

FCC CFR47 PART 22H, 24E, AND 27L **CERTIFICATION TEST REPORT** FOR

Dual band Cell phone with LTE +WIFI+BT 3.0; HOTSPOT Supports

MODEL NUMBER: LG-VS950

ADDITIONAL MODEL NUMBERS: VS950, LGVS950

FCC ID: ZNFVS950

REPORT NUMBER: 12U14390-3, Revision A

ISSUE DATE: MAY 24, 2012

Prepared for LG ELECTRONICS MOBILECOMM U.S.A., INC. **1000 SYLVAN AVENUE ENGLEWOOD CLIFFS, NJ 07632**

Prepared by

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



NVLAP LAB CODE 200065-0

Revision History

	Issue		
Rev.	Date	Revisions	Revised By
	05/10/12	Initial Issue	T. Chan
	05/24/12	Updated Frequency Range on Section 5.2 Table	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM 1000 SYLVAN AVENUE ENGLEWOOD CLIFFS, NEW JERSE				
EUT DESCRIPTION:	Dual band Cell phone with LTE +WIFI+BT 3.0; HOTSPOT Support.				
MODEL:					
SERIAL NUMBER:	990001510000656				
DATE TESTED:	APRIL 24-MAY 04, 2012				
	APPLICABLE STANDARDS				
ST	ANDARD	TEST RESULTS			
FCC PART	22H, 24E, and 27L	Pass			

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

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

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Tested By:

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, and FCC 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 CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <u>http://www.ccsemc.com</u>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

36.5 dBuV + 18.7 dB/m + 0.6 dB - 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

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

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Dual band Cell phone with LTE +WIFI+BT 3.0 HOTSPOT supported.

5.2. MAXIMUM OUTPUT POWER

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

Part 22 Cellular Band

Frequency range	Modulation	Conc	lucted	ERP	
(MHz)	wouldtion	dBm	mW	dBm	mW
824.2 - 848.8	GSM	32.90	1949.8	31.09	1285.3
824.2 - 848.8	GPRS	33.10	2041.7	30.57	1140.2
824.2 - 848.8	EGPRS	30.20	1047.1	27.96	625.2
824.7 – 848.31	1XRTT	28.13	650.1	27.10	512.9
824.7 – 848.31	EVDO	29.98	995.4	24.60	288.4

Part 24 PCS Band

Frequency range	Modulation	Conducted		EIRP	
(MHz)	Modulation	dBm	mW	dBm	mW
1850.2-1909.8	GSM	29.70	933.3	29.82	959.4
1850.2-1909.8	GPRS	29.90	977.2	29.92	981.7
1850.2-1909.8	EGPRS	29.40	871.0	28.63	729.5
1851.25-1908.75	1xRTT	27.71	590.2	28.32	679.2
1851.25-1908.75	EVDO	29.12	816.6	24.03	252.9
1852.4-1907.6	REL 99	26.67	464.5	30.21	1049.5
1852.4-1907.6	HSDPA	28.50	707.9	30.87	1221.8

Part 27 LTE Band 13

Frequency range	Modulation	Conducted		ERP	
(MHz)	Modulation	dBm	mW	dBm	mW
782	QPSK	27.50	562.3	25.12	325.1
782	16QAM	27.30	537.0	24.62	289.7

5.3. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was.VS9500Ca.

The EUT is linked with Agilent 8960 and CMW500 Communication Test Set.

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5.4. MAXIMUM ANTENNA GAIN

The radio utilizes IFA antennas for the maximum peak gain as table show below:

Modulation Bands	Peak Gain (dBi)
GSM,CDMA Cell	-1.5
GSM, CDMA & UMTS, PCS	1.9
CDMA2000 EVDO, Cell	-6.1
CDMA200 EVDO, PCS	-5.1
LTE Band 13	-4.2

5.5. WORST-CASE CONFIGURATION AND MODE

Based on the investigation results, the highest peak power and enhanced data rate is the worstcase scenario for all measurements.

Worst-case modes:

- GPRS (GMSK)
- EGPRS (8PSK)
- For Cellular and PCS band: 1xRTT (RC1 SO2), EVDO REV A.
- For PCS band UMTS REL 99, HSDPA
- LTE BAND 13

For the fundamental investigation, since the EUT is a portable device that has three orientations; therefore X, Y and Z orientations and the worst among X, Y, and Z with AC/DC adapter and headset have been investigated and the worst case was found to be at Z-position with AC/DC adapter and headset on GSM, WCDMA for PCS band and Y position for cell band. For CDMA, LTE bands, worst case was found to be at Y position and X position on EVDO Rev A PCS band.

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5.6. DESCRIPTION OF TEST SETUP

RADIATED TESTS SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST						
Description Manufacturer Model Serial Number						
AC ADAPTER	LG ELECTRONICS	MCS-01WT	TA1Z0000455			
HEADSET	LG ELECTRONICS	NA	N/A			

I/O CABLES (CONDUCTED TEST)

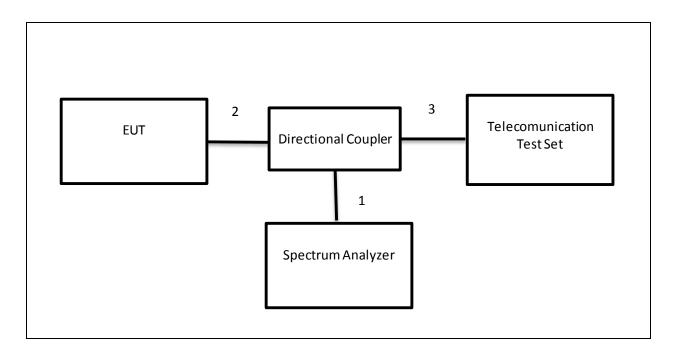
	I/O CABLE LIST							
Cable Port # of Connector Cable Cable Remark						Remarks		
No.		Identica	Туре	Туре	Length			
		Ports						
1	RF In/Out	1	Spectrum Analyzer	UN-SHELDED	None	N/A		
2	RF out	1	Directional Coupler	UN-SHELDED	0.1m	N/A		
3	RF In/Out	1	Communication Call box	UN-SHELDED	0.5m	N/A		

I/O CABLES (RADIATED TEST)

	I/O CABLE LIST							
Cable	Port	# of	Connector	Cable	Cable	Remarks		
No.		Identical Ports	Туре	Туре	Length			
1	AC	1	115VAC	UN-SHELDED	1.0m	N/A		
2	DC	1	DC	UN-SHELDED	1.0m	Volume control on		
3	Audio	1	Earphone	UN-SHELDED	1.0m	NA		
4	RF In/Out	1	Horn	UN-SHELDED	5m	NA		

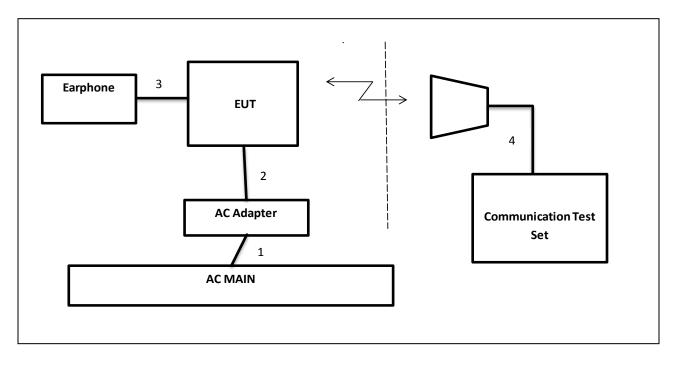
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CONDUCTED SETUP DIAGRAM FOR TESTS



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RADIATED SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

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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, 26.5 GHz	Agilent / HP	E4440A	C01179	02/16/13			
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	12/15/12			
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/12			
Antenna, Horn, 18 GHz	EMCO	3115	C00945	06/29/12			
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	02/07/13			
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/12/12			
Communication Test Set	Agilent / HP	E5515C	C01086	06/17/12			
Communication Test Set	R & S	CMW500	None	12/16/12			
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	10/20/12			
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689`	CNR			
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR			
Directional Coupler, 4.2 GHz, 40 dB	A-R	DC7144A	C00983	CNR			
Sleeve Dipole 1730~2030 MHz	ETS	3126-1880	C01157	08/01/12			
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/14/12			
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00993	07/16/12			

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7. RF POWER OUTPUT VERIFICATION

GSM MODE

GSM (GMSK) - Coding scheme: CS4

			Conducted ou	output power (dBm)	
Band	Ch	Frequency	F	Peak	
			1 slot	2 slot	
	128	824.2	32.90	32.90	
GSM850	190	836.6	32.80	32.70	
	251	848.8	32.80	32.70	
	512	1850.2	29.50	29.40	
GSM1900	661	1880.0	29.70	29.60	
	810	1909.8	29.70	29.60	

GPRS (GMSK) - Coding scheme: CS4

			Conducted ou	tput power (dBm)	
Band	Ch	Frequency	Peak		
			1 slot	2 slot	
	128	824.2	33.10	32.00	
GSM850	190	836.6	32.90	31.80	
	251	848.8	32.90	31.80	
	512	1850.2	29.80	28.90	
GSM1900	661	1880.0	29.90	29.00	
	810	1909.8	29.80	29.00	

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LOF NG (OF SN) - County scheme. MCS03					
			Conducted ou	tput power (dBm)	
Band	Ch	Frequency	F	Peak	
			1 slot	2 slot	
	128	824.2	30.20	28.80	
GSM850	190	836.6	30.20	28.80	
	251	848.8	30.20	28.90	
	512	1850.2	29.30	27.90	
GSM1900	661	1880.0	29.40	28.00	
	810	1909.8	29.40	28.00	

EGPRS (8PSK) - Coding scheme: MCS09

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<u>1xRTT</u>

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

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

Application Rev, License CDMA2000 Mobile Test B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 7
- > Network ID (NID) > 1
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
 - TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
 - > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
 Rvs Power Ctrl > All Up bits (Maximum TxPout)

Radio		Conducted Output Power (dBm)				
Configuration	Service Option	Ch. 1013 / 824.7 MHz	Ch. 384 / 836.52 MHz	Ch. 777 / 848.31 MHz		
(RC)	(SO)	Peak	Peak	Peak		
RC1	2 (Loopback)	28.12	28.13	27.70		
KCT	55 (Loopback)	28.11	28.02	27.62		
RC2	9 (Loopback)	28.09	28.02	27.60		
RG2	55 (Loopback)	28.08	27.95	27.58		
	2 (Loopback)	27.96	27.86	27.40		
RC3	55 (Loopback)	27.99	27.83	27.41		
RC3	32 (+ F-SCH)	27.85	27.77	27.33		
	32 (+ SCH)	28.03	28.06	27.97		
	2 (Loopback)	27.94	27.84	27.44		
RC4	55 (Loopback)	27.92	27.83	27.35		
RC4	32 (+ F-SCH)	27.97	28.03	27.59		
	32 (+ SCH)	27.84	27.87	27.51		
RC5	9 (Loopback)	28.02	27.87	27.45		
RCS	55 (Loopback)	27.97	27.81	27.44		
	2 (Loopback)	27.91	27.84	27.40		
RC11	75 (Loopback)	27.92	27.81	27.36		
	32 (+F-SCH)	27.96	27.86	27.33		
	32 (+SCH)	27.80	27.71	27.26		

CELLULAR BAND

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PCS BAND

Radio		Conducted Output Power (dBm)			
Configuration	Service Option	Ch. 25/ 1851.25 MHz	Ch. 600/ 1880 MHz	Ch. 1175/ 1908.75 MHz	
(RC)	(SO)	Peak	Peak	Peak	
RC1	2 (Loopback)	27.58	27.71	27.00	
Ker	55 (Loopback)	27.54	27.66	26.96	
RC2	9 (Loopback)	27.50	27.63	26.99	
RC2	55 (Loopback)	27.56	27.60	26.98	
	2 (Loopback)	27.63	27.38	26.85	
RC3	55 (Loopback)	27.31	27.46	26.88	
RUS	32 (+ F-SCH)	27.43	27.57	26.95	
	32 (+ SCH)	27.40	27.50	26.90	
	2 (Loopback)	27.59	27.42	26.95	
RC4	55 (Loopback)	27.33	27.45	26.82	
RC4	32 (+ F-SCH)	27.45	27.58	26.96	
	32 (+ SCH)	27.31	27.56	26.90	
DOF	9 (Loopback)	27.38	27.50	26.74	
RC5	55 (Loopback)	27.34	27.41	26.87	
	2 (Loopback)	27.18	27.38	26.85	
RC11	75 (Loopback)	27.29	27.58	6.75	
NOT I	32 (+F-SCH)	27.27	27.43	26.92	
	32 (+SCH)	27.40	27.57	26.96	

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1XEV-DO RELEASE 0 (REL. 0)

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

ApplicationRev, License1xEV-DO Terminal TestA.09.13

EVDO Release 0 - RTAP

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

EVDO Release 0 - FTAP

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

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CELL BAND

				Conducted power (dBm)
FTAP Rate	RTAP Rate	Channel	f (MHz)	Peak
		1013	824.70	29.32
307.2 kbps (2 slot, QPSK)	153.6 kbps	384	836.52	29.84
		777	848.31	28.58

PCS BAND

				Conducted power (dBm)
FTAP Rate	RTAP Rate	Channel	f (MHz)	Peak
		25	1851.25	28.35
307.2 kbps (2 slot, QPSK)	153.6 kbps	600	1880.00	28.97
(2 300, Q1 010)		1175	1908.75	28.67

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1XEV-DO REVISION A (REV. A)

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

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Release A – RETAP

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

EVDO Release A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2

> PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)

- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

CELL BAND

				Conducted power (dBm)
FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f (MHz)	Peak
		1013	824.70	29.98
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	384	836.52	29.88
		777	848.31	29.34

PCS BAND

				Conducted power (dBm)
FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f (MHz)	Peak
		25	1851.25	28.78
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	600	1880.00	29.12
		1175	1908.75	28.80

UMTS REL99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V7.5.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7) 12.2kps RMC is used for this testing. Power control set to All bits up. A summary of these settings are illustrated below:

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

RESULTS

REL 99

Band	UL Ch	DL Ch	Frequency	Conducted output power (dBm)
			- 17	Peak
	9262	9662	1852.4	26.53
UMTS1900 (Band II)	9400	9800	1880.0	26.67
(Dalid II)	9538	9938	1907.6	26.57

UMTS Rel 6 HSDPA

The following Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V7.5.0 specification. All TX RMS and Peak power requirements for Power Class 3 were met according to table 5.2AA.5 and achieved through the outlined test procedure in section 5.2AA.4.2. A summary of these settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA			
	Subtest	1	2	3	4			
	Loopback Mode	Test Mode 1						
	Rel99 RMC	12.2kbps RMC						
	HSDPA FRC	H-Set1						
	HSUPA Test	Not Applicable						
WCDMA	Power Control Algorithm	Algorithm 2						
General	βc	2/15	12/15	15/15	15/15			
Settings	βd	15/15	15/15	8/15	4/15			
	βec	-	-	-	-			
	βc/βd	2/15	12/15	15/8	15/4			
	βhs	4/15	24/15	30/15	30/15			
	βed	Not Applicable						
	DACK	8						
	DNAK	8						
HSDPA	DCQI	8						
Specific	Ack-Nack repetition factor	3						
Settings	CQI Feedback (Table 5.2B.4)	4ms						
	CQI Repetition Factor (Table 5.2B.4)	2						
	Ahs = β hs/ β c	30/15						

Band	Subtest	UL Ch	DL Ch	Frequency	Conducted output power (dBm)
Danu	Sublesi	UL CII		Frequency	Peak
		9262	9662	1852.4	26.71
	1	9400	9800	1880.0	26.79
		9538	9938	1907.6	26.48
	2	9262	9662	1852.4	27.15
		9400	9800	1880.0	27.24
UMTS1900		9538	9938	1907.6	26.91
(Band II)	3	9262	9662	1852.4	26.95
		9400	9800	1880.0	26.69
		9538	9938	1907.6	27.03
		9262	9662	1852.4	26.82
	4	9400	9800	1880.0	27.06
		9538	9938	1907.6	26.89

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UMTS Rel 6 HSPA (HSDPA & HSUPA)

The following 5 Sub-Tests were completed according to the test requirements outlined in section 5.2B of the 3GPP TS34.121-1 V7.5.0 specification. All TX RMS and Peak power requirements were met according to table 5.2B.5 and achieved through the outlined test procedure in section 5.2B.4.2. A summary of these settings are illustrated below:

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA			
	Subtest	1	2	3	4	5			
	Loopback Mode	Test Mode 1							
	Rel99 RMC	12.2kbps RMC							
	HSDPA FRC	H-Set1							
	HSUPA Test	HSUPA Loopback							
WCDMA	Power Control Algorithm	Algorithm2							
General	βc	11/15	6/15	15/15	2/15	15/15			
Settings	βd	15/15	15/15	9/15	15/15	15/15			
Settings	βec	209/225	12/15	30/15	2/15	24/15			
	βc/βd	11/15	6/15	15/9	2/15	15/15			
	βhs	22/15	12/15	30/15	4/15	30/15			
				47/15					
	βed	1309/225	94/75	47/15	56/75	134/15			
	DACK	8			•	•			
HSDPA	DNAK	8							
	DCQI	8							
	Ack-Nack repetition factor	3							
Specific Settings	CQI Feedback (Table 5.2B.4)	4ms							
Settings	CQI Repetition Factor (Table								
	5.2B.4)	2							
	Ahs = β hs/ β c	30/15							
	D E-DPCCH	6	8	8	5	7			
	DHARQ	0	0	0	0	0			
	AG Index	20	12	15	17	21			
	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			
HSUPA Specific Settings	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	i	E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO	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				

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Band	Subtest	UL Ch	DL Ch	Frequency	Conducted output power (dBm)
		0000	0000	4050.4	Peak
		9262	9662	1852.4	28.38
	1	9400	9800	1880.0	28.39
		9538	9938	1907.6	28.11
		9262	9662	1852.4	28.44
	2	9400	9800	1880.0	<mark>28.50</mark>
		9538	9938	1907.6	28.15
UMTS1900	3	9262	9662	1852.4	27.34
(Band II)		9400	9800	1880.0	27.45
(Danu II)		9538	9938	1907.6	27.13
	4	9262	9662	1852.4	28.44
		9400	9800	1880.0	28.49
		9538	9938	1907.6	28.14
		9262	9662	1852.4	28.42
	5	9400	9800	1880.0	28.49
		9538	9938	1907.6	28.14

LTE 10 MHz BAND 13

RB CONFIGURATION	START RB OFFSET	MODE	PEAK POWER (dBm)
1	0		27.10
1	49	QPSK	26.80
25	12		27.40
50	0		27.50
1	0		26.77
1	49	16QAM	26.40
25	12		27.21
50	0		27.30

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8. CONDUCTED TEST RESULTS

8.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

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

MODES TESTED

- GSM, GPRS and EGPRS
- 1xRTT RC1, SO2
- EVDO, REV A
- WCDMA REL. 99, HSDPA
- LTE BAND 13

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RESULTS

Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
		128	824.2	242.0385	290.498
	GSM	190	836.6	242.3879	313.011
		251	848.8	247.6777	310.654
		128	824.2	250.7085	291.038
Cellular	GPRS	190	836.6	247.9895	314.566
		251	848.8	253.7473	313.012
		128	824.2	242.3729	279.659
	EGPRS	190	836.6	246.1097	292.933
		251	848.8	238.2607	306.409
		512	1850.2	253.8157	310.200
	GSM	661	1880.0	252.1927	305.360
		810	1909.8	243.9594	303.215
		512	1850.2	253.3175	310.258
PCS	GPRS	661	1880.0	253.5578	284.073
		810	1909.8	250.3211	306.696
		512	1850.2	241.0245	288.237
	EGPRS	661	1880.0	245.4398	310.288
		810	1909.8	247.8229	283.632

Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
		1013	824.70	1.2709	1.424
	1xRTT	384	836.52	1.2897	1.431
Cellular		777	848.31	1.3203	1.413
Cellular		1013	824.70	1.2770	1.388
	EVDO	384	836.52	1.2736	1.371
		777	848.31	1.2813	1.401
		25	1851.25	1.2774	1.423
	1xRTT	600	1880.00	1.2736	1.413
PCS		1175	1908.75	1.2851	1.414
PCS		25	1851.25	1.2750	1.407
	EVDO	600	1880.00	1.2784	1.376
		1175	1908.75	1.2703	1.408

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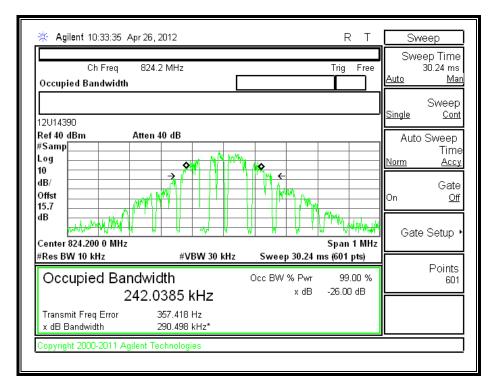
Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
	WCDMA, REL99	9662	1852.4	4.1406	4.580
		9800	1880.0	4.1462	4.571
PCS		9938	1907.6	4.1307	4.522
	WCDMA, HSDPA	9662	1852.4	4.1402	4.571
		9800	1880.0	4.1737	4.553
	110DT A	9938	1907.6	4.1633	4.525

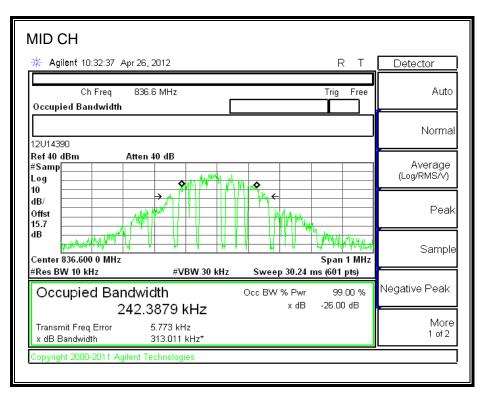
Band	Mode	RB/RB SIZE	f (MHz)	99% BW (kHz)	-26dB BW (kHz)
		1/0		303.8837	4621.00
	10 MHz BAND	1/49	782.0	261.1309	396.098
	QPSK	25/12		4466.80	4730.00
LTE		50/0		8928.80	9362.00
		1/0	702.0	269.7151	330.454
	10 MHz BAND	1/49		308.8119	4653.00
	16QAM	25/12		4491.90	4787.00
		50/0		8919.70	9265.00

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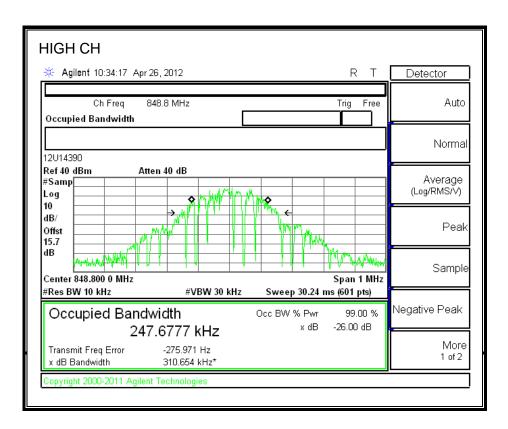
99% BANDWIDTH and 26dB

GSM850 BAND



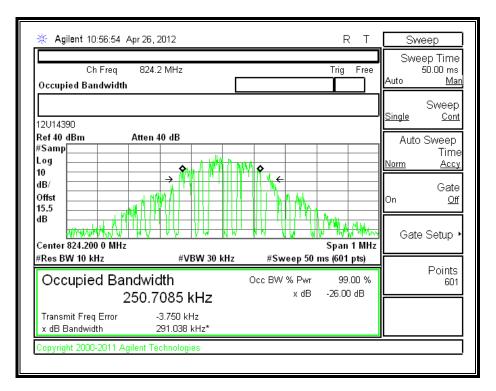


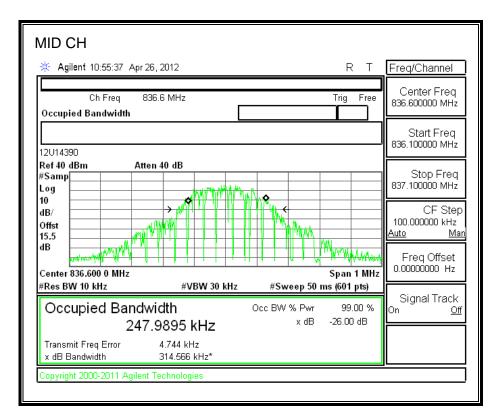
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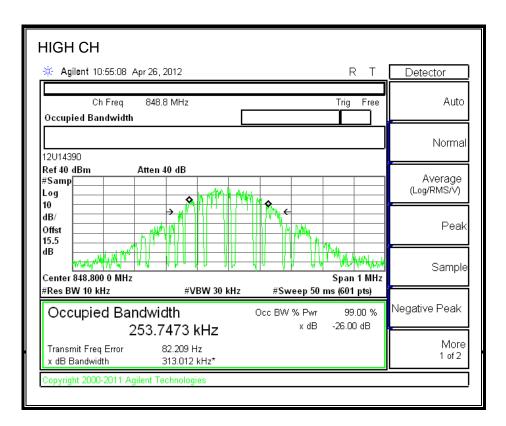
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GPRS850 BAND



