



**FCC CFR47 PART 22 SUBPART H  
FCC CFR47 PART 24 SUBPART E  
INDUSTRY CANADA RSS-132 ISSUE 2  
INDUSTRY CANADA RSS-133 ISSUE 5**

**CERTIFICATION TEST REPORT  
FOR  
802.11BG, BT, WWAN COMBO MODULE**

**MODEL NUMBER: FENWAY**

**FCC ID: J9CFENWAY-1  
IC: 2723A-FENWAY1**

**REPORT NUMBER: 09U12627-1, Revision C  
ISSUE DATE: August 5, 2009**

*Prepared for*

**QUALCOMM  
5775 MOREHOUSE DRIVE  
SAN DIEGO, CA 92121, U.S.A.**

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**NVLAP LAB CODE 200065-0**

Revision History

Rev.	Date	Revisions	Revised By
--	07/20/09	Initial Issue	T. Chan
B	07/21/09	Updated to RSS-133 Issue 5, The Peak Output Power Were Measured Under This Report	T. Chan
B	07/27/09	Updated EUT description	A. Zaffar
C	08/05/09	Updated RF conducted power for 1XRTT on page 13 and 14, EVDO REV 0 on page 15 and EVDO REV A on page 16	C. Lin

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** QUALCOMM CORPORATE  
5775 MOREHOUSE DRIVE  
SAN DIEGO, CA 92121, U.S.A.

**EUT DESCRIPTION:** 802.11bg, BT, WWAN Combo Module

**MODEL:** FENWAY

**SERIAL NUMBER:** FDSOAUY

**DATE TESTED:** JULY 15-18, 2009

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 22 Subpart H	Pass
CFR 47 Part 24 Subpart E	Pass
INDUSTRY CANADA RSS-132 Issue 2	Pass
INDUSTRY CANADA RSS-133 Issue 5	Pass

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

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## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, RSS-132 Issue 2, and RSS-133 Issue 5.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

## **5. EQUIPMENT UNDER TEST**

### **5.1. DESCRIPTION OF EUT**

The EUT is an 802.11bg, BT, WWAN Combo Module.

### **5.2. DESCRIPTION OF AVAILABLE ANTENNAS**

The radio utilizes a Magnetic Mount triple-frequency Mobile antenna with a maximum gain of 0 dBi.

### 5.3. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	HP	Compaq6910p	CND8153FTV	DoC
AC Adapter	HP	PA-1131-08HC	7500329102	DoC
Horn	EMCO	3115	6717	NA
AC Adapter	QUALCOMM	GWC-1700	CV90-C6024	DoC
Qualcomm Miniposer	QUALCOMM	NA	NA	NA

#### I/O CABLES (CONDUCTED TEST)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	2	US 115V	Un-shielded	2m	No
2	DC	2	DC	Un-shielded	2m	No
3	USB	1	USB	Un-shielded	2m	Yes
4	RF In/Out	1	Directional Coupler	Un-shielded	1m	Yes
5	RF In/Out	1	Communication Test Set	Un-shielded	2m	Yes
6	RF In/Out	1	Spectrum Analyzer	Un-shielded	1m	Yes

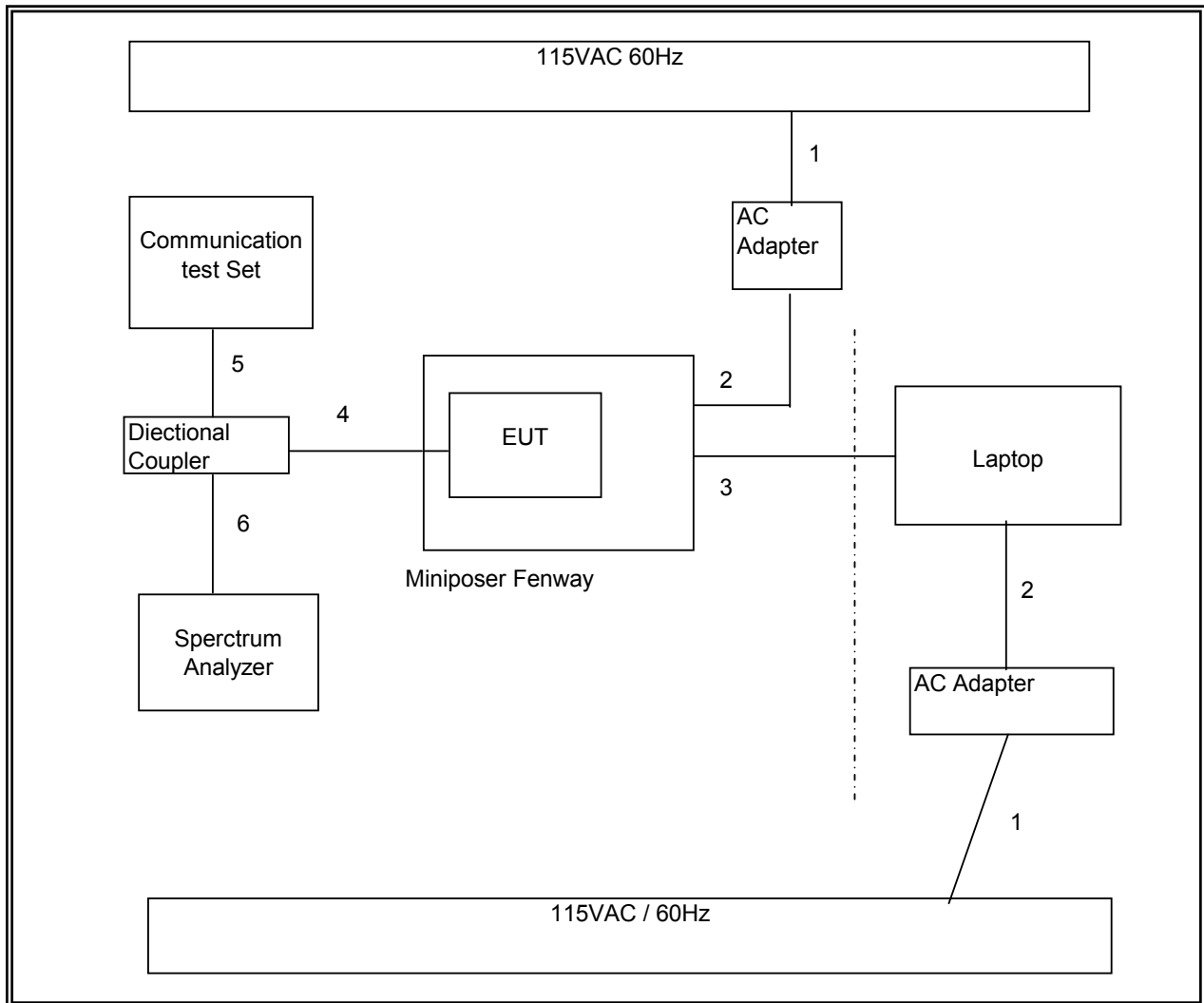
#### I/O CABLES (RADIATED TEST)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	2	US 115V	Un-shielded	2m	No
2	DC	2	DC	Un-shielded	2m	No
3	USB	1	USB	Un-shielded	2m	Yes
4	RF In/Out	1	Horn	Un-shielded	1m	Yes

#### TEST SETUP

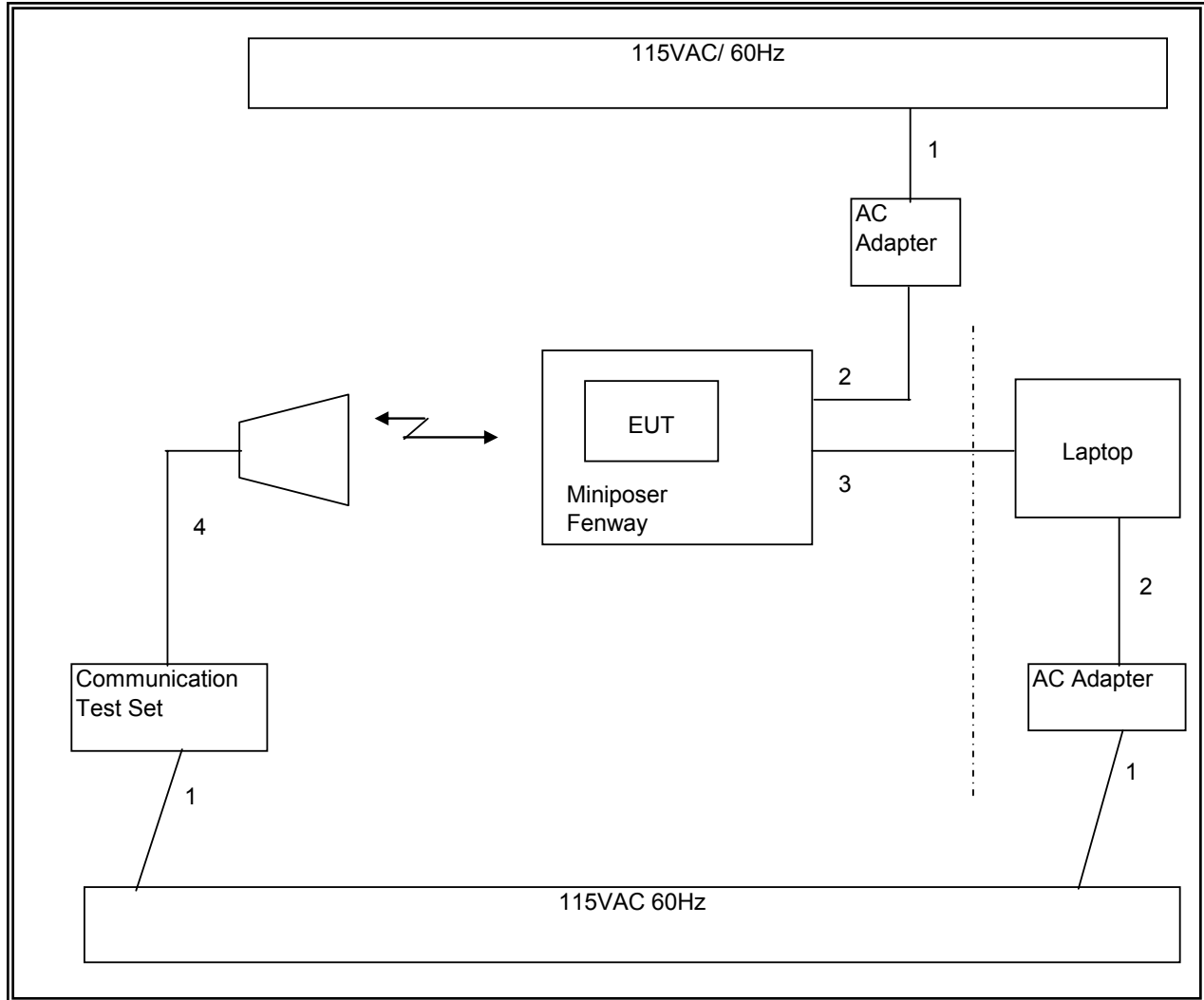
The EUT is installed in a test fixture during the tests. A link is established between the EUT and the Agilent 8960 communications test set.

