



FCC CFR47 PART 22H, 24E, AND 27L CLASS II PERMISSIVE CHANGE **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: 12U14455-4

ISSUE DATE: JUNE 19, 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
	06/19/12	Initial Issue	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM 1000 SYLVAN AVENUE ENGLEWOOD CLIFFS, NEW JERS						
EUT DESCRIPTION:	DUAL BAND CELL PHONE WITH LTE +WIFI+BT 3.0; HOTSPOT SUPPORT						
MODEL:	LG-VS950, VS950 and LGVS950						
SERIAL NUMBER:	990001510004799						
DATE TESTED:	JUNE 6 TO 17, 2012						
	APPLICABLE STANDARDS						
STANDARD 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.

Approved & Released For UL CCS By:

THU CHAN ENGINEERING MANAGER UL CCS Tested By:

MENGISTU MEKURIA EMC ENGINEER UL CCS

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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 RF conducted measurement passed within \pm 0.5dBm of the original output power.

The RF radiated measurement with maximum peak ERP / EIRP output powers are as follows:

Frequency range	Modulation	ERP	
(MHz)	wouldion	dBm	mW
824.2 - 848.8	GSM	30.44	1106.6
824.2 - 848.8	GPRS	30.50	1122.0
824.2 - 848.8	EGPRS	28.15	653.1
824.7 – 848.31	1XRTT	27.15	518.8
824.7 – 848.31	EVDO	23.92	246.6

Part 22 Cellular Band

Part 24 PCS Band

Frequency range	Modulation	Ell	RP
(MHz)	Modulation	dBm	mW
1850.2-1909.8	GSM	30.02	1004.6
1850.2-1909.8	GPRS	30.51	1124.6
1850.2-1909.8	EGPRS	30.19	1044.7
1851.25-1908.75	1xRTT	29.68	929.0
1851.25-1908.75	EVDO	26.53	449.8
1852.4-1907.6	REL 99	28.84	765.6
1852.4-1907.6	HSDPA	28.68	737.9

Part 27 LTE Band 13

Frequency range	Modulation	ERP	
(MHz)	Wouldtion	dBm	mW
782	QPSK	25.84	383.7
782	16QAM	26.16	413.0

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5.3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The change filed under this application has the following changes.

- Hardware Changes (Antenna Pattern and PCB Adjustments)
- Software Changes (Fixed Bugs and User Interface)

5.4. SOFTWARE AND FIRMWARE

The EUT driver software installed during testing was.VS9500Ca.

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

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

Since the EUT is a portable device the three orientations; X, Y and Z, and the worst among them with an AC Adapter and headset have been investigated to determine the worst case. After the investigations worst case were found to be at X-position with AC/DC adapter and headset for all modes on PCS band, Y position with charger for EVDO on cell band, Z-position with headset for all other modes on cell band and LTE band 13.

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5.6. DESCRIPTION OF TEST SETUP

RADIATED TESTS SUPPORT EQUIPMENT

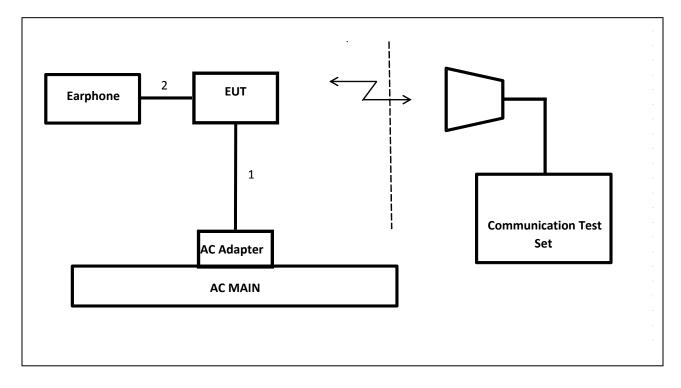
Support Equipment List								
Description Manufacturer Model			Serial Number	FCC ID				
AC Adapter	LG	MCS-01WR	RA1Z0057345	N/A				
Headset	LG	I-SOUND	EAB62209201	N/A				

I/O CABLES (RADIATED TEST)

	I/O CABLE LIST								
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks			
1	AC	1	USB	UN-SHELDED	1.0m	N/A			
2	Audio	0	Earphone	UN-SHELDED	1.0m	NA			

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RADIATED SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST						
Description	Manufacturer	Model	Asset	Cal Due		
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	03/22/13		
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01161	12/16/12		
Antenna, Horn, 18 GHz	EMCO	3115	C00872	09/20/12		
Antenna, Horn, 18 GHz	EMCO	3115	C00945	10/06/12		
Antenna, Horn, 18 GHz	EMCO	3115	C00943	CNR		
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	03/23/13		
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	07/12/12		
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	07/13/12		
Communications Test Set	Agilent / HP	E5515C	1000732	09/27/12		
Communication Test Set	R & S	CMW500	None	12/16/12		
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	7/16/2012		

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7. RADIATED TEST RESULTS

7.1. 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	28.57	719.45
GSM	192	836.60	30.44	1106.62
	251	848.80	29.68	928.97
	128	824.20	28.58	721.11
GPRS	192	836.60	30.50	1122.02
	251	848.80	29.95	988.55
	128	824.20	25.69	370.68
EGPRS	192	836.60	28.15	653.13
	251	848.80	27.72	591.56
	1013	824.70	25.30	338.84
1xRTT	384	836.52	27.15	518.80
	777	848.31	26.21	417.83
	1013	824.70	23.52	224.91
EVDO, REV A	384	836.52	23.92	246.60
	777	848.31	23.07	202.77

PCS BAND (EIRP)

			EIRP	
Mode	Channel	f (MHz)	dBm	mW
	512	1850.20	28.48	704.69
GSM	661	1880.00	29.32	855.07
	810	1909.80	30.02	1004.62
	512	1850.20	29.08	809.10
GPRS	661	1880.00	29.19	829.85
	810	1909.80	30.51	1124.60
	512	1850.20	28.48	704.69
EGPRS	661	1880.00	29.03	799.83
	810	1909.80	30.19	1044.72
	25	1851.25	29.43	877.00
1xRTT	600	1880.00	29.52	895.36
	1175	1908.75	29.68	928.97
	25	1851.25	24.91	309.74
EVDO, REV A	600	1880.00	26.53	449.78
	1175	1908.75	25.55	358.92
	9662	1852.40	28.47	703.07
REL 99	9800	1880.00	28.84	765.60
	9938	1906.80	27.56	570.16
	9662	1852.40	28.63	729.46
HSDPA	9800	1880.00	28.68	737.90
	9938	1906.80	27.56	570.16

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LTE BAND 13 (ERP)

			EF	RP
Mode	RB/RB SIZE	f (MHz)	dBm	mW
	1/0		24.47	279.90
10 MHZ BAND	1/49		25.74	374.97
QPSK	25/12		25.13	325.84
	50/0	782.0	25.84	383.71
	1/0	702.0	24.58	287.08
10 MHz BAND	1/49		25.82	381.94
16QAM	25/12		25.04	319.15
	50/0		26.16	413.05

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GSM850 BAND

		-		titution Measur on Services Cha				
ompany	:	LG ELECTRO	NICS					
roject #:		12U14455						
ate:		06/07/12						
est Engi	neer:	MENGISTU M	IEKURIA					
onfigura		EUT with AC	Adapter and Earp	phone				
ode:			BAND GSM MOD					
eceivin	g: Sunol T122 a	l: 00022117,	6ft SMA Cable	ble (Setup this c e (SN # 20894700 Antenna Gain		-	T) Margin	Notes
ubstituti f MHz	g: Sunol T122 a on: Dipole S/N	l: 00022117,	6ft SMA Cable	e (SN # 20894700	3) Wareh	ouse.		Notes
eceiving ubstituti f <u>MHz</u> Low Ch	g: Sunol T122 ; on: Dipole S/N SG reading (dBm)	I: 00022117, Ant. Pol. (H/V)	6ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	3) Wareh ERP (dBm)	ouse. Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f MHz	g: Sunol T122 ; on: Dipole S/N SG reading	l: 00022117, Ant. Pol.	6ft SMA Cable	e (SN # 20894700 Antenna Gain	3) Wareh	ouse. Limit	Margin	Notes
eceiving ubstituti f MHz Low Ch 824.20 824.20	g: Sunol T122 a on: Dipole S/N SG reading (dBm) 29.07	I: 00022117, Ant. Pol. (H/V) V	6ft SMA Cable Cable Loss (dB) 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0	3) Wareh ERP (dBm) 28.57	ouse. Limit (dBm) 38.5	Margin (dB)	Notes
eceiving ubstituti f MHz Low Ch 824.20 824.20 Mid Ch	g: Sunol T122 : on: Dipole S/N SG reading (dBm) 29.07 21.10	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	3) Wareh ERP (dBm) 28.57 20.60	ouse. Limit (dBm) 38.5 38.5	Margin (dB) -9.9 -17.8	Notes
eceiving ubstituti f <u>MHz</u> Low Ch 824.20 824.20 Mid Ch 836.60	g: Sunol T122 a on: Dipole S/N SG reading (dBm) 29.07 21.10 30.94	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 28.57 20.60 30.44	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -9.9 -17.8 -8.0	Notes
eceiving ubstituti f MHz Low Ch 824.20 824.20 Mid Ch	g: Sunol T122 : on: Dipole S/N SG reading (dBm) 29.07 21.10	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	3) Wareh ERP (dBm) 28.57 20.60	ouse. Limit (dBm) 38.5 38.5	Margin (dB) -9.9 -17.8	Notes
eceiving ubstituti f MHz Low Ch 824.20 824.20 Mid Ch 836.60 836.60	g: Sunol T122 a on: Dipole S/N SG reading (dBm) 29.07 21.10 30.94	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 28.57 20.60 30.44	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -9.9 -17.8 -8.0	Notes
eceiving ubstituti f <u>MHz</u> Low Ch 824.20 824.20 Mid Ch 836.60	g: Sunol T122 a on: Dipole S/N SG reading (dBm) 29.07 21.10 30.94	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 28.57 20.60 30.44	ouse. Limit (dBm) 38.5 38.5 38.5	Margin (dB) -9.9 -17.8 -8.0	Notes

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GPRS850 BAND

		-		titution Measur on Services Cha				
ompany:		LG ELECTRO	NICS					
oject #:		12U14455						
ate:		06/07/12						
est Engi	neer:	MENGISTU M	EKURIA					
onfigura	tion:	EUT with AC A	Adapter and Ear	phone				
ode:		TX, 850MHz B	AND GPRS MO	DE				
ceiving	g: Sunol T122,	l: 00022117,	6ft SMA Cable	able (Setup this e (SN # 20894700 Antenna Gain		-	T) Margin	Notes
eceiving Ibstituti f	g: Sunol T122, on: Dipole S/N	l: 00022117,	6ft SMA Cable	e (SN # 20894700	3) Wareh	iouse.	Margin	Notes
ıbstituti f MHz	g: Sunol T122, on: Dipole S/N SG reading (dBm)	I: 00022117, Ant. Pol.	6ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
eceiving Ibstituti f	g: Sunol T122, on: Dipole S/N SG reading	I: 00022117, Ant. Pol. (H/V)	6ft SMA Cable	e (SN # 20894700 Antenna Gain	3) Wareh	louse.	Margin	Notes
f MHz 824.20 824.20	: Sunol T122, on: Dipole S/N SG reading (dBm) 29.08 22.55	I: 00022117, Ant. Pol. (H/V) V	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	23) Wareh ERP (dBm) 28.58 22.05	Limit (dBm) 38.5 38.5	Margin (dB) -9.9 -16.4	Notes
f MHz 824.20	j: Sunol T122, on: Dipole S/N SG reading (dBm) 29.08	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 28.58	Limit (dBm)	Margin (dB)	Notes
f MHz 824.20 836.60	: Sunol T122, on: Dipole S/M SG reading (dBm) 29.08 22.55 31.00	I: 00022117, Ant. Pol. (H/V) V H V	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	23) Wareh ERP (dBm) 28.58 22.05 30.50	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -9.9 -16.4 -8.0	Notes

