

FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT
(Part 0 : SAR CHARACTERIZATION)

FOR

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

MODEL NUMBER: SC-55E, SCG28

FCC ID: A3LSMF956JPN

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TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	5/31/2024	Initial Issue	--
V2	6/12/2024	Ant.E NR Band n66 for EN-DC added. -Added band in SAR Characterizations table in Sec.6.3. -Added SAR results in Sec.7.	Taehun Kim

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1. Attestation of SAR Characterization

Applicant Name	SAMSUNG ELECTRONICS CO.,LTD.
FCC ID	A3LSMF956JPN
Model Number	SC-55E, SCG28
Applicable Standards	FCC 47 CFR § 2.1093 IEC Std 1528 IEC/IEEE Std 62209-1528 Published RF exposure KDB procedures
Report type	Part.0 : SAR Characterization
Date Tested	5/3/2024 to 6/12/2024
Part 0 Purpose	Part 0 is the procedures for determining P_{Limit} for 2G/3G/4G/5G NR sub6 and WLAN/BT 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	Sunghoon Kim Senior Laboratory Engineer UL Korea, Ltd. Suwon Laboratory

2. Introduction

The equipment under test (EUT) is SAMSUNG Smartphone (FCC ID : A3LSMF956JPN), it contains the Qualcomm modems supporting 2G/3G/4G/5G NR and WLAN/BT technologies. These modems are enable with Qualcomm Smart Transmit feature to control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is in compliance with FCC requirement.

This purpose of the part 0 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.

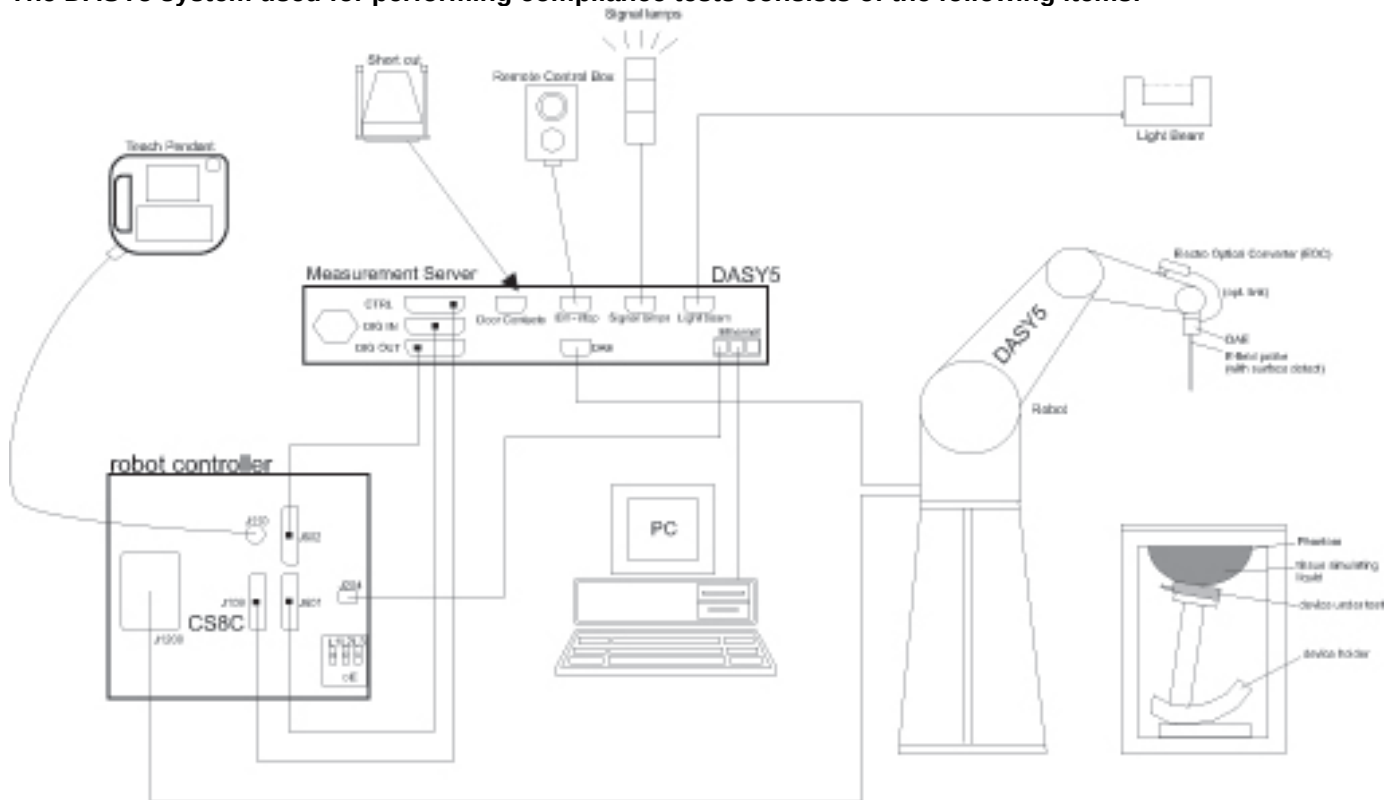
The full scope of accreditation can be viewed at