**SETUP DIAGRAM FOR CONDUCTED TESTS**





**SETUP DIAGRAM FOR RADIATED TESTS**



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	02/03/10
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	01/14/10
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	02/04/10
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00778	12/16/09
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	04/06/10
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/06/09
Communications Test Set	Agilent / HP	E5515C	C01086	06/12/10
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	10/29/09
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Directional Coupler, 18 GHz	Krytar	1817	N02656	CNR
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/03/10
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00993	06/28/10

## 7. TEST SUMMARY

### 7.1. LIST OF TEST ITEMS

Description of test	Rule part		Results
	FCC	IC	
1. RF Power Output	§2.1046	RSS-132, 4.4; RSS-133, 6.4;	Complies
2. Occupied Bandwidth	§2.1049	RSS-Gen, 4.6	--
3. Block Edge (Band Edge)	§22.359, §24.238	RSS-132, 4.5; RSS-133, 6.5	Complies
4. Out of Band Emissions	§2.1051, §22.917, §24.238	RSS-132, 4.5; RSS-133, 6.5	Complies
5. Frequency Stability	§2.1055, §22.355, §24.235	RSS-132, 4.3; RSS-133, 6.3	Complies
6. Radiated Power (ERP & EIRP)	§2.1046, §22.913, §24.232	RSS-132; 4.4, RSS-133, 6.4	Complies
7. Field Strength of Spurious Radiation	§2.1053, §22.917, §24.238	RSS-132, 4.5; RSS-233, 6.5	Complies
8. Receiver Spurious Emissions (IC only)	n/a	RSS-132, 4.6; RSS-133, 6.6, RSS-Gen	Complies

### 7.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak output power as follows:

#### Part 22 Cellular Band

Frequency range (MHz)	Modulation	Conducted		ERP	
		dBm	mW	dBm	mW
824.7 – 848.31	1xRTT (RC1, SO55)	29.33	857.0	28.00	631.0
824.7 – 848.31	EV-DO - REV A	29.61	914.1	28.40	691.8

#### Part 24 PCS Band

Frequency range (MHz)	Modulation	Conducted		EIRP	
		dBm	mW	dBm	mW
1851.25 – 1908.8	1xRTT (RC1, SO55)	29.38	867.0	28.00	631.0
1851.25 – 1908.8	EV-DO - REV A	29.77	948.4	28.30	676.1

## 8. RF POWER OUTPUT VERIFICATION

Maximum output power is verified on the Low, Middle and High channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E for 1xRTT, section 3.1.2.3.4 of 3GPP2 C.S0033-0/TIA-866 for Rel. 0 and section 4.3.4 of 3GPP2 C.S0033-A for Rev. A

### 8.1. RF POWER OUTPUT FOR 1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

<u>Application</u>	<u>Rev. License</u>
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 8  
> Network ID (NID) > 65535
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps  
> R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)
  -

**RF Power Output Results for 1XRTT**

RF Power Output for 1xRTT - Cell Band							
Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		Ch. 1013/824.7MHz		Ch. 384/836.52MHz		Ch. 777/848.31MHz	
		Average	Peak	Average	Peak	Average	Peak
RC1 (Fwd1, Rvs1)	1 (Voice)	NA	NA	NA	NA	NA	NA
	2 (Loopback)	25.17	29.30	25.21	29.18	24.52	29.04
	3 (Voice)	25.13	29.15	25.20	29.17	24.51	29.27
	55 (Loopback)	25.23	29.32	25.24	29.33	24.59	29.15
	68 (Voice)	NA	NA	NA	NA	NA	NA
RC2 (Fwd2, Rvs2)	9 (Loopback)	25.26	29.19	25.27	29.27	24.57	29.19
	17 (Voice)	25.20	29.13	25.19	29.06	24.50	29.08
	55 (Loopback)	25.21	29.30	25.18	29.09	24.51	29.07
	32768 (Voice)	25.18	29.01	25.20	29.04	24.50	29.05
RC3 (Fwd3, Rvs3)	1 (Voice)	NA	NA	NA	NA	NA	NA
	2 (Loopback)	25.31	28.87	25.28	28.90	24.61	28.50
	3 (Voice)	25.25	28.74	25.21	28.63	24.55	28.97
	55 (Loopback)	25.28	28.80	25.24	28.67	24.64	28.35
	32 (+ F-SCH)	25.32	29.01	25.27	28.78	24.63	28.44
	32 (+ SCH)	25.26	28.54	25.22	28.86	24.65	28.90
RC4 (Fwd4, Rvs3)	1 (Voice)	NA	NA	NA	NA	NA	NA
	2 (Loopback)	25.30	28.86	25.32	28.91	24.63	28.45
	3 (Voice)	25.29	28.80	25.19	28.95	24.50	28.49
	55 (Loopback)	25.25	28.84	25.26	28.75	24.51	28.46
	32 (+ F-SCH)	25.24	28.91	25.21	28.66	24.50	28.38
	32 (+ SCH)	25.29	28.72	25.25	28.71	24.55	28.40
RC5 (Fwd5, Rvs4)	9 (Loopback)	25.30	28.77	25.28	28.91	24.59	28.48
	17 (Voice)	25.22	28.78	25.23	28.69	24.52	28.71
	55 (Loopback)	25.30	28.76	25.30	28.64	24.60	28.43
	32768 (Voice)	25.21	28.80	25.21	28.73	24.50	28.58

**RF Power Output Results for 1XRTT**

RF Power Output for 1xRTT - PCS Band							
Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)					
		Ch. 25/1851.25MHz		Ch. 600/1880MHz		Ch. 1175/1908.75 MHz	
		Average	Peak	Average	Peak	Average	Peak
RC1 (Fwd1, Rvs1)	1 (Voice)	NA	NA	NA	NA	NA	NA
	2 (Loopback)	24.61	28.63	24.60	28.89	23.92	28.00
	3 (Voice)	24.55	28.55	24.54	28.87	23.91	28.05
	55 (Loopback)	24.65	28.86	24.65	29.38	23.95	28.60
	68 (Voice)	23.52	28.70	24.52	29.23	23.90	28.45
RC2 (Fwd2, Rvs2)	9 (Loopback)	24.55	28.60	24.62	28.93	23.95	27.90
	17 (Voice)	24.50	28.95	24.61	28.99	23.88	28.23
	55 (Loopback)	24.54	28.58	24.67	28.98	23.90	27.95
	32768 (Voice)	24.45	28.66	24.55	29.27	23.90	28.61
RC3 (Fwd3, Rvs3)	1 (Voice)	NA	NA	NA	NA	NA	NA
	2 (Loopback)	24.59	28.20	24.65	28.48	23.88	27.47
	3 (Voice)	24.45	27.97	24.60	28.34	23.71	27.79
	55 (Loopback)	24.52	28.01	24.65	28.54	23.95	27.51
	32 (+ F-SCH)	24.54	28.22	24.65	28.48	23.72	27.54
	32 (+ SCH)	24.55	27.88	24.62	28.35	23.75	27.62
RC4 (Fwd4, Rvs3)	1 (Voice)	NA	NA	NA	NA	NA	NA
	2 (Loopback)	24.50	28.07	24.58	28.28	23.98	27.43
	3 (Voice)	24.47	28.04	24.50	28.35	23.91	27.44
	55 (Loopback)	24.51	27.94	24.55	28.23	23.97	27.44
	32 (+ F-SCH)	24.55	28.15	24.52	28.45	24.00	27.49
	32 (+ SCH)	24.57	27.90	24.55	28.45	23.97	27.35
RC5 (Fwd5, Rvs4)	9 (Loopback)	24.72	28.11	24.61	28.18	24.21	27.46
	17 (Voice)	24.45	28.01	24.52	28.48	24.14	27.35
	55 (Loopback)	24.56	28.13	24.60	28.32	24.22	27.47
	32768 (Voice)	24.48	28.13	24.58	28.36	24.15	27.17

## 8.2. RF POWER OUTPUT FOR EVDO REV 0

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

<u>Application</u>	<u>Rev, License</u>
1xEV-DO Terminal Test	A.09.13

### EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press "Start Data Connection" when "Session Open" appear in "Active Cell"
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

### EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press "Start Data Connection" when "Session Open" appear in "Active Cell"
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

### RF Power Output for EV-DO Rel 0

#### Cell Band

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted power (dBm)	
				Average	Peak
307.2 kbps (2 slot, QPSK)	153.6 kbps	1013	824.70	24.91	28.81
		384	836.52	24.77	28.90
		777	848.31	24.25	28.83

#### PCS Band

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted power (dBm)	
				Average	Peak
307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	23.99	28.50
		600	1880.00	24.12	29.00
		1175	1908.75	23.55	27.99

### 8.3. RF POWER OUTPUT FOR EVDO REV A

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

<u>Application</u>	<u>Rev, License</u>
1xEV-DO Terminal Test	A.09.13

**EVDO Release A – RETAP**

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

**EVDO Release A - FETAP**

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

**RF Power Output Results for EV-DO Rev A**

**Cell Band**

FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f (MHz)	Conducted power (dBm)	
				Average	Peak
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	1013	824.70	24.11	29.05
		384	836.52	24.65	29.61
		777	848.31	24.30	29.19

**PCS Band**

FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f (MHz)	Conducted power (dBm)	
				Average	Peak
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	23.88	29.77
		600	1880.00	23.92	29.72
		1175	1908.75	23.68	28.62



## 9. WORST-CASE CONFIGURATION AND MODE

Based on the following investigation results, see Section 6. RF POWER OUTPUT VERIFICATION. The highest peak power and enhanced data rate is the worst-case scenario for all measurements.

Worst case modes:

- For Cellular and PCS band: 1xRTT (RC1 SO55)
- For Cellular and PCS band: EVDO-Rev A

## 10. CONDUCTED TEST RESULTS

### 10.1. OCCUPIED BANDWIDTH

#### RULE PART(S)

FCC: §2.1049  
 IC: RSS-Gen, 4.6

#### LIMITS

For reporting purposes only

#### TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

#### MODES TESTED

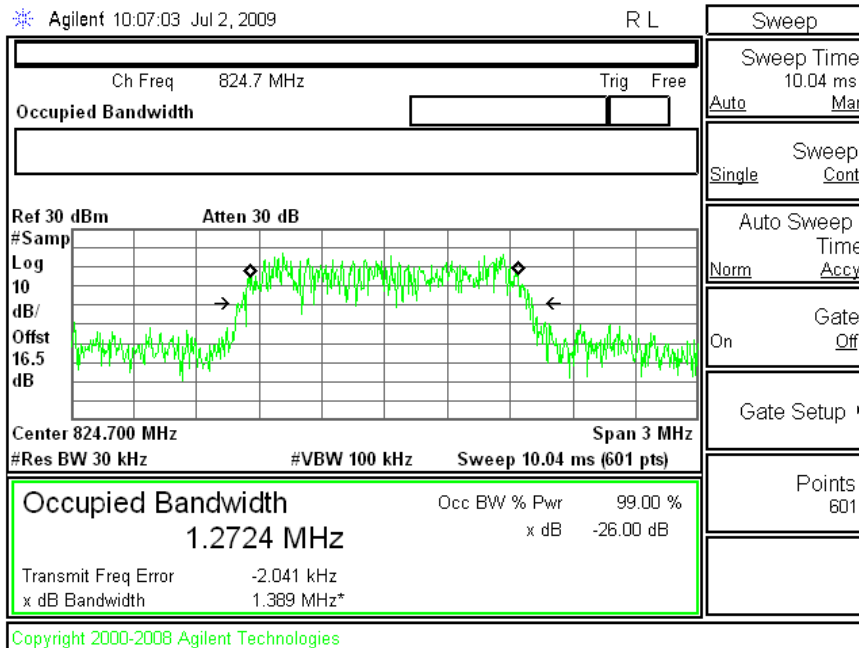
- 1xRTT - RC1, SO55
- EV-DO - REV A

#### RESULTS

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW MHz)
Cellular	1xRTT	1013	824.70	1.2724	1.389
		384	836.52	1.2678	1.393
		777	848.31	1.2705	1.411
	EV-DO REV A	1013	824.70	1.2714	1.398
		384	836.52	1.2794	1.423
		777	848.31	1.2700	1.404
PCS	1xRTT	25	1851.25	1.2797	1.406
		600	1880.0	1.2745	1.389
		1175	1908.75	1.2724	1.405
	EV-DO REV A	25	1851.25	1.2726	1.390
		600	1880.0	1.2753	1.393
		1175	1908.75	1.2725	1.397

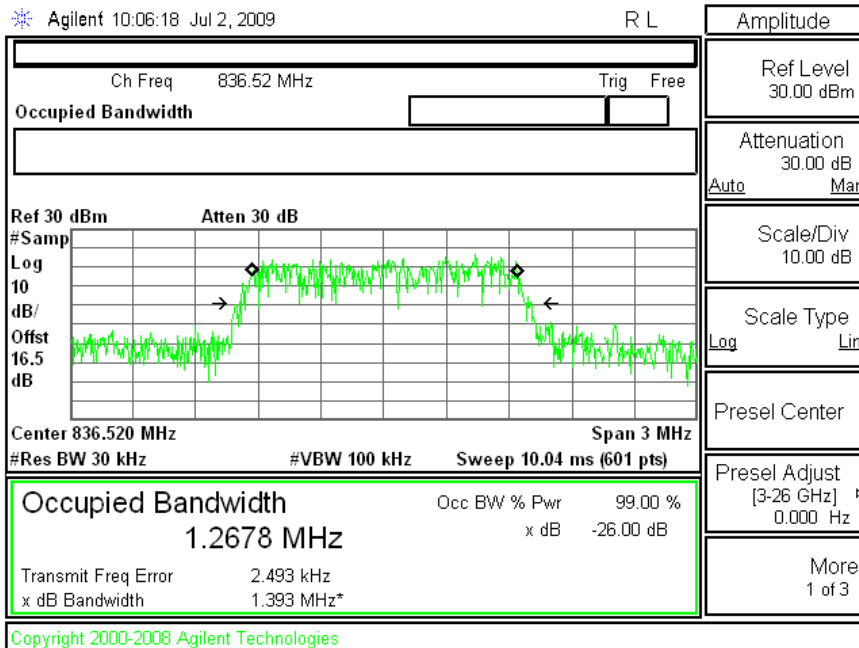
**Plots for 1xRTT Mode (Cellular Band)**

