



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 + NFC

MODEL NUMBER: LG-D631, D631, LGD631

FCC ID: ZNFD631

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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 + NFC

MODEL: LG-D631, D631, LGD631

SERIAL NUMBER: 403KPMZ000323

DATE TESTED: APRIL 2 - 8, 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:

$$\text{EIRP} = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)} + \text{Substitution Antenna Factor (dBi)}$$

$$\text{ERP} = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)}$$

$$(\text{Path loss} = \text{Signal generator output} - \text{PSA reading with substitution antenna})$$

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 + NFC that is manufactured by (LG).

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	33.6	2290.87		
	824~849	GPRS	33.6	2290.87	28.201	660.85
	824~849	EGPRS	27.4	549.54	23.971	249.52
GSM1900	1850~1910	GMSK	30.5	1122.02		
	1850~1910	GPRS	30.5	1122.02	29.07	807.24
	1850~1910	EGPRS	26.4	436.52	26.12	409.26

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	23.7	234.42	20.581	114.31
	824~849	HSDPA	23.7	234.42	20.731	118.33
	824~849	HSUPA	22.9	194.98		
Band 2	1850~1910	REL99	23.6	229.09	23.33	215.28
	1850~1910	HSDPA	23.6	229.09	23.28	212.81
	1850~1910	HSUPA	23.5	223.87		

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	23.61	229.61	17.871	61.25
	704~716	10MHz	16QAM	22.39	173.38	17.011	50.25

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	23.61	229.61	17.421	55.22
	704~716	5MHz	16QAM	22.28	169.04	16.301	42.67

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	10MHz	QPSK	24.02	252.35	20.351	108.42
	824~849	10MHz	16QAM	22.78	189.67	19.351	86.12

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	5MHz	QPSK	24.06	254.68	19.981	99.56
	824~849	5MHz	16QAM	22.75	188.36	19.001	79.45

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE4	1710~1755	10MHz	QPSK	24.10	257.04	23.85	242.66

	1710~1755	10MHz	16QAM	22.86	193.20	22.81	190.99
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FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE4	1710~1755	5MHz	QPSK	24.12	258.23	23.57	227.51
	1710~1755	5MHz	16QAM	22.85	192.75	22.24	167.49

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	24.05	254.10	23.65	231.74
	1850~1910	10MHz	16QAM	22.84	192.31	22.86	193.2

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE2	1850~1910	5MHz	QPSK	24.05	254.10	23.6	229.09
	1850~1910	5MHz	16QAM	22.84	192.31	22.68	185.35

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	-3.93
Band 2, 1850~1910MHz	-1.21
Band 4, 1710~1755MHz	0.15
Band 17, 704~716MHz	-3.03

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	LG-D631	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

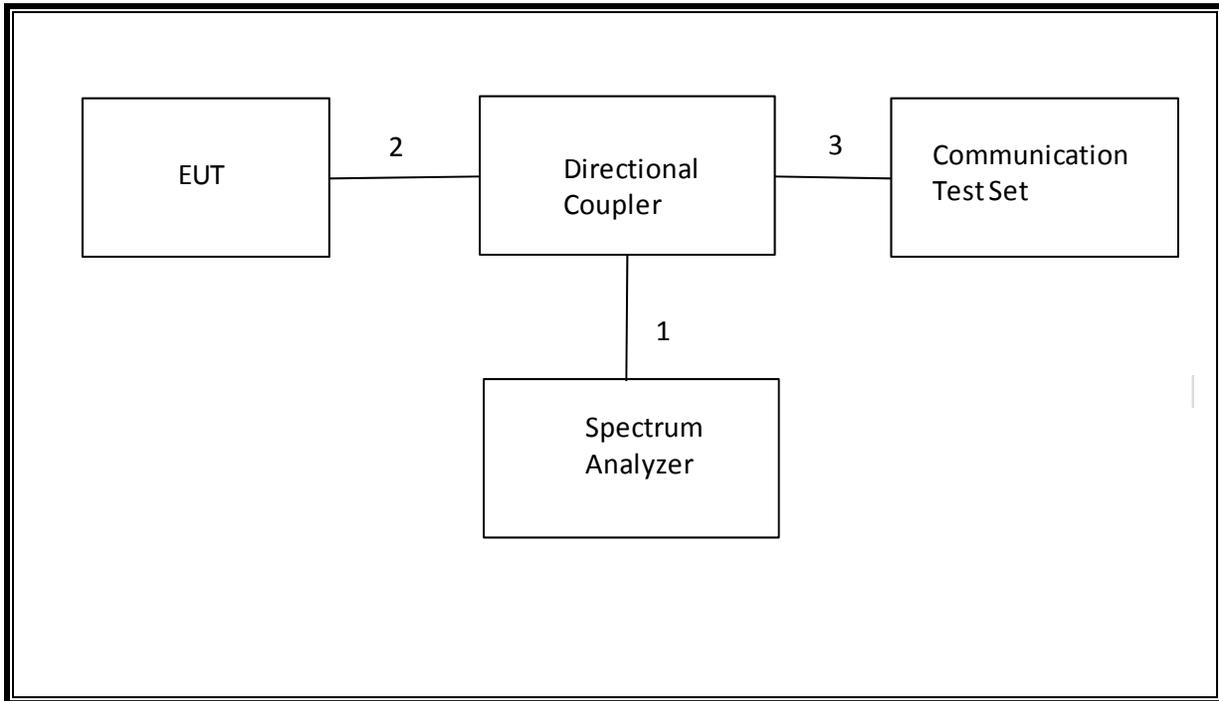
I/O CABLES (RADIATED SETUP)

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

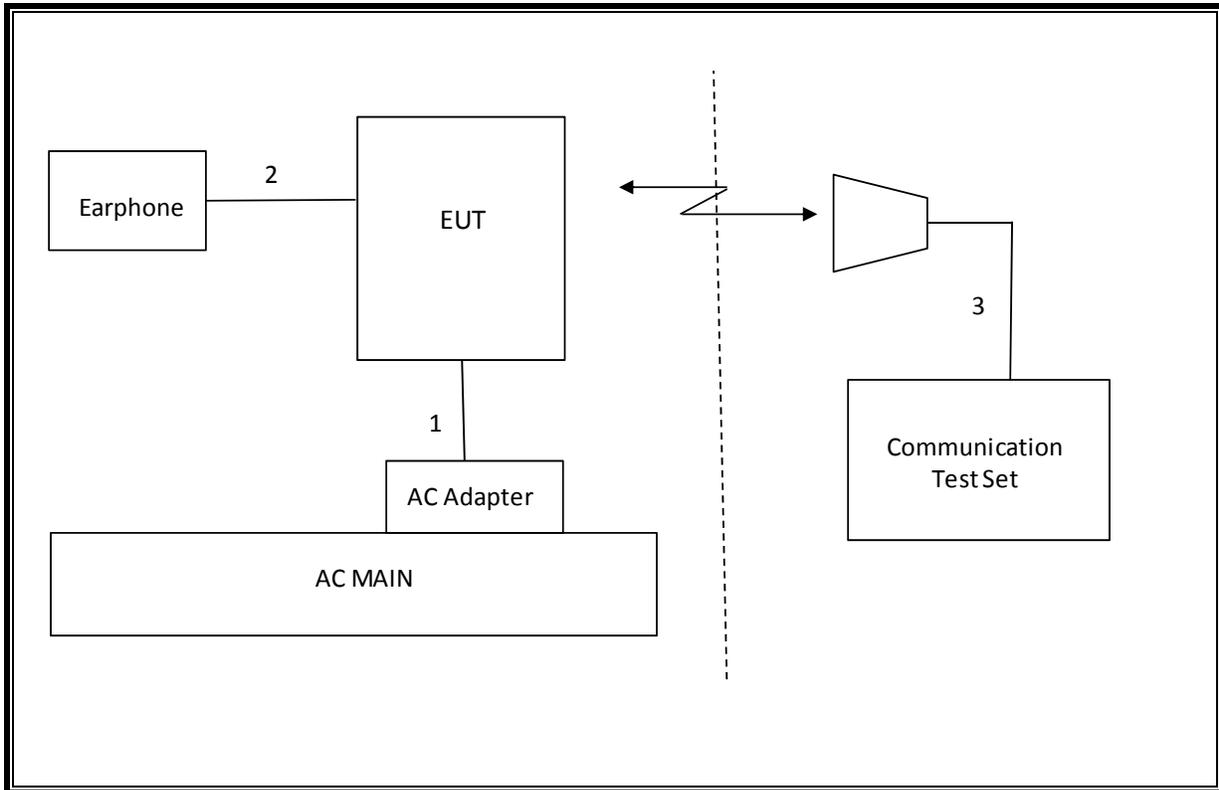
TEST SETUP

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	02/26/14
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	02/14/14
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	8977KHz
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	-18.415dBm
2.1046	N/A	Conducted output power	N/A		Pass	33.6dBm
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	28.20dBm
27.50(b)(10)	N/A		34.77 dBm		Pass	
24.232(c) 27.50(d)(4)	RSS-133(6.4) RSS-139(6.4)	Equivalent Isotropic Radiated Power	33dBm 30dBm		Pass	29.07dBm
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	-40.6 dBm

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	33.6	
		190	836.6	33.4	
		251	848.8	33.5	
	GPRS	128	824.2	33.6	31.6
		190	836.6	33.3	31.6
		251	848.8	33.4	31.6
	EGPRS	128	824.2	27.4	27.4
		190	836.6	27.3	27.4
		251	848.8	27.1	27.2
GSM1900	GMSK	512	1850.2	30.4	
		661	1880	30.5	
		810	1909.8	30.4	
	GPRS	512	1850.2	30.5	28.3
		661	1880	30.5	28.4
		810	1909.8	30.6	28.5
	EGPRS	512	1850.2	26.4	26.5
		661	1880	26.3	26.4
		810	1909.8	26.2	26.2

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
	β_c	Not Applicable
	β_d	Not Applicable
	β_{ec}	Not Applicable
	β_c/β_d	8/15
	β_{hs}	Not Applicable
	β_{ed}	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	23.7
		4183	836.6	23.7
		4233	846.6	23.5
Band 2	REL99	9262	1852.4	23.6
		9400	1880	23.6
		9538	1907.6	23.5

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			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	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			
	$A_{hs} = \beta_{hs}/\beta_c$	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	23.6
			4183	836.6	23.6
			4233	846.6	23.6
		2	4132	826.4	23.7
			4183	836.6	23.6
			4233	846.6	23.5
		3	4132	826.4	23.1
			4183	836.6	23.1
			4233	846.6	23.0
		4	4132	826.4	23.2
			4183	836.6	23.1
			4233	846.6	23.0
Band 2	HSDPA	1	9262	1852.4	23.6

			9400	1880	23.6
			9538	1907.6	23.5
		2	9262	1852.4	23.6
			9400	1880	23.5
			9538	1907.6	23.5
		3	9262	1852.4	23.1
			9400	1880	23.1
			9538	1907.6	23.1
		4	9262	1852.4	23.1
			9400	1880	23.0
			9538	1907.6	23.0

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
	β_c/β_d	11/15	6/15	15/9	2/15	15/15
Bhs	22/15	12/15	30/15	4/15	30/15	
β_{ed} (note1)	1309/225	94/75	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 = β_{hs}/β_c	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: β_{ed} 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	22.9
			4183	836.6	22.6
			4233	846.6	22.8
		2	4132	826.4	21.7
			4183	836.6	21.6
			4233	846.6	21.7
		3	4132	826.4	22.3
			4183	836.6	22.2
			4233	846.6	22.4
		4	4132	826.4	21.5
			4183	836.6	21.7
			4233	846.6	21.7
		5	4132	826.4	23.2
			4183	836.6	23.2
			4233	846.6	23.4
Band 2	HSUPA	1	9262	1852.4	22.9
			9400	1880	22.5
			9538	1907.6	23.5
		2	9262	1852.4	21.7
			9400	1880	21.6
			9538	1907.6	21.5
		3	9262	1852.4	22.4
			9400	1880	22.5
			9538	1907.6	22.1
		4	9262	1852.4	21.6
			9400	1880	21.7
			9538	1907.6	21.7
		5	9262	1852.4	22.8
			9400	1880	23.3
			9538	1907.6	23.3

8.4. LTE OUTPUT VERIFICATION

8.4.1. LTE OUTPUT RESULT

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Full Power
						Avg Pwr (dBm)
						23790
						710 MHz
LTE Band 17	10	QPSK	1	0	0	23.61
			1	25	0	23.49
			1	49	0	23.49
			25	0	1	22.48
			25	12	1	22.46
			25	25	1	22.49
			50	0	1	22.51
		16QAM	1	0	1	22.39
			1	25	1	22.27
			1	49	1	22.29
			25	0	2	21.55
			25	12	2	21.47
			25	25	2	21.49
			50	0	2	21.55
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)
						23790
						710 MHz
LTE Band 17	5	QPSK	1	0	0	23.61
			1	12	0	23.58
			1	24	0	23.53
			12	0	1	22.49
			12	7	1	22.48
			12	13	1	22.43
			25	0	1	22.48
		16QAM	1	0	1	22.24
			1	12	1	22.24
			1	24	1	22.28
			12	0	2	21.49
			12	7	2	21.49
			12	13	2	21.52
			25	0	2	21.58

Full Power								
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20450	20525	20600
						829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0	24.02	23.95	24.08
			1	25	0	23.99	24.09	23.98
			1	49	0	23.94	24.11	23.94
			25	0	1	22.88	22.87	22.97
			25	12	1	22.86	23.00	22.95
			25	25	1	22.84	23.03	22.96
			50	0	1	22.90	23.10	23.06
		16QAM	1	0	1	22.78	22.77	22.81
			1	25	1	22.72	22.84	22.78
			1	49	1	22.72	22.83	22.66
			25	0	2	22.04	22.03	22.12
			25	12	2	21.97	22.04	22.03
			25	25	2	21.94	22.06	22.03
			50	0	2	22.02	22.14	22.12
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20425	20525	20625
						826.5 MHz	836.5 MHz	846.5 MHz
LTE Band 5	5	QPSK	1	0	0	24.06	24.03	24.16
			1	12	0	24.00	24.01	24.07
			1	24	0	24.03	24.16	24.04
			12	0	1	22.85	22.89	22.97
			12	6	1	22.88	23.04	22.96
			12	13	1	22.83	23.02	22.97
			25	0	1	22.90	23.06	23.00
		16QAM	1	0	1	22.72	22.80	22.80
			1	12	1	22.70	22.78	22.76
			1	24	1	22.75	22.88	22.84
			12	0	2	22.00	21.99	22.08
			12	6	2	22.02	22.12	22.10
			12	13	2	21.99	22.10	22.08
			25	0	2	22.09	22.17	22.20

Full Power								
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						20000	20175	20350
						1715 MHz	1732.5 MHz	1750 MHz
LTE Band 4	10	QPSK	1	0	0	24.10	24.08	24.07
			1	25	0	24.07	23.95	24.00
			1	49	0	24.07	24.07	24.01
			25	0	1	23.08	23.04	23.00
			25	12	1	23.03	22.99	22.99
			25	25	1	23.05	23.08	23.03
			50	0	1	23.11	23.08	23.02
		16QAM	1	0	1	22.86	22.91	22.88
			1	25	1	22.84	22.83	22.80
			1	49	1	22.85	22.86	22.80
			25	0	2	22.13	22.09	22.02
			25	12	2	22.04	21.99	21.94
			25	25	2	22.09	22.07	21.94
			50	0	2	22.14	22.08	21.95
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						19975	20175	20375
						1712.5 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	24.01	24.07	24.15
			1	12	0	24.12	24.11	24.04
			1	24	0	24.11	24.11	24.03
			12	0	1	23.03	23.04	22.94
			12	7	1	23.03	23.01	23.00
			12	13	1	23.02	23.04	22.97
			25	0	1	23.09	23.02	22.97
		16QAM	1	0	1	22.84	22.75	22.86
			1	12	1	22.79	22.79	22.71
			1	24	1	22.85	22.83	22.77
			12	0	2	22.08	22.11	21.96
			12	7	2	22.12	22.03	21.98
			12	13	2	22.12	22.07	21.96
			25	0	2	22.20	22.09	22.05

Full Power								
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18650	18900	19150
						1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	24.05	24.06	24.01
			1	25	0	23.92	24.06	24.04
			1	49	0	24.02	23.99	24.09
			25	0	1	23.03	23.04	23.02
			25	12	1	22.97	22.99	23.01
			25	25	1	23.01	23.07	23.06
			50	0	1	23.03	22.73	23.06
		16QAM	1	0	1	22.84	22.79	22.83
			1	25	1	22.77	22.74	22.80
			1	49	1	22.83	22.78	22.86
			25	0	2	22.12	22.01	22.16
			25	12	2	22.04	21.95	22.14
			25	25	2	21.98	22.04	22.15
			50	0	2	22.03	22.02	22.09
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Avg Pwr (dBm)		
						18625	18900	19175
						1852.5 MHz	1880 MHz	1907.5 MHz
LTE Band 2	5	QPSK	1	0	0	23.99	23.98	24.03
			1	12	0	24.05	24.00	24.04
			1	24	0	24.04	24.03	24.07
			12	0	1	23.06	23.02	23.14
			12	7	1	23.01	23.01	23.09
			12	13	1	23.01	23.01	23.09
			25	0	1	23.08	23.00	23.12
		16QAM	1	0	1	22.80	22.75	23.20
			1	12	1	22.84	22.77	23.20
			1	24	1	22.74	22.87	23.20
			12	0	2	22.14	22.03	22.10
			12	7	2	22.14	22.08	22.10
			12	13	2	22.17	22.06	22.08
			25	0	2	22.20	22.14	22.06

9. PEAK TO AVERAGE RATIO

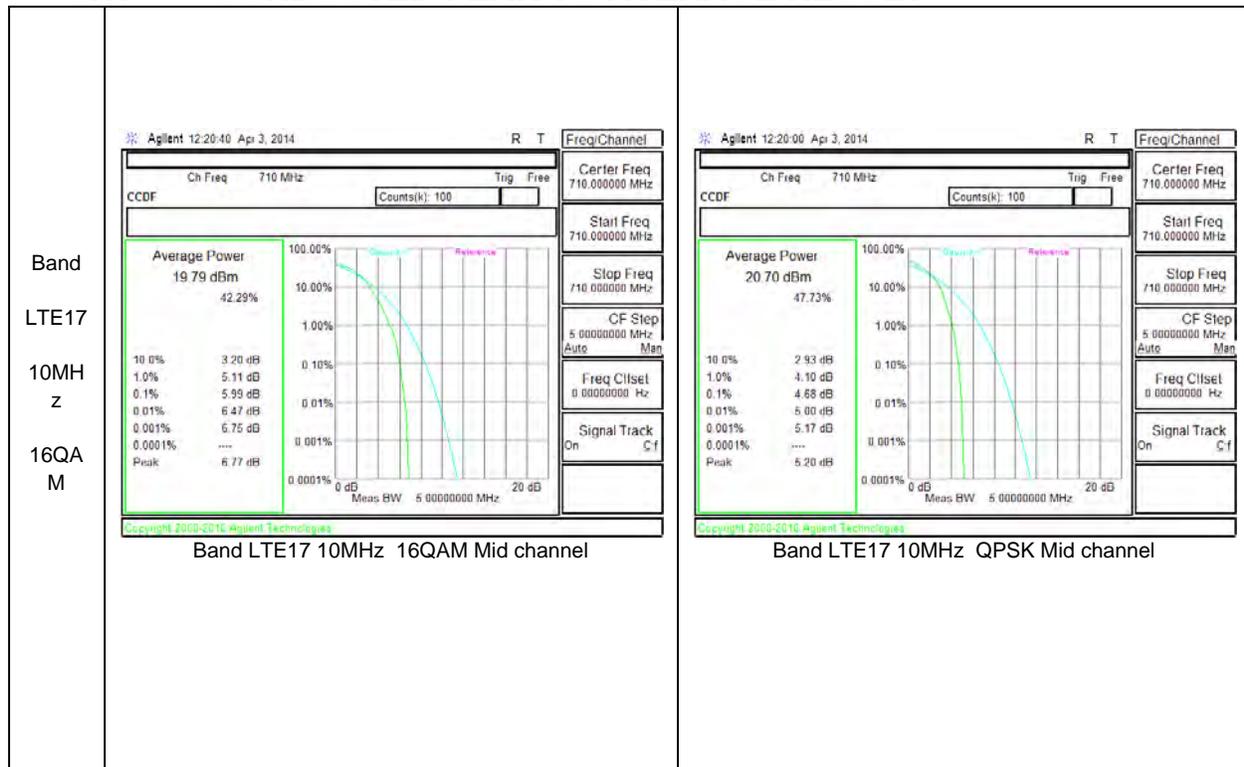
Test Procedure

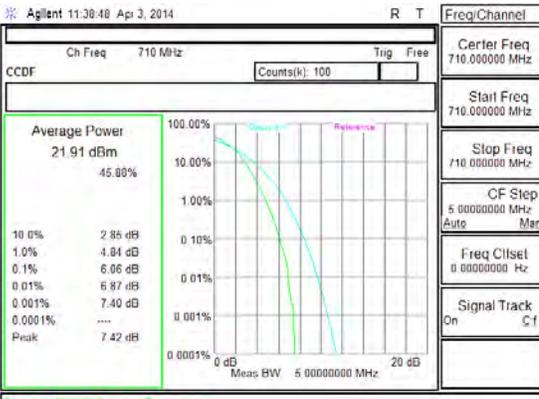
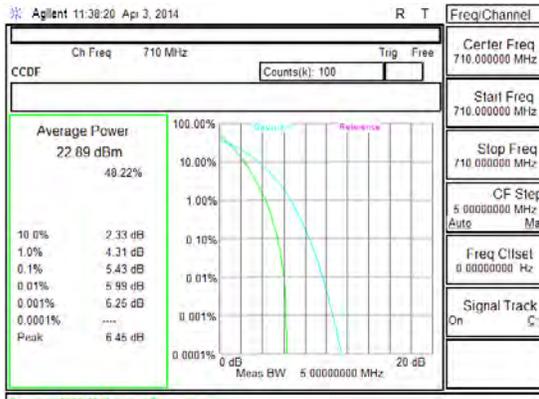
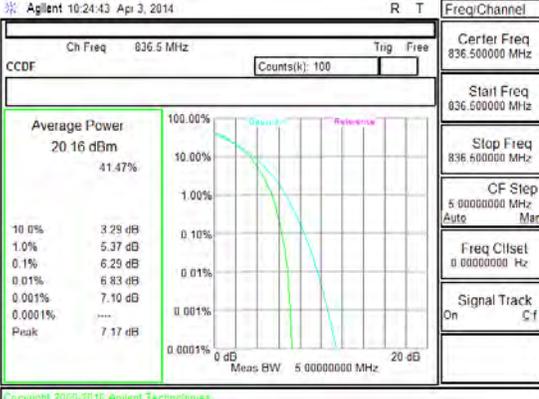
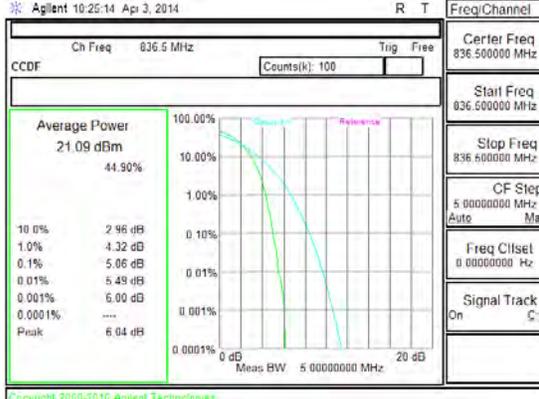
Per KDB 971168 D01 Power Meas License Digital Systems v02r01

