



Report No.: SZ11080080W01

FCC/IC TEST REPORT



Issued to

Teleepoch Limited

For

Mobile phone

Model Name: Wi920, WI920E/MAX
Brand Name: PUBLIC/ UMX
Trade Name: PUBLIC/ UMX
FCC ID: U46-MAX
IC ID: 9412A-MAX
Standard: 47 CFR Part 2, RSS-Gen
47 CFR Part 22 Subpart H, RSS-132
47 CFR Part 24 Subpart E, RSS-133
47 CFR Part 27 Subpart L, RSS-139
Test date: July 21, 2011 – September 2, 2011
Issue date: December 8, 2011

Shenzhen Morlab Communications Technology Co., Ltd.



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2011-12-8

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Change History		
Issue	Date	Reason for change
1.0	September 19, 2011	First edition
2.0	December 8, 2011	Add some details description about the ERP/EIRP and Conducted RF Output Power

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type: Mobile phone
Model Name: WI920, WI920E/MAX
Serial No.....: (n.a, marked #1 by test site)
Hardware Version: WI920_V1.2
Software Version: N/A
Applicant: Teleepoch Limited
5A, B1 Building, Digital Tech Zone, High, Shenzhen, China
Manufacturer: TELEEPOCH Limited
5A, B1 Building, Digital Tech Zone, High, Shenzhen, China
Frequency Range: CDMA 800MHz:
Tx: 824.7 – 848.31 MHz;
Rx: 869.7-893.31MHz
CDMA 1900MHz:
Tx: 1851.25 MHz -1908.75 MHz;
Rx: 1931.25 MHz-1988.75 MHz
AWS 1700MHz:
Tx:1710MHz -1755MHz;
Rx:2110MHz -2155MHz
Modulation Type.....: CDMA 1X
Emission Designators: 1M30F9W

Note 1: The EUT is a model of CDMA EVDO mobile station operating in Cellular and PCS bands.

Note 2: The normal configuration for the EUT is the Mobile Phone (MS) 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.

1.2 Test Standards and Results

The objective of the report is to perform testing according to:

No.	Identity (FCC)	Identity (IC)	Document Title
1	47 CFR Part 2 (10-1-09 Edition)	RSS-Gen (Issue 3, December 2010)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-09 Edition)	RSS-132 (Issue 2, September 2005)	Public Mobile Services
3	47 CFR Part 24 (10-1-09 Edition)	RSS-133 (Issue 5, February 2009)	Personal Communications Services
4	47 CFR Part 27 (10-1-09 Edition)	RSS-139 (Issue 2, February 2009)	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC&IC rules and results are as below:

N o.	Section in CFR 47	Section in RSS GEN/132/133/139	Description	Test Band	Result
1	2.1046	4.6, 4.4, 6.4, 6.4	Conducted RF Output Power	CDMA 800/1900MHz AWS 1700MHz	PASS
2	2.1049, 27.53	4.4.1, 5.6, 6.1	Occupied Bandwidth	CDMA 800/1900MHz AWS 1700MHz	PASS
3	2.1055, 22.355, 24.235, 27.54	4.5, 4.3, 7, 6.3	Frequency Stability	CDMA 800/1900MHz AWS 1700MHz	PASS
4	2.1051, 2.1057 22.917, 24.238	4.7, 4.5, 6.3, 6.5	Conducted Out of Band Emissions	CDMA 800/1900MHz	PASS
5	2.1051, 2.1057 22.917, 24.238 27.53	4.7, 4.5, 6.3, 6.5	Band Edge	CDMA 800/1900MHz AWS 1700MHz	PASS
6	22.913, 24.232 27.50	4.6, 4.4, 6.2, 6.4	Transmitter Radiated Power (EIPR/ERP)	CDMA 800/1900MHz AWS 1700MHz	PASS
7	2.1053, 2.1057 22.917, 24.238 27.53	4.6, 4.4, 6.2, 6.4	Radiated Out of Band Emissions	CDMA 800/1900MHz AWS 1700MHz	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, 27L REQUIREMENTS (IC RSS-GEN, RSS-132, RSS-133, RSS-139)

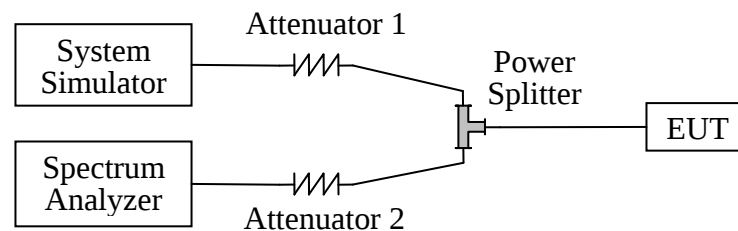
2.1 Conducted RF Output Power

2.1.1 Requirement

According to FCC section 2.1046(a) and RSS-GEN section 4.6, 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.

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. 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 CDMA 800MHz operates at maximum output Power, the rated conducted RF output power is 38.5dBm, and For the CDMA 1900MHz operates at maximum output Power, the rated conducted RF output power is 33dBm, and For the AWS 1700MHz operates at maximum output Power, the rated conducted RF output power is 30dBm.

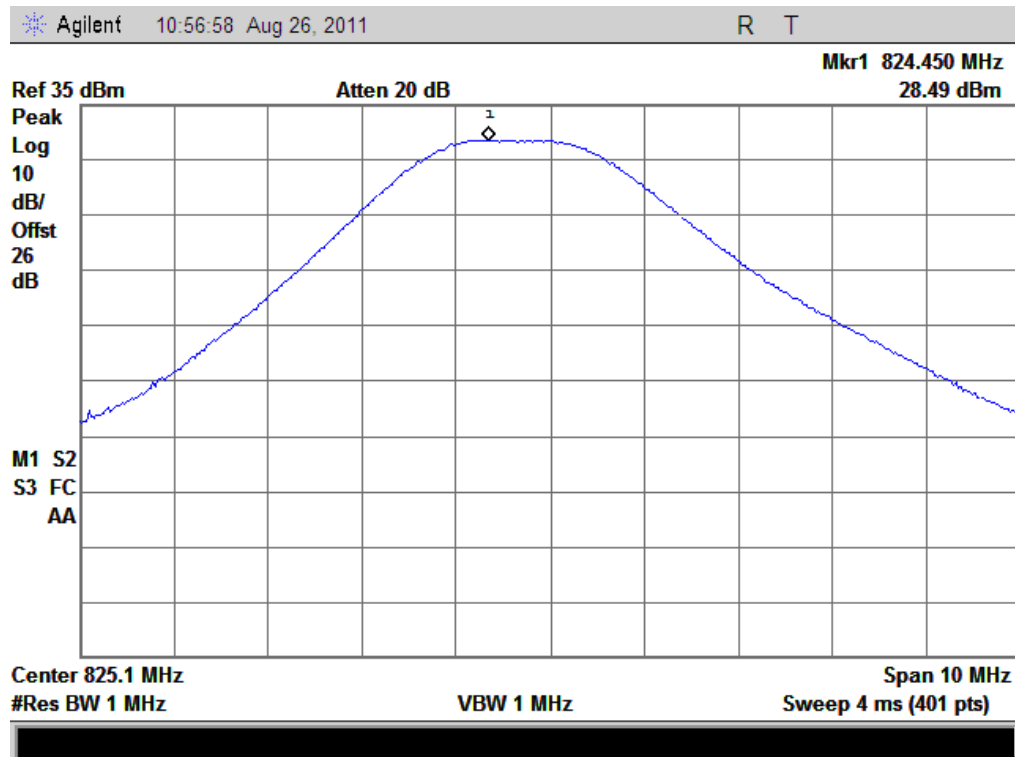
1. Test Verdict:

No.	Channel Number	Frequency (MHz)	Measured Power		Rated Power	
			dBm	W	dBm	W
CDMA 800MHz	1013	824.7	28.49	0.706318	38.5	7
	384	836.52	29.04	0.801678		
	777	848.31	28.29	0.674528		
CDMA 1900MHz	25	1851.30	27.89	0.615177	33	2
	600	1880.0	27.19	0.5236		
	1175	1908.8	26.72	0.469894		
G block	1275	1913.4	23.97	0.249459	33	2
EVDO 800	1013	824.7	24.75	0.298538	38.5	7
	384	836.52	23.87	0.243781		
	777	848.31	25.3	0.338844		
EVDO 1900	25	1851.30	25.72	0.37325	33	2
	600	1880.0	24.99	0.3155		
	1175	1908.8	25.27	0.336512		
AWS 1700MHz	25	1711.25	26.17	0.414	30	1
	450	1732.5	27.18	0.522396		
	875	1753.75	26.76	0.474242		

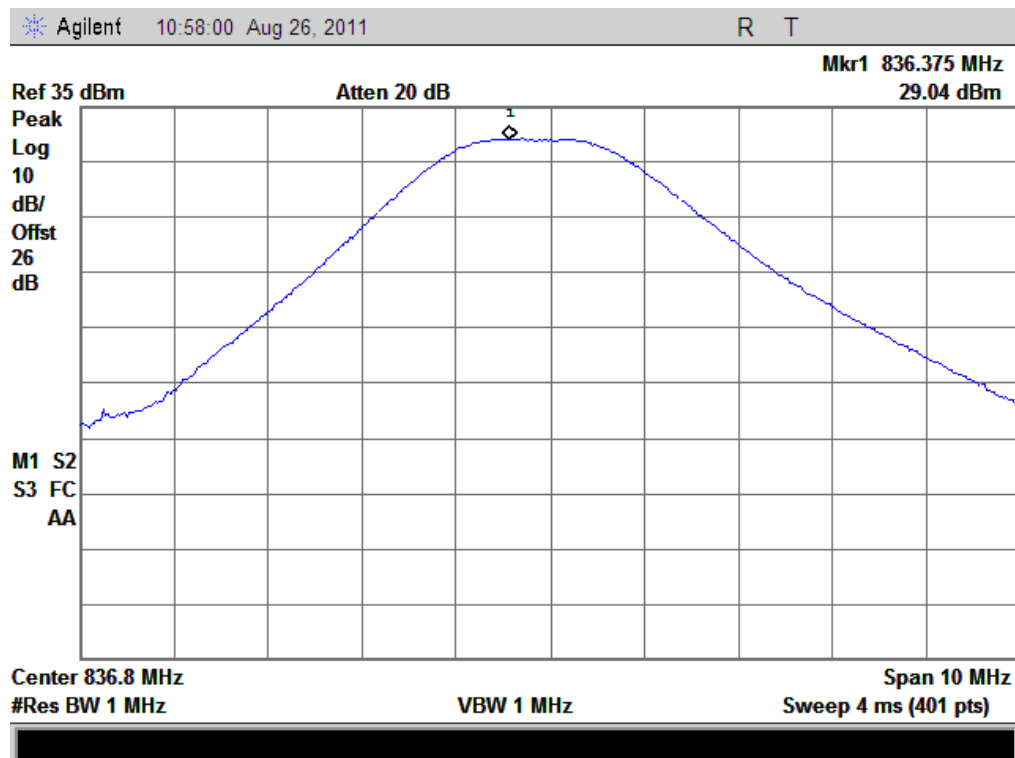
Note: For 1xRRT mode, all of the test modes(RC1/SO2, RC1/SO55, RC3/SO2, RC3/SO55) were complied, only the maximum power (RC1/SO2 consignment) was recorded.

For the EVDO mode, all of the test modes(9.6kpbs, 19.2kpbs, 38.2kpbs, 76.8kpbs, 153.6kpbs) were complied, only the maximum power (9.6kpbs mode) was recorded.

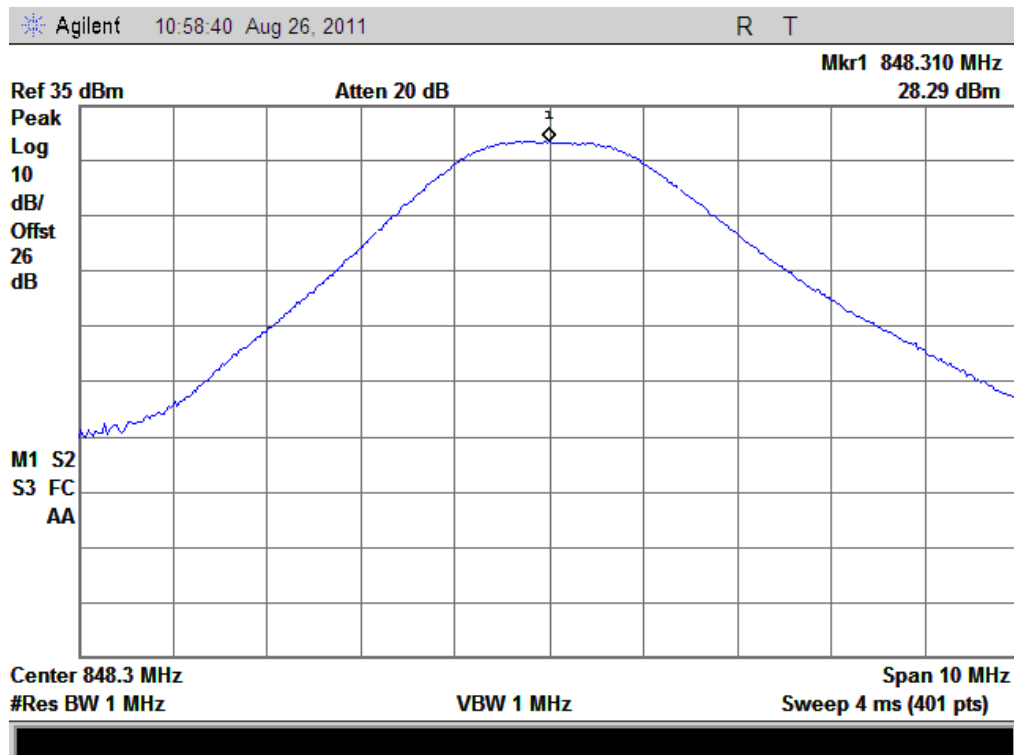
2. Test Plots:



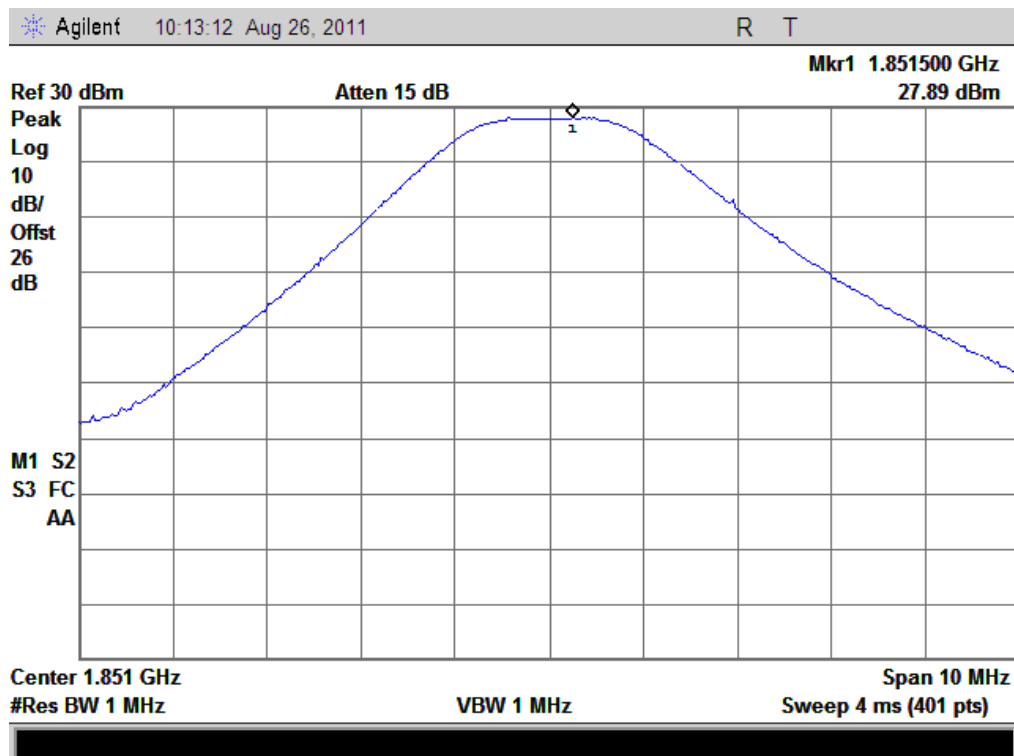
(Plot A: CDMA 800MHz Channel = 1013)



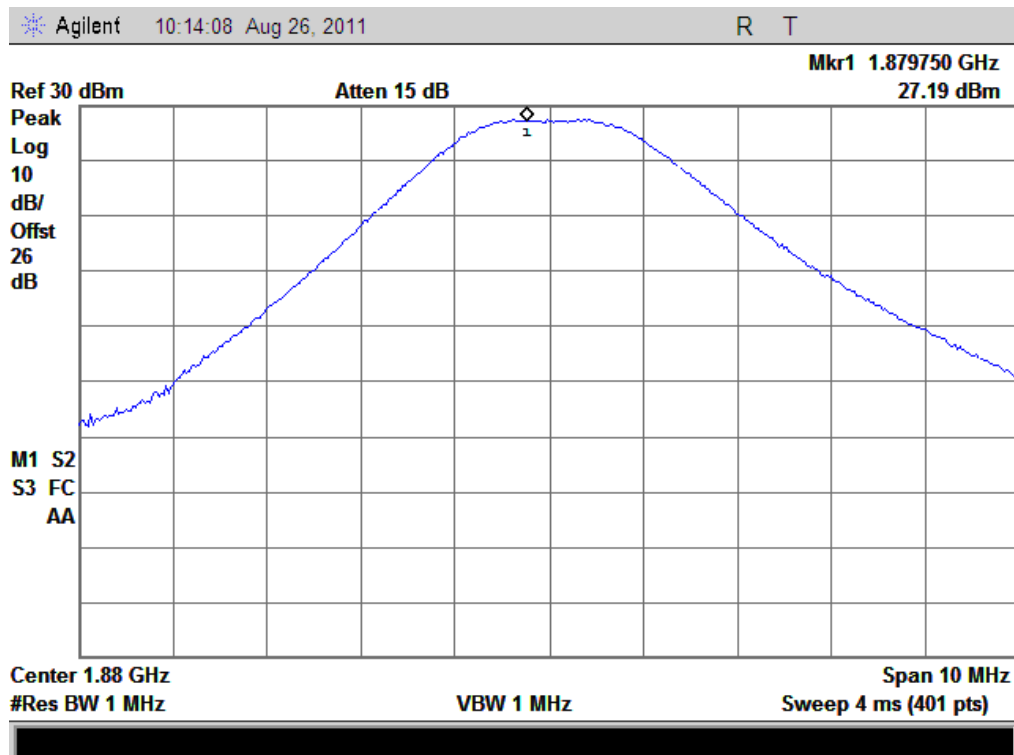
(Plot B: CDMA 800MHz Channel = 384)



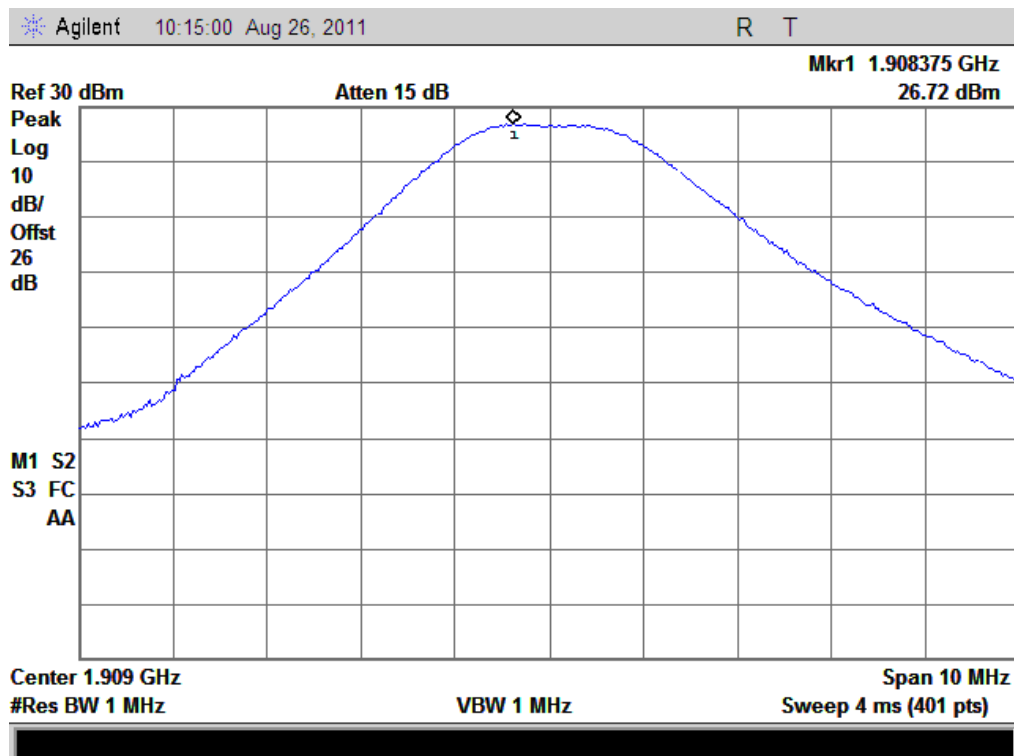
(Plot C: CDMA 800MHz Channel = 777)



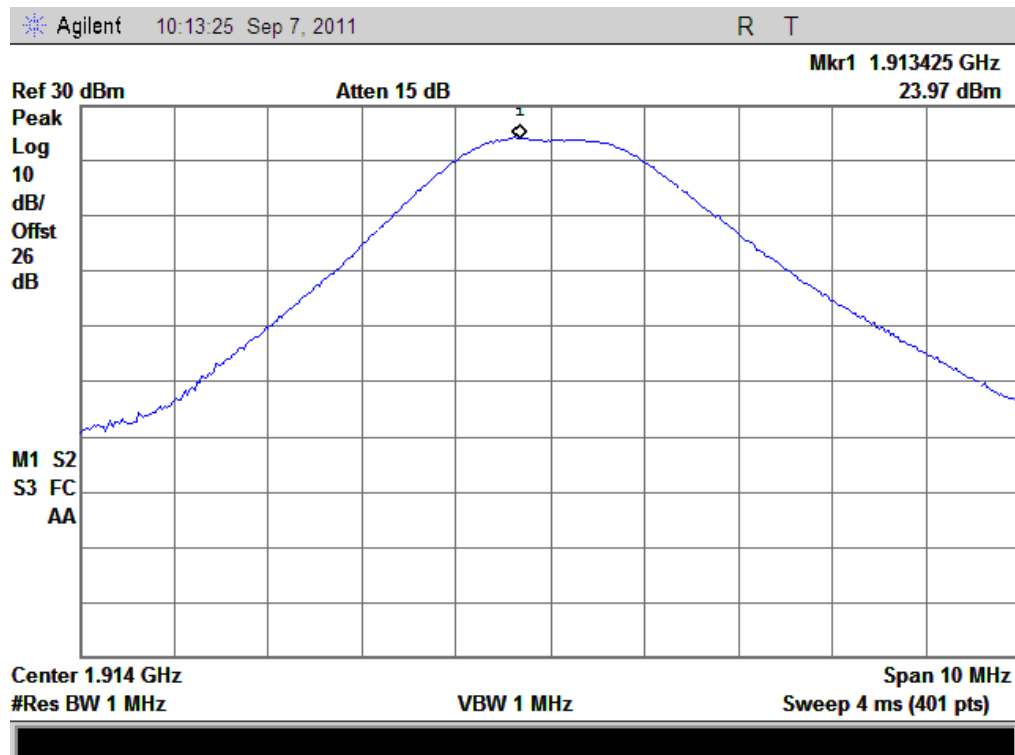
(Plot D: CDMA 1900MHz Channel = 25)



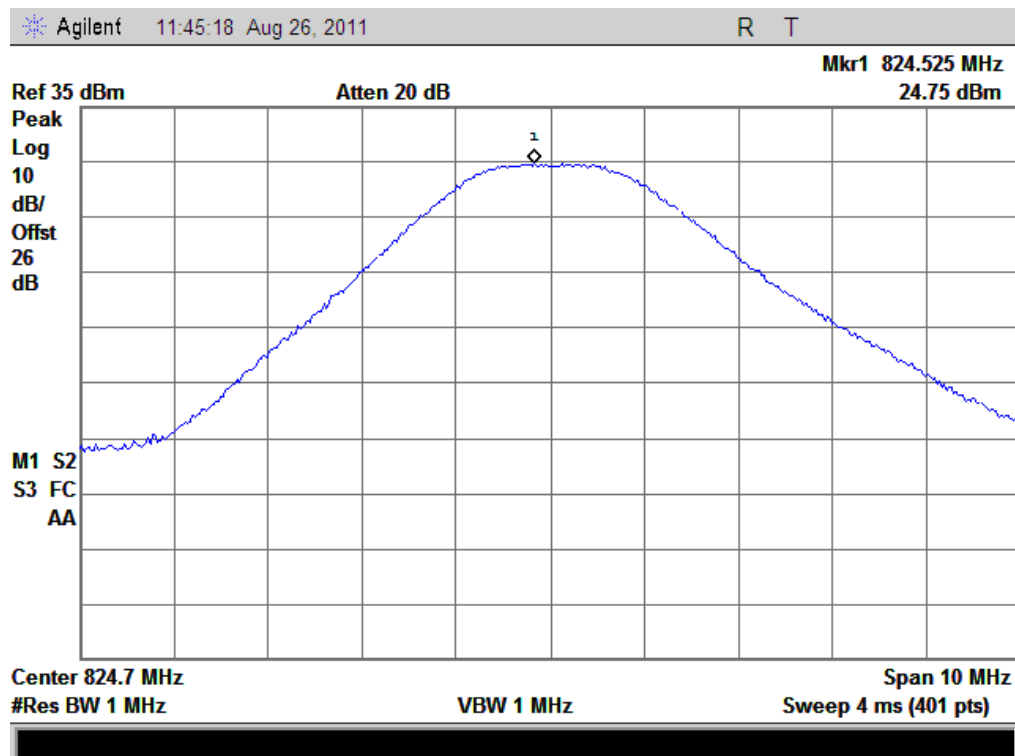
(Plot E: CDMA 1900MHz Channel = 600)



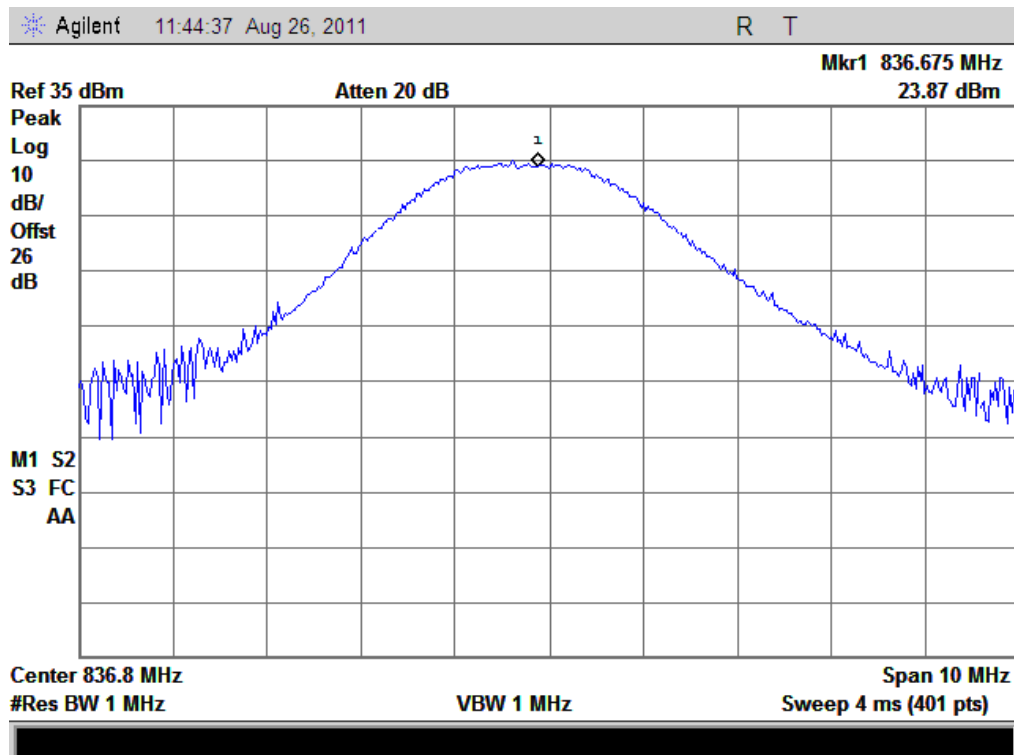
(Plot F: CDMA 1900MHz Channel = 1175)



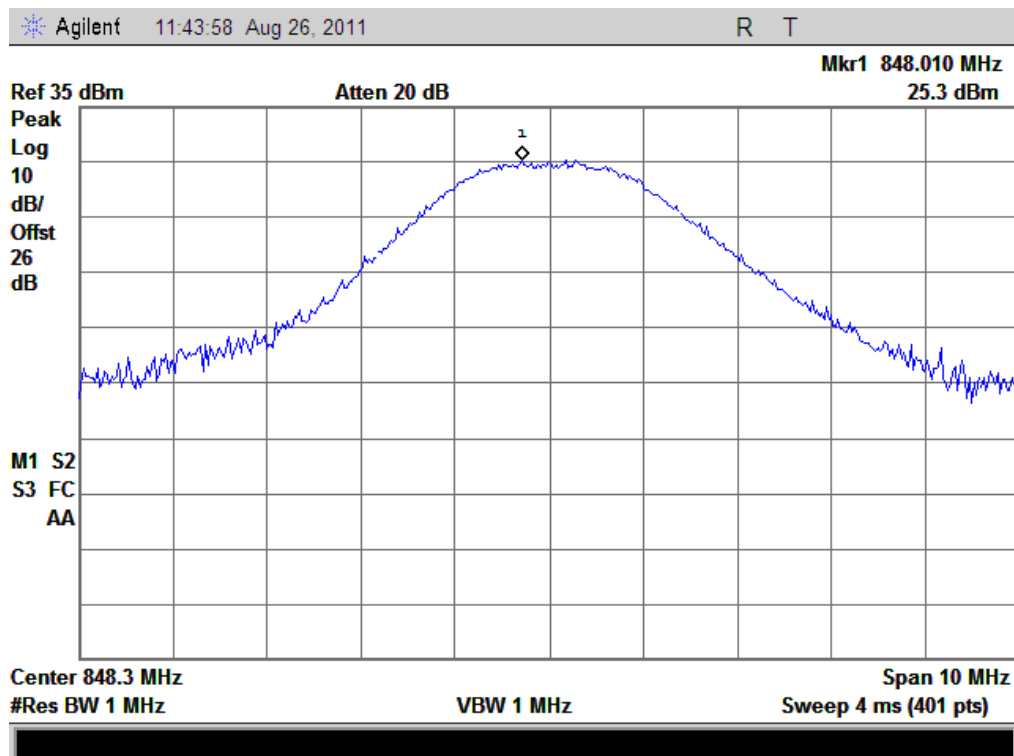
(Plot G: CDMA 1914MHz Channel = 1275)