1xRTT Ch 1013



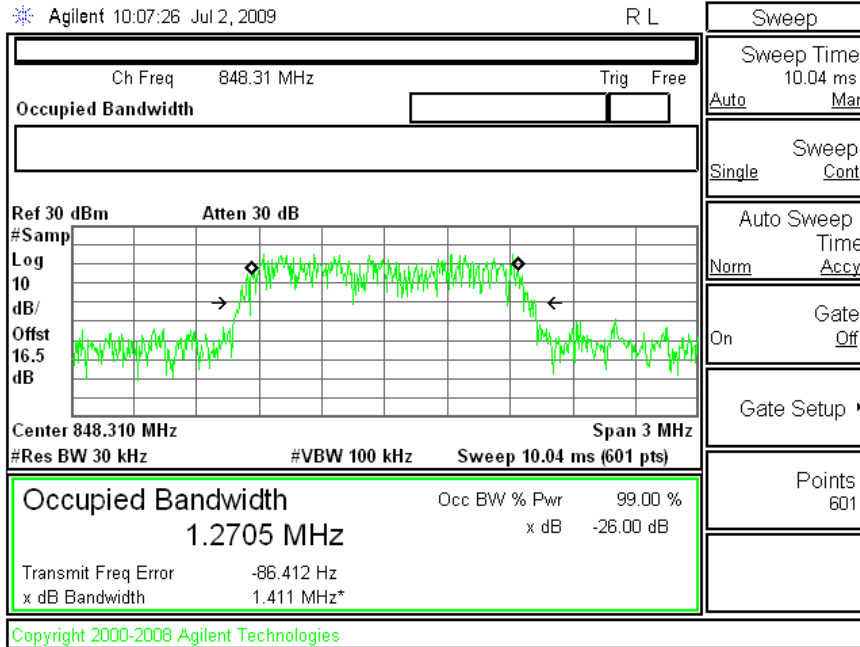
Sweep
Sweep Time 10.04 ms
Auto Man
Single Sweep Cont
Auto Sweep Time Norm Accy
Gate On Off
Gate Setup
Points 601

1xRTT, Ch 384



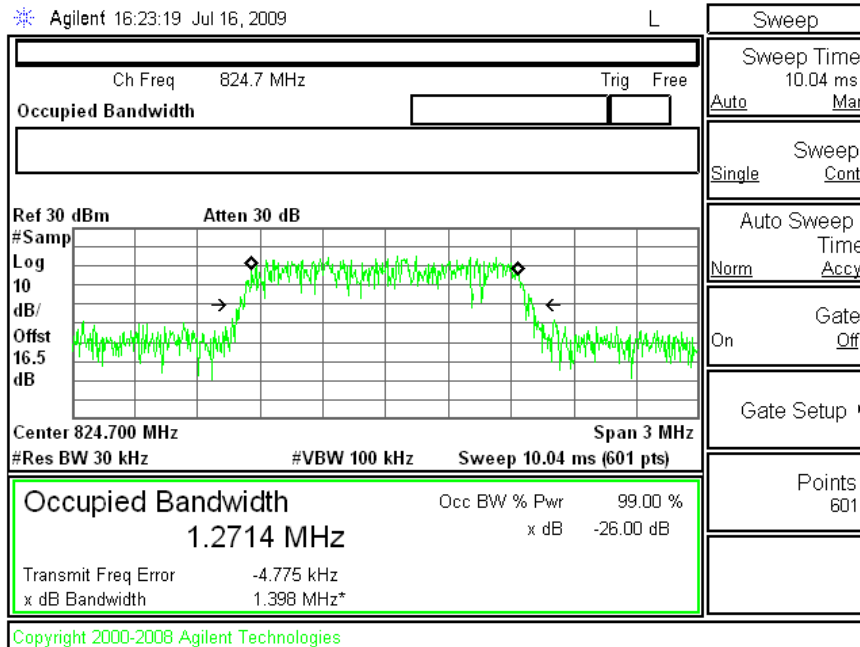
Amplitude
Ref Level 30.00 dBm
Attenuation 30.00 dB
Auto Man
Scale/Div 10.00 dB
Scale Type Log Lin
Presel Center
Presel Adjust [3-26 GHz] 0.000 Hz
More 1 of 3