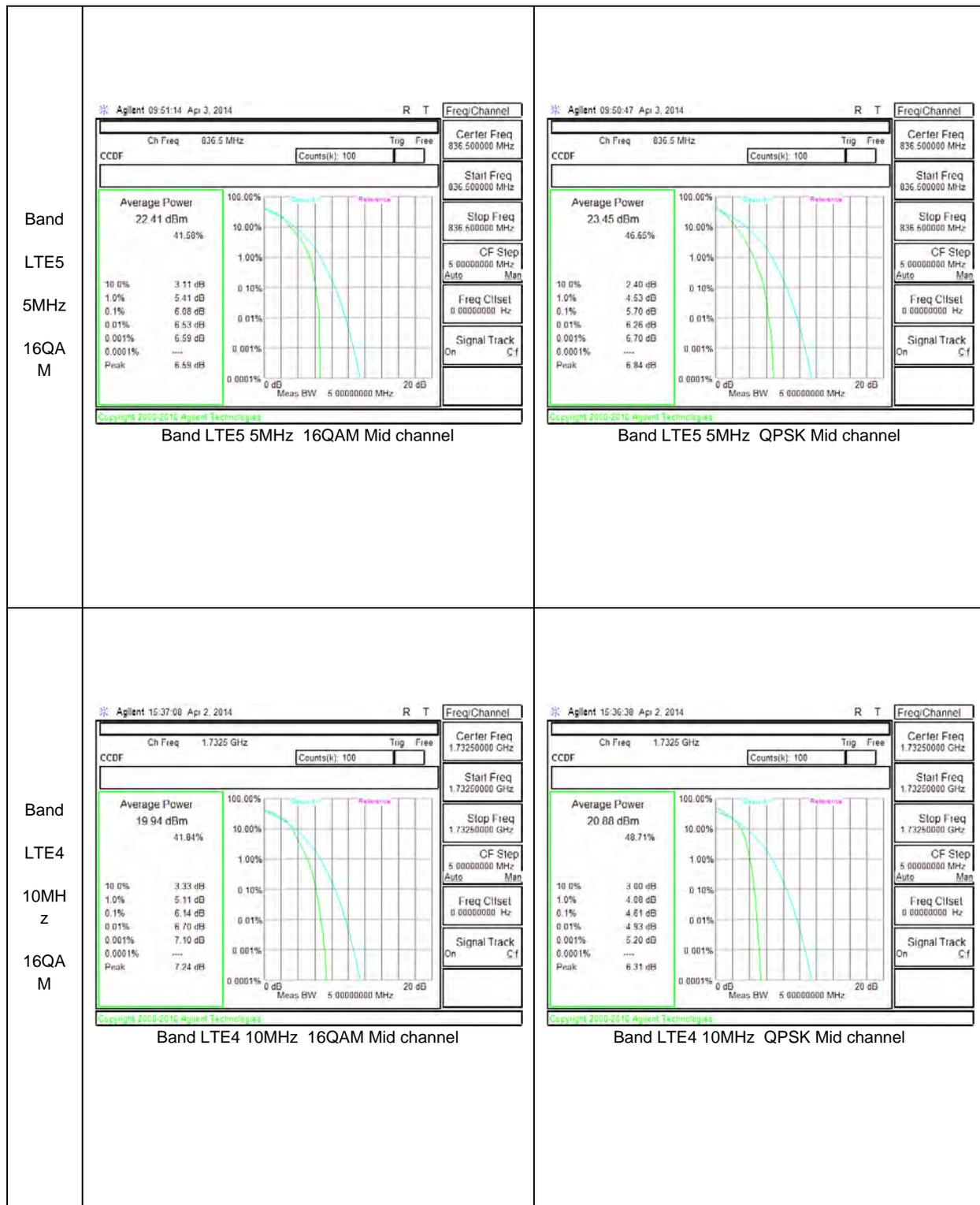
Test Spec

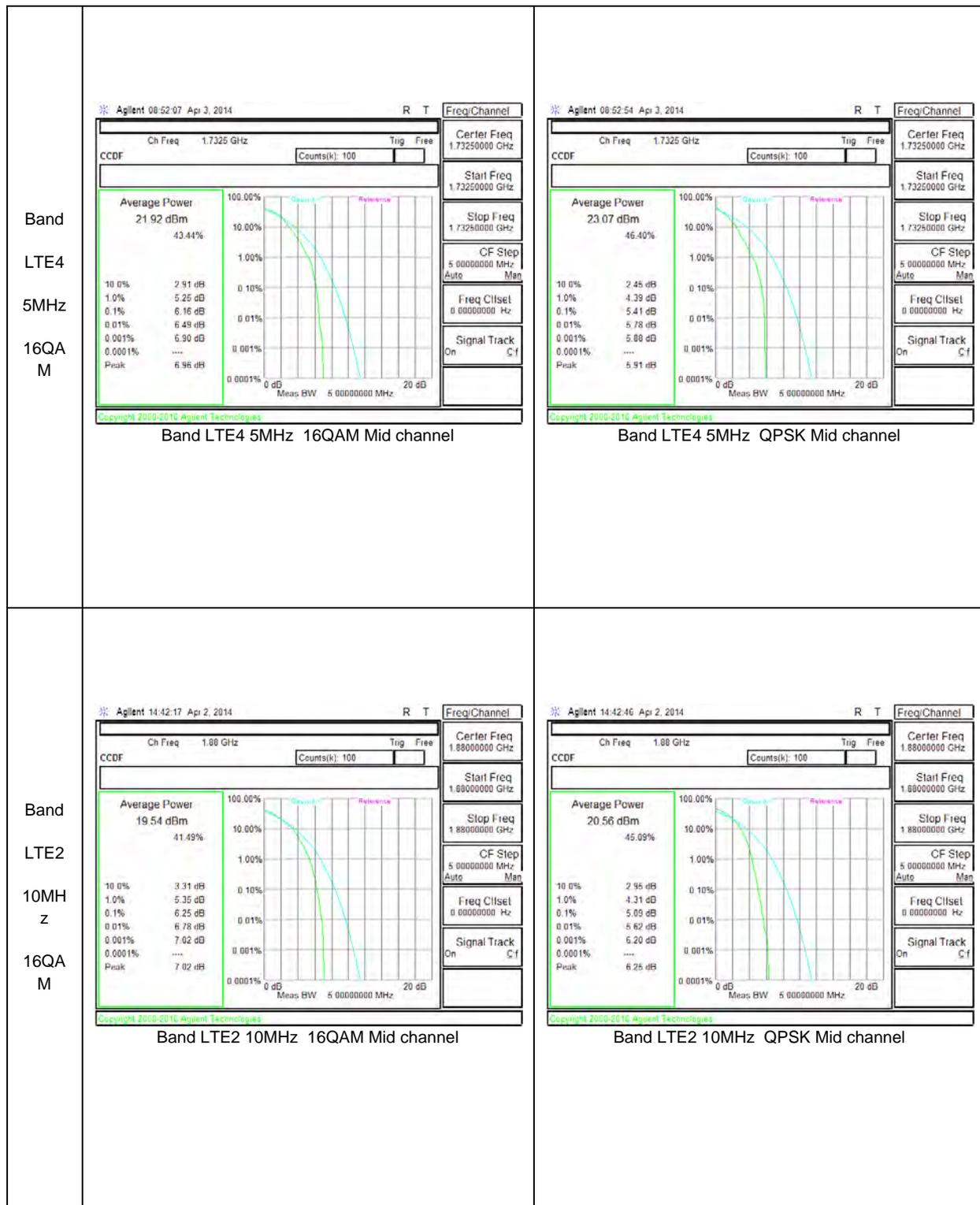
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

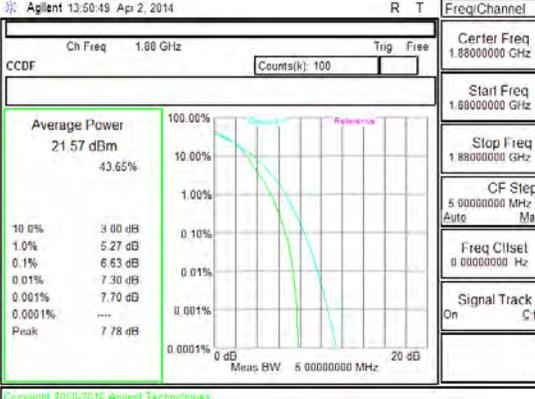
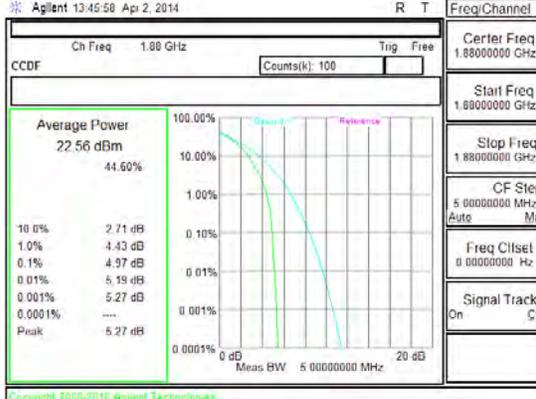
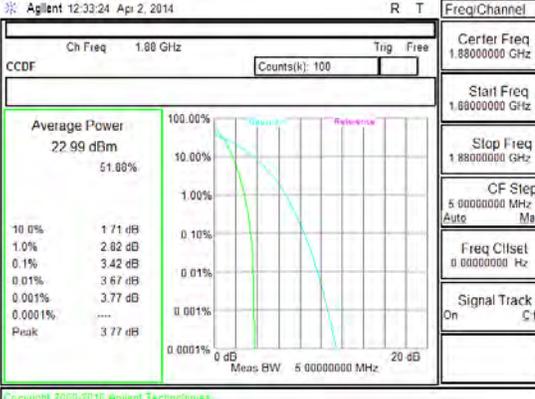
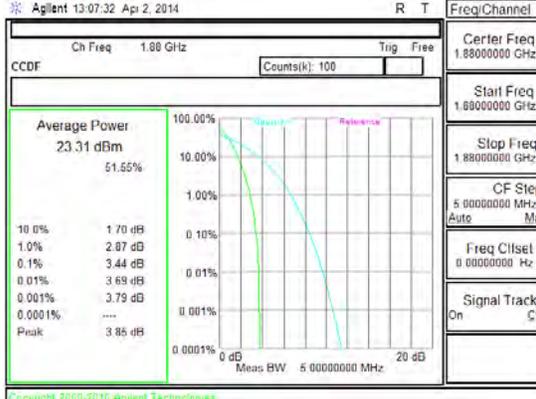
9.1. CONDUCTED PEAK TO AVERAGE RESULT

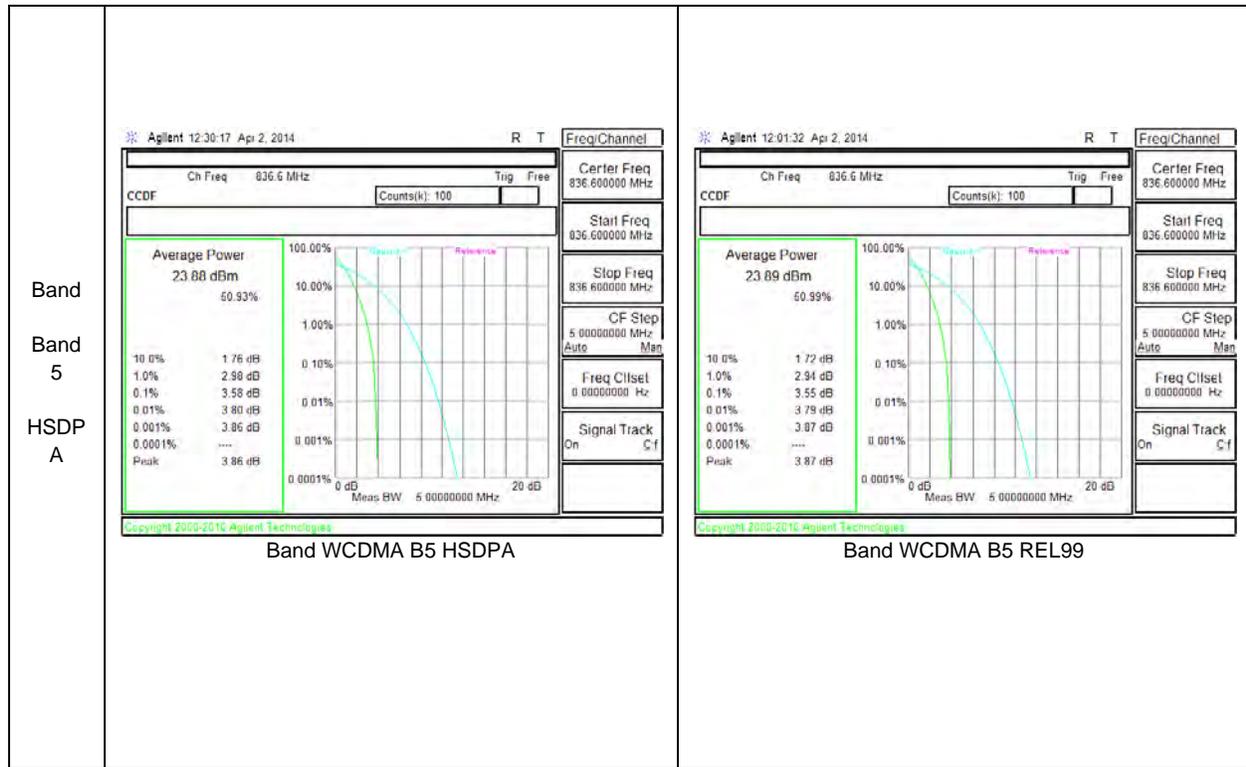


<p>Band LTE17 5MHz 16QAM</p>	 <p>Band LTE17 5MHz 16QAM Mid channel</p>	 <p>Band LTE17 5MHz QPSK Mid channel</p>
<p>Band LTE5 10MHz 16QAM</p>	 <p>Band LTE5 10MHz 16QAM Mid channel</p>	 <p>Band LTE5 10MHz QPSK Mid channel</p>





<p>Band LTE2 5MHz 16QAM</p>	 <p>Band LTE2 5MHz 16QAM Mid channel</p>	 <p>Band LTE2 5MHz QPSK Mid channel</p>
<p>Band Band 2 HSDPA</p>	 <p>Band WCDMA B2 HSDPA</p>	 <p>Band WCDMA B2 REL99</p>



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)

MODES TESTED

GSM 850/1900 & WCDMA B2/B5 & LTE B2/B4/B5/B17

10.1.1. OCCUPIED BANDWIDTH RESULTS

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
GSM850	GPRS	128	824.2	240	310
		190	836.6	246	317
		251	848.8	248	316
	EGPRS	128	824.2	245	308
		190	836.6	243	317
		251	848.8	244	320
GSM1900	GPRS	512	1850.2	239	315
		661	1880	242	319
		810	1909.8	241	313
	EGPRS	512	1850.2	240	303
		661	1880	240	302
		810	1909.8	244	305
Band 5	REL99	4132	826.4	4159	4620
		4183	836.6	4139	4610
		4233	846.6	4150	4617
	HSDPA	4132	826.4	4135	4620
		4183	836.6	4148	4599
		4233	846.6	4131	4626
Band 2	REL99	9262	1852.4	4138	4626
		9400	1880	4146	4638
		9538	1907.6	4146	4645
	HSDPA	9262	1852.4	4145	4628
		9400	1880	4136	4620
		9538	1907.6	4141	4641

10.1.2. LTE OCCUPIED BANDWIDTH RESULTS

Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE17	10	QPSK	50/0	709	8948	9674
			50/0	710	8961	9658
			50/0	711	8962	9902
		16QAM	50/0	709	8959	9706
			50/0	710	8966	9774
			50/0	711	8977	9698

Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE17	5	QPSK	25/0	706.5	4477	4892
			25/0	710	4477	4890
			25/0	713.5	4492	4906
		16QAM	25/0	706.5	4480	4899
			25/0	710	4479	4892
			25/0	713.5	4482	4933

Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE5	10	QPSK	50/0	829	8946	9677
			50/0	836.5	8941	9787
			50/0	844	8943	9740
		16QAM	50/0	829	8963	9659
			50/0	836.5	8958	9703
			50/0	844	8958	9763

Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE5	5	QPSK	25/0	826.5	4461	4924
			25/0	836.5	4478	4877
			25/0	846.5	4469	4897
		16QAM	25/0	826.5	4472	4953
			25/0	836.5	4476	4930

			25/0	846.5	4478	4916
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Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE4	10	QPSK	50/0	1715	8945	9688
			50/0	1732.5	8950	9713
			50/0	1750	8949	9664
		16QAM	50/0	1715	8928	9669
			50/0	1732.5	8967	9753
			50/0	1750	8960	9723

Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE4	5	QPSK	25/0	1712.5	4479	4943
			25/0	1732.5	4480	4902
			25/0	1752.5	4468	4888
		16QAM	25/0	1712.5	4484	4868
			25/0	1732.5	4479	4948
			25/0	1752.5	4462	4898

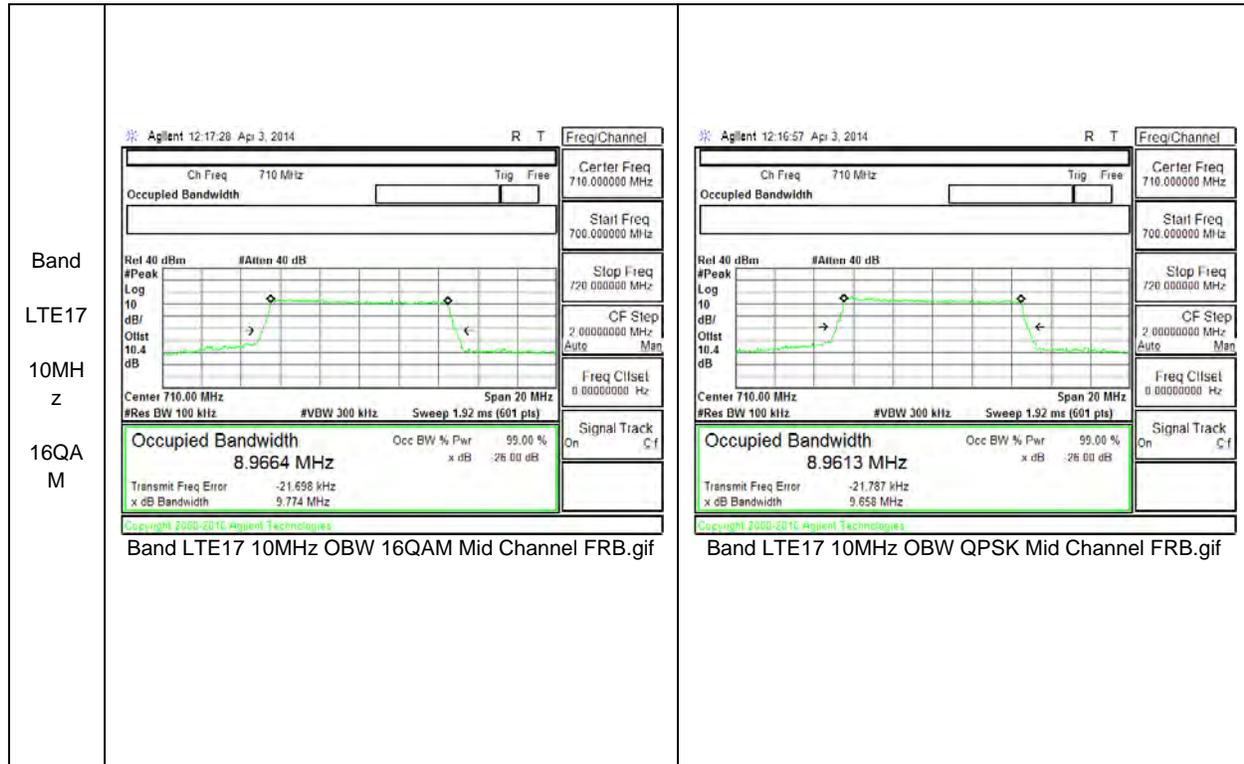
Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE2	10	QPSK	50/0	1855	8950	9778
			50/0	1880	8952	9763
			50/0	1905	8939	9686
		16QAM	50/0	1855	8968	9698
			50/0	1880	8940	9792
			50/0	1905	8921	9652

Band	BW(MHz)	Mode	RB/RB	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
LTE2	5	QPSK	25/0	1852.5	4536	5082
			25/0	1880	4553	5045
			25/0	1907.5	4522	5039
		16QAM	25/0	1852.5	4535	5039

FCC ID: ZNFD631

			25/0	1880	4554	5106
			25/0	1907.5	4548	5054

10.1.3. OCCUPIED BANDWIDTH PLOTS



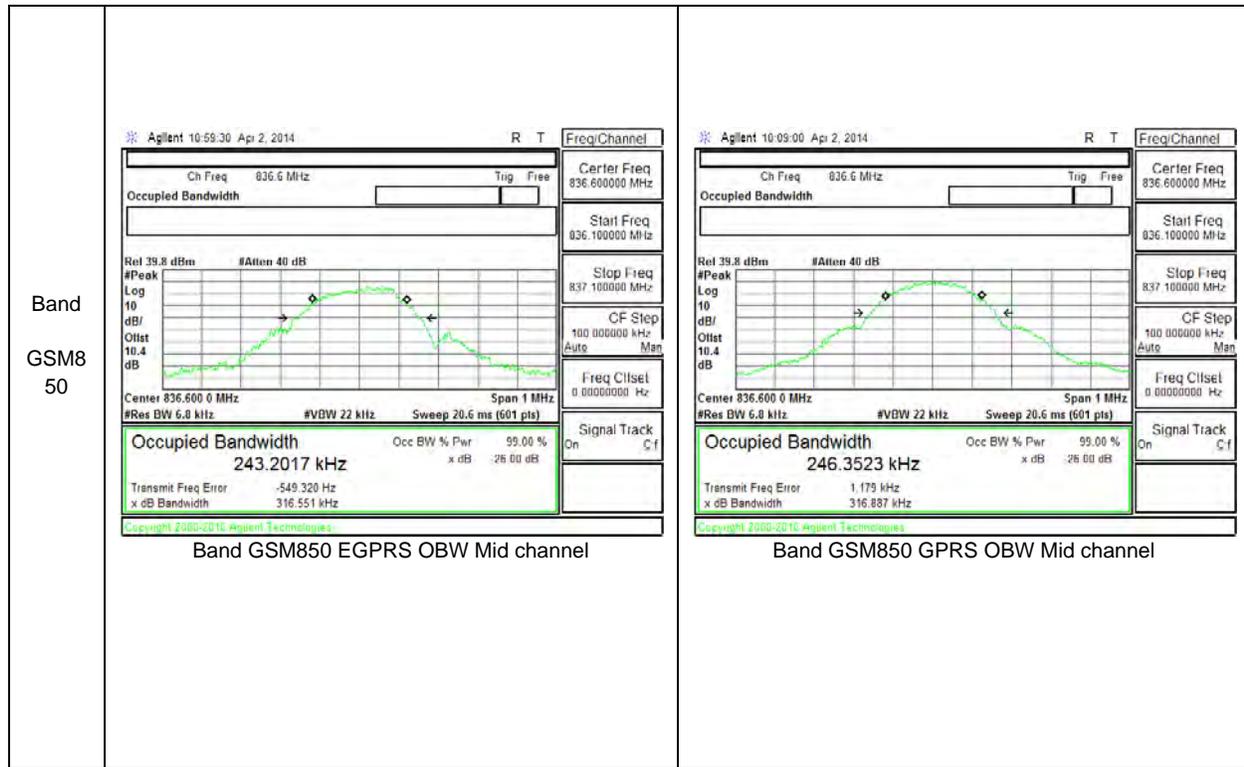
<p>Band LTE17 5MHz 16QAM</p>	<p>Agilent 11:40:01 Apr 3, 2014</p> <p>Ch Freq 710 MHz</p> <p>Center Freq 710.000000 MHz</p> <p>Start Freq 705.000000 MHz</p> <p>Stop Freq 715.000000 MHz</p> <p>CF Step 1.00000000 MHz</p> <p>Span 10 MHz</p> <p>Occupied Bandwidth 4.4794 MHz</p> <p>Transmit Freq Error -2.628 kHz</p> <p>x dB Bandwidth 4.892 MHz</p> <p>Band LTE17 5MHz OBW 16QAM Mid Channel FRB.gif</p>	<p>Agilent 11:40:41 Apr 3, 2014</p> <p>Ch Freq 710 MHz</p> <p>Center Freq 710.000000 MHz</p> <p>Start Freq 705.000000 MHz</p> <p>Stop Freq 715.000000 MHz</p> <p>CF Step 1.00000000 MHz</p> <p>Span 10 MHz</p> <p>Occupied Bandwidth 4.4769 MHz</p> <p>Transmit Freq Error -5.488 kHz</p> <p>x dB Bandwidth 4.890 MHz</p> <p>Band LTE17 5MHz OBW QPSK Mid Channel FRB.gif</p>
<p>Band LTE5 10MHz 16QAM</p>	<p>Agilent 10:30:08 Apr 3, 2014</p> <p>Ch Freq 836.5 MHz</p> <p>Center Freq 836.500000 MHz</p> <p>Start Freq 829.000000 MHz</p> <p>Stop Freq 844.000000 MHz</p> <p>CF Step 1.50000000 MHz</p> <p>Span 15 MHz</p> <p>Occupied Bandwidth 8.9579 MHz</p> <p>Transmit Freq Error 398.722 Hz</p> <p>x dB Bandwidth 9.703 MHz</p> <p>Band LTE5 10MHz OBW 16QAM Mid Channel FRB.gif</p>	<p>Agilent 10:29:37 Apr 3, 2014</p> <p>Ch Freq 836.5 MHz</p> <p>Center Freq 836.500000 MHz</p> <p>Start Freq 829.000000 MHz</p> <p>Stop Freq 844.000000 MHz</p> <p>CF Step 1.50000000 MHz</p> <p>Span 15 MHz</p> <p>Occupied Bandwidth 8.9412 MHz</p> <p>Transmit Freq Error -640.346 Hz</p> <p>x dB Bandwidth 9.787 MHz</p> <p>Band LTE5 10MHz OBW QPSK Mid Channel FRB.gif</p>

<p>Band LTE5 5MHz 16QAM</p>	<p>Agilent 09:56:48 Apr 3, 2014</p> <p>Ch Freq 836.5 MHz</p> <p>Center Freq 836.500000 MHz</p> <p>Start Freq 831.500000 MHz</p> <p>Stop Freq 841.500000 MHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 4.4756 MHz</p> <p>Transmit Freq Error 697.959 Hz</p> <p>x dB Bandwidth 4.930 MHz</p> <p>Band LTE5 5MHz OBW 16QAM Mid Channel FRB.gif</p>	<p>Agilent 09:57:25 Apr 3, 2014</p> <p>Ch Freq 836.5 MHz</p> <p>Center Freq 836.500000 MHz</p> <p>Start Freq 831.500000 MHz</p> <p>Stop Freq 841.500000 MHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 4.4783 MHz</p> <p>Transmit Freq Error -6.685 kHz</p> <p>x dB Bandwidth 4.877 MHz</p> <p>Band LTE5 5MHz OBW QPSK Mid Channel FRB.gif</p>
<p>Band LTE4 10MHz 16QAM</p>	<p>Agilent 15:41:31 Apr 2, 2014</p> <p>Ch Freq 1.7325 GHz</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.72250000 GHz</p> <p>Stop Freq 1.74250000 GHz</p> <p>CF Step 2.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 8.9671 MHz</p> <p>Transmit Freq Error 10.390 kHz</p> <p>x dB Bandwidth 9.753 MHz</p> <p>Band LTE4 10MHz OBW 16QAM Mid Channel FRB.gif</p>	<p>Agilent 15:42:24 Apr 2, 2014</p> <p>Ch Freq 1.7325 GHz</p> <p>Center Freq 1.73250000 GHz</p> <p>Start Freq 1.72250000 GHz</p> <p>Stop Freq 1.74250000 GHz</p> <p>CF Step 2.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 8.9504 MHz</p> <p>Transmit Freq Error 8.230 kHz</p> <p>x dB Bandwidth 9.713 MHz</p> <p>Band LTE4 10MHz OBW QPSK Mid Channel FRB.gif</p>

<p>Band LTE4 5MHz 16QAM</p>	<p>Agilent 08:59:02 Apr 3, 2014</p> <p>Ch Freq 1.7325 GHz</p> <p>Center Freq 1.7325000 GHz</p> <p>Start Freq 1.7275000 GHz</p> <p>Stop Freq 1.7375000 GHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 4.4785 MHz</p> <p>Transmit Freq Error 3.677 kHz</p> <p>Band LTE4 5MHz OBW 16QAM Mid Channel FRB.gif</p>	<p>Agilent 08:58:25 Apr 3, 2014</p> <p>Ch Freq 1.7325 GHz</p> <p>Center Freq 1.7325000 GHz</p> <p>Start Freq 1.7275000 GHz</p> <p>Stop Freq 1.7375000 GHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 4.4796 MHz</p> <p>Transmit Freq Error -3.932 kHz</p> <p>Band LTE4 5MHz OBW QPSK Mid Channel FRB.gif</p>
<p>Band LTE2 10MHz 16QAM</p>	<p>Agilent 14:46:53 Apr 2, 2014</p> <p>Ch Freq 1.88 GHz</p> <p>Center Freq 1.8800000 GHz</p> <p>Start Freq 1.8700000 GHz</p> <p>Stop Freq 1.8900000 GHz</p> <p>CF Step 2.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 8.9400 MHz</p> <p>Transmit Freq Error -8.353 kHz</p> <p>Band LTE2 10MHz OBW 16QAM Mid Channel FRB.gif</p>	<p>Agilent 14:46:09 Apr 2, 2014</p> <p>Ch Freq 1.88 GHz</p> <p>Center Freq 1.8800000 GHz</p> <p>Start Freq 1.8700000 GHz</p> <p>Stop Freq 1.8900000 GHz</p> <p>CF Step 2.0000000 MHz</p> <p>Freq Clisset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth 8.9519 MHz</p> <p>Transmit Freq Error -4.939 kHz</p> <p>Band LTE2 10MHz OBW QPSK Mid Channel FRB.gif</p>

