FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART E
FCC CFR47 PART 27 SUBPART L

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n and NFC

MODEL NUMBER: LG-D725, D725, LGD725

FCC ID: ZNFD725

REPORT NUMBER: 14U17493-1

ISSUE DATE: April 28, 2014

Prepared for

LG ELECTRONICS MOBILECOMM U.S.A., INC

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	4/25/14	Initial Issue	P. Zhang

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: LG ELECTRONICS MOBILECOMM U.S.A., INC.

EUT DESCRIPTION: GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n and NFC

MODEL: LG-D725, D725, LGD725

SERIAL NUMBER: 403KPVH000431(Conducted & Radiated)

DATE TESTED: APRIL 2 – 28, 2014

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E, 27E and 27L	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.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 22, FCC CFR Part 24, FCC CFR 47 Part 27.

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.ul.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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 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 GSM/WCDMA/LTE Phone + Bluetooth, DTS/UNII a/b/g/n and NFC.

5.2. MAXIMUM OUTPUT POWER

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

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			Peak (dBm)	Peak (mW)	Peak (dBm)	Peak (mW)
GSM850	824~849	GMSK	33.2	2089.30		
	824~849	GPRS	33.2	2089.30	29.491	889.41
	824~849	EGPRS	27.7	588.84	26.671	464.62
GSM1900	1850~1910	GMSK	30.6	1148.15		
	1850~1910	GPRS	30.6	1148.15	29.03	799.83
	1850~1910	EGPRS	26.4	436.52	27.27	533.33

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
Band 5	824~849	REL99	24.6	288.40	21.591	144.24
	824~849	HSDPA	24.7	295.12	20.781	119.7
	824~849	HSUPA	24.4	275.42		
Band 2	1850~1910	REL99	23.7	234.42	23.04	201.37
	1850~1910	HSDPA	23.8	239.88	23.14	206.06
	1850~1910	HSUPA	23.6	229.09		

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	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE17	704~716	10MHz	QPSK	24.7	295.12	20.571	114.05
	704~716	10MHz	16QAM	23.5	223.87	19.491	88.94

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE17	704~716	5MHz	QPSK	24.7	295.12	19.911	97.97
	704~716	5MHz	16QAM	23.4	218.78	18.981	79.09

FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE7	2500~2570	20MHz	QPSK	24.1	257.04	22	158.49
	2500~2570	20MHz	16QAM	23.1	204.17	21.03	126.77

FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE7	2500~2570	15MHz	QPSK	24.1	257.04	22.2	165.96
	2500~2570	15MHz	16QAM	22.9	194.98	21.3	134.9

FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)

LTE7	2500~2570	10MHz	QPSK	24.2	263.03	21.72	148.59
	2500~2570	10MHz	16QAM	22.9	194.98	20.72	118.03

FCC Part 22/2 4/27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE7	2500~2570	5MHz	QPSK	24.2	263.03	20.6	114.82
	2500~2570	5MHz	16QAM	22.8	190.55	19.25	84.14

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	10MHz	QPSK	24.7	295.12	20.541	113.27
	824~849	10MHz	16QAM	23.5	223.87	19.521	89.56

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	5MHz	QPSK	24.7	295.12	20.951	124.48
	824~849	5MHz	16QAM	23.4	218.78	19.801	95.52

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE4	1710~1755	10MHz	QPSK	24.7	295.12	24.69	294.44
	1710~1755	10MHz	16QAM	23.4	218.78	23.87	243.78

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted		Radiated	
			Peak	Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE4	1710~1755	5MHz	QPSK	24.7	295.12	25.88	387.26

	1710~1755	5MHz	16QAM	23.4	218.78	24.86	306.2

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE2	1850~1910	10MHz	QPSK	24.6	288.40	24.09	256.45
	1850~1910	10MHz	16QAM	23.5	223.87	23.13	205.59

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE2	1850~1910	5MHz	QPSK	24.7	25.88dBm	24.12	258.23
	1850~1910	5MHz	16QAM	23.5	223.87	23.21	209.41

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)
Band 5, 824~849MHz	-2.08
Band 2, 1850~1910MHz	0.72
Band 4, 1710~1755MHz	0.03
Band 17, 704~716MHz	-2.35
LTE7, 2500~2570MHz	-4.28

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	LG ELECTRONICS	MCS-01WD	DB390078751	N/A
Earphone	LG ELECTRONICS	N/A	N/A	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

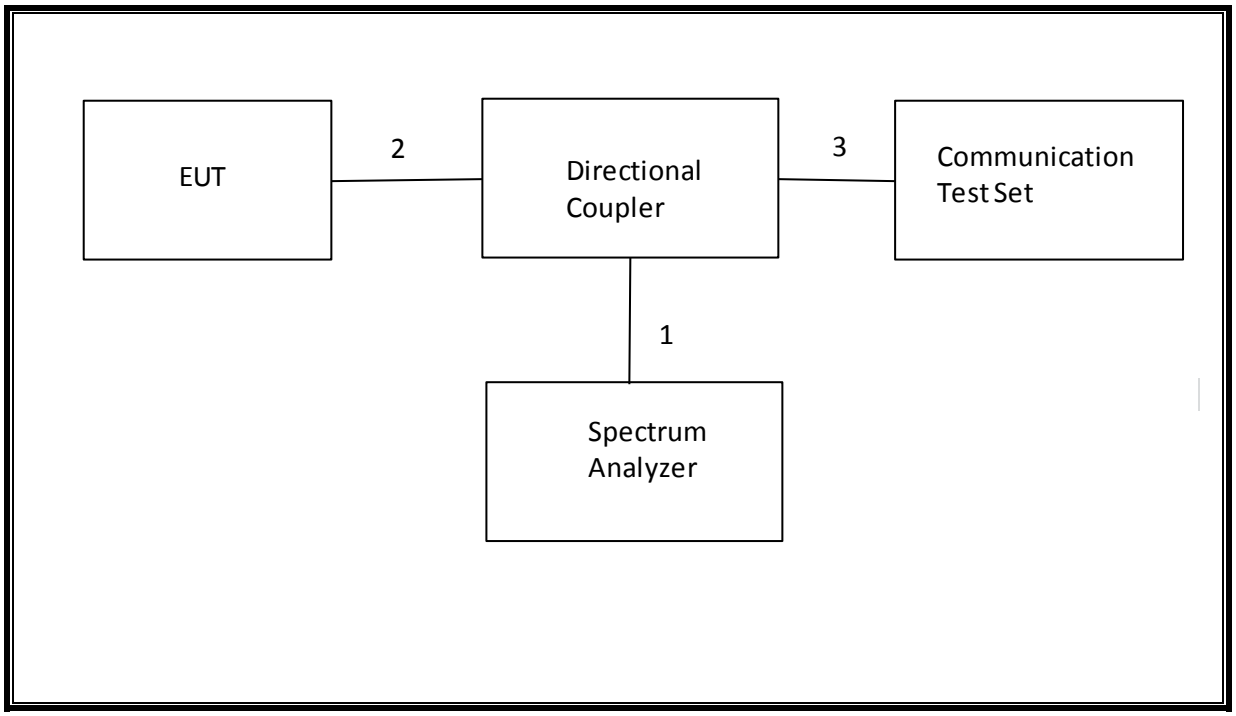
I/O CABLES (RADIATED SETUP)

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

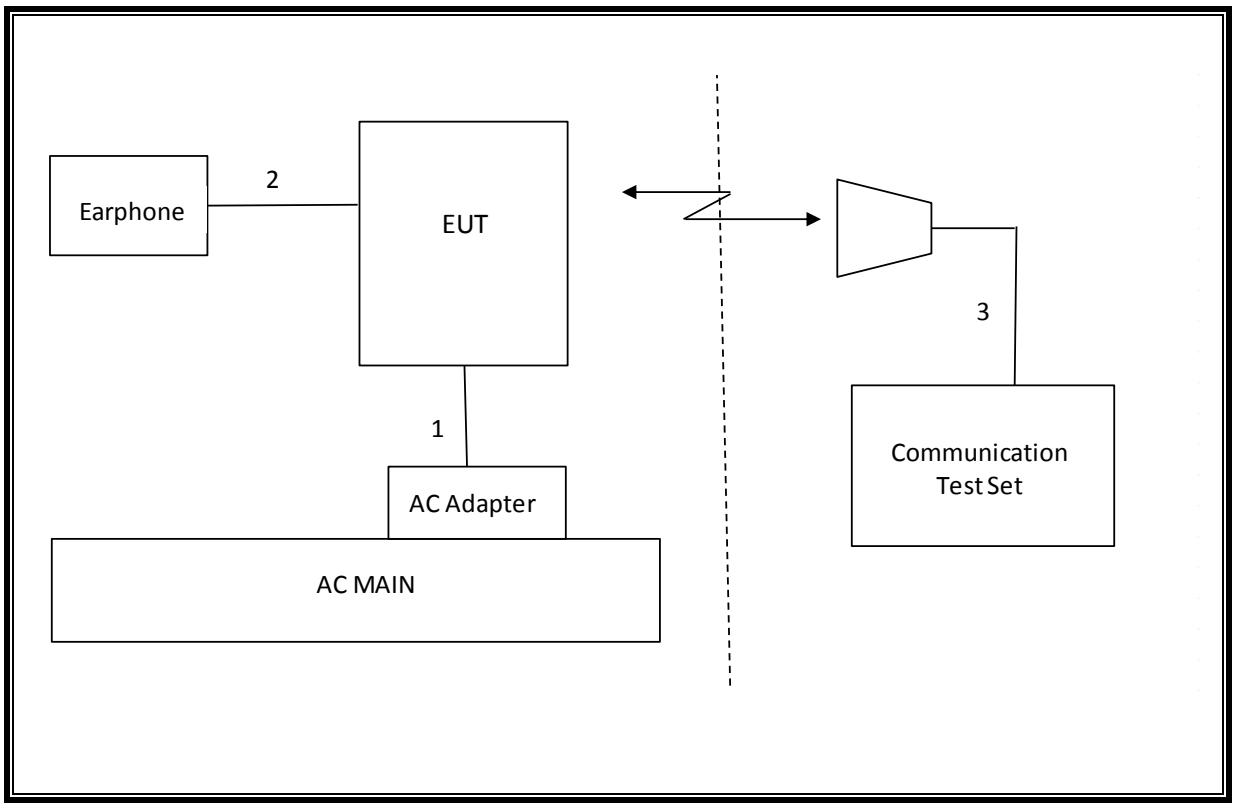
TEST SETUP

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**
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01179	02/26/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	08/14/14
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/14
Antenna, Horn, 18 GHz	EMCO	3115	C00784	09/25/14
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02688	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	01/09/15
Communications Test Set	R&S	CMW500	T159	07/02/14
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	07/06/14
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	C00993	02/14/15
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR

7. Summary Table

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	17.85MHz
22.917(a) 24.238(a) 27.53(g) 90.691	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass	-18.543dBm
27.53(m)	RSS-199(4.5)		-25dBm		Pass	-25.34dBm
2.1046	N/A	Conducted output power	N/A		Pass	33.2dBm
27.53(m)	RSS-199(4.5)	Emission Mask			Pass	Band 7
22.355 24.235 27.54 90.213	RSS-132(4.3) RSS-133(6.3) RSS-139(6.3) RSS-199(4.3)	Frequency Stability	2.5PPM		Pass	0.017PPM
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass	29.49dBm
27.50(b)(10)	N/A		34.77 dBm		Pass	20.57dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	29.03dBm
27.50(d)(4)	RSS-139(6.4)		30dBm		Pass	25.88dBm
22.917(a) 24.238(a) 27.53(g)	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Radiated Spurious Emission	-13dBm		Pass	-30.8dBm
27.53(m)	RSS-199(4.5)		-25dBm		Pass	-26.9dBm

8. RF POWER OUTPUT VERIFICATION

8.1. GSM/GPRS/EDGE

Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press Connection control to choose the different menus

Press RESET > choose all to reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM+GPRS or GSM+EGPRS

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850/900

> 30 dBm for GPRS1800/1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0> 4 dB

Slot Config > Unchanged (if already set under MS Signal)

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3 (Default)

Network Coding Scheme > CS4 (GPRS) and MCS5 ~ MCS9 (EGPRS)

Bit Stream > 2E9-1PSR Bit Pattern

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection Press Signal On to turn on the signal and change settings

8.1.1. GSM OUTPUT POWER RESULT

Band	Mode	Ch.	f(MHz)	1 time slot	2 time slot
				Peak (dBm)	Peak (dBm)
GSM850	GMSK	128	824.2	33.2	
		190	836.6	33.1	
		251	848.8	33.0	
	GPRS	128	824.2	33.2	31.5
		190	836.6	33.2	31.6
		251	848.8	33.0	31.5
	EGPRS	128	824.2	27.7	25.4
		190	836.6	27.6	25.4
		251	848.8	27.6	25.6
GSM1900	GMSK	512	1850.2	30.6	
		661	1880	30.6	
		810	1909.8	30.4	
	GPRS	512	1850.2	30.6	28.6
		661	1880	30.6	28.5
		810	1909.8	30.4	28.5
	EGPRS	512	1850.2	26.3	24.5
		661	1880	26.3	24.5
		810	1909.8	26.4	24.6

8.2. UMTS REL 99

TEST PROCEDURE

The following summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	βc	Not Applicable
	βd	Not Applicable
	βec	Not Applicable
	βc/βd	8/15
	βhs	Not Applicable
	βed	Not Applicable

8.2.1. UMTS REL 99 OUTPUT POWER RESULT

Band	Mode	Ch.	f(MHz)	Conducted Power (dBm) Avg (dBm)
Band 5	REL99	4132	826.4	24.6
		4183	836.6	24.5
		4233	846.6	24.6
Band 2	REL99	9262	1852.4	23.7
		9400	1880	23.7
		9538	1907.6	23.6

8.3. UMTS HSDPA

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	Rel5 HSDPA			
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

8.3.1. UMTS HSDPA OUTPUT POWER RESULT

Band	Mode	Subset	Ch.	f(MHz)	Conducted Power (dBm) Avg (dBm)
Band 5	HSDPA	1	4132	826.4	24.6
			4183	836.6	24.5
			4233	846.6	24.7
		2	4132	826.4	24.7
			4183	836.6	24.6
			4233	846.6	24.6
		3	4132	826.4	24.2
			4183	836.6	24.2
			4233	846.6	24.2
		4	4132	826.4	24.2
			4183	836.6	24.1
			4233	846.6	24.2
Band 2	HSDPA	1	9262	1852.4	23.5

			9400	1880	23.8
			9538	1907.6	23.7
		2	9262	1852.4	23.8
			9400	1880	23.8
			9538	1907.6	23.8
		3	9262	1852.4	23.3
			9400	1880	23.2
			9538	1907.6	23.2
		4	9262	1852.4	23.3
			9400	1880	23.2
			9538	1907.6	23.2

8.3.2. UMTS HSUPA

TEST PROCEDURE

The following summary of these settings are illustrated below: (ETSI TS 134.121-1 Table C.11.1)

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	P-CPICH (dB)	-10				
	P-CCPCH (dB)	-12				
	SCH (dB)	-12				
	PICH(dB)	-15				
	DPCH (dB)	-9				
	HS-SCCH_1 (dB)	-8				
	HS-PDSCH (dB)	-3				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	Bc	11/15	6/15	15/15	2/15	15/15
	Bd	15/15	15/15	9/15	15/15	15/15
	Bec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	Bhs	22/15	12/15	30/15	4/15	30/15
	βed (note1)	1309/225	94/75	47/15 47/15	56/75	134/15
	MPR	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	Reference E-TFCIs	5	5	2	5	5
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

Note1: βed cannot be set directly, it is set by Absolute Grant Value.

8.3.3. UMTS HSUPA OUTPUT POWER RESULT

Band	Mode	Subset	Ch.	f(MHz)	Conducted Power (dBm) Avg (dBm)
Band 5	HSUPA	1	4132	826.4	24.3
			4183	836.6	23.8
			4233	846.6	23.5
		2	4132	826.4	23.1
			4183	836.6	22.9
			4233	846.6	22.5
		3	4132	826.4	23.2
			4183	836.6	23.1
			4233	846.6	23.5
		4	4132	826.4	23.2
			4183	836.6	23.1
			4233	846.6	23.0
		5	4132	826.4	23.6
			4183	836.6	23.5
			4233	846.6	24.4
Band 2	HSUPA	1	9262	1852.4	22.6
			9400	1880	23.1
			9538	1907.6	22.9
		2	9262	1852.4	21.6
			9400	1880	22.0
			9538	1907.6	22.1
		3	9262	1852.4	22.2
			9400	1880	22.6
			9538	1907.6	22.3
		4	9262	1852.4	22.5
			9400	1880	21.9
			9538	1907.6	22.1
		5	9262	1852.4	22.6
			9400	1880	23.4
			9538	1907.6	23.6

8.4. LTE OUTPUT VERIFICATION

8.4.1. LTE OUTPUT RESULT

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	0	24.5	24.6	24.6
			1	25	0	0	24.6	24.6	24.5
			1	49	0	0	24.5	24.6	24.5
			25	0	1	1	23.6	23.6	23.6
			25	12	1	1	23.6	23.7	23.5
			25	25	1	1	23.6	23.7	23.6
			50	0	1	1	23.6	23.7	23.6
		16QAM	1	0	1	1	23.4	23.5	23.5
			1	25	1	1	23.4	23.4	23.4
			1	49	1	1	23.4	23.5	23.4
			25	0	2	2	22.6	22.7	22.7
			25	12	2	2	22.6	22.7	22.6
			25	25	2	2	22.6	22.7	22.6
			50	0	2	2	22.6	22.7	22.6
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1852.5 MHz	1880 MHz	1907.5 MHz
LTE Band 2	5	QPSK	1	0	0	0	24.6	24.7	24.6
			1	12	0	0	24.5	24.6	24.5
			1	24	0	0	24.6	24.6	24.6
			12	0	1	1	23.6	23.7	23.6
			12	7	1	1	23.6	23.7	23.6
			12	13	1	1	23.6	23.7	23.6
			25	0	1	1	23.6	23.7	23.6
		16QAM	1	0	1	1	23.3	23.5	23.4
			1	12	1	1	23.4	23.4	23.3
			1	24	1	1	23.4	23.5	23.4
			12	0	2	2	22.6	22.7	22.6
			12	7	2	2	22.7	22.7	22.6
			12	13	2	2	22.7	22.7	22.7
			25	0	2	2	22.7	22.7	22.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1715 MHz	1732.5 MHz	1750 MHz
LTE Band 4	10	QPSK	1	0	0	0	24.6	24.6	24.6
			1	25	0	0	24.5	24.5	24.7
			1	49	0	0	24.5	24.6	24.7
			25	0	1	1	23.5	23.6	23.6
			25	12	1	1	23.5	23.5	23.6
			25	25	1	1	23.6	23.5	23.6
			50	0	1	1	23.6	23.6	23.6
		16QAM	1	0	1	1	23.4	23.4	23.4
			1	25	1	1	23.3	23.3	23.4
			1	49	1	1	23.3	23.4	23.4
			25	0	2	2	22.6	22.7	22.7
			25	12	2	2	22.5	22.5	22.7
			25	25	2	2	22.6	22.6	22.6
			50	0	2	2	22.6	22.6	22.6

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							1715 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	0	24.5	24.5	24.7
			1	12	0	0	24.5	24.5	24.7
			1	24	0	0	24.6	24.6	24.7
			12	0	1	1	23.6	23.5	23.6
			12	7	1	1	23.5	23.5	23.6
			12	13	1	1	23.5	23.5	23.6
			25	0	1	1	23.5	23.5	23.5
		16QAM	1	0	1	1	23.3	23.3	23.4
			1	12	1	1	23.3	23.2	23.4
			1	24	1	1	23.4	23.3	23.4
			12	0	2	2	22.6	22.5	22.7
			12	7	2	2	22.6	22.6	22.7
			12	13	2	2	22.6	22.6	22.6
			25	0	2	2	22.7	22.6	22.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0	0	24.6	24.5	24.6
			1	25	0	0	24.6	24.6	24.6
			1	49	0	0	24.5	24.6	24.7
			25	0	1	1	23.6	23.5	23.6
			25	12	1	1	23.6	23.6	23.6
			25	25	1	1	23.6	23.6	23.6
			50	0	1	1	23.6	23.6	23.6
		16QAM	1	0	1	1	23.5	23.4	23.4
			1	25	1	1	23.4	23.4	23.4
			1	49	1	1	23.4	23.4	23.5
			25	0	2	2	22.7	22.6	22.6
			25	12	2	2	22.6	22.6	22.5
			25	25	2	2	22.6	22.5	22.6
			50	0	2	2	22.7	22.6	22.6
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							826.5 MHz	836.5 MHz	846.5 MHz
LTE Band 5	5	QPSK	1	0	0	0	24.5	24.5	24.6
			1	12	0	0	24.6	24.6	24.6
			1	24	0	0	24.6	24.6	24.7
			12	0	1	1	23.5	23.6	23.6
			12	7	1	1	23.6	23.6	23.6
			12	13	1	1	23.6	23.5	23.6
			25	0	1	1	23.6	23.6	23.6
		16QAM	1	0	1	1	23.2	23.3	23.3
			1	12	1	1	23.4	23.3	23.3
			1	24	1	1	23.4	23.4	23.4
			12	0	2	2	22.5	22.6	22.6
			12	7	2	2	22.6	22.6	22.6
			12	13	2	2	22.6	22.6	22.6
			25	0	2	2	22.7	22.7	22.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							2510 MHz	2535 MHz	2560 MHz
LTE Band 7	20	QPSK	1	0	0	0	23.7	24.1	24.0
			1	49	0	0	23.7	24.0	24.0
			1	99	0	0	23.9	24.1	23.7
			50	0	1	1	22.7	23.0	23.0
			50	24	1	1	22.7	23.0	22.9
			50	50	1	1	22.7	22.9	22.8
			100	0	1	1	22.7	22.9	22.9
		16QAM	1	0	1	1	22.8	23.1	23.1
			1	49	1	1	22.8	23.0	23.0
			1	99	1	1	23.0	23.0	22.8
			50	0	2	2	21.8	22.1	22.0
			50	24	2	2	21.7	22.0	22.0
			50	50	2	2	21.8	22.1	21.9
			100	0	2	2	21.8	22.0	22.0
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							2507.5 MHz	2535 MHz	2562.5 MHz
LTE Band 7	15	QPSK	1	0	0	0	23.8	24.1	24.1
			1	37	0	0	23.6	24.0	24.0
			1	74	0	0	23.9	24.1	23.8
			36	0	1	1	22.7	23.0	23.0
			36	20	1	1	22.7	23.0	23.0
			36	39	1	1	22.8	23.0	22.9
			75	0	1	1	22.7	23.0	23.0
		16QAM	1	0	1	1	22.6	22.8	22.8
			1	37	1	1	22.5	22.8	22.8
			1	74	1	1	22.6	22.9	22.6
			36	0	2	2	21.8	22.1	22.0
			36	20	2	2	21.7	22.0	22.0
			36	39	2	2	21.7	22.0	21.9
			75	0	2	2	21.7	22.0	22.0
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							2505 MHz	2535 MHz	2565 MHz
LTE Band 7	10	QPSK	1	0	0	0	23.8	24.2	24.0
			1	25	0	0	23.7	24.1	23.9
			1	49	0	0	23.7	24.2	23.7
			25	0	1	0	22.7	23.1	22.9
			25	12	1	0	22.7	23.0	22.9
			25	25	1	0	22.7	23.0	22.8
			50	0	1	0	22.7	23.0	22.9
		16QAM	1	0	1	0	22.7	22.9	22.8
			1	25	1	0	22.6	22.8	22.7
			1	49	1	0	22.5	22.9	22.5
			25	0	2	0	21.8	22.2	22.0
			25	12	2	0	21.8	22.0	21.9
			25	25	2	0	21.7	22.1	21.8
			50	0	2	0	21.8	22.1	21.9

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)		
							2502.5 MHz	2535 MHz	2567.5 MHz
LTE Band 7	5	QPSK	1	0	0	0	23.8	24.2	24.0
			1	12	0	0	23.7	24.1	23.9
			1	24	0	0	23.8	24.2	23.8
			12	0	1	1	22.8	23.0	22.9
			12	6	1	1	22.8	23.0	22.9
			12	13	1	1	22.8	23.0	22.9
			25	0	1	1	22.7	23.0	22.9
		16QAM	1	0	1	1	22.6	22.8	22.7
			1	12	1	1	22.4	22.7	22.6
			1	24	1	1	22.6	22.8	22.6
			12	0	2	2	21.8	22.0	21.9
			12	6	2	2	21.8	22.1	22.0
			12	13	2	2	21.8	22.1	21.9
			25	0	2	2	21.8	22.2	21.9

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)
							710 MHz
LTE Band 17	10	QPSK	1	0	0	0	24.7
			1	25	0	0	24.7
			1	49	0	0	24.4
			25	0	1	1	23.6
			25	12	1	1	23.6
			25	25	1	1	23.6
			50	0	1	1	23.6
		16QAM	1	0	1	1	23.5
			1	25	1	1	23.5
			1	49	1	1	23.4
			25	0	2	2	22.6
			25	12	2	2	22.6
			25	25	2	2	22.6
			50	0	2	2	22.6
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Meas. MPR	Avg Pwr (dBm)
							710 MHz
LTE Band 17	5	QPSK	1	0	0	0	24.7
			1	12	0	0	24.7
			1	24	0	0	24.7
			12	0	1	1	23.6
			12	7	1	1	23.6
			12	13	1	1	23.7
			25	0	1	1	23.6
		16QAM	1	0	1	1	23.4
			1	12	1	1	23.4
			1	24	1	1	23.4
			12	0	2	2	22.6
			12	7	2	2	22.6
			12	13	2	2	22.7
			25	0	2	2	22.7

9. PEAK TO AVERAGE RATIO

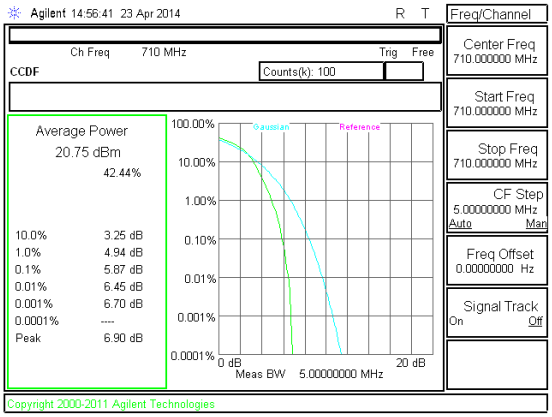
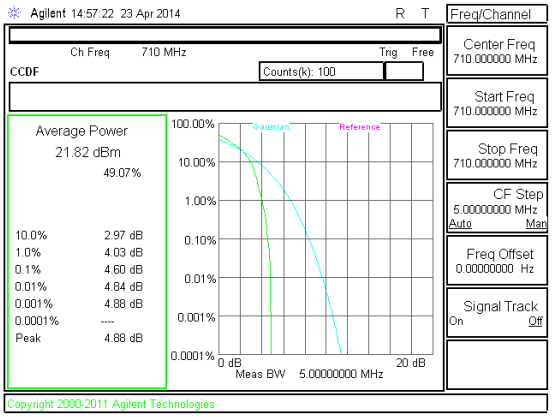
Test Procedure

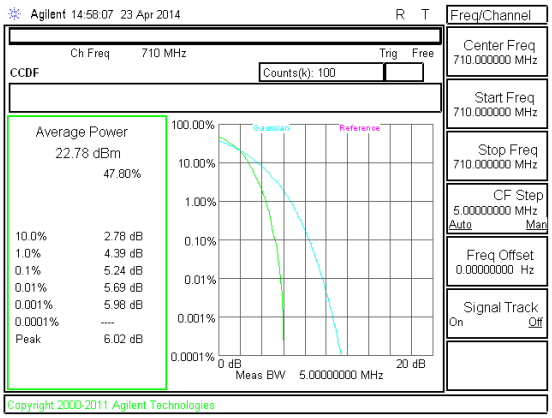
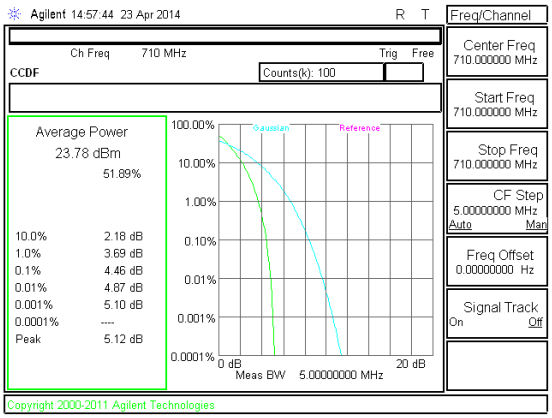
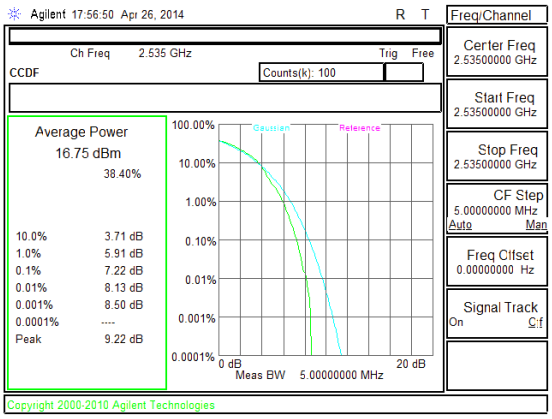
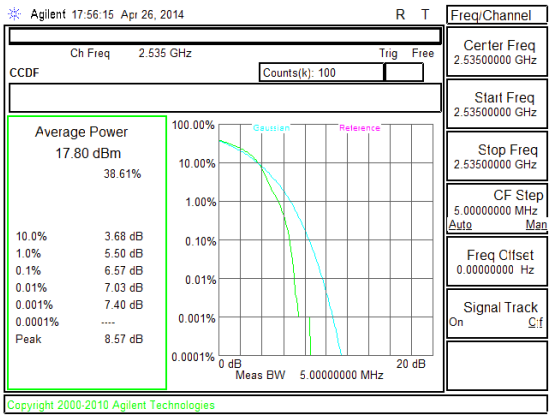
Per KDB 971168 D01 Power Meas License Digital Systems v02r01

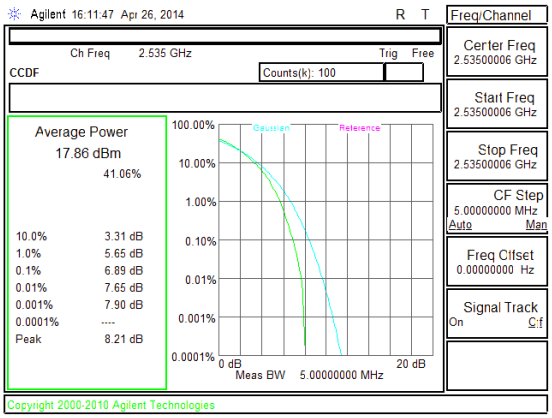
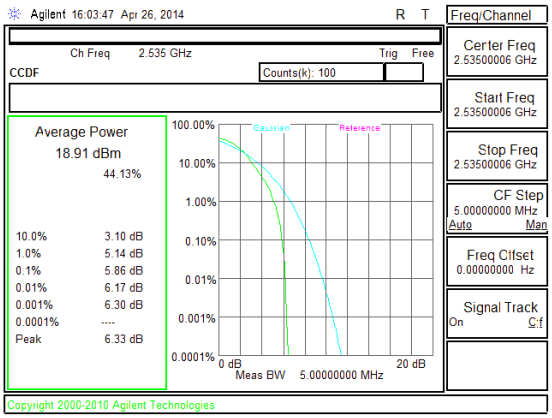
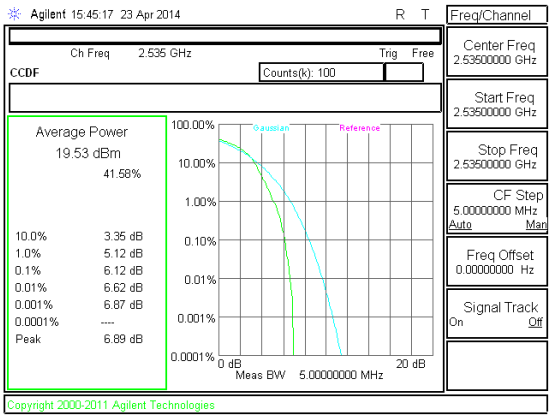
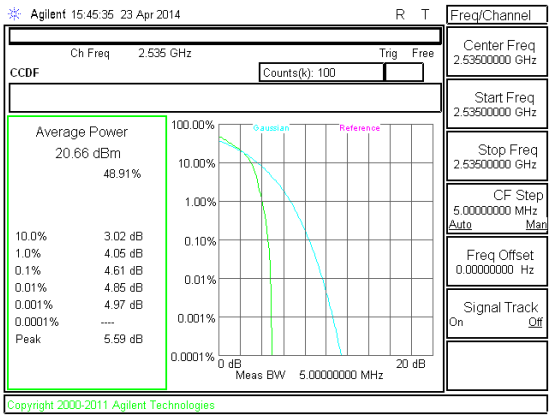
Test Spec

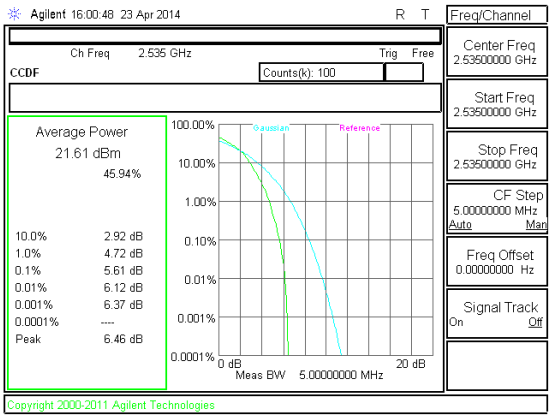
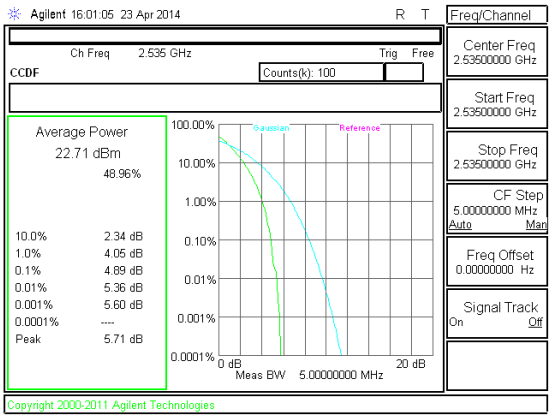
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

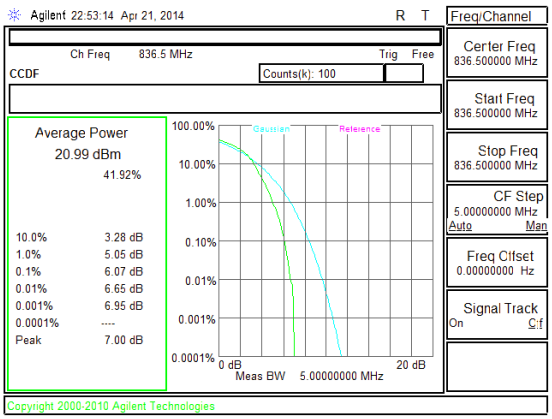
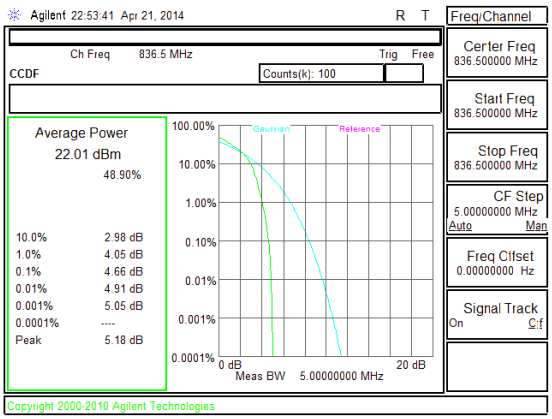
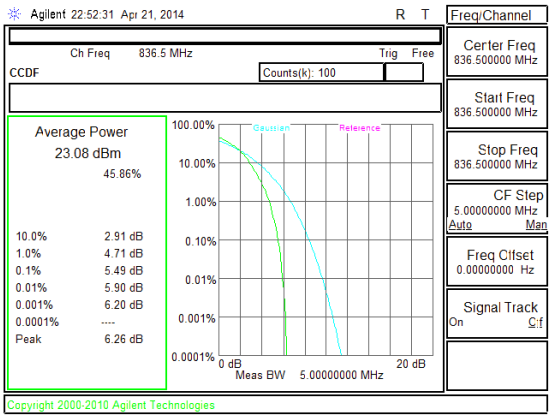
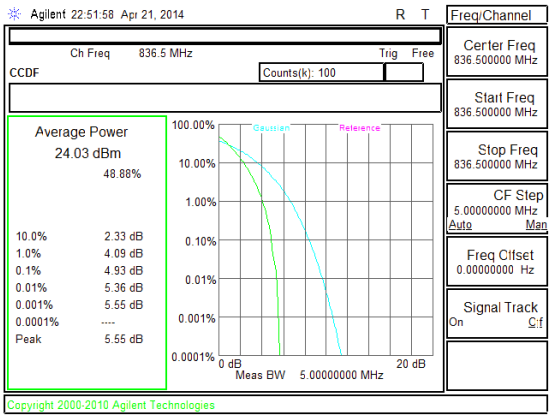
9.1. CONDUCTED PEAK TO AVERAGE RESULT