1xRTT Ch 777

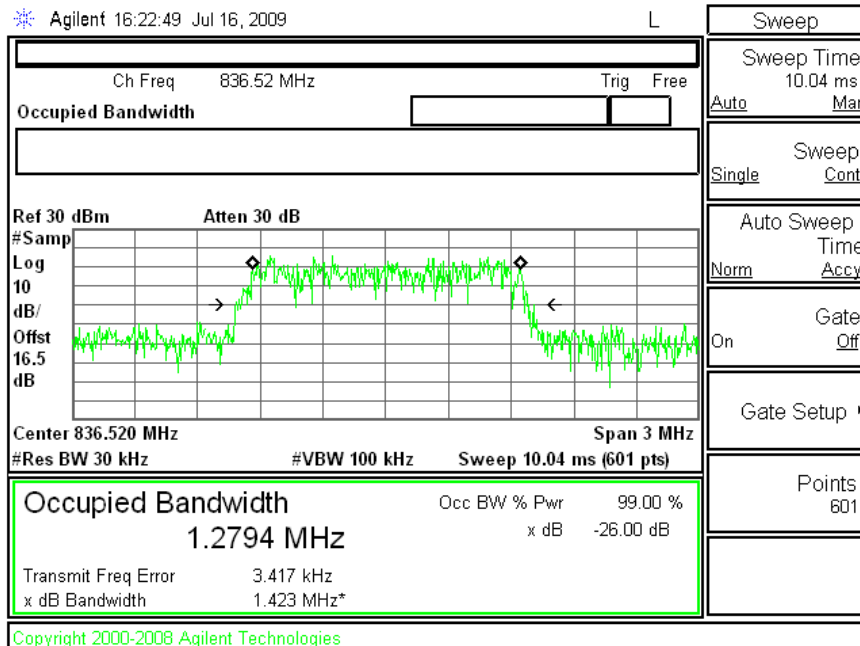


**Plots for EVDO-REV A Mode (Cellular Band)**

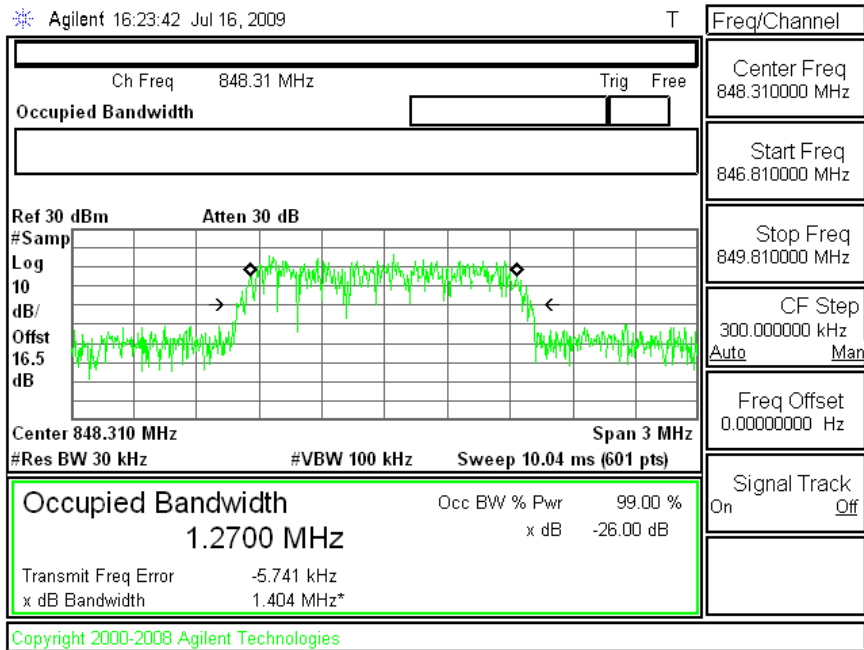
EVDO-REV A, Ch 1013



EVDO-REV A, Ch 384

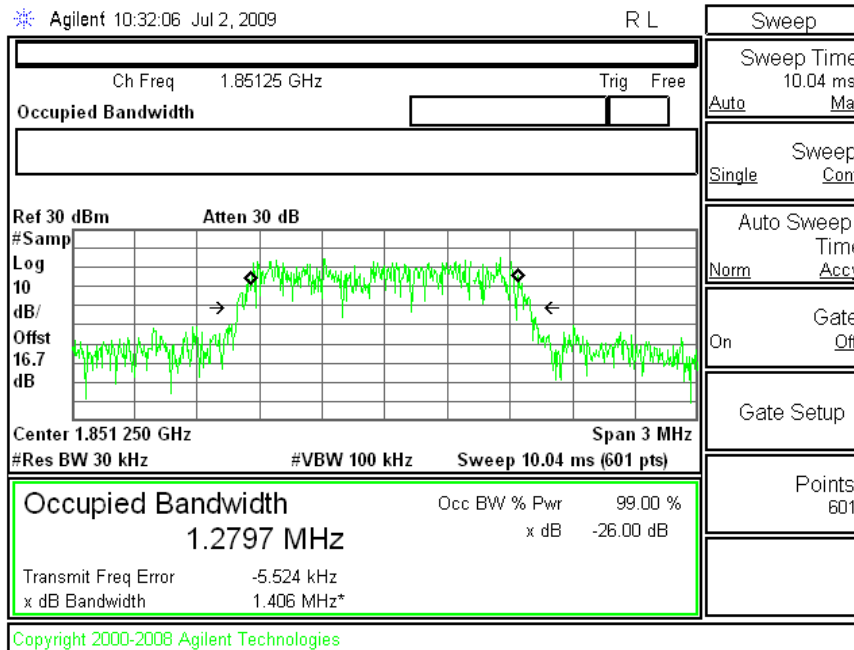


EVDO-REV A Ch 777

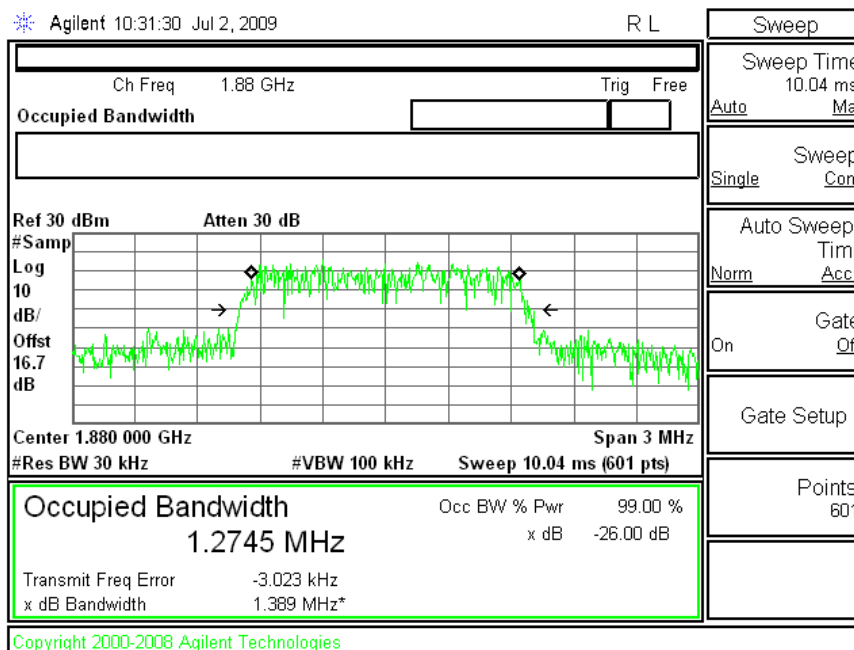


**Plots for 1xRTT Mode (PCS Band)**

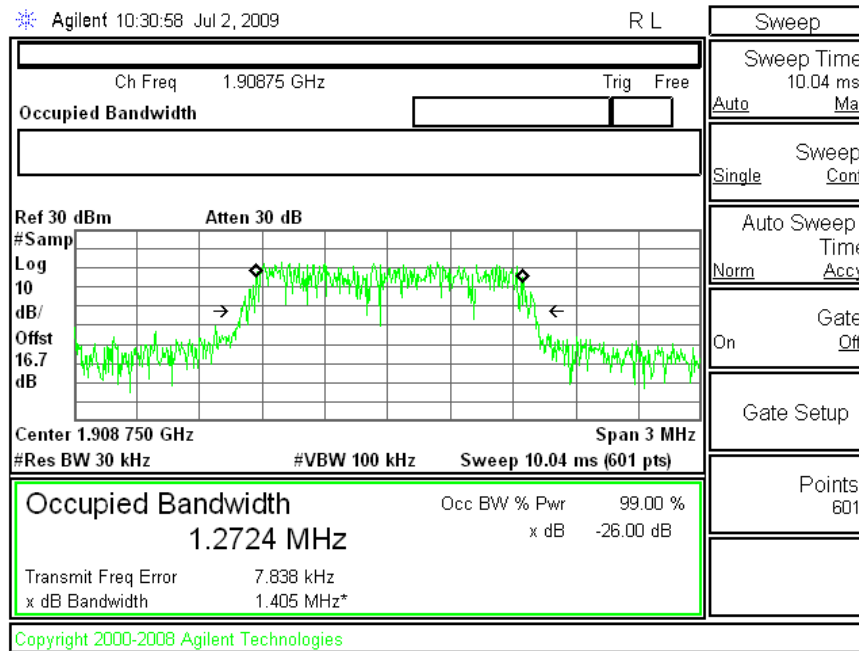
1xRTT, Ch 25



1xRTT, Ch 600



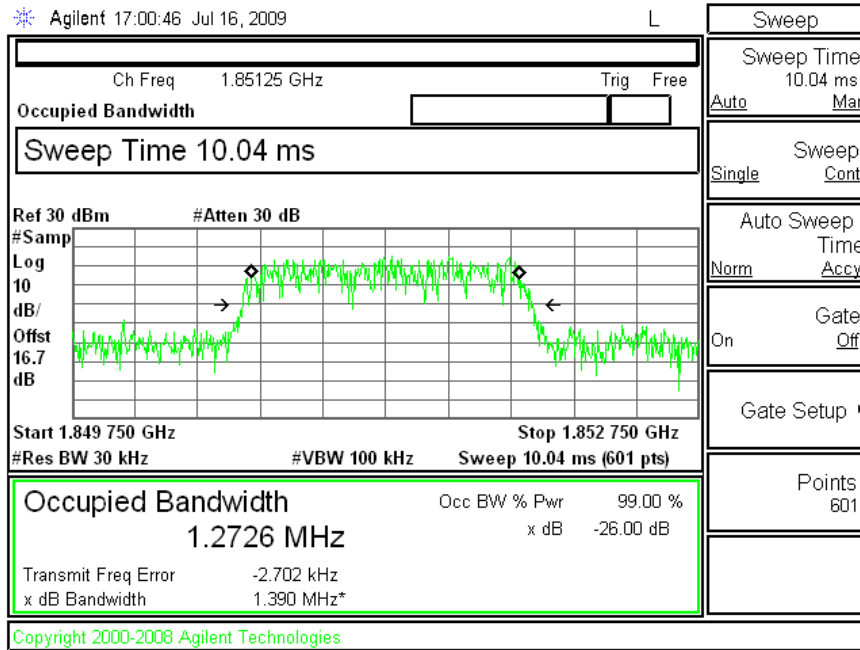
1xRTT, Ch 1175



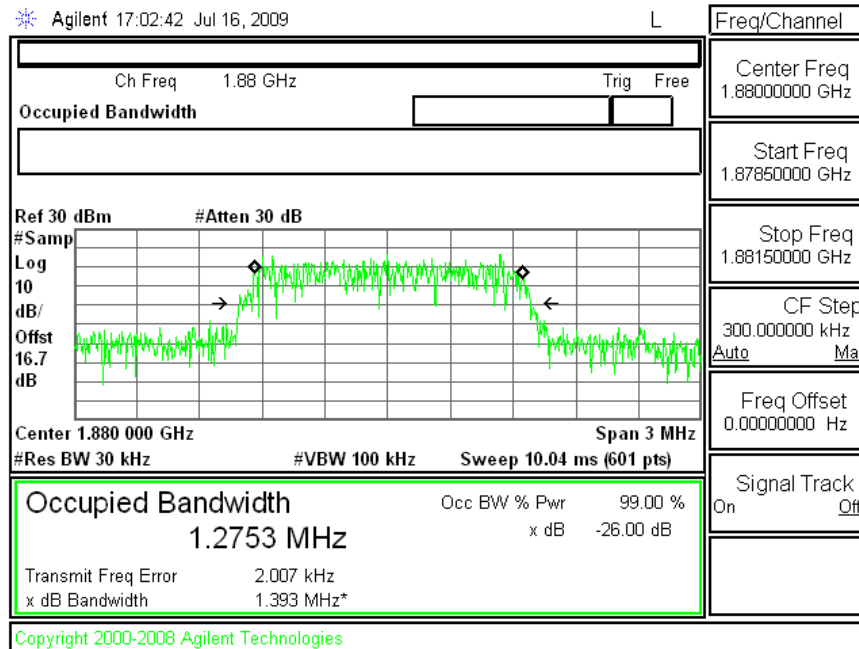


**Plots for EVDO, REV A Mode (PCS Band)**

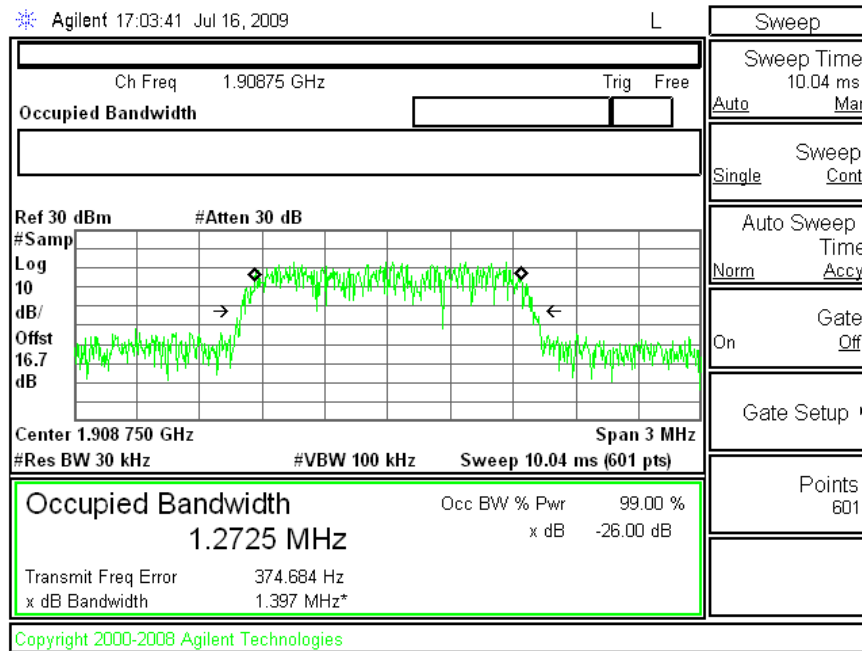
EVDO-REV A, Ch 25



EVDO-REV A, Ch 600



EVDO-REV A, Ch 1175



## **10.2. BAND EDGE**

### **RULE PART(S)**

FCC: §22.359, 24.238

IC: RSS-132, 4.5; RSS-133, 6.5

### **LIMITS**

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.

### **TEST PROCEDURE**

The transmitter output was connected to a Agilent 8960 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency (824, 848, 1850, 1910MHz)
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

