

**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 and NFC

MODEL NUMBER: SM-A166M/DS, SM-A166M

FCC ID: A3LSMA166M

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TL-637

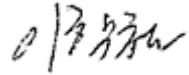
Revision History

Rev.	Date	Revisions	Revised By
V1	8/16/2024	Initial Issue	--
V2	8/23/2024	Revised table in Sec.6.1.1	Taehun Kim

Table of Contents

1.	Attestation of SAR Characterization	4
2.	Introduction	5
3.	Facilities and Accreditation	5
4.	SAR Measurement System & Test Equipment	6
4.1.	<i>SAR Measurement System.....</i>	6
4.2.	<i>SAR Scan Procedures.....</i>	8
4.3.	<i>Test Equipment.....</i>	10
5.	Device Under Test (DUT) Information	12
5.1	<i>Wireless Technologies.....</i>	12
5.2	<i>Time-Averaging for SAR.....</i>	13
5.3	<i>Nomenclature for SAR Characterization Report for WWAN</i>	13
6.	SAR Characterizations.....	14
6.1	<i>SAR Design Target.....</i>	14
6.1.1	<i>WWAN SAR Design Target</i>	14
6.2	<i>SAR Determination.....</i>	15
6.2.1	<i>RSI and SAR Determination in WWAN techs</i>	15
6.3	<i>Plimit determination</i>	16
6.3.1	<i>Plimit determination of RSI scenarios</i>	16
7.	SAR Test results for Plimit calculations	17
7.1	<i>SAR Test results for P_{limit} calculations in each RSI scenarios</i>	17

1. Attestation of SAR Characterization

Applicant Name	SAMSUNG ELECTRONICS CO.,LTD.
FCC ID	A3LSMA166M
Model Number	SM-A166M/DS, SM-A166M
Applicable Standards	FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures
Report type	SAR Characterization Report
Date Tested	6/27/2024 to 8/16/2024
SAR Characterization Purpose	SAR Char is the procedures for determining P_{Limit} for WWAN (2G/3G/4G/5G-sub6) to satisfy <i>SAR_design_target</i> 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	Hakchul Lee Laboratory Engineer UL Korea, Ltd. Suwon Laboratory

2. Introduction

The equipment under test (EUT) is SAMSUNG Smartphone (FCC ID : A3LSMA166M), it contains S.LSI TAS supporting WWAN technologies (2G/3G/4G/5G-Sub6). TAS chipset is enabled with 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.

And The EUT has also supports to WLAN/BT/NFC technologies, but There are not support to TAS algorithm.

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 4 Room	SAR 8 Room
SAR 7 Room	SAR 9 Room

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.

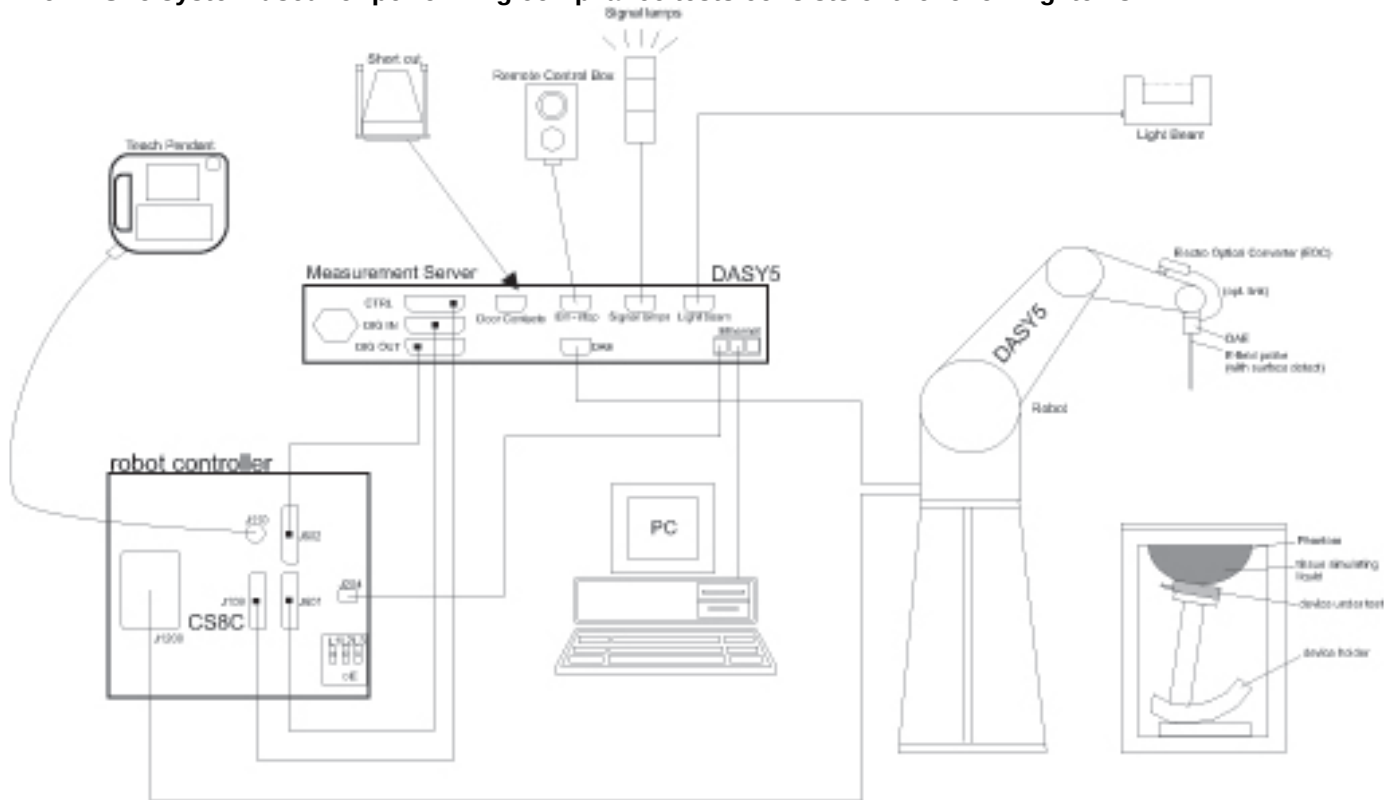
The full scope of accreditation can be viewed at