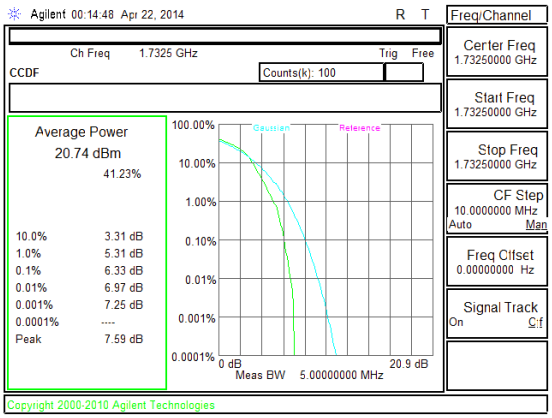
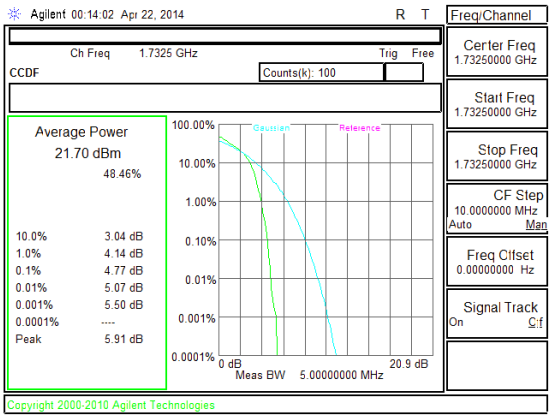
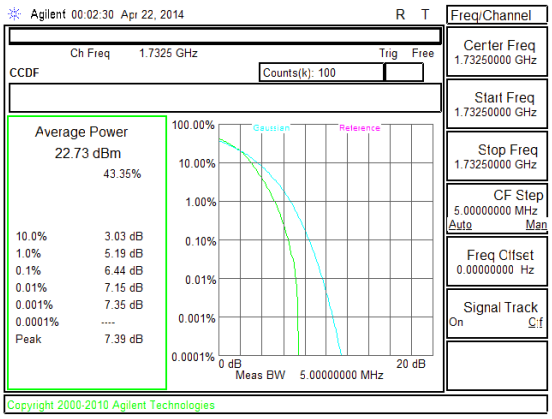
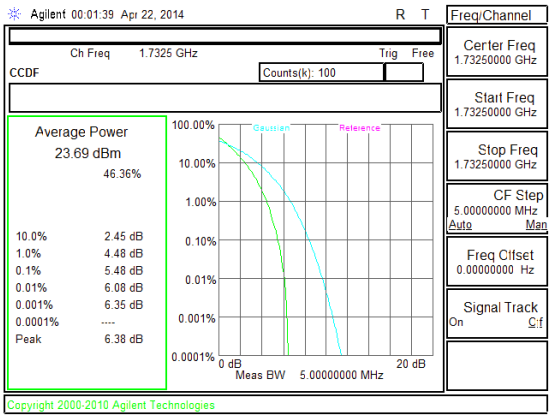
Band LTE17 10MHz 16QAM	 Band LTE17 10MHz 16QAM Mid channel	 Band LTE17 10MHz QPSK Mid channel

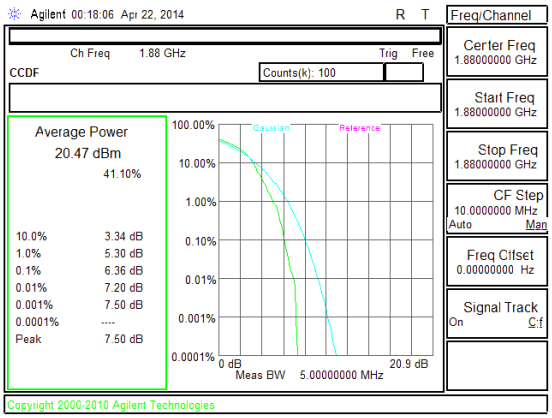
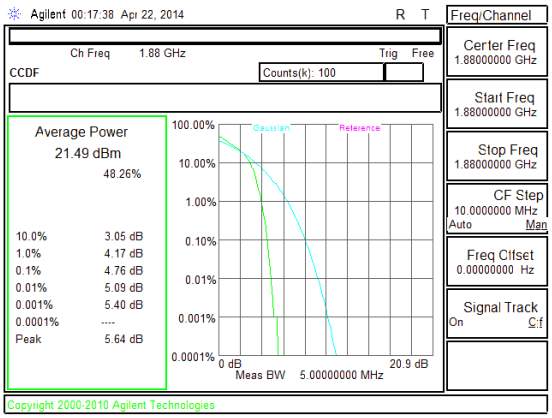
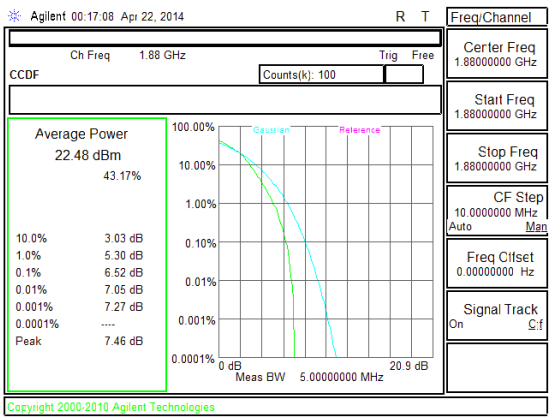
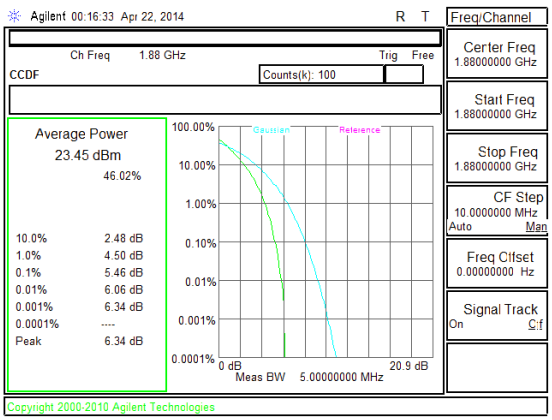
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz 16QAM Mid channel	 Band LTE17 5MHz QPSK Mid channel
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz 16QAM Mid channel	 Band LTE7 20MHz QPSK Mid channel

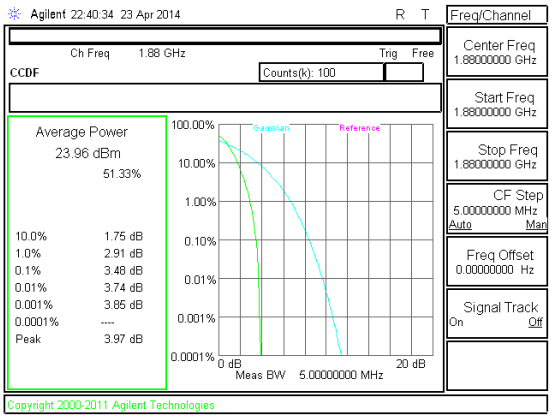
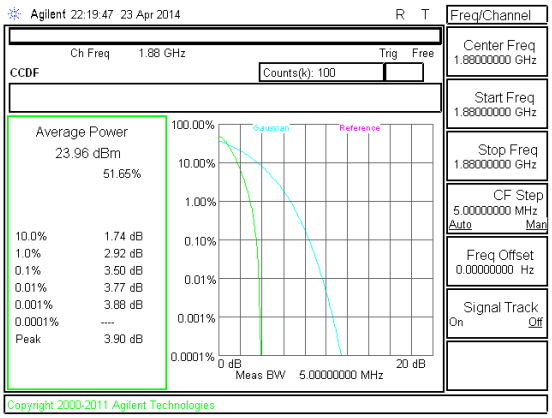
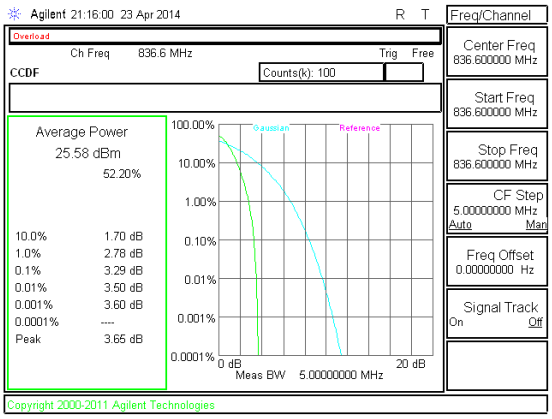
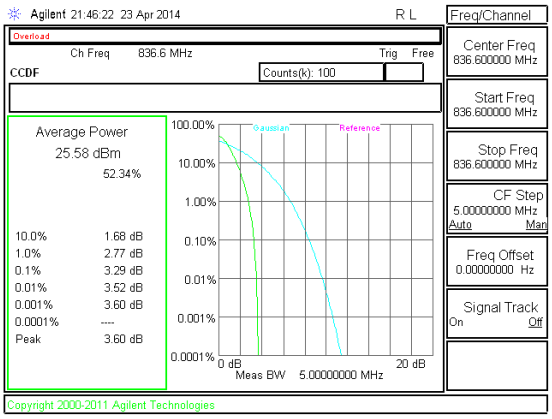
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz 16QAM Mid channel	 Band LTE7 15MHz QPSK Mid channel
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz 16QAM Mid channel	 Band LTE7 10MHz QPSK Mid channel

Band LTE7 5MHz 16QAM	 Band LTE7 5MHz 16QAM Mid channel	 Band LTE7 5MHz QPSK Mid channel

Band LTE5 10MHz 16QAM	 Band LTE5 10MHz 16QAM Mid channel	 Band LTE5 10MHz QPSK Mid channel
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz 16QAM Mid channel	 Band LTE5 5MHz QPSK Mid channel

Band LTE4 10MHz 16QAM	 Band LTE4 10MHz 16QAM Mid channel	 Band LTE4 10MHz QPSK Mid channel
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz 16QAM Mid channel	 Band LTE4 5MHz QPSK Mid channel

Band LTE2 10MHz 16QAM	 Band LTE2 10MHz 16QAM Mid channel	 Band LTE2 10MHz QPSK Mid channel
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz 16QAM Mid channel	 Band LTE2 5MHz QPSK Mid channel

Band Band 2 HSDPA	 Band WCDMA B2 HSDPA	 Band WCDMA B2 REL99
Band Band 5 HSDPA	 Band WCDMA B5 HSDPA	 Band WCDMA B5 REL99

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 (KHz)	-26dB BW (KHz)
GSM850	GPRS	128	824.2	250.63	332.19
		190	836.6	251.76	332.58
		251	848.8	250.76	329.96
	EGPRS	128	824.2	255.42	330.17
		190	836.6	251.71	324.15
		251	848.8	253.6	319.87
GSM1900	GPRS	512	1850.2	248.89	328.9
		661	1880	251.61	333.46
		810	1909.8	252.21	332.77
	EGPRS	512	1850.2	260.17	336.97
		661	1880	252.99	328.12
		810	1909.8	253.17	335.45
Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
Band 5	REL99	4132	826.4	4.14	4.61
		4183	836.6	4.14	4.61
		4233	846.6	4.14	4.63
	HSDPA	4132	826.4	4.14	4.6
		4183	836.6	4.14	4.58
		4233	846.6	4.13	4.63
Band 2	REL99	9262	1852.4	4.15	4.62
		9400	1880	4.14	4.61
		9538	1907.6	4.16	4.6
	HSDPA	9262	1852.4	4.12	4.6
		9400	1880	4.15	4.59
		9538	1907.6	4.16	4.61

10.1.2. LTE OCCUPIED BANDWIDTH RESULTS

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE17	10	QPSK	50/0	709	8.93	9.71
			50/0	710	8.96	9.81
			50/0	711	8.95	9.7
		16QAM	50/0	709	8.94	9.58
			50/0	710	8.94	9.75
			50/0	711	8.94	9.69

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE17	5	QPSK	25/0	706.5	4.48	4.9
			25/0	710	4.46	4.87
			25/0	713.5	4.47	4.9
		16QAM	25/0	706.5	4.48	4.89
			25/0	710	4.48	4.94
			25/0	713.5	4.48	4.94

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE7	20	QPSK	100/0	2510	17.85	18.99
			100/0	2535	17.78	19.00
			100/0	2560	17.80	18.88
		16QAM	100/0	2510	17.83	19.16
			100/0	2535	17.83	19.14
			100/0	2560	17.81	19.06

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE7	15	QPSK	75/0	2507.5	13.39	14.31
			75/0	2535	13.39	14.31
			75/0	2562.5	13.39	14.39
		16QAM	75/0	2507.5	13.38	14.46
			75/0	2535	13.37	14.37

			75/0	2562.5	13.40	14.40

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE7	10	QPSK	50/0	2505	8.83	9.69
			50/0	2535	8.92	9.70
			50/0	2565	8.93	9.78
		16QAM	50/0	2505	8.94	9.70
			50/0	2535	8.92	9.69
			50/0	2565	8.94	9.75

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE7	5	QPSK	25/0	2502.5	4.46	4.90
			25/0	2535	4.46	4.90
			25/0	2567.5	4.47	4.91
		16QAM	25/0	2502.5	4.48	4.97
			25/0	2535	4.46	4.88
			25/0	2567.5	4.59	5.10

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	10	QPSK	50/0	829	8.84	9.21
			50/0	836.5	8.88	9.24
			50/0	844	8.9	9.17
		16QAM	50/0	829	8.84	9.21
			50/0	836.5	8.9	9.18
			50/0	844	8.9	9.37

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	5	QPSK	25/0	826.5	4.48	4.61
			25/0	836.5	4.46	4.73
			25/0	846.5	4.46	4.63
		16QAM	25/0	826.5	4.46	4.67

			25/0	836.5	4.46	4.6
			25/0	846.5	4.45	4.62

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	10	QPSK	50/0	1715	8.71	9.14
			50/0	1732.5	8.86	9.17
			50/0	1750	8.95	9.22
		16QAM	50/0	1715	8.81	9.4
			50/0	1732.5	8.96	9.2
			50/0	1750	8.9	9.22

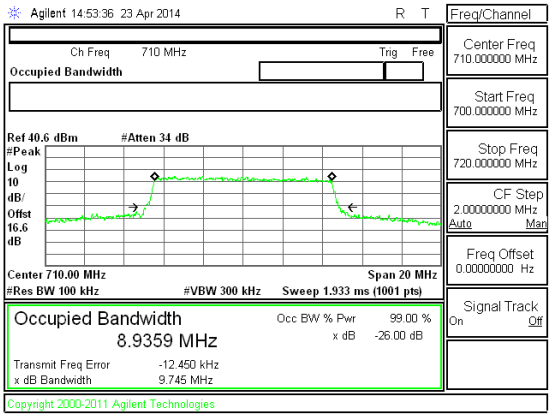
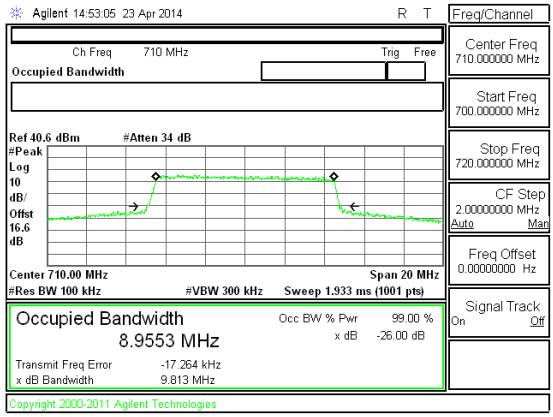
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	5	QPSK	25/0	1712.5	4.43	4.7
			25/0	1732.5	4.43	4.7
			25/0	1752.5	4.42	4.59
		16QAM	25/0	1712.5	4.4	4.62
			25/0	1732.5	4.44	4.64
			25/0	1752.5	4.45	4.63

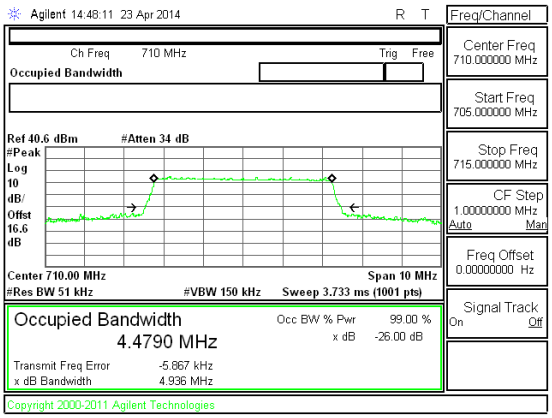
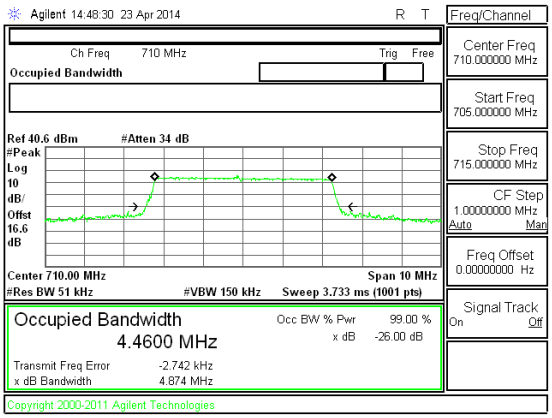
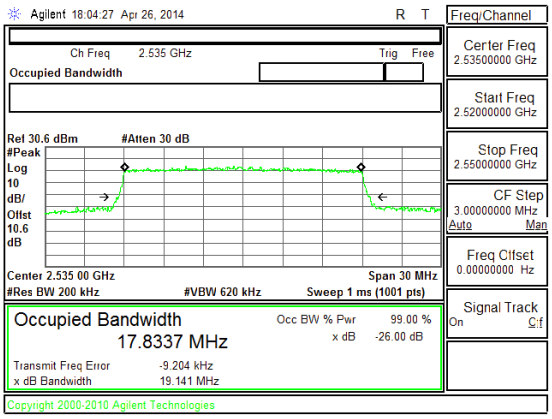
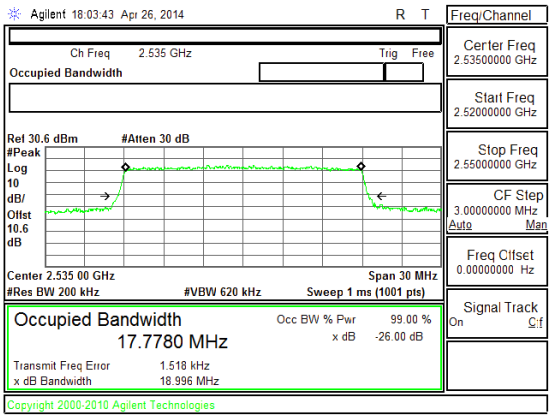
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	10	QPSK	50/0	1855	8.92	9.23
			50/0	1880	8.93	9.15
			50/0	1905	8.94	9.19
		16QAM	50/0	1855	8.88	9.6
			50/0	1880	8.91	9.4
			50/0	1905	8.89	9.33

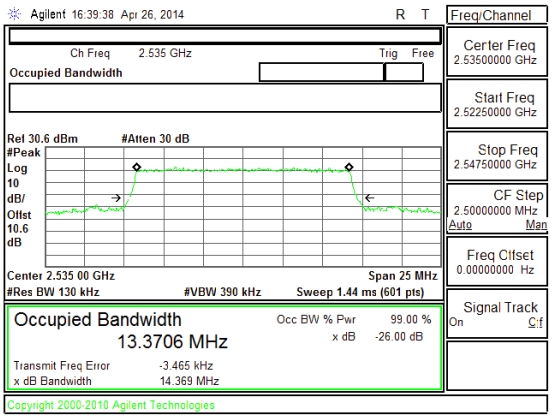
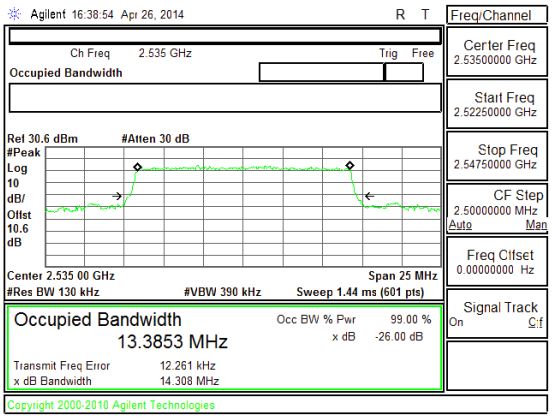
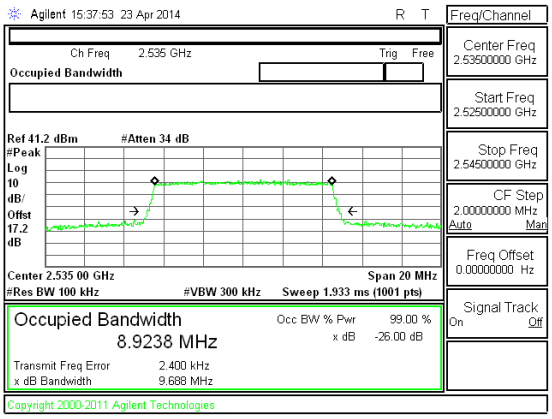
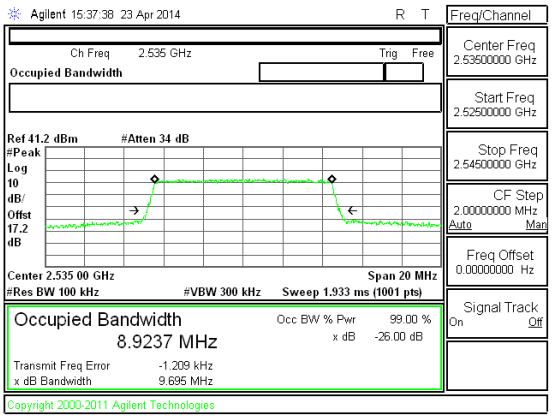
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	5	QPSK	25/0	1852.5	4.47	4.74
			25/0	1880	4.47	4.79
			25/0	1907.5	4.45	4.69

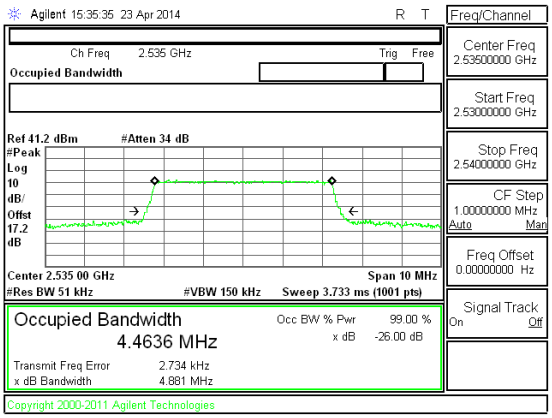
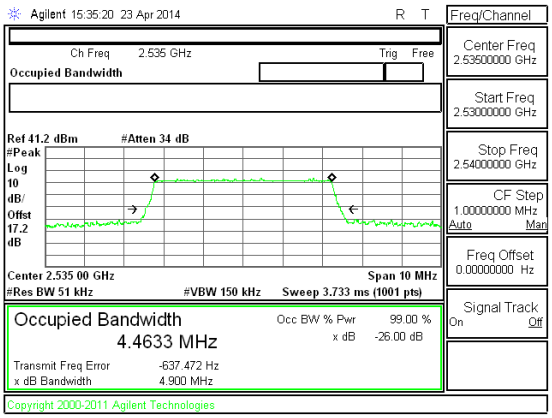
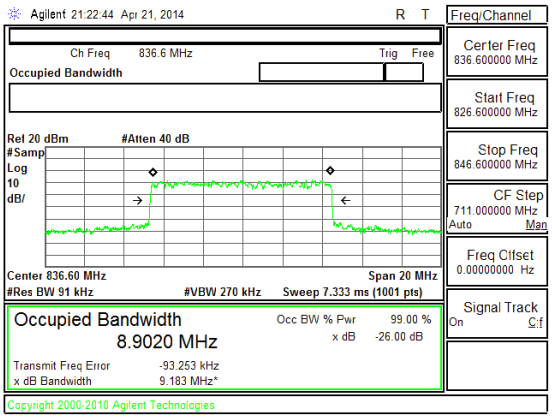
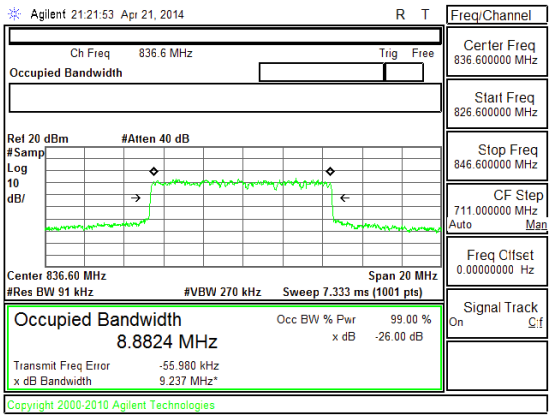
		16QAM	25/0	1852.5	4.44	4.8
			25/0	1880	4.49	4.7
			25/0	1907.5	4.44	4.49

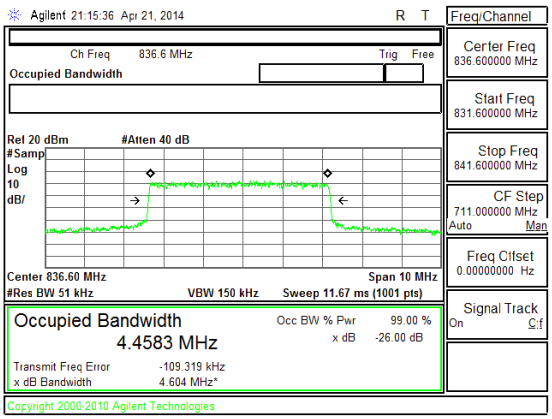
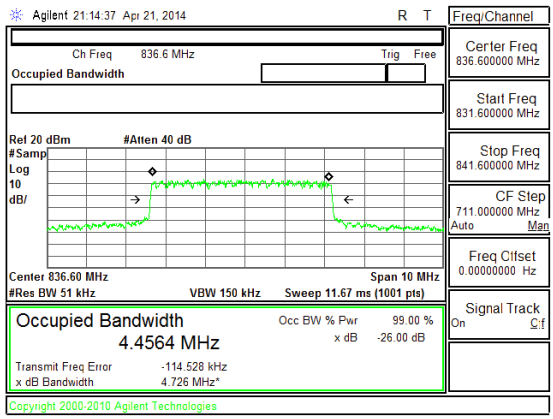
10.1.3. OCCUPIED BANDWIDTH PLOTS

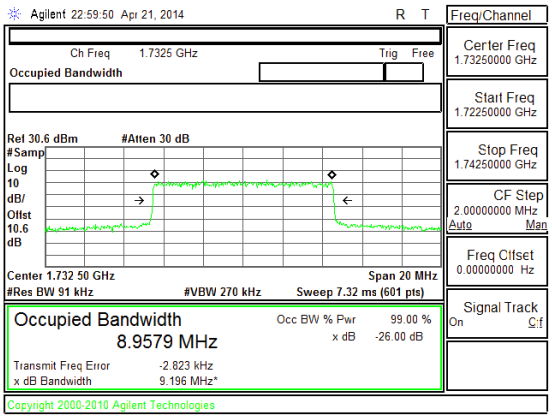
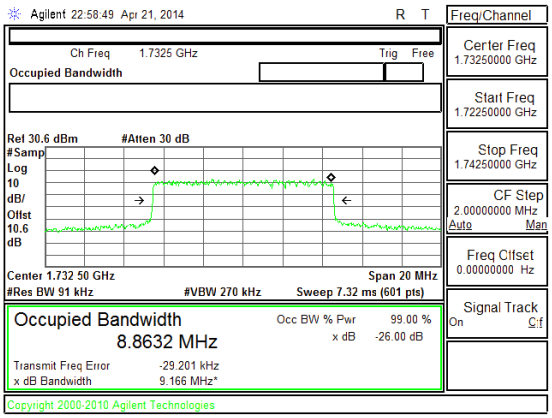
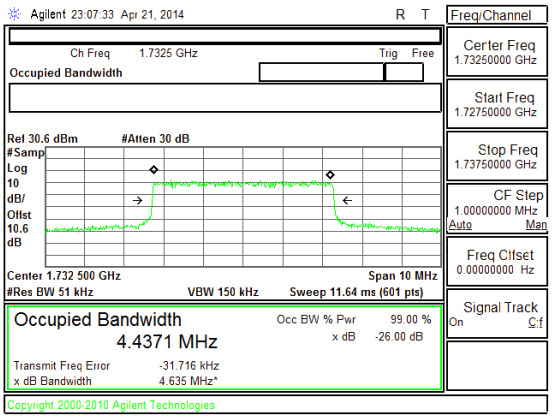
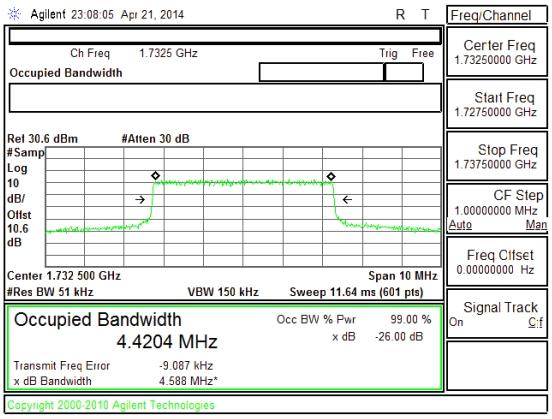
Band LTE17 10MHz 16QAM	 Band LTE17 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE17 10MHz OBW QPSK Mid Channel FRB.gif

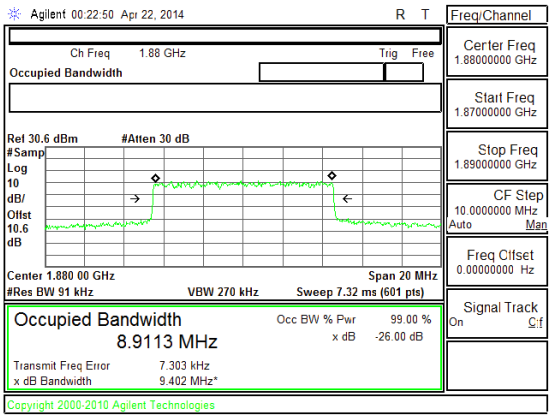
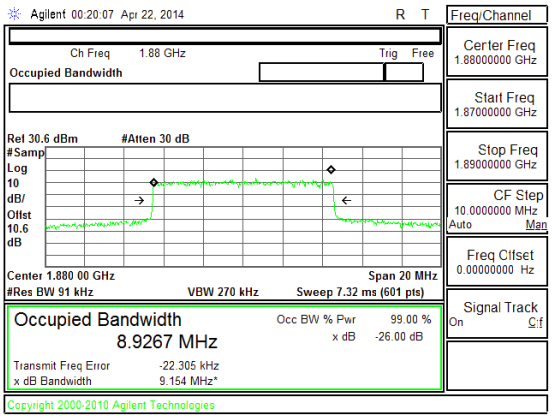
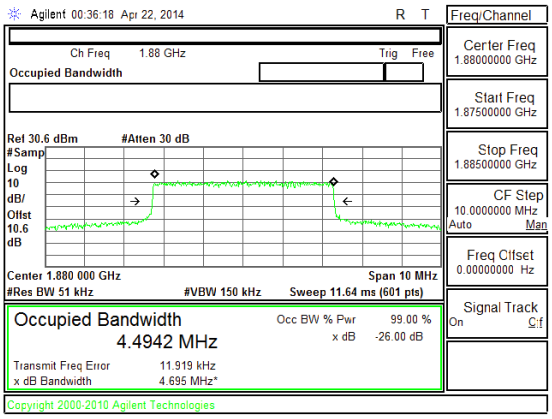
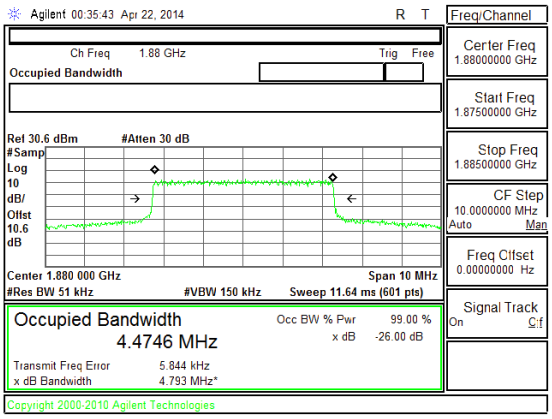
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE17 5MHz OBW QPSK Mid Channel FRB.gif
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 20MHz OBW QPSK Mid Channel FRB.gif

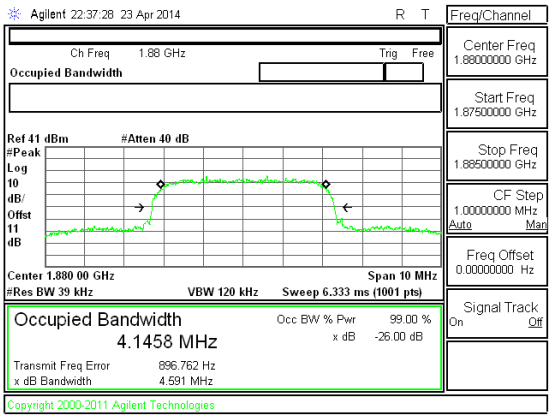
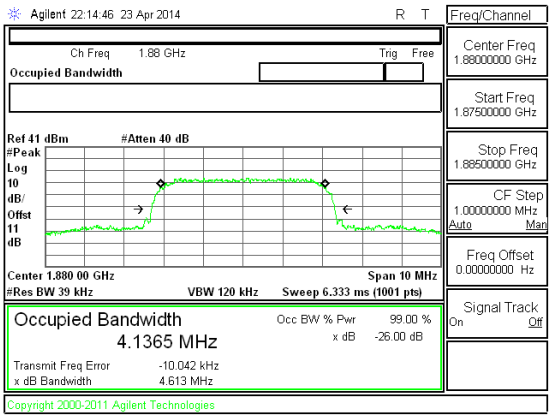
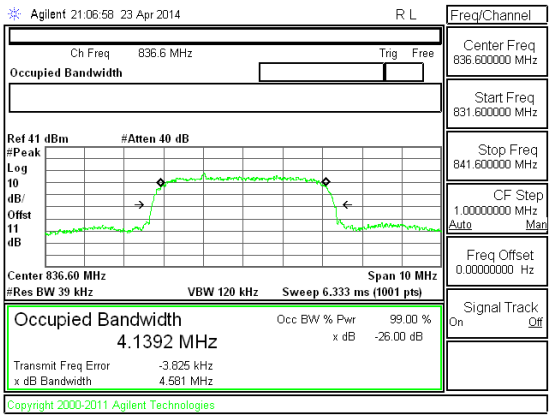
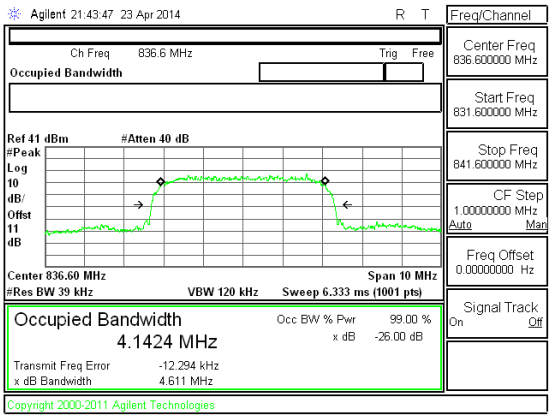
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 15MHz OBW QPSK Mid Channel FRB.gif
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 10MHz OBW QPSK Mid Channel FRB.gif

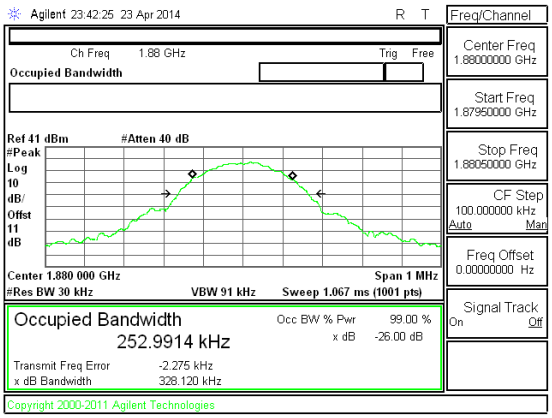
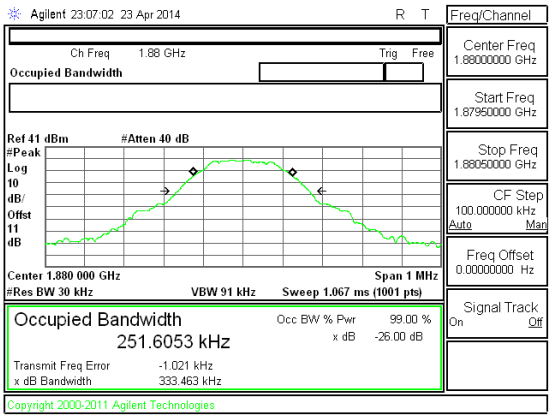
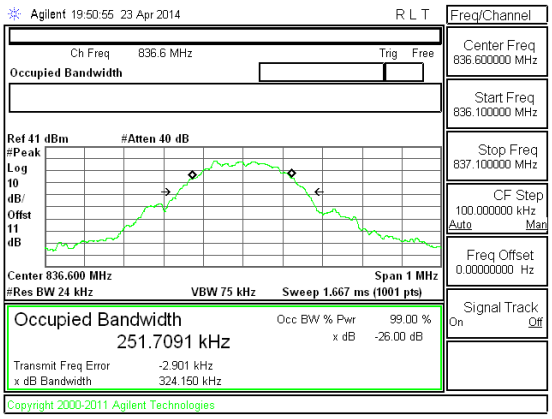
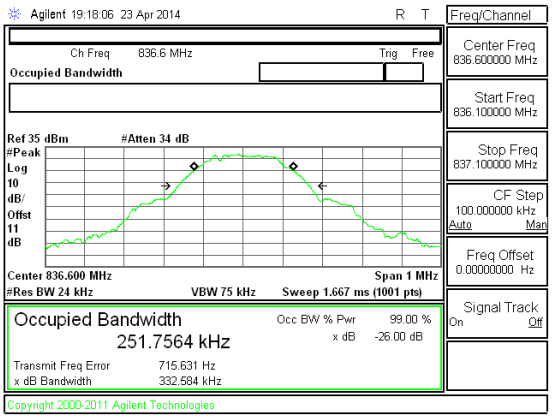
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE7 5MHz OBW QPSK Mid Channel FRB.gif
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 10MHz OBW QPSK Mid Channel FRB.gif

