TEST REPORT

FCC SAR Part 0 Test for SM-A266MDS
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-SR-2501-FC007-R1

DATE OF ISSUE
January 23, 2025

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TEST REPORT

PART 0 RF Exposure Test for certification

REPORT NO.
HCT-SR-2501-FC007-R1

DATE OF ISSUE
Jan. 23, 2025

FCC ID :A3LSMA266M

Applicant	SAMSUNG Electronics Co., Ltd 129, Samsung-ro, Yeongtong-gu, Suwon-Si, Gyeonggi-do, 16677, Korea
Product Name	Mobile Phone
Model Name	SM-A266M/DS
Additional Model Name	SM-A266M
Date of Test	Dec. 11, 2024~Jan. 15, 2025
Location of Test	■ Permanent Testing Lab ☐ On Site Testing Lab (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA)
FCC Rule Part(s)	CFR § 2.1093
Test Results	Pass (SAR limit : 1.6 W/kg)

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test results were applied only to the test methods required by the standard.

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	Jan. 22, 2025	Initial Release
1	Jan. 23, 2025	Revised Sec. 2.1

Notice

Content
The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated. The test results have only been applied with the test methods required by the standard(s). The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***. When confirmation of authenticity of this test report is required, please contact www.hct.co.kr The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).

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1. Test Location

1.1 Test Laboratory

Company Name	HCT Co., Ltd.
Address	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si,Gyeonggi-do, 17383 KOREA
Telephone	031-645-6300
Fax.	031-645-6401

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)

1.3 General Information of the EUT

Model Name	SM-A266M/DS
Additional Model Name	SM-A266M
Equipment Type	Mobile Phone
FCC ID	A3LSMA266M
Application Type	Certification
Applicant	SAMSUNG Electronics Co., Ltd.

2. DEVICE UNDER TEST DESCRIPTION

2.1 General Information of the EUT

Device Wireless specification overview		
Band & Mode	Operating Mode	Tx Frequency
GSM850	Voice / Data	824.2 MHz~ 848.8 MHz
GSM1900	Voice / Data	1 850.2 MHz~ 1 909.8 MHz
UMTS Band 2	Voice / Data	1 852.4 MHz~ 1 907.6 MHz
UMTS Band 4	Voice / Data	1 712.4 MHz~ 1 752.6 MHz
UMTS Band 5	Voice / Data	826.4 MHz~ 846.6 MHz
LTE FDD Band 2 (PCS)	Voice / Data	1 850.7 MHz~ 1 909.3 MHz
LTE FDD Band 4 (AWS)	Voice / Data	1 710.7 MHz~ 1 754.3 MHz
LTE FDD Band 5 (Cell)	Voice / Data	824.7 MHz~ 848.3 MHz
LTE FDD Band 12	Voice / Data	699.7 MHz~ 715.3 MHz
LTE FDD Band 13	Voice / Data	779.5 MHz~ 784.5 MHz
LTE FDD Band 17	Voice / Data	706.5 MHz~ 713.5 MHz
LTE FDD Band 26	Voice / Data	814.7 MHz~ 848.3 MHz
LTE TDD Band 41	Voice / Data	2 498.5 MHz ~ 2 687.5 MHz
LTE FDD Band 66 (AWS)	Voice / Data	1 710.7 MHz ~ 1 779.3 MHz
NR FDD Band n5	Voice / Data	826.5 MHz~ 846.5 MHz
NR FDD Band n66	Voice / Data	1 712.5 MHz~ 1 777.5 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
U-NII-4	Voice / Data	5 845 MHz ~ 5 885 MHz
2.4 GHz WLAN	Voice / Data	2 412 MHz ~ 2 462 MHz
Bluetooth / LE 5.3	Data	2 402 MHz ~ 2 480 MHz
NFC	Data	13.56 MHz

2.2 Time-Averaging for SAR

This WWAN Mode of DUT is equipped with an S.LSI chipset to which the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm is applied.
This DUT is enabled with the Samsung S.LSI proprietary TAS (Time Average SAR) algorithm for WWAN Mode and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is in compliance with the FCC requirement

FCC RF exposure limit is based on time averaged RF exposure. The SAR regulatory specification is defined over certain measurement duration allowing for time-averaging. The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm has been designed to meet the compliance limits over the required duration, while still allowing dynamic control of transmit power to satisfy the performance of the system.

