



FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 90 SUBPART S
FCC CFR47 PART 27 SUBPART M

CERTIFICATION TEST REPORT

FOR
CDMA/LTE PHONE + BLUETOOTH &
WLAN 2.4GHZ AND NFC BAR PHONE

MODEL NUMBER: LG-LS740

FCC ID: ZNFLS740

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LG ELECTRONICS MOBILECOMM U.S.A., INC

Prepared by

UL VERIFICATION SERVICES

47173 BENICIA STREET

FREMONT, CA 94538, U.S.A.

TEL: (510) 771-1000

FAX: (510) 661-0888



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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC
EUT DESCRIPTION: CDMA/LTE Phone + Bluetooth & WLAN 2.4GHz and NFC
MODEL: LG-LS740
Serial Number: 0UMY1 (Radiated)
DATE TESTED: November 20 - 27, 2013

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E , 27M and 90S	PASS

UL Verification Services Inc. 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 Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 Verification Services Inc. By:



PHILIP KIM
WiSE OPERATIONS MANAGER
UL VERIFICATION SERVICES INC.

Tested By:



STEVEN TRAN
WiSE LAB TECHNICIAN
UL VERIFICATION SERVICES INC.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 22, FCC CFR Part 24, FCC CFR 47 Part 27, and FCC CFR 47 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 Verification Services Inc. 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 18000 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 CDMA/LTE Phone Bluetooth and WLAN (2.4 GHz) + NFC.

5.2. MAXIMUM OUTPUT POWER

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

FCC Part 22/2 4/27						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			dBm	mW	dBm	mW
BC10	816~824	1xRTT	25.2	331.13	22.121	162.97
	816~824	EVDO REV A	25.02	317.69	23.701	234.48
BC0	824~849	1xRTT	25.1	323.59	21.081	128.26
	824~849	EVDO REV A	25.08	322.11	22.621	182.85
BC1	1850~1910	1xRTT	25.18	329.61	22.76	188.8
	1850~1910	EVDO REV A	25.03	318.42	23.14	206.06

5.3. MAXIMUM OUTPUT POWER (LTE)

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

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE41	2496~2690	20MHz	QPSK	27.67	584.79	25.93	391.74
			16QAM	27.77	598.41	25.43	349.14

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE41	2496~2690	15MHz	QPSK	27.81	603.95	26.29	425.6
			16QAM	27.58	572.80	24.9	309.03

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE41	2496~2690	10MHz	QPSK	27.74	594.29	25.74	374.97
			16QAM	27.5	562.34	25.23	333.43

FCC Part 22/90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE26	814~849	10MHz	QPSK	29.29	849.18	25.211	331.97
			16QAM	29.48	887.16	24.301	269.22

FCC Part 22/90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE26	814~849	5MHz	QPSK	29.16	824.14	24.401	275.49
			16QAM	29.19	829.85	23.701	234.48

FCC Part 22/90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE26	814~849	3MHz	QPSK	29.06	805.38	23.801	239.94
			16QAM	28.91	778.04	23.101	204.22

FCC Part 22/90							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE26	814~849	1.4MHz	QPSK	28.97	788.86	23.601	229.14
			16QAM	28.5	707.95	22.901	195.03

FCC Part 2 4							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE25	1850~1915	10MHz	QPSK	28.95	785.24	26.08	405.51
			16QAM	28.79	756.83	25.38	345.14

FCC Part 2 4							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE25	1850~1915	5MHz	QPSK	28.75	749.89	26.19	415.91
			16QAM	28.99	792.50	25.06	320.63

FCC Part 2 4							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				dBm	mW	dBm	mW
LTE25	1850~1915	3MHz	QPSK	28.86	769.13	26.82	480.84
			16QAM	28.68	737.90	26.08	405.51

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the [List the bands supported] with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
BC10, 816~824MHz	-2.6
BC0, 824~849MHz	-2.3
BC1, 1850~1910MHz	-1.2
LTE25, 1850~1915MHz	-1.2
LTE26, 814~849MHz	-2.3
LTE41, 2496~2690MHz	-2.4

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG	MCS-01WD	DB83Y00000030	N/A

I/O CABLES (CONDUCTED SETUP)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

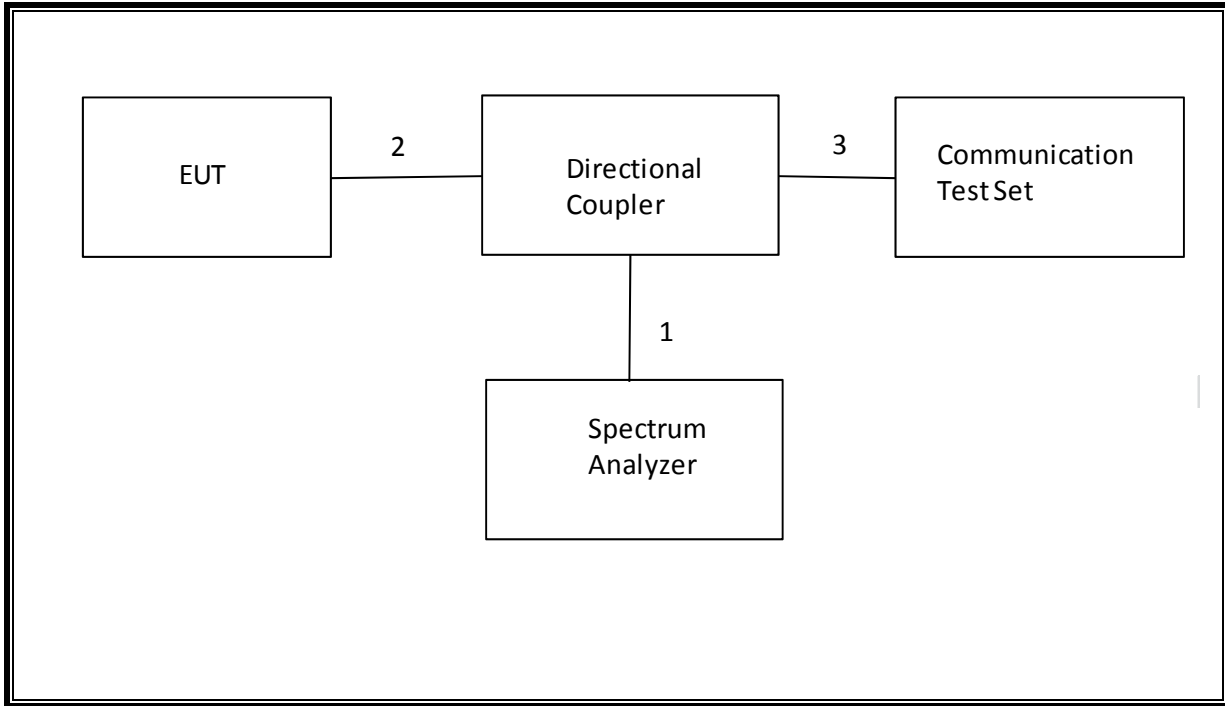
I/O CABLES (RADIATED SETUP)

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	USB	1	AC Adapter	Un-shielded	1.2m	No
2	Jack	1	Headset	Shielded	1m	No
3	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

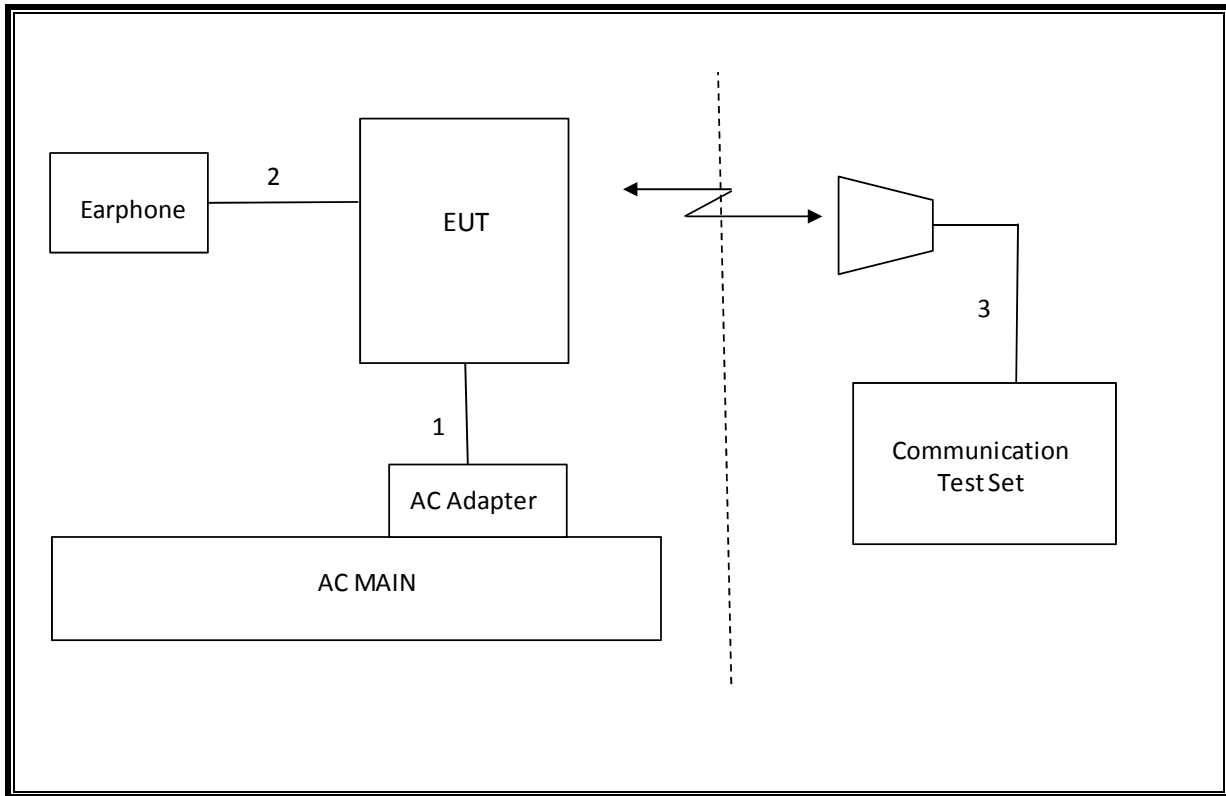
TEST SETUP

The EUT is continuously communicated to the call box during the tests.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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
Antenna, Horn, 18 GHz	EMCO	3115	C00872	10/25/14
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	12/11/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01179	02/26/14
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	10/22/14
8960 Communication Test Set	Agilent / HP	E5515C	C01086	11/10/14
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	01/09/14
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	03/28/14
Vector signal generator, 6 GHz	Agilent / HP	E4438C	F00037	08/06/14
Antenna, Tuned Dipole 400-1000 MHz	ETS	3121C DB4	C00993	02/14/14

7. Summary Table

Test Description	Test Limit	Test Condition	Test Result	Worst Case	Note
Occupied Band width (99%)	N/A	Conducted	Pass	17.85 MHz	
Band Edge / Conducted Spurious Emission	-13dBm		Pass	-26.52 dBm	
	-25dBm		Pass	-27.42 dBm	Band 41
Conducted output power	N/A		Pass	29.48 dBm	
Emission Mask			Pass	-24.28	Band 41 Band 26
Frequency Stability	2.5PPM		Pass	0.087 ppm	
Effective Radiated Power	38 dBm	Radiated	Pass	25.21 dBm	BC 0
	50dBm		Pass		BC10; Band 26
Equivalent Isotropic Radiated Power	33dBm		Pass	27.16 dBm	Band 41
	30dBm		Pass		Band 4
Radiated Spurious Emission	-13dBm		Pass	-29.5 dBm	Band 25 Band 26
	-25dBm	Pass	-33.1 dBm	Band 41	

8.1. CDMA2000

8.1.1. 1xRTT

TEST PROCEDURE

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) > 7
 > Network ID (NID) > 1
- 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)

8.1.2. CDMA2000 OUTPUT POWER RESULT

	Radio Configuration	Service Option (SO)	Conducted Output Power (dBm)		
			25/1851.25MHz	600/1880MHz	1175/1908.75MHz
			Average	Average	Average
BC1	RC1	2 (Loopback)	25.14	25.06	25.13
		55 (Loopback)	25.13	25.03	25.17
	RC2	9 (Loopback)	25.12	25.01	25.10
		55 (Loopback)	25.14	24.98	25.11
	RC3	2 (Loopback)	25.10	24.96	25.07
		55 (Loopback)	25.11	24.95	25.06
		32 (+ F-SCH)	25.09	24.98	25.16
		32 (+ SCH)	25.10	24.98	25.08
	RC4	2 (Loopback)	25.12	24.97	25.06
		55 (Loopback)	25.11	24.96	25.13
		32 (+ F-SCH)	25.08	24.97	25.14
		32 (+ SCH)	25.09	24.95	25.18
	RC5	9 (Loopback)	25.10	24.95	25.06
		55 (Loopback)	25.11	24.95	25.05
	RC11	2 (Loopback)	25.16	25.07	25.11
		75 (Loopback)	25.16	25.01	25.10
		32 (+ F-SCH)	25.17	25.04	25.13
		32 (+ SCH)	25.16	25.02	25.17

	Radio Configuration	Service Option (SO)	Conducted Output Power (dBm)		
			1013/824.7MHz	1013/824.7MHz	1013/824.7MHz
			Average	Average	Average
BC0	RC1	2 (Loopback)	24.98	25.02	25.03
		55 (Loopback)	25.01	25.10	25.06
	RC2	9 (Loopback)	24.98	25.07	24.98
		55 (Loopback)	24.98	25.07	24.98
	RC3	2 (Loopback)	24.97	25.06	25.04
		55 (Loopback)	24.98	25.05	25.01
		32 (+ F-SCH)	24.96	25.07	24.98
		32 (+ SCH)	24.98	25.05	25.04
	RC4	2 (Loopback)	24.98	25.06	25.02
		55 (Loopback)	24.96	25.04	24.98
		32 (+ F-SCH)	24.97	25.05	24.98
		32 (+ SCH)	24.97	25.05	25.03
	RC5	9 (Loopback)	24.97	25.06	24.96

		55 (Loopback)	24.98	25.05	24.95
	RC11	2 (Loopback)	25.01	25.09	25.01
		75 (Loopback)	25.03	25.07	24.97
		32 (+ F-SCH)	24.98	25.08	24.98
		32 (+ SCH)	25.01	25.08	25.03

	Radio Configuration	Service Option (SO)	Conducted Output Power (dBm)		
			476/817.9MHz	476/817.9MHz	476/817.9MHz
			Average	Average	Average
BC10	RC1	2 (Loopback)	25.09	25.20	25.17
		55 (Loopback)	25.06	25.19	25.19
	RC2	9 (Loopback)	25.17	25.18	25.16
		55 (Loopback)	25.15	25.19	25.14
	RC3	2 (Loopback)	25.12	25.17	25.15
		55 (Loopback)	25.09	25.19	25.16
		32 (+ F-SCH)	25.08	25.16	25.12
		32 (+ SCH)	25.10	25.16	25.13
	RC4	2 (Loopback)	25.05	25.16	25.12
		55 (Loopback)	25.10	25.15	25.15
		32 (+ F-SCH)	25.11	25.18	25.14
		32 (+ SCH)	25.11	25.17	25.13
	RC5	9 (Loopback)	25.08	25.15	25.13
		55 (Loopback)	25.10	25.17	25.14
	RC11	2 (Loopback)	25.15	25.20	25.15
		75 (Loopback)	25.14	25.18	25.17
		32 (+ F-SCH)	25.11	25.20	25.18
		32 (+ SCH)	25.14	25.19	25.16

8.1.3. 1xEV-DO Release 0

TEST PROCEDURE

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 Params:
 - 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 Params:
 - 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)

8.1.4. 1XEVD0 REL 0 OUTPUT POWER RESULT

Radio Configuration	FTAP Rate	RTAP Rate	Channel	f(MHz)	Conducted Power (dBm)
					Average
BC10	307.2 kbps(2 slot, QPSK)	153.6 kbps	476	817.9	25.02
			580	820.5	25.01
			684	823.1	24.98
BC0			1013	824.7	25.03
			384	836.52	25.08
			777	848.31	25.02
BC1			25	1851.25	25.07
			600	1880	24.98
			1175	1908.75	25.05

Radio Configuration	Service Option	Channel	f (MHz)	Conducted Power (dBm)
				Average
BC10	EVDO REL. 0	476	817.9	25.02
		580	820.5	25.05
		684	823.1	24.98
BC0	EVDO REL. 0	1013	824.7	25.01
		384	836.52	25.03
		777	848.31	24.98
BC1	EVDO REL. 0	25	1851.25	25.08
		600	1880	24.98
		1175	1908.75	25.08

8.1.5. 1xEV-DO Rev. A

TEST PROCEDURE

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)

8.1.6. 1xEVDO REV A OUTPUT RESULT

Radio Configuration	FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f(MHz)	Conducted Power (dBm)	
						Average
BC10	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	476	817.9		24.98
			580	820.5		25.03
			684	823.1		25.02
BC0			1013	824.7		25.05
			384	836.52		25.13
			777	848.31		25.08
BC1			25	1851.25		25.10
			600	1880		24.98
			1175	1908.75		25.08

Radio Configuration	Service Option	Channel	f (MHz)	Conducted Power (dBm)	
					Average
BC10	EVDO REV. A	476	817.9		24.95
		580	820.5		25.02
		684	823.1		24.95
BC0	EVDO REV. A	1013	824.7		25.03
		384	836.52		25.08
		777	848.31		25.08
BC1	EVDO REV. A	25	1851.25		25.03
		600	1880		24.87
		1175	1908.75		25.01

8.2. LTE OUTPUT VERIFICATION

8.2.1. LTE OUTPUT RESULT

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE41	2506	QPSK	20	1	0	22.60	26.89
				1	49	22.57	27.16
				1	99	22.53	27.09
				50	0	21.51	27.33
				50	24	21.50	27.51
				50	49	21.55	27.67
				100	0	21.50	27.59
	2506	16QAM		1	0	21.34	27.00
				1	49	21.28	27.30
				1	99	21.28	27.27
				50	0	20.57	27.46
				50	24	20.58	27.50
				50	49	20.62	27.59
				100	0	20.58	27.77
	2593	QPSK		1	0	22.66	26.95
				1	49	22.57	26.99
				1	99	22.62	27.15
				50	0	21.35	27.21
				50	24	21.29	27.17
				50	49	21.33	27.28
				100	0	21.32	27.38
	2593	16QAM		1	0	21.48	26.68
				1	49	21.35	26.70
				1	99	21.45	26.85
				50	0	20.49	27.38
				50	24	20.44	27.30
				50	49	20.42	27.29
				100	0	20.39	27.39
	2680	QPSK		1	0	22.63	27.38
				1	49	22.66	27.09
				1	99	22.64	26.21
				50	0	21.27	27.27
				50	24	21.24	27.13
				50	49	21.40	26.89
				100	0	21.32	27.28
	2680	16QAM		1	0	21.66	27.06
				1	49	21.64	26.82
				1	99	21.73	26.05
				50	0	20.33	27.53
				50	24	20.34	27.22
				50	49	20.56	27.06
				100	0	20.32	27.13

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE41	2503.5	QPSK	15	1	0	22.67	27.33
				1	37	22.72	27.67
				1	74	22.74	27.81
				37	0	21.52	27.58
				37	17	21.51	27.65
				37	36	21.52	27.75
	2503.5	16QAM		75	0	21.59	27.69
				1	0	21.54	27.01
				1	37	21.50	27.28
				1	74	21.55	27.42
				37	0	20.52	27.34
				37	17	20.50	27.35
	2593	QPSK		37	36	20.55	27.58
				75	0	20.69	27.76
				1	0	22.71	27.07
				1	37	22.74	27.12
				1	74	22.60	27.20
				37	0	21.37	27.08
	2593	16QAM		37	17	21.28	27.01
				37	36	21.30	27.14
				75	0	21.29	27.49
				1	0	21.16	26.65
				1	37	21.09	26.66
				1	74	21.12	26.71
	2682.5	QPSK		37	0	20.51	26.74
				37	17	20.39	26.66
				37	36	20.41	26.72
				75	0	20.41	27.47
				1	0	22.52	27.29
				1	37	22.45	26.83
	2682.5	16QAM		1	74	22.28	26.04
				37	0	21.31	27.41
				37	17	21.38	27.20
				37	36	21.40	26.93
				75	0	21.31	27.34
				1	0	21.17	26.78
				1	37	21.13	26.42
				1	74	21.11	25.78
				37	0	20.24	27.19
				37	17	20.35	27.00
				37	36	20.52	26.80
				75	0	20.39	27.44

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE41	2501	QPSK	10	1	0	22.68	27.30
				1	24	22.63	27.53
				1	49	22.68	27.74
				25	0	21.65	27.23
				25	11	21.49	27.18
				25	24	21.63	27.40
	2501	16QAM		50	0	21.57	27.44
				1	0	21.51	26.99
				1	24	21.43	27.14
				1	49	21.48	27.36
				25	0	20.69	27.26
				25	11	20.58	27.23
	2593	QPSK		25	24	20.74	27.50
				50	0	20.60	27.39
				1	0	22.75	27.12
				1	24	22.70	27.12
				1	49	22.73	27.18
				25	0	21.31	27.04
	2593	16QAM		25	11	21.30	27.05
				25	24	21.33	27.08
				50	0	21.32	27.34
				1	0	21.15	26.64
				1	24	21.11	26.68
				1	49	21.12	26.70
	2685	QPSK		25	0	20.35	26.77
				25	11	20.33	26.70
				25	24	20.36	26.78
				50	0	20.44	26.96
				1	0	22.35	27.08
				1	24	22.42	26.66
	2685	16QAM		1	49	22.38	26.12
				25	0	21.37	26.95
				25	11	21.39	26.72
				25	24	21.34	26.57
				50	0	21.43	27.18
				1	0	21.55	26.86
	2685	16QAM		1	24	21.62	26.50
				1	49	21.57	25.97
				25	0	20.33	26.82
				25	11	20.44	26.64
25			24	20.50	26.52		
50			0	20.62	27.16		

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE26	819	QPSK	10	1	0	23.88	28.40
				1	24	23.82	28.70
				1	49	23.89	28.85
				25	0	22.81	29.05
				25	11	22.72	29.06
				25	24	22.81	29.24
	819	16QAM		50	0	22.85	29.29
				1	0	22.30	28.37
				1	24	22.21	28.66
				1	49	22.41	28.89
				25	0	21.69	29.25
				25	11	21.67	29.31
	831.5	QPSK		25	24	21.75	29.48
				50	0	21.80	29.43
				1	0	23.94	28.92
				1	24	23.78	28.64
				1	49	23.85	28.89
				25	0	22.55	28.71
	831.5	16QAM		25	11	22.49	28.57
				25	24	22.49	28.60
				50	0	22.47	28.99
				1	0	22.69	28.69
				1	24	22.46	28.33
				1	49	22.59	28.59
	844	QPSK		25	0	21.43	28.52
				25	11	21.39	28.47
				25	24	21.46	28.56
				50	0	21.41	28.89
				1	0	23.90	28.86
				1	24	23.77	28.69
	844	16QAM		1	49	23.72	28.15
				25	0	22.72	29.37
				25	11	22.60	29.16
				25	24	22.60	28.90
				50	0	22.72	28.87
				1	0	22.42	28.67
				1	24	22.19	28.47
				1	49	22.16	28.03
				25	0	21.80	29.48
				25	11	21.66	29.32
25			24	21.68	28.99		
50			0	21.66	29.05		

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE26	816.5	QPSK	5	1	0	23.85	28.33
				1	11	23.78	28.50
				1	24	23.86	28.74
				12	0	22.77	28.82
				12	5	22.90	29.11
				12	11	22.78	29.16
	816.5	16QAM		25	0	22.87	29.09
				1	0	22.32	28.20
				1	11	22.29	28.26
				1	24	22.38	28.53
				12	0	21.83	28.62
				12	5	21.91	28.73
	831.5	QPSK		12	11	21.79	28.70
				25	0	21.89	29.19
				1	0	23.54	28.44
				1	11	23.67	28.36
				1	24	23.81	28.49
				12	0	22.58	28.84
	831.5	16QAM		12	5	22.55	28.83
				12	11	22.56	28.85
				25	0	22.54	28.91
				1	0	22.06	28.21
				1	11	22.08	28.00
				1	24	22.24	28.25
	846.5	QPSK		12	0	21.58	28.46
				12	5	21.55	28.33
				12	11	21.50	28.34
				25	0	21.59	29.02
				1	0	23.65	28.76
				1	11	23.81	28.45
	846.5	16QAM		1	24	23.82	28.13
				12	0	22.79	28.95
				12	5	22.78	28.80
				12	11	22.75	28.57
				25	0	22.68	28.85
				1	0	22.39	28.94
	846.5	16QAM		1	11	22.52	28.53
				1	24	22.29	28.27
				12	0	21.83	28.57
				12	5	21.80	28.44
				12	11	21.81	28.31
				25	0	21.69	28.84

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE26	815.5	QPSK	3	1	0	23.91	28.41
				1	7	23.92	28.61
				1	14	23.84	28.91
				7	0	22.87	28.71
				7	2	22.80	28.71
				7	6	22.93	28.83
				15	0	22.93	29.06
	815.5	16QAM		1	0	22.69	28.48
				1	7	22.72	28.75
				1	14	22.76	28.91
				7	0	21.56	28.38
				7	2	21.56	28.51
				7	6	21.68	28.70
				15	0	21.77	28.68
	831.5	QPSK		1	0	23.63	28.67
				1	7	23.61	28.55
				1	14	23.85	28.68
				7	0	22.55	28.44
				7	2	22.48	28.66
				7	6	22.46	28.55
				15	0	22.53	28.75
	831.5	16QAM		1	0	22.31	28.81
				1	7	22.37	28.72
				1	14	22.49	28.83
				7	0	21.25	28.38
				7	2	21.43	28.13
				7	6	21.24	28.42
				15	0	21.33	28.35
	847.5	QPSK		1	0	23.88	28.70
				1	7	23.87	28.36
				1	14	23.66	28.25
				7	0	22.71	28.73
				7	2	22.71	28.60
				7	6	22.67	28.41
				15	0	22.73	28.60
	847.5	16QAM		1	0	22.59	28.80
				1	7	22.61	28.47
				1	14	22.40	28.34
				7	0	21.44	28.37
				7	2	21.58	28.47
				7	6	21.49	28.33
				15	0	21.69	28.70

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE26	814.7	QPSK	1.4	1	0	23.91	28.44
				1	2	23.57	28.44
				1	5	23.55	28.69
				3	0	23.60	28.61
				3	0	23.60	28.61
				3	2	23.61	28.57
	814.7	16QAM		6	0	22.81	28.60
				1	0	22.71	28.36
				1	2	22.65	28.34
				1	5	22.39	28.38
				3	0	22.51	28.48
				3	0	22.31	28.40
	831.5	QPSK		3	2	22.38	28.43
				6	0	21.55	28.13
				1	0	23.79	28.84
				1	2	23.87	28.61
				1	5	23.72	28.77
				3	0	23.84	28.73
	831.5	16QAM		3	0	23.83	28.97
				3	2	23.81	28.94
				6	0	22.58	28.50
				1	0	22.43	28.41
				1	2	22.48	28.33
				1	5	22.50	28.44
	848.3	QPSK		3	0	22.16	28.50
				3	0	22.14	28.49
				3	2	22.14	28.37
				6	0	21.33	28.42
				1	0	23.79	28.45
				1	2	23.85	28.24
	848.3	16QAM		1	5	23.76	28.30
				3	0	23.89	28.42
				3	0	23.89	28.42
				3	2	23.85	28.34
				6	0	22.66	28.41
				1	0	22.64	28.24
				1	2	22.63	28.14
				1	5	22.48	28.16
				3	0	22.30	28.31
				3	0	22.27	28.30
				3	2	22.24	28.20
				6	0	21.49	28.37

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE25	1855	QPSK	10	1	0	23.71	28.12
				1	24	23.80	27.88
				1	49	23.85	28.18
				25	0	22.52	28.17
				25	11	22.62	28.14
				25	24	22.78	28.39
	1855	16QAM		50	0	22.64	28.41
				1	0	22.19	28.18
				1	24	22.31	27.90
				1	49	22.33	28.23
				25	0	21.54	28.37
				25	11	21.61	28.20
	1882.5	QPSK		25	24	21.72	28.34
				50	0	21.63	28.79
				1	0	23.92	28.80
				1	24	23.86	28.54
				1	49	23.88	28.56
				25	0	22.62	28.60
	1882.5	16QAM		25	11	22.62	28.50
				25	24	22.68	28.41
				50	0	22.62	28.95
				1	0	22.55	28.56
				1	24	22.71	28.28
				1	49	22.61	28.37
	1910	QPSK		25	0	21.57	28.44
				25	11	21.60	28.47
				25	24	21.60	28.38
				50	0	21.59	28.91
				1	0	23.80	27.95
				1	24	23.75	27.84
	1910	16QAM		1	49	23.70	28.08
				25	0	22.56	28.09
				25	11	22.51	28.11
				25	24	22.55	28.45
				50	0	22.57	28.45
				1	0	22.27	27.86
				1	24	22.24	27.68
				1	49	22.20	28.04
				25	0	21.67	28.15
				25	11	21.61	28.18
25			24	21.56	28.43		
50			0	21.63	28.51		

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE25	1852.5	QPSK	5	1	0	23.79	28.16
				1	11	23.77	27.90
				1	24	23.85	28.08
				12	0	22.41	28.24
				12	5	22.54	28.15
				12	11	22.64	28.25
	1852.5	16QAM		25	0	22.54	28.47
				1	0	22.24	27.98
				1	11	22.26	27.77
				1	24	22.34	27.91
				12	0	21.46	27.94
				12	5	21.55	27.91
	1882.5	QPSK		12	11	21.64	28.00
				25	0	21.63	28.77
				1	0	23.80	28.55
				1	11	23.84	28.36
				1	24	23.88	28.44
				12	0	22.62	28.69
	1882.5	16QAM		12	5	22.64	28.58
				12	11	22.61	28.61
				25	0	22.65	28.83
				1	0	22.27	28.42
				1	11	22.29	28.17
				1	24	22.37	28.30
	1912.5	QPSK		12	0	21.59	28.30
				12	5	21.60	28.20
				12	11	21.60	28.20
				25	0	21.67	28.88
				1	0	23.70	28.04
				1	11	23.74	28.08
	1912.5	16QAM		1	24	23.74	28.04
				12	0	22.50	28.39
				12	5	22.62	28.43
				12	11	22.57	28.44
				25	0	22.57	28.75
				1	0	22.15	27.95
				1	11	22.21	27.99
				1	24	22.20	27.94
				12	0	21.48	28.20
				12	5	21.56	28.25
				12	11	21.57	28.31
				25	0	21.60	28.99

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average	Max Peak
LTE25	1851.5	QPSK	3	1	0	23.87	28.12
				1	7	23.72	28.05
				1	14	23.92	28.25
				7	0	22.57	28.43
				7	2	22.43	28.19
				7	6	22.48	28.15
				15	0	22.50	28.30
	1851.5	16QAM		1	0	22.54	28.31
				1	7	22.41	28.10
				1	14	22.64	28.24
				7	0	21.46	27.86
				7	2	21.39	27.81
				7	6	21.48	27.68
				15	0	21.47	28.11
	1882.5	QPSK		1	0	23.94	28.80
				1	7	23.64	28.39
				1	14	23.93	28.63
				7	0	22.70	28.86
				7	2	22.65	28.71
				7	6	22.63	28.67
				15	0	22.66	28.53
	1882.5	16QAM		1	0	22.56	28.65
				1	7	22.63	28.65
				1	14	22.69	28.68
				7	0	21.62	28.32
				7	2	21.63	28.30
				7	6	21.63	28.15
				15	0	21.62	28.43
	1913.5	QPSK		1	0	23.87	28.41
				1	7	23.91	28.11
				1	14	23.74	28.09
				7	0	22.70	28.68
				7	2	22.60	28.49
				7	6	22.49	28.42
				15	0	22.56	28.47
	1913.5	16QAM		1	0	22.58	28.43
				1	7	22.52	28.31
				1	14	22.28	28.06
				7	0	21.61	28.25
				7	2	21.56	28.23
7			6	21.49	28.04		
15			0	21.54	28.46		

9. PEAK TO AVERAGE RATIO

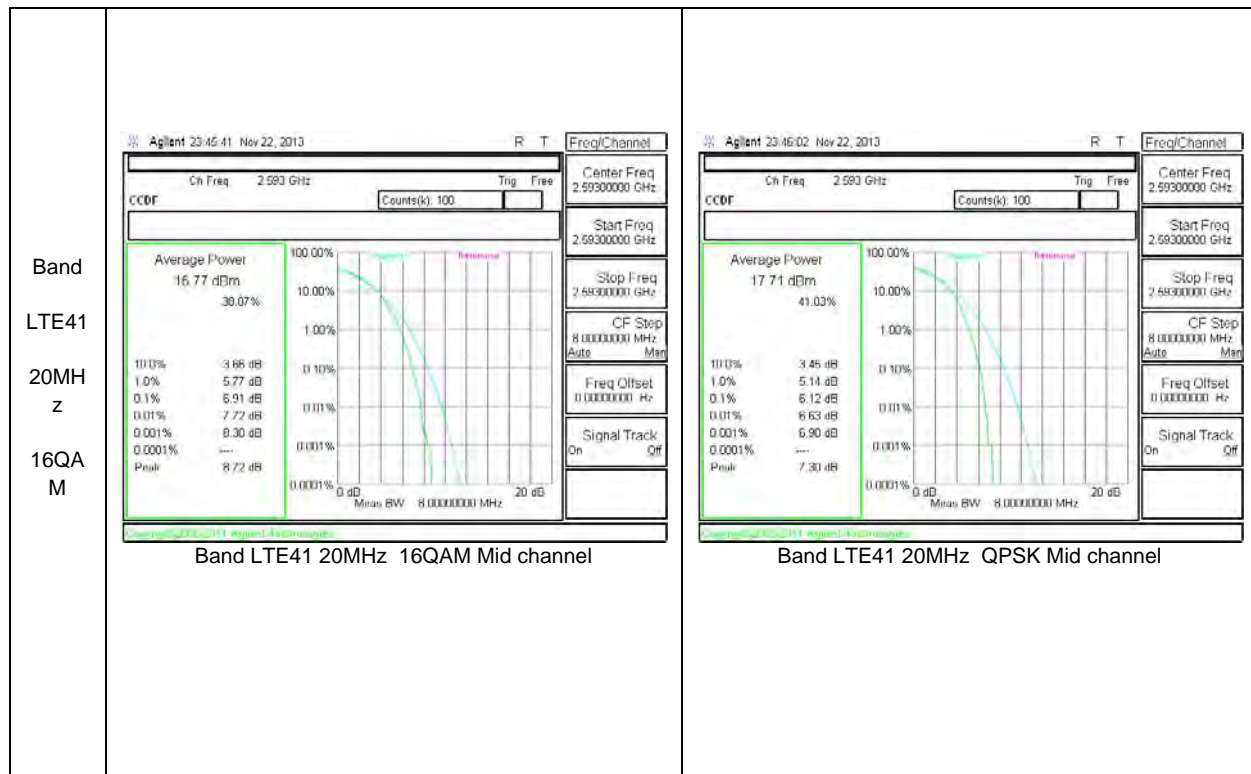
Test Procedure

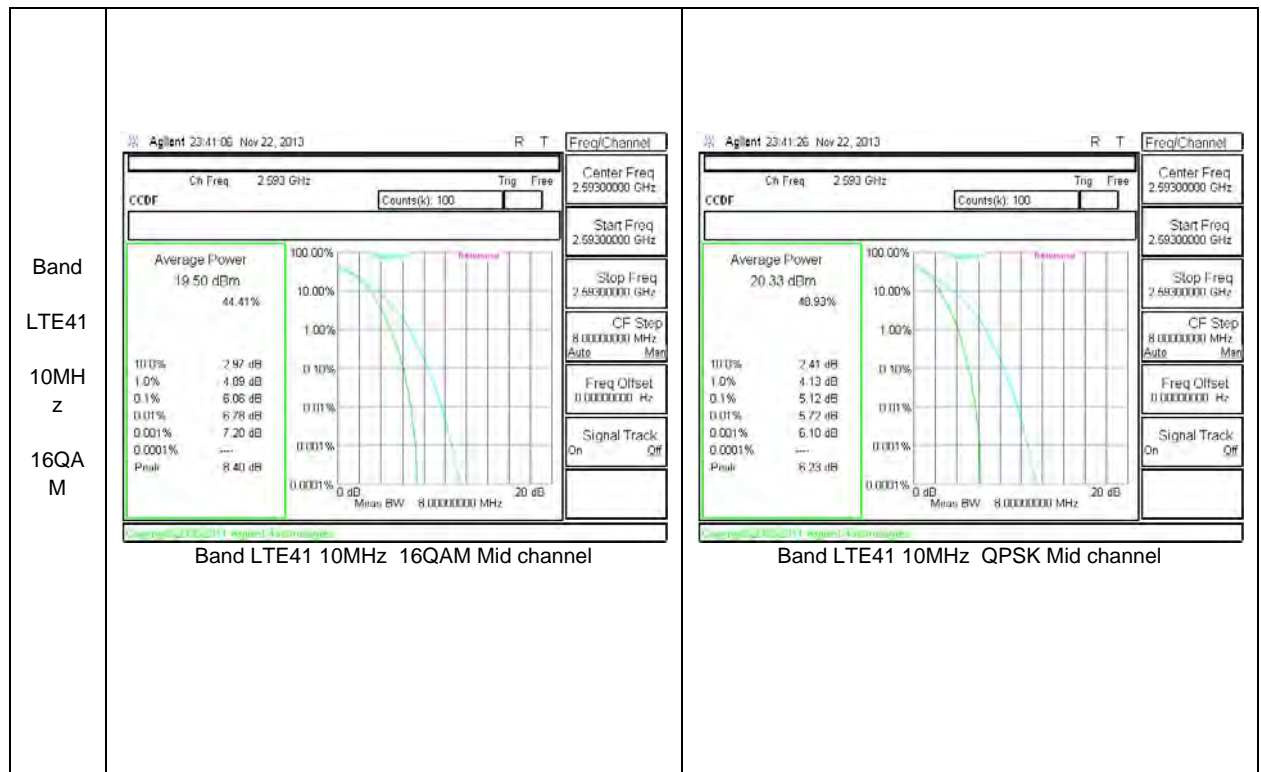
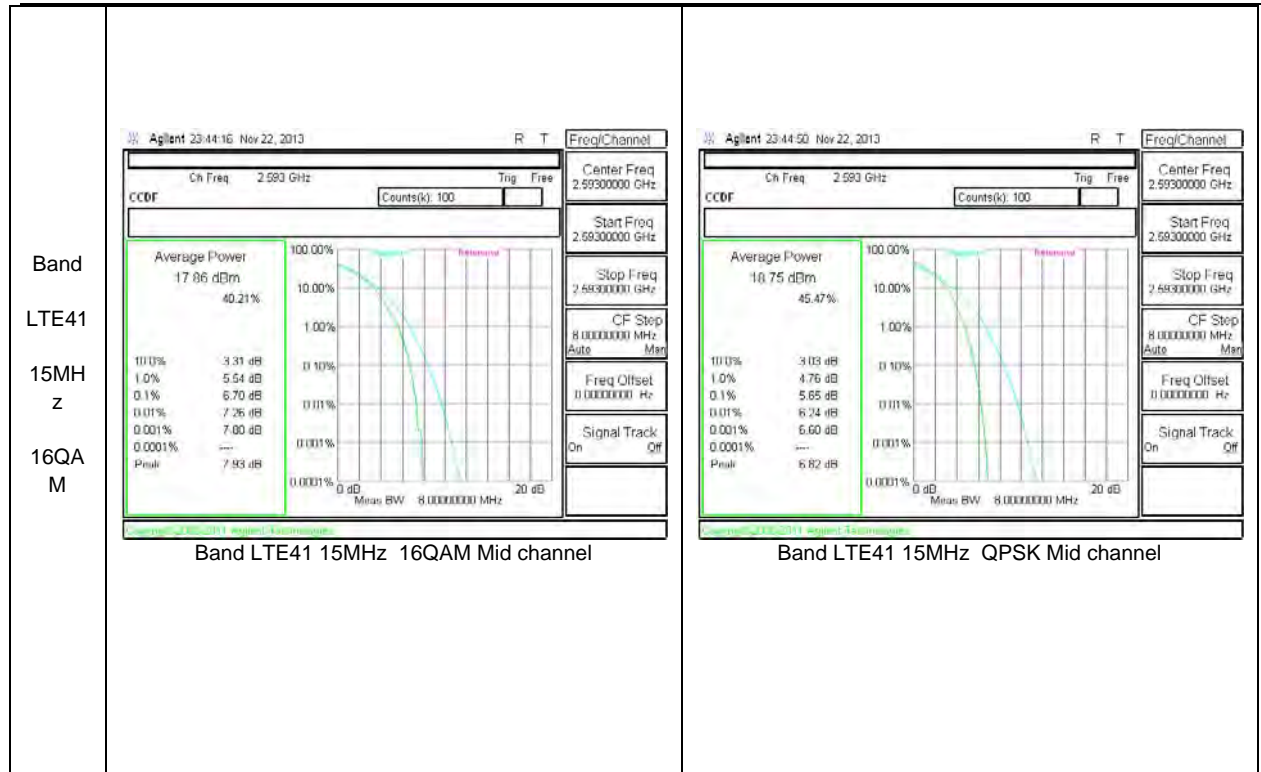
Per KDB 971168 D01 Power Meas License Digital Systems v02r01

