FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT
(SAR CHARACTERIZATION Report)

FOR

GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, and NFC

MODEL NUMBER: SM-A546V

FCC ID: A3LSMA546V

REPORT NUMBER: 4790632299-S1V3

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IAS ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	1/17/2023	Initial Issue	--
V2	1/25/2023	Revised Pmax target of NR Band n77 PC3 & PC2 in Section 6.3.	Seungyeon Kim
V3	2/1/2023	Revised Note.2 in Section 5.1.	Seungyeon Kim

Table of Contents

1. Attestation of SAR Characterization

Applicant Name	SAMSUNG ELECTRONICS CO.,LTD.
FCC ID	A3LSMA546V
Model Number	SM-A546V
Applicable Standards	FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures
Report type	SAR Characterization Report
Date Tested	11/14/2022 to 1/16/2023
SAR Characterization Purpose	SAR Char is the procedures for determining P_{Limit} for 2G/3G/4G/5G NR sub6 to satisfy *SAR_design_target* in order to FCC limit's requirement.

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

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

Approved & Released By:	Prepared By:
	
Justin Park Operations Leader UL Korea, Ltd. Suwon Laboratory	Seungyeon Kim Laboratory Senior Technician UL Korea, Ltd. Suwon Laboratory

2. Introduction

The equipment under test (EUT) is SAMSUNG Smartphone (FCC ID : A3LSMA546V), it contains S.LSI chipset supporting 2G/3G/4G/5G NR technologies. These chipsets are enabled with 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 for meeting system performance.

This purpose of the SAR Char report is to determine SAR char is derived from SAR test measurements and conducted power measurements to determine P_{Limit} for each technology/band. The P_{Limit} represents the maximum time-averaged power level for the corresponding radio/antenna configuration.

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

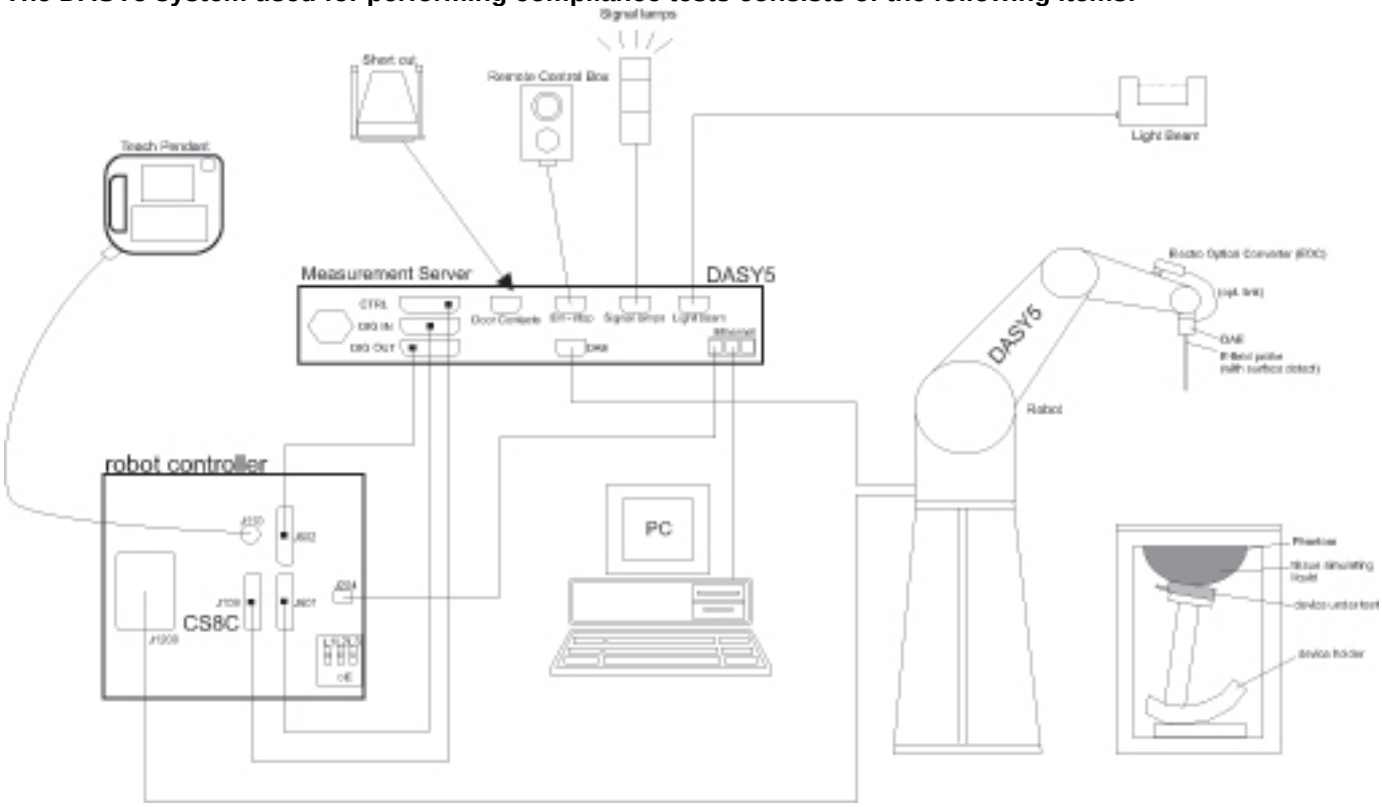
Suwon	
SAR 1 Room	SAR 6 Room
SAR 2 Room	SAR 7 Room
SAR 3 Room	SAR 8 Room
SAR 4 Room	SAR 9 Room
SAR 5 Room	

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.
The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf.