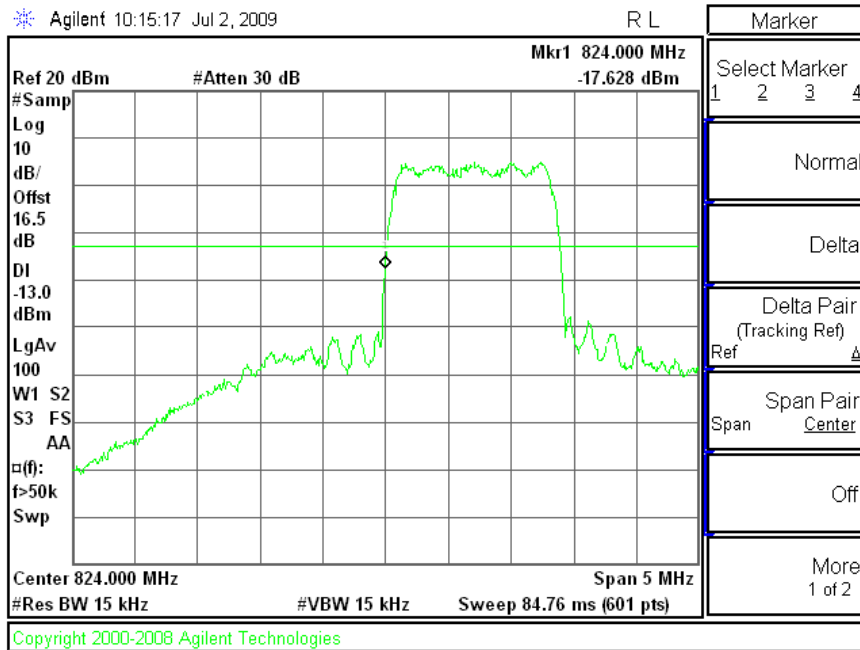
### **MODES TESTED**

- 1xRTT - RC1, SO55
- EV-DO - REV A

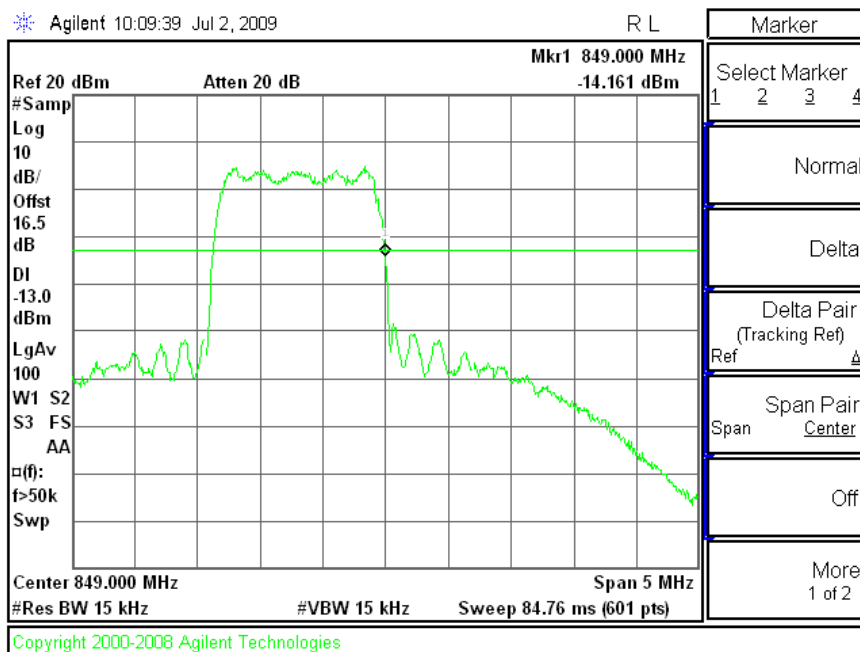
### **RESULTS**

**Plots for 1xRTT mode (Cellular Band)**

**1xRTT, Ch 1013 (824.7 MHz)**

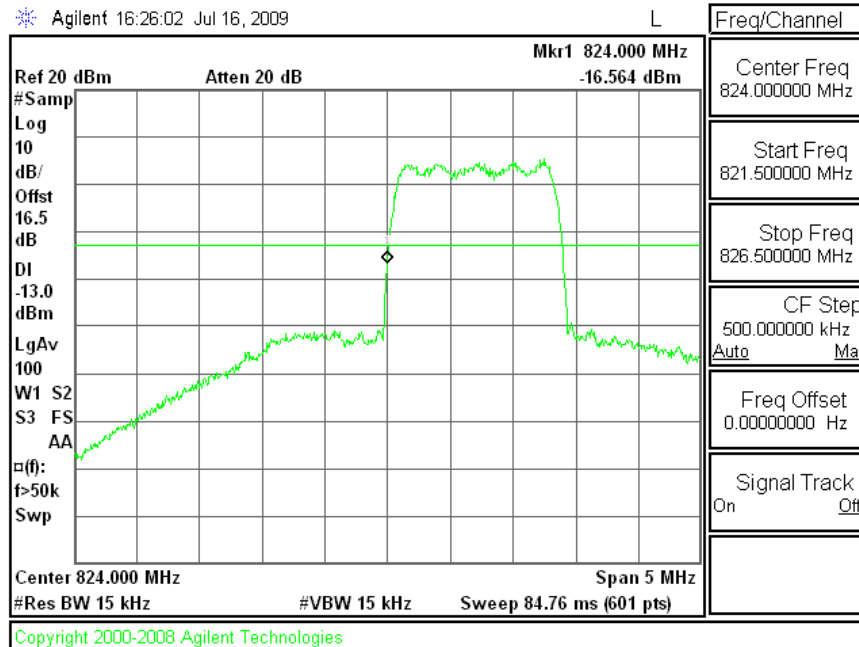


**1xRTT, Ch 777 (848.75 MHz)**

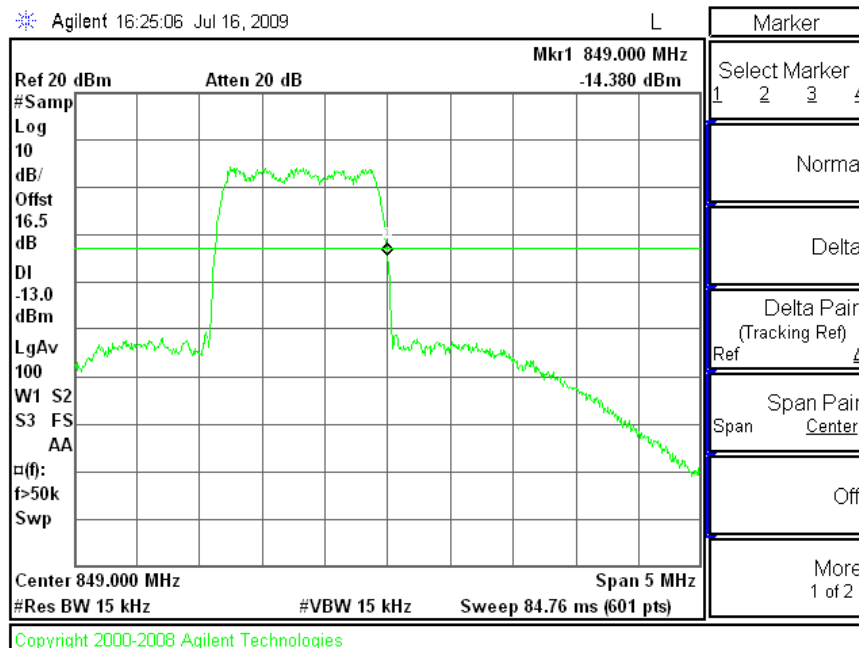


**Plots for EVDO-REV A mode (Cellular Band)**

**EVDO-REV A Ch 1013 (824.7 MHz)**

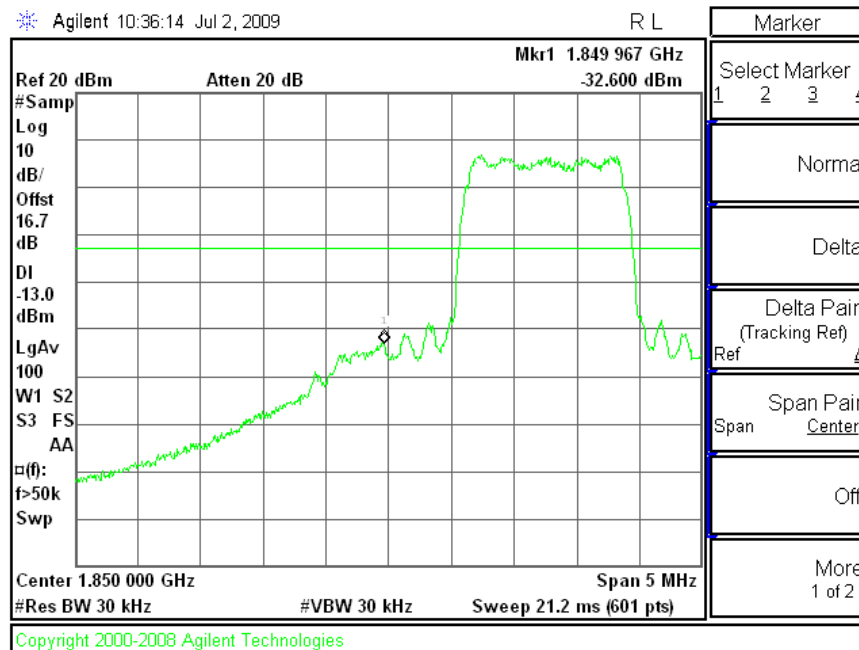


**EVDO-REV A, Ch 777 (848.75 MHz)**

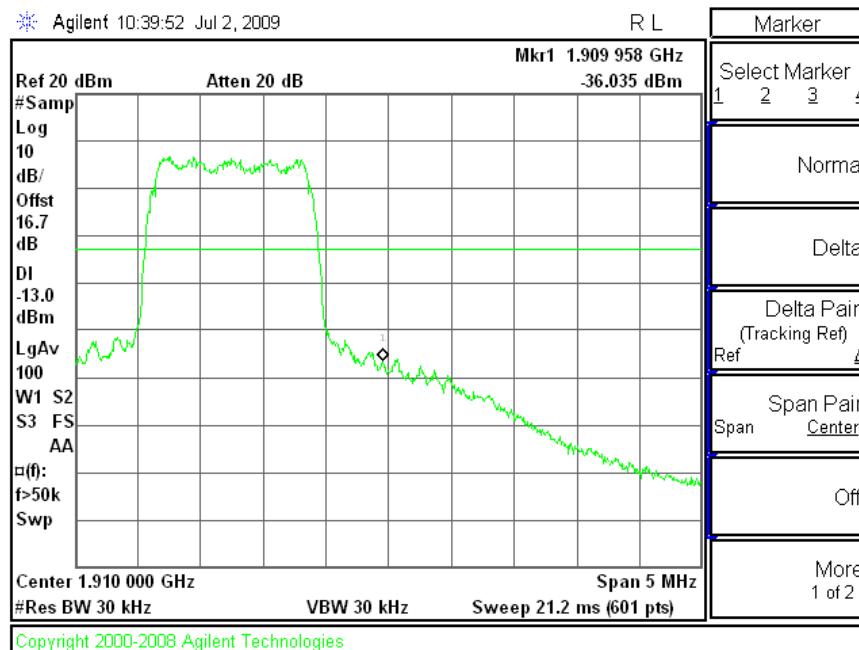


**Plots for 1xRTT mode (PCS Band)**

1xRTT, Ch 25 (1851.25 MHz)

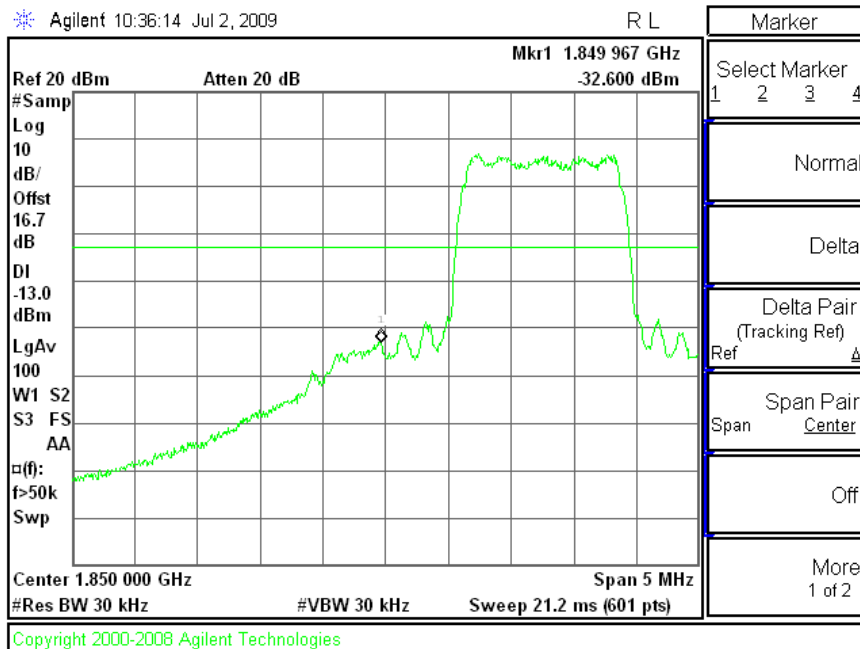


1xRTT Ch 1175 (1908.75 MHz)

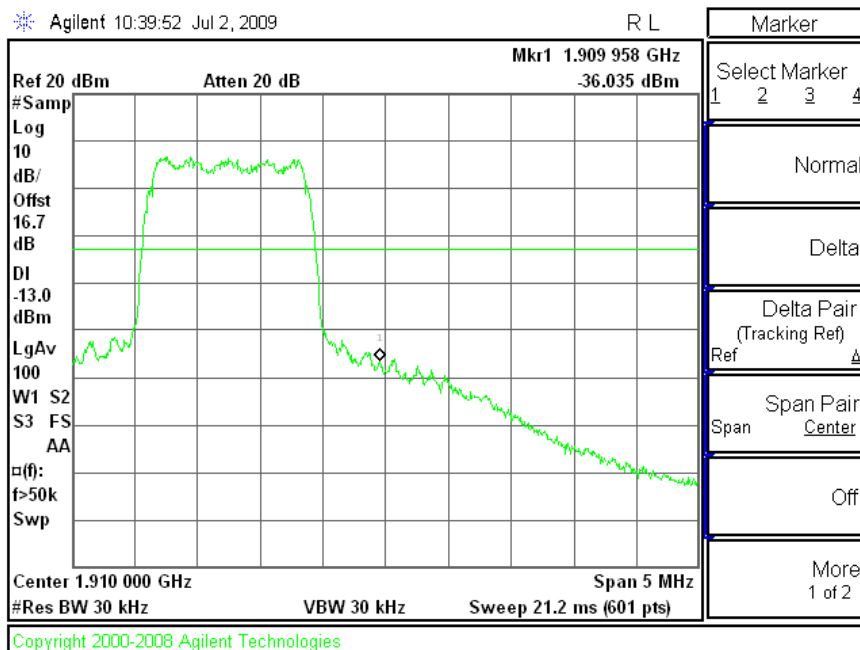


**Plots for EVDO-REV A mode (PCS Band)**

**EVDO-REV A Ch 25(1851.25 MHz)**



**EVDO-REV A Ch 1175(1908.75 MHz)**



### **10.3. OUT OF BAND EMISSIONS**

#### **RULE PART(S)**

FCC: §2.1051, §22.901, §22.917, §24.238

IC: RSS-132, 4.5; RSS-133, 6.5

#### **LIMITS**

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.

