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PART 0 SAR CHAR REPORT

Applicant Name: **SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677 Rep. of Korea	**Date of Issue: May 13, 2022** **Test Report No.: HCT-SR-2205-FC006** **Test Site: HCT CO., LTD.**

FCC ID: A3LSMG990U2

Report Type:	**Part 0 SAR Characterization**
Equipment Type:	**Mobile Phone**
Model Name:	**SM-G990U2**
Multi-Model Name:	**SM-G990U3/DS**

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.

Tested By

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REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	May 13, 2022	Initial Release

This test results were applied only to the test methods required by the standard.

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1. Test Location

1.1 Test Laboratory

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1.2 Test Facilities

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

Korea	National Radio Research Agency (Designation No. KR0032)
	KOLAS (Testing No. KT197)

2. DEVICE UNDER TEST

2.1 General Information of the EUT

Device Wireless specification overview		
Band & Mode	Operating Mode	Tx Frequency
CDMA/EVDO BC10	Voice / Data	817.90 MHz ~ 823.10 MHz
CDMA/EVDO BC0	Voice / Data	824.70 MHz ~ 848.31 MHz
PCS CDMA/EVDO	Voice / Data	1 851.25 MHz ~ 1 908.75 MHz
GSM850	Voice / Data	824.2 MHz ~ 848.8 MHz
GSM1900	Voice / Data	1 850.2 MHz ~ 1 909.8 MHz
UMTS 850	Voice / Data	826.4 MHz ~ 846.6 MHz
UMTS 1700	Voice / Data	1 712.4 MHz ~ 1 752.6 MHz
UMTS 1900	Voice / Data	1 852.4 MHz ~ 1 907.6 MHz
LTE Band 2 (PCS)	Voice / Data	1 850.7 MHz ~ 1 909.3 MHz
LTE Band 4 (AWS)	Voice / Data	1 710.7 MHz ~ 1 754.3 MHz
LTE Band 5 (Cell)	Voice / Data	824.7 MHz ~ 848.3 MHz
LTE Band 7	Voice / Data	2 502.5 MHz ~ 2 567.5 MHz
LTE Band 12	Voice / Data	699.7 MHz ~ 715.3 MHz
LTE Band 13	Voice / Data	779.5 MHz ~ 784.5 MHz
LTE Band 14	Voice / Data	790.5 MHz ~ 795.5 MHz
LTE Band 25	Voice / Data	1 850.7 MHz ~ 1 914.3 MHz
LTE Band 26	Voice / Data	814.7 MHz ~ 848.3 MHz
LTE Band 30	Voice / Data	2 307.5 MHz ~ 2 312.5 MHz
LTE TDD Band 38	Voice / Data	2 572.5 MHz ~ 2 617.5 MHz
LTE TDD Band 40	Voice / Data	2 302.5 MHz ~ 2 397.5 MHz
LTE TDD Band 41	Voice / Data	2 498.5 MHz ~ 2 687.5 MHz
LTE TDD Band 48	Voice / Data	3 552.5 MHz ~ 3697.5 MHz
LTE Band 66 (AWS)	Voice / Data	1 710.7 MHz ~ 1 779.3 MHz
LTE Band 71	Voice / Data	665.5 MHz ~ 695.5 MHz
NR Band n2	Voice / Data	1 852.5 MHz ~ 1 907.5 MHz
NR Band n5	Voice / Data	826.5 MHz ~ 846.5 MHz
NR Band n12	Voice / Data	701.5 MHz ~ 713.5 MHz
NR Band n25	Voice / Data	1 852.5 MHz ~ 1 912.5 MHz
NR Band n30	Voice / Data	2 307.5 MHz ~ 2 312.5 MHz
NR Band n41	Voice / Data	2 506.02 MHz ~ 2 679.99 MHz
NR Band n66	Voice / Data	1 712.5 MHz ~ 1 777.5 MHz
NR Band n71	Voice / Data	665.5 MHz ~ 695.5 MHz
NR Band n77	Voice / Data	3 710 MHz ~ 3 969.99 MHz
NR Band n260	Data	37000 MHz ~ 40000 MHz
NR Band n261	Data	27500 MHz ~ 28350 MHz
U-NII-1	Voice / Data	5 180 MHz ~ 5 240 MHz
U-NII-2A	Voice / Data	5 260 MHz ~ 5 320 MHz
U-NII-2C	Voice / Data	5 500 MHz ~ 5 720 MHz
U-NII-3	Voice / Data	5 745 MHz ~ 5 825 MHz
2.4 GHz WLAN	Voice / Data	2 412 MHz ~ 2 462 MHz
Bluetooth / LE 5.0	Data	2 402 MHz ~ 2 480 MHz
NFC	Data	13.56 MHz

This device uses the Qualcomm® Smart Transmit feature to control and manage transmitting power in real time and to ensure the time-averaged RF exposure is in compliance with the FCC requirement at all times for 2G/3G/4G/5G WWAN operations. Additionally, this device supports WLAN/BT/NFC technologies, but the output power of these technologies is not controlled by the Smart Transmit algorithm.

2.2Time-Averaging for SAR

This device is enabled with Qualcomm® Smart Transmit algorithm to control and manage transmitting power in real time and to ensure that the time-averaged RF exposure from 2G/3G/4G/5G NR WWAN is incompliance with FCC requirements.

This Part 0 report shows SAR and Power Density characterization of WWAN radios for 2G/3G/4G and 5G Sub-6 NR respectively. Characterization is achieved by determining Plimit for 2G/3G/4G and 5G Sub-6 NR correspond to the exposure design targets after accounting for all device design related uncertainties,i.e. SAR_design_target (< FCC SAR limit) for sub-6 radio.
The SAR characterization is denoted as SAR Char in this report. Section 2.3 includes a nomenclature of the specific terms used in this report.

The compliance test under the static transmission scenario and simultaneous transmission analysis are reporte d in Part 1 report. The validation of the time-averaging algorithm and compliance under the dynamic (time-varying) transmission scenario for WWAN technologies are reported in Part 2 report

2.3 Nomenclature for Part 0 Report

Technology	Term	Description
2G/3G/4G/5G Sub 6 NR	Plimit	Power level that corresponds to the exposure design target (SAR_design_target) after accounting for all device design related uncertainties
	Pmax	Maximum tune up output power
	SAR_design_target	Target SAR level < FCC SAR limit after accounting for all device design related uncertainties.
	SAR Char	Table containing Plimit for all technologies and bands

3. SAR MEASUREMENTS

3.1 SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (d*W*) absorbed by (dissipated in) an incremental mass (d*m*) contained in a volume element (d*V*) of a given density (*r*). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body

$$SAR = \frac{d}{d\ t}\left(\frac{d\ U}{d\ m}\right)$$

SAR Mathematical Equation

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

$$SAR = \sigma\ E^2 / \rho$$

Where:

σ = conductivity of the tissue-simulant material (S/m)

ρ = mass density of the tissue-simulant material (kg/㎥)

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 relations 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.

3.2 SAR 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 more than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the DUT's head and body area and the horizontal grid resolution was depending on the FCC KDB 865664 D01v01r04 (see table 3-1) & IEEE 1528-2013.

2. Based on step, the area of the maximum absorption was determined by sophisticated interpolations routines implemented in DASY software. When an Area Scan has measured all reachable point. DASY system computes the field maximal found in the scanned are, within a range of the maximum. SAR at this fixed point was measured and used as a reference value.

3. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB 865664 D01v01r04 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 (reference from the DASY manual.)

   a. The data at the surface were extrapolated, since the center of the dipoles is no more than 2.7 mm away from the tip of the probe (it is different from the probe type) and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

   b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 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 integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

   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. If the value changed by more than 5 %, the SAR evaluation and drift measurements were repeated.

Table 3-1

Frequency	Maximum Area Scan Resolution(mm) (Δxarea, Δyarea)	Maximum Zoom Scan Resolution (mm) (Δxzoom, Δyzoom)	Maximum Zoom Scan Spatial Resolution (mm)			Minimum Zoom Scan Volume (mm) (x,y,z)
			Uniform Grid	Graded Grid		
			Δzzoom(n)	Δzzoom(1)*	Δzzoom(n>1)*	
≤2 GHz	≤15	≤8	≤5	≤4	≤1.5*Δzzoom(n-1)	≥30
2-3 GHz	≤12	≤5	≤5	≤4	≤1.5*Δzzoom(n-1)	≥30
3-4 GHz	≤12	≤5	≤4	≤3	≤1.5*Δzzoom(n-1)	≥28
4-5 GHz	≤10	≤4	≤3	≤2.5	≤1.5*Δzzoom(n-1)	≥25
5-6 GHz	≤10	≤4	≤2	≤2	≤1.5*Δzzoom(n-1)	≥22

Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04*

4. SAR CHARAC TERIZATION

4.1 DSI and SAR Determination

This device uses different Device State Index (DSI) to configure different time averaged power levels based on certain exposure scenarios. Depending on the detection scheme implemented in the smartphone, the worst-case SAR was determined by measurements for the relevant exposure conditions for that DSI. Detailed descriptions of the detection mechanisms are included in the operational description.

When 1g SAR and 10g SAR exposure comparison is needed, the worst-case was determined from SAR normalized to 1g or 10g SAR limit.

The device state index (DSI) conditions used in Table 4-1 represent different exposure scenarios.

Scenario	Description	SAR Test Cases
Head (DSI = 2)	Device positioned next to head Receiver Active	Head SAR per KDB Publication 648474 D04
Hotspot mode (DSI = 3)	Device transmits in hotspot mode near body Hotspot Mode Active	Hotspot SAR per KDB Publication 941225 D06
Phablet Grip (DSI=1 or 4)	Device is held with hand and grip sensor is triggered Grip sensor triggered or earjack is active	Phablet SAR per KDB Publication 648474 D04 & KDB Publication 616217 D04
Phablet (DSI = 0)	Device is held with hand and grip sensor is not triggered Distance grip sensor not triggered	Phablet SAR per KDB Publication 648474 D04 & KDB Publication 616217 D04
Body-worn (DSI = 0)	Device being used with a body-worn accessory	Body-worn SAR per KDB Publication 648474 D04

Table 4-1 DSI and Corresponding Exposure Scenarios

4.2 SAR Design Target

SAR_design_target is determined by ensuring that it is less than FCC SAR limit after accounting for total device designed related uncertainties specified by the manufacturer (see Table 4-2).

SAR_design_target			
$SAR_design_target < SAR_regulatory_limit \times 10^{-Total\ Uncertainty/10}$			
1g SAR (W/kg)		**10g SAR (W/kg)**	
Total Uncertainty	1.0 dB	*Total Uncertainty*	1.0 dB
SAR_regulatory_limit	1.6 W/kg	*SAR_regulatory_limit*	4.0 W/kg
SAR_design_target	1.0 W/kg	*SAR_design_target*	2.5 W/kg

Table 4-2 *SAR_design_target* Calculations

4.3 SAR Characterization

SAR test results corresponding to Pmax for each antenna/technology/band/DSI can be found in Appendix A. Plimit is calculated by linearly scaling with the measured SAR at the Pmax to correspond to the SAR_design_target. Plimit determination for each exposure scenario corresponding to SAR_design_target are shown in Table 4-3.

Device State Index (DSI)	Plimit Determination Scenarios
0	The worst-case SAR exposure is determined as maximum SAR normalized to the limit among: 1. Body Worn SAR 2. Extremity SAR measured at 8, 6 and 13 mm spacing for back, front, bottom respectively 3. Extremity SAR measured at 0 mm for left and right surfaces
2	Plimit is calculated based on 1g Head SAR
3	Plimit is calculated based on 1g Hotspot SAR at 10 mm
1&4	Plimit is calculated based on 10g Extremity SAR at 0 mm for back, front, and bottom surfaces. Ear jack inseted mode.

