



**CC CFR47 PART 22H, 24E, AND 90S
CERTIFICATION TEST REPORT**

FOR

CELLULAR/PCS CDMA AND LTE PHONE WITH BLUETOOTH AND WLAN

MODEL NUMBER: LS840, LG-LS840, LGLS840*

FCC ID: ZNFLS840

REPORT NUMBER: 11U14124-1, Revision A

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Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC.
10101 OLD GROVE ROAD
SAN DIEGO, CA 92131

Prepared by
COMPLIANCE CERTIFICATION SERVICES (UL CCS)
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888



NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
---	11/18/11	Initial Issue	T. Chan
A	12/05/11	Added CDMA2000 1X Advanced capability	M. Mekuria

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.
 10101 OLD GROVE ROAD
 SAN DIEGO, CA 92131

EUT DESCRIPTION: Cellular/PCS CDMA and LTE PHONE with Bluetooth and WLAN

MODEL: LS840, LG-LS840, LGLS840

SERIAL NUMBER: 256691416400001385

DATE TESTED: NOVEMBER 03 TO 18, 2011

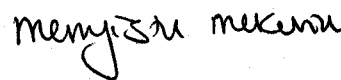
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E, and 90S	Pass

Compliance Certification Services (UL 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 UL 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 UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:

Tested By:

THU CHAN
 ENGINEERING MANAGER
 UL CCS

MENGISTU MEKURIA
 EMC ENGINEER
 UL CCS

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, and FCC Part 90.

3. FACILITIES AND ACCREDITATION

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

UL 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 a smart-phone that features Cellular/PCS CDMA and PCS LTE with Bluetooth and WLAN.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted and ERP / EIRP output powers as follows:

Part 90 Cellular Band					
Frequency range (MHz)	Modulation	Conducted		ERP	
		dBm	mW	dBm	mW
817.9 – 823.1	CDMA 2000 1xRTT	29.17	826.0	25.36	343.6

Part 22 Cellular Band					
Frequency range (MHz)	Modulation	Conducted		ERP	
		dBm	mW	dBm	mW
824.7 – 848.31	CDMA 2000 1xRTT	29.17	826.0	24.65	291.7
	CDMA 2000 EVDO REV. A	29.20	831.8	23.58	228.0

Part 24 PCS Band					
Frequency range (MHz)	Modulation	Conducted		EIRP	
		dBm	mW	dBm	mW
1851.25-1908.75	CDMA 2000 1xRTT	28.93	781.6	28.78	755.1
	CDMA 2000 EVDO REV. A	29.47	885.1	28.16	654.6

Part 24 LTE Band 25 MODE (5.0 MHz BANDWIDTH)						
Frequency range (MHz)	Modulation	Start RB and RB offset	Conducted		ERP	
			dBm	mW	dBm	mW
1850.00 - 1915.00	QPSK	1/0	28.71	743.0	29.85	966.1
		1/24	28.70	741.3	28.99	792.5
		12/6	29.02	798.0	29.00	794.3
		25/0	28.95	785.2	27.52	564.9
	16QAM	1/0	28.83	763.8	29.60	912.0
		1/24	28.92	779.8	28.80	758.6
		12/6	29.01	796.2	28.87	770.9
		25/0	29.18	827.9	27.98	628.1

5.3. SOFTWARE AND FIRMWARE

The EUT software installed during testing was MS840C01.

The test utility software used during testing was WiFi Test.

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case is EUT on the highest power. Based on Peak Power measurement investigations, the following modes should be considered as worst-case scenario for all other measurements.

Worst-case modes:

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- LTE Band 4

Since the EUT is a portable device, for the fundamental tests the three orientations have been investigated; an X, Y and Z orientations, and the worst among X, Y, and Z with AC/DC adapter and headset. After the investigations the worst case were found to be a Y-position without an AC/DC adapter and headset on Cell and X-positions without an AC adapter and headset for PCS bands and X-Position with headset on LTE bands.

5.5. DESCRIPTION OF TEST SETUP

RADIATED TESTS SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST			
Description	Manufacturer	Model	Serial Number
AC Adapter	LG Electronics	MCS-02WS	SA14258000036
Ear Phone	LG Electronics	N/A	N/A

I/O CABLES (RF Conducted Test)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A
2	RF	1	RF	SHELDED	0.1m	N/A
3	RF	1	SMA	SHELDED	0.6 m	N/A

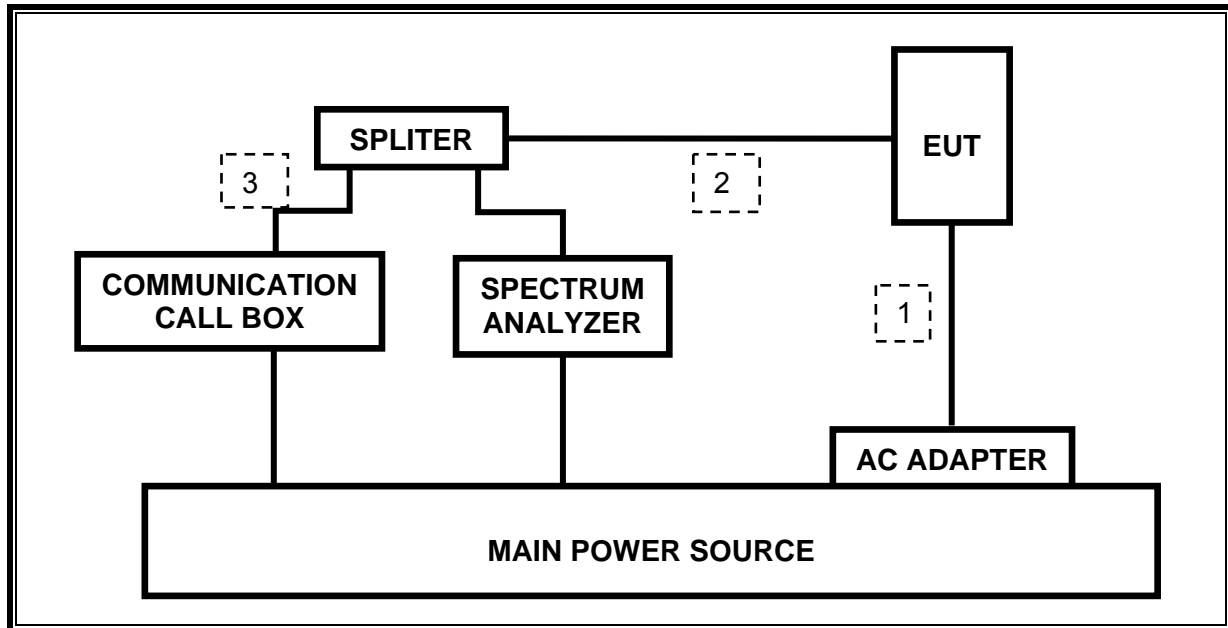
I/O CABLES (RF Radiated Test)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A
2	AUDIO	1	MINI JACK	UN-SHELDED	1.0m	Volume control on cable

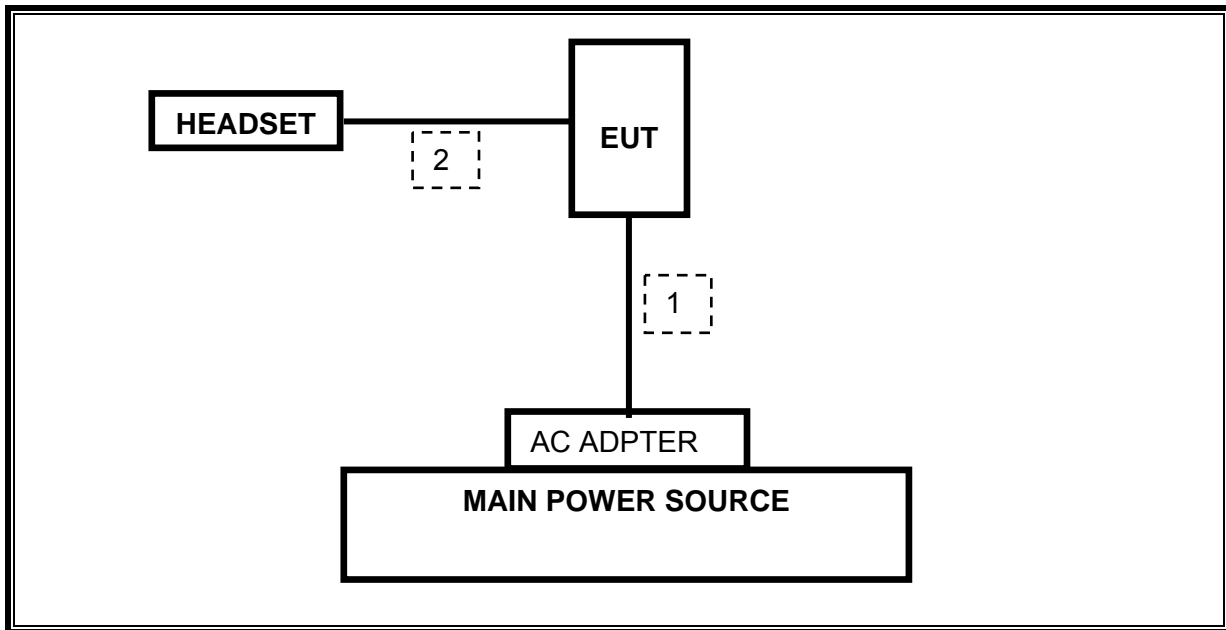
TEST SETUP

EUT was connected to an AC adapter and head set during radiated emission tests. The communication test equipment make link with EUT during the test

CONDUCTED SETUP DIAGRAM FOR TESTS



RADIATED SETUP DIAGRAM FOR 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	C01159	05/11/12
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01176	08/04/12
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	01/19/12
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/15/12
Antenna, Horn, 18 GHz	EMCO	3115	C00943	CNR
Antenna, Horn, 18 GHz	EMCO	3115	C00945	10/06/12
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/16/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	07/12/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/12/12
Communications Test Set	Agilent / HP	E5515C	C01086	06/17/12
Communication Test Set	R & S	CMMV500	N/A	01/25/12
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	04/20/12
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Directional Coupler, 4.2 GHz, 40 dB	A-R	DC7144A	C00983	CNR
Sleeve Dipole 1730~2030 MHz	ETS	3126-1880	C01157	10/27/12
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/14/12
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00993	07/10/12

7. 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

7.1. CDMA2000

CDMA2000 1xRTT

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

Application Rev. License

CDMA2000 Mobile Test B.15.18, L

- Protocol Rev > 6 (IS-2000-0)
- System ID: 7; NID: 1, Reg. Ch. #: 610 for Cell, 600 for PCS & 450 for AWS
- Radio Config (RC) > RC1 or RC3
- Service Option (SO) Setup > SO55 or SO32
- Traffic Data Rate > Full
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RF Output Power for 800 MHz Secondary Band

Radio Configuration (RC)	Service Option (SO)	RF Pwr (dBm)		
		Ch.476/817.9 MHz	Ch.580/820.5 MHz	Ch.684/823.1 MHz
		Peak	Peak	Peak
RC1	2 (Loopback)	28.93	28.67	29.16
	55 (Loopback)	29.11	28.33	29.17
RC2	9 (Loopback)	28.92	28.85	29.14
	55 (Loopback)	28.90	28.78	29.16
RC3	2 (Loopback)	28.74	28.62	28.62
	55 (Loopback)	28.73	28.67	28.63
	32 (+F-SCH)	28.21	28.63	28.68
	32 (+SCH)	28.27	28.52	28.62
RC4	2 (Loopback)	28.55	28.51	28.74
	55 (Loopback)	28.63	28.49	28.64
	32 (+F-SCH)	28.24	28.53	28.64
	32 (+SCH)	28.29	28.51	28.63
RC5	9 (Loopback)	28.59	28.65	28.76
	55 (Loopback)	28.58	28.54	28.72
RC11	2 (Loopback)	28.66	28.72	28.64
	75 (Loopback)	28.65	28.66	28.73
	32 (+F-SCH)	28.58	28.68	28.53
	32 (+SCH)	28.60	28.59	28.65

RF Output Power for Cellular Band

Radio Configuration (RC)	Service Option (SO)	RF Pwr (dBm)		
		Ch. 1013/824.7 MHz	Ch.384/836.52 MHz	Ch.777/848.31 MHz
		Peak	Peak	Peak
RC1	2 (Loopback)	29.13	28.46	28.14
	55 (Loopback)	29.09	28.18	28.01
RC2	9 (Loopback)	29.06	28.39	28.07
	55 (Loopback)	29.17	28.41	27.80
RC3	2 (Loopback)	28.66	28.18	27.84
	55 (Loopback)	28.60	28.17	27.83
	32 (+F-SCH)	28.77	28.12	27.59
	32 (+SCH)	28.82	28.07	27.72
RC4	2 (Loopback)	28.60	27.88	27.72
	55 (Loopback)	28.62	28.28	27.68
	32 (+F-SCH)	28.55	28.15	27.88
	32 (+SCH)	28.20	27.72	27.61
RC5	9 (Loopback)	28.49	28.09	27.65
	55 (Loopback)	28.66	28.12	27.69
RC11	2 (Loopback)	28.47	28.31	28.26
	75 (Loopback)	28.46	28.26	28.18
	32 (+F-SCH)	28.58	28.40	28.20
	32 (+SCH)	28.57	28.33	28.21

RF Output Power for PCS Band

Radio Configuration (RC)	Service Option (SO)	RF Pwr (dBm)		
		Ch. 25/1851.25 MHz	Ch.600/1880 MHz	Ch.1175/1908.75 MHz
		Peak	Peak	Peak
RC1	2 (Loopback)	28.18	28.67	28.12
	55 (Loopback)	28.10	28.65	28.13
RC2	9 (Loopback)	28.18	28.87	28.24
	55 (Loopback)	28.15	28.93	28.13
RC3	2 (Loopback)	27.94	28.53	28.05
	55 (Loopback)	27.95	28.61	28.02
	32 (+F-SCH)	27.92	28.29	28.16
	32 (+SCH)	27.81	28.52	27.79
RC4	2 (Loopback)	28.00	28.32	28.05
	55 (Loopback)	27.95	28.39	28.17
	32 (+F-SCH)	27.74	28.36	27.79
	32 (+SCH)	27.80	28.35	27.72
RC5	9 (Loopback)	27.96	28.31	28.16
	55 (Loopback)	27.96	28.31	28.03
RC11	2 (Loopback)	28.27	28.67	28.27
	75 (Loopback)	28.29	28.62	28.28
	32 (+F-SCH)	28.36	28.61	28.23
	32 (+SCH)	28.38	28.56	28.36

1xEV-Do - Release 0 (Rel. 0)

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

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
 - Access Network Info > Cell Parameters > Sector ID > 00000000 : 00000000 : 00000000 : 00000000 > Subnet Mask > 0
 - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parm:
 - Cell Power > -105.5 dBm/1.23 MHz
 - System ID: 7; NID: 1, Reg. Ch. #: 610 for Cell, 600 for PCS & 450 for AWS
 - 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 : 00000000 : 00000000 : 00000000 > Subnet Mask > 0
 - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parm:
 - 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)

CELL Band

FTAP Rate	RTAP Rate	Channel	f (MHz)	RF Pwr (dBm)
				Peak
307.2 kbps (2 slot, QPSK)	153.6 kbps	1013	824.70	28.61
		384	836.52	28.78
		777	848.31	28.91

PCS Band

FTAP Rate	RTAP Rate	Channel	f (MHz)	RF Pwr (dBm)
				Peak
307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	28.24
		600	1880.00	28.96
		1175	1908.75	29.00

1xEV-Do - Revision A (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 Rev. 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: 00000000: 00000000: 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 Rev. 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: 00000000: 00000000: 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)

CELL Band

FETAP Traffic Format	RETAP Data Payload Size	Channel	f (MHz)	RF Pwr (dBm)
				Peak
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	1013	824.70	28.85
		384	836.52	29.04
		777	848.31	29.20

PCS Band

FETAP Traffic Format	RETAP Data Payload Size	Channel	f (MHz)	RF Pwr (dBm)
				Peak
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	28.39
		600	1880.00	29.25
		1175	1908.75	29.47

7.2. LTE Band 25

Output power for LTE Band 25 (5 MHz)

Freq. (MHz)	UL Channel	Modulation	BW (MHz)	RB Size	RB Offset	Max Peak Power (dBm)
1852.5	26065	QPSK	5.0	1	0	28.09
				1	24	28.26
				12	6	28.12
				25	0	28.47
		16-QAM		1	0	28.04
				1	24	28.31
				12	6	28.13
				25	0	28.71
1882.5.0	26365	QPSK	5.0	1	0	28.71
				1	24	28.70
				12	6	29.02
				25	0	28.95
		16-QAM		1	0	28.83
				1	24	28.92
				12	6	29.01
				25	0	29.18
1912.5	26665	QPSK	5.0	1	0	28.86
				1	24	28.51
				12	6	28.74
				25	0	28.58
		16-QAM		1	0	28.74
				1	24	28.54
				12	6	28.63
				25	0	28.89

8. CONDUCTED TEST RESULTS

8.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

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

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- LTE Band 2 and 4

RESULTS

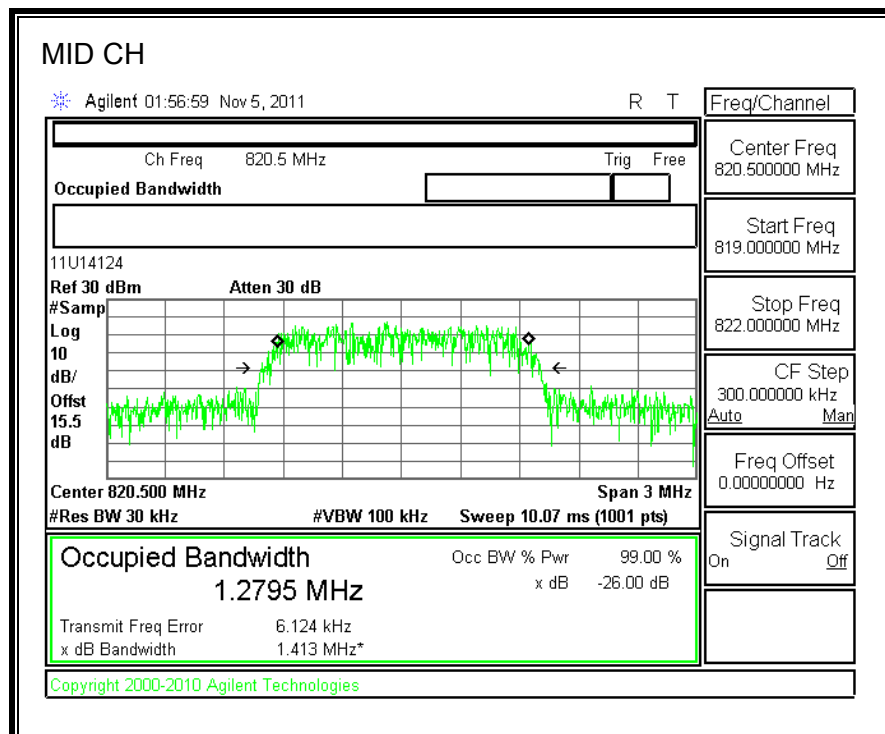
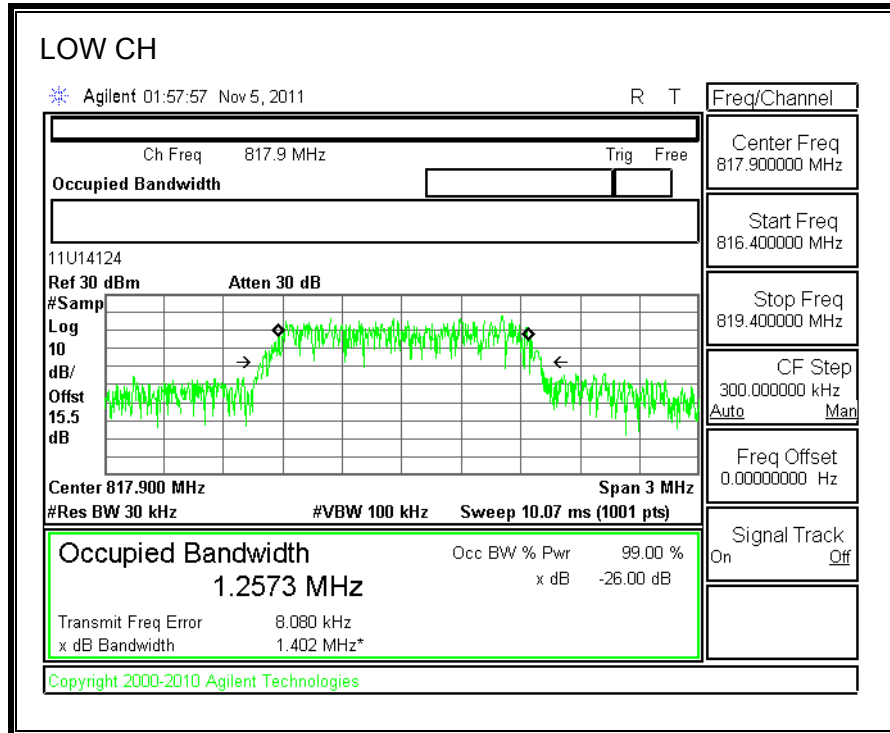
Mode	Band	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
CDMA 2000 1xRTT	800 MHz Secondary	476	817.90	1257.3	1402.0
		580	820.50	1279.5	1413.0
		684	823.10	1269.8	1404.0
	CELL	1013	824.70	1267.8	1399.0
		384	836.52	1268.1	1400.0
		777	848.31	1279.4	1404.0
	PCS	25	1851.25	1295.0	1410.0
		600	1880.00	1304.1	1407.0
		1175	1908.75	1301.8	1411.0

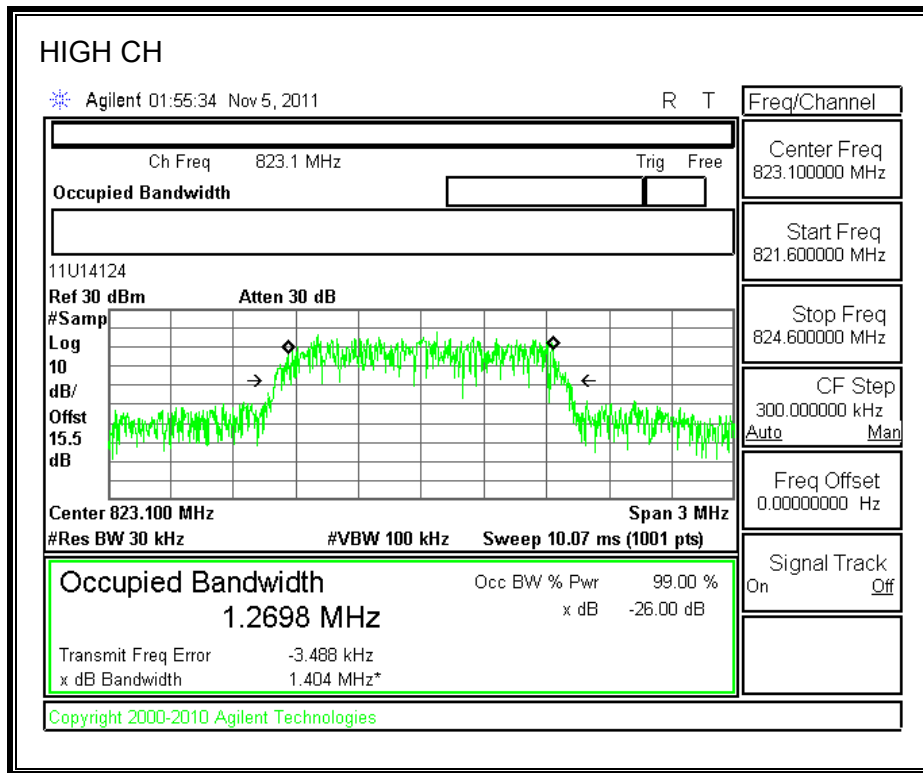
Mode	Band	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
CDMA 2000 EVDO REV.A	CELL	1013	824.70	1278.8	1405.0
		384	836.52	1284.6	1415.0
		777	848.31	1250.9	1405.0
	PCS	25	1851.25	1275.4	1406.0
		600	1880.00	1275.7	1402.0
		1175	1908.75	1267.1	1406.0

Band	Mode	RB/RB SIZE	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
LTE BAND 25	5.0 MHz BAND QPSK	12/6	1852.5	2152.8	2684.0
		25/0		4548.1	4782.0
	5.0 MHz BAND 16QAM	12/6		2159.3	2687.0
		25/0		4477.5	4818.0
	5.0 MHz BAND QPSK	12/6	1882.5	2160.6	2682.0
		25/0		4516.6	4823.0
	5.0 MHz BAND 16QAM	12/6		2204.3	2633.0
		25/0		4560.0	4877.0
	5.0 MHz BAND QPSK	12/6	1912.5	2156.7	2687.0
		25/0		4539.3	4823.0
	5.0 MHz BAND 16QAM	12/6		2167.5	2686.0
		25/0		4504.2	4768.0

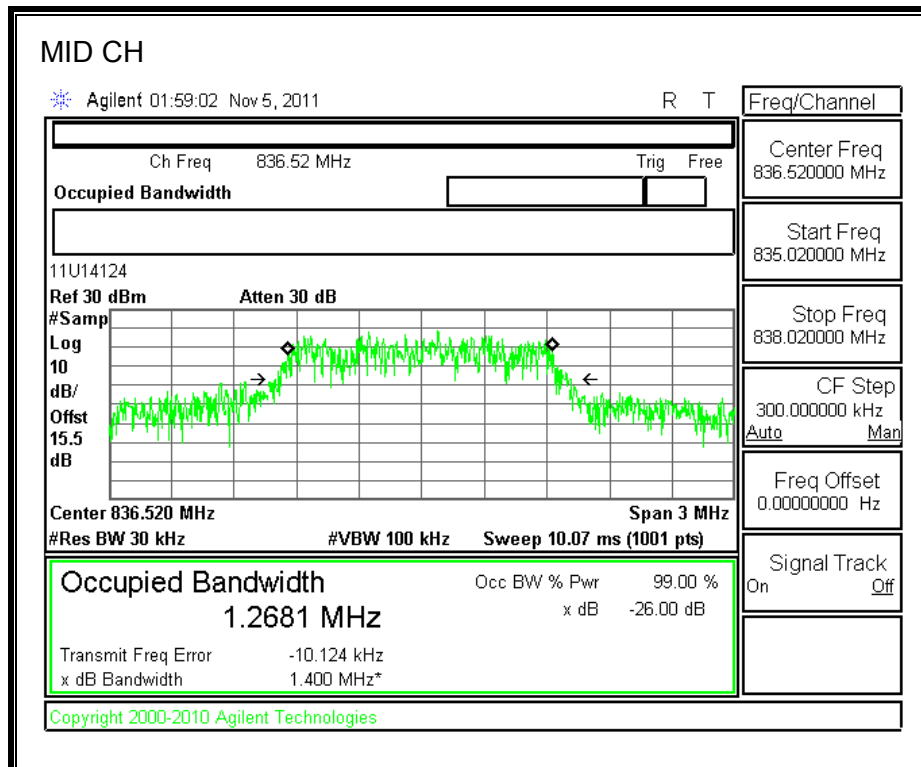
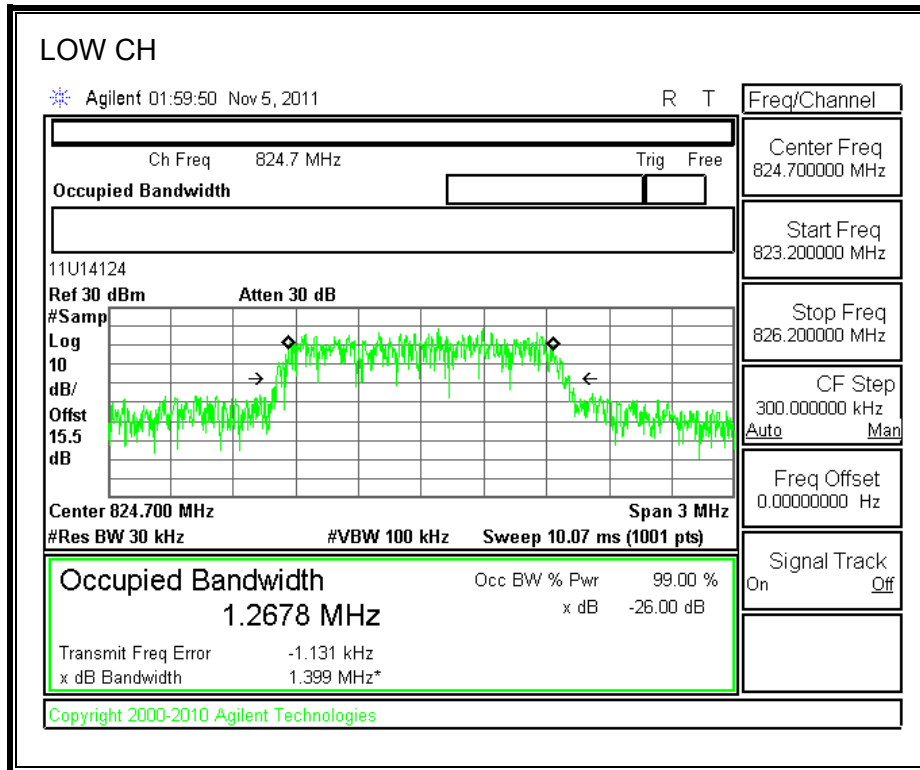
99% BANDWIDTH and 26dB