#### **TEST PROCEDURE**

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

#### **MODES TESTED**

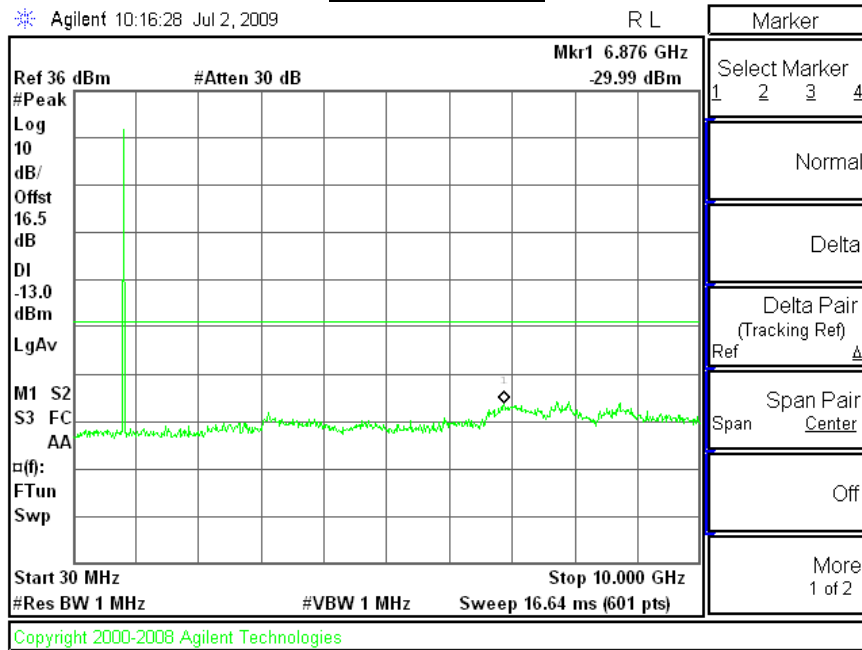
- 1xRTT – RC1, SO55
- EV-DO – Rev A

#### **RESULTS**

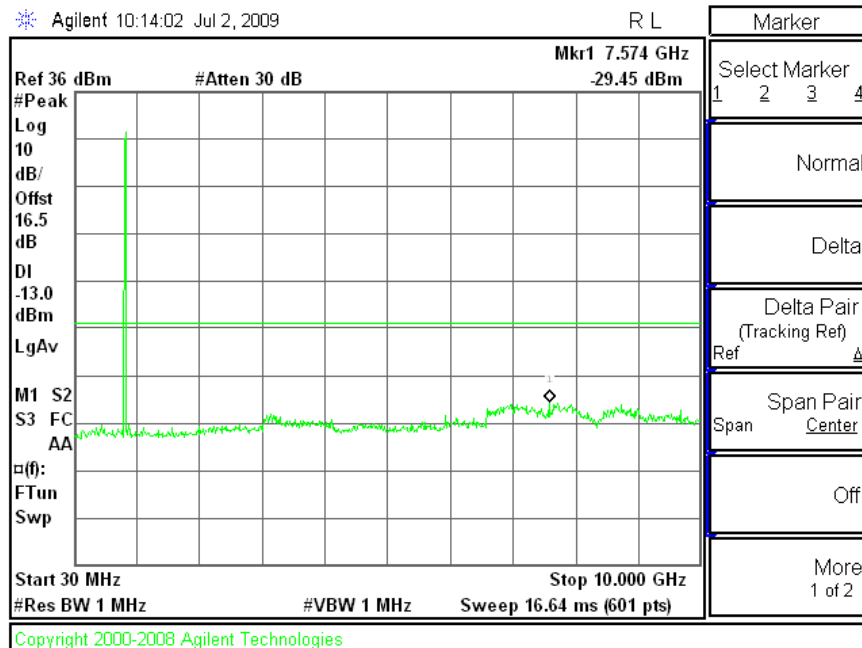


**Plots for 1xRTT Mode (Cellular Band)**

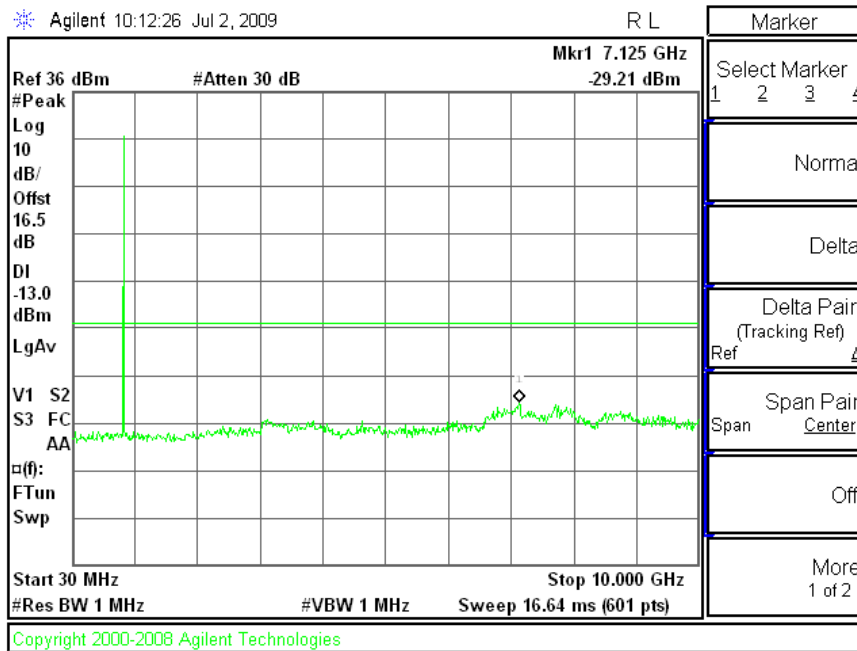
1xRTT, Ch 1013



1xRTT, Ch 384

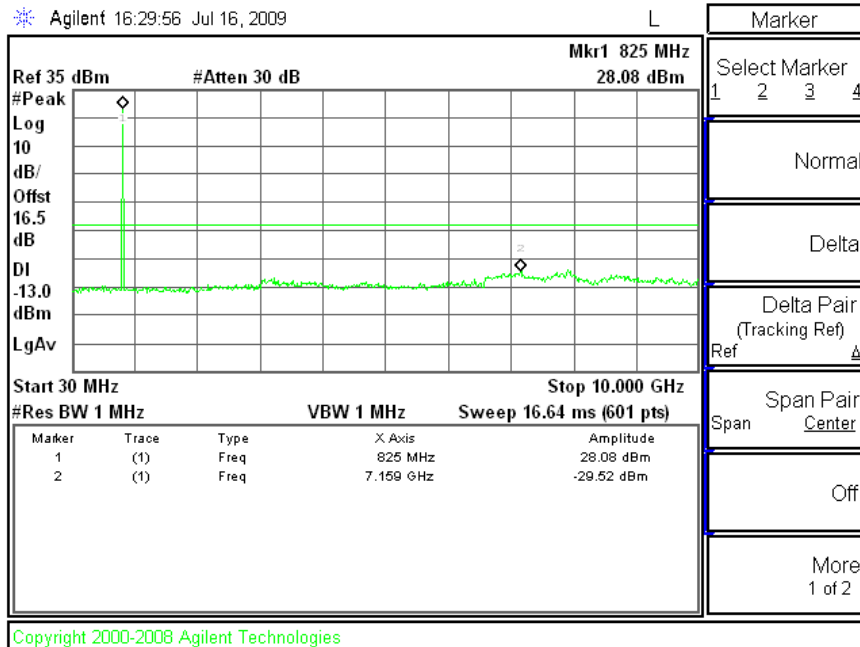


1xRTT, Ch 777

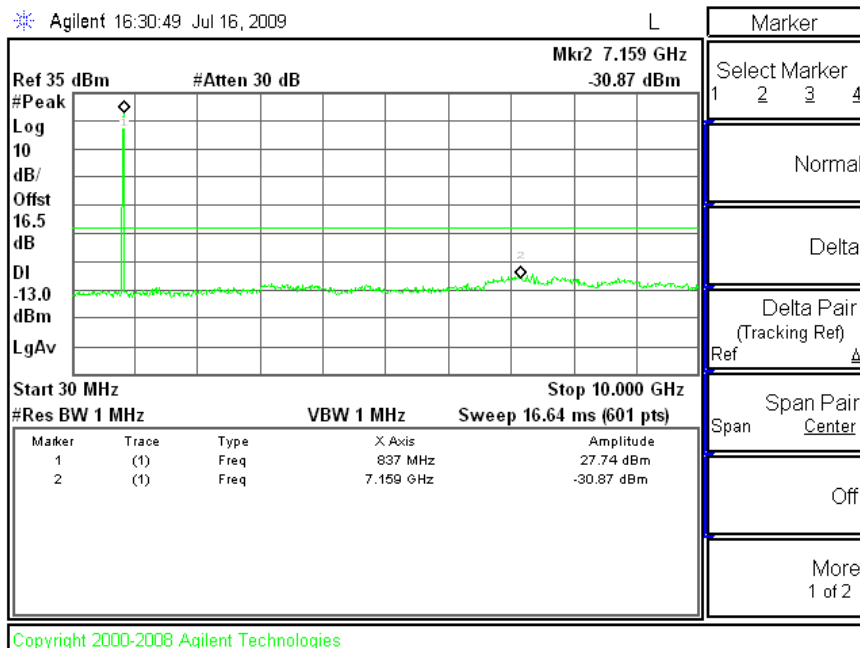


**Plots for EVDO-REV A Mode (Cellular Band)**

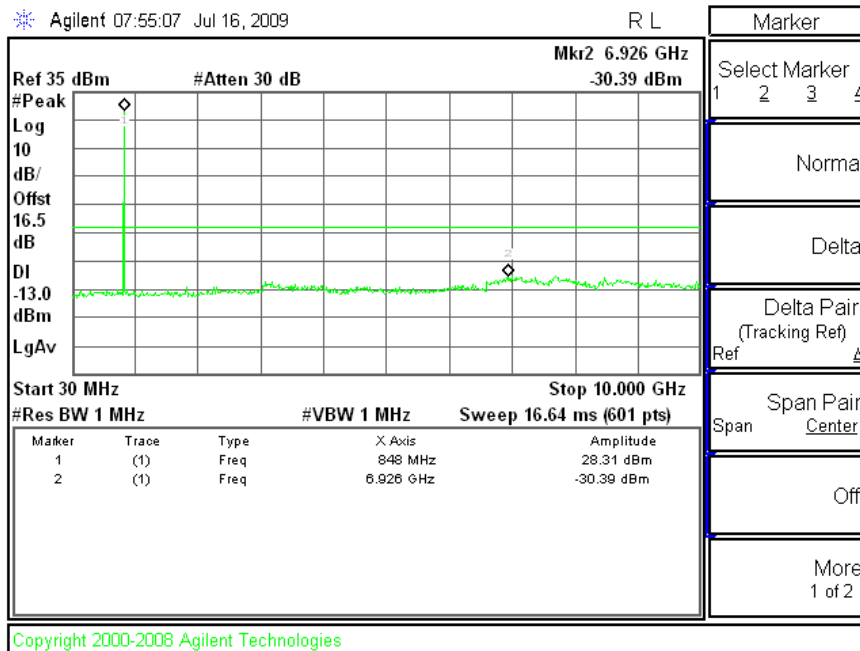
**EVDO-REV A, Ch 1013**



**EVDO-REV A, Ch 384**

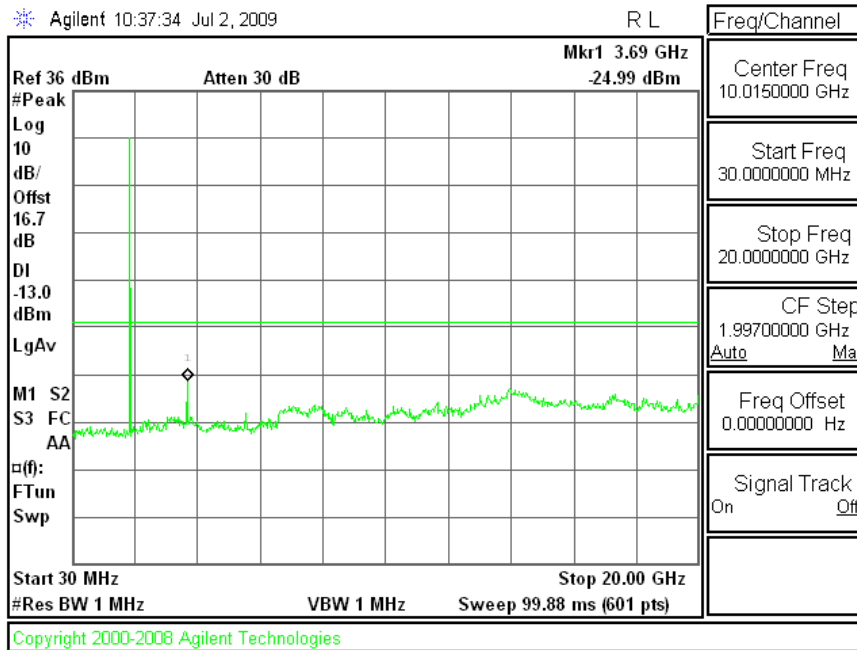


EVDO-REV A, Ch 777

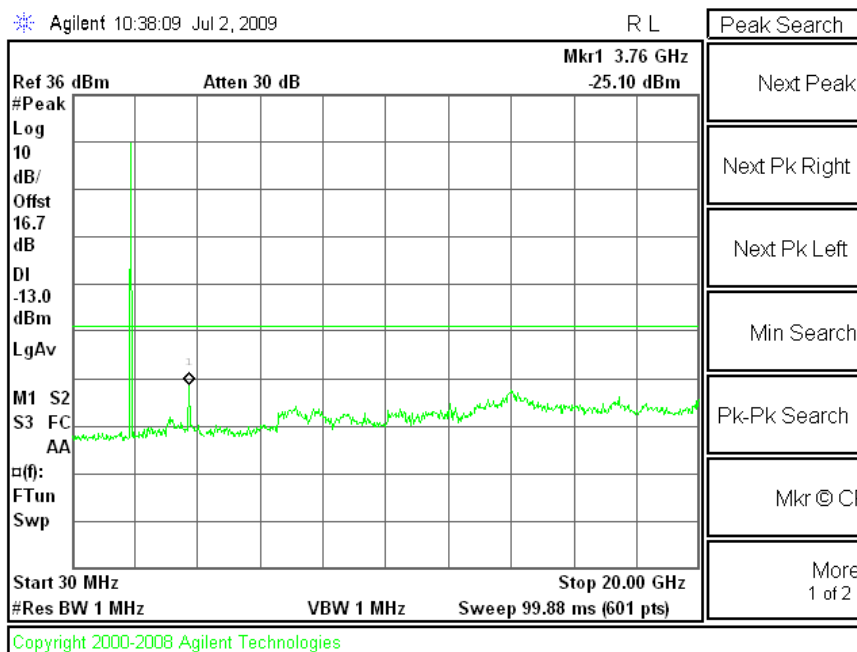


**Plots for 1xRTT Mode (PCS Band)**

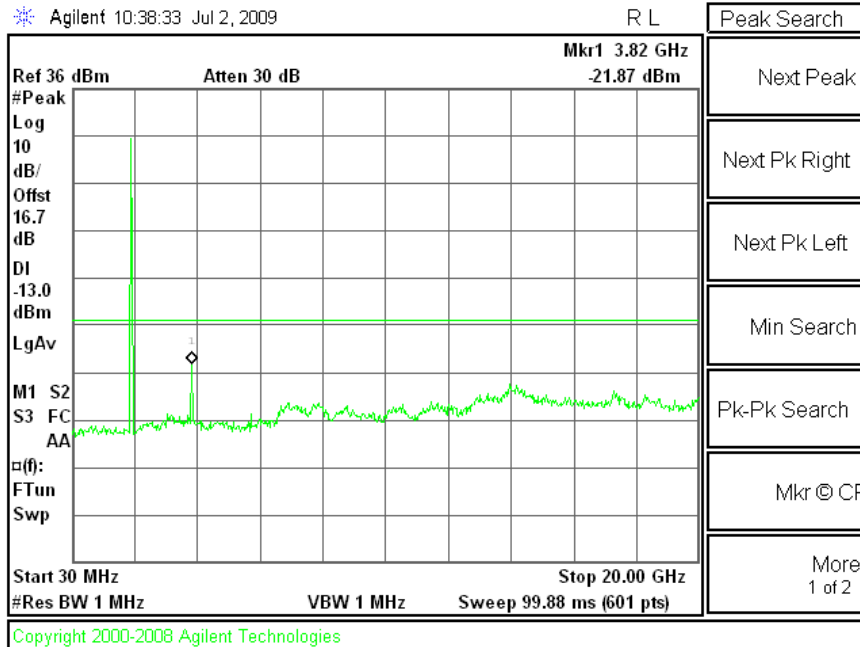
1xRTT Ch 25



1xRTT Ch 600

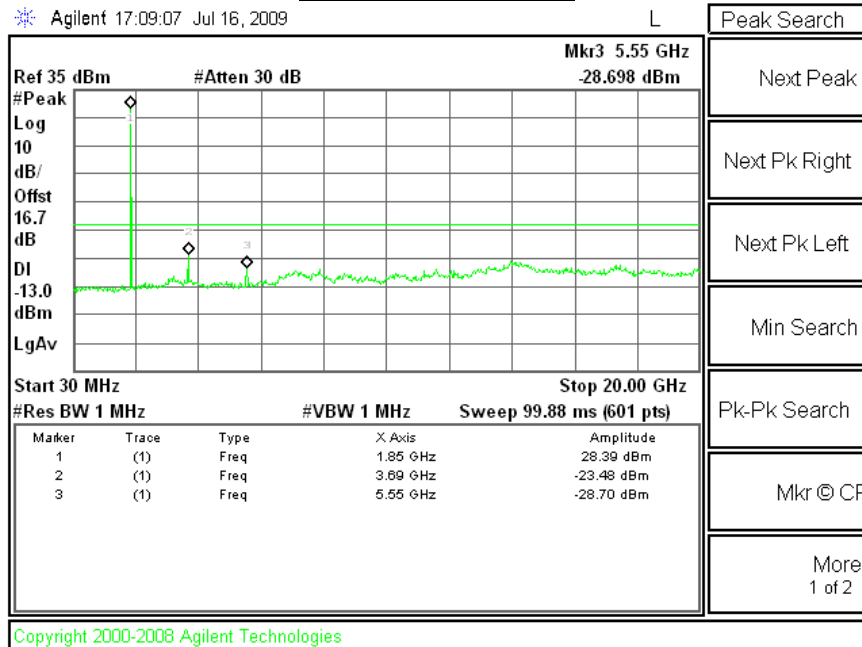


1xRTT Ch 1175

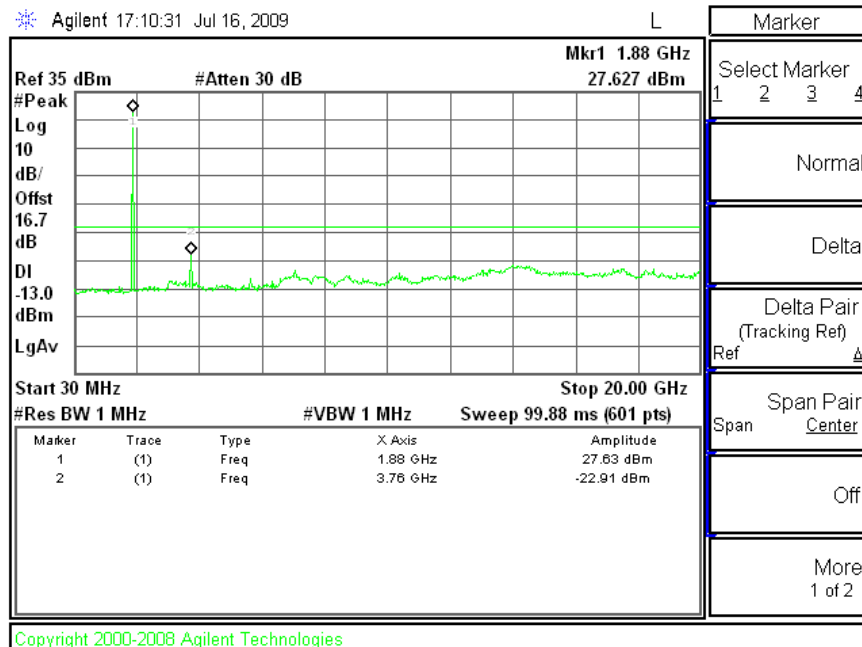


**Plots for EVDO-REV A Mode (PCS Band)**

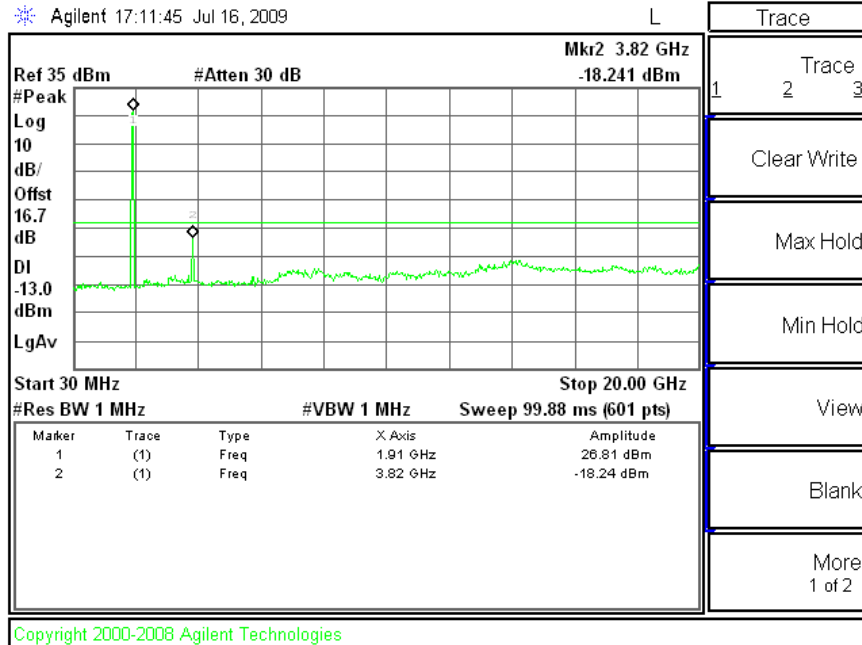
**EVDO-REV A, Ch 25**



**EVDO-REV A, Ch 600**



EVDO-REV A, Ch 1175





## 10.4. FREQUENCY STABILITY

### RULE PART(S)

FCC: §2.1055, §22.355, §24.235  
IC: RSS-132, 4.3; RSS-133, 6.3

### LIMITS

- §22.355 & RSS-132 4.3 - The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.
- RSS-133 6.3 - The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.
- §24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

### TEST PROCEDURE

Use Agilent 8960 with Frequency Error measurement capability.

- Temp. =  $-20^{\circ}$  to  $+50^{\circ}\text{C}$
- Voltage = 115 Vdc (85% - 115%)

#### **Frequency Stability vs Temperature:**

The EUT is placed inside a temperature chamber. The temperature is set to  $20^{\circ}\text{C}$  and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until  $+50^{\circ}\text{C}$  is reached.

#### **Frequency Stability vs Voltage:**

The peak frequency error is recorded (worst-case).

### MODES TESTED

- EV-DO – Rev A

### RESULTS

See the following pages.

**CELL, EVDO Rev A – MID CHANNEL**

Reference Frequency: Cellular Mid Channel 835.838330MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2089.596 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
115.00	50	835.838326	0.005	2.5
115.00	40	835.838325	0.006	2.5
115.00	30	835.838328	0.002	2.5
<b>115.00</b>	<b>20</b>	<b>835.838330</b>	<b>0</b>	2.5
115.00	10	835.838332	-0.002	2.5
115.00	0	835.838337	-0.008	2.5
115.00	-10	835.838335	-0.006	2.5
115.00	-20	835.838342	-0.014	2.5
115.00	-30	835.838338	-0.010	2.5

Reference Frequency: Cellular Mid Channel 835.838330MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2089.596 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>100%</b>	<b>20</b>	<b>835.838330</b>	<b>0</b>	<b>2.5</b>
85%	20	835.838327	0.004	2.5
115%	20	835.838326	0.005	2.5

**PCS, EVDO-REV A – MID CHANNEL**

Reference Frequency: PCS Mid Channel 1879.316833MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4698.292 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
115.00	50	1879.316809	0.013	2.5
115.00	40	1879.316816	0.009	2.5
115.00	30	1879.316822	0.006	2.5
<b>115.00</b>	<b>20</b>	<b>1879.31683</b>	<b>0</b>	<b>2.5</b>
115.00	10	1879.316840	-0.004	2.5
115.00	0	1879.316838	-0.003	2.5
115.00	-10	1879.316840	-0.004	2.5
115.00	-20	1879.316843	-0.005	2.5
115.00	-30	1879.316812	0.011	2.5

Reference Frequency: PCS Mid Channel 1879.316833MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4698.292 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>100%</b>	<b>20</b>	<b>1879.316833</b>	<b>0</b>	<b>2.5</b>
85%	20	1879.316848	-0.008	2.5
115%	20	1879.316850	-0.009	2.5

## 11. RADIATED TEST RESULTS

### 11.1. RADIATED POWER (ERP & EIRP)

#### RULE PART(S)

FCC: §2.1046, §22.913, §24.232  
 IC: RSS-132; 4.4, RSS-133, 6.4

#### LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) & RSS-133 § 6.4 - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

RSS-132 4.4, SRSP503 5.1.3 - The maximum ERP shall be 11.5 Watts for mobile stations.