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

4. SAR Measurement System & Test Equipment

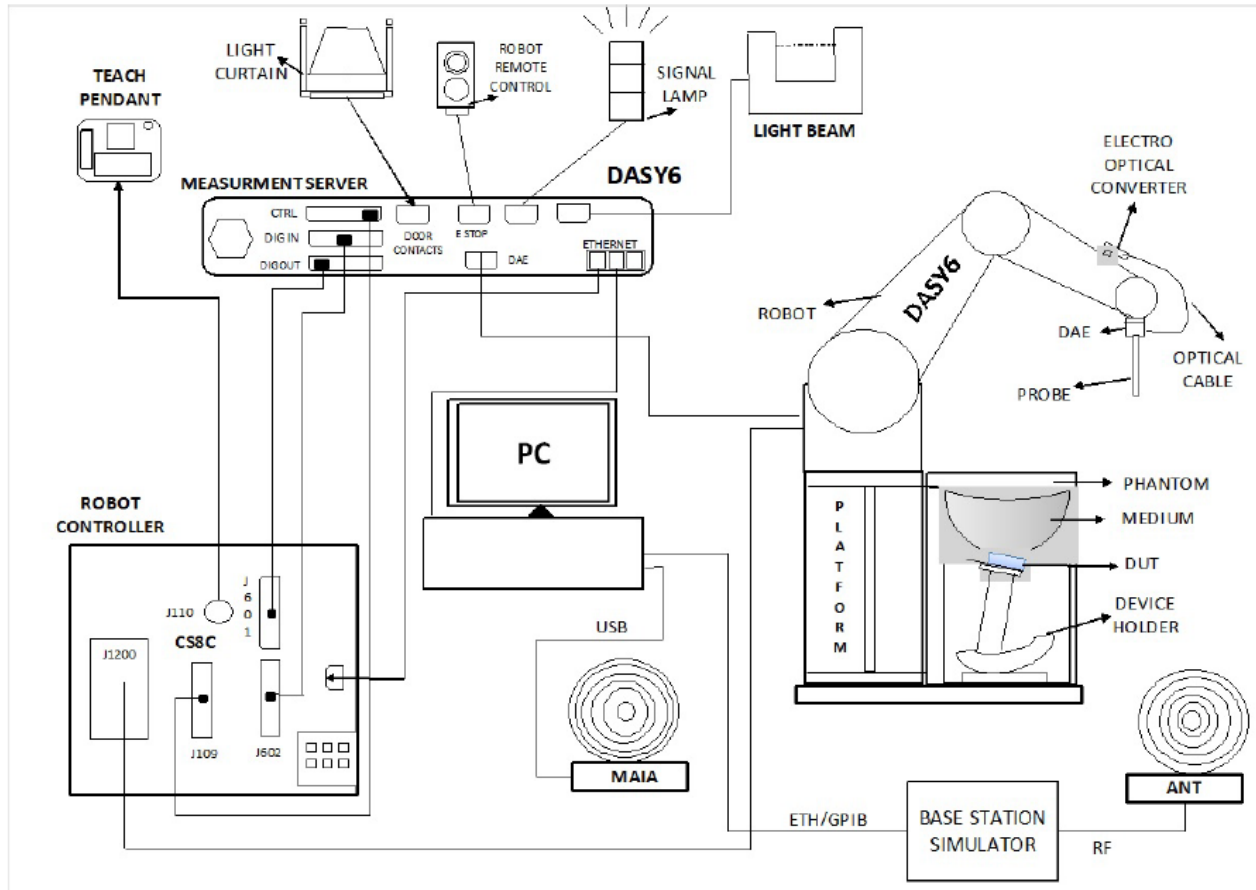
4.1. SAR Measurement System

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 Win11 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 Win11 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. 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	ROHDE & SCHWARZ	ZNB 20	102256	7-24-2024
Dielectric Assessment Kit	SPEAG	DAK-12	1158	9-20-2024
Dielectric Assessment Kit	SPEAG	DAK-3.5	1133	3-12-2025
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	7-17-2024
Vector Network Analyzer	SPEAG	DAKS_VNA R140	SN0060221	3-21-2025
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	7-25-2024
Thermometer	LKM	DTM3000	3862	7-25-2024

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	Keysight	N5181B	MY59100587	7-26-2024
MXG Analog Signal Generator	Keysight	N5173B	MY59101083	7-27-2024
MXG Analog Signal Generator	Agilent	E8257D	MY53400994	7-24-2024
Power Sensor	KEYSIGHT	U2000A	MY60180020	7-26-2024
Power Sensor	KEYSIGHT	U2000A	MY60490008	7-25-2024
Power Sensor	KEYSIGHT	U2000A	MY60160004	7-25-2024
Power Sensor	KEYSIGHT	U2000A	MY61010006	7-25-2024
Power Sensor	KEYSIGHT	U2000A	MY61010010	7-25-2024
Power Sensor	KEYSIGHT	U2004A USB Sensor	MY61200006	1-3-2025
Power Sensor	KEYSIGHT	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
Power Amplifier	Sambo	BA00T60W2D	S3010-0001	2-21-2025
Directional Coupler	Agilent	772D	MY52180193	7-25-2024
Directional Coupler	H.P	778D	16133	7-25-2024
Directional Coupler	NARDA	4216-10	02835	7-25-2024
Directional Coupler	MINI-CIRCUITS	ZMDC-30-1+	SF569102123	7-25-2024
Directional Coupler	MINI-CIRCUITS	ZUDC20-183+	N/A	7-24-2024
Directional Coupler	MINI-CIRCUITS	ZUDC20-183+	N/A	7-24-2024
Directional Coupler	KRYTAR	100318010	215541	1-4-2025
Directional Coupler	KRYTAR	100318010	215542	1-4-2025
Directional Coupler	MINI-CIRCUITS	ZMDC10-83-S+	2316	2-28-2025
Directional Coupler	MINI-CIRCUITS	ZMDC10-83-S+	2316	2-28-2025
Low Pass Filter	FILTRON	L14012FL	1410003S	7-25-2024
Low Pass Filter	MICROLAB	LA-60N	3942	7-25-2024
Low Pass Filter	MICROLAB	LA-15N	3943	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-6000+	S0141	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-6000+	S0142	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	S0143	7-25-2024
Low Pass Filter	MINI-CIRCUITS	NLP-1200+	VUU19301915	1-4-2025
Low Pass Filter	MINI-CIRCUITS	NLP-1200+	VUU19301915	1-4-2025
Low Pass Filter	MINI-CIRCUITS	NLP-1200	VUU19301915	7-25-2024
Low Pass Filter	KRYTAR	VLKX10-11000-13640-21000-60TS	1	7-25-2024
Low Pass Filter	MINI-CIRCUITS	VLF-1500+	32333	2-28-2025

