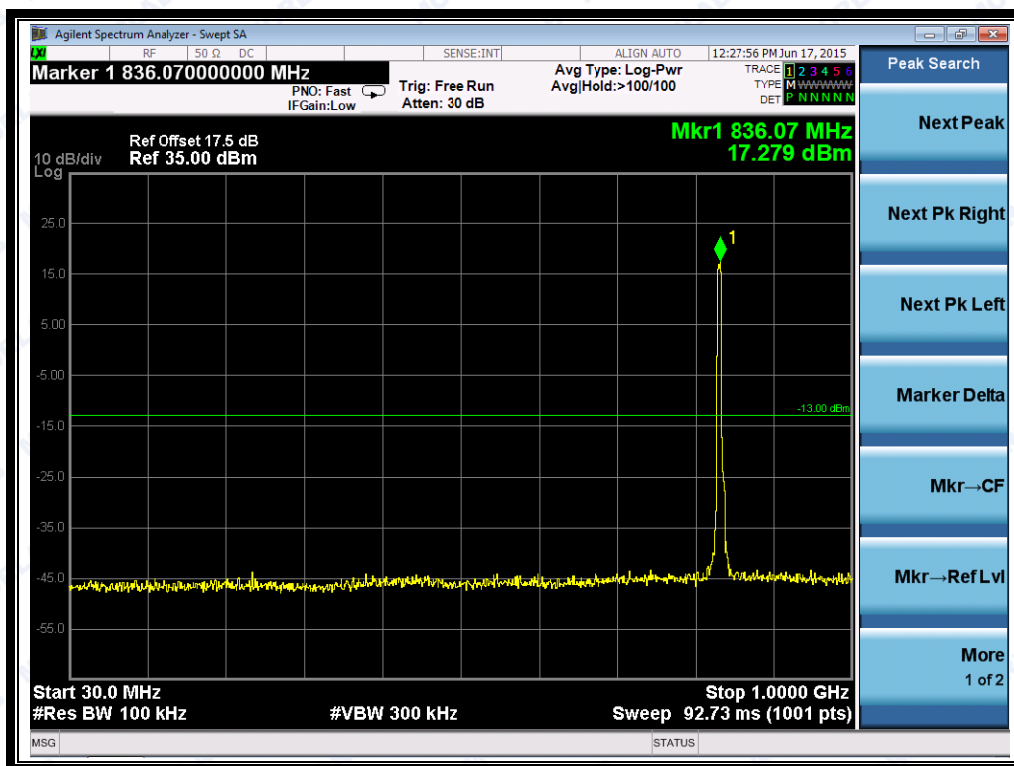
(Plot K1: HSUPA 850MHz Channel = 4132, 30MHz to 1GHz)



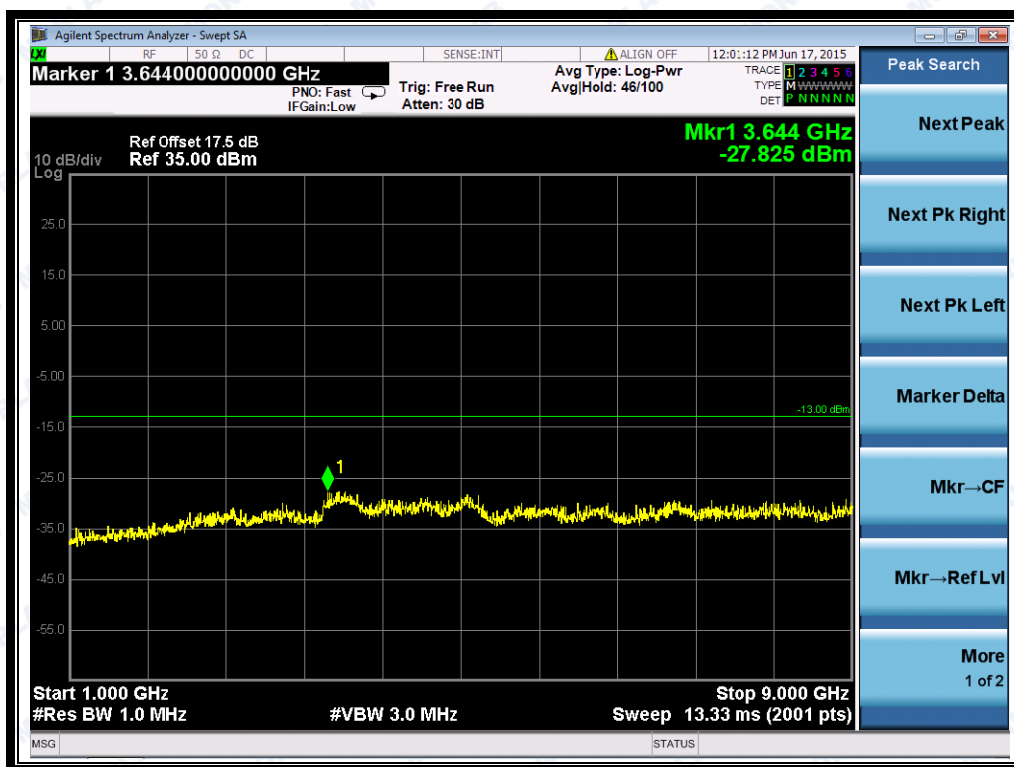
(Plot K1.1: HSUPA 850MHz Channel = 4132, 1GHz to 9GHz)



REPORT No.: SZ15060079W01



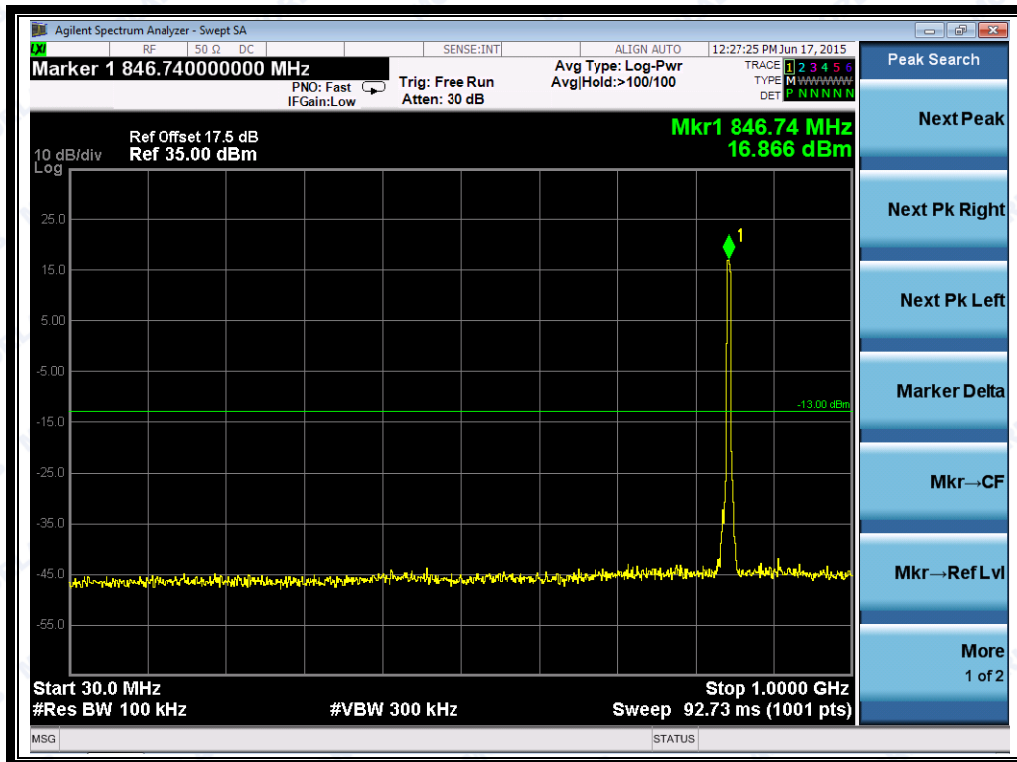
(Plot K2: HSUPA 850MHz Channel = 4175, 30MHz to 1GHz)



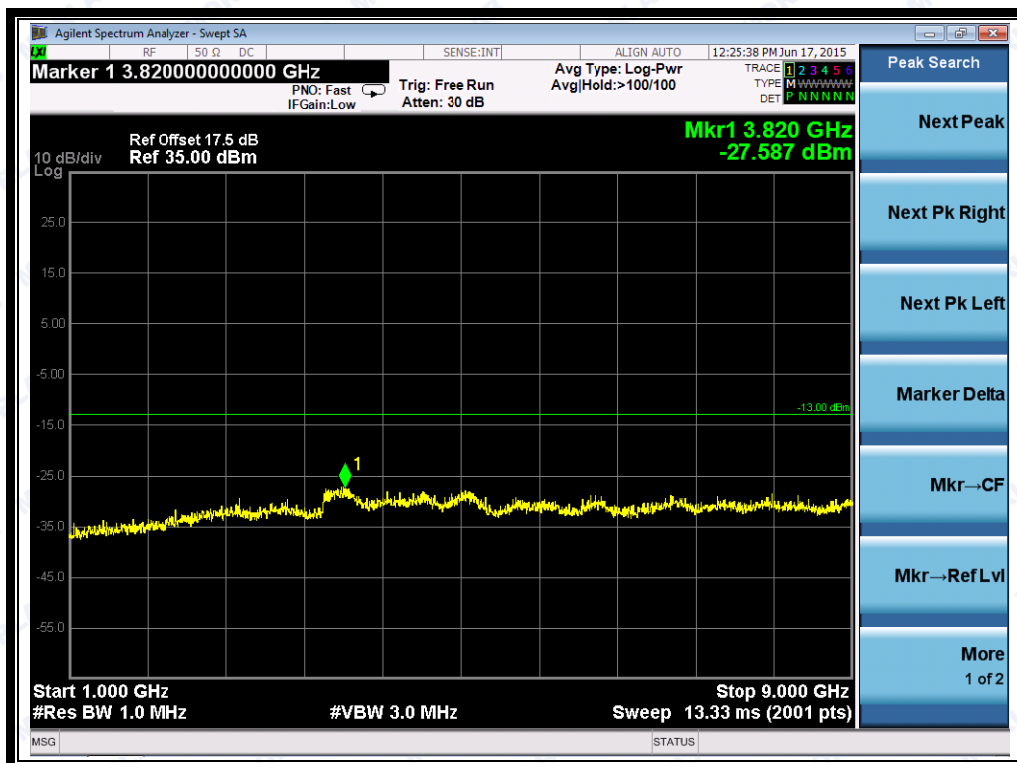
(Plot K2.1: HSUPA 850MHz Channel = 4175, 1GHz to 9GHz)



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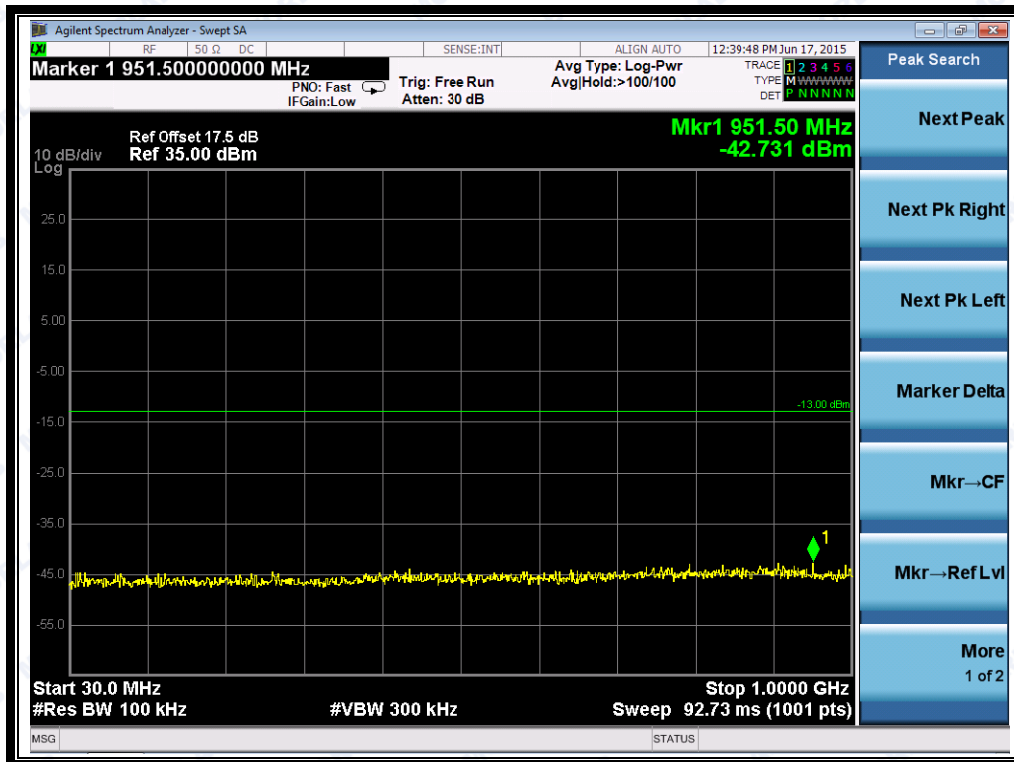
(Plot K3: HSUPA 850MHz Channel = 4233, 30MHz to 1GHz)



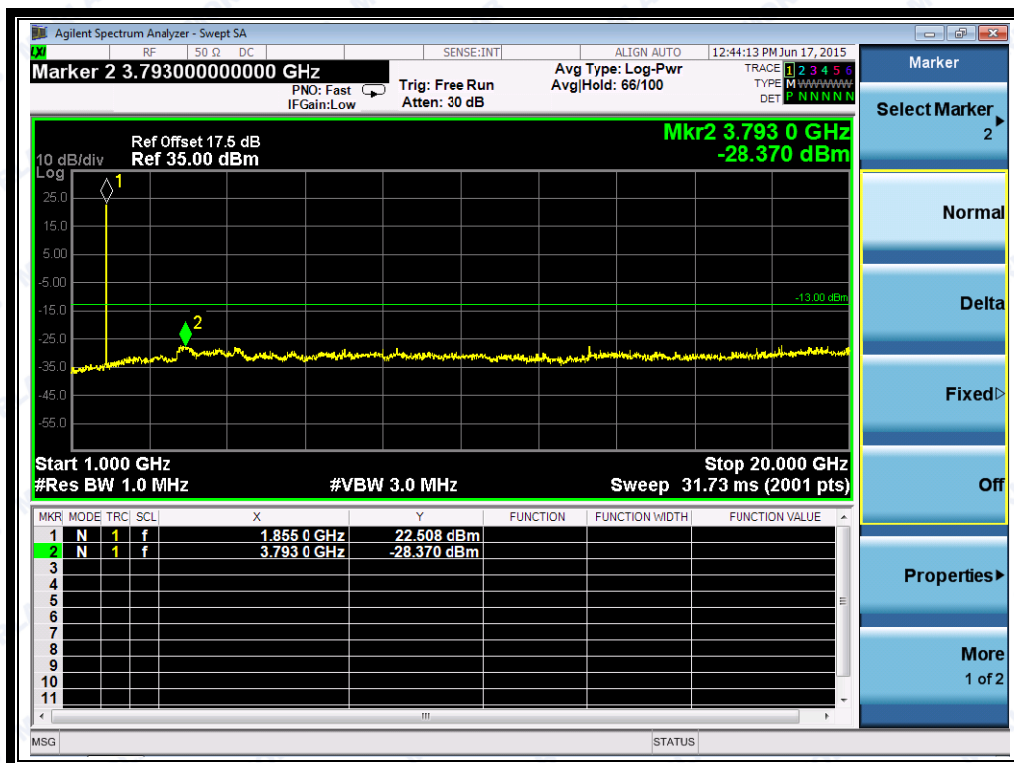
(Plot K3.1: HSUPA 850MHz Channel = 4233, 1GHz to 9GHz)



REPORT No.: SZ15060079W01



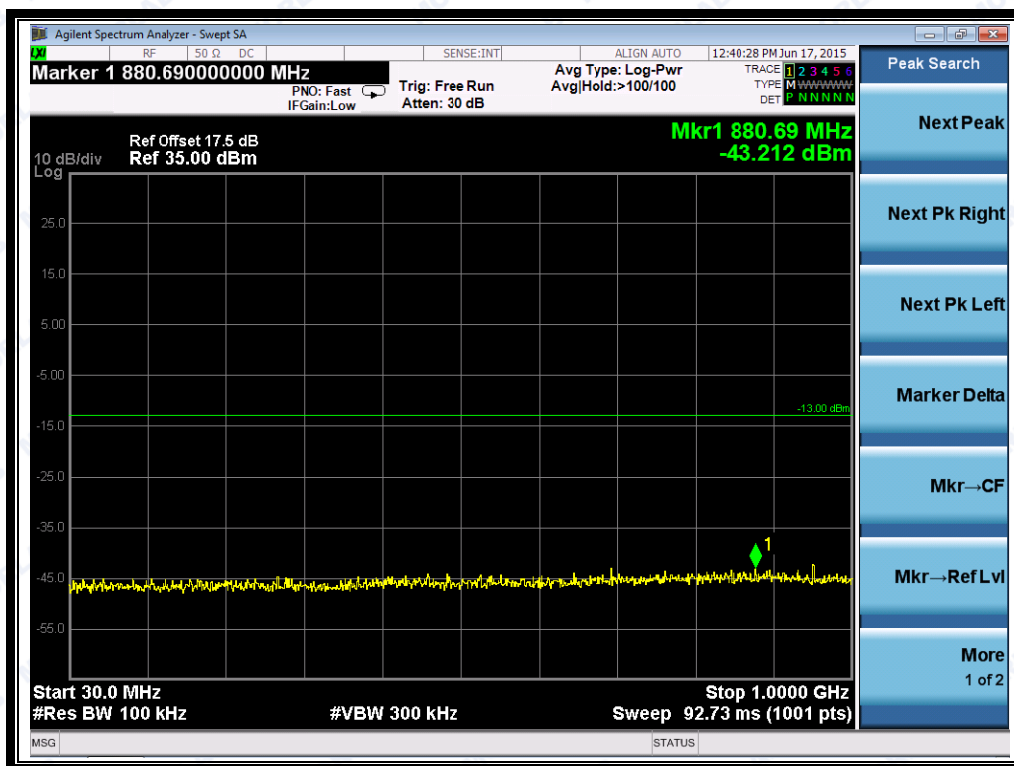
(Plot L1: HSUPA 1900MHz Channel = 9262, 30MHz to 1GHz)



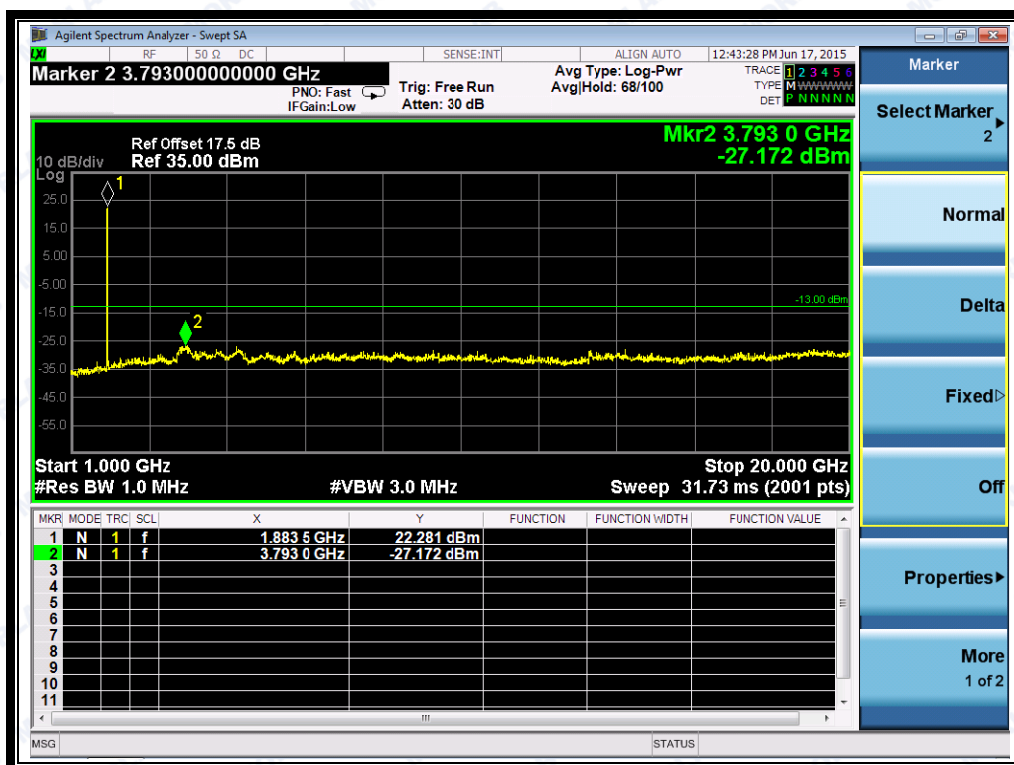
(Plot L1.1: HSUPA 1900MHz Channel = 9262, 1GHz to 20GHz)



REPORT No.: SZ15060079W01



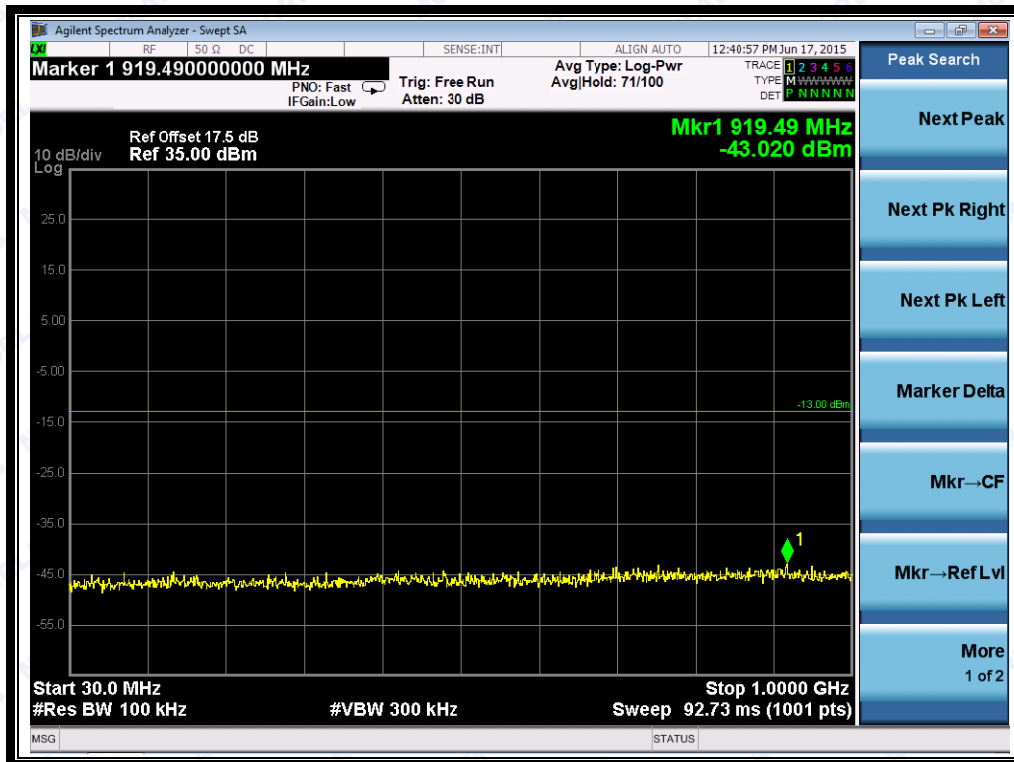
(Plot L2: HSUPA 1900MHz Channel = 9400, 30MHz to 1GHz)



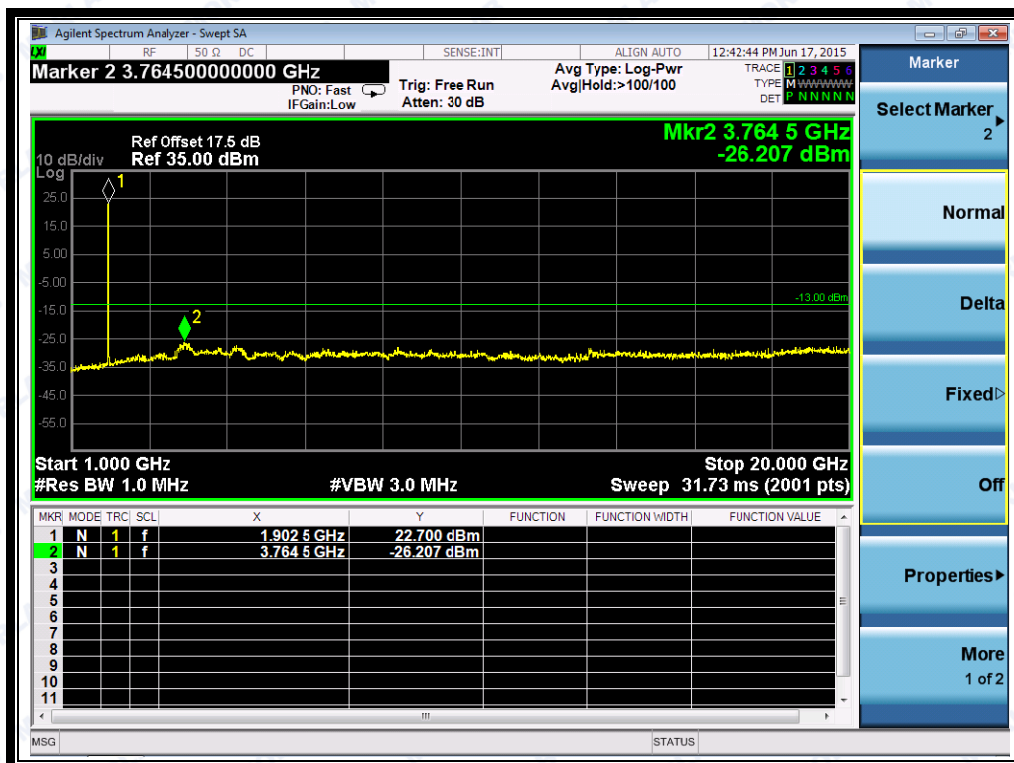
(Plot L2.1: HSUPA1900MHz Channel = 9400, 1GHz to 20GHz)



REPORT No.: SZ15060079W01



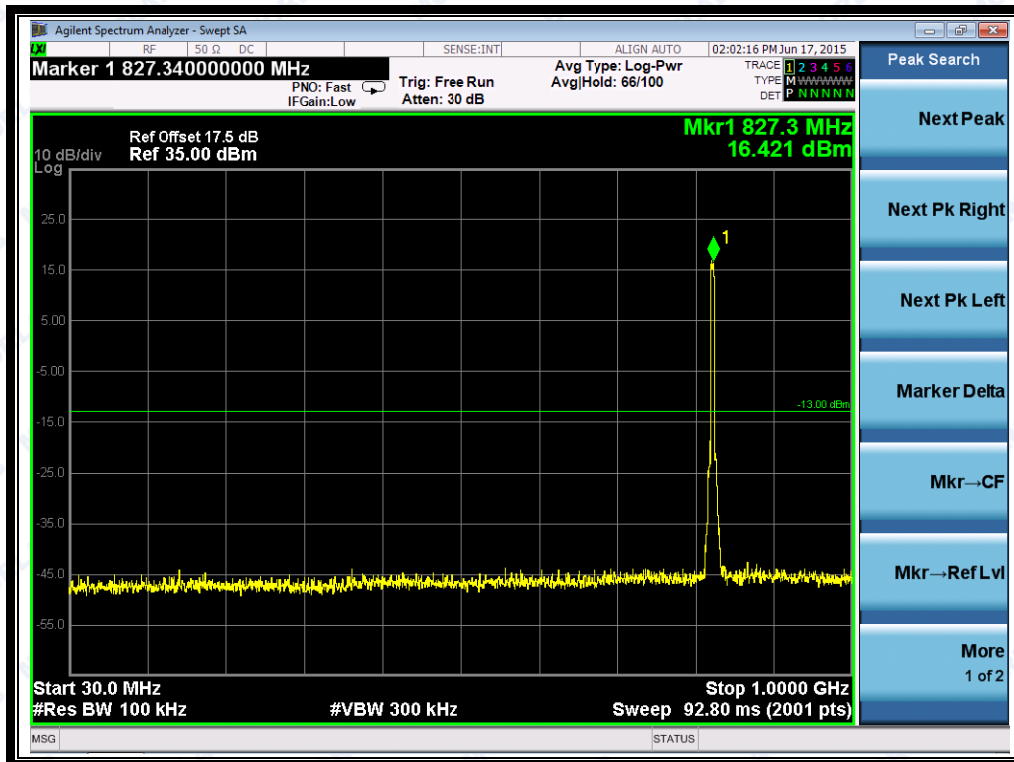
(Plot L3: HSUPA1900MHz Channel = 9538, 30MHz to 1GHz)



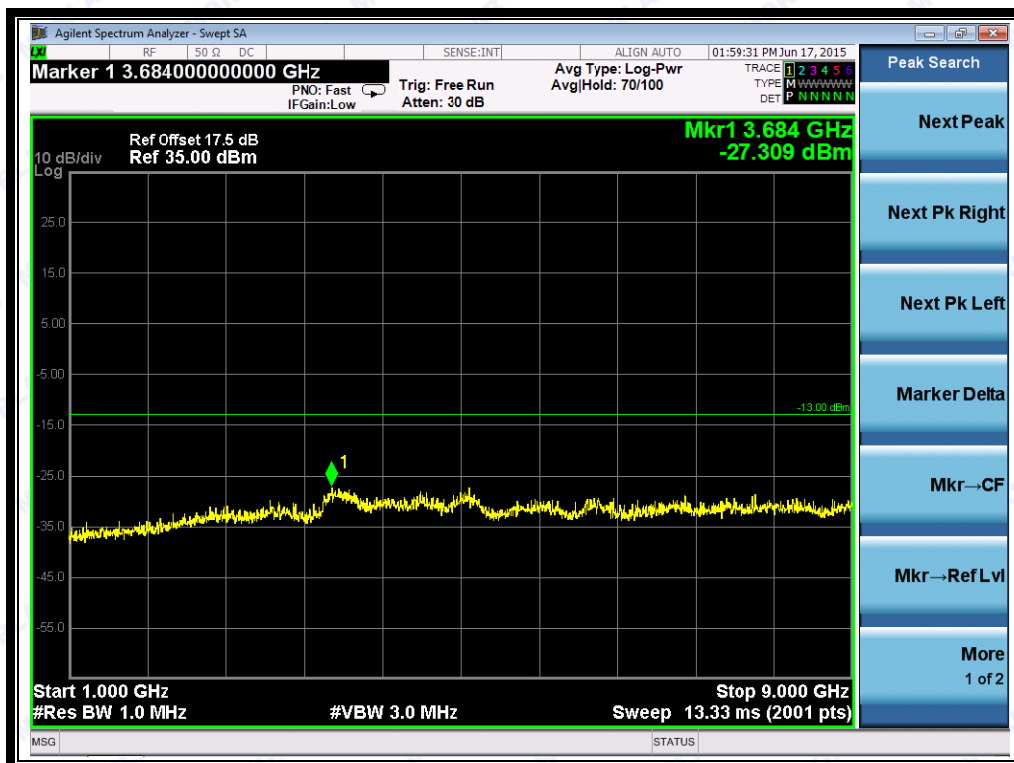
(Plot L3.1: HSUPA1900MHz Channel = 9538 1GHz to 20GHz)



REPORT No.: SZ15060079W01



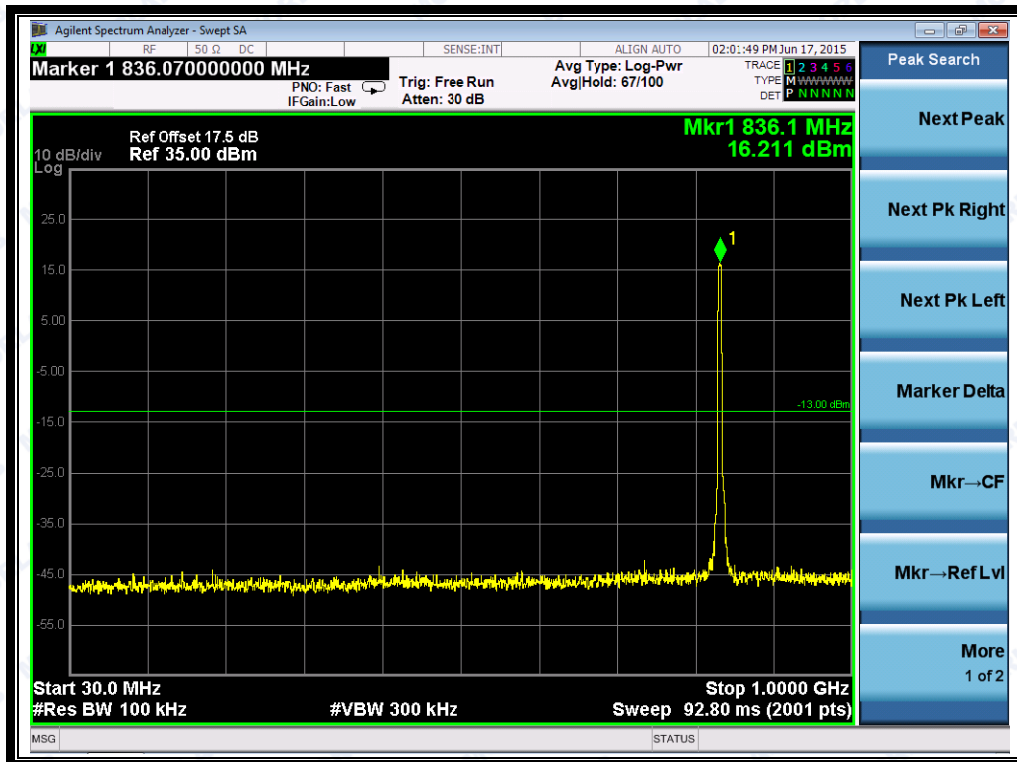
(Plot M1: HSPA+ 850MHz Channel = 4132, 30MHz to 1GHz)