Table 4-3 *PLimit* Determination

Note:
For DSI=0,*Plimit* is calculated by :
Plimit = min{ *Plimit* cooresponding to 1g Body Worn SAR evaluation at 15mm spacing,
Plimit cooresponding to 10g Extremity SAR evaluation at 6(Front), 8(Rear) and 13mm(bottom) spacing,
Plimit cooresponding to 10g Extremity SAR evaluation at 0mm for Left and right surface }

Plim values in green indicate Plimt < Pmax		Plim values in grey indicate Plim > Pmax					
Plimt corresponding to 1 W/kg (1g) 2.5W/kg(10g) SAR_Design_target							Pmax
SAR Exposure Position		Body worn/ Phablet	Phablet (Grip On)	Head (RCV ON)	Hotspot	EarJack	Maximum Tune-up Output Power (Frame Averaged Power) [dBm]
Averaging volume		1g/10g	10g	1g	1g	10g	
seperation Distance		5/0,8,6,13 mm	0 mm	0 mm	10 mm	0 mm	
Mode	Band	DSI = 0	DSI = 1	DSI = 2	DSI = 3	DSI = 4	
CDMA	BC10	26.5	26.5	31.3	26.7	26.5	24.0
CDMA	BC0	26.2	26.2	31.7	26.3	26.2	24.0
CDMA	BC1	24.3	19.5	31.0	18.5	19.5	23.5
GSM/GPRS/EDGE	850	28.7	28.7	31.2	27.7	28.7	25.5
GSM/GPRS/EDGE	1900	26.2	17.5	33.8	17.5	17.5	22.7
UMTS	5	26.3	26.3	34.0	26.0	26.3	24.0
UMTS	4	25.2	18.5	31.1	18.5	18.5	23.5
UMTS	2	24.8	18.0	30.5	18.0	18.0	23.5
LTE FDD	12	25.3	25.3	33.5	30.1	25,3	24.5
LTE FDD	13	26.5	26.5	31.6	26.9	26.5	24.5
LTE FDD	14	26.4	26.4	30.8	26.2	26.4	24.5
LTE FDD	26	26.2	26.2	31.2	27.7	26.2	24.5
LTE FDD	5	26.2	26.2	31.3	27.7	26.2	24.5
LTE FDD	66	27.9	20.0	30.3	19.5	20.0	24.5
LTE FDD	4	27.9	20.0	30.3	19.5	20.0	24.5
LTE FDD	2	27.6	20.5	30.3	18.5	20.5	24.5
LTE FDD	25	27.6	20.5	30.3	18.5	20.5	24.5
LTE FDD	71	26.8	26.8	33.8	26.8	26.8	24.5
LTE FDD	7	26.9	20.0	32.8	20.0	20.0	23.5
LTE FDD	30	26.0	18.0	33.9	18.0	18.0	22.0
LTE TDD	40	22.2	22.2	33.1	19.7	22.2	11.0
LTE TDD	48	22.0	22.0	14.5	18.0	22.0	22.0
LTE TDD PC3	41	27.8	19.5	33.2	19.5	19.5	22.5
LTE TDD PC2	41	26.2	18.4	30.6	18.4	18.4	22.4
LTE TDD	38	27.8	17.5	33.2	17.5	17.5	22.5
NR FDD	5	27.9	27.9	35.2	29.1	27.9	24.5
NR FDD	12	26.9	26.9	35.5	31.1	26.9	24.5
NR FDD	71	29.2	29.2	34.6	30.3	26.9	24.5
NR FDD	30	24.9	17.5	32.7	17.5	17.5	23.5
NR FDD	66	25.8	19.0	31.0	19.0	19.0	23.5
NR FDD	2	24.9	18.5	31.7	18.5	18.5	23.5
NR FDD	25	24.9	18.5	31.7	18.5	18.5	23.5
NR TDD PC3	41	18.0	18.0	18.0	18.0	18.0	24.0
NR TDD PC2	41	18.0	18.0	18.0	18.0	18.0	26.0
NR TDD SRS1(PC3)	n77 DoD	17.0	17.0	14.0	17.0	17.0	24.0
NR TDD SRS1(PC2)	n77 DoD	17.0	17.0	14.0	17.0	17.0	26.5
NR TDD SRS2(PC3)	n77 DoD	12.0	12.0	12.0	12.0	12.0	20.5
NR TDD SRS2(PC2)	n77 DoD	12.0	12.0	12.0	12.0	12.0	22.0
NR TDD SRS3(PC3)	n77 DoD	12.0	12.0	12.0	12.0	12.0	20.0
NR TDD SRS3(PC2)	n77 DoD	12.0	12.0	12.0	12.0	12.0	21.0
NR TDD SRS4(PC3)	n77 DoD	12.0	12.0	12.0	12.0	12.0	18.5
NR TDD SRS4(PC2)	n77 DoD	12.0	12.0	12.0	12.0	12.0	20.5
NR TDD SRS1(PC3)	n77	17.0	17.0	14.0	17.0	17.0	24.0
NR TDD SRS1(PC2)	n77	17.0	17.0	14.0	17.0	17.0	26.5
NR TDD SRS2(PC3)	n77	12.0	12.0	12.0	12.0	12.0	20.5
NR TDD SRS2(PC2)	n77	12.0	12.0	12.0	12.0	12.0	22.0
NR TDD SRS3(PC3)	n77	12.0	12.0	12.0	12.0	12.0	20.0
NR TDD SRS3(PC2)	n77	12.0	12.0	12.0	12.0	12.0	21.0
NR TDD SRS4(PC3)	n77	12.0	12.0	12.0	12.0	12.0	18.5
NR TDD SRS4(PC2)	n77	12.0	12.0	12.0	12.0	12.0	20.5

Table 4-4 SAR Characterization

Note:

1. Compared with the Plimt (Tune up Powers) declared in each DSI by the manufacturer and the plimt (calculation) calculated by the SAR measurement of each DSI, the lower power were applied to the EFS as the plimit at each DSI configurations.
2. When *Pmax* < *Plimit*, the DUT will operate at a power level up to *Pmax*.
3. when Hotspot Mode (DSI=3) Grip sensor (DSI=1) and Ear-jack mode(DSI=4) are triggered at the same time,DSI=3(Hotspot) takes more higher priority.the Priority for power reduction was given in the order of hotspot(DSI=3), earjack.(DSI=4), and grip (DSI=1),.
4. Maximum Tune up Power,P*max*. Is configured in NV settings in EUT to limit maximum transmitting power. This power is converted into peak power in NV setting for TDD schemes.(GPRS, LTE TDD ,NR TDD)

5. Equipment List

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli 1-2	CS8Cspeag-TX90	F11/ 5K3RA1/ C/ 01	N/A	N/A	N/A
Staubli 3	CS8Cspeag-TX90	F12/ 5K9GA1/ C/ 01	N/A	N/A	N/A
Staubli 4	CS8Cspeag-TX90	F17/ 59CHA1/ C/ 01	N/A	N/A	N/A
Staubli 5	CS8Cspeag-TX90	F17/ 59RAA1/ C/ 01	N/A	N/A	N/A
Staubli 6	CS8Cspeag-TX90	F13/ 5R4XF1/ C/ 01	N/A	N/A	N/A
Staubli 7	CS8Cspeag-TX90	F08/5AJ0A1/C/01	N/A	N/A	N/A
Staubli 8	CS8Cspeag-TX90	F/20/0018446/C/001	N/A	N/A	N/A
Staubli 10	CS8Cspeag-TX90	F13/ 5SD0A1/ C/ 01	N/A	N/A	N/A
Staubli 12-L	CS8Cspeag-TX90	F/21/0029002/C/001	N/A	N/A	N/A
Staubli 12-R	CS8Cspeag-TX90	F/21/0029145/C/001	N/A	N/A	N/A
Staubli 1-2	TX90 XLspeag	F11/ 5K3RA1/ A/ 01	N/A	N/A	N/A
Staubli 3	TX90 XLspeag	F12/ 5K9GA1/ A/ 01	N/A	N/A	N/A
Staubli 4	TX90 XLspeag	F17/ 59CHA1/ A/ 01	N/A	N/A	N/A
Staubli 5	TX90 XLspeag	F17/ 59RAA1/ A/ 01	N/A	N/A	N/A
Staubli 6	TX90 XLspeag	F13/ 5R4XF1/ A/ 01	N/A	N/A	N/A
Staubli 7	TX90 XLspeag	F08/5AJ0A1/A/01	N/A	N/A	N/A
Staubli 8	TX90 XLspeag	F/20/0018446/A/001	N/A	N/A	N/A
Staubli 10	TX90 XLspeag	F13/ 5SD0A1/ A/ 01	N/A	N/A	N/A
Staubli 12-L	TX90 XLspeag	F/21/0029002/A/001	N/A	N/A	N/A
Staubli 12-R	TX90 XLspeag	F/21/0029145/A/001	N/A	N/A	N/A
Staubli 1-2	Teach Pendant (Joystick)	S-1203 0309	N/A	N/A	N/A
Staubli 3	Teach Pendant (Joystick)	S-1206 0513	N/A	N/A	N/A
Staubli 4	Teach Pendant (Joystick)	010963	N/A	N/A	N/A
Staubli 5	Teach Pendant (Joystick)	011578	N/A	N/A	N/A
Staubli 6	Teach Pendant (Joystick)	S-1338 1332	N/A	N/A	N/A
Staubli 7	Teach Pendant (Joystick)	S-0008	N/A	N/A	N/A
Staubli 8	Teach Pendant (Joystick)	020885	N/A	N/A	N/A
Staubli 10	Teach Pendant (Joystick)	001729	N/A	N/A	N/A
Staubli 12-L	Teach Pendant (Joystick)	D21144507C	N/A	N/A	N/A
Staubli 12-R	Teach Pendant (Joystick)	D21144507C	N/A	N/A	N/A
SPEAG	DAE4	868	09/27/2021	Annual	09/27/2022
SPEAG	DAE4	504	03/01/2022	Annual	03/01/2023
SPEAG	DAE4	648	06/02/2021	Annual	06/02/2022
SPEAG	DAE4	446	09/30/2021	Annual	09/30/2022
SPEAG	DAE4	911	10/07/2021	Annual	10/07/2022
SPEAG	DAE4	1686	06/21/2021	Annual	06/21/2022
SPEAG	DAE4	1422	05/19/2021	Annual	05/19/2022
SPEAG	DAE4	1687	06/21/2021	Annual	06/21/2022
SPEAG	DAE4	1225	12/01/2021	Annual	12/01/2022
SPEAG	DAE4	1629	07/26/2021	Annual	07/26/2022
SPEAG	E-Field Probe EX3DV4	3903	03/29/2022	Annual	03/29/2023
SPEAG	E-Field Probe EX3DV4	3968	09/29/2021	Annual	09/29/2022
SPEAG	E-Field Probe EX3DV4	3972	05/21/2021	Annual	05/21/2022
SPEAG	E-Field Probe EX3DV4	7681	12/14/2021	Annual	12/14/2022
SPEAG	E-Field Probe EX3DV4	7309	04/20/2021	Annual	04/20/2022
SPEAG	E-Field Probe EX3DV4	7622	11/22/2021	Annual	11/22/2022
SPEAG	E-Field Probe ES3DV3	3076	07/28/2021	Annual	07/28/2022
SPEAG	E-Field Probe EX3DV4	7679	09/10/2021	Annual	09/10/2022
SPEAG	E-Field Probe EX3DV4	7655	05/21/2021	Annual	05/21/2022
SPEAG	E-Field Probe EX3DV4	7702	01/20/2022	Annual	01/20/2023
SPEAG	Dipole D750V3	1014	06/01/2021	Annual	06/01/2022
SPEAG	Dipole D835V2	4d165	08/03/2021	Annual	08/03/2022
SPEAG	Dipole D1800V2	2d015	07/30/2021	Annual	07/30/2022
SPEAG	Dipole D1900V2	5d032	01/28/2022	Annual	01/28/2023