Note(s):

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

Test Equipment (Continued)

Low Pass Filter	MINI-CIRCUITS	VLF-1500+	32241	2-28-2025
Low Pass Filter	MINI-CIRCUITS	VLF-3000+	32226	2-28-2025
Attenuator	KEYSIGHT	BW-S3W10+	N/A	1-4-2025
Attenuator	KEYSIGHT	8491B003	MY39272275	7-25-2024
Attenuator	KEYSIGHT	8491B003	MY39272277	7-24-2024
Attenuator	KEYSIGHT	8491B/003	VE2017A0283	7-25-2024
Attenuator	KEYSIGHT	8491B/003	MY39272276	7-25-2024
Attenuator	KEYSIGHT	8491B/010	MY39271981	7-24-2024
Attenuator	KEYSIGHT	8491B/010	MY39272011	7-25-2024
Attenuator	KEYSIGHT	8491B010	MY39272293	7-25-2024
Attenuator	KEYSIGHT	8491B010	MY39272306	7-24-2024
Attenuator	KEYSIGHT	8491B020	MY39272300	7-25-2024
Attenuator	KEYSIGHT	8491B/020	MY39272301	7-25-2024
Attenuator	KEYSIGHT	8491B/020	MY39272302	7-24-2024
Attenuator	KEYSIGHT	8491B/020	MY39271973	7-25-2024
E-Field Probe	SPEAG	EX3DV4	7313	2-21-2025
E-Field Probe	SPEAG	EX3DV4	7330	1-22-2025
E-Field Probe	SPEAG	EX3DV4	7376	7-25-2024
E-Field Probe	SPEAG	EX3DV4	7545	8-25-2024
E-Field Probe	SPEAG	EX3DV4	7645	9-20-2024
E-Field Probe	SPEAG	EX3DV4	7651	3-18-2025
E-Field Probe	SPEAG	EX3DV4	7646	3-15-2025
E-Field Probe	SPEAG	EX3DV4	7652	4-22-2025
Data Acquisition Electronics	SPEAG	DAE4	1447	3-13-2025
Data Acquisition Electronics	SPEAG	DAE4	1468	8-24-2024
Data Acquisition Electronics	SPEAG	DAE4	1494	7-17-2024
Data Acquisition Electronics	SPEAG	DAE4	1591	2-16-2025
Data Acquisition Electronics	SPEAG	DAE4	1671	4-18-2025
Data Acquisition Electronics	SPEAG	DAE4	1667	3-14-2025
Data Acquisition Electronics	SPEAG	DAE4	1343	6-30-2024
Data Acquisition Electronics	SPEAG	DAE4	912	11-17-2024
System Validation Dipole	SPEAG	CLA -13	1015	8-22-2024
System Validation Dipole	SPEAG	D750V3	1122	2-22-2025
System Validation Dipole	SPEAG	D835V2	4d194	3-11-2025
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	D2450V2	939	7-19-2024
System Validation Dipole	SPEAG	D5GHzV2	1325	4-21-2025
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	D2600V2	1097	9-26-2024
Thermometer	Lutron	MHB-382SD	AH.50215	1-4-2025
Thermometer	Lutron	MHB-382SD	AH.50213	1-4-2025
Thermometer	Lutron	MHB-382SD	AH.91463	1-4-2025
Thermometer	Lutron	MHB-382SD	AJ.42446	7-31-2024
Thermometer	Lutron	MHB-382SD	AK.12102	7-31-2024
Thermometer	Lutron	MHB-382SD	AK.12103	7-31-2024
Thermometer	Lutron	MHB-382SD	AK.12123	1-8-2025
Thermometer	Lutron	MHB-382SD	AK.18789	7-31-2024

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.

Test Equipment (Continued)**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	150314	7-26-2024
Base Station Simulator	R & S	CMW500	162790	7-26-2024
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	169802	1-3-2025
Base Station Simulator	R & S	CMW500	169799	7-26-2024
Base Station Simulator	R & S	CMW500	169800	7-27-2024
UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY57510596	7-27-2024
UXM 5G Wireless Test Platform	KEYSIGHT	E751B	MY59150850	1-3-2025
UXM 5G Wireless Test Platform	KEYSIGHT	E751B	MY57510655	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 V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 24) HSUPA (Category 6) DC-HSDPA (Category 24) HSPA+ (DL only)		100%
LTE	FDD Band 12 / FDD Band 13 FDD Band 5 / Band 66 FDD Band 4 / FDD Band 2 TDD Band 41-PC3	QPSK 16QAM 64QAM 256QAM Rel. 16 Carrier Aggregation (2 Uplink and 3 Downlinks) <u>UL CA intraband-contiguous (2CC)</u> 41C		100% (FDD) 63.3% (TDD) Power Class 3
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
NR (Sub6)	FDD Band n5 / 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) 802.11ac (VHT20) / 802.11ax (HE20)		98.87% (802.11b)
	5 GHz	802.11a / 802.11n (HT20) & (HT40) 802.11ac (VHT20) & (VHT40) & (VHT80) & (VHT160) 802.11ax (HE20) & (HE40) & (HE80) & (HE160)		98.18% (802.11n (HT40) 94.43% (802.11ac (VHT80)
	6 GHz	802.11a 802.11ax (HE20) & (HE40) & (HE80) & (HE160)		99.63% (802.11ax (HE160)
	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		76.94% (BDR)
NFC	13.56 MHz	Type A/B/F		100%
UWB	6489.6 – 7987.2 MHz	Signal Configurations(0/1/3), PRF modes(BPRF/HPRF)		100%