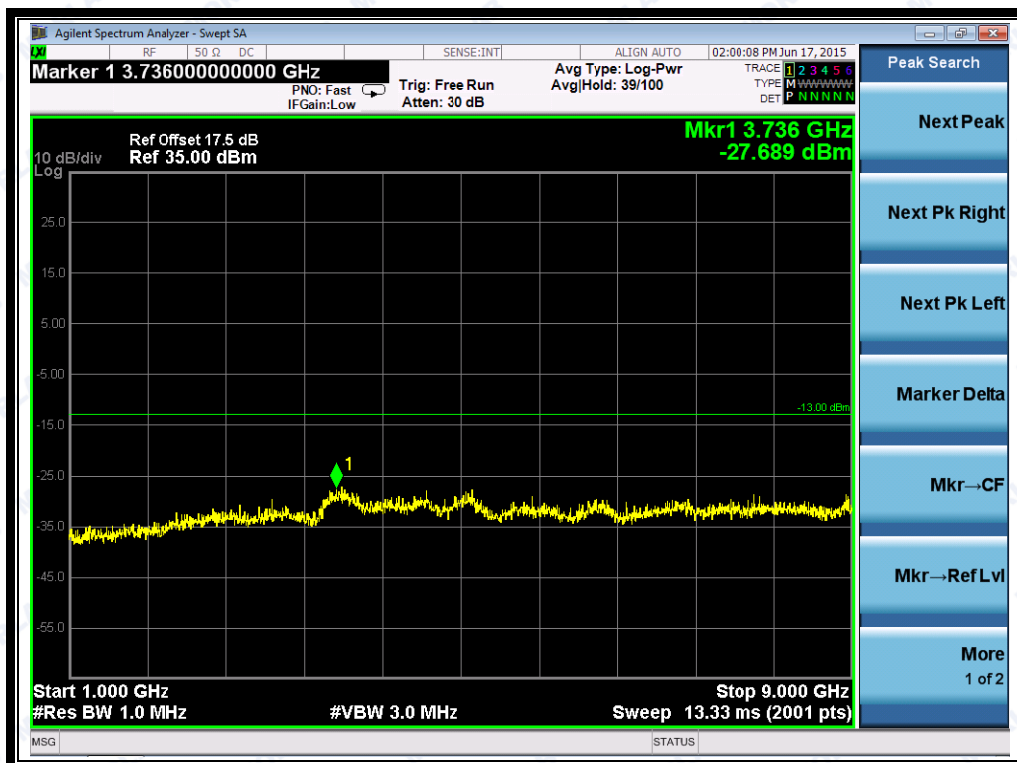
(Plot M1.1: HSPA+ 850MHz Channel = 4132, 1GHz to 9GHz)



REPORT No.: SZ15060079W01



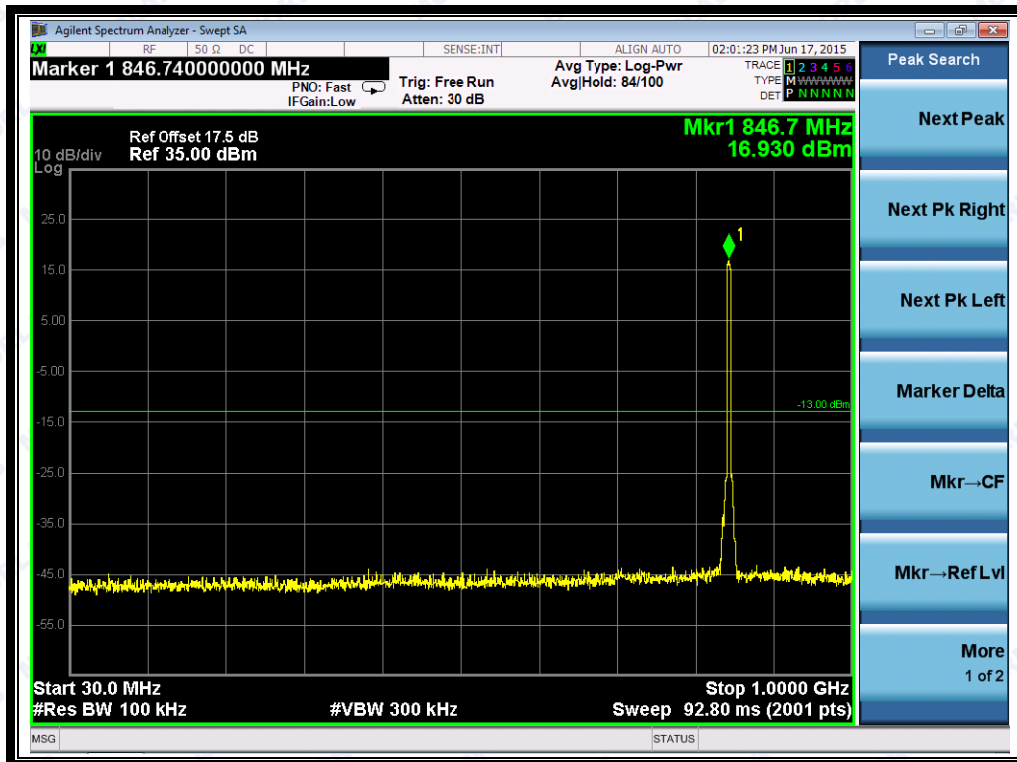
(Plot M2: HSPA+ 850MHz Channel = 4175, 30MHz to 1GHz)



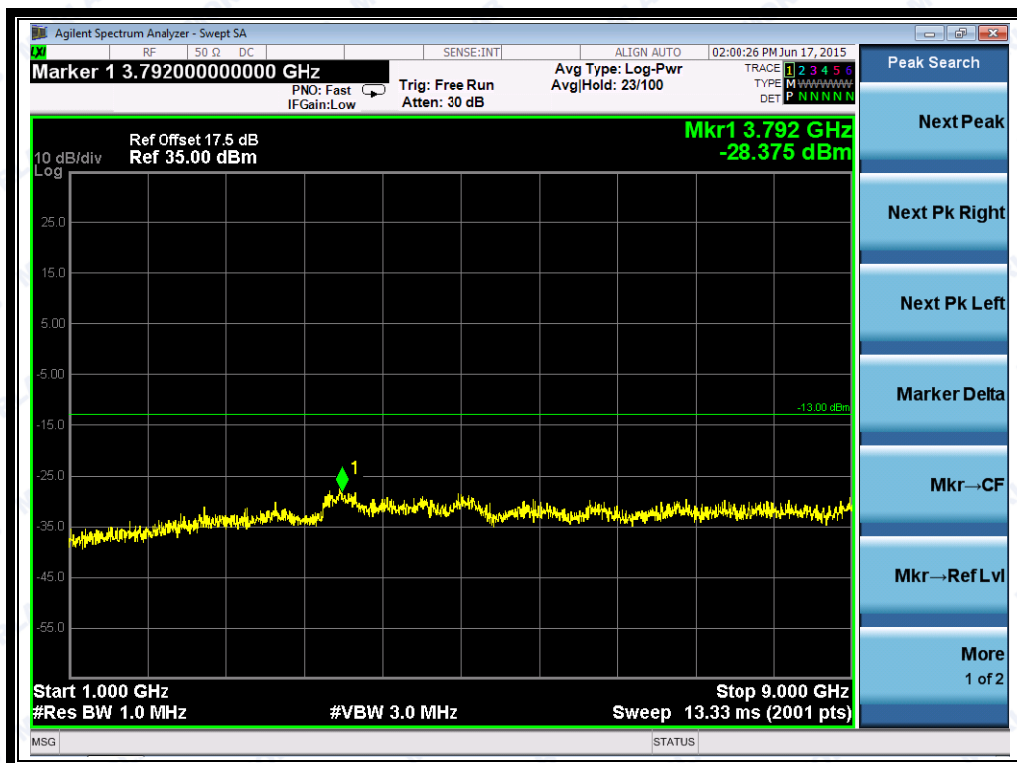
(Plot M2.1: HSPA+ 850MHz Channel = 4175, 1GHz to 9GHz)



REPORT No.: SZ15060079W01



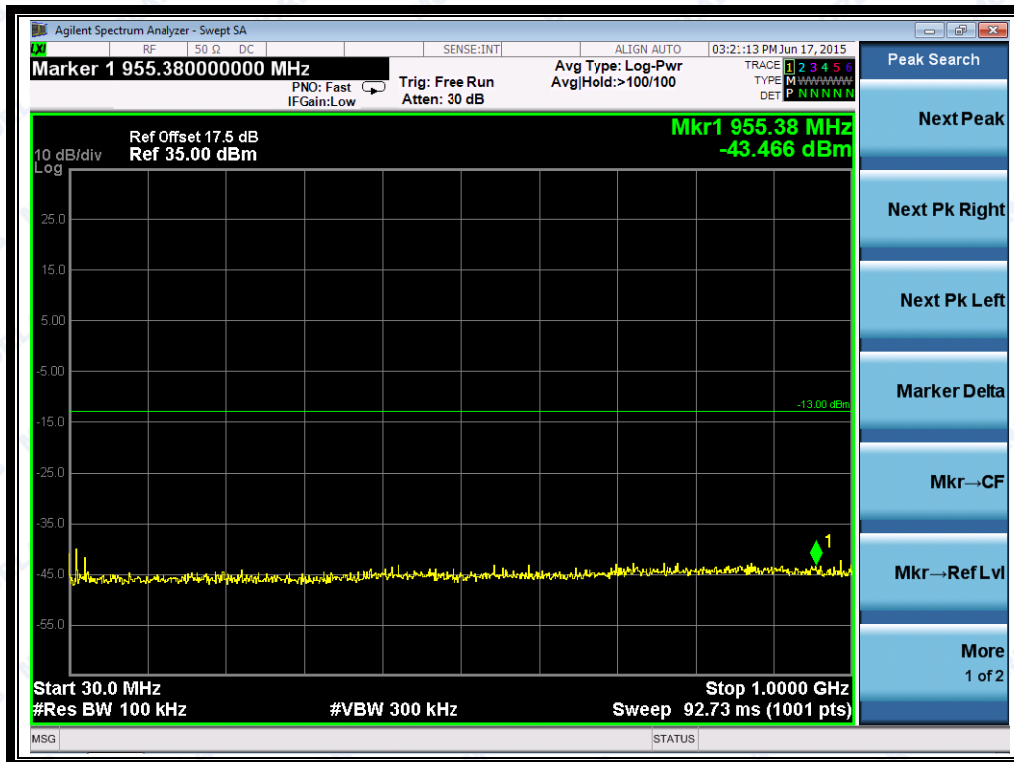
(Plot M3: HSPA+ 850MHz Channel = 4233, 30MHz to 1GHz)



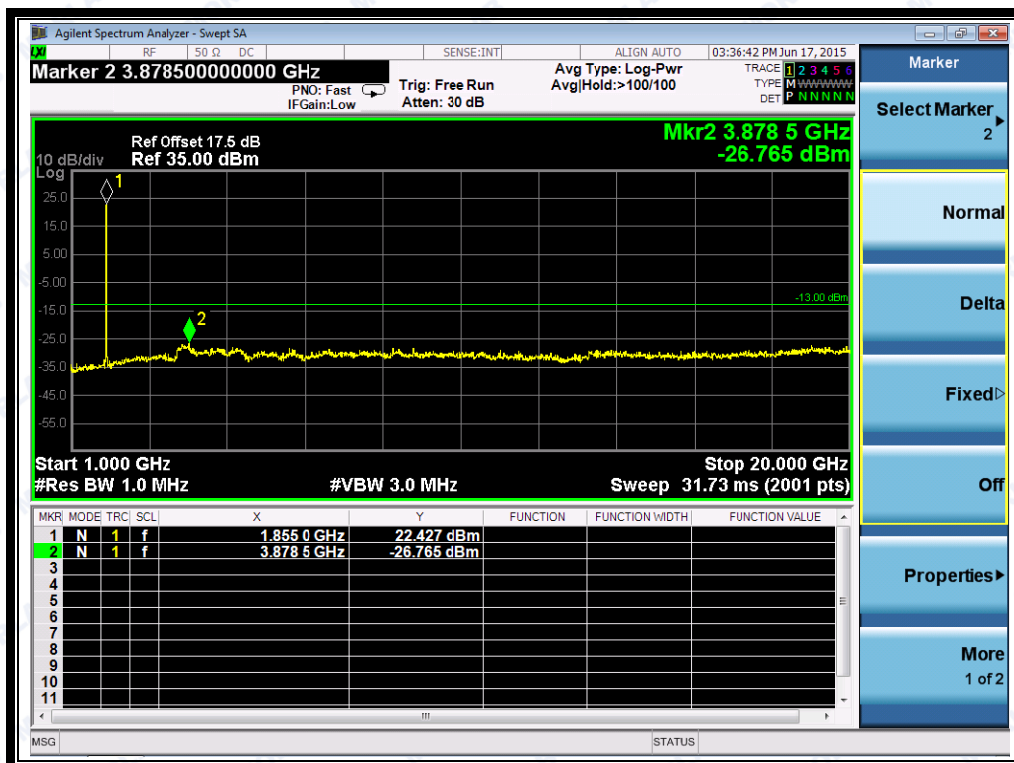
(Plot M3.1: HSPA+ 850MHz Channel = 4233, 1GHz to 9GHz)



REPORT No.: SZ15060079W01



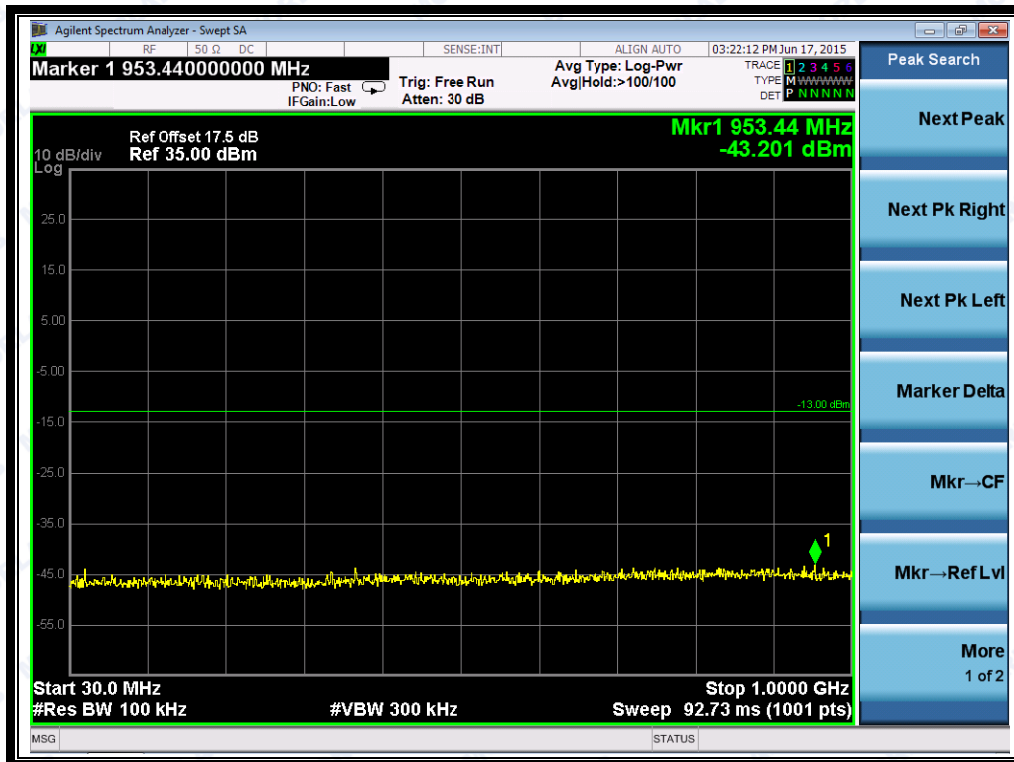
(Plot N1: HSPA+ 1900MHz Channel = 9262, 30MHz to 1GHz)



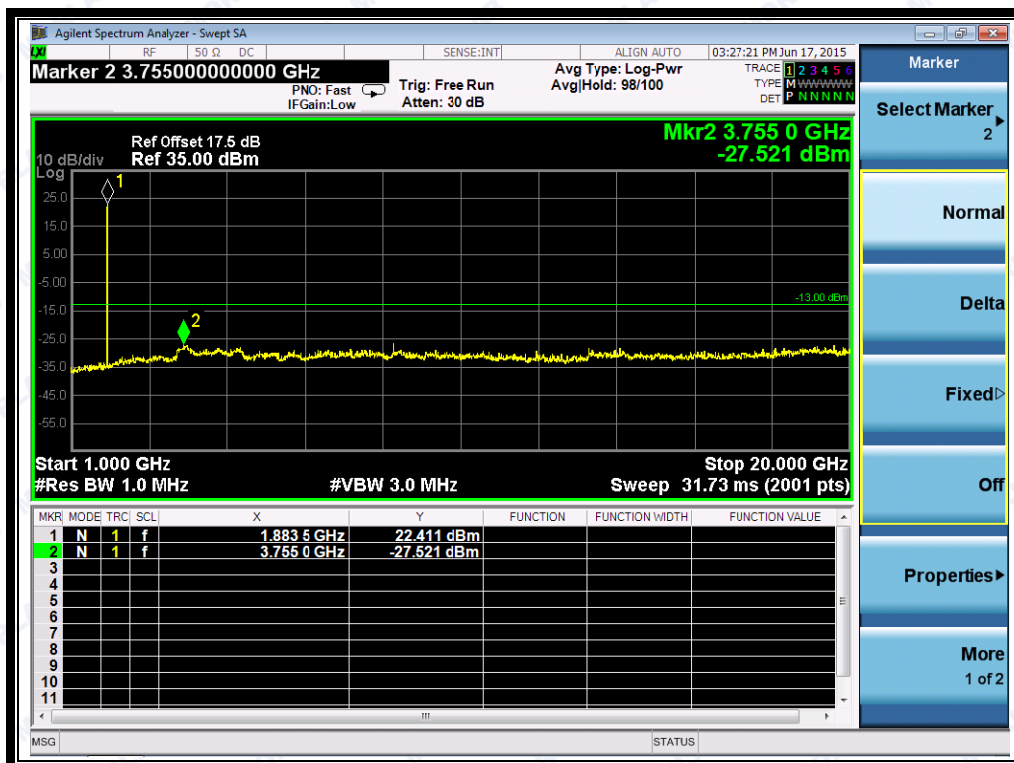
(Plot N1.1: HSPA+ 1900MHz Channel = 9262, 1GHz to 20GHz)



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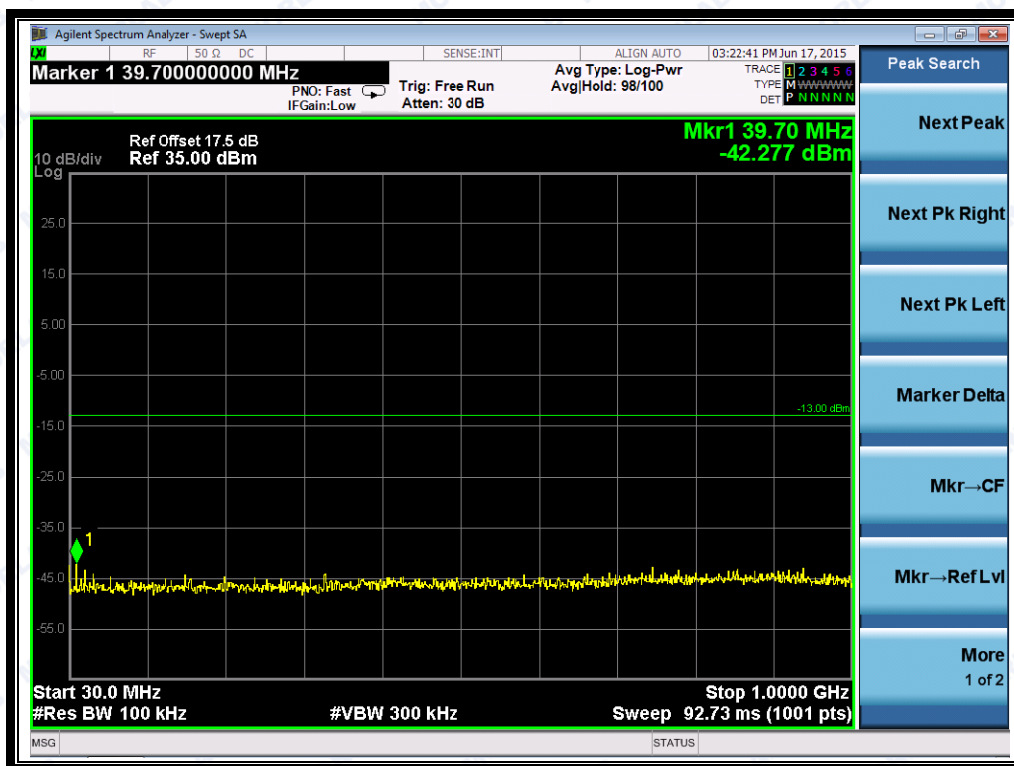
(Plot N2: HSPA+ 1900MHz Channel = 9400, 30MHz to 1GHz)



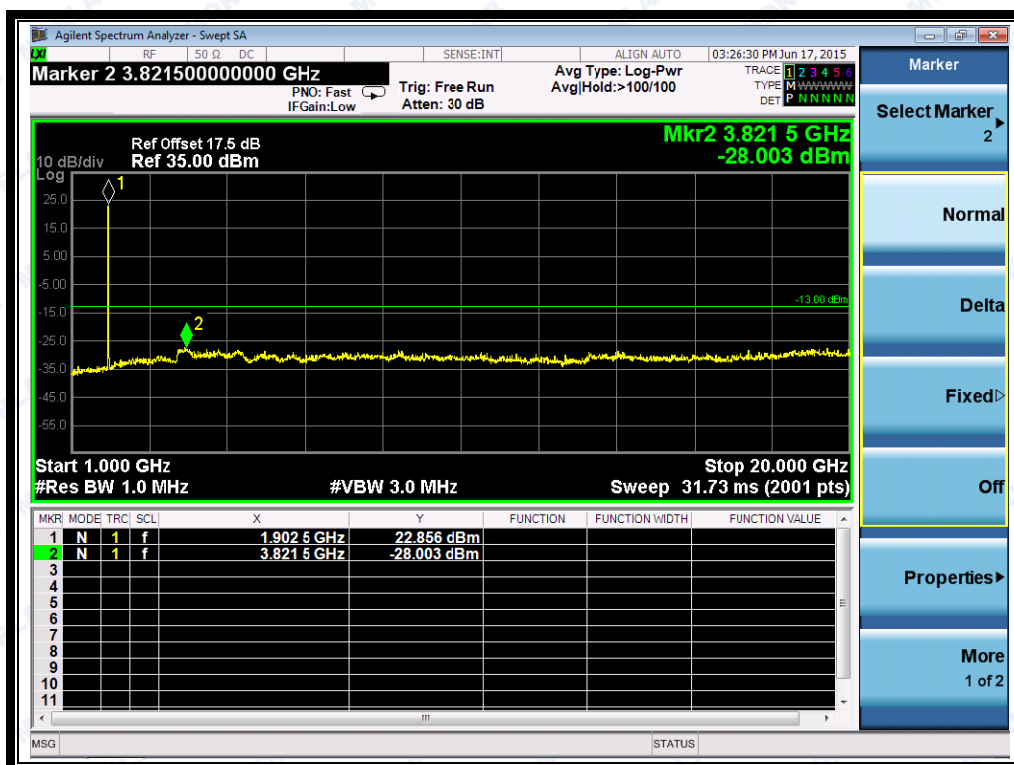
(Plot N2.1: HSPA+ 1900MHz Channel = 9400, 1GHz to 20GHz)



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(Plot N3: HSPA+ 1900MHz Channel = 9538, 30MHz to 1GHz)



(Plot N3.1: HSPA+ 1900MHz Channel = 9538 1GHz to 20GHz)



2.6 Band Edge

2.6.1 Requirement

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

2.6.2 Test Description

See section 2.1.2 of this report.

2.6.3 Test Result

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

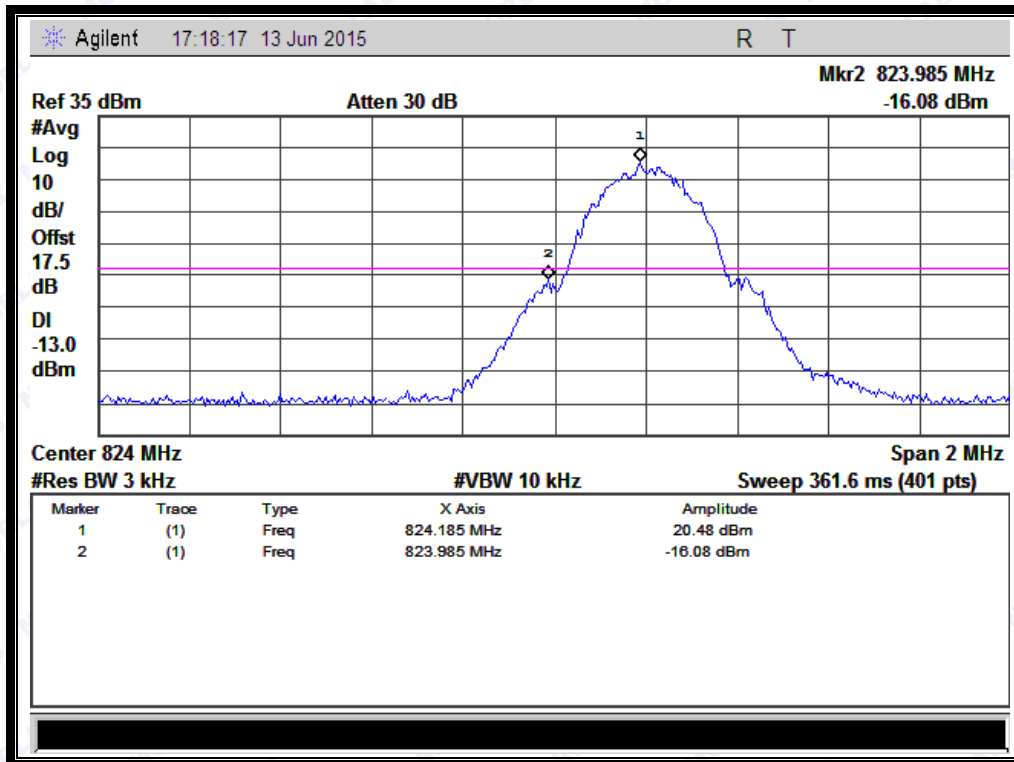
Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-16.08	Plat A1	-13	PASS
	251	848.8	-18.14	Plot A2		PASS
GSM 1900MHz	512	1850.2	-19.43	Plat B1	-13	PASS
	810	1909.8	-19.72	Plot B2		PASS
EGPRS 850MHz	128	824.2	-27.77	Plat C1	-13	PASS
	251	848.8	-26.73	Plot C2		PASS
EGPRS 1900MHz	512	1850.2	-26.92	Plat D1	-13	PASS
	810	1909.8	-25.18	Plot D2		PASS
WCDMA 850MHz	4132	826.4	-15.672	Plat E1	-13	PASS
	4233	846.6	-18.383	Plot E2		PASS
WCDMA 1900MHz	9262	1852.4	-17.484	Plat F1	-13	PASS
	9538	1907.6	-17.106	Plot F2		PASS
HSDPA 850MHz	4132	826.4	-16.659	Plat G1	-13	PASS
	4233	846.6	-18.124	Plot G2		PASS
HSDPA 1900MHz	9262	1852.4	-18.183	Plat H1	-13	PASS
	9538	1907.6	-16.212	Plot H2		PASS
HSUPA 850MHz	4132	826.4	-15.925	Plat I1	-13	PASS
	4233	846.6	-18.667	Plot I2		PASS
HSUPA 1900MHz	9262	1852.4	-17.698	Plat J1	-13	PASS
	9538	1907.6	-17.168	Plot J2		PASS
HSPA+ 850MHz	4132	826.4	-15.911	Plat K1	-13	PASS
	4233	846.6	-18.765	Plot K2		PASS
HSPA + 1900MHz	9262	1852.4	-17.369	Plat L1	-13	PASS
	9538	1907.6	-16.730	Plot L2		PASS

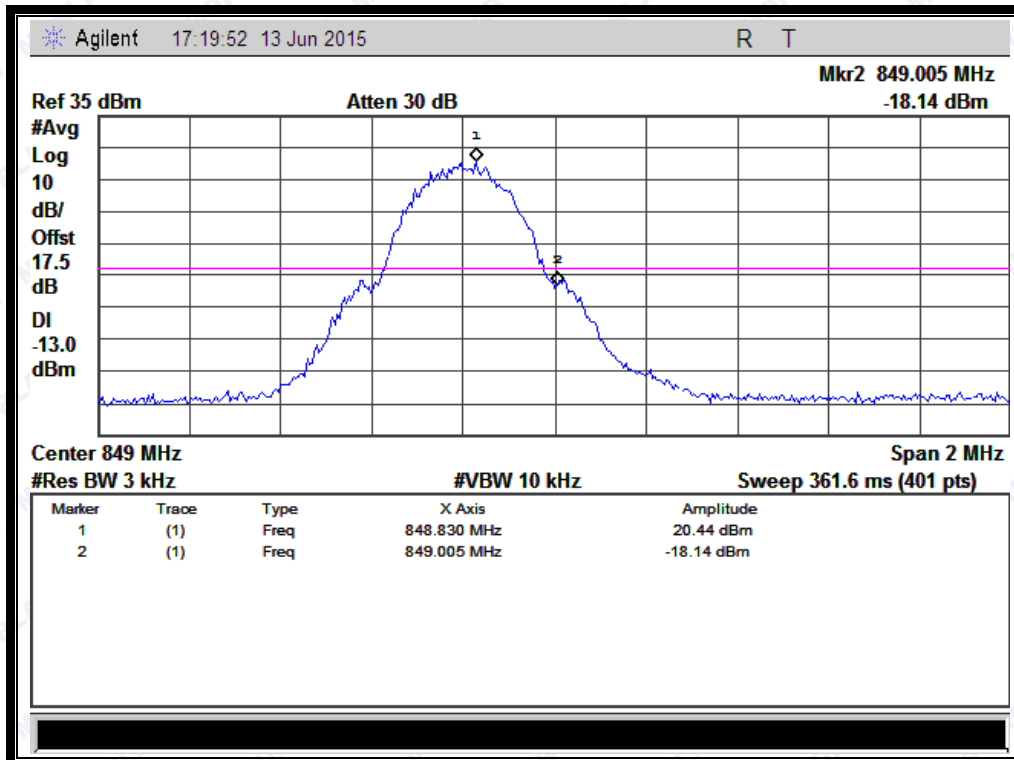


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Test Plots:



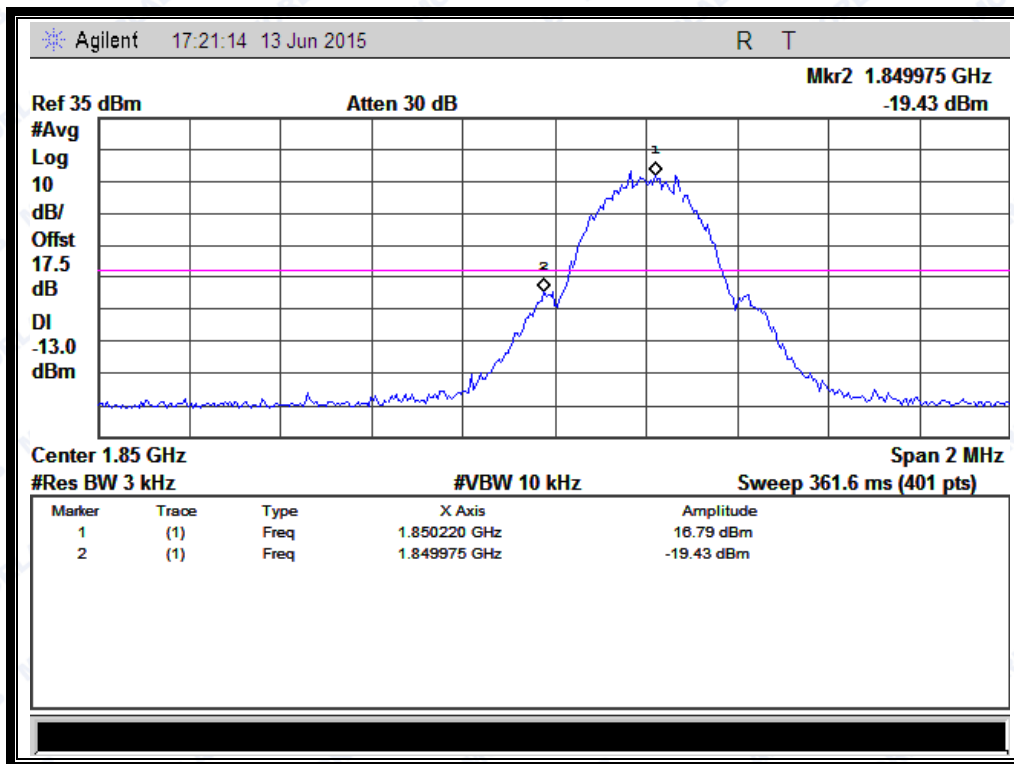
(Plot A1: GSM 850 Channel = 128)



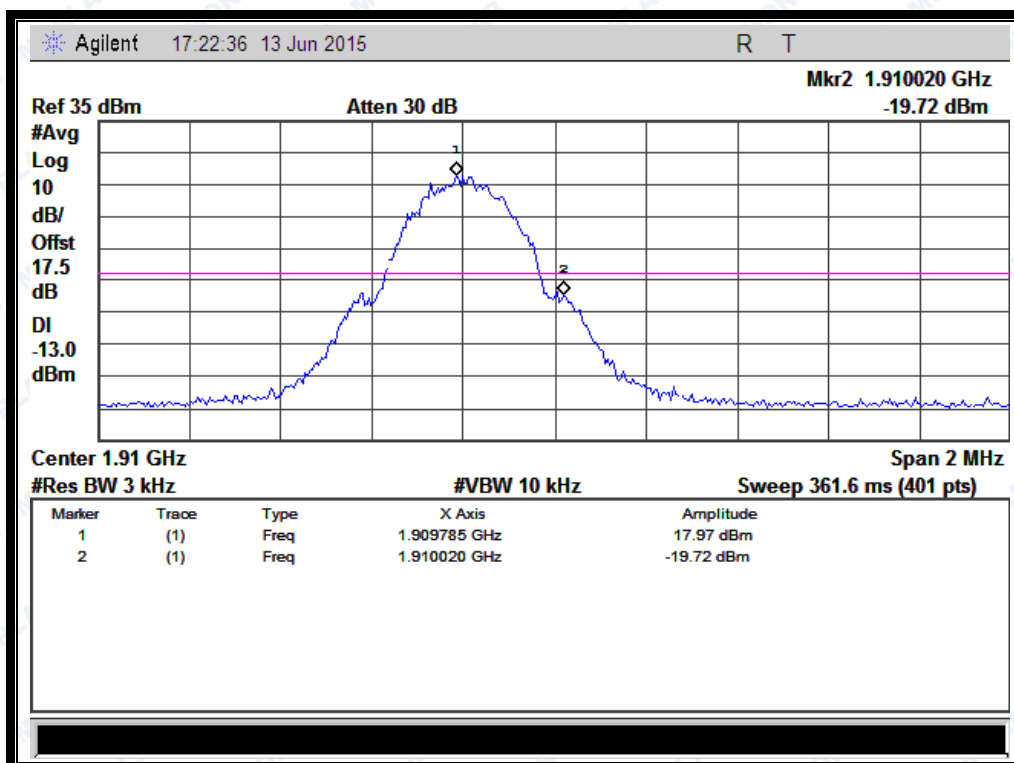
(Plot A2: GSM 850 Channel = 251)