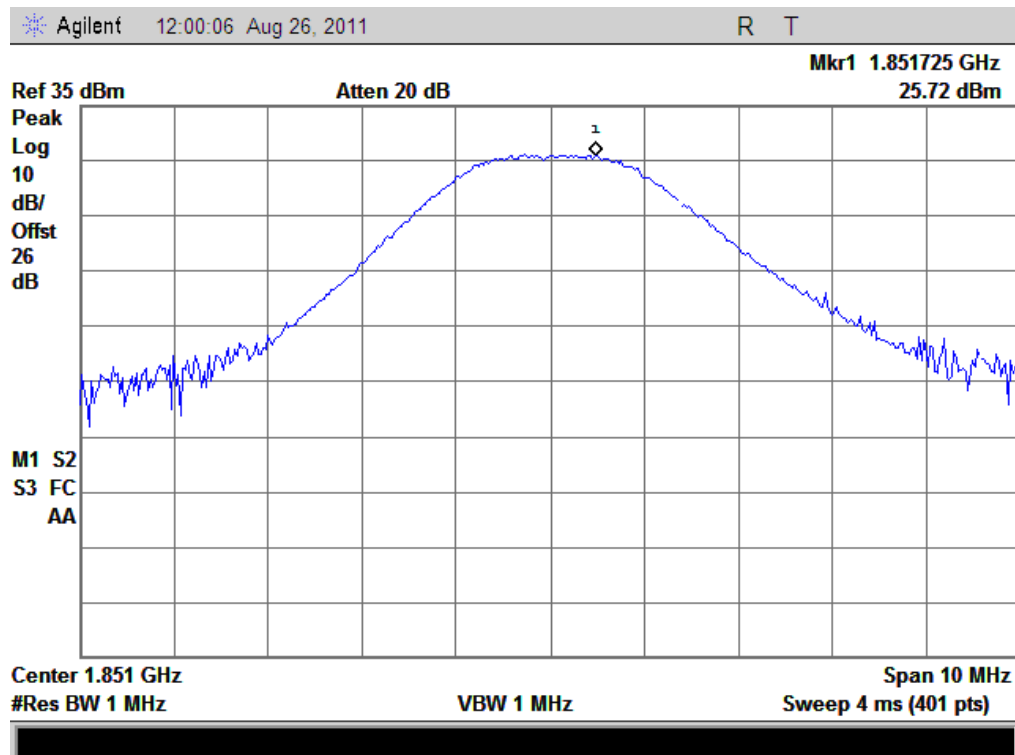
(Plot H: CDMA-EVDO 800MHz Channel = 1013)



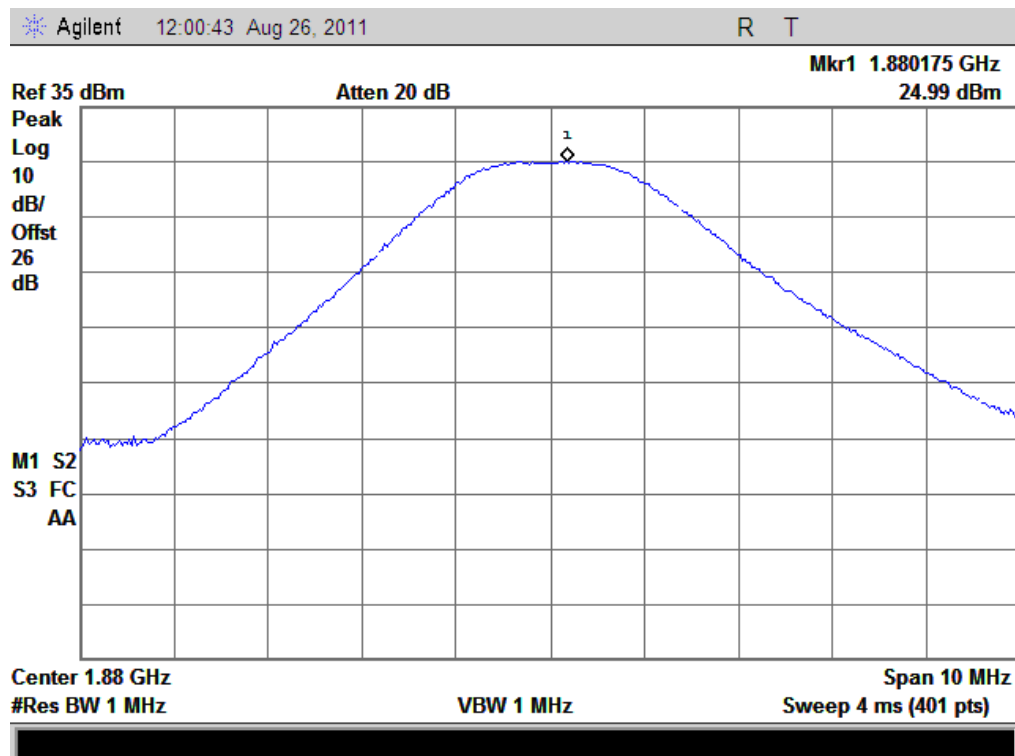
(Plot I: CDMA-EVDO 800MHz Channel = 384)



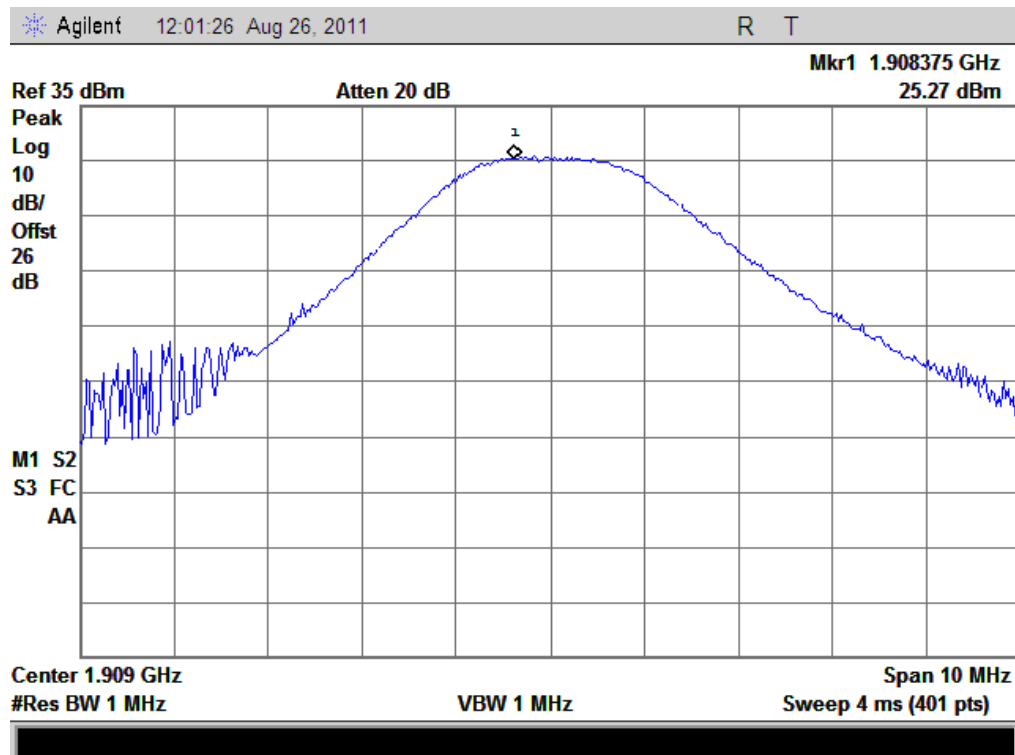
(Plot J: CDMA-EVDO 800MHz Channel = 777)



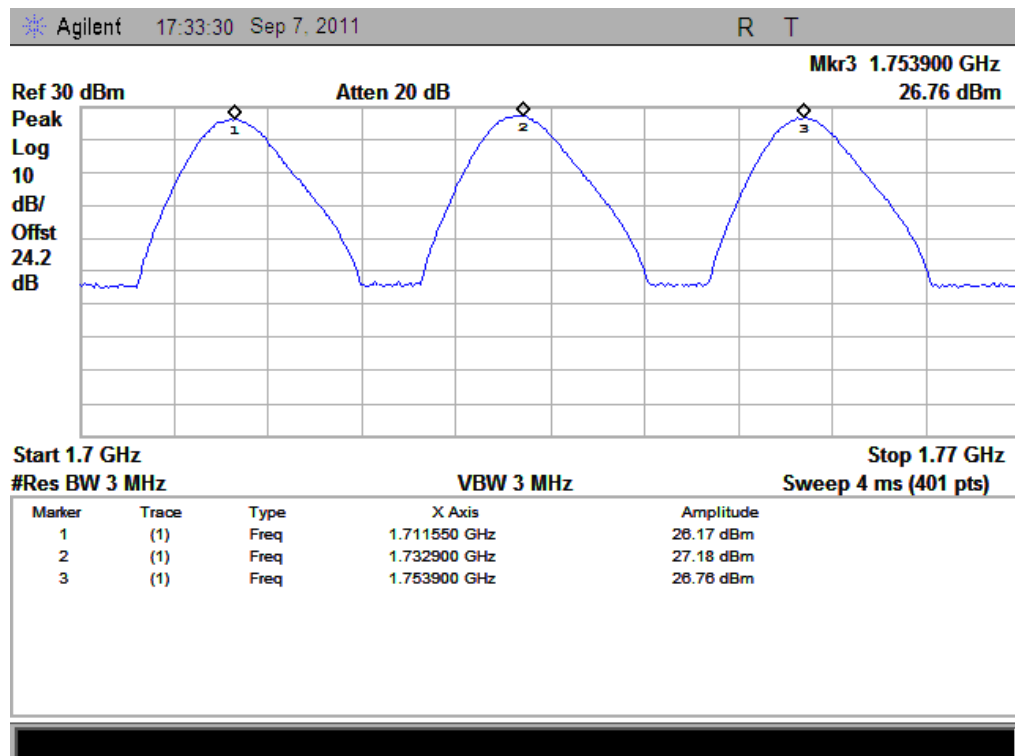
(Plot K: CDMA-EVDO 1900MHz Channel = 25)



(Plot L: CDMA-EVDO 1900MHz Channel = 600)



(Plot M: CDMA-EVDO 1900MHz Channel = 1175)



(Plot N: CDMA-1700MHz Channel = 25, 450, 875)

2.2 99% Occupied Bandwidth

2.2.1 Definition

According to FCC section 2.1049 and IC RSS-GEN section 4.6, 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.

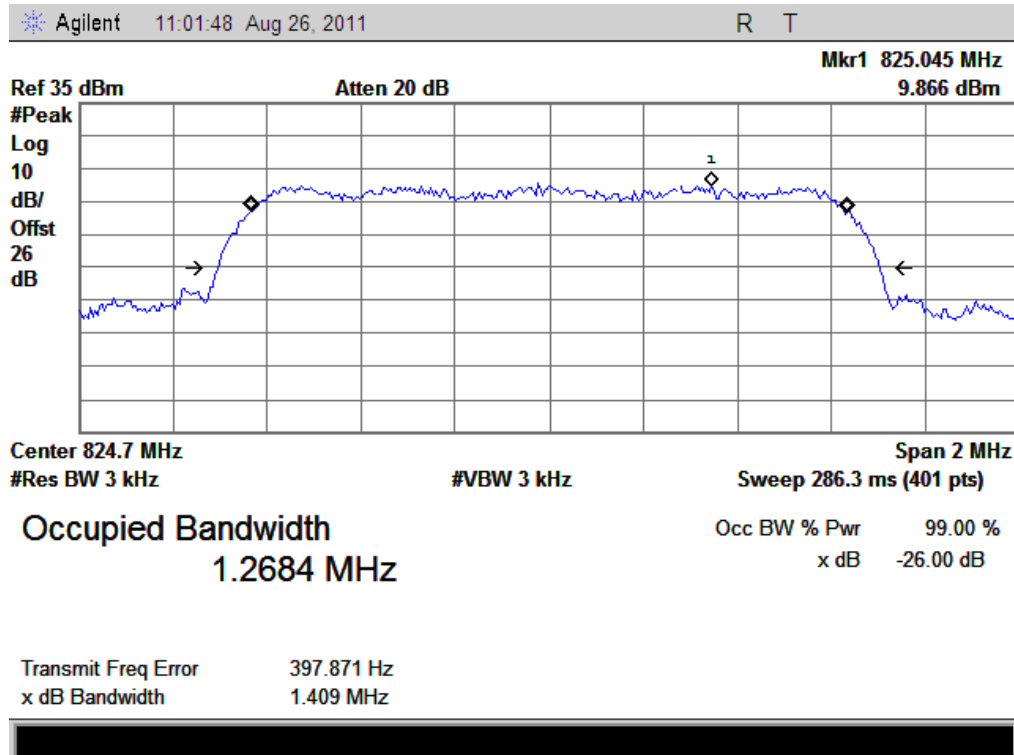
2.2.3 Test Verdict

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

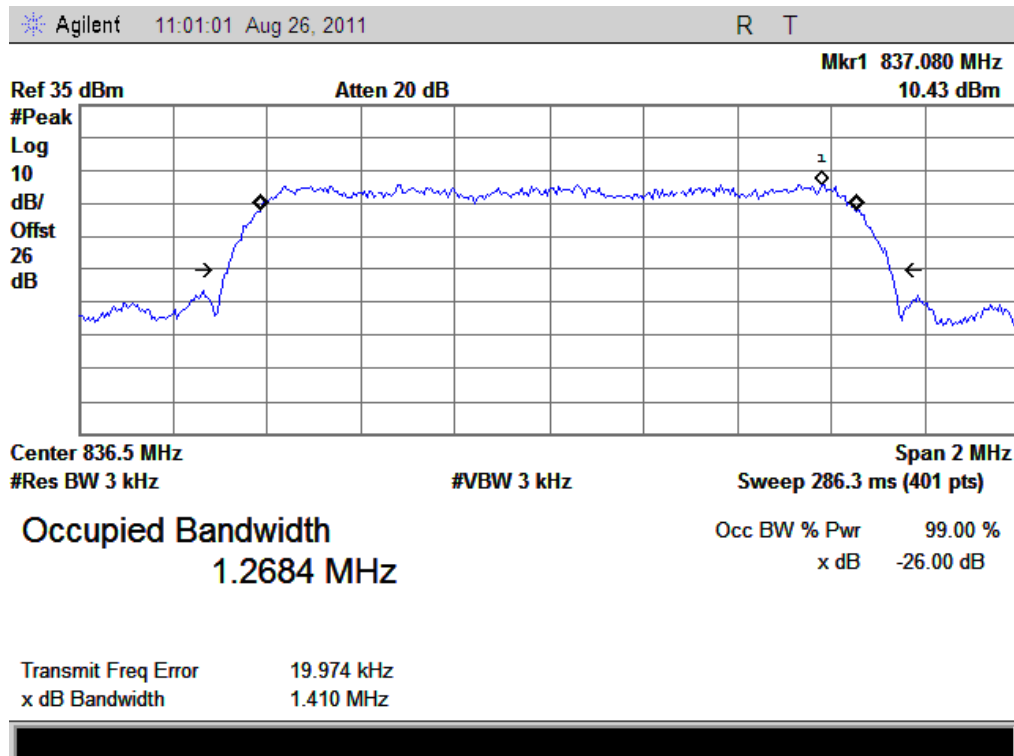
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured 99% Occupied Bandwidth (MHz)	Refer to Plot
CDMA 800MHz	1013	824.7	1.2684	Plot A
	384	836.52	1.2684	Plot B
	777	848.31	1.2724	Plot C
CDMA 1900MHz	25	1850.2	1.2738	Plot D
	600	1880.0	1.2723	Plot E
	1175	1909.8	1.2739	Plot F
G block	1275	1914.0	1.2751	Plot G
EVDO 800MHz	1013	824.7	1.2695	Plot H
	384	836.52	1.2691	Plot I
	777	848.31	1.2709	Plot J
EVDO 1900MHz	25	1850.2	1.2730	Plot K
	600	1880.0	1.2669	Plot L
	1175	1909.8	1.2697	Plot M
AWS 1700MHz	25	1711.25	1.2980	Plot N
	450	1732.5	1.2980	Plot O
	875	1753.75	1.2900	Plot P

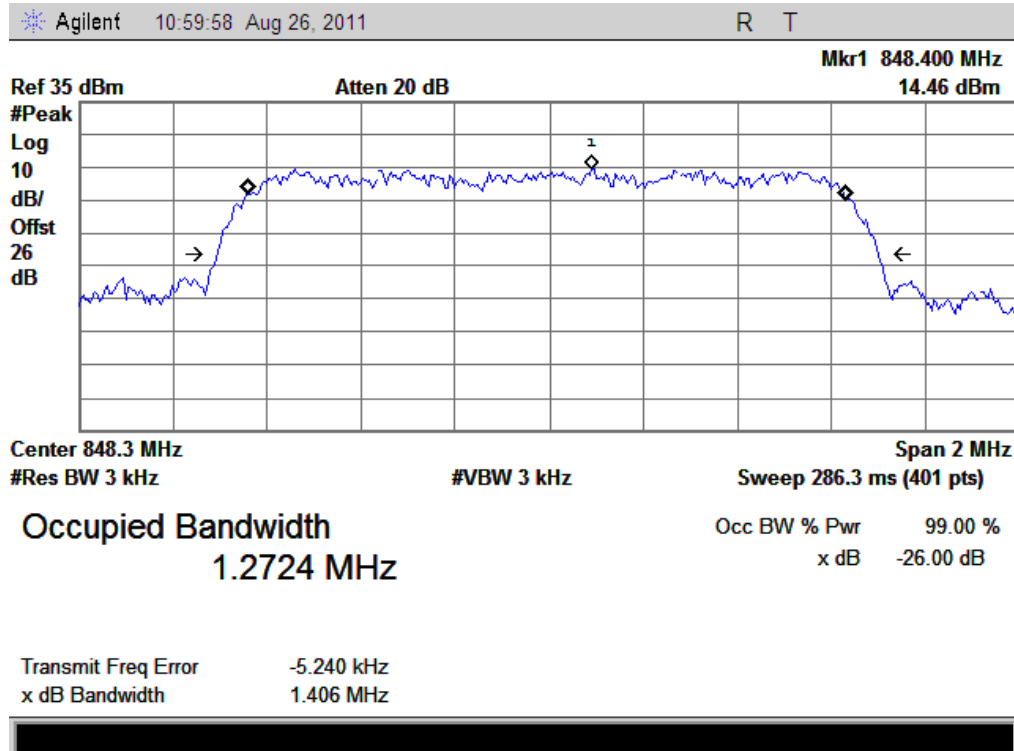
2. Test Plots:



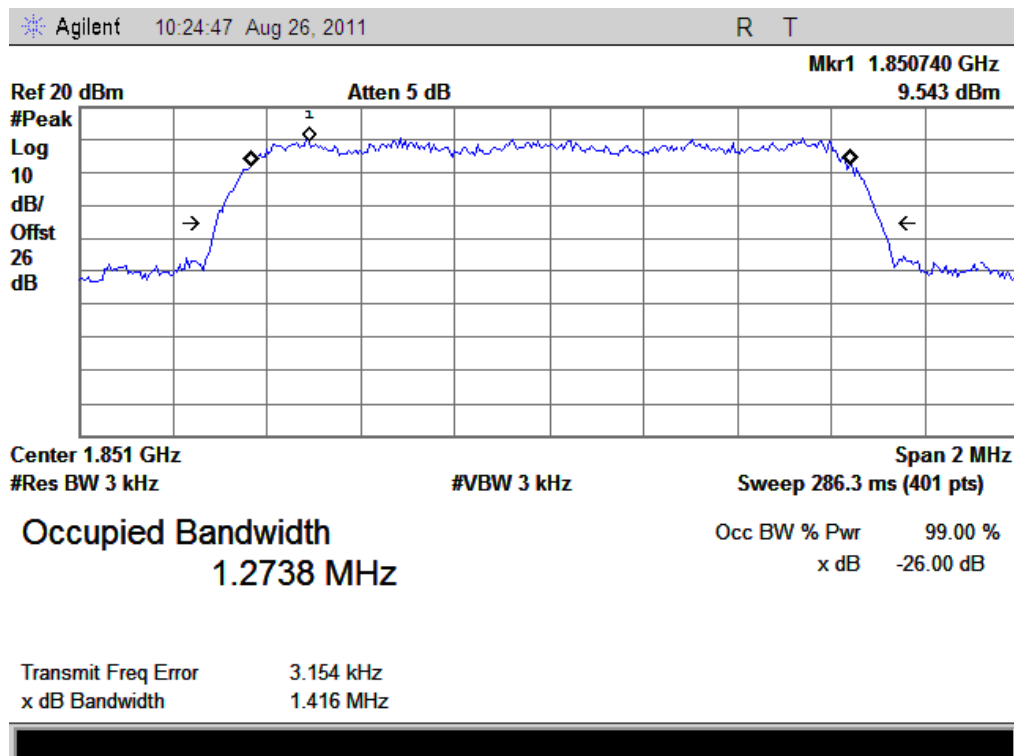
(Plot A: CDMA 800MHz Channel = 1013)



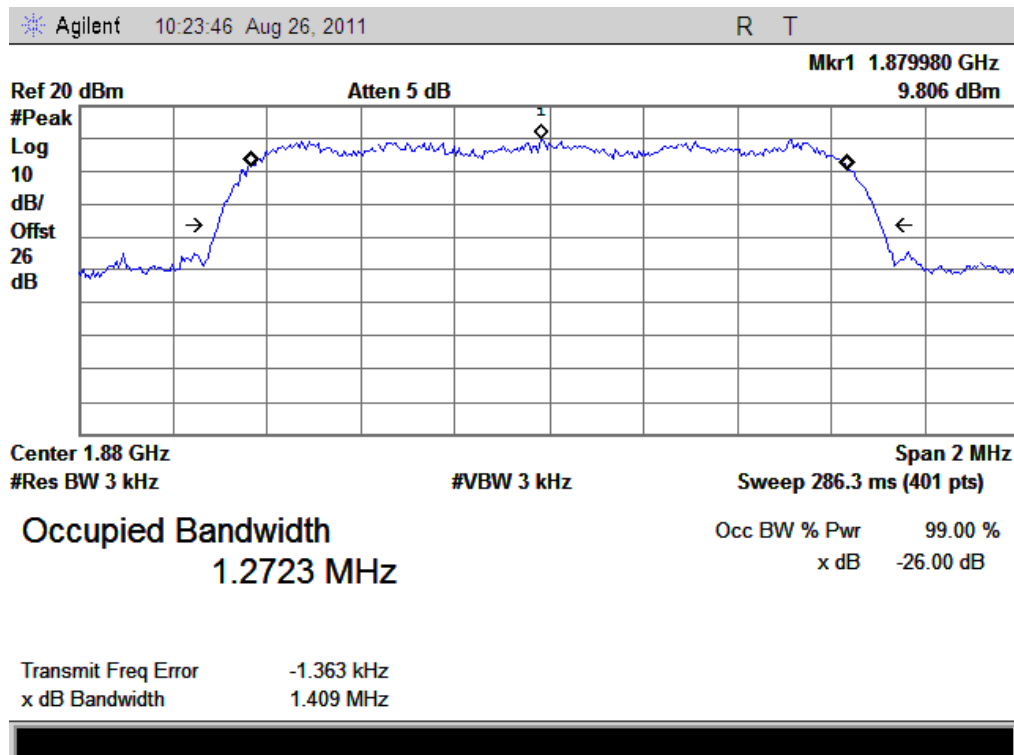
(Plot B: CDMA 800MHz Channel = 384)



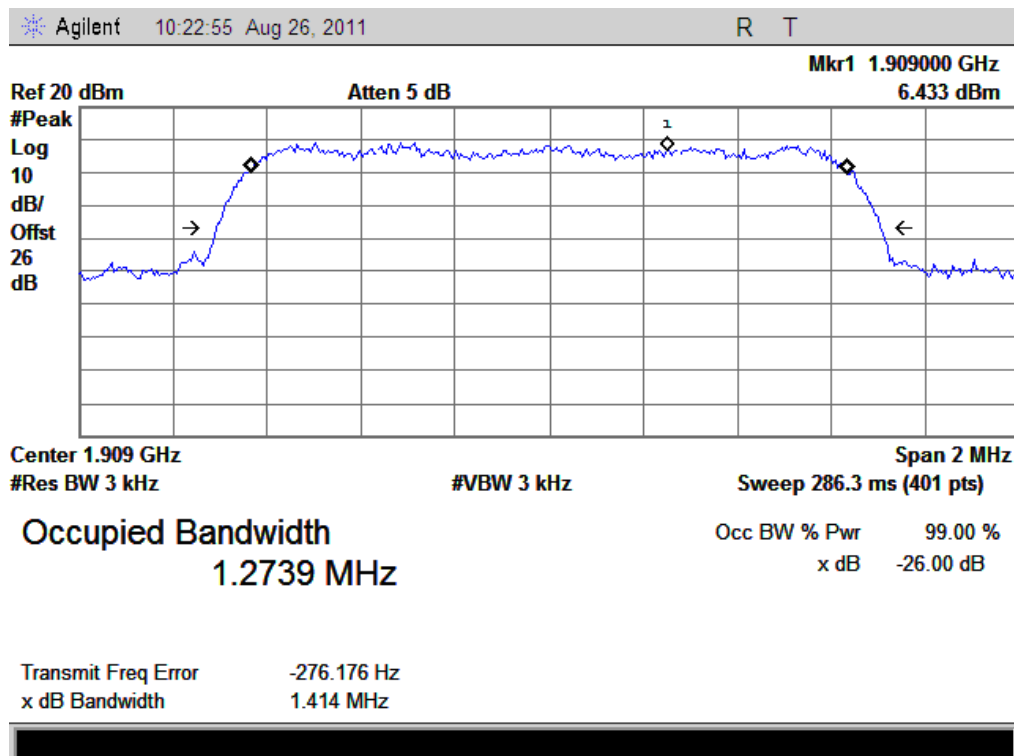
(Plot C: CDMA 800MHz Channel = 777)



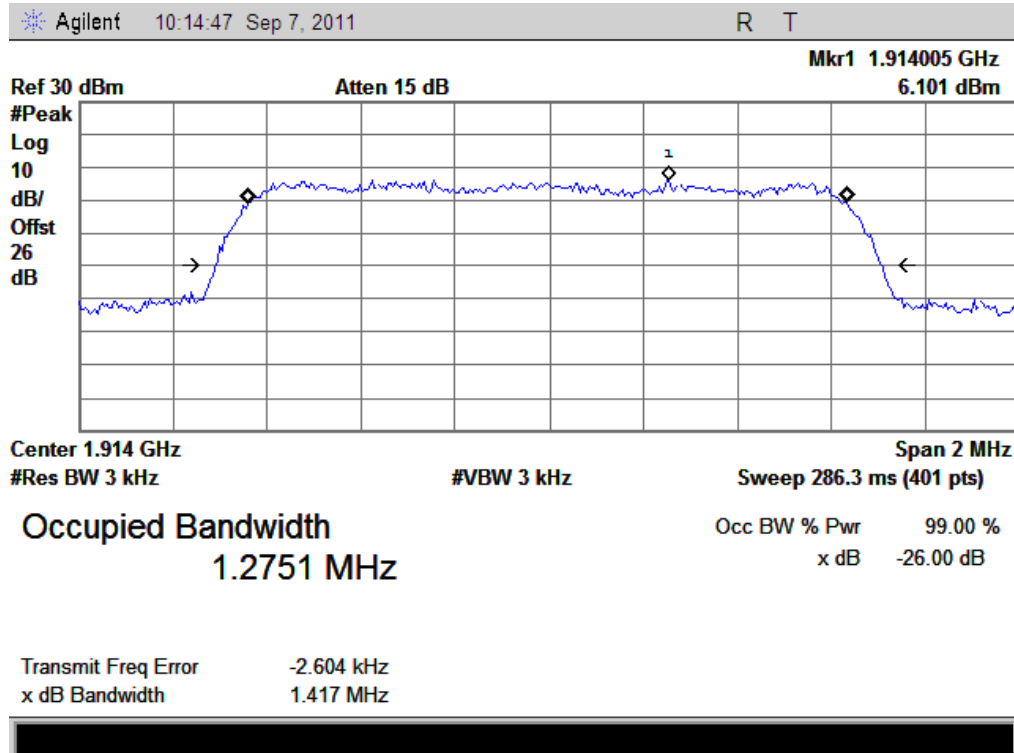
(Plot D: CDMA 1900MHz Channel = 25)



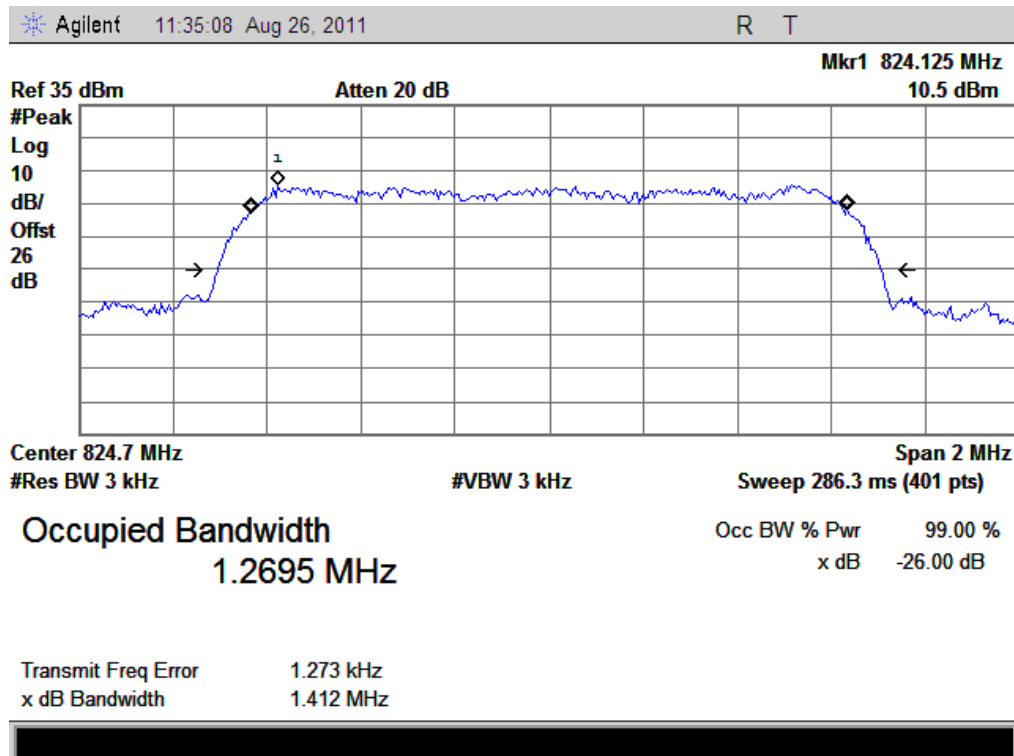
(Plot E: CDMA 1900MHz Channel = 600)