<https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

4. SAR Measurement System & Test Equipment

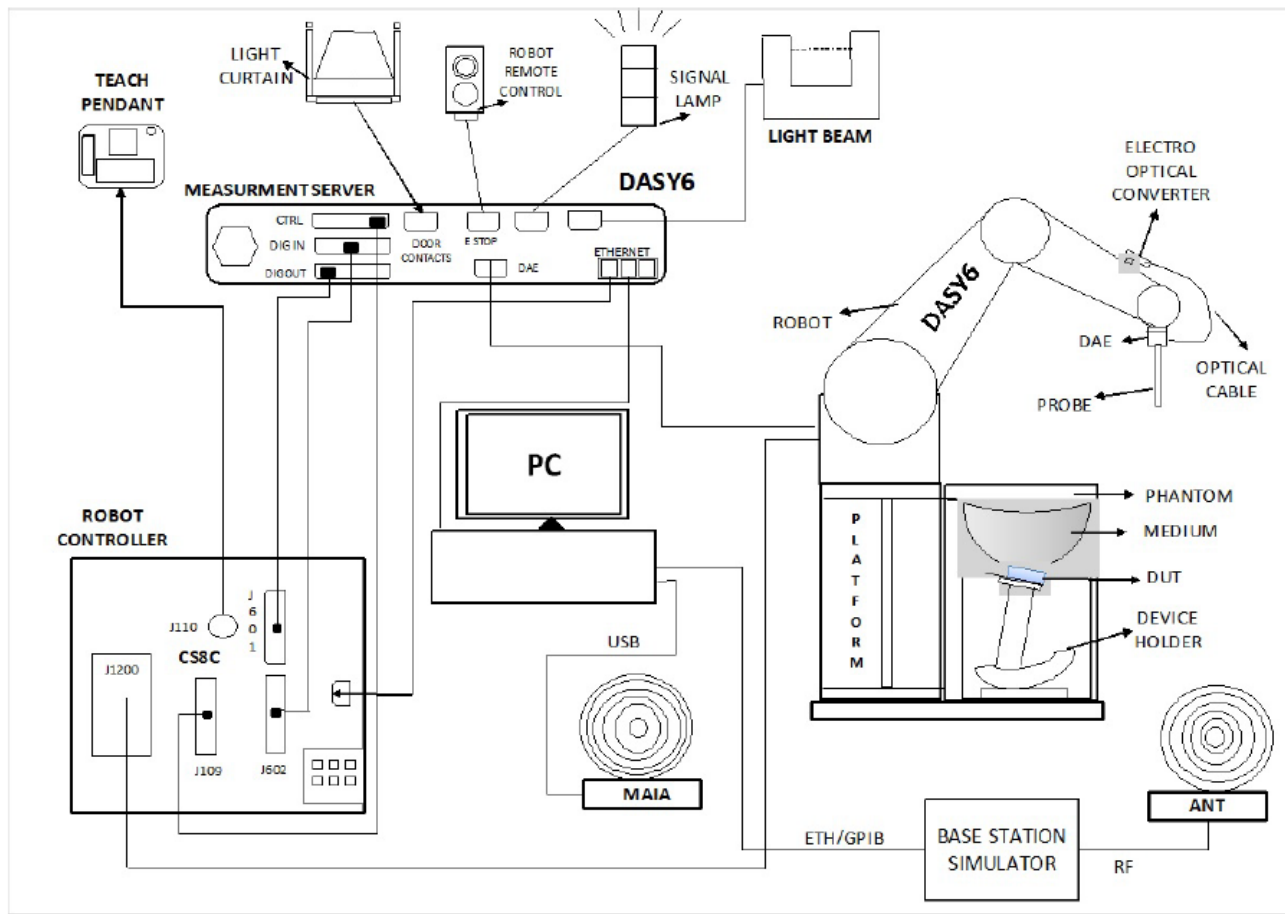
4.1. SAR Measurement System

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	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 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 $\leq$ 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: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
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 <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> 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	7-24-2024
Network Analyzer	Agilent	E5071C	MY46522054	7-24-2025
Dielectric Assessment Kit	SPEAG	DAK-12	1158	9-20-2024
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	6-10-2025
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Shorting block	SPEAG	DAK-12 Short	SM DAK 220 AD	N/A
Thermometer	LKM	DTM3000	3851	7-23-2025
Thermometer	LKM	DTM3000	3862	7-23-2025

