



Report No.: SZ11060109W08



FCC TEST REPORT

Issued to

S.F. EXPRESS GROUP CO., LTD.

For

Handheld Terminal

Model Name: HHT4GR
Brand Name: SF
Trade Name: HHT4GR
FCC ID: ZZQHHT4GR
Standard: 47 CFR Part 2
47 CFR Part 22 Subpart H
47 CFR Part 24 Subpart E
Test date: Sep. 5, 2011 – Sep. 23, 2011
Issue date: Nov. 24, 2011

Shenzhen Morlab Communications Technology Co., Ltd.



Tested by Zhang Yan

Zhang Yan

Date 2011.11.24

Approved by Wu Xuewen

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Date 2011.11.24

Review by Peng Huarui

Peng Huarui

Date 2011.11.24

CTIA Authorized Test Lab
LAB CODE 20081223-00

IEEE 1725

OTA

OFTA
電訊管理局



GCF
Official Observer of
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Bluetooth
BQTF

FCC
Reg. No.
741109

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Change History		
Issue	Date	Reason for change
1.0	Sep. 26, 2011	Original edition
2.0	Nov.24,2011	Corrected EIRP data

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type: Handheld Terminal
Serial No.....: (N/A)
Hardware Version: HHT4GR-MB-P2
Software Version: 4GR_V1.0.6_110622MP
Applicant: S.F. EXPRESS GROUP CO., LTD.
9-11/F、14-20F, Wanji Business Building, Fuhua Avenue, Futian District, Shenzhen, P.R. China
Manufacturer: QI NENG WAN WEI (Beijing) Co., Ltd.
No.2203, Unit 4, Building 7, No.9 Shuanghuayuan nanli, Chaoyang Dist, Beijing, P.R. China
Frequency Range.....: 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.....: WCDMA Mode with QPSK Modulation
Emission Designators: 1M15F9W
HSDPA Mode with QPSK Modulation

Note 1: The EUT is a Handheld Terminal operating in Cellular and PCS bands.

Note 2: The normal configuration for the EUT is the Handheld Terminal associated with ancillary equipments e.g. the Battery and/or the AC Adapter (Charger).

Note 3: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 4: 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), 4157(835MHz) and 4233 (846.6MHz).

Note 5: 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 6: 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 (10-1-09 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-09 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-09 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	2.1049 27.53	20dB Occupied Bandwidth	PASS
3	2.1055 22.355 24.235 27.54	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 27.53	Band Edge	PASS
6	22.913 24.232 27.50	Transmitter Radiated Power (EIPR/ERP)	PASS
7	2.1053 2.1057 22.917 24.238 27.53	Radiated Out of Band Emissions	PASS

NOTE: Measurement method according to ANSI/TIA-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 3/F, Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

1.3.2 Test Environment Conditions

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

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

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

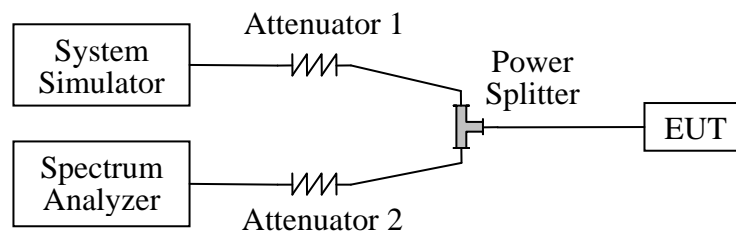
2.1 Conducted RF Output Power

2.1.1 Requirement

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

2.1.2 Test Description

1. Test Setup:



The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level All up bit and Power Class = 3. A call is established between the EUT and the SS.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date
System Simulator	Agilent	E5515C	GB43130131	2011.05
Spectrum Analyzer	Agilent	E7405A	US44210471	2011.05
Power Splitter	Weinschel	1506A	NW521	(n.a.)
Attenuator 1	Resnet	20dB	(n.a.)	(n.a.)
Attenuator 2	Resnet	3dB	(n.a.)	(n.a.)

2.1.3 Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted

RF output power of the EUT. For the WCDMA 850MHz operates at All up bit, the rated conducted RF output power is 33dBm, and For the WCDMA 1900MHz operates at All up bit, the rated conducted RF output power is 30dBm.

1. Test Verdict:

Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4123	4157	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	24.39	25.52	24.56	24.40	24.16	25.31
HSDPA	1	24.37	25.32	24.38	24.21	22.17	25.22
	2	24.23	25.25	24.26	24.33	22.13	25.18
	3	24.19	25.11	24.22	24.10	21.53	25.10
	4	24.14	25.13	24.13	24.11	21.50	25.08

2.2 99% Occupied Bandwidth

2.2.1 Definition

According to FCC section 2.1049, 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.

2.2.2 Test Description

See section 2.1.2 of this report.

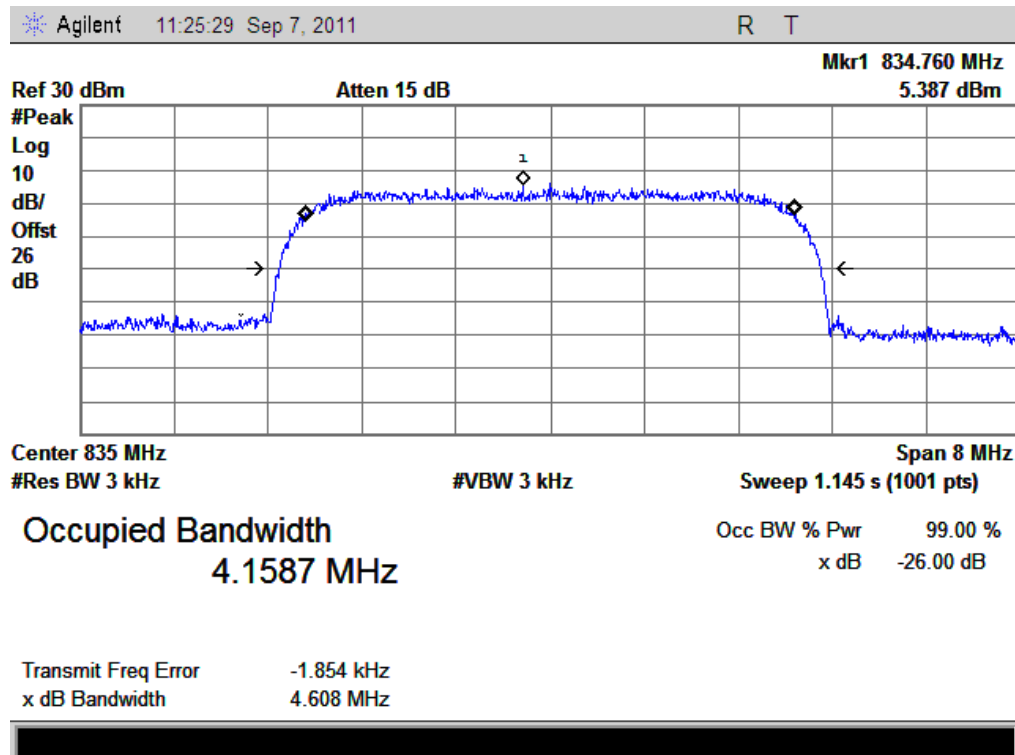
2.2.3 Test Verdict

Here the lowest, middle and highest channels are tested to record the 99% occupied bandwidth

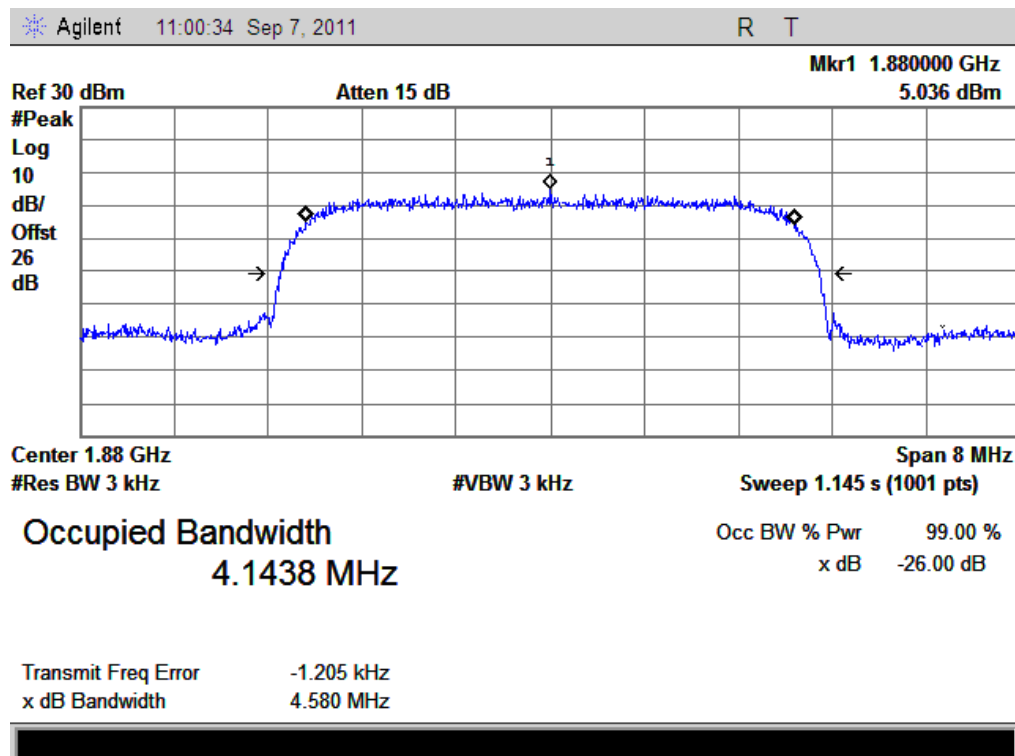
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured 99% Occupied Bandwidth	Refer to Plot
WCDMA 850MHz	4175	835	4.1587	Plot A
WCDMA 1900MHz	9400	1880	4.1438	Plot B
HSDPA 850MHz	4175	835	4.1733	Plot C
HSDPA 1900MHz	9400	1880	4.1745	Plot D

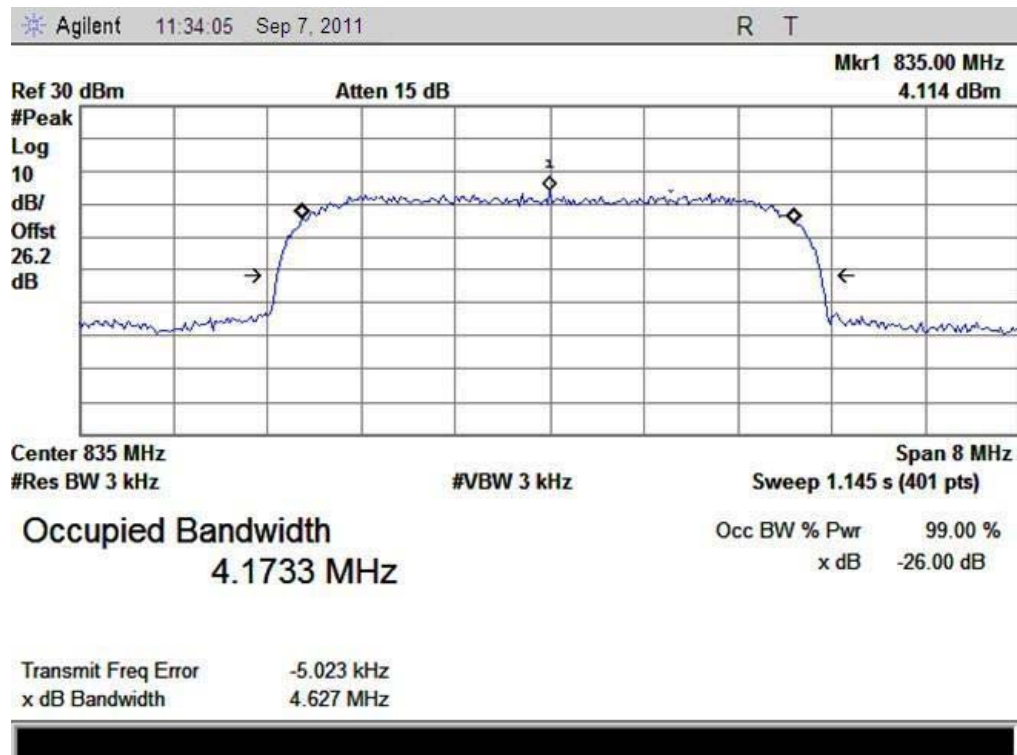
Test Plots:



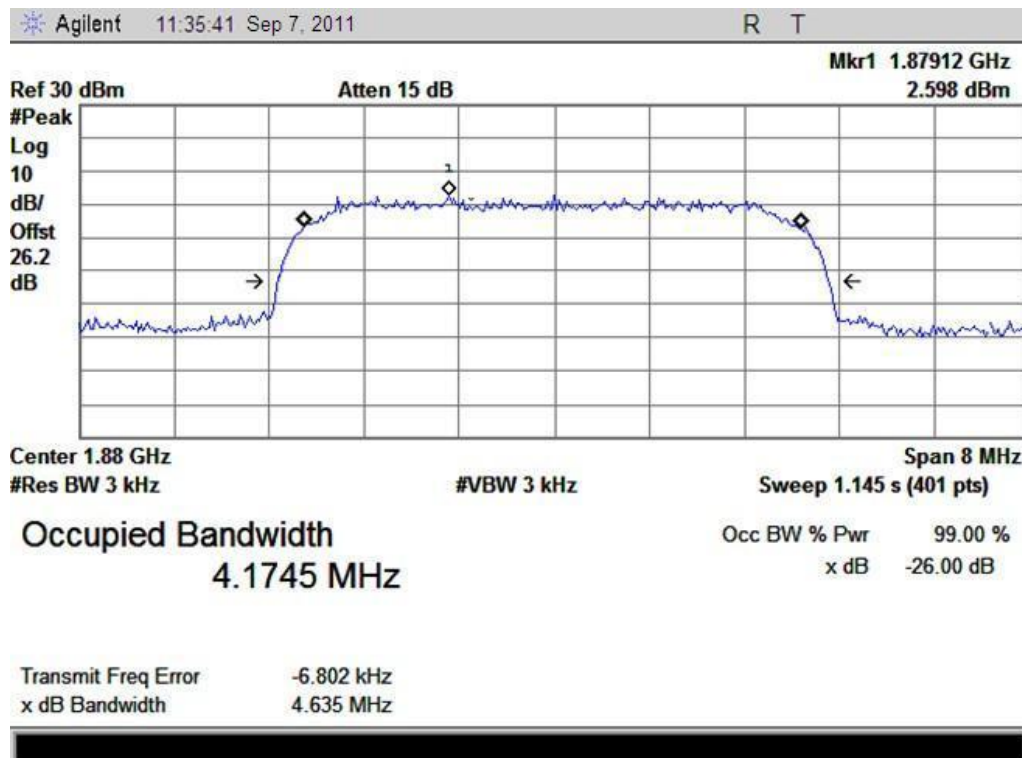
(Plot A: WCDMA 850MHz Channel = 4400)



(Plot B: WCDMA 1900MHz Channel = 9800)



(Plot D: HSDPA 850MHz Channel = 4400)



(Plot E: HSDPA 1900MHz Channel = 9800)

2.3 Frequency Stability

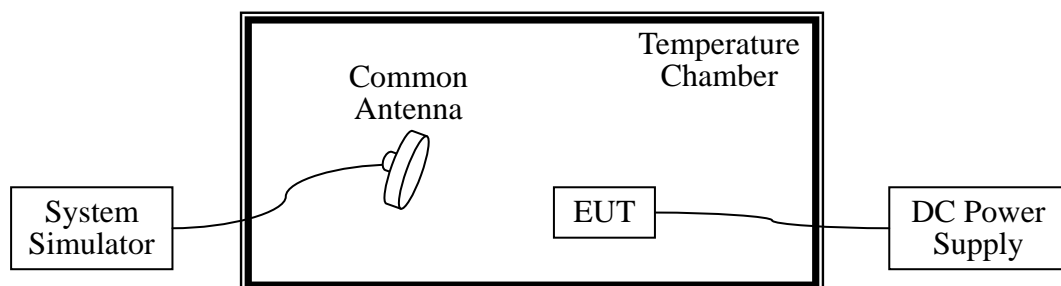
2.3.1 Requirement

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

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

2.3.2 Test Description

1. Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control All up bit and Power Class = 3. A call is established between the EUT and the SS via a Common Antenna.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date
System Simulator	Agilent	E5515C	GB43130131	2011.05
DC Power Supply	Good Will	GPS-3030DD	EF920938	2011.05
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2011.05

2.3.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.7VDC, 4.2VDC and 3.6VDC, which are specified by the applicant; the normal temperature here used is 25°C . The frequency

deviation limit of WCDMA 850MHz band is ± 2.5 ppm, WCDMA 1900MHz is ± 1 ppm

Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Temperature (°C)	Channel = 4132 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
			Hz	Limits	Hz	Limits	Hz	Limits	
WCDMA 850MHz	3.7	-30	-5.66	±826.4	5.78	±835	27.18	±846.6	PASS
		-20	9.70		-10.17		30.07		
		-10	-10.06		23.28		5.48		
		0	21.06		-3.03		-1.82		
		+10	13.07		-3.03		19.02		
		+20	-12.76		-10.39		44.78		
		+30	-2.05		17.75		21.99		
		+40	-3.77		5.31		17.67		
		+50	5.39		-12.19		-19.44		
	4.2	+25	9.65	20.74	-6.76				
	3.6	+25	-0.70	23.29	-14.09				

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	
WCDMA 1900MHz	3.7	-30	8.87	±1852.4	5.07	±1880.0	13.97	±1907.6	PASS
		-20	5.71		-2.63		-19.32		
		-10	-5.22		0.31		18.71		
		0	9.37		-3.20		11.82		
		+10	13.97		1.18		1.23		
		+20	22.42		3.61		-3.60		
		+30	18.57		-11.62		-7.78		
		+40	-19.93		-7.97		22.21		
		+50	23.76		-8.23		-11.57		
	4.2	+25	-10.20	21.16	1.97				
	3.6	+25	-9.09	26.94	11.40				

HSDPA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4132 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.7	-30	8.78	±826.4	21.77	±835	-3.87	±846.6	PASS
	-20	-1.49		-1.93		14.41		
	-10	17.14		18.67		21.57		
	0	-23.61		27.46		-24.37		
	+10	32.03		-8.56		-13.96		
	+20	23.83		20.65		35.23		
	+30	13.31		12.88		-8.31		
	+40	-14.01		-14.75		-13.95		
	+50	34.55		23.37		26.37		
4.2	+25	-3.57		7.93		7.90		
3.6	+25	17.51		-31.21		1.78		

HSDPA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.7	-30	1.80	±1852.4	15.66	±1880	2.61	±1907.6	PASS
	-20	-17.26		1.75		-8.38		
	-10	12.78		-7.00		-13.02		
	0	11.87		21.02		-8.51		
	+10	-16.65		26.48		5.64		
	+20	20.12		-4.81		-3.85		
	+30	-3.01		34.31		9.57		
	+40	21.71		8.36		27.54		
	+50	14.37		-25.88		-12.52		
4.2	+25	-11.21		29.43		-2.83		
3.6	+25	10.60		-2.27		14.42		

2.4 Conducted Out of Band Emissions

2.4.1 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.

2.4.2 Test Description

See section 2.1.2 of this report.

2.4.3 Test Result

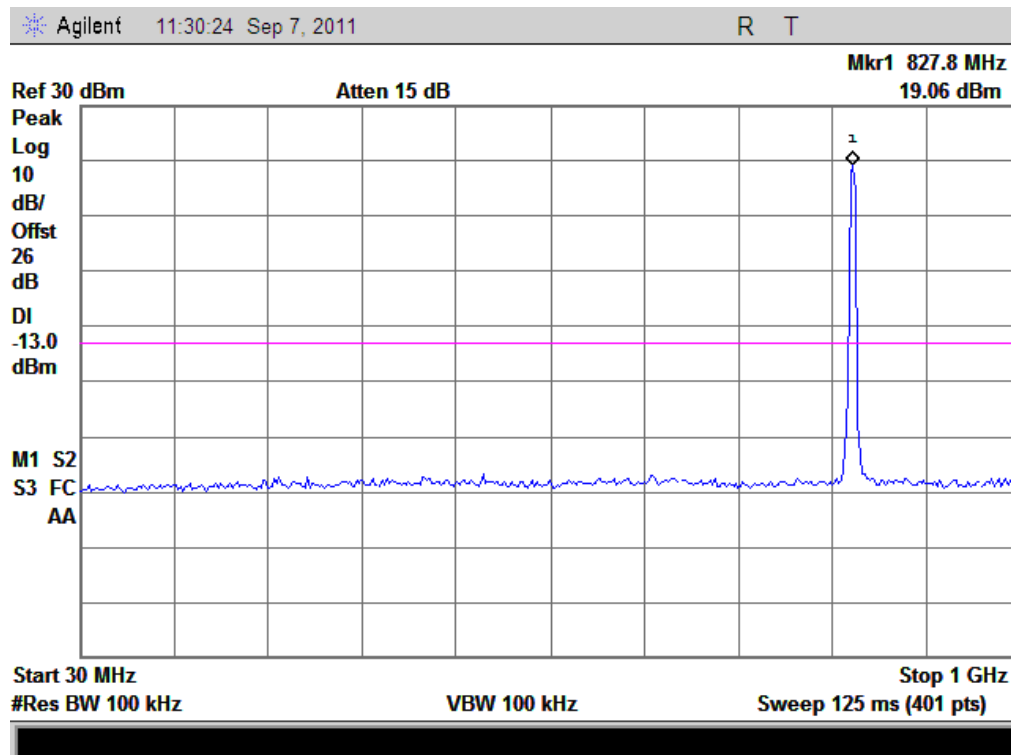
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