<p>Band LTE2 5MHz 16QAM</p>	<p>Agilent 13:50:03 Apr 2, 2014</p> <p>Center Freq 1.8800000 GHz</p> <p>Start Freq 1.8750000 GHz</p> <p>Stop Freq 1.8850000 GHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clsset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth: 4.5536 MHz</p> <p>Transmit Freq Error: -2.014 kHz</p> <p>x dB Bandwidth: 5.106 MHz</p> <p>Band LTE2 5MHz OBW 16QAM Mid Channel FRB.gif</p>	<p>Agilent 13:49:13 Apr 2, 2014</p> <p>Center Freq 1.8800000 GHz</p> <p>Start Freq 1.8750000 GHz</p> <p>Stop Freq 1.8850000 GHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clsset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth: 4.5528 MHz</p> <p>Transmit Freq Error: 9.775 kHz</p> <p>x dB Bandwidth: 5.045 MHz</p> <p>Band LTE2 5MHz OBW QPSK Mid Channel FRB.gif</p>
<p>Band Band 2</p>	<p>Agilent 12:36:07 Apr 2, 2014</p> <p>Center Freq 1.8800000 GHz</p> <p>Start Freq 1.8750000 GHz</p> <p>Stop Freq 1.8850000 GHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clsset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth: 4.1358 MHz</p> <p>Transmit Freq Error: -12.511 kHz</p> <p>x dB Bandwidth: 4.620 MHz</p> <p>Band WCDMA B2 HSDPA OBW</p>	<p>Agilent 13:12:00 Apr 2, 2014</p> <p>Center Freq 1.8800000 GHz</p> <p>Start Freq 1.8750000 GHz</p> <p>Stop Freq 1.8850000 GHz</p> <p>CF Step 1.0000000 MHz</p> <p>Freq Clsset 0.0000000 Hz</p> <p>Signal Track On</p> <p>Occupied Bandwidth: 4.1457 MHz</p> <p>Transmit Freq Error: -13.326 kHz</p> <p>x dB Bandwidth: 4.638 MHz</p> <p>Band WCDMA B2 REL99 OBW</p>

<p>Band Band 5</p>	<p>Agilent 12:27:44 Apr 2, 2014</p> <p>Ch Freq 836.6 MHz</p> <p>Center Freq 836.600000 MHz</p> <p>Start Freq 831.600000 MHz</p> <p>Stop Freq 841.600000 MHz</p> <p>Span 10 MHz</p> <p>#Res BW 39 kHz</p> <p>#VDW 120 kHz</p> <p>Sweep 6.28 ms (601 pts)</p> <p>Occupied Bandwidth 4.1480 MHz</p> <p>Transmit Freq Error 5.574 kHz</p> <p>x dB Bandwidth 4.599 MHz</p> <p>Band WCDMA B5 HSDPA OBW</p>	<p>Agilent 11:58:28 Apr 2, 2014</p> <p>Ch Freq 836.6 MHz</p> <p>Center Freq 836.600000 MHz</p> <p>Start Freq 831.600000 MHz</p> <p>Stop Freq 841.600000 MHz</p> <p>Span 10 MHz</p> <p>#Res BW 39 kHz</p> <p>#VDW 120 kHz</p> <p>Sweep 6.28 ms (601 pts)</p> <p>Occupied Bandwidth 4.1391 MHz</p> <p>Transmit Freq Error 3.632 kHz</p> <p>x dB Bandwidth 4.610 MHz</p> <p>Band WCDMA B5 REL99 OBW</p>
<p>Band GSM1 900</p>	<p>Agilent 09:54:57 Apr 2, 2014</p> <p>Ch Freq 1.86 GHz</p> <p>Center Freq 1.86000000 GHz</p> <p>Start Freq 1.87550000 GHz</p> <p>Stop Freq 1.88050000 GHz</p> <p>Span 1 MHz</p> <p>#Res BW 6.8 kHz</p> <p>#VDW 22 kHz</p> <p>Sweep 20.6 ms (601 pts)</p> <p>Occupied Bandwidth 240.0225 kHz</p> <p>Transmit Freq Error 1.342 kHz</p> <p>x dB Bandwidth 301.899 kHz</p> <p>Band GSM1900 EGPRS OBW Mid channel</p>	<p>Agilent 09:05:16 Apr 2, 2014</p> <p>Ch Freq 1.86 GHz</p> <p>Center Freq 1.86000000 GHz</p> <p>Start Freq 1.87550000 GHz</p> <p>Stop Freq 1.88050000 GHz</p> <p>Span 1 MHz</p> <p>#Res BW 6.8 kHz</p> <p>#VDW 22 kHz</p> <p>Sweep 20.6 ms (601 pts)</p> <p>Occupied Bandwidth 241.7259 kHz</p> <p>Transmit Freq Error -1.290 kHz</p> <p>x dB Bandwidth 319.340 kHz</p> <p>Band GSM1900 GPRS OBW Mid channel</p>



10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238

LIMITS

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

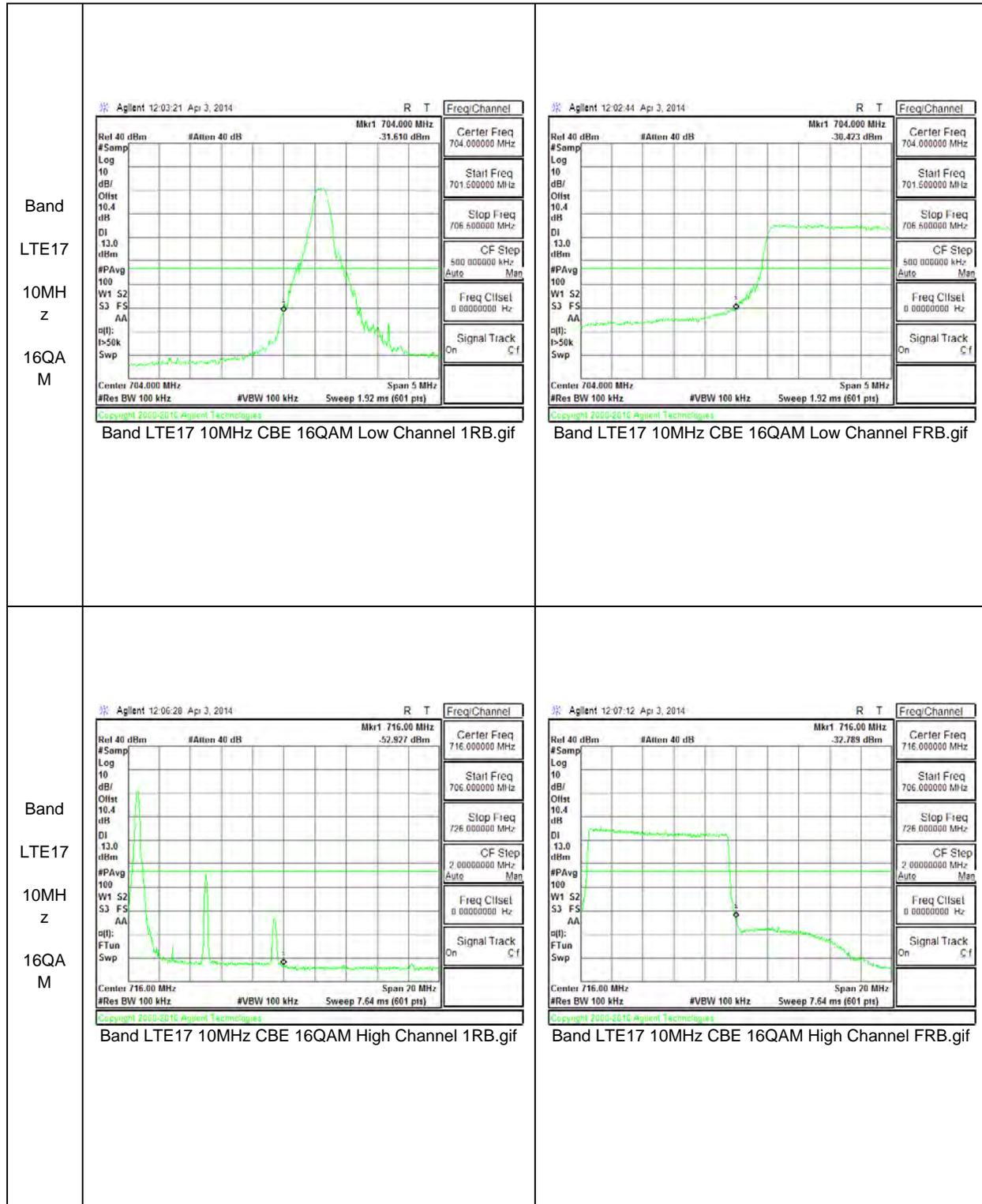
The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

MODES TESTED

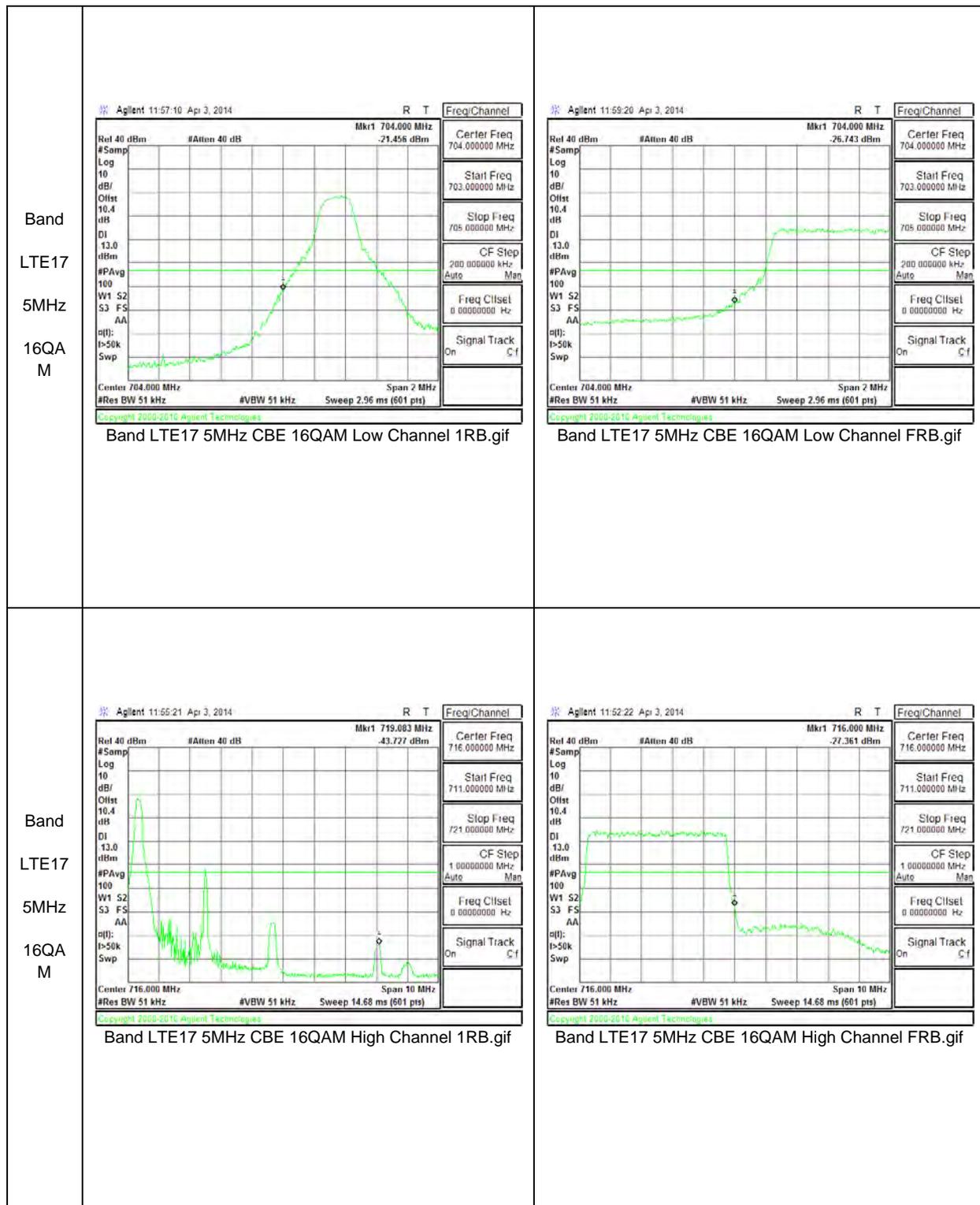
GSM 850/1900 & WCDMA B2/B5 & LTE B2/B4/B5/B17

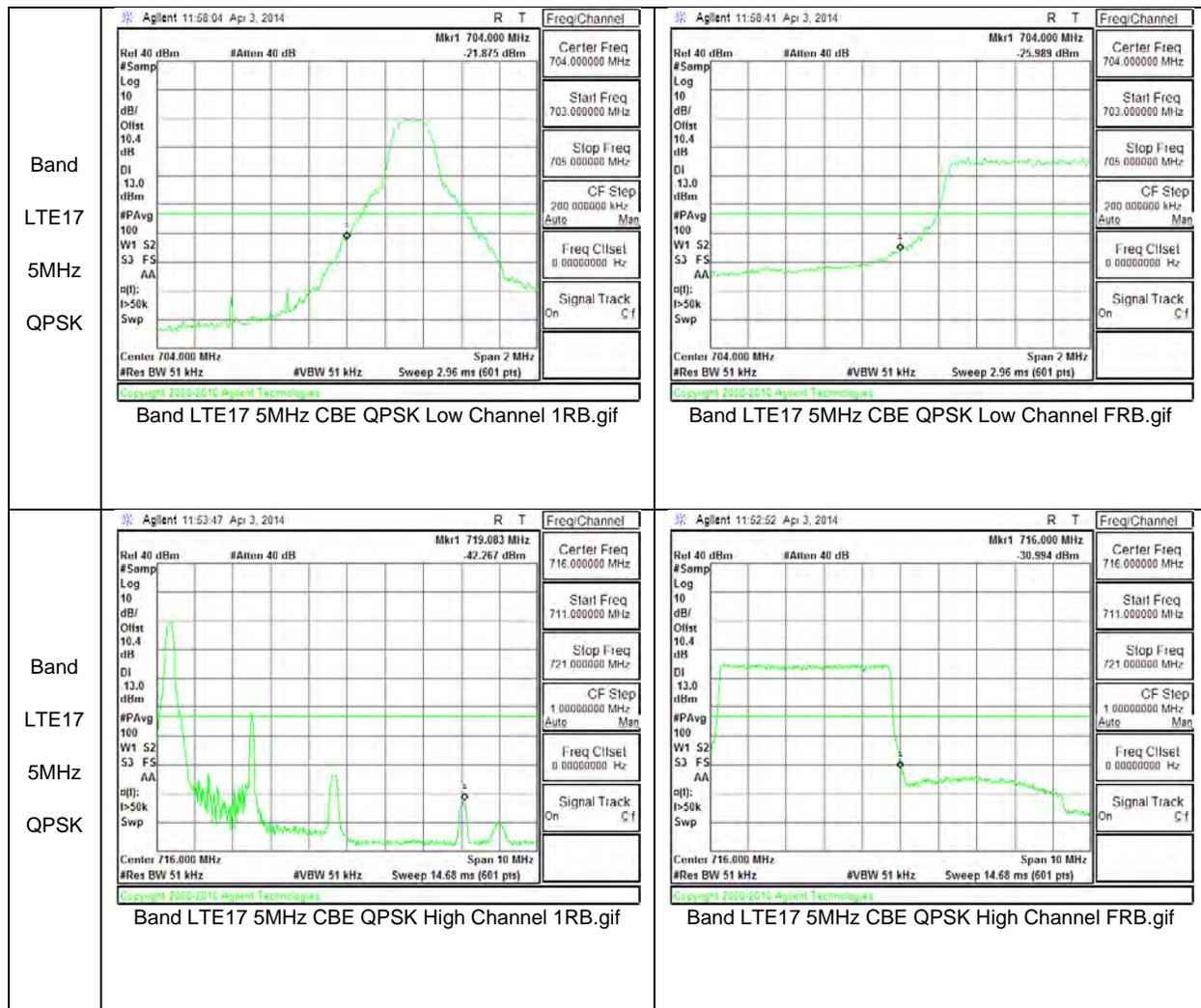
RESULTS

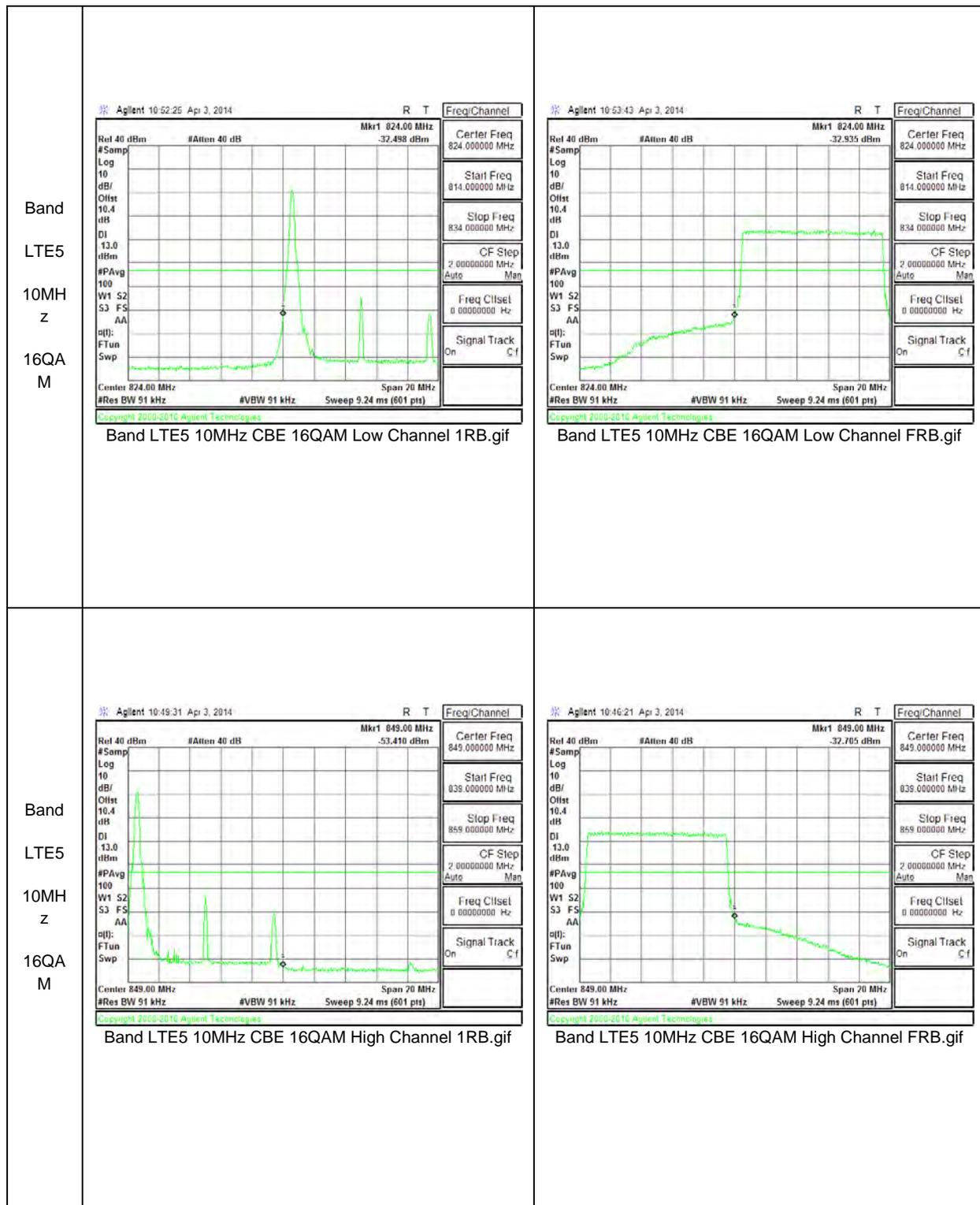
10.2.1. BAND EDGE PLOTS



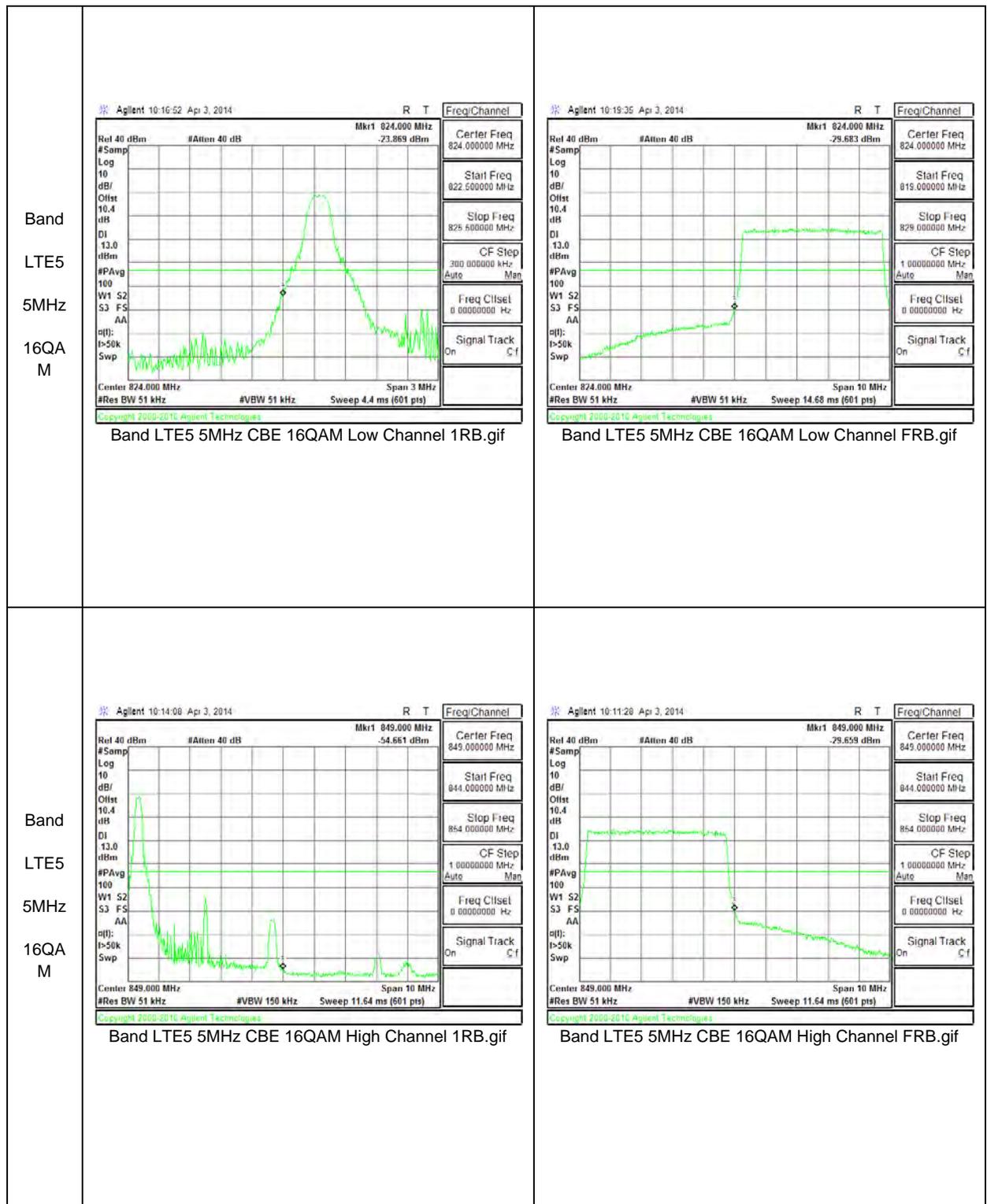
<p>Band LTE17 10MH z QPSK</p>	<p>Agilent 12:03:41 Apr 3, 2014</p> <p>Mkr1 704.000 MHz -30.261 dBm</p> <p>Center Freq 704.000000 MHz Start Freq 701.500000 MHz Stop Freq 706.500000 MHz CF Step 500.000000 kHz Freq Clisel 0.000000 Hz</p> <p>Band LTE17 10MHz CBE QPSK Low Channel 1RB.gif</p>	<p>Agilent 12:02:14 Apr 3, 2014</p> <p>Mkr1 704.000 MHz -29.327 dBm</p> <p>Center Freq 704.000000 MHz Start Freq 701.500000 MHz Stop Freq 706.500000 MHz CF Step 500.000000 kHz Freq Clisel 0.000000 Hz</p> <p>Band LTE17 10MHz CBE QPSK Low Channel FRB.gif</p>
<p>Band LTE17 10MH z QPSK</p>	<p>Agilent 12:06:00 Apr 3, 2014</p> <p>Mkr1 716.000 MHz -52.981 dBm</p> <p>Center Freq 716.000000 MHz Start Freq 706.000000 MHz Stop Freq 726.000000 MHz CF Step 2.000000 MHz Freq Clisel 0.000000 Hz</p> <p>Band LTE17 10MHz CBE QPSK High Channel 1RB.gif</p>	<p>Agilent 12:07:58 Apr 3, 2014</p> <p>Mkr1 716.000 MHz -33.409 dBm</p> <p>Center Freq 716.000000 MHz Start Freq 706.000000 MHz Stop Freq 726.000000 MHz CF Step 2.000000 MHz Freq Clisel 0.000000 Hz</p> <p>Band LTE17 10MHz CBE QPSK High Channel FRB.gif</p>