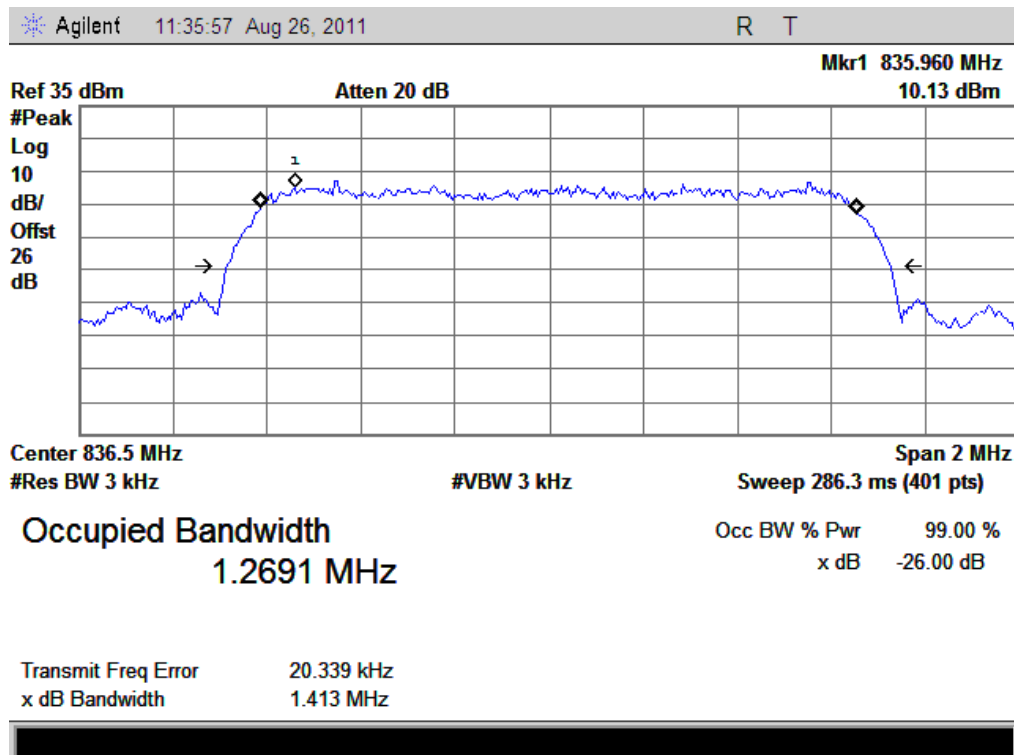
(Plot F: CDMA 1900MHz Channel = 1175)



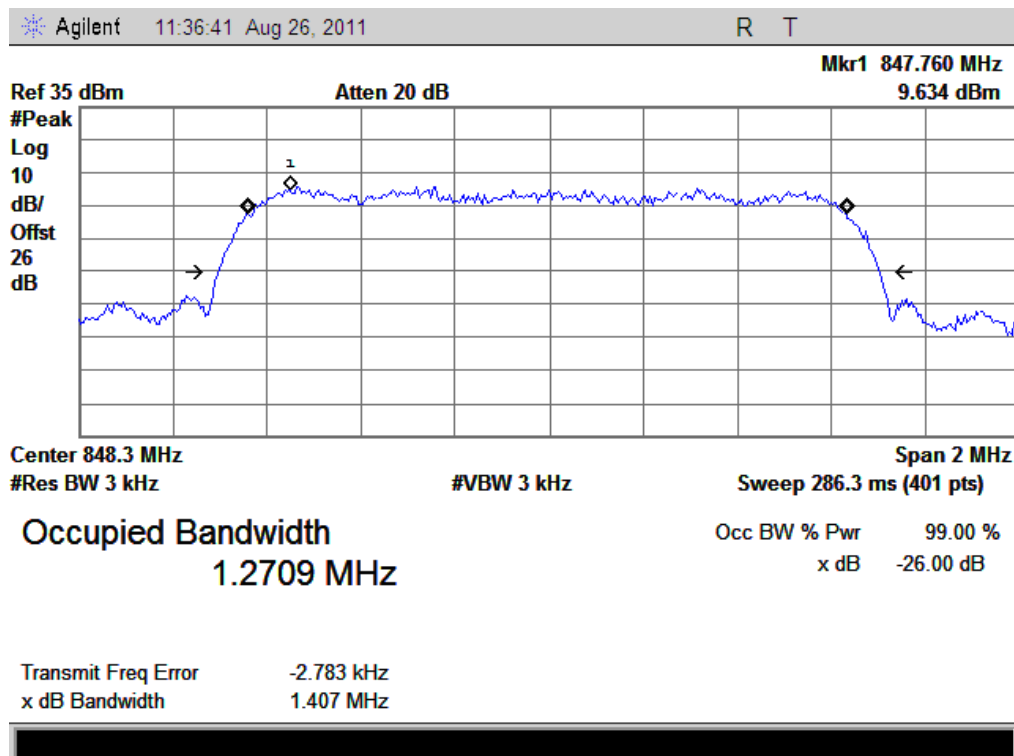
(Plot G: CDMA 1914MHz Channel = 1275)



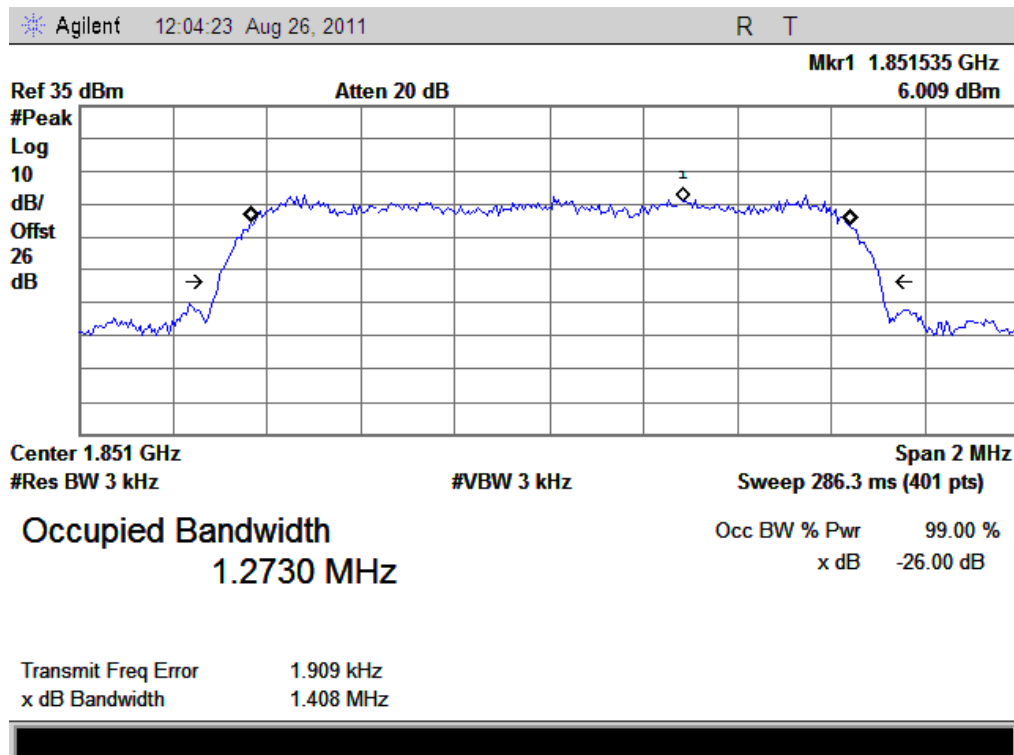
(Plot H: CDMA-EVDO 800MHz Channel = 1013)



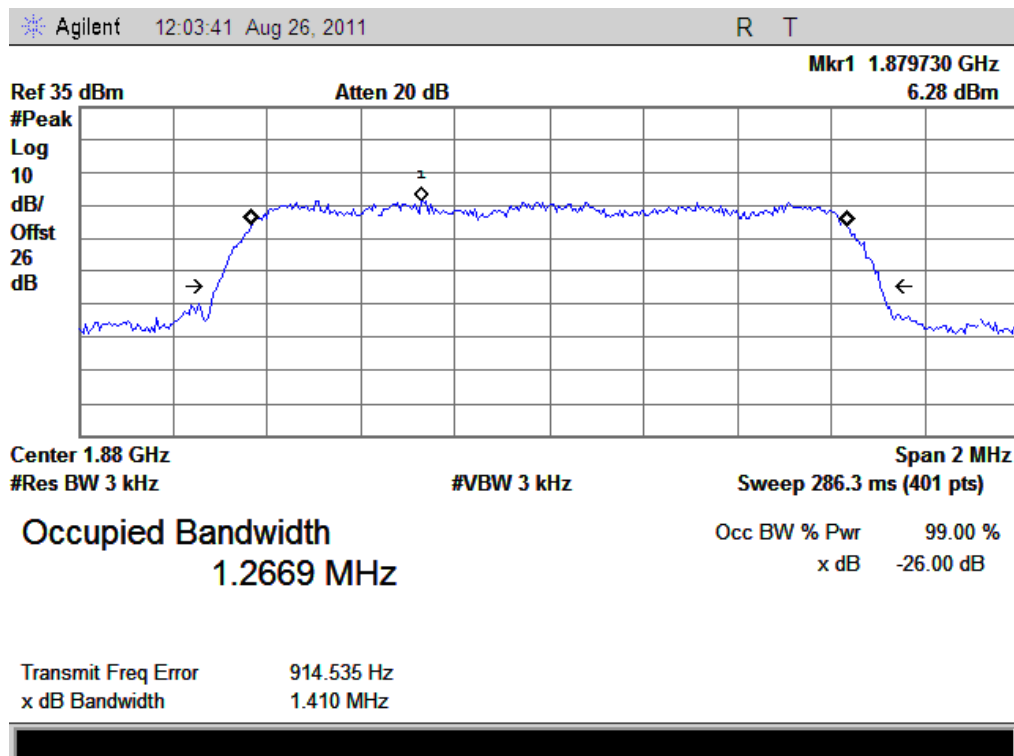
(Plot I: CDMA-EVDO 800MHz Channel = 384)



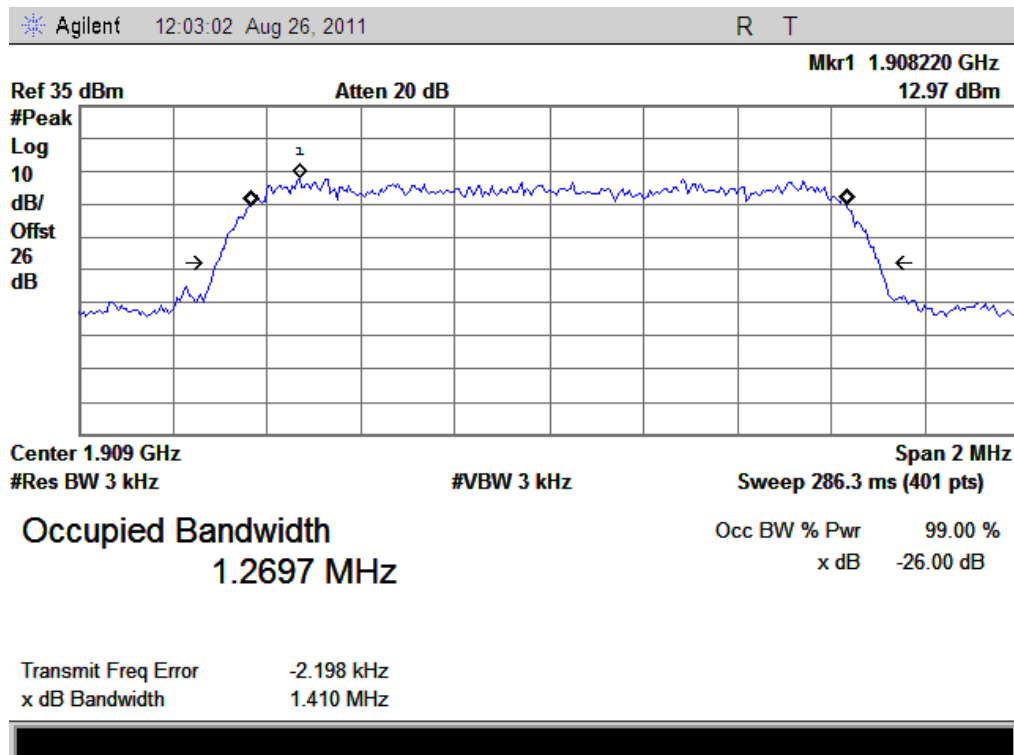
(Plot J: CDMA-EVDO 800MHz Channel = 777)



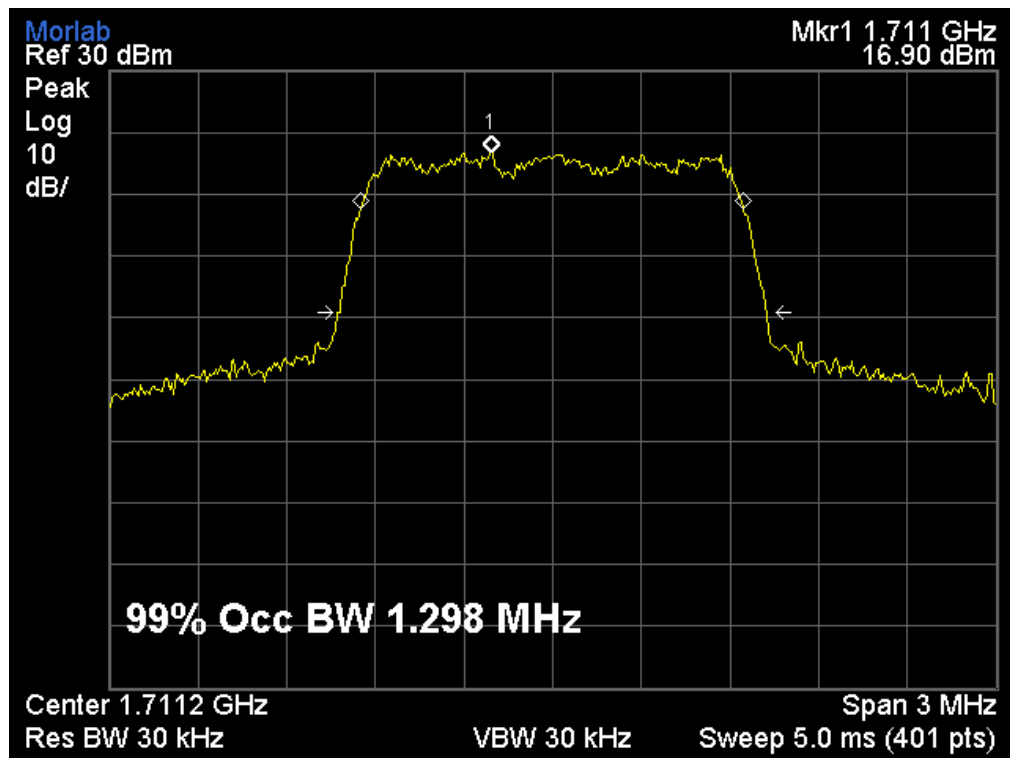
(Plot K: CDMA-EVDO 1900MHz Channel = 25)



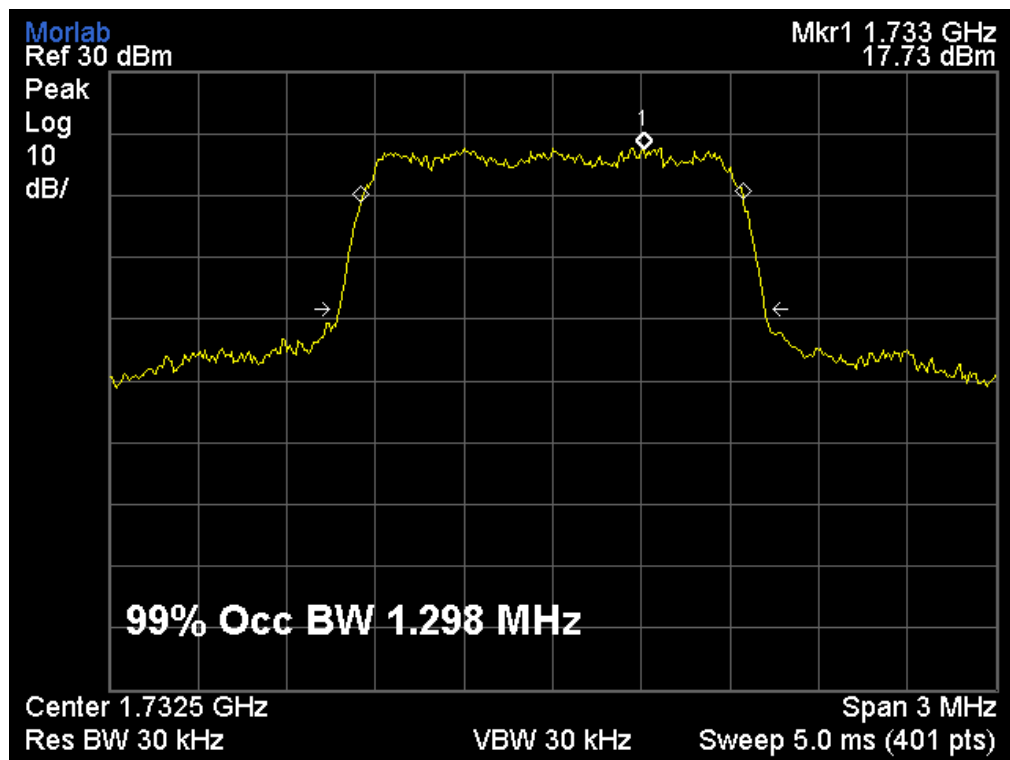
(Plot L: CDMA-EVDO 1900MHz Channel = 600)



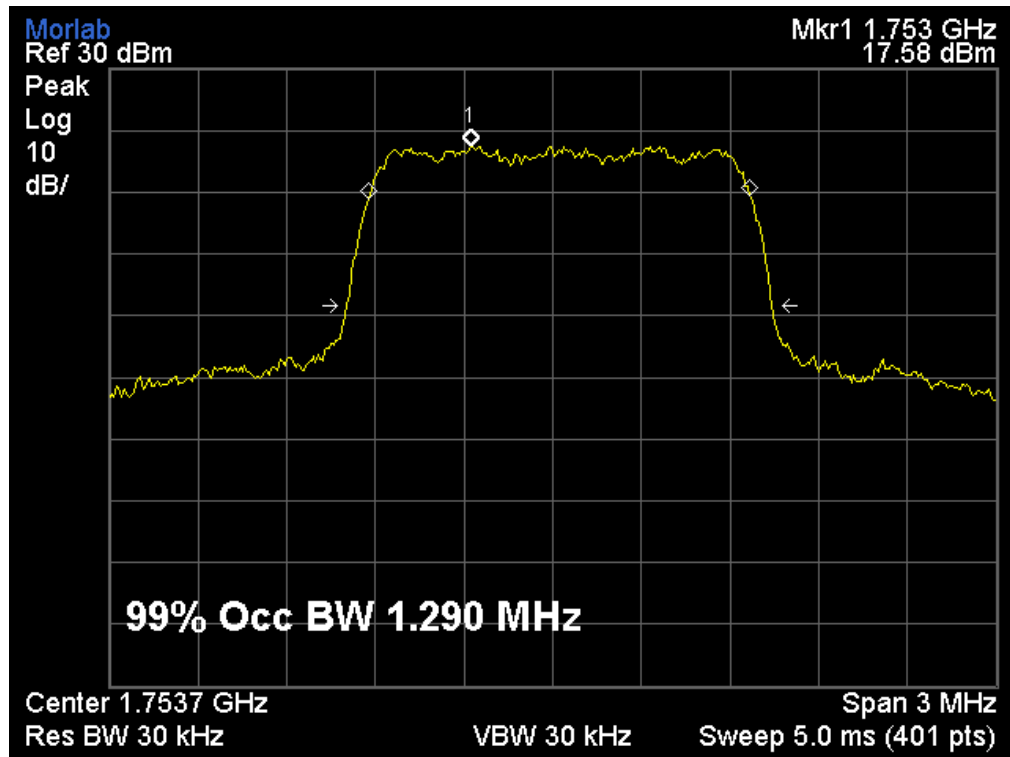
(Plot M: CDMA-EVDO 1900MHz Channel = 1175)



(Plot N: AWS 1711.25MHz Channel = 25)



(Plot O: AWS 1732.5MHz Channel = 450)



(Plot P: AWS 1753.75MHz Channel = 875)

2.3 Frequency Stability

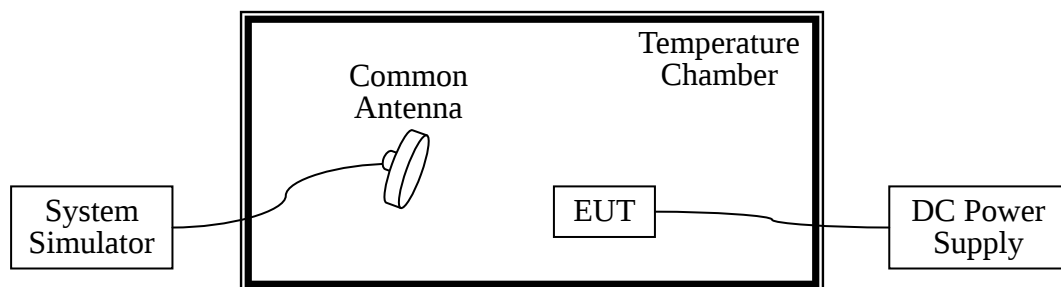
2.3.1 Requirement

According to FCC section 2.1055 and IC RSS-GEN section 4.5, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. 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.

2.3.2 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. 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 3.4VDC, which are specified by the applicant; the normal temperature here used is 25°C. The frequency deviation limit of CDMA 800MHz and AWA 1700MHz band is ± 2.5 ppm, CDMA 1900MHz is

±1ppm.

Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Tempera ture (°C)	Channel = 1013 (824.7MHz)		Channel = 384 (836.52MHz)		Channel = 777 (848.31MHz)		
			Hz	Limits	Hz	Limits	Hz	Limits	
CDMA 800MHz	3.7	-30	7.06	±2061.7 5	26.75	±2091.30	-16.29	±2120.7 75	PASS
		-20	-21.13		-11.01		29.37		
		-10	17.01		11.54		-11.06		
		0	3.20		-4.85		35.04		
		+10	-5.17		13.32		-22.26		
		+20	14.51		5.09		35.09		
		+30	20.79		23.04		26.75		
		+40	-18.75		-10.26		-11.08		
		+50	17.43		21.09		21.44		
	4.2	+25	13.27	-17.85	-7.85				
	3.4	+25	14.34	15.32	25.32				
Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Tempera ture (°C)	Channel = 25 (1851.2MHz)		Channel = 600 (1880.0MHz)		Channel = 1175 (1908.8MHz)		
			Hz	Limits	Hz	Limits	Hz	Limits	
CDMA 1900MHz	3.7	-30	-16.11	±1851.2	15.06	±1880.0	-9.54	±1908.8	PASS
		-20	9.35		-25.16		18.17		
		-10	-25.42		24.03		-24.09		
		0	-2.21		-23.21		23.41		
		+10	-19.01		9.85		-16.07		
		+20	26.52		27.01		29.16		
		+30	-18.49		26.09		-17.54		
		+40	17.92		-8.15		11.74		
		+50	-10.25		27.23		28.05		
	4.2	+25	26.98	24.37	-20.13				
	3.4	+25	7.39	24.26	33.70				

Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Temperature (°C)	Channel = 1013 (824.7MHz)		Channel = 384 (836.52MHz)		Channel = 777 (848.31MHz)		
			Hz	Limits	Hz	Limits	Hz	Limits	
CDMA 800-EVDO	3.7	-30	16.0	±2.5ppm	9.7	±2.5ppm	12.0	±2.5ppm	PASS
		-20	-24.2		-21.2		-22.4		
		-10	29.3		29.7		32.6		
		0	23.9		21.7		19.2		
		+10	-23.4		-21.7		-25.4		
		+20	-29.7		-29.1		-34.6		
		+30	9.6		9.8		13.6		
		+40	23.0		22.4		21.8		
		+50	8.4		4.4		4.2		
	4.2	+25	19.8	21.6	24.8				
	3.4	+25	-6.3	-3.6	-4.2				
Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Temperature (°C)	Channel = 25 (1851.2MHz)		Channel = 600 (1880.0MHz)		Channel = 1175 (1908.8MHz)		
			Hz	Limits	Hz	Limits	Hz	Limits	
CDMA 1900-EVDO	3.7	-30	13.1	±1851.2 Hz	8.8	±1880.0 Hz	17.0	±1908.8 Hz	PASS
		-20	3.0		0.7		6.2		
		-10	-8.8		-3.8		-3.9		
		0	-23.2		-19.9		-23.7		
		+10	-6.3		-3.4		-9.9		
		+20	19.9		14.2		15.5		
		+30	-29.1		-27.2		-24.4		
		+40	-27.4		-30.5		-27.9		
		+50	15.0		12.3		13.5		
	4.2	+25	28.1	25.8	23.6				
	3.4	+25	-13.5	-14.0	-13.7				

Band	Test Conditions		Frequency Deviation						Verdict
	Power (VDC)	Temperature (°C)	Channel = 25 (1711.25MHz)		Channel = 450 (1732.5MHz)		Channel = 875 (1753.75MHz)		
			Hz	Limits	Hz	Limits	Hz	Limits	
CDMA 1700MHz	3.7	-30	13.32	±4278.1 25	26.75	±4331. 25	-16.29	±4384.3 75	PASS
		-20	5.09		-11.01		29.37		
		-10	23.04		11.54		-11.06		
		0	-10.26		-4.85		35.04		
		+10	13.32		13.32		-22.26		
		+20	21.7		5.09		13.32		
		+30	3.0		23.04		5.09		
		+40	19.4		-10.26		23.04		
		+50	6.8		21.09		-10.26		
	4.2	+25	13.1	-17.85	13.32				
	3.4	+25	1.8	15.32	5.09				

2.4 Conducted Out of Band Emissions

2.4.1 Requirement

According to FCC section 2.1051 and IC RSS-GEN section 4.7, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43+10*\log(P)$ dB. This calculated to be -13dBm.

2.4.2 Test Description

See section 2.1.2 of this report.

2.4.3 Test Result

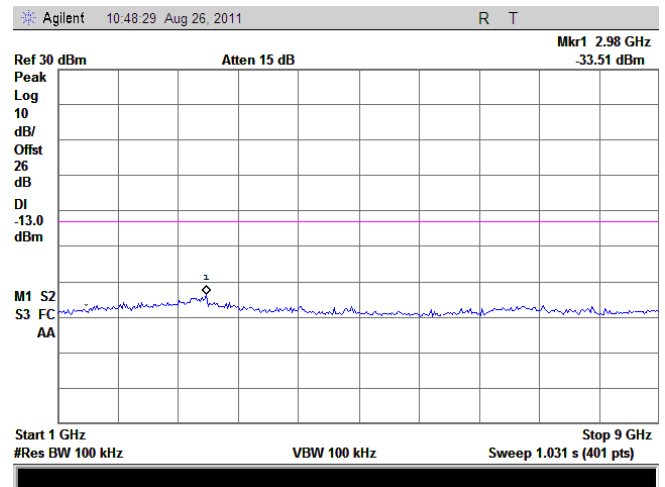
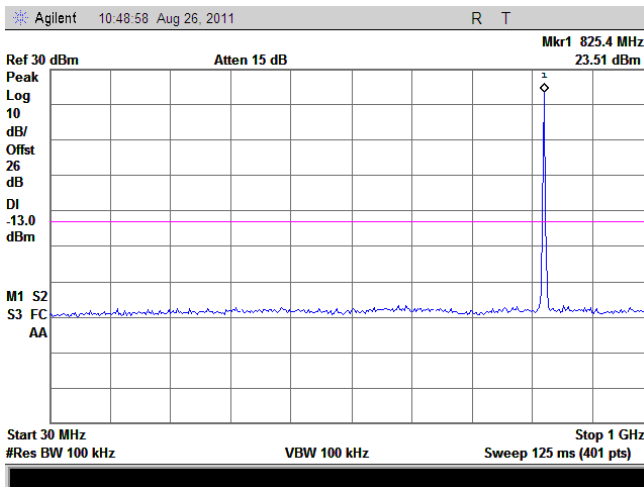
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

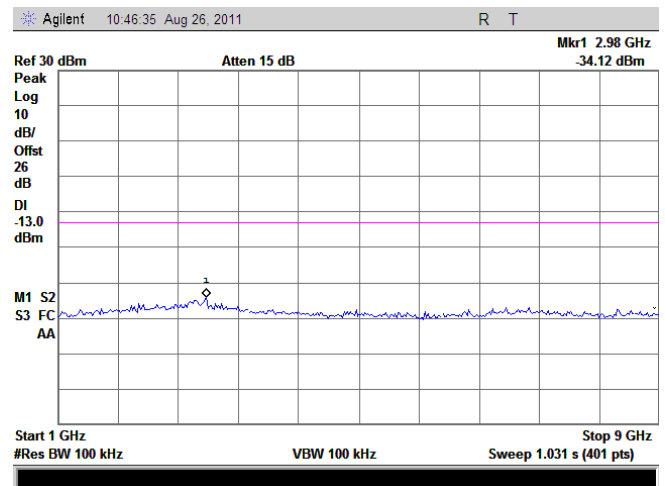
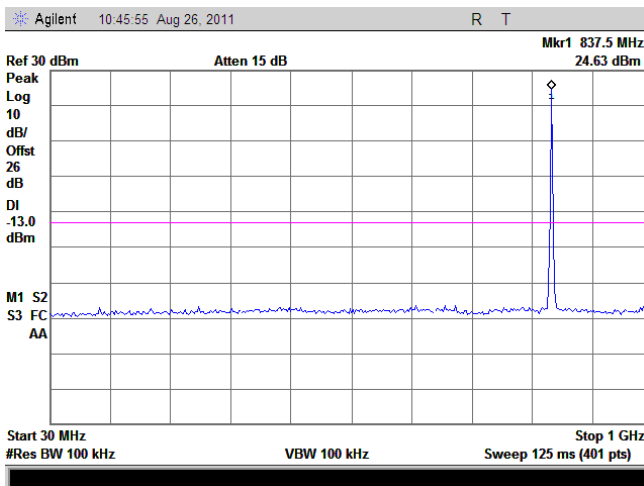
No.	Channel	Frequency(MHz)	Measured Max Spurious Emission(dBm)	Limit(dBm)
CDMA 800MHz	1013	824.7	-33.51	-13
	384	836.52	-34.12	-13
	777	848.31	-34.13	-13
CDMA 1900MHz	25	1850.2	-47.43	-13
	600	1880.0	-37.25	-13
	1175	1909.8	-37.54	-13
EVDO 800MHz	1013	824.7	-34.12	-13
	384	836.52	-30.06	-13
	777	848.31	-29.96	-13
EVDO 1900MHz	25	1850.2	-32.84	-13
	600	1880.0	-32.88	-13
	1175	1909.8	-32.22	-13
AWS 1700MHz	25	1711.25	-27.49	-13
	450	1732.5	-24.63	-13
	875	1753.75	-26.78	-13
G Block	1275	1914.0	-47.24	-13

2. Test Plots for the Whole Measurement Frequency Range:

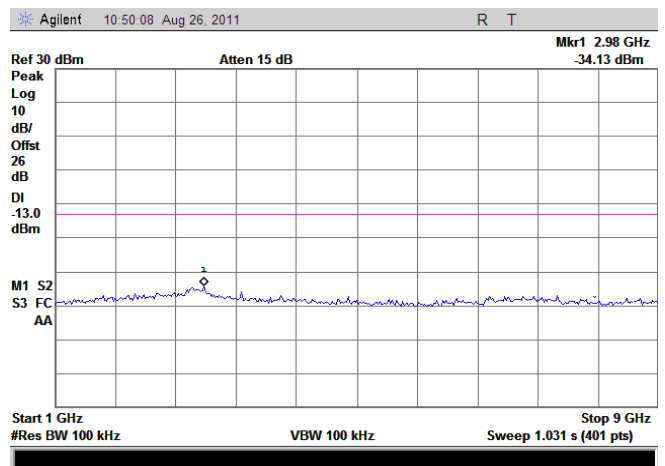
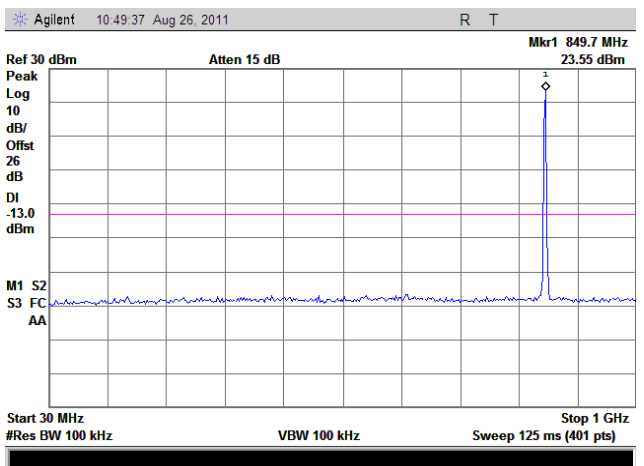
Note: the power of the EUT transmitting frequency should be ignored.



