



SAR EVALUATION REPORT

Applicant Name:
LG Electronics U.S.A., Inc.
111 Sylvan Avenue, North Building
Englewood Cliffs, NJ 07632
United States

Date of Testing:
07/09/20 – 08/31/20
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Document Serial No.:
1M2006150095-01-R2.ZNF

FCC ID: ZNFF100TM
APPLICANT: LG ELECTRONICS U.S.A., INC.

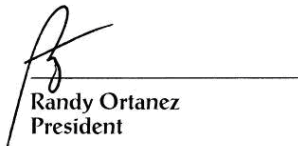
DUT Type: Portable Handset
Application Type: Certification
FCC Rule Part(s): CFR §2.1093
Model: LM-F100TM
Additional Model(s): LMF100TM, F100TM

Equipment Class	Band & Mode	Tx Frequency	SAR			
			1g Head (W/kg)	1g Body-Worn (W/kg)	1g Hotspot (W/kg)	10g Phablet (W/kg)
PCE	GSM/GPRS/EDGE 850	824.20 - 848.80 MHz	< 0.1	0.35	0.35	N/A
PCE	GSM/GPRS/EDGE 1900	1850.20 - 1909.80 MHz	< 0.1	0.52	0.79	N/A
PCE	UMTS 850	824.40 - 848.80 MHz	< 0.1	0.41	0.41	N/A
PCE	UMTS 1755	1712.4 - 1752.6 MHz	< 0.1	0.81	1.02	2.23
PCE	UMTS 1900	1852.4 - 1907.6 MHz	< 0.1	0.77	1.12	2.87
PCE	CDMA/EVDO BC3 (222H)	824.70 - 848.31 MHz	< 0.1	0.50	0.48	N/A
PCE	CDMA/EVDO BC10 (825S)	817.60 - 853.10 MHz	< 0.1	0.39	0.37	N/A
PCE	PCS CDMA/EVDO	1851.25 - 1908.75 MHz	< 0.1	0.72	0.95	2.99
PCE	LTE Band 71	665.5 - 695.5 MHz	< 0.1	0.24	0.24	N/A
PCE	LTE Band 12	699.7 - 715.3 MHz	< 0.1	0.33	0.33	N/A
PCE	LTE Band 17	708.5 - 715.5 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 13	779.5 - 784.5 MHz	< 0.1	0.31	0.31	N/A
PCE	LTE Band 26 (Cell)	814.7 - 848.3 MHz	< 0.1	0.34	0.34	N/A
PCE	LTE Band 5 (Cell)	824.7 - 848.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 66 (AWS)	1710.7 - 1779.3 MHz	0.12	0.98	0.76	1.92
PCE	LTE Band 4 (AWS)	1710.7 - 1754.3 MHz	N/A	N/A	N/A	N/A
PCE	LTE Band 25 (PCS)	1850.7 - 1914.3 MHz	< 0.1	0.80	0.99	2.86
PCE	LTE Band 2 (PCS)	1850.7 - 1909.3 MHz	0.10	0.24	0.60	N/A
CBE	LTE Band 46	3502.5 - 3697.5 MHz	0.01	0.29	0.38	N/A
PCE	LTE Band 41	2498.5 - 2687.5 MHz	< 0.1	0.45	0.50	2.41
PCE	NR Band n71	665.5 - 695.5 MHz	< 0.1	0.24	0.24	N/A
PCE	NR Band n5 (Cell)	825.5 - 848.5 MHz	< 0.1	0.37	0.37	N/A
PCE	NR Band n66 (AWS)	1712.5 - 1777.5 MHz	0.15	0.29	0.70	N/A
PCE	NR Band n25 (PCS)	1852.5 - 1912.5 MHz	0.17	0.22	0.72	N/A
PCE	NR Band n2 (PCS)	1852.5 - 1907.5 MHz	N/A	N/A	N/A	N/A
PCE	NR Band n41	2505.02 - 2679.99 MHz	< 0.1	0.14	0.15	N/A
DTS	2.4 GHz WLAN	2412 - 2482 MHz	0.78	0.29	0.81	N/A
NI	U-NB-1	5180 - 5240 MHz	N/A	N/A	0.15	N/A
NI	U-NB-2A	5260 - 5320 MHz	0.11	0.15	N/A	0.89
NI	U-NB-2C	5500 - 5720 MHz	0.33	0.13	N/A	0.47
NI	U-NB-3	5745 - 5825 MHz	< 0.1	0.37	0.37	N/A
DSS/DTS	Bluetooth	2402 - 2480 MHz	0.11	< 0.1	< 0.1	N/A
Simultaneous SAR per KDB 690783 D01v0103:			1.58	1.54	1.99	3.99

Note: This revised Test Report (S/N: 1M2006150095-01-R2.ZNF) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in Section 1.9 of this report; for North American frequency bands only.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.


Randy Ortanez
President



The SAR Tick is an initiative of the Mobile & Wireless Forum (MWF). While a product may be considered eligible, use of the SAR Tick logo requires an agreement with the MWF. Further details can be obtained by emailing: sartick@mwfa.info.

FCC ID: ZNFF100TM		SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 1 of 187	

T A B L E O F C O N T E N T S

1	DEVICE UNDER TEST	3
2	LTE INFORMATION	16
3	INTRODUCTION	18
4	DOSIMETRIC ASSESSMENT	19
5	DEFINITION OF REFERENCE POINTS.....	20
6	TEST CONFIGURATION POSITIONS.....	21
7	RF EXPOSURE LIMITS	25
8	FCC MEASUREMENT PROCEDURES.....	26
9	RF CONDUCTED POWERS	34
10	SYSTEM VERIFICATION.....	114
11	SAR DATA SUMMARY	122
12	FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS.....	156
13	SAR MEASUREMENT VARIABILITY	173
14	ADDITIONAL TESTING PER FCC GUIDANCE	175
15	EQUIPMENT LIST	183
16	MEASUREMENT UNCERTAINTIES.....	184
17	CONCLUSION.....	185
18	REFERENCES	186
APPENDIX A: SAR TEST PLOTS		
APPENDIX B: SAR DIPOLE VERIFICATION PLOTS		
APPENDIX C: SAR TISSUE SPECIFICATIONS		
APPENDIX D: SAR SYSTEM VALIDATION		
APPENDIX E: DUT ANTENNA DIAGRAM & SAR TEST SETUP PHOTOGRAPHS		
APPENDIX F: DOWNLINK LTE CA RF CONDUCTED POWERS		
APPENDIX G: POWER REDUCTION VERIFICATION		
APPENDIX H: PROBE AND DIPOLE CALIBRATION CERTIFICATES		

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 2 of 187	

1 DEVICE UNDER TEST

1.1 Device Overview

Band & Mode	Operating Modes	Tx Frequency
GSM/GPRS/EDGE 850	Voice/Data	824.20 - 848.80 MHz
GSM/GPRS/EDGE 1900	Voice/Data	1850.20 - 1909.80 MHz
UMTS 850	Voice/Data	826.40 - 846.60 MHz
UMTS 1750	Voice/Data	1712.4 - 1752.6 MHz
UMTS 1900	Voice/Data	1852.4 - 1907.6 MHz
CDMA/EVDO BC0 (\$22H)	Voice/Data	824.70 - 848.31 MHz
CDMA/EVDO BC10 (\$90S)	Voice/Data	817.90 - 823.10 MHz
PCS CDMA/EVDO	Voice/Data	1851.25 - 1908.75 MHz
LTE Band 71	Voice/Data	665.5 - 695.5 MHz
LTE Band 12	Voice/Data	699.7 - 715.3 MHz
LTE Band 17	Voice/Data	706.5 - 713.5 MHz
LTE Band 13	Voice/Data	779.5 - 784.5 MHz
LTE Band 26 (Cell)	Voice/Data	814.7 - 848.3 MHz
LTE Band 5 (Cell)	Voice/Data	824.7 - 848.3 MHz
LTE Band 66 (AWS)	Voice/Data	1710.7 - 1779.3 MHz
LTE Band 4 (AWS)	Voice/Data	1710.7 - 1754.3 MHz
LTE Band 25 (PCS)	Voice/Data	1850.7 - 1914.3 MHz
LTE Band 2 (PCS)	Voice/Data	1850.7 - 1909.3 MHz
LTE Band 48	Voice/Data	3552.5 - 3697.5 MHz
LTE Band 41	Voice/Data	2498.5 - 2687.5 MHz
NR Band n71	Data	665.5 - 695.5 MHz
NR Band n5 (Cell)	Data	826.5 - 846.5 MHz
NR Band n66 (AWS)	Data	1712.5 - 1777.5 MHz
NR Band n25 (PCS)	Data	1852.5 - 1912.5 MHz
NR Band n2 (PCS)	Data	1852.5 - 1907.5 MHz
NR Band n41	Data	2506.02 - 2679.99 MHz
2.4 GHz WLAN	Voice/Data	2412 - 2462 MHz
U-NII-1	Voice/Data	5180 - 5240 MHz
U-NII-2A	Voice/Data	5260 - 5320 MHz
U-NII-2C	Voice/Data	5500 - 5720 MHz
U-NII-3	Voice/Data	5745 - 5825 MHz
Bluetooth	Data	2402 - 2480 MHz
NFC	Data	13.56 MHz
WMC	Data	500 Hz - 4 kHz

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 3 of 187

1.1 Time-Averaging Algorithm for RF Exposure Compliance

The equipment under test (EUT) contains:

Qualcomm® SM7250 modem supporting 2G/3G/4G/5G NR WWAN technologies

Qualcomm® SM7250 modem is enabled with Qualcomm® Smart Transmit feature. This feature performs time averaging algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time. Refer to Compliance Summary document for detailed description of Qualcomm® Smart Transmit feature (report SN could be found in Section 1.11 – Bibliography).

Note that WLAN operations are not enabled with Smart Transmit.

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of *SAR_{design target}*, below the predefined time-averaged power limit (i.e., *P_{limit}* for sub-6 radio), for each characterized technology and band (see RF Exposure Part 0 Test Report, report SN could be found in Section 1.11 - Bibliography).

Smart Transmit allows the device to transmit at higher power instantaneously, as high as *P_{max}*, when needed, but enforces power limiting to maintain time-averaged transmit power to *P_{limit}*. Below table shows *P_{limit}* EFS settings and maximum tune up output power *P_{max}* configured for this EUT for various transmit conditions (Device State Index DSI). Note that the device uncertainty for sub-6GHz WWAN is +1.0/-1.0 dB for this EUT.

Exposure Scenario:		Head	Body-Worn	Phablet	Swivel		Hotspot	Phablet	Maximum Tune-Up Output Power*
					Head	Phablet			
Averaging Volume:		1g	1g	10g	1g	10g	1g	10g	
Spacing:		0 mm	10 mm	3, 0, 3 mm	0mm	3, 1, 3 mm	10 mm	0 mm	
DSI:		1			7		5	8	
Technology/Band	Antenna	Plimit							Pmax
GSM/GPRS/EDGE 850 MHz	1	29.5			27.6		29.5		25.1
GSM/GPRS/EDGE 1900 MHz	2	24.5			24.0		24.5		22.6
UMTS B5	1	29.5			27.7		29.5		24.5
UMTS B4	2	26.3			24.5		22.5		24.5
UMTS B2	2	26.7			24.5		22.5		24.5
CDMA/EVDO BC10	1	29.7			29.7		29.7		24.5
CDMA/EVDO BC0	1	28.5			28.5		28.5		24.5
CDMA/EVDO BC1	2	26.7			24.5		22.5		24.5
LTE FDD B12/B17	1	30.3			30.3		30.3		24.5
LTE FDD B12 ULCA PCC	1	32.6			33.7		30.3		22.5
LTE FDD B13	1	30.6			30.6		30.6		24.5
LTE FDD B5	1	30.8			29.7		30.2		24.5
LTE FDD B26	1	30.2			30.2		30.2		24.5
LTE FDD B71	1	32.4			32.2		32.4		24.5
LTE FDD B66/B4	2	25.4			24.5		22.5		24.5
LTE FDD B66 ULCA PCC	3	24.6			27.1		24.6		22.5
LTE FDD B66 EN-DC	3	22.5			22.5		22.5		24.5
LTE FDD B25/B2	2	25.7			23.7		22.5		24.5
LTE FDD B2 ULCA PCC	3	23.6			23.7		23.6		22.5
LTE FDD B2 EN-DC	3	22.5			22.5		22.5		24.5
LTE TDD B48	9	19.5			19.5		19.5		21.0
LTE TDD B41 (PC3)	2	22.0			22.0		22.0		22.5
LTE TDD B41 (PC2)	2	22.0			22.0		22.0		22.9
NR FDD n71	1	32.0			30.2		32.0		24.5
NR FDD n5	1	29.3			29.2		29.3		24.5
NR FDD n66	3	22.5			22.5		22.5		24.5
NR FDD n25/n2	3	22.5			22.5		22.5		24.5
NR TDD n41 PC3	1	17.7			17.7		17.7		18.2
NR TDD n41 PC2	1	17.7			17.7		17.7		20.2

*Note all *P_{limit}* EFS and maximum tune up output power *P_{max}* levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of TDD modulation schemes (for e.g., GSM & LTE TDD). LTE B12/B2/B66 is defined by ULCA PCC and Standalone, and LTE B12/B2/B66 ULCA is defined by ULCA SCC. When they are operated by ULCA, the max power is 22.5 dBm (2 dB lower than standalone power).

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 4 of 187	

*Maximum tune up output power P_{max} is used to configure EUT during RF tune up procedure. The maximum allowed output power is equal to maximum Tune up output power + 1.0dB device design uncertainty. For interband-ULCA scenarios, LTE Band 66/2/12 as SCC will operate as maximum allowed output power limited at 17.7 dBm according to software implementation in this model.

The maximum time-averaged output power (dBm) for any 2G/3G/4G/5G WWAN technology, band, and DSI = minimum of " P_{limit} EFS" and "Maximum tune up output power P_{max} " +1.0/-1.0 dB device uncertainty. SAR values in this report were scaled to this maximum time-averaged output power to determine compliance per KDB Publication 447498 D01v06.

The purpose of this report (Part 1 test) is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.

Measurement Condition: All conducted power and SAR measurements in this report (Part 1 test) were performed by setting Reserve_power_margin (Smart Transmit EFS entry) to 0dB.

1.2 Power Reduction for SAR

This device uses an independent fixed level power reduction mechanism for WLAN operations during voice or VoIP held to ear scenarios. Per FCC Guidance, the held-to-ear exposure conditions were evaluated at reduced power according to the head SAR positions described in IEEE 1528-2013. Detailed descriptions of the power reduction mechanism are included in the operational description.

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under portable hotspot conditions and under some conditions when the device is being used in close proximity to the user's hand. All hotspot SAR evaluations for this device were performed at the maximum allowed output power when hotspot is enabled. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in phablet use conditions. Detailed descriptions of the power reduction mechanism are included in the operational description.

1.3 Mechanical Modes

This device supports four different mechanical modes: normal mode, normal mode + pop up, swivel mode, swivel mode + pop up. Per FCC guidance, the use conditions of mechanical mode 1 (normal mode) and mechanical mode 3 (swivel mode) were considered for SAR testing. SAR with the mechanical mode 3 was measured for the configurations with the highest reported SAR for each wireless technology, frequency band, operating mode, and applicable exposure condition (head, phablet). Full SAR tests were additionally performed for any mechanical mode 3 test configurations with 1g SAR >1.2 W/kg or 10g SAR >3.0 W/kg. For WIFI/BT and LTE B48 phablet, if the worst case was right edge or left edge, the second-worst case was considered for SAR testing with mechanical mode 3. Appendix E contains positioning information in mechanical mode 3.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 5 of 187

1.4 Nominal and Maximum Output Power Specifications

This device operates using the following maximum and nominal output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v06.

1.4.1 2G/3G/4G/5G Output Power

GSM/GPRS/EDGE 850										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Pmax, All DSI	Max allowed power	34.0	34.0	32.0	30.5	29.0	27.0	27.0	26.0	26.0
	Nominal	33.0	33.0	31.0	29.5	28.0	26.0	26.0	25.0	25.0
GSM/GPRS/EDGE 1900										
Power Level		Voice (in dBm)	Data - Burst Average GMSK (in dBm)				Data - Burst Average 8-PSK (in dBm)			
		1 TX Slot	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots	1 TX Slots	2 TX Slots	3 TX Slots	4 TX Slots
Pmax, All DSI	Max allowed power	31.0	31.0	29.0	28.0	26.0	26.0	26.0	25.0	25.0
	Nominal	30.0	30.0	28.0	27.0	25.0	25.0	25.0	24.0	24.0

CDMA BC10 (815 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Pmax, All DSI	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5

CDMA BC0 (835 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Pmax, All DSI	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5

CDMA BC1 (1900 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		1x-RTT	EVDO Rev 0	EVDO Rev A
Pmax, DSI = 1 (Head, Bodyworn, Phablet Max); DSI = 7 (Swivel)	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5

UMTS Band 5 (850 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6
Pmax, All DSI	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5

UMTS Band 4 (1750 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6
Pmax, DSI = 1 (Head, Bodyworn, Phablet Max); DSI = 7 (Swivel)	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5

UMTS Band 2 (1900 MHz)				
Power Level		Modulated Average Output Power (in dBm)		
		3GPP WCDMA Rel 99	3GPP HSDPA Rel 5	3GPP HSUPA Rel 6
Pmax, DSI = 1 (Head, Bodyworn, Phablet Max); DSI = 7 (Swivel)	Max allowed power	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5
DSI = 5 (Hotspot); DSI = 8 (Phablet Reduced)	Max allowed power	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 6 of 187	

Mode / Band		Modulated Average Output Power (in dBm)			
		Pmax	DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	DSI = 7 (Swivel)
LTE FDD Band 71	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
LTE FDD Band 12	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
LTE FDD Band 17	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
LTE FDD Band 13	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
LTE FDD Band 5	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
LTE FDD Band 26	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
LTE FDD Band 4	Max allowed power	25.5	25.5	23.5	25.5
	Nominal	24.5	24.5	22.5	24.5
LTE FDD Band 66	Max allowed power	25.5	25.5	23.5	25.5
	Nominal	24.5	24.5	22.5	24.5
LTE FDD Band 2	Max allowed power	25.5	25.5	23.5	24.7
	Nominal	24.5	24.5	22.5	23.7
LTE FDD Band 25	Max allowed power	25.5	25.5	23.5	24.7
	Nominal	24.5	24.5	22.5	23.7
LTE TDD Band 48	Max allowed power	24.0	22.5	22.5	22.5
	Nominal	23.0	21.5	21.5	21.5
LTE TDD Band 41 (PC3)	Max allowed power	25.5	25.0	25.0	25.0
	Nominal	24.5	24.0	24.0	24.0
LTE TDD Band 41 (PC2)	Max allowed power	26.6	26.6	26.6	26.6
	Nominal	25.6	25.6	25.6	25.6

Mode / Band		Modulated Average Output Power (in dBm)			
		Pmax	DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	DSI = 7 (Swivel)
NR FDD Band n71	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
NR FDD Band n5	Max allowed power	25.5	25.5	25.5	25.5
	Nominal	24.5	24.5	24.5	24.5
NR FDD Band n66	Max allowed power	25.5	23.5	23.5	23.5
	Nominal	24.5	22.5	22.5	22.5
NR FDD Band n2	Max allowed power	25.5	23.5	23.5	23.5
	Nominal	24.5	22.5	22.5	22.5
NR FDD Band n25	Max allowed power	25.5	23.5	23.5	23.5
	Nominal	24.5	22.5	22.5	22.5
NR TDD Band 41 (PC3)	Max allowed power	25.5	25.0	25.0	25.0
	Nominal	24.5	24.0	24.0	24.0
NR TDD Band 41 (PC2)	Max allowed power	27.5	25.0	25.0	25.0
	Nominal	26.5	24.0	24.0	24.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 7 of 187

The below tables are applicable in the following condition:

- Inter-band ULCA Active for combos CA 12A-66A, CA 2A-12A

Mode / Band		Modulated Average Output Power (in dBm)			
		Pmax	DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	DSI = 7 (Swivel)
LTE FDD Band 12 as PCC	Max allowed power	23.5	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5	22.5
LTE FDD Band 66 Ant 3 as PCC	Max allowed power	23.5	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5	22.5
LTE FDD Band 2 Ant 3 as PCC	Max allowed power	23.5	23.5	23.5	23.5
	Nominal	22.5	22.5	22.5	22.5
LTE FDD Band 12 as SCC	Max allowed power	17.7	17.7	17.7	17.7
	Nominal	17.0	17.0	17.0	17.0
LTE FDD Band 66 Ant 3 as SCC	Max allowed power	17.7	17.7	17.7	17.7
	Nominal	17.0	17.0	17.0	17.0
LTE FDD Band 2 Ant 3 as SCC	Max allowed power	17.7	17.7	17.7	17.7
	Nominal	17.0	17.0	17.0	17.0

The below tables are applicable in the following condition:

- EN-DC active with LTE Band 2/66 as an anchor band for NR Band n5 and n71

Mode / Band		Modulated Average Output Power (in dBm)			
		Pmax	DSI = 1 (Head, Bodyworn, or Phablet Max)	DSI = 5 (Hotspot); DSI =8 (Phablet Reduced)	DSI = 7 (Swivel)
LTE FDD Band 66 Ant 3 as Anchor Band in EN-DC	Max allowed power	25.5	23.5	23.5	23.5
	Nominal	24.5	22.5	22.5	22.5
LTE FDD Band 2 Ant 3 as Anchor Band in EN-DC	Max allowed power	25.5	23.5	23.5	23.5
	Nominal	24.5	22.5	22.5	22.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 8 of 187

1.4.2 Maximum Bluetooth and SISO/MIMO WLAN Output Power

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1 / Antenna 2															
		b		g		n		ac		b (CDD + STBC)		g (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	21.5	20.5	20.0	19.0	19.0	18.0	19.0	18.0	24.5	23.5	23.0	22.0	22.0	21.0	22.0	21.0
			ch. 1: 18.0 ch. 2: 18.0 ch. 10: 18.0 ch. 11: 18.0	17.0 17.0 17.0 17.0	ch. 1: 17.0 ch. 2: 17.0 ch. 10: 17.0 ch. 11: 17.0	16.0 16.0 16.0 16.0	ch. 1: 17.0 ch. 2: 17.0 ch. 10: 17.0 ch. 11: 17.0	16.0 16.0 16.0 16.0				ch. 1: 21.0 ch. 2: 21.0 ch. 10: 21.0 ch. 11: 21.0	20.0 20.0 20.0 20.0	ch. 1: 20.0 ch. 2: 20.0 ch. 10: 20.0 ch. 11: 20.0	19.0 19.0 19.0 19.0	ch. 1: 20.0 ch. 2: 20.0 ch. 10: 20.0 ch. 11: 20.0	19.0 19.0 19.0 19.0
Mode	Band	IEEE 802.11 (in dBm)															
		SISO						MIMO									
		Antenna 1 / Antenna 2															
		a		n		ac		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)					
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.				
5 GHz WIFI (20MHz BW)	5200 MHz	20.0	19.0	18.5	17.5	18.5	17.5	23.0	22.0	21.5	20.5	21.5	20.5	ch. 36: 17.0 ch. 44: 17.0 ch. 48: 17.0	16.0 16.0 16.0	ch. 36: 17.0 ch. 44: 17.0 ch. 48: 17.0	16.0 16.0 16.0
	5300 MHz	20.0	19.0	18.0	17.0	18.0	17.0	23.0	22.0	21.0	20.0	21.0	20.0	ch. 52: 17.0 ch. 60: 17.0 ch. 64: 17.0	16.0 16.0 16.0	ch. 52: 17.0 ch. 60: 17.0 ch. 64: 17.0	16.0 16.0 16.0
	5500 MHz	17.0	16.0	17.0	16.0	17.0	16.0	20.0	19.0	20.0	19.0	20.0	19.0				
	5800 MHz	20.0	19.0	18.5	17.5	18.5	17.5	23.0	22.0	21.5	20.5	21.5	20.5	ch. 149: 17.0 ch. 153: 17.0	16.0 16.0	ch. 149: 17.0 ch. 153: 17.0	16.0 16.0
	5200 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0	ch. 38: 14.0 ch. 38: 17.0	13.0 16.0	ch. 38: 14.0 ch. 38: 17.0	13.0 16.0
	5300 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0	ch. 62: 14.0 ch. 62: 17.0	13.0 16.0	ch. 62: 14.0 ch. 62: 17.0	13.0 16.0
	5500 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0	ch. 102: 14.0 ch. 102: 17.0	13.0 16.0	ch. 102: 14.0 ch. 102: 17.0	13.0 16.0
	5800 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0				
5 GHz WIFI (80MHz BW)	5200 MHz					13.0	12.0									16.0	15.0
	5300 MHz					13.0	12.0									16.0	15.0
	5500 MHz					15.0	14.0									18.0	17.0
	5800 MHz					ch. 106: 13.0 15.0	12.0 14.0									ch. 106: 16.0 18.0	15.0 17.0
Mode / Band		Bluetooth		Maximum		Modulated Average - Single Tx Chain (dBm)											
		1 Mbps (GFSK)		Nominal		12.0											
		2 Mbps (DPSK)		Maximum		11.5											
				Nominal		10.5											
		3 Mbps (8DPSK)		Maximum		11.5											
				Nominal		10.5											
		Bluetooth LE		Maximum		10.0											
				Nominal		9.0											

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 9 of 187

1.4.3

Reduced SISO/MIMO WLAN Output Power

The below tables are applicable in the following conditions:

- Head Conditions
- Simultaneous conditions with 2.4 GHz WLAN and 5 GHz WLAN

Mode	Band	IEEE 802.11 (in dBm)															
		SISO								MIMO							
		Antenna 1 / Antenna 2															
		b		g		n		ac		b (CDD + STBC)		g (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
2.4 GHz WIFI	2.45 GHz	18.0	17.0	18.0	17.0	18.0	17.0	18.0	17.0	21.0	20.0	21.0	20.0	21.0	20.0	21.0	20.0
						ch. 1: 17.0	16.0	ch. 1: 17.0	16.0					ch. 1: 20.0	19.0	ch. 1: 20.0	19.0
						ch. 2: 17.0	16.0	ch. 2: 17.0	16.0					ch. 2: 20.0	19.0	ch. 2: 20.0	19.0
						ch. 10: 17.0	16.0	ch. 10: 17.0	16.0					ch. 10: 20.0	19.0	ch. 10: 20.0	19.0
						ch. 11: 17.0	16.0	ch. 11: 17.0	16.0					ch. 11: 20.0	19.0	ch. 11: 20.0	19.0

Mode	Band	IEEE 802.11 (in dBm)											
		SISO						MIMO					
		Antenna 1 / Antenna 2											
		a		n		ac		a (CDD + STBC)		n (CDD+STBC, SDM)		ac (CDD+STBC, SDM)	
Maximum / Nominal Power		Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.	Max	Nom.
5 GHz WIFI (20MHz BW)	5200 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
	5300 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
	5500 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
	5800 MHz	16.0	15.0	16.0	15.0	16.0	15.0	19.0	18.0	19.0	18.0	19.0	18.0
5 GHz WIFI (40MHz BW)	5200 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
				ch. 38: 14.0	13.0	ch. 38: 14.0	13.0			ch. 38: 17.0	16.0	ch. 38: 17.0	16.0
	5300 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
				ch. 62: 14.0	13.0	ch. 62: 14.0	13.0			ch. 62: 17.0	16.0	ch. 62: 17.0	16.0
5 GHz WIFI (80MHz BW)	5500 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
				ch. 102: 14.0	13.0	ch. 102: 14.0	13.0			ch. 102: 17.0	16.0	ch. 102: 17.0	16.0
	5800 MHz			16.0	15.0	16.0	15.0			19.0	18.0	19.0	18.0
5 GHz WIFI (80MHz BW)	5200 MHz					13.0	12.0					16.0	15.0
	5300 MHz					13.0	12.0					16.0	15.0
	5500 MHz					15.0	14.0					18.0	17.0
	5800 MHz					ch. 106: 13.0	12.0					ch. 106: 16.0	15.0
						15.0	14.0					18.0	17.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 10 of 187

1.5 DUT Antenna Locations

The overall dimensions of this device are > 9 x 5 cm. A diagram showing the location of the device antennas can be found in Appendix E. Since the diagonal dimension of this device is > 160 mm and <200 mm, it is considered a “phablet.”

**Table 1-1
Device Edges/Sides for SAR Testing**

Mode	Back	Front	Top	Bottom	Right	Left
GPRS 850	Yes	Yes	No	Yes	Yes	No
GPRS 1900	Yes	Yes	No	Yes	No	Yes
UMTS 850	Yes	Yes	No	Yes	Yes	No
UMTS 1750	Yes	Yes	No	Yes	No	Yes
UMTS 1900	Yes	Yes	No	Yes	No	Yes
EVDO BC0 (\$22H)	Yes	Yes	No	Yes	Yes	No
EVDO BC10 (\$90S)	Yes	Yes	No	Yes	Yes	No
PCS EVDO	Yes	Yes	No	Yes	No	Yes
LTE Band 71	Yes	Yes	No	Yes	Yes	No
LTE Band 12	Yes	Yes	No	Yes	Yes	No
LTE Band 13	Yes	Yes	No	Yes	Yes	No
LTE Band 26 (Cell)	Yes	Yes	No	Yes	Yes	No
LTE Band 66 (AWS) Ant 3	Yes	Yes	No	Yes	Yes	No
LTE Band 66 (AWS) Ant 2	Yes	Yes	No	Yes	No	Yes
LTE Band 25 (PCS)	Yes	Yes	No	Yes	No	Yes
LTE Band 2 (PCS) Ant 3	Yes	Yes	No	Yes	Yes	No
LTE Band 48	Yes	Yes	Yes	No	Yes	No
LTE Band 41	Yes	Yes	No	Yes	No	Yes
NR Band n71	Yes	Yes	No	Yes	Yes	No
NR Band n5 (Cell)	Yes	Yes	No	Yes	Yes	No
NR Band n66 (AWS)	Yes	Yes	No	Yes	Yes	No
NR Band n25 (PCS)	Yes	Yes	No	Yes	Yes	No
NR Band n41	Yes	Yes	No	Yes	Yes	No
2.4 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
2.4 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 1	Yes	Yes	Yes	No	No	Yes
5 GHz WLAN Ant 2	Yes	Yes	Yes	No	No	Yes
Bluetooth	Yes	Yes	Yes	No	No	Yes

Note: Particular DUT edges were not required to be evaluated for wireless router SAR or phablet SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06v02r01 Section III and FCC KDB Publication 648474 D04v01r03. Additional edges were evaluated per manufacturer.

The distances between the transmit antennas and the edges of the device are included in the filing. When wireless router mode is enabled, U-NII-2A, U-NII-2C operations are disabled.

1.6 Near Field Communications (NFC) Antenna

This DUT has NFC operations. The NFC antenna is integrated into the device for this model. Therefore, all SAR tests were performed with the device which already incorporates the NFC antenna. A diagram showing the location of the NFC antenna can be found in Appendix E.

1.7 Simultaneous Transmission Capabilities

According to FCC KDB Publication 447498 D01v06, transmitters are considered to be operating simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds.

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB Publication 447498 D01v06 4.3.2 procedures.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 11 of 187

Table 1-2
Simultaneous Transmission Scenarios

No.	Capable Transmit Configuration	Head	Body-Worn Accessory	Wireless Router	Phablet	Notes
1	1x CDMA voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
2	1x CDMA voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
3	1x CDMA voice + 2.4 GHz Bluetooth	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
4	1x CDMA voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
5	1x CDMA voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
6	1x CDMA voice + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
7	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
8	1x CDMA voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
9	1x CDMA voice + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	N/A	Yes	
10	GSM voice + 2.4 GHz Wi-Fi	Yes	Yes	N/A	Yes	
11	GSM voice + 5 GHz Wi-Fi	Yes	Yes	N/A	Yes	
12	GSM voice + 2.4 GHz Bluetooth	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
13	GSM voice + 2.4 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
14	GSM voice + 5 GHz Wi-Fi MIMO	Yes	Yes	N/A	Yes	
15	GSM voice + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
16	GSM voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
17	GSM voice + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	N/A	Yes	^ Bluetooth Tethering is considered
18	GSM voice + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	N/A	Yes	
19	UMTS + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
20	UMTS + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
21	UMTS + 2.4 GHz Bluetooth	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
22	UMTS + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
23	UMTS + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
24	UMTS + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
25	UMTS + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
26	UMTS + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
27	UMTS + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	Yes	Yes	
28	LTE + 2.4 GHz Wi-Fi	Yes	Yes	Yes	Yes	
29	LTE + 5 GHz Wi-Fi	Yes	Yes	Yes	Yes	
30	LTE + 2.4 GHz Bluetooth	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
31	LTE + 2.4 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
32	LTE + 5 GHz Wi-Fi MIMO	Yes	Yes	Yes	Yes	
33	LTE + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
34	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
35	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
36	LTE + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes	Yes	Yes	Yes	
37	LTE + 5G NR	Yes	Yes	N/A	Yes	
38	LTE + 5 GHz Wi-Fi + 5G NR	Yes	Yes	Yes	Yes	
39	LTE + 2.4 GHz Wi-Fi + 5G NR	Yes	Yes	Yes	Yes	
40	LTE + 2.4 GHz Bluetooth + 5G NR	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
41	LTE + 2.4 GHz Wi-Fi MIMO + 5G NR	Yes	Yes	Yes	Yes	
42	LTE + 5 GHz Wi-Fi MIMO + 5G NR	Yes	Yes	Yes	Yes	
43	LTE + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2 + 5G NR	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
44	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi + 5G NR	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
45	LTE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO + 5G NR	Yes*	Yes	Yes*	Yes	^ Bluetooth Tethering is considered
46	LTE + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2 + 5G NR	Yes	Yes	Yes	Yes	
47	CDMA/EVDO data + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
48	CDMA/EVDO data + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
49	CDMA/EVDO data + 2.4 GHz Bluetooth	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
50	CDMA/EVDO data + 2.4 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
51	CDMA/EVDO data + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
52	CDMA/EVDO data + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
53	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
54	CDMA/EVDO data + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
55	CDMA/EVDO data + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
56	GPRS/EDGE + 2.4 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
57	GPRS/EDGE + 5 GHz Wi-Fi	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
58	GPRS/EDGE + 2.4 GHz Bluetooth	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
59	GPRS/EDGE + 2.4 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
60	GPRS/EDGE + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered
61	GPRS/EDGE + 2.4 GHz Bluetooth + 2.4 GHz Wi-Fi Ant 2	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
62	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
63	GPRS/EDGE + 2.4 GHz Bluetooth + 5 GHz Wi-Fi MIMO	Yes*	Yes*	Yes*	Yes	* Pre-installed VOIP applications are considered ^ Bluetooth Tethering is considered
64	GPRS/EDGE + 2.4 GHz Wi-Fi Ant 1 + 5 GHz Wi-Fi Ant 2	Yes*	Yes*	Yes	Yes	* Pre-installed VOIP applications are considered

- 2.4 GHz WLAN antenna 1 and 2.4 GHz Bluetooth share the same antenna path and cannot transmit simultaneously.
- When the user utilizes multiple services in UMTS 3G mode it uses multi-Radio Access Bearer or multi-RAB. The power control is based on a physical control channel (Dedicated Physical Control Channel [DPCCH]) and power control will be adjusted to meet the needs of both services. Therefore, the UMTS+WLAN scenario also represents the UMTS Voice/DATA + WLAN Hotspot scenario.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 12 of 187	

3. Per the manufacturer, WIFI Direct is expected to be used in conjunction with a held-to-ear or body-worn accessory voice call. Therefore, there are no simultaneous transmission scenarios involving WIFI direct beyond that listed in the above table.
4. 5 GHz Wireless Router is only supported for the U-NII-1 and U-NII-3 by S/W, therefore U-NII-2A, and U-NII-2C were not evaluated for wireless router conditions.
5. This device supports 2x2 MIMO Tx for WLAN 802.11a/g/n/ac. 802.11a/g/n/ac supports CDD and STBC and 802.11n/ac additionally supports SDM. Each WLAN antenna can transmit independently or together when operating with MIMO.
6. This device supports VOLTE.
7. This device supports VOWIFI.
8. This device supports Bluetooth Tethering.
9. LTE + 5G NR FR1 Scenarios are limited to EN-DC combinations with anchor bands shown in the NR FR1 Checklist.
10. LTE operations in the table above include intra-band and inter-band ULCA operations with 2 carriers transmitting in the uplink.

1.8 Miscellaneous SAR Test Considerations

(A) WIFI/BT

Since U-NII-1 and U-NII-2A bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg, head and body-worn SAR is not required for U-NII-1 band according to FCC KDB Publication 248227 D01v02r02.

Since Wireless Router operations are not allowed by the chipset firmware using U-NII-2A and U-NII-2C WIFI, only 2.4 GHz, U-NII-1, and U-NII-3 WIFI Hotspot SAR tests and combinations are considered for SAR with respect to Wireless Router configurations according to FCC KDB 941225 D06v02r01.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Because wireless router operations are not supported for U-NII-2A & U-NII-2C WLAN, phablet SAR tests were performed. Phablet SAR was not evaluated for 2.4 GHz WLAN, Bluetooth, U-NII-1, and U-NII-3 WLAN operations since wireless router 1g SAR was < 1.2 W/kg.

This device supports IEEE 802.11ac with the following features:

- a) Up to 80 MHz Bandwidth only for 5GHz
- b) Up to 20 MHz Bandwidth only for 2.4 GHz
- c) No aggregate channel configurations
- d) 2 Tx antenna output
- e) Up to 1024 QAM is supported
- f) TDWR and Band gap channels are supported
- g) MU-MIMO UL Operations are not supported

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 13 of 187

(B) Licensed Transmitter(s)

GSM/GPRS/EDGE DTM is not supported for US bands. Therefore, the GSM Voice modes in this report do not transmit simultaneously with GPRS/EDGE Data.

This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 D01v03r01.

LTE SAR for the higher modulations and lower bandwidths were not tested since the maximum average output power of all required channels and configurations was not more than 0.5 dB higher than the highest bandwidth; and the reported LTE SAR for the highest bandwidth was less than 1.45 W/kg for all configurations according to FCC KDB 941225 D05v02r04.

CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1x Advanced was not more than 0.25 dB higher than the maximum powers for 1x and the measured SAR in any 1x mode exposure conditions was not greater than 1.2 W/kg per FCC KDB Publication 941225 D01v03r01.

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r02, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive. The downlink carrier aggregation exclusion analysis can be found in Appendix F.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is greater than 160mm and less than 200mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information).

This device supports LTE and NR capabilities with overlapping transmission frequency ranges. When the supported frequency range of an LTE/NR Band falls completely within an LTE/NR band with a larger transmission frequency range, both LTE/NR bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE/NR bands share the same transmission path and signal characteristics, SAR was only assessed for the band with the larger transmission frequency range.

This device supports intra-band LTE Carrier Aggregation (CA) for LTE Band 41 with two component carriers in the uplink. SAR Measurements and conducted powers were evaluated per 2017 Fall TCB Workshop Notes.

This device supports uplink inter-band LTE Carrier Aggregation (CA) for LTE Bands 12, 2, 66 with two component carriers in the uplink. SAR tests were performed separately for antenna 3 for LTE Band 2 and LTE Band 66.

This device supports downlink 4x4 MIMO operations for some LTE Bands. Per May 2017 TCB Workshop Notes, SAR for 4x4 DL MIMO was not needed since the maximum average output power in 4x4 DL MIMO mode was not more than 0.25 dB higher than the maximum output power with 4x4 DL MIMO inactive. Additionally, SAR for 4x4 MIMO Downlink Carrier Aggregation was not needed since the maximum average output power in 4x4 MIMO Downlink Carrier Aggregation mode was not more than 0.25 dB higher than the maximum output power with 4x4 MIMO Downlink and downlink carrier aggregation inactive.

NR implementation is limited to EN-DC operations only, with LTE Bands shown in the NR FR1 Checklist acting as anchor bands. Per FCC Guidance, SAR tests for NR Bands and LTE Anchor Bands were performed separately due to equipment limitations in SAR probe calibration factors. Please see Section 11 for more details.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 14 of 187

This device supports 64QAM on the uplink and 256QAM on the downlink for LTE Operations. Conducted powers for 64QAM uplink configurations were measured per Section 5.1 of FCC KDB Publication 941225D05v02r05. SAR was not required for 64QAM since the highest maximum output power for 64QAM is $\leq \frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is $\leq 1.45\text{W/kg}$, per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

This device supports both Power Class 2 (PC2) and Power Class 3 (PC3) for LTE Band 41. Per May 2017 TCB Workshop Notes, SAR tests were performed with Power Class 3 (given the specific UL/DL limitations for Power Class 2). Additionally, SAR testing for the power class condition was evaluated for the highest configuration in Power Class 3 for each test configuration to confirm the results were scalable linearly (See Section 14).

1.9 Guidance Applied

- IEEE 1528-2013
- FCC KDB Publication 941225 D01v03r01, D05v02r04, D05Av01r02, D06v02r01 (2G/3G/4G and Hotspot)
- FCC KDB Publication 248227 D01v02r02 (SAR Considerations for 802.11 Devices)
- FCC KDB Publication 447498 D01v06 (General SAR Guidance)
- FCC KDB Publication 865664 D01v01r04, D02v01r02 (SAR Measurements up to 6 GHz)
- FCC KDB Publication 648474 D04v01r03 (Phablet Procedures)
- FCC KDB Publication 616217 D04v01r02 (Proximity Sensor)
- October 2013 TCB Workshop Notes (GPRS Testing Considerations)
- May 2017 TCB Workshop Notes (LTE 4x4 Downlink MIMO)
- April 2018 TCB Workshop Notes (LTE Carrier Aggregation)

1.10 Device Serial Numbers

Several samples with identical hardware were used to support SAR testing. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units. The serial numbers used for each test are indicated alongside the results in Section 11.

1.11 Bibliography

Report Type	Report Serial Number
SAR Evaluation Report (Part 0)	Rev. A
RF Exposure Part 2 Test Report	1M2006150095-21.ZNF
RF Exposure Compliance Summary Report	1M2006150095-22.ZNF

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 15 of 187

LTE Information					
Form Factor	Portable Handset				
Frequency Range of each LTE transmission band	LTE Band 71 (665.5 - 695.5 MHz)				
	LTE Band 12 (699.7 - 715.3 MHz)				
	LTE Band 17 (706.5 - 713.5 MHz)				
	LTE Band 13 (779.5 - 784.5 MHz)				
	LTE Band 26 (Cell) (814.7 - 848.3 MHz)				
	LTE Band 5 (Cell) (824.7 - 848.3 MHz)				
	LTE Band 66 (AWS) (1710.7 - 1779.3 MHz)				
	LTE Band 4 (AWS) (1710.7 - 1754.3 MHz)				
	LTE Band 25 (PCS) (1850.7 - 1914.3 MHz)				
	LTE Band 2 (PCS) (1850.7 - 1909.3 MHz)				
	LTE Band 48 (3552.5 - 3697.5 MHz)				
	LTE Band 41 (2498.5 - 2687.5 MHz)				
	LTE Band 71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Bandwidths	LTE Band 12: 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 17: 5 MHz, 10 MHz				
	LTE Band 13: 5 MHz, 10 MHz				
	LTE Band 26 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz				
	LTE Band 5 (Cell): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz				
	LTE Band 66 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 4 (AWS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 25 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 2 (PCS): 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 48: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	LTE Band 41: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
LTE Band 71: 5 MHz	665.5 (133147)		680.5 (133297)		695.5 (133447)
LTE Band 71: 10 MHz	668 (133172)		680.5 (133297)		693 (133422)
LTE Band 71: 15 MHz	670.5 (133197)		680.5 (133297)		690.5 (133397)
LTE Band 71: 20 MHz	673 (133222)		680.5 (133297)		688 (133372)
LTE Band 12: 1.4 MHz	699.7 (23017)		707.5 (23095)		715.3 (23173)
LTE Band 12: 3 MHz	700.5 (23025)		707.5 (23095)		714.5 (23165)
LTE Band 12: 5 MHz	701.5 (23035)		707.5 (23095)		713.5 (23155)
LTE Band 12: 10 MHz	704 (23060)		707.5 (23095)		711 (23130)
LTE Band 17: 5 MHz	706.5 (23755)		710 (23790)		713.5 (23825)
LTE Band 17: 10 MHz	709 (23780)		710 (23790)		711 (23800)
LTE Band 13: 5 MHz	779.5 (23205)		782 (23230)		784.5 (23255)
LTE Band 13: 10 MHz	N/A		782 (23230)		N/A
LTE Band 26 (Cell): 1.4 MHz	814.7 (26697)		831.5 (26865)		848.3 (27033)
LTE Band 26 (Cell): 3 MHz	815.5 (26705)		831.5 (26865)		847.5 (27025)
LTE Band 26 (Cell): 5 MHz	816.5 (26715)		831.5 (26865)		846.5 (27015)
LTE Band 26 (Cell): 10 MHz	819 (26740)		831.5 (26865)		844 (26990)
LTE Band 26 (Cell): 15 MHz	821.5 (26765)		831.5 (26865)		841.5 (26965)
LTE Band 5 (Cell): 1.4 MHz	824.7 (20407)		836.5 (20525)		848.3 (20643)
LTE Band 5 (Cell): 3 MHz	825.5 (20415)		836.5 (20525)		847.5 (20635)
LTE Band 5 (Cell): 5 MHz	826.5 (20425)		836.5 (20525)		846.5 (20625)
LTE Band 5 (Cell): 10 MHz	829 (20450)		836.5 (20525)		844 (20600)
LTE Band 66 (AWS): 1.4 MHz	1710.7 (131979)		1745 (132322)		1779.3 (132665)
LTE Band 66 (AWS): 3 MHz	1711.5 (131987)		1745 (132322)		1778.5 (132657)
LTE Band 66 (AWS): 5 MHz	1712.5 (131997)		1745 (132322)		1777.5 (132647)
LTE Band 66 (AWS): 10 MHz	1715 (132022)		1745 (132322)		1775 (132622)
LTE Band 66 (AWS): 15 MHz	1717.5 (132047)		1745 (132322)		1772.5 (132597)
LTE Band 66 (AWS): 20 MHz	1720 (132072)		1745 (132322)		1770 (132572)
LTE Band 4 (AWS): 1.4 MHz	1710.7 (19957)		1732.5 (20175)		1754.3 (20393)
LTE Band 4 (AWS): 3 MHz	1711.5 (19965)		1732.5 (20175)		1753.5 (20385)
LTE Band 4 (AWS): 5 MHz	1712.5 (19975)		1732.5 (20175)		1752.5 (20375)
LTE Band 4 (AWS): 10 MHz	1715 (20000)		1732.5 (20175)		1750 (20350)
LTE Band 4 (AWS): 15 MHz	1717.5 (20025)		1732.5 (20175)		1747.5 (20325)
LTE Band 4 (AWS): 20 MHz	1720 (20050)		1732.5 (20175)		1745 (20300)
LTE Band 25 (PCS): 1.4 MHz	1850.7 (26047)		1882.5 (26365)		1914.3 (26683)
LTE Band 25 (PCS): 3 MHz	1851.5 (26055)		1882.5 (26365)		1913.5 (26675)
LTE Band 25 (PCS): 5 MHz	1852.5 (26065)		1882.5 (26365)		1912.5 (26665)
LTE Band 25 (PCS): 10 MHz	1855 (26090)		1882.5 (26365)		1910 (26640)
LTE Band 25 (PCS): 15 MHz	1857.5 (26115)		1882.5 (26365)		1907.5 (26615)
LTE Band 25 (PCS): 20 MHz	1860 (26140)		1882.5 (26365)		1905 (26590)
LTE Band 2 (PCS): 1.4 MHz	1850.7 (18607)		1880 (18900)		1909.3 (19193)
LTE Band 2 (PCS): 3 MHz	1851.5 (18615)		1880 (18900)		1908.5 (19185)
LTE Band 2 (PCS): 5 MHz	1852.5 (18625)		1880 (18900)		1907.5 (19175)
LTE Band 2 (PCS): 10 MHz	1855 (18650)		1880 (18900)		1905 (19150)
LTE Band 2 (PCS): 15 MHz	1857.5 (18675)		1880 (18900)		1902.5 (19125)
LTE Band 2 (PCS): 20 MHz	1860 (18700)		1880 (18900)		1900 (19100)
LTE Band 48: 5 MHz	3552.5 (55265)	3600.8 (55748)	N/A	3649.2 (56232)	3697.5 (56715)
LTE Band 48: 10 MHz	3555 (55290)	3601.7 (55757)	N/A	3648.3 (56223)	3695 (56690)
LTE Band 48: 15 MHz	3557.5 (55315)	3602.5 (55765)	N/A	3647.5 (56215)	3692.5 (56665)
LTE Band 48: 20 MHz	3560 (55340)	3603.3 (55773)	N/A	3646.7 (56207)	3690 (56640)
LTE Band 41: 5 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 10 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 15 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
LTE Band 41: 20 MHz	2506 (39750)	2549.5 (40185)	2593 (40620)	2636.5 (41055)	2680 (41490)
UE Category	DL UE Cat 18, UL UE Cat 13				
Modulations Supported in UL	QPSK, 16QAM, 64QAM				
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3-6.2.5? (manufacturer attestation to be provided)	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
LTE Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Additional Information	This device does not support full CA features on 3GPP Release 15. It supports carrier aggregation, downlink MIMO, LAA features as shown in section 9 and Appendix F. All other uplink communications are identical to the Release 8 specification. Uplink communications are done on the PCC. The following LTE Release 15 Features are not supported: Relay, HetNet, Enhanced MIMO, eICIC, eMBMS, Cross-Carrier Scheduling, Enhanced SC-FDMA.				

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 16 of 187	

NR Information					
Form Factor	Portable Handset				
Frequency Range of each NR transmission band	NR Band n71 (665.5 - 695.5 MHz)				
	NR Band n5 (Cell) (826.5 - 846.5 MHz)				
	NR Band n66 (AWS) (1712.5 - 1777.5 MHz)				
	NR Band n25 (PCS) (1852.5 - 1912.5 MHz)				
	NR Band n2 (PCS) (1852.5 - 1907.5 MHz)				
	NR Band n41 (2506.02 - 2679.99 MHz)				
Channel Bandwidths	NR Band n71: 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n5 (Cell): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n66 (AWS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n25 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n2 (PCS): 5 MHz, 10 MHz, 15 MHz, 20 MHz				
	NR Band n41: 20 MHz, 40 MHz, 50 MHz, 60 MHz, 80 MHz, 90 MHz, 100 MHz				
Channel Numbers and Frequencies (MHz)	Low	Low-Mid	Mid	Mid-High	High
NR Band n71: 5 MHz	665.5 (133100)		680.5 (136100)	695.5 (139100)	
NR Band n71: 10 MHz	668 (133600)		680.5 (136100)	693 (138600)	
NR Band n71: 15 MHz	670.5 (134100)		680.5 (136100)	690.5 (138100)	
NR Band n71: 20 MHz	673 (134600)		680.5 (136100)	688 (137600)	
NR Band n5 (Cell): 5 MHz	826.5 (165300)		836.5 (167300)	846.5 (169300)	
NR Band n5 (Cell): 10 MHz	829 (165800)		836.5 (167300)	844 (168800)	
NR Band n5 (Cell): 15 MHz	831.5 (166300)		836.5 (167300)	841.5 (168300)	
NR Band n5 (Cell): 20 MHz	834 (166800)		836.5 (167300)	839 (167800)	
NR Band n66 (AWS): 5 MHz	1712.5 (342500)		1745 (349000)	1777.5 (355500)	
NR Band n66 (AWS): 10 MHz	1715 (343000)		1745 (349000)	1775 (355000)	
NR Band n66 (AWS): 15 MHz	1717.5 (343500)		1745 (349000)	1772.5 (354500)	
NR Band n66 (AWS): 20 MHz	1720 (344000)		1745 (349000)	1770 (354000)	
NR Band n25 (PCS): 5 MHz	1852.5 (370500)		1882.5 (376500)	1912.5 (382500)	
NR Band n25 (PCS): 10 MHz	1855 (371000)		1882.5 (376500)	1910 (382000)	
NR Band n25 (PCS): 15 MHz	1857.5 (371500)		1882.5 (376500)	1907.5 (381500)	
NR Band n25 (PCS): 20 MHz	1860 (372000)		1882.5 (376500)	1905 (381000)	
NR Band n2 (PCS): 5 MHz	1852.5 (370500)		1880 (376000)	1907.5 (381500)	
NR Band n2 (PCS): 10 MHz	1855 (371000)		1880 (376000)	1905 (381000)	
NR Band n2 (PCS): 15 MHz	1857.5 (371500)		1880 (376000)	1902.5 (380500)	
NR Band n2 (PCS): 20 MHz	1860 (372000)		1880 (376000)	1900 (380000)	
NR Band n41: 20 MHz	2506.02 (501204)	2549.49 (509898)	2592.99 (518598)	2636.49 (527298)	2679.99 (535998)
NR Band n41: 40 MHz	2516.01 (503202)	2567.34 (513468)	N/A	2618.67 (523734)	2670 (534000)
NR Band n41: 50 MHz	2521.02 (504204)		2592.99 (518598)	2664.99 (532998)	
NR Band n41: 60 MHz	2526 (505200)		2592.99 (518598)	2659.98 (531996)	
NR Band n41: 80 MHz	2536.02 (507204)		N/A	2649.99 (529998)	
NR Band n41: 90 MHz	2541 (508200)		N/A	2644.98 (528996)	
NR Band n41: 100 MHz	2546.01 (509202)		2592.99 (518598)	2640 (528000)	
SCS for NR Band n71/n5/n66/n25/n2	15 kHz				
SCS for NR Band n41	30 kHz				
Modulations Supported in UL	DFT-s-OFDM: $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM				
NR MPR Permanently implemented per 3GPP TS	YES				
A-MPR (Additional MPR) disabled for SAR Testing?	YES				
EN-DC Carrier Aggregation Possible Combinations	The technical description includes all the possible carrier aggregation combinations				
LTE Anchor Bands for NR Band n71	LTE Band 2/66				
LTE Anchor Bands for NR Band n5	LTE Band 2/66				
LTE Anchor Bands for NR Band n66 (AWS)	LTE Band 2/5/12				
LTE Anchor Bands for NR Band n25 (PCS)	LTE Band 12/66				
LTE Anchor Bands for NR Band n2 (PCS)	LTE Band 5/12/66				
LTE Anchor Bands for NR Band n41	LTE Band 2/66				

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 17 of 187	

3 INTRODUCTION

The FCC and Innovation, Science, and Economic Development Canada have adopted the guidelines for evaluating the environmental effects of radio frequency (RF) radiation in ET Docket 93-62 on Aug. 6, 1996 and Health Canada Safety Code 6 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices. [1]

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [3] and Health Canada RF Exposure Guidelines Safety Code 6 [22]. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave [4] is used for guidance in measuring the Specific Absorption Rate (SAR) due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the International Committee for Non-Ionizing Radiation Protection (ICNIRP) in Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” Report No. Vol 74. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

3.1 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dU) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body (see Equation 3-1).

Equation 3-1
SAR Mathematical Equation

$$SAR = \frac{d}{dt} \left(\frac{dU}{dm} \right) = \frac{d}{dt} \left(\frac{dU}{\rho dv} \right)$$

SAR is expressed in units of Watts per Kilogram (W/kg).

$$SAR = \frac{\sigma \cdot E^2}{\rho}$$

where:

- σ = conductivity of the tissue-simulating material (S/m)
- ρ = mass density of the tissue-simulating material (kg/m³)
- E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relation to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.[6]

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 18 of 187

4 DOSIMETRIC ASSESSMENT

4.1 Measurement Procedure

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013:

1. The SAR distribution at the exposed side of the head or body was measured at a distance no greater than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the device-head and body interface and the horizontal grid resolution was determined per FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013.
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during the 1g/10g cube evaluation. SAR at this fixed point was measured and used as a reference value.
3. Based on the area scan data, the peak of the region with maximum SAR was determined by spline interpolation. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB Publication 865664 D01v01r04 (See Table 4-1) and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (see references or the DASY manual online for more details):
 - a. SAR values at the inner surface of the phantom are extrapolated from the measured values along the line away from the surface with spacing no greater than that in Table 4-1. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).
 - b. After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.
 - c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan was complete to calculate the SAR drift. If the drift deviated by more than 5%, the SAR test and drift measurements were repeated.

