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## PART 0 SAR CHAR REPORT

<b>Applicant Name:</b> <b>SAMSUNG Electronics Co., Ltd.</b> 129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677 Rep. of Korea	<b>Date of Issue:</b> Sep.03, 2020 <b>Test Report No.:</b> HCT-SR-2008-FC009-R1 <b>Test Site:</b> HCT CO., LTD.
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**FCC ID:**

**A3LSMG781V**

**Report Type:** Part 0 SAR Characterization  
**Equipment Type:** Mobile Phone  
**Model Name:** SM-G781V

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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SAR Team  
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**REVISION HISTORY**

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

<b>Revision No.</b>	<b>Date of Issue</b>	<b>Description</b>
0	Aug. 26, 2020	Initial Release
1	Sep.03,2020	Revised page 11,16.

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

The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA.

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## 1. Test Location

### 1.1 Test Laboratory

<b>Company Name</b>	HCT Co., Ltd.
<b>Address</b>	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
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### 1.2 Test Facilities

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

<b>Korea</b>	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 29	Voice / Data	717 MHz ~ 728 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 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 (PCS)	Data	1 852.5 MHz ~ 1 907.5 MHz
NR Band n5 (Cell)	Data	826.5 MHz ~ 846.5 MHz
NR Band n25	Data	1852.5 MHz ~ 1912.5 MHz
NR Band n41	Data	2 506.02 MHz ~ 2 679.99 MHz
NR Band n66	Data	1 712.5 MHz ~ 1 777.5 MHz
NR Band n71	Data	665.5 MHz - 695.5 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 ~ 2 472 MHz
Bluetooth	Data	2 402 MHz ~ 2 480 MHz
NFC	Data	13.56 MHz
MST	Data	555 Hz ~ 8.3 kHz

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 /MST technologies, but the output power of these modems is not controlled by the Smart Transmit algorithm

## 2.2 Time-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 in compliance 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 P<sub>limit</sub> 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<sub>design\_target</sub> (< 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 reported 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	P <sub>limit</sub>	Power level that corresponds to the exposure design target ( <i>SAR<sub>design_target</sub></i> ) after accounting for all device design related uncertainties
	P <sub>max</sub>	Maximum tune up output power
	SAR <sub>design_target</sub>	Target SAR level < FCC SAR limit after accounting for all device design related uncertainties
	SAR Char	Table containing <i>P<sub>limit</sub></i> 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 ( $dW$ ) absorbed by (dissipated in) an incremental mass ( $dm$ ) contained in a volume element ( $dV$ ) 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

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

Figure 1. SAR Mathematical Equation

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

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

Where:

- $\sigma$  = conductivity of the tissue-simulant material (S/m)
- $\rho$  = mass density of the tissue-simulant material (kg/m<sup>3</sup>)
- $E$  = 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 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 3-1](#)) 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 3-1](#)) 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
  - b. [Table 3-1](#). 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).
  - c. 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.
  - d. 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.

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

**Table 3-1**  
**Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04\***



## 4. SAR CHARACTERIZATION

### 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)	<input type="checkbox"/> Device positioned next to head <input type="checkbox"/> Receiver Active	<i>Head SAR per KDB Publication 648474 D04</i>
Hotspot mode (DSI = 3)	<input type="checkbox"/> Device transmits in hotspot mode near body <input type="checkbox"/> Hotspot Mode Active	<i>Hotspot SAR per KDB Publication 941225 D06</i>
Phablet Grip (DSI=1 or 4)	<input type="checkbox"/> Device is held with hand and grip sensor is triggered <input type="checkbox"/> Grip sensor triggered or earjack is active	<i>Phablet SAR per KDB Publication 648474 D04 &amp; KDB Publication 616217 D04</i>
Phablet (DSI = 0)	<input type="checkbox"/> Device is held with hand and grip sensor is not triggered <input type="checkbox"/> Distance grip sensor not triggered	<i>Phablet SAR per KDB Publication 648474 D04 &amp; KDB Publication 616217 D04</i>
Body-worn (DSI = 0)	<input type="checkbox"/> Device being used with a body-worn accessory	<i>Body-worn SAR per KDB Publication 648474 D04</i>

**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).

<i>SAR_design_target</i>			
$SAR\_design\_target < SAR\_regulatory\_limit \times 10^{-Total\ Uncertainty/10}$			
1g SAR (W/kg)		10g SAR (W/kg)	
<i>Total Uncertainty</i>	1.0 dB	<i>Total Uncertainty</i>	1.0 dB
<i>SAR_regulatory_limit</i>	1.6 W/kg	<i>SAR_regulatory_limit</i>	4.0 W/kg
<i>SAR_design_target</i>	1.0 W/kg	<i>SAR_design_target</i>	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.

Table 4-3 *PLimit* Determination

Device State Index (DSI)	<i>PLimit</i> 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, 7 and 13 mm spacing for back, front, bottom respectively 3. Extremity SAR measured at 0 mm for left and right surfaces 4. Ear-jack inserted mode for GSM Bands
2	<i>PLimit</i> is calculated based on 1g Head SAR
3	<i>PLimit</i> is calculated based on 1g Hotspot SAR at 10 mm
1 & 4	<i>PLimit</i> is calculated based on 10g Extremity SAR at 0 mm for back, front, and bottom surfaces

Note:

For DSI=0, *PLimit* is calculated by :

$$P_{limit} = \min\{ P_{limit} \text{ cooresponding to 1g Body Worn SAR evaluation at 15mm spacing, } \\ P_{limit} \text{ cooresponding to 10g Extremity SAR evaluation at 7(Front), 8(rear) and 13mm(bottom) spacing, } \\ P_{limit} \text{ cooresponding to 10g Extremity SAR evaluation at 0mm for Left and right surfaces } \\ P_{limit} \text{ cooresponding to 10g Extremity SAR evaluation at 0mm for GSM Bands at Ear-jack inserted mode} \}$$

Table 4-4 SAR Characterization

Exposure Scenario:		Body-Worn	Phablet (Grip off)	Phablet (Grip on)	Head	Hotspot	Earjack inserted Mode	Maximum Tune-up Output Power*
Averaging Volume:		1g	10g	10g	1g	1g	10g	
Spacing:		15 mm	8, 7, 13 mm	0 mm	0 mm	10 mm	0 mm	
DSI:		0		1	2	3	4	
Technology/Band	Antenna	Plimit corresponding to 1mW/g (SAR_design_target)						Pmax
CDMA/EVDO BC10	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
CDMA/EVDO BC0	Main #1	24.80	24.80	24.80	24.80	24.80	24.80	
PCS CDMA/EVDO BC1	Main #1	24.30	18.00	24.30	18.00	18.00	24.30	
GSM/GPRS/EDGE 850	Main #1	25.48	22.48	25.48	25.48	25.48	25.48	
GSM/GPRS/EDGE 1900	Main #1	22.74	19.74	22.74	19.74	22.74	22.74	
UMTS 850	Main #1	24.00	24.00	24.00	24.00	24.00	24.00	
UMTS 1700	Main #1	24.00	18.50	24.00	18.50	18.50	24.00	
UMTS 1900	Main #1	24.00	18.00	24.00	18.00	18.00	24.00	
LTE Band 2 (PCS)	Main #1	24.00	18.00	24.00	18.00	18.00	24.00	
LTE Band 4 (AWS)	Main #1	24.00	18.00	24.00	18.00	18.00	24.00	
LTE Band 5/26 (Cell)	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
LTE Band 7	Main #2	23.00	20.00	23.00	20.00	20.00	23.00	
LTE Band 12	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
LTE Band 13	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
LTE Band 14	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
LTE Band 25	Main #1	24.00	18.00	24.00	18.00	18.00	24.00	
LTE Band 26	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
LTE Band 30	Main #2	23.00	20.00	23.00	20.00	20.00	23.00	
LTE TDD Band 38	Main #2	21.50	21.00	21.50	21.00	21.00	21.50	
LTE TDD Band 40	Main #2	8.01	8.01	8.01	8.01	8.01	8.01	
LTE TDD Band 41(PC3)	Main #2	21.50	21.00	21.50	21.00	21.00	21.50	
LTE TDD Band 41(PC2)	Main #2	22.37	21.00	22.37	21.00	21.00	22.37	
LTE Band 66 (AWS)	Main #1	24.00	18.00	24.00	18.00	18.00	24.00	
LTE Band 71	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
NR Band n2 (PCS)	Main #1	24.50	18.50	24.50	18.50	18.50	24.50	
NR Band n5 (Cell)	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	
NR Band n25	Main #1	24.50	18.50	24.50	18.50	18.50	24.50	
NR Band n41	Main #2	17.50	15.00	17.50	15.00	15.00	17.50	
NR Band n66	Main #1	24.50	19.00	24.50	19.00	19.00	24.50	
NR Band n71	Main #1	24.50	24.50	24.50	24.50	24.50	24.50	

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  $P_{max} < Plimit$ , the DUT will operate at a power level up to  $P_{max}$ .
3. when Hotspot Mode (DSI=3) Grip sensor (DSI=1) and Ear-jack mode(DSI=4) are triggered at the same time, DSI=1 takes more higher priority.  
the Priority for power reduction was given in the order of grip (DSI=1), hotspot(DSI=3) and earjack.(DSI=4).
3.  $Plimit$  for DSI=1 and DSI =3 are the same.
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)