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	7-26-2024
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	7-22-2025
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	7-27-2024
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	7-23-2025
Power Sensor	KEY SIGHT	U2000A	MY60180020	7-26-2024
Power Sensor	KEY SIGHT	U2000A	MY60180020	7-25-2025
Power Sensor	KEY SIGHT	U2000A	MY61010006	7-25-2024
Power Sensor	KEY SIGHT	U2000A	MY61010006	7-23-2025
Power Sensor	KEY SIGHT	U2000A	MY54260007	7-26-2024
Power Sensor	KEY SIGHT	U2000A	MY54260007	7-25-2025
Power Sensor	KEY SIGHT	U2004A USB Sensor	MY61200006	1-3-2025
Power Sensor	KEY SIGHT	U2004A USB Sensor	MY61280010	1-3-2025
Power Amplifier	EXODUS	AMP2027	1410025-AMP2027-10003	2-14-2025
Power Amplifier	MINI-CIRCUITS	TVA-R5-13A+	2111006	1-3-2025
Power Amplifier	EXODUS	AMP2027ADB	10002	1-5-2025
Directional Coupler	H.P	778D	16133	7-25-2024
Directional Coupler	H.P	778D	16133	7-25-2025
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	7-25-2024
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	7-24-2025
Directional Coupler	KRYTAR	100318010	215541	1-4-2025
Low Pass Filter	MICROLAB	LA-60N	3942	7-25-2024
Low Pass Filter	MICROLAB	LA-60N	3942	7-24-2025
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	7-24-2025
Low Pass Filter	MINI-CIRCUITS	VLF-1500+	32241	2-28-2025
Attenuator	KEY SIGHT	8491B/003	VE2017A0283	7-25-2024
Attenuator	KEY SIGHT	8491B/003	VE2017A0283	7-24-2025
Attenuator	KEY SIGHT	8491B/010	MY39271981	7-24-2024
Attenuator	KEY SIGHT	8491B/010	MY39271981	7-24-2025
Attenuator	KEY SIGHT	8491B/010	MY39272011	7-25-2024
Attenuator	KEY SIGHT	8491B/010	MY39272011	7-24-2025
Attenuator	KEY SIGHT	8491B/020	MY39272302	7-24-2024
Attenuator	KEY SIGHT	8491B/020	MY39272302	7-24-2025
Attenuator	KEY SIGHT	8491B/020	MY39271973	7-25-2024
Attenuator	KEY SIGHT	8491B/020	MY39271973	7-24-2025

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.

Test Equipment (Continued)**System Check**

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
E-Field Probe	SPEAG	EX3DV4	7313	2-21-2025
E-Field Probe	SPEAG	EX3DV4	7314	5-23-2025
E-Field Probe	SPEAG	EX3DV4	7645	9-20-2024
E-Field Probe	SPEAG	EX3DV4	7646	3-15-2025
Data Acquisition Electronics	SPEAG	DAE4	1447	3-13-2025
Data Acquisition Electronics	SPEAG	DAE4	1670	5-15-2025
Data Acquisition Electronics	SPEAG	DAE4	1671	4-18-2025
Data Acquisition Electronics	SPEAG	DAE4	1668	4-18-2025
System Validation Dipole	SPEAG	D750V3	1205	4-18-2025
System Validation Dipole	SPEAG	D835V2	4d174	9-21-2024
System Validation Dipole	SPEAG	D1750V2	1125	11-30-2024
System Validation Dipole	SPEAG	D1900V2	5d190	11-16-2024
System Validation Dipole	SPEAG	D1900V2	5d199	3-13-2025
System Validation Dipole	SPEAG	D2450V2	960	3-14-2025
System Validation Dipole	SPEAG	D5GHzV2	1209	2-28-2025
System Validation Dipole	SPEAG	D1750V2	1180	9-21-2024
System Validation Dipole	SPEAG	D2600V2	1178	4-25-2025
System Validation Dipole	SPEAG	CLA-13	1015	8-22-2024
Resistive Power Splitter	Weinschel	1534	S0244	7-24-2025
Resistive Power Splitter	Weinschel	1534	S0245	7-24-2025
Thermometer	Lutron	MHB-382SD	AJ.42446	7-31-2024
Thermometer	Lutron	MHB-382SD	AJ.42446	7-26-2025
Thermometer	Lutron	MHB-382SD	AK.12102	7-26-2024
Thermometer	Lutron	MHB-382SD	AK.12102	7-24-2025
Thermometer	Lutron	MHB-382SD	AK.12103	7-27-2024
Thermometer	Lutron	MHB-382SD	AK.12103	7-24-2025
Thermometer	Lutron	MHB-382SD	AK.18789	7-27-2024
Thermometer	Lutron	MHB-382SD	AK.18789	7-24-2025
Thermometer	Lutron	MHB-382SD	AJ.45903	1-4-2025

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	7-27-2024
Base Station Simulator	R & S	CMW500	150313	7-24-2025
Base Station Simulator	R & S	CMW500	150314	7-26-2024
Base Station Simulator	R & S	CMW500	150314	7-24-2025
Base Station Simulator	R & S	CMW500	169803	3-25-2025
Base Station Simulator	R & S	CMW500	169801	1-3-2025
Base Station Simulator	R & S	CMW500	169796	1-3-2025
Base Station Simulator	R & S	CMW500	169800	7-27-2024
Base Station Simulator	R & S	CMW500	169800	7-24-2025
UXM 5G Wireless Test Platform	KEYSIGHT	E751B	MY59150850	1-3-2025
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY58120110	1-3-2025
Radio Communication Test Station	Anritsu	MT8000A	6272466165	10-18-2024
Radio Communication Analyzer	Anritsu	MT8821C	6161094351	11-30-2024