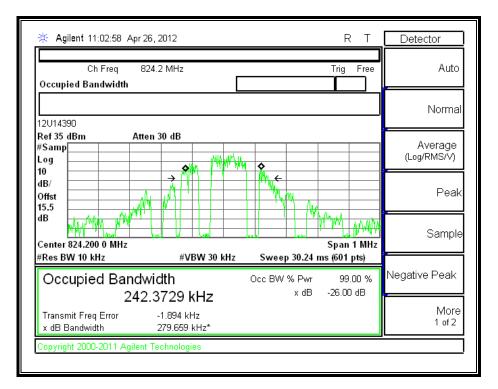


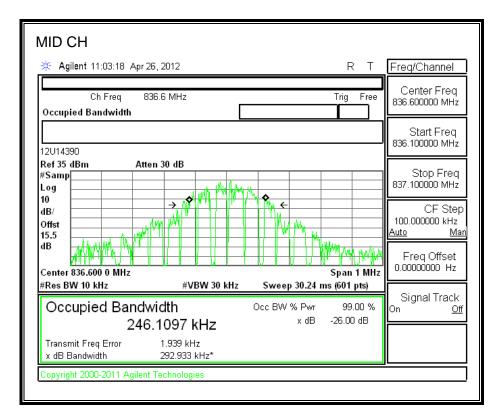
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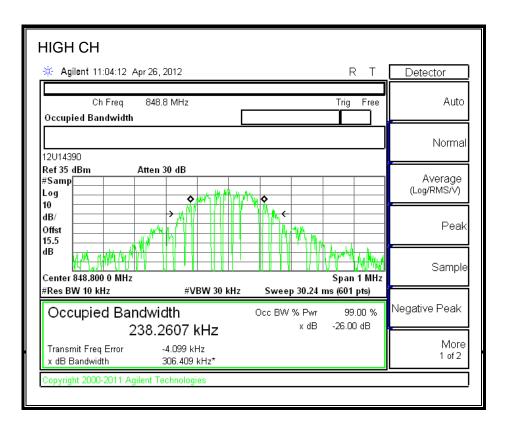
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EGPRS850 BAND



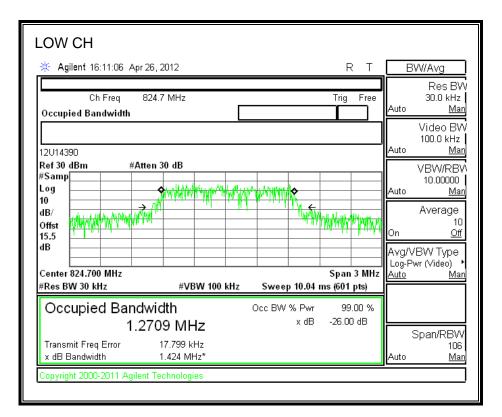


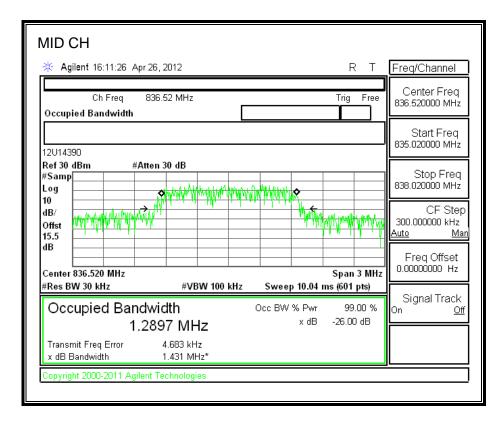
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CDMA2000 1xRTT Cellular Band



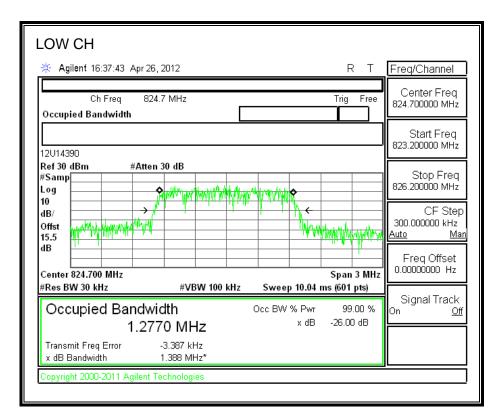


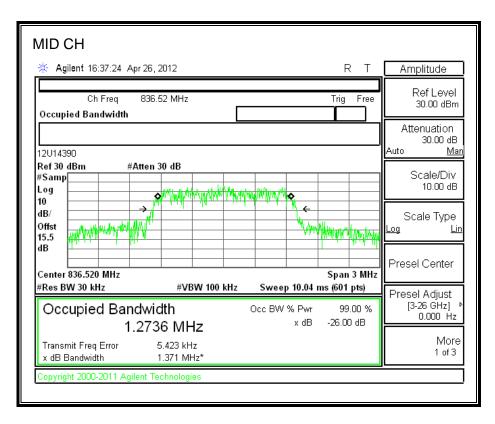
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HIGH CH * Agilent 16:12:11 Apr 26, 2012 R T	Sweep
Ch Freq 848.31 MHz Trig Free	Sweep Time 10.04 ms
Occupied Bandwidth	<u>Auto Man</u>
12U14390	Sweep <u>Single Cont</u>
Ref 30 dBm #Atten 30 dB	Auto Sweep
#Samp Log 10	Time <u>Norm Accy</u>
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Gate On <u>Off</u>
	Gate Setup ▸
Center 848.310 MHz Span 3 MHz	
#Res BW 30 kHz #VBW 100 kHz Sweep 10.04 ms (601 pts)	Deinte
Occupied Bandwidth Occ BW % Pwr 99.00 %	Points 601
1.3203 MHz × dB -26.00 dB	
Transmit Freq Error -2.440 kHz x dB Bandwidth 1.413 MHz*	
Copyright 2000-2011 Agilent Technologies	

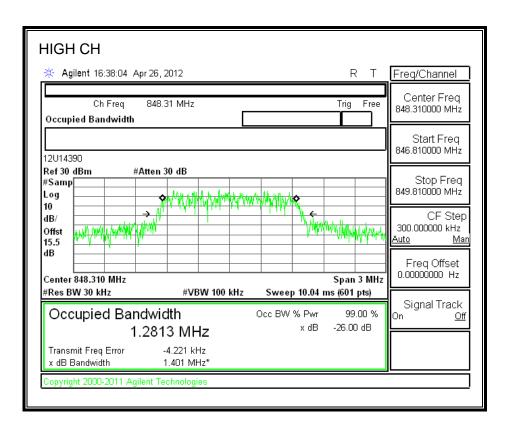
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CDMA2000 EVDO REV A, Cellular Band



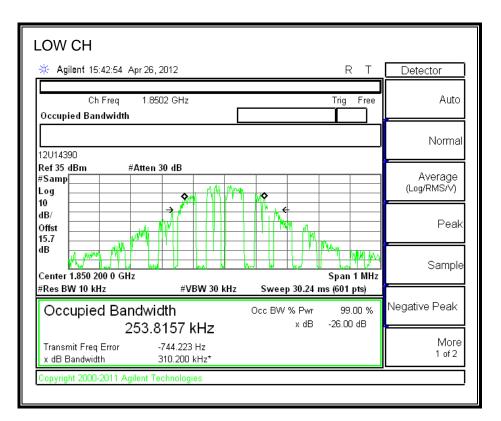


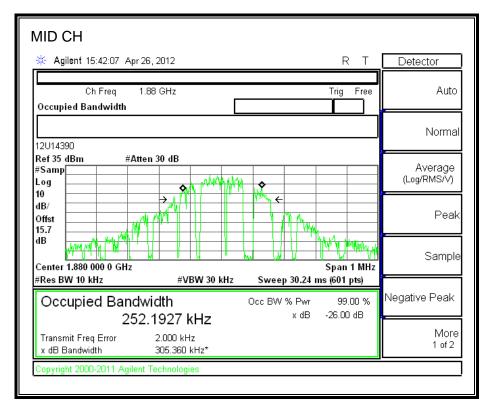
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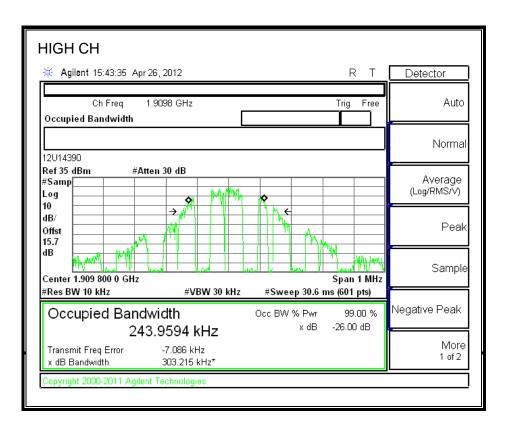
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GSM1900 BAND



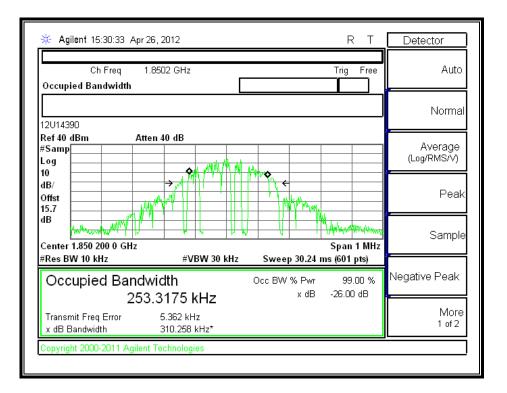


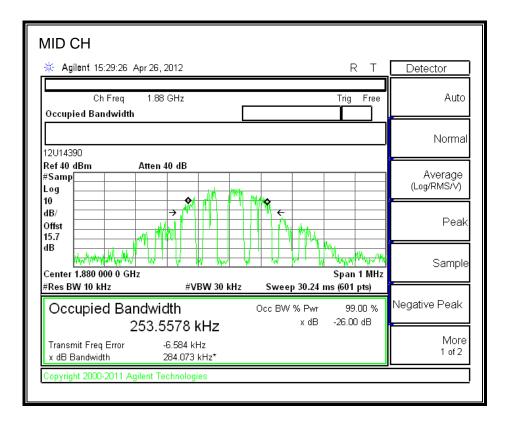
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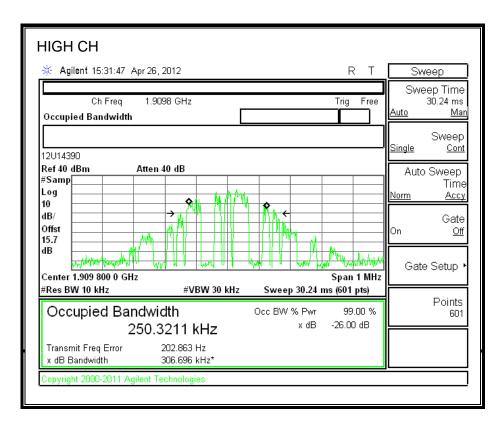
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GPRS1900 BAND



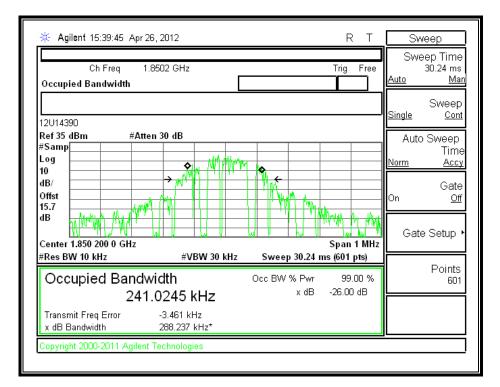


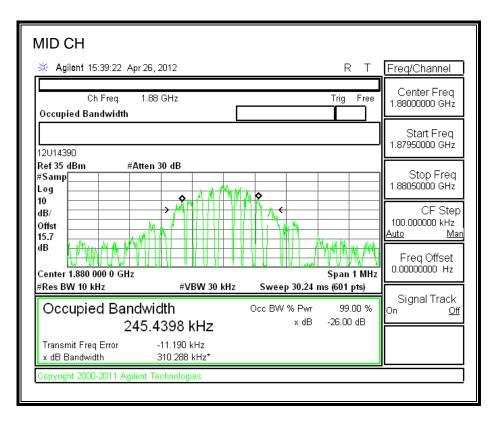
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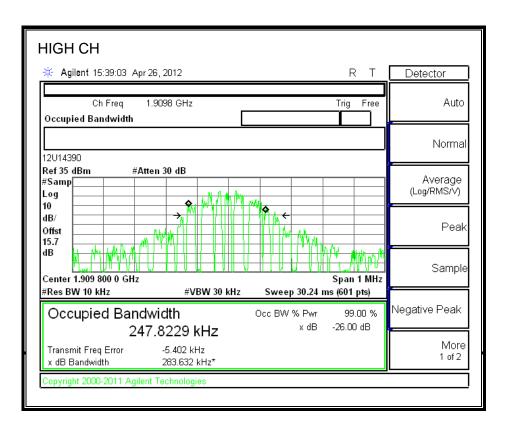
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EGPRS1900 BAND



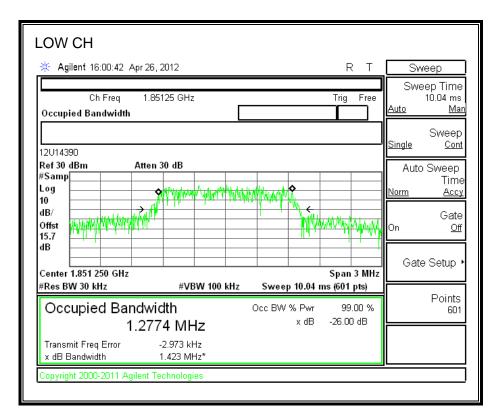


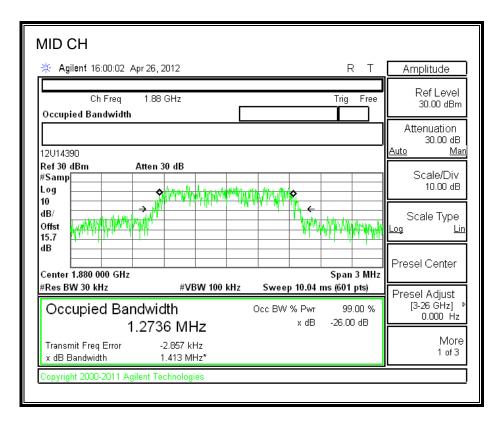
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CDMA2000 1xRTT PCS Band



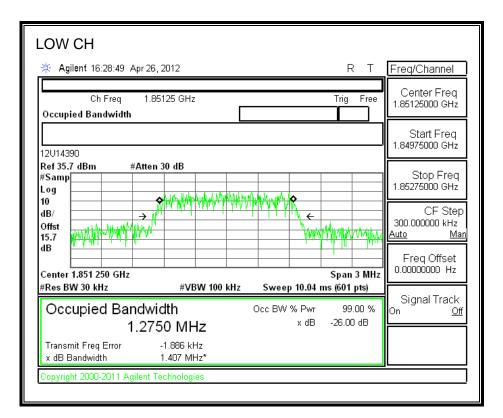


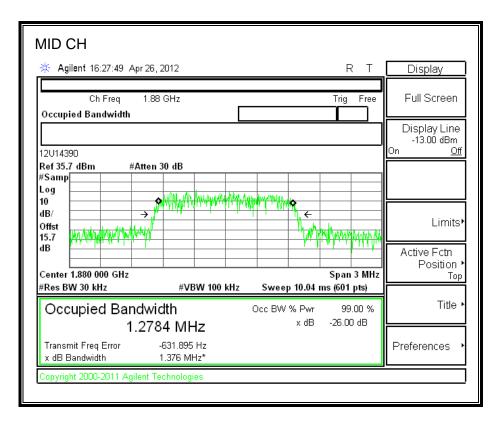
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HIGH CH	Freq/Channel					
Ch Freq 1.90875 GHz Trig Free Occupied Bandwidth	Center Freq 1.90875000 GHz					
12U14390	Start Freq 1.90725000 GHz					
Ref 30 dBm Atten 30 dB #Samp	Stop Freq 1.91025000 GHz CF Step 300.000000 kHz <u>Auto Man</u> Freq Offset					
Center 1.908 750 GHz Span 3 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 10.04 ms (601 pts)	0.00000000 Hz					
Occupied Bandwidth Occ BW % Pwr 99.00 % 1.2851 MHz x dB -26.00 dB Transmit Freq Error 1.125 kHz x dB x dB Bandwidth 1.414 MHz*	Signal Track On <u>Off</u>					
Copyright 2000-2011 Agilent Technologies						

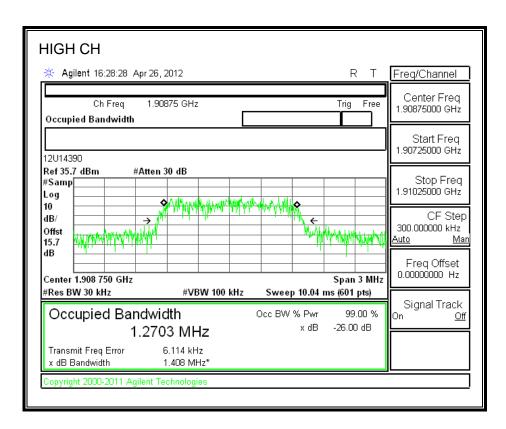
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CDMA2000 EVDO REV A, PCS Band



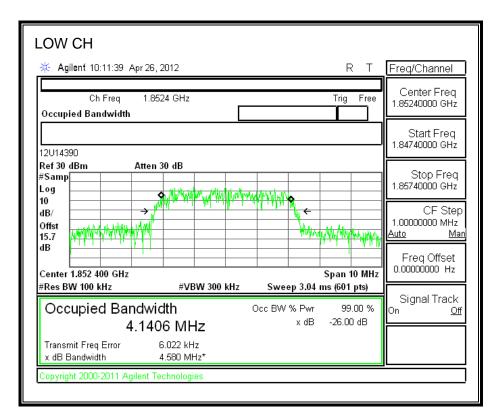


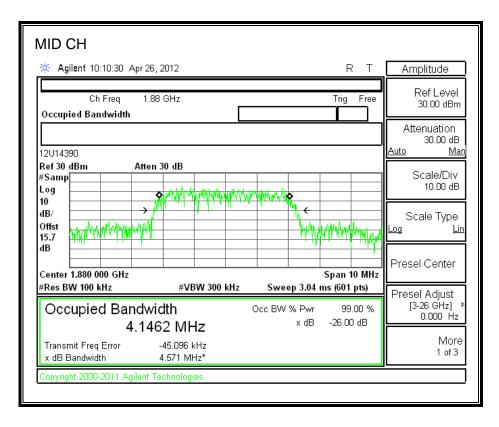
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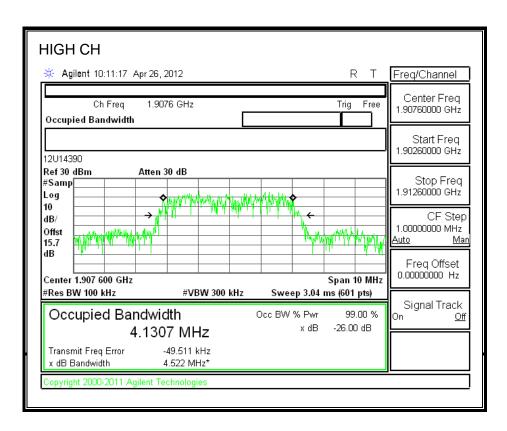
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WCDMA REL 99. PCS Band



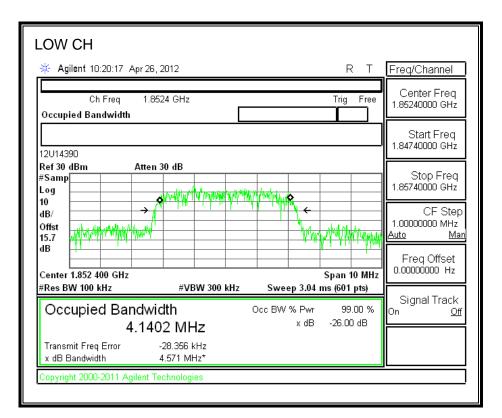


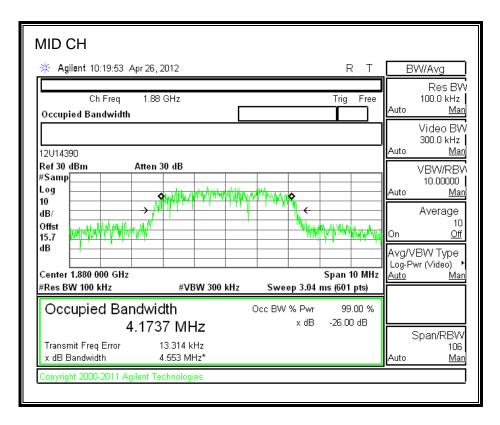
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WCDMA HSDPA. PCS Band



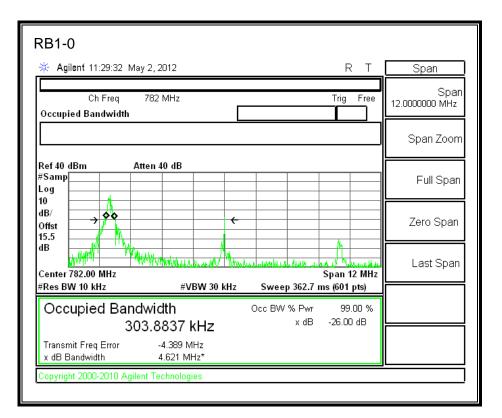


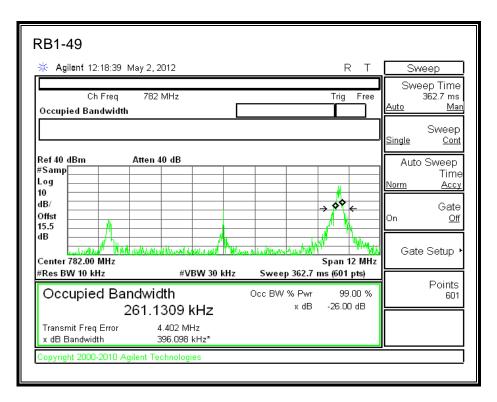
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HIGH CH	Freq/Channel
Ch Freq 1.9076 GHz Trig Free Occupied Bandwidth	Center Freq 1.90760000 GHz
12U14390 Ref 30 dBm Atten 30 dB	Start Freq 1.90260000 GHz
#Samp Log 10 dB/ Offst 15.7	Stop Freq 1.91260000 GHz CF Step 1.00000000 MHz <u>Auto Man</u>
dB Center 1.907 600 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 3.04 ms (601 pts)	Freq Offset 0.00000000 Hz
4.1633 MHz × dB -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error -33.785 kHz x dB Bandwidth 4.525 MHz* Copyright 2000-2011 Agilent Technologies	

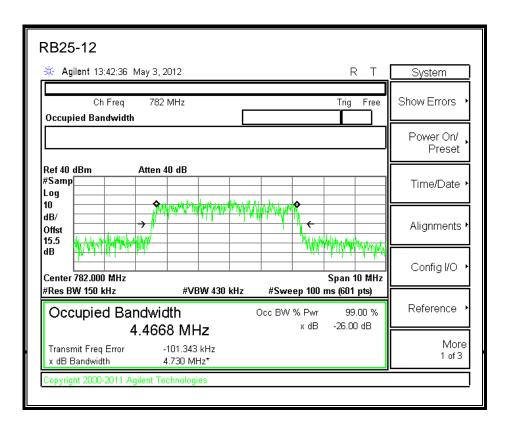
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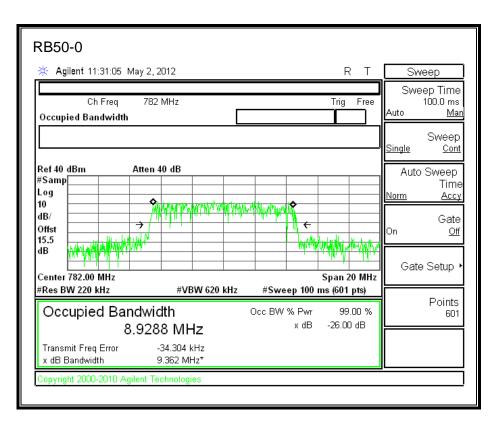
LTE QPSK Band 13





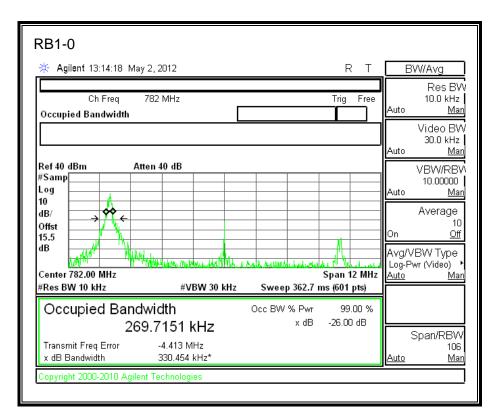
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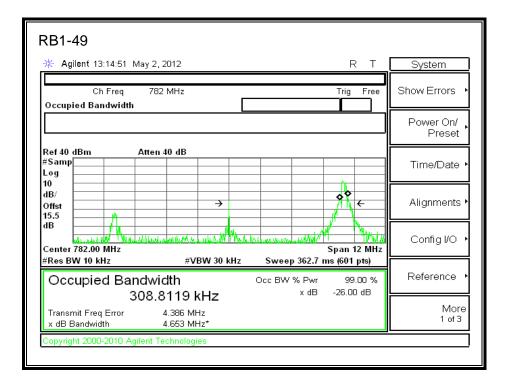




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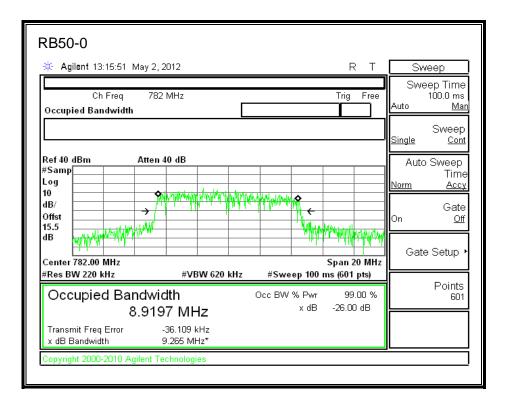
LTE 16QAM Band 13





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RB25-12					
🔆 Agilent 13:42:11 May 3, 20)12		RT	Si	veep
Ch Freq 782 M Occupied Bandwidth	ИНz		Trig Free	SW Auto	eep Time 100.0 ms <u>Man</u>
				<u>Single</u>	Sweep <u>Cont</u>
Ref 40 dBm Atten 40 #Samp Log) dB			Auti Norm	o Sweep Time <u>Accy</u>
Offst				On	Gate <u>Off</u>
dB			Span 10 MHz	Gat	:e Setup 🕨
#Res BW 150 kHz	#VBW 430 kHz	#Sweep 100	ms (601 pts)		Deinte
Occupied Bandwidth Occ BW % Pwr 99.00 % 4.4919 MHz × dB -26.00 dB					
	28.415 kHz 787 MHz*				
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8.2. BAND EDGE

RULE PART(S)

FCC: §22.359, 24.238, FCC part 27.53(c)

<u>LIMITS</u>

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

TEST PROCEDURE

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

For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency (824, 849, 1850, 1910MHz)
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

LIMITS

On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P) dB$ in a 6.25 kHz band segment, for mobile and portable stations.