This feature performs time averaging SAR algorithm in real time to control and manage transmitting power and ensure the time-averaged RF exposure is in compliance with FCC requirements all the time.

The Samsung S.LSI TAS algorithm allow the device to transmit at higher power instantaneously, as high as Pmax, when needed, but enforces power limiting to maintain time-averaged transmit power to Plimit. Below table shows Plimit NV settings and maximum tune up output power Pmax configured for this DUT for various transmit conditions (Radio SAR indicator RSI for Head/Non-Head SAR of WWAN Mode).
The purpose of this report is to demonstrate that the DUT meets FCC SAR limits when transmitting in static transmission configurations at Plimit specified by manufacturer.

SAR Characterization confirms that Plimit in the 4G/5G communication mode declared by the manufacturer satisfies SAR_Design_target.

The compliance test under the static transmission scenario and simultaneous transmission analysis are reported in SAR report for WWAN mode. The validation of The Samsung S.LSI proprietary TAS (Time Average SAR) algorithm and compliance under the time- varying transmission scenario for WWAN technologies are reported in A3LSMA266M_SAR 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

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

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/m^3)
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)	Δz zoom(1)*	Δz zoom(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 CHARACTERIZATION

4.1 Exposure Index and SAR Determination

This device uses different Radio SAR Index (RSI) 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 RSI. 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 Radio SAR Index (RSI) conditions used in Table 4-1 represent different exposure scenarios.

Table 4-1 RSI and Corresponding Exposure Scenarios

Scenario		Description	SAR Test Cases
Head	RSI = 1	Device positioned next to head When RCV is activated for voice call	Head SAR per KDB Publication 648474 D04
Non – Head	RSI = 0 (Body)	Device is held with hand Device transmits in hotspot mode near body Device being used with a body-worn accessory Device being used with a Earjack	Phablet SAR per KDB Publication 648474 D04 Hotspot SAR per KDB Publication 941225 D06 Body-worn SAR per KDB Publication 648474 D04

The output power for SAR test in WWAN mode of this device is characterized as Head [RSI=1] and Non-Head [RSI=0] is body SAR configuration.

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 for WWAN Bands

Table 4-4 SAR Characterization

Plim values in green indicate Plimit < Pmax			Plim values in grey indicate Plim > Pmax		
Plimit corresponding to 1 W/kg (1g) SAR_Design_target					Pmax
SAR Exposure Position			Non-Head (body/Hotspot/Phablet)	Head	Maximum Tune-up Output Power (Frame Averaged Power) [dBm]
Averaging volume			1g	1g	
seperation Distance			5 mm	0 mm	
Mode	Band	Antenna	RSI=0	RSI=1	
GSM/GPRS/EDGE	850	Ant.A	22.8	30.8	25.0
GSM/GPRS/EDGE	1900	Ant.B	17.1	31.8	21.0
UMTS	2	Ant.B	18.0	29.7	24.0
UMTS	4	Ant.B	20.0	31.5	24.0
UMTS	5	Ant.A	20.0	30.9	24.5
LTE FDD	2	Ant.B	19.5	29.2	23.0
LTE FDD	2	Ant.D	20.0	20.0	23.5
LTE FDD	5	Ant.A	20.0	30.7	24.5
LTE FDD	4/66	Ant.B	19.5	30.4	23.0
LTE FDD	12	Ant.A	19.5	32.5	24.5
LTE FDD	13	Ant.A	19.5	31.8	24.5
LTE FDD	26	Ant.A	20.0	31.4	24.5
LTE FDD	41	Ant.B	16.0	33.0	21.5
NR FDD	5	Ant.A	18.0	30.4	24.0
NR FDD	66	Ant.B	20.0	32.2	23.5
NR FDD	66	Ant.D	18.5	19.0	23.5