Band LTE5 5MHz 16QAM	 Band LTE5 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 5MHz OBW QPSK Mid Channel FRB.gif

Band LTE4 10MHz 16QAM	 Band LTE4 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE4 5MHz OBW QPSK Mid Channel FRB.gif

Band LTE2 10MHz 16QAM	 Band LTE2 10MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 10MHz OBW QPSK Mid Channel FRB.gif
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE2 5MHz OBW QPSK Mid Channel FRB.gif

Band Band 2 HSDPA	 Band WCDMA B2 HSDPA OBW	 Band WCDMA B2 REL99 OBW
Band Band 5 HSDPA	 Band WCDMA B5 HSDPA OBW	 Band WCDMA B5 REL99 OBW

Band GSM1900 EGPRS	 Band GSM1900 EGPRS OBW Mid channel	 Band GSM1900 GPRS OBW Mid channel
Band GSM850 EGPRS	 Band GSM850 EGPRS OBW Mid channel	 Band GSM850 GPRS OBW Mid channel

10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238, §27

LIMITS

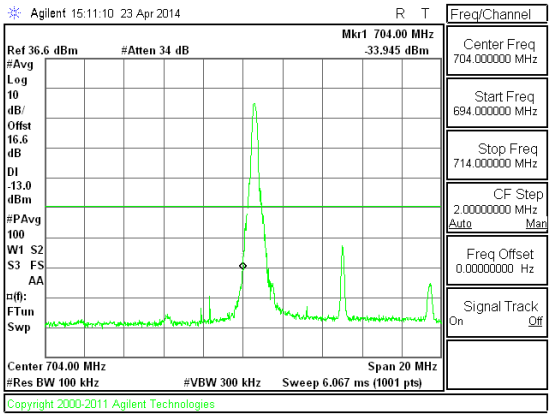
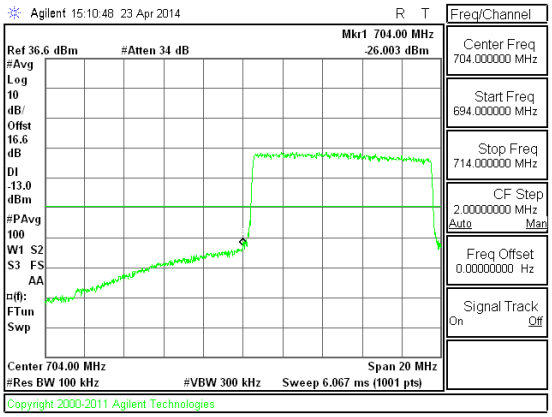
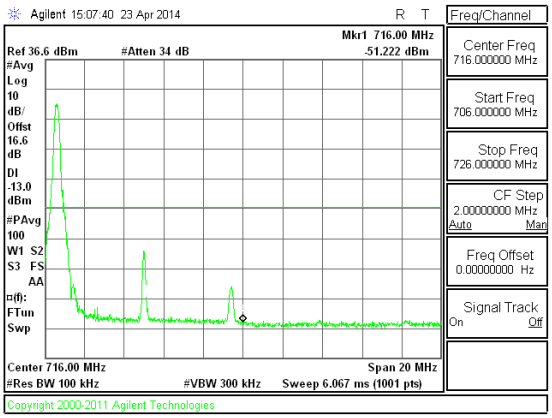
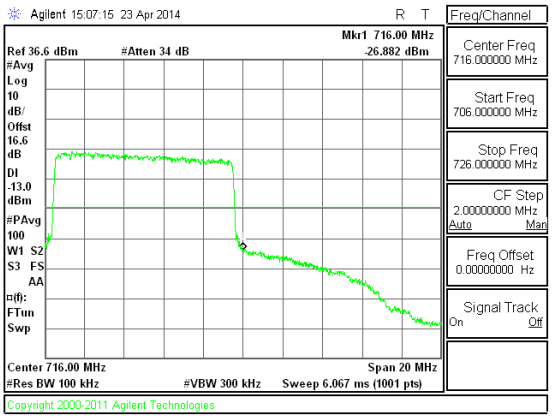
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

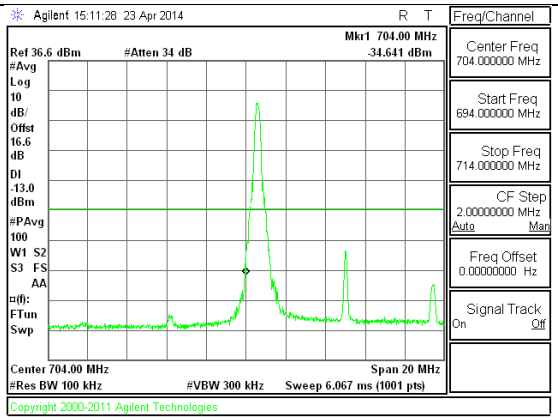
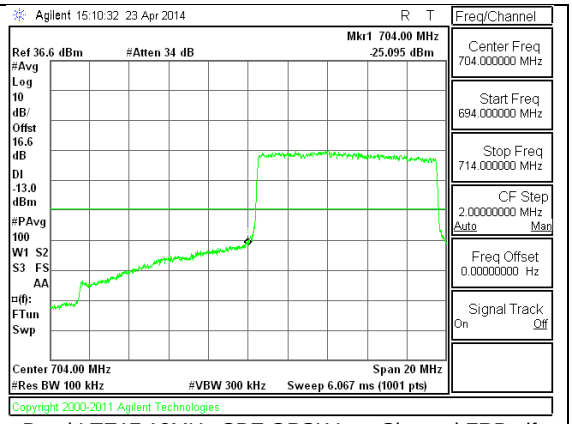
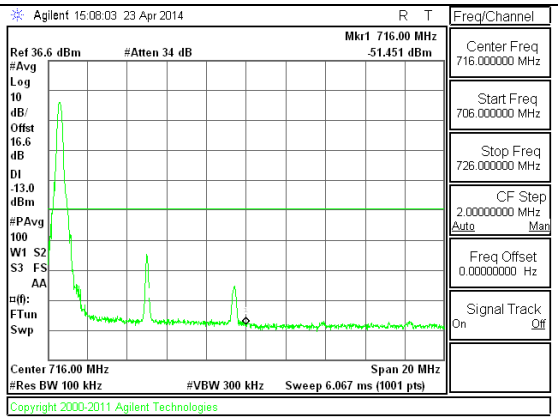
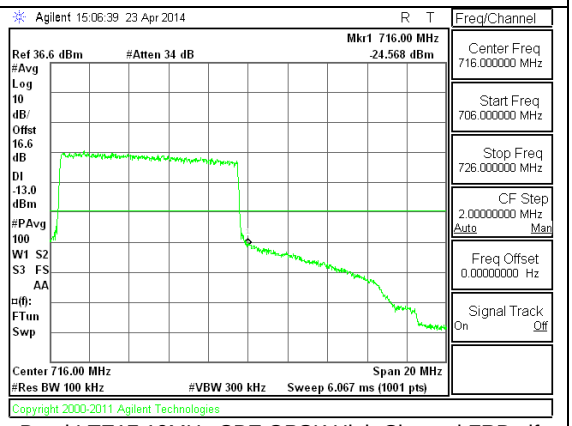
TEST PROCEDURE

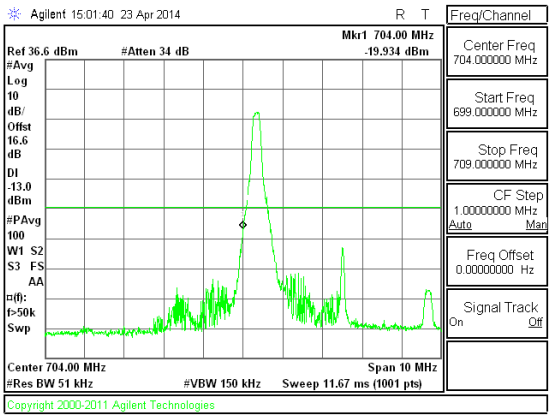
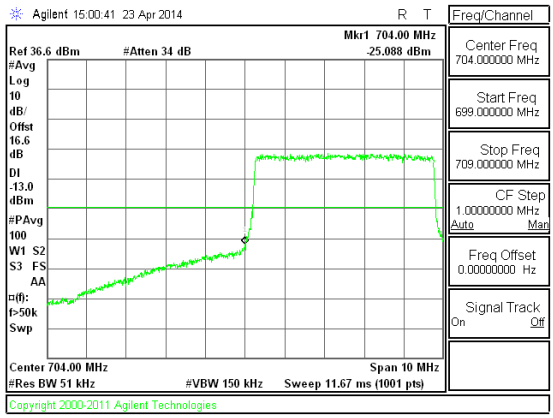
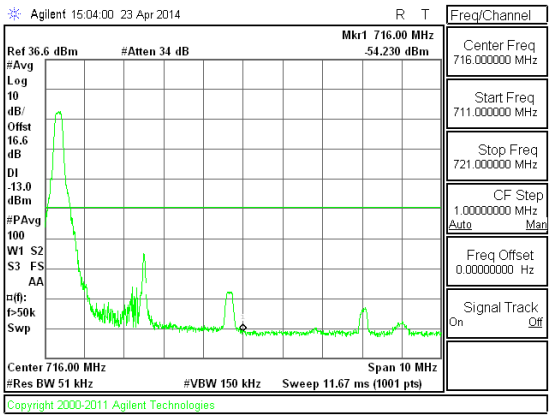
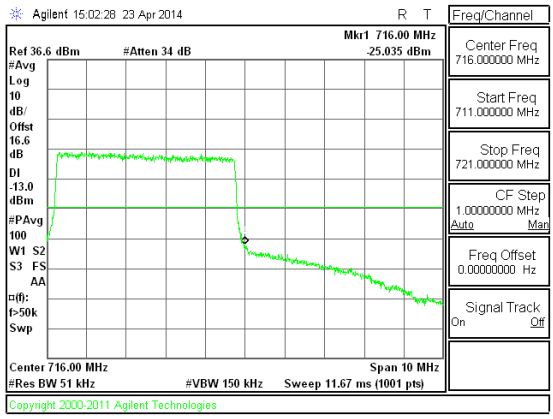
Per KDB 971168 D01 Power Meas License Digital Systems v02r01
The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

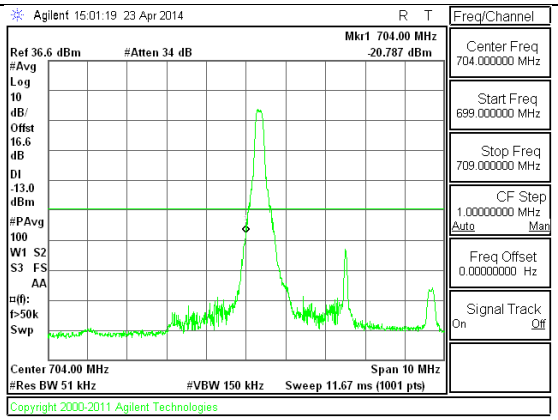
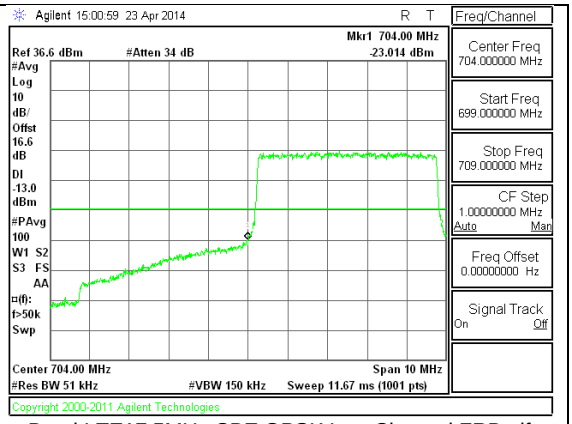
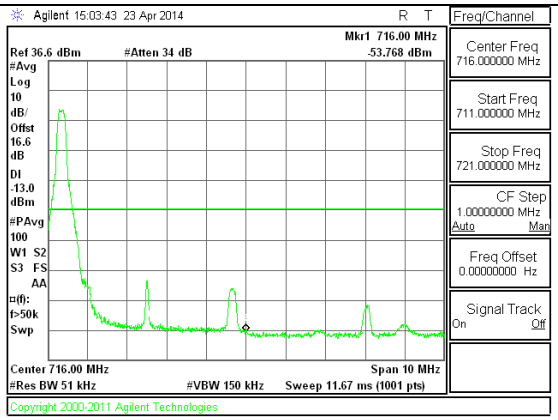
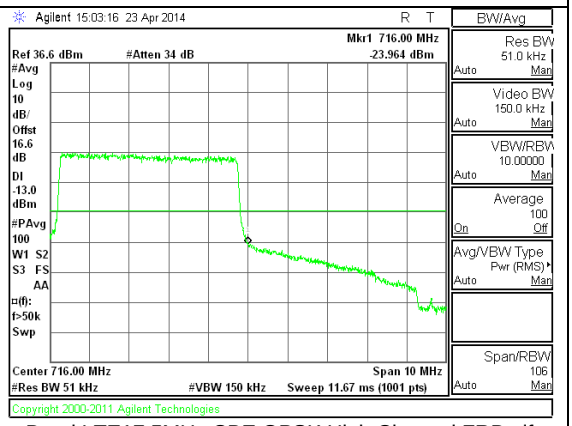
RESULTS

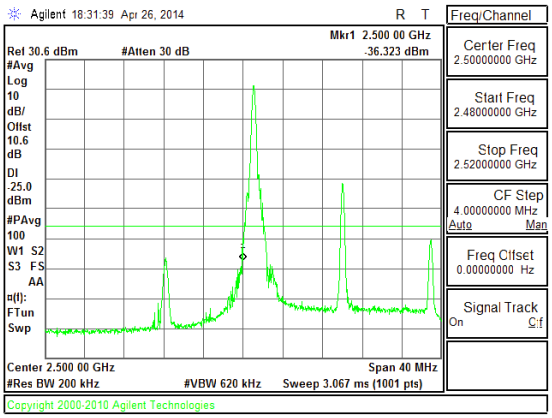
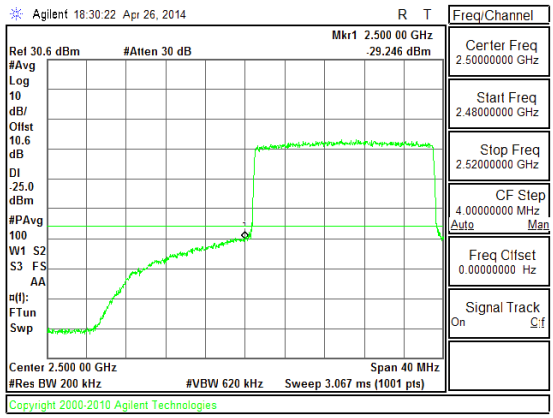
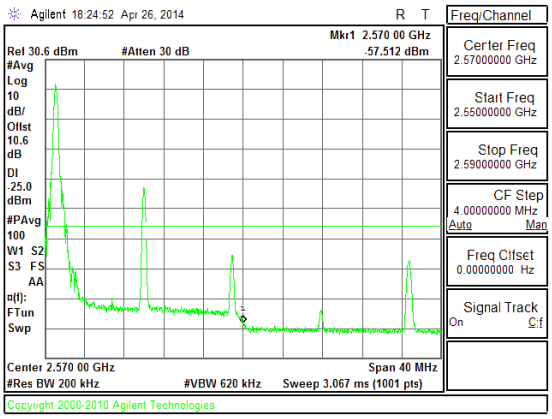
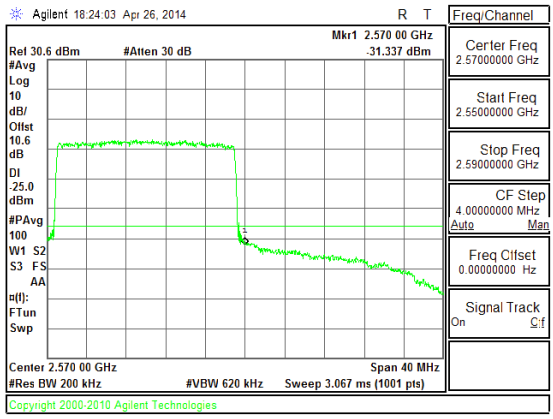
10.2.1. BAND EDGE PLOTS

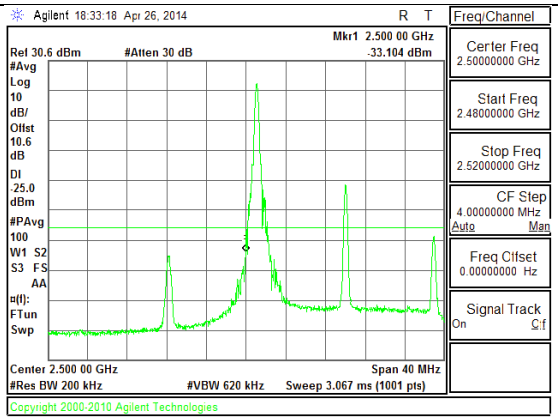
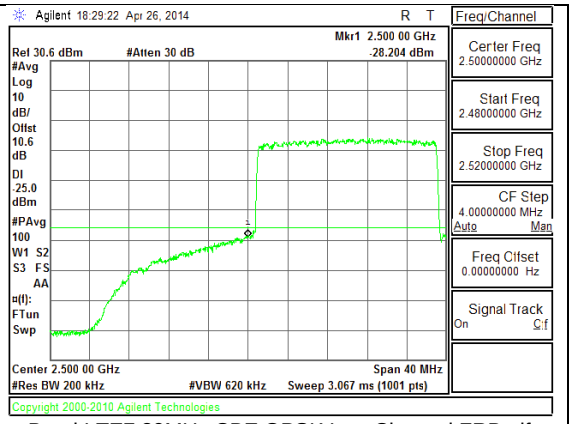
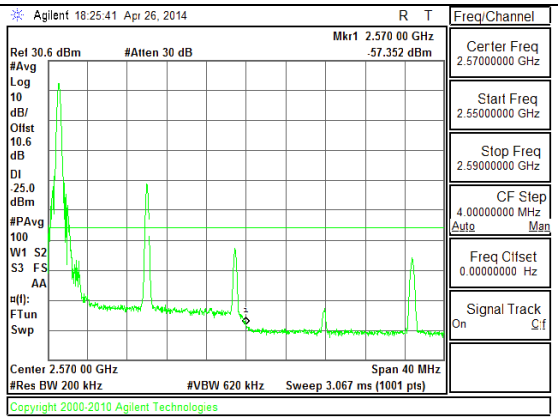
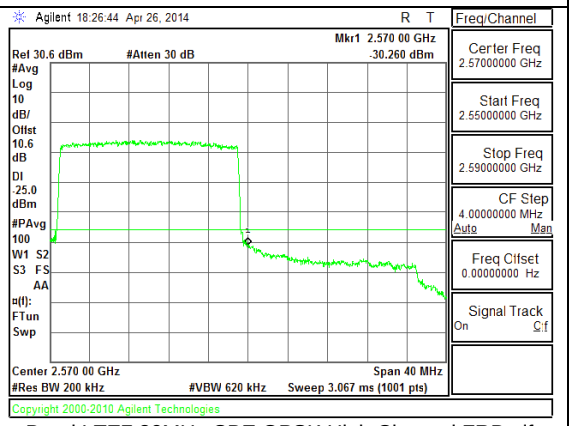
Band LTE17 10MHz 16QAM	 Band LTE17 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE17 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE17 10MHz 16QAM	 Band LTE17 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE17 10MHz CBE 16QAM High Channel FRB.gif

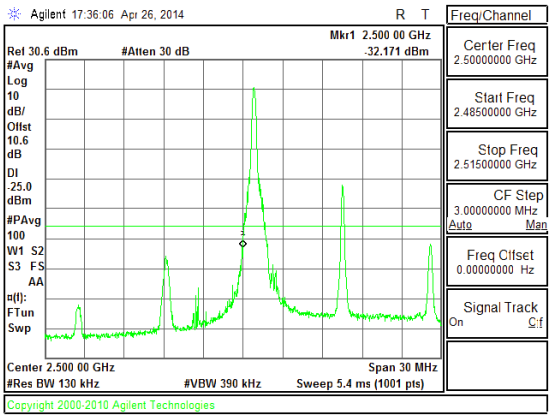
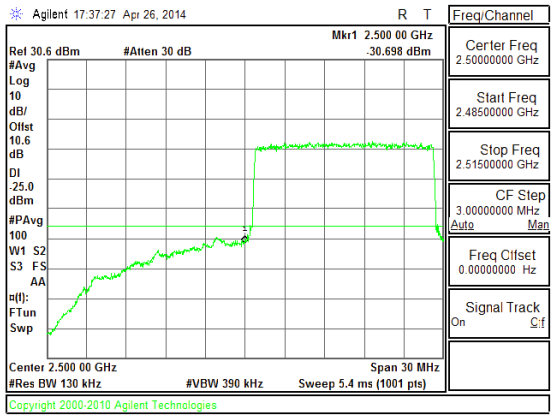
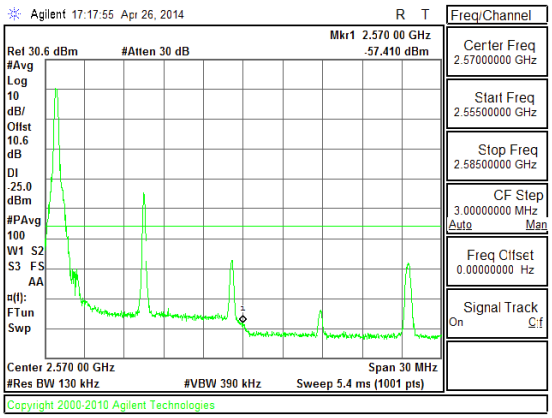
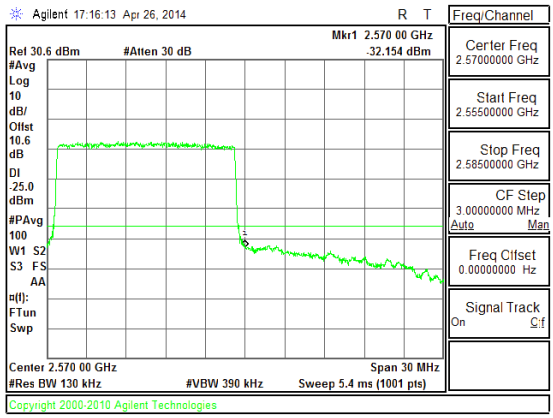
Band LTE17 10MHz QPSK	 Band LTE17 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE17 10MHz CBE QPSK Low Channel FRB.gif
Band LTE17 10MHz QPSK	 Band LTE17 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE17 10MHz CBE QPSK High Channel FRB.gif

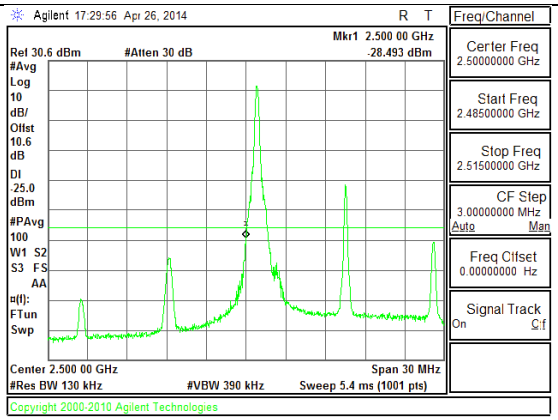
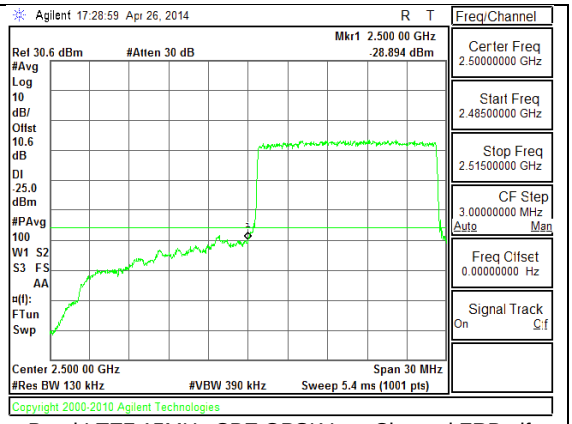
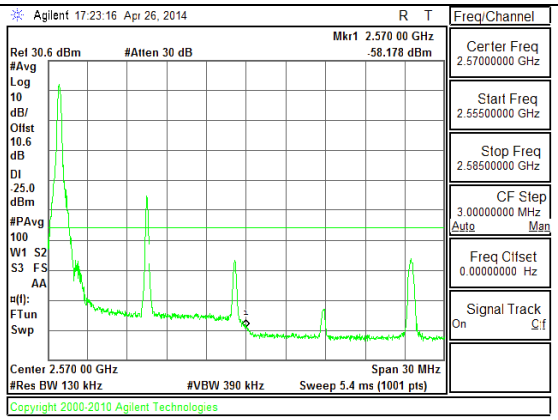
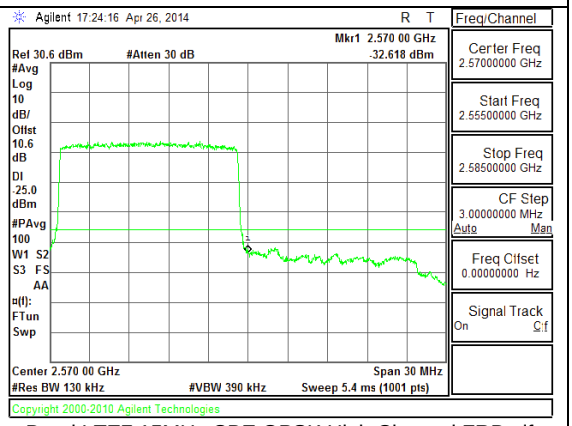
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE17 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE17 5MHz CBE 16QAM High Channel FRB.gif

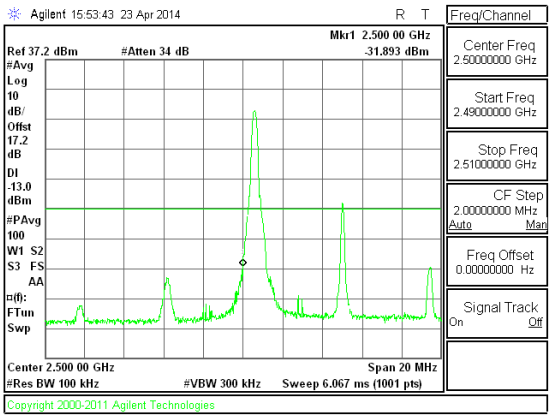
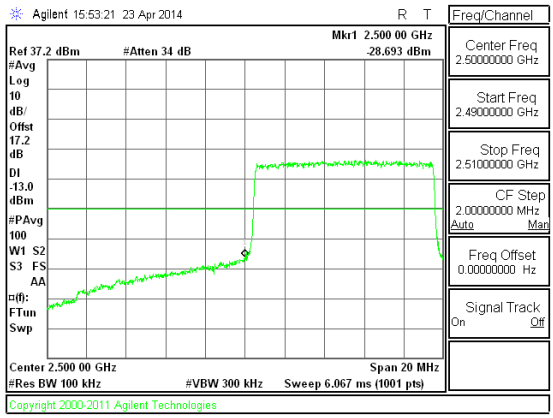
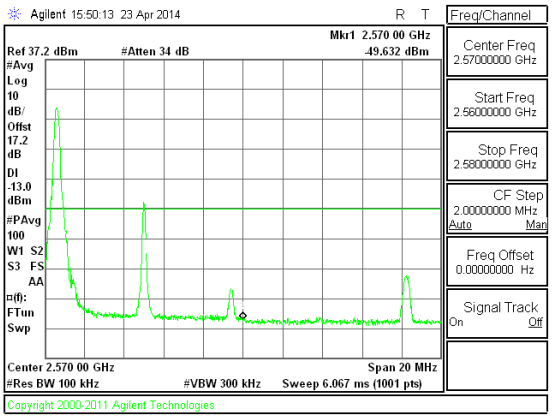
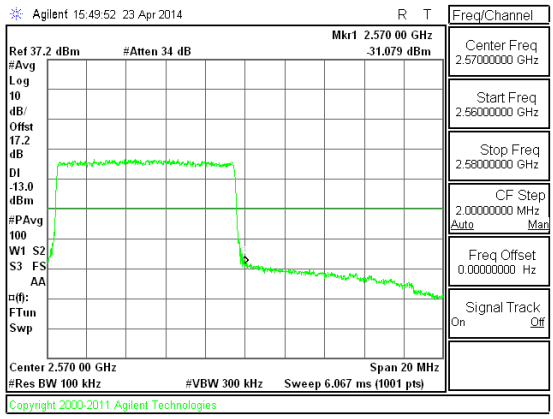
Band LTE17 5MHz QPSK	 Band LTE17 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE17 5MHz CBE QPSK Low Channel FRB.gif
Band LTE17 5MHz QPSK	 Band LTE17 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE17 5MHz CBE QPSK High Channel FRB.gif

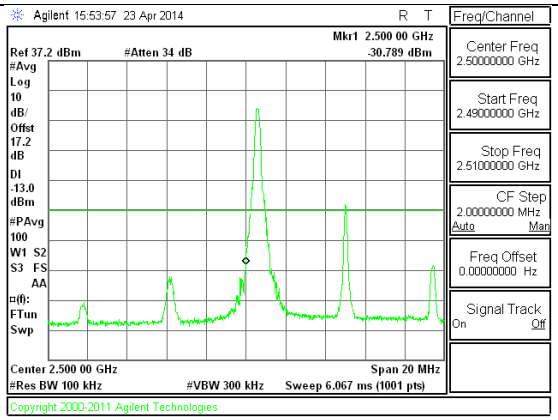
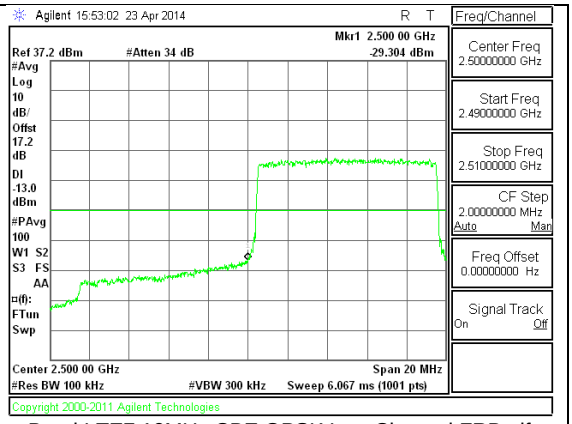
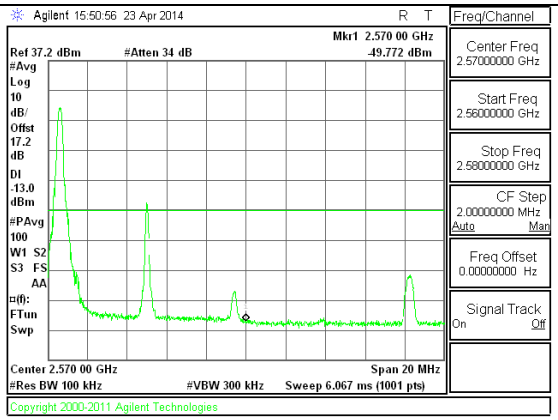
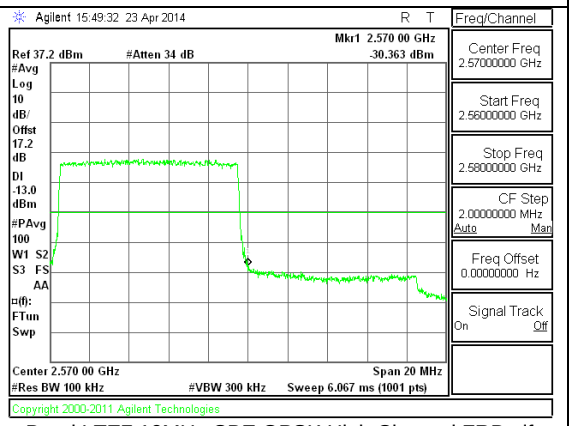
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE7 20MHz CBE 16QAM Low Channel FRB.gif
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 20MHz CBE 16QAM High Channel FRB.gif

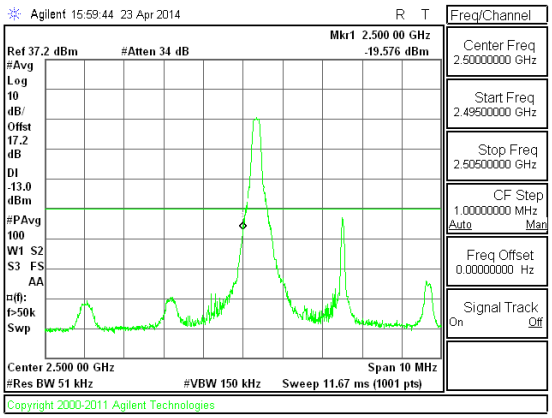
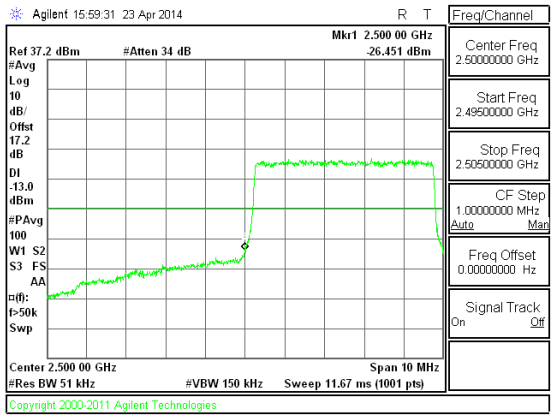
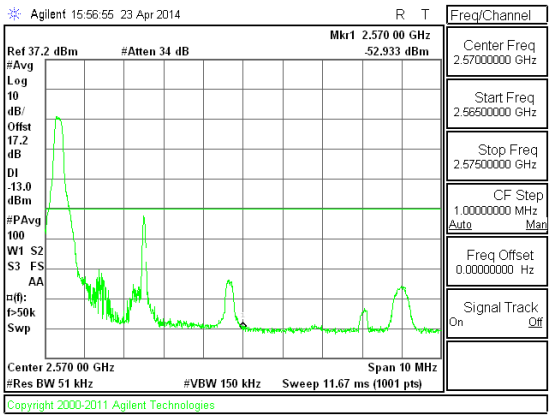
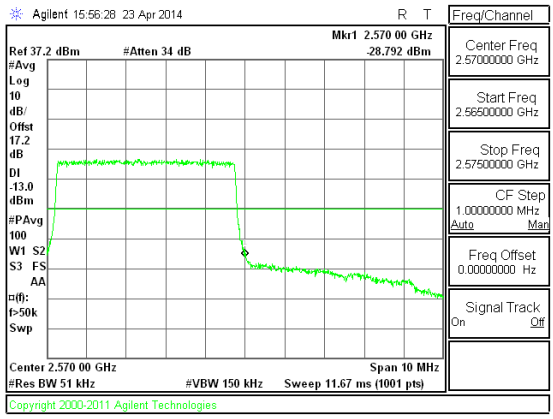
Band LTE7 20MHz QPSK	 Band LTE7 20MHz CBE QPSK Low Channel 1RB.gif	 Band LTE7 20MHz CBE QPSK Low Channel FRB.gif
Band LTE7 20MHz QPSK	 Band LTE7 20MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 20MHz CBE QPSK High Channel FRB.gif