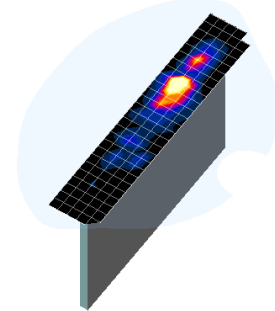


Figure 4-1
Sample SAR Area
Scan

Table 4-1
Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

Frequency	Maximum Area Scan Resolution (mm) ($\Delta x_{\text{area}}, \Delta y_{\text{area}}$)	Maximum Zoom Scan Resolution (mm) ($\Delta x_{\text{zoom}}, \Delta y_{\text{zoom}}$)	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
				$\Delta z_{\text{zoom}}(n)$	$\Delta z_{\text{zoom}}(1)^*$	
≤2 GHz	≤15	≤8	≤5	≤4	≤1.5* $\Delta z_{\text{zoom}}(n-1)$	≥30
2-3 GHz	≤12	≤5	≤5	≤4	≤1.5* $\Delta z_{\text{zoom}}(n-1)$	≥30
3-4 GHz	≤12	≤5	≤4	≤3	≤1.5* $\Delta z_{\text{zoom}}(n-1)$	≥28
4-5 GHz	≤10	≤4	≤3	≤2.5	≤1.5* $\Delta z_{\text{zoom}}(n-1)$	≥25
5-6 GHz	≤10	≤4	≤2	≤2	≤1.5* $\Delta z_{\text{zoom}}(n-1)$	≥22

*Also compliant to IEEE 1528-2013 Table 6

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT		 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 19 of 187	

5

DEFINITION OF REFERENCE POINTS

5.1 EAR REFERENCE POINT

Figure 5-2 shows the front, back and side views of the SAM Twin Phantom. The point “M” is the reference point for the center of the mouth, “LE” is the left ear reference point (ERP), and “RE” is the right ERP. The ERP is 15mm posterior to the entrance to the ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 5-1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front), also called the Reference Pivoting Line, is not perpendicular to the reference plane (see Figure 5-1). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].

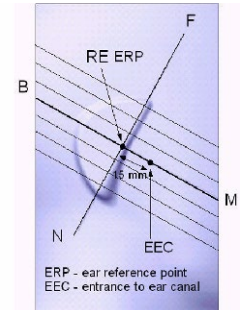


Figure 5-1
Close-Up Side view
of ERP

5.2 HANDSET REFERENCE POINTS

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed in a normal operating position with the acoustic output located along the “vertical centerline” on the front of the device aligned to the “ear reference point” (See Figure 5-3). The acoustic output was then located at the same level as the center of the ear reference point. The test device was positioned so that the “vertical centerline” was bisecting the front surface of the handset at its top and bottom edges, positioning the “ear reference point” on the outer surface of the both the left and right head phantoms on the ear reference point.

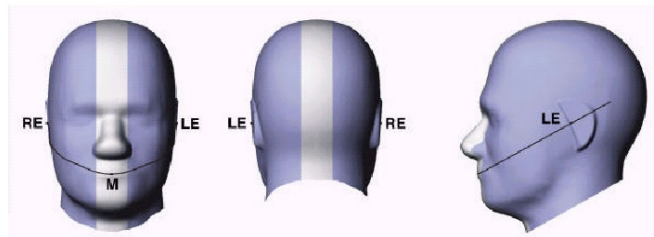


Figure 5-2
Front, back and side view of SAM Twin Phantom

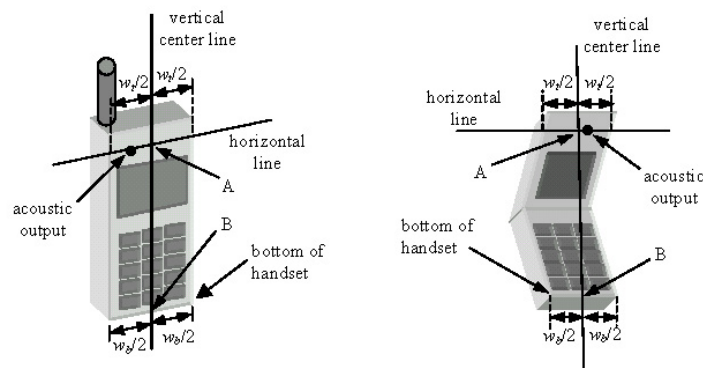


Figure 5-3
Handset Vertical Center & Horizontal Line Reference Points

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 20 of 187

6 TEST CONFIGURATION POSITIONS

6.1 Device Holder

The device holder is made out of low-loss POM material having the following dielectric parameters: relative permittivity $\epsilon = 3$ and loss tangent $\delta = 0.02$.

6.2 Positioning for Cheek

1. The test device was positioned with the device close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6-1), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.

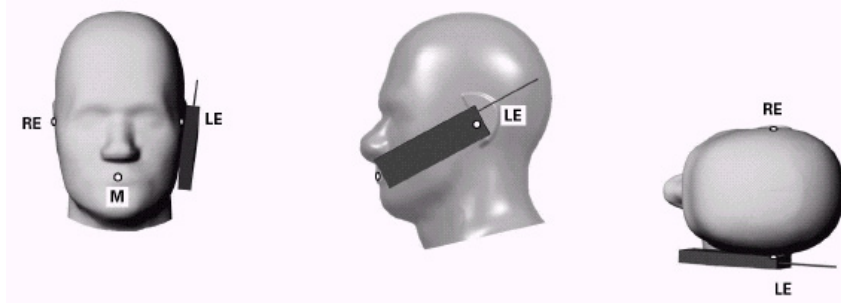


Figure 6-1 Front, Side and Top View of Cheek Position

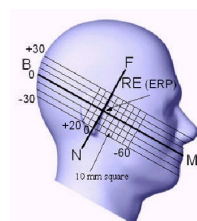
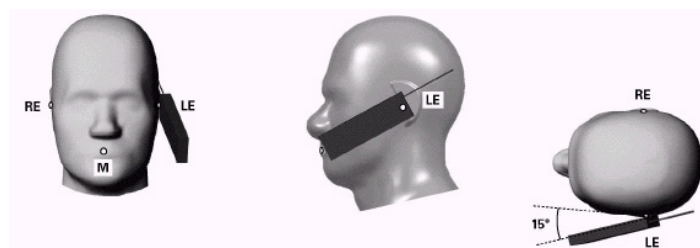
2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the pinna.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the reference plane.
4. The phone was then rotated around the vertical centerline until the phone (horizontal line) was symmetrical with respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the device contact with the ear, the device was rotated about the NF line until any point on the handset made contact with a phantom point below the ear (cheek) (See Figure 6-2).

6.3 Positioning for Ear / 15° Tilt

With the test device aligned in the “Cheek Position”:

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15 degrees.
2. The phone was then rotated around the horizontal line by 15 degrees.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the handset touched the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. In this situation, the tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 6-2).

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 21 of 187



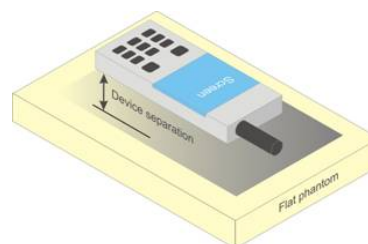
6.4 SAR Evaluations near the Mouth/Jaw Regions of the SAM Phantom

Antennas located near the bottom of a phone may require SAR measurements around the mouth and jaw regions of the SAM head phantom. This typically applies to clam-shell style phones that are generally longer in the unfolded normal use positions or to certain older style long rectangular phones. Per IEEE 1528-2013, a rotated SAM phantom is necessary to allow probe access to such regions. Both SAM heads of the TwinSAM-Chin20 are rotated 20 degrees around the NF line. Each head can be removed from the table for emptying and cleaning.

Under these circumstances, the following procedures apply, adopted from the FCC guidance on SAR handsets document FCC KDB Publication 648474 D04v01r03. The SAR required in these regions of SAM should be measured using a flat phantom. The phone should be positioned with a separation distance of 4 mm between the ear reference point (ERP) and the outer surface of the flat phantom shell. While maintaining this distance at the ERP location, the low (bottom) edge of the phone should be lowered from the phantom to establish the same separation distance between the peak SAR location identified by the truncated partial SAR distribution measured with the SAM phantom. The distance from the peak SAR location to the phone is determined by the straight line passing perpendicularly through the phantom surface. When it is not feasible to maintain 4 mm separation at the ERP while also establishing the required separation at the peak SAR location, the top edge of the phone will be allowed to touch the phantom with a separation < 4 mm at the ERP. The phone should not be tilted to the left or right while placed in this inclined position to the flat phantom.

6.5 Body-Worn Accessory Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6-4). Per FCC KDB Publication 648474 D04v01r03, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01v06 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode. A body-worn accessory, measured without a headset connected to reported SAR configuration for that wireless mode and frequency accessory with a headset attached to the handset.



Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 22 of 187	

contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented.

Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

6.6 Extremity Exposure Configurations

Devices that are designed or intended for use on extremities or mainly operated in extremity only exposure conditions; i.e., hands, wrists, feet and ankles, may require extremity SAR evaluation. When the device also operates in close proximity to the user's body, SAR compliance for the body is also required. The 1g body and 10g extremity SAR Exclusion Thresholds found in KDB Publication 447498 D01v06 should be applied to determine SAR test requirements.

Per KDB Publication 447498 D01v06, Cell phones (handsets) are not normally designed to be used on extremities or operated in extremity only exposure conditions. The maximum output power levels of handsets generally do not require extremity SAR testing to show compliance. Therefore, extremity SAR was not evaluated for this device.

6.7 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v02r01 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 procedures. The "Portable Hotspot" feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

6.8 Phablet Configurations

For smart phones with a display diagonal dimension > 150 mm or an overall diagonal dimension > 160 mm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 23 of 187

support voice calls next to the ear, the phablets procedures outlined in KDB Publication 648474 D04v01r03 should be applied to evaluate SAR compliance. A device marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance. In addition to the normally required head and body-worn accessory SAR test procedures required for handsets, the UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna ≤ 25 mm from that surface or edge, in direct contact with the phantom, for 10g SAR. The UMPC mini-tablet 1g SAR at 5 mm is not required. When hotspot mode applies, 10g SAR is required only for the surfaces and edges with hotspot mode 1g SAR > 1.2 W/kg.

6.9 Proximity Sensor Considerations

This device uses a power reduction mechanism to reduce output powers in certain use conditions when the device is used close the user's body.

When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a non-reduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included in Appendix G.

The sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the sensor entirely covers the antennas.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 24 of 187

7 RF EXPOSURE LIMITS

7.1 Uncontrolled Environment

UNCONTROLLED ENVIRONMENTS are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

7.2 Controlled Environment

CONTROLLED ENVIRONMENTS are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Table 7-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT <i>General Population</i> (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT <i>Occupational</i> (W/kg) or (mW/g)
Peak Spatial Average SAR Head	1.6	8.0
Whole Body SAR	0.08	0.4
Peak Spatial Average SAR Hands, Feet, Ankle, Wrists, etc.	4.0	20

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 25 of 187

8 FCC MEASUREMENT PROCEDURES

Power measurements for licensed transmitters are performed using a base station simulator under digital average power.

8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as *reported* SAR. The highest *reported* SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

8.2 3G SAR Test Reduction Procedure

In FCC KDB Publication 941225 D01v03r01, certain transmission modes within a frequency band and wireless mode evaluated for SAR are defined as primary modes. The equivalent modes considered for SAR test reduction are denoted as secondary modes. When the maximum output power including tune-up tolerance specified for production units in a secondary mode is ≤ 0.25 dB higher than the primary mode or when the highest reported SAR of the primary mode, scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode, is ≤ 1.2 W/kg, SAR measurements are not required for the secondary mode. These criteria are referred to as the 3G SAR test reduction procedure. When the 3G SAR test reduction procedure is not satisfied, SAR measurements are additionally required for the secondary mode.

8.3 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.”

The device is placed into a simulated call using a base station simulator in a RF shielded chamber. Establishing connections in this manner ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. Devices under test are evaluated prior to testing, with a fully charged battery and were configured to operate at maximum output power. In order to verify that the device is tested throughout the SAR test at maximum output power, the SAR measurement system measures a “point SAR” at an arbitrary reference point at the start and end of the 1 gram SAR evaluation, to assess for any power drifts during the evaluation. If the power drift deviates by more than 5%, the SAR test and drift measurements are repeated.

8.4 SAR Measurement Conditions for CDMA2000

The following procedures were performed according to FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.”

8.4.1 Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by FCC KDB Publication 941225 D01v03r01 “3G SAR Measurement Procedures.” Maximum output power is verified on the High, Middle and Low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. SO55 tests were measured with power control bits in the “All Up” condition.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 26 of 187

1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 8-1 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH₀ and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH₀ data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 8-2 was applied.

Table 8-1
Parameters for Max. Power for RC1

Parameter	Units	Value
I_{or}	dBm/1.23 MHz	-104
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

Table 8-2
Parameters for Max. Power for RC3

Parameter	Units	Value
I_{or}	dBm/1.23 MHz	-86
$\frac{Pilot E_c}{I_{or}}$	dB	-7
$\frac{Traffic E_c}{I_{or}}$	dB	-7.4

5. FCHs were configured at full rate for maximum SAR with “All Up” power control bits.

8.4.2 Head SAR Measurements

SAR for next to the ear head exposure is measured in RC3 with the handset configured to transmit at fullrate in SO55. The 3G SAR test reduction procedure is applied to RC1 with RC3 as the primary mode; otherwise, SAR is required for the channel with maximum measured output in RC1 using the head exposure configuration that results in the highest reported SAR in RC3.

Head SAR is additionally evaluated using EVDO Rev. A to support compliance for VoIP operations. See Section 8.4.5 for EVDO Rev. A configuration parameters.

8.4.3 Body-worn SAR Measurements

SAR for body-worn exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. The 3G SAR test reduction procedure is applied to the multiple code channel configuration (FCH+SCH_n), with FCH only as the primary mode. Otherwise, SAR is required for multiple code channel configuration (FCH + SCH_n), with FCH at full rate and SCH₀ enabled at 9600 bps, using the highest reported SAR configuration for FCH only. When multiple code channels are enabled, the transmitter output can shift by more than 0.5 dB and may lead to higher SAR drifts and SCH dropouts.

The 3G SAR test reduction procedure is applied to body-worn accessory SAR in RC1 with RC3 as the primary mode. Otherwise, SAR is required for RC1, with SO55 and full rate, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

8.4.4 Body-worn SAR Measurements for EVDO Devices

For handsets with EVDO capabilities, the 3G SAR test reduction procedure is applied to EVDO Rev. 0 with 1x RTT RC3 as the primary mode to determine body-worn accessory test requirements. Otherwise, body-worn accessory SAR is required for Rev. 0, at 153.6 kbps, using the highest reported SAR configuration for body-worn accessory exposure in RC3.

The 3G SAR test reduction procedure is applied to Rev. A, with Rev. 0 as the primary mode to determine body-worn accessory SAR test requirements. When SAR is not required for Rev. 0, the 3G SAR test reduction is applied with 1x RTT RC3 as the primary mode.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 27 of 187

When SAR is required for EVDO Rev. A, SAR is measured with a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 Physical Layer configurations, using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0 or 1x RTT RC3, as appropriate.

8.4.5 Body SAR Measurements for EVDO Hotspot

Hotspot Body SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0. The 3G SAR test reduction procedure is applied to Rev. A, Subtype 2 Physical layer configuration, with Rev. 0 as the primary mode; otherwise, SAR is measured for Rev. A using the highest reported SAR configuration for body-worn accessory exposure in Rev. 0. The AT is tested with a Reverse Data Channel rate of 153.6 kbps in Subtype 0/1 Physical Layer configurations; and a Reverse Data Channel payload size of 4096 bits and Termination Target of 16 slots in Subtype 2 Physical Layer configurations.

For EVDO data devices that also support 1x RTT voice and/or data operations, the 3G SAR test reduction procedure is applied to 1x RTT RC3 and RC1 with EVDO Rev. 0 and Rev. A as the respective primary modes. Otherwise, the 'Body-Worn Accessory SAR' procedures in the '3GPP2 CDMA 2000 1x Handsets' section are applied.

8.4.6 CDMA2000 1x Advanced

This device additionally supports 1x Advanced. Conducted powers are measured using SO75 with RC8 on the uplink and RC11 on the downlink per FCC KDB Publication 941225 D01v03r01. Smart blanking is disabled for all measurements. The EUT is configured with forward power control Mode 000 and reverse power control at 400 bps. Conducted powers are measured on an Agilent 8960 Series 10 Wireless Communications Test Set, Model E5515C using the CDMA2000 1x Advanced application, Option E1962B-410.

The 3G SAR test reduction procedure is applied to the 1x-Advanced transmission mode with 1x RTT RC3 as the primary mode. When SAR measurement is required, the 1x-Advanced power measurement configurations are used. The 1x Advanced SAR procedures are applied separately to head, body-worn accessory and other exposure conditions.

8.5 SAR Measurement Conditions for UMTS

8.5.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all "1s" or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

8.5.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1s". The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 28 of 187

primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.5.3 Body SAR Measurements

SAR for body exposure configurations is measured using the 12.2 kbps RMC with the TPC bits all “1s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCH_n configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreading code or DPDCH_n, for the highest reported SAR configuration in 12.2 kbps RMC.

8.5.4 SAR Measurements with Rel 5 HSDPA

The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, for the highest reported SAR configuration in 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

8.5.5 SAR Measurements with Rel 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

8.6 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r04 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

8.6.1 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

8.6.2 MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

8.6.3 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 29 of 187

8.6.4 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05v02r04:

- a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
 - i. The required channel and offset combination with the highest maximum output power is required for SAR.
 - ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
 - iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
- b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.
- c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
- d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sections 5.2.1 through 5.2.3 is less than or equal to $\frac{1}{2}$ dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/kg.

8.6.5 TDD

LTE TDD testing is performed using the SAR test guidance provided in FCC KDB 941225 D05v02r04. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05v02r04. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211 Section 4.

8.6.6 Downlink Only Carrier Aggregation

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05Av01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. Additional conducted output powers are measured with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for downlink only carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with downlink only carrier aggregation inactive.

8.7 SAR Testing with 802.11 Transmitters

The normal network operating configurations of 802.11 transmitters are not suitable for SAR measurements. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01v02r02 for more details.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 30 of 187	

8.7.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.

A periodic duty factor is required for current generation SAR systems to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 - 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

8.7.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification. Unless band gap channels are permanently disabled, SAR must be considered for these channels. Each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

8.7.4 Initial Test Position Procedure

For exposure conditions with multiple test positions, such as handset operating next to the ear, devices with hotspot mode or UMPC mini-tablet, procedures for initial test position can be applied. Using the transmission mode determined by the DSSS procedure or initial test configuration, area scans are measured for all positions in an exposure condition. The test position with the highest extrapolated (peak) SAR is used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg, no additional testing for the remaining test positions is required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.5 2.4 GHz SAR Test Requirements

SAR is measured for 2.4 GHz 802.11b DSSS using either the fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

- 1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 31 of 187

- 2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

2.4 GHz 802.11 g/n/ax OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.6 OFDM Transmission Mode and SAR Test Channel Selection

When the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. Per April 2019 TCB Workshop guidance, 802.11ax was considered the highest order 802.11 mode. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

8.7.7 Initial Test Configuration Procedure

For OFDM, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order IEEE 802.11 mode. The channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements (See Section 8.7.6). When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

8.7.8 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 32 of 187

8.7.9 MIMO SAR considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR measurements for MIMO are required. Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 33 of 187

9 RF CONDUCTED POWERS

9.1 CDMA Conducted Powers

Table 9-1
Measured P_{max}

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	564	90S	820.1	25.25	25.25	25.24	25.26	25.25	25.14	25.20
Cellular	1013	22H	824.7	25.22	25.21	25.23	25.23	25.22	25.09	25.17
	384	22H	836.52	25.15	25.22	25.21	25.17	25.21	25.07	25.19
	777	22H	848.31	25.21	25.18	25.19	25.18	25.14	25.00	25.11
PCS	25	24E	1851.25	24.62	24.62	24.90	24.60	24.63	24.94	25.06
	600	24E	1880	24.65	24.64	24.92	24.63	24.64	24.93	25.03
	1175	24E	1908.75	24.61	24.61	25.07	24.77	24.78	24.95	25.05

Table 9-2
Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)

Band	Channel	Rule Part	Frequency	SO55 [dBm]	SO55 [dBm]	SO75 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC		MHz	RC1	RC3	RC11	FCH+SCH	FCH	(RTAP)	(RETAP)
PCS	25	24E	1851.25	22.81	22.85	22.84	23.00	22.99	23.15	22.99
	600	24E	1880	22.77	22.77	22.75	22.91	22.92	23.10	22.97
	1175	24E	1908.75	22.81	22.83	22.81	22.98	22.96	22.95	22.96

Note: RC1 is only applicable for IS-95 compatibility. For FCC Rule Part 90S, Per FCC KDB Publication 447498 D01v06 4.1.g), only one channel is required since the device operates within the transmission range of 817.90 – 823.10 MHz.



Figure 9-1
Power Measurement Setup

FCC ID: ZNFF100TM	PCTEST Proud to be part of element	SAR EVALUATION REPORT	LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 34 of 187

9.2 GSM Conducted Powers

Table 9-3
Measured P_{max}

Maximum Burst-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	33.62	33.43	31.92	30.28	29.00	26.99	26.84	26.00	25.99
	190	33.52	33.66	31.66	30.26	28.82	26.69	26.66	25.94	25.88
	251	33.40	33.45	31.55	30.25	28.75	26.45	26.42	25.76	25.62
GSM 1900	512	30.37	30.45	28.31	27.23	25.51	25.61	25.29	24.30	24.19
	661	30.26	30.28	28.31	27.23	25.51	25.51	25.47	24.54	24.34
	810	30.11	30.10	28.40	27.12	25.42	25.51	25.53	24.40	24.45

Calculated Maximum Frame-Averaged Output Power										
		Voice	GPRS/EDGE Data (GMSK)				EDGE Data (8-PSK)			
Band	Channel	GSM [dBm] CS (1 Slot)	GPRS [dBm] 1 Tx Slot	GPRS [dBm] 2 Tx Slot	GPRS [dBm] 3 Tx Slot	GPRS [dBm] 4 Tx Slot	EDGE [dBm] 1 Tx Slot	EDGE [dBm] 2 Tx Slot	EDGE [dBm] 3 Tx Slot	EDGE [dBm] 4 Tx Slot
GSM 850	128	24.42	24.23	25.73	25.85	25.82	17.79	20.65	21.57	22.81
	190	24.32	24.46	25.47	25.83	25.64	17.49	20.47	21.51	22.70
	251	24.20	24.25	25.36	25.82	25.57	17.25	20.23	21.33	22.44
GSM 1900	512	21.17	21.25	22.12	22.80	22.33	16.41	19.10	19.87	21.01
	661	21.06	21.08	22.12	22.80	22.33	16.31	19.28	20.11	21.16
	810	20.91	20.90	22.21	22.69	22.24	16.31	19.34	19.97	21.27

GSM 850	Frame	23.80	23.80	24.81	25.07	24.82	16.80	19.81	20.57	21.82
GSM 1900	Avg.Targets:	20.80	20.80	21.81	22.57	21.82	15.80	18.81	19.57	20.82

Note:

- Both burst-averaged and calculated frame-averaged powers are included. Frame-averaged power was calculated from the measured burst-averaged power by converting the slot powers into linear units and calculating the energy over 8 timeslots.
- GPRS/EDGE (GMSK) output powers were measured with coding scheme setting of 1 (CS1) on the base station simulator. CS1 was configured to measure GPRS output power measurements and SAR to ensure GMSK modulation in the signal. Our Investigation has shown that CS1 - CS4 settings do not have any impact on the output levels or modulation in the GPRS modes.
- EDGE (8-PSK) output powers were measured with MCS7 on the base station simulator. MCS7 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS7 coding scheme will ensure 8-PSK modulation. It has been shown that MCS levels that produce 8-PSK modulation do not have an impact on output power.

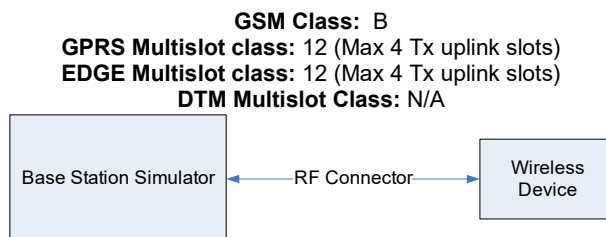


Figure 9-2
Power Measurement Setup

FCC ID: ZNFF100TM	PCTEST Proud to be part of element	SAR EVALUATION REPORT	LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 35 of 187

9.3 UMTS Conducted Powers

Table 9-4
Measured P_{max}

3GPP Release Version	Mode	3GPP 34.121 Subtest	Cellular Band [dBm]			AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			4132	4183	4233	1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	25.38	25.41	25.34	25.37	25.46	25.44	25.00	25.37	25.27	-
99		12.2 kbps AMR	25.41	25.39	25.32	25.39	25.44	25.45	25.36	25.33	25.31	-
6	HSDPA	Subtest 1	25.18	25.25	25.16	25.04	25.05	25.03	25.46	25.35	25.20	0
6		Subtest 2	25.18	25.14	25.05	24.89	24.91	24.74	25.49	25.34	25.20	0
6		Subtest 3	24.68	24.70	24.56	24.55	24.57	24.52	24.92	24.85	24.68	0.5
6		Subtest 4	24.71	24.72	24.67	24.59	24.67	24.64	24.93	24.80	24.70	0.5
6	HSUPA	Subtest 1	24.52	24.58	24.51	24.52	24.53	24.65	24.86	24.72	24.60	0
6		Subtest 2	23.14	23.17	23.09	23.00	23.03	23.00	23.38	23.28	23.13	2
6		Subtest 3	24.18	24.22	24.12	24.00	23.49	23.93	24.35	24.27	24.14	1
6		Subtest 4	23.16	23.20	23.14	22.91	23.04	23.03	23.38	23.33	23.15	2
6		Subtest 5	25.02	25.11	25.06	25.22	25.30	25.32	25.46	25.38	25.24	0

Table 9-5
Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)

3GPP Release Version	Mode	3GPP 34.121 Subtest	AWS Band [dBm]			PCS Band [dBm]			3GPP MPR [dB]
			1312	1412	1513	9262	9400	9538	
99	WCDMA	12.2 kbps RMC	23.26	23.26	23.28	23.50	23.46	23.32	-
99		12.2 kbps AMR	23.23	23.24	23.27	23.45	23.40	23.30	-
6	HSDPA	Subtest 1	23.36	23.43	23.45	23.50	23.45	23.33	0
6		Subtest 2	23.37	23.41	23.48	23.49	23.45	23.43	0
6		Subtest 3	22.90	22.94	22.91	23.00	22.97	22.81	0.5
6		Subtest 4	22.84	22.91	22.93	23.00	22.92	22.83	0.5
6	HSUPA	Subtest 1	22.62	22.66	22.70	22.83	22.73	22.63	0
6		Subtest 2	21.20	21.24	21.23	21.46	21.40	21.32	2
6		Subtest 3	22.40	22.47	22.44	22.43	22.36	22.23	1
6		Subtest 4	21.15	21.20	21.20	21.44	21.39	21.25	2
6		Subtest 5	23.28	23.38	23.39	23.50	23.44	23.31	0

This device does not support DC-HSDPA.



Figure 9-3
Power Measurement Setup

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 36 of 187

9.4 LTE Conducted Powers

9.4.1 LTE Band 71

Table 9-6
LTE Band 71 Measured P_{max} - 20 MHz Bandwidth

LTE Band 71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.16	0	0
	1	50	25.08		0
	1	99	24.96		0
	50	0	24.14	0-1	1
	50	25	24.13		1
	50	50	24.06		1
	100	0	24.08		1
16QAM	1	0	24.49	0-1	1
	1	50	24.50		1
	1	99	24.38		1
	50	0	23.08	0-2	2
	50	25	23.11		2
	50	50	23.10		2
	100	0	23.05		2
64QAM	1	0	23.21	0-2	2
	1	50	23.19		2
	1	99	23.12		2
	50	0	22.18	0-3	3
	50	25	22.15		3
	50	50	22.14		3
	100	0	22.08		3

Note: LTE Band 71 at 20 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 37 of 187

Table 9-7
LTE Band 71 Measured P_{max} - 15 MHz Bandwidth

LTE Band 71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133297 (680.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.13	0	0
	1	36	25.03		0
	1	74	24.94		0
	36	0	24.09	0-1	1
	36	18	24.03		1
	36	37	24.04		1
	75	0	24.02		1
16QAM	1	0	24.36	0-1	1
	1	36	24.29		1
	1	74	24.27		1
	36	0	23.08	0-2	2
	36	18	23.02		2
	36	37	23.05		2
	75	0	23.06		2
64QAM	1	0	23.23	0-2	2
	1	36	23.19		2
	1	74	23.16		2
	36	0	22.13	0-3	3
	36	18	22.01		3
	36	37	22.03		3
	75	0	21.98		3

Note: LTE Band 71 at 15 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 38 of 187

Table 9-8
LTE Band 71 Measured P_{max} - 10 MHz Bandwidth

LTE Band 71 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133172 (668.0 MHz)	133297 (680.5 MHz)	133422 (693.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.17	25.12	24.99	0	0
	1	25	24.90	24.99	24.95		0
	1	49	24.98	24.93	24.89		0
	25	0	24.09	24.04	24.04	0-1	1
	25	12	24.14	24.10	23.97		1
	25	25	24.11	24.07	23.92		1
16QAM	50	0	24.12	23.96	23.85	0-1	1
	1	0	24.34	24.32	24.28		1
	1	25	24.31	24.28	24.30		1
	1	49	24.39	24.24	24.19	0-2	1
	25	0	23.15	23.05	23.00		2
	25	12	23.10	23.05	23.02		2
64QAM	25	25	23.10	23.09	23.03	0-2	2
	50	0	23.08	22.95	22.92		2
	1	0	23.37	23.29	23.18		0-2
	1	25	23.35	23.23	23.21	2	
	1	49	23.17	23.19	23.14	2	
	25	0	22.21	22.03	22.05	0-3	3
25	12	22.21	22.14	22.02	3		
25	25	22.06	22.06	21.97	3		
50	0	22.14	21.98	22.00	3		

Table 9-9
LTE Band 71 Measured P_{max} - 5 MHz Bandwidth

LTE Band 71 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			133147 (665.5 MHz)	133297 (680.5 MHz)	133447 (695.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.06	24.87	24.82	0	0
	1	12	25.09	25.00	24.98		0
	1	24	24.97	24.92	24.86		0
	12	0	24.16	24.02	23.92	0-1	1
	12	6	24.32	24.07	23.99		1
	12	13	24.19	24.06	23.99		1
16QAM	25	0	24.16	23.96	23.97	0-1	1
	1	0	24.31	24.17	24.16		1
	1	12	24.33	24.30	24.28		1
	1	24	24.26	24.24	24.21	0-2	1
	12	0	23.30	23.05	22.97		2
	12	6	23.31	23.09	23.06		2
64QAM	12	13	23.20	23.10	23.05	0-2	2
	25	0	23.22	23.10	22.92		2
	1	0	23.00	23.09	23.14		0-2
	1	12	23.27	23.19	23.16	2	
	1	24	23.28	23.21	23.15	2	
	12	0	21.72	22.07	22.02	0-3	3
12	6	22.31	22.16	22.08	3		
12	13	22.20	22.13	22.06	3		
25	0	22.08	22.10	21.98		3	

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 39 of 187	

9.4.1

LTE Band 12

Table 9-10
LTE Band 12 Measured P_{max} - 10 MHz Bandwidth

LTE Band 12 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23095 (707.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.07	0	0
	1	25	24.92		0
	1	49	25.04		0
	25	0	24.02	0-1	1
	25	12	24.08		1
	25	25	24.03		1
	50	0	24.06		1
16QAM	1	0	24.25	0-1	1
	1	25	24.26		1
	1	49	24.32		1
	25	0	23.06	0-2	2
	25	12	23.17		2
	25	25	23.14		2
	50	0	23.03		2
64QAM	1	0	23.01	0-2	2
	1	25	23.10		2
	1	49	23.04		2
	25	0	22.17	0-3	3
	25	12	22.23		3
	25	25	22.18		3
	50	0	22.05		3

Note: LTE Band 12 at 10 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 40 of 187

Table 9-11
LTE Band 12 Measured P_{max} - 5 MHz Bandwidth

LTE Band 12 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23035 (701.5 MHz)	23095 (707.5 MHz)	23155 (713.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.90	24.96	24.97	0	0
	1	12	24.86	25.09	24.99		0
	1	24	24.87	25.00	24.85		0
	12	0	24.00	24.08	24.00	0-1	1
	12	6	24.04	24.06	24.05		1
	12	13	23.99	24.00	24.05		1
	25	0	24.01	23.95	23.95		1
16QAM	1	0	24.18	24.23	24.25	0-1	1
	1	12	24.21	24.30	24.26		1
	1	24	24.23	24.21	24.26		1
	12	0	23.01	23.06	23.05	0-2	2
	12	6	23.07	23.07	23.01		2
	12	13	23.01	23.10	23.05		2
	25	0	23.02	23.05	23.04		2
64QAM	1	0	23.22	23.19	23.23	0-2	2
	1	12	23.23	23.21	23.32		2
	1	24	23.10	23.24	23.18		2
	12	0	22.03	22.03	22.06	0-3	3
	12	6	22.13	22.04	22.07		3
	12	13	22.03	22.05	22.02		3
	25	0	22.00	22.09	22.02		3

Table 9-12
LTE Band 12 Measured P_{max} - 3 MHz Bandwidth

LTE Band 12 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23025 (700.5 MHz)	23095 (707.5 MHz)	23165 (714.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.94	24.92	24.92	0	0
	1	7	24.80	24.99	24.89		0
	1	14	24.89	24.92	24.84		0
	8	0	24.04	23.97	24.03	0-1	1
	8	4	24.01	24.04	24.05		1
	8	7	23.94	23.95	24.04		1
	15	0	24.01	23.97	23.96		1
16QAM	1	0	24.28	24.22	24.23	0-1	1
	1	7	24.25	24.19	24.16		1
	1	14	24.20	24.28	24.25		1
	8	0	23.05	23.01	23.04	0-2	2
	8	4	23.10	23.09	23.11		2
	8	7	23.08	23.10	23.15		2
	15	0	23.02	23.04	23.00		2
64QAM	1	0	23.12	23.19	23.22	0-2	2
	1	7	23.35	23.24	23.16		2
	1	14	23.12	23.14	23.19		2
	8	0	21.99	21.98	22.07	0-3	3
	8	4	22.00	22.10	22.09		3
	8	7	22.02	22.00	22.11		3
	15	0	22.06	22.04	22.02		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 41 of 187	

Table 9-13
LTE Band 12 Measured P_{max} – 1.4 MHz Bandwidth

LTE Band 12 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23017 (699.7 MHz)	23095 (707.5 MHz)	23173 (715.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.87	24.84	24.92	0	0
	1	2	24.99	24.92	24.99		0
	1	5	25.05	24.99	25.05		0
	3	0	25.12	24.82	25.17		0
	3	2	24.99	24.88	25.02		0
	3	3	24.98	24.99	24.99		0
	6	0	24.00	23.98	23.95	0-1	1
16QAM	1	0	24.12	24.01	24.12	0-1	1
	1	2	24.13	24.12	24.11		1
	1	5	24.00	24.22	24.13		1
	3	0	24.12	24.23	24.17		1
	3	2	24.08	24.17	24.22		1
	3	3	24.05	24.00	24.17		1
	6	0	23.12	23.05	22.98	0-2	2
64QAM	1	0	23.08	23.11	22.88	0-2	2
	1	2	23.01	23.17	22.84		2
	1	5	23.07	23.22	22.89		2
	3	0	23.18	23.25	22.92		2
	3	2	23.22	23.27	23.00		2
	3	3	23.28	23.13	23.01		2
	6	0	22.08	22.01	22.07	0-3	3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 42 of 187	

9.4.2

LTE Band 13

Table 9-14
LTE Band 13 Measured P_{max} - 10 MHz Bandwidth

LTE Band 13 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.32	0	0
	1	25	25.20		0
	1	49	25.22		0
	25	0	24.28	0-1	1
	25	12	24.22		1
	25	25	24.19		1
	50	0	24.23		1
16QAM	1	0	24.46	0-1	1
	1	25	24.49		1
	1	49	24.44		1
	25	0	23.31	0-2	2
	25	12	23.28		2
	25	25	23.34		2
	50	0	23.18		2
64QAM	1	0	23.46	0-2	2
	1	25	23.39		2
	1	49	23.48		2
	25	0	22.31	0-3	3
	25	12	22.28		3
	25	25	22.31		3
	50	0	22.13		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 43 of 187

Table 9-15
LTE Band 13 Measured P_{max} - 5 MHz Bandwidth

LTE Band 13 5 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			23230 (782.0 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	25.10	0	0
	1	12	25.08		0
	1	24	25.05		0
	12	0	24.18	0-1	1
	12	6	24.18		1
	12	13	24.23		1
	25	0	24.12		1
16QAM	1	0	24.38	0-1	1
	1	12	24.44		1
	1	24	24.33		1
	12	0	23.18	0-2	2
	12	6	23.24		2
	12	13	23.17		2
	25	0	23.20		2
64QAM	1	0	23.32	0-2	2
	1	12	23.33		2
	1	24	23.31		2
	12	0	22.18	0-3	3
	12	6	22.22		3
	12	13	22.18		3
	25	0	22.11		3

Note: LTE Band 13 at 5 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 44 of 187	

9.4.1

LTE Band 26

Table 9-16
LTE Band 26 Measured P_{max} - 15 MHz Bandwidth

LTE Band 26 (Cell) 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Mid Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26865 (831.5 MHz)		
			Conducted Power [dBm]		
QPSK	1	0	24.99	0	0
	1	36	25.00		0
	1	74	24.97		0
	36	0	24.02	0-1	1
	36	18	24.04		1
	36	37	24.06		1
	75	0	24.03		1
16QAM	1	0	24.35	0-1	1
	1	36	24.35		1
	1	74	24.31		1
	36	0	23.02	0-2	2
	36	18	23.05		2
	36	37	23.06		2
	75	0	23.07		2
64QAM	1	0	23.11	0-2	2
	1	36	23.15		2
	1	74	23.11		2
	36	0	22.07	0-3	3
	36	18	22.09		3
	36	37	22.10		3
	75	0	22.10		3

Note: LTE Band 26 at 15 MHz bandwidth does not support three non-overlapping channels. Per KDB Publication 941225 D05v02, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 45 of 187

Table 9-17
LTE Band 26 Measured P_{max} - 10 MHz Bandwidth

LTE Band 26 (Cell) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26740 (819.0 MHz)	26865 (831.5 MHz)	26990 (844.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.13	24.91	25.11	0	0
	1	25	25.16	25.05	24.79		0
	1	49	25.02	25.03	24.74		0
	25	0	24.17	24.00	24.04	0-1	1
	25	12	24.23	23.99	24.05		1
	25	25	24.09	24.06	23.59		1
	50	0	24.18	24.06	24.00		1
16QAM	1	0	24.15	24.43	24.37	0-1	1
	1	25	24.25	24.45	24.19		1
	1	49	24.22	24.30	23.99		1
	25	0	23.11	23.07	23.05	0-2	2
	25	12	23.23	23.15	23.17		2
	25	25	23.15	23.10	22.68		2
	50	0	23.14	23.07	23.05		2
64QAM	1	0	22.73	23.28	23.18	0-2	2
	1	25	23.22	23.34	23.17		2
	1	49	23.30	23.31	23.02		2
	25	0	21.74	22.02	21.86	0-3	3
	25	12	22.03	22.15	21.64		3
	25	25	22.15	21.97	21.78		3
	50	0	21.84	22.09	21.64		3

Table 9-18
LTE Band 26 Measured P_{max} - 5 MHz Bandwidth

LTE Band 26 (Cell) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26715 (816.5 MHz)	26865 (831.5 MHz)	27015 (846.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.03	25.14	25.09	0	0
	1	12	25.22	25.06	24.83		0
	1	24	25.34	25.10	24.74		0
	12	0	24.18	24.04	24.05	0-1	1
	12	6	24.10	24.14	24.05		1
	12	13	24.11	24.18	24.00		1
	25	0	24.26	24.16	24.02		1
16QAM	1	0	24.18	24.37	24.28	0-1	1
	1	12	24.17	24.21	24.20		1
	1	24	24.23	24.19	24.05		1
	12	0	23.08	23.10	23.11	0-2	2
	12	6	23.08	23.15	23.18		2
	12	13	23.11	23.15	23.17		2
	25	0	22.98	23.18	23.15		2
64QAM	1	0	23.25	23.13	23.00	0-2	2
	1	12	23.01	23.04	23.15		2
	1	24	23.13	23.14	23.08		2
	12	0	21.94	22.13	21.99	0-3	3
	12	6	22.13	22.21	21.84		3
	12	13	22.17	22.10	21.98		3
	25	0	22.17	22.25	21.78		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 46 of 187

Table 9-19
LTE Band 26 Measured P_{max} - 3 MHz Bandwidth

LTE Band 26 (Cell) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26705 (815.5 MHz)	26865 (831.5 MHz)	27025 (847.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.00	25.03	25.13	0	0
	1	7	25.11	25.16	25.27		0
	1	14	25.29	25.09	25.12		0
	8	0	24.17	24.07	24.08	0-1	1
	8	4	24.11	24.17	24.15		1
	8	7	24.02	24.14	24.13		1
	15	0	24.03	24.12	24.22		1
16QAM	1	0	24.17	24.26	24.17	0-1	1
	1	7	24.28	24.25	24.17		1
	1	14	24.11	24.37	24.13		1
	8	0	23.13	23.15	23.18	0-2	2
	8	4	23.28	23.31	23.12		2
	8	7	23.07	23.27	23.18		2
	15	0	23.11	23.20	23.00		2
64QAM	1	0	23.02	23.19	23.27	0-2	2
	1	7	23.08	23.23	23.08		2
	1	14	23.02	23.33	23.02		2
	8	0	22.00	22.13	22.11	0-3	3
	8	4	22.00	22.22	22.08		3
	8	7	21.92	22.08	22.08		3
	15	0	21.84	22.23	21.99		3

Table 9-20
LTE Band 26 Measured P_{max} - 1.4 MHz Bandwidth

LTE Band 26 (Cell) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26697 (814.7 MHz)	26865 (831.5 MHz)	27033 (848.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.11	24.89	24.95	0	0
	1	2	25.13	25.00	24.59		0
	1	5	25.09	25.10	24.63		0
	3	0	25.05	24.88	24.93		0
	3	2	25.12	25.00	24.61		0
	3	3	25.03	24.94	24.61		0
	6	0	24.16	24.02	23.58	0-1	1
16QAM	1	0	24.37	24.27	23.72	0-1	1
	1	2	24.25	24.14	23.81		1
	1	5	24.36	24.27	24.00		1
	3	0	24.20	24.02	23.64		1
	3	2	24.21	24.17	23.66		1
	3	3	24.18	24.12	23.70	1	
6	0	23.28	23.17	22.81	0-2	2	
64QAM	1	0	22.54	23.14	22.90	0-2	2
	1	2	22.57	23.21	22.88		2
	1	5	22.72	23.12	22.90		2
	3	0	22.64	23.18	22.86		2
	3	2	22.60	23.18	22.85		2
	3	3	22.74	23.14	22.86		2
	6	0	21.93	22.13	21.75	0-3	3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 47 of 187	

9.4.2

LTE Band 66 (AWS)

Table 9-21
LTE Band 66 (AWS) Measured P_{max} - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.86	24.91	25.02	0	0
	1	50	25.05	25.13	24.93		0
	1	99	24.85	24.90	24.90		0
	50	0	24.09	24.16	24.19	0-1	1
	50	25	24.17	24.22	24.18		1
	50	50	24.07	24.14	24.19		1
	100	0	24.13	24.11	24.17		1
16QAM	1	0	24.25	24.47	24.50	0-1	1
	1	50	24.50	24.45	24.50		1
	1	99	24.26	24.44	24.44		1
	50	0	23.08	23.10	23.21	0-2	2
	50	25	23.18	23.14	23.25		2
	50	50	23.07	23.12	23.22		2
	100	0	23.12	23.12	23.17		2
64QAM	1	0	22.91	22.92	23.48	0-2	2
	1	50	23.19	23.20	23.47		2
	1	99	22.99	22.95	23.40		2
	50	0	22.10	22.22	22.19	0-3	3
	50	25	22.23	22.24	22.25		3
	50	50	22.15	22.18	22.21		3
	100	0	22.16	22.15	22.14		3

Table 9-22
LTE Band 66 (AWS) Measured P_{max} - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.80	24.96	24.97	0	0
	1	36	24.96	25.14	25.02		0
	1	74	24.73	24.89	24.87		0
	36	0	23.99	24.09	24.13	0-1	1
	36	18	24.11	24.10	24.11		1
	36	37	24.02	24.06	24.10		1
	75	0	24.04	24.01	24.03		1
16QAM	1	0	23.63	24.07	24.40	0-1	1
	1	36	23.83	24.22	24.35		1
	1	74	23.61	24.00	24.22		1
	36	0	22.92	23.04	23.02	0-2	2
	36	18	23.02	23.06	23.05		2
	36	37	22.94	23.05	23.05		2
	75	0	22.98	22.91	22.98		2
64QAM	1	0	22.65	23.28	23.05	0-2	2
	1	36	22.83	23.13	23.15		2
	1	74	22.59	23.31	23.08		2
	36	0	22.17	22.10	22.23	0-3	3
	36	18	22.21	22.12	22.27		3
	36	37	22.17	22.09	22.24		3
	75	0	22.08	22.11	22.08		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 48 of 187

Table 9-23
LTE Band 66 (AWS) Measured P_{max} - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.74	24.68	24.79	0	0
	1	25	24.85	24.95	24.96		0
	1	49	24.71	24.71	24.75		0
	25	0	24.04	24.00	24.09	0-1	1
	25	12	24.13	24.08	24.11		1
	25	25	24.00	24.04	24.05		1
50	0	24.03	24.00	24.06		1	
16QAM	1	0	23.51	23.93	24.08	0-1	1
	1	25	23.79	24.18	24.27		1
	1	49	23.51	23.95	24.05		1
	25	0	23.04	22.96	23.00	0-2	2
	25	12	23.08	23.06	23.03		2
	25	25	22.96	22.97	23.01		2
50	0	22.95	22.88	22.96		2	
64QAM	1	0	22.54	22.64	23.28	0-2	2
	1	25	22.68	22.96	23.02		2
	1	49	22.52	22.68	23.01		2
	25	0	22.17	22.16	22.11	0-3	3
	25	12	22.24	22.21	22.17		3
	25	25	22.11	22.20	22.11		3
	50	0	22.11	22.02	22.06		3

Table 9-24
LTE Band 66 (AWS) Measured P_{max} - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.08	25.01	24.98	0	0
	1	12	25.07	25.07	24.97		0
	1	24	24.99	24.99	24.88		0
	12	0	24.13	24.16	24.19	0-1	1
	12	6	24.13	24.13	24.19		1
	12	13	24.05	24.06	24.06		1
16QAM	25	0	24.11	24.10	24.14	0-1	1
	1	0	24.30	24.06	24.23		1
	1	12	24.32	24.17	24.29		1
	1	24	24.24	24.07	24.11	0-2	1
	12	0	23.05	23.07	23.09		2
	12	6	23.07	23.04	23.13		2
64QAM	12	13	22.98	22.99	23.06	0-2	2
	25	0	22.96	23.03	23.04		2
	1	0	23.21	23.26	23.23	0-2	2
	1	12	23.27	23.34	23.25		2
	1	24	23.03	23.25	23.07		2
	12	0	22.20	22.20	22.18	0-3	3
	12	6	22.20	22.18	22.19		3
	12	13	22.07	22.13	22.07		3
	25	0	22.17	22.14	22.14		

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 49 of 187	

Table 9-25
LTE Band 66 (AWS) Measured P_{max} - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.99	24.97	25.03	0	0
	1	7	24.95	24.92	24.98		0
	1	14	24.92	24.90	24.91		0
	8	0	24.11	24.11	24.19	0-1	1
	8	4	24.08	24.13	24.15		1
	8	7	24.03	24.05	24.09		1
	15	0	24.06	24.14	24.17		1
16QAM	1	0	23.89	24.20	24.42	0-1	1
	1	7	23.78	24.24	24.41		1
	1	14	23.70	24.15	24.23		1
	8	0	22.93	22.91	23.16	0-2	2
	8	4	22.91	22.91	23.14		2
	8	7	22.86	22.86	23.07		2
	15	0	22.98	23.10	23.15		2
64QAM	1	0	22.93	23.07	23.01	0-2	2
	1	7	22.87	23.03	23.19		2
	1	14	22.73	22.97	23.01		2
	8	0	22.21	22.10	22.32	0-3	3
	8	4	22.26	22.18	22.32		3
	8	7	22.15	22.09	22.27		3
	15	0	22.24	22.18	22.22		3

Table 9-26
LTE Band 66 (AWS) Measured P_{max} - 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	24.91	24.89	25.10	0	0
	1	2	24.93	24.92	25.14		0
	1	5	24.82	24.83	25.07		0
	3	0	24.92	24.96	24.98		0
	3	2	24.96	25.01	25.02		0
	3	3	24.92	24.96	24.95		0
	6	0	24.00	24.01	24.02	0-1	1
16QAM	1	0	23.73	24.23	24.24	0-1	1
	1	2	23.79	24.22	24.23		1
	1	5	23.70	24.19	24.17		1
	3	0	23.73	23.62	23.68		1
	3	2	23.78	23.69	23.73		1
	3	3	23.69	23.62	23.68		1
	6	0	22.86	23.03	22.93	0-2	2
64QAM	1	0	22.79	22.96	23.41	0-2	2
	1	2	22.84	23.03	23.47		2
	1	5	22.67	22.95	23.31		2
	3	0	23.03	22.93	23.01		2
	3	2	23.06	22.97	23.02		2
	3	3	23.03	22.89	22.94		2
	6	0	22.00	22.06	22.06	0-3	3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 50 of 187	

Table 9-27
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.87	22.80	23.14	0	0
	1	50	23.06	23.04	23.06		0
	1	99	22.86	22.76	23.04		0
	50	0	23.11	23.19	23.18	0-1	0
	50	25	23.22	23.22	23.32		0
	50	50	23.12	23.17	23.15		0
	100	0	23.10	23.13	23.12		0
16QAM	1	0	23.31	23.25	23.44	0-1	0
	1	50	23.46	23.41	23.33		0
	1	99	23.33	23.16	23.28		0
	50	0	23.03	23.13	23.08	0-2	0
	50	25	23.14	23.15	23.20		0
	50	50	23.04	23.10	23.10		0
	100	0	23.07	23.05	23.05		0
64QAM	1	0	22.89	23.11	23.17	0-2	0
	1	50	23.12	23.27	23.09		0
	1	99	22.95	22.97	23.07		0
	50	0	22.04	22.10	22.09	0-3	1
	50	25	22.15	22.17	22.21		1
	50	50	22.06	22.12	22.11		1
	100	0	22.07	22.10	22.07		1

Table 9-28
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.93	23.00	23.10	0	0
	1	36	23.05	23.10	23.08		0
	1	74	22.95	22.92	23.00		0
	36	0	23.13	23.08	23.08	0-1	0
	36	18	23.10	23.08	23.10		0
	36	37	23.08	23.12	23.13		0
	75	0	23.07	23.05	23.03		0
16QAM	1	0	23.40	23.50	23.13	0-1	0
	1	36	23.47	23.42	23.14		0
	1	74	23.35	23.47	23.10		0
	36	0	23.15	23.05	23.10	0-2	0
	36	18	23.20	23.06	23.11		0
	36	37	23.16	23.08	23.14		0
	75	0	23.15	23.05	23.08		0
64QAM	1	0	22.97	22.65	23.19	0-2	0
	1	36	23.09	22.83	23.28		0
	1	74	22.88	22.63	23.25		0
	36	0	22.07	22.16	22.13	0-3	1
	36	18	22.11	22.14	22.13		1
	36	37	22.08	22.13	22.15		1
	75	0	21.97	22.05	22.12		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 51 of 187	

Table 9-29
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.99	22.85	22.91	0	0
	1	25	23.00	23.00	23.13		0
	1	49	22.95	22.81	22.93		0
	25	0	23.10	23.05	23.10	0-1	0
	25	12	23.15	23.10	23.15		0
	25	25	23.06	23.07	23.13		0
16QAM	50	0	23.05	23.02	23.05	0-1	0
	1	0	23.23	22.92	22.90		0
	1	25	23.46	23.10	23.10		0
	1	49	23.30	22.93	22.91	0-2	0
	25	0	23.17	23.15	23.11		0
	25	12	23.20	23.26	23.15		0
64QAM	25	25	23.07	23.20	23.16	0-2	0
	50	0	23.07	23.05	23.04		0
	1	0	22.88	22.66	22.79	0-2	0
	1	25	23.15	22.74	23.01		0
	1	49	22.89	22.58	22.92		0
	25	0	21.97	22.04	22.06	0-3	1
	25	12	22.02	22.14	22.11		1
	25	25	21.97	22.12	22.13		1
	50	0	21.92	21.98	22.02		1

Table 9-30
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.91	22.90	23.05	0	0
	1	12	22.91	22.97	23.01		0
	1	24	22.87	22.93	22.95		0
	12	0	22.97	22.98	23.01	0-1	0
	12	6	22.95	22.99	23.03		0
	12	13	22.95	22.93	22.90		0
16QAM	25	0	22.91	22.96	23.00	0-1	0
	1	0	23.25	23.10	23.20		0
	1	12	23.25	23.20	23.05		0
	1	24	23.15	23.10	23.10	0-2	0
	12	0	23.13	23.06	23.07		0
	12	6	23.14	23.02	23.11		0
64QAM	12	13	23.03	23.00	23.02	0-2	0
	25	0	23.03	22.95	22.98		0
	1	0	23.17	23.14	23.19		0-2
	1	12	23.16	23.12	23.17	0	
	1	24	23.01	23.01	23.12	0	
	64QAM	12	0	22.03	22.09	22.25	0-3
12		6	22.05	22.06	22.27	1	
12		13	21.97	22.04	22.16	1	
25		0	21.98	22.09	22.14		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 52 of 187

Table 9-31
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.98	22.86	22.97	0	0
	1	7	22.96	22.85	22.96		0
	1	14	23.00	22.82	22.87		0
	8	0	23.01	22.95	23.02	0-1	0
	8	4	22.97	22.98	22.99		0
	8	7	22.94	22.95	22.95		0
16QAM	15	0	22.95	22.94	22.96	0-1	0
	1	0	23.43	23.03	23.01		0
	1	7	23.33	23.02	22.90		0
	1	14	23.32	23.00	22.85	0-2	0
	8	0	23.10	23.00	23.12		0
	8	4	23.09	23.09	23.13		0
64QAM	8	7	23.04	23.00	23.10	0-2	0
	15	0	23.03	22.95	23.01		0
	1	0	22.94	22.97	23.19		0-2
	1	7	22.91	23.05	23.15	0	
	1	14	22.85	22.94	23.14	0-3	
	8	0	22.14	22.11	22.18		1
	8	4	22.14	22.18	22.19		1
	8	7	22.07	22.10	22.14		1
	15	0	22.04	22.23	22.18		1