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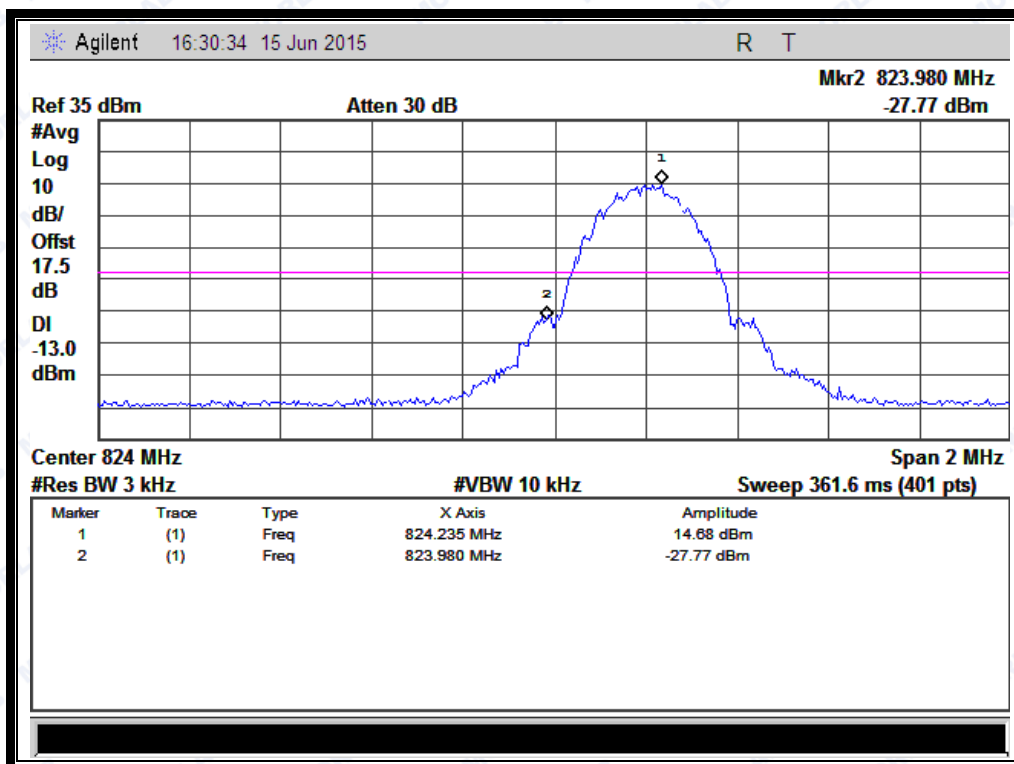
(Plot B1: GSM 1900 Channel = 512)



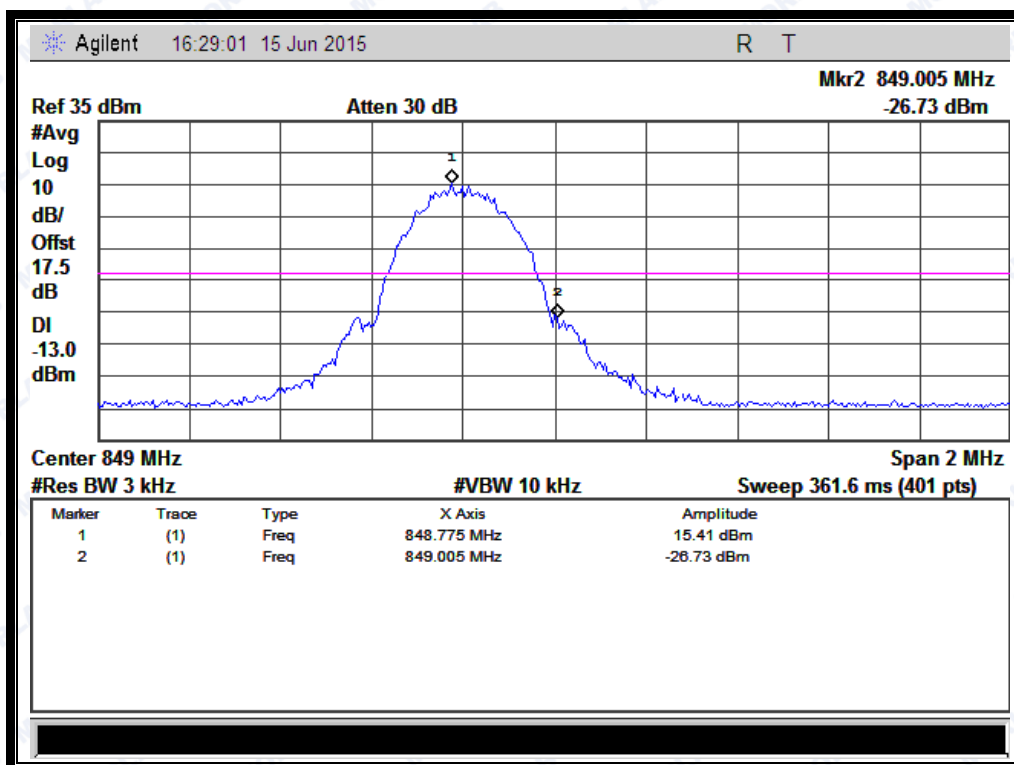
(Plot B2: GSM 1900 Channel = 810)



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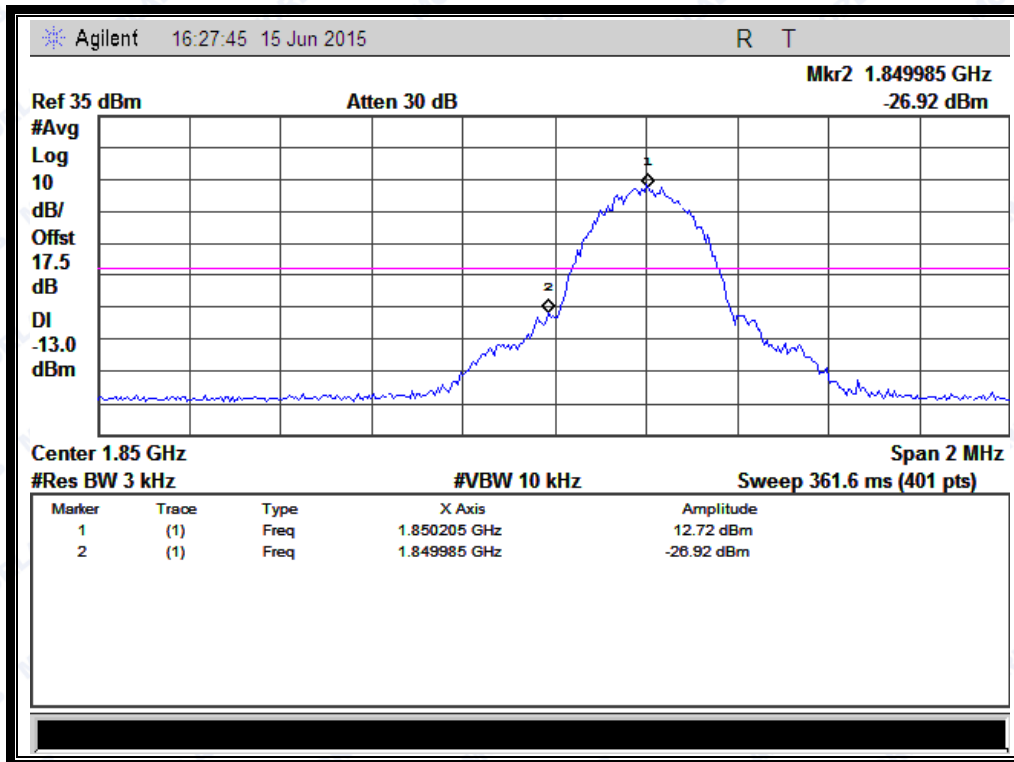
(Plot C1: EGPRS 850 Channel = 128)



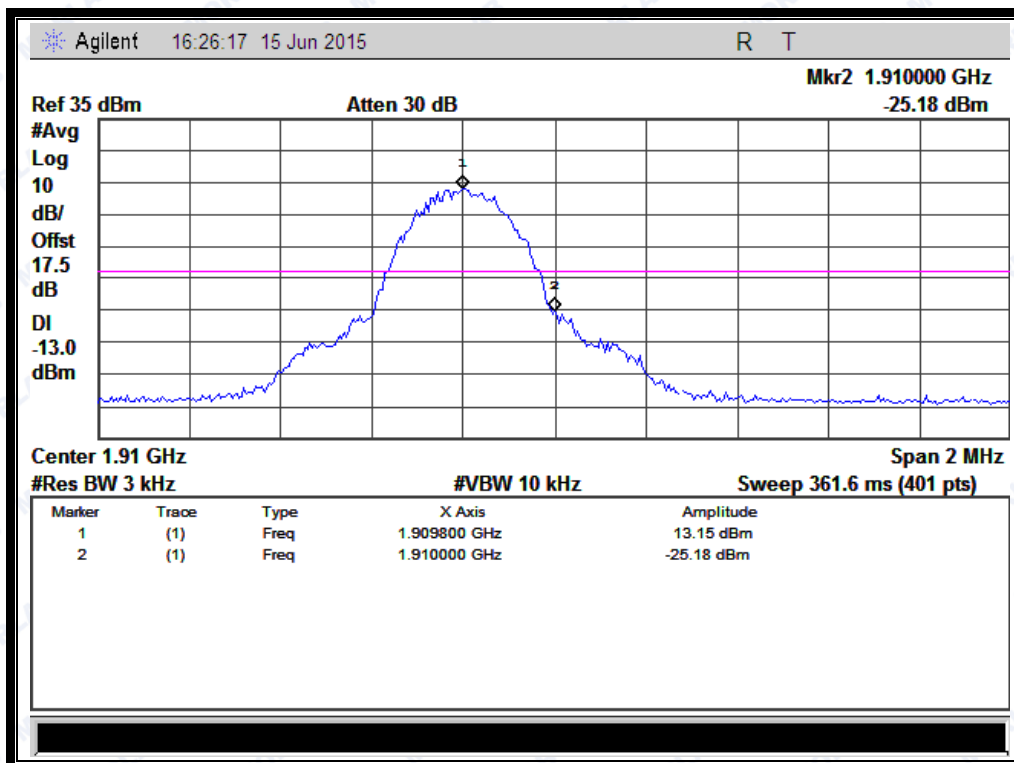
(Plot C2: EGPRS 850 Channel = 251)



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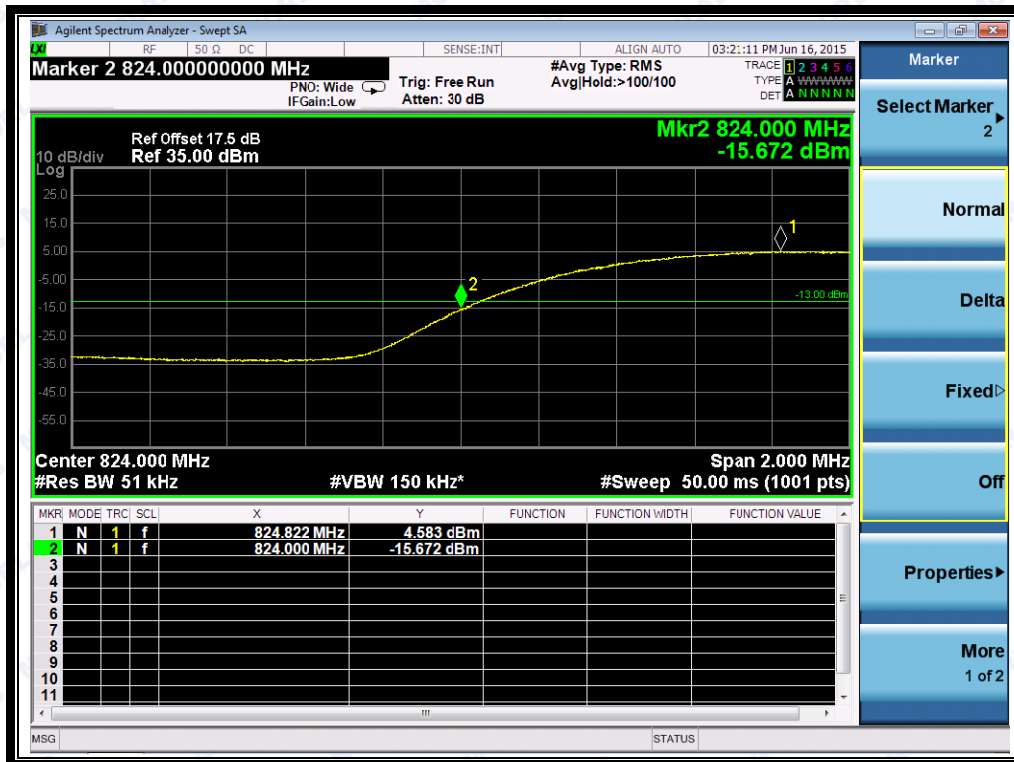
(Plot D1: EGPRS 1900 Channel = 512)



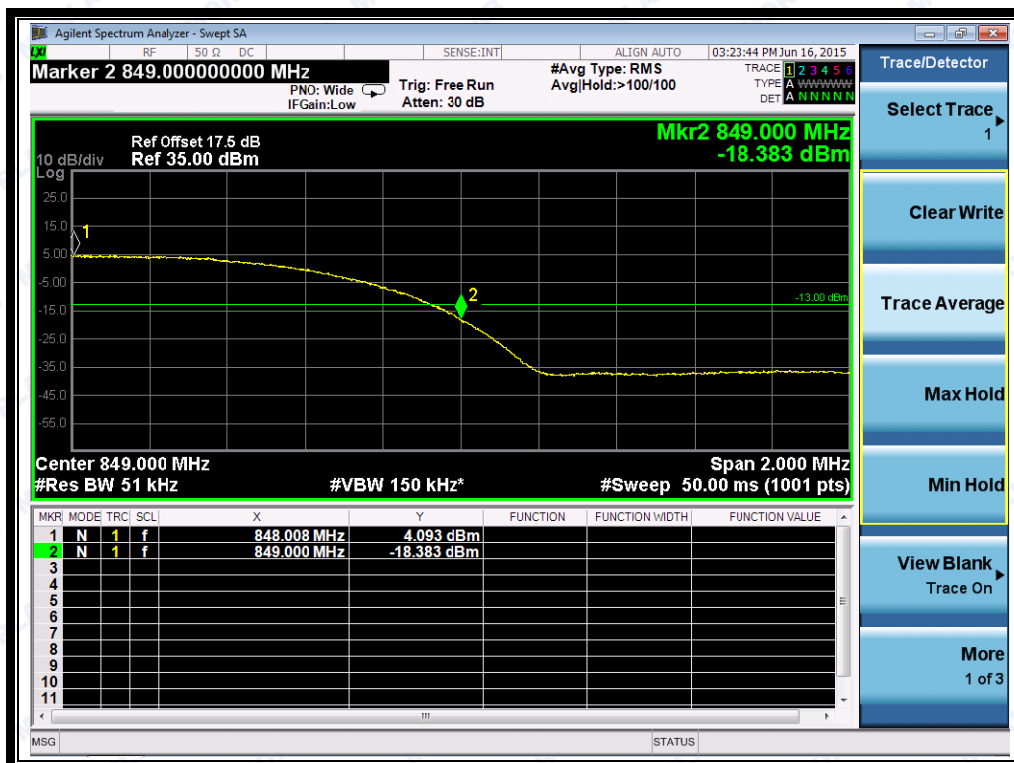
(Plot D2: EGPRS 1900 Channel = 810)



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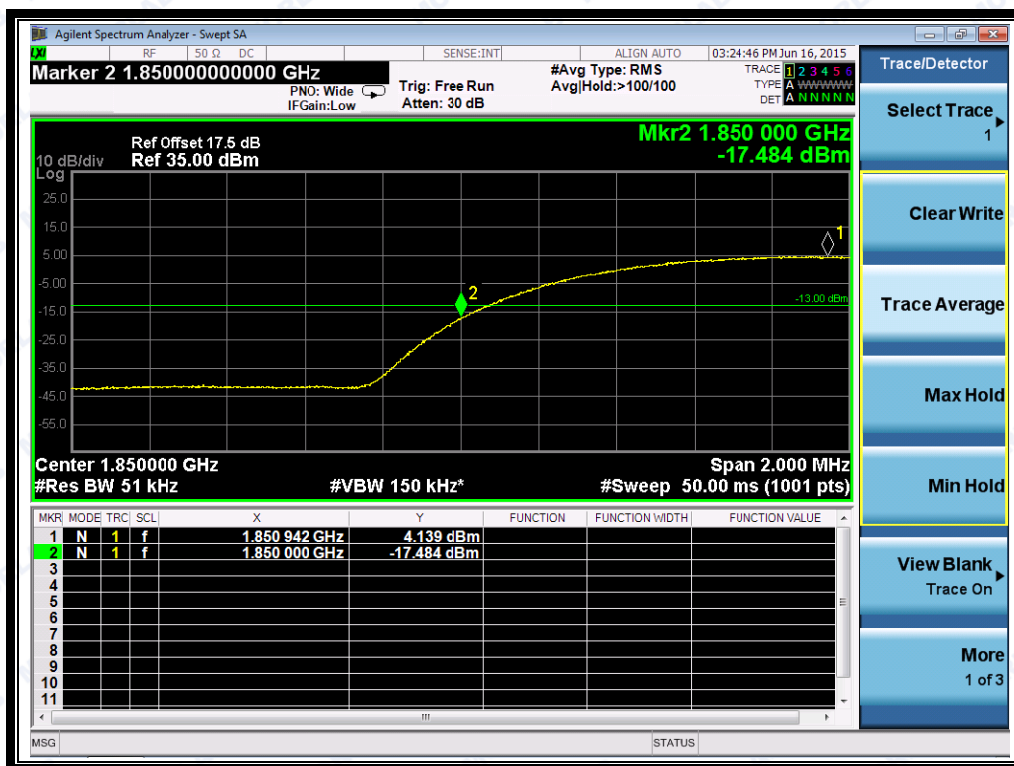
(Plot E1: WCDMA 850 Channel = 4132)



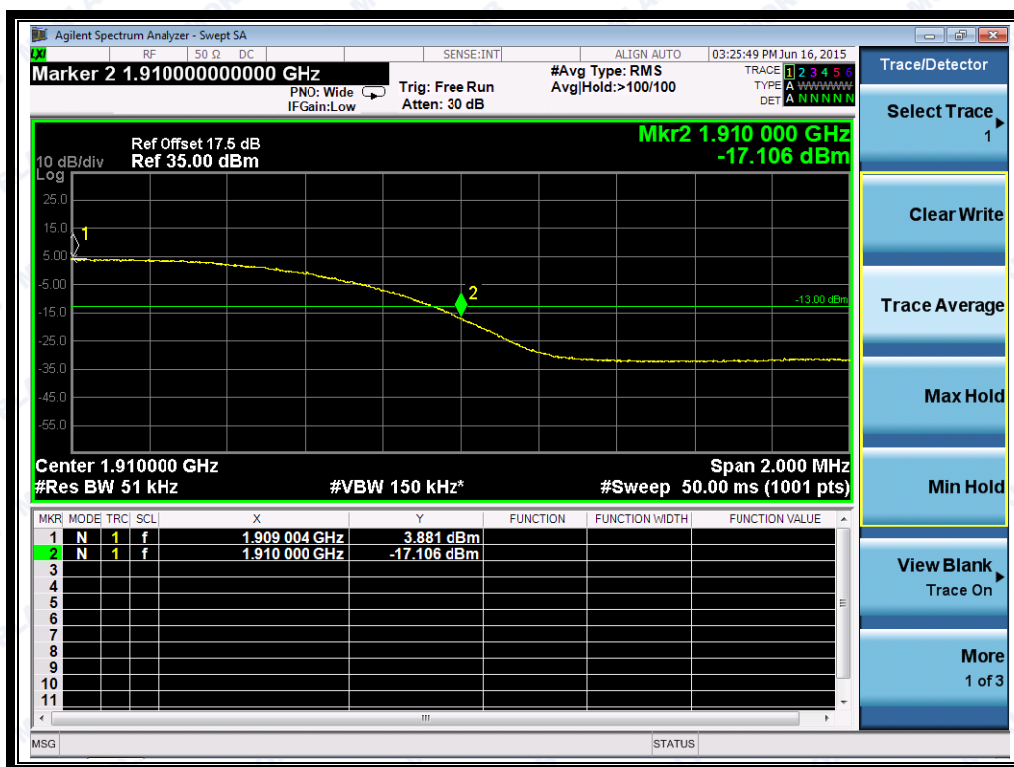
(Plot E2: WCDMA 850 Channel = 4233)



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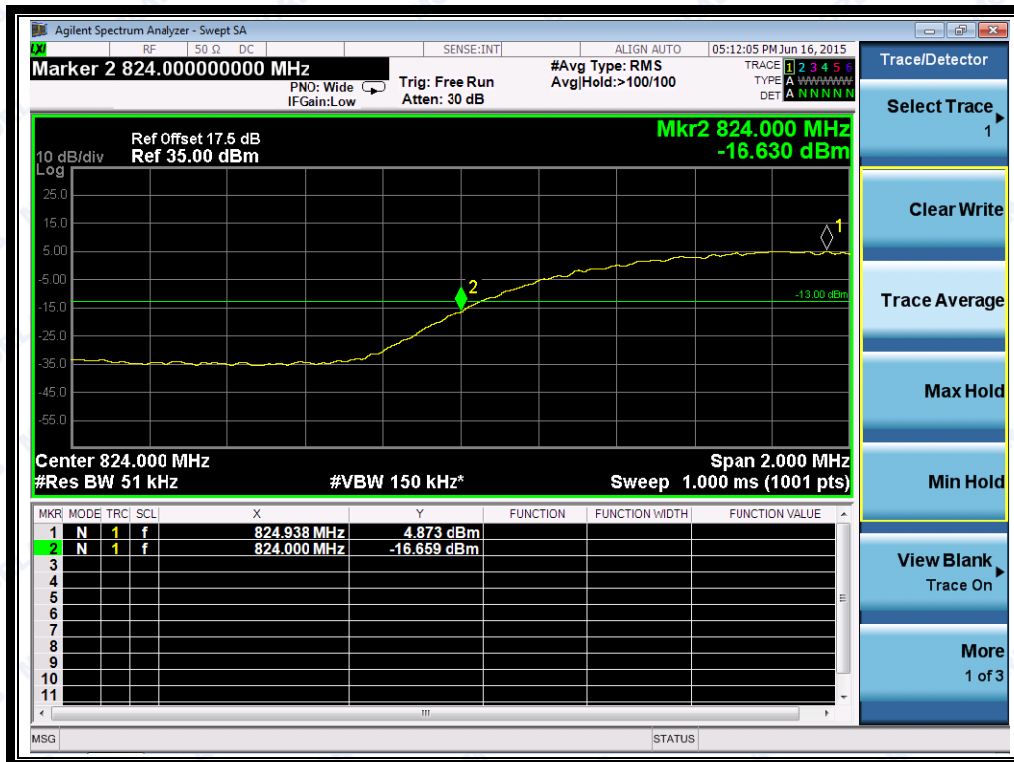
(Plot F1: WCDMA 1900 Channel = 9262)



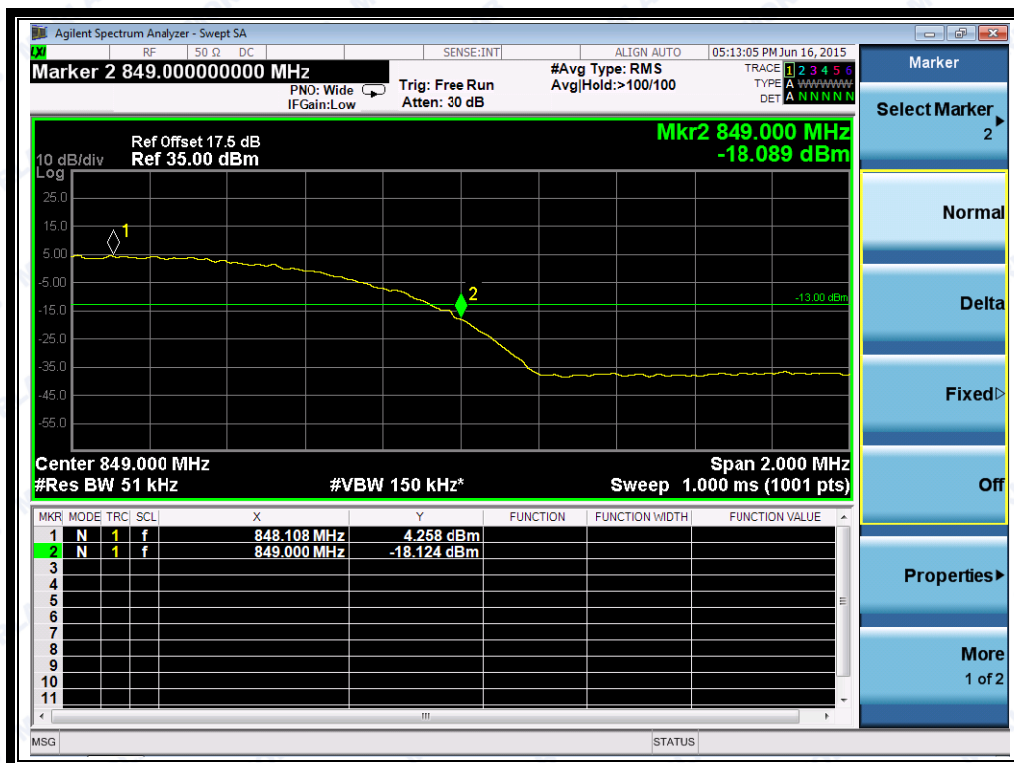
(Plot F2: WCDMA 1900 Channel = 9538)



REPORT No.: SZ15060079W01



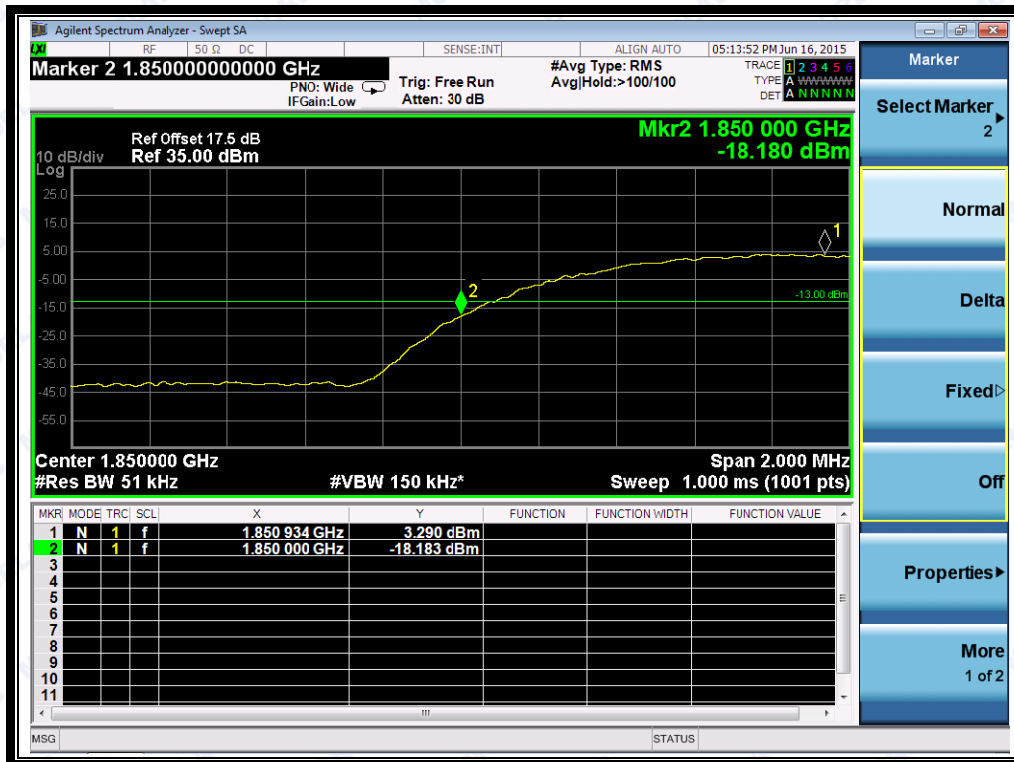
(Plot G1: HSDPA 850 Channel = 4132)



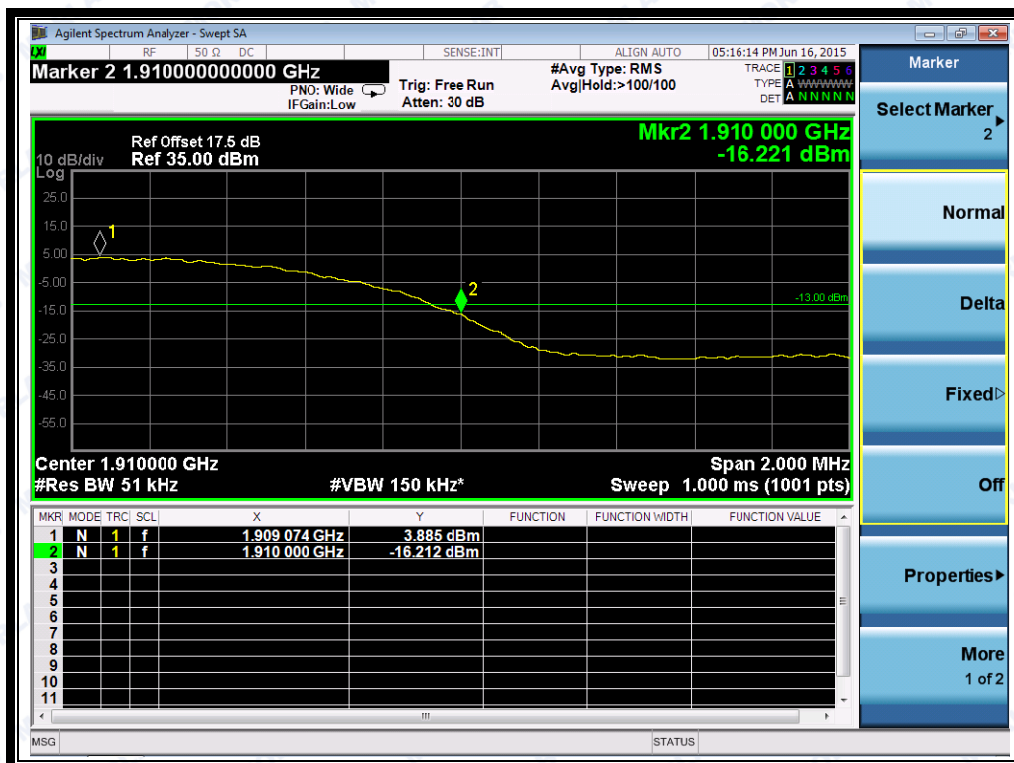
(Plot G2: HSDPA 850 Channel = 4233)



REPORT No.: SZ15060079W01



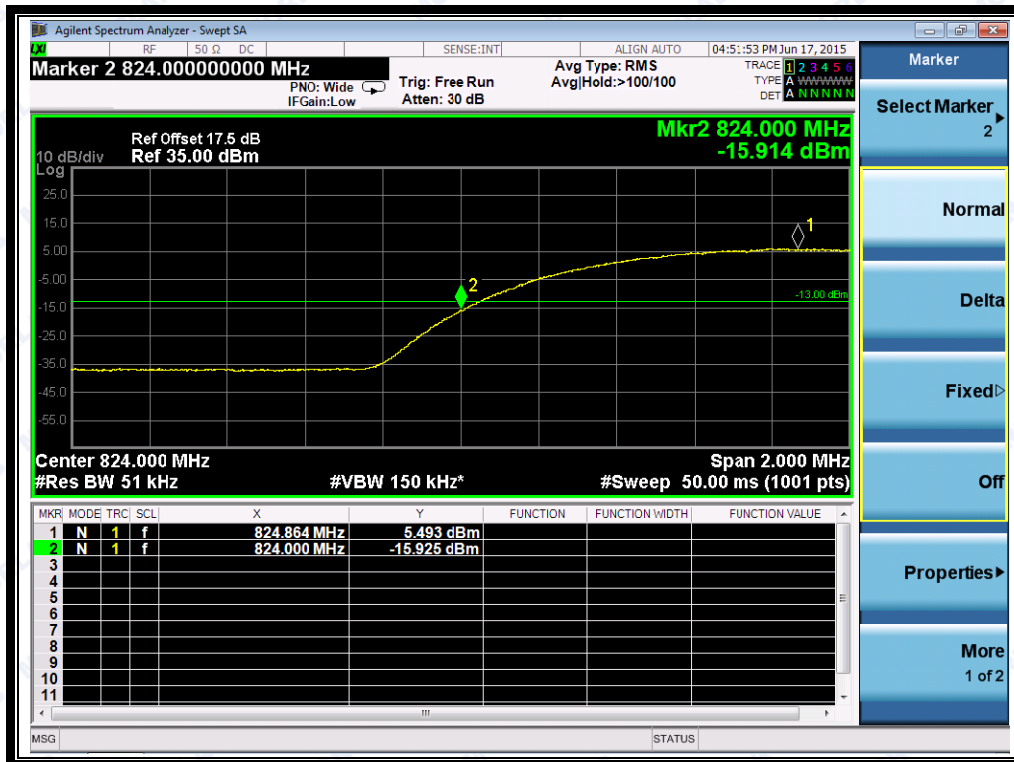
(Plot H1: HSDPA 1900 Channel = 9262)



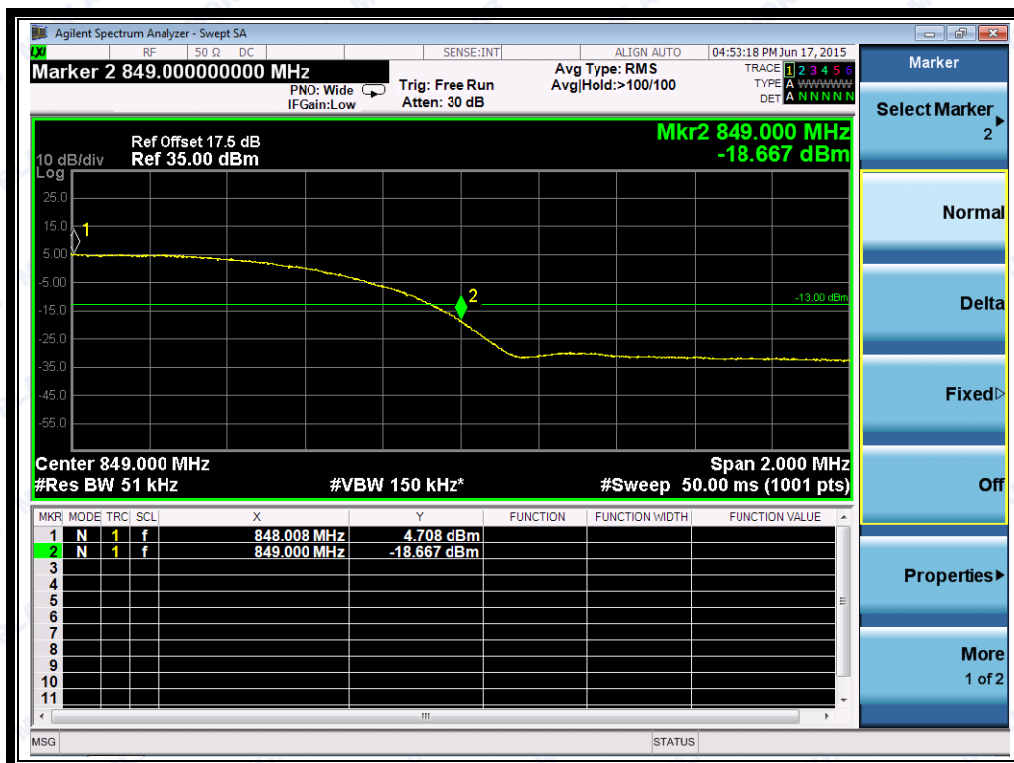
(Plot H2: HSDPA 1900 Channel = 9538)