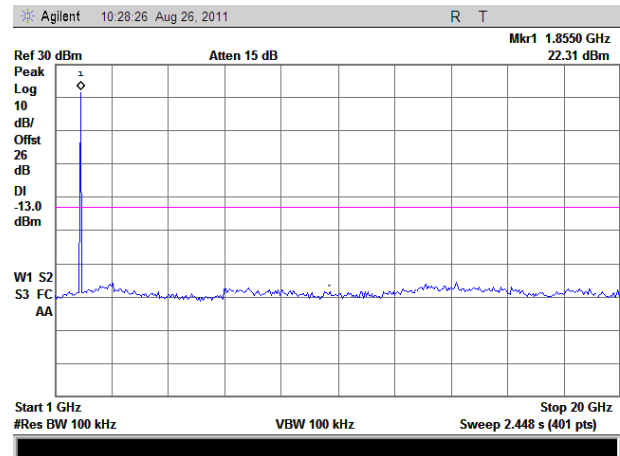
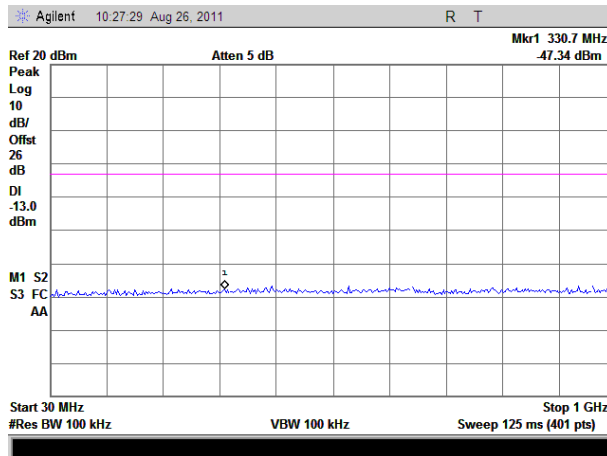
(Plot A: CDMA 800MHz Channel = 1013, 30MHz to 9GHz)



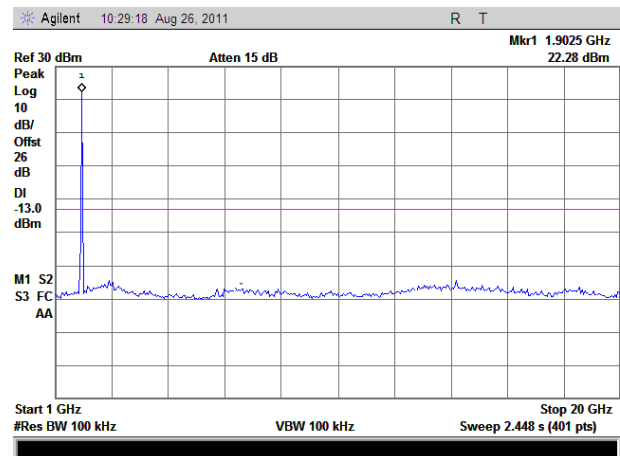
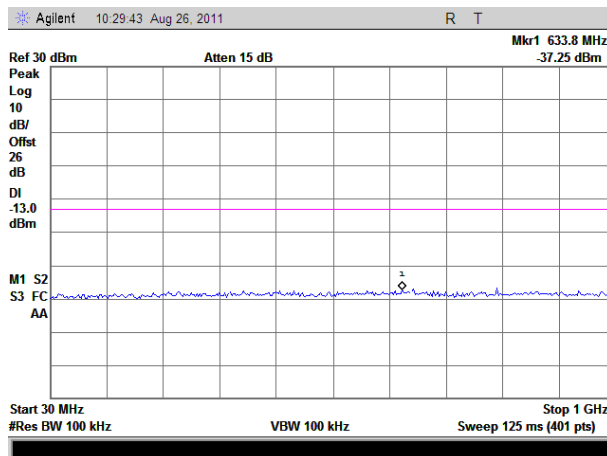
(Plot B: CDMA 800MHz Channel = 384, 30MHz to 9GHz)



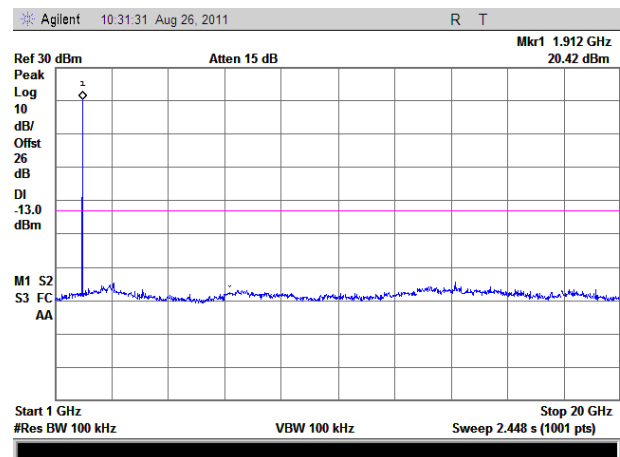
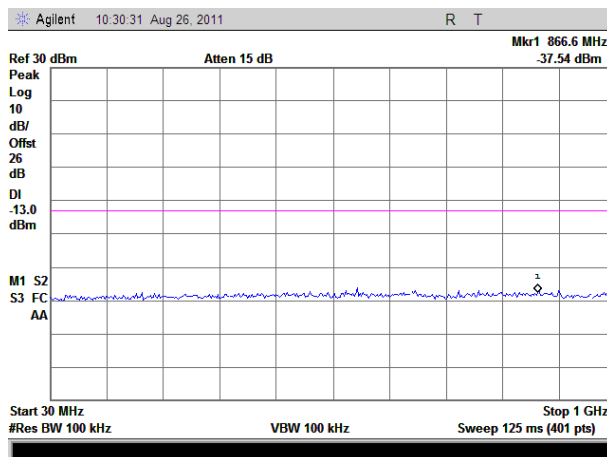
(Plot C: CDMA 800MHz Channel = 777, 30MHz to 9GHz)



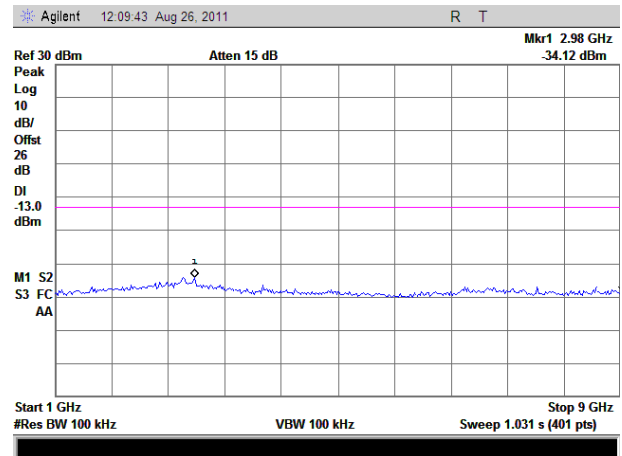
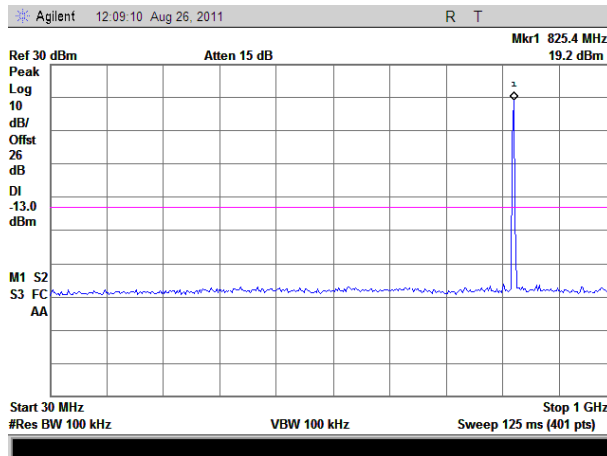
(Plot D: CDMA 1900MHz Channel = 25, 30MHz to 20GHz)



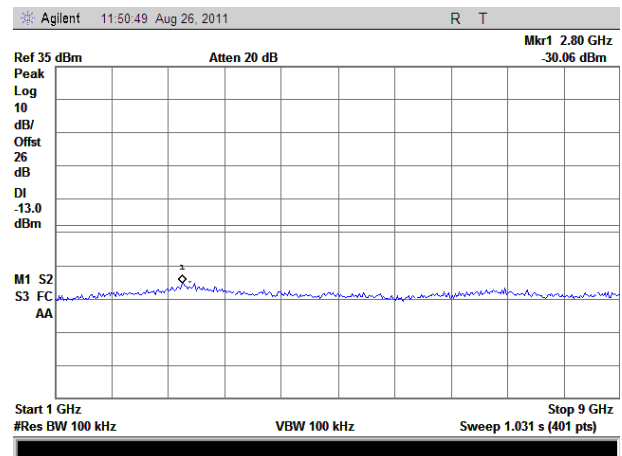
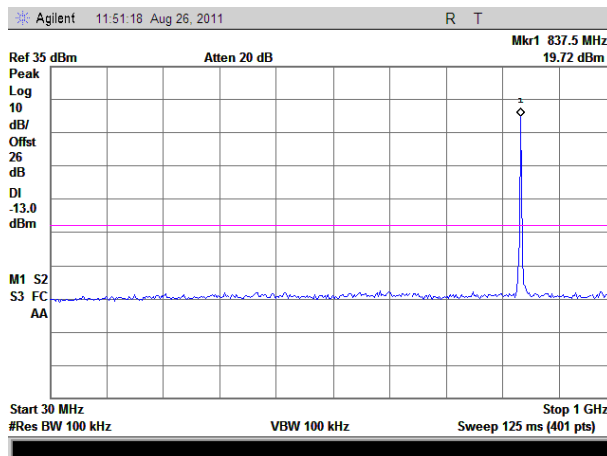
(Plot E: CDMA 1900MHz Channel = 600, 30MHz to 20GHz)



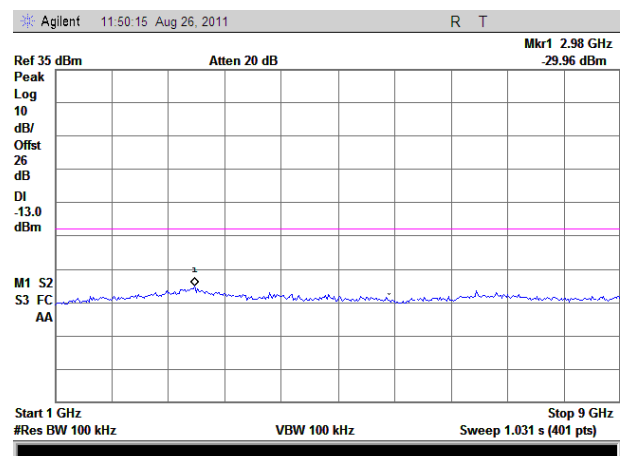
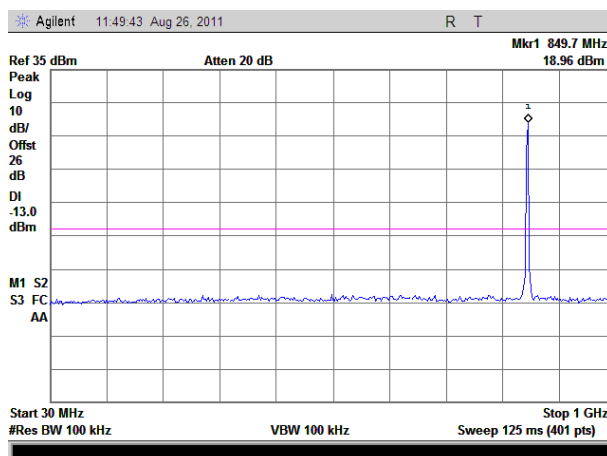
(Plot F: CDMA 1900MHz Channel = 1175, 30MHz to 20GHz)



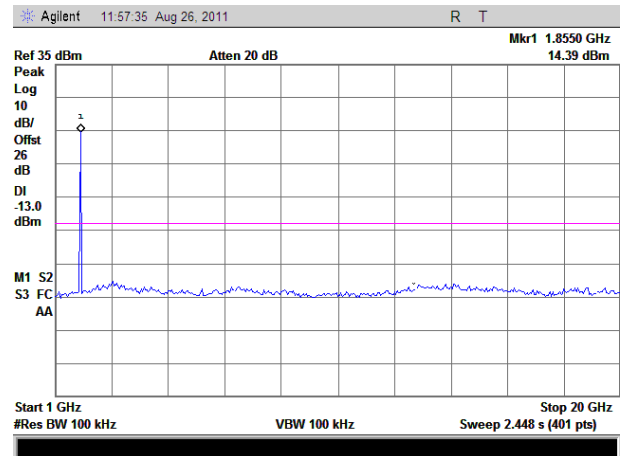
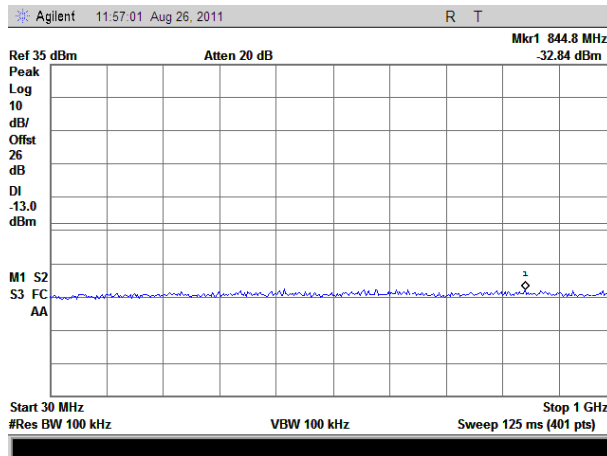
(Plot G: CDMA-EVDO 800MHz Channel = 1013, 30MHz to 9GHz)



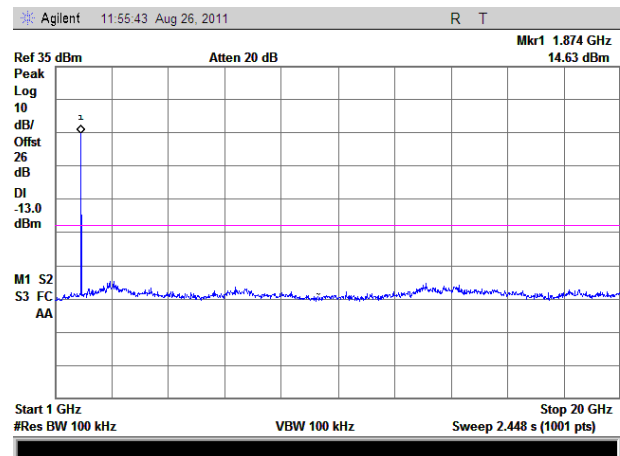
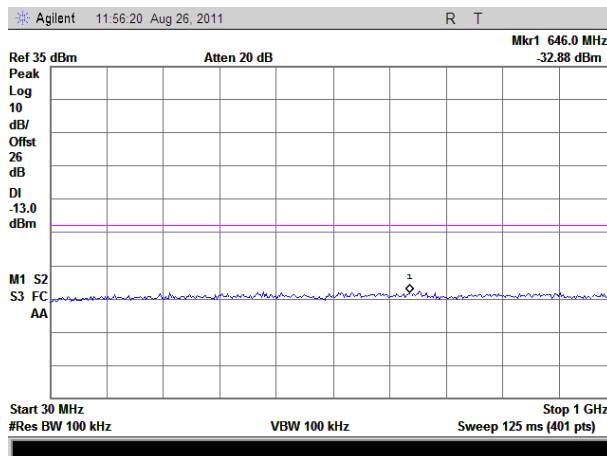
(Plot H: CDMA-EVDO 800MHz Channel = 384, 30MHz to 9GHz)



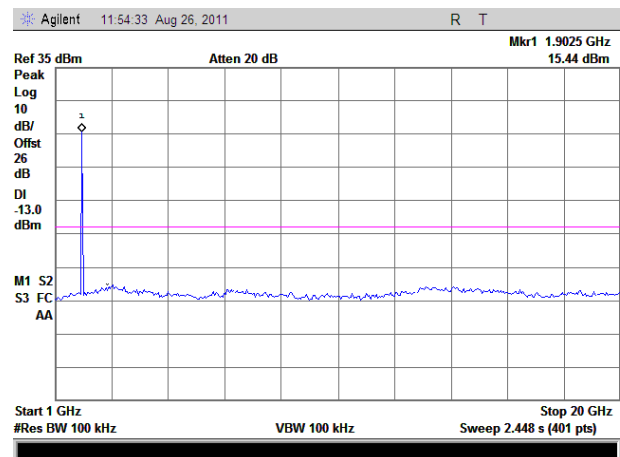
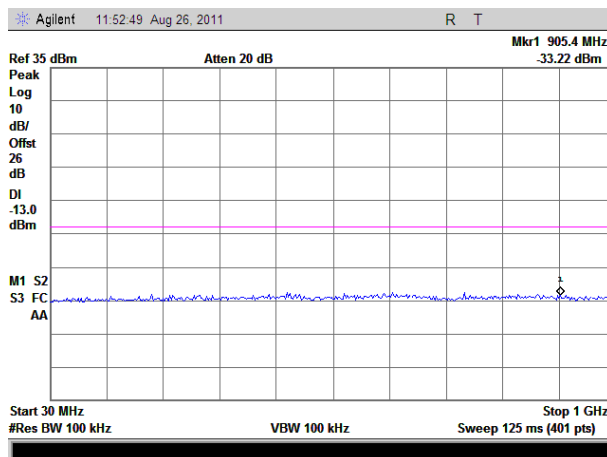
(Plot I: CDMA-EVDO 800MHz Channel = 777, 30MHz to 9GHz)



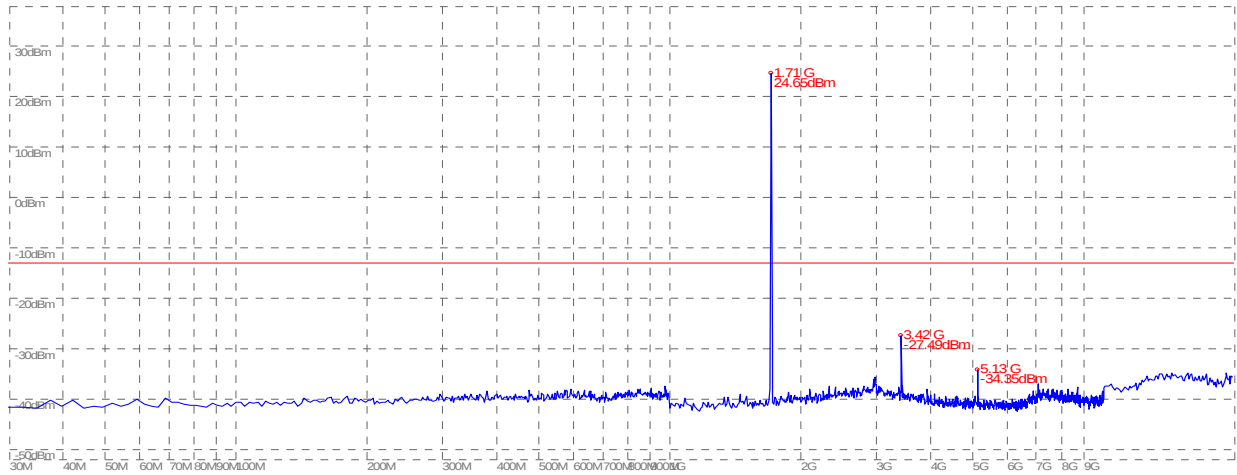
(Plot J: CDMA-EVDO 1900MHz Channel = 25, 30MHz to 20GHz)



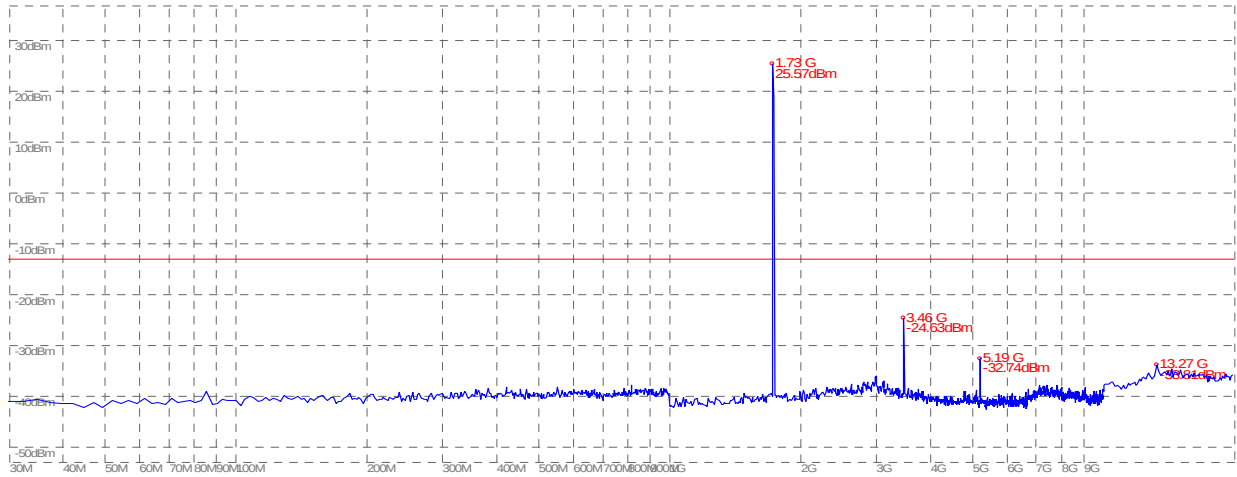
(Plot K: CDMA-EVDO 1900MHz Channel = 600, 30MHz to 20GHz)



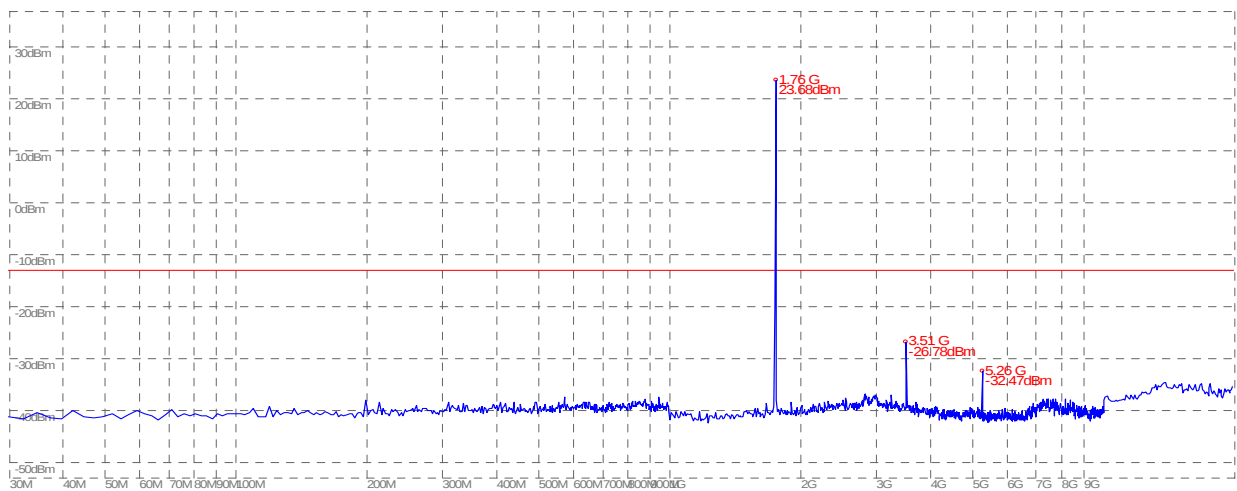
(Plot L: CDMA-EVDO 1900MHz Channel = 1175, 30MHz to 20GHz)



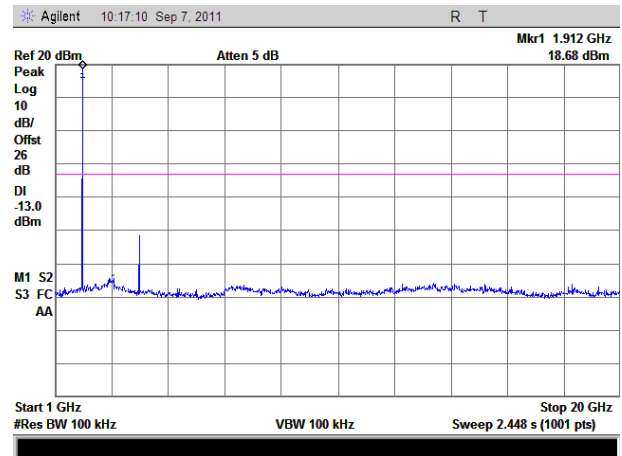
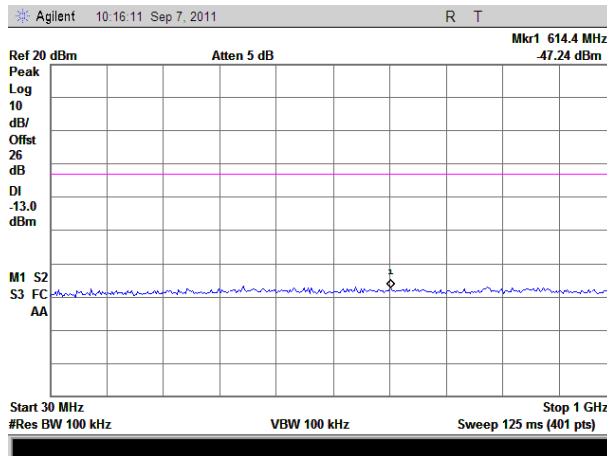
(Plot M: AWS 1711.25MHz Channel = 28, 30MHz to 20GHz)



(Plot N: AWS 1732.5MHz Channel = 450, 30MHz to 20GHz)



(Plot O: AWS 1732.5MHz Channel = 875, 30MHz to 20GHz)



(Plot P: G Block 1914.0MHz Channel = 1275, 30MHz to 20GHz)

2.5 Band Edge

2.5.1 Requirement

According to FCC section 2.1051 and IC RSS-GEN section 4.7, in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

2.5.2 Test Description

See section 2.1.2 of this report.