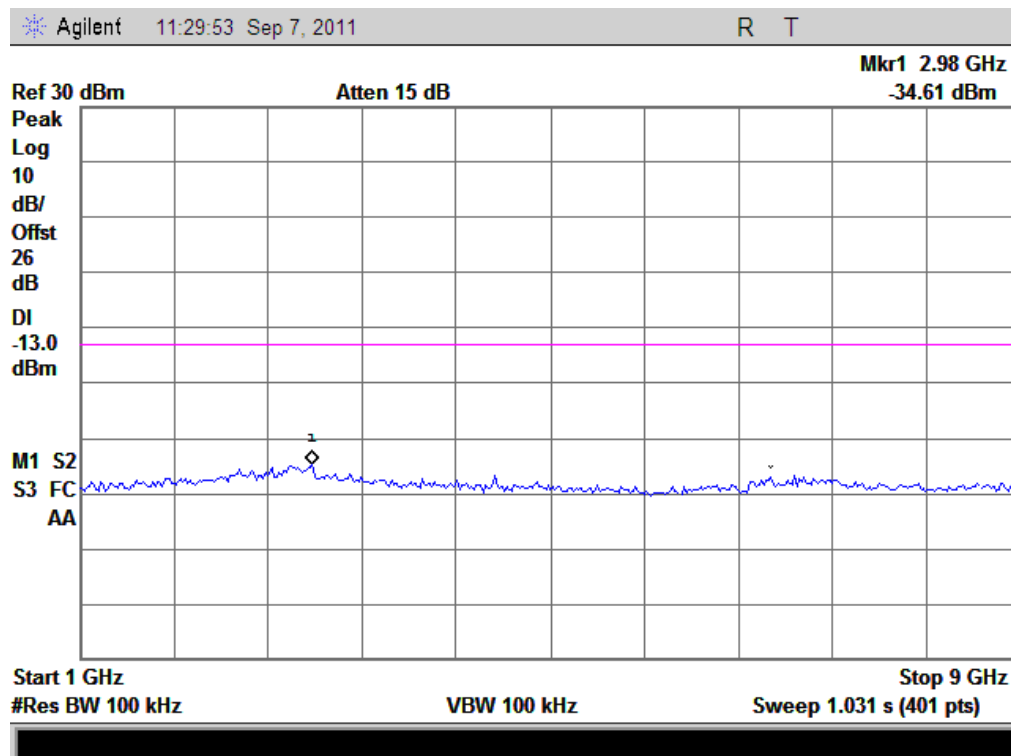
No.	Channel	Frequency(MHz)	Measured Max Spurious Emission(dBm)	Limit(dBm)
WCDMA 850MHz	4132	826.4	<-25	-13
	4175	835	<-25	-13
	4233	846.6	<-25	-13
WCDMA 1900MHz	9262	1852.4	<-25	-13
	9400	1880	<-25	-13
	9538	1907.6	<-25	-13
HSDPA 850MHz	4132	826.4	<-25	-13
	4175	835	<-25	-13
	4233	846.6	<-25	-13
HSDPA 1900MHz	9262	1852.4	<-25	-13
	9400	1880	<-25	-13
	9538	1907.6	<-25	-13

2. Test Plots for the Whole Measurement Frequency Range:

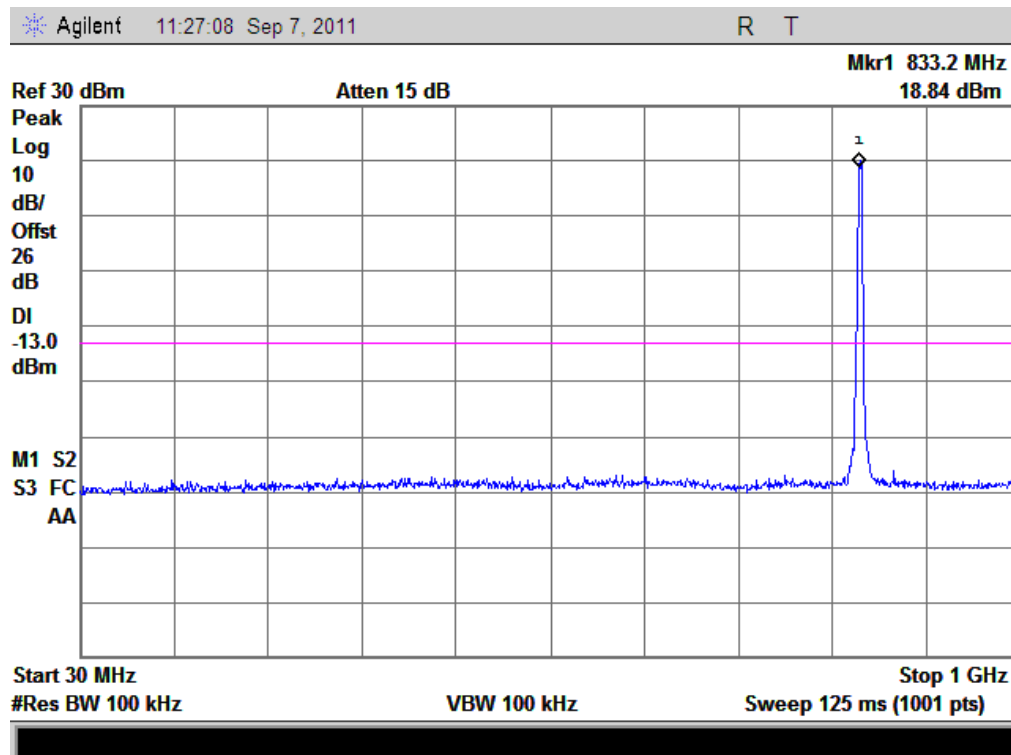
Note: the power of the EUT transmitting frequency should be ignored.



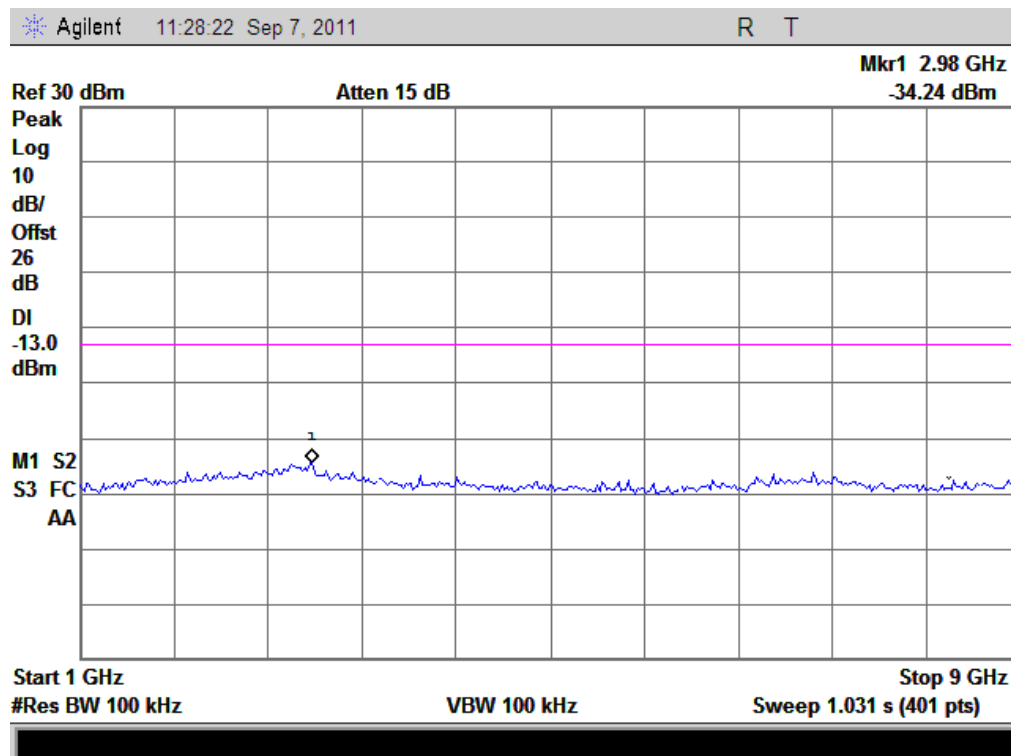
(Plot A1: WCDMA850MHz Channel = 4132, 30MHz to 1GHz)



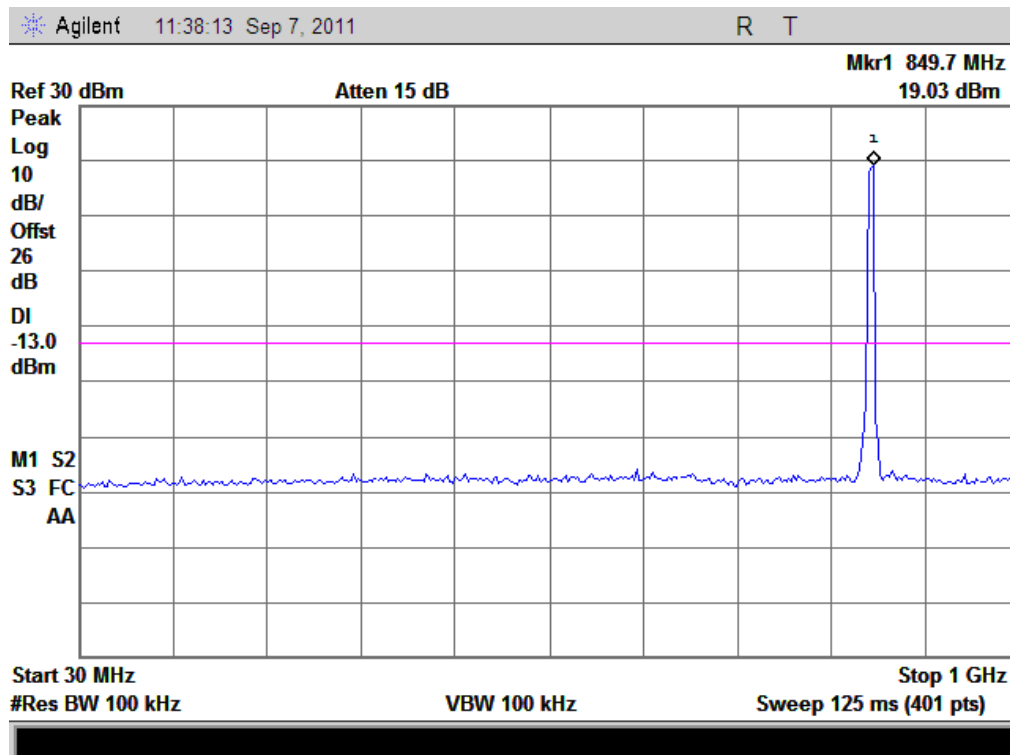
(Plot A1.1: WCDMA850MHz Channel = 4132, 1GHz to 9GHz)



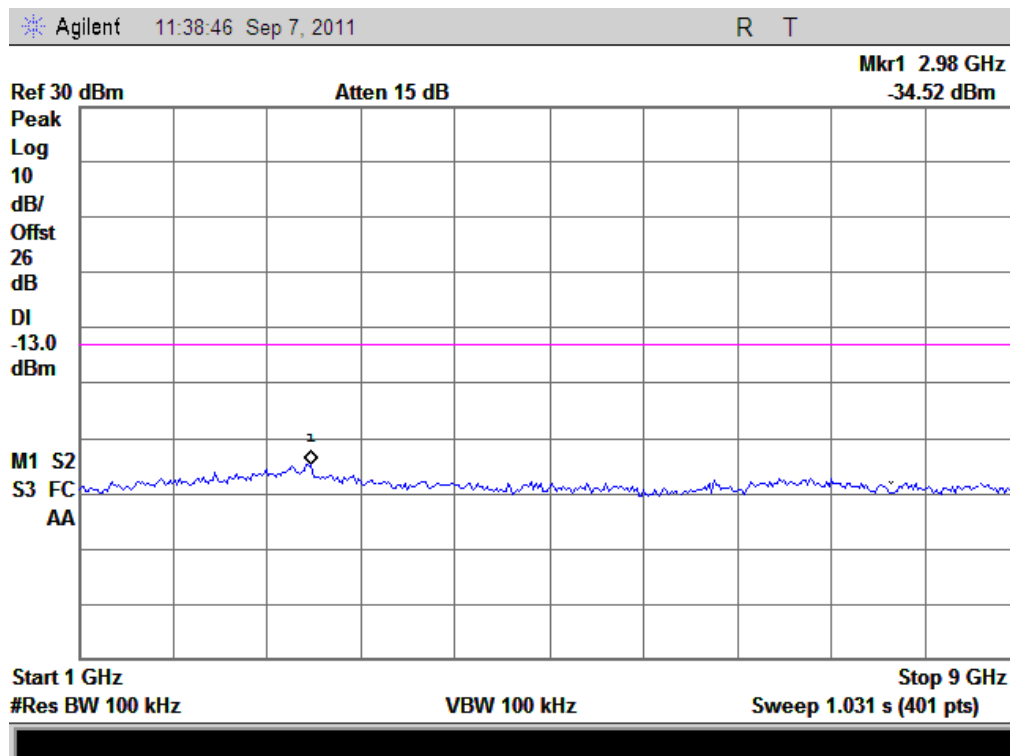
(Plot B2: WCDMA850MHz Channel = 4175, 30MHz to 1GHz)



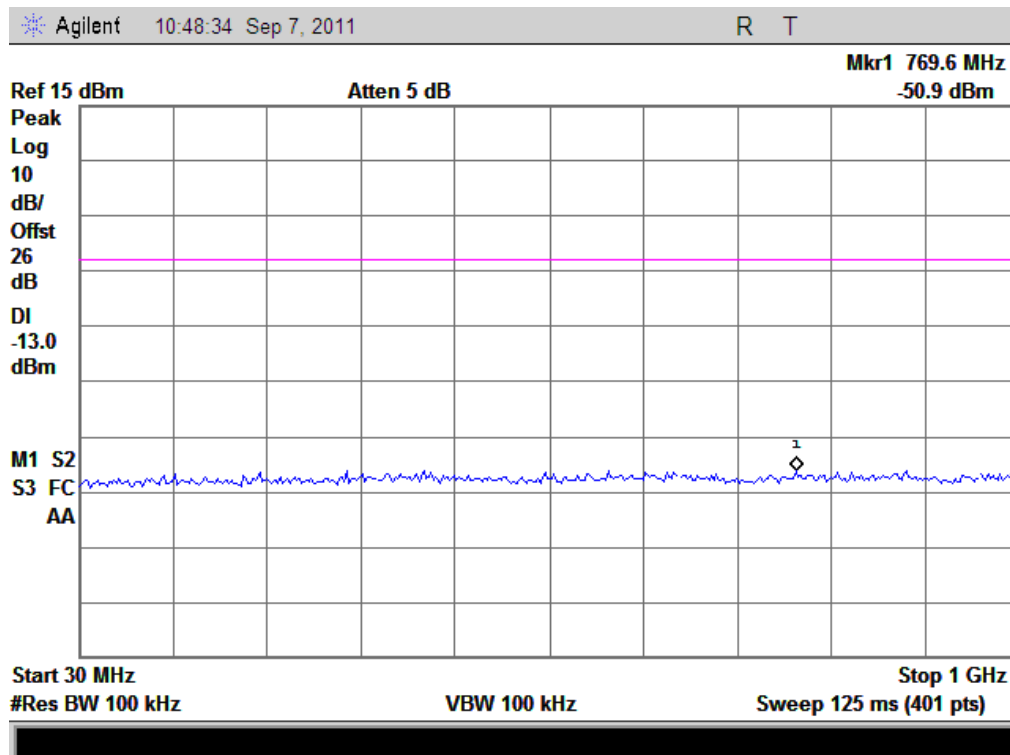
(Plot B2.1: WCDMA850MHz Channel = 4175, 1GHz to 9GHz)



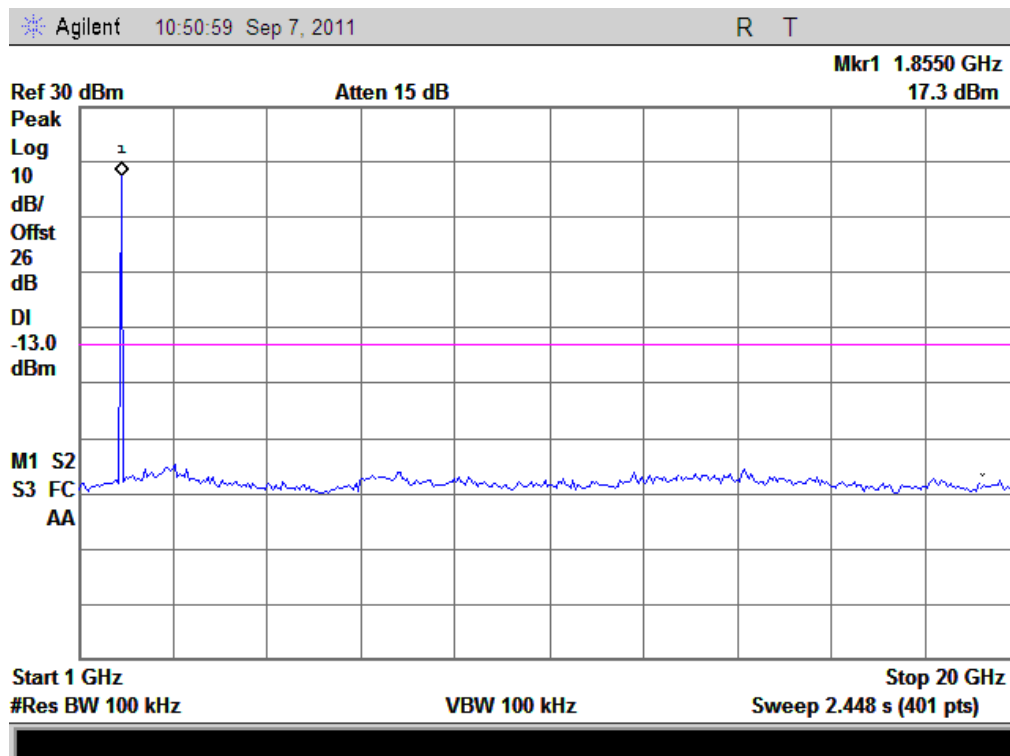
(Plot C3: WCDMA850MHz Channel = 4233, 30MHz to 1GHz)



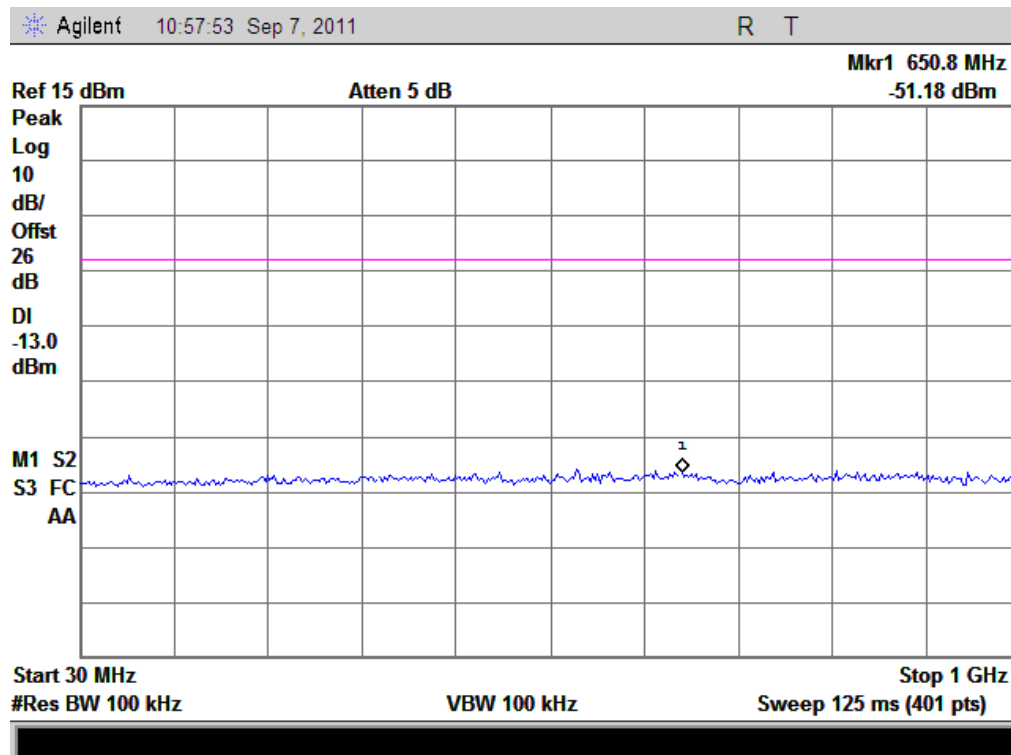
(Plot C3.1: WCDMA850MHz Channel = 4233, 1GHz to 9GHz)



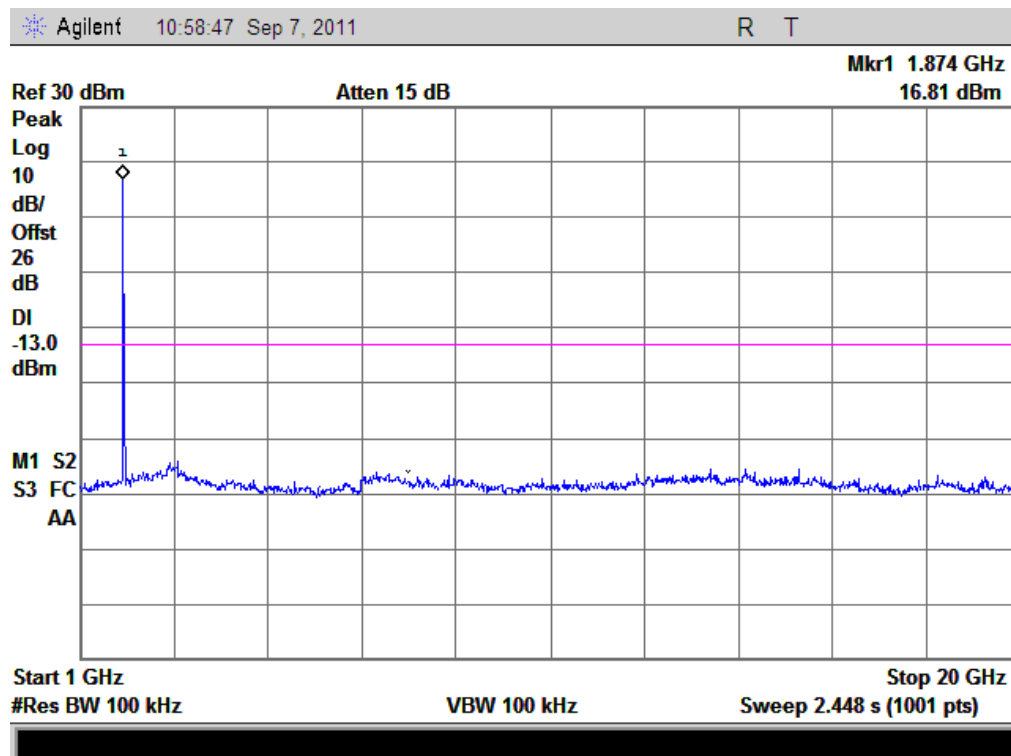
(Plot D1: WCDMA1900MHz Channel = 9262, 30MHz to 1GHz)