Compliance with the provisions of paragraphs above of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

TEST PROCEDURE

The transmitter output was connected to 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.

For each band edge measurement:

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

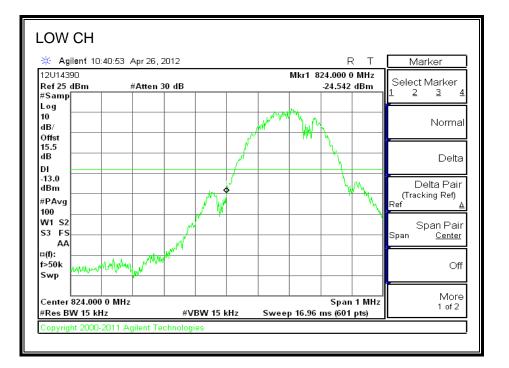
MODES TESTED

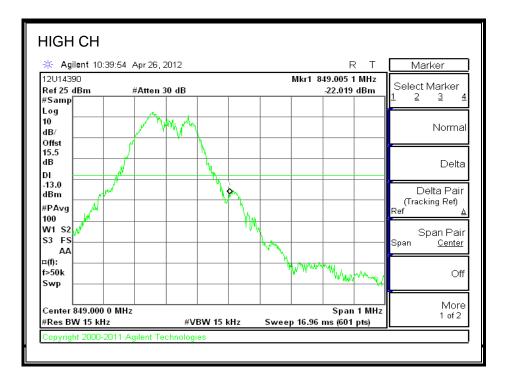
- GSM, GPRS & EGPRS
- 1xRTT RC1, SO2
- EVDO, REV A
- WCDMA REL. 99
- WCDMA HSDPA
- LTE BAND 13

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BANDEDGE

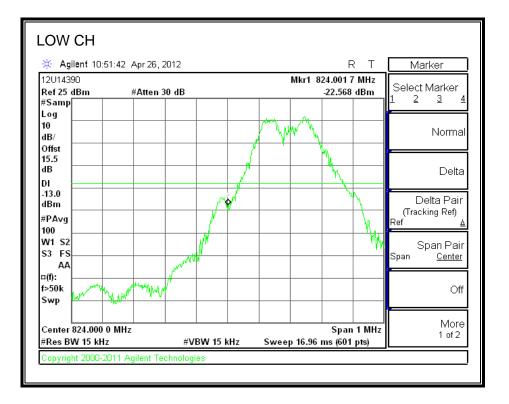
GSM850 BAND

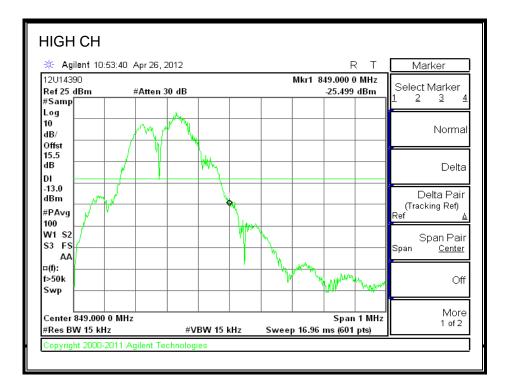




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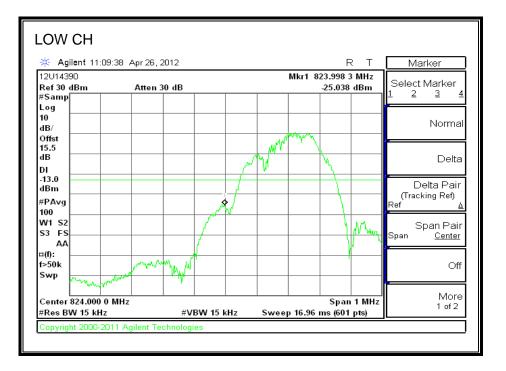
GPRS850 BAND

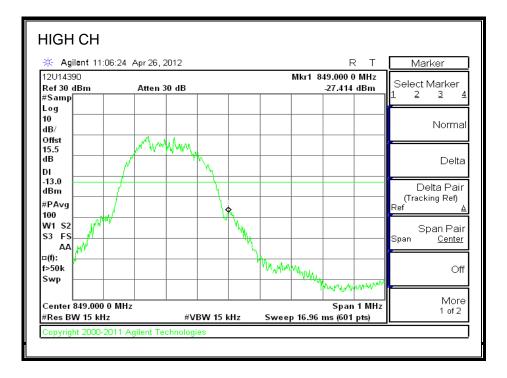




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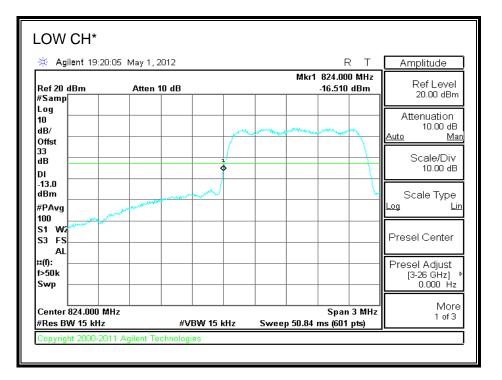
EGPRS850 BAND

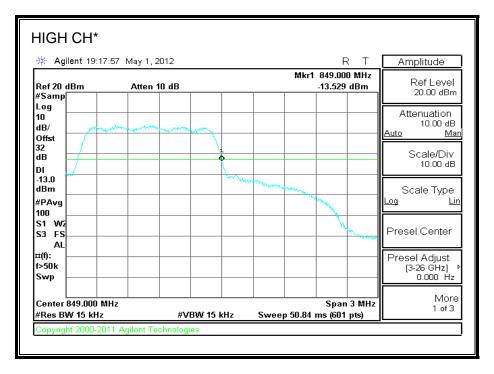




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CDMA2000 1xRTT Cellular Band

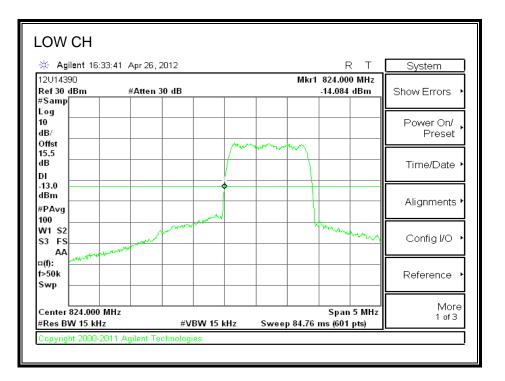


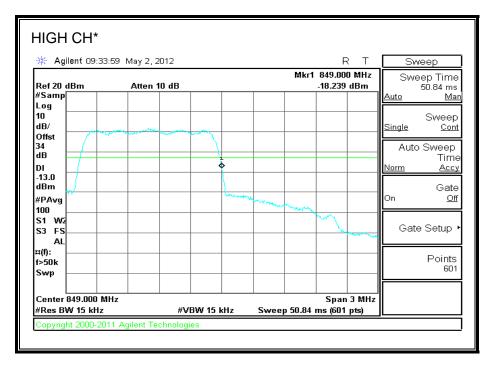


*Note: This particular test has made using radiated method with real substitution.

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CDMA2000 EVDO REV A, Cellular Band

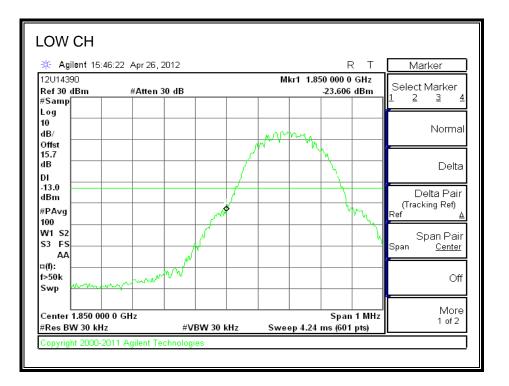


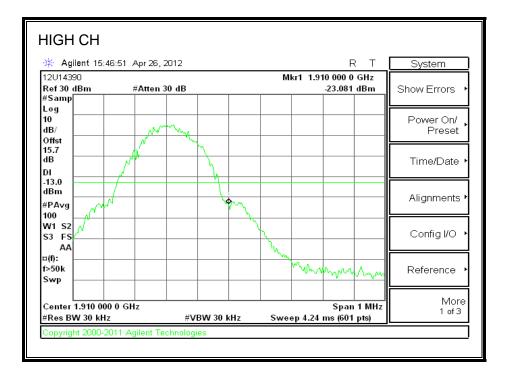


*Note: This particular test has made using radiated method with real substitution.

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GSM1900 BAND





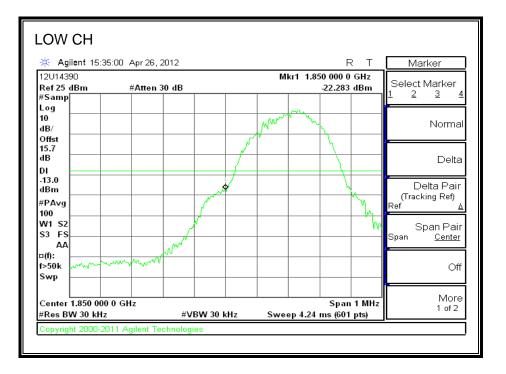
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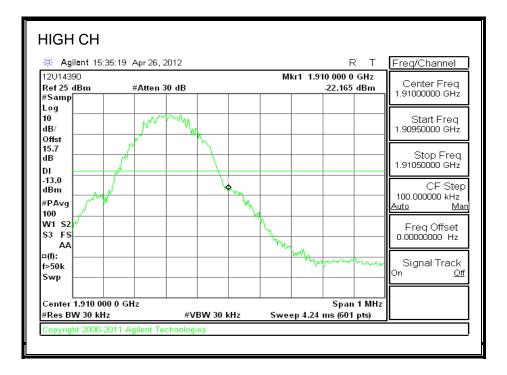
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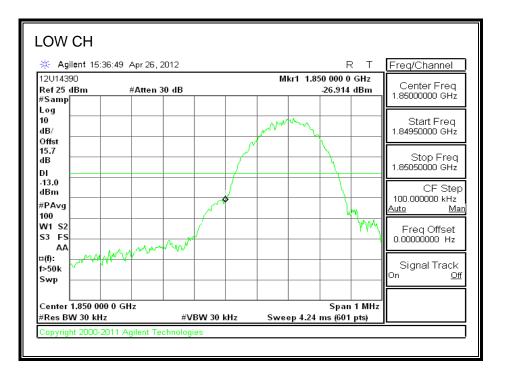
GPRS1900 BAND

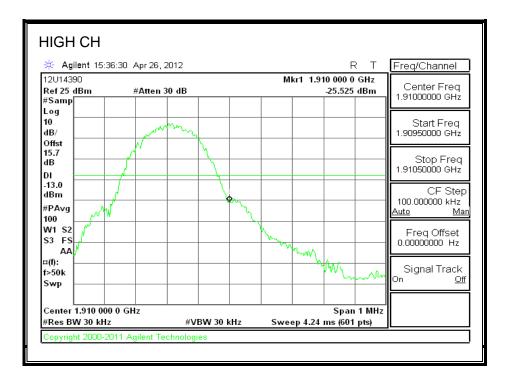




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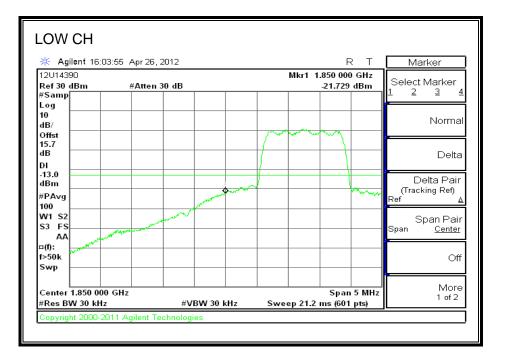
EGPRS1900 BAND

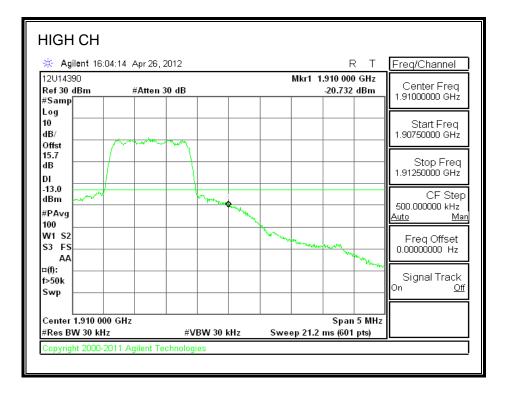




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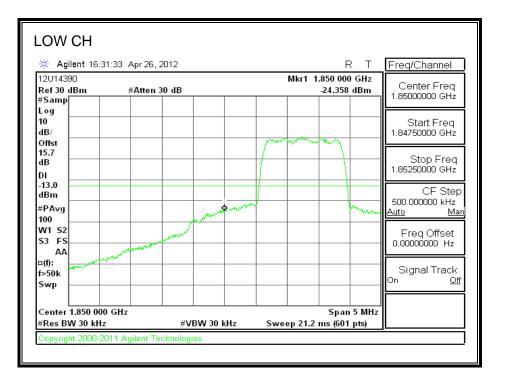
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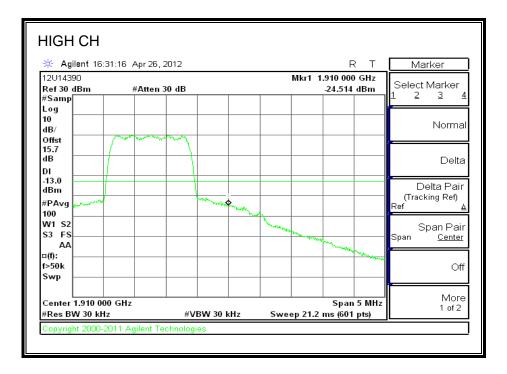




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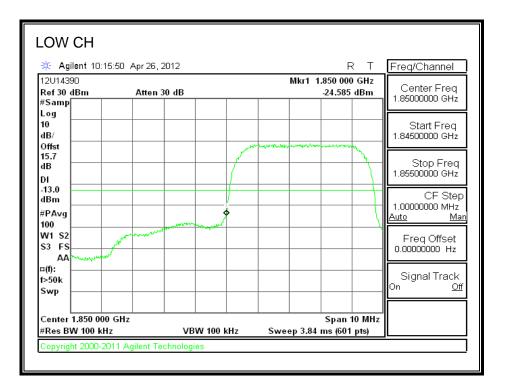
CDMA2000 EVDO REV A, PCS Band

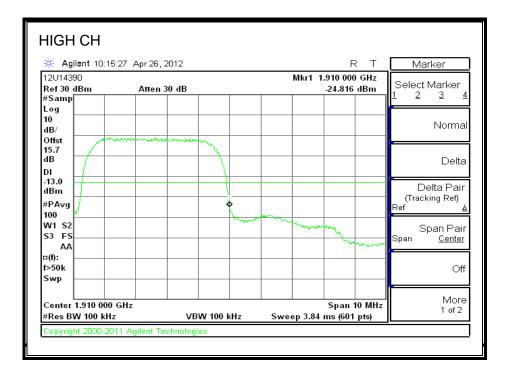




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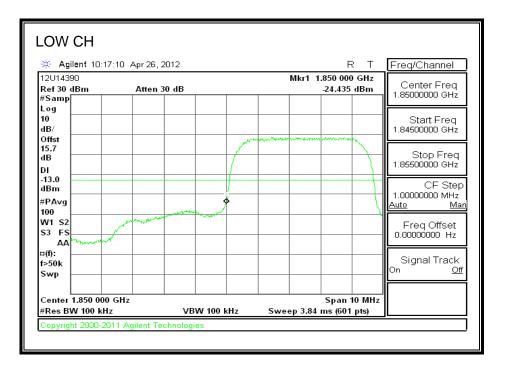
WCDMA REL 99. PCS Band

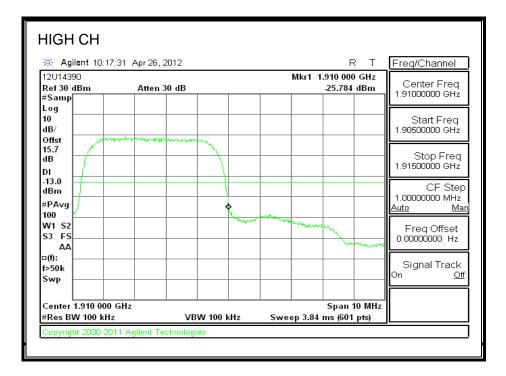




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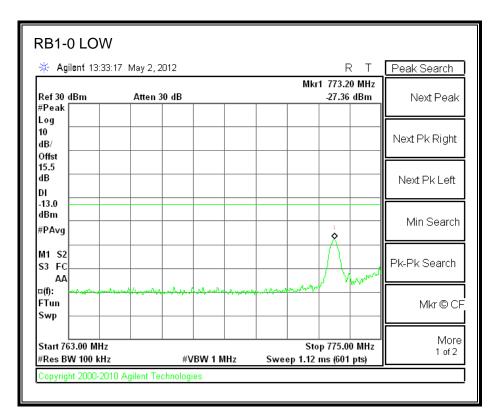
WCDMA HSDPA. PCS Band

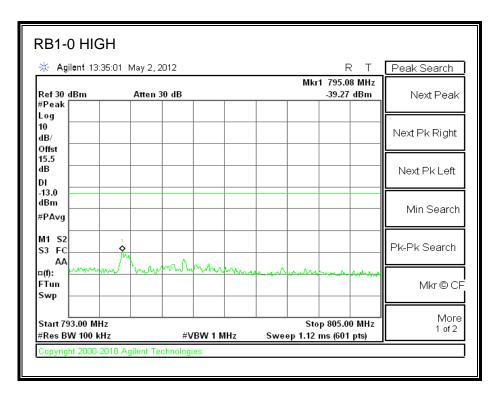




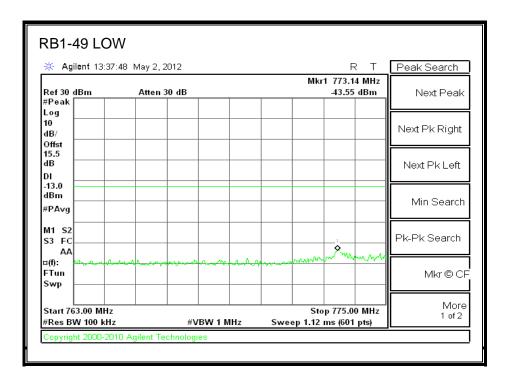
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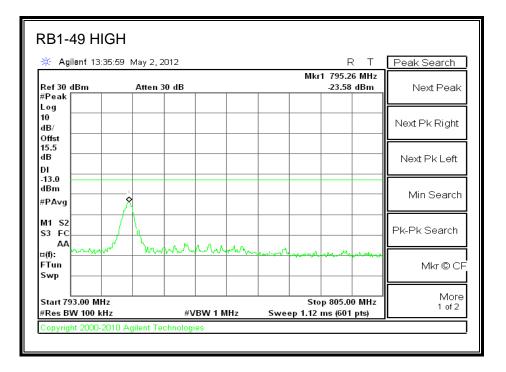
LTE QPSK Band 13

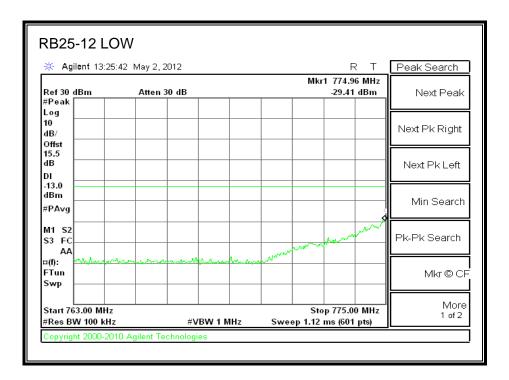


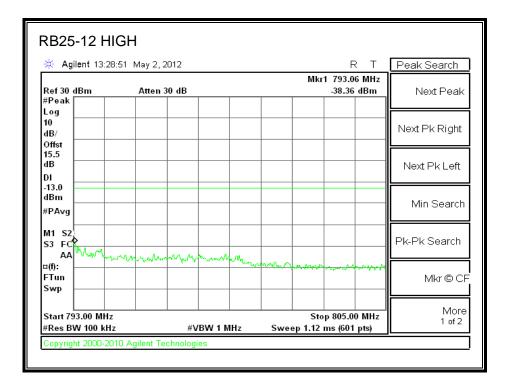


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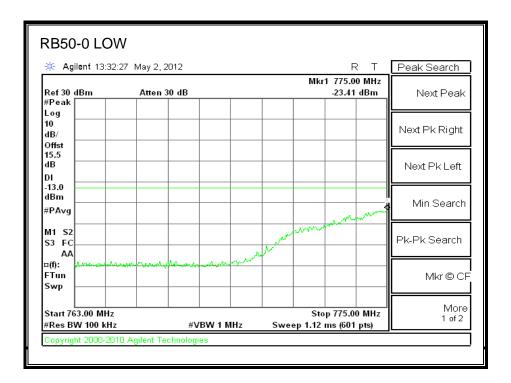


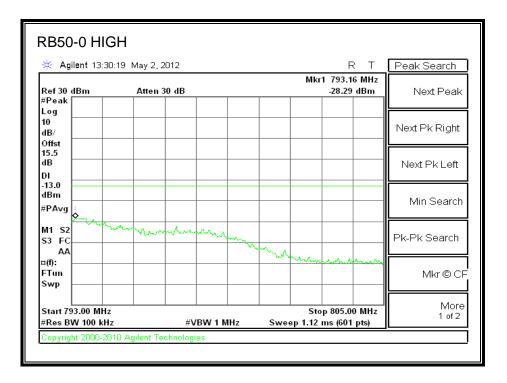






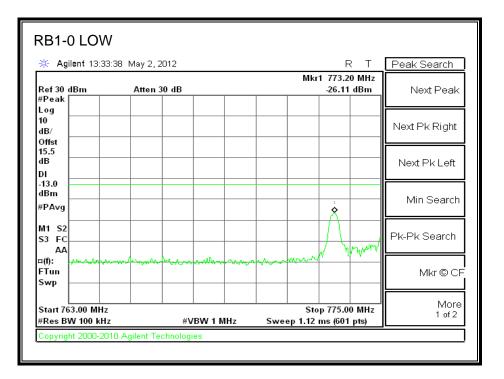
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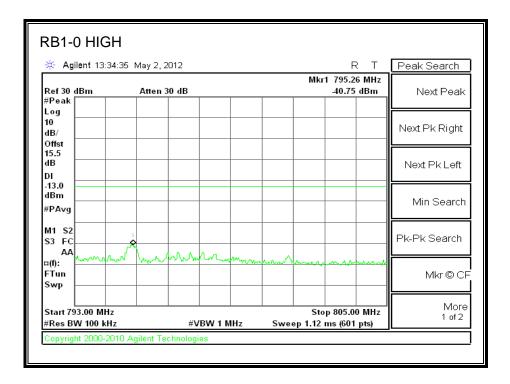