## 5. Equipment List

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	Triple Modular Phantom	-	N/A	N/A	N/A
SPEAG	SAM Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX60	F10/ 5D1CA1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F12/5K9GA1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/59CHA1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/59RAA1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F13/5R4XF1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F11/5K3RA1/C/01	N/A	N/A	N/A
Staubli	TX60 Lspeag	F10/ 5D1CA1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F12/5K9GA1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/59CHA1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/59RAA1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F13/5R4XF1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F11/5K3RA1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0123	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1206 0513	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	010963	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	011578	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1338 1332	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-1203 0309	N/A	N/A	N/A
SPEAG	DAE4	1417	02/26/2020	Annual	02/26/2021
SPEAG	DAE4	466	04/22/2020	Annual	04/22/2021
SPEAG	DAE4	869	09/19/2019	Annual	09/19/2020
SPEAG	DAE4	648	05/25/2020	Annual	05/25/2021
SPEAG	DAE4	652	02/03/2020	Annual	02/03/2021
SPEAG	DAE4	868	09/04/2019	Annual	09/04/2020
SPEAG	E-Field Probe EX3DV4	3797	11/28/2019	Annual	11/28/2020
SPEAG	E-Field Probe EX3DV4	3903	03/25/2020	Annual	03/25/2021
SPEAG	E-Field Probe EX3DV4	3968	09/27/2019	Annual	09/27/2020
SPEAG	E-Field Probe EX3DV4	7370	08/29/2019	Annual	08/29/2020
SPEAG	E-Field Probe ET3DV6	1630	02/26/2020	Annual	02/26/2021
SPEAG	E-Field Probe EX3DV4	3716	11/27/2019	Annual	11/27/2020
SPEAG	Dipole D750V3	1014	05/19/2020	Annual	05/19/2021
SPEAG	Dipole D835V2	4d165	07/28/2020	Annual	07/28/2021
SPEAG	Dipole D1800V2	2d015	09/19/2019	Annual	09/19/2020
SPEAG	Dipole D1900V2	5d061	01/21/2020	Annual	01/21/2021
SPEAG	Dipole D2300V2	1010	08/26/2019	Annual	08/26/2020
SPEAG	Dipole D2450V2	743	02/20/2020	Annual	02/20/2021
SPEAG	Dipole D2600V2	1106	09/19/2019	Annual	09/19/2020
SPEAG	Dipole D5GHzV2	1107	09/26/2019	Annual	09/26/2020
Agilent	Power Meter E4419B	MY41291386	10/07/2019	Annual	10/07/2020
Agilent	Power Meter N1911A	MY45101406	09/10/2019	Annual	09/10/2020
Agilent	Power Sensor 8481A	SG1091286	10/07/2019	Annual	10/07/2020
Agilent	Power Sensor 8481A	MY41090873	10/07/2019	Annual	10/07/2020
Agilent	Power Sensor N1921A	MY55220026	09/06/2019	Annual	09/06/2020
SPEAG	DAKS 3.5	1038	03/24/2020	Annual	03/24/2021
H.P	Network Analyzer /8753ES	JP39240221	01/28/2020	Annual	01/28/2021
Agilent	E5515C	MY48361100	10/07/2019	Annual	10/07/2020
Agilent	E5515C	MY48360252	08/06/2020	Annual	08/06/2021
Agilent	W E5515C	GB44051865	06/01/2020	Annual	06/01/2021
Agilent	E5515C	GB44051865	06/01/2020	Annual	06/01/2021

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Agilent	Signal Generator N5182A	MY47070230	05/06/2020	Annual	05/06/2021
Agilent	Signal Generator N5182A	MY47070230	05/06/2020	Annual	05/06/2021
Agilent	11636B/Power Divider	58698	02/28/2020	Annual	02/28/2021
TESTO	175-H1/Thermometer	40331915309	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40331922309	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40332651310	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40331949309	01/29/2020	Annual	01/29/2021
TESTO	175-H1/Thermometer	40331939309	01/29/2020	Annual	01/29/2021
EMPOWER	RF Power Amplifier	1084	07/01/2020	Annual	07/01/2021
EMPOWER	RF Power Amplifier	1011	10/08/2019	Annual	10/08/2020
MICRO LAB	LP Filter / LA-15N	10453	10/07/2019	Annual	10/07/2020
MICRO LAB	LP Filter / LA-30N	-	10/07/2019	Annual	10/07/2020
MICRO LAB	LP Filter / LA-60N	32011	10/07/2019	Annual	10/07/2020
Agilent	Attenuator (3dB) 8693B	MY39260298	09/18/2019	Annual	09/18/2020
HP	Attenuator (20dB) 8493C	09271	09/18/2019	Annual	09/18/2020
Agilent	Directional Bridge	3140A03878	06/08/2020	Annual	06/08/2021
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/29/2019	Annual	10/29/2020
HP	Dual Directional Coupler	16072	10/07/2019	Annual	10/07/2020
Anritsu	Radio Communication Tester MT8820C	6201074225	03/02/2020	Annual	03/02/2021
Anritsu	Radio Communication Tester MT8820C	6200695605	05/06/2020	Annual	05/06/2021
Anritsu	Radio Communication Tester MT8820C	6200628628	09/20/2019	Annual	09/20/2020
Anritsu	Radio Communication Tester MT8821C	6201502997	08/06/2020	Annual	08/06/2021
Anritsu	Radio Communication Test Station MT8000A	6262036812	01/06/2020	Annual	01/06/2021
R&S	Bluetooth CBT	100272	03/02/2020	Annual	03/02/2021

\* The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.

## 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		Conducted	Test Position	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
Mhz	Ch.			Power (dBm)			(W/kg)	(dBm)	(dBm)
820	560	RC3 / SO55	CDMA BC10	24.95	Left Cheek	1:1	0.096	35.1	31.3
820	560	RC3 / SO55	CDMA BC10	24.95	Left Tilt	1:1	0.205	31.8	
820	560	RC3 / SO55	CDMA BC10	24.95	Right Cheek	1:1	0.175	32.5	
820	560	RC3 / SO55	CDMA BC10	24.95	Right Tilt	1:1	0.234	31.3	
820	560	EVDO Rev. A	CDMA BC10	24.95	Left Cheek	1:1	0.127	33.9	
820	560	EVDO Rev. A	CDMA BC10	24.95	Left Tilt	1:1	0.117	34.3	
820	560	EVDO Rev. A	CDMA BC10	24.95	Right Cheek	1:1	0.140	33.5	
820	560	EVDO Rev. A	CDMA BC10	24.95	Right Tilt	1:1	0.105	34.7	
836.52	384	RC3 / SO55	CDMA BC 0	24.83	Left Cheek	1:1	0.094	35.1	33.2
836.52	384	RC3 / SO55	CDMA BC 0	24.83	Left Tilt	1:1	0.090	35.3	
836.52	384	RC3 / SO55	CDMA BC 0	24.83	Right Cheek	1:1	0.137	33.5	
836.52	384	RC3 / SO55	CDMA BC 0	24.83	Right Tilt	1:1	0.090	35.3	
836.52	384	EVDO Rev. A	CDMA BC 0	24.83	Left Cheek	1:1	0.113	34.3	
836.52	384	EVDO Rev. A	CDMA BC 0	24.83	Left Tilt	1:1	0.106	34.6	
836.52	384	EVDO Rev. A	CDMA BC 0	24.83	Right Cheek	1:1	0.144	33.2	
836.52	384	EVDO Rev. A	CDMA BC 0	24.83	Right Tilt	1:1	0.100	34.8	
1880.0	600	RC3 / SO55	PCS	23.59	Left Cheek	1:1	0.103	33.5	33.2
1880.0	600	RC3 / SO55	PCS	23.59	Left Tilt	1:1	0.064	35.5	
1880.0	600	RC3 / SO55	PCS	23.59	Right Cheek	1:1	0.099	33.6	
1880.0	600	RC3 / SO55	PCS	23.59	Right Tilt	1:1	0.055	36.2	
1880.0	600	EVDO Rev. A	PCS	23.67	Left Cheek	1:1	0.111	33.2	
1880.0	600	EVDO Rev. A	PCS	23.67	Left Tilt	1:1	0.044	37.2	
1880.0	600	EVDO Rev. A	PCS	23.67	Right Cheek	1:1	0.080	34.6	
1880.0	600	EVDO Rev. A	PCS	23.67	Right Tilt	1:1	0.064	35.6	