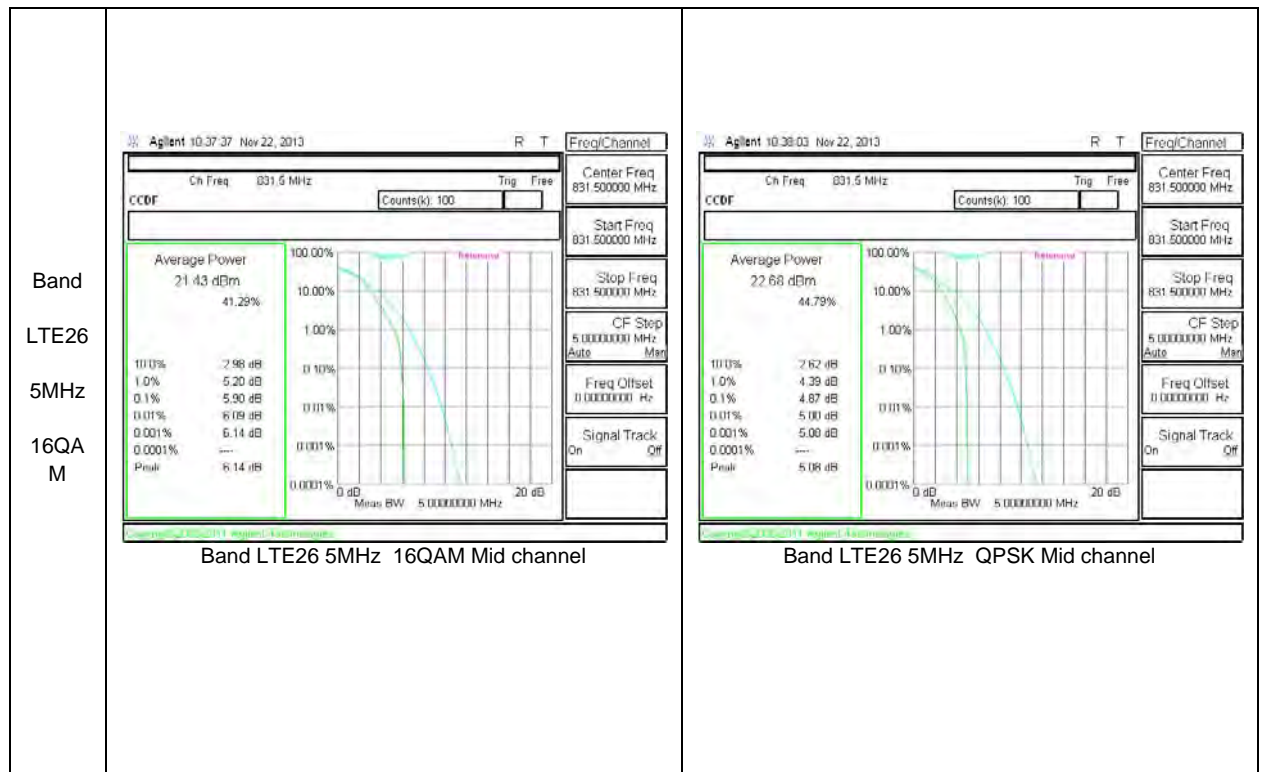
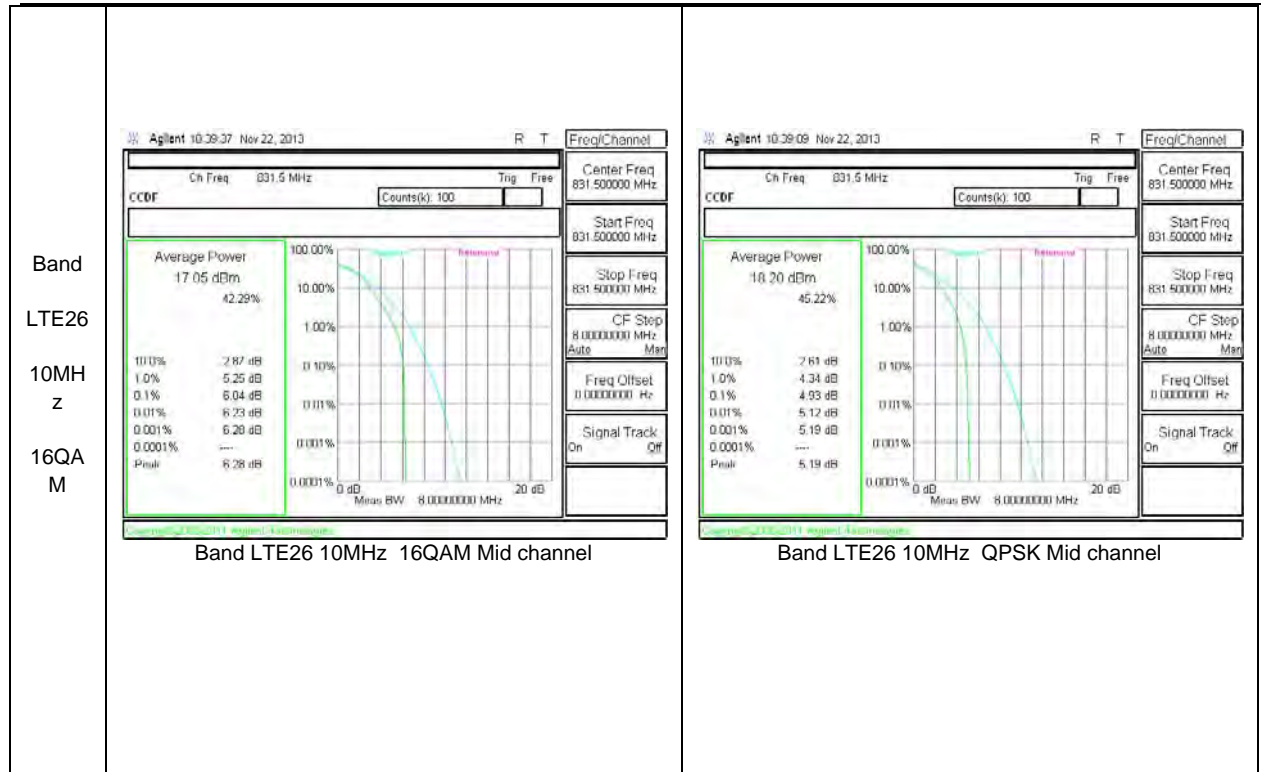
Test Spec

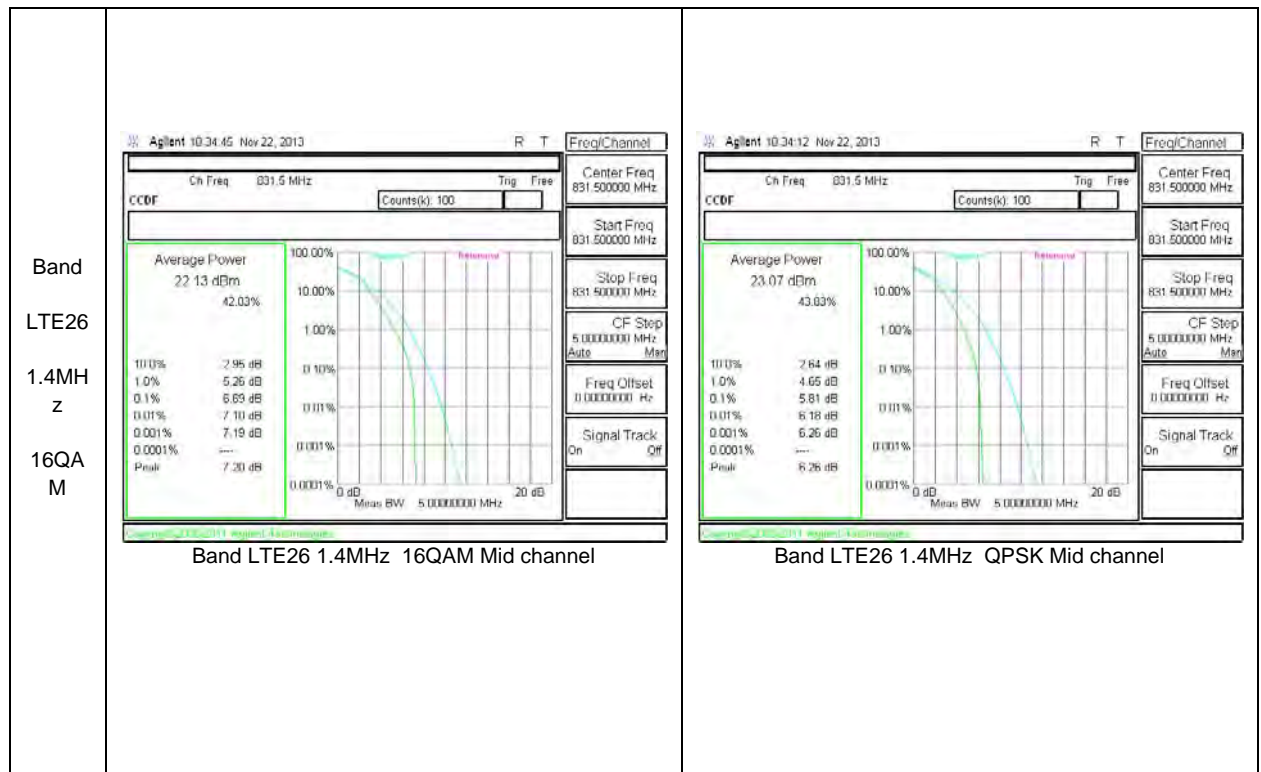
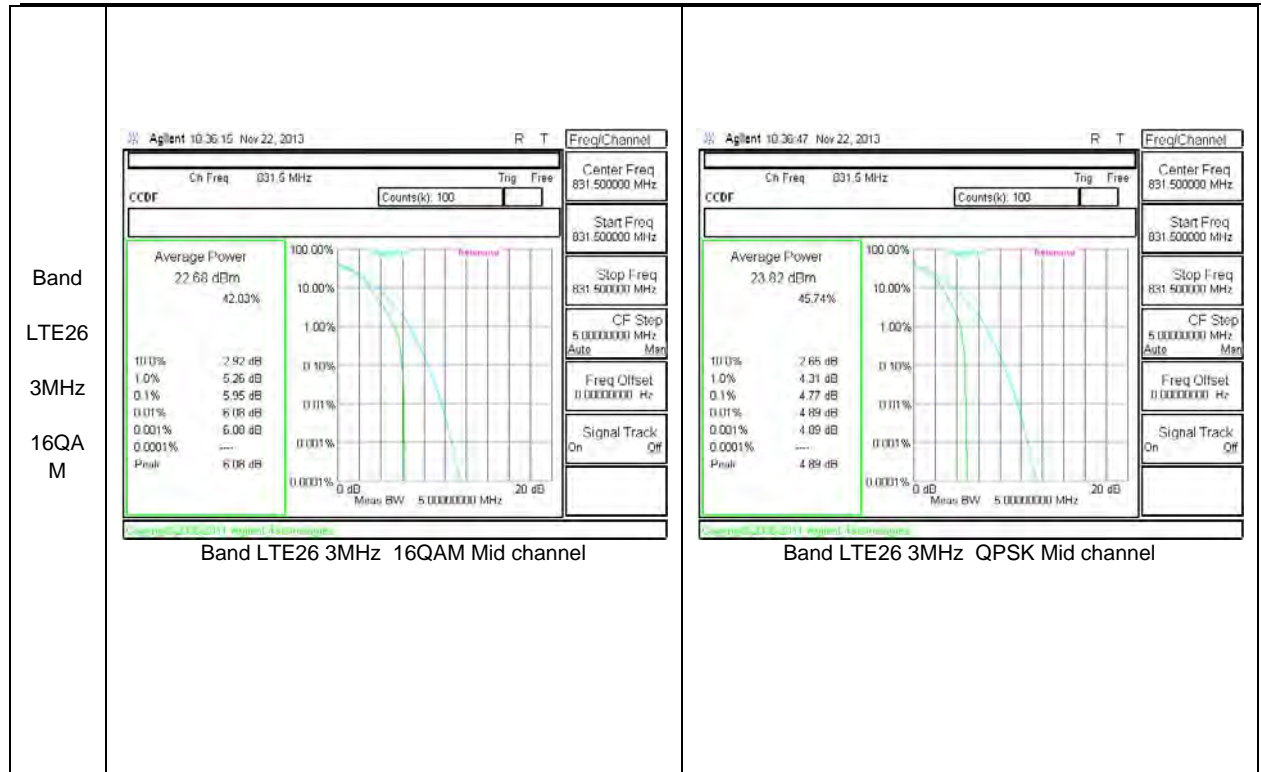
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

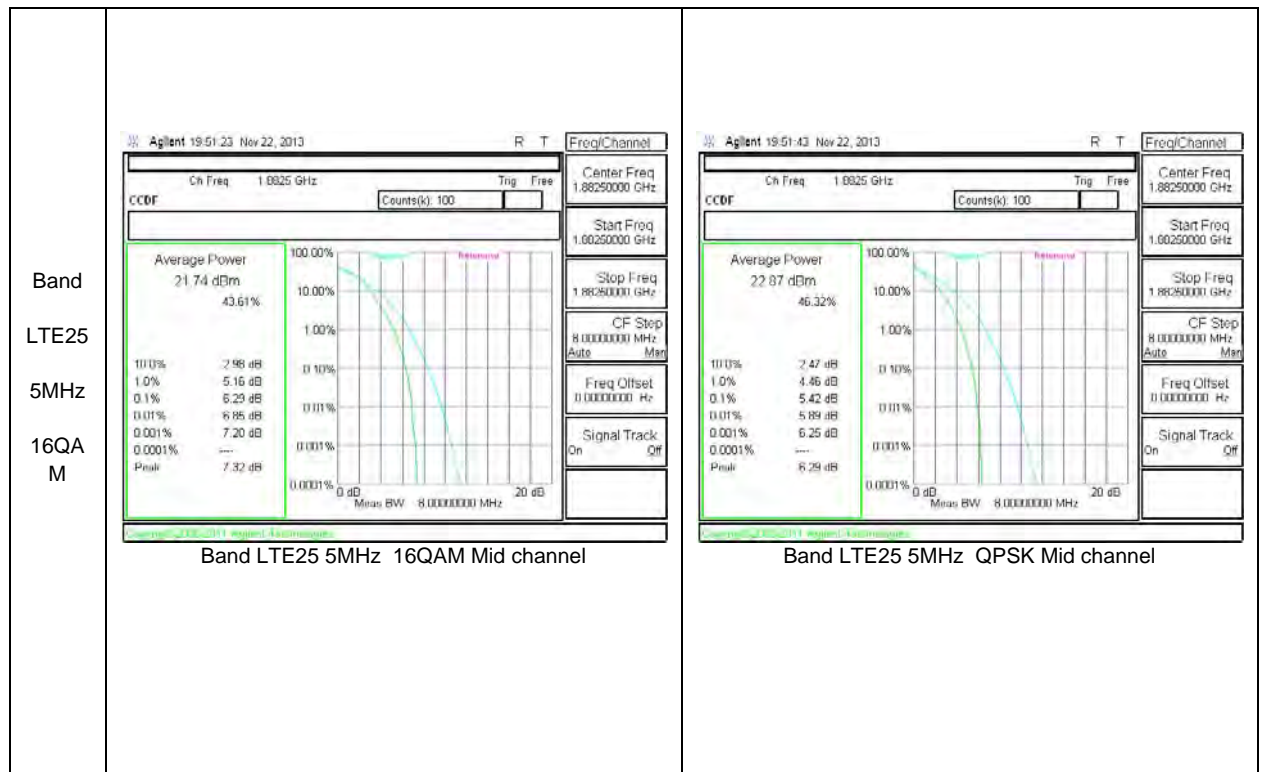
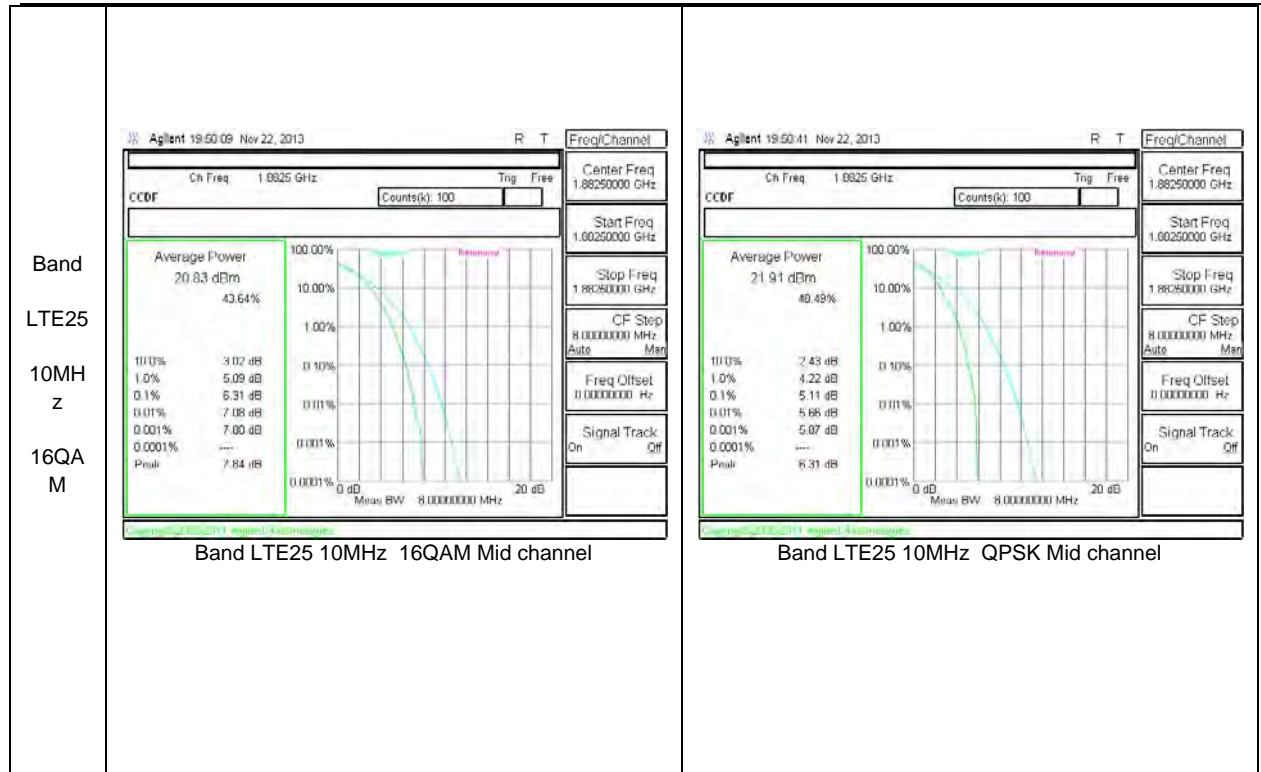
9.1. CONDUCTED PEAK TO AVERAGE RESULT

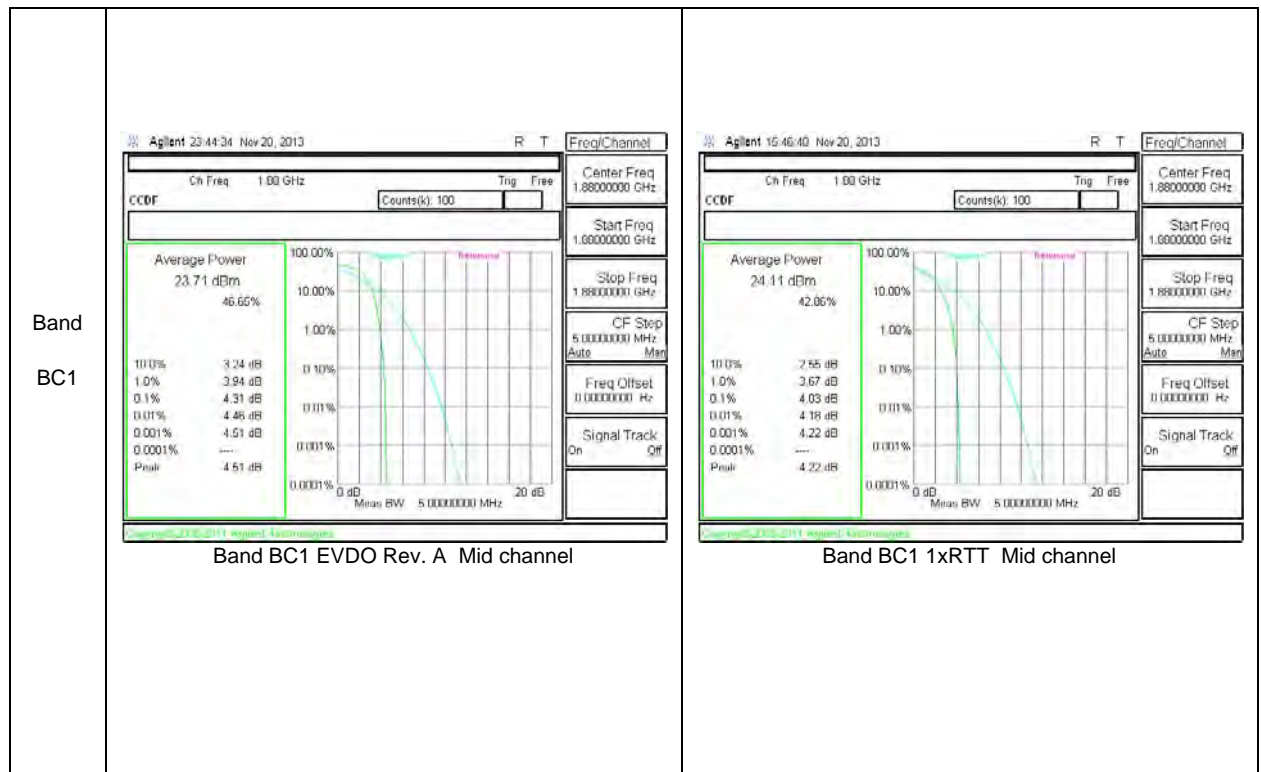
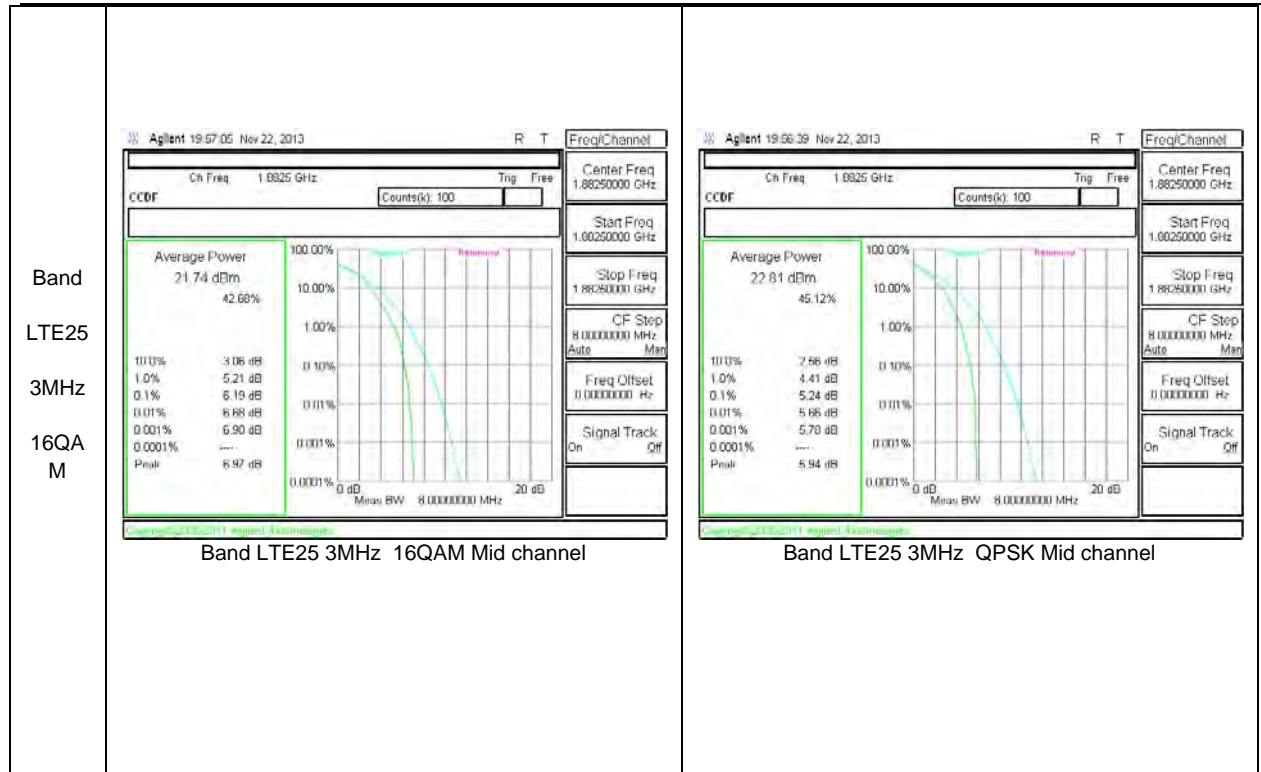


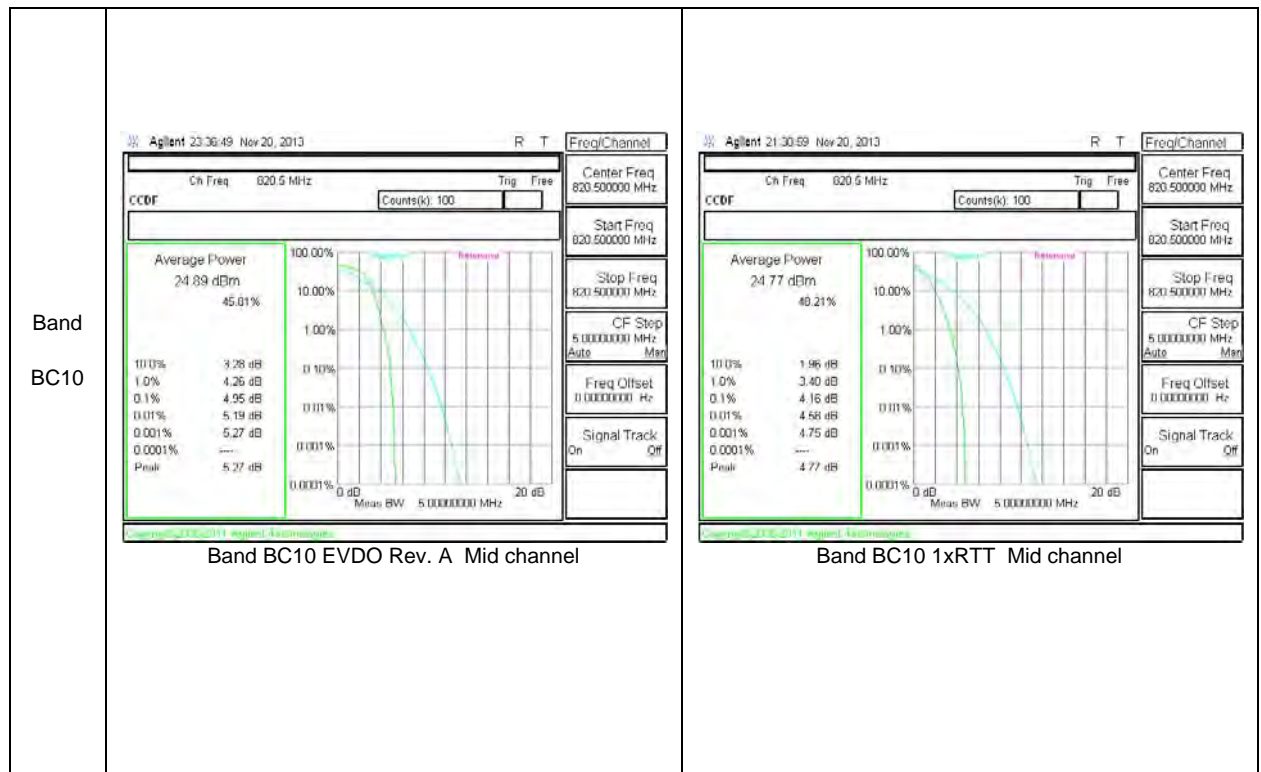
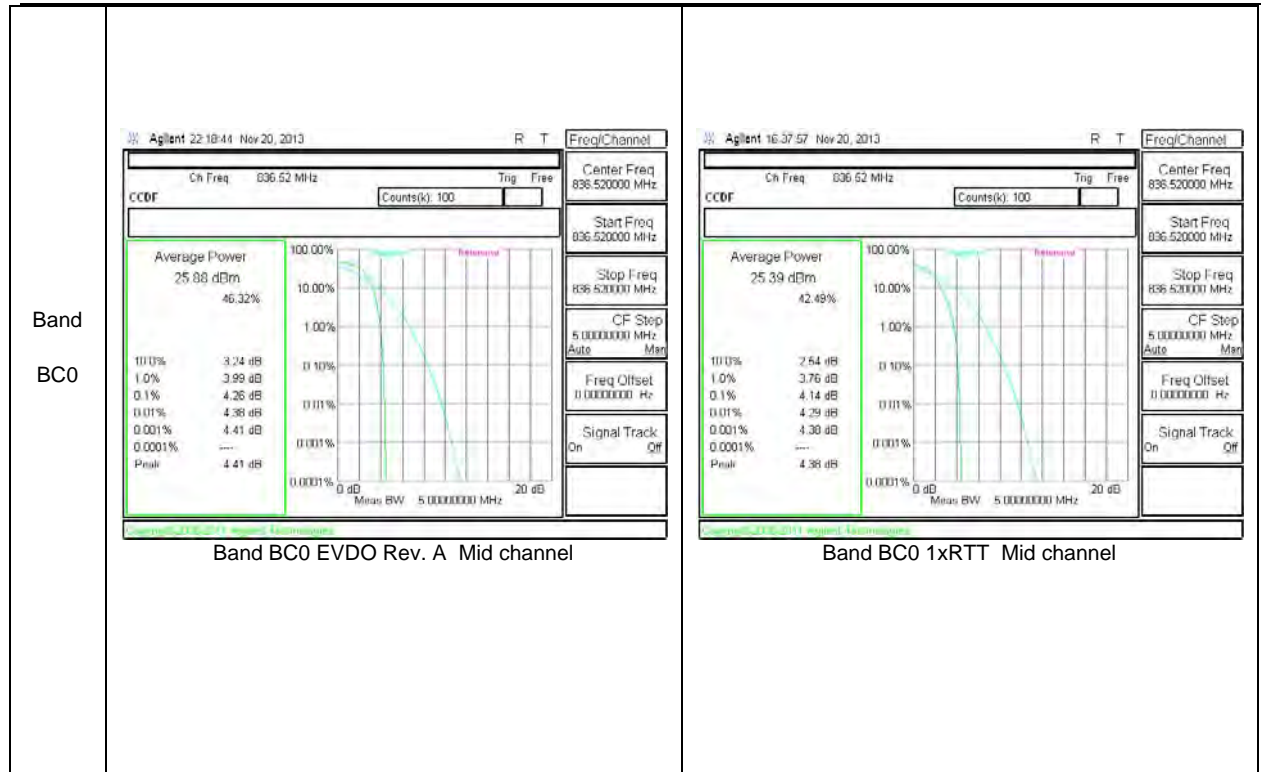












10. LIMITS AND CONDUCTED RESULTS

10.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

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

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.