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EGPRS850 BAND

			-	titution Measur on Services Cha				
ompany:		LG ELECTRO	NICS					
oject #:		12U14455						
ite:		06/07/12						
st Engi	neer:	MENGISTU M	EKURIA					
onfigura	tion:	EUT with AC A	Adapter and Ear	phone				
ode:		TX, 850MHz b						
	: Sunol T122 a	l: 00022117,	6ft SMA Cable	ble (Setup this o e (SN # 20894700 Antenna Gain	3) Wareh	-	T) Margin	Notes
eceiving Ibstituti	: Sunol T122 ; on: Dipole S/N	l: 00022117,	6ft SMA Cable	e (SN # 20894700	3) Wareh	iouse.	Margin	Notes
eceiving Ibstituti f	: Sunol T122 a on: Dipole S/N SG reading	l: 00022117, Ant. Pol.	6ft SMA Cable	e (SN # 20894700 Antenna Gain	03) Wareh ERP	louse.	Margin	Notes
eceiving Ibstituti f MHz	: Sunol T122 a on: Dipole S/N SG reading (dBm)	l: 00022117, Ant. Pol. (H/V)	6ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	03) Wareh ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
f MHz 824.20	: Sunol T122 : on: Dipole S/N SG reading (dBm) 26.19	l: 00022117, Ant. Pol. (H/V) V	6ft SMA Cable Cable Loss (dB) 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0	03) Wareh ERP (dBm) 25.69	Limit (dBm)	Margin (dB)	Notes
f MHz 824.20 824.20	: Sunol T122 : on: Dipole S/N SG reading (dBm) 26.19 18.79	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	03) Wareh ERP (dBm) 25.69 18.29	Limit (dBm) 38.5 38.5	Margin (dB) -12.8 -20.2	Notes
f MHz 824.20 836.60	: Sunol T122 : on: Dipole S/N SG reading (dBm) 26.19 18.79 28.65	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	23) Wareh ERP (dBm) 25.69 18.29 28.15	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -12.8 -20.2 -10.3	Notes

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CDMA2000 1xRTT CELL BAND

High Frequency Substitution Measurement
Compliance Certification Services Chamber A

Company:	LG ELECTRONICS
Project #:	12U14455
Date:	06/07/12
Test Engineer:	MENGISTU MEKURIA
Configuration:	EUT with AC Adapter and Earphone
Mode:	TX, 850 MHz BAND, CDMA 1xRTT MODE

Test Equipment:

Receiving: Sunol T122 and Chamber A N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.

f /Hz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	(()		()	()	(()	
824.70	25.80	V	0.5	0.0	25.30	38.5	-13.1	
824.70	18.50	Н	0.5	0.0	18.00	38.5	-20.4	
836.52	27.65	V	0.5	0.0	27.15	38.5	-11.3	
836.52	20.74	Н	0.5	0.0	20.24	38.5	-18.2	
848.31	26.71	V	0.5	0.0	26.21	38.5	-12.2	
848.31	20.09	Н	0.5	0.0	19.59	38.5	-18.9	

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CDMA2000 EVDO Rev A, CELL BAND

		-		titution Measur on Services Cha				
ompany:		LG ELECTRO	NICS					
roject #:		12U14455						
ate:		06/07/12						
est Engi	neer:	MENGISTU M	EKURIA					
onfigura	tion:	EUT with AC /	Adapter and Ear	phone				
lode:		TX, 850 MHz 8	BAND, CDMA E	VDO REV. A MODE				
-	: Sunol T122 a	l: 00022117,	6ft SMA Cable	ble (Setup this o e (SN # 20894700 Antenna Gain		-	T) Margin	Notes
eceiving ubstituti	: Sunol T122 a on: Dipole S/N	l: 00022117,	6ft SMA Cable	e (SN # 20894700	3) Wareh	nouse.	Margin	Notes
eceiving ubstituti f	: Sunol T122 a on: Dipole S/N SG reading	l: 00022117, Ant. Pol.	6ft SMA Cable	e (SN # 20894700 Antenna Gain	3) Wareh	louse.	Margin	Notes
eceiving ubstituti f MHz	: Sunol T122 a on: Dipole S/N SG reading (dBm)	l: 00022117, Ant. Pol. (H/V)	6ft SMA Cable Cable Loss (dB)	e (SN # 20894700 Antenna Gain (dBd)	3) Wareh ERP (dBm)	Limit	Margin (dB)	Notes
eceiving ubstituti f MHz 824.70	: Sunol T122 a on: Dipole S/N SG reading (dBm) 24.02	l: 00022117, Ant. Pol. (H/V) V	6ft SMA Cable Cable Loss (dB) 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0	3) Wareh ERP (dBm) 23.52	Limit (dBm)	Margin (dB)	Notes
eceiving ubstituti f MHz 824.70 824.70	: Sunol T122 a on: Dipole S/N SG reading (dBm) 24.02 21.31	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0	3) Wareh ERP (dBm) 23.52 20.81	Limit (dBm) 38.5 38.5	Margin (dB) -14.9 -17.6	Notes
eceiving ubstituti f MHz 824.70 824.70 836.52	: Sunol T122 a on: Dipole S/N SG reading (dBm) 24.02 21.31 24.42	I: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	e (SN # 20894700 Antenna Gain (dBd) 0.0 0.0 0.0	3) Wareh ERP (dBm) 23.52 20.81 23.92	Limit (dBm) 38.5 38.5 38.5	Margin (dB) -14.9 -17.6 -14.5	Notes

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GSM1900 BAND

			-	ental Measuremen Services Chamber				
Company:	:	LG ELECTRON	ICS					
Project #:		12U14455						
Date:		06/07/12						
Test Engi	ineer:	MENGISTU ME	KURIA					
Configura		EUT with AC A	dapter and Earphon	e				
Mode:		TX, 1900 MHz E						
-	g: Horn T73, an			(244639001) Wareho Antenna Gain	EIRP	Limit	Delta	Notes
Receiving Substituti f GHz	g: Horn T73, an ion: Horn T217	Substitution,	4ft SMA Cable	· · ·		Limit (dBm)	Delta (dB)	Notes
Receiving Substituti f GHz Low CH	g: Horn T73, an ion: Horn T217 SG reading (dBm)	Substitution, Ant. Pol.	4ft SMA Cable Cable Loss (dB)	Antenna Gain	EIRP (dBm)	(dBm)	(dB)	Notes
Receiving Substituti f GHz -ow CH 1.850	g: Horn T73, an ion: Horn T217 SG reading	Substitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss	Antenna Gain (dBi)	EIRP			Notes
Receiving Substituti GHz Low CH 1.850 1.850	3: Horn T73, an ion: Horn T217 SG reading (dBm) 15.4 20.9	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) 23.20 28.48	(dBm) 33.0 33.0	(dB) -9.8 -4.5	Notes
Receiving Substituti f GHz Low CH 1.850 1.850 1.880	3: Horn T73, an ion: Horn T217 SG reading (dBm) 15.4 20.9 15.1	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 23.20 28.48 22.70	(dBm) 33.0 33.0 33.0	(dB) -9.8 -4.5 -10.3	Notes
Receiving Substituti f GHz ow CH 1.850 1.850 1.880	3: Horn T73, an ion: Horn T217 SG reading (dBm) 15.4 20.9	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) 23.20 28.48	(dBm) 33.0 33.0	(dB) -9.8 -4.5	Notes
Receiving Substituti f GHz ow CH 1.850 1.850	3: Horn T73, an ion: Horn T217 SG reading (dBm) 15.4 20.9 15.1	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 23.20 28.48 22.70	(dBm) 33.0 33.0 33.0	(dB) -9.8 -4.5 -10.3	Notes

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GPRS1900 BAND

			-	ental Measuremen Services Chamber				
ompany		LG ELECTRON	ICS					
Project #		12U14455						
Date:		06/07/12						
lest Eng	neer:	MENGISTU ME	KURIA					
Configura	tion:	EUT with AC Ac	apter and Earphon	e				
/lode:		TX, 1900 MHz E						
eceivin	g: Horn T73, an on: Horn T217			(244639001) Wareho Antenna Gain	use EIRP	Limit	Delta	Notes
Receivin Substitut	g: Horn T73, an	Substitution,	4ft SMA Cable			Limit (dBm)	Delta (dB)	Notes
Substitut	: Horn T73, an on: Horn T217 SG reading	Substitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	EIRP			Notes
Receivin Substitut f GHz	y: Horn T73, 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
Receivin Substitut f GHz .850	y: Horn T73, an on: Horn T217 SG reading (dBm) 15.8	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 23.54	(dBm) 33.0	(dB) -9.5	Notes
Receivin Substitut f GHz .850 .850	g: Horn T73, an on: Horn T217 SG reading (dBm) 15.8 21.5	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) 23.54 29.08	(dBm) 33.0 33.0	(dB) -9.5 -3.9	Notes
Receivin Substitut f GHz .850 .850 .880	g: Horn T73, an on: Horn T217 SG reading (dBm) 15.8 21.5 15.2	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 23.54 29.08 22.84	(dBm) 33.0 33.0 33.0 33.0	(dB) -9.5 -3.9 -10.2	Notes

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EGPRS1900 BAND

			-	ental Measuremen Services Chamber				
Company	:	LG ELECTRON	ICS					
Project #	:	12U14455						
Date:		06/07/12						
Test Eng	ineer:	MENGISTU ME	KURIA					
Configura	ation:	EUT with AC Ac	lapter and Earphon	e				
Mode:		TX, 1900 MHz E	AND, EGPRS					
Test Equ Receivin	i <u>pment:</u> g: Horn T73, an			(244639001) Wareho Antenna Gain	use EIRP	Limit	Delta	Notes
<u>Test Equ</u> Receivin Substitut	i <u>pment:</u> g: Horn T73, an ion: Horn T217	Substitution,	4ft SMA Cable			Limit (dBm)	Delta (dB)	Notes
Test Equ Receivin Substitut f GHz	i <u>pment:</u> g: Horn T73, an ion: Horn T217 SG reading	Substitution, Ant. Pol. (H/V)	4ft SMA Cable Cable Loss	Antenna Gain	EIRP (dBm)			Notes
Test Equ Receivin Substitut f GHz 1.850	ipment: g: Horn T73, an ion: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 22.88	(dBm) 33.0	(dB) -10.1	Notes
Test Equ Receivin Substitut f GHz	ipment: g: Horn T73, an 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
Test Equ Receivin Substitut f GHz 1.850	ipment: g: Horn T73, an ion: Horn T217 SG reading (dBm)	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 22.88	(dBm) 33.0	(dB) -10.1	Notes
Test Equ Receivin Substitut f GHz 1.850 1.850	ipment: g: Horn T73, an ion: Horn T217 SG reading (dBm) 15.1 20.9	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) 22.88 28.48	(dBm) 33.0 33.0	(dB) -10.1 -4.5	Notes
Test Equ Receivin Substitut f GHz 1.850 1.850 1.880	ipment: g: Horn T73, an ion: Horn T217 SG reading (dBm) 15.1 20.9 15.1	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 22.88 28.48 22.69	(dBm) 33.0 33.0 33.0	(dB) -10.1 -4.5 -10.3	Notes