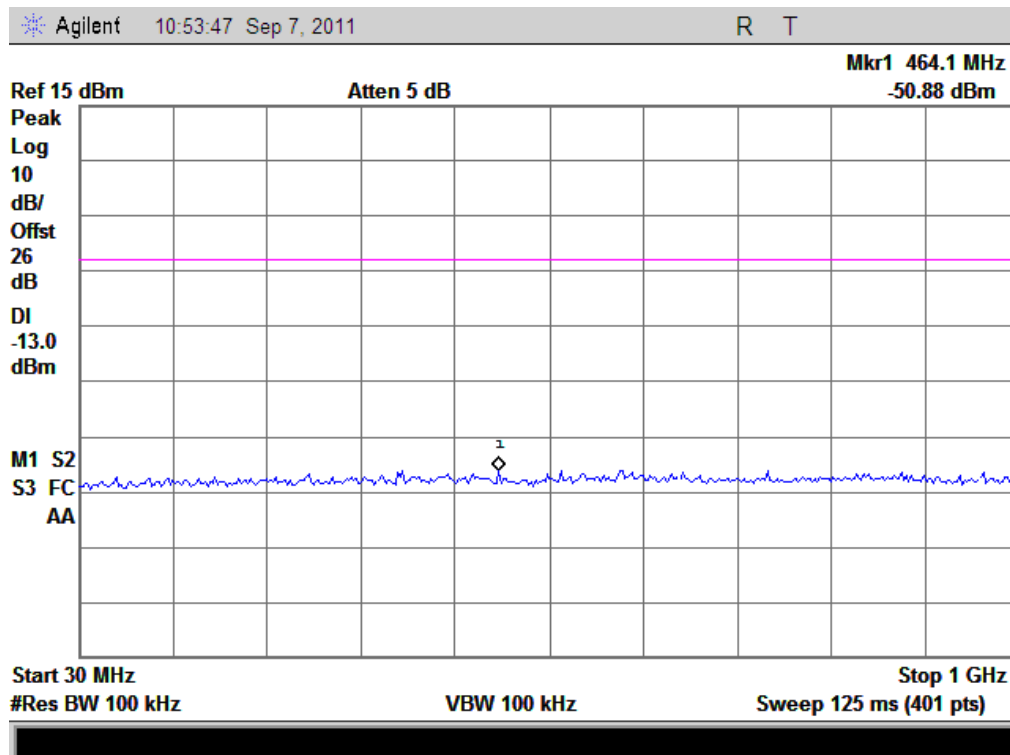
(Plot D1.1: WCDMA1900MHz Channel = 9262, 1GHz to 20GHz)



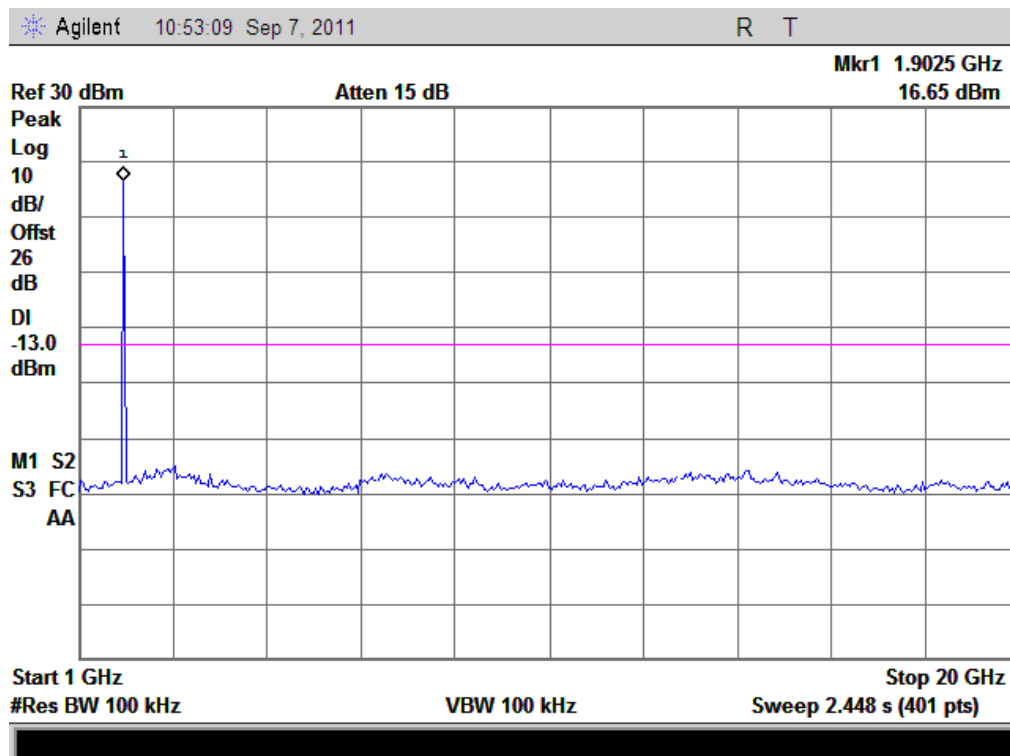
(Plot E2: WCDMA1900MHz Channel = 9400, 30MHz to 1GHz)



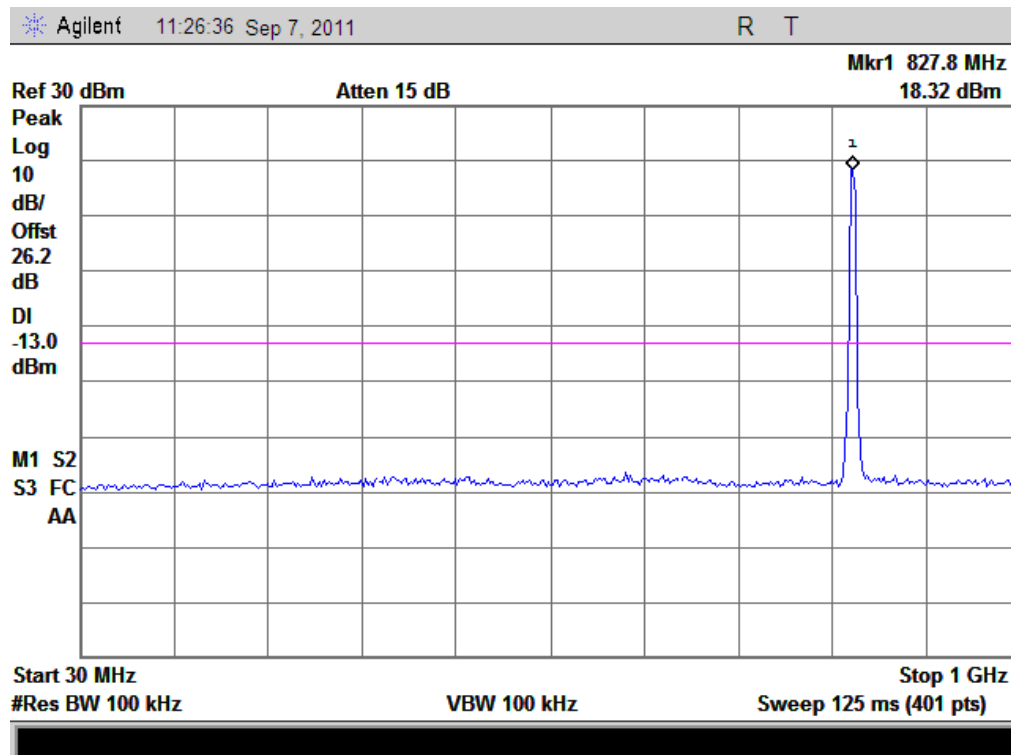
(Plot E2.1: WCDMA1900MHz Channel = 9400, 1GHz to 20GHz)



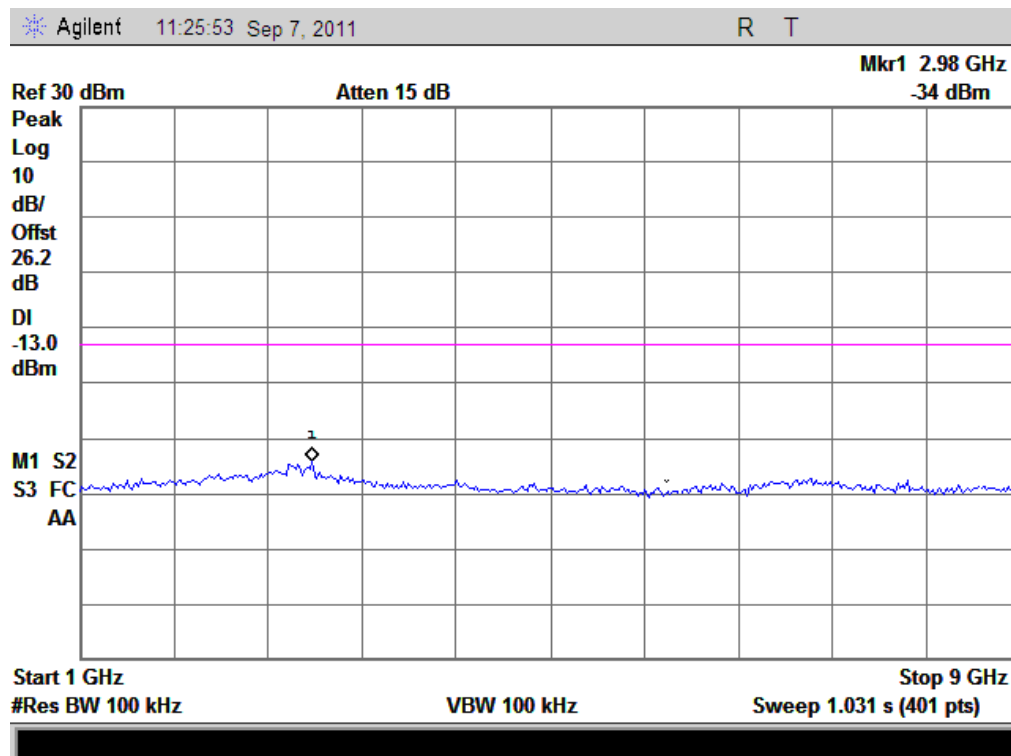
(Plot F3: WCDMA1900MHz Channel = 9538, 30MHz to 1GHz)



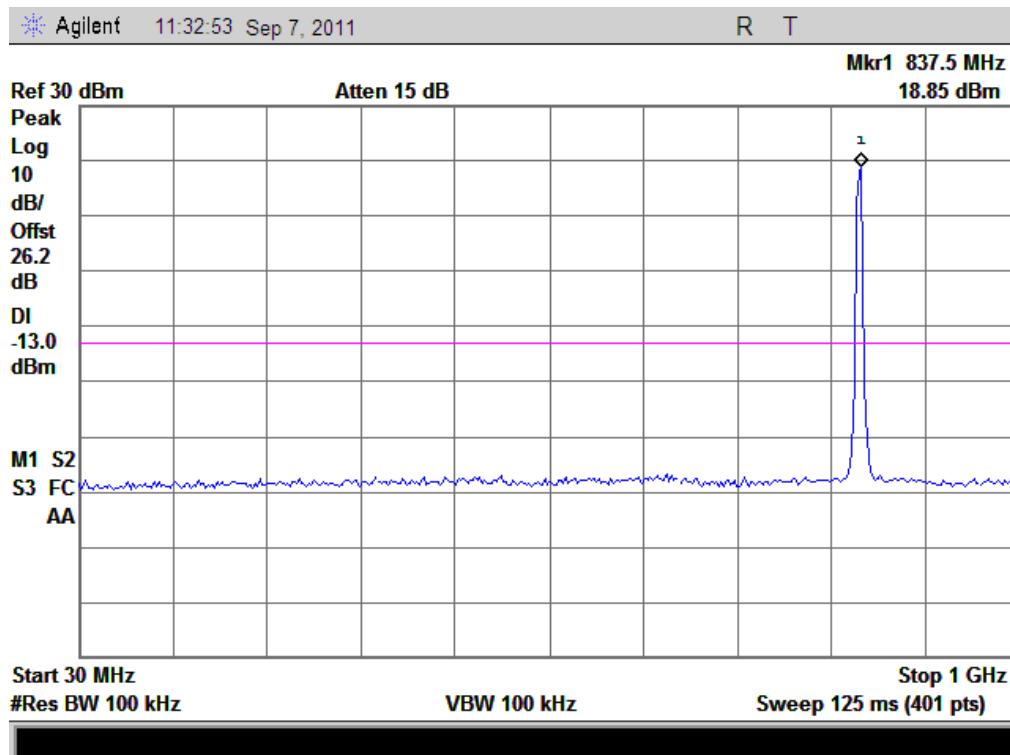
(Plot F3.1: WCDMA1900MHz Channel = 9538 1GHz to 20GHz)



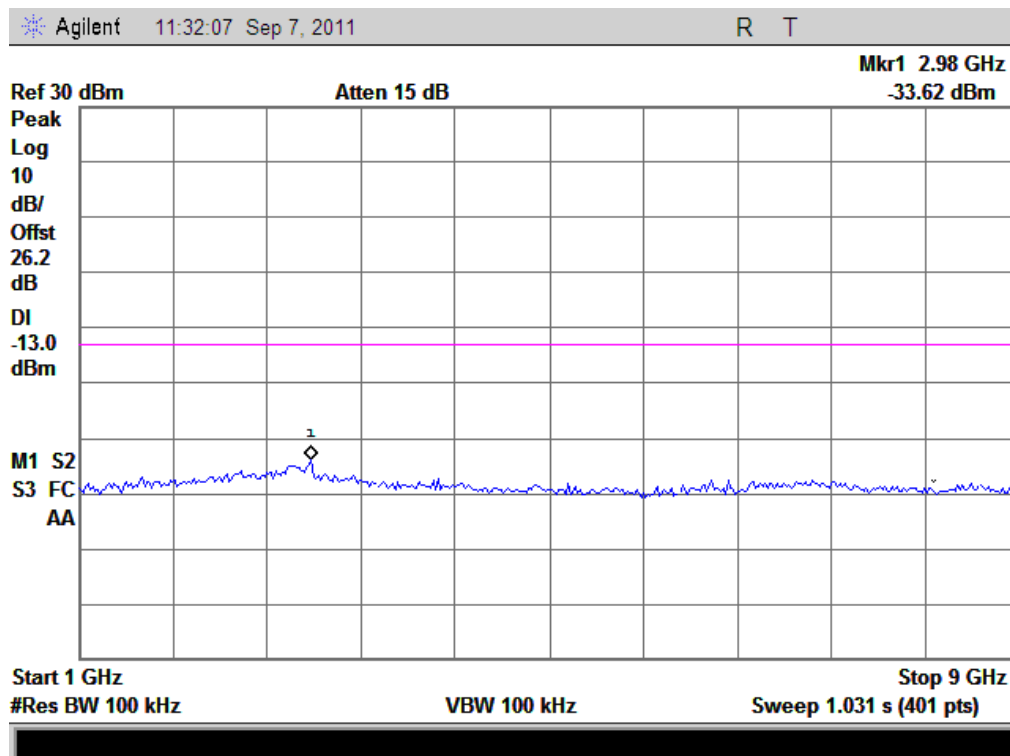
(Plot G1: HSDPA 850MHz Channel = 4132, 30MHz to 1GHz)



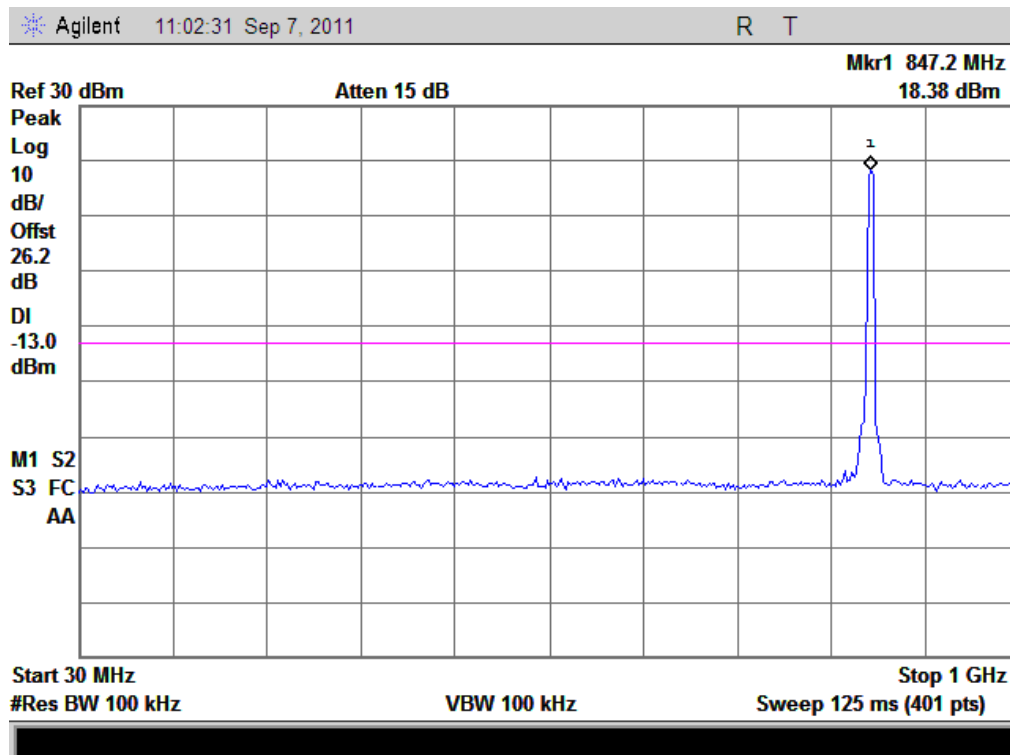
(Plot G1.1: HSDPA 850MHz Channel = 4132, 1GHz to 9GHz)



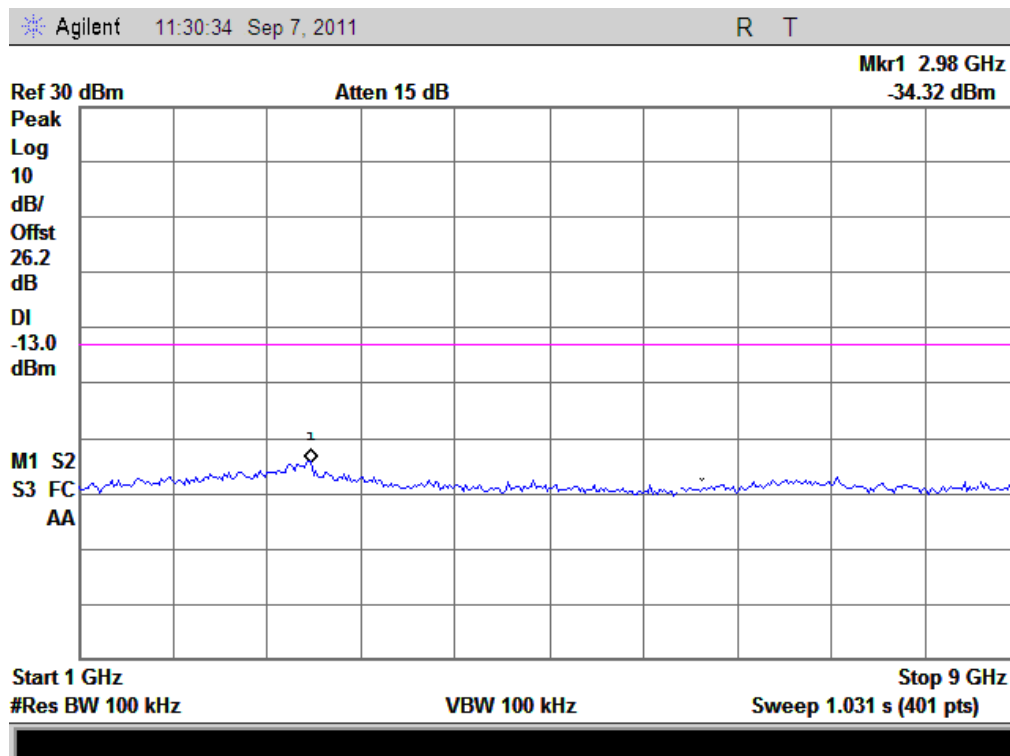
(Plot H2: HSDPA 850MHz Channel = 4175, 30MHz to 1GHz)



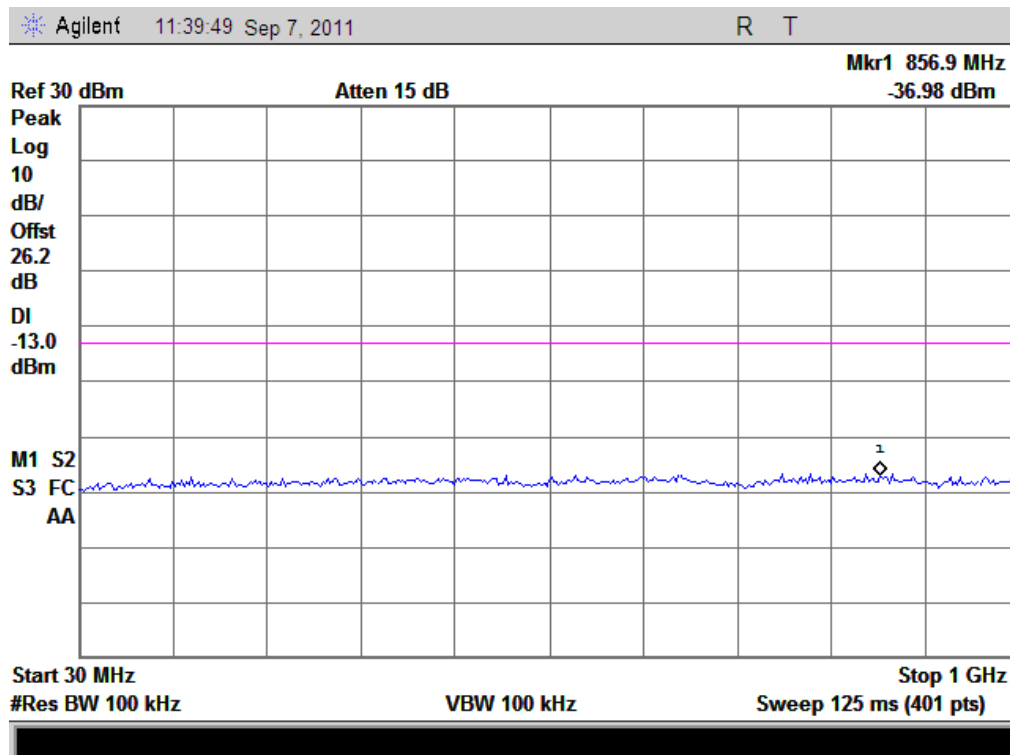
(Plot H2.1: HSDPA 850MHz Channel = 4175, 1GHz to 9GHz)



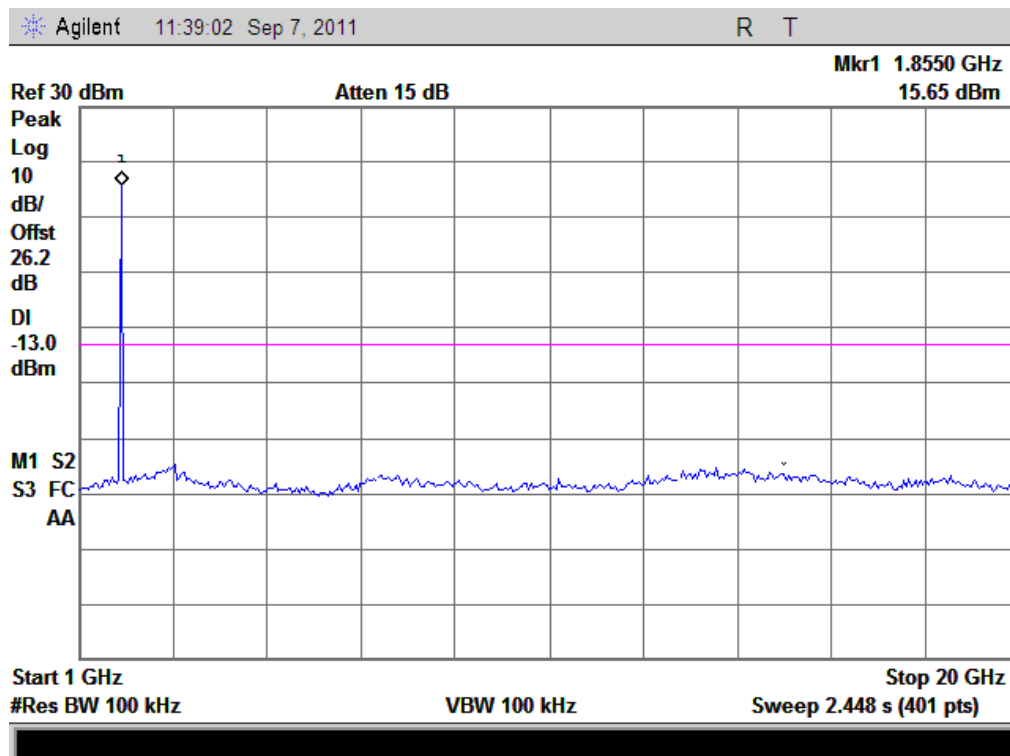
(PlotI3: HSDPA850MHz Channel = 4233, 30MHz to 1GHz)