(KDB 971168 D01 Power Meas License Digital Systems v02r01 - 06/07/2013)

10.1.1. OCCUPIED BANDWIDTH RESULTS

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
BC10	1xRTT	476	817.9	1.28	1.43
		580	820.5	1.27	1.43
		684	823.1	1.27	1.43
	EVDO REL. A	476	817.9	1.28	1.42
		580	820.5	1.27	1.42
		684	823.1	1.27	1.44
BC0	1xRTT	1013	824.7	1.28	1.42
		384	836.52	1.27	1.43
		777	848.31	1.28	1.44
	EVDO REL. A	1013	824.7	1.28	1.43
		384	836.52	1.27	1.44
		777	848.31	1.27	1.43
BC1	1xRTT	25	1851.25	1.28	1.43
		600	1880	1.27	1.43
		1175	1908.75	1.27	1.43
	EVDO REL. A	25	1851.25	1.27	1.43
		600	1880	1.28	1.43
		1175	1908.75	1.28	1.44

10.1.2. LTE OCCUPIED BANDWIDTH RESULTS

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE41	20	QPSK	100/0	2506	17.81	18.73
			100/0	2593	17.78	18.9
			100/0	2680	17.83	18.54
		16QAM	100/0	2506	17.8	18.73
			100/0	2593	17.84	18.5
			100/0	2680	17.85	18.83

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE41	15	QPSK	75/0	2503.5	13.4	13.85
			75/0	2593	13.43	14.02
			75/0	2682.5	13.36	13.95
		16QAM	75/0	2503.5	13.38	14.09
			75/0	2593	13.36	14.05
			75/0	2682.5	13.37	13.17

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE41	10	QPSK	50/0	2501	8.94	9.81
			50/0	2593	8.93	9.47
			50/0	2685	8.95	9.45
		16QAM	50/0	2501	8.91	9.58
			50/0	2593	8.85	9.33
			50/0	2685	8.9	9.42

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE26	10	QPSK	50/0	819	8.88	9.17
			50/0	831.5	8.9	9.28
			50/0	844	8.79	9.15
		16QAM	50/0	819	8.92	9.44
			50/0	831.5	8.85	9.24
			50/0	844	8.96	9.2

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE26	5	QPSK	25/0	816.5	4.44	4.59
			25/0	831.5	4.44	4.64
			25/0	846.5	4.43	4.59
		16QAM	25/0	816.5	4.47	4.72
			25/0	831.5	4.45	4.69
			25/0	846.5	4.38	4.64

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE26	3	QPSK	15/0	815.5	2.68	2.83
			15/0	831.5	2.69	2.79
			15/0	847.5	2.68	2.86
		16QAM	15/0	815.5	2.66	2.79
			15/0	831.5	2.65	2.77
			15/0	847.5	2.67	2.78

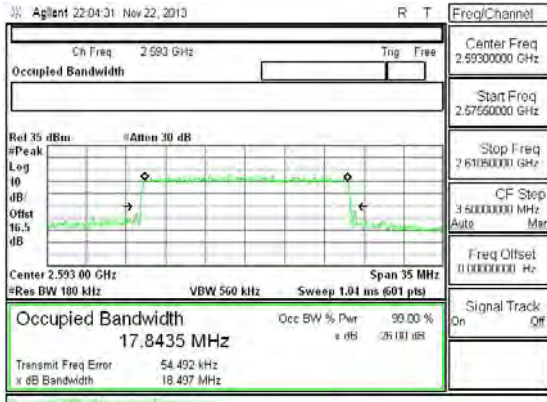
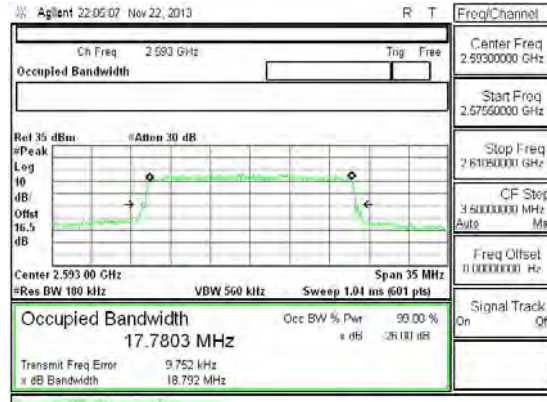
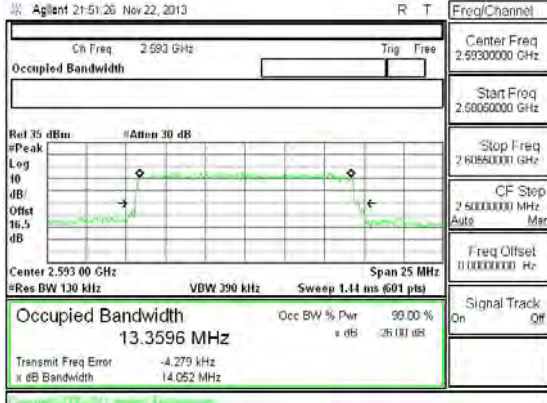
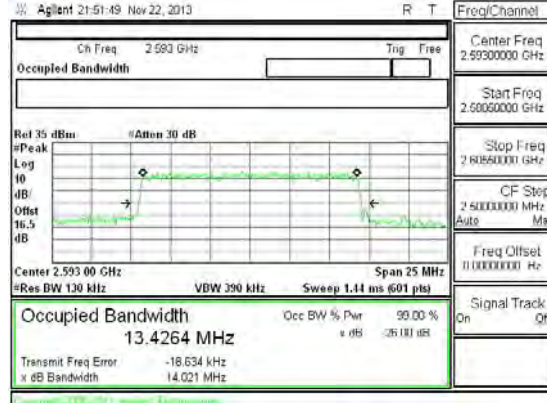
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE26	1.4	QPSK	6/0	814.7	1.08	1.26
			6/0	831.5	1.08	1.22
			6/0	848.3	1.09	1.19
		16QAM	6/0	814.7	1.07	1.24
			6/0	831.5	1.07	1.21
			6/0	848.3	1.08	1.21

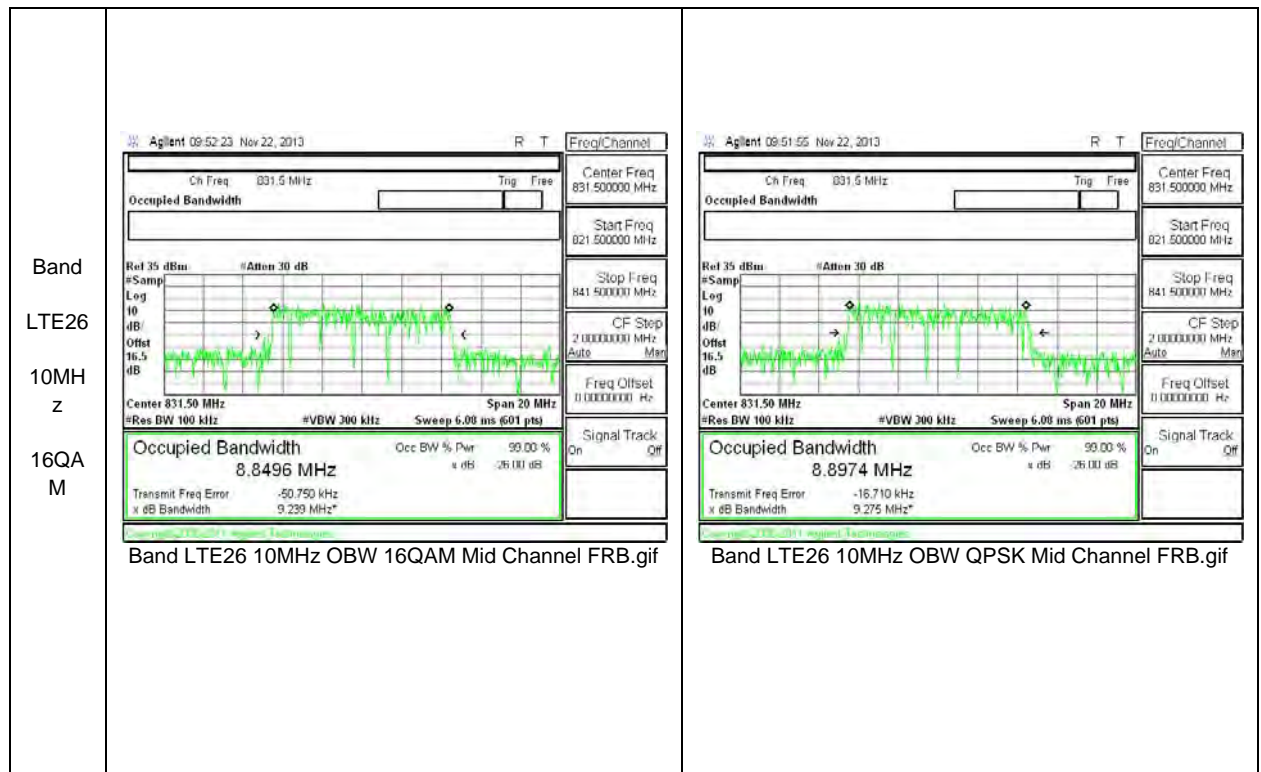
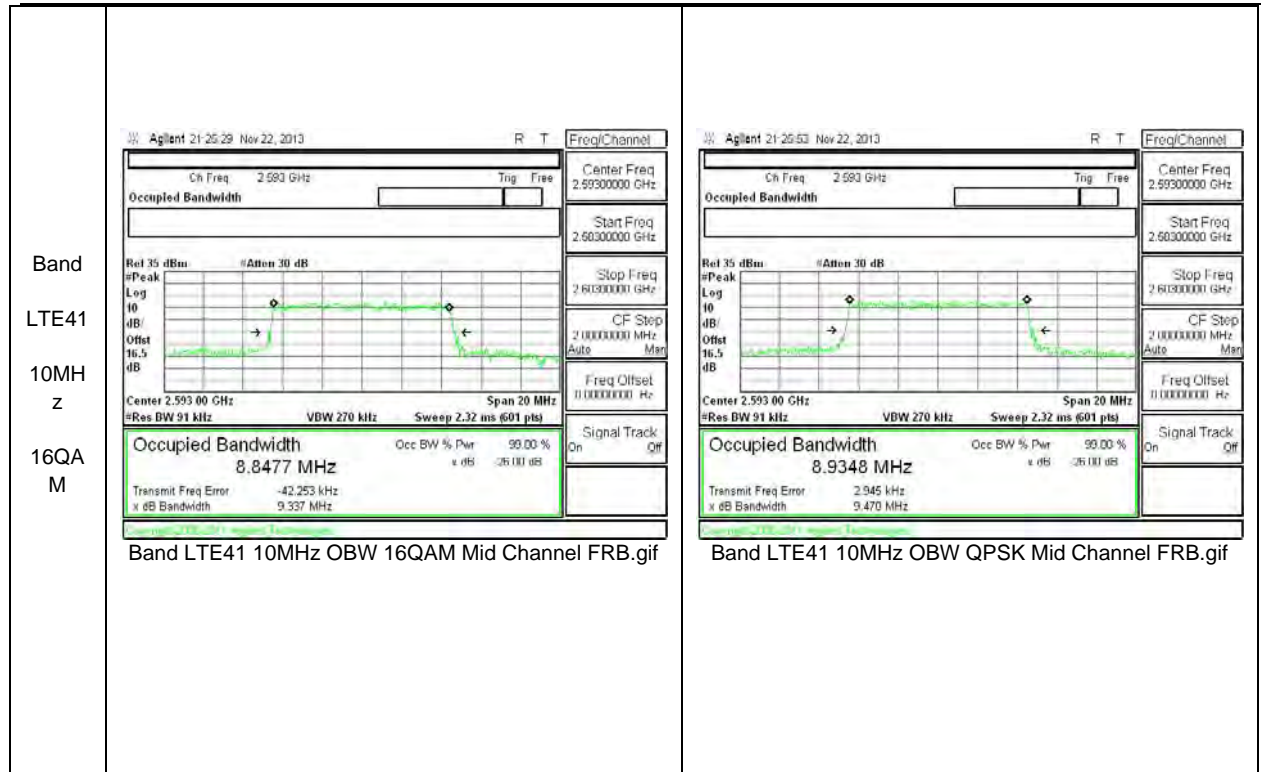
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE25	10	QPSK	50/0	1855	8.80	9.13
			50/0	1882.5	8.73	9.15
			50/0	1910	8.87	9.28
		16QAM	50/0	1855	8.93	9.20
			50/0	1882.5	8.78	9.22
			50/0	1910	8.87	9.18

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE25	5	QPSK	25/0	1852.5	4.43	4.64
			25/0	1882.5	4.46	4.73
			25/0	1912.5	4.43	4.59
		16QAM	25/0	1852.5	4.48	4.61
			25/0	1882.5	4.47	4.68
			25/0	1912.5	4.45	4.69

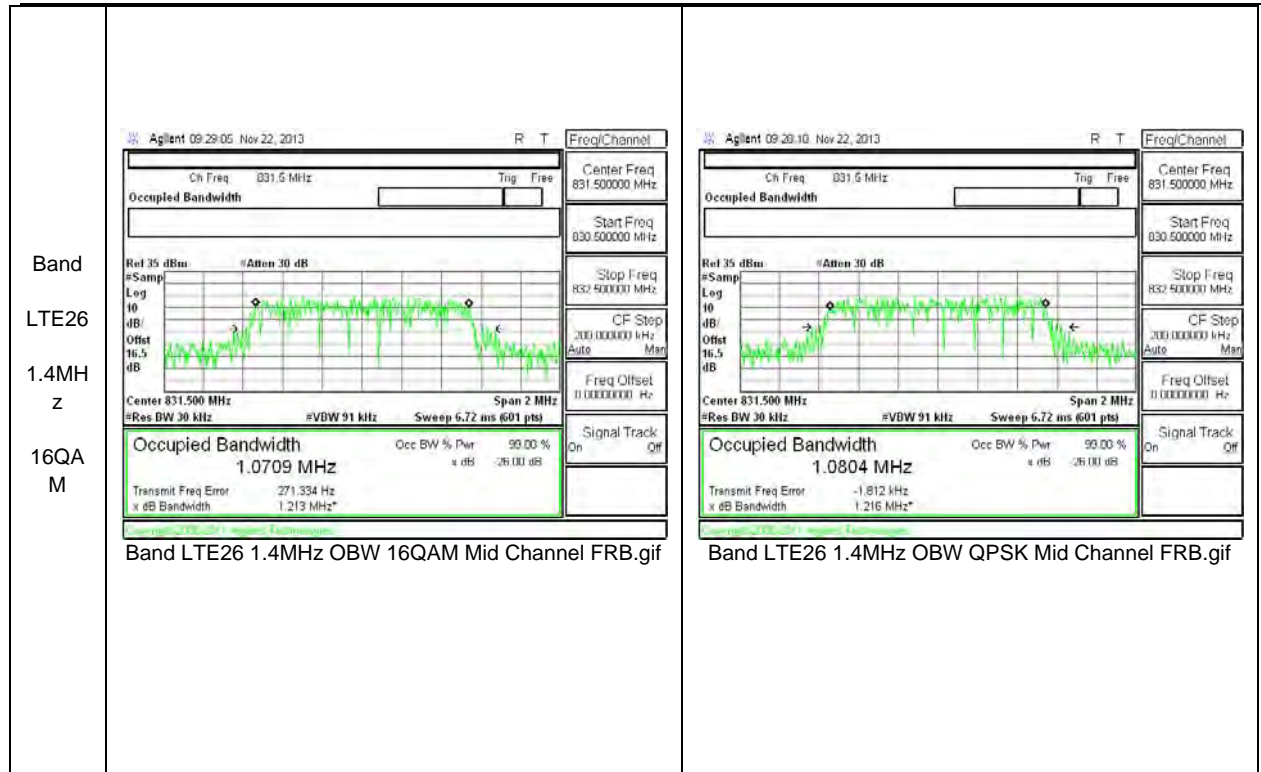
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE25	3	QPSK	15/0	1851.5	2.66	2.82
			15/0	1882.5	2.67	2.83
			15/0	1913.5	2.65	2.84
		16QAM	15/0	1851.5	2.68	2.86
			15/0	1882.5	2.67	2.80
			15/0	1913.5	2.68	2.90

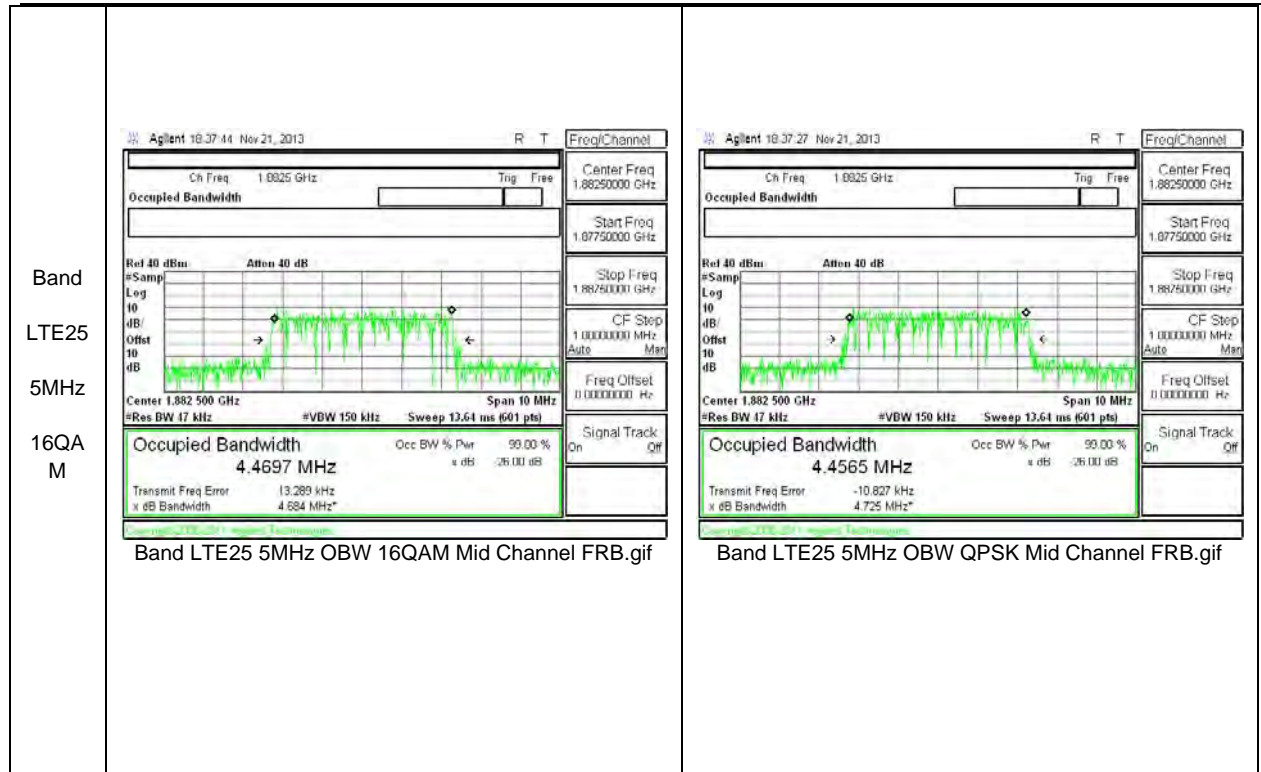
10.1.1. OCCUPIED BANDWIDTH PLOTS

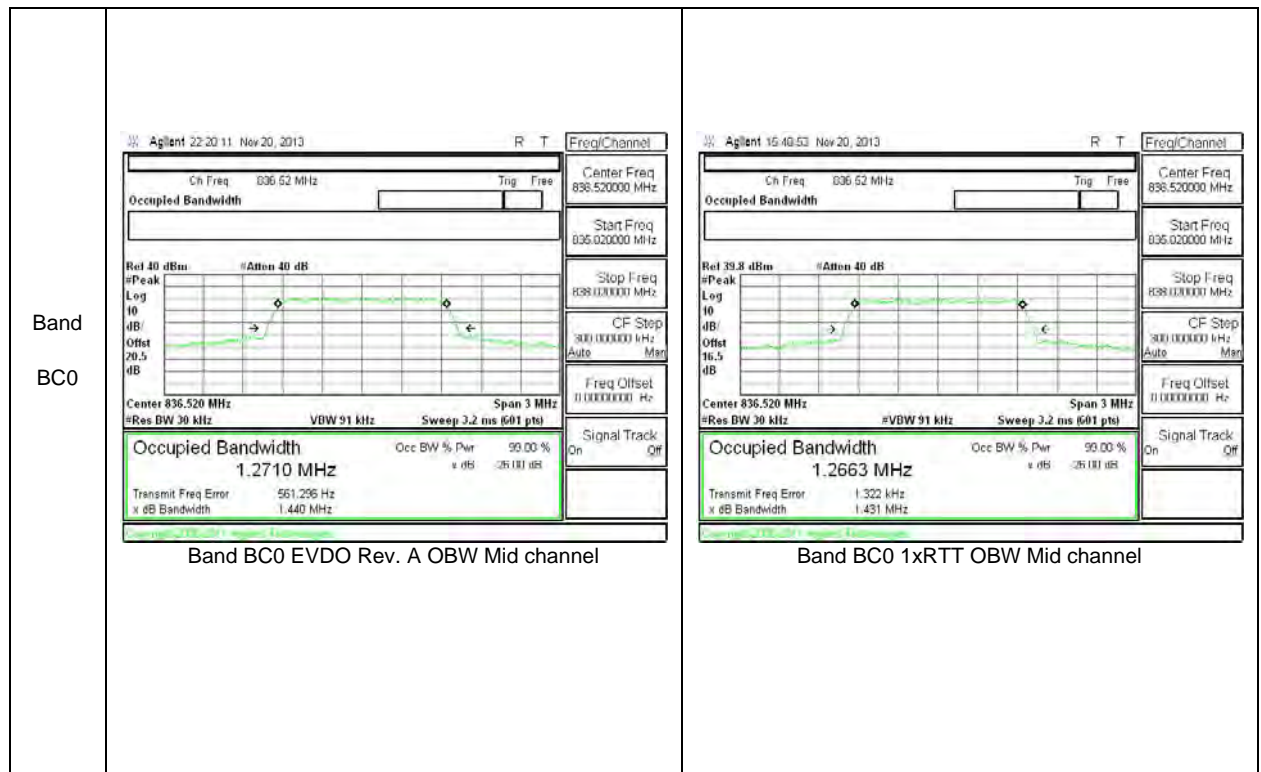
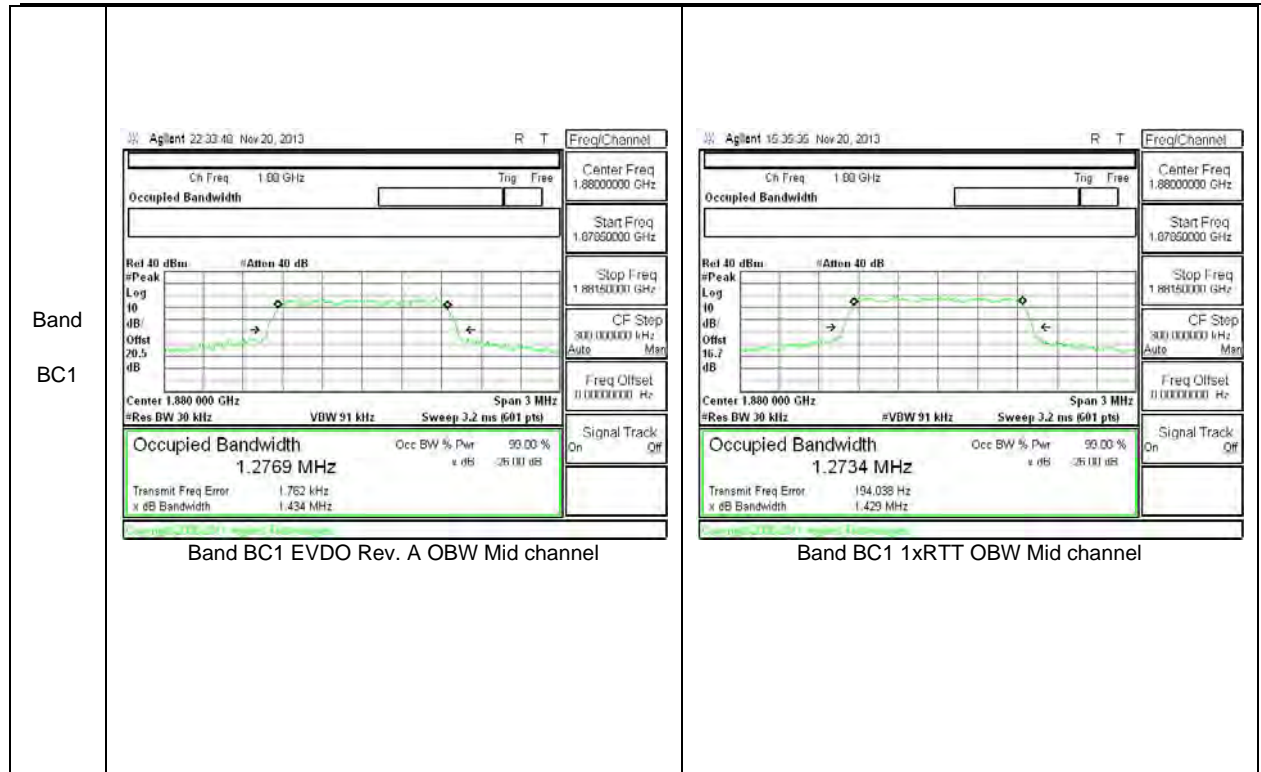
<p>Band LTE41 20MHz Z 16QAM</p>	 <p>Agilent 22:04:31 Nov 22, 2013</p> <p>Center Freq 2.5930000 GHz</p> <p>Start Freq 2.5755000 GHz</p> <p>Stop Freq 2.6105000 GHz</p> <p>CF Step 3.5000000 MHz</p> <p>Freq Offset 0.0000000 Hz</p> <p>Center 2.593 00 GHz</p> <p>Span 35 MHz</p> <p>Res BW 180 kHz</p> <p>VBW 560 kHz</p> <p>Sweep 1.04 ms (601 pts)</p> <p>Occupied Bandwidth 17.8435 MHz</p> <p>Occ BW % Par 99.00 %</p> <p>Transmit Freq Error 54.492 kHz</p> <p>x dB Bandwidth 18.437 MHz</p> <p>Band LTE41 20MHz OBW 16QAM Mid Channel FRB.gif</p>	 <p>Agilent 22:05:07 Nov 22, 2013</p> <p>Center Freq 2.5930000 GHz</p> <p>Start Freq 2.5755000 GHz</p> <p>Stop Freq 2.6105000 GHz</p> <p>CF Step 3.5000000 MHz</p> <p>Freq Offset 0.0000000 Hz</p> <p>Center 2.593 00 GHz</p> <p>Span 35 MHz</p> <p>Res BW 180 kHz</p> <p>VBW 560 kHz</p> <p>Sweep 1.04 ms (601 pts)</p> <p>Occupied Bandwidth 17.7803 MHz</p> <p>Occ BW % Par 99.00 %</p> <p>Transmit Freq Error 9.752 kHz</p> <p>x dB Bandwidth 18.792 MHz</p> <p>Band LTE41 20MHz OBW QPSK Mid Channel FRB.gif</p>
<p>Band LTE41 15MHz Z 16QAM</p>	 <p>Agilent 21:51:26 Nov 22, 2013</p> <p>Center Freq 2.5930000 GHz</p> <p>Start Freq 2.5805000 GHz</p> <p>Stop Freq 2.6055000 GHz</p> <p>CF Step 2.5000000 MHz</p> <p>Freq Offset 0.0000000 Hz</p> <p>Center 2.593 00 GHz</p> <p>Span 25 MHz</p> <p>Res BW 130 kHz</p> <p>VBW 390 kHz</p> <p>Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.3596 MHz</p> <p>Occ BW % Par 99.00 %</p> <p>Transmit Freq Error -4.279 kHz</p> <p>x dB Bandwidth 14.052 MHz</p> <p>Band LTE41 15MHz OBW 16QAM Mid Channel FRB.gif</p>	 <p>Agilent 21:51:49 Nov 22, 2013</p> <p>Center Freq 2.5930000 GHz</p> <p>Start Freq 2.5805000 GHz</p> <p>Stop Freq 2.6055000 GHz</p> <p>CF Step 2.5000000 MHz</p> <p>Freq Offset 0.0000000 Hz</p> <p>Center 2.593 00 GHz</p> <p>Span 25 MHz</p> <p>Res BW 130 kHz</p> <p>VBW 390 kHz</p> <p>Sweep 1.44 ms (601 pts)</p> <p>Occupied Bandwidth 13.4264 MHz</p> <p>Occ BW % Par 99.00 %</p> <p>Transmit Freq Error -18.634 kHz</p> <p>x dB Bandwidth 14.021 MHz</p> <p>Band LTE41 15MHz OBW QPSK Mid Channel FRB.gif</p>

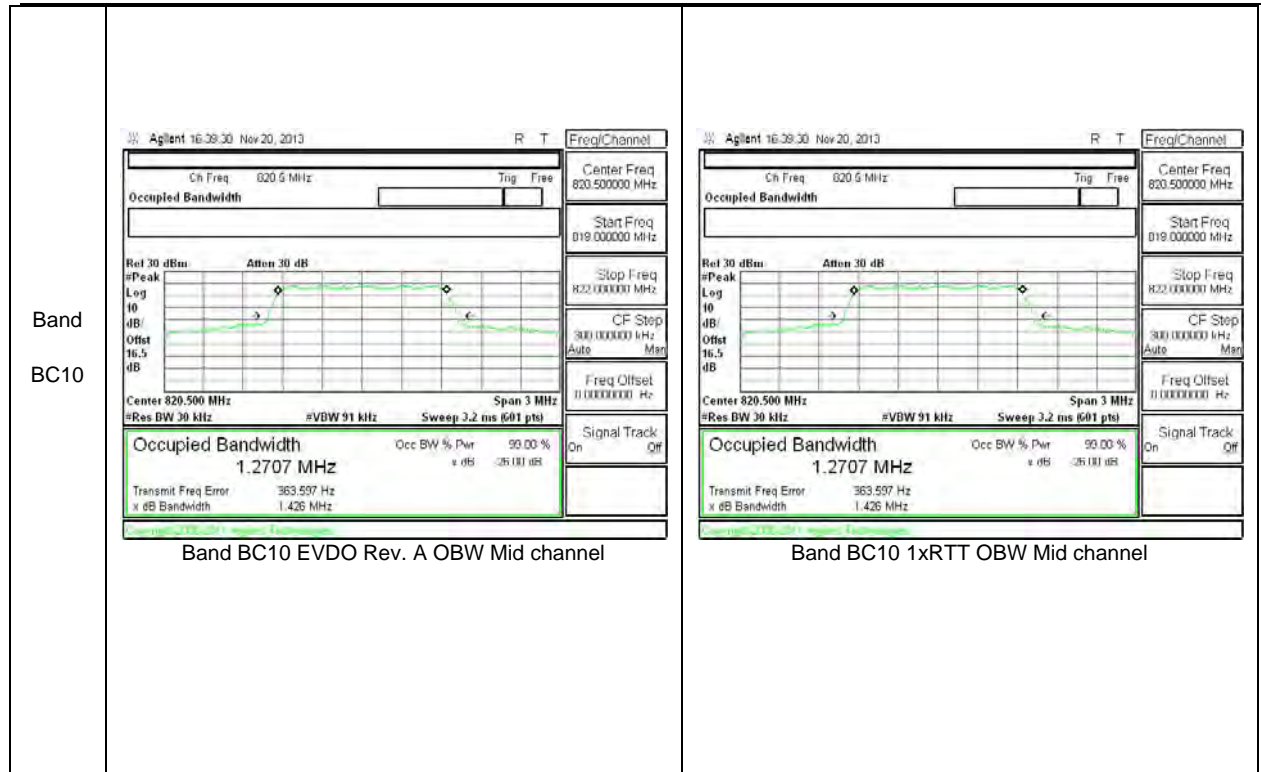












10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238 and § 90.691

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

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

The transmitter output was connected to an Agilent 8960 or a CMW500 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.

- Set the spectrum analyzer span to include the block edge frequency (824, 849, 1850, 1910 and 1915MHz)
- 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.
- For Part 27.53 (LTE 41)
- (m)(4) For mobile station, the attenuation factor shall be not less than $43+10\text{Log}(P)\text{dB}$ at the channel edge and $(55+10\text{Log}(P)\text{dB})$ at 5.5MHz from the channel edges.
- (m)(6) Compliance with these rules is based on the user of measurement instrumentation employing a resolution bandwidth of 1MHz or greater. However, in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least 1 percent of the emission bandwidth may be employed.

RULE PART(S) for Emission Mask

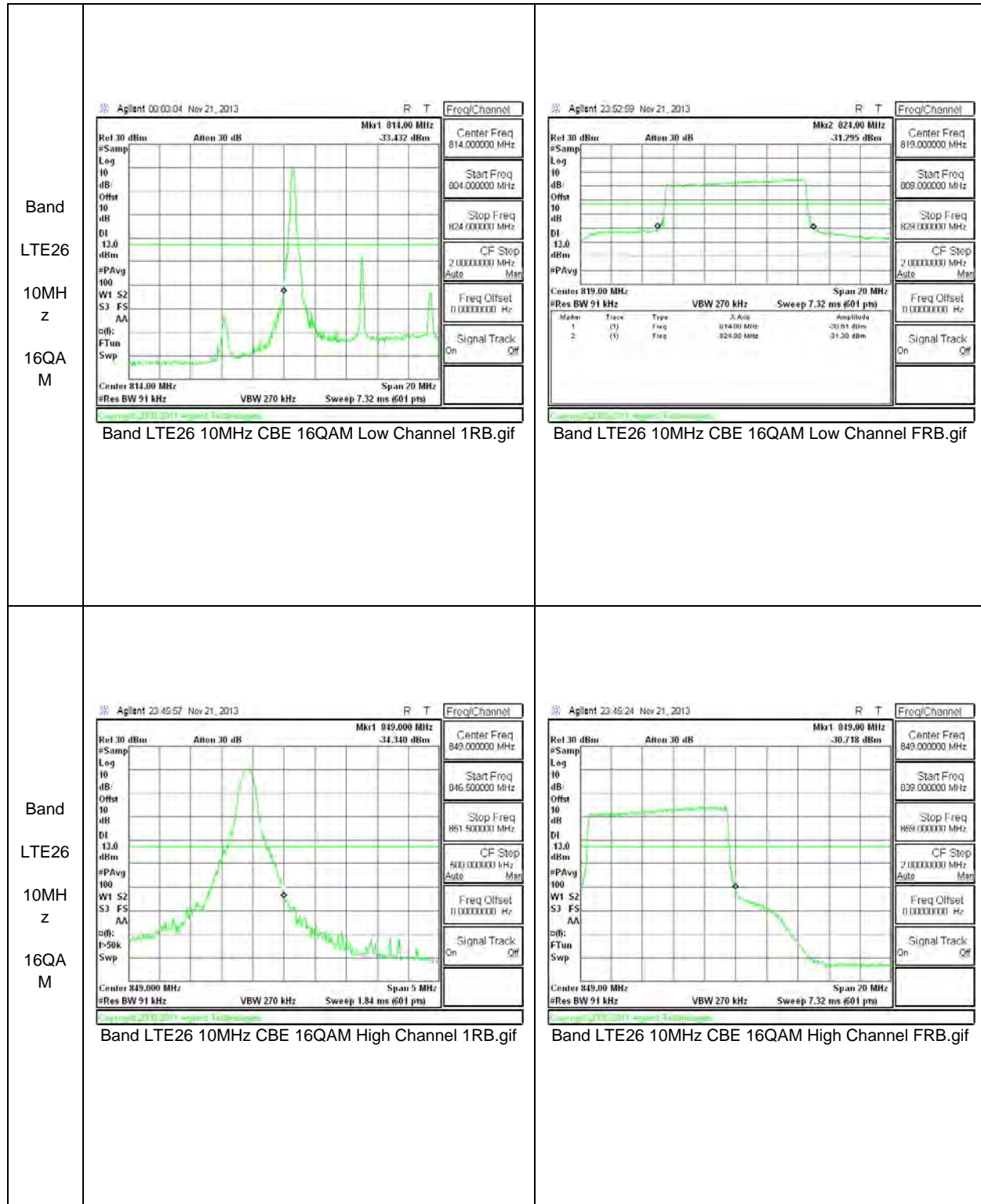
- FCC: §90.210, and §90.691
- (a)(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \text{Log}_{10}(f/6.1)$ decibels or $50 + 10 \text{Log}_{10}(P)$ 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.
- (a)(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 $43 + 10\text{Log}_{10}(P)$ 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. {NOTE: Use 100 kHz reference bandwidth.}