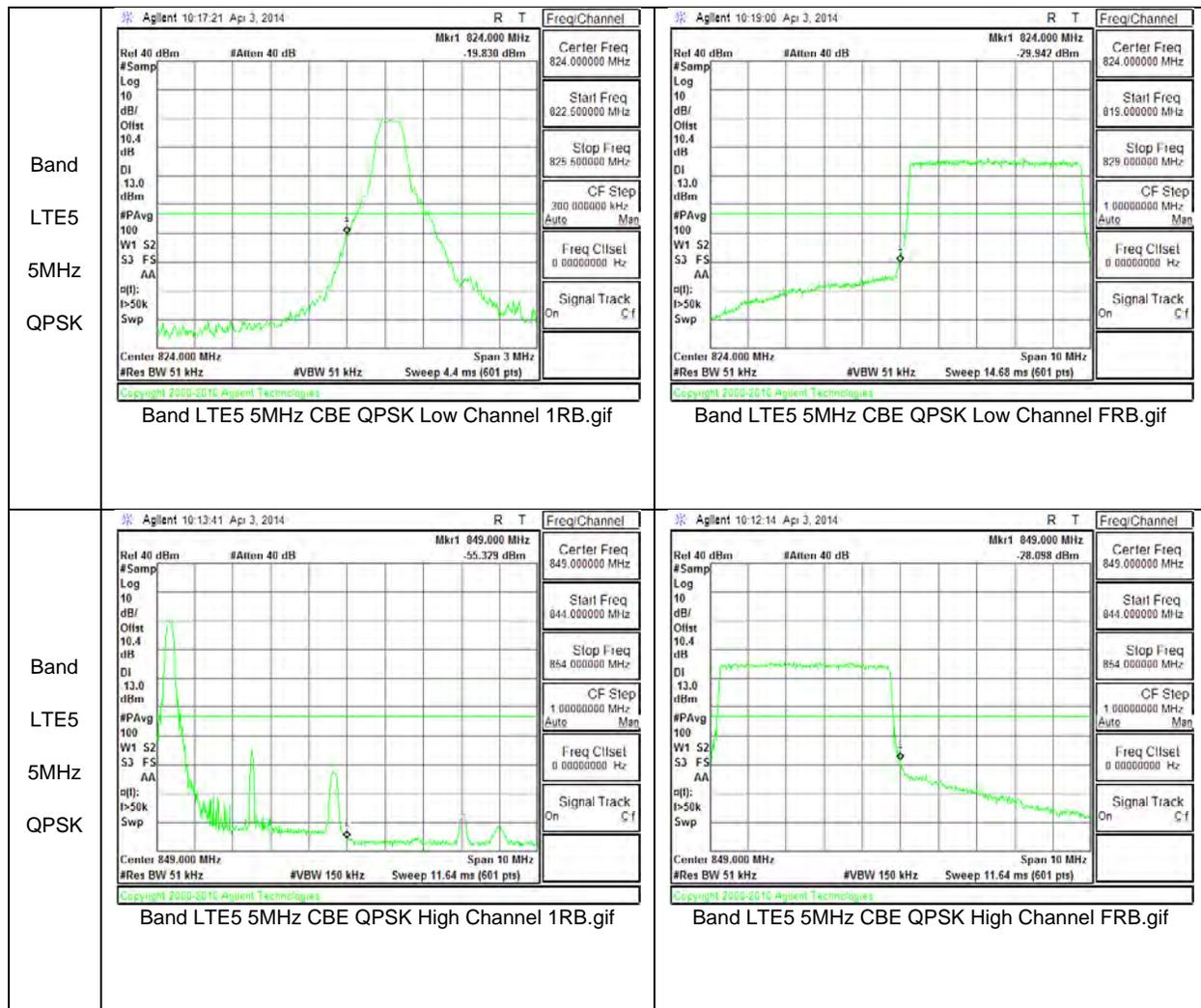






<p>Band LTE5 10MH z QPSK</p>	<p>Agilent 10:51:53 Apr 3, 2014 R T Freq/Channel</p> <p>Rel 40 dBm #Atten 40 dB Mkr1 824.00 MHz Center Freq 824.000000 MHz</p> <p>Start Freq 814.000000 MHz</p> <p>Stop Freq 834.000000 MHz</p> <p>CF Step 2.0000000 MHz Auto Man</p> <p>Freq Clset 0.0000000 Hz</p> <p>Signal Track On Cf</p> <p>Center 824.00 MHz Span 20 MHz</p> <p>#Res BW 91 kHz #VBW 91 kHz Sweep 9.24 ms (601 pts)</p> <p>Copyright 2000-2010 Agilent Technologies</p> <p>Band LTE5 10MHz CBE QPSK Low Channel 1RB.gif</p>	<p>Agilent 10:54:25 Apr 3, 2014 R T Freq/Channel</p> <p>Rel 40 dBm #Atten 40 dB Mkr1 824.00 MHz Center Freq 824.000000 MHz</p> <p>Start Freq 814.000000 MHz</p> <p>Stop Freq 834.000000 MHz</p> <p>CF Step 2.0000000 MHz Auto Man</p> <p>Freq Clset 0.0000000 Hz</p> <p>Signal Track On Cf</p> <p>Center 824.00 MHz Span 20 MHz</p> <p>#Res BW 91 kHz #VBW 91 kHz Sweep 9.24 ms (601 pts)</p> <p>Copyright 2000-2010 Agilent Technologies</p> <p>Band LTE5 10MHz CBE QPSK Low Channel FRB.gif</p>
<p>Band LTE5 10MH z QPSK</p>	<p>Agilent 10:50:15 Apr 3, 2014 R T Freq/Channel</p> <p>Rel 40 dBm #Atten 40 dB Mkr1 849.00 MHz Center Freq 849.000000 MHz</p> <p>Start Freq 839.000000 MHz</p> <p>Stop Freq 859.000000 MHz</p> <p>CF Step 2.0000000 MHz Auto Man</p> <p>Freq Clset 0.0000000 Hz</p> <p>Signal Track On Cf</p> <p>Center 849.00 MHz Span 20 MHz</p> <p>#Res BW 91 kHz #VBW 91 kHz Sweep 9.24 ms (601 pts)</p> <p>Copyright 2000-2010 Agilent Technologies</p> <p>Band LTE5 10MHz CBE QPSK High Channel 1RB.gif</p>	<p>Agilent 10:45:49 Apr 3, 2014 R T Freq/Channel</p> <p>Rel 40 dBm #Atten 40 dB Mkr1 849.00 MHz Center Freq 849.000000 MHz</p> <p>Start Freq 839.000000 MHz</p> <p>Stop Freq 859.000000 MHz</p> <p>CF Step 2.0000000 MHz Auto Man</p> <p>Freq Clset 0.0000000 Hz</p> <p>Signal Track On Cf</p> <p>Center 849.00 MHz Span 20 MHz</p> <p>#Res BW 91 kHz #VBW 91 kHz Sweep 9.24 ms (601 pts)</p> <p>Copyright 2000-2010 Agilent Technologies</p> <p>Band LTE5 10MHz CBE QPSK High Channel FRB.gif</p>

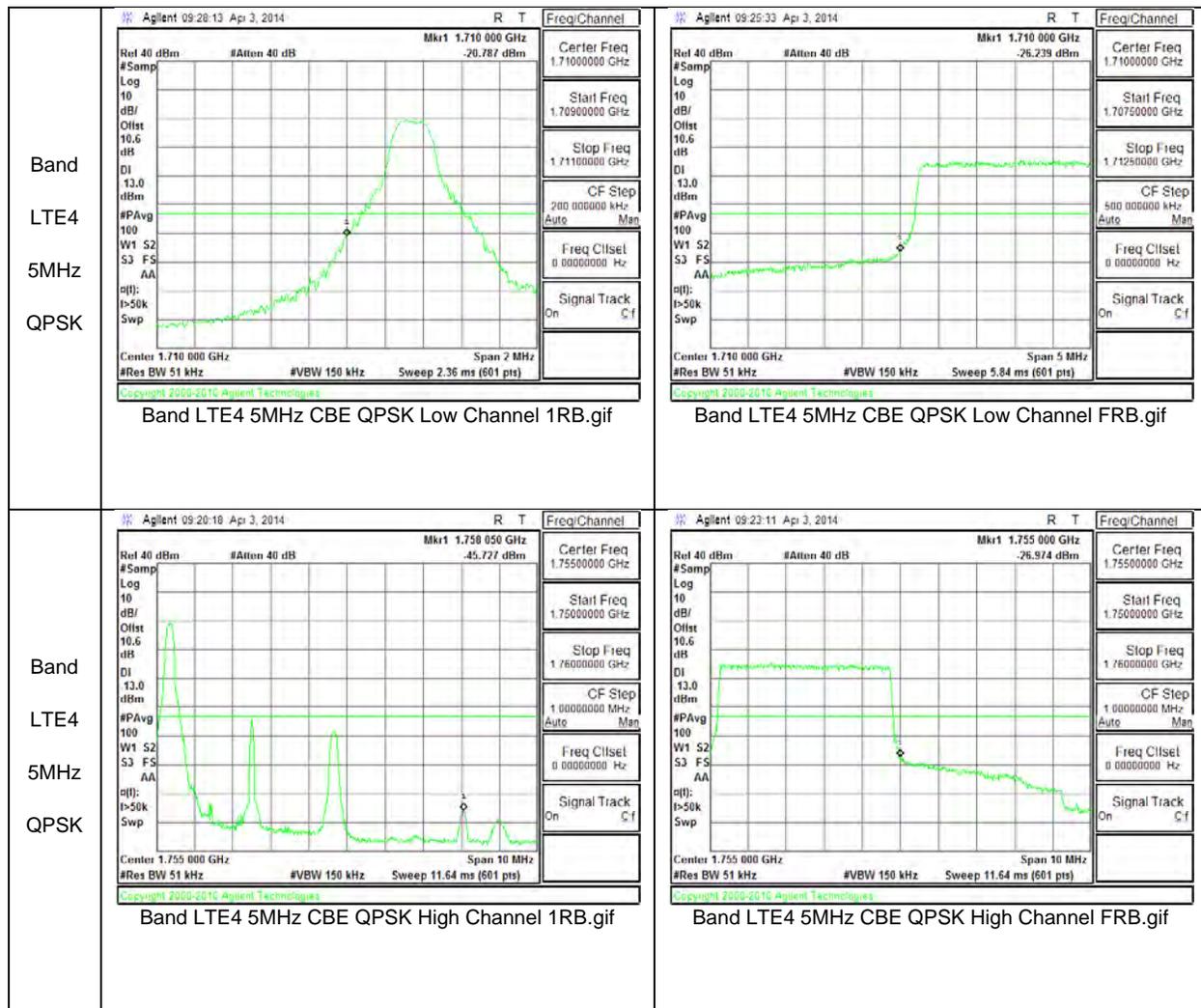


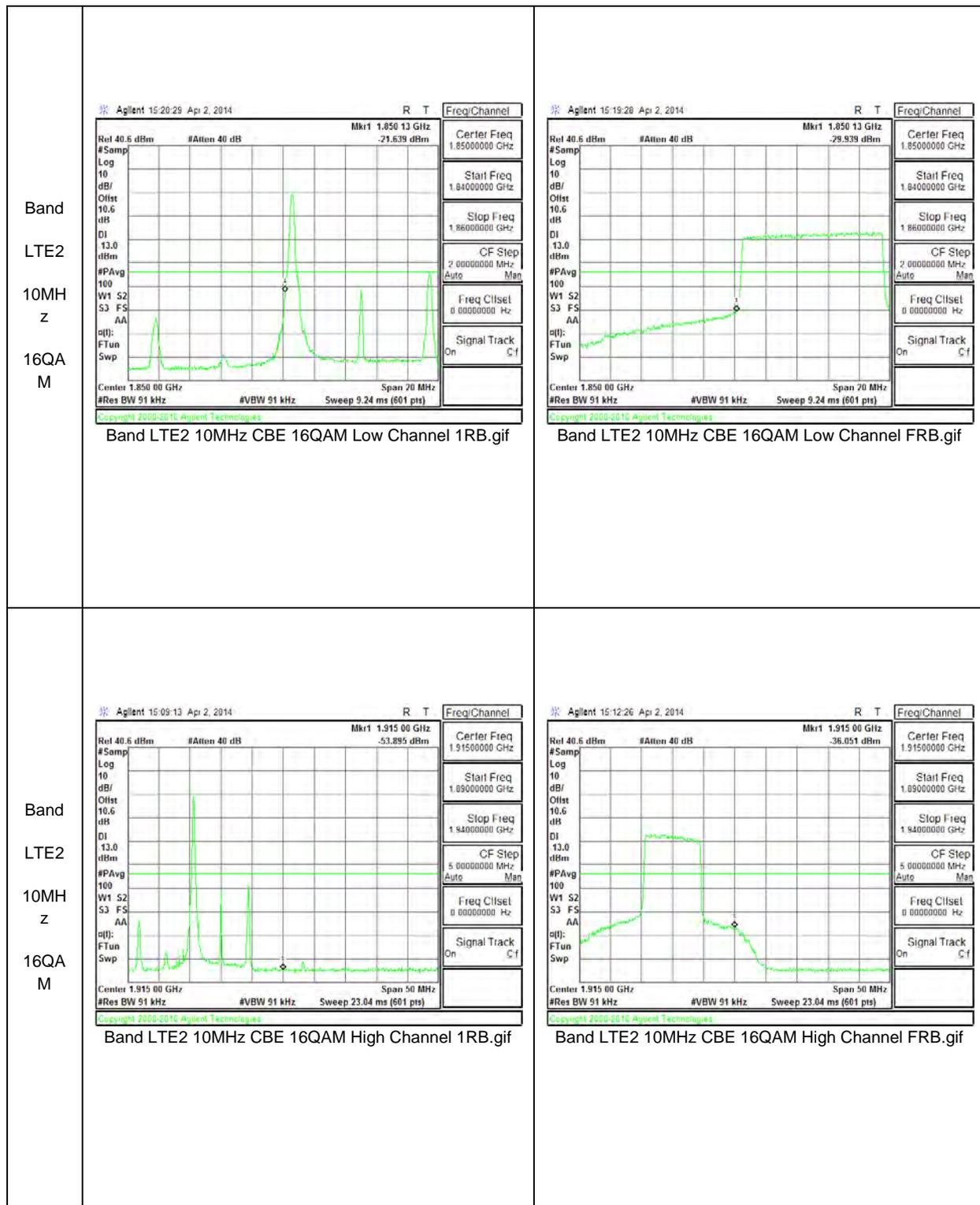


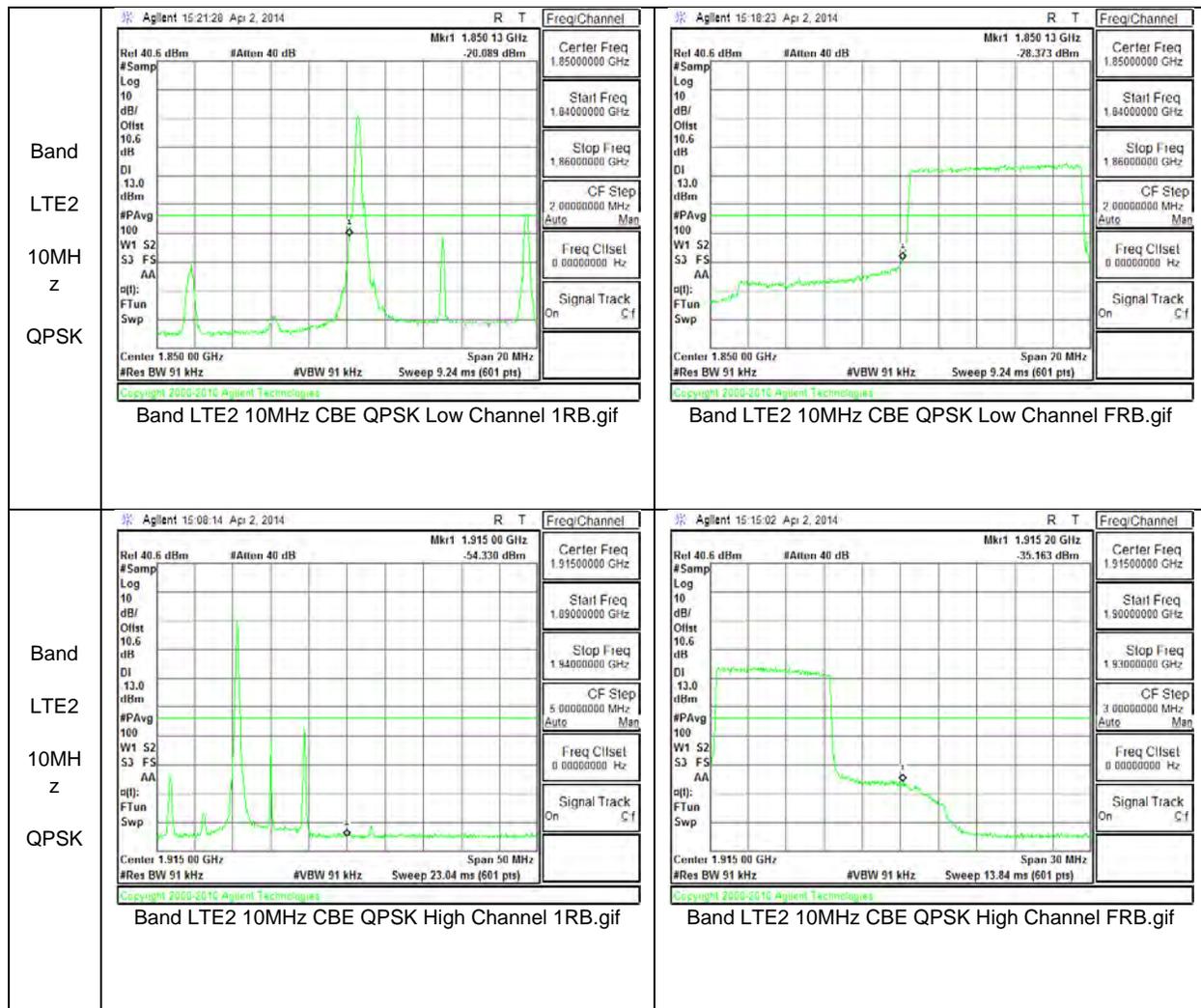
<p>Band LTE4 10MHz z 16QAM</p>	<p>Agilent 08:25:28 Apr 3, 2014</p> <p>Mkr1 1.710 000 GHz -32.126 dBm</p> <p>Center Freq 1.7100000 GHz</p> <p>Start Freq 1.70750000 GHz</p> <p>Stop Freq 1.71250000 GHz</p> <p>CF Step 500 000000 kHz</p> <p>Freq Cliset 0 00000000 Hz</p> <p>Signal Track On</p> <p>Center 1.710 000 GHz Span 5 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.52 ms (601 pts)</p> <p>Band LTE4 10MHz CBE 16QAM Low Channel 1RB.gif</p>	<p>Agilent 08:29:08 Apr 3, 2014</p> <p>Mkr1 1.710 00 GHz -27.342 dBm</p> <p>Center Freq 1.7100000 GHz</p> <p>Start Freq 1.70000000 GHz</p> <p>Stop Freq 1.72000000 GHz</p> <p>CF Step 2 00000000 MHz</p> <p>Freq Cliset 0 00000000 Hz</p> <p>Signal Track On</p> <p>Center 1.710 00 GHz Span 20 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 6.08 ms (601 pts)</p> <p>Band LTE4 10MHz CBE 16QAM Low Channel FRB.gif</p>
<p>Band LTE4 10MHz z 16QAM</p>	<p>Agilent 08:42:48 Apr 3, 2014</p> <p>Mkr1 1.763 20 GHz -43.063 dBm</p> <p>Center Freq 1.7550000 GHz</p> <p>Start Freq 1.74500000 GHz</p> <p>Stop Freq 1.76500000 GHz</p> <p>CF Step 2 00000000 MHz</p> <p>Freq Cliset 0 00000000 Hz</p> <p>Signal Track On</p> <p>Center 1.755 00 GHz Span 20 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 6.08 ms (601 pts)</p> <p>Band LTE4 10MHz CBE 16QAM High Channel 1RB.gif</p>	<p>Agilent 08:36:00 Apr 3, 2014</p> <p>Mkr1 1.755 00 GHz -30.307 dBm</p> <p>Center Freq 1.7550000 GHz</p> <p>Start Freq 1.74500000 GHz</p> <p>Stop Freq 1.76500000 GHz</p> <p>CF Step 2 00000000 MHz</p> <p>Freq Cliset 0 00000000 Hz</p> <p>Signal Track On</p> <p>Center 1.755 00 GHz Span 20 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 6.08 ms (601 pts)</p> <p>Band LTE4 10MHz CBE 16QAM High Channel FRB.gif</p>

<p>Band LTE4 10MHz z QPSK</p>	<p>Agilent 08:26:37 Apr 3, 2014</p> <p>Center 1.710 000 GHz #VBW 300 kHz Sweep 1.52 ms (601 pts)</p> <p>Band LTE4 10MHz CBE QPSK Low Channel 1RB.gif</p>	<p>Agilent 08:28:17 Apr 3, 2014</p> <p>Center 1.710 00 GHz #VBW 100 kHz Sweep 6.08 ms (601 pts)</p> <p>Band LTE4 10MHz CBE QPSK Low Channel FRB.gif</p>
<p>Band LTE4 10MHz z QPSK</p>	<p>Agilent 08:40:58 Apr 3, 2014</p> <p>Center 1.755 00 GHz #VBW 300 kHz Sweep 6.08 ms (601 pts)</p> <p>Band LTE4 10MHz CBE QPSK High Channel 1RB.gif</p>	<p>Agilent 08:38:45 Apr 3, 2014</p> <p>Center 1.755 00 GHz #VBW 300 kHz Sweep 6.08 ms (601 pts)</p> <p>Band LTE4 10MHz CBE QPSK High Channel FRB.gif</p>

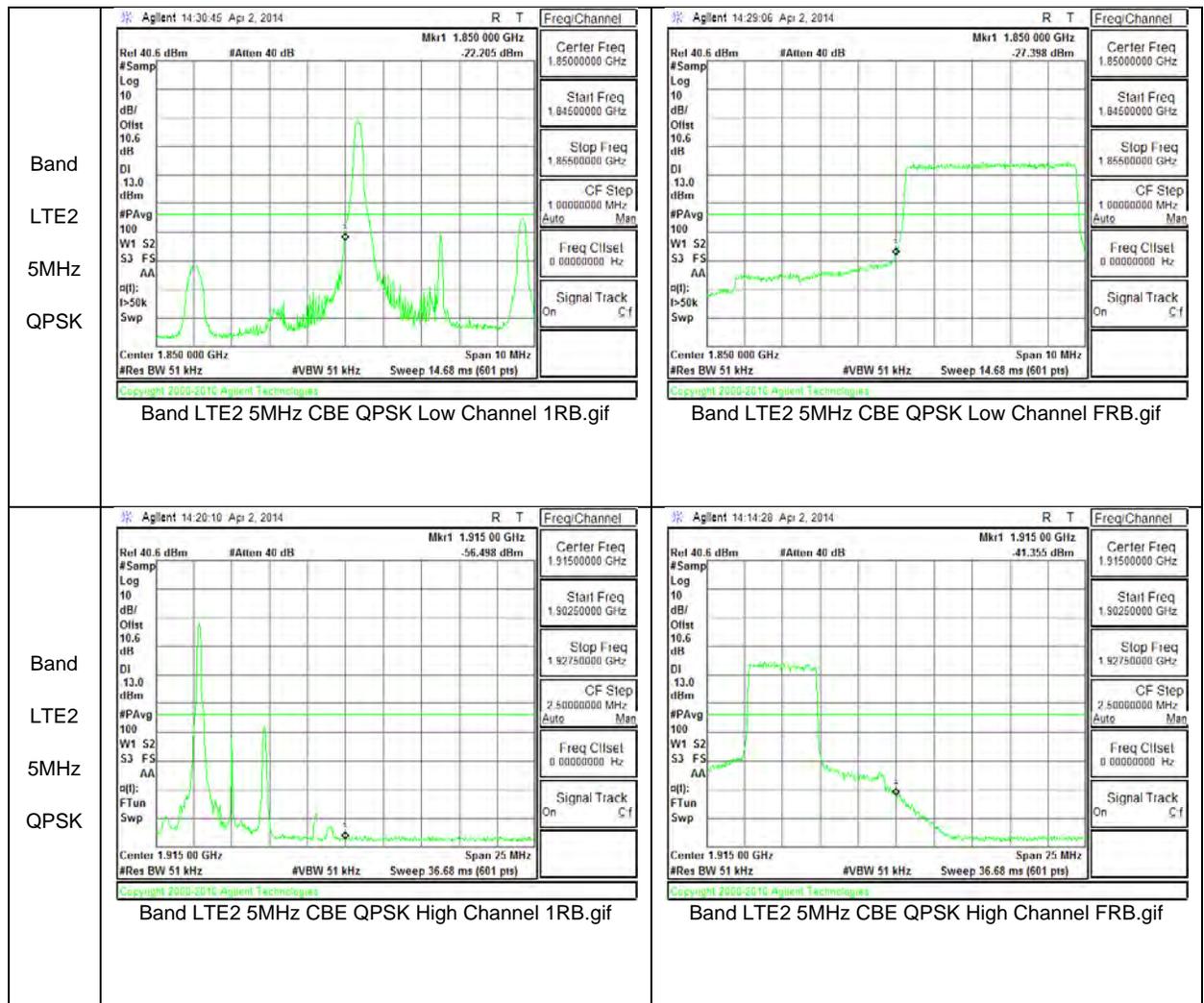
<p>Band LTE4 5MHz 16QAM</p>	<p>Agilent 09:27:26 Apr 3, 2014</p> <p>Band LTE4 5MHz CBE 16QAM Low Channel 1RB.gif</p>	<p>Agilent 09:26:16 Apr 3, 2014</p> <p>Band LTE4 5MHz CBE 16QAM Low Channel FRB.gif</p>
<p>Band LTE4 5MHz 16QAM</p>	<p>Agilent 09:21:19 Apr 3, 2014</p> <p>Band LTE4 5MHz CBE 16QAM High Channel 1RB.gif</p>	<p>Agilent 09:22:30 Apr 3, 2014</p> <p>Band LTE4 5MHz CBE 16QAM High Channel FRB.gif</p>