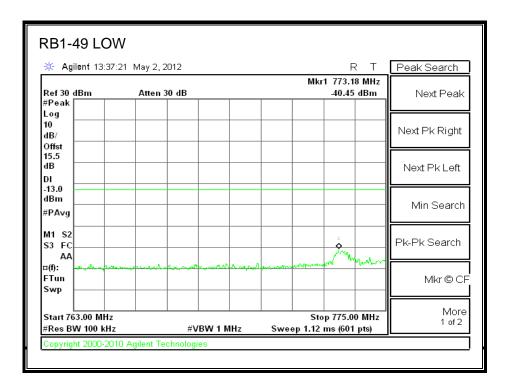
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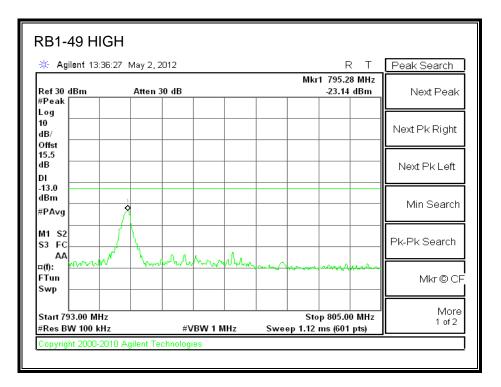
LTE 16QAM Band 13



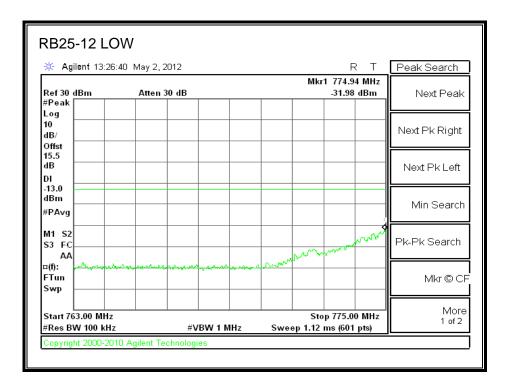


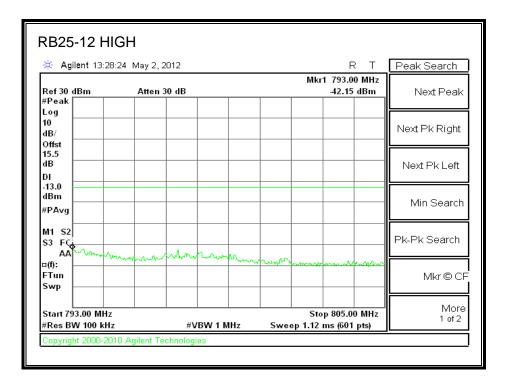
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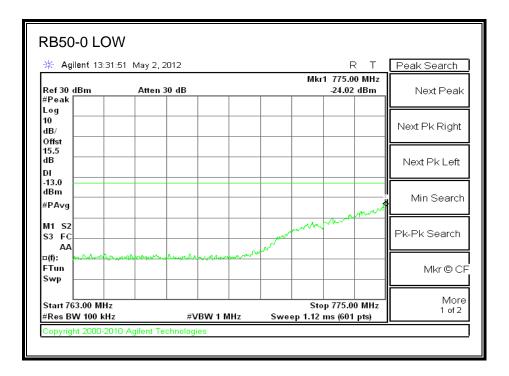


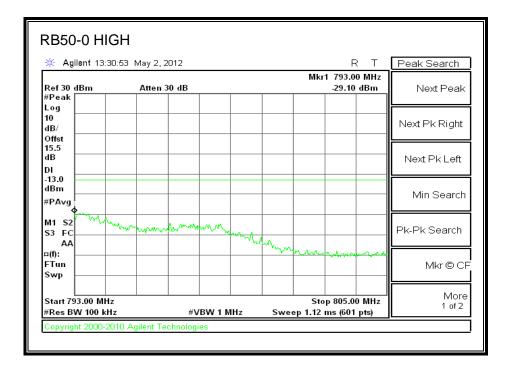
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8.3. OUT OF BAND EMISSIONS

RULE PART(S)

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

LIMITS

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

TEST PROCEDURE

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

For each out of band emissions measurement:

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

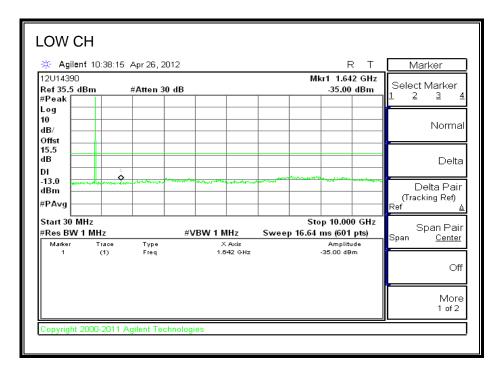
MODES TESTED

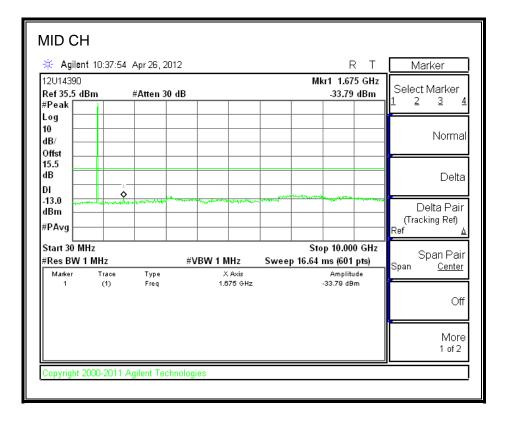
- GSM, GPRS and EGPRS
- 1xRTT RC1, SO2
- WCDMA REL. 99, HSDPA
- LTE BAND 13

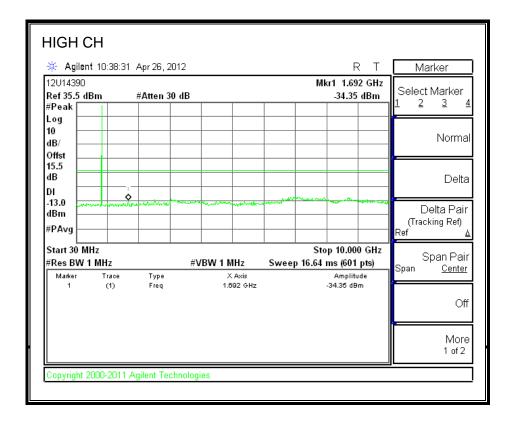
RESULTS

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GSM850 BAND



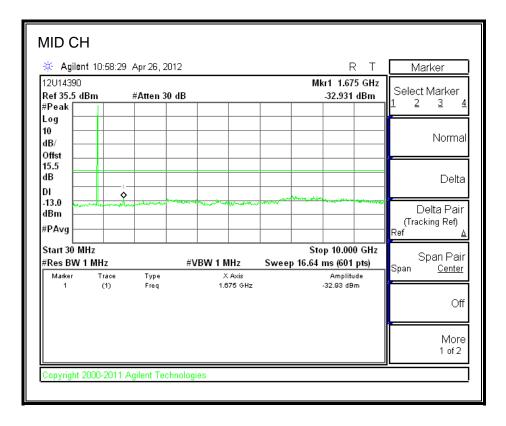


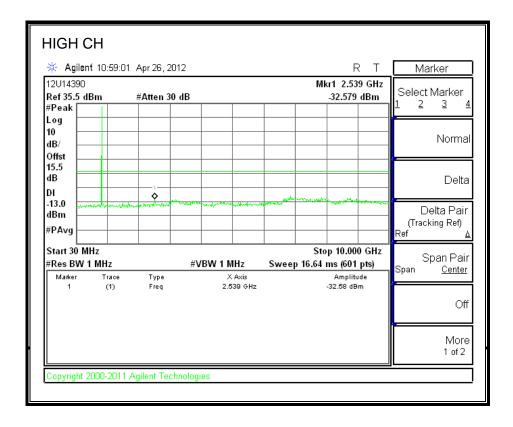


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GPRS850 BAND

	lent 10:	58:03 A	Apr 26, 2	2012					F		Marker
201439 Ref 35.5	-	ŧ	≄Atten 3	0 dB					r1 1.64 -34.239		Select Marker
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_og 0											
iB/											Norma
offst 5.5											-
IB											Delta
л Г		\$					-				
13.0 IBm	menoully	and the second	and the second	and the second second	and the second sec	and the a	Contraction of the local distribution of the		and the second second		Delta Pai
PAvg											(Tracking Ref) Ref
Start 30									40.00		Rei
	MHZ N1MHz	,		#V	/BW 1 N	1Hz	Swee	5to p 16.64 i	p 10.00 ms <i>(</i> 601		Span Pai
Marker	Tra	ace	Туре		×	Axis	01100		Amplitu	ıde	Span <u>Cente</u>
1	(*	1)	Freq		1.6	641 GHz			34.24 dB	m	
											01
											Mor
											1 of 2

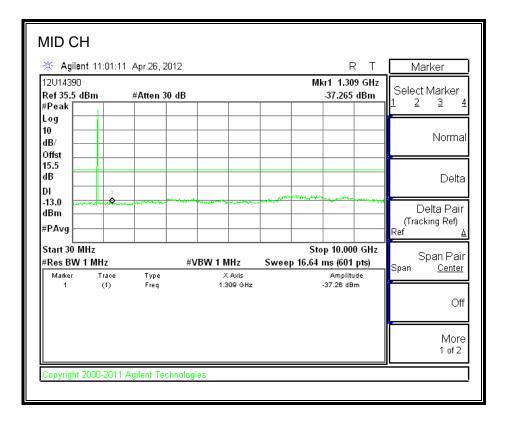




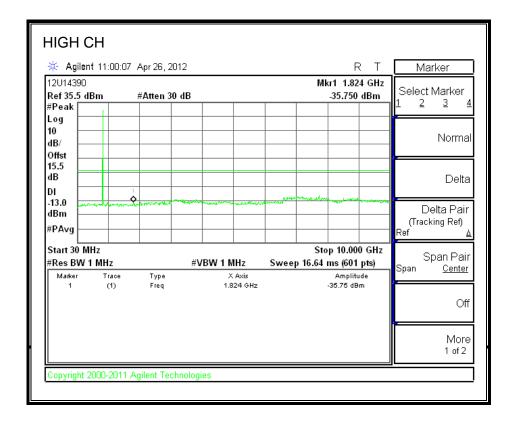
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EGPRS850 BAND

-		01:37 /	Apr 26, 2	012					F		M	arker
12U1439 Ref 35.5		;	#Atten 3	0 dB					r1 2.28 -35.252		Selec 1 2	t Marker
#Peak											⊥	3 4
Log 10 dB/												Norma
Offst												
15.5 1B												Delta
)I 13.0								manum	المرجع المرجع الم			
iBm	ورامية محمد م	where the second					•~~~~		~		_	Delta Pair
≠PA∨g											Ref	cking Ref) ∡
∣ Start 30 ≇Res B\	MHz W 1 MH	7		#V	BW 1 N	1H7	Swee	Sto p 16.64 i	p 10.00 ms <i>(</i> 601			Span Pair
Marker	Tr	ace	Туре		×	Axis 89 GHz	01100	•	Amplitu 35.25 dB	Jde	Span	<u>Center</u>
1	(1)	Freq		2.2	89 GHZ			-30.20 08	'n		Off
												More 1 of 2

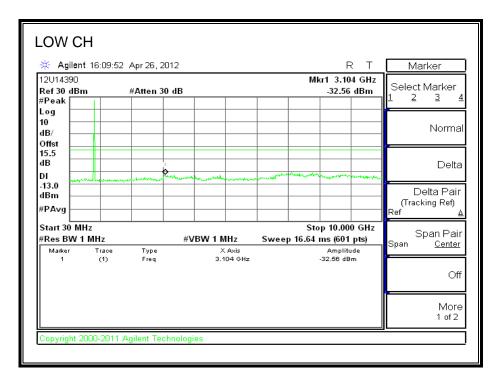


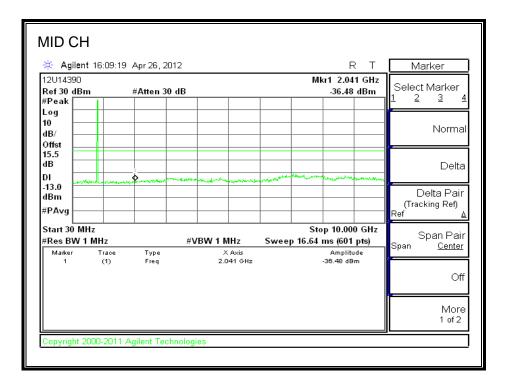
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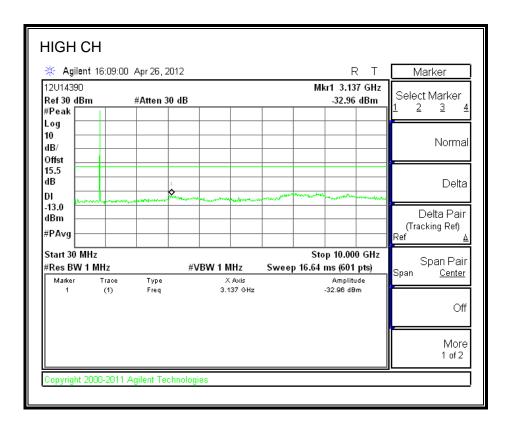
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CDMA2000 1xRTT Cellular Band





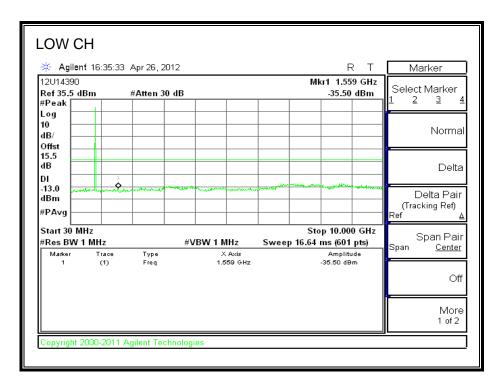
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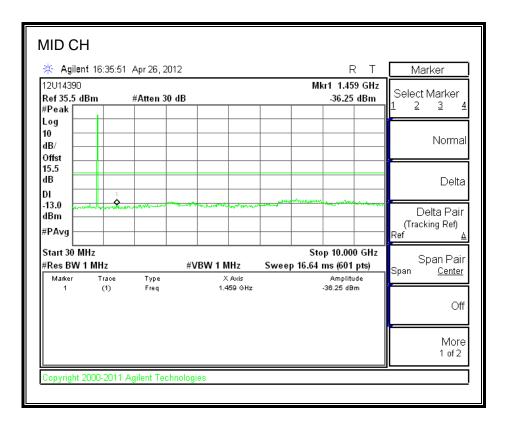


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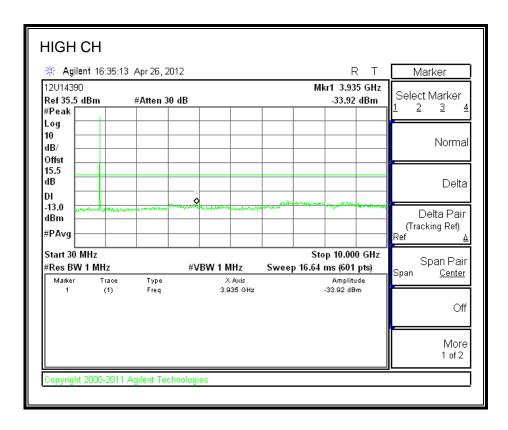
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CDMA2000 EVDO REV A, Cellular Band





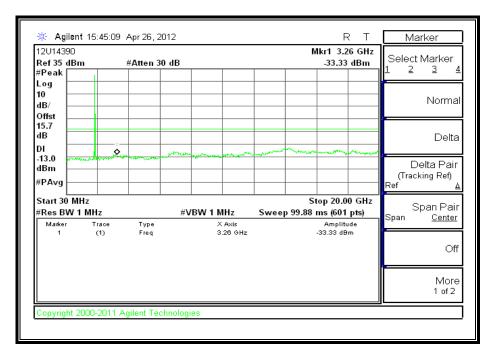
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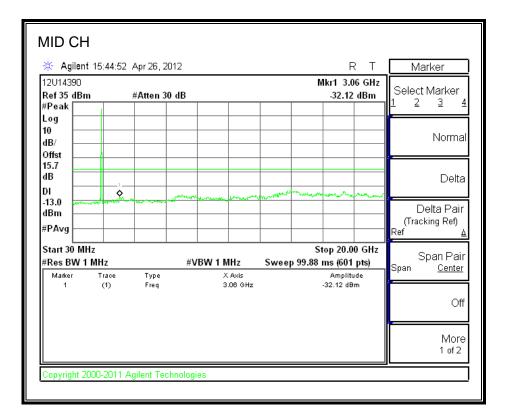


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GSM1900 BAND



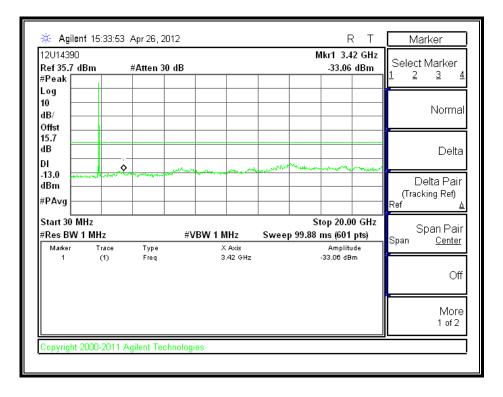


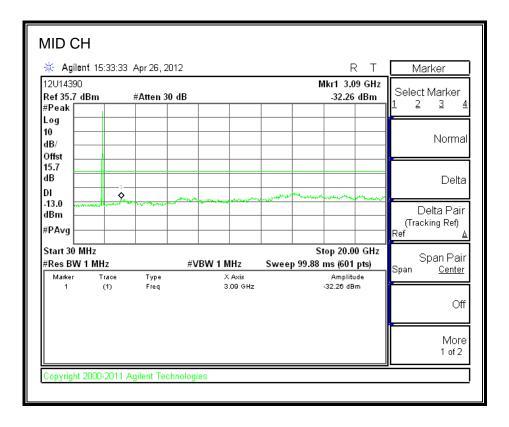
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	nt 15:44:26	Apr 26, 2	012					R T	Marker
12U14390 Ref 35 dB #Peak ⊡		#Atten 3	0 dB			N	lkr1 3.2 -33.40		Select Marker
10 — dB/ — Offst									Marker Trace <u>Auto 1 2</u>
15.7 dB									Readout Frequency
DI -13.0			manna	man	merendend	monor	and the	mun	Trequency
dBm –	-onthe states								Marker Table
#PAvg –									<u>On Of</u>
Start 30 M	IHz					St	top 20.0	0 GHz	
#Res BW			#VBW	1 MHz	Swee	p 99.88	,	• •	Marker All Off
Marker 1	Trace (1)	Type Freq		X Axis 3.26 GHz	2		Ampliti -33.40 dB		
									More 2 of 2

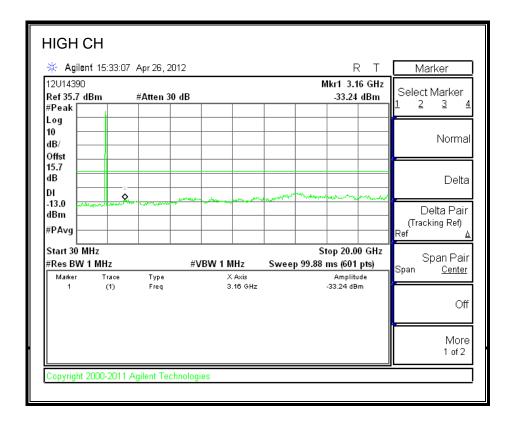
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GPRS1900 BAND





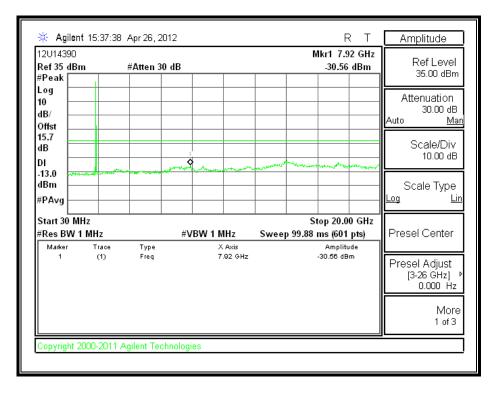
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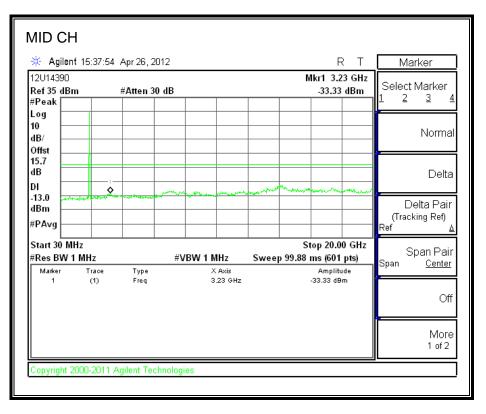


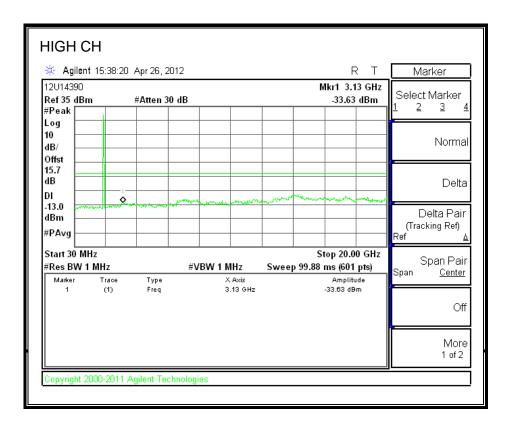
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EGPRS1900 BAND

LOW CH

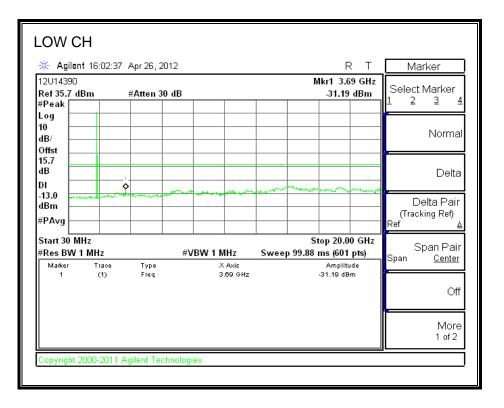


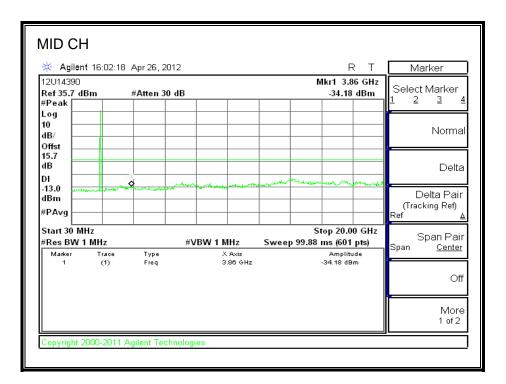




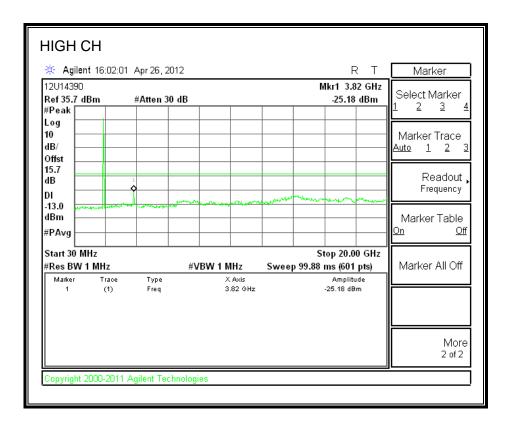
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CDMA2000 1xRTT PCS Band