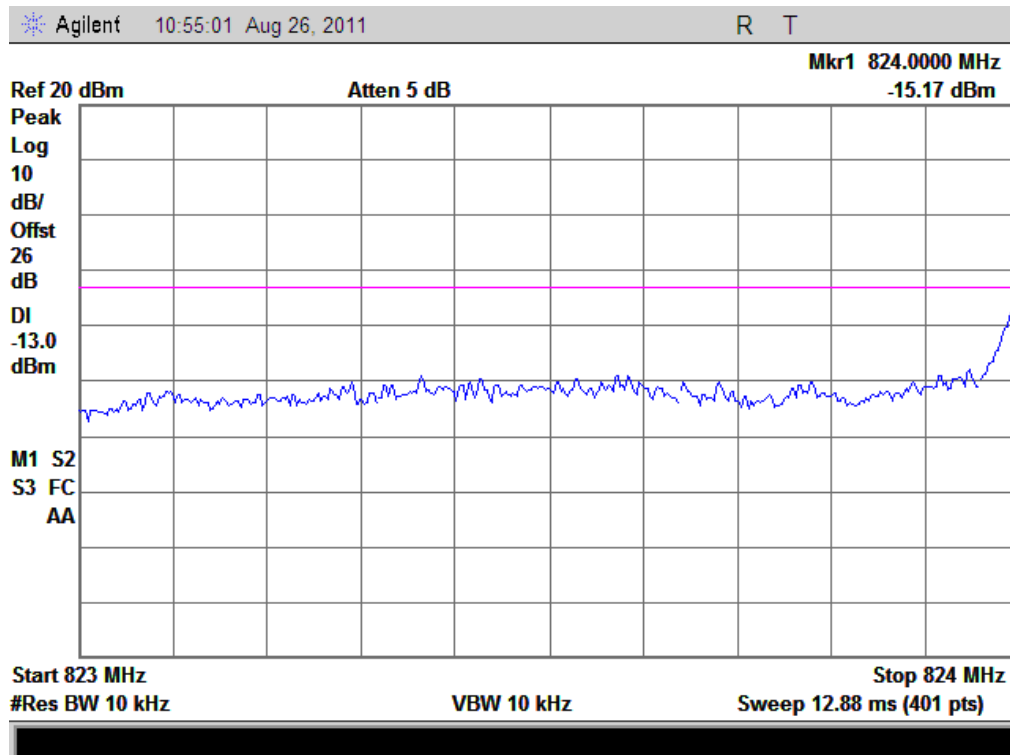
2.5.3 Test Result

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

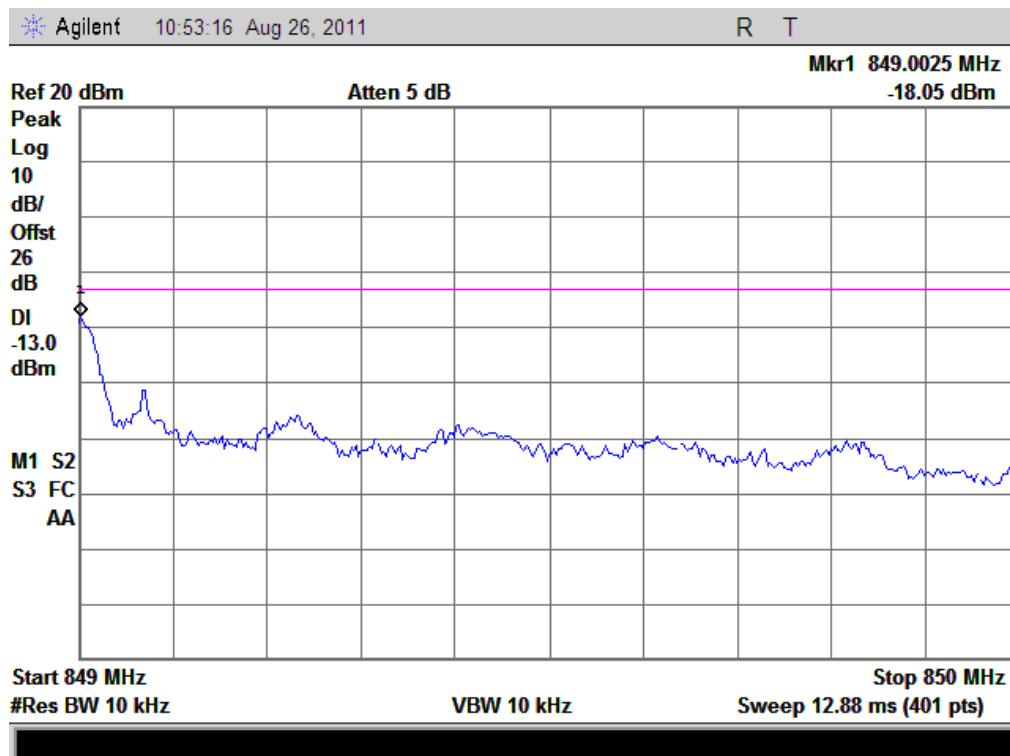
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
CDMA 800MHz	1013	824.7	-15.17	Plat A	-13	PASS
	777	848.31	-18.05	Plot B		PASS
CDMA 1900MHz	25	1851.2	-19.9	Plat C	-13	PASS
	1175	1908.8	-19.91	Plot D		PASS
EVDO 800MHz	1013	824.7	-16.05	Plat E	-13	PASS
	777	848.31	-14.17	Plot F		PASS
EVDO 1900MHz	25	1851.2	-19.76	Plat G	-13	PASS
	1175	1908.8	-22.41	Plot H		PASS
AWS 1700MHz	25	1711.25	-20.48	Plot I	-13	PASS
	875	1753.75	-29.82	Plat J	-13	PASS
G Block	1275	1914.0	-21.48	Plot K	-13	PASS

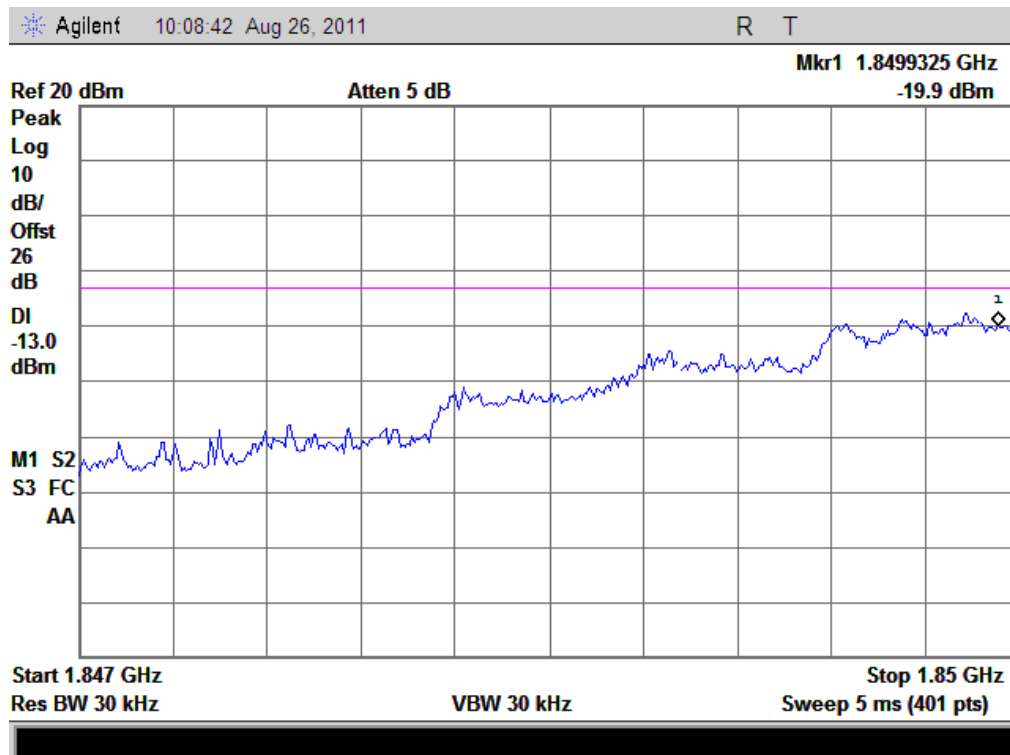
2. Test Plots:



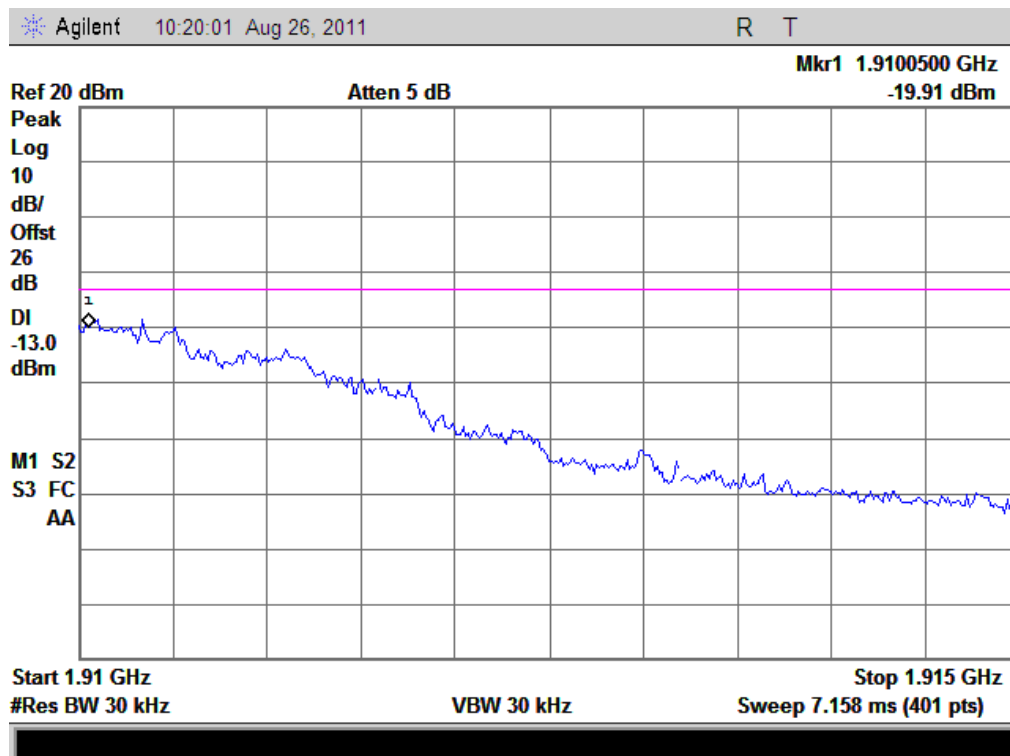
(Plot A: CDMA 800MHz Channel = 1013)



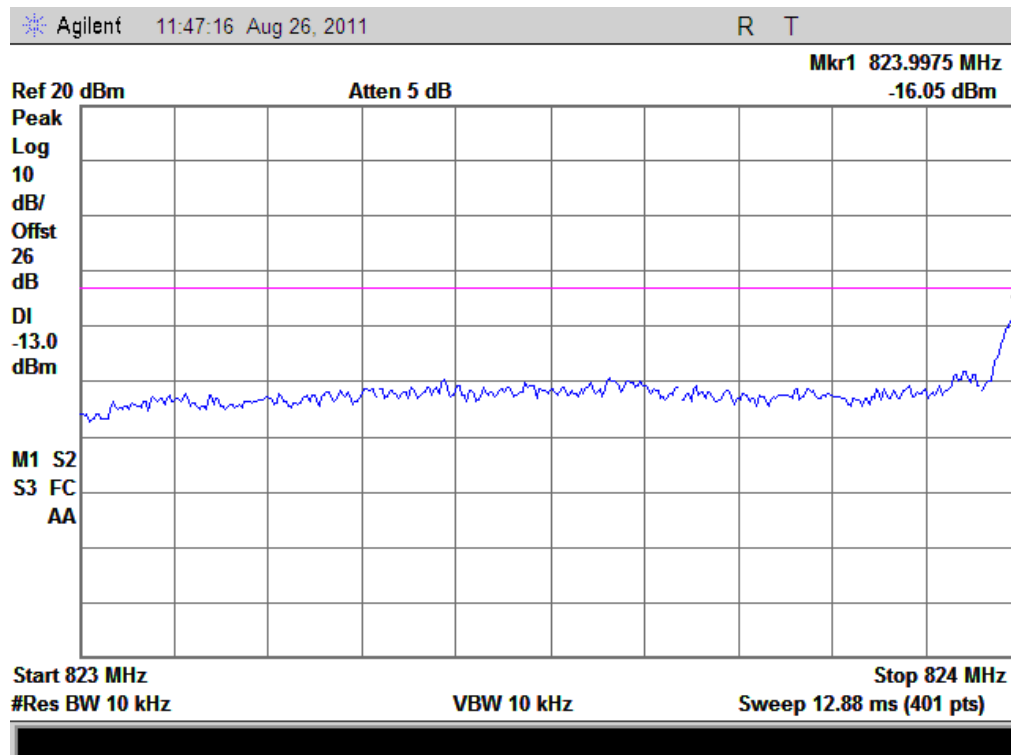
(Plot B: CDMA 800MHz Channel = 777)



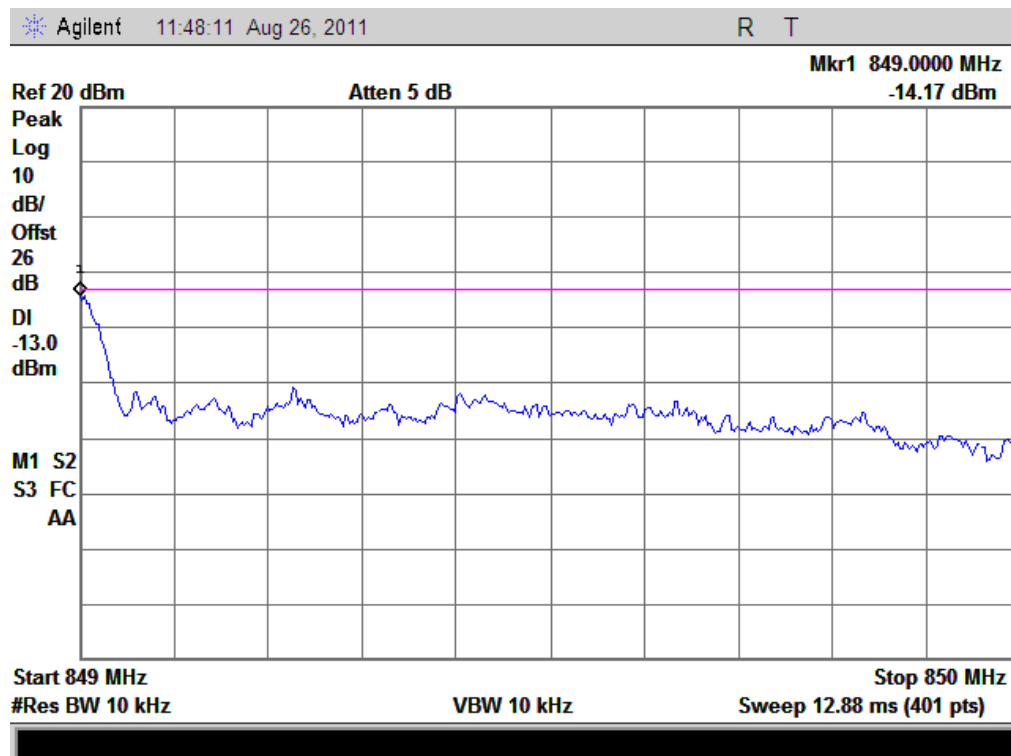
(Plot C: CDMA 1900MHz Channel = 25)



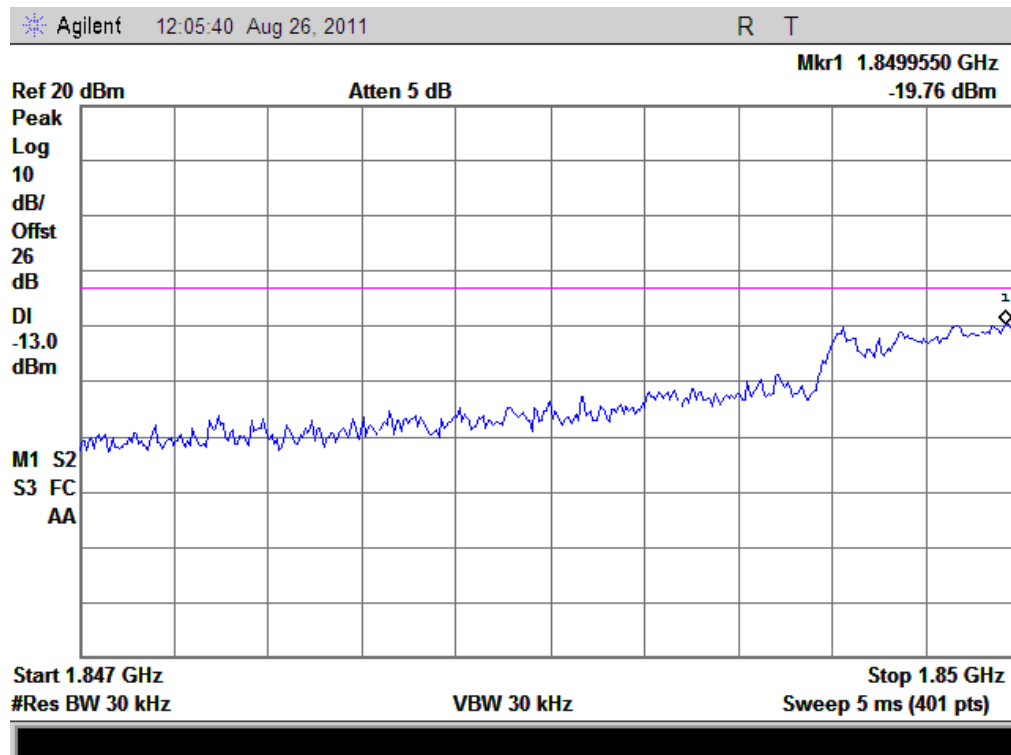
(Plot D: CDMA 1900MHz Channel = 1175)



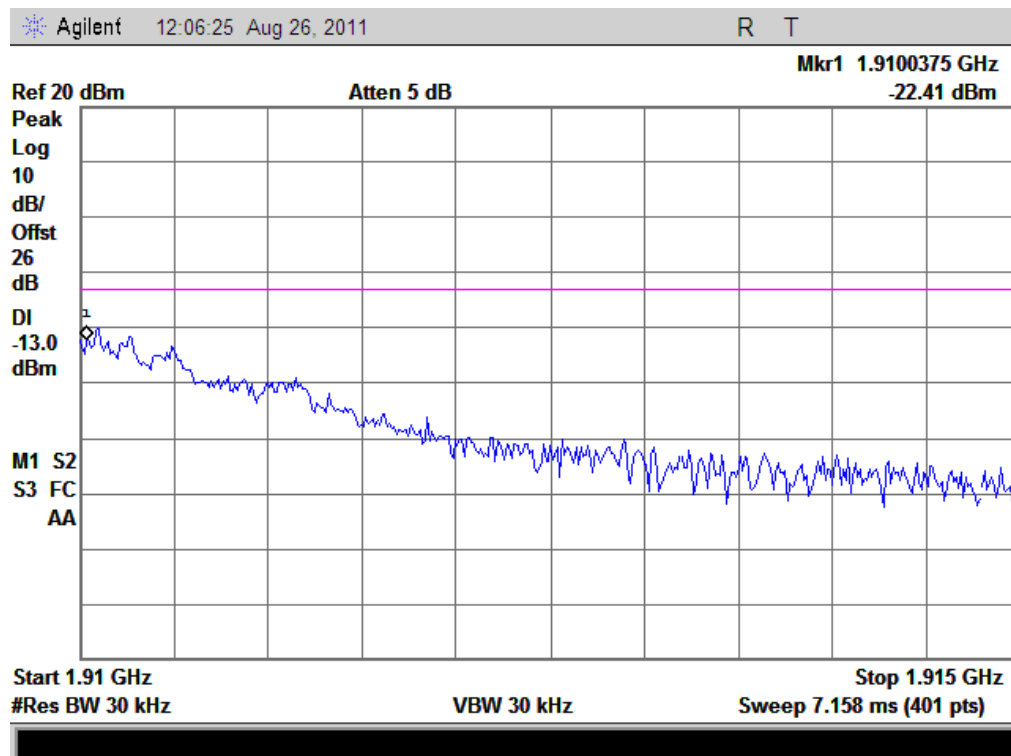
(Plot E: CDMA-EVDO 800MHz Channel = 1013)



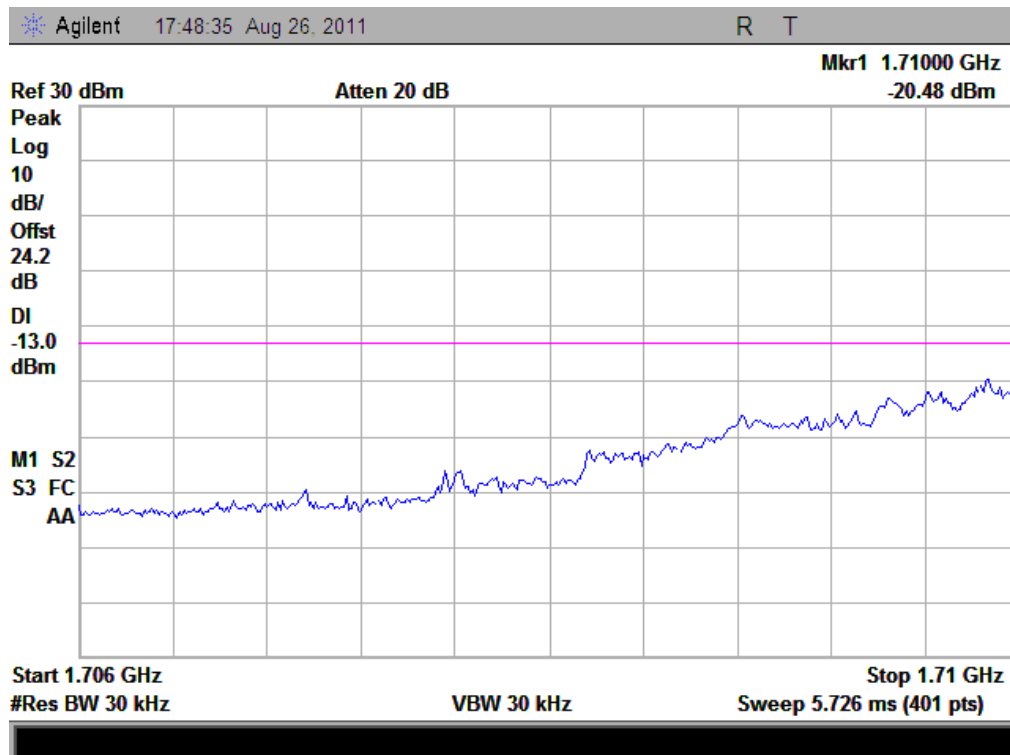
(Plot F: CDMA-EVDO 800MHz Channel = 777)



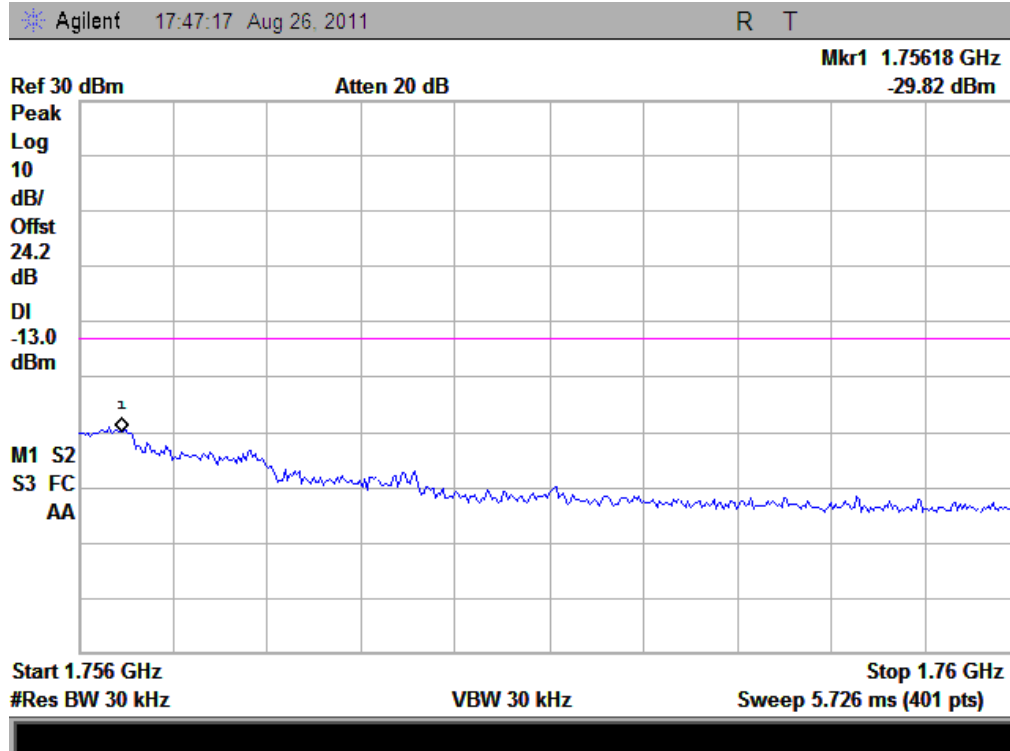
(Plot G: CDMA-EVDO 1900MHz Channel = 25)



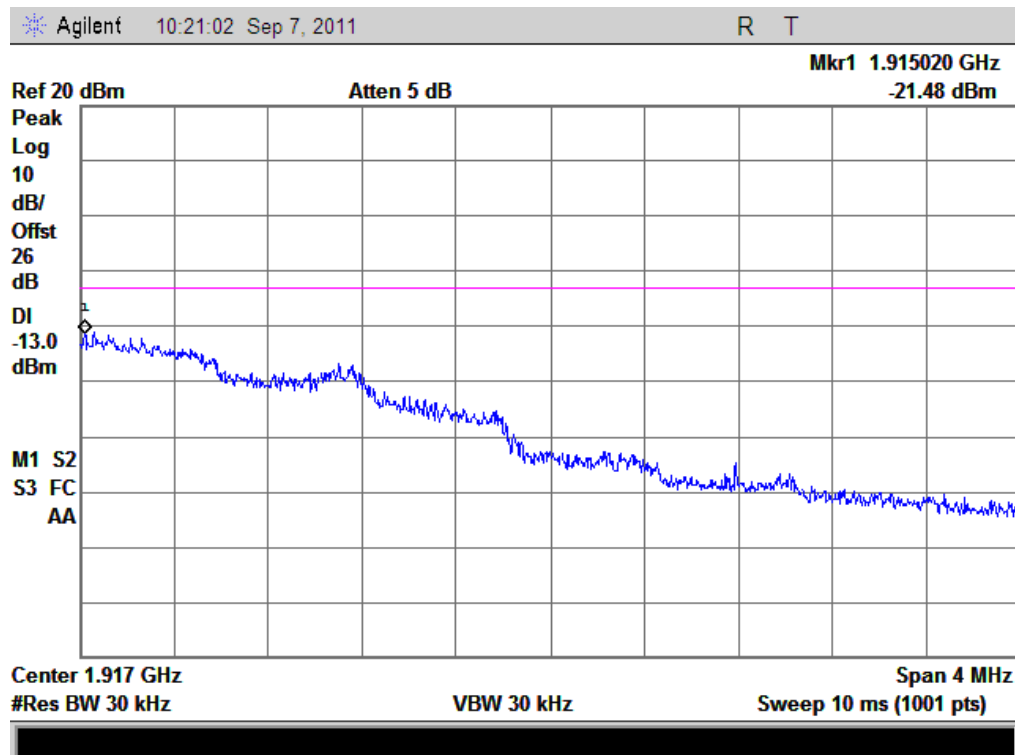
(Plot H: CDMA-EVDO 1900MHz Channel = 1175)



(Plot I: AWS 1711.25 MHz Channel = 25)



(Plot J: AWS 1753.75 MHz Channel = 875)



(Plot K: AWS 1753.75 MHz Channel = 1175)

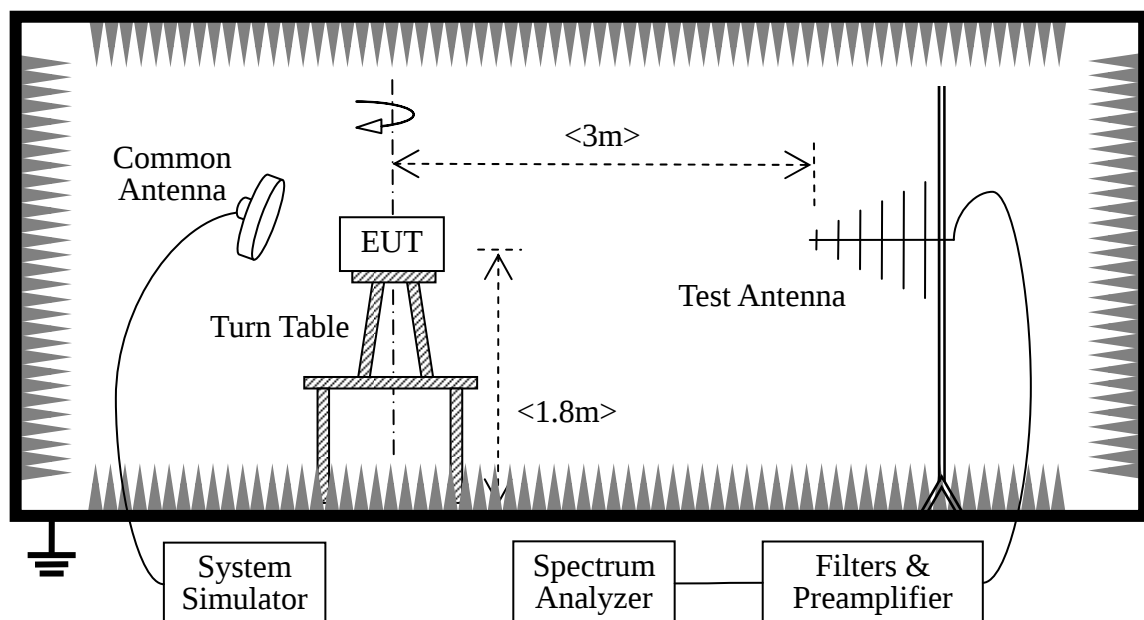
2.6 Transmitter Radiated Power (EIRP/ERP)

2.6.1 Requirement

According to FCC section 22.913 and RSS-132 section 4.6, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232 and RSS-133 section 4.2, 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): $RBW=VBW=1\text{MHz}$, for CDMA modulated signal: $RBW=VBW=3\text{MHz}$.
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: CDMA800 29.04dBm, CDMA 1900 27.89dBm, EVDO800 25.3 dBm, EVDO 1900 25.72dBm, AWS1700 27.18dBm, G block 23.97dBm;

- Step size (dB): 3dB

- Minimum RF power: CDMA800 -0.5dBm, CDMA 1900 -0.7dBm, EVDO800 -0.5dBm, EVDO 1900 -0.7dBm, AWS1700 -0.7dBm, G block -0.8dBm

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:

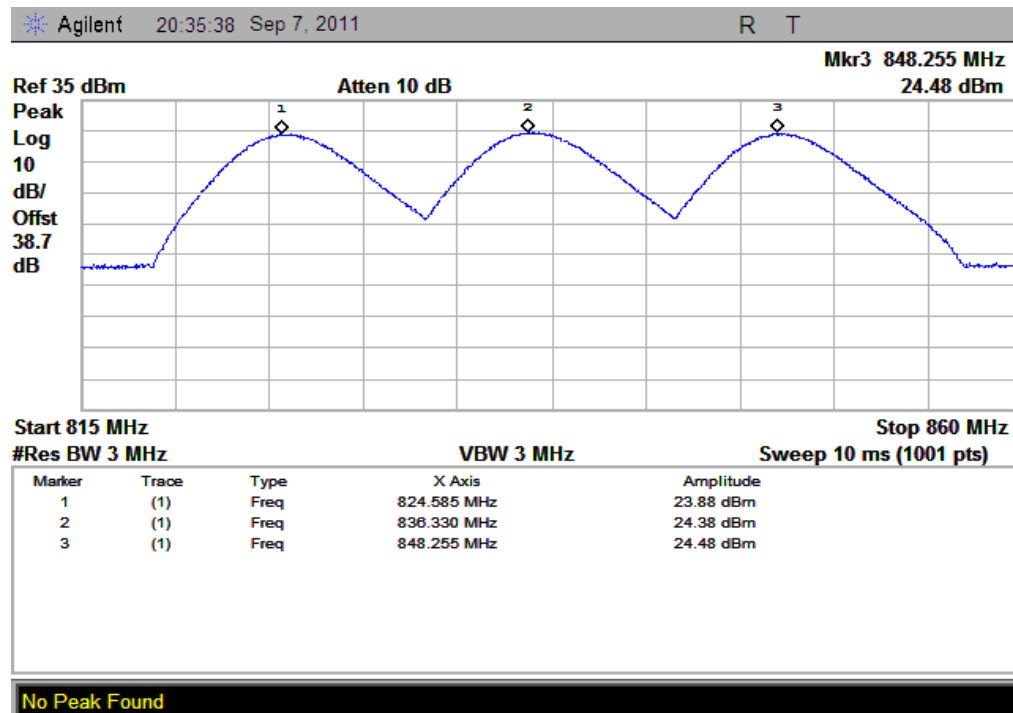
Test result of ERP:

No.	Channel	Frequency (MHz)	Measured ERP		Limit	
			dBm	W	dBm	W
CDMA 800MHz	1013	824.7	23.88	0.244343	38.5	7
	384	836.52	24.38	0.274157		
	777	848.31	24.45	0.278612		
EVDO 800MHz	1013	824.7	22.54	0.179473	38.5	7
	384	836.52	18.53	0.071285		
	777	848.31	20.68	0.11695		