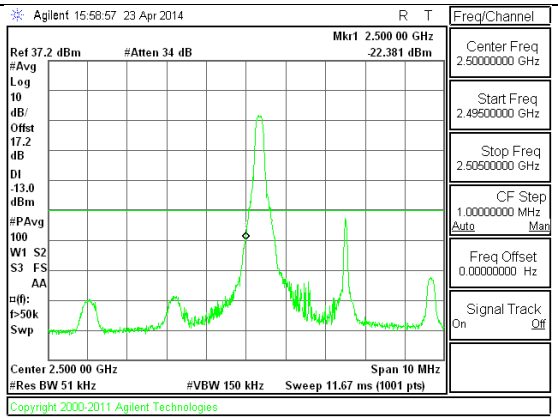
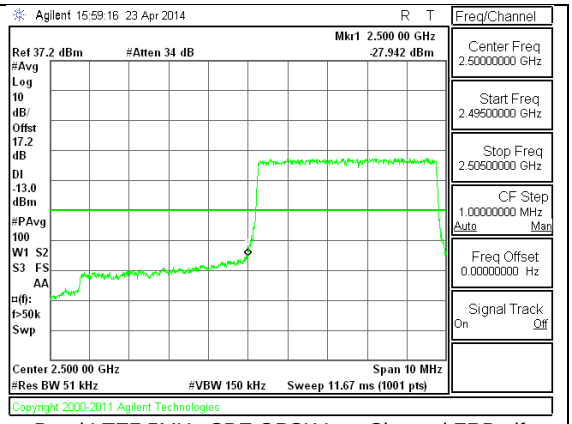
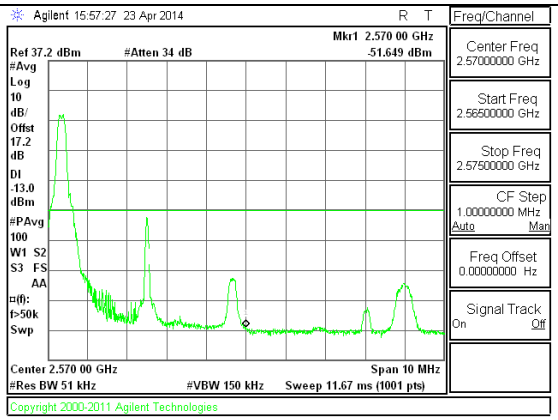
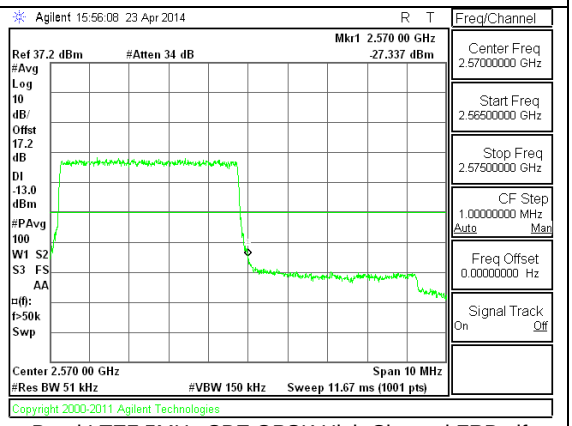
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE7 15MHz CBE 16QAM Low Channel FRB.gif
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 15MHz CBE 16QAM High Channel FRB.gif

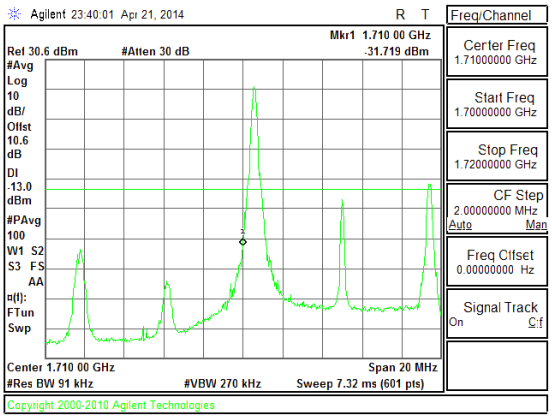
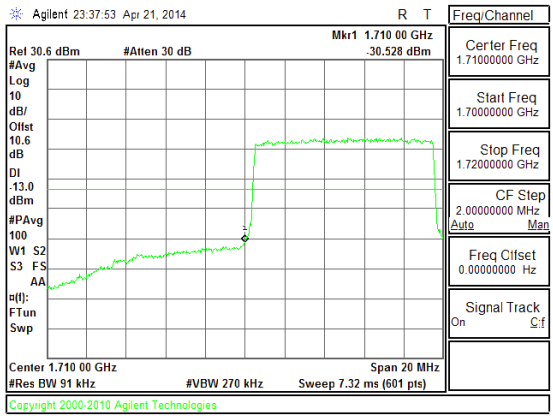
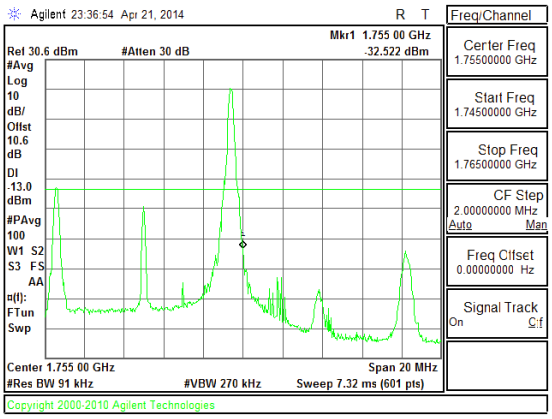
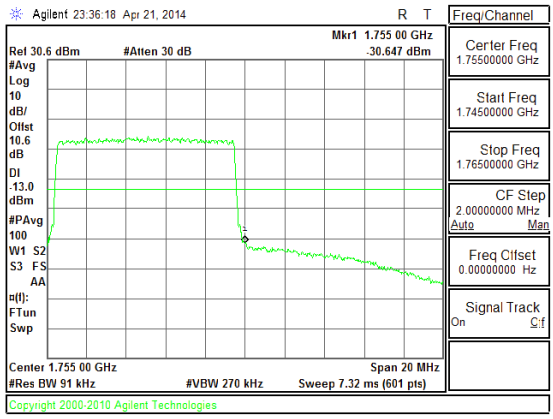
Band LTE7 15MHz QPSK	 Band LTE7 15MHz CBE QPSK Low Channel 1RB.gif	 Band LTE7 15MHz CBE QPSK Low Channel FRB.gif
Band LTE7 15MHz QPSK	 Band LTE7 15MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 15MHz CBE QPSK High Channel FRB.gif

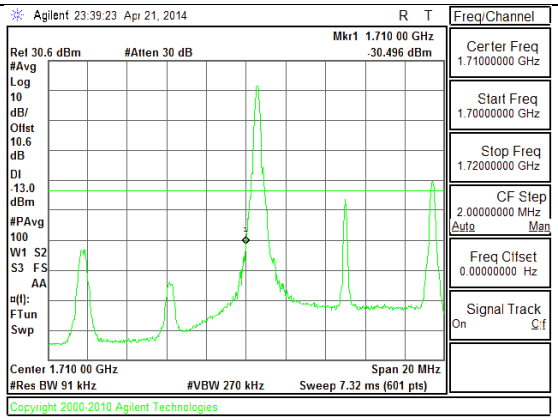
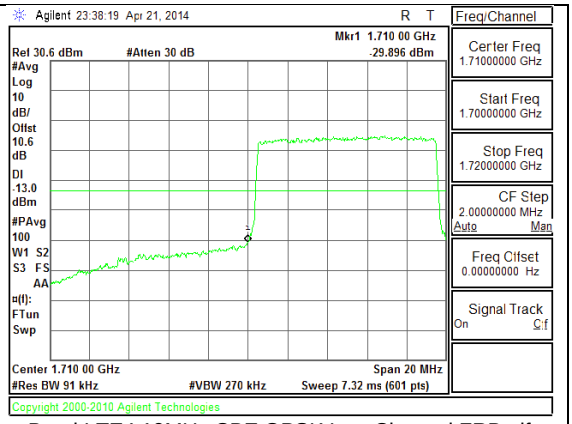
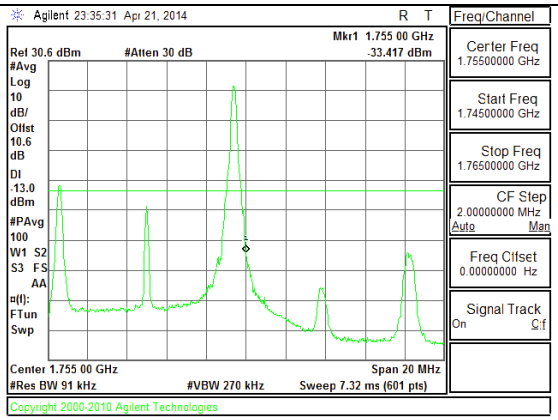
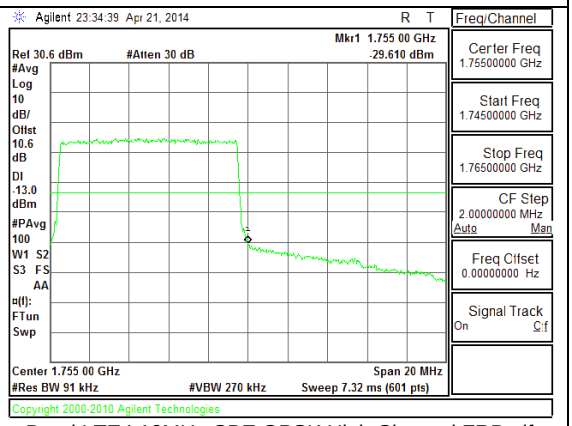
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE7 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 10MHz CBE 16QAM High Channel FRB.gif

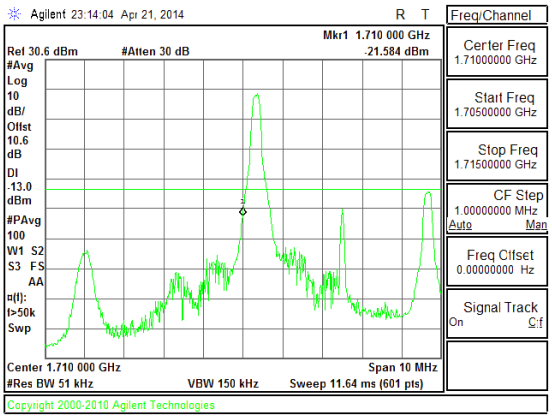
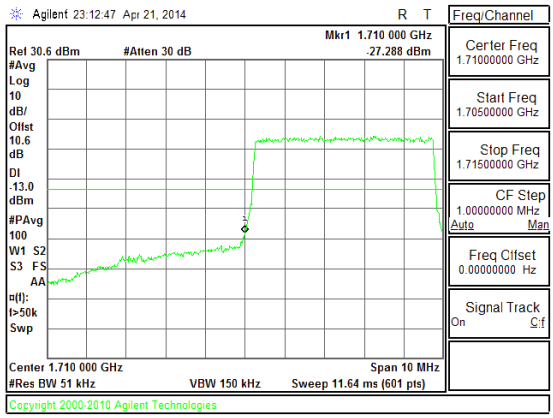
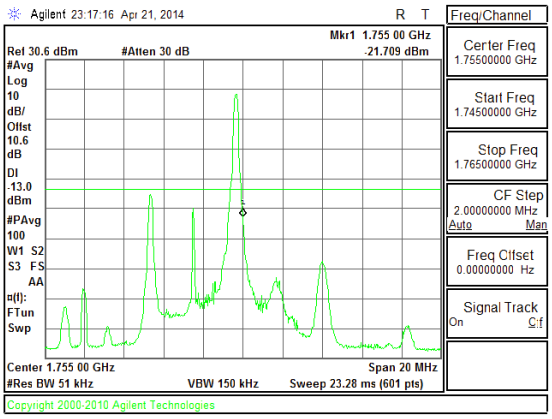
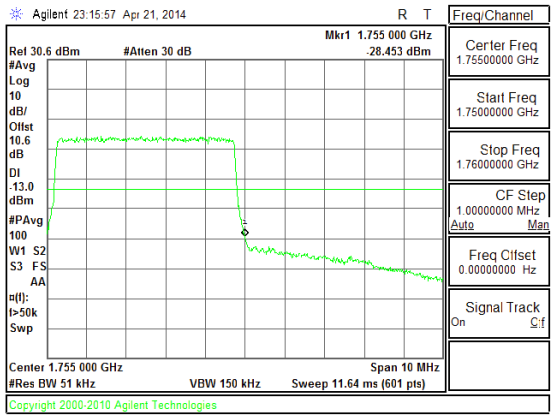
Band LTE7 10MHz QPSK	 Band LTE7 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE7 10MHz CBE QPSK Low Channel FRB.gif
Band LTE7 10MHz QPSK	 Band LTE7 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 10MHz CBE QPSK High Channel FRB.gif

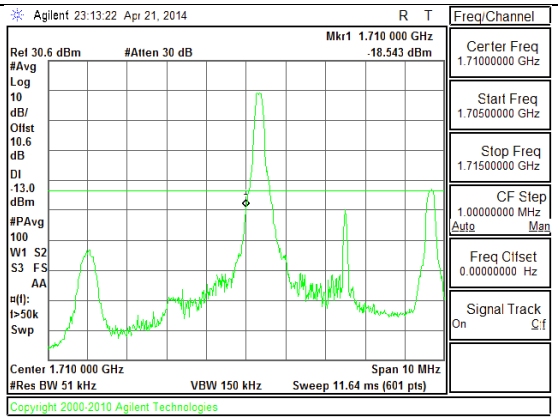
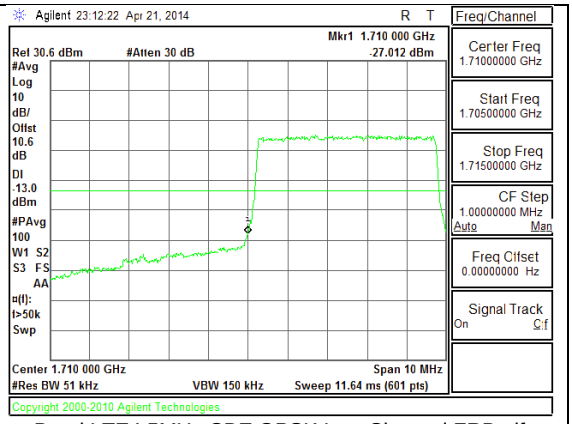
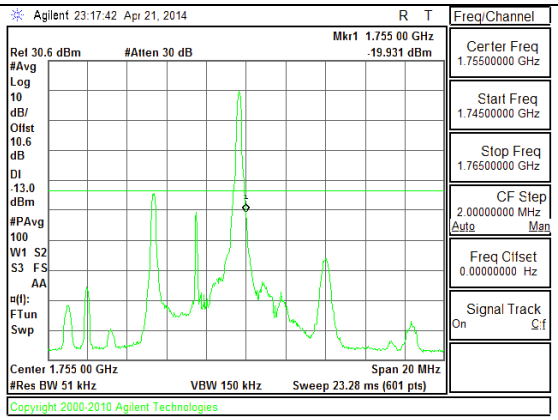
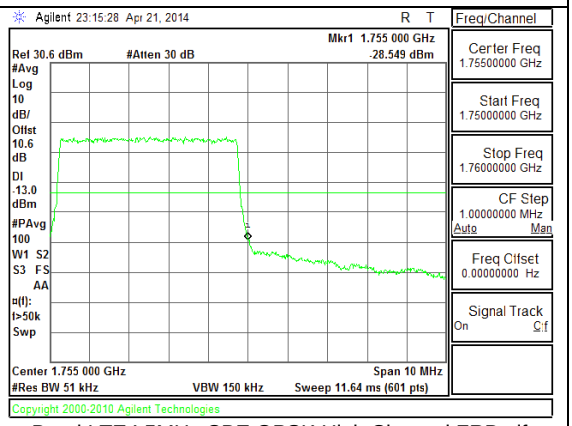
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE7 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE7 5MHz CBE 16QAM High Channel FRB.gif

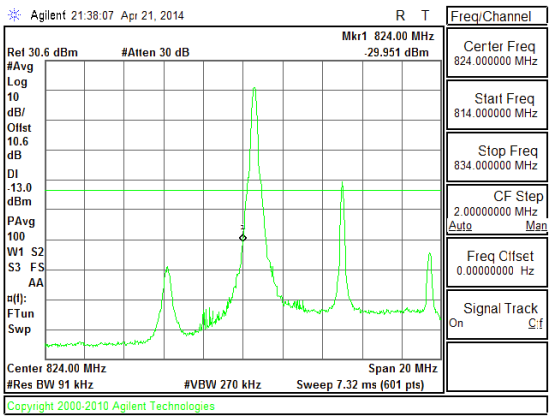
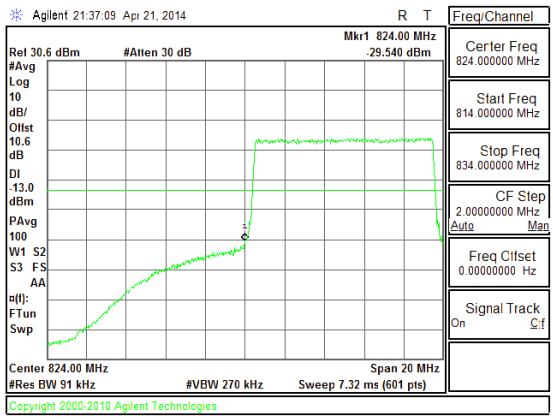
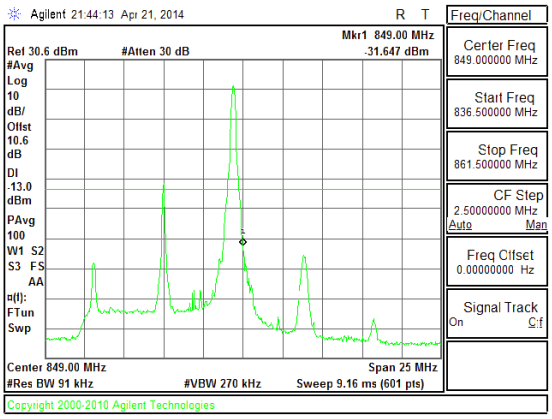
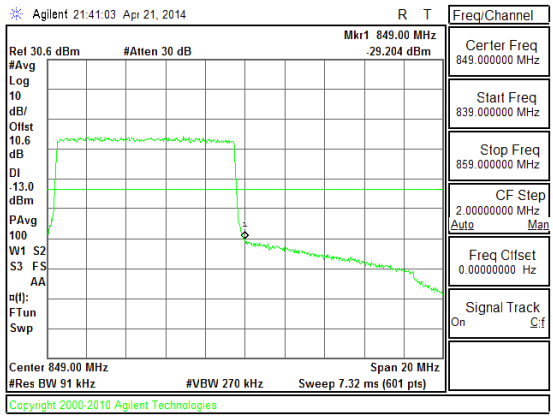
Band LTE7 5MHz QPSK	 Band LTE7 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE7 5MHz CBE QPSK Low Channel FRB.gif
Band LTE7 5MHz QPSK	 Band LTE7 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE7 5MHz CBE QPSK High Channel FRB.gif

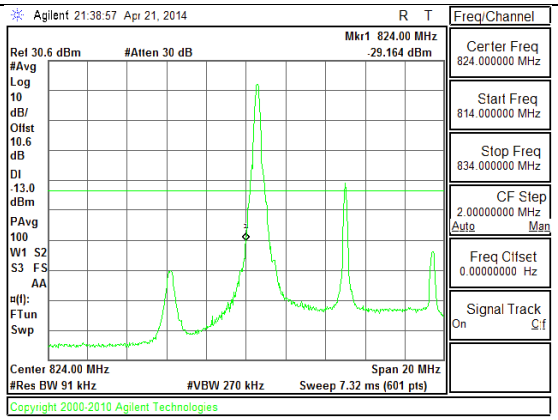
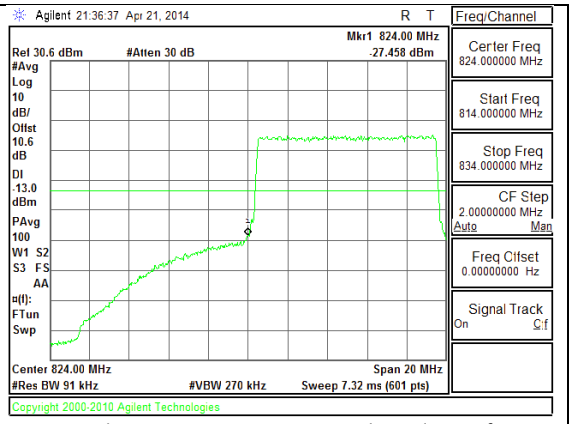
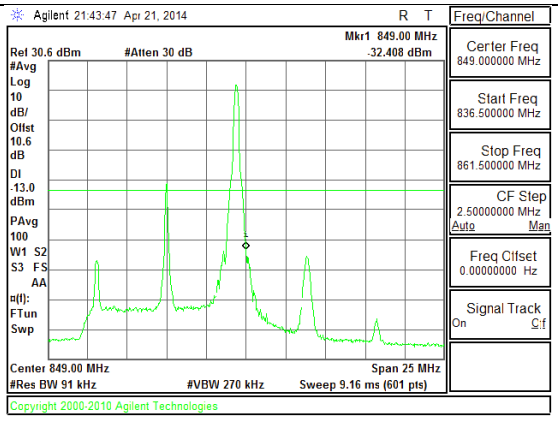
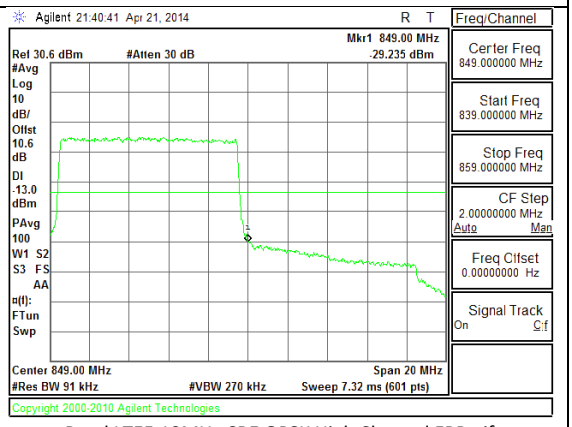
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 10MHz CBE 16QAM High Channel FRB.gif

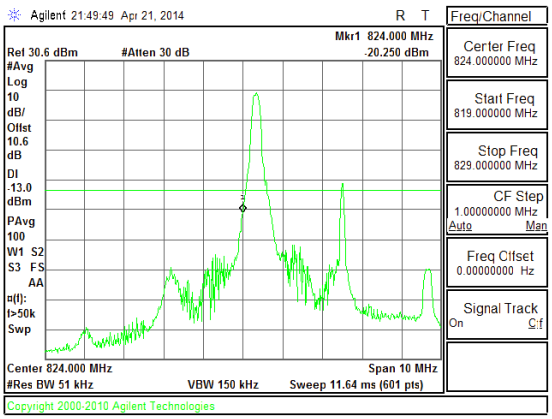
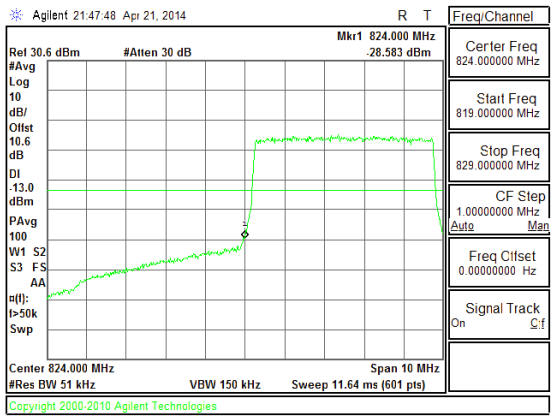
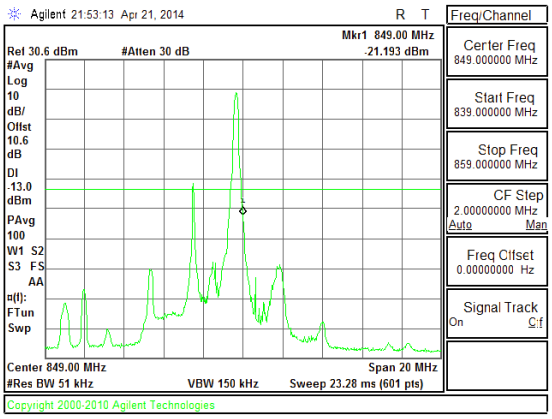
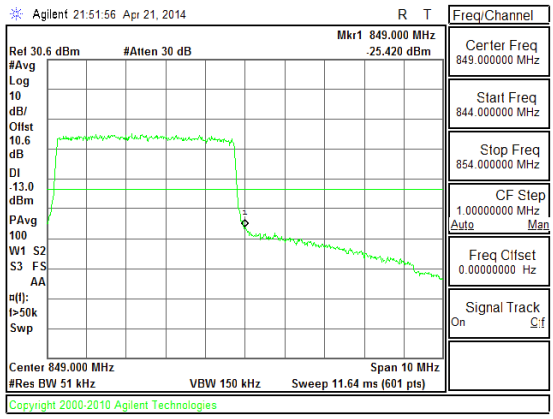
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK Low Channel FRB.gif
Band LTE4 10MHz QPSK	 Band LTE4 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 10MHz CBE QPSK High Channel FRB.gif

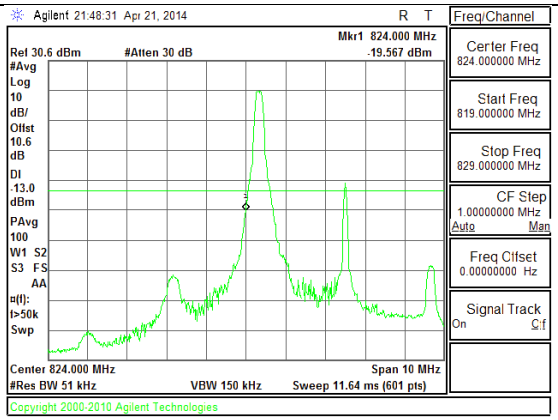
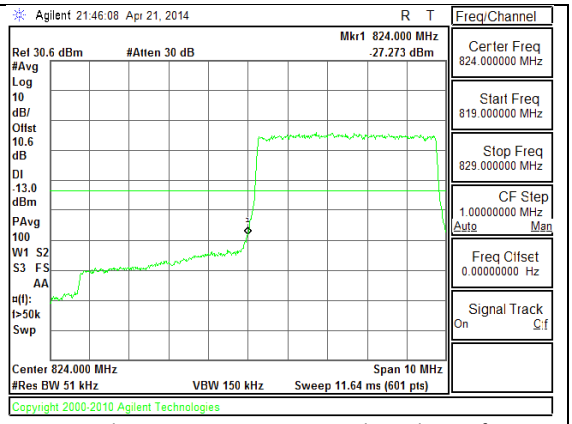
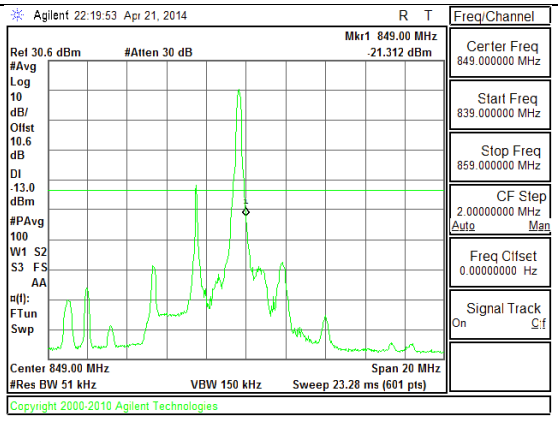
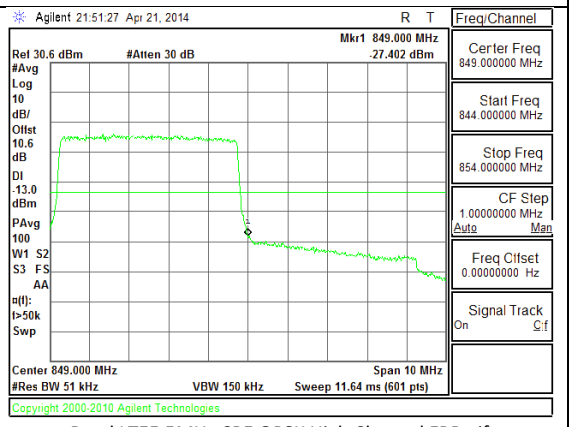
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE4 5MHz CBE 16QAM High Channel FRB.gif

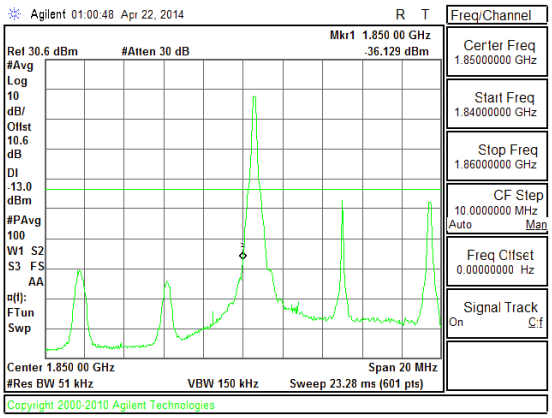
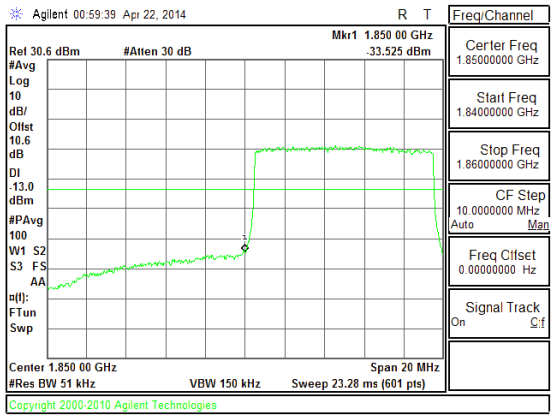
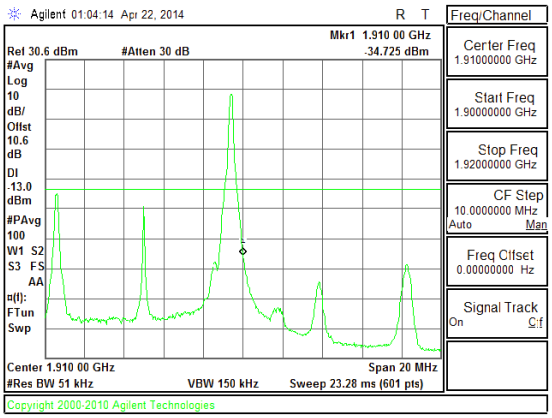
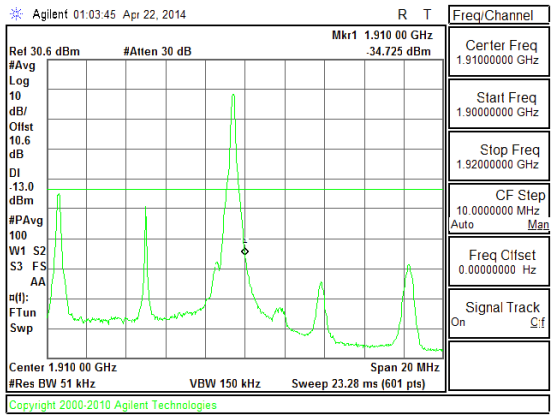
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK Low Channel FRB.gif
Band LTE4 5MHz QPSK	 Band LTE4 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE4 5MHz CBE QPSK High Channel FRB.gif

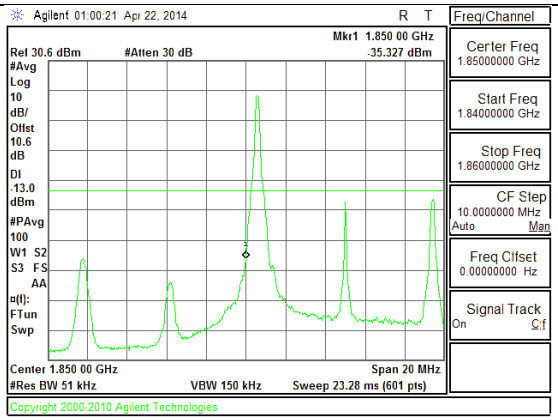
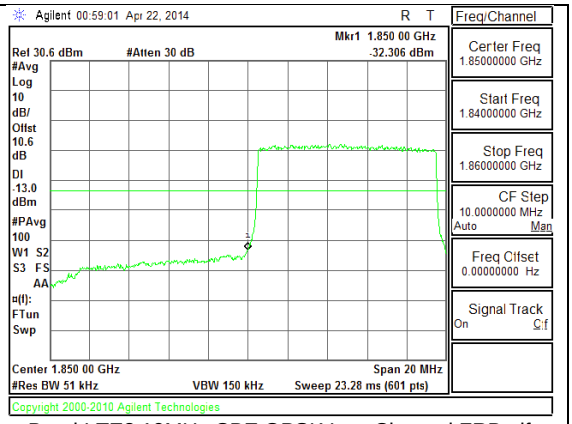
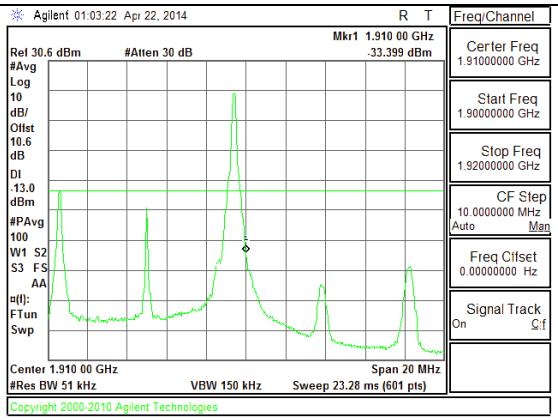
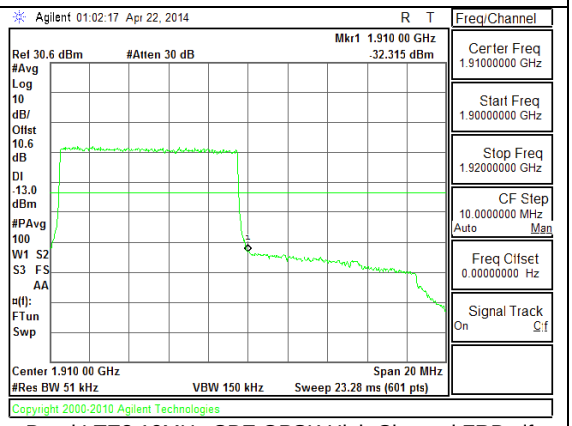
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 10MHz CBE 16QAM High Channel FRB.gif

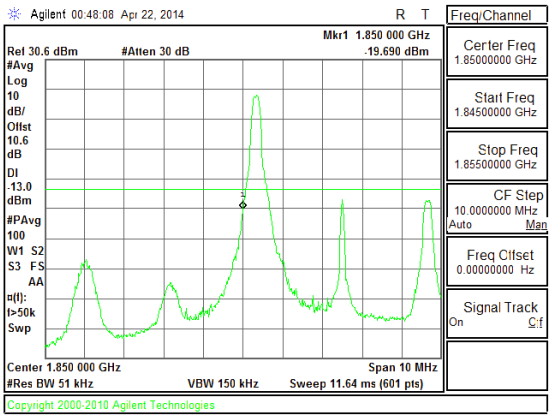
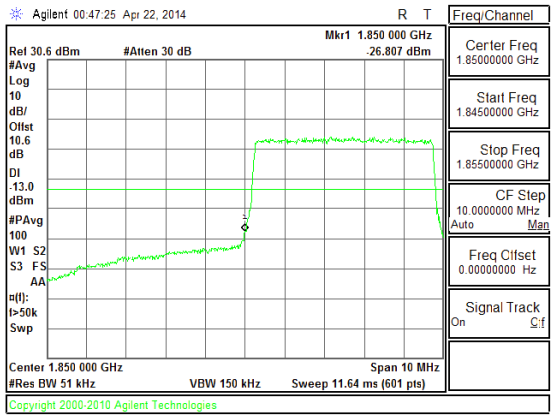
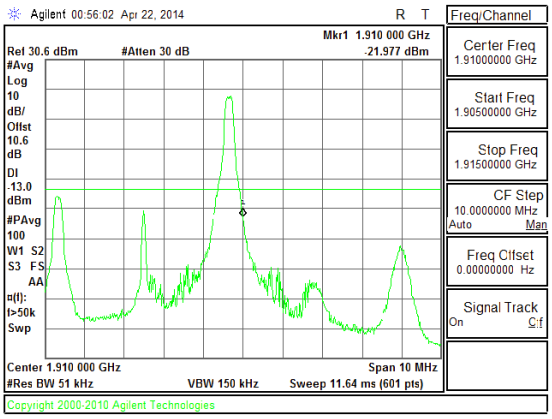
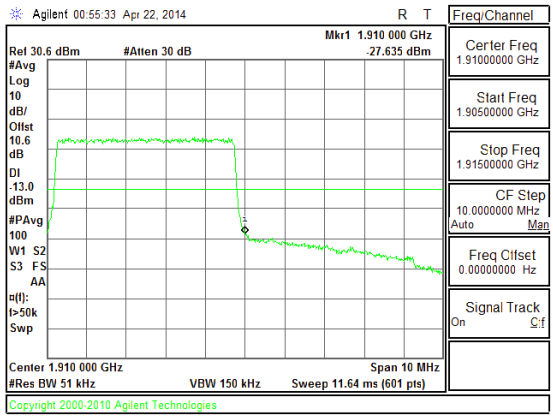
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK Low Channel FRB.gif
Band LTE5 10MHz QPSK	 Band LTE5 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 10MHz CBE QPSK High Channel FRB.gif