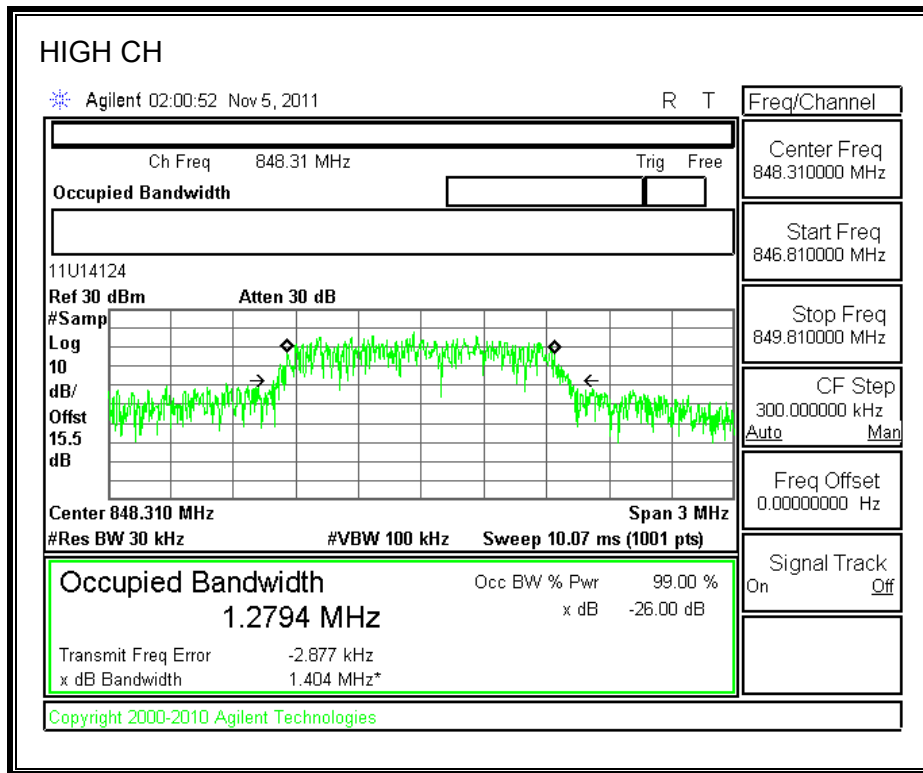
1xRTT 800 MHz SECONDARY BAND



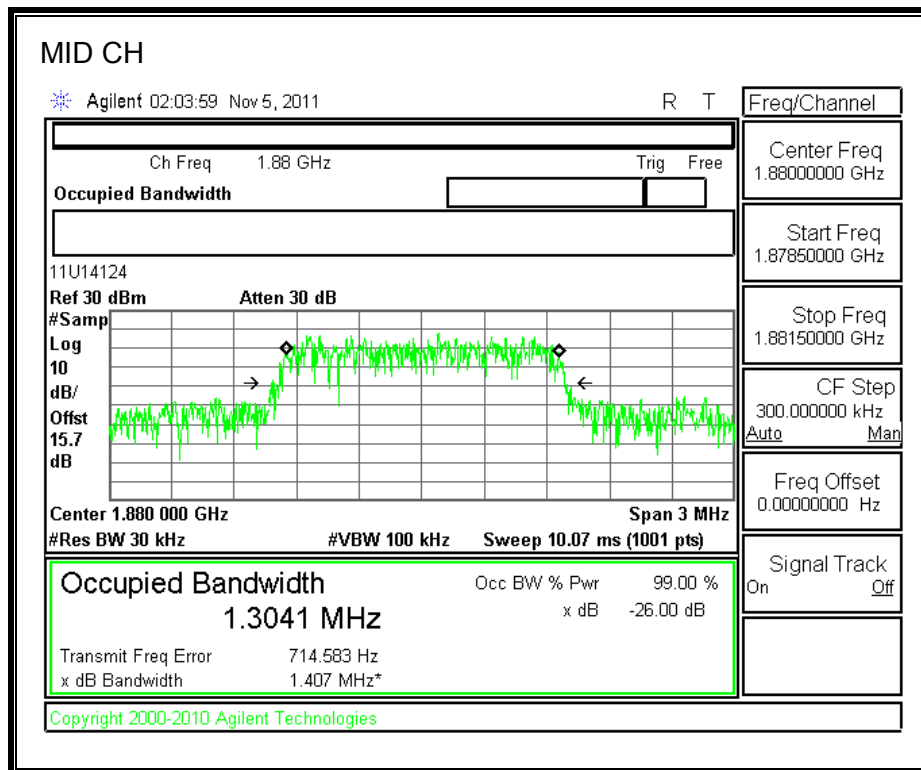
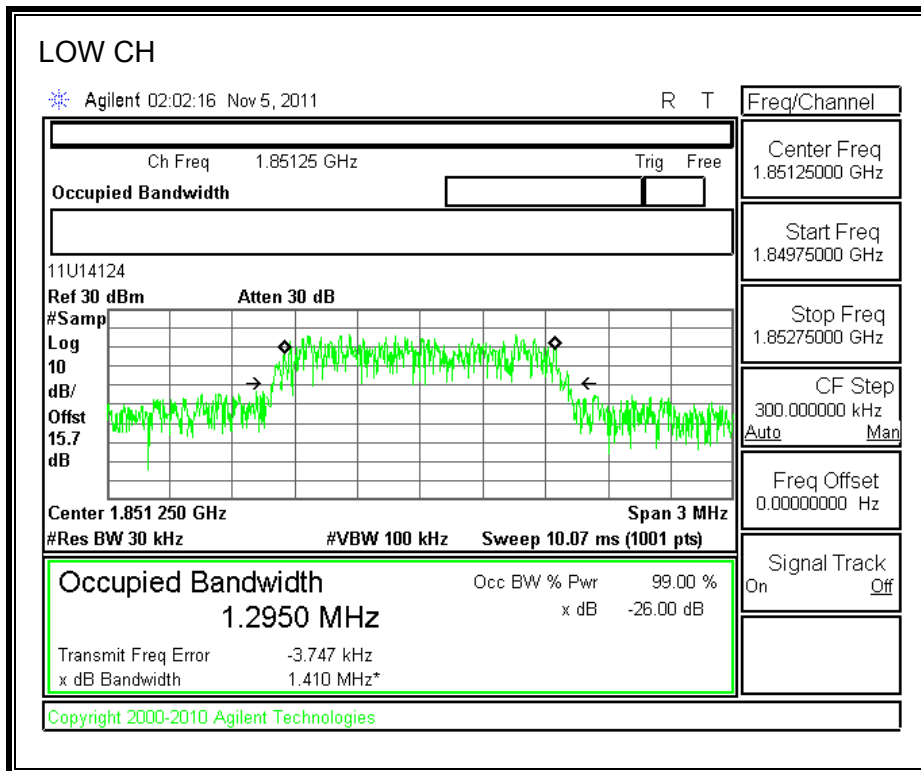


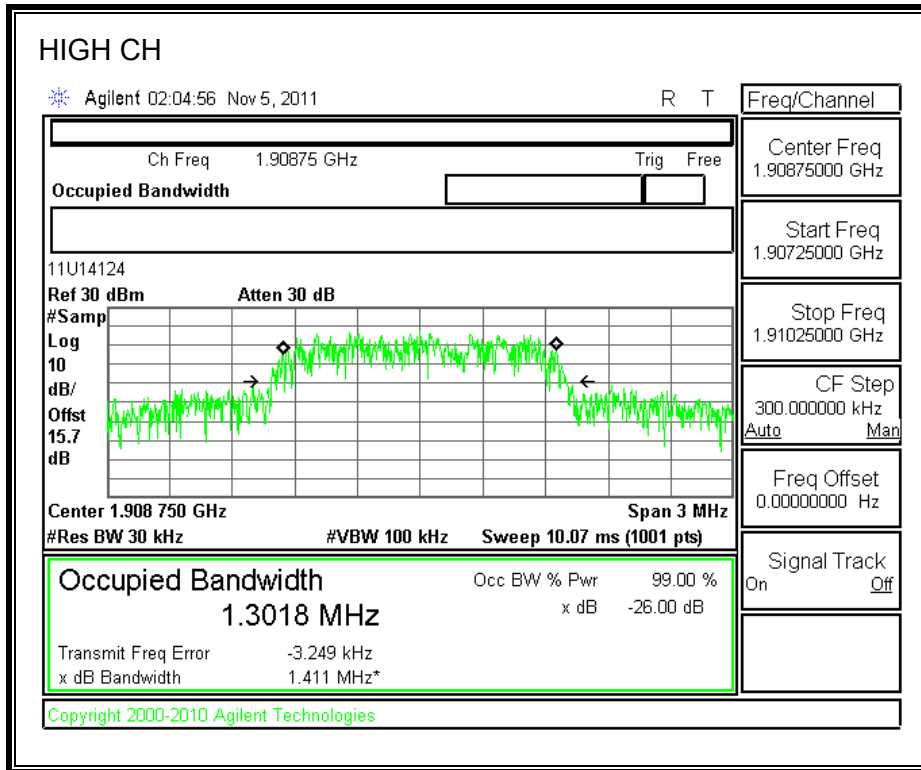
1xRTT 850 BAND



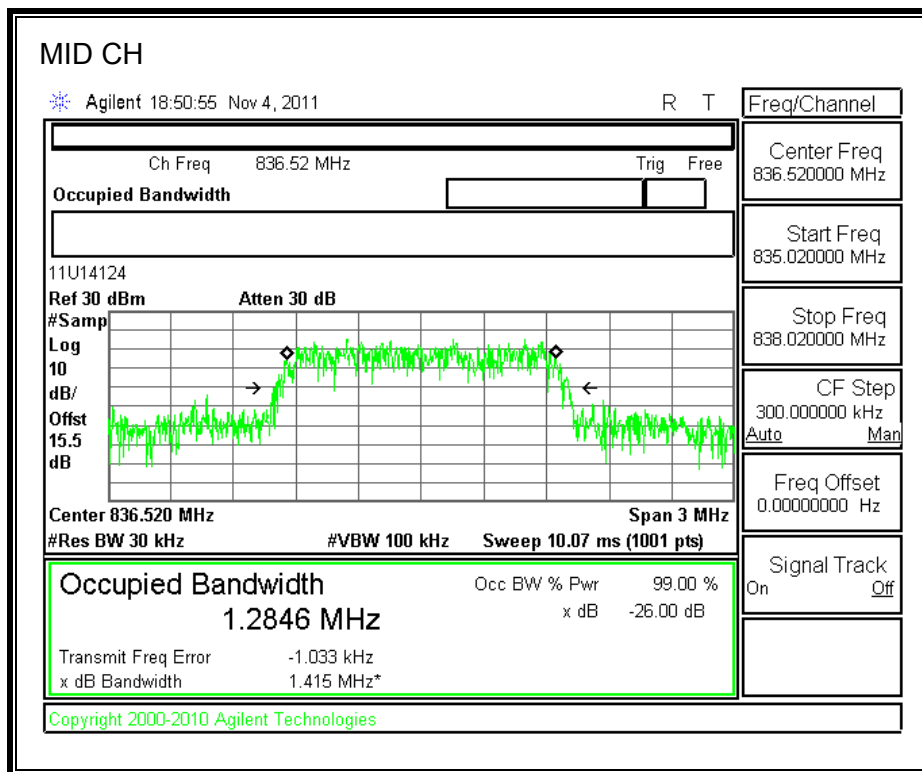
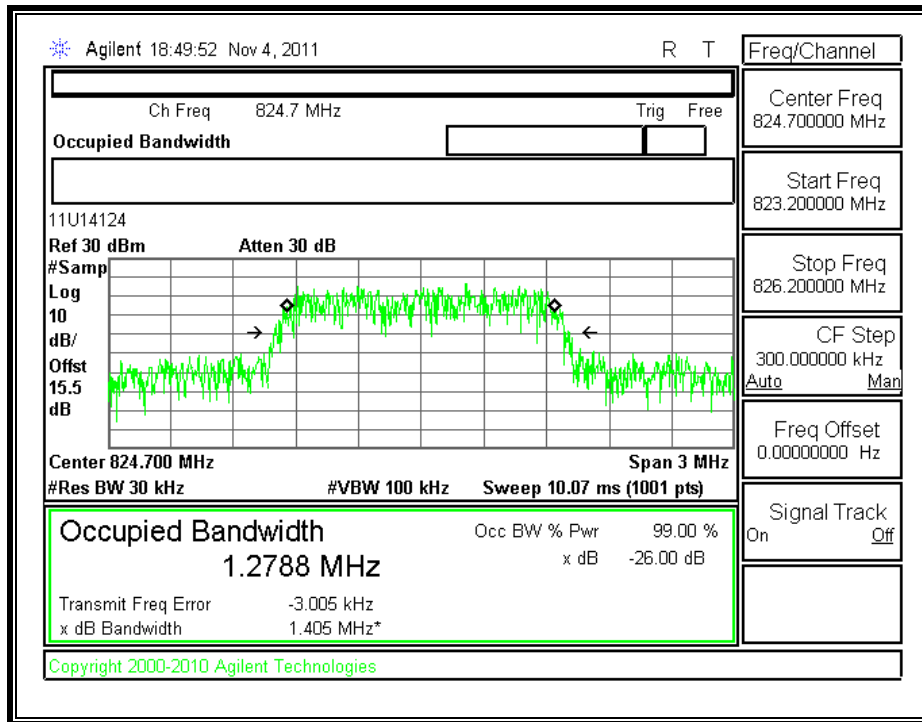


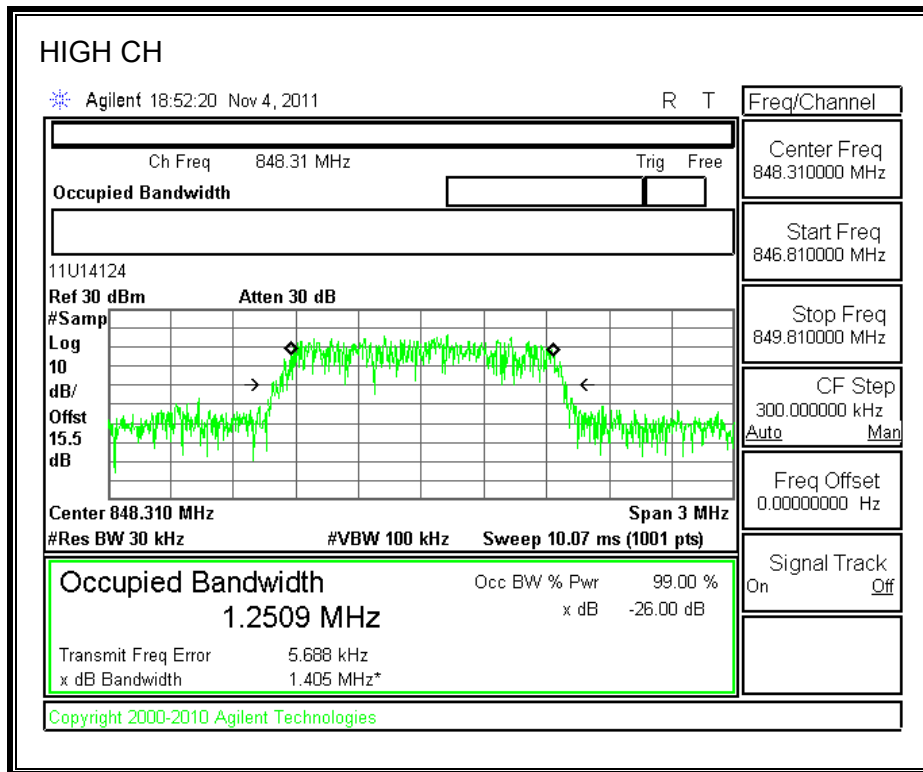
1xRTT 1900 BAND



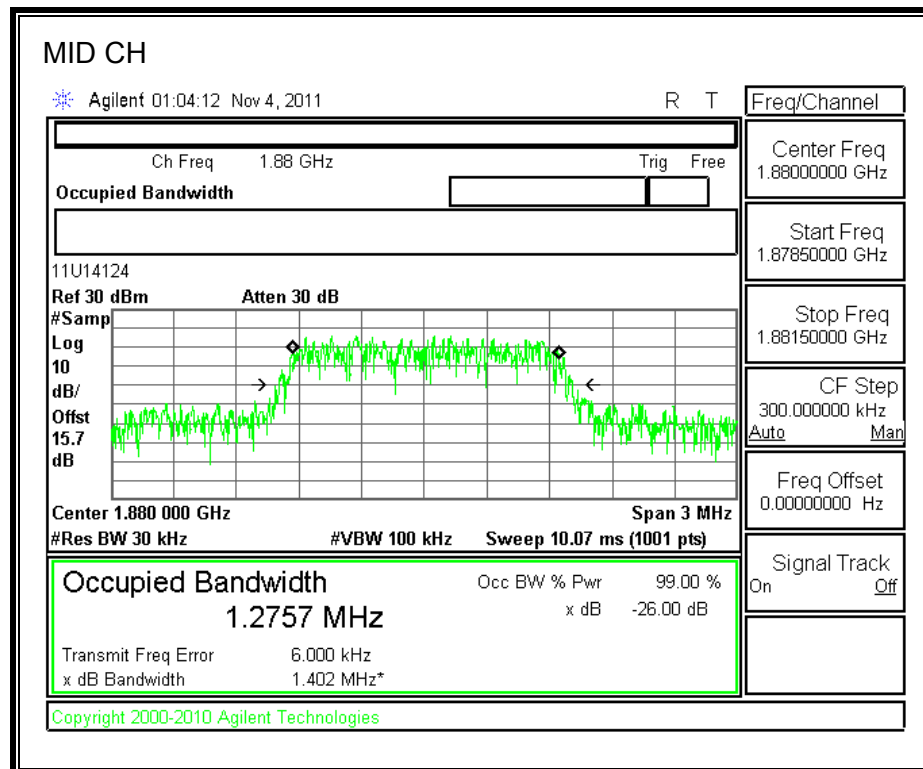
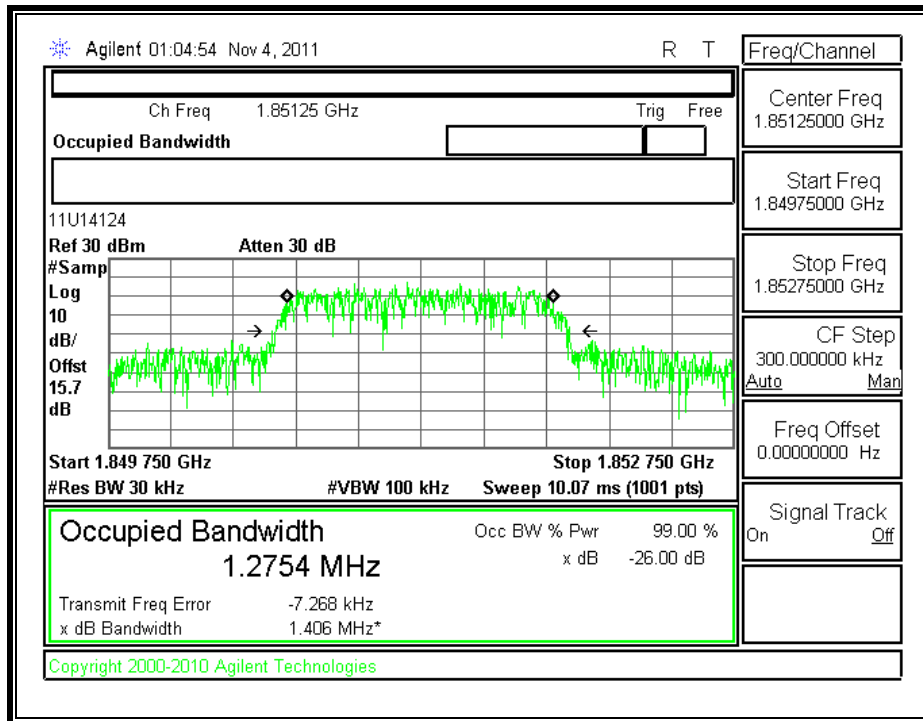


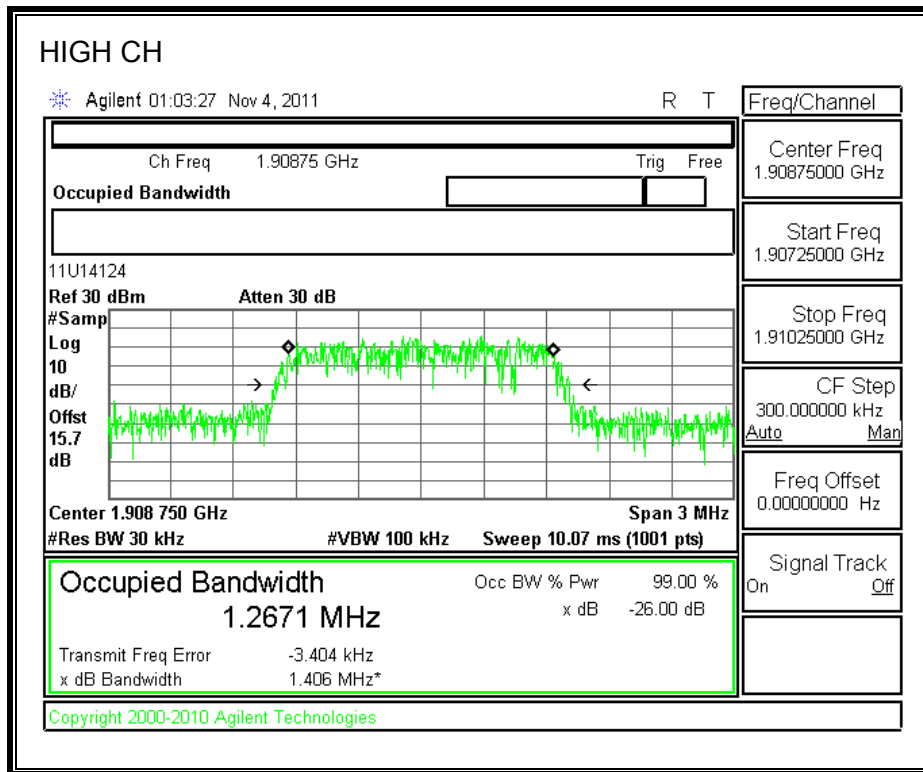
EVDO REV A.850 BAND





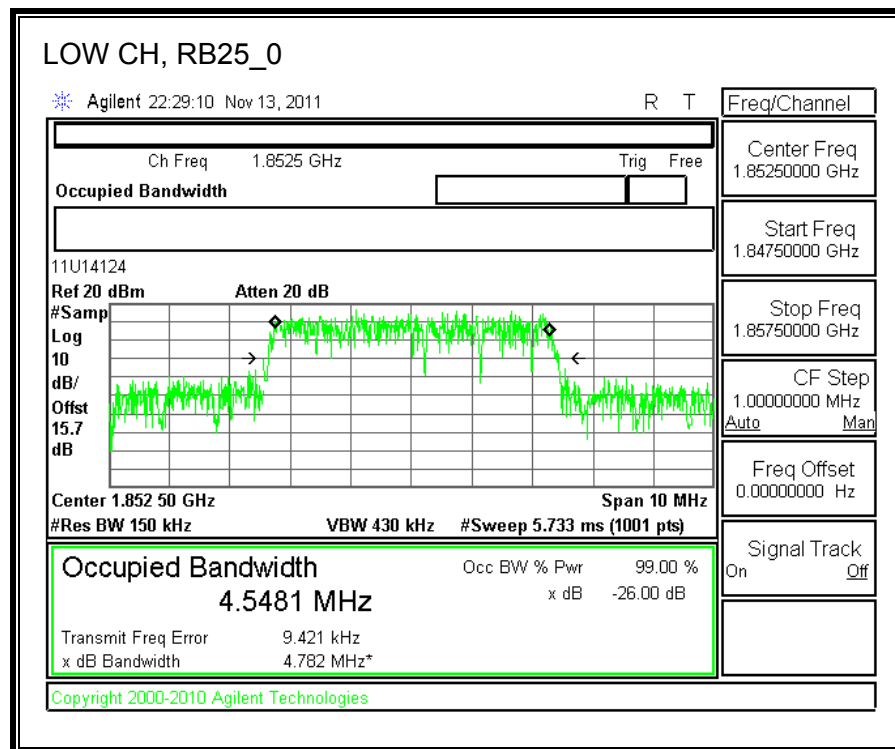
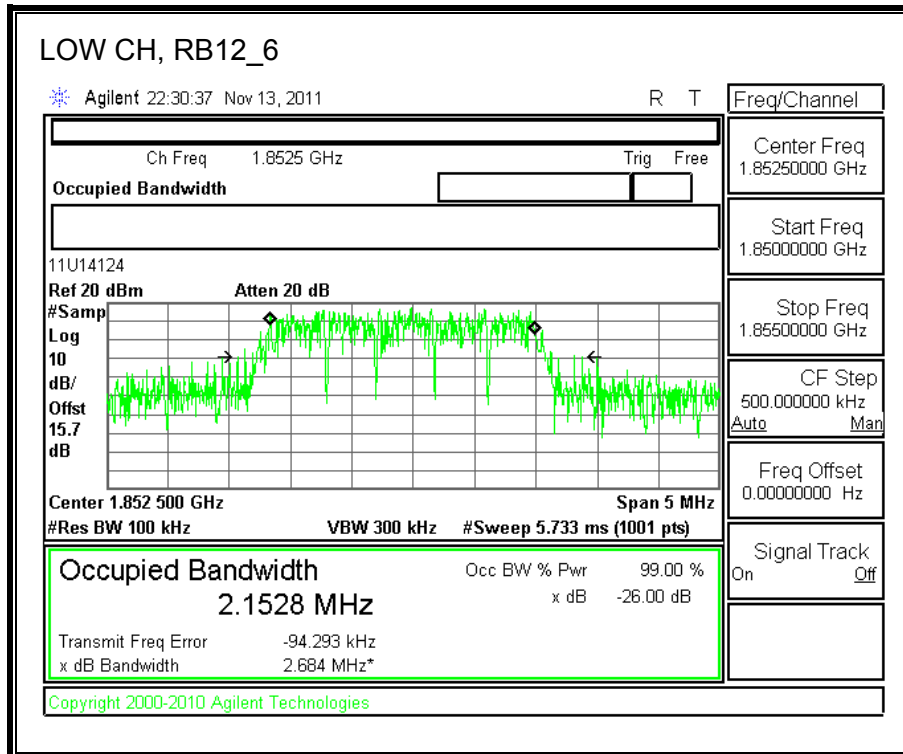
EVDO REV A.1900 BAND



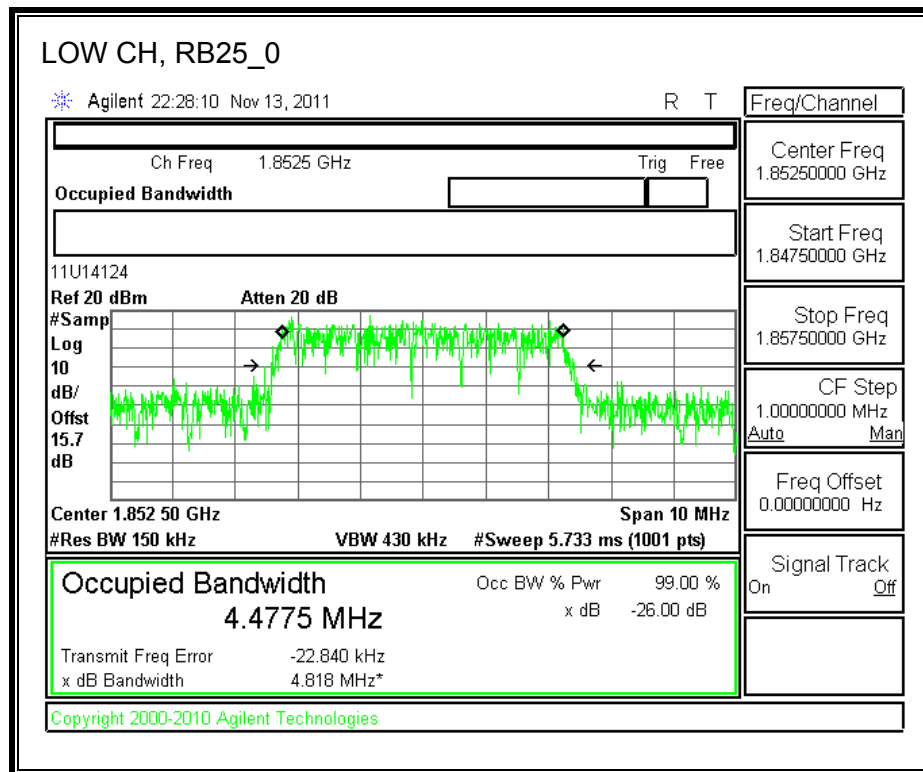
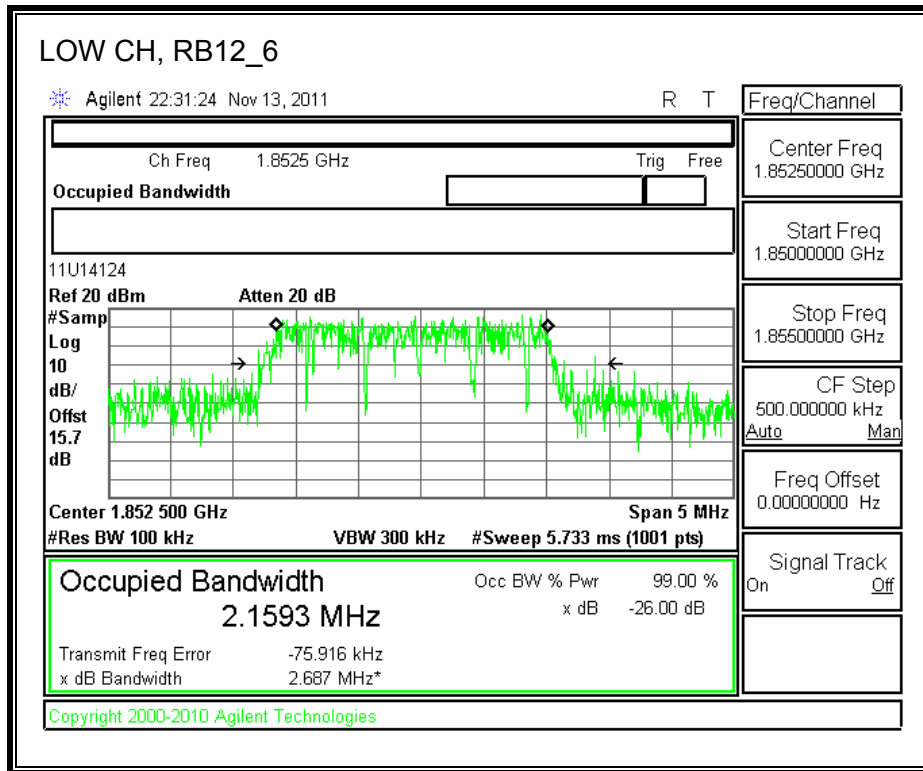


LTE, Band 25 (5.0MHz BAND WIDTH)

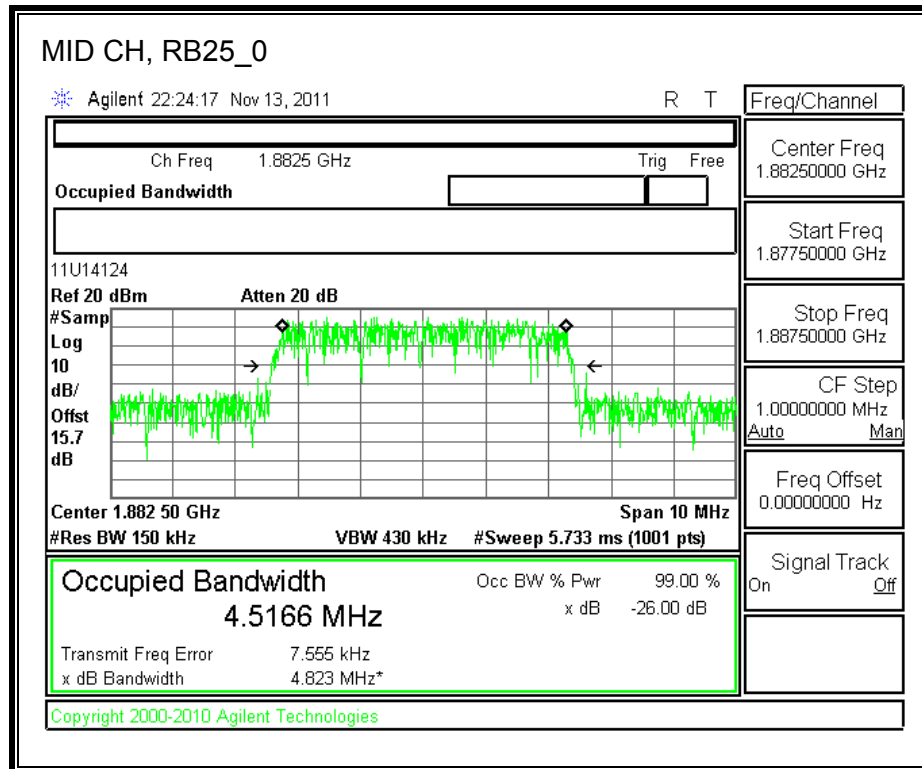
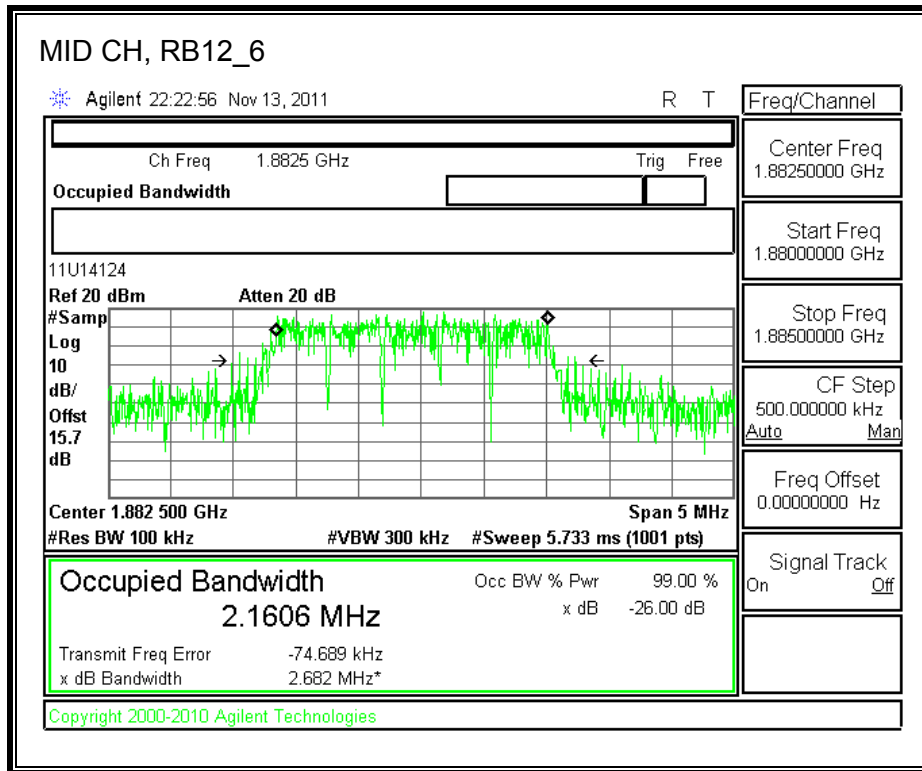
QPSK