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	Dipole D2300V2	1010	08/17/2021	Annual	08/17/2022
SPEAG	Dipole D2450V2	965	06/15/2021	Annual	06/15/2022
SPEAG	Dipole D2600V2	1106	07/30/2021	Annual	07/30/2022
SPEAG	Dipole D3500V2	1132	01/24/2022	Annual	01/24/2023
SPEAG	Dipole D3700V2	1105	11/22/2021	Annual	11/22/2022
SPEAG	Dipole D3900V2	1019	06/09/2021	Annual	05/22/2021
SPEAG	Dipole D5GHzV2	1107	07/22/2021	Annual	07/22/2022
Agilent	Power Meter E4419B	MY41291386	10/06/2021	Annual	10/06/2022
Agilent	Power Meter E4419B	MY40330223	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor 8481A	SG1091286	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor 8481A	MY41090675	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor N1921A	MY55220026	08/05/2021	Annual	08/05/2022
Agilent	Power Divider	11636B	02/24/2022	Annual	02/24/2023
SPEAG	DAKS 3.5	1038	03/28/2022	Annual	03/28/2023
ROHDE&SCHWARZ	Signal Generator	SMB100A	07/05/2021	Annual	07/05/2022
H.P	Network Analyzer /8753ES	JP39240221	01/05/2022	Annual	01/05/2023
Agilent	WIRELESS COMMUNICATION E5515C	MY48361100	10/06/2021	Annual	10/06/2022
TESTO	175-H1/Thermometer	40331936309	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	40331939309	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	40331915309	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	40331922309	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	40332651310	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	40331949309	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	44606559906	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	44606611906	01/04/2022	Annual	01/04/2023
TESTO	175-H1/Thermometer	83239085	11/15/2021	Annual	11/15/2022
TESTO	175-H1/Thermometer	2183499992	12/09/2021	Annual	12/09/2022
EMPOWER	RF Power Amplifier	1084	06/25/2021	Annual	06/25/2022
EMPOWER	RF Power Amplifier	1011	10/06/2021	Annual	10/06/2022
MICRO LAB	LP Filter / LA-15N	10453	10/06/2021	Annual	10/05/2022
MICRO LAB	LP Filter / LA-30N	-	10/06/2021	Annual	10/05/2022
MICRO LAB	LP Filter / LA-60N	32011	10/06/2021	Annual	10/05/2022
HP	Attenuator (3dB) 333340A	02427	09/06/2021	Annual	09/06/2022
HP	Attenuator (20dB) 8493C	09271	09/06/2021	Annual	09/17/2022
Agilent	Directional Bridge 86205A	3140A03878	05/28/2021	Annual	05/28/2022
OSI	Power Divider	12	06/24/2021	Annual	06/24/2022
OSI	Power Divider	9	06/24/2021	Annual	06/24/2022
OSI	Power Divider	10	06/24/2021	Annual	06/24/2022
OSI	Power Divider	8	06/24/2021	Annual	06/24/2022
OSI	Power Divider	11	06/24/2021	Annual	06/24/2022
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/22/2021	Annual	10/22/2022
HP	Dual Directional Coupler	16072	10/05/2021	Annual	10/05/2022
Anritsu	Radio Communication Test Station MT8000A	6261967108	05/24/2021	Annual	05/24/2022
Anritsu	Radio Communication Test Station MT8000A	6261949673	11/15/2021	Annual	11/15/2022
Anritsu	Radio Communication Tester MT8820C	6201074225	02/24/2022	Annual	02/24/2023
Anritsu	Radio Communication Tester MT8820C	6200695605	04/15/2021	Annual	04/15/2022
Anritsu	Radio Communication Tester MT8820C	6200628628	09/06/2021	Annual	09/06/2022
Anritsu	Radio Communication Tester MT8821C	6262192348	11/15/2021	Annual	11/15/2022
Anritsu	Radio Communication Tester MT8821C	6262116770	07/12/2021	Annual	07/12/2022
Anritsu	Radio Communication Tester MT8821C	6201502997	07/08/2021	Annual	07/08/2022
Anritsu	Radio Communication Tester MT8821C	6262044720	12/20/2021	Annual	12/20/2022
ROHDE&SCHWARZ	BLUETOOTH TESTER CBT	100272	02/08/2022	Annual	02/08/2023

6. Measurement Uncertainty

The measured SAR was <1.5 W/Kg for 1g SAR and <3.75 W/Kg For 10g SAR for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

Appendix A: SAR Test Results For P limit CALCULATIONS

Table A-1 DSI = 2 *PLimit* Calculations – 2G/3G Head SAR

MEASUREMENT RESULTS									
Frequency		Mode/ Band		Frame Averaged Conducted Power	Test Position	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)			(W/kg)	(dBm)	(dBm)
820	560	RC3 / SO55	CDMA BC10	24.16	Right Cheek	1:1	0.139	32.7	31.3
820	560	RC3 / SO55	CDMA BC10	24.16	Right Tilt	1:1	0.101	34.1	
820	560	RC3 / SO55	CDMA BC10	24.16	Left Cheek	1:1	0.117	33.5	
820	560	RC3 / SO55	CDMA BC10	24.16	Left Tilt	1:1	0.076	35.4	
820	560	EVDO Rev. A	CDMA BC10	23.57	Right Cheek	1:1	0.167	31.7	
820	560	EVDO Rev. A	CDMA BC10	23.57	Right Tilt	1:1	0.067	35.3	
820	560	EVDO Rev. A	CDMA BC10	23.57	Left Cheek	1:1	0.114	33.0	
820	560	EVDO Rev. A	CDMA BC10	23.57	Left Tilt	1:1	0.067	35.3	
836.52	384	RC3 / SO55	CDMA BC0	24.30	Right Cheek	1:1	0.172	31.9	31.7
836.52	384	RC3 / SO55	CDMA BC0	24.30	Right Tilt	1:1	0.080	35.3	
836.52	384	RC3 / SO55	CDMA BC0	24.30	Left Cheek	1:1	0.117	33.6	
836.52	384	RC3 / SO55	CDMA BC0	24.30	Left Tilt	1:1	0.075	35.5	
836.52	384	EVDO Rev. A	CDMA BC0	23.89	Right Cheek	1:1	0.165	31.7	
836.52	384	EVDO Rev. A	CDMA BC0	23.89	Right Tilt	1:1	0.065	35.8	
836.52	384	EVDO Rev. A	CDMA BC0	23.89	Left Cheek	1:1	0.105	33.7	
836.52	384	EVDO Rev. A	CDMA BC0	23.89	Left Tilt	1:1	0.068	35.6	
1880.0	600	RC3 / SO55	PCS	24.10	Right Cheek	1:1	0.110	33.7	31.0
1880.0	600	RC3 / SO55	PCS	24.10	Right Tilt	1:1	0.025	40.1	
1880.0	600	RC3 / SO55	PCS	24.10	Left Cheek	1:1	0.203	31.0	
1880.0	600	RC3 / SO55	PCS	24.10	Left Tilt	1:1	0.036	38.5	
1880.0	600	EVDO Rev. A	PCS	24.11	Right Cheek	1:1	0.132	32.9	
1880.0	600	EVDO Rev. A	PCS	24.11	Right Tilt	1:1	0.057	36.6	
1880.0	600	EVDO Rev. A	PCS	24.11	Left Cheek	1:1	0.192	31.3	
1880.0	600	EVDO Rev. A	PCS	24.11	Left Tilt	1:1	0.102	34.0	

MEASUREMENT RESULTS									
Frequency		Mode/ Band		Frame Averaged Conducted Power	Test Position	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plim
MHz	Ch.			(dBm)			(W/kg)	(dBm)	(dBm)
836.6	190	GSM 850	GPRS 2Tx	25.56	Right Cheek	2:8	0.270	31.2	31.2
836.6	190	GSM 850		25.56	Right Tilt	2:8	0.127	34.5	
836.6	190	GSM 850		25.56	Left Cheek	2:8	0.205	32.4	
836.6	190	GSM 850		25.56	Left Tilt	2:8	0.160	33.5	
1 880	661	GSM 1900	GPRS 3Tx	22.45	Right Cheek	3:8	0.040	36.4	33.8
1 880	661	GSM 1900		22.45	Right Tilt	3:8	0.035	37.0	
1 880	661	GSM 1900		22.45	Left Cheek	3:8	0.073	33.8	
1 880	661	GSM 1900		22.45	Left Tilt	3:8	0.012	41.7	
836.6	4183	UMTS 850	RMC	23.96	Right Cheek	1:1	0.068	35.6	34.0
836.6	4183	UMTS 850	RMC	23.96	Right Tilt	1:1	0.048	37.1	
836.6	4183	UMTS 850	RMC	23.96	Left Cheek	1:1	0.098	34.0	
836.6	4183	UMTS 850	RMC	23.96	Left Tilt	1:1	0.022	40.5	
1 732.4	1412	UMTS 1700	RMC	23.28	Right Cheek	1:1	0.154	31.4	31.1
1 732.4	1412	UMTS 1700	RMC	23.28	Right Tilt	1:1	0.099	33.3	
1 732.4	1412	UMTS 1700	RMC	23.28	Left Cheek	1:1	0.165	31.1	
1 732.4	1412	UMTS 1700	RMC	23.28	Left Tilt	1:1	0.096	33.5	
1 880	9400	UMTS 1900	RMC	23.47	Right Cheek	1:1	0.121	32.6	30.5
1 880	9400	UMTS 1900	RMC	23.47	Right Tilt	1:1	0.129	32.4	
1 880	9400	UMTS 1900	RMC	23.47	Left Cheek	1:1	0.200	30.5	
1 880	9400	UMTS 1900	RMC	23.47	Left Tilt	1:1	0.064	35.4	

Table A-2 DSI = 2 *PLimit* Calculations – 4G Head SAR

MEASUREMENT RESULTS													
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)	(dBm)		(dB)				(W/kg)	(dBm)	(dBm)
2 560	21350	LTE Band 7	High	20	23.93	Right Cheek	0	1	49	1:1	0.099	34.0	32.8
2 560	21350	LTE Band 7	High	20	23.93	Right Tilt	0	1	49	1:1	0.069	35.5	
2 560	21350	LTE Band 7	High	20	23.93	Left Cheek	0	1	49	1:1	0.130	32.8	
2 560	21350	LTE Band 7	High	20	23.93	Left Tilt	0	1	49	1:1	0.040	37.9	
707.5	23095	LTE Band 12	Mid	10	24.02	Right Cheek	0	1	0	1:1	0.129	33.5	33.5
707.5	23095	LTE Band 12	Mid	10	24.02	Right Tilt	0	1	0	1:1	0.064	36.2	
707.5	23095	LTE Band 12	Mid	10	24.02	Left Cheek	0	1	0	1:1	0.088	34.8	
707.5	23095	LTE Band 12	Mid	10	24.02	Left Tilt	0	1	0	1:1	0.057	36.7	
782	23230	LTE Band 13	Mid	10	24.15	Right Cheek	0	1	49	1:1	0.180	31.6	31.6
782	23230	LTE Band 13	Mid	10	24.15	Right Tilt	0	1	49	1:1	0.100	34.2	
782	23230	LTE Band 13	Mid	10	24.15	Left Cheek	0	1	49	1:1	0.126	33.1	
782	23230	LTE Band 13	Mid	10	24.15	Left Tilt	0	1	49	1:1	0.086	34.8	
793	23330	LTE Band 14	Mid	10	24.28	Right Cheek	0	1	24	1:1	0.225	30.8	30.8
793	23330	LTE Band 14	Mid	10	24.28	Right Tilt	0	1	24	1:1	0.117	33.6	
793	23330	LTE Band 14	Mid	10	24.28	Left Cheek	0	1	24	1:1	0.172	31.9	
793	23330	LTE Band 14	Mid	10	24.28	Left Tilt	0	1	24	1:1	0.124	33.3	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Right Cheek	0	1	49	1:1	0.175	32.3	30.3
1 882.5	26365	LTE Band 25	Mid	20	24.69	Right Tilt	0	1	49	1:1	0.121	33.9	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Left Cheek	0	1	49	1:1	0.274	30.3	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Left Tilt	0	1	49	1:1	0.109	34.3	
831.5	26865	LTE Band 26	Mid	15	23.95	Right Cheek	0	1	0	1:1	0.187	31.2	31.2
831.5	26865	LTE Band 26	Mid	15	23.95	Right Tilt	0	1	0	1:1	0.087	34.6	
831.5	26865	LTE Band 26	Mid	15	23.95	Left Cheek	0	1	0	1:1	0.116	33.3	
831.5	26865	LTE Band 26	Mid	15	23.95	Left Tilt	0	1	0	1:1	0.071	35.4	
2 310	27710	LTE Band 30	Mid	10	22.42	Right Cheek	0	1	49	1:1	0.056	34.9	33.9
2 310	27710	LTE Band 30	Mid	10	22.42	Right Tilt	0	1	49	1:1	0.045	35.9	
2 310	27710	LTE Band 30	Mid	10	22.42	Left Cheek	0	1	49	1:1	0.071	33.9	
2 310	27710	LTE Band 30	Mid	10	22.42	Left Tilt	0	1	49	1:1	0.048	35.6	
2 310	38750	LTE Band 40	Mid	10	10.9	Right Cheek	0	1	24	1:1.58	0.006	33.1	33.1
2 310	38750	LTE Band 40	Mid	10	10.9	Right Tilt	0	1	24	1:1.58	0.000	-	
2 310	38750	LTE Band 40	Mid	10	10.9	Left Cheek	0	1	24	1:1.58	0.003	36.1	
2 310	38750	LTE Band 40	Mid	10	10.9	Left Tilt	0	1	24	1:1.58	0.001	40.9	
2 355	39200	LTE Band 40	Mid	10	10.57	Right Cheek	0	1	24	1:1.58	0.004	34.6	
2 355	39200	LTE Band 40	Mid	10	10.57	Right Tilt	0	1	24	1:1.58	0.001	40.6	
2 355	39200	LTE Band 40	Mid	10	10.57	Left Cheek	0	1	24	1:1.58	0.002	37.6	
2 355	39200	LTE Band 40	Mid	10	10.80	Left Tilt	0	1	24	1:1.58	0.000	-	