REPORT No.: SZ15060079W01



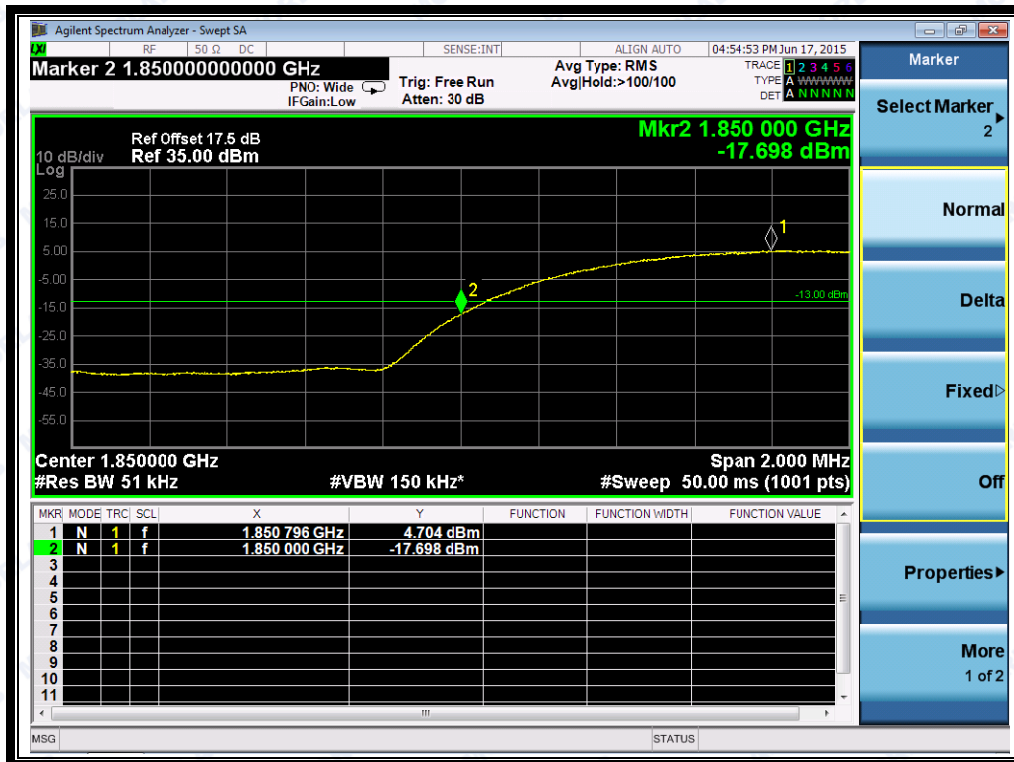
(Plot I1: HSUPA 850 Channel = 4132)



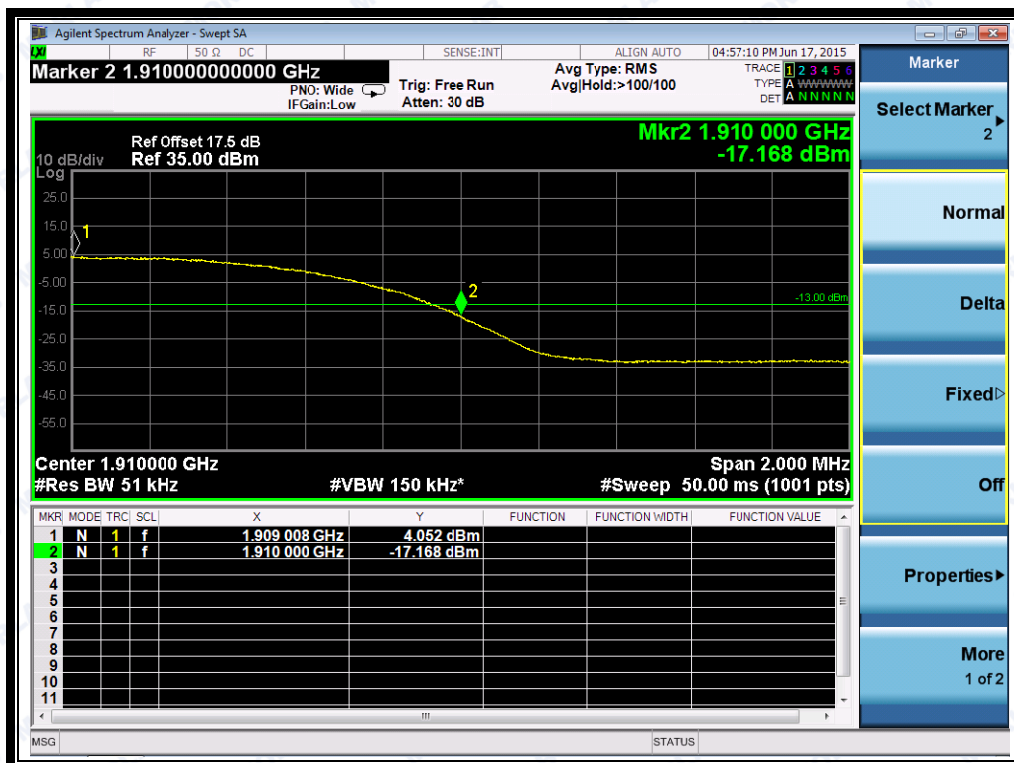
(Plot I2: HSUPA 850 Channel = 4233)



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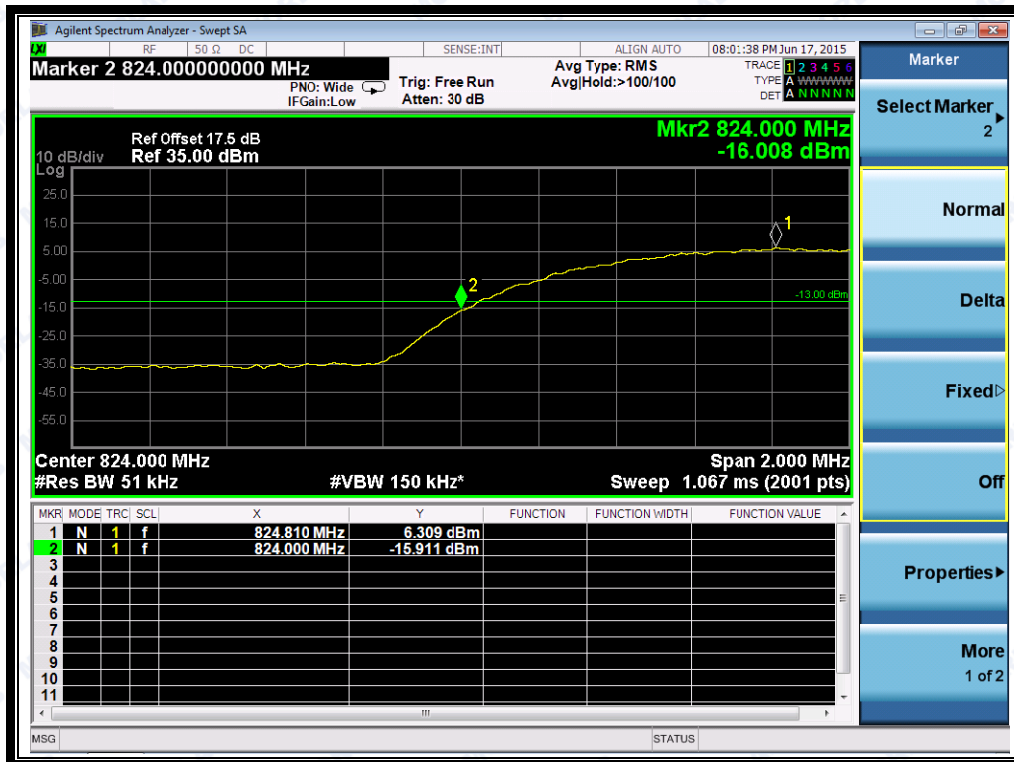
(Plot J1: HSUPA 1900 Channel = 9262)



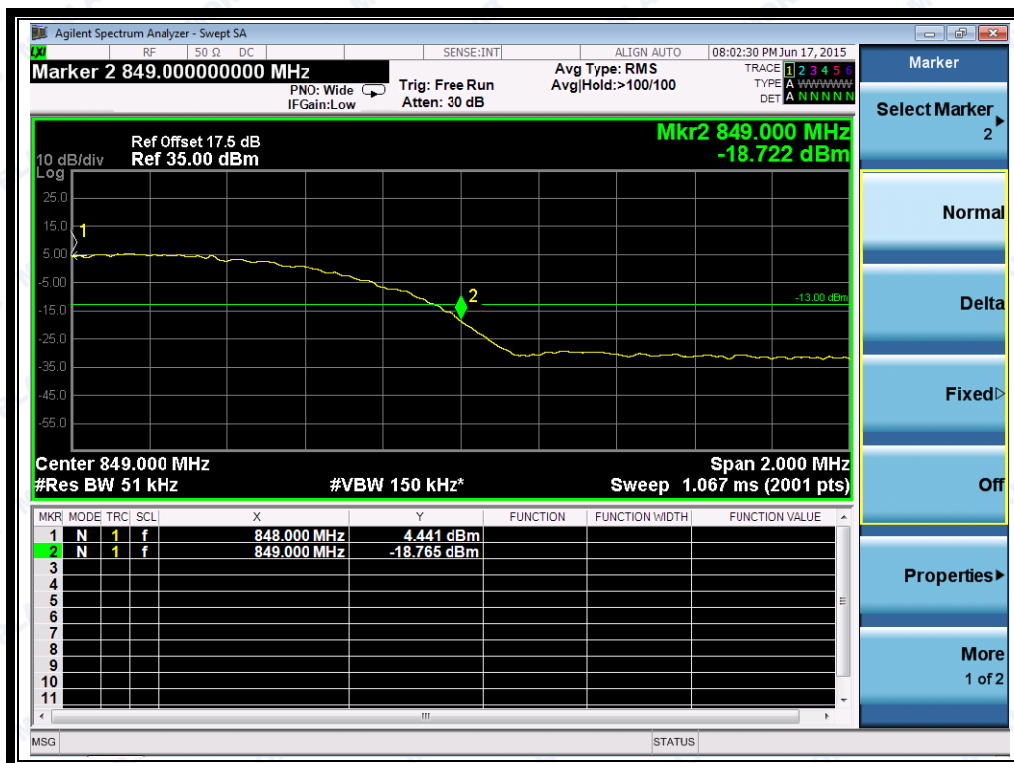
(Plot J2: HSUPA 1900 Channel = 9538)



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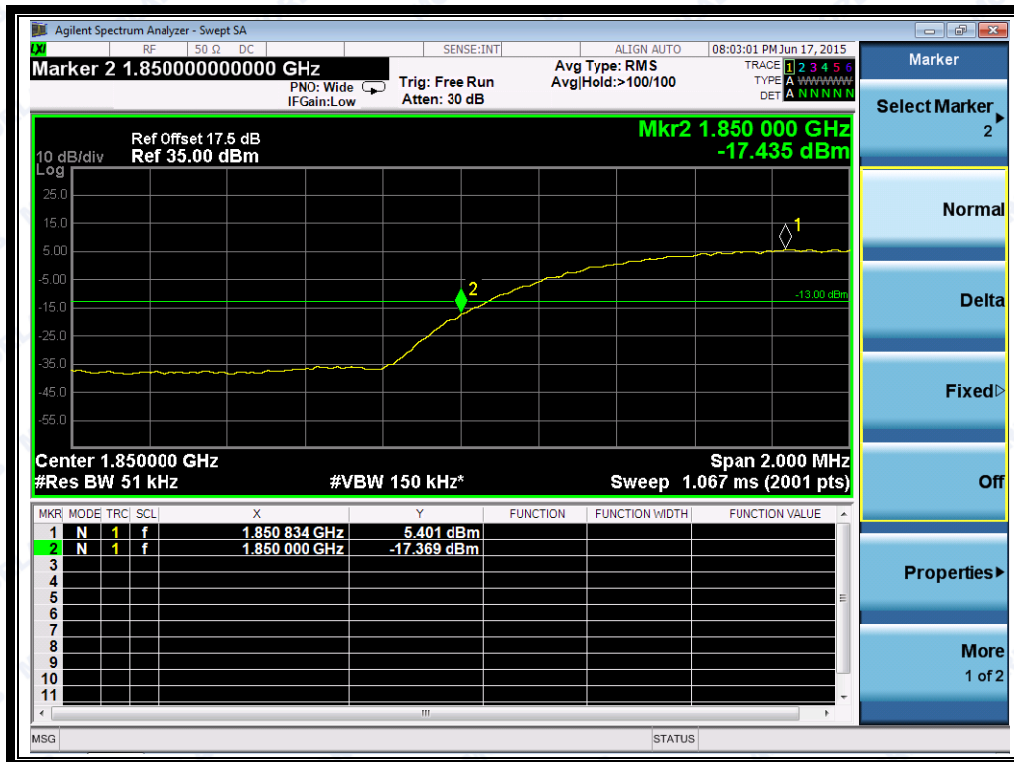
(Plot K1: HSPA+ 850 Channel = 4132)



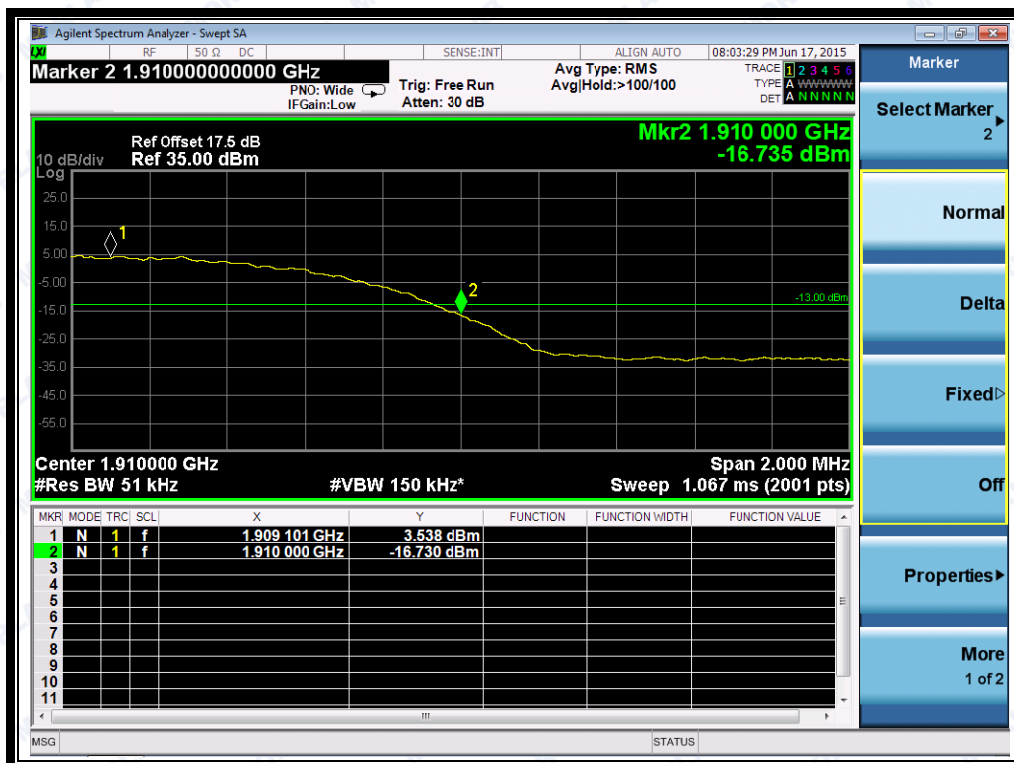
(Plot K2: HSPA+ 850 Channel = 4233)



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(Plot L1: HSPA+ 1900 Channel = 9262)



(Plot L2: HSPA+ 1900 Channel = 9538)

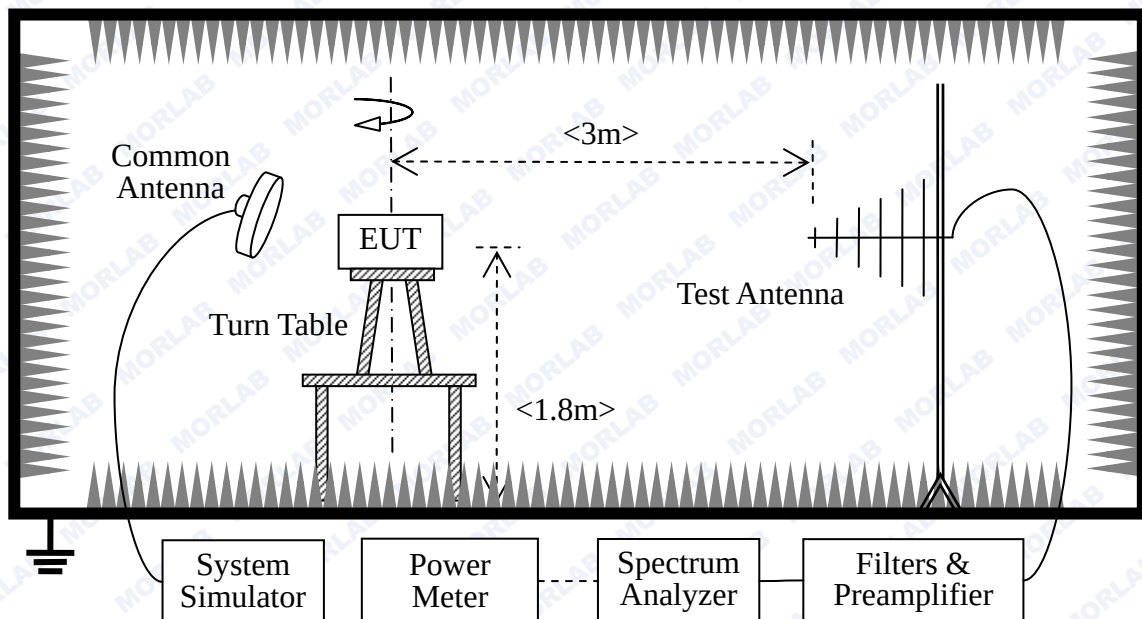
2.7 Transmitter Radiated Power (EIRP/ERP)

2.7.1 Requirement

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

2.7.2 Test Description

Test Setup:



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

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

- GSM Maximum RF output power: GSM 850 33.39dBm, GSM 1900 30.59dBm. WCDMA 850 23.70 dBm, WCDMA 1900 23.64 dBm .Please refer to section 2.1.3 of this report.
- Step size (dB): 3dB
- Minimum RF power: GSM 850 2.2dBm, GSM 1900 0.4dBm, WCDMA 850 0.31dBm, WCDMA 1900 0.6dBm.



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.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2015.02.26	2016.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2015.02.26	2016.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2015.02.26	2016.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2015.02.26	2016.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2015.02.26	2016.02.25
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2015.02.26	2016.02.25
Pre-AMPs	lucix	S10M100L3802	S020180L3203	2015.02.26	2016.02.25
Notch Filter	COM-MW	ZBSF-C836.5-2 5-X	NA	2015.02.26	2016.02.25
Notch Filter	COM-MW	ZBSF-C1747.5- 75-X2	NA	2015.02.26	2016.02.25
Notch Filter	COM-MW	ZBSF-C1880-60 -X2	NA	2015.02.26	2016.02.25

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} .

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	33.95	2.483	Plot A	38.5	7	PASS
	190	836.60	5	33.30	2.138				PASS
	251	848.80	5	33.06	2.023				PASS
GPRS 850MHz	128	824.20	5	33.73	2.360	Plot B ^{Note 1}	38.5	7	PASS
	190	836.60	5	33.50	2.239				PASS
	251	848.80	5	33.22	2.099				PASS
EGPRS 850MHz	128	824.20	5	33.93	2.472	Plot C ^{Note 1}	38.5	7	PASS
	190	836.60	5	33.69	2.339				PASS
	251	848.80	5	33.23	2.104				PASS

Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 1900MHz	512	1850.2	0	30.00	1.000	Plot D	33	2	PASS
	661	1880.0	0	30.57	1.140				PASS
	810	1909.8	0	30.70	1.175				PASS
GPRS 1900MHz	512	1850.2	0	30.04	1.009	Plot E ^{Note 1}	33	2	PASS
	661	1880.0	0	30.38	1.091				PASS
	810	1909.8	0	30.38	1.091				PASS
EGPRS 1900MHz	512	1850.2	0	30.07	1.016	Plot F ^{Note 1}	33	2	PASS
	661	1880.0	0	30.04	1.009				PASS
	810	1909.8	0	30.43	1.104				PASS

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



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WCDMA Model Test Verdict:

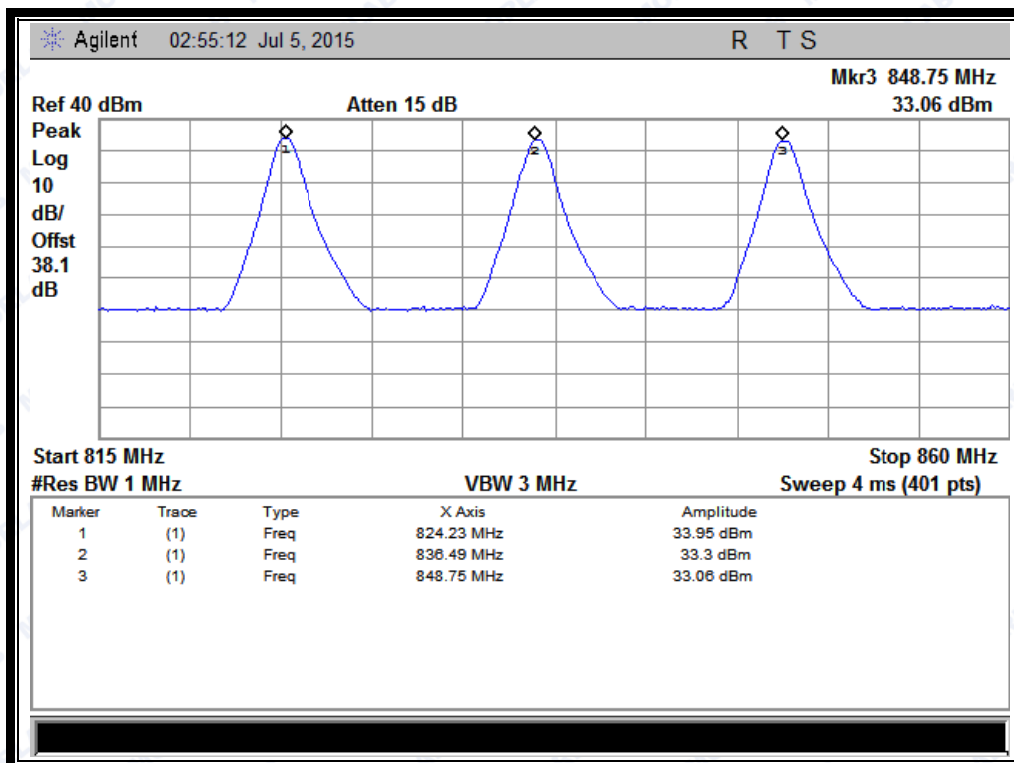
Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	26.26	0.423	Plot G	38.5	7	PASS
	4175	835.0	27.11	0.514				PASS
	4233	846.6	27.15	0.519				PASS
HSDPA 850MHz	4132	826.4	26.40	0.437	Plot H	38.5	7	PASS
	4175	835.0	27.39	0.548				PASS
	4233	846.6	27.12	0.515				PASS
HSUPA 850MHz	4132	826.4	26.38	0.435	Plot I	38.5	7	PASS
	4175	835.0	27.21	0.526				PASS
	4233	846.6	27.04	0.506				PASS
HSPA+ 850MHz	4132	826.4	26.00	0.398	Plot J	38.5	7	PASS
	4175	835.0	27.24	0.530				PASS
	4233	846.6	27.33	0.541				PASS

Band	Channel	Frequency (MHz)	Measured EIRP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 1900MHz	9262	1852.4	26.28	0.425	Plot K	33	2	PASS
	9400	1880.0	26.85	0.484				PASS
	9538	1907.6	26.19	0.416				PASS
HSDPA 1900MHz	9262	1852.4	26.43	0.440	Plot L	33	2	PASS
	9400	1880.0	26.58	0.455				PASS
	9538	1907.6	26.20	0.417				PASS
HSUPA 1900MHz	9262	1852.4	26.19	0.416	Plot M	33	2	PASS
	9400	1880.0	26.46	0.443				PASS
	9538	1907.6	26.12	0.409				PASS
HSPA+ 1900MHz	9262	1852.4	26.31	0.428	Plot N	33	2	PASS
	9400	1880.0	26.53	0.450				PASS
	9538	1907.6	26.18	0.415				PASS

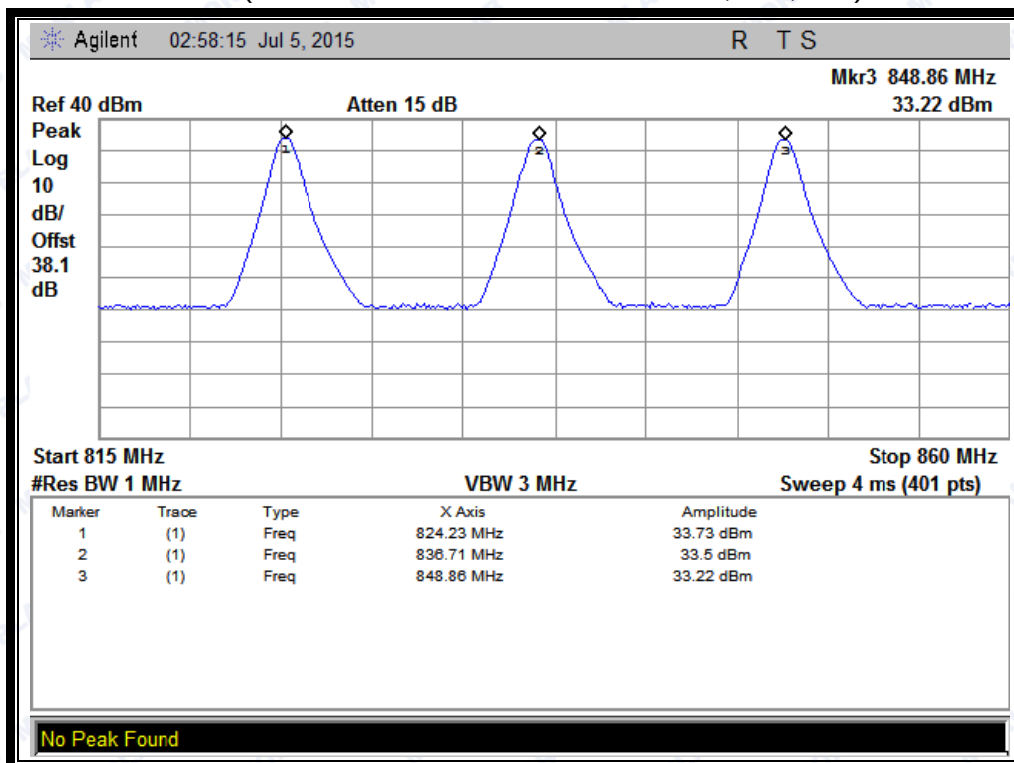


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Test Plots:



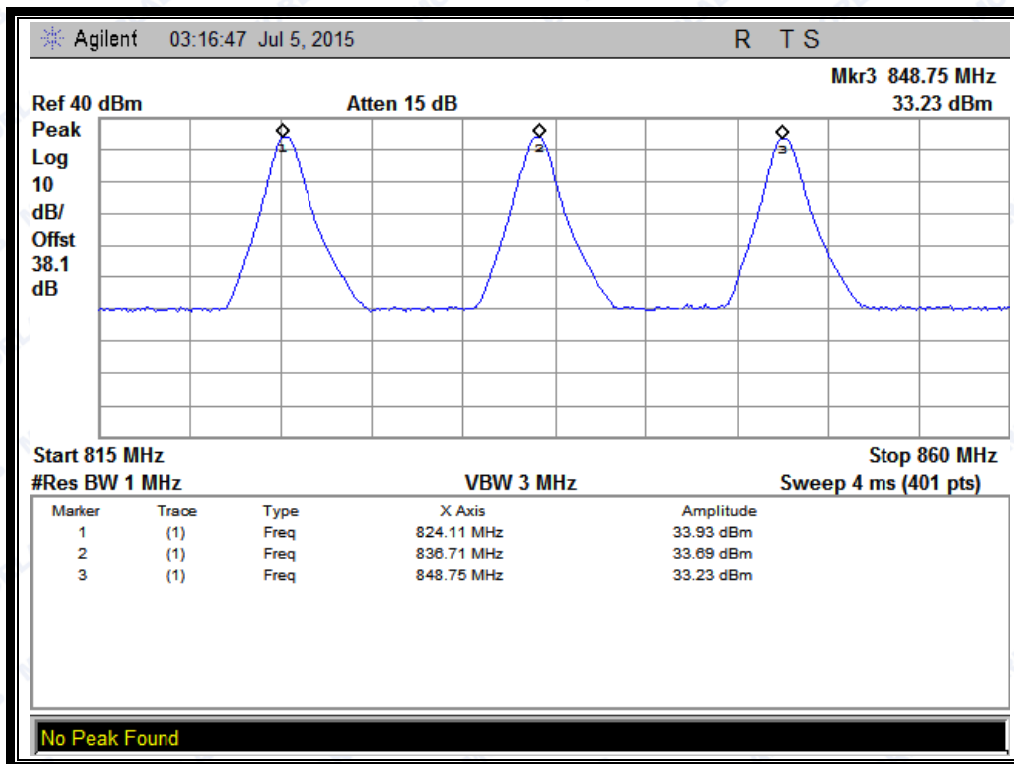
(Plot A: GSM 850MHz Channel = 128, 190, 251)



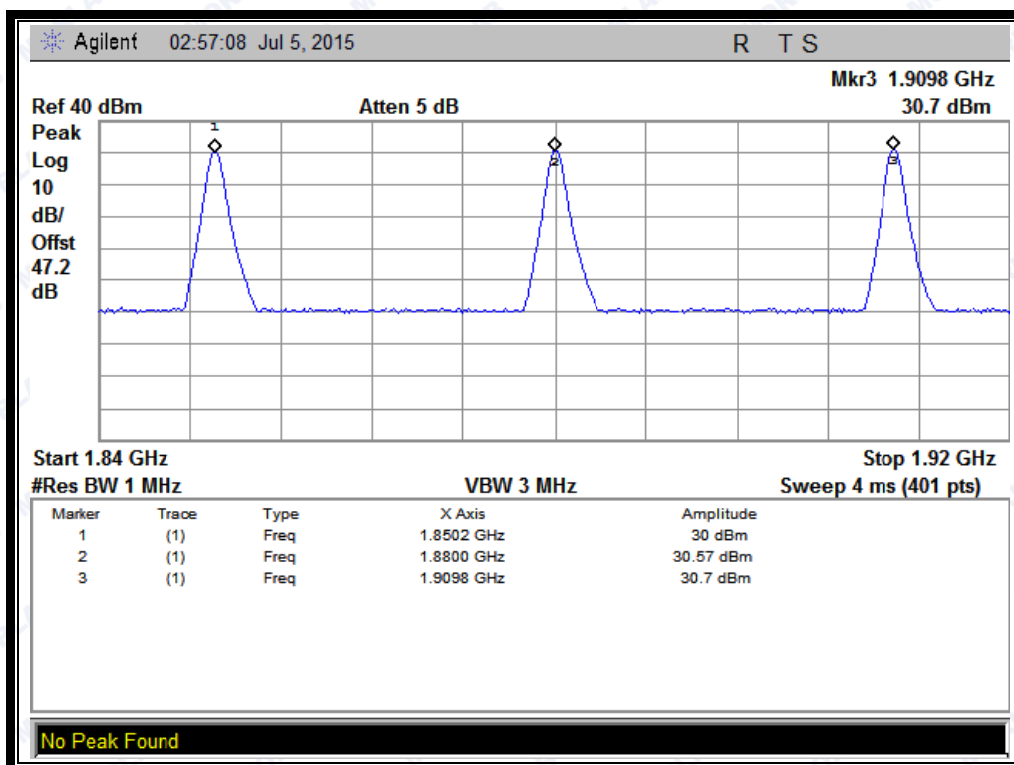
(Plot B: GPRS 850MHz Channel = 128, 190, 251)



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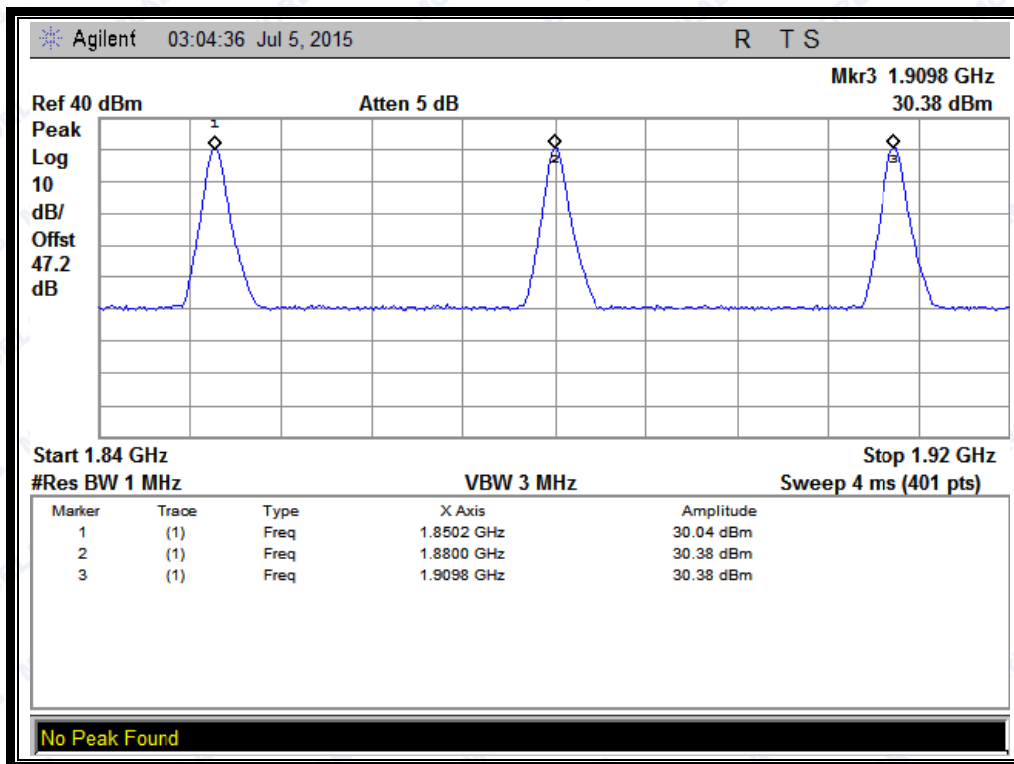
(Plot C: EGPRS 850MHz Channel = 128, 190, 251)