MEASUREMENT RESULTS									
Frequency		Mode/ Band		Conducted Power	Test Position	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.			(dBm)			(W/kg)	(dBm)	(dBm)
836.6	190	GSM 850	GSM	31.61	Left Cheek	1:8.3	0.070	34.0	32.7
836.6	190	GSM 850	GSM	31.61	Left Tilt	1:8.3	0.075	33.7	
836.6	190	GSM 850	GSM	31.61	Right Cheek	1:8.3	0.094	32.7	
836.6	190	GSM 850	GSM	31.61	Right Tilt	1:8.3	0.047	35.7	
836.6	190	GPRS 2TX	GSM	31.57	Left Cheek	1:4.15	0.137	34.0	
836.6	190	GPRS 2TX	GSM	31.57	Left Tilt	1:4.15	0.110	35.0	
836.6	190	GPRS 2TX	GSM	31.57	Right Cheek	1:4.15	0.180	32.8	
836.6	190	GPRS 2TX	GSM	31.57	Right Tilt	1:4.15	0.086	36.0	
1 880	661	GSM 1900	GSM	29.11	Left Cheek	1:8.3	0.048	33.1	33.1
1 880	661	GSM 1900	GSM	29.11	Left Tilt	1:8.3	0.022	36.5	
1 880	661	GSM 1900	GSM	29.11	Right Cheek	1:8.3	0.037	34.2	
1 880	661	GSM 1900	GSM	29.11	Right Tilt	1:8.3	0.027	35.6	
1 880	661	GPRS 3Tx	GSM	26.68	Left Cheek	1:2.77	0.074	35.4	
1 880	661	GPRS 3Tx	GSM	26.68	Left Tilt	1:2.77	0.035	38.8	
1 880	661	GPRS 3Tx	GSM	26.68	Right Cheek	1:2.77	0.058	36.6	
1 880	661	GPRS 3Tx	GSM	26.68	Right Tilt	1:2.77	0.041	37.9	
836.6	4183	UMTS 850	RMC	23.60	Left Cheek	1:1	0.087	34.2	32.0
836.6	4183	UMTS 850	RMC	23.60	Left Tilt	1:1	0.049	36.7	
836.6	4183	UMTS 850	RMC	23.60	Right Cheek	1:1	0.143	32.0	
836.6	4183	UMTS 850	RMC	23.60	Right Tilt	1:1	0.066	35.4	
1 732.4	1412	UMTS 1700	RMC	23.22	Left Cheek	1:1	0.085	33.9	33.9
1 732.4	1412	UMTS 1700	RMC	23.22	Left Tilt	1:1	0.051	36.1	
1 732.4	1412	UMTS 1700	RMC	23.22	Right Cheek	1:1	0.073	34.6	
1 732.4	1412	UMTS 1700	RMC	23.22	Right Tilt	1:1	0.049	36.3	
1 880	9400	UMTS 1900	RMC	23.45	Left Cheek	1:1	0.101	33.4	33.4
1 880	9400	UMTS 1900	RMC	23.45	Left Tilt	1:1	0.073	34.8	
1 880	9400	UMTS 1900	RMC	23.45	Right Cheek	1:1	0.067	35.2	
1 880	9400	UMTS 1900	RMC	23.45	Right Tilt	1:1	0.058	35.8	

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

MEASUREMENT RESULTS													
Frequency		Mode		Band width	Conducted Power	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
Mhz	Ch.												
683	133322	LTE Band 71	Mid	20	24.75	Right Cheek	0	1	99	1:1	0.223	31.3	31.3
683	133322	LTE Band 71	Mid	20	24.75	Right Tilt	0	1	99	1:1	0.119	34.0	
683	133322	LTE Band 71	Mid	20	24.75	Left Cheek	0	1	99	1:1	0.149	33.0	
683	133322	LTE Band 71	Mid	20	24.75	Left Tilt	0	1	99	1:1	0.130	33.6	
707.5	23095	LTE Band 12	Mid	10	24.64	Right Cheek	0	1	49	1:1	0.158	32.7	32.7
707.5	23095	LTE Band 12	Mid	10	24.64	Right Tilt	0	1	49	1:1	0.080	35.6	
707.5	23095	LTE Band 12	Mid	10	24.64	Left Cheek	0	1	49	1:1	0.113	34.1	
707.5	23095	LTE Band 12	Mid	10	24.64	Left Tilt	0	1	49	1:1	0.098	34.7	
782	23230	LTE Band 13	Mid	10	24.49	Right Cheek	0	1	0	1:1	0.221	31.0	31.0
782	23230	LTE Band 13	Mid	10	24.49	Right Tilt	0	1	0	1:1	0.122	33.6	
782	23230	LTE Band 13	Mid	10	24.49	Left Cheek	0	1	0	1:1	0.086	35.1	
782	23230	LTE Band 13	Mid	10	24.49	Left Tilt	0	1	0	1:1	0.174	32.1	
793	23330	LTE Band 14	Mid	10	24.35	Right Cheek	0	1	0	1:1	0.198	31.4	31.4
793	23330	LTE Band 14	Mid	10	24.35	Right Tilt	0	1	0	1:1	0.111	33.9	
793	23330	LTE Band 14	Mid	10	24.35	Left Cheek	0	1	0	1:1	0.090	34.8	
793	23330	LTE Band 14	Mid	10	24.35	Left Tilt	0	1	0	1:1	0.138	32.9	
831.5	26865	LTE Band 26	Mid	15	24.38	Right Cheek	0	1	0	1:1	0.135	33.1	32.8
831.5	26865	LTE Band 26	Mid	15	24.38	Right Tilt	0	1	0	1:1	0.090	34.8	
831.5	26865	LTE Band 26	Mid	15	24.38	Left Cheek	0	1	0	1:1	0.073	35.7	
831.5	26865	LTE Band 26	Mid	15	24.38	Left Tilt	0	1	0	1:1	0.143	32.8	
1 770	132572	LTE Band 66	High	20	24.24	Right Cheek	0	1	0	1:1	0.121	33.4	31.4
1 770	132572	LTE Band 66	High	20	24.24	Right Tilt	0	1	0	1:1	0.085	34.9	
1 770	132572	LTE Band 66	High	20	24.24	Left Cheek	0	1	0	1:1	0.194	31.4	
1 770	132572	LTE Band 66	High	20	24.24	Left Tilt	0	1	0	1:1	0.094	34.5	
1 905	26590	LTE Band 25	High	20	23.89	Right Cheek	0	1	99	1:1	0.061	36.0	35.7
1 905	26590	LTE Band 25	High	20	23.89	Right Tilt	0	1	99	1:1	0.035	38.4	
1 905	26590	LTE Band 25	High	20	23.89	Left Cheek	0	1	99	1:1	0.066	35.7	
1 905	26590	LTE Band 25	High	20	23.89	Left Tilt	0	1	99	1:1	0.024	40.1	

**MEASUREMENT RESULTS**

Frequency		Mode		Band width	Conducted Power	Test Position	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
Mhz	Ch.			Mhz	(dBm)		(dB)				(W/kg)	(dBm)	(dBm)
2 310	27710	LTE Band 30	Mid	10	22.06	Right Cheek	0	1	24	1:1	0.041	35.9	33.1
2 310	27710	LTE Band 30	Mid	10	22.06	Right Tilt	0	1	24	1:1	0.073	33.4	
2 310	27710	LTE Band 30	Mid	10	22.06	Left Cheek	0	1	24	1:1	0.078	33.1	
2 310	27710	LTE Band 30	Mid	10	22.06	Left Tilt	0	1	24	1:1	0.049	35.2	
2 310	38450	LTE Band 40	Low	10	9.37	Right Cheek	0	1	24	1:1.58	0.0000097	59.5	44.9
2 310	38450	LTE Band 40	Low	10	9.37	Right Tilt	0	1	24	1:1.58	0.00028	44.9	
2 310	38450	LTE Band 40	Low	10	9.37	Left Cheek	0	1	24	1:1.58	0.0000794	50.4	
2 310	38450	LTE Band 40	Low	10	9.37	Left Tilt	0	1	24	1:1.58	0.0000157	57.4	
2 355	39200	LTE Band 40	High	10	9.47	Right Cheek	0	1	24	1:1.58	0.017	27.2	25.0
2 355	39200	LTE Band 40	High	10	9.47	Right Tilt	0	1	24	1:1.58	0.014	28.0	
2 355	39200	LTE Band 40	High	10	9.47	Left Cheek	0	1	24	1:1.58	0.028	25.0	
2 355	39200	LTE Band 40	High	10	9.47	Left Tilt	0	1	24	1:1.58	0.010	29.5	
2 549.5	40185	LTE Band 41	Low	20	23.58	Right Cheek	0	1	0	1:1.58	0.040	35.6	34.4
2 549.5	40185	LTE Band 41	Low	20	23.58	Right Tilt	0	1	0	1:1.58	0.053	34.4	
2 549.5	40185	LTE Band 41	Low	20	23.58	Left Cheek	0	1	0	1:1.58	0.048	34.8	
2 549.5	40185	LTE Band 41	Low	20	23.58	Left Tilt	0	1	0	1:1.58	0.035	36.2	
2 560	21350	LTE Band 7	Low	20	22.63	Right Cheek	0	1	99	1:1	0.100	32.6	32.6
2 560	21350	LTE Band 7	Low	20	22.63	Right Tilt	0	1	99	1:1	0.060	34.8	
2 560	21350	LTE Band 7	Low	20	22.63	Left Cheek	0	1	99	1:1	0.073	34.0	
2 560	21350	LTE Band 7	Low	20	22.63	Left Tilt	0	1	99	1:1	0.088	33.2	

