

FCC CFR47 PART 15 SUBPART C INDUSTRY CANADA RSS-210 ISSUE 8

C2PC CERTIFICATION TEST REPORT

FOR

GSM/CDMA/WCDMA/LTE Phone + Bluetooth & WLAN (2.4GHz & 5GHz) and NFC

MODEL NUMBER: LG-D820, LGD820 and D820

FCC ID: ZNFD820 IC: 2703C-D820

REPORT NUMBER: 13U15778-4, Revision C

ISSUE DATE: SEPTEMBER 23, 2013

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

> Prepared by UL VERIFICATION SERVICES INC. 47173 BENICIA STREET FREMONT, CA 94538, U.S.A. TEL: (510) 771-1000 FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Revisions Revisions Revision	
8/21/13 Initial Issue P. Kim	
A 9/12/13 Updated Section 5.4 Software and Firmware AAument	ado
B9/17/13Updated Section 8.2 investigate frequency range and 5.2 target power.P. Kim	
C 9/23/13 Updated the power summary table P. Kim	

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1. ATTESTATION OF TEST RESULTS

	STANDARD	TEST RESULTS
	APPLICABLE STANDARDS	
DATE TESTED:	AUGUST 2 – AUGUST 9, 2013	
SERIAL NUMBER:	(0021EDF624E7C39B) CONDUCTEE (0021E9AAE056EE83) RADIATED)
MODEL:	LG-D820, LGD820 and D820	
EUT DESCRIPTION:	GSM/CDMA/WCDMA/LTE Phone + E WLAN (2.4GHz & 5GHz) and NFC	Bluetooth &
COMPANY NAME:	LG ELECTRONICS MOBILECOMM U 1000 SYLVAN AVENUE ENGLEWOOD CLIFFS, NEW JERSE	J.S.A., INC. Y 07632

CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

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

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

Approved & Released For UL Verification Services Inc. By:

Mi hi

PHILIP KIM WISE PROGRAM MANAGER UL Verification Services Inc. Tested By:

STEVEN TRAN WISE LAB TECHNICIAN UL Verification Services Inc.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <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 LTE Phone Bluetooth, WLAN(2.4GHz & 5GHz) and NFC.

5.2. OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

Frequency Range	Mode	Output Power	Output Power
(MHz)		(dBm)	(mW)
2412 - 2462	802.11b	19.22	83.56
2412 - 2462	802.11g	19.21	83.37
2412 - 2462	802.11n HT20	18.56	71.78
2412 - 2462	802.11ac HT20	18.56	71.78

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antenna, with a maximum gain of -1.96 dBi.

5.4. SOFTWARE AND FIRMWARE

Android OS Version: 3.40-gbab8bca-00002-gd1a7716. Kernel Version: M8974A-0.0.19.0.05.

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5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X,Y,Z, it was determined that Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y orientation.

Worst-case data rates as provided by the client were: Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps 802.11g mode: 6 Mbps 802.11a mode: 6 Mbps 802.11n HT20mode: MCS0

Radiated emissions for EUT with antenna was performed and passed; therefore, antenna port spurious was not performed.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List						
Description Manufacturer Model Serial Number FCC ID						
AC Adapter	LG	MCS.01WR	EAY62768913	N/A		
Earphone	QuadBeat	LE 410	EAB62729001	N/A		

I/O CABLES

	I/O Cable List					
Cable	Port	# of identical	Connector	Cable Type	Cable	Remarks
No		ports	Туре		Length (m)	
1	DC Power	1	Mini-USB	Shielded	1.2m	N/A
2	Audio	1	Mini-Jack	Unshielded	1m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

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REPORT NO: 13U15778-4C FCC ID: ZNFD820

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 Date	Cal Due
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB1	C01016	08/14/13	08/14/14
Antenna, Horn, 18 GHz	ETS	3117	C01006	12/11/12	12/11/13
Antenna, Horn, 25.5 GHz	ARA	MWH-1826/B	C00980	11/14/12	11/14/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	01/16/13	01/16/14
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	10/22/12	10/22/13
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	10/21/12	10/21/13
PXA SIGNAL ANALYZER	Agilent / HP	N9030A	N/A		05/09/14
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	08/08/12	08/15/14
LISN, 30 MHz	FCC	50/250-25-2	C00626	01/14/13	01/14/14
Reject Filter, 2.4GHz	Micro-Tronics	BRM50702	N02684	CNR	CNR

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7. MEASUREMENT METHODS

KDB 558074 Measurement Procedure PK2 is used for power and PKPSD is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

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8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

<u>LIMITS</u>

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to \geq 3XRBW MHz ~ 3MHz for peak measurements and as applicable for average measurements.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

To compute the Duty Cycle Correction Factor this equation was used:10 * log (1/Duty Cycle). The DCCF was added to the Reference Offset.