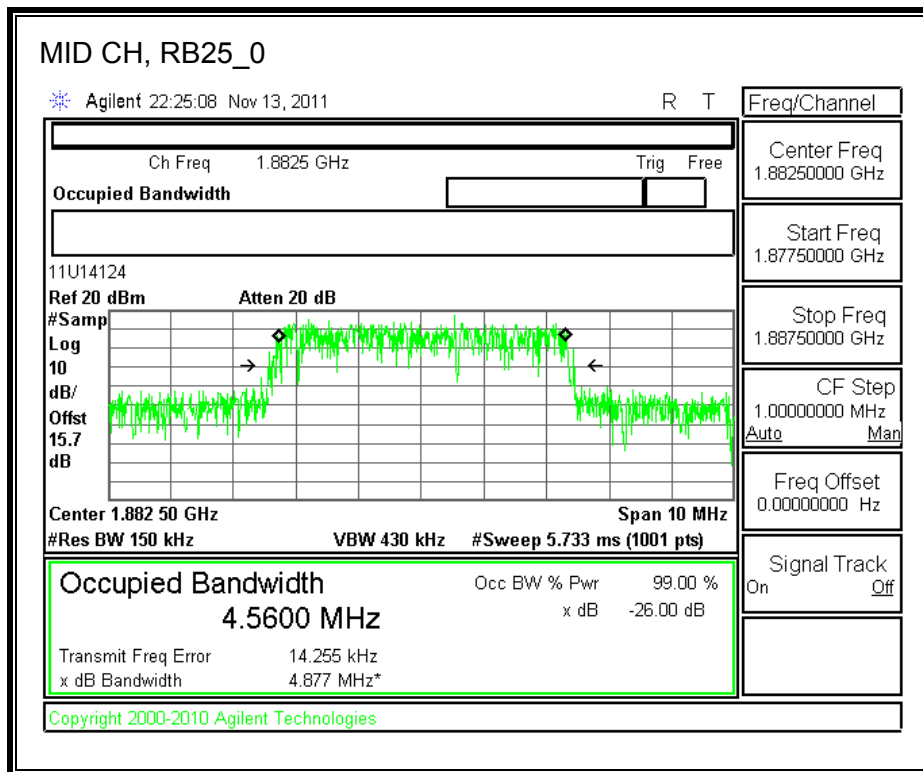
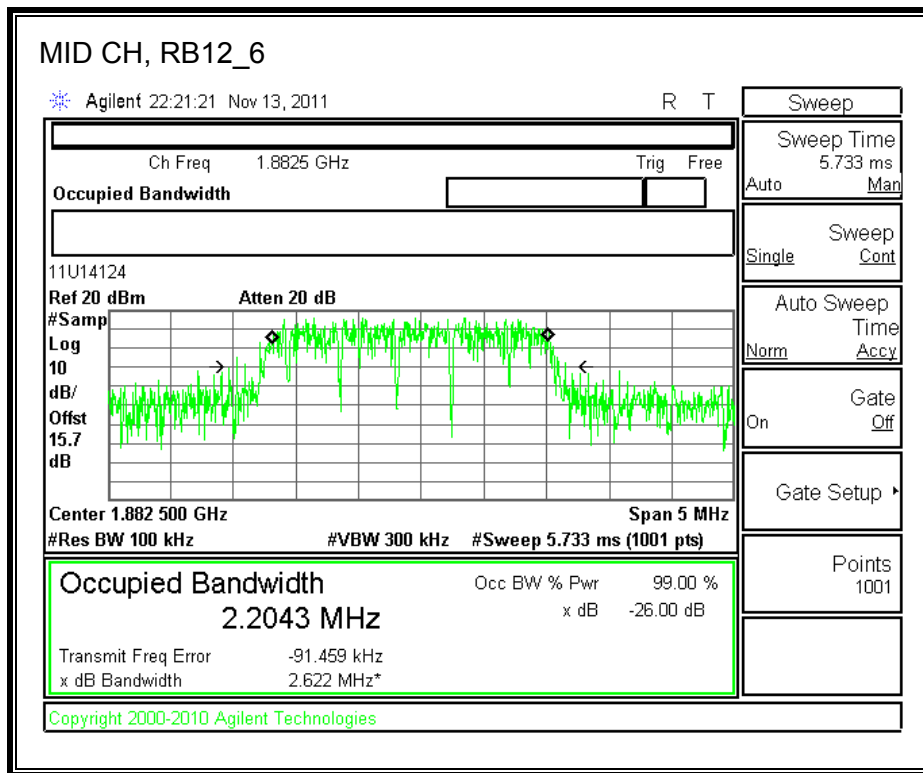
16QAM



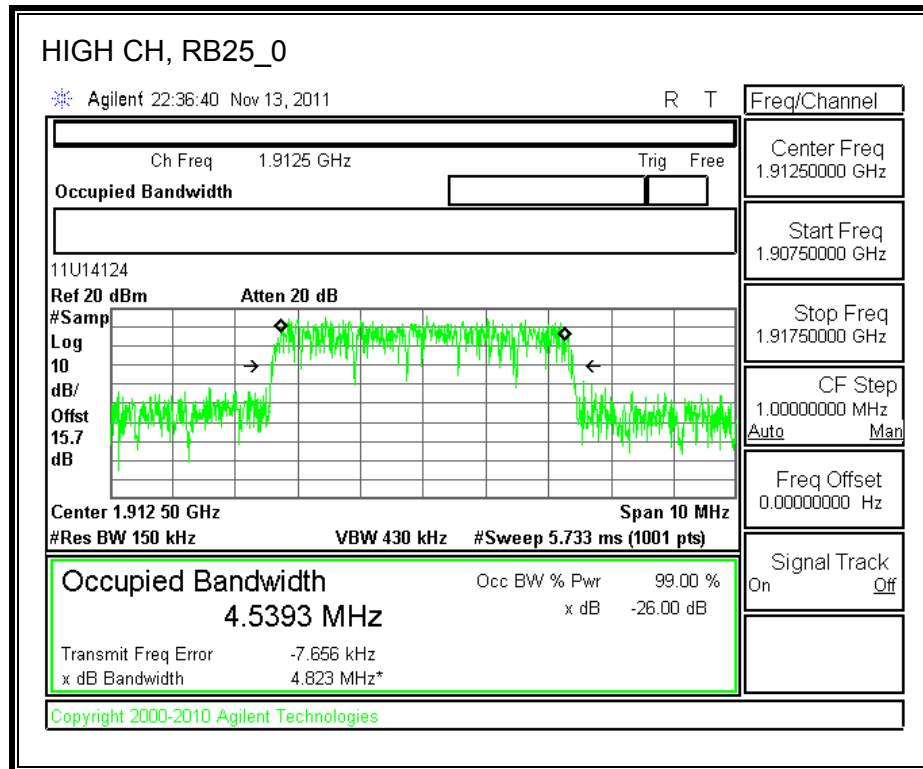
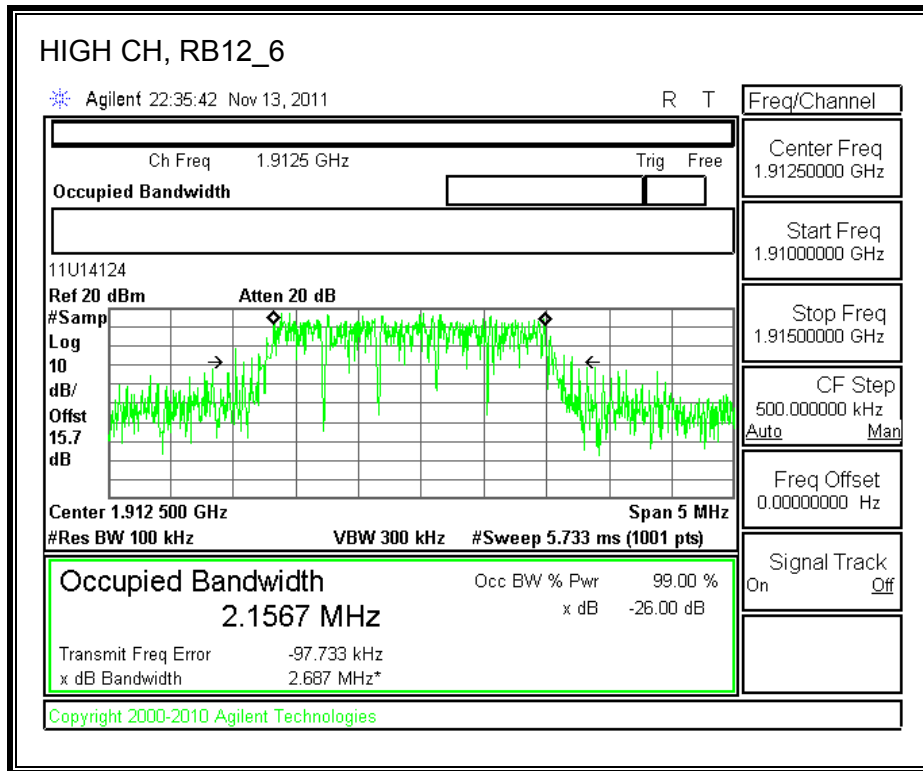
QPSK



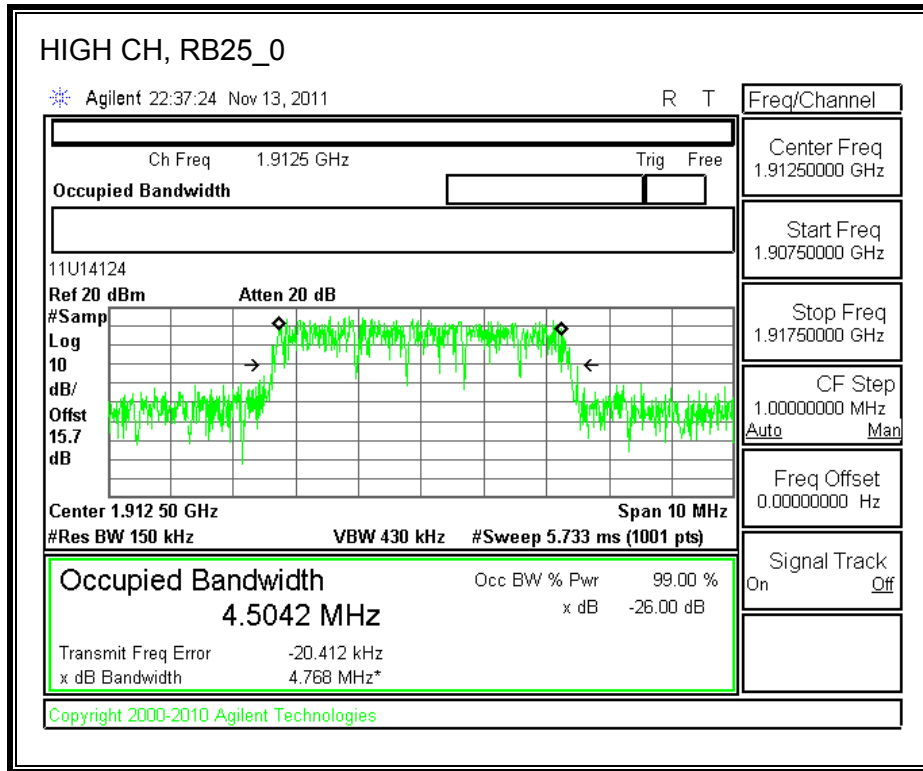
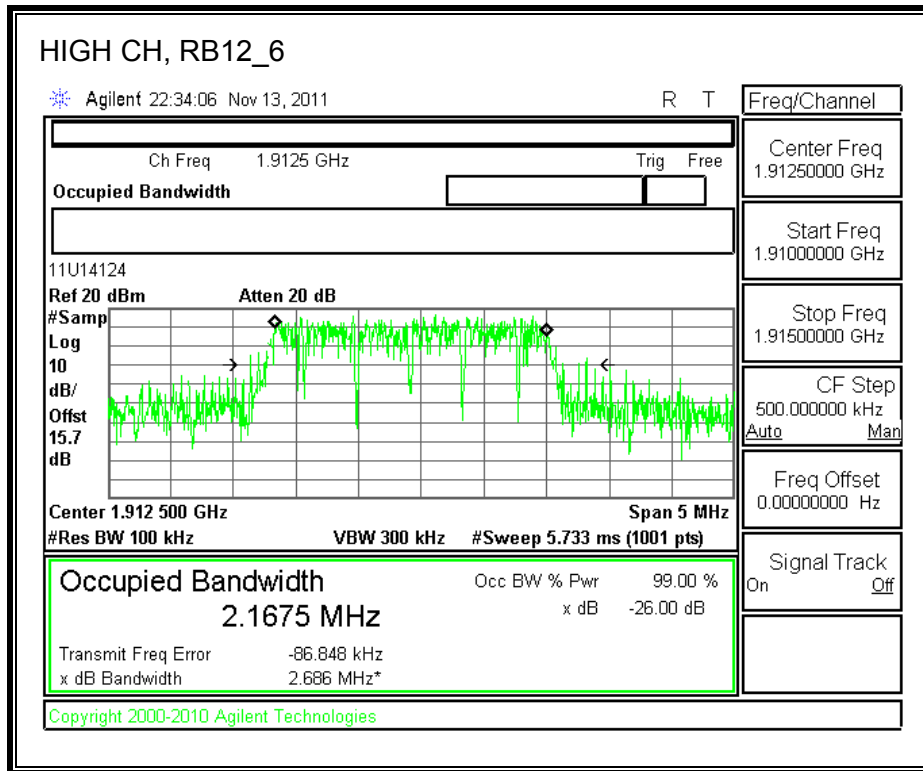
16QAM



QPSK



16QAM



8.2. BAND EDGE

RULE PART(S)

FCC: §22.359, 24.238, and 27.

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, 849, 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.

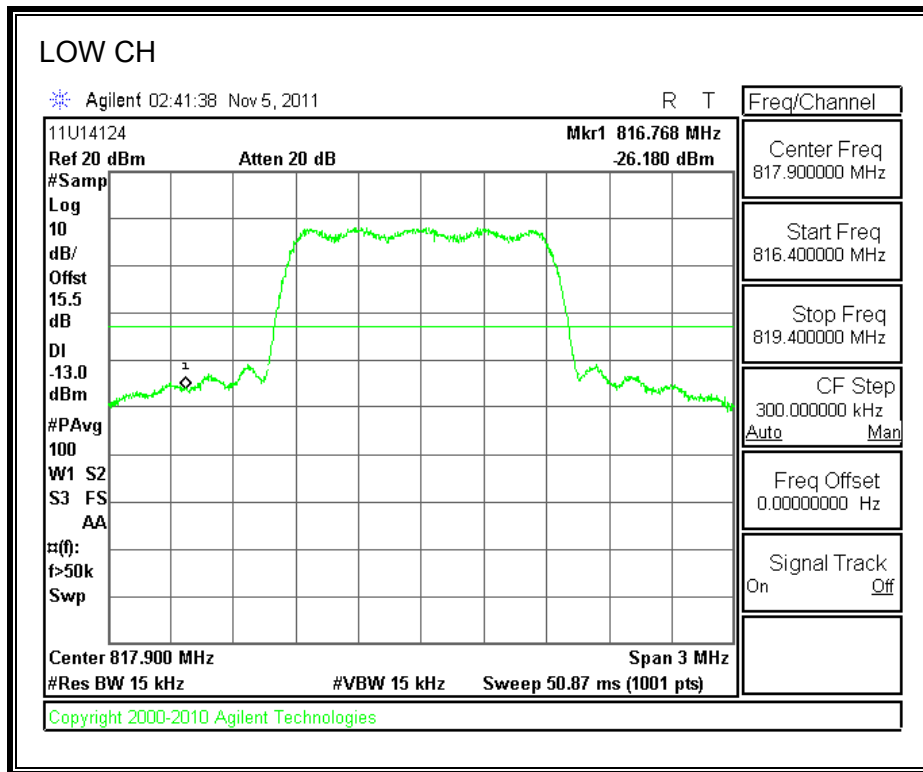
MODES TESTED

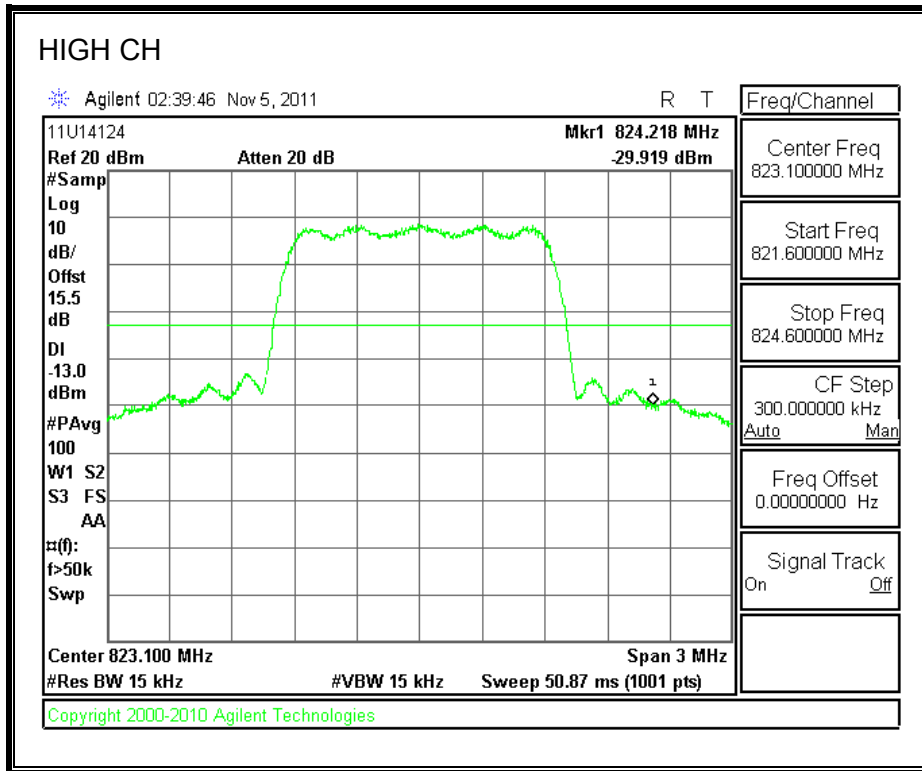
- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- LTE Band 2 and 4

RESULTS

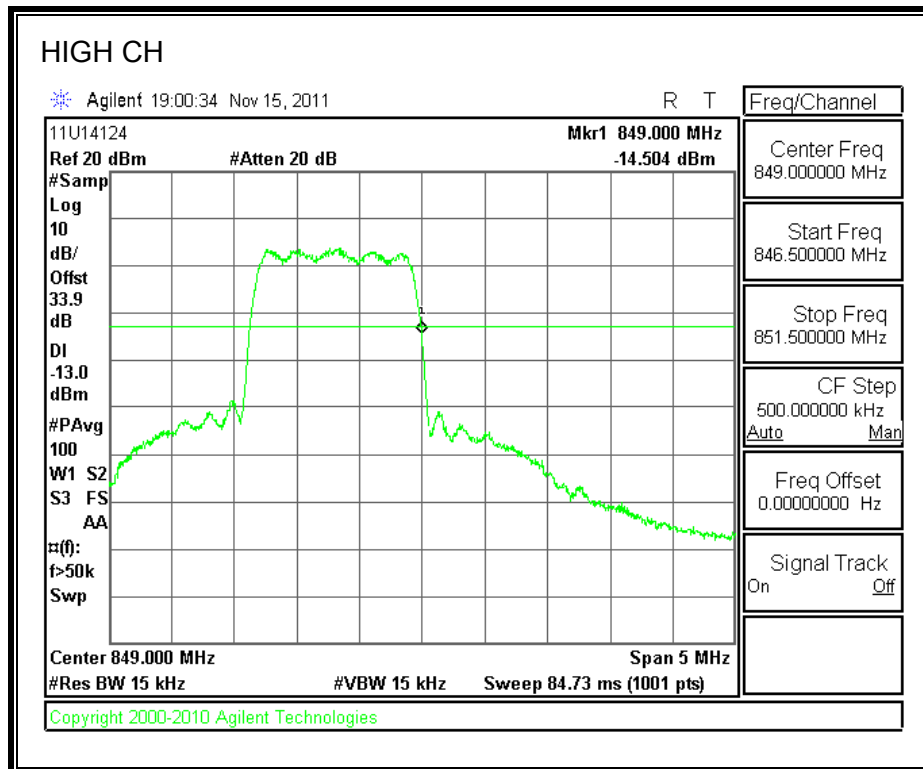
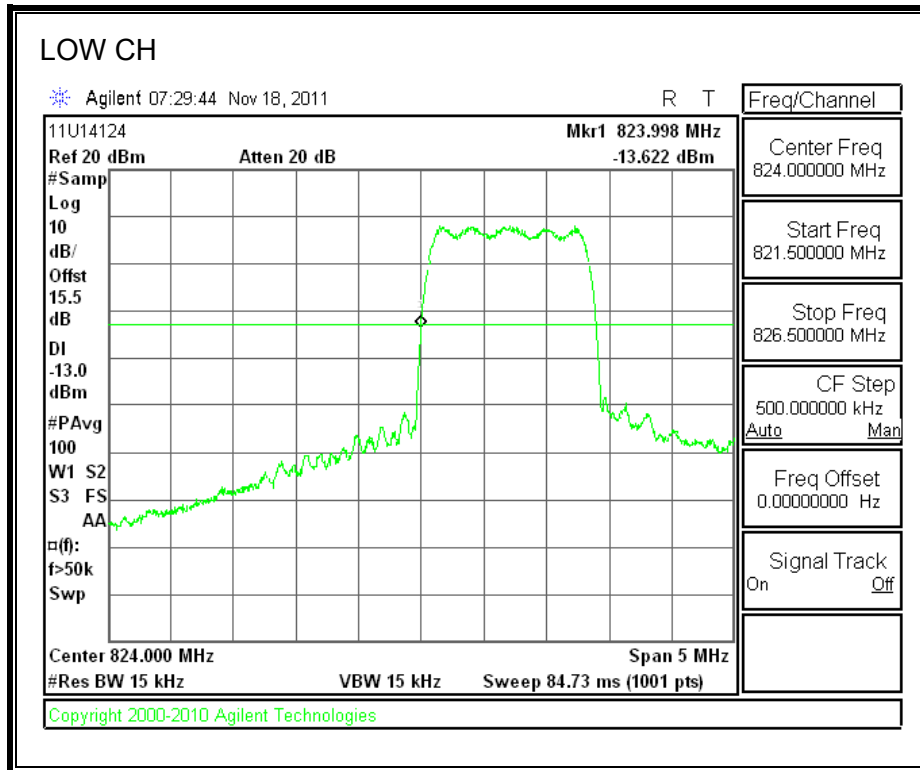
BANDEDGE

1xRTT 800 MHz SECONDARY BAND



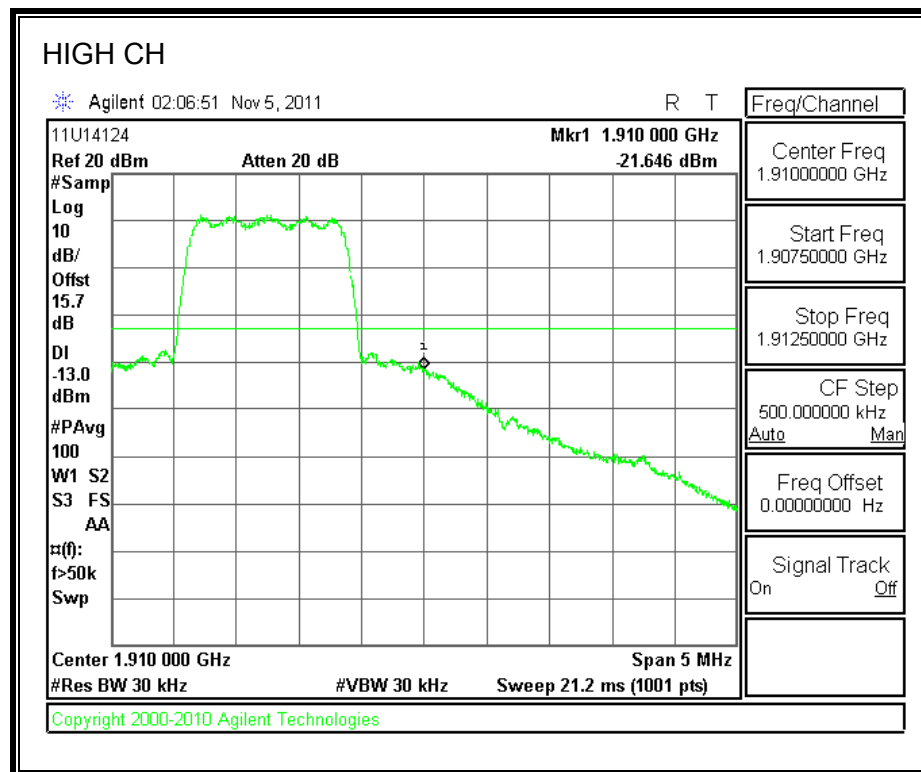
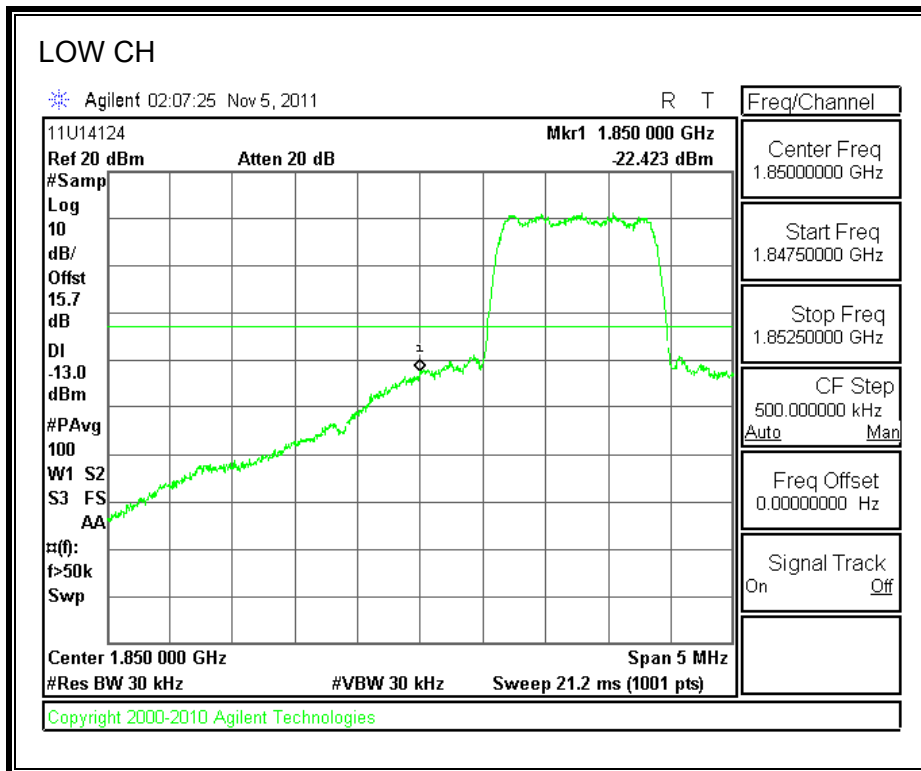


1xRTT 850 BAND

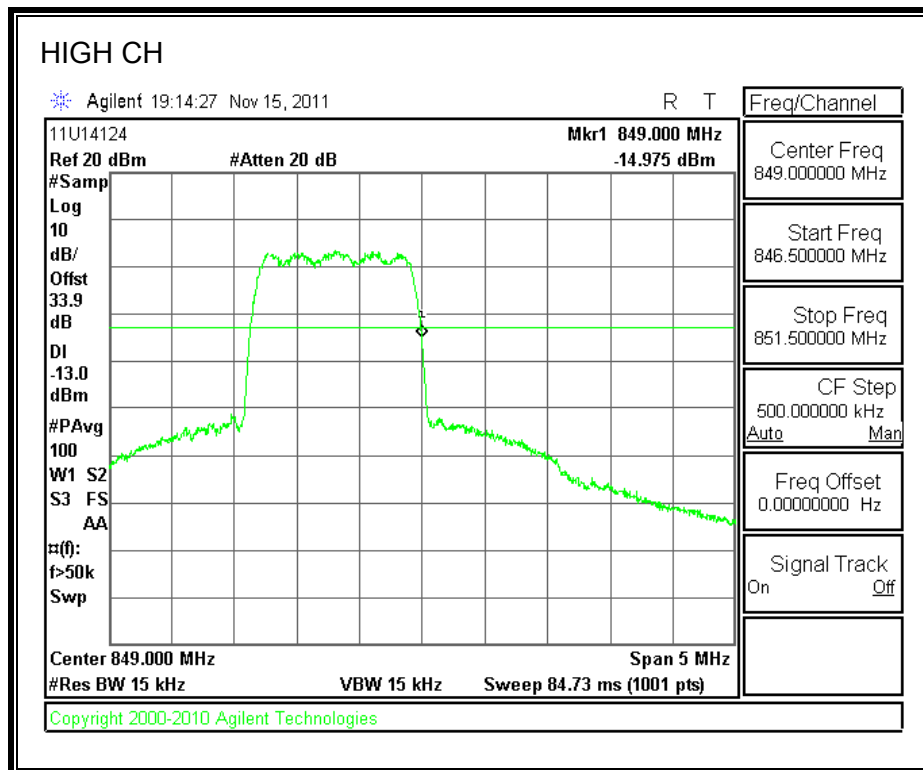
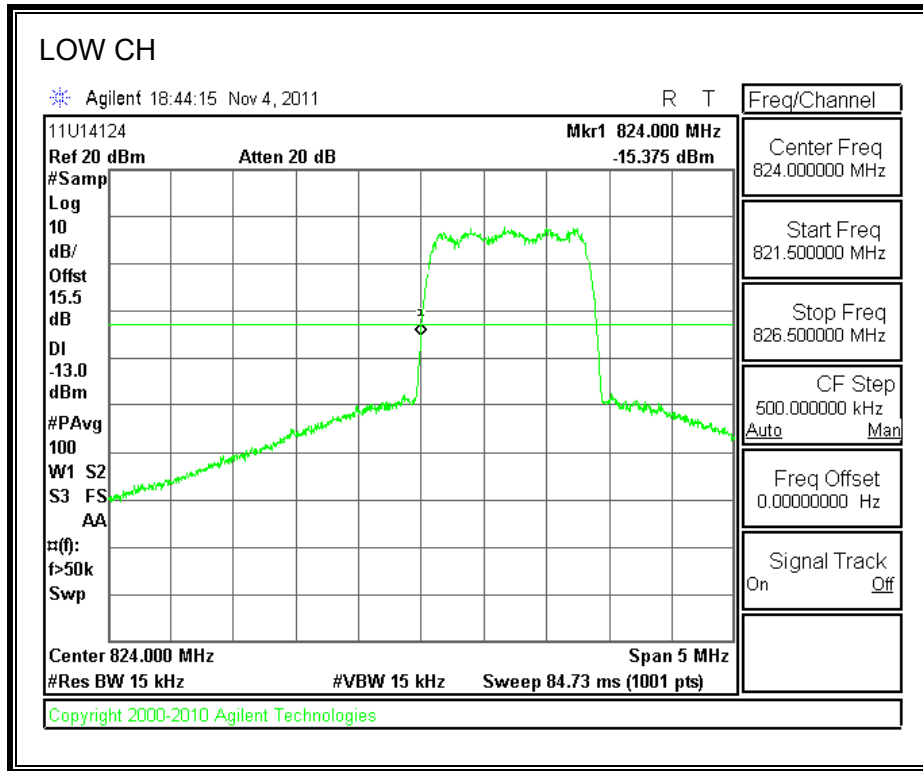


Note: Radiated emissions Bandedge measurement method is applied for cell band at high channel.