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

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

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Conducted Power	Test Configurations		MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	PLimit	Minimum PLimit
MHz	Ch.													
680.5	136100	NR Band n71	Mid	20	24.39	Left Cheek	DFT-s-OFDM QPSK	0	1	53	1:1	0.132	33.2	32.5
680.5	136100	NR Band n71	Mid	20	24.39	Left Tilt	DFT-s-OFDM QPSK	0	1	53	1:1	0.092	34.8	
680.5	136100	NR Band n71	Mid	20	24.39	Right Cheek	DFT-s-OFDM QPSK	0	1	53	1:1	0.153	32.5	
680.5	136100	NR Band n71	Mid	20	24.39	Right Tilt	DFT-s-OFDM QPSK	0	1	53	1:1	0.083	35.2	
836.5	167300	NR Band n5	Mid	20	24.59	Left Cheek	DFT-s-OFDM QPSK	0	1	1	1:1	0.056	37.1	36.0
836.5	167300	NR Band n5	Mid	20	24.59	Left Tilt	DFT-s-OFDM QPSK	0	1	1	1:1	0.070	36.1	
836.5	167300	NR Band n5	Mid	20	24.59	Right Cheek	DFT-s-OFDM QPSK	0	1	1	1:1	0.073	36.0	
836.5	167300	NR Band n5	Mid	20	24.59	Right Tilt	DFT-s-OFDM QPSK	0	1	1	1:1	0.032	39.5	
1 770	354000	NR Band n66	High	20	24.44	Left Cheek	DFT-s-OFDM QPSK	0	1	104	1:1	0.056	37.0	37.0
1 770	354000	NR Band n66	High	20	24.44	Left Tilt	DFT-s-OFDM QPSK	0	1	104	1:1	0.043	38.1	
1 770	354000	NR Band n66	High	20	24.44	Right Cheek	DFT-s-OFDM QPSK	0	1	104	1:1	0.043	38.1	
1 770	354000	NR Band n66	High	20	24.44	Right Tilt	DFT-s-OFDM QPSK	0	1	104	1:1	0.041	38.3	
1 905	381000	NR Band n25	High	20	24.16	Left Cheek	DFT-s-OFDM QPSK	0	1	53	1:1	0.129	27.0	27.0
1 905	381000	NR Band n25	High	20	24.16	Left Tilt	DFT-s-OFDM QPSK	0	1	53	1:1	0.073	29.5	
1 905	381000	NR Band n25	High	20	24.16	Right Cheek	DFT-s-OFDM QPSK	0	1	53	1:1	0.110	27.7	
1 905	381000	NR Band n25	High	20	24.16	Right Tilt	DFT-s-OFDM QPSK	0	1	53	1:1	0.071	29.6	
2 592.99	518598	NR Band n41	Mid	100	24.01	Left Cheek	DFT-s-OFDM QPSK	0	1	137	1:4.0	0.067	29.7	29.7
2 592.99	518598	NR Band n41	Mid	100	24.01	Left Tilt	DFT-s-OFDM QPSK	0	1	137	1:4.0	0.027	33.7	
2 592.99	518598	NR Band n41	Mid	100	24.01	Right Cheek	DFT-s-OFDM QPSK	0	1	137	1:4.0	0.026	33.8	
2 592.99	518598	NR Band n41	Mid	100	24.01	Right Tilt	DFT-s-OFDM QPSK	0	1	137	1:4.0	0.042	31.8	

**Table A-4 DSI = 0 P<sub>Limit</sub> Calculations - 2G/3G Body-Worn SAR**

For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Conducted Power (dBm)	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g) (W/kg)	P <sub>limit</sub> (dBm)	Minimum P <sub>limit</sub> (dBm)
Mhz	Ch.									
820	560	RC3 / SO55	CDMA BC10	24.95	Back	15	1:1	0.241	31.1	30.2
820	560	RC3 / SO55	CDMA BC10	24.95	Front	15	1:1	0.224	31.4	
820	560	EVDO Rev. A	CDMA BC10	24.95	Back	15	1:1	0.301	30.2	
820	560	EVDO Rev. A	CDMA BC10	24.95	Front	15	1:1	0.234	31.3	
836.52	384	RC3 / SO55	CDMA BC 0	24.83	Back	15	1:1	0.263	30.6	30.6
836.52	384	RC3 / SO55	CDMA BC 0	24.83	Front	15	1:1	0.232	31.2	
836.52	384	EVDO Rev. A	CDMA BC 0	24.83	Back	15	1:1	0.265	30.6	
836.52	384	EVDO Rev. A	CDMA BC 0	24.83	Front	15	1:1	0.224	31.3	
1880.0	600	RC3 / SO55	PCS	23.59	Back	15	1:1	0.568	26.0	26.0
1880.0	600	RC3 / SO55	PCS	23.59	Front	15	1:1	0.543	26.2	
1880.0	600	EVDO Rev. A	PCS	23.63	Back	15	1:1	0.127	32.6	
1880.0	600	EVDO Rev. A	PCS	23.63	Front	15	1:1	0.542	26.3	
836.6	190	GSM 850	GSM	31.61	Back	15	1:8.3	0.172	30.2	30.2
836.6	190	GSM 850	GSM	31.61	Front	15	1:8.3	0.136	31.2	
824.2	128	GPRS 2Tx	GSM	31.57	Back	15	1:4.15	0.315	30.4	
824.2	128	GPRS 2Tx	GSM	31.57	Front	15	1:4.15	0.259	31.3	
1 880	661	GSM 1900	GSM	29.11	Back	15	1:8.3	0.225	26.6	26.6
1 880	661	GSM 1900	GSM	29.11	Front	15	1:8.3	0.206	26.9	
1 880	661	GPRS 3Tx	GSM	26.68	Back	15	1:2.77	0.344	26.9	
1 880	661	GPRS 3Tx	GSM	26.68	Front	15	1:2.77	0.306	27.4	
826.4	4132	UMTS 850	RMC	23.60	Back	15	1:1	0.216	30.3	30.3
826.4	4132	UMTS 850	RMC	23.60	Front	15	1:1	0.160	31.6	
1 732.4	1412	UMTS 1700	RMC	23.22	Back	15	1:1	0.619	25.3	25.3
1 732.4	1412	UMTS 1700	RMC	23.22	Front	15	1:1	0.466	26.5	
1 880	9400	UMTS 1900	RMC	23.45	Back	15	1:1	0.503	26.4	26.4
1 880	9400	UMTS 1900	RMC	23.45	Front	15	1:1	0.453	26.9	

**Table A-5 DSI = 0 P<sub>Limit</sub> Calculations - 4G Body-Worn SAR**

For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Conducted Power	Test Position	Spacing (mm)	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR(1g) (W/kg)	P <sub>limit</sub> (dBm)	Minimum P <sub>limit</sub> (dBm)
Mhz	Ch.													
683	133322	LTE Band 71	Mid	20	24.75	Back	15	0	1	99	1:1	0.332	29.5	29.5
683	133322	LTE Band 71	Mid	20	24.75	Front	15	0	1	99	1:1	0.273	30.4	
707.5	23095	LTE Band 12	Mid	10	24.64	Back	15	0	1	49	1:1	0.268	30.4	30.4
707.5	23095	LTE Band 12	Mid	10	24.64	Front	15	0	1	49	1:1	0.225	31.1	
782	23230	LTE Band 13	Mid	10	24.49	Back	15	0	1	0	1:1	0.355	29.0	29.0
782	23230	LTE Band 13	Mid	10	24.49	Front	15	0	1	0	1:1	0.296	29.8	
793	23330	LTE Band 14	Mid	10	24.35	Back	15	0	1	0	1:1	0.340	29.0	29.0
793	23330	LTE Band 14	Mid	10	24.35	Front	15	0	1	0	1:1	0.282	29.8	
831.5	26865	LTE Band 26	Mid	15	24.38	Back	15	0	1	0	1:1	0.223	30.9	30.9
831.5	26865	LTE Band 26	Mid	15	24.38	Front	15	0	1	0	1:1	0.185	31.7	
1 770	132572	LTE Band 66	High	20	24.24	Back	15	0	1	0	1:1	0.871	24.8	24.8
1 770	132572	LTE Band 66	High	20	24.24	Front	15	0	1	0	1:1	0.773	25.4	
1 905	26590	LTE Band 25	High	20	23.89	Back	15	0	1	99	1:1	0.530	26.6	26.6
1 905	26590	LTE Band 25	High	20	23.89	Front	15	0	1	99	1:1	0.497	26.9	
2 310	27710	LTE Band 30	Mid	10	22.06	Back	15	0	1	24	1:1	0.324	27.0	27.0
2 310	27710	LTE Band 30	Mid	10	22.06	Front	15	0	1	24	1:1	0.192	29.2	
2 310	38750	LTE Band 40	Low	10	9.37	Back	15	0	1	24	1:1.58	0.010	27.4	27.4
2 310	38750	LTE Band 40	Low	10	9.37	Front	15	0	1	24	1:1.58	0.00724	28.9	
2 355	39200	LTE Band 40	High	10	9.47	Back	15	0	1	24	1:1.58	0.012	26.7	26.7
2 355	39200	LTE Band 40	High	10	9.47	Front	15	0	1	24	1:1.58	0.0067	29.0	
2 549.5	40185	LTE Band 41	High	20	23.58	Back	15	0	1	0	1:1.58	0.195	30.7	30.7
2 549.5	40185	LTE Band 41	High	20	23.58	Front	15	0	1	0	1:1.58	0.146	31.9	
2 510	20850	LTE Band 7	Low	20	22.63	Back	15	0	1	0	1:1	0.271	28.3	28.3
2 510	20850	LTE Band 7	Low	20	22.63	Front	15	0	1	0	1:1	0.185	30.0	