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CDMA2000 1xRTT PCS BAND

			•	ental Measuremen Services Chamber				
ompany		LG ELECTRON	ICS					
roject #:		12U14455						
ate:		06/07/12						
est Engi	neer:	MENGISTU ME	KURIA					
onfigura		EUT with AC Ac	apter and Earphon	e				
lode:			AND, CDMA2000,					
est Equi eceiving ubstituti	: Horn T73, an on: Horn T217	Substitution,	4ft SMA Cable	(244639001) Wareho		Limit	Delta	Notes
est Equi	: Horn T73, an			(244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
est Equi eceiving substituti f GHz ow Ch	: Horn T73, 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
est Equi eceiving ubstituti f GHz ow Ch 851	: Horn T73, an on: Horn T217 SG reading (dBm) 16.7	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 24.49	(dBm) 33.0	(dB) -8.5	Notes
est Equi eceiving ubstituti f GHz ow Ch 851	: Horn T73, 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
est Equi Receiving Substituti f GHz ow Ch .851 .851	: Horn T73, an on: Horn T217 SG reading (dBm) 16.7 21.8	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) 24.49 29.43	(dBm) 33.0 33.0	(dB) -8.5 -3.6	Notes
est Equi ecceiving dubstituti f GHz ow Ch .851 .851 .880	: Horn T73, an on: Horn T217 SG reading (dBm) 16.7	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 24.49	(dBm) 33.0	(dB) -8.5	Notes
est Equi Receiving Substituti GHz ow Ch .851 .851 .880 .880	: Horn T73, an on: Horn T217 SG reading (dBm) 16.7 21.8 15.9 22.0	Substitution, Ant. Pol. (H/V) V H V H	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46 8.36	EIRP (dBm) 24.49 29.43 23.48 29.52	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -8.5 -3.6 -9.5 -3.5	Notes
est Equi ecciving ubstituti f GHz ow Ch 851 851 880	: Horn T73, an on: Horn T217 SG reading (dBm) 16.7 21.8 15.9	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 24.49 29.43 23.48	(dBm) 33.0 33.0 33.0	(dB) -8.5 -3.6 -9.5	Notes

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CDMA2000 EVDO REV A, PCS BAND

		High Frequency Fundamental Measurement Compliance Certification Services Chamber A									
Company	:	LG ELECTRON	IICS								
Project #	:	12U14455									
)ate:		06/07/12									
lest Eng	ineer:	MENGISTU ME	KURIA								
Configur	ation:	EUT with AC A	dapter and Earphon	e							
/lode:		TX, 1900 MHz E	BAND, EVDO Rev A	4							
eceivin	g: Horn T73, an			(244639001) Wareho Antenna Gain	use EIRP	Limit	Delta	Notes			
Substitut	g: Horn T73, an ion: Horn T217	Substitution,	4ft SMA Cable			Limit (dBm)	Delta (dB)	Notes			
Receivin Substitut	g: Horn T73, an ion: Horn T217 SG reading	Substitution, Ant. Pol.	4ft SMA Cable	Antenna Gain	EIRP			Notes			
Receivin Substitut f GHz	g: Horn T73, an 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			
Receivin Substitut f GHz .851	g: Horn T73, an ion: Horn T217 SG reading (dBm) 10.8	Substitution, Ant. Pol. (H/V) V	4ft SMA Cable Cable Loss (dB)	Antenna Gain (dBi) 8.62	EIRP (dBm) 18.56	(dBm) 33.0	(dB) -14.4	Notes			
Receivin Substitut GHz .851 .851	g: Horn T73, an ion: Horn T217 SG reading (dBm) 10.8 17.3	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) 18.56 24.91	(dBm) 33.0 33.0	(dB) -14.4 -8.1	Notes			
Receivin Substitut f GHz .851 .851 .880	g: Horn T73, an ion: Horn T217 SG reading (dBm) 10.8 17.3 12.4	Substitution, Ant. Pol. (H/V) V H V	4ft SMA Cable Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 18.56 24.91 20.05	(dBm) 33.0 33.0 33.0 33.0	(dB) -14.4 -8.1 -13.0	Notes			

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WCDMA REL. 99 PCS BAND

			-	ental Measuremen Services Chamber					
ompany	:	LG ELECTRON	ICS						
roject #	:	12U14455							
ate:		06/07/12							
est Eng	ineer:	MENGISTU ME	KURIA						
onfigur:	ation:	EUT with AC A	dapter and Earphon	e					
lode:		TX, WCDMA19							
eceivin	g: Horn T73, an			SN # 245182002) War Antenna Gain	ehouse	Limit	Delta	Notes	
Substitut	g: Horn T73, an ion: Horn T60 S	ubstitution, 4	ft SMA Cable (,		Limit (dBm)	Delta (dB)	Notes	
Receivin Substitut f	g: Horn T73, an ion: Horn T60 S SG reading	Ant. Pol.	ft SMA Cable (S	Antenna Gain	EIRP			Notes	
Receivin Substitut f GHz	g: Horn T73, an ion: Horn T60 S SG reading (dBm)	ubstitution, 4 Ant. Pol. (H/V)	ft SMA Cable (S Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes	
f GHz 852 852	g: Horn T73, an ion: Horn T60 S SG reading (dBm) 14.2	Ant. Pol. (H/V)	tft SMA Cable (S Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 21.95 28.47	(dBm) 33.0 33.0	(dB) -11.1	Notes	
f GHz 852	g: Horn T73, an ion: Horn T60 S SG reading (dBm) 14.2 20.9	Ant. Pol. (H/V) V H	fft SMA Cable (S Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 21.95	(dBm) 33.0	(dB) -11.1 -4.5	Notes	
Receivin Gubstitut GHz .852 .852 .880 .880	g: Horn T73, an ion: Horn T60 S SG reading (dBm) 14.2 20.9 14.2 21.3	Ant. Pol. (H/V) V H V H	4ft SMA Cable (S Cable Loss (dB) 0.85 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46 8.36	EIRP (dBm) 21.95 28.47 21.78 28.84	(dBm) 33.0 33.0 33.0 33.0 33.0	(dB) -11.1 -4.5 -11.2 -4.2	Notes	
f GHz .852 .852 .880	g: Horn T73, an ion: Horn T60 S SG reading (dBm) 14.2 20.9 14.2	Ant. Pol. (H/V) V H	4ft SMA Cable (5 Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 21.95 28.47 21.78	(dBm) 33.0 33.0 33.0 33.0	(dB) -11.1 -4.5 -11.2	Notes	

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WCDMA HSDPA, PCS BAND

			-	ental Measuremen Services Chamber					
ompany:		LG ELECTRON	ICS						
roject #:		12U14455							
ate:		06/07/12							
est Engi	neer:	MENGISTU ME	KURIA						
onfigura	tion:	EUT with AC Ac	dapter and Earphon	e					
ode:		TX, WCDMA190	00, HSDPA						
eceiving	: Horn T73, an			SN # 245182002) Wai Antenna Gain	ehouse	Limit	Delta	Notes	
eceiving ubstituti	: Horn T73, an on: Horn T60 S	ubstitution, 4	ft SMA Cable (Limit (dBm)	Delta (dB)	Notes	
eceiving ubstituti f GHz	: Horn T73, an on: Horn T60 S SG reading	Ant. Pol.	ft SMA Cable (S	Antenna Gain	EIRP			Notes	
eceiving ubstituti f GHz 852	: Horn T73, an on: Horn T60 S SG reading (dBm)	Ant. Pol. (H/V)	ft SMA Cable (S Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	(dBm)	(dB)	Notes	
ubstituti f	: Horn T73, an on: Horn T60 S SG reading (dBm) 14.6	Ant. Pol. (H/V)	fft SMA Cable (S Cable Loss (dB) 0.85	Antenna Gain (dBi) 8.62	EIRP (dBm) 22.40	(dBm) 33.0	(dB) -10.6	Notes	
eceiving ubstituti f GHz 852 852	: Horn T73, an on: Horn T60 S SG reading (dBm) 14.6 21.0	Ant. Pol. (H/V) V H	tft SMA Cable (S Cable Loss (dB) 0.85 0.85	Antenna Gain (dBi) 8.62 8.47	EIRP (dBm) 22.40 28.63	(dBm) 33.0 33.0	(dB) -10.6 -4.4	Notes	
eceiving ubstituti f GHz 852 852 880	: Horn T73, an on: Horn T60 S SG reading (dBm) 14.6 21.0 14.6	Ant. Pol. (H/V) V H	4ft SMA Cable (S Cable Loss (dB) 0.85 0.85 0.85	Antenna Gain (dBi) 8.62 8.47 8.46	EIRP (dBm) 22.40 28.63 22.23	(dBm) 33.0 33.0 33.0 33.0	(dB) -10.6 -4.4 -10.8	Notes	

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 BAND 13 QPSK

		-		tution Measure Services Cha						
Company	:	LG ELECTRO	NICS							
Project #		12U14455								
Date:		06/06/12								
Test Engineer: MENGSITU MEKURIA Configuration: EUT only										
Configuration: EUT only Mode: TX, LTE BAND 13, 10MHz BW, QPSK										
	-			le (Setup this on (SN # 208947003						
	-	N: 00022117,	6ft SMA Cable	• •			Margin (dB)	Notes		
f MHz B=1 & SR	SG reading (dBm) B=0, QPSK	N: 00022117, Ant. Pol. (H/V)	6ft SMA Cable Cable Loss (dB)	(SN # 208947003 Antenna Gain) Wareho ERP (dBm)	Limit (dBm)	Margin (dB)	Notes		
f MHz B=1 & SR 782.00	SG reading (dBm) B=0, QPSK 24.97	N: 00022117, Ant. Pol. (H/V) V	6ft SMA Cable Cable Loss (dB) 0.5	(SN # 208947003 Antenna Gain (dBd)	ERP (dBm) 24.47	Limit (dBm)	Margin (dB)	Notes		
f MHz B=1 & SR	SG reading (dBm) B=0, QPSK	N: 00022117, Ant. Pol. (H/V)	6ft SMA Cable Cable Loss (dB)	(SN # 208947003 Antenna Gain (dBd)) Wareho ERP (dBm)	Limit (dBm)	Margin (dB)	Notes		
Substitut f MHz 3B=1 & SR 782.00 782.00	SG reading (dBm) B=0, QPSK 24.97	N: 00022117, Ant. Pol. (H/V) V	6ft SMA Cable Cable Loss (dB) 0.5	(SN # 208947003 Antenna Gain (dBd)	ERP (dBm) 24.47	Limit (dBm)	Margin (dB)	Notes		
Substitut f MHz 3B=1 & SR 782.00 782.00	on: Dipole S/I SG reading (dBm) B=0, QPSK 24.97 16.95	N: 00022117, Ant. Pol. (H/V) V	6ft SMA Cable Cable Loss (dB) 0.5	(SN # 208947003 Antenna Gain (dBd)	ERP (dBm) 24.47	Limit (dBm)	Margin (dB)	Notes		
Substitut f MHz (B=1 & SR 782.00 782.00 (B=1 & SR	SG reading (dBm) B=0, QPSK 24.97 16.95 B=49, QPSK	v: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5	(SN # 208947003 Antenna Gain (dBd) 0.0 0.0) Wareho ERP (dBm) 24.47 16.45	Limit (dBm) 34.8 34.8	Margin (dB) -10.3 -18.4	Notes		
Substitut f MHz 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00	ion: Dipole S/f SG reading (dBm) B=0, QPSK 24.97 16.95 B=49, QPSK 26.24 18.57	v: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	(SN # 208947003 Antenna Gain (dBd) 0.0 0.0	B) Wareho ERP (dBm) 24.47 16.45 25.74	Limit (dBm) 34.8 34.8 34.8	Margin (dB) -10.3 -18.4 -9.1	Notes		
Substitut f MHz 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00	SG reading (dBm) B=0, QPSK 24.97 16.95 B=49, QPSK 26.24	v: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	(SN # 208947003 Antenna Gain (dBd) 0.0 0.0	B) Wareho ERP (dBm) 24.47 16.45 25.74	Limit (dBm) 34.8 34.8 34.8	Margin (dB) -10.3 -18.4 -9.1	Notes		
Substitut f MHz RB=1 & SR 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00	ion: Dipole S/f SG reading (dBm) B=0, QPSK 24.97 16.95 B=49, QPSK 26.24 18.57 RB=12, QPSK	N: 00022117, Ant. Pol. (H/V) V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5	(SN # 208947003 Antenna Gain (dBd) 0.0 0.0 0.0 0.0	ERP (dBm) 24.47 16.45 25.74 18.07	Limit (dBm) 34.8 34.8 34.8 34.8 34.8	Margin (dB) -10.3 -18.4 -9.1 -16.7	Notes		
Substitut f MHz 88=1 & SR 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00	on: Dipole S/f SG reading (dBm) B=0, QPSK 24.97 16.95 B=49, QPSK 26.24 18.57 RB=12, QPSK 25.63 19.04	N: 00022117, Ant. Pol. (H/V) V H V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5 0.5	(SN # 208947003 Antenna Gain (dBd) 0.0 0.0 0.0 0.0 0.0	ERP (dBm) 24.47 16.45 25.74 18.07 25.13	Limit (dBm) 34.8 34.8 34.8 34.8 34.8 34.8	Margin (dB) -10.3 -18.4 -9.1 -16.7 -9.7	Notes		
Substitut f MHz B=1 & SR 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00 782.00	on: Dipole S/f SG reading (dBm) B=0, QPSK 24.97 16.95 B=49, QPSK 26.24 18.57 RB=12, QPSK 25.63	N: 00022117, Ant. Pol. (H/V) V H V H	6ft SMA Cable Cable Loss (dB) 0.5 0.5 0.5 0.5	(SN # 208947003 Antenna Gain (dBd) 0.0 0.0 0.0 0.0 0.0	ERP (dBm) 24.47 16.45 25.74 18.07 25.13	Limit (dBm) 34.8 34.8 34.8 34.8 34.8 34.8	Margin (dB) -10.3 -18.4 -9.1 -16.7 -9.7	Notes		