Note:

1. Compared with the Plimit(Tune up Powers) declared in each RSI by manufacturer and the plimit(calculation) calculated by the SAR measurement of each RSI, the lower power were applied to the plimit at each RSI configurations.
2. When *Pmax*<*Plimit*, the DUT will operate at a power level up to *Pmax.*
3. Maximum Tune up Power, Pmax 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)

5. Equipment List

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
SPEAG	ELI Phantom	-	N/A	N/A	N/A
SPEAG	cDASY6 5G Module Phantom		N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F11/ 5K3RA1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F13/ 5R4XF1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/ 59CHA1/ C/ 01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX60	F/20/0018446/C/001	N/A	N/A	N/A
N/A	TX90 Lspeag	F11/ 5K3RA1/ A/ 01	N/A	N/A	N/A
N/A	TX90 XLspeag	F13/ 5R4XF1/ A/ 01	N/A	N/A	N/A
N/A	TX90 XLspeag	F17/ 59CHA1/ A/ 01	N/A	N/A	N/A
N/A	TX60 Lspeag	F/20/0018446/A/001	N/A	N/A	N/A
N/A	Teach Pendant (Joystick)	D21142603	N/A	N/A	N/A
N/A	Teach Pendant (Joystick)	D21142605	N/A	N/A	N/A
N/A	Teach Pendant (Joystick)	D21142606B	N/A	N/A	N/A
N/A	Teach Pendant (Joystick)	D21142608A	N/A	N/A	N/A
TESTO1	175-H1/Thermometer	40331936309	12/26/2023	Annual	12/26/2024
TESTO1	175-H1/Thermometer	40331936309	12/26/2024	Annual	12/26/2025
TESTO2	175-H1/Thermometer	40331953309	01/18/2024	Annual	01/18/2025
TESTO4	175-H1/Thermometer	40331915309	12/26/2023	Annual	12/26/2024
TESTO4	175-H1/Thermometer	40331915309	12/26/2024	Annual	12/26/2025
TESTO	175-H1/Thermometer	44606611906	03/20/2024	Annual	03/20/2025
SPEAG	DAE4	869	03/15/2024	Annual	03/15/2025
SPEAG	DAE4	1687	07/12/2024	Annual	07/12/2025
SPEAG	DAE4	1464	06/19/2024	Annual	06/19/2025
SPEAG	DAE4	1417	02/16/2024	Annual	02/16/2025
SPEAG	E-Field Probe EX3DV4	3797	01/23/2024	Annual	01/23/2025
SPEAG	E-Field Probe EX3DV4	7654	05/22/2024	Annual	05/22/2025
SPEAG	E-Field Probe EX3DV4	7680	05/28/2024	Annual	05/28/2025
SPEAG	E-Field Probe EX3DV4	7681	11/22/2024	Annual	11/22/2025
SPEAG	CLA13	1016	11/19/2024	Annual	11/19/2025
SPEAG	Dipole D750V3	1014	05/20/2024	Annual	05/20/2025
SPEAG	Dipole D835V2	441	04/18/2024	Annual	04/18/2025
SPEAG	Dipole D1800V2	2d007	04/15/2024	Annual	04/15/2025
SPEAG	Dipole D1900V2	5d032	01/18/2024	Annual	01/18/2025
SPEAG	Dipole D2450V2	743	03/14/2024	Annual	03/14/2025
SPEAG	Dipole D2600V2	1015	04/22/2024	Annual	04/22/2025
SPEAG	Dipole D5 GHz V2	1107	04/19/2024	Annual	04/19/2025