4. SAR Measurement System & Test Equipment

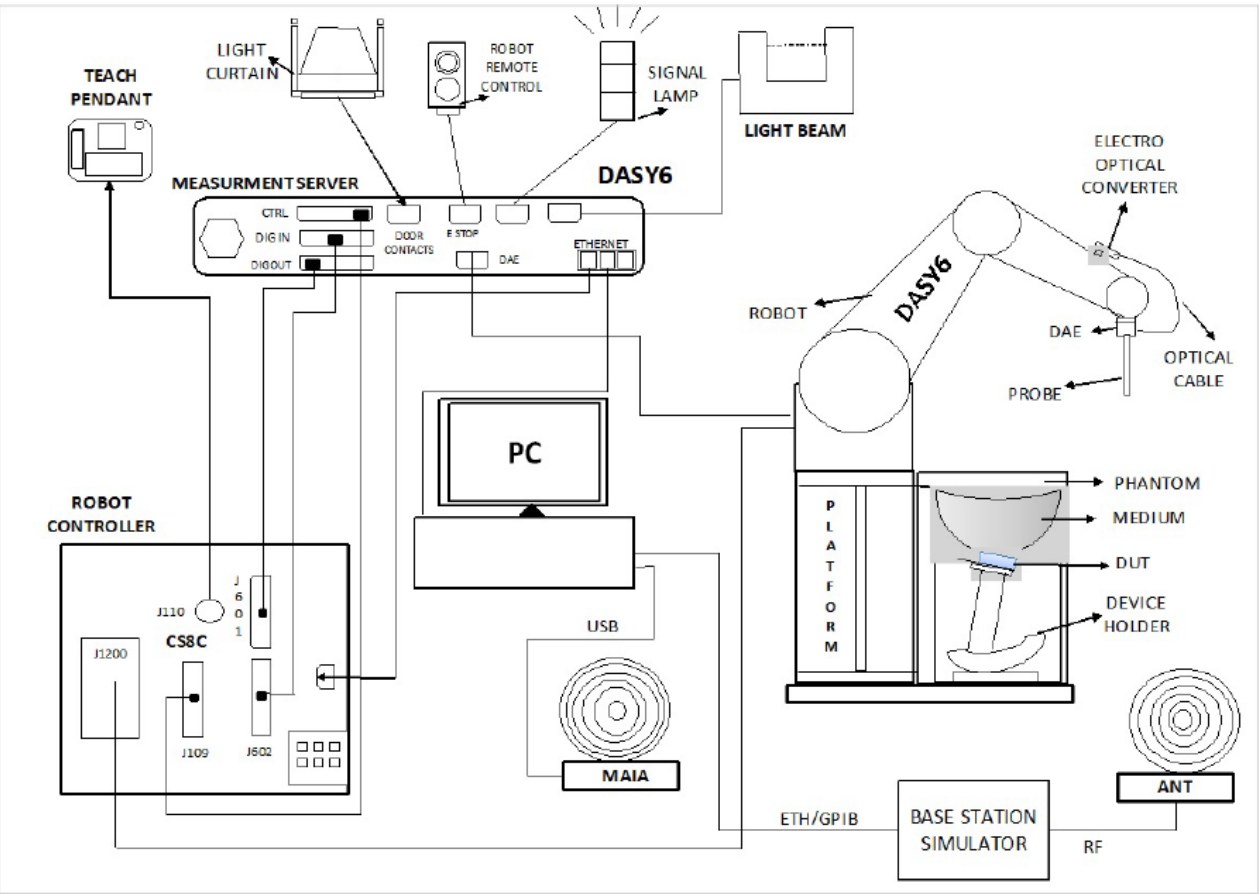
4.1. SAR Measurement System

The DASY5 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

The DASY6 & 8 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win10 and the DASY6 or 8 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z-direction.

4.3. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E5071C	MY46522054	8-5-2023
Network Analyzer	ROHDE & SCHWARZ	ZNB 20	102256	8-5-2023
Dielectric Assessment Kit	SPEAG	DAK-12	1158	11-17-2023
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	7-25-2023
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	LKM	DTM3000	3851	8-3-2023
Thermometer	LKM	DTM3000	3862	8-3-2023

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	8-4-2023
MXG Analog Signal Generator	Keysight	N5181B	MY59100587	8-4-2023
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	8-4-2023
Power Sensor	Keysight	U2000A	MY60180020	8-3-2023
Power Sensor	Keysight	U2000A	MY60490008	8-3-2023
Power Sensor	Keysight	U2000A	MY61060004	8-3-2023
Power Sensor	Keysight	U2000A	MY61010010	8-3-2023
Power Amplifier	EXODUS	AMP2027	1410025-AMP2027-10003	11-2-2023
Power Amplifier	MINI-CIRCUITS	TVA-R5-13A+	2111006	2-15-2023
				1-6-2024
Power Amplifier	EXODUS	AMP2027ADB	10002	3-30-2023
				1-6-2024
Directional Coupler	Agilent	772D	MY52180193	8-3-2023
Directional Coupler	H.P	778D	16133	8-3-2023
Directional Coupler	NARDA	4216-10	02836	8-3-2023
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	8-3-2023
Low Pass Filter	FILTRON	L14012FL	1410003S	8-3-2023
Low Pass Filter	MICROLAB	LA-60N	3942	8-3-2023
Low Pass Filter	MINI-CIRCUITS	VLF-6000+	S0142	8-2-2023
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	8-2-2023
Low Pass Filter	MINI-CIRCUITS	NLP-1200	VUU19301915	8-2-2023
Attenuator	KEYSIGHT	8491B/003	MY39272276	8-3-2023
Attenuator	KEYSIGHT	8491B/010	MY39271981	8-3-2023
Attenuator	KEYSIGHT	8491B/010	MY39272011	8-2-2023
Attenuator	KEYSIGHT	8491B/020	MY39272301	8-3-2023
Attenuator	KEYSIGHT	8491B/020	MY39272302	8-2-2023
Attenuator	KEYSIGHT	8491B/003	MY39272275	8-2-2023
E-Field Probe	SPEAG	EX3DV4	7313	3-2-2023
E-Field Probe	SPEAG	EX3DV4	7330	1-28-2023
E-Field Probe	SPEAG	EX3DV4	7376	7-27-2023
E-Field Probe	SPEAG	EX3DV4	7545	8-19-2023
E-Field Probe	SPEAG	EX3DV4	7645	11-15-2023
E-Field Probe	SPEAG	EX3DV4	7651	5-30-2023
E-Field Probe	SPEAG	EX3DV4	7652	4-28-2023
E-Field Probe	SPEAG	EX3DV4	7646	3-29-2023

Note(s):

1. All equipments were used until Cal.Due data.

Test Equipment (Continued)