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LTE BAND 13 16QAM

High Frequency Substitution Measurement Compliance Certification Services Chamber A

Company:LG ELECTRONICSProject #:12U14455Date:06/06/12Test Engineer:MENGSITU MEKURIAConfiguration:EUT onlyMode:TX, LTE BAND 13, 10 MHz BW, 16 QAM

Test Equipment:

Receiving: Sunol T122 and Chamber A 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	ERP	Limit	Margin	Notes
MHz	(dBm)	(H/V)	(dB)	(dBd)	(dBm)	(dBm)	(dB)	
RB=1 & SR	B=0, 16QAM							
782.00	25.08	V	0.5	0.0	24.58	34.8	-10.2	
782.00	17.00	Н	0.5	0.0	16.50	34.8	-18.3	
RB=1 & SR	B=49, 16QAM							
782.00	26.32	V	0.5	0.0	25.82	34.8	-9.0	
782.00	18.63	Н	0.5	0.0	18.13	34.8	-16.7	
RB=25 & SI	RB=12, 16QAM							
782.00	25.54	V	0.5	0.0	25.04	34.8	-9.8	
782.00	19.09	Н	0.5	0.0	18.59	34.8	-16.2	
RB=50 & SI	RB=0 16QAM							
782.00	26.66	V	0.5	0.0	26.16	34.8	-8.6	
782.00	20.45	Н	0.5	0.0	19.95	34.8	-14.9	
	l			L		<u>.</u>		

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7.2. 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

			Cor Above 1GH	mpliance Ce z High Freq				ement	
Company	:	LG ELECTROI	VICS						
Project #:		12U14455							
Date:		06/15/12							
Test Engi		MENGISTU MI	FKURIA						
Configura			dapter and Earp	phone					
/lode:			D, GSM MODE						
Chamber		r	Pre-an	nplifer		Filter		Lir	nit
5n	n Chamber B	-	T145 84498	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)	
_ow Ch, (8		(1.1.1)		(/	(/			<u>,/</u>	
.648	-4.1	V	3.0	35.5	1.0	-38.7	-13.0	-25.7	
.473	-6.8	V	3.0	35.4	1.0	-41.2	-13.0	-28.2	
.297	-20.6	V	3.0	35.5	1.0	-55.2	-13.0	-42.2	
.648	-8.5	H	3.0	35.5	1.0	-43.1	-13.0	-30.1	
2.473	-4.8	H	3.0	35.4	1.0	-39.2	-13.0	-26.2	
3.297	-20.6	Н	3.0	35.5	1.0	-55.1	-13.0	_42.1	
Mid Ch, (8	36 6MHz)						•		
1.673	-1.7	V	3.0	35.5	1.0	-36.2	-13.0	-23.2	
2.510	-10.1	v	3.0	35.4	1.0	-44.5	-13.0	-31.5	
3.346	-21.4	v	3.0	35.5	1.0	-55.9	-13.0	-42.9	
1.673	-5.9	Н	3.0	35.5	1.0	-40.4	-13.0	-27.4	
	-10.2	Н	3.0	35.4	1.0	-44.6	-13.0	-31.6	
	7	Н	3.0	35.5	1.0	-55.9	-13.0	-42.9	
3.346	-21.4		3.0	7 ara 7	1.0	-53.2	-13.0	-40.2	
3.346	-21.4 -18.9	Н	3.0	35.2	1.0	JUDIL	+		
3.346 1.183	-18.9	Н	3.0	35.2	1.0				
3.346 1.183 High Ch, (8	-18.9 48.8MHz)							_18.8	
3.346 4.183 High Ch, (8 1.698	-18.9 48.8MHz) 2.7	V	3.0	35.5	1.0	-31.8	-13.0	-18.8 -36.5	
3.346 4.183 High Ch, (8 1.698 2.546	-18.9 48.8MHz)							-18.8 -36.5 -41.6	
3.346 4.183 High Ch, (8 1.698 2.546 3.395	-18.9 48.8MHz) 2.7 -15.1	V V	3.0 3.0	35.5 35.4	1.0 1.0	-31.8 -49.5	-13.0 -13.0	-36.5	
2.510 3.346 4.183 High Ch, (8 1.698 2.546 3.395 1.698 2.546	-18.9 48.8MHz) 2.7 -15.1 -20.1	V V V	3.0 3.0 3.0	35.5 35.4 35.5	1.0 1.0 1.0	-31.8 -49.5 -54.6	-13.0 -13.0 -13.0	-36.5 -41.6	

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GPRS850 BAND

			Co Above 1GH	mpliance Ce z High Freq				ement	
Company:		LG ELECTRON	VICS						
Project #:		12U14455							
Date:		06/15/12							
rest Engi		MENGISTU ME							
Configura				abana					
Jonngura Node:			dapter and Ear						
ioue.						Filter			
	Chambe	r	Pre-an	nplifer		Filter		LII	mit
Chamb 5m Chamber		3 🖵	T145 8449	в	Filter 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)	Notes
ow Ch, (8)		(100)	(,	(48)	(40)		(abiii)	(42)	
.648	-6.3	v	3.0	35.5	1.0	-40.9	-13.0	-27.9	
.473	-0.5	v	3.0	35.4	1.0	-43.3	-13.0	-30.3	
297	-21.0	Ĥ	3.0	35.5	1.0	-55.5	-13.0	-42.5	
.648	-2.9	V	3.0	35.5	1.0	-37.4	-13.0	-24.4	
.473	-10.8	V	3.0	35.4	1.0	-45.2	-13.0	-32.2	
.297	-21.4	Н	3.0	35.5	1.0	-55.9	-13.0	-42.9	
id Ch, (8	36.6MHz)								
.673	-1.8	V	3.0	35.5	1.0	-36.3	-13.0	-23.3	
.510	-10.8	V	3.0	35.4	1.0	-45.2	-13.0	-32.2	
346	-23.2	H	3.0	35.5	1.0	-57.7	-13.0	-44.7	
.673	-3.1	V	3.0	35.5	1.0	-37.6	-13.0	-24.6	
.510	-6.1	V	3.0	35.4	1.0	-40.5	-13.0	-27.5	
346	-23.0	Н	3.0	35.5	1.0	-57.6	-13.0	-44.6	
ab Ch /0	48.8MHz)								
ոսո շո. տ	2.5	V	3.0	35.5	1.0	-32.0	-13.0	-19.0	
	-13.5	v	3.0	35.4	1.0	-48.0	-13.0	-35.0	
698 546		Н	3.0	35.5	1.0	-55.5	-13.0	-42.5	
598 546	-21.0	i II			1.0	-36.3	-13.0	-23.3	
698 546 395		V	3.0	35.5	1.0	-30.3			
698	-21.0		3.0 3.0	35.5 35.4	1.0	-46.8	-13.0	-33.8	

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EGPRS850 BAND

				mpliance Ce Iz High Freq				ement	
Company		LG ELECTRON	IICS						
Project #:		12U14455							
Date:		06/15/12							
Test Engi	neer:	MENGISTU ME	EKURIA						
Configura	tion:	EUT with AC A	dapter and Ear	phone					
Mode:		TX, CELL BAN	D, EGPRS MO	DE					
	Chambe	r	Pre-an	nplifer		Filter		L	Limit
50	n Chamber B	-	T145 8449	в 🗸	Fil	ter 1	•	Part 22	•
	i entimet D		1		I			I	
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	24.2MHz)								
			3.0	7 355 7	1.0	-50.8	400 7	-37.8	
1.648	-16.2	V		35.5			-13.0		
1.648 2.473	-18.1	V	3.0	35.4	1.0	-52.5	-13.0	-39.5	
1.648 2.473 1.648	-18.1 -17.0	V H	3.0 3.0	35.4 35.5	1.0 1.0	-52.5 -51.6	-13.0 -13.0	-39.5 -38.6	
1.648 2.473 1.648	-18.1	V	3.0	35.4	1.0	-52.5	-13.0	-39.5	
1.648 2.473 1.648 2.473	-18.1 -17.0 -17.0	V H	3.0 3.0	35.4 35.5	1.0 1.0	-52.5 -51.6	-13.0 -13.0	-39.5 -38.6	
1.648 2.473 1.648	-18.1 -17.0 -17.0	V H	3.0 3.0	35.4 35.5	1.0 1.0	-52.5 -51.6	-13.0 -13.0	-39.5 -38.6	
1.648 2.473 1.648 2.473 Mid Ch, (8	-18.1 -17.0 -17.0 36.6MHz)	V H H	3.0 3.0 3.0	35.4 35.5 35.4	1.0 1.0 1.0	-52.5 -51.6 -51.4	-13.0 -13.0 -13.0 -13.0 -13.0	-39.5 -38.6 -38.4	
1.648 2.473 1.648 2.473 Mid Ch, (8 1.673 2.510 1.673	-18.1 -17.0 -17.0 36.6MHz) -13.2 -18.1 -9.1	V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-52.5 -51.6 -51.4 -51.4 -47.7 -52.5 -43.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-39.5 -38.6 -38.4 -34.7 -39.5 -30.7	
1.648 2.473 1.648 2.473 Mid Ch, (8 1.673 2.510	-18.1 -17.0 -17.0 36.6MHz) -13.2 -18.1	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.5 35.4	1.0 1.0 1.0 1.0	-52.5 -51.6 -51.4 -51.4 -52.5	-13.0 -13.0 -13.0 -13.0 -13.0	-39.5 -38.6 -38.4 -34.7 -39.5	
1.648 2.473 1.648 2.473 Mid Ch, (8 1.673 2.510 1.673	-18.1 -17.0 -17.0 36.6MHz) -13.2 -18.1 -9.1 -22.4	V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-52.5 -51.6 -51.4 -51.4 -47.7 -52.5 -43.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-39.5 -38.6 -38.4 -34.7 -39.5 -30.7	
1.648 2.473 1.648 2.473 Mid Ch, (8 1.673 2.510 1.673 2.510	-18.1 -17.0 -17.0 36.6MHz) -13.2 -18.1 -9.1 -22.4	V H H V V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-52.5 -51.6 -51.4 -51.4 -47.7 -52.5 -43.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-39.5 -38.6 -38.4 -34.7 -39.5 -30.7	
1.648 2.473 1.648 2.473 Mid Ch. (8 1.673 2.510 1.673 2.510 High Ch. (8	-18.1 -17.0 -17.0 36.6MHz) -13.2 -18.1 -9.1 -22.4 48.8MHz)	V H H H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5 35.4	1.0 1.0 1.0 1.0 1.0 1.0 1.0	-52.5 -51.6 -51.4 -51.4 -52.5 -43.7 -56.8	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-39.5 -38.6 -38.4 -38.4 -39.5 -39.5 -30.7 -43.8	
1.648 2.473 1.648 2.473 Mid Ch. (8 1.673 2.510 1.673 2.510 High Ch. (8 1.698	-18.1 -17.0 -17.0 36.6MHz) -13.2 -18.1 -9.1 -22.4 48.8MHz) -10.0	V H H V V H H	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5 35.4 35.5	1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	-52.5 -51.6 -51.4 -51.4 -52.5 -43.7 -56.8 -56.8 -44.5	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-39.5 -38.6 -38.4 -34.7 -39.5 -30.7 -43.8 -31.5	