Table 9-32
LTE Band 66 (AWS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.19	22.84	22.87	0	0
	1	2	23.10	22.87	22.91		0
	1	5	23.20	22.80	22.84		0
	3	0	22.83	22.80	22.81		0
	3	2	22.88	22.85	22.84		0
	3	3	22.89	22.76	22.79		0
	6	0	22.86	22.91	22.88	0-1	0
16QAM	1	0	23.31	22.98	23.03	0-1	0
	1	2	23.33	23.00	23.10		0
	1	5	23.30	22.95	22.98		0
	3	0	23.05	23.10	22.95		0
	3	2	23.08	23.13	22.96		0
	3	3	23.00	23.07	22.88		0
	6	0	22.80	23.12	23.09	0-2	0
64QAM	1	0	23.12	23.28	22.85	0-2	0
	1	2	23.14	23.14	22.89		0
	1	5	23.09	23.20	22.87		0
	3	0	22.98	22.29	23.12		0
	3	2	23.04	23.00	23.16		0
	3	3	22.99	23.00	23.14		0
	6	0	22.13	22.05	22.37	0-3	1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 53 of 187	

Table 9-33
LTE Band 66 (AWS) Ant 3 for conditions with NR ENDC (Plimit DSI = 1/5/8/7) and inter-band ULCA When
Band 66 as PCC (Pmax) - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.38	22.41	22.62	0	0
	1	50	22.56	22.56	22.52		0
	1	99	22.33	22.32	22.42		0
	50	0	22.69	22.66	22.56	0-1	0
	50	25	22.84	22.67	22.52		0
	50	50	22.66	22.68	22.53		0
	100	0	22.61	22.60	22.45		0
16QAM	1	0	22.67	22.58	22.93	0-1	0
	1	50	22.73	22.74	22.74		0
	1	99	22.67	22.51	22.59		0
	50	0	22.56	22.60	22.56	0-2	0
	50	25	22.70	22.57	22.54		0
	50	50	22.63	22.68	22.55		0
	100	0	22.70	22.44	22.53		0
64QAM	1	0	22.25	22.21	22.41	0-2	0
	1	50	22.61	22.45	22.49		0
	1	99	22.35	22.24	22.52		0
	50	0	22.22	22.02	22.18	0-3	1
	50	25	22.23	22.13	22.17		1
	50	50	22.06	22.10	22.15		1
	100	0	22.21	22.05	22.06		1

Table 9-34
LTE Band 66 (AWS) Ant 3 for conditions with NR ENDC (Plimit DSI = 1/5/8/7) and inter-band ULCA When
Band 66 as PCC (Pmax) - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.47	22.38	22.69	0	0
	1	36	22.50	22.47	22.62		0
	1	74	22.30	22.31	22.35		0
	36	0	22.66	22.55	22.56	0-1	0
	36	18	22.64	22.58	22.52		0
	36	37	22.62	22.59	22.54		0
	75	0	22.64	22.52	22.43		0
16QAM	1	0	22.92	22.48	22.95	0-1	0
	1	36	22.84	22.52	22.82		0
	1	74	22.72	22.39	22.67		0
	36	0	22.69	22.57	22.70	0-2	0
	36	18	22.73	22.66	22.67		0
	36	37	22.65	22.67	22.68		0
	75	0	22.64	22.56	22.48		0
64QAM	1	0	22.42	22.33	22.45	0-2	0
	1	36	22.65	22.60	22.43		0
	1	74	22.37	22.42	22.44		0
	36	0	22.29	22.13	22.14	0-3	1
	36	18	22.30	22.24	22.22		1
	36	37	22.19	22.19	22.21		1
	75	0	22.21	22.13	22.18		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 54 of 187

Table 9-35
LTE Band 66 (AWS) Ant 3 for conditions with NR ENDC (Plimit DSI = 1/5/8/7) and inter-band ULCA When Band 66 as PCC (Pmax) - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.47	22.49	22.35	0	0
	1	25	22.53	22.61	22.47		0
	1	49	22.44	22.48	22.30		0
	25	0	22.61	22.49	22.40	0-1	0
	25	12	22.69	22.63	22.48		0
	25	25	22.53	22.50	22.41		0
	50	0	22.59	22.46	22.37		0
16QAM	1	0	22.96	22.41	22.89	0-1	0
	1	25	23.00	22.82	23.10		0
	1	49	22.94	22.71	22.76		0
	25	0	22.53	22.39	22.27	0-2	0
	25	12	22.61	22.52	22.38		0
	25	25	22.44	22.38	22.28		0
	50	0	22.62	22.55	22.44		0
64QAM	1	0	22.32	22.34	22.23	0-2	0
	1	25	22.68	22.72	22.46		0
	1	49	22.50	22.52	22.25		0
	25	0	22.26	22.11	22.05	0-3	1
	25	12	22.21	22.12	22.04		1
	25	25	22.20	22.15	22.08		1
	50	0	22.18	22.11	22.00		1

Table 9-36
LTE Band 66 (AWS) Ant 3 for conditions with NR ENDC (Plimit DSI = 1/5/8/7) and inter-band ULCA When Band 66 as PCC (Pmax) - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.64	22.59	22.48	0	0
	1	12	22.66	22.62	22.49		0
	1	24	22.47	22.47	22.33		0
	12	0	22.72	22.60	22.63	0-1	0
	12	6	22.70	22.61	22.62		0
	12	13	22.63	22.57	22.47		0
	25	0	22.62	22.61	22.55		0
16QAM	1	0	22.93	22.75	22.73	0-1	0
	1	12	22.74	22.82	22.87		0
	1	24	22.77	22.81	22.67		0
	12	0	22.83	22.60	22.63	0-2	0
	12	6	22.75	22.61	22.61		0
	12	13	22.74	22.56	22.44		0
	25	0	22.68	22.58	22.52		0
64QAM	1	0	22.77	22.66	22.56	0-2	0
	1	12	22.70	22.57	22.62		0
	1	24	22.66	22.59	22.51		0
	12	0	22.40	22.28	22.26	0-3	1
	12	6	22.39	22.27	22.31		1
	12	13	22.34	22.23	22.09		1
	25	0	22.25	22.24	22.17		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 55 of 187	

Table 9-37

LTE Band 66 (AWS) Ant 3 for conditions with NR ENDC (Plimit DSI = 1/5/8/7) and inter-band ULCA When Band 66 as PCC (Pmax) - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.55	22.55	22.53	0	0
	1	7	22.63	22.59	22.47		0
	1	14	22.61	22.57	22.38		0
	8	0	22.74	22.61	22.57	0-1	0
	8	4	22.68	22.72	22.54		0
	8	7	22.66	22.64	22.52		0
	15	0	22.75	22.69	22.50		0
16QAM	1	0	23.00	23.02	23.11	0-1	0
	1	7	23.01	23.11	22.88		0
	1	14	23.12	23.02	22.90		0
	8	0	22.73	22.63	22.55	0-2	0
	8	4	22.71	22.66	22.44		0
	8	7	22.70	22.60	22.42		0
	15	0	22.78	22.75	22.54		0
64QAM	1	0	22.76	22.67	22.75	0-2	0
	1	7	22.77	22.72	22.52		0
	1	14	22.66	22.71	22.53		0
	8	0	22.49	22.35	22.30	0-3	1
	8	4	22.47	22.42	22.29		1
	8	7	22.36	22.39	22.18		1
	15	0	22.24	22.28	22.12		1

Table 9-38

LTE Band 66 (AWS) Ant 3 for conditions with NR ENDC (Plimit DSI = 1/5/8/7) and inter-band ULCA When Band 66 as PCC (Pmax) – 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.59	22.48	22.32	0	0
	1	2	22.67	22.62	22.41		0
	1	5	22.55	22.44	22.36		0
	3	0	22.58	22.58	22.43		0
	3	2	22.61	22.55	22.39		0
	3	3	22.49	22.46	22.28		0
	6	0	22.56	22.57	22.43	0-1	0
16QAM	1	0	23.00	23.12	23.09	0-1	0
	1	2	23.10	23.04	23.00		0
	1	5	23.12	23.09	23.01		0
	3	0	22.70	22.65	22.51		0
	3	2	22.75	22.70	22.56		0
	3	3	22.67	22.66	22.48		0
	6	0	22.67	22.61	22.50	0-2	0
64QAM	1	0	22.69	22.65	22.54	0-2	0
	1	2	22.75	22.76	22.56		0
	1	5	22.56	22.51	22.42		0
	3	0	22.78	22.71	22.56		0
	3	2	22.81	22.70	22.58		0
	3	3	22.69	22.71	22.59		0
	6	0	22.24	22.18	22.05	0-3	1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 56 of 187

Table 9-39
LTE Band 66 (AWS) Ant 3 for conditions with Inter-Band ULCA when Band 66 as SCC
Measured P_{Limit} - 20 MHz Bandwidth

LTE Band 66 (AWS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	16.72	16.69	17.02	0	0
	1	50	17.03	17.01	16.91		0
	1	99	16.68	16.73	16.88		0
	50	0	17.07	17.07	17.02	0-1	0
	50	25	17.20	17.08	17.03		0
	50	50	17.09	17.11	16.98		0
	100	0	17.02	17.00	16.92		0
16QAM	1	0	17.46	17.41	17.50	0-1	0
	1	50	17.47	17.49	17.49		0
	1	99	17.30	17.28	17.38		0
	50	0	17.12	17.13	17.08	0-2	0
	50	25	17.21	17.09	17.06		0
	50	50	17.10	17.13	17.01		0
	100	0	17.08	17.01	16.93		0
64QAM	1	0	16.82	16.58	17.04	0-2	0
	1	50	17.33	17.24	17.22		0
	1	99	16.94	16.99	17.16		0
	50	0	17.17	17.10	17.06	0-3	0
	50	25	17.24	17.14	17.10		0
	50	50	17.09	17.09	17.00		0
	100	0	17.15	17.01	16.94		0

Table 9-40
LTE Band 66 (AWS) Ant 3 for conditions with Inter-Band ULCA when Band 66 as SCC
Measured P_{Limit} - 15 MHz Bandwidth

LTE Band 66 (AWS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	17.08	17.15	17.13	0	0
	1	36	17.11	17.20	17.00		0
	1	74	16.89	16.94	16.84		0
	36	0	17.12	17.08	16.95	0-1	0
	36	18	17.10	17.10	16.91		0
	36	37	17.07	17.09	16.99		0
	75	0	17.09	17.03	16.88		0
16QAM	1	0	17.20	17.19	17.23	0-1	0
	1	36	17.23	17.22	17.08		0
	1	74	17.17	17.01	17.05		0
	36	0	17.16	17.07	16.95	0-2	0
	36	18	17.12	17.12	16.96		0
	36	37	17.02	17.13	16.92		0
	75	0	17.13	17.08	16.91		0
64QAM	1	0	17.29	17.13	17.28	0-2	0
	1	36	17.48	17.50	17.33		0
	1	74	17.36	17.48	17.34		0
	36	0	17.12	17.11	17.01	0-3	0
	36	18	17.14	17.08	16.94		0
	36	37	17.09	17.16	16.95		0
	75	0	17.18	17.15	17.02		0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 57 of 187

Table 9-41
LTE Band 66 (AWS) Ant 3 for conditions with Inter-Band ULCA when Band 66 as SCC
Measured P_{Limit} - 10 MHz Bandwidth

LTE Band 66 (AWS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	16.98	16.88	16.84	0	0
	1	25	17.09	17.08	17.00		0
	1	49	16.88	16.87	16.76		0
	25	0	17.17	16.98	16.91	0-1	0
	25	12	17.21	17.05	16.98		0
	25	25	17.10	17.06	16.94		0
	50	0	17.15	17.01	16.90		0
16QAM	1	0	17.16	17.03	17.08	0-1	0
	1	25	17.29	17.32	17.23		0
	1	49	17.12	17.09	16.96		0
	25	0	17.12	17.00	16.97	0-2	0
	25	12	17.15	17.03	16.95		0
	25	25	17.10	17.06	16.99		0
	50	0	17.11	16.96	16.86		0
64QAM	1	0	17.37	17.10	17.10	0-2	0
	1	25	17.48	17.49	17.50		0
	1	49	17.45	17.45	17.27		0
	25	0	17.04	16.89	16.84	0-3	0
	25	12	17.11	16.96	16.92		0
	25	25	17.01	16.99	16.87		0
	50	0	17.19	17.02	16.96		0

Table 9-42
LTE Band 66 (AWS) Ant 3 for conditions with Inter-Band ULCA when Band 66 as SCC
 P_{Limit} - 5 MHz Bandwidth

LTE Band 66 (AWS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	17.35	17.11	16.95	0	0
	1	12	17.32	17.15	16.87		0
	1	24	17.16	17.02	16.82		0
	12	0	17.33	17.08	17.04	0-1	0
	12	6	17.31	17.12	17.07		0
	12	13	17.18	17.13	17.00		0
	25	0	17.17	17.10	17.00		0
16QAM	1	0	17.43	17.22	17.34	0-1	0
	1	12	17.48	17.29	17.15		0
	1	24	17.28	17.24	17.16		0
	12	0	17.21	17.06	17.12	0-2	0
	12	6	17.16	17.11	17.11		0
	12	13	17.13	17.06	16.97		0
	25	0	17.15	17.08	16.95		0
64QAM	1	0	17.50	17.47	17.33	0-2	0
	1	12	17.50	17.50	17.50		0
	1	24	17.39	17.31	17.29		0
	12	0	17.26	17.22	17.11	0-3	0
	12	6	17.37	17.15	17.02		0
	12	13	17.22	17.16	17.03		0
	25	0	17.14	17.04	16.96		0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 58 of 187	

Table 9-43
LTE Band 66 (AWS) Ant 3 for conditions with Inter-Band ULCA when Band 66 as SCC
Measured P_{Limit} - 3 MHz Bandwidth

LTE Band 66 (AWS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	17.26	17.18	16.93	0	0
	1	7	17.32	17.20	16.77		0
	1	14	17.17	17.00	16.86		0
	8	0	17.19	17.15	17.05	0-1	0
	8	4	17.23	17.18	17.03		0
	8	7	17.13	17.16	16.99		0
	15	0	17.19	17.15	17.00		0
16QAM	1	0	17.47	17.31	17.24	0-1	0
	1	7	17.22	17.24	17.13		0
	1	14	17.33	17.29	17.18		0
	8	0	17.11	17.00	16.95	0-2	0
	8	4	17.16	17.11	16.93		0
	8	7	17.16	17.00	16.89		0
	15	0	17.12	17.10	16.98		0
64QAM	1	0	17.50	17.49	17.43	0-2	0
	1	7	17.49	17.50	17.50		0
	1	14	17.42	17.42	17.31		0
	8	0	17.28	17.17	17.07	0-3	0
	8	4	17.21	17.18	17.09		0
	8	7	17.17	17.20	17.03		0
	15	0	17.16	17.11	17.01		0

Table 9-44
LTE Band 66 (AWS) Ant 3 for Inter-Band ULCA when Band 66 as SCC
Measured P_{Limit} - 1.4 MHz Bandwidth

LTE Band 66 (AWS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	17.13	17.05	16.91	0	0
	1	2	17.22	17.12	16.85		0
	1	5	17.12	17.00	16.78		0
	3	0	17.08	17.02	16.86		0
	3	2	17.09	17.06	16.87		0
	3	3	17.02	17.01	16.82		0
	6	0	17.06	17.20	16.91	0-1	0
16QAM	1	0	17.36	17.23	17.08	0-1	0
	1	2	17.30	17.35	17.44		0
	1	5	17.31	17.11	17.18		0
	3	0	17.04	16.92	16.80		0
	3	2	17.00	16.97	16.82		0
	3	3	16.98	16.89	16.83	0	
64QAM	6	0	17.14	17.14	17.00	0-2	0
	1	0	17.49	17.49	17.27	0-2	0
	1	2	17.50	17.48	17.23		0
	1	5	17.42	17.32	17.25		0
	3	0	17.17	17.10	16.95		0
	3	2	17.14	17.08	16.99		0
	3	3	17.12	17.05	16.94	0	
6	0	17.11	17.08	16.96	0-3	0	

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 59 of 187	

9.4.3

LTE Band 25 (PCS)

Table 9-45
LTE Band 25 (PCS) Measured P_{max} - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.47	25.33	25.06	0	0
	1	50	25.44	25.33	25.04		0
	1	99	25.45	25.32	25.04		0
	50	0	24.50	24.34	24.41	0-1	1
	50	25	24.49	24.38	24.40		1
	50	50	24.47	24.36	24.41		1
16QAM	100	0	24.39	24.29	24.36	0-1	1
	1	0	24.50	24.37	24.29		1
	1	50	24.48	24.41	24.26		1
	1	99	24.50	24.38	24.19	0-2	2
	50	0	23.47	23.31	23.44		2
	50	25	23.45	23.34	23.44		2
64QAM	50	50	23.44	23.33	23.42	0-2	2
	100	0	23.40	23.29	23.36		2
	1	0	23.49	23.38	23.50		0-2
	1	50	23.50	23.40	23.49	2	
	1	99	23.50	23.37	23.50	0-3	
	50	0	22.49	22.38	22.41		3
50	25	22.50	22.41	22.42	3		
50	50	22.50	22.40	22.40	3		
	100	0	22.44	22.31	22.29		3

Table 9-46
LTE Band 25 (PCS) Measured P_{max} - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.42	25.33	25.03	0	0
	1	36	25.43	25.30	25.08		0
	1	74	25.33	25.30	25.00		0
	36	0	24.02	24.03	24.03	0-1	1
	36	18	24.24	24.16	24.13		1
	36	37	24.21	24.10	24.11		1
	75	0	24.15	24.01	24.05		1
16QAM	1	0	23.70	24.23	24.26	0-1	1
	1	36	24.00	24.33	24.37		1
	1	74	23.91	24.22	24.33		1
	36	0	23.01	23.02	22.95	0-2	2
	36	18	23.19	23.12	23.10		2
	36	37	23.15	23.07	23.06		2
	75	0	23.13	22.93	22.97		2
64QAM	1	0	22.64	23.48	23.37	0-2	2
	1	36	22.97	23.36	23.45		2
	1	74	22.77	23.43	23.47		2
	36	0	22.19	22.04	22.16	0-3	3
	36	18	22.35	22.17	22.27		3
	36	37	22.28	22.13	22.24		3
	75	0	22.21	22.14	22.05		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 60 of 187

Table 9-47
LTE Band 25 (PCS) Measured P_{max} - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.36	25.19	25.22	0	0
	1	25	25.41	25.47	25.16		0
	1	49	25.31	25.26	25.16		0
	25	0	24.14	23.99	23.99	0-1	1
	25	12	24.24	24.17	24.03		1
	25	25	24.14	24.11	23.99		1
	50	0	24.14	24.04	24.02		1
16QAM	1	0	23.72	23.93	24.29	0-1	1
	1	25	23.83	24.21	24.25		1
	1	49	23.59	23.95	24.33		1
	25	0	23.15	22.97	22.96	0-2	2
	25	12	23.19	23.15	23.06		2
	25	25	23.12	23.04	22.98		2
	50	0	23.05	22.88	23.00		2
64QAM	1	0	22.63	22.72	23.50	0-2	2
	1	25	22.79	22.93	23.45		2
	1	49	22.59	22.79	23.46		2
	25	0	22.25	22.12	22.09	0-3	3
	25	12	22.36	22.32	22.18		3
	25	25	22.26	22.23	22.10		3
	50	0	22.20	22.10	22.06		3

Table 9-48
LTE Band 25 (PCS) Measured P_{max} - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.43	25.28	25.39	0	0
	1	12	25.45	25.32	25.34		0
	1	24	25.50	25.36	25.13		0
	12	0	24.13	24.11	24.00	0-1	1
	12	6	24.17	24.21	24.04		1
	12	13	24.17	24.16	24.02		1
	25	0	24.19	24.11	24.00		1
16QAM	1	0	24.32	24.33	24.16	0-1	1
	1	12	24.46	24.25	24.21		1
	1	24	24.38	24.06	24.12		1
	12	0	23.08	23.25	22.94	0-2	2
	12	6	23.09	23.30	23.01		2
	12	13	23.09	23.25	22.99		2
	25	0	23.16	23.06	22.96		2
64QAM	1	0	23.12	22.98	23.21	0-2	2
	1	12	23.15	23.13	23.23		2
	1	24	23.20	23.05	23.20		2
	12	0	22.18	22.24	22.05	0-3	3
	12	6	22.21	22.29	22.07		3
	12	13	22.25	22.25	22.04		3
	25	0	22.15	22.22	21.99		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 61 of 187	

Table 9-49
LTE Band 25 (PCS) Measured P_{max} - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.42	25.27	25.21	0	0
	1	7	25.49	25.26	25.11		0
	1	14	25.49	25.32	25.13		0
	8	0	24.14	24.11	24.01	0-1	1
	8	4	24.18	24.15	24.04		1
	8	7	24.16	24.14	24.02		1
	15	0	24.12	24.15	24.03	1	
16QAM	1	0	24.26	24.41	24.32	0-1	1
	1	7	24.22	24.36	24.43		1
	1	14	24.27	24.40	24.23		1
	8	0	23.09	23.11	23.02	0-2	2
	8	4	23.14	23.16	23.06		2
	8	7	23.14	23.11	23.01		2
	15	0	23.05	23.14	22.98	2	
64QAM	1	0	23.04	23.25	22.88	0-2	2
	1	7	23.06	23.14	22.93		2
	1	14	23.11	23.29	22.94		2
	8	0	22.16	22.25	22.00	0-3	3
	8	4	22.20	22.30	22.09		3
	8	7	22.16	22.30	22.06		3
	15	0	22.32	22.14	22.08		

Table 9-50
LTE Band 25 (PCS) Measured P_{max} – 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	25.36	25.34	25.24	0	0
	1	2	25.45	25.32	25.33		0
	1	5	25.42	25.27	25.28		0
	3	0	25.47	25.43	25.31		0
	3	2	25.34	25.30	25.40		0
	3	3	25.48	25.44	25.32		0
	6	0	24.10	24.04	23.87	0-1	1
16QAM	1	0	24.34	24.16	23.95	0-1	1
	1	2	24.41	24.30	24.02		1
	1	5	24.40	24.23	23.99		1
	3	0	24.08	24.22	24.03		1
	3	2	24.13	24.29	24.09		1
	3	3	24.07	24.24	24.06	1	
6	0	23.00	23.05	22.80	0-2	2	
64QAM	1	0	23.19	23.20	22.81	0-2	2
	1	2	23.21	23.29	22.93		2
	1	5	23.25	23.19	22.80		2
	3	0	23.07	23.09	23.00		2
	3	2	23.16	23.13	23.09		2
	3	3	23.13	23.06	23.02		2
	6	0	22.17	22.16	22.11	0-3	3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 62 of 187	

Table 9-51
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 20 MHz Bandwidth

LTE Band 25 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26140 (1860.0 MHz)	26365 (1882.5 MHz)	26590 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	23.25	23.06	23.12	0	0
	1	50	23.21	23.08	23.08		0
	1	99	23.26	23.07	23.10		0
	50	0	23.32	23.22	23.24	0-1	0
	50	25	23.31	23.21	23.29		0
	50	50	23.31	23.22	23.27		0
	100	0	23.24	23.14	23.23		0
16QAM	1	0	23.46	23.24	23.37	0-1	0
	1	50	23.47	23.25	23.20		0
	1	99	23.45	23.28	23.25		0
	50	0	23.25	23.14	23.18	0-2	0
	50	25	23.25	23.19	23.16		0
	50	50	23.24	23.17	23.17		0
	100	0	23.18	23.06	23.11		0
64QAM	1	0	23.27	23.42	23.31	0-2	0
	1	50	23.32	23.38	23.35		0
	1	99	23.33	23.50	23.31		0
	50	0	22.28	22.18	22.22	0-3	1
	50	25	22.26	22.20	22.23		1
	50	50	22.26	22.19	22.18		1
	100	0	22.19	22.12	22.12		1

Table 9-52
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 15 MHz Bandwidth

LTE Band 25 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26115 (1857.5 MHz)	26365 (1882.5 MHz)	26615 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.85	23.00	22.91	0	0
	1	36	22.94	22.94	22.85		0
	1	74	22.87	22.93	22.87		0
	36	0	22.97	22.88	22.85	0-1	0
	36	18	23.03	22.94	22.94		0
	36	37	23.01	22.93	22.93		0
	75	0	22.99	22.88	22.87		0
16QAM	1	0	23.20	23.20	23.00	0-1	0
	1	36	23.40	23.20	22.95		0
	1	74	23.32	23.27	23.01		0
	36	0	23.05	22.85	22.87	0-2	0
	36	18	23.10	22.91	22.93		0
	36	37	23.06	22.88	22.97		0
	75	0	23.02	22.87	22.93		0
64QAM	1	0	22.97	22.91	22.89	0-2	0
	1	36	23.32	23.31	23.33		0
	1	74	23.13	23.11	23.11		0
	36	0	22.10	22.09	22.09	0-3	1
	36	18	22.20	22.25	22.24		1
	36	37	22.22	22.25	22.25		1
	75	0	22.08	22.13	22.07		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 63 of 187	

Table 9-53
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 10 MHz Bandwidth

LTE Band 25 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26090 (1855.0 MHz)	26365 (1882.5 MHz)	26640 (1910.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.79	22.60	22.85	0	0
	1	25	22.99	22.83	22.86		0
	1	49	22.77	22.57	22.90		0
	25	0	22.97	22.88	22.83	0-1	0
	25	12	23.01	22.99	22.91		0
	25	25	22.93	22.91	22.88		0
	50	0	22.95	22.83	22.83		0
16QAM	1	0	23.12	22.70	22.90	0-1	0
	1	25	23.34	22.90	22.89		0
	1	49	23.20	22.73	22.93		0
	25	0	23.03	22.92	22.87	0-2	0
	25	12	23.09	23.12	22.98		0
	25	25	23.04	23.07	22.87		0
	50	0	22.98	23.01	22.81		0
64QAM	1	0	23.05	22.53	23.23	0-2	0
	1	25	23.28	22.76	23.04		0
	1	49	23.03	22.66	23.48		0
	25	0	22.06	22.03	22.01	0-3	1
	25	12	22.08	22.23	22.06		1
	25	25	22.11	22.17	22.05		1
	50	0	22.06	21.94	21.91		1

Table 9-54
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 5 MHz Bandwidth

LTE Band 25 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26065 (1852.5 MHz)	26365 (1882.5 MHz)	26665 (1912.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.85	22.90	22.94	0	0
	1	12	22.93	22.95	22.90		0
	1	24	22.90	23.00	22.93		0
	12	0	22.97	22.94	22.91	0-1	0
	12	6	22.96	22.98	22.92		0
	12	13	22.99	23.00	22.90		0
	25	0	23.00	22.97	22.88		0
16QAM	1	0	23.50	23.11	23.05	0-1	0
	1	12	23.50	23.20	23.06		0
	1	24	23.48	23.15	23.08		0
	12	0	23.10	23.02	22.96	0-2	0
	12	6	23.14	23.04	22.99		0
	12	13	23.15	23.03	22.98		0
	25	0	23.07	22.95	22.93		0
64QAM	1	0	23.08	23.10	23.30	0-2	0
	1	12	23.12	23.07	23.32		0
	1	24	23.12	23.10	23.37		0
	12	0	22.08	22.02	22.01	0-3	1
	12	6	22.13	22.07	22.03		1
	12	13	22.13	22.06	22.07		1
	25	0	22.05	22.06	21.99		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 64 of 187

Table 9-55
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 3 MHz Bandwidth

LTE Band 25 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26055 (1851.5 MHz)	26365 (1882.5 MHz)	26675 (1913.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.85	23.00	22.91	0	0
	1	7	22.94	22.94	22.85		0
	1	14	22.87	22.93	22.87		0
	8	0	22.97	22.88	22.85	0-1	0
	8	4	23.03	22.94	22.94		0
	8	7	23.01	22.93	22.93		0
	15	0	22.99	22.88	22.87		0
16QAM	1	0	23.20	23.50	23.00	0-1	0
	1	7	23.40	23.25	22.95		0
	1	14	23.32	23.27	23.01		0
	8	0	23.05	23.25	22.87	0-2	0
	8	4	23.10	22.91	22.93		0
	8	7	23.06	22.88	22.97		0
	15	0	23.02	22.87	22.93		0
64QAM	1	0	22.87	22.70	23.01	0-2	0
	1	7	22.83	22.83	23.00		0
	1	14	22.84	22.86	22.99		0
	8	0	22.26	22.06	22.01	0-3	1
	8	4	22.17	22.08	22.02		1
	8	7	22.16	22.09	22.01		1
	15	0	22.13	22.18	22.01		1

Table 9-56
LTE Band 25 (PCS) Measured P_{limit} for DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active) - 1.4 MHz Bandwidth

LTE Band 25 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			26047 (1850.7 MHz)	26365 (1882.5 MHz)	26683 (1914.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.85	22.73	22.75	0	0
	1	2	22.91	22.83	22.78		0
	1	5	22.85	22.77	22.76		0
	3	0	22.86	22.78	22.70		0
	3	2	22.88	22.83	22.76		0
	3	3	22.84	22.78	22.71		0
	6	0	22.91	22.85	22.81	0-1	0
16QAM	1	0	23.33	22.90	22.91	0-1	0
	1	2	23.40	23.01	23.01		0
	1	5	23.38	22.95	22.96		0
	3	0	23.04	23.03	22.74		0
	3	2	23.10	23.09	22.83		0
	3	3	23.05	23.11	22.78		0
	6	0	22.84	23.07	22.93	0-2	0
64QAM	1	0	23.15	22.56	22.82	0-2	0
	1	2	23.21	22.71	22.92		0
	1	5	23.19	22.73	22.98		0
	3	0	23.25	22.89	22.81		0
	3	2	23.31	22.96	22.81		0
	3	3	23.28	22.94	22.83		0
	6	0	22.03	22.28	22.01		0-3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 65 of 187

9.4.1

LTE Band 2 (PCS) Ant 3

Table 9-57
LTE Band 2 (PCS) Measured P_{Limit} for all DSI - 20 MHz Bandwidth

LTE Band 2 (PCS) 20 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.45	22.44	22.43	0	0
	1	50	22.46	22.49	22.46		0
	1	99	22.32	22.38	22.61		0
	50	0	22.50	22.49	22.47	0-1	0
	50	25	22.62	22.59	22.59		0
	50	50	22.62	22.62	22.63		0
	100	0	22.57	22.47	22.49		0
16QAM	1	0	22.65	22.74	22.72	0-1	0
	1	50	22.59	22.69	22.68		0
	1	99	22.61	22.55	22.63		0
	50	0	22.43	22.46	22.45	0-2	0
	50	25	22.68	22.55	22.58		0
	50	50	22.55	22.61	22.61		0
	100	0	22.59	22.52	22.50		0
64QAM	1	0	22.81	22.73	22.76	0-2	0
	1	50	22.87	22.88	22.85		0
	1	99	22.79	22.79	22.91		0
	50	0	22.14	22.17	22.18	0-3	1
	50	25	22.31	22.28	22.26		1
	50	50	22.28	22.32	22.32		1
	100	0	22.23	22.12	22.10		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 66 of 187

Table 9-58
LTE Band 2 (PCS) Measured P_{Limit} for all DSI - 15 MHz Bandwidth

LTE Band 2 (PCS) 15 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.44	22.61	22.55	0	0
	1	36	22.64	22.63	22.58		0
	1	74	22.55	22.62	22.75		0
	36	0	22.49	22.46	22.51	0-1	0
	36	18	22.63	22.52	22.58		0
	36	37	22.62	22.59	22.70		0
	75	0	22.62	22.49	22.56		0
16QAM	1	0	22.65	22.68	23.04	0-1	0
	1	36	22.93	22.50	22.92		0
	1	74	22.80	22.58	22.84		0
	36	0	22.59	22.47	22.58	0-2	0
	36	18	22.72	22.50	22.66		0
	36	37	22.73	22.64	22.76		0
	75	0	22.65	22.51	22.56		0
64QAM	1	0	22.53	22.44	22.27	0-2	0
	1	36	22.82	22.70	22.53		0
	1	74	22.74	22.45	22.71		0
	36	0	22.07	22.10	22.15	0-3	1
	36	18	22.27	22.15	22.23		1
	36	37	22.28	22.18	22.16		1
	75	0	22.29	22.10	22.27		1

Table 9-59
LTE Band 2 (PCS) Measured P_{Limit} for all DSI - 10 MHz Bandwidth

LTE Band 2 (PCS) 10 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.28	22.43	22.65	0	0
	1	25	22.54	22.73	22.63		0
	1	49	22.30	22.41	22.68		0
	25	0	22.68	22.74	22.67	0-1	0
	25	12	22.73	22.78	22.71		0
	25	25	22.63	22.71	22.73		0
	50	0	22.62	22.60	22.60		0
16QAM	1	0	22.51	22.61	22.97	0-1	0
	1	25	22.94	22.83	22.89		0
	1	49	22.58	22.63	22.85		0
	25	0	22.62	22.59	22.58	0-2	0
	25	12	22.64	22.60	22.55		0
	25	25	22.56	22.66	22.61		0
	50	0	22.66	22.64	22.59		0
64QAM	1	0	22.34	22.29	22.37	0-2	0
	1	25	22.54	22.60	22.88		0
	1	49	22.40	22.46	22.53		0
	25	0	22.26	22.17	22.19	0-3	1
	25	12	22.27	22.10	22.14		1
	25	25	22.19	22.00	21.83		1
	50	0	22.24	22.08	22.07		1

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 67 of 187

Table 9-60
LTE Band 2 (PCS) Measured P_{Limit} for all DSI - 5 MHz Bandwidth

LTE Band 2 (PCS) 5 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.53	22.51	22.56	0	0
	1	12	22.64	22.56	22.59		0
	1	24	22.48	22.43	22.52		0
	12	0	22.72	22.67	22.90	0-1	0
	12	6	22.82	22.76	22.80		0
	12	13	22.73	22.63	22.75		0
	25	0	22.67	22.65	22.76		0
16QAM	1	0	22.95	22.86	22.83	0-1	0
	1	12	22.84	22.80	22.94		0
	1	24	22.88	22.79	22.89		0
	12	0	22.76	22.62	22.71	0-2	0
	12	6	22.78	22.60	22.79		0
	12	13	22.59	22.56	22.71		0
	25	0	22.68	22.64	22.59		0
64QAM	1	0	22.56	22.38	22.54	0-2	0
	1	12	22.57	22.55	22.47		0
	1	24	22.44	22.39	22.33		0
	12	0	22.29	22.14	21.74	0-3	1
	12	6	22.30	22.17	21.73		1
	12	13	22.21	22.26	21.62		1
	25	0	22.29	22.19	21.70		1

Table 9-61
LTE Band 2 (PCS) Measured P_{Limit} for all DSI - 3 MHz Bandwidth

LTE Band 2 (PCS) 3 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.46	22.46	22.62	0	0
	1	7	22.63	22.57	22.60		0
	1	14	22.55	22.51	22.57		0
	8	0	22.69	22.63	22.77	0-1	0
	8	4	22.71	22.73	22.78		0
	8	7	22.63	22.65	22.73		0
	15	0	22.73	22.66	22.76		0
16QAM	1	0	22.89	22.85	23.01	0-1	0
	1	7	22.80	22.82	22.97		0
	1	14	22.79	22.83	22.84		0
	8	0	22.86	22.74	22.78	0-2	0
	8	4	22.84	22.76	22.77		0
	8	7	22.74	22.66	22.78		0
	15	0	22.76	22.65	22.76		0
64QAM	1	0	22.53	22.57	22.56	0-2	0
	1	7	22.52	22.44	22.42		0
	1	14	22.47	22.50	22.45		0
	8	0	22.46	22.33	21.81	0-3	1
	8	4	22.40	22.38	21.75		1
	8	7	22.35	22.30	21.70		1
	15	0	22.36	22.28	21.69		1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 68 of 187	

Table 9-62
LTE Band 2 (PCS) Measured P_{Limit} for all DSI – 1.4 MHz Bandwidth

LTE Band 2 (PCS) 1.4 MHz Bandwidth							
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)		
			Conducted Power [dBm]				
QPSK	1	0	22.75	22.60	22.65	0	0
	1	2	22.70	22.76	22.86		0
	1	5	22.46	22.55	22.65		0
	3	0	22.61	22.61	22.62		0
	3	2	22.48	22.54	22.65		0
	3	3	22.51	22.55	22.52		0
	6	0	22.62	22.69	22.69	0-1	0
16QAM	1	0	22.68	22.62	22.68	0-1	0
	1	2	22.85	22.81	22.74		0
	1	5	22.64	22.55	22.59		0
	3	0	22.52	22.48	22.44		0
	3	2	22.46	22.50	22.47		0
	3	3	22.45	22.38	22.43		0
	6	0	22.63	22.58	22.64	0-2	0
64QAM	1	0	22.66	22.66	22.67	0-2	0
	1	2	22.78	22.74	22.70		0
	1	5	22.61	22.61	22.52		0
	3	0	22.73	22.62	22.68		0
	3	2	22.80	22.72	22.75		0
	3	3	22.80	22.65	22.74		0
	6	0	22.30	22.26	21.66	0-3	1

9.4.1 LTE Band 48

Table 9-63
LTE Band 48 Measured P_{Limit} for all DSI - 20 MHz Bandwidth

LTE Band 48 20 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55340 (3560.0 MHz)	55773 (3603.3 MHz)	56207 (3646.7 MHz)	56640 (3690.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	21.69	21.65	21.66	21.62	0	0
	1	50	21.72	21.68	21.63	21.64		0
	1	99	21.83	21.80	21.67	21.62		0
	50	0	21.77	21.83	21.66	21.65	0-1	0
	50	25	21.89	21.86	21.83	21.75		0
	50	50	21.83	21.73	21.75	21.67		0
	100	0	21.80	21.81	21.72	21.69		0
16QAM	1	0	21.60	21.70	21.53	21.84	0-1	0
	1	50	21.63	21.68	21.62	21.79		0
	1	99	21.67	21.73	21.57	21.85		0
	50	0	21.45	21.44	21.38	21.42	0-2	0.5
	50	25	21.44	21.47	21.50	21.48		0.5
	50	50	21.46	21.37	21.45	21.40		0.5
	100	0	21.47	21.45	21.46	21.46		0.5
64QAM	1	0	21.04	21.36	21.45	21.05	0-2	0.5
	1	50	21.14	21.50	21.49	21.11		0.5
	1	99	21.16	21.47	21.41	21.04		0.5
	50	0	20.50	20.48	20.39	20.43	0-3	1.5
	50	25	20.36	20.42	20.47	20.39		1.5
	50	50	20.49	20.44	20.43	20.42		1.5
	100	0	20.49	20.49	20.49	20.48		1.5

FCC ID: ZNFF100TM



SAR EVALUATION REPORT



Approved by:
Quality Manager

Document S/N:

1M2006150095-01-R2.ZNF

Test Dates:

07/09/20 – 08/31/20

DUT Type:

Portable Handset

Page 69 of 187

Table 9-64
LTE Band 48 Measured P_{Limit} for all DSI - 15 MHz Bandwidth

LTE Band 48 15 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55315 (3557.5 MHz)	55765 (3602.5 MHz)	56215 (3647.5 MHz)	56665 (3692.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	21.60	21.69	21.65	21.68	0	0
	1	36	21.66	21.53	21.60	21.64		0
	1	74	21.60	21.60	21.66	21.64		0
	36	0	21.56	21.67	21.52	21.68	0-1	0
	36	18	21.71	21.67	21.69	21.63		0
	36	37	21.58	21.56	21.61	21.60		0
	75	0	21.57	21.61	21.59	21.53		0
16QAM	1	0	21.80	21.68	21.63	21.88	0-1	0
	1	36	21.90	21.77	21.60	21.93		0
	1	74	21.75	21.68	21.57	21.79		0
	36	0	21.40	21.25	21.33	21.22	0-2	0.5
	36	18	21.30	21.45	21.32	21.45		0.5
	36	37	21.15	21.21	21.42	21.40		0.5
	75	0	21.47	21.14	21.48	21.41		0.5
64QAM	1	0	20.95	21.43	21.44	21.08	0-2	0.5
	1	36	21.10	21.14	21.10	21.12		0.5
	1	74	21.01	21.08	21.44	21.02		0.5
	36	0	20.37	20.38	20.12	20.42	0-3	1.5
	36	18	20.39	20.44	20.43	20.50		1.5
	36	37	20.49	20.22	20.12	20.24		1.5
	75	0	20.49	20.43	20.47	20.44		1.5

Table 9-65
LTE Band 48 Measured P_{Limit} for all DSI - 10 MHz Bandwidth

LTE Band 48 10 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55290 (3555.0 MHz)	55757 (3601.7 MHz)	56223 (3648.3 MHz)	56690 (3695.0 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	21.60	21.57	21.54	21.62	0	0
	1	25	21.64	21.54	21.66	21.61		0
	1	49	21.63	21.61	21.61	21.59		0
	25	0	21.60	21.50	21.55	21.61	0-1	0
	25	12	21.60	21.57	21.58	21.68		0
	25	25	21.61	21.63	21.50	21.55		0
	50	0	21.53	21.54	21.50	21.64		0
16QAM	1	0	21.66	21.55	21.63	21.66	0-1	0
	1	25	21.64	21.63	21.59	21.67		0
	1	49	21.68	21.56	21.57	21.60		0
	25	0	21.34	21.43	21.37	21.47	0-2	0.5
	25	12	21.36	21.22	21.42	21.38		0.5
	25	25	21.47	21.48	21.50	21.36		0.5
	50	0	21.33	21.48	21.34	21.20		0.5
64QAM	1	0	21.29	21.40	21.18	21.17	0-2	0.5
	1	25	21.31	21.18	21.23	21.13		0.5
	1	49	21.35	21.28	21.44	21.30		0.5
	25	0	20.46	20.20	20.44	20.41	0-3	1.5
	25	12	20.20	20.19	20.30	20.22		1.5
	25	25	20.37	20.22	20.25	20.14		1.5
	50	0	20.45	20.45	20.49	20.48		1.5

FCC ID: ZNFF100TM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 70 of 187

Table 9-66
LTE Band 48 Measured P_{Limit} for all DSI - 5 MHz Bandwidth

LTE Band 48 5 MHz Bandwidth								
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			55265 (3552.5 MHz)	55748 (3600.8 MHz)	56232 (3649.2 MHz)	56715 (3697.5 MHz)		
			Conducted Power [dBm]					
QPSK	1	0	21.84	21.68	21.71	21.93	0	0
	1	12	22.00	21.83	21.77	21.88		0
	1	24	21.93	21.79	21.76	21.95		0
	12	0	21.56	21.69	21.63	21.59	0-1	0
	12	6	21.63	21.57	21.60	21.67		0
	12	13	21.61	21.53	21.59	21.66		0
	25	0	21.57	21.53	21.56	21.63		0
16QAM	1	0	21.59	21.68	21.50	21.69	0-1	0
	1	12	21.84	21.50	21.59	21.88		0
	1	24	21.76	21.50	21.56	21.81		0
	12	0	21.40	21.48	21.49	21.33	0-2	0.5
	12	6	21.32	21.44	21.46	21.50		0.5
	12	13	21.29	21.50	21.35	21.41		0.5
	25	0	21.18	21.44	21.31	21.42		0.5
64QAM	1	0	21.31	21.35	21.29	21.36	0-2	0.5
	1	12	21.22	21.23	21.47	21.37		0.5
	1	24	21.43	21.19	21.42	21.30		0.5
	12	0	20.36	20.35	20.43	20.41	0-3	1.5
	12	6	20.40	20.41	20.33	20.47		1.5
	12	13	20.41	20.40	20.48	20.46		1.5
	25	0	20.33	20.46	20.35	20.40		1.5

9.4.2 LTE Band 41

Table 9-67
LTE Band 41 PC3 Measured P_{max} - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.96	24.93	24.76	24.74	24.56	0	0
	1	50	24.97	24.94	25.10	24.95	24.88		0
	1	99	24.99	24.95	24.78	24.48	24.74		0
	50	0	23.96	23.98	23.89	23.96	23.90	0-1	1
	50	25	24.05	24.04	24.07	24.06	24.06		1
	50	50	24.02	24.04	24.01	23.96	24.03		1
	100	0	23.94	23.96	23.99	23.99	23.99		1
16QAM	1	0	24.01	24.40	23.95	24.18	23.65	0-1	1
	1	50	24.03	24.39	24.26	24.39	23.96		1
	1	99	24.09	24.42	24.05	23.94	23.86		1
	50	0	22.97	23.00	22.88	22.96	22.88	0-2	2
	50	25	23.08	23.05	23.02	23.10	23.11		2
	50	50	23.05	23.02	23.00	22.94	23.08		2
	100	0	22.95	22.92	22.97	22.96	23.02		2
64QAM	1	0	22.94	22.51	22.80	22.89	22.63	0-2	2
	1	50	22.99	22.56	23.11	23.12	23.00		2
	1	99	23.02	22.57	22.92	22.70	22.89		2
	50	0	21.99	21.95	21.92	21.98	21.96	0-3	3
	50	25	22.10	22.06	22.06	22.11	22.13		3
	50	50	22.08	22.02	22.00	21.97	22.09		3
	100	0	22.02	21.98	21.96	22.03	22.06		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 71 of 187	

Table 9-68
LTE Band 41 PC3 Measured P_{max} - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.05	24.80	24.83	25.04	24.76	0	0
	1	36	25.07	24.91	25.02	25.19	25.00		0
	1	74	24.97	24.76	24.81	24.81	24.82		0
	36	0	24.09	23.96	24.13	24.16	24.02	0-1	1
	36	18	24.10	24.11	24.11	24.29	24.11		1
	36	37	24.05	23.98	24.01	24.19	24.15		1
	75	0	24.00	23.99	24.17	24.18	24.03		1
16QAM	1	0	24.07	23.91	23.89	24.11	23.77	0-1	1
	1	36	24.17	23.98	24.16	24.26	24.08		1
	1	74	24.07	23.89	23.96	23.86	23.96		1
	36	0	22.87	22.58	22.79	22.76	22.69	0-2	2
	36	18	22.99	22.69	22.95	22.90	22.85		2
	36	37	22.92	22.56	22.90	22.77	22.88		2
	75	0	22.80	22.62	22.80	22.85	22.69		2
64QAM	1	0	22.87	22.76	22.64	22.65	22.59	0-2	2
	1	36	22.96	22.82	23.02	22.92	22.93		2
	1	74	22.89	22.84	22.76	22.55	22.81		2
	36	0	21.79	21.48	21.75	21.80	21.67	0-3	3
	36	18	21.89	21.61	21.88	21.90	21.76		3
	36	37	21.84	21.51	21.85	21.79	21.80		3
	75	0	21.84	21.58	21.84	21.78	21.73		3

Table 9-69
LTE Band 41 PC3 Measured P_{max} - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.03	24.91	24.88	24.87	24.69	0	0
	1	25	25.05	25.11	25.03	25.12	24.89		0
	1	49	24.93	24.88	24.75	24.59	24.56		0
	25	0	24.19	24.05	24.19	24.15	24.08	0-1	1
	25	12	24.02	24.22	24.07	24.02	24.13		1
	25	25	24.27	24.28	24.23	24.16	24.09		1
	50	0	24.17	24.26	24.24	24.13	24.03		1
16QAM	1	0	24.03	23.95	23.78	24.02	23.74	0-1	1
	1	25	24.03	24.23	24.09	24.34	23.99		1
	1	49	24.04	23.95	23.79	24.16	23.66		1
	25	0	22.82	22.75	22.81	22.80	22.72	0-2	2
	25	12	22.94	22.91	22.97	22.89	22.79		2
	25	25	22.87	22.78	22.84	22.81	22.72		2
	50	0	22.82	22.92	22.85	22.80	22.66		2
64QAM	1	0	22.79	22.70	22.48	22.43	22.43	0-2	2
	1	25	22.84	22.93	22.84	22.70	22.74		2
	1	49	22.88	22.75	22.61	22.39	22.46		2
	25	0	21.71	21.87	21.71	21.71	21.58	0-3	3
	25	12	21.78	22.04	21.84	21.73	21.63		3
	25	25	21.75	21.89	21.68	21.68	21.61		3
	50	0	21.75	21.87	21.75	21.83	21.59		3

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 72 of 187	

Table 9-70
LTE Band 41 PC3 Measured P_{max} - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	25.02	25.07	24.92	25.07	24.85	0	0
	1	12	25.04	25.13	25.02	25.15	24.87		0
	1	24	25.03	25.08	24.95	25.10	24.80		0
	12	0	23.74	23.73	23.60	23.63	23.52	0-1	1
	12	6	23.74	23.76	23.69	23.72	23.57		1
	12	13	23.70	23.75	23.64	23.65	23.56		1
	25	0	23.68	23.70	23.64	23.65	23.55		1
16QAM	1	0	23.56	23.94	23.51	23.81	23.39	0-1	1
	1	12	23.64	24.01	23.61	23.93	23.46		1
	1	24	23.61	23.99	23.54	23.88	23.39		1
	12	0	23.04	23.09	22.90	23.00	22.79	0-2	2
	12	6	23.03	23.09	22.95	23.08	22.89		2
	12	13	23.00	23.04	22.91	23.06	22.80		2
	25	0	23.01	23.05	22.95	22.84	22.86		2
64QAM	1	0	23.06	22.95	22.99	23.02	22.91	0-2	2
	1	12	23.26	23.03	23.21	23.14	23.14		2
	1	24	23.09	22.98	23.05	23.04	22.92		2
	12	0	21.99	22.12	21.88	21.94	21.83	0-3	3
	12	6	22.01	22.10	21.97	21.99	21.87		3
	12	13	21.96	22.04	21.94	21.95	21.84		3
	25	0	21.94	22.02	21.92	21.88	21.82		3

Table 9-71
LTE Band 41 PC2 Measured P_{max} - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.87	27.10	26.66	26.83	26.54	0	0
	1	50	26.87	27.05	27.00	26.90	26.60		0
	1	99	26.90	26.93	26.58	26.64	26.47		0
	50	0	25.90	26.17	25.96	26.18	25.87	0-1	1
	50	25	26.06	26.17	26.13	26.02	26.16		1
	50	50	26.08	26.50	26.03	26.12	26.20		1
	100	0	26.01	26.10	25.95	26.02	25.99		1

FCC ID: ZNFF100TM



SAR EVALUATION REPORT



Approved by:
Quality Manager

Document S/N:
1M2006150095-01-R2.ZNF

Test Dates:
07/09/20 – 08/31/20

DUT Type:
Portable Handset

Page 73 of 187

Table 9-72
LTE Band 41 PC3 Measured P_{Limit} for all DSI - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.35	24.48	24.12	24.21	23.97	0	0
	1	50	24.44	24.52	24.40	24.47	24.31		0
	1	99	24.31	24.55	24.09	23.82	24.25		0
	50	0	23.23	23.38	23.41	23.27	23.14	0-1	0.5
	50	25	23.27	23.40	23.49	23.37	23.33		0.5
	50	50	23.33	23.50	23.44	23.23	23.28		0.5
	100	0	23.28	23.41	23.44	23.24	23.23		0.5
16QAM	1	0	23.53	23.82	23.26	23.45	23.16	0-1	0.5
	1	50	23.51	23.72	23.54	23.41	23.43		0.5
	1	99	23.59	23.66	23.23	23.10	23.30		0.5
	50	0	22.58	22.66	22.67	22.65	22.43	0-2	1.5
	50	25	22.69	22.70	22.74	22.66	22.65		1.5
	50	50	22.68	22.81	22.55	22.51	22.72		1.5
	100	0	22.64	22.76	22.72	22.64	22.60		1.5
64QAM	1	0	22.78	22.83	22.64	22.68	22.48	0-2	1.5
	1	50	22.90	22.95	22.85	22.83	22.69		1.5
	1	99	22.87	23.02	22.49	22.33	22.68		1.5
	50	0	21.63	21.78	21.59	21.70	21.57	0-3	2.5
	50	25	21.74	21.79	21.80	21.77	21.60		2.5
	50	50	21.75	21.85	21.69	21.50	21.64		2.5
	100	0	21.61	21.72	21.70	21.58	21.50		2.5

Table 9-73
LTE Band 41 PC3 P_{Limit} for all DSI - 15 MHz Bandwidth

LTE Band 41 15 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.22	24.17	24.11	24.24	23.97	0	0
	1	36	24.30	24.44	24.39	24.13	24.24		0
	1	74	24.24	24.09	24.15	23.82	24.10		0
	36	0	23.48	23.47	23.47	23.39	23.29	0-1	0.5
	36	18	23.58	23.61	23.65	23.45	23.48		0.5
	36	37	23.58	23.51	23.60	23.14	23.42		0.5
	75	0	23.48	23.50	23.53	23.32	23.39		0.5
16QAM	1	0	23.81	23.53	23.81	23.94	23.49	0-1	0.5
	1	36	23.90	23.75	23.91	23.71	23.78		0.5
	1	74	23.83	23.47	23.77	23.52	23.65		0.5
	36	0	22.84	22.79	22.83	22.63	22.70	0-2	1.5
	36	18	22.93	22.97	23.00	22.56	22.85		1.5
	36	37	22.92	22.87	22.94	22.36	22.81		1.5
	75	0	22.76	22.79	22.82	22.53	22.69		1.5
64QAM	1	0	22.78	22.38	22.70	22.36	22.54	0-2	1.5
	1	36	22.97	22.69	23.03	22.38	22.88		1.5
	1	74	22.92	22.39	22.82	22.02	22.72		1.5
	36	0	21.86	21.77	21.83	21.40	21.70	0-3	2.5
	36	18	21.91	21.89	21.99	21.48	21.86		2.5
	36	37	21.90	21.79	21.93	21.41	21.84		2.5
	75	0	21.81	21.81	21.86	21.48	21.76	2.5	

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 74 of 187	

Table 9-74
LTE Band 41 PC3 P_{Limit} for all DSI - 10 MHz Bandwidth

LTE Band 41 10 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.35	24.21	24.26	24.12	24.13	0	0
	1	25	24.41	24.45	24.52	24.33	24.31		0
	1	49	24.38	24.19	24.39	24.04	23.94		0
	25	0	23.55	23.49	23.52	23.45	23.35	0-1	0.5
	25	12	23.38	23.68	23.63	23.59	23.48		0.5
	25	25	23.49	23.56	23.65	23.48	23.22		0.5
	50	0	23.46	23.57	23.56	23.51	23.37		0.5
16QAM	1	0	24.27	23.45	24.33	23.81	23.98	0-1	0.5
	1	25	23.99	23.75	24.03	24.08	24.11		0.5
	1	49	24.14	23.58	23.82	23.80	23.62		0.5
	25	0	22.83	22.74	22.68	22.85	22.52	0-2	1.5
	25	12	22.87	22.90	22.98	22.97	22.81		1.5
	25	25	22.87	22.80	22.87	22.89	22.70		1.5
	50	0	22.70	22.83	22.81	22.87	22.67		1.5
64QAM	1	0	22.97	22.44	22.94	22.46	22.96	0-2	1.5
	1	25	23.20	22.82	23.16	22.79	22.84		1.5
	1	49	23.26	22.61	22.91	22.46	22.76		1.5
	25	0	21.76	21.79	21.63	21.78	21.68	0-3	2.5
	25	12	21.76	21.95	21.97	21.93	21.86		2.5
	25	25	21.75	21.90	21.68	21.82	21.80		2.5
	50	0	21.74	21.88	21.81	21.81	21.65		2.5

Table 9-75
LTE Band 41 PC3 P_{Limit} for all DSI - 5 MHz Bandwidth

LTE Band 41 5 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	24.31	24.38	24.39	24.23	24.30	0	0
	1	12	24.40	24.43	24.43	24.32	24.31		0
	1	24	24.35	24.42	24.41	24.25	24.22		0
	12	0	23.59	23.66	23.61	23.51	23.40	0-1	0.5
	12	6	23.59	23.66	23.68	23.62	23.49		0.5
	12	13	23.55	23.62	23.65	23.61	23.44		0.5
	25	0	23.58	23.62	23.67	23.60	23.48		0.5
16QAM	1	0	24.20	24.01	24.34	23.85	24.12	0-1	0.5
	1	12	24.25	24.02	24.35	23.84	24.12		0.5
	1	24	24.28	24.05	24.34	23.85	24.11		0.5
	12	0	22.83	22.90	22.84	22.98	22.66	0-2	1.5
	12	6	22.84	22.93	22.93	23.06	22.74		1.5
	12	13	22.80	22.91	22.88	23.02	22.68		1.5
	25	0	22.78	22.89	22.94	22.91	22.68		1.5
64QAM	1	0	22.60	22.71	22.71	22.94	22.56	0-2	1.5
	1	12	22.64	22.73	22.79	22.96	22.61		1.5
	1	24	22.72	22.74	22.72	22.93	22.58		1.5
	12	0	21.86	21.95	21.90	21.88	21.67	0-3	2.5
	12	6	21.87	21.98	21.98	21.97	21.77		2.5
	12	13	21.87	21.94	21.92	21.90	21.70		2.5
	25	0	21.80	21.92	21.88	21.90	21.70		2.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 75 of 187	

Table 9-76
LTE Band 41 PC2 P_{Limit} for all DSI - 20 MHz Bandwidth

LTE Band 41 20 MHz Bandwidth									
Modulation	RB Size	RB Offset	Low Channel	Low-Mid Channel	Mid Channel	Mid-High Channel	High Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			39750 (2506.0 MHz)	40185 (2549.5 MHz)	40620 (2593.0 MHz)	41055 (2636.5 MHz)	41490 (2680.0 MHz)		
			Conducted Power [dBm]						
QPSK	1	0	26.04	26.17	25.91	25.91	25.66	0	0
	1	50	25.97	26.11	26.15	26.12	26.10		0
	1	99	25.97	26.14	25.79	25.65	25.96		0
	50	0	25.84	25.98	25.90	25.96	25.73	0-1	0.1
	50	25	25.91	26.07	26.05	26.01	25.86		0.1
	50	50	25.88	26.00	25.84	25.84	25.85		0.1
	100	0	25.85	26.02	25.99	25.99	25.86		0.1

FCC ID: ZNFF100TM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 76 of 187

9.4.3 LTE Uplink Carrier Aggregation Conducted Powers

Table 9-77
LTE Band 41 Uplink Carrier Aggregation Measured P_{max}

Combination	PCC							SCC							Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41	20	40620	2593.0	QPSK	1	99	LTE B41	20	40818	2612.8	QPSK	1	0	25.23	24.78

Combination	PCC							SCC							Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	40620	2593.0	QPSK	1	99	LTE B41 PC2	20	40818	2612.8	QPSK	1	0	26.60	26.58

Table 9-78
LTE Band 41 Uplink Carrier Aggregation Measured P_{Limit}

Combination	PCC							SCC							Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41	20	40185	2549.5	QPSK	1	99	LTE B41	20	40383	2569.3	QPSK	1	0	24.25	24.55
CA_41C	LTE B41	20	41055	2636.5	QPSK	1	0	LTE B41	20	40857	2616.7	QPSK	1	99	24.00	24.21

Combination	PCC							SCC							Power	
	PCC Band	PCC Bandwidth [MHz]	PCC (UL/DL) Channel	PCC (UL/DL) Frequency [MHz]	Modulation	PCC UL# RB	PCC UL RB Offset	SCC Band	SCC Bandwidth [MHz]	SCC (UL/DL) Channel	SCC (UL/DL) Frequency [MHz]	Modulation	SCC UL# RB	SCC UL RB Offset	LTE Tx.Power with UL CA Enabled (dBm)	LTE Single Carrier Tx Power (dBm)
CA_41C	LTE B41 PC2	20	40185	2549.5	QPSK	1	99	LTE B41 PC2	20	40383	2569.3	QPSK	1	0	25.71	26.14
CA_41C	LTE B41 PC2	20	41055	2636.5	QPSK	1	0	LTE B41 PC2	20	40857	2616.7	QPSK	1	99	25.81	25.91

Notes:

1. This device supports uplink carrier aggregation for LTE CA_41C with a maximum of two component carriers. For intraband contiguous carrier aggregation scenarios, 3GPP 36.101 Table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when non-contiguous RB allocation is implemented. The conducted powers and MPR settings in this device are permanently implemented per the above 3GPP requirements.
2. Per FCC Guidance, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.