Data Acquisition Electronics	SPEAG	DAE4	1447	3-25-2023
Data Acquisition Electronics	SPEAG	DAE4	1468	8-18-2023
Data Acquisition Electronics	SPEAG	DAE4	1494	7-18-2023
Data Acquisition Electronics	SPEAG	DAE4	1670	6-7-2023
Data Acquisition Electronics	SPEAG	DAE4	1671	5-31-2023
Data Acquisition Electronics	SPEAG	DAE4	1667	4-27-2023
Data Acquisition Electronics	SPEAG	DAE4	1668	4-27-2023
Data Acquisition Electronics	SPEAG	DAE4	1343	2023-0823
System Validation Dipole	SPEAG	D750V3	1205	4-27-2023
System Validation Dipole	SPEAG	D835V2	4d194	3-24-2023
System Validation Dipole	SPEAG	D835V2	4d174	9-21-2023
System Validation Dipole	SPEAG	D1750V2	1180	9-21-2023
System Validation Dipole	SPEAG	D1900V2	5d190	11-16-2023
System Validation Dipole	SPEAG	D1900V2	5d199	3-25-2023
System Validation Dipole	SPEAG	D2450V2	960	3-24-2023
System Validation Dipole	SPEAG	D2600V2	1178	4-23-2023
System Validation Dipole	SPEAG	D3500V2	1121	4-21-2023
System Validation Dipole	SPEAG	D3700V2	1036	5-21-2023
System Validation Dipole	SPEAG	D3900V2	1069	4-21-2023
System Validation Dipole	SPEAG	D5GHzV2	1184	11-23-2023
System Validation Dipole	SPEAG	CLA-13	1015	8-23-2023
Thermometer	Lutron	MHB-382SD	AH.91463	8-4-2023
				1-11-2024
Thermometer	Lutron	MHB-382SD	AH.50215	8-9-2023
				1-9-2024
Thermometer	Lutron	MHB-382SD	AH.50213	8-4-2023
				1-11-2024
Thermometer	Lutron	MHB-382SD	AH.45903	8-9-2023
				1-9-2024
Thermometer	Lutron	MHB-382SD	AK.12123	8-9-2023
				1-9-2024
Thermometer	Lutron	MHB-382SD	AK.18789	8-9-2023
Thermometer	Lutron	MHB-382SD	AK.12103	8-9-2023

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	8-2-2023
Base Station Simulator	R & S	CMW500	150314	8-2-2023
Base Station Simulator	R & S	CMW500	162790	8-2-2023
Base Station Simulator	R & S	CMW500	169803	5-27-2023
				1-5-2024
Base Station Simulator	R & S	CMW500	169799	8-2-2023
Base Station Simulator	R & S	CMW500	169800	8-2-2023
Base Station Simulator	R & S	CMW500	169798	8-2-2023
UXM 5G Wireless Test Platform	Keysight	E7515B	MY59150850	**12-13-2022**
				1-9-2024
UXM 5G Wireless Test Platform	Keysight	E7515B	MY58120110	**1-7-2023**
				1-10-2024
UXM 5G Wireless Test Platform	Keysight	E7515B	MY57510596	8-5-2023
Radio Communication Test Station	Anritsu	MT8000A	6272466165	9-8-2023
Radio Communication Analyzer	Anritsu	MT8821C	6161094351	9-8-2023

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (for blue box items)
3. All equipments were used until Cal.Due data.

5. Device Under Test (DUT) Information

5.1 Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☒ Class 33 - 4 Up, 5 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50%
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No			
W-CDMA (UMTS)	Band II Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 14) HSUPA (Category 6) DC-HSDPA (Category 14) HSPA+ (DL only)		100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 7 FDD Band 12 FDD Band 13 FDD Band 66 TDD Band 48	QPSK 16QAM 64QAM 256QAM Rel. 16 Carrier Aggregation (2 Uplink and 4 Downlinks) **Uplink Carrier Aggregation(2CC)** CA_48C		100% (FDD) 63.3% (TDD)
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
5G NR (Sub 6)	FDD Band n2 FDD Band n5 FDD Band n66 TDD Band n48 TDD Band n77-Power Class 3 TDD Band n77-Power Class 2	DFT-s-ODFM: ■ π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-ODFM: ■QPSK, 16QAM, 64QAM, 256QAM		100%
Wi-Fi	2.4 GHz	802.11b, 802.11g, 802.11n (HT20), 802.11ax (HE20)		SISO : 98.7% (802.11b) MIMO : 98.5% (802.11b)
	5 GHz	802.11a / 802.11n (HT20/40) 802.11ac (VHT20/40/80) 802.11ax (HE20/40/80)		SISO : 96.0% (802.11a) 95.2% (802.11ac (VHT80) MIMO: 97.8% (802.11a)
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 5.3 LE		77.1%
NFC	13.56 MHz	Type A/B/F		100%

Notes:

1. The Bluetooth protocol is considered source-based averaging. Bluetooth was verified to have the highest duty cycle and was considered and used for SAR Testing.
2. Duty cycle plot for Wi-Fi are in Section.9.5 (2.4GHz) & Section.9.6 (5GHz) of SAR report
3. This device supports Power Class 2(HPUE) and Power Class 3 for NR Band n77
4. This device supports UL CA Intra-band Continues.
5. NR TDD Band n48 & n77 has support SRS (Sounding Reference Signal) 0/1/2/3 operates.

5.2 Time-Averaging for SAR

This device is enabled with Samsung S.LSI proprietary TAS (Time Average SAR) 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 Sub6 WWAN is compliance with FCC requirement. This SAR Char report shows SAR characterization of WWAN radios for 2G/3G/4G/5G NR Sub6. Characterization is achieved by determining P_{limit} for 2G/3G/4G/5G NR Sub6 that correspond to the *SAR_design_target* after accounting for all device design related uncertainty. The SAR Characterization is denoted as SAR Char in this report.

5.3 Nomenclature for SAR Characterization Report

Term	Descroption
P_{max}	Maximum Tx power that can be transmitted physically from RFIC for a given RAT.
SAR_regulatory_limit	SAR value limit specified by FCC.
SAR_design_target	Target SAR level using in TAS algorithm. This SAR value should be less than SAR regulatory limit and should be determined after accounting for all uncertainties and other design considerations.
P_{limit}	Power level corresponds to the SAR design target.

Table 5.3.1 Definitions for TAS algorithm

6. SAR Characterizations

6.1 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.

SAR_design_target			
$SAR\_design\_target < SAR\_regulatory\_limit \times 10^{\frac{-Total\ Uncertainty}{10}}$			
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 6.1.1 Definitions of uncertainty and design target

6.2 RSI 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 Tablet, 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.

The radio SAR Index (RSI) conditions used in below table represent different exposure scenarios.

RF exposure Scenarios	RSI No.	Descroption	KDB guide For SAR test
Head exposure	4	1. Next to the ear exposure condition. 2. Handset's Receiver(ear piece) is active during voice or VoIP call.	KDB 648474 D04
Body-worn exposure	0	1. Handset are used with body-worn accessories.	KDB 648474 D04
Hotspot exposure	3	1. SAR test requirements for Handset with wireless router or hotspot mode capabilities. 2. Hotspot mode SAR test for Near body use condition.	KDB 941225 D06
Product Specific 10-g	1 or 2	1. Hand use conditions for Handset(Phablet) and Proximity sensor is triggered 2. Connected ear-jack.	KDB 648474 D04 KDB 616217 D04
	0	1. Hand use conditions for Handset(Phablet) and Proximity sensor is not triggered.	KDB 648474 D04 KDB 616217 D04

Table 6.2.1 RSI and Corresponding Exposure Scenarios

6.3 Plimit determination of each RSI scenarios

SAR results corresponding to P_{max} for each antenna/technology/band/RSI can be found in Section.7. P_{limit} is calculated by linearly scaling with the measured SAR at the P_{max} to correspond to *the SAR_ design_target*. P_{limit} determination for each exposure scenario corresponding to *SAR_design_target* are shown in table.