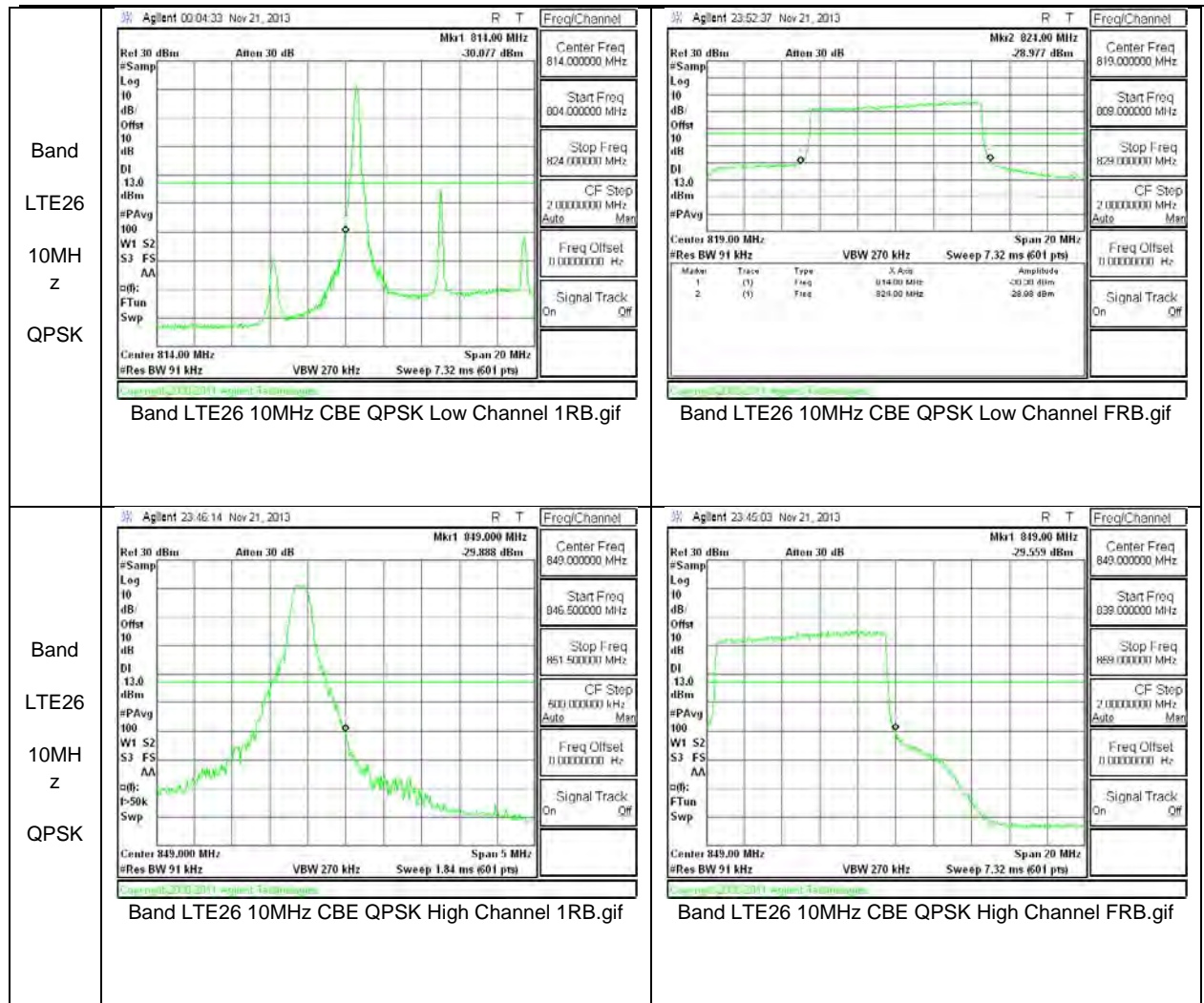
MODES TESTED

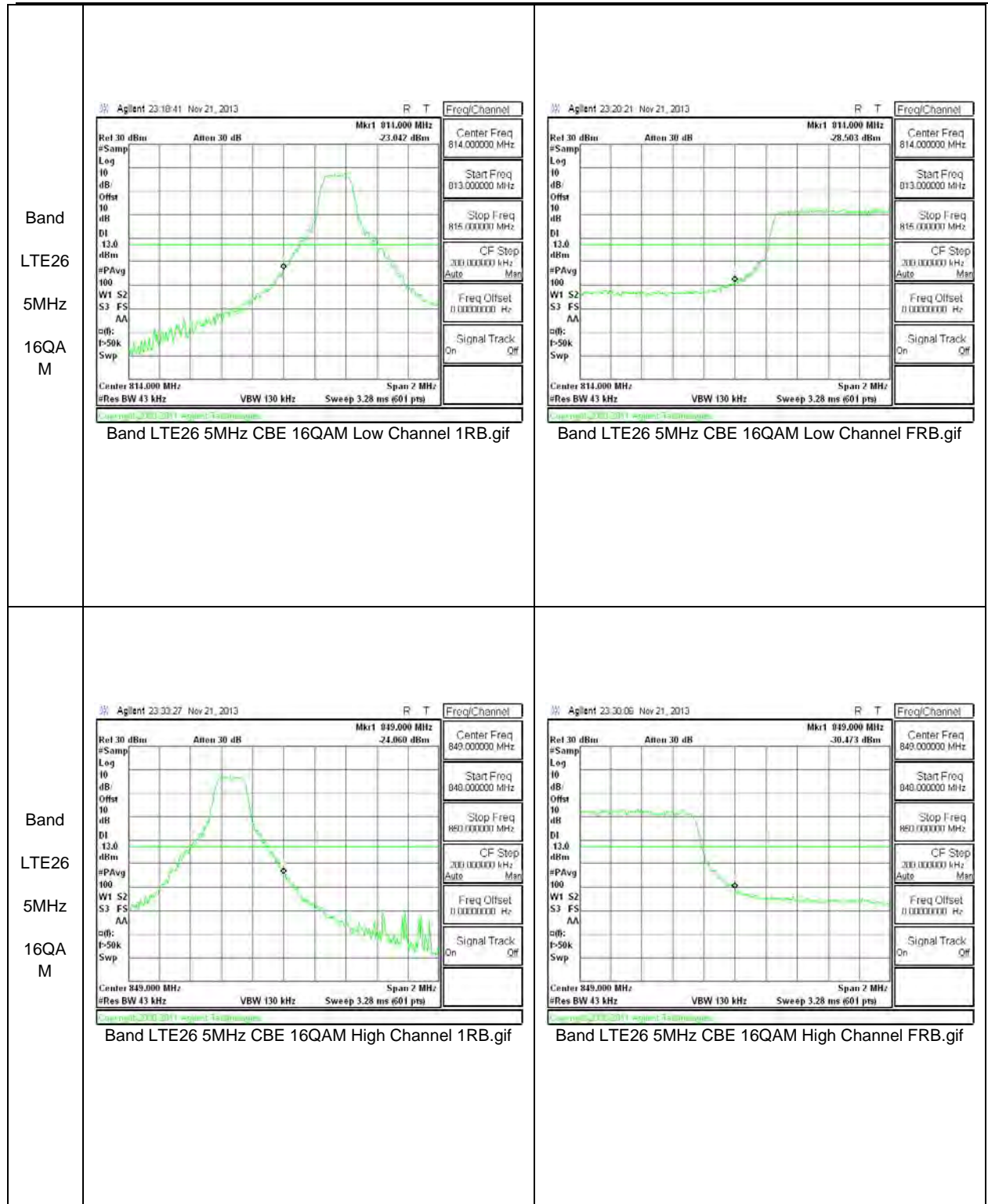
LTE BAND 25, 26, 41 & CDMA BC0, 1, 10

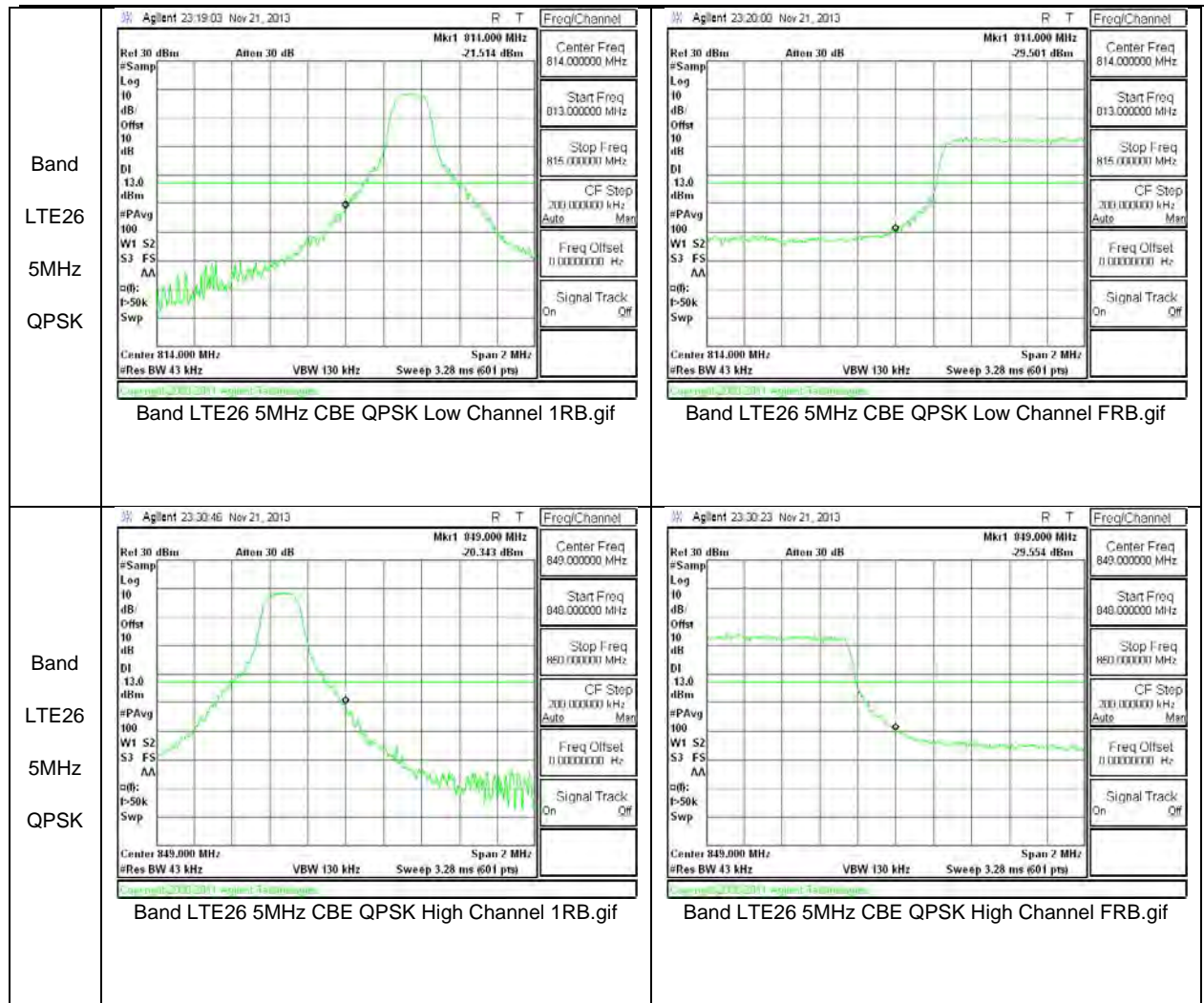
RESULTS

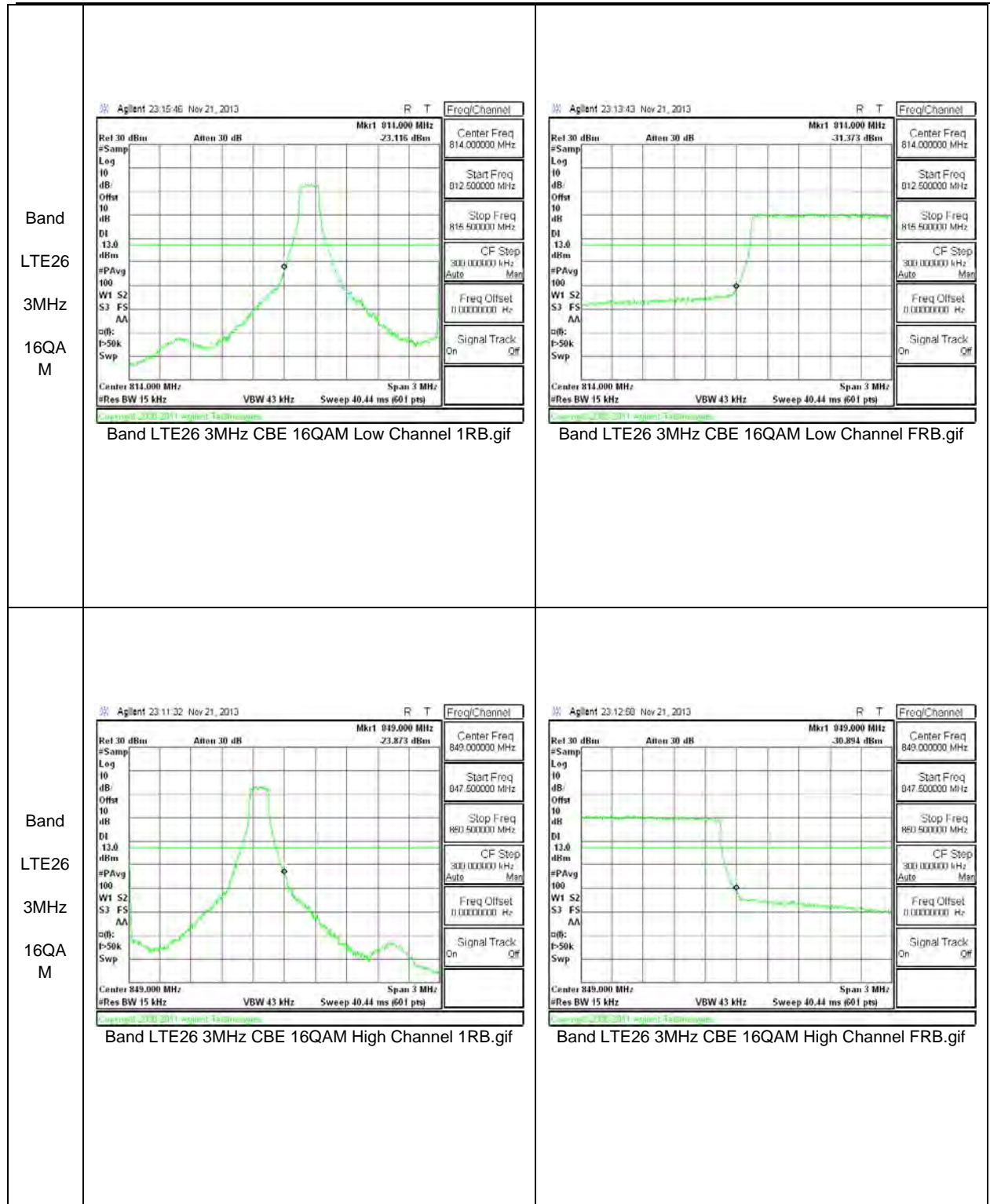
10.2.1. BAND EDGE PLOTS

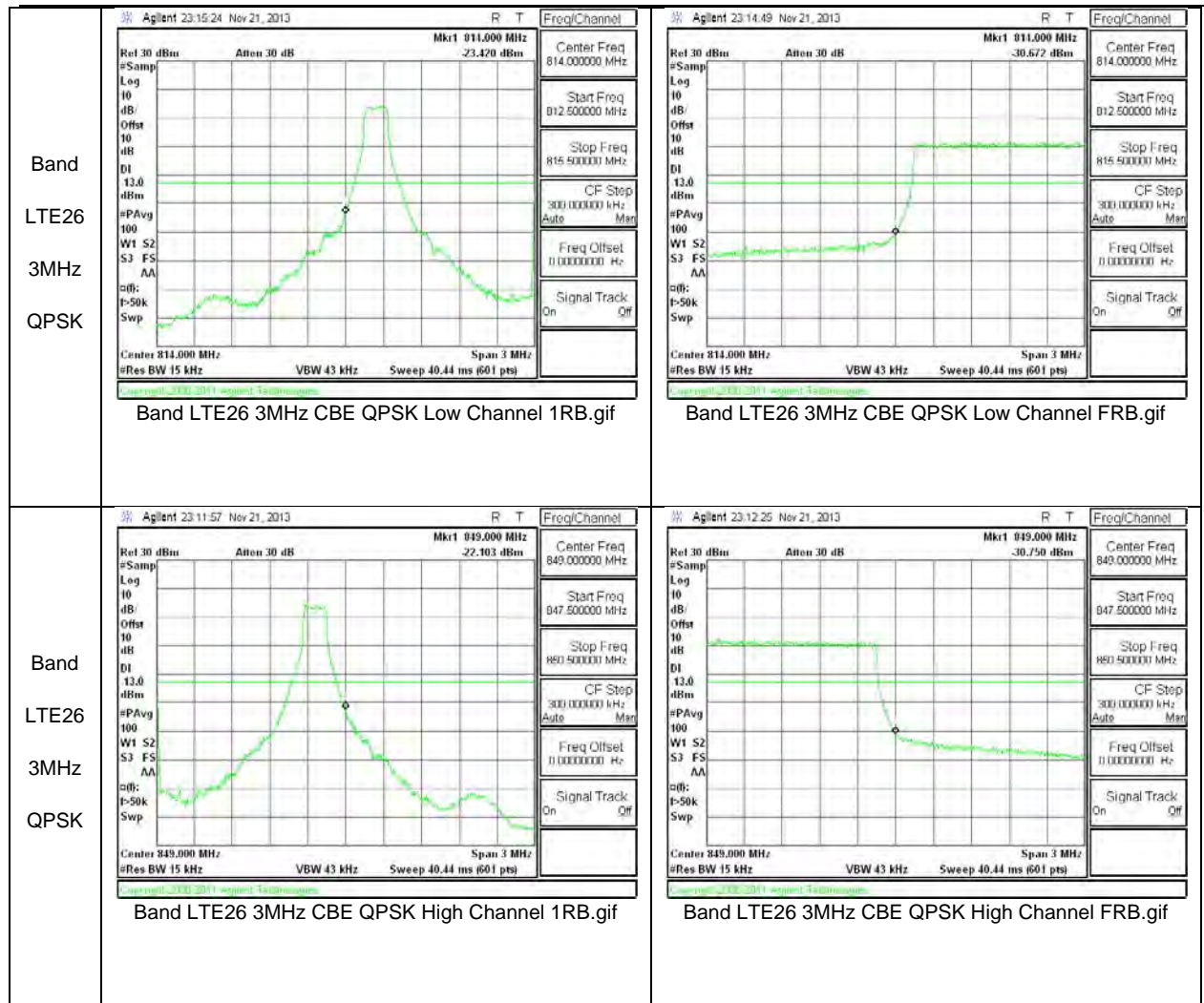


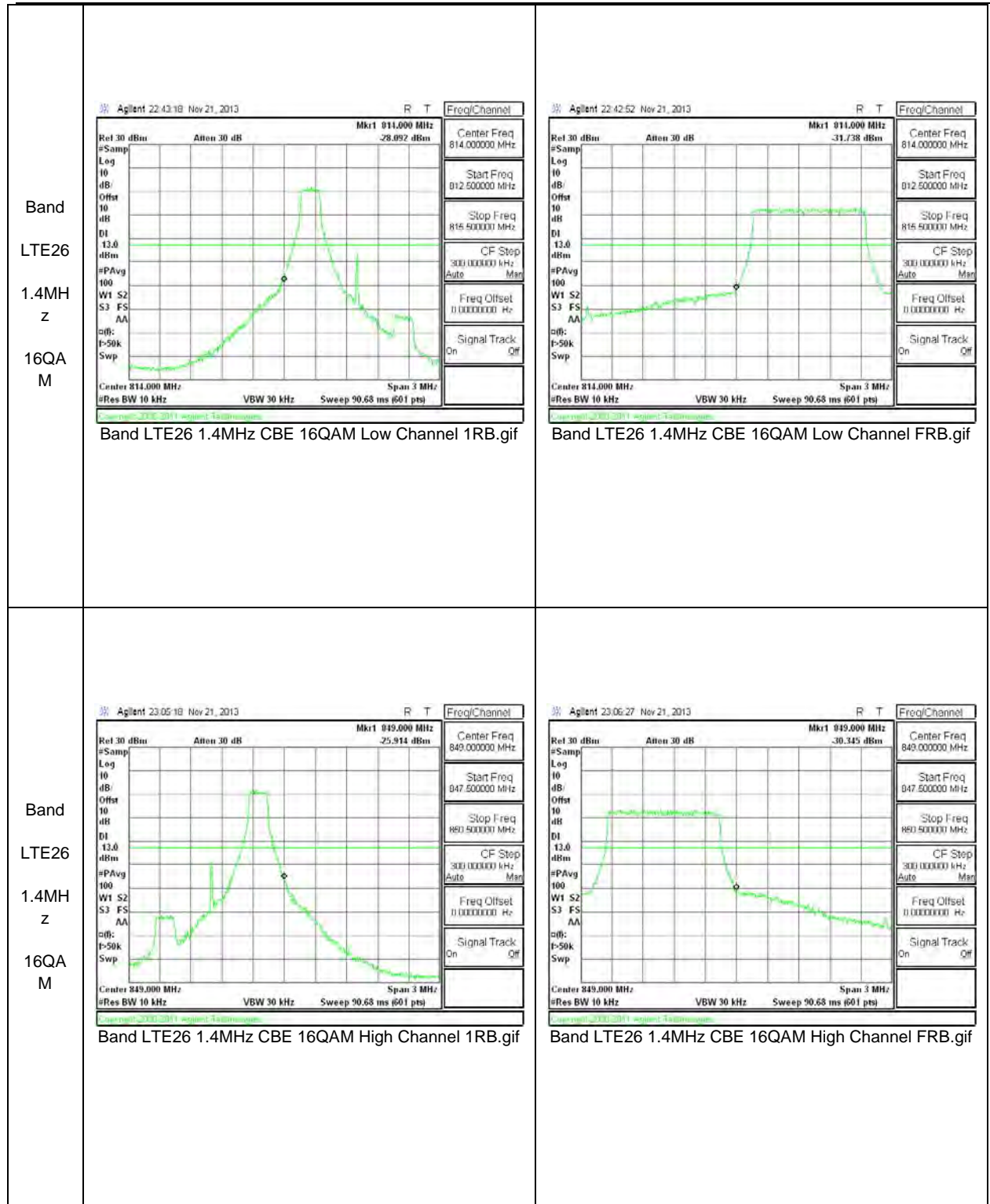


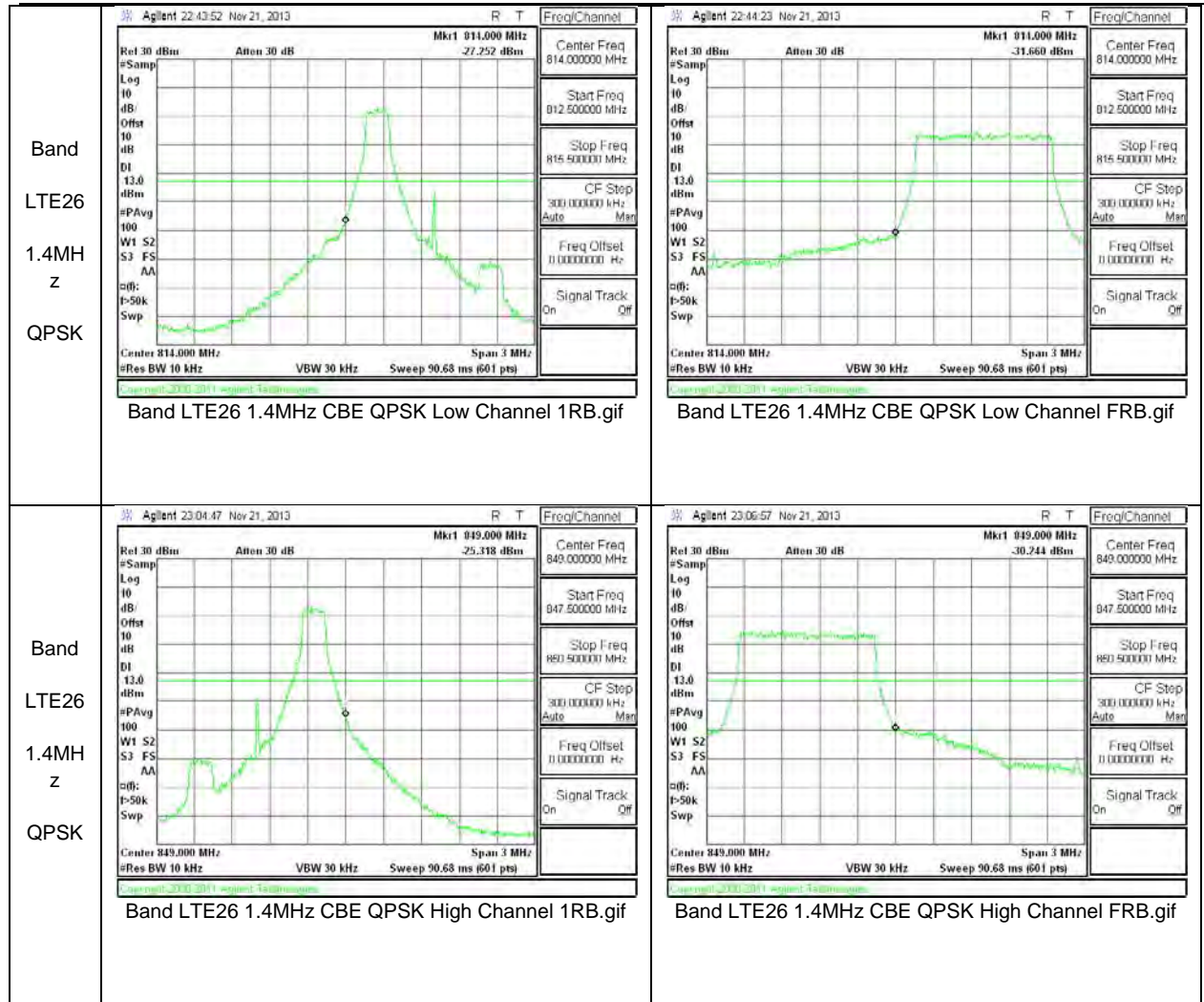


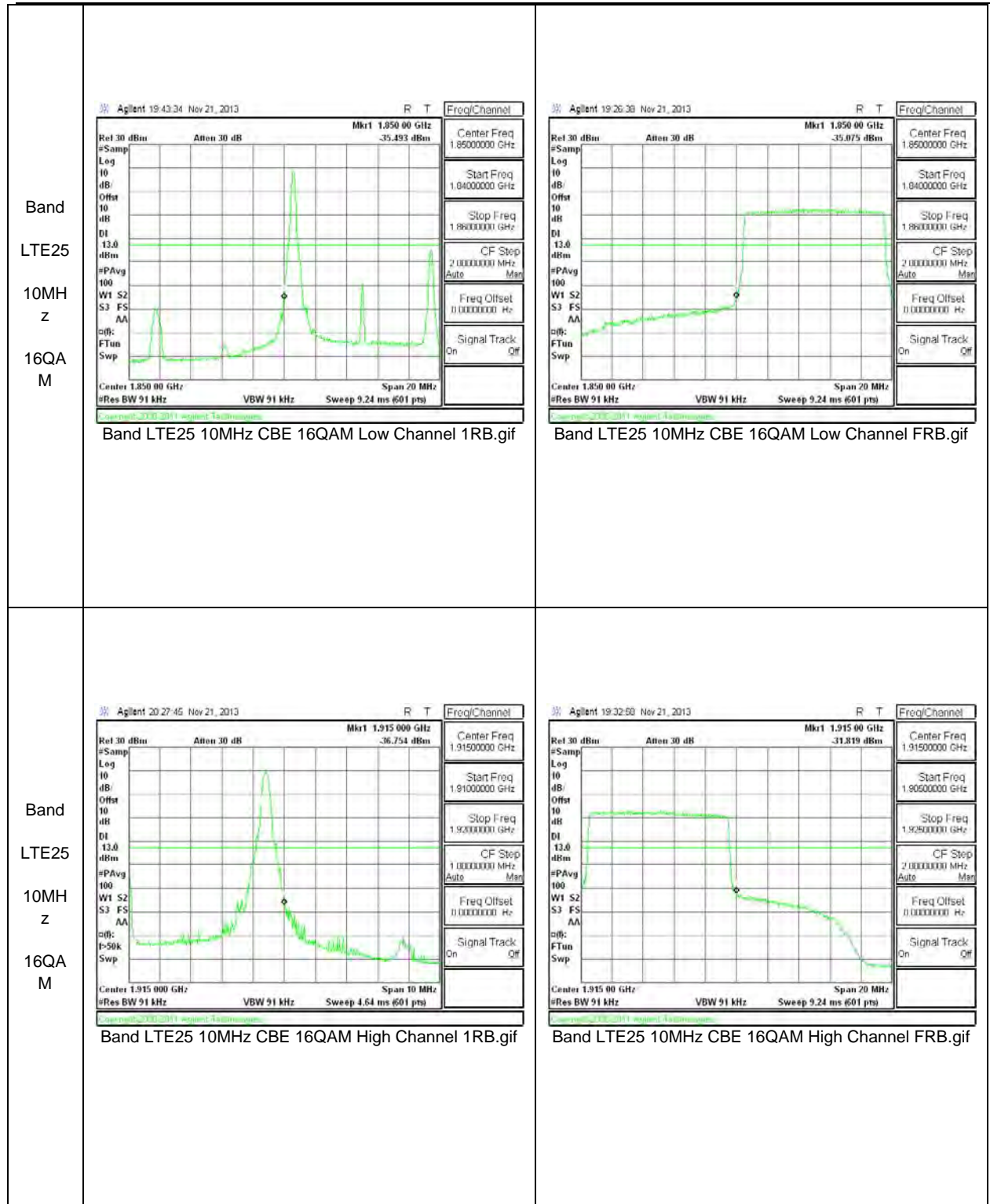


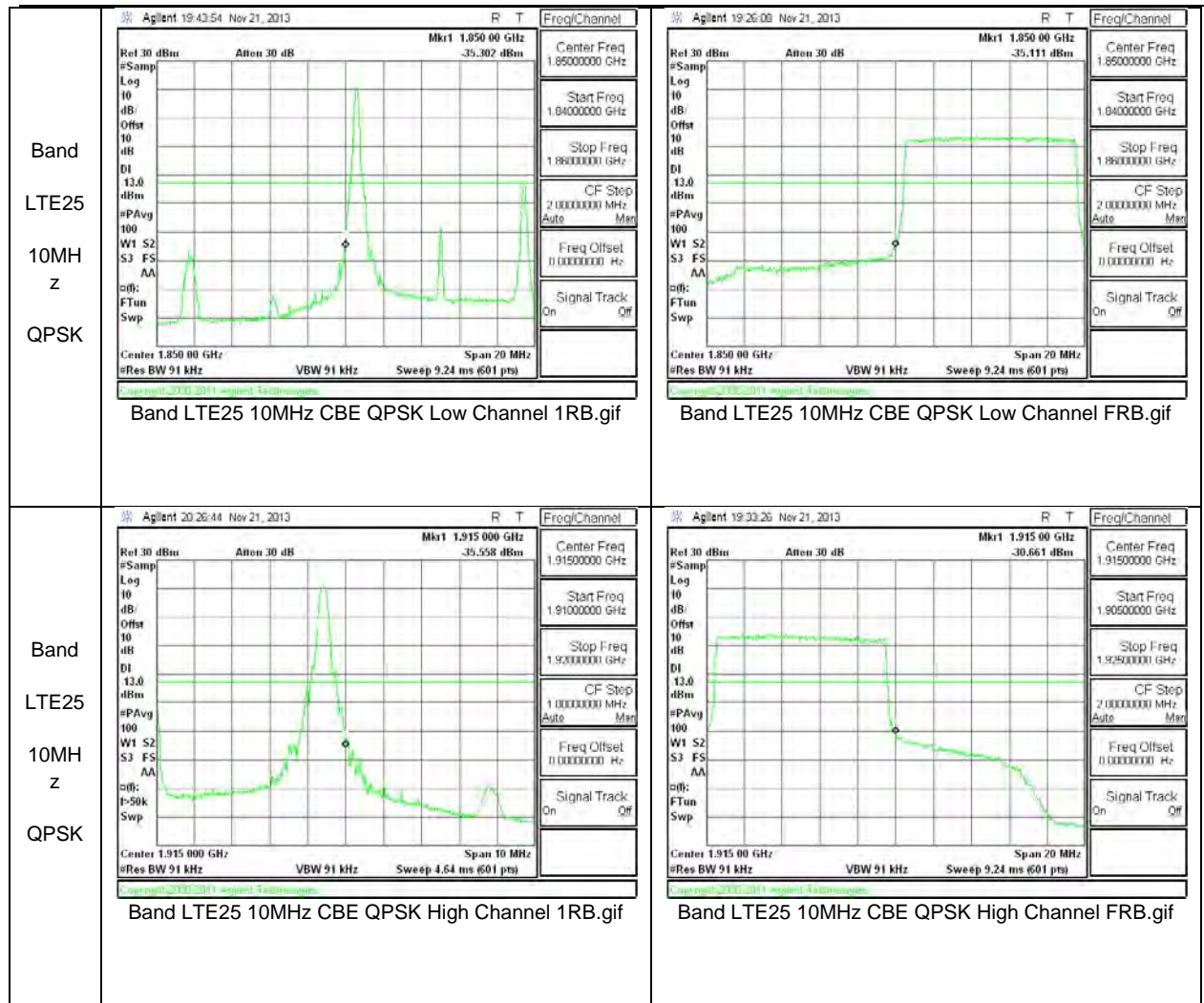


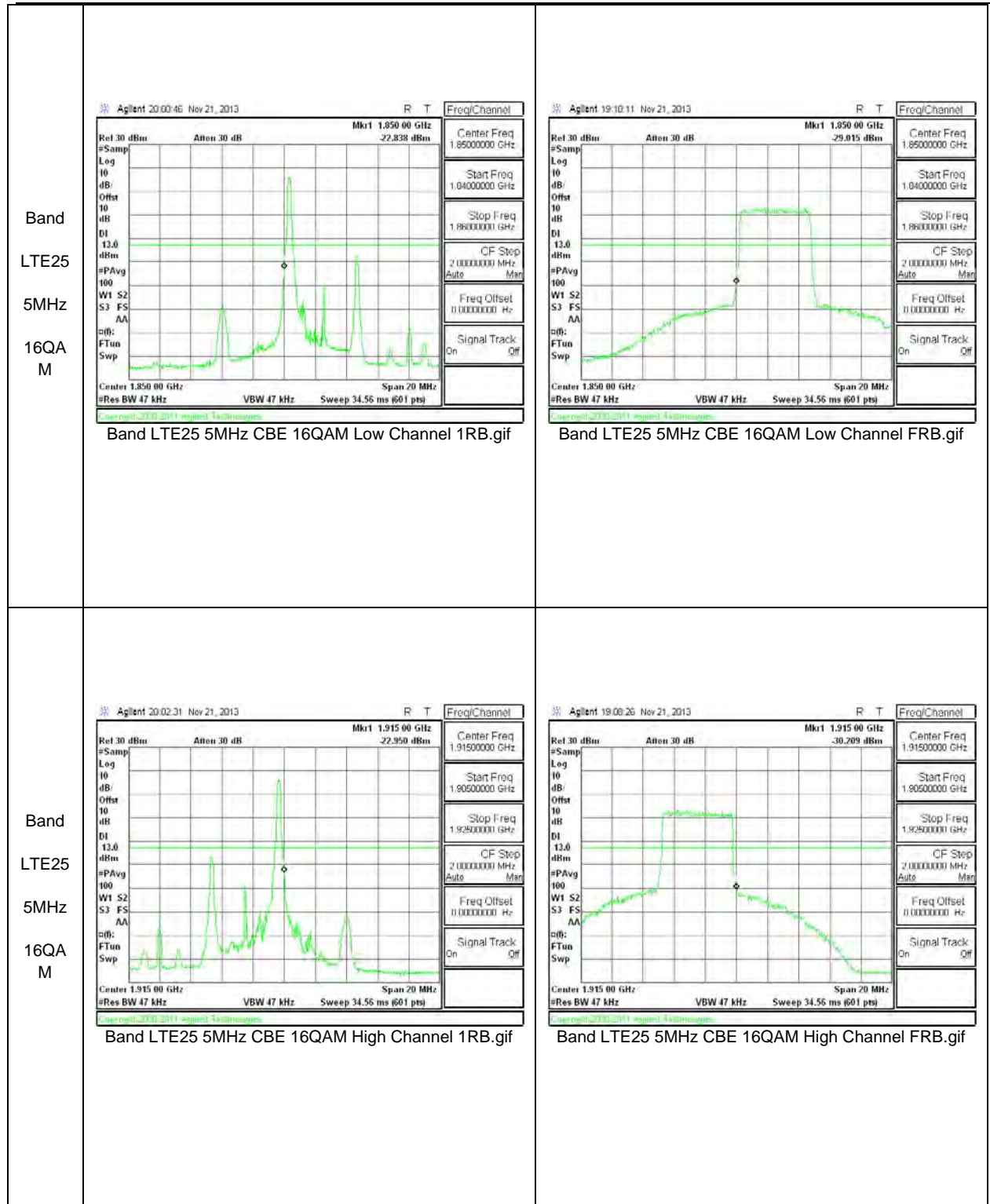


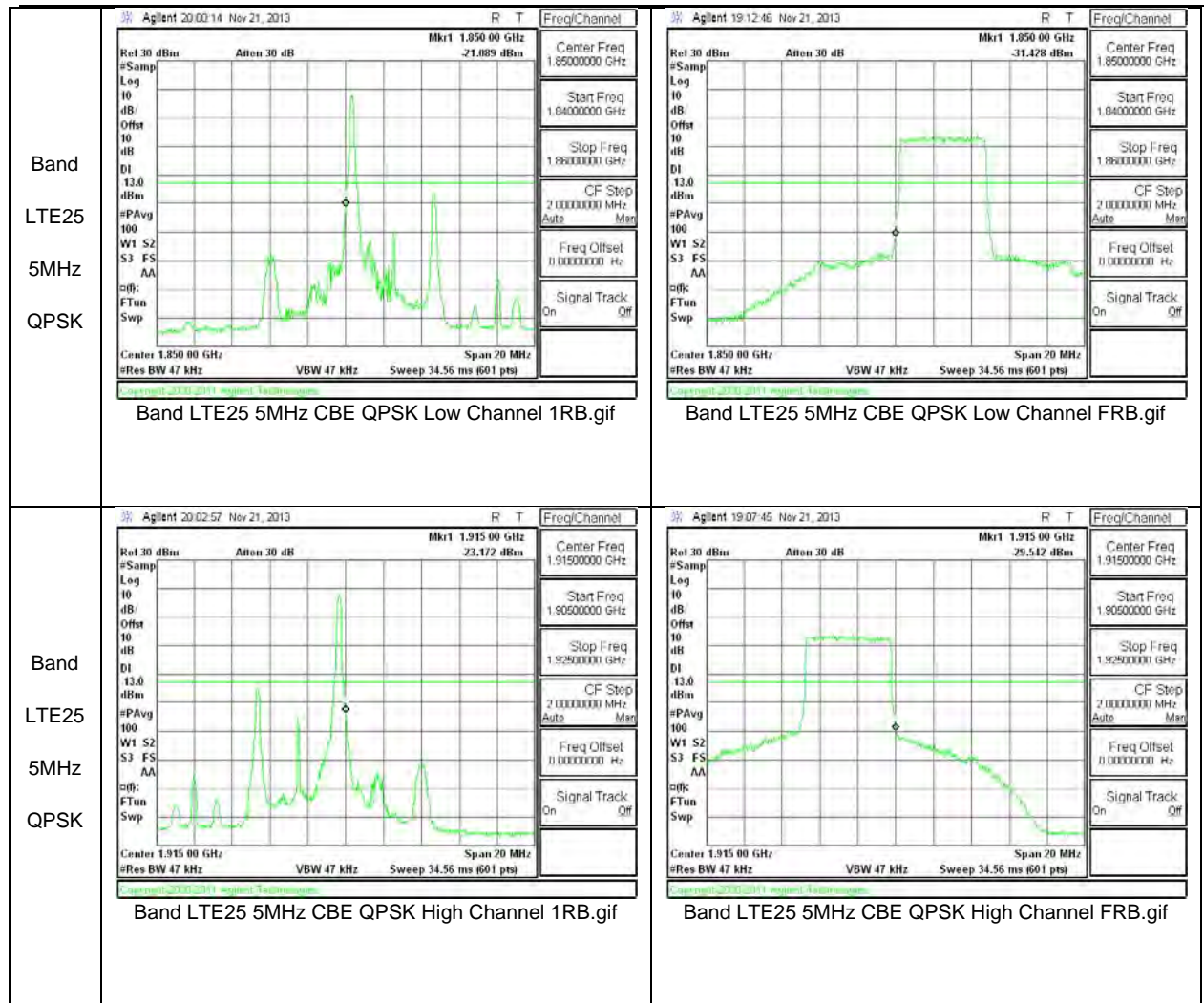


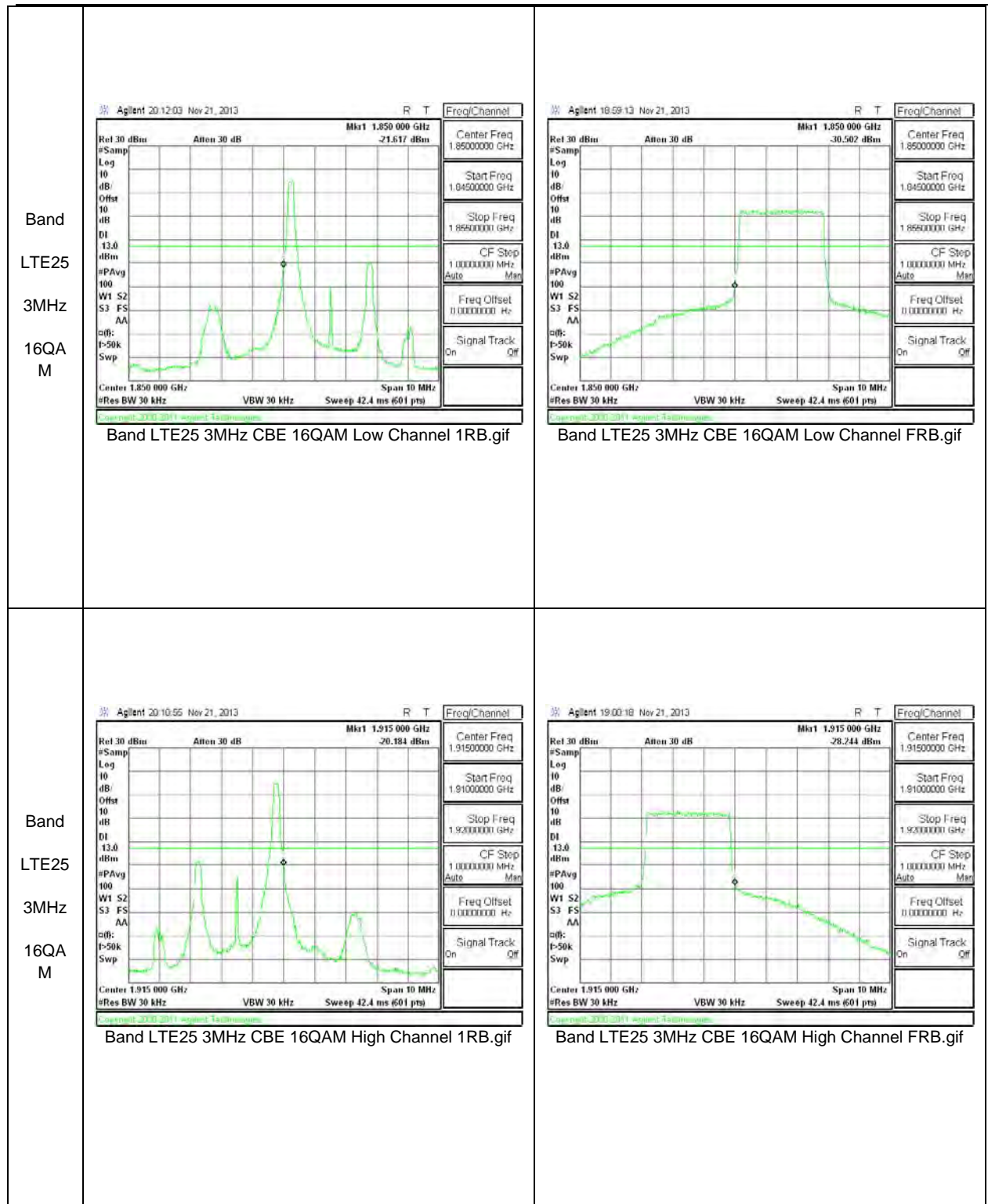


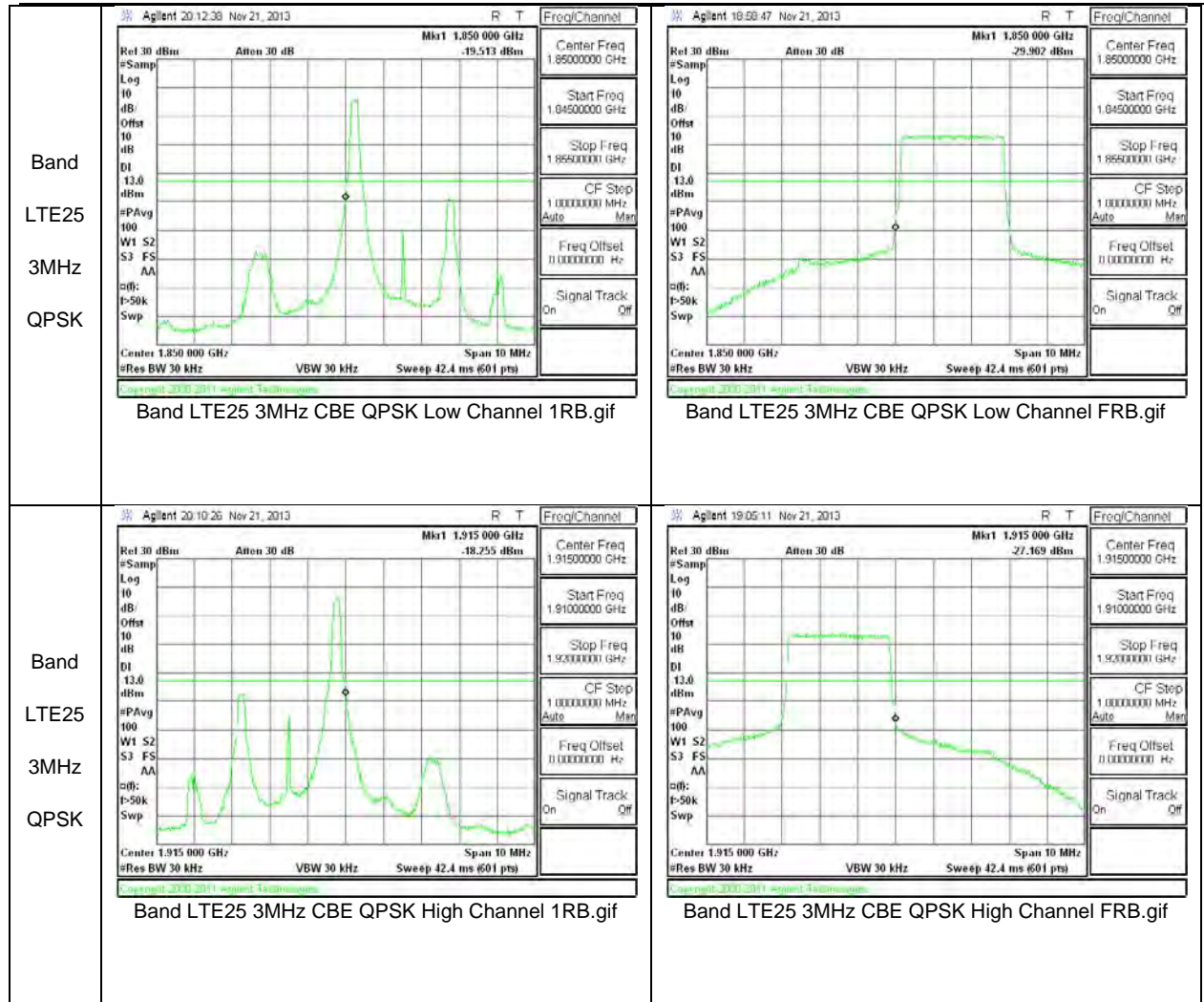


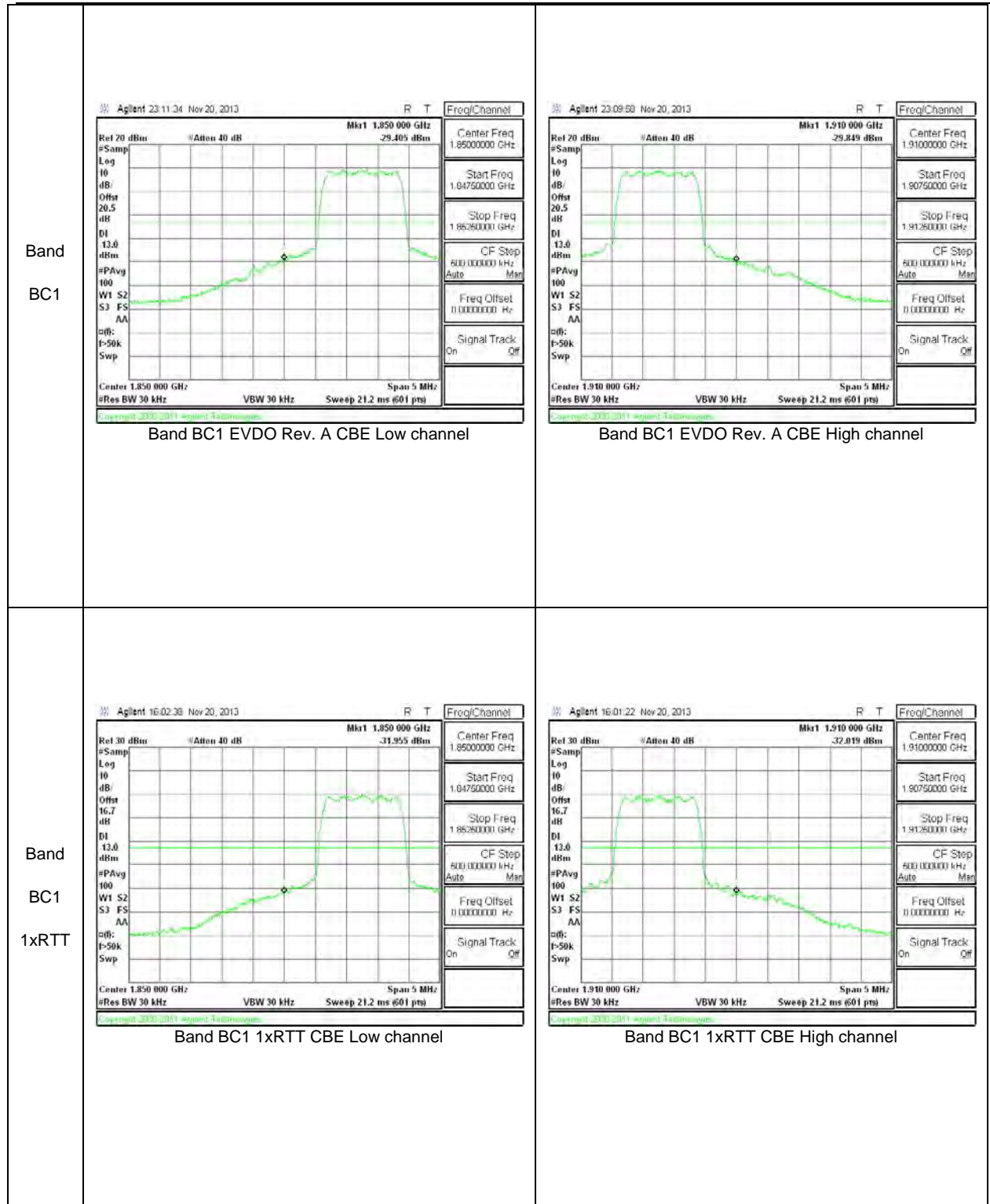


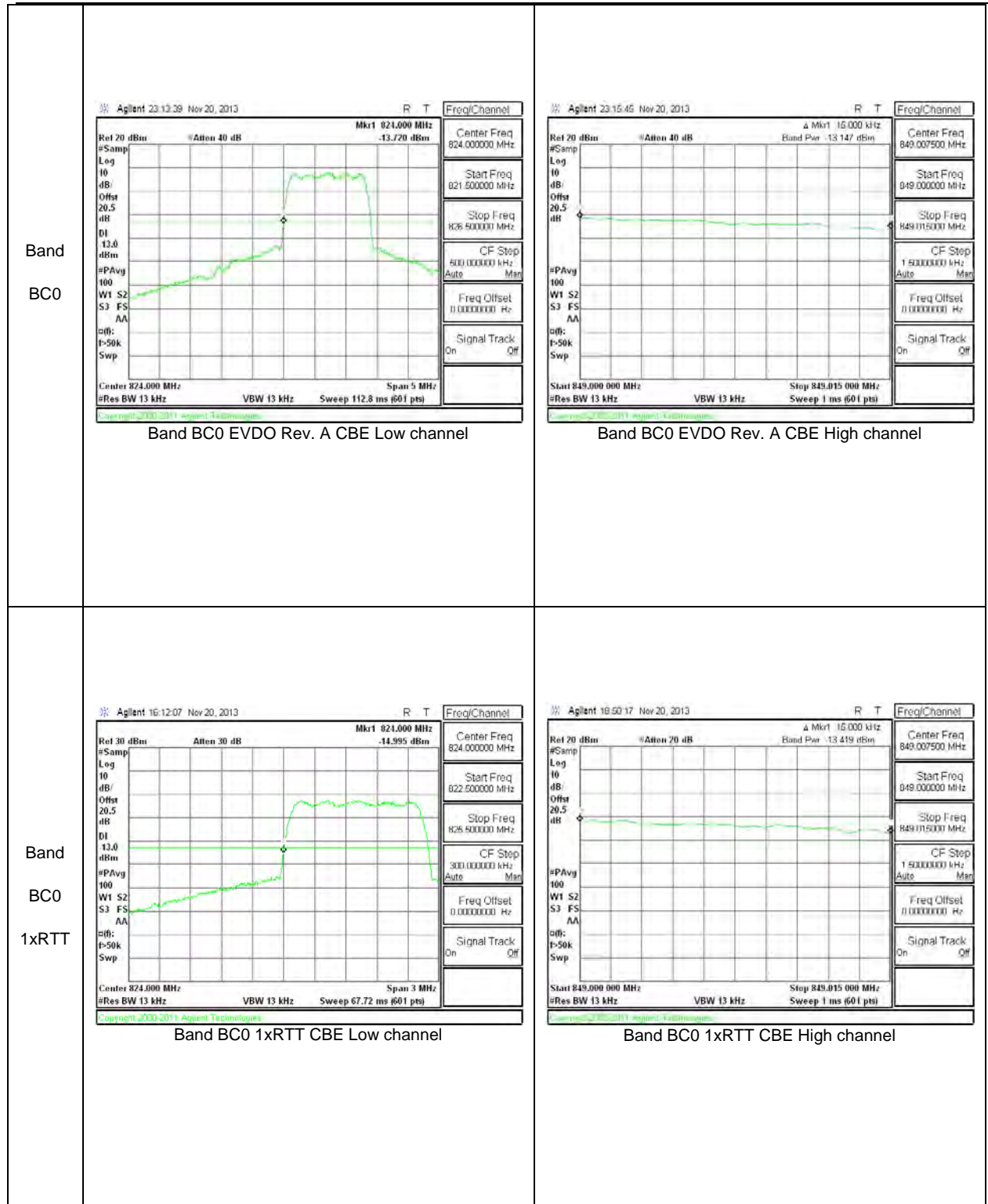


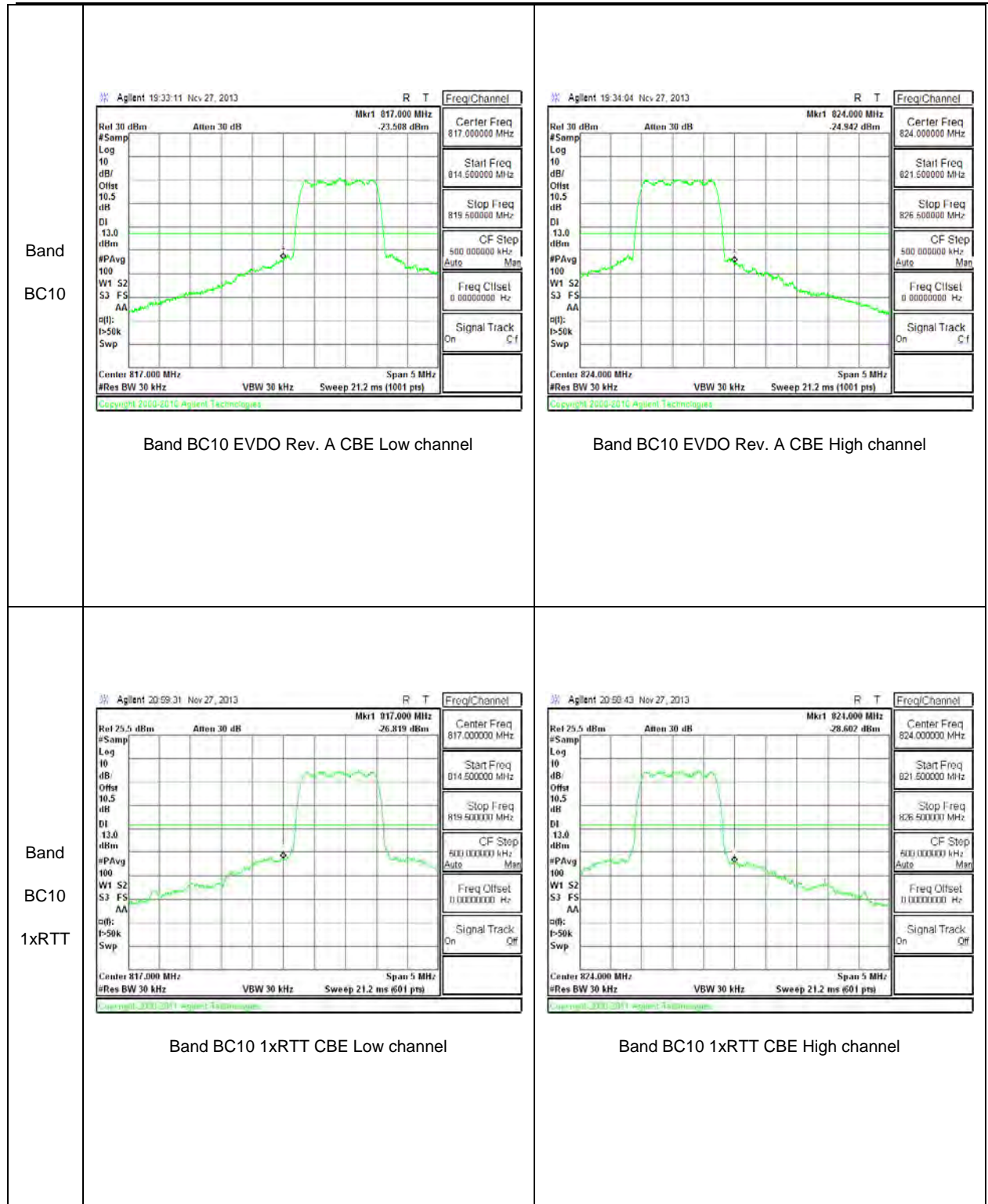




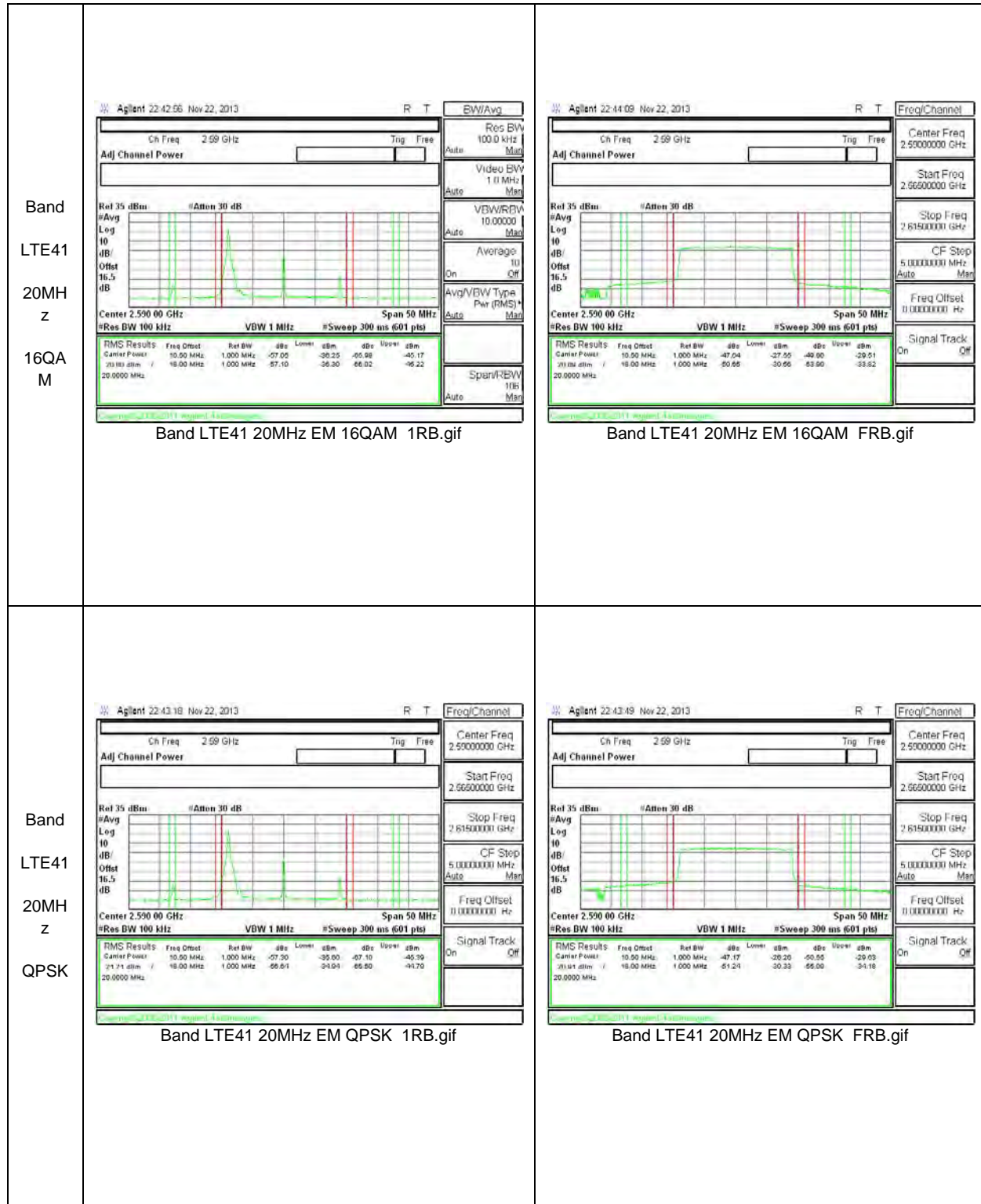


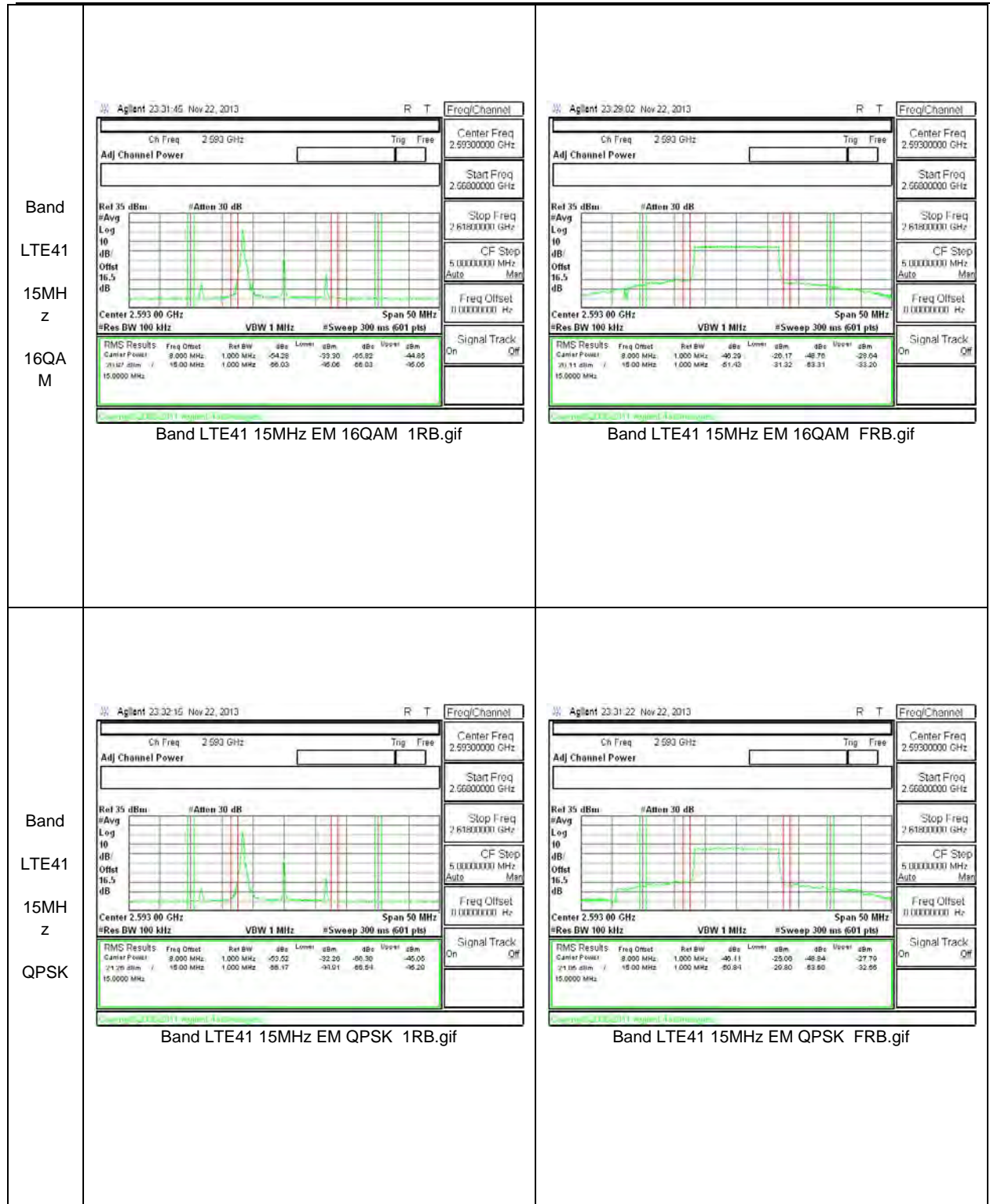