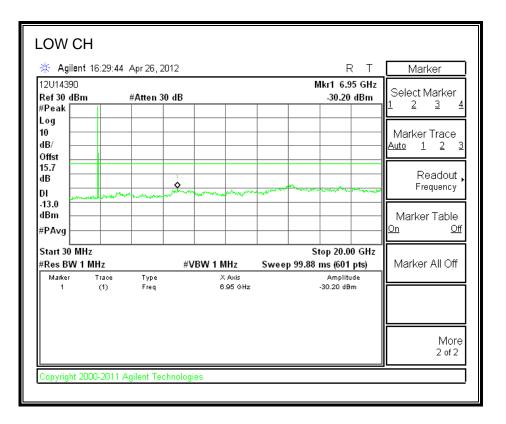


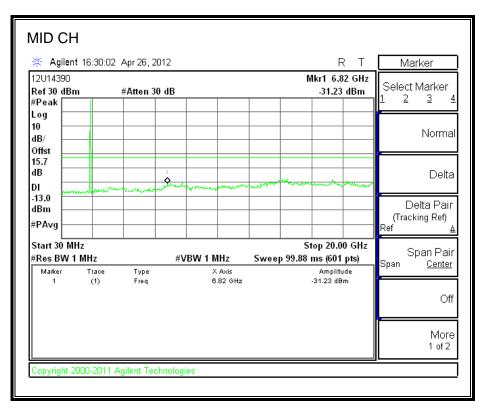
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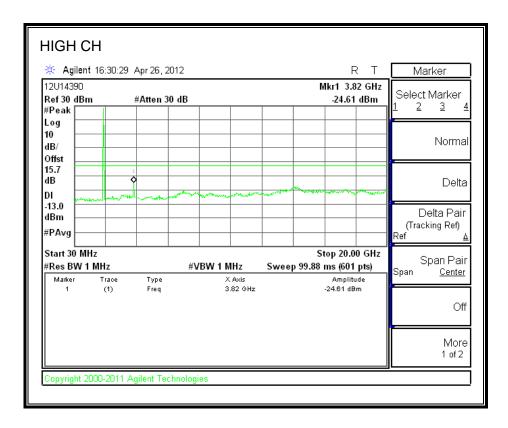
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CDMA2000 EVDO REV A, PCS Band



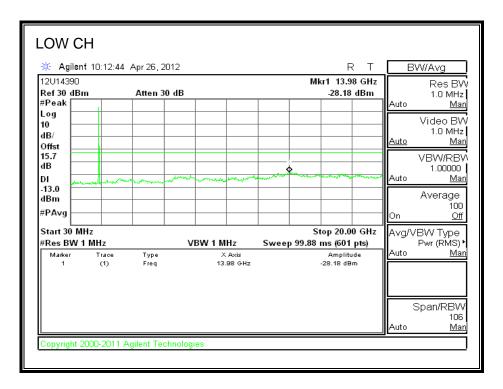


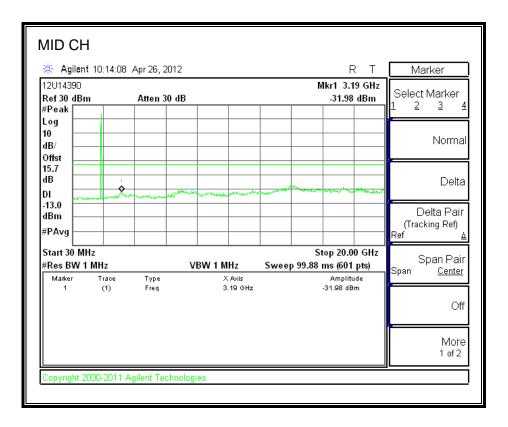
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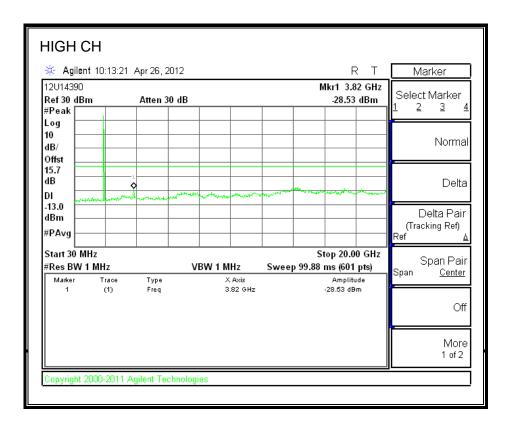
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WCDMA REL 99. PCS Band



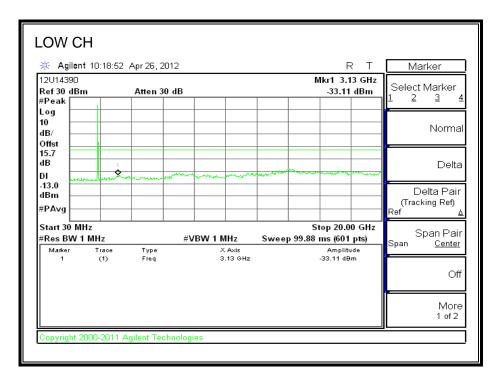


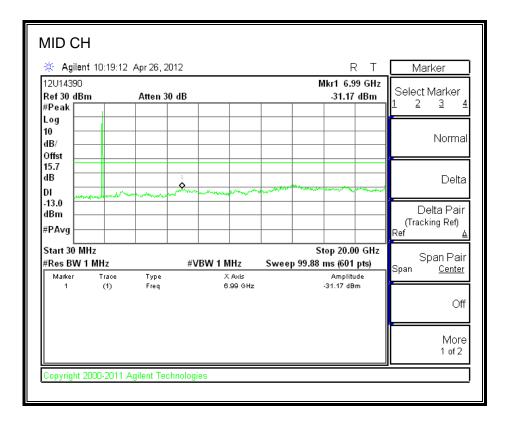
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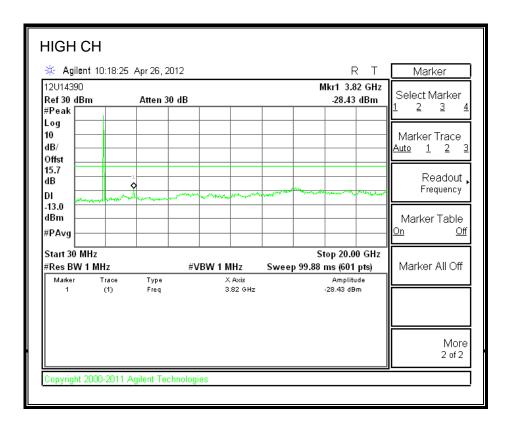
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WCDMA HSDPA. PCS Band



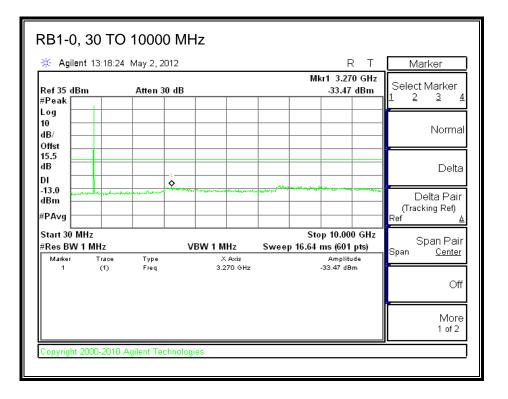


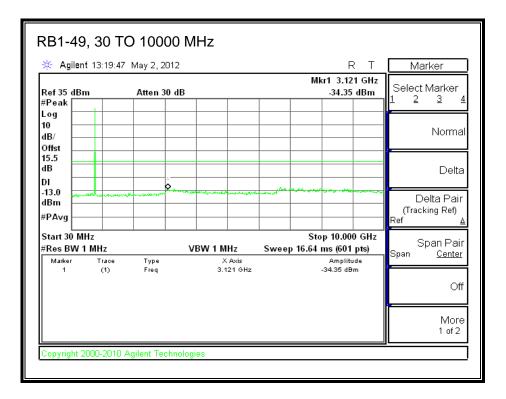
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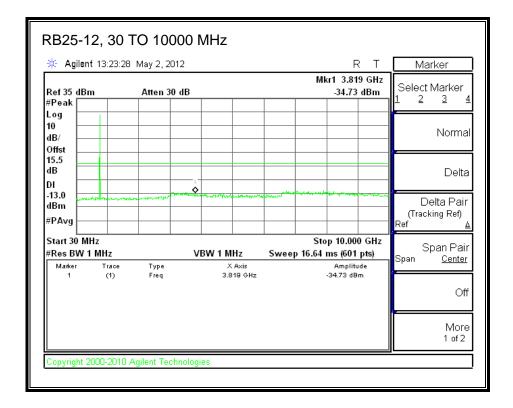
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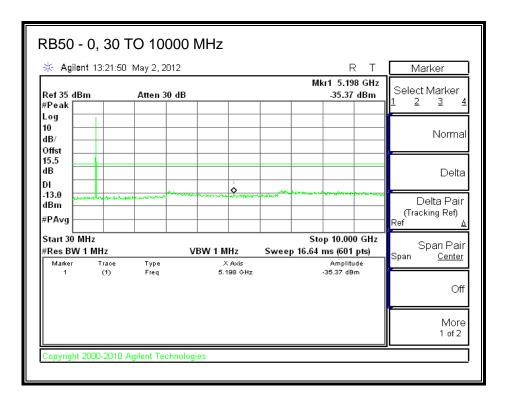
LTE QPSK Band 13





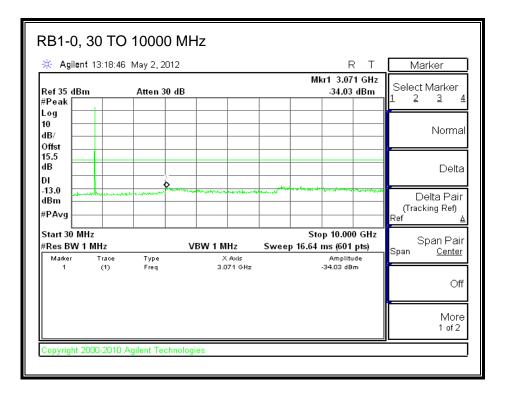
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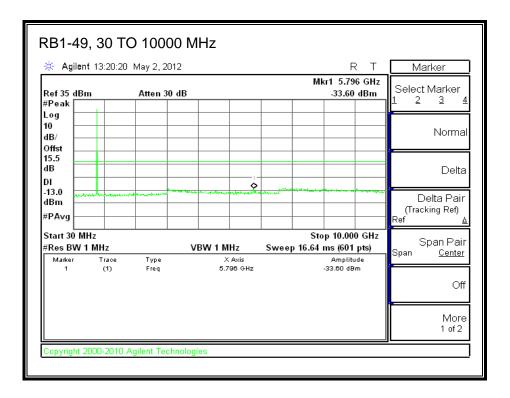




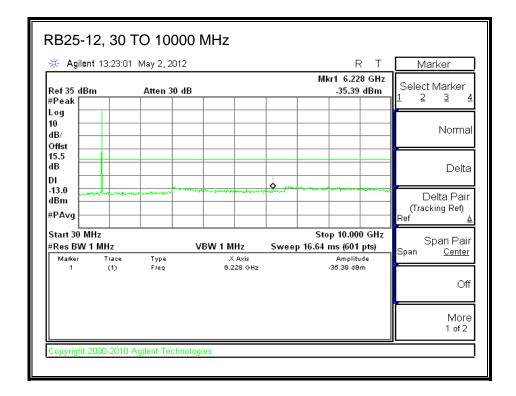
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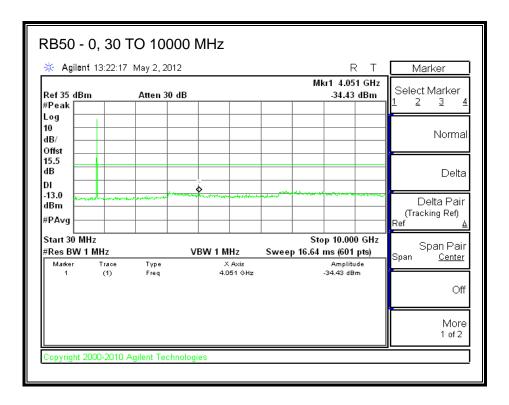
LTE 16QAM Band 13





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8.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.

<u>LIMITS</u>

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

RSS-133 6.3 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

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

TEST PROCEDURE

Use Agilent 8960 and CMW 500 with Frequency Error measurement capability.

- Temp. = -20° to +50°C
- Voltage = Normal, 3.7Vdc, Low, 3.50Vdc and High, 4.26Vdc.

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50°C is reached.

Frequency Stability vs Voltage:

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

MODES TESTED

- GPRS
- 1xRTT RC1, SO2
- UMTS, HSDPA
- LTE BAND 13

<u>RESULTS</u>

See the following pages.

Page 105 of 147

CELL, GSM MODULATION - MID CHANNEL

Refe	Reference Frequency: Cellular Mid Channel 836.599994MHz @ 20°C							
	Limit: to	stay +- 2.5 ppm =	2091.500	Hz				
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse				
(Vac)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)				
3.70	50	836.599999	-0.006	2.5				
3.70	40	836.600003	-0.011	2.5				
3.70	30	836.599995	-0.001	2.5				
3.70	20	836.599994	0	2.5				
3.70	10	836.599987	0.008	2.5				
3.70	0	836.599992	0.002	2.5				
3.70	-10	836.599960	0.041	2.5				
3.70	-20	836.599992	0.002	2.5				
3.70	-30	836.600000	-0.007	2.5				

Reference Frequency: Cellular Mid Channel 836.599994MHz @ 20°C Limit: to stay +- 2.5 ppm = 2091.500 Hz								
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse							
(Vac)	Temperature (°C) (MHz) Delta (ppm) Limit (ppm)							
3.70	20	836.599994	0	2.5				
4.26	20	836.599985	0.011	2.5				
3.50	20	836.599983	0.013	2.5				
End Voltage(3.4)	20	836.599975	0.023	2.5				

PCS, GSM MODULATION - MID CHANNEL

	Reference Frequency: PCS Mid Channel 1879.99753MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz							
Power Supply	Environment	Frequency Deviation Measureed with Time Elapse						
(Vac)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)				
3.70	50	1879.999978	-0.010	2.5				
3.70	40	1879.999971	-0.006	2.5				
3.70	30	1879.999967	-0.004	2.5				
3.70	20	1879.999960	0	2.5				
3.70	10	1880.000010	-0.027	2.5				
3.70	0	1880.000013	-0.028	2.5				
3.70	-10	1880.000006	-0.024	2.5				
3.70	-20	1880.000014	-0.029	2.5				
3.70	-30	1880.000018	-0.031	2.5				

Reference Frequency: PCS Mid Channel 1880.00000MHz @ 20°C Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz							
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse						
(Vac)	Temperature (*C) (MHz) Delta (ppm) Limit (ppm)						
3.70	20	1879.999960	0	2.5			
4.26	20	1879.999956	0.002	2.5			
3.50	20	1879.999951	0.005	2.5			
End Voltage(3.4)	20	1879.999945	0.008	2.5			

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CELL CDMA2000 1xRTT - MID CHANNEL

Refe	• •		el 836.519982MHz @ 2	
	Limit: to	stay +- 2.5 ppm =	2091.300	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vac)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	836.520007	-0.030	2.5
3.70	40	836.520003	-0.025	2.5
3.70	30	836.519995	-0.016	2.5
3.70	20	836.519982	0	2.5
3.70	10	836.519986	-0.005	2.5
3.70	0	836.519987	-0.006	2.5
3.70	-10	836.519992	-0.012	2.5
3.70	-20	836.519988	-0.007	2.5
3.70	-30	836.519992	-0.012	2.5

Reference Frequency: Cellular Mid Channel 836.519982MHz @ 20°C Limit: to stay +- 2.5 ppm = 2091.300 Hz								
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse							
(Vdc)) Temperature (°C) (MHz) Delta (ppm) Limit (ppm)							
3.70	20	836.519982	0	2.5				
4.26	20	836.519985	-0.004	2.5				
3.50	20	836.519993	-0.013	2.5				
End Votage(3.4)	20	836.519997	-0.018	2.5				

PCS, CDMA2000 1xRTT - MID CHANNEL

Ref	erence Frequency: I	PCS Mid Channel 1	880.000044MHz @ 20	0°C
Limit: within	n the authorized blo	ck or +- 2.5 ppm =	4700.000	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vac)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	50	1880.000052	-0.004	2.5
3.70	40	1880.000048	-0.002	2.5
3.70	30	1880.000046	-0.001	2.5
3.70	20	1880.000044	0	2.5
3.70	10	1880.000035	0.005	2.5
3.70	0	1880.000028	0.009	2.5
3.70	-10	1880.000032	0.006	2.5
3.70	-20	1880.000030	0.007	2.5
3.70	-30	1880.000370	-0.173	2.5
Ref	erence Frequency: I	PCS Mid Channel 1	880.000044MHz @ 20	0°C
Limit: within	n the authorized blo	ck or +- 2.5 ppm =	4700.000	Hz
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse
(Vac)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)
3.70	20	1880.000044	0	2.5
4.26	20	1880.000048	-0.002	2.5
3.50	20	1880.000036	0.004	2.5
End Voltage(3.4)	20	1880.000033	0.006	2.5

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PCS, WCDMA MODULATION - MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999957MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz							
Power Supply	Environment						
(Vac)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)			
3.70	50	1879.999978	-0.011	2.5			
3.70	40	1879.999971	-0.007	2.5			
3.70	30	1879.999967	-0.005	2.5			
3.70	20	1879.999957	0	2.5			
3.70	10	1880.000010	-0.028	2.5			
3.70	0	1880.000038	-0.043	2.5			
3.70	-10	1880.000037	-0.043	2.5			
3.70	-20	1880.000035	-0.042	2.5			
3.70	-30	1880.000033	-0.041	2.5			

Reference Frequency: PCS Mid Channel 1879.999957MHz @ 20ºC Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz							
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse						
(Vac)	Temperature (*C) (MHz) Delta (ppm) Limit (ppm)						
3.70	20	1879.999957	0	2.5			
4.26	20	1880.000038	-0.043	2.5			
3.50	20	1880.000035	-0.041	2.5			
End Voltage(3.4V)	20	1880.000033	-0.040	2.5			

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LTE BAND 13 - 782 MHZ

	Reference Frequen	cy: LTE Band 781.	999991MHz @ 20°C			
	Limit: to	stay +- 2.5 ppm =	1955.000	Hz		
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse		
(Vac)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.70	50	781.999987	0.005	2.5		
3.70	40	781.999986	0.006	2.5		
3.70	30	781.999988	0.004	2.5		
3.70	20	781.999991	0	2.5		
3.70	10	782.000002	-0.014	2.5		
3.70	0	782.000004	-0.017	2.5		
3.70	-10	782.000003	-0.015	2.5		
3.70	-20	782.000001	-0.013	2.5		
3.70	-30	30 782.000005 -0.018				
Reference Frequency: Cellular Mid Channel781.999991MHz @ 20°C						
	Limit: to	stay +- 2.5 ppm =	1955.000	Hz		
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse		
(Vac)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)		
3.70	20	781.999991	0	2.5		
4.26	20	781.999995	-0.005	2.5		
3.50	20	781.999994	-0.004	2.5		
End Voltage(3.4)	20	781.999998	-0.009	2.5		

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9. RADIATED TEST RESULTS

9.1. 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.

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

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17.

MODES TESTED

- GSM, GPRS and EGPRS
- 1xRTT RC1, SO2
- WCDMA REL. 99, HSDPA
- LTE BAND 13

RESULTS

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CELLULAR BAND (ERP)

			EF	RP
Mode	Channel	f (MHz)	dBm	mW
	128	824.20	29.37	864.97
GSM	192	836.60	31.09	1285.29
	251	848.80	29.48	887.16
	128	824.20	29.97	993.12
GPRS	192	836.60	30.57	1140.25
	251	848.80	29.27	845.28
	128	824.20	26.87	486.41
EGPRS	192	836.60	27.96	625.17
	251	848.80	26.15	412.10
	1013	824.70	27.10	512.86
1xRTT	384	836.52	26.24	420.73
	777	848.31	24.50	281.84
	1013	824.70	24.60	288.40
EVDO, REV A	384	836.52	24.50	281.84
	777	848.31	23.80	239.88

PCS BAND (EIRP)

			EII	RP
Mode	Channel	f (MHz)	dBm	mW
	512	1850.20	29.82	959.40
GSM	661	1880.00	29.61	914.11
	810	1909.80	28.33	680.77
	512	1850.20	29.92	981.75
GPRS	661	1880.00	29.51	893.31
	810	1909.80	28.63	729.46
	512	1850.20	28.42	695.02
EGPRS	661	1880.00	28.31	677.64
	810	1909.80	28.63	729.46
	25	1851.25	28.32	679.20
1xRTT	600	1880.00	27.51	563.64
	1175	1908.75	25.63	365.59
	25	1851.25	22.88	194.09
EVDO, REV A	600	1880.00	24.03	252.93
	1175	1908.75	23.16	207.01
	9662	1852.40	30.17	1039.92
REL 99	9800	1880.00	30.21	1049.54
	9938	1906.80	30.15	1035.14
	9662	1852.40	30.87	1221.80
HSDPA	9800	1880.00	30.51	1124.60
	9938	1906.80	30.45	1109.17

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LTE BAND 13 (ERP)

			EF	RP
Mode	RB/RB SIZE	f (MHz)	dBm	mW
	1/0		21.72	148.59
10 MHZ BAND	1/49		24.52	283.14
QPSK	25/12		23.52	224.91
	50/0	782.0	25.12	325.09
	1/0	702.0	21.52	141.91
10 MHz BAND	1/49		24.52	283.14
16QAM	25/12		23.42	219.79
	50/0	ſ	24.62	289.73

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GSM850 BAND

High Frequency Substitution Measurement	
Compliance Certification Services Chamber B	

Company:	LG ELECTRONICS
Project #:	12U14390
Date:	04/28/12
Test Engineer:	Chin Pang
Configuration:	EUT with AC Adapter and Earphone
Mode:	TX, 850MHz BAND GSM MODE

Test Equipment:

Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.

f MU-	-		Cable Loss (dB)	Antenna Gain (dBd)		Limit	Margin	Notes
MHz	(dBm)	(H/V)	(ab)	(aba)	(dBm)	(dBm)	(dB)	
Low Ch								
824.20	29.87	V	0.5	0.0	29.37	38.5	-9.1	
824.20	24.30	Н	0.5	0.0	23.80	38.5	-14.6	
Mid Ch								
836.60	31.59	V	0.5	0.0	31.09	38.5	-7.4	
836.60	24.40	Н	0.5	0.0	23.90	38.5	-14.6	
ligh Ch								
848.80	29.98	V	0.5	0.0	29.48	38.5	-9.0	
848.80	24.30	Н	0.5	0.0	23.80	38.5	-14.6	
	li						ll.	
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GPRS850 BAND

High Frequency Substitution Measurement Compliance Certification Services Chamber B

Company:	LG ELECTRONICS
Project #:	12U14390
Date:	04/28/12
Test Engineer:	Chin Pang
Configuration:	EUT with AC Adapter and Earphone
Mode:	TX, 850MHz BAND GPRS MODE

Test Equipment:

Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.

ow Ch 30.47 V 0.5 0.0 29.97 38.5 -8.5 324.20 27.00 H 0.5 0.0 26.50 38.5 -11.9 Aid Ch	f	-			Antenna Gain	ERP	Limit	Margin	Notes
324.20 27.00 H 0.5 0.0 26.50 38.5 -11.9 Aid Ch	MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
824.20 27.00 H 0.5 0.0 26.50 38.5 -11.9 Mid Ch	ow Ch								
Mid Ch No.5 0.0 30.57 38.5 -7.9 836.60 31.07 V 0.5 0.0 30.57 38.5 -7.9 836.60 26.20 H 0.5 0.0 25.70 38.5 -12.8 High Ch	324.20	30.47	V	0.5	0.0	29.97	38.5	-8.5	
836.60 26.20 H 0.5 0.0 25.70 38.5 -12.8 High Ch	324.20	27.00	Н	0.5	0.0	26.50	38.5	-11.9	
836.60 26.20 H 0.5 0.0 25.70 38.5 -12.8 High Ch	Aid Ch								
ligh Ch	336.60	31.07	V	0.5	0.0	30.57	38.5	-7.9	
	336.60	26.20	Н	0.5	0.0	25.70	38.5	-12.8	
	igh Ch								
848.80 29.77 V 0.5 0.0 29.27 38.5 -9.2	348.80	29.77	V	0.5	0.0	29.27	38.5	-9.2	
848.80 26.20 H 0.5 0.0 25.70 38.5 -12.7	348.80	26.20	Н	0.5	0.0	25.70	38.5	-12.7	

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EGPRS850 BAND

High Frequency Substitution Measurement Compliance Certification Services Chamber B

Company:	LG ELECTRONICS
Project #:	12U14390
Date:	04/28/12
Test Engineer:	Chin Pang
Configuration:	EUT with AC Adapter and Earphone
Mode:	TX, 850MHz band, EGPRS

Test Equipment:

Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.

f	-			Antenna Gain		Limit	Margin	Notes
MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
ow Ch								
324.20	27.37	V	0.5	0.0	26.87	38.5	-11.6	
324.20	22.20	Н	0.5	0.0	21.70	38.5	-16.7	
Aid Ch								
336.60	28.46	V	0.5	0.0	27.96	38.5	-10.5	
836.60	21.50	Н	0.5	0.0	21.00	38.5	-17.5	
igh Ch								
348.80	26.65	V	0.5	0.0	26.15	38.5	-12.3	
348.80	21.10	Н	0.5	0.0	20.60	38.5	-17.8	
				۶		1		
/. 3.17.11								

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CDMA2000 1xRTT CELL BAND

High Frequency Substitution Measurement Compliance Certification Services Chamber B

Company:	LG ELECTRONICS
Project #:	12U14390
Date:	04/28/12
Test Engineer:	Chin Pang
Configuration:	EUT with AC Adapter and Headset
Mode:	TX, 850 MHz BAND, CDMA 1xRTT MODE