Figure 9-4
Power Measurement Setup

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 77 of 187

9.5 NR Conducted Powers

9.5.1 NR Band n71

Table 9-79
NR Band n71 Measured P_{max} for all DSI - 20 MHz Bandwidth

NR Band n71 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			136100 (680.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.46	0	0.0
	1	53	25.21		0.0
	1	104	25.19		0.0
	50	0	25.28	0-0.5	0.0
	50	28	25.18	0	0.0
	50	56	25.19	0-0.5	0.0
	100	0	25.23		0.0
DFT-s-OFDM QPSK	1	1	25.41	0	0.0
	1	53	25.19		0.0
	1	104	25.14		0.0
	50	0	24.36	0-1	1.0
	50	28	25.25	0	0.0
	50	56	24.18	0-1	1.0
	100	0	24.20		1.0
DFT-s-OFDM 16QAM	1	1	23.92	0-1	1.0
CP-OFDM QPSK	1	1	23.58	0-1.5	1.5

Note: NR Band n71 at 20 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 78 of 187

Table 9-80
NR Band n71 Measured P_{max} for all DSI - 15 MHz Bandwidth

NR Band n71 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			136100 (680.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.48	0	0.0
	1	40	25.39		0.0
	1	77	25.35		0.0
	36	0	25.33	0-0.5	0.0
	36	22	25.42	0	0.0
	36	43	25.20	0-0.5	0.0
	75	0	25.34		0.0
DFT-s-OFDM QPSK	1	1	25.36	0	0.0
	1	40	25.34		0.0
	1	77	25.33		0.0
	36	0	24.34	0-1	1.0
	36	22	25.34	0	0.0
	36	43	24.23	0-1	1.0
	75	0	24.30		1.0
DFT-s-OFDM 16QAM	1	1	23.94	0-1	1.0
CP-OFDM QPSK	1	1	23.28	0-1.5	1.5

Note: NR Band n71 at 15 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 79 of 187	

Table 9-81
NR Band n71 Measured P_{max} for all DSI - 10 MHz Bandwidth
NR Band n71
10 MHz Bandwidth

			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133600 (668 MHz)	136100 (680.5 MHz)	138600 (693 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.42	25.36	25.43	0	0.0
	1	26	25.28	25.33	25.22		0.0
	1	50	25.18	25.33	25.08		0.0
	25	0	25.22	25.15	25.14	0-0.5	0.0
	25	14	25.28	25.36	25.19	0	0.0
	25	27	25.11	25.19	25.01	0-0.5	0.0
	50	0	25.21	25.24	25.07		0.0
DFT-s-OFDM QPSK	1	1	25.36	25.37	25.31	0	0.0
	1	26	25.19	25.35	25.25		0.0
	1	50	25.17	25.28	25.02		0.0
	25	0	24.24	24.16	24.14	0-1	1.0
	25	14	25.24	25.32	25.21	0	0.0
	25	27	24.10	24.22	24.03	0-1	1.0
	50	0	24.17	24.22	24.07		1.0
DFT-s-OFDM 16QAM	1	1	23.84	23.76	23.69	0-1	1.0
CP-OFDM QPSK	1	1	23.16	23.19	23.10	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 80 of 187	

Table 9-82
NR Band n71 Measured P_{max} for all DSI - 5 MHz Bandwidth

NR Band n71 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	133100 (665.5 MHz)	136100 (680.5 MHz)	139100 (695.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.43	25.41	25.29	0	0.0
	1	13	25.36	25.38	25.18		0.0
	1	23	25.28	25.29	25.02		0.0
	12	0	25.32	25.24	25.12	0-0.5	0.0
	12	7	25.36	25.35	25.17	0	0.0
	12	13	25.19	25.17	24.94	0-0.5	0.0
	25	0	25.21	25.13	25.04		0.0
DFT-s-OFDM QPSK	1	1	25.41	25.37	25.26	0	0.0
	1	13	25.34	25.38	25.09		0.0
	1	23	25.31	25.29	25.01		0.0
	12	0	24.40	24.28	24.09	0-1	1.0
	12	7	25.39	25.39	25.15	0	0.0
	12	13	24.19	24.23	23.98	0-1	1.0
	25	0	24.23	24.13	24.00		1.0
DFT-s-OFDM 16QAM	1	1	23.77	23.88	23.66	0-1	1.0
CP-OFDM QPSK	1	1	23.26	23.13	23.02	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 81 of 187	

9.5.2

NR Band n5

Table 9-83
NR Band n5 Measured P_{max} for all DSI - 20 MHz Bandwidth

NR Band n5 20 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.44	0	0.0
	1	53	25.32		0.0
	1	104	25.21		0.0
	50	0	25.28	0-0.5	0.0
	50	28	25.24	0	0.0
	50	56	25.23	0-0.5	0.0
	100	0	25.32		0.0
DFT-s-OFDM QPSK	1	1	25.38	0	0.0
	1	53	25.28		0.0
	1	104	25.02		0.0
	50	0	24.31	0-1	1.0
	50	28	25.23	0	0.0
	50	56	24.26	0-1	1.0
	100	0	24.27		1.0
DFT-s-OFDM 16QAM	1	1	24.15	0-1	1.0
CP-OFDM QPSK	1	1	23.28	0-1.5	1.5

Note: NR Band n5 (Cell) at 20 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 82 of 187

Table 9-84
NR Band n5 Measured P_{max} for all DSI - 15 MHz Bandwidth
NR Band n5
15 MHz Bandwidth

NR Band n5 15 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.26	0	0.0
	1	40	25.20		0.0
	1	77	25.09		0.0
	36	0	25.16	0-0.5	0.0
	36	22	25.12	0	0.0
	36	43	25.05	0-0.5	0.0
	75	0	25.16		0.0
DFT-s-OFDM QPSK	1	1	25.46	0	0.0
	1	40	25.35		0.0
	1	77	25.24		0.0
	36	0	24.19	0-1	1.0
	36	22	25.27	0	0.0
	36	43	24.09	0-1	1.0
	75	0	24.14		1.0
DFT-s-OFDM 16QAM	1	1	24.12	0-1	1.0
CP-OFDM QPSK	1	1	23.29	0-1.5	1.5

Note: NR Band n5 (Cell) at 15 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 83 of 187	

Table 9-85
NR Band n5 Measured P_{max} for all DSI - 10 MHz Bandwidth
NR Band n5
10 MHz Bandwidth

NR Band n5 10 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			167300 (836.5 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.18	0	0.0
	1	26	25.24		0.0
	1	50	25.13		0.0
	25	0	25.11	0-0.5	0.0
	25	14	25.28	0	0.0
	25	27	25.09	0-0.5	0.0
	50	0	25.18		0.0
DFT-s-OFDM QPSK	1	1	25.38	0	0.0
	1	26	25.46		0.0
	1	50	25.31		0.0
	25	0	24.17	0-1	1.0
	25	14	25.29	0	0.0
	25	27	24.09	0-1	1.0
	50	0	24.21		1.0
DFT-s-OFDM 16QAM	1	1	23.88	0-1	1.0
CP-OFDM QPSK	1	1	23.29	0-1.5	1.5

Note: NR Band n5 (Cell) at 10 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 84 of 187	

Table 9-86
NR Band n5 Measured P_{max} for all DSI - 5 MHz Bandwidth

NR Band n5 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	165300 (826.5 MHz)	167300 (836.5 MHz)	169300 (846.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	25.29	25.26	25.08	0	0.0
	1	13	25.17	25.31	25.02		0.0
	1	23	25.15	25.17	24.96		0.0
	12	0	25.23	25.18	25.03	0-0.5	0.0
	12	7	25.31	25.34	25.14	0	0.0
	12	13	25.04	25.10	24.92	0-0.5	0.0
	25	0	25.13	25.18	24.98		0.0
DFT-s-OFDM QPSK	1	1	25.48	25.43	25.27	0	0.0
	1	13	25.36	25.45	25.16		0.0
	1	23	25.26	25.28	25.11		0.0
	12	0	24.17	24.13	24.06	0-1	1.0
	12	7	25.32	25.34	25.16	0	0.0
	12	13	24.11	24.13	23.92	0-1	1.0
	25	0	24.17	24.23	23.99		1.0
DFT-s-OFDM 16QAM	1	1	24.10	24.09	23.90	0-1	1.0
CP-OFDM QPSK	1	1	23.31	23.26	23.17	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 85 of 187	

9.5.3

NR Band n66 (AWS)

Table 9-87
NR Band n66 (AWS) Measured P_{Limit} for all DSI - 20 MHz Bandwidth

NR Band n66 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	344000 (1720 MHz)	349000 (1745 MHz)	354000 (1770 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.74	22.81	22.76	0	0.0
	1	53	23.05	23.00	23.01		0.0
	1	104	22.79	22.78	22.64		0.0
	50	0	22.77	22.75	22.69	0-0.5	0.0
	50	28	22.74	22.78	22.66	0	0.0
	50	56	22.69	22.76	22.63	0-0.5	0.0
	100	0	22.75	22.77	22.62		0.0
DFT-s-OFDM QPSK	1	1	22.77	22.75	22.76	0	0.0
	1	53	22.71	23.00	22.61		0.0
	1	104	22.66	22.71	22.59		0.0
	50	0	22.75	22.78	22.75	0-1	0.0
	50	28	22.76	22.75	22.66	0	0.0
	50	56	22.74	22.76	22.65	0-1	0.0
	100	0	22.70	22.71	22.70		0.0
DFT-s-OFDM 16QAM	1	1	22.58	22.75	22.53	0-1	0.0
CP-OFDM QPSK	1	1	22.68	22.70	22.69	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 86 of 187

Table 9-88
NR Band n66 (AWS) Measured P_{Limit} for all DSI - 15 MHz Bandwidth

NR Band n66 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343500 (1717.5 MHz)	349000 (1745 MHz)	354500 (1772.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.82	22.91	22.87	0	0.0
	1	40	22.69	22.76	22.71		0.0
	1	77	22.83	22.91	22.78		0.0
	36	0	22.74	22.87	22.79	0-0.5	0.0
	36	22	22.68	22.83	22.69	0	0.0
	36	43	22.80	22.82	22.88	0-0.5	0.0
	75	0	22.75	22.83	22.80		0.0
DFT-s-OFDM QPSK	1	1	23.02	23.05	23.08	0	0.0
	1	40	22.89	23.08	22.99		0.0
	1	77	23.04	23.07	23.09		0.0
	36	0	22.81	22.90	22.88	0-1	0.0
	36	22	22.72	22.84	22.75	0	0.0
	36	43	22.84	22.94	22.80	0-1	0.0
	75	0	22.78	22.90	22.85		0.0
DFT-s-OFDM 16QAM	1	1	22.83	23.07	22.97	0-1	0.0
CP-OFDM QPSK	1	1	22.28	22.39	22.32	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 87 of 187

Table 9-89
NR Band n66 (AWS) Measured P_{Limit} for all DSI - 10 MHz Bandwidth

NR Band n66 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	343000 (1715 MHz)	349000 (1745 MHz)	355000 (1775 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.75	22.97	22.89	0	0.0
	1	26	22.69	22.92	22.86		0.0
	1	50	22.70	22.88	22.81		0.0
	25	0	22.77	22.92	22.93	0-0.5	0.0
	25	14	22.75	22.89	22.88	0	0.0
	25	27	22.79	22.91	22.91	0-0.5	0.0
	50	0	22.64	22.85	22.84		0.0
DFT-s-OFDM QPSK	1	1	22.83	23.04	22.92	0	0.0
	1	26	22.86	23.01	23.04		0.0
	1	50	22.87	22.93	22.97		0.0
	25	0	22.72	22.93	22.94	0-1	0.0
	25	14	22.70	22.93	22.87	0	0.0
	25	27	22.68	22.89	22.86	0-1	0.0
	50	0	22.72	22.93	22.95		0.0
DFT-s-OFDM 16QAM	1	1	22.98	23.13	23.00	0-1	0.0
CP-OFDM QPSK	1	1	22.29	22.33	22.36	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 88 of 187	

Table 9-90
NR Band n66 (AWS) Measured P_{Limit} for all DSI - 5 MHz Bandwidth

NR Band n66 5 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	342500 (1712.5 MHz)	349000 (1745 MHz)	355500 (1777.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.76	22.92	22.88	0	0.0
	1	13	22.83	23.03	22.84		0.0
	1	23	22.74	22.88	22.76		0.0
	12	0	22.79	22.85	22.86	0-0.5	0.0
	12	7	22.83	22.98	22.87	0	0.0
	12	13	22.77	22.94	22.84	0-0.5	0.0
	25	0	22.75	22.92	22.86		0.0
DFT-s-OFDM QPSK	1	1	22.93	23.02	23.03	0	0.0
	1	13	22.95	23.05	23.06		0.0
	1	23	22.84	23.09	22.90		0.0
	12	0	22.77	22.95	22.92	0-1	0.0
	12	7	22.82	23.00	22.89	0	0.0
	12	13	22.76	22.97	22.88	0-1	0.0
	25	0	22.73	22.91	22.80		0.0
DFT-s-OFDM 16QAM	1	1	22.95	23.13	22.95	0-1	0.0
CP-OFDM QPSK	1	1	22.30	22.38	22.29	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 89 of 187	

9.5.4

NR Band n25 (PCS)

Table 9-91
NR Band n25 (PCS) Measured P_{Limit} for all DSI - 20 MHz Bandwidth

NR Band n25 20 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	372000 (1860 MHz)	376500 (1882.5 MHz)	381000 (1905 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.76	22.80	22.70	0	0.0
	1	53	22.66	22.79	22.79		0.0
	1	104	22.63	22.70	22.67		0.0
	50	0	22.72	22.76	22.71	0-0.5	0.0
	50	28	22.72	22.74	22.66	0	0.0
	50	56	22.70	22.65	22.75	0-0.5	0.0
	100	0	22.64	22.74	22.63		0.0
DFT-s-OFDM QPSK	1	1	22.82	22.82	22.74	0	0.0
	1	53	22.84	22.97	22.83		0.0
	1	104	22.79	22.69	22.73		0.0
	50	0	22.72	22.80	22.71	0-1	0.0
	50	28	22.69	22.72	22.67	0	0.0
	50	56	22.75	22.71	22.72	0-1	0.0
	100	0	22.68	22.73	22.65		0.0
DFT-s-OFDM 16QAM	1	1	22.61	22.51	22.59	0-1	0.0
CP-OFDM QPSK	1	1	22.80	22.73	22.82	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 90 of 187

Table 9-92
NR Band n25 (PCS) Measured P_{Limit} for all DSI - 15 MHz Bandwidth

NR Band n25 15 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371500 (1857.5 MHz)	376500 (1882.5 MHz)	381500 (1907.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.76	22.73	22.67	0	0.0
	1	40	22.68	22.79	22.62		0.0
	1	77	22.72	22.82	22.62		0.0
	36	0	22.69	22.81	22.70	0-0.5	0.0
	36	22	22.65	22.75	22.61	0	0.0
	36	43	22.64	22.72	22.58	0-0.5	0.0
	75	0	22.62	22.72	22.66		0.0
DFT-s-OFDM QPSK	1	1	22.90	22.92	22.88	0	0.0
	1	40	22.87	22.97	22.82		0.0
	1	77	22.85	22.99	22.83		0.0
	36	0	22.70	22.83	22.69	0-1	0.0
	36	22	22.66	22.78	22.63	0	0.0
	36	43	22.62	22.72	22.67	0-1	0.0
	75	0	22.67	22.79	22.68		0.0
DFT-s-OFDM 16QAM	1	1	22.92	22.91	22.84	0-1	0.0
CP-OFDM QPSK	1	1	22.56	22.68	22.61	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 91 of 187

Table 9-93
NR Band n25 (PCS) Measured P_{Limit} for all DSI - 10 MHz Bandwidth

NR Band n25 10 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	371000 (1855 MHz)	376500 (1882.5 MHz)	382000 (1910 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.71	22.62	22.64	0	0.0
	1	26	22.58	22.69	22.76		0.0
	1	50	22.55	22.67	22.69		0.0
	25	0	22.52	22.64	22.63	0-0.5	0.0
	25	14	22.58	22.64	22.64	0	0.0
	25	27	22.59	22.69	22.67	0-0.5	0.0
	50	0	22.58	22.63	22.62		0.0
DFT-s-OFDM QPSK	1	1	22.85	22.80	22.80	0	0.0
	1	26	22.81	22.88	22.98		0.0
	1	50	22.69	22.90	22.82		0.0
	25	0	22.61	22.62	22.68	0-1	0.0
	25	14	22.55	22.59	22.64	0	0.0
	25	27	22.59	22.69	22.66	0-1	0.0
	50	0	22.54	22.62	22.65		0.0
DFT-s-OFDM 16QAM	1	1	22.77	22.86	22.78	0-1	0.0
CP-OFDM QPSK	1	1	22.53	22.62	22.56	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 92 of 187

Table 9-94
NR Band n25 (PCS) Measured P_{Limit} for all DSI - 5 MHz Bandwidth
NR Band n25
5 MHz Bandwidth

			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	370500 (1852.5 MHz)	376500 (1882.5 MHz)	382500 (1912.5 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	22.48	22.59	22.66	0	0.0
	1	13	22.55	22.68	22.74		0.0
	1	23	22.58	22.65	22.69		0.0
	12	0	22.44	22.59	22.65	0-0.5	0.0
	12	7	22.59	22.67	22.58	0	0.0
	12	13	22.58	22.65	22.67	0-0.5	0.0
	25	0	22.54	22.64	22.58		0.0
DFT-s-OFDM QPSK	1	1	22.78	22.83	22.78	0	0.0
	1	13	22.81	22.99	22.88		0.0
	1	23	22.80	22.92	22.83		0.0
	12	0	22.52	22.64	22.58	0-1	0.0
	12	7	22.61	22.66	22.67	0	0.0
	12	13	22.62	22.71	22.69	0-1	0.0
	25	0	22.59	22.69	22.60		0.0
DFT-s-OFDM 16QAM	1	1	22.72	22.78	22.81	0-1	0.0
CP-OFDM QPSK	1	1	22.37	22.44	22.46	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 93 of 187	

9.5.1

NR Band n41

Table 9-95
NR Band n41 PC2 Measured P_{max} for Head - 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			518598 (2592.99 MHz) Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	26.66	0	0.0
	1	137	26.77		0.0
	1	271	26.59		0.0
	135	0	26.33	0-0.5	0.0
	135	69	26.69	0	0.0
	135	138	26.28	0-0.5	0.0
	270	0	26.27		0.0
DFT-s-OFDM QPSK	1	1	26.74	0	0.0
	1	137	26.78		0.0
	1	271	26.63		0.0
	135	0	25.79	0-1	1.0
	135	69	26.77	0	0.0
	135	138	25.80	0-1	1.0
	270	0	25.78		1.0
DFT-s-OFDM 16QAM	1	1	25.86	0-1	1.0
CP-OFDM QPSK	1	1	24.72	0-1.5	1.5

Note: NR Band n41 at 100 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 94 of 187	

Table 9-96
NR Band n41 PC2 Measured P_{max} for Head - 90 MHz Bandwidth

NR Band n41 90 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	508200 (2541 MHz)	528996 (2644.98 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM $\pi/2$ BPSK	1	1	26.99	27.03	0	0.0
	1	123	26.64	26.88		0.0
	1	243	26.58	26.83		0.0
	120	0	26.14	26.36	0-0.5	0.0
	120	63	26.77	26.80	0	0.0
	120	125	26.38	26.24	0-0.5	0.0
	243	0	26.48	26.43		0.0
DFT-s-OFDM QPSK	1	1	27.02	26.92	0	0.0
	1	123	26.82	26.79		0.0
	1	243	26.91	26.86		0.0
	120	0	25.79	25.87	0-1	1.0
	120	63	26.81	26.82	0	0.0
	120	125	25.90	25.73	0-1	1.0
	243	0	25.88	25.90		1.0
DFT-s-OFDM 16QAM	1	1	25.97	25.93	0-1	1.0
CP-OFDM QPSK	1	1	25.02	24.91	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 95 of 187

Table 9-97
NR Band n41 PC2 Measured P_{max} for Head - 80 MHz Bandwidth

NR Band n41 80 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	507204 (2536.02 MHz)	529998 (2649.99 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM $\pi/2$ BPSK	1	1	26.96	27.07	0	0.0
	1	109	26.79	26.76		0.0
	1	215	26.64	26.82		0.0
	108	0	26.41	26.37	0-0.5	0.0
	108	55	26.82	26.84	0	0.0
	108	109	26.47	26.38	0-0.5	0.0
	216	0	26.36	26.42		0.0
DFT-s-OFDM QPSK	1	1	26.89	26.82	0	0.0
	1	109	26.81	26.71		0.0
	1	215	27.01	26.74		0.0
	108	0	25.90	25.75	0-1	1.0
	108	55	26.76	26.68	0	0.0
	108	109	25.84	25.77	0-1	1.0
	216	0	25.87	25.75		1.0
DFT-s-OFDM 16QAM	1	1	25.71	26.10	0-1	1.0
CP-OFDM QPSK	1	1	24.87	25.08	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 96 of 187

Table 9-98
NR Band n41 PC2 Measured P_{max} for Head - 60 MHz Bandwidth

NR Band n41 60 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	505200 (2526 MHz)	518598 (2592.99 MHz)	531996 (2659.98 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	26.69	26.68	26.62	0	0.0
	1	81	26.81	26.95	26.73		0.0
	1	160	26.76	26.67	26.75		0.0
	81	0	26.38	26.42	26.24	0-0.5	0.0
	81	41	26.83	26.90	26.77	0	0.0
	81	81	26.47	26.44	26.38	0-0.5	0.0
	162	0	26.49	26.48	26.29		0.0
DFT-s-OFDM QPSK	1	1	26.82	26.89	26.69	0	0.0
	1	81	26.77	26.93	26.65		0.0
	1	160	26.96	26.71	26.81		0.0
	81	0	25.89	25.91	25.62	0-1	1.0
	81	41	26.88	26.82	26.75	0	0.0
	81	81	25.84	25.89	25.78	0-1	1.0
	162	0	25.87	25.96	25.79		1.0
DFT-s-OFDM 16QAM	1	1	26.14	26.05	25.69	0-1	1.0
CP-OFDM QPSK	1	1	24.93	24.68	24.53	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 97 of 187

Table 9-99
NR Band n41 PC2 Measured P_{max} for Head - 50 MHz Bandwidth

NR Band n41 50 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	504204 (2521.02 MHz)	518598 (2592.99 MHz)	532998 (2664.99 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	26.75	26.88	26.74	0	0.0
	1	67	26.69	26.81	26.69		0.0
	1	131	26.82	26.77	26.77		0.0
	64	0	26.29	26.32	26.16	0-0.5	0.0
	64	35	26.76	26.85	26.64	0	0.0
	64	69	26.33	26.46	26.19	0-0.5	0.0
	128	0	26.31	26.36	26.22		0.0
DFT-s-OFDM QPSK	1	1	26.79	26.70	26.74	0	0.0
	1	67	26.68	26.77	26.66		0.0
	1	131	26.82	26.84	26.85		0.0
	64	0	25.73	25.81	25.63	0-1	1.0
	64	35	26.77	26.80	26.70	0	0.0
	64	69	25.71	25.83	25.73	0-1	1.0
	128	0	25.86	25.82	25.68		1.0
DFT-s-OFDM 16QAM	1	1	25.68	25.73	25.61	0-1	1.0
CP-OFDM QPSK	1	1	24.90	24.82	24.78	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 98 of 187

Table 9-100
NR Band n41 PC2 Measured P_{max} for Head - 40 MHz Bandwidth

NR Band n41 40 MHz Bandwidth								
			Channel				MPR Allowed per 3GPP [dB]	MPR Allowed per 3GPP [dB]
Modulation	RB Size	RB Offset	503202 (2516.01 MHz)	513468 (2567.34 MHz)	523734 (2618.67 MHz)	534000 (2670 MHz)		
			Conducted Power [dBm]					
DFT-s-OFDM $\pi/2$ BPSK	1	1	27.14	27.15	27.14	27.08	0	0.0
	1	53	27.07	27.23	27.15	27.10		0.0
	1	104	27.00	27.13	27.07	27.10		0.0
	50	0	26.54	26.65	26.60	26.48	0-0.5	0.0
	50	28	27.01	27.10	27.08	27.00	0	0.0
	50	56	26.48	26.69	26.78	26.44	0-0.5	0.0
	100	0	26.50	26.63	26.51	26.54		0.0
DFT-s-OFDM QPSK	1	1	27.09	27.05	27.14	27.13	0	0.0
	1	53	26.92	27.21	27.06	27.11		0.0
	1	104	27.08	27.17	27.10	27.12		0.0
	50	0	26.08	26.12	26.14	25.99	0-1	1.0
	50	28	26.97	27.15	27.12	27.03	0	0.0
	50	56	26.04	26.09	26.08	25.96	0-1	1.0
	100	0	26.02	26.10	26.03	26.07		1.0
DFT-s-OFDM 16QAM	1	1	26.03	26.02	26.14	26.11	0-1	1.0
CP-OFDM QPSK	1	1	25.14	25.16	25.22	25.10	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 99 of 187	

Table 9-101
NR Band n41 PC2 Measured P_{max} for Head - 20 MHz Bandwidth

NR Band n41 20 MHz Bandwidth									
			Channel					MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	501204 (2506.02 MHz)	509898 (2549.49 MHz)	518598 (2592.99 MHz)	527298 (2636.49 MHz)	535998 (2679.99 MHz)		
			Conducted Power [dBm]						
DFT-s-OFDM $\pi/2$ BPSK	1	1	26.92	26.75	26.87	26.86	26.90	0	0.0
	1	26	26.84	26.72	26.92	26.84	26.76		0.0
	1	49	26.91	26.84	26.90	26.75	26.84		0.0
	25	0	26.62	26.49	26.59	26.33	26.39	0-0.5	0.0
	25	13	27.02	26.90	26.96	26.79	26.82	0	0.0
	25	26	26.53	26.44	26.53	26.28	26.37	0-0.5	0.0
	50	0	26.44	26.42	26.60	26.41	26.29		0.0
DFT-s-OFDM QPSK	1	1	27.05	26.92	27.06	26.98	26.86	0	0.0
	1	26	26.96	26.87	26.97	26.89	26.95		0.0
	1	49	26.78	26.88	26.91	26.91	26.85		0.0
	25	0	26.01	26.01	26.05	25.82	25.81	0-1	1.0
	25	13	26.87	26.79	26.98	26.84	26.84	0	0.0
	25	26	26.02	25.95	26.04	25.73	25.88	0-1	1.0
	50	0	25.99	25.90	26.07	25.79	25.79		1.0
DFT-s-OFDM 16QAM	1	1	25.92	25.71	25.91	25.69	25.76	0-1	1.0
CP-OFDM QPSK	1	1	24.97	24.92	25.16	24.93	24.88	0-1.5	1.5

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 100 of 187

Table 9-102

NR Band n41 PC3 Measured P_{limit} for DSI = 1 (Body worn, and Phablet Max), DSI = 7 (Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)
- 100 MHz Bandwidth

NR Band n41 100 MHz Bandwidth					
Modulation	RB Size	RB Offset	Channel	MPR Allowed per 3GPP [dB]	MPR [dB]
			518598 (2592.99 MHz)		
			Conducted Power [dBm]		
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.23	0	0.0
	1	137	24.46		0.0
	1	271	24.17		0.0
	135	0	24.30	0-0.5	0.0
	135	69	24.33	0	0.0
	135	138	24.29		0.0
	270	0	24.26		0.0
DFT-s-OFDM QPSK	1	1	24.31	0	0.0
	1	137	24.43		0.0
	1	271	24.12		0.0
	135	0	24.36	0-1	0.0
	135	69	24.27	0	0.0
	135	138	24.31		0.0
	270	0	24.21		0.0
DFT-s-OFDM 16QAM	1	1	24.39	0-1	0.0
CP-OFDM QPSK	1	1	24.56	0-1.5	0.0

Note: NR Band n41 at 100 MHz bandwidth does not support non-overlapping channels. Per FCC Guidance, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 101 of 187

Table 9-103

NR Band n41 PC3 Measured P_{limit} for DSI = 1 (Body worn, and Phablet Max), DSI = 7 (Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)
- 90 MHz Bandwidth

NR Band n41 90 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	508200 (2541 MHz)	528996 (2644.98 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.49	24.43	0	0.0
	1	123	24.42	24.31		0.0
	1	243	24.44	24.48		0.0
	120	0	24.32	24.26	0-0.5	0.0
	120	63	24.34	24.30	0	0.0
	120	125	24.40	24.16	0-0.5	0.0
	243	0	24.38	24.35		0.0
DFT-s-OFDM QPSK	1	1	24.52	24.63	0	0.0
	1	123	24.39	24.35		0.0
	1	243	24.57	24.44		0.0
	120	0	24.37	24.26	0-1	0.0
	120	63	24.22	24.28	0	0.0
	120	125	24.37	24.25	0-1	0.0
	243	0	24.28	24.34		0.0
DFT-s-OFDM 16QAM CP-OFDM QPSK	1	1	24.69	24.51	0-1	0.0
	1	1	24.56	24.43	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 102 of 187

Table 9-104

NR Band n41 PC3 Measured P_{limit} for DSI = 1 (Body worn, and Phablet Max), DSI = 7 (Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)
- 80 MHz Bandwidth

NR Band n41 80 MHz Bandwidth						
			Channel		MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	507204 (2536.02 MHz)	529998 (2649.99 MHz)		
			Conducted Power [dBm]			
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.48	24.51	0	0.0
	1	109	24.39	24.42		0.0
	1	215	24.55	24.35		0.0
	108	0	24.41	24.30	0-0.5	0.0
	108	55	24.37	24.28	0	0.0
	108	109	24.40	24.37	0-0.5	0.0
	216	0	24.38	24.32		0.0
DFT-s-OFDM QPSK	1	1	24.47	24.50	0	0.0
	1	109	24.44	24.28		0.0
	1	215	24.55	24.40		0.0
	108	0	24.40	24.43	0-1	0.0
	108	55	24.31	24.26	0	0.0
	108	109	24.42	24.31	0-1	0.0
	216	0	24.38	24.32		0.0
DFT-s-OFDM 16QAM	1	1	24.25	24.31	0-1	0.0
CP-OFDM QPSK	1	1	24.31	24.58	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 103 of 187

Table 9-105

NR Band n41 PC3 Measured P_{limit} for DSI = 1 (Body worn, and Phablet Max), DSI = 7 (Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)
- 60 MHz Bandwidth

NR Band n41 60 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	505200 (2526 MHz)	518598 (2592.99 MHz)	531996 (2659.98 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.33	24.34	24.15	0	0.0
	1	81	24.36	24.61	24.35		0.0
	1	160	24.62	24.25	24.31		0.0
	81	0	24.27	24.49	24.22	0-0.5	0.0
	81	41	24.40	24.46	24.27	0	0.0
	81	81	24.38	24.37	24.29	0-0.5	0.0
	162	0	24.47	24.44	24.25		0.0
DFT-s-OFDM QPSK	1	1	24.48	24.40	23.97	0	0.0
	1	81	24.45	24.51	24.35		0.0
	1	160	24.52	24.26	24.41		0.0
	81	0	24.39	24.47	24.17	0-1	0.0
	81	41	24.46	24.46	24.26	0	0.0
	81	81	24.43	24.38	24.28	0-1	0.0
	162	0	24.42	24.42	24.28		0.0
DFT-s-OFDM 16QAM	1	1	24.49	24.57	24.26	0-1	0.0
CP-OFDM QPSK	1	1	24.24	24.38	24.13	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 104 of 187

Table 9-106

NR Band n41 PC3 Measured P_{limit} for DSI = 1 (Body worn, and Phablet Max), DSI = 7 (Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)
- 50 MHz Bandwidth

NR Band n41 50 MHz Bandwidth							
			Channel			MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	504204 (2521.02 MHz)	518598 (2592.99 MHz)	532998 (2664.99 MHz)		
			Conducted Power [dBm]				
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.52	24.49	24.29	0	0.0
	1	67	24.31	24.54	24.07		0.0
	1	131	24.44	24.42	24.36		0.0
	64	0	24.38	24.44	24.18	0-0.5	0.0
	64	35	24.35	24.47	24.23	0	0.0
	64	69	24.29	24.39	24.25	0-0.5	0.0
	128	0	24.34	24.47	24.16		0.0
DFT-s-OFDM QPSK	1	1	24.48	24.36	24.35	0	0.0
	1	67	24.39	24.40	24.28		0.0
	1	131	24.42	24.48	24.39		0.0
	64	0	24.34	24.43	24.22	0-1	0.0
	64	35	24.37	24.45	24.17	0	0.0
	64	69	24.38	24.38	24.30	0-1	0.0
	128	0	24.36	24.38	24.19		0.0
DFT-s-OFDM 16QAM	1	1	24.39	24.42	24.19	0-1	0.0
CP-OFDM QPSK	1	1	24.35	24.38	24.24	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 105 of 187

Table 9-107

NR Band n41 PC3 Measured P_{limit} for DSI = 1 (Body worn, and Phablet Max), DSI = 7 (Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)
- 40 MHz Bandwidth

NR Band n41 40 MHz Bandwidth								
			Channel				MPR Allowed per 3GPP [dB]	MPR Allowed per 3GPP [dB]
Modulation	RB Size	RB Offset	503202 (2516.01 MHz)	513468 (2567.34 MHz)	523734 (2618.67 MHz)	534000 (2670 MHz)		
			Conducted Power [dBm]					
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.52	24.56	24.54	24.47	0	0.0
	1	53	24.62	24.47	24.65	24.63		0.0
	1	104	24.54	24.62	24.49	24.51		0.0
	50	0	24.64	24.49	24.63	24.44	0-0.5	0.0
	50	28	24.61	24.58	24.57	24.53	0	0.0
	50	56	24.54	24.67	24.61	24.49	0-0.5	0.0
	100	0	24.57	24.69	24.46	24.55		0.0
DFT-s-OFDM QPSK	1	1	24.49	24.58	24.64	24.56	0	0.0
	1	53	24.69	24.54	24.60	24.48		0.0
	1	104	24.62	24.47	24.53	24.50		0.0
	50	0	24.73	24.60	24.69	24.49	0-1	0.0
	50	28	24.55	24.53	24.59	24.45	0	0.0
	50	56	24.64	24.65	24.64	24.51	0-1	0.0
	100	0	24.59	24.60	24.58	24.48		0.0
DFT-s-OFDM 16QAM	1	1	24.46	24.62	24.54	24.48	0-1	0.0
CP-OFDM QPSK	1	1	24.50	24.56	24.49	24.51	0-1.5	0.0

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 106 of 187

Table 9-108

NR Band n41 PC3 Measured P_{limit} for DSI = 1 (Body worn, and Phablet Max), DSI = 7 (Swivel Mode) and/or DSI = 5 (Hotspot mode) and/or DSI = 8 (Phablet with grip sensor active)
- 20 MHz Bandwidth

NR Band n41 20 MHz Bandwidth									
			Channel					MPR Allowed per 3GPP [dB]	MPR [dB]
Modulation	RB Size	RB Offset	501204 (2506.02 MHz)	509898 (2549.49 MHz)	518598 (2592.99 MHz)	527298 (2636.49 MHz)	535998 (2679.99 MHz)		
			Conducted Power [dBm]						
DFT-s-OFDM $\pi/2$ BPSK	1	1	24.42	24.35	24.33	24.46	24.29	0	0.0
	1	26	24.35	24.46	24.48	24.35	24.20		0.0
	1	49	24.40	24.30	24.50	24.38	24.25		0.0
	25	0	24.33	24.25	24.48	24.27	24.28	0-0.5	0.0
	25	13	24.25	24.21	24.46	24.22	24.22	0	0.0
	25	26	24.38	24.28	24.41	24.20	24.27	0-0.5	0.0
	50	0	24.21	24.26	24.38	24.19	24.20		0.0
DFT-s-OFDM QPSK	1	1	24.35	24.37	24.29	24.38	24.36	0	0.0
	1	26	24.17	24.34	24.33	24.30	24.37		0.0
	1	49	24.23	24.42	24.46	24.33	24.31		0.0
	25	0	24.34	24.29	24.43	24.25	24.23	0-1	0.0
	25	13	24.21	24.21	24.41	24.18	24.17	0	0.0
	25	26	24.30	24.32	24.38	24.19	24.33	0-1	0.0
	50	0	24.29	24.23	24.34	24.28	24.31		0.0
DFT-s-OFDM 16QAM	1	1	24.46	24.37	24.43	24.12	24.26	0-1	0.0
CP-OFDM QPSK	1	1	24.38	24.24	24.37	24.28	24.15	0-1.5	0.0

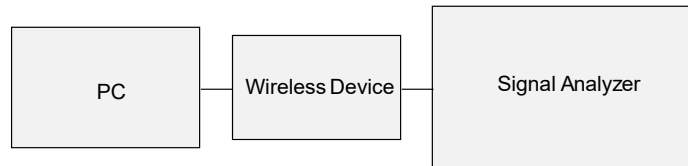


Figure 9-5
Power Measurement Setup

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 107 of 187

9.6 WLAN Conducted Powers

Table 9-109
2.4 GHz WLAN Maximum Average RF Power – Ant 1

Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	21.49	17.85	16.71	16.72
2422	3	N/A	19.70	18.33	18.40
2437	6	21.25	19.92	18.70	18.66
2452	9	N/A	19.84	18.55	18.53
2462	11	20.73	17.53	16.40	16.35

Table 9-110
2.4 GHz WLAN Maximum Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	20.72	17.92	16.92	16.75
2422	3	N/A	19.45	18.73	18.74
2437	6	21.22	19.71	18.81	18.93
2452	9	N/A	19.62	18.64	18.87
2462	11	20.83	17.65	16.90	16.94

Table 9-111
2.4 GHz WLAN Reduced Average RF Power– Ant 1

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	17.63	17.85	16.71	16.72
2437	6	17.65	17.46	17.28	17.26
2462	11	16.80	17.53	16.40	16.35

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 108 of 187

Table 9-112
2.4 GHz WLAN Reduced Average RF Power – Ant 2

2.4GHz Conducted Power [dBm]					
Freq [MHz]	Channel	IEEE Transmission Mode			
		802.11b	802.11g	802.11n	802.11ac
		Average	Average	Average	Average
2412	1	17.40	17.92	16.92	16.75
2437	6	17.84	18.00	17.88	17.96
2462	11	17.22	17.65	16.90	16.94

Table 9-113
5 GHz WLAN Maximum Average RF Power – Ant 1

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	16.49	16.97	16.95
5200	40	19.73	17.26	17.14
5220	44	16.43	16.96	16.93
5240	48	16.35	16.92	16.93
5260	52	16.38	16.94	16.99
5280	56	19.33	17.97	17.96
5300	60	16.30	16.57	16.70
5320	64	16.17	16.82	16.85
5500	100	16.70	16.63	16.60
5600	120	16.17	16.06	16.05
5620	124	16.10	16.93	16.85
5720	144	16.68	16.03	16.01
5745	149	16.44	16.33	16.36
5785	157	19.66	17.26	17.16
5825	165	19.44	17.93	17.90

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 109 of 187

Table 9-114
5 GHz WLAN Maximum Average RF Power – Ant 2

5GHz (20MHz) Conducted Power [dBm]				
Freq [MHz]	Channel	IEEE Transmission Mode		
		802.11a	802.11n	802.11ac
		Average	Average	Average
5180	36	16.89	16.73	16.83
5200	40	19.98	17.90	17.62
5220	44	16.96	16.81	16.56
5240	48	16.99	16.84	16.51
5260	52	16.98	16.90	16.51
5280	56	19.94	17.89	17.49
5300	60	16.93	16.82	16.55
5320	64	16.67	16.36	16.04
5500	100	16.02	16.58	16.53
5600	120	16.75	16.83	16.95
5620	124	16.67	16.96	16.71
5720	144	16.07	16.75	16.70
5745	149	16.78	16.99	16.64
5785	157	19.84	17.93	17.94
5825	165	19.67	17.82	17.81

Table 9-115
5 GHz WLAN Reduced Average RF Power– Ant 1

5GHz (40MHz) Conducted Power [dBm]			
Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	13.80	13.76
5230	46	15.53	15.53
5270	54	15.73	15.57
5310	62	13.70	13.71
5510	102	13.46	13.49
5590	118	15.02	15.43
5630	126	15.03	15.10
5710	142	15.98	15.99
5755	151	15.63	15.61
5795	159	15.64	15.60

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 110 of 187

Table 9-116
5 GHz WLAN Reduced Average RF Power– Ant 2
5GHz (40MHz) Conducted Power [dBm]

Freq [MHz]	Channel	IEEE Transmission Mode	
		802.11n	802.11ac
		Average	Average
5190	38	13.96	13.97
5230	46	15.95	15.98
5270	54	15.75	15.81
5310	62	13.97	13.98
5510	102	13.96	13.98
5590	118	15.07	15.01
5630	126	15.03	15.05
5710	142	15.17	15.15
5755	151	15.05	15.04
5795	159	15.20	15.22

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

- Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
- For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
- For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
- For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

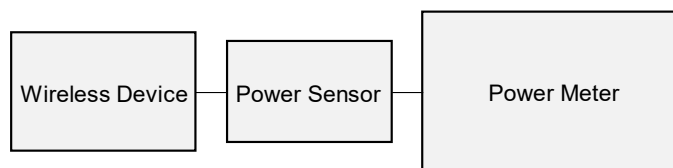


Figure 9-6
Power Measurement Setup

FCC ID: ZNFF100TM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 111 of 187

9.7 Bluetooth Conducted Powers

Table 9-117
Bluetooth Average RF Power

Frequency [MHz]	Data Rate [Mbps]	Channel No.	Avg Conducted Power	
			[dBm]	[mW]
2402	1.0	0	10.91	12.320
2441	1.0	39	11.95	15.671
2480	1.0	78	10.30	10.720
2402	2.0	0	10.28	10.656
2441	2.0	39	11.31	13.530
2480	2.0	78	9.71	9.347
2402	3.0	0	10.31	10.732
2441	3.0	39	11.36	13.687
2480	3.0	78	9.78	9.515

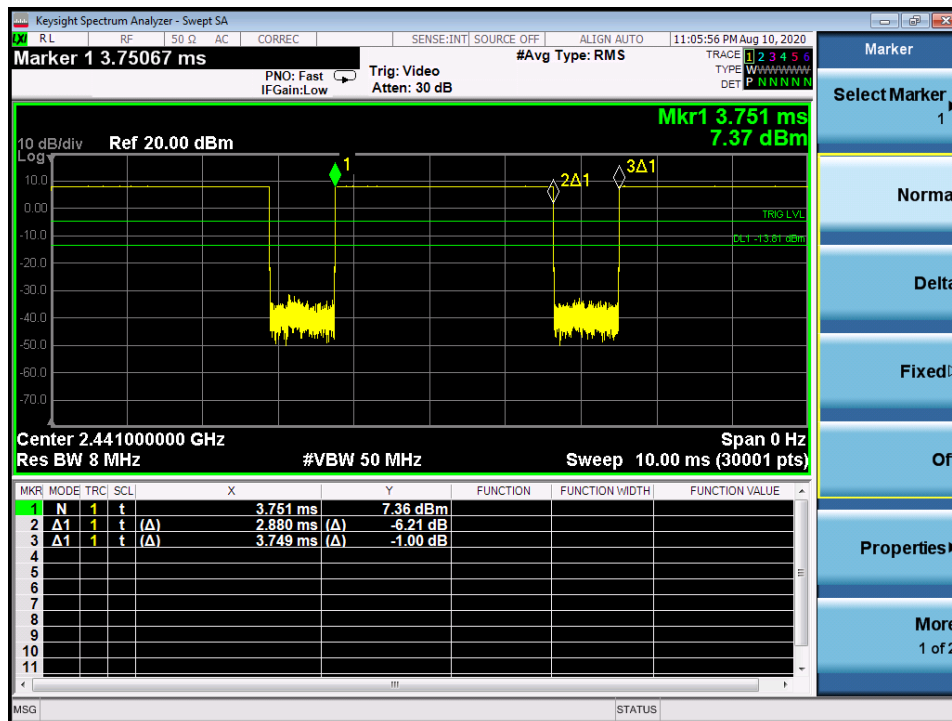


Figure 9-7
Bluetooth Transmission Plot

FCC ID: ZNFF100TM	PCTEST Proud to be part of element	SAR EVALUATION REPORT	LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 112 of 187

Equation 9-1
Bluetooth Duty Cycle Calculation

$$Duty\ Cycle = \frac{Pulse\ Width}{Period} * 100\% = \frac{2.880\ ms}{3.749\ ms} * 100\% = 76.8\%$$

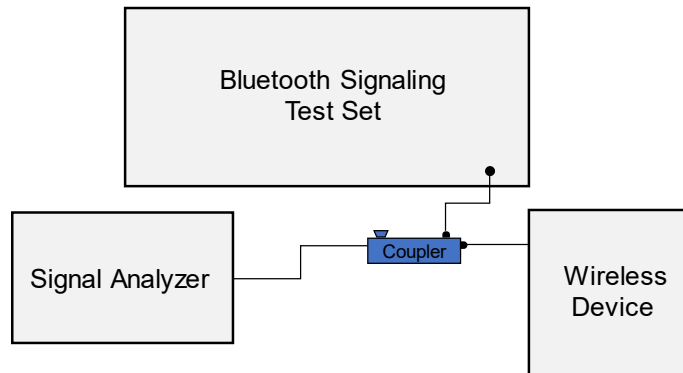


Figure 9-8
Power Measurement Setup

FCC ID: ZNFF100TM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 113 of 187

10 SYSTEM VERIFICATION

10.1 Tissue Verification

Table 10-1
Measured Tissue Properties -Head

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
7/15/2020	750 Head	22.7	680	0.852	43.027	0.888	42.305	-4.05%	1.71%
			695	0.855	42.938	0.889	42.227	-3.82%	1.68%
			700	0.857	42.951	0.889	42.201	-3.60%	1.78%
			710	0.860	42.882	0.890	42.149	-3.37%	1.74%
			725	0.866	42.870	0.891	42.071	-2.81%	1.90%
			750	0.874	42.813	0.894	41.942	-2.24%	2.08%
			770	0.880	42.725	0.895	41.838	-1.68%	2.12%
			785	0.886	42.694	0.896	41.760	-1.12%	2.24%
8/28/2020	750 Head	24.0	800	0.890	42.618	0.897	41.682	-0.78%	2.25%
			680	0.856	42.613	0.888	42.305	-3.60%	0.73%
			695	0.859	42.563	0.889	42.227	-3.37%	0.80%
7/9/2020	835 Head	22.2	750	0.881	42.449	0.894	41.942	-1.45%	1.21%
			820	0.885	41.501	0.899	41.578	-1.56%	-0.19%
			835	0.889	41.453	0.900	41.500	-1.22%	-0.11%
7/31/2020	835 Head	22.4	850	0.895	41.420	0.916	41.500	-2.29%	-0.19%
			820	0.873	41.999	0.899	41.578	-2.89%	1.01%
			835	0.878	41.951	0.900	41.500	-2.44%	1.09%
8/3/2020	835 Head	21.7	850	0.884	41.899	0.916	41.500	-3.49%	0.96%
			820	0.861	41.931	0.899	41.578	-4.23%	0.85%
			835	0.866	41.888	0.900	41.500	-3.78%	0.93%
8/12/2020	1750 Head	22.8	850	0.872	41.854	0.916	41.500	-4.80%	0.85%
			1710	1.288	41.495	1.348	40.142	-4.45%	3.37%
			1720	1.293	41.481	1.354	40.126	-4.51%	3.38%
			1745	1.308	41.444	1.368	40.087	-4.39%	3.39%
			1750	1.311	41.437	1.371	40.079	-4.38%	3.39%
			1770	1.323	41.407	1.383	40.047	-4.34%	3.40%
8/25/2020	1750 Head	21.1	1790	1.335	41.374	1.394	40.016	-4.23%	3.39%
			1710	1.375	38.455	1.348	40.142	2.00%	-4.20%
			1720	1.385	38.406	1.354	40.126	2.29%	-4.29%
			1745	1.411	38.282	1.368	40.087	3.14%	-4.50%
			1750	1.416	38.256	1.371	40.079	3.28%	-4.55%
			1770	1.436	38.157	1.383	40.047	3.83%	-4.72%
			1790	1.456	38.058	1.394	40.016	4.45%	-4.89%

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 114 of 187

Table 10-2
Measured Tissue Properties - Head Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
7/15/2020	1900 Head	22.9	1850	1.335	39.993	1.400	40.000	-4.64%	-0.02%
			1860	1.340	39.981	1.400	40.000	-4.29%	-0.05%
			1880	1.351	39.965	1.400	40.000	-3.50%	-0.09%
			1900	1.362	39.950	1.400	40.000	-2.71%	-0.12%
			1905	1.364	39.946	1.400	40.000	-2.57%	-0.14%
			1910	1.367	39.943	1.400	40.000	-2.36%	-0.14%
8/13/2020	1900 Head	22.1	1850	1.377	39.265	1.400	40.000	-1.64%	-1.84%
			1860	1.387	39.222	1.400	40.000	-0.93%	-1.95%
			1880	1.408	39.137	1.400	40.000	0.57%	-2.16%
			1900	1.429	39.039	1.400	40.000	2.07%	-2.40%
			1905	1.434	39.014	1.400	40.000	2.43%	-2.46%
			1910	1.439	38.993	1.400	40.000	2.79%	-2.52%
8/27/2020	1900 Head	21.2	1850	1.384	39.589	1.400	40.000	-1.14%	-1.03%
			1860	1.395	39.545	1.400	40.000	-0.36%	-1.14%
			1880	1.417	39.460	1.400	40.000	1.21%	-1.35%
			1900	1.438	39.371	1.400	40.000	2.71%	-1.57%
			1905	1.444	39.348	1.400	40.000	3.14%	-1.63%
			1910	1.449	39.326	1.400	40.000	3.50%	-1.69%
8/4/2020	2450 Head	24.1	2400	1.807	38.963	1.756	39.289	2.90%	-0.83%
			2450	1.867	38.764	1.800	39.200	3.72%	-1.11%
			2480	1.903	38.630	1.833	39.162	3.82%	-1.36%
8/6/2020	2450 Head	24.0	2400	1.824	38.464	1.756	39.289	3.87%	-2.10%
			2450	1.881	38.253	1.800	39.200	4.50%	-2.42%
			2480	1.916	38.122	1.833	39.162	4.53%	-2.66%
			2500	1.939	38.046	1.855	39.136	4.53%	-2.79%
			2510	1.950	38.008	1.866	39.123	4.50%	-2.85%
			2535	1.979	37.907	1.893	39.092	4.54%	-3.03%
			2550	1.996	37.843	1.909	39.073	4.56%	-3.15%
			2560	2.008	37.800	1.920	39.060	4.58%	-3.23%
			2600	2.057	37.639	1.964	39.009	4.74%	-3.51%
			2650	2.116	37.427	2.018	38.945	4.86%	-3.90%
			2680	2.152	37.302	2.051	38.907	4.92%	-4.13%
			2700	2.176	37.222	2.073	38.882	4.97%	-4.27%
8/10/2020	2450 Head	23.8	2535	1.981	38.262	1.893	39.092	4.65%	-2.12%
			2550	1.996	38.203	1.909	39.073	4.56%	-2.23%
			2560	2.008	38.169	1.920	39.060	4.58%	-2.28%
			2600	2.054	37.999	1.964	39.009	4.58%	-2.59%
			2650	2.114	37.782	2.018	38.945	4.76%	-2.99%
			2680	2.149	37.672	2.051	38.907	4.78%	-3.17%
			2700	2.172	37.586	2.073	38.882	4.78%	-3.33%
8/27/2020	3600 Head	22.6	3500	2.828	39.408	2.913	37.929	-2.92%	3.90%
			3550	2.868	39.333	2.964	37.871	-3.24%	3.86%
			3560	2.876	39.320	2.974	37.860	-3.30%	3.86%
8/12/2020	5200-5800 Head	23.3	5250	4.502	35.772	4.706	35.929	-4.33%	-0.44%
			5270	4.520	35.761	4.727	35.906	-4.38%	-0.40%
			5600	4.873	35.202	5.065	35.529	-3.79%	-0.92%
			5710	5.008	35.053	5.178	35.403	-3.28%	-0.99%
			5750	5.047	34.965	5.219	35.357	-3.30%	-1.11%
			5795	5.086	34.901	5.265	35.305	-3.40%	-1.14%