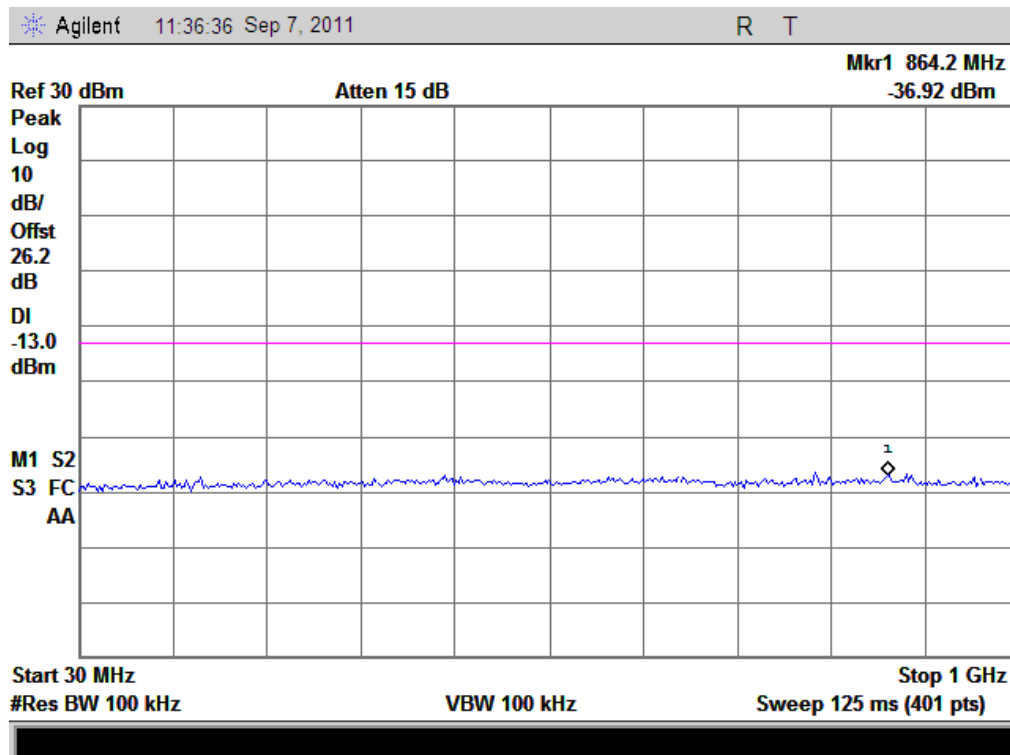
(Plot I3.1: HSDPA850MHz Channel = 4233, 1GHz to 9GHz)



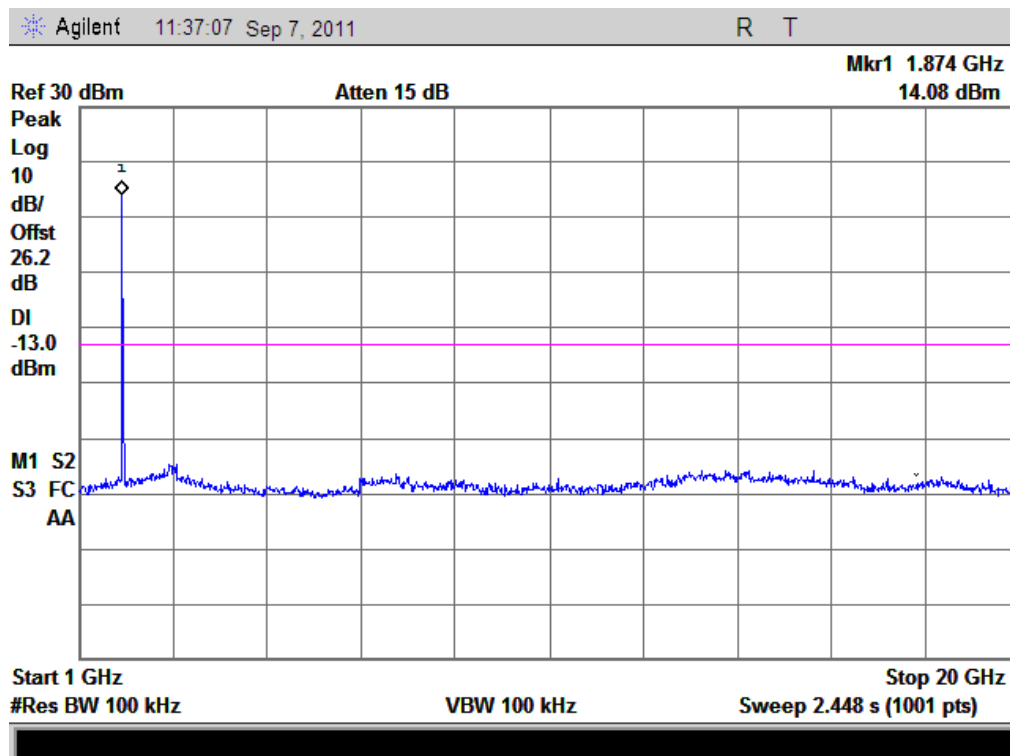
(PlotJ1: HSDPA1900MHz Channel = 9262, 30MHz to 1GHz)



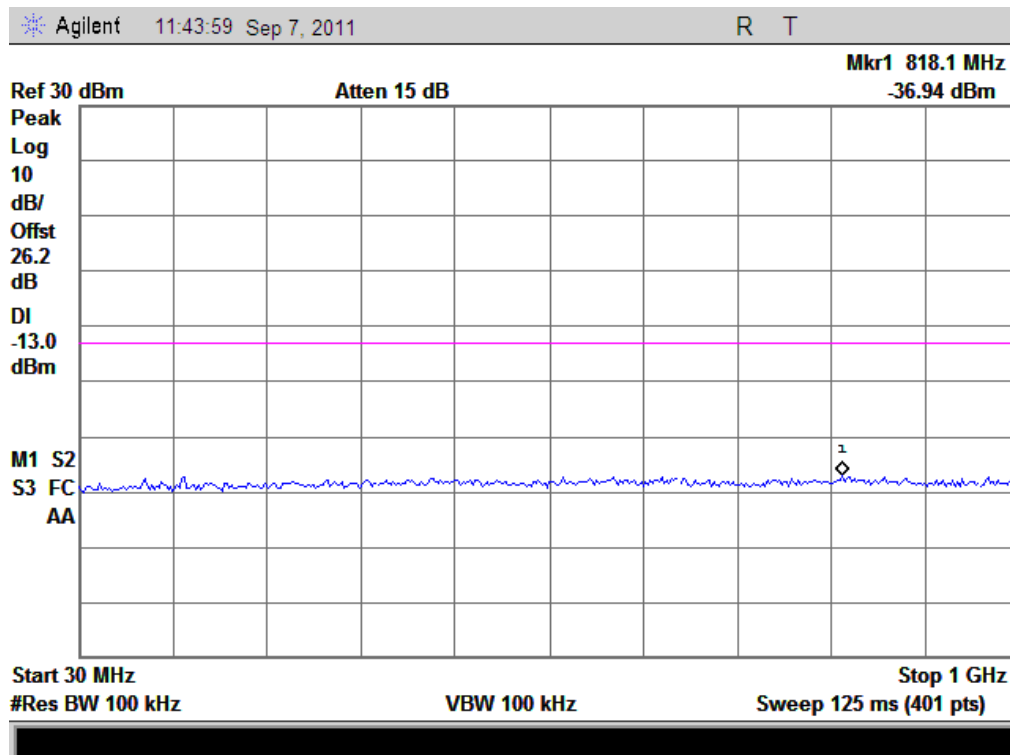
(Plot J1.1: HSDPA1900MHz Channel = 9262, 1GHz to 20GHz)



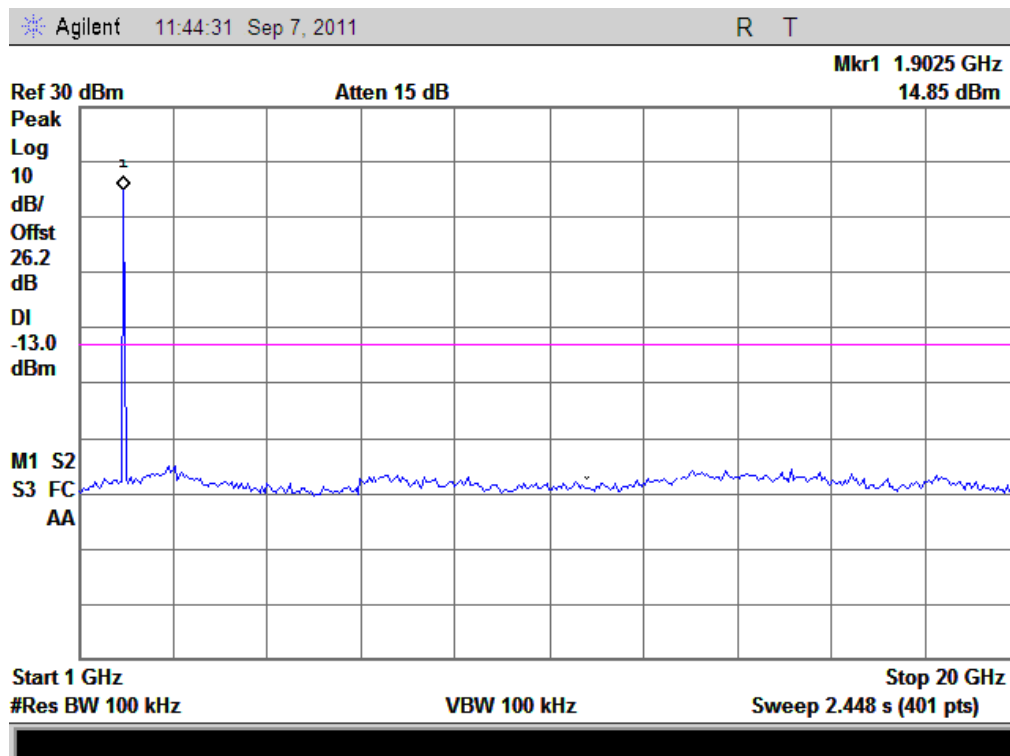
(Plot K2: HSDPA1900MHz Channel = 9400, 30MHz to 1GHz)



(Plot K2.1: HSDPA1900MHz Channel = 9400, 1GHz to 20GHz)



(Plot L3: HSDPA1900MHz Channel = 9538, 30MHz to 1GHz)



(Plot L3.1: HSDPA1900MHz Channel = 9538 1GHz to 20GHz)

2.5 Band Edge

2.5.1 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.

2.5.2 Test Description

See section 2.1.2 of this report.

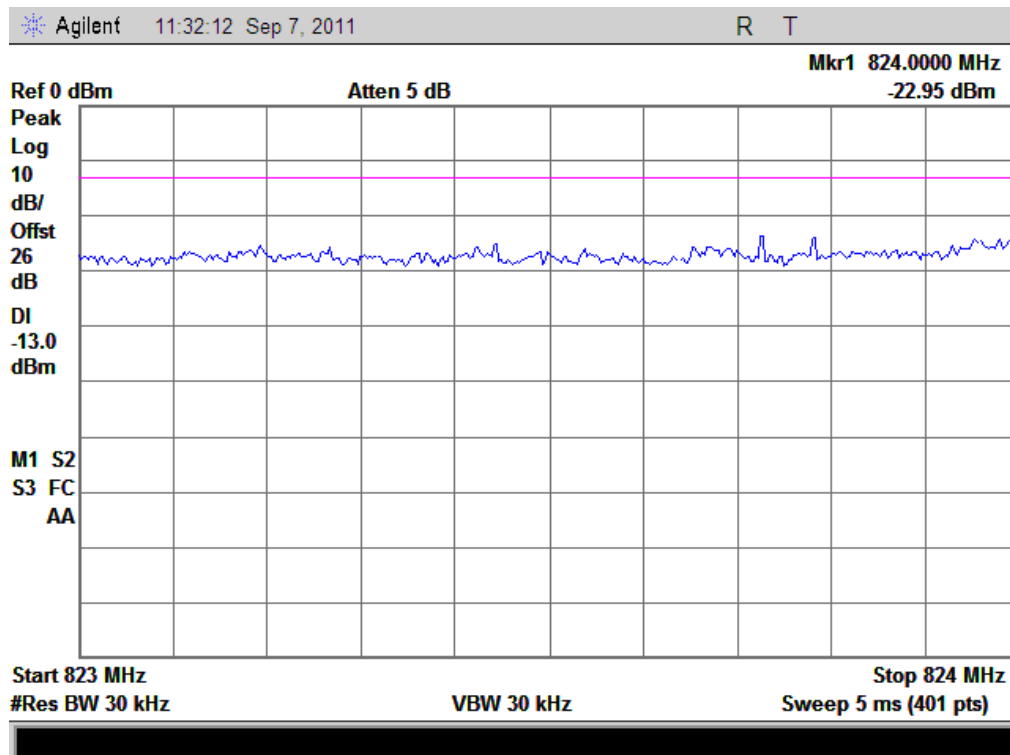
2.5.3 Test Result

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

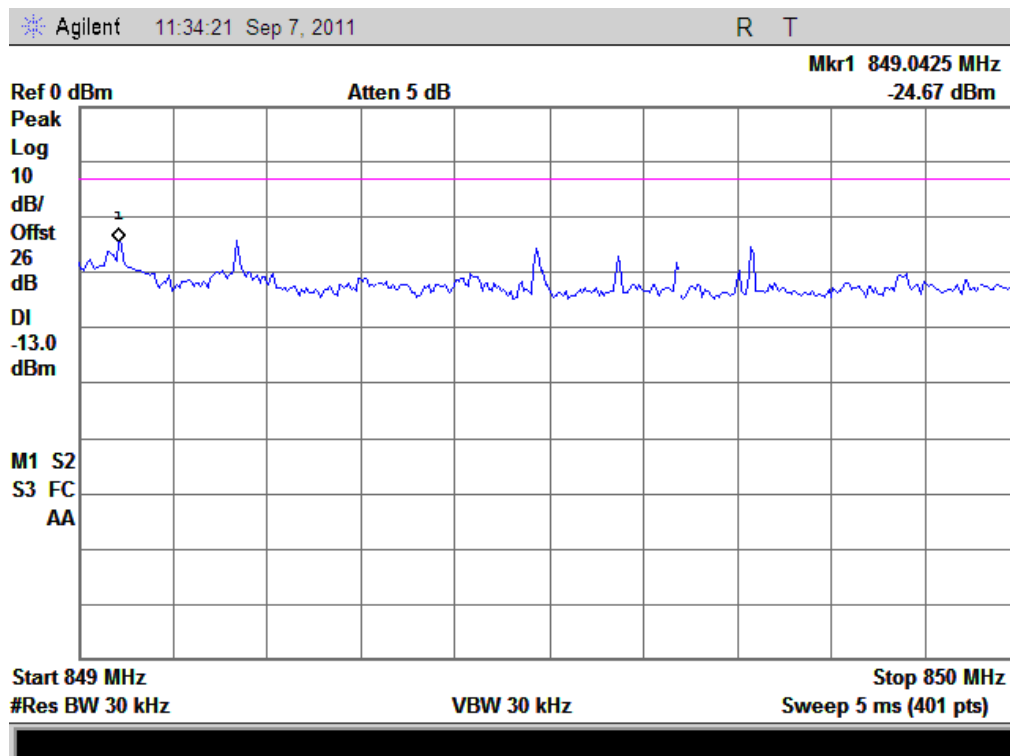
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
WCDMA 850MHz	4132	826.4	-22.95	Plat A	-13	PASS
	4233	846.6	-24.67	Plot B		PASS
WCDMA1900MHz	9262	1852.4	-22.05	Plat C	-13	PASS
	9538	1907.6	-24.16	Plot D		PASS
HSDPA 850MHz	4132	826.4	-25.03	Plat E	-13	PASS
	4233	846.6	-24.79	Plot F		PASS
HSDPA 1900MHz	9262	1852.4	-24.4	Plat G	-13	PASS
	9538	1907.6	-24.17	Plot H		PASS

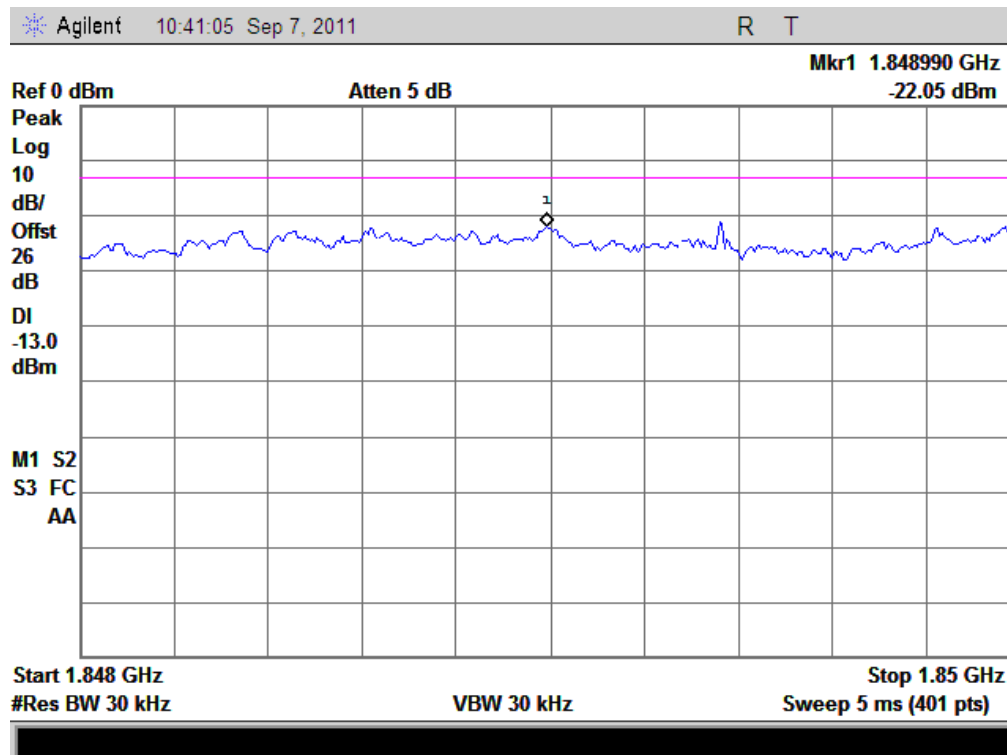
2. Test Plots:



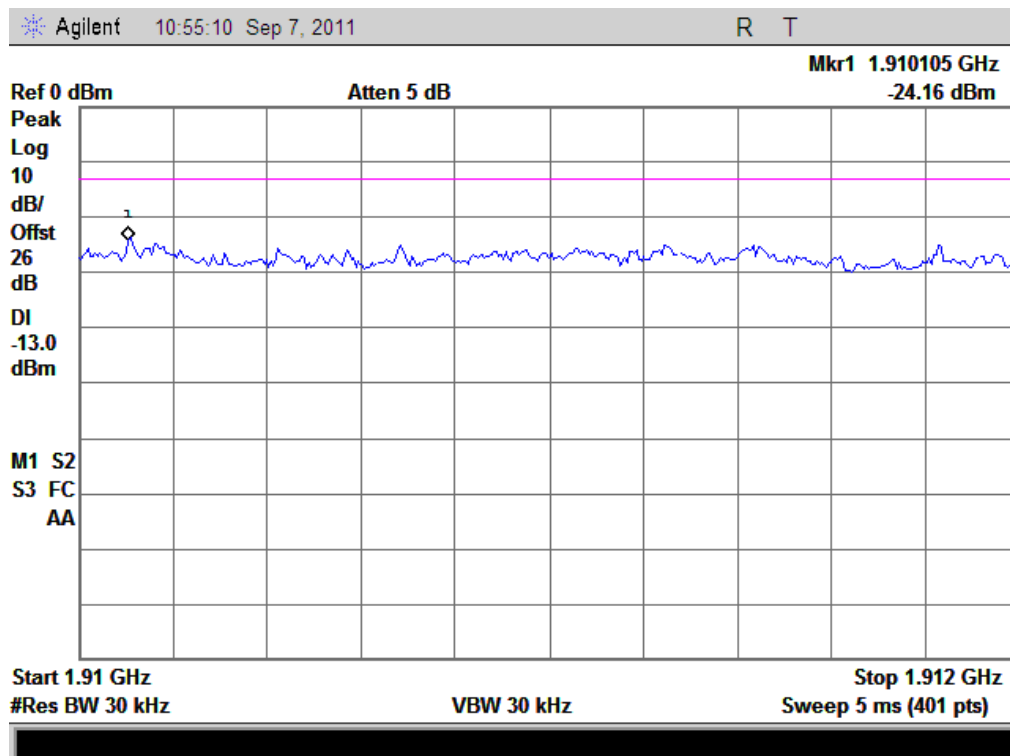
(Plot A: WCDMA 850 Channel = 4132)