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 IV Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 14) HSUPA (Category 6) DC-HSDPA (Category 14) HSPA+ (DL only)		100%
LTE	FDD Band 12 FDD Band 13 FDD Band 26 FDD Band 5 FDD Band 66 FDD Band 4 FDD Band 2 TDD Band 41 Power Class 3	QPSK 16QAM 64QAM 256QAM Rel. 16 Carrier Aggregation (1 Uplink and 2 Downlinks)		100% (FDD) 63.3% (TDD) – PC3
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
5G NR (Sub 6)	FDD Band n5 FDD Band n66 TDD Band n41	DFT-s-OFDM: ■ $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: ■ QPSK, 16QAM, 64QAM, 256QAM		100%
Wi-Fi	2.4 GHz	802.11b, 802.11g, 802.11n (HT20)		98.9% (802.11b-SISO)
	5 GHz	802.11a / 802.11n (HT20/40) 802.11ac (VHT20/40/80)		96.9% (802.11a SISO) 95.4% (802.11ac (VHT80-SISO)
	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		76.7% _(BT)
NFC	13.56 MHz	Type A/B/F/V		100%

Notes

1. This device supports Power Class 2(HPUE) and Power Class 3 for LTE Band 41 & NR Band n41 & NR Band n77
2. NR TDD Band n41 has support SRS(0,1,2,3) modes.

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 WWAN is compliance with FCC requirement. This SAR Char report shows SAR characterization of WWAN radios. Characterization is achieved by determining P_{limit} for WWAN radios 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 for WWAN

Term	Description
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.
SAR Char (SAR Characterization)	Table containing P_{limit} for all technologies and bands.

Table 5.3.1 Definitions for TAS algorithm

6. SAR Characterizations

6.1 SAR Design Target

6.1.1 WWAN 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.

<i>WWAN_SAR_design_target</i>			
$SAR\_design\_target < SAR\_regulatory\_limit \times 10^{\frac{-Total\ Uncertainty}{10}}$			
1g SAR (W/kg)		10g SAR (W/kg)	
Total Uncertainty	1.0 dB	Total Uncertainty	1.0 dB
<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 6.1.1 Definitions of uncertainty and design target for WWAN techs.

6.2 SAR Determination

6.2.1 RSI and SAR Determination in WWAN techs

This device uses different Radio SAR Index (RSI) **via S.LSI TAS** to configure different time averaged power levels based on certain exposure scenarios. Depending on the detection scheme implemented in the wireless device, 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.

RFexposure Conditions	Technologies Supported	RSI conditions	Description
Head	All WWAN bands	4 (RCV)	1. Device positioned next to head. 2. Receiver Active.
Body-worn	All WWAN bands	0 (Free)	1. Device being used with a body-worn accessory.
Hotspot	All WWAN bands	3 (Hotspot)	1. Device transmits in hotspot mode near body. 2. Hotspot Mode Active.
Phablet-10g	All WWAN bands	0 (Free)	1. Device is held with hand.

Table 6.2.1 RSI and Corresponding Exposure Scenarios

6.3 Plimit determination

6.3.1 Plimit determination of RSI scenarios

SAR results corresponding to P_{max} for each antenna/technology/band/RSI can be found in Section.7.1. P_{limit} is calculated by linearly scaling with 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. If P_{limit} is lower than P_{max} , then SAR Char's SAR data were referred to SAR data in SAR report.

Table 6.3.1.1 P_{Limit} Determination of WWAN's RSI scenarios

RSI state	Plimit Determination Scenarios
RCV	Plimit is calculated based on 1g Head exposure SAR results.
Hotspot	Plimit is calculated based on 1g Hotspot exposure SAR results at 10 mm test distance.
Free	The worst-case SAR exposure is determine as maximum SAR normalized to the limit (i.e. low est Plimit) among: 1. 1g Body worn SAR measured at 10 mm test distance. 2. 10g Phablet SAR measured at 0 mm test distance.

Table 6.3.1.2 Plimit result according to technologies and bands in each RSI

Exposure condition			Head	Body-worn & Hotspot	Extremity	Pmax (Maximum tune-up Power) (dBm)
Spatial-average			1g	1g	10g	
Test distance (mm)			0	10	0	
RSI			4	0 & 3	0	
RF Air Interface	Antenna	Antenna Group	Plimit corresponding to 1.0 W/kg (SAR_design_target) (1g) / 2.5 W/kg (SAR_design_target) (10g)			
GSM 850	A	0	24.60	24.60	24.60	24.6
GSM 1900	A	0	21.30	21.30	21.30	21.3
WCDMA 5	A	0	24.00	24.00	24.00	24.0
WCDMA 4	A	0	23.00	21.00	21.00	23.0
WCDMA 2	A	0	23.00	21.00	21.00	23.0
LTE Band 12	A	0	23.00	23.00	23.00	23.0
LTE Band 13	A	0	22.00	22.00	22.00	22.0
LTE Band 26	A	0	23.00	23.00	23.00	23.0
LTE Band 5	A	0	24.50			24.5
LTE Band 66	A	0	21.00	21.00	21.00	23.5
LTE Band 66	B	1	21.00	21.00	21.00	23.5
LTE Band 4	A	0	23.00			23.0
LTE Band 2	A	0	21.00	21.00	21.00	23.0
LTE Band 2	B	1	21.00	21.00	21.00	23.0
LTE Band 41	A	0	19.00	19.00	19.00	21.0
NR Band n5	A	0	24.50	24.50	24.50	24.5
NR Band n66	A	0	21.00	21.00	21.00	23.5
NR Band n41	A	0	17.00	17.00	17.00	23.0
NR Band n41 SRS1	C	1	17.00	17.00	17.00	17.0
NR Band n41 SRS2	B	1	17.00	17.00	17.00	17.0
NR Band n41 SRS3	F	1	17.00	17.00	17.00	17.0