1xRTT 1900 BAND

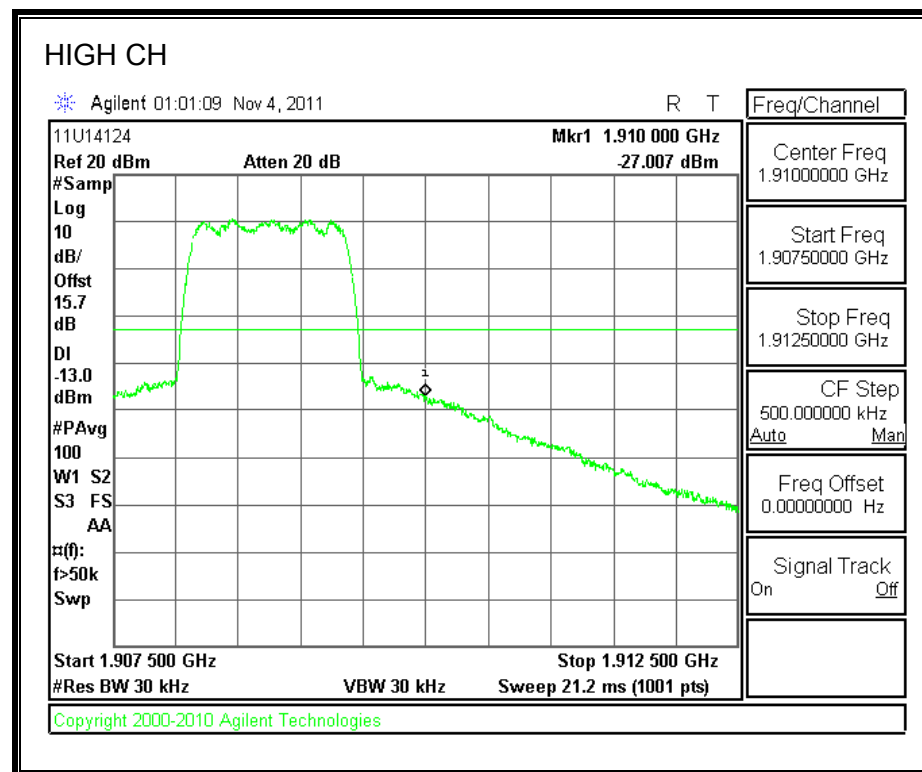
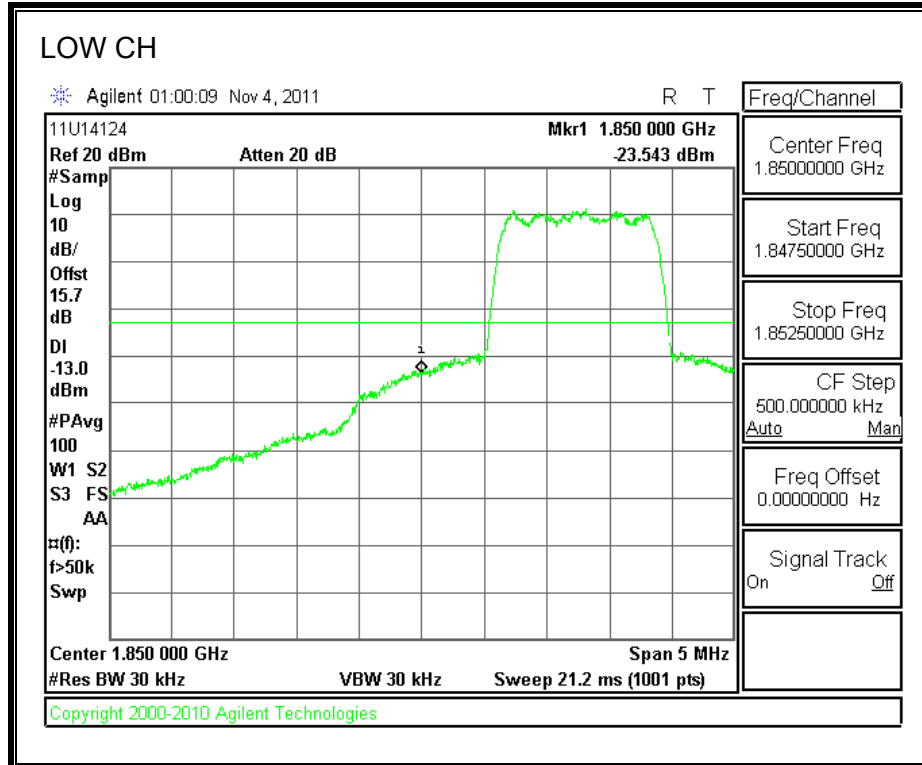


EVDO REV A. 850 BAND



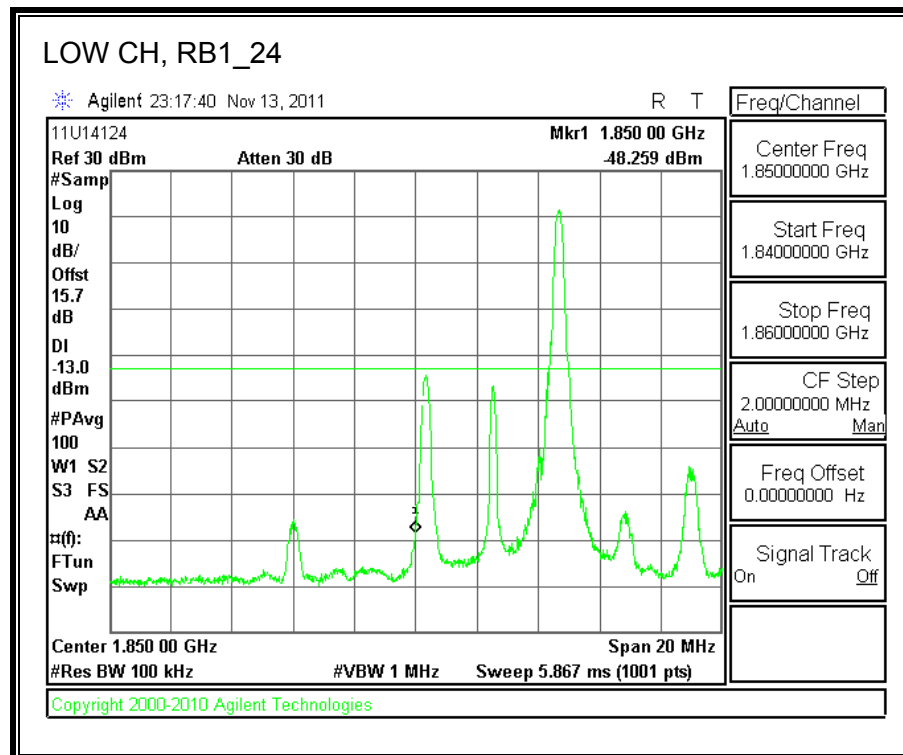
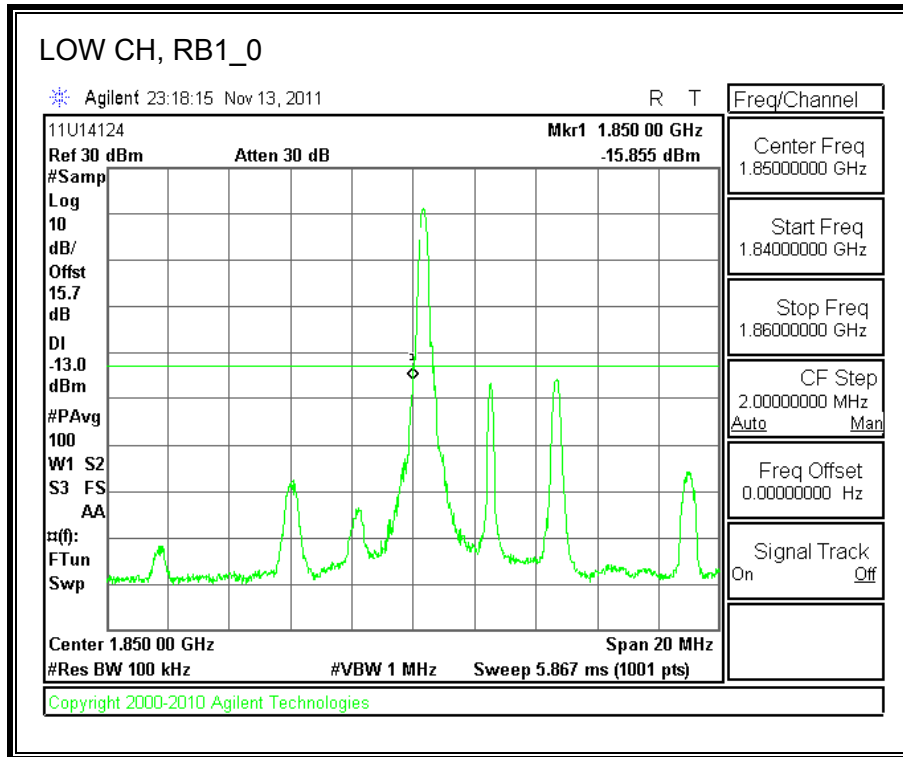
Note: Radiated emissions Bandedge measurement method is applied for cell band at high channel.

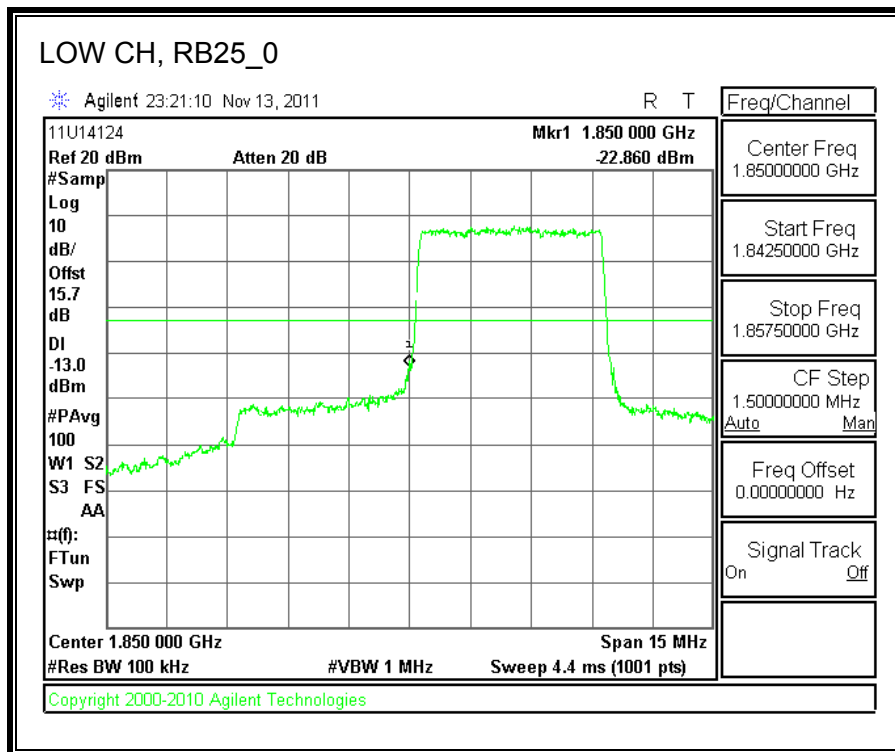
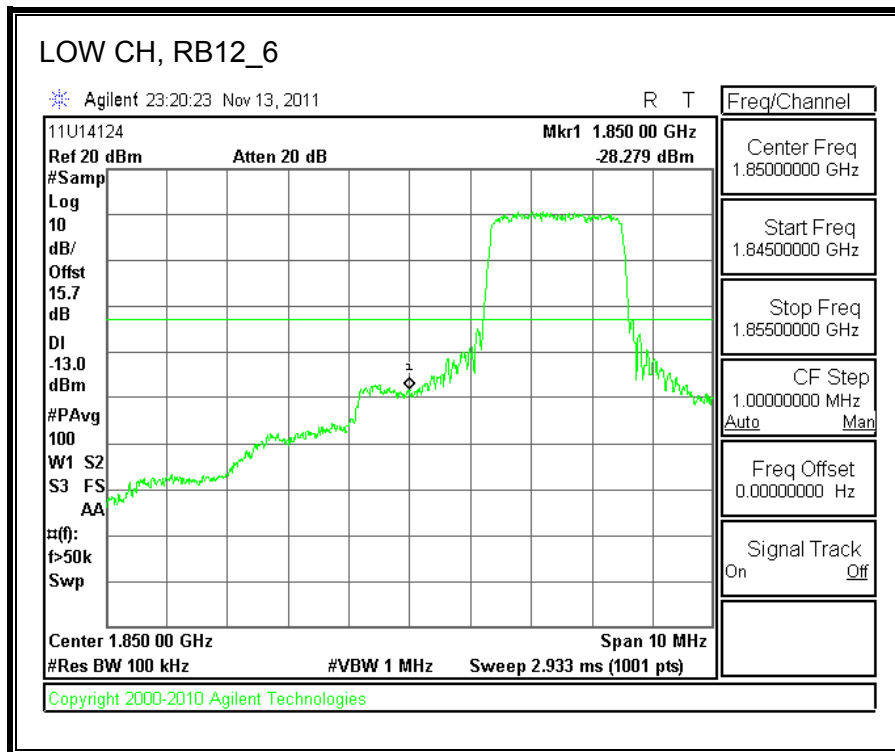
EVDO REV A.1900 BAND

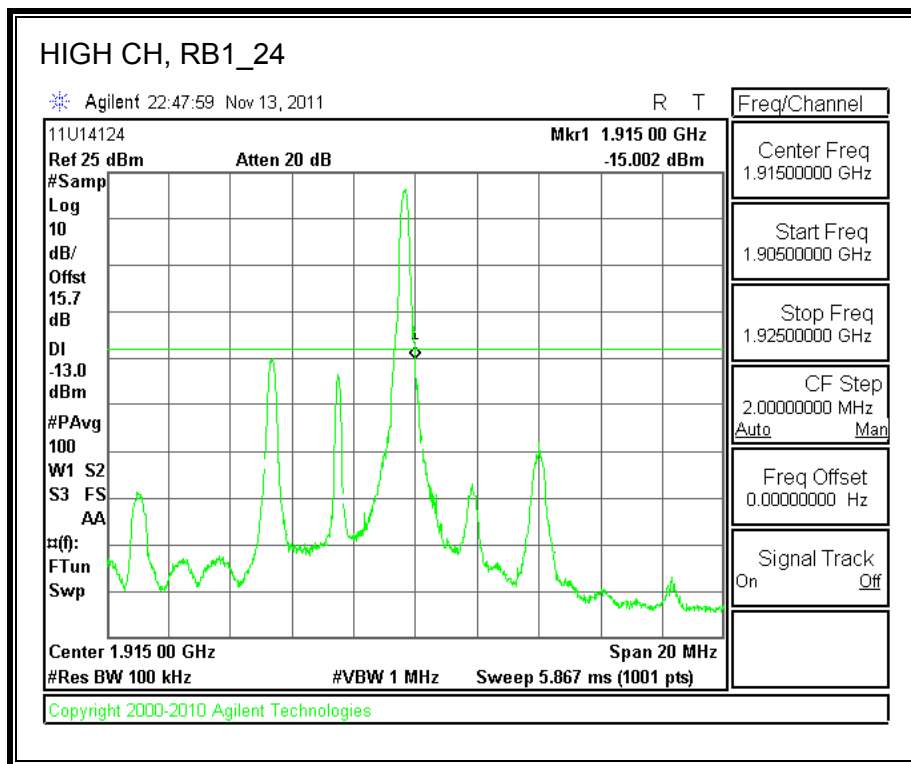
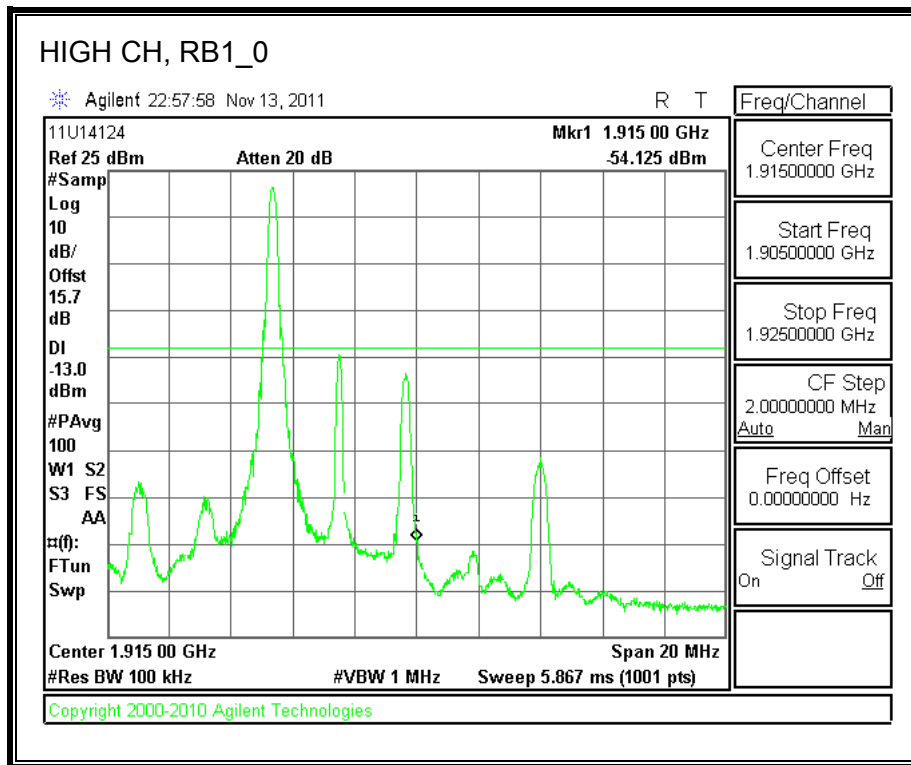


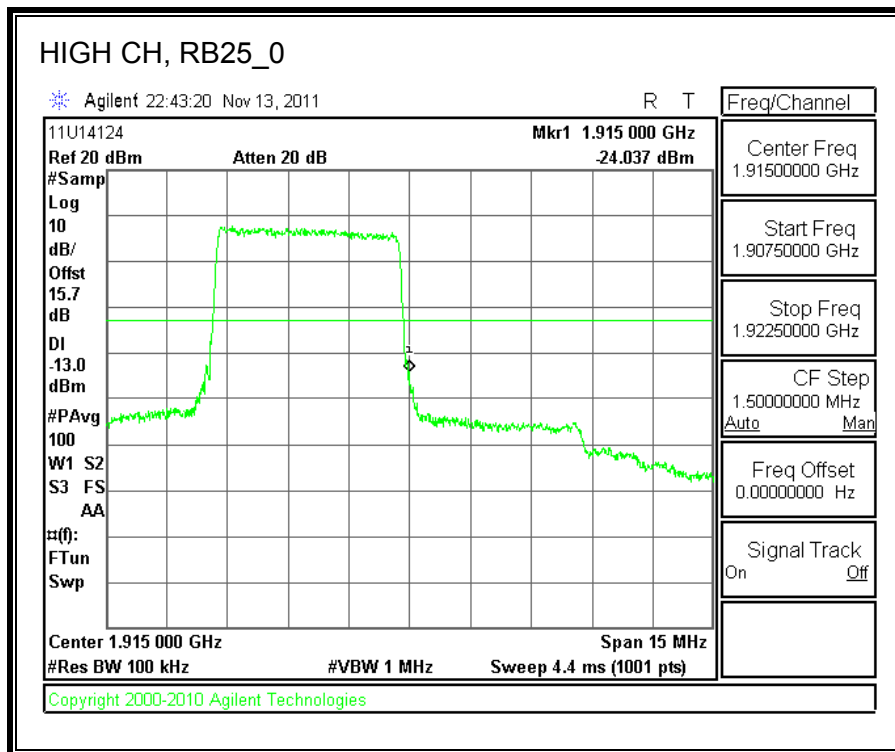
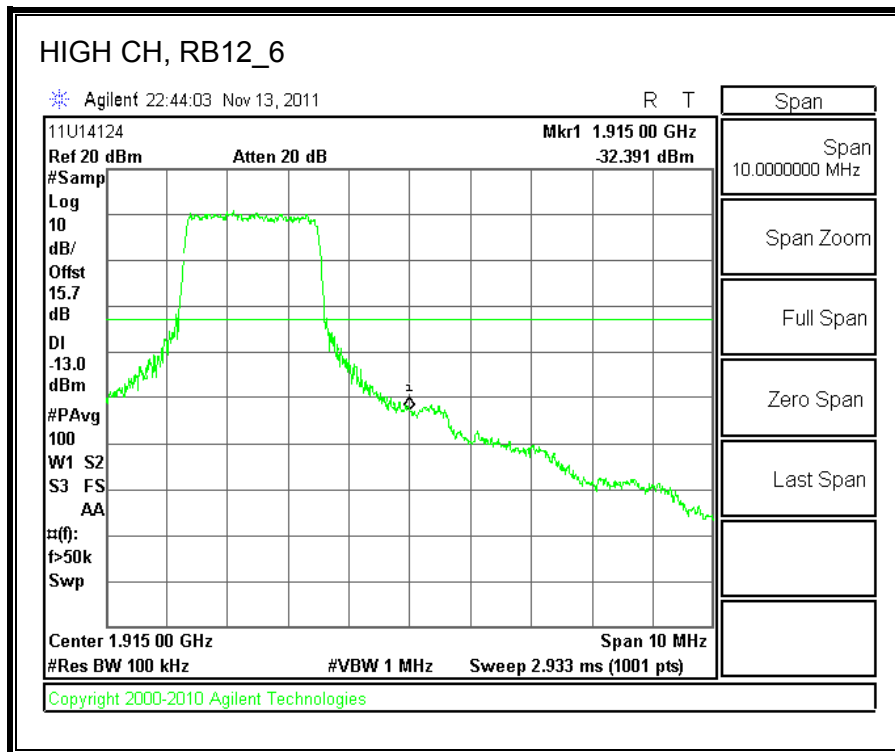
LTE, Band 25 (5.0MHz BAND WIDTH)

QPSK



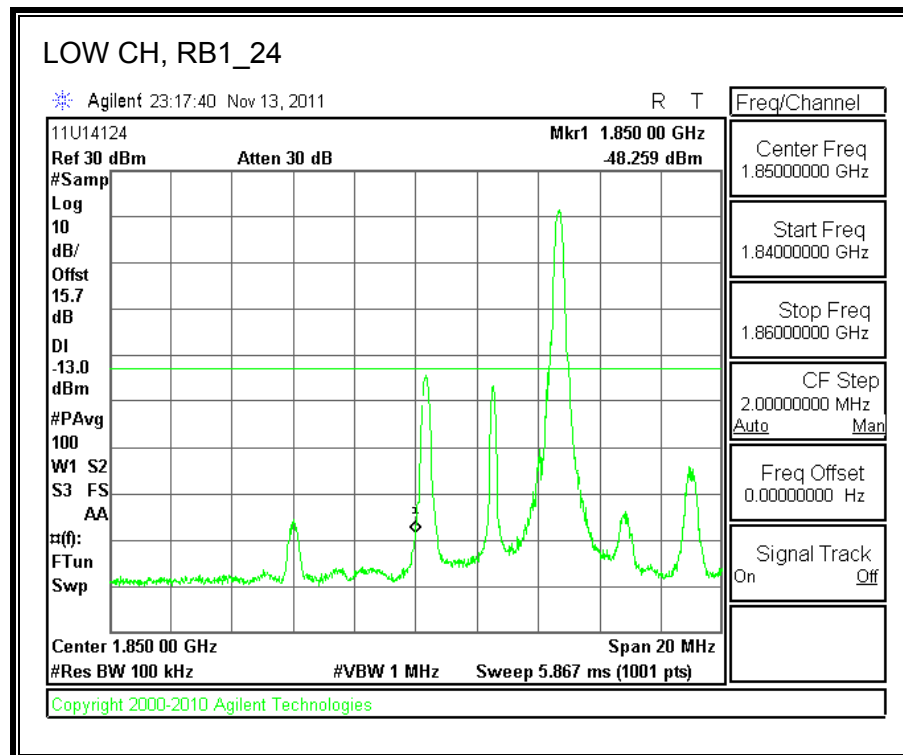
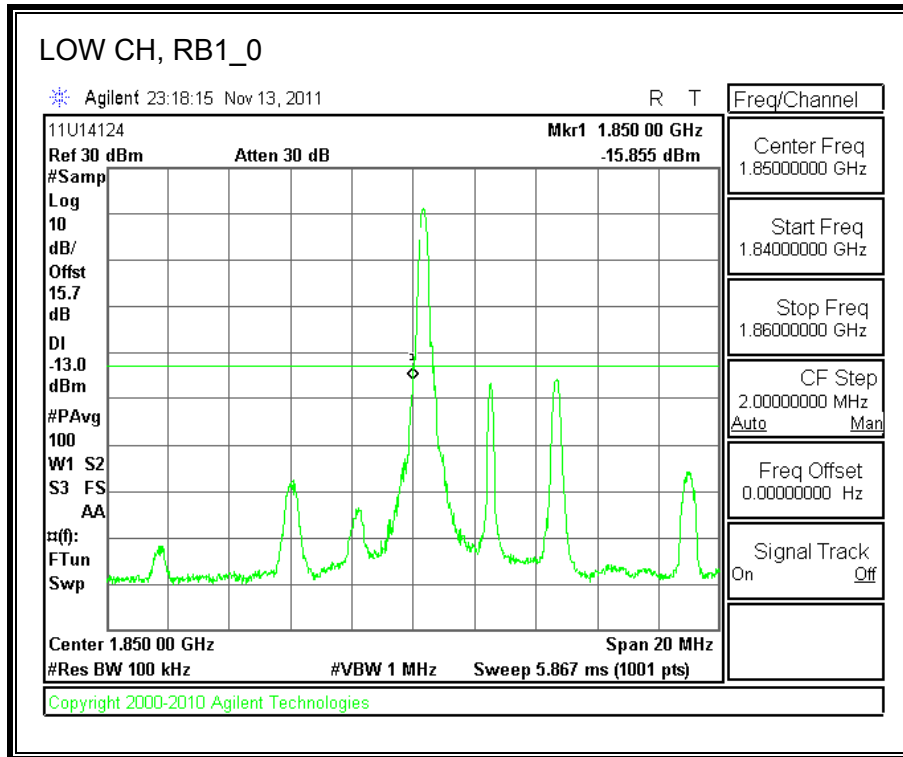


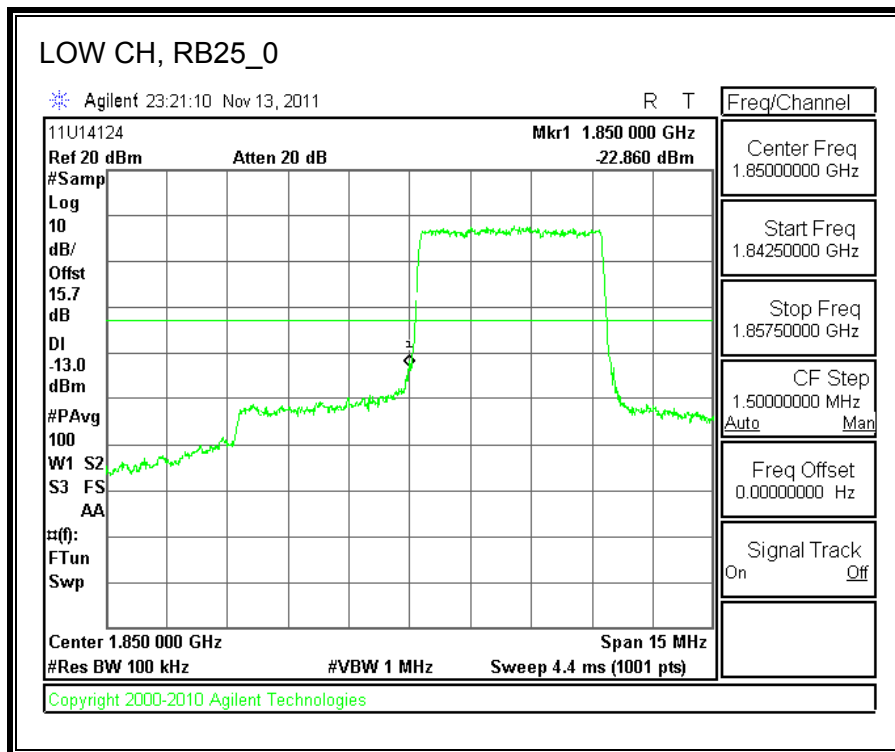
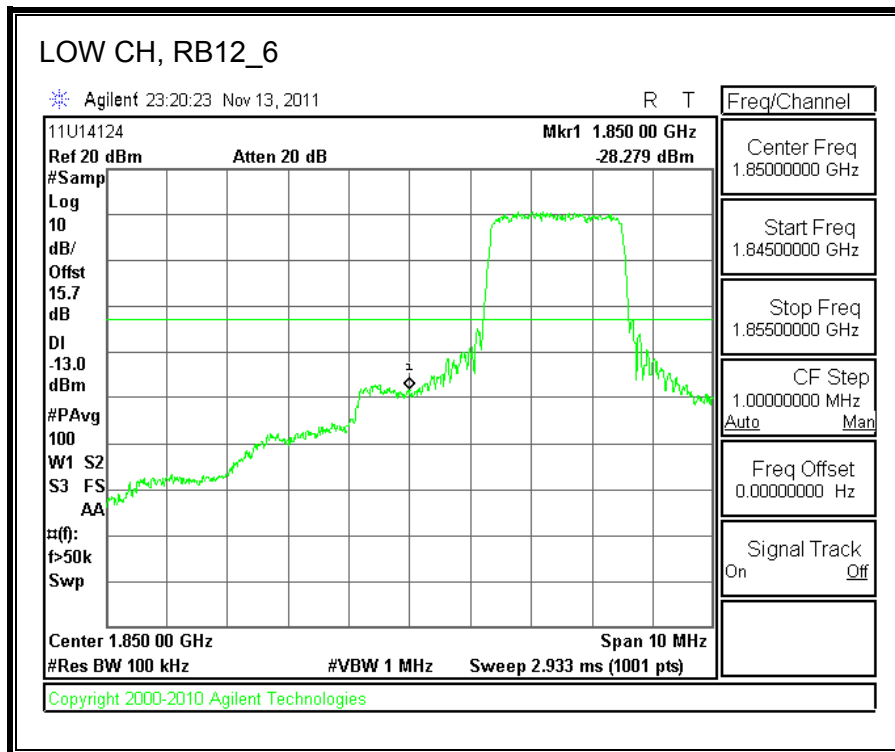