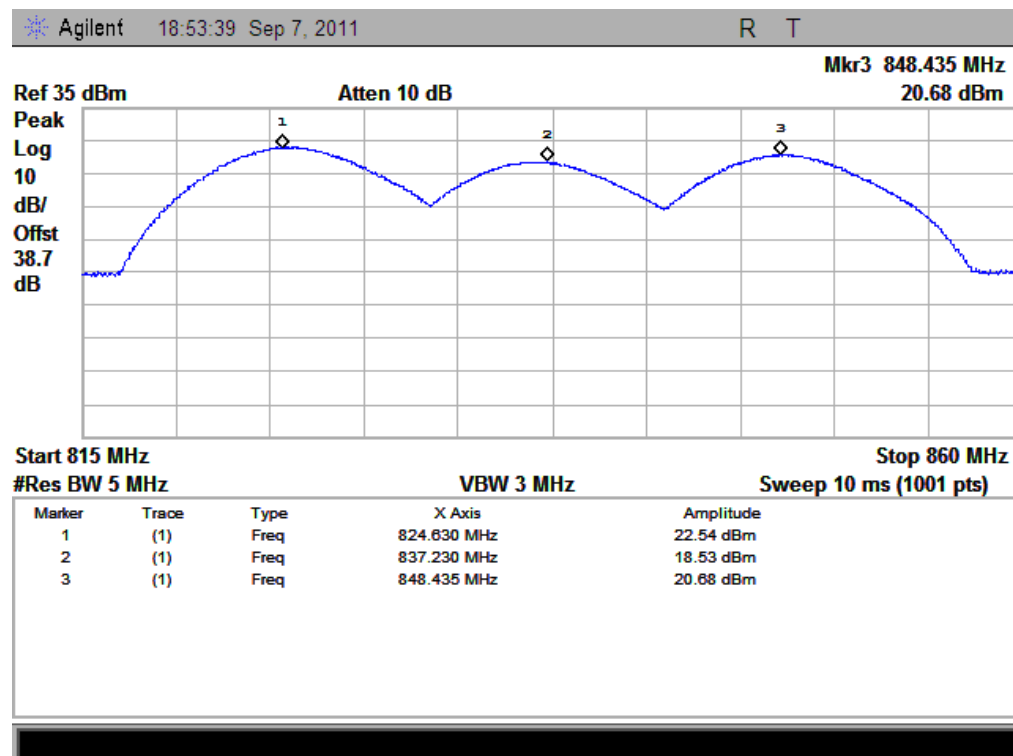
Test result of EIRP:

No.	Channel	Frequency (MHz)	Measured EIRP		Limit	
			dBm	W	dBm	W
CDMA 1900MHz	25	1850.2	22.86	0.193197	33	2
	600	1880.0	21.34	0.136144		
	1175	1909.8	24.08	0.255859		
G Block	1275	1914.0	22.97	0.198153	33	2
EVDO 1900MHz	25	1850.2	19.85	0.096605	33	2
	600	1880.0	21.09	0.128529		
	1175	1909.8	21.46	0.139959		
AWS 1700MHz	25	1711.25	21.18	0.13122	33	2
	450	1732.5	20.29	0.106905		
	875	1753.75	21.82	0.152055		

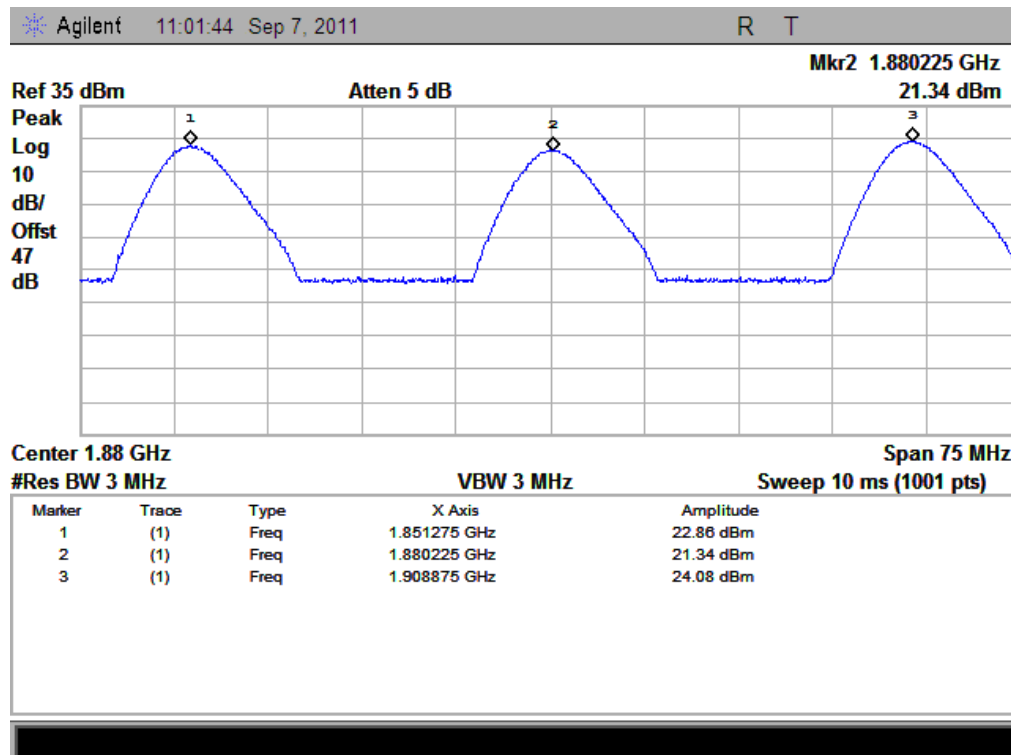
2. Test Plots:



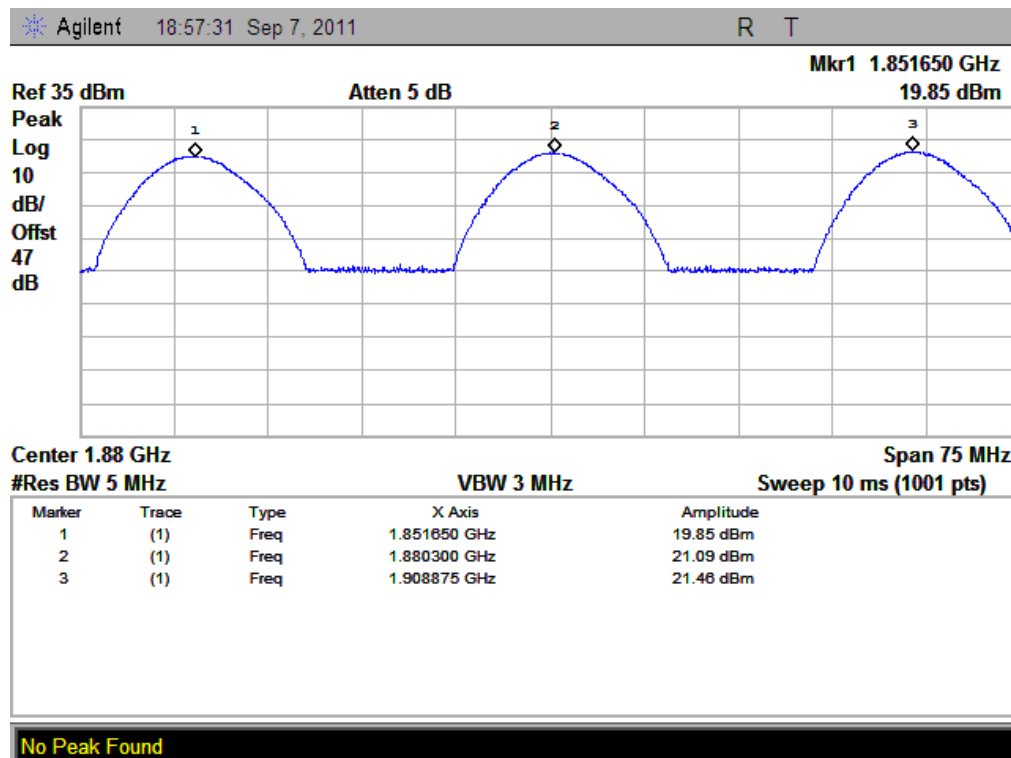
(Plot A: CDMA 800MHz Channel = 1013,384, 777)



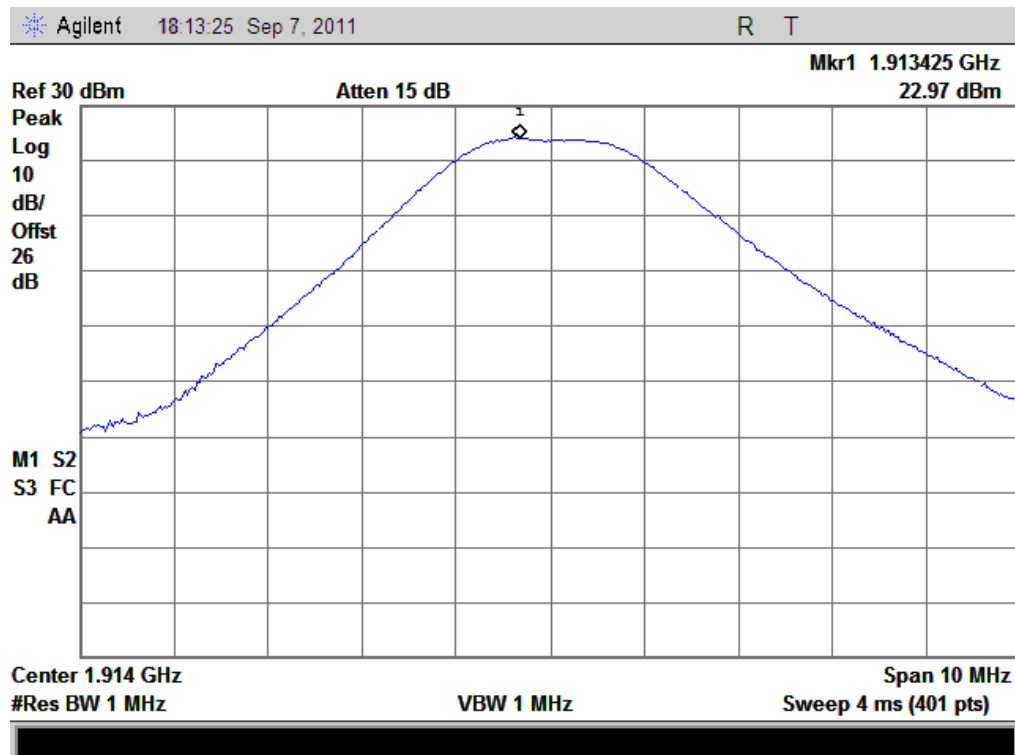
(Plot B: CDMA-EVDO 800MHz Channel = 1013,384, 777)



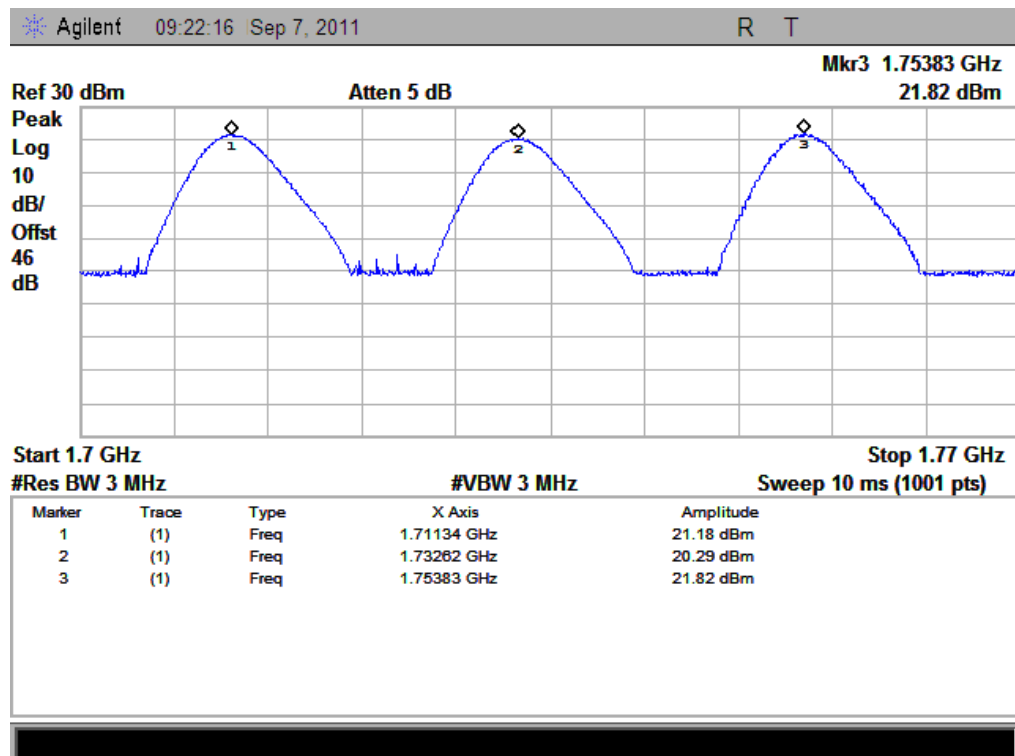
(Plot C: CDMA 1900MHz Channel = 25, 600, 1175)



(Plot D: CDMA-EVDO 1900MHz Channel = 25, 600, 1175)



(Plot E: 1914MHz Channel = 1275)



(Plot F: AWGS 1914MHz Channel = 25, 450, 875)

2.7 Radiated Out of Band Emissions

2.7.1 Requirement

According to FCC section 2.1053 and IC RSS-GEN section 4.7, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43+10*\log(P)$ dB. This calculated to be -13dBm.

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.

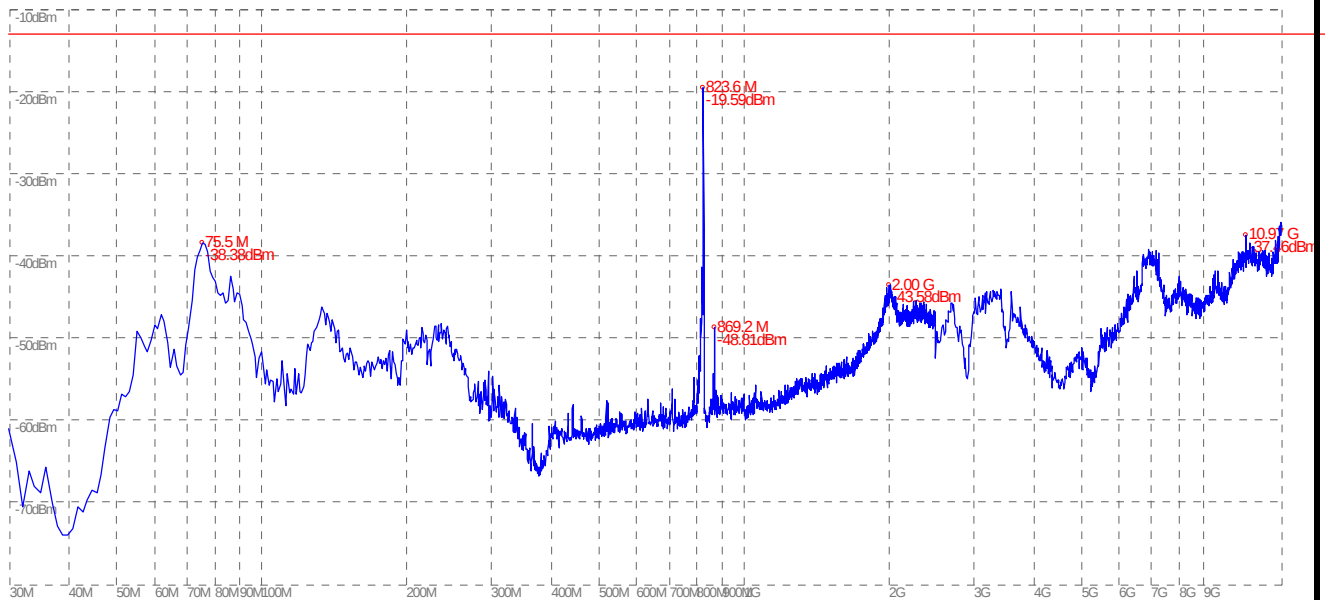
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
CDMA 800MHz	1013	1649	< -25	< -25	Plot A.1/A.2	-13	PASS
	384	1673	< -25	< -25	Plot B.1/B.2		PASS
	777	1696	< -25	< -25	Plot C.1/C.2		PASS
CDMA 1900MHz	25	3700	< -25	< -25	Plot D.1/D.2	-13	PASS
	600	3760	< -25	< -25	Plot E.1/E.2		PASS
	1175	1909.8	< -25	< -25	Plot F.1/F.2		PASS
EVDO 800MHz	1013	1649	< -25	< -25	Plot G.1/G.2	-13	PASS
	384	1673	< -25	< -25	Plot H.1/H.2		PASS
	777	1696	< -25	< -25	Plot I.1/I.2		PASS
EVDO 1900MHz	25	3700	< -25	< -25	Plot J.1/J.2	-13	PASS
	600	3760	< -25	< -25	Plot K.1/K.2		PASS

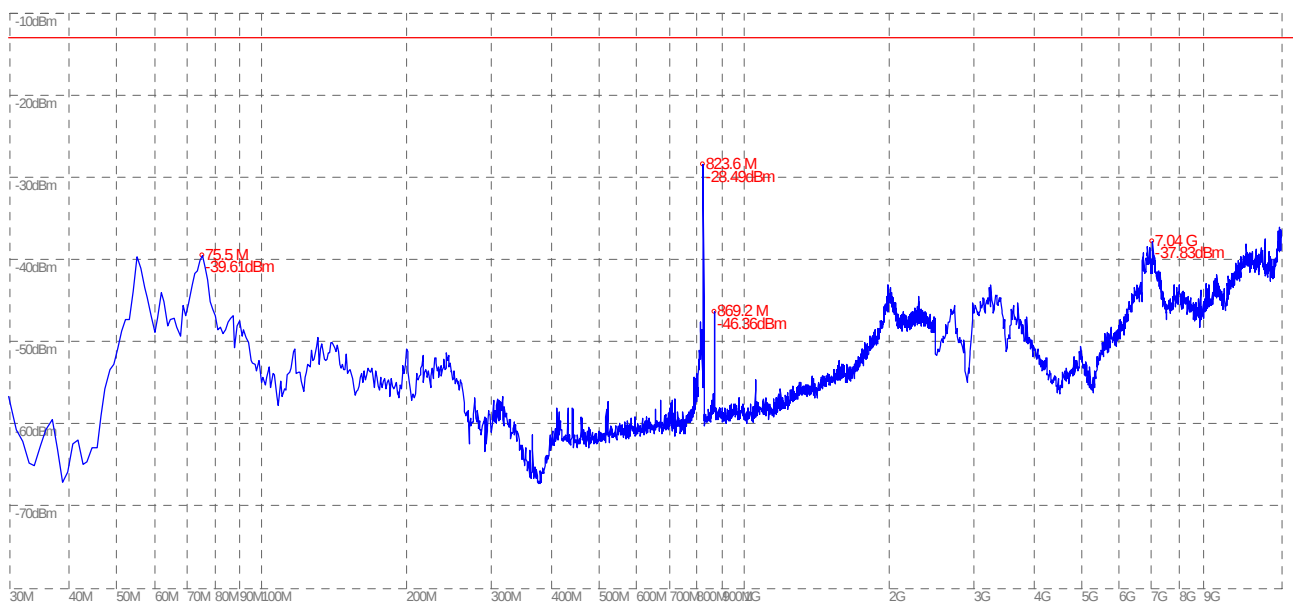
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
	1175	1909.8	< -25	< -25	Plot L.1/L.2		PASS
AWS 1700MHz	25	1711.25	< -25	< -25	Plot M.1/M.2	-13	PASS
	450	1732.5	< -25	< -25	Plot N.1/N.2		PASS
	875	1753.75	< -25	< -25	Plot O.1/O.2		PASS
G Block	1275	1914.0	< -25	< -25	Plot P.1/P.2	-13	PASS

2. Test Plots for the Whole Measurement Frequency Range:

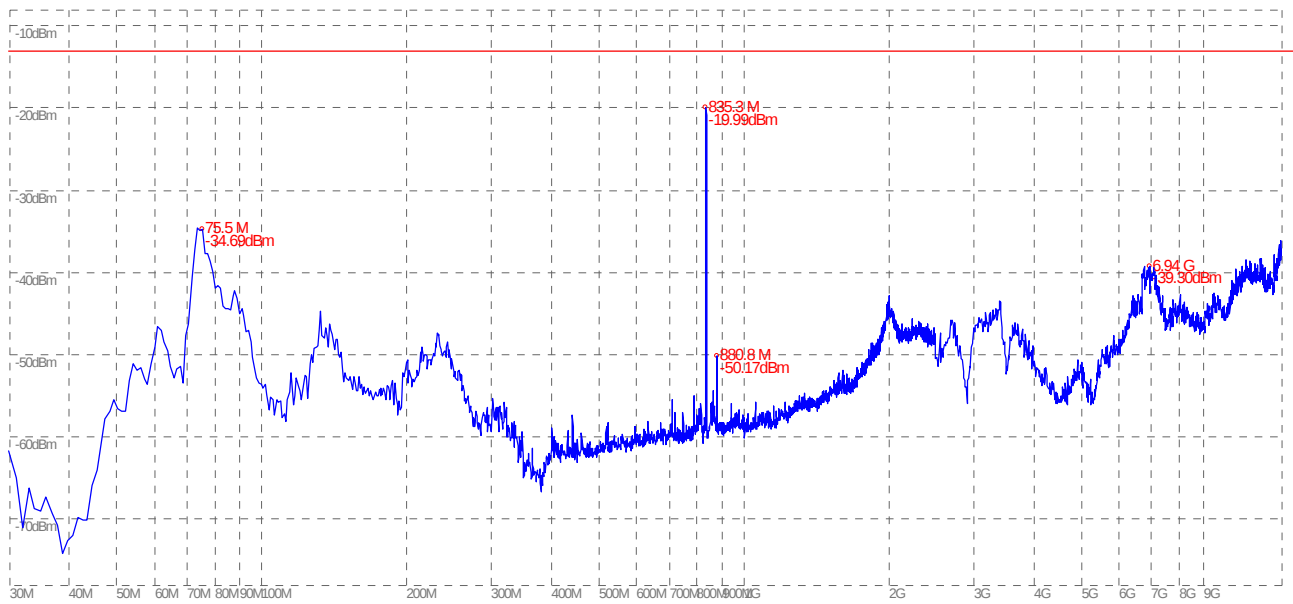
Note: the power of the EUT transmitting frequency should be ignored.



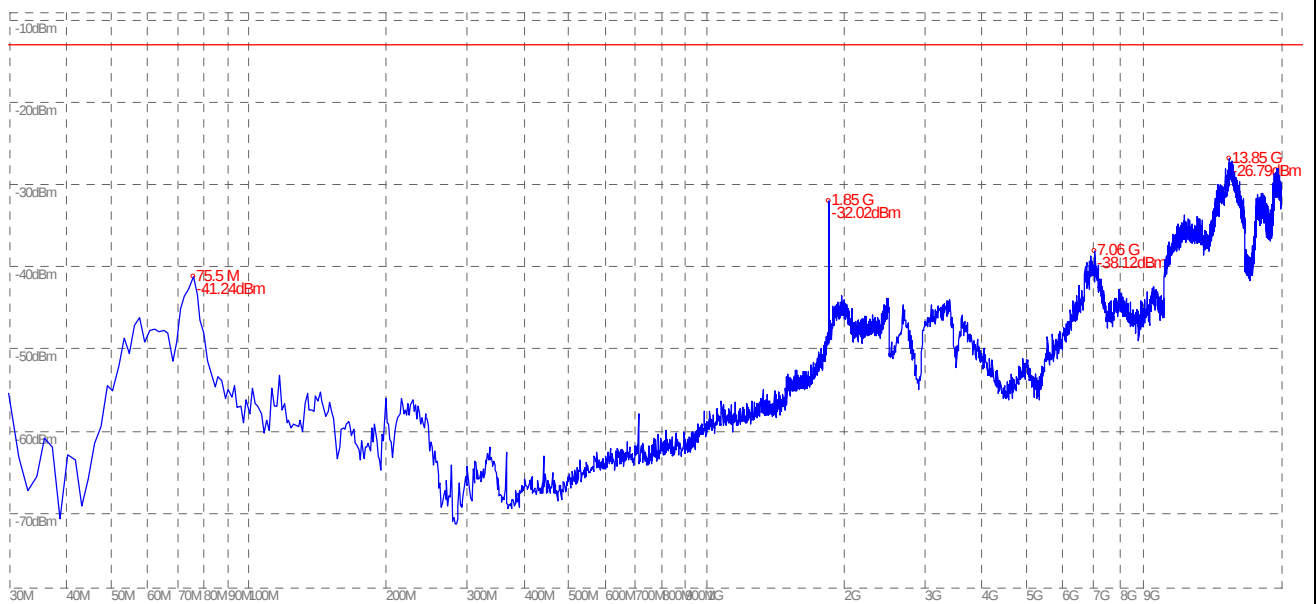
(Plot A.1: CDMA 800MHz Channel = 1013, Test Antenna Horizontal)



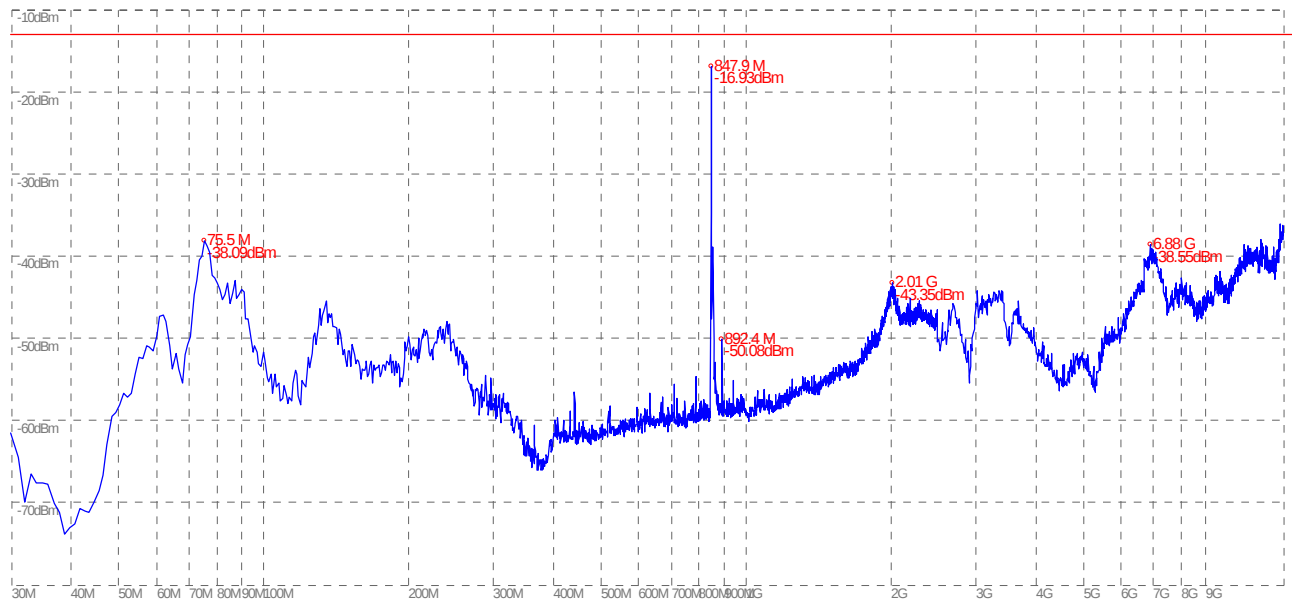
(Plot A.2: CDMA 800MHz Channel = 1013, Test Antenna Vertical)



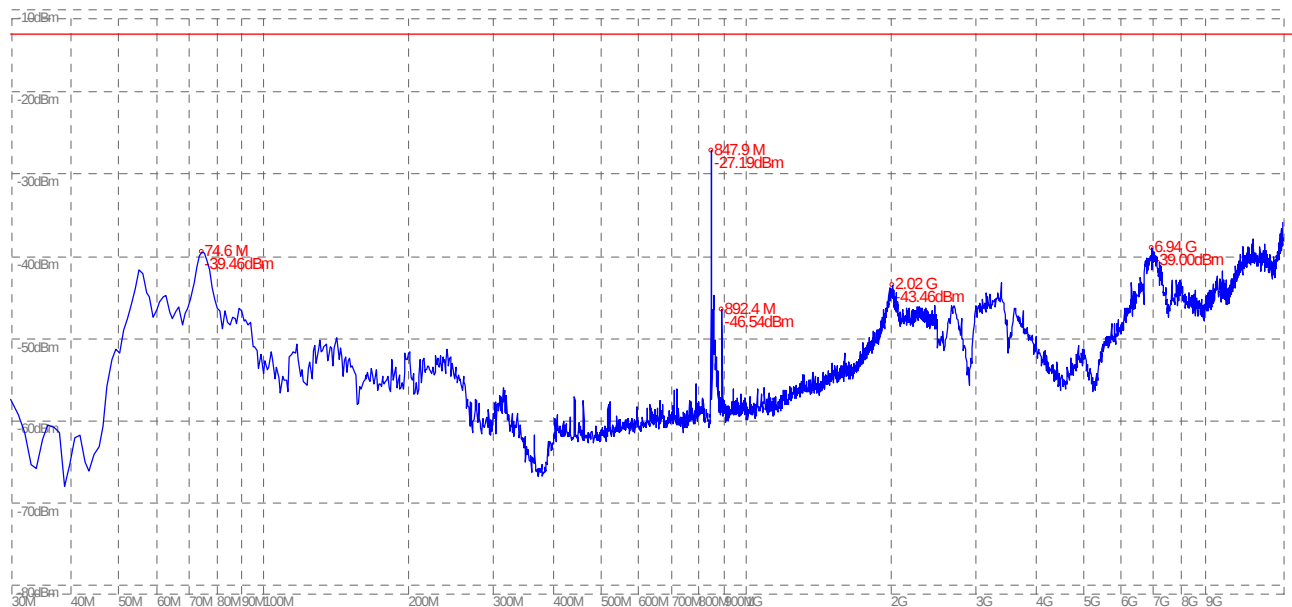
(Plot B.1: CDMA 800MHz Channel = 384, Test Antenna Horizontal)



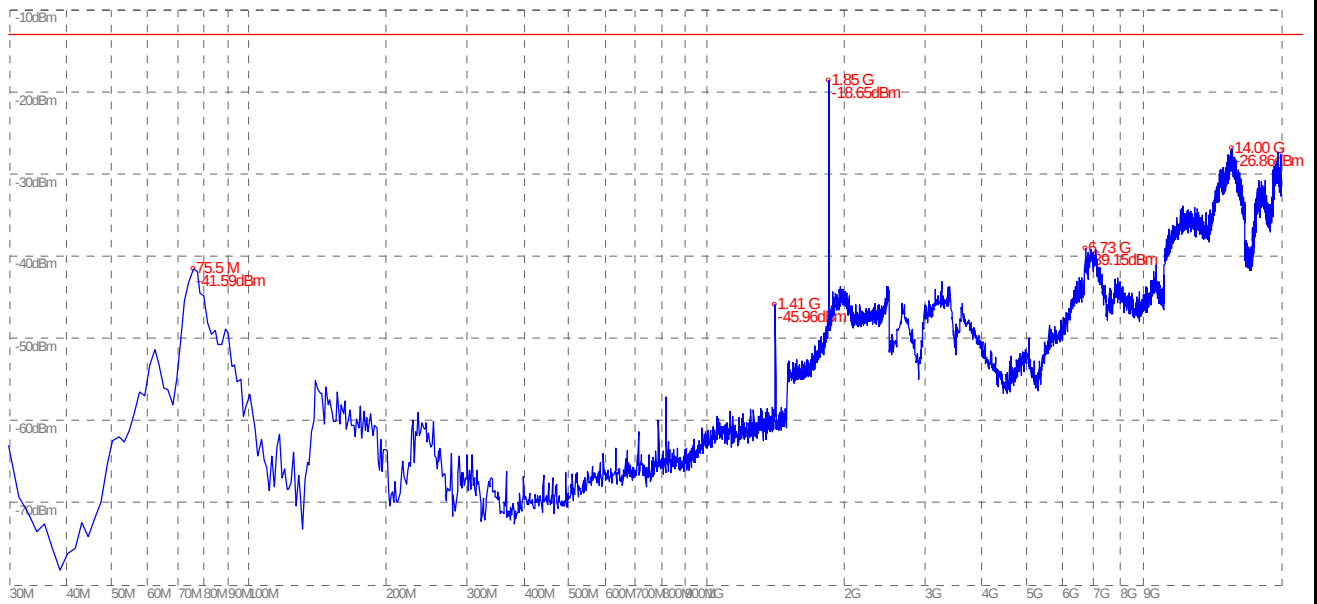
(Plot B.2: CDMA 800MHz Channel = 384, Test Antenna Vertical)



