FCC RF TEST REPORT

APPLICANT	:	ZTE Corporation
PRODUCT NAME	:	3G EVDO Wireless data terminal
MODEL NAME	:	ZTE AC70
TRADE NAME	:	ZTE
BRAND NAME	:	ZTE
FCC ID	:	SRQ-AC70
STANDARD(S)	:	47 CFR Part 22 Subpart H
ISSUE DATE	:	2015-4-27

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2015-4-27	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	3G EVDO Wireless data terminal
Model Name	ZTE AC70
Brand Name	ZTE
HW Version	AC70MB_A
SW Version	N/A
Test Standards	47 CFR Part 22 Subpart H
Test Date	2015-4-13 to 2015-4-22
Test Result	PASS

Tested by   :   _Nie Juan_

Nie Juan

Reviewed by   :   _Peng Huarui_

Peng Huarui

Approved by   :   _Zeng Dexin_

Zeng Dexin

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type .... : 3G EVDO Wireless data terminal

Model Name........................ : ZTE   AC70

Serial No. .... : (n.a, marked #1 by test site)

Hardware Version .... : AC70MB_A

Software Version .... : N/A

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 .... : CDMA 800MHz:

Tx: 824.7 – 848.31 MHz;

Rx: 869.7-893.31MHz

Modulation Type.................. : CDMA 1X

EVDO 0

EVDO A

EVDO B

Emission Designators .... : 1M27F9W

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 800MHz band used by the EUT can be represented with the formula $F(n)=824.2+0.2*(n-128)$, $128<=n<=251$; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately BC0 1013 (824.7MHz), 384 (836.52MHz) and 777 (848.31MHz),

Note 2: 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)	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

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

No.	Section in CFR 47	Description	Result
1	2.1046	Conducted RF Output Power	PASS
2	2.1049, 22.917	Occupied Bandwidth	PASS
3	2.1055, 22.355,	Frequency Stability	PASS
4	2.1051, 2.1057 22.917	Conducted Out of Band Emissions	PASS
5	2.1051, 2.1057 22.917	Band Edge	PASS
6	22.913	Transmitter Radiated Power (EIPR/ERP)	PASS
7	2.1053, 2.1057 22.917	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 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.

2.1.2 Test Description

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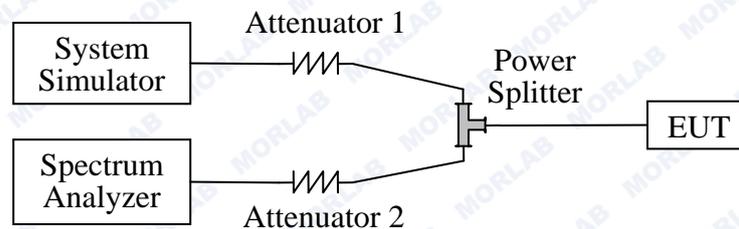
The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded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

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 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.

Test Verdict:

| No.	Channel Number	Frequency (MHz)	Measured Power		Rated Power	
			dBm	W	dBm	W
CDMA 800MHz	1013	824.7	27.20	0.5248	38.5	7
	384	836.52	27.70	0.5888		
	777	848.31	27.20	0.5248		
EVDO 0 800	1013	824.7	27.65	0.5821	38.5	7
	384	836.52	27.51	0.5636		
	777	848.31	27.42	0.5521		
ECDO A 800	1013	824.7	27.67	0.5848	38.5	7
	384	836.52	27.57	0.5715		
	777	848.31	27.57	0.5715		
ECDO B 800	1013	824.7	27.62	0.5781	38.5	7
	384	836.52	27.58	0.5728		
	777	848.31	27.52	0.5649		

Test Plots:
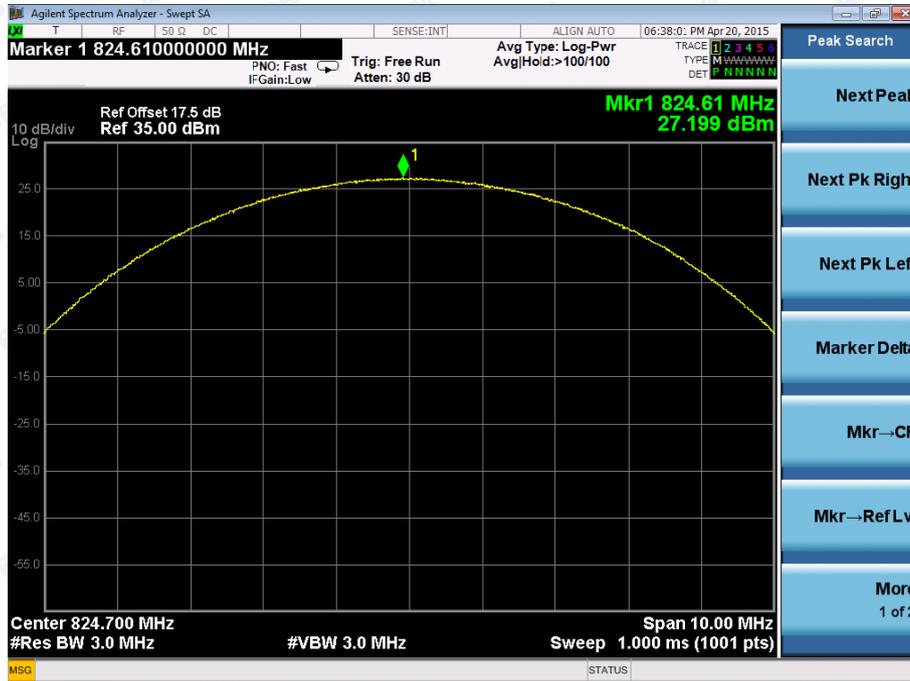
(Plot A: CDMA 800MHz Channel = 1013)
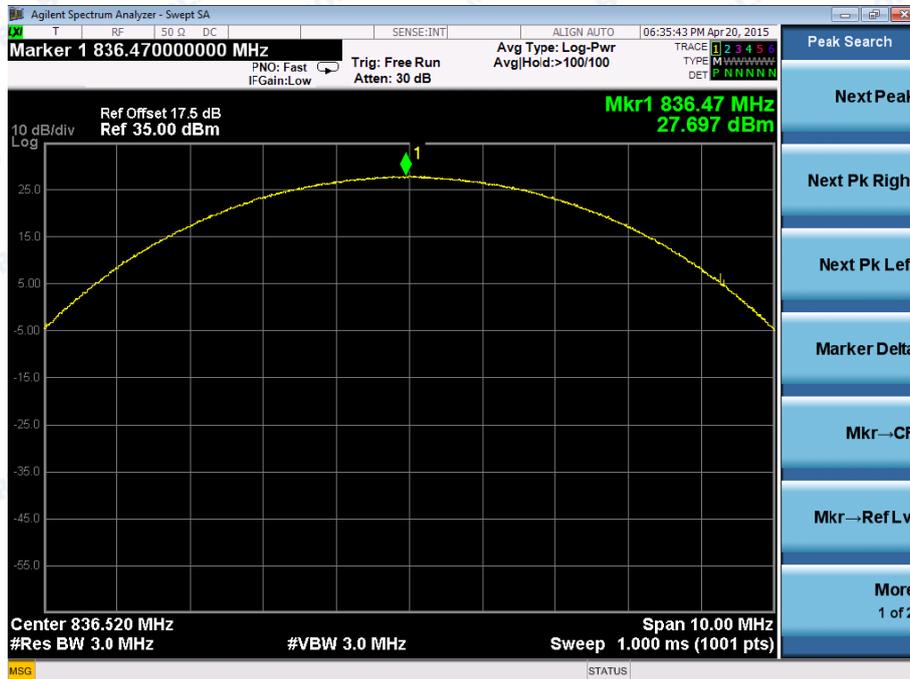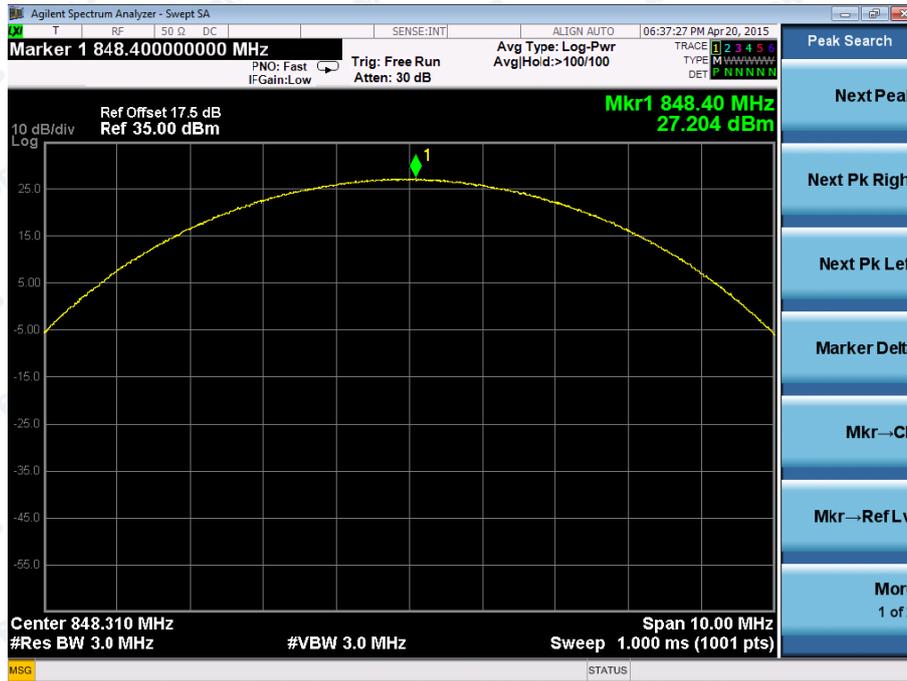
(Plot B: CDMA 800MHz Channel = 384)

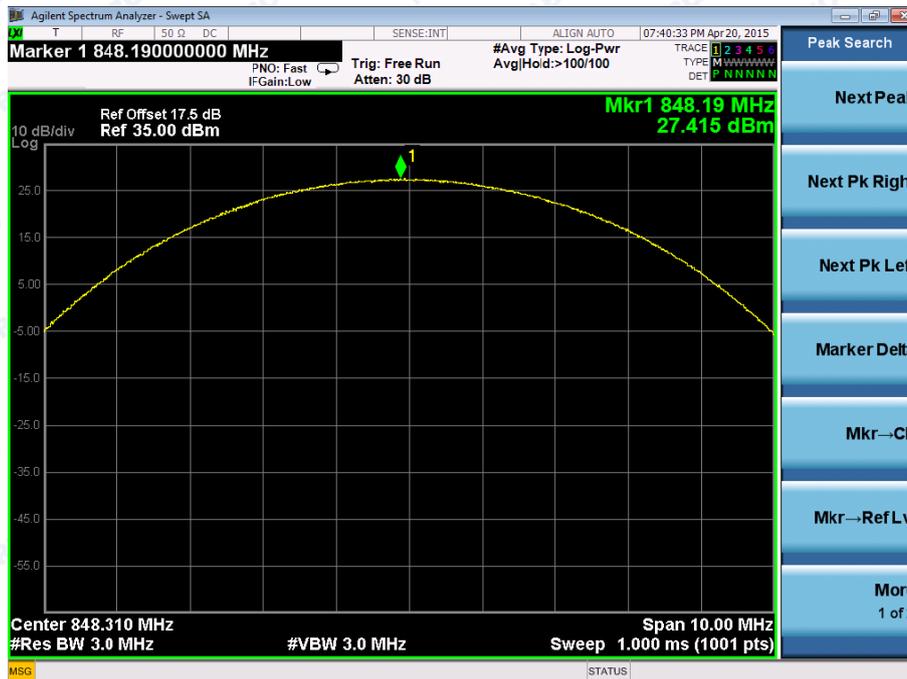(Plot C: CDMA 800MHz Channel = 777)
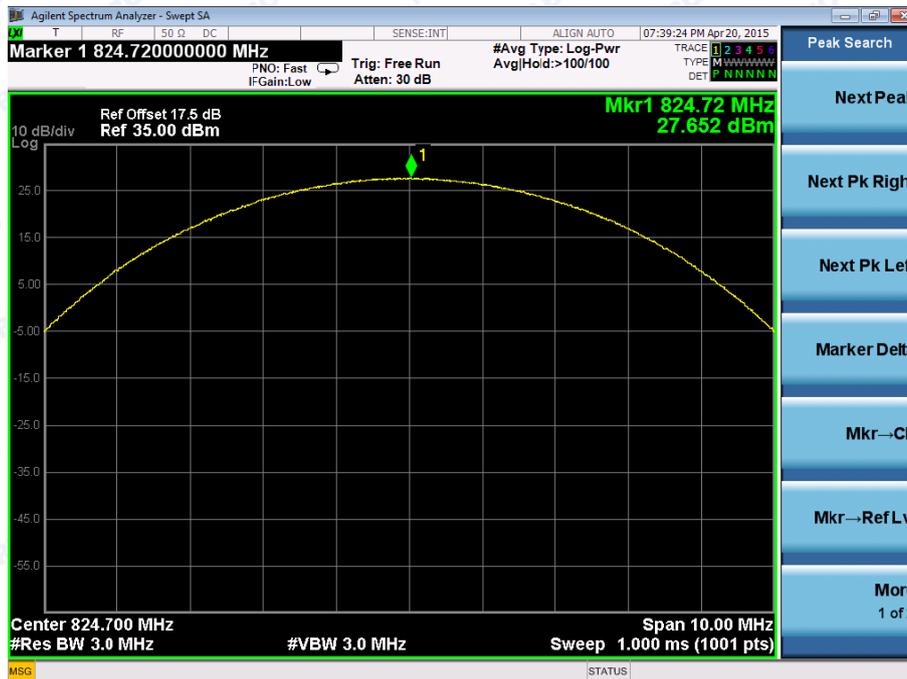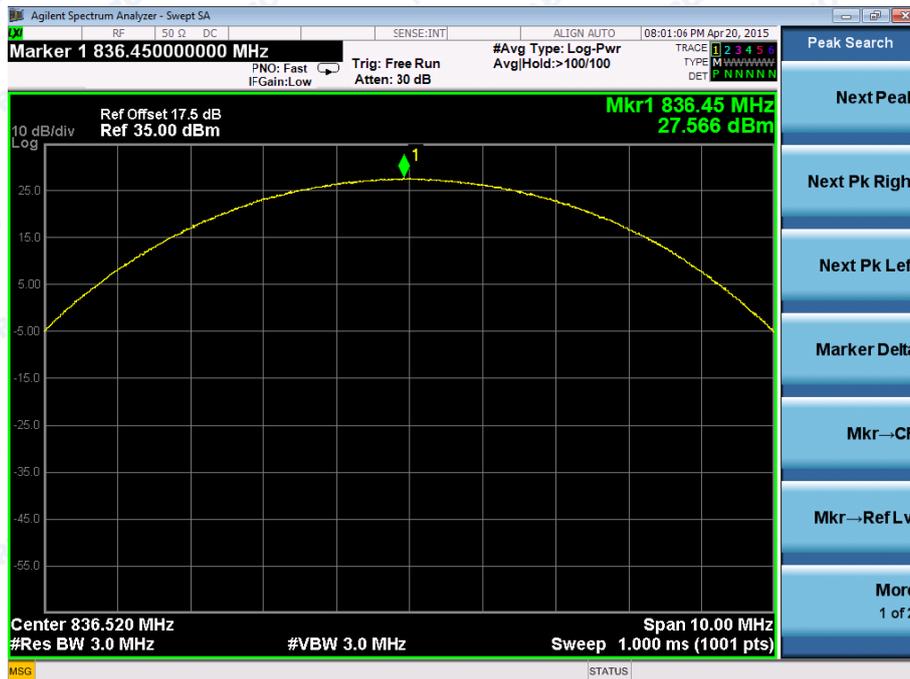