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 LTE TDD modulation schemes.
4. For NR FR1 TDD Bands, P_{limit} listed averaged power level, and P_{max} listed burst power level.
5. LTE Band 5, 4 are covered by LTE Band 26, 66 in case of Body-worn, Hotspot and Extremity exposure conditions.

7. SAR Test results for Plimit calculations

7.1 SAR Test results for P_{limit} calculations in each RSI scenarios

Head exposure (RSI =RCV)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Head	0	GSM 850	A	GPRS 3 Slots		190	0	Left Touch	24.37	0.205	31.25	29.66
							0	Left Tilt	24.37	0.129	33.26	
							0	Right Touch	24.37	0.296	29.66	
							0	Right Tilt	24.37	0.141	32.88	
Head	0	GSM 1900	A	GPRS 4 Slots		661	0	Left Touch	21.26	0.099	31.30	31.30
							0	Left Tilt	21.26	0.087	31.86	
							0	Right Touch	21.26	0.096	31.44	
							0	Right Tilt	21.26	0.050	34.27	
Head	0	WCDMA 5	A	Rel 99 RMC 12.2 kbps		4183	0	Left Touch	23.74	0.166	31.54	30.77
							0	Left Tilt	23.74	0.104	33.57	
							0	Right Touch	23.74	0.198	30.77	
							0	Right Tilt	23.74	0.106	33.49	
Head	0	WCDMA 4	A	Rel 99 RMC 12.2 kbps		1513	0	Left Touch	22.39	0.168	30.14	30.14
							0	Left Tilt	22.39	0.087	32.99	
							0	Right Touch	22.39	0.059	34.68	
							0	Right Tilt	22.39	0.064	34.33	
Head	0	WCDMA 2	A	Rel 99 RMC 12.2 kbps		9400	0	Left Touch	22.53	0.135	31.23	30.46
							0	Left Tilt	22.53	0.161	30.46	
							0	Right Touch	22.53	0.159	30.52	
							0	Right Tilt	22.53	0.082	33.39	
Head	0	LTE Band 12	A	QPSK	1/0	23095	0	Left Touch	23.31	0.149	31.58	31.21
							0	Left Tilt	23.31	0.088	33.87	
							0	Right Touch	23.31	0.162	31.21	
							0	Right Tilt	23.31	0.077	34.45	
Head	0	LTE Band 13	A	QPSK	1/25	23230	0	Left Touch	21.86	0.178	29.36	29.36
							0	Left Tilt	21.86	0.092	32.22	
							0	Right Touch	21.86	0.178	29.36	
							0	Right Tilt	21.86	0.090	32.32	
Head	0	LTE Band 26	A	QPSK	1/0	26865	0	Left Touch	23.25	0.134	31.98	31.02
							0	Left Tilt	23.25	0.078	34.33	
							0	Right Touch	23.25	0.167	31.02	
							0	Right Tilt	23.25	0.082	34.11	
Head	0	LTE Band 5	A	QPSK	1/0	20525	0	Left Touch	24.47	0.160	32.43	31.03
							0	Left Tilt	24.47	0.069	36.08	
							0	Right Touch	24.47	0.221	31.03	
							0	Right Tilt	24.47	0.111	34.02	
Head	0	LTE Band 66	A	QPSK	1/0	132322	0	Left Touch	20.47	0.114	29.90	29.90
							0	Left Tilt	20.47	0.069	32.08	
							0	Right Touch	20.47	0.060	32.69	
							0	Right Tilt	20.47	0.043	34.14	
Head	0	LTE Band 66	B	QPSK	1/99	132322	0	Left Touch	20.55	0.077	31.69	26.71
							0	Left Tilt	20.55	0.049	33.65	
							0	Right Touch	20.55	0.242	26.71	
							0	Right Tilt	20.55	0.081	31.47	
Head	0	LTE Band 4	A	QPSK	1/99	20175	0	Left Touch	22.23	0.137	30.86	30.86
							0	Left Tilt	22.23	0.072	33.66	
							0	Right Touch	22.23	0.037	36.55	
							0	Right Tilt	22.23	0.067	33.97	
Head	0	LTE Band 2	A	QPSK	1/0	18900	0	Left Touch	20.46	0.072	31.89	31.22
							0	Left Tilt	20.46	0.084	31.22	
							0	Right Touch	20.46	0.077	31.60	
							0	Right Tilt	20.46	0.052	33.30	
Head	0	LTE Band 2	B	QPSK	1/0	18700	0	Left Touch	20.19	0.149	28.46	25.08
							0	Left Tilt	20.19	0.154	28.31	
							0	Right Touch	20.19	0.324	25.08	
							0	Right Tilt	20.19	0.133	28.95	
Head	0	LTE Band 41	A	QPSK	50/24	41490	0	Left Touch	16.99	0.098	27.08	27.08
							0	Left Tilt	16.99	0.032	31.94	
							0	Right Touch	16.99	0.051	29.91	
							0	Right Tilt	16.99	0.052	29.83	

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.