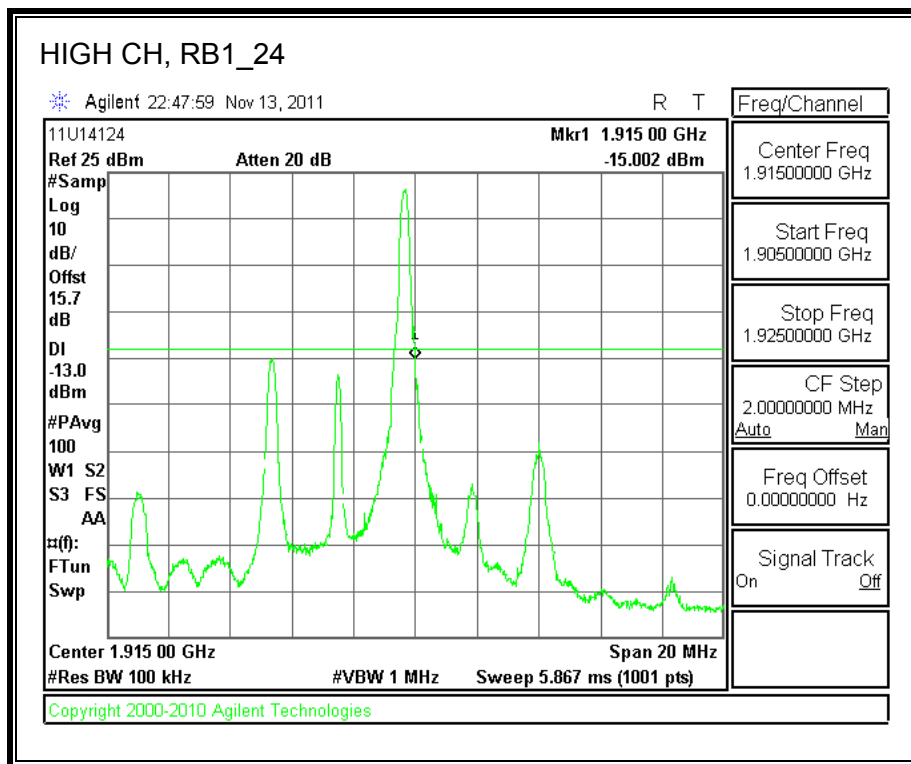
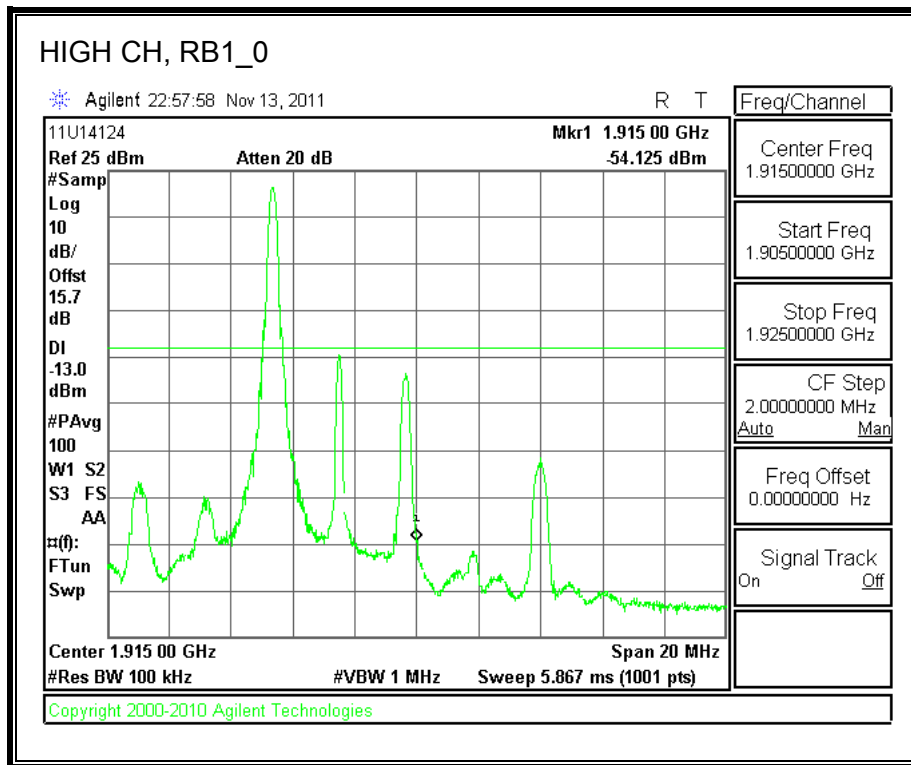


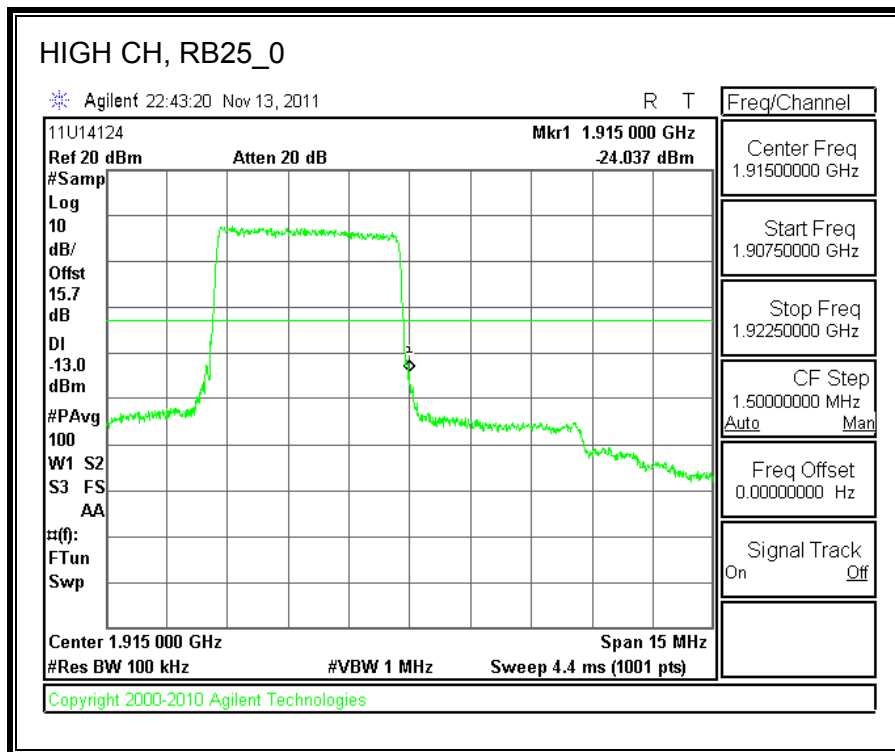
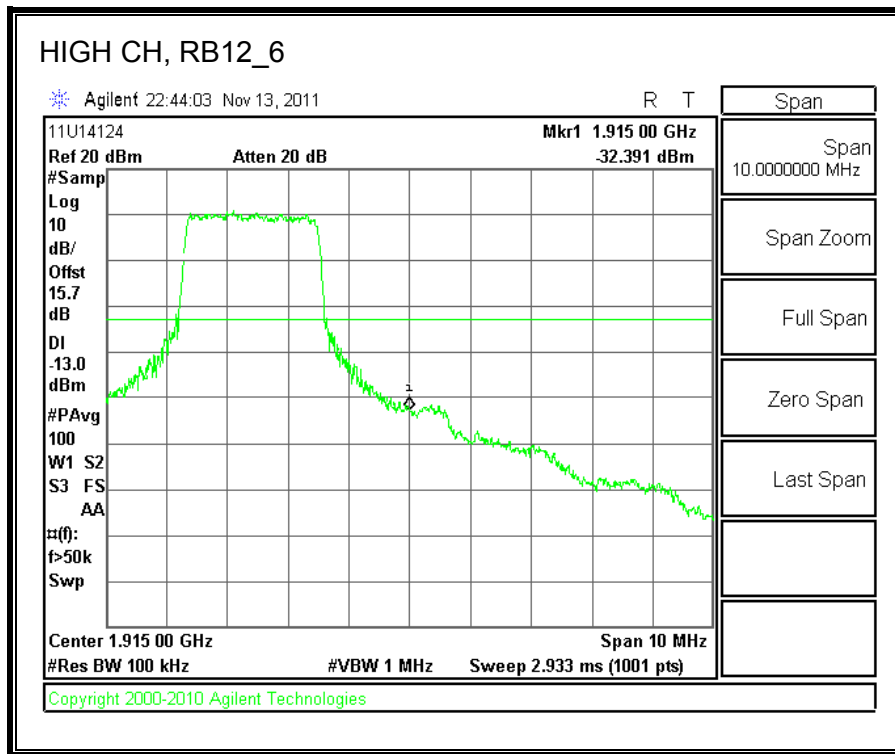
LTE, Band 25 (5.0MHz BAND WIDTH)

QPSK

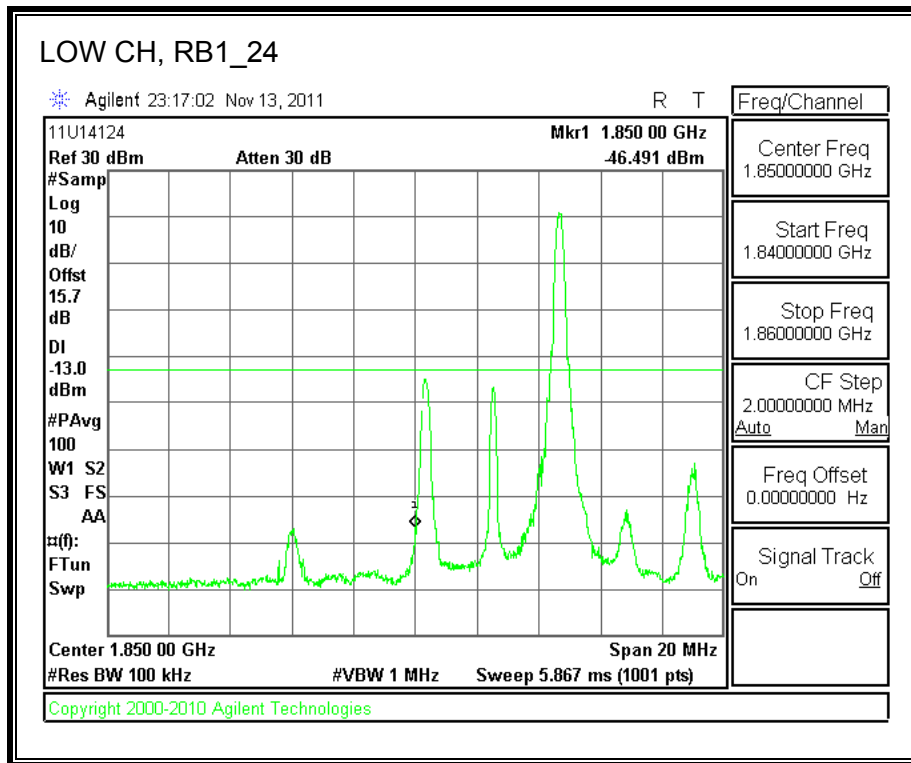
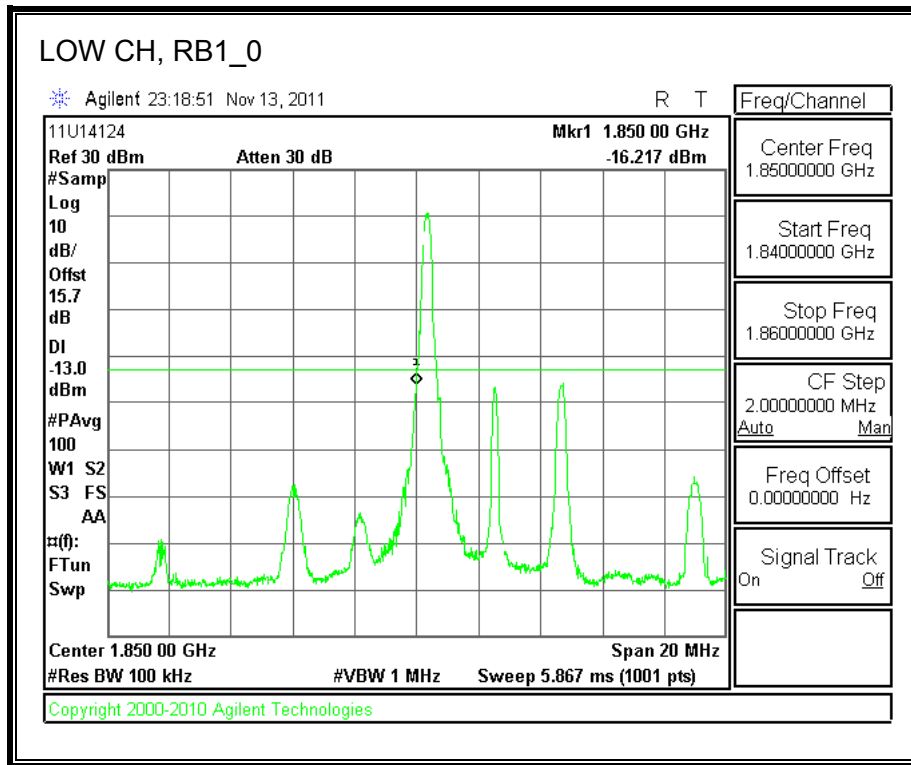


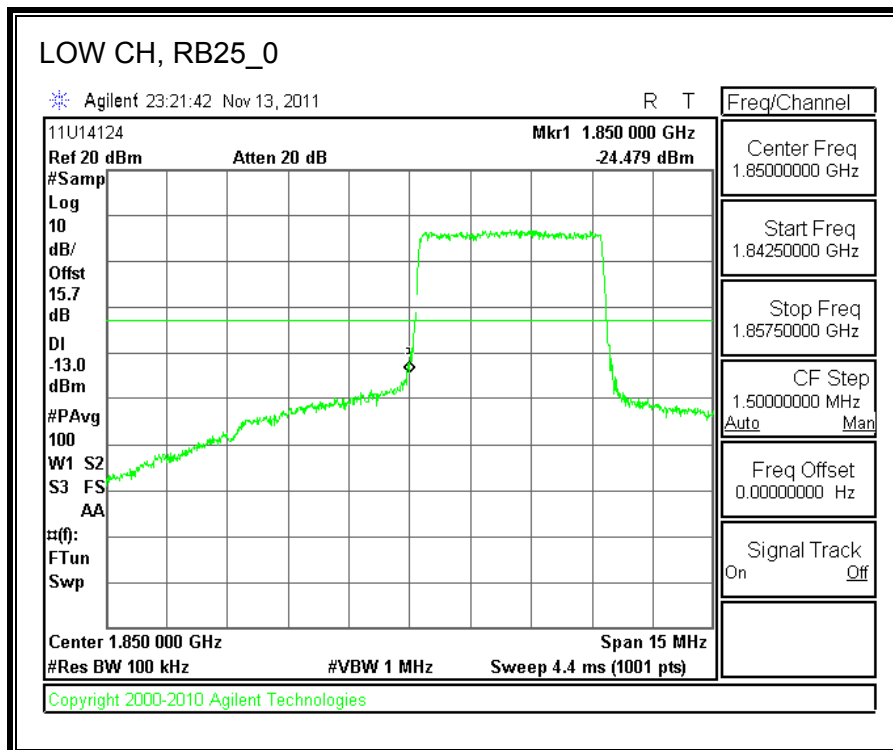
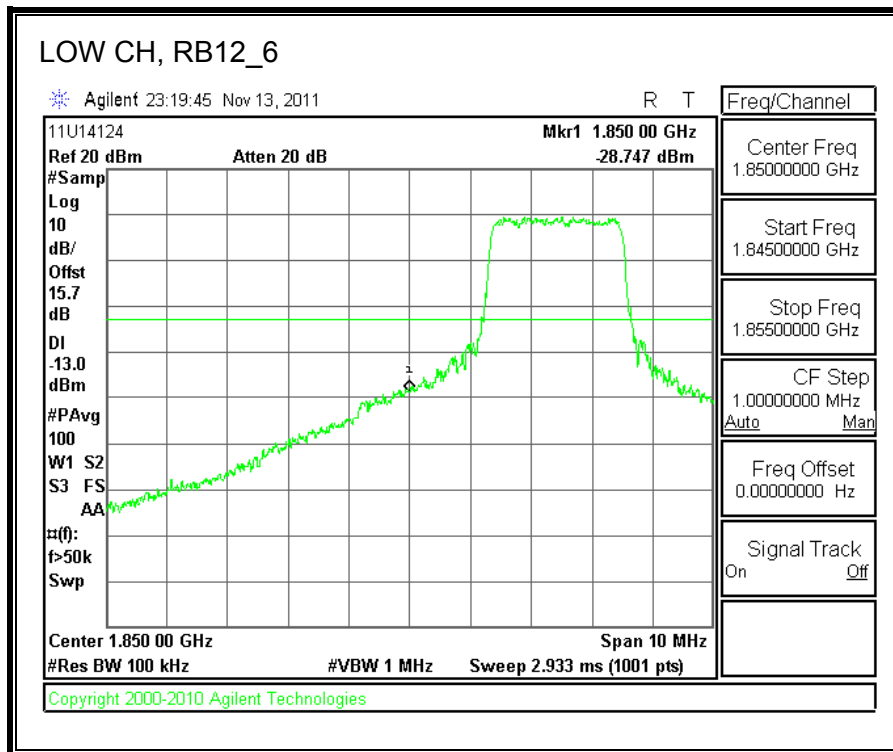


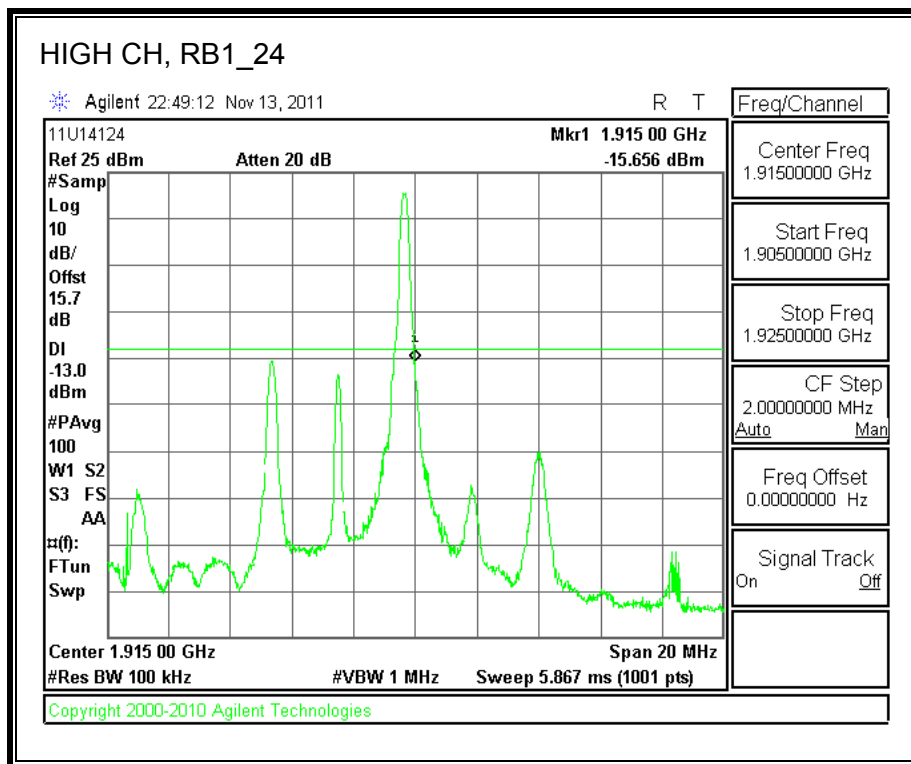
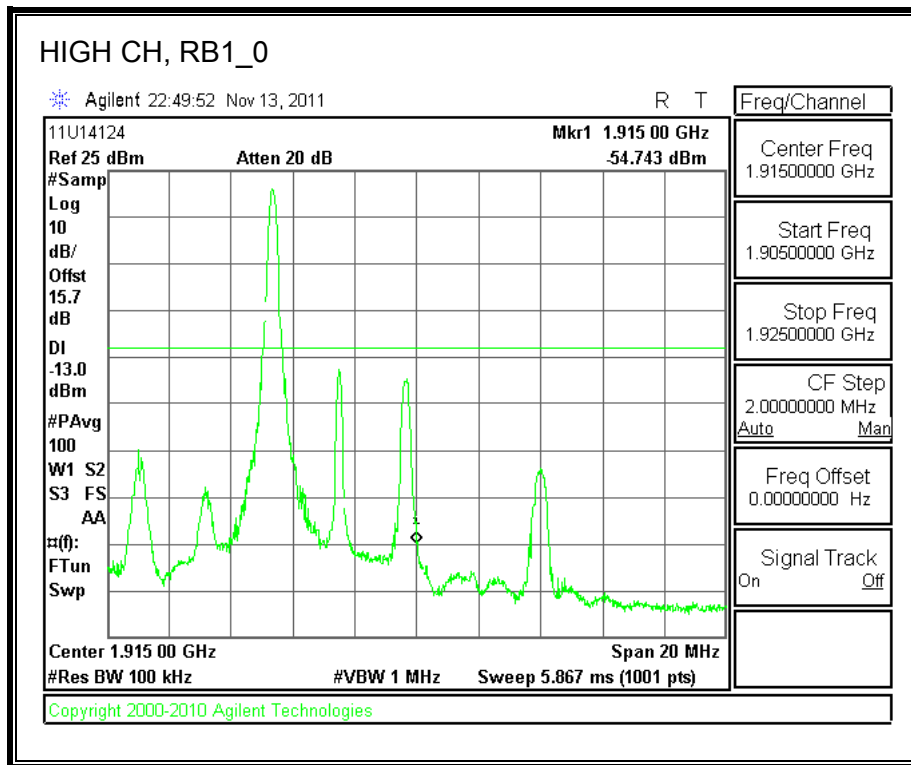


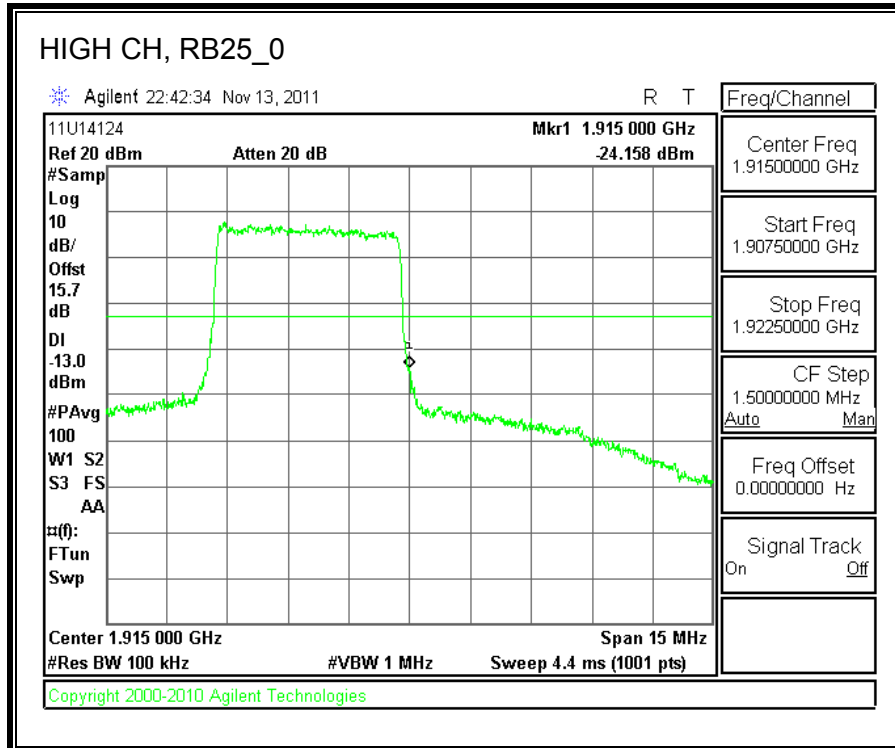
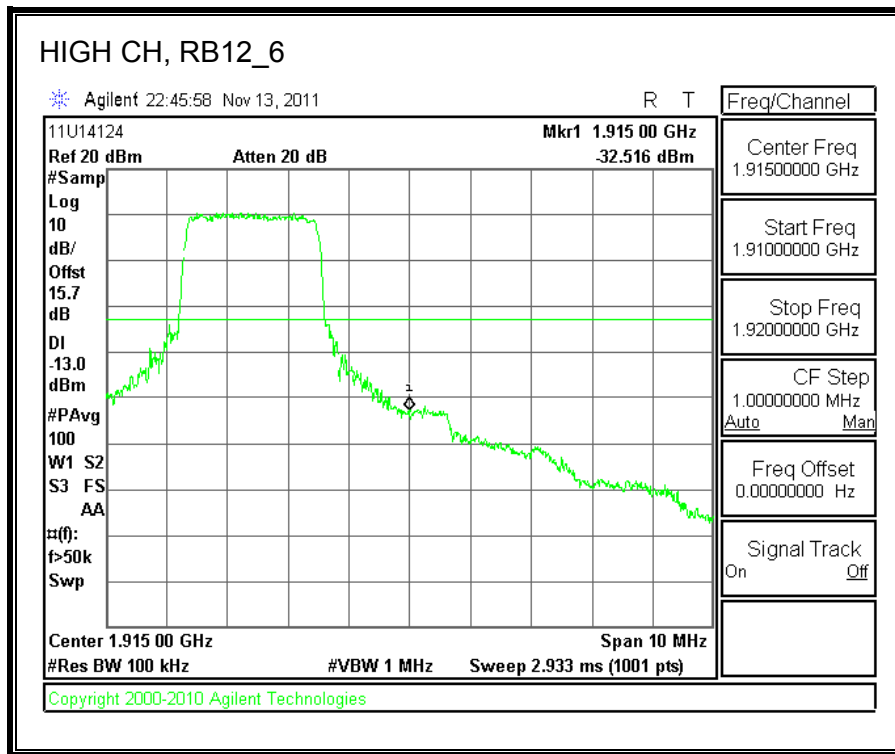


16QAM









8.3. OUT OF BAND EMISSIONS

RULE PART(S)

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

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:

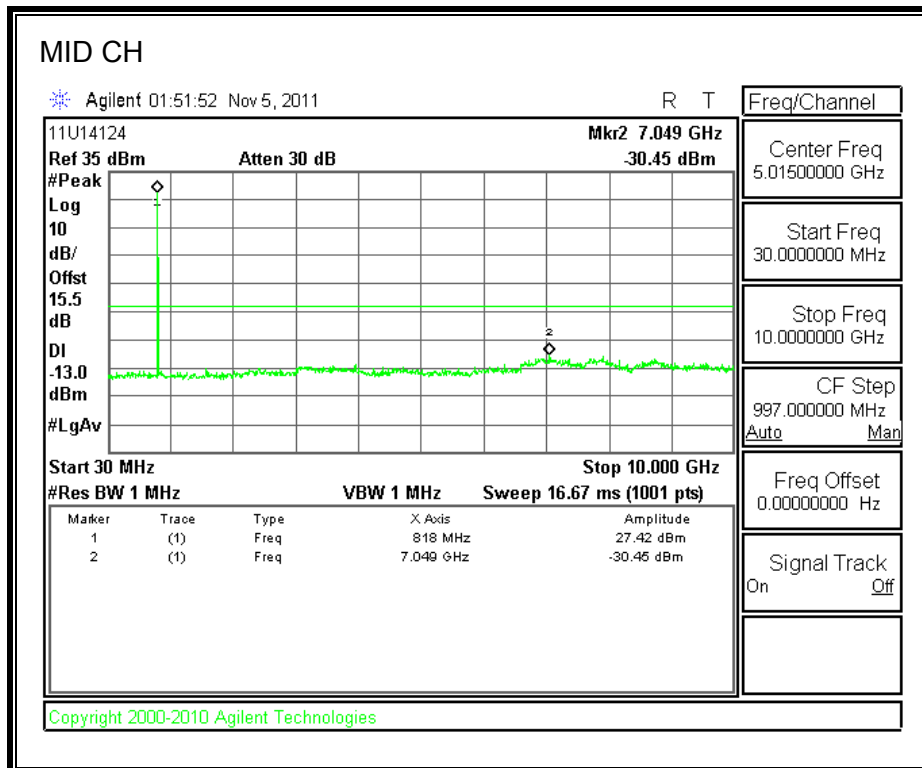
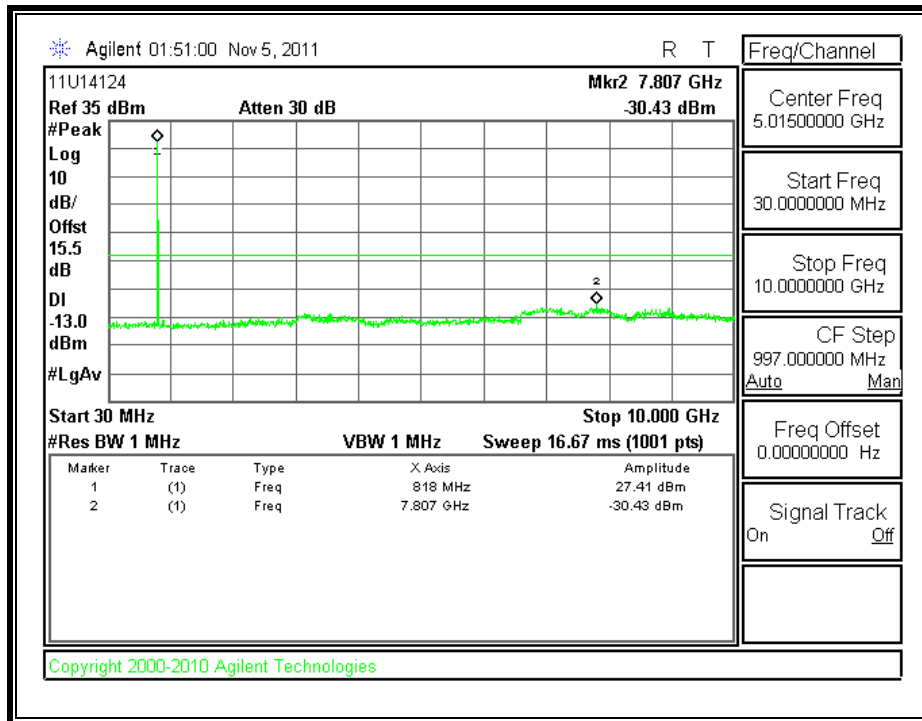
- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

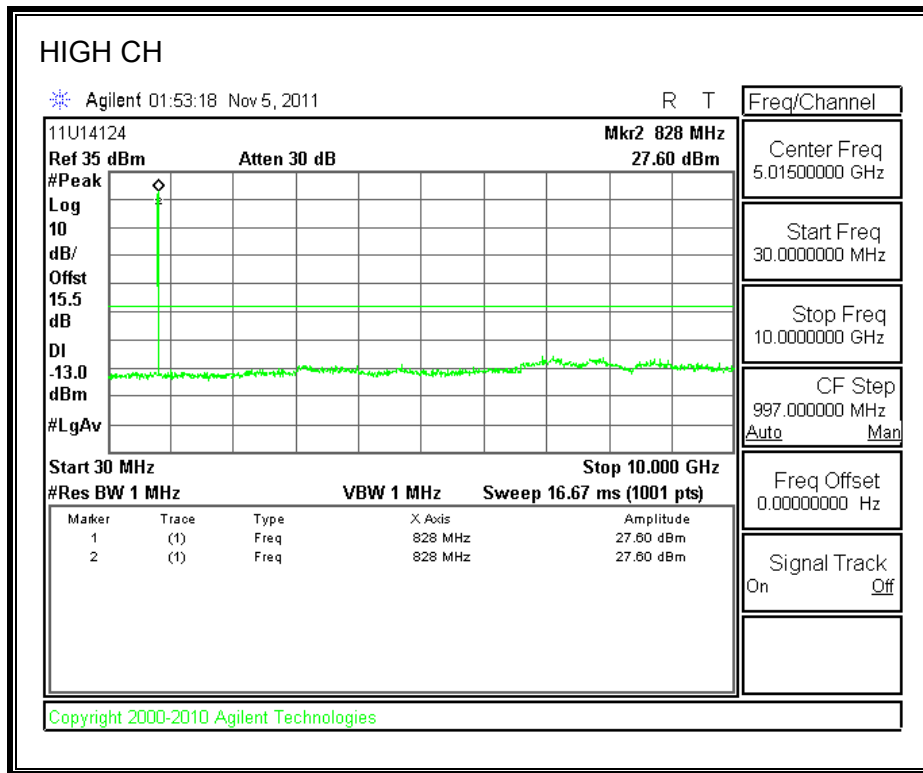
MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- LTE Band 2 and 4