Table 6.3.1 P_{Limit} Determination

Radio SAR Index (RSI)	Plimit Determination Scenarios
RSI = 0	The worst-case SAR exposure is determined as maximum SAR normalized to the limit among; 1. Body-worn exposure SAR 2. Product Specific 10-g SAR measured at 11, 7 and 13 mm spacing for Rear, Front, Edge.3 3. Product Specific 10-g SAR measued at 0 mm for Edge1, Edge2, Edge4.
RSI = 1 or 2	1. Plimit is calculated based on Product Spectic 10-g SAR at 0 mm for Rear, Front, Edge 3.
RSI = 4	1. Plimit is calculated based on Head exposure SAR
RSI = 3	1. Plimit is calculated based on Hotspot SAR at 10mm.

Notes:

For RSI = 0, P_{limit} is calculated by:

Main.1 Ant

P_{limit} = min{ P_{limit} corresponding to 1g Body worn SAR evaluation at 15 mm spacing,

P_{limit} corresponding to Product specifc 10g SAR evaluation at 11(Rear), 7(Front). 13(Edge3) mm spacing,

P_{limit} corresponding to Product specifc 10g SAR evaluation at 0 mm for Edge2 surfaces}

Main.2 Ant

P_{limit} = min{ P_{limit} corresponding to 1g Body worn SAR evaluation at 15 mm spacing,

P_{limit} corresponding to Product specifc 10g SAR evaluation at 11(Rear), 7(Front). 13(Edge3) mm spacing,

P_{limit} corresponding to Product specifc 10g SAR evaluation at 0 mm for Edge4 surfaces}

Other Antennas (Sub.3 / Sub.5 / Sub.8)

P_{limit} = min{ P_{limit} corresponding to 1g Body worn SAR evaluation at 15 mm spacing,

P_{limit} corresponding to Product specifc 10g SAR evaluation at 0 mm on all surfaces and side edges with each antenna location at within 25mm from that surface or edge.}

Table 6.3.2 Plimit result according to technologies and bands in each RSI

Exposure condition		Body-Worn	Product Specific 10-g Without triggering sensor	Product Specific 10-g With triggering sensor	Head (RCV)	Hotspot	Ear-jack	Pmax (Maximum tune-up Power) (dBm)
Spatial-average		1g	10g	10g	1g	1g	10g	
Test distance (mm)		15	11/7/0/13	0	0	10	0	
RSI:		0	0	2	4	3	1	
RF Air Interface	Antenna	Plimit (all values are time averaged)						
GSM 850	Main.1	24.98	24.98	24.98	24.98	24.98	21.48	24.98
GSM 1900	Main.2	20.99	20.99	20.99	20.99	20.99	20.99	20.99
WCDMA Band II	Main.2	23.00	23.00	21.00	23.00	21.00	21.00	23.00
WCDMA Band V	Main.1	24.00	24.00	24.00	24.00	24.00	24.00	24.00
LTE Band 2	Main.2	24.00	24.00	22.00	24.00	22.00	22.00	24.00
LTE Band 5	Main.1	24.50	24.50	24.50	24.50	24.50	24.50	24.50
LTE Band 7	Main.2	23.00	23.00	20.00	23.00	20.00	20.00	23.00
LTE Band 12	Main.1	24.00	24.00	24.00	24.00	24.00	24.00	24.00
LTE Band 13	Main.1	24.00	24.00	24.00	24.00	24.00	24.00	24.00
LTE Band 48	Sub.3	18.00	18.00	18.00	17.50	18.00	18.00	21.00
LTE Band 66(4)	Main.2	24.00	24.00	22.00	24.00	22.00	22.00	24.00
NR Band n2	Main.2	24.00	24.00	22.00	24.00	22.00	22.00	24.00
NR Band n5	Main.1	24.50	24.50	24.50	24.50	24.50	24.50	24.50
NR Band n66	Main.2	24.00	24.00	22.00	24.00	22.00	22.00	24.00
NR Band n48 -SRS 0-	Sub.3	14.00	14.00	14.00	13.00	14.00	14.00	23.00
NR Band n48 -SRS 1-	Main.2	14.50	14.50	14.50	13.50	14.50	14.50	19.00
NR Band n48 -SRS 2-	Sub.5	14.00	14.00	14.00	13.00	14.00	14.00	18.00
NR Band n48 -SRS 3-	Sub.8	14.00	14.00	14.00	12.00	14.00	14.00	17.00
NR Band n77 -SRS 0-PC3/PC2	Sub.3	15.00	15.00	15.00	15.00	15.00	15.00	23.50 / 27.00
NR Band n77 -SRS 1-PC3/PC2 (DoD)	Main.2	13.00	13.00	13.00	13.00	13.00	13.00	19.50
NR Band n77 -SRS 1-PC3/PC2	Main.2	15.50	15.50	15.50	15.50	15.50	15.50	19.50
NR Band n77 -SRS 2-PC3/PC2	Sub.5	14.50	14.50	14.50	14.50	14.50	14.50	21.00
NR Band n77 -SRS 3-PC3/PC2	Sub.8	14.50	14.50	14.50	14.50	14.50	14.50	18.50

Notes:

1. If P_{limit} is higher than P_{max} for some modes/bands, The modes/bands will operate at a power level up to P_{max}.
2. P_{max} (Maximum tune-up power) is specified in tune-up document. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty.
3. All P_{limit} NV and maximum tune up output P_{max} levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of GSM & LTE TDD modulation schemes.
4. For NR FR1 TDD Bands, P_{limit} listed averaged power level, and P_{max} listed burst power level.
5. P_{limit} (RSI=0) was determined to be the lower of “Body-worn” and “Product Specific 10-g at Max power” in each WWAN Bands.