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 115 of 187	

Table 10-3
Measured Tissue Properties – Body

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
8/3/2020	750 Body	21.9	680	0.947	53.700	0.958	55.804	-1.15%	-3.77%
			695	0.952	53.668	0.959	55.745	-0.73%	-3.73%
			750	0.973	53.556	0.964	55.531	0.93%	-3.56%
8/17/2020	750 Body	22.3	700	0.949	53.824	0.959	55.726	-1.04%	-3.41%
			710	0.952	53.801	0.960	55.687	-0.83%	-3.39%
			750	0.968	53.702	0.964	55.531	0.41%	-3.29%
			770	0.975	53.645	0.965	55.453	1.04%	-3.26%
			785	0.982	53.606	0.966	55.395	1.66%	-3.23%
8/27/2020	750 Body	22.4	680	0.948	53.370	0.958	55.804	-1.04%	-4.36%
			695	0.953	53.346	0.959	55.745	-0.63%	-4.30%
			750	0.975	53.217	0.964	55.531	1.14%	-4.17%
7/9/2020	835 Body	21.9	820	0.962	54.578	0.969	55.258	-0.72%	-1.23%
			835	0.976	54.437	0.970	55.200	0.62%	-1.38%
			850	0.991	54.293	0.988	55.154	0.30%	-1.56%
8/20/2020	835 Body	21.6	820	0.938	55.091	0.969	55.258	-3.20%	-0.30%
			835	0.954	54.941	0.970	55.200	-1.65%	-0.47%
			850	0.969	54.785	0.988	55.154	-1.92%	-0.67%
8/26/2020	835 Body	21.9	820	0.942	54.243	0.969	55.258	-2.79%	-1.84%
			835	0.957	54.090	0.970	55.200	-1.34%	-2.01%
			850	0.973	53.929	0.988	55.154	-1.52%	-2.22%
7/26/2020	1750 Body	21.4	1710	1.469	51.295	1.463	53.537	0.41%	-4.19%
			1720	1.481	51.251	1.469	53.511	0.82%	-4.22%
			1745	1.508	51.136	1.485	53.445	1.55%	-4.32%
			1750	1.514	51.115	1.488	53.432	1.75%	-4.34%
			1770	1.535	51.035	1.501	53.379	2.27%	-4.39%
8/12/2020	1750 Body	22.1	1790	1.557	50.960	1.514	53.326	2.84%	-4.44%
			1710	1.463	52.489	1.463	53.537	0.00%	-1.96%
			1720	1.469	52.480	1.469	53.511	0.00%	-1.93%
			1745	1.485	52.463	1.485	53.445	0.00%	-1.84%
			1750	1.489	52.462	1.488	53.432	0.07%	-1.82%
8/24/2020	1750 Body	22.2	1770	1.502	52.458	1.501	53.379	0.07%	-1.73%
			1790	1.517	52.446	1.514	53.326	0.20%	-1.65%
			1710	1.450	52.440	1.463	53.537	-0.89%	-2.05%
			1720	1.461	52.395	1.469	53.511	-0.54%	-2.09%
			1745	1.488	52.298	1.485	53.445	0.20%	-2.15%
8/26/2020	1750 Body	22.3	1750	1.494	52.279	1.488	53.432	0.40%	-2.16%
			1770	1.515	52.200	1.501	53.379	0.93%	-2.21%
			1790	1.536	52.115	1.514	53.326	1.45%	-2.27%
			1710	1.460	51.410	1.463	53.537	-0.21%	-3.97%
			1720	1.472	51.371	1.469	53.511	0.20%	-4.00%
8/26/2020	1750 Body	22.3	1745	1.501	51.274	1.485	53.445	1.08%	-4.06%
			1750	1.506	51.254	1.488	53.432	1.21%	-4.08%
			1770	1.528	51.177	1.501	53.379	1.80%	-4.13%
			1790	1.549	51.091	1.514	53.326	2.31%	-4.19%

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 116 of 187	

Table 10-4
Measured Tissue Properties - Body Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
7/27/2020	1900 Body	21.7	1850	1.508	51.959	1.520	53.300	-0.79%	-2.52%
			1860	1.518	51.922	1.520	53.300	-0.13%	-2.59%
			1880	1.539	51.858	1.520	53.300	1.25%	-2.71%
			1900	1.560	51.799	1.520	53.300	2.63%	-2.82%
			1905	1.566	51.785	1.520	53.300	3.03%	-2.84%
			1910	1.571	51.771	1.520	53.300	3.36%	-2.87%
8/3/2020	1900 Body	23.6	1850	1.506	52.656	1.520	53.300	-0.92%	-1.21%
			1860	1.516	52.605	1.520	53.300	-0.26%	-1.30%
			1880	1.540	52.492	1.520	53.300	1.32%	-1.52%
			1900	1.561	52.419	1.520	53.300	2.70%	-1.65%
			1905	1.568	52.416	1.520	53.300	3.16%	-1.66%
			1910	1.573	52.409	1.520	53.300	3.49%	-1.67%
8/5/2020	1900 Body	23.9	1850	1.513	52.190	1.520	53.300	-0.46%	-2.08%
			1860	1.524	52.154	1.520	53.300	0.26%	-2.15%
			1880	1.547	52.082	1.520	53.300	1.78%	-2.29%
			1900	1.569	52.007	1.520	53.300	3.22%	-2.43%
			1905	1.575	51.985	1.520	53.300	3.62%	-2.47%
			1910	1.580	51.965	1.520	53.300	3.95%	-2.50%
8/10/2020	1900 Body	22.7	1850	1.524	51.623	1.520	53.300	0.26%	-3.15%
			1860	1.535	51.583	1.520	53.300	0.99%	-3.22%
			1880	1.558	51.514	1.520	53.300	2.50%	-3.35%
			1900	1.581	51.444	1.520	53.300	4.01%	-3.48%
			1905	1.587	51.426	1.520	53.300	4.41%	-3.52%
			1910	1.592	51.408	1.520	53.300	4.74%	-3.55%
8/17/2020	1900 Body	23.1	1850	1.513	51.532	1.520	53.300	-0.46%	-3.32%
			1860	1.524	51.500	1.520	53.300	0.26%	-3.38%
			1880	1.547	51.444	1.520	53.300	1.78%	-3.48%
			1900	1.568	51.377	1.520	53.300	3.16%	-3.61%
			1905	1.574	51.362	1.520	53.300	3.55%	-3.64%
			1910	1.579	51.346	1.520	53.300	3.88%	-3.67%
8/17/2020	1900 Body	24.7	1850	1.490	53.076	1.520	53.300	-1.97%	-0.42%
			1860	1.501	53.049	1.520	53.300	-1.25%	-0.47%
			1880	1.522	52.999	1.520	53.300	0.13%	-0.56%
			1900	1.544	52.943	1.520	53.300	1.58%	-0.67%
			1905	1.549	52.929	1.520	53.300	1.91%	-0.70%
			1910	1.555	52.916	1.520	53.300	2.30%	-0.72%
8/19/2020	1900 Body	22.4	1850	1.516	51.790	1.520	53.300	-0.26%	-2.83%
			1860	1.528	51.755	1.520	53.300	0.53%	-2.90%
			1880	1.551	51.691	1.520	53.300	2.04%	-3.02%
			1900	1.573	51.623	1.520	53.300	3.49%	-3.15%
			1905	1.579	51.606	1.520	53.300	3.88%	-3.18%
			1910	1.584	51.590	1.520	53.300	4.21%	-3.21%
8/24/2020	1900 Body	24.2	1850	1.514	51.232	1.520	53.300	-0.39%	-3.88%
			1860	1.525	51.204	1.520	53.300	0.33%	-3.93%
			1880	1.546	51.136	1.520	53.300	1.71%	-4.06%
			1900	1.567	51.061	1.520	53.300	3.09%	-4.20%
			1905	1.573	51.044	1.520	53.300	3.49%	-4.23%
			1910	1.578	51.025	1.520	53.300	3.82%	-4.27%
8/31/2020	1900 Body	22.4	1850	1.521	51.391	1.520	53.300	0.07%	-3.58%
			1860	1.531	51.349	1.520	53.300	0.72%	-3.66%
			1880	1.554	51.274	1.520	53.300	2.24%	-3.80%
			1900	1.580	51.207	1.520	53.300	3.95%	-3.93%
			1905	1.586	51.190	1.520	53.300	4.34%	-3.96%
			1910	1.592	51.173	1.520	53.300	4.74%	-3.99%
8/3/2020	2450 Body	23.8	2400	1.959	51.741	1.902	52.767	3.00%	-1.94%
			2450	2.026	51.539	1.950	52.700	3.90%	-2.20%
			2480	2.067	51.418	1.993	52.662	3.71%	-2.36%

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 117 of 187	

Table 10-5
Measured Tissue Properties - Body Continued

Calibrated for Tests Performed on:	Tissue Type	Tissue Temp During Calibration (°C)	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ϵ	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ϵ	% dev σ	% dev ϵ
8/6/2020	2450 Body	22.9	2400	1.963	51.274	1.902	52.767	3.21%	-2.83%
			2450	2.030	51.073	1.950	52.700	4.10%	-3.09%
			2480	2.071	50.948	1.993	52.662	3.91%	-3.25%
8/10/2020	2450 Body	21.6	2535	2.158	51.352	2.071	52.592	4.20%	-2.36%
			2550	2.182	51.276	2.092	52.573	4.30%	-2.47%
			2560	2.197	51.226	2.106	52.560	4.32%	-2.54%
			2600	2.256	51.082	2.163	52.509	4.30%	-2.72%
			2650	2.322	50.891	2.234	52.445	3.94%	-2.96%
			2680	2.367	50.736	2.277	52.407	3.95%	-3.19%
			2700	2.398	50.650	2.305	52.382	4.03%	-3.31%
			2550	2.181	50.672	2.092	52.573	4.25%	-3.62%
8/24/2020	2450 Body	23.4	2560	2.195	50.629	2.106	52.560	4.23%	-3.67%
			2600	2.254	50.464	2.163	52.509	4.21%	-3.89%
			2650	2.323	50.261	2.234	52.445	3.98%	-4.16%
			2680	2.364	50.132	2.277	52.407	3.82%	-4.34%
			2700	2.393	50.051	2.305	52.382	3.82%	-4.45%
8/26/2020	2450 Body	23.5	2550	2.168	50.760	2.092	52.573	3.63%	-3.45%
			2560	2.183	50.719	2.106	52.560	3.66%	-3.50%
			2600	2.241	50.563	2.163	52.509	3.61%	-3.71%
			2650	2.313	50.363	2.234	52.445	3.54%	-3.97%
			2680	2.354	50.234	2.277	52.407	3.38%	-4.15%
			2700	2.382	50.148	2.305	52.382	3.34%	-4.26%
8/31/2020	2450 Body	22.0	2400	1.860	51.091	1.902	52.767	-2.21%	-3.18%
			2450	1.926	50.904	1.950	52.700	-1.23%	-3.41%
			2480	1.966	50.801	1.993	52.662	-1.35%	-3.53%
			2500	1.992	50.735	2.021	52.636	-1.43%	-3.61%
			2510	2.006	50.704	2.035	52.623	-1.43%	-3.65%
			2535	2.039	50.610	2.071	52.592	-1.55%	-3.77%
			2550	2.059	50.546	2.092	52.573	-1.58%	-3.86%
			2560	2.073	50.504	2.106	52.560	-1.57%	-3.91%
			2600	2.129	50.352	2.163	52.509	-1.57%	-4.11%
			2650	2.194	50.174	2.234	52.445	-1.79%	-4.33%
			2680	2.234	50.049	2.277	52.407	-1.89%	-4.50%
			2700	2.261	49.969	2.305	52.382	-1.91%	-4.61%
			3500	3.396	50.184	3.314	51.321	2.47%	-2.22%
8/25/2020	3600 Body	22.5	3550	3.449	50.100	3.372	51.254	2.28%	-2.25%
			3560	3.459	50.096	3.384	51.240	2.22%	-2.23%
			3600	3.504	50.038	3.431	51.186	2.13%	-2.24%
			5200	5.408	47.143	5.299	49.014	2.06%	-3.82%
7/19/2020	5200-5800 Body	23.5	5250	5.469	47.002	5.358	48.947	2.07%	-3.97%
			5280	5.516	46.971	5.393	48.906	2.28%	-3.96%
			5500	5.801	46.600	5.650	48.607	2.67%	-4.13%
			5600	5.937	46.434	5.766	48.471	2.97%	-4.20%
			5750	6.143	46.198	5.942	48.268	3.38%	-4.29%
			5785	6.187	46.154	5.982	48.220	3.43%	-4.28%

The above measured tissue parameters were used in the DASY software. The DASY software was used to perform interpolation to determine the dielectric parameters at the SAR test device frequencies (per KDB Publication 865664 D01v01r04 and IEEE 1528-2013 6.6.1.2). The tissue parameters listed in the SAR test plots may slightly differ from the table above due to significant digit rounding in the software.

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 118 of 187	

10.2 Test System Verification

Prior to SAR assessment, the system is verified to $\pm 10\%$ of the SAR measurement on the reference dipole at the time of calibration by the calibration facility. Full system validation status and result summary can be found in Appendix E.

Table 10-6
System Verification Results – 1g Head

System Verification												
TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation _{1g} (%)
E	750	HEAD	07/15/2020	25.0	22.7	0.200	1161	3589	1.720	8.030	8.600	7.10%
D	750	HEAD	08/28/2020	23.1	22.4	0.200	1003	7488	1.670	8.780	8.350	-4.90%
L	835	HEAD	07/09/2020	22.3	22.2	0.200	4d132	7406	1.980	9.650	9.900	2.59%
L	835	HEAD	07/31/2020	23.7	22.4	0.200	4d132	7406	1.880	9.650	9.400	-2.59%
L	835	HEAD	08/03/2020	22.3	21.4	0.200	4d132	7406	1.950	9.650	9.750	1.04%
L	1750	HEAD	08/12/2020	24.1	22.2	0.100	1150	7406	3.540	36.500	35.400	-3.01%
L	1750	HEAD	08/25/2020	22.0	21.2	0.100	1150	7406	3.800	36.500	38.000	4.11%
L	1900	HEAD	07/15/2020	24.8	22.3	0.100	5d148	7406	4.180	39.100	41.800	6.91%
E	1900	HEAD	08/13/2020	21.9	22.1	0.100	5d149	3589	3.690	39.300	36.900	-6.11%
L	1900	HEAD	08/27/2020	22.3	21.5	0.100	5d148	7406	3.910	39.100	39.100	0.00%
E	2450	HEAD	08/04/2020	22.8	22.3	0.100	719	3589	5.280	53.100	52.800	-0.56%
E	2450	HEAD	08/06/2020	22.8	22.1	0.100	719	3589	5.330	53.100	53.300	0.38%
E	2600	HEAD	08/06/2020	22.8	22.1	0.100	1064	3589	5.960	58.100	59.600	2.58%
E	2600	HEAD	08/10/2020	24.0	22.5	0.100	1064	3589	5.880	58.100	58.800	1.20%
D	3500	HEAD	08/27/2020	23.1	22.6	0.100	1059	7488	6.140	64.600	61.400	-4.95%
H	5250	HEAD	08/12/2020	24.0	23.3	0.050	1057	7357	3.690	79.200	73.800	-6.82%
H	5600	HEAD	08/12/2020	24.0	23.3	0.050	1057	7357	3.970	84.100	79.400	-5.59%
H	5750	HEAD	08/12/2020	24.0	23.3	0.050	1057	7357	3.930	80.500	78.600	-2.36%

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 119 of 187

Table 10-7
System Verification Results – 1g Body

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{1g} (W/kg)	1 W Target SAR _{1g} (W/kg)	1 W Normalized SAR _{1g} (W/kg)	Deviation _{1g} (%)
P	750	BODY	08/03/2020	23.9	21.9	0.200	1054	7551	1.780	8.530	8.900	4.34%
E	750	BODY	08/17/2020	23.8	21.7	0.200	1054	3589	1.840	8.530	9.200	7.85%
P	750	BODY	08/27/2020	22.2	22.4	0.200	1054	7551	1.830	8.530	9.150	7.27%
D	835	BODY	07/09/2020	22.3	21.9	0.200	4d047	7488	1.990	9.470	9.950	5.07%
P	835	BODY	08/20/2020	22.4	21.6	0.200	4d132	7551	1.950	9.960	9.750	-2.11%
P	835	BODY	08/26/2020	22.9	21.9	0.200	4d132	7551	2.090	9.960	10.450	4.92%
L	1750	BODY	07/26/2020	22.5	21.8	0.100	1148	7406	3.890	36.300	38.900	7.16%
P	1750	BODY	08/12/2020	22.7	22.3	0.100	1148	7551	3.530	36.300	35.300	-2.75%
I	1750	BODY	08/24/2020	21.9	22.2	0.100	1148	7570	3.770	36.300	37.700	3.86%
I	1750	BODY	08/26/2020	23.5	22.3	0.100	1148	7570	3.790	36.300	37.900	4.41%
H	1900	BODY	07/27/2020	23.0	19.8	0.100	5d149	7357	4.180	39.400	41.800	6.09%
H	1900	BODY	08/05/2020	24.5	23.5	0.100	5d080	7357	3.990	39.200	39.900	1.79%
H	1900	BODY	08/10/2020	24.0	22.7	0.100	5d149	7357	4.200	39.400	42.000	6.60%
H	1900	BODY	08/17/2020	24.1	23.1	0.100	5d149	7357	4.220	39.400	42.200	7.11%
J	1900	BODY	08/17/2020	20.9	22.7	0.100	5d080	7571	4.210	39.200	42.100	7.40%
H	1900	BODY	08/19/2020	24.8	23.5	0.100	5d149	7357	4.260	39.400	42.600	8.12%
H	1900	BODY	08/24/2020	24.0	22.8	0.100	5d080	7357	4.170	39.200	41.700	6.38%
H	1900	BODY	08/31/2020	24.4	22.4	0.100	5d180	7357	4.100	39.200	41.000	4.59%
O	2450	BODY	08/03/2020	23.1	22.8	0.100	981	7552	4.930	50.900	49.300	-3.14%
O	2450	BODY	08/06/2020	24.1	22.7	0.100	981	7552	4.980	50.900	49.800	-2.16%
O	2600	BODY	08/10/2020	23.0	21.9	0.100	1004	7552	5.760	54.800	57.600	5.11%
O	2600	BODY	08/24/2020	23.1	23.4	0.100	1004	7552	5.710	54.800	57.100	4.20%
O	2600	BODY	08/26/2020	24.1	23.5	0.100	1004	7552	5.820	54.800	58.200	6.20%
D	3500	BODY	08/25/2020	23.1	22.5	0.100	1059	7488	6.500	65.100	65.000	-0.15%
G	5250	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	3.660	75.600	73.200	-3.17%
G	5600	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	3.920	78.500	78.400	-0.13%
G	5750	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	3.670	75.900	73.400	-3.29%

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 120 of 187

Table 10-8
System Verification Results – 10g

System Verification TARGET & MEASURED												
SAR System #	Tissue Frequency (MHz)	Tissue Type	Date	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Source SN	Probe SN	Measured SAR _{10g} (W/kg)	1 W Target SAR _{10g} (W/kg)	1 W Normalized SAR _{10g} (W/kg)	Deviation _{10g} (%)
L	1750	BODY	07/26/2020	22.5	21.8	0.100	1148	7406	2.050	19.300	20.500	6.22%
P	1750	BODY	08/12/2020	22.7	22.3	0.100	1148	7551	1.880	19.300	18.800	-2.59%
H	1900	BODY	08/03/2020	24.4	22.5	0.100	5d149	7357	2.200	20.700	22.000	6.28%
H	1900	BODY	08/05/2020	24.5	23.5	0.100	5d080	7357	2.080	20.600	20.800	0.97%
J	1900	BODY	08/17/2020	20.9	22.7	0.100	5d080	7571	2.150	20.600	21.500	4.37%
O	2450	BODY	08/31/2020	21.7	22.0	0.100	797	7552	2.230	24.200	22.300	-7.85%
O	2600	BODY	08/31/2020	21.7	22.0	0.100	1004	7552	2.510	24.700	25.100	1.62%
G	5250	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	1.030	21.200	20.600	-2.83%
G	5600	BODY	07/19/2020	21.1	22.7	0.050	1237	7538	1.100	22.000	22.000	0.00%

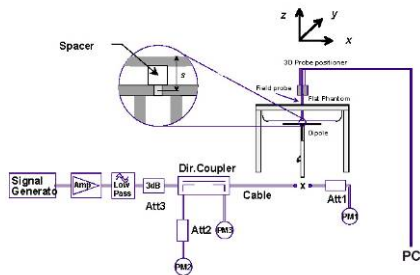


Figure 10-1
System Verification Setup Diagram



Figure 10-2
System Verification Setup Photo

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 121 of 187

11 SAR DATA SUMMARY

**Table 11-1
GSM 850 Head SAR**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	34.0	33.52	-0.17	Right	Cheek	1	00276	1	1:8.3	0.020	1.117	0.022	
836.60	190	GSM 850	GSM	34.0	33.52	0.01	Right	Tilt	1	00276	1	1:8.3	0.010	1.117	0.011	
836.60	190	GSM 850	GSM	34.0	33.52	0.02	Left	Cheek	1	00276	1	1:8.3	0.031	1.117	0.035	
836.60	190	GSM 850	GSM	34.0	33.52	0.02	Left	Tilt	1	00276	1	1:8.3	0.011	1.117	0.012	
836.60	190	GSM 850	GPRS	30.5	30.26	-0.02	Right	Cheek	1	00276	3	1:2.76	0.028	1.057	0.030	
836.60	190	GSM 850	GPRS	30.5	30.26	0.06	Right	Tilt	1	00276	3	1:2.76	0.016	1.057	0.017	
836.60	190	GSM 850	GPRS	30.5	30.26	0.20	Left	Cheek	1	00276	3	1:2.76	0.036	1.057	0.038	A1
836.60	190	GSM 850	GPRS	30.5	30.26	0.20	Left	Cheek	3	00276	3	1:2.76	0.036	1.057	0.038	
836.60	190	GSM 850	GPRS	30.5	30.26	0.03	Left	Tilt	1	00276	3	1:2.76	0.018	1.057	0.019	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

**Table 11-2
GSM 1900 Head SAR**

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	# of Time Slots	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)		(W/kg)	
1880.00	661	GSM 1900	GSM	31.0	30.26	0.03	Right	Cheek	1	00276	1	1:8.3	0.025	1.186	0.030	
1880.00	661	GSM 1900	GSM	31.0	30.26	0.04	Right	Tilt	1	00276	1	1:8.3	0.013	1.186	0.015	
1880.00	661	GSM 1900	GSM	31.0	30.26	0.14	Left	Cheek	1	00276	1	1:8.3	0.032	1.186	0.038	
1880.00	661	GSM 1900	GSM	31.0	30.26	0.03	Left	Tilt	1	00276	1	1:8.3	0.011	1.186	0.013	
1880.00	661	GSM 1900	GPRS	28.0	27.23	0.07	Right	Cheek	1	00276	3	1:2.76	0.033	1.194	0.039	
1880.00	661	GSM 1900	GPRS	28.0	27.23	0.04	Right	Tilt	1	00276	3	1:2.76	0.018	1.194	0.021	
1880.00	661	GSM 1900	GPRS	28.0	27.23	0.18	Left	Cheek	1	00276	3	1:2.76	0.035	1.194	0.042	
1880.00	661	GSM 1900	GPRS	28.0	27.23	0.13	Left	Cheek	3	00276	3	1:2.76	0.035	1.194	0.042	A2
1880.00	661	GSM 1900	GPRS	28.0	27.23	-0.02	Left	Tilt	1	00276	3	1:2.76	0.012	1.194	0.014	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Head									
Spatial Peak							1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population							averaged over 1 gram									

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 122 of 187

Table 11-3
UMTS 850 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	4183	UMTS 850	RMC	25.5	25.41	0.04	Right	Cheek	1	00185	1:1	0.039	1.021	0.040	
836.60	4183	UMTS 850	RMC	25.5	25.41	0.03	Right	Tilt	1	00185	1:1	0.022	1.021	0.022	
836.60	4183	UMTS 850	RMC	25.5	25.41	-0.03	Left	Cheek	1	00185	1:1	0.055	1.021	0.056	A3
836.60	4183	UMTS 850	RMC	25.5	25.41	0.19	Left	Cheek	3	00185	1:1	0.045	1.021	0.046	
836.60	4183	UMTS 850	RMC	25.5	25.41	0.20	Left	Tilt	1	00185	1:1	0.023	1.021	0.023	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-4
UMTS 1750 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	-0.10	Right	Cheek	1	00268	1:1	0.077	1.009	0.078	A4
1732.40	1412	UMTS 1750	RMC	25.5	25.46	-0.03	Right	Cheek	3	00268	1:1	0.041	1.009	0.041	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	0.04	Right	Tilt	1	00268	1:1	0.021	1.009	0.021	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	-0.01	Left	Cheek	1	00268	1:1	0.048	1.009	0.048	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	0.02	Left	Tilt	1	00268	1:1	0.026	1.009	0.026	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-5
UMTS 1900 Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.04	Right	Cheek	1	00276	1:1	0.035	1.030	0.036	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.07	Right	Tilt	1	00276	1:1	0.035	1.030	0.036	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.00	Left	Cheek	1	00276	1:1	0.052	1.030	0.054	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	-0.02	Left	Cheek	3	00276	1:1	0.066	1.030	0.068	A5
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.10	Left	Tilt	1	00276	1:1	0.019	1.030	0.020	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 123 of 187

Table 11-6
CDMA BC10 (§90S) Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.25	0.09	Right	Cheek	1	00276	1:1	0.041	1.059	0.043	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.25	0.04	Right	Tilt	1	00276	1:1	0.028	1.059	0.030	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.25	0.02	Left	Cheek	1	00276	1:1	0.060	1.059	0.064	
820.10	564	CDMA BC10 (§90S)	RC3 / SO55	25.5	25.25	0.03	Left	Tilt	1	00276	1:1	0.030	1.059	0.032	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.20	0.20	Right	Cheek	1	00276	1:1	0.039	1.072	0.042	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.20	0.05	Right	Tilt	1	00276	1:1	0.028	1.072	0.030	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.20	0.03	Left	Cheek	1	00276	1:1	0.062	1.072	0.066	
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.20	0.03	Left	Cheek	3	00276	1:1	0.073	1.072	0.078	A6
820.10	564	CDMA BC10 (§90S)	EVDO Rev. A	25.5	25.20	0.03	Left	Tilt	1	00276	1:1	0.027	1.072	0.029	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-7
CDMA BC0 (§22H) Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.22	0.02	Right	Cheek	1	00276	1:1	0.032	1.067	0.034	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.22	0.03	Right	Tilt	1	00276	1:1	0.019	1.067	0.020	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.22	-0.20	Left	Cheek	1	00276	1:1	0.046	1.067	0.049	
836.52	384	CDMA BC0 (§22H)	RC3 / SO55	25.5	25.22	0.05	Left	Tilt	1	00276	1:1	0.021	1.067	0.022	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.19	-0.13	Right	Cheek	1	00276	1:1	0.032	1.074	0.034	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.19	0.16	Right	Tilt	1	00276	1:1	0.022	1.074	0.024	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.19	0.03	Left	Cheek	1	00276	1:1	0.054	1.074	0.058	A7
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.19	0.20	Left	Cheek	3	00276	1:1	0.043	1.074	0.046	
836.52	384	CDMA BC0 (§22H)	EVDO Rev. A	25.5	25.19	0.20	Left	Tilt	1	00276	1:1	0.020	1.074	0.021	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 124 of 187

Table 11-8
PCS CDMA Head SAR

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.64	0.17	Right	Cheek	1	00177	1:1	0.036	1.219	0.044	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.64	0.03	Right	Tilt	1	00177	1:1	0.026	1.219	0.032	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.64	-0.03	Left	Cheek	1	00177	1:1	0.053	1.219	0.065	A8
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.64	0.09	Left	Cheek	3	00177	1:1	0.050	1.219	0.061	
1880.00	600	PCS CDMA	RC3 / SO55	25.5	24.64	-0.12	Left	Tilt	1	00177	1:1	0.020	1.219	0.024	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.03	0.18	Right	Cheek	1	00177	1:1	0.038	1.114	0.042	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.03	0.03	Right	Tilt	1	00177	1:1	0.028	1.114	0.031	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.03	0.17	Left	Cheek	1	00177	1:1	0.047	1.114	0.052	
1880.00	600	PCS CDMA	EVDO Rev. A	25.5	25.03	0.04	Left	Tilt	1	00177	1:1	0.031	1.114	0.035	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram							

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-9
LTE Band 71 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
680.50	133297	Mid	LTE Band 71	20	1	25.5	25.16	0.03	0	Right	Cheek	QPSK	1	0	00185	1:1	0.026	1.081	0.028	
680.50	133297	Mid	LTE Band 71	20	1	24.5	24.14	0.04	1	Right	Cheek	QPSK	50	0	00185	1:1	0.014	1.086	0.015	
680.50	133297	Mid	LTE Band 71	20	1	25.5	25.16	0.06	0	Right	Tilt	QPSK	1	0	00185	1:1	0.016	1.081	0.017	
680.50	133297	Mid	LTE Band 71	20	1	24.5	24.14	0.07	1	Right	Tilt	QPSK	50	0	00185	1:1	0.009	1.086	0.010	
680.50	133297	Mid	LTE Band 71	20	1	25.5	25.16	0.02	0	Left	Cheek	QPSK	1	0	00185	1:1	0.027	1.081	0.029	A9
680.50	133297	Mid	LTE Band 71	20	3	25.5	25.16	0.09	0	Left	Cheek	QPSK	1	0	00185	1:1	0.020	1.081	0.022	
680.50	133297	Mid	LTE Band 71	20	1	24.5	24.14	0.02	1	Left	Cheek	QPSK	50	0	00185	1:1	0.014	1.086	0.015	
680.50	133297	Mid	LTE Band 71	20	1	25.5	25.16	0.02	0	Left	Tilt	QPSK	1	0	00185	1:1	0.015	1.081	0.016	
680.50	133297	Mid	LTE Band 71	20	1	24.5	24.14	0.08	1	Left	Tilt	QPSK	50	0	00185	1:1	0.006	1.086	0.007	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 125 of 187

Table 11-10
LTE Band 12 Head SAR

MEASUREMENT RESULTS																			
Frequency		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
Ch.																(W/kg)		(W/kg)	
23095	Mid	LTE Band 12	10	1	25.5	25.07	0.09	0	Right	Cheek	QPSK	1	0	00185	1:1	0.039	1.104	0.043	
23095	Mid	LTE Band 12	10	1	24.5	24.08	0.03	1	Right	Cheek	QPSK	25	12	00185	1:1	0.024	1.102	0.026	
23095	Mid	LTE Band 12	10	1	25.5	25.07	0.02	0	Right	Tilt	QPSK	1	0	00185	1:1	0.022	1.104	0.024	
23095	Mid	LTE Band 12	10	1	24.5	24.08	0.03	1	Right	Tilt	QPSK	25	12	00185	1:1	0.014	1.102	0.015	
23095	Mid	LTE Band 12	10	1	25.5	25.07	0.18	0	Left	Cheek	QPSK	1	0	00185	1:1	0.043	1.104	0.047	A10
23095	Mid	LTE Band 12	10	3	25.5	25.07	0.17	0	Left	Cheek	QPSK	1	0	00185	1:1	0.032	1.104	0.035	
23095	Mid	LTE Band 12	10	1	24.5	24.08	0.20	1	Left	Cheek	QPSK	25	12	00185	1:1	0.028	1.102	0.031	
23095	Mid	LTE Band 12	10	1	25.5	25.07	0.20	0	Left	Tilt	QPSK	1	0	00185	1:1	0.018	1.104	0.020	
23095	Mid	LTE Band 12	10	1	24.5	24.08	0.03	1	Left	Tilt	QPSK	25	12	00185	1:1	0.011	1.102	0.012	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-11
LTE Band 13 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.32	-0.20	0	Right	Cheek	QPSK	1	0	00185	1:1	0.041	1.042	0.043	A11
782.00	23230	Mid	LTE Band 13	10	3	25.5	25.32	0.02	0	Right	Cheek	QPSK	1	0	00185	1:1	0.029	1.042	0.030	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.28	0.02	1	Right	Cheek	QPSK	25	0	00185	1:1	0.026	1.052	0.027	
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.32	0.17	0	Right	Tilt	QPSK	1	0	00185	1:1	0.030	1.042	0.031	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.28	0.03	1	Right	Tilt	QPSK	25	0	00185	1:1	0.018	1.052	0.019	
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.32	0.20	0	Left	Cheek	QPSK	1	0	00185	1:1	0.037	1.042	0.039	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.28	0.03	1	Left	Cheek	QPSK	25	0	00185	1:1	0.024	1.052	0.025	
782.00	23230	Mid	LTE Band 13	10	1	25.5	25.32	0.02	0	Left	Tilt	QPSK	1	0	00185	1:1	0.016	1.042	0.017	
782.00	23230	Mid	LTE Band 13	10	1	24.5	24.28	0.03	1	Left	Tilt	QPSK	25	0	00185	1:1	0.012	1.052	0.013	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 126 of 187

Table 11-12
LTE Band 26 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	25.5	25.00	0.04	0	Right	Cheek	QPSK	1	36	00276	1:1	0.030	1.122	0.034	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	24.5	24.06	0.02	1	Right	Cheek	QPSK	36	37	00276	1:1	0.018	1.107	0.020	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	25.5	25.00	0.08	0	Right	Tilt	QPSK	1	36	00276	1:1	0.018	1.122	0.020	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	24.5	24.06	-0.05	1	Right	Tilt	QPSK	36	37	00276	1:1	0.010	1.107	0.011	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	25.5	25.00	-0.03	0	Left	Cheek	QPSK	1	36	00276	1:1	0.048	1.122	0.054	A12
831.50	26865	Mid	LTE Band 26 (Cell)	15	3	25.5	25.00	0.11	0	Left	Cheek	QPSK	1	36	00276	1:1	0.048	1.122	0.054	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	24.5	24.06	0.03	1	Left	Cheek	QPSK	36	37	00276	1:1	0.025	1.107	0.028	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	25.5	25.00	0.06	0	Left	Tilt	QPSK	1	36	00276	1:1	0.020	1.122	0.022	
831.50	26865	Mid	LTE Band 26 (Cell)	15	1	24.5	24.06	0.04	1	Left	Tilt	QPSK	36	37	00276	1:1	0.012	1.107	0.013	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-13
LTE Band 66 (AWS) Head SAR - Ant 2

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	0.01	0	Right	Cheek	QPSK	1	50	00268	1:1	0.062	1.089	0.068	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	3	25.5	25.13	-0.20	0	Right	Cheek	QPSK	1	50	00268	1:1	0.038	1.089	0.041	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	-0.04	1	Right	Cheek	QPSK	50	25	00268	1:1	0.039	1.067	0.042	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	0.02	0	Right	Tilt	QPSK	1	50	00268	1:1	0.020	1.089	0.022	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	0.02	1	Right	Tilt	QPSK	50	25	00268	1:1	0.016	1.067	0.017	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	0.03	0	Left	Cheek	QPSK	1	50	00268	1:1	0.035	1.089	0.038	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	0.02	1	Left	Cheek	QPSK	50	25	00268	1:1	0.032	1.067	0.034	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	0.05	0	Left	Tilt	QPSK	1	50	00268	1:1	0.021	1.089	0.023	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	0.02	1	Left	Tilt	QPSK	50	25	00268	1:1	0.019	1.067	0.020	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-14
LTE Band 66 (AWS) Head SAR - Ant 3

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.62	0.03	0	Right	Cheek	QPSK	1	0	10994	1:1	0.096	1.225	0.118	A13
1770.00	132572	High	LTE Band 66 (AWS)	20	3	23.5	22.62	0.18	0	Right	Cheek	QPSK	1	0	10994	1:1	0.046	1.225	0.056	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.84	0.08	0	Right	Cheek	QPSK	50	25	10994	1:1	0.092	1.164	0.107	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.62	0.10	0	Right	Tilt	QPSK	1	0	10994	1:1	0.042	1.225	0.051	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.84	0.21	0	Right	Tilt	QPSK	50	25	10994	1:1	0.042	1.164	0.049	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.62	0.06	0	Left	Cheek	QPSK	1	0	10994	1:1	0.053	1.225	0.065	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.84	0.03	0	Left	Cheek	QPSK	50	25	10994	1:1	0.054	1.164	0.063	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	22.62	0.12	0	Left	Tilt	QPSK	1	0	10994	1:1	0.046	1.225	0.056	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	22.84	0.02	0	Left	Tilt	QPSK	50	25	10994	1:1	0.045	1.164	0.052	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM		SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 127 of 187

Table 11-15
LTE Band 66 (AWS) Head SAR - Ant 3 for conditions with Inter-Band ULCA as SCC

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.03	0.09	0	Right	Cheek	QPSK	1	50	10994	1:1	0.023	1.167	0.027	
1720.00	132072	Low	LTE Band 66 (AWS)	20	3	17.7	17.03	0.07	0	Right	Cheek	QPSK	1	50	10994	1:1	0.009	1.167	0.011	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.20	0.05	0	Right	Cheek	QPSK	50	25	10994	1:1	0.022	1.122	0.025	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.03	0.07	0	Right	Tilt	QPSK	1	50	10994	1:1	0.007	1.167	0.008	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.20	0.07	0	Right	Tilt	QPSK	50	25	10994	1:1	0.007	1.122	0.008	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.03	-0.03	0	Left	Cheek	QPSK	1	50	10994	1:1	0.011	1.167	0.013	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.20	0.03	0	Left	Cheek	QPSK	50	25	10994	1:1	0.011	1.122	0.012	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.03	0.05	0	Left	Tilt	QPSK	1	50	10994	1:1	0.008	1.167	0.009	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	17.7	17.20	0.06	0	Left	Tilt	QPSK	50	25	10994	1:1	0.008	1.122	0.009	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-16
LTE Band 25 (PCS) Head SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	0.03	0	Right	Cheek	QPSK	1	0	00276	1:1	0.030	1.007	0.030	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.03	1	Right	Cheek	QPSK	50	0	00276	1:1	0.022	1.000	0.022	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	0.18	0	Right	Tilt	QPSK	1	0	00276	1:1	0.017	1.007	0.017	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.06	1	Right	Tilt	QPSK	50	0	00276	1:1	0.016	1.000	0.016	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	-0.03	0	Left	Cheek	QPSK	1	0	00276	1:1	0.045	1.007	0.045	
1860.00	26140	Low	LTE Band 25 (PCS)	20	3	25.5	25.47	-0.03	0	Left	Cheek	QPSK	1	0	00276	1:1	0.049	1.007	0.049	A14
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.14	1	Left	Cheek	QPSK	50	0	00276	1:1	0.029	1.000	0.029	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	-0.08	0	Left	Tilt	QPSK	1	0	00276	1:1	0.016	1.007	0.016	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.10	1	Left	Tilt	QPSK	50	0	00276	1:1	0.009	1.000	0.009	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note 1: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)
Note 2: For Swivel mode, LTE B25 head SAR was tested at Pmax which is a more conservative measurement than PLimit DSI 7

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 128 of 187

Table 11-17
LTE Band 2 (PCS) Head SAR Ant 3

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Cover Type	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.61	0.17	0	Right	Cheek	QPSK	1	99	11000	1:1	0.079	1.227	0.097	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.63	0.10	0	Right	Cheek	QPSK	50	50	11000	1:1	0.084	1.222	0.103	A15
1900.00	19100	High	LTE Band 2 (PCS)	20	3	23.5	22.63	0.09	0	Right	Cheek	QPSK	50	50	11000	1:1	0.050	1.222	0.061	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.61	0.02	0	Right	Tilt	QPSK	1	99	11000	1:1	0.029	1.227	0.036	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.63	0.09	0	Right	Tilt	QPSK	50	50	11000	1:1	0.029	1.222	0.035	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.61	-0.04	0	Left	Cheek	QPSK	1	99	11000	1:1	0.049	1.227	0.060	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.63	0.17	0	Left	Cheek	QPSK	50	50	11000	1:1	0.050	1.222	0.061	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.61	0.19	0	Left	Tilt	QPSK	1	99	11000	1:1	0.041	1.227	0.050	
1900.00	19100	High	LTE Band 2 (PCS)	20	1	23.5	22.63	0.14	0	Left	Tilt	QPSK	50	50	11000	1:1	0.043	1.222	0.053	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-18
LTE Band 48 Head SAR

MEASUREMENT RESULTS																				
FREQUENCY			LTE Band 48	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.83	-0.05	0	Right	Cheek	QPSK	1	99	00268	1:1.58	0.136	1.167	0.159	
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.89	-0.04	0	Right	Cheek	QPSK	50	25	00268	1:1.58	0.126	1.151	0.145	
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.83	0.20	0	Right	Tilt	QPSK	1	99	00268	1:1.58	0.082	1.167	0.096	
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.89	-0.02	0	Right	Tilt	QPSK	50	25	00268	1:1.58	0.083	1.151	0.096	
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.83	-0.04	0	Left	Cheek	QPSK	1	99	00268	1:1.58	0.420	1.167	0.490	
3560.00	55340	Low	LTE Band 48	20	3	22.5	21.83	0.10	0	Left	Cheek	QPSK	1	99	00268	1:1.58	0.778	1.167	0.908	A16
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.89	-0.03	0	Left	Cheek	QPSK	50	25	00268	1:1.58	0.402	1.151	0.463	
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.83	0.15	0	Left	Tilt	QPSK	1	99	00268	1:1.58	0.224	1.167	0.261	
3560.00	55340	Low	LTE Band 48	20	1	22.5	21.89	0.12	0	Left	Tilt	QPSK	50	25	00268	1:1.58	0.222	1.151	0.256	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population											Head 1.6 W/kg (mW/g) averaged over 1 gram									

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM		SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 129 of 187

Table 11-19
LTE Band 41 Head SAR

MEASUREMENT RESULTS																						
1 CC Uplink 2 CC Uplink, Power Class	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.															(W/kg)		(W/kg)		
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	0.03	0	Right	Cheek	QPSK	1	50	00185	1:1.58	0.045	1.096	0.049	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	0.21	1	Right	Cheek	QPSK	50	25	00185	1:1.58	0.025	1.104	0.028	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	0.04	0	Right	Tilt	QPSK	1	50	00185	1:1.58	0.022	1.096	0.024	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	0.14	1	Right	Tilt	QPSK	50	25	00185	1:1.58	0.011	1.104	0.012	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	-0.08	0	Left	Cheek	QPSK	1	50	00185	1:1.58	0.052	1.096	0.057	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	3	25.5	25.10	0.04	0	Left	Cheek	QPSK	1	50	00185	1:1.58	0.036	1.096	0.039	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	24.78	-0.01	0	Left	Cheek	QPSK	1	99	00185	1:1.58	0.045	1.180	0.053	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	-0.17	1	Left	Cheek	QPSK	50	25	00185	1:1.58	0.029	1.104	0.032	
1 CC Uplink - Power Class 2	N/A	2593.00	40620	Mid	LTE Band 41	20	1	27.5	27.00	0.00	0	Left	Cheek	QPSK	1	50	00185	1:2.31	0.056	1.122	0.063	A17
1 CC Uplink - Power Class 2	N/A	2593.00	40620	Mid	LTE Band 41	20	1	27.5	26.58	0.03	0	Left	Cheek	QPSK	1	99	00185	1:2.31	0.044	1.236	0.054	
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.23	0.20	0	Left	Cheek	QPSK	1	99	00185	1:1.58	0.048	1.064	0.051	
	SCC	2612.80	40818													0						
2 CC Uplink - Power Class 2	PCC	2593.00	40620	Mid	LTE Band 41	20	1	27.5	26.60	0.02	0	Left	Cheek	QPSK	1	99	00185	1:2.31	0.042	1.230	0.052	
	SCC	2612.80	40818													0						
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	0.06	0	Left	Tilt	QPSK	1	50	00185	1:1.58	0.026	1.096	0.028	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	0.12	1	Left	Tilt	QPSK	50	25	00185	1:1.58	0.015	1.104	0.017	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT												Head										
Spatial Peak												1.6 W/kg (mW/g)										
Uncontrolled Exposure/General Population												averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Note 2: LTE B41 head SAR was tested at Pmax which is a more conservative measurement than PLimit DSI 1

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 130 of 187

Table 11-20
NR Band n71 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)																(W/kg)			
680.50	136100	Mid	NR Band n71	20	1	25.5	25.41	0.21	0	Right	Cheek	DFT-S-OFDM	QPSK	1	1	10994	1:1	0.016	1.021	0.016	
680.50	136100	Mid	NR Band n71	20	1	25.5	25.25	0.03	0	Right	Cheek	DFT-S-OFDM	QPSK	50	28	10994	1:1	0.023	1.059	0.024	
680.50	136100	Mid	NR Band n71	20	3	25.5	25.25	0.01	0	Right	Cheek	DFT-S-OFDM	QPSK	50	28	10994	1:1	0.035	1.059	0.037	A18
680.50	136100	Mid	NR Band n71	20	1	24.0	23.58	-0.18	1.5	Right	Cheek	CP-OFDM	QPSK	1	1	10994	1:1	0.011	1.102	0.012	
680.50	136100	Mid	NR Band n71	20	1	25.5	25.41	-0.18	0	Right	Tilt	DFT-S-OFDM	QPSK	1	1	10994	1:1	0.010	1.021	0.010	
680.50	136100	Mid	NR Band n71	20	1	25.5	25.25	0.03	0	Right	Tilt	DFT-S-OFDM	QPSK	50	28	10994	1:1	0.016	1.059	0.017	
680.50	136100	Mid	NR Band n71	20	1	25.5	25.41	0.18	0	Left	Cheek	DFT-S-OFDM	QPSK	1	1	10994	1:1	0.018	1.021	0.018	
680.50	136100	Mid	NR Band n71	20	1	25.5	25.25	0.07	0	Left	Cheek	DFT-S-OFDM	QPSK	50	28	10994	1:1	0.021	1.059	0.022	
680.50	136100	Mid	NR Band n71	20	1	25.5	25.41	0.08	0	Left	Tilt	DFT-S-OFDM	QPSK	1	1	10994	1:1	0.009	1.021	0.009	
680.50	136100	Mid	NR Band n71	20	1	25.5	25.25	0.01	0	Left	Tilt	DFT-S-OFDM	QPSK	50	28	10994	1:1	0.010	1.059	0.011	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-21
NR Band n5 (Cell) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.38	0.04	0	Right	Cheek	DFT-S-OFDM	QPSK	1	1	00276	1:1	0.024	1.028	0.025	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.23	-0.15	0	Right	Cheek	DFT-S-OFDM	QPSK	50	28	00276	1:1	0.026	1.064	0.028	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.38	0.08	0	Right	Tilt	DFT-S-OFDM	QPSK	1	1	00276	1:1	0.017	1.028	0.017	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.23	0.02	0	Right	Tilt	DFT-S-OFDM	QPSK	50	28	00276	1:1	0.015	1.064	0.016	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.38	0.20	0	Left	Cheek	DFT-S-OFDM	QPSK	1	1	00276	1:1	0.044	1.028	0.045	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.23	0.08	0	Left	Cheek	DFT-S-OFDM	QPSK	50	28	00276	1:1	0.045	1.064	0.048	A19
836.50	167300	Mid	NR Band n5 (Cell)	20	3	25.5	25.23	0.19	0	Left	Cheek	DFT-S-OFDM	QPSK	50	28	00276	1:1	0.039	1.064	0.041	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	24.0	23.28	0.02	1.5	Left	Cheek	CP-OFDM	QPSK	1	1	00276	1:1	0.033	1.180	0.039	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.38	0.20	0	Left	Tilt	DFT-S-OFDM	QPSK	1	1	00276	1:1	0.016	1.028	0.016	
836.50	167300	Mid	NR Band n5 (Cell)	20	1	25.5	25.23	0.06	0	Left	Tilt	DFT-S-OFDM	QPSK	50	28	00276	1:1	0.019	1.064	0.020	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-22
NR Band n66 (AWS) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.00	-0.20	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.132	1.122	0.148	A20
1745.00	349000	Mid	NR Band n66 (AWS)	20	3	23.5	23.00	0.08	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.060	1.122	0.067	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	22.78	-0.14	0	Right	Cheek	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.107	1.180	0.126	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	22.70	0.12	0	Right	Cheek	CP-OFDM	QPSK	1	1	10994	1:1	0.093	1.202	0.112	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.00	0.18	0	Right	Tilt	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.047	1.122	0.053	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	22.78	0.16	0	Right	Tilt	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.043	1.180	0.051	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.00	0.05	0	Left	Cheek	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.075	1.122	0.084	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	22.78	0.11	0	Left	Cheek	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.065	1.180	0.077	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	23.00	-0.02	0	Left	Tilt	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.043	1.122	0.048	
1745.00	349000	Mid	NR Band n66 (AWS)	20	1	23.5	22.78	0.03	0	Left	Tilt	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.039	1.180	0.046	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Head 1.6 W/kg (mW/g) averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM		SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 131 of 187

Table 11-23
NR Band n25 (PCS) Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Modes	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																(W/kg)		(W/kg)		
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.97	0.02	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.148	1.130	0.167	A21
1882.50	376500	Mid	NR Band n25 (PCS)	20	3	23.5	22.97	0.04	0	Right	Cheek	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.070	1.130	0.079	
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.80	0.05	0	Right	Cheek	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.135	1.175	0.159	
1905.00	381000	High	NR Band n25 (PCS)	20	1	23.5	22.82	-0.09	0	Right	Cheek	CP-OFDM	QPSK	1	1	10994	1:1	0.129	1.169	0.151	
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.97	0.02	0	Right	Tilt	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.053	1.130	0.060	
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.80	-0.08	0	Right	Tilt	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.052	1.175	0.061	
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.97	0.12	0	Left	Cheek	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.104	1.130	0.118	
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.80	0.08	0	Left	Cheek	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.099	1.175	0.116	
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.97	-0.02	0	Left	Tilt	DFT-S-OFDM	QPSK	1	53	10994	1:1	0.054	1.130	0.061	
1882.50	376500	Mid	NR Band n25 (PCS)	20	1	23.5	22.80	0.07	0	Left	Tilt	DFT-S-OFDM	QPSK	50	0	10994	1:1	0.055	1.175	0.065	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Table 11-24
NR Band 41 Head SAR

MEASUREMENT RESULTS																					
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Device Serial Number	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.																				
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.78	0.04	0	Right	Cheek	DFT-S-OFDM	QPSK	1	137	00276	1:4	0.046	1.180	0.054	A22
2592.99	518598	Mid	NR Band n41	100	3	27.5	26.78	0.06	0	Right	Cheek	DFT-S-OFDM	QPSK	1	137	00276	1:4	0.024	1.180	0.028	
2592.99	518598	Mid	NR Band n41	100	1	26.0	24.72	0.03	1.5	Right	Cheek	CP-OFDM	QPSK	1	1	00276	1:4	0.032	1.343	0.043	
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.77	0.04	0	Right	Cheek	DFT-S-OFDM	QPSK	135	69	00276	1:4	0.042	1.183	0.050	
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.78	0.04	0	Right	Tilt	DFT-S-OFDM	QPSK	1	137	00276	1:4	0.039	1.180	0.046	
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.77	0.06	0	Right	Tilt	DFT-S-OFDM	QPSK	135	69	00276	1:4	0.034	1.183	0.040	
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.78	0.03	0	Left	Cheek	DFT-S-OFDM	QPSK	1	137	00276	1:4	0.019	1.180	0.022	
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.77	0.02	0	Left	Cheek	DFT-S-OFDM	QPSK	135	69	00276	1:4	0.019	1.183	0.022	
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.78	-0.01	0	Left	Tilt	DFT-S-OFDM	QPSK	1	137	00276	1:4	0.020	1.180	0.024	
2592.99	518598	Mid	NR Band n41	100	1	27.5	26.77	0.02	0	Left	Tilt	DFT-S-OFDM	QPSK	135	69	00276	1:4	0.019	1.183	0.022	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Head											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

Note 1: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

Note 2: NR band n41 head SAR was tested at Pmax which is a more conservative measurement than PLimit DSI 1

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 132 of 187

**Table 11-25
DTS Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
2437	6	802.11b	DSSS	22	18.0	17.65	0.07	Right	Cheek	1	1	00375	1	99.2	0.350	0.246	1.084	1.008	0.269	
2437	6	802.11b	DSSS	22	18.0	17.65	0.06	Right	Cheek	1	3	00375	1	99.2	0.720	0.527	1.084	1.008	0.576	
2437	6	802.11b	DSSS	22	18.0	17.65	0.07	Right	Tilt	1	1	00375	1	99.2	0.204	-	1.084	1.008	-	
2437	6	802.11b	DSSS	22	18.0	17.65	0.14	Left	Cheek	1	1	00375	1	99.2	0.153	0.099	1.084	1.008	0.108	
2437	6	802.11b	DSSS	22	18.0	17.65	0.17	Left	Tilt	1	1	00375	1	99.2	0.061	0.041	1.084	1.008	0.045	
2437	6	802.11b	DSSS	22	18.0	17.84	0.19	Right	Cheek	2	1	00375	1	99.2	0.454	-	1.038	1.008	-	
2437	6	802.11b	DSSS	22	18.0	17.84	0.20	Right	Tilt	2	1	00375	1	99.2	0.508	0.311	1.038	1.008	0.325	
2437	6	802.11b	DSSS	22	18.0	17.84	0.09	Right	Tilt	2	3	00375	1	99.2	1.170	0.748	1.038	1.008	0.783	A23
2437	6	802.11b	DSSS	22	18.0	17.84	0.06	Left	Cheek	2	1	00375	1	99.2	0.246	0.159	1.038	1.008	0.166	
2437	6	802.11b	DSSS	22	18.0	17.84	0.09	Left	Tilt	2	1	00375	1	99.2	0.264	0.165	1.038	1.008	0.173	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Head 1.6 W/kg (mW/g) averaged over 1 gram												

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

**Table 11-26
NII Head SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Antenna Config.	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5270	54	802.11n	OFDM	40	16.0	15.73	0.00	Right	Cheek	1	1	00375	13.5	94.9	0.183	-	1.064	1.054	-	
5270	54	802.11n	OFDM	40	16.0	15.73	0.00	Right	Tilt	1	1	00375	13.5	94.9	0.182	-	1.064	1.054	-	
5270	54	802.11n	OFDM	40	16.0	15.73	0.00	Left	Cheek	1	1	00375	13.5	94.9	0.176	-	1.064	1.054	-	
5270	54	802.11n	OFDM	40	16.0	15.73	0.00	Left	Tilt	1	1	00375	13.5	94.9	0.186	0.101	1.064	1.054	0.113	
5270	54	802.11n	OFDM	40	16.0	15.75	0.00	Right	Cheek	2	1	00375	13.5	94.2	0.131	-	1.059	1.062	-	
5270	54	802.11n	OFDM	40	16.0	15.75	0.01	Right	Tilt	2	1	00375	13.5	94.2	0.200	0.083	1.059	1.062	0.093	
5270	54	802.11n	OFDM	40	16.0	15.75	0.00	Right	Tilt	2	3	00375	13.5	94.2	0.223	0.079	1.059	1.062	0.089	
5270	54	802.11n	OFDM	40	16.0	15.75	0.10	Left	Cheek	2	1	00375	13.5	94.2	0.101	-	1.059	1.062	-	
5270	54	802.11n	OFDM	40	16.0	15.75	0.00	Left	Tilt	2	1	00375	13.5	94.2	0.112	-	1.059	1.062	-	
5710	142	802.11n	OFDM	40	16.0	15.98	-0.15	Right	Cheek	1	1	00375	13.5	94.9	0.396	-	1.005	1.054	-	
5710	142	802.11n	OFDM	40	16.0	15.98	0.12	Right	Tilt	1	1	00375	13.5	94.9	0.412	0.151	1.005	1.054	0.160	
5710	142	802.11n	OFDM	40	16.0	15.98	0.20	Right	Tilt	1	3	00375	13.5	94.9	0.743	0.314	1.005	1.054	0.333	A24
5710	142	802.11n	OFDM	40	16.0	15.98	0.08	Left	Cheek	1	1	00375	13.5	94.9	0.275	-	1.005	1.054	-	
5710	142	802.11n	OFDM	40	16.0	15.98	0.10	Left	Tilt	1	1	00375	13.5	94.9	0.283	-	1.005	1.054	-	
5710	142	802.11n	OFDM	40	16.0	15.17	0.10	Right	Cheek	2	1	00375	13.5	94.2	0.157	0.061	1.211	1.062	0.078	
5710	142	802.11n	OFDM	40	16.0	15.17	0.00	Right	Tilt	2	1	00375	13.5	94.2	0.067	-	1.211	1.062	-	
5710	142	802.11n	OFDM	40	16.0	15.17	0.00	Left	Cheek	2	1	00375	13.5	94.2	0.067	-	1.211	1.062	-	
5710	142	802.11n	OFDM	40	16.0	15.17	0.01	Left	Tilt	2	1	00375	13.5	94.2	0.063	-	1.211	1.062	-	
5795	159	802.11n	OFDM	40	16.0	15.64	0.03	Right	Cheek	1	1	00375	13.5	94.9	0.207	-	1.086	1.054	-	
5795	159	802.11n	OFDM	40	16.0	15.64	0.04	Right	Tilt	1	1	00375	13.5	94.9	0.209	0.072	1.086	1.054	0.082	
5795	159	802.11n	OFDM	40	16.0	15.64	0.10	Left	Cheek	1	1	00375	13.5	94.9	0.139	-	1.086	1.054	-	
5795	159	802.11n	OFDM	40	16.0	15.64	0.00	Left	Tilt	1	1	00375	13.5	94.9	0.127	-	1.086	1.054	-	
5795	159	802.11n	OFDM	40	16.0	15.20	0.07	Right	Cheek	2	1	00375	13.5	94.2	0.179	0.073	1.202	1.062	0.093	
5795	159	802.11n	OFDM	40	16.0	15.20	0.00	Right	Tilt	2	1	00375	13.5	94.2	0.085	-	1.202	1.062	-	
5795	159	802.11n	OFDM	40	16.0	15.20	0.00	Left	Cheek	2	1	00375	13.5	94.2	0.056	-	1.202	1.062	-	
5795	159	802.11n	OFDM	40	16.0	15.20	0.00	Left	Tilt	2	1	00375	13.5	94.2	0.064	-	1.202	1.062	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Head												
Spatial Peak								1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 1 gram												