(Plot D: EVDO 0 800MHz Channel = 1013)

(Plot E: EVDO 0 800MHz Channel = 384)

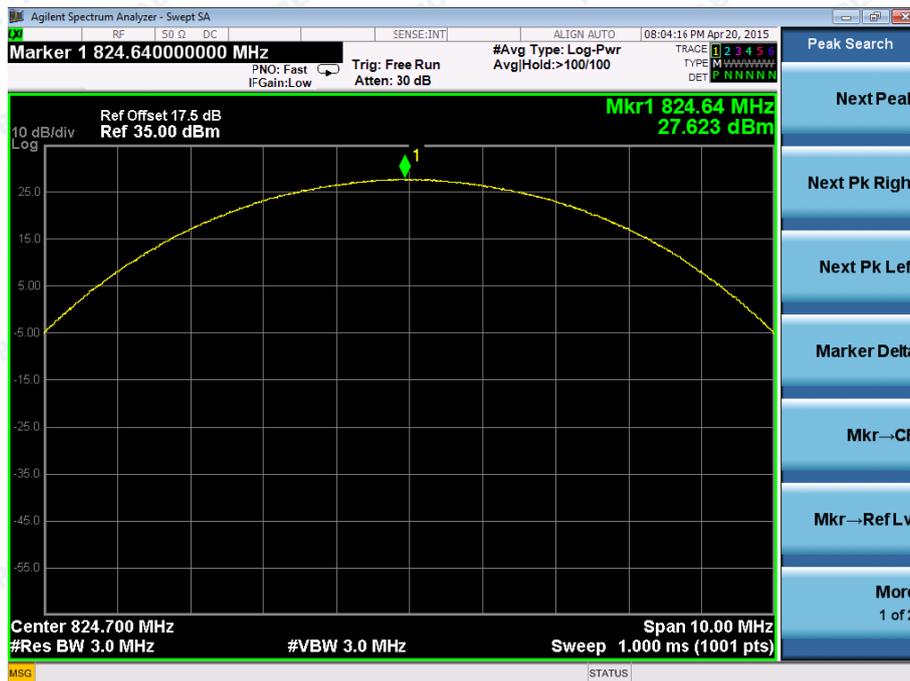(Plot F: EVDO 0 800MHz Channel = 777)

(Plot G: EVDO A 800MHz Channel = 1013)

(Plot H: EVDO A 800MHz Channel = 384)

(Plot I: EVDO A 800MHz Channel = 777)

(Plot J: EVDO B 800MHz Channel = 1013)
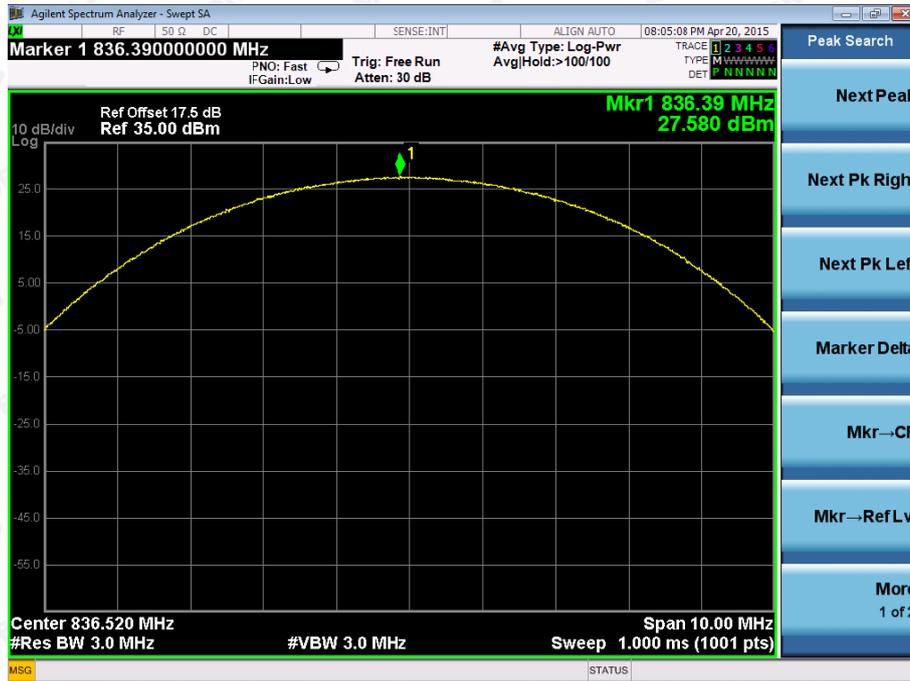
(Plot K: EVDO B 800MHz Channel = 384)

(Plot L: EVDO B 800MHz Channel = 777)

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.

Test Verdict:

Band	Channel	Frequency (MHz)	Measured 99% Occupied Bandwidth (MHz)	Refer to Plot
CDMA 800MHz	1013	824.7	1.2705	Plot A
	384	836.52	1.2700	Plot B
	777	848.31	1.2706	Plot C
EVDO 0 800	1013	824.7	1.2750	Plot D
	384	836.52	1.2710	Plot E
	777	848.31	1.2708	Plot F
EVDO A 800	1013	824.7	1.2712	Plot G
	384	836.52	1.2706	Plot H
	777	848.31	1.2716	Plot I
EVDO B 800	1013	824.7	1.2704	Plot J
	384	836.52	1.2744	Plot K
	777	848.31	1.2712	Plot L

Test Plots:
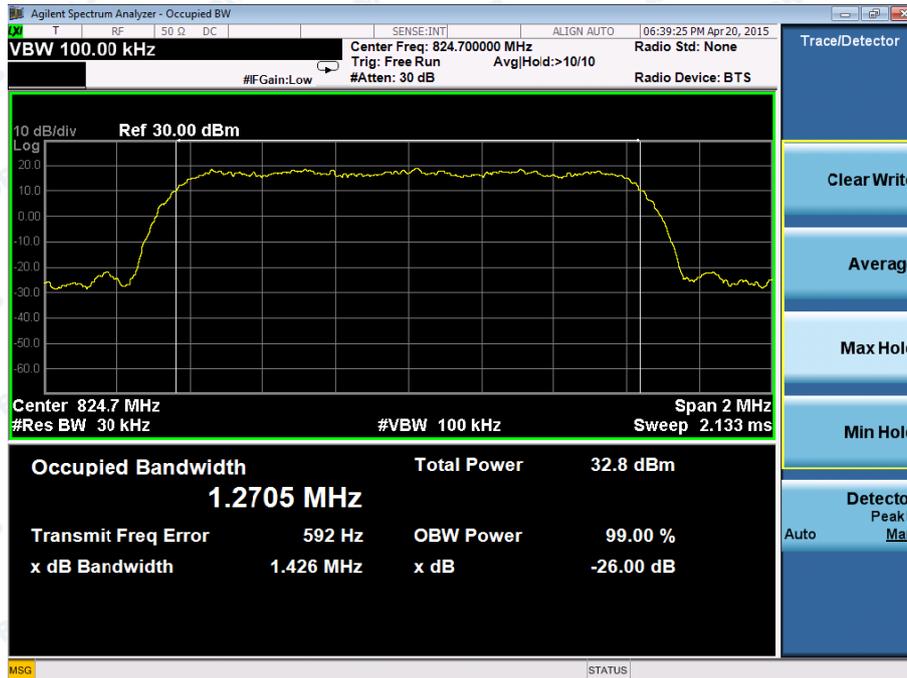
(Plot A: CDMA 800MHz Channel = 1013)
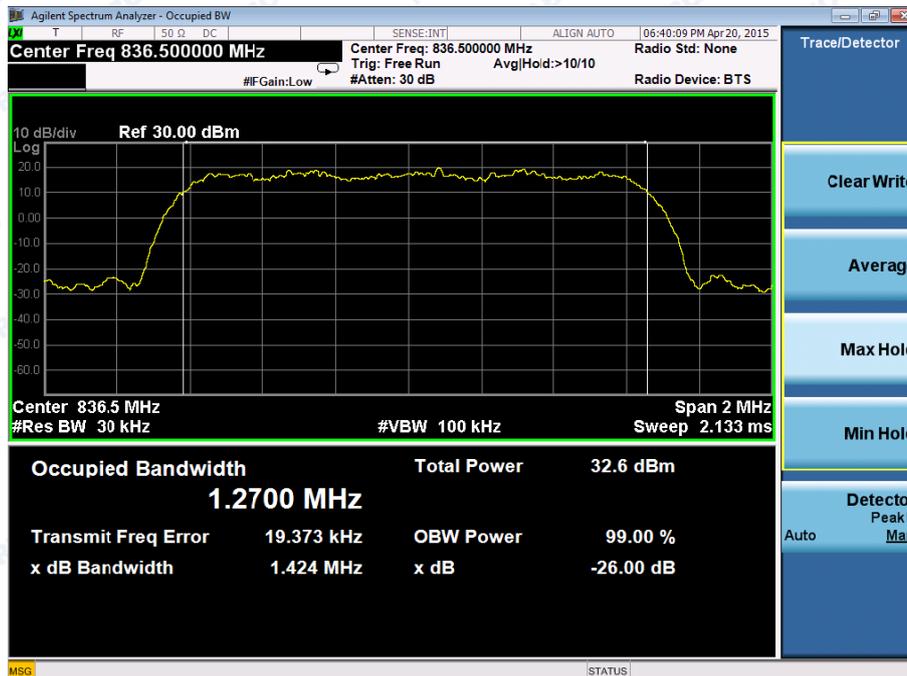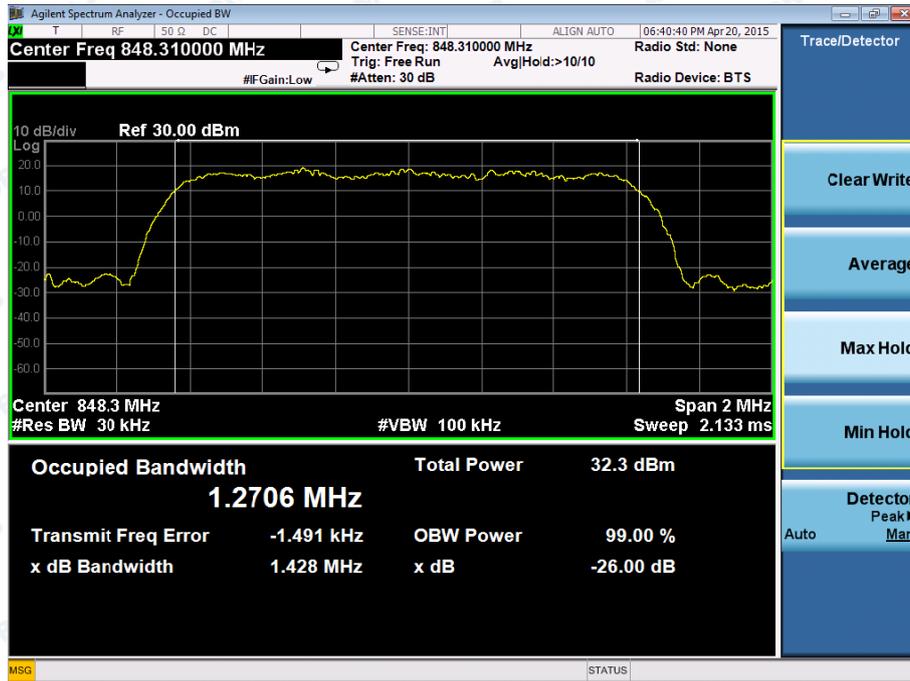
(Plot B: CDMA 800MHz Channel = 384)

(Plot C: CDMA 800MHz Channel = 777)

(Plot D: EVDO 0 800MHz Channel = 1013)

(Plot E: EVDO 0 800MHz Channel = 384)

(Plot F: EVDO 0 800MHz Channel = 777)

(Plot G: EVDO A 800MHz Channel = 1013)

(Plot H: EVDO A 800MHz Channel = 384)

(Plot I: EVDO A 800MHz Channel = 777)

(Plot J: EVDO B 800MHz Channel = 1013)

(Plot K: EVDO B 800MHz Channel = 384)

(Plot L: EVDO B 800MHz Channel = 777)