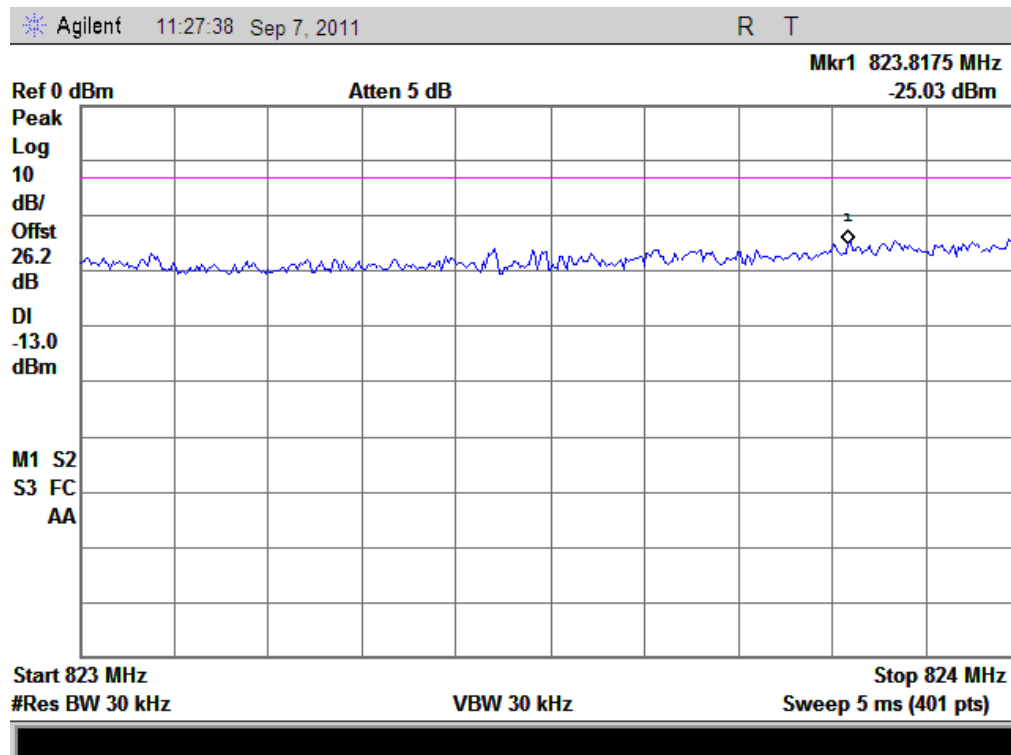
(Plot B: WCDMA 850 Channel = 4233)



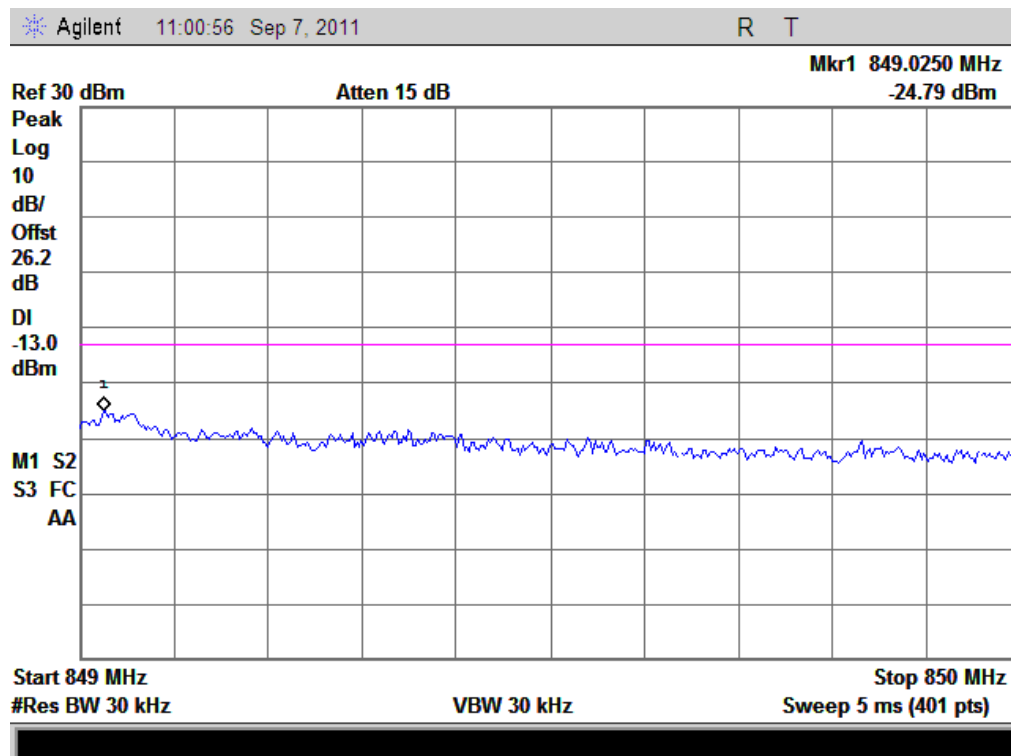
(Plot C: WCDMA 1900 Channel = 9262)



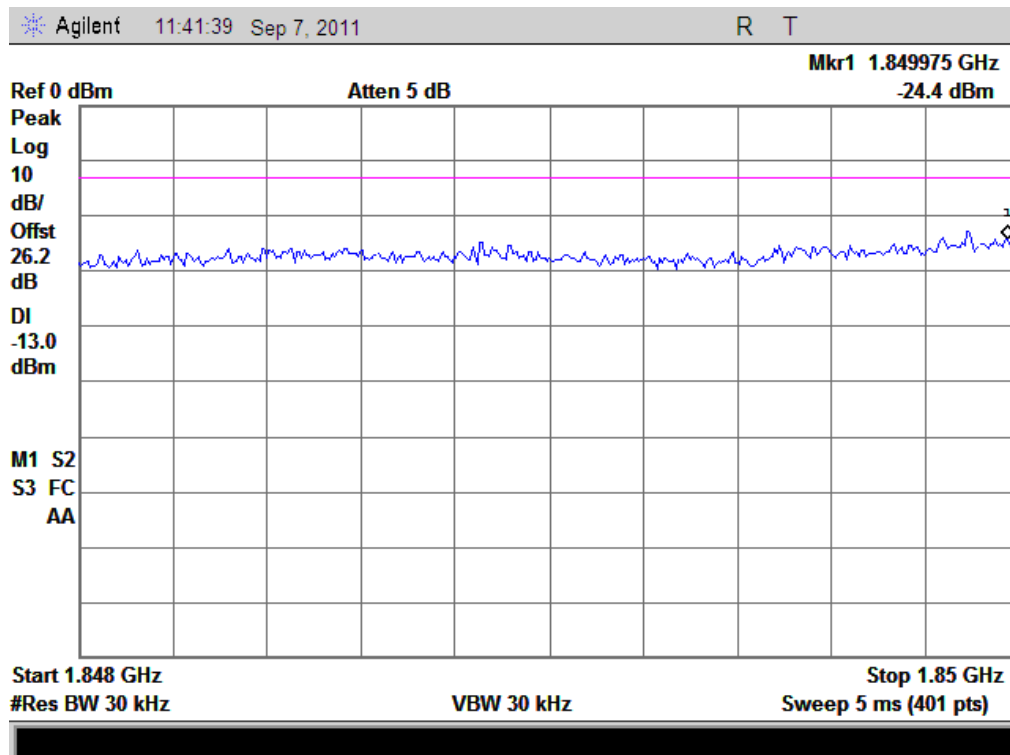
(Plot D: WCDMA 1900 Channel = 9538)



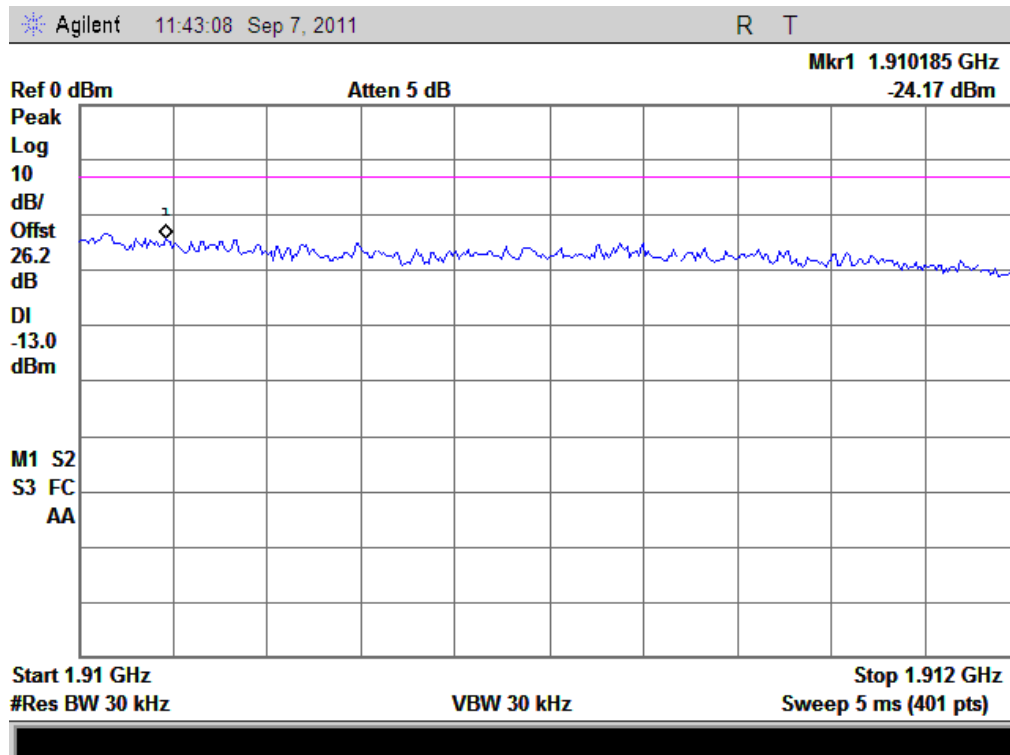
(Plot E: HSDPA 850 Channel = 4132)



(Plot F : HSDPA850 Channel = 4233)



(Plot G :HSDPA 1900 Channel = 9262)



(Plot H: HSDPA 1900 Channel = 9538)

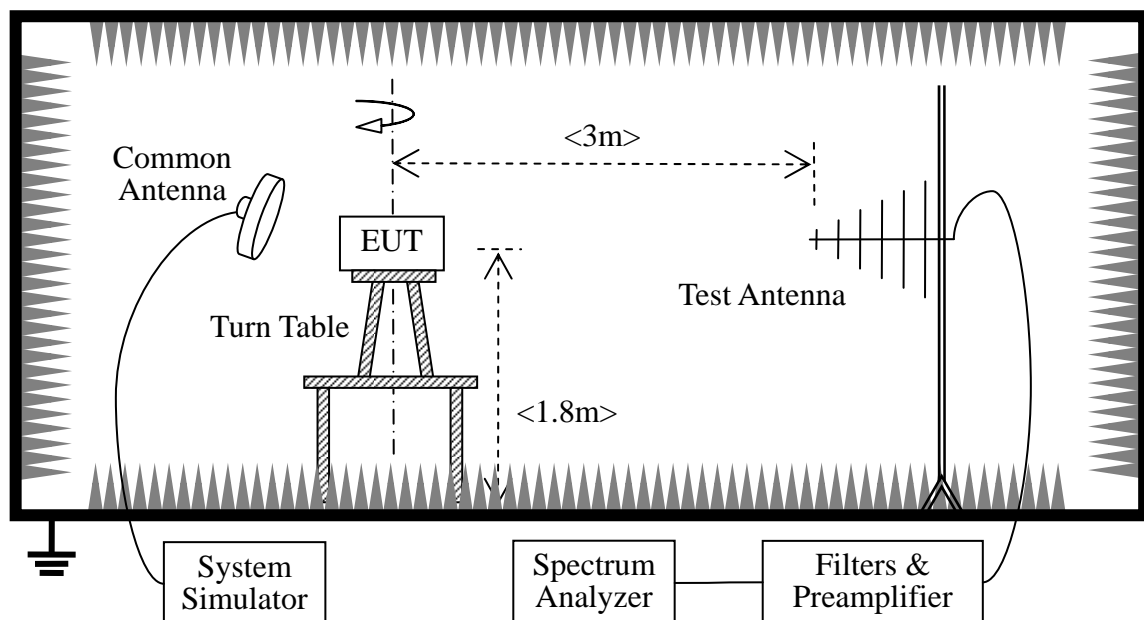
2.6 Transmitter Radiated Power (EIRP/ERP)

2.6.1 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 2Watts e.i.r.p. peak power.

2.6.2 Test Description

1. Test Setup:



1. The resolution bandwidth of the Spectrum Analyzer is set to be comparable to the emission bandwidth of the transmitter, e.g. for GSM modulated signal (here used): RBW=VBW=1MHz, for CDMA modulated signal: RBW=VBW=3MHz.
2. The low, middle and the high channels are selected to perform tests respectively.
3. Employ the bi-log Test Antenna as the test system receiving antenna; set the polarization of the Test Antenna to be the same as that of the EUT transmitting antenna.

Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; actuate the Turn Table to turn from 0 degrees to 360 degrees to find the maximum reading via the Spectrum Analyzer, mark the peak; finally record the peak and the plot.

-Maximum RF output power: WCDMA 850 25.52dBm, WCDMA 1900 25.31dBm, HSDPA 850 25.32dBm, HSDPA 1900 25.22dBm.

- Step size (dB): 3dB

- Minimum RF power: WCDMA800 -0.5dBm, WCDMA 1900 -0.7dBm.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date
System Simulator	Agilent	E5515C	GB43130131	2011.05
Spectrum Analyzer	Agilent	E7405A	US44210471	2011.05
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2011.05
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2011.05
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2011.05

2.6.3 Test Result

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

The substitution corrections are obtained as described below:

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

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

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

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

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

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

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

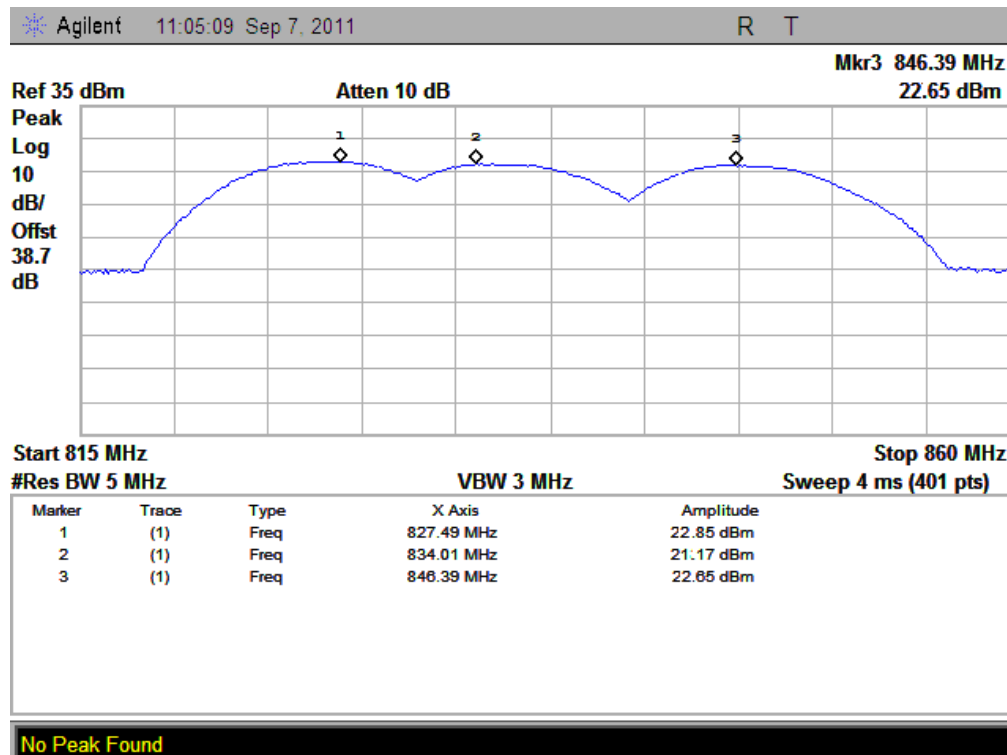
A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT} .

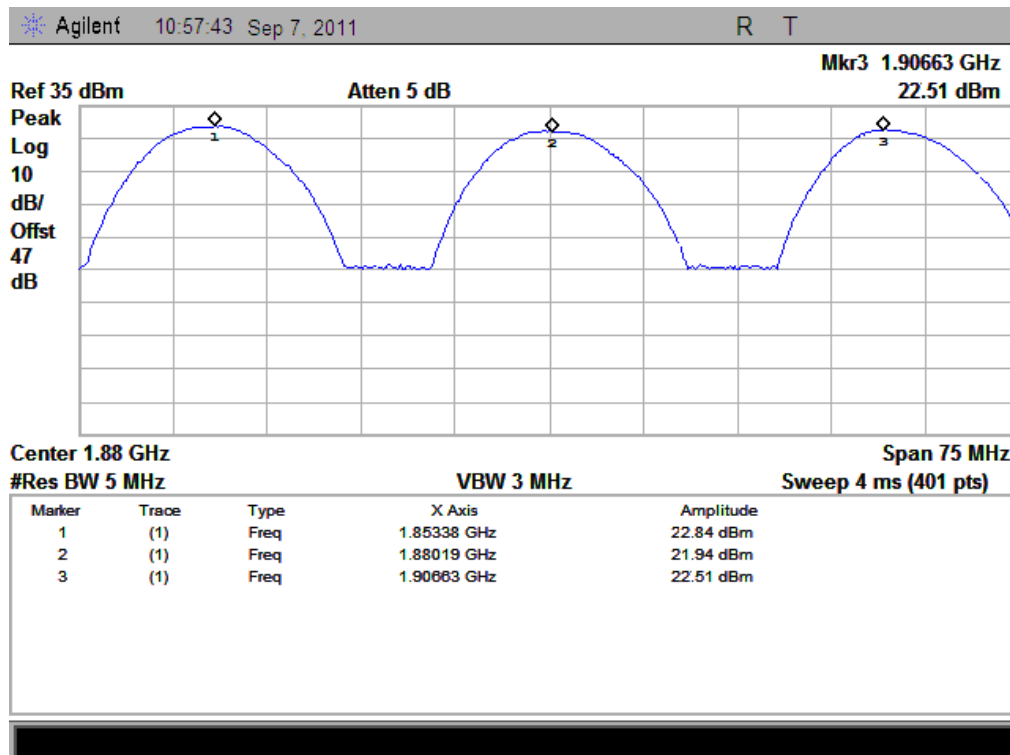
1. Test Verdict:

No.	Channel	Frequency (MHz)	Measured ERP/EIRP		Limit ERP/EIRP	
			dBm	W	dBm	W
WCDMA 850MHz	4132	826.4	22.85	0.192752	38.5	7
	4175	835	21.17	0.130918		
	4233	846.6	22.65	0.184077		
WCDMA 1900MHz	9262	1852.4	22.84	0.192309	33	2
	9400	1880	21.94	0.156315		
	9538	1907.6	22.51	0.178238		
HSDPA 850MHz	4132	826.4	22.58	0.181134	38.5	7
	4175	835	21.13	0.129718		
	4233	846.6	22.17	0.164816		
HSDPA 1900MHz	9262	1852.4	22.42	0.174582	33	2
	9400	1880	20.46	0.111173		
	9538	1907.6	22.58	0.181134		

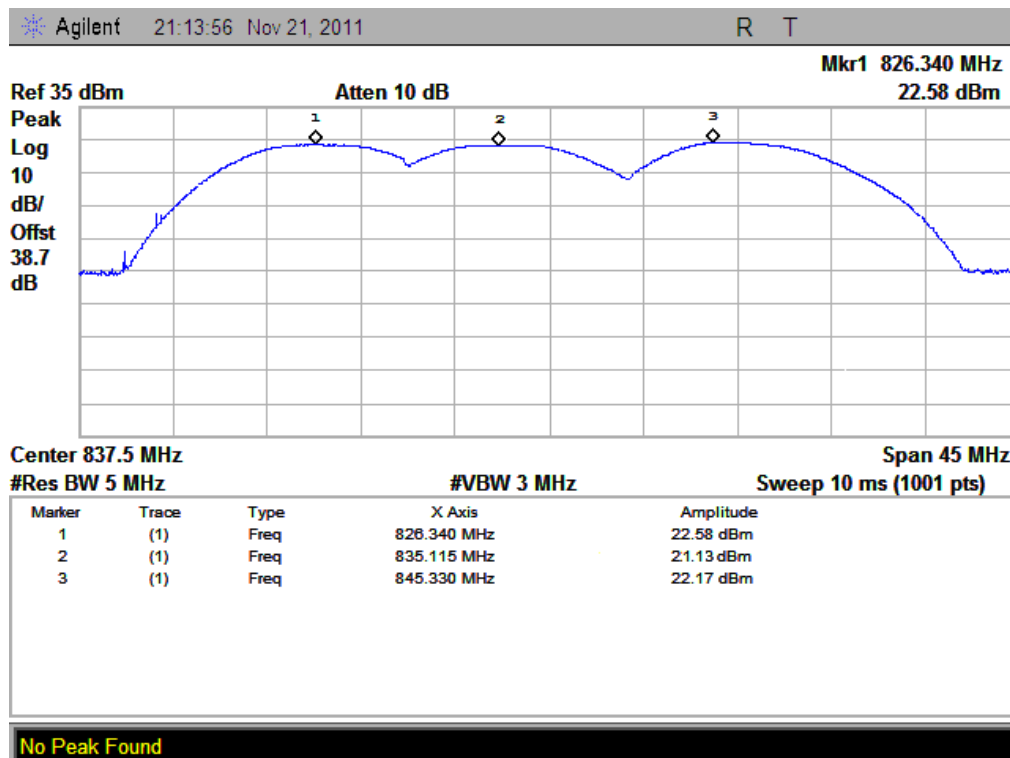
2. Test Plots:



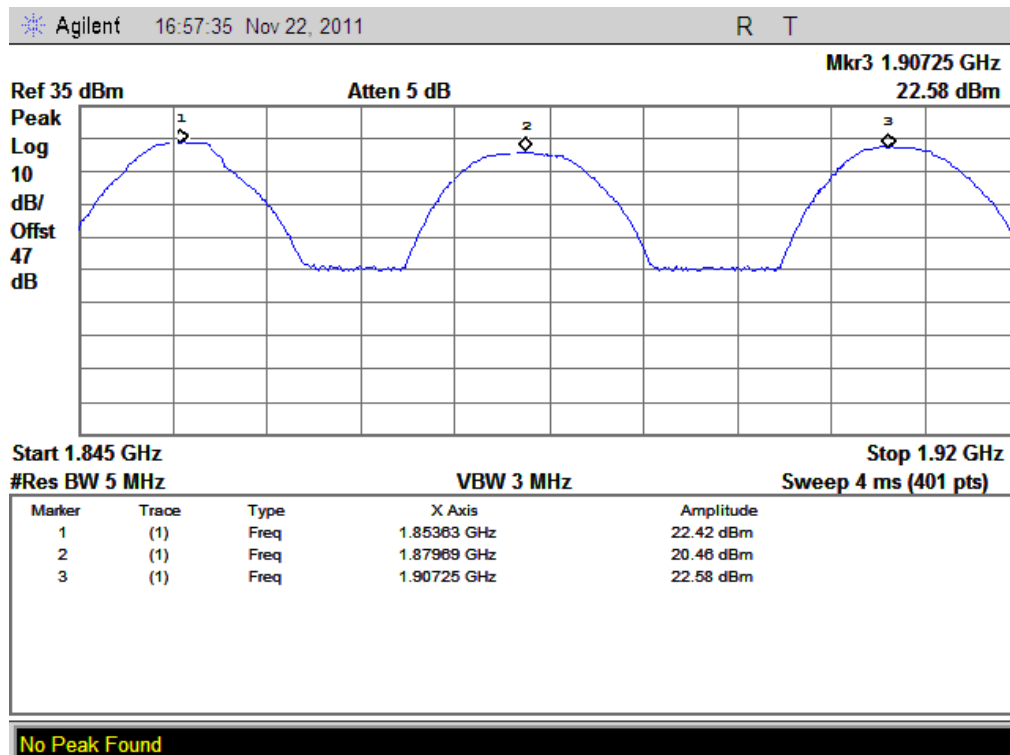
(WCDMA 850MHz Channel = 4132、4175、4233)



(WCDMA 1900MHz Channel = 9262、9400、9538)



(HSDPA 850MHz Channel = 4132、4175、4233)



(HSDPA1900MHz Channel = 9262、9400、9538)

2.7 Radiated Out of Band Emissions

2.7.1 Requirement

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

2.7.2 Test Description

See section 2.6.2 of this report.