7. SAR Test results for P_{limit} calculations

Head exposure (RSI = 4)

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P_{limit} (dBm)	Minimum P_{limit} (dBm)
Head	4	GSM 850	Main.1	GPRS 2 Slots	190	0	Left Touch	24.56	0.225	31.04	29.94
						0	Left Tilt	24.56	0.109	34.19	
						0	Right Touch	24.56	0.290	29.94	
						0	Right Tilt	24.56	0.136	33.22	
Head	4	GSM 1900	Main.2	GPRS 4 Slots	661	0	Left Touch	20.51	0.087	31.11	31.11
						0	Left Tilt	20.51	0.068	32.17	
						0	Right Touch	20.51	0.085	31.20	
						0	Right Tilt	20.51	0.067	32.24	
Head	4	WCDMA Band II	Main.2	Rel 99	9400	0	Left Touch	22.89	0.216	29.55	29.55
						0	Left Tilt	22.89	0.134	31.62	
						0	Right Touch	22.89	0.208	29.71	
						0	Right Tilt	22.89	0.109	32.52	
Head	4	WCDMA Band V	Main.1	Rel 99	4183	0	Left Touch	23.69	0.140	32.23	31.16
						0	Left Tilt	23.69	0.066	35.52	
						0	Right Touch	23.69	0.179	31.16	
						0	Right Tilt	23.69	0.085	34.41	
Head	4	LTE Band 2	Main.2	QPSK BW=20 RB 1/99	18700	0	Left Touch	24.38	0.250	30.40	30.40
						0	Left Tilt	24.38	0.141	32.89	
						0	Right Touch	24.38	0.233	30.71	
						0	Right Tilt	24.38	0.161	32.31	
Head	4	LTE Band 5	Main.1	QPSK BW=10 RB 1/0	20525	0	Left Touch	24.37	0.238	30.60	30.12
						0	Left Tilt	24.37	0.120	33.58	
						0	Right Touch	24.37	0.266	30.12	
						0	Right Tilt	24.37	0.145	32.76	
Head	4	LTE Band 7	Main.2	QPSK BW=20 RB 1/0	20850	0	Left Touch	23.24	0.183	30.62	30.62
						0	Left Tilt	23.24	0.058	35.63	
						0	Right Touch	23.24	0.128	32.17	
						0	Right Tilt	23.24	0.104	33.07	
Head	4	LTE Band 12	Main.1	QPSK BW=10 RB 1/49	20395	0	Left Touch	24.21	0.218	30.83	30.11
						0	Left Tilt	24.21	0.130	33.07	
						0	Right Touch	24.21	0.257	30.11	
						0	Right Tilt	24.21	0.132	33.00	
Head	4	LTE Band 13	Main.1	QPSK BW=10 RB 1/0	23230	0	Left Touch	23.58	0.177	31.10	29.74
						0	Left Tilt	23.58	0.098	33.68	
						0	Right Touch	23.58	0.242	29.74	
						0	Right Tilt	23.58	0.146	31.94	
Head	4	LTE Band 48	Sub.3	QPSK BW=20 RB 1/0	55340	0	Left Touch	17.71	0.154	25.83	18.87
						0	Left Tilt	17.71	0.136	26.37	
						0	Right Touch	17.71	0.765	18.87	
						0	Right Tilt	17.71	0.397	21.72	
Head	4	LTE Band 66(4)	Main.2	QPSK BW=20 RB 1/49	132572	0	Left Touch	24.31	0.263	30.11	30.11
						0	Left Tilt	24.31	0.178	31.81	
						0	Right Touch	24.31	0.236	30.58	
						0	Right Tilt	24.31	0.151	32.52	
Head	4	NR Band n2	Main.2	DFT-s QPSK BW=40 RB 108/54	376000	0	Left Touch	24.30	0.225	30.78	30.78
						0	Left Tilt	24.30	0.146	32.66	
						0	Right Touch	24.30	0.160	32.26	
						0	Right Tilt	24.30	0.090	34.74	
Head	4	NR Band n5	Main.1	DFT-s QPSK BW=20 RB 50/28	167300	0	Left Touch	24.32	0.190	31.53	29.97
						0	Left Tilt	24.32	0.103	34.19	
						0	Right Touch	24.32	0.272	29.97	
						0	Right Tilt	24.32	0.134	33.05	
Head	4	NR Band n66	Main.2	DFT-s QPSK BW=40 RB 108/54	349000	0	Left Touch	24.17	0.201	31.14	31.14
						0	Left Tilt	24.17	0.089	34.66	
						0	Right Touch	24.17	0.184	31.52	
						0	Right Tilt	24.17	0.102	34.08	
Head	4	NR Band n48-SRS0-	Sub.3	DFT-s QPSK BW=40 RB 50/28	641666	0	Left Touch	13.34	0.069	24.98	20.14
						0	Left Tilt	13.34	0.062	25.45	
						0	Right Touch	13.34	0.209	20.14	
						0	Right Tilt	13.34	0.138	21.94	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Head	4	NR Band n48-SRS1-	Main.2	CW	641666	0	Left Touch	14.29	0.001	44.29	44.29
						0	Left Tilt	14.29	0.001	44.29	
						0	Right Touch	14.29	0.001	44.29	
						0	Right Tilt	14.29	0.001	44.29	
Head	4	NR Band n48-SRS2-	Sub.5	CW	641666	0	Left Touch	13.16	0.056	25.71	20.04
						0	Left Tilt	13.16	0.006	35.36	
						0	Right Touch	13.16	0.205	20.04	
						0	Right Tilt	13.16	0.034	27.88	
Head	4	NR Band n48-SRS3-	Sub.8	CW	641666	0	Left Touch	12.72	0.034	27.42	23.81
						0	Left Tilt	12.72	0.041	26.61	
						0	Right Touch	12.72	0.066	24.51	
						0	Right Tilt	12.72	0.078	23.81	
Head	4	NR Band n77-SRS0-	Sub.3	DFT-s QPSK BW=100 RB 270/0	662000	0	Left Touch	15.08	0.160	23.04	16.01
						0	Left Tilt	15.08	0.130	23.94	
						0	Right Touch	15.08	0.807	16.01	
						0	Right Tilt	15.08	0.371	19.39	
Head	4	NR Band n77-SRS1-	Main.2	CW	662000	0	Left Touch	16.41	0.001	46.41	46.41
						0	Left Tilt	16.41	0.001	46.41	
						0	Right Touch	16.41	0.001	46.41	
						0	Right Tilt	16.41	0.001	46.41	
Head	4	NR Band n77-SRS2-	Sub.5	CW	633334	0	Left Touch	15.06	0.177	22.58	18.23
						0	Left Tilt	15.06	0.060	27.27	
						0	Right Touch	15.06	0.482	18.23	
						0	Right Tilt	15.06	0.097	25.17	
Head	4	NR Band n77-SRS3-	Sub.8	CW	650000	0	Left Touch	14.61	0.120	23.82	20.67
						0	Left Tilt	14.61	0.144	23.03	
						0	Right Touch	14.61	0.234	20.92	
						0	Right Tilt	14.61	0.248	20.67	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

Body-worn exposure (RSI = 0)