MEASUREMENT RESULTS													
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)	(dBm)		(dB)				(W/kg)	(dBm)	(dBm)
2 593	40620	LTE Band41(PC3)	Mid	20	23.14	Right Cheek	0	1	49	1:1.58	0.063	33.2	33.2
2 593	40620	LTE Band41(PC3)	Mid	20	23.14	Right Tilt	0	1	49	1:1.58	0.057	33.6	
2 593	40620	LTE Band41(PC3)	Mid	20	23.14	Left Cheek	0	1	49	1:1.58	0.038	35.4	
2 593	40620	LTE Band41(PC3)	Mid	20	23.14	Left Tilt	0	1	49	1:1.58	0.030	36.4	
2 593	40620	LTE Band41(PC2)	Mid	20	22.34	Right Cheek	0	1	49	1:2.31	0.093	32.7	30.6
2 593	40620	LTE Band41(PC2)	Mid	20	22.34	Right Tilt	0	1	49	1:2.31	0.074	33.7	
2 593	40620	LTE Band41(PC2)	Mid	20	22.34	Left Cheek	0	1	49	1:2.31	0.150	30.6	
2 593	40620	LTE Band41(PC2)	Mid	20	22.34	Left Tilt	0	1	49	1:2.31	0.044	35.9	
3 560.0	55340	LTE Band 48	Low	20	14.58	Right Cheek	0	50	25	1:1.58	0.399	18.6	18.1
3 560.0	55340	LTE Band 48	Low	20	14.58	Right Tilt	0	50	25	1:1.58	0.450	18.1	
3 560.0	55340	LTE Band 48	Low	20	14.58	Left Cheek	0	50	25	1:1.58	0.091	25.0	
3 560.0	55340	LTE Band 48	Low	20	14.58	Left Tilt	0	50	25	1:1.58	0.108	24.2	
1 770	132572	LTE Band 66	High	20	24.79	Right Cheek	0	1	0	1:1	0.176	32.3	30.0
1 770	132572	LTE Band 66	High	20	24.79	Right Tilt	0	1	0	1:1	0.100	34.8	
1 770	132572	LTE Band 66	High	20	24.79	Left Cheek	0	1	0	1:1	0.298	30.3	
1 770	132572	LTE Band 66	High	20	24.79	Left Tilt	0	50	25	1:1	0.064	35.8	
680.5	133297	LTE Band 71	Mid	20	24.51	Right Cheek	0	1	0	1:1	0.119	33.8	33.8
680.5	133297	LTE Band 71	Mid	20	24.51	Right Tilt	0	1	0	1:1	0.056	37.0	
680.5	133297	LTE Band 71	Mid	20	24.51	Left Cheek	0	1	0	1:1	0.118	33.8	
680.5	133297	LTE Band 71	Mid	20	24.51	Left Tilt	0	1	0	1:1	0.063	36.5	

Table A-3 DSI = 2 *PLimit* Calculations – NR Head SAR

For some bands/modes, a lower *PLimit* was selected as a more conservative evaluation.

NR TDD Bands : In the case of the NR TDD bands, the Plimit were calculated as the Frame average power to which the duty factor was applied to the burst power.

SAR measurements of all NR bands were measured in FTM Mode.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Configurations		MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)	(dBm)			(dB)				(W/kg)	(dBm)	(dBm)
836.5	167300	NR Band n5	Mid	20	24.31	Right Cheek	DFT-s-OFDM QPSK	0	50	28	1:1	0.081	35.2	35.2
836.5	167300	NR Band n5	Mid	20	24.31	Right Tilt	DFT-s-OFDM QPSK	0	50	28	1:1	0.033	39.1	
836.5	167300	NR Band n5	Mid	20	24.31	Left Cheek	DFT-s-OFDM QPSK	0	50	28	1:1	0.040	38.3	
836.5	167300	NR Band n5	Mid	20	24.31	Left Tilt	DFT-s-OFDM QPSK	0	50	28	1:1	0.031	39.4	
707.5	141500	NR Band n12	Mid	15	24.33	Right Cheek	DFT-s-OFDM QPSK	0	36	22	1:1	0.076	35.5	35.5
707.5	141500	NR Band n12	Mid	15	24.33	Right Tilt	DFT-s-OFDM QPSK	0	36	22	1:1	0.034	39.0	
707.5	141500	NR Band n12	Mid	15	24.33	Left Cheek	DFT-s-OFDM QPSK	0	36	22	1:1	0.064	36.3	
707.5	141500	NR Band n12	Mid	15	24.47	Left Tilt	DFT-s-OFDM QPSK	0	1	1	1:1	0.021	41.2	
1 882.5	376500	NR Band n25	Mid	40	23.01	Right Cheek	DFT-s-OFDM QPSK	0	108	54	1:1	0.119	32.3	31.7
1 882.5	376500	NR Band n25	Mid	40	23.01	Right Tilt	DFT-s-OFDM QPSK	0	108	54	1:1	0.071	34.5	
1 882.5	376500	NR Band n25	Mid	40	23.01	Left Cheek	DFT-s-OFDM QPSK	0	108	54	1:1	0.134	31.7	
1 882.5	376500	NR Band n25	Mid	40	23.01	Left Tilt	DFT-s-OFDM QPSK	0	108	54	1:1	0.074	34.3	
2 310	462000	NR Band n30	Mid	10	23.09	Right Cheek	DFT-s-OFDM QPSK	0	1	26	1:1	0.110	32.7	32.7
2 310	462000	NR Band n30	Mid	10	23.03	Right Tilt	DFT-s-OFDM QPSK	0	25	14	1:1	0.043	36.7	
2 310	462000	NR Band n30	Mid	10	23.03	Left Cheek	DFT-s-OFDM QPSK	0	25	14	1:1	0.072	34.5	
2 310	462000	NR Band n30	Mid	10	23.03	Left Tilt	DFT-s-OFDM QPSK	0	25	14	1:1	0.031	38.1	
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.53	Right Cheek	DFT-s-OFDM QPSK	0	135	69	1:1	0.008	39.5	35.1
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.47	Right Tilt	DFT-s-OFDM QPSK	0	1	271	1:1	0.000	-	
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.53	Left Cheek	DFT-s-OFDM QPSK	0	135	69	1:1	0.022	35.1	
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.47	Left Tilt	DFT-s-OFDM QPSK	0	1	271	1:1	0.001	48.5	
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.53	Right Cheek	DFT-s-OFDM QPSK	0	135	69	1:1	0.008	39.5	35.1
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.47	Right Tilt	DFT-s-OFDM QPSK	0	1	271	1:1	0.000	-	
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.53	Left Cheek	DFT-s-OFDM QPSK	0	135	69	1:1	0.022	35.1	
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.47	Left Tilt	DFT-s-OFDM QPSK	0	1	271	1:1	0.001	48.5	
1 745	349000	NR Band n66	Mid	40	23.48	Right Cheek	DFT-s-OFDM QPSK	0	108	54	1:1	0.171	31.2	31.0
1 745	349000	NR Band n66	Mid	40	23.48	Right Tilt	DFT-s-OFDM QPSK	0	108	54	1:1	0.089	34.0	
1 745	349000	NR Band n66	Mid	40	23.48	Left Cheek	DFT-s-OFDM QPSK	0	108	54	1:1	0.176	31.0	
1 745	349000	NR Band n66	Mid	40	23.48	Left Tilt	DFT-s-OFDM QPSK	0	108	54	1:1	0.074	34.8	
680.5	136100	NR Band n71	Mid	20	24.26	Right Cheek	DFT-s-OFDM QPSK	0	50	28	1:1	0.093	34.6	34.6
680.5	136100	NR Band n71	Mid	20	24.26	Right Tilt	DFT-s-OFDM QPSK	0	50	28	1:1	0.049	37.4	
680.5	136100	NR Band n71	Mid	20	24.26	Left Cheek	DFT-s-OFDM QPSK	0	50	28	1:1	0.082	35.1	
680.5	136100	NR Band n71	Mid	20	24.37	Left Tilt	DFT-s-OFDM QPSK	0	1	1	1:1	0.037	38.7	
3 930	652000	NR Band 77(PC3)	High	100	14.89	Right Cheek	DFT-s-OFDM QPSK	0	1	137	1:1	0.679	16.6	16.6
3 930	652000	NR Band 77(PC3)	High	100	14.89	Right Tilt	DFT-s-OFDM QPSK	0	1	137	1:1	0.508	17.8	
3 930	652000	NR Bandn77(PC3)	High	100	14.89	Left Cheek	DFT-s-OFDM QPSK	0	1	137	1:1	0.191	22.1	
3 930	652000	NR Bandn77(PC3)	High	100	14.89	Left Tilt	DFT-s-OFDM QPSK	0	1	137	1:1	0.150	23.1	
3 930	652000	NR Bandn77(PC2)	High	100	14.89	Right Cheek	DFT-s-OFDM QPSK	0	1	137	1:1	0.679	16.6	16.6
3 930	652000	NR Bandn77(PC2)	High	100	14.89	Right Tilt	DFT-s-OFDM QPSK	0	1	137	1:1	0.508	17.8	
3 930	652000	NR Bandn77(PC2)	High	100	14.89	Left Cheek	DFT-s-OFDM QPSK	0	1	137	1:1	0.191	22.1	
3 930	652000	NR Bandn77(PC2)	High	100	14.89	Left Tilt	DFT-s-OFDM QPSK	0	1	137	1:1	0.150	23.1	

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Configurations		MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)	(dBm)			(dB)				(W/kg)	(dBm)	(dBm)
3 500.01	633334	NR Bandn77(DoD)	Mid	100	8.76	Right Cheek	DFT-s-OFDM QPSK	0	1	271	1:1	0.664	16.5	16.5
3 500.01	633334	NR Bandn77(DoD)	Mid	100	8.76	Right Tilt	DFT-s-OFDM QPSK	0	1	271	1:1	0.487	17.9	
3 500.01	633334	NR Bandn77(DoD)	Mid	100	8.78	Left Cheek	DFT-s-OFDM QPSK	0	135	69	1:1	0.131	23.6	
3 500.01	633334	NR Bandn77(DoD)	Mid	100	8.78	Left Tilt	DFT-s-OFDM QPSK	0	135	69	1:1	0.125	23.8	
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Right Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	-
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Right Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Left Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Left Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Right Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.259	18.1	18.1
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Right Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Left Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.062	24.3	
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Left Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Right Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	-
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Right Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Left Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Left Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Right Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	-
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Right Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Left Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Left Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Right Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.248	18.0	18.0
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Right Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Left Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.056	24.4	
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Left Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Right Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	-
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Right Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Left Cheek	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Left Tilt	DFT-s-OFDM QPSK	0	270	0	1:1	0.000	-	

Table A-4 DSI = 0 *PLimit* Calculations - 2G/3G Body-Worn SAR

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Frame Averaged Conducted Power	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)				(W/kg)	(dBm)	(dBm)
820	560	TDSO RC32/SO55	CDMA BC10	24.20	Back	15	1:1	0.326	29.1	29.1
820	560	TDSO RC32/SO55	CDMA BC10	24.20	Front	15	1:1	0.309	29.3	
820	560	EVDO Rev. A	CDMA BC10	23.57	Back	15	1:1	0.279	29.1	
820	560	EVDO Rev. A	CDMA BC10	23.57	Front	15	1:1	0.230	30.0	
836.52	384	TDSO RC32/SO55	CDMA BC 0	24.32	Back	15	1:1	0.430	28.0	28.0
836.52	384	TDSO RC32/SO55	CDMA BC 0	24.32	Front	15	1:1	0.392	28.4	
836.52	384	EVDO Rev. A	CDMA BC 0	23.89	Back	15	1:1	0.368	29.1	
836.52	384	EVDO Rev. A	CDMA BC 0	23.89	Front	15	1:1	0.300	29.3	
1 908.75	1175	TDSO RC32/SO55	PCS	23.92	Back	15	1:1	0.918	24.3	24.3
1 908.75	1175	TDSO RC32/SO55	PCS	23.92	Front	15	1:1	0.870	24.5	
1 880.0	600	EVDO Rev. A	PCS	24.11	Back	15	1:1	0.879	24.7	
1 880.0	600	EVDO Rev. A	PCS	24.11	Front	15	1:1	0.722	25.5	
836.6	190	GSM 850	GPRS2Tx	25.56	Back	15	2:8	0.387	29.7	29.7
836.6	190	GSM 850	GPRS2Tx	25.56	Front	15	2:8	0.348	30.1	
1 880	661	GSM 1900	GPRS3Tx	22.45	Back	15	3:8	0.413	26.3	26.2
1 880	661	GSM 1900	GPRS3Tx	22.45	Front	15	3:8	0.425	26.2	
836.6	4183	UMTS 850	RMC	23.96	Back	15	1:1	0.332	28.7	28.7
836.6	4183	UMTS 850	RMC	23.96	Front	15	1:1	0.313	29.0	
1 712.4	1312	UMTS 1700	RMC	23.46	Back	15	1:1	0.785	24.5	25.2
1 732.4	1412	UMTS 1700	RMC	23.28	Front	15	1:1	0.641	25.2	
1 907.6	9538	UMTS 1900	RMC	23.50	Back	15	1:1	0.774	24.5	24.5
1 907.6	9538	UMTS 1900	RMC	23.50	Front	15	1:1	0.675	25.2	