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
Agilent	Power Meter E4419B	MY41291386	09/11/2024	Annual	09/11/2025
Agilent	Power Meter N1911A	MY45101406	05/21/2024	Annual	05/21/2025
Agilent	Power Sensor 8481A	SG1091286	09/12/2024	Annual	09/12/2025
H.P	Power Sensor 8481A	MY41090675	09/12/2024	Annual	09/12/2025
Agilent	Wideband Power Sensor N1921A	MY55220026	07/30/2024	Annual	07/30/2025
Agilent	11636B/Power Divider	58698	01/15/2024	Annual	01/15/2025
Agilent	11636B/Power Divider	58698	01/13/2025	Annual	01/13/2026
SPEAG	DAKS 3.5	1038	01/22/2024	Annual	01/22/2025
SPEAG	Vector Reflectometer	141013	01/11/2024	Annual	01/11/2025
SPEAG	Vector Reflectometer	0050813	04/15/2024	Annual	04/15/2025
SPEAG	DAKS 12	1048	03/20/2024	Annual	03/20/2025
SPEAG	MXA Signal Analyzer	MY49100108	01/09/2024	Annual	01/09/2025
H.P	Network Analyzer /8753ES	JP39240221	12/26/2023	Annual	12/26/2024
H.P	Network Analyzer /8753ES	JP39240221	12/23/2024	Annual	12/23/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY48360252	07/29/2024	Annual	07/29/2025
Agilent	WIRELESS COMMUNICATION E5515C	MY50260992	05/22/2024	Annual	05/22/2025
R&S	Wireless Communication Test Set CMW500	115733	03/19/2024	Annual	03/19/2025
Agilent	SIGNAL GENERATOR N5182A	MY47070230	03/19/2024	Annual	03/19/2025
EMPOWER	RF Power Amplifier	1084	05/21/2024	Annual	05/21/2025
EMPOWER	RF Power Amplifier	1041D/C0508	05/21/2024	Annual	05/21/2025
EMPOWER	RF Power Amplifier	1011	09/11/2024	Annual	09/11/2025
MICRO LAB	LP Filter / LA-15N	10453	09/11/2024	Annual	09/11/2025
MICRO LAB	LP Filter / LA-30N	-	09/11/2024	Annual	09/11/2025
MICRO LAB	LP Filter / LA-60N	32011	09/11/2024	Annual	09/11/2025
Agilent	Attenuator (3dB) 8693B	MY39260298	08/20/2024	Annual	08/20/2025
HP	Attenuator (20dB) 8493C	09271	08/20/2024	Annual	08/20/2025
Agilent	Directional Bridge 86205A	3140A04581	04/22/2024	Annual	04/22/2025
Anritsu	Radio Communication Test Station MT8000A	6262036812	11/27/2024	Annual	11/27/2025
Anritsu	Radio Communication Tester MT8820C	6201074225	01/17/2024	Annual	01/17/2025
Anritsu	Radio Communication Tester MT8820C	6200695605	03/19/2024	Annual	03/19/2025
Anritsu	Radio Communication Tester MT8821C	6201502997	05/21/2024	Annual	05/21/2025
Anritsu	Radio Communication Tester MT8821C	6262044720	11/27/2024	Annual	11/27/2025
ROHDE&SCHWARZ	BLUETOOTH TESTER CBT	100272	01/16/2024	Annual	01/16/2025