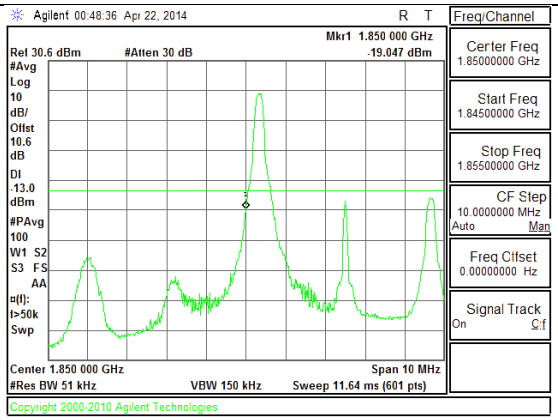
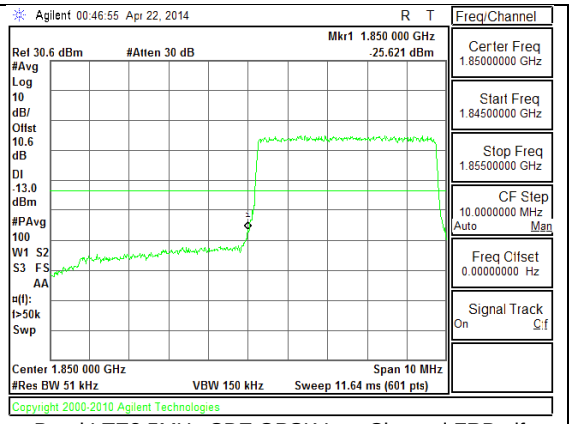
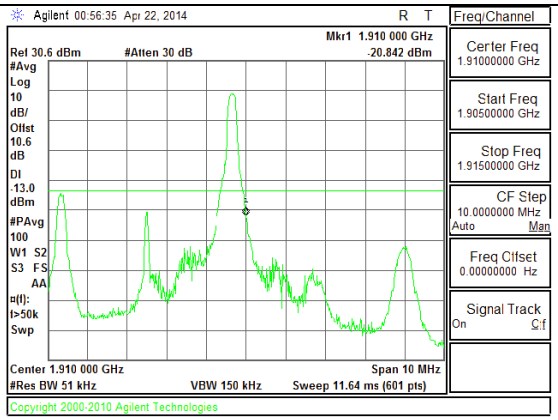
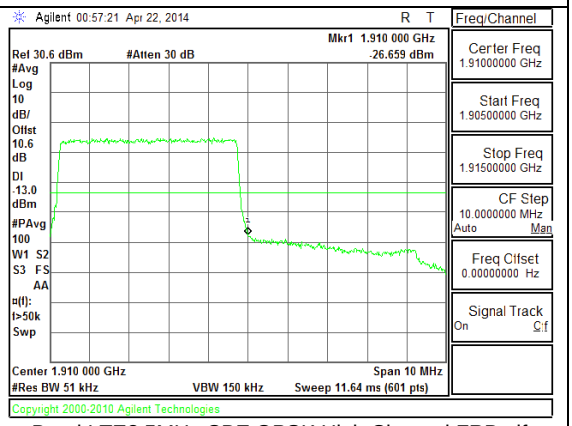
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE5 5MHz CBE 16QAM High Channel FRB.gif

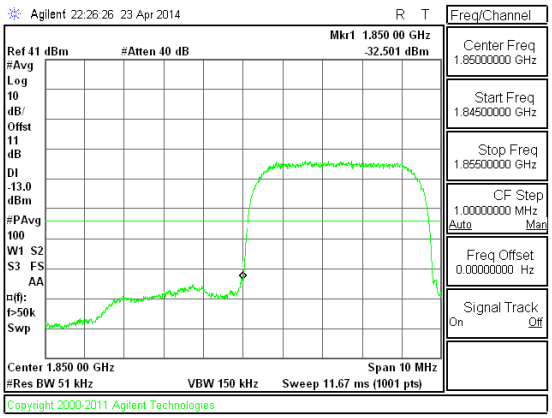
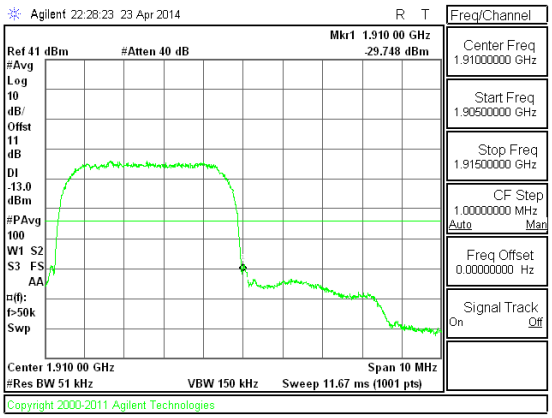
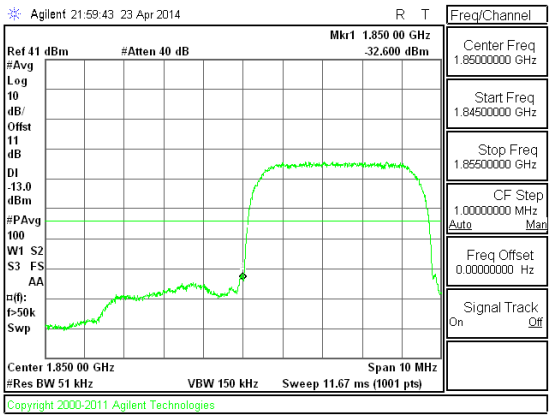
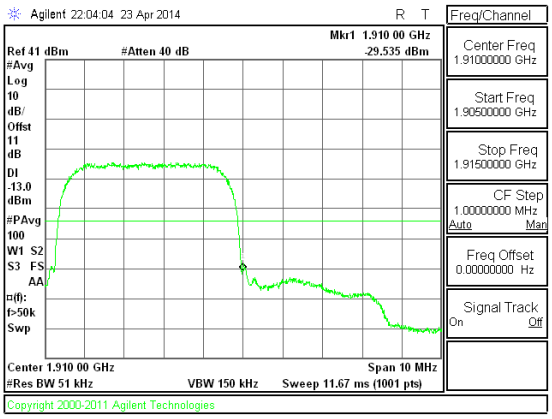
Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK Low Channel FRB.gif
Band LTE5 5MHz QPSK	 Band LTE5 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE5 5MHz CBE QPSK High Channel FRB.gif

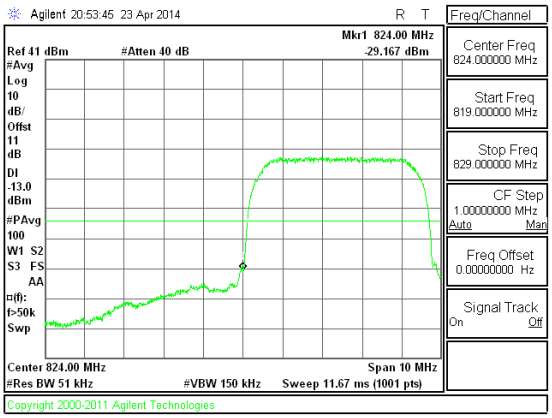
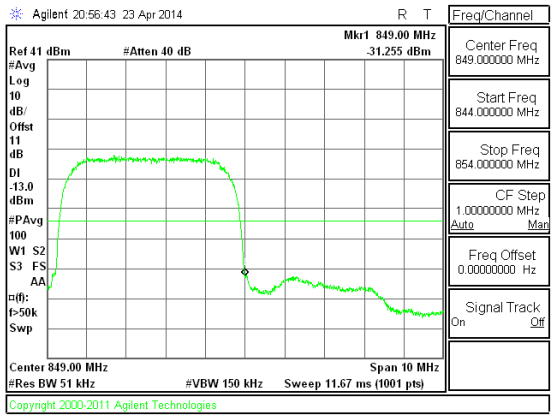
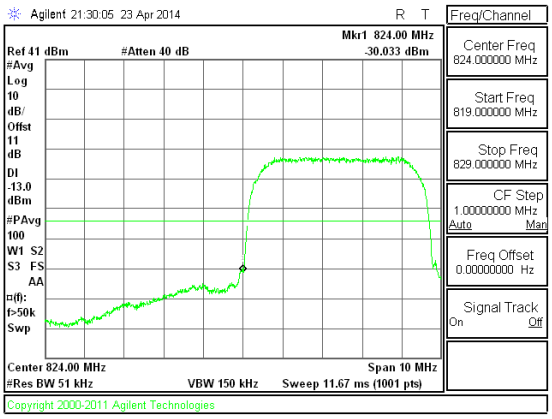
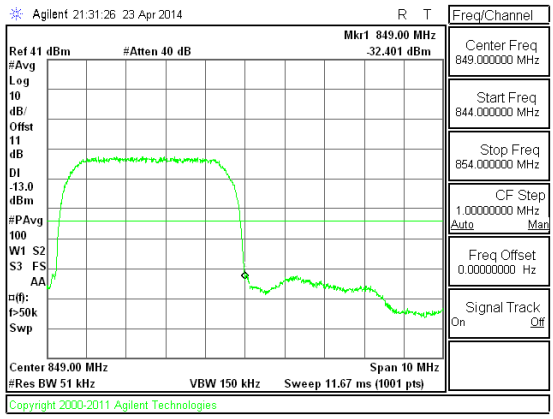
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 10MHz CBE 16QAM High Channel FRB.gif

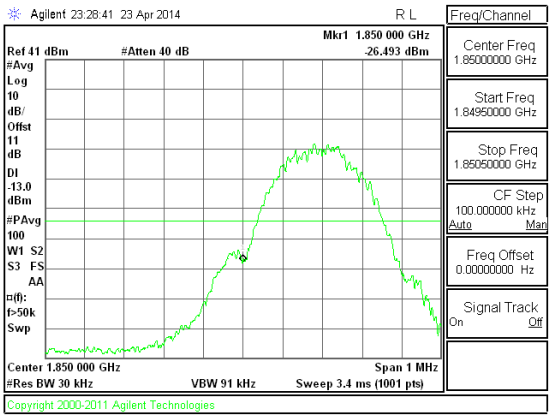
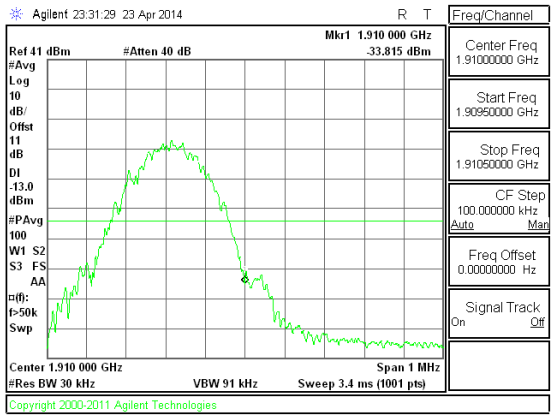
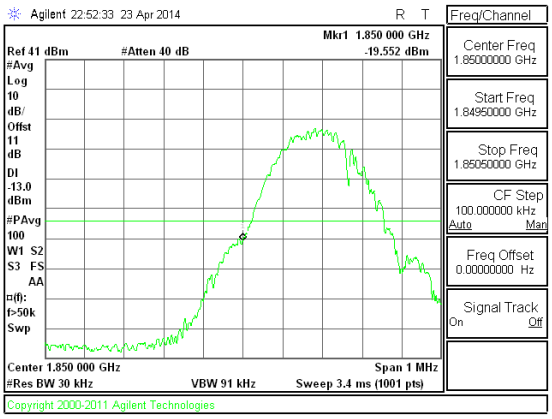
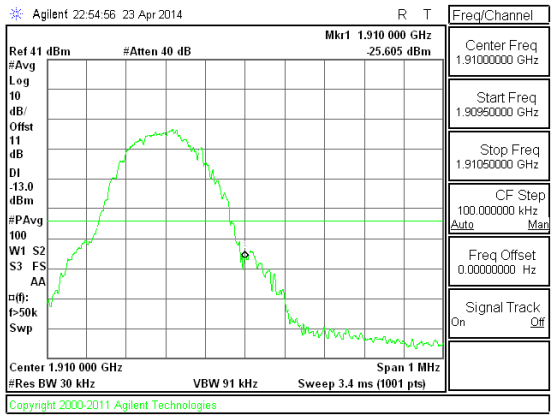
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK Low Channel FRB.gif
Band LTE2 10MHz QPSK	 Band LTE2 10MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 10MHz CBE QPSK High Channel FRB.gif

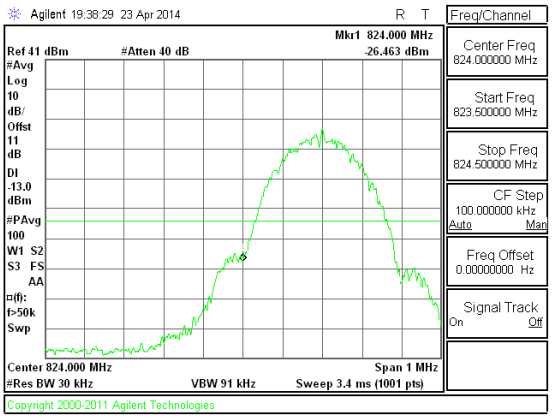
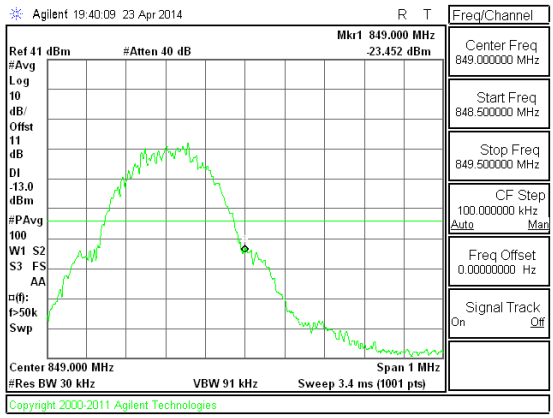
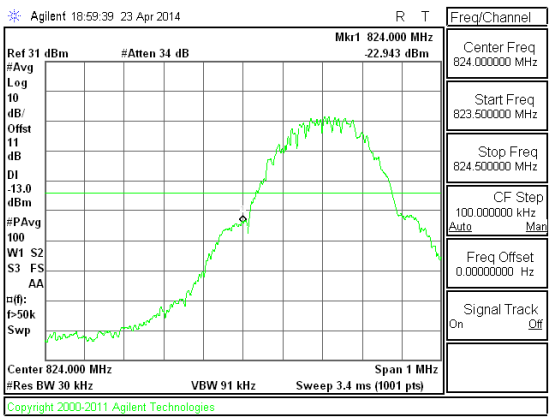
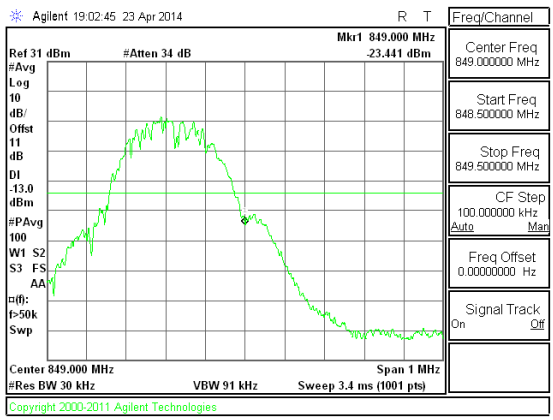
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM Low Channel 1RB.gif	 Band LTE2 5MHz CBE 16QAM Low Channel FRB.gif
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CBE 16QAM High Channel 1RB.gif	 Band LTE2 5MHz CBE 16QAM High Channel FRB.gif

Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK Low Channel 1RB.gif	 Band LTE2 5MHz CBE QPSK Low Channel FRB.gif
Band LTE2 5MHz QPSK	 Band LTE2 5MHz CBE QPSK High Channel 1RB.gif	 Band LTE2 5MHz CBE QPSK High Channel FRB.gif

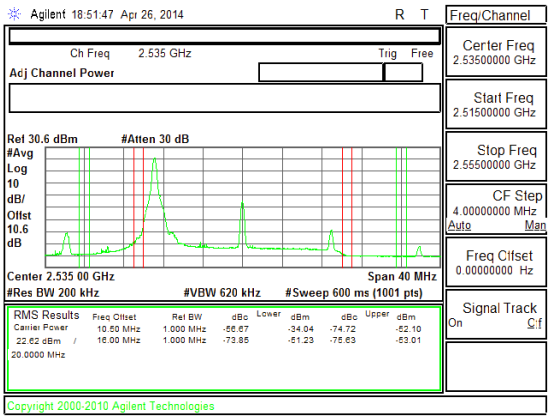
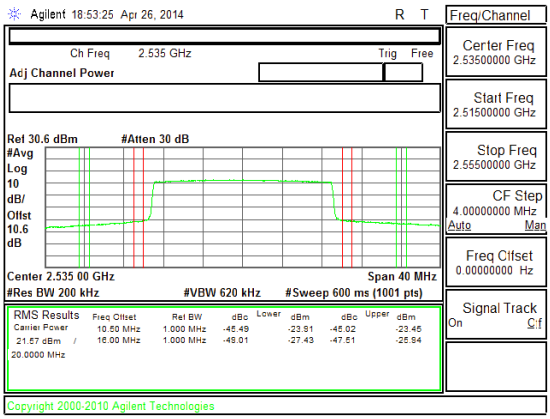
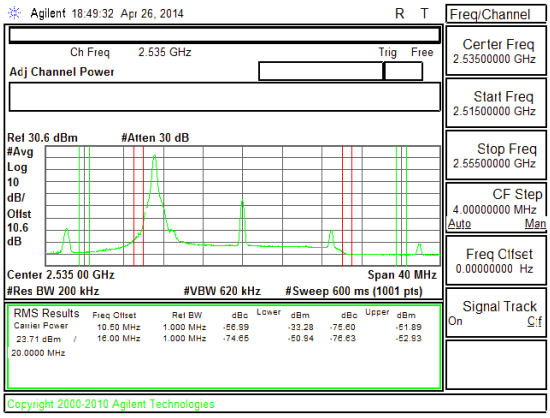
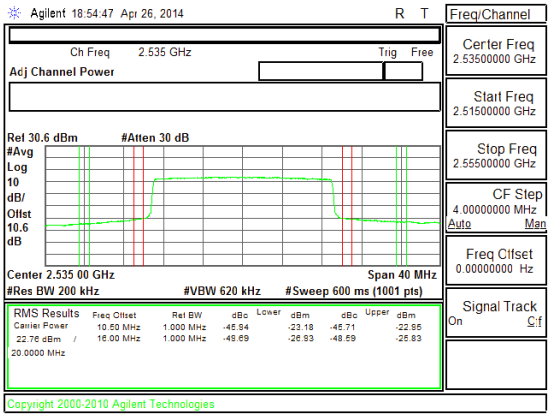
Band Band 2 HSDPA	 Band WCDMA B2 HSDPA CBE	 Band WCDMA B2 HSDPA CBE
Band Band 2 REL99	 Band WCDMA B2 REL99 CBE	 Band WCDMA B2 REL99 CBE

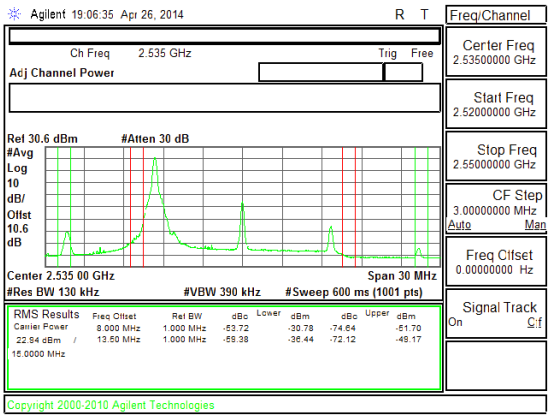
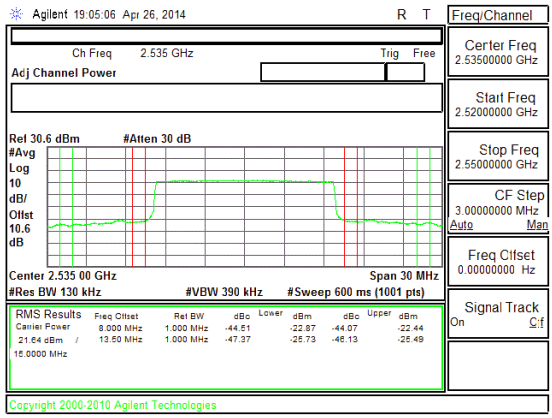
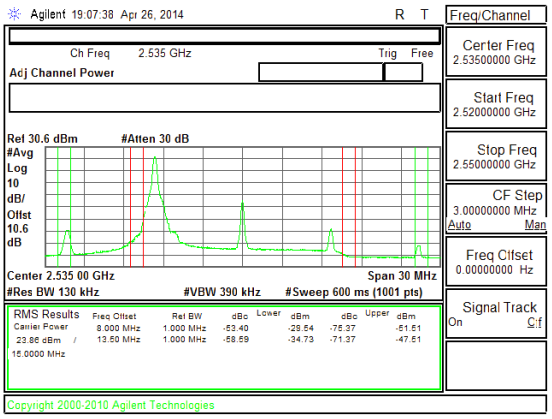
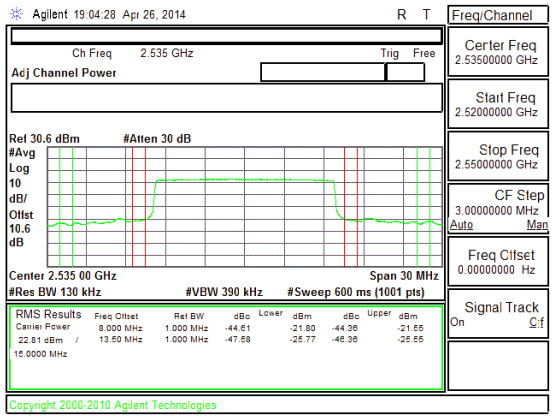
Band Band 5 HSDPA	 Band WCDMA B5 HSDPA CBE	 Band WCDMA B5 HSDPA CBE
Band Band 5 REL99	 Band WCDMA B5 REL99 CBE	 Band WCDMA B5 REL99 CBE

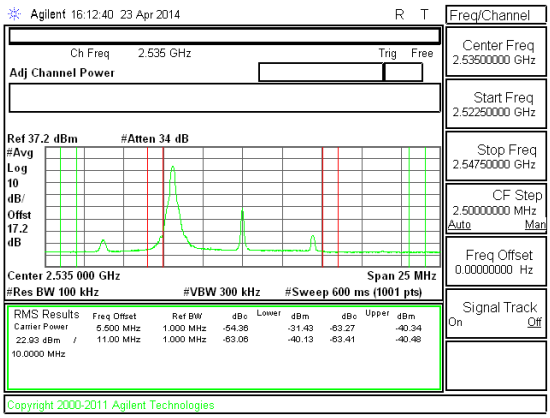
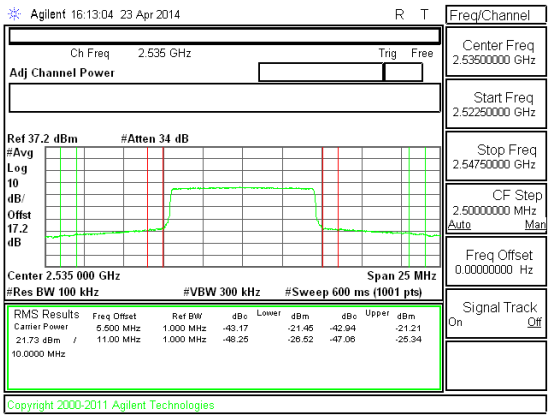
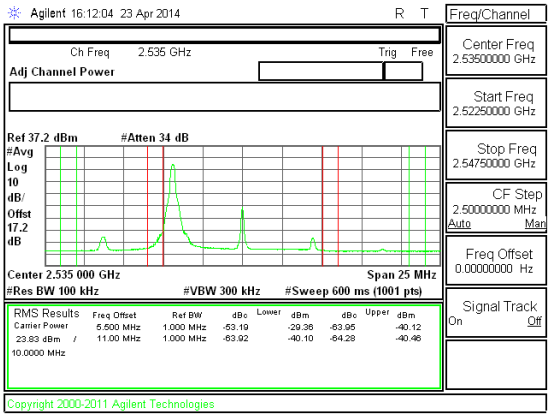
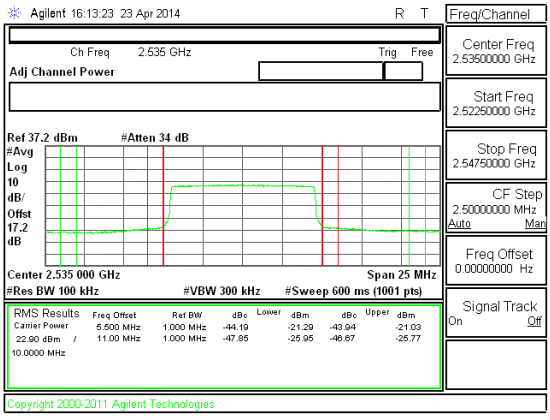
Band GSM1900 EGPRS	 Band GSM1900 EGPRS CBE Low channel	 Band GSM1900 EGPRS CBE High channel
Band GSM1900 GPRS	 Band GSM1900 GPRS CBE Low channel	 Band GSM1900 GPRS CBE High channel

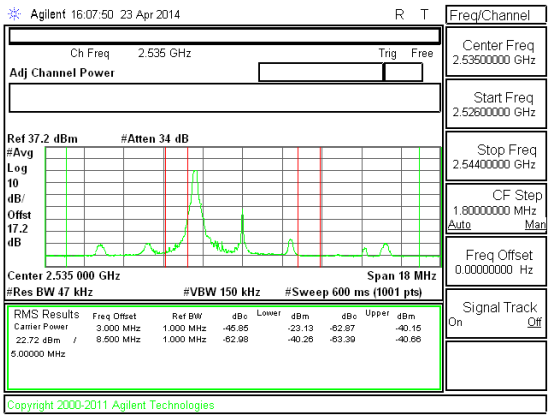
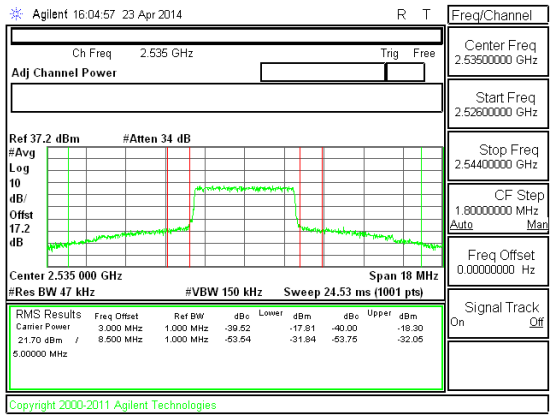
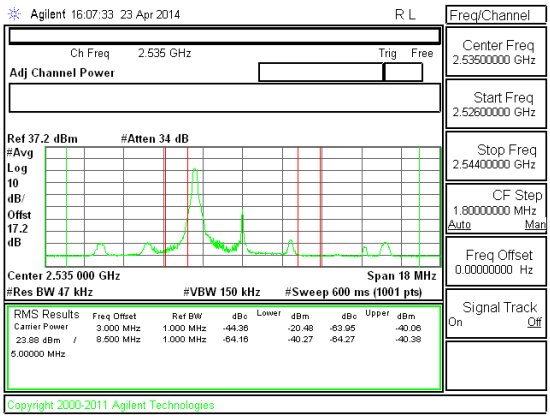
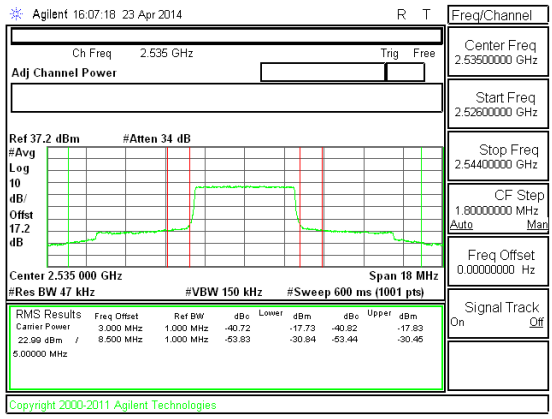
Band GSM850 EGPRS	 Band GSM850 EGPRS CBE Low channel	 Band GSM850 EGPRS CBE High channel
Band GSM850 GPRS	 Band GSM850 GPRS CBE Low channel	 Band GSM850 GPRS CBE High channel

10.2.2. EMISSION MASK PLOTS

Band 7 20MHz 16QAM		
Band 7 20MHz QPSK		

Band 7 15MHz 16QAM		
Band 7 15MHz QPSK		

Band 7 10MHz 16QAM		
Band 7 10MHz QPSK		

Band 7 5MHz 16QAM		
Band 7 5MHz QPSK		

10.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §27

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

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.

SOP

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.

RESULTS

10.3.1. OUT OF BAND EMISSIONS RESULT

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE17	10	QPSK	709	-23.36	-13	-10.36
			710	-24.98	-13	-11.98
			711	-25.04	-13	-12.04
		16QAM	709	-25.81	-13	-12.81
			710	-25.06	-13	-12.06
			711	-25.81	-13	-12.81

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE17	5	QPSK	706.5	-22.6	-13	-9.6
			710	-25.26	-13	-12.26
			713.5	-24.71	-13	-11.71
		16QAM	706.5	-24.37	-13	-11.37
			710	-24.02	-13	-11.02
			713.5	-23.5	-13	-10.5

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	20	QPSK	2510	-35.1	-13	-22.1
			2535	-35.45	-13	-22.45
			2560	-35.46	-13	-22.46
		16QAM	2510	-35.81	-13	-22.81
			2535	-35.98	-13	-22.98
			2560	-34.26	-13	-21.26

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	15	QPSK	2507.5	-34.84	-13	-21.84
			2535	-35.86	-13	-22.86
			2562.5	-34.54	-13	-21.54
		16QAM	2507.5	-35.68	-13	-22.68
			2535	-35.23	-13	-22.23

			2562.5	-35.14	-13	-22.14

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	10	QPSK	2505	-23.28	-13	-10.28
			2535	-23.99	-13	-10.99
			2565	-23.09	-13	-10.09
		16QAM	2505	-24.74	-13	-11.74
			2535	-23.6	-13	-10.6
			2565	-24.47	-13	-11.47

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE7	5	QPSK	2502.5	-22.59	-13	-9.59
			2535	-23.48	-13	-10.48
			2567.5	-23.5	-13	-10.5
		16QAM	2502.5	-23.77	-13	-10.77
			2535	-22.92	-13	-9.92
			2567.5	-24.39	-13	-11.39

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	QPSK	829	-36.33	-13	-23.33
			836.5	-36.29	-13	-23.29
			844	-37.91	-13	-24.91
		16QAM	829	-36.72	-13	-23.72
			836.5	-37.66	-13	-24.66
			844	-36.91	-13	-23.91

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	5	QPSK	826.5	-34.99	-13	-21.99
			836.5	-36.52	-13	-23.52
			846.5	-36.41	-13	-23.41
		16QAM	826.5	-34.99	-13	-21.99

			836.5	-37.45	-13	-24.45
			846.5	-36.38	-13	-23.38

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	10	QPSK	1715	-36.5	-13	-23.5
			1732.5	-35.89	-13	-22.89
			1750	-35.55	-13	-22.55
		16QAM	1715	-36.16	-13	-23.16
			1732.5	-37.14	-13	-24.14
			1750	-36.64	-13	-23.64

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	5	QPSK	1712.5	-36.46	-13	-23.46
			1732.5	-37.08	-13	-24.08
			1752.5	-36.24	-13	-23.24
		16QAM	1712.5	-35.42	-13	-22.42
			1732.5	-34.8	-13	-21.8
			1752.5	-35.95	-13	-22.95

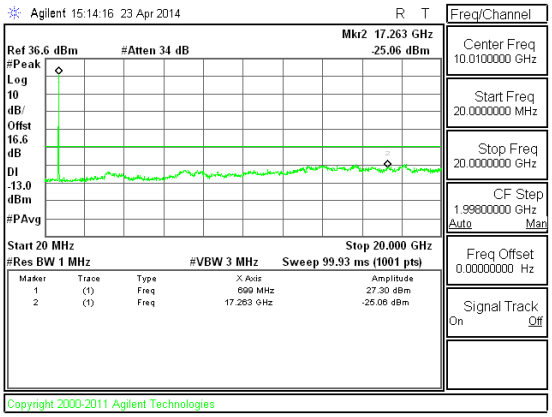
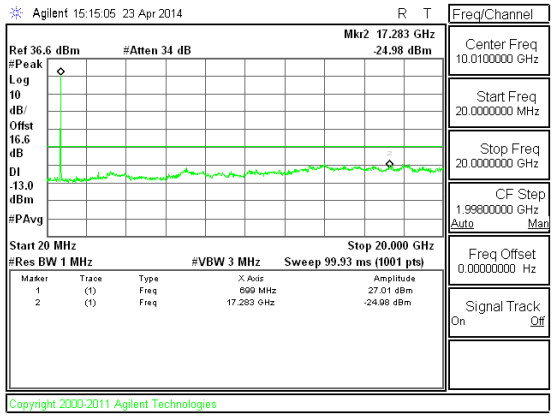
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	10	QPSK	1855	-36.71	-13	-23.71
			1880	-35.15	-13	-22.15
			1905	-37.26	-13	-24.26
		16QAM	1855	-34.86	-13	-21.86
			1880	-35.84	-13	-22.84
			1905	-36.82	-13	-23.82

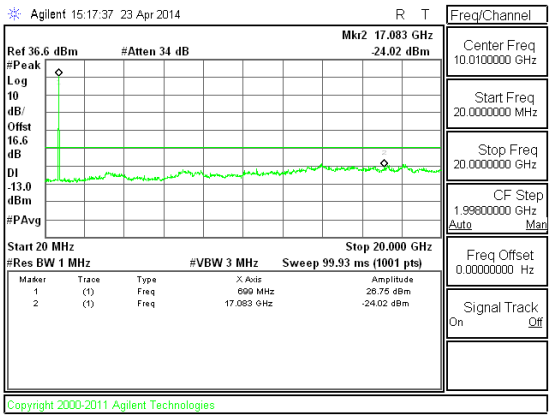
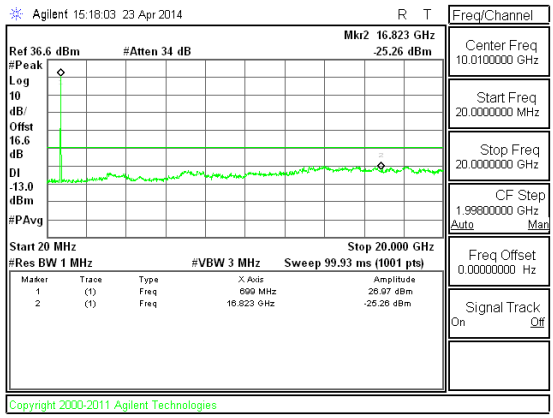
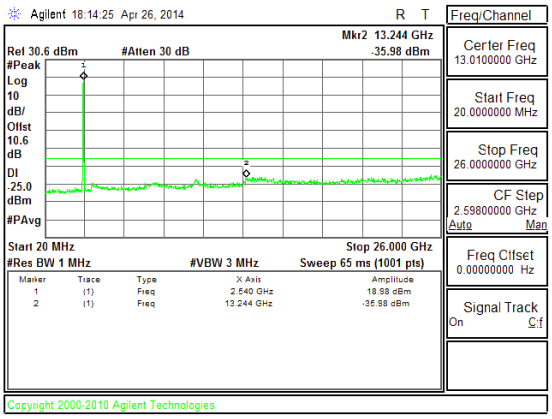
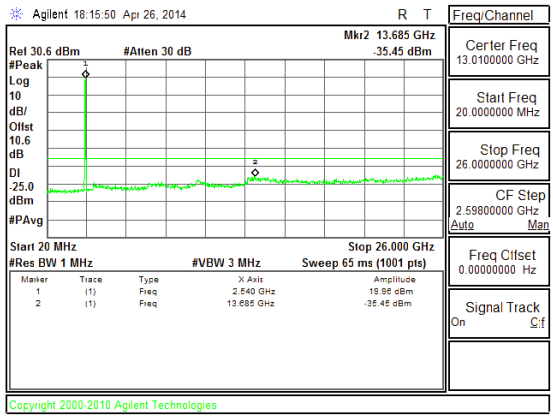
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	5	QPSK	1852.5	-37.68	-13	-24.68
			1880	-38.12	-13	-25.12
			1907.5	-36.41	-13	-23.41

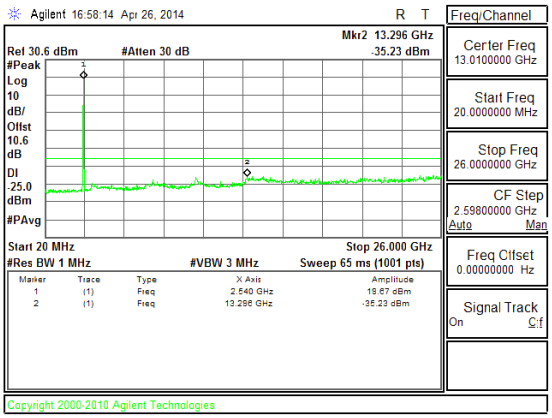
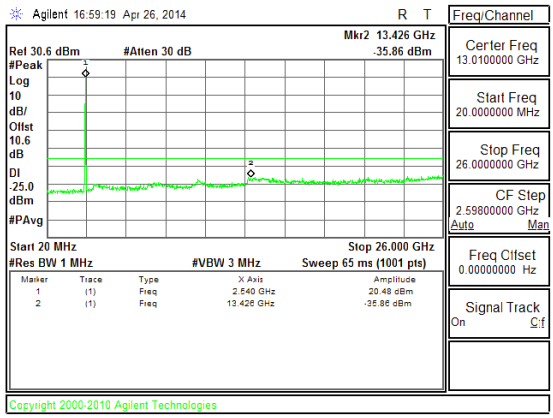
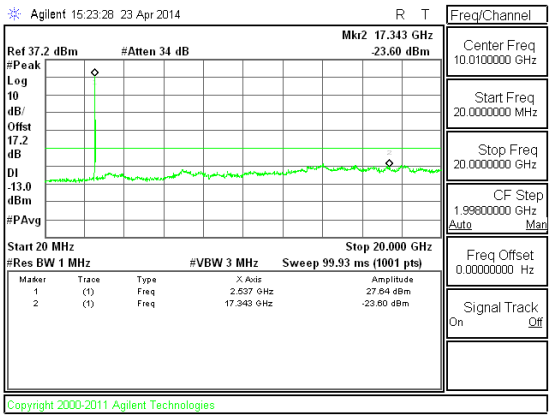
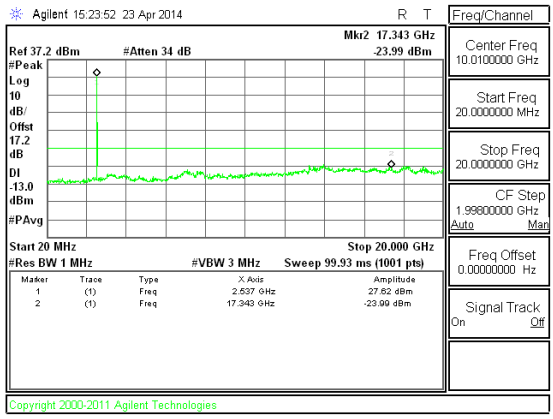
		16QAM	1852.5	-35.96	-13	-22.96
			1880	-36.47	-13	-23.47
			1907.5	-36.75	-13	-23.75