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P_{limit} (dBm)	Minimum P_{limit} (dBm)
Body-worn	0	GSM 850	Main.1	GPRS 2 Slots	190	15	Rear	24.56	0.137	33.19	33.04
						15	Front	24.56	0.142	33.04	
Body-worn	0	GSM 1900	Main.2	GPRS 4 Slots	661	15	Rear	20.51	0.213	27.23	27.23
						15	Front	20.51	0.150	28.75	
Body-worn	0	WCDMA Band II	Main.2	Rel 99	9400	15	Rear	22.89	0.370	27.21	27.21
						15	Front	22.89	0.294	28.21	
Body-worn	0	WCDMA Band V	Main.1	Rel 99	4183	15	Rear	23.69	0.185	31.02	31.02
						15	Front	23.69	0.140	32.23	
Body-worn	0	LTE Band 2	Main.2	QPSK BW=20 RB 1/99	18700	15	Rear	24.38	0.537	27.08	27.08
						15	Front	24.38	0.460	27.75	
Body-worn	0	LTE Band 5	Main.1	QPSK BW=10 RB 1/0	20525	15	Rear	24.37	0.305	29.53	29.53
						15	Front	24.37	0.279	29.91	
Body-worn	0	LTE Band 7	Main.2	QPSK BW=20 RB 1/0	20850	15	Rear	23.24	0.298	28.50	28.50
						15	Front	23.24	0.277	28.82	
Body-worn	0	LTE Band 12	Main.1	QPSK BW=10 RB 1/49	23095	15	Rear	24.21	0.339	28.91	28.91
						15	Front	24.21	0.299	29.45	
Body-worn	0	LTE Band 13	Main.1	QPSK BW=10 RB 1/0	23230	15	Rear	23.58	0.346	28.19	28.19
						15	Front	23.58	0.271	29.25	
Body-worn	0	LTE Band 48	Sub.3	QPSK BW=20 RB 50/50	55773	15	Rear	18.56	0.180	26.01	26.01
						15	Front	18.56	0.077	29.71	
Body-worn	0	LTE Band 66(4)	Main.2	QPSK BW=20 RB 1/49	132572	15	Rear	24.31	0.515	27.19	27.19
						15	Front	24.31	0.432	27.96	
Body-worn	0	NR Band n2	Main.2	DFT-s QPSK BW=40 RB 108/54	376000	15	Rear	24.30	0.480	27.49	27.49
						15	Front	24.30	0.390	28.39	
Body-worn	0	NR Band n5	Main.1	DFT-s QPSK BW=20 RB 50/28	167300	15	Rear	24.32	0.266	30.07	30.07
						15	Front	24.32	0.252	30.31	
Body-worn	0	NR Band n66	Main.2	DFT-s QPSK BW=40 RB 108/54	349000	15	Rear	24.17	0.430	27.84	27.84
						15	Front	24.17	0.281	29.68	
Body-worn	0	NR Band n48-SRS0-	Sub.3	DFT-s QPSK BW=40 RB 50/28	641666	15	Rear	14.56	0.077	25.69	25.69
						15	Front	14.56	0.037	28.91	
Body-worn	0	NR Band n48-SRS1-	Main.2	CW	641666	15	Rear	15.26	0.025	31.28	30.95
						15	Front	15.26	0.027	30.95	
Body-worn	0	NR Band n48-SRS2-	Sub.5	CW	641666	15	Rear	14.42	0.022	31.08	31.08
						15	Front	14.42	0.015	32.60	
Body-worn	0	NR Band n48-SRS3-	Sub.8	CW	641666	15	Rear	13.70	0.027	29.47	29.47
						15	Front	13.70	0.006	35.81	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Body-worn	0	NR Band n77-SRS0-	Sub.3	DFT-s QPSK BW=100 RB 1/137	662000	15	Rear	15.11	0.107	24.82	24.82
						15	Front	15.11	0.094	25.37	
Body-worn	0	NR Band n77-SRS1-	Main.2	CW	662000	15	Rear	16.41	0.001	46.41	33.40
						15	Front	16.41	0.020	33.40	
Body-worn	0	NR Band n77-SRS2-	Sub.5	CW	633334	15	Rear	15.06	0.063	27.05	27.05
						15	Front	15.06	0.042	28.84	
Body-worn	0	NR Band n77-SRS3-	Sub.8	CW	650000	15	Rear	14.61	0.080	25.57	25.57
						15	Front	14.61	0.001	44.61	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

Hotspot exposure (RSI = 3)