2.4G	DC	DC %	DCCF
11b	0.9936	99.36	0.028
11g	0.947005	94.70046083	0.236
11n	0.938272	93.82716049	0.277
11ac	0.731383	73.13829787	1.359

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Please note that Peak and Average plots were taken in 2 different chambers. Due to that the reference offset values are not the same.

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8.2. TRANSMITTER ABOVE 1 GHz

8.3. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)

			Mkr1 2.4	84 259 0 GHz	1
e f 100.3 dB µV [⊃] eak	#Atten 0 dB			52.25 dBµ∨	Certer Freq 2.49175000 GHz
99 3/					Start Freq 2.48350000 GHz
.2					Stop Freq 2.5000000 GHz
l.0 3μV ↔	WWW.com.	erkanslighted and a surficial	Dadhaalaa fii farhiaadall	alarmanishi shikariya nika	CF Ster 1.6500000 MHz <u>Auto Ma</u>
1 V2 3 FC AA					Freq Clfset 0.00000000 Hz
l): Tun Np					Signal Track ^{On <u>C</u>:}
art 2.483 500 0 (GHz #VI	DW 2 MH-	Stop 2.5	00 000 0 GHz	



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			Mkr1 2.48	3 929 0 GHz	<u>است</u> ار
Ref 100.3 dBµV	#Atten 0 dB			52.14 dBμV	Center Freq 2.49175000 GHz
og 0 B/					Start Freq 2.48350000 GHz
1.2 B					Stop Freq 2.5000000 GHz
4.0 BµV ♦ FAvg	tta an	let backst propagation of	ada,	สุราณกับสีเหล่าหมู่ไขมีสีมุมงารเกาส์ _ป ม	CF Step 1.65000000 MHz <u>Auto Ma</u>
51 V2 53 FC AA					Freq Clfset 0.00000000 Hz
(1): Tun Wp					Signal Track
Start 2.483 500 0 G	Hz #V/		Stop 2.50	0 000 0 GHz	



HARMONICS AND SPURIOUS EMISSIONS

Low Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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Trace Markers

M ar ker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.517	40.29	PK	34.7	-31	43.99	53.97	-9.98	74	-30.01	0-360	100	н
2	8.293	37.29	PK	36	-26.9	46.39	53.97	-7.58	74	-27.61	0-360	100	н

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Mid Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

(GHz)	Reading (dBuV)	Det	AF T120 (dB/m)	r/Pad (dB)	Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	(Degs)	(cm)	Polarit
6.651	37.89	PK	35.8	-29.1	44.59	53.97	-9.38	74	-29.41	0-360	100	V
8.691	37.84	PK	36.1	-26	47.94	53.97	-6.03	74	-26.06	0-360	100	V
-	6.651 8.691	(d B uV) 6.651 37.89 8.691 37.84	(dBuV) 6.651 37.89 PK 8.691 37.84 PK	(dBuV) (dB'm) 6.651 37.89 PK 35.8 8.691 37.84 PK 36.1	(dBuV) (dB/ (dB/ (dB/ (dB/ (dB/ (dB/ (dB/ (dB/	(dBuV) (dB/V/m) (dB/V/m) 6.651 37.89 PK 35.8 -29.1 44.59 8.691 37.84 PK 36.1 -26 47.94	(dBuV) (dBuV) (dBuV/m) (dBuV/m) (dBuV/m) 6.6.651 37.89 PK 35.8 -29.1 44.59 53.97 8.691 37.84 PK 36.1 -26 47.94 53.97	(dBuV) (dB/m) (dB/m) (dB/m) (dB/m) 6.6.61 37.89 PK 35.8 -29.1 44.59 53.97 -9.38 8.691 37.84 PK 36.1 -26 47.94 53.97 -6.03	(dBuV) (dB/m) (dB/m)<	(dBuV) (dBuV) (dBuV/m) (dBuV/m) (dBuV/m) (dBuV/m) 6.6.61 37.89 PK 35.8 -29.1 44.59 53.97 -9.38 74 -29.41 8.691 37.84 PK 36.1 -26 47.94 53.97 -6.03 74 -29.41	(dBuV) (dB) (dBuV/m) ((dBuv) (dB) (dBuv)

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High Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M arker	(GHz)	Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	5.6 17	40	PK	34.8	-30.8	44	53.97	-9.97	74	-30	0-360	201	v
4	6.701	38.52	PK	35.8	-29	45.32	53.97	-8.65	74	-28.68	0-360	201	v
K - Peak (detector												

8.4. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)