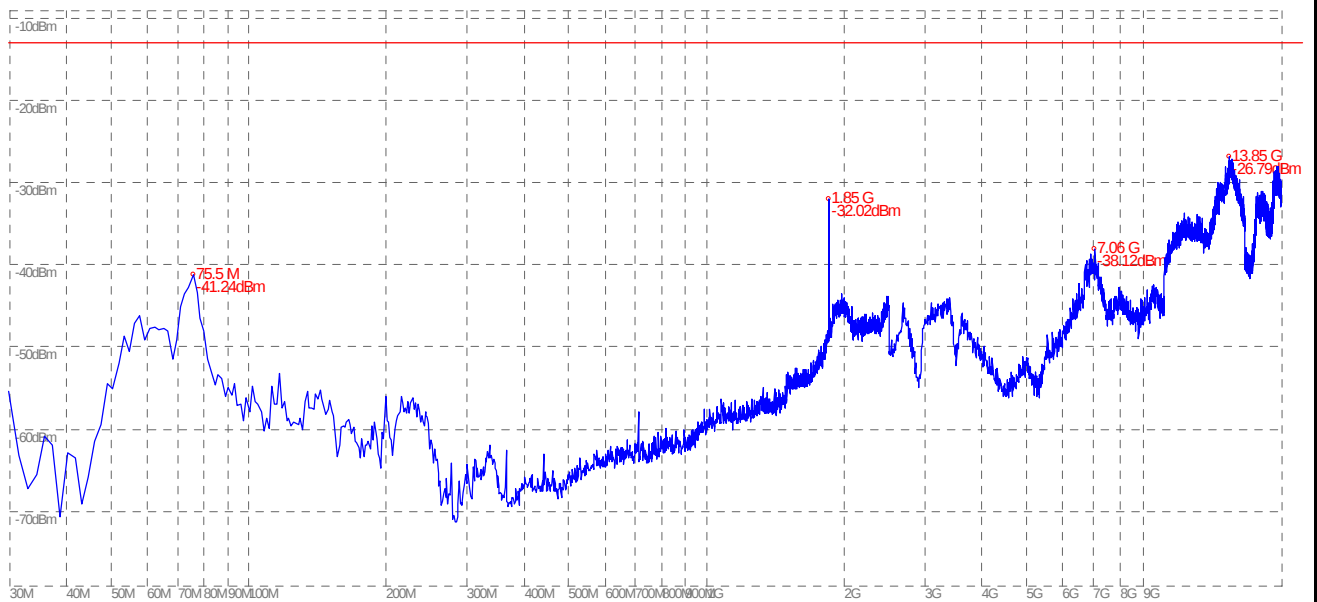
(Plot C.1: CDMA 800MHz Channel = 777, Test Antenna Horizontal)



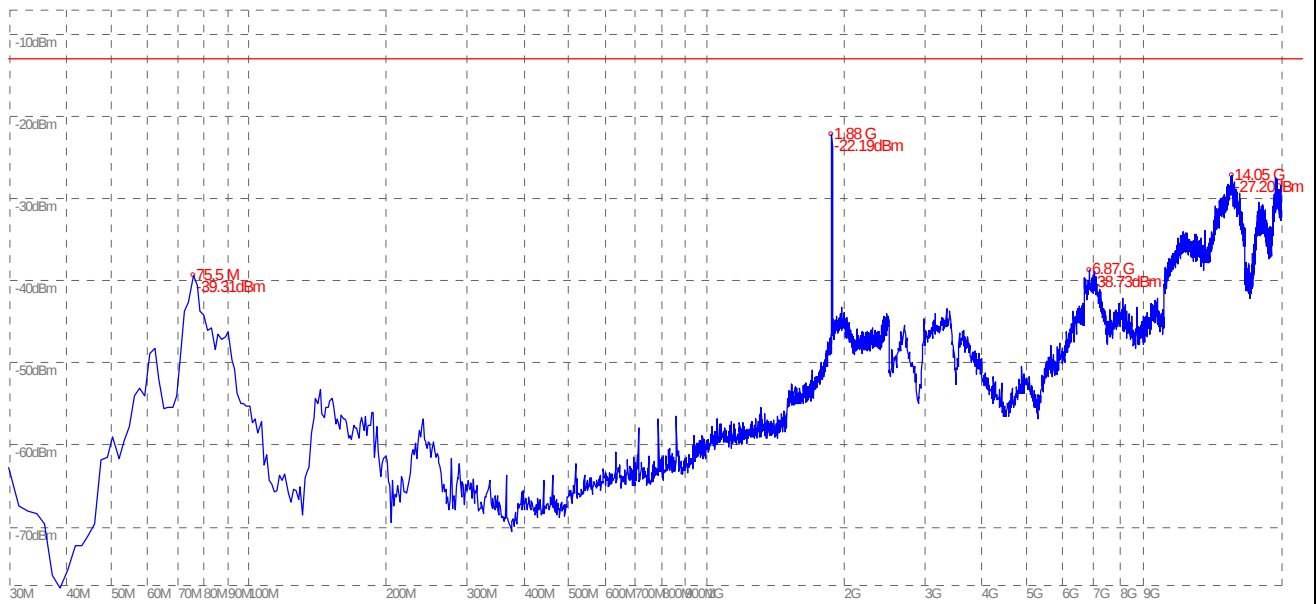
(Plot C.2: CDMA 800MHz Channel = 777, Test Antenna Vertical)



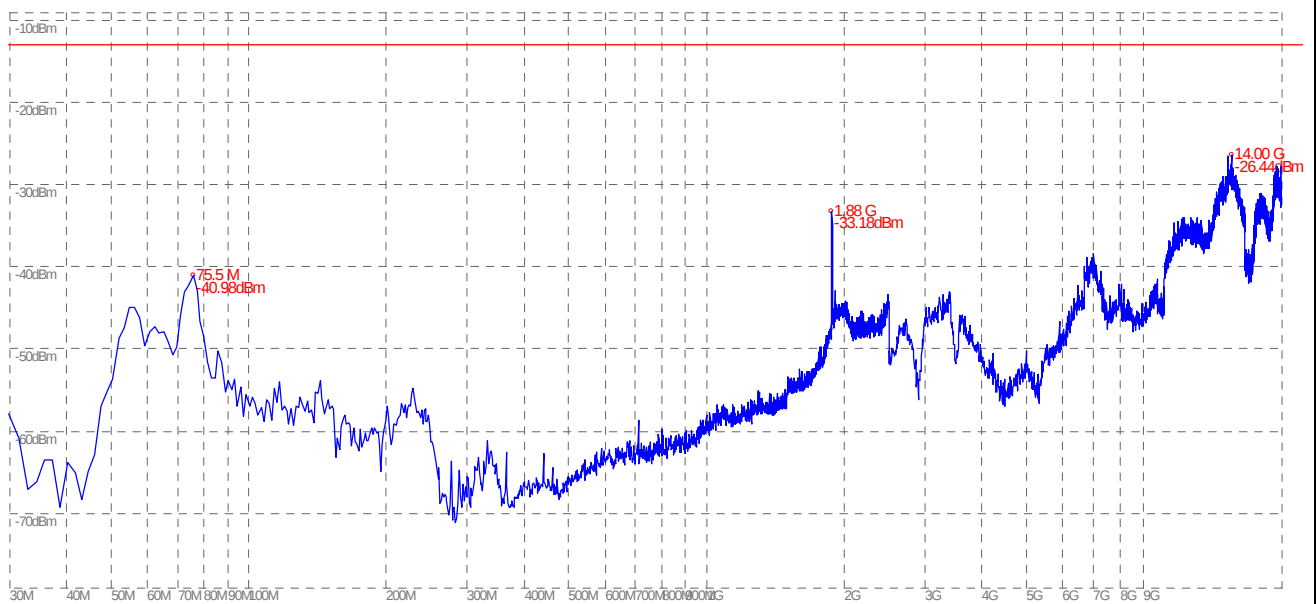
(Plot D.1: CDMA 1900MHz Channel = 25, Test Antenna Horizontal)



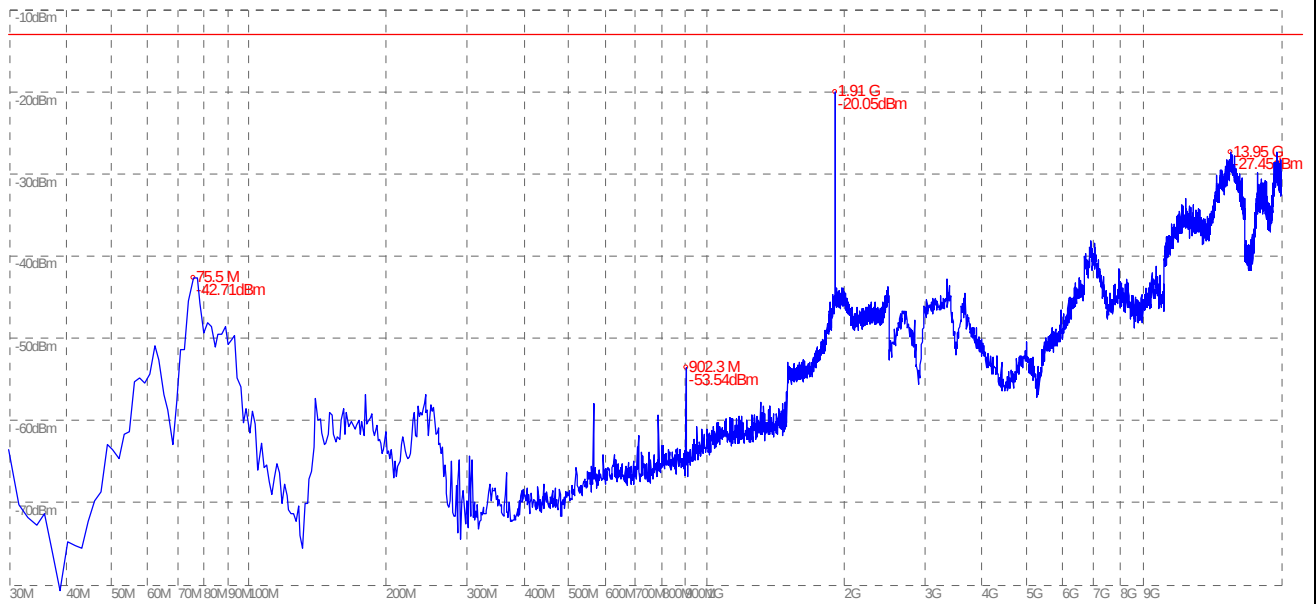
(Plot D.2: CDMA 1900MHz Channel = 25, Test Antenna Vertical)



(Plot E.1: CDMA 1900MHz Channel = 600, Test Antenna Horizontal)



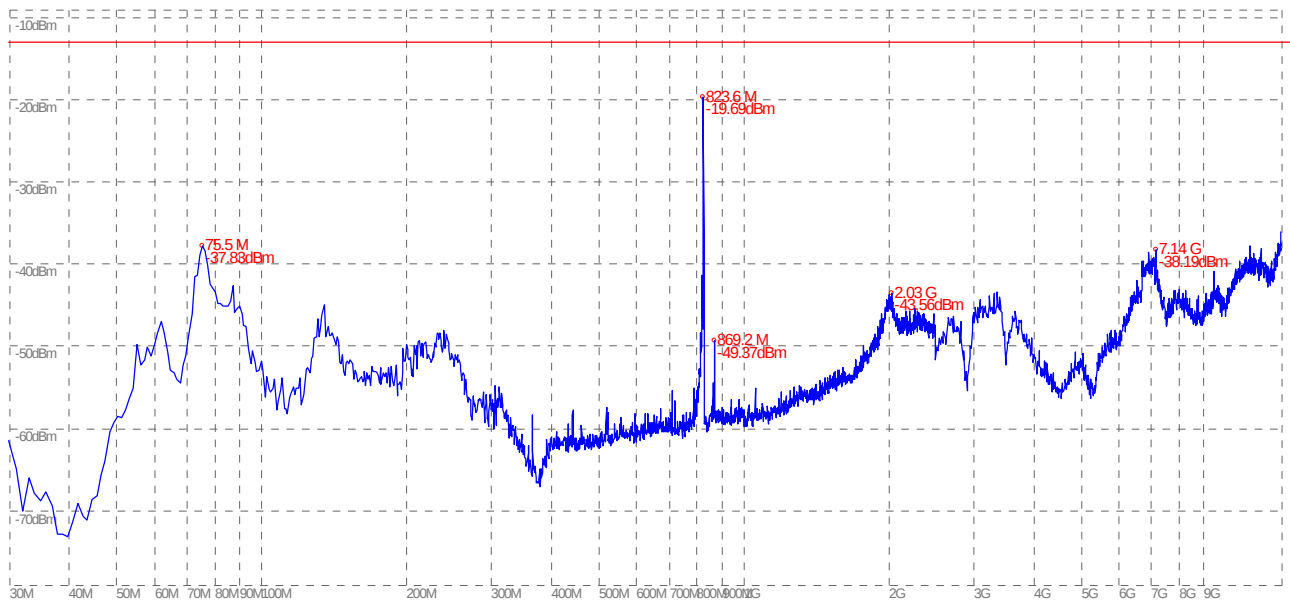
(Plot E.2: CDMA 1900MHz Channel = 600, Test Antenna Vertical)



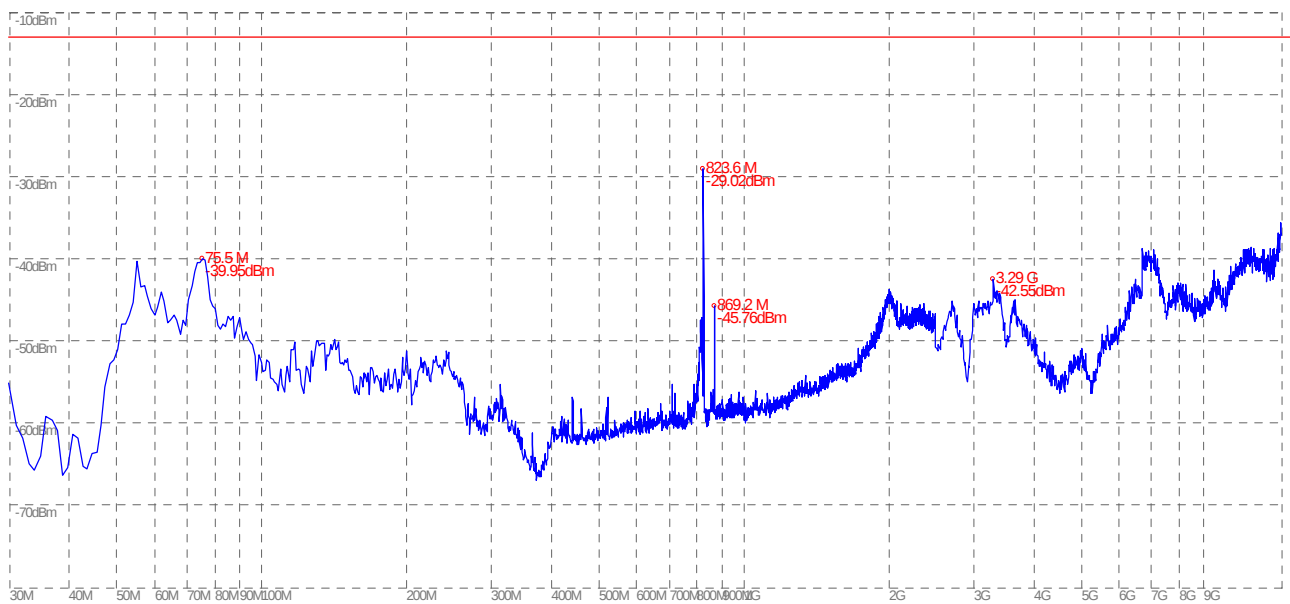
(Plot F.1: CDMA 1900MHz Channel = 1175, Test Antenna Horizontal)



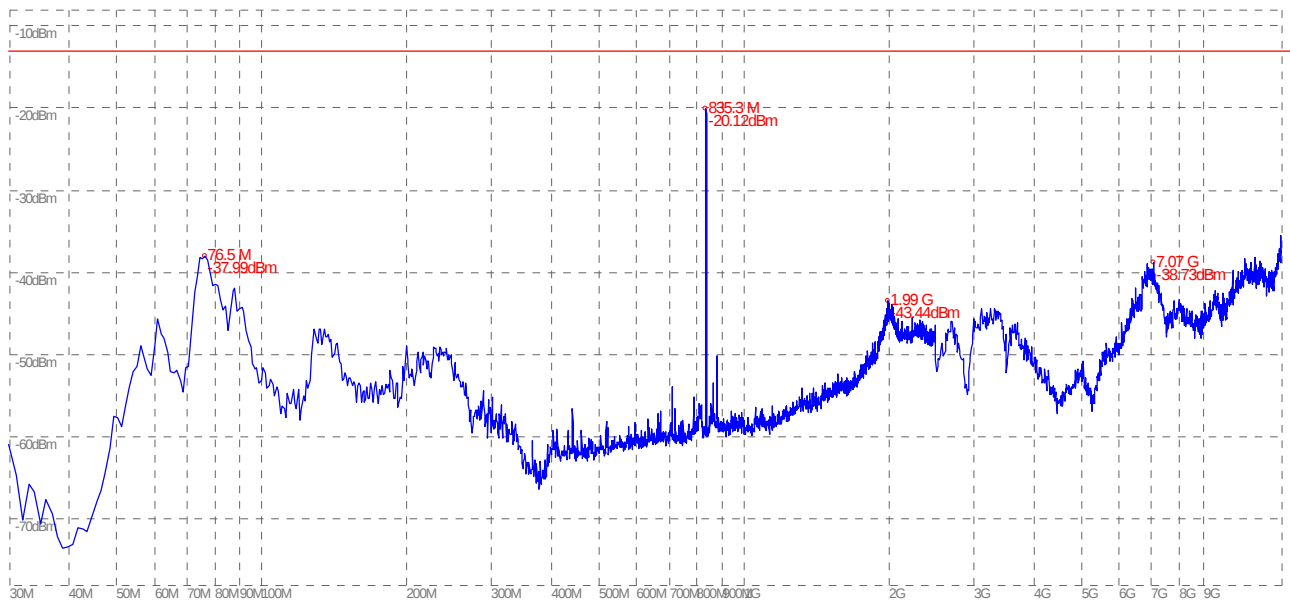
(Plot F.2: CDMA 1900MHz Channel = 1175, Test Antenna Vertical)



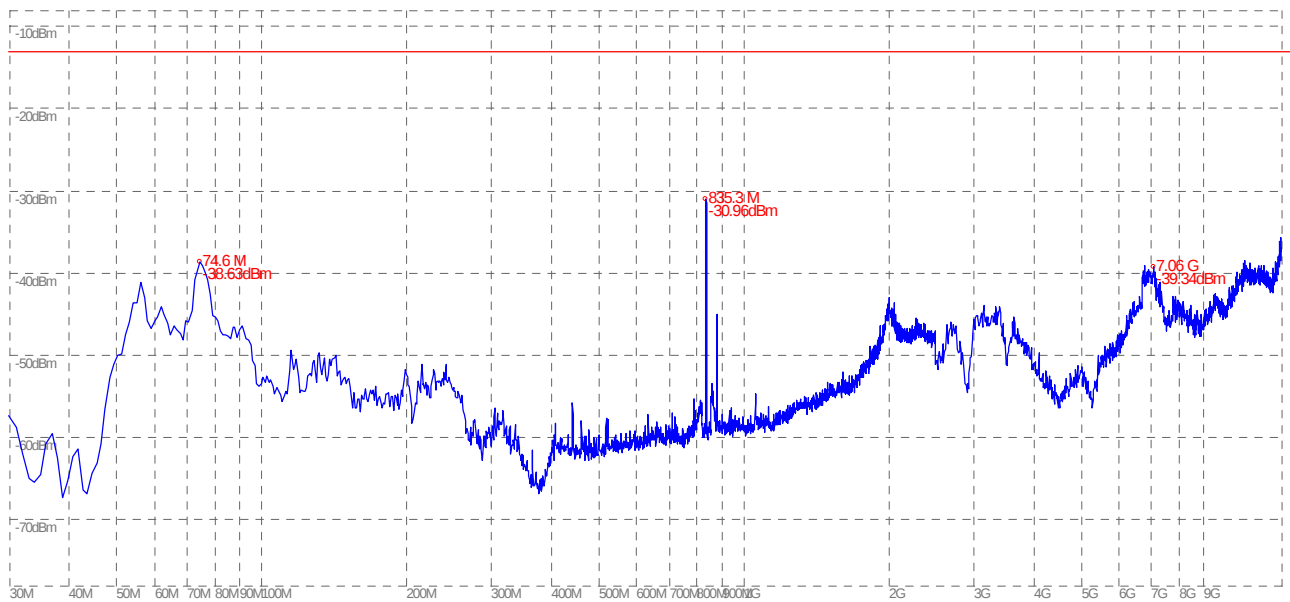
(Plot G.1: CDMA-EVDO 800MHz Channel = 1013, Test Antenna Horizontal)



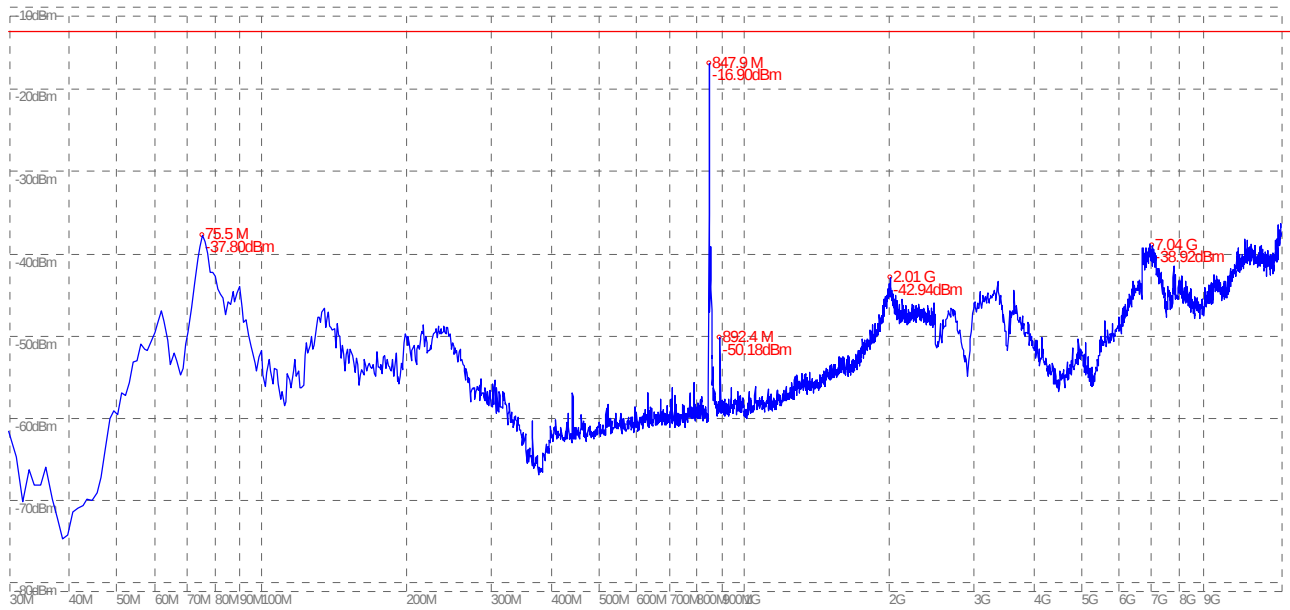
(Plot G.2: CDMA-EVDO 800MHz Channel = 1013, Test Antenna Vertical)



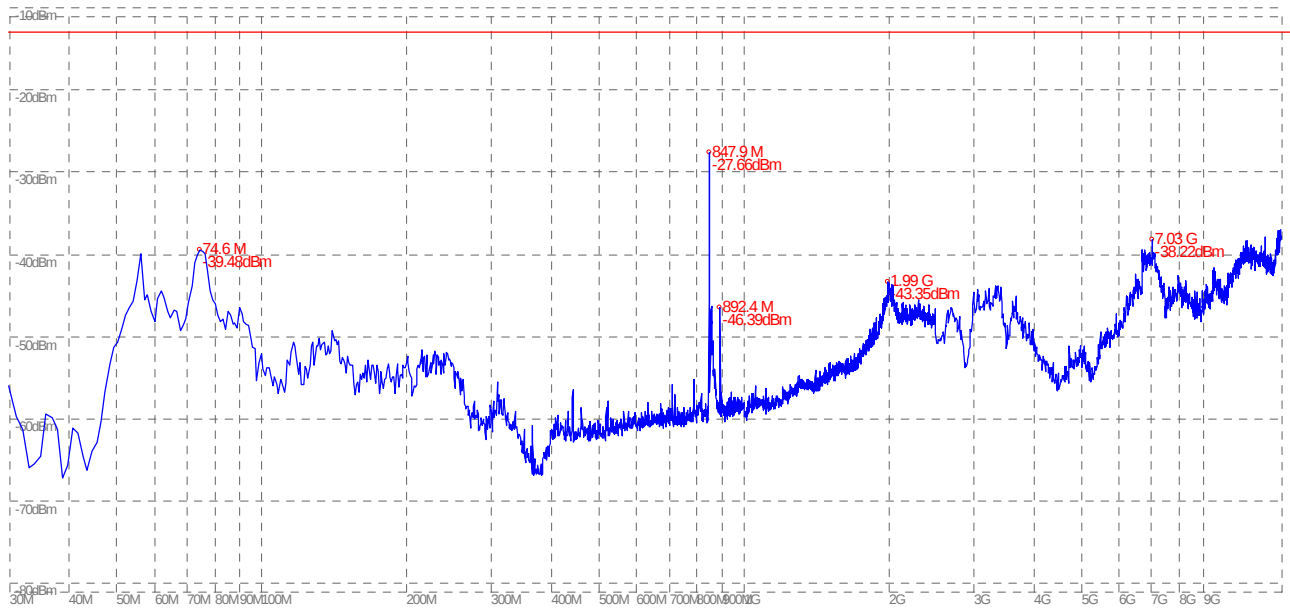
(Plot H.1: CDMA-EVDO 800MHz Channel = 384, Test Antenna Horizontal)



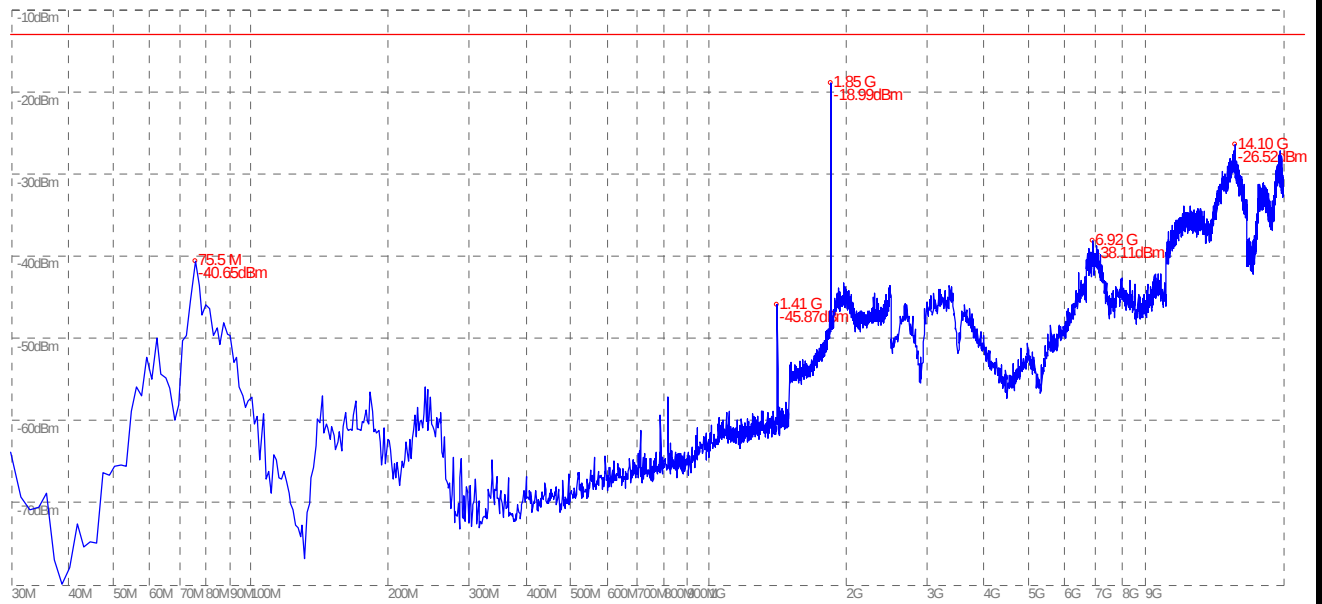
(Plot H.2: CDMA-EVDO 800MHz Channel = 384, Test Antenna Vertical)



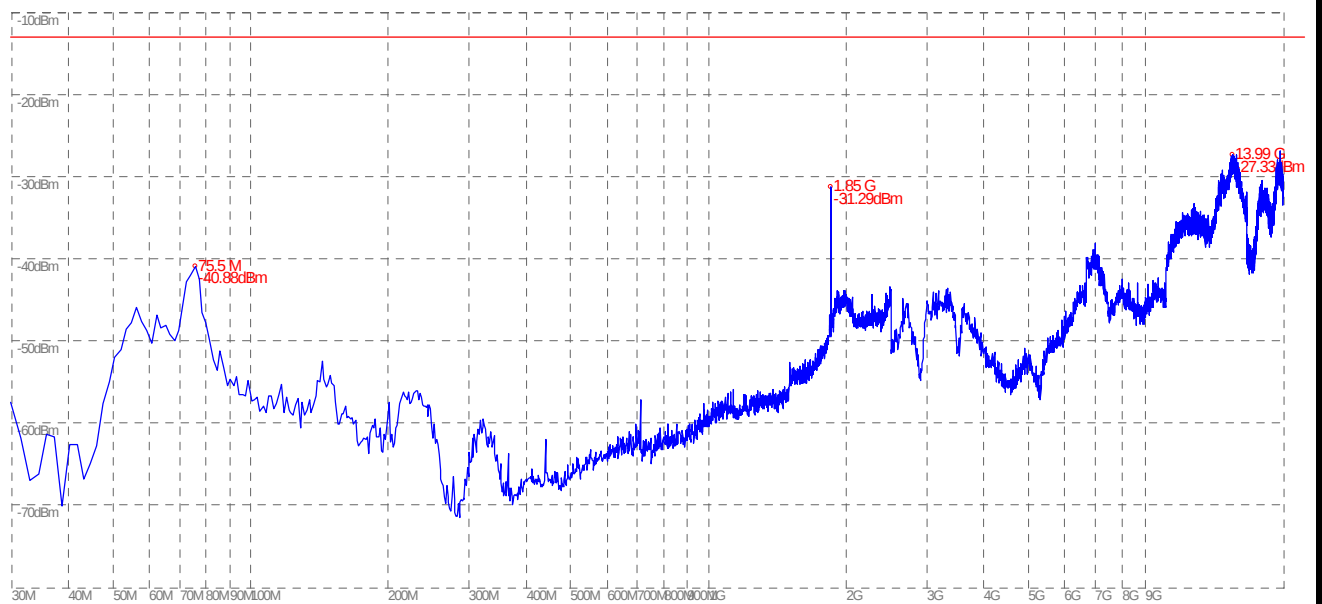
(Plot I.1: CDMA-EVDO 800MHz Channel = 777, Test Antenna Horizontal)