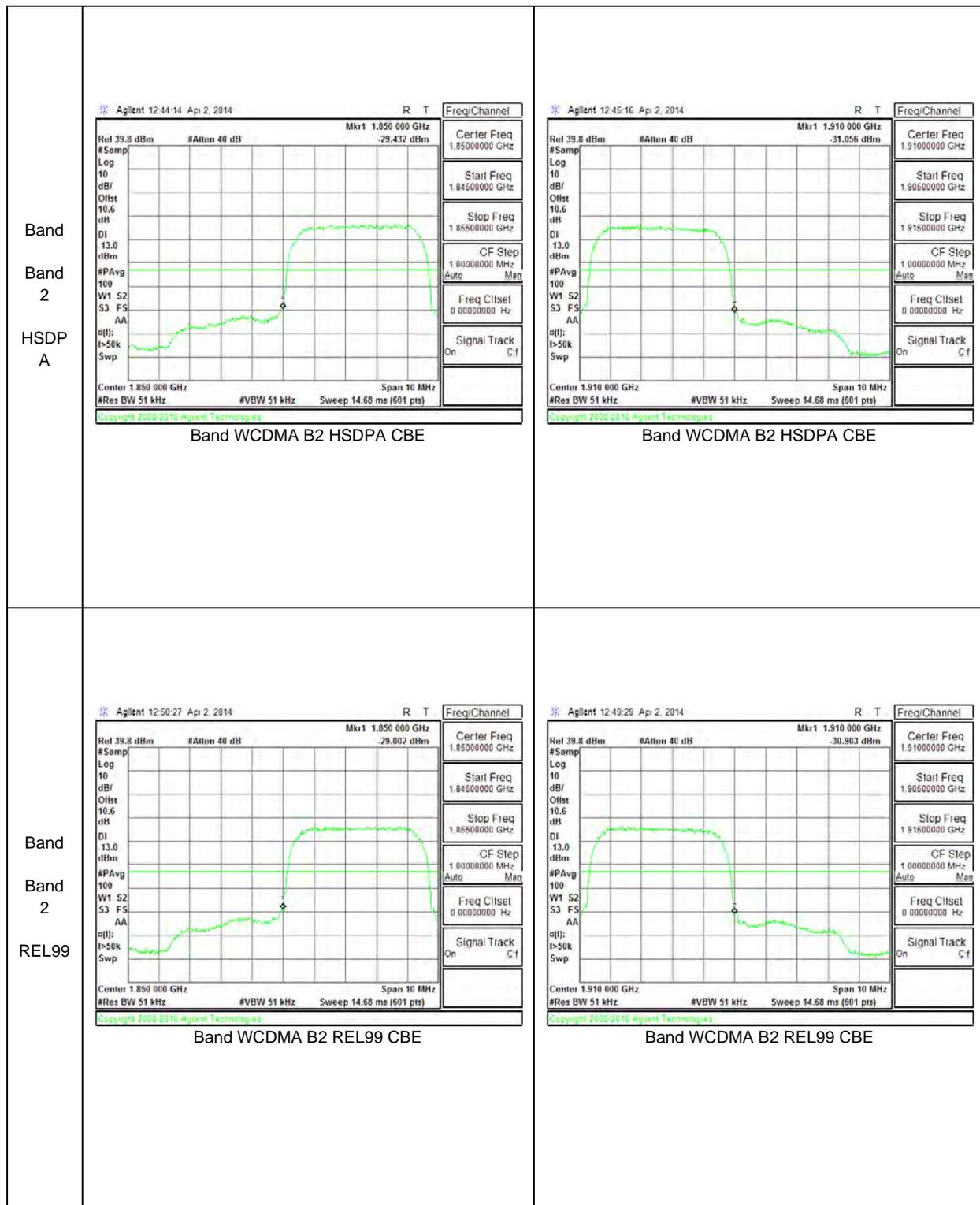


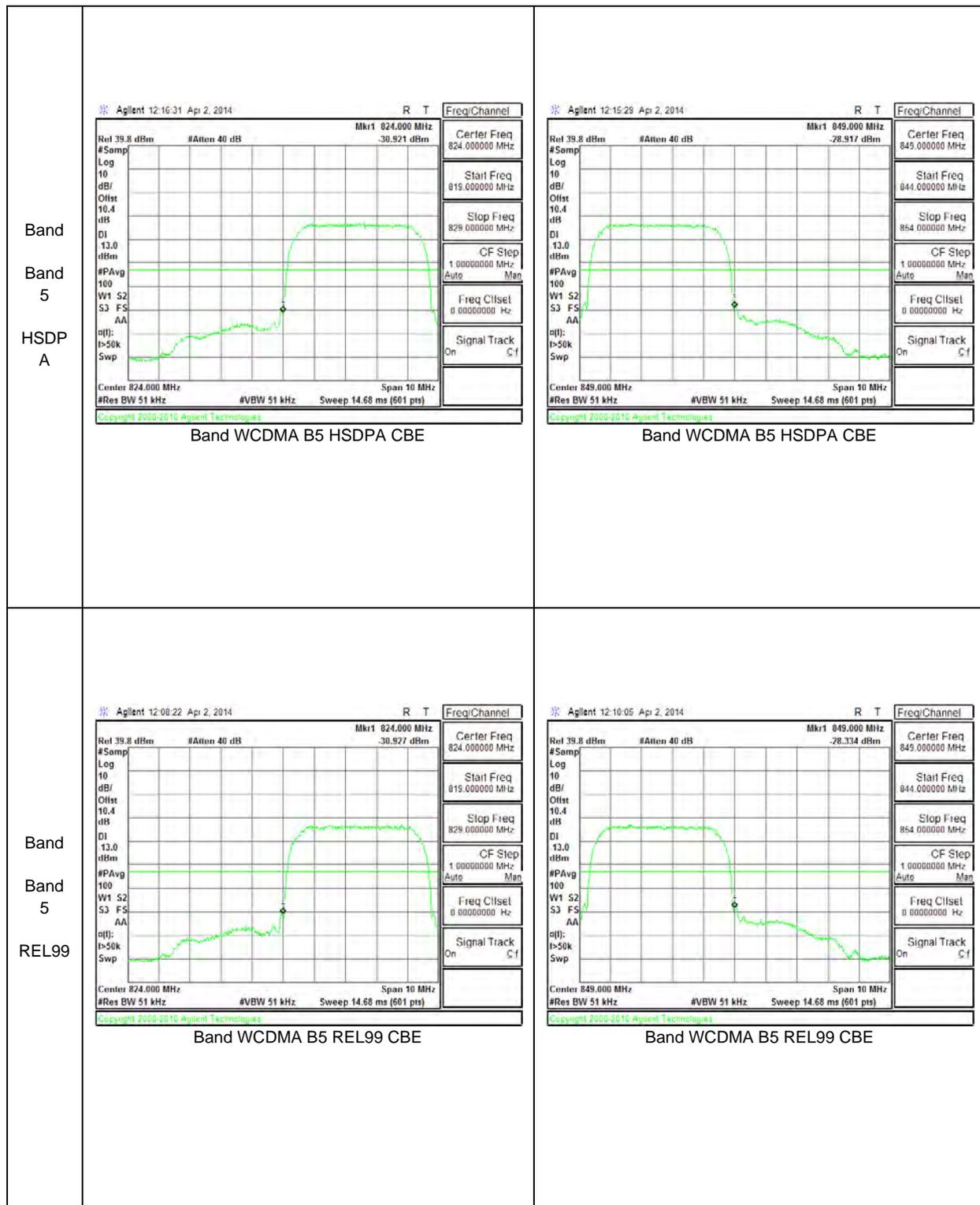


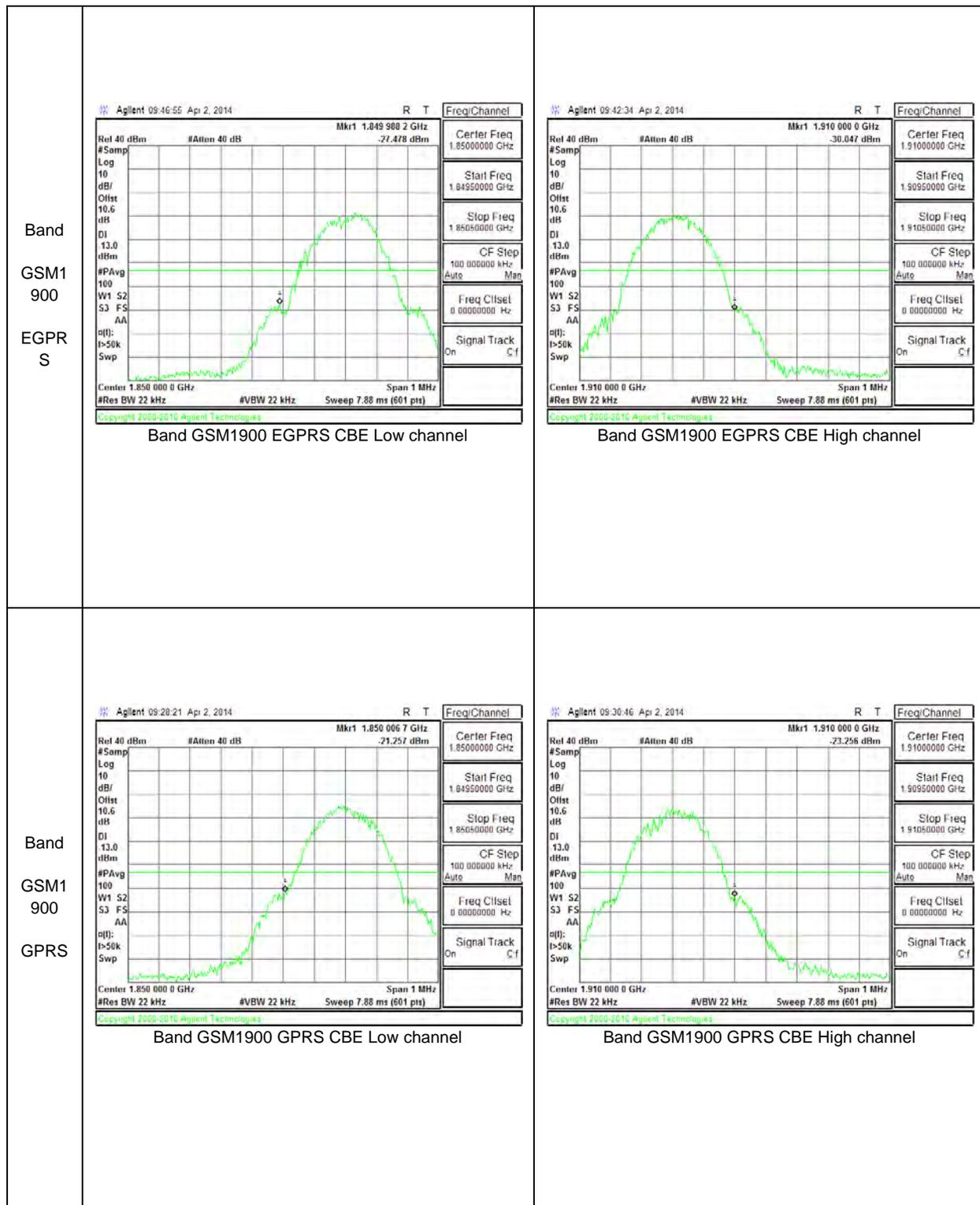


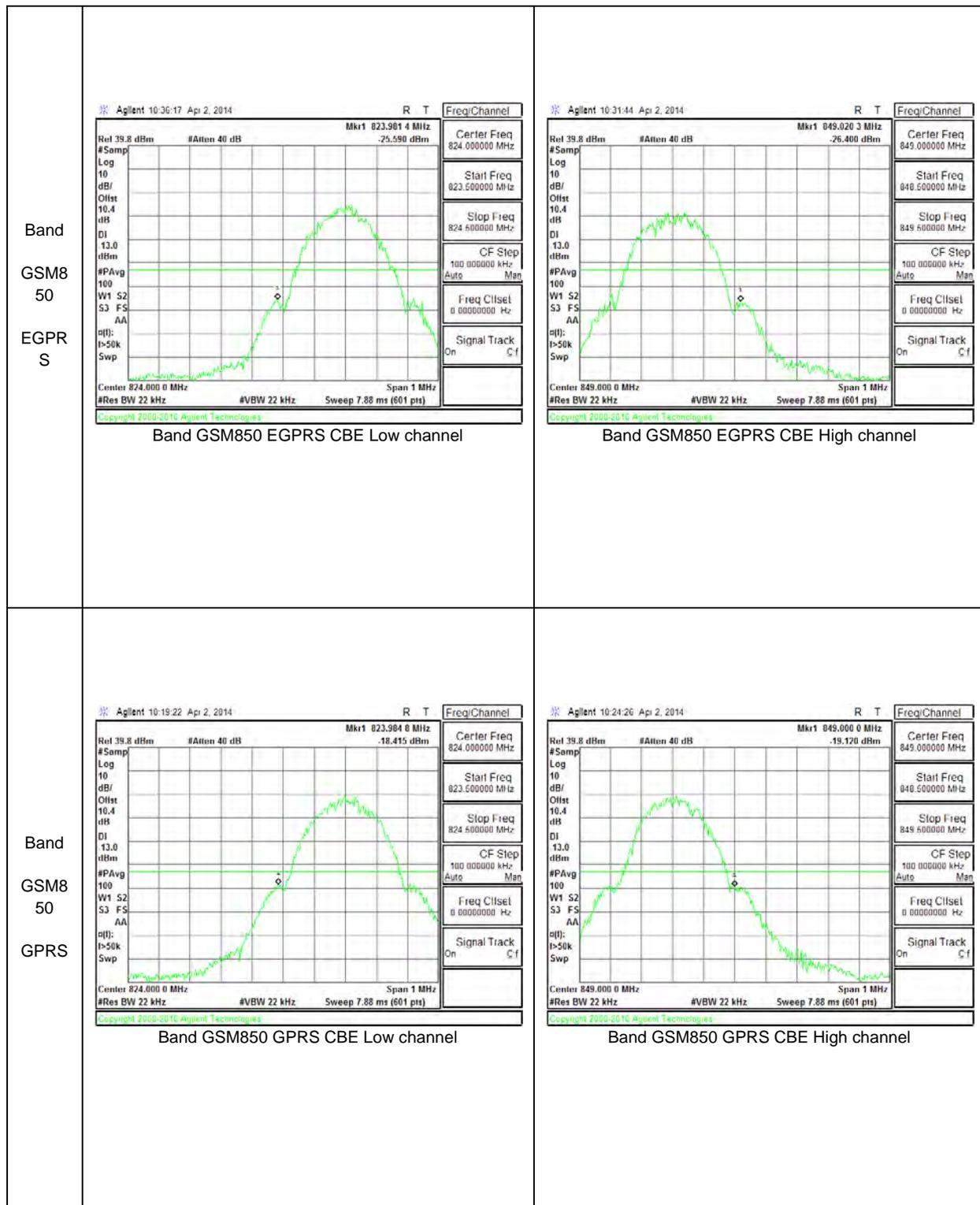
<p>Band LTE2 5MHz 16QAM</p>		
<p>Band LTE2 5MHz 16QAM</p>		











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.

MODES TESTED

GSM 850/1900 & WCDMA B2/B5 & LTE B2/B4/B5/B17

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	-26.42	-13	-13.42
			710	-26.47	-13	-13.47
			711	-25.59	-13	-12.59
		16QAM	709	-26.45	-13	-13.45
			710	-26.58	-13	-13.58
			711	-25.3	-13	-12.3

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE17	5	QPSK	706.5	-26.01	-13	-13.01
			710	-26.57	-13	-13.57
			713.5	-25.69	-13	-12.69
		16QAM	706.5	-26.23	-13	-13.23
			710	-26.53	-13	-13.53
			713.5	-27.28	-13	-14.28

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	QPSK	829	-26.19	-13	-13.19
			836.5	-25.97	-13	-12.97
			844	-25.92	-13	-12.92
		16QAM	829	-26.19	-13	-13.19
			836.5	-26.02	-13	-13.02
			844	-26	-13	-13

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	5	QPSK	826.5	-26.25	-13	-13.25
			836.5	-25.67	-13	-12.67
			846.5	-25.52	-13	-12.52
		16QAM	826.5	-25.41	-13	-12.41
			836.5	-26.53	-13	-13.53
			846.5	-24.98	-13	-11.98

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	10	QPSK	1715	-26.47	-13	-13.47
			1732.5	-25.65	-13	-12.65
			1750	-26.47	-13	-13.47
		16QAM	1715	-25.95	-13	-12.95
			1732.5	-25.03	-13	-12.03
			1750	-25.53	-13	-12.53

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE4	5	QPSK	1712.5	-26.35	-13	-13.35
			1732.5	-25.66	-13	-12.66
			1752.5	-26.43	-13	-13.43
		16QAM	1712.5	-25.96	-13	-12.96
			1732.5	-25.94	-13	-12.94
			1752.5	-25.08	-13	-12.08

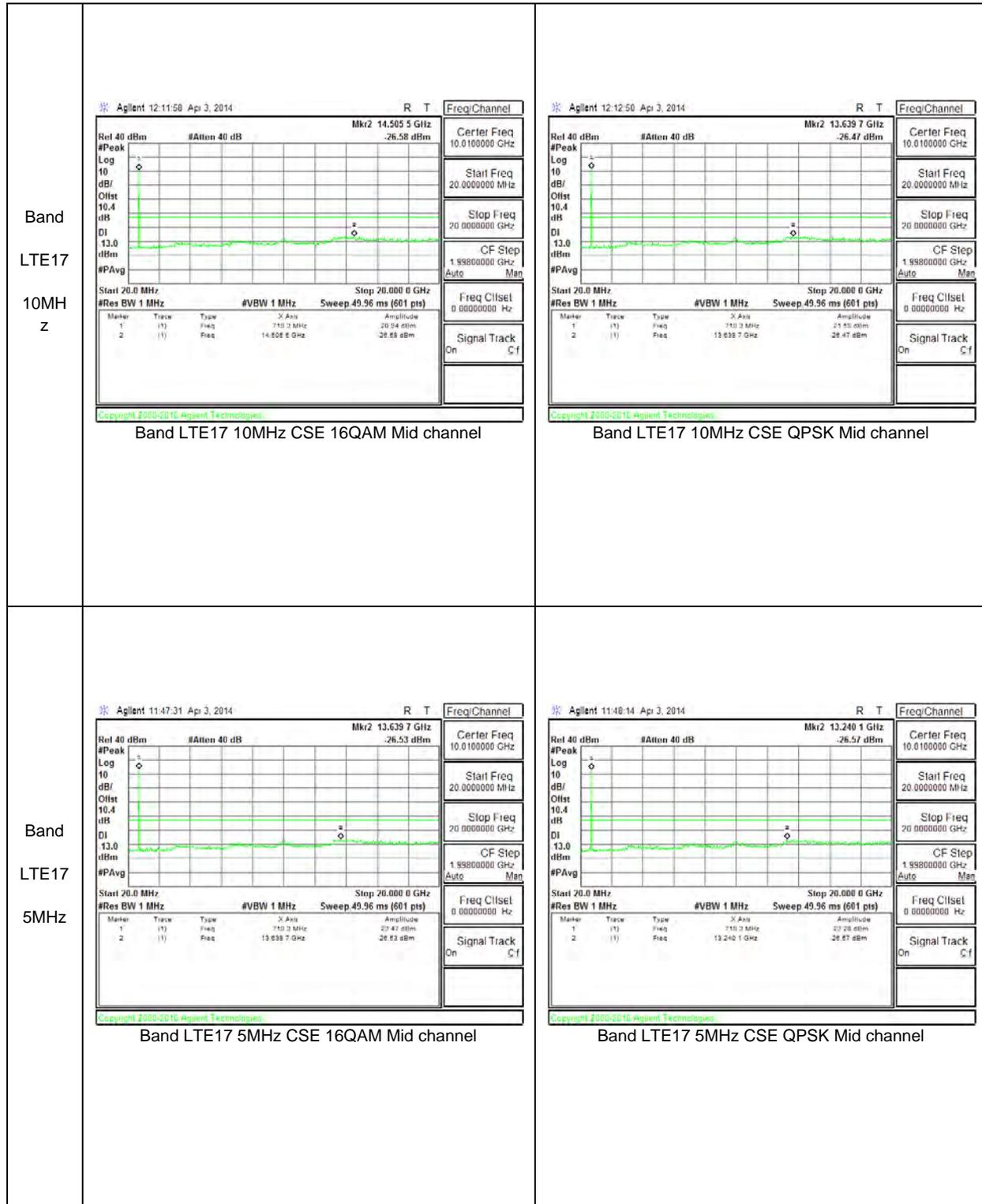
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	10	QPSK	1855	-26.27	-13	-13.27
			1880	-25.28	-13	-12.28
			1905	-25.68	-13	-12.68
		16QAM	1855	-25.71	-13	-12.71
			1880	-25.31	-13	-12.31
			1905	-25.75	-13	-12.75

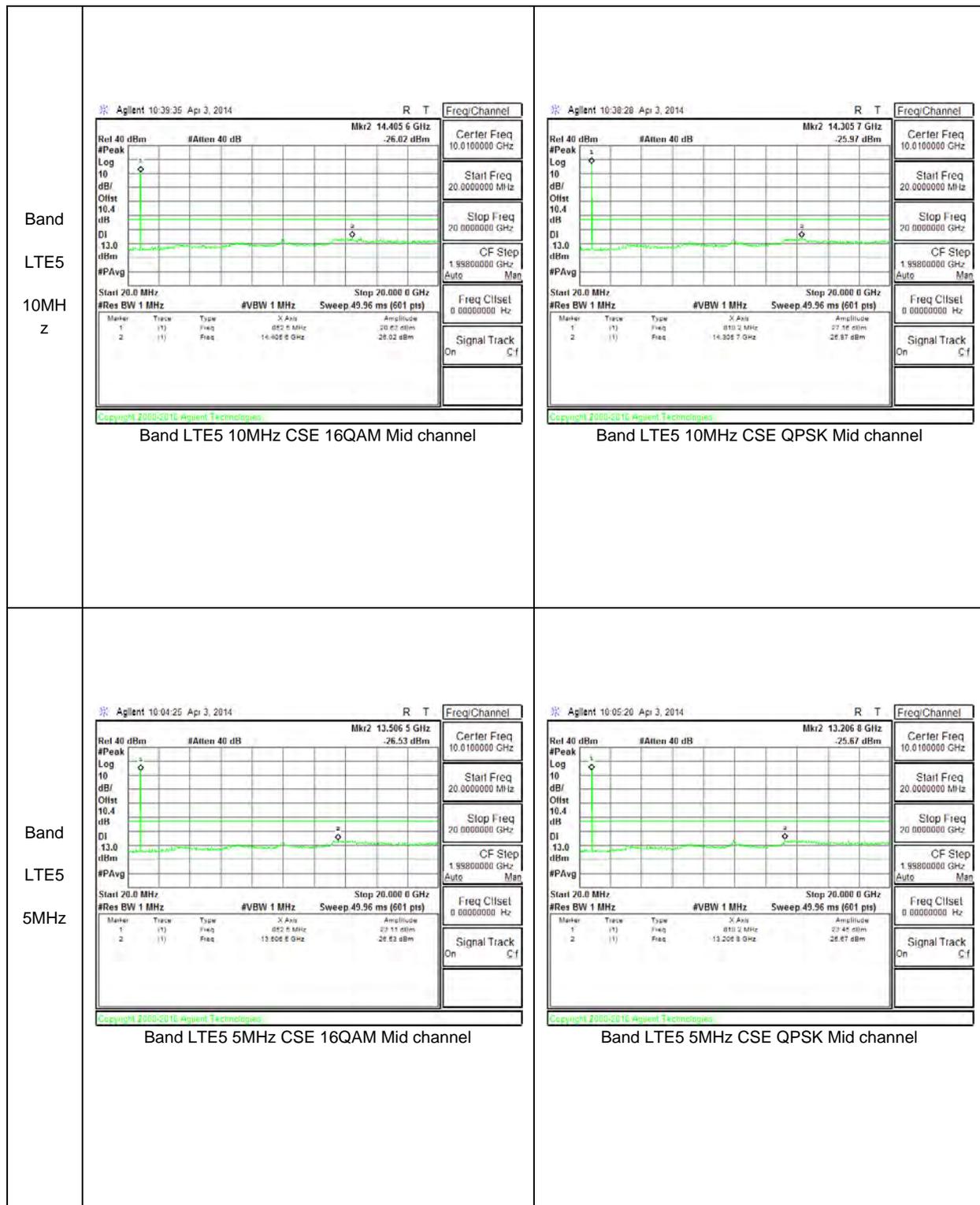
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE2	5	QPSK	1852.5	-26.88	-13	-13.88
			1880	-25.75	-13	-12.75
			1907.5	-26.02	-13	-13.02
		16QAM	1852.5	-25.68	-13	-12.68
			1880	-25.09	-13	-12.09