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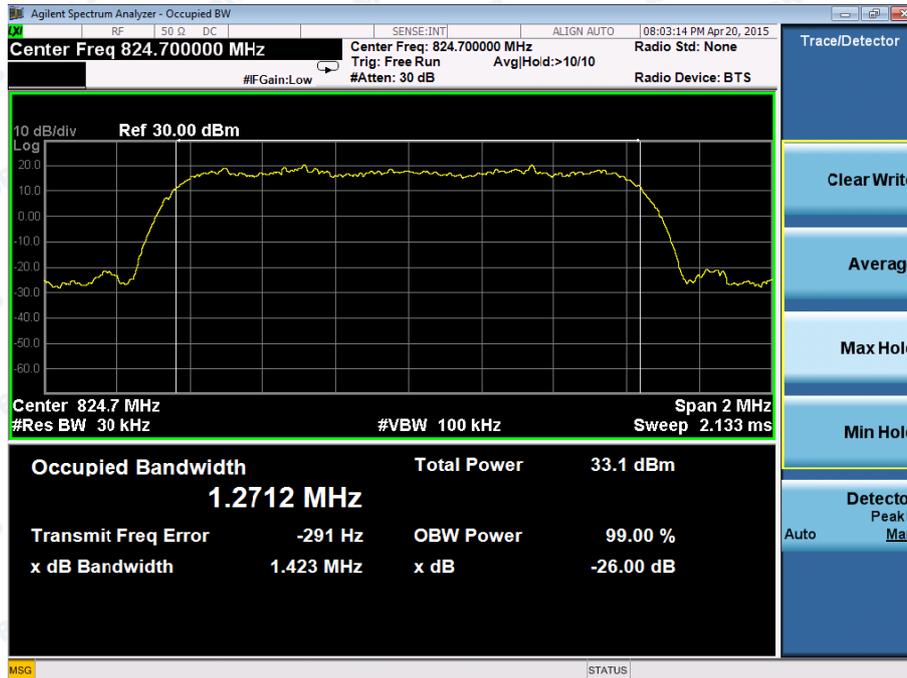Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

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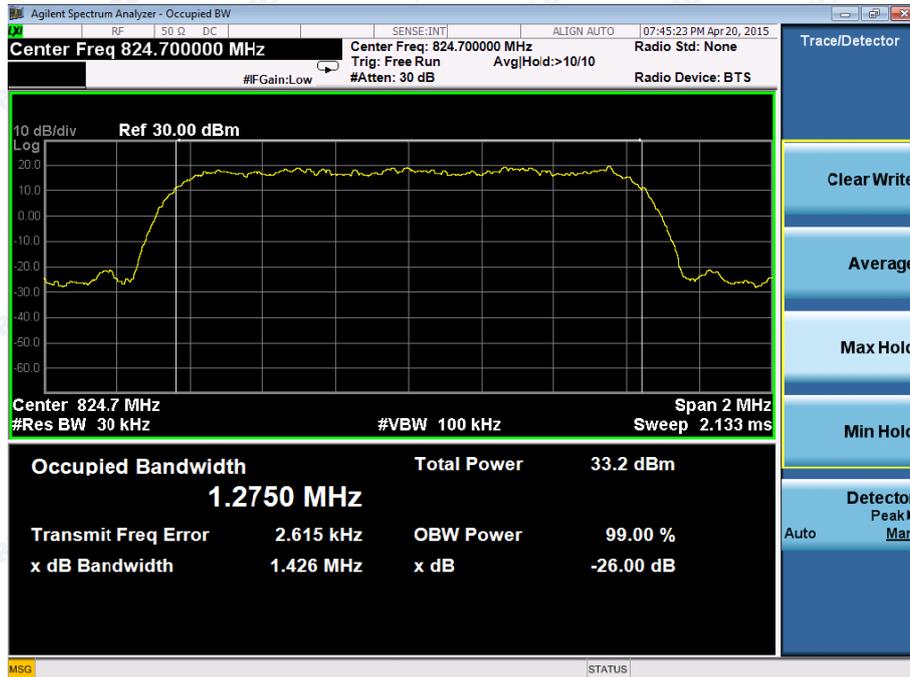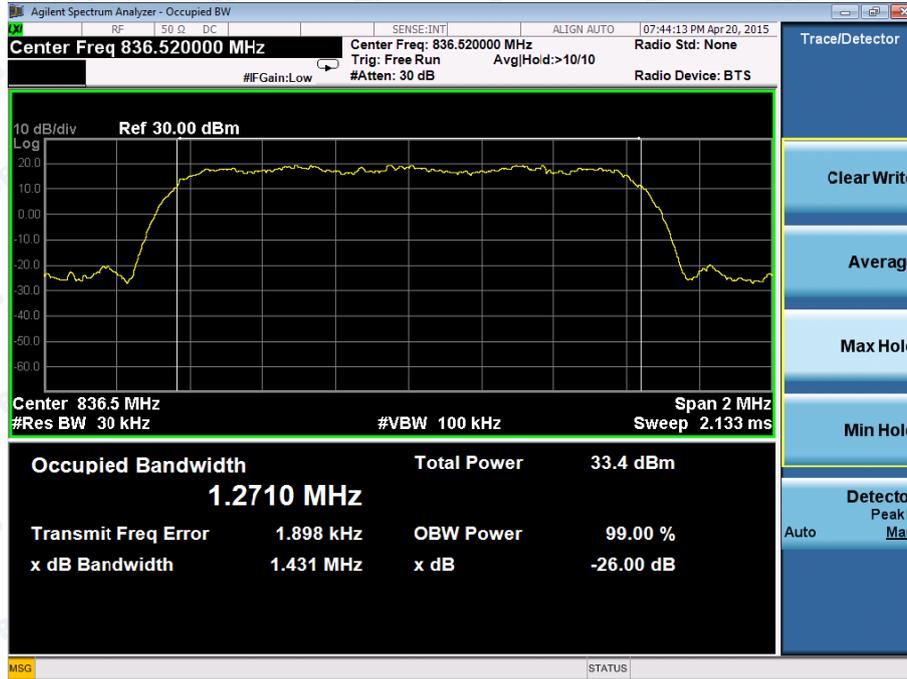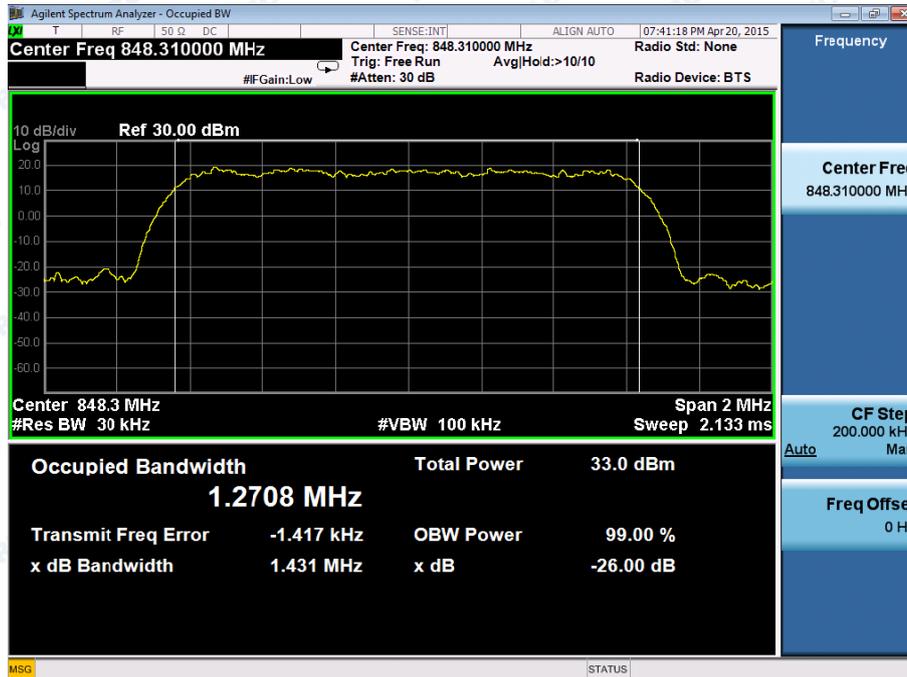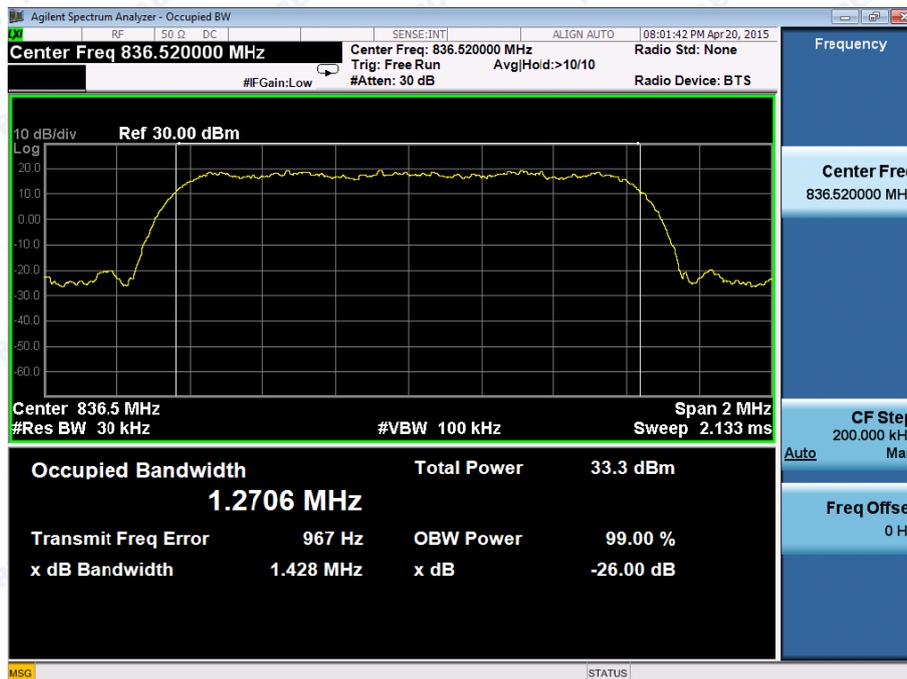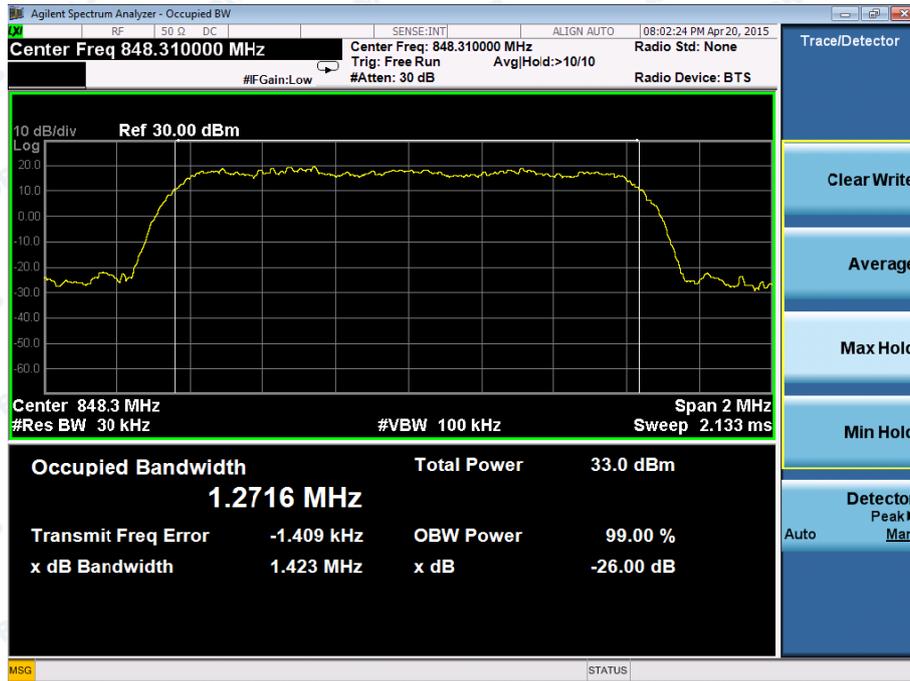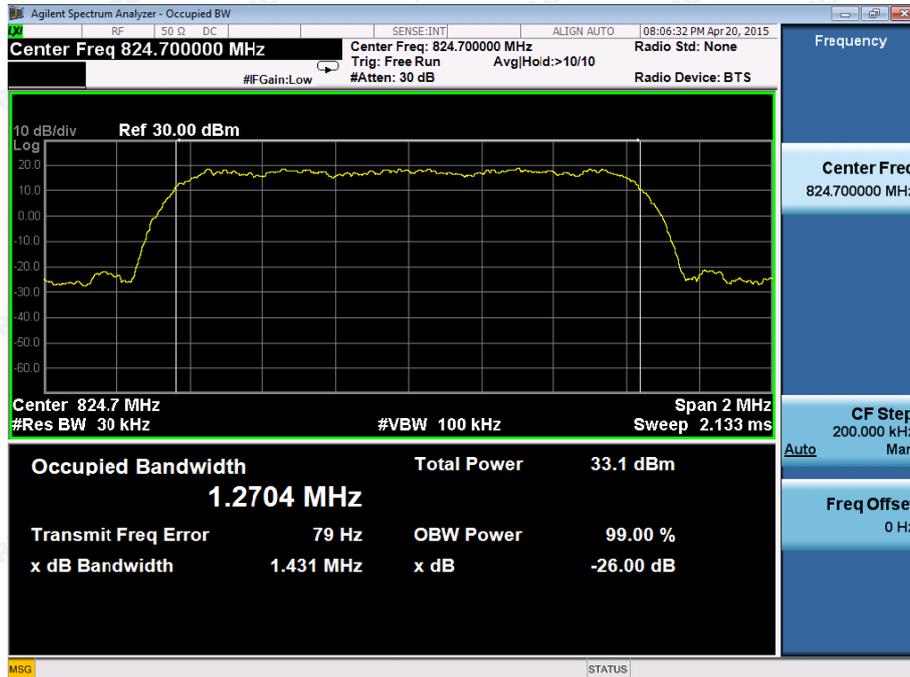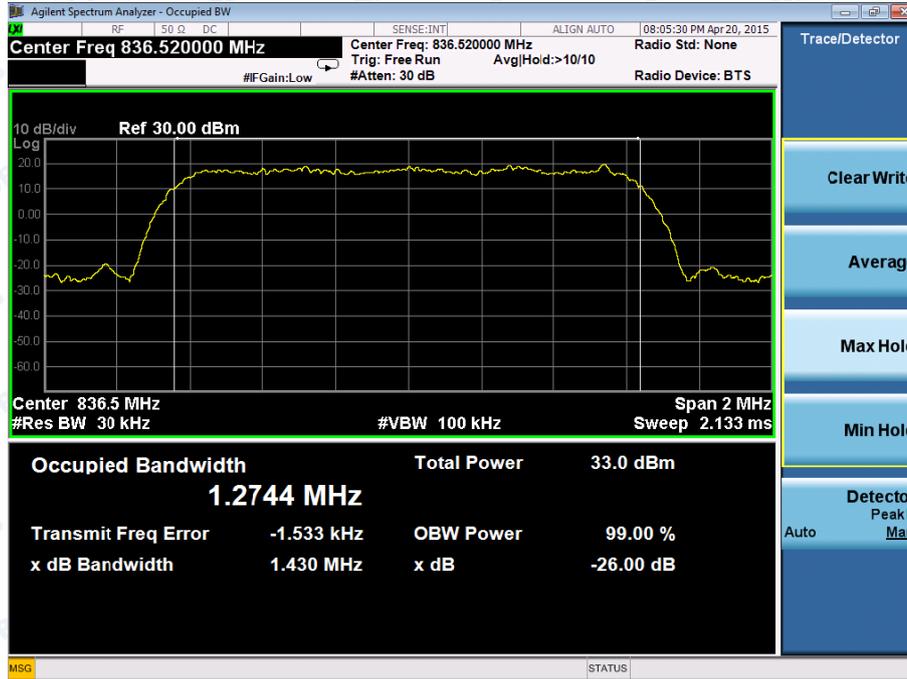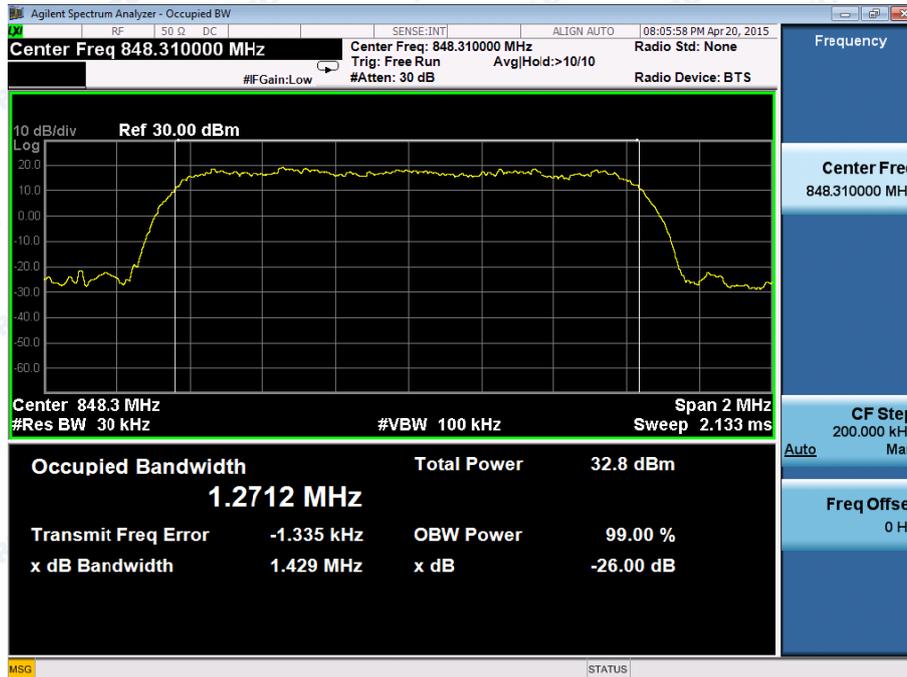
2.3 Frequency Stability
2.3.1 Requirement