Test Equipment:

Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.

f	-			Antenna Gain		Limit	Margin	Notes
MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
Low Ch								
824.70	20.17	V	0.5	0.0	19.67	38.5	-18.8	
824.70	27.60	Н	0.5	0.0	27.10	38.5	-11.3	
Mid Ch								
836.52	20.94	V	0.5	0.0	20.44	38.5	-18.0	
836.52	26.74	Н	0.5	0.0	26.24	38.5	-12.2	
High Ch						•		
848.31	18.81	V	0.5	0.0	18.31	38.5	-20.1	
848.31	25.00	Н	0.5	0.0	24.50	38.5	-13.9	
				ļ		l		

CDMA2000 EVDO Rev A, CELL BAND

ompany:		LG ELECTRO	NICS					
oject #:		12U14390						
ate:		04/28/12						
est Engi	neer:	Chin Pang						
onfigura		EUT with AC Adapter and Headset						
ode:			BAND, CDMA E\					
		Worst cast at	-					
est Equi	pment:							
				Cable (Setup thi			/	
ibetituti	on: Dinole S/N	I- 00022117	6ft SMA Cable	(SN # 20894700	3) Wareh			
ubstituti	on: Dipole S/N	I: 00022117 ,	6ft SMA Cable	e (SN # 20894700)3) Wareh	ouse.		
ubstituti f	on: Dipole S/N SG reading			e (SN # 20894700 Antenna Gain)3) Wareh ERP	ouse. Limit	Margin	Notes
							Margin (dB)	Notes
f	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain	ERP (dBm)	Limit (dBm)	(dB)	Notes
f MHz Low Ch 824.70	SG reading (dBm) 23.47	Ant. Pol. (H/V) V	Cable Loss (dB) 0.5	Antenna Gain (dBd) 0.0	ERP (dBm) 22.97	Limit (dBm) 38.5	(dB) -15.5	Notes
f MHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	(dB)	Notes
f MHz Low Ch 824.70	SG reading (dBm) 23.47	Ant. Pol. (H/V) V	Cable Loss (dB) 0.5	Antenna Gain (dBd) 0.0	ERP (dBm) 22.97	Limit (dBm) 38.5	(dB) -15.5	Notes
f MHz Low Ch 824.70 824.70	SG reading (dBm) 23.47	Ant. Pol. (H/V) V	Cable Loss (dB) 0.5	Antenna Gain (dBd) 0.0	ERP (dBm) 22.97	Limit (dBm) 38.5	(dB) -15.5	Notes
f MHz Low Ch 824.70 824.70 Mid Ch	SG reading (dBm) 23.47 25.10	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0	ERP (dBm) 22.97 24.60	Limit (dBm) 38.5 38.5	(dB) -15.5 -13.8	Notes
f MHz Low Ch 824.70 824.70 Mid Ch 836.52 836.52	SG reading (dBm) 23.47 25.10 23.34	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 22.97 24.60 22.84	Limit (dBm) 38.5 38.5 38.5	(dB) -15.5 -13.8 -15.6	Notes
f MHz Low Ch 824.70 824.70 814.70 Mid Ch 836.52 836.52 836.52	SG reading (dBm) 23.47 25.10 23.34 25.00	Ant. Pol. (H/V) V H V H	Cable Loss (dB) 0.5 0.5 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0 0.0	ERP (dBm) 22.97 24.60 22.84 24.50	Limit (dBm) 38.5 38.5 38.5 38.5	(dB) -15.5 -13.8 -15.6 -14.0	Notes
f MHz Low Ch 824.70 824.70 Mid Ch 836.52 836.52	SG reading (dBm) 23.47 25.10 23.34	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.5 0.5	Antenna Gain (dBd) 0.0 0.0 0.0	ERP (dBm) 22.97 24.60 22.84	Limit (dBm) 38.5 38.5 38.5	(dB) -15.5 -13.8 -15.6	Notes

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GSM1900 BAND

			-	ental Measuremen Services Chamber				
Company	:	LG ELECTRON	ICS					
Project #:		12U14390						
Date:		04/28/12						
Test Engi	neer:	Chin Pang						
Configura		-	lapter and Earphon	e				
Mode:		TX, 1900 MHz E						
Receiving Substituti	g: Horn T59, an on: Horn T217	Substitution,	4ft SMA Cable ((244639001) Wareho		Limit	Delta	Notes
Substituti f GHz	g: Horn T59, an	Substitution,		(244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Receiving Substituti f GHz _ow Ch	g: Horn T59, an on: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V)	4ft SMA Cable (Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Receiving Substituti f GHz _ow Ch 1.850	g: Horn T59, an on: Horn T217 SG reading (dBm) 22.1	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable (Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 29.82	(dBm) 33.0	(dB) -3.2	Notes
Receiving Substituti f GHz _ow Ch	g: Horn T59, an on: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V)	4ft SMA Cable (Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Receiving Substituti f GHz _ow Ch 1.850	g: Horn T59, an on: Horn T217 SG reading (dBm) 22.1	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable (Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 29.82	(dBm) 33.0	(dB) -3.2	Notes
Receiving Substituti f GHz -ow Ch 1.850 1.850 Mid Ch 1.880	: Horn T59, an on: Horn T217 SG reading (dBm) 22.1 18.5 22.0	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable (Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 29.82	(dBm) 33.0 33.0 33.0 33.0	(dB) -3.2 -6.9 -3.4	Notes
Receiving Substituti GHz _ow Ch 1.850 1.850 Mid Ch	3: Horn T59, an on: Horn T217 SG reading (dBm) 22.1 18.5	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable (Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 29.82 26.08	(dBm) 33.0 33.0	(dB) -3.2 -6.9	Notes
Receiving Substituti GHz ow Ch 1.850 1.850 Mid Ch 1.880 1.880	: Horn T59, an on: Horn T217 SG reading (dBm) 22.1 18.5 22.0	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable (Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 29.82 26.08 29.61	(dBm) 33.0 33.0 33.0 33.0	(dB) -3.2 -6.9 -3.4	Notes
Receiving Substituti f GHz -ow Ch 1.850 1.850 Mid Ch 1.880	: Horn T59, an on: Horn T217 SG reading (dBm) 22.1 18.5 22.0	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable (Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 29.82 26.08 29.61	(dBm) 33.0 33.0 33.0 33.0	(dB) -3.2 -6.9 -3.4	Notes

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GPRS1900 BAND

Company	:	LG ELECTRON	ICS					
Project #		12U14390						
Date:		04/28/12						
Test Eng		Chin Pang						
Configura			dapter and Earphon	10				
Mode:		TX, 1900 MHz E						
<u>Test Equ</u>								
	g: Horn T59, an							
	-			(244639001) Wareho	use			
	-			(244639001) Wareho Antenna Gain	EIRP	Limit	Delta	Notes
Substitut	ion: Horn T217	Substitution,	4ft SMA Cable	· · ·		Limit (dBm)	Delta (dB)	Notes
Substitut f	ion: Horn T217 SG reading	Substitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	EIRP			Notes
Substitut f GHz Low Ch 1.850	ion: Horn T217 SG reading (dBm) 22.2	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 29.92	(dBm) 33.0	(dB) -3.1	Notes
Substitut f GHz Low Ch	ion: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Substitut f GHz Low Ch 1.850 1.850	ion: Horn T217 SG reading (dBm) 22.2	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 29.92	(dBm) 33.0	(dB) -3.1	Notes
Substitut f GHz Low Ch 1.850 1.850 Mid Ch	SG reading (dBm) 22.2 16.8	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 29.92 24.38	(dBm) 33.0 33.0	(dB) -3.1 -8.6	Notes
Substitut f GHz Low Ch 1.850 1.850 Mid Ch 1.880	SG reading (dBm) 22.2 16.8 21.9	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 29.92 24.38 29.51	(dBm) 33.0 33.0 33.0	(dB) -3.1 -8.6 -3.5	Notes
Substitut f GHz Low Ch 1.850 1.850 Mid Ch	SG reading (dBm) 22.2 16.8	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 29.92 24.38	(dBm) 33.0 33.0	(dB) -3.1 -8.6	Notes
Substitut f GHz Low Ch 1.850 1.850 Mid Ch 1.880	SG reading (dBm) 22.2 16.8 21.9 16.7	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 29.92 24.38 29.51	(dBm) 33.0 33.0 33.0	(dB) -3.1 -8.6 -3.5	Note:
Substitut f GHz Low Ch 1.850 1.850 Mid Ch 1.880 1.880	SG reading (dBm) 22.2 16.8 21.9	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 29.92 24.38 29.51	(dBm) 33.0 33.0 33.0	(dB) -3.1 -8.6 -3.5	Note:

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EGPRS1900 BAND

			-	ental Measuremen Services Chamber				
Company	:	LG ELECTRON	ICS					
Project #:		12U14390						
Date:		04/28/12						
Test Engi	neer:	Chin Pang						
Configura	tion:	EUT with AC A	dapter and Earphon	e				
Node:		TX, 1900 MHz E	BAND, EGPRS					
Substituti	SG reading	Substitution, Ant. Pol.	4ft SMA Cable	(244639001) Wareho Antenna Gain	EIRP	Limit	Delta	Notes
Substituti f GHz	g: Horn T59, and on: Horn T217	Substitution,	4ft SMA Cable	. ,		Limit (dBm)	Delta (dB)	Notes
Substituti	g: Horn T59, and on: Horn T217 SG reading	Substitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	EIRP			Notes
Substituti f GHz _ow Ch	g: Horn T59, an on: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz ow Ch 1.850	j: Horn T59, an on: Horn T217 SG reading (dBm) 20.7	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 28.42	(dBm) 33.0	(dB) _4.6	Notes
Substituti f GHz ₋ow Ch 1.850	j: Horn T59, an on: Horn T217 SG reading (dBm) 20.7	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 28.42	(dBm) 33.0	(dB) _4.6	Notes
Substituti f GHz ow Ch 1.850 1.850 Vid Ch	: Horn T59, an on: Horn T217 SG reading (dBm) 20.7 18.5	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 28.42 26.08	(dBm) 33.0 33.0	(dB) -4.6 -6.9	Notes
Substituti f GHz ow Ch 1.850 1.850 Mid Ch 1.880 1.880	: Horn T59, an on: Horn T217 SG reading (dBm) 20.7 18.5 20.7	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 28.42 26.08 28.31	(dBm) 33.0 33.0 33.0	(dB) 4.6 -6.9 4.7	Notes
Substituti f GHz ow Ch 1.850 1.850 Mid Ch 1.880	: Horn T59, an on: Horn T217 SG reading (dBm) 20.7 18.5 20.7	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 28.42 26.08 28.31	(dBm) 33.0 33.0 33.0	(dB) 4.6 -6.9 4.7	Notes

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CDMA2000 1xRTT PCS BAND

			•	ental Measuremen Services Chamber				
Company	:	LG ELECTRON	IICS					
Project #:		12U14390						
Date:		04/27/12						
Test Eng	neer:	Chin Pang						
Configura	tion:	EUT with AC A	dapter and Earphon	e				
Node:		TX, 1900 MHz 6						
eceivin	g: Horn T59, an			244639001) Wareho Antenna Gain	EIRP	Limit	Delta	Notes
Substitut f GHz	g: Horn T59, an on: Horn T217	Substitution,	, 4ft SMA Cable (·		Limit (dBm)	Delta (dB)	Notes
Receiving Substitut f GHz _ow Ch	g: Horn T59, an on: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V)	, 4ft SMA Cable (Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
Receiving Substitut f GHz ow Ch	g: Horn T59, an on: Horn T217 SG reading	Substitution, Ant. Pol. (H/V) V	, 4ft SMA Cable (Cable Loss (dB) 0.85	Antenna Gain	EIRP (dBm) 28.32	(dBm) 33.0	(dB) _4.7	Notes
Receiving Substitut f GHz	y: Horn T59, an on: Horn T217 SG reading (dBm) 20.6	Substitution, Ant. Pol. (H/V)	, 4ft SMA Cable (Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm)	(dBm)	(dB)	Notes
Receiving Substitut <u>f</u> <u>GHz</u> ow Ch 1.851 1.851 Mid Ch	g: Horn T59, an on: Horn T217 SG reading (dBm) 20.6 16.0	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 28.32 23.58	(dBm) 33.0 33.0	(dB) 4.7 -9.4	Notes
Receiving Substitut GHz ow Ch 1.851 1.851 Mid Ch 1.880	g: Horn T59, an on: Horn T217 SG reading (dBm) 20.6 16.0 19.9	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 28.32 23.58 27.51	(dBm) 33.0 33.0 33.0	(dB) 4.7 -9.4 -5.5	Notes
Receiving Substitut <u>f</u> <u>GHz</u> ow Ch 1.851 1.851 Mid Ch	g: Horn T59, an on: Horn T217 SG reading (dBm) 20.6 16.0	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 28.32 23.58	(dBm) 33.0 33.0	(dB) 4.7 -9.4	Notes
Receiving Substitut GHz .ow Ch 1.851 1.851 Mid Ch 1.880 1.880	g: Horn T59, an on: Horn T217 SG reading (dBm) 20.6 16.0 19.9	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 28.32 23.58 27.51	(dBm) 33.0 33.0 33.0	(dB) 4.7 -9.4 -5.5	Notes
Receiving Substitut GHz ow Ch 1.851 1.851 Mid Ch 1.880	g: Horn T59, an on: Horn T217 SG reading (dBm) 20.6 16.0 19.9	Substitution, Ant. Pol. (H/V) V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 28.32 23.58 27.51	(dBm) 33.0 33.0 33.0	(dB) 4.7 -9.4 -5.5	Notes

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CDMA2000 EVDO REV A, PCS BAND

Company	:	LG ELECTRON	ICS					
Project #		12U14390						
Date:		04/28/12						
Test Eng	ineer:	Chin Pang						
Configur			dapter and Earphon	e				
Mode:			BAND, EVDO Rev A					
		Worst cast cas		-				
Test Equ	ipment:							
		Substitution,	AIL SIMA Cable	(244639001) Wareho	use			
f	SG reading		Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
			,	·		Limit (dBm)	Delta (dB)	Notes
f GHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.851	SG reading (dBm) 7.5	Ant. Pol. (H/V) V	Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 15.22	(dBm) 33.0	(dB) -17.8	Notes
f GHz Low Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.851 1.851	SG reading (dBm) 7.5	Ant. Pol. (H/V) V	Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 15.22	(dBm) 33.0	(dB) -17.8	Notes
f GHz Low Ch 1.851	SG reading (dBm) 7.5	Ant. Pol. (H/V) V	Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 15.22	(dBm) 33.0	(dB) -17.8	Notes
f GHz Low Ch 1.851 1.851 Mid Ch	SG reading (dBm) 7.5 15.3	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 15.22 22.88	(dBm) 33.0 33.0	(dB) -17.8 -10.1	Notes
f GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880	SG reading (dBm) 7.5 15.3 8.7	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 15.22 22.88 16.31	(dBm) 33.0 33.0 33.0	(dB) -17.8 -10.1 -16.7	Notes
f GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880 High Ch	SG reading (dBm) 7.5 15.3 8.7 16.5	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46 8.36	EIRP (dBm) 15.22 22.88 16.31 24.03	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -17.8 -10.1 -16.7 -9.0	Notes
f GHz Low Ch 1.851	SG reading (dBm) 7.5	Ant. Pol. (H/V) V	Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 15.22	(dBm) 33.0	(dB) -17.8	No
f GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880	SG reading (dBm) 7.5 15.3 8.7	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 15.22 22.88 16.31	(dBm) 33.0 33.0 33.0	(dB) -17.8 -10.1 -16.7	Note
f GHz Low Ch 1.851 1.851 Mid Ch 1.880 1.880	SG reading (dBm) 7.5 15.3 8.7	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 15.22 22.88 16.31	(dBm) 33.0 33.0 33.0	(dB) -17.8 -10.1 -16.7	Notes

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WCDMA REL. 99 PCS BAND

Company		LG						
Project #		12U14353						
Date:		03/29/12						
Test Eng	ineer:	Chin Pang						
Configura		EUT and AC Ad	apter					
Mode:		TX, WCDMA190						
		Worst case at Z						
Test Equ								
	g: Horn T73, an	d Camber A S	MA Cables					
Substitut	ion: Horn T60 S	Substitution, 4	ft SMA Cable (S	SN # 245182002) War	ehouse			
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
	SG reading (dBm)	Ant. Pol. (H/V)		Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
f GHz	-	(H/V)	Cable Loss					Notes
f GHz Low Ch 1.852	(dBm) 22.4	(H/V) V	Cable Loss (dB)	(dBi) 8.62	(dBm) 30.17	(dBm) 33.0	(dB) -2.8	Notes
f GHz Low Ch 1.852	(dBm)	(H/V)	Cable Loss (dB)	(dBi)	(dBm)	(dBm)	(dB)	Notes
f GHz Low Ch 1.852 1.852	(dBm) 22.4	(H/V) V	Cable Loss (dB)	(dBi) 8.62	(dBm) 30.17	(dBm) 33.0	(dB) -2.8	Notes
f GHz Low Ch 1.852 1.852 Mid Ch	(dBm) 22.4 17.2	(H/V) V H	Cable Loss (dB)	(dBi) 8.62 8.47	(dBm) 30.17 24.82	(dBm) 33.0 33.0	(dB) -2.8 -8.2	Notes
f	(dBm) 22.4	(H/V) V	Cable Loss (dB)	(dBi) 8.62	(dBm) 30.17	(dBm) 33.0	(dB) -2.8	Notes
f GHz Low Ch 1.852 1.852 Mid Ch 1.880	(dBm) 22.4 17.2 22.6	(H/V) V H	Cable Loss (dB) 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 30.17 24.82 30.21	(dBm) 33.0 33.0 33.0	(dB) -2.8 -8.2 -2.8	Notes
f GHz Low Ch 1.852 1.852 Mid Ch 1.880 1.880 High Ch	(dBm) 22.4 17.2 22.6 15.8	(H/V) V H V H	Cable Loss (dB) 0.85 0.85 0.85 0.85	(dBi) 8.62 8.47 8.46 8.36	(dBm) 30.17 24.82 30.21 23.31	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -2.8 -8.2 -2.8 -9.7	Notes
f GHz Low Ch 1.852 1.852 Mid Ch 1.880 1.880	(dBm) 22.4 17.2 22.6	(H/V) V H	Cable Loss (dB) 0.85 0.85	(dBi) 8.62 8.47 8.46	(dBm) 30.17 24.82 30.21	(dBm) 33.0 33.0 33.0	(dB) -2.8 -8.2 -2.8	Notes

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WCDMA HSDPA, PCS BAND

		High Frequ	lency Fundam	ental Measurement	I Contraction of the second se			
		Compliance	Certification S	Services Chamber	В			
Company:		LG						
Project #:		12U14353						
Date:		03/29/12						
Test Engin	eer:	Chin Pang						
Configurati	ion:	EUT and AC Ad	lapter					
Mode:		TX, WCDMA190	00, HSDPA					
		Worst case at Z	2 pos					
Test Equip	ment:							
Receiving:	Horn T73, an	d Camber A S	SMA Cables					
	ni Harn TCO C	ubstitution /	Iff SMA Cable (S	SN # 245182002) War	ehouse			
Substitutio	n. Horn 160 3	ubstitution, 4	ar SimA Cable (c	,				
f	SG reading	Ant. Pol.	Cable Loss	Antenna Gain	EIRP	Limit	Delta	Notes
f GHz						Limit (dBm)	Delta (dB)	Notes
f GHz _ow Ch	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz -ow Ch 1.852	SG reading (dBm) 23.1	Ant. Pol. (H/V) V	Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 30.87	(dBm) 33.0	(dB) -2.1	Notes
f GHz Low Ch 1.852	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes
f GHz -ow Ch 1.852 1.852	SG reading (dBm) 23.1	Ant. Pol. (H/V) V	Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 30.87	(dBm) 33.0	(dB) -2.1	Notes
f GHz Low Ch 1.852 1.852 Mid Ch	SG reading (dBm) 23.1	Ant. Pol. (H/V) V	Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 30.87	(dBm) 33.0	(dB) -2.1	Notes
f GHz Low Ch 1.852 1.852 Mid Ch 1.880	SG reading (dBm) 23.1 14.4	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 30.87 22.02	(dBm) 33.0 33.0	(dB) -2.1 -11.0	Notes
f GHz Low Ch 1.852 1.852 Mid Ch 1.880 1.880	SG reading (dBm) 23.1 14.4 22.9	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 30.87 22.02 30.51	(dBm) 33.0 33.0 33.0 33.0	(dB) -2.1 -11.0 -2.5	Notes
f GHz Low Ch 1.852 1.852 Mid Ch 1.880 1.880 High Ch	SG reading (dBm) 23.1 14.4 22.9 13.3	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46 8.36	EIRP (dBm) 30.87 22.02 30.51 20.81	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -2.1 -11.0 -2.5 -12.2	Notes
f GHz Low Ch 1.852 1.852 Mid Ch 1.880 1.880 High Ch 1.908	SG reading (dBm) 23.1 14.4 22.9 13.3 23.0	Ant. Pol. (H/V) V H V H	Cable Loss (dB) 0.85 0.85 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46 8.36 8.36	EIRP (dBm) 30.87 22.02 30.51 20.81 30.45	(dBm) 33.0 33.0 33.0 33.0 33.0 33.0 33.0	(dB) -2.1 -11.0 -2.5 -12.2 -2.6	Notes
f	SG reading (dBm) 23.1 14.4 22.9 13.3	Ant. Pol. (H/V) V H	Cable Loss (dB) 0.85 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46 8.36	EIRP (dBm) 30.87 22.02 30.51 20.81	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -2.1 -11.0 -2.5 -12.2	Notes

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LTE BAND 13 QPSK

Project #: 12U14390 Date: 05/03/12 Test Engineer: Chin Pang Configuration: EUT and AC Adapter Mode: TX, LTE BAND 13 10MHz BW Worst Case at Y position Worst Case at Y position Test Equipment: Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. f SG reading Ant. Pol. (dB) (dB) (dBm) (dB) (dBm) (dB) RB=1 & SRB=0, QPSK Image: Control of the test of the test of the test of the test of t	Project #: 12U14390 Date: 05/03/12 Test Engineer: Chin Pang Configuration: EUT and AC Adapter Mode: TX, LTE BAND 13 10MHz BW Worst Case at Y position Test Equipment: Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. f SG reading Ant. Pol. (dB) Cable Loss Antenna Gain (dBm) ERP (dBm) Notes MHz (dBm) (H/V) 0.5 0.0 21.72 34.8 -13.1 782.00 22.22 V 0.5 0.0 20.85 34.8 -14.0 RB=1 & SRB=49, QPSK Image: Color	Project #: 12U14390 Date: 05/03/12 Fest Engineer: Chin Pang Configuration: EUT and AC Adapter Mode: TX, LTE BAND 13 10MHz BW Worst Case at Y position Fest Equipment: Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse. f SG reading Ant. Pol. Cable Loss Antenna Gain (dBm) (dBm) (dBm) (dBm) Margin (dB) Notes 782.00 22.22 V 0.5 0.0 21.72 34.8 -13.1 782.00 25.02 V 0.5 0.0 24.52 34.8 -10.3 782.00 25.02 V 0.5 0.0 19.85 34.8 -15.0 782.00 24.02 V 0.5 0.0 23.52 34.8 -11.3	Project #: Date: Test Engineer: Configuration: Mode:		12U14390 05/03/12 Chin Pang EUT and AC A						
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782.00 20.35 H 0.5 0.0 19.85 34.8 -15.0 RB=25 & SRB=12, QPSK	782.00 25.02 V 0.5 0.0 24.52 34.8 10.3	782.00 20.35 H 0.5 0.0 19.85 34.8 -15.0 RB=25 & SRB=12, QPSK	RB=1 & SRB=49,	QPSK							
RB=25 & SRB=12, QPSK 0.5 0.0 23.52 34.8 -11.3 782.00 22.60 H 0.5 0.0 22.10 34.8 -12.7 RB=50 & SRB=0 QPSK RB=50 & SRB=0 QPSK Image: Constant of the second secon		RB=25 & SRB=12, QPSK 0.5 0.0 23.52 34.8 -11.3					·•••••••••••••••••••••••••••••••••••••				
782.00 24.02 V 0.5 0.0 23.52 34.8 -11.3 782.00 22.60 H 0.5 0.0 22.10 34.8 -12.7 RB=50 & SRB=0 QPSK	782.00 20.35 H 0.5 0.0 19.85 34.8 -15.0	782.00 24.02 V 0.5 0.0 23.52 34.8 -11.3	782.00	20.35	Н	0.5	0.0	19.85	34.8	-15.0	
782.00 24.02 V 0.5 0.0 23.52 34.8 -11.3 782.00 22.60 H 0.5 0.0 22.10 34.8 -12.7 RB=50 & SRB=0 QPSK		782.00 24.02 V 0.5 0.0 23.52 34.8 -11.3	PD-15 & SPD-11	OPSK							
782.00 22.60 H 0.5 0.0 22.10 34.8 -12.7 RB=50 & SRB=0 QPSK Image: SRB=0 QPSK					V	0.5	0.0	23.52	34.8	-11.3	
										åå	
722.00 7 25.62 V 0.5 0.0 25.12 24.8 0.7		CB=50 & SRB=0 QPSK			V	0.5	0.0	25.42	24.0	0.7	
		792.00 25.52 V 0.5 0.0 25.12 24.9 0.7			V H	0.5	0.0	20.12	34.8 34.8	-9.7 -13.0	
782.00 22.35 H 0.5 0.0 21.85 34.8 -13.0		782.00 25.62 V 0.5 0.0 25.12 34.8 -9.7 782.00 22.35 H 0.5 0.0 21.85 34.8 13.0	102.00	LLIJJ		V.J	v.v	21.05	J4.U	-13.0	
	782.00 20.35 H 0.5 0.0 19.85 34.8 .15.0 RB=25 & SRB=12, QPSK	3B=50 & SRB=0 OPSK	782.00 RB=25 & SRB=12 782.00 782.00	20.35 , QPSK 24.02 22.60	H	0.5	0.0	19.85 23.52	34.8 34.8	-15.0 -11.3	