Table A-5 DSI = 0 *PLimit* Calculations - 4G Body-Worn SAR

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position	Spacing (mm)	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)				(W/kg)	(dBm)	(dBm)
2 560	21350	LTE Band 7	High	20	23.93	Back	15	0	1	49	1:1	0.507	26.9	26.9
2 560	21350	LTE Band 7	High	20	23.93	Front	15	0	1	49	1:1	0.376	28.2	
707.5	23095	LTE Band 12	Mid	10	24.02	Back	15	0	1	0	1:1	0.142	32.5	32.0
707.5	23095	LTE Band 12	Mid	10	24.02	Front	15	0	1	0	1:1	0.160	32.0	
782	23230	LTE Band 13	Mid	10	24.15	Back	15	0	1	49	1:1	0.349	28.7	28.7
782	23230	LTE Band 13	Mid	10	24.15	Front	15	0	1	49	1:1	0.292	29.5	
793	23330	LTE Band 14	Mid	10	24.28	Back	15	0	1	24	1:1	0.382	28.5	28.5
793	23330	LTE Band 14	Mid	10	24.28	Front	15	0	1	24	1:1	0.356	28.8	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Back	15	0	1	49	1:1	0.509	27.6	27.6
1 882.5	26365	LTE Band 25	Mid	20	24.69	Front	15	0	1	49	1:1	0.442	28.2	
831.5	26865	LTE Band 26	Mid	15	23.95	Back	15	0	1	0	1:1	0.321	28.9	28.9
831.5	26865	LTE Band 26	Mid	15	23.95	Front	15	0	1	0	1:1	0.262	29.8	
2 310	27710	LTE Band 30	Mid	10	22.42	Back	15	0	1	49	1:1	0.483	25.6	26.0
2 310	27710	LTE Band 30	Mid	10	22.42	Front	15	0	1	49	1:1	0.502	25.4	
2 310	38750	LTE Band 40	Mid	10	10.90	Back	15	0	1	24	1:1.58	0.027	26.6	26.6
2 310	38750	LTE Band 40	Mid	10	10.90	Front	15	0	1	24	1:1.58	0.025	26.9	
2 535	39200	LTE Band 40 Upper	Mid	10	12.56	Back	15	0	1	24	1:1.58	0.029	26.0	26.0
2 535	39200	LTE Band 40 Upper	Mid	10	12.56	Front	15	0	1	24	1:1.58	0.027	26.3	
1 770	132572	LTE Band 66	High	20	24.79	Back	15	0	1	0	1:1	0.471	28.1	27.9
1 770	132572	LTE Band 66	High	20	24.79	Front	15	0	1	0	1:1	0.494	27.9	
2 593	40620	LTE Band 41(PC3)	Mid	20	23.14	Back	15	0	1	49	1:1.58	0.340	27.8	27.8
2 593	40620	LTE Band 41(PC3)	Mid	20	23.14	Front	15	0	1	49	1:1.58	0.285	28.6	
2 593	40620	LTE Band 41(PC2)	Mid	20	22.34	Back	15	0	1	49	1:2.31	0.408	18.3	18.3
2 593	40620	LTE Band 41(PC2)	Mid	20	22.34	Front	15	0	1	49	1:2.31	0.311	23.2	
3 560	55340	LTE Band 48	Low	20	24.42	Back	15	0	1	99	1:2.31	0.220	29.0	26.8
3 560	55340	LTE Band 48	Low	20	24.42	Front	15	0	50	25	1:2.31	0.305	26.8	
680.5	133297	LTE Band 71	Mid	20	24.51	Back	15	0	1	49	1:1	0.176	32.1	32.1
680.5	133297	LTE Band 71	Mid	20	24.51	Front	15	0	1	49	1:1	0.163	32.4	

Table A-6 DSI = 0 *PLimit* Calculations - NR Body-Worn SAR

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

NR TDD Bands : In the case of the NR TDD bands, the Plimit were calculated as the Frame average power to which the duty factor was applied to the burst power. SAR measurements of all NR bands were measured in FTM Mode.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Configurations		MPR	Spacing (mm)	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)					(W/kg)	(dBm)	(dBm)
836.5	167300	NR Band n5	Mid	20	24.45	Back	DFT-s-OFDM QPSK	0	15	1	104	1:1	0.135	33.1	33.1
836.5	167300	NR Band n5	Mid	20	24.31	Front	DFT-s-OFDM QPSK	0	15	50	28	1:1	0.118	33.6	
707.5	141500	NR Band n12	Mid	15	24.23	Back	DFT-s-OFDM QPSK	0	15	36	22	1:1	0.101	34.3	34.3
707.5	141500	NR Band n12	Mid	15	24.23	Front	DFT-s-OFDM QPSK	0	15	36	22	1:1	0.099	34.4	
1 882.5	376500	NR Band n25	Mid	40	23.42	Back	DFT-s-OFDM QPSK	0	15	1	108	1:1	0.663	25.2	24.9
1 882.5	376500	NR Band n25	Mid	40	23.01	Front	DFT-s-OFDM QPSK	0	15	1	108	1:1	0.641	24.9	
2 310	462000	NR Band n30	Mid	10	23.09	Back	DFT-s-OFDM QPSK	0	15	25	14	1:1	0.654	24.9	24.9
2 310	462000	NR Band n30	Mid	10	23.09	Front	DFT-s-OFDM QPSK	0	15	25	14	1:1	0.643	24.9	
2 592.99	518598	NR Bandn41(PC3)	Mid	100	18.47	Back	DFT-s-OFDM QPSK	0	15	1	271	1:1	0.127	27.4	27.4
2 592.99	518598	NR Bandn41(PC3)	Mid	100	18.47	Front	DFT-s-OFDM QPSK	0	15	1	271	1:1	0.121	27.6	
2 592.99	518598	NR Bandn41(PC2)	Mid	100	18.47	Back	DFT-s-OFDM QPSK	0	15	1	271	1:1	0.127	27.4	27.4
2 592.99	518598	NR Bandn41(PC2)	Mid	100	18.47	Front	DFT-s-OFDM QPSK	0	15	1	271	1:1	0.121	27.6	
1 745	349000	NR Band n66	Mid	40	23.48	Back	DFT-s-OFDM QPSK	0	15	108	54	1:1	0.581	25.8	25.8
1 745	349000	NR Band n66	Mid	40	23.48	Front	DFT-s-OFDM QPSK	0	15	108	54	1:1	0.558	26.0	
680.5	136100	NR Band n71	Mid	20	24.37	Back	DFT-s-OFDM QPSK	0	15	1	1	1:1	0.124	33.4	33.4
680.5	136100	NR Band n71	Mid	20	24.26	Front	DFT-s-OFDM QPSK	0	15	50	28	1:1	0.113	33.7	
3 930	662000	NR Bandn77(PC3)	High	100	17.60	Back	DFT-s-OFDM QPSK	0	15	135	69	1:1	0.106	27.3	26.4
3 930	662000	NR Bandn77(PC3)	High	100	17.60	Front	DFT-s-OFDM QPSK	0	15	135	69	1:1	0.132	26.4	
3 930	662000	NR Bandn77(PC2)	High	100	17.60	Back	DFT-s-OFDM QPSK	0	15	135	69	1:1	0.106	27.3	26.4
3 930	662000	NR Bandn77(PC2)	High	100	17.60	Front	DFT-s-OFDM QPSK	0	15	135	69	1:1	0.132	26.4	
3 500.01	633334	NR Bandn77(DoD)	Mid	100	17.83	Back	DFT-s-OFDM QPSK	0	15	1	1	1:1	0.106	27.6	27.6
3 500.01	633334	NR Bandn77(DoD)	Mid	100	17.54	Front	DFT-s-OFDM QPSK	0	15	135	69	1:1	0.089	28.0	
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Back	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000	-	-
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Front	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000	-	
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Back	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000	-	-
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Front	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Back	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.033	26.2	26.2
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Front	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Back	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.00309	37.3	33.0
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Front	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.0075	33.0	
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Back	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000	-	-
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Front	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Back	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.014	29.8	29.8
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Front	DFT-s-OFDM QPSK	0	15	270	0	1:1	0.000		

Table A-7 DSI = 3 *PLimit* Calculations – 2G/3G Hotspot SAR

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Frame Averaged Conducted Power	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)				(W/kg)	(dBm)	(dBm)
820	560	EVDO Rev.0	CDMA BC10	23.60	Back	10	1:1	0.533	26.3	26.3
820	560	EVDO Rev.0	CDMA BC10	23.60	Front	10	1:1	0.413	27.4	
820	560	EVDO Rev.0	CDMA BC10	23.60	Bottom	10	1:1	0.292	28.9	
820	560	EVDO Rev.0	CDMA BC10	23.60	Right	10	1:1	0.229	30.0	
820	560	EVDO Rev.0	CDMA BC10	23.60	Left	10	1:1	0.097	33.7	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Back	10	1:1	0.631	25.9	25.9
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Front	10	1:1	0.550	26.5	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Bottom	10	1:1	0.300	29.1	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Right	10	1:1	0.237	30.1	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Left	10	1:1	0.091	34.3	
1 880.0	600	EVDO Rev.0	PCS	19.03	Back	10	1:1	0.466	22.3	19.4
1 880.0	600	EVDO Rev.0	PCS	19.03	Front	10	1:1	0.424	22.8	
1 880.0	600	EVDO Rev.0	PCS	19.03	Bottom	10	1:1	0.927	19.4	
1 880.0	600	EVDO Rev.0	PCS	19.03	Right	10	1:1	0.063	31.0	
1 880.0	600	EVDO Rev.0	PCS	19.03	Left	10	1:1	0.077	30.2	

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Frame Averaged Conducted Power	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)				(W/kg)	(dBm)	(dBm)
836.6	190	GSM 850	GPRS2Tx	25.56	Back	10	1:4.15	0.616	27.7	27.7
836.6	190	GSM 850	GPRS2Tx	25.56	Front	10	1:4.15	0.547	28.2	
836.6	190	GSM 850	GPRS2Tx	25.56	Bottom	10	1:4.15	0.489	28.7	
836.6	190	GSM 850	GPRS2Tx	25.56	Right	10	1:4.15	0.417	29.4	
836.6	190	GSM 850	GPRS2Tx	25.56	Left	10	1:4.15	0.113	35.0	
1 880.0	661	GSM 1900	GPRS1Tx	17.12	Back	10	1:8.3	0.215	23.8	21.3
1 880.0	661	GSM 1900	GPRS1Tx	17.12	Front	10	1:8.3	0.196	24.2	
1 880.0	661	GSM 1900	GPRS1Tx	17.12	Bottom	10	1:8.3	0.379	21.3	
1 880.0	661	GSM 1900	GPRS1Tx	17.12	Right	10	1:8.3	0.025	33.1	
1 880.0	661	GSM 1900	GPRS1Tx	17.12	Left	10	1:8.3	0.042	30.9	
836.6	4183	UMTS 850	RMC	23.96	Back	10	1:1	0.621	26.0	26.0
836.6	4183	UMTS 850	RMC	23.96	Front	10	1:1	0.415	27.8	
836.6	4183	UMTS 850	RMC	23.96	Bottom	10	1:1	0.424	27.7	
836.6	4183	UMTS 850	RMC	23.96	Right	10	1:1	0.411	27.8	
836.6	4183	UMTS 850	RMC	23.96	Left	10	1:1	0.121	33.1	
1 732.4	1412	UMTS 1700	RMC	18.27	Back	10	1:1	0.223	24.8	21.2
1 732.4	1412	UMTS 1700	RMC	18.27	Front	10	1:1	0.252	24.3	
1 732.4	1412	UMTS 1700	RMC	18.27	Bottom	10	1:1	0.512	21.2	
1 732.4	1412	UMTS 1700	RMC	18.27	Right	10	1:1	0.044	31.8	
1 732.4	1412	UMTS 1700	RMC	18.27	Left	10	1:1	0.061	30.4	
1 880	9400	UMTS 1900	RMC	18.44	Back	10	1:1	0.376	22.7	18.5
1 880	9400	UMTS 1900	RMC	18.44	Front	10	1:1	0.455	21.9	
1 880	9538	UMTS 1900	RMC	18.47	Bottom	10	1:1	0.976	18.5	
1 907.6	9400	UMTS 1900	RMC	18.44	Right	10	1:1	0.058	30.8	
1 880	9400	UMTS 1900	RMC	18.44	Left	10	1:1	0.076	29.6	