Head exposure (RSI =RCV) (Continued)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Head	0	NR Band n5	A	QPSK	50/28	167300	0	Left Touch	24.87	0.073	36.24	35.38
							0	Left Tilt	24.87	0.038	39.07	
							0	Right Touch	24.87	0.089	35.38	
							0	Right Tilt	24.87	0.050	37.88	
Head	0	NR Band n66	A	QPSK	1/107	349000	0	Left Touch	20.21	0.076	31.40	31.40
							0	Left Tilt	20.21	0.044	33.78	
							0	Right Touch	20.21	0.039	34.30	
							0	Right Tilt	20.21	0.035	34.77	
Head	0	NR Band n41	A	QPSK	135/69	518598	0	Left Touch	17.32	0.089	27.83	27.83
							0	Left Tilt	17.32	0.025	33.34	
							0	Right Touch	17.32	0.050	30.33	
							0	Right Tilt	17.32	0.046	30.69	
Head	0	NR Band n41 SRS1	C	CW		518598	0	Left Touch	16.97	0.656	18.80	18.64
							0	Left Tilt	16.97	0.680	18.64	
							0	Right Touch	16.97	0.262	22.79	
							0	Right Tilt	16.97	0.261	22.80	
Head	0	NR Band n41 SRS2	B	CW		518598	0	Left Touch	17.94	0.070	29.49	23.81
							0	Left Tilt	17.94	0.047	31.22	
							0	Right Touch	17.94	0.259	23.81	
							0	Right Tilt	17.94	0.108	27.61	
Head	0	NR Band n41 SRS3	F	CW		518598	0	Left Touch	17.56	0.306	22.70	22.70
							0	Left Tilt	17.56	0.129	26.45	
							0	Right Touch	17.56	0.100	27.56	
							0	Right Tilt	17.56	0.033	32.37	

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 & Hotspot exposure (RSI=Free&Hotspot)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Hotspot	0	GSM 850	A	GPRS 3 Slots		190	10	Rear	24.37	0.473	27.62	27.62
							10	Front	24.37	0.223	30.89	
							10	Top				
							10	Left	24.37	0.178	31.87	
							10	Bottom	24.37	0.221	30.93	
							10	Right	24.37	0.279	29.91	
Hotspot	0	GSM 1900	A	GPRS 4 Slots		661	10	Rear	21.26	0.336	26.00	25.98
							10	Front	21.26	0.214	27.96	
							10	Top				
							10	Left	21.26	0.134	29.99	
							10	Bottom	21.26	0.337	25.98	
							10	Right	21.26	0.056	33.78	
Hotspot	0	WCDMA 5	A	Rel 99 RMC 12.2 kbps		4183	10	Rear	23.74	0.380	27.94	27.94
							10	Front	23.74	0.206	30.60	
							10	Top				
							10	Left	23.74	0.117	33.06	
							10	Bottom	23.74	0.277	29.32	
							10	Right	23.74	0.238	29.97	
Hotspot	0	WCDMA 4	A	Rel 99 RMC 12.2 kbps		1513	10	Rear	20.87	0.348	25.45	24.29
							10	Front	20.87	0.169	28.59	
							10	Top				
							10	Left	20.87	0.085	31.58	
							10	Bottom	20.87	0.455	24.29	
							10	Right	20.87	0.040	34.85	
Hotspot	0	WCDMA 2	A	Rel 99 RMC 12.2 kbps		9400	10	Rear	20.39	0.313	25.43	25.43
							10	Front	20.39	0.176	27.93	
							10	Top				
							10	Left	20.39	0.119	29.63	
							10	Bottom	20.39	0.262	26.21	
							10	Right	20.39	0.047	33.67	
Hotspot	0	LTE Band 12	A	QPSK	1/0	23095	10	Rear	23.31	0.250	29.33	29.33
							10	Front	23.31	0.200	30.30	
							10	Top				
							10	Left	23.31	0.156	31.38	
							10	Bottom	23.31	0.101	33.27	
							10	Right	23.31	0.238	29.54	
Hotspot	0	LTE Band 13	A	QPSK	1/25	23230	10	Rear	21.86	0.260	27.71	27.64
							10	Front	21.86	0.198	28.89	
							10	Top				
							10	Left	21.86	0.193	29.00	
							10	Bottom	21.86	0.181	29.28	
							10	Right	21.86	0.264	27.64	
Hotspot	0	LTE Band 26	A	QPSK	1/0	26865	10	Rear	23.25	0.262	29.07	29.07
							10	Front	23.25	0.147	31.58	
							10	Top				
							10	Left	23.25	0.116	32.61	
							10	Bottom	23.25	0.177	30.77	
							10	Right	23.25	0.151	31.46	
Hotspot	0	LTE Band 66	A	QPSK	1/0	132322	10	Rear	20.47	0.263	26.27	23.71
							10	Front	20.47	0.191	27.66	
							10	Top				
							10	Left	20.47	0.097	30.60	
							10	Bottom	20.47	0.474	23.71	
							10	Right	20.47	0.044	34.04	
Hotspot	0	LTE Band 66	B	QPSK	1/99	132322	10	Rear	20.55	0.330	25.36	25.36
							10	Front	20.55	0.046	33.92	
							10	Top	20.55	0.020	37.54	
							10	Left	20.55	0.167	28.32	
							10	Bottom				
							10	Right				