			Mkr1 2.4	91 948 0 GHz	Contex From
Ref 100.3 dBµV Peak	#Atten 0 dB			51.53 dBµ∨	2.49175000 GHz
og 0 B/					Start Freq 2.48350000 GHz
1.2 B					Stop Freq 2.5000000 GHz
4.0 BμV FAvg	MARINE LAURE MARINE	l ¢ hepiletet	lipson of the first france of the state	ารถึงเสาะสาวสารแล้วงปลุ่มหัว	CF Step 1.6500000 MHz <u>Auto Ma</u>
1 V2 3 FC AA					Freq Ctfset 0.00000000 Hz
(1): Tun Swp					Signal Track ^{On <u>C</u>tt}
itart 2.483 500 0 G Res BW 1 MHz	Hz #V	BW 3 MHz	Stop 2.5 Sweep 1	00 000 0 GHz ms (1001 pts)	



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	-		Mkr1 2	485 546 0 GHz	
et 100.3 dBµV Peak	#Atten 0 dB			51.85 dBµV	Center Freq 2.49175000 GHz
og D B/					Start Freq 2.48350000 GHz
I.2					Stop Freq 2.5000000 GHz
4.0 BμV =Avg	ana ana ana ang ang ang ang ang ang ang	rajúratura terativana	เรื่อที่เคร่ไรร่างจุรุงที่เครื่อง	Ortoonleave Jacobart	CF Ste 1.6500000 MHz <u>Auto M</u>
1 V2 3 FC AA					Freq Offset 0.00000000 Hz
1): Tun wp					Signal Track
tart 2.483 500 0 G	iHz		Stop 2.	500 000 0 GHz	



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HARMONICS AND SPURIOUS EMISSIONS

Low Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M arker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	7.169	38.59	PK	35.7	-29.5	44.79	53.97	-9.18	74	-29.21	0-360	101	V
4	8.946	36.04	PK	36.3	-26.2	46.14	53.97	-7.83	74	-27.86	0-360	200	V
K - Peak	detector												

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Mid Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M arker	Frequency (GHz)	Meter Reading	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarit
	 '	(dBuV)	 '	 '		(dBuV/m)	───	ļ/	 	↓	ب ا	 '	
2	7.761	37.57	PK	35.9	-28.5	44.97	53.97	-9	74	-29.03	0-360	100	V
3	9.625	35.08	PK	37.3	-25.1	47.28	53.97	-6.69	74	-26.72	0-360	100	v
K - Peak	detector	35.06	Pr	37.3	-25.1	47.20	53.97	-0.09	7**	-26.72	0-360	100	

High Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.



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8.5. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)

						M	cr1 2.48	3 830 0	GHz	1
ef 100.3 Peak	dBμV	#Atten	0 dB					51.41	dBµV	Center Freq 2.49175000 GHz
og _										
) B/										Start Freq 2.48350000 GHz
list 1.2 – B –										Stop Freq
										2.50000000 GHz
BμV ¢	Indensonal (America	in the states	un fondilien daaffen	had digle a deb by by by	al the global of	harren and	(4,1.1 /1 /1/1	,	<u>anaki bi</u> na	CF Ste 1.65000000 MHz Auto M
1 V2 3 FC										Freq Clifset
AA										
Tun										Signal Track On <u>O</u>
·										
art 2.48	33 500 0 GH	z				S	top 2.50	0 000 0	GHz	



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-1 400 2 dB \/			Mkr1 2.49	2 806 0 GHz	Certer Freq
Peak	#Atten U db			52.04 dbµV	2.49175000 GHz
og 0 0 B/					Start Freq 2.48350000 GHz
1.2 B					Stop Freq 2.5000000 GHz
4.0 ΙΒμV FΑνg	ri n'ininina maripana manana		dormal franciadada	जन्मस्य विद्यालय	CF Step 1.65000000 MHz <u>Auto Ma</u>
61 V2 63 FC					Freq Offset 0.00000000 Hz
(1): Tun Swp					Signal Track ^{On <u>C</u>i}
Start 2.483 500 0 G	GHz #VBW	3 MHz	Stop 2.50	0 000 0 GHz	



HARMONICS AND SPURIOUS EMISSIONS

Low Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M arker	(GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	4.365	40.5	PK	33.6	-31.1	43	53.97	-10.97	74	-31	0-360	100	V
4	9.71	35.42	PK	37.4	-25.4	47.42	53.97	-6.55	74	-26.58	0-360	100	V
(- Peak (letector												

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Mid Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M arker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.883	41.81	PK	31	-24.8	48.01	53.97	-5.96	74	-25.99	0-360	101	V
5	7.053	37.77	PK	35.7	-28.6	44.87	53.97	-9.1	74	-29.13	0-360	200	V
6	13.703	37.19	PK	39.1	-26.2	50.09	-	-	74	-23.91	0-360	200	V
8	13.651	30.38	PK	39.1	-26.4	43.08	53.97	-10.89	-	-	0-360	201	v
ζ-Peakα	detector												