Table A-8 DSI = 3 *PLimit* Calculations - – 4G Hotspot SAR

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position	Spacing (mm)	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)				(W/kg)	(dBm)	(dBm)
2 510	20850	LTE Band 7	Low	20	19.83	Back	10	0	50	25	1:1	0.419	23.6	22.5
2 510	20850	LTE Band 7	Low	20	19.83	Front	10	0	50	25	1:1	0.314	24.9	
2 510	20850	LTE Band 7	Low	20	19.83	Bottom	10	0	50	25	1:1	0.542	22.5	
2 510	20850	LTE Band 7	Low	20	19.83	Left	10	0	50	25	1:1	0.188	27.1	
707.5	23095	LTE Band 12	Mid	10	24.02	Back	10	1	25	12	1:1	0.261	29.9	29.9
707.5	23095	LTE Band 12	Mid	10	24.02	Front	10	0	1	0	1:1	0.186	31.3	
707.5	23095	LTE Band 12	Mid	10	24.02	Bottom	10	0	1	0	1:1	0.182	31.4	
707.5	23095	LTE Band 12	Mid	10	24.02	Right	10	0	1	0	1:1	0.143	32.5	
707.5	23095	LTE Band 12	Mid	10	24.02	Left	10	0	1	0	1:1	0.080	35.0	
782	23230	LTE Band 13	Mid	10	24.15	Back	10	0	1	49	1:1	0.537	26.9	26.9
782	23230	LTE Band 13	Mid	10	24.15	Front	10	0	1	49	1:1	0.379	28.4	
782	23230	LTE Band 13	Mid	10	24.15	Bottom	10	0	1	49	1:1	0.311	29.2	
782	23230	LTE Band 13	Mid	10	24.15	Right	10	0	1	49	1:1	0.320	33.8	
782	23230	LTE Band 13	Mid	10	24.15	Left	10	0	1	49	1:1	0.108	29.1	
793	23330	LTE Band 14	Mid	10	24.28	Back	10	0	1	24	1:1	0.462	27.6	27.6
793	23330	LTE Band 14	Mid	10	24.28	Front	10	0	1	24	1:1	0.487	27.7	
793	23330	LTE Band 14	Mid	10	24.28	Bottom	10	0	1	24	1:1	0.142	28.5	
793	23330	LTE Band 14	Mid	10	24.28	Right	10	0	1	24	1:1	0.436	27.9	
793	23330	LTE Band 14	Mid	10	24.28	Left	10	0	1	24	1:1	0.380	32.8	
1 860	26140	LTE Band 25	Low	20	18.64	Back	10	0	50	0	1:1	0.362	23.1	20.5
1 860	26140	LTE Band 25	Low	20	18.64	Front	10	0	50	0	1:1	0.346	23.2	
1 860	26140	LTE Band 25	Low	20	18.64	Bottom	10	0	50	0	1:1	0.653	20.5	
1 860	26140	LTE Band 25	Low	20	18.64	Right	10	0	50	0	1:1	0.049	31.7	
1 860	26140	LTE Band 25	Low	20	18.64	Left	10	0	50	0	1:1	0.066	30.4	
831.5	26865	LTE Band 26	Low	15	23.95	Back	10	0	1	0	1:1	0.525	26.7	26.7
831.5	26865	LTE Band 26	Low	15	23.95	Front	10	0	1	0	1:1	0.425	27.7	
831.5	26865	LTE Band 26	Low	15	23.95	Bottom	10	0	1	0	1:1	0.216	30.6	
831.5	26865	LTE Band 26	Low	15	23.95	Right	10	0	1	0	1:1	0.142	32.4	
831.5	26865	LTE Band 26	Low	15	23.95	Left	10	0	1	0	1:1	0.074	35.3	
2 310	27710	LTE Band 30	Mid	10	18.02	Back	10	0	25	12	1:1	0.298	23.3	19.0
2 310	27710	LTE Band 30	Mid	10	18.02	Front	10	0	25	12	1:1	0.300	23.2	
2 310	27710	LTE Band 30	Mid	10	18.02	Bottom	10	0	25	12	1:1	0.806	19.0	
2 310	27710	LTE Band 30	Mid	10	18.02	Left	10	0	25	12	1:1	0.081	28.9	
2 310	38750	LTE Band 40 (Low)	Mid	10	10.90	Back	10	0	1	24	1:1.58	0.063	22.9	20.2
2 310	38750	LTE Band 40 (Low)	Mid	10	10.90	Front	10	0	1	24	1:1.58	0.058	23.3	
2 310	38750	LTE Band 40 (Low)	Mid	10	11.10	Bottom	10	0	25	12	1:1.58	0.123	20.2	
2 310	38750	LTE Band 40 (Low)	Mid	10	11.10	Left	10	0	25	12	1:1.58	0.014	29.6	
2 355	39200	LTE Band 40 (Upper)	Mid	10	10.80	Back	10	0	25	12	1:1.58	0.056	23.3	19.7
2 355	39200	LTE Band 40 (Upper)	Mid	10	10.57	Front	10	0	1	24	1:1.58	0.064	22.5	
2 355	39200	LTE Band 40 (Upper)	Mid	10	10.80	Bottom	10	0	25	12	1:1.58	0.129	19.7	
2 355	39200	LTE Band 40 (Upper)	Mid	10	10.80	Left	10	0	25	12	1:1.58	0.013	29.7	

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position	Spacing (mm)	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)				(W/kg)	(dBm)	(dBm)
2 506	39750	LTE Band 41(PC3)	Low	20	19.00	Back	10	0	1	0	1:1.58	0.305	24.2	23.3
2 506	39750	LTE Band 41(PC3)	Low	20	19.00	Front	10	0	1	0	1:1.58	0.208	25.8	
2 506	39750	LTE Band 41(PC3)	Low	20	19.04	Bottom	10	0	50	25	1:1.58	0.377	23.3	
2 506	39750	LTE Band 41(PC3)	Low	20	19.04	Left	10	0	50	25	1:1.58	0.143	27.5	
2 506	39750	LTE Band 41(PC2)	Low	20	18.46	Back	10	0	1	0	1:2.31	0.284	20.3	18.2
2 506	39750	LTE Band 41(PC2)	Low	20	18.46	Front	10	0	1	0	1:2.31	0.215	21.5	
2 506	39750	LTE Band 41(PC2)	Low	20	18.46	Bottom	10	0	1	0	1:2.31	0.459	18.2	
2 506	39750	LTE Band 41(PC2)	Low	20	18.46	Left	10	0	50	25	1:2.31	0.122	23.9	
3 560	55340	LTE Band 48	Low	20	17.31	Back	10	0	1	99	1:1.58	0.160	25.3	24.3
3 560	55340	LTE Band 48	Low	20	17.31	Front	10	0	1	99	1:1.58	0.150	25.6	
3 603.3	55773	LTE Band 48	Low	20	17.31	Top	10	0	1	0	1:1.58	0.209	24.3	
3 560	55340	LTE Band 48	High	20	17.31	Left	10	0	1	99	1:1.58	0.157	25.4	
1 770	132572	LTE Band 66	High	20	19.39	Back	10	0	1	49	1:1	0.414	23.2	21.8
1 720	132072	LTE Band 66	High	20	19.41	Front	10	0	50	25	1:1	0.437	23.0	
1 772.5	132597	LTE Band 66	High	20	19.39	Bottom	10	0	1	0	1:1	0.570	21.8	
1 770	132572	LTE Band 66	High	20	19.41	Right	10	0	50	25	1:1	0.061	31.6	
1 770	132572	LTE Band 66	High	20	19.39	Left	10	0	1	49	1:1	0.055	32.0	
680.5	133297	LTE Band 71	Mid	20	24.51	Back	10	0	1	49	1:1	0.311	29.6	29.6
680.5	133297	LTE Band 71	Mid	20	24.51	Front	10	0	1	49	1:1	0.195	31.6	
680.5	133297	LTE Band 71	Mid	20	24.51	Bottom	10	0	1	49	1:1	0.166	32.3	
680.5	133297	LTE Band 71	Mid	20	24.51	Right	10	0	1	49	1:1	0.179	32.0	
680.5	133297	LTE Band 71	Mid	20	24.51	Left	10	0	1	49	1:1	0.111	34.1	

Table A-9 DSI = 3 *PLimit* Calculations - – NR Hotspot SAR

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

NR TDD Bands : In the case of the NR TDD bands, the Plimit were calculated as the Frame average power to which the duty factor was applied to the burst power.

SAR measurements of all NR bands were measured in FTM Mode.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position		MPR	Spacing (mm)	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)					(W/kg)	(dBm)	(dBm)
836.5	167300	NR Band n5	Mid	20	24.31	Back	DFT-s-OFDM QPSK	0	10	50	28	1:1	0.335	29.1	29.1
836.5	167300	NR Band n5	Mid	20	24.31	Front	DFT-s-OFDM QPSK	0	10	550	28	1:1	0.201	31.3	
836.5	167300	NR Band n5	Mid	20	24.31	Bottom	DFT-s-OFDM QPSK	0	10	50	28	1:1	0.156	32.4	
836.5	167300	NR Band n5	Mid	20	24.31	Right	DFT-s-OFDM QPSK	0	10	50	28	1:1	0.103	34.2	
836.5	167300	NR Band n5	Mid	20	24.31	Left	DFT-s-OFDM QPSK	0	10	50	28	1:1	0.026	40.2	
707.5	141500	NR Band n12	Mid	15	24.33	Back	DFT-s-OFDM QPSK	0	10	36	22	1:1	0.212	31.1	31.1
707.5	141500	NR Band n12	Mid	15	24.33	Front	DFT-s-OFDM QPSK	0	10	36	22	1:1	0.134	33.1	
707.5	141500	NR Band n12	Mid	15	24.33	Bottom	DFT-s-OFDM QPSK	0	10	36	22	1:1	0.111	33.9	
707.5	141500	NR Band n12	Mid	15	24.33	Right	DFT-s-OFDM QPSK	0	10	36	22	1:1	0.072	35.8	
707.5	141500	NR Band n12	Mid	15	24.47	Left	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.056	37.0	
1 882.5	376500	NR Band n25	Mid	40	18.14	Back	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.457	21.5	19.5
1 882.5	376500	NR Band n25	Mid	40	18.14	Front	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.420	21.9	
1 882.5	376500	NR Band n25	Mid	40	18.14	Bottom	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.726	19.5	
1 882.5	376500	NR Band n25	Mid	40	18.14	Right	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.055	30.7	
1 882.5	376500	NR Band n25	Mid	40	18.14	Left	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.072	29.6	
2 310	462000	NR Band n30	Mid	10	17.29	Back	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.397	21.3	18.4
2 310	462000	NR Band n30	Mid	10	17.29	Front	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.423	21.0	
2 310	462000	NR Band n30	Mid	10	17.32	Bottom	DFT-s-OFDM QPSK	0	10	25	27	1:1	0.772	18.4	
2 310	462000	NR Band n30	Mid	10	17.32	Left	DFT-s-OFDM QPSK	0	10	25	27	1:1	0.088	27.9	
2 592.99	518598	NR Bandn41(PC3)	Mid	100	18.47	Back	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.246	24.6	22.2
2 592.99	518598	NR Bandn41(PC3)	Mid	100	18.47	Front	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.256	24.4	
2 592.99	518598	NR Bandn41(PC3)	Mid	100	18.47	Bottom	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.424	22.2	
2 592.99	518598	NR Bandn41(PC3)	Mid	100	18.47	Left	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.169	26.2	
2 592.99	518598	NR Bandn41(PC2)	Mid	100	18.47	Back	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.246	24.6	22.2
2 592.99	518598	NR Bandn41(PC2)	Mid	100	18.47	Front	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.256	24.4	
2 592.99	518598	NR Bandn41(PC2)	Mid	100	18.47	Bottom	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.424	22.2	
2 592.99	518598	NR Bandn41(PC2)	Mid	100	18.47	Left	DFT-s-OFDM QPSK	0	10	1	271	1:1	0.169	26.2	
1 745	349000	NR Band n66	Mid	40	19.33	Back	DFT-s-OFDM QPSK	0	10	108	0	1:1	0.480	22.5	19.9
1 745	349000	NR Band n66	Mid	40	19.33	Front	DFT-s-OFDM QPSK	0	10	108	0	1:1	0.497	22.4	
1 745	349000	NR Band n66	Mid	40	19.45	Bottom	DFT-s-OFDM QPSK	0	10	108	0	1:1	0.894	19.9	
1 745	349000	NR Band n66	Mid	40	19.45	Right	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.070	31.0	
1 745	349000	NR Band n66	Mid	40	19.33	Left	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.098	29.4	