* 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 Plimit CALCULATIONS

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

MEASUREMENT RESULTS										
Frequency		Mode/ Band		Ant.	Frame Averaged Conducted Power	Test Position	Duty Cycle	Meas. SAR(1g)	Plimit	Minimum Plimit
MHz	Ch.				(dBm)			(W/kg)	(dBm)	(dBm)
836.6	190	GSM 850	GPRS 4Tx	A	24.15	Left Cheek	1:2.08	0.141	32.7	30.8
836.6	190	GSM 850		A	24.15	Left Tilt	1:2.08	0.082	35.0	
836.6	190	GSM 850		A	24.15	Right Cheek	1:2.08	0.214	30.8	
836.6	190	GSM 850		A	24.15	Right Tilt	1:2.08	0.109	33.8	
1 880	661	GSM 1900	GPRS 2Tx	B	22.21	Left Cheek	1:4.15	0.110	31.8	31.8
1 880	661	GSM 1900		B	22.21	Left Tilt	1:4.15	0.059	34.5	
1 880	661	GSM 1900		B	22.21	Right Cheek	1:4.15	0.088	32.8	
1 880	661	GSM 1900		B	22.21	Right Tilt	1:4.15	0.062	34.3	
836.6	4183	UMTS Band 5	RMC	A	24.68	Left Cheek	1:1	0.177	32.2	30.9
836.6	4183	UMTS Band 5		A	24.68	Left Tilt	1:1	0.107	34.4	
836.6	4183	UMTS Band 5		A	24.68	Right Cheek	1:1	0.237	30.9	
836.6	4183	UMTS Band 5		A	24.68	Right Tilt	1:1	0.132	33.5	
1 732.4	1412	UMTS Band 4	RMC	B	24.35	Left Cheek	1:1	0.192	31.5	31.5
1 732.4	1412	UMTS Band 4		B	24.35	Left Tilt	1:1	0.092	34.7	
1 732.4	1412	UMTS Band 4		B	24.35	Right Cheek	1:1	0.161	32.3	
1 732.4	1412	UMTS Band 4		B	24.35	Right Tilt	1:1	0.103	34.2	
1 880	9400	UMTS Band 2	RMC	B	23.70	Left Cheek	1:1	0.251	29.7	29.7
1 880	9400	UMTS Band 2		B	23.70	Left Tilt	1:1	0.135	32.4	
1 880	9400	UMTS Band 2		B	23.70	Right Cheek	1:1	0.193	30.8	
1 880	9400	UMTS Band 2		B	23.70	Right Tilt	1:1	0.123	32.8	

Table A-2 RSI = 1 *PLimit* Calculations – 4G Head SAR

MEASUREMENT RESULTS													
Frequency		Mode	Ant.	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)
707.5	23095	LTE Band 12	A	10	24.72	Left Cheek	0	1	0	1:1	0.145	33.1	32.5
707.5	23095	LTE Band 12	A	10	24.72	Left Tilt	0	1	0	1:1	0.069	36.3	
707.5	23095	LTE Band 12	A	10	24.72	Right Cheek	0	1	0	1:1	0.166	32.5	
707.5	23095	LTE Band 12	A	10	24.72	Right Tilt	0	1	0	1:1	0.089	35.2	
782	23230	LTE Band 13	A	10	24.05	Left Cheek	0	1	0	1:1	0.142	32.5	31.8
782	23230	LTE Band 13	A	10	24.05	Left Tilt	0	1	0	1:1	0.076	35.2	
782	23230	LTE Band 13	A	10	24.05	Right Cheek	0	1	0	1:1	0.166	31.8	
782	23230	LTE Band 13	A	10	24.05	Right Tilt	0	1	0	1:1	0.083	34.9	
831.5	26865	LTE Band 26	A	15	22.67	Left Cheek	0	1	74	1:1	0.081	33.6	31.4
831.5	26865	LTE Band 26	A	15	22.67	Left Tilt	0	1	74	1:1	0.059	35.0	
831.5	26865	LTE Band 26	A	15	22.67	Right Cheek	0	1	74	1:1	0.135	31.4	
831.5	26865	LTE Band 26	A	15	22.67	Right Tilt	0	1	74	1:1	0.072	34.1	
836.5	20525	LTE Band 5	A	10	24.22	Left Cheek	0	1	0	1:1	0.171	31.9	30.7
836.5	20525	LTE Band 5	A	10	24.22	Left Tilt	0	1	0	1:1	0.104	34.0	
836.5	20525	LTE Band 5	A	10	24.22	Right Cheek	0	1	0	1:1	0.223	30.7	
836.5	20525	LTE Band 5	A	10	24.22	Right Tilt	0	1	0	1:1	0.112	33.7	
1 900	19100	LTE Band 2	B	20	22.67	Left Cheek	0	1	49	1:1	0.224	29.2	29.2
1 900	19100	LTE Band 2	B	20	22.67	Left Tilt	0	1	49	1:1	0.098	32.8	
1 900	19100	LTE Band 2	B	20	22.67	Right Cheek	0	1	49	1:1	0.154	30.8	
1 900	19100	LTE Band 2	B	20	22.67	Right Tilt	0	1	49	1:1	0.111	32.2	
1 900	19100	LTE Band 2	D	20	19.63	Left Cheek	0	1	99	1:1	0.399	23.6	21.9
1 900	19100	LTE Band 2	D	20	19.63	Left Tilt	0	1	99	1:1	0.439	23.2	
1 900	19100	LTE Band 2	D	20	19.63	Right Cheek	0	1	99	1:1	0.599	21.9	
1 900	19100	LTE Band 2	D	20	19.63	Right Tilt	0	1	99	1:1	0.569	22.1	
1 745	132322	LTE Band 66	B	20	22.33	Left Cheek	0	1	49	1:1	0.155	30.4	30.4
1 745	132322	LTE Band 66	B	20	22.33	Left Tilt	0	1	49	1:1	0.070	33.9	
1 745	132322	LTE Band 66	B	20	22.33	Right Cheek	0	1	49	1:1	0.116	31.7	
1 745	132322	LTE Band 66	B	20	22.33	Right Tilt	0	1	49	1:1	0.078	33.4	
2 636.5	41055	LTE Band41(PC3)	B	20	22.33	Left Cheek	0	1	0	1:1.58	0.086	33.0	33.0
2 636.5	41055	LTE Band41(PC3)	B	20	22.33	Left Tilt	0	1	0	1:1.58	0.029	37.7	
2 636.5	41055	LTE Band41(PC3)	B	20	22.33	Right Cheek	0	1	0	1:1.58	0.057	34.8	
2 636.5	41055	LTE Band41(PC3)	B	20	22.33	Right Tilt	0	1	0	1:1.58	0.057	34.8	