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

(a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.

(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.3.2 Test Description

Test Setup:
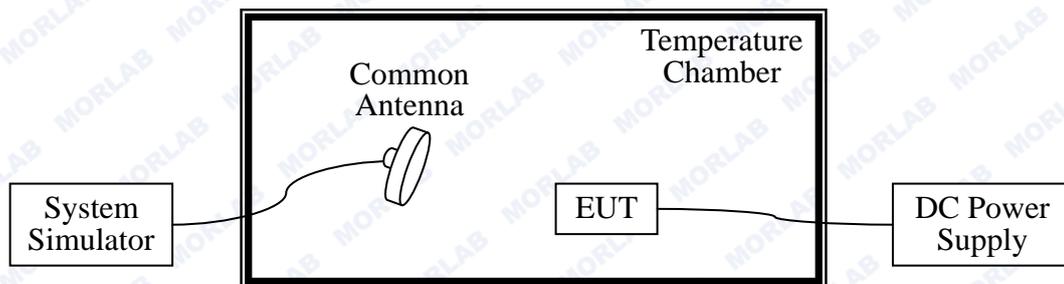
The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

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	YOMA Experimental Equip.	HL4003T	(n.a.)	2015.02.26	2016.02.25

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 band is ±2.5ppm.

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 800MHz	3.7	-30	7.06	±2061.75	26.75	±2091.30	-16.29	±2120.775	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)	Temperature (°C)	Channel = 1013 (824.7MHz)		Channel = 384 (836.52MHz)		Channel = 777 (848.31MHz)		
			Hz	Limits	Hz	Hz	Limits	Hz	
EVDO 0 800MHz	3.7	-30	-16.11	±2061.75	15.06	±2091.30	-9.54	±2120.775	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	
EVDO A	3.7	-30	16.0	±2061.75	9.7	±2091.30	12.0	±2120.775	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 = 1013 (824.7MHz)		Channel = 384 (836.52MHz)		Channel = 777 (848.31MHz)		
			Hz	Limits	Hz	Limits	Hz	Limits	
EVDOB	3.7	-30	13.1	±2061.75	8.8	±2091.30	17.0	±2120.775	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		

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.

Test Verdict:

No.	Channel	Frequency(MHz)	Measured Max Spurious Emission(dBm)	Limit(dBm)
CDMA 800MHz	1013	824.7	< -25	-13
	384	836.52	< -25	-13
	777	848.31	< -25	-13
EVDO 0 800	1013	824.7	< -25	-13
	384	836.52	< -25	-13
	777	848.31	< -25	-13
EVDO A 800	1013	824.7	< -25	-13
	384	836.52	< -25	-13
	777	848.31	< -25	-13
EVDO B 800	1013	824.7	< -25	-13
	384	836.52	< -25	-13
	777	848.31	< -25	-13

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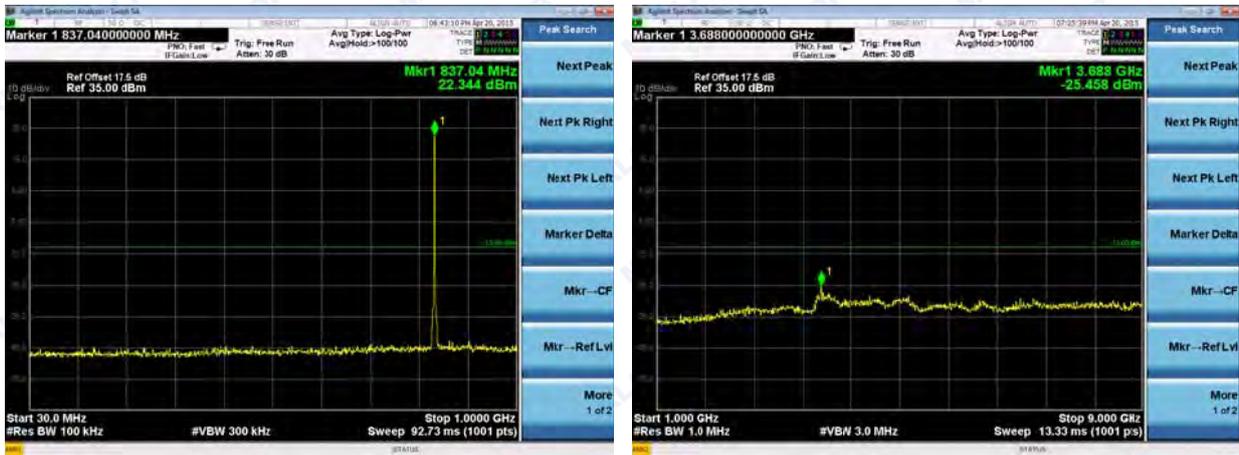
(Plot B: CDMA 800MHz Channel = 384, 30MHz to 9GHz)

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

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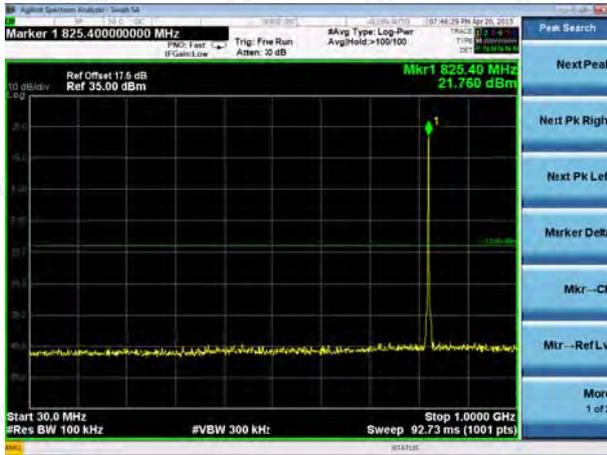
(Plot D: EVDO 0 800MHz Channel = 1013, 30MHz to 9GHz)
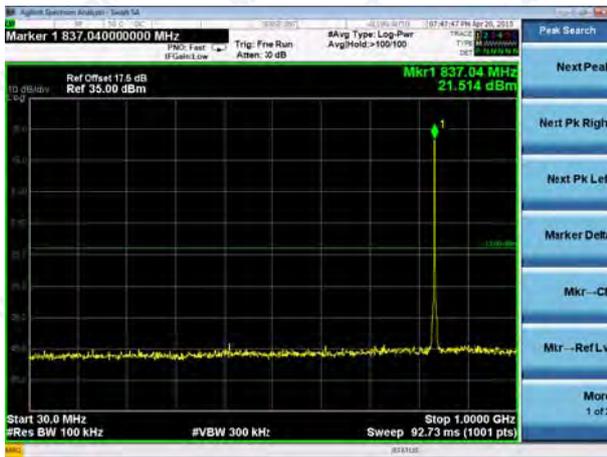
(Plot E: EVDO 0 800MHz Channel = 384, 30MHz to 9GHz)
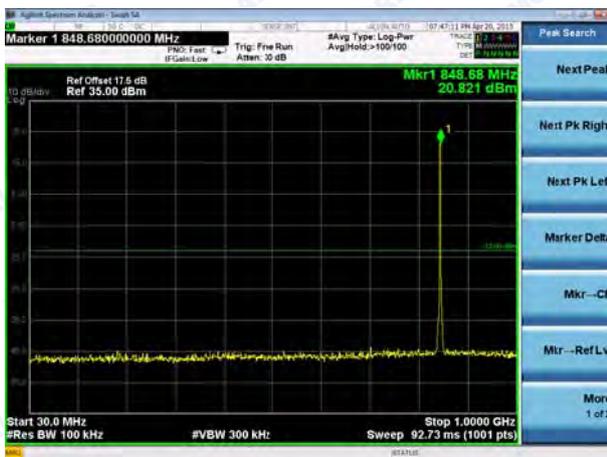
(Plot F: EVDO 0 800MHz Channel = 777, 30MHz to 9GHz)

(Plot G: EVDO A 800MHz Channel = 1013, 30MHz to 9GHz)
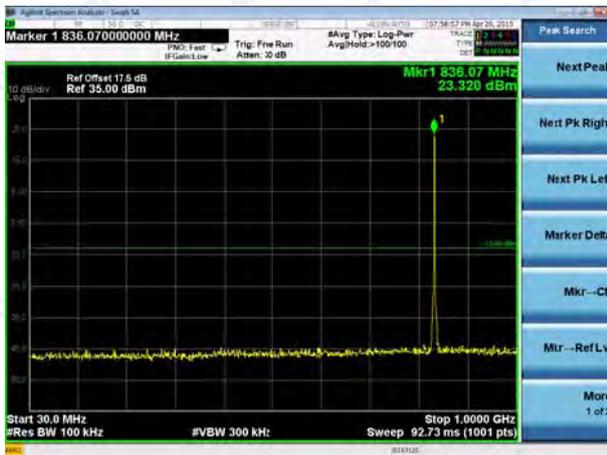
(Plot H: EVDO A 800MHz Channel = 384, 30MHz to 9GHz)
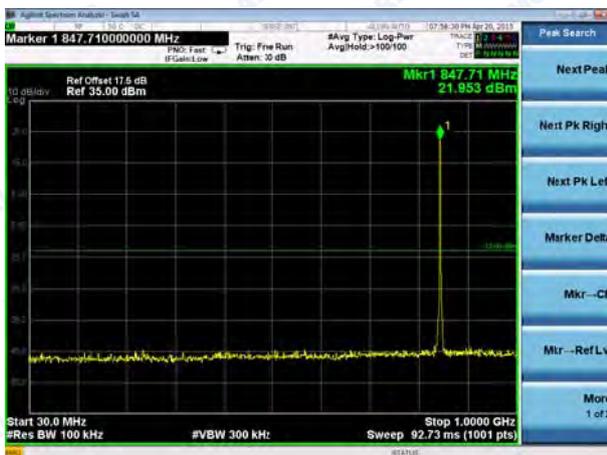
(Plot I: EVDO A 800MHz Channel = 777, 30MHz to 9GHz)
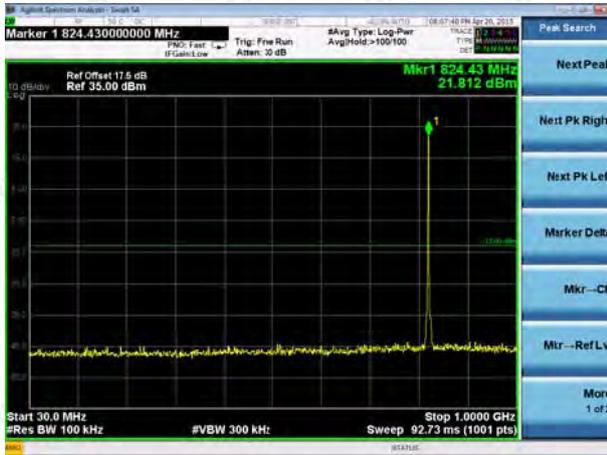
(Plot J: EVDO B 800MHz Channel = 1013, 30MHz to 9GHz)
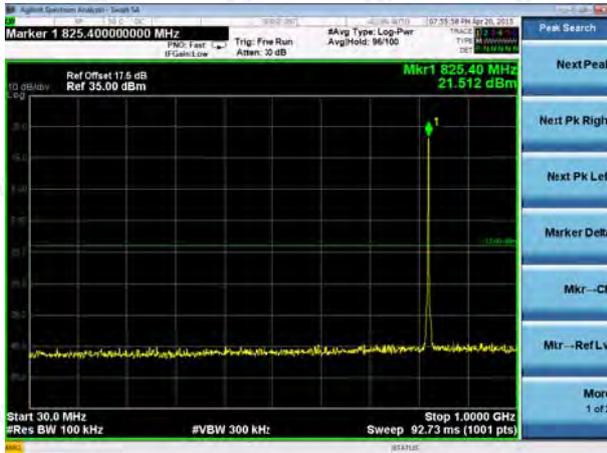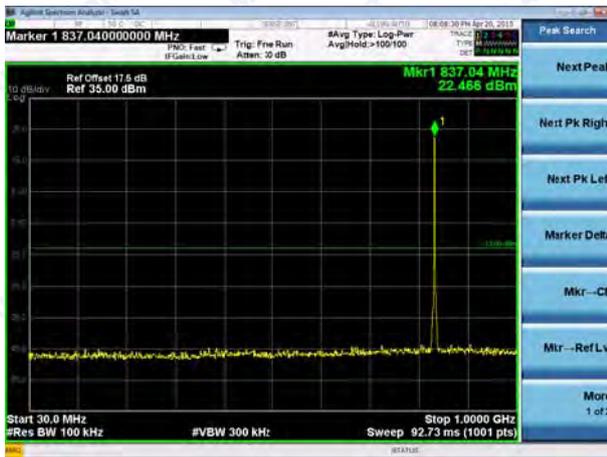