**Table A-6 DSI = 0 P<sub>Limit</sub> Calculations - NR Body-Worn SAR**

For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Conducted Power	Test Configurations		MPR	Spacing	RB	RB	Duty Cycle	Meas. SAR(1g)	Plimit	Minimu Plimit
Mhz	Ch.			Mhz	(dBm)			(dB)	(mm)	Size	offset	(W/kg)	(dBm)	(dBm)	
680.5	136100	NR Band n71	High	20	24.39	Back	DFT-s-OFDM QPSK	0	15	1	53	1:1	0.249	30.4	30.4
680.5	136100	NR Band n71	High	20	24.39	Front	DFT-s-OFDM QPSK	0	15	1	53	1:1	0.215	31.1	
836.5	167300	NR Band n5	High	20	24.59	Back	DFT-s-OFDM QPSK	0	15	1	1	1:1	0.112	34.1	34.1
836.5	167300	NR Band n5	High	20	24.59	Front	DFT-s-OFDM QPSK	0	15	1	1	1:1	0.082	35.5	
1 770.0	354000	NR Band n66	High	20	24.44	Back	DFT-s-OFDM QPSK	0	15	1	104	1:1	0.325	29.3	29.3
1 770.0	354000	NR Band n66	High	20	24.44	Front	DFT-s-OFDM QPSK	0	15	1	104	1:1	0.301	29.7	
1 905.0	381000	NR Band n25	High	20	24.16	Back	DFT-s-OFDM QPSK	0	15	1	53	1:1	0.814	25.1	25.1
1 905.0	381000	NR Band n25	High	20	24.16	Front	DFT-s-OFDM QPSK	0	15	1	53	1:1	0.759	25.4	
2 592.99	518598	NR Band n41	Mid	100	24.01	Back	DFT-s-OFDM QPSK	0	15	1	137	1:4.0	0.087	28.6	28.6
2 592.99	518598	NR Band n41	Mid	100	24.01	Front	DFT-s-OFDM QPSK	0	15	1	137	1:4.0	0.062	30.1	

**Table A-7 DSI = 3 P<sub>Limit</sub> Calculations - - 2G/3G Hotspot SAR**

For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Conducted Power (dBm)	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g) (W/kg)	P <sub>limit</sub> (dBm)	Minimum P <sub>limit</sub> (dBm)
Mhz	Ch.									
820	560	EVDO Rev.0	CDMA BC10	24.95	Back	10	1:1	0.572	27.4	27.4
820	560	EVDO Rev.0	CDMA BC10	24.95	Front	10	1:1	0.501	28.0	
820	560	EVDO Rev.0	CDMA BC10	24.95	Bottom	10	1:1	0.341	29.6	
820	560	EVDO Rev.0	CDMA BC10	24.95	Right	10	1:1	0.225	31.4	
820	560	EVDO Rev.0	CDMA BC10	24.95	Left	10	1:1	0.075	36.2	
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Back	10	1:1	0.510	27.8	27.8
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Front	10	1:1	0.479	28.0	
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Bottom	10	1:1	0.349	29.4	
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Right	10	1:1	0.132	33.6	
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Left	10	1:1	0.078	35.9	
1880.0	600	EVDO Rev.0	PCS	18.68	Back	10	1:1	0.365	23.1	20.2
1880.0	600	EVDO Rev.0	PCS	18.68	Front	10	1:1	0.396	22.7	
1880.0	600	EVDO Rev.0	PCS	18.68	Bottom	10	1:1	0.654	20.2	
1880.0	600	EVDO Rev.0	PCS	18.68	Right	10	1:1	0.037	33.0	
1880.0	600	EVDO Rev.0	PCS	18.68	Left	10	1:1	0.034	33.4	



MEASUREMENT RESULTS										
Frequency		Mode/ Band		Conducted Power (dBm)	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g) (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Mhz	Ch.									
824.2	128	GSM 850	GPRS 2Tx	31.57	Back	10	1:4.15	0.599	27.6	27.6
824.2	128	GSM 850	GPRS 2Tx	31.57	Front	10	1:4.15	0.528	28.2	
824.2	128	GSM 850	GPRS 2Tx	31.57	Bottom	10	1:4.15	0.381	29.6	
824.2	128	GSM 850	GPRS 2Tx	31.57	Right	10	1:4.15	0.146	33.7	
824.2	128	GSM 850	GPRS 2Tx	31.57	Left	10	1:4.15	0.066	37.2	
1 880.0	661	GSM 1900	GPRS 3Tx	23.99	Back	10	1:2.77	0.320	24.7	24.3
1 880.0	661	GSM 1900	GPRS 3Tx	23.99	Front	10	1:2.77	0.346	24.3	
1 880.0	661	GSM 1900	GPRS 3Tx	23.99	Bottom	10	1:2.77	0.783	20.8	
1 880.0	661	GSM 1900	GPRS 3Tx	23.99	Right	10	1:2.77	0.047	33.0	
1 880.0	661	GSM 1900	GPRS 3Tx	23.99	Left	10	1:2.77	0.043	33.4	
826.4	4132	UMTS 850	RMC	23.60	Back	10	1:1	0.420	27.4	27.4
826.4	4132	UMTS 850	RMC	23.60	Front	10	1:1	0.312	28.7	
826.4	4132	UMTS 850	RMC	23.60	Bottom	10	1:1	0.252	29.6	
826.4	4132	UMTS 850	RMC	23.60	Right	10	1:1	0.163	31.5	
826.4	4132	UMTS 850	RMC	23.60	Left	10	1:1	0.074	34.9	
1 732.4	1412	UMTS 1700	RMC	18.25	Back	10	1:1	0.408	22.1	20.5
1 732.4	1412	UMTS 1700	RMC	18.25	Front	10	1:1	0.335	23.0	
1 732.4	1412	UMTS 1700	RMC	18.25	Bottom	10	1:1	0.594	20.5	
1 732.4	1412	UMTS 1700	RMC	18.25	Right	10	1:1	0.066	30.1	
1 732.4	1412	UMTS 1700	RMC	18.25	Left	10	1:1	0.062	30.3	
1 880	9400	UMTS 1900	RMC	18.46	Back	10	1:1	0.403	22.4	18.9
1 880	9400	UMTS 1900	RMC	18.46	Front	10	1:1	0.419	22.2	
1 880	9400	UMTS 1900	RMC	18.46	Bottom	10	1:1	0.895	18.9	
1 880	9400	UMTS 1900	RMC	18.46	Right	10	1:1	0.052	31.3	
1 880	9400	UMTS 1900	RMC	18.46	Left	10	1:1	0.047	31.7	

**Table A-8 DSI = 3 P<sub>Limit</sub> Calculations - - 4G Hotspot SAR**

For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Conducted Power	Test Position	Spacing (mm)	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(1g)	P <sub>limit</sub>	Minimum P <sub>limit</sub>
MHz	Ch.													
683	133322	LTE Band 71	Mid	20	24.75	Back	10	0	1	99	1:1	0.432	28.4	28.4
683	133322	LTE Band 71	Mid	20	24.75	Front	10	0	1	99	1:1	0.301	30.0	
683	133322	LTE Band 71	Mid	20	24.75	Bottom	10	0	1	99	1:1	0.380	29.0	
683	133322	LTE Band 71	Mid	20	24.75	Right	10	0	1	99	1:1	0.324	29.6	
683	133322	LTE Band 71	Mid	20	24.75	Left	10	0	1	99	1:1	0.185	32.1	
707.5	23095	LTE Band 12	Mid	10	24.64	Back	10	1	1	49	1:1	0.363	29.0	29.0
707.5	23095	LTE Band 12	Mid	10	24.64	Front	10	0	1	49	1:1	0.299	29.9	
707.5	23095	LTE Band 12	Mid	10	24.64	Bottom	10	0	1	49	1:1	0.293	30.0	
707.5	23095	LTE Band 12	Mid	10	24.64	Right	10	0	1	49	1:1	0.272	30.3	
707.5	23095	LTE Band 12	Mid	10	24.64	Left	10	0	1	49	1:1	0.128	33.6	
782	23230	LTE Band 13	Mid	10	24.49	Back	10	0	1	0	1:1	0.619	26.6	26.6
782	23230	LTE Band 13	Mid	10	24.49	Front	10	0	1	0	1:1	0.482	27.7	
782	23230	LTE Band 13	Mid	10	24.49	Bottom	10	0	1	0	1:1	0.435	28.1	
782	23230	LTE Band 13	Mid	10	24.49	Right	10	0	1	0	1:1	0.356	29.0	
782	23230	LTE Band 13	Mid	10	24.49	Left	10	0	1	0	1:1	0.182	31.9	
793	23330	LTE Band 14	Mid	10	24.35	Back	10	0	1	0	1:1	0.604	26.5	26.5
793	23330	LTE Band 14	Mid	10	24.35	Front	10	0	1	0	1:1	0.482	27.5	
793	23330	LTE Band 14	Mid	10	24.35	Bottom	10	0	1	0	1:1	0.409	28.2	
793	23330	LTE Band 14	Mid	10	24.35	Right	10	0	1	0	1:1	0.375	28.6	
793	23330	LTE Band 14	Mid	10	24.35	Left	10	0	1	0	1:1	0.167	32.1	
831.5	26865	LTE Band 26	Mid	15	24.38	Back	10	0	1	0	1:1	0.458	27.8	27.8
831.5	26865	LTE Band 26	Mid	15	24.38	Front	10	0	1	0	1:1	0.376	28.6	
831.5	26865	LTE Band 26	Mid	15	24.38	Bottom	10	0	1	0	1:1	0.288	29.8	
831.5	26865	LTE Band 26	Mid	15	24.38	Right	10	0	1	0	1:1	0.124	33.4	
831.5	26865	LTE Band 26	Mid	15	24.38	Left	10	0	1	0	1:1	0.090	34.8	
1 770	132572	LTE Band 66	High	20	18.07	Back	10	0	1	49	1:1	0.427	21.8	19.7
1 770	132572	LTE Band 66	High	20	18.07	Front	10	0	1	49	1:1	0.415	21.9	
1 770	132572	LTE Band 66	High	20	18.07	Bottom	10	0	1	49	1:1	0.688	19.7	
1 770	132572	LTE Band 66	High	20	18.07	Right	10	0	1	49	1:1	0.050	31.1	
1 770	132572	LTE Band 66	High	20	18.07	Left	10	0	1	49	1:1	0.058	30.4	