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position		MPR	Spacing (mm)	RB Size	RB offset	Duty Cycle	Meas. SAR (1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)					(W/kg)	(dBm)	(dBm)
680.5	136100	NR Band n71	Mid	20	24.26	Back	DFT-s-OFDM QPSK	0	10	50	28	1:1	0.248	30.3	30.3
680.5	136100	NR Band n71	Mid	20	24.26	Front	DFT-s-OFDM QPSK	0	10	50	28	1:1	0.154	32.4	
680.5	136100	NR Band n71	Mid	20	24.26		DFT-s-OFDM QPSK	0	10	50	28	1:1	0.135	33.0	
680.5	136100	NR Band n71	Mid	20	24.26	Right	DFT-s-OFDM QPSK	0	10	50	28	1:1	0.144	32.7	
680.5	136100	NR Band n71	Mid	20	24.37	Left	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.076	35.6	
3 930	662000	NR Band n77(PC3)	High	100	17.60	Back	DFT-s-OFDM QPSK	0	10	135	69	1:1	0.221	24.2	22.9
3 930	662000	NR Band n77(PC3)	High	100	17.60	Front	DFT-s-OFDM QPSK	0	10	135	69	1:1	0.231	24.0	
3 930	662000	NR Band n77(PC3)	High	100	17.68	Top	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.303	22.9	
3 930	662000	NR Band n77(PC3)	High	100	17.60	Left	DFT-s-OFDM QPSK	0	10	135	69	1:1	0.173	25.2	
3 930	662000	NR Band n77(PC2)	High	100	17.60	Back	DFT-s-OFDM QPSK	0	10	135	69	1:1	0.221	24.2	22.9
3 930	662000	NR Band n77(PC2)	High	100	17.60	Front	DFT-s-OFDM QPSK	0	10	135	69	1:1	0.231	24.0	
3 930	662000	NR Band n77(PC2)	High	100	17.68	Top	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.303	22.9	
3 930	662000	NR Band n77(PC2)	High	100	17.60	Left	DFT-s-OFDM QPSK	0	10	135	69	1:1	0.173	25.2	
3 500.01	633334	NR Band n77(DoD)	Mid	100	17.83	Back	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.227	24.3	22.4
3 500.01	633334	NR Band n77(DoD)	Mid	100	17.54	Front	DFT-s-OFDM QPSK	0	10	135	69	1:1	0.160	25.8	
3 500.01	633334	NR Band n77(DoD)	Mid	100	17.83	Top	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.349	22.4	
3 500.01	633334	NR Band n77(DoD)	Mid	100	17.83	Left	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.183	25.2	
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Back	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.011	32.0	30.4
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Front	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Bottom	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.016	30.4	
3 930	662000	NR Bandn77 SRS #2	Mid	100	12.46	Left	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Back	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.00495	35.2	35.2
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Front	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.00488	35.2	
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Bottom	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 750	650000	NR Bandn77 SRS #3	Mid	100	12.21	Left	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Back	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.166	19.1	19.1
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Front	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 930	662000	NR Bandn77 SRS #4	Mid	100	11.34	Left	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Back	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.0089	32.5	27.9
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Front	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.026	27.9	
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Bottom	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.012	31.2	
3 500.01	633334	NR Bandn77 SRS(DoD)#2	Mid	100	12.04	Left	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Back	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.00533	34.9	34.9
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Front	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.00128	41.9	
3 500.01	633334	NR Bandn77 SRS(DoD)#3	Mid	100	11.93	Left	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.00515	34.9	
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Back	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.072	22.7	22.7
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Front	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	
3 500.01	633334	NR Bandn77 SRS(DoD)#4	Mid	100	11.29	Left	DFT-s-OFDM QPSK	0	10	270	0	1:1	0.000	-	

Table A-10 DSI = 0 *PLimit* Calculations - – 2G/3G Phablet SAR (Grip Sensor is off)
For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Frame Averaged Conducted Power	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)				(W/kg)	(dBm)	(dBm)
1 880.0	600	EVDO Rev.0	PCS	24.14	Back	8	1:1	1.030	28.0	27.4
1 880.0	600	EVDO Rev.0	PCS	24.14	Front	6	1:1	0.723	**29.5**	
1 880.0	600	EVDO Rev.0	PCS	24.14	Bottom	13	1:1	1.180	27.4	
1 880.0	600	EVDO Rev.0	PCS	24.14	Right	0	1:1	0.601	30.3	
1 880.0	600	EVDO Rev.0	PCS	24.14	Left	0	1:1	0.647	30.0	
1 880.0	661	GSM 1900	GPRS 3Tx	22.45	Back	8	1:2.8	0.473	29.7	27.8
1 880.0	661	GSM 1900	GPRS 3Tx	22.45	Front	6	1:2.8	0.726	**27.8**	
1 880.0	661	GSM 1900	GPRS 3Tx	22.45	Bottom	13	1:2.8	0.648	28.3	
1 880.0	661	GSM 1900	GPRS 3Tx	22.45	Right	0	1:2.8	0.292	31.8	
1 880.0	661	GSM 1900	GPRS 3Tx	22.45	Left	0	1:2.8	0.431	30.1	
1 732.4	1412	UMTS 1700	RMC	23.28	Back	8	1:1	1.110	26.8	25.7
1 732.4	1412	UMTS 1700	RMC	23.28	Front	6	1:1	1.430	**25.7**	
1 732.4	1412	UMTS 1700	RMC	23.28	Bottom	13	1:1	0.954	27.5	
1 732.4	1412	UMTS 1700	RMC	23.28	Right	0	1:1	0.433	30.9	
1 732.4	1412	UMTS 1700	RMC	23.28	Left	0	1:1	0.408	31.2	
1 880.0	9400	UMTS 1900	RMC	23.47	Back	8	1:1	0.945	27.7	25.9
1 880.0	9400	UMTS 1900	RMC	23.47	Front	6	1:1	1.430	25.9	
1 880.0	9400	UMTS 1900	RMC	23.47	Bottom	13	1:1	1.130	26.9	
1 880.0	9400	UMTS 1900	RMC	23.47	Right	0	1:1	0.422	31.2	
1 880.0	9400	UMTS 1900	RMC	23.47	Left	0	1:1	0.572	29.9	
836.6	190	GPRS 2TX	GSM	25.56	Back	0	1:4.15	1.200	28.7	28.7
836.6	190	GPRS 2TX	GSM	25.56	Front	0	1:4.15	0.921	29.9	
836.6	190	GPRS 2TX	GSM	25.56	Bottom	0	1:4.15	0.403	33.5	
836.6	190	GPRS 2TX	GSM	25.56	Right	0	1:4.15	0.305	34.7	
836.6	190	GPRS 2TX	GSM	25.56	Left	0	1:4.15	0.264	35.3	

Table A-11 DSI = 0 *PLimit* Calculations - – 4G Phablet SAR(Grip Sensor is off)
For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position	Spacing (mm)	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)				(W/kg)	(dBm)	(dBm)
2 560	21350	LTE Band 7	High	20	23.93	Back	8	0	1	49	1:1	0.705	29.4	27.1
2 560	21350	LTE Band 7	High	20	23.93	Front	6	0	1	49	1:1	0.647	29.8	
2 560	21350	LTE Band 7	High	20	23.93	Bottom	13	0	1	49	1:1	0.665	29.7	
2 560	21350	LTE Band 7	High	20	23.93	Left	0	0	1	49	1:1	1.20	27.1	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Back	8	0	1	49	1:1	1.010	28.6	27.8
1 882.5	26365	LTE Band 25	Mid	20	24.69	Front	6	0	1	49	1:1	1.220	27.8	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Bottom	13	0	1	49	1:1	0.903	29.1	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Right	0	0	1	49	1:1	0.421	32.4	
1 882.5	26365	LTE Band 25	Mid	20	24.69	Left	0	0	1	49	1:1	0.563	31.2	
2 310	27710	LTE Band 30	Mid	10	22.42	Back	8	0	1	49	1:1	0.477	29.6	27.4
2 310	27710	LTE Band 30	Mid	10	22.42	Front	6	0	1	49	1:1	0.793	27.4	
2 310	27710	LTE Band 30	Mid	10	22.42	Bottom	13	0	1	49	1:1	0.800	27.4	
2 310	27710	LTE Band 30	Mid	10	22.42	Left	0	0	1	49	1:1	0.601	28.6	
2 593	40620	LTE Band 41(PC2)	Mid	20	25.98	Back	8	0	1	49	1:2.31	0.619	28.4	27.1
2 593	40620	LTE Band 41(PC2)	Mid	20	25.98	Front	6	0	1	49	1:2.31	0.580	28.7	
2 593	40620	LTE Band 41(PC2)	Mid	20	25.98	Bottom	13	0	1	49	1:2.31	0.437	29.9	
2 593	40620	LTE Band 41(PC2)	Mid	20	25.98	Left	0	0	1	49	1:2.31	0.829	27.1	
3 560	55340	LTE Band 48	Low	20	22.34	Back	0	0	1	49	1:1.58	1.830	23.8	22.6
3 560	55340	LTE Band 48	Low	20	22.43	Front	0	0	1	49	1:1.58	2.030	23.3	
3 560	55340	LTE Band 48	Low	20	22.43	Bottom	0	0	1	49	1:1.58	1.980	23.4	
3 560	55340	LTE Band 48	Low	20	22.43	Left	0	0	1	49	1:1.58	2.420	22.6	
1 770	132572	LTE Band 66	High	20	23.89	Back	8	0	50	25	1:1	0.740	29.2	29.2
1 770	132572	LTE Band 66	High	20	24.79	Front	6	0	1	0	1:1	0.833	29.6	
1 770	132572	LTE Band 66	High	20	24.79	Bottom	13	0	1	0	1:1	0.597	31.0	
1 770	132572	LTE Band 66	High	20	24.79	Right	0	0	1	0	1:1	0.347	33.4	
1 770	132572	LTE Band 66	High	20	24.79	Left	0	0	1	0	1:1	0.334	33.5	

Table A-11 DSI = 0 *PLimit* Calculations - – NR Phablet SAR (Grip Sensor is off, Maximum Power)
For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

NR TDD Bands : In the case of the NR TDD bands, the Plimit were calculated as the Frame average power to which the duty factor was applied to the burst power.

SAR measurements of all NR bands were measured in FTM Mode.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Frame Averaged Conducted Power	Test Position		MPR	Spacing (mm)	RB Size	RB offset	Duty Cycle	Meas. SAR (1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)					(W/kg)	(dBm)	(dBm)
1 882.5	376500	NR Band n25	Mid	40	23.01	Back	DFT-s-OFDM QPSK	0	8	108	54	1:1	1.020	26.9	26.1
1 882.5	376500	NR Band n25	Mid	40	23.01	Front	DFT-s-OFDM QPSK	0	6	108	54	1:1	1.240	26.1	
1 882.5	376500	NR Band n25	Mid	40	23.01	Bottom	DFT-s-OFDM QPSK	0	13	108	54	1:1	0.992	27.0	
1 882.5	376500	NR Band n25	Mid	40	23.01	Right	DFT-s-OFDM QPSK	0	0	108	54	1:1	0.337	31.7	
1 882.5	376500	NR Band n25	Mid	40	23.01	Left	DFT-s-OFDM QPSK	0	0	108	54	1:1	0.663	28.8	
2 310	462000	NR Band n30	Mid	10	23.09	Back	DFT-s-OFDM QPSK	0	8	1	26	1:1	1.01	27.0	26.6
2 310	462000	NR Band n30	Mid	10	23.09	Front	DFT-s-OFDM QPSK	0	6	1	26	1:1	1.12	26.6	
2 310	462000	NR Band n30	Mid	10	23.09	Bottom	DFT-s-OFDM QPSK	0	13	1	26	1:1	0.904	27.5	
2 310	462000	NR Band n30	Mid	10	23.03	Left	DFT-s-OFDM QPSK	0	0	25	14	1:1	0.724	28.2	
1 745	349000	NR Band n66	Mid	40	23.48	Back	DFT-s-OFDM QPSK	0	8	108	54	1:1	0.875	28.0	26.8
1 745	349000	NR Band n66	Mid	40	23.48	Front	DFT-s-OFDM QPSK	0	6	108	54	1:1	1.160	26.8	
1 745	349000	NR Band n66	Mid	40	23.48	Bottom	DFT-s-OFDM QPSK	0	13	108	54	1:1	0.797	28.4	
1 745	349000	NR Band n66	Mid	40	23.48	Right	DFT-s-OFDM QPSK	0	0	108	54	1:1	0.298	32.7	
1 745	349000	NR Band n66	Mid	40	23.48	Left	DFT-s-OFDM QPSK	0	0	108	54	1:1	0.504	30.4	

Table A-11 DSI = 1 (Grip Sensor is not activated) ***P*Limit** **Calculations - – 2G/3G Phablet SAR**
For some bands/modes, a lower *P*Limit was selected as a more conservative evaluation.