Notes:

1. Wi-Fi & Bluetooth were tested SAR using highest duty cycle.
2. 6GHz RF Exposure report has test results of WiFi 6GHz and UWB.

5.2. Time-Averaging for SAR

This device is enabled with Qualcomm Smart Transmit algorithm to control and manage transmitting power in real time and to ensure that the time-averaged RF exposure from 2G/3G/4G/5G NR Sub6 WWAN/WIFI/BT is compliance with FCC requirement. This part.0 report shows SAR characterization of 2G/3G/4G/5G NR Sub6 and WLAN/BT. Characterization is achieved by determining P_{limit} for 2G/3G/4G/5G NR Sub6 and WLAN/BT 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 Part 0 Report

Technology	Term	Description
2G/3G/4G/ 5G NR Sub6/ and WLAN/BT	P_{limit}	Power level that corresponds to the exposure design target (SAR_{design_target}) after accounting for all device design related uncertainties
	P_{max}	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 P_{limit} for all technologies and bands

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.

<i>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

6.2. DSI and SAR Determination

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

The device state index (DSI) conditions used in below table represent different exposure scenarios.

DSI and Corresponding Exposure Scenarios

RF exposure Scenarios	DSI No.	Description	KDB guide For SAR test
Folder Opened - Head	2	1. Next to the ear exposure condition. 2. Handset's Receiver(ear piece) is active during voice or VoIP call.	KDB 648474 D04
Folder Closed - Head	3	1. Next to the ear exposure condition. 2. Handset's Receiver(ear piece) is active during voice or VoIP call.	KDB 648474 D04
Folder Opened - Body	0	1. UMPC-mini Tablet are designed for interactive hand-held use next to or near the body of users.	KDB 941225 D07
Folder Closed - Body	1	1. Handsets supports Hotspot mode that Active near body. 2. Handsets are carried in body-worn accessories. 3. Hand use conditions for Handsets(Phablet).	KDB 648474 D04 KDB 941225 D06

6.3. SAR Char

SAR results corresponding to P_{max} for each antenna/technology/band/DSI 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.

P_{Limit} Determination

Device State Index (DSI)	P_{limit} Determination Scenarios
DSI = 0	The worst-case SAR exposure is determined as maximum SAR normalized to the limit among; 1. Body 1-g SAR at 10 mm in Folder Open condition. 2. Extremity 10-g SAR at 0 mm in Folder Open condition.
DSI = 1	The worst-case SAR exposure is determined as maximum SAR normalized to the limit among; 1. Bodyworn & Hotspot 1g SAR at 10 mm in Folder Close condition. 2. Product Specific 10g SAR at 0 mm in Folder Close condition.
DSI = 2 or 3	1. P_{limit} is calculated based on Head exposure SAR

Notes:

1. For DSI = 1, P_{limit} is calculated by:

All Antennas

$P_{limit} = \min\{ P_{limit} \text{ corresponding to Body-worn \& Hotspot 1g SAR evaluation at 10mm spacing,}$
 $P_{limit} \text{ corresponding to Product specific 10g SAR evaluation at 0 mm on all surfaces and side edges with each antenna}$
location at within 25mm from that surface or edge.}

2. For DSI = 0, P_{limit} is calculated by:

All Antennas

$P_{limit} = \min\{ P_{limit} \text{ corresponding to Body 1-g SAR evaluation at 10mm spacing,}$
 $P_{limit} \text{ corresponding to Extremity 10-g SAR evaluation at 0 mm on all surfaces and side edges with each antenna}$
location at within 25mm from that surface or edge.}