**MEASUREMENT RESULTS**

Frequency		Mode		Band width	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)
1 905	26590	LTE Band 25	High	20	17.67	Back	10	0	1	99	1:1	0.372	22.0	19.2
1 905	26590	LTE Band 25	High	20	17.67	Front	10	0	1	99	1:1	0.377	21.9	
1 905	26590	LTE Band 25	High	20	17.67	Bottom	10	0	1	99	1:1	0.702	19.2	
1 905	26590	LTE Band 25	High	20	17.67	Right	10	0	1	99	1:1	0.042	31.4	
1 905	26590	LTE Band 25	High	20	17.67	Left	10	0	1	99	1:1	0.028	33.2	
2 310	27710	LTE Band 30	Mid	10	19.42	Back	10	0	1	0	1:1	0.302	24.6	24.6
2 310	27710	LTE Band 30	Mid	10	19.42	Front	10	0	1	0	1:1	0.201	26.4	
2 310	27710	LTE Band 30	Mid	10	19.42	Bottom	10	0	1	0	1:1	0.231	25.8	
2 310	27710	LTE Band 30	Mid	10	19.42	Left	10	0	1	0	1:1	0.137	28.1	
2 310	38750	LTE Band 40	Low	10	9.37	Back	10	0	1	24	1:1.58	0.017	27.1	26.6
2 310	38750	LTE Band 40	Low	10	9.37	Front	10	0	1	24	1:1.58	0.019	26.6	
2 310	38750	LTE Band 40	Low	10	9.37	Bottom	10	0	1	24	1:1.58	0.017	27.1	
2 310	38750	LTE Band 40	Low	10	9.37	Left	10	0	1	24	1:1.58	0.011	29.0	
2 355	39200	LTE Band 40	High	10	9.47	Back	10	0	1	24	1:1.58	0.025	25.5	25.5
2 355	39200	LTE Band 40	High	10	9.47	Front	10	0	1	24	1:1.58	0.018	26.9	
2 355	39200	LTE Band 40	High	10	9.47	Bottom	10	0	1	24	1:1.58	0.013	28.3	
2 355	39200	LTE Band 40	High	10	9.47	Right	10	0	1	24	1:1.58	0.0031	34.7	
2 355	39200	LTE Band 40	High	10	9.47	Left	10	0	1	24	1:1.58	0.028	25.0	
2 636.5	41055	LTE Band 41	High	20	22.54	Back	10	0	1	0	1:1.58	0.311	25.6	24.2
2 636.5	41055	LTE Band 41	High	20	22.54	Front	10	0	1	0	1:1.58	0.232	26.9	
2 636.5	41055	LTE Band 41	High	20	22.54	Bottom	10	0	1	0	1:1.58	0.434	24.2	
2 636.5	41055	LTE Band 41	High	20	22.54	Left	10	0	1	0	1:1.58	0.183	27.9	
2 510	20850	LTE Band 7	Low	20	19.55	Back	10	0	1	0	1:1	0.169	27.3	24.1
2 510	20850	LTE Band 7	Low	20	19.55	Front	10	0	1	0	1:1	0.219	26.1	
2 510	20850	LTE Band 7	Low	20	19.55	Bottom	10	0	1	0	1:1	0.351	24.1	
2 510	20850	LTE Band 7	Low	20	19.55	Left	10	0	1	0	1:1	0.148	27.8	

**Table A-9 DSI = 3 P<sub>Limit</sub> Calculations - - NR Hotspot SAR**

For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Conducted Power	Test Position		MPR	Spacing	RB	RB	Duty Cycle	Meas. SAR(1g)	P <sub>limit</sub>	Minimum P <sub>limit</sub>
Mhz	Ch.			Mhz	(dBm)			(dB)	(mm)	Size	offset		(W/kg)	(dBm)	(dBm)
680.5	136100	NR Band n71	Mid	20	24.39	Back	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.304	29.6	29.6
680.5	136100	NR Band n71	Mid	20	24.39	Front	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.260	30.2	
680.5	136100	NR Band n71	Mid	20	24.39	Bottom	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.222	30.9	
680.5	136100	NR Band n71	Mid	20	24.39	Right	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.233	30.7	
680.5	136100	NR Band n71	Mid	20	24.39	Left	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.145	32.8	
836.5	167300	NR Band n5	Mid	20	24.59	Back	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.253	30.6	30.6
836.5	167300	NR Band n5	Mid	20	24.59	Front	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.191	31.8	
836.5	167300	NR Band n5	Mid	20	24.59	Bottom	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.083	35.4	
836.5	167300	NR Band n5	Mid	20	24.59	Right	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.046	38.0	
836.5	167300	NR Band n5	Mid	20	24.59	Left	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.061	36.7	
1 720.0	344000	NR Band n66	High	20	19.11	Back	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.427	22.8	20.6
1 720.0	344000	NR Band n66	High	20	19.11	Front	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.405	23.0	
1 720.0	344000	NR Band n66	High	20	19.11	Bottom	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.712	20.6	
1 720.0	344000	NR Band n66	High	20	19.11	Right	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.062	31.2	
1 720.0	344000	NR Band n66	High	20	19.11	Left	DFT-s-OFDM QPSK	0	10	1	1	1:1	0.065	31.0	
1 905.0	381000	NR Band n25	High	20	19.00	Back	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.384	23.2	20.4
1 905.0	381000	NR Band n25	High	20	19.00	Front	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.296	24.3	
1 905.0	381000	NR Band n25	High	20	19.00	Bottom	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.732	20.4	
1 905.0	381000	NR Band n25	High	20	19.00	Right	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.048	32.2	
1 905.0	381000	NR Band n25	High	20	19.00	Left	DFT-s-OFDM QPSK	0	10	1	53	1:1	0.034	33.7	
2 592.99	518598	NR Band n41	Mid	100	21.38	Back	DFT-s-OFDM QPSK	0	10	1	1	1:4.0	0.128	24.3	24.3
2 592.99	518598	NR Band n41	Mid	100	21.38	Front	DFT-s-OFDM QPSK	0	10	1	1	1:4.0	0.069	27.0	
2 592.99	518598	NR Band n41	Mid	100	21.38	Bottom	DFT-s-OFDM QPSK	0	10	1	1	1:4.0	0.115	24.8	
2 592.99	518598	NR Band n41	Mid	100	21.38	Right	DFT-s-OFDM QPSK	0	10	1	1	1:4.0	0.017	33.1	
2 592.99	518598	NR Band n41	Mid	100	21.38	Left	DFT-s-OFDM QPSK	0	10	1	1	1:4.0	0.049	28.5	

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

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Conducted Power (dBm)	Test Position	Spacing (mm)	Duty Cycle	Meas. SAR(1g) (W/kg)	P <sub>limit</sub> (dBm)	Minimum P <sub>limit</sub> (dBm)
Mhz	Ch.									
820	560	CDMA BC10	EVDO	24.95	Back	0	1:1	1.890	26.2	25.6
820	560	CDMA BC10	EVDO	24.95	Front	0	1:1	2.160	25.6	
820	560	CDMA BC10	EVDO	24.95	Left	0	1:1	0.325	33.8	
820	560	CDMA BC10	EVDO	24.95	Right	0	1:1	0.490	32.0	
820	560	CDMA BC10	EVDO	24.95	Bottom	0	1:1	1.210	28.1	
836.52	384	CDMA BC 0	EVDO	24.85	Back	0	1:1	1.760	26.4	26.0
836.52	384	CDMA BC 0	EVDO	24.85	Front	0	1:1	1.940	26.0	
836.52	384	CDMA BC 0	EVDO	24.85	Left	0	1:1	1.120	28.3	
836.52	384	CDMA BC 0	EVDO	24.85	Right	0	1:1	0.460	32.2	
836.52	384	CDMA BC 0	EVDO	24.85	Bottom	0	1:1	0.444	32.4	
836.6	4183	UMTS 850	RMC	23.60	Back	0	1:1	0.846	28.3	27.9
836.6	4183	UMTS 850	RMC	23.60	Front	0	1:1	0.922	27.9	
836.6	4183	UMTS 850	RMC	23.60	Bottom	0	1:1	0.456	31.0	
836.6	4183	UMTS 850	RMC	23.60	Right	0	1:1	0.206	34.4	
836.6	4183	UMTS 850	RMC	23.60	Left	0	1:1	0.177	35.1	
824.2	128	GSM 850	GPRS 2Tx	31.57	Back	8	1:4.15	0.395	33.4	33.4
824.2	128	GSM 850	GPRS 2Tx	31.57	Front	7	1:4.15	0.083	40.2	
824.2	128	GSM 850	GPRS 2Tx	31.57	Bottom	13	1:4.15	0.381	33.6	
824.2	128	GSM 850	GPRS 2Tx	31.57	Right	0	1:4.15	0.276	35.0	
824.2	128	GSM 850	GPRS 2Tx	31.57	Left	0	1:4.15	0.050	42.4	
1 880.0	661	GSM 1900	GPRS 3Tx	26.68	Rear	8	1:2.77	0.423	28.4	26.7
1 880.0	661	GSM 1900	GPRS 3Tx	26.68	Front	7	1:2.77	0.623	26.7	
1 880.0	661	GSM 1900	GPRS 3Tx	26.68	Bottom	13	1:2.77	0.452	28.1	
1 880.0	661	GSM 1900	GPRS 3Tx	26.68	Left	0	1:2.77	0.154	32.8	
1 880.0	661	GSM 1900	GPRS 3Tx	26.68	Right	0	1:2.77	0.168	32.4	
1 732.4	1412	UMTS 1700	RMC	23.22	Rear	8	1:1	1.28	26.1	26.1
1 732.4	1412	UMTS 1700	RMC	23.22	Front	7	1:1	1.21	26.4	
1 732.4	1412	UMTS 1700	RMC	23.22	Bottom	13	1:1	0.737	28.5	
1 732.4	1412	UMTS 1700	RMC	23.22	Left	0	1:1	0.362	31.6	
1 732.4	1412	UMTS 1700	RMC	23.22	Right	0	1:1	0.380	31.4	
1 880.0	9400	UMTS 1900	RMC	23.45	Rear	8	1:1	0.709	28.9	27.9
1 880.0	9400	UMTS 1900	RMC	23.45	Front	7	1:1	0.905	27.9	
1 880.0	9400	UMTS 1900	RMC	23.45	Bottom	13	1:1	0.848	28.1	
1 880.0	9400	UMTS 1900	RMC	23.45	Left	0	1:1	0.094	37.7	
1 880.0	9400	UMTS 1900	RMC	23.45	Right	0	1:1	0.273	33.1	
1 880.0	600	EVDO Rev.0	PCS	23.67	Rear	8	1:1	0.734	29.0	28.4
1 880.0	600	EVDO Rev.0	PCS	23.67	Front	7	1:1	0.849	28.4	
1 880.0	600	EVDO Rev.0	PCS	23.67	Bottom	13	1:1	0.798	28.6	
1 880.0	600	EVDO Rev.0	PCS	23.67	Left	0	1:1	0.243	33.8	
1 880.0	600	EVDO Rev.0	PCS	23.67	Right	0	1:1	0.247	33.7	