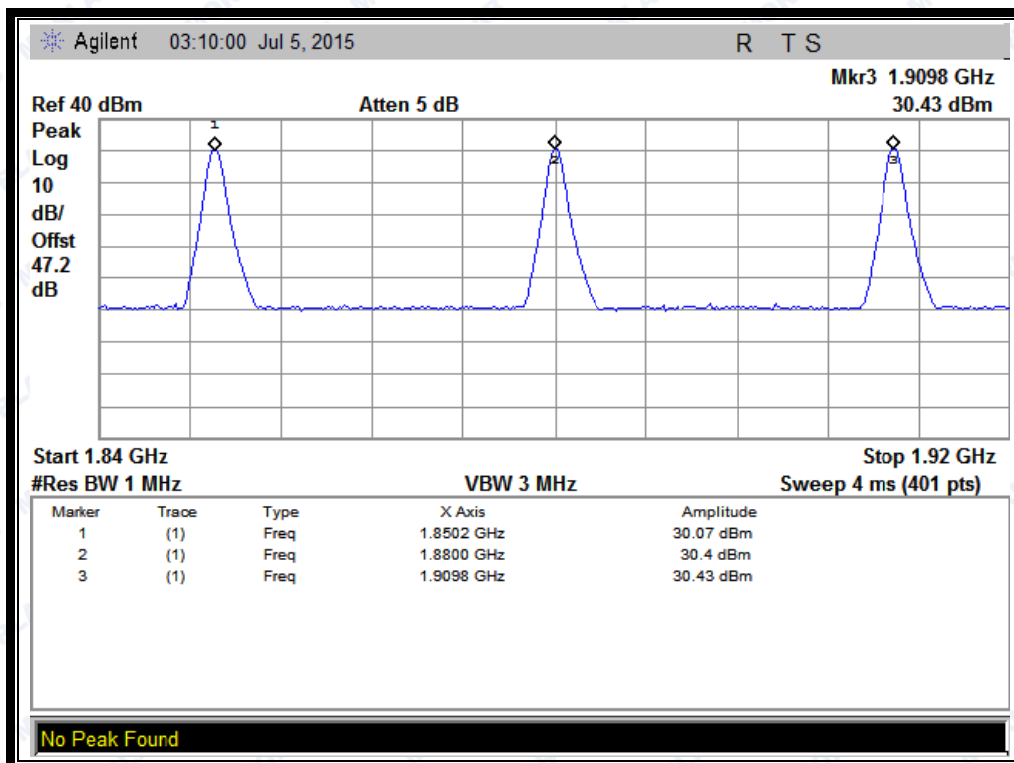
(Plot D: GSM 1900MHz Channel = 512, 661, 810)



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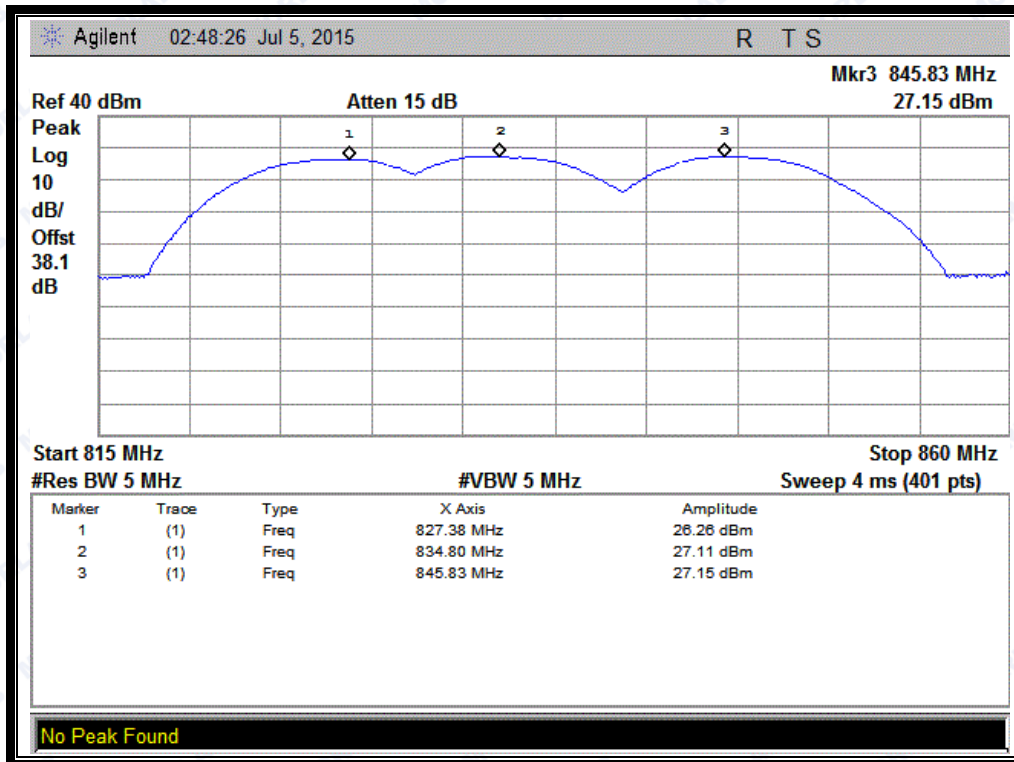
(Plot E: GPRS 1900MHz Channel = 512, 661, 810)



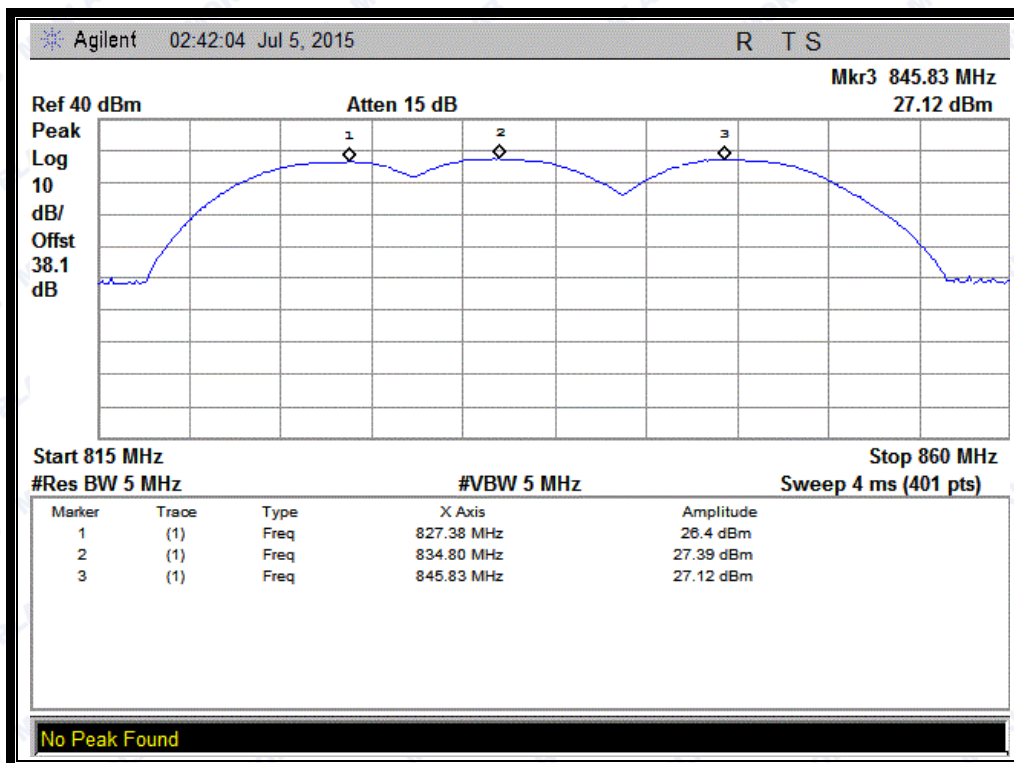
(Plot F: EGPRS 1900MHz Channel = 512, 661, 810)



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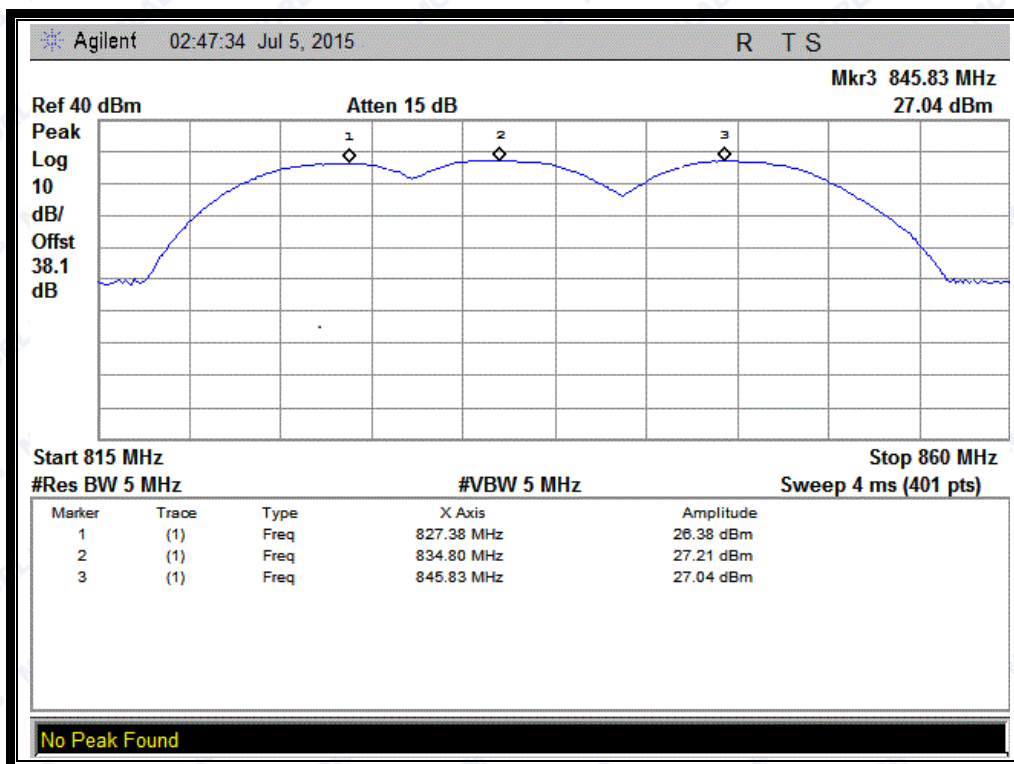
(Plot G: WCDMA 850 MHz Channel = 4132, 4175, 4233)



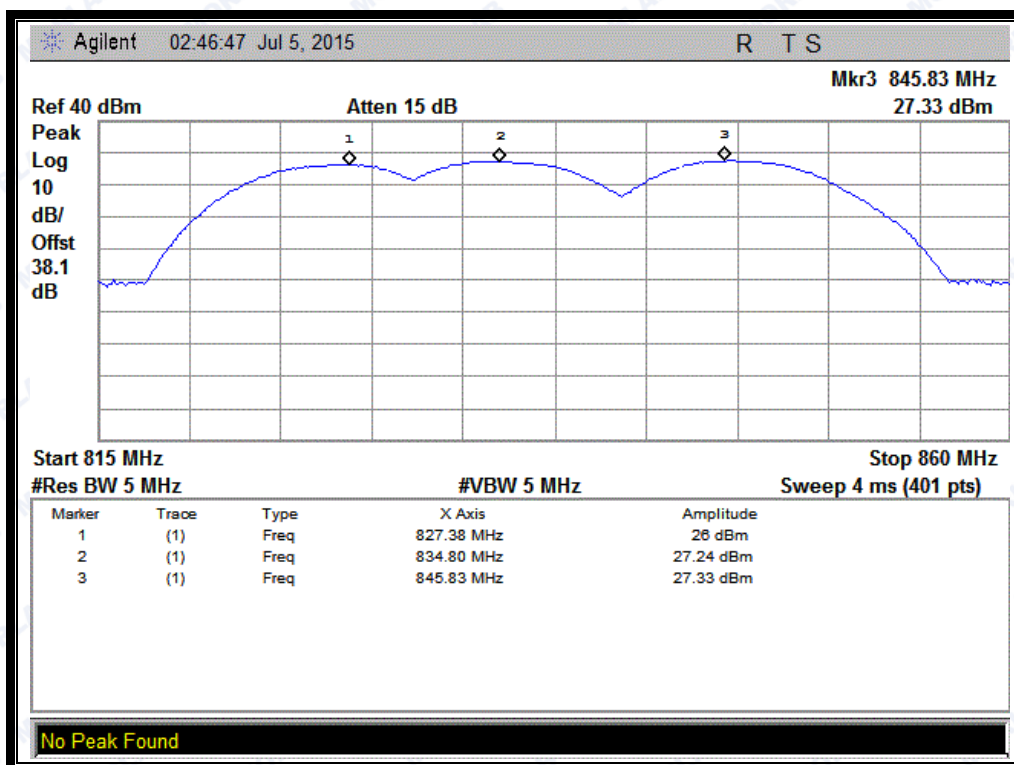
(Plot H: HSDPA 850 MHz Channel = 4132, 4175, 4233)



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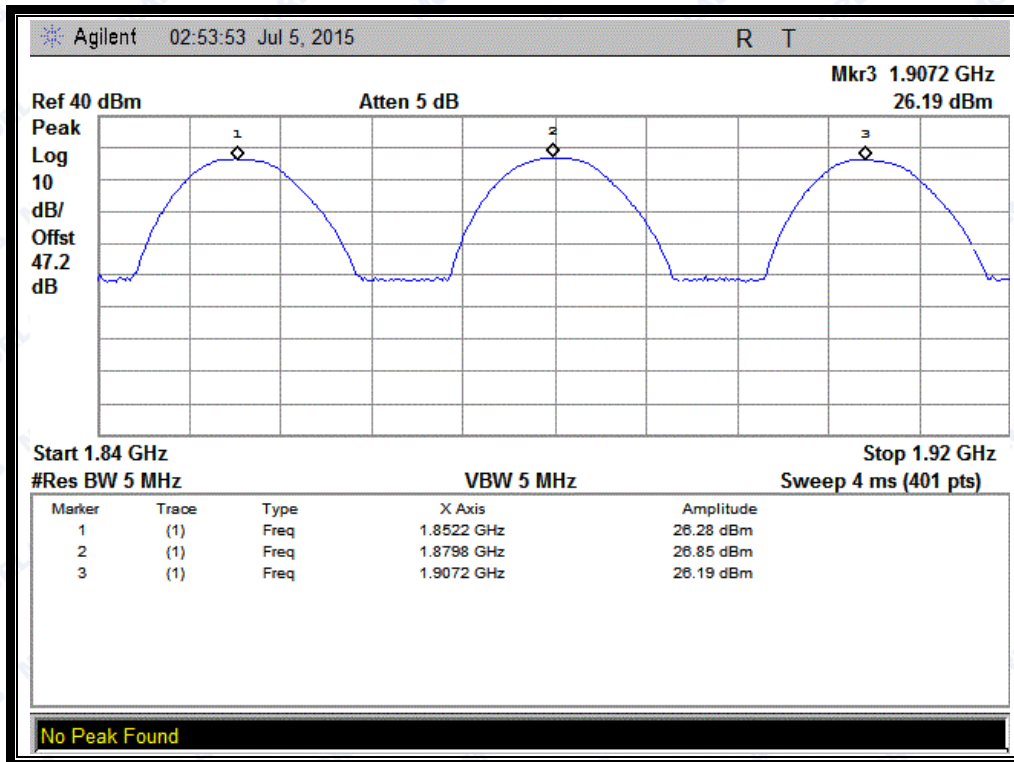
(Plot I: HSUPA 850 MHz Channel = 4132, 4175, 4233)



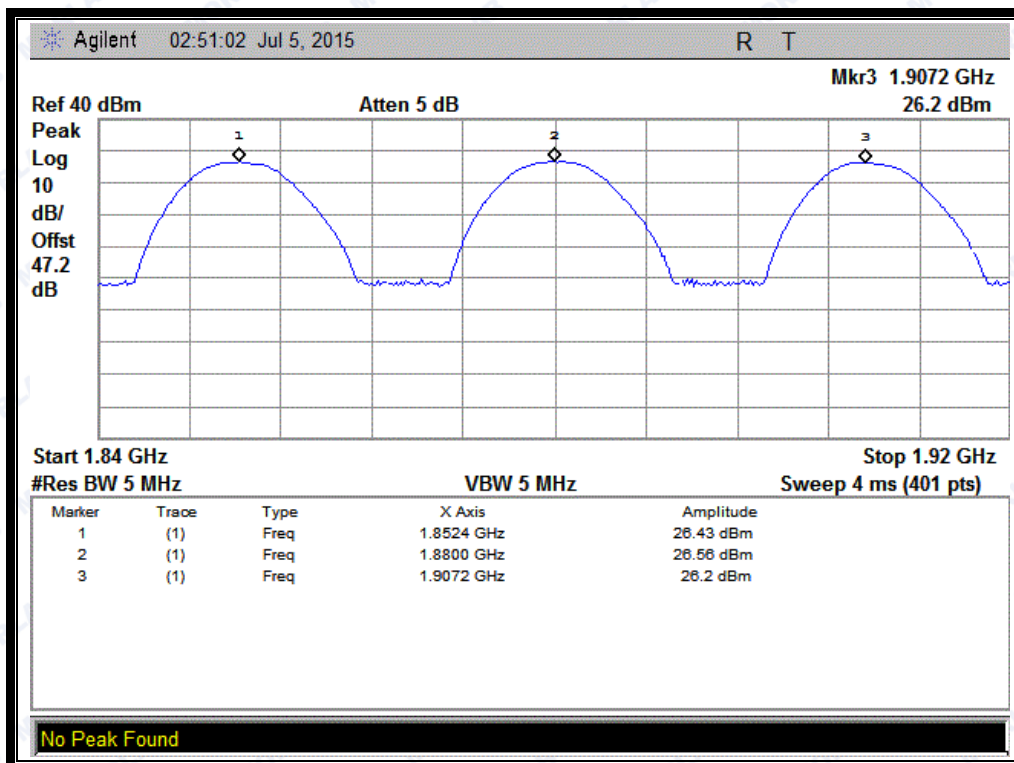
(Plot J: HSPA+ 850 MHz Channel = 4132, 4175, 4233)



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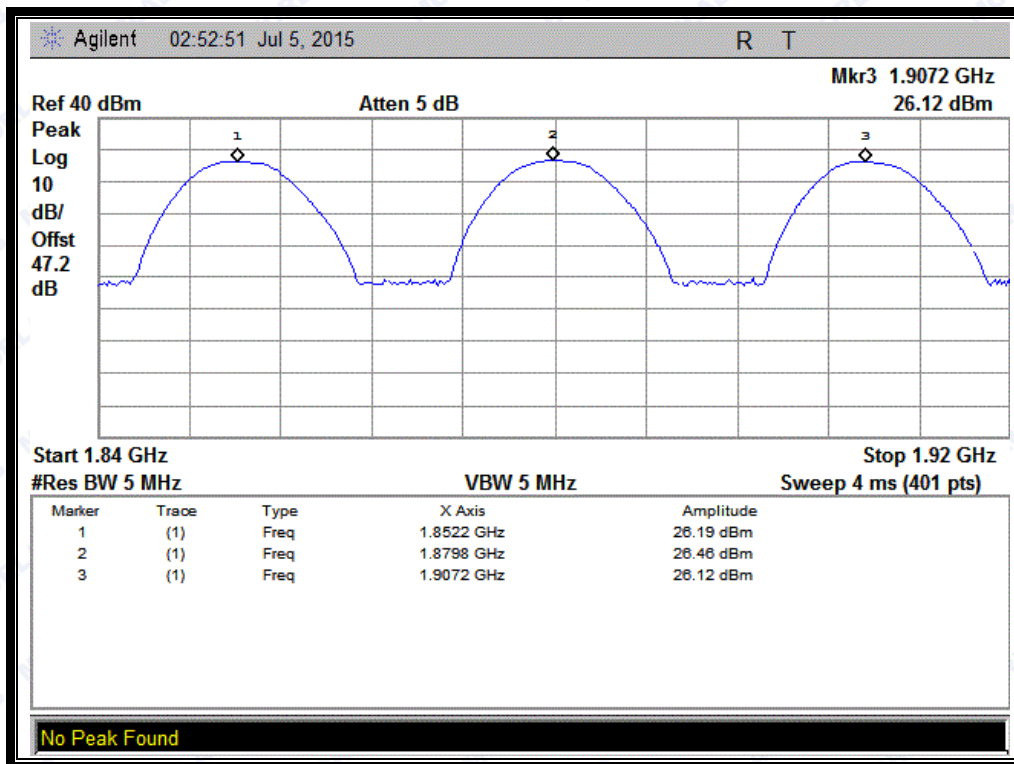
(Plot K: WCDMA 1900 MHz Channel = 9262, 9400, 9538)



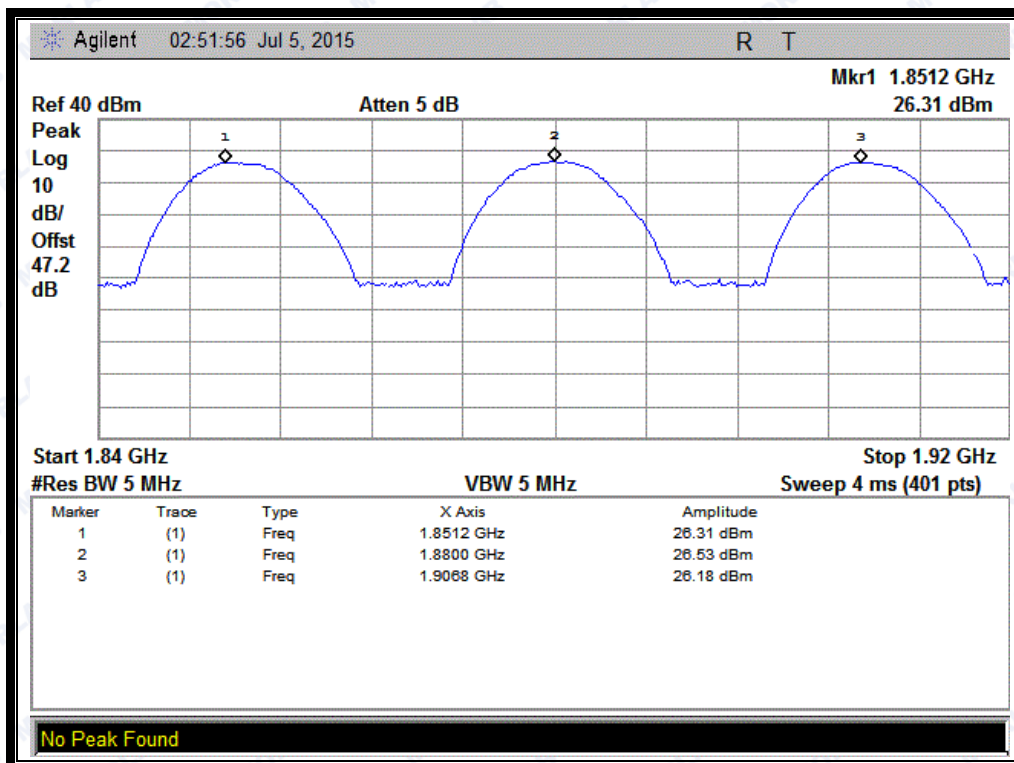
(Plot L: HSDPA1900 MHz Channel = 9262, 9400, 9538)



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



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



2.8 Radiated Out of Band Emissions

2.8.1 Requirement

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

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

2.8.2 Test Description

See section 2.7.2 of this report.

Equipment List:

Description	Manufacturer	Model	Serial No.	Cal.Date	Cal.Due
System Simulator	Agilent	E5515C	GB43130131	2015.02.26	2016.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2015.02.26	2016.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2015.02.26	2016.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2015.02.26	2016.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2015.02.26	2016.02.25
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2015.02.26	2016.02.25
Pre-AMPs	lucix	S10M100L3802	S020180L3203	2015.02.26	2016.02.25
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2015.02.26	2016.02.25
Notch Filter	COM-MW	ZBSF-C1747.5-75-X2	NA	2015.02.26	2016.02.25
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2015.02.26	2016.02.25

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:



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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 A1/A2	-13	PASS
	190	836.6	< -25	< -25	Plot A3/A4		PASS
	251	848.8	< -25	< -25	Plot A5/A6		PASS
GSM 1900MHz	512	1850.2	< -25	< -25	Plot B1/B2	-13	PASS
	661	1880.0	< -25	< -25	Plot B3/B4		PASS
	810	1909.8	< -25	< -25	Plot B5/B6		PASS
EGPRS 850MHz	128	824.2	< -25	< -25	Plot C1/C2	-13	PASS
	190	836.6	< -25	< -25	Plot C3/C4		PASS
	251	848.8	< -25	< -25	Plot C5/C6		PASS
EGPRS 1900MHz	512	1850.2	< -25	< -25	Plot D1/D2	-13	PASS
	661	1880.0	< -25	< -25	Plot D3/D4		PASS
	810	1909.8	< -25	< -25	Plot D5/D6		PASS
WCDMA 850MHz	4132	826.4	< -25	< -25	Plot E1/E2	-13	PASS
	4175	835.0	< -25	< -25	Plot E3/E4		PASS
	4233	846.6	< -25	< -25	Plot E5/E6		PASS
WCDMA 1900MHz	9262	1852.4	< -25	< -25	Plot F1/F2	-13	PASS
	9400	1880.0	< -25	< -25	Plot F3/F4		PASS
	9538	1907.6	< -25	< -25	Plot F5/F6		PASS
HSDPA 850MHz	4132	826.4	< -25	< -25	Plot G1/G2	-13	PASS
	4175	835.0	< -25	< -25	Plot G3/G4		PASS
	4233	846.6	< -25	< -25	Plot G5/G6		PASS
HSDPA 1900MHz	9262	1852.4	< -25	< -25	Plot H1/H2	-13	PASS
	9400	1880.0	< -25	< -25	Plot H3/H4		PASS
	9538	1907.6	< -25	< -25	Plot H5/H6		PASS
HSUPA 850MHz	4132	826.4	< -25	< -25	Plot I1/I2	-13	PASS
	4175	835.0	< -25	< -25	Plot I3/I4		PASS
	4233	846.6	< -25	< -25	Plot I5/I6		PASS
HSUPA 1900MHz	9262	1852.4	< -25	< -25	Plot J1/J2	-13	PASS
	9400	1880.0	< -25	< -25	Plot J3/J4		PASS
	9538	1907.6	< -25	< -25	Plot J5/J6		PASS
HSPA+ 850MHz	4132	826.4	< -25	< -25	Plot K1/K2	-13	PASS
	4175	835.0	< -25	< -25	Plot K3/K4		PASS
	4233	846.6	< -25	< -25	Plot K5/K6		PASS

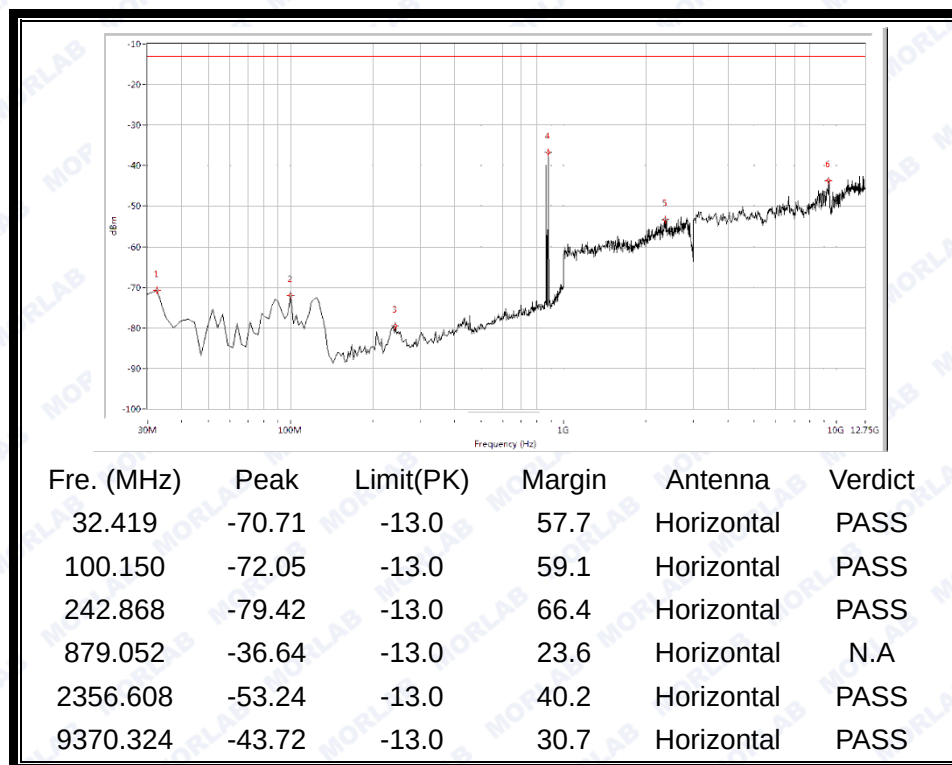


Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
HSPA+ 1900MHz	9262	1852.4	< -25	< -25	Plot L1/L2	-13	PASS
	9400	1880.0	< -25	< -25	Plot L3/L4		PASS
	9538	1907.6	< -25	< -25	Plot L5/L6		PASS

2. Test Plots for the Whole Measurement Frequency Range:

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

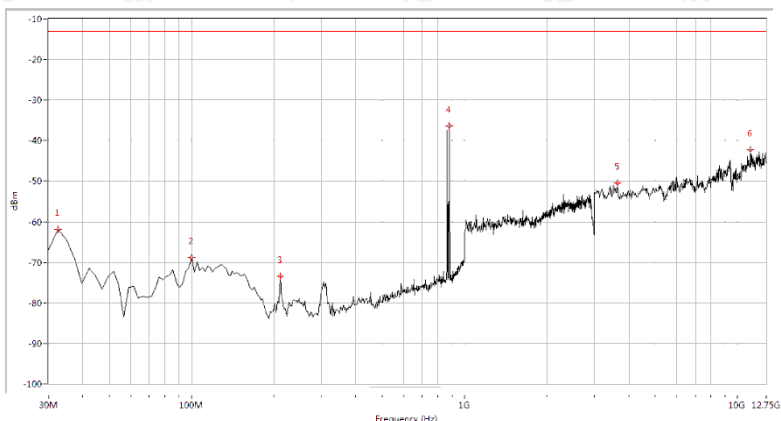
Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.