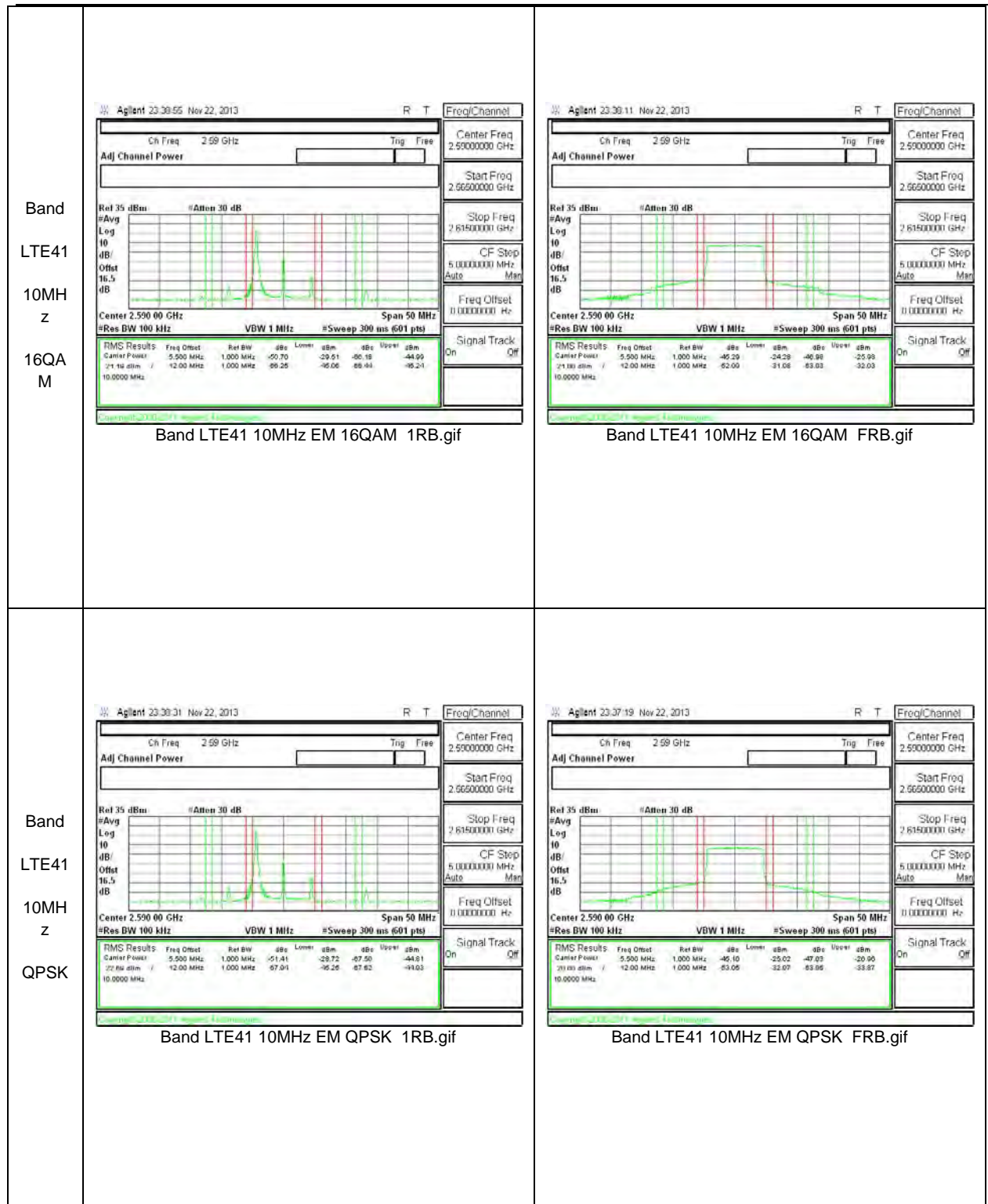


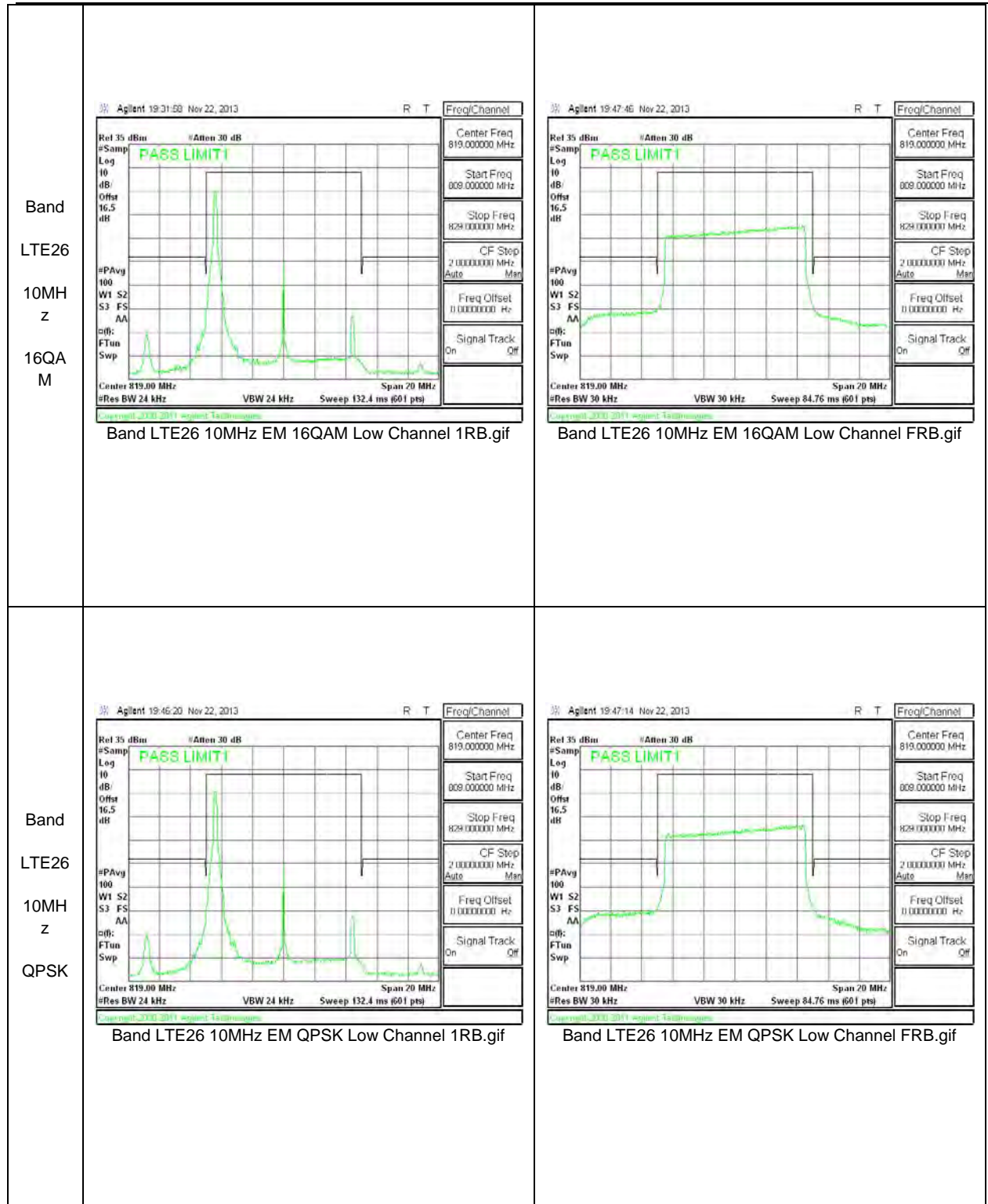


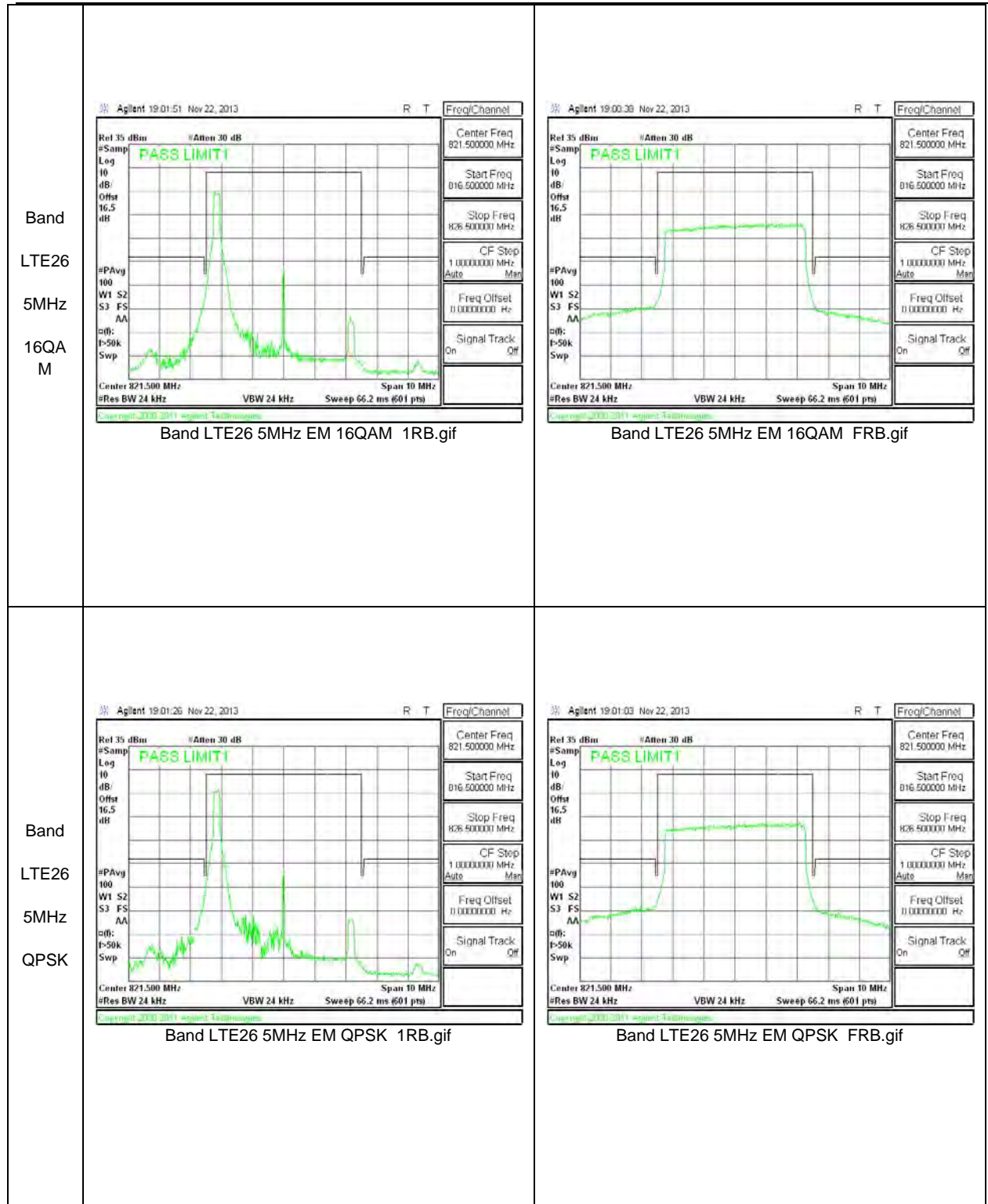
10.2.2. EMISSION MASK PLOTS

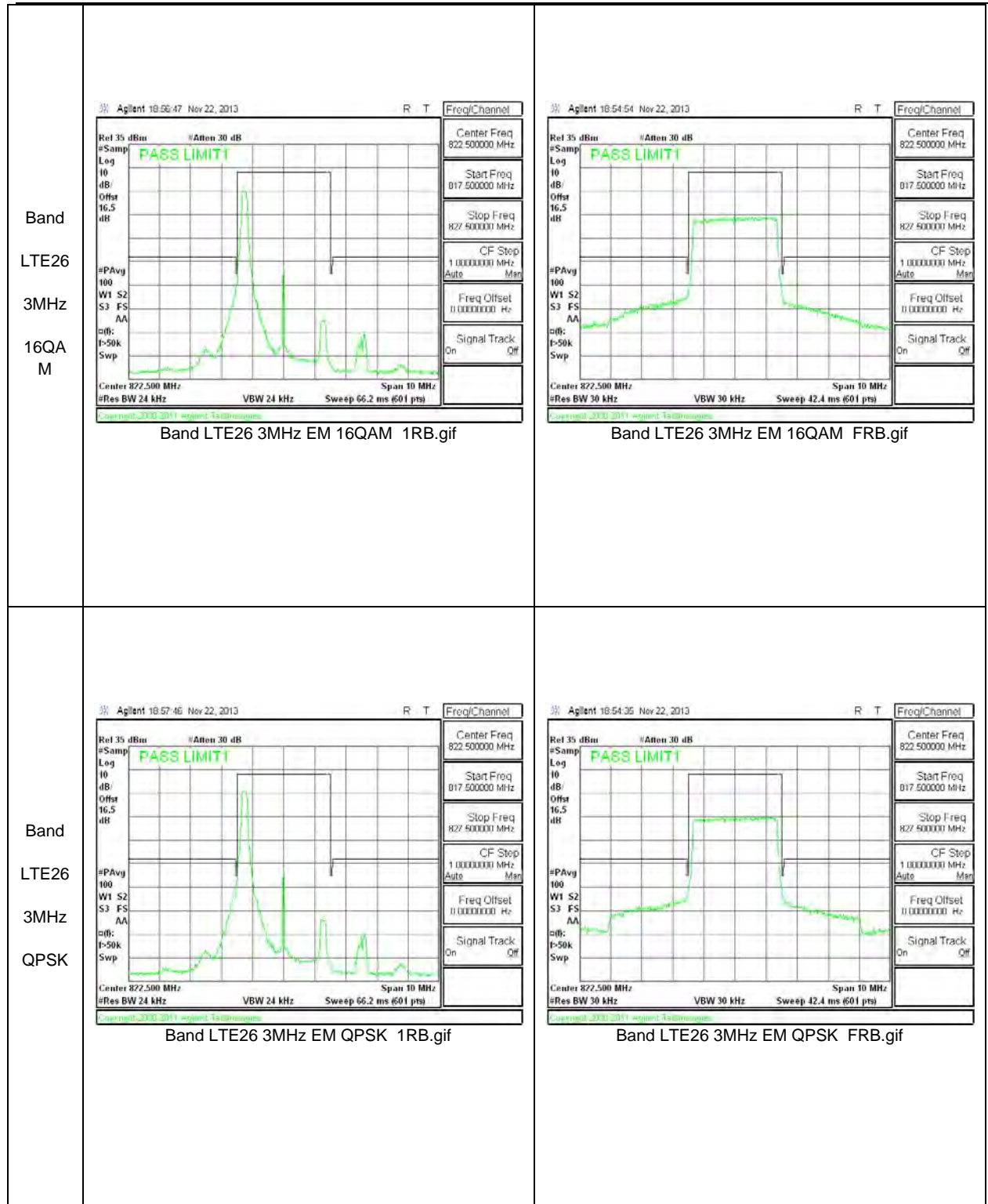


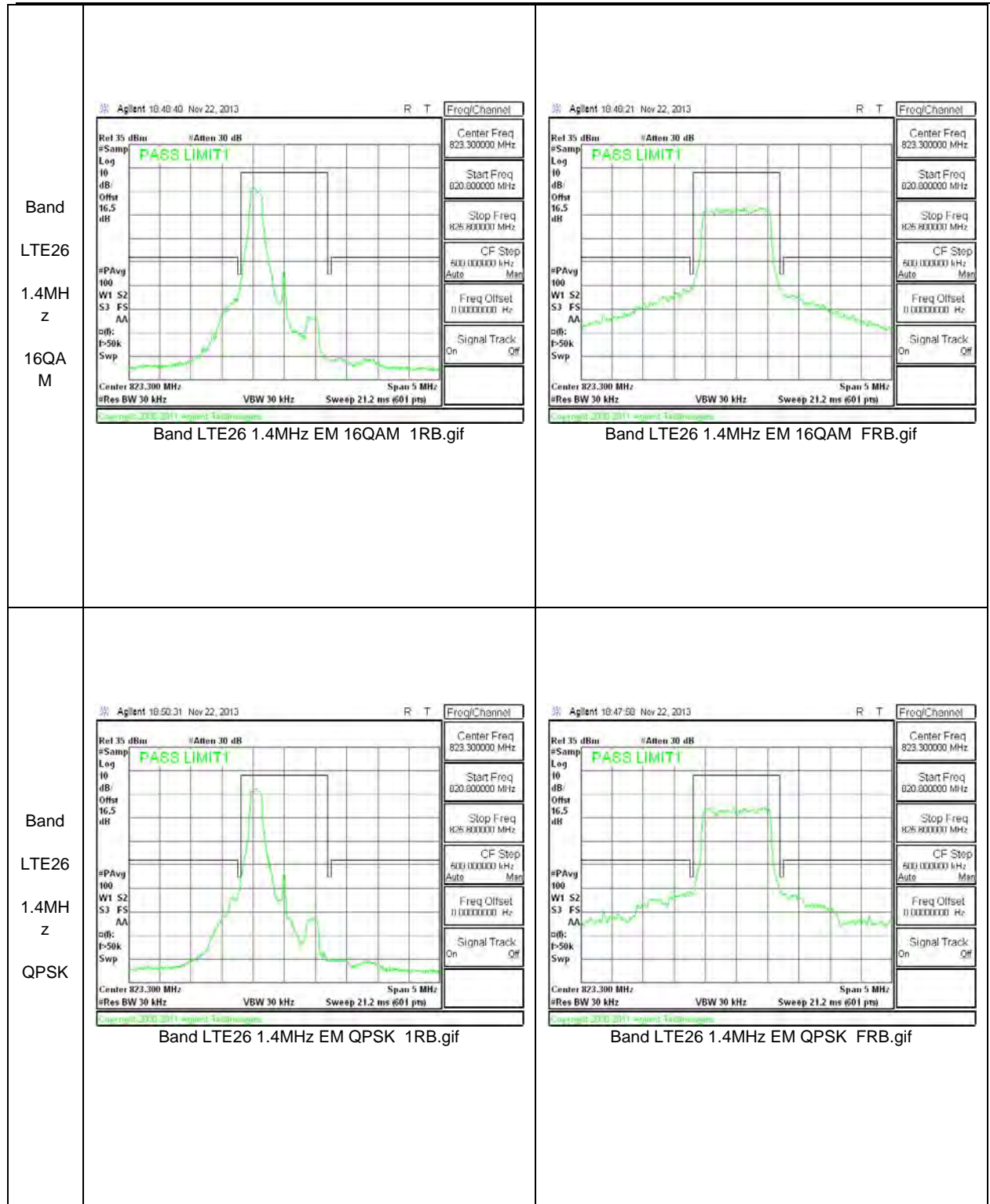


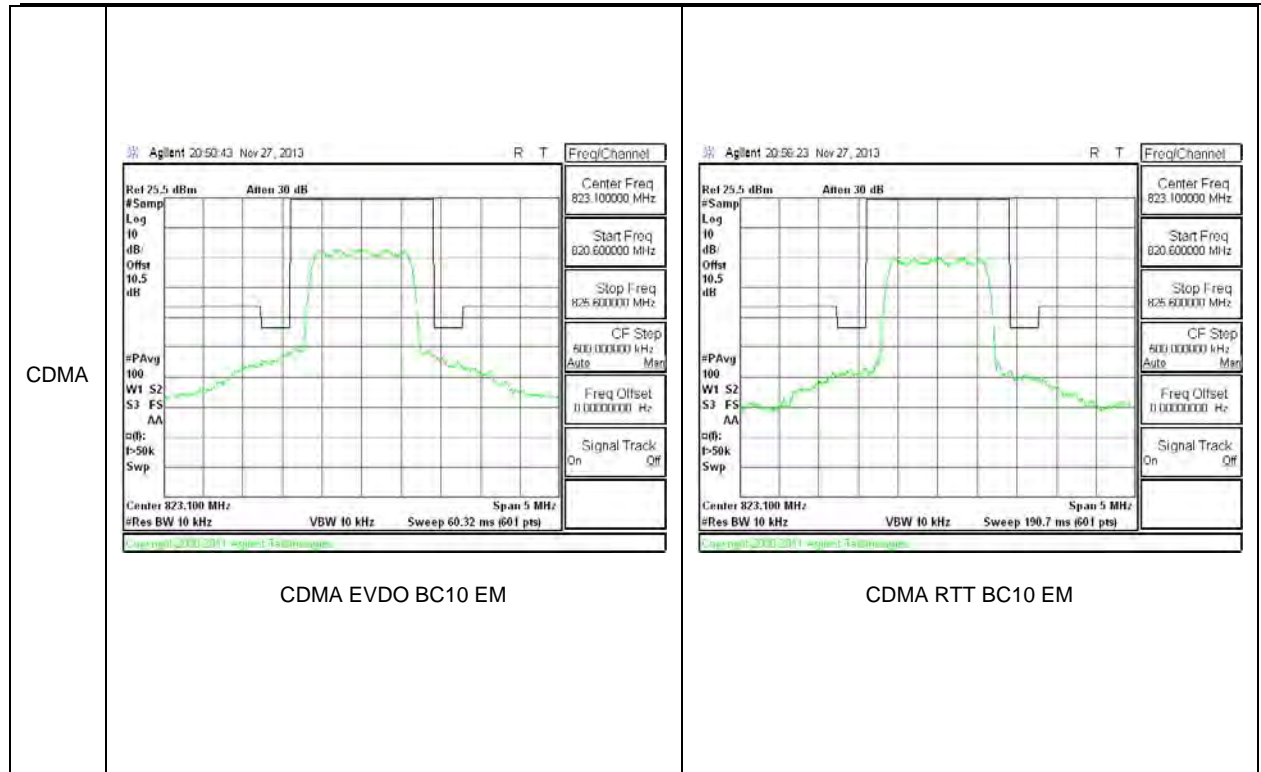












10.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §90.691

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

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

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

LTE BAND 25, 26, 41 & CDMA BC0, 1, 10

RESULTS

10.3.1. OUT OF BAND EMISSIONS RESULT

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE41	20	QPSK	2506	-29.38	-25	-4.38
			2593	-27.42	-25	-2.42
			2680	-28.52	-25	-3.52
		16QAM	2506	-28.8	-25	-3.8
			2593	-28.14	-25	-3.14
			2680	-28.34	-25	-3.34