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Hotspot	3	GSM 850	Main.1	GPRS 2 Slots	190	10	Rear	24.56	0.384	28.72	28.72
						10	Front	24.56	0.129	33.45	
						10	Edge 2	24.56	0.284	30.03	
						10	Edge 3	24.56	0.185	31.89	
Hotspot	3	GSM 1900	Main.2	GPRS 4 Slots	661	10	Rear	20.51	0.398	24.51	23.81
						10	Front	20.51	0.282	26.01	
						10	Edge 3	20.51	0.468	23.81	
						10	Edge 4	20.51	0.158	28.52	
Hotspot	3	WCDMA Band II	Main.2	Rel 99	9400	10	Rear	20.91	0.433	24.55	23.03
						10	Front	20.91	0.306	26.05	
						10	Edge 3	20.91	0.614	23.03	
						10	Edge 4	20.91	0.206	27.77	
Hotspot	3	WCDMA Band V	Main.1	Rel 99	4183	10	Rear	23.69	0.390	27.78	27.78
						10	Front	23.69	0.166	31.49	
						10	Edge 2	23.69	0.179	31.16	
						10	Edge 3	23.69	0.239	29.91	
Hotspot	3	LTE Band 2	Main.2	QPSK BW=20 RB 50/0	18700	10	Rear	22.14	0.684	23.79	23.04
						10	Front	22.14	0.545	24.78	
						10	Edge 3	22.14	0.812	23.04	
						10	Edge 4	22.14	0.348	26.72	
Hotspot	3	LTE Band 5	Main.1	QPSK BW=10 RB 1/0	20525	10	Rear	24.37	0.510	27.29	27.29
						10	Front	24.37	0.256	30.29	
						10	Edge 2	24.37	0.389	28.47	
						10	Edge 3	24.37	0.346	28.98	
Hotspot	3	LTE Band 7	Main.2	QPSK BW=20 RB 1/0	20850	10	Rear	20.02	0.363	24.42	24.42
						10	Front	20.02	0.246	26.11	
						10	Edge 3	20.02	0.341	24.69	
						10	Edge 4	20.02	0.100	30.02	
Hotspot	3	LTE Band 12	Main.1	QPSK BW=10 RB 1/49	23095	10	Rear	24.21	0.376	28.46	28.46
						10	Front	24.21	0.288	29.62	
						10	Edge 2	24.21	0.359	28.66	
						10	Edge 3	24.21	0.266	29.96	
Hotspot	3	LTE Band 13	Main.1	QPSK BW=10 RB 1/0	23230	10	Rear	23.58	0.402	27.54	26.63
						10	Front	23.58	0.277	29.16	
						10	Edge 2	23.58	0.495	26.63	
						10	Edge 3	23.58	0.259	29.45	
Hotspot	3	LTE Band 48	Sub.3	QPSK BW=20 RB 50/50	55773	10	Rear	18.56	0.356	23.05	22.74
						10	Front	18.56	0.163	26.44	
						10	Edge 1	18.56	0.226	25.02	
						10	Edge 4	18.56	0.382	22.74	
Hotspot	3	LTE Band 66(4)	Main.2	QPSK BW=20 RB 50/0	132572	10	Rear	21.85	0.576	24.25	23.00
						10	Front	21.85	0.503	24.83	
						10	Edge 3	21.85	0.768	23.00	
						10	Edge 4	21.85	0.276	27.44	
Hotspot	3	NR Band n2	Main.2	DFT-s QPSK BW=40 RB 108/54	376000	10	Rear	22.14	0.653	23.99	23.58
						10	Front	22.14	0.394	26.19	
						10	Edge 3	22.14	0.717	23.58	
						10	Edge 4	22.14	0.267	27.87	
Hotspot	3	NR Band n5	Main.1	DFT-s QPSK BW=20 RB 50/28	167300	10	Rear	24.32	0.480	27.51	27.51
						10	Front	24.32	0.296	29.61	
						10	Edge 2	24.32	0.307	29.45	
						10	Edge 3	24.32	0.306	29.46	
Hotspot	3	NR Band n66	Main.2	DFT-s QPSK BW=40 RB 1/214	349000	10	Rear	22.04	0.608	24.20	23.98
						10	Front	22.04	0.475	25.27	
						10	Edge 3	22.04	0.640	23.98	
						10	Edge 4	22.04	0.257	27.94	
Hotspot	3	NR Band n48-SRS0-	Sub.3	DFT-s QPSK BW=40 RB 1/53	641666	10	Rear	14.55	0.110	24.14	22.07
						10	Front	14.55	0.075	25.79	
						10	Edge 1	14.55	0.062	26.63	
						10	Edge 4	14.55	0.177	22.07	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Hotspot	3	NR Band n48-SRS1-	Main.2	CW	641666	10	Rear	15.26	0.062	27.34	22.25
						10	Front	15.26	0.065	27.13	
						10	Edge 3	15.26	0.200	22.25	
						10	Edge 4	15.26	0.019	32.47	
Hotspot	2	NR Band n48-SRS2-	Sub.5	CW	641666	10	Rear	14.42	0.049	27.51	25.45
						10	Front	14.42	0.025	30.37	
						10	Edge 1	14.42	0.004	38.15	
						10	Edge 4	14.42	0.079	25.45	
Hotspot	3	NR Band n48-SRS3-	Sub.8	CW	641666	10	Rear	13.70	0.051	26.59	26.59
						10	Front	13.70	0.014	32.18	
						10	Edge 1	13.70	0.038	27.95	
						10	Edge 4	13.70	0.012	32.94	
Hotspot	3	NR Band n77-SRS0-	Sub.3	DFT-s QPSK BW=100 RB 1/137	662000	10	Rear	15.11	0.207	21.95	19.12
						10	Front	15.11	0.184	22.46	
						10	Edge 1	15.11	0.101	25.07	
						10	Edge 4	15.11	0.397	19.12	
Hotspot	3	NR Band n77-SRS1-	Main.2	CW	662000	10	Rear	16.41	0.036	30.85	25.20
						10	Front	16.41	0.061	28.56	
						10	Eedge 3	16.41	0.004	40.39	
						10	Edge 4	16.41	0.132	25.20	
Hotspot	3	NR Band n77-SRS2-	Sub.5	CW	633334	10	Rear	15.06	0.128	23.99	22.73
						10	Front	15.06	0.069	26.68	
						10	Edge 1	15.06	0.002	41.96	
						10	Edge 4	15.06	0.171	22.73	
Hotspot	3	NR Band n77-SRS3-	Sub.8	CW	650000	10	Rear	14.61	0.158	22.62	22.62
						10	Front	14.61	0.027	30.25	
						10	Edge 1	14.61	0.092	24.96	
						10	Edge 4	14.61	0.025	30.72	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

Product Specific 10-g without triggering sensor (RSI = 0)