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

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Conducted Power	Test Position	Spacing (mm)	MPR (dB)	RB Size	RB offset	Duty Cycle	Meas. SAR(1g) (W/kg)	P <sub>limit</sub> (dBm)	Minimum P <sub>limit</sub> (dBm)
Mhz	Ch.	Mhz		Mhz	(dBm)									
1 770	132572	LTE Band 66	High	20	24.24	Back	8	0	1	49	1:1	0.686	29.9	29.1
1 770	132572	LTE Band 66	High	20	24.24	Front	7	0	1	49	1:1	0.762	29.4	
1 770	132572	LTE Band 66	High	20	24.24	Bottom	13	0	1	49	1:1	0.825	29.1	
1 770	132572	LTE Band 66	High	20	24.24	Right	0	0	1	49	1:1	0.283	33.7	
1 770	132572	LTE Band 66	High	20	24.24	Left	0	0	1	49	1:1	0.122	37.4	
2 310	27710	LTE Band 30	Mid	10	22.06	Back	8	0	1	0	1:1	0.103	35.9	33.3
2 310	27710	LTE Band 30	Mid	10	22.06	Front	7	0	1	0	1:1	0.188	33.3	
2 310	27710	LTE Band 30	Mid	10	22.06	Bottom	13	0	1	0	1:1	0.125	35.1	
2 310	27710	LTE Band 30	Mid	10	22.06	Left	0	0	1	0	1:1	0.158	34.1	
2 636.5	41055	LTE Band 41	High	20	23.58	Back	8	0	1	0	1:1.58	0.522	24.4	21.9
2 636.5	41055	LTE Band 41	High	20	23.58	Front	7	0	1	0	1:1.58	0.414	25.4	
2 636.5	41055	LTE Band 41	High	20	23.58	Bottom	13	0	1	0	1:1.58	0.234	27.9	
2 636.5	41055	LTE Band 41	High	20	23.58	Right	0	0	1	0	1:1.58	0.931	21.9	
2 510	20850	LTE Band 7	Low	20	22.63	Back	8	0	1	0	1:1	0.419	30.4	23.2
2 510	20850	LTE Band 7	Low	20	22.63	Front	7	0	1	0	1:1	0.499	29.6	
2 510	20850	LTE Band 7	Low	20	22.63	Bottom	13	0	1	0	1:1	0.171	34.3	
2 510	20850	LTE Band 7	Low	20	23.58	Left	0	0	1	0	1:1	1.060	23.2	

**Table A-11 DSI = 0 P<sub>Limit</sub> Calculations - - NR Phablet SAR (Grip Sensor is off )**  
 For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Conducted Power	Test Position		MPR	Spacing	RB	RB	Duty Cycle	Meas. SAR(1g)	P <sub>limit</sub>	Minimum P <sub>limit</sub>
Mhz	Ch.			Mhz	(dBm)			(dB)	(mm)	Size	offset		(W/kg)	(dBm)	(dBm)
1 770	354000	NR Band n66	High	20	24.44	Back	DFT-s-OFDM QPSK	0	8	1	104	1:1	0.747	23.7	23.3
1 770	354000	NR Band n66	High	20	24.44	Front	DFT-s-OFDM QPSK	0	7	1	104	1:1	0.820	23.3	
1 770	354000	NR Band n66	High	20	24.44	Bottom	DFT-s-OFDM QPSK	0	13	1	104	1:1	0.706	24.0	
1 770	354000	NR Band n66	High	20	24.44	Right	DFT-s-OFDM QPSK	0	0	1	104	1:1	0.327	27.3	
1 770	354000	NR Band n66	High	20	24.44	Left	DFT-s-OFDM QPSK	0	0	1	104	1:1	0.278	28.0	
1 905	381000	NR Band n25	High	20	24.16	Back	DFT-s-OFDM QPSK	0	8	1	53	1:1	1.03	28.0	27.2
1 905	381000	NR Band n25	High	20	24.16	Front	DFT-s-OFDM QPSK	0	7	1	53	1:1	1.25	27.2	
1 905	381000	NR Band n25	High	20	24.16	Bottom	DFT-s-OFDM QPSK	0	13	1	53	1:1	1.10	27.7	
1 905	381000	NR Band n25	High	20	24.16	Right	DFT-s-OFDM QPSK	0	0	1	53	1:1	0.314	33.2	
1 905	381000	NR Band n25	High	20	24.16	Left	DFT-s-OFDM QPSK	0	0	1	53	1:1	0.360	32.6	
2 592.99	518598	NR Band n41	Mid	100	21.38	Back	DFT-s-OFDM QPSK	0	8	1	1	1:4.0	0.205	32.2	30.8
2 592.99	518598	NR Band n41	Mid	100	21.38	Front	DFT-s-OFDM QPSK	0	7	1	1	1:4.0	0.185	32.7	
2 592.99	518598	NR Band n41	Mid	100	21.38	Bottom	DFT-s-OFDM QPSK	0	13	1	1	1:4.0	0.075	36.6	
2 592.99	518598	NR Band n41	Mid	100	21.38	Right	DFT-s-OFDM QPSK	0	0	1	1	1:4.0	0.284	30.8	
2 592.99	518598	NR Band n41	Mid	100	21.38	Left	DFT-s-OFDM QPSK	0	0	1	1	1:4.0	0.096	35.5	

**Table A-11 DSI = 1 ,4 (except GSM Mode) $P_{Limit}$  Calculations - - 2G/3G Phablet SAR**

(Grip Sensor is on, Earjack inserted )

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

Please see the table below for the earjack inserted mode of GSM Bands

MEASUREMENT RESULTS										
Frequency		Mode		Conducted Power	Test Position	Distance	Duty Cycle	Meas. SAR(10g)	Plimit	Minimum Plimit
Mhz	Ch.									
820	560	EVDO Rev.0	CDMA BC10	24.95	Rear	0	1:1	1.890	26.2	25.6
820	560	EVDO Rev.0	CDMA BC10	24.95	Front	0	1:1	2.160	25.6	
820	560	EVDO Rev.0	CDMA BC10	24.95	Bottom	0	1:1	0.325	33.8	
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Rear	0	1:1	1.760	26.4	26.0
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Front	0	1:1	1.940	26.0	
836.52	384	EVDO Rev.0	CDMA BC 0	24.85	Bottom	0	1:1	1.120	28.3	
1 880.0	600	EVDO Rev.0	PCS	18.64	Rear	0	1:1	0.677	24.3	23.5
1 880.0	600	EVDO Rev.0	PCS	18.64	Front	0	1:1	0.816	23.5	
1 880.0	600	EVDO Rev.0	PCS	18.64	Bottom	0	1:1	0.805	23.6	
836.6	190	GPRS 2Tx	GSM	28.80	Back	0	1:4.17	0.559	29.1	28.8
836.6	190	GPRS 2Tx	GSM	28.80	Front	0	1:4.17	0.601	28.8	
836.6	190	GPRS 2Tx	GSM	28.80	Bottom	0	1:4.17	0.315	31.6	
1 880.0	661	GPRS 3Tx	GSM	23.93	Rear	0	1:2.77	0.804	22.8	21.6
1 880.0	661	GPRS 3Tx	GSM	23.93	Front	0	1:2.77	1.07	21.6	
1 880.0	661	GPRS 3Tx	GSM	23.93	Bottom	0	1:2.77	0.973	22.0	
826.4	4132	UMTS 850	RMC	23.60	Rear	0	1:1	0.846	28.3	27.9
826.4	4132	UMTS 850	RMC	23.60	Front	0	1:1	0.922	27.9	
826.4	4132	UMTS 850	RMC	23.60	Bottom	0	1:1	0.456	31.0	
1 732.4	1412	UMTS 1700	RMC	18.26	Rear	0	1:1	0.906	22.7	21.2
1 732.4	1412	UMTS 1700	RMC	18.26	Front	0	1:1	1.01	22.2	
1 732.4	1412	UMTS 1700	RMC	18.26	Bottom	0	1:1	1.27	21.2	
1 880.0	9400	UMTS 1900	RMC	18.48	Rear	0	1:1	1.01	22.4	21.3
1 880.0	9400	UMTS 1900	RMC	18.48	Front	0	1:1	1.27	21.4	
1 880.0	9400	UMTS 1900	RMC	18.48	Bottom	0	1:1	1.31	21.3	