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 133 of 187

**Table 11-27
DSS Head SAR**

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.												(W/kg)			(W/kg)	
2441.00	39	Bluetooth	FHSS	12.0	11.95	0.04	Right	Cheek	1	00375	1	76.8	0.032	1.012	1.302	0.042	
2441.00	39	Bluetooth	FHSS	12.0	11.95	0.04	Right	Cheek	3	00375	1	76.8	0.080	1.012	1.302	0.105	A25
2441.00	39	Bluetooth	FHSS	12.0	11.95	0.02	Right	Tilt	1	00375	1	76.8	0.016	1.012	1.302	0.021	
2441.00	39	Bluetooth	FHSS	12.0	11.95	0.03	Left	Cheek	1	00375	1	76.8	0.011	1.012	1.302	0.014	
2441.00	39	Bluetooth	FHSS	12.0	11.95	0.02	Left	Tilt	1	00375	1	76.8	0.003	1.012	1.302	0.004	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Head 1.6 W/kg (mW/g) averaged over 1 gram										

Note: Green entry represents additional Head SAR Position (Mechanical Mode #3: Swivel)

11.1 Standalone Body-Worn SAR Data

**Table 11-28
GSM/UMTS/CDMA Body-Worn SAR Data**

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GSM	34.0	33.52	0.02	10 mm	00276	1	1:8.3	back	0.311	1.117	0.347	
836.60	190	GSM 850	GPRS	30.5	30.26	-0.05	10 mm	00276	3	1:2.76	back	0.335	1.057	0.354	A26
1880.00	661	GSM 1900	GSM	31.0	30.26	0.02	10 mm	00185	1	1:8.3	back	0.398	1.186	0.472	
1880.00	661	GSM 1900	GPRS	28.0	27.23	-0.01	10 mm	00185	3	1:2.76	back	0.436	1.194	0.521	A27
836.60	4183	UMTS 850	RMC	25.5	25.41	-0.02	10 mm	11000	N/A	1:1	back	0.397	1.021	0.405	A29
1712.40	1312	UMTS 1750	RMC	25.5	25.37	0.00	10 mm	00177	N/A	1:1	back	0.789	1.030	0.813	A30
1732.40	1412	UMTS 1750	RMC	25.5	25.46	-0.03	10 mm	00177	N/A	1:1	back	0.778	1.009	0.785	
1752.60	1513	UMTS 1750	RMC	25.5	25.44	0.06	10 mm	00177	N/A	1:1	back	0.735	1.014	0.745	
1852.40	9262	UMTS 1900	RMC	25.5	25.00	0.01	10 mm	00185	N/A	1:1	back	0.678	1.122	0.761	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.02	10 mm	00185	N/A	1:1	back	0.705	1.030	0.726	
1907.60	9538	UMTS 1900	RMC	25.5	25.27	0.01	10 mm	00185	N/A	1:1	back	0.729	1.054	0.768	A32
820.10	564	CDMA BC10 (\$90S)	TDSO / SO32	25.5	25.25	0.02	10 mm	10994	N/A	1:1	back	0.364	1.059	0.385	A34
836.52	384	CDMA BC0 (\$22H)	TDSO / SO32	25.5	25.21	0.01	10 mm	10994	N/A	1:1	back	0.464	1.069	0.496	A36
1851.25	25	PCS CDMA	TDSO / SO32	25.5	24.63	-0.03	10 mm	00185	N/A	1:1	back	0.536	1.222	0.655	
1880.00	600	PCS CDMA	TDSO / SO32	25.5	24.64	0.03	10 mm	00185	N/A	1:1	back	0.551	1.219	0.672	
1908.75	1175	PCS CDMA	TDSO / SO32	25.5	24.78	0.00	10 mm	00185	N/A	1:1	back	0.611	1.180	0.721	A38
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 134 of 187

Table 11-29
LTE Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																(W/kg)		(W/kg)	
MHz	Ch.																		
680.50	133297	Mid	LTE Band 71	20	25.5	25.16	0.04	0	00185	QPSK	1	0	10 mm	back	1:1	0.219	1.081	0.237	A40
680.50	133297	Mid	LTE Band 71	20	24.5	24.14	-0.02	1	00185	QPSK	50	0	10 mm	back	1:1	0.177	1.086	0.192	
707.50	23095	Mid	LTE Band 12	10	25.5	25.07	0.02	0	11000	QPSK	1	0	10 mm	back	1:1	0.300	1.104	0.331	A41
707.50	23095	Mid	LTE Band 12	10	24.5	24.08	0.00	1	11000	QPSK	25	12	10 mm	back	1:1	0.190	1.102	0.209	
782.00	23230	Mid	LTE Band 13	10	25.5	25.32	-0.01	0	11000	QPSK	1	0	10 mm	back	1:1	0.300	1.042	0.313	A42
782.00	23230	Mid	LTE Band 13	10	24.5	24.28	0.01	1	11000	QPSK	25	0	10 mm	back	1:1	0.188	1.052	0.198	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.00	-0.02	0	00177	QPSK	1	36	10 mm	back	1:1	0.303	1.122	0.340	A43
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.06	-0.07	1	00177	QPSK	36	37	10 mm	back	1:1	0.250	1.107	0.277	
1720.00	132072	Low	LTE Band 66 (AWS)	20	25.5	25.05	0.01	0	00185	QPSK	1	50	10 mm	back	1:1	0.665	1.109	0.737	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	25.5	25.13	0.09	0	00185	QPSK	1	50	10 mm	back	1:1	0.718	1.089	0.782	
1770.00	132572	High	LTE Band 66 (AWS)	20	25.5	25.02	0.08	0	00185	QPSK	1	0	10 mm	back	1:1	0.790	1.117	0.882	A44
1745.00	132322	Mid	LTE Band 66 (AWS)	20	24.5	24.22	0.03	1	00185	QPSK	50	25	10 mm	back	1:1	0.456	1.067	0.487	
1770.00	132572	High	LTE Band 66 (AWS)	20	24.5	24.17	0.10	1	00185	QPSK	100	0	10 mm	back	1:1	0.480	1.079	0.518	
1860.00	26140	Low	LTE Band 25 (PCS)	20	25.5	25.47	-0.03	0	00185	QPSK	1	0	10 mm	back	1:1	0.733	1.007	0.738	A46
1882.50	26365	Mid	LTE Band 25 (PCS)	20	25.5	25.33	-0.01	0	00185	QPSK	1	0	10 mm	back	1:1	0.714	1.040	0.743	
1905.00	26590	High	LTE Band 25 (PCS)	20	25.5	25.06	-0.02	0	00185	QPSK	1	0	10 mm	back	1:1	0.724	1.107	0.801	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.50	0.02	1	00185	QPSK	50	0	10 mm	back	1:1	0.435	1.000	0.435	
1860.00	26140	Low	LTE Band 25 (PCS)	20	24.5	24.39	-0.02	1	00185	QPSK	100	0	10 mm	back	1:1	0.428	1.026	0.439	
3560.00	55340	Low	LTE Band 48	20	22.5	21.83	-0.09	0	00268	QPSK	1	99	10 mm	back	1:1.58	0.248	1.167	0.289	
3560.00	55340	Low	LTE Band 48	20	22.5	21.89	-0.11	0	00268	QPSK	50	25	10 mm	back	1:1.58	0.251	1.151	0.289	A50
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-30
LTE Body-Worn SAR Ant 3

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.62	0.03	0	10994	QPSK	1	0	10 mm	back	1:1	0.202	1.225	0.247	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.84	0.00	0	10994	QPSK	50	25	10 mm	back	1:1	0.220	1.164	0.256	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.61	-0.05	0	00185	QPSK	1	99	10 mm	back	1:1	0.185	1.227	0.227	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.63	-0.17	0	00185	QPSK	50	50	10 mm	back	1:1	0.193	1.222	0.236	A48
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-31
LTE Body-Worn SAR - Ant 3 for conditions with Inter-Band ULCA as SCC

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.															(W/kg)		(W/kg)	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.03	0.03	0	00177	QPSK	1	50	10 mm	back	1:1	0.056	1.167	0.065	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.20	0.06	0	00177	QPSK	50	25	10 mm	back	1:1	0.060	1.122	0.067	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 135 of 187

Table 11-32
LTE Band 41 Body-Worn

MEASUREMENT RESULTS																					
1 CC Uplink / 2 CC Uplink, Power Class	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.5	25.10	0.04	0	00185	QPSK	1	50	10 mm	back	1:1.58	0.381	1.096	0.418	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	25.5	24.78	-0.02	0	00185	QPSK	1	99	10 mm	back	1:1.58	0.363	1.180	0.428	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	24.5	24.07	-0.03	1	00185	QPSK	50	25	10 mm	back	1:1.58	0.205	1.104	0.226	
1 CC Uplink - Power Class 2	N/A	2593.00	40620	Mid	LTE Band 41	20	27.5	27.00	-0.03	0	00185	QPSK	1	50	10 mm	back	1:2.31	0.390	1.235	0.438	
1 CC Uplink - Power Class 2	N/A	2593.00	40620	Mid	LTE Band 41	20	27.5	26.58	-0.11	0	00185	QPSK	1	99	10 mm	back	1:2.31	0.368	1.122	0.455	
2 CC Uplink - Power Class 3	PCC	2593.00	40620	Mid	LTE Band 41	20	25.5	25.23	0.11	0	00185	QPSK	1	99	10 mm	back	1:1.58	0.421	1.064	0.448	A52
	SCC	2612.80	40818											0							
2 CC Uplink - Power Class 2	PCC	2593.00	40620	Mid	LTE Band 41	20	27.5	26.60	0.03	0	00185	QPSK	1	99	10 mm	back	1:2.31	0.361	1.230	0.444	
	SCC	2612.80	40818											0							
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-33
NR Body-Worn SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #
MHz	Ch.																			
680.50	136100	Mid	NR Band n71	20	25.5	25.41	0.05	0	10994	DFT-S-OFDM	QPSK	1	1	10 mm	back	1:1	0.217	1.021	0.222	
680.50	136100	Mid	NR Band n71	20	25.5	25.25	0.02	0	10994	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.230	1.059	0.244	A54
680.50	136100	Mid	NR Band n71	20	24.0	23.58	0.02	1.5	10994	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.156	1.102	0.172	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.38	-0.04	0	11000	DFT-S-OFDM	QPSK	1	1	10 mm	back	1:1	0.334	1.028	0.343	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.23	0.05	0	11000	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.343	1.064	0.365	A55
836.50	167300	Mid	NR Band n5 (Cell)	20	24.0	23.28	0.02	1.5	11000	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.233	1.180	0.275	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.00	0.03	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.260	1.122	0.292	A56
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.78	-0.11	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	back	1:1	0.242	1.180	0.286	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.70	-0.01	0	10994	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.216	1.202	0.260	
1882.50	376500	Mid	NR Band n25 (PCS)	20	23.5	22.97	0.03	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.186	1.130	0.210	
1882.50	376500	Mid	NR Band n25 (PCS)	20	23.5	22.80	-0.21	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	back	1:1	0.188	1.175	0.221	A58
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	22.82	-0.03	0	10994	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.184	1.169	0.215	
2592.99	518598	Mid	NR Band n41	100	25.0	24.43	-0.07	0	00276	DFT-S-OFDM	QPSK	1	137	10 mm	back	1:4	0.115	1.140	0.131	
2592.99	518598	Mid	NR Band n41	100	25.0	24.36	-0.12	0	00276	DFT-S-OFDM	QPSK	135	0	10 mm	back	1:4	0.123	1.159	0.143	A60
2592.99	518598	Mid	NR Band n41	100	25.0	24.56	-0.19	0	00276	CP-OFDM	QPSK	1	1	10 mm	back	1:4	0.099	1.107	0.110	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-34
DTS Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.5	21.49	-0.20	10 mm	1	00375	1	back	99.2	0.440	0.291	1.002	1.008	0.294	A62
2437	6	802.11b	DSSS	22	21.5	21.22	0.07	10 mm	2	00375	1	back	99.2	0.336	0.243	1.067	1.008	0.261	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 136 of 187

Table 11-35
NII Body-Worn SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	20.0	19.33	0.20	10 mm	1	00375	6	back	98.1	0.206	0.098	1.167	1.019	0.117	
5280	56	802.11a	OFDM	20	20.0	19.94	0.07	10 mm	2	00375	6	back	98.1	0.335	0.147	1.014	1.019	0.152	
5500	100	802.11a	OFDM	20	17.0	16.70	0.11	10 mm	1	00375	6	back	98.1	0.193	0.078	1.072	1.019	0.085	
5600	120	802.11a	OFDM	20	17.0	16.75	0.02	10 mm	2	00375	6	back	98.1	0.287	0.121	1.059	1.019	0.131	
5785	157	802.11a	OFDM	20	20.0	19.66	0.00	10 mm	1	00375	6	back	98.1	0.238	0.097	1.081	1.019	0.107	
5785	157	802.11a	OFDM	20	20.0	19.84	-0.05	10 mm	2	00375	6	back	98.1	0.796	0.346	1.038	1.019	0.366	A64
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Table 11-36
DSS Body-Worn SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g) [W/kg]	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g) [W/kg]	Plot #
MHz	Ch.															
2441	39	Bluetooth	FHSS	12.0	11.95	-0.02	10 mm	00375	1	back	76.8	0.025	1.012	1.302	0.033	A65
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram								

FCC ID: ZNFF100TM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 137 of 187

11.2 Standalone Hotspot SAR Data

Table 11-37
GPRS/UMTS/CDMA Hotspot SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	# of Time Slots	Duty Cycle	Side	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
836.60	190	GSM 850	GPRS	30.5	30.26	-0.05	10 mm	00276	3	1:2.76	back	0.335	1.057	0.354	A26
836.60	190	GSM 850	GPRS	30.5	30.26	-0.08	10 mm	00276	3	1:2.76	front	0.127	1.057	0.134	
836.60	190	GSM 850	GPRS	30.5	30.26	-0.15	10 mm	00276	3	1:2.76	bottom	0.117	1.057	0.124	
836.60	190	GSM 850	GPRS	30.5	30.26	-0.01	10 mm	00276	3	1:2.76	right	0.128	1.057	0.135	
1880.00	661	GSM 1900	GPRS	28.0	27.23	-0.01	10 mm	00185	3	1:2.76	back	0.436	1.194	0.521	
1880.00	661	GSM 1900	GPRS	28.0	27.23	0.05	10 mm	00185	3	1:2.76	front	0.138	1.194	0.165	
1850.20	512	GSM 1900	GPRS	28.0	27.23	-0.05	10 mm	00185	3	1:2.76	bottom	0.658	1.194	0.786	A28
1880.00	661	GSM 1900	GPRS	28.0	27.23	-0.04	10 mm	00185	3	1:2.76	bottom	0.639	1.194	0.763	
1909.80	810	GSM 1900	GPRS	28.0	27.12	-0.06	10 mm	00185	3	1:2.76	bottom	0.607	1.225	0.744	
1880.00	661	GSM 1900	GPRS	28.0	27.23	0.17	10 mm	00185	3	1:2.76	right	0.052	1.194	0.062	
1880.00	661	GSM 1900	GPRS	28.0	27.23	0.03	10 mm	00185	3	1:2.76	left	0.108	1.194	0.129	
836.60	4183	UMTS 850	RMC	25.5	25.41	-0.02	10 mm	11000	N/A	1:1	back	0.397	1.021	0.405	A29
836.60	4183	UMTS 850	RMC	25.5	25.41	-0.02	10 mm	11000	N/A	1:1	front	0.185	1.021	0.189	
836.60	4183	UMTS 850	RMC	25.5	25.41	0.00	10 mm	11000	N/A	1:1	bottom	0.178	1.021	0.182	
836.60	4183	UMTS 850	RMC	25.5	25.41	-0.05	10 mm	11000	N/A	1:1	right	0.207	1.021	0.211	
1732.40	1412	UMTS 1750	RMC	23.5	23.26	-0.01	10 mm	00177	N/A	1:1	back	0.573	1.057	0.606	
1732.40	1412	UMTS 1750	RMC	23.5	23.26	0.00	10 mm	00177	N/A	1:1	front	0.281	1.057	0.297	
1712.40	1312	UMTS 1750	RMC	23.5	23.26	-0.04	10 mm	00177	N/A	1:1	bottom	0.895	1.057	0.946	
1732.40	1412	UMTS 1750	RMC	23.5	23.26	-0.02	10 mm	00177	N/A	1:1	bottom	0.950	1.057	1.004	
1752.60	1513	UMTS 1750	RMC	23.5	23.28	0.01	10 mm	00177	N/A	1:1	bottom	0.968	1.052	1.018	A31
1732.40	1412	UMTS 1750	RMC	23.5	23.26	0.02	10 mm	00177	N/A	1:1	right	0.129	1.057	0.136	
1732.40	1412	UMTS 1750	RMC	23.5	23.26	0.03	10 mm	00177	N/A	1:1	left	0.242	1.057	0.256	
1752.60	1513	UMTS 1750	RMC	23.5	23.28	0.01	10 mm	00177	N/A	1:1	bottom	0.967	1.052	1.017	
1880.00	9400	UMTS 1900	RMC	23.5	23.46	-0.02	10 mm	00185	N/A	1:1	back	0.524	1.009	0.529	
1880.00	9400	UMTS 1900	RMC	23.5	23.46	-0.01	10 mm	00185	N/A	1:1	front	0.175	1.009	0.177	
1852.40	9262	UMTS 1900	RMC	23.5	23.50	-0.08	10 mm	00185	N/A	1:1	bottom	1.120	1.000	1.120	A33
1880.00	9400	UMTS 1900	RMC	23.5	23.46	-0.01	10 mm	00185	N/A	1:1	bottom	0.998	1.009	1.007	
1907.60	9538	UMTS 1900	RMC	23.5	23.32	-0.05	10 mm	00185	N/A	1:1	bottom	0.919	1.042	0.958	
1880.00	9400	UMTS 1900	RMC	23.5	23.46	0.02	10 mm	00185	N/A	1:1	right	0.064	1.009	0.065	
1880.00	9400	UMTS 1900	RMC	23.5	23.46	0.01	10 mm	00185	N/A	1:1	left	0.157	1.009	0.158	
1852.40	9262	UMTS 1900	RMC	23.5	23.50	-0.02	10 mm	00185	N/A	1:1	bottom	1.050	1.000	1.050	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.5	25.14	0.03	10 mm	10994	N/A	1:1	back	0.343	1.086	0.372	A35
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.5	25.14	0.05	10 mm	10994	N/A	1:1	front	0.137	1.086	0.149	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.5	25.14	0.04	10 mm	10994	N/A	1:1	bottom	0.185	1.086	0.201	
820.10	564	CDMA BC10 (\$90S)	EVDO Rev. 0	25.5	25.14	0.03	10 mm	10994	N/A	1:1	right	0.165	1.086	0.179	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.5	25.07	-0.04	10 mm	10994	N/A	1:1	back	0.433	1.104	0.478	A37
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.5	25.07	0.04	10 mm	10994	N/A	1:1	front	0.181	1.104	0.200	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.5	25.07	0.02	10 mm	10994	N/A	1:1	bottom	0.215	1.104	0.237	
836.52	384	CDMA BC0 (\$22H)	EVDO Rev. 0	25.5	25.07	0.01	10 mm	10994	N/A	1:1	right	0.215	1.104	0.237	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	23.10	0.02	10 mm	00185	N/A	1:1	back	0.425	1.096	0.466	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	23.10	0.01	10 mm	00185	N/A	1:1	front	0.147	1.096	0.161	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.5	23.15	-0.08	10 mm	00185	N/A	1:1	bottom	0.868	1.084	0.941	A39
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	23.10	-0.06	10 mm	00185	N/A	1:1	bottom	0.862	1.096	0.945	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.5	22.95	-0.03	10 mm	00185	N/A	1:1	bottom	0.772	1.135	0.876	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	23.10	0.01	10 mm	00185	N/A	1:1	right	0.055	1.096	0.060	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	23.10	0.02	10 mm	00185	N/A	1:1	left	0.162	1.096	0.178	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram								

Note: Blue entry represents variability measurements.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 138 of 187

Table 11-38
LTE Band 71 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
680.50	133297	Mid	LTE Band 71	20	25.5	25.16	0.04	0	00185	QPSK	1	0	10 mm	back	1:1	0.219	1.081	0.237	A40
680.50	133297	Mid	LTE Band 71	20	24.5	24.14	-0.02	1	00185	QPSK	50	0	10 mm	back	1:1	0.177	1.086	0.192	
680.50	133297	Mid	LTE Band 71	20	25.5	25.16	0.04	0	00185	QPSK	1	0	10 mm	front	1:1	0.115	1.081	0.124	
680.50	133297	Mid	LTE Band 71	20	24.5	24.14	0.01	1	00185	QPSK	50	0	10 mm	front	1:1	0.077	1.086	0.084	
680.50	133297	Mid	LTE Band 71	20	25.5	25.16	-0.05	0	00185	QPSK	1	0	10 mm	bottom	1:1	0.093	1.081	0.101	
680.50	133297	Mid	LTE Band 71	20	24.5	24.14	0.01	1	00185	QPSK	50	0	10 mm	bottom	1:1	0.061	1.086	0.066	
680.50	133297	Mid	LTE Band 71	20	25.5	25.16	-0.07	0	00185	QPSK	1	0	10 mm	right	1:1	0.102	1.081	0.110	
680.50	133297	Mid	LTE Band 71	20	24.5	24.14	0.02	1	00185	QPSK	50	0	10 mm	right	1:1	0.067	1.086	0.073	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-39
LTE Band 12 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
707.50	23095	Mid	LTE Band 12	10	25.5	25.07	0.02	0	11000	QPSK	1	0	10 mm	back	1:1	0.300	1.104	0.331	A41
707.50	23095	Mid	LTE Band 12	10	24.5	24.08	0.00	1	11000	QPSK	25	12	10 mm	back	1:1	0.190	1.102	0.209	
707.50	23095	Mid	LTE Band 12	10	25.5	25.07	-0.02	0	11000	QPSK	1	0	10 mm	front	1:1	0.115	1.104	0.127	
707.50	23095	Mid	LTE Band 12	10	24.5	24.08	0.02	1	11000	QPSK	25	12	10 mm	front	1:1	0.074	1.102	0.082	
707.50	23095	Mid	LTE Band 12	10	25.5	25.07	0.04	0	11000	QPSK	1	0	10 mm	bottom	1:1	0.121	1.104	0.134	
707.50	23095	Mid	LTE Band 12	10	24.5	24.08	0.09	1	11000	QPSK	25	12	10 mm	bottom	1:1	0.078	1.102	0.086	
707.50	23095	Mid	LTE Band 12	10	25.5	25.07	0.08	0	00268	QPSK	1	0	10 mm	right	1:1	0.102	1.104	0.113	
707.50	23095	Mid	LTE Band 12	10	24.5	24.08	-0.07	1	00268	QPSK	25	12	10 mm	right	1:1	0.067	1.102	0.074	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-40
LTE Band 13 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
782.00	23230	Mid	LTE Band 13	10	25.5	25.32	-0.01	0	11000	QPSK	1	0	10 mm	back	1:1	0.300	1.042	0.313	A42
782.00	23230	Mid	LTE Band 13	10	24.5	24.28	0.01	1	11000	QPSK	25	0	10 mm	back	1:1	0.188	1.052	0.198	
782.00	23230	Mid	LTE Band 13	10	25.5	25.32	0.10	0	11000	QPSK	1	0	10 mm	front	1:1	0.127	1.042	0.132	
782.00	23230	Mid	LTE Band 13	10	24.5	24.28	0.03	1	11000	QPSK	25	0	10 mm	front	1:1	0.074	1.052	0.078	
782.00	23230	Mid	LTE Band 13	10	25.5	25.32	-0.06	0	11000	QPSK	1	0	10 mm	bottom	1:1	0.188	1.042	0.196	
782.00	23230	Mid	LTE Band 13	10	24.5	24.28	0.02	1	11000	QPSK	25	0	10 mm	bottom	1:1	0.127	1.052	0.134	
782.00	23230	Mid	LTE Band 13	10	25.5	25.32	-0.06	0	11000	QPSK	1	0	10 mm	right	1:1	0.168	1.042	0.175	
782.00	23230	Mid	LTE Band 13	10	24.5	24.28	-0.01	1	11000	QPSK	25	0	10 mm	right	1:1	0.115	1.052	0.121	
MEASUREMENT RESULTS Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 139 of 187	

Table 11-41
LTE Band 26 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.00	-0.02	0	00177	QPSK	1	36	10 mm	back	1:1	0.303	1.122	0.340	A43
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.06	-0.07	1	00177	QPSK	36	37	10 mm	back	1:1	0.250	1.107	0.277	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.00	0.00	0	00177	QPSK	1	36	10 mm	front	1:1	0.154	1.122	0.173	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.06	0.03	1	00177	QPSK	36	37	10 mm	front	1:1	0.129	1.107	0.143	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.00	0.01	0	00177	QPSK	1	36	10 mm	bottom	1:1	0.169	1.122	0.190	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.06	0.00	1	00177	QPSK	36	37	10 mm	bottom	1:1	0.135	1.107	0.149	
831.50	26865	Mid	LTE Band 26 (Cell)	15	25.5	25.00	0.01	0	00177	QPSK	1	36	10 mm	right	1:1	0.193	1.122	0.217	
831.50	26865	Mid	LTE Band 26 (Cell)	15	24.5	24.06	0.00	1	00177	QPSK	36	37	10 mm	right	1:1	0.159	1.107	0.176	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11- 42
LTE Band 66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.14	-0.02	0	00177	QPSK	1	0	10 mm	back	1:1	0.463	1.086	0.503	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.32	0.01	0	00177	QPSK	50	25	10 mm	back	1:1	0.460	1.042	0.479	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.14	-0.05	0	00177	QPSK	1	0	10 mm	front	1:1	0.198	1.086	0.215	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.32	-0.03	0	00177	QPSK	50	25	10 mm	front	1:1	0.185	1.042	0.193	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	23.06	-0.02	0	00177	QPSK	1	50	10 mm	bottom	1:1	0.657	1.107	0.727	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.5	23.04	0.01	0	00177	QPSK	1	50	10 mm	bottom	1:1	0.669	1.112	0.744	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.14	-0.02	0	00177	QPSK	1	0	10 mm	bottom	1:1	0.695	1.086	0.755	A45
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.32	-0.01	0	00177	QPSK	50	25	10 mm	bottom	1:1	0.668	1.042	0.696	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.14	-0.02	0	00177	QPSK	1	0	10 mm	right	1:1	0.056	1.086	0.061	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.32	0.09	0	00177	QPSK	50	25	10 mm	right	1:1	0.053	1.042	0.055	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.14	0.12	0	00177	QPSK	1	0	10 mm	left	1:1	0.196	1.086	0.213	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	23.32	0.05	0	00177	QPSK	50	25	10 mm	left	1:1	0.197	1.042	0.205	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																			
Spatial Peak								Body											
Uncontrolled Exposure/General Population								1.6 W/kg (mW/g)											
								averaged over 1 gram											

FCC ID: ZNFF100TM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 140 of 187

Table 11-43
LTE Band 66 (AWS) Hotspot SAR – Ant 3

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.62	0.03	0	10994	QPSK	1	0	10 mm	back	1:1	0.202	1.225	0.247	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.84	0.00	0	10994	QPSK	50	25	10 mm	back	1:1	0.220	1.164	0.256	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.62	-0.06	0	10994	QPSK	1	0	10 mm	front	1:1	0.088	1.225	0.108	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.84	-0.09	0	10994	QPSK	50	25	10 mm	front	1:1	0.115	1.164	0.134	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.62	0.15	0	10994	QPSK	1	0	10 mm	bottom	1:1	0.156	1.225	0.191	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.84	-0.04	0	10994	QPSK	50	25	10 mm	bottom	1:1	0.159	1.164	0.185	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.56	0.03	0	10994	QPSK	1	50	10 mm	right	1:1	0.523	1.242	0.650	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	23.5	22.56	-0.02	0	10994	QPSK	1	50	10 mm	right	1:1	0.563	1.242	0.699	
1770.00	132572	High	LTE Band 66 (AWS)	20	23.5	22.62	-0.01	0	10994	QPSK	1	0	10 mm	right	1:1	0.566	1.225	0.693	
1720.00	132072	Low	LTE Band 66 (AWS)	20	23.5	22.84	-0.02	0	10994	QPSK	50	25	10 mm	right	1:1	0.552	1.164	0.643	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Table 11-44
LTE Band 66 (AWS) Hotspot SAR - Ant 3 for conditions with Inter-Band ULCA as SCC

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.														(W/kg)		(W/kg)		
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.03	0.03	0	00177	QPSK	1	50	10 mm	back	1:1	0.056	1.167	0.065	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.20	0.06	0	00177	QPSK	50	25	10 mm	back	1:1	0.060	1.122	0.067	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.03	0.02	0	00177	QPSK	1	50	10 mm	front	1:1	0.035	1.167	0.041	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.20	0.05	0	00177	QPSK	50	25	10 mm	front	1:1	0.038	1.122	0.043	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.03	0.02	0	00177	QPSK	1	50	10 mm	bottom	1:1	0.028	1.167	0.033	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.20	-0.03	0	00177	QPSK	50	25	10 mm	bottom	1:1	0.030	1.122	0.034	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.03	0.03	0	00177	QPSK	1	50	10 mm	right	1:1	0.139	1.167	0.162	
1720.00	132072	Low	LTE Band 66 (AWS)	20	17.7	17.20	0.01	0	00177	QPSK	50	25	10 mm	right	1:1	0.152	1.122	0.171	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 141 of 187

Table 11-45
LTE Band 25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.26	0.11	0	00177	QPSK	1	99	10 mm	back	1:1	0.449	1.057	0.475	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.32	0.13	0	00177	QPSK	50	0	10 mm	back	1:1	0.468	1.042	0.488	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.26	0.03	0	00177	QPSK	1	99	10 mm	front	1:1	0.170	1.057	0.180	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.32	0.00	0	00177	QPSK	50	0	10 mm	front	1:1	0.179	1.042	0.187	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.26	-0.03	0	00177	QPSK	1	99	10 mm	bottom	1:1	0.784	1.057	0.829	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.5	23.08	0.07	0	00177	QPSK	1	50	10 mm	bottom	1:1	0.858	1.102	0.946	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.5	23.12	0.03	0	00177	QPSK	1	0	10 mm	bottom	1:1	0.907	1.091	0.990	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.32	0.01	0	00177	QPSK	50	0	10 mm	bottom	1:1	0.755	1.042	0.787	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	23.5	23.22	-0.01	0	00177	QPSK	50	0	10 mm	bottom	1:1	0.845	1.067	0.902	
1905.00	26590	High	LTE Band 25 (PCS)	20	23.5	23.29	0.03	0	00177	QPSK	50	25	10 mm	bottom	1:1	0.938	1.050	0.985	A47
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.24	0.03	0	00177	QPSK	100	0	10 mm	bottom	1:1	0.889	1.062	0.944	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.26	0.08	0	00177	QPSK	1	99	10 mm	right	1:1	0.044	1.057	0.047	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.32	0.18	0	00177	QPSK	50	0	10 mm	right	1:1	0.039	1.042	0.041	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.26	-0.08	0	00177	QPSK	1	99	10 mm	left	1:1	0.118	1.057	0.125	
1860.00	26140	Low	LTE Band 25 (PCS)	20	23.5	23.32	0.00	0	00177	QPSK	50	0	10 mm	left	1:1	0.126	1.042	0.131	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram											

Table 11-46
LTE Band 2 (PCS) Hotspot SAR – Ant 3

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.61	-0.05	0	00185	QPSK	1	99	10 mm	back	1:1	0.185	1.227	0.227	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.63	-0.17	0	00185	QPSK	50	50	10 mm	back	1:1	0.193	1.222	0.236	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.61	0.01	0	00185	QPSK	1	99	10 mm	front	1:1	0.130	1.227	0.160	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.63	-0.20	0	00185	QPSK	50	50	10 mm	front	1:1	0.143	1.222	0.175	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.61	0.14	0	00185	QPSK	1	99	10 mm	bottom	1:1	0.081	1.227	0.099	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.63	-0.18	0	00185	QPSK	50	50	10 mm	bottom	1:1	0.084	1.222	0.103	
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.61	-0.09	0	00185	QPSK	1	99	10 mm	right	1:1	0.488	1.227	0.599	A49
1900.00	19100	High	LTE Band 2 (PCS)	20	23.5	22.63	-0.03	0	00185	QPSK	50	50	10 mm	right	1:1	0.483	1.222	0.590	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT																			
Spatial Peak								Body											
Uncontrolled Exposure/General Population								1.6 W/kg (mW/g)											
								averaged over 1 gram											

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 142 of 187	

Table 11-47
LTE Band 48 Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
MHz	Ch.	(W/kg)														(W/kg)			
3560.00	55340	Low	LTE Band 48	20	22.5	21.83	-0.09	0	00268	QPSK	1	99	10 mm	back	1:1.58	0.248	1.167	0.289	
3560.00	55340	Low	LTE Band 48	20	22.5	21.89	-0.11	0	00268	QPSK	50	25	10 mm	back	1:1.58	0.251	1.151	0.289	
3560.00	55340	Low	LTE Band 48	20	22.5	21.83	0.08	0	00268	QPSK	1	99	10 mm	front	1:1.58	0.108	1.167	0.126	
3560.00	55340	Low	LTE Band 48	20	22.5	21.89	0.09	0	00268	QPSK	50	25	10 mm	front	1:1.58	0.108	1.151	0.124	
3560.00	55340	Low	LTE Band 48	20	22.5	21.83	0.11	0	00268	QPSK	1	99	10 mm	top	1:1.58	0.098	1.167	0.114	
3560.00	55340	Low	LTE Band 48	20	22.5	21.89	-0.13	0	00268	QPSK	50	25	10 mm	top	1:1.58	0.098	1.151	0.113	
3560.00	55340	Low	LTE Band 48	20	22.5	21.83	-0.02	0	00268	QPSK	1	99	10 mm	right	1:1.58	0.328	1.167	0.383	A51
3560.00	55340	Low	LTE Band 48	20	22.5	21.89	-0.02	0	00268	QPSK	50	25	10 mm	right	1:1.58	0.326	1.151	0.375	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population									Body 1.6 W/kg (mW/g) averaged over 1 gram										

Table 11-48
LTE Band 41 Hotspot SAR

MEASUREMENT RESULTS																					
1 CC Uplink 2 CC Uplink, Power Class	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
		MHz	Ch.														(W/kg)		(W/kg)		
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	25.0	24.55	0.02	0	00185	QPSK	1	99	10 mm	back	1:1.58	0.295	1.109	0.327	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	24.5	23.50	-0.02	0.5	00185	QPSK	50	50	10 mm	back	1:1.58	0.177	1.259	0.223	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	25.0	24.55	-0.08	0	00185	QPSK	1	99	10 mm	front	1:1.58	0.127	1.109	0.141	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	24.5	23.50	-0.04	0.5	00185	QPSK	50	50	10 mm	front	1:1.58	0.077	1.259	0.097	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	25.0	24.55	-0.01	0	00185	QPSK	1	99	10 mm	bottom	1:1.58	0.450	1.109	0.499	A53
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	24.5	23.50	0.00	0.5	00185	QPSK	50	50	10 mm	bottom	1:1.58	0.316	1.259	0.398	
1 CC Uplink - Power Class 2	N/A	2549.50	40185	Low-Md	LTE Band 41	20	26.6	26.14	0.03	0	00185	QPSK	1	99	10 mm	bottom	1:2.31	0.428	1.112	0.476	
2 CC Uplink - Power Class 3	PCC	2549.50	40185	Low-Md	LTE Band 41	20	25.0	24.25	-0.02	0	00185	QPSK	1	99	10 mm	bottom	1:1.58	0.417	1.189	0.496	
	SCC	2569.30	40383											0							
2 CC Uplink - Power Class 2	PCC	2549.50	40185	Low-Md	LTE Band 41	20	26.6	25.71	0.00	0	00185	QPSK	1	99	10 mm	bottom	1:2.31	0.402	1.227	0.493	
	SCC	2569.30	40383											0							
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	25.0	24.55	-0.06	0	00185	QPSK	1	99	10 mm	right	1:1.58	0.103	1.109	0.114	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	24.5	23.50	0.13	0.5	00185	QPSK	50	50	10 mm	right	1:1.58	0.060	1.259	0.076	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	25.0	24.55	0.00	0	00185	QPSK	1	99	10 mm	left	1:1.58	0.075	1.109	0.083	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Md	LTE Band 41	20	24.5	23.50	0.00	0.5	00185	QPSK	50	50	10 mm	left	1:1.58	0.045	1.259	0.057	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Body											
Spatial Peak										1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population										averaged over 1 gram											

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 143 of 187

Table 11-49
NR Band n71 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
680.50	136100	Mid	NR Band n71	20	25.5	25.41	0.05	0	10994	DFT-S-OFDM	QPSK	1	1	10 mm	back	1:1	0.217	1.021	0.222	
680.50	136100	Mid	NR Band n71	20	25.5	25.25	0.02	0	10994	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.230	1.059	0.244	A54
680.50	136100	Mid	NR Band n71	20	24.0	23.58	0.02	1.5	10994	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.156	1.102	0.172	
680.50	136100	Mid	NR Band n71	20	25.5	25.41	-0.09	0	10994	DFT-S-OFDM	QPSK	1	1	10 mm	front	1:1	0.081	1.021	0.083	
680.50	136100	Mid	NR Band n71	20	25.5	25.25	0.07	0	10994	DFT-S-OFDM	QPSK	50	28	10 mm	front	1:1	0.087	1.059	0.092	
680.50	136100	Mid	NR Band n71	20	25.5	25.41	0.07	0	10994	DFT-S-OFDM	QPSK	1	1	10 mm	bottom	1:1	0.071	1.021	0.072	
680.50	136100	Mid	NR Band n71	20	25.5	25.25	0.04	0	10994	DFT-S-OFDM	QPSK	50	28	10 mm	bottom	1:1	0.081	1.059	0.086	
680.50	136100	Mid	NR Band n71	20	25.5	25.41	-0.01	0	10994	DFT-S-OFDM	QPSK	1	1	10 mm	right	1:1	0.071	1.021	0.072	
680.50	136100	Mid	NR Band n71	20	25.5	25.25	-0.04	0	10994	DFT-S-OFDM	QPSK	50	28	10 mm	right	1:1	0.077	1.059	0.082	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

Table 11-50
NR Band n5 (Cell) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #
																	(W/kg)		(W/kg)	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.38	-0.04	0	11000	DFT-S-OFDM	QPSK	1	1	10 mm	back	1:1	0.334	1.028	0.343	A55
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.23	0.05	0	11000	DFT-S-OFDM	QPSK	50	28	10 mm	back	1:1	0.343	1.064	0.365	
836.50	167300	Mid	NR Band n5 (Cell)	20	24.0	23.28	0.02	1.5	11000	CP-OFDM	QPSK	1	1	10 mm	back	1:1	0.233	1.180	0.275	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.38	-0.10	0	11000	DFT-S-OFDM	QPSK	1	1	10 mm	front	1:1	0.167	1.028	0.172	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.23	0.02	0	11000	DFT-S-OFDM	QPSK	50	28	10 mm	front	1:1	0.175	1.064	0.186	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.38	-0.01	0	11000	DFT-S-OFDM	QPSK	1	1	10 mm	bottom	1:1	0.184	1.028	0.189	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.23	0.02	0	11000	DFT-S-OFDM	QPSK	50	28	10 mm	bottom	1:1	0.181	1.064	0.193	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.38	-0.04	0	11000	DFT-S-OFDM	QPSK	1	1	10 mm	right	1:1	0.152	1.028	0.156	
836.50	167300	Mid	NR Band n5 (Cell)	20	25.5	25.23	-0.02	0	11000	DFT-S-OFDM	QPSK	50	28	10 mm	right	1:1	0.161	1.064	0.171	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

Table 11-51
NR Band n66 (AWS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.00	0.03	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.260	1.122	0.292	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.78	-0.11	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	back	1:1	0.242	1.180	0.286	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.00	0.02	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	front	1:1	0.152	1.122	0.171	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.78	-0.02	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	front	1:1	0.136	1.180	0.160	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.00	-0.07	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	bottom	1:1	0.212	1.122	0.238	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.78	-0.02	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	bottom	1:1	0.176	1.180	0.208	
1720.00	344000	Low	NR Band n66 (AWS)	20	23.5	22.77	0.05	0	11000	DFT-S-OFDM	QPSK	1	1	10 mm	right	1:1	0.585	1.183	0.692	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	23.00	0.01	0	11000	DFT-S-OFDM	QPSK	1	53	10 mm	right	1:1	0.607	1.122	0.681	A57
1770.00	354000	High	NR Band n66 (AWS)	20	23.5	22.76	0.00	0	11000	DFT-S-OFDM	QPSK	1	1	10 mm	right	1:1	0.558	1.186	0.662	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.78	-0.03	0	11000	DFT-S-OFDM	QPSK	50	0	10 mm	right	1:1	0.547	1.180	0.645	
1745.00	349000	Mid	NR Band n66 (AWS)	20	23.5	22.70	0.00	0	11000	CP-OFDM	QPSK	1	1	10 mm	right	1:1	0.580	1.202	0.697	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 144 of 187

Table 11-52
NR Band n25 (PCS) Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	Scaling Factor	Reported SAR (1g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.97	0.03	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	back	1:1	0.186	1.130	0.210	
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.80	-0.21	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	back	1:1	0.188	1.175	0.221	
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.97	0.03	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	front	1:1	0.144	1.130	0.163	
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.80	-0.13	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	front	1:1	0.132	1.175	0.155	
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.97	0.02	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	bottom	1:1	0.060	1.130	0.068	
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.80	-0.04	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	bottom	1:1	0.072	1.175	0.085	
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.97	0.00	0	10994	DFT-S-OFDM	QPSK	1	53	10 mm	right	1:1	0.571	1.130	0.645	
1860.00	372000	Low	NR Band n25 (PCS)	20	23.5	22.75	0.06	0	10994	DFT-S-OFDM	QPSK	50	56	10 mm	right	1:1	0.604	1.189	0.718	A59
1882.50	376500	Md	NR Band n25 (PCS)	20	23.5	22.80	0.09	0	10994	DFT-S-OFDM	QPSK	50	0	10 mm	right	1:1	0.590	1.175	0.693	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	22.72	0.06	0	10994	DFT-S-OFDM	QPSK	50	56	10 mm	right	1:1	0.576	1.197	0.689	
1905.00	381000	High	NR Band n25 (PCS)	20	23.5	22.82	0.05	0	10994	CP-OFDM	QPSK	1	1	10 mm	right	1:1	0.542	1.169	0.634	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak								Body 1.6 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 1 gram												

Table 11-53
NR Band n41 Hotspot SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Device Serial Number	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g) (W/kg)	Scaling Factor	Reported SAR (1g) (W/kg)	Plot #	
MHz	Ch.																			
2592.99	518598	Mid	NR Band n41	100	25.0	24.43	-0.07	0	00276	DFT-S-OFDM	QPSK	1	137	10 mm	back	1:4	0.115	1.140	0.131	
2592.99	518598	Mid	NR Band n41	100	25.0	24.36	-0.12	0	00276	DFT-S-OFDM	QPSK	135	0	10 mm	back	1:4	0.123	1.159	0.143	
2592.99	518598	Mid	NR Band n41	100	25.0	24.43	0.06	0	00276	DFT-S-OFDM	QPSK	1	137	10 mm	front	1:4	0.018	1.140	0.021	
2592.99	518598	Mid	NR Band n41	100	25.0	24.36	-0.06	0	00276	DFT-S-OFDM	QPSK	135	0	10 mm	front	1:4	0.033	1.159	0.038	
2592.99	518598	Mid	NR Band n41	100	25.0	24.43	0.08	0	00276	DFT-S-OFDM	QPSK	1	137	10 mm	bottom	1:4	0.015	1.140	0.017	
2592.99	518598	Mid	NR Band n41	100	25.0	24.36	-0.01	0	00276	DFT-S-OFDM	QPSK	135	0	10 mm	bottom	1:4	0.025	1.159	0.029	
2592.99	518598	Mid	NR Band n41	100	25.0	24.43	-0.03	0	00276	DFT-S-OFDM	QPSK	1	137	10 mm	right	1:4	0.121	1.140	0.138	
2592.99	518598	Mid	NR Band n41	100	25.0	24.36	-0.04	0	00276	DFT-S-OFDM	QPSK	135	0	10 mm	right	1:4	0.126	1.159	0.146	A61
2592.99	518598	Mid	NR Band n41	100	25.0	24.56	0.04	0	00276	CP-OFDM	QPSK	1	1	10 mm	right	1:4	0.122	1.107	0.135	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population								Body 1.6 W/kg (mW/g) averaged over 1 gram												

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 145 of 187

Table 11-54
WLAN Hotspot SAR

MEASUREMENT RESULTS																			
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (1g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.													W/kg	(W/kg)			(W/kg)	
2412	1	802.11b	DSSS	22	21.5	21.49	-0.20	10 mm	1	00375	1	back	99.2	0.440	0.291	1.002	1.008	0.294	
2412	1	802.11b	DSSS	22	21.5	21.49	-0.03	10 mm	1	00375	1	front	99.2	0.223	-	1.002	1.008	-	
2412	1	802.11b	DSSS	22	21.5	21.49	0.02	10 mm	1	00375	1	top	99.2	0.208	-	1.002	1.008	-	
2412	1	802.11b	DSSS	22	21.5	21.49	0.02	10 mm	1	00375	1	left	99.2	1.049	0.682	1.002	1.008	0.689	A63
2437	6	802.11b	DSSS	22	21.5	21.25	0.02	10 mm	1	00375	1	left	99.2	0.901	0.566	1.059	1.008	0.604	
2462	11	802.11b	DSSS	22	21.5	20.73	0.01	10 mm	1	00375	1	left	99.2	1.087	0.671	1.194	1.008	0.808	
2437	6	802.11b	DSSS	22	21.5	21.22	0.07	10 mm	2	00375	1	back	99.2	0.336	0.243	1.067	1.008	0.261	
2437	6	802.11b	DSSS	22	21.5	21.22	0.09	10 mm	2	00375	1	front	99.2	0.157	-	1.067	1.008	-	
2437	6	802.11b	DSSS	22	21.5	21.22	0.09	10 mm	2	00375	1	top	99.2	0.692	0.437	1.067	1.008	0.470	
2437	6	802.11b	DSSS	22	21.5	21.22	-0.03	10 mm	2	00375	1	left	99.2	0.099	-	1.067	1.008	-	
5200	40	802.11a	OFDM	20	20.0	19.73	-0.17	10 mm	1	00375	6	back	98.1	0.331	-	1.064	1.019	-	
5200	40	802.11a	OFDM	20	20.0	19.73	0.00	10 mm	1	00375	6	front	98.1	0.168	-	1.064	1.019	-	
5200	40	802.11a	OFDM	20	20.0	19.73	-0.10	10 mm	1	00375	6	top	98.1	0.251	-	1.064	1.019	-	
5200	40	802.11a	OFDM	20	20.0	19.73	0.02	10 mm	1	00375	6	left	98.1	0.334	0.139	1.064	1.019	0.151	
5200	40	802.11a	OFDM	20	20.0	19.98	0.10	10 mm	2	00375	6	back	98.1	0.230	0.103	1.005	1.019	0.105	
5200	40	802.11a	OFDM	20	20.0	19.98	0.00	10 mm	2	00375	6	front	98.1	0.050	-	1.005	1.019	-	
5200	40	802.11a	OFDM	20	20.0	19.98	-0.03	10 mm	2	00375	6	top	98.1	0.079	-	1.005	1.019	-	
5200	40	802.11a	OFDM	20	20.0	19.98	-0.08	10 mm	2	00375	6	left	98.1	0.164	-	1.005	1.019	-	
5785	157	802.11a	OFDM	20	20.0	19.66	0.00	10 mm	1	00375	6	back	98.1	0.238	-	1.081	1.019	-	
5785	157	802.11a	OFDM	20	20.0	19.66	0.00	10 mm	1	00375	6	front	98.1	0.077	-	1.081	1.019	-	
5785	157	802.11a	OFDM	20	20.0	19.66	-0.20	10 mm	1	00375	6	top	98.1	0.197	-	1.081	1.019	-	
5785	157	802.11a	OFDM	20	20.0	19.66	-0.04	10 mm	1	00375	6	left	98.1	0.420	0.179	1.081	1.019	0.197	
5785	157	802.11a	OFDM	20	20.0	19.84	-0.05	10 mm	2	00375	6	back	98.1	0.796	0.346	1.038	1.019	0.366	A64
5785	157	802.11a	OFDM	20	20.0	19.84	0.03	10 mm	2	00375	6	front	98.1	0.203	-	1.038	1.019	-	
5785	157	802.11a	OFDM	20	20.0	19.84	0.03	10 mm	2	00375	6	top	98.1	0.142	-	1.038	1.019	-	
5785	157	802.11a	OFDM	20	20.0	19.84	-0.10	10 mm	2	00375	6	left	98.1	0.592	-	1.038	1.019	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Body											
Spatial Peak								1.6 W/kg (mW/g)											
Uncontrolled Exposure/General Population								averaged over 1 gram											

Table 11-55
DSS Hotspot SAR

MEASUREMENT RESULTS																
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	SAR (1g)	Scaling Factor (Cond Power)	Scaling Factor (Duty Cycle)	Reported SAR (1g)	Plot #
MHz	Ch.											(W/kg)			(W/kg)	
2441	39	Bluetooth	FHSS	12.0	11.95	-0.02	10 mm	00375	1	back	76.8	0.025	1.012	1.302	0.033	
2441	39	Bluetooth	FHSS	12.0	11.95	-0.11	10 mm	00375	1	front	76.8	0.006	1.012	1.302	0.008	
2441	39	Bluetooth	FHSS	12.0	11.95	-0.01	10 mm	00375	1	top	76.8	0.009	1.012	1.302	0.012	
2441	39	Bluetooth	FHSS	12.0	11.95	-0.12	10 mm	00375	1	left	76.8	0.046	1.012	1.302	0.061	A66
ANSI / IEEE C95.1 1992 - SAFETY LIMIT							Body									
Spatial Peak							1.6 W/kg (mW/g)									
Uncontrolled Exposure/General Population							averaged over 1 gram									

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 146 of 187

11.3 Standalone Phablet SAR Data

Table 11-56
UMTS/CDMA Phablet SAR Data

MEASUREMENT RESULTS															
FREQUENCY		Mode	Service	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Mechanical Mode	Device Serial Number	Duty Cycle	Side	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.											(W/kg)		(W/kg)	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	0.05	3 mm	1	00177	1:1	back	1.520	1.009	1.534	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	0.01	0 mm	1	00177	1:1	front	1.080	1.009	1.090	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	-0.12	3 mm	1	00177	1:1	bottom	1.600	1.009	1.614	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	-0.01	0 mm	1	00177	1:1	right	0.259	1.009	0.261	
1732.40	1412	UMTS 1750	RMC	25.5	25.46	0.07	0 mm	1	00177	1:1	left	0.986	1.009	0.995	
1712.40	1312	UMTS 1750	RMC	23.5	23.26	0.01	0 mm	1	00177	1:1	back	1.960	1.057	2.072	
1732.40	1412	UMTS 1750	RMC	23.5	23.26	0.03	0 mm	1	00177	1:1	back	2.010	1.057	2.125	
1752.60	1513	UMTS 1750	RMC	23.5	23.28	0.05	0 mm	1	00177	1:1	back	2.120	1.052	2.230	A67
1752.60	1513	UMTS 1750	RMC	23.5	23.28	-0.02	0 mm	3	00177	1:1	back	1.990	1.052	2.093	
1732.40	1412	UMTS 1750	RMC	23.5	23.26	-0.09	0 mm	1	00177	1:1	bottom	1.830	1.057	1.934	
1752.60	1513	UMTS 1750	RMC	23.5	23.28	0.05	0 mm	1	00177	1:1	back	2.030	1.052	2.136	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.01	3 mm	1	00185	1:1	back	1.260	1.030	1.298	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	-0.02	0 mm	1	00185	1:1	front	0.962	1.030	0.991	
1852.40	9262	UMTS 1900	RMC	25.5	25.00	-0.07	3 mm	1	00185	1:1	bottom	2.300	1.122	2.581	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	-0.04	3 mm	1	00185	1:1	bottom	2.250	1.030	2.318	
1907.60	9538	UMTS 1900	RMC	25.5	25.27	-0.06	3 mm	1	00185	1:1	bottom	2.070	1.054	2.182	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.11	0 mm	1	00185	1:1	right	0.223	1.030	0.230	
1880.00	9400	UMTS 1900	RMC	25.5	25.37	0.04	0 mm	1	00185	1:1	left	0.767	1.030	0.790	
1852.40	9262	UMTS 1900	RMC	23.5	23.50	0.01	0 mm	1	00268	1:1	back	2.360	1.000	2.360	
1880.00	9400	UMTS 1900	RMC	23.5	23.46	0.04	0 mm	1	00268	1:1	back	2.590	1.009	2.613	
1907.60	9538	UMTS 1900	RMC	23.5	23.32	-0.05	0 mm	1	00268	1:1	back	2.610	1.042	2.720	
1852.40	9262	UMTS 1900	RMC	23.5	23.50	-0.11	0 mm	1	00268	1:1	bottom	2.690	1.000	2.690	
1880.00	9400	UMTS 1900	RMC	23.5	23.46	-0.20	0 mm	1	00268	1:1	bottom	2.840	1.009	2.866	A68
1880.00	9400	UMTS 1900	RMC	23.5	23.46	-0.04	0 mm	3	00268	1:1	bottom	2.710	1.009	2.734	
1907.60	9538	UMTS 1900	RMC	23.5	23.32	-0.10	0 mm	1	00268	1:1	bottom	2.550	1.042	2.657	
1880.00	9400	UMTS 1900	RMC	23.5	23.46	-0.02	0 mm	1	00268	1:1	bottom	2.750	1.009	2.775	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.93	0.02	3 mm	1	00185	1:1	back	1.390	1.140	1.585	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.93	0.07	0 mm	1	00185	1:1	front	0.667	1.140	0.760	
1851.25	25	PCS CDMA	EVDO Rev. 0	25.5	24.94	-0.06	3 mm	1	00185	1:1	bottom	1.960	1.138	2.230	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.93	-0.06	3 mm	1	00185	1:1	bottom	1.920	1.140	2.189	
1908.75	1175	PCS CDMA	EVDO Rev. 0	25.5	24.95	-0.08	3 mm	1	00185	1:1	bottom	1.740	1.135	1.975	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.93	-0.01	0 mm	1	00185	1:1	right	0.256	1.140	0.292	
1880.00	600	PCS CDMA	EVDO Rev. 0	25.5	24.93	0.06	0 mm	1	00185	1:1	left	0.720	1.140	0.821	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.5	23.15	-0.02	0 mm	1	00185	1:1	back	2.150	1.084	2.331	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	23.10	-0.01	0 mm	1	00185	1:1	back	2.350	1.096	2.576	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.5	22.95	-0.02	0 mm	1	00185	1:1	back	2.510	1.135	2.849	
1851.25	25	PCS CDMA	EVDO Rev. 0	23.5	23.15	-0.03	0 mm	1	00185	1:1	bottom	2.760	1.084	2.992	A69
1851.25	25	PCS CDMA	EVDO Rev. 0	23.5	23.15	-0.12	0 mm	3	00185	1:1	bottom	2.740	1.084	2.970	
1880.00	600	PCS CDMA	EVDO Rev. 0	23.5	23.10	-0.02	0 mm	1	00185	1:1	bottom	2.670	1.096	2.926	
1908.75	1175	PCS CDMA	EVDO Rev. 0	23.5	22.95	-0.04	0 mm	1	00185	1:1	bottom	2.470	1.135	2.803	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams								