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Product Specific-10g (Sensor Off)	0	GSM 850	Main.1	GPRS 2 Slots	190	0	Rear	24.56	1.160	27.89	27.89
						0	Front	24.56	0.824	29.38	
						0	Edge 2	24.56	0.621	30.61	
						0	Edge 3	24.56	1.150	27.93	
Product Specific-10g (Sensor Off)	0	GSM 1900	Main.2	GPRS 4 Slots	661	0	Rear	20.51	1.280	23.42	23.42
						0	Front	20.51	0.954	24.69	
						0	Edge 3	20.51	1.150	23.88	
						0	Edge 4	20.51	0.545	27.13	
Product Specific-10g (Sensor Off)	0	WCDMA Band II	Main.2	Rel 99	9400	11	Rear	22.89	0.405	30.79	26.78
						7	Front	22.89	0.558	29.40	
						13	Edge 3	22.89	0.391	30.95	
						0	Edge 4	22.89	1.020	26.78	
Product Specific-10g (Sensor Off)	0	WCDMA Band V	Main.1	Rel 99	4183	0	Rear	23.69	1.440	26.09	26.09
Product Specific-10g (Sensor Off)	0	LTE Band 2	Main.2	QPSK BW=20 RB 1/99	18700	11	Rear	24.38	0.597	30.60	27.29
						7	Front	24.38	0.941	28.62	
						13	Edge 3	24.38	0.707	29.87	
						0	Edge 4	24.38	1.280	27.29	
Product Specific-10g (Sensor Off)	0	LTE Band 5	Main.1	QPSK BW=10 RB 1/0	20525	0	Rear	24.37	1.430	26.80	26.80
Product Specific-10g (Sensor Off)	0	LTE Band 7	Main.2	QPSK BW=20 RB 1/0	20850	11	Rear	23.24	0.344	31.85	28.47
						7	Front	23.24	0.391	31.30	
						13	Edge 3	23.24	0.298	32.48	
						0	Edge 4	23.24	0.749	28.47	
Product Specific-10g (Sensor Off)	0	LTE Band 12	Main.1	QPSK BW=10 RB 1/49	23095	0	Rear	24.21	1.010	28.15	28.15
						0	Front	24.21	0.585	30.52	
						0	Edge 2	24.21	0.353	32.71	
						0	Edge 3	24.21	0.747	29.46	
Product Specific-10g (Sensor Off)	0	LTE Band 13	Main.1	QPSK BW=10 RB 1/0	23230	0	Rear	23.58	1.430	26.01	26.01
						0	Front	23.58	0.572	29.99	
						0	Edge 2	23.58	0.405	31.48	
						0	Edge 3	23.58	0.880	28.11	
Product Specific-10g (Sensor Off)	0	LTE Band 48	Sub.3	QPSK BW=20 RB 1/99	55773	0	Rear	18.65	0.639	24.57	20.59
						0	Front	18.65	0.692	24.23	
						0	Edge 1	18.65	0.462	25.98	
						0	Edge 4	18.65	1.600	20.59	
Product Specific-10g (Sensor Off)	0	LTE Band 66(4)	Main.2	QPSK BW=20 RB 1/49	132572	11	Rear	24.31	0.465	31.61	27.36
						7	Front	24.31	0.721	29.71	
						13	Edge 3	24.31	0.635	30.26	
						0	Edge 4	24.31	1.240	27.36	
Product Specific-10g (Sensor Off)	0	NR Band n2	Main.2	DFT-s QPSK BW=40 RB 108/54	376000	11	Rear	24.30	0.523	31.09	27.91
						7	Front	24.30	0.692	29.88	
						13	Edge 3	24.30	0.462	31.63	
						0	Edge 4	24.30	1.090	27.91	
Product Specific-10g (Sensor Off)	0	NR Band n5	Main.1	DFT-s QPSK BW=20 RB 50/28	167300	0	Rear	24.32	1.060	28.05	28.05
Product Specific-10g (Sensor Off)	0	NR Band n66	Main.2	DFT-s QPSK BW=40 RB 1/214	349000	11	Rear	24.28	0.392	32.33	28.69
						7	Front	24.28	0.650	30.13	
						13	Edge 3	24.28	0.414	32.09	
						0	Edge 4	24.28	0.906	28.69	
Product Specific-10g (Sensor Off)	0	NR Band n48-SRS0-	Sub.3	DFT-s QPSK BW=40 RB 1/53	641666	0	Rear	14.55	0.200	25.52	22.93
						0	Front	14.55	0.279	24.07	
						0	Edge 1	14.55	0.125	27.56	
						0	Edge 4	14.55	0.363	22.93	
Product Specific-10g (Sensor Off)	0	NR Band n48-SRS1-	Main.2	CW	641666	0	Rear	15.26	0.239	25.46	22.90
						0	Front	15.26	0.261	25.07	
						0	Edge 3	15.26	0.430	22.90	
						0	Edge 4	15.26	0.036	33.68	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	P_{limit} (dBm)	Minimum P_{limit} (dBm)
Product Specific-10g (Sensor Off)	0	NR Band n48-SRS2-	Sub.5	CW	641666	0	Rear	14.42	0.663	20.18	17.19
						0	Front	14.42	0.364	22.79	
						0	Edge 1	14.42	0.027	34.02	
						0	Edge 4	14.42	1.320	17.19	
Product Specific-10g (Sensor Off)	0	NR Band n48-SRS3-	Sub.8	CW	641666	0	Rear	13.70	0.375	21.94	20.09
						0	Front	13.70	0.132	26.47	
						0	Edge 1	13.70	0.574	20.09	
						0	Edge 4	13.70	0.043	31.30	
Product Specific-10g (Sensor Off)	0	NR Band n77-SRS0-	Sub.3	DFT-s QPSK BW=100 RB 1/137	662000	0	Rear	15.11	0.455	22.51	18.16
						0	Front	15.11	0.679	20.77	
						0	Edge 1	15.11	0.231	25.45	
						0	Edge 4	15.11	1.240	18.16	
Product Specific-10g (Sensor Off)	0	NR Band n77-SRS1-	Main.2	CW	662000	0	Rear	16.41	0.183	27.76	24.11
						0	Front	16.41	0.235	26.68	
						0	Edge 3	16.41	0.425	24.11	
						0	Edge 4	16.41	0.023	36.77	
Product Specific-10g (Sensor Off)	0	NR Band n77-SRS2-	Sub.5	CW	633334	0	Rear	15.06	0.405	22.96	21.00
						0	Front	15.06	0.312	24.10	
						0	Edge 1	15.06	0.006	41.14	
						0	Edge 4	15.06	0.636	21.00	
Product Specific-10g (Sensor Off)	0	NR Band n77-SRS3-	Sub.8	CW	650000	0	Rear	14.61	0.387	22.71	22.71
						0	Front	14.61	0.102	28.50	
						0	Edge 1	14.61	0.360	23.03	
						0	Edge 4	14.61	0.037	32.93	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

Product Specific 10-g with triggering sensor (RSI = 1 or 2)

RF Exposure Conditions	RSI	band	Antenna	mode	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	P_{limit} (dBm)	Minimum P_{limit} (dBm)
Product Specific-10g (Sensor On)	1 or 2	WCDMA Band II	Main.2	Rel 99	9400	0	Rear	20.94	1.370	23.55	23.55
						0	Front	20.94	1.350	23.62	
						0	Edge 3	20.94	0.857	25.59	
Product Specific-10g (Sensor On)	1 or 2	LTE Band 2	Main.2	QPSK BW=20 RB 1/99	18700	0	Rear	22.15	1.910	23.32	23.32
						0	Front	22.15	1.530	24.28	
						0	Edge 3	22.15	1.410	24.64	
Product Specific-10g (Sensor On)	1 or 2	LTE Band 7	Main.2	QPSK BW=20 RB 1/0	20850	0	Rear	20.04	1.840	21.37	21.37
						0	Front	20.04	0.928	24.34	
						0	Edge 3	20.04	1.360	22.68	
Product Specific-10g (Sensor On)	1 or 2	LTE Band 66(4)	Main.2	QPSK BW=20 RB 1/49	132572	0	Rear	22.09	2.290	22.47	22.47
						0	Front	22.09	2.050	22.95	
						0	Edge 3	22.09	1.950	23.17	
Product Specific-10g (Sensor On)	1 or 2	NR Band n2	Main.2	DFT-s QPSK BW=40 RB 1/1	376000	0	Rear	22.17	1.620	24.05	24.05
						0	Front	22.17	1.510	24.36	
						0	Edge 3	22.17	1.010	26.11	
Product Specific-10g (Sensor On)	1 or 2	NR Band n66	Main.2	DFT-s QPSK BW=40 RB 1/214	349000	0	Rear	22.04	1.510	24.23	24.03
						0	Front	22.04	1.420	24.50	
						0	Edge 3	22.04	1.580	24.03	

Notes:

1. The maximum allowed power is equal to maximum tune up power + 1 dB device design uncertainty
2. Measured Output power refer to Sec.9 in SAR report.

END OF REPORT