**Table A-11 DSI = 4 GSM Mode  $P_{Limit}$  Calculations - - 2G/3G Phablet SAR (Ear-jack inserted)**

MEASUREMENT RESULTS										
Frequency		Mode		Conducted Power	Test Position	Distance	Duty Cycle	Meas. SAR(10g)	Plimit	Minimum Plimit
Mhz	Ch.									
835.6	190	GPRS 2Tx	GSM	31.61	Rear	0	1:4.17	1.370	28.0	28.0
835.6	190	GPRS 2Tx	GSM	31.61	Front	0	1:4.17	1.410	27.9	
835.6	190	GPRS 2Tx	GSM	31.61	Right	0	1:4.17	0.268	35.1	
835.6	190	GPRS 2Tx	GSM	31.61	Left	0	1:4.17	0.301	34.6	
1 880.0	661	GPRS 3Tx	GSM	26.68	Rear	0	1:2.77	1.120	24.3	24.2
1 880.0	661	GPRS 3Tx	GSM	26.68	Front	0	1:2.77	1.140	24.2	
1 880.0	661	GPRS 3Tx	GSM	26.68	Right	0	1:2.77	0.140	33.3	
1 880.0	661	GPRS 3Tx	GSM	26.68	Left	0	1:2.77	0.106	34.5	



**Table A-13 DSI = 3 ,4 P<sub>Limit</sub> Calculations - – 4G Phablet SAR (Grip Sensor is on, Earjack inserted )**  
 For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS														
Frequency		Mode		Band width	Conducted Power	Test Position	Spacing (mm)	MPR	RB Size	RB offset	Duty Cycle	Meas. SAR(10g)	P <sub>limit</sub>	Minimum P <sub>limit</sub>
Mhz	Ch.													
683	133322	LTE Band 71	Mid	20	24.75	Rear	0	0	1	99	1:1	1.280	27.7	27.4
683	133322	LTE Band 71	Mid	20	24.75	Front	0	0	1	99	1:1	1.360	27.4	
683	133322	LTE Band 71	Mid	20	24.75	Bottom	0	0	1	99	1:1	0.801	29.7	
707.5	23095	LTE Band 12	Mid	10	24.64	Rear	0	0	1	49	1:1	0.973	28.7	28.3
707.5	23095	LTE Band 12	Mid	10	24.64	Front	0	0	1	49	1:1	1.080	28.3	
707.5	23095	LTE Band 12	Mid	10	24.64	Bottom	0	0	1	49	1:1	0.606	30.8	
782	23230	LTE Band 13	Mid	10	24.49	Rear	0	0	1	0	1:1	0.954	28.7	28.7
782	23230	LTE Band 13	Mid	10	24.49	Front	0	0	1	0	1:1	0.969	28.6	
782	23230	LTE Band 13	Mid	10	24.49	Bottom	0	0	1	0	1:1	0.462	31.8	
793	23330	LTE Band 14	Mid	10	24.35	Rear	0	0	1	0	1:1	1.100	27.9	27.9
793	23330	LTE Band 14	Mid	10	24.35	Front	0	0	1	0	1:1	1.090	28.0	
793	23330	LTE Band 14	Mid	10	24.35	Bottom	0	0	1	0	1:1	0.582	30.7	
831.5	26865	LTE Band 26	Mid	15	24.38	Rear	0	0	1	0	1:1	1.060	28.1	27.9
831.5	26865	LTE Band 26	Mid	15	24.38	Front	0	0	1	0	1:1	1.100	27.9	
831.5	26865	LTE Band 26	Mid	15	24.38	Bottom	0	0	1	0	1:1	0.597	30.6	
1 770	132572	LTE Band 66	High	20	18.30	Rear	0	0	1	49	1:1	0.881	22.8	21.5
1 770	132572	LTE Band 66	High	20	18.30	Front	0	0	1	49	1:1	1.04	22.1	
1 770	132572	LTE Band 66	High	20	18.30	Bottom	0	0	1	49	1:1	1.20	21.5	
1 905	26590	LTE Band 25	High	20	17.94	Rear	0	0	1	99	1:1	0.732	23.3	22.7
1 905	26590	LTE Band 25	High	20	17.94	Front	0	0	1	99	1:1	0.833	22.7	
1 905	26590	LTE Band 25	High	20	17.94	Bottom	0	0	1	99	1:1	0.619	24.0	
2 310	27710	LTE Band 30	Mid	10	19.45	Rear	0	0	1	0	1:1	0.572	25.9	25.1
2 310	27710	LTE Band 30	Mid	10	19.45	Front	0	0	1	0	1:1	0.674	25.1	
2 310	27710	LTE Band 30	Mid	10	19.45	Bottom	0	0	1	0	1:1	0.521	26.3	
2 310	38750	LTE Band 40	Low	10	9.37	Rear	0	0	1	24	1:1.58	0.073	22.7	21.3
2 310	38750	LTE Band 40	Low	10	9.37	Front	0	0	1	24	1:1.58	0.047	24.6	
2 310	38750	LTE Band 40	Low	10	9.37	Bottom	0	0	1	24	1:1.58	0.102	21.3	
2 636.5	41055	LTE Band 41	High	20	22.48	Rear	0	0	1	0	1:1.58	1.440	22.9	22.7
2 636.5	41055	LTE Band 41	High	20	22.48	Front	0	0	1	0	1:1.58	1.420	23.0	
2 636.5	41055	LTE Band 41	High	20	22.48	Bottom	0	0	1	0	1:1.58	1.510	22.7	
2 510	20850	LTE Band 7	Low	20	19.51	Rear	0	0	1	0	1:1	1.150	22.9	21.0
2 510	20850	LTE Band 7	Low	20	19.51	Front	0	0	1	0	1:1	1.780	21.0	
2 510	20850	LTE Band 7	Low	20	19.51	Bottom	0	0	1	0	1:1	1.020	23.4	

**Table A-15 DSI = 3,4 P<sub>Limit</sub> Calculations - - NR Phablet SAR** (grip on , Ear jack inserted)  
 For some bands/modes, a lower P<sub>Limit</sub> was selected as a more conservative evaluation.

MEASUREMENT RESULTS															
Frequency		Mode		Band width	Conducted Power	Test Position		MPR	Spacing	RB	RB	Duty Cycle	Meas. SAR(10g)	P <sub>limit</sub>	Minimum P <sub>limit</sub>
Mhz	Ch.			Mhz	(dBm)			(dB)	(mm)	Size	offset		(W/kg)	(dBm)	(dBm)
680.5	136100	NR Band n71	Mid	20	24.53	Back	DFT-s-OFDM QPSK	0	0	1	53	1:1	0.748	29.8	28.9
680.5	136100	NR Band n71	Mid	20	24.53	Front	DFT-s-OFDM QPSK	0	0	1	53	1:1	0.916	28.9	
680.5	136100	NR Band n71	Mid	20	24.53	Bottom	DFT-s-OFDM QPSK	0	0	1	53	1:1	0.515	31.4	
836.5	167300	NR Band n5	Mid	20	25.01	Back	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.862	29.6	28.2
836.5	167300	NR Band n5	Mid	20	25.01	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.200	28.2	
836.5	167300	NR Band n5	Mid	20	25.01	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.748	30.3	
1 745.0	349000	NR Band n66	High	20	19.07	Rear	DFT-s-OFDM QPSK	0	0	1	1	1:1	0.883	23.6	22.8
1 745.0	349000	NR Band n66	High	20	19.07	Front	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.010	23.0	
1 745.0	349000	NR Band n66	High	20	19.07	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:1	1.070	22.8	
1 905.0	381000	NR Band n25	High	20	18.99	Rear	DFT-s-OFDM QPSK	0	0	1	53	1:1	0.839	23.7	22.3
1 905.0	381000	NR Band n25	High	20	18.99	Front	DFT-s-OFDM QPSK	0	0	1	53	1:1	0.926	23.3	
1 905.0	381000	NR Band n25	High	20	18.99	Bottom	DFT-s-OFDM QPSK	0	0	1	53	1:1	1.16	22.3	
2 592.99	518598	NR Band n41	Mid	100	21.39	Back	DFT-s-OFDM QPSK	0	0	1	1	1:4.0	0.439	22.9	21.7
2 592.99	518598	NR Band n41	Mid	100	21.39	Front	DFT-s-OFDM QPSK	0	0	1	1	1:4.0	0.587	21.7	
2 592.99	518598	NR Band n41	Mid	100	21.39	Bottom	DFT-s-OFDM QPSK	0	0	1	1	1:4.0	0.557	21.9	