#### TEST PROCEDURE

ANSI / TIA / EIA 603C  
 RSS-132; RSS-133

#### MODES TESTED

- 1xRTT – RC1, SO55
- Ev-DO – Rev A

#### RESULTS for Cellular Band (ERP)

Mode	Channel	f (MHz)	ERP	
			dBm	mW
1xRTT (RC1, SO55)	1013	824.70	28.00	630.96
	384	836.52	27.90	616.60
	777	848.75	26.00	398.11
EVDO-REV A	1013	824.70	27.20	524.81
	384	836.52	28.40	691.83
	777	848.75	27.50	562.34

#### RESULTS for PCS Band (EIRP)

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
1xRTT (RC1, SO55)	25	1851.25	27.50	562.34
	600	1880.00	28.00	630.96
	1175	1908.75	27.70	588.84
EVDO-REV A	25	1851.25	26.40	436.52
	600	1880.00	27.90	616.60
	1175	1908.75	28.30	676.08

**ERP for 1xRTT Mode (Cellular Band)**

High Frequency Substitution Measurement Compliance Certification Services Chamber B							
Company: Qualcomm							
Project #: 09U12627							
Date: 7/2/2009							
Test Engineer: Chin Pang							
Configuration: EUT with Magnetic Dipole Antenna							
Mode: Cell, 1xRTT CDMA200							
<b>Test Equipment:</b>							
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>							
824.70	-4.6	V	32.6	28.0	38.5	-10.4	
824.70	-8.2	H	30.4	22.1	38.5	-16.3	
<b>Mid Ch</b>							
836.52	-4.8	V	32.7	27.9	38.5	-10.6	
836.52	-9.4	H	30.7	21.4	38.5	-17.1	
<b>High Ch</b>							
848.31	-6.0	V	32.0	26.0	38.5	-12.5	
848.31	-10.6	H	30.8	20.2	38.5	-18.3	
Rev. 1.24.7							

**ERP for EVDO-REV A Mode (Cellular Band)**

High Frequency Substitution Measurement Compliance Certification Services 3m Chamber							
Company: Qualcomm							
Project #: 09U12627							
Date: 7/15/2009							
Test Engineer: Chin Pang							
Configuration: EUT Only							
Mode: TX, Cell, EV-DO, Rev A							
<b>Test Equipment:</b>							
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.							
f MHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>							
824.70	-3.6	V	30.8	27.2	38.5	-11.3	
824.70	-10.1	H	28.9	18.8	38.5	-19.7	
<b>Mid Ch</b>							
836.52	-3.5	V	31.8	28.4	38.5	-10.1	
836.52	-11.8	H	28.8	17.0	38.5	-21.4	
<b>High Ch</b>							
848.31	-5.3	V	32.8	27.5	38.5	-10.9	
848.31	-14.0	H	29.6	15.6	38.5	-22.8	
Rev. 1.24.7							

**EIRP for 1xRTT Mode (PCS Band)**

High Frequency Fundamental Measurement Compliance Certification Services 3m Chamber							
Company:Qualcomm							
Project #:09U12627							
Date: 7/2/2009							
Test Engineer: Chin Pang							
Configuration:EUT/Magnetic Antenna							
Mode:PCS, 1xRTT CDMA2000							
<b>Test Equipment:</b>							
Receiving: Horn T60, and 3m Camber SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (SN # 208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch</b>							
1.851	-11.2	V	38.7	27.5	33.0	-5.5	
1.850	-18.0	H	37.8	19.8	33.0	-13.2	
<b>Mid Ch</b>							
1.880	-11.9	V	39.9	28.0	33.0	-5.0	
1.880	-18.6	H	38.8	20.3	33.0	-12.7	
<b>High Ch</b>							
1.909	-12.2	V	39.9	27.7	33.0	-5.3	
1.909	-20.3	H	38.6	18.3	33.0	-14.7	
Rev. 1.24.7							

**EIRP for EVDO-REV A Mode (PCS Band)**

High Frequency Fundamental Measurement Compliance Certification Services 3m Chamber							
Company:Qualcomm							
Project #:09U12627							
Date: 7/15/2009							
Test Engineer: Chin Pang							
Configuration:EUT Only							
Mode:TX, PCS EV-DO, Rev A							
<b>Test Equipment:</b>							
Receiving: Horn T60, and 3m Camber SMA Cables							
Substitution: Horn T72 Substitution, 6ft SMA Cable (SN # 208947003) Warehouse							
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Path Loss (dBm)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch</b>							
1.851	-12.3	V	38.7	26.4	33.0	-6.6	
1.851	-19.5	H	36.8	17.3	33.0	-15.7	
<b>Mid Ch</b>							
1.880	-12.0	V	39.9	27.9	33.0	-5.1	
1.880	-21.4	H	38.8	17.4	33.0	-15.6	
<b>High Ch</b>							
1.909	-12.7	V	40.9	28.3	33.0	-4.7	
1.909	-20.0	H	37.6	17.6	33.0	-15.4	
Rev. 1.24.7							

## 11.2. FIELD STRENGTH OF SPURIOUS RADIATION

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238  
IC: RSS-132, 4.5; RSS-233, 6.5

### LIMIT

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.

### TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth ( i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth ( i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

### MODES TESTED

- 1xRTT – RC1, SO55
- Ev-DO – Rev A

### RESULTS

**1xRTT Mode (Cellular Band)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:Qualcomm										
Project #:09U12627										
Date:7/2/2009										
Test Engineer:Chin Pang										
Configuration:EUT and Magnetic Dipole Antenna										
Mode:TX, Cell 1xRTT CDMA2000										
Chamber		Pre-amplifier			Filter			Limit		
3m Chamber		T34 8449B			Filter 1			TX Part 22		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 824.7MHz</b>										
1.649	-58.1	H	3.0	36.6	37.4	1.0	-60.0	-13.0	-47.0	
1.649	-57.5	V	3.0	36.9	37.4	1.0	-59.1	-13.0	-46.1	
2.474	-55.0	V	3.0	41.6	36.4	1.0	-50.9	-13.0	-37.9	
<b>Mid Ch, 836.52MHz</b>										
1.673	-57.0	H	3.0	36.9	37.3	1.0	-58.6	-13.0	-45.6	
1.673	-53.2	V	3.0	37.1	37.3	1.0	-54.5	-13.0	-41.5	
2.510	-63.0	V	3.0	41.8	36.4	1.0	-58.7	-13.0	-45.7	
<b>High Ch, 848.31MHz</b>										
1.696	-58.3	H	3.0	37.1	37.3	1.0	-59.6	-13.0	-46.6	
1.696	-51.5	V	3.0	37.4	37.3	1.0	-52.5	-13.0	-39.5	
2.544	-59.2	V	3.0	41.9	36.3	1.0	-54.8	-13.0	-41.8	
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										



**EVDO-REV A Mode (Cellular Band)**

Above 1GHz High Frequency Substitution Measurement										
Company:Qualcomm										
Project #:09U12627										
Date:7/15/2009										
Test Engineer:Chin Pang										
Configuration:EUT and Magnetic Dipole Antenna										
Mode:TX, Cell , EV-DO Rev A										
Chamber		Pre-amplifier			Filter		Limit			
3m Chamber		T34 8449B			Filter 1		TX Part 22			
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch. 824.7MHz</b>										
1.649	-61.0	H	3.0	36.6	37.4	1.0	-62.9	-13.0	-49.9	
2.474	-50.1	H	3.0	40.0	36.4	1.0	-47.6	-13.0	-34.6	
1.649	-58.0	V	3.0	36.9	37.4	1.0	-59.6	-13.0	-46.6	
2.474	-49.8	V	3.0	41.6	36.4	1.0	-45.7	-13.0	-32.7	
<b>Mid Ch. 836.52MHz</b>										
1.673	-60.0	H	3.0	36.9	37.3	1.0	-61.6	-13.0	-48.6	
2.510	-50.0	H	3.0	40.2	36.4	1.0	-47.3	-13.0	-34.3	
1.673	-53.2	V	3.0	37.1	37.3	1.0	-54.5	-13.0	-41.5	
2.510	-51.0	V	3.0	41.8	36.4	1.0	-46.7	-13.0	-33.7	
<b>High Ch. 848.31MHz</b>										
1.696	-58.0	H	3.0	37.1	37.3	1.0	-59.3	-13.0	-46.3	
2.544	-53.5	H	3.0	40.4	36.3	1.0	-50.6	-13.0	-37.6	
1.696	-54.0	V	3.0	37.4	37.3	1.0	-55.1	-13.0	-42.1	
2.544	-53.2	V	3.0	41.9	36.3	1.0	-48.8	-13.0	-35.8	
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

**1xRTT Mode (PCS Band)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:Qualcomm Project #:09U12627 Date:7/2/2009 Test Engineer:Chin Pang Configuration:EUT and Magnetic Dipole Antenna Mode:TX, PCS 1xRTT CDMA2000										
Chamber		Pre-amplifier			Filter			Limit		
3m Chamber		T34 8449B			Filter 1			TX Part 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch, 1851.25MHz</b>										
3.703	-48.2	H	3.0	44.7	35.4	1.0	-37.9	-13.0	-24.9	
5.554	-62.6	H	3.0	49.7	34.7	1.0	-46.6	-13.0	-33.6	
3.703	-48.5	V	3.0	44.9	35.4	1.0	-38.0	-13.0	-25.0	
5.554	-58.8	V	3.0	49.2	34.7	1.0	-43.4	-13.0	-30.4	
<b>Mid Ch, 1880MHz</b>										
3.760	-48.5	H	3.0	44.8	35.3	1.0	-38.0	-13.0	-25.0	
5.640	-62.6	H	3.0	49.9	34.7	1.0	-46.4	-13.0	-33.4	
3.760	-48.5	V	3.0	45.1	35.3	1.0	-37.7	-13.0	-24.7	
5.640	-58.5	V	3.0	49.3	34.7	1.0	-42.9	-13.0	-29.9	
<b>High Ch, 1908.75MHz</b>										
3.818	-42.5	H	3.0	45.0	35.3	1.0	-31.8	-13.0	-18.8	
5.726	-58.7	H	3.0	50.1	34.7	1.0	-42.4	-13.0	-29.4	
3.818	-40.5	V	3.0	45.3	35.3	1.0	-29.5	-13.0	-16.5	
5.726	-56.0	V	3.0	49.5	34.7	1.0	-40.3	-13.0	-27.3	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

**EVDO-REV A Mode (PCS Band)**

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:Qualcomm										
Project #:09U12627										
Date:7/15/2009										
Test Engineer:Chin Pang										
Configuration:EUT and Magnetic Dipole Antenna										
Mode:TX, PCS, EV-DO Rev A										
Chamber		Pre-amplifier			Filter			Limit		
3m Chamber		T34 8449B			Filter 1			TX Part 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch. 1851.25MHz</b>										
3.703	-47.8	H	3.0	44.7	35.4	1.0	-37.5	-13.0	-24.5	
5.554	-61.5	H	3.0	49.7	34.7	1.0	-45.5	-13.0	-32.5	
11.107	-64.0	H	3.0	56.2	34.8	1.0	-41.6	-13.0	-28.6	
3.703	-46.5	V	3.0	44.9	35.4	1.0	-36.0	-13.0	-23.0	
5.554	-57.5	V	3.0	49.2	34.7	1.0	-42.1	-13.0	-29.1	
9.256	-63.0	V	3.0	54.5	35.2	1.0	-42.8	-13.0	-29.8	
11.108	-58.8	V	3.0	56.2	34.8	1.0	-36.4	-13.0	-23.4	
<b>Mid Ch. 1880MHz</b>										
3.760	-45.5	H	3.0	44.8	35.3	1.0	-35.0	-13.0	-22.0	
5.640	-59.3	H	3.0	49.9	34.7	1.0	-43.1	-13.0	-30.1	
3.760	-47.1	V	3.0	45.1	35.3	1.0	-36.3	-13.0	-23.3	
5.640	-60.0	V	3.0	49.3	34.7	1.0	-44.4	-13.0	-31.4	
11.280	-60.5	V	3.0	56.4	34.7	1.0	-37.9	-13.0	-24.9	
<b>High Ch. 1908.75MHz</b>										
3.818	-42.1	H	3.0	45.0	35.3	1.0	-31.4	-13.0	-18.4	
5.726	-59.0	H	3.0	50.1	34.7	1.0	-42.7	-13.0	-29.7	
3.818	-42.0	V	3.0	45.3	35.3	1.0	-31.0	-13.0	-18.0	
5.726	-60.0	V	3.0	49.5	34.7	1.0	-44.3	-13.0	-31.3	
9.544	-64.4	V	3.0	54.8	35.3	1.0	-43.8	-13.0	-30.8	
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

### 11.3. RECEIVER SPURIOUS EMISSIONS

#### RULE PART(S)

FCC: N/A  
IC: RSS-132, 4.6; RSS-133, 6.6, RSS-Gen

#### LIMIT

RSS-Gen 6 (a) - If a radiated measurement is made, all spurious emissions shall comply with the limits of Table 1.

Table 1 - Spurious Emission Limits for Receivers:

Spurious Frequency (MHz)	Field Strength(microvolt/m at 3 meters)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

#### TEST PROCEDURE

RSS-Gen 4.10 - The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tuneable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

#### RESULTS

See the following pages.

**RECEIVER SPURIOUS EMISSIONS FOR 30 TO 1000 MHz**

30-1000MHz Frequency Measurement													
Compliance Certification Services, Fremont 5m Chamber													
Test Engr:		Chin Pang											
Date:		07/17/09											
Project #:		09U12627											
Company:		Qualcomm											
EUT Description:		Fenway, 802.11bg, BT, WWAN Combo Module											
EUT M/N:		FENWAY											
Test Target:		FCC Class B											
Mode Oper:		Normal											
f	Measurement Frequency	Amp	Preamp Gain	Margin	Margin vs. Limit								
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters										
Read	Analyzer Reading	Filter	Filter Insert Loss										
AF	Antenna Factor	Corr	Calculated Field Strength										
CL	Cable Loss	Limit	Field Strength Limit										
f	Dist	Read	AF	CL	Amp	D Corr	Filter	Corr.	Limit	Margin	Ant. Pol	Det.	Notes
MHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
<b>horiz data</b>													
67.442	3.0	49.8	8.2	0.7	28.3	0.0	0.0	30.3	40.0	-9.7	H	EP	
86.522	3.0	49.1	7.5	0.8	28.3	0.0	0.0	29.2	40.0	-10.8	H	EP	
216.968	3.0	53.6	11.9	1.2	27.4	0.0	0.0	39.3	46.0	-6.7	H	EP	
242.889	3.0	53.3	11.8	1.3	27.4	0.0	0.0	39.0	46.0	-7.0	H	EP	
329.772	3.0	45.1	14.0	1.6	27.6	0.0	0.0	33.0	46.0	-13.0	H	EP	
379.814	3.0	48.4	14.7	1.7	27.9	0.0	0.0	36.9	46.0	-9.1	H	EP	
666.266	3.0	42.4	18.8	2.3	28.5	0.0	0.0	34.9	46.0	-11.1	H	EP	
35.520	3.0	40.6	17.1	0.5	28.4	0.0	0.0	29.9	40.0	-10.1	V	EP	
64.321	3.0	50.0	8.1	0.7	28.3	0.0	0.0	30.4	40.0	-9.6	V	EP	
84.602	3.0	49.5	7.7	0.8	28.3	0.0	0.0	29.7	40.0	-10.3	V	EP	
217.088	3.0	46.4	11.9	1.2	27.4	0.0	0.0	32.1	46.0	-13.9	V	EP	
379.814	3.0	46.1	14.7	1.7	27.9	0.0	0.0	34.6	46.0	-11.4	V	EP	
666.266	3.0	41.2	18.8	2.3	28.5	0.0	0.0	33.8	46.0	-12.2	V	EP	
Rev. 1.27.09													
Note: No other emissions were detected above the system noise floor.													



**RECEIVER SPURIOUS EMISSIONS FOR ABOVE 1GHz**

Note: No emissions were found within above 1GHz of 20dB below the system noise floor.