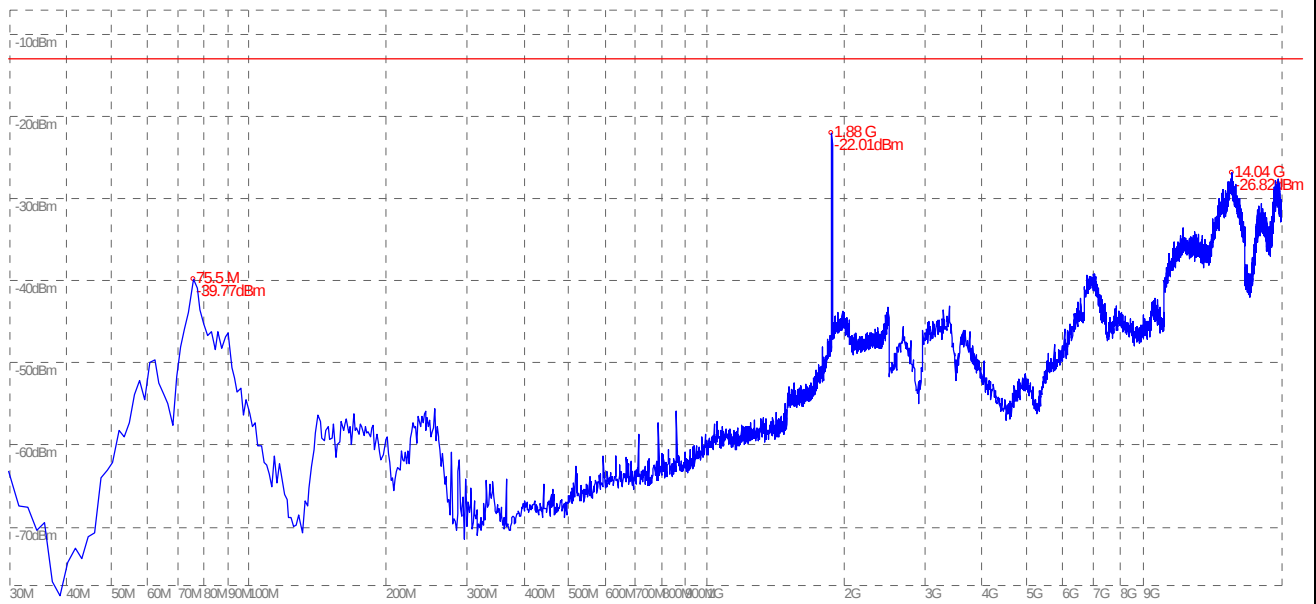
(Plot I.2: CDMA-EVDO 800MHz Channel = 777, Test Antenna Vertical)



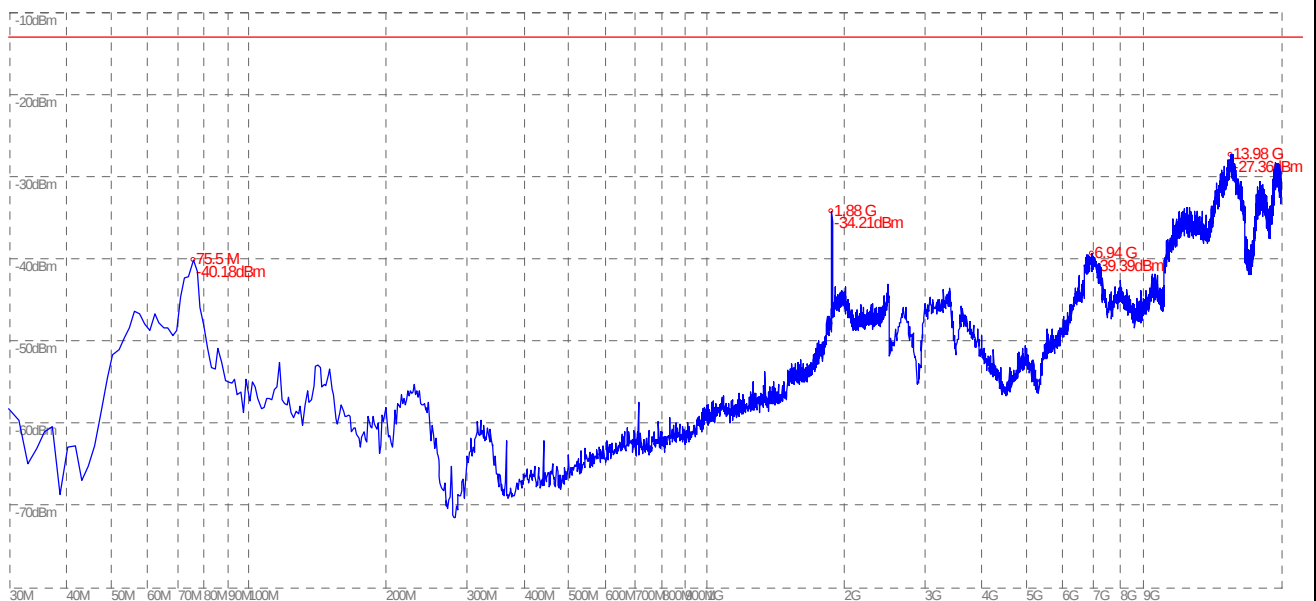
(Plot J.1: CDMA-EVDO 1900MHz Channel = 25, Test Antenna Horizontal)



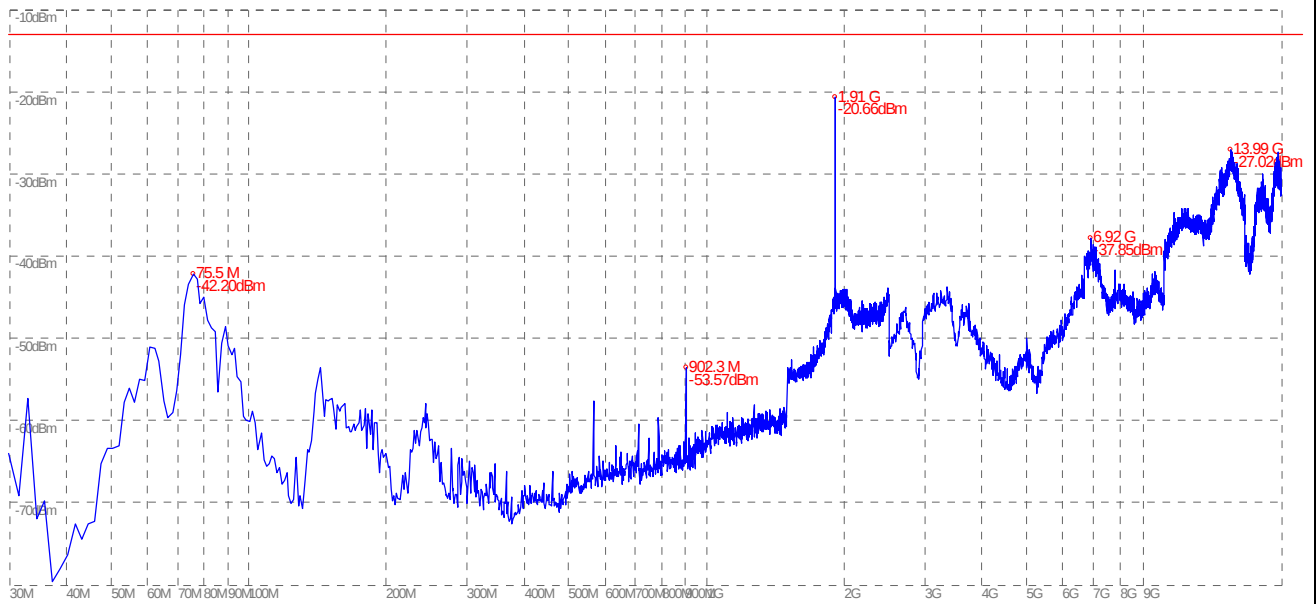
(Plot J.2: CDMA-EVDO 1900MHz Channel = 25, Test Antenna Vertical)



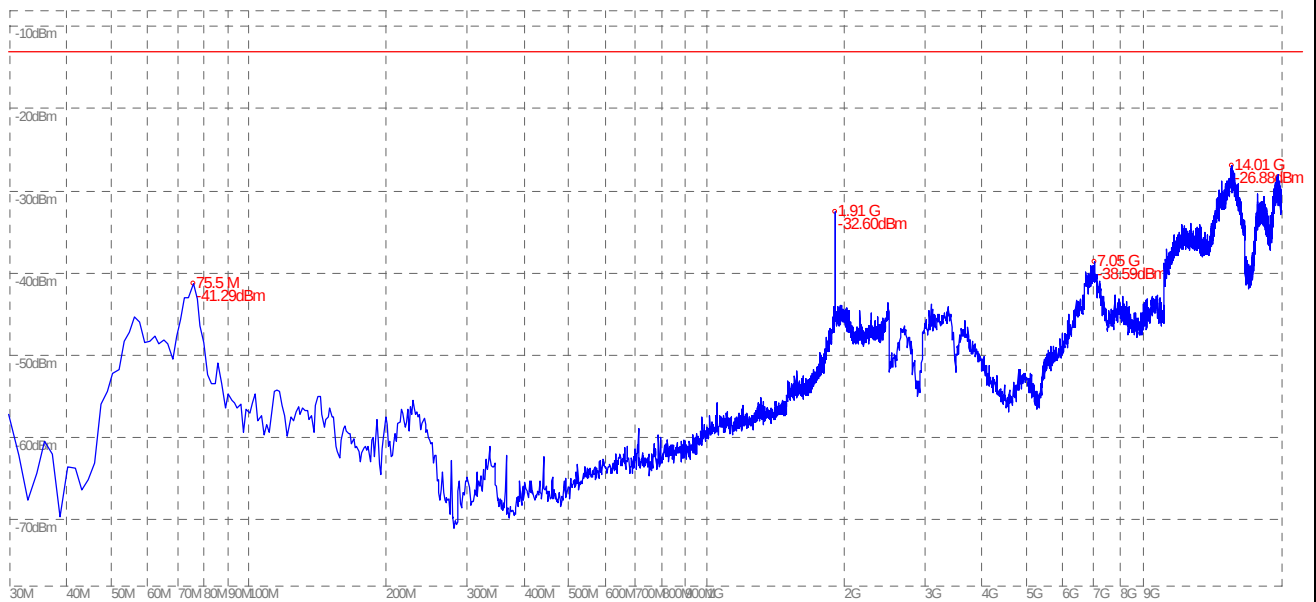
(Plot K.1: CDMA-EVDO 1900MHz Channel = 600, Test Antenna Horizontal)



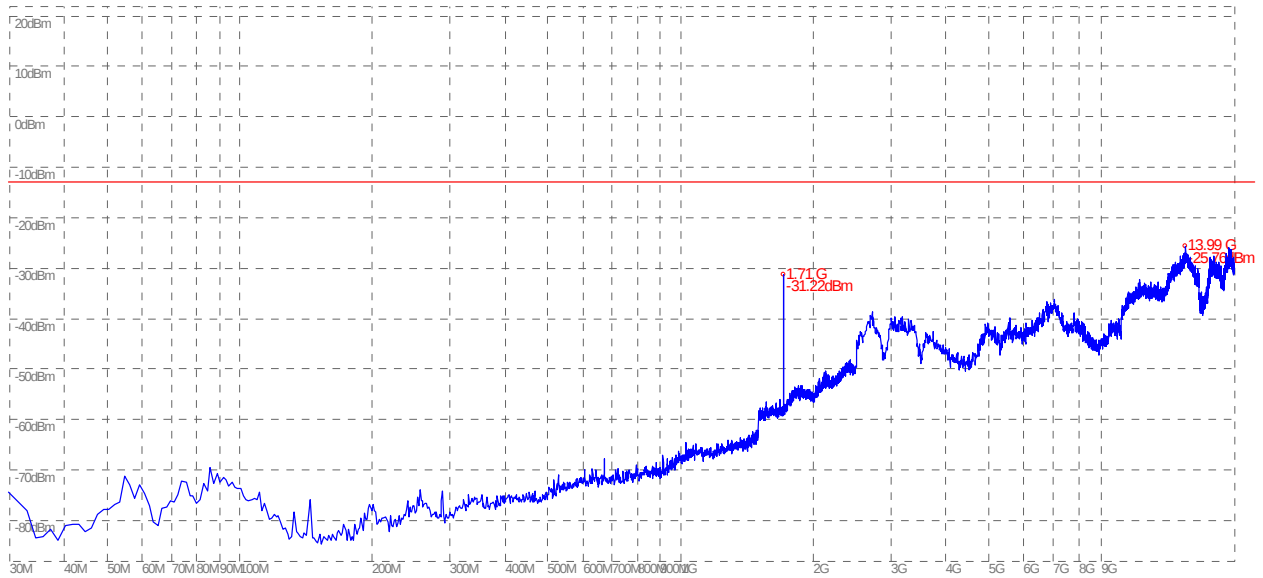
(Plot K.2: CDMA-EVDO 1900MHz Channel = 600, Test Antenna Vertical)



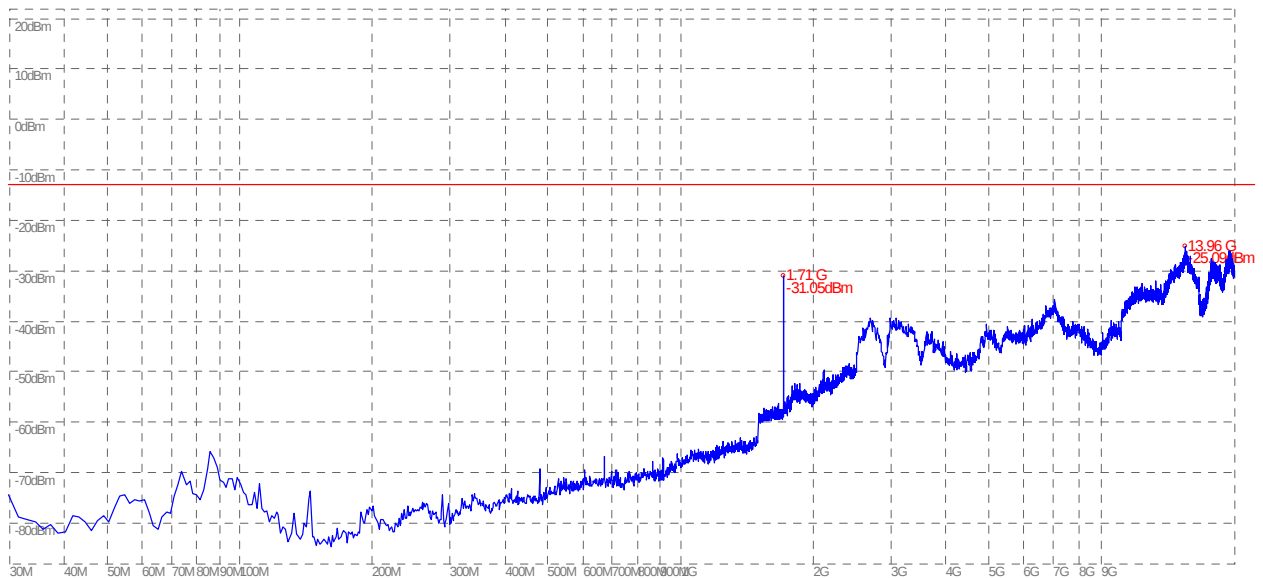
(Plot L.1: CDMA-EVDO 1900MHz Channel = 1175, Test Antenna Horizontal)



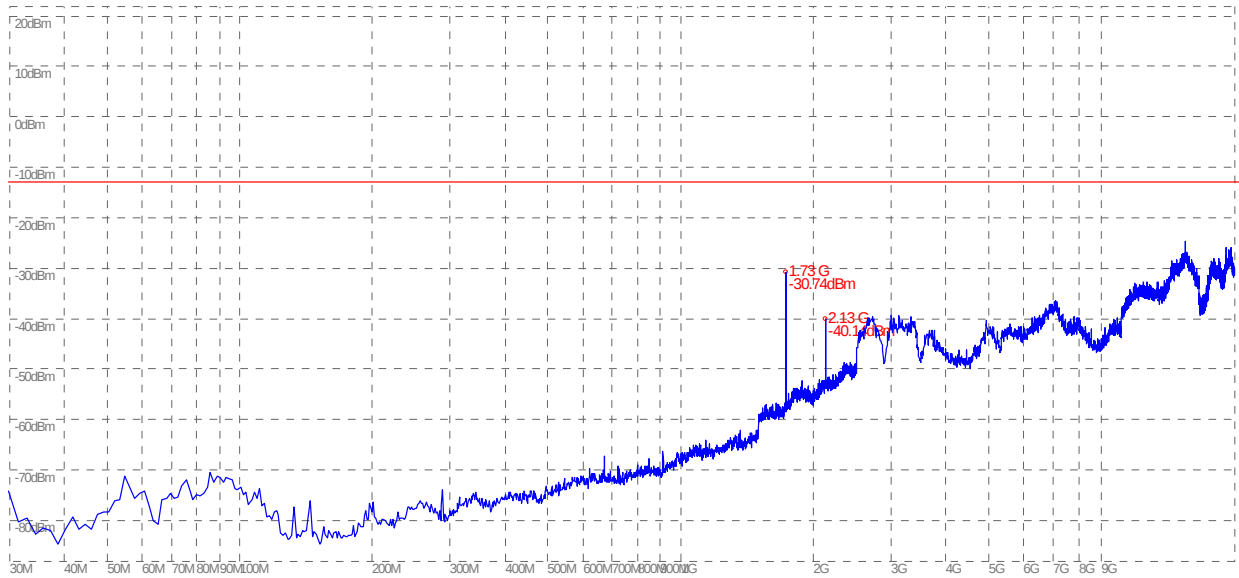
(Plot L.2: CDMA-EVDO 1900MHz Channel = 1175, Test Antenna Vertical)



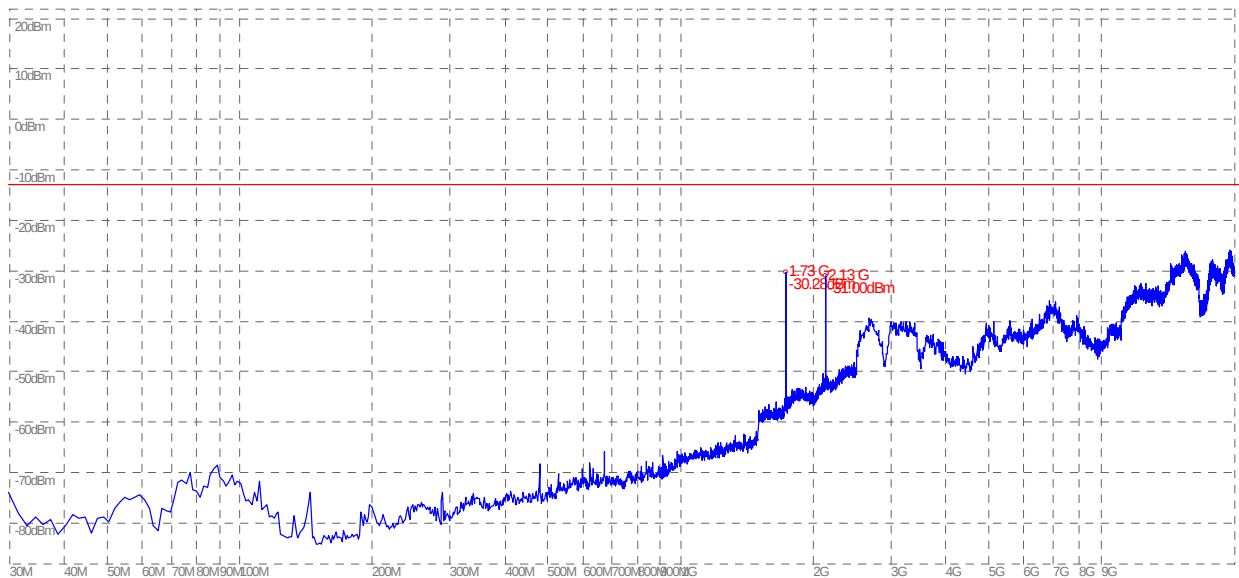
(Plot M.1: AWS 1711.25MHz Channel = 25, Test Antenna Horizontal)



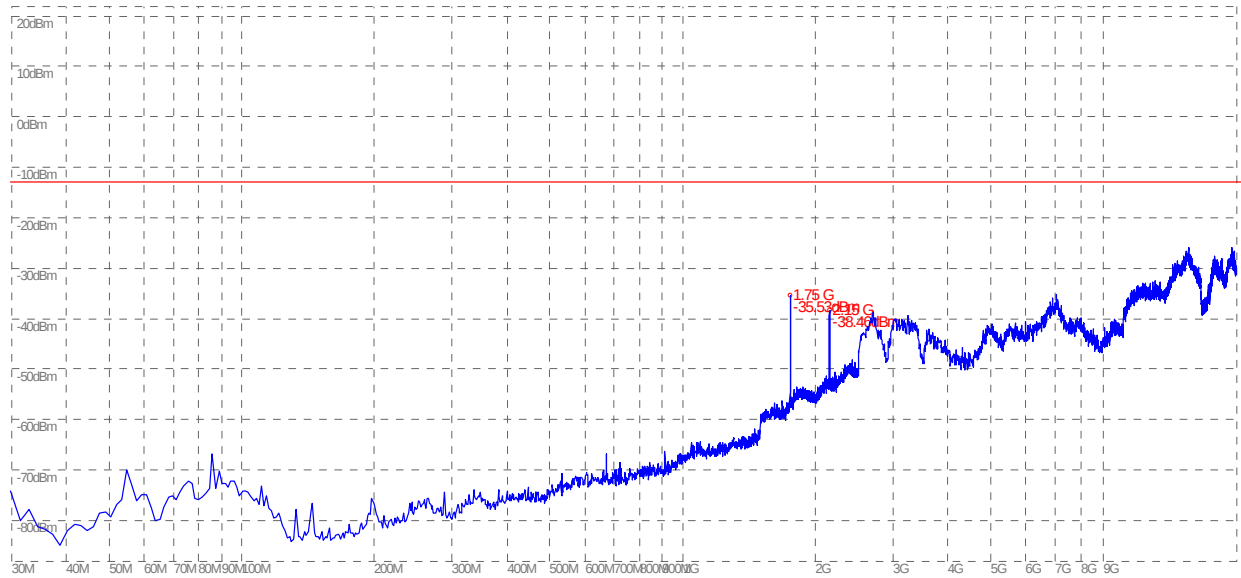
(Plot M.2: AWS 1711.25MHz Channel = 25, Test Antenna Vertical)



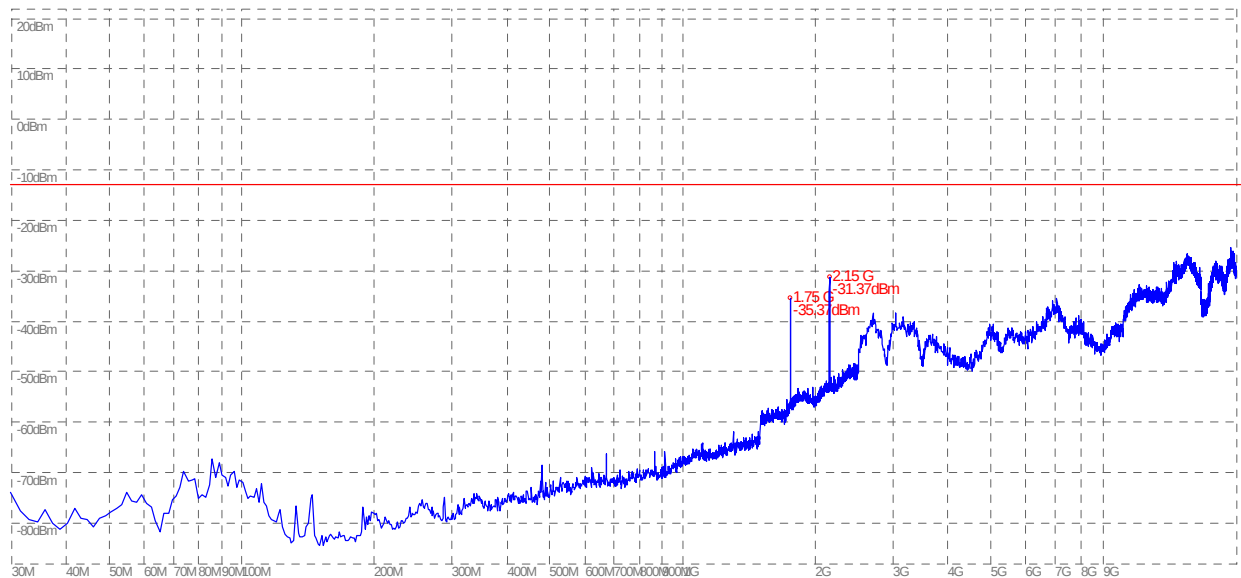
(Plot N.1: AWS 1732.5MHz Channel = 450, Test Antenna Horizontal)



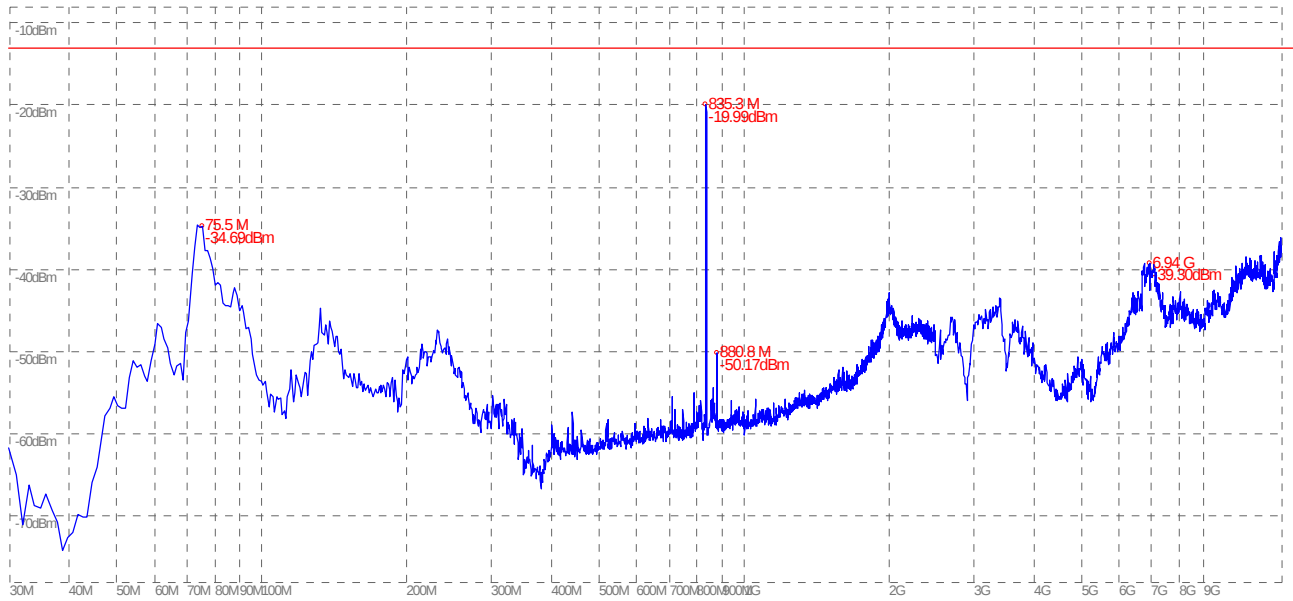
(Plot N.1: AWS 1732.5MHz Channel = 450, Test Antenna Vertical)



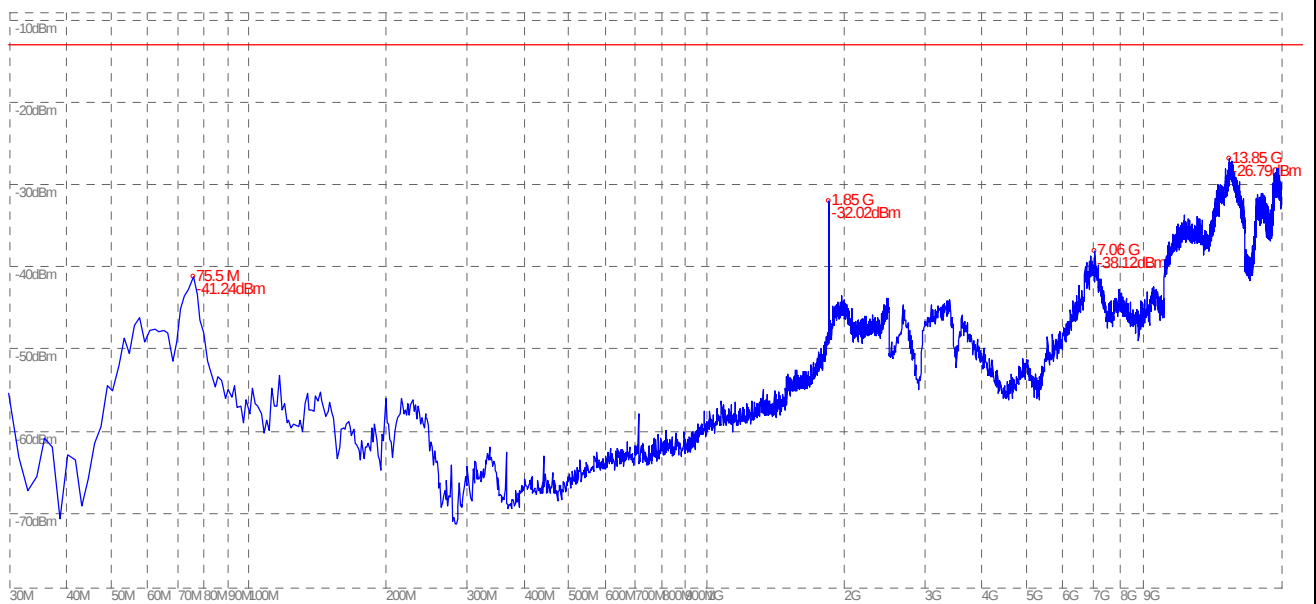
(Plot O.1: AWS 1753.75MHz Channel = 875, Test Antenna Horizontal)



(Plot O.2: AWS 1753.75MHz Channel = 875, Test Antenna Vertical)



(Plot B.1: 1914 MHz Channel = 1257, Test Antenna Horizontal)



(Plot B.2: 1914MHz Channel = 1257, Test Antenna Vertical)

**** END OF REPORT ****