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CDMA2000 1xRTT CELL BAND

			Cor Above 1GH	mpliance Co z High Fred				ement	
Company		LG ELECTRO							
			NICS						
Project #:		12U14455							
Date:		06/14/12							
Test Engi		MENGISTU M							
Configura			Adapter and Ear						
Node:		TX, 650 MIHZ E	3AND, CDMA 1>	RTT MODE					
	Chambe	r	Pre-an	nplifer		Filter		Lin	nit
5n	n Chamber B	-	T145 8449	в 🚽	Fil	ter 1	-	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, 8									
1.649	-12.3	V	3.0	35.5	1.0	-46.8	-13.0	-33.8	
3.247	-10.5	V V	3.0 3.0	35.6 35.6	1.0 1.0	-45.2 -44.2	-13.0 -13.0	-32.2 -31.2	
9.072 9.896	-9.6	V	3.0	35.5	1.0	-44.2	-13.0 -13.0	-31.2	
1.649	-9.0	V H	3.0	30.0 35.5	1.0	-43.5	-13.0 -13.0	-30.5	
7.422	-10.8	п Н	3.0	35.7	1.0	-40.2	-13.0	-32.5	
B.247	-8.4	H	3.0	35.6	1.0	43.0	-13.0	-30.0	
Mid Ch, 8	36 52MH 7								
1.673	-15.2	V	3.0	35.5	1.0	-49.7	-13.0	-36.7	
7.529	-12.2	v	3.0	35.7	1.0	-46.9	-13.0	-33.9	
8.365	-9.8	V	3.0	35.6	1.0	-44.4	-13.0	-31.4	
9.202	-9.1	V	3.0	35.6	1.0	-43.6	-13.0	-30.6	
1.673	-18.9	Н	3.0	35.5	1.0	-53.5	-13.0	-40.5	
7.529	-7.3	H	3.0	35.7	1.0	-42.0	-13.0	-29.0	
8.365	-7.2	H	3.0	35.6	1.0	-41.9	-13.0	-28.9	
9.202	-8.7	Н	3.0	35.6	1.0	-43.2	-13.0	-30.2	
ligh Ch, 8	48.31MHz								
1.697	-12.3	V	3.0	35.5	1.0	-46.8	-13.0	-33.8	
3.483	-9.7	V	3.0	35.6	1.0	-44.3	-13.0	-31.3	
).331	-8.9	V	3.0	35.6	1.0	-43.4	-13.0	-30.4	
	-13.3	Н	3.0	35.5	1.0	-47.9	-13.0	-34.9	
	-9.6	H	3.0	35.7	1.0	-44.3	-13.0	-31.3	
.635	7	U	3.0	35.6	1.0	_40.0	-13.0	-27.0	
1.697 7.635 8.483 9.331	-5.3 -9.6	H	3.0	35.6	1.0	-44.2	-13.0	-31.2	

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CDMA2000 EVDO REV A, CELL BAND

				mpliance Ce Iz High Freq				ement		
Company		LG ELECTRO	NICS							
Project #	:	12U14455								
Date:		06/17/12								
Test Eng		MENGISTU M								
Configura Mode:			Adapter and Ear EVDO Rev A M							
mode.		TA, Cell Dalid,								
	Chambe	r	Pre-ar	nplifer		Filter		L	imit	
5r	n Chamber E	•	T145 8449	B 🚽	Fil	ter 1	•	Part 22	•	
f	SG reading			Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)		
	851.25MHz	v	20	7 75 5 7	4.0	40.0	42.0	25.0		
1.649 2.474	-14.3 -6.7	V V	3.0 3.0	35.5 35.4	1.0 1.0	_48.9 _41.1	-13.0 -13.0	-35.9 -28.1		
1.649	-0.7	v H	3.0	35.5	1.0	-47.1	-13.0	-34.1		
2.474	-8.8	H	3.0	35.4	1.0	-43.3	-13.0	-30.3		
Mid Ch, 8 1.672	-13.8	v	3.0	35.5	1.0	-48.3	-13.0	-35.3		
2.510	-13.0	V	3.0	35.5 35.4	1.0	-40.5	-13.0	-35.5		
1.672	-13.4	v H	3.0	35.5	1.0	-47.9	-13.0	-34.9		
	-12.1	H	3.0	35.4	1.0	-46.5	-13.0	-33.5		
2.510	008 75MU-							·		
	900.7 JMITZ	V	3.0	35.5	1.0	-45.5	-13.0	-32.5		
High Ch, 1	11.0	-	3.0	35.4	1.0	-43.5	-13.0	-32.5		
High Ch, 1 1.697	-11.0	V				-46.4	-13.0	-33.4		
High Ch, 1 1.697 2.545	-7.3	V H		35.5	1.0	-40.4				
2.510 High Ch, 1 1.697 2.545 1.697 2.545		V H H	3.0 3.0	35.5 35.4	1.0	-40.4	-13.0	-32.4		

GSM1900 BAND

		Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
_				Zingnine	lucincy of		measu	ement			
Company:		LG ELECTRO	NICS								
Project #:		12U14455									
Date:		06/15/12									
lest Engi		MENGISTU M									
Configura			Adapter and Ear	phone							
lode:		TX, PCS BANI	D, GSM MODE								
Chamber		r	Pre-an	nplifer		Filter		Li	mit		
Chambe 5m Chamber E		5 -	T145 8449	З	Fil	ter 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)	Notes		
	850.2MHz)	(100)	()	(42)	(48)	(abiii)	(abiii)	(42)			
.700	-14.2	V	3.0	35.4	1.0	-48.5	-13.0	-35.5			
.551	-19.9	V	3.0	35.4	1.0	-54.3	-13.0	-41.3			
.401	-15.8	H	3.0	35.7	1.0	-50.5	-13.0	-37.5			
251	-11.0	Н	3.0	35.6	1.0	-45.5	-13.0	-32.5			
700	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5			
551 401	-17.6 -14.6	V H	3.0 3.0	35.4 35.7	1.0 1.0	-52.0 -49.3	-13.0 -13.0	-39.0 -36.3			
.401 .251	-14.0	H	3.0	35.6	1.0	-49.5	-13.0	-33.5			
.201	-12.0		5.0	00.0		-10.0	-10.0	-00.0			
lid Ch, (18	880.0MHz)		•								
.760	-15.7	V	3.0	35.3	1.0	-50.0	-13.0	-37.0			
.640	-19.4	V	3.0	35.4	1.0	-53.9	-13.0	-40.9			
.520	-14.9 -9.5	H	3.0 3.0	35.7	1.0	-49.6	-13.0 -13.0	-36.6 -31.1			
.400 .760	-9.5 -15.0	H V	3.0 3.0	35.6 35.3	1.0 1.0	-44.1 -49.4	-13.0 -13.0	-31.1 -36.4			
.640	-13.0	V	3.0	35.3	1.0	-49.4	-13.0	-39.9			
.520	-14.2	Ĥ	3.0	35.7	1.0	-48.9	-13.0	-35.9			
.400	-14.7	H	3.0	35.6	1.0	-49.3	-13.0	-36.3			
]										
	909.8MHz)						40.0				
820	-11.9 -16.9	V V	3.0 3.0	35.3 35.4	1.0 1.0	_46.2 _51.3	-13.0 -13.0	-33.2 -38.3			
720	-16.9 -15.4	V V	3.0	35.4 35.7	1.0	-51.3	-13.0 -13.0	-38.3 -37.1			
	-10.3	V	3.0	35.6	1.0	-44.9	-13.0	-31.9			
539		ů H	3.0	35.3	1.0	-52.8	-13.0	-39.8			
539 549	-18.5				1.0	-52.3	-13.0	-39.3			
639 549 820		H	3.0	35.4	1.0	-02.0		-0010			
.729 .639 .549 .820 .729 .639 .549	-18.5		3.0 3.0 3.0	35.4 35.7 35.6	1.0	-50.3	-13.0 -13.0	-37.3 -35.1			

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GPRS1900 BAND

		Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company		LG ELECTRO									
Project #:		12U14455	100								
Date:		06/15/12									
Test Engi		MENGISTU M	FKURIA								
Configura			Adapter and Ear	phone							
Mode:			D, GPRS MODE								
		,	,								
	Chambe	r	Pre-an	nplifer		Filter		Li	imit		
5m Chamber		• •	T145 8449	в 🚽	Fil	ter 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)			
.ow Ch, (1	850.2MHz)			. ,	. /		. ,				
3.700	-13.2	V	3.0	35.4	1.0	-47.6	-13.0	-34.6			
.551	-19.6	V	3.0	35.4	1.0	-54.0	-13.0	-41.0			
.401	-15.0	V	3.0	35.7	1.0	-49.7	-13.0	-36.7			
.251 .700	-10.8 -13.2	V H	3.0 3.0	35.6 35.4	1.0 1.0	-45.3 -47.5	-13.0 -13.0	-32.3 -34.5			
.551	-13.2	H	3.0	35.4	1.0	-47.5	-13.0	-39.3			
.401	-14.1	H	3.0	35.7	1.0	-48.8	-13.0	-35.8			
.251	-11.6	Н	3.0	35.6	1.0	-46.1	-13.0	-33.1			
	000 0000 0										
Aid Ch, (1 6.760	880.0MHz) -12.9	V	3.0	35.3	1.0	-47.3	-13.0	-34.3			
5.760 5.640	-12.9	V V	3.0	35.3 35.4	1.0	-47.3	-13.0 -13.0	-34.3 -39.5			
7.520	-10.1	V	3.0	35.7	1.0	-49.8	-13.0	-36.8			
.400	-9.4	V	3.0	35.6	1.0	-43.9	-13.0	-30.9			
.760	-15.1	Н	3.0	35.3	1.0	_49.5	-13.0	-36.5			
5.640	-16.7	H	3.0	35.4	1.0	-51.1	-13.0	-38.1			
.520	-13.7	H	3.0	35.7	1.0	-48.4	-13.0	-35.4			
.400	-12.9	H	3.0	35.6	1.0	-47.4	-13.0	-34.4			
iah Ch. (1	1909.8MHz)										
.820	-11.8	V	3.0	35.3	1.0	-46.1	-13.0	-33.1			
.729	-17.9	V	3.0	35.4	1.0	-52.3	-13.0	-39.3			
.639	-15.2	V	3.0	35.7	1.0	-49.9	-13.0	-36.9			
549	-10.4	V	3.0	35.6	1.0	-45.0	-13.0	-32.0			
0.00	-14.2	H	3.0	35.3	1.0	-48.5	-13.0	-35.5			
	-17.0	H	3.0 3.0	35.4 35.7	1.0 1.0	-51.5	-13.0 -13.0	-38.5 -36.0			
.729		n –	J.U								
.820 .729 .639 .549	-14.3 -11.2	Н	3.0	35.6	1.0	-45.7	-13.0	-32.7			