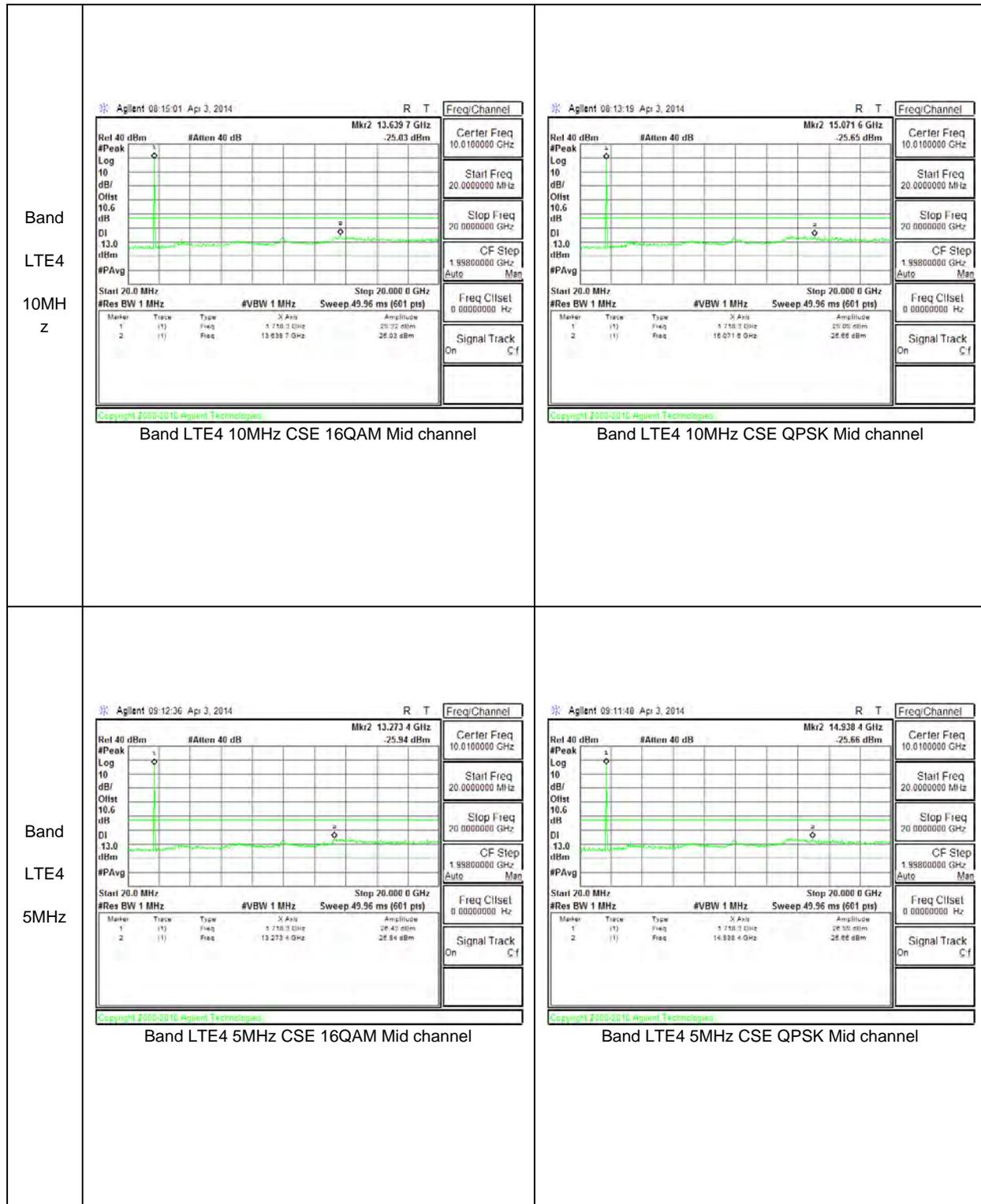
			1907.5	-25.46	-13	-12.46
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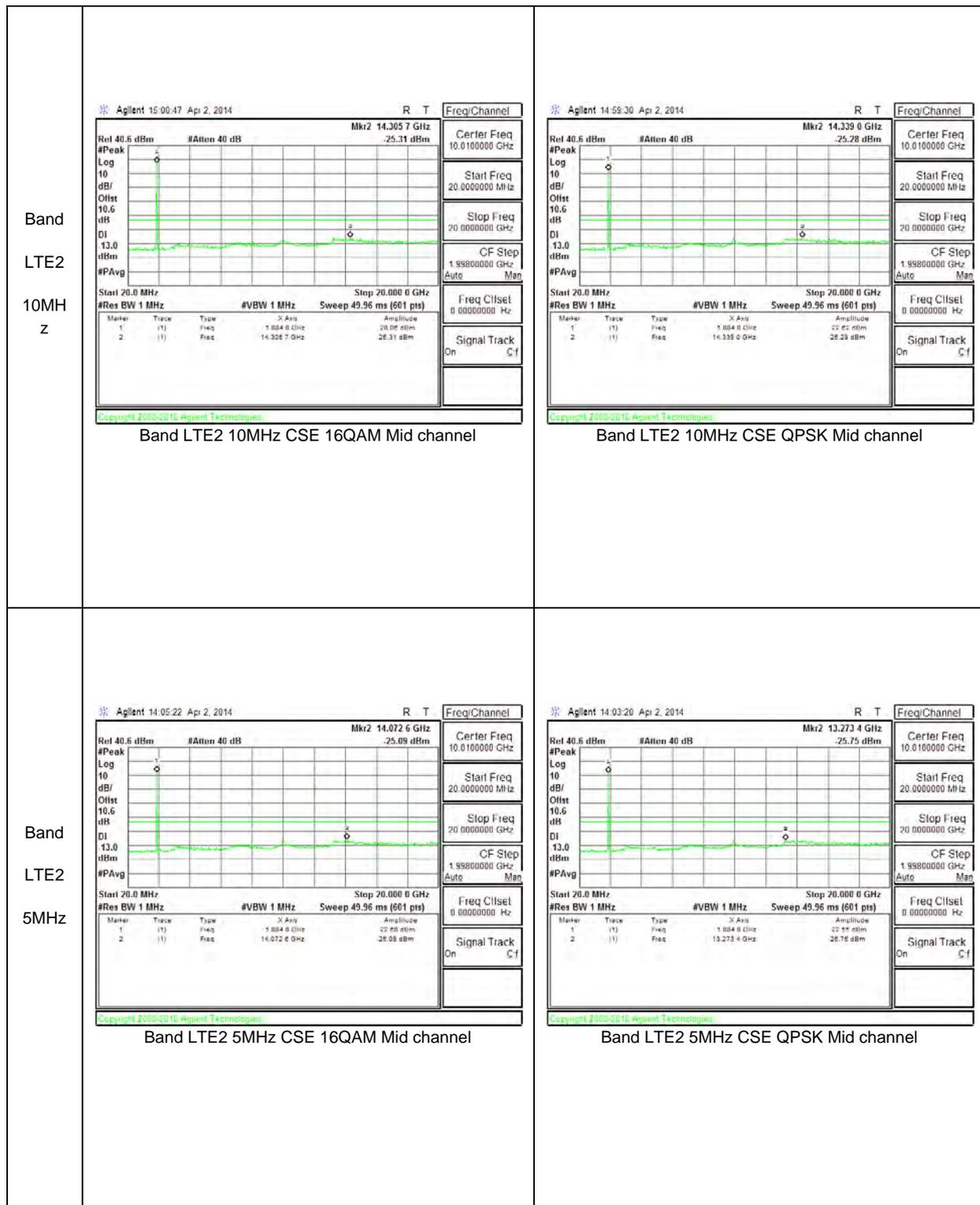
Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-26.78	-13	-13.78
		836.6	-26.75	-13	-13.75
		848.8	-26.84	-13	-13.84
	EGPRS	824.2	-26.47	-13	-13.47
		836.6	-27.85	-13	-14.85
		848.8	-24.8	-13	-11.8
GSM1900	GPRS	1850.2	-25.56	-13	-12.56
		1880	-25.82	-13	-12.82
		1909.8	-25.98	-13	-12.98
	EGPRS	1850.2	-26.58	-13	-13.58
		1880	-26.51	-13	-13.51
		1909.8	-26.24	-13	-13.24
Band 5	REL99	826.4	-25.76	-13	-12.76
		836.6	-26.38	-13	-13.38
		846.6	-25.69	-13	-12.69
	HSDPA	826.4	-25.63	-13	-12.63
		836.6	-27.26	-13	-14.26
		846.6	-25.64	-13	-12.64
Band 2	REL99	1852.4	-24.92	-13	-11.92
		1880	-25.68	-13	-12.68
		1907.6	-23.97	-13	-10.97
	HSDPA	1852.4	-25.48	-13	-12.48
		1880	-26.62	-13	-13.62
		1907.6	-26.51	-13	-13.51

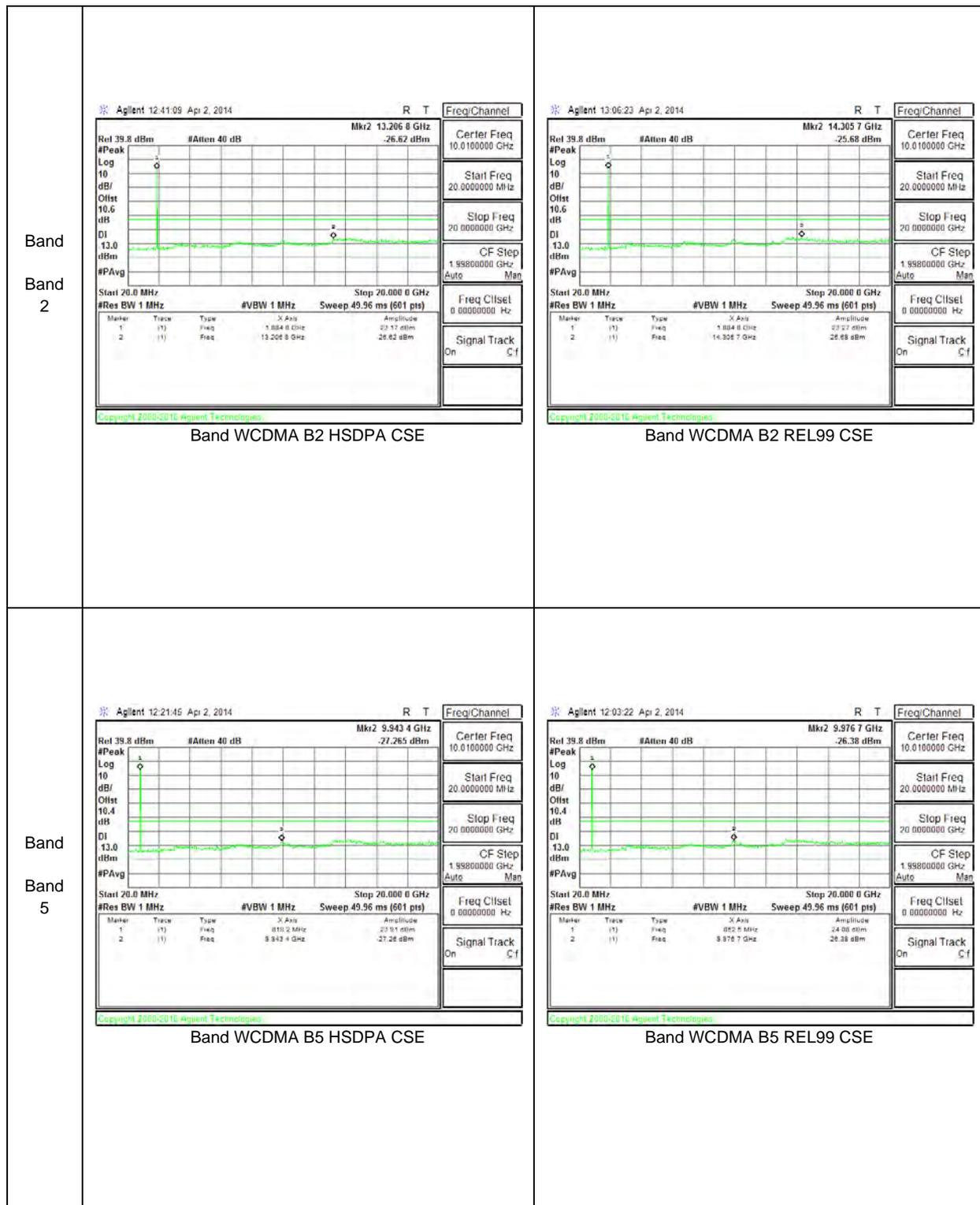
10.3.2. OUT OF BAND EMISSIONS PLOTS

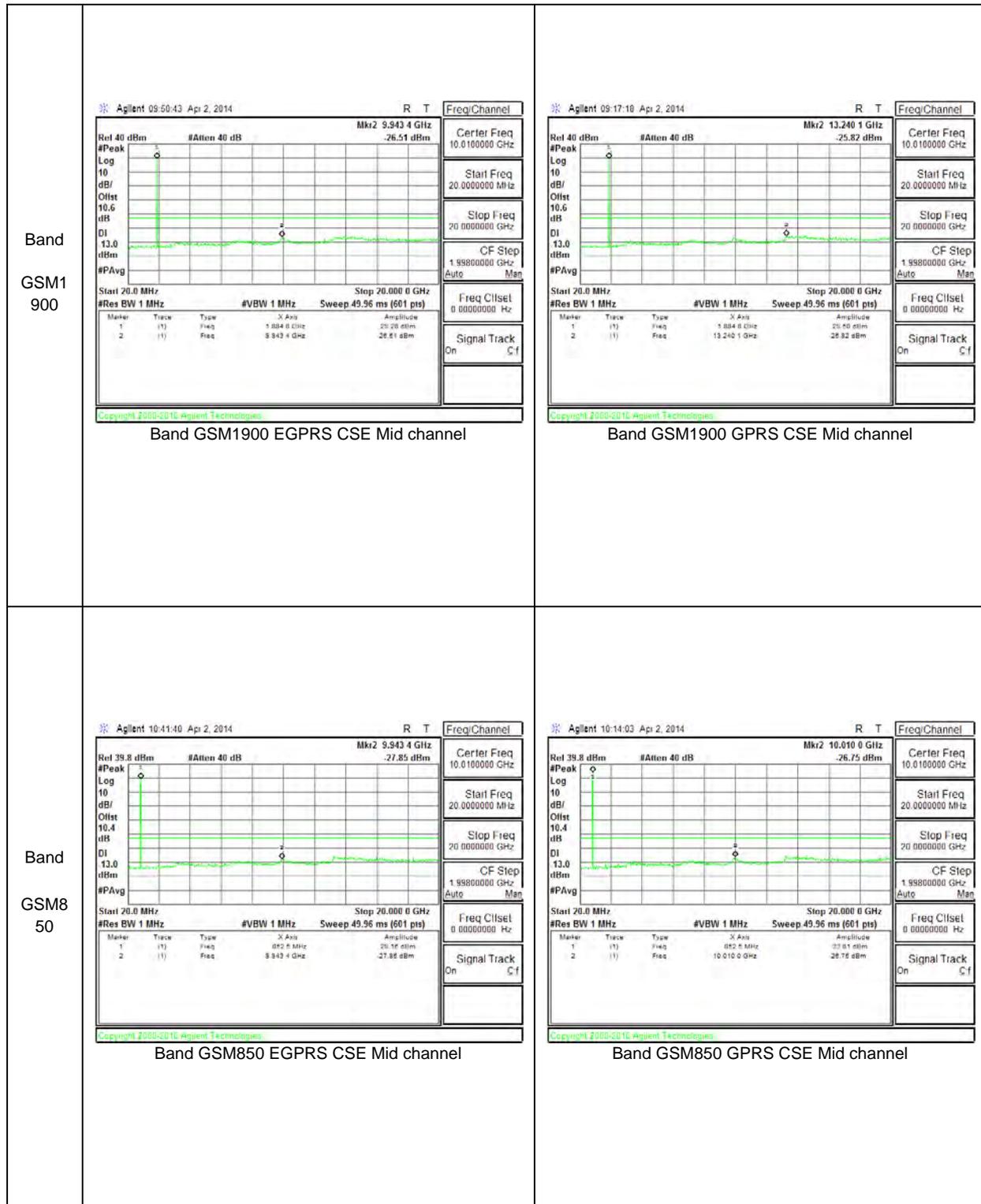












10.4. FREQUENCY STABILITY

RULE PART(S)

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

LIMITS

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

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

RESULTS

See the following pages.

10.4.1. FREQUENCY STABILITY RESULTS

BAND V, Channel 4183, Freq: 836.6MHz – MID CHANNEL

Limit: +- 2.5 ppm = 2091.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	836.599997	0.007	2.5
3.80	40	836.599995	0.010	2.5
3.80	30	836.600002	0.001	2.5
3.80	20	836.600003	0	2.5
3.80	10	836.600002	0.001	2.5
3.80	0	836.600003	0.000	2.5
3.80	-10	836.600003	0.000	2.5
3.80	-20	836.599996	0.008	2.5
3.80	-30	836.599998	0.006	2.5

Reference Frequency: Mid Channel 836.6 MHz @ 20°C				
Limit: +- 2.5 ppm = 2091.500 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	836.600003	0.00000	2.5
4.30	20	836.600004	-0.00120	2.5
3.40	20	836.599997	0.00717	2.5

BAND II, Channel 9400 Freq: 1880MHz– MID CHANNEL

Reference Frequency: PC S Mid Channel 1880MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1880.000007	0.001	2.5
3.80	40	1880.000007	0.001	2.5
3.80	30	1880.000006	0.001	2.5
3.80	20	1880.000008	0	2.5
3.80	10	1880.000005	0.002	2.5
3.80	0	1880.000006	0.001	2.5
3.80	-10	1880.000007	0.001	2.5
3.80	-20	1880.000009	-0.001	2.5
3.80	-30	1880.000008	0.000	2.5

Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1880.000008	0	2.5
4.30	20	1880.000009	-0.001	2.5
3.40	20	1880.000006	0.001	2.5

LTE BAND 17 – MID CHANNEL

Reference Frequency: Mid Channel 710 MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 1775.000 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	709.999996	-0.003	2.5
3.80	40	709.999996	-0.003	2.5
3.80	30	709.999995	-0.001	2.5
3.80	20	709.999994	0	2.5
3.80	10	709.999991	0.004	2.5
3.80	0	710.000006	-0.017	2.5
3.80	-10	710.000005	-0.015	2.5
3.80	-20	710.000004	-0.014	2.5
3.80	-30	710.000003	-0.013	2.5

Reference Frequency: Mid Channel 710.000010 MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 1775.000 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	709.999994	0.00000	2.5
4.30	20	709.999995	-0.00141	2.5
3.40	20	709.999993	0.00141	2.5

LTE BAND 4 – MID CHANNEL

Reference Frequency: PCS Mid Channel 1732.5MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	50	1732.499990	0.002	2.5
3.80	40	1732.499995	-0.001	2.5
3.80	30	1732.499991	0.002	2.5
3.80	20	1732.499994	0	2.5
3.80	10	1732.499993	0.001	2.5
3.80	0	1732.499992	0.001	2.5
3.80	-10	1732.499993	0.001	2.5
3.80	-20	1732.499991	0.002	2.5
3.80	-30	1732.499993	0.001	2.5

Reference Frequency: PCS Mid Channel 1732.500012 MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4331.250 Hz				
Power Supply (Vdc)	Environment Temperature (*C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
3.80	20	1732.499994	0.00000	2.5
4.30	20	1732.499992	0.00115	2.5
3.40	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.

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.

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

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

TEST RESULTS

11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	23.33	215.28
		9400	1880	22.96	197.7
		9538	1907.6	22.6	181.97
	HSDPA	9262	1852.4	23.28	212.81
		9400	1880	22.87	193.64
		9538	1907.6	22.27	168.66

Band	Mode	Channel	f(MHz)	ERP	
				dBm	mW
Band 5	REL99	4132	826.4	20.581	114.31
		4183	836.6	20.551	113.53
		4233	846.6	20.171	104.02
	HSDPA	4132	826.4	19.461	88.33
		4183	836.6	20.731	118.33
		4233	846.6	20.281	106.68

Band	Mode	Channel	f(MHz)	EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	29.07	807.24
		661	1880	28.95	785.24
		810	1909.8	27.62	578.1
	EGPRS	512	1850.2	26.12	409.26
		661	1880	25.18	329.61
		810	1909.8	24.69	294.44

Band	Mode	Channel	f(MHz)	ERP	
				dBm	mW
GSM850	GPRS	128	824.2	27.581	572.93
		190	836.6	28.201	660.85
		251	848.8	27.931	621.01
	EGPRS	128	824.2	23.971	249.52
		190	836.6	23.747	236.97
		251	848.8	23.617	229.99

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	17.871	61.25
			1/0	710	17.661	58.36
			1/0	711	17.321	53.96
		16QAM	1/0	709	17.011	50.25
			1/0	710	16.911	49.1
			1/0	711	16.611	45.82

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE17	5	QPSK	1/0	706.5	17.421	55.22
			1/0	710	17.381	54.71
			1/0	713.5	17.271	53.35
		16QAM	1/0	706.5	16.301	42.67
			1/0	710	16.271	42.37
			1/0	713.5	16.091	40.65

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	19.611	91.43
			1/0	836.5	20.341	108.17
			1/0	844	20.351	108.42
		16QAM	1/0	829	18.521	71.14
			1/0	836.5	19.351	86.12
			1/0	844	19.191	83

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	5	QPSK	1/0	826.5	19.071	80.74

		16QAM	1/0	836.5	19.981	99.56
			1/0	846.5	19.831	96.18
			1/0	826.5	18.041	63.69
			1/0	836.5	18.761	75.18
			1/0	846.5	19.001	79.45

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	10	QPSK	1/0	1715	23.33	215.28
			1/0	1732.5	23.85	242.66
			1/0	1750	23.58	228.03
		16QAM	1/0	1715	22.81	190.99
			1/0	1732.5	22.71	186.64
			1/0	1750	22.76	188.8

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE4	5	QPSK	1/0	1712.5	22.81	190.99
			1/0	1732.5	23.57	227.51
			1/0	1752.5	23.42	219.79
		16QAM	1/0	1712.5	21.53	142.23
			1/0	1732.5	22.24	167.49
			1/0	1752.5	22.2	165.96

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	10	QPSK	1/0	1855	23.65	231.74
			1/0	1880	22.53	179.06
			1/0	1905	23.07	202.77
		16QAM	1/0	1855	22.86	193.2
			1/0	1880	21.37	137.09

			1/0	1905	21.77	150.31
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Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE2	5	QPSK	1/0	1852.5	23.6	229.09
			1/0	1880	22.62	182.81
			1/0	1907.5	22.36	172.19
		16QAM	1/0	1852.5	22.68	185.35
			1/0	1880	21.27	133.97
			1/0	1907.5	20.94	124.17

11.1.3. ERP/EIRP DATA

Band LTE17 10MHz z 16QAM M	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B									
	Company: LG Electronics Project #: 14U17477 Date: 04/08/14 Test Engineer: Charles Vergonio Configuration: EUT ONLY/ Y Orientation Mode: LTE17 10MHz FUND 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	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes	
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)		
	Low Ch									
	709.00	9.39	V	0.9	0.0	8.49	34.8	-26.3		
	709.00	17.91	H	0.9	0.0	17.01	34.8	-17.8		
	Mid Ch									
	710.00	9.19	V	0.9	0.0	8.29	34.8	-26.5		
	710.00	17.81	H	0.9	0.0	16.91	34.8	-17.9		
	High Ch									
	711.00	8.99	V	0.9	0.0	8.09	34.8	-26.7		
	711.00	17.51	H	0.9	0.0	16.61	34.8	-18.2		
	Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band LTE17 10MHz z QPSK	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: 14U17477 Date: 04/08/14 Test Engineer: Charles Vergonio Configuration: EUT ONLY/ Y Orientation Mode: LTE17 10MHz FUND 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	10.11	V	0.9	0.0	9.21	34.8	-25.6	
	709.00	18.77	H	0.9	0.0	17.87	34.8	-16.9	
	Mid Ch								
	710.00	9.97	V	0.9	0.0	9.07	34.8	-25.7	
	710.00	18.56	H	0.9	0.0	17.66	34.8	-17.1	
High Ch									
711.00	9.36	V	0.9	0.0	8.46	34.8	-26.3		
711.00	18.22	H	0.9	0.0	17.32	34.8	-17.4		
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 B								
	Company: LG Electronics								
	Project #: 14U17477								
	Date: 04/08/14								
	Test Engineer: Charles Vergonio								
	Configuration: EUT ONLY/ Y Orientation								
	Mode: LTE17 5MHz FUND 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	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	706.50	9.38	V	0.9	0.0	8.48	34.8	-26.3	
	706.50	17.20	H	0.9	0.0	16.30	34.8	-18.5	
	Mid Ch								
	710.00	9.09	V	0.9	0.0	8.19	34.8	-26.6	
	710.00	17.17	H	0.9	0.0	16.27	34.8	-18.5	
	High Ch								
	713.50	8.52	V	0.9	0.0	7.62	34.8	-27.1	
	713.50	16.99	H	0.9	0.0	16.09	34.8	-18.7	
	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 B									
	Company: LG Electronics Project #: 14U17477 Date: 04/08/14 Test Engineer: Charles Vergonio Configuration: EUT ONLY/ Y Orientation Mode: LTE17 5MHz FUND 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	10.15	V	0.9	0.0	9.25	34.8	-25.5		
	706.50	18.32	H	0.9	0.0	17.42	34.8	-17.3		
	Mid Ch									
	710.00	10.01	V	0.9	0.0	9.11	34.8	-25.7		
	710.00	18.28	H	0.9	0.0	17.38	34.8	-17.4		
High Ch										
713.50	9.58	V	0.9	0.0	8.68	34.8	-26.1			
713.50	18.17	H	0.9	0.0	17.27	34.8	-17.5			
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm										

Band LTE5 10MHz z 16QAM	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: 14U17477 Date: 04/08/14 Test Engineer: Charles Vergonio Configuration: EUT ONLY/ Y Orientation Mode: LTE5 10MHz FUND 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								
	829.00	13.79	V	0.9	0.0	12.89	38.5	-25.6	
	829.00	19.42	H	0.9	0.0	18.52	38.5	-19.9	
	Mid Ch								
	836.50	14.10	V	0.9	0.0	13.20	38.5	-25.2	
836.50	20.25	H	0.9	0.0	19.35	38.5	-19.1		
High Ch									
844.00	13.87	V	0.9	0.0	12.97	38.5	-25.5		
844.00	20.09	H	0.9	0.0	19.19	38.5	-19.3		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band LTE5 10MHz z QPSK	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: 14U17477 Date: 04/08/14 Test Engineer: Charles Vergonio Configuration: EUT ONLY/ Y Orientation Mode: LTE5 10MHz FUND 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	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	829.00	14.88	V	0.9	0.0	13.98	38.5	-24.5	
	829.00	20.51	H	0.9	0.0	19.61	38.5	-18.8	
	Mid Ch								
	836.50	15.10	V	0.9	0.0	14.20	38.5	-24.2	
836.50	21.24	H	0.9	0.0	20.34	38.5	-18.1		
High Ch									
844.00	14.98	V	0.9	0.0	14.08	38.5	-24.4		
844.00	21.25	H	0.9	0.0	20.35	38.5	-18.1		
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 B									
	Company: LG Electronics Project #: 14U17477 Date: 04/08/14 Test Engineer: Charles Vergonio Configuration: EUT ONLY/ Y Orientation Mode: LTE5 5MHz FUND 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									
	826.50	14.70	V	0.9	0.0	13.80	38.5	-24.6		
	826.50	18.94	H	0.9	0.0	18.04	38.5	-20.4		
	Mid Ch									
836.50	14.04	V	0.9	0.0	13.14	38.5	-25.3			
836.50	19.66	H	0.9	0.0	18.76	38.5	-19.7			
High Ch										
846.50	13.84	V	0.9	0.0	12.94	38.5	-25.5			
846.50	19.90	H	0.9	0.0	19.00	38.5	-19.4			
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 B								
	Company: LG Electronics Project #: 14U17477 Date: 04/08/14 Test Engineer: Charles Vergonio Configuration: EUT ONLY/ Y Orientation Mode: LTE5 5MHz FUND 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								
	826.50	15.40	V	0.9	0.0	14.50	38.5	-23.9	
	826.50	19.97	H	0.9	0.0	19.07	38.5	-19.4	
	Mid Ch								
836.50	15.11	V	0.9	0.0	14.21	38.5	-24.2		
836.50	20.88	H	0.9	0.0	19.98	38.5	-18.5		
High Ch									
846.50	14.40	V	0.9	0.0	13.50	38.5	-24.9		
846.50	20.73	H	0.9	0.0	19.83	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 LTE4 10MHz z 16QAM	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B4 10MHz 16QAM								
	Test Equipment:								
	Receiving: Horn T345, and Chamber B 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	7.53	V	0.9	8.3	14.97	30.0	-15.0	
	1715.00	15.37	H	0.9	8.3	22.81	30.0	-7.2	
	Mid Ch								
1732.50	9.06	V	0.9	8.2	16.41	30.0	-13.6		
1732.50	15.36	H	0.9	8.2	22.71	30.0	-7.3		
High Ch									
1750.00	8.53	V	0.9	8.2	15.88	30.0	-14.1		
1750.00	15.41	H	0.9	8.2	22.76	30.0	-7.2		
Rev. 3.17.11									
Note: For Band 4 EIRP limit is 30dBm									

Band LTE4 10MHz z QPSK	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B2 10MHz QPSK								
	Test Equipment: Receiving: Horn T345, and Chamber B SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1715.00	8.56	V	0.9	8.3	16.00	30.0	-14.0	
	1715.00	15.89	H	0.9	8.3	23.33	30.0	-6.7	
	Mid Ch								
	1732.50	10.00	V	0.9	8.2	17.35	30.0	-12.7	
1732.50	16.50	H	0.9	8.2	23.85	30.0	-6.2		
High Ch									
1750.00	8.95	V	0.9	8.2	16.30	30.0	-13.7		
1750.00	16.23	H	0.9	8.2	23.58	30.0	-6.4		
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 B								
	Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B4 5MHz 16QAM								
	Test Equipment:								
	Receiving: Horn T345, and Chamber B 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	6.62	V	0.9	8.3	14.06	30.0	-15.9	
	1712.50	14.09	H	0.9	8.3	21.53	30.0	-8.5	
	Mid Ch								
1732.50	8.40	V	0.9	8.2	15.75	30.0	-14.3		
1732.50	14.89	H	0.9	8.2	22.24	30.0	-7.8		
High Ch									
1752.50	7.93	V	0.9	8.2	15.28	30.0	-14.7		
1752.50	14.85	H	0.9	8.2	22.20	30.0	-7.8		
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 B																																																																																										
	Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B4 5MHz QPSK																																																																																										
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Band LTE2 10MHz z 16QAM M	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B									
	Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B2 10MHz 16QAM									
	Test Equipment: Receiving: Horn T345, and Chamber B 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	9.36	V	0.9	7.9	16.41	33.0	-16.6		
	1855.00	15.81	H	0.9	7.9	22.86	33.0	-10.1		
	Mid Ch									
	1880.00	8.76	V	0.9	7.9	15.81	33.0	-17.2		
	1880.00	14.32	H	0.9	7.9	21.37	33.0	-11.6		
High Ch										
1905.00	9.50	V	0.9	7.8	16.45	33.0	-16.6			
1905.00	14.82	H	0.9	7.8	21.77	33.0	-11.2			
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm										