(Plot K: EVDO B 800MHz Channel = 384, 30MHz to 9GHz)

(Plot L: EVDO B 800MHz Channel = 777, 30MHz to 9GHz)

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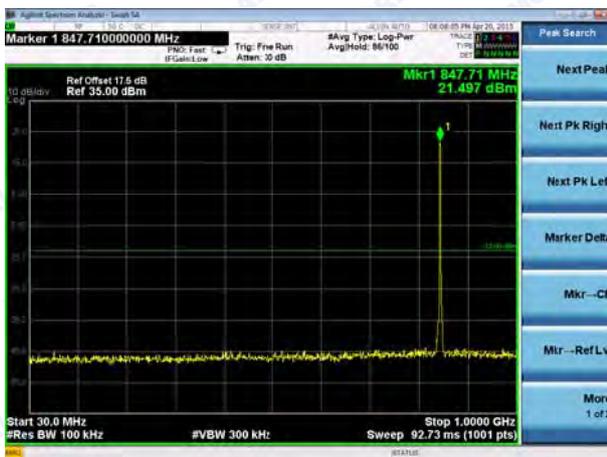
2.5 Band Edge
2.5.1 Requirement

According to FCC section 2.1051, 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.

Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
CDMA 800MHz	1013	824.7	-18.09	Plat A	-13	PASS
	777	848.31	-15.61	Plot B		PASS
EVDO 0 800	1013	824.7	-17.89	Plat C	-13	PASS
	777	848.31	-15.65	Plot D		PASS
EVDO A 800	1013	824.7	-18.76	Plat E	-13	PASS
	777	848.31	-15.89	Plot F		PASS
EVDO B 800	1013	824.7	-18.32	Plat G	-13	PASS
	777	848.31	-15.48	Plot H		PASS

Test Plots:

(Plot A: CDMA 800MHz Channel = 1013)

(Plot B: CDMA 800MHz Channel = 777)

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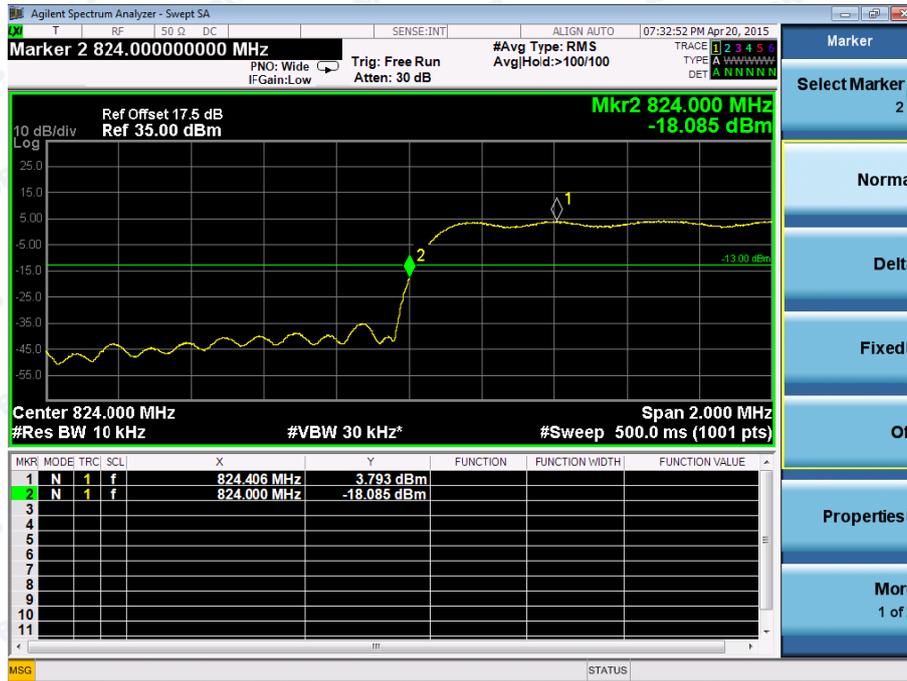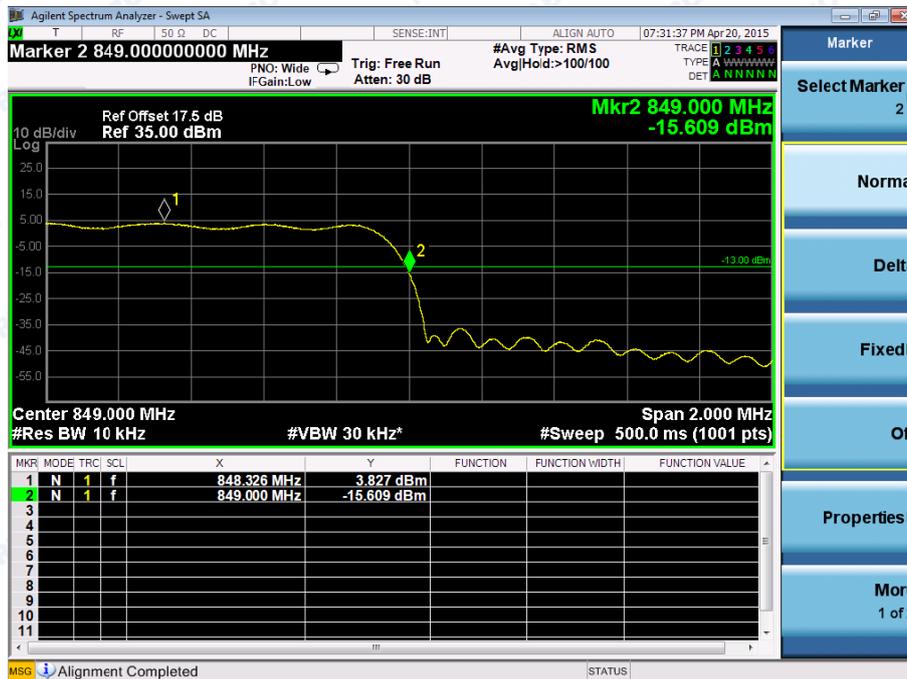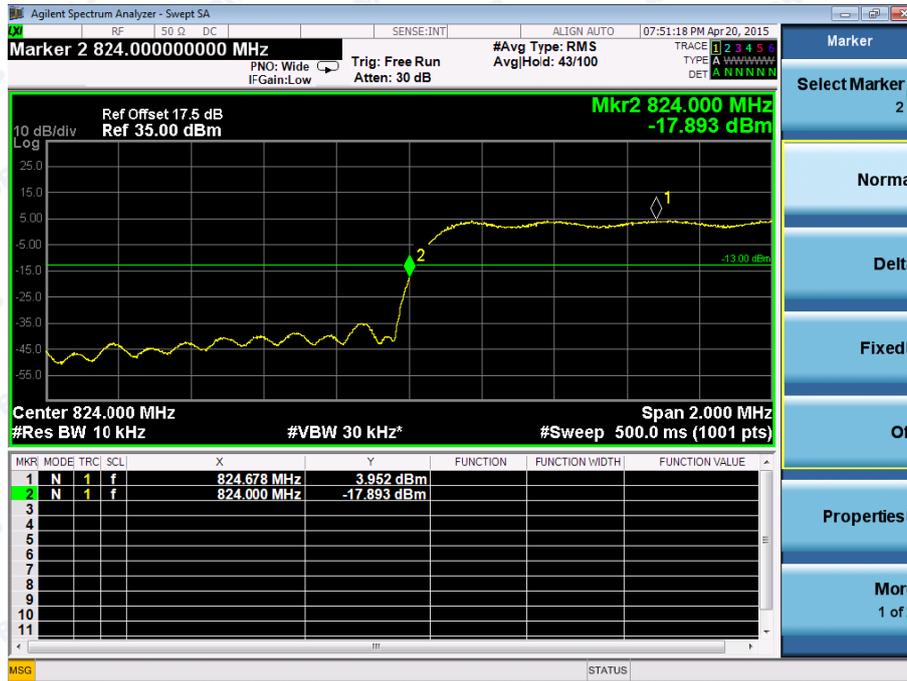
(Plot C: EVDO 0 800MHz Channel = 1013)

(Plot D: EVDO 0 800MHz Channel = 777)

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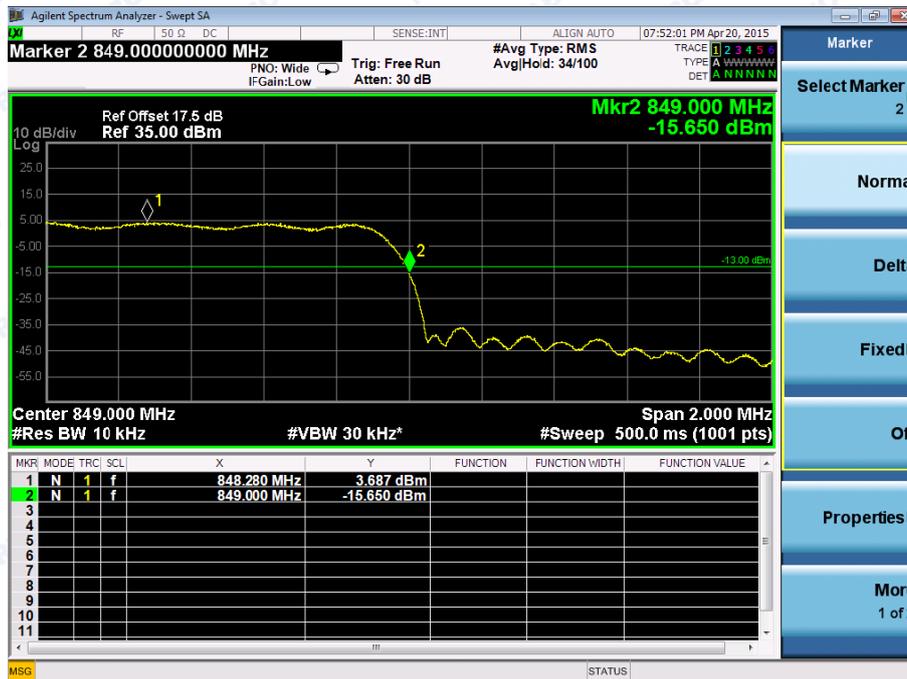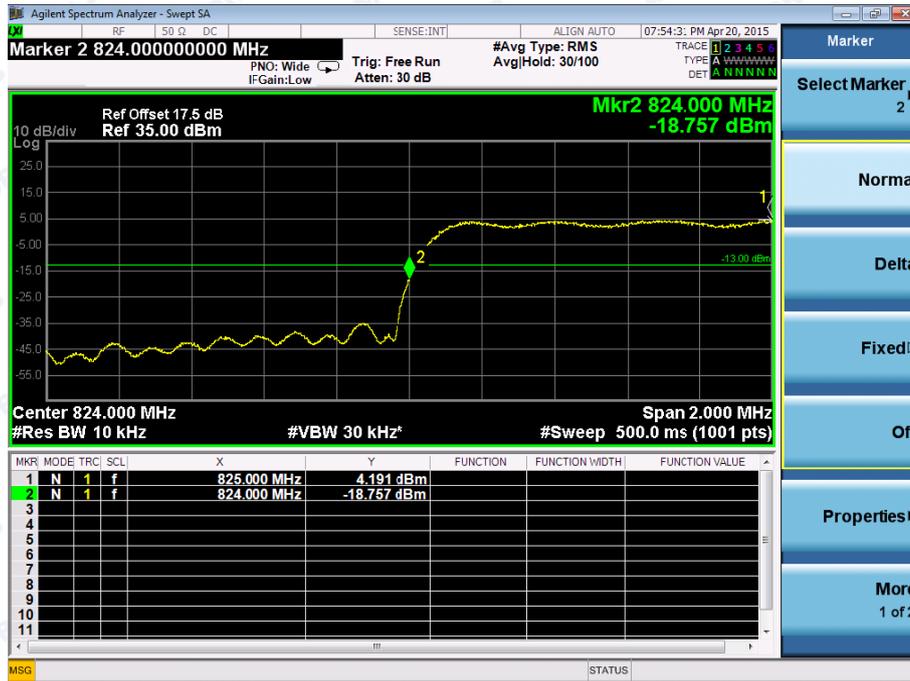
(Plot E: EVDO A 800MHz Channel = 1013)

(Plot F: EVDO A 800MHz Channel = 777)
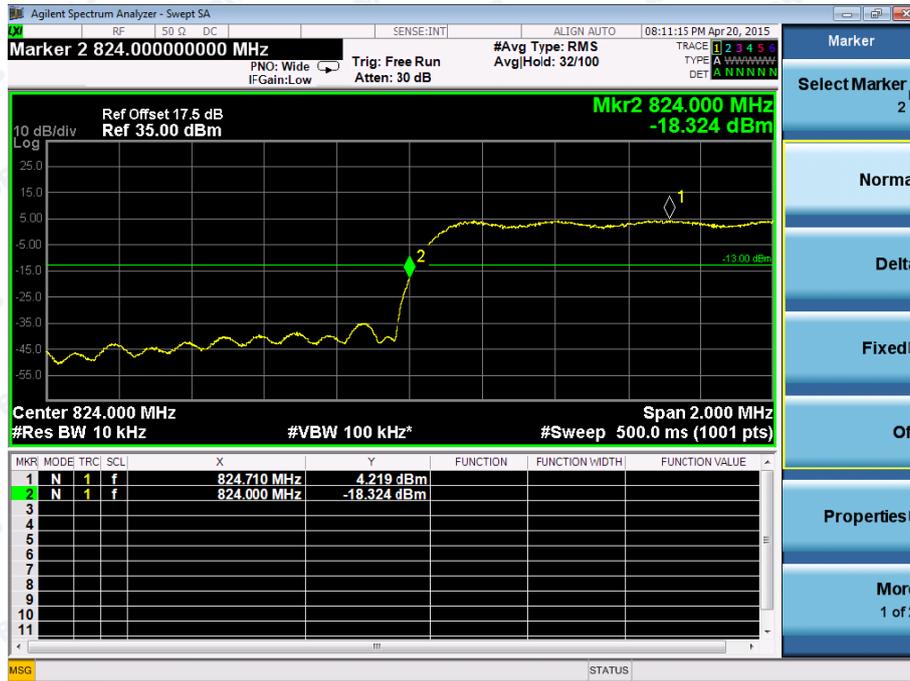
(Plot G: EVDO B 800MHz Channel = 1013)

(Plot H: EVDO B 800MHz Channel = 777)

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.