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EGPRS1900 BAND

				mpliance Co Iz High Fred				ement	
Company Project # Date: Test Eng Configur Mode:	; jineer: ation:			•					
	Chambe	r	Pre-ar	nplifer		Filter		Lii	mit
5	m Chamber B	-	T144 8449	B 🗸	Fil	ter 1	•	Part 24	•
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, (1850.2MHz)	V = = 1			N/				
3.700	-14.7	V	3.0	36.8	1.0	-50.5	-13.0	-37.5	
5.551	-16.9	<u>v</u>	3.0	36.3	1.0	-52.2	-13.0	-39.2	
	-17.9	H	3.0 3.0	36.8 36.3	1.0 1.0	-53.8	-13.0 -13.0	-40.8 -37.5	
3.700		п	3.0	30.3	1.0	-30.3	-13.0	-37.3	
5.551	-13.3		1				1	1	
5.551									
5.551	-13.5 1880.0MHz) -14.7	V	3.0	36.8	1.0	-50.4	-13.0	-37.4	
5.551 Mid Ch, (1880.0MHz)	V V	3.0 3.0	36.8 36.3	1.0 1.0	-50.4 -52.9	-13.0 -13.0	_37.4 _39.9	
5.551 Mid Ch, (3.760	1880.0MHz) 14.7							······	
5.551 Mid Ch, (3.760 5.640	1880.0MHz) -14.7 -17.6	V	3.0	36.3	1.0	-52.9	-13.0	-39.9	
5.551 Mid Ch, (3.760 5.640 3.760 5.640	1880.0MHz) -14.7 -17.6 -18.4 -16.5	V H	3.0 3.0	36.3 36.8	1.0 1.0	-52.9 -54.1	-13.0 -13.0	-39.9 -41.1	
5.551 Mid Ch, (3.760 5.640 3.760 5.640 High Ch, (1880.0MHz) -14.7 -17.6 -18.4 -16.5 1909.8MHz)	V H H	3.0 3.0 3.0	36.3 36.8 36.3	1.0 1.0 1.0	-52.9 -54.1 -51.8	-13.0 -13.0 -13.0	-39.9 -41.1 -38.8	
5.551 Mid Ch, (3.760 5.640 3.760 5.640 High Ch, (3.820	1880.0MHz) -14.7 -17.6 -18.4 -16.5 1909.8MHz) -14.6	V H H	3.0 3.0 3.0 3.0	36.3 36.8 36.3 36.7	1.0 1.0 1.0 1.0	-52.9 -54.1 -51.8 -50.3	-13.0 -13.0 -13.0 -13.0	-39.9 -41.1 -38.8 -37.3	
5.551 Mid Ch, (3.760 5.640 3.760 5.640 High Ch, (3.820 5.729	1880.0MHz) -14.7 -17.6 -18.4 -16.5 1909.8MHz) -14.6 -16.4	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	36.3 36.8 36.3 36.7 36.7 36.3	1.0 1.0 1.0 1.0 1.0	-52.9 -54.1 -51.8 -50.3 -51.7	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-39.9 -41.1 -38.8 -37.3 -38.7	
5.551 Mid Ch, (3.760 5.640 3.760 5.640 High Ch, (1880.0MHz) -14.7 -17.6 -18.4 -16.5 1909.8MHz) -14.6	V H H	3.0 3.0 3.0 3.0	36.3 36.8 36.3 36.7	1.0 1.0 1.0 1.0	-52.9 -54.1 -51.8 -50.3	-13.0 -13.0 -13.0 -13.0	-39.9 -41.1 -38.8 -37.3	

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CDMA2000 1xRTT PCS BAND

			Cor Above 1GH	mpliance Co Iz High Frec				ement	
Company Project # Date: Test Eng Configur Mode:	ineer: ation:				DE				
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
5r	n Chamber B	-	T145 8449B 🗸		Filter 1 🗸			Part 24	
				_	Filter	EIRP	1 1 14	Delta	Nata
f	SG reading	Ant. Pol.	Distance	Preamp			Limit		Notes
GHz	(dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch, 1	(dBm) 851.25MHz	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch, 1 3.703	(dBm) 851.25MHz -16.0	(H/V) V	(m) 3.0	(dB) 35.4	(dB)	(dBm) -50.4	(dBm) -13.0	(dB) -37.4	Notes
GHz Low Ch, 1 3.703 5.554	(dBm) 851.25MHz	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	Notes
GHz Low Ch, 1 3.703 5.554 3.703	(dBm) 851.25MHz -16.0 -15.1	(H/V) V V	(m) 3.0 3.0	(dB) 35.4 35.4	(dB) 1.0 1.0	(dBm) -50.4 -49.5	(dBm) -13.0 -13.0	(dB) -37.4 -36.5	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7	(H/V) V V H	(m) 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4	(dB) 1.0 1.0 1.0	(dBm) -50.4 -49.5 -49.1	(dBm) -13.0 -13.0 -13.0	(dB) -37.4 -36.5 -36.1	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1	(dBm) 351.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz	(H/V) V H H	(m) 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4	(dB) 1.0 1.0 1.0 1.0	(dBm) -50.4 -49.5 -49.1 -48.1	(dBm) -13.0 -13.0 -13.0 -13.0	(dB) -37.4 -36.5 -36.1 -35.1	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz -12.2	(H/V) V H H	(m) 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.3	(dB) 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 49.5 49.1 -48.1 -46.6	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0	(dB) -37.4 -36.5 -36.1 -35.1 -33.6	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760 5.640	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz -12.2 -12.9	(H/V) V H H V V V	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.4 35.4 35.3 35.4	(dB) 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 -49.5 -49.1 -48.1 	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) 37.4 36.5 36.1 35.1 33.6 34.3	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760 5.640 3.760	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz -12.2 -12.9 -14.7	(H/V) V V H H V V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.4 35.3 35.3 35.4 35.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 -49.5 -49.1 -48.1 	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) 37.4 36.5 36.1 35.1 33.6 34.3 36.1	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760 5.640 3.760	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz -12.2 -12.9	(H/V) V H H V V V	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.4 35.4 35.3 35.4	(dB) 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 -49.5 -49.1 -48.1 	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) 37.4 36.5 36.1 35.1 33.6 34.3	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760 5.640 5.640	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz -12.2 -12.9 -14.7	(H/V) V V H H V V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.4 35.3 35.3 35.4 35.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 -49.5 -49.1 -48.1 	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) 37.4 36.5 36.1 35.1 33.6 34.3 36.1	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760 5.640 3.760 5.640 High Ch, 1	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz -12.2 -12.9 -14.7 -12.6	(H/V) V V H H V V V H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.4 35.3 35.3 35.4 35.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 -49.5 -49.1 -48.1 	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) 37.4 36.5 36.1 35.1 33.6 34.3 36.1	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760 5.640 5.640	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 880.00MHz -12.2 -12.9 -14.7 -12.6 908.75MHz	(H/V) V V H H V V V H H	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.3 35.3 35.4 35.3 35.4 35.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 49.5 49.1 48.1 48.1 46.6 47.3 49.1 47.0	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) 37.4 36.5 36.1 35.1 33.6 34.3 36.1 34.0	Notes
GHz Low Ch, 1 3.703 5.554 3.703 5.554 Mid Ch, 1 3.760 5.640 3.760 5.640 High Ch, 1 3.818	(dBm) 851.25MHz -16.0 -15.1 -14.8 -13.7 -12.2 -12.9 -14.7 -12.6 908.75MHz -10.4	(H/V) V V H H V V V H H V V	(m) 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	(dB) 35.4 35.4 35.4 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3	(dB) 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(dBm) -50.4 49.5 49.1 48.1 48.1 46.6 47.3 49.1 47.0 44.7	(dBm) -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0 -13.0	(dB) 37.4 36.5 36.1 35.1 33.6 34.3 36.1 34.0 31.7	Notes

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CDMA2000 EVDO Rev A, PCS BAND

			Cor Above 1GH	mpliance Co z High Free				ement	
Company	<i>ı</i> :	LG ELECTRO	VICS						
Project #		12U14455							
Date:		06/17/12							
Test Eng	jineer:	MENGISTU MI	EKURIA						
- Configur	ation:	EUT with AC A	dapter and Earp	ohone					
Node:		TX, PCS Band	EVDO Rev A N	NODE					
	Chambe	r	Pre-an	nplifer		Filter		Lir	nit
		-		-					
5	m Chamber E	•	T145 8449E		FI	ter 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)	
ow Ch, 1	851.25MHz								
3.702	1.2	V	3.0	35.4	1.0	-33.1	-13.0	-20.1	
5.554	-10.6	V	3.0	35.4	1.0	_45.1	-13.0	-32.1	
3.702 5.554	3.4	H	3.0 3.0	35.4 35.4	1.0 1.0	-31.0	-13.0 -13.0	-18.0 -32.1	
.334	-10.7	п	3.0	33.4	1.0	-43.1	-13.0	-32.1	
Mid Ch, 1	880MHz								
	3.1	V	3.0	35.3	1.0	-31.2	-13.0	-18.2	
3.760	-1.4	V	3.0	35.4	1.0	-35.8	-13.0	-22.8	
5.640	6.4	Н	3.0	35.3	1.0	-28.0	-13.0	-15.0	
5.640 3.760	7 6 3	Н	3.0	35.4	1.0	_40.7	-13.0	-27.7	
5.640	-6.3								
5.640 3.760 5.640							1		
5.640 3.760 5.640 High Ch, '	1908.75MHz	V	3.0	35.3	1.0	-31.6	-13.0	-18.6	
5.640 3.760 5.640		V	3.0 3.0	35.3 35.4	1.0 1.0	-31.6	-13.0 -13.0	-18.6 -29.2	
5.640 5.760 5.640 High Ch, ² 5.818 5.726	1908.75MHz 2.7			35.3 35.4 35.3	1.0 1.0 1.0	-31.6 -42.2 -28.3	-13.0 -13.0 -13.0	-18.6 -29.2 -15.3	
5.640 3.760 5.640 High Ch, * 3.818	1908.75MHz 2.7 -7.8	V	3.0	35.4	1.0	_42.2	-13.0	-29.2	

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WCDMA REL 99, PCS BAND

			Co Above 1GH	mpliance Co Iz High Frec				ement	
Company Project # Date: Test Eng Configur Mode:	: ineer: ation:								
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
5	m Chamber B	-	T145 8449B 🗸		Filter 1 🗸			Part 24	
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1									
3.704	-17.7	V	3.0	35.4	1.0	-52.0	-13.0	-39.0	
5.557	-13.6	<u>v</u>	3.0	35.4	1.0	-48.0	-13.0	-35.0	
3.704	-17.5	H	3.0 3.0	35.4 35.4	1.0 1.0	51.9 46.2	-13.0 -13.0	-38.9 -33.2	
5 557	-11.7	п	5.0	33.4	1.0	-40.2	-13.0	-33.2	
5.557				•					
	880.0MHz			1 1					
Mid Ch, 1	880.0MHz -16.5	V	3.0	35.3	1.0	-50.8	-13.0	-37.8	
Mid Ch, 1 3.760		V V	3.0 3.0	35.3 35.4	1.0 1.0	-47.3	-13.0	-37.8 -34.3	
5.557 Mid Ch, 1 3.760 5.640 3.760	-16.5 -12.9 -16.0	V H	3.0 3.0	35.4 35.3	1.0 1.0	-47.3 -50.3	-13.0 -13.0	-34.3 -37.3	
Mid Ch, 1 3.760 5.640	-16.5 -12.9	V	3.0	35.4	1.0	-47.3	-13.0	-34.3	
Mid Ch, 1 3.760 5.640 3.760 5.640	-16.5 -12.9 -16.0 -11.2	V H	3.0 3.0	35.4 35.3	1.0 1.0	-47.3 -50.3	-13.0 -13.0	-34.3 -37.3	
Mid Ch, 1 3.760 5.640 3.760 5.640 High Ch, 1	-16.5 -12.9 -16.0 -11.2 907.6MHz	V H H	3.0 3.0 3.0	35.4 35.3 35.4	1.0 1.0 1.0	-47.3 -50.3 -45.7	-13.0 -13.0 -13.0	-34.3 -37.3 -32.7	
Mid Ch, 1 3.760 5.640 3.760 5.640 High Ch, 1 3.815	-16.5 -12.9 -16.0 -11.2 907.6MHz -10.3	V H H	3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0	-47.3 -50.3 -45.7 -44.7	-13.0 -13.0 -13.0 -13.0	-34.3 -37.3 -32.7 -31.7	
Mid Ch, 1 3.760 5.640 3.760 5.640 High Ch, 1 3.815 5.723	-16.5 -12.9 -16.0 -11.2 907.6MHz -10.3 -10.4	V H H V V	3.0 3.0 3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3 35.3 35.3 35.4	1.0 1.0 1.0 1.0 1.0	-47.3 -50.3 -45.7 -44.7 -44.9	-13.0 -13.0 -13.0 -13.0 -13.0 -13.0	-34.3 -37.3 -32.7 -31.7 -31.9	
Mid Ch, 1 3.760 5.640 3.760 5.640	-16.5 -12.9 -16.0 -11.2 907.6MHz -10.3	V H H	3.0 3.0 3.0 3.0	35.4 35.3 35.4 35.3	1.0 1.0 1.0 1.0	-47.3 -50.3 -45.7 -44.7	-13.0 -13.0 -13.0 -13.0	-34.3 -37.3 -32.7 -31.7	