Band LTE2 10MHz z QPSK	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B									
	Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B2 10MHz QPSK									
	Test Equipment: Receiving: Horn T345, and Chamber B 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	10.35	V	0.9	7.9	17.40	33.0	-15.6		
	1855.00	16.60	H	0.9	7.9	23.65	33.0	-9.4		
	Mid Ch									
	1880.00	9.90	V	0.9	7.9	16.95	33.0	-16.1		
	1880.00	15.48	H	0.9	7.9	22.53	33.0	-10.5		
High Ch										
1905.00	10.10	V	0.9	7.8	17.05	33.0	-16.0			
1905.00	16.12	H	0.9	7.8	23.07	33.0	-9.9			
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm										

Band LTE2 5MHz 16QAM M	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B2 5MHz 16QAM								
	Test Equipment: Receiving: Horn T345, and Chamber B 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	10.05	V	0.9	7.9	17.10	33.0	-15.9	
	1852.50	15.63	H	0.9	7.9	22.68	33.0	-10.3	
	Mid Ch								
	1880.00	10.90	V	0.9	7.9	17.95	33.0	-15.1	
	1880.00	14.22	H	0.9	7.9	21.27	33.0	-11.7	
High Ch									
1907.50	10.69	V	0.9	7.8	17.64	33.0	-15.4		
1907.50	13.99	H	0.9	7.8	20.94	33.0	-12.1		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

		High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B						
		Company: LG Electronics Project #: 14U17477 Date: 04/03/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: LTE B2 5MHz QPSK						
Band		Test Equipment:						
LTE2		Receiving: Horn T345, and Chamber B SMA Cables						
5MHz		Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse						
QPSK								
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	11.75	V	0.9	7.9	18.80	33.0	-14.2	
1852.50	16.55	H	0.9	7.9	23.60	33.0	-9.4	
Mid Ch								
1880.00	11.68	V	0.9	7.9	18.73	33.0	-14.3	
1880.00	15.57	H	0.9	7.9	22.62	33.0	-10.4	
High Ch								
1907.50	11.51	V	0.9	7.8	18.46	33.0	-14.5	
1907.50	15.41	H	0.9	7.8	22.36	33.0	-10.6	
Rev. 3.17.11								
Note: For Band 4 EIRP limit is 30dBm								

Band Band 2 HSDP A	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: Date: 04/02/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: WCDMA HSDPA B2								
	Test Equipment: Receiving: Horn T345, and Chamber C SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1852.40	9.55	V	0.9	7.9	16.60	33.0	-16.4	
	1852.40	16.23	H	0.9	7.9	23.28	33.0	-9.7	
	Mid Ch								
	1880.00	10.00	V	0.9	7.9	17.05	33.0	-16.0	
1880.00	15.82	H	0.9	7.9	22.87	33.0	-10.1		
High Ch									
1907.60	9.70	V	0.9	7.8	16.65	33.0	-16.4		
1907.60	15.32	H	0.9	7.8	22.27	33.0	-10.7		
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 B								
	Company: LG Electronics Project #: Date: 04/02/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: WCDMA REL99 B2								
	Test Equipment: Receiving: Horn T345, 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	9.75	V	0.9	7.9	16.80	33.0	-16.2	
	1852.40	16.28	H	0.9	7.9	23.33	33.0	-9.7	
	Mid Ch								
	1880.00	10.56	V	0.9	7.9	17.61	33.0	-15.4	
	1880.00	15.91	H	0.9	7.9	22.96	33.0	-10.0	
High Ch									
1907.60	9.80	V	0.9	7.8	16.75	33.0	-16.3		
1907.60	15.65	H	0.9	7.8	22.60	33.0	-10.4		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

Band Band 5 HSDP A	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: Date: 04/02/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: WCDMA HSDPA B5								
	Test Equipment: Receiving: Sunol T243, 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	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	ERP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	826.40	15.23	V	0.9	0.0	14.33	38.5	-24.1	
	826.40	20.36	H	0.9	0.0	19.46	38.5	-19.0	
	Mid Ch								
	836.60	14.92	V	0.9	0.0	14.02	38.5	-24.4	
836.60	21.63	H	0.9	0.0	20.73	38.5	-17.7		
High Ch									
846.60	15.47	V	0.9	0.0	14.57	38.5	-23.9		
846.60	21.18	H	0.9	0.0	20.28	38.5	-18.2		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band 5 REL99	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B																																																																																																					
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Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm																																																																																																						

Band GSM1 900 EGPR S	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: Date: 04/02/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: GSM1900 EGPRS								
	Test Equipment: Receiving: Horn T345, and Chamber C SMA Cables Substitution: Horn T59 Substitution, 4ft SMA Cable Warehouse								
	f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Margin	Notes
	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
	Low Ch								
	1850.20	16.30	V	0.9	7.9	23.35	33.0	-9.7	
	1850.20	19.07	H	0.9	7.9	26.12	33.0	-6.9	
	Mid Ch								
	1880.00	16.30	V	0.9	7.9	23.35	33.0	-9.7	
1880.00	18.13	H	0.9	7.9	25.18	33.0	-7.8		
High Ch									
1909.80	16.26	V	0.9	7.8	23.21	33.0	-9.8		
1909.80	17.74	H	0.9	7.8	24.69	33.0	-8.3		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

Band GSM1 900 GPRS	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: Date: 04/02/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: GSM1900 GPRS								
	Test Equipment: Receiving: Horn T345, 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	18.99	V	0.9	7.9	26.04	33.0	-7.0	
	1850.20	22.02	H	0.9	7.9	29.07	33.0	-3.9	
	Mid Ch								
	1880.00	18.80	V	0.9	7.9	25.85	33.0	-7.2	
	1880.00	21.90	H	0.9	7.9	28.95	33.0	-4.1	
High Ch									
1909.80	18.70	V	0.9	7.8	25.65	33.0	-7.4		
1909.80	20.67	H	0.9	7.8	27.62	33.0	-5.4		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

Band GSM8 50 EGPR S	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B								
	Company: LG Electronics Project #: Date: 04/02/14 Test Engineer: Charles Vergonio Configuration: EUT Only Mode: GSM850 EGPRS 850MHz								
	Test Equipment: Receiving: Sunol T243, 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	20.50	V	0.9	0.0	19.60	38.5	-18.8	
	824.20	24.87	H	0.9	0.0	23.97	38.5	-14.5	
	Mid Ch								
	836.60	19.27	V	0.9	0.0	18.37	38.5	-20.1	
	836.60	24.65	H	0.9	0.0	23.75	38.5	-14.7	
High Ch									
848.80	19.09	V	0.9	0.0	18.19	38.5	-20.3		
848.80	24.52	H	0.9	0.0	23.62	38.5	-14.8		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

Band GSM8 50 GPRS	High Frequency Substitution Measurement UL Verification Services, Inc. Chamber B																																																																																																					
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	Configuration: EUT Only																																																																																																					
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f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																														
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11.2. FIELD STRENGTH OF SPURIOUS RADIATION**RULE PART(S)**

FCC: §2.1053, §22.917, §24.238

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

TEST PROCEDURE

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

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

RESULTS

11.2.1. SPURIOUS RADIATION DATA

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
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	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE17 10MHz z 16QAM	Low Ch, (709MHz)									
	1.418	-27.8	V	3.0	33.1	1.0	-59.9	-13.0	-46.9	
	2.127	-25.7	V	3.0	31.6	1.0	-56.3	-13.0	-43.3	
	2.836	-28.6	V	3.0	31.0	1.0	-58.6	-13.0	-45.6	
	1.418	-29.3	H	3.0	33.1	1.0	-61.4	-13.0	-48.4	
	2.127	-27.9	H	3.0	31.6	1.0	-58.5	-13.0	-45.5	
	2.836	-30.1	H	3.0	31.0	1.0	-60.2	-13.0	-47.2	
	Mid Ch, (710MHz)									
	1.420	-26.7	V	3.0	33.1	1.0	-58.8	-13.0	-45.8	
	2.130	-26.1	V	3.0	31.6	1.0	-56.7	-13.0	-43.7	
	2.840	-29.5	V	3.0	31.0	1.0	-59.5	-13.0	-46.5	
	1.420	-29.8	H	3.0	33.1	1.0	-61.9	-13.0	-48.9	
	2.130	-28.3	H	3.0	31.6	1.0	-58.9	-13.0	-45.9	
	2.840	-29.6	H	3.0	31.0	1.0	-59.7	-13.0	-46.7	
	High Ch, (711MHz)									
	1.422	-27.8	V	3.0	33.1	1.0	-59.9	-13.0	-46.9	
	2.133	-26.5	V	3.0	31.6	1.0	-57.0	-13.0	-44.0	
	2.844	-29.4	V	3.0	31.0	1.0	-59.4	-13.0	-46.4	
1.422	-29.6	H	3.0	33.1	1.0	-61.7	-13.0	-48.7		
2.133	-27.2	H	3.0	31.6	1.0	-57.8	-13.0	-44.8		
2.844	-30.2	H	3.0	31.0	1.0	-60.2	-13.0	-47.2		
Rev. 03.03.09										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
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	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE17 10MH z QPSK	Low Ch, (709MHz)									
	1.418	-26.8	V	3.0	33.1	1.0	-58.9	-13.0	-45.9	
	2.127	-26.6	V	3.0	31.6	1.0	-57.2	-13.0	-44.2	
	2.836	-29.2	V	3.0	31.0	1.0	-59.2	-13.0	-46.2	
	1.418	-29.2	H	3.0	33.1	1.0	-61.2	-13.0	-48.2	
	2.127	-28.0	H	3.0	31.6	1.0	-58.6	-13.0	-45.6	
	2.836	-30.1	H	3.0	31.0	1.0	-60.1	-13.0	-47.1	
	Mid Ch, (710MHz)									
	1.420	-27.2	V	3.0	33.1	1.0	-59.3	-13.0	-46.3	
	2.130	-25.7	V	3.0	31.6	1.0	-56.3	-13.0	-43.3	
	2.840	-29.4	V	3.0	31.0	1.0	-59.5	-13.0	-46.5	
	1.420	-29.5	H	3.0	33.1	1.0	-61.6	-13.0	-48.6	
2.130	-27.9	H	3.0	31.6	1.0	-58.5	-13.0	-45.5		
2.840	-29.5	H	3.0	31.0	1.0	-59.6	-13.0	-46.6		
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	-29.1	V	3.0	31.0	1.0	-59.2	-13.0	-46.2		
1.422	-28.9	H	3.0	33.1	1.0	-61.0	-13.0	-48.0		
2.133	-28.0	H	3.0	31.6	1.0	-58.6	-13.0	-45.6		
2.844	-30.2	H	3.0	31.0	1.0	-60.3	-13.0	-47.3		
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE B17 5MHz har 16QAM								
Chamber		Pre-amplifer			Filter		Limit			
5m Chamber A		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 16QA M	Low Ch, (706.5MHz)									
	1.413	-26.4	V	3.0	33.1	1.0	-58.5	-13.0	-45.5	
	2.120	-25.9	V	3.0	31.6	1.0	-56.5	-13.0	-43.5	
	2.826	-29.8	V	3.0	31.0	1.0	-59.9	-13.0	-46.9	
	1.413	-28.9	H	3.0	33.1	1.0	-61.0	-13.0	-48.0	
	2.120	-28.1	H	3.0	31.6	1.0	-58.7	-13.0	-45.7	
	2.826	-30.3	H	3.0	31.0	1.0	-60.3	-13.0	-47.3	
	Mid Ch, (710MHz)									
	1.420	-27.7	V	3.0	33.1	1.0	-59.8	-13.0	-46.8	
	2.130	-26.2	V	3.0	31.6	1.0	-56.8	-13.0	-43.8	
	2.840	-29.6	V	3.0	31.0	1.0	-59.6	-13.0	-46.6	
	1.420	-29.4	H	3.0	33.1	1.0	-61.5	-13.0	-48.5	
	2.130	-27.6	H	3.0	31.6	1.0	-58.2	-13.0	-45.2	
	2.840	-29.5	H	3.0	31.0	1.0	-59.6	-13.0	-46.6	
	High Ch, (713.5MHz)									
	1.427	-27.1	V	3.0	33.1	1.0	-59.2	-13.0	-46.2	
	2.141	-25.5	V	3.0	31.6	1.0	-56.0	-13.0	-43.0	
	2.854	-28.9	V	3.0	31.0	1.0	-58.9	-13.0	-45.9	
1.427	-29.5	H	3.0	33.1	1.0	-61.6	-13.0	-48.6		
2.141	-28.1	H	3.0	31.6	1.0	-58.6	-13.0	-45.6		
2.854	-29.5	H	3.0	31.0	1.0	-59.5	-13.0	-46.5		
Rev. 03.03.09										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE B17 5MHz har QPSK								
Chamber		Pre-amplifer			Filter		Limit			
5m Chamber A		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	-26.8	V	3.0	33.1	1.0	-58.9	-13.0	-45.9	
	2.120	-26.5	V	3.0	31.6	1.0	-57.1	-13.0	-44.1	
5MHz	2.826	-30.0	V	3.0	31.0	1.0	-60.0	-13.0	-47.0	
QPSK										
	1.413	-28.9	H	3.0	33.1	1.0	-60.9	-13.0	-47.9	
	2.120	-27.5	H	3.0	31.6	1.0	-58.1	-13.0	-45.1	
	2.826	-30.3	H	3.0	31.0	1.0	-60.4	-13.0	-47.4	
Mid Ch, (710MHz)										
	1.420	-27.4	V	3.0	33.1	1.0	-59.5	-13.0	-46.5	
	2.130	-26.2	V	3.0	31.6	1.0	-56.8	-13.0	-43.8	
	2.840	-29.3	V	3.0	31.0	1.0	-59.3	-13.0	-46.3	
	1.420	-29.2	H	3.0	33.1	1.0	-61.3	-13.0	-48.3	
	2.130	-27.5	H	3.0	31.6	1.0	-58.1	-13.0	-45.1	
	2.840	-29.8	H	3.0	31.0	1.0	-59.8	-13.0	-46.8	
High Ch, (713.5MHz)										
	1.427	-26.7	V	3.0	33.1	1.0	-58.8	-13.0	-45.8	
	2.141	-25.7	V	3.0	31.6	1.0	-56.2	-13.0	-43.2	
	2.854	-29.0	V	3.0	31.0	1.0	-59.0	-13.0	-46.0	
	1.427	-29.2	H	3.0	33.1	1.0	-61.3	-13.0	-48.3	
	2.141	-27.8	H	3.0	31.6	1.0	-58.3	-13.0	-45.3	
	2.854	-29.0	H	3.0	31.0	1.0	-59.0	-13.0	-46.0	
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE BAND 5, 10MHz BW, 16QAM								
Chamber		Pre-amplifer			Filter		Limit			
5m Chamber A		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
LTE5 10MHz z 16QAM M	Low Channel (829MHz)									
	1.658	-26.8	V	3.0	37.4	1.0	-63.2	-13.0	-50.2	
	2.487	-21.9	V	3.0	36.4	1.0	-57.3	-13.0	-44.3	
	3.316	-21.3	V	3.0	35.8	1.0	-56.1	-13.0	-43.1	
	1.658	-26.9	H	3.0	37.4	1.0	-63.3	-13.0	-50.3	
	2.487	-24.1	H	3.0	36.4	1.0	-59.5	-13.0	-46.5	
	3.316	-21.2	H	3.0	35.8	1.0	-56.0	-13.0	-43.0	
	Mid Channel (836.5MHz)									
	1.673	-26.9	V	3.0	37.3	1.0	-63.2	-13.0	-50.2	
	2.509	-23.6	V	3.0	36.4	1.0	-58.9	-13.0	-45.9	
	3.346	-23.1	V	3.0	35.8	1.0	-57.9	-13.0	-44.9	
	1.673	-27.3	H	3.0	37.3	1.0	-63.6	-13.0	-50.6	
	2.509	-25.0	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
	3.346	-22.5	H	3.0	35.8	1.0	-57.3	-13.0	-44.3	
	High Channel (844MHz)									
	1.688	-26.8	V	3.0	37.3	1.0	-63.1	-13.0	-50.1	
	2.532	-24.2	V	3.0	36.3	1.0	-59.6	-13.0	-46.6	
	3.376	-23.0	V	3.0	35.7	1.0	-57.7	-13.0	-44.7	
	1.688	-28.0	H	3.0	37.3	1.0	-64.3	-13.0	-51.3	
	2.532	-25.9	H	3.0	36.3	1.0	-61.3	-13.0	-48.3	
	3.376	-22.1	H	3.0	35.7	1.0	-56.8	-13.0	-43.8	
	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 #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE BAND 5, 10MHz BW,QPSK								
Chamber		Pre-amplifer		Filter		Limit				
5m Chamber A		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
LTE5 10MH z QPSK	Low Channel (829MHz)									
	1.658	-26.3	V	3.0	37.4	1.0	-62.7	-13.0	-49.7	
	2.487	-21.8	V	3.0	36.4	1.0	-57.2	-13.0	-44.2	
	3.316	-20.9	V	3.0	35.8	1.0	-55.7	-13.0	-42.7	
	1.658	-26.6	H	3.0	37.4	1.0	-63.0	-13.0	-50.0	
	2.487	-24.4	H	3.0	36.4	1.0	-59.8	-13.0	-46.8	
	3.316	-21.0	H	3.0	35.8	1.0	-55.8	-13.0	-42.8	
	Mid Channel (836.5MHz)									
	1.673	-26.8	V	3.0	37.3	1.0	-63.2	-13.0	-50.2	
	2.509	-23.3	V	3.0	36.4	1.0	-58.6	-13.0	-45.6	
	3.346	-22.7	V	3.0	35.8	1.0	-57.4	-13.0	-44.4	
	1.673	-27.0	H	3.0	37.3	1.0	-63.4	-13.0	-50.4	
	2.509	-24.7	H	3.0	36.4	1.0	-60.1	-13.0	-47.1	
	3.346	-22.7	H	3.0	35.8	1.0	-57.4	-13.0	-44.4	
	High Channel (844MHz)									
	1.688	-26.1	V	3.0	37.3	1.0	-62.4	-13.0	-49.4	
	2.532	-24.1	V	3.0	36.3	1.0	-59.4	-13.0	-46.4	
	3.376	-22.1	V	3.0	35.7	1.0	-56.8	-13.0	-43.8	
1.688	-27.7	H	3.0	37.3	1.0	-64.0	-13.0	-51.0		
2.532	-25.7	H	3.0	36.3	1.0	-61.0	-13.0	-48.0		
3.376	-22.0	H	3.0	35.7	1.0	-56.7	-13.0	-43.7		
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 #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE BAND 5, 5MHz BW,16QAM								
Chamber		Pre-amplifer			Filter		Limit			
5m Chamber A		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
LTE5 5MHz 16QAM	Low Channel (826.5MHz)									
	1.653	-27.1	V	3.0	37.4	1.0	-63.4	-13.0	-50.4	
	2.479	-22.2	V	3.0	36.4	1.0	-57.6	-13.0	-44.6	
	3.306	-20.6	V	3.0	35.8	1.0	-55.4	-13.0	-42.4	
	1.653	-27.2	H	3.0	37.4	1.0	-63.6	-13.0	-50.6	
	2.479	-25.5	H	3.0	36.4	1.0	-60.8	-13.0	-47.8	
	3.306	-21.6	H	3.0	35.8	1.0	-56.4	-13.0	-43.4	
	Mid Channel (836.5MHz)									
	1.673	-27.8	V	3.0	37.3	1.0	-64.2	-13.0	-51.2	
	2.509	-23.3	V	3.0	36.4	1.0	-58.6	-13.0	-45.6	
	3.346	-22.3	V	3.0	35.8	1.0	-57.1	-13.0	-44.1	
	1.673	-26.9	H	3.0	37.3	1.0	-63.2	-13.0	-50.2	
	2.509	-25.2	H	3.0	36.4	1.0	-60.6	-13.0	-47.6	
	3.346	-23.1	H	3.0	35.8	1.0	-57.8	-13.0	-44.8	
	High Channel (846.5MHz)									
	1.693	-27.4	V	3.0	37.3	1.0	-63.7	-13.0	-50.7	
	2.539	-23.9	V	3.0	36.3	1.0	-59.2	-13.0	-46.2	
	3.386	-21.7	V	3.0	35.7	1.0	-56.4	-13.0	-43.4	
1.693	-28.1	H	3.0	37.3	1.0	-64.4	-13.0	-51.4		
2.539	-25.4	H	3.0	36.3	1.0	-60.8	-13.0	-47.8		
3.386	-21.5	H	3.0	35.7	1.0	-56.2	-13.0	-43.2		
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 #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE BAND 5, 5MHz BW,QPSK								
Chamber		Pre-amplifer			Filter		Limit			
5m Chamber A		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 Channel (826.5MHz)										
LTE5	1.653	-27.0	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	
5MHz	3.306	-20.4	V	3.0	35.8	1.0	-55.2	-13.0	-42.2	
QPSK										
	1.653	-26.9	H	3.0	37.4	1.0	-63.3	-13.0	-50.3	
	2.479	-24.2	H	3.0	36.4	1.0	-59.6	-13.0	-46.6	
	3.306	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5	
Mid Channel (836.5MHz)										
	1.673	-26.4	V	3.0	37.3	1.0	-62.7	-13.0	-49.7	
	2.509	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1	
	3.346	-22.6	V	3.0	35.8	1.0	-57.3	-13.0	-44.3	
	1.673	-26.4	H	3.0	37.3	1.0	-62.8	-13.0	-49.8	
	2.509	-24.6	H	3.0	36.4	1.0	-60.0	-13.0	-47.0	
	3.346	-21.3	H	3.0	35.8	1.0	-56.0	-13.0	-43.0	
High Channel (846.5MHz)										
	1.693	-26.8	V	3.0	37.3	1.0	-63.1	-13.0	-50.1	
	2.539	-24.2	V	3.0	36.3	1.0	-59.5	-13.0	-46.5	
	3.386	-21.4	V	3.0	35.7	1.0	-56.1	-13.0	-43.1	
	1.693	-27.6	H	3.0	37.3	1.0	-63.9	-13.0	-50.9	
	2.539	-25.8	H	3.0	36.3	1.0	-61.2	-13.0	-48.2	
	3.386	-21.8	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
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 #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE band 4, 10MHz BW, 16QAM								
Chamber		Pre-amplifer		Filter		Limit				
3m Chamber		T145 8449B		Filter 1		Part 24				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE4 10MHz z 16QAM M	Low Ch, (1715 MHz)									
	3.430	-20.4	V	3.0	30.4	1.0	-49.8	-13.0	-36.8	
	5.145	-19.9	V	3.0	28.8	1.0	-47.7	-13.0	-34.7	
	6.860	-16.6	V	3.0	27.1	1.0	-42.8	-13.0	-29.8	
	3.430	-21.4	H	3.0	30.4	1.0	-50.9	-13.0	-37.9	
	5.145	-19.8	H	3.0	28.8	1.0	-47.6	-13.0	-34.6	
	6.860	-15.4	H	3.0	27.1	1.0	-41.5	-13.0	-28.5	
	Mid Ch, (1732.5 MHz)									
	3.465	-22.1	V	3.0	30.4	1.0	-51.5	-13.0	-38.5	
5.198	-19.1	V	3.0	28.7	1.0	-46.8	-13.0	-33.8		
6.930	-15.8	V	3.0	27.1	1.0	-41.9	-13.0	-28.9		
3.465	-21.2	H	3.0	30.4	1.0	-50.6	-13.0	-37.6		
5.198	-19.3	H	3.0	28.7	1.0	-47.0	-13.0	-34.0		
6.930	-15.1	H	3.0	27.1	1.0	-41.2	-13.0	-28.2		
High Ch, (1750 MHz)										
3.500	-21.7	V	3.0	30.4	1.0	-51.1	-13.0	-38.1		
5.250	-20.3	V	3.0	28.7	1.0	-47.9	-13.0	-34.9		
7.000	-16.2	V	3.0	27.0	1.0	-42.2	-13.0	-29.2		
3.500	-23.1	H	3.0	30.4	1.0	-52.5	-13.0	-39.5		
5.250	-18.9	H	3.0	28.7	1.0	-46.6	-13.0	-33.6		
7.000	-15.0	H	3.0	27.0	1.0	-41.0	-13.0	-28.0		
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE band 4, 10MHz BW, QPSK								
Chamber		Pre-amplifier		Filter		Limit				
3m Chamber		T145 8449B		Filter 1		Part 24				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE4 10MH z QPSK	Low Ch, (1715 MHz)									
	3.430	-20.4	V	3.0	30.4	1.0	-49.8	-13.0	-36.8	
	5.145	-19.8	V	3.0	28.8	1.0	-47.5	-13.0	-34.5	
	6.860	-16.5	V	3.0	27.1	1.0	-42.6	-13.0	-29.6	
	3.430	-21.3	H	3.0	30.4	1.0	-50.8	-13.0	-37.8	
	5.145	-19.6	H	3.0	28.8	1.0	-47.4	-13.0	-34.4	
	6.860	-15.4	H	3.0	27.1	1.0	-41.6	-13.0	-28.6	
	Mid Ch, (1732.5 MHz)									
	3.465	-21.9	V	3.0	30.4	1.0	-51.3	-13.0	-38.3	
	5.198	-19.2	V	3.0	28.7	1.0	-46.9	-13.0	-33.9	
	6.930	-16.2	V	3.0	27.1	1.0	-42.3	-13.0	-29.3	
	3.465	-21.2	H	3.0	30.4	1.0	-50.6	-13.0	-37.6	
5.198	-19.2	H	3.0	28.7	1.0	-46.9	-13.0	-33.9		
6.930	-15.2	H	3.0	27.1	1.0	-41.2	-13.0	-28.2		
High Ch, (1750 MHz)										
3.500	-21.5	V	3.0	30.4	1.0	-50.9	-13.0	-37.9		
5.250	-19.7	V	3.0	28.7	1.0	-47.4	-13.0	-34.4		
7.000	-15.5	V	3.0	27.0	1.0	-41.5	-13.0	-28.5		
3.500	-22.5	H	3.0	30.4	1.0	-51.9	-13.0	-38.9		
5.250	-19.3	H	3.0	28.7	1.0	-47.0	-13.0	-34.0		
7.000	-14.6	H	3.0	27.0	1.0	-40.6	-13.0	-27.6		
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE band 4, 5MHz BW, 16 QAM								
		Chamber		Pre-amplifier		Filter		Limit		
		3m Chamber		T145 8449B		Filter 1		Part 24		
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE4 5MHz 16QAM	Low Ch, (1712.5 MHz)									
	3.425	-20.6	V	3.0	30.4	1.0	-50.0	-13.0	-37.0	
	5.138	-19.7	V	3.0	28.8	1.0	-47.5	-13.0	-34.5	
	6.850	-16.6	V	3.0	27.1	1.0	-42.8	-13.0	-29.8	
	3.425	-22.8	H	3.0	30.4	1.0	-52.2	-13.0	-39.2	
	5.138	-19.1	H	3.0	28.8	1.0	-46.8	-13.0	-33.8	
	6.850	-15.9	H	3.0	27.1	1.0	-42.0	-13.0	-29.0	
	Mid Ch, (1732.5 MHz)									
	3.465	-20.8	V	3.0	30.4	1.0	-50.2	-13.0	-37.2	
	5.198	-20.2	V	3.0	28.7	1.0	-47.9	-13.0	-34.9	
	6.930	-16.7	V	3.0	27.1	1.0	-42.7	-13.0	-29.7	
	3.465	-22.0	H	3.0	30.4	1.0	-51.4	-13.0	-38.4	
	5.198	-19.0	H	3.0	28.7	1.0	-46.7	-13.0	-33.7	
	6.930	-15.8	H	3.0	27.1	1.0	-41.9	-13.0	-28.9	
	High Ch, (1752.5 MHz)									
	3.505	-22.3	V	3.0	30.4	1.0	-51.7	-13.0	-38.7	
	5.258	-20.2	V	3.0	28.6	1.0	-47.9	-13.0	-34.9	
	7.010	-15.2	V	3.0	27.0	1.0	-41.2	-13.0	-28.2	
3.505	-22.9	H	3.0	30.4	1.0	-52.3	-13.0	-39.3		
5.258	-19.3	H	3.0	28.6	1.0	-47.0	-13.0	-34.0		
7.010	-15.6	H	3.0	27.0	1.0	-41.6	-13.0	-28.6		
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		TX, LTE band 4, 5MHz BW, QPSK								
		Chamber		Pre-amplifier		Filter		Limit		
		3m Chamber		T145 8449B		Filter 1		Part 24		
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, (1712.5 MHz)									
LTE4	3.425	-19.8	V	3.0	30.4	1.0	-49.2	-13.0	-36.2	
	5.138	-20.0	V	3.0	28.8	1.0	-47.7	-13.0	-34.7	
5MHz	6.850	-16.6	V	3.0	27.1	1.0	-42.7	-13.0	-29.7	
	3.425	-22.1	H	3.0	30.4	1.0	-51.6	-13.0	-38.6	
QPSK	5.138	-19.0	H	3.0	28.8	1.0	-46.8	-13.0	-33.8	
	6.850	-15.6	H	3.0	27.1	1.0	-41.7	-13.0	-28.7	
	Mid Ch, (1732.5 MHz)									
	3.465	-21.1	V	3.0	30.4	1.0	-50.5	-13.0	-37.5	
	5.198	-20.1	V	3.0	28.7	1.0	-47.8	-13.0	-34.8	
	6.930	-16.3	V	3.0	27.1	1.0	-42.3	-13.0	-29.3	
	3.465	-22.5	H	3.0	30.4	1.0	-51.9	-13.0	-38.9	
	5.198	-19.0	H	3.0	28.7	1.0	-46.7	-13.0	-33.7	
	6.930	-15.8	H	3.0	27.1	1.0	-41.8	-13.0	-28.8	
	High Ch, (1752.5 MHz)									
	3.505	-22.1	V	3.0	30.4	1.0	-51.5	-13.0	-38.5	
	5.258	-19.8	V	3.0	28.6	1.0	-47.5	-13.0	-34.5	
	7.010	-16.0	V	3.0	27.0	1.0	-42.0	-13.0	-29.0	
	3.505	-22.6	H	3.0	30.4	1.0	-52.0	-13.0	-39.0	
	5.258	-18.5	H	3.0	28.6	1.0	-46.1	-13.0	-33.1	
	7.010	-14.8	H	3.0	27.0	1.0	-40.8	-13.0	-27.8	
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		LTE2_10M_16QAM								
Chamber		Pre-amplifer			Filter		Limit			
3m Chamber		T343 8449B			Filter 1		Part 24			
Band	f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
LTE2	GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	Low Ch, 1855.0MHz									
10MH	3.710	-21.5	V	3.0	35.4	1.0	-55.9	-13.0	-42.9	
z	5.565	-19.1	V	3.0	34.7	1.0	-52.8	-13.0	-39.8	
	7.420	-15.2	V	3.0	34.9	1.0	-49.2	-13.0	-36.2	
16QA	3.710	-22.7	H	3.0	35.4	1.0	-57.1	-13.0	-44.1	
M	5.565	-19.6	H	3.0	34.7	1.0	-53.3	-13.0	-40.3	
	7.420	-14.9	H	3.0	34.9	1.0	-48.8	-13.0	-35.8	
	Mid Ch, 1880.0MHz									
	3.760	-22.3	V	3.0	35.3	1.0	-56.6	-13.0	-43.6	
	5.640	-18.8	V	3.0	34.7	1.0	-52.6	-13.0	-39.6	
	7.520	-14.9	V	3.0	34.9	1.0	-48.8	-13.0	-35.8	
	3.760	-22.1	H	3.0	35.3	1.0	-56.4	-13.0	-43.4	
	5.640	-18.0	H	3.0	34.7	1.0	-51.7	-13.0	-38.7	
	7.520	-15.2	H	3.0	34.9	1.0	-49.2	-13.0	-36.2	
	High Ch, 1905 MHz									
	3.810	-21.6	V	3.0	35.3	1.0	-55.9	-13.0	-42.9	
	5.715	-18.5	V	3.0	34.7	1.0	-52.2	-13.0	-39.2	
	7.620	-15.8	V	3.0	34.9	1.0	-49.7	-13.0	-36.7	
	3.810	-22.1	H	3.0	35.3	1.0	-56.4	-13.0	-43.4	
	5.715	-18.5	H	3.0	34.7	1.0	-52.2	-13.0	-39.2	
	7.620	-14.3	H	3.0	34.9	1.0	-48.2	-13.0	-35.2	
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 #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		LTE2_10M_QPSK								
Chamber		Pre-amplifer		Filter		Limit				
3m Chamber		T343 8449B		Filter 1		Part 22				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE2 10MH z QPSK	Low Ch, 1855.0MHz									
	3.710	-21.4	V	3.0	35.4	1.0	-55.7	-13.0	-42.7	
	5.565	-19.2	V	3.0	34.7	1.0	-52.9	-13.0	-39.9	
	7.420	-15.9	V	3.0	34.9	1.0	-49.8	-13.0	-36.8	
	3.710	-22.3	H	3.0	35.4	1.0	-56.7	-13.0	-43.7	
	5.565	-18.4	H	3.0	34.7	1.0	-52.2	-13.0	-39.2	
	7.420	-14.6	H	3.0	34.9	1.0	-48.5	-13.0	-35.5	
	Mid Ch, 1880.0MHz									
	3.760	-22.1	V	3.0	35.3	1.0	-56.5	-13.0	-43.5	
	5.640	-18.2	V	3.0	34.7	1.0	-51.9	-13.0	-38.9	
	7.520	-15.5	V	3.0	34.9	1.0	-49.5	-13.0	-36.5	
	3.760	-21.9	H	3.0	35.3	1.0	-56.2	-13.0	-43.2	
5.640	-18.3	H	3.0	34.7	1.0	-52.0	-13.0	-39.0		
7.520	-14.0	H	3.0	34.9	1.0	-47.9	-13.0	-34.9		
High Ch, 1905 MHz										
3.810	-21.4	V	3.0	35.3	1.0	-55.6	-13.0	-42.6		
5.715	-18.6	V	3.0	34.7	1.0	-52.3	-13.0	-39.3		
7.620	-15.7	V	3.0	34.9	1.0	-49.6	-13.0	-36.6		
3.810	-21.9	H	3.0	35.3	1.0	-56.2	-13.0	-43.2		
5.715	-18.1	H	3.0	34.7	1.0	-51.9	-13.0	-38.9		
7.620	-14.6	H	3.0	34.9	1.0	-48.6	-13.0	-35.6		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		LTE2_5M_16QAM								
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
LTE2 5MHz 16QA M	Low Ch, 1852.5MHz									
	3.705	-21.5	V	3.0	35.4	1.0	-55.9	-13.0	-42.9	
	5.557	-19.5	V	3.0	34.7	1.0	-53.2	-13.0	-40.2	
	7.410	-15.7	V	3.0	34.9	1.0	-49.6	-13.0	-36.6	
	3.705	-22.2	H	3.0	35.4	1.0	-56.6	-13.0	-43.6	
	5.557	-18.4	H	3.0	34.7	1.0	-52.1	-13.0	-39.1	
	7.410	-15.1	H	3.0	34.9	1.0	-49.0	-13.0	-36.0	
	Mid Ch, 1880.0MHz									
	3.760	-21.7	V	3.0	35.3	1.0	-56.0	-13.0	-43.0	
	5.640	-19.3	V	3.0	34.7	1.0	-53.0	-13.0	-40.0	
	7.520	-16.0	V	3.0	34.9	1.0	-49.9	-13.0	-36.9	
	3.760	-22.5	H	3.0	35.3	1.0	-56.8	-13.0	-43.8	
	5.640	-18.2	H	3.0	34.7	1.0	-51.9	-13.0	-38.9	
	7.520	-14.7	H	3.0	34.9	1.0	-48.6	-13.0	-35.6	
	High Ch, 1907.5 MHz									
	3.815	-22.9	V	3.0	35.3	1.0	-57.2	-13.0	-44.2	
	5.722	-20.2	V	3.0	34.7	1.0	-53.9	-13.0	-40.9	
	7.630	-14.4	V	3.0	34.9	1.0	-48.4	-13.0	-35.4	
3.815	-22.1	H	3.0	35.3	1.0	-56.4	-13.0	-43.4		
5.722	-18.1	H	3.0	34.7	1.0	-51.8	-13.0	-38.8		
7.630	-15.2	H	3.0	34.9	1.0	-49.1	-13.0	-36.1		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/05/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		LTE2_5M_QPSK								
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
Low Ch, 1852.5MHz										
LTE2	3.705	-21.3	V	3.0	35.4	1.0	-55.7	-13.0	-42.7	
5MHz	5.557	-19.0	V	3.0	34.7	1.0	-52.8	-13.0	-39.8	
	7.410	-15.7	V	3.0	34.9	1.0	-49.6	-13.0	-36.6	
QPSK	3.705	-22.0	H	3.0	35.4	1.0	-56.4	-13.0	-43.4	
	5.557	-18.6	H	3.0	34.7	1.0	-52.3	-13.0	-39.3	
	7.410	-15.0	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	
Mid Ch, 1880.0MHz										
	3.760	-21.8	V	3.0	35.3	1.0	-56.1	-13.0	-43.1	
	5.640	-18.9	V	3.0	34.7	1.0	-52.6	-13.0	-39.6	
	7.520	-15.9	V	3.0	34.9	1.0	-49.9	-13.0	-36.9	
	3.760	-22.2	H	3.0	35.3	1.0	-56.5	-13.0	-43.5	
	5.640	-18.1	H	3.0	34.7	1.0	-51.9	-13.0	-38.9	
	7.520	-14.8	H	3.0	34.9	1.0	-48.7	-13.0	-35.7	
High Ch, 1907.5 MHz										
	3.815	-22.7	V	3.0	35.3	1.0	-57.0	-13.0	-44.0	
	5.722	-19.7	V	3.0	34.7	1.0	-53.4	-13.0	-40.4	
	7.630	-14.2	V	3.0	34.9	1.0	-48.1	-13.0	-35.1	
	3.815	-22.9	H	3.0	35.3	1.0	-57.2	-13.0	-44.2	
	5.722	-18.9	H	3.0	34.7	1.0	-52.6	-13.0	-39.6	
	7.630	-14.9	H	3.0	34.9	1.0	-48.8	-13.0	-35.8	
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 #:		14U17477								
Date:		04/04/14								
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			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band 2 HSDPA	Low Ch, 1852.4MHz									
	3.705	-21.9	V	3.0	35.4	1.0	-56.3	-13.0	-43.3	
	5.557	-19.1	V	3.0	34.7	1.0	-52.8	-13.0	-39.8	
	7.409	-15.7	V	3.0	34.9	1.0	-49.6	-13.0	-36.6	
	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	-14.2	H	3.0	34.9	1.0	-48.1	-13.0	-35.1	
	Mid Ch, 1880MHz									
	3.760	-23.0	V	3.0	35.3	1.0	-57.3	-13.0	-44.3	
	5.640	-18.3	V	3.0	34.7	1.0	-52.1	-13.0	-39.1	
	7.520	-16.0	V	3.0	34.9	1.0	-49.9	-13.0	-36.9	
	3.760	-22.2	H	3.0	35.3	1.0	-56.5	-13.0	-43.5	
	5.640	-17.7	H	3.0	34.7	1.0	-51.4	-13.0	-38.4	
	7.520	-14.9	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	
	High Ch, 1907.6MHz									
	3.815	-21.5	V	3.0	35.3	1.0	-55.8	-13.0	-42.8	
	5.723	-17.9	V	3.0	34.7	1.0	-51.7	-13.0	-38.7	
	7.630	-16.2	V	3.0	34.9	1.0	-50.1	-13.0	-37.1	
3.815	-21.6	H	3.0	35.3	1.0	-55.9	-13.0	-42.9		
5.723	-16.9	H	3.0	34.7	1.0	-50.7	-13.0	-37.7		
7.630	-14.8	H	3.0	34.9	1.0	-48.7	-13.0	-35.7		
Rev. 03.03.09										