Note 1: Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel)

Note 2: Blue entry represents variability measurements.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 147 of 187

Table 11-57
LTE Band 66 (AWS) Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
MHz	Ch.															(W/kg)		(W/kg)		
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	0.00	0	00177	QPSK	1	50	3 mm	back	1:1	1.390	1.089	1.514	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	0.01	1	00177	QPSK	50	25	3 mm	back	1:1	0.926	1.067	0.988	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	-0.02	0	00177	QPSK	1	50	0 mm	front	1:1	1.010	1.089	1.100	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	-0.02	1	00177	QPSK	50	25	0 mm	front	1:1	0.675	1.067	0.720	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	-0.01	0	00177	QPSK	1	50	3 mm	bottom	1:1	1.600	1.089	1.742	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	0.01	1	00177	QPSK	50	25	3 mm	bottom	1:1	1.090	1.067	1.163	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	-0.07	0	00177	QPSK	1	50	0 mm	right	1:1	0.181	1.089	0.197	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	0.03	1	00177	QPSK	50	25	0 mm	right	1:1	0.125	1.067	0.133	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	25.5	25.13	-0.02	0	00177	QPSK	1	50	0 mm	left	1:1	0.948	1.089	1.032	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	24.5	24.22	0.08	1	00177	QPSK	50	25	0 mm	left	1:1	0.632	1.067	0.674	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	23.14	-0.08	0	00177	QPSK	1	0	0 mm	back	1:1	1.720	1.086	1.868	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	23.32	-0.09	0	00177	QPSK	50	25	0 mm	back	1:1	1.790	1.042	1.865	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	23.14	-0.02	0	00177	QPSK	1	0	0 mm	bottom	1:1	1.710	1.086	1.857	
1720.00	132072	Low	LTE Band 66 (AWS)	20	1	23.5	23.22	0.17	0	00177	QPSK	50	25	0 mm	bottom	1:1	1.590	1.067	1.697	
1745.00	132322	Mid	LTE Band 66 (AWS)	20	1	23.5	23.22	0.15	0	00177	QPSK	50	25	0 mm	bottom	1:1	1.670	1.067	1.782	
1770.00	132572	High	LTE Band 66 (AWS)	20	1	23.5	23.32	-0.02	0	00177	QPSK	50	25	0 mm	bottom	1:1	1.840	1.042	1.917	A70
1770.00	132572	High	LTE Band 66 (AWS)	20	3	23.5	23.32	-0.02	0	00177	QPSK	50	25	0 mm	bottom	1:1	1.680	1.042	1.751	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population										Phablet 4.0 W/kg (mW/g) averaged over 10 grams										

Note: Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 148 of 187

Table 11-58
LTE Band 25 (PCS) Phablet SAR

MEASUREMENT RESULTS																				
FREQUENCY			Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #
MHz	Ch.																(W/kg)		(W/kg)	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	0.06	0	00177	QPSK	1	0	3 mm	back	1:1	1.480	1.007	1.490	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.07	1	00177	QPSK	50	0	3 mm	back	1:1	0.932	1.000	0.932	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	0.06	0	00177	QPSK	1	0	0 mm	front	1:1	0.661	1.007	0.666	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.02	1	00177	QPSK	50	0	0 mm	front	1:1	0.420	1.000	0.420	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	-0.04	0	00177	QPSK	1	0	3 mm	bottom	1:1	2.230	1.007	2.246	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	1	25.5	25.33	-0.03	0	00177	QPSK	1	0	3 mm	bottom	1:1	2.370	1.040	2.465	
1905.00	26590	High	LTE Band 25 (PCS)	20	1	25.5	25.06	-0.06	0	00177	QPSK	1	0	3 mm	bottom	1:1	2.430	1.107	2.690	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	-0.07	1	00177	QPSK	50	0	3 mm	bottom	1:1	1.430	1.000	1.430	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.39	-0.08	1	00177	QPSK	100	0	3 mm	bottom	1:1	1.430	1.026	1.467	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	0.03	0	00117	QPSK	1	0	0 mm	right	1:1	0.127	1.007	0.128	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.19	1	00117	QPSK	50	0	0 mm	right	1:1	0.076	1.000	0.076	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	25.5	25.47	0.01	0	00177	QPSK	1	0	0 mm	left	1:1	0.530	1.007	0.534	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	24.5	24.50	0.08	1	00177	QPSK	50	0	0 mm	left	1:1	0.392	1.000	0.392	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	23.5	23.26	-0.03	0	00177	QPSK	1	99	0 mm	back	1:1	2.140	1.057	2.262	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	1	23.5	23.08	-0.03	0	00177	QPSK	1	50	0 mm	back	1:1	2.210	1.102	2.435	
1905.00	26590	High	LTE Band 25 (PCS)	20	1	23.5	23.12	-0.03	0	00177	QPSK	1	0	0 mm	back	1:1	2.260	1.091	2.466	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	23.5	23.32	-0.03	0	00177	QPSK	50	0	0 mm	back	1:1	2.170	1.042	2.261	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	1	23.5	23.22	-0.03	0	00177	QPSK	50	0	0 mm	back	1:1	2.260	1.067	2.411	
1905.00	26590	High	LTE Band 25 (PCS)	20	1	23.5	23.29	-0.02	0	00177	QPSK	50	25	0 mm	back	1:1	2.360	1.050	2.478	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	23.5	23.24	-0.03	0	00177	QPSK	100	0	0 mm	back	1:1	2.180	1.062	2.315	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	23.5	23.26	0.03	0	00177	QPSK	1	99	0 mm	bottom	1:1	2.340	1.057	2.473	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	1	23.5	23.08	0.01	0	00177	QPSK	1	50	0 mm	bottom	1:1	2.410	1.102	2.656	
1905.00	26590	High	LTE Band 25 (PCS)	20	1	23.5	23.12	-0.09	0	00177	QPSK	1	0	0 mm	bottom	1:1	2.430	1.091	2.651	
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	23.5	23.32	-0.11	0	00177	QPSK	50	0	0 mm	bottom	1:1	2.380	1.042	2.480	
1882.50	26365	Mid	LTE Band 25 (PCS)	20	1	23.5	23.22	-0.04	0	00177	QPSK	50	0	0 mm	bottom	1:1	2.490	1.067	2.657	
1905.00	26590	High	LTE Band 25 (PCS)	20	1	23.5	23.29	0.03	0	00177	QPSK	50	25	0 mm	bottom	1:1	2.540	1.050	2.667	
1905.00	26590	High	LTE Band 25 (PCS)	20	3	23.5	23.29	-0.08	0	00177	QPSK	50	25	0 mm	bottom	1:1	2.720	1.050	2.856	A71
1860.00	26140	Low	LTE Band 25 (PCS)	20	1	23.5	23.24	-0.07	0	00177	QPSK	100	0	0 mm	bottom	1:1	2.410	1.062	2.559	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT										Phablet										
Spatial Peak										4.0 W/kg (mW/g)										
Uncontrolled Exposure/General Population										averaged over 10 grams										

Note: Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 149 of 187

Table 11-59
LTE Band 41 Phablet SAR

MEASUREMENT RESULTS																						
1 CC Uplink / 2 CC Uplink, Power Class	Component Carrier	FREQUENCY		Mode	Bandwidth [MHz]	Mechanical Mode	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	MPR [dB]	Serial Number	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	Scaling Factor	Reported SAR (10g)	Plot #	
		MHz	Ch.															(W/kg)		(W/kg)		
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	-0.07	0	00185	QPSK	1	50	3 mm	back	1:1.58	0.713	1.096	0.781	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	-0.08	1	00185	QPSK	50	25	3 mm	back	1:1.58	0.500	1.104	0.552	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	-0.09	0	00185	QPSK	1	50	0 mm	front	1:1.58	0.454	1.096	0.498	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	-0.09	1	00185	QPSK	50	25	0 mm	front	1:1.58	0.332	1.104	0.367	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	-0.05	0	00185	QPSK	1	50	3 mm	bottom	1:1.58	0.939	1.096	1.029	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	-0.06	1	00185	QPSK	50	25	3 mm	bottom	1:1.58	0.661	1.104	0.730	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	0.00	0	00185	QPSK	1	50	0 mm	right	1:1.58	0.307	1.096	0.336	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	0.00	1	00185	QPSK	50	25	0 mm	right	1:1.58	0.215	1.104	0.237	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.5	25.10	0.04	0	00185	QPSK	1	50	0 mm	left	1:1.58	0.320	1.096	0.351	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	24.07	0.14	1.0	00185	QPSK	50	25	0 mm	left	1:1.58	0.223	1.104	0.246	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	1	25.0	24.55	-0.07	0	00185	QPSK	1	99	0 mm	back	1:1.58	1.350	1.109	1.497	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	1	24.5	23.33	-0.07	0.5	00185	QPSK	50	50	0 mm	back	1:1.58	1.050	1.309	1.374	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	1	24.5	23.50	-0.02	0.5	00185	QPSK	50	50	0 mm	back	1:1.58	1.200	1.259	1.511	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	23.49	-0.13	0.5	00185	QPSK	50	25	0 mm	back	1:1.58	1.270	1.262	1.603	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	1	24.5	23.37	-0.04	0.5	00185	QPSK	50	25	0 mm	back	1:1.58	1.330	1.297	1.725	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	1	24.5	23.33	-0.07	0.5	00185	QPSK	50	25	0 mm	back	1:1.58	1.150	1.309	1.505	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	23.44	-0.10	0.5	00185	QPSK	100	0	0 mm	back	1:1.58	1.240	1.276	1.582	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	1	25.0	24.44	-0.05	0	00185	QPSK	1	50	0 mm	bottom	1:1.58	1.520	1.138	1.730	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low-Mid	LTE Band 41	20	1	25.0	24.55	-0.03	0	00185	QPSK	1	99	0 mm	bottom	1:1.58	1.610	1.109	1.785	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	25.0	24.40	-0.06	0	00185	QPSK	1	50	0 mm	bottom	1:1.58	1.590	1.148	1.825	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	1	25.0	24.21	-0.16	0	00185	QPSK	1	0	0 mm	bottom	1:1.58	1.780	1.199	2.134	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	1	25.0	24.47	-0.17	0	00185	QPSK	1	50	0 mm	bottom	1:1.58	1.770	1.130	2.000	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	3	25.0	24.47	-0.10	0	00185	QPSK	1	50	0 mm	bottom	1:1.58	2.130	1.130	2.407	A72
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	1	25.0	24.31	-0.06	0	00185	QPSK	1	50	0 mm	bottom	1:1.58	1.160	1.172	1.360	
1 CC Uplink - Power Class 3	N/A	2506.00	39750	Low	LTE Band 41	20	1	24.5	23.33	0.04	0.5	00185	QPSK	50	50	0 mm	bottom	1:1.58	1.410	1.309	1.846	
1 CC Uplink - Power Class 3	N/A	2549.50	40185	Low	LTE Band 41	20	1	24.5	23.50	0.00	0.5	00185	QPSK	50	50	0 mm	bottom	1:1.58	1.460	1.259	1.838	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	23.49	-0.02	0.5	00185	QPSK	50	25	0 mm	bottom	1:1.58	1.490	1.262	1.880	
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	1	24.5	23.37	-0.20	0.5	00185	QPSK	50	25	0 mm	bottom	1:1.58	1.340	1.297	1.738	
1 CC Uplink - Power Class 3	N/A	2680.00	41490	High	LTE Band 41	20	1	24.5	23.33	-0.09	0.5	00185	QPSK	50	25	0 mm	bottom	1:1.58	1.060	1.309	1.388	
1 CC Uplink - Power Class 3	N/A	2593.00	40620	Mid	LTE Band 41	20	1	24.5	23.44	-0.16	0.5	00185	QPSK	100	0	0 mm	bottom	1:1.58	1.480	1.276	1.888	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	1	26.6	25.91	-0.02	0	00185	QPSK	1	0	0 mm	bottom	1:2.31	1.850	1.172	2.168	
1 CC Uplink - Power Class 2	N/A	2636.50	41055	Mid-High	LTE Band 41	20	1	26.6	26.12	-0.02	0	00185	QPSK	1	50	0 mm	bottom	1:2.31	1.870	1.117	2.089	
2 CC Uplink - Power Class 3	PCC	2636.50	41055	Mid-High	LTE Band 41	20	1	25.0	24.00	-0.20	0	00185	QPSK	1	0	0 mm	bottom	1:1.58	1.700	1.259	2.140	
	SCC	2616.70	40857																			
2 CC Uplink - Power Class 2	PCC	2636.50	41055	Mid-High	LTE Band 41	20	1	26.6	25.81	-0.03	0	00185	QPSK	1	0	0 mm	bottom	1:2.31	1.760	1.199	2.110	
	SCC	2616.70	40857																			
1 CC Uplink - Power Class 3	N/A	2636.50	41055	Mid-High	LTE Band 41	20	3	25.0	24.47	0.03	0	00185	QPSK	1	50	0 mm	bottom	1:1.58	2.080	1.130	2.350	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT											Phablet 4.0 W/kg (mW/g) averaged over 10 grams											
Spatial Peak Uncontrolled Exposure/General Population																						

Note: Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel)

Note 2: Blue entry represents variability measurements.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 150 of 187	

**Table 11-60
WLAN Phablet SAR**

MEASUREMENT RESULTS																				
FREQUENCY		Mode	Service	Bandwidth [MHz]	Maximum Allowed Power [dBm]	Conducted Power [dBm]	Power Drift [dB]	Spacing	Antenna Config.	Mechanical Mode	Device Serial Number	Data Rate (Mbps)	Side	Duty Cycle (%)	Peak SAR of Area Scan	SAR (10g)	Scaling Factor (Power)	Scaling Factor (Duty Cycle)	Reported SAR (10g)	Plot #
MHz	Ch.														W/kg	(W/kg)			(W/kg)	
5280	56	802.11a	OFDM	20	20.0	19.33	0.02	0 mm	1	1	00375	6	back	98.1	2.826	0.339	1.167	1.019	0.403	
5280	56	802.11a	OFDM	20	20.0	19.33	0.05	0 mm	1	3	00375	6	back	98.1	2.429	0.262	1.167	1.019	0.312	
5280	56	802.11a	OFDM	20	20.0	19.33	0.00	0 mm	1	1	00375	6	front	98.1	1.176	-	1.167	1.019	-	
5280	56	802.11a	OFDM	20	20.0	19.33	0.04	0 mm	1	1	00375	6	top	98.1	1.535	-	1.167	1.019	-	
5280	56	802.11a	OFDM	20	20.0	19.33	0.00	0 mm	1	1	00375	6	left	98.1	3.623	0.286	1.167	1.019	0.340	
5280	56	802.11a	OFDM	20	20.0	19.94	0.00	0 mm	2	1	00375	6	back	98.1	3.308	0.641	1.014	1.019	0.662	A73
5280	56	802.11a	OFDM	20	20.0	19.94	0.06	0 mm	2	3	00375	6	back	98.1	3.023	0.600	1.014	1.019	0.620	
5280	56	802.11a	OFDM	20	20.0	19.94	0.00	0 mm	2	1	00375	6	front	98.1	0.985	-	1.014	1.019	-	
5280	56	802.11a	OFDM	20	20.0	19.94	-0.04	0 mm	2	1	00375	6	top	98.1	1.871	-	1.014	1.019	-	
5280	56	802.11a	OFDM	20	20.0	19.94	0.00	0 mm	2	1	00375	6	left	98.1	2.508	-	1.014	1.019	-	
5500	100	802.11a	OFDM	20	17.0	16.70	0.01	0 mm	1	1	00375	6	back	98.1	2.301	0.253	1.072	1.019	0.276	
5500	100	802.11a	OFDM	20	17.0	16.70	0.00	0 mm	1	1	00375	6	front	98.1	1.223	-	1.072	1.019	-	
5500	100	802.11a	OFDM	20	17.0	16.70	0.00	0 mm	1	1	00375	6	top	98.1	1.981	-	1.072	1.019	-	
5500	100	802.11a	OFDM	20	17.0	16.70	0.00	0 mm	1	1	00375	6	left	98.1	5.284	0.428	1.072	1.019	0.468	
5600	120	802.11a	OFDM	20	17.0	16.75	0.04	0 mm	2	1	00375	6	back	98.1	2.266	0.403	1.059	1.019	0.435	
5600	120	802.11a	OFDM	20	17.0	16.75	0.00	0 mm	2	1	00375	6	front	98.1	0.514	-	1.059	1.019	-	
5600	120	802.11a	OFDM	20	17.0	16.75	0.03	0 mm	2	1	00375	6	top	98.1	0.478	-	1.059	1.019	-	
5600	120	802.11a	OFDM	20	17.0	16.75	0.00	0 mm	2	1	00375	6	left	98.1	0.902	-	1.059	1.019	-	
ANSI / IEEE C95.1 1992 - SAFETY LIMIT								Phablet												
Spatial Peak								4.0 W/kg (mW/g)												
Uncontrolled Exposure/General Population								averaged over 10 grams												

Note: Green entry represents additional Phablet SAR Position (Mechanical Mode #3: Swivel)

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 151 of 187

11.4 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, and FCC KDB Publication 447498 D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The orange highlights throughout the report represents the highest SAR per FCC Equipment Class reflected on the FCC Grant.
5. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
6. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
7. Device was tested using a fixed spacing for body-worn accessory testing. A separation distance of 10 mm was considered because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this separation distance.
8. Per FCC KDB Publication 648474 D04v01r03, body-worn SAR was evaluated without a headset connected to the device. Since the standalone reported body-worn SAR was ≤ 1.2 W/kg, no additional body-worn SAR evaluations using a headset cable were required.
9. Per FCC KDB 865664 D01v01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 13 for variability analysis.
10. During SAR Testing for the Wireless Router conditions per FCC KDB Publication 941225 D06v02r01, the actual Portable Hotspot operation (with actual simultaneous transmission of a transmitter with WIFI) was not activated (See Section 6.7 for more details).
11. Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimension is > 160 mm and < 200 mm. Therefore, phablet SAR tests are required when wireless router mode does not apply or if wireless router 1g SAR > 1.2 W/kg. Additional SAR tests for phablet SAR were evaluated per KDB 616217 Section 6 (See Section 6.9 for more information)
12. Unless otherwise noted, when 10g SAR measurement is considered, a factor of 2.5 is applied to the 1g thresholds for the equivalent test cases.
13. This device uses Qualcomm Smart Transmit for 2G/3G/4G/5G operations to control and manage transmitting power in real time to ensure RF Exposure compliance. Per FCC Guidance, compliance was assessed at the minimum of the time averaged power and the maximum output power for each band/mode/exposure condition (DSI).
14. SAR with the additional mechanical mode (swivel) was measured for the configurations with the highest reported SAR for each wireless technology, frequency band, operating mode for head and phablet exposure conditions

GSM Test Notes:

1. Body-Worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn SAR.
2. Justification for reduced test configurations per KDB Publication 941225 D01v03r01 and October 2013 TCB Workshop Notes: The source-based frame-averaged output power was evaluated for all GPRS/EDGE slot configurations. The configuration with the highest target frame averaged output power was evaluated for hotspot SAR. When the maximum frame-averaged powers are equivalent across two or more slots (within 0.25 dB), the configuration with the most number of time slots was tested.
3. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 152 of 187

- GPRS was additionally evaluated for head and body-worn exposure conditions to address possible VoIP scenarios.

CDMA Notes:

- Head SAR for CDMA2000 mode was tested under RC3/SO55 per FCC KDB Publication 941225 D01v03r01.
- Body-Worn SAR was tested with 1x RTT with TDSO / SO32 FCH Only. EVDO Rev0 and RevA and TDSO / SO32 FCH+SCH SAR tests were not required per the 3G SAR Test Reduction Procedure in FCC KDB Publication 941225 D01v03r01.
- CDMA Wireless Router SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0 according to KDB 941225 D01v03r01 procedures for data devices. Wireless Router SAR tests for Subtype 2 of Rev.A and 1x RTT configurations were not required per the 3G SAR Test Reduction Policy in KDB Publication 941225 D01v03r01.
- Head SAR was additionally evaluated using EVDO Rev. A to determine compliance for VoIP operations.
- Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.
- CDMA 1X Advanced technology was not required for SAR since the maximum allowed output powers for 1X Advanced was not more than 0.25 dB higher than the maximum powers for 1X.

UMTS Notes:

- UMTS mode was tested under RMC 12.2 kbps with HSPA Inactive per KDB Publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
- Per FCC KDB Publication 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg for 1g evaluations then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the required test channels is $> \frac{1}{2}$ dB, instead of the middle channel, the highest output power channel was used.

LTE Notes:

- LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r04. The general test procedures used for testing can be found in Section 8.6.4.
- MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.
- A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).
- Per FCC KDB Publication 447498 D01v06, when the reported LTE Band 41 and LTE Band 48 SAR measured at the highest output power channel in a given a test configuration was > 0.6 W/kg for 1g evaluations, testing at the other channels was required for such test configurations.
- TDD LTE was tested per the guidance provided in FCC KDB Publication 941225 D05v02r04. Testing was performed using UL-DL configuration 0 with 6 UL subframes and 2 S subframes using extended cyclic prefix only and special subframe configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Section 4, the duty factor for special subframe configuration 6 using extended cyclic prefix is 0.633.
- Per KDB Publication 941225 D05Av01r02, SAR for downlink only LTE CA operations was not needed since the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.
- For LTE Band 41, per FCC guidance, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each exposure condition, the uplink CA scenario with two

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 153 of 187

component carriers was additionally tested for the configuration with the highest SAR when carrier aggregation was not active. The SCC was configured with the closest available contiguous channel. The two component carriers were configured so the resource blocks are physically allocated side by side to achieve the maximum output power.

8. This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per FCC Guidance, all SAR tests were performed using Power Class 3. SAR with power class 2 at the available duty factor was additionally performed for the power class 3 configuration with the highest SAR configuration for each exposure conditions. Please see Section 14 for linearity results.

NR Notes:

1. NR implementation is limited to EN-DC operations only, with the LTE Bands shown in the NR FR1 checklist acting as anchor bands. Per FCC guidance, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors.
2. Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
3. Simultaneous transmission analysis for EN-DC operations is addressed in the Part 2 Test Report (Serial Number can be found in the bibliography in section 1-12).
4. This device additionally supports some EN-DC conditions where additional LTE carriers are added on the downlink only.
5. Per FCC Guidance, NR modulations and RB Sizes/Offsets were selected for testing such that configurations with the highest output power were evaluated for SAR tests.

WLAN Notes:

1. For held-to-ear, hotspot, and phablet operations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g evaluations, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is ≤ 0.8 W/kg or all test positions are measured.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4 GHz WIFI single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR. See Section 8.7.5 for more information.
3. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5 GHz WIFI single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration adjusted by the ratio of maximum output powers is less than 1.2 W/kg for 1g evaluations. See Section 8.7.6 for more information.
4. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg for 1g evaluations or all test channels were measured.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated EMC test reports.
6. Per KDB Publication 248227 D01v02r02, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB Publication 447498 D01v06 by either evaluating the sum of the 1g SAR values of each antenna transmitting independently or making a SAR measurement with both antennas transmitting simultaneously. Please see Section 12 for complete analysis.

Bluetooth Notes

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element		SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 154 of 187	

1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests test mode type. Per October 2016 TCB Workshop Notes, the reported SAR was scaled to the 100% transmission duty factor to determine compliance. See Section 9.7 for the time domain plot and calculation for the duty factor of the device.
2. Head and Hotspot Bluetooth SAR were evaluated for BT BR tethering applications.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 155 of 187

12 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

12.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v06 are applicable to devices with built-in unlicensed transmitters such as 802.11 and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

12.2 Simultaneous Transmission Procedures

This device contains transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per FCC KDB Publication 447498 D01v06 4.3.2 and IEEE 1528-2013 Section 6.3.4.1.2, simultaneous transmission SAR test exclusion may be applied when the sum of the 1g SAR for all the simultaneous transmitting antennas in a specific physical test configuration is ≤ 1.6 W/kg. The different test positions in an exposure condition may be considered collectively to determine SAR test exclusion according to the sum of 1g or 10g SAR.

Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure from 4G (including scenarios with inter-band ULCA active) and time-averaged RF exposure from 5G NR. Smart Transmit algorithm controls the total RF exposure from both 4G and 5G NR and during inter-band ULCA active conditions to not exceed FCC limit. Therefore, simultaneous transmission compliance between 4G+5G operations (including scenarios with inter-band ULCA active) is demonstrated in the Qualcomm Part 2 Report during algorithm validation.

Per FCC KDB Publication 941225 D06v02r01, the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR (“-”).

(*) For test positions that were not required to be evaluated for WLAN SAR per FCC KDB publication 248227, the worst case WLAN SAR result for the applicable exposure conditions was used for simultaneous transmission analysis.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 156 of 187

12.3 Head SAR Simultaneous Transmission Analysis

Table 12-1
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	GSM/GPRS 850	0.038	0.576	0.783	0.614	0.821	1.397
	GSM/GPRS 1900	0.042	0.576	0.783	0.618	0.825	1.401
	UMTS 850	0.056	0.576	0.783	0.632	0.839	1.415
	UMTS 1750	0.078	0.576	0.783	0.654	0.861	1.437
	UMTS 1900	0.068	0.576	0.783	0.644	0.851	1.427
	CDMA BC10 (\$90S)	0.078	0.576	0.783	0.654	0.861	1.437
	CDMA BC0 (\$22H)	0.058	0.576	0.783	0.634	0.841	1.417
	PCS CDMA	0.065	0.576	0.783	0.641	0.848	1.424
	LTE Band 71	0.029	0.576	0.783	0.605	0.812	1.388
	LTE Band 12	0.047	0.576	0.783	0.623	0.830	1.406
	LTE Band 13	0.043	0.576	0.783	0.619	0.826	1.402
	LTE Band 26 (Cell)	0.054	0.576	0.783	0.630	0.837	1.413
	LTE Band 66 (AWS)	0.068	0.576	0.783	0.644	0.851	1.427
	LTE Band 66 (AWS) Ant 3	0.118	0.576	0.783	0.694	0.901	1.477
	LTE Band 25 (PCS)	0.049	0.576	0.783	0.625	0.832	1.408
	LTE Band 2 (PCS) Ant 3	0.103	0.576	0.783	0.679	0.886	1.462
	LTE Band 48	0.908	0.576	0.783	1.484	See Table Below	See Table Below
	LTE Band 41	0.063	0.576	0.783	0.639	0.846	1.422
	NR Band n71	0.037	0.576	0.783	0.613	0.820	1.396
	NR Band n5 (Cell)	0.048	0.576	0.783	0.624	0.831	1.407
	NR Band n66 (AWS)	0.148	0.576	0.783	0.724	0.931	1.507
	NR Band n25 (PCS)	0.167	0.576	0.783	0.743	0.950	1.526
	NR Band n41	0.054	0.576	0.783	0.630	0.837	1.413
Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	Right Cheek	0.159	0.576	0.783*	0.735	0.942	1.518
	Right Tilt	0.096	0.576*	0.783	0.672	0.879	1.455
	Left Cheek	0.908	0.108	0.166	1.016	1.074	1.182
	Left Tilt	0.261	0.045	0.173	0.306	0.434	0.479

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 157 of 187	

Table 12-2
Simultaneous Transmission Scenario with 5 GHz WLAN (Held to Ear)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Head SAR	GSM/GPRS 850	0.038	0.333	0.093	0.371	0.131	0.464
	GSM/GPRS 1900	0.042	0.333	0.093	0.375	0.135	0.468
	UMTS 850	0.056	0.333	0.093	0.389	0.149	0.482
	UMTS 1750	0.078	0.333	0.093	0.411	0.171	0.504
	UMTS 1900	0.068	0.333	0.093	0.401	0.161	0.494
	CDMA BC10 (§90S)	0.078	0.333	0.093	0.411	0.171	0.504
	CDMA BC0 (§22H)	0.058	0.333	0.093	0.391	0.151	0.484
	PCS CDMA	0.065	0.333	0.093	0.398	0.158	0.491
	LTE Band 71	0.029	0.333	0.093	0.362	0.122	0.455
	LTE Band 12	0.047	0.333	0.093	0.380	0.140	0.473
	LTE Band 13	0.043	0.333	0.093	0.376	0.136	0.469
	LTE Band 26 (Cell)	0.054	0.333	0.093	0.387	0.147	0.480
	LTE Band 66 (AWS)	0.068	0.333	0.093	0.401	0.161	0.494
	LTE Band 66 (AWS) Ant 3	0.118	0.333	0.093	0.451	0.211	0.544
	LTE Band 25 (PCS)	0.049	0.333	0.093	0.382	0.142	0.475
	LTE Band 2 (PCS) Ant 3	0.103	0.333	0.093	0.436	0.196	0.529
	LTE Band 48	0.908	0.333	0.093	1.241	1.001	1.334
	LTE Band 41	0.063	0.333	0.093	0.396	0.156	0.489
	NR Band n71	0.037	0.333	0.093	0.370	0.130	0.463
	NR Band n5 (Cell)	0.048	0.333	0.093	0.381	0.141	0.474
	NR Band n66 (AWS)	0.148	0.333	0.093	0.481	0.241	0.574
	NR Band n25 (PCS)	0.167	0.333	0.093	0.500	0.260	0.593
	NR Band n41	0.054	0.333	0.093	0.387	0.147	0.480

Table 12-3
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2 (Held to Ear)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM/GPRS 850	0.038	0.576	0.093	0.707
	GSM/GPRS 1900	0.042	0.576	0.093	0.711
	UMTS 850	0.056	0.576	0.093	0.725
	UMTS 1750	0.078	0.576	0.093	0.747
	UMTS 1900	0.068	0.576	0.093	0.737
	CDMA BC10 (§90S)	0.078	0.576	0.093	0.747
	CDMA BC0 (§22H)	0.058	0.576	0.093	0.727
	PCS CDMA	0.065	0.576	0.093	0.734
	LTE Band 71	0.029	0.576	0.093	0.698
	LTE Band 12	0.047	0.576	0.093	0.716
	LTE Band 13	0.043	0.576	0.093	0.712
	LTE Band 26 (Cell)	0.054	0.576	0.093	0.723
	LTE Band 66 (AWS)	0.068	0.576	0.093	0.737
	LTE Band 66 (AWS) Ant 3	0.118	0.576	0.093	0.787
	LTE Band 25 (PCS)	0.049	0.576	0.093	0.718
	LTE Band 2 (PCS) Ant 3	0.103	0.576	0.093	0.772
	LTE Band 48	0.908	0.576	0.093	1.577
	LTE Band 41	0.063	0.576	0.093	0.732
	NR Band n71	0.037	0.576	0.093	0.706
	NR Band n5 (Cell)	0.048	0.576	0.093	0.717
	NR Band n66 (AWS)	0.148	0.576	0.093	0.817
	NR Band n25 (PCS)	0.167	0.576	0.093	0.836
	NR Band n41	0.054	0.576	0.093	0.723

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by:
				Quality Manager
Document S/N:	Test Dates:	DUT Type:		Page 158 of 187
1M2006150095-01-R2.ZNF	07/09/20 – 08/31/20	Portable Handset		

Table 12-4
Simultaneous Transmission Scenario with Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Head SAR	GSM/GPRS 850	0.038	0.105	0.143
	GSM/GPRS 1900	0.042	0.105	0.147
	UMTS 850	0.056	0.105	0.161
	UMTS 1750	0.078	0.105	0.183
	UMTS 1900	0.068	0.105	0.173
	CDMA BC10 (\$90S)	0.078	0.105	0.183
	CDMA BC0 (\$22H)	0.058	0.105	0.163
	PCS CDMA	0.065	0.105	0.170
	LTE Band 71	0.029	0.105	0.134
	LTE Band 12	0.047	0.105	0.152
	LTE Band 13	0.043	0.105	0.148
	LTE Band 26 (Cell)	0.054	0.105	0.159
	LTE Band 66 (AWS)	0.068	0.105	0.173
	LTE Band 66 (AWS) Ant 3	0.118	0.105	0.223
	LTE Band 25 (PCS)	0.049	0.105	0.154
	LTE Band 2 (PCS) Ant 3	0.103	0.105	0.208
	LTE Band 48	0.908	0.105	1.013
	LTE Band 41	0.063	0.105	0.168
	NR Band n71	0.037	0.105	0.142
	NR Band n5 (Cell)	0.048	0.105	0.153
	NR Band n66 (AWS)	0.148	0.105	0.253
	NR Band n25 (PCS)	0.167	0.105	0.272
	NR Band n41	0.054	0.105	0.159

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 159 of 187

Table 12-5
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	GSM/GPRS 850	0.038	0.105	0.783	0.926
	GSM/GPRS 1900	0.042	0.105	0.783	0.930
	UMTS 850	0.056	0.105	0.783	0.944
	UMTS 1750	0.078	0.105	0.783	0.966
	UMTS 1900	0.068	0.105	0.783	0.956
	CDMA BC10 (\$90S)	0.078	0.105	0.783	0.966
	CDMA BC0 (\$22H)	0.058	0.105	0.783	0.946
	PCS CDMA	0.065	0.105	0.783	0.953
	LTE Band 71	0.029	0.105	0.783	0.917
	LTE Band 12	0.047	0.105	0.783	0.935
	LTE Band 13	0.043	0.105	0.783	0.931
	LTE Band 26 (Cell)	0.054	0.105	0.783	0.942
	LTE Band 66 (AWS)	0.068	0.105	0.783	0.956
	LTE Band 66 (AWS) Ant 3	0.118	0.105	0.783	1.006
	LTE Band 25 (PCS)	0.049	0.105	0.783	0.937
	LTE Band 2 (PCS) Ant 3	0.103	0.105	0.783	0.991
	LTE Band 48	0.908	0.105	0.783	See Table Below
	LTE Band 41	0.063	0.105	0.783	0.951
	NR Band n71	0.037	0.105	0.783	0.925
	NR Band n5 (Cell)	0.048	0.105	0.783	0.936
	NR Band n66 (AWS)	0.148	0.105	0.783	1.036
	NR Band n25 (PCS)	0.167	0.105	0.783	1.055
	NR Band n41	0.054	0.105	0.783	0.942
Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Head SAR	Right Cheek	0.159	0.105	0.783*	1.047
	Right Tilt	0.096	0.021	0.783	0.900
	Left Cheek	0.908	0.014	0.166	1.088
	Left Tilt	0.261	0.004	0.173	0.438

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 160 of 187

Table 12-6
Simultaneous Transmission Scenario with 5 GHz WLAN and Bluetooth (Held to Ear)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+4	1+2+3	1+2+3+4
Head SAR	GSM/GPRS 850	0.038	0.105	0.333	0.093	0.236	0.476	0.569
	GSM/GPRS 1900	0.042	0.105	0.333	0.093	0.240	0.480	0.573
	UMTS 850	0.056	0.105	0.333	0.093	0.254	0.494	0.587
	UMTS 1750	0.078	0.105	0.333	0.093	0.276	0.516	0.609
	UMTS 1900	0.068	0.105	0.333	0.093	0.266	0.506	0.599
	CDMA BC10 (\$90S)	0.078	0.105	0.333	0.093	0.276	0.516	0.609
	CDMA BC0 (\$22H)	0.058	0.105	0.333	0.093	0.256	0.496	0.589
	PCS CDMA	0.065	0.105	0.333	0.093	0.263	0.503	0.596
	LTE Band 71	0.029	0.105	0.333	0.093	0.227	0.467	0.560
	LTE Band 12	0.047	0.105	0.333	0.093	0.245	0.485	0.578
	LTE Band 13	0.043	0.105	0.333	0.093	0.241	0.481	0.574
	LTE Band 26 (Cell)	0.054	0.105	0.333	0.093	0.252	0.492	0.585
	LTE Band 66 (AWS)	0.068	0.105	0.333	0.093	0.266	0.506	0.599
	LTE Band 66 (AWS) Ant 3	0.118	0.105	0.333	0.093	0.316	0.556	0.649
	LTE Band 25 (PCS)	0.049	0.105	0.333	0.093	0.247	0.487	0.580
	LTE Band 2 (PCS) Ant 3	0.103	0.105	0.333	0.093	0.301	0.541	0.634
	LTE Band 48	0.908	0.105	0.333	0.093	1.106	1.346	1.439
	LTE Band 41	0.063	0.105	0.333	0.093	0.261	0.501	0.594
	NR Band n71	0.037	0.105	0.333	0.093	0.235	0.475	0.568
	NR Band n5 (Cell)	0.048	0.105	0.333	0.093	0.246	0.486	0.579
	NR Band n66 (AWS)	0.148	0.105	0.333	0.093	0.346	0.586	0.679
	NR Band n25 (PCS)	0.167	0.105	0.333	0.093	0.365	0.605	0.698
	NR Band n41	0.054	0.105	0.333	0.093	0.252	0.492	0.585

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 161 of 187

12.4 Body-Worn Simultaneous Transmission Analysis

Table 12-7
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM/GPRS 850	0.354	0.294	0.261	0.648	0.615	0.909
	GSM/GPRS 1900	0.521	0.294	0.261	0.815	0.782	1.076
	UMTS 850	0.405	0.294	0.261	0.699	0.666	0.960
	UMTS 1750	0.813	0.294	0.261	1.107	1.074	1.368
	UMTS 1900	0.768	0.294	0.261	1.062	1.029	1.323
	CDMA BC10 (\$90S)	0.385	0.294	0.261	0.679	0.646	0.940
	CDMA BC0 (\$22H)	0.496	0.294	0.261	0.790	0.757	1.051
	PCS CDMA	0.721	0.294	0.261	1.015	0.982	1.276
	LTE Band 71	0.237	0.294	0.261	0.531	0.498	0.792
	LTE Band 12	0.331	0.294	0.261	0.625	0.592	0.886
	LTE Band 13	0.313	0.294	0.261	0.607	0.574	0.868
	LTE Band 26 (Cell)	0.340	0.294	0.261	0.634	0.601	0.895
	LTE Band 66 (AWS)	0.882	0.294	0.261	1.176	1.143	1.437
	LTE Band 66 (AWS) Ant 3	0.256	0.294	0.261	0.550	0.517	0.811
	LTE Band 25 (PCS)	0.801	0.294	0.261	1.095	1.062	1.356
	LTE Band 2 (PCS) Ant 3	0.236	0.294	0.261	0.530	0.497	0.791
	LTE Band 48	0.289	0.294	0.261	0.583	0.550	0.844
	LTE Band 41	0.455	0.294	0.261	0.749	0.716	1.010
	NR Band n71	0.244	0.294	0.261	0.538	0.505	0.799
	NR Band n5 (Cell)	0.365	0.294	0.261	0.659	0.626	0.920
	NR Band n66 (AWS)	0.292	0.294	0.261	0.586	0.553	0.847
	NR Band n25 (PCS)	0.221	0.294	0.261	0.515	0.482	0.776
	NR Band n41	0.143	0.294	0.261	0.437	0.404	0.698

Table 12-8
Simultaneous Transmission Scenario with 5 GHz WLAN (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Body-Worn SAR	GSM/GPRS 850	0.354	0.117	0.366	0.471	0.720	0.837
	GSM/GPRS 1900	0.521	0.117	0.366	0.638	0.887	1.004
	UMTS 850	0.405	0.117	0.366	0.522	0.771	0.888
	UMTS 1750	0.813	0.117	0.366	0.930	1.179	1.296
	UMTS 1900	0.768	0.117	0.366	0.885	1.134	1.251
	CDMA BC10 (\$90S)	0.385	0.117	0.366	0.502	0.751	0.868
	CDMA BC0 (\$22H)	0.496	0.117	0.366	0.613	0.862	0.979
	PCS CDMA	0.721	0.117	0.366	0.838	1.087	1.204
	LTE Band 71	0.237	0.117	0.366	0.354	0.603	0.720
	LTE Band 12	0.331	0.117	0.366	0.448	0.697	0.814
	LTE Band 13	0.313	0.117	0.366	0.430	0.679	0.796
	LTE Band 26 (Cell)	0.340	0.117	0.366	0.457	0.706	0.823
	LTE Band 66 (AWS)	0.882	0.117	0.366	0.999	1.248	1.365
	LTE Band 66 (AWS) Ant 3	0.256	0.117	0.366	0.373	0.622	0.739
	LTE Band 25 (PCS)	0.801	0.117	0.366	0.918	1.167	1.284
	LTE Band 2 (PCS) Ant 3	0.236	0.117	0.366	0.353	0.602	0.719
	LTE Band 48	0.289	0.117	0.366	0.406	0.655	0.772
	LTE Band 41	0.455	0.117	0.366	0.572	0.821	0.938
	NR Band n71	0.244	0.117	0.366	0.361	0.610	0.727
	NR Band n5 (Cell)	0.365	0.117	0.366	0.482	0.731	0.848
	NR Band n66 (AWS)	0.292	0.117	0.366	0.409	0.658	0.775
	NR Band n25 (PCS)	0.221	0.117	0.366	0.338	0.587	0.704
	NR Band n41	0.143	0.117	0.366	0.260	0.509	0.626

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 162 of 187

Table 12-9
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2
(Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn SAR	GSM/GPRS 850	0.354	0.294	0.366	1.014
	GSM/GPRS 1900	0.521	0.294	0.366	1.181
	UMTS 850	0.405	0.294	0.366	1.065
	UMTS 1750	0.813	0.294	0.366	1.473
	UMTS 1900	0.768	0.294	0.366	1.428
	CDMA BC10 (\$90S)	0.385	0.294	0.366	1.045
	CDMA BC0 (\$22H)	0.496	0.294	0.366	1.156
	PCS CDMA	0.721	0.294	0.366	1.381
	LTE Band 71	0.237	0.294	0.366	0.897
	LTE Band 12	0.331	0.294	0.366	0.991
	LTE Band 13	0.313	0.294	0.366	0.973
	LTE Band 26 (Cell)	0.340	0.294	0.366	1.000
	LTE Band 66 (AWS)	0.882	0.294	0.366	1.542
	LTE Band 66 (AWS) Ant 3	0.256	0.294	0.366	0.916
	LTE Band 25 (PCS)	0.801	0.294	0.366	1.461
	LTE Band 2 (PCS) Ant 3	0.236	0.294	0.366	0.896
	LTE Band 48	0.289	0.294	0.366	0.949
	LTE Band 41	0.455	0.294	0.366	1.115
	NR Band n71	0.244	0.294	0.366	0.904
	NR Band n5 (Cell)	0.365	0.294	0.366	1.025
	NR Band n66 (AWS)	0.292	0.294	0.366	0.952
	NR Band n25 (PCS)	0.221	0.294	0.366	0.881
	NR Band n41	0.143	0.294	0.366	0.803

Table 12-10
Simultaneous Transmission Scenario with Bluetooth (Body-Worn at 1.0 cm)

	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Body-Worn SAR	GSM/GPRS 850	0.354	0.033	0.387
	GSM/GPRS 1900	0.521	0.033	0.554
	UMTS 850	0.405	0.033	0.438
	UMTS 1750	0.813	0.033	0.846
	UMTS 1900	0.768	0.033	0.801
	CDMA BC10 (\$90S)	0.385	0.033	0.418
	CDMA BC0 (\$22H)	0.496	0.033	0.529
	PCS CDMA	0.721	0.033	0.754
	LTE Band 71	0.237	0.033	0.270
	LTE Band 12	0.331	0.033	0.364
	LTE Band 13	0.313	0.033	0.346
	LTE Band 26 (Cell)	0.340	0.033	0.373
	LTE Band 66 (AWS)	0.882	0.033	0.915
	LTE Band 66 (AWS) Ant 3	0.256	0.033	0.289
	LTE Band 25 (PCS)	0.801	0.033	0.834
	LTE Band 2 (PCS) Ant 3	0.236	0.033	0.269
	LTE Band 48	0.289	0.033	0.322
	LTE Band 41	0.455	0.033	0.488
	NR Band n71	0.244	0.033	0.277
	NR Band n5 (Cell)	0.365	0.033	0.398
	NR Band n66 (AWS)	0.292	0.033	0.325
	NR Band n25 (PCS)	0.221	0.033	0.254
	NR Band n41	0.143	0.033	0.176

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 163 of 187

Table 12-11
Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Body-Worn SAR	GSM/GPRS 850	0.354	0.033	0.261	0.648
	GSM/GPRS 1900	0.521	0.033	0.261	0.815
	UMTS 850	0.405	0.033	0.261	0.699
	UMTS 1750	0.813	0.033	0.261	1.107
	UMTS 1900	0.768	0.033	0.261	1.062
	CDMA BC10 (\$90S)	0.385	0.033	0.261	0.679
	CDMA BC0 (\$22H)	0.496	0.033	0.261	0.790
	PCS CDMA	0.721	0.033	0.261	1.015
	LTE Band 71	0.237	0.033	0.261	0.531
	LTE Band 12	0.331	0.033	0.261	0.625
	LTE Band 13	0.313	0.033	0.261	0.607
	LTE Band 26 (Cell)	0.340	0.033	0.261	0.634
	LTE Band 66 (AWS)	0.882	0.033	0.261	1.176
	LTE Band 66 (AWS) Ant 3	0.256	0.033	0.261	0.550
	LTE Band 25 (PCS)	0.801	0.033	0.261	1.095
	LTE Band 2 (PCS) Ant 3	0.236	0.033	0.261	0.530
	LTE Band 48	0.289	0.033	0.261	0.583
	LTE Band 41	0.455	0.033	0.261	0.749
	NR Band n71	0.244	0.033	0.261	0.538
	NR Band n5 (Cell)	0.365	0.033	0.261	0.659
	NR Band n66 (AWS)	0.292	0.033	0.261	0.586
	NR Band n25 (PCS)	0.221	0.033	0.261	0.515
	NR Band n41	0.143	0.033	0.261	0.437

Table 12-12
Simultaneous Transmission Scenario with 5 GHz WLAN and Bluetooth (Body-Worn at 1.0 cm)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3	1+2+4	1+2+3+4
Body-Worn SAR	GSM/GPRS 850	0.354	0.033	0.117	0.366	0.504	0.753	0.870
	GSM/GPRS 1900	0.521	0.033	0.117	0.366	0.671	0.920	1.037
	UMTS 850	0.405	0.033	0.117	0.366	0.555	0.804	0.921
	UMTS 1750	0.813	0.033	0.117	0.366	0.963	1.212	1.329
	UMTS 1900	0.768	0.033	0.117	0.366	0.918	1.167	1.284
	CDMA BC10 (\$90S)	0.385	0.033	0.117	0.366	0.535	0.784	0.901
	CDMA BC0 (\$22H)	0.496	0.033	0.117	0.366	0.646	0.895	1.012
	PCS CDMA	0.721	0.033	0.117	0.366	0.871	1.120	1.237
	LTE Band 71	0.237	0.033	0.117	0.366	0.387	0.636	0.753
	LTE Band 12	0.331	0.033	0.117	0.366	0.481	0.730	0.847
	LTE Band 13	0.313	0.033	0.117	0.366	0.463	0.712	0.829
	LTE Band 26 (Cell)	0.340	0.033	0.117	0.366	0.490	0.739	0.856
	LTE Band 66 (AWS)	0.882	0.033	0.117	0.366	1.032	1.281	1.398
	LTE Band 66 (AWS) Ant 3	0.256	0.033	0.117	0.366	0.406	0.655	0.772
	LTE Band 25 (PCS)	0.801	0.033	0.117	0.366	0.951	1.200	1.317
	LTE Band 2 (PCS) Ant 3	0.236	0.033	0.117	0.366	0.386	0.635	0.752
	LTE Band 48	0.289	0.033	0.117	0.366	0.439	0.688	0.805
	LTE Band 41	0.455	0.033	0.117	0.366	0.605	0.854	0.971
	NR Band n71	0.244	0.033	0.117	0.366	0.394	0.643	0.760
	NR Band n5 (Cell)	0.365	0.033	0.117	0.366	0.515	0.764	0.881
	NR Band n66 (AWS)	0.292	0.033	0.117	0.366	0.442	0.691	0.808
	NR Band n25 (PCS)	0.221	0.033	0.117	0.366	0.371	0.620	0.737
	NR Band n41	0.143	0.033	0.117	0.366	0.293	0.542	0.659

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 164 of 187

12.5 Hotspot SAR Simultaneous Transmission Analysis

Table 12-13
Simultaneous Transmission Scenario with 2.4 GHz WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G/5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot	GPRS 850	0.354	0.808	0.470	1.162	0.824	See Table Below
	GPRS 1900	0.786	0.808	0.470	1.594	1.256	See Table Below
	UMTS 850	0.405	0.808	0.470	1.213	0.875	See Table Below
	UMTS 1750	1.018	0.808	0.470	See Table Below	1.488	See Table Below
	UMTS 1900	1.120	0.808	0.470	See Table Below	1.590	See Table Below
	EVDO BC10 (\$90S)	0.372	0.808	0.470	1.180	0.842	See Table Below
	EVDO BC0 (\$22H)	0.478	0.808	0.470	1.286	0.948	See Table Below
	PCS EVDO	0.945	0.808	0.470	See Table Below	1.415	See Table Below
	LTE Band 71	0.237	0.808	0.470	1.045	0.707	1.515
	LTE Band 12	0.331	0.808	0.470	1.139	0.801	See Table Below
	LTE Band 13	0.313	0.808	0.470	1.121	0.783	1.591
	LTE Band 26 (Cell)	0.340	0.808	0.470	1.148	0.810	See Table Below
	LTE Band 66 (AWS)	0.755	0.808	0.470	1.563	1.225	See Table Below
	LTE Band 66 (AWS) Ant 3	0.699	0.808	0.470	1.507	1.169	See Table Below
	LTE Band 25 (PCS)	0.990	0.808	0.470	See Table Below	1.460	See Table Below
	LTE Band 2 (PCS) Ant 3	0.599	0.808	0.470	1.407	1.069	See Table Below
	LTE Band 48	0.383	0.808	0.470	1.191	0.853	See Table Below
	LTE Band 41	0.499	0.808	0.470	1.307	0.969	See Table Below
	NR Band n71	0.244	0.808	0.470	1.052	0.714	1.522
	NR Band n5 (Cell)	0.365	0.808	0.470	1.173	0.835	See Table Below
	NR Band n66 (AWS)	0.697	0.808	0.470	1.505	1.167	See Table Below
	NR Band n25 (PCS)	0.718	0.808	0.470	1.526	1.188	See Table Below
	NR Band n41	0.146	0.808	0.470	0.954	0.616	1.424
Simult Tx	Configuration	GPRS 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2+3		
Hotspot SAR	Back	0.354	0.294	0.261	0.909		
	Front	0.134	0.808*	0.470*	1.412		
	Top	-	0.808*	0.470	1.278		
	Bottom	0.124	-	-	0.124		
	Right	0.135	-	-	0.135		
	Left	-	0.808	0.470*	1.278		
Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2+3		
Hotspot SAR	Back	0.521	0.294	0.261	1.076		
	Front	0.165	0.808*	0.470*	1.443		
	Top	-	0.808*	0.470	1.278		
	Bottom	0.786	-	-	0.786		
	Right	0.062	-	-	0.062		
	Left	0.129	0.808	0.470*	1.407		
Simult Tx	Configuration	UMTS 850 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2+3		
Hotspot SAR	Back	0.405	0.294	0.261	0.960		
	Front	0.189	0.808*	0.470*	1.467		
	Top	-	0.808*	0.470	1.278		
	Bottom	0.182	-	-	0.182		
	Right	0.211	-	-	0.211		
	Left	-	0.808	0.470*	1.278		
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot SAR	Back	0.606	0.294	0.261	0.900	0.867	1.161
	Front	0.297	0.808*	0.470*	1.105	0.767	1.575
	Top	-	0.808*	0.470	0.808	0.470	1.278
	Bottom	1.018	-	-	1.018	1.018	1.018
	Right	0.136	-	-	0.136	0.136	0.136
	Left	0.256	0.808	0.470*	1.064	0.726	1.534

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 165 of 187	

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)			Simult Tx	Configuration	EVDO BC10 (\$90S) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2	1+3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.529	0.294	0.261	0.823	0.790	1.084	Hotspot SAR	Back	0.372	0.294	0.261	0.927
	Front	0.177	0.808*	0.470*	0.985	0.647	1.455		Front	0.149	0.808*	0.470*	1.427
	Top	-	0.808*	0.470	0.808	0.470	1.278		Top	-	0.808*	0.470	1.278
	Bottom	1.120	-	-	1.120	1.120	1.120		Bottom	0.201	-	-	0.201
	Right	0.065	-	-	0.065	0.065	0.065		Right	0.179	-	-	0.179
	Left	0.158	0.808	0.470*	0.966	0.628	1.436		Left	-	0.808	0.470*	1.278

Simult Tx	Configuration	EVDO BC0 (\$22H) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2+3			1	2	3	1+2	1+3	1+2+3
Hotspot SAR	Back	0.478	0.294	0.261	1.033	Hotspot SAR	Back	0.466	0.294	0.261	0.760	0.727	1.021
	Front	0.200	0.808*	0.470*	1.478		Front	0.161	0.808*	0.470*	0.969	0.631	1.439
	Top	-	0.808*	0.470	1.278		Top	-	0.808*	0.470	0.808	0.470	1.278
	Bottom	0.237	-	-	0.237		Bottom	0.945	-	-	0.945	0.945	0.945
	Right	0.237	-	-	0.237		Right	0.060	-	-	0.060	0.060	0.060
	Left	-	0.808	0.470*	1.278		Left	0.178	0.808	0.470*	0.986	0.648	1.456

Simult Tx	Configuration	LTE Band 12 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 26 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.331	0.294	0.261	0.886	Hotspot SAR	Back	0.340	0.294	0.261	0.895
	Front	0.127	0.808*	0.470*	1.405		Front	0.173	0.808*	0.470*	1.451
	Top	-	0.808*	0.470	1.278		Top	-	0.808*	0.470	1.278
	Bottom	0.134	-	-	0.134		Bottom	0.190	-	-	0.190
	Right	0.113	-	-	0.113		Right	0.217	-	-	0.217
	Left	-	0.808	0.470*	1.278		Left	-	0.808	0.470*	1.278

Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 66 (AWS) Ant 3 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.503	0.294	0.261	1.058	Hotspot SAR	Back	0.256	0.294	0.261	0.811
	Front	0.215	0.808*	0.470*	1.493		Front	0.134	0.808*	0.470*	1.412
	Top	-	0.808*	0.470	1.278		Top	-	0.808*	0.470	1.278
	Bottom	0.755	-	-	0.755		Bottom	0.191	-	-	0.191
	Right	0.061	-	-	0.061		Right	0.699	-	-	0.699
	Left	0.213	0.808	0.470*	1.491		Left	-	0.808	0.470*	1.278