SAR Characterizations

Exposure condition			Folder Open UMPC Body 1-g	Folder Open UMPC Extremity 10-g	Folder Closed Head	Folder Closed Bodyworn & Hotspot	Folder Closed Phablet Specific 10-g SAR	P _{max} (Maximum tune-up Power) (dBm)
Spatial-average			1g	10g	1g	1g	10g	
Test distance (mm)			10	0	0	10	0	
Configuration			Folder Open	Folder Open	Folder Close	Folder Close	Folder Close	
DSI :			0	3	1			
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, A+B	AG 0	26.20		31.3		26.7	25.3
GSM 1900	B	AG 0	18.30		31.9		18.3	21.8
WCDMA 5	A, A+B	AG 0	25.00		29.5		24.6	24.3
LTE Band 5	A, A+B	AG 0	25.70		28.7		24.9	24.5
LTE Band 12	A, A+B	AG 0	25.20		28.5		25.0	24.2
LTE Band 13	A, A+B	AG 0	26.80		29.1		25.7	24.5
LTE Band 2	B	AG 0	18.00		30.0		19.0	24.0
LTE Band 66(4)	B	AG 0	19.00		31.6		19.0	24.0
LTE Band 41 PC3	B	AG 0	15.50		30.5		18.0	22.0
LTE Band 41 PC3	E	AG 1	19.00		22.7		19.0	22.0
NR Band n5	A, A+B	AG 0	25.50		29.4		24.8	24.0
NR Band n66	B	AG 0	19.00		29.9		19.0	24.0
NR Band n66	E	AG 1	20.00		21.5		20.0	23.5
NR Band n41	E	AG 1	19.00		22.0		19.0	24.0
NR Band n41	B	AG 0	16.50		32.5		18.0	24.0
DTS SISO Ant. 1	G	AG 1	17.00		17.0		17.0	19.0
DTS SISO Ant. 2	F	AG 1	17.00		17.0		17.0	19.0
DTS MIMO	G+F	AG 1	17.00		17.0		17.0	19.0
UNII-2A SISO Ant. 1	G	AG 1	18.50		19.7		20.2	17.0
UNII-2A SISO Ant. 2	D	AG 1	22.00		25.6		22.1	17.0
UNII-2A MIMO	D+G	AG 1	18.50		19.3		19.4	17.0
UNII-2C SISO Ant. 1	G	AG 1	20.00		22.8		20.4	17.0
UNII-2C SISO Ant. 2	D	AG 1	21.50		24.6		20.9	17.0
UNII-2C MIMO	D+G	AG 1	18.50		22.2		19.9	17.0
UNII-3 SISO Ant. 1	G	AG 1	19.00		22.0		21.1	17.0
UNII-3 SISO Ant. 2	D	AG 1	21.10		21.1		20.8	17.0
UNII-3 MIMO	D+G	AG 1	18.70		20.8		20.5	17.0
UNI-4 SISO Ant. 1	G	AG 1	18.70		20.7		21.9	17.0
UNI-4 SISO Ant. 2	D	AG 1	20.70		21.2		21.7	17.0
UNI-4 MIMO	D+G	AG 1	18.50		19.1		20.2	17.0
WiFi 6E SISO Ant. 1	G	AG 1	10.00		12.0		12.0	16.0
WiFi 6E SISO Ant. 2	D	AG 1	10.00		12.0		12.0	16.0
WiFi 6E MIMO	D+G	AG 1	10.00		12.0		12.0	16.0
Bluetooth Ant. 1	G	AG 1	24.80		31.4		26.1	18.5
Bluetooth Ant. 2	F	AG 1	22.20		24.3		20.9	18.5
Bluetooth MIMO	G+F	AG 1	23.40		27.0		23.6	18.0

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} EFS 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 TDD modulation schemes (e.g GSM and LTE TDD).
4. P_{limit} (DSI=0) was determined to be the lower of "UMPC Body 1-g" and "UMPC Extremity 10-g" in each Bands.
5. P_{limit} (DSI=1) was determined to be the lower of "Body-worn & Hotspot" and "Product Specific 10-g" in each Bands.
6. Some band's DSIs were determined more conservative P_{limit} instead of calculation P_{limit} in Section.7.