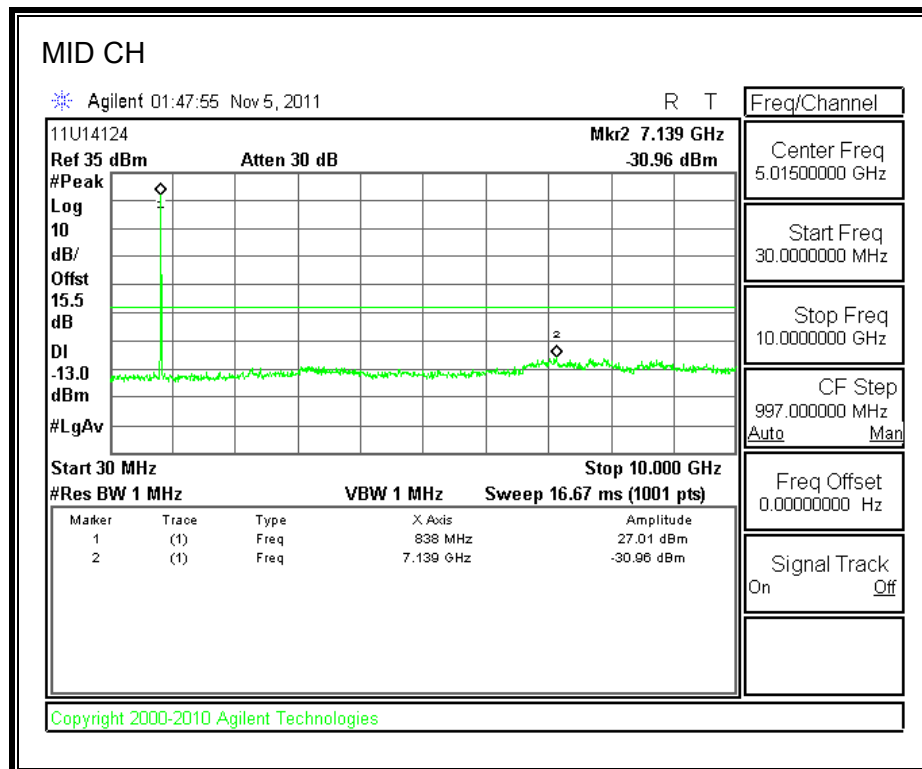
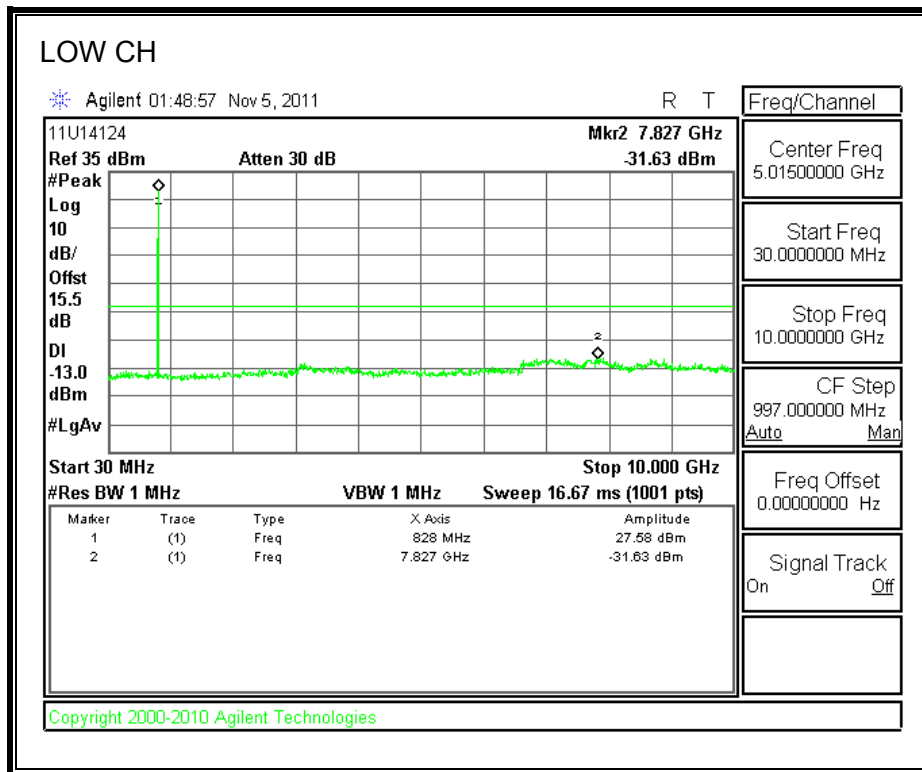
RESULTS

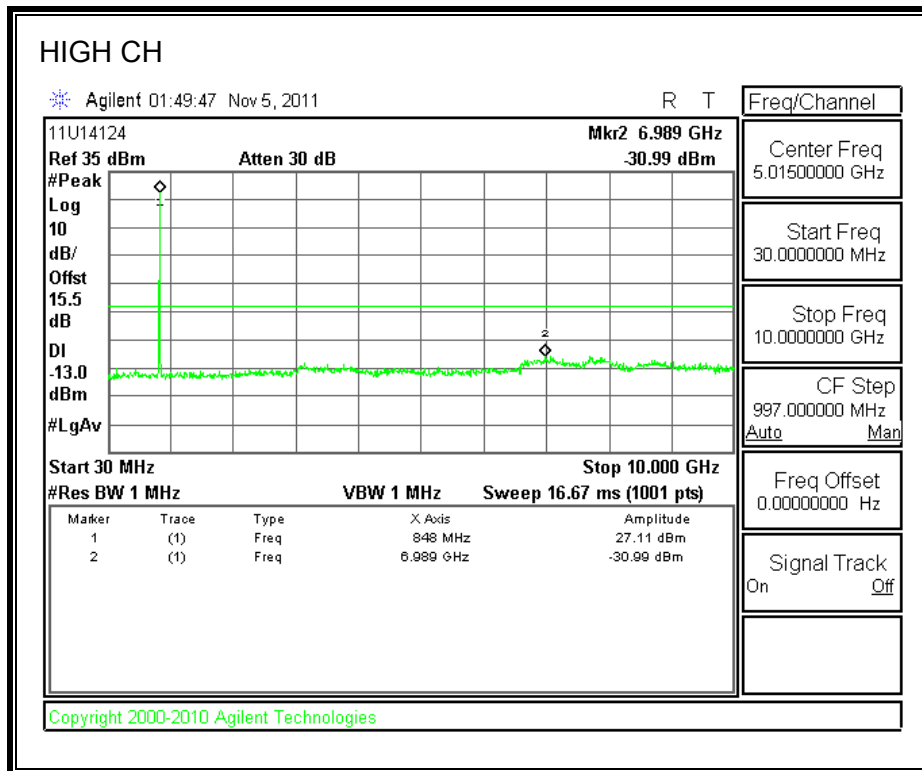
1xRTT 800 MHz SECONDARY BAND



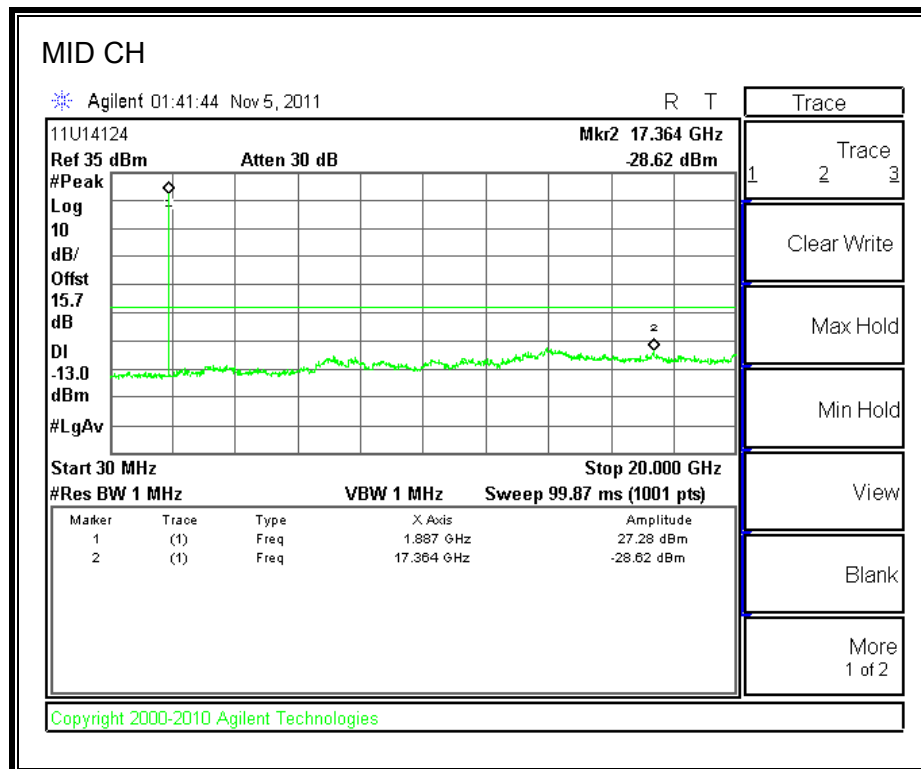
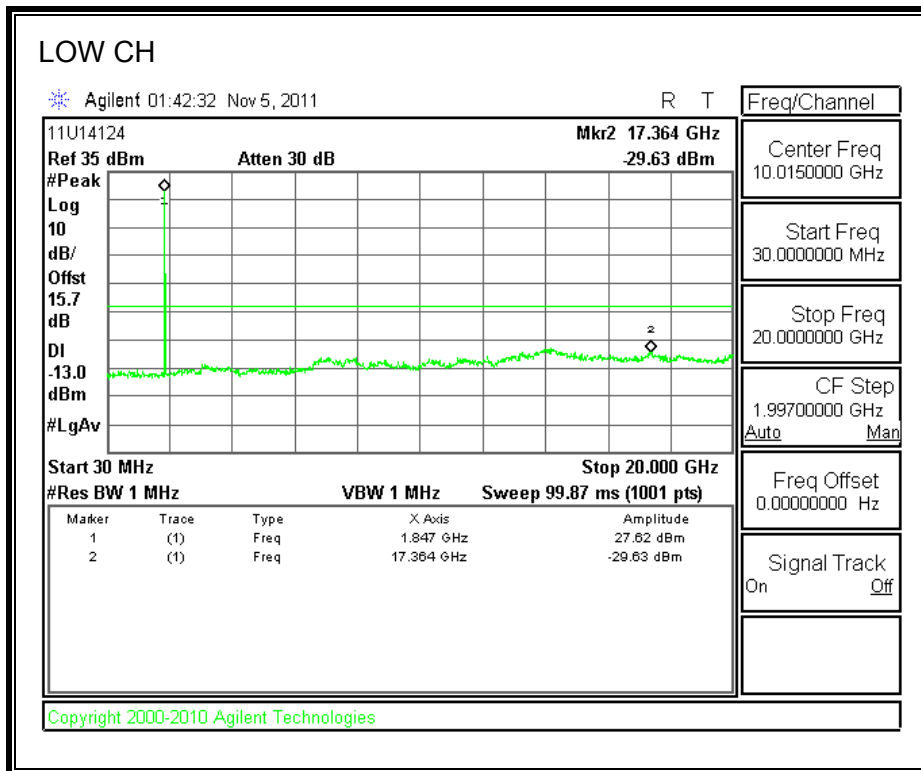


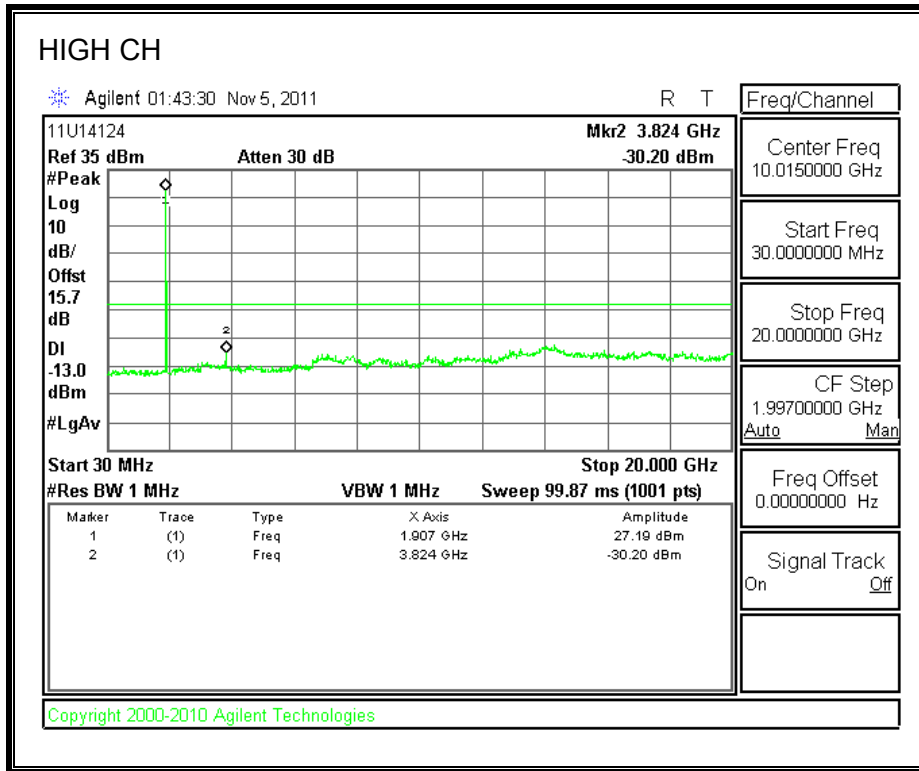
1xRTT 850 BAND



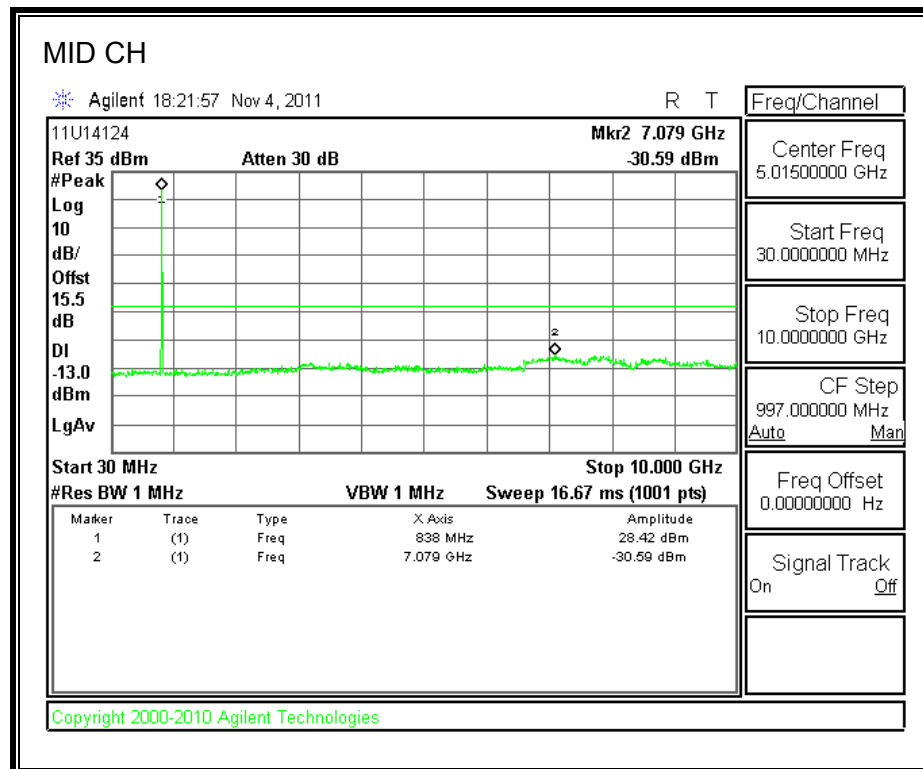
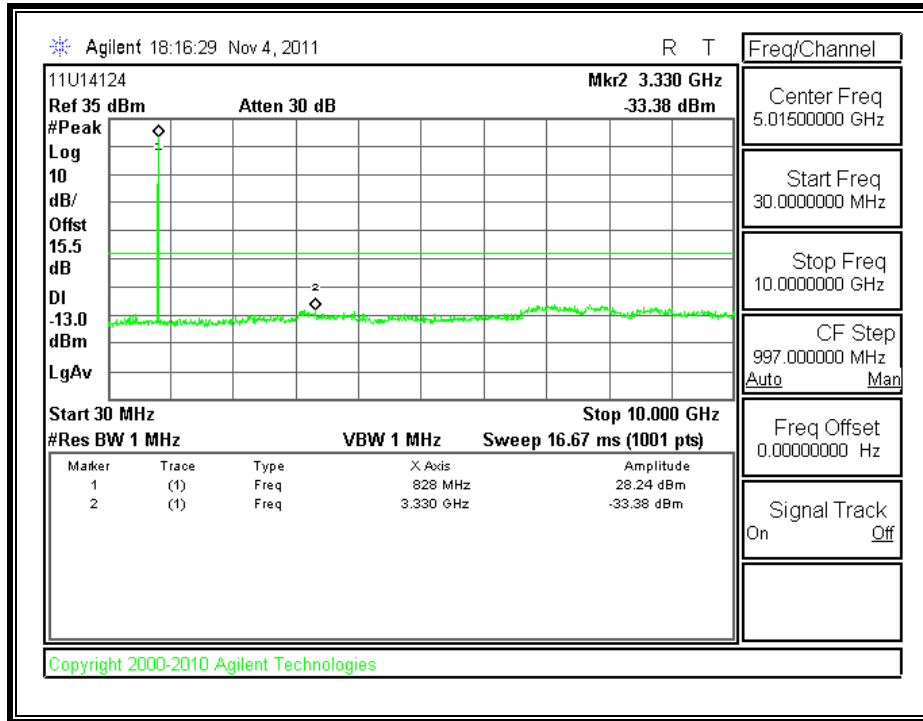


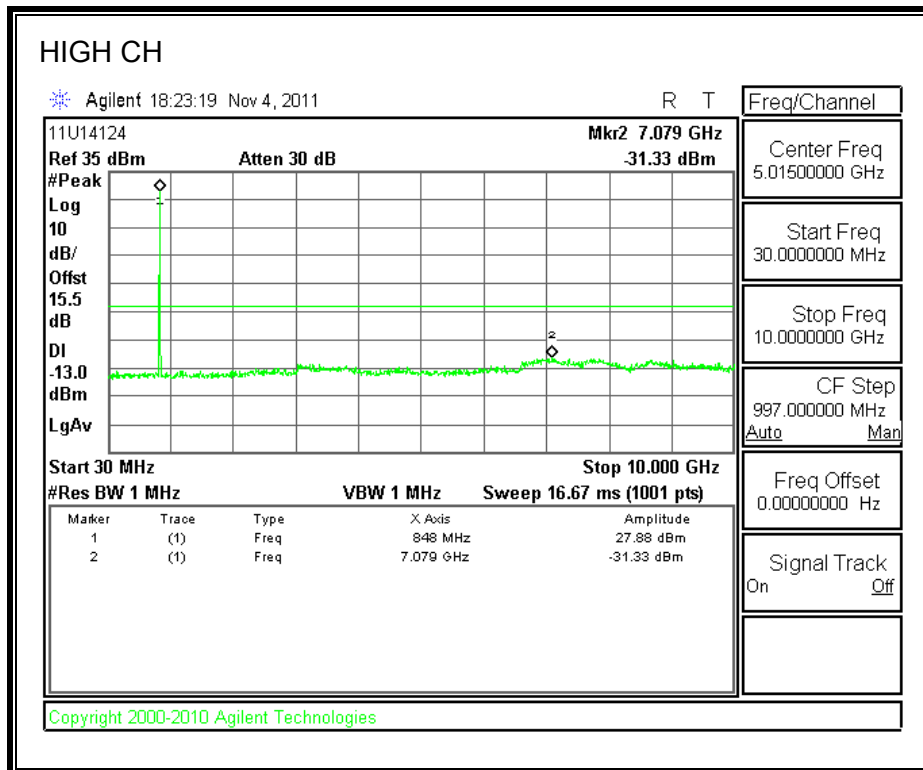
1xRTT 1900 BAND



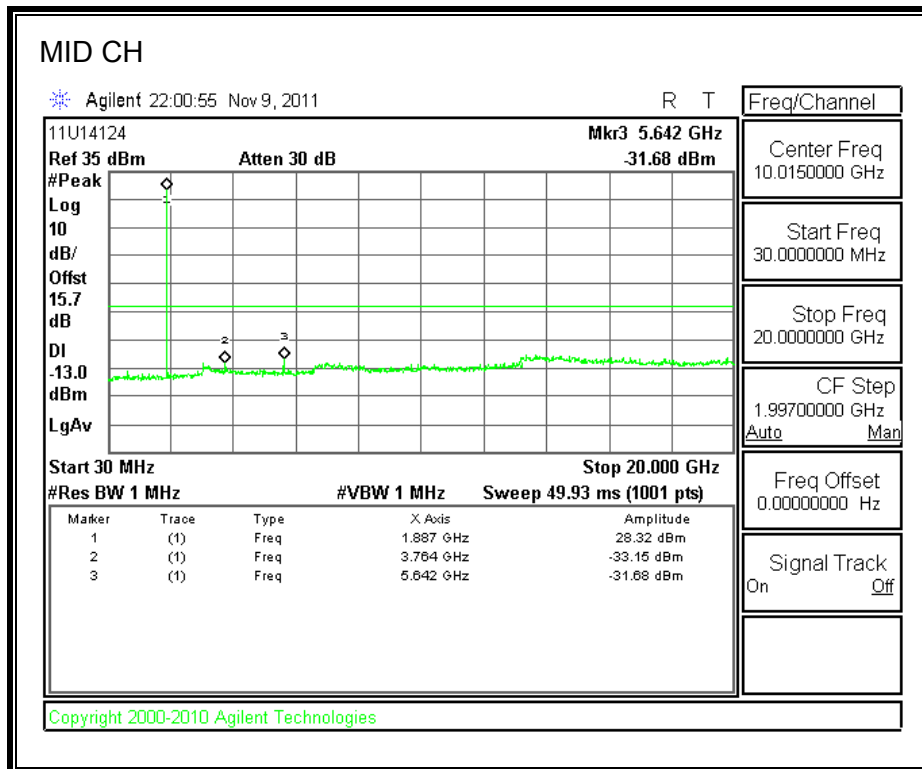
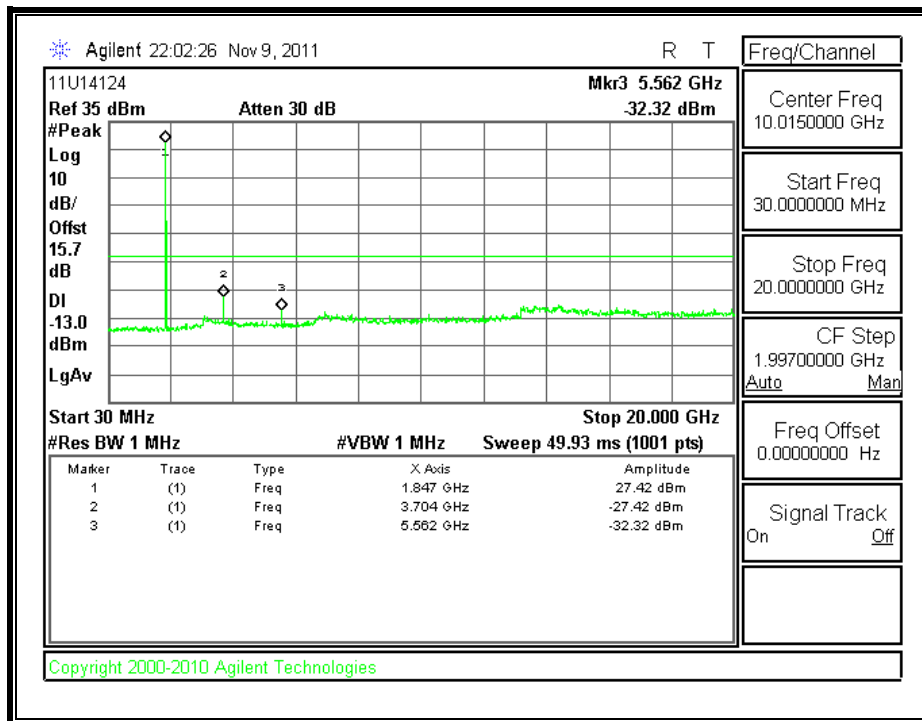


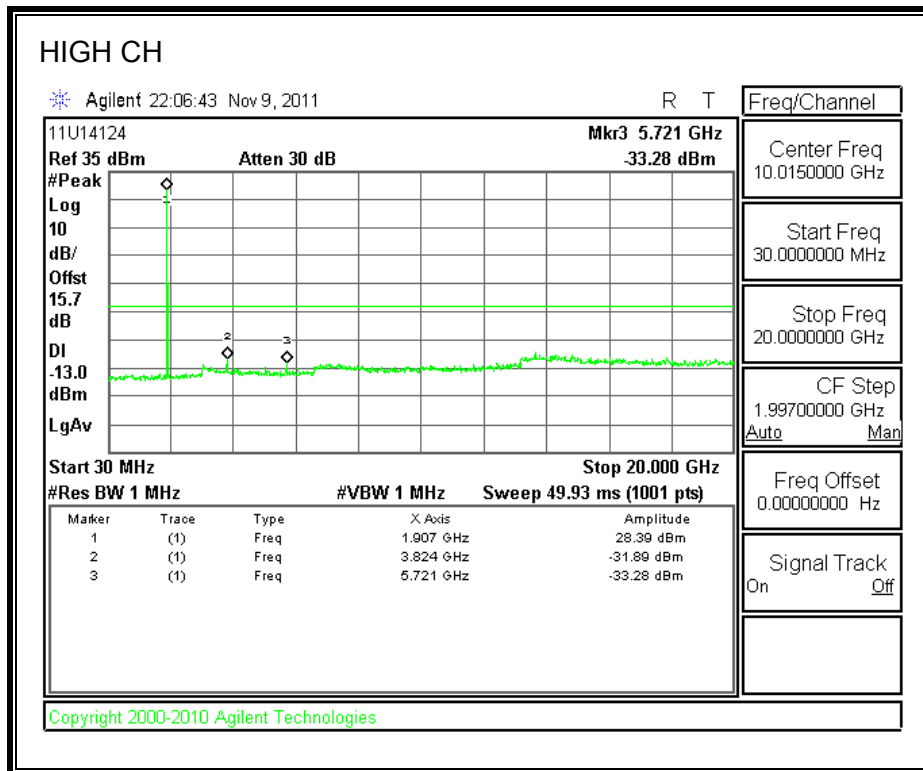
EVDO REV A.850 BAND





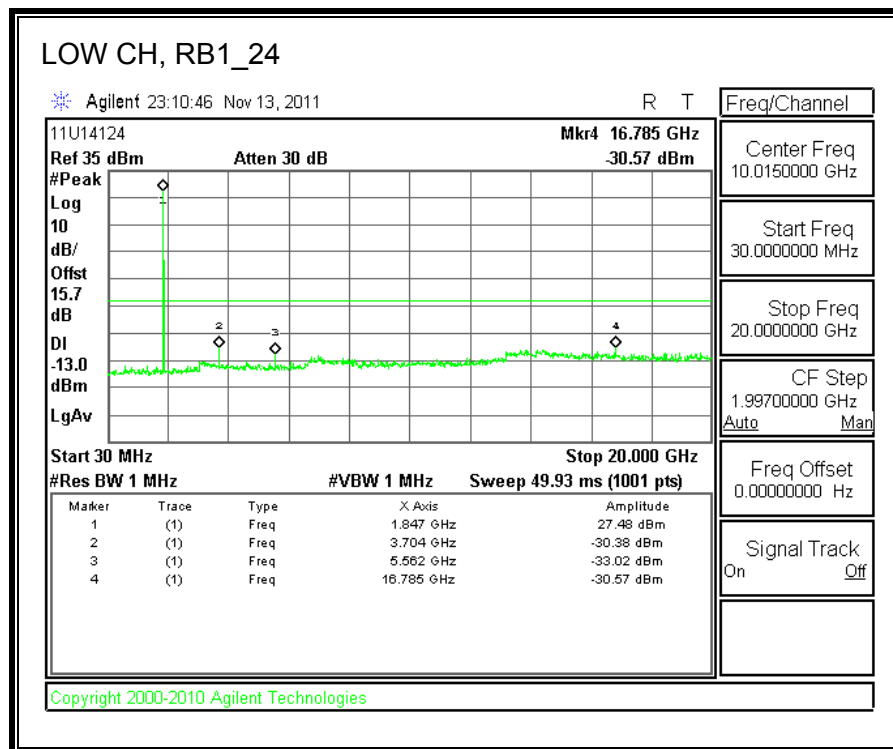
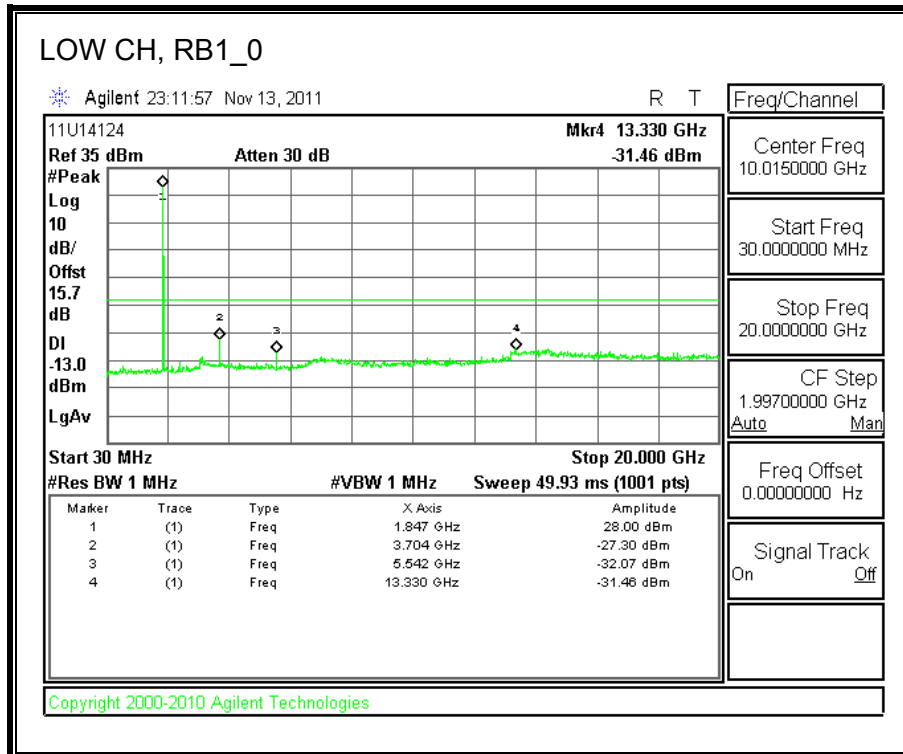
EVDO REV A.1900 BAND