2.6.2   Test Description

Test Setup:
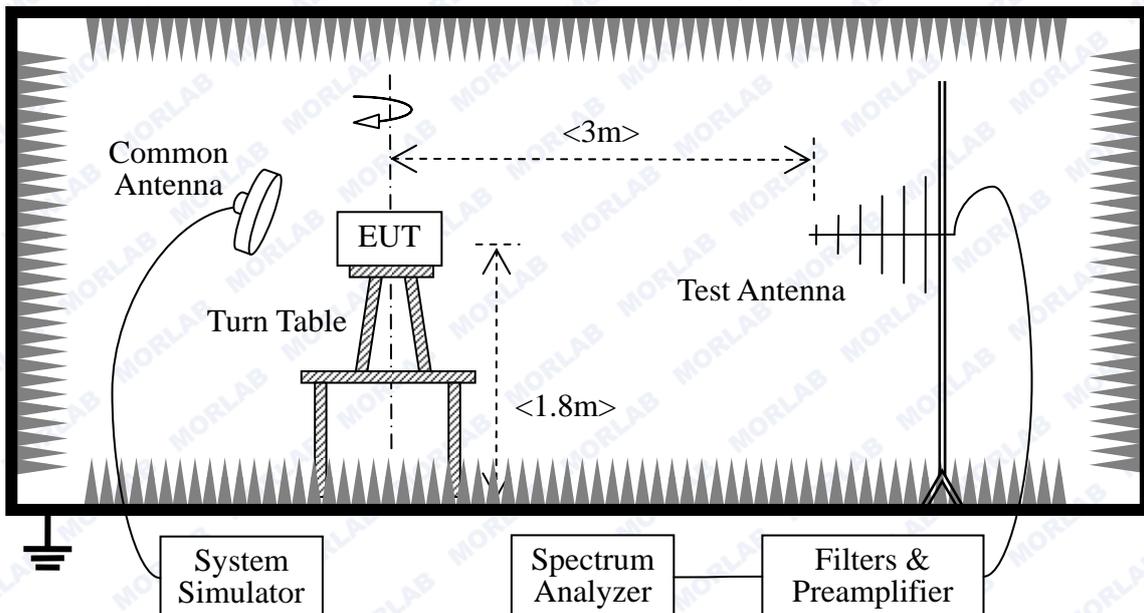
The resolution bandwidth of the Spectrum Analyzer is set to be comparable to the emission bandwidth of the transmitter, e.g. for GSM modulated signal (here used): RBW=VBW=1MHz, for CDMA modulated signal: RBW=VBW=3MHz.

The low, middle and the high channels are selected to perform tests respectively.

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 27.70dBm, EVDO 0 800 27.65dBm, EVDO A 800 27.67dBm, EVDO B 27.62dBm

- Step size (dB): 3dB

- Minimum RF power: CDMA800 0.5dBm, EVDO 0 800 0.5dBm, EVDO A 800 0.7dBm, EVDO B 800 0.7dBm

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	UG -596A/U	A0902607	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

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:

$A_{SUBST} = P_{SUBST\_TX} - P_{SUBST\_RX} - L_{SUBST\_CABLES} + G_{SUBST\_TX\_ANT}$

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

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

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

$G_{SUBST\_TX\_ANT}$ 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}.

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Test Verdict:

No.	Channel	Frequency (MHz)	Measured ERP		Limit	
			dBm	W	dBm	W
CDMA 800MHz	1013	824.7	28.58	0.721107	38.5	7
	384	836.52	28.50	0.707946		
	777	848.31	28.09	0.644169		
EVDO 0 800	1013	824.7	28.44	0.698232	38.5	7
	384	836.52	28.58	0.721107		
	777	848.31	27.97	0.626614		
EVDO A 800	1013	824.7	28.44	0.698232	38.5	7
	384	836.52	28.29	0.674528		
	777	848.31	28.23	0.665273		
EVDO B 800	1013	824.7	28.63	0.729458	38.5	7
	384	836.52	29.06	0.805378		
	777	848.31	28.33	0.680769		

Test Plots:

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

Agilent   02:39:43 Apr 13, 2015   R   T

                                                                Mkr2 836.49 MHz
Ref 35 dBm   Atten 10 dB   28.58 dBm
Peak
Log
10
dB/
Offst
38.1
dB

Start 815 MHz   Stop 860 MHz
#Res BW 3 MHz   VBW 3 MHz   Sweep 4 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	824.56 MHz	28.44 dBm
2	(1)	Freq	836.49 MHz	28.58 dBm
3	(1)	Freq	848.41 MHz	27.97 dBm

(Plot B: EVDO 0 800MHz Channel = 1013,384, 777)

Agilent   02:44:11 Apr 13, 2015   R   T

                                                                Mkr1 824.68 MHz
Ref 35 dBm   Atten 10 dB   28.44 dBm
Peak
Log
10
dB/
Offst
38.1
dB

Start 815 MHz   Stop 860 MHz
#Res BW 3 MHz   VBW 3 MHz   Sweep 4 ms (401 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	824.68 MHz	28.44 dBm
2	(1)	Freq	836.38 MHz	28.29 dBm
3	(1)	Freq	848.08 MHz	28.23 dBm

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

```
Agilent        02:49:11  Apr 13, 2015                    R   T
                                                    Mkr1  824.68 MHz
Ref 35 dBm                  Atten 10 dB                  28.63 dBm
Peak
Log
10
dB/
Offst
38.1
dB

Start 815 MHz                                           Stop 860 MHz
#Res BW 3 MHz                    VBW 3 MHz         Sweep 4 ms (401 pts)
```

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	824.68 MHz	28.63 dBm
2	(1)	Freq	836.38 MHz	29.06 dBm
3	(1)	Freq	848.08 MHz	28.33 dBm

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

2.7 Radiated Out of Band Emissions
2.7.1 Requirement
According to FCC section 2.1053, 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.
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
EVDO 0 800	1013	824.7	< -25	< -25	Plot D.1/D.2	-13	PASS
	384	836.52	< -25	< -25	Plot E.1/E.2		PASS
	777	848.31	< -25	< -25	Plot F.1/F.2		PASS
EVDO A 800	1013	824.7	< -25	< -25	Plot G.1/G.2	-13	PASS
	384	836.52	< -25	< -25	Plot H.1/H.2		PASS
	777	848.31	< -25	< -25	Plot I.1/I.2		PASS
EVDO B 800	1013	824.7	< -25	< -25	Plot J.1/J.2	-13	PASS
	384	836.52	< -25	< -25	Plot K.1/K.2		PASS
	777	848.31	< -25	< -25	Plot L.1/L.2		PASS

Test Plots for the Whole Measurement Frequency Range:

Note: the power of the EUT transmitting frequency should be ignored.
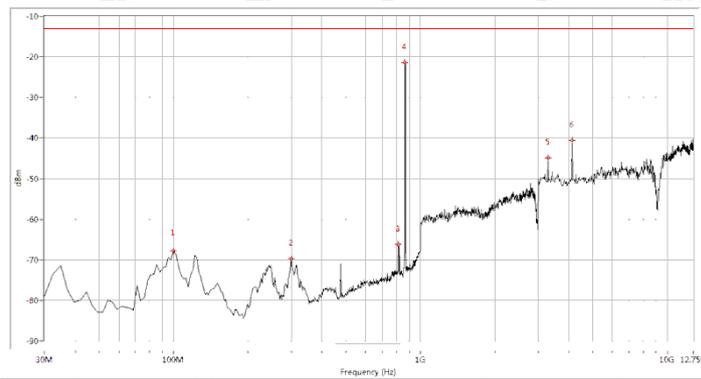
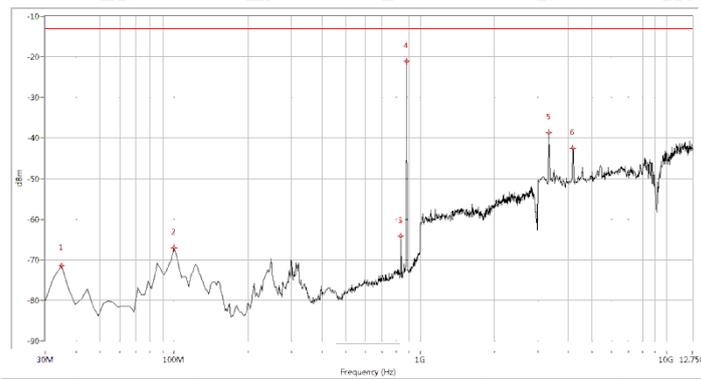| Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-67.82	-13.0	54.8	241.5	Horizontal	PASS
300.923	-69.75	-13.0	56.8	41.4	Horizontal	PASS
816.160	-66.30	-13.0	53.3	81.2	Horizontal	N.A
866.958	-21.35	-13.0	8.3	55.9	Horizontal	N.A
3291.771	-44.83	-13.0	31.8	243.4	Horizontal	PASS
4118.454	-40.64	-13.0	27.6	112.8	Horizontal	PASS

(Plot A.1:   CDMA 800MHz Channel = 1013, Test Antenna Horizontal)
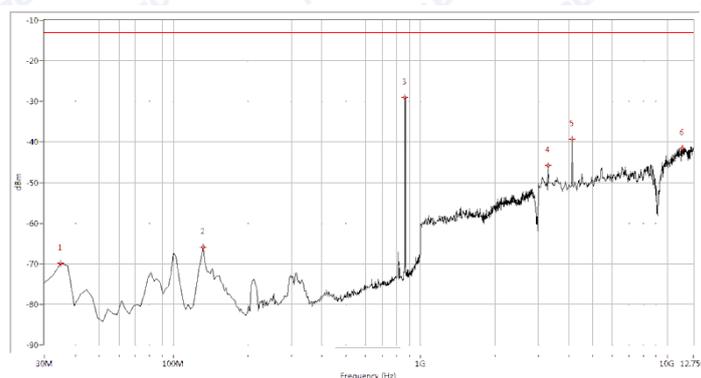
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-69.83	-13.0	56.8	19.4	Vertical	PASS
131.596	-65.91	-13.0	52.9	194.6	Vertical	PASS
866.958	-28.98	-13.0	16.0	334.9	Vertical	N.A
3291.771	-45.83	-13.0	32.8	112.1	Vertical	PASS
4118.454	-39.32	-13.0	26.3	219.6	Vertical	PASS
11509.975	-41.51	-13.0	28.5	106.1	Vertical	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-71.45	-13.0	58.5	272.8	Horizontal	PASS
100.150	-67.05	-13.0	54.1	251.2	Horizontal	PASS
835.511	-64.11	-13.0	51.1	0.0	Horizontal	N.A
879.052	-21.08	-13.0	8.1	256.4	Horizontal	N.A
3340.399	-38.64	-13.0	25.6	248.3	Horizontal	PASS
4167.082	-42.46	-13.0	29.5	118.0	Horizontal	PASS

(Plot B.1:   CDMA 800MHz Channel = 384, Test Antenna Horizontal)
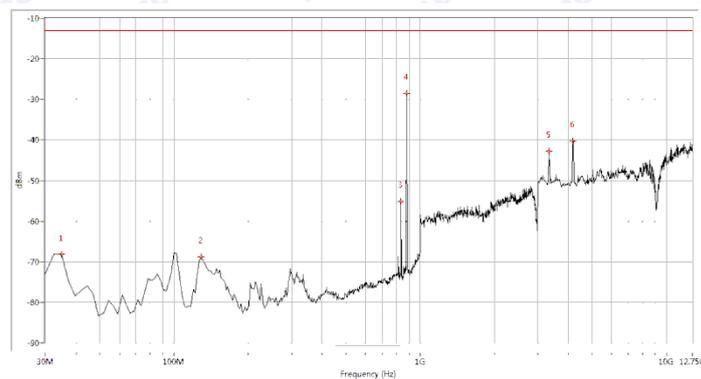
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.11	-13.0	55.1	360.0	Vertical	PASS
129.177	-68.83	-13.0	55.8	208.1	Vertical	PASS
835.511	-55.10	-13.0	42.1	123.6	Vertical	N.A
879.052	-28.57	-13.0	15.6	255.4	Vertical	N.A
3340.399	-42.86	-13.0	29.9	39.5	Vertical	PASS
4167.082	-40.21	-13.0	27.2	243.1	Vertical	PASS