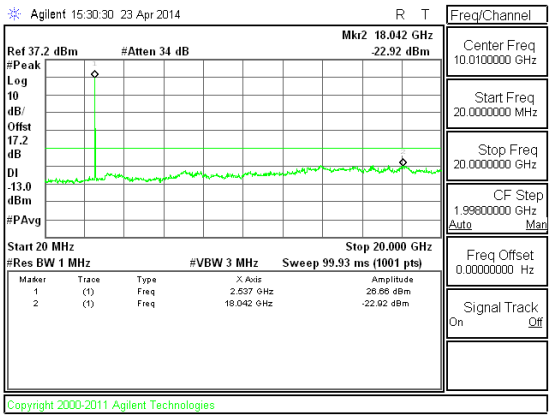
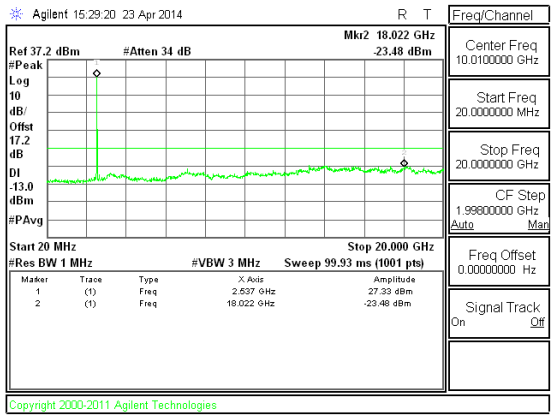
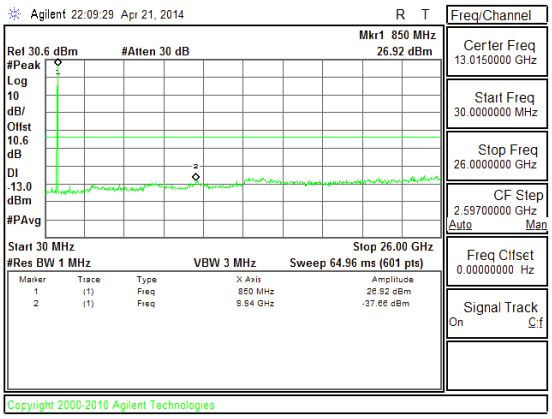
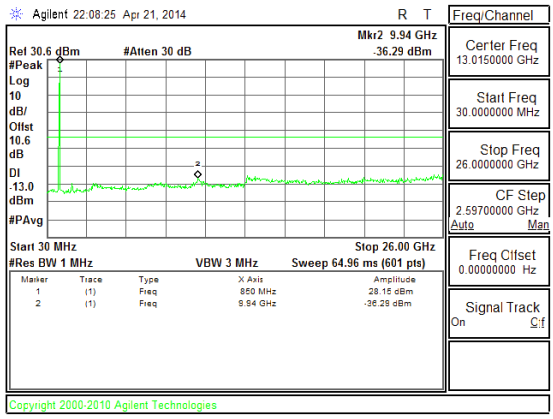
Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-28.98	-13	-15.98
		836.6	-28.44	-13	-15.44
		848.8	-28.83	-13	-15.83
	EGPRS	824.2	-22.93	-13	-9.93
		836.6	-22.4	-13	-9.4
		848.8	-22.63	-13	-9.63
GSM1900	GPRS	1850.2	-23.09	-13	-10.09
		1880	-22.65	-13	-9.65
		1909.8	-22.08	-13	-9.08
	EGPRS	1850.2	-22.11	-13	-9.11
		1880	-21.78	-13	-8.78
		1909.8	-22.64	-13	-9.64
Band 5	REL99	826.4	-23.26	-13	-10.26
		836.6	-22.6	-13	-9.6
		846.6	-23.08	-13	-10.08
	HSDPA	826.4	-22.92	-13	-9.92
		836.6	-22.48	-13	-9.48
		846.6	-23.3	-13	-10.3
Band 2	REL99	1852.4	-23.26	-13	-10.26
		1880	-22.52	-13	-9.52
		1907.6	-23.02	-13	-10.02
	HSDPA	1852.4	-22.23	-13	-9.23
		1880	-23.08	-13	-10.08
		1907.6	-25.33	-13	-12.33

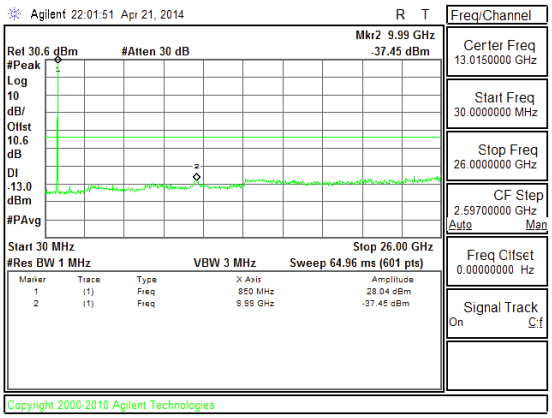
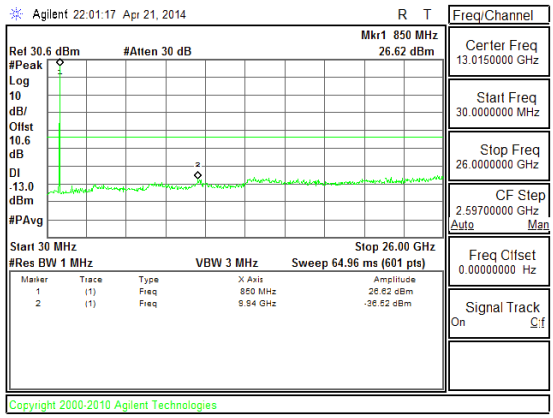
10.3.2. OUT OF BAND EMISSIONS PLOTS

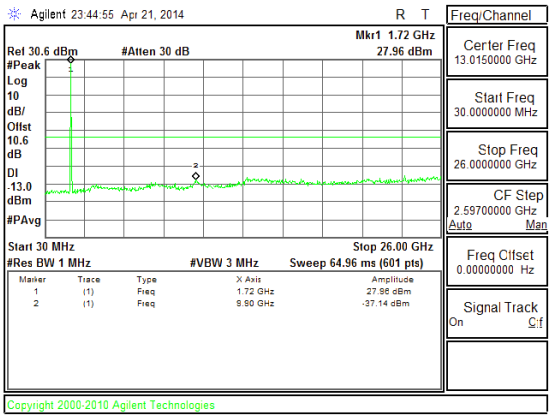
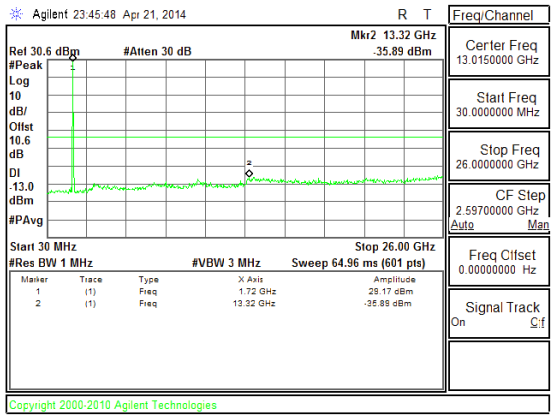
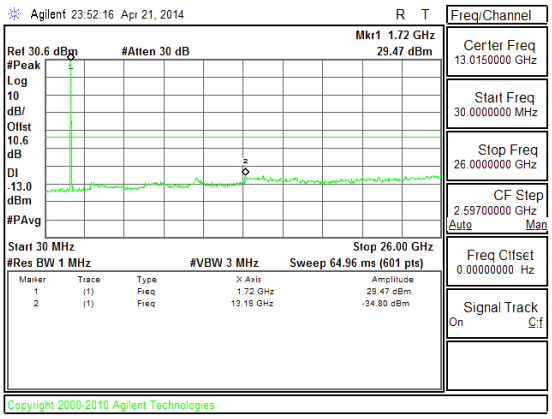
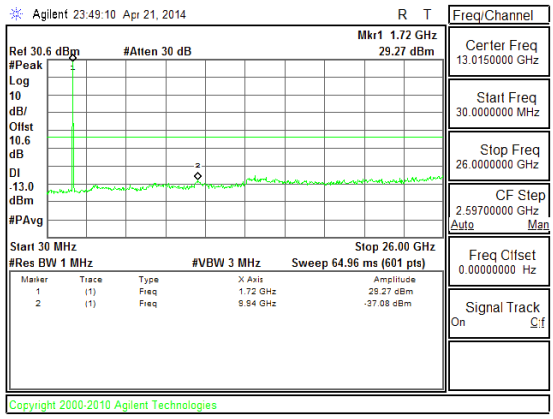
Band LTE17 10MHz 16QAM	 Band LTE17 10MHz CSE 16QAM Mid channel	 Band LTE17 10MHz CSE QPSK Mid channel

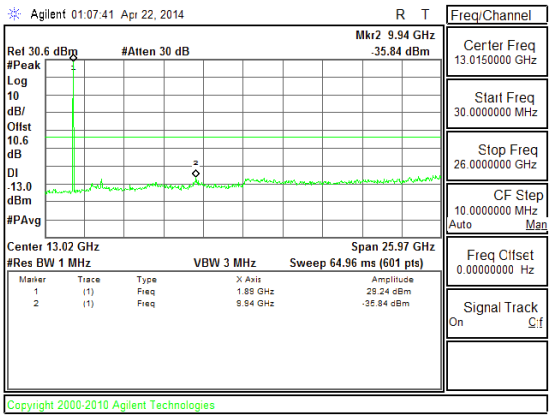
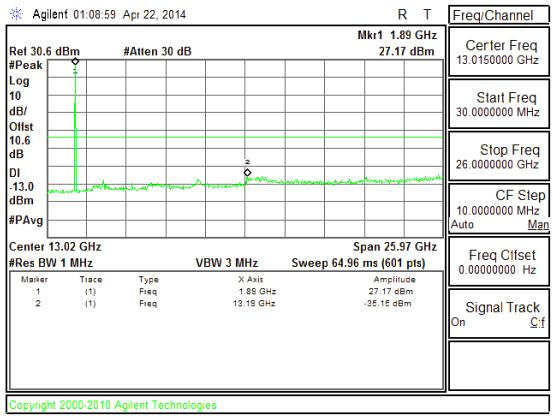
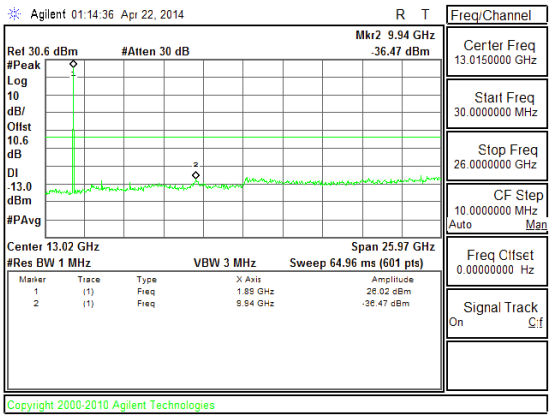
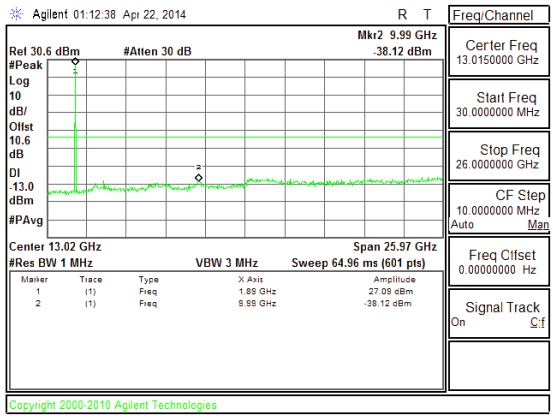
Band LTE17 5MHz 16QAM	 Band LTE17 5MHz CSE 16QAM Mid channel	 Band LTE17 5MHz CSE QPSK Mid channel
Band LTE7 20MHz 16QAM	 Band LTE7 20MHz CSE 16QAM Mid channel	 Band LTE7 20MHz CSE QPSK Mid channel

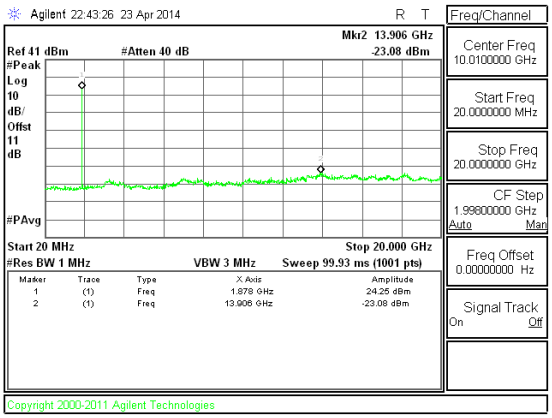
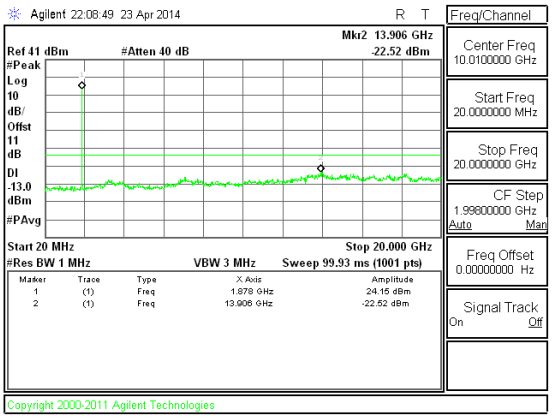
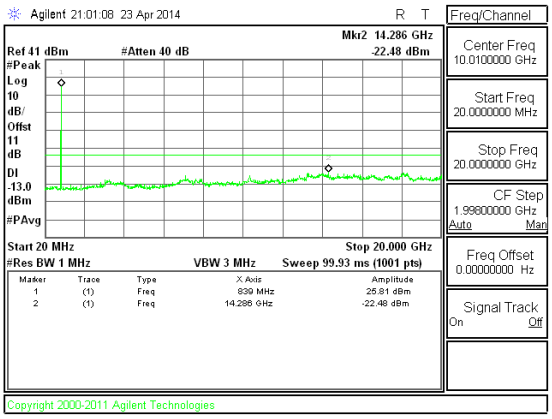
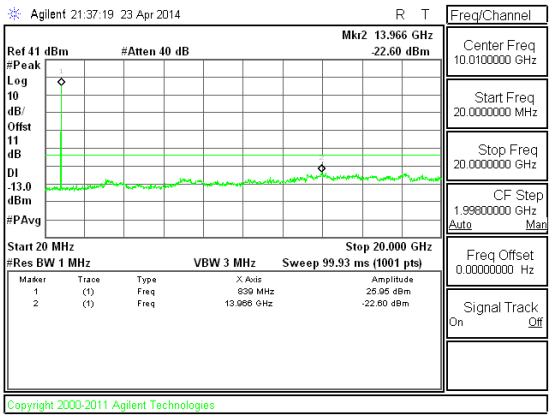
Band LTE7 15MHz 16QAM	 Band LTE7 15MHz CSE 16QAM Mid channel	 Band LTE7 15MHz CSE QPSK Mid channel
Band LTE7 10MHz 16QAM	 Band LTE7 10MHz CSE 16QAM Mid channel	 Band LTE7 10MHz CSE QPSK Mid channel

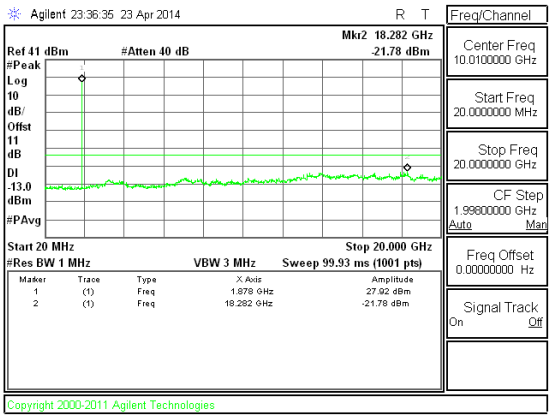
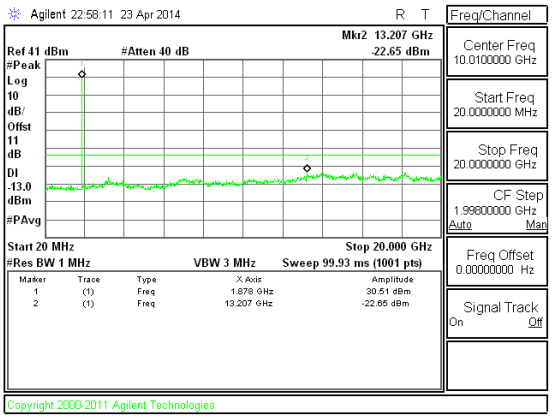
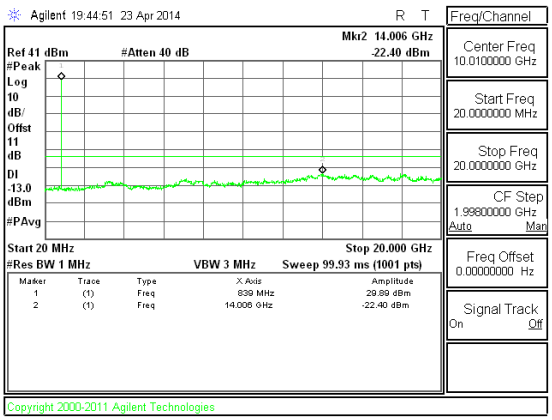
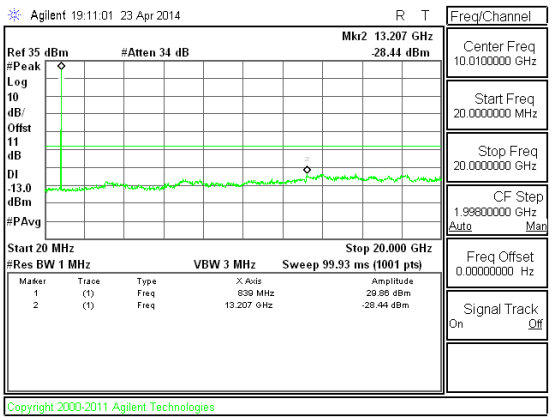
Band LTE7 5MHz 16QAM	 Band LTE7 5MHz CSE 16QAM Mid channel	 Band LTE7 5MHz CSE QPSK Mid channel
Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CSE 16QAM Mid channel	 Band LTE5 10MHz CSE QPSK Mid channel

Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CSE 16QAM Mid channel	 Band LTE5 5MHz CSE QPSK Mid channel

Band LTE4 10MHz 16QAM	 Band LTE4 10MHz CSE 16QAM Mid channel	 Band LTE4 10MHz CSE QPSK Mid channel
Band LTE4 5MHz 16QAM	 Band LTE4 5MHz CSE 16QAM Mid channel	 Band LTE4 5MHz CSE QPSK Mid channel

Band LTE2 10MHz 16QAM	 Band LTE2 10MHz CSE 16QAM Mid channel	 Band LTE2 10MHz CSE QPSK Mid channel
Band LTE2 5MHz 16QAM	 Band LTE2 5MHz CSE 16QAM Mid channel	 Band LTE2 5MHz CSE QPSK Mid channel

Band Band 2 HSDPA	 Band WCDMA B2 HSDPA CSE	 Band WCDMA B2 REL99 CSE
Band Band 5 HSDPA	 Band WCDMA B5 HSDPA CSE	 Band WCDMA B5 REL99 CSE

Band GSM1900 EGPRS	 Band GSM1900 EGPRS CSE Mid channel	 Band GSM1900 GPRS CSE Mid channel
Band GSM850 EGPRS	 Band GSM850 EGPRS CSE Mid channel	 Band GSM850 GPRS CSE Mid channel

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

RESULTS

See the following pages.

10.4.1. FREQUENCY STABILITY RESULTS

LTE BAND 7 – MID CHANNEL

Reference Frequency: Cellular Mid Channel 2535.000019 MHz @ 20°C Limit: to stay +- 2.5 ppm = 6337.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	2535.000062	-0.017	2.5
3.80	40	2535.000057	-0.015	2.5
3.80	30	2535.000033	-0.006	2.5
3.80	***20***	***2535.000018***	***0***	***2.5***
3.80	10	2535.000014	0.002	2.5
3.80	0	2535.000005	0.005	2.5
3.80	-10	2535.000007	0.004	2.5
3.80	-20	2535.000009	0.004	2.5
3.80	-30	2535.000010	0.003	2.5

Reference Frequency: Cellular Mid Channel 2535.000019 MHz @ 20°C Limit: to stay +- 2.5 ppm = 6337.500 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***2535.000018***	***0***	***2.5***
4.30	20	2535.000043	*-0.010*	2.5
3.30	20	2535.000021	*-0.001*	2.5

LTE BAND 2 – MID CHANNEL (1880.0 MHz)

Reference Frequency: Cellular Mid Channel 1879.999996MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1879.999992	0.002	2.5
3.80	40	1879.999994	0.001	2.5
3.80	30	1879.999995	0.001	2.5
3.80	***20***	***1879.999996***	***0***	2.5
3.80	10	1879.999993	0.002	2.5
3.80	0	1879.999996	0.000	2.5
3.80	-10	1879.999997	-0.001	2.5
3.80	-20	1879.999993	0.002	2.5
3.80	-30	1879.999996	0.000	2.5

Reference Frequency: Cellular Mid Channel 1879.999996MHz @ 20°C Limit: to stay +- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***1879.999996***	***0***	***2.5***
3.30	20	1879.999995	*0.001*	2.5
4.30	20	1879.999993	*0.002*	2.5

LTE BAND 5 – MID CHANNEL (836.5 MHz)

Reference Frequency: Cellular Mid Channel 836.499998C Limit: to stay +- 2.5 ppm = 2091.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.499995	0.004	2.5
3.80	40	836.499996	0.002	2.5
3.80	30	836.499997	0.001	2.5
3.80	***20***	***836.499998***	***0***	2.5
3.80	10	836.499997	0.001	2.5
3.80	0	836.499997	0.001	2.5
3.80	-10	836.499998	0.000	2.5
3.80	-20	836.499998	0.000	2.5
3.80	-30	836.499997	0.001	2.5

Reference Frequency: Cellular Mid Channel 836.499998MHz @ 20°C Limit: to stay +- 2.5 ppm = 2091.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***836.499998***	***0***	***2.5***
3.30	20	836.499997	*0.001*	2.5
4.30	20	836.499996	*0.002*	2.5

LTE BAND 17 – MID CHANNEL

Reference Frequency: Mid Channel 710 MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 1775.000 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	709.999988	-0.004	2.5
3.80	40	709.999988	-0.004	2.5
3.80	30	709.999986	-0.001	2.5
3.80	***20***	***709.999985***	***0***	***2.5***
3.80	10	709.999984	0.001	2.5
3.80	0	709.999991	-0.008	2.5
3.80	-10	709.999995	-0.014	2.5
3.80	-20	709.999993	-0.011	2.5
3.80	-30	709.999992	-0.010	2.5

Reference Frequency: Mid Channel 710.000010 MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 1775.000 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse		
			Delta (ppm)	Limit (ppm)
3.80	***20***	***709.999985***	***0.00000***	***2.5***
4.30	20	709.999987	*-0.00282*	2.5
3.30	20	709.999984	*0.00141*	2.5

LTE BAND 4 – MID CHANNEL

Reference Frequency: PCS Mid Channel 1732.5MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.500012	-0.010	2.5
3.80	40	1732.500010	-0.009	2.5
3.80	30	1732.500011	-0.010	2.5
3.80	***20***	***1732.499994***	***0***	***2.5***
3.80	10	1732.499993	0.001	2.5
3.80	0	1732.499993	0.001	2.5
3.80	-10	1732.499992	0.001	2.5
3.80	-20	1732.499990	0.002	2.5
3.80	-30	1732.499989	0.003	2.5

Reference Frequency: PCS Mid Channel 1732.500012 MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measureed with Time Elapse	Delta (ppm)	Limit (ppm)
3.80	***20***	***1732.499994***	***0.00000***	***2.5***
4.30	20	1732.499992	*0.00115*	2.5
3.30	20	1732.499991	*0.00173*	2.5

11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, and § 27

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.

TEST RESULTS

11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	22.87	193.64
		9400	1880	23.04	201.37
		9538	1907.6	22.75	188.36
	HSDPA	9262	1852.4	22.47	176.6
		9400	1880	23.14	206.06
		9538	1907.6	22.48	177.01

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	21.591	144.24
		4183	836.6	20.771	119.43
		4233	846.6	19.421	87.52
	HSDPA	4132	826.4	20.781	119.7
		4183	836.6	20.631	115.64
		4233	846.6	19.201	83.2

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	29.03	799.83
		661	1880	28.65	732.82
		810	1909.8	28.42	695.02
	EGPRS	512	1850.2	26.5	446.68
		661	1880	27.27	533.33
		810	1909.8	27	501.19

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM850	GPRS	128	824.2	29.491	889.41
		190	836.6	27.571	571.61
		251	848.8	27.561	570.3
	EGPRS	128	824.2	26.671	464.62
		190	836.6	25.821	382.03
		251	848.8	24.261	266.75

11.1.2. LTE ERP/EIRP Results

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	10	QPSK	1/0	709	19.651	92.28
			1/0	710	20.531	113.01
			1/0	711	20.571	114.05
		16QAM	1/0	709	18.801	75.88
			1/0	710	19.491	88.94
			1/0	711	19.481	88.74

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	5	QPSK	1/0	706.5	19.591	91.01
			1/0	710	19.911	97.97
			1/0	713.5	19.881	97.3
		16QAM	1/0	706.5	18.711	74.32
			1/0	710	18.941	78.36
			1/0	713.5	18.981	79.09

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	20	QPSK	1/0	2510	20.85	121.62
			1/0	2535	21.9	154.88
			1/0	2560	22	158.49
		16QAM	1/0	2510	20.13	103.04
			1/0	2535	20.6	114.82
			1/0	2560	21.03	126.77

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	15	QPSK	1/0	2507.5	22.2	165.96

			1/0	2535	21.1	128.82
			1/0	2562.5	20.3	107.15
		16QAM	1/0	2507.5	21.3	134.9
			1/0	2535	20.4	109.65
			1/0	2562.5	18.8	75.86

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	10	QPSK	1/0	2505	21.22	132.43
			1/0	2535	21.72	148.59
			1/0	2565	20.99	125.6
		16QAM	1/0	2505	20.17	103.99
			1/0	2535	20.72	118.03
			1/0	2565	19.86	96.83

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE7	5	QPSK	1/0	2502.5	20.1	102.33
			1/0	2535	20.6	114.82
			1/0	2567.5	19.57	90.57
		16QAM	1/0	2502.5	18.94	78.34
			1/0	2535	19.25	84.14
			1/0	2567.5	18.8	75.86

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	20.541	113.27
			1/0	836.5	20.351	108.42
			1/0	844	20.411	109.93
		16QAM	1/0	829	19.521	89.56
			1/0	836.5	19.271	84.55

			1/0	844	19.381	86.72

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	5	QPSK	1/0	826.5	20.951	124.48
			1/0	836.5	18.211	66.24
			1/0	846.5	19.391	86.92
		16QAM	1/0	826.5	19.801	95.52
			1/0	836.5	17.101	51.3
			1/0	846.5	18.341	68.25

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	10	QPSK	1/0	1715	24.08	255.86
			1/0	1732.5	24.69	294.44
			1/0	1750	24.27	267.3
		16QAM	1/0	1715	23.14	206.06
			1/0	1732.5	23.87	243.78
			1/0	1750	23.36	216.77

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	5	QPSK	1/0	1712.5	25.29	338.06
			1/0	1732.5	25.88	387.26
			1/0	1752.5	25.51	355.63
		16QAM	1/0	1712.5	24.3	269.15
			1/0	1732.5	24.86	306.2
			1/0	1752.5	24.66	292.42

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW

LTE2	10	QPSK	1/0	1855	24.09	256.45
			1/0	1880	23.2	208.93
			1/0	1905	23.91	246.04
		16QAM	1/0	1855	23.13	205.59
			1/0	1880	22.29	169.43
			1/0	1905	22.9	194.98

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	5	QPSK	1/0	1852.5	24.12	258.23
			1/0	1880	23.4	218.78
			1/0	1907.5	24.09	256.45
		16QAM	1/0	1852.5	23.21	209.41
			1/0	1880	22.35	171.79
			1/0	1907.5	23	199.53

11.1.3. ERP/EIRP DATA

Band

LTE17

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company:	LG
Project #:	14U17493
Date:	04/22/14
Test Engineer:	R. Alegre
Configuration:	EUT only
Mode:	LTE Band 17_10MHz_16QAM

Test Equipment:
Receiving: Sunol T477, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
709.00	13.91	V	0.9	0.0	13.01	38.5	-25.4	
709.00	19.70	H	0.9	0.0	18.80	38.5	-19.6	
Mid Ch								
710.00	15.31	V	0.9	0.0	14.41	38.5	-24.0	
710.00	20.39	H	0.9	0.0	19.49	38.5	-19.0	
High Ch								
711.00	14.99	V	0.9	0.0	14.09	38.5	-24.4	
711.00	20.38	H	0.9	0.0	19.48	38.5	-19.0	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE17

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: R. Alegre
Configuration: EUT only
Mode: LTE Band 17_10MHz_QPSK

Test Equipment:
Receiving: Sunol T477, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
709.00	15.09	V	0.9	0.0	14.19	38.5	-24.3	
709.00	20.55	H	0.9	0.0	19.65	38.5	-18.8	
Mid Ch								
710.00	16.41	V	0.9	0.0	15.51	38.5	-22.9	
710.00	21.43	H	0.9	0.0	20.53	38.5	-17.9	
High Ch								
711.00	16.27	V	0.9	0.0	15.37	38.5	-23.1	
711.00	21.47	H	0.9	0.0	20.57	38.5	-17.9	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE17

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: R. Alegre
Configuration: EUT only
Mode: LTE Band 17_5MHz_16QAM

Test Equipment:
Receiving: Sunol T477, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
706.50	13.07	V	0.9	0.0	12.17	38.5	-26.3	
706.50	19.61	H	0.9	0.0	18.71	38.5	-19.7	
Mid Ch								
710.00	14.97	V	0.9	0.0	14.07	38.5	-24.4	
710.00	19.84	H	0.9	0.0	18.94	38.5	-19.5	
High Ch								
713.50	14.04	V	0.9	0.0	13.14	38.5	-25.3	
713.50	19.88	H	0.9	0.0	18.98	38.5	-19.5	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE17

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: R. Alegre
Configuration: EUT only
Mode: LTE Band 17_5MHz_QPSK

Test Equipment:
Receiving: Sunol T477, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
706.50	14.08	V	0.9	0.0	13.18	38.5	-25.3	
706.50	20.49	H	0.9	0.0	19.59	38.5	-18.9	
Mid Ch								
710.00	15.96	V	0.9	0.0	15.06	38.5	-23.4	
710.00	20.81	H	0.9	0.0	19.91	38.5	-18.5	
High Ch								
713.50	15.07	V	0.9	0.0	14.17	38.5	-24.3	
713.50	20.78	H	0.9	0.0	19.88	38.5	-18.6	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE7

20MHz

16QAM

High Frequency Substitution Measurement
Compliance Certification Services Chamber C

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: Kiya/Oren
Configuration: EUT only, X-position
Mode: LTE B7 20M 16QAM

Test Equipment:
Receiving: Sunol T119, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Horn T59 3115, 4ft SMA Cable (SN # 244640 002)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2510.00	6.26	V	0.9	9.5	14.83	38.5	-23.6	
2510.00	11.56	H	0.9	9.5	20.13	38.5	-18.3	
Mid Ch								
2535.00	6.43	V	0.9	9.5	15.03	38.5	-23.4	
2535.00	12.00	H	0.9	9.5	20.60	38.5	-17.9	
High Ch								
2560.00	9.14	V	0.9	9.7	17.94	38.5	-20.5	
2560.00	12.23	H	0.9	9.7	21.03	38.5	-17.4	

Rev. 3.17.11

Band

LTE7

20MHz

QPSK

High Frequency Substitution Measurement
Compliance Certification Services Chamber C

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: Kiya/Oren
Configuration: EUT only, X-position
Mode: LTE B7 20M QPSK

Test Equipment:
Receiving: Sunol T119, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Horn T59 3115, 4ft SMA Cable (SN # 244640 002)

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2510.00	7.17	V	0.9	9.5	15.74	38.5	-22.7	
2510.00	12.28	H	0.9	9.5	20.85	38.5	-17.6	
Mid Ch								
2535.00	7.56	V	0.9	9.5	16.16	38.5	-22.3	
2535.00	13.30	H	0.9	9.5	21.90	38.5	-16.6	
High Ch								
2560.00	9.86	V	0.9	9.7	18.66	38.5	-19.8	
2560.00	13.20	H	0.9	9.7	22.00	38.5	-16.5	

Rev. 3.17.11

Band

LTE7

15MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	Kiya/Oren
Configuration:	EUT only, X-position
Mode:	LTE B7 15M 16QAM

Test Equipment:

Receiving: Horn T119, and Chamber C SMA Cables

Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50	6.60	V	0.9	9.5	15.20	33.0	-17.8	
2507.50	12.70	H	0.9	9.5	21.30	33.0	-11.7	
Mid Ch								
2535.00	6.50	V	0.9	9.5	15.10	33.0	-17.9	
2535.00	11.80	H	0.9	9.5	20.40	33.0	-12.6	
High Ch								
2562.50	8.30	V	0.9	9.6	17.00	33.0	-16.0	
2562.50	10.10	H	0.9	9.6	18.80	33.0	-14.2	

Rev. 3.17.11

Note: For Band 4 EIRP limit is 30dBm

Band LTE7 15MHz QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	Kiya/Oren
Configuration:	EUT only, X-position
Mode:	LTE B7 15M QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2507.50	7.70	V	0.9	9.5	16.30	33.0	-16.7	
2507.50	13.60	H	0.9	9.5	22.20	33.0	-10.8	
Mid Ch								
2535.00	7.70	V	0.9	9.5	16.30	33.0	-16.7	
2535.00	12.50	H	0.9	9.5	21.10	33.0	-11.9	
High Ch								
2562.50	9.90	V	0.9	9.6	18.60	33.0	-14.4	
2562.50	11.60	H	0.9	9.6	20.30	33.0	-12.7	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE7

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 4/21/14
Test Engineer: R. Alegre
Configuration: EUT
Mode: LTE7, 10MHz, 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	7.74	V	0.9	9.5	16.36	33.0	-16.6	
2505.00	11.55	H	0.9	9.5	20.17	33.0	-12.8	
Mid Ch								
2535.00	7.96	V	0.9	9.5	16.58	33.0	-16.4	
2535.00	12.10	H	0.9	9.5	20.72	33.0	-12.3	
High Ch								
2565.00	7.37	V	0.9	9.5	16.02	33.0	-17.0	
2565.00	11.21	H	0.9	9.5	19.86	33.0	-13.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE7

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 4/21/14
Test Engineer: R. Alegre
Configuration: EUT
Mode: LTE7, 10MHz, QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2505.00	8.86	V	0.9	9.5	17.48	33.0	-15.5	
2505.00	12.60	H	0.9	9.5	21.22	33.0	-11.8	
Mid Ch								
2535.00	8.96	V	0.9	9.5	17.58	33.0	-15.4	
2535.00	13.10	H	0.9	9.5	21.72	33.0	-11.3	
High Ch								
2565.00	8.50	V	0.9	9.5	17.15	33.0	-15.9	
2565.00	12.34	H	0.9	9.5	20.99	33.0	-12.0	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE7