Table A-3 RSI = 1 *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 TDD NR bands were measured in FTM Mode.

MEASUREMENT RESULTS														
Frequency		Mode	Ant.	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	A	20	23.98	Left Cheek	DFT-s OFDM QPSK	0	1	53	1:1	0.157	32.0	30.4
836.5	167300	NR Band n5	A	20	23.98	Left Tilt	DFT-s OFDM QPSK	0	1	53	1:1	0.096	34.2	
836.5	167300	NR Band n5	A	20	23.98	Right Cheek	DFT-s OFDM QPSK	0	1	53	1:1	0.227	30.4	
836.5	167300	NR Band n5	A	20	23.98	Right Tilt	DFT-s OFDM QPSK	0	1	53	1:1	0.112	33.5	
1 745	349000	NR Band n66	B	40	23.86	Left Cheek	DFT-s OFDM QPSK	0	1	108	1:1	0.145	32.2	32.2
1 745	349000	NR Band n66	B	40	23.86	Left Tilt	DFT-s OFDM QPSK	0	1	108	1:1	0.090	34.3	
1 745	349000	NR Band n66	B	40	23.86	Right Cheek	DFT-s OFDM QPSK	0	1	108	1:1	0.142	32.3	
1 745	349000	NR Band n66	B	40	23.86	Right Tilt	DFT-s OFDM QPSK	0	1	108	1:1	0.085	34.6	
1 745	349000	NR Band n66	D	40	19.34	Left Cheek	DFT-s OFDM QPSK	0	1	108	1:1	0.402	23.3	21.3
1 745	349000	NR Band n66	D	40	19.34	Left Tilt	DFT-s OFDM QPSK	0	1	108	1:1	0.432	23.0	
1 745	349000	NR Band n66	D	40	19.34	Right Cheek	DFT-s OFDM QPSK	0	1	108	1:1	0.630	21.3	
1 745	349000	NR Band n66	D	40	19.34	Right Tilt	DFT-s OFDM QPSK	0	1	108	1:1	0.600	21.6	