Compliance Certification Services									
Above 1GHz High Frequency Substitution Measurement									
Company:		LG							
Project #:		14U17477							
Date:		04/04/14							
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	-18.7	V	3.0	34.7	1.0	-52.4	-13.0	-39.4	
7.409	-15.6	V	3.0	34.9	1.0	-49.5	-13.0	-36.5	
3.705	-21.8	H	3.0	35.4	1.0	-56.2	-13.0	-43.2	
5.557	-17.9	H	3.0	34.7	1.0	-51.6	-13.0	-38.6	
7.409	-14.4	H	3.0	34.9	1.0	-48.3	-13.0	-35.3	
Mid Ch, 1880MHz									
3.760	-22.3	V	3.0	35.3	1.0	-56.6	-13.0	-43.6	
5.640	-18.6	V	3.0	34.7	1.0	-52.4	-13.0	-39.4	
7.520	-15.9	V	3.0	34.9	1.0	-49.8	-13.0	-36.8	
3.760	-21.8	H	3.0	35.3	1.0	-56.1	-13.0	-43.1	
5.640	-18.0	H	3.0	34.7	1.0	-51.7	-13.0	-38.7	
7.520	-14.9	H	3.0	34.9	1.0	-48.8	-13.0	-35.8	
High Ch, 1907.6MHz									
3.815	-21.5	V	3.0	35.3	1.0	-55.8	-13.0	-42.8	
5.723	-17.9	V	3.0	34.7	1.0	-51.6	-13.0	-38.6	
7.630	-15.8	V	3.0	34.9	1.0	-49.7	-13.0	-36.7	
3.815	-20.6	H	3.0	35.3	1.0	-54.9	-13.0	-41.9	
5.723	-16.9	H	3.0	34.7	1.0	-50.6	-13.0	-37.6	
7.630	-15.0	H	3.0	34.9	1.0	-48.9	-13.0	-35.9	
Rev. 03.03.09									

Band 2
REL99

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		LG							
Project #:		14U17477							
Date:		04/04/14							
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
Band 5									
Low Ch, 826.40MHz									
1.652	-28.1	V	3.0	37.4	1.0	-64.4	-13.0	-51.4	
2.479	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8	
3.306	-22.8	V	3.0	35.8	1.0	-57.6	-13.0	-44.6	
1.652	-27.1	H	3.0	37.4	1.0	-63.5	-13.0	-50.5	
2.479	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	
3.306	-22.9	H	3.0	35.8	1.0	-57.7	-13.0	-44.7	
Mid Ch, 836.6MHz									
1.673	-27.2	V	3.0	37.3	1.0	-63.5	-13.0	-50.5	
2.510	-22.3	V	3.0	36.4	1.0	-57.6	-13.0	-44.6	
3.346	-23.4	V	3.0	35.8	1.0	-58.2	-13.0	-45.2	
1.673	-28.7	H	3.0	37.3	1.0	-65.0	-13.0	-52.0	
2.510	-25.6	H	3.0	36.4	1.0	-61.0	-13.0	-48.0	
3.346	-22.7	H	3.0	35.8	1.0	-57.5	-13.0	-44.5	
High Ch, 846.6MHz									
1.693	-27.9	V	3.0	37.3	1.0	-64.2	-13.0	-51.2	
2.539	-24.3	V	3.0	36.3	1.0	-59.7	-13.0	-46.7	
3.386	-22.8	V	3.0	35.7	1.0	-57.5	-13.0	-44.5	
1.693	-27.2	H	3.0	37.3	1.0	-63.5	-13.0	-50.5	
2.539	-24.8	H	3.0	36.3	1.0	-60.1	-13.0	-47.1	
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.									

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		LG							
Project #:		14U17477							
Date:		04/04/14							
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	-28.0	V	3.0	37.4	1.0	-64.4	-13.0	-51.4	
2.479	-21.4	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
3.306	-22.8	V	3.0	35.8	1.0	-57.6	-13.0	-44.6	
Band 5									
1.652	-27.0	H	3.0	37.4	1.0	-63.4	-13.0	-50.4	
2.479	-25.1	H	3.0	36.4	1.0	-60.4	-13.0	-47.4	
3.306	-23.1	H	3.0	35.8	1.0	-57.9	-13.0	-44.9	
REL99									
Mid Ch, 836.6MHz									
1.673	-27.9	V	3.0	37.3	1.0	-64.2	-13.0	-51.2	
2.510	-22.0	V	3.0	36.4	1.0	-57.4	-13.0	-44.4	
3.346	-23.6	V	3.0	35.8	1.0	-58.3	-13.0	-45.3	
1.673	-28.3	H	3.0	37.3	1.0	-64.6	-13.0	-51.6	
2.510	-24.0	H	3.0	36.4	1.0	-59.4	-13.0	-46.4	
3.346	-22.7	H	3.0	35.8	1.0	-57.4	-13.0	-44.4	
High Ch, 846.6MHz									
1.693	-27.1	V	3.0	37.3	1.0	-63.4	-13.0	-50.4	
2.539	-24.2	V	3.0	36.3	1.0	-59.5	-13.0	-46.5	
3.386	-22.1	V	3.0	35.7	1.0	-56.8	-13.0	-43.8	
1.693	-26.4	H	3.0	37.3	1.0	-62.7	-13.0	-49.7	
2.539	-24.7	H	3.0	36.3	1.0	-60.0	-13.0	-47.0	
3.386	-21.9	H	3.0	35.7	1.0	-56.6	-13.0	-43.6	
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/04/14								
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	-20.3	V	3.0	35.4	1.0	-54.7	-13.0	-41.7	
	5.550	-18.8	V	3.0	34.7	1.0	-52.5	-13.0	-39.5	
	7.400	-14.4	V	3.0	34.9	1.0	-48.3	-13.0	-35.3	
	3.700	-20.7	H	3.0	35.4	1.0	-55.1	-13.0	-42.1	
	5.550	-17.9	H	3.0	34.7	1.0	-51.7	-13.0	-38.7	
	7.400	-13.1	H	3.0	34.9	1.0	-47.0	-13.0	-34.0	
	Mid Ch, 1880.0MHz									
	3.760	-20.4	V	3.0	35.3	1.0	-54.8	-13.0	-41.8	
	5.640	-19.3	V	3.0	34.7	1.0	-53.0	-13.0	-40.0	
	7.520	-13.1	V	3.0	34.9	1.0	-47.0	-13.0	-34.0	
	3.760	-22.3	H	3.0	35.3	1.0	-56.6	-13.0	-43.6	
	5.640	-14.6	H	3.0	34.7	1.0	-48.4	-13.0	-35.4	
	7.520	-11.5	H	3.0	34.9	1.0	-45.4	-13.0	-32.4	
	High Ch, 1909.8 MHz									
3.820	-18.7	V	3.0	35.3	1.0	-52.9	-13.0	-39.9		
5.729	-15.6	V	3.0	34.7	1.0	-49.4	-13.0	-36.4		
7.639	-12.8	V	3.0	35.0	1.0	-46.7	-13.0	-33.7		
3.820	-19.5	H	3.0	35.3	1.0	-53.8	-13.0	-40.8		
5.729	-15.3	H	3.0	34.7	1.0	-49.0	-13.0	-36.0		
7.639	-12.8	H	3.0	35.0	1.0	-46.8	-13.0	-33.8		
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/04/14								
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				
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, 1850MHz										
GSM1 900	3.700	-20.3	V	3.0	35.4	1.0	-54.7	-13.0	-41.7	
	5.550	-18.3	V	3.0	34.7	1.0	-52.1	-13.0	-39.1	
GPRS	7.400	-12.9	V	3.0	34.9	1.0	-46.8	-13.0	-33.8	
	3.700	-21.0	H	3.0	35.4	1.0	-55.4	-13.0	-42.4	
	5.550	-15.7	H	3.0	34.7	1.0	-49.5	-13.0	-36.5	
	7.400	-12.4	H	3.0	34.9	1.0	-46.3	-13.0	-33.3	
Mid Ch, 1880.0MHz										
	3.760	-20.5	V	3.0	35.3	1.0	-54.8	-13.0	-41.8	
	5.640	-18.4	V	3.0	34.7	1.0	-52.2	-13.0	-39.2	
	7.520	-11.7	V	3.0	34.9	1.0	-45.6	-13.0	-32.6	
	3.760	-20.5	H	3.0	35.3	1.0	-54.8	-13.0	-41.8	
	5.640	-12.2	H	3.0	34.7	1.0	-45.9	-13.0	-32.9	
	7.520	-10.6	H	3.0	34.9	1.0	-44.5	-13.0	-31.5	
High Ch, 1909.8 MHz										
	3.820	-18.0	V	3.0	35.3	1.0	-52.3	-13.0	-39.3	
	5.729	-15.0	V	3.0	34.7	1.0	-48.7	-13.0	-35.7	
	7.639	-11.6	V	3.0	35.0	1.0	-45.5	-13.0	-32.5	
	3.820	-18.6	H	3.0	35.3	1.0	-52.9	-13.0	-39.9	
	5.729	-12.6	H	3.0	34.7	1.0	-46.4	-13.0	-33.4	
	7.639	-11.5	H	3.0	35.0	1.0	-45.4	-13.0	-32.4	
Rev. 03.03.09										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/04/14								
Test Engineer:		R. Alegre								
Configuration:		EUT with AC charger								
Mode:		EGPRS 850								
Chamber		Pre-amplifier		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
GSM850 EGPRS	Low Ch, 824.2MHz									
	1.648	-27.5	V	3.0	37.4	1.0	-63.9	-13.0	-50.9	
	2.473	-24.0	V	3.0	36.4	1.0	-59.4	-13.0	-46.4	
	3.297	-22.2	V	3.0	35.8	1.0	-57.0	-13.0	-44.0	
	1.648	-18.6	H	3.0	37.4	1.0	-55.0	-13.0	-42.0	
	2.473	-25.9	H	3.0	36.4	1.0	-61.3	-13.0	-48.3	
	3.297	-22.7	H	3.0	35.8	1.0	-57.5	-13.0	-44.5	
	Mid Ch, 836.6MHz									
	1.673	-25.3	V	3.0	37.3	1.0	-61.6	-13.0	-48.6	
	2.510	-21.9	V	3.0	36.4	1.0	-57.2	-13.0	-44.2	
	3.346	-22.2	V	3.0	35.8	1.0	-56.9	-13.0	-43.9	
	1.673	-25.4	H	3.0	37.3	1.0	-61.8	-13.0	-48.8	
	2.510	-22.2	H	3.0	36.4	1.0	-57.5	-13.0	-44.5	
	3.346	-23.0	H	3.0	35.8	1.0	-57.8	-13.0	-44.8	
	High Ch, 848.8MHz									
1.698	-27.9	V	3.0	37.3	1.0	-64.2	-13.0	-51.2		
2.547	-24.4	V	3.0	36.3	1.0	-59.7	-13.0	-46.7		
3.395	-22.0	V	3.0	35.7	1.0	-56.7	-13.0	-43.7		
1.698	-20.4	H	3.0	37.3	1.0	-56.7	-13.0	-43.7		
2.547	-21.3	H	3.0	36.3	1.0	-56.6	-13.0	-43.6		
3.395	-22.9	H	3.0	35.7	1.0	-57.6	-13.0	-44.6		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		LG								
Project #:		14U17477								
Date:		04/04/14								
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			
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GSM850	Low Ch, 824.2MHz									
	1.648	-26.2	V	3.0	37.4	1.0	-62.5	-13.0	-49.5	
	2.473	-22.5	V	3.0	36.4	1.0	-57.9	-13.0	-44.9	
	3.297	-23.0	V	3.0	35.8	1.0	-57.8	-13.0	-44.8	
	1.648	-19.6	H	3.0	37.4	1.0	-56.0	-13.0	-43.0	
	2.473	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5	
GPRS	3.297	-23.2	H	3.0	35.8	1.0	-58.0	-13.0	-45.0	
	Mid Ch, 836.6MHz									
	1.673	-25.2	V	3.0	37.3	1.0	-61.5	-13.0	-48.5	
	2.510	-21.5	V	3.0	36.4	1.0	-56.8	-13.0	-43.8	
	3.346	-22.1	V	3.0	35.8	1.0	-56.9	-13.0	-43.9	
	1.673	-25.3	H	3.0	37.3	1.0	-61.7	-13.0	-48.7	
GPRS	2.510	-22.1	H	3.0	36.4	1.0	-57.5	-13.0	-44.5	
	3.346	-23.0	H	3.0	35.8	1.0	-57.7	-13.0	-44.7	
	High Ch, 848.8MHz									
	1.698	-26.3	V	3.0	37.3	1.0	-62.6	-13.0	-49.6	
	2.547	-23.7	V	3.0	36.3	1.0	-59.0	-13.0	-46.0	
	3.395	-22.3	V	3.0	35.7	1.0	-57.0	-13.0	-44.0	
GPRS	1.698	-19.6	H	3.0	37.3	1.0	-55.9	-13.0	-42.9	
	2.547	-21.9	H	3.0	36.3	1.0	-57.3	-13.0	-44.3	
	3.395	-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.										