7. SAR Test results for P_{limit} calculations

Head exposure (DSI = 2, 3)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P_{limit} (dBm)	Minimum P_{limit} (dBm)
Head	3	GSM 850	A	GPRS 2 Slots		190	0	Left Touch	25.00	0.042	38.77	34.10
							0	Left Tilt	25.00	0.057	37.44	
							0	Right Touch	25.00	0.093	35.32	
							0	Right Tilt	25.00	0.036	39.44	
			A+B	GPRS 2 Slots		190	0	Left Touch	25.00	0.096	35.18	
							0	Left Tilt	25.00	0.074	36.31	
							0	Right Touch	25.00	0.123	34.10	
							0	Right Tilt	25.00	0.088	35.56	
Head	3	GSM 1900	B	GPRS 2 Slots		661	0	Left Touch	21.48	0.043	35.15	34.67
							0	Left Tilt	21.48	0.019	38.69	
							0	Right Touch	21.48	0.048	34.67	
							0	Right Tilt	21.48	0.028	37.01	
Head	3	WCDMA 5	A	Rel 99		4183	0	Left Touch	24.43	0.119	33.67	32.20
							0	Left Tilt	24.43	0.076	35.62	
							0	Right Touch	24.43	0.144	32.85	
							0	Right Tilt	24.43	0.085	35.14	
			A+B	Rel 99		4183	0	Left Touch	24.43	0.167	32.20	
							0	Left Tilt	24.43	0.095	34.65	
							0	Right Touch	24.43	0.164	32.28	
							0	Right Tilt	24.43	0.102	34.34	
Head	3	LTE Band 5	A	QPSK BW = 10	1/0	20525	0	Left Touch	24.31	0.135	33.01	31.39
							0	Left Tilt	24.31	0.083	35.12	
							0	Right Touch	24.31	0.159	32.30	
							0	Right Tilt	24.31	0.121	33.48	
			A+B	QPSK BW = 10	1/0	20525	0	Left Touch	24.31	0.162	32.21	
							0	Left Tilt	24.31	0.094	34.58	
							0	Right Touch	24.31	0.196	31.39	
							0	Right Tilt	24.31	0.118	33.59	
Head	3	LTE Band 12	A	QPSK BW = 10	1/49	23095	0	Left Touch	23.76	0.100	33.76	31.18
							0	Left Tilt	23.76	0.058	36.13	
							0	Right Touch	23.76	0.127	32.72	
							0	Right Tilt	23.76	0.054	36.44	
			A+B	QPSK BW = 10	1/49	23095	0	Left Touch	23.76	0.122	32.90	
							0	Left Tilt	23.76	0.077	34.90	
							0	Right Touch	23.76	0.181	31.18	
							0	Right Tilt	23.76	0.089	34.27	
Head	3	LTE Band 13	A	QPSK BW = 10	1/25	23230	0	Left Touch	24.78	0.091	35.19	31.86
							0	Left Tilt	24.78	0.043	38.45	
							0	Right Touch	24.78	0.130	33.64	
							0	Right Tilt	24.78	0.060	37.00	
			A+B	QPSK BW = 10	1/25	23230	0	Left Touch	24.78	0.120	33.99	
							0	Left Tilt	24.78	0.071	36.27	
							0	Right Touch	24.78	0.196	31.86	
							0	Right Tilt	24.78	0.091	35.19	
Head	3	LTE Band 2	B	QPSK BW = 20	1/0	18700	0	Left Touch	23.98	0.132	32.77	32.77
							0	Left Tilt	23.98	0.085	34.69	
							0	Right Touch	23.98	0.127	32.94	
							0	Right Tilt	23.98	0.086	34.64	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Head exposure (DSI = 2, 3)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Head	3	LTE Band 66(4)	B	QPSK BW = 20	1/0	132072	0	Left Touch	24.31	0.075	35.56	34.35
							0	Left Tilt	24.31	0.048	37.50	
							0	Right Touch	24.31	0.099	34.35	
							0	Right Tilt	24.31	0.036	38.75	
Head	3	LTE Band 41 PC3	B	QPSK BW = 20	1/0	41055	0	Left Touch	22.40	0.074	33.71	33.71
							0	Left Tilt	22.40	0.062	34.48	
							0	Right Touch	22.40	0.069	34.01	
							0	Right Tilt	22.40	0.017	40.10	
Head	3	LTE Band 41 PC3	E	QPSK BW = 20	1/49	41490	0	Left Touch	21.66	0.607	23.83	22.73
							0	Left Tilt	21.66	0.781	22.73	
						41055	0	Right Touch	22.06	0.406	25.97	
							41490	0	Right Tilt	21.66	0.554	
Head	3	NR Band n5	A	DFT-s OFDM QPSK BW= 20	1/1	167300	0	Left Touch	24.25	0.124	33.32	32.15
							0	Left Tilt	24.25	0.077	35.39	
							0	Right Touch	24.25	0.124	33.32	
							0	Right Tilt	24.25	0.078	35.33	
			A+B	DFT-s OFDM QPSK BW= 20	50/28	167300	0	Left Touch	24.05	0.123	33.15	
							0	Left Tilt	24.05	0.081	34.97	
							0	Right Touch	24.05	0.155	32.15	
					1/1		0	Right Tilt	24.25	0.066	36.05	
Head	3	NR Band n66	B	DFT-s OFDM QPSK BW=40	108/54	349000	0	Left Touch	24.43	0.114	33.86	32.67
							0	Left Tilt	24.43	0.060	36.65	
							0	Right Touch	24.43	0.150	32.67	
							0	Right Tilt	24.43	0.149	32.70	
Head	3	NR Band n66	E	DFT-s OFDM QPSK BW=40	108/54	349000	0	Left Touch	21.40	0.381	25.59	24.34
							0	Left Tilt	21.40	0.508	24.34	
							0	Right Touch	21.40	0.406	25.31	
							0	Right Tilt	21.40	0.479	24.60	
Head	3	NR Band n41	E	DFT-s OFDM QPSK BW=100	135/69	518598	0	Left Touch	22.67	0.494	25.73	24.10
					1/1		0	Left Tilt	22.67	0.719	24.10	
							0	Right Touch	22.79	0.460	26.16	
							0	Right Tilt	22.79	0.623	24.85	
Head	3	NR Band n41	B	DFT-s OFDM QPSK BW=100	1/1	518598	0	Left Touch	24.76	0.077	35.90	35.27
							0	Left Tilt	24.76	0.036	39.20	
							0	Right Touch	24.76	0.089	35.27	
							0	Right Tilt	24.76	0.029	40.14	
Head	3	DTS SISO Ant. 1	G	802.11b 1Mbps		1	0	Left Touch	17.21	0.104	27.04	27.04
Head	3	DTS SISO Ant. 2	F	802.11b 1Mbps		1	0	Left Tilt	17.96	0.317	22.95	22.95
Head	3	DTS MIMO	G+F	802.11b 1Mbps		1	0	Left Tilt	17.93	0.361	22.35	22.35
Head	3	UNII-2A SISO Ant. 1	G	802.11n (HT40)		54	0	Left Touch	16.68	0.496	19.73	19.73
Head	3	UNII-2A SISO Ant. 2	D	802.11n (HT40)		54	0	Left Touch	17.30	0.145	25.69	25.69
Head	3	UNII-2A MIMO	G+D	802.11n (HT40)		54	0	Left touch	16.70	0.544	19.34	19.34