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WCDMA HSDPA, PCS BAND

			Cor Above 1GH	mpliance Co z High Frec				ement	
Company Project # Date: Test Eng Configur Mode:	: ineer: ation:				DDE				
	Chambe	r	Pre-an	nplifer		Filter		Lii	mit
51	n Chamber B	3 -	T145 8449	B	Fil	ter 1	•	Part 24	•
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1				. ,	. ,		. ,		
3.704	-14.7	V	3.0	35.4	1.0	-49.0	-13.0	-36.0	
5.557	-13.6	V	3.0	35.4	1.0	-48.0	-13.0	-35.0	
3.704	-14.5	H	3.0	35.4	1.0	-48.9	-13.0	-35.9	
5.557	-11.7	H	3.0	35.4	1.0	-46.2	-13.0	-33.2	
Mid Ch, 1	880 0MHz								
	-15.5	V	3.0	35.3	1.0	-49.8	-13.0	-36.8	
	-14.9	v	3.0	35.4	1.0	-49.3	-13.0	-36.3	
3.760 5.640	-15.0	Н	3.0	35.3	1.0	-49.3	-13.0	-36.3	
3.760	-15.0		*	· · · · · · · · · · · · · · · · · · ·	4 0	-47.7	-13.0	-34.7	
3.760 5.640	-13.0	Н	3.0	35.4	1.0	-41.1			
3.760 5.640 3.760 5.640	-13.2	Н	3.0	35.4	1.0	-41.1			
3.760 5.640 3.760 5.640 High Ch, 1	-13.2 907.6MHz						40.0	~ ~ ~	
3.760 5.640 3.760 5.640 High Ch, 1 3.815	-13.2 907.6MHz -10.3	V	3.0	35.3	1.0	-44.7	-13.0	_31.7	
3.760 5.640 3.760 5.640 High Ch, 1 3.815 5.723	-13.2 907.6MHz -10.3 -13.4	V V	3.0 3.0	35.3 35.4	1.0 1.0	_44.7 _47.9	-13.0	-34.9	
3.760 5.640 3.760	-13.2 907.6MHz -10.3	V	3.0	35.3	1.0	-44.7			

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LTE BAND 13 QPSK

Test Engineer: MENGSITU MEKURIA Configuration: EUT WITH HEADSET AND AC A Mode: TX, LTE BAND MODE, 10MHz B Om Chamber Pre-amp T145 8449B T145 8449B f SG reading (dBm) Ant. Pol. (H/V) Distance (m) I BAND 13 (782.0 MHz) Image: Chamber B	ADAPTER BW, QPSK Dilifer Preamp (dB) 35.6 35.4 35.6		Filter ter 1 ERP (dBm)	Limit (dBm)	Li Part 27 Delta (dB)	mit • Notes
Project #: 12U14455 Date: 06/17/12 Test Engineer: MENGSITU MEKURIA Configuration: EUT WITH HEADSET AND AC A Mode: TX, LTE BAND MODE, 10MHz B Chamber Pre-amp 5m Chamber B Pre-amp f SG reading Ant. Pol. Distance Distance GHz (dBm) (H/V) (m) BAND 13 (782.0 MHz) RB1 0 1.555 22.333 2333 2333	BW, QPSK olifer Preamp (dB) 35.6 35.4 35.6	Filter (dB)	ter 1 ERP (dBm)	Limit (dBm)	Part 27 Delta (dB) 46.3	-
Date: 06/17/12 Test Engineer: MENGSITU MEKURIA Configuration: EUT WITH HEADSET AND AC A Mode: TX, LTE BAND MODE, 10MHz B Om Chamber Pre-amp T145 8449B T145 8449B f SG reading Ant. Pol. Distance I GHz (dBm) (H/V) (m) I BAND 13 (782.0 MHz) RB1 0 2.333 -20.1 V 3.0 Lists -20.5 H 3.0 2.333 -20.4 H 3.0	BW, QPSK olifer Preamp (dB) 35.6 35.4 35.6	Filter (dB)	ter 1 ERP (dBm)	Limit (dBm)	Part 27 Delta (dB) 46.3	-
Test Engineer: MENGSITU MEKURIA Configuration: EUT WITH HEADSET AND AC A Mode: TX, LTE BAND MODE, 10MHz B Ome TX, LTE BAND MODE, 10MHz B Ome T145 8449B f SG reading (dBm) Ant. Pol. (H/V) Distance (m) I BAND 13 (782.0 MHz) Image: Chamber B	BW, QPSK olifer Preamp (dB) 35.6 35.4 35.6	Filter (dB)	ter 1 ERP (dBm)	Limit (dBm)	Part 27 Delta (dB) 46.3	-
Configuration: EUT WITH HEADSET AND AC A Mode: TX, LTE BAND MODE, 10MHz E Chamber Pre-amp 5m Chamber B T145 8449B f SG reading Ant. Pol. (dBm) Distance I BAND 13 (782.0 MHz) (dBm) RB1 0 - 1.555 -24.7 V 2.333 -20.1 V 2.333 -20.4 H	BW, QPSK olifer Preamp (dB) 35.6 35.4 35.6	Filter (dB)	ter 1 ERP (dBm)	Limit (dBm)	Part 27 Delta (dB) 46.3	-
Mode: TX, LTE BAND MODE, 10MHz E Chamber Pre-amp 5m Chamber B T145 8449B f SG reading (dBm) Ant. Pol. (H/V) Distance (m) I BAND 13 (782.0 MHz) Image: Comparison of the second	BW, QPSK olifer Preamp (dB) 35.6 35.4 35.6	Filter (dB)	ter 1 ERP (dBm)	Limit (dBm)	Part 27 Delta (dB) 46.3	-
5m Chamber B T145 8449B f SG reading (dBm) Ant. Pol. (H/V) Distance (m) I BAND 13 (782.0 MHz) I I I I I RB1 0 I </td <td>▼ Preamp (dB) 35.6 35.4 35.6</td> <td>Filter (dB)</td> <td>ter 1 ERP (dBm)</td> <td>Limit (dBm)</td> <td>Part 27 Delta (dB) 46.3</td> <td>-</td>	▼ Preamp (dB) 35.6 35.4 35.6	Filter (dB)	ter 1 ERP (dBm)	Limit (dBm)	Part 27 Delta (dB) 46.3	-
f SG reading (dBm) Ant. Pol. (H/V) Distance (m) I BAND 13 (782.0 MHz)	▼ Preamp (dB) 35.6 35.4 35.6	Filter (dB)	ter 1 ERP (dBm)	Limit (dBm)	Part 27 Delta (dB) 46.3	-
f SG reading (dBm) Ant. Pol. (H/V) Distance (m) BAND 13 (782.0 MHz) RB1 0 1.555 -24.7 V 3.0 1.555 -20.1 V 3.0 2.333 -20.5 H 3.0 2.333	(dB) 35.6 35.4 35.6	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB) -46.3	Notes
f SG reading (dBm) Ant. Pol. (H/V) Distance (m) BAND 13 (782.0 MHz) RB1 0 1.555 -24.7 V 3.0 2.333 -20.1 V 3.0 1.555 -20.5 H 3.0 2.333 -20.4 H 3.0	(dB) 35.6 35.4 35.6	(dB) 1.0	(dBm) -59.3	(dBm) -13.0	(dB) -46.3	Notes
GHz (dBm) (H/V) (m) BAND 13 (782.0 MHz)	(dB) 35.6 35.4 35.6	(dB) 1.0	(dBm) -59.3	(dBm) -13.0	(dB) -46.3	Notes
BAND 13 (782.0 MHz) RB1 0	35.6 35.4 35.6	1.0	-59.3	-13.0	-46.3	
RB1 0 V 3.0 1.555 -24.7 V 3.0 2.333 -20.1 V 3.0 1.555 -20.5 H 3.0 2.333 -20.4 H 3.0	35.4 35.6					
1.555 -24.7 V 3.0 2.333 -20.1 V 3.0 1.555 -20.5 H 3.0 2.333 -20.4 H 3.0	35.4 35.6					
2.333 -20.1 V 3.0 1.555 -20.5 H 3.0 2.333 -20.4 H 3.0	35.4 35.6					
1.555 -20.5 H 3.0 2.333 -20.4 H 3.0	35.6	1.0			-41.5	
2.333 -20.4 H 3.0		1.0	-54.5	-13.0 -13.0	-41.3 -42.1	
	35.4	1.0	-54.9	-13.0	-42.1	
RB 1 49						
1.573 -23.4 V 3.0	35.6	1.0	-58.0	-13.0	-45.0	
2.359 -20.1 V 3.0	35.4	1.0	-54.5	-13.0	-41.5	
1.573 -22.9 H 3.0	35.6	1.0	-57.4	-13.0	-44.4	
2.358 -21.5 H 3.0	35.4	1.0	55.9	-13.0	-42.9	
RB 25 12						
1.565 -25.1 V 3.0	35.6	1.0	-59.7	-13.0	-46.7	
2.347 -20.1 V 3.0	35.4	1.0	-54.5	-13.0	-41.5	
1.565 -23.4 Н 3.0	35.6	1.0	-58.0	-13.0	-45.0	
2.347 -21.5 Н 3.0	35.4	1.0	-55.9	-13.0	-42.9	
RB 50 0 1.564 -24.4 V 3.0	35.6	1.0	-59.0	-13.0	-46.0	
1.364 -24.4 V 3.0 2.346 -20.1 V 3.0	35.6	1.0	-59.0	-13.0 -13.0	-46.0 -41.5	
2.346 -20.1 V 3.0	35.6	1.0	-54.5	-13.0	-41.5 -45.0	
2.346 -21.5 H 3.0	35.4	1.0	-55.9	-13.0	-42.9	
			7		^	

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LTE QPSK Radiated Measurement in 1559 - 1610MHz Band