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High Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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Trace Markers

arker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.357	42.7	PK	29.6	-25.5	46.8	53.97	-7.17	74	-27.2	0-360	101	v
5	4.732	40.2	PK	34.1	-31	43.3	53.97	-10.67	74	-30.7	0-360	101	v
6	11.873	35.99	PK	39.3	-24.7	50.59		-	74	-23.41	0-360	201	v
8	11.888	28.94	PK	39.3	-24.4	43.84	53.97	-10.13			0-360	101	V
- Peak	detector												

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8.6. TX ABOVE 1 GHz 802.11ac VHT20 MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)





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AUTHORIZED BANDEDGE (HIGH CHANNEL)





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	-		Mkr1 2	484 539 5	GH7	
et 100.3 dBµV Peak	#Atten 0 dB		50.79 dBµ∨			Center Freq 2.49175000 GHz
og 0 B/						Start Freq 2.48350000 GHz
I						Stop Freq 2.5000000 GHz
4.0 BμV FAvg	netstyre that have been by by have a set of	ratelyingula, interdencies	เป็นโพรงร่างสาวอาเม	l-usipetin haven	un un an	CF Ste 1.6500000 MHz <u>Auto M</u>
1 V2 3 FC AA						Freq Ctfset 0.00000000 Hz
t): Tun wp						Signal Track ^{On <u>C</u>}
tart 2.483 500 0 GH	Hz		Stop 2	.500 000 0	GHz	



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HARMONICS AND SPURIOUS EMISSIONS

Low Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M arker	(GHz)	Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.553	40.94	PK	28.4	-25.3	44.04	53.97	-9.93	74	-29.96	0-360	101	V
6	5.922	39.19	PK	35.3	-30.5	43.99	53.97	-9.98	74	-30.01	0-360	200	V
7	6.672	38.21	PK	35.8	-28.9	45.11	53.97	-8.86	74	-28.89	0-360	200	v
10	14.832	30.28	PK	40	-25.8	44.48	53.97	-9.49	74	-29.52	0-360	201	V
- Peak	detector												

Mid Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M ar ker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	2.007	42.19	PK	31.6	-24.6	49.19	53.97	-4.78	74	-24.81	0-360	201	V
5	4.492	39.87	РК	33.9	-31.9	4187	53.97	-12.1	74	-32.13	0-360	101	٧
8	11.94	29.07	PK	39.3	-24.1	44.27	53.97	-9.7	74	-29.73	0-360	101	V
≺ - Peak o	detector												

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High Channel



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

M ar ker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cbl/Flt r/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	1.994	40.06	PK	31.6	-24.7	46.96	53.97	-7.01	74	-27.04	0-360	201	V
6	4.754	40.08	PK	34.1	-313	42.88	53.97	-11.09	74	-31.12	0-360	201	V
7	7.354	37.22	PK	35.7	-28.2	44.72	53.97	-9.25	74	-29.28	0-360	201	v
10	14.942	29.71	PK	40.1	-26.2	43.61	53.97	-10.36	74	-30.39	0-360	201	V
(- Peak (detector												

8.7. WORST-CASE BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



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SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



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Below 1G Data

Frequency	Meter	Det	AF T477 (dB/m)	Amp/Cbl/Fltr/Pad	Corrected	QPk Limit	Margin	Azimuth	Height	Polarity
(MHz)	Reading			(dB)	Reading	(dBuV/m)	(dB)	(Degs)	(cm)	
	(dBuV)				(dBuV/m)					
123.245	30.96	PK	13.8	-26.7	18.06	43.52	-25.46	0-360	200	Н
156.4375	35.77	PK	12.3	-26.5	21.57	43.52	-21.95	0-360	200	Н
88.5225	35.88	PK	7.6	-27	16.48	43.52	-27.04	0-360	100	V
92.1775	34.39	PK	8.2	-26.9	15.69	43.52	-27.83	0-360	100	V
100.295	33.09	PK	10.4	-26.9	16.59	43.52	-26.93	0-360	100	V
199.065	32.09	PK	12.3	-26.1	18.29	43.52	-25.23	0-360	100	V
352.6	30.33	PK	14.5	-25.3	19.53	46.02	-26.49	0-360	100	Н
461.6	35.37	PK	16.7	-24.7	27.37	46.02	-18.65	0-360	400	Н
461.6	34.89	PK	16.7	-24.7	26.89	46.02	-19.13	0-360	200	V
531.3	29.56	PK	18.2	-24.1	23.66	46.02	-22.36	0-360	400	V

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