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.7.3 Test Result

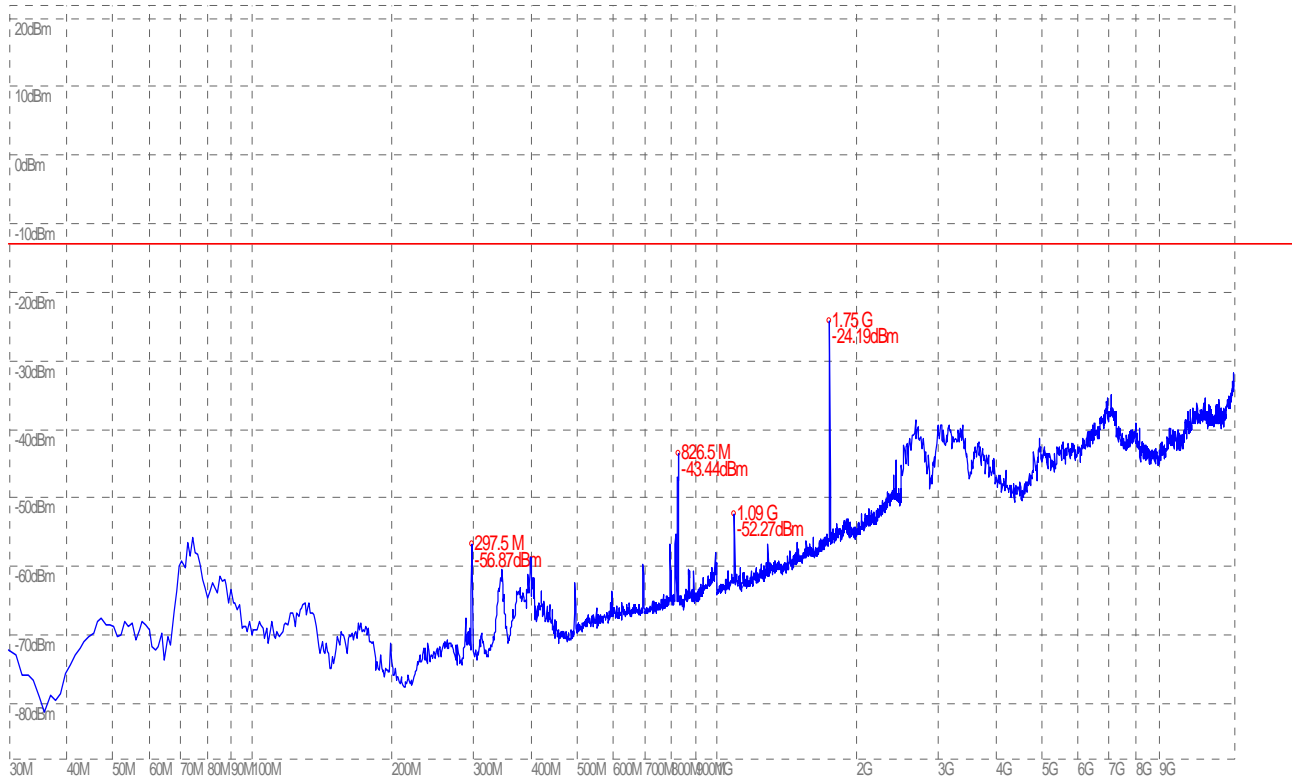
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

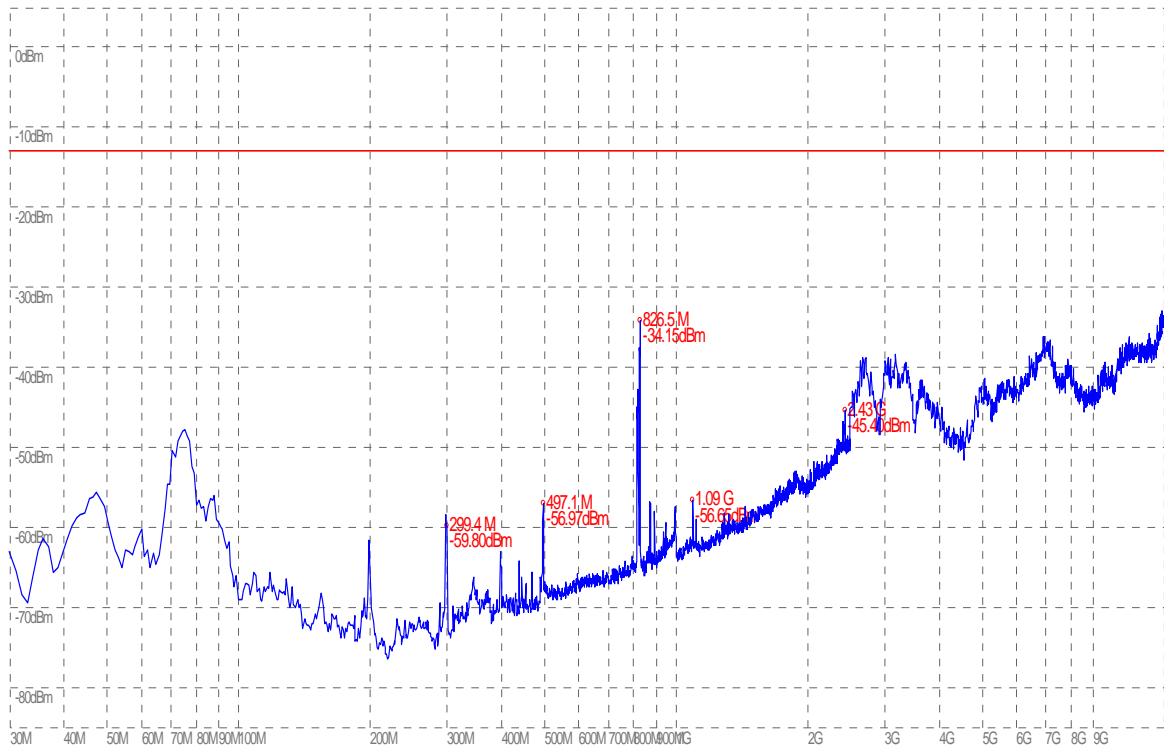
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
WCDMA 850MHz	4132	826.4	< -25	< -25	Plot A.1/A.2	-13	PASS
	4175	835	< -25	< -25	Plot B.1/B.2		PASS
	4233	846.6	< -25	< -25	Plot C.1/C.2		PASS
WCDMA 1900MHz	9262	1852.4	< -25	< -25	Plot D.1/D.2	-13	PASS
	9400	1880	< -25	< -25	Plot E.1/E.2		PASS
	9538	1907.6	< -25	< -25	Plot F.1/F.2		PASS
HSDPA 850MHz	4132	826.4	< -25	< -25	Plot G.1/G.2	-13	PASS
	4175	835	< -25	< -25	Plot G.3/G.4		PASS
	4233	846.6	< -25	< -25	Plot G.5/G.6		PASS
HSDPA 1900MHz	9262	1852.4	< -25	< -25	Plot H.1/H.2	-13	PASS
	9400	1880	< -25	< -25	Plot H.3/H.4		PASS
	9538	1907.6	< -25	< -25	Plot H.5/H.6		PASS

2. Test Plots for the Whole Measurement Frequency Range:

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



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



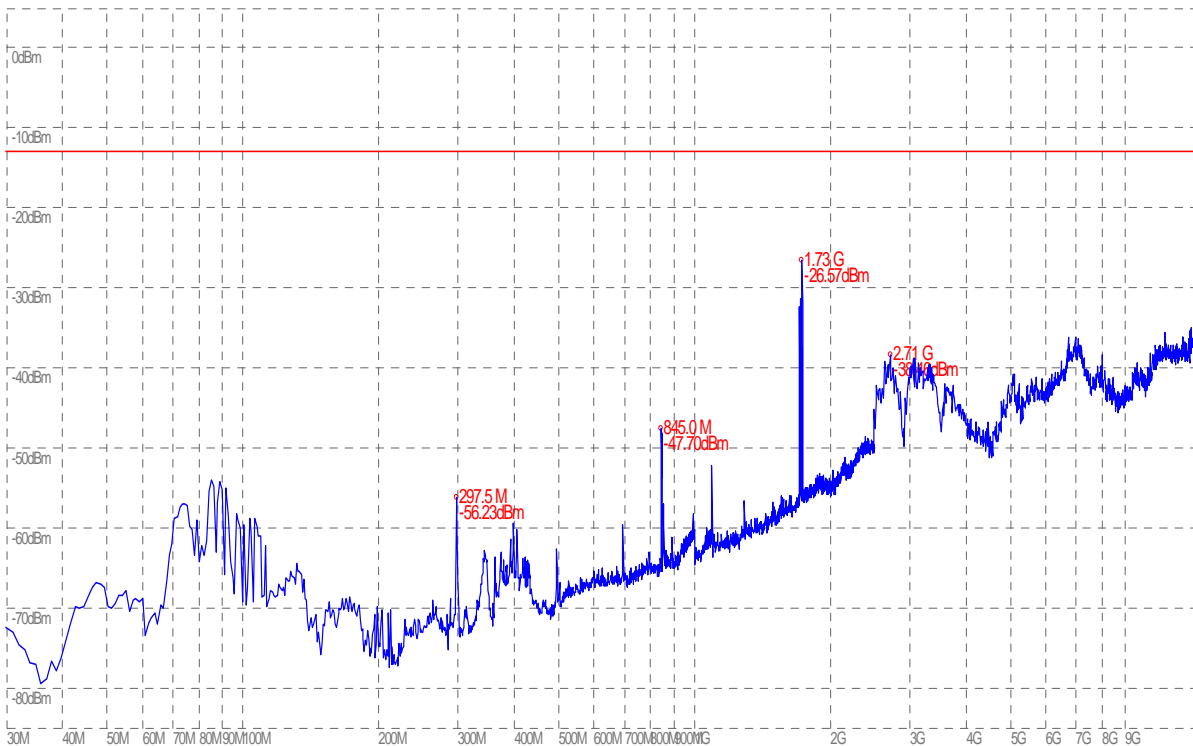
(Plot E.2: WCDMA 850MHz Channel = 4132, Test Antenna Vertical)



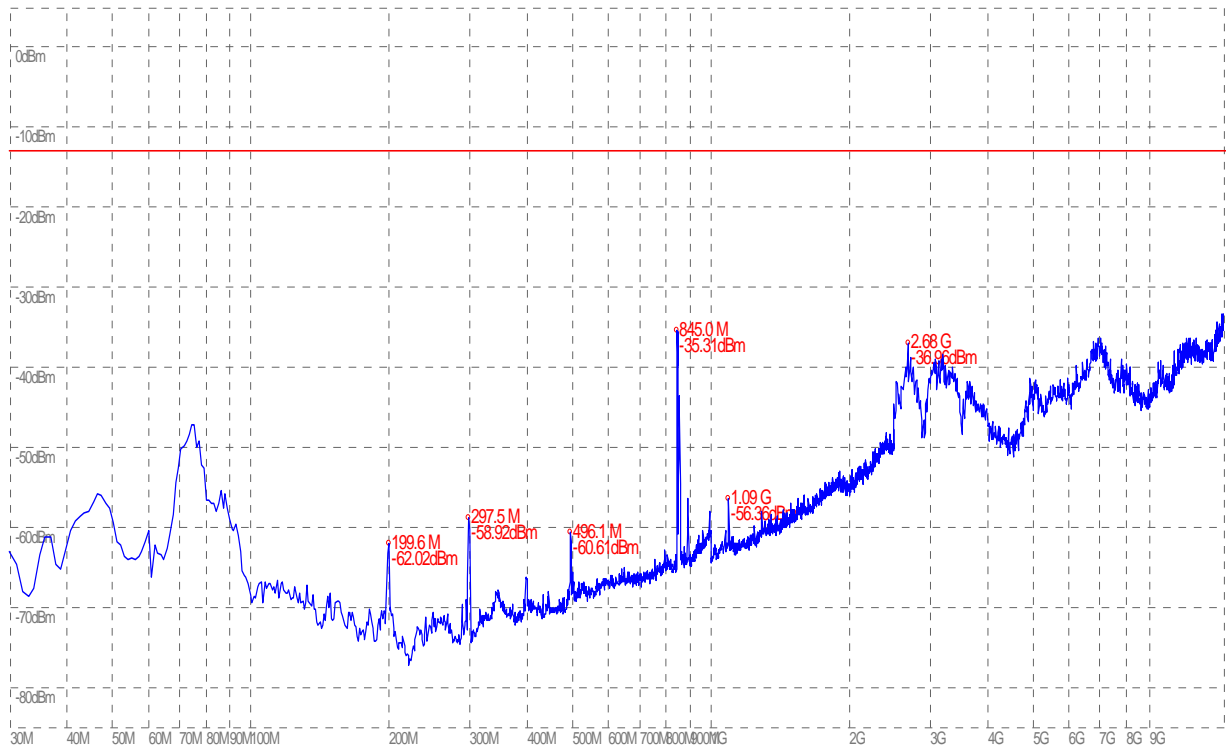
(Plot E.3: WCDMA 850MHz Channel = 4175, Test Antenna Horizontal)



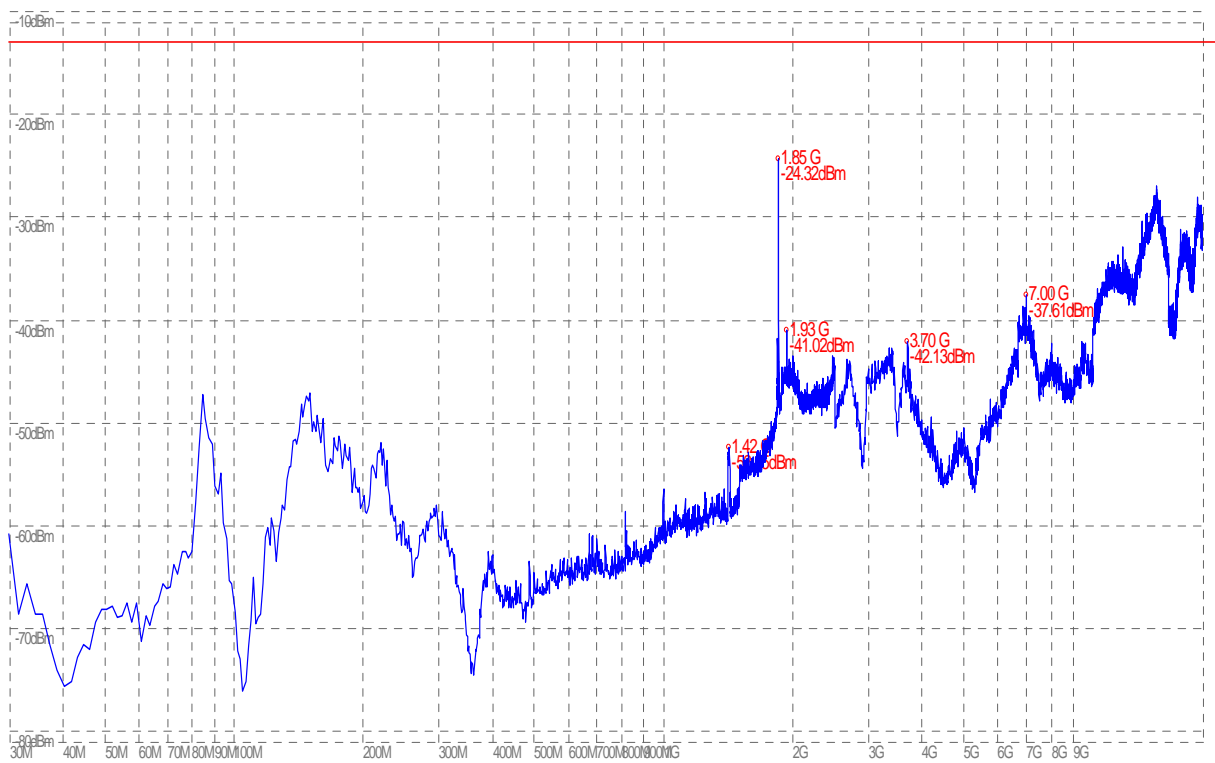
(Plot E.4: WCDMA 850MHz Channel = 4175, Test Antenna Vertical)



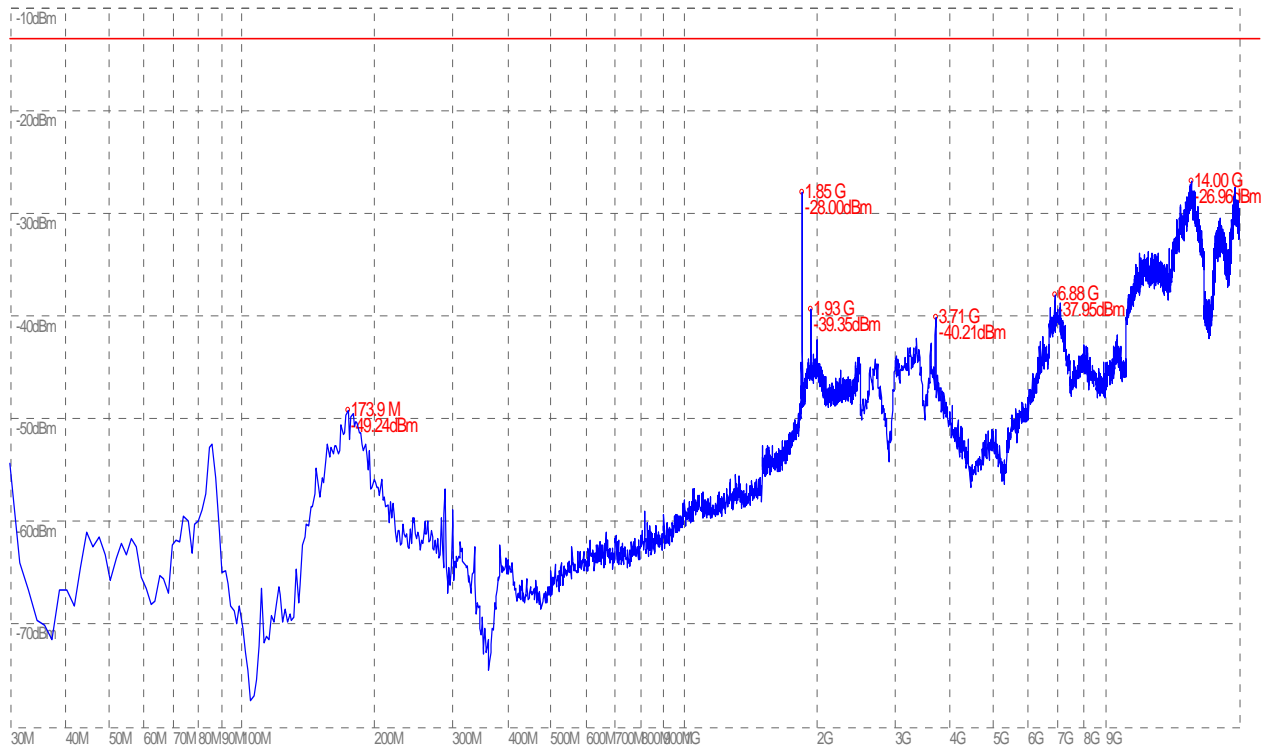
(Plot E.5: WCDMA 850MHz Channel = 4233, Test Antenna Horizontal)



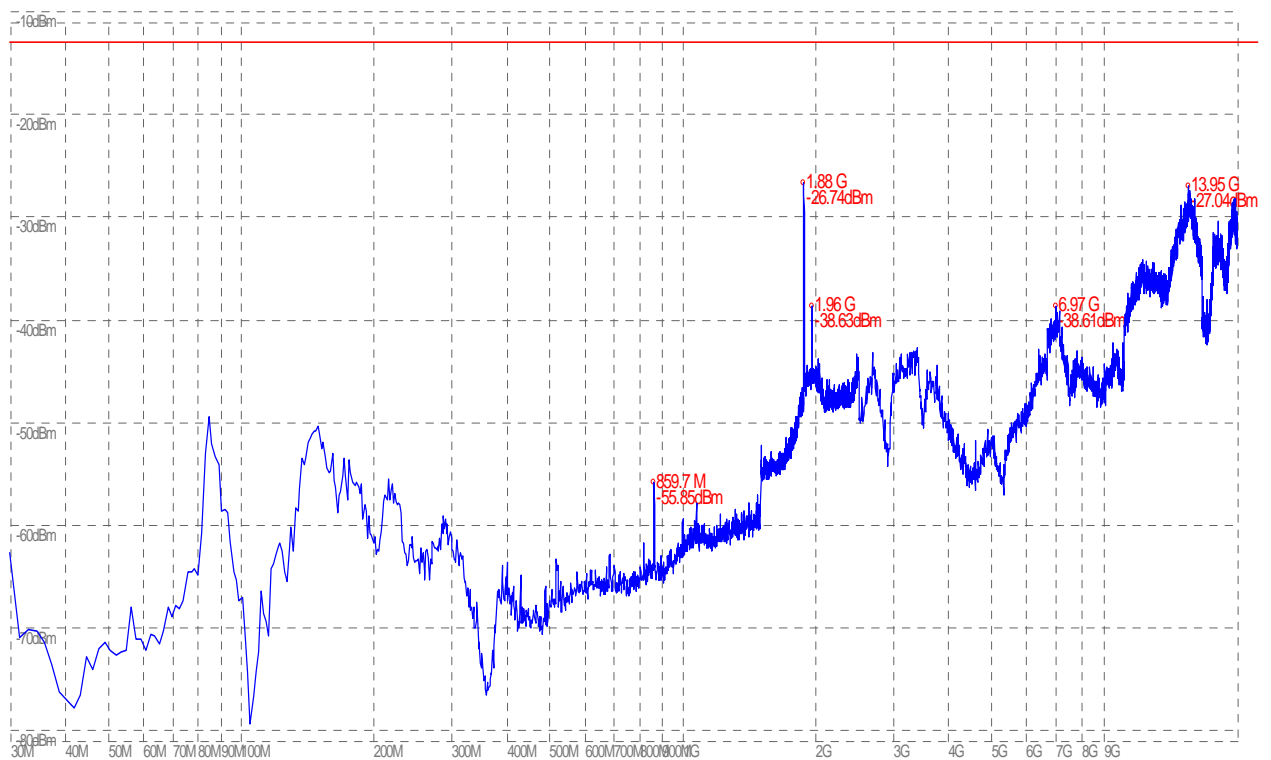
(Plot E.6: WCDMA 850MHz Channel = 4233, Test Antenna Vertical)