			Co Above 1GH	mpliance Ce Iz High Freq				ement	
Company:		LG ELECTRO	VICS						
Project #:		12U14455							
Date:		06/17/12							
lest Engi	neer:	MENGISTU MI	EKURIA						
Configura	tion:	EUT with HEA	DSET AND AC	Adapter					
/lode:		TX, LTE Band	13						
		782MHz, QPS	K, 10MHz BW I	MODE					
	Chambe	-	Pre-an	nnlifer		Filter		Lin	nit
	Chambe		110 41	inpinior					
50			T145 8449	•	Fil	ter 1	•	Part 27	•
5m	n Chamber B			•	Fil		•	Part 27	•
5n f		•		•	Filter		• Limit	Part 27 Delta	Notes
	n Chamber B	•	T145 8449	B T		ter 1			•
f GHz 782MHz), F	SG reading (dBm) (dPSK	Ant. Pol. (H/V)	T145 8449 Distance (m)	B ▼ Preamp (dB)	Filter (dB)	ter 1 EIRP (dBm)	Limit (dBm)	Delta (dB)	•
f GHz 782MHz), F .559	SG reading (dBm) 881 0, QPSK -23.6	Ant. Pol. (H/V)	T145 8449 Distance (m) 3.0	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	•
f GHz 782MHz), F	SG reading (dBm) (dPSK	Ant. Pol. (H/V)	T145 8449 Distance (m)	B ▼ Preamp (dB)	Filter (dB)	ter 1 EIRP (dBm)	Limit (dBm)	Delta (dB)	•
f GHz 782MHz), F .559 .559	SG reading (dBm) 881 0, QPSK 23.6 -25.0	Ant. Pol. (H/V)	T145 8449 Distance (m) 3.0	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	•
f GHz 782MHz), F .559 .559 782MHz), F	SG reading (dBm) (dBm) (23.6 -25.0 (25.0 (25.0) (25	Ant. Pol. (H/V)	T145 8449	Preamp (dB)	Filter (dB)	ter 1 EIRP (dBm) -58.2 -59.6	Limit (dBm)	Delta (dB) -18.2 -19.6	•
f GHz 782MHz), F .559 .559	SG reading (dBm) 881 0, QPSK 23.6 -25.0	Ant. Pol. (H/V) V H	T145 8449 Distance (m) 3.0	Preamp (dB) 35.6 35.6	Filter (dB) 1.0 1.0	EIRP (dBm)	Limit (dBm) -40.0	Delta (dB)	•
f GHz 782MHz), F .559 .559 782MHz), F .600 .600	SG reading (dBm) 8B1 0, QPSK -23.6 -25.0 2B1 49, QPSK -26.2 -25.5	V V	T145 8449	B • Preamp (dB) 35.6 35.6 35.6	Filter (dB)	ter 1 EIRP (dBm) -58.2 -59.6 -60.8	Limit (dBm) -40.0 -40.0	Delta (dB) -18.2 -19.6 -20.8	•
f GHz 782MHz), F .559 .559 782MHz), F .600 .600 782MHz), F	SG reading (dBm) 8B1 0, QPSK -23.6 -25.0 2B1 49, QPSK -26.2 -25.5 2B25 12, QPSK	V H	T145 8449 Distance (m) 3.0 3.0 3.0 3.0	Preamp (dB) 35.6 35.6 35.6 35.6	Filter (dB) 1.0 1.0 1.0	EIRP (dBm) -58.2 -59.6 -60.8 -60.1	Limit (dBm) -40.0 -40.0 -40.0 -40.0	Delta (dB) -18.2 -19.6 -20.8 -20.1	•
f GHz 782MHz), F .559 .559 782MHz), F .600 .600 782MHz), F .564	SG reading (dBm) 881 0, QP SK -23.6 -25.0 881 49, QP SK -26.2 -25.5 8825 12, QP SK -25.6	V H	T145 8449	Preamp (dB) 35.6 35.6 35.6 35.6 35.6	Filter (dB) 1.0 1.0 1.0 1.0	EIRP (dBm) -58.2 -59.6 -60.8 -60.1 -60.2	Limit (dBm) -40.0 -40.0 -40.0 -40.0 -40.0	Delta (dB) -18.2 -19.6 -20.8 -20.1 -20.2	•
f GHz 782MHz), F .559 .559 782MHz), F .600 .600 782MHz), F	SG reading (dBm) 8B1 0, QPSK -23.6 -25.0 2B1 49, QPSK -26.2 -25.5 2B25 12, QPSK	V H	T145 8449 Distance (m) 3.0 3.0 3.0 3.0	Preamp (dB) 35.6 35.6 35.6 35.6	Filter (dB) 1.0 1.0 1.0	EIRP (dBm) -58.2 -59.6 -60.8 -60.1	Limit (dBm) -40.0 -40.0 -40.0 -40.0	Delta (dB) -18.2 -19.6 -20.8 -20.1	•
f GHz 782MHz), F .559 .559 782MHz), F .600 .600 782MHz), F .564 .564	SG reading (dBm) (dBm) (23.6 -25.0 (25.0 (25.5) (25.5) (25.5) (25.5) (25.6) -25.6 -25.6 (22.0)	V H	T145 8449	Preamp (dB) 35.6 35.6 35.6 35.6 35.6	Filter (dB) 1.0 1.0 1.0 1.0	EIRP (dBm) -58.2 -59.6 -60.8 -60.1 -60.2	Limit (dBm) -40.0 -40.0 -40.0 -40.0 -40.0	Delta (dB) -18.2 -19.6 -20.8 -20.1 -20.2	•
f GHz 782MHz), F .559 .559 782MHz), F .600 .600 782MHz), F .564 .564	SG reading (dBm) 881 0, QP SK -23.6 -25.0 881 49, QP SK -26.2 -25.5 8825 12, QP SK -25.6	V H	T145 8449	Preamp (dB) 35.6 35.6 35.6 35.6 35.6	Filter (dB) 1.0 1.0 1.0 1.0	EIRP (dBm) -58.2 -59.6 -60.8 -60.1 -60.2	Limit (dBm) -40.0 -40.0 -40.0 -40.0 -40.0	Delta (dB) -18.2 -19.6 -20.8 -20.1 -20.2	•

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LTE BAND 13 16QAM

			Cor Above 1GH	mpliance Ce z High Freq				ement	
Company:	:	LG ELECTRO	NICS						
Project #:		12U14455							
Date:		06/17/12							
Test Engi	ineer:	MENGISTU M	EKURIA						
Configura	ation:	EUT WITH HE	ADSET AND AC	CADAPTER					
lode:		TX, LTE BAND	MODE, 10MH	z BW, 16QAM					
	Chambe	r	Pre-amplifer			Filter		Lir	mit
5n	n Chamber B	•	T145 8449	B	Fil	ter 1	•	Part 27 🗸	
f	SG reading		Distance	Preamp	Filter	ERP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	<u>(m)</u>	(dB)	(dB)	(dBm)	(dBm)	(dB)	
	(82.0 MHz)								
RB1 0	-25.3	V	3.0	35.6	1.0	-59.9	-13.0	-46.9	
2.333	-25.5	V	3.0	35.0 35.4	1.0	-59.9	-13.0	-40.9	
1.564	-21.0	V H	3.0	35.6	1.0	-50.2	-13.0	-43.2	
2.333	-23.5	H	3.0	35.4	1.0	-57.9	-13.0	-44.9	
	2010								
RB 1 49									
.555	-23.9	V	3.0	35.6	1.0	-58.5	-13.0	-45.5	
2.335	-20.8	V	3.0	35.4	1.0	-55.2	-13.0	-42.2	
.555	-22.0	H	3.0	35.6	1.0	-56.6	-13.0	-43.6	
2.335	-22.5	H	3.0	35.4	1.0	-56.9	-13.0	-43.9	
RB 25 12									
1.565	-25.0	V	3.0	35.6	1.0	-59.6	-13.0	-46.6	
2.347	-23.0	V	3.0	35.4	1.0	-56.2	-13.0	-40.0	
1.565	-21.0	V H	3.0	35.6	1.0	-50.2	-13.0	-43.2	
2.347	-22.5	H	3.0	35.4	1.0	-56.9	-13.0	-43.9	
RB 50 0	210		7 2 4	25.0	4.0		42.0		
504	-24.8	V V	3.0	35.6	1.0	-59.4	-13.0	-46.4	
	-21.3	V H	3.0	35.4 35.6	1.0 1.0	-55.7	-13.0 -13.0	-42.7 -44.5	
.346	7 22 0		3.0			-57.5	-13.0 -13.0		
.346 .564	-23.0		20	25 4					
.564 2.346 .564 2.346	-23.0 -23.5	Н	3.0	35.4	1.0	57.9	-13.0	-44.9	

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LTE 16QAM Radiated Measurement in 1559 - 1610MHz Band

			Cor Above 1GH	mpliance Co Iz High Frec				ement	
Company	:	LG ELECTRO	NICS						
Project #		12U14455							
Date:		06/17/12							
Test Eng	ineer:	MENGISTU M	EKURIA						
Configura	ation:	EUT with HEA	DSET AND AC	Adapter					
Mode:		TX, LTE Band	13						
		782MHz, 16Q	AM, 10MHz BW	MODE					
	Chambe	r	Pre-an	nplifer		Filter			Limit
5r	n Chamber B	· •	T145 8449	B 🚽	Fil	Filter 1		Part 27	7 🚽
	00		Distance	B				Dalla	N - (
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
		(110.0			(15)	(15.)		(15)	
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
(782MHz),	RB1 0, QPSK				(/		(dBm)	(/	
(782MHz), 1.596	RB1 0, QPSK -26.1	v	3.0	35.6	1.0	-60.7	(dBm) -40.0	-20.7	
(782MHz),	RB1 0, QPSK				(/		(dBm)	(/	
(782MHz), 1.596 1.596	RB1 0, QPSK -26.1	V H	3.0	35.6	1.0	-60.7	(dBm) -40.0 -40.0	-20.7	
(782MHz), 1.596 1.596 (782MHz), 1.560	RB1 0, QP SK -26.1 -25.6 RB1 49, QP SK -26.4	V H V	3.0 3.0 3.0	35.6 35.6 35.6	1.0 1.0 1.0	-60.7 -60.2 -61.0	(dBm) -40.0 -40.0	-20.7 -20.2 -21.0	
(782MHz), 1.596 1.596 (782MHz),	RB1 0, QPSK -26.1 -25.6 RB1 49, QPSK	V H	3.0 3.0	35.6 35.6	1.0 1.0	-60.7 -60.2	(dBm) -40.0 -40.0	-20.7 -20.2	
(782MHz), 1.596 1.596 (782MHz), 1.560 1.560	RB1 0, QPSK -26.1 -25.6 RB1 49, QPSK -26.4 -25.2	V H V	3.0 3.0 3.0	35.6 35.6 35.6	1.0 1.0 1.0	-60.7 -60.2 -61.0	(dBm) -40.0 -40.0	-20.7 -20.2 -21.0	
(782MHz), 1.596 1.596 (782MHz), 1.560 1.560 (782MHz),	RB1 0, QP SK -26.1 -25.6 RB1 49, QP SK -26.4	V H V	3.0 3.0 3.0	35.6 35.6 35.6	1.0 1.0 1.0	-60.7 -60.2 -61.0	(dBm) -40.0 -40.0	-20.7 -20.2 -21.0	
(782MHz), 1.596 1.596 (782MHz), 1.560 1.560	RB1 0, QP SK 26.1 25.6 RB1 49, QP SK 26.4 25.2 RB25 12, QP SK	V H V H	3.0 3.0 3.0 3.0 3.0	35.6 35.6 35.6 35.6 35.6	1.0 1.0 1.0	-60.7 -60.2 -61.0 -59.8	(dBm) -40.0 -40.0 -40.0 -40.0	-20.7 -20.2 -21.0 -19.8	
(782MHz), 1.596 1.596 (782MHz), 1.560 1.560 (782MHz), 1.580 1.580	RB1 0, QP SK -26.1 -25.6 RB1 49, QP SK -26.4 -25.2 RB25 12, QP SK -25.5 -24.8	V H V H	3.0 3.0 3.0 3.0 3.0 3.0	35.6 35.6 35.6 35.6 35.6 35.6	1.0 1.0 1.0 1.0	-60.7 -60.2 -61.0 -59.8 -60.1	(dBm) -40.0 -40.0 -40.0 -40.0 -40.0	-20.7 -20.2 -21.0 -19.8 -20.1	
(782MHz), 1.596 (782MHz), 1.560 (782MHz), 1.560 (782MHz), 1.580 (782MHz),	RB1 0, QP SK -26.1 -25.6 RB1 49, QP SK -26.4 -25.2 RB25 12, QP SK -25.5 -24.8 RB50 0, QP SK	V H V H	3.0 3.0 3.0 3.0 3.0 3.0 3.0	35.6 35.6 35.6 35.6 35.6 35.6 35.6	1.0 1.0 1.0 1.0 1.0 1.0	-60.7 -60.2 -61.0 -59.8 -60.1 -59.4	(dBm) -40.0 -40.0 -40.0 -40.0 -40.0 -40.0	-20.7 -20.2 -21.0 -19.8 -20.1 -19.4	
(782MHz), 1.596 1.596 (782MHz), 1.560 1.560 (782MHz), 1.580 1.580	RB1 0, QP SK -26.1 -25.6 RB1 49, QP SK -26.4 -25.2 RB25 12, QP SK -25.5 -24.8	V H V H	3.0 3.0 3.0 3.0 3.0 3.0	35.6 35.6 35.6 35.6 35.6 35.6	1.0 1.0 1.0 1.0	-60.7 -60.2 -61.0 -59.8 -60.1	(dBm) -40.0 -40.0 -40.0 -40.0 -40.0	-20.7 -20.2 -21.0 -19.8 -20.1	

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