Table A-6 RSI = 0 *PLimit* Calculations – 2G/3G Body SAR

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

MEASUREMENT RESULTS											
Frequency		Mode/ Band		Ant. No.	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	GPRS 2Tx	A	22.10	Rear	5	1:4.15	0.755	23.3	23.3
836.6	190	GSM 850	GPRS 2Tx	A	22.10	Front	5	1:4.15	0.432	25.7	
836.6	190	GSM 850	GPRS 2Tx	A	22.10	Left	5	1:4.15	0.091	32.5	
836.6	190	GSM 850	GPRS 2Tx	A	22.10	Right	5	1:4.15	0.258	28.0	
836.6	190	GSM 850	GPRS 2Tx	A	22.10	Bottom	5	1:4.15	0.501	25.1	
1 880.0	661	GSM 1900	GPRS 3Tx	B	16.65	Rear	5	1:2.77	0.391	20.7	20.7
1 880.0	661	GSM 1900	GPRS 3Tx	B	16.65	Front	5	1:2.77	0.239	22.9	
1 880.0	661	GSM 1900	GPRS 3Tx	B	16.65	Left	5	1:2.77	0.164	24.5	
1 880.0	661	GSM 1900	GPRS 3Tx	B	16.65	Bottom	5	1:2.77	0.283	22.1	
836.6	4183	UMTS Band 5	RMC	A	19.48	Rear	5	1:1	0.472	22.7	22.7
836.6	4183	UMTS Band 5	RMC	A	19.48	Front	5	1:1	0.254	25.4	
836.6	4183	UMTS Band 5	RMC	A	19.48	Left	5	1:1	0.062	31.6	
836.6	4183	UMTS Band 5	RMC	A	19.48	Right	5	1:1	0.117	28.8	
836.6	4183	UMTS Band 5	RMC	A	19.48	Bottom	5	1:1	0.326	24.3	
1 732.4	1412	UMTS Band 4	RMC	B	19.72	Rear	5	1:1	0.813	20.6	20.6
1 732.4	1412	UMTS Band 4	RMC	B	19.72	Front	5	1:1	0.463	23.1	
1 732.4	1412	UMTS Band 4	RMC	B	19.72	Left	5	1:1	0.297	25.0	
1 732.4	1412	UMTS Band 4	RMC	B	19.72	Bottom	5	1:1	0.626	21.8	
1 880	9400	UMTS Band 2	RMC	B	17.18	Rear	5	1:1	0.521	20.0	19.9
1 880	9400	UMTS Band 2	RMC	B	17.18	Front	5	1:1	0.397	21.2	
1 880	9400	UMTS Band 2	RMC	B	17.18	Left	5	1:1	0.219	23.8	
1 880	9400	UMTS Band 2	RMC	B	17.18	Bottom	5	1:1	0.539	19.9	