MEASUREMENT RESULTS										
Frequency		Mode		Frame Averaged Conducted Power	Test Position	Distance	Duty Cycle	Meas. SAR(10g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)		(mm)		(W/kg)	(dBm)	(dBm)
820	560	EVDO Rev.0	CDMA BC10	23.57	Back	0	1:1	1.290	26.4	26.2
820	560	EVDO Rev.0	CDMA BC10	23.57	Front	0	1:1	1.380	26.2	
820	560	EVDO Rev.0	CDMA BC10	23.57	Bottom	0	1:1	0.741	28.9	
820	560	EVDO Rev.0	CDMA BC10	23.57	Right	0	1:1	0.227	34.0	
820	560	EVDO Rev.0	CDMA BC10	23.57	Left	0	1:1	0.230	33.9	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Back	0	1:1	1.250	26.9	26.4
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Front	0	1:1	1.410	26.4	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Bottom	0	1:1	0.718	29.3	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Right	0	1:1	0.274	33.5	
836.52	384	EVDO Rev.0	CDMA BC 0	23.89	Left	0	1:1	0.266	33.6	
1 880.0	600	EVDO Rev.0	PCS	20.04	Back	0	1:1	1.260	23.0	20.8
1 880.0	600	EVDO Rev.0	PCS	20.04	Front	0	1:1	1.580	22.0	
1 880.0	600	EVDO Rev.0	PCS	20.04	Bottom	0	1:1	2.100	20.8	
836.6	4183	UMTS 850	RMC	23.96	Back	0	1:1	1.420	26.4	26.3
836.6	4183	UMTS 850	RMC	23.96	Front	0	1:1	1.460	26.3	
836.6	4183	UMTS 850	RMC	23.96	Bottom	0	1:1	0.823	28.8	
836.6	4183	UMTS 850	RMC	23.96	Right	0	1:1	0.280	33.5	
836.6	4183	UMTS 850	RMC	23.96	Left	0	1:1	0.201	34.9	
1 732.4	1412	UMTS 1700	RMC	18.27	Back	0	1:1	1.120	21.8	21.6
1 732.4	1412	UMTS 1700	RMC	18.27	Front	0	1:1	1.170	21.6	
1 732.4	1412	UMTS 1700	RMC	18.27	Bottom	0	1:1	1.080	21.9	
1880.0	9400	UMTS 1900	RMC	18.46	Back	0	1:1	0.848	23.2	22.1
1880.0	9400	UMTS 1900	RMC	18.46	Front	0	1:1	1.010	22.4	
1880.0	9400	UMTS 1900	RMC	18.46	Bottom	0	1:1	1.080	22.1	

Table A-11 DSI = 0 GSM Mode *P*Limit Calculations - – 2G/3G Phablet SAR (Grip on)

MEASUREMENT RESULTS										
Frequency		Mode		Frame Averaged Conducted	Test Position	Distance	Duty Cycle	Meas. SAR(10g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)		(mm)		(W/kg)	(dBm)	(dBm)
1880.0	661	GPRS 1TX	GSM	17.22	Back	0	1:8.3	0.645	23.1	22.6
1880.0	661	GPRS 1TX	GSM	17.22	Front	0	1:8.3	0.732	22.6	
1880.0	661	GPRS 1TX	GSM	17.22	Bottom	0	1:8.3	0.402	25.2	

Table A-13 DSI =1,4 *PLimit* Calculations - – 4G Phablet SAR (Grip Sensor is on, Earjack inserted)
For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Frame Averaged Conducted	Test Position	Spacing (mm)	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(10g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)				(W/kg)	(dBm)	(dBm)
2 560	21350	LTE Band 7	High	20	19.75	Back	0	0	1	0	1:1	1.170	23.1	21.7
2 560	21350	LTE Band 7	High	20	19.75	Front	0	0	1	0	1:1	0.965	24.0	
2 560	21350	LTE Band 7	High	20	19.75	Bottom	0	0	1	0	1:1	1.580	21.7	
707.5	23095	LTE Band 12	Mid	10	24.02	Back	0	0	1	0	1:1	1.150	27.4	25.3
707.5	23095	LTE Band 12	Mid	10	24.02	Front	0	0	1	0	1:1	1.850	25.3	
707.5	23095	LTE Band 12	Mid	10	24.02	Bottom	0	0	1	0	1:1	1.090	27.6	
707.5	23095	LTE Band 12	Mid	10	24.02	Right	0	0	1	0	1:1	0.102	37.9	
707.5	23095	LTE Band 12	Mid	10	24.02	Left	0	0	1	0	1:1	0.186	35.3	
782	23230	LTE Band 13	Mid	10	24.15	Back	0	0	1	49	1:1	1.420	26.6	26.5
782	23230	LTE Band 13	Mid	10	24.15	Front	0	0	1	49	1:1	1.460	26.5	
782	23230	LTE Band 13	Mid	10	24.15	Bottom	0	0	1	49	1:1	0.903	28.6	
782	23230	LTE Band 13	Mid	10	24.15	Right	0	0	1	49	1:1	0.241	34.3	
782	23230	LTE Band 13	Mid	10	24.15	Left	0	0	1	49	1:1	0.283	33.6	
793	23330	LTE Band 14	Mid	10	24.28	Back	0	0	1	24	1:1	1.360	26.9	26.4
793	23330	LTE Band 14	Mid	10	24.28	Front	0	0	1	24	1:1	1.540	26.4	
793	23330	LTE Band 14	Mid	10	24.28	Bottom	0	0	1	24	1:1	0.902	28.7	
793	23330	LTE Band 14	Mid	10	24.28	Right	0	0	1	24	1:1	0.274	33.9	
793	23330	LTE Band 14	Mid	10	24.28	Left	0	0	1	24	1:1	0.271	33.9	
1 882.5	26365	LTE Band 25	Mid	20	20.49	Back	0	0	1	99	1:1	1.150	23.9	22.7
1 882.5	26365	LTE Band 25	Mid	20	20.49	Front	0	0	1	99	1:1	1.500	22.8	
1 882.5	26365	LTE Band 25	Mid	20	20.49	Bottom	0	0	1	99	1:1	1.530	22.7	
831.5	26865	LTE Band 26	Mid	15	23.95	Back	0	0	1	0	1:1	1.380	26.5	26.2
831.5	26865	LTE Band 26	Mid	15	23.95	Front	0	0	1	0	1:1	1.480	26.2	
831.5	26865	LTE Band 26	Mid	15	23.95	Bottom	0	0	1	0	1:1	0.769	29.1	
831.5	26865	LTE Band 26	Mid	15	23.95	Right	0	0	1	0	1:1	0.257	33.8	
831.5	26865	LTE Band 26	Mid	15	23.95	Left	0	0	1	0	1:1	0.256	33.8	
2 310	27710	LTE Band 30	Mid	10	18.12	Back	0	0	1	24	1:1	0.994	22.0	21.5
2 310	27710	LTE Band 30	Mid	10	18.12	Front	0	0	1	24	1:1	0.722	23.4	
2 310	27710	LTE Band 30	Mid	10	18.12	Bottom	0	0	1	24	1:1	1.110	21.5	
2 506	39750	LTE Band 41(PC2)	Low	20	22.09	Rear	0	0	1	0	1:2.31	1.000	18.8	18.8
2 506	39750	LTE Band 41(PC2)	Low	20	22.09	Front	0	0	1	0	1:2.31	0.636	20.8	
2 506	39750	LTE Band 41(PC2)	Low	20	22.09	Bottom	0	0	1	0	1:2.31	0.928	19.1	
1 720	132072	LTE Band 66	Low	20	19.68	Back	0	0	1	99	1:1	1.660	21.6	21.3
1 720	132072	LTE Band 66	Low	20	19.68	Front	0	0	1	99	1:1	1.770	21.3	
1 720	132072	LTE Band 66	Low	20	19.68	Bottom	0	0	1	99	1:1	1.680	21.4	
680.5	133297	LTE Band 71	Mid	20	24.51	Back	0	0	1	49	1:1	1.210	27.7	26.8
680.5	133297	LTE Band 71	Mid	20	24.51	Front	0	0	1	49	1:1	1.470	26.8	
680.5	133297	LTE Band 71	Mid	20	24.51	Bottom	0	0	1	49	1:1	1.160	27.8	
680.5	133297	LTE Band 71	Mid	20	24.51	Right	0	0	1	49	1:1	0.112	38.0	
680.5	133297	LTE Band 71	Mid	20	24.51	Left	0	0	1	49	1:1	0.178	36.0	

Table A-15 DSI = 1,4 *PLimit* Calculations - – NR Phablet SAR(grip on , Ear jack inserted)
For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.
NR TDD Bands : In the case of the NR TDD bands, the Plimit were calculated as the Frame average power to which the duty factor was applied to the burst power.
SAR measurements of all NR bands were measured in FTM Mode.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Frame Averaged Conducted	Test Position		MPR	Spacing (mm)	RB Size	RB offset	Duty Cycle	Meas. SAR (1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)					(W/kg)	(dBm)	(dBm)
836.5	167300	NR Band n5	Mid	20	24.45	Back	DFT-s-OFDM QPSK	0	0	1	104	1:1	0.577	30.8	27.9
836.5	167300	NR Band n5	Mid	20	24.45	Front	DFT-s-OFDM QPSK	0	0	1	104	1:1	1.120	27.9	
836.5	167300	NR Band n5	Mid	20	24.45	Bottom	DFT-s-OFDM QPSK	0	0	1	104	1:1	0.631	30.4	
836.5	167300	NR Band n5	Mid	20	24.45	Right	DFT-s-OFDM QPSK	0	0	1	104	1:1	0.053	41.2	
836.5	167300	NR Band n5	Mid	20	24.45	Left	DFT-s-OFDM QPSK	0	0	1	104	1:1	0.069	40.0	
707.5	141500	NR Band n12	Mid	15	24.23	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.813	29.3	26.9
707.5	141500	NR Band n12	Mid	15	24.23	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.440	26.9	
707.5	141500	NR Band n12	Mid	15	24.23	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.290	27.3	
707.5	141500	NR Band n12	Mid	15	24.23	Right	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.041	42.3	
707.5	141500	NR Band n12	Mid	15	24.23	Left	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.086	39.1	
1 882.5	376500	NR Band n25	Mid	40	18.14	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.918	22.3	21.5
1 882.5	376500	NR Band n25	Mid	40	18.14	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.150	21.5	
1 882.5	376500	NR Band n25	Mid	40	18.14	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.030	22.0	
2 310	462000	NR Band n30	Mid	10	17.28	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.630	23.3	21.0
2 310	462000	NR Band n30	Mid	10	17.28	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.604	23.4	
2 310	462000	NR Band n30	Mid	10	17.28	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.070	21.0	
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.47	Back	DFT-s-OFDM QPSK	0	0	1	271	1:1	1.03	22.3	20.4
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.47	Front	DFT-s-OFDM QPSK	0	0	1	271	1:1	1.270	21.5	
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.47	Bottom	DFT-s-OFDM QPSK	0	0	1	271	1:1	1.620	20.4	
2 592.99	518598	NR Band n41(PC3)	Mid	100	18.47	Left	DFT-s-OFDM QPSK	0	0	1	271	1:1	0.407	22.4	
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.47	Back	DFT-s-OFDM QPSK	0	0	1	271	1:1	1.03	22.3	20.4
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.47	Front	DFT-s-OFDM QPSK	0	0	1	271	1:1	1.270	21.5	
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.47	Bottom	DFT-s-OFDM QPSK	0	0	1	271	1:1	1.620	20.4	
2 592.99	518598	NR Band n41(PC2)	Mid	100	18.47	Left	DFT-s-OFDM QPSK	0	0	1	271	1:1	0.407	22.4	
1 745	349000	NR Band n66	Mid	40	19.44	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.450	21.7	20.1
1 745	349000	NR Band n66	Mid	40	19.44	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.800	20.7	
1 745	349000	NR Band n66	Mid	40	19.44	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:1	2.080	20.1	

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Frame Averaged Conducted	Test Position		MPR	Spacing (mm)	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			MHz	(dBm)			(dB)					(W/kg)	(dBm)	(dBm)
680.5	136100	NR Band n71	Mid	20	24.37	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.417	32.1	29.2
680.5	136100	NR Band n71	Mid	20	24.37	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.827	29.2	
680.5	136100	NR Band n71	Mid	20	24.37	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.655	30.2	
680.5	136100	NR Band n71	Mid	20	24.37	Right	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.033	43.2	
680.5	136100	NR Band n71	Mid	20	24.37	Left	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.231	34.7	
3 930	662000	NR Band n77(PC3)	High	100	17.68	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.150	21.0	20.1
3 930	662000	NR Band n77(PC3)	High	100	17.68	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.430	20.1	
3 930	662000	NR Band n77(PC3)	High	100	17.68	Top	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.836	22.4	
3 930	662000	NR Band n77(DoD)	High	100	17.83	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.661	23.6	23.5
3 930	662000	NR Band n77(DoD)	High	100	17.83	Top	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.671	23.5	