(Plot B.2:   CDMA 800MHz Channel = 384, Test Antenna Vertical)
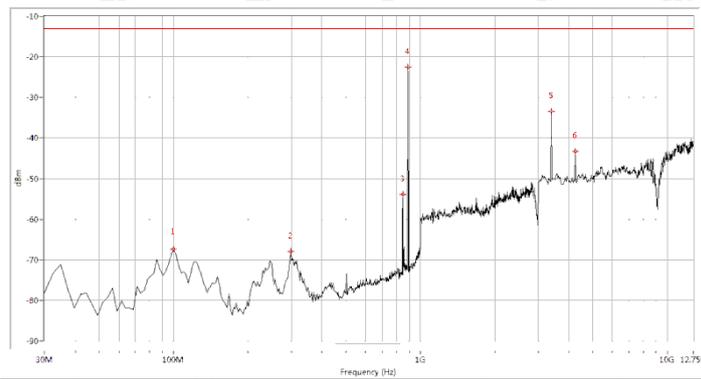
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-67.39	-13.0	54.4	218.6	Horizontal	PASS
298.504	-67.98	-13.0	55.0	245.3	Horizontal	PASS
847.606	-53.83	-13.0	40.8	90.1	Horizontal	N.A
891.147	-22.59	-13.0	9.6	245.3	Horizontal	N.A
3389.027	-33.41	-13.0	20.4	248.7	Horizontal	PASS
4240.025	-43.26	-13.0	30.3	124.0	Horizontal	PASS

(Plot C.1:   CDMA 800MHz Channel = 777, Test Antenna Horizontal)
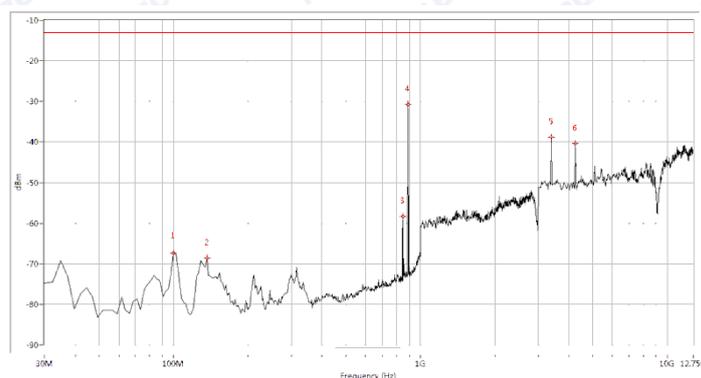
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-67.39	-13.0	54.4	14.1	Vertical	PASS
136.434	-68.61	-13.0	55.6	112.8	Vertical	PASS
847.606	-58.30	-13.0	45.3	275.8	Vertical	N.A
891.147	-30.74	-13.0	17.7	349.5	Vertical	N.A
3389.027	-38.81	-13.0	25.8	2.8	Vertical	PASS
4240.025	-40.46	-13.0	27.5	240.4	Vertical	PASS

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

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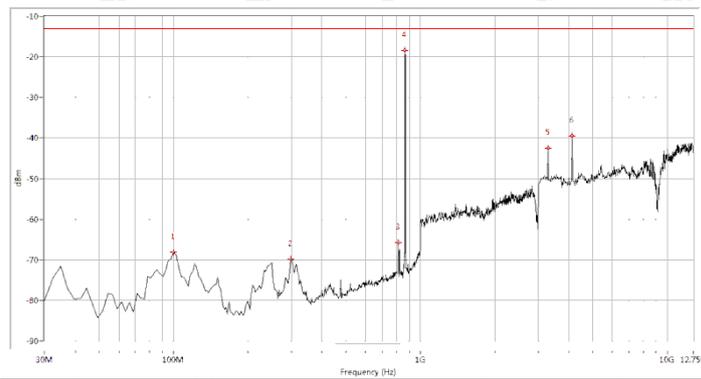
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-68.19	-13.0	55.2	266.9	Horizontal	PASS
298.504	-69.87	-13.0	56.9	15.6	Horizontal	PASS
816.160	-65.80	-13.0	52.8	91.9	Horizontal	N.A
866.958	-18.39	-13.0	5.4	256.5	Horizontal	N.A
3291.771	-42.45	-13.0	29.4	262.4	Horizontal	PASS
4118.454	-39.51	-13.0	26.5	67.7	Horizontal	PASS

(Plot D.1:   EVDO 0 800MHz Channel = 1013, Test Antenna Horizontal)
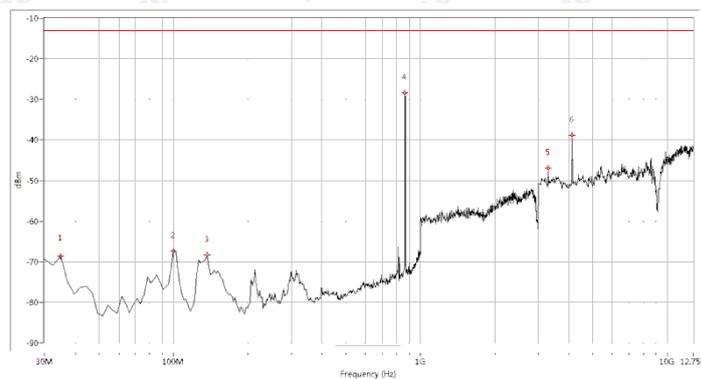
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.55	-13.0	55.6	288.9	Vertical	PASS
100.150	-67.38	-13.0	54.4	138.1	Vertical	PASS
136.434	-68.33	-13.0	55.3	90.5	Vertical	PASS
866.958	-28.43	-13.0	15.4	-0.0	Vertical	N.A
3291.771	-46.89	-13.0	33.9	53.2	Vertical	PASS
4118.454	-38.83	-13.0	25.8	240.8	Vertical	PASS

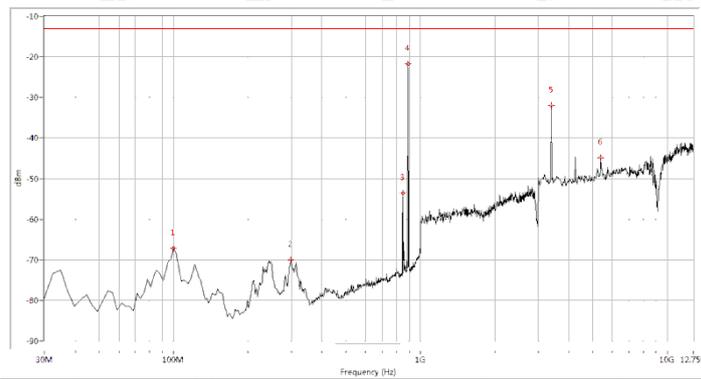(Plot D.2:   EVDO 0 800MHz Channel = 1013, Test Antenna Vertical)
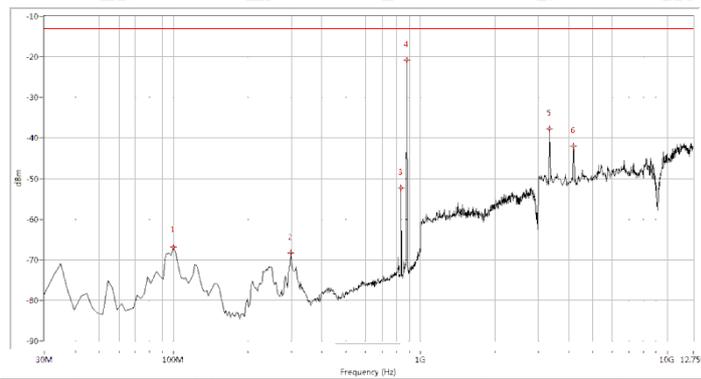
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-66.91	-13.0	53.9	303.4	Horizontal	PASS
298.504	-68.35	-13.0	55.3	22.0	Horizontal	PASS
835.511	-52.37	-13.0	39.4	88.3	Horizontal	N.A
879.052	-20.84	-13.0	7.8	62.9	Horizontal	N.A
3340.399	-37.79	-13.0	24.8	243.1	Horizontal	PASS
4167.082	-41.94	-13.0	28.9	113.2	Horizontal	PASS

(Plot E.1:   EVDO 0 800MHz Channel = 384, Test Antenna Horizontal)
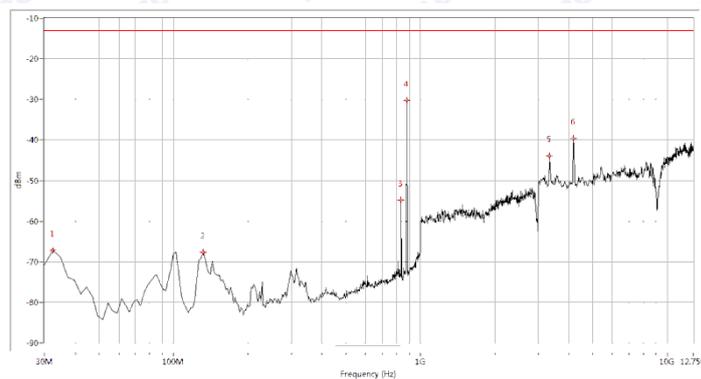
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-67.15	-13.0	54.2	360.0	Vertical	PASS
131.596	-67.74	-13.0	54.7	110.6	Vertical	PASS
835.511	-54.82	-13.0	41.8	24.6	Vertical	N.A
879.052	-30.32	-13.0	17.3	330.1	Vertical	N.A
3340.399	-43.84	-13.0	30.8	30.6	Vertical	PASS
4167.082	-39.58	-13.0	26.6	234.8	Vertical	PASS

(Plot E.2:   EVDO 0 800MHz Channel = 384, Test Antenna Vertical)

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-67.18	-13.0	54.2	255.8	Horizontal	PASS
298.504	-69.97	-13.0	57.0	50.7	Horizontal	PASS
847.606	-53.64	-13.0	40.6	87.2	Horizontal	N.A
891.147	-21.79	-13.0	8.8	240.5	Horizontal	N.A
3389.027	-32.00	-13.0	19.0	252.7	Horizontal	PASS
5382.793	-44.84	-13.0	31.8	146.3	Horizontal	PASS

(Plot F.1:   EVDO 0 800MHz Channel = 777, Test Antenna Horizontal)
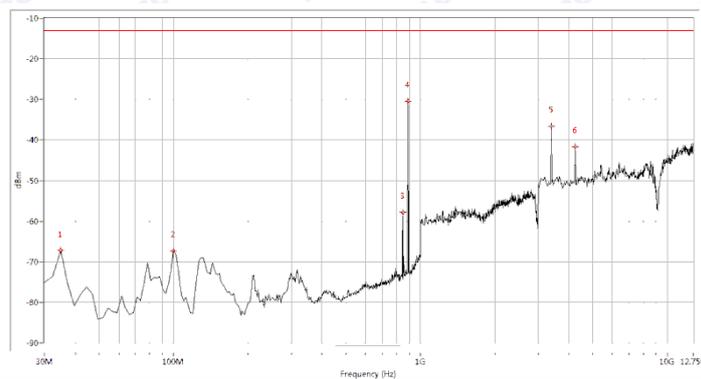
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-67.21	-13.0	54.2	165.2	Vertical	PASS
100.150	-67.35	-13.0	54.4	42.4	Vertical	PASS
847.606	-57.82	-13.0	44.8	113.9	Vertical	N.A
891.147	-30.41	-13.0	17.4	340.8	Vertical	N.A
3389.027	-36.58	-13.0	23.6	360.0	Vertical	PASS
4240.025	-41.72	-13.0	28.7	257.2	Vertical	PASS

(Plot F.2:   EVDO 0 800MHz Channel = 777, Test Antenna Vertical)
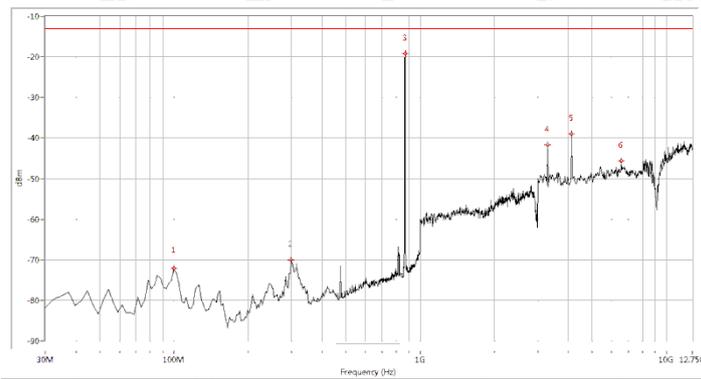
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-72.15	-13.0	59.2	360.0	Horizontal	PASS
298.504	-70.06	-13.0	57.1	29.5	Horizontal	PASS
869.377	-19.17	-13.0	6.2	247.9	Horizontal	N.A
3291.771	-41.71	-13.0	28.7	240.0	Horizontal	PASS
4118.454	-38.99	-13.0	26.0	59.2	Horizontal	PASS
6574.190	-45.70	-13.0	32.7	49.5	Horizontal	PASS

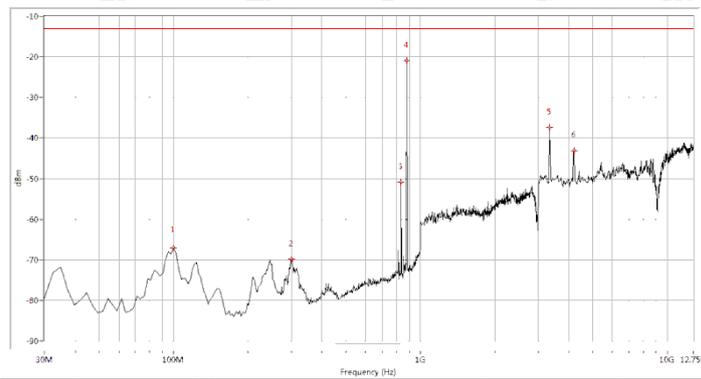(Plot G.1:   EVDO A 800MHz Channel = 1013, Test Antenna Horizontal)
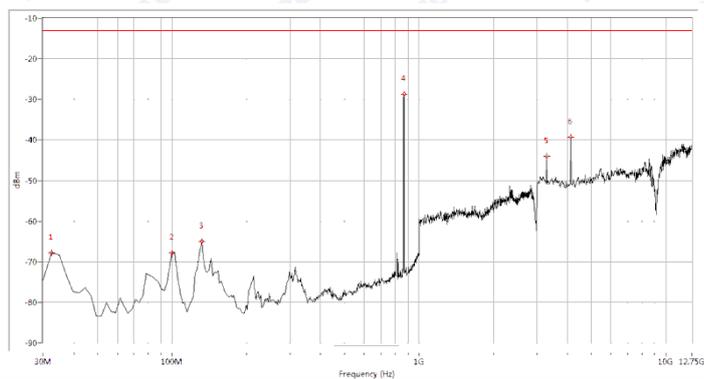
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-67.79	-13.0	54.8	23.4	Vertical	PASS
100.150	-67.89	-13.0	54.9	344.7	Vertical	PASS
131.596	-65.04	-13.0	52.0	173.4	Vertical	PASS
869.377	-28.67	-13.0	15.7	344.7	Vertical	N.A
3291.771	-44.10	-13.0	31.1	44.0	Vertical	PASS
4118.454	-39.25	-13.0	26.2	219.6	Vertical	PASS