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 4/21/14
Test Engineer: R. Alegre
Configuration: EUT
Mode: LTE7, 5MHz, 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	2.80	V	0.9	9.5	11.42	33.0	-21.6	
2502.50	10.32	H	0.9	9.5	18.94	33.0	-14.1	
Mid Ch								
2535.00	3.68	V	0.9	9.5	12.30	33.0	-20.7	
2535.00	10.63	H	0.9	9.5	19.25	33.0	-13.8	
High Ch								
2567.50	3.49	V	0.9	9.5	12.14	33.0	-20.9	
2567.50	10.15	H	0.9	9.5	18.80	33.0	-14.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band
LTE7
5MHz
QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 4/21/14
Test Engineer: R. Alegre
Configuration: EUT
Mode: LTE7, 5MHz, QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
2502.50	4.00	V	0.9	9.5	12.62	33.0	-20.4	
2502.50	11.48	H	0.9	9.5	20.10	33.0	-12.9	
Mid Ch								
2535.00	5.11	V	0.9	9.5	13.73	33.0	-19.3	
2535.00	11.98	H	0.9	9.5	20.60	33.0	-12.4	
High Ch								
2567.50	4.36	V	0.9	9.5	13.01	33.0	-20.0	
2567.50	10.92	H	0.9	9.5	19.57	33.0	-13.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE5

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 4/22/14
Test Engineer: R. Alegre
Configuration: EUT ONLY
Mode: LTE5 10MHz FUND 16QAM

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
829.00	15.87	V	0.9	0.0	14.97	38.5	-23.5	
829.00	20.42	H	0.9	0.0	19.52	38.5	-18.9	
Mid Ch								
836.50	13.32	V	0.9	0.0	12.42	38.5	-26.0	
836.50	20.17	H	0.9	0.0	19.27	38.5	-19.2	
High Ch								
844.00	14.22	V	0.9	0.0	13.32	38.5	-25.1	
844.00	20.28	H	0.9	0.0	19.38	38.5	-19.1	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE5

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 4/22/14
Test Engineer: R. Alegre
Configuration: EUT ONLY
Mode: LTE5 10MHz FUND QPSK

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
829.00	16.55	V	0.9	0.0	15.65	38.5	-22.8	
829.00	21.44	H	0.9	0.0	20.54	38.5	-17.9	
Mid Ch								
836.50	14.05	V	0.9	0.0	13.15	38.5	-25.3	
836.50	21.25	H	0.9	0.0	20.35	38.5	-18.1	
High Ch								
844.00	15.23	V	0.9	0.0	14.33	38.5	-24.1	
844.00	21.31	H	0.9	0.0	20.41	38.5	-18.0	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE5

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 4/22/14
Test Engineer: R. Alegre
Configuration: EUT ONLY
Mode: LTE5 5MHz FUND 16QAM

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
826.50	14.53	V	0.9	0.0	13.63	38.5	-24.8	
826.50	20.70	H	0.9	0.0	19.80	38.5	-18.6	
Mid Ch								
836.50	14.03	V	0.9	0.0	13.13	38.5	-25.3	
836.50	18.00	H	0.9	0.0	17.10	38.5	-21.3	
High Ch								
846.50	14.13	V	0.9	0.0	13.23	38.5	-25.2	
846.50	19.24	H	0.9	0.0	18.34	38.5	-20.1	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE5

5MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 4/22/14
Test Engineer: R. Alegre
Configuration: EUT ONLY
Mode: LTE5 5MHz FUND QPSK

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
826.50	15.58	V	0.9	0.0	14.68	38.5	-23.8	
826.50	21.85	H	0.9	0.0	20.95	38.5	-17.5	
Mid Ch								
836.50	14.95	V	0.9	0.0	14.05	38.5	-24.4	
836.50	19.11	H	0.9	0.0	18.21	38.5	-20.2	
High Ch								
846.50	15.12	V	0.9	0.0	14.22	38.5	-24.2	
846.50	20.29	H	0.9	0.0	19.39	38.5	-19.1	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

LTE4

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 10MHz 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	10.72	V	0.9	8.3	18.16	30.0	-11.8	
1715.00	15.70	H	0.9	8.3	23.14	30.0	-6.9	
Mid Ch								
1732.50	9.68	V	0.9	8.2	17.03	30.0	-13.0	
1732.50	16.52	H	0.9	8.2	23.87	30.0	-6.1	
High Ch								
1750.00	8.89	V	0.9	8.2	16.24	30.0	-13.8	
1750.00	16.01	H	0.9	8.2	23.36	30.0	-6.6	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE4

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 10MHz QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1715.00	11.56	V	0.9	8.3	19.00	30.0	-11.0	
1715.00	16.64	H	0.9	8.3	24.08	30.0	-5.9	
Mid Ch								
1732.50	10.64	V	0.9	8.2	17.99	30.0	-12.0	
1732.50	17.34	H	0.9	8.2	24.69	30.0	-5.3	
High Ch								
1750.00	9.81	V	0.9	8.2	17.16	30.0	-12.8	
1750.00	16.92	H	0.9	8.2	24.27	30.0	-5.7	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE4

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 5MHz 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	9.31	V	0.9	8.3	16.75	30.0	-13.3	
1712.50	16.86	H	0.9	8.3	24.30	30.0	-5.7	
Mid Ch								
1732.50	7.33	V	0.9	8.2	14.68	30.0	-15.3	
1732.50	17.51	H	0.9	8.2	24.86	30.0	-5.1	
High Ch								
1752.50	6.44	V	0.9	8.2	13.79	30.0	-16.2	
1752.50	17.31	H	0.9	8.2	24.66	30.0	-5.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band
LTE4
5MHz
QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B4 5MHz QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1712.50	10.25	V	0.9	8.3	17.69	30.0	-12.3	
1712.50	17.85	H	0.9	8.3	25.29	30.0	-4.7	
Mid Ch								
1732.50	8.29	V	0.9	8.2	15.64	30.0	-14.4	
1732.50	18.53	H	0.9	8.2	25.88	30.0	-4.1	
High Ch								
1752.50	7.32	V	0.9	8.2	14.67	30.0	-15.3	
1752.50	18.16	H	0.9	8.2	25.51	30.0	-4.5	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE2

10MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B2 10MHz 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	14.24	V	0.9	7.9	21.29	33.0	-11.7	
1855.00	16.08	H	0.9	7.9	23.13	33.0	-9.9	
Mid Ch								
1880.00	14.53	V	0.9	7.9	21.58	33.0	-11.4	
1880.00	15.24	H	0.9	7.9	22.29	33.0	-10.7	
High Ch								
1905.00	14.37	V	0.9	7.8	21.32	33.0	-11.7	
1905.00	15.95	H	0.9	7.8	22.90	33.0	-10.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE2

10MHz

QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B2 10MHz QPSK

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1855.00	15.15	V	0.9	7.9	22.20	33.0	-10.8	
1855.00	17.04	H	0.9	7.9	24.09	33.0	-8.9	
Mid Ch								
1880.00	15.45	V	0.9	7.9	22.50	33.0	-10.5	
1880.00	16.15	H	0.9	7.9	23.20	33.0	-9.8	
High Ch								
1905.00	15.40	V	0.9	7.8	22.35	33.0	-10.7	
1905.00	16.96	H	0.9	7.8	23.91	33.0	-9.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

LTE2

5MHz

16QAM

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B2 5MHz 16QAM

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	14.16	V	0.9	7.9	21.21	33.0	-11.8	
1852.50	16.16	H	0.9	7.9	23.21	33.0	-9.8	
Mid Ch								
1880.00	13.52	V	0.9	7.9	20.57	33.0	-12.4	
1880.00	15.30	H	0.9	7.9	22.35	33.0	-10.7	
High Ch								
1907.50	14.44	V	0.9	7.8	21.39	33.0	-11.6	
1907.50	16.05	H	0.9	7.8	23.00	33.0	-10.0	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band
LTE2
5MHz
QPSK

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG Electronics
Project #: 14U17493
Date: 04/19/14
Test Engineer: R. Alegre
Configuration: EUT Only
Mode: LTE B2 5MHz QPSK

Test Equipment:
Receiving: Horn 119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.50	15.01	V	0.9	7.9	22.06	33.0	-10.9	
1852.50	17.07	H	0.9	7.9	24.12	33.0	-8.9	
Mid Ch								
1880.00	14.29	V	0.9	7.9	21.34	33.0	-11.7	
1880.00	16.35	H	0.9	7.9	23.40	33.0	-9.6	
High Ch								
1907.50	15.23	V	0.9	7.8	22.18	33.0	-10.8	
1907.50	17.14	H	0.9	7.8	24.09	33.0	-8.9	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

Band 2

HSDPA

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: Kiya/Oren
Configuration: Z Position, EUT only
Mode: WCDMA_HSDPA_1900

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	14.80	V	0.85	7.9	21.80	33.0	-11.2	
1852.40	15.47	H	0.85	7.9	22.47	33.0	-10.5	
Mid Ch								
1880.00	13.53	V	0.85	7.9	20.53	33.0	-12.5	
1880.00	16.14	H	0.85	7.9	23.14	33.0	-9.9	
High Ch								
1907.60	13.27	V	0.85	7.9	20.27	33.0	-12.7	
1907.60	15.48	H	0.85	7.9	22.48	33.0	-10.5	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

Band 2

REL99

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: Kiya/Oren
Configuration: Z Position, EUT only
Mode: WCDMA_Rel 99_1900

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1852.40	15.30	V	0.85	7.9	22.30	33.0	-10.7	
1852.40	15.87	H	0.85	7.9	22.87	33.0	-10.1	
Mid Ch								
1880.00	14.35	V	0.85	7.9	21.35	33.0	-11.7	
1880.00	16.04	H	0.85	7.9	23.04	33.0	-10.0	
High Ch								
1907.60	14.80	V	0.85	7.9	21.80	33.0	-11.2	
1907.60	15.75	H	0.85	7.9	22.75	33.0	-10.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

Band 5

HSDPA

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: Kiya/Oren
Configuration: EUT, X Position
Mode: WCDMA_HSDPA_850

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
826.40	12.83	V	0.9	0.0	11.93	38.5	-26.5	
826.40	21.68	H	0.9	0.0	20.78	38.5	-17.7	
Mid Ch								
836.60	13.17	V	0.9	0.0	12.27	38.5	-26.2	
836.60	21.53	H	0.9	0.0	20.63	38.5	-17.8	
High Ch								
846.60	13.57	V	0.9	0.0	12.67	38.5	-25.8	
846.60	20.10	H	0.9	0.0	19.20	38.5	-19.2	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

Band 5

REL99

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: Kiya/Oren
Configuration: EUT, X Position
Mode: WCDMA_REL99_850

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
826.40	13.28	V	0.9	0.0	12.38	38.5	-26.1	
826.40	22.49	H	0.9	0.0	21.59	38.5	-16.9	
Mid Ch								
836.60	13.38	V	0.9	0.0	12.48	38.5	-26.0	
836.60	21.67	H	0.9	0.0	20.77	38.5	-17.7	
High Ch								
846.60	13.48	V	0.9	0.0	12.58	38.5	-25.9	
846.60	20.32	H	0.9	0.0	19.42	38.5	-19.0	

Rev. 3.17.11
Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm

Band

GSM1900

EGPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: Kiya/Oren
Configuration: EUT only Z position
Mode: EGPRS 1900MHz

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	19.23	V	0.85	7.9	26.23	33.0	-6.8	
1850.20	19.50	H	0.85	7.9	26.50	33.0	-6.5	
Mid Ch								
1880.00	18.63	V	0.85	7.9	25.63	33.0	-7.4	
1880.00	20.27	H	0.85	7.9	27.27	33.0	-5.7	
High Ch								
1909.80	20.00	V	0.85	7.9	27.00	33.0	-6.0	
1909.80	18.52	H	0.85	7.9	25.52	33.0	-7.5	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

GSM1900

GPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: Kiya/Oren
Configuration: EUT only Z position
Mode: GPRS 1900MHz

Test Equipment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	22.03	V	0.85	7.9	29.03	33.0	-4.0	
1850.20	21.16	H	0.85	7.9	28.16	33.0	-4.8	
Mid Ch								
1880.00	20.60	V	0.85	7.9	27.60	33.0	-5.4	
1880.00	21.65	H	0.85	7.9	28.65	33.0	-4.4	
High Ch								
1909.80	21.42	V	0.85	7.9	28.42	33.0	-4.6	
1909.80	19.78	H	0.85	7.9	26.78	33.0	-6.2	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

Band

GSM850

EGPRS

High Frequency Substitution Measurement
Compliance Certification Services Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: Kiya/Oren
Configuration: EUT only X-position
Mode: EGRPS 850MHz

Test Equipment:
Receiving: Sunol T185, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
824.20	18.47	V	0.9	0.0	17.57	38.5	-20.9	
824.20	27.57	H	0.9	0.0	26.67	38.5	-11.8	
Mid Ch								
836.60	19.05	V	0.9	0.0	18.15	38.5	-20.3	
836.60	26.72	H	0.9	0.0	25.82	38.5	-12.6	
High Ch								
848.80	17.68	V	0.9	0.0	16.78	38.5	-21.7	
848.80	25.16	H	0.9	0.0	24.26	38.5	-14.2	

Rev. 3.17.11

Band

GSM850

GPRS

High Frequency Substitution Measurement
Compliance Certification Services Chamber C

Company: LG
Project #: 14U17493
Date: 04/22/14
Test Engineer: R. Alegre
Configuration: EUT only
Mode: GRPS 850MHz

Test Equipment:
Receiving: Sunol T407, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) 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								
824.20	20.15	V	0.9	0.0	19.25	38.5	-19.2	
824.20	30.39	H	0.9	0.0	29.49	38.5	-9.0	
Mid Ch								
836.60	22.04	V	0.9	0.0	21.14	38.5	-17.3	
836.60	28.47	H	0.9	0.0	27.57	38.5	-10.9	
High Ch								
848.80	21.66	V	0.9	0.0	20.76	38.5	-17.7	
848.80	28.46	H	0.9	0.0	27.56	38.5	-10.9	

Rev. 3.17.11

11.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §27

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

RESULTS

11.2.1. SPURIOUS RADIATION DATA

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE B17 10MHz har 16QAM

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	Part 22

Band: LTE17 10MHz 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (709MHz)									
1.418	-27.6	V	3.0	33.1	1.0	-59.7	-13.0	-46.7	
2.127	-27.9	V	3.0	31.6	1.0	-58.5	-13.0	-45.5	
2.836	-30.4	V	3.0	31.0	1.0	-60.4	-13.0	-47.4	
1.418	-28.7	H	3.0	33.1	1.0	-60.8	-13.0	-47.8	
2.127	-29.1	H	3.0	31.6	1.0	-59.6	-13.0	-46.6	
2.836	-30.6	H	3.0	31.0	1.0	-60.6	-13.0	-47.6	
Mid Ch, (710MHz)									
1.420	-27.6	V	3.0	33.1	1.0	-59.7	-13.0	-46.7	
2.130	-27.9	V	3.0	31.6	1.0	-58.5	-13.0	-45.5	
2.840	-29.0	V	3.0	31.0	1.0	-59.1	-13.0	-46.1	
1.420	-27.7	H	3.0	33.1	1.0	-59.8	-13.0	-46.8	
2.130	-29.3	H	3.0	31.6	1.0	-59.9	-13.0	-46.9	
2.840	-30.7	H	3.0	31.0	1.0	-60.8	-13.0	-47.8	
High Ch, (711MHz)									
1.422	-27.7	V	3.0	33.1	1.0	-59.8	-13.0	-46.8	
2.133	-28.5	V	3.0	31.6	1.0	-59.1	-13.0	-46.1	
2.844	-30.2	V	3.0	31.0	1.0	-60.2	-13.0	-47.2	
1.422	-29.5	H	3.0	33.1	1.0	-61.6	-13.0	-48.6	
2.133	-29.5	H	3.0	31.6	1.0	-60.1	-13.0	-47.1	
2.844	-30.8	H	3.0	31.0	1.0	-60.9	-13.0	-47.9	

Rev. 03.03.09

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE B17 10MHz har QPSK

Chamber	Pre-amplifer	Filter	Limit
5m Chamber A	T145 8449B	Filter 1	Part 22

Band LTE17 10MHz QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (709MHz)									
1.418	-27.8	V	3.0	33.1	1.0	-59.9	-13.0	-46.9	
2.127	-27.1	V	3.0	31.6	1.0	-57.6	-13.0	-44.6	
2.836	-30.1	V	3.0	31.0	1.0	-60.1	-13.0	-47.1	
1.418	-29.6	H	3.0	33.1	1.0	-61.7	-13.0	-48.7	
2.127	-29.6	H	3.0	31.6	1.0	-60.2	-13.0	-47.2	
2.836	-30.9	H	3.0	31.0	1.0	-60.9	-13.0	-47.9	
Mid Ch, (710MHz)									
1.420	-27.6	V	3.0	33.1	1.0	-59.6	-13.0	-46.6	
2.130	-28.0	V	3.0	31.6	1.0	-58.6	-13.0	-45.6	
2.840	-29.9	V	3.0	31.0	1.0	-59.9	-13.0	-46.9	
1.420	-28.8	H	3.0	33.1	1.0	-60.8	-13.0	-47.8	
2.130	-29.3	H	3.0	31.6	1.0	-59.9	-13.0	-46.9	
2.840	-30.4	H	3.0	31.0	1.0	-60.4	-13.0	-47.4	
High Ch, (711MHz)									
1.422	-27.1	V	3.0	33.1	1.0	-59.2	-13.0	-46.2	
2.133	-25.7	V	3.0	31.6	1.0	-56.2	-13.0	-43.2	
2.844	-29.2	V	3.0	31.0	1.0	-59.2	-13.0	-46.2	
1.422	-29.4	H	3.0	33.1	1.0	-61.5	-13.0	-48.5	
2.133	-29.8	H	3.0	31.6	1.0	-60.4	-13.0	-47.4	
2.844	-30.5	H	3.0	31.0	1.0	-60.5	-13.0	-47.5	

Rev. 03.03.09

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE B17 5MHz 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
LTE17 5MHz 16QAM	Low Ch, (706.5MHz)									
	1.413	-30.3	V	3.0	33.1	1.0	-62.4	-13.0	-49.4	
	2.120	-22.7	V	3.0	31.6	1.0	-53.3	-13.0	-40.3	
	2.826	-24.4	V	3.0	31.0	1.0	-54.4	-13.0	-41.4	
	1.413	-30.1	H	3.0	33.1	1.0	-62.2	-13.0	-49.2	
	2.120	-23.3	H	3.0	31.6	1.0	-53.9	-13.0	-40.9	
	2.826	-23.7	H	3.0	31.0	1.0	-53.7	-13.0	-40.7	
	Mid Ch, (710MHz)									
	1.420	-31.8	V	3.0	33.1	1.0	-63.8	-13.0	-50.8	
	2.130	-24.5	V	3.0	31.6	1.0	-55.1	-13.0	-42.1	
	2.840	-24.8	V	3.0	31.0	1.0	-54.8	-13.0	-41.8	
	1.420	-29.9	H	3.0	33.1	1.0	-62.0	-13.0	-49.0	
	2.130	-26.9	H	3.0	31.6	1.0	-57.5	-13.0	-44.5	
	2.840	-23.4	H	3.0	31.0	1.0	-53.5	-13.0	-40.5	
	High Ch, (713.5MHz)									
	1.427	-29.8	V	3.0	33.1	1.0	-61.9	-13.0	-48.9	
	2.141	-22.7	V	3.0	31.6	1.0	-53.3	-13.0	-40.3	
	2.854	-22.8	V	3.0	31.0	1.0	-52.8	-13.0	-39.8	
	1.427	-29.5	H	3.0	33.1	1.0	-61.5	-13.0	-48.5	
	2.141	-24.0	H	3.0	31.6	1.0	-54.5	-13.0	-41.5	
	2.854	-22.9	H	3.0	31.0	1.0	-52.9	-13.0	-39.9	

Rev. 03.03.09

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE B17 5MHz har 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
	Low Ch, (706.5MHz)									
LTE17	1.413	-30.1	V	3.0	33.1	1.0	-62.2	-13.0	-49.2	
	2.120	-23.4	V	3.0	31.6	1.0	-54.0	-13.0	-41.0	
5MHz	2.826	-24.2	V	3.0	31.0	1.0	-54.2	-13.0	-41.2	
	1.413	-30.1	H	3.0	33.1	1.0	-62.2	-13.0	-49.2	
QPSK	2.120	-23.4	H	3.0	31.6	1.0	-54.0	-13.0	-41.0	
	2.826	-24.4	H	3.0	31.0	1.0	-54.5	-13.0	-41.5	
	Mid Ch, (710MHz)									
	1.420	-30.7	V	3.0	33.1	1.0	-62.8	-13.0	-49.8	
	2.130	-24.9	V	3.0	31.6	1.0	-55.5	-13.0	-42.5	
	2.840	-24.3	V	3.0	31.0	1.0	-54.3	-13.0	-41.3	
	1.420	-30.1	H	3.0	33.1	1.0	-62.1	-13.0	-49.1	
	2.130	-26.2	H	3.0	31.6	1.0	-56.7	-13.0	-43.7	
	2.840	-24.3	H	3.0	31.0	1.0	-54.3	-13.0	-41.3	
	High Ch, (713.5MHz)									
	1.427	-29.7	V	3.0	33.1	1.0	-61.8	-13.0	-48.8	
	2.141	-22.7	V	3.0	31.6	1.0	-53.3	-13.0	-40.3	
	2.854	-22.8	V	3.0	31.0	1.0	-52.8	-13.0	-39.8	
	1.427	-29.4	H	3.0	33.1	1.0	-61.5	-13.0	-48.5	
	2.141	-24.0	H	3.0	31.6	1.0	-54.5	-13.0	-41.5	
	2.854	-22.9	H	3.0	31.0	1.0	-52.9	-13.0	-39.9	

Rev. 03.03.09

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: Kiya/Oren
Configuration: X Position, w/AC Charger and headphones
Mode: TX, LTE band 7, 20MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 27

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE7	Low Ch, (2510 MHz)									
20MHz	5.020	-12.4	V	3.0	28.9	1.0	-40.3	-25.0	-15.3	
	7.530	-18.6	V	3.0	26.3	1.0	-43.9	-25.0	-18.9	
	10.040	-11.3	V	3.0	23.1	1.0	-33.4	-25.0	-8.4	
	5.020	-8.1	H	3.0	28.9	1.0	-36.0	-25.0	-11.0	
	7.530	-18.3	H	3.0	26.3	1.0	-43.6	-25.0	-18.6	
16QAM	10.040	-6.4	H	3.0	23.1	1.0	-28.5	-25.0	-3.5	
	Mid Ch, (2535MHz)									
	5.070	-13.3	V	3.0	28.8	1.0	-41.1	-25.0	-16.1	
	7.650	-19.3	V	3.0	26.2	1.0	-44.4	-25.0	-19.4	
	10.140	-13.3	V	3.0	23.1	1.0	-35.3	-25.0	-10.3	
	5.070	-8.8	H	3.0	28.8	1.0	-36.6	-25.0	-11.6	
	7.650	-18.9	H	3.0	26.2	1.0	-44.1	-25.0	-19.1	
	10.140	-14.6	H	3.0	23.1	1.0	-36.6	-25.0	-11.6	
	High Ch, (2560 MHz)									
	5.120	-13.2	V	3.0	28.8	1.0	-41.0	-25.0	-16.0	
	7.680	-18.8	V	3.0	26.1	1.0	-43.9	-25.0	-18.9	
	10.240	-13.8	V	3.0	23.0	1.0	-35.8	-25.0	-10.8	
	5.120	-9.5	H	3.0	28.8	1.0	-37.3	-25.0	-12.3	
	7.680	-18.7	H	3.0	26.1	1.0	-43.8	-25.0	-18.8	
	10.240	-15.2	H	3.0	23.0	1.0	-37.3	-25.0	-12.3	

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 #: 14U17493
Date: 04/25/14
Test Engineer: Kiya/Oren
Configuration: X Position, w/AC Charger and headphones
Mode: TX, LTE band 7, 20MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 27

Band: LTE7 20MHz QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2510 MHz)									
5.020	-12.8	V	3.0	28.9	1.0	-40.7	-25.0	-15.7	
7.530	-17.4	V	3.0	26.3	1.0	-42.7	-25.0	-17.7	
10.040	-10.6	V	3.0	23.1	1.0	-32.7	-25.0	-7.7	
5.020	-9.3	H	3.0	28.9	1.0	-37.2	-25.0	-12.2	
7.530	-18.5	H	3.0	26.3	1.0	-43.8	-25.0	-18.8	
10.040	-7.0	H	3.0	23.1	1.0	-29.1	-25.0	-4.1	
Mid Ch, (2535MHz)									
5.070	-12.3	V	3.0	28.8	1.0	-40.2	-25.0	-15.2	
7.650	-19.3	V	3.0	26.2	1.0	-44.4	-25.0	-19.4	
10.140	-11.2	V	3.0	23.1	1.0	-33.2	-25.0	-8.2	
5.070	-7.7	H	3.0	28.8	1.0	-35.5	-25.0	-10.5	
7.650	-18.5	H	3.0	26.2	1.0	-43.6	-25.0	-18.6	
10.140	-13.6	H	3.0	23.1	1.0	-35.6	-25.0	-10.6	
High Ch, (2560 MHz)									
5.120	-11.2	V	3.0	28.8	1.0	-39.0	-25.0	-14.0	
7.680	-18.5	V	3.0	26.1	1.0	-43.6	-25.0	-18.6	
10.240	-8.5	V	3.0	23.0	1.0	-30.5	-25.0	-5.5	
5.120	-8.4	H	3.0	28.8	1.0	-36.2	-25.0	-11.2	
7.680	-18.4	H	3.0	26.1	1.0	-43.5	-25.0	-18.5	
10.240	-13.0	H	3.0	23.0	1.0	-35.0	-25.0	-10.0	

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 #: 14U17493
Date: 04/25/14
Test Engineer: Kiya/Oren
Configuration: X Position, w/AC Charger and headphones
Mode: TX, LTE band 7, 15MHz, 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 27

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE7	Low Ch, (2507 MHz)									
15MHz	5.014	-12.2	V	3.0	28.9	1.0	-40.1	-25.0	-15.1	
	7.521	-17.5	V	3.0	26.3	1.0	-42.9	-25.0	-17.9	
	10.028	-7.3	V	3.0	23.1	1.0	-29.3	-25.0	-4.3	
	5.014	-5.4	H	3.0	28.9	1.0	-33.3	-25.0	-8.3	
	7.521	-18.6	H	3.0	26.3	1.0	-43.9	-25.0	-18.9	
16QAM	10.028	-12.2	H	3.0	23.1	1.0	-34.3	-25.0	-9.3	
	Mid Ch, (2535 MHz)									
	5.070	-13.2	V	3.0	28.8	1.0	-41.0	-25.0	-16.0	
	7.650	-18.2	V	3.0	26.2	1.0	-43.3	-25.0	-18.3	
	10.140	-7.2	V	3.0	23.1	1.0	-29.2	-25.0	-4.2	
	5.070	-6.1	H	3.0	28.8	1.0	-33.9	-25.0	-8.9	
	7.650	-17.9	H	3.0	26.2	1.0	-43.0	-25.0	-18.0	
	10.140	-14.2	H	3.0	23.1	1.0	-36.3	-25.0	-11.3	
	High Ch, (2562 MHz)									
	5.124	-11.0	V	3.0	28.8	1.0	-38.8	-25.0	-13.8	
	7.686	-19.6	V	3.0	26.1	1.0	-44.7	-25.0	-19.7	
	10.248	-11.1	V	3.0	23.0	1.0	-33.1	-25.0	-8.1	
	5.124	-6.2	H	3.0	28.8	1.0	-34.0	-25.0	-9.0	
	7.686	-18.5	H	3.0	26.1	1.0	-43.6	-25.0	-18.6	
	10.248	-14.1	H	3.0	23.0	1.0	-36.2	-25.0	-11.2	

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 #: 14U17493
Date: 04/25/14
Test Engineer: Kiya/Oren
Configuration: X Position, w/AC Charger and headphones
Mode: TX, LTE band 7, 15MHz, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 27

Band: LTE7 15MHz QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (2507 MHz)									
5.014	-11.9	V	3.0	28.9	1.0	-39.8	-25.0	-14.8	
7.521	-17.3	V	3.0	26.3	1.0	-42.6	-25.0	-17.6	
10.028	-5.7	V	3.0	23.1	1.0	-27.8	-25.0	-2.8	
5.014	-4.8	H	3.0	28.9	1.0	-32.7	-25.0	-7.7	
7.521	-18.5	H	3.0	26.3	1.0	-43.8	-25.0	-18.8	
10.028	-10.8	H	3.0	23.1	1.0	-32.9	-25.0	-7.9	
Mid Ch, (2535 MHz)									
5.070	-12.1	V	3.0	28.8	1.0	-39.9	-25.0	-14.9	
7.650	-17.9	V	3.0	26.2	1.0	-43.0	-25.0	-18.0	
10.140	-4.9	V	3.0	23.1	1.0	-26.9	-25.0	-1.9	
5.070	-5.7	H	3.0	28.8	1.0	-33.6	-25.0	-8.6	
7.650	-18.0	H	3.0	26.2	1.0	-43.2	-25.0	-18.2	
10.140	-13.9	H	3.0	23.1	1.0	-35.9	-25.0	-10.9	
High Ch, (2562 MHz)									
5.124	-11.0	V	3.0	28.8	1.0	-38.8	-25.0	-13.8	
7.686	-18.9	V	3.0	26.1	1.0	-44.0	-25.0	-19.0	
10.248	-10.7	V	3.0	23.0	1.0	-32.7	-25.0	-7.7	
5.124	-5.4	H	3.0	28.8	1.0	-33.2	-25.0	-8.2	
7.686	-18.7	H	3.0	26.1	1.0	-43.9	-25.0	-18.9	
10.248	-13.0	H	3.0	23.0	1.0	-35.0	-25.0	-10.0	

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

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	R. Alegre
Configuration:	EUT with AC charger
Mode:	TX, LTE BAND 7, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	FCC Part 27

Band

LTE7

10MHz

16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (2505MHz)									
5.010	-17.4	V	3.0	34.8	1.0	-51.2	-25.0	-26.2	
7.515	-13.0	V	3.0	34.9	1.0	-46.9	-25.0	-21.9	
10.020	-10.8	V	3.0	35.4	1.0	-45.2	-25.0	-20.2	
5.010	-18.3	H	3.0	34.8	1.0	-52.1	-25.0	-27.1	
7.515	-12.1	H	3.0	34.9	1.0	-46.0	-25.0	-21.0	
10.020	-9.9	H	3.0	35.4	1.0	-44.3	-25.0	-19.3	
Mid Channel (2535MHz)									
5.070	-18.4	V	3.0	34.7	1.0	-52.2	-25.0	-27.2	
7.605	-14.1	V	3.0	34.9	1.0	-48.0	-25.0	-23.0	
10.122	-11.7	V	3.0	35.3	1.0	-46.0	-25.0	-21.0	
5.070	-16.8	H	3.0	34.7	1.0	-50.5	-25.0	-25.5	
7.605	-13.0	H	3.0	34.9	1.0	-47.0	-25.0	-22.0	
10.122	-9.3	H	3.0	35.3	1.0	-43.6	-25.0	-18.6	
High Channel (2565MHz)									
5.130	-18.4	V	3.0	34.7	1.0	-52.1	-25.0	-27.1	
7.689	-13.0	V	3.0	35.0	1.0	-47.0	-25.0	-22.0	
10.260	-11.9	V	3.0	35.2	1.0	-46.2	-25.0	-21.2	
5.130	-17.9	H	3.0	34.7	1.0	-51.6	-25.0	-26.6	
7.689	-11.0	H	3.0	35.0	1.0	-45.0	-25.0	-20.0	
10.260	-9.2	H	3.0	35.2	1.0	-43.4	-25.0	-18.4	

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

Band

LTE7

10MHz

QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	R. Alegre
Configuration:	EUT with AC charger
Mode:	TX, LTE BAND 7, 10MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (2505MHz)									
5.010	-17.2	V	3.0	34.8	1.0	-51.0	-25.0	-26.0	
7.515	-13.1	V	3.0	34.9	1.0	-47.0	-25.0	-22.0	
10.020	-11.0	V	3.0	35.4	1.0	-45.4	-25.0	-20.4	
5.010	-18.2	H	3.0	34.8	1.0	-52.0	-25.0	-27.0	
7.515	-11.9	H	3.0	34.9	1.0	-45.9	-25.0	-20.9	
10.020	-10.6	H	3.0	35.4	1.0	-44.9	-25.0	-19.9	
Mid Channel (2535MHz)									
5.070	-18.4	V	3.0	34.7	1.0	-52.1	-25.0	-27.1	
7.605	-13.9	V	3.0	34.9	1.0	-47.8	-25.0	-22.8	
10.122	-11.7	V	3.0	35.3	1.0	-46.0	-25.0	-21.0	
5.070	-16.7	H	3.0	34.7	1.0	-50.4	-25.0	-25.4	
7.605	-13.0	H	3.0	34.9	1.0	-46.9	-25.0	-21.9	
10.122	-11.2	H	3.0	35.3	1.0	-45.5	-25.0	-20.5	
High Channel (2565MHz)									
5.130	-17.7	V	3.0	34.7	1.0	-51.4	-25.0	-26.4	
7.689	-13.0	V	3.0	35.0	1.0	-46.9	-25.0	-21.9	
10.260	-12.0	V	3.0	35.2	1.0	-46.2	-25.0	-21.2	
5.130	-17.8	H	3.0	34.7	1.0	-51.5	-25.0	-26.5	
7.689	-12.6	H	3.0	35.0	1.0	-46.6	-25.0	-21.6	
10.260	-10.9	H	3.0	35.2	1.0	-45.1	-25.0	-20.1	

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

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	R. Alegre
Configuration:	EUT with AC charger
Mode:	TX, LTE BAND 7, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	FCC Part 27

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Channel (2502.5MHz)									
LTE7	5.005	-17.8	V	3.0	35.3	1.0	-52.1	-25.0	-27.1	
	7.508	-14.9	V	3.0	35.7	1.0	-49.6	-25.0	-24.6	
5MHz	10.010	-9.8	V	3.0	35.5	1.0	-44.4	-25.0	-19.4	
	5.005	-19.4	H	3.0	35.3	1.0	-53.7	-25.0	-28.7	
	7.508	-11.0	H	3.0	35.7	1.0	-45.7	-25.0	-20.7	
16QAM	10.010	-9.4	H	3.0	35.5	1.0	-43.9	-25.0	-18.9	
	Mid Channel (2535MHz)									
	5.070	-18.5	V	3.0	35.3	1.0	-52.9	-25.0	-27.9	
	7.605	-13.9	V	3.0	35.7	1.0	-48.6	-25.0	-23.6	
	10.140	-11.9	V	3.0	35.4	1.0	-46.3	-25.0	-21.3	
	5.007	-19.1	H	3.0	35.3	1.0	-53.5	-25.0	-28.5	
	7.605	-11.6	H	3.0	35.7	1.0	-46.3	-25.0	-21.3	
	10.140	-12.6	H	3.0	35.4	1.0	-47.0	-25.0	-22.0	
	High Channel (2567.5MHz)									
	5.135	-18.2	V	3.0	35.3	1.0	-52.5	-25.0	-27.5	
	7.703	-13.7	V	3.0	35.7	1.0	-48.4	-25.0	-23.4	
	10.270	-10.1	V	3.0	35.3	1.0	-44.4	-25.0	-19.4	
	5.135	-15.0	H	3.0	35.3	1.0	-49.3	-25.0	-24.3	
	7.703	-13.0	H	3.0	35.7	1.0	-47.7	-25.0	-22.7	
	10.270	-10.5	H	3.0	35.3	1.0	-44.8	-25.0	-19.8	

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

Band
LTE7
5MHz
QPSK

UL Verification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	R. Alegre
Configuration:	EUT with AC charger
Mode:	TX, LTE BAND 7, 5MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	FCC Part 27

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (2502.5MHz)									
5.005	-17.5	V	3.0	35.3	1.0	-51.9	-25.0	-26.9	
7.508	-13.9	V	3.0	35.7	1.0	-48.6	-25.0	-23.6	
10.010	-9.8	V	3.0	35.5	1.0	-44.3	-25.0	-19.3	
5.005	-19.0	H	3.0	35.3	1.0	-53.3	-25.0	-28.3	
7.508	-11.1	H	3.0	35.7	1.0	-45.8	-25.0	-20.8	
10.010	-9.7	H	3.0	35.5	1.0	-44.2	-25.0	-19.2	
Mid Channel (2535MHz)									
5.007	-18.3	V	3.0	35.3	1.0	-52.6	-25.0	-27.6	
7.605	-13.7	V	3.0	35.7	1.0	-48.4	-25.0	-23.4	
10.140	-12.8	V	3.0	35.4	1.0	-47.2	-25.0	-22.2	
5.007	-19.3	H	3.0	35.3	1.0	-53.6	-25.0	-28.6	
7.605	-11.6	H	3.0	35.7	1.0	-46.3	-25.0	-21.3	
10.140	-12.2	H	3.0	35.4	1.0	-46.6	-25.0	-21.6	
High Channel (2567.5MHz)									
5.135	-18.1	V	3.0	35.3	1.0	-52.5	-25.0	-27.5	
7.703	-13.7	V	3.0	35.7	1.0	-48.3	-25.0	-23.3	
10.270	-9.5	V	3.0	35.3	1.0	-43.8	-25.0	-18.8	
5.135	-15.0	H	3.0	35.3	1.0	-49.4	-25.0	-24.4	
7.703	-12.9	H	3.0	35.7	1.0	-47.6	-25.0	-22.6	
10.270	-10.4	H	3.0	35.3	1.0	-44.8	-25.0	-19.8	

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 #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE BAND 5, 10MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