(Plot A1: GSM 850MHz Channel = 128, Test Antenna Horizontal)

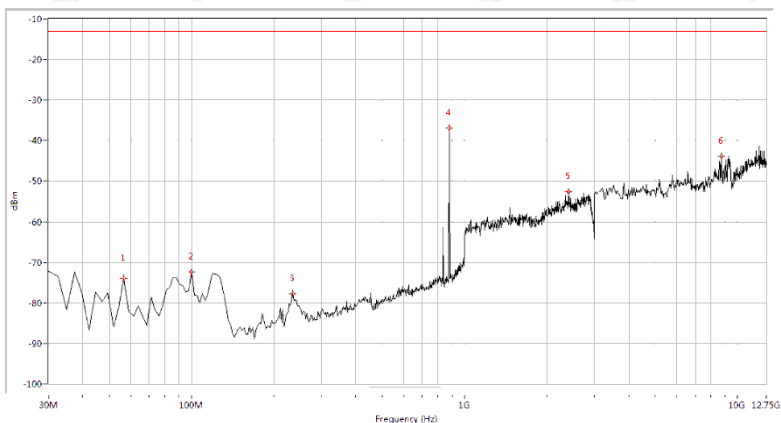


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.79	-13.0	48.8	Vertical	PASS
100.150	-68.89	-13.0	55.9	Vertical	PASS
211.421	-73.51	-13.0	60.5	Vertical	PASS
879.052	-36.42	-13.0	23.4	Vertical	N.A
3632.170	-50.52	-13.0	37.5	Vertical	PASS
11169.576	-42.31	-13.0	29.3	Vertical	PASS

(Plot A2: GSM 850MHz Channel = 128, Test Antenna Vertical)

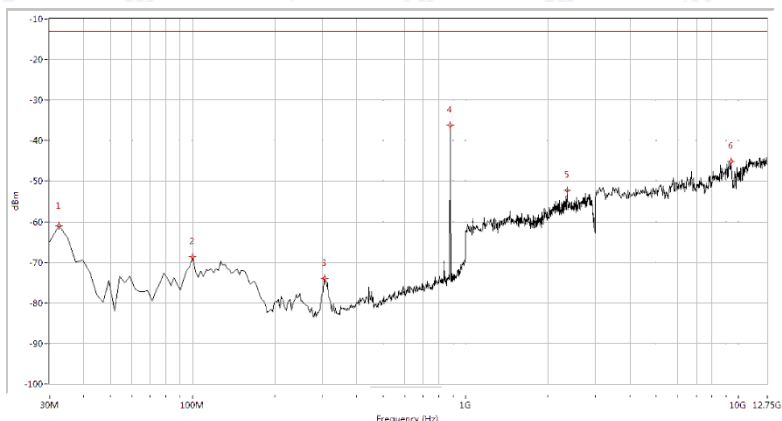


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
56.608	-74.05	-13.0	61.1	Horizontal	PASS
100.150	-72.45	-13.0	59.4	Horizontal	PASS
235.611	-77.79	-13.0	64.8	Horizontal	PASS
879.052	-36.84	-13.0	23.8	Horizontal	N.A
2411.471	-52.67	-13.0	39.7	Horizontal	PASS
8738.155	-43.78	-13.0	30.8	Horizontal	PASS

(Plot A3: GSM850MHz Channel = 190, Test Antenna Horizontal)

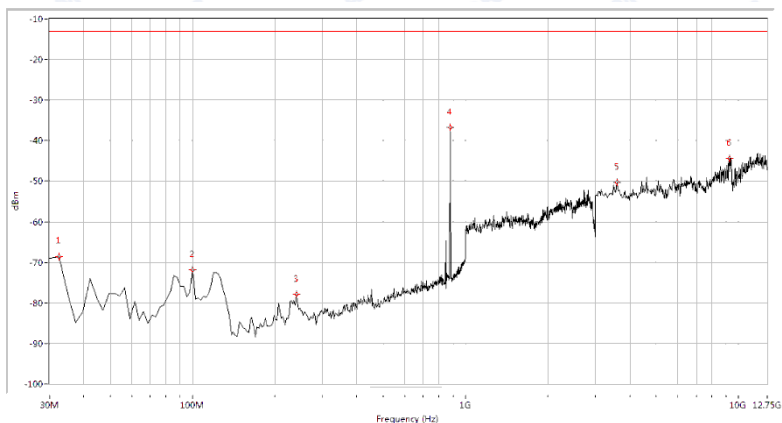


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.05	-13.0	48.0	Vertical	PASS
100.150	-68.61	-13.0	55.6	Vertical	PASS
305.761	-74.06	-13.0	61.1	Vertical	PASS
879.052	-36.29	-13.0	23.3	Vertical	N.A
2361.596	-52.27	-13.0	39.3	Vertical	PASS
9394.638	-45.13	-13.0	32.1	Vertical	PASS

(Plot A4: GSM 850MHz Channel = 190, Test Antenna Vertical)

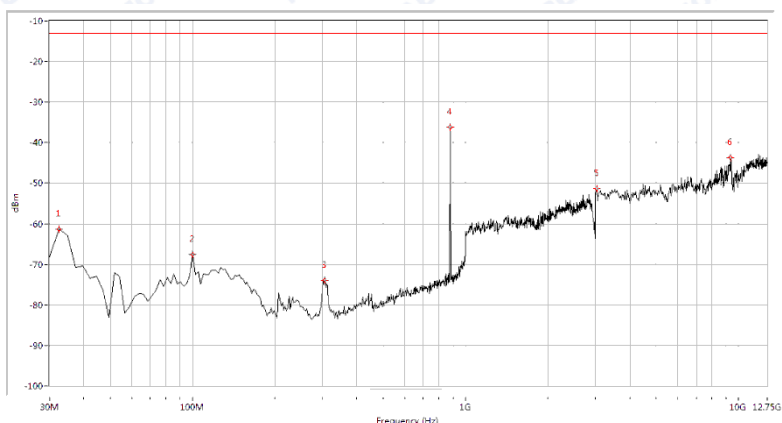


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-68.56	-13.0	55.6	Horizontal	PASS
100.150	-71.87	-13.0	58.9	Horizontal	PASS
240.449	-77.85	-13.0	64.8	Horizontal	PASS
879.052	-36.78	-13.0	23.8	Horizontal	N.A
3583.541	-50.32	-13.0	37.3	Horizontal	PASS
9297.382	-44.34	-13.0	31.3	Horizontal	PASS

(Plot A5: GSM 850MHz Channel = 251, Test Antenna Horizontal)

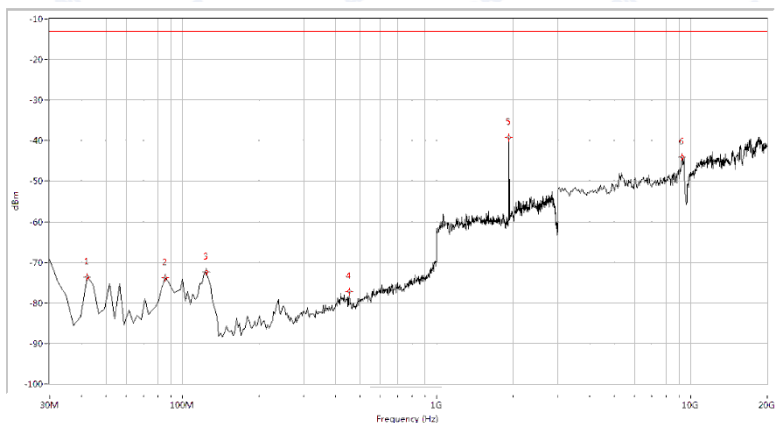


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.36	-13.0	48.4	Vertical	PASS
100.150	-67.58	-13.0	54.6	Vertical	PASS
305.761	-74.00	-13.0	61.0	Vertical	PASS
879.052	-36.21	-13.0	23.2	Vertical	N.A
3024.314	-51.40	-13.0	38.4	Vertical	PASS
9370.324	-43.69	-13.0	30.7	Vertical	PASS

(Plot A6: GSM 850MHz Channel = 251, Test Antenna Vertical)

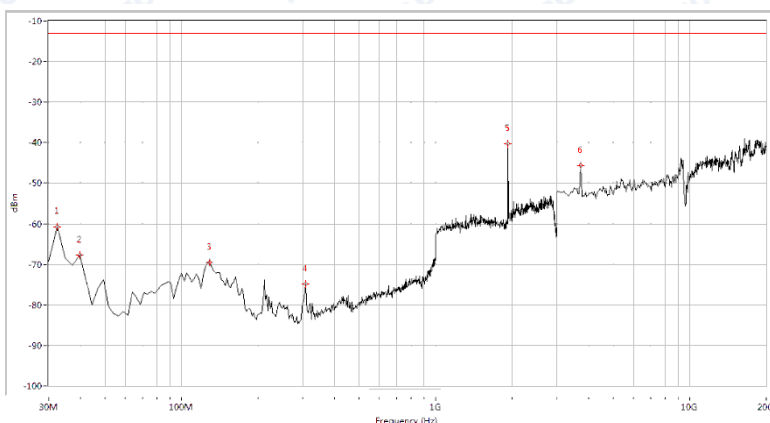


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-73.61	-13.0	60.6	Horizontal	PASS
85.636	-73.80	-13.0	60.8	Horizontal	PASS
124.339	-72.35	-13.0	59.3	Horizontal	PASS
453.317	-77.17	-13.0	64.2	Horizontal	PASS
1927.681	-39.18	-13.0	26.2	Horizontal	N.A
9231.920	-43.97	-13.0	31.0	Horizontal	PASS

(Plot B1: GSM 1900MHz Channel = 512, Test Antenna Horizontal)

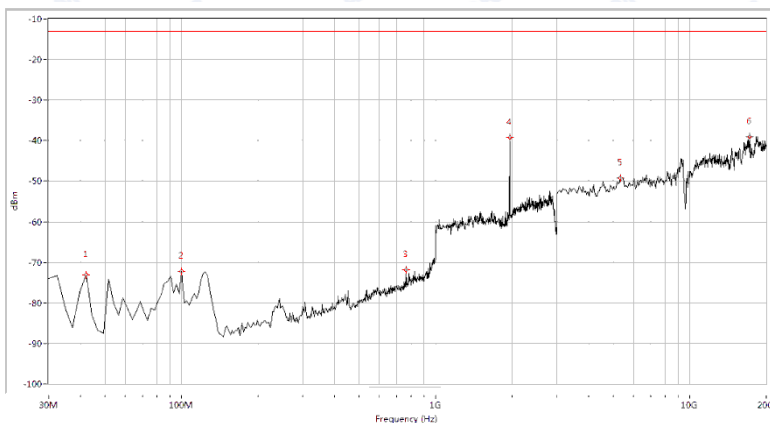


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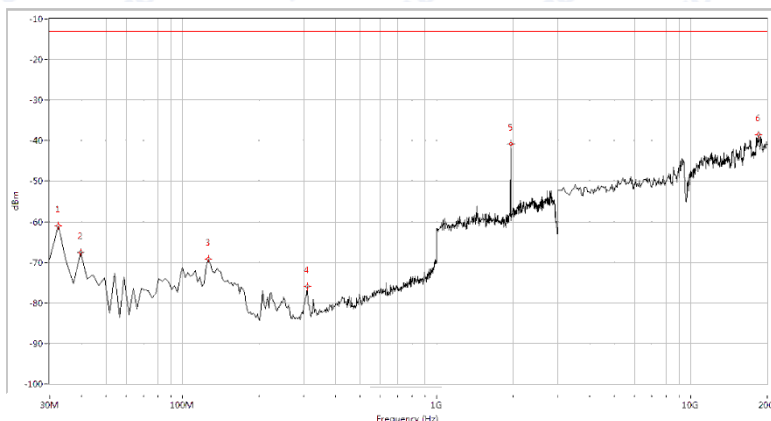
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.73	-13.0	47.7	Vertical	PASS
39.676	-67.66	-13.0	54.7	Vertical	PASS
129.177	-69.60	-13.0	56.6	Vertical	PASS
308.180	-74.91	-13.0	61.9	Vertical	PASS
1927.681	-40.21	-13.0	27.2	Vertical	N.A
3720.698	-45.64	-13.0	32.6	Vertical	PASS

(Plot B2: GSM 1900MHz Channel = 512, Test Antenna Vertical)



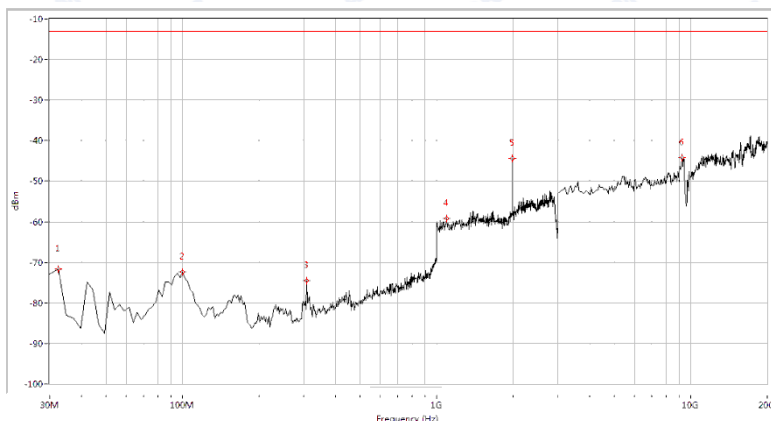
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-73.12	-13.0	60.1	Horizontal	PASS
100.150	-72.28	-13.0	59.3	Horizontal	PASS
765.362	-71.93	-13.0	58.9	Horizontal	PASS
1957.606	-39.24	-13.0	26.2	Horizontal	N.A
5331.671	-49.19	-13.0	36.2	Horizontal	PASS
17159.601	-39.04	-13.0	26.0	Horizontal	PASS

(Plot B3: GSM 1900MHz Channel = 661, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.02	-13.0	48.0	Vertical	PASS
39.676	-67.63	-13.0	54.6	Vertical	PASS
126.758	-69.24	-13.0	56.2	Vertical	PASS
310.599	-76.00	-13.0	63.0	Vertical	PASS
1957.606	-40.81	-13.0	27.8	Vertical	N.A
18516.209	-38.46	-13.0	25.5	Vertical	PASS

(Plot B4: GSM 1900MHz Channel = 661, Test Antenna Vertical)

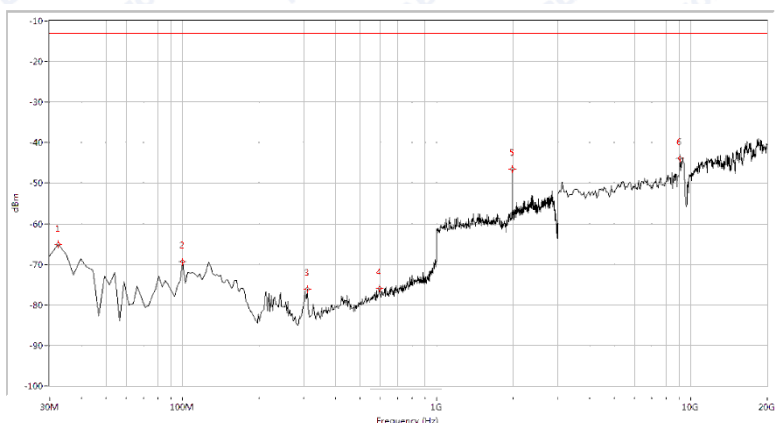


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-71.63	-13.0	58.6	Horizontal	PASS
100.150	-72.29	-13.0	59.3	Horizontal	PASS
308.180	-74.56	-13.0	61.6	Horizontal	PASS
1094.763	-59.26	-13.0	46.3	Horizontal	PASS
1987.531	-44.35	-13.0	31.4	Horizontal	N.A
9231.920	-44.21	-13.0	31.2	Horizontal	PASS

(Plot B5: GSM 1900MHz Channel = 810, Test Antenna Horizontal)

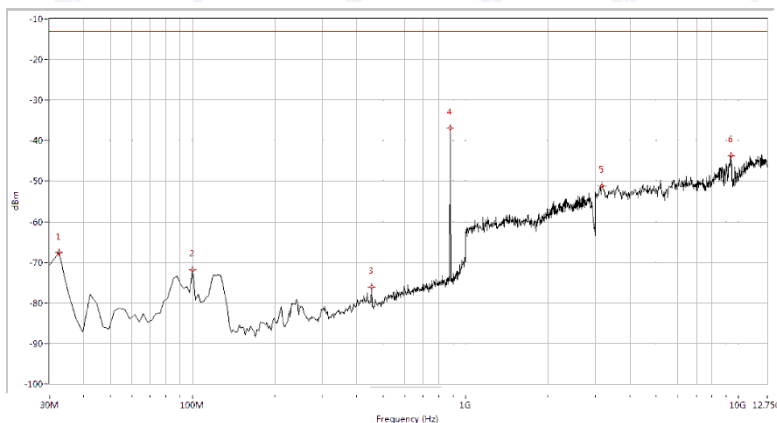


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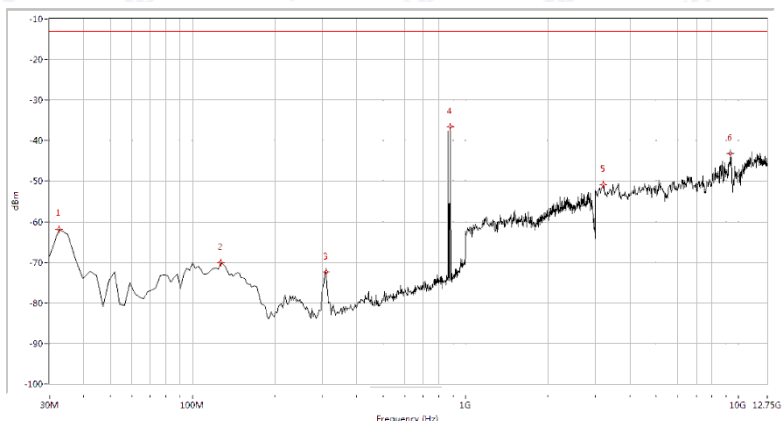
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-65.07	-13.0	52.1	Vertical	PASS
100.150	-69.27	-13.0	56.3	Vertical	PASS
310.599	-76.13	-13.0	63.1	Vertical	PASS
596.035	-76.00	-13.0	63.0	Vertical	PASS
1987.531	-46.57	-13.0	33.6	Vertical	N.A
9062.344	-43.88	-13.0	30.9	Vertical	PASS

(Plot B6: GSM 1900MHz Channel = 810, Test Antenna Vertical)



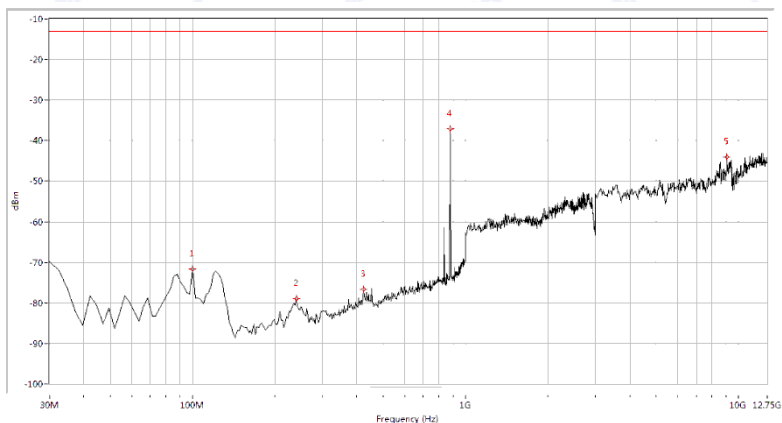
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-67.61	-13.0	54.6	Horizontal	PASS
100.150	-71.85	-13.0	58.8	Horizontal	PASS
453.317	-76.14	-13.0	63.1	Horizontal	PASS
879.052	-37.00	-13.0	24.0	Horizontal	N.A
3170.200	-51.24	-13.0	38.2	Horizontal	PASS
9418.953	-43.62	-13.0	30.6	Horizontal	PASS

(Plot C1: EGPRS 850MHz Channel = 128, Test Antenna Horizontal)



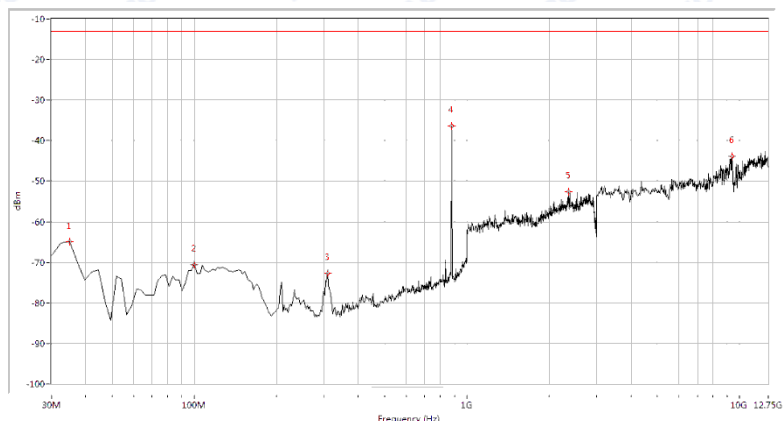
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.85	-13.0	48.9	Vertical	PASS
126.758	-69.98	-13.0	57.0	Vertical	PASS
308.180	-72.37	-13.0	59.4	Vertical	PASS
879.052	-36.50	-13.0	23.5	Vertical	N.A
3194.514	-50.79	-13.0	37.8	Vertical	PASS
9370.324	-43.17	-13.0	30.2	Vertical	PASS

(Plot C2: EGPRS 850MHz Channel = 128, Test Antenna Vertical)



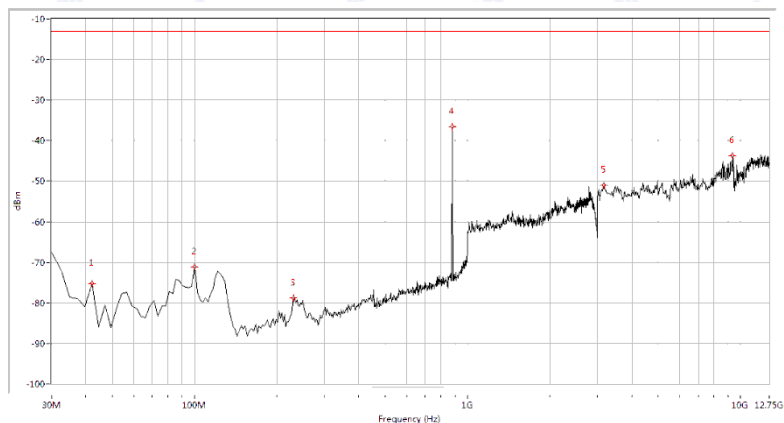
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
100.150	-71.67	-13.0	58.7	Horizontal	PASS
240.449	-78.94	-13.0	65.9	Horizontal	PASS
424.289	-76.71	-13.0	63.7	Horizontal	PASS
879.052	-37.04	-13.0	24.0	Horizontal	N.A
9078.554	-44.10	-13.0	31.1	Horizontal	PASS
100.150	-71.67	-13.0	58.7	Horizontal	PASS

(Plot C3: EGPRS 850MHz Channel = 190, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-64.95	-13.0	51.9	Vertical	PASS
100.150	-70.53	-13.0	57.5	Vertical	PASS
308.180	-72.67	-13.0	59.7	Vertical	PASS
879.052	-36.31	-13.0	23.3	Vertical	N.A
2361.596	-52.64	-13.0	39.6	Vertical	PASS
9394.638	-43.90	-13.0	30.9	Vertical	PASS

(Plot C4: EGPRS 850MHz Channel = 190, Test Antenna Vertical)

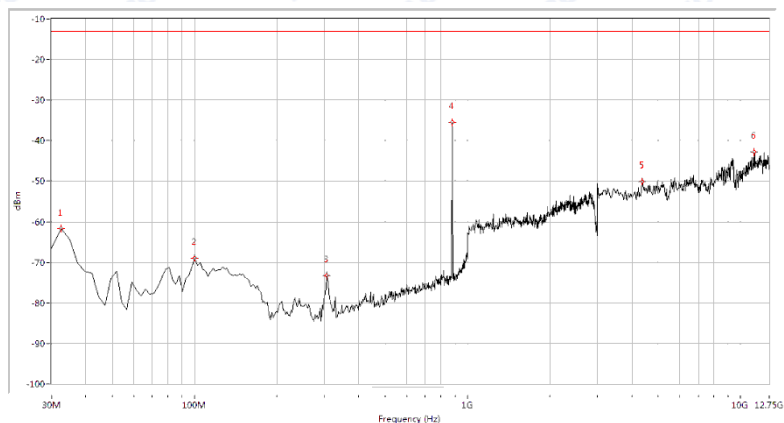


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-75.25	-13.0	62.3	Horizontal	PASS
100.150	-71.09	-13.0	58.1	Horizontal	PASS
230.773	-78.86	-13.0	65.9	Horizontal	PASS
879.052	-36.59	-13.0	23.6	Horizontal	N.A
3170.200	-50.96	-13.0	38.0	Horizontal	PASS
9370.324	-43.65	-13.0	30.7	Horizontal	PASS

(Plot C5: EGPRS 850MHz Channel = 251, Test Antenna Horizontal)

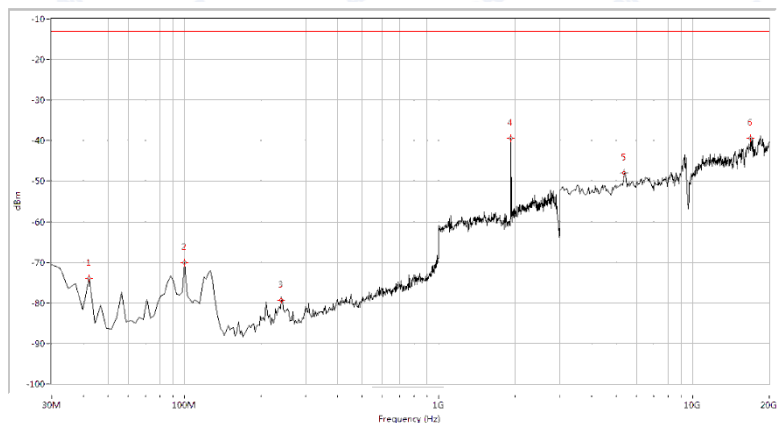


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.70	-13.0	48.7	Vertical	PASS
100.150	-68.99	-13.0	56.0	Vertical	PASS
305.761	-73.20	-13.0	60.2	Vertical	PASS
879.052	-35.53	-13.0	22.5	Vertical	N.A
4361.596	-50.10	-13.0	37.1	Vertical	PASS
11193.890	-42.78	-13.0	29.8	Vertical	PASS

(Plot C6: EGPRS 850MHz Channel = 251, Test Antenna Vertical)

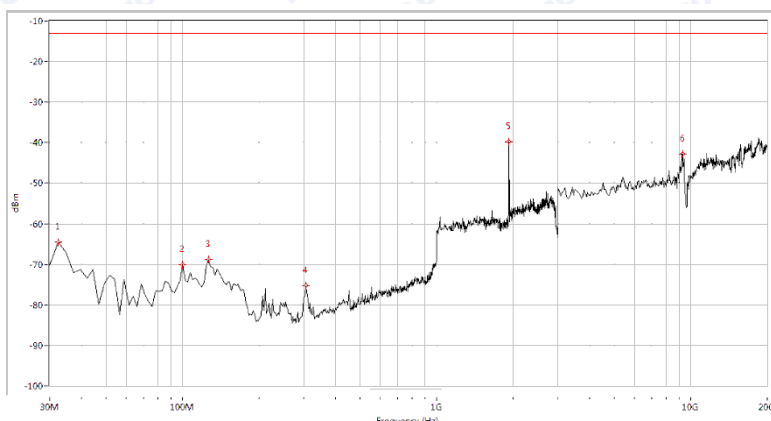


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-74.00	-13.0	61.0	Horizontal	PASS
100.150	-70.11	-13.0	57.1	Horizontal	PASS
240.449	-79.32	-13.0	66.3	Horizontal	PASS
1927.681	-39.48	-13.0	26.5	Horizontal	N.A
5374.065	-47.89	-13.0	34.9	Horizontal	PASS
16862.843	-39.38	-13.0	26.4	Horizontal	PASS

(Plot D1: EGPRS 1900MHz Channel = 512, Test Antenna Horizontal)

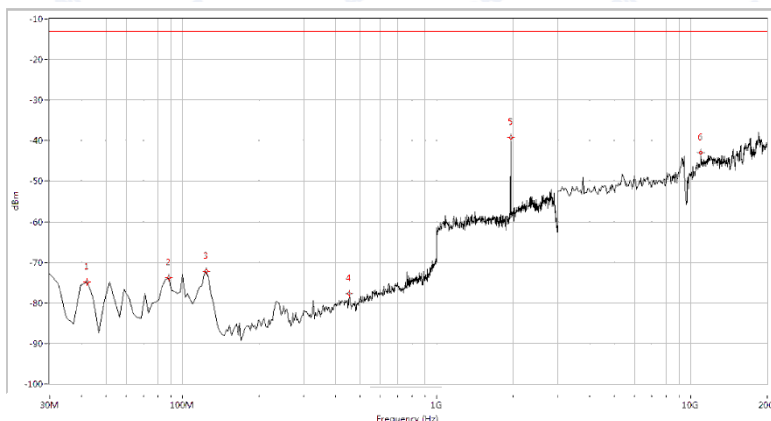


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-64.52	-13.0	51.5	Vertical	PASS
100.150	-69.97	-13.0	57.0	Vertical	PASS
126.758	-68.83	-13.0	55.8	Vertical	PASS
305.761	-75.28	-13.0	62.3	Vertical	PASS
1927.681	-39.83	-13.0	26.8	Vertical	N.A
9274.314	-42.78	-13.0	29.8	Vertical	PASS

(Plot D2: EGPRS 1900MHz Channel = 512, Test Antenna Vertical)

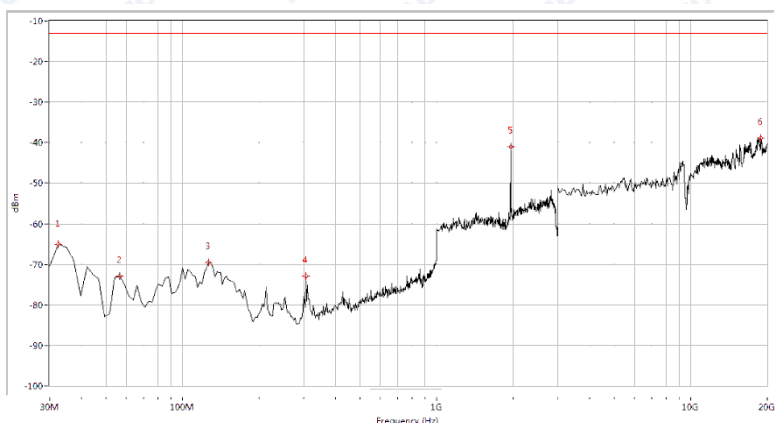


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-74.85	-13.0	61.8	Horizontal	PASS
88.055	-73.81	-13.0	60.8	Horizontal	PASS
124.339	-72.28	-13.0	59.3	Horizontal	PASS
453.317	-77.67	-13.0	64.7	Horizontal	PASS
1957.606	-39.15	-13.0	26.1	Horizontal	N.A
10970.075	-43.04	-13.0	30.0	Horizontal	PASS

(Plot D3: EGPRS 1900MHz Channel = 661, Test Antenna Horizontal)

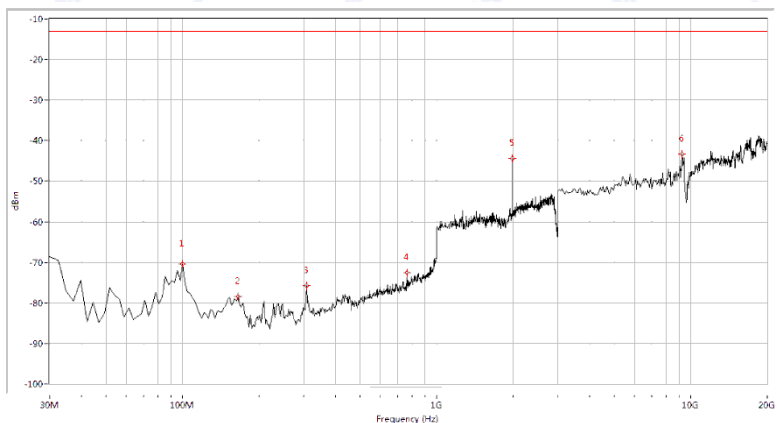


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-65.00	-13.0	52.0	Vertical	PASS
56.608	-72.90	-13.0	59.9	Vertical	PASS
126.758	-69.48	-13.0	56.5	Vertical	PASS
305.761	-72.96	-13.0	60.0	Vertical	PASS
1957.606	-41.08	-13.0	28.1	Vertical	N.A
18812.968	-38.83	-13.0	25.8	Vertical	PASS

(Plot D4: EGPRS 1900MHz Channel = 661, Test Antenna Vertical)

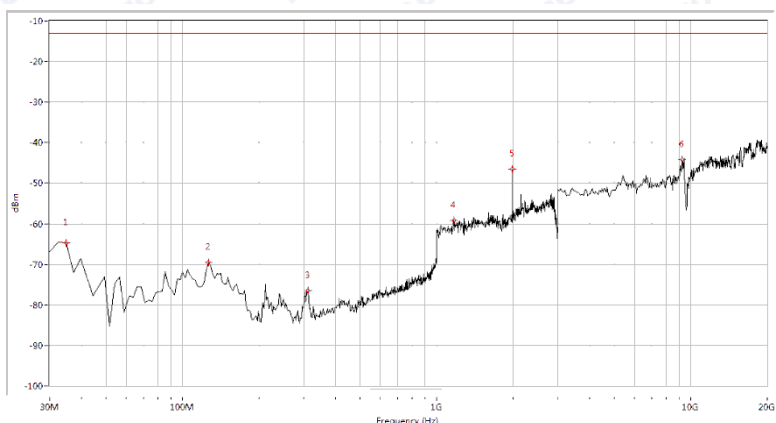


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
100.150	-70.46	-13.0	57.5	Horizontal	PASS
165.461	-78.51	-13.0	65.5	Horizontal	PASS
308.180	-75.78	-13.0	62.8	Horizontal	PASS
765.362	-72.56	-13.0	59.6	Horizontal	PASS
1987.531	-44.31	-13.0	31.3	Horizontal	N.A
9231.920	-43.28	-13.0	30.3	Horizontal	PASS

(Plot D5: EGPRS 1900MHz Channel = 810, Test Antenna Horizontal)

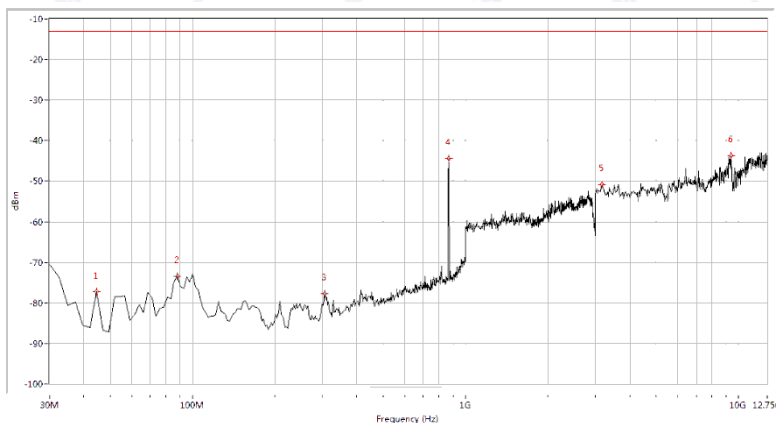


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-64.66	-13.0	51.7	Vertical	PASS
126.758	-69.53	-13.0	56.5	Vertical	PASS
313.017	-76.42	-13.0	63.4	Vertical	PASS
1169.576	-59.12	-13.0	46.1	Vertical	PASS
1987.531	-46.56	-13.0	33.6	Vertical	N.A
9231.920	-44.16	-13.0	31.2	Vertical	PASS

(Plot D6: EGPRS 1900MHz Channel = 810, Test Antenna Vertical)

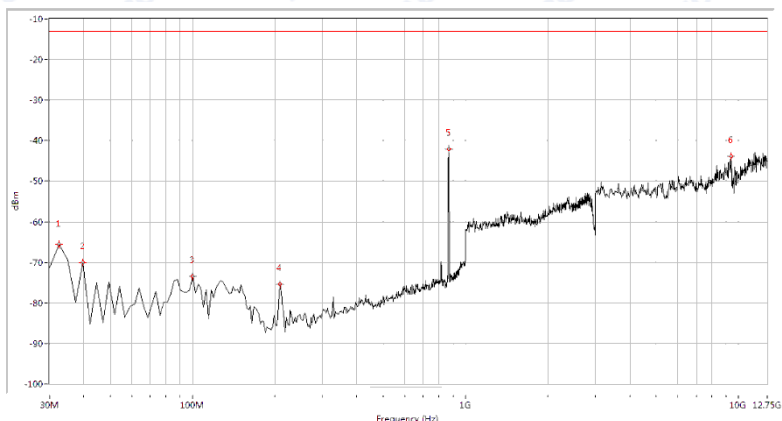


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
44.514	-77.10	-13.0	64.1	Horizontal	PASS
88.055	-73.43	-13.0	60.4	Horizontal	PASS
305.761	-77.66	-13.0	64.7	Horizontal	PASS
869.377	-44.47	-13.0	31.5	Horizontal	N.A
3170.200	-50.89	-13.0	37.9	Horizontal	PASS
9394.638	-43.76	-13.0	30.8	Horizontal	PASS

(Plot E1: WCDMA 850MHz Channel = 4132, Test Antenna Horizontal)

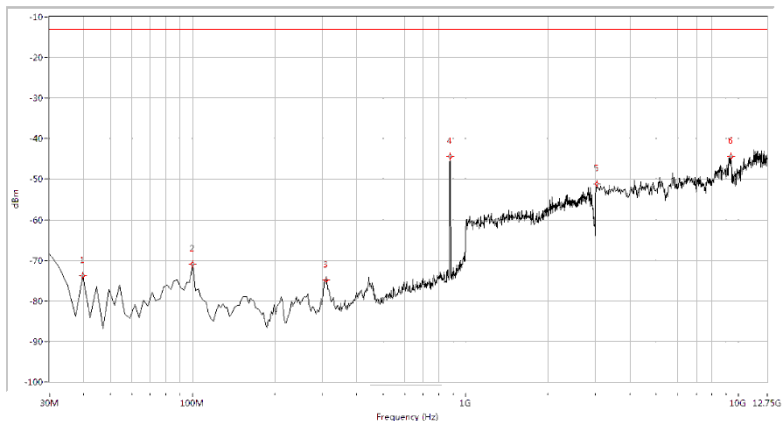


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-65.62	-13.0	52.6	Vertical	PASS
39.676	-69.99	-13.0	57.0	Vertical	PASS
100.150	-73.41	-13.0	60.4	Vertical	PASS
209.002	-75.43	-13.0	62.4	Vertical	PASS
871.796	-42.00	-13.0	29.0	Vertical	N.A
9394.638	-43.92	-13.0	30.9	Vertical	PASS

(Plot E2: WCDMA 850MHz Channel = 4132, Test Antenna Vertical)

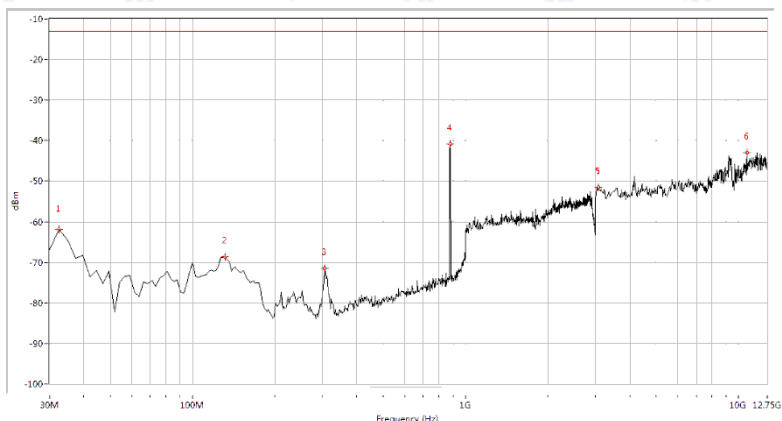


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-73.74	-13.0	60.7	Horizontal	PASS
100.150	-70.98	-13.0	58.0	Horizontal	PASS
308.180	-74.82	-13.0	61.8	Horizontal	PASS
879.052	-44.39	-13.0	31.4	Horizontal	N.A
3024.314	-51.15	-13.0	38.2	Horizontal	PASS
9394.638	-44.48	-13.0	31.5	Horizontal	PASS