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 & Hotspot exposure (RSI=Free&Hotspot) (Continued)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Hotspot	0	LTE Band 2	A	QPSK	1/0	18900	10	Rear	20.46	0.332	25.25	25.25
							10	Front	20.46	0.136	29.12	
							10	Top				
							10	Left	20.46	0.125	29.49	
							10	Bottom	20.46	0.231	26.82	
							10	Right	20.46	0.047	33.74	
Hotspot	0	LTE Band 2 Upper	B	QPSK	50/0	18700	10	Rear	20.13	0.387	24.25	24.25
							10	Front	20.13	0.060	32.35	
							10	Top	20.13	0.024	36.33	
							10	Left	20.13	0.279	25.67	
							10	Bottom				
							10	Right				
Hotspot	0	LTE Band 41	A	QPSK	1/49	41490	10	Rear	17.01	0.114	26.44	24.60
							10	Front	17.01	0.092	27.37	
							10	Top				
							10	Left	17.01	0.074	28.32	
							10	Bottom	17.01	0.174	24.60	
							10	Right	17.01	0.020	34.00	
Hotspot	0	NR Band n5	A	QPSK	50/28	167300	10	Rear	24.87	0.158	32.88	32.34
							10	Front	24.87	0.091	35.28	
							10	Top				
							10	Left	24.87	0.013	43.73	
							10	Bottom	24.87	0.179	32.34	
							10	Right	24.87	0.019	42.08	
Hotspot	0	NR Band n66	A	QPSK	1/107	349000	10	Rear	20.21	0.234	26.52	23.34
							10	Front	20.21	0.167	27.98	
							10	Top				
							10	Left	20.21	0.081	31.13	
							10	Bottom	20.21	0.486	23.34	
							10	Right	20.21	0.046	33.58	
Hotspot	0	NR Band n41	A	QPSK	1/136	518598	10	Rear	17.32	0.155	25.42	23.54
							10	Front	17.32	0.097	27.45	
							10	Top				
							10	Left	17.32	0.073	28.69	
							10	Bottom	17.32	0.239	23.54	
							10	Right	17.32	0.025	33.34	
Hotspot	0	NR Band n41 SRS1	C	CW		518598	10	Rear	16.97	0.313	22.01	22.01
							10	Front	16.97	0.156	25.04	
							10	Top	16.97	0.262	22.79	
							10	Left				
							10	Bottom				
							10	Right	16.97	0.048	30.16	
Hotspot	0	NR Band n41 SRS2	B	CW		518598	10	Rear	17.94	0.480	21.13	21.13
							10	Front	17.94	0.062	30.02	
							10	Top	17.94	0.025	33.96	
							10	Left	17.94	0.229	24.34	
							10	Bottom				
							10	Right				
Hotspot	0	NR Band n41 SRS3	F	CW		518598	10	Rear	17.56	0.231	23.92	23.92
							10	Front	17.56	0.054	30.24	
							10	Top	17.56	0.019	34.77	
							10	Left				
							10	Bottom				
							10	Right	17.56	0.074	28.87	