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LTE BAND 13 16QAM

Company		LG						
Project #:		12U14390						
Date:		05/03/12						
Test Engi		Chin Pang						
Configura		EUT and AC A	dentar					
Configura Mode:		TX. LTE BAND						
Moue.		10MHz BW	0.10					
		Worst Case at	Vacation					
Test Equi		Worst Case at	, r posición					
Receiving	g: Sunol T130,	and 3m Cha	mber N-type C	able (Setup this	s one for	testing E	UT)	
Substituti	on: Dipole S/N	l: 00022117,	6ft SMA Cable	(SN # 20894700)3) Wareh	iouse.		
-	SG reading	Ant. Pol.	Cable Loss /	Antenna Gain	ERP	Limit	Margin	Notes
f								
MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
MHz RB=1 & SR	B=0, 16QAM			(dBd)				
MHz RB=1 & SR 782.00	B=0, 16QAM 22.02	V	0.5	(dBd) 0.0	21.52	34.8	-13.3	
MHz RB=1 & SR	B=0, 16QAM			(dBd)				
MHz RB=1 & SR 782.00 782.00	B=0, 16QAM 22.02 21.05	V	0.5	(dBd) 0.0	21.52	34.8	-13.3	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR	B=0, 16QAM 22.02 21.05 B=49, 16QAM	V	0.5	(dBd) 0.0 0.0	21.52 20.55	34.8 34.8	-13.3 -14.3	
MHz RB=1 & SR 782.00 782.00	B=0, 16QAM 22.02 21.05	V	0.5	(dBd) 0.0	21.52	34.8	-13.3	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02	V H V	0.5	(dBd) 0.0 0.0 0.0	21.52 20.55 24.52	34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00 782.00	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02	V H V H	0.5	(dBd) 0.0 0.0 0.0	21.52 20.55 24.52 19.75	34.8 34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00 782.00 RB=25 & SI 782.00	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02 20.25 RB=12, 16QAM 23.92	V H V H	0.5 0.5 0.5 0.5 0.5	(dBd) 0.0 0.0 0.0 0.0 0.0	21.52 20.55 24.52 19.75 23.42	34.8 34.8 34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3 -15.1 -11.4	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00 782.00 782.00 RB=25 & SI	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02 20.25 RB=12, 16QAM	V H V H	0.5 0.5 0.5 0.5 0.5	(dBd) 0.0 0.0 0.0 0.0	21.52 20.55 24.52 19.75	34.8 34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3 -15.1	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00 782.00 RB=25 & SI 782.00 782.00 782.00	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02 20.25 RB=12, 16QAM 23.92 22.45	V H V H	0.5 0.5 0.5 0.5 0.5	(dBd) 0.0 0.0 0.0 0.0 0.0	21.52 20.55 24.52 19.75 23.42	34.8 34.8 34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3 -15.1 -11.4	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00 782.00 RB=25 & SI 782.00 782.00 RB=50 & SI	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02 20.25 RB=12, 16QAM 23.92 22.45 RB=0 16QAM	V H V H	0.5 0.5 0.5 0.5 0.5 0.5	(dBd) 0.0 0.0 0.0 0.0 0.0	21.52 20.55 24.52 19.75 23.42 21.95	34.8 34.8 34.8 34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3 -15.1 -11.4 -12.9	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00 782.00 RB=25 & SI 782.00 RB=50 & SI 782.00	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02 20.25 RB=12, 16QAM 23.92 22.45 RB=0 16QAM 25.12	V H V H V H	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	(dBd) 0.0 0.0 0.0 0.0 0.0 0.0 0.0	21.52 20.55 24.52 19.75 23.42 21.95 24.62	34.8 34.8 34.8 34.8 34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3 -15.1 -11.4 -12.9 -10.2	
MHz RB=1 & SR 782.00 782.00 RB=1 & SR 782.00 782.00 RB=25 & SI 782.00 782.00 RB=50 & SI	B=0, 16QAM 22.02 21.05 B=49, 16QAM 25.02 20.25 RB=12, 16QAM 23.92 22.45 RB=0 16QAM	V H V H	0.5 0.5 0.5 0.5 0.5 0.5	(dBd) 0.0 0.0 0.0 0.0 0.0	21.52 20.55 24.52 19.75 23.42 21.95	34.8 34.8 34.8 34.8 34.8 34.8 34.8	-13.3 -14.3 -10.3 -15.1 -11.4 -12.9	

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9.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, & §27.53

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.

(c) For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P) dB$;

(f) For operations in the 746–763 MHz, 775–793 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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.

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

MODES TESTED

- GSM, GPRS and EGPRS
- 1xRTT RC1, SO2
- EVDO, Rev A.
- WCDMA REL. 99 and HSDPA
- LTE BAND 13

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RESULTS

GSM850 BAND

•		10							
Company		LG							
Project #:		12U14390							
Date:		05/01/12							
Test Eng		Chin Pang							
Configura	ition:	EUT and AC A							
Mode:		TX, CELL BAN	D GSM MODE						
	Chambe	r	Pre-an	nplifer		Filter		Lir	nit
5r	n Chamber E	3 –	T145 8449	В	Fil	ter 1	•	Part 22	-
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (8		<u>, , , , , , , , , , , , , , , , , , , </u>			1				
1.648	-16.2	V	3.0	35.5	1.0	-50.8	-13.0	-37.8	
2.473	-8.3	V	3.0	35.4	1.0	-42.7	-13.0	-29.7	
1.648	-17.8	H	3.0	35.5	1.0	-52.3	-13.0	-39.3	
2.473	-10.2	H	3.0	35.4	1.0	-44.6	-13.0	-31.6	
Mid Ch, (8	36 6MHz)								
1.673	-5.9	v	3.0	35.5	1.0	-40.4	-13.0	-27.4	
2.510	-13.2	v	3.0	35.4	1.0	-47.6	-13.0	-34.6	
1.673	-16.5	H	3.0	35.5	1.0	-51.1	-13.0	-38.1	
2.510	-10.1	Н	3.0	35.4	1.0	-44.5	-13.0	-31.5	
		•							
	· · · · · · · · · · · · · · · · · · ·	V	2.0	25.5	10	42.4	42.0	20.4	
High Ch, (8	-7.6	v V	3.0 3.0	35.5 35.4	1.0 1.0	-42.1 -47.5	-13.0 -13.0	-29.1 -34.5	
1.698	120	V H	3.0 3.0	30.4 35.5	1.0	-47.5	-13.0 -13.0	-34.5 -38.8	
1.698 2.546	-13.0		J.V		1.0	-51.0	-13.0 -13.0	-30.0	
1.698	-13.0 -17.3 -16.9	H	3.0	35.4	1.0				

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GPRS850 BAND

-									
Company		LG							
Project #	:	12U14390							
Date:		5/1/12012							
Test Eng	ineer:	Chin Pang							
Configura	ation:	EUT and AC A	dapter						
Node:		TX, CELL BAN	ID GPRS						
	Chambe	r	Pre-an	nplifer		Filter		Lir	nit
5r	n Chamber E		T145 84498	3 +	Fil	ter 1	•	Part 22	-
			1		1		_	I	_
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
.ow Ch, (8	324.2MHz)								
.648	-8.2	V	3.0	35.5	1.0	-42.8	-13.0	-29.8	
2.473	-7.3	V	3.0	35.4	1.0	-41.7	-13.0	-28.7	
.648	-17.8	Н	3.0	35.5	1.0	-52.3	-13.0	-39.3	
.473	-10.2	Н	3.0	35.4	1.0	-44.6	-13.0	-31.6	
lid Ch. (8	36.6MHz)	•							
.673	-2.9	V	3.0	35.5	1.0	-37.4	-13.0	-24.4	
2.510	-10.2	V	3.0	35.4	1.0	-44.6	-13.0	-31.6	
1.673	-11.5	Н	3.0	35.5	1.0	-46.1	-13.0	-33.1	
2.510	-13.1	Н	3.0	35.4	1.0	-47.5	-13.0	-34.5	
line Ch. #									
M	848.8MHz)	V	20	25.5	10	-39.1	12.0	-26.1	
	-4.6	V V	3.0 3.0	35.5 35.4	1.0 1.0	-39.1	-13.0 -13.0	-26.1 -35.5	
1.698	-14.0	V H	3.0 3.0	30.4 35.5	1.0	-48.5	-13.0 -13.0	-33.8	
.546				35.5 35.4	1.0	-46.8	-13.0 -13.0	-33.8	
	-16.9	H	3.0						

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EGPRS850 BAND

Date: Test Engine		LG ELECTRON 12U14390 04/28/12	NCS					
	eer:	Chin Pang						
Configurati			dapter and Earphon	e				
/lode:			BAND, EGPRS	-				
ubstitution	Horn T59, an		Cable Loss	(244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch	(abm)	(n /v)	(dB)	(abi)	(abm)	(abm)	(ab)	
.850	21.0	V	0.85	8.62	28.72	33.0	-4.3	
.850	18.5	H	0.85	8.47	26.08	33.0	-6.9	
lid Ch								
.880	21.9	V	0.85	8.46	29.51	33.0	-3.5	
.880	18.5	Н	0.85	8.36	26.00	33.0	-7.0	
igh Ch								
	22.7	V	0.85	8.30	30.13	33.0	-2.9	
.910	22.1	Н	0.85	8.25	26.36	33.0	-6.6	

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CDMA2000 1xRTT CELL BAND

			Co Above 1GH	npliance Co z High Freq				ement	
Company	:	LG							
Project #		12U14390							
Date:		05/01/12							
Test Eng	ineer:	Chin Pang							
Configur		EUT and AC A	Adapter						
	-		d CDMA 1xRTT						
	Chambe	r	Pre-an	nplifer		Filter		Li	imit
51	n Chamber E	3 🖵	T145 8449	З 🚽	Filter 1		•	Part 22	-
	00 manufilmen	Ant Dal	Distance	Deserve	Filter		1 114	Dalta	Nataa
f	SG reading		Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, 8	24.70MHz -23.2	v	3.0	35.5	1.0	-57.7	-13.0	-44.7	
1.649 2.474	-23.2	V	3.0	35.3 35.4	1.0	-37.7	-13.0 -13.0	-44.7 -36.7	
1.649	-23.8	H	3.0	35.5	1.0	-45.7	-13.0	-30.7	
2.474	-19.2	H	3.0	35.4	1.0	-53.6	-13.0	-40.6	
Mid Ch, 8	36.52MHz								
1.672	-22.9	٧	3.0	35.5	1.0	-57.4	-13.0	-44.4	
2.510	-14.2	V	3.0	35.4	1.0	-48.6	-13.0	-35.6	
1.672	-23.5	Н	3.0	35.5	1.0	-58.1	-13.0	-45.1	
2.510	-18.1	Н	3.0	35.4	1.0	-52.5	-13.0	-39.5	
	48.31MHz								
ուսու շո. օ	-19.6	v	3.0	35.5	1.0	-54.1	-13.0	-41.1	
	-19.0	V	3.0	35.5	1.0	-34.1	-13.0	-41.1	
1.697		H	3.0	35.5	1.0	-40.5	-13.0	-42.8	
1.697 2.545	213			33.3				,	
1.697	21.3 18.9	H	3.0	35.4	1.0	-53.3	-13.0	-40.3	

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CDMA2000 EVDO REV A, CELL BAND

				mpliance Ce Iz High Freq				ement	
Company Project # Date: Test Eng Configur Mode:	: ineer: ation:	LG ELECTRON 12U14390 05/01/12 Chin Pang EUT with AC A TX, Cell Band I	dapter						
	Chambe	r	Pre-ar	nplifer		Filter		Li	imit
51	n Chamber B	- -	T145 8449	B	Fil	ter 1	Ŧ	Part 22	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, 1	851.25MHz								
1.649	-24.2	V	3.0	35.5	1.0	-58.7	-13.0	-45.7	
2.474	-18.3	V	3.0	35.4	1.0	-52.7	-13.0	-39.7	
1.649	-23.8	H	3.0	35.5	1.0	-58.3	-13.0	-45.3	
2.474	-20.2	Н	3.0	35.4	1.0	-54.6	-13.0	-41.6	
	36.52MHz								
Mid Ch. 8	-23.9	V	3.0	35.5	1.0	-58.4	-13.0	-45.4	
			3.0	35.4	1.0	-52.6	-13.0	-39.6	
1.672	-18.2	V	3.0			¥	42.0 9	-44.1	
1.672 2.510	-18.2 -22.5	V H	3.0	35.5	1.0	-57.1	-13.0		
1.672 2.510 1.672		-	·····		1.0 1.0	-57.1 -54.5	-13.0 -13.0	-41.5	
Mid Ch, 8 1.672 2.510 1.672 2.510 High Ch, 1	-22.5 -20.1	H	3.0	35.5					
1.672 2.510 1.672 2.510 High Ch, 1	-22.5 -20.1 908.75MHz	H H	3.0 3.0	35.5 35.4	1.0	-54.5	-13.0	-41.5	
1.672 2.510 1.672 2.510 High Ch, 1 1.697	-22.5 -20.1 908.75MHz -23.6	H H V	3.0 3.0 3.0	35.5 35.4 35.5	1.0 1.0	-54.5 -58.1	-13.0 -13.0	_41.5 _45.1	
1.672 2.510 1.672 2.510 High Ch, 1 1.697 2.545	-22.5 -20.1 908.75MHz -23.6 -19.0	H H V V	3.0 3.0 3.0 3.0 3.0	35.5 35.4 35.5 35.5 35.4	1.0 1.0 1.0	-54.5 -58.1 -53.5	-13.0 -13.0 -13.0	_41.5 _45.1 _40.5	
1.672 2.510 1.672 2.510 High Ch, 1 1.697	-22.5 -20.1 908.75MHz -23.6	H H V	3.0 3.0 3.0	35.5 35.4 35.5	1.0 1.0	-54.5 -58.1	-13.0 -13.0	_41.5 _45.1	

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GSM1900 BAND

Company		LG							
Project #		12U14390							
Date:		05/01/12							
Test Eng		Chin Pang							
Configur	ation:	EUT and AC A	dapter						
Mode:		TX, PCS BANI	D, GSM						
	Chambe	r	Pre-an	nplifer		Filter		L	imit
51	n Chamber B	•	T145 8449	В 🖵	Fil	ter 1	-	Part 24	-
	1							,	
f	SG reading		Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	1850.2MHz)								
3.700	-14.9	V	3.0	35.4	1.0	-49.2	-13.0	-36.2	
3.700 5.551	-14.9 -10.8	V	3.0	35.4	1.0	-45.2	-13.0	-32.2	
3.700 5.551 3.700	-14.9 -10.8 -16.7	V H	3.0 3.0	35.4 35.4	1.0 1.0	-45.2 -51.0	-13.0 -13.0	-32.2 -38.0	
3.700 5.551 3.700	-14.9 -10.8	V	3.0	35.4	1.0	-45.2	-13.0	-32.2	
3.700 5.551 3.700 5.551	-14.9 -10.8 -16.7 -12.0	V H	3.0 3.0	35.4 35.4	1.0 1.0	-45.2 -51.0	-13.0 -13.0	-32.2 -38.0	
3.700 5.551 3.700 5.551 Mid Ch, ('	-14.9 -10.8 -16.7 -12.0 8880.0MHz)	V H H	3.0 3.0 3.0	35.4 35.4 35.4	1.0 1.0 1.0	-45.2 -51.0 -46.4	-13.0 -13.0 -13.0	-32.2 -38.0 -33.4	
3.700 5.551 3.700 5.551 Mid Ch, (3.760	-14.9 -10.8 -16.7 -12.0 [880.0MHz] -16.7	V H H	3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.3	1.0 1.0 1.0	-45.2 -51.0 -46.4 -51.1	-13.0 -13.0 -13.0 -13.0	-32.2 -38.0 -33.4 -38.1	
3.700 5.551 3.700 5.551 Mid Ch, ('	-14.9 -10.8 -16.7 -12.0 8880.0MHz)	V H H	3.0 3.0 3.0	35.4 35.4 35.4	1.0 1.0 1.0	-45.2 -51.0 -46.4	-13.0 -13.0 -13.0	-32.2 -38.0 -33.4	
3.700 5.551 3.700 5.551 Mid Ch, (3.760 5.640	-14.9 -10.8 -16.7 -12.0 880.0MHz -16.7 -11.7	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.3 35.3	1.0 1.0 1.0 1.0	_45.2 _51.0 _46.4 _51.1 _46.1	-13.0 -13.0 -13.0 -13.0 -13.0	-32.2 -38.0 -33.4 -38.1 -33.1	
3.700 5.551 3.700 5.551 Mid Ch, (3.760 5.640 3.760	.14.9 .10.8 .16.7 .12.0 880.0MHz) .16.7 .16.7 .11.7 .17.5	V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0	45.2 -51.0 -46.4 -51.1 -51.1 -51.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-32.2 -38.0 -33.4 -38.1 -33.1 -38.8	
3.700 5.551 3.700 5.551 Mid Ch, (* 3.760 5.640 3.760 5.640	.14.9 .10.8 .16.7 .12.0 880.0MHz) .16.7 .16.7 .11.7 .17.5	V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0	45.2 -51.0 -46.4 -51.1 -51.1 -51.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-32.2 -38.0 -33.4 -38.1 -33.1 -38.8	
3.700 5.551 3.700 5.551 Mid Ch, (3.760 5.640 3.760 5.640 High Ch, (3.820	.14.9 .10.8 .16.7 .12.0 .16.7 .12.0 .16.7 .11.7 .11.7 .17.5 .11.8 .1909.8MHz) .14.6	V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	45.2 -51.0 -46.4 -51.1 -51.8 -51.8 -46.3 -51.8 -48.9	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-32.2 -38.0 -33.4 -38.1 -38.1 -38.8 -33.3 -33.3 -35.9	
3.700 5.551 3.700 5.551 Mid Ch, (* 3.760 5.640 3.760 5.640 High Ch, (* 3.820 5.729	.14.9 .10.8 .16.7 .12.0 [880.0MHz] .16.7 .11.7 .17.5 .11.8 [309.8MHz]	V H H H V V V H H V V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.3 35.4 35.3 35.4 35.3 35.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0	45.2 -51.0 -46.4 -51.1 -51.8 -46.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-32.2 -38.0 -33.4 -38.1 -33.1 -38.8 -33.3 -35.9 -33.1	
3.700 5.551 3.700 5.551 Mid Ch, (* 3.760 5.640 3.760 5.640	.14.9 .10.8 .16.7 .12.0 .16.7 .12.0 .16.7 .11.7 .11.7 .17.5 .11.8 .1909.8MHz) .14.6	V H H H V V H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	45.2 -51.0 -46.4 -51.1 -51.8 -51.8 -46.3 -51.8 -48.9	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-32.2 -38.0 -33.4 -38.1 -38.1 -38.8 -33.3 -33.3 -35.9	

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GPRS1900 BAND

Company		LG							
Project #:		12U14390							
-									
Date:		05/01/12							
Test Eng		Chin Pang							
Configura		EUT and AC A							
Mode:		TX, PCS BANE), gprs						
	Chambe	r	Pre-an	nplifer		Filter		L	imit
5r	n Chamber B	-	T145 84498	в 🚽	Fil	ter 1	-	Part 24	-
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
	-		(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
	(dDm)				(UD)				
GHz	(dBm)	(H/V)	(111)	(42)	()	((abiii)	(42)	
GHz Low Ch, (1	850.2MHz)				(/				
GHz Low Ch, (1 3.700	850.2MHz) -14.4	V	3.0	35.4	1.0	-48.7	-13.0	-35.7	
GHz Low Ch, (1 3.700 5.551	850.2MHz)				(/				
GHz Low Ch, (1 3.700 5.551 3.700	850.2MHz) -14.4 -10.8	V V V	3.0 3.0	35.4 35.4	1.0 1.0	-48.7 -45.2	-13.0 -13.0	-35.7 -32.2	
GHz Low Ch, (1 3.700 5.551 3.700 5.551	850.2MHz) -14.4 -10.8 -14.7 -11.0	V V H	3.0 3.0 3.0 3.0	35.4 35.4 35.4	1.0 1.0 1.0	-48.7 -45.2 -49.0	-13.0 -13.0 -13.0	-35.7 -32.2 -36.0	
GHz Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz)	V V H H	3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4	1.0 1.0 1.0 1.0	-48.7 -45.2 -49.0 -45.4	-13.0 -13.0 -13.0 -13.0	-35.7 -32.2 -36.0 -32.4	
GHz Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7	V V H H	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.4 35.3	1.0 1.0 1.0 1.0	-48.7 -45.2 -49.0 -45.4 -49.1	-13.0 -13.0 -13.0 -13.0 -13.0	-35.7 -32.2 -36.0 -32.4 -36.1	
GHz Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7 -10.7	V V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.4 35.3 35.3	1.0 1.0 1.0 1.0 1.0	48.7 45.2 49.0 45.4 49.1 49.1 45.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0		
GHz Low Ch, (1 3.700 5.551 5.551 Mid Ch, (1 3.760 5.640 3.760	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7 -10.7 -15.5	V V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	48.7 45.2 49.0 45.4 49.1 45.1 49.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0		
GHz Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7 -10.7	V V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.4 35.3 35.3	1.0 1.0 1.0 1.0 1.0	48.7 45.2 49.0 45.4 49.1 49.1 45.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0		
GHz Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7 -10.7 -15.5 -11.8	V V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	48.7 45.2 49.0 45.4 49.1 45.1 49.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0		
GHz Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7 -10.7 -15.5	V V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	48.7 45.2 49.0 45.4 49.1 45.1 49.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0		
GHz Low Ch, (1 3,700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640 High Ch, (1 3.820	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7 -10.7 -10.7 -15.5 -11.8 1909.8MHz)	V V H H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	48.7 45.2 49.0 45.4 49.1 45.1 49.8 46.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0		
GHz Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640 High Ch, (1	850.2MHz) -14.4 -10.8 -14.7 -11.0 880.0MHz) -14.7 -10.7 -15.5 -11.8 1909.8MHz) -12.6	V V H H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.4 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	48.7 45.2 49.0 45.4 49.1 45.1 49.8 46.3 46.9	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0		