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE41	15	QPSK	2503.5	-31.83	-25	-6.83
			2593	-30.27	-25	-5.27
			2682.5	-32.48	-25	-7.48
		16QAM	2503.5	-33.72	-25	-8.72
			2593	-28.42	-25	-3.42
			2682.5	-34.05	-25	-9.05

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE41	10	QPSK	2501	-27.85	-25	-2.85
			2593	-28.06	-25	-3.06
			2685	-29.31	-25	-4.31
		16QAM	2501	-28.08	-25	-3.08
			2593	-28.69	-25	-3.69
			2685	-27.95	-25	-2.95

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE26	10	QPSK	819	-30.79	-13	-17.79
			831.5	-30.73	-13	-17.73
			844	-27.58	-13	-14.58
		16QAM	819	-30.35	-13	-17.35
			831.5	-26.96	-13	-13.96
			844	-28.11	-13	-15.11

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE26	5	QPSK	816.5	-27.67	-13	-14.67
			831.5	-26.2	-13	-13.2
			846.5	-28.06	-13	-15.06
		16QAM	816.5	-27.25	-13	-14.25
			831.5	-27.23	-13	-14.23
			846.5	-27.55	-13	-14.55

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE26	3	QPSK	815.5	-33.01	-13	-20.01
			831.5	-32.65	-13	-19.65
			847.5	-27.23	-13	-14.23
		16QAM	815.5	-31.06	-13	-18.06
			831.5	-27.69	-13	-14.69
			847.5	-26.55	-13	-13.55

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE26	1.4	QPSK	814.7	-31.05	-13	-18.05
			831.5	-32.89	-13	-19.89
			848.3	-27.57	-13	-14.57
		16QAM	814.7	-31.15	-13	-18.15
			831.5	-27.62	-13	-14.62
			848.3	-27.47	-13	-14.47

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	10	QPSK	1855	-40.17	-13	-27.17
			1882.5	-40	-13	-27
			1910	-38.67	-13	-25.67
		16QAM	1855	-40.89	-13	-27.89
			1882.5	-41.58	-13	-28.58
			1910	-37.74	-13	-24.74

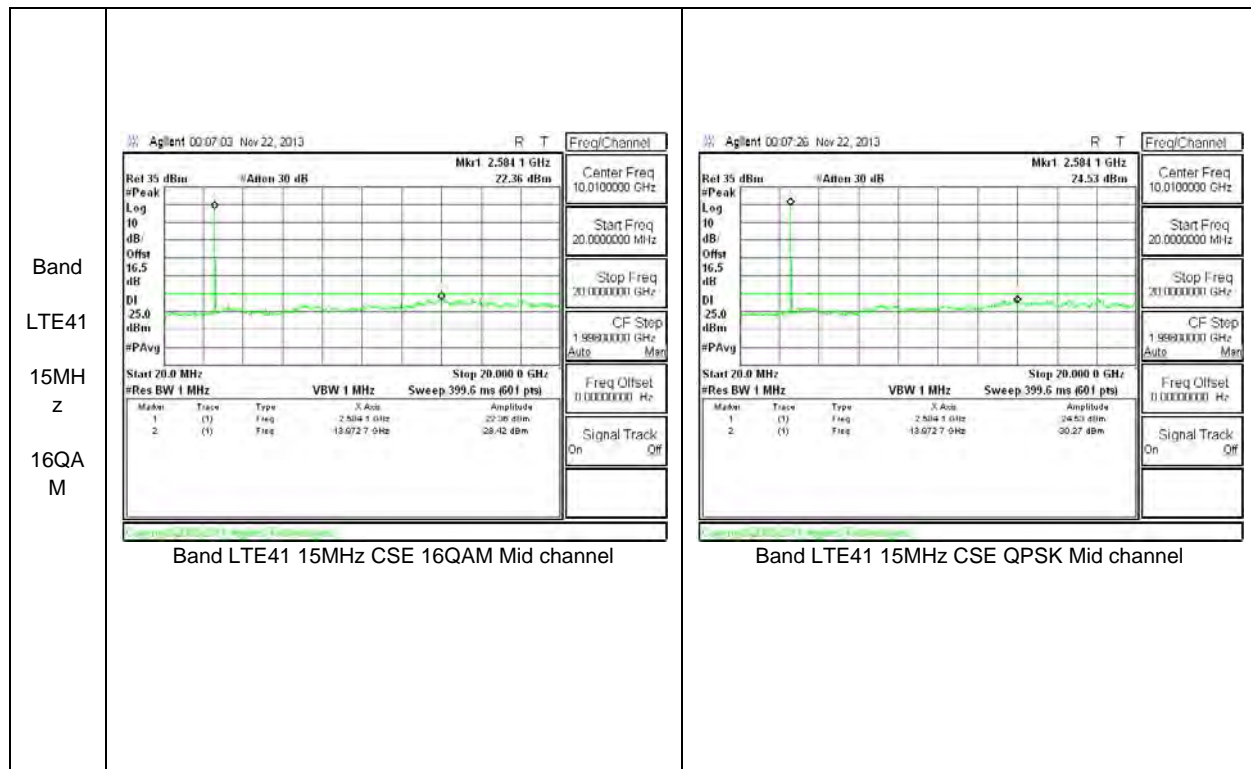
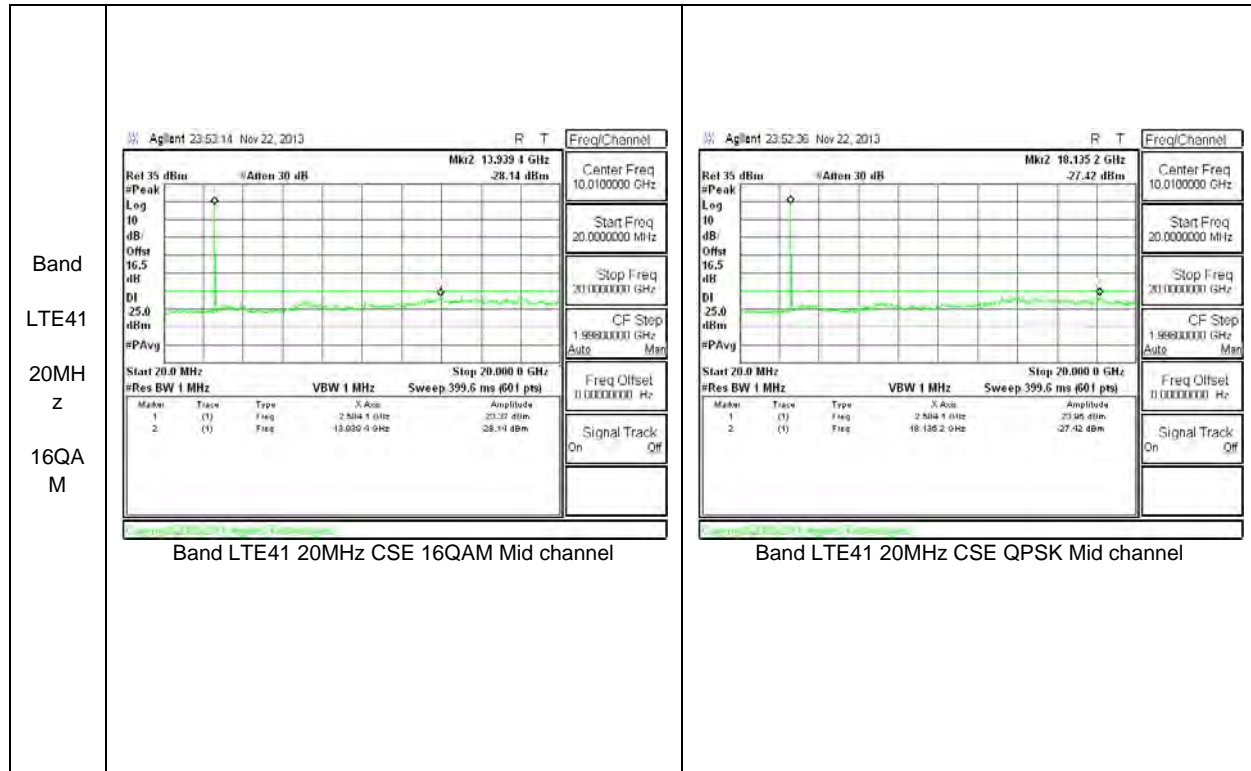
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
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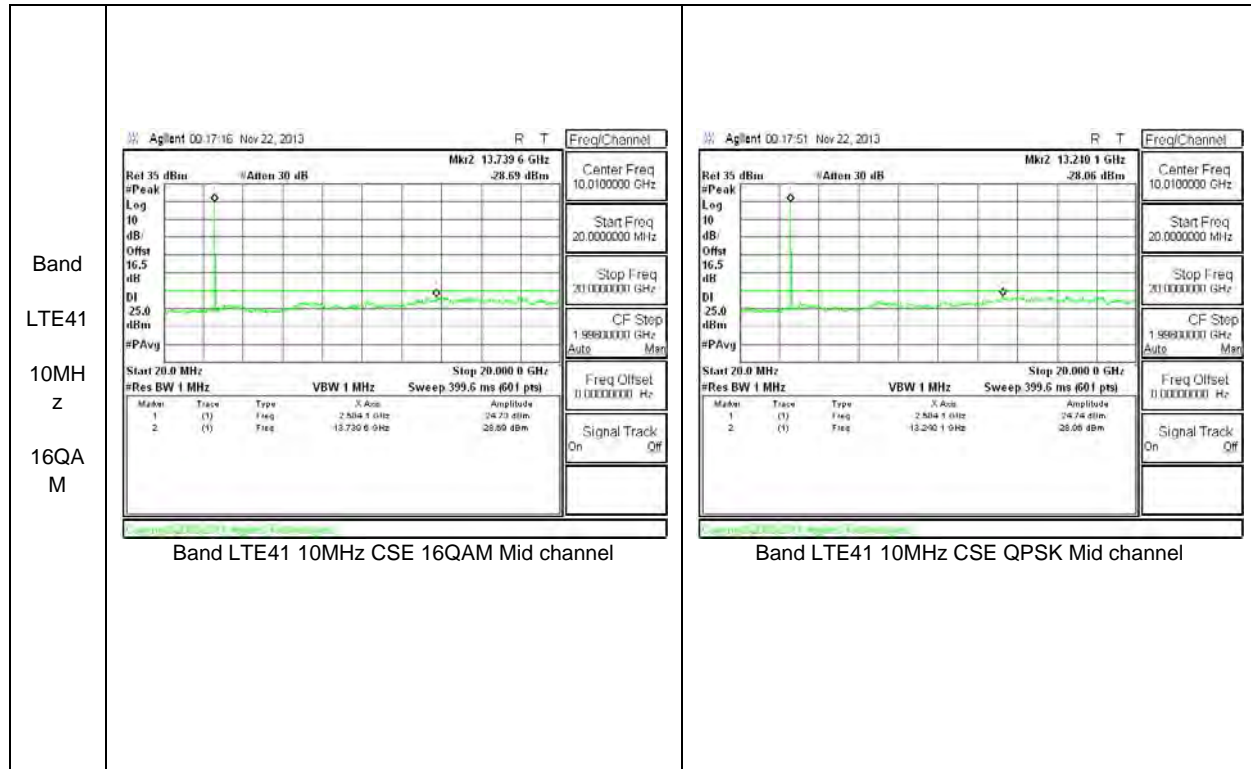
LTE25	5	QPSK	1852.5	-40.89	-13	-27.89
			1882.5	-39.76	-13	-26.76
			1912.5	-40.68	-13	-27.68
		16QAM	1852.5	-36.57	-13	-23.57
			1882.5	-40.3	-13	-27.3
			1912.5	-40.36	-13	-27.36

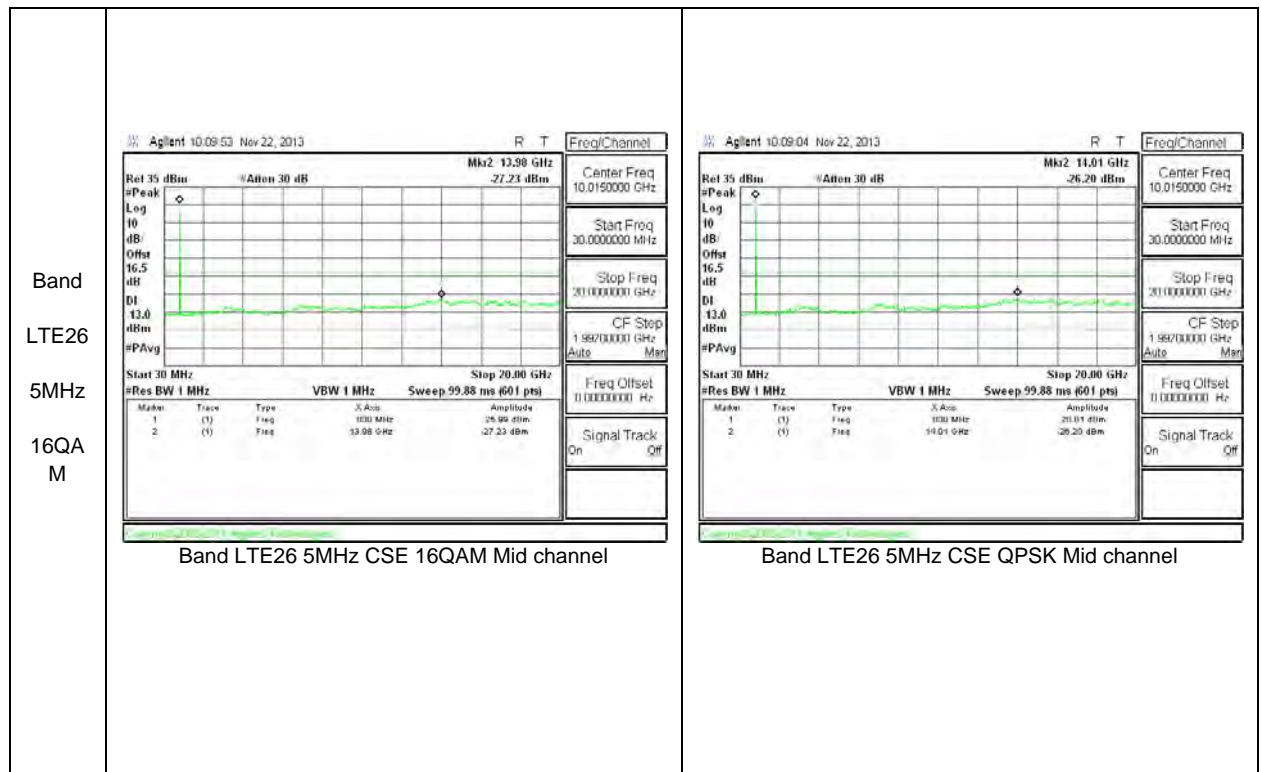
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE25	3	QPSK	1851.5	-40.35	-13	-27.35
			1882.5	-40.35	-13	-27.35
			1913.5	-38.61	-13	-25.61
		16QAM	1851.5	-39.01	-13	-26.01
			1882.5	-39.18	-13	-26.18
			1913.5	-39.82	-13	-26.82

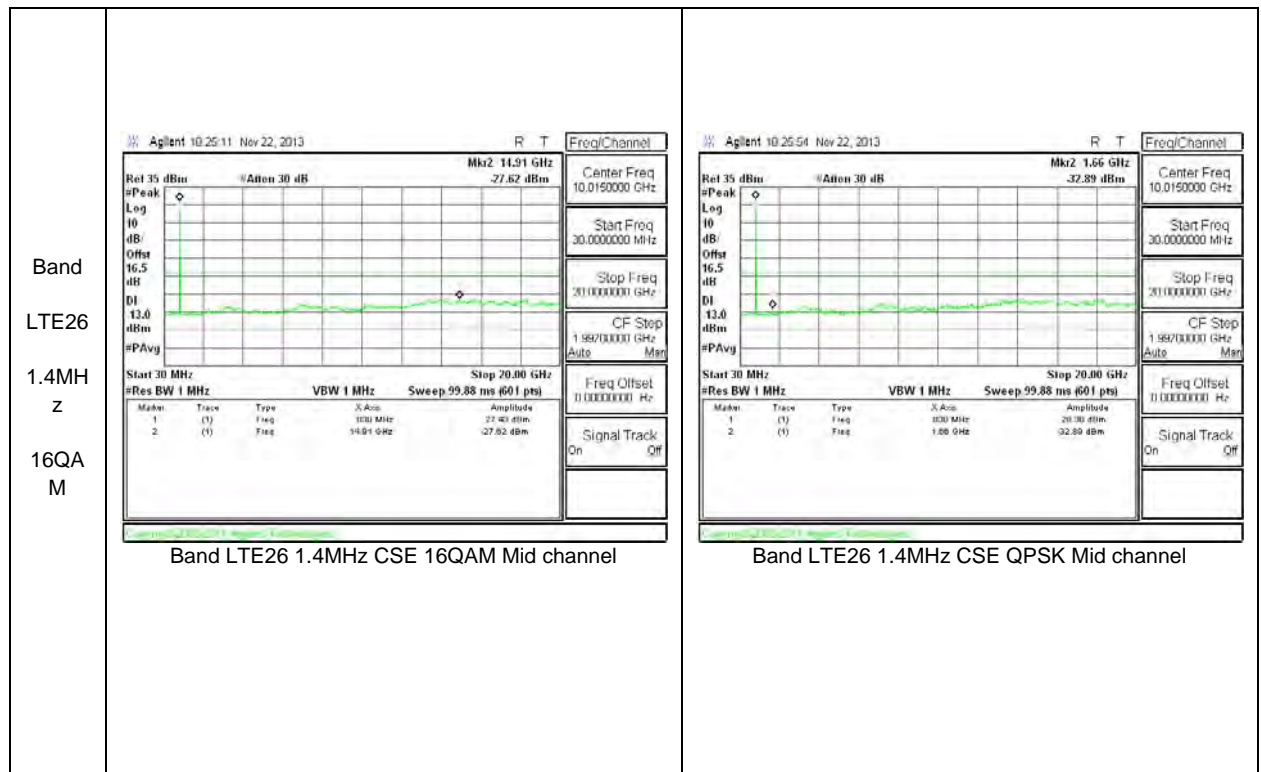
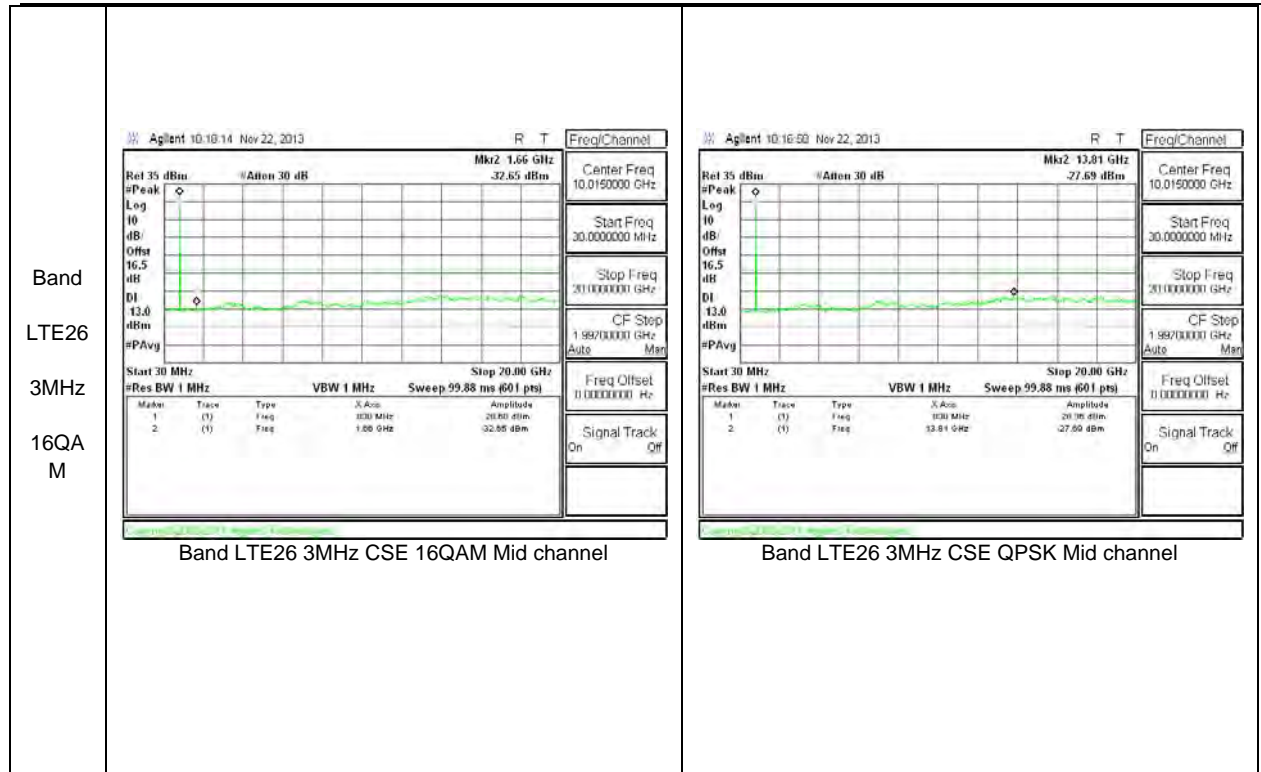
Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
BC10	1xRTT	817.9	-38.15	-13	-25.15
		820.5	-36.92	-13	-23.92
		823.1	-37.42	-13	-24.42
BC0	1xRTT	824.7	-31.16	-13	-18.16
		836.52	-26.52	-13	-13.52
		848.31	-26.76	-13	-13.76
BC1	1xRTT	1851.25	-27.03	-13	-14.03
		1880	-29.41	-13	-16.41
		1908.75	-30.42	-13	-17.42

10.3.2. OUT OF BAND EMISSIONS PLOTS

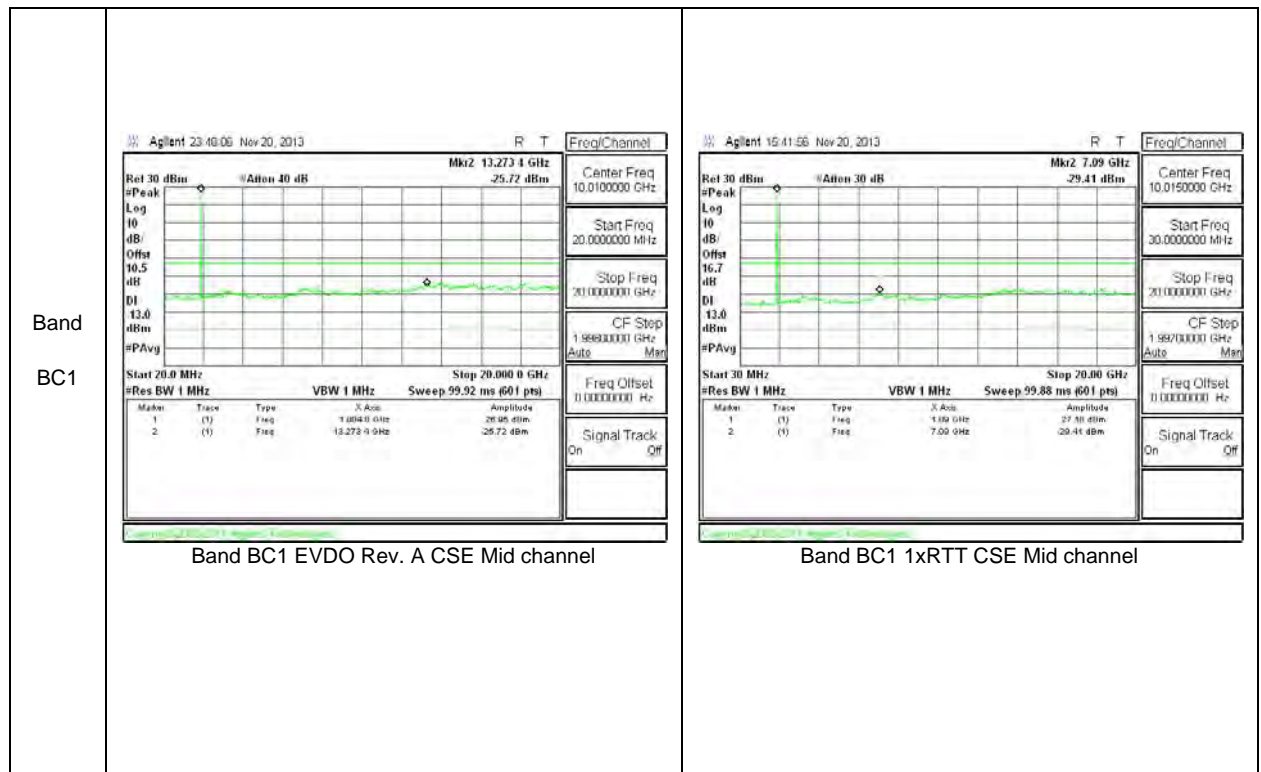


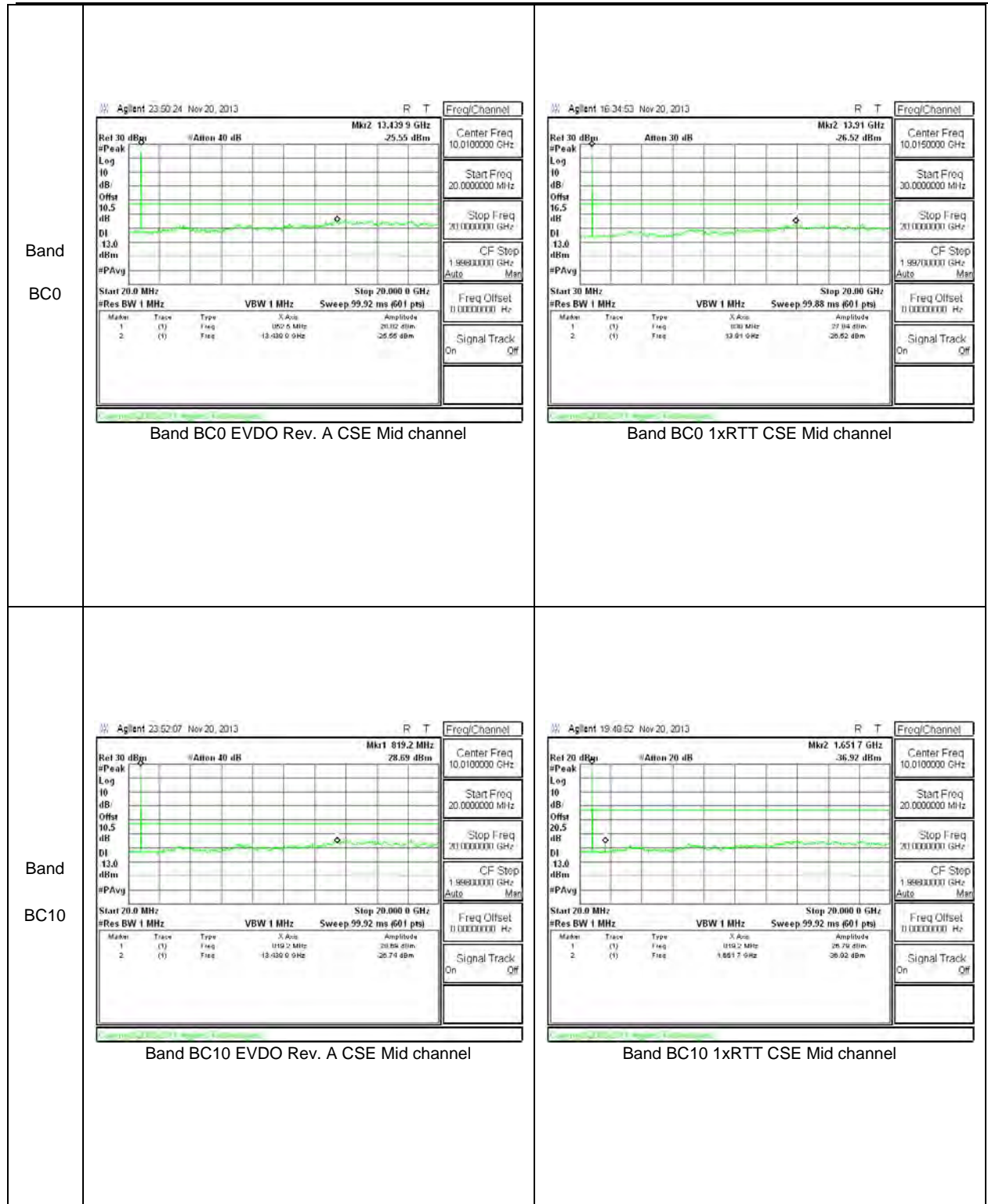












10.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, and §27.54

LIMITS

§22.355 - 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.

§27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

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°C is reached. Reference power supply voltage for these tests is 3.7Vdc.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case). The test voltage ranges from 3.20 to 4.20 VDC.

MODES TESTED

LTE BAND 25, 26, 41 & CDMA BC0, 1, 10

RESULTS

See the following pages.

10.4.1. FREQUENCY STABILITY RESULTS

BAND 41

Reference Frequency: Cellular Mid Channel 2593.000012 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	2593.000033	-0.008	2.5
3.70	40	2593.000025	-0.005	2.5
3.70	30	2593.000022	-0.004	2.5
3.70	20	2593.000012	0	2.5
3.70	10	2593.000008	0.002	2.5
3.70	0	2593.000011	0.000	2.5
3.70	-10	2593.000007	0.002	2.5
3.70	-20	2593.000005	0.003	2.5
3.70	-30	2593.000002	0.004	2.5

Reference Frequency: Cellular Mid Channel 2593.000012 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 6482.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	2593.000012	0	2.5
4.20	20	2593.000020	-0.003	2.5
3.20	20	2593.000023	-0.004	2.5

BAND 26

Reference Frequency: Cellular Mid Channel 835.999992MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2047.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	819.000000	0.001	2.5
3.70	40	819.000000	0.001	2.5
3.70	30	819.000000	0.001	2.5
3.70	20	819.000001	0	2.5
3.70	10	819.000001	0.000	2.5
3.70	0	819.000001	0.000	2.5
3.70	-10	819.000001	0.000	2.5
3.70	-20	819.000001	0.000	2.5
3.70	-30	819.000001	0.000	2.5

Reference Frequency: Cellular Mid Channel 836.000004MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2047.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	818.999999	0	2.5
4.20	20	819.000000	-0.001	2.5
3.30	20	818.999999	0.000	2.5
End Volt(3.2)	20	818.999999	0.000	2.5

BAND 25

Reference Frequency: PCS Mid Channel 1882.5000MHz @ 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	1882.499999	0.000	2.5
3.70	40	1882.499998	0.001	2.5
3.70	30	1882.499999	0.000	2.5
3.70	20	1882.499999	0	2.5
3.70	10	1882.499999	0.000	2.5
3.70	0	1882.500001	-0.001	2.5
3.70	-10	1882.499998	0.001	2.5
3.70	-20	1882.499999	0.000	2.5
3.70	-30	1882.499999	0.000	2.5

Reference Frequency: PCS Mid Channel 1880.000036MHz @ 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	1882.499999	0.00000	2.5
4.20	20	1882.499998	0.00080	2.5
3.30	20	1882.499997	0.00133	2.5
End Volt(3.2)	20	1882.499999	0.00000	2.5

BC0 CDMA

Reference Frequency: CDMA2000_Mid Channe 836.520001 MHz @ 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	836.520003	-0.002	2.5
3.70	40	836.520002	-0.001	2.5
3.70	30	836.520001	0.000	2.5
3.70	20	836.520001	0	2.5
3.70	10	836.520000	0.001	2.5
3.70	0	836.520000	0.001	2.5
3.70	-10	836.519997	0.005	2.5
3.70	-20	836.519993	0.010	2.5
3.70	-30	836.519992	0.011	2.5

Reference Frequency: CDMA2000_Mid channel 836.520001 MHz @ 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	836.520001	0	2.5
4.20	20	836.520000	0.001	2.5
3.20	20	836.520003	-0.002	2.5

BC1 CDMA

Reference Frequency: CDMA2000_Mid Channel 1880.000004 MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1880.000003	0.001	2.5
3.70	40	1880.000003	0.001	2.5
3.70	30	1880.000005	-0.001	2.5
3.70	20	1880.000004	0	2.5
3.70	10	1880.000004	0.000	2.5
3.70	0	1880.000005	-0.001	2.5
3.70	-10	1880.000004	0.000	2.5
3.70	-20	1880.000004	0.000	2.5
3.70	-30	1880.000005	-0.001	2.5

Reference Frequency: CDMA2000_Mid Channel 1880.000004 MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vac)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1880.000004	0	2.5
4.20	20	1880.000005	-0.001	2.5
3.20	20	1880.000001	0.002	2.5

BC10 CDMA

Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	820.499929	0.087	2.5
3.70	40	820.499934	0.080	2.5
3.70	30	820.499951	0.060	2.5
3.70	20	820.500000	0	2.5
3.70	10	820.499985	0.018	2.5
3.70	0	820.499981	0.023	2.5
3.70	-10	820.499978	0.027	2.5
3.70	-20	820.499966	0.041	2.5
3.70	-30	820.499965	0.043	2.5

Reference Frequency: Cellular Mid Channel 820.5 MHz @ 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	820.500000	0	2.5
4.20	20	820.500002	-0.002	2.5
3.20	20	820.500005	-0.006	2.5

11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

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

§ 90.635 Limitations on power and antenna height.