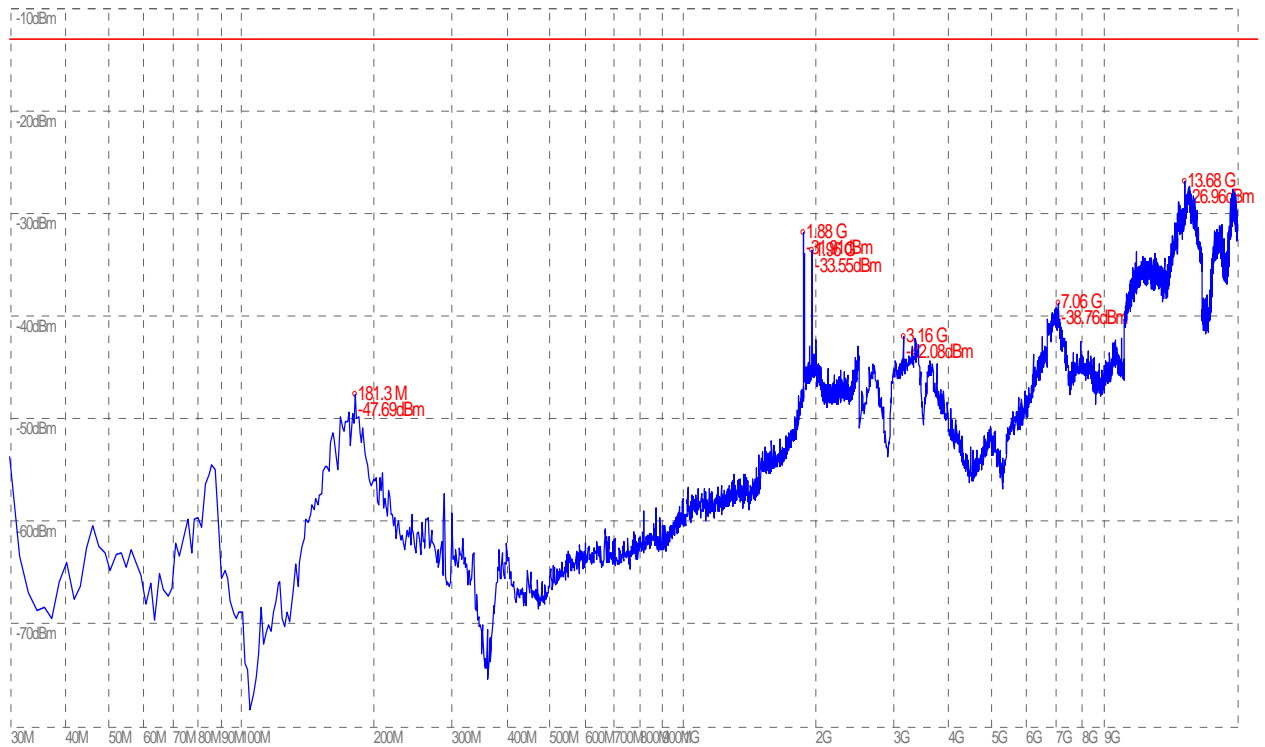
(Plot F.1: WCDMA 1900MHz Channel = 9262, Test Antenna Horizontal)



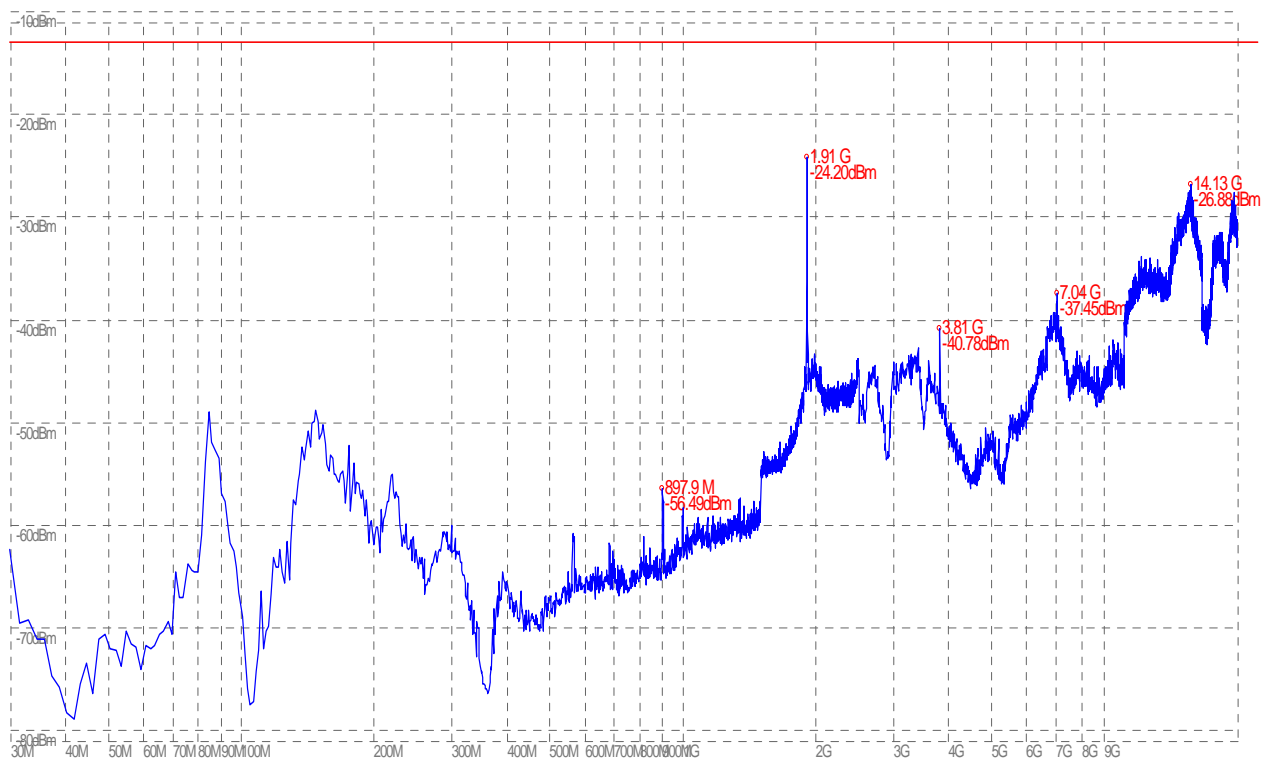
(Plot F.2: WCDMA 1900MHz Channel = 9262, Test Antenna Vertical)



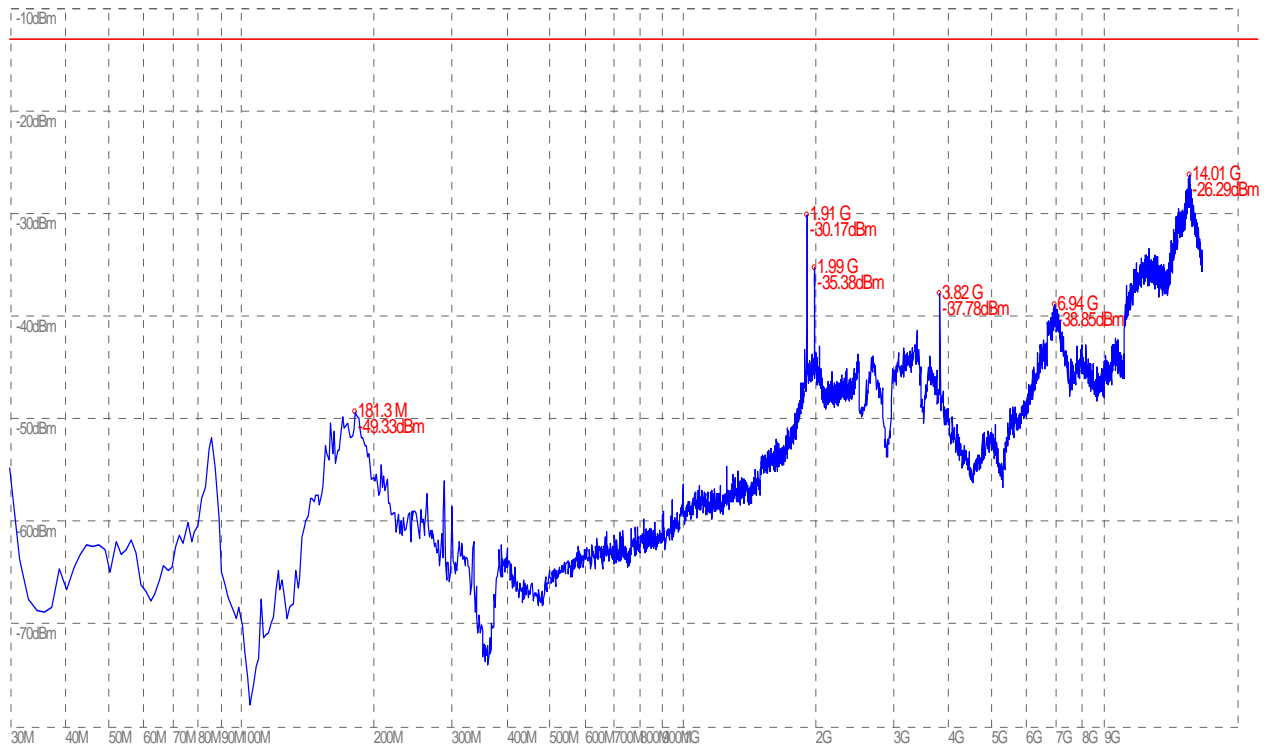
(Plot F.3: WCDMA 1900MHz Channel = 9400, Test Antenna Horizontal)



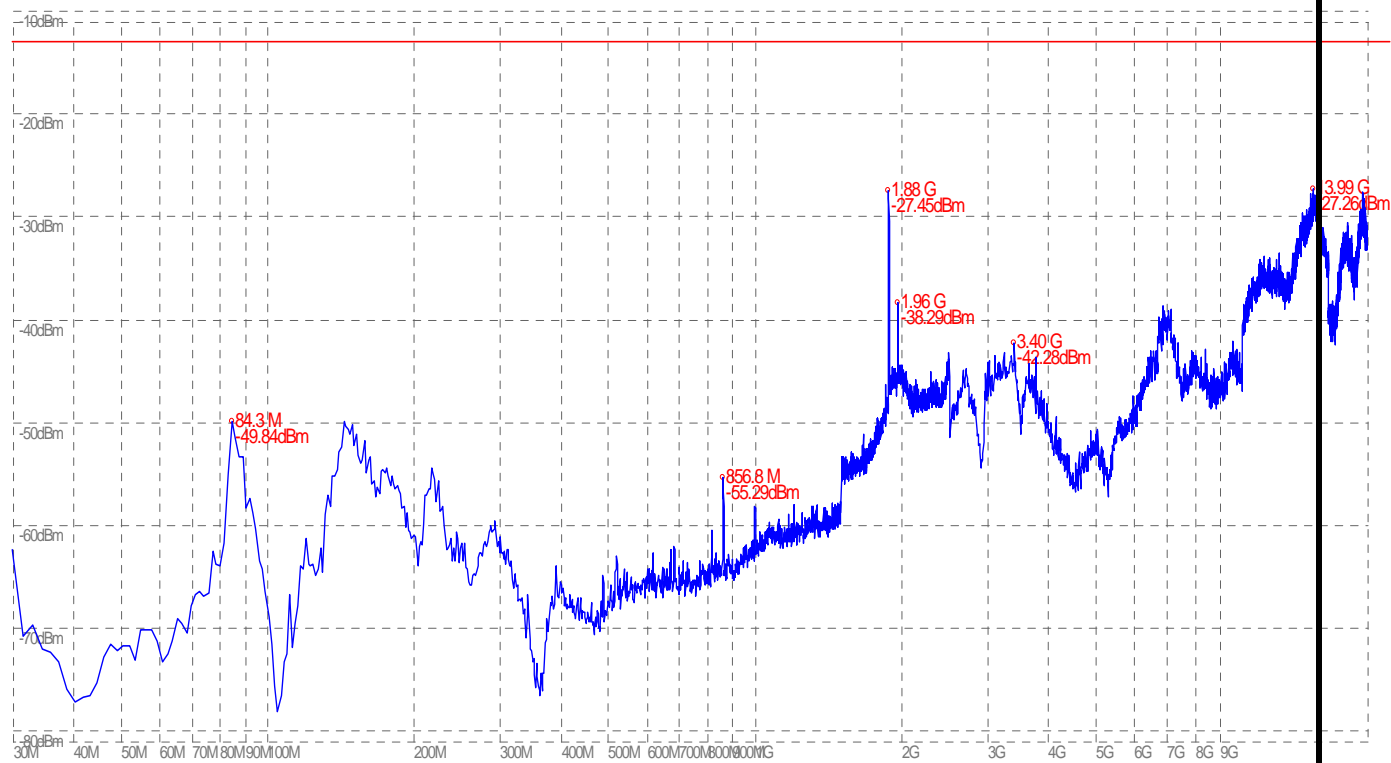
(Plot F.4: WCDMA 1900MHz Channel = 9400, Test Antenna Vertical)



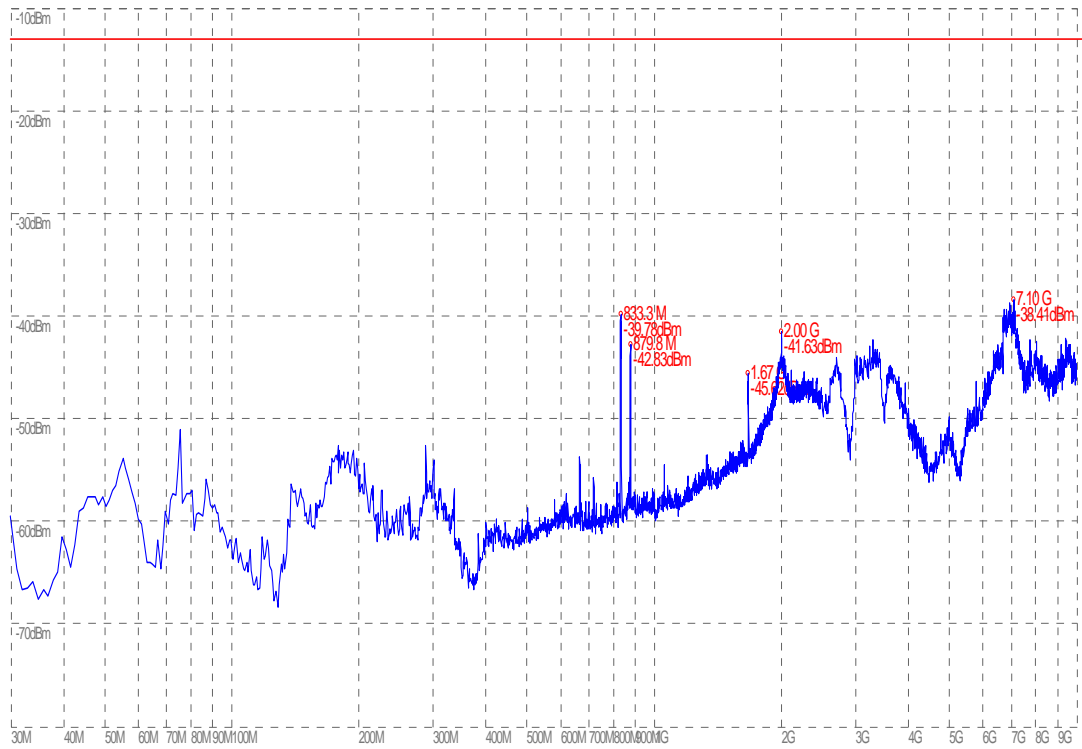
(Plot F.5: WCDMA 1900MHz Channel = 9538, Test Antenna Horizontal)



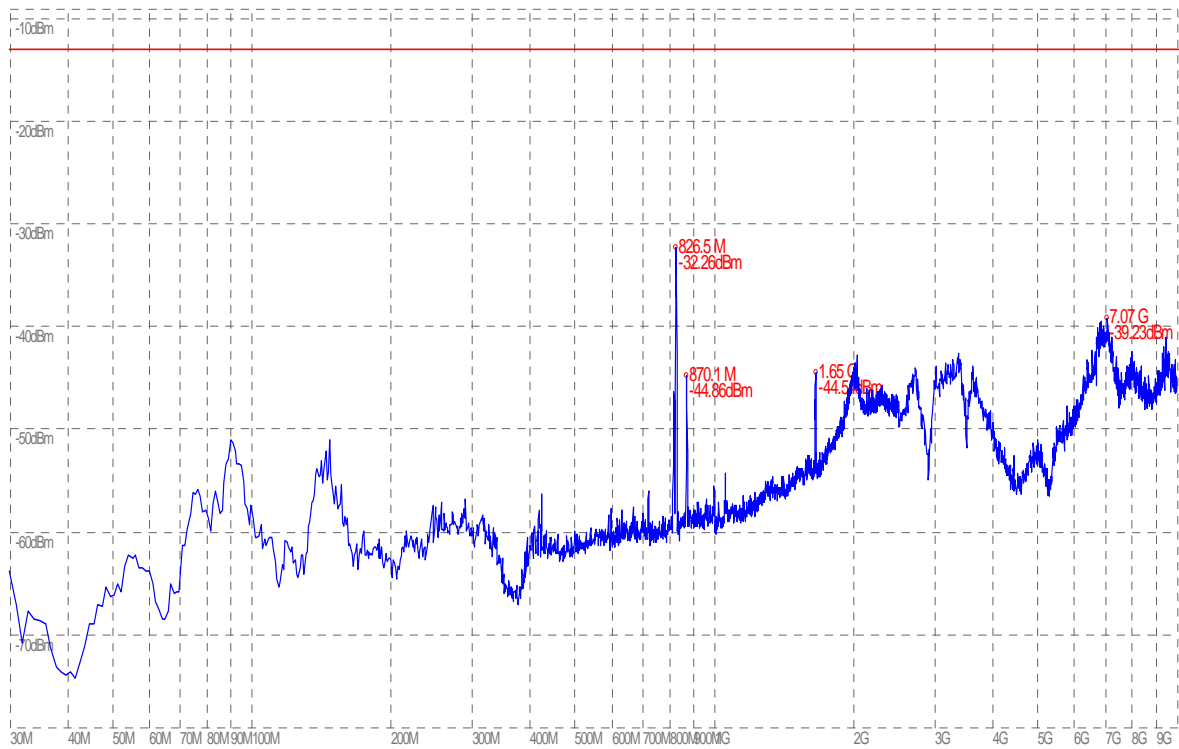
(Plot F.6: WCDMA 1900MHz Channel = 9538, Test Antenna Vertical)



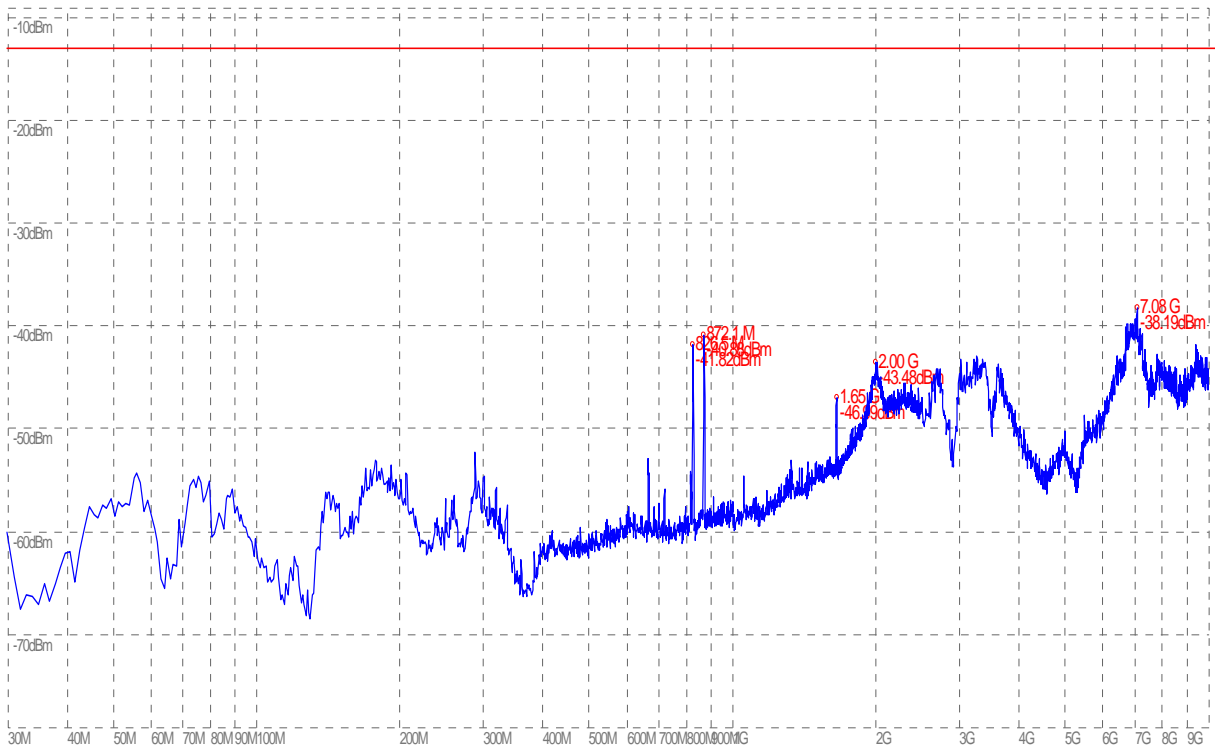
(Plot G.1: HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)



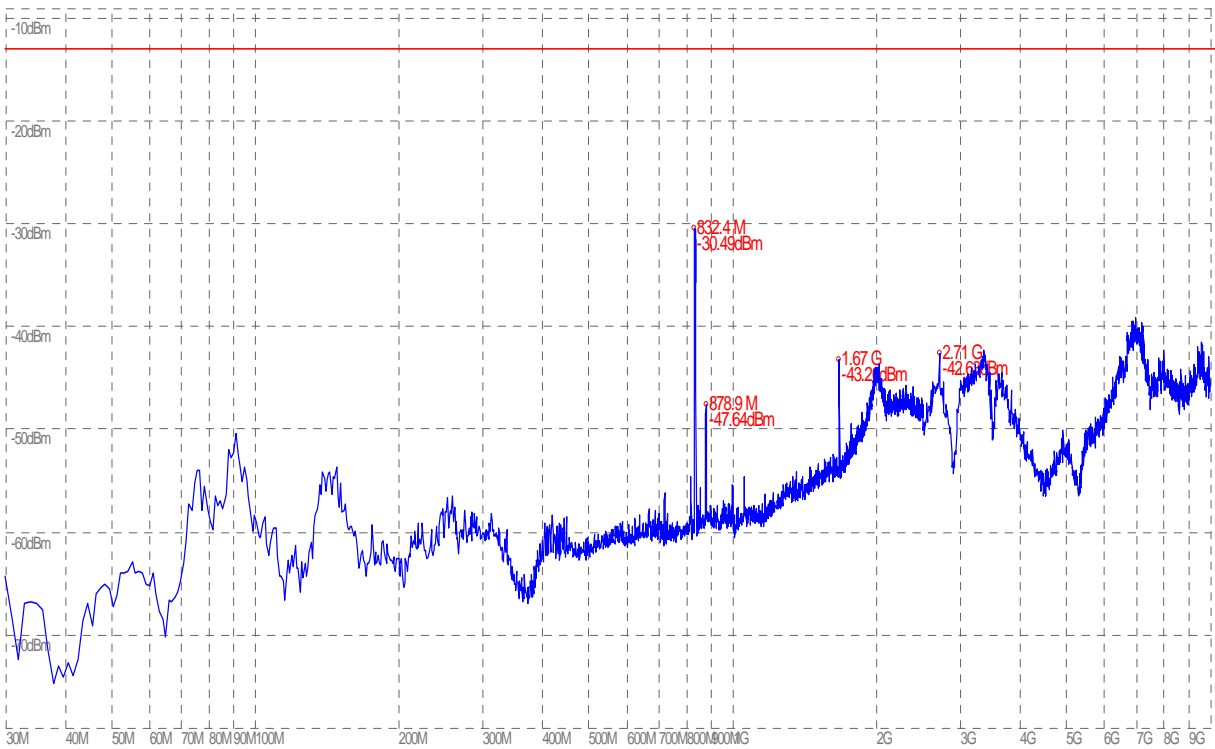
(Plot G.2: HSDPA 850MHz Channel = 4132, Test Antenna Vertical)