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Head exposure (DSI = 2, 3)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Head	3	UNII-3 SISO Ant. 1	G	802.11ac (VHT80)		155	0	Right Touch	17.05	0.318	22.03	22.03
Head	3	UNII-3 SISO Ant. 2	D	802.11ac (VHT80)		155	0	Left Tilt	17.51	0.429	21.19	21.19
Head	3	UNII-3 MIMO	G+D	802.11ac (VHT80)		155	0	Left Tilt	17.42	0.457	20.82	20.82
Head	3	UNII-4 SISO Ant. 1	G	802.11ac (VHT80)		171	0	Right Touch	17.04	0.424	20.77	20.77
Head	3	UNII-4 SISO Ant. 2	D	802.11ac (VHT80)		171	0	Left Tilt	17.33	0.408	21.22	21.22
Head	3	UNII-4 MIMO	G+D	802.11ac (VHT80)		171	0	Left Tilt	17.24	0.646	19.14	19.14
Head	3	WiFi 6E SISO Ant. 1	G	802.11ax (HE160)		15	0	Right Touch	12.60	0.243	18.74	18.74
Head	3	WiFi 6E SISO Ant. 2	D	802.11ax (HE160)		143	0	Left Touch	12.50	0.120	21.71	21.71
Head	3	WiFi 6E MIMO	G+D	802.11ax (HE160)		207	0	Left Touch	12.95	0.145	21.34	21.34
Head	3	Bluetooth Ant. 1	G	GFSK DH5		39	0	Left Touch	18.25	0.048	31.44	31.44
							0	Left Tilt	18.25	0.018	35.70	
							0	Right Touch	18.25	0.022	34.83	
							0	Right Tilt	18.25	0.006	40.47	
Head	3	Bluetooth Ant. 2	F	GFSK DH5		39	0	Left Touch	17.93	0.167	25.70	24.31
							0	Left Tilt	17.93	0.230	24.31	
							0	Right Touch	17.93	0.152	26.11	
							0	Right Tilt	17.93	0.215	24.61	
Head	3	Bluetooth MIMO	G+F	GFSK DH5		0	0	Left Touch	15.51	0.070	27.06	27.06
							0	Left Tilt	14.98	0.052	27.82	
							0	Right Touch	15.51	0.047	28.79	
							0	Right Tilt	14.98	0.062	27.06	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Body-worn & Hotspot exposure (DSI = 1)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Bodyworn & Hotspot	1	GSM 850	A	GPRS 2 Slots		190	10	Rear	25.00	0.225	31.48	28.69
							10	Front	25.00	0.054	37.68	
							10	Bottom	25.00	0.063	37.01	
							10	Right	25.00	0.148	33.30	
			A+B	GPRS 2 Slots		190	10	Rear	25.00	0.428	28.69	
							10	Front	25.00	0.137	33.63	
							10	Left	25.00	0.130	33.86	
							10	Bottom	25.00	0.127	33.96	
Bodyworn & Hotspot	1	GSM 1900	B	GPRS 4 Slots		661	10	Right	25.00	0.325	29.88	20.60
							10	Rear	18.43	0.532	21.17	
							10	Front	18.43	0.120	27.64	
							10	Left	18.43	0.066	30.23	
							10	Bottom	18.43	0.607	20.60	
Bodyworn & Hotspot	1	WCDMA 5	A	Rel 99		4183	10	Right	18.43	0.140	26.97	27.96
							10	Rear	24.43	0.380	28.63	
							10	Front	24.43	0.143	32.88	
							10	Bottom	24.43	0.163	32.31	
			A+B	Rel 99		4183	10	Right	24.43	0.354	28.94	
							10	Rear	24.43	0.444	27.96	
							10	Front	24.43	0.166	32.23	
							10	Left	24.43	0.145	32.82	
							10	Bottom	24.43	0.153	32.58	
							10	Right	24.43	0.444	27.96	
Bodyworn & Hotspot	1	LTE Band 5	A	QPSK BW = 10	1/0	20525	10	Rear	24.31	0.402	31.83	27.95
							10	Front	24.31	0.177	33.34	
							10	Bottom	24.31	0.125	33.34	
							10	Right	24.31	0.304	29.48	
			A+B	QPSK BW = 10	1/0	20525	10	Rear	24.31	0.433	27.95	
							10	Front	24.31	0.180	31.76	
							10	Left	24.31	0.207	31.15	
							10	Bottom	24.31	0.209	31.11	
Bodyworn & Hotspot	1	LTE Band 12	A	QPSK BW = 10	1/49	23095	10	Right	24.31	0.334	29.07	28.03
							10	Rear	23.76	0.242	29.92	
							10	Front	23.76	0.113	33.23	
							10	Bottom	23.76	0.117	33.08	
			A+B	QPSK BW = 10	1/49	23095	10	Right	23.76	0.280	29.29	
							10	Rear	23.76	0.310	28.85	
							10	Front	23.76	0.140	32.30	
							10	Left	23.76	0.124	32.83	
Bodyworn & Hotspot	1	LTE Band 13	A	QPSK BW = 10	1/25	23230	10	Bottom	23.76	0.195	30.86	28.21
							10	Right	23.76	0.374	28.03	
							10	Rear	24.78	0.337	29.50	
							10	Front	24.78	0.137	33.41	
			A+B	QPSK BW = 10	1/25	23230	10	Bottom	24.78	0.117	34.10	
							10	Right	24.78	0.339	29.48	
							10	Rear	24.78	0.354	29.29	
							10	Front	24.78	0.192	31.95	
							10	Left	24.78	0.143	33.23	
							10	Bottom	24.78	0.180	32.23	
							10	Right	24.78	0.454	28.21	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Body-worn & Hotspot exposure (DSI = 1)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Bodyworn & Hotspot	1	LTE Band 2	B	QPSK BW = 20	50/24	18700	10	Rear	19.03	0.840	19.79	19.21
					1/0		10	Front	19.03	0.201	26.00	
							10	Left	19.01	0.088	29.57	
							10	Bottom	19.01	0.955	19.21	
							10	Right	19.01	0.155	27.11	
Bodyworn & Hotspot	1	LTE Band 66(4)	B	QPSK BW = 20	50/0	132072	10	Rear	19.12	0.516	21.99	21.96
					1/0		10	Front	19.12	0.087	29.72	
							10	Left	19.12	0.060	31.34	
							10	Bottom	19.09	0.516	21.96	
							50/0	10	Right	19.12	0.138	
Bodyworn & Hotspot	1	LTE Band 41 PC3	B	QPSK BW = 20	1/0	39750	10	Rear	18.56	0.415	22.38	18.09
							10	Front	18.56	0.086	29.22	
						41055	10	Left	18.56	0.038	32.76	
							10	Bottom	18.46	1.090	18.09	
							39750	10	Right	18.56	0.073	
Bodyworn & Hotspot	1	LTE Band 41 PC3	E	QPSK BW = 20	1/49	41055	10	Rear	19.03	0.380	23.23	21.79
							10	Front	19.03	0.084	29.79	
					50/50	41490	10	Top	18.93	0.518	21.79	
						41055	10	Left	19.05	0.058	31.42	
Bodyworn & Hotspot	1	NR Band n5	A	DFT-s OFDM QPSK BW= 20	1/1	167300	10	Rear	24.25	0.404	28.19	28.19
							10	Front	24.25	0.147	32.58	
							10	Bottom	24.25	0.129	33.14	
							10	Right	24.25	0.290	29.63	
			A+B	DFT-s OFDM QPSK BW= 20	167300	50/28	10	Rear	24.05	0.339	28.75	
						1/1	10	Front	24.05	0.163	31.93	
						50/28	10	Left	24.25	0.187	31.53	
						1/1	10	Bottom	24.05	0.135	32.75	
						10	Right	24.25	0.349	28.82		
						10	Left	24.25	0.349	28.82		
Bodyworn & Hotspot	1	NR Band n66	B	DFT-s OFDM QPSK BW=40	108/54	349000	10	Rear	19.32	0.736	20.65	20.65
							10	Front	19.32	0.213	26.04	
							10	Left	19.32	0.086	29.98	
							10	Bottom	19.32	0.608	21.48	
							10	Right	19.32	0.149	27.59	
Bodyworn & Hotspot	1	NR Band n66	E	DFT-s OFDM QPSK BW=40	108/54	349000	10	Rear	19.86	0.556	22.41	22.39
							10	Front	19.86	0.123	28.96	
							10	Top	19.86	0.559	22.39	
							10	Left	19.86	0.103	29.73	
Bodyworn & Hotspot	1	NR Band n41	E	DFT-s OFDM QPSK BW=100	1/1	518598	10	Rear	19.75	0.389	23.85	23.08
					135/0		10	Front	19.59	0.078	30.67	
					1/1		10	Top	19.75	0.464	23.08	
							10	Left	19.75	0.079	30.77	
							10	Right	19.75	0.079	30.77	
Bodyworn & Hotspot	1	NR Band n41	B	DFT-s OFDM QPSK BW=100	135/69	518598	10	Rear	18.51	0.496	21.56	19.62
					1/1		10	Front	18.51	0.083	29.32	
					135/69		10	Left	18.78	0.043	32.45	
							10	Bottom	18.51	0.775	19.62	
							10	Right	18.51	0.091	28.92	
Bodyworn & Hotspot	1	DTS SISO Ant. 1	G	802.11b 1Mbps		1	10	Rear	17.21	0.139	25.78	25.78
Bodyworn & Hotspot	1	DTS SISO Ant. 2	F	802.11b 1Mbps		1	10	Top	17.96	0.363	22.36	22.36
Bodyworn & Hotspot	1	DTS MIMO	G+F	802.11b 1Mbps		1	10	Top	17.93	0.350	22.49	22.49