(Plot E3: WCDMA 850MHz Channel = 4175, Test Antenna Horizontal)

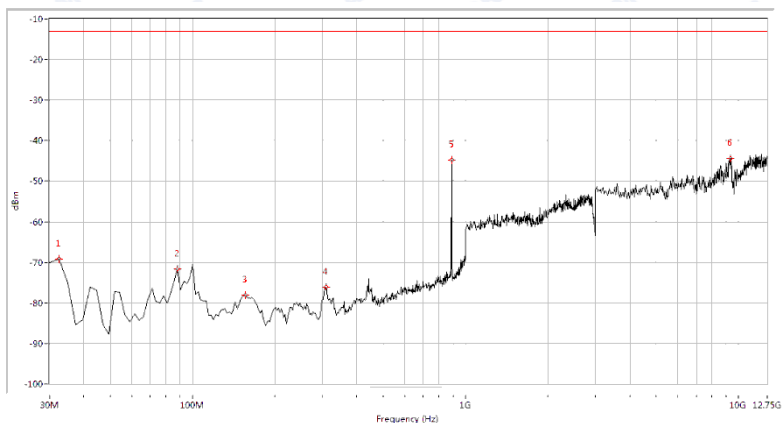


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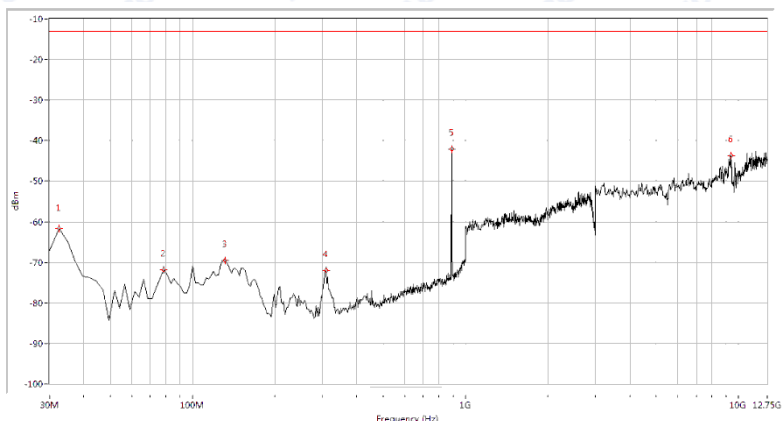
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.91	-13.0	48.9	Vertical	PASS
131.596	-68.64	-13.0	55.6	Vertical	PASS
305.761	-71.43	-13.0	58.4	Vertical	PASS
879.052	-40.92	-13.0	27.9	Vertical	N.A
3072.943	-51.50	-13.0	38.5	Vertical	PASS
10731.920	-43.05	-13.0	30.1	Vertical	PASS

(Plot E4: WCDMA 850MHz Channel = 4175, Test Antenna Vertical)



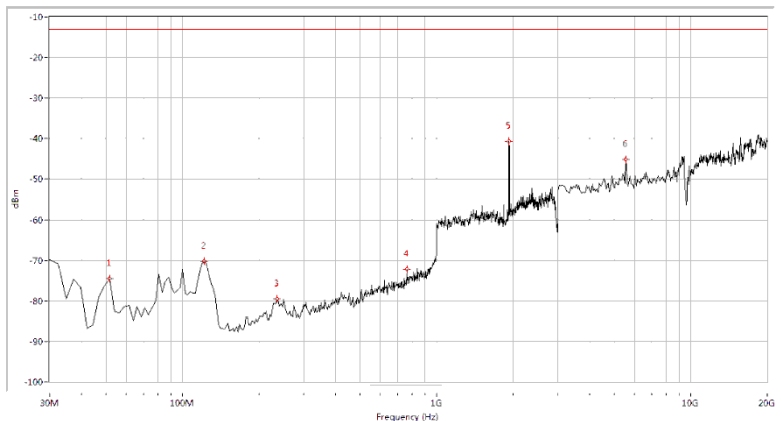
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-69.25	-13.0	56.3	Horizontal	PASS
88.055	-71.71	-13.0	58.7	Horizontal	PASS
155.786	-78.07	-13.0	65.1	Horizontal	PASS
308.180	-76.19	-13.0	63.2	Horizontal	PASS
888.728	-44.73	-13.0	31.7	Horizontal	N.A
9370.324	-44.46	-13.0	31.5	Horizontal	PASS

(Plot E5: WCDMA 850MHz Channel = 4233, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.62	-13.0	48.6	Vertical	PASS
78.379	-71.90	-13.0	58.9	Vertical	PASS
131.596	-69.50	-13.0	56.5	Vertical	PASS
308.180	-71.96	-13.0	59.0	Vertical	PASS
891.147	-42.06	-13.0	29.1	Vertical	N.A
9394.638	-43.60	-13.0	30.6	Vertical	PASS

(Plot E6: WCDMA 850MHz Channel = 4233, Test Antenna Vertical)

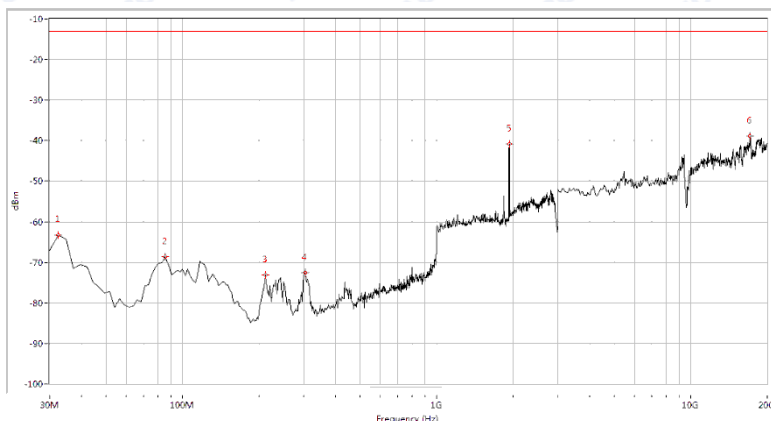


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
51.771	-74.44	-13.0	61.4	Horizontal	PASS
121.920	-70.25	-13.0	57.2	Horizontal	PASS
235.611	-79.56	-13.0	66.6	Horizontal	PASS
765.362	-72.21	-13.0	59.2	Horizontal	PASS
1927.681	-40.60	-13.0	27.6	Horizontal	N.A
5543.641	-45.09	-13.0	32.1	Horizontal	PASS

(Plot F1: WCDMA 1900MHz Channel = 9262, Test Antenna Horizontal)

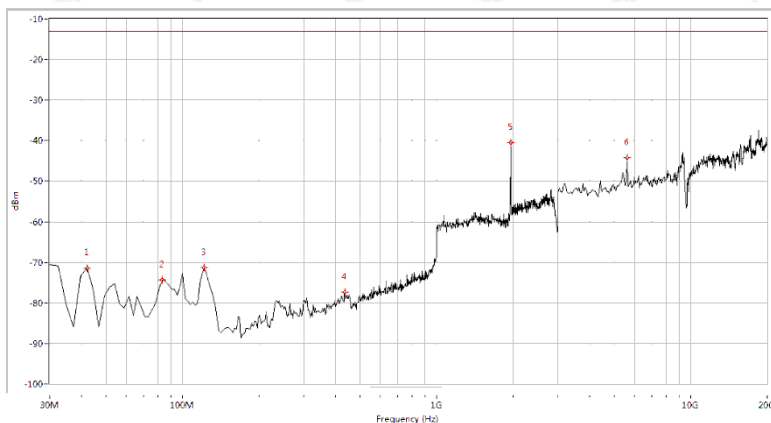


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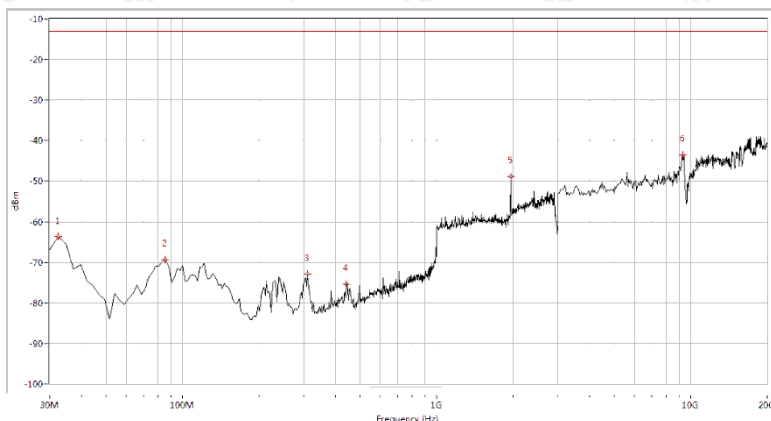
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.38	-13.0	50.4	Vertical	PASS
85.636	-68.66	-13.0	55.7	Vertical	PASS
211.421	-73.11	-13.0	60.1	Vertical	PASS
303.342	-72.55	-13.0	59.6	Vertical	PASS
1932.668	-40.75	-13.0	27.7	Vertical	N.A
17117.207	-38.90	-13.0	25.9	Vertical	PASS

(Plot F2: WCDMA 1900MHz Channel = 9262, Test Antenna Vertical)



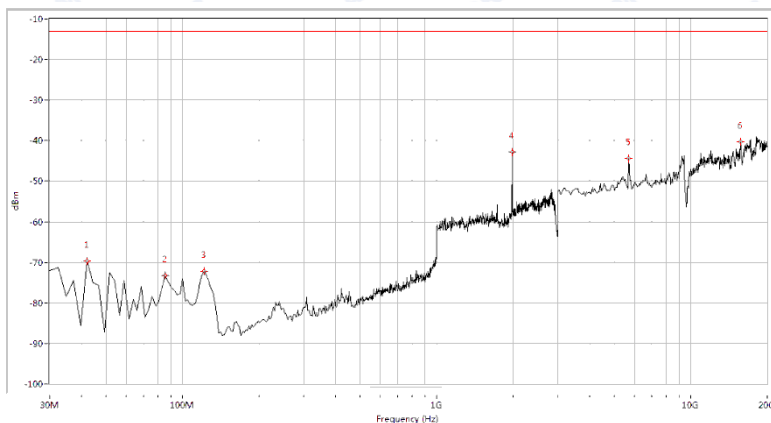
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-71.56	-13.0	58.6	Horizontal	PASS
83.217	-74.42	-13.0	61.4	Horizontal	PASS
121.920	-71.26	-13.0	58.3	Horizontal	PASS
436.384	-77.42	-13.0	64.4	Horizontal	PASS
1957.606	-40.44	-13.0	27.4	Horizontal	N.A
5628.429	-44.19	-13.0	31.2	Horizontal	PASS

(Plot F3: WCDMA 1900MHz Channel = 9400, Test Antenna Horizontal)



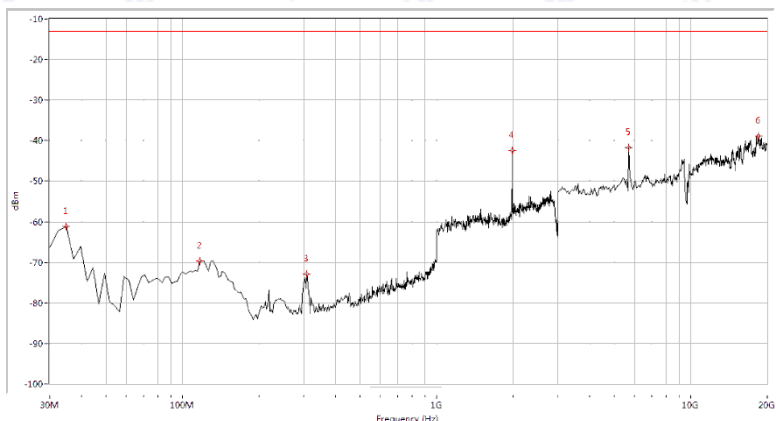
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.71	-13.0	50.7	Vertical	PASS
85.636	-69.28	-13.0	56.3	Vertical	PASS
310.599	-72.94	-13.0	59.9	Vertical	PASS
441.222	-75.35	-13.0	62.4	Vertical	PASS
1957.606	-48.94	-13.0	35.9	Vertical	N.A
9274.314	-43.58	-13.0	30.6	Vertical	PASS

(Plot F4: WCDMA 1900MHz Channel = 9400, Test Antenna Vertical)



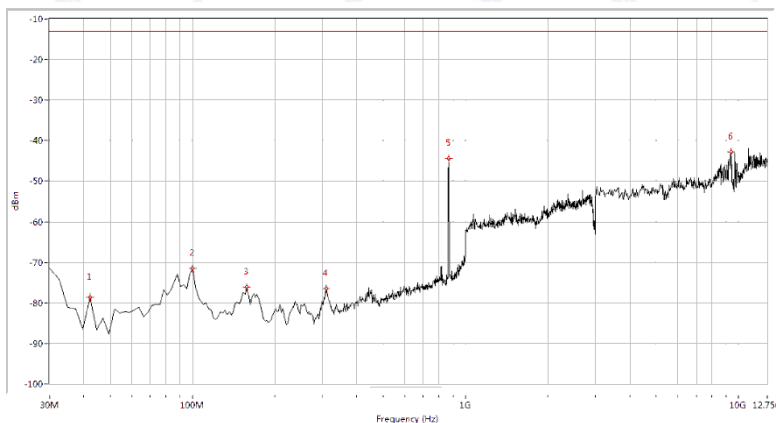
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-69.72	-13.0	56.7	Horizontal	PASS
85.636	-73.18	-13.0	60.2	Horizontal	PASS
121.920	-72.14	-13.0	59.1	Horizontal	PASS
1987.531	-42.79	-13.0	29.8	Horizontal	N.A
5713.217	-44.41	-13.0	31.4	Horizontal	PASS
15718.204	-40.23	-13.0	27.2	Horizontal	PASS

(Plot F5: WCDMA 1900MHz Channel = 9538, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-61.20	-13.0	48.2	Vertical	PASS
117.082	-69.73	-13.0	56.7	Vertical	PASS
308.180	-72.89	-13.0	59.9	Vertical	PASS
1987.531	-42.52	-13.0	29.5	Vertical	N.A
5713.217	-41.80	-13.0	28.8	Vertical	PASS
18473.815	-38.89	-13.0	25.9	Vertical	PASS

(Plot F6: WCDMA 1900MHz Channel = 9538, Test Antenna Vertical)

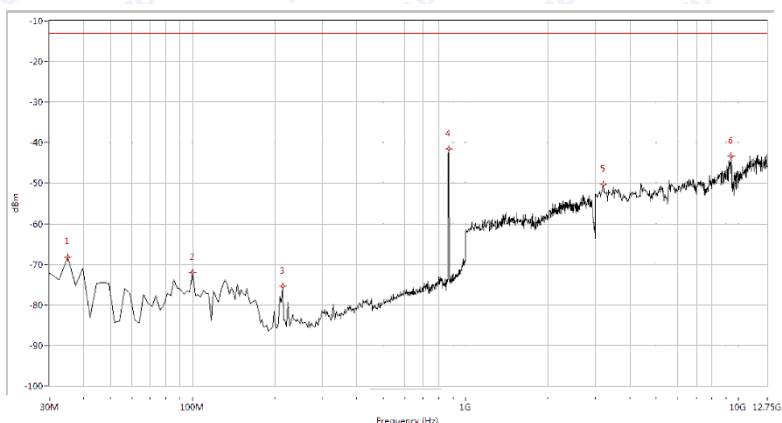


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-78.68	-13.0	65.7	Horizontal	PASS
100.150	-71.47	-13.0	58.5	Horizontal	PASS
158.204	-76.18	-13.0	63.2	Horizontal	PASS
308.180	-76.49	-13.0	63.5	Horizontal	PASS
869.377	-44.35	-13.0	31.4	Horizontal	N.A
9418.953	-42.76	-13.0	29.8	Horizontal	PASS

(Plot G1: HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)

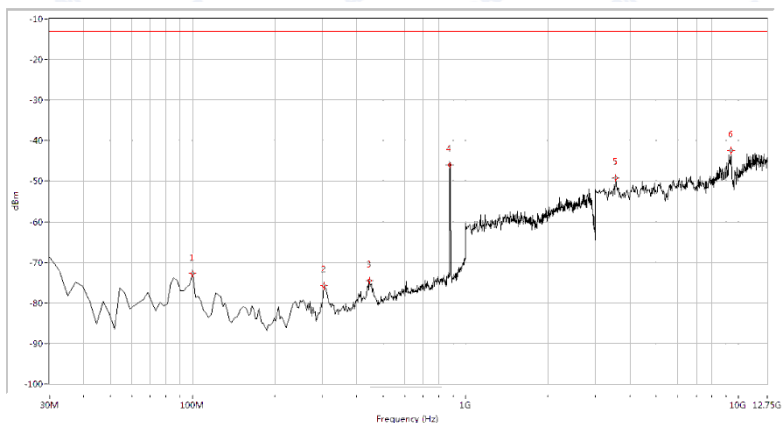


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-68.31	-13.0	55.3	Vertical	PASS
100.150	-72.06	-13.0	59.1	Vertical	PASS
213.840	-75.43	-13.0	62.4	Vertical	PASS
869.377	-41.60	-13.0	28.6	Vertical	N.A
3194.514	-50.35	-13.0	37.3	Vertical	PASS
9418.953	-43.38	-13.0	30.4	Vertical	PASS

(Plot G2: HSDPA 850MHz Channel = 4132, Test Antenna Vertical)

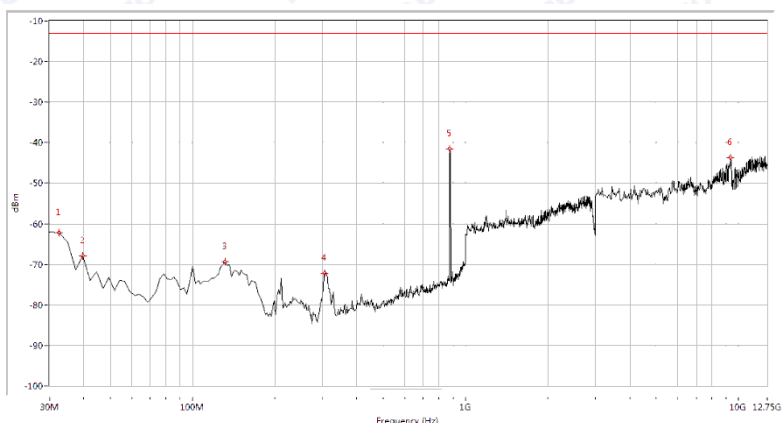


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
100.150	-72.71	-13.0	59.7	Horizontal	PASS
303.342	-75.78	-13.0	62.8	Horizontal	PASS
446.060	-74.46	-13.0	61.5	Horizontal	PASS
876.633	-45.98	-13.0	33.0	Horizontal	N.A
3559.227	-49.27	-13.0	36.3	Horizontal	PASS
9394.638	-42.36	-13.0	29.4	Horizontal	PASS

(Plot G3: HSDPA 850MHz Channel = 4175, Test Antenna Horizontal)

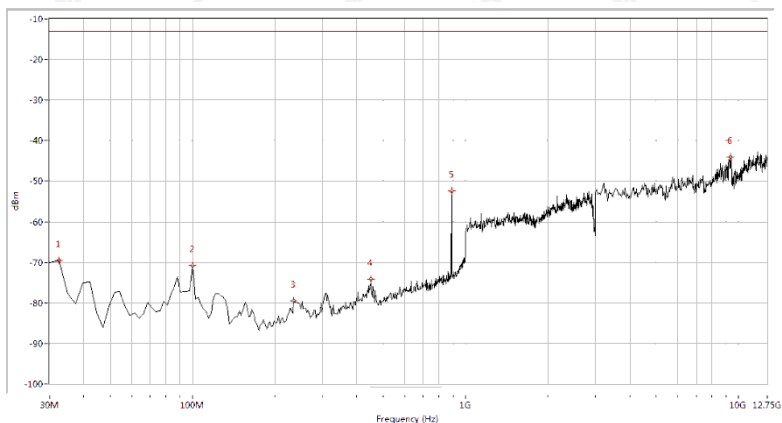


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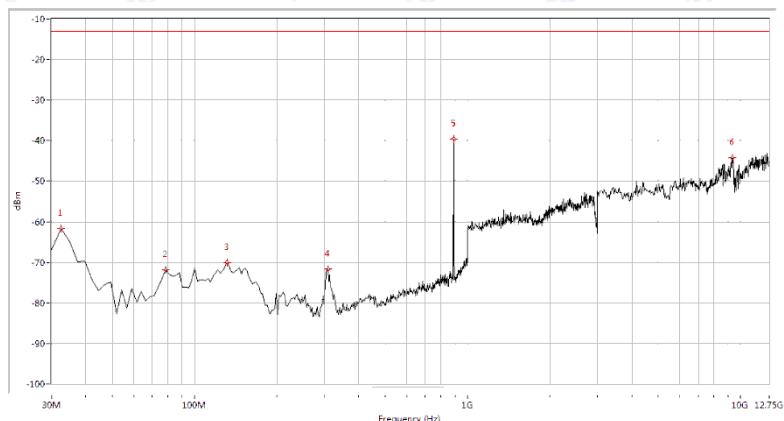
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-62.18	-13.0	49.2	Vertical	PASS
39.676	-68.00	-13.0	55.0	Vertical	PASS
131.596	-69.34	-13.0	56.3	Vertical	PASS
305.761	-72.16	-13.0	59.2	Vertical	PASS
876.633	-41.60	-13.0	28.6	Vertical	N.A
9370.324	-43.70	-13.0	30.7	Vertical	PASS

(Plot G4: HSDPA 850MHz Channel = 4175, Test Antenna Vertical)



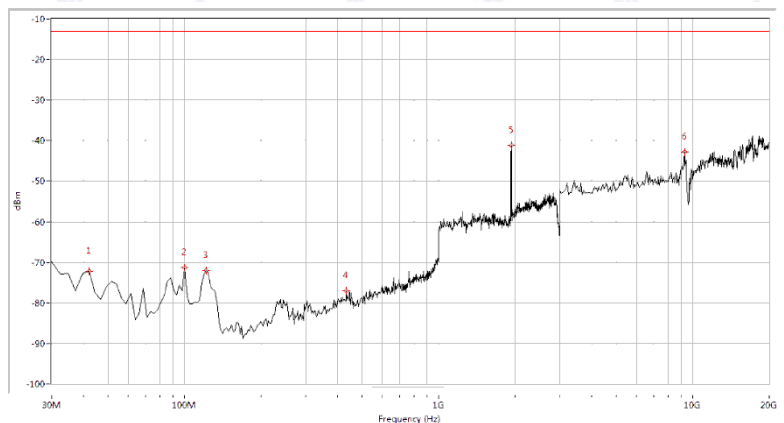
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-69.56	-13.0	56.6	Horizontal	PASS
100.150	-70.84	-13.0	57.8	Horizontal	PASS
235.611	-79.50	-13.0	66.5	Horizontal	PASS
450.898	-74.16	-13.0	61.2	Horizontal	PASS
888.728	-52.39	-13.0	39.4	Horizontal	N.A
9346.010	-43.95	-13.0	31.0	Horizontal	PASS

(Plot G5: HSDPA 850MHz Channel = 4233, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.70	-13.0	48.7	Vertical	PASS
78.379	-71.86	-13.0	58.9	Vertical	PASS
131.596	-70.08	-13.0	57.1	Vertical	PASS
308.180	-71.64	-13.0	58.6	Vertical	PASS
891.147	-39.64	-13.0	26.6	Vertical	N.A
9370.324	-44.19	-13.0	31.2	Vertical	PASS

(Plot G6: HSDPA 850MHz Channel = 4233, Test Antenna Vertical)

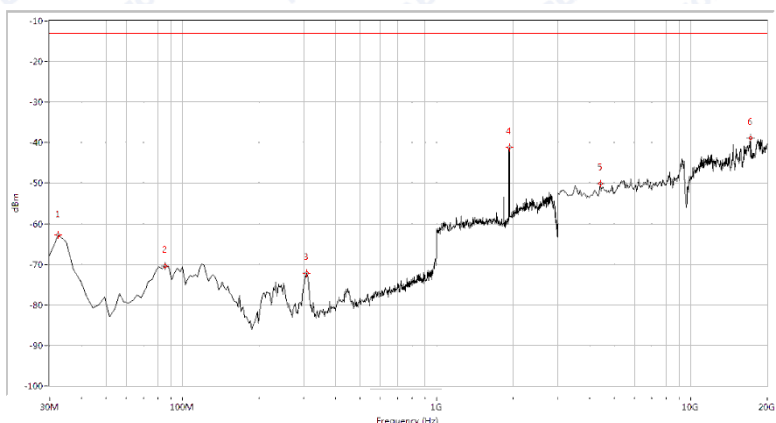


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-72.19	-13.0	59.2	Horizontal	PASS
100.150	-71.36	-13.0	58.4	Horizontal	PASS
121.920	-72.04	-13.0	59.0	Horizontal	PASS
433.965	-76.94	-13.0	63.9	Horizontal	PASS
1932.668	-41.12	-13.0	28.1	Horizontal	N.A
9274.314	-42.78	-13.0	29.8	Horizontal	PASS

(Plot H1: HSDPA 1900MHz Channel = 9262, Test Antenna Horizontal)

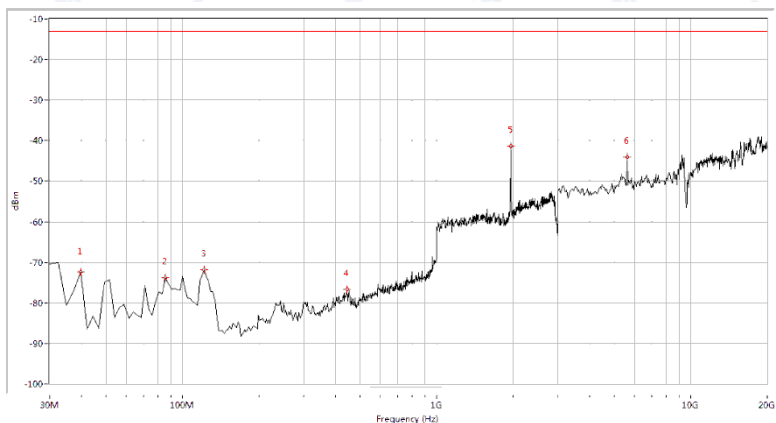


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-62.79	-13.0	49.8	Vertical	PASS
85.636	-70.41	-13.0	57.4	Vertical	PASS
308.180	-72.23	-13.0	59.2	Vertical	PASS
1932.668	-41.19	-13.0	28.2	Vertical	N.A
4399.002	-50.18	-13.0	37.2	Vertical	PASS
17159.601	-38.88	-13.0	25.9	Vertical	PASS

(Plot H2: HSDPA 1900MHz Channel = 9262, Test Antenna Vertical)

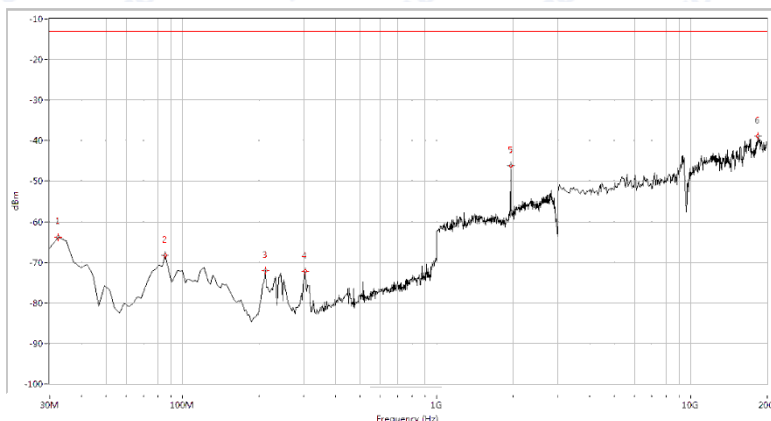


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-72.33	-13.0	59.3	Horizontal	PASS
85.636	-73.80	-13.0	60.8	Horizontal	PASS
121.920	-71.83	-13.0	58.8	Horizontal	PASS
443.641	-76.62	-13.0	63.6	Horizontal	PASS
1957.606	-41.36	-13.0	28.4	Horizontal	N.A
5628.429	-44.12	-13.0	31.1	Horizontal	PASS

(Plot H3: HSDPA 1900MHz Channel = 9400, Test Antenna Horizontal)

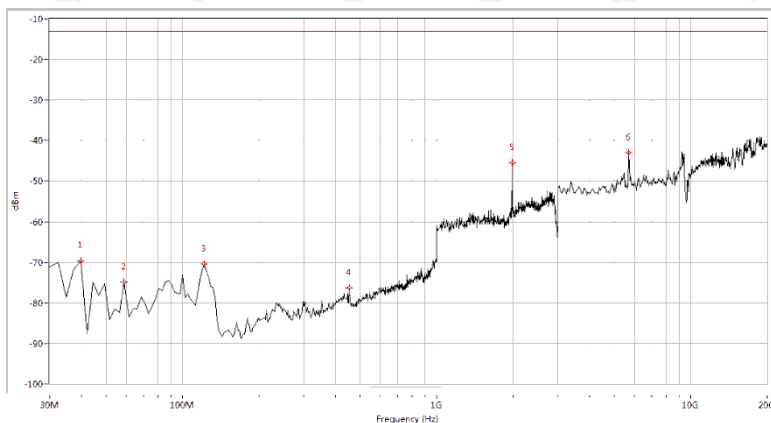


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.88	-13.0	50.9	Vertical	PASS
85.636	-68.22	-13.0	55.2	Vertical	PASS
211.421	-71.97	-13.0	59.0	Vertical	PASS
303.342	-72.20	-13.0	59.2	Vertical	PASS
1957.606	-46.14	-13.0	33.1	Vertical	N.A
18389.027	-38.90	-13.0	25.9	Vertical	PASS

(Plot H4: HSDPA 1900MHz Channel = 9400, Test Antenna Vertical)

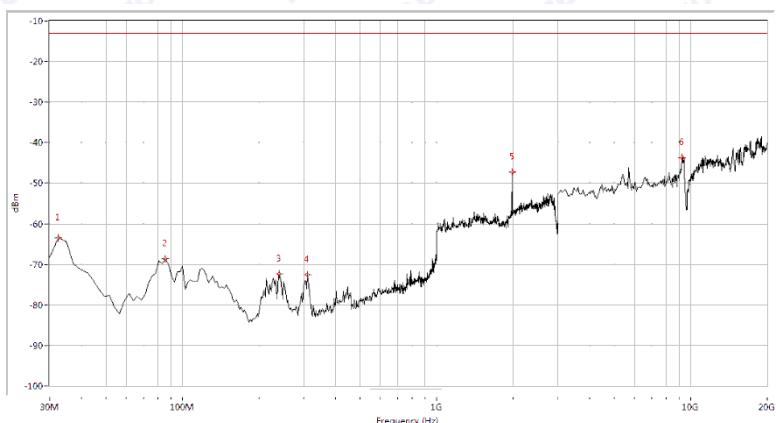


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-69.74	-13.0	56.7	Horizontal	PASS
59.027	-74.87	-13.0	61.9	Horizontal	PASS
121.920	-70.46	-13.0	57.5	Horizontal	PASS
453.317	-76.32	-13.0	63.3	Horizontal	PASS
1987.531	-45.47	-13.0	32.5	Horizontal	N.A
5713.217	-42.94	-13.0	29.9	Horizontal	PASS

(Plot H5: HSDPA 1900MHz Channel = 9538, Test Antenna Horizontal)

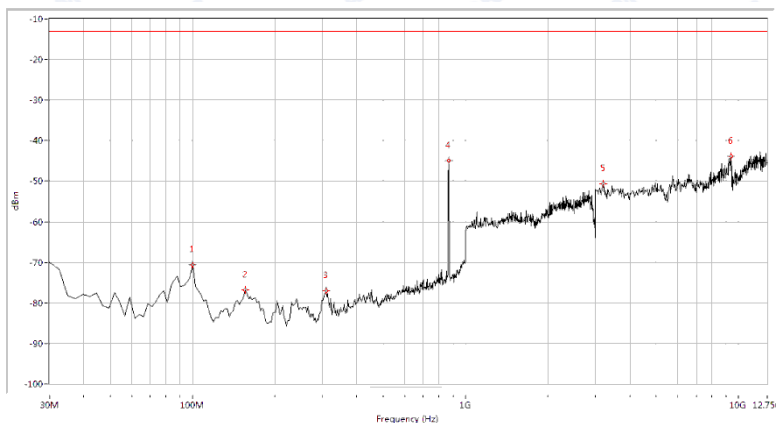


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.45	-13.0	50.4	Vertical	PASS
85.636	-68.57	-13.0	55.6	Vertical	PASS
240.449	-72.38	-13.0	59.4	Vertical	PASS
310.599	-72.58	-13.0	59.6	Vertical	PASS
1987.531	-47.24	-13.0	34.2	Vertical	N.A
9231.920	-43.66	-13.0	30.7	Vertical	PASS

(Plot H6: HSDPA 1900MHz Channel = 9538, Test Antenna Vertical)

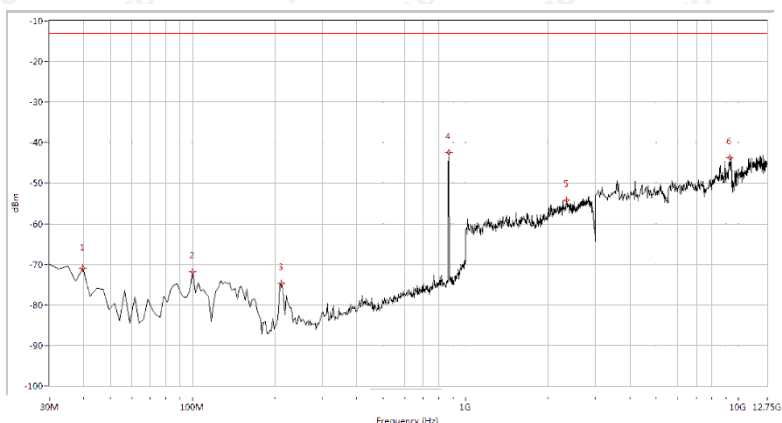


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
100.150	-70.56	-13.0	57.6	Horizontal	PASS
155.786	-76.76	-13.0	63.8	Horizontal	PASS
308.180	-77.06	-13.0	64.1	Horizontal	PASS
869.377	-44.92	-13.0	31.9	Horizontal	N.A
3194.514	-50.56	-13.0	37.6	Horizontal	PASS
9418.953	-43.88	-13.0	30.9	Horizontal	PASS

(Plot I1: HSUPA 850MHz Channel = 4132, Test Antenna Horizontal)