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)			Simult Tx	Configuration	LTE Band 2 (PCS) Ant 3 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2	1+3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.488	0.294	0.261	0.782	0.749	1.043	Hotspot SAR	Back	0.236	0.294	0.261	0.791
	Front	0.187	0.808*	0.470*	0.995	0.657	1.465		Front	0.175	0.808*	0.470*	1.453
	Top	-	0.808*	0.470	0.808	0.470	1.278		Top	-	0.808*	0.470	1.278
	Bottom	0.990	-	-	0.990	0.990	0.990		Bottom	0.103	-	-	0.103
	Right	0.047	-	-	0.047	0.047	0.047		Right	0.599	-	-	0.599
	Left	0.131	0.808	0.470*	0.939	0.601	1.409		Left	-	0.808	0.470*	1.278

Simult Tx	Configuration	LTE Band 48 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.289	0.294	0.261	0.844	Hotspot SAR	Back	0.327	0.294	0.261	0.882
	Front	0.126	0.808*	0.470*	1.404		Front	0.141	0.808*	0.470*	1.419
	Top	0.114	0.808*	0.470	1.392		Top	-	0.808*	0.470	1.278
	Bottom	0.383	-	-	0.383		Bottom	0.469	-	-	0.499
	Right	0.114	-	-	0.114		Right	0.114	-	-	0.114
	Left	-	0.808	0.470*	1.278		Left	0.083	0.808	0.470*	1.361

Simult Tx	Configuration	NR Band n5 (Cell) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Hotspot SAR	Back	0.365	0.294	0.261	0.920	Hotspot SAR	Back	0.292	0.294	0.261	0.847
	Front	0.186	0.808*	0.470*	1.464		Front	0.171	0.808*	0.470*	1.449
	Top	-	0.808*	0.470	1.278		Top	-	0.808*	0.470	1.278
	Bottom	0.193	-	-	0.193		Bottom	0.238	-	-	0.238
	Right	0.171	-	-	0.171		Right	0.697	-	-	0.697
	Left	-	0.808	0.470*	1.278		Left	-	0.808	0.470*	1.278

Simult Tx	Configuration	NR Band n25 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.221	0.294	0.261	0.776
	Front	0.163	0.808*	0.470*	1.441
	Top	-	0.808*	0.470	1.278
	Bottom	0.085	-	-	0.085
	Right	0.718	-	-	0.718
	Left	-	0.808	0.470*	1.278

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 166 of 187

Table 12-14
Simultaneous Transmission Scenario with 5 GHz WLAN (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Hotspot	GPRS 850	0.354	0.197	0.366	0.551	0.720	0.917
	GPRS 1900	0.786	0.197	0.366	0.983	1.152	1.349
	UMTS 850	0.405	0.197	0.366	0.602	0.771	0.968
	UMTS 1750	1.018	0.197	0.366	1.215	1.384	1.581
	UMTS 1900	1.120	0.197	0.366	1.317	1.486	See Table Below
	EVDO BC10 (\$90S)	0.372	0.197	0.366	0.569	0.738	0.935
	EVDO BC0 (\$22H)	0.478	0.197	0.366	0.675	0.844	1.041
	PCS EVDO	0.945	0.197	0.366	1.142	1.311	1.508
	LTE Band 71	0.237	0.197	0.366	0.434	0.603	0.800
	LTE Band 12	0.331	0.197	0.366	0.528	0.697	0.894
	LTE Band 13	0.313	0.197	0.366	0.510	0.679	0.876
	LTE Band 26 (Cell)	0.340	0.197	0.366	0.537	0.706	0.903
	LTE Band 66 (AWS)	0.755	0.197	0.366	0.952	1.121	1.318
	LTE Band 66 (AWS) Ant 3	0.699	0.197	0.366	0.896	1.065	1.262
	LTE Band 25 (PCS)	0.990	0.197	0.366	1.187	1.356	1.553
	LTE Band 2 (PCS) Ant 3	0.599	0.197	0.366	0.796	0.965	1.162
	LTE Band 48	0.383	0.197	0.366	0.580	0.749	0.946
	LTE Band 41	0.499	0.197	0.366	0.696	0.865	1.062
	NR Band n71	0.244	0.197	0.366	0.441	0.610	0.807
	NR Band n5 (Cell)	0.365	0.197	0.366	0.562	0.731	0.928
	NR Band n66 (AWS)	0.697	0.197	0.366	0.894	1.063	1.260
	NR Band n25 (PCS)	0.718	0.197	0.366	0.915	1.084	1.281
	NR Band n41	0.146	0.197	0.366	0.343	0.512	0.709

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.529	0.197*	0.366	1.092
	Front	0.177	0.197*	0.366*	0.740
	Top	-	0.197*	0.366*	0.563
	Bottom	1.120	-	-	1.120
	Right	0.065	-	-	0.065
	Left	0.158	0.197	0.366*	0.721

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 167 of 187	

Table 12-15
Simultaneous Transmission Scenario with 2.4 GHz WLAN Ant 1 and 5 GHz WLAN Ant 2
(Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	GPRS 850	0.354	0.808	0.366	1.528
	GPRS 1900	0.786	0.808	0.366	See Table Below
	UMTS 850	0.405	0.808	0.366	1.579
	UMTS 1750	1.018	0.808	0.366	See Table Below
	UMTS 1900	1.120	0.808	0.366	See Table Below
	EVDO BC10 (§90S)	0.372	0.808	0.366	1.546
	EVDO BC0 (§22H)	0.478	0.808	0.366	See Table Below
	PCS EVDO	0.945	0.808	0.366	See Table Below
	LTE Band 71	0.237	0.808	0.366	1.411
	LTE Band 12	0.331	0.808	0.366	1.505
	LTE Band 13	0.313	0.808	0.366	1.487
	LTE Band 26 (Cell)	0.340	0.808	0.366	1.514
	LTE Band 66 (AWS)	0.755	0.808	0.366	See Table Below
	LTE Band 66 (AWS) Ant 3	0.699	0.808	0.366	See Table Below
	LTE Band 25 (PCS)	0.990	0.808	0.366	See Table Below
	LTE Band 2 (PCS) Ant 3	0.599	0.808	0.366	See Table Below
	LTE Band 48	0.383	0.808	0.366	1.557
	LTE Band 41	0.499	0.808	0.366	See Table Below
	NR Band n71	0.244	0.808	0.366	1.418
	NR Band n5 (Cell)	0.365	0.808	0.366	1.539
	NR Band n66 (AWS)	0.697	0.808	0.366	See Table Below
	NR Band n25 (PCS)	0.718	0.808	0.366	See Table Below
	NR Band n41	0.146	0.808	0.366	1.320
Simult Tx	Configuration	GPRS 1900 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.521	0.294	0.366	1.181
	Front	0.165	0.808*	0.366*	1.339
	Top	-	0.808*	0.366*	1.174
	Bottom	0.786	-	-	0.786
	Right	0.062	-	-	0.062
	Left	0.129	0.808	0.366*	1.303
Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.606	0.294	0.366	1.266
	Front	0.297	0.808*	0.366*	1.471
	Top	-	0.808*	0.366*	1.174
	Bottom	1.018	-	-	1.018
	Right	0.136	-	-	0.136
	Left	0.256	0.808	0.366*	1.430
Simult Tx	Configuration	EVDO BC0 (§22H) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.478	0.294	0.366	1.138
	Front	0.200	0.808*	0.366*	1.374
	Top	-	0.808*	0.366*	1.174
	Bottom	0.237	-	-	0.237
	Right	0.237	-	-	0.237
	Left	-	0.808	0.366*	1.174
Simult Tx	Configuration	LTE Band 66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.466	0.294	0.366	1.126
	Front	0.161	0.808*	0.366*	1.335
	Top	-	0.808*	0.366*	1.174
	Bottom	0.945	-	-	0.945
	Right	0.060	-	-	0.060
	Left	0.178	0.808	0.366*	1.352
Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.256	0.294	0.366	0.916
	Front	0.134	0.808*	0.366*	1.308
	Top	-	0.808*	0.366*	1.174
	Bottom	0.191	-	-	0.191
	Right	0.699	-	-	0.699
	Left	-	0.808	0.366*	1.174

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 168 of 187	

Simult Tx	Configuration	LTE Band 2 (PCS) Ant 3 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.236	0.294	0.366	0.896
	Front	0.175	0.808*	0.366*	1.349
	Top	-	0.808*	0.366*	1.174
	Bottom	0.103	-	-	0.103
	Right	0.599	-	-	0.599
	Left	-	0.808	0.366*	1.174
Simult Tx	Configuration	NR Band n66 (AWS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.292	0.294	0.366	0.952
	Front	0.171	0.808*	0.366*	1.345
	Top	-	0.808*	0.366*	1.174
	Bottom	0.238	-	-	0.238
	Right	0.697	-	-	0.697
	Left	-	0.808	0.366*	1.174

Simult Tx	Configuration	LTE Band 41 SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.327	0.294	0.366	0.987
	Front	0.141	0.808*	0.366*	1.315
	Top	-	0.808*	0.366*	1.174
	Bottom	0.499	-	-	0.499
	Right	0.114	-	-	0.114
	Left	0.083	0.808	0.366*	1.257
Simult Tx	Configuration	NR Band n25 (PCS) SAR (W/kg)	2.4 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.221	0.294	0.366	0.881
	Front	0.163	0.808*	0.366*	1.337
	Top	-	0.808*	0.366*	1.174
	Bottom	0.085	-	-	0.085
	Right	0.718	-	-	0.718
	Left	-	0.808	0.366*	1.174

Table 12-16
Simultaneous Transmission Scenario with Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	Σ SAR (W/kg)
		1	2	1+2
Hotspot SAR	GPRS 850	0.354	0.061	0.415
	GPRS 1900	0.786	0.061	0.847
	UMTS 850	0.405	0.061	0.466
	UMTS 1750	1.018	0.061	1.079
	UMTS 1900	1.120	0.061	1.181
	EVDO BC10 (\$90S)	0.372	0.061	0.433
	EVDO BC0 (\$22H)	0.478	0.061	0.539
	PCS EVDO	0.945	0.061	1.006
	LTE Band 71	0.237	0.061	0.298
	LTE Band 12	0.331	0.061	0.392
	LTE Band 13	0.313	0.061	0.374
	LTE Band 26 (Cell)	0.340	0.061	0.401
	LTE Band 66 (AWS)	0.755	0.061	0.816
	LTE Band 66 (AWS) Ant 3	0.699	0.061	0.760
	LTE Band 25 (PCS)	0.990	0.061	1.051
	LTE Band 2 (PCS) Ant 3	0.599	0.061	0.660
	LTE Band 48	0.383	0.061	0.444
	LTE Band 41	0.499	0.061	0.560
	NR Band n71	0.244	0.061	0.305
	NR Band n5 (Cell)	0.365	0.061	0.426
	NR Band n66 (AWS)	0.697	0.061	0.758
	NR Band n25 (PCS)	0.718	0.061	0.779
	NR Band n41	0.146	0.061	0.207

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 169 of 187	

Table 12-17

Simultaneous Transmission Scenario with 2.4 GHz WLAN Antenna 2 and Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot	GPRS 850	0.354	0.061	0.470	0.885
	GPRS 1900	0.786	0.061	0.470	1.317
	UMTS 850	0.405	0.061	0.470	0.936
	UMTS 1750	1.018	0.061	0.470	1.549
	UMTS 1900	1.120	0.061	0.470	See Table Below
	EVDO BC10 (\$90S)	0.372	0.061	0.470	0.903
	EVDO BC0 (\$22H)	0.478	0.061	0.470	1.009
	PCS EVDO	0.945	0.061	0.470	1.476
	LTE Band 71	0.237	0.061	0.470	0.768
	LTE Band 12	0.331	0.061	0.470	0.862
	LTE Band 13	0.313	0.061	0.470	0.844
	LTE Band 26 (Cell)	0.340	0.061	0.470	0.871
	LTE Band 66 (AWS)	0.755	0.061	0.470	1.286
	LTE Band 66 (AWS) Ant 3	0.699	0.061	0.470	1.230
	LTE Band 25 (PCS)	0.990	0.061	0.470	1.521
	LTE Band 2 (PCS) Ant 3	0.599	0.061	0.470	1.130
	LTE Band 48	0.383	0.061	0.470	0.914
	LTE Band 41	0.499	0.061	0.470	1.030
	NR Band n71	0.244	0.061	0.470	0.775
	NR Band n5 (Cell)	0.365	0.061	0.470	0.896
	NR Band n66 (AWS)	0.697	0.061	0.470	1.228
	NR Band n25 (PCS)	0.718	0.061	0.470	1.249
	NR Band n41	0.146	0.061	0.470	0.677
Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	2.4 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3
Hotspot SAR	Back	0.529	0.033	0.261	0.823
	Front	0.177	0.008	0.470*	0.655
	Top	-	0.012	0.470	0.482
	Bottom	1.120	-	-	1.120
	Right	0.065	-	-	0.065
	Left	0.158	0.061	0.470*	0.689

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 170 of 187

Table 12-18
Simultaneous Transmission Scenario with 5 GHz WLAN and Bluetooth (Hotspot at 1.0 cm)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	4	1+2+3	1+2+4	1+2+3+4
Hotspot SAR	GPRS 850	0.354	0.061	0.197	0.366	0.612	0.781	0.978
	GPRS 1900	0.786	0.061	0.197	0.366	1.044	1.213	1.410
	UMTS 850	0.405	0.061	0.197	0.366	0.663	0.832	1.029
	UMTS 1750	1.018	0.061	0.197	0.366	1.276	1.445	See Table Below
	UMTS 1900	1.120	0.061	0.197	0.366	1.378	1.547	See Table Below
	EVDO BC10 (\$90S)	0.372	0.061	0.197	0.366	0.630	0.799	0.996
	EVDO BC0 (\$22H)	0.478	0.061	0.197	0.366	0.736	0.905	1.102
	PCS EVDO	0.945	0.061	0.197	0.366	1.203	1.372	1.569
	LTE Band 71	0.237	0.061	0.197	0.366	0.495	0.664	0.861
	LTE Band 12	0.331	0.061	0.197	0.366	0.589	0.758	0.955
	LTE Band 13	0.313	0.061	0.197	0.366	0.571	0.740	0.937
	LTE Band 26 (Cell)	0.340	0.061	0.197	0.366	0.598	0.767	0.964
	LTE Band 66 (AWS)	0.755	0.061	0.197	0.366	1.013	1.182	1.379
	LTE Band 66 (AWS) Ant 3	0.699	0.061	0.197	0.366	0.957	1.126	1.323
	LTE Band 25 (PCS)	0.990	0.061	0.197	0.366	1.248	1.417	See Table Below
	LTE Band 2 (PCS) Ant 3	0.599	0.061	0.197	0.366	0.857	1.026	1.223
	LTE Band 48	0.383	0.061	0.197	0.366	0.641	0.810	1.007
	LTE Band 41	0.499	0.061	0.197	0.366	0.757	0.926	1.123
	NR Band n71	0.244	0.061	0.197	0.366	0.502	0.671	0.868
	NR Band n5 (Cell)	0.365	0.061	0.197	0.366	0.623	0.792	0.989
	NR Band n66 (AWS)	0.697	0.061	0.197	0.366	0.955	1.124	1.321
	NR Band n25 (PCS)	0.718	0.061	0.197	0.366	0.976	1.145	1.342
	NR Band n41	0.146	0.061	0.197	0.366	0.404	0.573	0.770

Simult Tx	Configuration	UMTS 1750 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.606	0.033	0.197*	0.366	1.202
	Front	0.297	0.008	0.197*	0.366*	0.868
	Top	-	0.012	0.197*	0.366*	0.575
	Bottom	1.018	-	-	-	1.018
	Right	0.136	-	-	-	0.136
	Left	0.256	0.061	0.197	0.366*	0.880

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.529	0.033	0.197*	0.366	1.125
	Front	0.177	0.008	0.197*	0.366*	0.748
	Top	-	0.012	0.197*	0.366*	0.575
	Bottom	1.120	-	-	-	1.120
	Right	0.065	-	-	-	0.065
	Left	0.158	0.061	0.197	0.366*	0.782

Simult Tx	Configuration	LTE Band 25 (PCS) SAR (W/kg)	Bluetooth SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	4	1+2+3+4
Hotspot SAR	Back	0.488	0.033	0.197*	0.366	1.084
	Front	0.187	0.008	0.197*	0.366*	0.758
	Top	-	0.012	0.197*	0.366*	0.575
	Bottom	0.990	-	-	-	0.990
	Right	0.047	-	-	-	0.047
	Left	0.131	0.061	0.197	0.366*	0.755

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 171 of 187

12.6 Phablet Simultaneous Transmission Analysis

Per FCC KDB Publication 648474 D04 Handset SAR, Phablet SAR tests were not required if wireless router 1g SAR (scaled to the maximum output power, including tolerance) < 1.2 W/kg. Therefore, no further analysis beyond the tables included in this section was required to determine that possible simultaneous transmission scenarios would not exceed the SAR limit.

For SAR summation, the highest reported SAR across all test distances was used as the most conservative evaluation for simultaneous transmission analysis for each device edge.

Table 12-19
Simultaneous Transmission Scenario with 5 GHz WLAN (Phablet)

Configuration	Mode	2G/3G/4G /5G SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)		
		1	2	3	1+2	1+3	1+2+3
Phablet SAR	UMTS 1750	2.230	0.468	0.662	2.698	2.892	3.360
	UMTS 1900	2.866	0.468	0.662	3.334	3.528	See Table Below
	PCS EVDO	2.992	0.468	0.662	3.460	3.654	See Table Below
	LTE Band 66 (AWS)	1.917	0.468	0.662	2.385	2.579	3.047
	LTE Band 25 (PCS)	2.856	0.468	0.662	3.324	3.518	3.986
	LTE Band 41	2.407	0.468	0.662	2.875	3.069	3.537

Simult Tx	Configuration	UMTS 1900 SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	PCS EVDO SAR (W/kg)	5 GHz WLAN Ant 1 SAR (W/kg)	5 GHz WLAN Ant 2 SAR (W/kg)	Σ SAR (W/kg)
		1	2	3	1+2+3			1	2	3	1+2+3
Phablet SAR	Back	2.720	0.403	0.662	3.785	Phablet SAR	Back	2.849	0.403	0.662	3.914
	Front	0.991	0.468*	0.662*	2.121		Front	0.760	0.468*	0.662*	1.890
	Top	-	0.468*	0.662*	1.130		Top	-	0.468*	0.662*	1.130
	Bottom	2.866	-	-	2.866		Bottom	2.992	-	-	2.992
	Right	0.230	-	-	0.230		Right	0.292	-	-	0.292
	Left	0.790	0.468	0.662*	1.920		Left	0.821	0.468	0.662*	1.951

12.7 Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the worst-case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528-2013 Section 6.3.4.1.2.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 172 of 187

13 SAR MEASUREMENT VARIABILITY

13.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

- 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
- 2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg ($\sim 10\%$ from the 1g SAR limit).
- 3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .
- 4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg
- 5) When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

Table 13-1
Body SAR Measurement Variability Results

BODY VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	Ratio	3rd Repeated SAR (1g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	bottom	10 mm	0.968	0.967	1.00	N/A	N/A	N/A	N/A
1900	1852.40	9262	UMTS 1900	RMC	bottom	10 mm	1.120	1.050	1.07	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT						Body							
Spatial Peak						1.6 W/kg (mW/g)							
Uncontrolled Exposure/General Population						averaged over 1 gram							

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 173 of 187

Table 13-2
Phablet SAR Measurement Variability Results

PHABLET VARIABILITY RESULTS													
Band	FREQUENCY		Mode	Service	Side	Spacing	Measured SAR (10g)	1st Repeated SAR (10g)	Ratio	2nd Repeated SAR (10g)	Ratio	3rd Repeated SAR (10g)	Ratio
	MHz	Ch.					(W/kg)	(W/kg)		(W/kg)		(W/kg)	
1750	1752.60	1513	UMTS 1750	RMC	back	0 mm	2.120	2.030	1.04	N/A	N/A	N/A	N/A
1900	1880.00	9400	UMTS 1900	RMC	bottom	0 mm	2.840	2.750	1.03	N/A	N/A	N/A	N/A
2600	2636.50	41055	LTE Band 41 PC3 , 20 MHz Bandwidth (Mechanical Mode #3:Swivel)	QPSK, 1 RB, 50 RB Offset	bottom	0 mm	2.130	2.080	1.02	N/A	N/A	N/A	N/A
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Phablet 4.0 W/kg (mW/g) averaged over 10 grams						

13.2 Measurement Uncertainty

The measured SAR was <1.5 W/kg for 1g and <3.75 W/kg for 10g for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE 1528-2013 was not required.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 174 of 187

14 ADDITIONAL TESTING PER FCC GUIDANCE

14.1 LTE Band 41 Power Class 2 and Power Class 3 Linearity

This device supports Power Class 2 and Power Class 3 operations for LTE Band 41. The highest available duty cycle for Power Class 2 operations is 43.3 % using UL-DL configuration 1. Per May 2017 TCB Workshop Notes based on the device behavior, all SAR tests were performed using Power Class 3. SAR with Power Class 2 at the highest power and available duty factor was additionally performed for the Power Class 3 configuration with the highest SAR for each exposure condition. The linearity between the Power Class 2 and Power Class 3 SAR results and the respective frame averaged powers was calculated to determine that the results were linear. When ULCA is active, the linearity between the Power Class 2 with ULCA active and Power Class 3 with ULCA active SAR results and the respective frame averaged powers was calculated to determine that the results were linear. Per May 2017 TCB Workshop, no additional SAR measurements were required since the linearity between power classes was < 10% and all reported SAR values were < 1.4 W/kg for 1g and < 3.5 W/kg for 10g.

Table 14-1
LTE Band 41 Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.50	27.50
Measured Output Power (dBm)	24.78	26.58
Measured SAR (W/kg)	0.045	0.044
Measured Power (mW)	300.61	454.99
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	190.28	197.01
% deviation from expected linearity		-5.78%

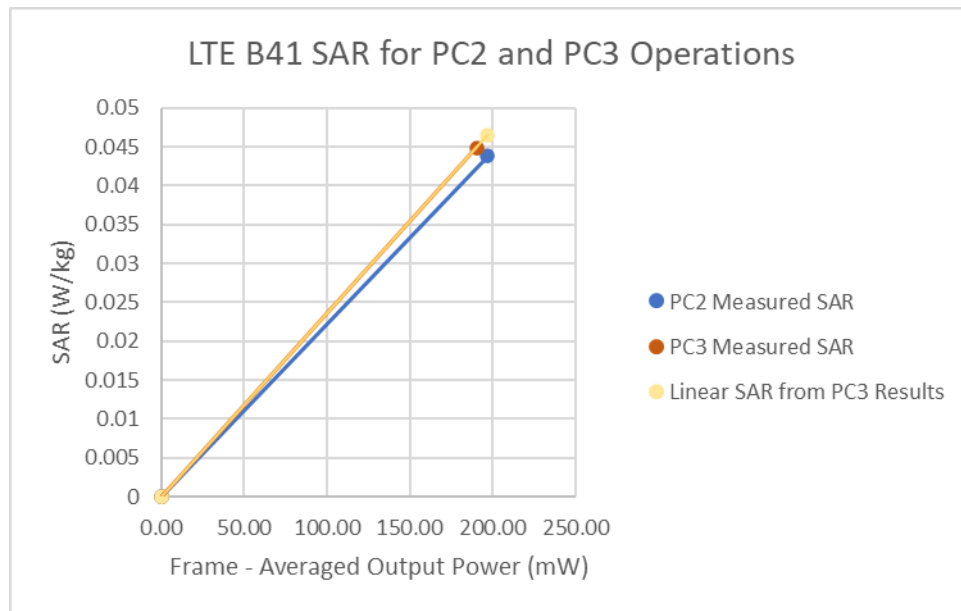


Figure 14-1
LTE Band 41 Head Linearity

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 175 of 187

Table 14-2
LTE Band 41 ULCA Head Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.50	27.50
Measured Output Power (dBm)	25.23	26.6
Measured SAR (W/kg)	0.048	0.042
Measured Power (mW)	333.43	457.09
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	211.06	197.92
% deviation from expected linearity		-6.10%

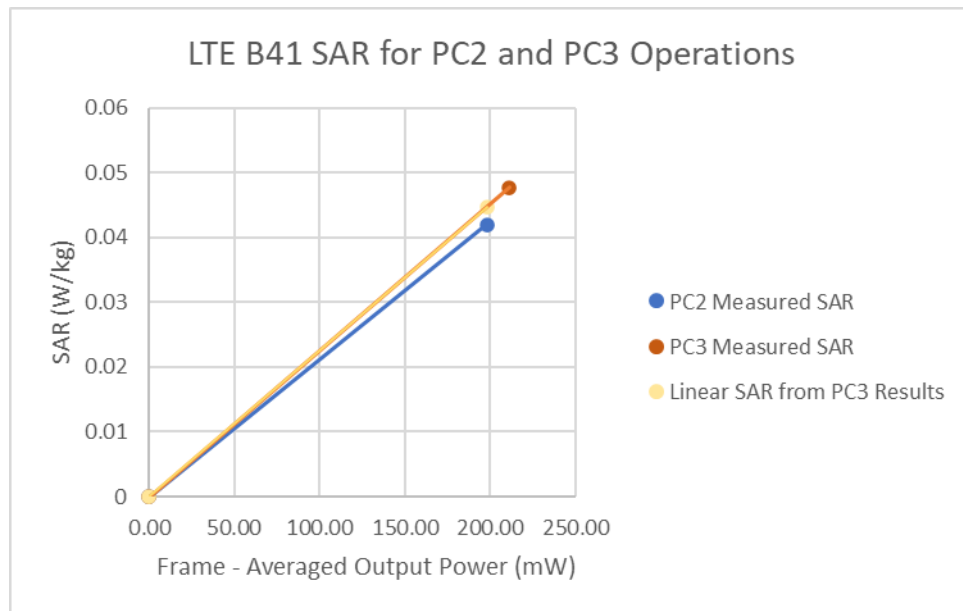


Figure 14-2
LTE Band 41 ULCA Head Linearity

FCC ID: ZNFF100TM	 Proud to be part of element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 176 of 187

Table 14-3
LTE Band 41 Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.50	27.50
Measured Output Power (dBm)	25.10	27.00
Measured SAR (W/kg)	0.381	0.390
Measured Power (mW)	323.59	501.19
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	204.83	217.01
% deviation from expected linearity		-3.38%

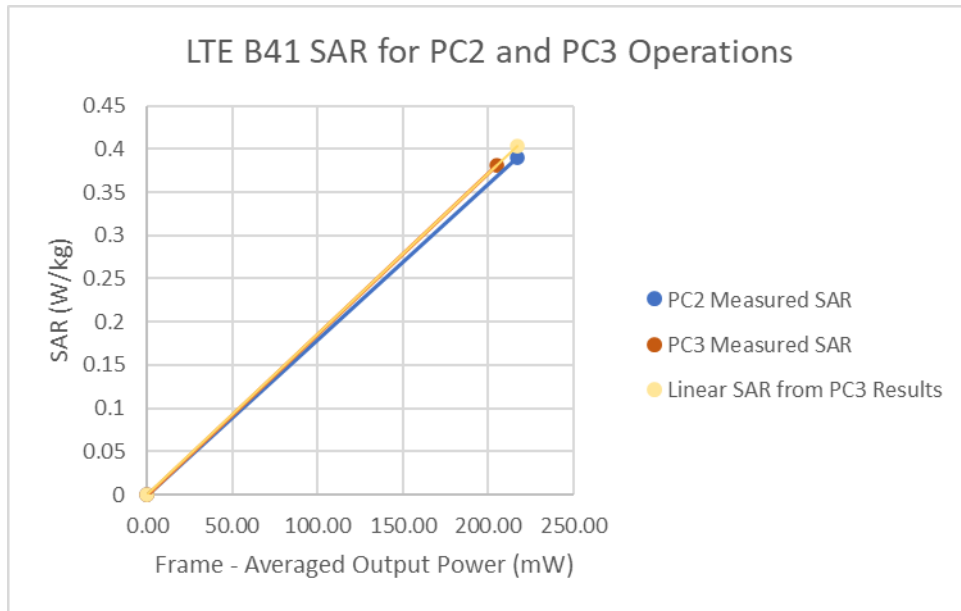


Figure 14-3
LTE Band 41 Body-Worn Linearity

FCC ID: ZNFF100TM	PCTEST Proud to be part of element	SAR EVALUATION REPORT	LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 177 of 187

Table 14-4
LTE Band 41 ULCA Body-Worn Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.50	27.50
Measured Output Power (dBm)	25.23	26.60
Measured SAR (W/kg)	0.421	0.361
Measured Power (mW)	333.43	457.09
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	211.06	197.92
% deviation from expected linearity		-8.56%

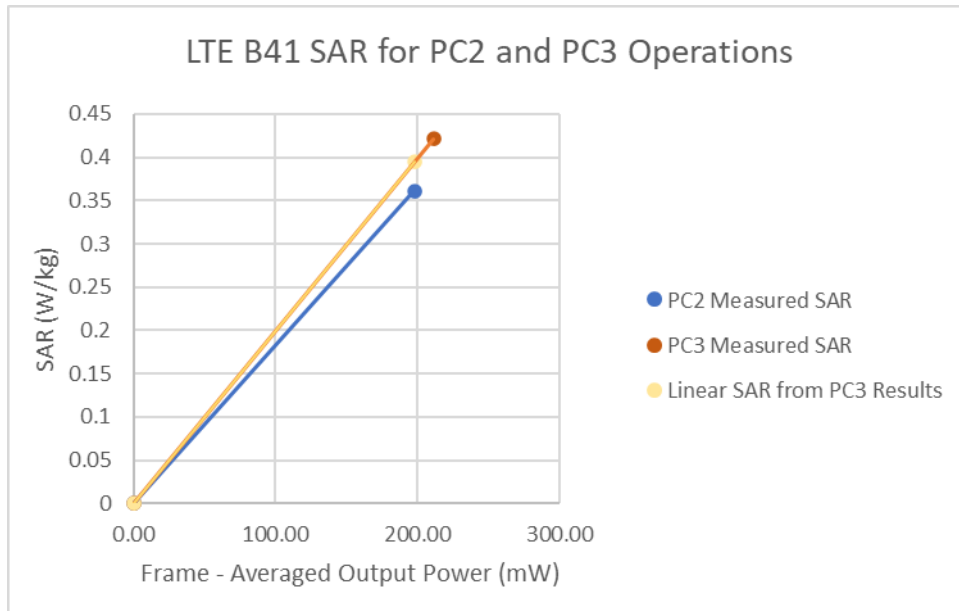


Figure 14-4
LTE Band 41 ULCA Body-Worn Linearity

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 178 of 187

Table 14-5
LTE Band 41 Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.00	26.60
Measured Output Power (dBm)	24.55	26.14
Measured SAR (W/kg)	0.450	0.428
Measured Power (mW)	285.10	411.15
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	180.47	178.03
% deviation from expected linearity		-3.58%

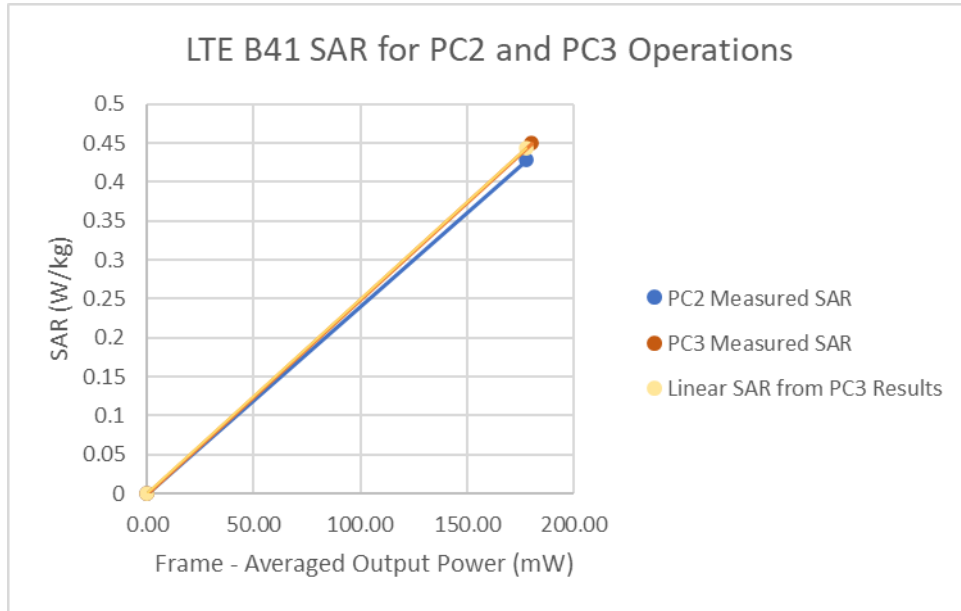


Figure 14-5
LTE Band 41 Hotspot Linearity

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 179 of 187	

Table 14-6
LTE Band 41 ULCA Hotspot Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.00	26.60
Measured Output Power (dBm)	24.25	25.71
Measured SAR (W/kg)	0.417	0.402
Measured Power (mW)	266.07	372.39
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	168.42	161.25
% deviation from expected linearity		0.69%

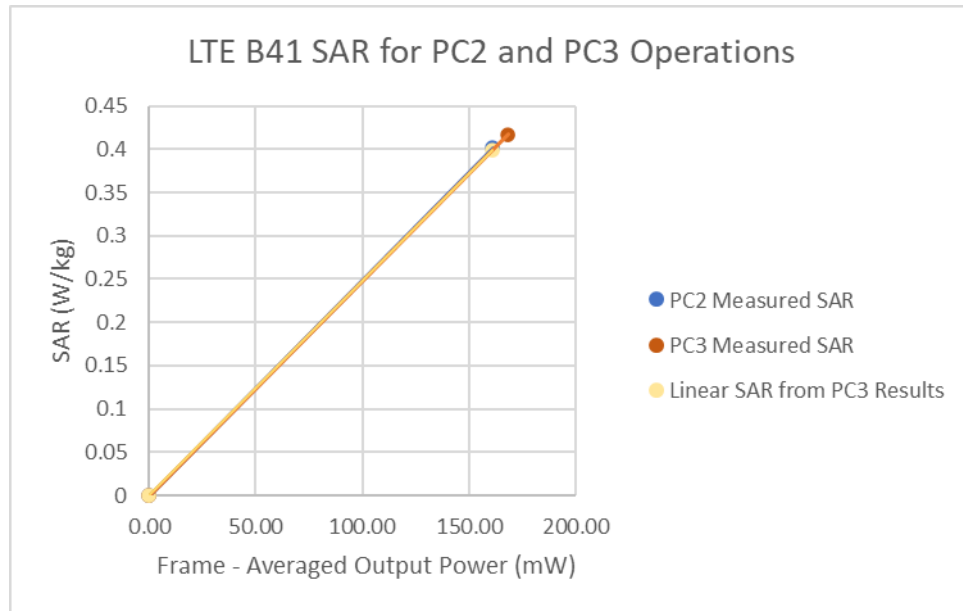


Figure 14-6
LTE Band 41 ULCA Hotspot Linearity

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 180 of 187

Table 14-7
LTE Band 41 Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.00	26.60
Measured Output Power (dBm)	24.47	26.12
Measured SAR (W/kg)	1.770	1.870
Measured Power (mW)	279.90	409.26
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	177.18	177.21
% deviation from expected linearity		5.63%

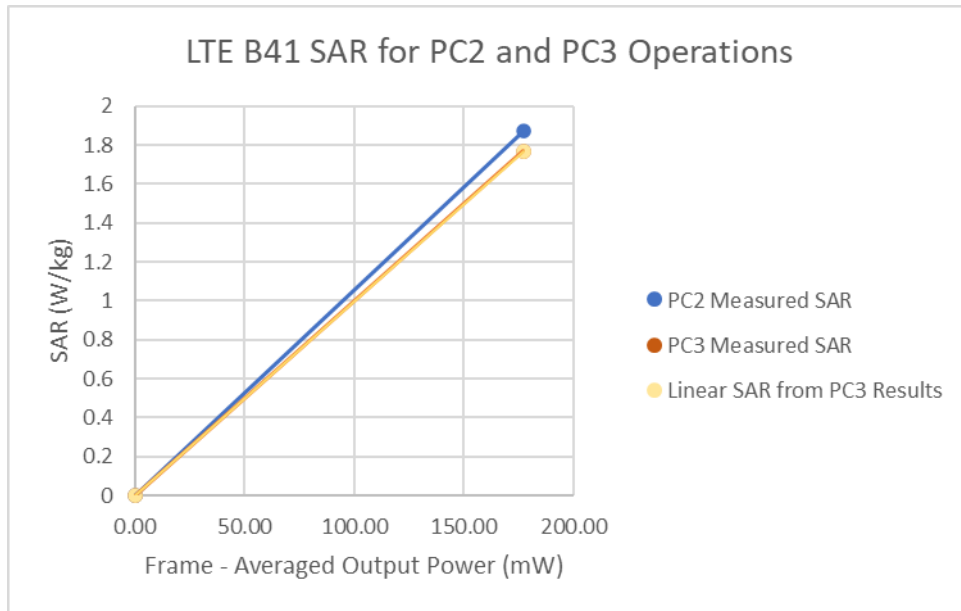


Figure 14-7
LTE Band 41 Phablet Linearity

FCC ID: ZNFF100TM	 Proud to be part of 	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 181 of 187

Table 14-8
LTE Band 41 ULCA Phablet Linearity Data

	LTE Band 41 PC3	LTE Band 41 PC2
Maximum Allowed Output Power (dBm)	25.00	26.60
Measured Output Power (dBm)	24.00	25.81
Measured SAR (W/kg)	1.700	1.760
Measured Power (mW)	251.19	381.07
Duty Cycle	63.3%	43.3%
Frame Averaged Output Power (mW)	159.00	165.00
% deviation from expected linearity		-0.23%

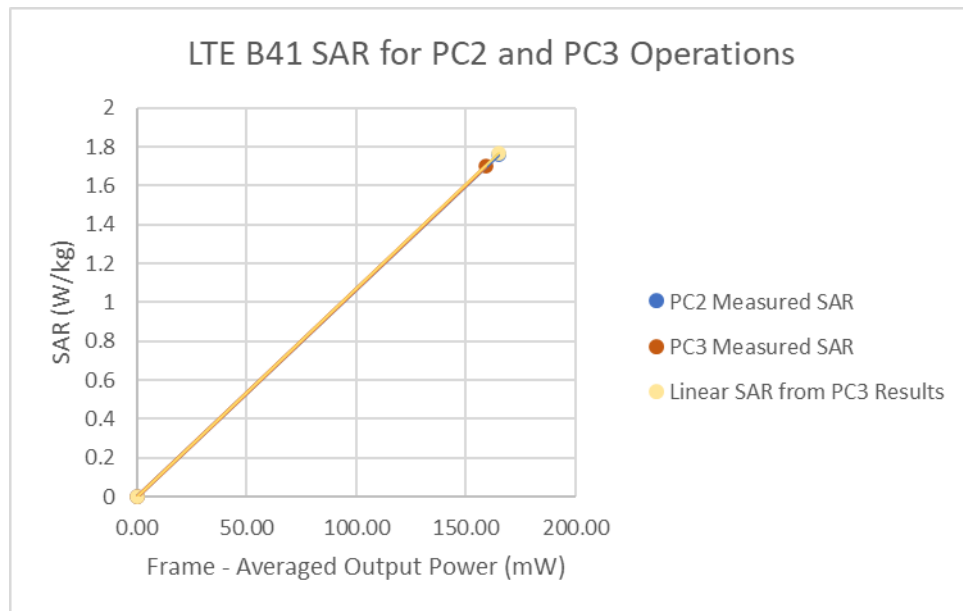


Figure 14-8
LTE Band 41 ULCA Phablet Linearity

FCC ID: ZNFF100TM	 PCTEST Proud to be part of 	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 182 of 187

15 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	85033E	3 5mm Standard Calibration Kit	6/6/2020	Annual	6/6/2021	MY33402352
Agilent	8594A	[9kHz-2.9GHz] Spectrum Analyzer	N/A	N/A	N/A	3051A00187
Agilent	8753E5	Network Analyzer	3/5/2020	Annual	3/5/2021	MY40001472
Agilent	8753E5	S-Parameter Network Analyzer	12/31/2019	Annual	12/31/2020	US39170122
Agilent	8753E5	S-Parameter Network Analyzer	1/16/2020	Annual	1/16/2021	US39170118
Agilent	8753E5	S-Parameter Vector Network Analyzer	9/19/2019	Annual	9/19/2020	MY40003841
Agilent	E4438C	ESG Vector Signal Generator	3/8/2019	Biennial	3/8/2021	MY42082385
Agilent	E4438C	ESG Vector Signal Generator	3/11/2019	Biennial	3/11/2021	MY45007030
Agilent	E4438C	ESG Vector Signal Generator	8/10/2020	Annual	8/10/2021	MY47270002
Agilent	E5515C	8960 Series 10 Wireless Communications Test Set	2/10/2020	Annual	2/10/2021	GB42230325
Agilent	E5515C	Wireless Communications Test Set	2/26/2020	Annual	2/26/2021	GB44008060
Agilent	E5515C	Wireless Communications Test Set	1/14/2020	Triennial	1/14/2023	GB43304447
Agilent	N4010A	Wireless Connectivity Test Set	N/A	N/A	N/A	GB46170464
Agilent	N5182A	MXG Vector Signal Generator	5/13/2020	Annual	5/13/2021	MY47420603
Agilent	N9920A	PSA Signal Analyzer (44GHz)	8/17/2020	Annual	8/17/2021	MY52302066
Amplifier Research	1551G6	Amplifier	11/15/2019	Annual	11/15/2020	433971
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433972
Amplifier Research	1551G6	Amplifier	CBT	N/A	CBT	433974
Anritsu	MA24106A	USB Power Sensor	6/8/2020	Annual	6/8/2021	1344555
Anritsu	MA24106A	USB Power Sensor	6/8/2020	Annual	6/8/2021	1349501
Anritsu	MA24106A	USB Power Sensor	6/3/2020	Annual	6/3/2021	2008527
Anritsu	MA2411B	Pulse Power Sensor	7/28/2020	Annual	7/28/2021	1339018
Anritsu	MA2411B	Pulse Power Sensor	8/12/2020	Annual	8/12/2021	1207364
Anritsu	ML2496A	Power Meter	2/13/2020	Annual	2/13/2021	1306009
Anritsu	ML2496A	Power Meter	3/23/2020	Annual	3/23/2021	1351001
Anritsu	MT8821C	Radio Communication Analyzer	3/10/2020	Annual	3/10/2021	6200901190
Anritsu	MT8821C	Radio Communication Analyzer	6/15/2020	Annual	6/15/2021	6201381794
Anritsu	MT8821C	Radio Communication Analyzer	2/22/2020	Annual	2/22/2021	6261885213
Control Company	4040	Therm./Clock/Humidity Monitor	2/17/2020	Biennial	2/17/2022	20012389
Control Company	4040	Therm./Clock/Humidity Monitor	2/17/2020	Biennial	2/17/2022	200113274
Control Company	4352	Long Stem Thermometer	5/16/2020	Biennial	5/16/2022	200294409
Control Company	4352	Long Stem Thermometer	5/16/2020	Biennial	5/16/2022	200294430
Control Company	4352	Long Stem Thermometer	5/16/2020	Biennial	5/16/2022	200294416
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	18176801
Control Company	4352	Ultra Long Stem Thermometer	11/29/2018	Biennial	11/29/2020	18176807
Keysight	7720	Dual Directional Coupler	CBT	N/A	CBT	MY32180215
KEYSIGHT	E4438C	VECTOR SIGNAL GENERATOR	6/22/2020	Annual	6/22/2021	MY45092078
Keysight Technologies	AT/N6705B	DC Power Supply	N/A	N/A	N/A	MY3001315
Keysight Technologies	N6705B	DC Power Analyzer	4/27/2019	Biennial	4/27/2021	MY3004059
Keysight Technologies	U3401A	Digital Multimeter	5/14/2020	Biennial	5/14/2022	MY57201470
MCL	BW-N6W5+	6dB Attenuator	CBT	N/A	CBT	1139
Mini-Circuits	SLP-2400+	Low Pass Filter	CBT	N/A	CBT	8897950903
Mini-Circuits	VLF-600H+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	VLF-600H+	Low Pass Filter	CBT	N/A	CBT	N/A
Mini-Circuits	BW-N20W5	Power Attenuator	CBT	N/A	CBT	1226
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-1200+	Low Pass Filter DC to 1000 MHz	CBT	N/A	CBT	N/A
Mini-Circuits	NLP-2950+	Low Pass Filter DC to 2700 MHz	CBT	N/A	CBT	N/A
Narda	4014E-6	4 - 8 GHz SMA 6 dB Directional Coupler	CBT	N/A	CBT	N/A
Narda	4772-3	Attenuator (3dB)	CBT	N/A	CBT	9406
Narda	BW-53W2	Attenuator (3dB)	CBT	N/A	CBT	120
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	N/A
Pasternack	NC-100	Torque Wrench	8/4/2020	Biennial	8/4/2022	1445
Pasternack	PE2208-6	Bidirectional Coupler	CBT	N/A	CBT	N/A
Pasternack	PE2208-10	Bidirectional Coupler	CBT	N/A	CBT	N/A
Rohde & Schwarz	CMW500	Radio Communication Tester	3/27/2020	Annual	3/27/2021	128653
Rohde & Schwarz	CMW500	Radio Communication Tester	5/21/2020	Annual	5/21/2021	128655
Rohde & Schwarz	ZNL6	Vector Network Analyzer	10/11/2019	Annual	10/11/2020	101307
SPEAG	DAK-3.5	Dielectric Assessment Kit	10/22/2019	Annual	10/22/2020	1091
SPEAG	DAK-3.5	Dielectric Assessment Kit	5/12/2020	Annual	5/12/2021	1070
SPEAG	DAK-3.5	Dielectric Parameter Probes	12/16/2019	Annual	12/16/2020	1278
SPEAG	D750V3	750 MHz SAR Dipole	10/19/2018	Biennial	10/19/2020	1161
SPEAG	D750V3	750 MHz SAR Dipole	3/16/2020	Annual	3/16/2021	1093
SPEAG	D750V3	750 MHz SAR Dipole	3/11/2020	Annual	3/11/2021	1054
SPEAG	D835V2	835 MHz SAR Dipole	3/13/2019	Biennial	3/13/2021	48047
SPEAG	D835V2	835 MHz SAR Dipole	1/13/2020	Annual	1/13/2021	40132
SPEAG	D1750V2	1750 MHz SAR Dipole	10/22/2018	Biennial	10/22/2020	1150
SPEAG	D1750V2	1750 MHz SAR Dipole	5/12/2020	Annual	5/12/2021	1148
SPEAG	D1900V2	1900 MHz SAR Dipole	2/21/2019	Biennial	2/21/2021	50148
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	50149
SPEAG	D1900V2	1900 MHz SAR Dipole	10/23/2018	Biennial	10/23/2020	54090
SPEAG	D2450V2	2450 MHz SAR Dipole	8/14/2019	Annual	8/14/2020	719
SPEAG	D2450V2	2450 MHz SAR Dipole	8/16/2018	Biennial	8/16/2020	981
SPEAG	D2450V2	2450 MHz SAR Dipole	9/11/2017	Triennial	9/11/2020	797
SPEAG	D2600V2	2600 MHz SAR Dipole	4/11/2018	Triennial	4/11/2021	1004
SPEAG	D2600V2	2600 MHz SAR Dipole	6/14/2019	Biennial	6/14/2021	1064
SPEAG	D3050V2	3050 MHz SAR Dipole	1/11/2018	Triennial	1/11/2021	1069
SPEAG	DSGHV2	5 GHz SAR Dipole	1/16/2018	Triennial	1/16/2021	1057
SPEAG	DSGHV2	5 GHz SAR Dipole	8/10/2018	Biennial	8/10/2020	1237
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1530
SPEAG	DAE4	Dasy Data Acquisition Electronics	1/13/2020	Annual	1/13/2021	1558
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/14/2020	Annual	5/14/2021	1583
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/15/2020	Annual	4/15/2021	1407
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/17/2019	Annual	9/17/2020	1333
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/12/2020	Annual	3/12/2021	1368
SPEAG	DAE4	Dasy Data Acquisition Electronics	12/5/2019	Annual	12/5/2020	1533
SPEAG	DAE4	Dasy Data Acquisition Electronics	9/12/2019	Annual	9/12/2020	1449
SPEAG	DAE4	Dasy Data Acquisition Electronics	5/20/2020	Annual	5/20/2021	728
SPEAG	EX30V4	SAR Probe	6/23/2020	Annual	6/23/2021	7406
SPEAG	EX30V4	SAR Probe	9/19/2019	Annual	9/19/2020	7551
SPEAG	EX30V4	SAR Probe	4/21/2020	Annual	4/21/2021	7557
SPEAG	EX30V4	SAR Probe	12/11/2019	Annual	12/11/2020	7571
SPEAG	EX30V4	SAR Probe	1/21/2020	Annual	1/21/2021	3589
SPEAG	EX30V4	SAR Probe	9/19/2019	Annual	9/19/2020	7552
SPEAG	EX30V4	SAR Probe	5/18/2020	Annual	5/18/2021	7538
SPEAG	EX30V4	SAR Probe	1/21/2020	Annual	1/21/2021	7488
SPEAG	EX30V4	SAR Probe	12/11/2019	Annual	12/11/2020	7570

Notes: 1) Equipment was solely used during its calibration period 2) CBT (Calibrated Before Testing). Prior to testing, the measurement paths containing a cable, amplifier, attenuator, coupler or filter were connected to a calibrated source (i.e. a signal generator) to determine the losses of the measurement path. The power meter offset was then adjusted to compensate for the measurement system losses. This level offset is stored within the power meter before measurements are made. This calibration verification procedure applies to the system verification and output power measurements. The calibrated reading is then taken directly from the power meter after compensation of the losses for all final power measurements.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT		Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset	Page 183 of 187	

16 MEASUREMENT UNCERTAINTIES

a	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	Tol. (± %)	Prob. Dist.	Div.	c _i 1gm	c _i 10 gms	1gm u _i (± %)	10gms u _i (± %)	v _i
Measurement System								
Probe Calibration	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	1.3	N	1	0.7	0.7	0.9	0.9	∞
Boundary Effect	2.0	R	1.73	1.0	1.0	1.2	1.2	∞
Linearity	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	0.25	R	1.73	1.0	1.0	0.1	0.1	∞
Readout Electronics	0.3	N	1	1.0	1.0	0.3	0.3	∞
Response Time	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions - Noise	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
RF Ambient Conditions - Reflections	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	6.7	R	1.73	1.0	1.0	3.9	3.9	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Test Sample Related								
Test Sample Positioning	2.7	N	1	1.0	1.0	2.7	2.7	35
Device Holder Uncertainty	1.67	N	1	1.0	1.0	1.7	1.7	5
Output Power Variation - SAR drift measurement	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
SAR Scaling	0.0	R	1.73	1.0	1.0	0.0	0.0	∞
Phantom & Tissue Parameters								
Phantom Uncertainty (Shape & Thickness tolerances)	7.6	R	1.73	1.0	1.0	4.4	4.4	∞
Liquid Conductivity - measurement uncertainty	4.2	N	1	0.78	0.71	3.3	3.0	10
Liquid Permittivity - measurement uncertainty	4.1	N	1	0.23	0.26	1.0	1.1	10
Liquid Conductivity - Temperature Uncertainty	3.4	R	1.73	0.78	0.71	1.5	1.4	∞
Liquid Permittivity - Temperature Uncertainty	0.6	R	1.73	0.23	0.26	0.1	0.1	∞
Liquid Conductivity - deviation from target values	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Permittivity - deviation from target values	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Combined Standard Uncertainty (k=1)						RSS	11.5	11.3
Expanded Uncertainty (95% CONFIDENCE LEVEL)						k=2	23.0	22.6

FCC ID: ZNFF100TM	 PCTEST Proud to be part of  element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 184 of 187

17 CONCLUSION

17.1 Measurement Conclusion

The SAR evaluation indicates that the EUT complies with the RF radiation exposure limits of the FCC and Innovation, Science, and Economic Development Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 185 of 187

18 REFERENCES

- [1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, Aug. 1996.
- [2] ANSI/IEEE C95.1-2005, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, 2006.
- [3] ANSI/IEEE C95.1-1992, American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 3kHz to 300GHz, New York: IEEE, Sept. 1992.
- [4] ANSI/IEEE C95.3-2002, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave, New York: IEEE, December 2002.
- [5] IEEE Standards Coordinating Committee 39 –Standards Coordinating Committee 34 – IEEE Std. 1528-2013, IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.
- [6] NCRP, National Council on Radiation Protection and Measurements, Biological Effects and Exposure Criteria for RadioFrequency Electromagnetic Fields, NCRP Report No. 86, 1986. Reprinted Feb. 1995.
- [7] T. Schmid, O. Egger, N. Kuster, Automated E-field scanning system for dosimetric assessments, IEEE Transaction on Microwave Theory and Techniques, vol. 44, Jan. 1996, pp. 105-113.
- [8] K. Pokovic, T. Schmid, N. Kuster, Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies, ICECOM97, Oct. 1997, pp. 1 -124.
- [9] K. Pokovic, T. Schmid, and N. Kuster, E-field Probe with improved isotropy in brain simulating liquids, Proceedings of the ELMAR, Zadar, Croatia, June 23-25, 1996, pp. 172-175.
- [10] Schmid & Partner Engineering AG, Application Note: Data Storage and Evaluation, June 1998, p2.
- [11] V. Hombach, K. Meier, M. Burkhardt, E. Kuhn, N. Kuster, The Dependence of EM Energy Absorption upon Human Modeling at 900 MHz, IEEE Transaction on Microwave Theory and Techniques, vol. 44 no. 10, Oct. 1996, pp. 1865-1873.
- [12] N. Kuster and Q. Balzano, Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz, IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.
- [13] G. Hartsgrrove, A. Kraszewski, A. Surowiec, Simulated Biological Materials for Electromagnetic Radiation Absorption Studies, University of Ottawa, Bioelectromagnetics, Canada: 1987, pp. 29-36.
- [14] Q. Balzano, O. Garay, T. Manning Jr., Electromagnetic Energy Exposure of Simulated Users of Portable Cellular Telephones, IEEE Transactions on Vehicular Technology, vol. 44, no.3, Aug. 1995.
- [15] W. Gander, Computermathematick, Birkhaeuser, Basel, 1992.
- [16] W.H. Press, S.A. Teukolsky, W.T. Vetterling, and B.P. Flannery, Numerical Recipes in C, The Art of Scientific Computing, Second edition, Cambridge University Press, 1992.
- [17] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 186 of 187

- [18] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10kHz-300GHz, Jan. 1995.
- [19] Prof. Dr. Niels Kuster, ETH, Eidgenössische Technische Hochschule Zürich, Dosimetric Evaluation of the Cellular Phone.
- [20] IEC 62209-1, Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1: Devices used next to the ear (Frequency range of 300 MHz to 6 GHz), July 2016.
- [21] Innovation, Science, Economic Development Canada RSS-102 Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) Issue 5, March 2015.
- [22] Health Canada Safety Code 6 Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz – 300 GHz, 2015
- [23] FCC SAR Test Procedures for 2G-3G Devices, Mobile Hotspot and UMPC Devices KDB Publications 941225, D01-D07
- [24] SAR Measurement Guidance for IEEE 802.11 Transmitters, KDB Publication 248227 D01
- [25] FCC SAR Considerations for Handsets with Multiple Transmitters and Antennas, KDB Publications 648474 D03-D04
- [26] FCC SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers, FCC KDB Publication 616217 D04
- [27] FCC SAR Measurement and Reporting Requirements for 100MHz – 6 GHz, KDB Publications 865664 D01-D02
- [28] FCC General RF Exposure Guidance and SAR Procedures for Dongles, KDB Publication 447498, D01-D02
- [29] Anexo à Resolução No. 533, de 10 de Setembro de 2009.
- [30] IEC 62209-2, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), Mar. 2010.

FCC ID: ZNFF100TM	 PCTEST Proud to be part of element	SAR EVALUATION REPORT	 LG	Approved by: Quality Manager
Document S/N: 1M2006150095-01-R2.ZNF	Test Dates: 07/09/20 – 08/31/20	DUT Type: Portable Handset		Page 187 of 187