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 exposure (RSI=Free)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Product specific 10-g SAR (Reduce)	0	GSM 850	A	GPRS 3 Slots		190	0	Rear	24.37	0.874	28.93	28.85
							0	Front	24.37	0.681	30.02	
							0	Top				
							0	Left	24.37	0.139	36.92	
							0	Bottom	24.37	0.891	28.85	
							0	Right	24.37	0.663	30.13	
Product specific 10-g SAR (Reduce)	0	GSM 1900	A	GPRS 4 Slots		661	0	Rear	21.26	1.630	23.12	23.12
							0	Front	21.26	0.808	26.17	
							0	Top				
							0	Left	21.26	0.498	28.27	
							0	Bottom	21.26	1.240	24.31	
							0	Right	21.26	0.070	36.79	
Product specific 10-g SAR (Reduce)	0	WCDMA 5	A	Rel 99 RMC 12.2 kbps		4183	0	Rear	23.74	0.795	28.72	28.72
							0	Front	23.74	0.617	29.82	
							0	Top				
							0	Left	23.74	0.111	37.27	
							0	Bottom	23.74	0.755	28.94	
							0	Right	23.74	0.577	30.11	
Product specific 10-g SAR (Reduce)	0	WCDMA 4	A	Rel 99 RMC 12.2 kbps		1513	0	Rear	20.87	0.997	24.86	24.52
							0	Front	20.87	0.342	29.51	
							0	Top				
							0	Left	20.87	0.256	30.77	
							0	Bottom	20.87	1.080	24.52	
							0	Right	20.87	0.206	31.71	
Product specific 10-g SAR (Reduce)	0	WCDMA 2	A	Rel 99 RMC 12.2 kbps		9400	0	Rear	20.39	1.420	22.85	22.85
							0	Front	20.39	0.553	26.94	
							0	Top				
							0	Left	20.39	0.382	28.55	
							0	Bottom	20.39	0.997	24.38	
							0	Right	20.39	0.061	36.52	
Product specific 10-g SAR (Reduce)	0	LTE Band 12	A	QPSK	1/0	23095	0	Rear	23.31	0.799	28.26	28.26
							0	Front	23.31	0.271	32.96	
							0	Top				
							0	Left	23.31	0.081	38.20	
							0	Bottom	23.31	0.523	30.10	
							0	Right	23.31	0.536	30.00	
Product specific 10-g SAR (Reduce)	0	LTE Band 13	A	QPSK	1/25	23230	0	Rear	21.86	0.818	26.71	26.71
							0	Front	21.86	0.670	27.58	
							0	Top				
							0	Left	21.86	0.089	36.35	
							0	Bottom	21.86	0.759	27.04	
							0	Right	21.86	0.649	27.72	
Product specific 10-g SAR (Reduce)	0	LTE Band 26	A	QPSK	1/0	26865	0	Rear	23.25	1.000	27.23	27.23
							0	Front	23.25	0.597	29.47	
							0	Top				
							0	Left	23.25	0.098	37.32	
							0	Bottom	23.25	0.640	29.17	
							0	Right	23.25	0.695	28.81	
Product specific 10-g SAR (Reduce)	0	LTE Band 66	A	QPSK	1/0	132322	0	Rear	20.47	0.922	24.80	23.48
							0	Front	20.47	0.528	27.22	
							0	Top				
							0	Left	20.47	0.339	29.15	
							0	Bottom	20.47	1.250	23.48	
							0	Right	20.47	0.271	30.12	
Product specific 10-g SAR (Reduce)	0	LTE Band 66	B	QPSK	1/99	132322	0	Rear	20.55	1.330	23.29	23.29
							0	Front	20.55	0.152	32.71	
							0	Top	20.55	0.029	39.91	
							0	Left	20.55	0.442	28.08	
							0	Bottom				
							0	Right				

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 exposure (RSI=Free) (Continued)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	Plimit (dBm)	Minimum Plimit (dBm)
Product specific 10-g SAR (Reduce)	0	LTE Band 2	A	QPSK	1/0	18900	0	Rear	20.46	1.290	23.33	23.33
							0	Front	20.46	0.667	26.20	
							0	Top				
							0	Left	20.46	0.071	35.93	
							0	Bottom	20.46	0.919	24.81	
							0	Right	20.46	0.052	37.28	
Product specific 10-g SAR (Reduce)	0	LTE Band 2 Upper	B	QPSK	50/0	18700	0	Rear	20.13	1.540	22.23	22.23
							0	Front	20.13	0.210	30.89	
							0	Top	20.13	0.040	38.09	
							0	Left	20.13	0.841	24.86	
							0	Bottom				
							0	Right				
Product specific 10-g SAR (Reduce)	0	LTE Band 41	A	QPSK	1/49	41490	0	Rear	17.01	0.607	23.16	23.16
							0	Front	17.01	0.327	25.84	
							0	Top				
							0	Left	17.01	0.207	27.83	
							0	Bottom	17.01	0.402	24.95	
							0	Right	17.01	0.055	33.59	
Product specific 10-g SAR (Reduce)	0	NR Band n5	A	QPSK	1/52	167300	0	Rear	24.80	0.654	30.62	30.62
							0	Front	24.80	0.219	35.37	
							0	Top				
							0	Left	24.80	0.052	41.62	
							0	Bottom	24.80	0.628	30.80	
							0	Right	24.80	0.087	39.38	
Product specific 10-g SAR (Reduce)	0	NR Band n66	A	QPSK	1/107	349000	0	Rear	20.21	0.709	25.68	24.06
							0	Front	20.21	0.546	26.82	
							0	Top				
							0	Left	20.21	0.244	30.32	
							0	Bottom	20.21	1.030	24.06	
							0	Right	20.21	0.129	33.08	
Product specific 10-g SAR (Reduce)	0	NR Band n41	A	QPSK	1/136	518598	0	Rear	17.32	0.544	23.94	22.72
							0	Front	17.32	0.352	25.83	
							0	Top				
							0	Left	17.32	0.198	28.33	
							0	Bottom	17.32	0.721	22.72	
							0	Right	17.32	0.073	32.67	
Product specific 10-g SAR (Reduce)	0	NR Band n41 SRS1	C	CW		518598	0	Rear	16.97	0.743	22.24	22.00
							0	Front	16.97	0.530	23.71	
							0	Top	16.97	0.786	22.00	
							0	Left				
							0	Bottom				
							0	Right	16.97	0.148	29.25	
Product specific 10-g SAR (Reduce)	0	NR Band n41 SRS2	B	CW		518598	0	Rear	17.94	1.310	20.75	20.75
							0	Front	17.94	0.147	30.25	
							0	Top	17.94	0.039	36.01	
							0	Left	17.94	0.548	24.53	
							0	Bottom				
							0	Right				
Product specific 10-g SAR (Reduce)	0	NR Band n41 SRS3	F	CW		518598	0	Rear	17.56	0.477	24.75	24.75
							0	Front	17.56	0.148	29.84	
							0	Top	17.56	0.046	34.91	
							0	Left				
							0	Bottom				
							0	Right	17.56	0.289	26.93	

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.

END OF REPORT