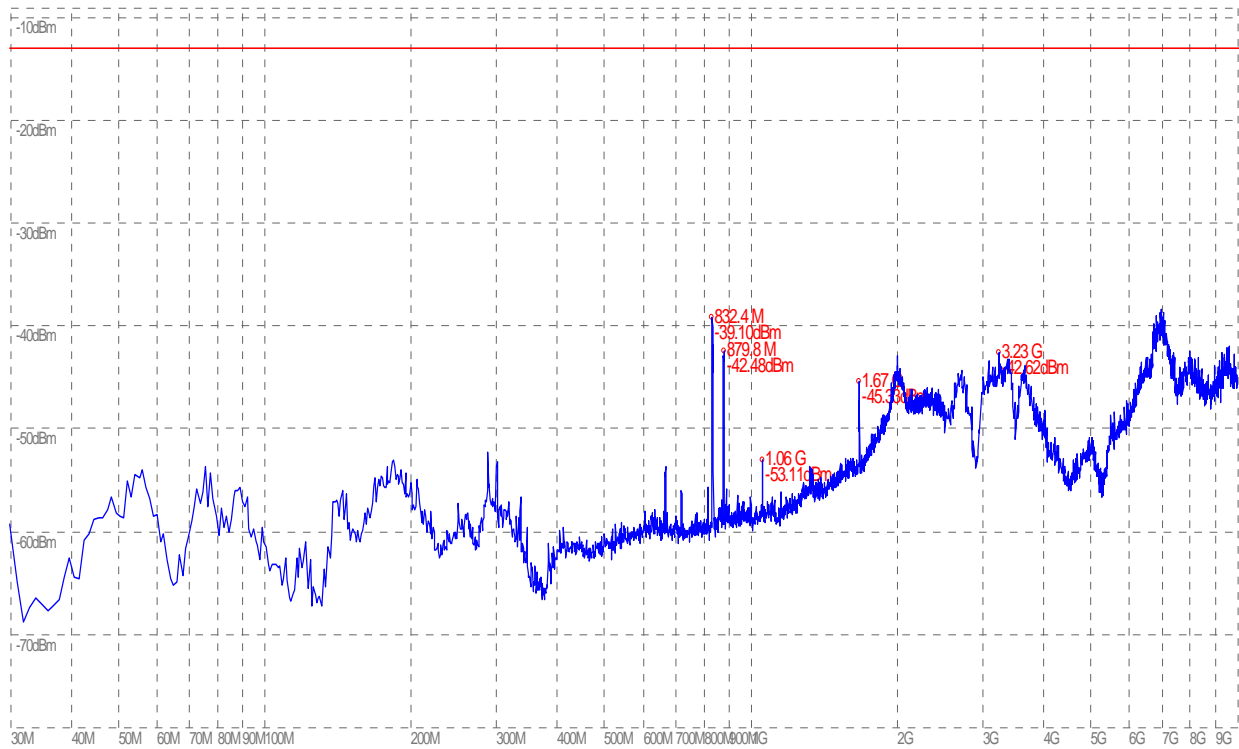
(Plot G.3: HSDPA 850MHz Channel = 4175, Test Antenna Horizontal)



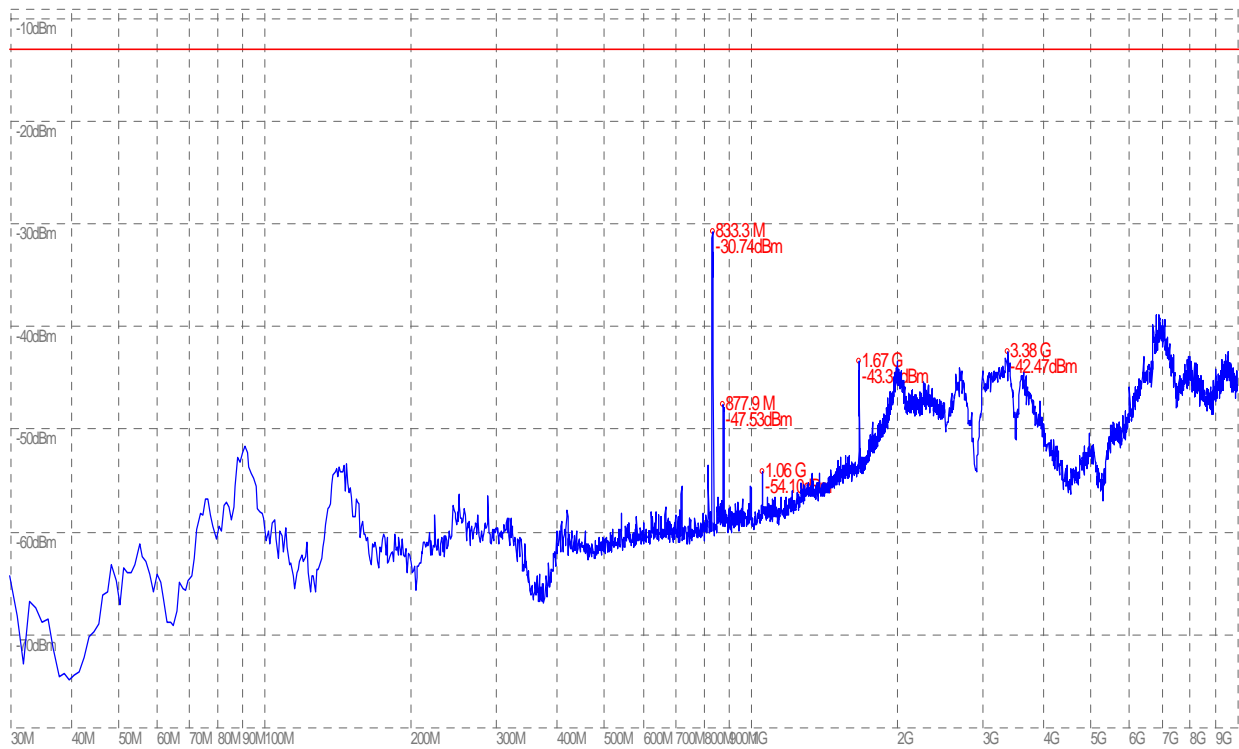
(Plot G.4: HSDPA 850MHz Channel = 4175, Test Antenna Vertical)



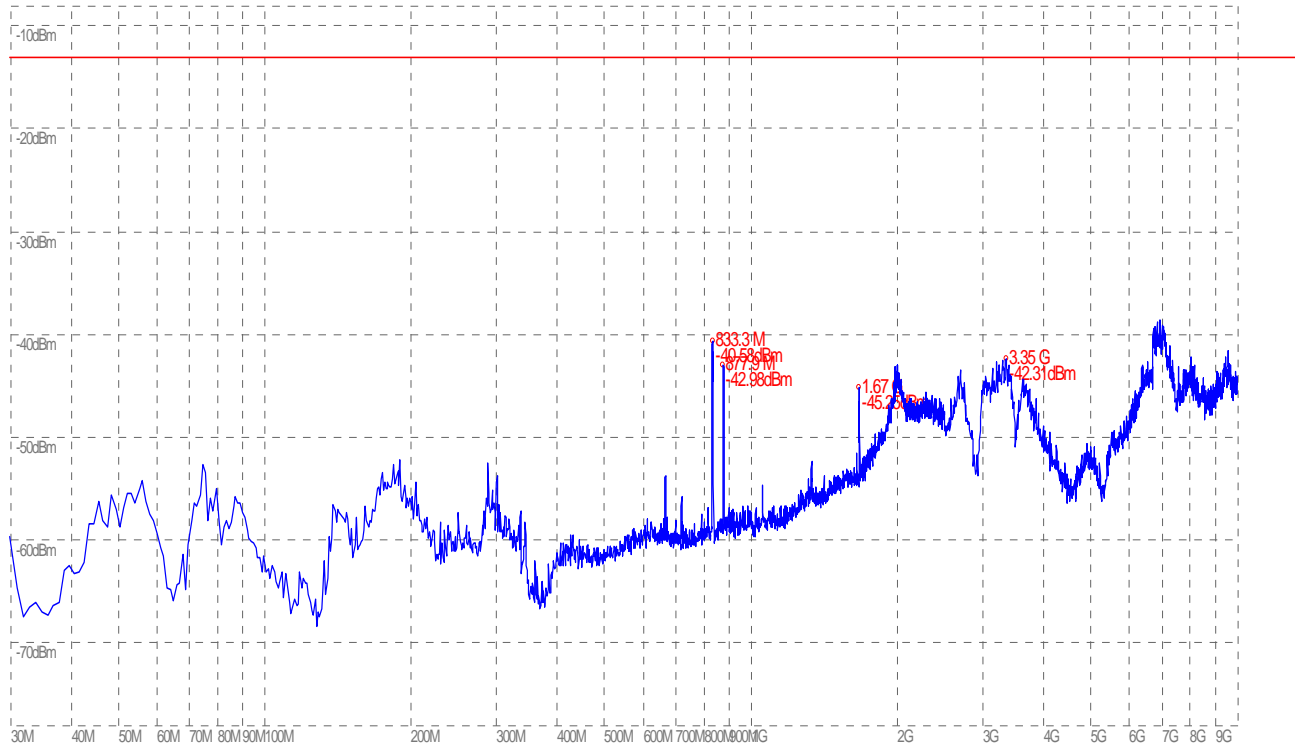
(Plot G.5: HSDPA 850MHz Channel = 4233, Test Antenna Horizontal)



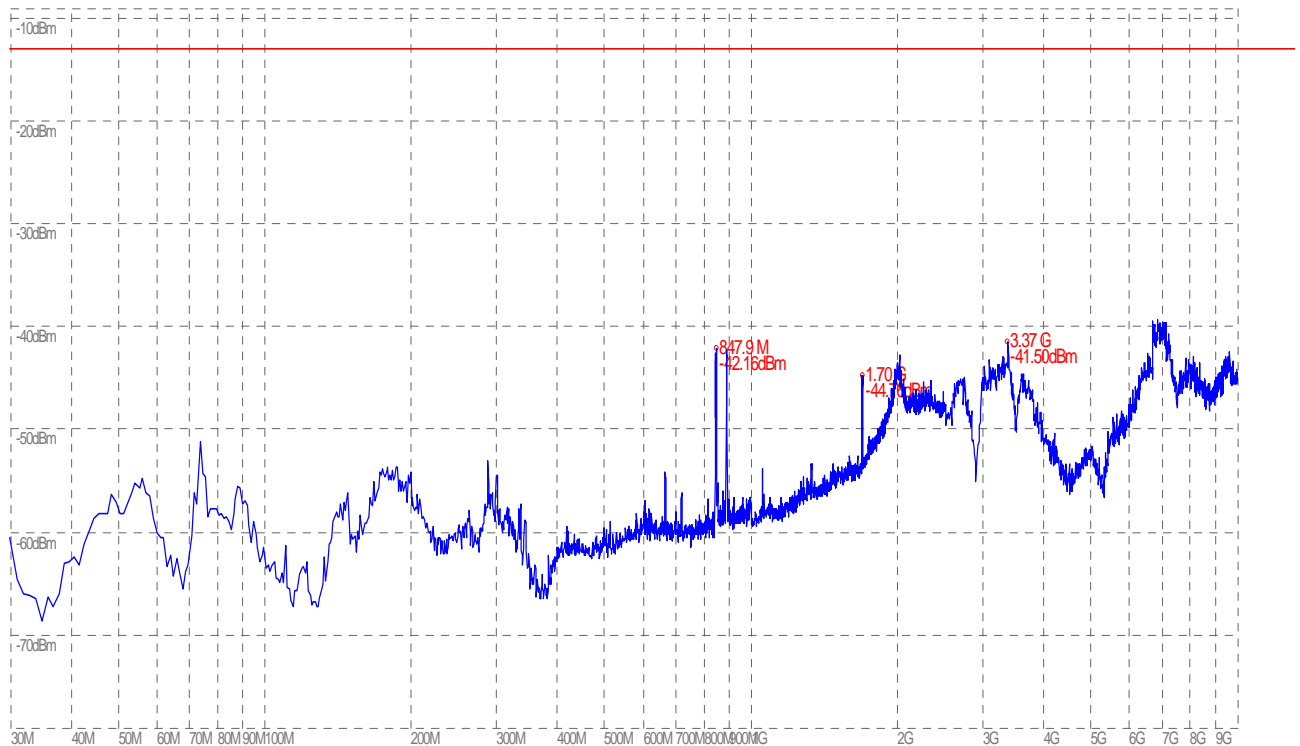
(Plot G.6: HSDPA 850MHz Channel = 4233, Test Antenna Vertical)



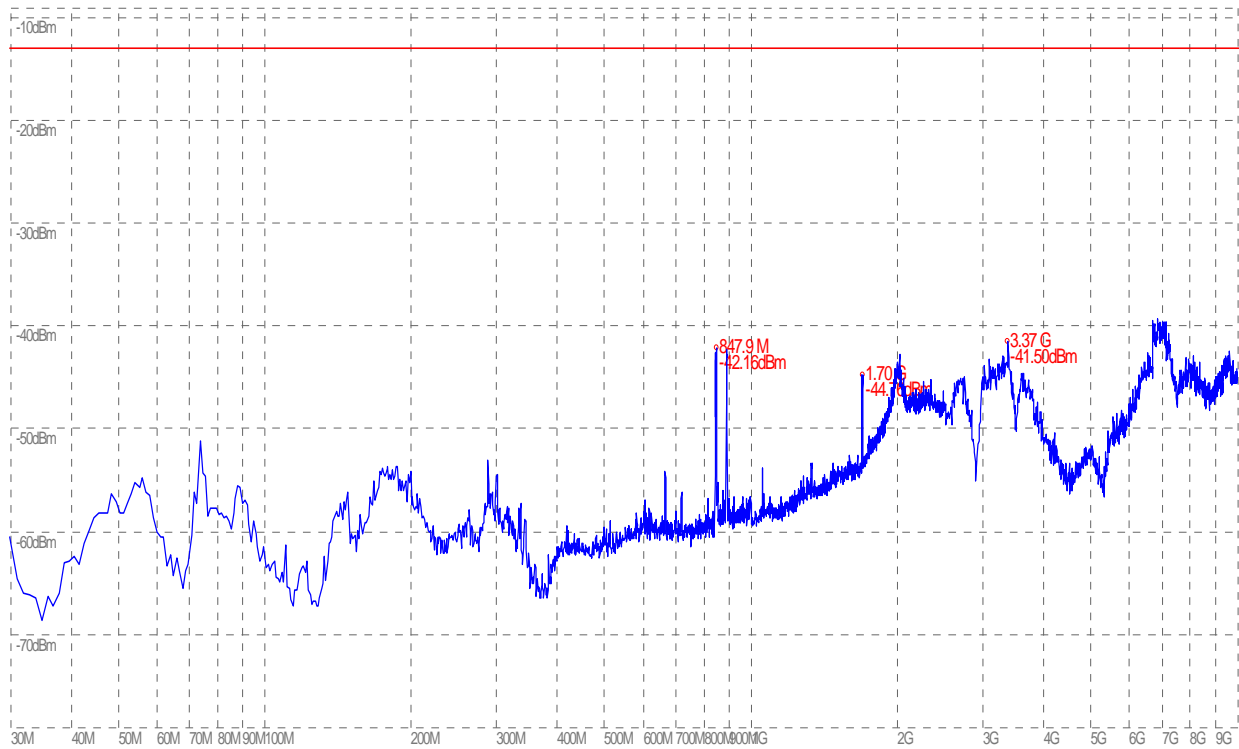
(Plot H.1: HSDPA 1900 MHz Channel = 9262, Test Antenna Horizontal)



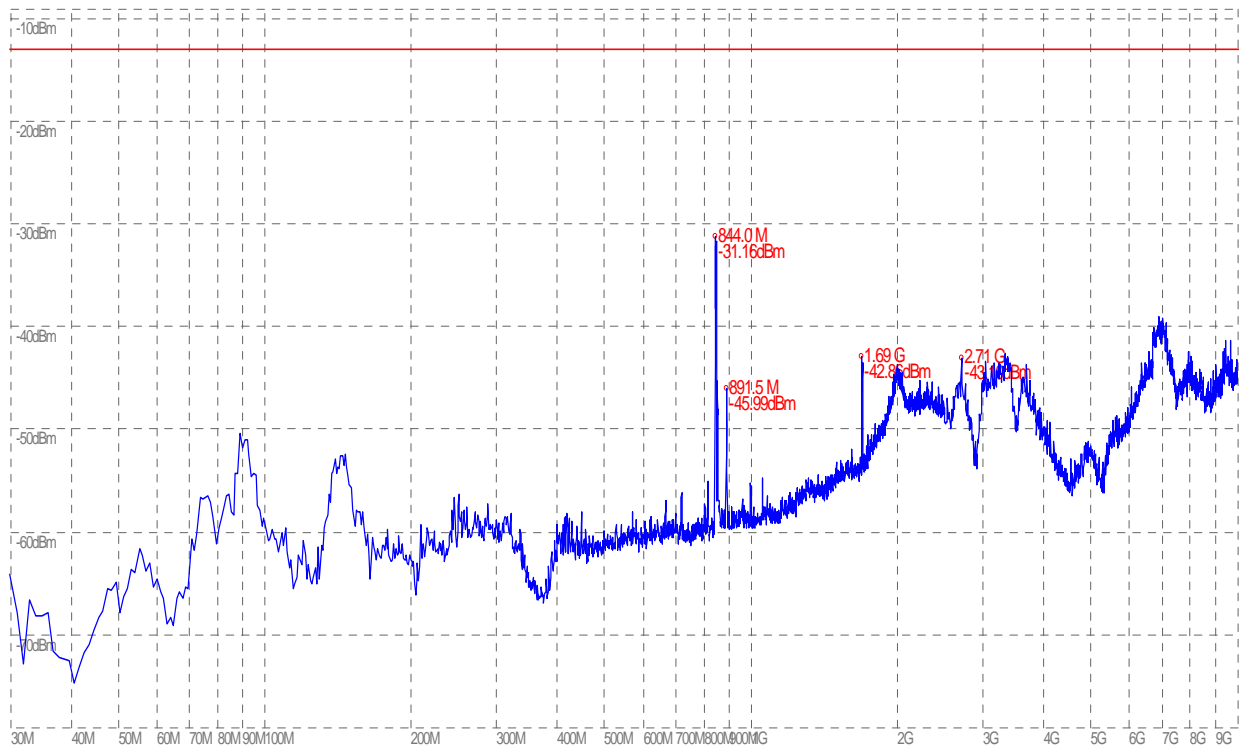
(Plot H.2: HSDPA 1900 MHz Channel = 9262, Test Antenna Vertical)



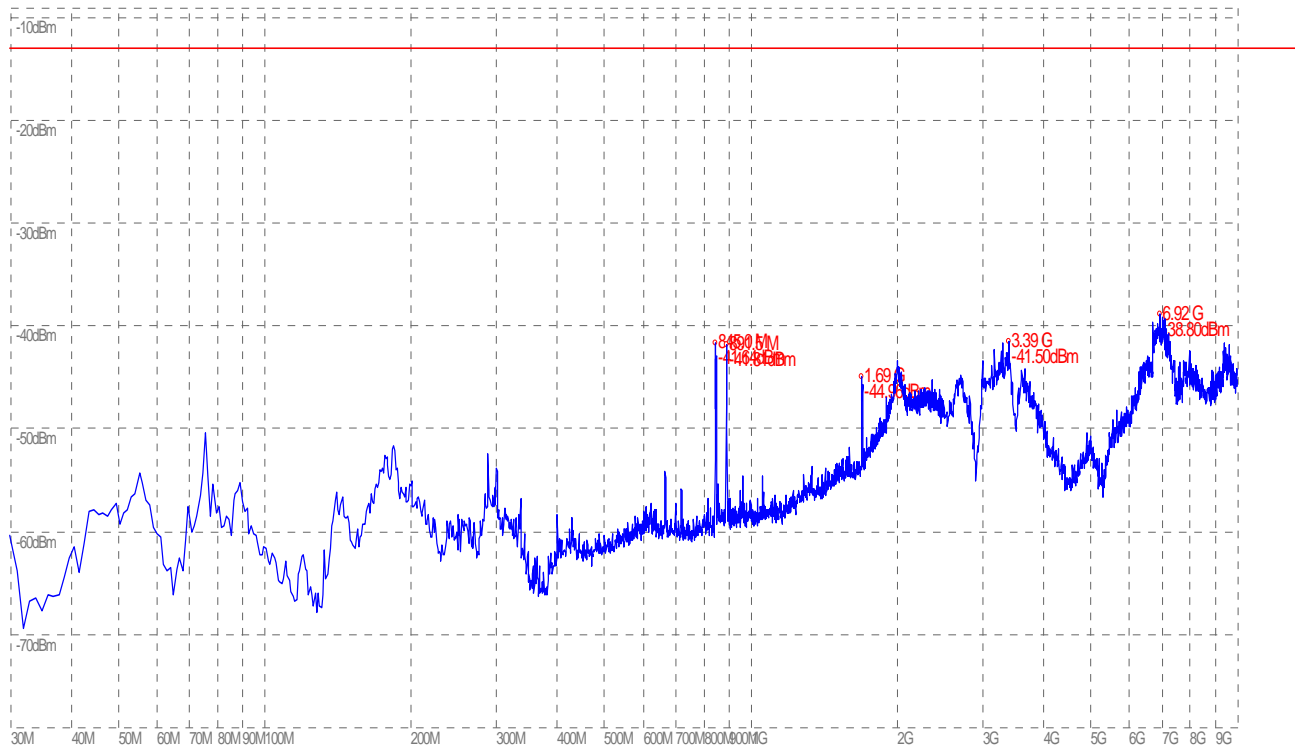
(Plot H.3: HSDPA 1900 MHz Channel = 9400, Test Antenna Horizontal)



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



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



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

** END OF REPORT **