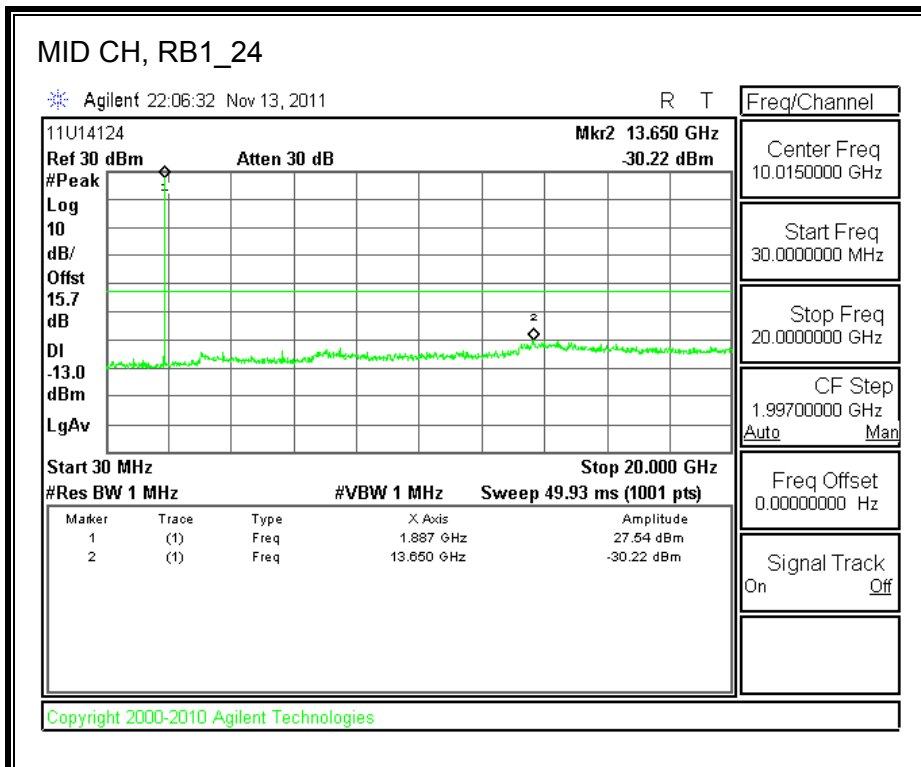
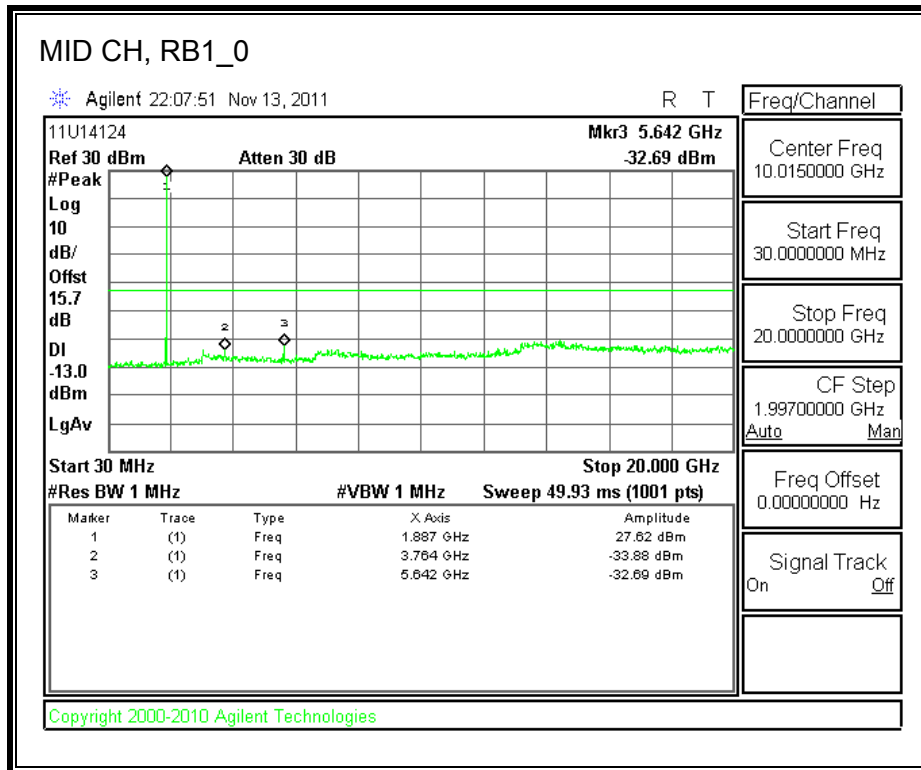


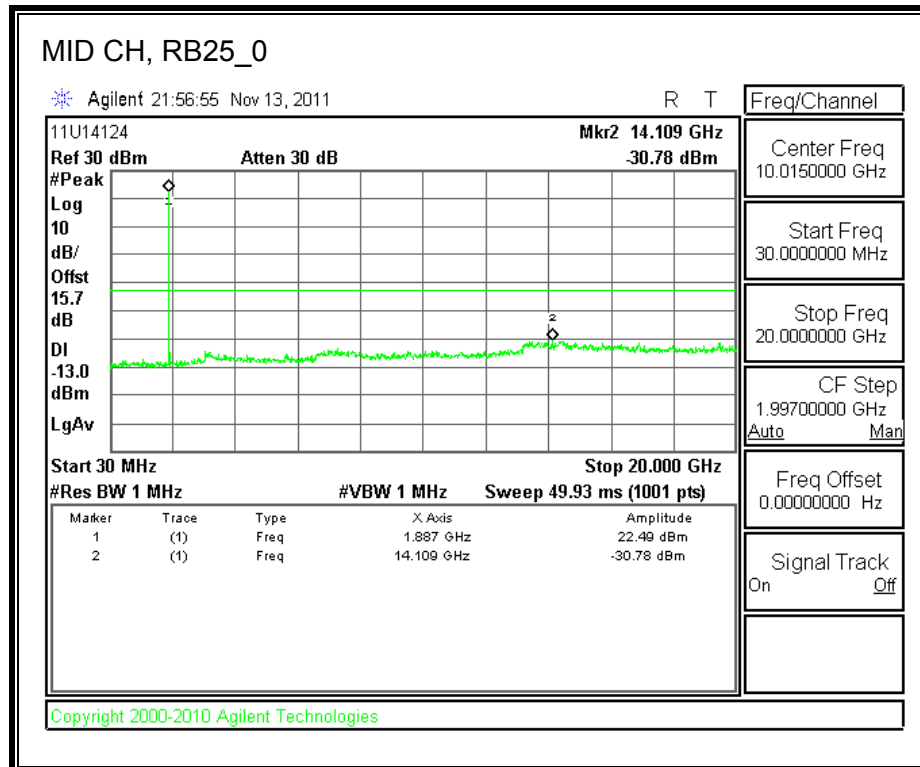
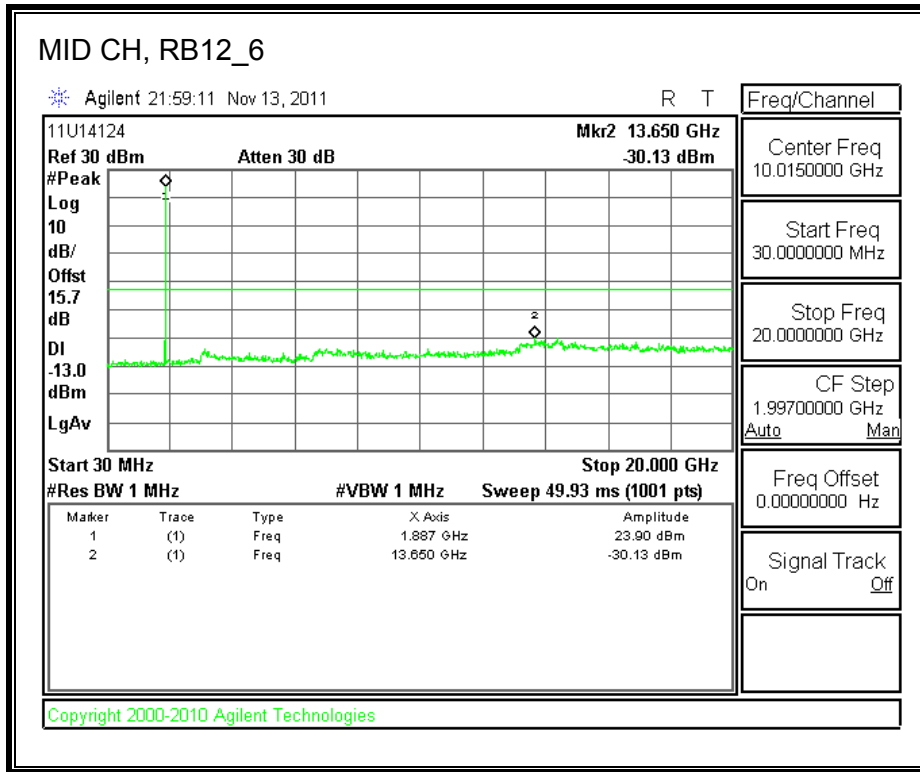


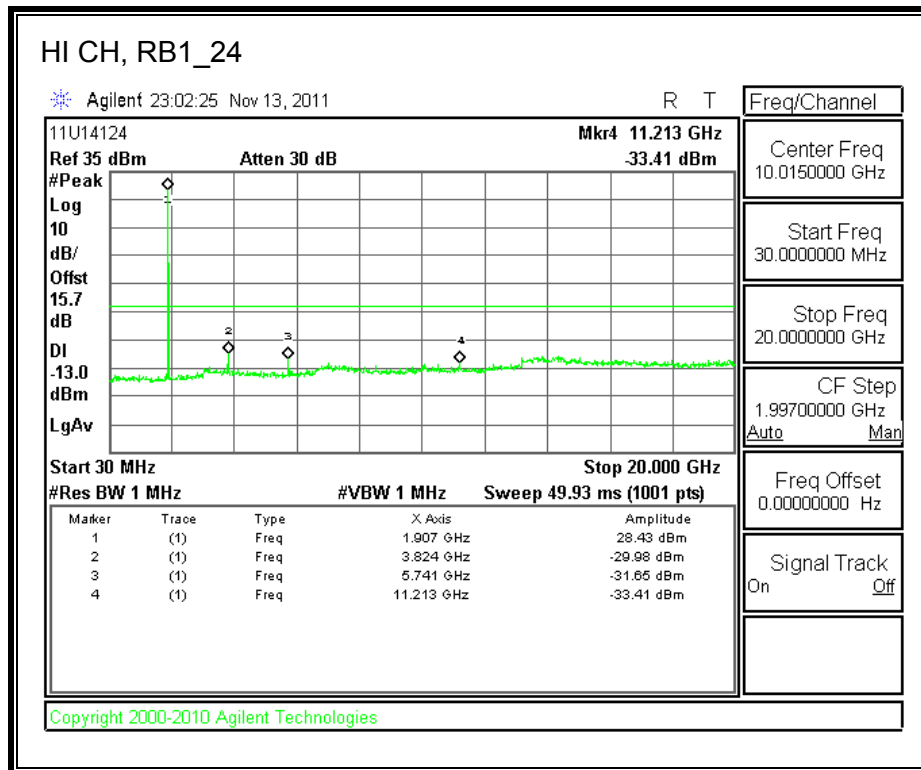
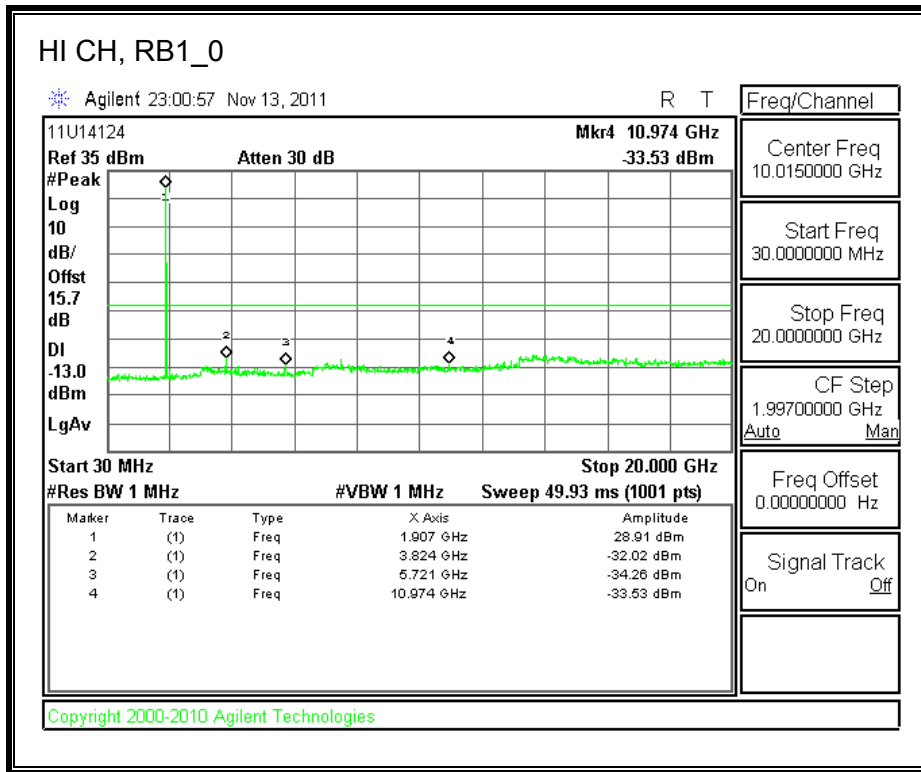
LTE, Band 25 (5.0MHz BAND WIDTH)

QPSK

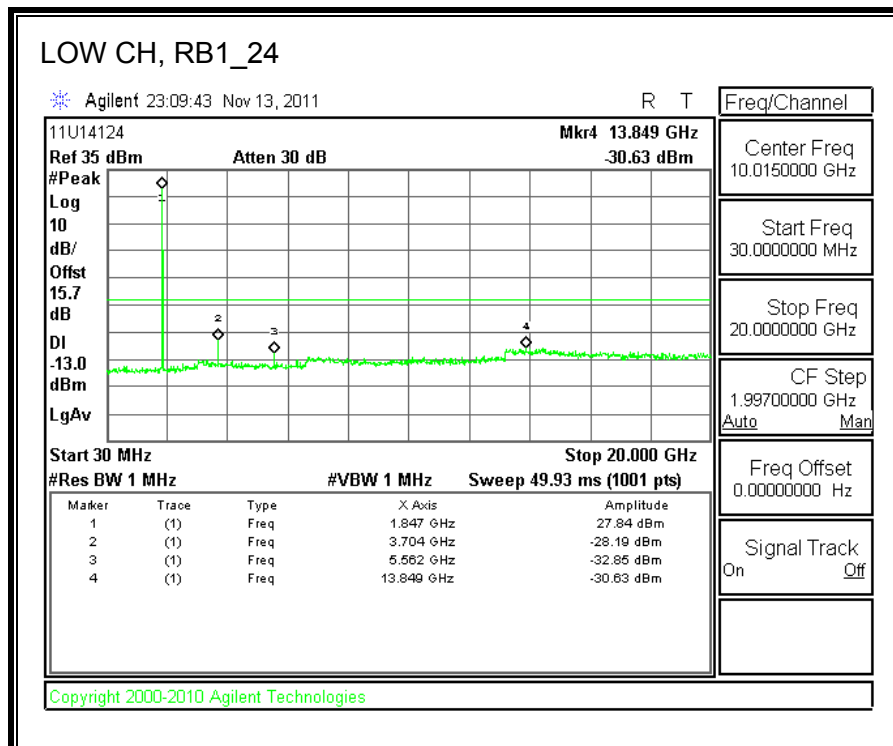
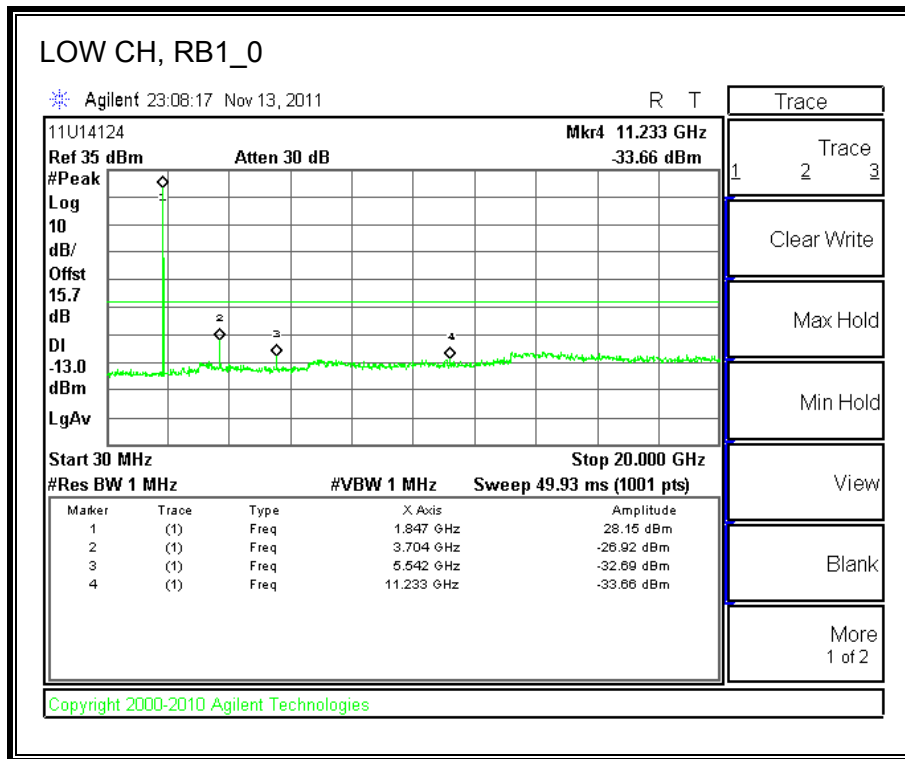


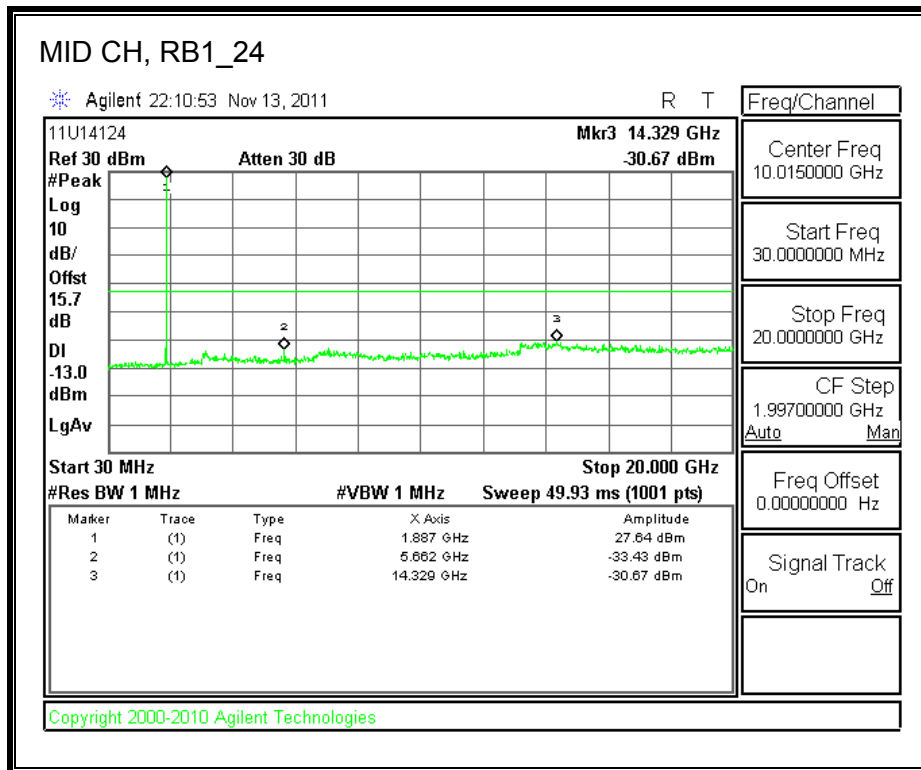
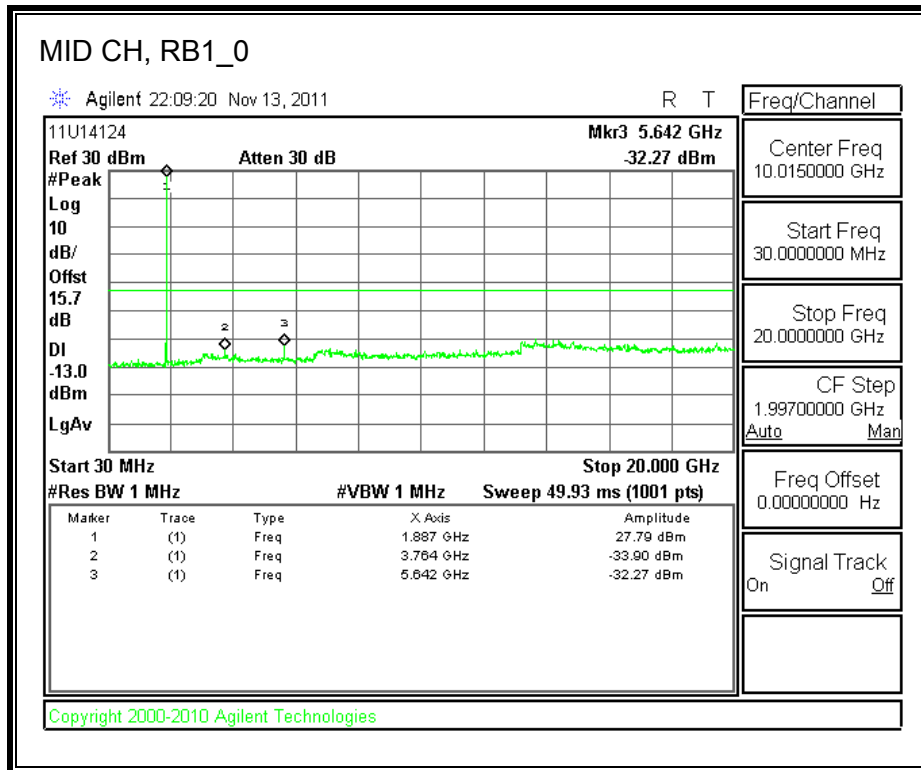


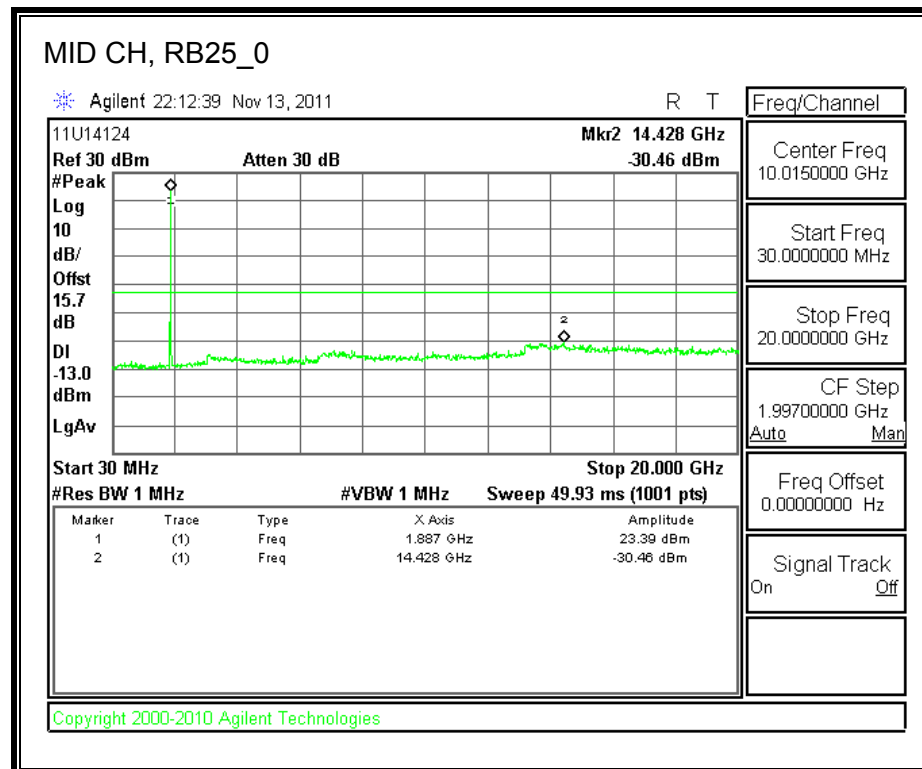
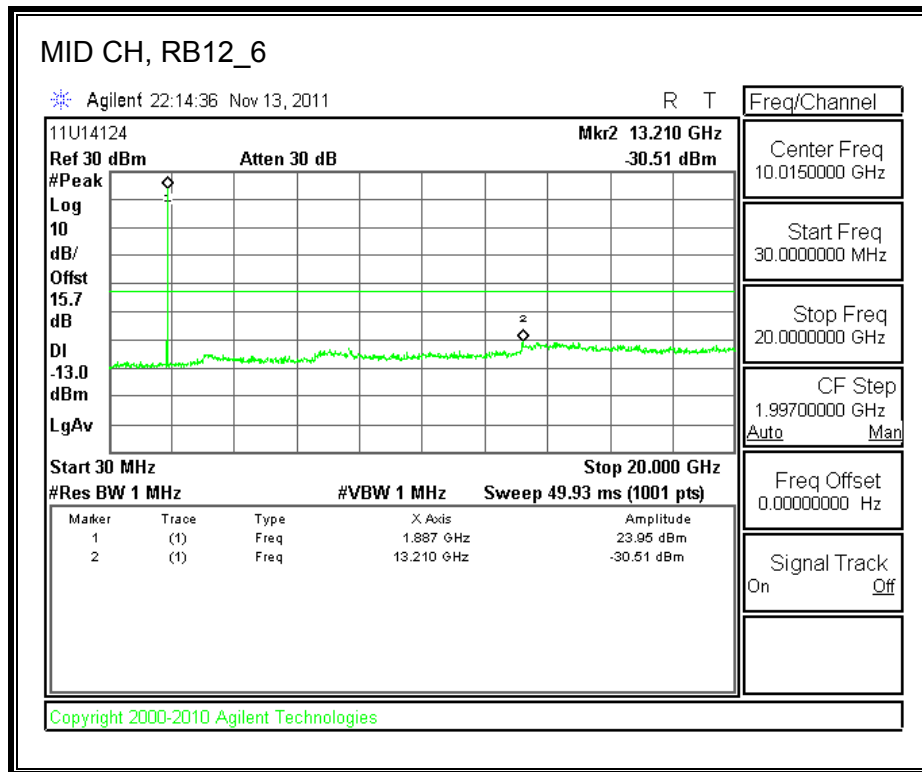


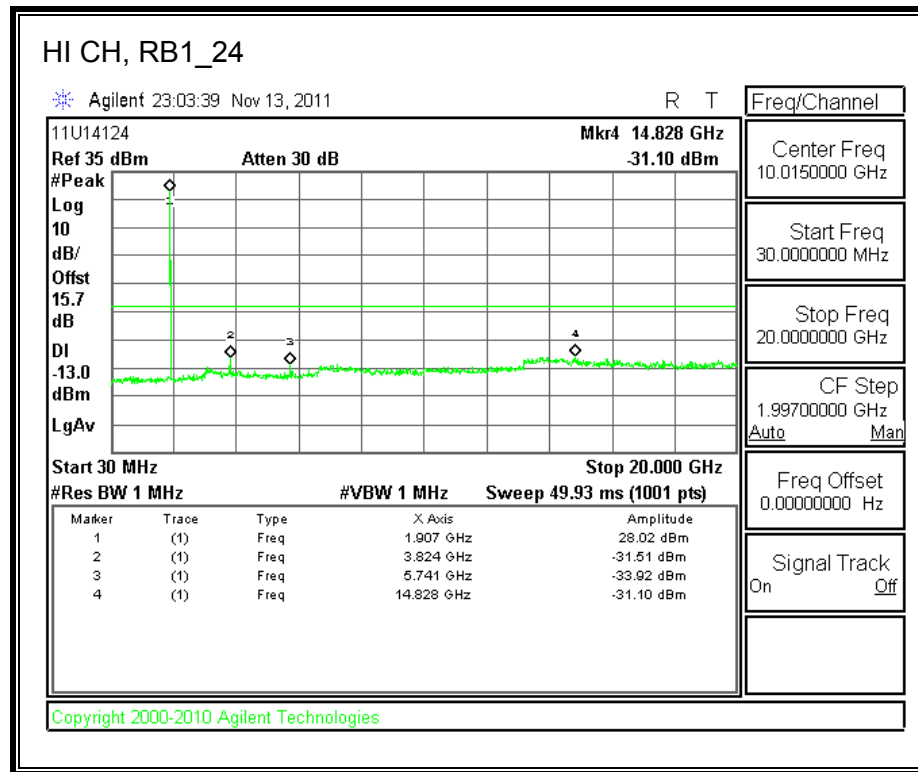
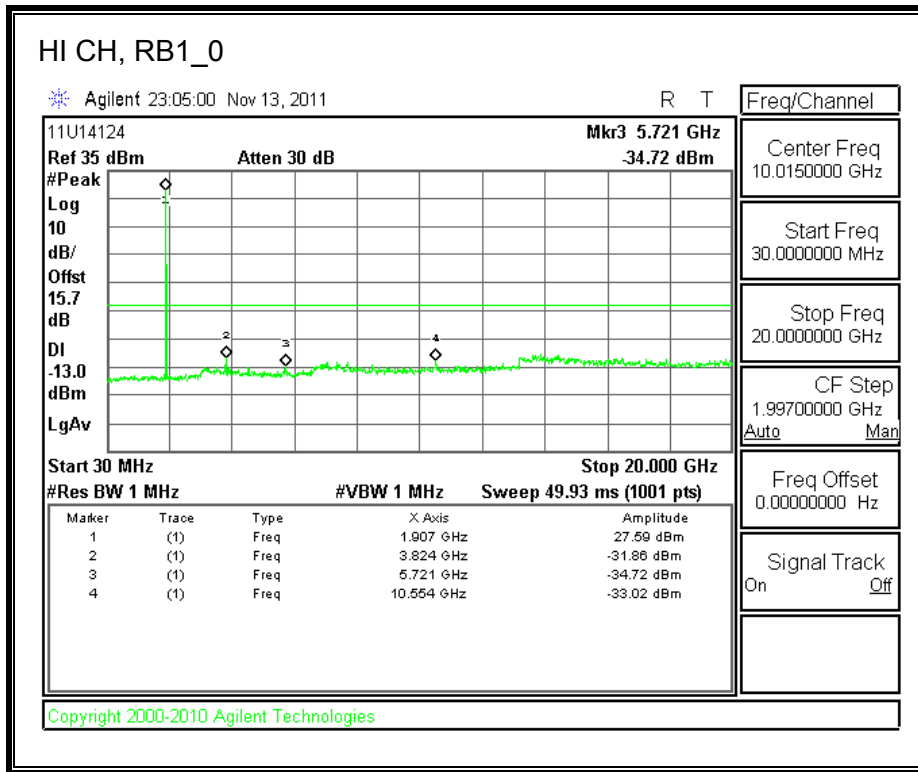


16QAM









8.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.

LIMITS

§22.355 & RSS-132 4.3 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

RSS-133 6.3 - The carrier frequency shall not depart from the reference frequency in excess of ± 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 and CMW 500 with Frequency Error measurement capability.

- Temp. = -30° to $+50^{\circ}\text{C}$
- Voltage = 3.7Vdc (85% - 115%)

Frequency Stability vs Temperature:

The EUT is placed inside a temperature chamber. The temperature is set to 20°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

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- LTE Band 2 and 4

RESULTS

See the following pages.