Band: LTE5 10MHz 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (829MHz)									
1.658	-26.8	V	3.0	37.4	1.0	-63.1	-13.0	-50.1	
2.487	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3.316	-21.8	V	3.0	35.8	1.0	-56.6	-13.0	-43.6	
1.658	-26.8	H	3.0	37.4	1.0	-63.1	-13.0	-50.1	
2.487	-23.9	H	3.0	36.4	1.0	-59.3	-13.0	-46.3	
3.316	-21.6	H	3.0	35.8	1.0	-56.4	-13.0	-43.4	
Mid Channel (836.5MHz)									
1.673	-27.7	V	3.0	37.3	1.0	-64.0	-13.0	-51.0	
2.509	-23.9	V	3.0	36.4	1.0	-59.2	-13.0	-46.2	
3.346	-23.4	V	3.0	35.8	1.0	-58.2	-13.0	-45.2	
1.673	-27.2	H	3.0	37.3	1.0	-63.5	-13.0	-50.5	
2.509	-25.1	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3.346	-23.1	H	3.0	35.8	1.0	-57.9	-13.0	-44.9	
High Channel (844MHz)									
1.688	-26.7	V	3.0	37.3	1.0	-63.1	-13.0	-50.1	
2.532	-24.3	V	3.0	36.3	1.0	-59.7	-13.0	-46.7	
3.376	-23.4	V	3.0	35.7	1.0	-58.1	-13.0	-45.1	
1.688	-27.9	H	3.0	37.3	1.0	-64.2	-13.0	-51.2	
2.532	-25.9	H	3.0	36.3	1.0	-61.3	-13.0	-48.3	
3.376	-22.7	H	3.0	35.7	1.0	-57.4	-13.0	-44.4	

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

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE BAND 5, 10MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

Band: LTE5 10MHz QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (829MHz)									
1.658	-26.4	V	3.0	37.4	1.0	-62.7	-13.0	-49.7	
2.487	-21.9	V	3.0	36.4	1.0	-57.3	-13.0	-44.3	
3.316	-21.7	V	3.0	35.8	1.0	-56.5	-13.0	-43.5	
1.658	-26.5	H	3.0	37.4	1.0	-62.9	-13.0	-49.9	
2.487	-24.6	H	3.0	36.4	1.0	-59.9	-13.0	-46.9	
3.316	-21.5	H	3.0	35.8	1.0	-56.2	-13.0	-43.2	
Mid Channel (836.5MHz)									
1.673	-27.7	V	3.0	37.3	1.0	-64.0	-13.0	-51.0	
2.509	-24.0	V	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3.346	-23.0	V	3.0	35.8	1.0	-57.7	-13.0	-44.7	
1.673	-26.9	H	3.0	37.3	1.0	-63.3	-13.0	-50.3	
2.509	-26.0	H	3.0	36.4	1.0	-61.4	-13.0	-48.4	
3.346	-23.0	H	3.0	35.8	1.0	-57.7	-13.0	-44.7	
High Channel (844MHz)									
1.688	-25.9	V	3.0	37.3	1.0	-62.2	-13.0	-49.2	
2.532	-23.6	V	3.0	36.3	1.0	-59.0	-13.0	-46.0	
3.376	-22.4	V	3.0	35.7	1.0	-57.1	-13.0	-44.1	
1.688	-27.7	H	3.0	37.3	1.0	-64.0	-13.0	-51.0	
2.532	-25.9	H	3.0	36.3	1.0	-61.2	-13.0	-48.2	
3.376	-22.5	H	3.0	35.7	1.0	-57.2	-13.0	-44.2	

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

1.0

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE BAND 5, 5MHz BW,16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

Band
LTE5
5MHz
16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (826.5MHz)									
1.653	-27.0	V	3.0	37.4	1.0	-63.4	-13.0	-50.4	
2.479	-21.5	V	3.0	36.4	1.0	-56.9	-13.0	-43.9	
3.306	-19.9	V	3.0	35.8	1.0	-54.7	-13.0	-41.7	
1.653	-26.6	H	3.0	37.4	1.0	-62.9	-13.0	-49.9	
2.479	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
3.306	-22.0	H	3.0	35.8	1.0	-56.8	-13.0	-43.8	
Mid Channel (836.5MHz)									
1.673	-27.8	V	3.0	37.3	1.0	-64.1	-13.0	-51.1	
2.509	-23.4	V	3.0	36.4	1.0	-58.7	-13.0	-45.7	
3.346	-22.7	V	3.0	35.8	1.0	-57.4	-13.0	-44.4	
1.673	-26.8	H	3.0	37.3	1.0	-63.1	-13.0	-50.1	
2.509	-23.4	H	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3.346	-22.5	H	3.0	35.8	1.0	-57.3	-13.0	-44.3	
High Channel (846.5MHz)									
1.693	-27.5	V	3.0	37.3	1.0	-63.8	-13.0	-50.8	
2.539	-24.1	V	3.0	36.3	1.0	-59.4	-13.0	-46.4	
3.386	-21.7	V	3.0	35.7	1.0	-56.4	-13.0	-43.4	
1.693	-27.0	H	3.0	37.3	1.0	-63.3	-13.0	-50.3	
2.539	-26.4	H	3.0	36.3	1.0	-61.7	-13.0	-48.7	
3.386	-22.6	H	3.0	35.7	1.0	-57.3	-13.0	-44.3	

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

1.0

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: TX, LTE BAND 5, 5MHz BW,QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

Band: LTE5, 5MHz, QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Channel (826.5MHz)									
1.653	-26.9	V	3.0	37.4	1.0	-63.3	-13.0	-50.3	
2.479	-21.8	V	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3.306	-20.8	V	3.0	35.8	1.0	-55.6	-13.0	-42.6	
1.653	-26.7	H	3.0	37.4	1.0	-63.0	-13.0	-50.0	
2.479	-24.2	H	3.0	36.4	1.0	-59.6	-13.0	-46.6	
3.306	-21.2	H	3.0	35.8	1.0	-56.0	-13.0	-43.0	
Mid Channel (836.5MHz)									
1.673	-27.6	V	3.0	37.3	1.0	-63.9	-13.0	-50.9	
2.509	-23.1	V	3.0	36.4	1.0	-58.4	-13.0	-45.4	
3.346	-23.0	V	3.0	35.8	1.0	-57.7	-13.0	-44.7	
1.673	-28.7	H	3.0	37.3	1.0	-65.0	-13.0	-52.0	
2.509	-21.8	H	3.0	36.4	1.0	-57.2	-13.0	-44.2	
3.346	-21.6	H	3.0	35.8	1.0	-56.3	-13.0	-43.3	
High Channel (846.5MHz)									
1.693	-26.8	V	3.0	37.3	1.0	-63.1	-13.0	-50.1	
2.539	-24.3	V	3.0	36.3	1.0	-59.7	-13.0	-46.7	
3.386	-21.7	V	3.0	35.7	1.0	-56.4	-13.0	-43.4	
1.693	-26.5	H	3.0	37.3	1.0	-62.8	-13.0	-49.8	
2.539	-25.8	H	3.0	36.3	1.0	-61.2	-13.0	-48.2	
3.386	-22.3	H	3.0	35.7	1.0	-57.0	-13.0	-44.0	

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

1.0

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/23/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 10MHz BW, 16QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 24

Band: LTE4, 10MHz, 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715 MHz)									
3.430	-2.0	V	3.0	30.4	1.0	-31.5	-13.0	-18.5	
5.145	-14.1	V	3.0	28.8	1.0	-41.9	-13.0	-28.9	
6.860	-16.6	V	3.0	27.1	1.0	-42.7	-13.0	-29.7	
3.430	-3.8	H	3.0	30.4	1.0	-33.2	-13.0	-20.2	
5.145	-11.1	H	3.0	28.8	1.0	-38.9	-13.0	-25.9	
6.860	-15.8	H	3.0	27.1	1.0	-42.0	-13.0	-29.0	
Mid Ch, (1732.5 MHz)									
3.465	-1.9	V	3.0	30.4	1.0	-31.3	-13.0	-18.3	
5.198	-17.6	V	3.0	28.7	1.0	-45.3	-13.0	-32.3	
6.930	-16.0	V	3.0	27.1	1.0	-42.0	-13.0	-29.0	
3.465	-2.6	H	3.0	30.4	1.0	-32.0	-13.0	-19.0	
5.198	-10.8	H	3.0	28.7	1.0	-38.5	-13.0	-25.5	
6.930	-15.2	H	3.0	27.1	1.0	-41.3	-13.0	-28.3	
High Ch, (1750 MHz)									
3.500	-1.4	V	3.0	30.4	1.0	-30.8	-13.0	-17.8	
5.250	-10.4	V	3.0	28.7	1.0	-38.0	-13.0	-25.0	
7.000	-15.9	V	3.0	27.0	1.0	-41.9	-13.0	-28.9	
3.500	-7.2	H	3.0	30.4	1.0	-36.6	-13.0	-23.6	
5.250	-6.2	H	3.0	28.7	1.0	-33.9	-13.0	-20.9	
7.000	-14.3	H	3.0	27.0	1.0	-40.3	-13.0	-27.3	

Rev. 03.03.09

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/23/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 10MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 24

Band: LTE4 10MHz QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1715 MHz)									
3.430	-1.7	V	3.0	30.4	1.0	-31.1	-13.0	-18.1	
5.145	-14.1	V	3.0	28.8	1.0	-41.9	-13.0	-28.9	
6.860	-16.7	V	3.0	27.1	1.0	-42.9	-13.0	-29.9	
3.430	-3.8	H	3.0	30.4	1.0	-33.2	-13.0	-20.2	
5.145	-12.0	H	3.0	28.8	1.0	-39.8	-13.0	-26.8	
6.860	-16.0	H	3.0	27.1	1.0	-42.1	-13.0	-29.1	
Mid Ch, (1732.5 MHz)									
3.465	-2.0	V	3.0	30.4	1.0	-31.4	-13.0	-18.4	
5.198	-18.4	V	3.0	28.7	1.0	-46.1	-13.0	-33.1	
6.930	-16.4	V	3.0	27.1	1.0	-42.5	-13.0	-29.5	
3.465	-4.6	H	3.0	30.4	1.0	-34.0	-13.0	-21.0	
5.198	-9.7	H	3.0	28.7	1.0	-37.4	-13.0	-24.4	
6.930	-14.8	H	3.0	27.1	1.0	-40.8	-13.0	-27.8	
High Ch, (1750 MHz)									
3.500	-1.6	V	3.0	30.4	1.0	-30.9	-13.0	-17.9	
5.250	-9.4	V	3.0	28.7	1.0	-37.1	-13.0	-24.1	
7.000	-15.4	V	3.0	27.0	1.0	-41.4	-13.0	-28.4	
3.500	-7.5	H	3.0	30.4	1.0	-36.9	-13.0	-23.9	
5.250	-6.1	H	3.0	28.7	1.0	-33.7	-13.0	-20.7	
7.000	-12.9	H	3.0	27.0	1.0	-38.9	-13.0	-25.9	

Rev. 03.03.09

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/23/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 5MHz BW, 16 QAM

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 24

Band: LTE4 5MHz 16QAM

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.5 MHz)									
3.425	-4.9	V	3.0	30.4	1.0	-34.3	-13.0	-21.3	
5.138	-9.3	V	3.0	28.8	1.0	-37.1	-13.0	-24.1	
6.850	-16.9	V	3.0	27.1	1.0	-43.1	-13.0	-30.1	
3.425	-2.4	H	3.0	30.4	1.0	-31.8	-13.0	-18.8	
5.138	-7.3	H	3.0	28.8	1.0	-35.1	-13.0	-22.1	
6.850	-16.9	H	3.0	27.1	1.0	-43.0	-13.0	-30.0	
Mid Ch, (1732.5 MHz)									
3.465	-5.0	V	3.0	30.4	1.0	-34.4	-13.0	-21.4	
5.198	-7.9	V	3.0	28.7	1.0	-35.6	-13.0	-22.6	
6.930	-16.8	V	3.0	27.1	1.0	-42.9	-13.0	-29.9	
3.465	-2.2	H	3.0	30.4	1.0	-31.6	-13.0	-18.6	
5.198	-6.2	H	3.0	28.7	1.0	-33.9	-13.0	-20.9	
6.930	-14.9	H	3.0	27.1	1.0	-40.9	-13.0	-27.9	
High Ch, (1752.5 MHz)									
3.505	-4.5	V	3.0	30.4	1.0	-33.9	-13.0	-20.9	
5.258	-10.1	V	3.0	28.6	1.0	-37.7	-13.0	-24.7	
7.010	-14.9	V	3.0	27.0	1.0	-40.9	-13.0	-27.9	
3.505	-4.6	H	3.0	30.4	1.0	-34.0	-13.0	-21.0	
5.258	-7.4	H	3.0	28.6	1.0	-35.0	-13.0	-22.0	
7.010	-15.8	H	3.0	27.0	1.0	-41.7	-13.0	-28.7	

Rev. 03.03.09

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/23/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: TX, LTE band 4, 5MHz BW, QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T145 8449B	Filter 1	Part 24

Band: LTE4, 5MHz, QPSK

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1712.5 MHz)									
3.425	-4.2	V	3.0	30.4	1.0	-33.7	-13.0	-20.7	
5.138	-9.2	V	3.0	28.8	1.0	-37.0	-13.0	-24.0	
6.850	-16.5	V	3.0	27.1	1.0	-42.6	-13.0	-29.6	
3.425	-2.1	H	3.0	30.4	1.0	-31.5	-13.0	-18.5	
5.138	-7.3	H	3.0	28.8	1.0	-35.1	-13.0	-22.1	
6.850	-15.8	H	3.0	27.1	1.0	-42.0	-13.0	-29.0	
Mid Ch, (1732.5 MHz)									
3.465	-4.1	V	3.0	30.4	1.0	-33.5	-13.0	-20.5	
5.198	-8.3	V	3.0	28.7	1.0	-36.0	-13.0	-23.0	
6.930	-16.6	V	3.0	27.1	1.0	-42.7	-13.0	-29.7	
3.465	-1.5	H	3.0	30.4	1.0	-30.9	-13.0	-17.9	
5.198	-6.4	H	3.0	28.7	1.0	-34.1	-13.0	-21.1	
6.930	-15.1	H	3.0	27.1	1.0	-41.1	-13.0	-28.1	
High Ch, (1752.5 MHz)									
3.505	-4.9	V	3.0	30.4	1.0	-34.2	-13.0	-21.2	
5.258	-9.3	V	3.0	28.6	1.0	-36.9	-13.0	-23.9	
7.010	-15.0	V	3.0	27.0	1.0	-41.0	-13.0	-28.0	
3.505	-4.4	H	3.0	30.4	1.0	-33.8	-13.0	-20.8	
5.258	-7.2	H	3.0	28.6	1.0	-34.9	-13.0	-21.9	
7.010	-14.8	H	3.0	27.0	1.0	-40.7	-13.0	-27.7	

Rev. 03.03.09

Band

LTE2

10MHz

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

	LG
Company:	14U17493
Project #:	04/23/14
Date:	R. Alegre
Test Engineer:	EUT, AC charger, and Earphone
Configuration:	EUT with AC charger
Mode:	LTE2_10M_16QAM

Chamber	Pre-amplifer	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, 1855.0MHz									
3.710	-17.5	V	3.0	35.4	1.0	-51.9	-13.0	-38.9	
5.565	-12.5	V	3.0	34.7	1.0	-46.2	-13.0	-33.2	
7.420	-16.0	V	3.0	34.9	1.0	-49.9	-13.0	-36.9	
3.710	-14.7	H	3.0	35.4	1.0	-49.0	-13.0	-36.0	
5.565	-14.5	H	3.0	34.7	1.0	-48.2	-13.0	-35.2	
7.420	-15.0	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	
Mid Ch, 1880.0MHz									
3.760	-19.0	V	3.0	35.3	1.0	-53.4	-13.0	-40.4	
5.640	-8.5	V	3.0	34.7	1.0	-42.3	-13.0	-29.3	
7.520	-14.7	V	3.0	34.9	1.0	-48.6	-13.0	-35.6	
3.760	-11.7	H	3.0	35.3	1.0	-46.0	-13.0	-33.0	
5.640	-13.0	H	3.0	34.7	1.0	-46.8	-13.0	-33.8	
7.520	-12.6	H	3.0	34.9	1.0	-46.5	-13.0	-33.5	
High Ch, 1905 MHz									
3.810	-15.0	V	3.0	35.3	1.0	-49.3	-13.0	-36.3	
5.715	-8.8	V	3.0	34.7	1.0	-42.5	-13.0	-29.5	
7.620	-15.7	V	3.0	34.9	1.0	-49.7	-13.0	-36.7	
3.810	-12.1	H	3.0	35.3	1.0	-46.4	-13.0	-33.4	
5.715	-12.2	H	3.0	34.7	1.0	-46.0	-13.0	-33.0	
7.620	-13.9	H	3.0	34.9	1.0	-47.8	-13.0	-34.8	

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

Band

LTE2

10MHz

QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/23/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: LTE2_10M_QPSK

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T343 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1855.0MHz									
3.710	-17.0	V	3.0	35.4	1.0	-51.4	-13.0	-38.4	
5.565	-12.1	V	3.0	34.7	1.0	-45.8	-13.0	-32.8	
7.420	-15.9	V	3.0	34.9	1.0	-49.9	-13.0	-36.9	
3.710	-13.9	H	3.0	35.4	1.0	-48.3	-13.0	-35.3	
5.565	-14.4	H	3.0	34.7	1.0	-48.1	-13.0	-35.1	
7.420	-14.8	H	3.0	34.9	1.0	-48.7	-13.0	-35.7	
Mid Ch, 1880.0MHz									
3.760	-18.5	V	3.0	35.3	1.0	-52.8	-13.0	-39.8	
5.640	-8.8	V	3.0	34.7	1.0	-42.5	-13.0	-29.5	
7.520	-15.6	V	3.0	34.9	1.0	-49.5	-13.0	-36.5	
3.760	-12.9	H	3.0	35.3	1.0	-47.2	-13.0	-34.2	
5.640	-12.6	H	3.0	34.7	1.0	-46.3	-13.0	-33.3	
7.520	-12.6	H	3.0	34.9	1.0	-46.5	-13.0	-33.5	
High Ch, 1905 MHz									
3.810	-16.1	V	3.0	35.3	1.0	-50.4	-13.0	-37.4	
5.715	-8.5	V	3.0	34.7	1.0	-42.2	-13.0	-29.2	
7.620	-15.4	V	3.0	34.9	1.0	-49.4	-13.0	-36.4	
3.810	-14.9	H	3.0	35.3	1.0	-49.2	-13.0	-36.2	
5.715	-11.6	H	3.0	34.7	1.0	-45.4	-13.0	-32.4	
7.620	-13.3	H	3.0	34.9	1.0	-47.3	-13.0	-34.3	

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

Band

LTE2

5MHz

16QAM

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/23/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: LTE2_5M_16QAM

Chamber	Pre-amplifer	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, 1852.5MHz									
3.705	-20.8	V	3.0	35.4	1.0	-55.1	-13.0	-42.1	
5.557	-3.4	V	3.0	34.7	1.0	-37.2	-13.0	-24.2	
7.410	-15.4	V	3.0	34.9	1.0	-49.3	-13.0	-36.3	
3.705	-12.3	H	3.0	35.4	1.0	-46.7	-13.0	-33.7	
5.557	-3.6	H	3.0	34.7	1.0	-37.3	-13.0	-24.3	
7.410	-14.6	H	3.0	34.9	1.0	-48.5	-13.0	-35.5	
Mid Ch, 1880.0MHz									
3.760	-19.2	V	3.0	35.3	1.0	-53.6	-13.0	-40.6	
5.640	-0.7	V	3.0	34.7	1.0	-34.4	-13.0	-21.4	
7.520	-13.4	V	3.0	34.9	1.0	-47.3	-13.0	-34.3	
3.760	-0.9	H	3.0	35.3	1.0	-35.2	-13.0	-22.2	
5.640	-6.3	H	3.0	34.7	1.0	-40.0	-13.0	-27.0	
7.520	-13.1	H	3.0	34.9	1.0	-47.1	-13.0	-34.1	
High Ch, 1907.5 MHz									
3.815	-8.3	V	3.0	35.3	1.0	-42.6	-13.0	-29.6	
5.722	-4.0	V	3.0	34.7	1.0	-37.7	-13.0	-24.7	
7.630	-11.7	V	3.0	34.9	1.0	-45.7	-13.0	-32.7	
3.815	-6.2	H	3.0	35.3	1.0	-40.5	-13.0	-27.5	
5.722	-3.6	H	3.0	34.7	1.0	-37.3	-13.0	-24.3	
7.630	-10.6	H	3.0	34.9	1.0	-44.6	-13.0	-31.6	

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

Band
LTE2
5MHz
QPSK

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/23/14
Test Engineer: R. Alegre
Configuration: EUT, AC charger, and Earphone
Mode: LTE2_5M_QPSK

Chamber	Pre-amplifer	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, 1852.5MHz									
3.705	-18.6	V	3.0	35.4	1.0	-53.0	-13.0	-40.0	
5.557	-0.9	V	3.0	34.7	1.0	-34.7	-13.0	-21.7	
7.410	-11.9	V	3.0	34.9	1.0	-45.8	-13.0	-32.8	
3.705	-13.1	H	3.0	35.4	1.0	-47.5	-13.0	-34.5	
5.557	-1.6	H	3.0	34.7	1.0	-35.3	-13.0	-22.3	
7.410	-14.3	H	3.0	34.9	1.0	-48.2	-13.0	-35.2	
Mid Ch, 1880.0MHz									
3.760	-19.0	V	3.0	35.3	1.0	-53.3	-13.0	-40.3	
5.640	0.6	V	3.0	34.7	1.0	-33.1	-13.0	-20.1	
7.520	-14.0	V	3.0	34.9	1.0	-47.9	-13.0	-34.9	
3.760	-1.0	H	3.0	35.3	1.0	-35.3	-13.0	-22.3	
5.640	-6.3	H	3.0	34.7	1.0	-40.1	-13.0	-27.1	
7.520	-14.1	H	3.0	34.9	1.0	-48.0	-13.0	-35.0	
High Ch, 1907.5 MHz									
3.815	-8.2	V	3.0	35.3	1.0	-42.5	-13.0	-29.5	
5.722	-4.5	V	3.0	34.7	1.0	-38.2	-13.0	-25.2	
7.630	-11.5	V	3.0	34.9	1.0	-45.5	-13.0	-32.5	
3.815	-6.0	H	3.0	35.3	1.0	-40.3	-13.0	-27.3	
5.722	-2.7	H	3.0	34.7	1.0	-36.4	-13.0	-23.4	
7.630	-10.5	H	3.0	34.9	1.0	-44.4	-13.0	-31.4	

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

Band

Band 2

HSDPA

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: Tx, 1900MHz HSDPA

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.705	-21.0	V	3.0	35.4	1.0	-55.4	-13.0	-42.4	
5.557	-19.1	V	3.0	34.7	1.0	-52.8	-13.0	-39.8	
7.409	-14.7	V	3.0	34.9	1.0	-48.6	-13.0	-35.6	
3.705	-23.2	H	3.0	35.4	1.0	-57.6	-13.0	-44.6	
5.557	-18.6	H	3.0	34.7	1.0	-52.3	-13.0	-39.3	
7.409	-13.4	H	3.0	34.9	1.0	-47.3	-13.0	-34.3	
Mid Ch, 1880MHz									
3.760	-21.4	V	3.0	35.3	1.0	-55.7	-13.0	-42.7	
5.640	-19.6	V	3.0	34.7	1.0	-53.4	-13.0	-40.4	
7.520	-15.3	V	3.0	34.9	1.0	-49.2	-13.0	-36.2	
3.760	-19.3	H	3.0	35.3	1.0	-53.6	-13.0	-40.6	
5.640	-17.4	H	3.0	34.7	1.0	-51.2	-13.0	-38.2	
7.520	-14.9	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	
High Ch, 1907.6MHz									
3.815	-21.4	V	3.0	35.3	1.0	-55.7	-13.0	-42.7	
5.723	-18.3	V	3.0	34.7	1.0	-52.0	-13.0	-39.0	
7.630	-15.1	V	3.0	34.9	1.0	-49.0	-13.0	-36.0	
3.815	-21.7	H	3.0	35.3	1.0	-56.0	-13.0	-43.0	
5.723	-16.8	H	3.0	34.7	1.0	-50.5	-13.0	-37.5	
7.630	-14.8	H	3.0	34.9	1.0	-48.7	-13.0	-35.7	

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Band

Band 2

REL99

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: Tx, 1900MHz Rel 99

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1852.4MHz									
3.705	-21.7	V	3.0	35.4	1.0	-56.1	-13.0	-43.1	
5.557	-18.6	V	3.0	34.7	1.0	-52.4	-13.0	-39.4	
7.409	-16.4	V	3.0	34.9	1.0	-50.3	-13.0	-37.3	
3.705	-21.7	H	3.0	35.4	1.0	-56.1	-13.0	-43.1	
5.557	-16.1	H	3.0	34.7	1.0	-49.8	-13.0	-36.8	
7.409	-14.3	H	3.0	34.9	1.0	-48.2	-13.0	-35.2	
Mid Ch, 1880MHz									
3.760	-21.6	V	3.0	35.3	1.0	-55.9	-13.0	-42.9	
5.640	-19.1	V	3.0	34.7	1.0	-52.8	-13.0	-39.8	
7.520	-15.8	V	3.0	34.9	1.0	-49.8	-13.0	-36.8	
3.760	-19.9	H	3.0	35.3	1.0	-54.2	-13.0	-41.2	
5.640	-17.8	H	3.0	34.7	1.0	-51.5	-13.0	-38.5	
7.520	-15.0	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	
High Ch, 1907.6MHz									
3.815	-21.4	V	3.0	35.3	1.0	-55.7	-13.0	-42.7	
5.723	-18.1	V	3.0	34.7	1.0	-51.8	-13.0	-38.8	
7.630	-15.7	V	3.0	34.9	1.0	-49.7	-13.0	-36.7	
3.815	-20.9	H	3.0	35.3	1.0	-55.2	-13.0	-42.2	
5.723	-16.6	H	3.0	34.7	1.0	-50.4	-13.0	-37.4	
7.630	-15.0	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	

Rev. 03.03.09

Band

Band 5

HSDPA

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	R. Alegre
Configuration:	EUT with AC charger
Mode:	WCDMA_HSDPA_ 850

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 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, 826.40MHz									
1.652	-26.5	V	3.0	37.4	1.0	-62.9	-13.0	-49.9	
2.479	-21.6	V	3.0	36.4	1.0	-57.0	-13.0	-44.0	
3.306	-23.5	V	3.0	35.8	1.0	-58.3	-13.0	-45.3	
1.652	-27.2	H	3.0	37.4	1.0	-63.6	-13.0	-50.6	
2.479	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
3.306	-22.2	H	3.0	35.8	1.0	-56.9	-13.0	-43.9	
Mid Ch, 836.6MHz									
1.673	-27.9	V	3.0	37.3	1.0	-64.3	-13.0	-51.3	
2.510	-23.4	V	3.0	36.4	1.0	-58.8	-13.0	-45.8	
3.346	-23.4	V	3.0	35.8	1.0	-58.1	-13.0	-45.1	
1.673	-28.7	H	3.0	37.3	1.0	-65.1	-13.0	-52.1	
2.510	-24.7	H	3.0	36.4	1.0	-60.0	-13.0	-47.0	
3.346	-23.2	H	3.0	35.8	1.0	-57.9	-13.0	-44.9	
High Ch, 846.6MHz									
1.693	-27.4	V	3.0	37.3	1.0	-63.7	-13.0	-50.7	
2.539	-24.2	V	3.0	36.3	1.0	-59.6	-13.0	-46.6	
3.386	-23.1	V	3.0	35.7	1.0	-57.8	-13.0	-44.8	
1.693	-27.2	H	3.0	37.3	1.0	-63.5	-13.0	-50.5	
2.539	-22.3	H	3.0	36.3	1.0	-57.6	-13.0	-44.6	
3.386	-23.7	H	3.0	35.7	1.0	-58.4	-13.0	-45.4	

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

Band

Band 5

REL99

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company:	LG
Project #:	14U17493
Date:	04/25/14
Test Engineer:	R. Alegre
Configuration:	EUT with AC charger
Mode:	WCDMA_Rel 99_ 850

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 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, 826.40MHz									
1.652	-25.9	V	3.0	37.4	1.0	-62.2	-13.0	-49.2	
2.479	-21.4	V	3.0	36.4	1.0	-56.7	-13.0	-43.7	
3.306	-22.7	V	3.0	35.8	1.0	-57.5	-13.0	-44.5	
1.652	-28.1	H	3.0	37.4	1.0	-64.4	-13.0	-51.4	
2.479	-22.3	H	3.0	36.4	1.0	-57.7	-13.0	-44.7	
3.306	-22.0	H	3.0	35.8	1.0	-56.8	-13.0	-43.8	
Mid Ch, 836.6MHz									
1.673	-27.1	V	3.0	37.3	1.0	-63.5	-13.0	-50.5	
2.510	-23.1	V	3.0	36.4	1.0	-58.5	-13.0	-45.5	
3.346	-22.6	V	3.0	35.8	1.0	-57.4	-13.0	-44.4	
1.673	-28.7	H	3.0	37.3	1.0	-65.1	-13.0	-52.1	
2.510	-23.4	H	3.0	36.4	1.0	-58.7	-13.0	-45.7	
3.346	-23.2	H	3.0	35.8	1.0	-57.9	-13.0	-44.9	
High Ch, 846.6MHz									
1.693	-27.2	V	3.0	37.3	1.0	-63.5	-13.0	-50.5	
2.539	-23.6	V	3.0	36.3	1.0	-58.9	-13.0	-45.9	
3.386	-22.3	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
1.693	-25.6	H	3.0	37.3	1.0	-61.9	-13.0	-48.9	
2.539	-21.9	H	3.0	36.3	1.0	-57.2	-13.0	-44.2	
3.386	-22.2	H	3.0	35.7	1.0	-56.9	-13.0	-43.9	

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 #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: EGPRS 1900

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
GSM1900 EGPRS	Low Ch, 1850MHz									
	3.700	-9.6	V	3.0	35.4	1.0	-44.0	-13.0	-31.0	
	5.550	-16.8	V	3.0	34.7	1.0	-50.5	-13.0	-37.5	
	7.400	-15.3	V	3.0	34.9	1.0	-49.2	-13.0	-36.2	
	3.700	-10.0	H	3.0	35.4	1.0	-44.4	-13.0	-31.4	
	5.550	-16.0	H	3.0	34.7	1.0	-49.8	-13.0	-36.8	
	7.400	-14.0	H	3.0	34.9	1.0	-47.9	-13.0	-34.9	
	Mid Ch, 1880.0MHz									
	3.760	-6.3	V	3.0	35.3	1.0	-40.6	-13.0	-27.6	
	5.640	-8.8	V	3.0	34.7	1.0	-42.5	-13.0	-29.5	
	7.520	-15.4	V	3.0	34.9	1.0	-49.3	-13.0	-36.3	
	3.760	-7.9	H	3.0	35.3	1.0	-42.2	-13.0	-29.2	
	5.640	-11.7	H	3.0	34.7	1.0	-45.4	-13.0	-32.4	
	7.520	-15.1	H	3.0	34.9	1.0	-49.1	-13.0	-36.1	
	High Ch, 1909.8 MHz									
	3.820	-4.5	V	3.0	35.3	1.0	-38.8	-13.0	-25.8	
	5.729	-10.9	V	3.0	34.7	1.0	-44.6	-13.0	-31.6	
	7.639	-14.0	V	3.0	35.0	1.0	-48.0	-13.0	-35.0	
	3.820	-16.9	H	3.0	35.3	1.0	-51.2	-13.0	-38.2	
	5.729	-9.3	H	3.0	34.7	1.0	-43.1	-13.0	-30.1	
	7.639	-13.2	H	3.0	35.0	1.0	-47.1	-13.0	-34.1	

Rev. 03.03.09

Band

GSM1900

GPRS

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: GPRS 1900

Chamber	Pre-amplifer	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, 1850MHz									
3.700	-9.4	V	3.0	35.4	1.0	-43.8	-13.0	-30.8	
5.550	-16.3	V	3.0	34.7	1.0	-50.0	-13.0	-37.0	
7.400	-15.7	V	3.0	34.9	1.0	-49.6	-13.0	-36.6	
3.700	-9.1	H	3.0	35.4	1.0	-43.5	-13.0	-30.5	
5.550	-15.4	H	3.0	34.7	1.0	-49.2	-13.0	-36.2	
7.400	-14.0	H	3.0	34.9	1.0	-47.9	-13.0	-34.9	
Mid Ch, 1880.0MHz									
3.760	-5.1	V	3.0	35.3	1.0	-39.4	-13.0	-26.4	
5.640	-10.4	V	3.0	34.7	1.0	-44.1	-13.0	-31.1	
7.520	-15.4	V	3.0	34.9	1.0	-49.3	-13.0	-36.3	
3.760	-7.7	H	3.0	35.3	1.0	-42.1	-13.0	-29.1	
5.640	-11.6	H	3.0	34.7	1.0	-45.4	-13.0	-32.4	
7.520	-14.9	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	
High Ch, 1909.8 MHz									
3.820	-4.4	V	3.0	35.3	1.0	-38.6	-13.0	-25.6	
5.729	-11.5	V	3.0	34.7	1.0	-45.2	-13.0	-32.2	
7.639	-15.7	V	3.0	35.0	1.0	-49.6	-13.0	-36.6	
3.820	-15.9	H	3.0	35.3	1.0	-50.2	-13.0	-37.2	
5.729	-9.2	H	3.0	34.7	1.0	-43.0	-13.0	-30.0	
7.639	-14.4	H	3.0	35.0	1.0	-48.4	-13.0	-35.4	

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Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: EGPRS 850

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 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, 824.2MHz									
GSM850	1.648	-25.8	V	3.0	37.4	1.0	-62.2	-13.0	-49.2	
	2.473	-24.1	V	3.0	36.4	1.0	-59.5	-13.0	-46.5	
	3.297	-21.8	V	3.0	35.8	1.0	-56.6	-13.0	-43.6	
	1.648	-26.5	H	3.0	37.4	1.0	-62.9	-13.0	-49.9	
	2.473	-23.2	H	3.0	36.4	1.0	-58.6	-13.0	-45.6	
	3.297	-22.1	H	3.0	35.8	1.0	-56.9	-13.0	-43.9	
	Mid Ch, 836.6MHz									
	1.673	-28.2	V	3.0	37.3	1.0	-64.5	-13.0	-51.5	
	2.510	-24.9	V	3.0	36.4	1.0	-60.2	-13.0	-47.2	
	3.346	-22.2	V	3.0	35.8	1.0	-57.0	-13.0	-44.0	
	1.673	-26.3	H	3.0	37.3	1.0	-62.7	-13.0	-49.7	
	2.510	-26.3	H	3.0	36.4	1.0	-61.7	-13.0	-48.7	
	3.346	-22.0	H	3.0	35.8	1.0	-56.7	-13.0	-43.7	
	High Ch, 848.8MHz									
	1.698	-24.8	V	3.0	37.3	1.0	-61.1	-13.0	-48.1	
	2.547	-23.8	V	3.0	36.3	1.0	-59.2	-13.0	-46.2	
	3.395	-22.6	V	3.0	35.7	1.0	-57.3	-13.0	-44.3	
	1.698	-26.5	H	3.0	37.3	1.0	-62.8	-13.0	-49.8	
	2.547	-23.8	H	3.0	36.3	1.0	-59.2	-13.0	-46.2	
	3.395	-23.2	H	3.0	35.7	1.0	-57.9	-13.0	-44.9	

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

Band

GSM850

GPRS

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: LG
Project #: 14U17493
Date: 04/25/14
Test Engineer: R. Alegre
Configuration: EUT with AC charger
Mode: GPRS 850

Chamber	Pre-amplifer	Filter	Limit
3m Chamber	T34 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, 824.2MHz									
1.648	-24.8	V	3.0	37.4	1.0	-61.2	-13.0	-48.2	
2.473	-24.0	V	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3.297	-22.8	V	3.0	35.8	1.0	-57.6	-13.0	-44.6	
1.648	-26.6	H	3.0	37.4	1.0	-63.0	-13.0	-50.0	
2.473	-13.2	H	3.0	36.4	1.0	-48.6	-13.0	-35.6	
3.297	-22.1	H	3.0	35.8	1.0	-56.9	-13.0	-43.9	
Mid Ch, 836.6MHz									
1.673	-28.1	V	3.0	37.3	1.0	-64.5	-13.0	-51.5	
2.510	-24.8	V	3.0	36.4	1.0	-60.1	-13.0	-47.1	
3.346	-23.1	V	3.0	35.8	1.0	-57.9	-13.0	-44.9	
1.673	-26.2	H	3.0	37.3	1.0	-62.5	-13.0	-49.5	
2.510	-26.1	H	3.0	36.4	1.0	-61.5	-13.0	-48.5	
3.346	-22.0	H	3.0	35.8	1.0	-56.7	-13.0	-43.7	
High Ch, 848.8MHz									
1.698	-24.3	V	3.0	37.3	1.0	-60.6	-13.0	-47.6	
2.547	-23.8	V	3.0	36.3	1.0	-59.1	-13.0	-46.1	
3.395	-22.4	V	3.0	35.7	1.0	-57.1	-13.0	-44.1	
1.698	-26.6	H	3.0	37.3	1.0	-62.9	-13.0	-49.9	
2.547	-23.9	H	3.0	36.3	1.0	-59.2	-13.0	-46.2	
3.395	-23.1	H	3.0	35.7	1.0	-57.8	-13.0	-44.8	

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