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

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

Please refer to the fundamental measurement template on completing the radiated power measurement:

MODES TESTED

LTE BAND 25, 26, 41 & CDMA BC0, 1, 10

TEST RESULTS

11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC1	1xRTT	25	1851.25	22.76	188.8
		600	1880	22.63	183.2
		1175	1908.75	21.12	129.4
	EVDO REV. A	25	1851.25	23.14	206.1
		600	1880	23.06	202.3
		1175	1908.75	22.76	188.8

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC0	1xRTT	1013	824.7	21.081	128.26
		384	836.52	19.781	95.08
		777	848.31	19.171	82.62
	EVDO REV. A	1013	824.7	22.621	182.85
		384	836.52	21.251	133.38
		777	848.31	20.501	112.23

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
BC10	1xRTT	476	817.9	22.121	162.97
		580	820.5	19.751	94.43
		684	823.1	20.741	118.6
	EVDO REV. A	476	817.9	23.701	234.48
		580	820.5	23.051	201.88
		684	823.1	22.621	182.85

11.1.2. LTE ERP/EIRP Results

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE41	20	QPSK	1/0	2506	25.93	391.74
			1/0	2593	25.23	333.43
			1/0	2680	25.3	338.84
		16QAM	1/0	2506	25.43	349.14
			1/0	2593	24.8	302
			1/0	2680	24.5	281.84

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE41	15	QPSK	1/0	2503.5	26.29	425.6
			1/0	2593	25.56	359.75
			1/0	2682.5	25	316.23
		16QAM	1/0	2503.5	24.53	283.79
			1/0	2593	24.9	309.03
			1/0	2682.5	24.4	275.42

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE41	10	QPSK	1/0	2501	25.74	374.97
			1/0	2593	25.63	365.59
			1/0	2685	25.07	321.37
		16QAM	1/0	2501	25.23	333.43
			1/0	2593	24.7	295.12
			1/0	2685	24.3	269.15

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE26	10	QPSK	1/0	819	25.211	331.97
			1/0	831.5	25.041	319.23
			1/0	844	24.491	281.25
		16QAM	1/0	819	24.301	269.22
			1/0	831.5	24.201	263.09
			1/0	844	23.901	245.53

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE26	5	QPSK	1/0	816.5	24.401	275.49
			1/0	831.5	24.321	270.46
			1/0	846.5	23.101	204.22
		16QAM	1/0	816.5	23.601	229.14
			1/0	831.5	23.701	234.48
			1/0	846.5	22.301	169.86

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE26	3	QPSK	1/0	815.5	23.801	239.94
			1/0	831.5	23.701	234.48
			1/0	847.5	22.001	158.53
		16QAM	1/0	815.5	23.101	204.22
			1/0	831.5	23.001	199.57
			1/0	847.5	21.001	125.92

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE26	1.4	QPSK	1/0	814.7	23.601	229.14
			1/0	831.5	23.501	223.92
			1/0	848.3	22.501	177.87
		16QAM	1/0	814.7	22.701	186.25
			1/0	831.5	22.901	195.03
			1/0	848.3	21.701	147.94

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	10	QPSK	1/0	1855	24.53	283.79
			1/0	1882.5	25.16	328.10
			1/0	1910	26.08	405.51
		16QAM	1/0	1855	23.75	237.14
			1/0	1882.5	24.56	285.76
			1/0	1910	25.38	345.14

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	5	QPSK	1/0	1852.5	25.35	342.77
			1/0	1882.5	25.79	379.31
			1/0	1912.5	26.19	415.91
		16QAM	1/0	1852.5	24.75	298.54
			1/0	1882.5	25.06	320.63
			1/0	1912.5	25.48	353.18

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE25	3	QPSK	1/0	1851.5	26.35	431.52
			1/0	1882.5	24.81	302.69
			1/0	1913.5	26.82	480.84
		16QAM	1/0	1851.5	25.55	358.92
			1/0	1882.5	24.16	260.62
			1/0	1913.5	26.08	405.51

11.1.3. ERP/EIRP PLOTS

Band LTE41 20MHz z 16QAM M	High Frequency Fundamental Measurement Compliance Certification Services Chamber C																																																																																																	
	Company:		LG																																																																																															
	Project #:		13U16534																																																																																															
	Date:		11/25/13																																																																																															
	Test Engineer:		Kiya Kedida																																																																																															
	Configuration:		EUT Only																																																																																															
	Mode:		LTE Band 41, 20MHz, 16QAM																																																																																															
	Test Equipment:		Receiving: Horn T119, and Chamber C SMA Cables																																																																																															
			Substitution: Horn T771 Substitution, 8ft SMA Cable Warehouse																																																																																															
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Band LTE41 20MHz z QPSK	High Frequency Fundamental Measurement Compliance Certification Services Chamber C							
	Company: LG Project #: 13U16534 Date: 11/25/13 Test Engineer: Kiya Kedida Configuration: EUT Only Mode: LTE Band 41, 20MHz, QPSK							
	Test Equipment: Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T771 Substitution, 8ft SMA Cable Warehouse							
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)
	Low Ch							
	2.506	16.4	V	1.07	6.10	21.38	33.0	-11.6
	2.506	20.9	H	1.07	6.10	25.93	33.0	-7.1
	Mid Ch							
	2.593	16.6	V	1.10	6.60	22.10	33.0	-10.9
	2.593	19.7	H	1.10	6.60	25.23	33.0	-7.8
High Ch								
2.680	15.3	V	1.20	7.20	21.32	33.0	-11.7	
2.680	19.3	H	1.20	7.20	25.30	33.0	-7.7	
Rev. 3.17.11								

Band LTE41 15MHz z 16QAM M	High Frequency Fundamental Measurement Compliance Certification Services Chamber C																																																																																						
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f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)																																																																																
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2.504	16.0	V	1.07	6.10	21.03	33.0	-12.0																																																																																
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2.683	14.2	V	1.20	7.20	20.20	33.0	-12.8																																																																																
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Band LTE41 15MH z QPSK	High Frequency Fundamental Measurement Compliance Certification Services Chamber C							
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	Test Equipment: Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T771 Substitution, 8ft SMA Cable Warehouse							
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)
	Low Ch							
	2.504	16.6	V	1.07	6.10	21.63	33.0	-11.4
	2.504	21.3	H	1.07	6.10	26.29	33.0	-6.7
	Mid Ch							
	2.593	16.3	V	1.10	6.60	21.83	33.0	-11.2
	2.593	20.1	H	1.10	6.60	25.56	33.0	-7.4
High Ch								
2.683	15.0	V	1.20	7.20	21.00	33.0	-12.0	
2.683	19.0	H	1.20	7.20	25.00	33.0	-8.0	
Rev. 3.17.11								

Band LTE41 10MHz z 16QAM M	High Frequency Fundamental Measurement Compliance Certification Services Chamber C																																																																																							
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2.501	20.2	H	1.07	6.10	25.23	33.0	-7.8																																																																																	
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Band LTE41 10MHz z QPSK	High Frequency Fundamental Measurement Compliance Certification Services Chamber C								
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	Test Equipment: Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T711 Substitution, 8ft SMA Cable Warehouse								
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	
	Low Ch								
	2.501	15.3	V	1.07	6.10	20.33	33.0	-12.7	
	2.501	20.7	H	1.07	6.10	25.74	33.0	-7.3	
	Mid Ch								
	2.593	15.5	V	1.10	6.60	21.02	33.0	-12.0	
	2.593	20.1	H	1.10	6.60	25.63	33.0	-7.4	
High Ch									
2.685	14.3	V	1.20	7.20	20.30	33.0	-12.7		
2.685	19.1	H	1.20	7.20	25.07	33.0	-7.9		
Rev. 3.17.11									

Band LTE26 10MHz z 16QAM M	High Frequency Substitution Measurement Compliance Certification Services Chamber C																																																																																																
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	Test Equipment:																																																																																																
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	Receiving: Sunol T185, and Chamber C Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.																																																																																																
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f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																									
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Rev. 3.17.11																																																																																																	

Band LTE26 1.4MH z QPSK	High Frequency Substitution Measurement Compliance Certification Services Chamber C								
	Company: LG								
	Project #: 13U16534								
	Date: 11/21/13								
	Test Engineer: Kiiya Kedida								
	Configuration: EUT only								
	Mode: LTE band 26, 1.4MHz BW QPSK, Average, RB1-0								
	Test Equipment: Receiving: Sunol T185, and Chamber C Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Rev. 3.17.11								

Band LTE25 10MH z 16QA M	High Frequency Fundamental Measurement Compliance Certification Services Chamber C									
	Company: LG Project #: 13U16534 Date: 11/22/13 Test Engineer: Kiiya Kedida Configuration: EUT only Mode: LTE band 25, 10MHz BW 16QAM, Average, RB1-0									
	Test Equipment: Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59 Substitution, 8ft SMA Cable (244639001) Warehouse									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch									
	1.855	15.3	V	1.50	7.94	21.74	33.0	-11.3		
	1.855	17.1	H	1.50	8.14	23.75	33.0	-9.3		
	Mid Ch									
	1.882.5	16.4	V	1.50	7.95	22.85	33.0	-10.2		
	1.882.6	17.8	H	1.50	8.26	24.56	33.0	-8.4		
	High Ch									
	1.910	15.3	V	1.50	7.97	21.77	33.0	-11.2		
	1.910	18.5	H	1.50	8.38	25.38	33.0	-7.6		
	Rev. 3.17.11									

Band LTE25 10MHz z QPSK	High Frequency Fundamental Measurement Compliance Certification Services Chamber C									
	Company: LG Project #: 13U16534 Date: 11/22/13 Test Engineer: Kiiya Kedida Configuration: EUT only Mode: LTE band 25, 10MHz BW QPSK, Average, RB1-0									
	Test Equipment: Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59 Substitution, 8ft SMA Cable (244639001) Warehouse									
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch									
	1.855	15.8	V	1.50	7.94	22.24	33.0	-10.8		
	1.855	17.9	H	1.50	8.14	24.53	33.0	-8.5		
	Mid Ch									
	1.882.5	17.2	V	1.50	7.95	23.65	33.0	-9.4		
	1.882.6	18.4	H	1.50	8.26	25.16	33.0	-7.8		
High Ch										
1.910	15.9	V	1.50	7.97	22.37	33.0	-10.6			
1.910	19.2	H	1.50	8.38	26.08	33.0	-6.9			
Rev. 3.17.11										

Band LTE25 5MHz 16QA M	High Frequency Fundamental Measurement Compliance Certification Services Chamber C							
	Company:		LG					
	Project #:		13U16534					
	Date:		11/22/13					
	Test Engineer:		Kiiya Kedida					
	Configuration:		EUT only					
	Mode:		LTE band 25, 5MHz BW 16QAM,Average, RB1-0					
	Test Equipment:		Receiving: Horn T119, and Chamber C SMA Cables Substitution: Horn T59 Substitution, 8ft SMA Cable (244639001) Warehouse					
			Rev. 3.17.11					

Band LTE25 5MHz QPSK	High Frequency Fundamental Measurement Compliance Certification Services Chamber C								
	Company:		LG						
	Project #:		13U16534						
	Date:		11/22/13						
	Test Engineer:		Kiiya Kedida						
	Configuration:		EUT only						
	Mode:		LTE band 25, 5MHz BW						
			QPSK, Average, RB1-0						
	Test Equipment:								
	Receiving:		Horn T119, and Chamber C SMA Cables						
Substitution:		Horn T59 Substitution, 8ft SMA Cable (244639001) Warehouse							
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
	GHz	(dBm)	(H/V)	(dB)	(dBi)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1.8525	17.6	V	1.50	7.94	24.04	33.0	-9.0	
	1.8525	18.7	H	1.50	8.14	25.35	33.0	-7.7	
	Mid Ch								
	1.8825	16.8	V	1.50	7.95	23.22	33.0	-9.8	
	1.8825	19.0	H	1.50	8.26	25.79	33.0	-7.2	
	High Ch								
	1.9125	12.9	V	1.50	7.97	19.40	33.0	-13.6	
	1.9125	19.3	H	1.50	8.38	26.19	33.0	-6.8	
	Rev. 3.17.11								

Band LTE25 3MHz 16QA M	High Frequency Fundamental Measurement Compliance Certification Services Chamber C																																																																																																
	Company:		LG																																																																																														
	Project #:		13U16534																																																																																														
	Date:		11/22/13																																																																																														
	Test Engineer:		Kiiya Kedida																																																																																														
	Configuration:		EUT only																																																																																														
	Mode:		LTE band 25, 3MHz BW 16QAM, Average, RB1-0																																																																																														
	Test Equipment:																																																																																																
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f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes																																																																																									
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Rev. 3.17.11																																																																																																	

Band LTE25 3MHz QPSK	High Frequency Fundamental Measurement Compliance Certification Services Chamber C								
	Company:		LG						
	Project #:		13U16534						
	Date:		11/22/13						
	Test Engineer:		Kiiya Kedida						
	Configuration:		EUT only						
	Mode:		LTE band 25, 3MHz BW						
			QPSK, Average, RB1-0						
	Test Equipment:		Receiving: Horn T119, and Chamber C SMA Cables						
			Substitution: Horn T59 Substitution, 8ft SMA Cable (244639001) Warehouse						
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1.8515	18.8	V	1.50	7.94	25.22	33.0	-7.8	
	1.8515	19.7	H	1.50	8.14	26.35	33.0	-6.7	
	Mid Ch								
	1.8825	16.4	V	1.50	7.95	22.88	33.0	-10.1	
	1.8825	18.1	H	1.50	8.26	24.81	33.0	-8.2	
	High Ch								
	1.9135	17.3	V	1.50	7.97	23.77	33.0	-9.2	
	1.9135	19.9	H	1.50	8.38	26.82	33.0	-6.2	
	Rev. 3.17.11								

Band BC1 EVDO REV. A	High Frequency Fundamental Measurement Compliance Certification Services Chamber C								
	Company:		LG						
	Project #:		13U16534						
	Date:		11/23/13						
	Test Engineer:		Charles Vergonio						
	Configuration:		EUT, X Position & charger						
	Mode:		EVDORA BC1 1900MHz						
	Test Equipment:								
	Receiving: T120, and Chamber C SMA Cables								
	Substitution: Horn T60 Substitution, 4ft SMA Cable (244639001) Warehouse								
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1.851	15.1	V	0.85	4.40	18.64	33.0	-14.4	
	1.851	19.6	H	0.85	4.40	23.14	33.0	-9.9	
	Mid Ch								
	1.880	17.4	V	0.85	4.40	20.98	33.0	-12.0	
	1.880	19.5	H	0.85	4.40	23.06	33.0	-9.9	
	High Ch								
	1.909	17.6	V	0.85	4.40	21.17	33.0	-11.8	
	1.909	19.2	H	0.85	4.40	22.76	33.0	-10.2	
	Rev. 3.17.11								

Band
 BC1
 1xRTT

**High Frequency Fundamental Measurement
 Compliance Certification Services Chamber C**

Company: LG
Project #: 13U16534
Date: 11/21/13
Test Engineer: Trina Noor
Configuration: EUT, Y Position & charger
Mode: CDMA 1900MHz

Test Equipment:

Receiving: T120, and Chamber D SMA Cables
 Substitution: Horn T60 Substitution, 4ft SMA Cable (244639001) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1.851	16.7	V	0.85	4.40	20.27	33.0	-12.7	
1.851	19.2	H	0.85	4.40	22.76	33.0	-10.2	
Mid Ch								
1.880	15.5	V	0.85	4.40	19.05	33.0	-14.0	
1.880	19.1	H	0.85	4.40	22.63	33.0	-10.4	
High Ch								
1.909	15.8	V	0.85	4.40	19.33	33.0	-13.7	
1.909	17.6	H	0.85	4.40	21.12	33.0	-11.9	

Rev. 3.17.11

Band BC0 EVDO REV. A	High Frequency Substitution Measurement Compliance Certification Services Chamber C																																																																																																
	Company:		LG																																																																																														
	Project #:		13U16534																																																																																														
	Date:		11/23/13																																																																																														
	Test Engineer:		CHARLES VERGONIO																																																																																														
	Configuration:		EUT WITH CHARGER, Y POSITION																																																																																														
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Band BC0 1xRTT	High Frequency Substitution Measurement Compliance Certification Services Chamber C																																																																																																
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	Receiving: Sunol T185, and Chamber C Cable (Setup this one for testing EUT)																																																																																																
	Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.																																																																																																
<table border="1"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>824.70</td> <td>21.26</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>20.36</td> <td>38.5</td> <td>-18.1</td> <td></td> </tr> <tr> <td>824.70</td> <td>21.98</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>21.08</td> <td>38.5</td> <td>-17.4</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>836.52</td> <td>21.17</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>20.27</td> <td>38.5</td> <td>-18.2</td> <td></td> </tr> <tr> <td>836.52</td> <td>20.68</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>19.78</td> <td>38.5</td> <td>-18.7</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>848.31</td> <td>19.46</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>18.56</td> <td>38.5</td> <td>-19.9</td> <td></td> </tr> <tr> <td>848.31</td> <td>20.07</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>19.17</td> <td>38.5</td> <td>-19.3</td> <td></td> </tr> </tbody> </table>								f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									824.70	21.26	V	0.9	0.0	20.36	38.5	-18.1		824.70	21.98	H	0.9	0.0	21.08	38.5	-17.4		Mid Ch									836.52	21.17	V	0.9	0.0	20.27	38.5	-18.2		836.52	20.68	H	0.9	0.0	19.78	38.5	-18.7		High Ch									848.31	19.46	V	0.9	0.0	18.56	38.5	-19.9		848.31	20.07	H	0.9	0.0	19.17	38.5	-19.3	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																									
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Rev. 3.17.11																																																																																																	

Band
 BC10
 EVDO
 REV.
 A

**High Frequency Substitution Measurement
 Compliance Certification Services Chamber C**

Company: LG
Project #: 13U16534
Date: 11/23/13
Test Engineer: CHARLES VERGONIO
Configuration: EUT WITH CHARGER, Y POSITION
Mode: CDMA EVDORA BC10

Test Equipment:

Receiving: Sunol T185, and Chamber C Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
817.90	22.74	V	0.9	0.0	21.84	38.5	-16.6	
817.90	24.60	H	0.9	0.0	23.70	38.5	-14.7	
Mid Ch								
820.50	22.68	V	0.9	0.0	21.78	38.5	-16.7	
820.50	23.95	H	0.9	0.0	23.05	38.5	-15.4	
High Ch								
823.10	22.48	V	0.9	0.0	21.58	38.5	-16.9	
823.10	23.52	H	0.9	0.0	22.62	38.5	-15.8	

Rev. 3.17.11

Band BC10 1xRTT	High Frequency Substitution Measurement Compliance Certification Services Chamber C								
	Company:		LG						
	Project #:		13U16534						
	Date:		11/23/13						
	Test Engineer:		CHARLES VERGONIO						
	Configuration:		EUT WITH CHARGER, Y POSITION						
	Mode:		CDMA RTT BC10						
	Test Equipment:		Receiving: Sunol T185, and Chamber C Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 8ft SMA Cable (SN # 208955002) Warehouse.						
			Rev. 3.17.11						

11.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §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

§ 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 $116 \text{Log}_{10}(f/6.1)$ decibels or $50 + 10 \text{Log}_{10}(P)$ 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 $43 + 10\text{Log}_{10}(P)$ 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

LTE BAND 25, 26, 41 & CDMA BC0, 1, 10

RESULTS

11.2.1. SPURIOUS RADIATION PLOTS

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/25/13								
Test Engineer:		Daniel Soper								
Configuration:		EUT with AC charger								
Mode:		TX, LTE B4 15MHZ 16QAM								
Chamber		Pre-amplifer			Filter		Limit			
3m Chamber		T145 8449B			Filter 1		Part 22			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2506 MHz)										
LTE41	5.012	-17.1	V	3.0	28.9	1.0	-45.0	-25.0	-20.0	
	7.518	-14.5	V	3.0	26.3	1.0	-39.8	-25.0	-14.8	
	10.553	-12.4	V	3.0	22.9	1.0	-34.3	-25.0	-9.3	
20MH z	5.012	-10.3	H	3.0	28.9	1.0	-38.2	-25.0	-13.2	
	7.518	-14.1	H	3.0	26.3	1.0	-39.5	-25.0	-14.5	
	10.553	-12.0	H	3.0	22.9	1.0	-34.0	-25.0	-9.0	
16QA M	Mid Ch, (2593 MHz)									
	5.186	-19.0	V	3.0	28.7	1.0	-46.7	-25.0	-21.7	
	7.779	-14.7	V	3.0	26.0	1.0	-39.7	-25.0	-14.7	
	10.372	-12.1	V	3.0	23.0	1.0	-34.1	-25.0	-9.1	
	5.186	-17.5	H	3.0	28.7	1.0	-45.2	-25.0	-20.2	
	7.779	-12.8	H	3.0	26.0	1.0	-37.7	-25.0	-12.7	
	10.372	-12.5	H	3.0	23.0	1.0	-34.5	-25.0	-9.5	
High Ch, (2680 MHz)										
	5.360	-19.7	V	3.0	28.5	1.0	-47.2	-25.0	-22.2	
	8.040	-14.6	V	3.0	25.6	1.0	-39.2	-25.0	-14.2	
	10.720	-13.6	V	3.0	22.9	1.0	-35.5	-25.0	-10.5	
	5.360	-19.5	H	3.0	28.5	1.0	-47.1	-25.0	-22.1	
	8.040	-13.9	H	3.0	25.6	1.0	-38.5	-25.0	-13.5	
	10.720	-12.3	H	3.0	22.9	1.0	-34.2	-25.0	-9.2	
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/25/13								
Test Engineer:		Kiya Kedida								
Configuration:		EUT with AC charger								
Mode:		TX, LTE B4 20MHZ QPSK								
Chamber		Pre-amplifer			Filter		Limit			
3m Chamber		T145 8449B			Filter 1		Part 22			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE41 20MH z QPSK	Low Ch, (2506 MHz)									
	5.012	-16.1	V	3.0	28.9	1.0	-43.9	-25.0	-18.9	
	7.518	-13.5	V	3.0	26.3	1.0	-38.8	-25.0	-13.8	
	10.553	-11.6	V	3.0	22.9	1.0	-33.5	-25.0	-8.5	
	5.012	-13.9	H	3.0	28.9	1.0	-41.8	-25.0	-16.8	
	7.518	-12.8	H	3.0	26.3	1.0	-38.2	-25.0	-13.2	
	10.553	-11.3	H	3.0	22.9	1.0	-33.2	-25.0	-8.2	
	Mid Ch, (2593 MHz)									
	5.186	-18.2	V	3.0	28.7	1.0	-45.9	-25.0	-20.9	
	7.779	-14.2	V	3.0	26.0	1.0	-39.2	-25.0	-14.2	
	10.372	-11.2	V	3.0	23.0	1.0	-33.2	-25.0	-8.2	
	5.186	-15.7	H	3.0	28.7	1.0	-43.4	-25.0	-18.4	
	7.779	-11.9	H	3.0	26.0	1.0	-36.9	-25.0	-11.9	
	10.372	-11.4	H	3.0	23.0	1.0	-33.4	-25.0	-8.4	
	High Ch, (2680 MHz)									
	5.360	-18.7	V	3.0	28.5	1.0	-46.2	-25.0	-21.2	
	8.040	-13.9	V	3.0	25.6	1.0	-38.5	-25.0	-13.5	
	10.720	-12.8	V	3.0	22.9	1.0	-34.7	-25.0	-9.7	
5.360	-17.7	H	3.0	28.5	1.0	-45.2	-25.0	-20.2		
8.040	-12.8	H	3.0	25.6	1.0	-37.5	-25.0	-12.5		
10.720	-11.2	H	3.0	22.9	1.0	-33.1	-25.0	-8.1		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/25/13								
Test Engineer:		Daniel Soper								
Configuration:		EUT with AC charger								
Mode:		TX, LTE B4 15MHZ 16QAM								
Chamber		Pre-amplifier		Filter		Limit				
3m Chamber		T145 8449B		Filter 1		Part 22				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE41 15MH z 16QA M	Low Ch, (2503.5 MHz)									
	5.007	-17.1	V	3.0	28.9	1.0	-45.0	-25.0	-20.0	
	7.511	-14.5	V	3.0	26.3	1.0	-39.9	-25.0	-14.9	
	10.014	-12.8	V	3.0	23.1	1.0	-34.9	-25.0	-9.9	
	5.007	-10.3	H	3.0	28.9	1.0	-38.2	-25.0	-13.2	
	7.511	-14.1	H	3.0	26.3	1.0	-39.5	-25.0	-14.5	
	10.014	-12.0	H	3.0	23.1	1.0	-34.1	-25.0	-9.1	
	Mid Ch, (2593 MHz)									
	5.186	-19.0	V	3.0	28.7	1.0	-46.7	-25.0	-21.7	
	7.779	-14.7	V	3.0	26.0	1.0	-39.7	-25.0	-14.7	
	10.372	-12.1	V	3.0	23.0	1.0	-34.1	-25.0	-9.1	
	5.186	-17.5	H	3.0	28.7	1.0	-45.2	-25.0	-20.2	
7.779	-12.8	H	3.0	26.0	1.0	-37.7	-25.0	-12.7		
10.372	-12.5	H	3.0	23.0	1.0	-34.5	-25.0	-9.5		
High Ch, (2682.5 MHz)										
5.365	-19.6	V	3.0	28.5	1.0	-47.2	-25.0	-22.2		
8.052	-14.5	V	3.0	25.6	1.0	-39.2	-25.0	-14.2		
10.730	-13.6	V	3.0	22.9	1.0	-35.5	-25.0	-10.5		
5.365	-19.5	H	3.0	28.5	1.0	-47.0	-25.0	-22.0		
8.052	-13.8	H	3.0	25.6	1.0	-38.5	-25.0	-13.5		
10.730	-12.3	H	3.0	22.9	1.0	-34.2	-25.0	-9.2		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/25/13								
Test Engineer:		Daniel Soper								
Configuration:		EUT with AC charger								
Mode:		TX, LTE B41 3MHz har 16QAM								
Chamber		Pre-amplifer		Filter		Limit				
3m Chamber		T145 8449B		Filter 1		Part 22				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE41 15MH z QPSK	Low Ch, (2503.5 MHz)									
	5.007	-14.9	V	3.0	28.9	1.0	-42.8	-25.0	-17.8	
	7.511	-15.4	V	3.0	26.3	1.0	-40.8	-25.0	-15.8	
	10.014	-12.9	V	3.0	23.1	1.0	-35.0	-25.0	-10.0	
	5.007	-8.9	H	3.0	28.9	1.0	-36.8	-25.0	-11.8	
	7.511	-14.1	H	3.0	26.3	1.0	-39.5	-25.0	-14.5	
	10.014	-12.5	H	3.0	23.1	1.0	-34.6	-25.0	-9.6	
	Mid Ch, (2593 MHz)									
	5.186	-20.2	V	3.0	28.7	1.0	-47.9	-25.0	-22.9	
	7.779	-13.9	V	3.0	26.0	1.0	-38.8	-25.0	-13.8	
	10.372	-12.8	V	3.0	23.0	1.0	-34.8	-25.0	-9.8	
	5.186	-19.5	H	3.0	28.7	1.0	-47.2	-25.0	-22.2	
	7.779	-13.8	H	3.0	26.0	1.0	-38.8	-25.0	-13.8	
	10.372	-11.4	H	3.0	23.0	1.0	-33.4	-25.0	-8.4	
	High Ch, (2682.5 MHz)									
	5.365	-19.6	V	3.0	28.5	1.0	-47.2	-25.0	-22.2	
	8.052	-14.5	V	3.0	25.6	1.0	-39.2	-25.0	-14.2	
	10.730	-13.6	V	3.0	22.9	1.0	-35.5	-25.0	-10.5	
5.365	-19.5	H	3.0	28.5	1.0	-47.0	-25.0	-22.0		
8.052	-13.8	H	3.0	25.6	1.0	-38.5	-25.0	-13.5		
10.730	-12.3	H	3.0	22.9	1.0	-34.2	-25.0	-9.2		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/25/13								
Test Engineer:		Daniel Soper								
Configuration:		EUT , wireless AC Adapter								
Mode:		TX, LTE band 41, 10MHz, 16QAM								
Chamber		Pre-amplifier			Filter		Limit			
3m Chamber		T145 8449B			Filter 1		Part 24			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE41 10MH z 16QA M	Low Ch, (2501 MHz)									
	5.002	-10.5	V	3.0	28.9	1.0	-38.5	-25.0	-13.5	
	7.503	-15.1	V	3.0	26.3	1.0	-40.5	-25.0	-15.5	
	10.004	-12.9	V	3.0	23.1	1.0	-35.0	-25.0	-10.0	
	5.002	-20.2	H	3.0	28.9	1.0	-48.1	-25.0	-23.1	
	7.503	-13.5	H	3.0	26.3	1.0	-38.9	-25.0	-13.9	
	10.004	-2.1	H	3.0	23.1	1.0	-24.2	-25.0	0.8	
	Mid Ch, (2593 MHz)									
	5.186	-19.5	V	3.0	28.7	1.0	-47.2	-25.0	-22.2	
	7.779	-14.5	V	3.0	26.0	1.0	-39.5	-25.0	-14.5	
	10.372	-12.6	V	3.0	23.0	1.0	-34.6	-25.0	-9.6	
	5.186	-19.8	H	3.0	28.7	1.0	-47.6	-25.0	-22.6	
	7.779	-13.8	H	3.0	26.0	1.0	-38.7	-25.0	-13.7	
	10.372	-12.5	H	3.0	23.0	1.0	-34.5	-25.0	-9.5	
	High Ch, (2685 MHz)									
	5.375	-20.4	V	3.0	28.5	1.0	-47.9	-25.0	-22.9	
	8.055	-14.9	V	3.0	25.6	1.0	-39.5	-25.0	-14.5	
	10.740	-13.7	V	3.0	22.9	1.0	-35.5	-25.0	-10.5	
5.375	-19.7	H	3.0	28.5	1.0	-47.2	-25.0	-22.2		
8.055	-14.2	H	3.0	25.6	1.0	-38.8	-25.0	-13.8		
10.740	-12.8	H	3.0	22.9	1.0	-34.6	-25.0	-9.6		
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/25/13								
Test Engineer:		Daniel Soper								
Configuration:		EUT , wireless AC Adapter								
Mode:		TX, LTE band 41, 10MHz, QPSK								
Chamber		Pre-amplifier			Filter		Limit			
3m Chamber		T145 8449B			Filter 1		Part 24			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE41 10MH z QPSK	Low Ch, (2501 MHz)									
	5.002	-20.6	V	3.0	28.9	1.0	-48.5	-25.0	-23.5	
	7.503	-14.6	V	3.0	26.3	1.0	-39.9	-25.0	-14.9	
	10.004	-11.0	V	3.0	23.1	1.0	-33.1	-25.0	-8.1	
	5.002	-11.1	H	3.0	28.9	1.0	-39.0	-25.0	-14.0	
	7.503	-14.5	H	3.0	26.3	1.0	-39.8	-25.0	-14.8	
	10.004	-11.8	H	3.0	23.1	1.0	-33.9	-25.0	-8.9	
	Mid Ch, (2593 MHz)									
	5.186	-19.2	V	3.0	28.7	1.0	-46.9	-25.0	-21.9	
	7.779	-14.4	V	3.0	26.0	1.0	-39.4	-25.0	-14.4	
	10.372	-12.8	V	3.0	23.0	1.0	-34.8	-25.0	-9.8	
	5.186	-19.7	H	3.0	28.7	1.0	-47.5	-25.0	-22.5	
	7.779	-13.8	H	3.0	26.0	1.0	-38.8	-25.0	-13.8	
	10.372	-12.5	H	3.0	23.0	1.0	-34.5	-25.0	-9.5	
	High Ch, (2685 MHz)									
	5.375	-20.0	V	3.0	28.5	1.0	-47.5	-25.0	-22.5	
	8.055	-14.3	V	3.0	25.6	1.0	-39.0	-25.0	-14.0	
	10.740	-13.4	V	3.0	22.9	1.0	-35.3	-25.0	-10.3	
5.375	-19.7	H	3.0	28.5	1.0	-47.2	-25.0	-22.2		
8.055	-13.9	H	3.0	25.6	1.0	-38.6	-25.0	-13.6		
10.740	-12.1	H	3.0	22.9	1.0	-33.9	-25.0	-8.9		
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 10MHZ har 16QAM								
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T145 8449B		Filter 1		Part 22				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26 10MH z 16QA M	Low Ch, (819MHz)									
	1.638	-30.9	V	3.0	32.7	1.0	-62.6	-13.0	-49.6	
	2.457	-26.1	V	3.0	31.3	1.0	-56.4	-13.0	-43.4	
	3.276	-22.0	V	3.0	30.6	1.0	-51.5	-13.0	-38.5	
	1.638	-29.6	H	3.0	32.7	1.0	-61.3	-13.0	-48.3	
	2.457	-27.8	H	3.0	31.3	1.0	-58.1	-13.0	-45.1	
	3.276	-21.5	H	3.0	30.6	1.0	-51.1	-13.0	-38.1	
	Mid Ch, (831.5MHz)									
	1.663	-30.3	V	3.0	32.6	1.0	-61.9	-13.0	-48.9	
	2.495	-25.8	V	3.0	31.5	1.0	-56.3	-13.0	-43.3	
	3.326	-22.6	V	3.0	30.5	1.0	-52.1	-13.0	-39.1	
	1.663	-29.5	H	3.0	32.6	1.0	-61.2	-13.0	-48.2	
2.495	-26.9	H	3.0	31.5	1.0	-57.4	-13.0	-44.4		
3.326	-22.5	H	3.0	30.5	1.0	-52.1	-13.0	-39.1		
High Ch, (844MHz)										
1.688	-30.5	V	3.0	32.6	1.0	-62.0	-13.0	-49.0		
2.532	-24.6	V	3.0	31.5	1.0	-55.1	-13.0	-42.1		
3.376	-26.4	V	3.0	30.5	1.0	-55.9	-13.0	-42.9		
1.688	-30.1	H	3.0	32.6	1.0	-61.6	-13.0	-48.6		
2.532	-26.3	H	3.0	31.5	1.0	-56.8	-13.0	-43.8		
3.376	-24.3	H	3.0	30.5	1.0	-53.8	-13.0	-40.8		
Rev. 03.03.09										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 10MHZ har QPSK								
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber B		T145 8449B			Filter 1		Part 22			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26 10MH z QPSK	Low Ch, (819MHz)									
	1.638	-30.9	V	3.0	32.7	1.0	-62.6	-13.0	-49.6	
	2.457	-25.4	V	3.0	31.3	1.0	-55.7	-13.0	-42.7	
	3.276	-21.9	V	3.0	30.6	1.0	-51.5	-13.0	-38.5	
	1.638	-30.3	H	3.0	32.7	1.0	-62.0	-13.0	-49.0	
	2.457	-28.2	H	3.0	31.3	1.0	-58.4	-13.0	-45.4	
	3.276	-22.2	H	3.0	30.6	1.0	-51.7	-13.0	-38.7	
	Mid Ch, (831.5MHz)									
	1.663	-31.1	V	3.0	32.6	1.0	-62.7	-13.0	-49.7	
	2.495	-25.6	V	3.0	31.5	1.0	-56.0	-13.0	-43.0	
	3.326	-22.2	V	3.0	30.5	1.0	-51.7	-13.0	-38.7	
	1.663	-29.9	H	3.0	32.6	1.0	-61.5	-13.0	-48.5	
	2.495	-27.5	H	3.0	31.5	1.0	-58.0	-13.0	-45.0	
	3.326	-22.0	H	3.0	30.5	1.0	-51.6	-13.0	-38.6	
	High Ch, (844MHz)									
1.688	-30.8	V	3.0	32.6	1.0	-62.4	-13.0	-49.4		
2.532	-25.1	V	3.0	31.5	1.0	-55.5	-13.0	-42.5		
3.376	-24.1	V	3.0	30.5	1.0	-53.6	-13.0	-40.6		
1.688	-29.9	H	3.0	32.6	1.0	-61.5	-13.0	-48.5		
2.532	-26.6	H	3.0	31.5	1.0	-57.1	-13.0	-44.1		
3.376	-23.2	H	3.0	30.5	1.0	-52.7	-13.0	-39.7		
Rev. 03.03.09										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 5MHZ har 16QAM								
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber B		T145 8449B			Filter 1		Part 22			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26 5MHz 16QA M	Low Ch, (816.5MHz)									
	1.633	-31.0	V	3.0	32.7	1.0	-62.7	-13.0	-49.7	
	2.449	-26.2	V	3.0	31.2	1.0	-56.4	-13.0	-43.4	
	3.266	-21.9	V	3.0	30.6	1.0	-51.5	-13.0	-38.5	
	1.633	-30.2	H	3.0	32.7	1.0	-61.9	-13.0	-48.9	
	2.449	-28.3	H	3.0	31.2	1.0	-58.5	-13.0	-45.5	
	3.266	-22.0	H	3.0	30.6	1.0	-51.6	-13.0	-38.6	
	Mid Ch, (831.5MHz)									
	1.663	-30.0	V	3.0	32.6	1.0	-61.6	-13.0	-48.6	
2.495	-26.2	V	3.0	31.5	1.0	-56.7	-13.0	-43.7		
3.326	-22.9	V	3.0	30.5	1.0	-52.4	-13.0	-39.4		
1.663	-30.7	H	3.0	32.6	1.0	-62.4	-13.0	-49.4		
2.495	-28.5	H	3.0	31.5	1.0	-59.0	-13.0	-46.0		
3.326	-20.9	H	3.0	30.5	1.0	-50.5	-13.0	-37.5		
High Ch, (844MHz)										
1.688	-30.7	V	3.0	32.6	1.0	-62.3	-13.0	-49.3		
2.532	-24.3	V	3.0	31.5	1.0	-54.8	-13.0	-41.8		
3.376	-24.4	V	3.0	30.5	1.0	-53.9	-13.0	-40.9		
1.688	-29.9	H	3.0	32.6	1.0	-61.4	-13.0	-48.4		
2.532	-26.5	H	3.0	31.5	1.0	-56.9	-13.0	-43.9		
3.376	-24.3	H	3.0	30.5	1.0	-53.7	-13.0	-40.7		
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Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 5MHZ har QPSK								
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber B		T145 8449B			Filter 1		Part 22			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (816.5MHz)										
LTE26	1.633	-30.8	V	3.0	32.7	1.0	-62.5	-13.0	-49.5	
	2.449	-25.9	V	3.0	31.2	1.0	-56.1	-13.0	-43.1	
	3.266	-21.9	V	3.0	30.6	1.0	-51.5	-13.0	-38.5	
5MHz	1.633	-30.4	H	3.0	32.7	1.0	-62.1	-13.0	-49.1	
	2.449	-28.2	H	3.0	31.2	1.0	-58.4	-13.0	-45.4	
	3.266	-21.9	H	3.0	30.6	1.0	-51.5	-13.0	-38.5	
QPSK	1.663	-31.1	V	3.0	32.6	1.0	-62.7	-13.0	-49.7	
	2.495	-27.3	V	3.0	31.5	1.0	-57.8	-13.0	-44.8	
	3.326	-23.8	V	3.0	30.5	1.0	-53.3	-13.0	-40.3	
Mid Ch, (831.5MHz)										
	1.663	-30.2	H	3.0	32.6	1.0	-61.8	-13.0	-48.8	
	2.495	-28.2	H	3.0	31.5	1.0	-58.7	-13.0	-45.7	
	3.326	-23.1	H	3.0	30.5	1.0	-52.6	-13.0	-39.6	
High Ch, (844MHz)										
	1.688	-29.9	V	3.0	32.6	1.0	-61.5	-13.0	-48.5	
	2.532	-24.8	V	3.0	31.5	1.0	-55.2	-13.0	-42.2	
	3.376	-24.2	V	3.0	30.5	1.0	-53.7	-13.0	-40.7	
	1.688	-29.6	H	3.0	32.6	1.0	-61.1	-13.0	-48.1	
	2.532	-26.8	H	3.0	31.5	1.0	-57.3	-13.0	-44.3	
	3.376	-24.1	H	3.0	30.5	1.0	-53.5	-13.0	-40.5	
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Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 3MHZ har 16QAM								
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T145 8449B		Filter 1		Part 22				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26 3MHz 16QA M	Low Ch, (815.5MHz)									
	1.631	-30.5	V	3.0	32.7	1.0	-62.3	-13.0	-49.3	
	2.446	-26.2	V	3.0	31.2	1.0	-56.4	-13.0	-43.4	
	3.262	-21.0	V	3.0	30.6	1.0	-50.6	-13.0	-37.6	
	1.631	-30.5	H	3.0	32.7	1.0	-62.2	-13.0	-49.2	
	2.446	-28.1	H	3.0	31.2	1.0	-58.4	-13.0	-45.4	
	3.262	-20.7	H	3.0	30.6	1.0	-50.3	-13.0	-37.3	
	Mid Ch, (831.5MHz)									
	1.663	-30.5	V	3.0	32.6	1.0	-62.1	-13.0	-49.1	
	2.495	-26.0	V	3.0	31.5	1.0	-56.5	-13.0	-43.5	
	3.326	-21.8	V	3.0	30.5	1.0	-51.3	-13.0	-38.3	
	1.663	-30.3	H	3.0	32.6	1.0	-61.9	-13.0	-48.9	
	2.495	-27.3	H	3.0	31.5	1.0	-57.7	-13.0	-44.7	
	3.326	-22.9	H	3.0	30.5	1.0	-52.4	-13.0	-39.4	
	High Ch, (847.5MHz)									
	1.695	-29.6	V	3.0	32.6	1.0	-61.2	-13.0	-48.2	
	2.542	-24.8	V	3.0	31.4	1.0	-55.2	-13.0	-42.2	
	3.390	-23.3	V	3.0	30.5	1.0	-52.7	-13.0	-39.7	
1.695	-29.5	H	3.0	32.6	1.0	-61.0	-13.0	-48.0		
2.542	-27.6	H	3.0	31.4	1.0	-58.1	-13.0	-45.1		
3.390	-24.1	H	3.0	30.5	1.0	-53.5	-13.0	-40.5		
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Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 3MHZ har QPSK								
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber B		T145 8449B			Filter 1		Part 22			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26 3MHz QPSK	Low Ch, (815.5MHz)									
	1.631	-30.5	V	3.0	32.7	1.0	-62.3	-13.0	-49.3	
	2.446	-26.6	V	3.0	31.2	1.0	-56.8	-13.0	-43.8	
	3.262	-22.1	V	3.0	30.6	1.0	-51.7	-13.0	-38.7	
	1.631	-30.7	H	3.0	32.7	1.0	-62.4	-13.0	-49.4	
	2.446	-28.5	H	3.0	31.2	1.0	-58.7	-13.0	-45.7	
	3.262	-21.6	H	3.0	30.6	1.0	-51.2	-13.0	-38.2	
	Mid Ch, (831.5MHz)									
	1.663	-30.9	V	3.0	32.6	1.0	-62.5	-13.0	-49.5	
	2.495	-25.9	V	3.0	31.5	1.0	-56.4	-13.0	-43.4	
	3.326	-23.0	V	3.0	30.5	1.0	-52.5	-13.0	-39.5	
	1.663	-30.1	H	3.0	32.6	1.0	-61.7	-13.0	-48.7	
2.495	-28.0	H	3.0	31.5	1.0	-58.5	-13.0	-45.5		
3.326	-22.7	H	3.0	30.5	1.0	-52.3	-13.0	-39.3		
High Ch, (847.5MHz)										
1.695	-30.7	V	3.0	32.6	1.0	-62.3	-13.0	-49.3		
2.542	-24.5	V	3.0	31.4	1.0	-54.9	-13.0	-41.9		
3.390	-24.0	V	3.0	30.5	1.0	-53.5	-13.0	-40.5		
1.695	-30.1	H	3.0	32.6	1.0	-61.6	-13.0	-48.6		
2.542	-26.7	H	3.0	31.4	1.0	-57.1	-13.0	-44.1		
3.390	-23.8	H	3.0	30.5	1.0	-53.3	-13.0	-40.3		
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Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 1.4MHZ har 16QAM								
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T145 8449B		Filter 1		Part 22				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26 1.4MH z 16QA M	Low Ch, (814.7MHz)									
	1.629		V	3.0	32.7	1.0	-31.7	-13.0	-18.7	
	2.444		V	3.0	31.2	1.0	-30.2	-13.0	-17.2	
	3.258		V	3.0	30.6	1.0	-29.6	-13.0	-16.6	
	1.629		H	3.0	32.7	1.0	-31.7	-13.0	-18.7	
	2.444		H	3.0	31.2	1.0	-30.2	-13.0	-17.2	
	3.258		H	3.0	30.6	1.0	-29.6	-13.0	-16.6	
	Mid Ch, (831.5MHz)									
	1.663		V	3.0	32.6	1.0	-31.6	-13.0	-18.6	
	2.495		V	3.0	31.5	1.0	-30.5	-13.0	-17.5	
	3.326		V	3.0	30.5	1.0	-29.5	-13.0	-16.5	
	1.663		H	3.0	32.6	1.0	-31.6	-13.0	-18.6	
2.495		H	3.0	31.5	1.0	-30.5	-13.0	-17.5		
3.326		H	3.0	30.5	1.0	-29.5	-13.0	-16.5		
High Ch, (847.5MHz)										
1.695		V	3.0	32.6	1.0	-31.6	-13.0	-18.6		
2.542		V	3.0	31.4	1.0	-30.4	-13.0	-17.4		
3.390		V	3.0	30.5	1.0	-29.5	-13.0	-16.5		
1.695		H	3.0	32.6	1.0	-31.6	-13.0	-18.6		
2.542		H	3.0	31.4	1.0	-30.4	-13.0	-17.4		
3.390		H	3.0	30.5	1.0	-29.5	-13.0	-16.5		
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Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16543								
Date:		11/24/13								
Test Engineer:		Trina Noor								
Configuration:		EUT with Wireless charger								
Mode:		TX, LTE B26 1.4MHZ har QPSK								
Chamber		Pre-amplifier			Filter		Limit			
5m Chamber B		T145 8449B			Filter 1		Part 22			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE26 1.4MH z QPSK	Low Ch, (814.7MHz)									
	1.629		V	3.0	32.7	1.0	-31.7	-13.0	-18.7	
	2.444		V	3.0	31.2	1.0	-30.2	-13.0	-17.2	
	3.258		V	3.0	30.6	1.0	-29.6	-13.0	-16.6	
	1.629		H	3.0	32.7	1.0	-31.7	-13.0	-18.7	
	2.444		H	3.0	31.2	1.0	-30.2	-13.0	-17.2	
	3.258		H	3.0	30.6	1.0	-29.6	-13.0	-16.6	
	Mid Ch, (831.5MHz)									
	1.663		V	3.0	32.6	1.0	-31.6	-13.0	-18.6	
	2.495		V	3.0	31.5	1.0	-30.5	-13.0	-17.5	
	3.326		V	3.0	30.5	1.0	-29.5	-13.0	-16.5	
	1.663		H	3.0	32.6	1.0	-31.6	-13.0	-18.6	
	2.495		H	3.0	31.5	1.0	-30.5	-13.0	-17.5	
	3.326		H	3.0	30.5	1.0	-29.5	-13.0	-16.5	
	High Ch, (847.5MHz)									
	1.695		V	3.0	32.6	1.0	-31.6	-13.0	-18.6	
	2.542		V	3.0	31.4	1.0	-30.4	-13.0	-17.4	
	3.390		V	3.0	30.5	1.0	-29.5	-13.0	-16.5	
1.695		H	3.0	32.6	1.0	-31.6	-13.0	-18.6		
2.542		H	3.0	31.4	1.0	-30.4	-13.0	-17.4		
3.390		H	3.0	30.5	1.0	-29.5	-13.0	-16.5		
Rev. 03.03.09										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/23/13								
Test Engineer:		Trina Noor								
Configuration:		EUT W/ AC Adapter								
Mode:		TX, LTE band 25, 10MHz, 16QAM								
Chamber		Pre-amplifier		Filter		Limit				
3m Chamber		T145 8449B		Filter 1		Part 24				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE2 5 10MH z 16QA M	Low Ch, (1855 MHz)									
	3.710	-24.1	V	3.0	30.2	1.0	-53.2	-13.0	-40.2	
	5.565	-20.0	V	3.0	28.4	1.0	-47.4	-13.0	-34.4	
	7.420	-18.7	V	3.0	26.5	1.0	-44.1	-13.0	-31.1	
	3.710	-23.5	H	3.0	30.2	1.0	-52.7	-13.0	-39.7	
	5.565	-19.5	H	3.0	28.4	1.0	-46.9	-13.0	-33.9	
	7.420	-18.5	H	3.0	26.5	1.0	-44.0	-13.0	-31.0	
	Mid Ch, (1882.5 MHz)									
	3.765	-23.6	V	3.0	30.1	1.0	-52.8	-13.0	-39.8	
	5.648	-17.9	V	3.0	28.3	1.0	-45.1	-13.0	-32.1	
	7.530	-18.5	V	3.0	26.3	1.0	-43.8	-13.0	-30.8	
	3.765	-23.2	H	3.0	30.1	1.0	-52.3	-13.0	-39.3	
	5.648	-17.7	H	3.0	28.3	1.0	-44.9	-13.0	-31.9	
	7.530	-17.6	H	3.0	26.3	1.0	-42.9	-13.0	-29.9	
	High Ch, (1910 MHz)									
	3.820	-23.6	V	3.0	30.1	1.0	-52.6	-13.0	-39.6	
	5.730	-18.3	V	3.0	28.2	1.0	-45.5	-13.0	-32.5	
	7.640	-18.0	V	3.0	26.2	1.0	-43.1	-13.0	-30.1	
3.820	-22.4	H	3.0	30.1	1.0	-51.5	-13.0	-38.5		
5.730	-18.9	H	3.0	28.2	1.0	-46.1	-13.0	-33.1		
7.640	-17.9	H	3.0	26.2	1.0	-43.1	-13.0	-30.1		
Rev. 03.03.09										