800 MHz SECONDARY, 1xRTT MODULATION – MID CHANNEL

Reference Frequency: 800MHz Secondary Mid Channel 820.500002MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2051.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	820.5000040	-0.002	2.5
3.70	40	820.5000030	-0.001	2.5
3.70	30	820.5000030	-0.001	2.5
3.70	20	820.5000020	0	2.5
3.70	10	820.5000010	0.001	2.5
3.70	0	820.5000000	0.002	2.5
3.70	-10	820.5000000	0.002	2.5
3.70	-20	820.4999990	0.004	2.5
3.70	-30	820.4999980	0.005	2.5

Reference Frequency: 800MHz Secondary Mid Channel 820.500002MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2051.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	820.5000020	0	2.5
3.50	20	820.5000020	0.000	2.5
4.26	20	820.5000020	0.000	2.5

CELL, 1xRTT MODULATION – MID CHANNEL

Reference Frequency: Cellular Mid Channel 836.520003MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2091.300 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	836.5200070	-0.005	2.5
3.70	40	836.5200050	-0.002	2.5
3.70	30	836.5200030	0.000	2.5
3.70	20	836.5200030	0	2.5
3.70	10	836.5200010	0.002	2.5
3.70	0	836.5200000	0.004	2.5
3.70	-10	836.5200000	0.004	2.5
3.70	-20	836.5199990	0.005	2.5
3.70	-30	836.5199970	0.007	2.5

Reference Frequency: Cellular Mid Channel 836.520003MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2091.300 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	836.5200030	0	2.5
3.50	20	836.5200020	0.001	2.5
4.26	20	836.5200040	-0.001	2.5

PCS, 1xRTT MODULATION – MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999996MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1879.9999940	0.001	2.5
3.70	40	1879.9999950	0.001	2.5
3.70	30	1879.9999950	0.001	2.5
3.70	20	1879.9999960	0	2.5
3.70	10	1879.9999990	-0.002	2.5
3.70	0	1880.0000000	-0.002	2.5
3.70	-10	1880.0000000	-0.002	2.5
3.70	-20	1880.0000020	-0.003	2.5
3.70	-30	1880.0000050	-0.005	2.5

Reference Frequency: PCS Mid Channel 1879.999996MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1879.9999960	0	2.5
3.50	20	1879.9999950	0.001	2.5
4.26	20	1879.9999960	0.000	2.5

CELL, EVDO REV. A- MID CHANNEL

Reference Frequency: CELL Mid Channel 836.520001MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 2091.300 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	836.520002	-0.001	2.5
3.70	40	836.520002	-0.001	2.5
3.70	30	836.520002	-0.001	2.5
3.70	20	836.520001	0	2.5
3.70	10	836.520000	0.001	2.5
3.70	0	836.519999	0.002	2.5
3.70	-10	836.519999	0.002	2.5
3.70	-20	836.519999	0.002	2.5
3.70	-30	836.520000	0.001	2.5

Reference Frequency: CELL Mid Channel 836.520001MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 2091.300 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	836.520001	0	2.5
3.50	20	836.520002	-0.001	2.5
4.26	20	836.520001	0.000	2.5

PCS, EVDO REV. A - MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999998MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1879.9999960	0.001	2.5
3.70	40	1879.9999970	0.001	2.5
3.70	30	1879.9999970	0.001	2.5
3.70	20	1879.9999980	0	2.5
3.70	10	1880.0000000	-0.001	2.5
3.70	0	1880.0000010	-0.002	2.5
3.70	-10	1880.0000010	-0.002	2.5
3.70	-20	1880.0000010	-0.002	2.5
3.70	-30	1880.0000000	-0.001	2.5

Reference Frequency: PCS Mid Channel 1879.999998MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1879.9999980	0	2.5
3.50	20	1879.9999980	0.000	2.5
4.26	20	1879.9999990	-0.001	2.5

QPSK-LTE BAND 25 – MID CHANNEL

Reference Frequency: LTE Mid Channel 1882.499996MHz @ 20°C				
Limit: within the authorized block or +- 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1882.4999830	0.007	2.5
3.70	40	1882.4999840	0.006	2.5
3.70	30	1882.4999850	0.006	2.5
3.70	20	1882.4999960	0	2.5
3.70	10	1882.5000030	-0.004	2.5
3.70	0	1882.5000090	-0.007	2.5
3.70	-10	1882.5000090	-0.007	2.5
3.70	-20	1882.5000070	-0.006	2.5
3.70	-30	1882.5000050	-0.005	2.5

Reference Frequency: LTE Mid Channel 1882.499996MHz @ 20°C				
Limit: within the authorized block or +- 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1882.4999960	0	2.5
3.50	20	1882.4999930	0.002	2.5
4.26	20	1882.4999950	0.001	2.5

16QAM-LTE BAND 25– MID CHANNEL

Reference Frequency: LTE Mid Channel 1882.499989MHz @ 20°C				
Limit: within the authorized block or +- 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1882.4999810	0.004	2.5
3.70	40	1882.4999840	0.003	2.5
3.70	30	1882.4999860	0.002	2.5
3.70	20	1882.4999890	0	2.5
3.70	10	1882.5000011	-0.006	2.5
3.70	0	1882.5000090	-0.011	2.5
3.70	-10	1882.5000070	-0.010	2.5
3.70	-20	1882.5000090	-0.011	2.5
3.70	-30	1882.5000060	-0.009	2.5

Reference Frequency: LTE Mid Channel 1882.499989MHz @ 20°C				
Limit: within the authorized block or +- 2.5 ppm = 4706.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1882.4999890	0	2.5
3.50	20	1882.4999890	0.000	2.5
4.26	20	1882.4999890	0.000	2.5

9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, § 90.635.

LIMITS

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

24.232(c) - 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.

27.50 (c)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

§ 90.635 Limitations on power and antenna height.

(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Table—Equivalent Power and Antenna Heights for Base Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for a 32 km (20 mi) Service Area Radius

Antenna height (ATT) meters (feet)	Effective radiated power (watts) ^{1,2,4}
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	³ 1,000

1Power is given in terms of effective radiated power (ERP).

2Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

3Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- LTE Band 2 and 4

RESULTS

800 MHz SECONDARY BAND (ERP)

Mode	Channel	f (MHz)	ERP	
			dBm	mW
1xRTT	476	817.90	25.35	342.77
	580	820.50	25.36	343.56
	684	823.10	24.98	314.77

CELLULAR BAND (ERP)

Mode	Channel	f (MHz)	ERP	
			dBm	mW
1xRTT	1013	824.70	24.64	291.07
	384	836.60	24.65	291.74
	777	848.31	23.40	218.78
EVDO REV. A	1013	824.70	23.58	228.03
	384	836.60	22.84	192.31
	777	848.31	22.61	182.39

PCS BAND (EIRP)

Mode	Channel	f (MHz)	EIRP	
			dBm	mW
1xRTT	25	1851.25	27.86	610.94
	600	1880.00	28.78	755.09
	1175	1908.75	27.62	578.10
EVDO REV. A	25	1851.25	24.65	291.74
	600	1880.00	27.22	527.23
	1175	1908.75	28.16	654.64

EIRP LTE Band 25 (5MHz BAND WIDTH)

Mode	RB/RB SIZE	f (MHz)	ERP	
			dBm	mW
5.0 MHZ BAND QPSK	1/0	1852.50	24.97	314.05
		1882.50	28.85	767.36
		1912.50	29.85	966.05
	1/24	1852.50	24.29	268.53
		1882.50	27.71	590.20
		1912.50	28.99	792.50
	12/6	1852.50	24.36	272.90
		1882.50	27.22	527.23
		1912.50	29.00	794.33
	25/0	1852.50	22.29	169.43
		1882.50	24.76	299.23
		1912.50	27.52	564.94

Mode	RB/RB SIZE	f (MHz)	ERP	
			dBm	mW
5.0 MHZ BAND 16QAM	1/0	1852.50	24.99	315.50
		1882.50	28.36	685.49
		1912.50	29.60	912.01
	1/24	1852.50	24.34	271.64
		1882.50	27.54	567.54
		1912.50	28.80	758.58
	12/6	1852.50	24.48	280.54
		1882.50	27.34	542.00
		1912.50	28.87	770.90
	25/0	1852.50	23.14	206.06
		1882.50	25.46	351.56
		1912.50	27.98	628.06

ERP 1xRTT 800 MHz SECONDARY BAND

High Frequency Substitution Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/09/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT ALONE						
Mode:		TX, 800MHz SECONDARY BAND CDMA 1xRTT MODE						
Test Equipment:								
Receiving: Sunol T122, and Chamber A N-type Cable								
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245182002) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
817.90	19.90	V	0.5	0.0	19.40	50.0	-30.6	
817.90	25.85	H	0.5	0.0	25.35	50.0	-24.6	
820.50	20.75	V	0.5	0.0	20.25	50.0	-29.7	
820.50	25.86	H	0.5	0.0	25.36	50.0	-24.6	
823.10	20.23	V	0.5	0.0	19.73	50.0	-30.3	
823.10	25.48	H	0.5	0.0	24.98	50.0	-25.0	
Rev. 3.17.11								

ERP 1xRTT 850 BAND

High Frequency Substitution Measurement Compliance Certification Services Chamber A								
Company:	LG ELECTRONICS							
Project #:	11U14124							
Date:	11/09/11							
Test Engineer:	MENGISTU MEKURIA							
Configuration:	EUT ALONE							
Mode:	TX, CELL BAND CDMA2000 1xRTT MODE							
Test Equipment:								
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)								
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245182002) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.70	20.19	V	0.5	0.0	19.69	38.5	-18.8	
824.70	25.14	H	0.5	0.0	24.64	38.5	-13.8	
836.52	18.67	V	0.5	0.0	18.17	38.5	-20.3	
836.52	25.15	H	0.5	0.0	24.65	38.5	-13.8	
848.31	18.03	V	0.5	0.0	17.53	38.5	-20.9	
848.31	23.90	H	0.5	0.0	23.40	38.5	-15.0	
Rev. 3.17.11								

EIRP 1xRTT 1900 BAND

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:	LG ELECTRONICS							
Project #:	11U14124							
Date:	11/09/11							
Test Engineer:	MENGISTU MEKURIA							
Configuration:	EUT ALONE							
Mode:	TX, PCS BAND CDMA2000 1xRTT. MODE							
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.851	12.8	V	0.85	8.01	19.93	33.0	-13.1	
1.851	20.7	H	0.85	8.01	27.86	33.0	-5.1	
1.880	13.0	V	0.85	8.13	20.28	33.0	-12.7	
1.880	21.5	H	0.85	8.13	28.78	33.0	-4.2	
1.909	12.9	V	0.85	8.13	20.16	33.0	-12.8	
1.909	20.3	H	0.85	8.13	27.62	33.0	-5.4	
Rev. 3.17.11								

EIRP EVDO REV A 850 BAND

High Frequency Substitution Measurement Compliance Certification Services Chamber A								
Company:	LG ELECTRONICS							
Project #:	11U14124							
Date:	11/09/11							
Test Engineer:	MENGISTU MEKURIA							
Configuration:	EUT ALONE							
Mode:	TX, CELL BAND CDMA2000 EVDO REV A. MODE							
Test Equipment:								
Receiving: Sunol T122, and 3m Chamber N-type Cable (Setup this one for testing EUT)								
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245182002) Warehouse.								
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.70	17.77	V	0.5	0.0	17.27	38.5	-21.2	
824.70	24.08	H	0.5	0.0	23.58	38.5	-14.9	
836.52	18.33	V	0.5	0.0	17.83	38.5	-20.6	
836.52	23.34	H	0.5	0.0	22.84	38.5	-15.6	
848.31	18.31	V	0.5	0.0	17.81	38.5	-20.6	
848.31	23.11	H	0.5	0.0	22.61	38.5	-15.8	
Rev. 3.17.11								

EIRP EVDO REV A 1900 BAND

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/09/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT ALONE						
Mode:		TX, PCS BAND CDMA2000 EVDO REV A. MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.851	11.7	V	0.85	8.01	18.89	33.0	-14.1	
1.851	17.5	H	0.85	8.01	24.65	33.0	-8.4	
1.880	14.6	V	0.85	8.13	21.87	33.0	-11.1	
1.880	19.9	H	0.85	8.13	27.22	33.0	-5.8	
1.909	14.1	V	0.85	8.13	21.39	33.0	-11.6	
1.909	20.9	H	0.85	8.13	28.16	33.0	-4.8	
Rev. 3.17.11								

ERP LTE QPSK Band 25 (5.0MHz BAND WIDTH)

RB1-0

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/14/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT WITH HEADSET ALONE						
Mode:		TX, QPSK_LTE BAND 25_RB1-0 MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.853	15.6	V	0.85	8.01	22.74	33.0	-10.3	
1.853	17.8	H	0.85	8.01	24.97	33.0	-8.0	
1.883	16.6	V	0.85	8.13	23.86	33.0	-9.1	
1.883	21.6	H	0.85	8.13	28.85	33.0	-4.2	
1.913	16.6	V	0.85	8.13	23.90	33.0	-9.1	
1.913	22.6	H	0.85	8.13	29.85	33.0	-3.2	
Rev. 3.17.11								

RB1-24

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/14/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT WITH HEADSET ALONE						
Mode:		TX, QPSK_LTE BAND 25_RB1-24 MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.853	14.9	V	0.85	8.01	22.03	33.0	-11.0	
1.853	17.1	H	0.85	8.01	24.29	33.0	-8.7	
1.883	15.9	V	0.85	8.13	23.22	33.0	-9.8	
1.883	20.4	H	0.85	8.13	27.71	33.0	-5.3	
1.913	16.0	V	0.85	8.13	23.23	33.0	-9.8	
1.913	21.7	H	0.85	8.13	28.99	33.0	-4.0	
Rev. 3.17.11								

RB12-6

Company:		LG ELECTRONICS							
Project #:		11U14124							
Date:		11/14/11							
Test Engineer:		MENGISTU MEKURIA							
Configuration:		EUT WITH HEADSET ALONE							
Mode:		TX, QPSK_LTE BAND 25_RB12-6 MODE							
Test Equipment:									
Receiving: Horn T73, and Camber A SMA Cables									
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse									
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
1.853	14.3	V	0.85	8.01	21.44	33.0	-11.6		
1.853	17.2	H	0.85	8.01	24.36	33.0	-8.6		
1.883	15.6	V	0.85	8.13	22.85	33.0	-10.2		
1.883	19.9	H	0.85	8.13	27.22	33.0	-5.8		
1.913	15.9	V	0.85	8.13	23.14	33.0	-9.9		
1.913	21.7	H	0.85	8.13	29.00	33.0	-4.0		
Rev. 3.17.11									

RB25-0

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/14/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT WITH HEADSET ALONE						
Mode:		TX, QPSK_LTE BAND 25_RB25-0 MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.853	11.6	V	0.85	8.01	18.79	33.0	-14.2	
1.853	15.1	H	0.85	8.01	22.29	33.0	-10.7	
1.883	12.9	V	0.85	8.13	20.16	33.0	-12.8	
1.883	17.5	H	0.85	8.13	24.76	33.0	-8.2	
1.913	14.1	V	0.85	8.13	21.41	33.0	-11.6	
1.913	20.2	H	0.85	8.13	27.52	33.0	-5.5	
Rev. 3.17.11								

ERP LTE 16QAM Band 25 (5.0MHz BAND WIDTH)

RB1-0

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/14/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT WITH HEADSET ALONE						
Mode:		TX, 16QAM_LTE BAND 25_RB1-0 MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.853	15.3	V	0.85	8.01	22.46	33.0	-10.5	
1.853	17.8	H	0.85	8.01	24.99	33.0	-8.0	
1.883	16.4	V	0.85	8.13	23.70	33.0	-9.3	
1.883	21.1	H	0.85	8.13	28.36	33.0	-4.6	
1.913	16.9	V	0.85	8.13	24.17	33.0	-8.8	
1.913	22.3	H	0.85	8.13	29.60	33.0	-3.4	
Rev. 3.17.11								

RB1-24

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/14/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT WITH HEADSET ALONE						
Mode:		TX, 16QAM_LTE BAND 25_RB1-24 MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.853	14.6	V	0.85	8.01	21.78	33.0	-11.2	
1.853	17.2	H	0.85	8.01	24.34	33.0	-8.7	
1.883	15.8	V	0.85	8.13	23.12	33.0	-9.9	
1.883	20.3	H	0.85	8.13	27.54	33.0	-5.5	
1.913	16.2	V	0.85	8.13	23.50	33.0	-9.5	
1.913	21.5	H	0.85	8.13	28.80	33.0	-4.2	
Rev. 3.17.11								

RB12-6

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/14/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT WITH HEADSET ALONE						
Mode:		TX, 16QAM_LTE BAND 25_RB12-6 MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.853	14.4	V	0.85	8.01	21.58	33.0	-11.4	
1.853	17.3	H	0.85	8.01	24.48	33.0	-8.5	
1.883	15.7	V	0.85	8.13	22.93	33.0	-10.1	
1.883	20.1	H	0.85	8.13	27.34	33.0	-5.7	
1.913	16.1	V	0.85	8.13	23.39	33.0	-9.6	
1.913	21.6	H	0.85	8.13	28.87	33.0	-4.1	
Rev. 3.17.11								

RB25-0

High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
Company:		LG ELECTRONICS						
Project #:		11U14124						
Date:		11/14/11						
Test Engineer:		MENGISTU MEKURIA						
Configuration:		EUT WITH HEADSET ALONE						
Mode:		TX, 16QAM_LTE BAND 25_RB25-0 MODE						
Test Equipment:								
Receiving: Horn T73, and Camber A SMA Cables								
Substitution: Horn T60 Substitution, 4ft SMA Cable (SN # 245182002) Warehouse								
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.853	12.8	V	0.85	8.01	19.94	33.0	-13.1	
1.853	16.0	H	0.85	8.01	23.14	33.0	-9.9	
1.883	13.8	V	0.85	8.13	21.10	33.0	-11.9	
1.883	18.2	H	0.85	8.13	25.46	33.0	-7.5	
1.913	14.8	V	0.85	8.13	22.06	33.0	-10.9	
1.913	20.7	H	0.85	8.13	27.98	33.0	-5.0	
Rev. 3.17.11								

9.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, & § 90.691

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. 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.

§27.53 (g) For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.

§27.53 (h) For operations in the 1710–1755 MHz and 2110–2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB.

§ 90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

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

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A
- LTE Band 2 and 4

RESULTS

ERP 1XRTT 800 MHz SECONDARY BAND

Compliance Certification Services									
Above 1GHz High Frequency Substitution Measurement									
Company:		LG ELECTRONICS							
Project #:		11U14124							
Date:		11/09/11							
Test Engineer:		MENGISTU MEKURIA							
Configuration:		EUT ALONE							
Mode:		TX, 800 MHz SECONDARY BAND CDMA 1xRTT MODE							
Chamber		Pre-amplifer		Filter		Limit			
5m Chamber A		T144 8449B		Filter 1		Part 90			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 817.90MHz									
1.636	-14.9	V	3.0	38.2	1.0	-52.0	-13.0	-39.0	
2.454	-17.7	V	3.0	37.5	1.0	-54.2	-13.0	-41.2	
1.636	-17.4	H	3.0	38.2	1.0	-54.5	-13.0	-41.5	
2.454	-17.9	H	3.0	37.5	1.0	-54.4	-13.0	-41.4	
Mid Ch, 820.50MHz									
1.641	-14.0	V	3.0	38.2	1.0	-51.1	-13.0	-38.1	
2.462	-18.3	V	3.0	37.5	1.0	-54.8	-13.0	-41.8	
1.641	-15.9	H	3.0	38.2	1.0	-53.0	-13.0	-40.0	
2.462	-21.0	H	3.0	37.5	1.0	-57.5	-13.0	-44.5	
High Ch, 823.10MHz									
1.646	-13.0	V	3.0	38.2	1.0	-50.2	-13.0	-37.2	
2.469	-17.2	V	3.0	37.5	1.0	-53.7	-13.0	-40.7	
1.646	-15.6	H	3.0	38.2	1.0	-52.8	-13.0	-39.8	
2.469	-20.2	H	3.0	37.5	1.0	-56.7	-13.0	-43.7	
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									

ERP 1xRTT 850 BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG ELECTRONICS
Project #: 11U14124
Date: 11/09/11
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX, CELL BAND CDMA 1xRTT MODE

Chamber

Pre-amplifer

Filter

Limit

5m Chamber A

T144 8449B

Filter 1

Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.70MHz									
1.649	-13.8	V	3.0	38.2	1.0	-50.9	-13.0	-37.9	
2.474	-19.7	V	3.0	37.5	1.0	-56.1	-13.0	-43.1	
1.649	-15.8	H	3.0	38.2	1.0	-52.9	-13.0	-39.9	
2.474	-20.6	H	3.0	37.5	1.0	-57.1	-13.0	-44.1	
Mid Ch, 836.52MHz									
1.673	-14.0	V	3.0	38.1	1.0	-51.1	-13.0	-38.1	
2.510	-17.9	V	3.0	37.5	1.0	-54.4	-13.0	-41.4	
1.673	-15.5	H	3.0	38.1	1.0	-52.6	-13.0	-39.6	
2.510	-20.8	H	3.0	37.5	1.0	-57.3	-13.0	-44.3	
High Ch, 848.31MHz									
1.697	-15.2	V	3.0	38.1	1.0	-52.3	-13.0	-39.3	
2.545	-18.2	V	3.0	37.5	1.0	-54.6	-13.0	-41.6	
1.697	-15.9	H	3.0	38.1	1.0	-53.0	-13.0	-40.0	
2.545	-19.3	H	3.0	37.5	1.0	-55.7	-13.0	-42.7	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

EIRP 1xRTT 1900 BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG ELECTRONICS
Project #: 11U14124
Date: 11/09/11
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX, PCS BAND CDMA 1xRTT MODE

Chamber
5m Chamber A

Pre-amplifier
T144 8449B

Filter
Filter 1

Limit
Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.703	-9.0	V	3.0	36.8	1.0	-44.8	-13.0	-31.8	
5.554	-8.2	V	3.0	36.3	1.0	-43.5	-13.0	-30.5	
3.703	-5.0	H	3.0	36.8	1.0	-40.8	-13.0	-27.8	
5.554	-8.3	H	3.0	36.3	1.0	-43.6	-13.0	-30.6	
Mid Ch, 1880.00MHz									
3.760	-7.1	V	3.0	36.8	1.0	-42.9	-13.0	-29.9	
5.640	-10.2	V	3.0	36.3	1.0	-45.5	-13.0	-32.5	
3.760	-4.8	H	3.0	36.8	1.0	-40.5	-13.0	-27.5	
5.640	-7.5	H	3.0	36.3	1.0	-42.8	-13.0	-29.8	
High Ch, 1908.75MHz									
3.818	-7.0	V	3.0	36.7	1.0	-42.7	-13.0	-29.7	
5.726	-11.2	V	3.0	36.3	1.0	-46.5	-13.0	-33.5	
3.818	-6.1	H	3.0	36.7	1.0	-41.8	-13.0	-28.8	
5.726	-7.2	H	3.0	36.3	1.0	-42.5	-13.0	-29.5	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

EIRP EVDO REV. A. 850 BAND

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG ELECTRONICS
Project #: 11U14124
Date: 11/09/11
Test Engineer: MENGISTU MEKURIA
Configuration: EUT ALONE
Mode: TX, CELL BAND CDMA2000 EVDO REV A MODE

Chamber
5m Chamber A

Pre-amplifier
T144 8449B

Filter
Filter 1

Limit
Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.70MHz									
1.649	-14.4	V	3.0	38.2	1.0	-51.6	-13.0	-38.6	
2.474	-19.9	V	3.0	37.5	1.0	-56.4	-13.0	-43.4	
1.649	-6.1	H	3.0	38.2	1.0	-43.3	-13.0	-30.3	
2.474	-16.7	H	3.0	37.5	1.0	-53.2	-13.0	-40.2	
Mid Ch, 836.52MHz									
1.673	-10.0	V	3.0	38.1	1.0	-47.1	-13.0	-34.1	
2.510	-19.8	V	3.0	37.5	1.0	-56.2	-13.0	-43.2	
1.673	-5.9	H	3.0	38.1	1.0	-43.0	-13.0	-30.0	
2.510	-19.6	H	3.0	37.5	1.0	-56.0	-13.0	-43.0	
High Ch, 848.31MHz									
1.697	-13.4	V	3.0	38.1	1.0	-50.5	-13.0	-37.5	
2.545	-19.0	V	3.0	37.5	1.0	-55.5	-13.0	-42.5	
1.697	-7.6	H	3.0	38.1	1.0	-44.7	-13.0	-31.7	
2.545	-20.7	H	3.0	37.5	1.0	-57.1	-13.0	-44.1	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

EIRP EVDO REV. A. 1900 BAND

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		LG ELECTRONICS							
Project #:		11U14124							
Date:		11/09/11							
Test Engineer:		MENGISTU MEKURIA							
Configuration:		EUT ALONE							
Mode:		TX, PCS BAND CDMA2000 EVDO REV A MODE							
Chamber		Pre-amplifier		Filter		Limit			
5m Chamber A		T144 8449B		Filter 1		Part 24			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.703	-8.7	V	3.0	36.8	1.0	-44.5	-13.0	-31.5	
5.554	-13.5	V	3.0	36.3	1.0	-48.8	-13.0	-35.8	
7.405	-7.1	V	3.0	36.6	1.0	-42.7	-13.0	-29.7	
3.703	-7.6	H	3.0	36.8	1.0	-43.4	-13.0	-30.4	
5.554	-14.3	H	3.0	36.3	1.0	-49.6	-13.0	-36.6	
7.405	-12.2	H	3.0	36.6	1.0	-47.8	-13.0	-34.8	
Mid Ch, 1880.00MHz									
3.760	-13.5	V	3.0	36.8	1.0	-49.3	-13.0	-36.3	
5.640	-14.8	V	3.0	36.3	1.0	-50.1	-13.0	-37.1	
7.520	-10.2	V	3.0	36.6	1.0	-45.8	-13.0	-32.8	
3.760	-14.7	H	3.0	36.8	1.0	-50.5	-13.0	-37.5	
5.640	-14.0	H	3.0	36.3	1.0	-49.3	-13.0	-36.3	
7.520	-11.4	H	3.0	36.6	1.0	-47.0	-13.0	-34.0	
High Ch, 1908.75MHz									
3.818	-7.6	V	3.0	36.7	1.0	-43.3	-13.0	-30.3	
5.726	-13.5	V	3.0	36.3	1.0	-48.9	-13.0	-35.9	
7.635	-11.7	V	3.0	36.6	1.0	-47.3	-13.0	-34.3	
3.818	-12.3	H	3.0	36.7	1.0	-48.0	-13.0	-35.0	
5.726	-12.6	H	3.0	36.3	1.0	-47.9	-13.0	-34.9	
7.635	-11.7	H	3.0	36.6	1.0	-47.3	-13.0	-34.3	
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									

ERIP LTE QPSK Band 25 (5.0 MHz BAND WIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG ELECTRONICS
Project #: 11U14124
Date: 11/15/2011
Test Engineer: MENGISTU MEKURIA
Configuration: EUT WITH HEADSET AND AN AC ADAPTER
Mode: TX, QPSK_LTE BAND 25_RB1-0 MODE (WORST CASE)

Chamber	Pre-amplifier	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch (1852.5MHz)									
3.705	-10.4	V	3.0	35.4	1.0	-44.7	-13.0	-31.7	
5.558	-9.7	V	3.0	35.4	1.0	-44.1	-13.0	-31.1	
7.410	-9.9	V	3.0	35.7	1.0	-44.6	-13.0	-31.6	
9.263	-9.1	V	3.0	35.6	1.0	-43.6	-13.0	-30.6	
3.705	-9.2	H	3.0	35.4	1.0	-43.5	-13.0	-30.5	
5.558	-13.2	H	3.0	35.4	1.0	-47.6	-13.0	-34.6	
7.410	-13.0	H	3.0	35.7	1.0	-47.7	-13.0	-34.7	
9.263	-10.8	H	3.0	35.6	1.0	-45.3	-13.0	-32.3	
Mid Ch (1882.5MHz)									
3.765	-11.1	V	3.0	35.3	1.0	-45.5	-13.0	-32.5	
5.648	-9.4	V	3.0	35.4	1.0	-43.9	-13.0	-30.9	
7.530	-9.6	V	3.0	35.7	1.0	-44.3	-13.0	-31.3	
9.413	-6.2	V	3.0	35.6	1.0	-40.8	-13.0	-27.8	
3.765	-8.7	H	3.0	35.3	1.0	-43.0	-13.0	-30.0	
5.648	-13.5	H	3.0	35.4	1.0	-47.9	-13.0	-34.9	
7.530	-12.6	H	3.0	35.7	1.0	-47.3	-13.0	-34.3	
9.413	-11.4	H	3.0	35.6	1.0	-46.0	-13.0	-33.0	
High Ch (1912.5MHz)									
3.825	-7.6	V	3.0	35.3	1.0	-41.9	-13.0	-28.9	
5.738	-2.9	V	3.0	35.5	1.0	-37.4	-13.0	-24.4	
7.650	-8.9	V	3.0	35.7	1.0	-43.5	-13.0	-30.5	
9.563	-12.1	V	3.0	35.6	1.0	-46.6	-13.0	-33.6	
3.825	-10.6	H	3.0	35.3	1.0	-44.9	-13.0	-31.9	
5.738	-13.3	H	3.0	35.5	1.0	-47.8	-13.0	-34.8	
7.650	-12.0	H	3.0	35.7	1.0	-46.7	-13.0	-33.7	
9.563	-10.0	H	3.0	35.6	1.0	-44.6	-13.0	-31.6	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.

ERIP LTE 16QAM Band 25 (5.0 MHz BAND WIDTH)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG ELECTRONICS
 Project #: 11U14124
 Date: 11/15/2011
 Test Engineer: MENGISTU MEKURIA
 Configuration: EUT WITH HEADSET AND AN AC ADAPTER
 Mode: TX, 16QAM_LTE BAND 25_RB1-0 MODE (WORST CASE)

Chamber
5m Chamber B

Pre-amplifier
T145 8449B

Filter
Filter 1

Limit
Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch (1852.5MHz)									
3.705	-10.0	V	3.0	35.4	1.0	-44.4	-13.0	-31.4	
5.558	-10.0	V	3.0	35.4	1.0	-44.4	-13.0	-31.4	
7.410	-10.8	V	3.0	35.7	1.0	-45.5	-13.0	-32.5	
9.263	-7.3	V	3.0	35.6	1.0	-41.9	-13.0	-28.9	
3.705	-9.3	H	3.0	35.4	1.0	-43.6	-13.0	-30.6	
5.558	-11.8	H	3.0	35.4	1.0	-46.2	-13.0	-33.2	
7.410	-12.5	H	3.0	35.7	1.0	-47.2	-13.0	-34.2	
9.263	-9.1	H	3.0	35.6	1.0	-43.7	-13.0	-30.7	
Mid Ch (1882.5MHz)									
3.765	-11.9	V	3.0	35.3	1.0	-46.2	-13.0	-33.2	
5.648	-12.3	V	3.0	35.4	1.0	-46.7	-13.0	-33.7	
7.530	-12.1	V	3.0	35.7	1.0	-46.8	-13.0	-33.8	
9.413	-9.0	V	3.0	35.6	1.0	-43.6	-13.0	-30.6	
3.765	-11.4	H	3.0	35.3	1.0	-45.7	-13.0	-32.7	
5.648	-11.7	H	3.0	35.4	1.0	-46.1	-13.0	-33.1	
7.530	-12.2	H	3.0	35.7	1.0	-46.9	-13.0	-33.9	
9.413	-9.9	H	3.0	35.6	1.0	-44.5	-13.0	-31.5	
High Ch (1912.5MHz)									
3.825	-8.3	V	3.0	35.3	1.0	-42.6	-13.0	-29.6	
5.738	-5.5	V	3.0	35.5	1.0	-40.0	-13.0	-27.0	
7.650	-11.6	V	3.0	35.7	1.0	-46.3	-13.0	-33.3	
9.563	-7.4	V	3.0	35.6	1.0	-41.9	-13.0	-28.9	
3.825	-7.0	H	3.0	35.3	1.0	-41.3	-13.0	-28.3	
5.738	-9.7	H	3.0	35.5	1.0	-44.2	-13.0	-31.2	
7.650	-12.3	H	3.0	35.7	1.0	-47.0	-13.0	-34.0	
9.563	-11.0	H	3.0	35.6	1.0	-45.6	-13.0	-32.6	

Rev. 03.03.09
 Note: No other emissions were detected above the system noise floor.