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EGPRS1900 BAND

			Co Above 1GH	mpliance Co Iz High Fred				ement	
Company	:	LG							
Project #	:	12U14390							
Date:		05/01/12							
Test Eng	ineer:	Chin Pang							
Configura		EUT and AC A	dapter						
Mode:		TX, PCS BAN	, EGPRS						
	Chambe	r	Pre-ar	nplifer		Filter		L	.imit
5r	n Chamber B	-	T144 8449	в 🗸	Fil	ter 1	•	Part 24	•
I								I	
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
	(dBm)	(110.0	()						
GHz	(ubiii)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, (1	850.2MHz)								
Low Ch, (1 3.700	850.2MHz) -14.9	V	3.0	36.8	1.0	-50.7	-13.0	-37.7	
Low Ch, (1 3.700 5.551	850.2MHz) -14.9 -11.8	V V	3.0 3.0	36.8 36.3	1.0 1.0	-50.7 -47.1	-13.0 -13.0	-37.7 -34.1	
L <mark>ow Ch, (</mark> 1 3.700 5.551 3.700	850.2MHz) -14.9 -11.8 -17.7	V V H	3.0 3.0 3.0	36.8 36.3 36.8	1.0 1.0 1.0	-50.7 -47.1 -53.5	-13.0 -13.0 -13.0	-37.7 -34.1 -40.5	
Low Ch, (1 3.700 5.551 3.700	850.2MHz) -14.9 -11.8	V V	3.0 3.0	36.8 36.3	1.0 1.0	-50.7 -47.1	-13.0 -13.0	-37.7 -34.1	
Low Ch, (1 3.700 5.551 3.700 5.551	850.2MHz) -14.9 -11.8 -17.7 -13.0	V V H	3.0 3.0 3.0	36.8 36.3 36.8	1.0 1.0 1.0	-50.7 -47.1 -53.5	-13.0 -13.0 -13.0	-37.7 -34.1 -40.5	
Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz)	V V H H	3.0 3.0 3.0 3.0	36.8 36.3 36.8 36.3	1.0 1.0 1.0 1.0	-50.7 -47.1 -53.5 -48.3	-13.0 -13.0 -13.0 -13.0	-37.7 -34.1 -40.5 -35.3	
Low Ch, (1 3.700 5.551 3.700 5.551	850.2MHz) -14.9 -11.8 -17.7 -13.0	V V H	3.0 3.0 3.0	36.8 36.3 36.8	1.0 1.0 1.0	-50.7 -47.1 -53.5	-13.0 -13.0 -13.0	-37.7 -34.1 -40.5	
Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz) -17.7	V V H H	3.0 3.0 3.0 3.0 3.0 3.0	36.8 36.3 36.3 36.3 36.3 36.3	1.0 1.0 1.0 1.0	-50.7 -47.1 -53.5 -48.3 -53.5	-13.0 -13.0 -13.0 -13.0 -13.0	-37.7 -34.1 -40.5 -35.3 -40.5	
Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz) -17.7 -13.7	V V H H V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0	36.8 36.3 36.3 36.3 36.3 36.3	1.0 1.0 1.0 1.0 1.0	-50.7 47.1 -53.5 48.3 -53.5 49.0	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.7 -34.1 -40.5 -35.3 -40.5 -36.0	
Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640 5.640	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz) -17.7 -13.7 -13.7 -18.5 -11.8	V V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	36.8 36.3 36.8 36.3 36.8 36.3 36.8 36.3 36.8	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-50.7 47.1 -53.5 48.3 -53.5 49.0 -54.2	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	37.7 34.1 40.5 -35.3 40.5 -36.0 41.2	
Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640 High Ch, (1	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz) -17.7 -13.7 -13.7 -18.5 -11.8 1909.8MHz)	V V H H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	36.8 36.3 36.8 36.3 36.3 36.8 36.3 36.8 36.3 36.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-50.7 47.1 -53.5 48.3 -53.5 49.0 -54.2 47.1	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.7 -34.1 -40.5 -35.3 -40.5 -36.0 -41.2 -34.1	
Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640 High Ch, (1 3.820	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz) -17.7 -13.7 -13.7 -18.5 -11.8 1909.8MHz) -13.6	V V H H H V V H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	36.8 36.3 36.8 36.3 36.3 36.8 36.3 36.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-50.7 47.1 -53.5 48.3 -53.5 49.0 -54.2 47.1 49.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.7 -34.1 -40.5 -35.3 -40.5 -36.0 -41.2 -34.1 -36.3	
.ow Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640 High Ch, (1 3.820 5.729	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz) -17.7 -13.7 -13.7 -18.5 -11.8 1909.8MHz) -13.6 -11.6	V V H H H V V H H H V V V	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	36.8 36.3 36.8 36.3 36.3 36.3 36.3 36.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-50.7 47.1 -53.5 48.3 -53.5 49.0 -54.2 47.1 -54.2 47.1 -54.2 49.3 46.9	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.7 -34.1 -40.5 -35.3 -40.5 -36.0 -41.2 -34.1 -36.3 -36.3 -33.9	
Low Ch, (1 3.700 5.551 3.700 5.551 Mid Ch, (1 3.760 5.640 3.760 5.640 High Ch, (1	850.2MHz) -14.9 -11.8 -17.7 -13.0 880.0MHz) -17.7 -13.7 -13.7 -18.5 -11.8 1909.8MHz) -13.6	V V H H H V V H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	36.8 36.3 36.8 36.3 36.3 36.8 36.3 36.3	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-50.7 47.1 -53.5 48.3 -53.5 49.0 -54.2 47.1 49.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.7 -34.1 -40.5 -35.3 -40.5 -36.0 -41.2 -34.1 -36.3	

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CDMA2000 1xRTT PCS BAND

			Co Above 1GH	mpliance Ce z High Freq				ement		
Company	:	LG								
Project #	:	12U14390								
Date:		05/01/12								
Test Eng	ineer:	Chin Pang								
Configur	ation:	EUT and AC A	dapter							
Mode:		TX, PCS Band	CDMA 1xRTT N	Node						
	Chambe	r	Pre-ar	nplifer		Filter		Li	mit	
51	n Chamber B	•	▼ T145 8449B		Filter 1			Part 24		
	·			_						
f	SG reading		Distance	Preamp	Filter	EIRP	Limit	Delta	Notes	
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)		
Low Ch, 1 3.703	851.25MHz 8.9	V	3.0	35.4	1.0	-43.2	-13.0	-30.2		
5.554	-0.5	V V	3.0	35.4	1.0	-44.2	-13.0	-30.2		
3.703	-11.7	H	3.0	35.4	1.0	-46.0	-13.0	-33.0		
5.554	-11.0	Η	3.0	35.4	1.0	-45.4	-13.0	-32.4		
	000.000									
	-10.7	V	3.0	35.3	1.0	-45.1	-13.0	-32.1		
	-10.7	V	3.0	35.3	1.0	-43.1	-13.0	-34.1		
Mid Ch, 1 3.760 5.640	14.1	-			1.0	-45.8	-13.0	-32.8		
3.760 5.640	-11.5	н	3.0	33.3						
3.760 5.640 3.760	-11.5 -11.8	H H	3.0 3.0	35.3 35.4	1.0	-46.3	-13.0	-33.3		
3.760 5.640 3.760 5.640	-11.8						-13.0	-33.3		
3.760 5.640 3.760 5.640 High Ch, 1	-11.8 908.75MHz	Н	3.0	35.4	1.0	-46.3				
3.760 5.640 3.760 5.640 High Ch, 1 3.818	-11.8 908.75MHz -4.6	H V	3.0 3.0	35.4 35.3	1.0 1.0	_46.3 _38.9	-13.0	-25.9		
3.760 5.640 3.760 5.640 High Ch, 1 3.818 5.726	-11.8 908.75MHz -4.6 -10.6	H V V	3.0 3.0 3.0	35.4 35.3 35.4	1.0 1.0 1.0	_46.3 _38.9 _45.1	-13.0 -13.0	-25.9 -32.1		
3.760 5.640 3.760 5.640	-11.8 908.75MHz -4.6	H V	3.0 3.0	35.4 35.3	1.0 1.0	_46.3 _38.9	-13.0	-25.9		

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CDMA2000 EVDO Rev A, PCS BAND

	I G ELECTRO	VICS INC							
	-								
Chamber				Filter			Limit		
hamber B	•	1145 6449	• <u>•</u>		teri	•	Fart 24	•	
G reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes	
-		(m)			1	(dBm)	(dB)		
· · ·	(****)	(/	()	()	(()	(/		
-14.9	V	3.0	35.4	1.0	-49.2	-13.0	-36.2		
-10.8	V	3.0	35.4	1.0	-45.2	-13.0	-32.2		
		3.0	35.4	1.0	-50.0	-13.0	-37.0		
-15.7	Н	5.0	55.4	1.0					
-15.7 -11.0	H	3.0	35.4 35.4	1.0	-45.4	-13.0	-32.4		
-11.0									
-11.0 NHz	H V V	3.0	35.4	1.0	-45.4	-13.0	-32.4		
-11.0 MHz -12.7 -11.7 -14.5	H V	3.0 3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0	_45.4 _47.1	-13.0 -13.0 -13.0 -13.0	-32.4 -34.1 -33.1 -35.8		
-11.0 MHz -12.7 -11.7	H V V	3.0 3.0 3.0	35.4 35.3 35.4	1.0 1.0 1.0	_45.4 _47.1 _46.1	-13.0 -13.0 -13.0	-32.4 -34.1 -33.1		
-11.0 MHz -12.7 -11.7 -14.5 -9.8	H V V H	3.0 3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0	_45.4 _47.1 _46.1 _48.8	-13.0 -13.0 -13.0 -13.0	-32.4 -34.1 -33.1 -35.8		
-11.0 MHz -12.7 -11.7 -14.5	H V V H	3.0 3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0	_45.4 _47.1 _46.1 _48.8	-13.0 -13.0 -13.0 -13.0	-32.4 -34.1 -33.1 -35.8		
-11.0 MHz -12.7 -11.7 -14.5 -9.8 75MHz	H V V H H	3.0 3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0	45.4 47.1 46.1 48.8 44.3	-13.0 -13.0 -13.0 -13.0 -13.0	32.4 34.1 33.1 35.8 31.3		
-11.0 AHz -12.7 -11.7 -14.5 -9.8 75MHz -13.6	H V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3 35.4 35.4 35.3	1.0 1.0 1.0 1.0 1.0	45.4 47.1 46.1 48.8 44.3 44.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-32.4 -34.1 -33.1 -35.8 -31.3 -34.9		
	er: n: Chambe hamber B G reading (dBm) 25MHz -14.9	12U14 04/24/12 er: Chin Pang n: EUT with AC A TX, PCS Band Chamber hamber B Greading Ant. Pol. (dBm) (H/V) 25MHz -14.9 V	O4/24/12 er: Chin Pang n: EUT with AC Adapter TX, PCS Band EVDO Rev A Chamber P hamber B G reading Ant. Pol. Distance (dBm) (H/V) (m) 25MHz -14.9 V 3.0	12U14 04/24/12 er: Chin Pang n: EUT with AC Adapter TX, PCS Band EVDO Rev A Chamber Pre-amplifer hamber B ▼ G reading Ant. Pol. (H/V) Distance Preamp (dB) (Bm) (H/V) 25MHz 3.0 -14.9 V	12U14 04/24/12 er: Chin Pang n: EUT with AC Adapter TX, PCS Band EVDO Rev A Chamber Pre-amplifer hamber B ▼ G reading Ant. Pol. Distance Preamp Filter (dBm) (H/V) (m) (dB) 25MHz 3.0 35.4 1.0	12U14 04/24/12 er: Chin Pang n: EUT with AC Adapter TX, PCS Band EVDO Rev A Chamber Pre-amplifer hamber B ▼ Greading Ant. Pol. Distance (dBm) (H/V) (m) (dB) 25MHz - - -14.9 V 3.0 35.4 1.0	12U14 04/24/12 er: Chin Pang n: EUT with AC Adapter TX, PCS Band EVDO Rev A Filter Filter hamber B ▼ S reading Ant. Pol. Distance Preamp Filter Filter 1 ▼ G reading Ant. Pol. Distance Preamp Filter (dB) (dBm) (dBm) 25MHz 0 3.0 35.4 1.0 49.2 -13.0	12U14 04/24/12 er: Chin Pang n: EUT with AC Adapter TX, PCS Band EVDO Rev A Chamber Pre-amplifer T145 8449B Filter L Part 24 G reading Ant. Pol. Distance Preamp (dBm) (H/V) (m) (dB) (dB) (dBm) (dBm) (dBm) 25MHz - -14.9 V	

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WCDMA REL 99, PCS BAND

			Cor Above 1GH	npliance Co z High Frec				ement	
Company Project #: Date:		LG 12U14390 05/01/12							
-		EUT and AC A	dapter D WCDMA, Rel	99					
	Chamber		Pre-an	nplifer		Filter	Li	imit	
5 n	n Chamber B	•	T145 8449B -		Fil	ter 1	Part 24 🗸		
f	SG reading		Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, 18 3.704	52.4MHz -11.9	V	3.0	35.4	1.0	-46.2	-13.0	-33.2	
5.557	-11.9	V	3.0	35.4 35.4	1.0	-40.2	-13.0	-33.2 -32.2	
3.704	-10.0	H	3.0	35.4	1.0	-49.0	-13.0	-36.0	
5.557	-14.7	H	3.0	35.4	1.0	-45.4	-13.0	-32.4	
	-110		0.0				-1010	V2.17	
Mid Ch, 1	80.0MHz						1		
3.760	-14.7	V	3.0	35.3	1.0	-49.1	-13.0	-36.1	
5.640	-11.7	V	3.0	35.4	1.0	-46.1	-13.0	-33.1	
3.760	-15.5	Н	3.0	35.3	1.0	-49.8	-13.0	-36.8	
	-12.8	Н	3.0	35.4	1.0	-47.3	-13.0	-34.3	
5.640									
5.640									
5.640 High Ch, 1			7		1.0	-41.9	-13.0	-28.9	
5.640 High Ch, 1 3.815	-7.6	V	3.0	35.3		y			
5.640 High Ch, 1 3.815 5.723	-7.6 -8.6	V	3.0	35.4	1.0	_43.1	-13.0	-30.1	
	-7.6					43.1 43.6 43.1	-13.0 -13.0 -13.0	-30.1 -30.6 -30.1	

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WCDMA HSDPA, PCS BAND

Company		LG							
Project #:		12U14390							
•									
Date:		05/01/12							
Test Engi		Chin Pang							
Configura		EUT and AC A							
Node:		TX, PCS BAN	D WCDMA, HS						
	Chamber		Pre-an	nplifer		Filter		l	Limit
5 n	n Chamber B	-	T145 8449	в 🚽	Filter 1 🗸			Part 24	
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	352.4MHz	()	()	(==)	(42)	(42.11)	(42.11)	(42)	
	· · · · · · · · · · · · · · · · · · ·	V	3.0	35.4	1.0	-47.2	-13.0	-34.2	
	-12.9								
3.704	-12.9 -10.8	V	3.0	35.4	1.0	-45.2	-13.0	-32.2	
3.704 5.557			3.0 3.0	35.4 35.4	1.0 1.0	-45.2 -50.0	-13.0 -13.0	-32.2 -37.0	
3.704 5.557 3.704	-10.8	V	å						
3.704 5.557 3.704 5.557	-10.8 -15.7 -12.0	V H	3.0	35.4	1.0	-50.0	-13.0	-37.0	
3.704 5.557 3.704 5.557 Mid Ch, 18	-10.8 -15.7 -12.0 880.0MHz	V H H	3.0 3.0	35.4 35.4	1.0 1.0	-50.0 -46.4	-13.0 -13.0	-37.0 -33.4	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760	-10.8 -15.7 -12.0 80.0MHz -14.7	V H H	3.0 3.0 3.0	35.4 35.4 35.3	1.0 1.0 1.0	-50.0 -46.4 -49.1	-13.0 -13.0 -13.0	-37.0 -33.4 -36.1	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760 5.640	-10.8 -15.7 -12.0 80.0MHz -14.7 -12.7	V H H V V	3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.3 35.4	1.0 1.0 1.0 1.0	-50.0 -46.4 -49.1 -47.1	-13.0 -13.0 -13.0 -13.0 -13.0	-37.0 -33.4 -36.1 -34.1	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760 5.640 3.760	-10.8 -15.7 -12.0 880.0MHz -14.7 -12.7 -16.5	V H H V V V	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0	-50.0 -46.4 -49.1 -47.1 -50.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.0 -33.4 -36.1 -34.1 -37.8	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760 5.640 3.760	-10.8 -15.7 -12.0 80.0MHz -14.7 -12.7	V H H V V	3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.3 35.4	1.0 1.0 1.0 1.0	-50.0 -46.4 -49.1 -47.1	-13.0 -13.0 -13.0 -13.0 -13.0	-37.0 -33.4 -36.1 -34.1	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760 5.640 3.760 5.640	-10.8 -15.7 -12.0 880.0MHz -14.7 -12.7 -16.5 -12.8	V H H V V V	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0	-50.0 -46.4 -49.1 -47.1 -50.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.0 -33.4 -36.1 -34.1 -37.8	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760 5.640 3.760 5.640 High Ch, 19	-10.8 -15.7 -12.0 880.0MHz -14.7 -12.7 -16.5 -12.8	V H H V V V	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0	-50.0 -46.4 -49.1 -47.1 -50.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.0 -33.4 -36.1 -34.1 -37.8	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760 5.640 3.760 5.640 High Ch, 19 3.815	-10.8 -15.7 -12.0 80.0MHz -14.7 -12.7 -16.5 -12.8 907.6MHz	V H H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.4 35.3 35.4 35.3 35.4	1.0 1.0 1.0 1.0 1.0 1.0	-50.0 -46.4 -49.1 -47.1 -50.8 -47.3	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.0 -33.4 -36.1 -34.1 -37.8 -34.3	
3.704 5.557 3.704 5.557 Mid Ch, 18 3.760 5.640 3.760	-10.8 -15.7 -12.0 80.0MHz -14.7 -12.7 -16.5 -12.8 907.6MHz -7.6	V H H H V V V H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0 1.0 1.0	-50.0 -46.4 	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-37.0 -33.4 -36.1 -34.1 -37.8 -34.3 -28.9	

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LTE BAND 13 QPSK

Company Project #: Date: Test Engi Configura Mode:	neer: ation:	LG 12U14390 05/03/12 Chin Pang EUT only TX, LTE BAND QPSK	MODE, 10MH;	z BW					
	Chambe	r	Pre-an	nplifer		Filter		Lin	nit
5n	n Chamber B	• •	T145 84498	3 -	Fil	ter 1	•	Part 27	-
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
BAND 13 (7									
RB1 0									
1.555	-26.0	V	3.0	35.6	1.0	-60.6	-13.0	-47.6	
2.333	-20.7	V	3.0	35.4	1.0	-55.1	-13.0	-42.1	
1.555	-23.7	Η	3.0	35.6	1.0	-58.3	-13.0	-45.3	
2.333	-22.0	Н	3.0	35.4	1.0	-56.5	-13.0	-43.5	
RB 1 49			•						
1.573	-24.7	V	3.0	35.6	1.0	-59.3	-13.0	-46.3	
2.359	-20.7	V	3.0	35.4	1.0	-55.1	-13.0	-42.1	
1.573	-26.0	Н	3.0	35.6	1.0	-60.6	-13.0	-47.6	
2.358	-23.1	Н	3.0	35.4	1.0	-57.5	-13.0	-44.5	
RB 25 12									
1.565	-26.3	V	3.0	35.6	1.0	-60.9	-13.0	-47.9	
2.347	-20.5	V	3.0	35.4	1.0	-55.1	-13.0	-42.1	
1.565	-26.6	Ĥ	3.0	35.6	1.0	-61.2	-13.0	-48.2	
2.347	-23.1	H	3.0	35.4	1.0	-57.5	-13.0	-44.5	
RB 50 0	25.7		2.0	25.0	10	C0.2	42.0	47.5	
1.564	-25.7	V V	3.0	35.6 35.4	1.0	-60.2	-13.0	_47.2 _42.1	
2.346 1.564	-20.7 -26.6	V H	3.0 3.0	35.4 35.6	1.0 1.0	55.1 61.2	-13.0 -13.0	-42.1 -48.2	
2.346	-20.0	п Н	3.0	35.6 35.4	1.0	-01.2	-13.0 -13.0	-40.2 -44.5	
	-23.1	п	J.U	55.4	1.0	-31.3	-13.0	-44.3	
			÷		,	··		••••••••••••••••••••••••••••••••••••••	

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LTE QPSK Radiated Measurement in 1559-1610MHz Band

Project #: Date: Test Engineer: Configuration: Mode:		LG 12U14390 05/03/12 Chin Pang EUT with AC A TX, LTE Band 782MHz, QPS	13						
Chamber 5m Chamber B 🗸		Pre-amplifer			Filter		Limit Part 27		
		•	T145 8449	T145 8449B 🗸		Filter 1			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	, RB1 0, QPSK								
1.559	-24.4	V	3.0	35.6	1.0	-59.0	-40.0	-19.0	
	-25.6	Н	3.0	35.6	1.0	-60.2	-40.0	-20.2	
1.009							•		
	, RB1 49, QPSK								
(782MHz) 1.600	-26.9	V	3.0	35.6	1.0	-61.4	-40.0	-21.4	
1.559 (782MHz) 1.600 1.600		V H	3.0 3.0	35.6 35.6	1.0 1.0	-61.4 -61.0	-40.0 -40.0	-21.4 -21.0	
(782MHz) 1.600 1.600	-26.9 -26.4			ۇ			·		
(782MHz) 1.600 1.600 (782MHz)	-26.9			35.6		-61.0	·	-21.0	
(782MHz) 1.600 1.600	-26.9 -26.4 , RB25 12, QPSK	Н	3.0	ۇ	1.0		-40.0		
(782MHz) 1.600 1.600 (782MHz) 1.564 1.564	-26.9 -26.4 , RB25 12, QP SK -26.7 -22.6	H V	3.0 3.0	35.6 35.6	1.0 1.0	-61.0 -61.3	-40.0 -40.0	-21.0 -21.3	
(782MHz) 1.600 1.600 (782MHz) 1.564 1.564 (782MHz)	-26.9 -26.4 , RB25 12, QP SK -26.7 -22.6 , RB50 0, QP SK	H V H	3.0 3.0 3.0	35.6 35.6 35.6	1.0 1.0 1.0	-61.0 -61.3 -57.2	_40.0 _40.0 _40.0	-21.0 -21.3 -17.2	
(782MHz) 1.600 1.600 (782MHz) 1.564 1.564	-26.9 -26.4 , RB25 12, QP SK -26.7 -22.6	H V	3.0 3.0	35.6 35.6	1.0 1.0	-61.0 -61.3	-40.0 -40.0	-21.0 -21.3	

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LTE BAND 13 16QAM

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
_				g						
Company:		LG								
Project #:		12U14390	03/12							
Date:		05/03/12								
Test Engi		Chin Pang								
Configura		EUT only								
Mode:		16QAM) MODE, 10MH	z BW						
	Chambe	r	Pre-amplifer		Filter			Limit		
5m	n Chamber E	3 🖵	T145 8449B 🗸		Filter 1 🗸			Part 27		
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	ERP	Limit	Delta	Notes	
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)		
BAND 13 (7			11	(-)	()		(
RB1 0 1.564	-26.9	v	3.0	35.6	1.0	-61.4	-13.0	-48.4		
2.333	-20.9	V	3.0	35.4	1.0	-01.4	-13.0 -13.0	-40.4 -43.1		
1.564	-26.6	H	3.0	35.6	1.0	-61.2	-13.0	-48.2		
2.333	-23.0	H	3.0	35.4	1.0	-57.5	-13.0	-44.5		
		ļ								
RB 1 49										
1.555 2.335	-25.5 -20.7	V V	3.0	35.6	1.0	-60.1	-13.0 12.0	47.1		
2.335	-20.7	V H	3.0 3.0	35.4 35.6	1.0 1.0	-55.1 -60.3	-13.0 -13.0	-42.1 -47.3		
2.335	-23.1	H	3.0	35.4	1.0	-56.5	-13.0	-47.5		
RB 25 12		•								
1.565	-26.5	V	3.0	35.6	1.0	-61.1	-13.0	-48.1		
2.347	-21.7	V	3.0	35.4	1.0	-56.1	-13.0	-43.1		
1.565	-26.6	H	3.0	35.6	1.0	-61.2	-13.0	-48.2		
2.347	-22.1	Н	3.0	35.4	1.0	-56.5	-13.0	-43.5		
RB 50 0										
1.564	-26.4	V	3.0	35.6	1.0	-60.9	-13.0	-47.9		
1.504	-21.2	V	3.0	35.4	1.0	-55.6	-13.0	-42.6		
2.346	-26.6	H	3.0	35.6	1.0	-61.2	-13.0	-48.2		
2.346 1.564	······	H	3.0	35.4	1.0	-57.5	-13.0	-44.5		
2.346	-23.1	п								

COMPLIANCE CERTIFICATION SERVICES (UL CCS)FORM NO: CCSUP4031B47173 BENICIA STREET, FREMONT, CA 94538, USATEL: (510) 771-1000FAX: (510) 661-0888This report shall not be reproduced except in full, without the written approval of UL.CCS.

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LTE 16QAM Radiated Measurement in 1559-1610MHz Band

Project #: Date: Test Engineer: Configuration: Mode:		LG 12U14390 05/03/12 Chin Pang EUT with AC Adapter TX, LTE Band 13 782MHz, 16QAM, 10MHz								
	Chambe	r	Pre-amplifer		Filter			Limit		
5m Chamber B		-	T145 8449	T145 8449B 🗸		Filter 1		Part 27		
f SG reading GHz (dBm)		Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	RB1 0, QPSK	(****)	()	(1	(1	(((/		
.596	-26.9	V	3.0	35.6	1.0	-61.5	-40.0	-21.5		
.596	-26.3	Η	3.0	35.6	1.0	-60.9	-40.0	-20.9		
7820011										
	RB1 49, QPSK	V	3.0	35.6	1.0	-61.6	-40.0	-21.6		
.560	RB1 49, QPSK _27.0 _26.1	V H	3.0 3.0	35.6 35.6	1.0 1.0	-61.6 -60.7	-40.0 -40.0	-21.6 -20.7		
.560 .560	-27.0 -26.1									
1.560 1.560 (782MHz),	-27.0 -26.1 RB25 12, QP SK	H	3.0	35.6	1.0	-60.7	-40.0	-20.7		
.560 .560 782MHz), .580	-27.0 -26.1 RB25 12, QPSK -26.6	H V	3.0 3.0	35.6 35.6	1.0 1.0	-60.7 -61.2	-40.0 -40.0	-20.7 -21.2		
1.560 1.560	-27.0 -26.1 RB25 12, QP SK	H	3.0	35.6	1.0	-60.7	-40.0	-20.7		
.560 .560 782MHz), .580 .580	-27.0 -26.1 RB25 12, QPSK -26.6 -25.4	H V	3.0 3.0	35.6 35.6	1.0 1.0	-60.7 -61.2	-40.0 -40.0	-20.7 -21.2		
1.560 1.560 782MHz), 1.580 1.580	-27.0 -26.1 RB25 12, QPSK -26.6	H V	3.0 3.0	35.6 35.6	1.0 1.0	-60.7 -61.2	-40.0 -40.0	-20.7 -21.2		

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