Table A-7 RSI = 0 *PLimit* Calculations – 4G Body SAR

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

MEASUREMENT RESULTS														
Frequency		Mode	Ant. No.	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)
1 900	19100	LTE Band 2	B	20	19.38	Rear	5	0	1	0	1:1	0.578	21.8	21.8
1 900	19100	LTE Band 2	B	20	19.38	Front	5	0	1	0	1:1	0.462	22.7	
1 900	19100	LTE Band 2	B	20	19.38	Left	5	0	1	0	1:1	0.376	23.6	
1 900	19100	LTE Band 2	B	20	19.38	Bottom	5	0	1	0	1:1	0.555	21.9	
1 880	18900	LTE Band 2	D	20	19.63	Rear	5	0	1	99	1:1	0.483	22.8	21.6
1 880	18900	LTE Band 2	D	20	19.63	Front	5	0	1	99	1:1	0.264	25.4	
1 880	18900	LTE Band 2	D	20	19.63	Left	5	0	1	99	1:1	0.082	30.5	
1 880	18900	LTE Band 2	D	20	19.63	Top	5	0	1	99	1:1	0.636	21.6	
1 745	132322	LTE Band 66	B	20	19.01	Rear	5	0	1	49	1:1	0.654	20.9	20.6
1 745	132322	LTE Band 66	B	20	19.01	Front	5	0	1	49	1:1	0.478	22.2	
1 745	132322	LTE Band 66	B	20	19.01	Left	5	0	1	49	1:1	0.301	24.2	
1 745	132322	LTE Band 66	B	20	19.01	Bottom	5	0	1	49	1:1	0.700	20.6	
707.5	23095	LTE Band 12	A	10	19.87	Rear	5	0	1	0	1:1	0.263	25.7	25.7
707.5	23095	LTE Band 12	A	10	19.87	Front	5	0	1	0	1:1	0.144	28.3	
707.5	23095	LTE Band 12	A	10	19.87	Left	5	0	1	0	1:1	0.063	31.9	
707.5	23095	LTE Band 12	A	10	19.87	Right	5	0	1	0	1:1	0.136	28.5	
707.5	23095	LTE Band 12	A	10	19.87	Bottom	5	0	1	0	1:1	0.172	27.5	
782	23230	LTE Band 13	A	10	19.39	Rear	5	0	1	0	1:1	0.347	24.0	24.0
782	23230	LTE Band 13	A	10	19.39	Front	5	0	1	0	1:1	0.197	26.4	
782	23230	LTE Band 13	A	10	19.39	Left	5	0	1	0	1:1	0.084	30.1	
782	23230	LTE Band 13	A	10	19.39	Right	5	0	1	0	1:1	0.208	26.2	
782	23230	LTE Band 13	A	10	19.39	Bottom	5	0	1	0	1:1	0.235	25.7	
831.5	26865	LTE Band 26	A	15	19.02	Rear	5	0	1	74	1:1	0.403	23.0	23.0
831.5	26865	LTE Band 26	A	15	19.02	Front	5	0	1	74	1:1	0.208	25.8	
831.5	26865	LTE Band 26	A	15	19.02	Left	5	0	1	74	1:1	0.062	31.1	
831.5	26865	LTE Band 26	A	15	19.02	Right	5	0	1	74	1:1	0.100	29.0	
831.5	26865	LTE Band 26	A	15	19.02	Bottom	5	0	1	74	1:1	0.267	24.8	
2 636.5	41055	LTE Band 41 (PC3)	B	20	18.29	Rear	5	0	1	0	1:1.58	0.196	23.4	22.5
2 636.5	41055	LTE Band 41 (PC3)	B	20	18.29	Front	5	0	1	0	1:1.58	0.139	24.9	
2 636.5	41055	LTE Band 41 (PC3)	B	20	18.29	Left	5	0	1	0	1:1.58	0.065	28.2	
2 636.5	41055	LTE Band 41 (PC3)	B	20	18.29	Bottom	5	0	1	0	1:1.58	0.240	22.5	

Table A-8 RSI = 2 *PLimit* Calculations – NR Hotspot 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.0
SAR measurements of TDD NR bands were measured in FTM Mode.

MEASUREMENT RESULTS															
Frequency		Mode	Ant. No.	Bandwidth	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	A	20	17.88	Rear	DFT-s-OFDM QPSK	0	5	1	53	1:1	0.331	22.7	22.7
836.5	167300	NR Band n5	A	20	17.88	Front	DFT-s-OFDM QPSK	0	5	1	53	1:1	0.161	25.8	
836.5	167300	NR Band n5	A	20	17.88	Left	DFT-s-OFDM QPSK	0	5	1	53	1:1	0.055	30.5	
836.5	167300	NR Band n5	A	20	17.88	Right	DFT-s-OFDM QPSK	0	5	1	53	1:1	0.112	27.4	
836.5	167300	NR Band n5	A	20	17.88	Bottom	DFT-s-OFDM QPSK	0	5	1	53	1:1	0.290	23.3	
1 745	349000	NR Band n66	B	40	19.85	Rear	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.778	20.9	20.3
1 745	349000	NR Band n66	B	40	19.85	Front	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.484	23.0	
1 745	349000	NR Band n66	B	40	19.85	Left	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.304	25.0	
1 745	349000	NR Band n66	B	40	19.85	Bottom	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.908	20.3	
1 745	349000	NR Band n66	D	40	19.34	Rear	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.602	21.5	19.8
1 745	349000	NR Band n66	D	40	19.34	Front	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.317	24.3	
1 745	349000	NR Band n66	D	40	19.34	Left	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.074	30.6	
1 745	349000	NR Band n66	D	40	19.34	Top	DFT-s-OFDM QPSK	0	5	1	108	1:1	0.905	19.8	