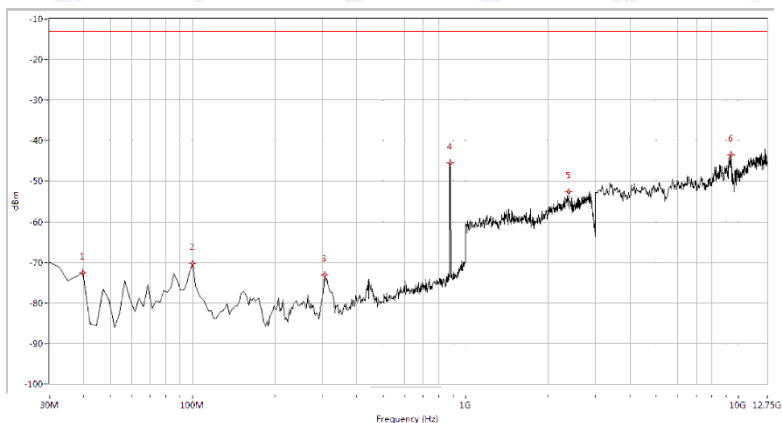


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-70.89	-13.0	57.9	Vertical	PASS
100.150	-71.80	-13.0	58.8	Vertical	PASS
211.421	-74.76	-13.0	61.8	Vertical	PASS
869.377	-42.50	-13.0	29.5	Vertical	N.A
2351.621	-54.22	-13.0	41.2	Vertical	PASS
9273.067	-43.74	-13.0	30.7	Vertical	PASS

(Plot I2: HSUPA 850MHz Channel = 4132, Test Antenna Vertical)

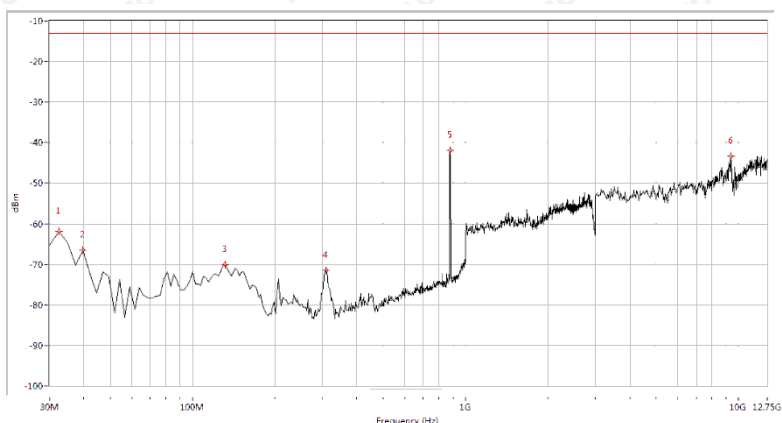


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-72.51	-13.0	59.5	Horizontal	PASS
100.150	-70.27	-13.0	57.3	Horizontal	PASS
305.761	-73.05	-13.0	60.0	Horizontal	PASS
879.052	-45.40	-13.0	32.4	Horizontal	N.A
2386.534	-52.63	-13.0	39.6	Horizontal	PASS
9394.638	-43.53	-13.0	30.5	Horizontal	PASS

(Plot I3: HSUPA 850MHz Channel = 4175, Test Antenna Horizontal)

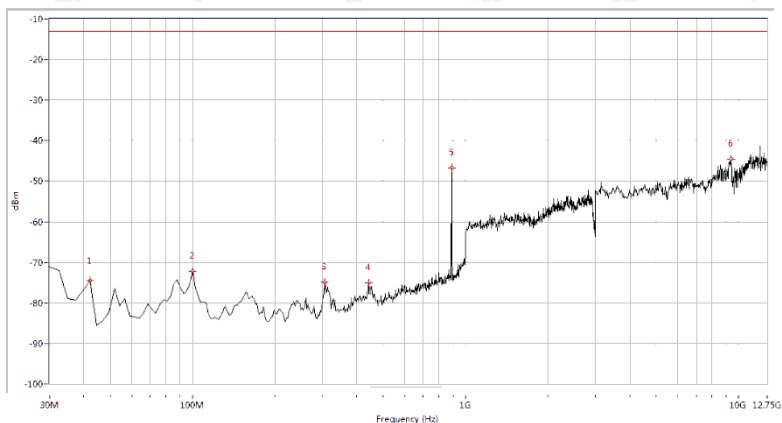


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.86	-13.0	48.9	Vertical	PASS
39.676	-66.54	-13.0	53.5	Vertical	PASS
131.596	-70.09	-13.0	57.1	Vertical	PASS
308.180	-71.44	-13.0	58.4	Vertical	PASS
879.052	-41.89	-13.0	28.9	Vertical	N.A
9394.638	-43.41	-13.0	30.4	Vertical	PASS

(Plot I4: HSUPA 850MHz Channel = 4175, Test Antenna Vertical)

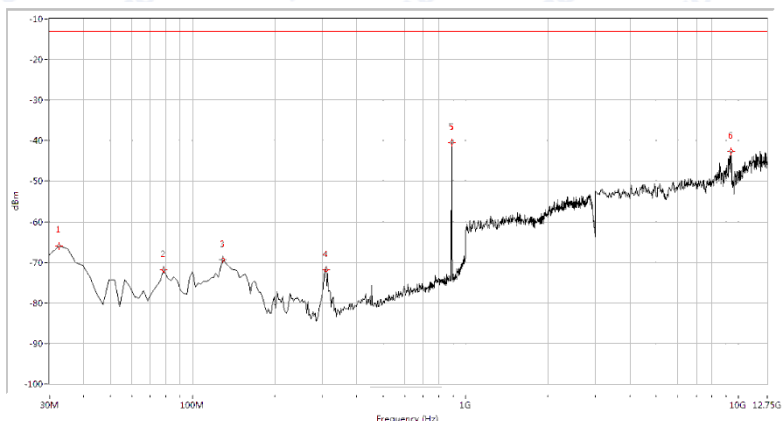


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-74.55	-13.0	61.5	Horizontal	PASS
100.150	-72.27	-13.0	59.3	Horizontal	PASS
305.761	-74.88	-13.0	61.9	Horizontal	PASS
441.222	-75.08	-13.0	62.1	Horizontal	PASS
888.728	-46.75	-13.0	33.7	Horizontal	N.A
9418.953	-44.55	-13.0	31.5	Horizontal	PASS

(Plot I5: HSUPA 850MHz Channel = 4233, Test Antenna Horizontal)

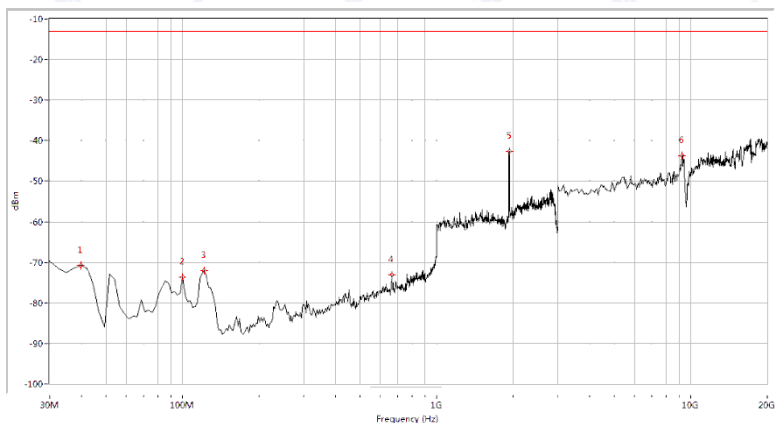


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-65.96	-13.0	53.0	Vertical	PASS
78.379	-71.87	-13.0	58.9	Vertical	PASS
129.177	-69.38	-13.0	56.4	Vertical	PASS
308.180	-71.92	-13.0	58.9	Vertical	PASS
888.728	-40.52	-13.0	27.5	Vertical	N.A
9394.638	-42.62	-13.0	29.6	Vertical	PASS

(Plot I6: HSUPA 850MHz Channel = 4233, Test Antenna Vertical)

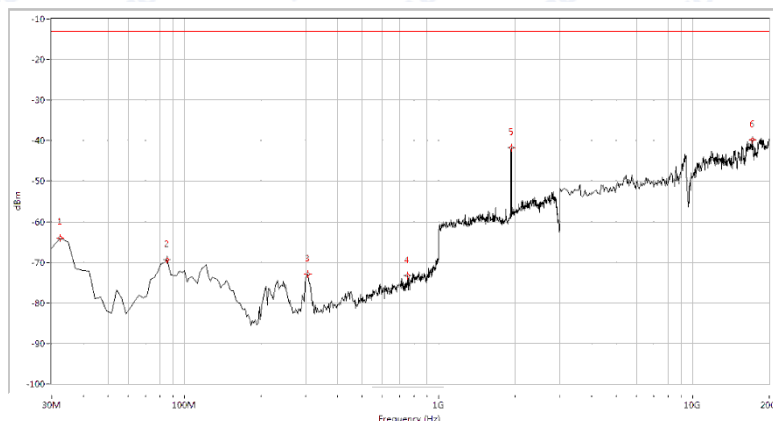


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-70.86	-13.0	57.9	Horizontal	PASS
100.150	-73.55	-13.0	60.5	Horizontal	PASS
121.920	-72.04	-13.0	59.0	Horizontal	PASS
666.185	-73.03	-13.0	60.0	Horizontal	PASS
1932.668	-42.69	-13.0	29.7	Horizontal	N.A
9231.920	-43.66	-13.0	30.7	Horizontal	PASS

(Plot J1: HSUPA 1900MHz Channel = 9262, Test Antenna Horizontal)

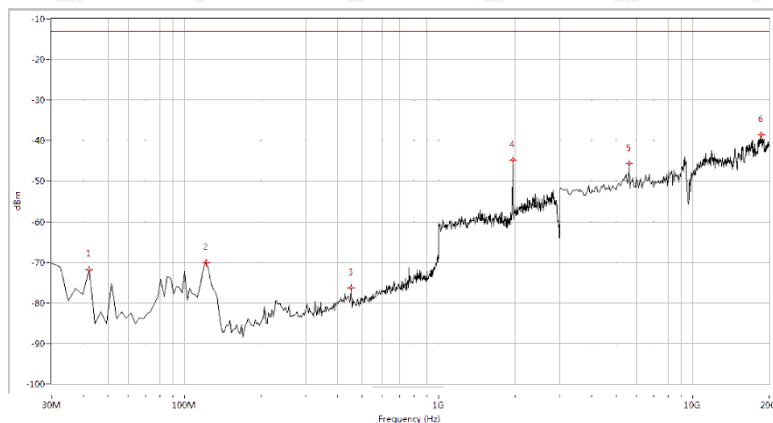


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.94	-13.0	50.9	Vertical	PASS
85.636	-69.42	-13.0	56.4	Vertical	PASS
305.761	-72.94	-13.0	59.9	Vertical	PASS
755.686	-73.27	-13.0	60.3	Vertical	PASS
1932.668	-41.72	-13.0	28.7	Vertical	N.A
17159.601	-39.71	-13.0	26.7	Vertical	PASS

(Plot J2: HSUPA 1900MHz Channel = 9262, Test Antenna Vertical)

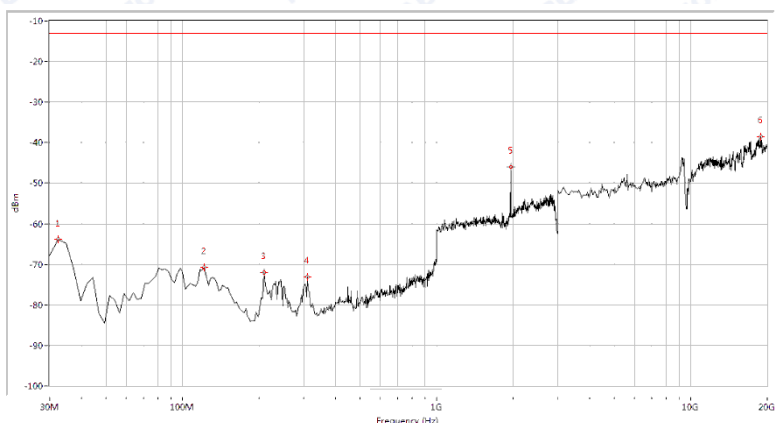


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-71.88	-13.0	58.9	Horizontal	PASS
121.920	-70.11	-13.0	57.1	Horizontal	PASS
453.317	-76.24	-13.0	63.2	Horizontal	PASS
1957.606	-44.70	-13.0	31.7	Horizontal	N.A
5628.429	-45.71	-13.0	32.7	Horizontal	PASS
18558.603	-38.50	-13.0	25.5	Horizontal	PASS

(Plot J3: HSUPA 1900MHz Channel = 9400, Test Antenna Horizontal)

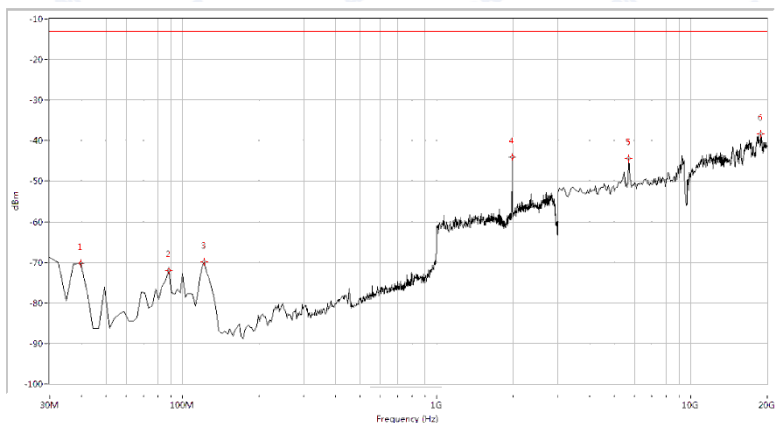


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.76	-13.0	50.8	Vertical	PASS
121.920	-70.80	-13.0	57.8	Vertical	PASS
209.002	-72.10	-13.0	59.1	Vertical	PASS
310.599	-73.15	-13.0	60.1	Vertical	PASS
1957.606	-46.02	-13.0	33.0	Vertical	N.A
18897.756	-38.56	-13.0	25.6	Vertical	PASS

(Plot J4: HSUPA 1900MHz Channel = 9400, Test Antenna Vertical)

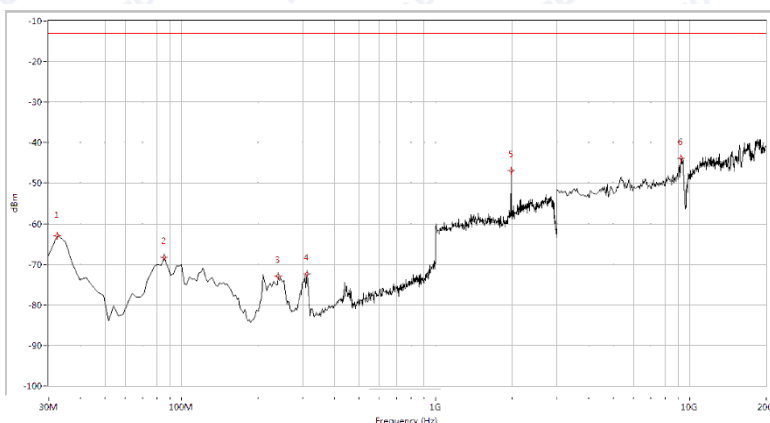


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-70.23	-13.0	57.2	Horizontal	PASS
88.055	-71.95	-13.0	59.0	Horizontal	PASS
121.920	-69.95	-13.0	57.0	Horizontal	PASS
1987.531	-44.07	-13.0	31.1	Horizontal	N.A
5713.217	-44.46	-13.0	31.5	Horizontal	PASS
18897.756	-38.26	-13.0	25.3	Horizontal	PASS

(Plot J5: HSUPA 1900MHz Channel = 9538, Test Antenna Horizontal)

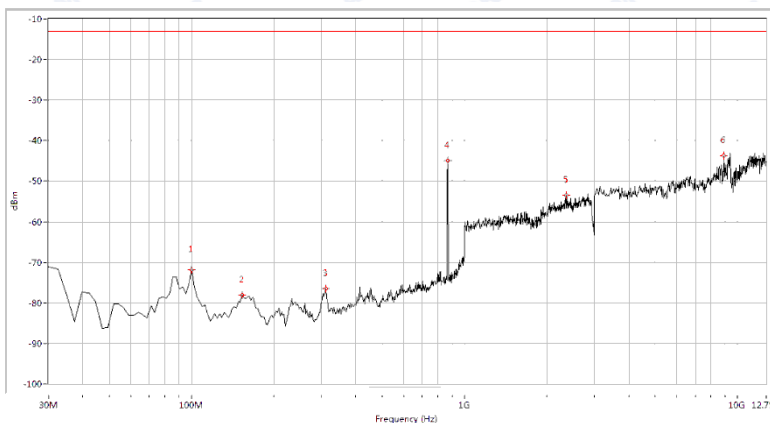


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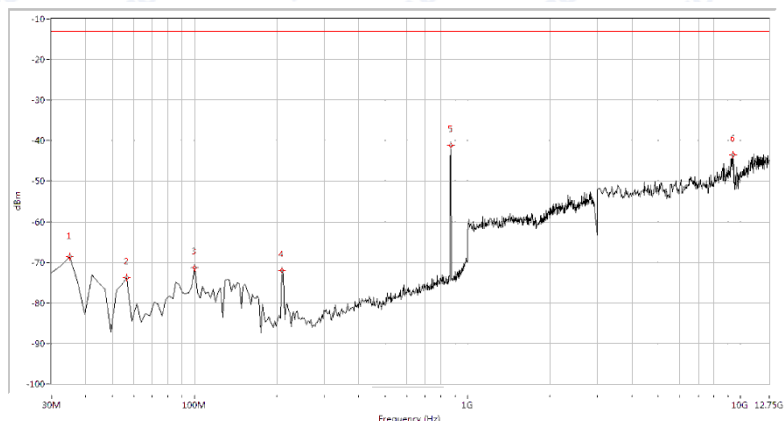
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-62.94	-13.0	49.9	Vertical	PASS
85.636	-68.24	-13.0	55.2	Vertical	PASS
240.449	-72.95	-13.0	59.9	Vertical	PASS
313.017	-72.36	-13.0	59.4	Vertical	PASS
1987.531	-46.93	-13.0	33.9	Vertical	N.A
9231.920	-43.93	-13.0	30.9	Vertical	PASS

(Plot J6: HSUPA 1900MHz Channel = 9538, Test Antenna Vertical)



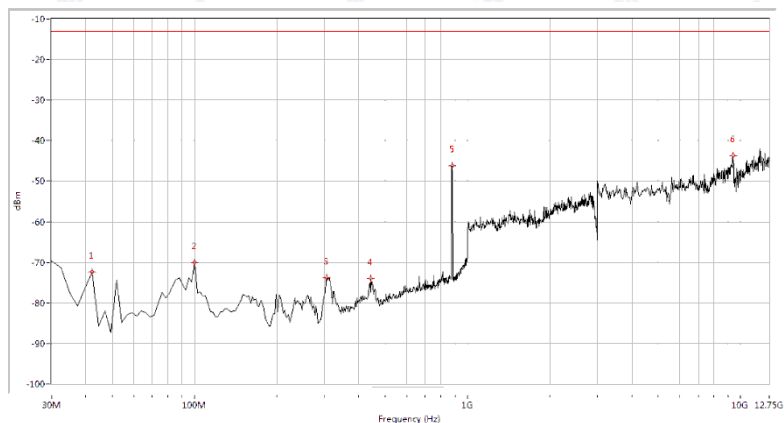
Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
100.150	-71.82	-13.0	58.8	Horizontal	PASS
153.367	-78.05	-13.0	65.1	Horizontal	PASS
310.599	-76.48	-13.0	63.5	Horizontal	PASS
869.377	-45.02	-13.0	32.0	Horizontal	N.A
2366.584	-53.57	-13.0	40.6	Horizontal	PASS
8908.354	-43.68	-13.0	30.7	Horizontal	PASS

(Plot K1: HSPA+ 850MHz Channel = 4132, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-68.68	-13.0	55.7	Vertical	PASS
56.608	-73.81	-13.0	60.8	Vertical	PASS
100.150	-71.38	-13.0	58.4	Vertical	PASS
209.002	-72.04	-13.0	59.0	Vertical	PASS
869.377	-41.15	-13.0	28.1	Vertical	N.A
9394.638	-43.42	-13.0	30.4	Vertical	PASS

(Plot K2: HSPA+ 850MHz Channel = 4132, Test Antenna Vertical)

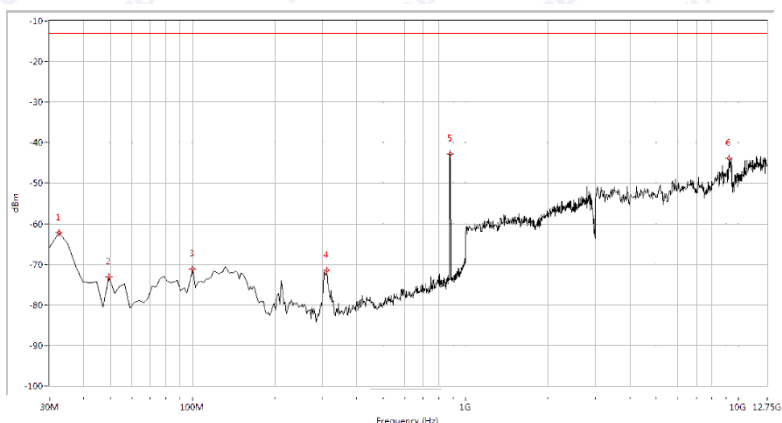


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-72.36	-13.0	59.4	Horizontal	PASS
100.150	-69.99	-13.0	57.0	Horizontal	PASS
305.761	-73.74	-13.0	60.7	Horizontal	PASS
443.641	-73.90	-13.0	60.9	Horizontal	PASS
879.052	-46.16	-13.0	33.2	Horizontal	N.A
9394.638	-43.73	-13.0	30.7	Horizontal	PASS

(Plot K3: HSPA+ 850MHz Channel = 4175, Test Antenna Horizontal)

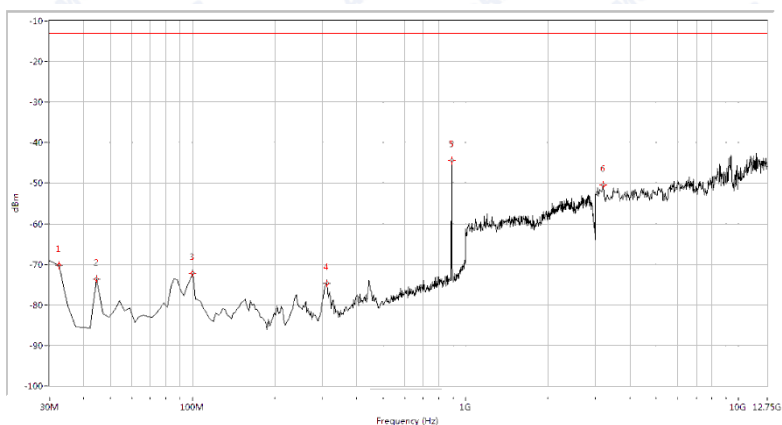


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-62.16	-13.0	49.2	Vertical	PASS
49.352	-73.13	-13.0	60.1	Vertical	PASS
100.150	-71.07	-13.0	58.1	Vertical	PASS
310.599	-71.54	-13.0	58.5	Vertical	PASS
879.052	-42.78	-13.0	29.8	Vertical	N.A
9248.753	-43.95	-13.0	30.9	Vertical	PASS

(Plot K4: HSPA+ 850MHz Channel = 4175, Test Antenna Vertical)

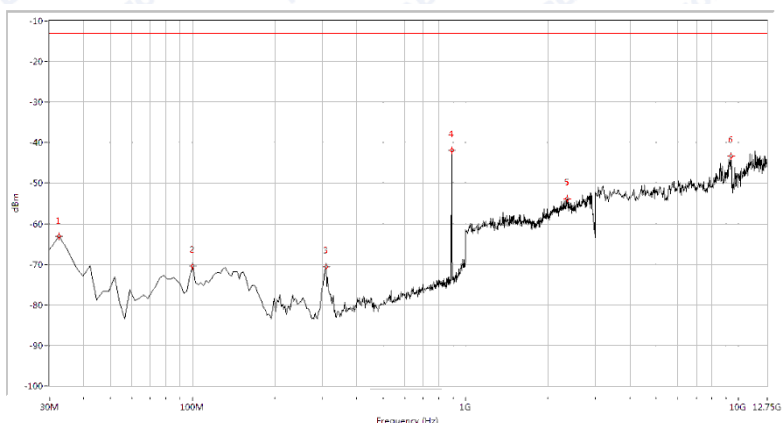


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-70.25	-13.0	57.2	Horizontal	PASS
44.514	-73.71	-13.0	60.7	Horizontal	PASS
100.150	-72.24	-13.0	59.2	Horizontal	PASS
310.599	-74.73	-13.0	61.7	Horizontal	PASS
891.147	-44.46	-13.0	31.5	Horizontal	N.A
3194.514	-50.39	-13.0	37.4	Horizontal	PASS

(Plot K5: HSPA+ 850MHz Channel = 4233, Test Antenna Horizontal)

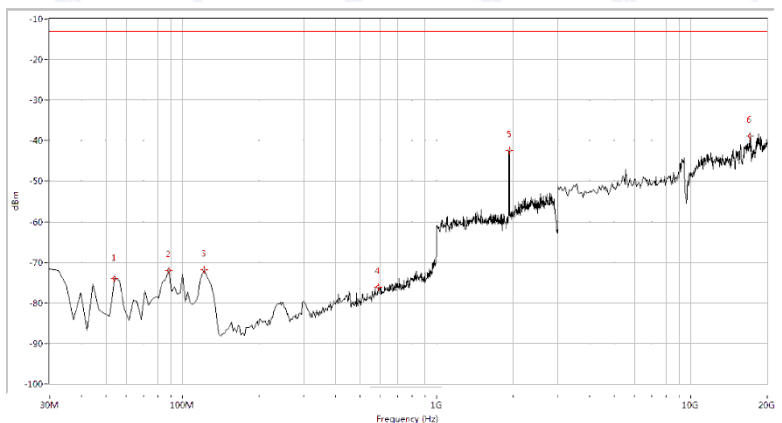


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.07	-13.0	50.1	Vertical	PASS
100.150	-70.37	-13.0	57.4	Vertical	PASS
308.180	-70.62	-13.0	57.6	Vertical	PASS
888.728	-41.99	-13.0	29.0	Vertical	N.A
2361.596	-53.80	-13.0	40.8	Vertical	PASS
9394.638	-43.29	-13.0	30.3	Vertical	PASS

(Plot K6: HSPA+ 850MHz Channel = 4233, Test Antenna Vertical)

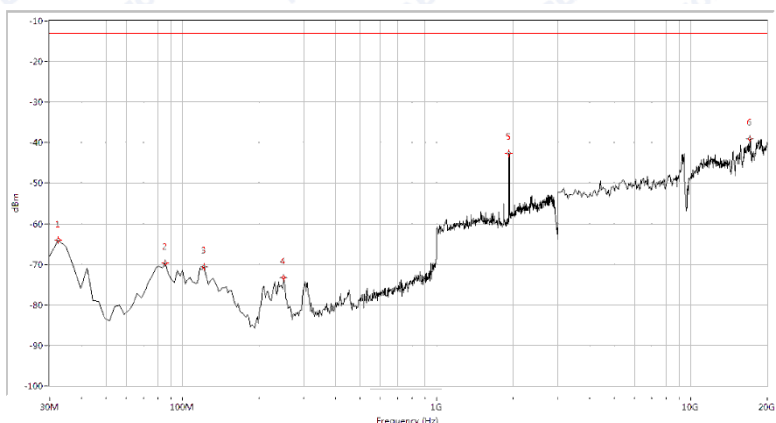


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
54.190	-73.92	-13.0	60.9	Horizontal	PASS
88.055	-72.07	-13.0	59.1	Horizontal	PASS
121.920	-71.89	-13.0	58.9	Horizontal	PASS
588.778	-76.03	-13.0	63.0	Horizontal	PASS
1932.668	-42.35	-13.0	29.4	Horizontal	N.A
17117.207	-38.85	-13.0	25.9	Horizontal	PASS

(Plot L1: HSPA+ 1900MHz Channel = 9262, Test Antenna Horizontal)

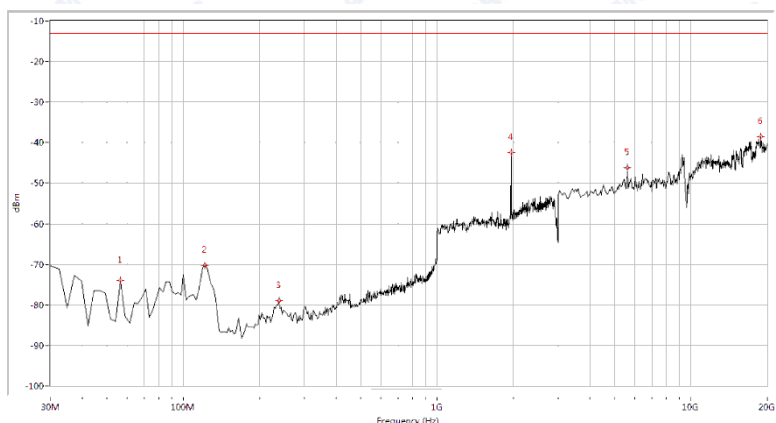


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-64.08	-13.0	51.1	Vertical	PASS
85.636	-69.64	-13.0	56.6	Vertical	PASS
121.920	-70.54	-13.0	57.5	Vertical	PASS
250.125	-73.21	-13.0	60.2	Vertical	PASS
1927.681	-42.67	-13.0	29.7	Vertical	N.A
17117.207	-39.07	-13.0	26.1	Vertical	PASS

(Plot L2: HSPA+ 1900MHz Channel = 9262, Test Antenna Vertical)

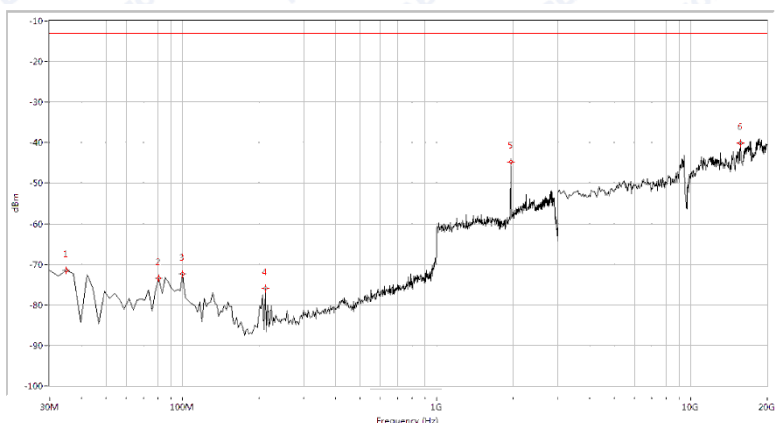


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
56.608	-73.98	-13.0	61.0	Horizontal	PASS
121.920	-70.19	-13.0	57.2	Horizontal	PASS
238.030	-78.94	-13.0	65.9	Horizontal	PASS
1957.606	-42.50	-13.0	29.5	Horizontal	N.A
5628.429	-46.24	-13.0	33.2	Horizontal	PASS
18897.756	-38.48	-13.0	25.5	Horizontal	PASS

(Plot L3: HSPA+ 1900MHz Channel = 9400, Test Antenna Horizontal)

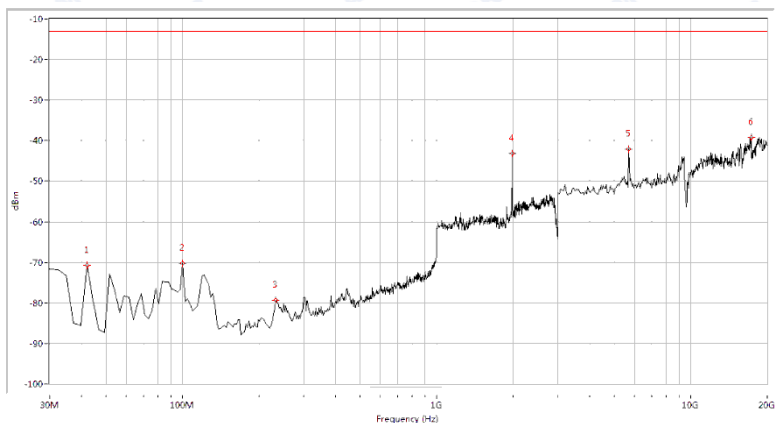


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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-71.52	-13.0	58.5	Vertical	PASS
80.798	-73.52	-13.0	60.5	Vertical	PASS
100.150	-72.37	-13.0	59.4	Vertical	PASS
211.421	-75.90	-13.0	62.9	Vertical	PASS
1957.606	-44.68	-13.0	31.7	Vertical	N.A
15675.810	-40.17	-13.0	27.2	Vertical	PASS

(Plot L4: HSPA+ 1900MHz Channel = 9400, Test Antenna Vertical)

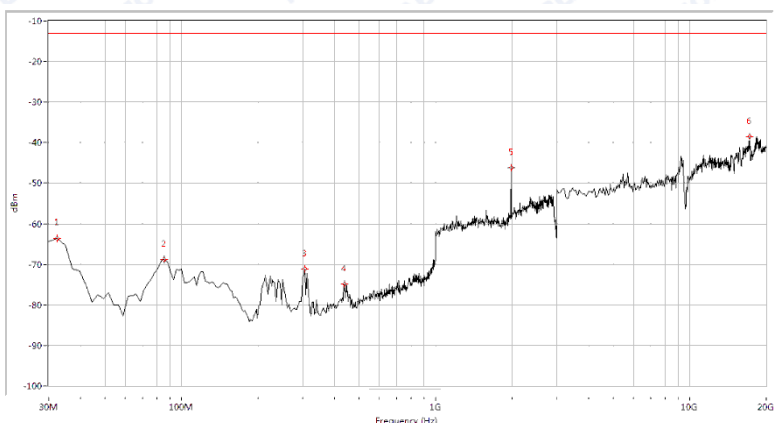


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-70.78	-13.0	57.8	Horizontal	PASS
100.150	-70.23	-13.0	57.2	Horizontal	PASS
233.192	-79.40	-13.0	66.4	Horizontal	PASS
1987.531	-43.09	-13.0	30.1	Horizontal	N.A
5713.217	-42.07	-13.0	29.1	Horizontal	PASS
17286.783	-39.30	-13.0	26.3	Horizontal	PASS

(Plot L5: HSPA+ 1900MHz Channel = 9538, Test Antenna Horizontal)



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Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-63.59	-13.0	50.6	Vertical	PASS
85.636	-68.82	-13.0	55.8	Vertical	PASS
305.761	-71.09	-13.0	58.1	Vertical	PASS
438.803	-74.93	-13.0	61.9	Vertical	PASS
1982.544	-46.13	-13.0	33.1	Vertical	N.A
17159.601	-38.53	-13.0	25.5	Vertical	PASS

(Plot L6: HSPA+ 1900MHz Channel = 9538, Test Antenna Vertical)

***** END OF REPORT *****