Compliance Certification Services									
Above 1GHz High Frequency Substitution Measurement									
Company:		LG							
Project #:		13U16534							
Date:		11/23/13							
Test Engineer:		Trina Noor							
Configuration:		EUT W/ AC Adapter							
Mode:		TX, LTE band 25, 10MHz, QPSK							
Chamber		Pre-amplifier			Filter		Limit		
3m Chamber		T145 8449B			Filter 1		Part 24		
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
v Ch, (1855 MHz)									
3.710	-23.8	V	3.0	30.2	1.0	-52.9	-13.0	-39.9	
5.565	-20.1	V	3.0	28.4	1.0	-47.4	-13.0	-34.4	
7.420	-18.3	V	3.0	26.5	1.0	-43.8	-13.0	-30.8	
3.710	-24.1	H	3.0	30.2	1.0	-53.3	-13.0	-40.3	
5.565	-19.5	H	3.0	28.4	1.0	-46.8	-13.0	-33.8	
7.420	-17.5	H	3.0	26.5	1.0	-42.9	-13.0	-29.9	
Ch, (1882.5 MHz)									
3.765	-23.1	V	3.0	30.1	1.0	-52.3	-13.0	-39.3	
5.648	-18.1	V	3.0	28.3	1.0	-45.3	-13.0	-32.3	
7.530	-19.0	V	3.0	26.3	1.0	-44.4	-13.0	-31.4	
3.765	-23.8	H	3.0	30.1	1.0	-52.9	-13.0	-39.9	
5.648	-18.1	H	3.0	28.3	1.0	-45.4	-13.0	-32.4	
7.530	-17.4	H	3.0	26.3	1.0	-42.7	-13.0	-29.7	
1 Ch, (1910 MHz)									
3.820	-23.1	V	3.0	30.1	1.0	-52.1	-13.0	-39.1	
5.730	-18.6	V	3.0	28.2	1.0	-45.8	-13.0	-32.8	
7.640	-18.1	V	3.0	26.2	1.0	-43.3	-13.0	-30.3	
3.820	-23.2	H	3.0	30.1	1.0	-52.3	-13.0	-39.3	
5.730	-18.5	H	3.0	28.2	1.0	-45.7	-13.0	-32.7	
7.640	-17.7	H	3.0	26.2	1.0	-42.9	-13.0	-29.9	
Rev. 03.03.09									

Band
 LTE2
 5
 10MH
 z
 QPS
 K

		Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
		Company:	LG								
		Project #:	13U16534								
		Date:	11/23/13								
		Test Engineer:	Trina Noor								
		Configuration:	EUT W/ AC Adapter								
		Mode:	TX, LTE band 25, 5MHz, 16QAM								
		<div style="border: 1px solid black; padding: 2px; display: inline-block;">Chamber</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">Pre-amplifier</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">Filter</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">Limit</div>			
		<div style="border: 1px solid black; padding: 2px; display: inline-block;">3m Chamber</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">T145 8449B</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">Filter 1</div>		<div style="border: 1px solid black; padding: 2px; display: inline-block;">Part 24</div>			
Band		f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
		GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
LTE25		Low Ch, (1851.5 MHz)									
		3.703	-23.2	V	3.0	30.2	1.0	-52.4	-13.0	-39.4	
		5.554	-20.6	V	3.0	28.4	1.0	-48.0	-13.0	-35.0	
5MHz		7.406	-19.0	V	3.0	26.5	1.0	-44.5	-13.0	-31.5	
		3.706	-23.4	H	3.0	30.2	1.0	-52.6	-13.0	-39.6	
16QA		5.554	-20.8	H	3.0	28.4	1.0	-48.2	-13.0	-35.2	
M		7.406	-18.2	H	3.0	26.5	1.0	-43.6	-13.0	-30.6	
		Mid Ch, (1882.5 MHz)									
		3.765	-23.3	V	3.0	30.1	1.0	-52.5	-13.0	-39.5	
		5.648	-21.1	V	3.0	28.3	1.0	-48.3	-13.0	-35.3	
		7.530	-19.0	V	3.0	26.3	1.0	-44.3	-13.0	-31.3	
		3.765	-23.5	H	3.0	30.1	1.0	-52.7	-13.0	-39.7	
		5.648	-20.5	H	3.0	28.3	1.0	-47.8	-13.0	-34.8	
		7.530	-17.9	H	3.0	26.3	1.0	-43.2	-13.0	-30.2	
		High Ch, (1913.5 MHz)									
		3.828	-21.9	V	3.0	30.1	1.0	-51.0	-13.0	-38.0	
		5.741	-15.7	V	3.0	28.2	1.0	-42.9	-13.0	-29.9	
		7.654	-18.5	V	3.0	26.1	1.0	-43.6	-13.0	-30.6	
		3.828	-22.6	H	3.0	30.1	1.0	-51.7	-13.0	-38.7	
		5.743	-14.1	H	3.0	28.2	1.0	-41.2	-13.0	-28.2	
		7.654	-16.9	H	3.0	26.1	1.0	-42.0	-13.0	-29.0	
		Rev. 03.03.09									

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/23/13								
Test Engineer:		Trina Noor								
Configuration:		EUT W/ AC Adapter								
Mode:		TX, LTE band 25, 5MHz, QPSK								
		Chamber	Pre-amplifier			Filter		Limit		
		3m Chamber	T 145 8449B			Filter 1		Part 24		
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Ch, (1851.5 MHz)										
3.703	-23.5	V	3.0	30.2	1.0	-52.7	-13.0	-39.7		
5.554	-21.0	V	3.0	28.4	1.0	-48.4	-13.0	-35.4		
7.406	-19.6	V	3.0	26.5	1.0	-45.0	-13.0	-32.0		
3.706	-24.0	H	3.0	30.2	1.0	-53.2	-13.0	-40.2		
5.554	-20.4	H	3.0	28.4	1.0	-47.7	-13.0	-34.7		
7.406	-18.8	H	3.0	26.5	1.0	-44.3	-13.0	-31.3		
Ch, (1882.5 MHz)										
3.765	-22.9	V	3.0	30.1	1.0	-52.1	-13.0	-39.1		
5.648	-20.9	V	3.0	28.3	1.0	-48.2	-13.0	-35.2		
7.530	-19.6	V	3.0	26.3	1.0	-44.9	-13.0	-31.9		
3.765	-23.8	H	3.0	30.1	1.0	-52.9	-13.0	-39.9		
5.648	-21.2	H	3.0	28.3	1.0	-48.5	-13.0	-35.5		
7.530	-18.3	H	3.0	26.3	1.0	-43.6	-13.0	-30.6		
Ch, (1913.5 MHz)										
3.828	-22.4	V	3.0	30.1	1.0	-51.5	-13.0	-38.5		
5.741	-15.0	V	3.0	28.2	1.0	-42.2	-13.0	-29.2		
7.654	-18.3	V	3.0	26.1	1.0	-43.4	-13.0	-30.4		
3.828	-22.9	H	3.0	30.1	1.0	-52.0	-13.0	-39.0		
5.743	-15.4	H	3.0	28.2	1.0	-42.6	-13.0	-29.6		
7.654	-16.6	H	3.0	26.1	1.0	-41.7	-13.0	-28.7		
Rev. 03.03.09										

Band
 LTE25
 5MHz
 QPSK

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement																																																																																																																																																																																																																																		
Company: LG Project #: 13U16534 Date: 11/23/13 Test Engineer: Trina Noor Configuration: EUT W/ AC Adapter Mode: TX, LTE band 25, 3MHz, 16QAM																																																																																																																																																																																																																																		
		Chamber	Pre-amplifier	Filter		Limit																																																																																																																																																																																																																												
		3m Chamber	T145 8449B	Filter 1		Part 24																																																																																																																																																																																																																												
Band	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>f GHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Distance (m)</th> <th>Preamp (dB)</th> <th>Filter (dB)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="10">Low Ch, (1851.5 MHz)</td> </tr> <tr> <td>LTE25</td> <td>3.703</td> <td>-22.4</td> <td>V</td> <td>3.0</td> <td>30.2</td> <td>1.0</td> <td>-51.6</td> <td>-13.0</td> <td>-38.6</td> </tr> <tr> <td rowspan="3">3MHz</td> <td>5.554</td> <td>-20.0</td> <td>V</td> <td>3.0</td> <td>28.4</td> <td>1.0</td> <td>-47.4</td> <td>-13.0</td> <td>-34.4</td> </tr> <tr> <td>7.406</td> <td>-19.3</td> <td>V</td> <td>3.0</td> <td>26.5</td> <td>1.0</td> <td>-44.8</td> <td>-13.0</td> <td>-31.8</td> </tr> <tr> <td>3.706</td> <td>-22.6</td> <td>H</td> <td>3.0</td> <td>30.2</td> <td>1.0</td> <td>-51.8</td> <td>-13.0</td> <td>-38.8</td> </tr> <tr> <td rowspan="2">16QAM</td> <td>5.554</td> <td>-20.2</td> <td>H</td> <td>3.0</td> <td>28.4</td> <td>1.0</td> <td>-47.5</td> <td>-13.0</td> <td>-34.5</td> </tr> <tr> <td>7.406</td> <td>-18.4</td> <td>H</td> <td>3.0</td> <td>26.5</td> <td>1.0</td> <td>-43.9</td> <td>-13.0</td> <td>-30.9</td> </tr> <tr> <td>M</td> <td colspan="9">Mid Ch, (1882.5 MHz)</td> </tr> <tr> <td></td> <td>3.765</td> <td>-22.3</td> <td>V</td> <td>3.0</td> <td>30.1</td> <td>1.0</td> <td>-51.4</td> <td>-13.0</td> <td>-38.4</td> </tr> <tr> <td></td> <td>5.648</td> <td>-20.4</td> <td>V</td> <td>3.0</td> <td>28.3</td> <td>1.0</td> <td>-47.7</td> <td>-13.0</td> <td>-34.7</td> </tr> <tr> <td></td> <td>7.530</td> <td>-19.2</td> <td>V</td> <td>3.0</td> <td>26.3</td> <td>1.0</td> <td>-44.5</td> <td>-13.0</td> <td>-31.5</td> </tr> <tr> <td></td> <td>3.765</td> <td>-20.4</td> <td>H</td> <td>3.0</td> <td>30.1</td> <td>1.0</td> <td>-49.6</td> <td>-13.0</td> <td>-36.6</td> </tr> <tr> <td></td> <td>5.648</td> <td>-21.3</td> <td>H</td> <td>3.0</td> <td>28.3</td> <td>1.0</td> <td>-48.6</td> <td>-13.0</td> <td>-35.6</td> </tr> <tr> <td></td> <td>7.530</td> <td>-17.2</td> <td>H</td> <td>3.0</td> <td>26.3</td> <td>1.0</td> <td>-42.5</td> <td>-13.0</td> <td>-29.5</td> </tr> <tr> <td></td> <td colspan="9">High Ch, (1913.5 MHz)</td> </tr> <tr> <td></td> <td>3.828</td> <td>-22.2</td> <td>V</td> <td>3.0</td> <td>30.1</td> <td>1.0</td> <td>-51.3</td> <td>-13.0</td> <td>-38.3</td> </tr> <tr> <td></td> <td>5.741</td> <td>-19.2</td> <td>V</td> <td>3.0</td> <td>28.2</td> <td>1.0</td> <td>-46.4</td> <td>-13.0</td> <td>-33.4</td> </tr> <tr> <td></td> <td>7.654</td> <td>-18.5</td> <td>V</td> <td>3.0</td> <td>26.1</td> <td>1.0</td> <td>-43.6</td> <td>-13.0</td> <td>-30.6</td> </tr> <tr> <td></td> <td>3.828</td> <td>-22.9</td> <td>H</td> <td>3.0</td> <td>30.1</td> <td>1.0</td> <td>-52.0</td> <td>-13.0</td> <td>-39.0</td> </tr> <tr> <td></td> <td>5.743</td> <td>-18.5</td> <td>H</td> <td>3.0</td> <td>28.2</td> <td>1.0</td> <td>-45.7</td> <td>-13.0</td> <td>-32.7</td> </tr> <tr> <td></td> <td>7.654</td> <td>-16.8</td> <td>H</td> <td>3.0</td> <td>26.1</td> <td>1.0</td> <td>-42.0</td> <td>-13.0</td> <td>-29.0</td> </tr> </tbody> </table>									f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch, (1851.5 MHz)										LTE25	3.703	-22.4	V	3.0	30.2	1.0	-51.6	-13.0	-38.6	3MHz	5.554	-20.0	V	3.0	28.4	1.0	-47.4	-13.0	-34.4	7.406	-19.3	V	3.0	26.5	1.0	-44.8	-13.0	-31.8	3.706	-22.6	H	3.0	30.2	1.0	-51.8	-13.0	-38.8	16QAM	5.554	-20.2	H	3.0	28.4	1.0	-47.5	-13.0	-34.5	7.406	-18.4	H	3.0	26.5	1.0	-43.9	-13.0	-30.9	M	Mid Ch, (1882.5 MHz)										3.765	-22.3	V	3.0	30.1	1.0	-51.4	-13.0	-38.4		5.648	-20.4	V	3.0	28.3	1.0	-47.7	-13.0	-34.7		7.530	-19.2	V	3.0	26.3	1.0	-44.5	-13.0	-31.5		3.765	-20.4	H	3.0	30.1	1.0	-49.6	-13.0	-36.6		5.648	-21.3	H	3.0	28.3	1.0	-48.6	-13.0	-35.6		7.530	-17.2	H	3.0	26.3	1.0	-42.5	-13.0	-29.5		High Ch, (1913.5 MHz)										3.828	-22.2	V	3.0	30.1	1.0	-51.3	-13.0	-38.3		5.741	-19.2	V	3.0	28.2	1.0	-46.4	-13.0	-33.4		7.654	-18.5	V	3.0	26.1	1.0	-43.6	-13.0	-30.6		3.828	-22.9	H	3.0	30.1	1.0	-52.0	-13.0	-39.0		5.743	-18.5	H	3.0	28.2	1.0	-45.7	-13.0	-32.7		7.654	-16.8	H	3.0	26.1	1.0	-42.0	-13.0	-29.0
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M	Mid Ch, (1882.5 MHz)																																																																																																																																																																																																																																	
	3.765	-22.3	V	3.0	30.1	1.0	-51.4	-13.0	-38.4																																																																																																																																																																																																																									
	5.648	-20.4	V	3.0	28.3	1.0	-47.7	-13.0	-34.7																																																																																																																																																																																																																									
	7.530	-19.2	V	3.0	26.3	1.0	-44.5	-13.0	-31.5																																																																																																																																																																																																																									
	3.765	-20.4	H	3.0	30.1	1.0	-49.6	-13.0	-36.6																																																																																																																																																																																																																									
	5.648	-21.3	H	3.0	28.3	1.0	-48.6	-13.0	-35.6																																																																																																																																																																																																																									
	7.530	-17.2	H	3.0	26.3	1.0	-42.5	-13.0	-29.5																																																																																																																																																																																																																									
	High Ch, (1913.5 MHz)																																																																																																																																																																																																																																	
	3.828	-22.2	V	3.0	30.1	1.0	-51.3	-13.0	-38.3																																																																																																																																																																																																																									
	5.741	-19.2	V	3.0	28.2	1.0	-46.4	-13.0	-33.4																																																																																																																																																																																																																									
	7.654	-18.5	V	3.0	26.1	1.0	-43.6	-13.0	-30.6																																																																																																																																																																																																																									
	3.828	-22.9	H	3.0	30.1	1.0	-52.0	-13.0	-39.0																																																																																																																																																																																																																									
	5.743	-18.5	H	3.0	28.2	1.0	-45.7	-13.0	-32.7																																																																																																																																																																																																																									
	7.654	-16.8	H	3.0	26.1	1.0	-42.0	-13.0	-29.0																																																																																																																																																																																																																									
Rev. 03.03.09																																																																																																																																																																																																																																		

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/23/13								
Test Engineer:		Trina Noor								
Configuration:		EUT W/ AC Adapter								
Mode:		TX, LTE band 25, 3MHz, QPSK								
		Chamber	Pre-amplifier	Filter	Limit					
		3m Chamber	T 145 8449B	Filter 1	Part 24					
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
Band										
LTE25										
3MHz										
QPSK										
Ch, (1851.5 MHz)										
3.703	-21.3	V	3.0	30.2	1.0	-50.5	-13.0	-37.5		
5.554	-21.8	V	3.0	28.4	1.0	-49.2	-13.0	-36.2		
7.406	-19.4	V	3.0	26.5	1.0	-44.9	-13.0	-31.9		
3.706	-21.7	H	3.0	30.2	1.0	-50.9	-13.0	-37.9		
5.554	-20.3	H	3.0	28.4	1.0	-47.6	-13.0	-34.6		
7.406	-18.8	H	3.0	26.5	1.0	-44.3	-13.0	-31.3		
Ch, (1882.5 MHz)										
3.765	-22.1	V	3.0	30.1	1.0	-51.2	-13.0	-38.2		
5.648	-20.0	V	3.0	28.3	1.0	-47.3	-13.0	-34.3		
7.530	-18.8	V	3.0	26.3	1.0	-44.1	-13.0	-31.1		
3.765	-22.6	H	3.0	30.1	1.0	-51.8	-13.0	-38.8		
5.648	-19.6	H	3.0	28.3	1.0	-46.8	-13.0	-33.8		
7.530	-17.9	H	3.0	26.3	1.0	-43.2	-13.0	-30.2		
Ch, (1913.5 MHz)										
3.828	-21.9	V	3.0	30.1	1.0	-51.0	-13.0	-38.0		
5.741	-19.0	V	3.0	28.2	1.0	-46.2	-13.0	-33.2		
7.654	-18.7	V	3.0	26.1	1.0	-43.9	-13.0	-30.9		
3.828	-23.6	H	3.0	30.1	1.0	-52.7	-13.0	-39.7		
5.743	-18.8	H	3.0	28.2	1.0	-46.0	-13.0	-33.0		
7.654	-16.6	H	3.0	26.1	1.0	-41.8	-13.0	-28.8		
Rev. 03.03.09										

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U16534
Date: 11/23/13
Test Engineer: CHARLES VERGONIO
Configuration: Y Position, AC Charger
Mode: EVDORA BC1

Chamber
 3m Chamber

Pre-amplifier
 T343 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, 1850MHz									
3.700	-20.3	V	3.0	35.4	1.0	-54.7	-13.0	-41.7	
5.550	-13.7	V	3.0	34.7	1.0	-47.4	-13.0	-34.4	
7.400	-18.4	V	3.0	34.9	1.0	-52.3	-13.0	-39.3	
3.700	-20.7	H	3.0	35.4	1.0	-55.1	-13.0	-42.1	
5.550	-13.5	H	3.0	34.7	1.0	-47.3	-13.0	-34.3	
7.400	-18.0	H	3.0	34.9	1.0	-51.9	-13.0	-38.9	
Mid Ch, 1880.0MHz									
3.760	-21.1	V	3.0	35.3	1.0	-55.5	-13.0	-42.5	
5.640	-13.3	V	3.0	34.7	1.0	-47.0	-13.0	-34.0	
7.520	-19.0	V	3.0	34.9	1.0	-52.9	-13.0	-39.9	
3.760	-21.7	H	3.0	35.3	1.0	-56.1	-13.0	-43.1	
5.640	-13.4	H	3.0	34.7	1.0	-47.1	-13.0	-34.1	
7.520	-18.9	H	3.0	34.9	1.0	-52.8	-13.0	-39.8	
High Ch, 1909.8 MHz									
3.820	-20.7	V	3.0	35.3	1.0	-55.0	-13.0	-42.0	
5.729	-13.8	V	3.0	34.7	1.0	-47.6	-13.0	-34.6	
7.640	-17.5	V	3.0	35.0	1.0	-51.4	-13.0	-38.4	
3.820	-21.7	H	3.0	35.3	1.0	-56.0	-13.0	-43.0	
5.729	-14.5	H	3.0	34.7	1.0	-48.3	-13.0	-35.3	
7.640	-17.7	H	3.0	35.0	1.0	-51.6	-13.0	-38.6	

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

Band
 BC1
 EVDO
 REV.
 A

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U16534
Date: 11/21/13
Test Engineer: Trina Noor
Configuration: Y Position, AC Charger
Mode: CDMA 1900

Chamber	Pre-amplifier	Filter	Limit
3m Chamber	T343 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		
Band BC1 1xRTT	Low Ch, 1850MHz											
		3.700	-21.4	V	3.0	35.4	1.0	-55.8	-13.0	-42.8		
		5.550	-14.6	V	3.0	34.7	1.0	-48.3	-13.0	-35.3		
		7.400	-18.8	V	3.0	34.9	1.0	-52.7	-13.0	-39.7		
		3.700	-21.6	H	3.0	35.4	1.0	-56.0	-13.0	-43.0		
		5.550	-14.3	H	3.0	34.7	1.0	-48.0	-13.0	-35.0		
		7.400	-18.5	H	3.0	34.9	1.0	-52.4	-13.0	-39.4		
		Mid Ch, 1880.0MHz										
		3.760	-22.4	V	3.0	35.3	1.0	-56.7	-13.0	-43.7		
		5.640	-13.9	V	3.0	34.7	1.0	-47.6	-13.0	-34.6		
		7.520	-17.9	V	3.0	34.9	1.0	-51.8	-13.0	-38.8		
		3.760	-22.9	H	3.0	35.3	1.0	-57.3	-13.0	-44.3		
		5.640	-14.2	H	3.0	34.7	1.0	-48.0	-13.0	-35.0		
		7.520	-18.7	H	3.0	34.9	1.0	-52.6	-13.0	-39.6		
		High Ch, 1909.8 MHz										
		3.820	-21.0	V	3.0	35.3	1.0	-55.2	-13.0	-42.2		
		5.729	-14.0	V	3.0	34.7	1.0	-47.7	-13.0	-34.7		
		7.640	-18.7	V	3.0	35.0	1.0	-52.7	-13.0	-39.7		
	3.820	-20.9	H	3.0	35.3	1.0	-55.2	-13.0	-42.2			
	5.729	-13.6	H	3.0	34.7	1.0	-47.3	-13.0	-34.3			
	7.640	-18.7	H	3.0	35.0	1.0	-52.6	-13.0	-39.6			

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

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/23/13								
Test Engineer:		CHARLES VERGONIO								
Configuration:		Y Position, AC Charger								
Mode:		EVDORA BC0 HARM								
		Chamber		Pre-amplifier		Filter		Limit		
		3m Chamber		T343 8449B		Filter 1		Part 24		
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
BC0 EVDO REV. A	Low Ch, 824.7MHz									
	1.650	-19.2	V	3.0	37.4	1.0	-55.6	-13.0	-42.6	
	2.474	-14.3	V	3.0	36.4	1.0	-49.7	-13.0	-36.7	
	3.298	-15.1	V	3.0	35.8	1.0	-49.9	-13.0	-36.9	
	1.650	-20.6	H	3.0	37.4	1.0	-56.9	-13.0	-43.9	
	2.474	-12.9	H	3.0	36.4	1.0	-48.3	-13.0	-35.3	
	3.298	-14.9	H	3.0	35.8	1.0	-49.7	-13.0	-36.7	
	Mid Ch, 836.52MHz									
	1.673	-15.7	V	3.0	37.3	1.0	-52.1	-13.0	-39.1	
	2.509	-14.8	V	3.0	36.4	1.0	-50.1	-13.0	-37.1	
	3.346	-14.5	V	3.0	35.8	1.0	-49.3	-13.0	-36.3	
	1.673	-13.2	H	3.0	37.3	1.0	-49.5	-13.0	-36.5	
	2.509	-13.4	H	3.0	36.4	1.0	-48.8	-13.0	-35.8	
	3.346	-15.1	H	3.0	35.8	1.0	-49.8	-13.0	-36.8	
	High Ch, 848.31 MHz									
	1.696	-17.0	V	3.0	37.3	1.0	-53.3	-13.0	-40.3	
	2.544	-14.0	V	3.0	36.3	1.0	-49.4	-13.0	-36.4	
	3.393	-14.9	V	3.0	35.7	1.0	-49.6	-13.0	-36.6	
1.696	-16.4	H	3.0	37.3	1.0	-52.7	-13.0	-39.7		
2.544	-12.2	H	3.0	36.3	1.0	-47.5	-13.0	-34.5		
3.393	-15.2	H	3.0	35.7	1.0	-49.9	-13.0	-36.9		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		13U16534								
Date:		11/23/13								
Test Engineer:		CHARLES VERGONIO								
Configuration:		Y Position, AC Charger								
Mode:		RTT BC0 HARM								
Chamber		Pre-amplifer			Filter		Limit			
3m Chamber		T343 8449B			Filter 1		Part 24			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
BC0 1xRTT	Low Ch, 824.7MHz									
	1.650	-21.1	V	3.0	37.4	1.0	-57.5	-13.0	-44.5	
	2.474	-15.0	V	3.0	36.4	1.0	-50.3	-13.0	-37.3	
	3.298	-15.0	V	3.0	35.8	1.0	-49.8	-13.0	-36.8	
	1.650	-21.8	H	3.0	37.4	1.0	-58.2	-13.0	-45.2	
	2.474	-13.0	H	3.0	36.4	1.0	-48.4	-13.0	-35.4	
	3.298	-14.5	H	3.0	35.8	1.0	-49.3	-13.0	-36.3	
	Mid Ch, 836.52MHz									
	1.673	-17.1	V	3.0	37.3	1.0	-53.4	-13.0	-40.4	
	2.509	-15.2	V	3.0	36.4	1.0	-50.5	-13.0	-37.5	
	3.346	-13.7	V	3.0	35.8	1.0	-48.5	-13.0	-35.5	
	1.673	-15.6	H	3.0	37.3	1.0	-52.0	-13.0	-39.0	
	2.509	-14.6	H	3.0	36.4	1.0	-49.9	-13.0	-36.9	
	3.346	-15.1	H	3.0	35.8	1.0	-49.8	-13.0	-36.8	
	High Ch, 848.31 MHz									
	1.696	-18.9	V	3.0	37.3	1.0	-55.2	-13.0	-42.2	
	2.544	-14.3	V	3.0	36.3	1.0	-49.6	-13.0	-36.6	
	3.393	-14.5	V	3.0	35.7	1.0	-49.2	-13.0	-36.2	
1.696	-17.9	H	3.0	37.3	1.0	-54.2	-13.0	-41.2		
2.544	-12.0	H	3.0	36.3	1.0	-47.4	-13.0	-34.4		
3.393	-15.1	H	3.0	35.7	1.0	-49.8	-13.0	-36.8		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U16534
Date: 11/23/13
Test Engineer: CHARLES VERGONIO
Configuration: Y Position, AC Charger
Mode: EVDORA BC10 HARM

Chamber	Pre-amplifier	Filter	Limit
3m Chamber	T343 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, 817.9MHz									
1.635	-17.8	V	3.0	37.4	1.0	-54.2	-13.0	-41.2	
2.453	-13.9	V	3.0	36.4	1.0	-49.3	-13.0	-36.3	
3.271	-14.9	V	3.0	35.8	1.0	-49.7	-13.0	-36.7	
1.635	-16.9	H	3.0	37.4	1.0	-53.3	-13.0	-40.3	
2.453	-10.9	H	3.0	36.4	1.0	-46.3	-13.0	-33.3	
3.271	-14.9	H	3.0	35.8	1.0	-49.7	-13.0	-36.7	
Mid Ch, 820.5MHz									
1.641	-19.8	V	3.0	37.4	1.0	-56.2	-13.0	-43.2	
2.461	-14.9	V	3.0	36.4	1.0	-50.3	-13.0	-37.3	
3.280	-15.4	V	3.0	35.8	1.0	-50.2	-13.0	-37.2	
1.641	-19.6	H	3.0	37.4	1.0	-56.0	-13.0	-43.0	
2.461	-12.4	H	3.0	36.4	1.0	-47.8	-13.0	-34.8	
3.280	-15.3	H	3.0	35.8	1.0	-50.1	-13.0	-37.1	
High Ch, 823.1 MHz									
1.646	-20.2	V	3.0	37.4	1.0	-56.6	-13.0	-43.6	
2.469	-15.5	V	3.0	36.4	1.0	-50.9	-13.0	-37.9	
3.292	-14.9	V	3.0	35.8	1.0	-49.7	-13.0	-36.7	
1.646	-21.3	H	3.0	37.4	1.0	-57.7	-13.0	-44.7	
2.469	-13.8	H	3.0	36.4	1.0	-49.1	-13.0	-36.1	
3.292	-15.0	H	3.0	35.8	1.0	-49.8	-13.0	-36.8	

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

Band
 BC10
 EVDO
 REV.
 A

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 13U16534
Date: 11/23/13
Test Engineer: CHARLES VERGONIO
Configuration: Y Position, AC Charger
Mode: RTT BC10 HARM

Chamber	Pre-amplifier	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 24

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 817.9MHz									
BC10	1.635	-19.3	V	3.0	37.4	1.0	-55.7	-13.0	-42.7	
	2.453	-14.5	V	3.0	36.4	1.0	-49.9	-13.0	-36.9	
	3.271	-15.2	V	3.0	35.8	1.0	-50.1	-13.0	-37.1	
1xRTT	1.635	-19.9	H	3.0	37.4	1.0	-56.3	-13.0	-43.3	
	2.453	-12.1	H	3.0	36.4	1.0	-47.5	-13.0	-34.5	
	3.271	-15.2	H	3.0	35.8	1.0	-50.1	-13.0	-37.1	
	Mid Ch, 820.5MHz									
	1.641	-22.0	V	3.0	37.4	1.0	-58.4	-13.0	-45.4	
	2.461	-15.1	V	3.0	36.4	1.0	-50.5	-13.0	-37.5	
	3.280	-14.5	V	3.0	35.8	1.0	-49.3	-13.0	-36.3	
	1.641	-21.5	H	3.0	37.4	1.0	-57.9	-13.0	-44.9	
	2.461	-13.1	H	3.0	36.4	1.0	-48.5	-13.0	-35.5	
	3.280	-15.1	H	3.0	35.8	1.0	-49.9	-13.0	-36.9	
	High Ch, 823.1 MHz									
	1.646	-21.4	V	3.0	37.4	1.0	-57.7	-13.0	-44.7	
	2.469	-15.2	V	3.0	36.4	1.0	-50.6	-13.0	-37.6	
	3.292	-14.5	V	3.0	35.8	1.0	-49.3	-13.0	-36.3	
	1.646	-21.7	H	3.0	37.4	1.0	-58.1	-13.0	-45.1	
	2.469	-15.1	H	3.0	36.4	1.0	-50.5	-13.0	-37.5	
	3.292	-14.7	H	3.0	35.8	1.0	-49.5	-13.0	-36.5	

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