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

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Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-67.08	-13.0	54.1	238.9	Horizontal	PASS
300.923	-69.86	-13.0	56.9	34.3	Horizontal	PASS
835.511	-50.80	-13.0	37.8	70.4	Horizontal	N.A
879.052	-20.89	-13.0	7.9	259.0	Horizontal	N.A
3340.399	-37.46	-13.0	24.5	239.3	Horizontal	PASS
4191.397	-43.14	-13.0	30.1	111.0	Horizontal	PASS

(Plot H.1: EVDO A 800MHz Channel = 384, Test Antenna Horizontal)
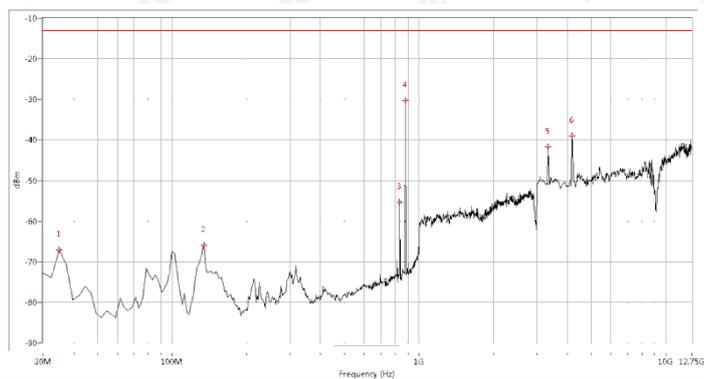
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-66.96	-13.0	54.0	357.3	Vertical	PASS
134.015	-65.88	-13.0	52.9	143.4	Vertical	PASS
835.511	-55.26	-13.0	42.3	236.4	Vertical	N.A
879.052	-30.27	-13.0	17.3	72.3	Vertical	N.A
3340.399	-41.68	-13.0	28.7	103.5	Vertical	PASS
4167.082	-38.95	-13.0	26.0	209.2	Vertical	PASS

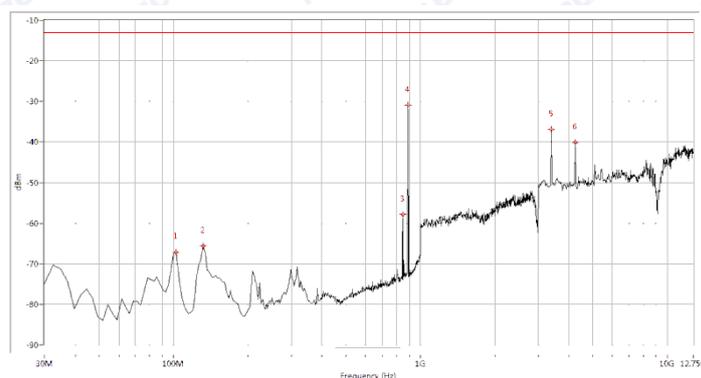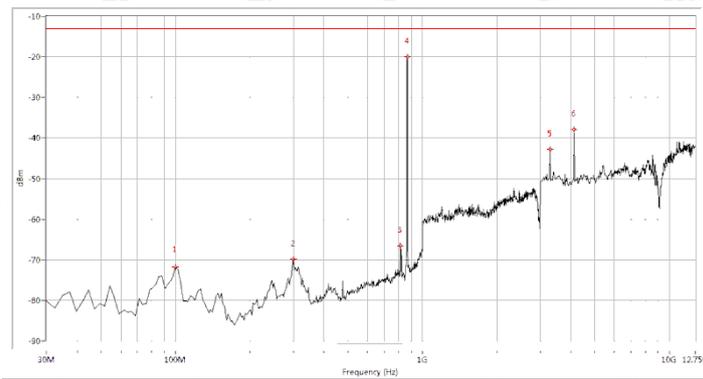(Plot H.2: EVDO A 800MHz Channel = 384, Test Antenna Vertical)
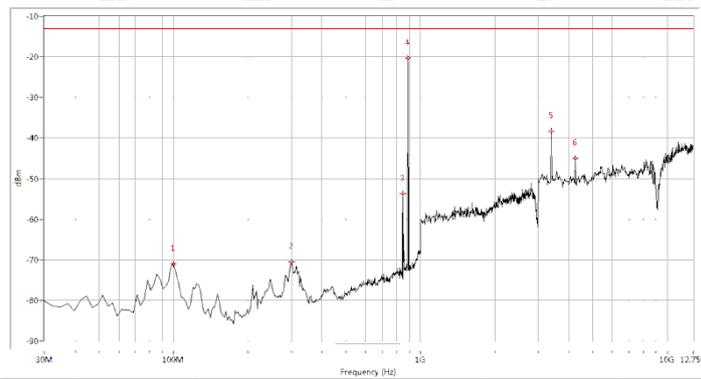
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-71.07	-13.0	58.1	243.8	Horizontal	PASS
300.923	-70.47	-13.0	57.5	47.2	Horizontal	PASS
847.606	-53.65	-13.0	40.6	88.2	Horizontal	N.A
891.147	-20.29	-13.0	7.3	67.7	Horizontal	N.A
3389.027	-38.34	-13.0	25.3	264.3	Horizontal	PASS
4240.025	-45.04	-13.0	32.0	74.5	Horizontal	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
102.569	-67.24	-13.0	54.2	314.9	Vertical	PASS
131.596	-65.64	-13.0	52.6	211.8	Vertical	PASS
847.606	-57.88	-13.0	44.9	350.5	Vertical	N.A
891.147	-30.93	-13.0	17.9	340.2	Vertical	N.A
3389.027	-36.91	-13.0	23.9	4.8	Vertical	PASS
4240.025	-40.09	-13.0	27.1	249.0	Vertical	PASS

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

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-71.75	-13.0	58.7	49.2	Horizontal	PASS
300.923	-69.93	-13.0	56.9	28.3	Horizontal	PASS
816.160	-66.54	-13.0	53.5	89.7	Horizontal	N.A
869.377	-20.03	-13.0	7.0	251.6	Horizontal	N.A
3291.771	-42.77	-13.0	29.8	246.0	Horizontal	PASS
4118.454	-37.89	-13.0	24.9	115.0	Horizontal	PASS

(Plot J.1: EVDO B 800MHz Channel = 1013, Test Antenna Horizontal)
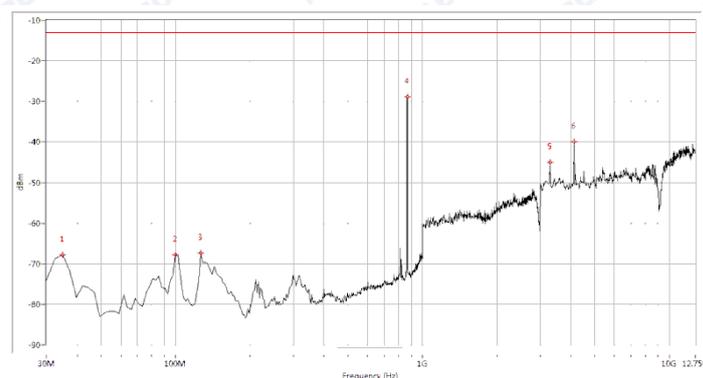
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-67.75	-13.0	54.8	66.3	Vertical	PASS
100.150	-67.90	-13.0	54.9	180.5	Vertical	PASS
126.758	-67.37	-13.0	54.4	201.3	Vertical	PASS
869.377	-28.87	-13.0	15.9	24.3	Vertical	N.A
3291.771	-44.95	-13.0	32.0	86.8	Vertical	PASS
4118.454	-40.00	-13.0	27.0	222.2	Vertical	PASS

(Plot J.2: EVDO B 800MHz Channel = 1013, Test Antenna Vertical)
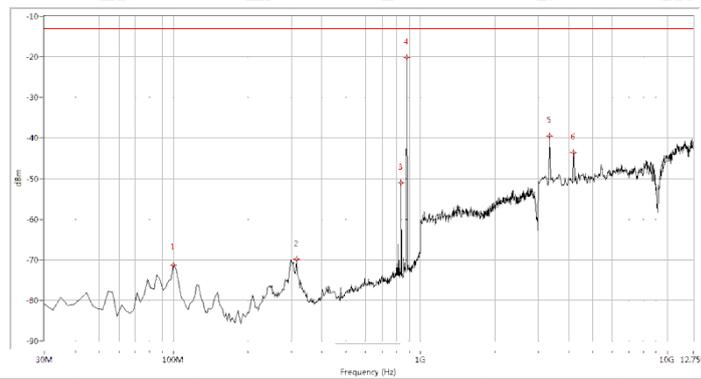
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-71.25	-13.0	58.2	145.6	Horizontal	PASS
315.436	-69.86	-13.0	56.9	36.6	Horizontal	PASS
835.511	-51.02	-13.0	38.0	79.0	Horizontal	N.A
879.052	-20.12	-13.0	7.1	251.6	Horizontal	N.A
3340.399	-39.53	-13.0	26.5	246.3	Horizontal	PASS
4167.082	-43.51	-13.0	30.5	55.9	Horizontal	PASS

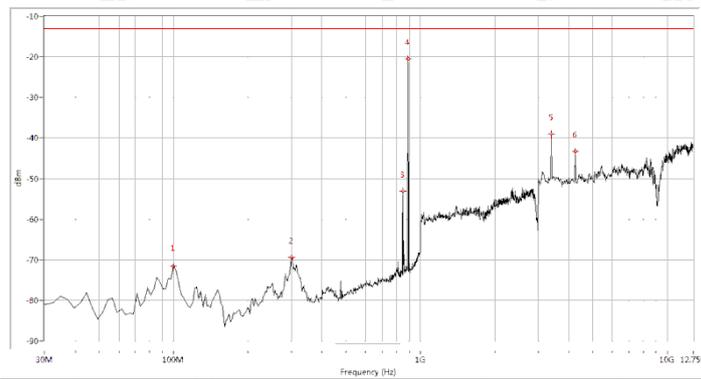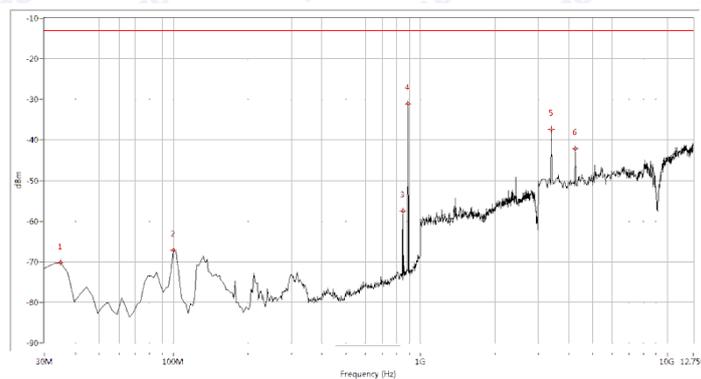(Plot K.1: EVDO B 800MHz Channel = 384, Test Antenna Horizontal)
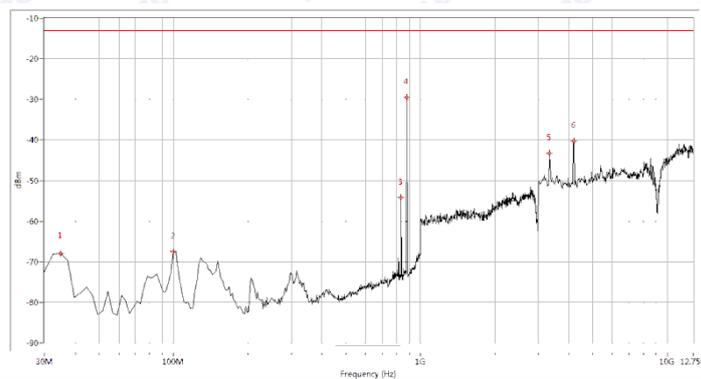
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-67.97	-13.0	55.0	340.6	Vertical	PASS
100.150	-67.51	-13.0	54.5	189.9	Vertical	PASS
835.511	-54.13	-13.0	41.1	354.5	Vertical	N.A
881.471	-29.50	-13.0	16.5	340.6	Vertical	N.A
3340.399	-43.23	-13.0	30.2	117.6	Vertical	PASS
4191.397	-40.21	-13.0	27.2	221.5	Vertical	PASS

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

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Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
100.150	-71.60	-13.0	58.6	257.6	Horizontal	PASS
300.923	-69.41	-13.0	56.4	223.0	Horizontal	PASS
847.606	-53.02	-13.0	40.0	81.5	Horizontal	N.A
891.147	-20.48	-13.0	7.5	263.2	Horizontal	N.A
3389.027	-39.05	-13.0	26.0	251.6	Horizontal	PASS
4240.025	-43.34	-13.0	30.3	110.5	Horizontal	PASS

(Plot L.1: EVDO B 800MHz Channel = 777, Test Antenna Horizontal)

Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-70.12	-13.0	57.1	253.3	Vertical	PASS
100.150	-67.25	-13.0	54.2	29.1	Vertical	PASS
847.606	-57.55	-13.0	44.6	-0.0	Vertical	N.A
891.147	-31.03	-13.0	18.0	77.1	Vertical	N.A
3389.027	-37.36	-13.0	24.4	-0.0	Vertical	PASS
4240.025	-42.09	-13.0	29.1	231.2	Vertical	PASS

(Plot L.2: EVDO B 800MHz Channel = 777, Test Antenna Vertical)

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