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Body-worn & Hotspot exposure (DSI = 1)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Bodyworn & Hotspot	1	UNII-2A SISO Ant. 1	G	802.11n (HT40)		54	10	Rear	16.68	0.190	23.89	23.89
Bodyworn & Hotspot	1	UNII-2A SISO Ant. 2	D	802.11n (HT40)		54	10	Rear	17.30	0.253	23.27	23.27
Bodyworn & Hotspot	1	UNII-2A MIMO	G+D	802.11n (HT40)		54	10	Rear	16.70	0.371	21.01	21.01
Bodyworn & Hotspot	1	UNII-2C SISO Ant. 1	G	802.11ac (VHT80)		122	10	Rear	17.08	0.217	23.72	23.72
Bodyworn & Hotspot	1	UNII-2C SISO Ant. 2	D	802.11ac (VHT80)		122	10	Rear	17.59	0.376	21.84	21.84
Bodyworn & Hotspot	1	UNII-2C MIMO	G+D	802.11ac (VHT80)		122	10	Rear	17.50	0.462	20.85	20.85
Bodyworn & Hotspot	1	UNII-3 SISO Ant. 1	G	802.11ac (VHT80)		155	10	Rear	17.05	0.220	23.63	23.63
Bodyworn & Hotspot	1	UNII-3 SISO Ant. 2	D	802.11ac (VHT80)		155	10	Rear	17.51	0.276	23.10	23.10
Bodyworn & Hotspot	1	UNII-3 MIMO	G+D	802.11ac (VHT80)		155	10	Rear	17.42	0.450	20.89	20.89
Bodyworn & Hotspot	1	UNII-4 SISO Ant. 1	G	802.11ac (VHT80)		171	10	Rear	17.04	0.244	23.17	23.17
Bodyworn & Hotspot		UNII-4 SISO Ant. 2	D	802.11ac (VHT80)		171	10	Rear	17.33	0.282	22.83	22.83
Bodyworn & Hotspot	1	UNII-4 MIMO	G+D	802.11ac (VHT80)		171	10	Rear	17.24	0.352	21.77	21.77
Bodyworn & Hotspot	1	WiFi 6E SISO Ant. 1	G	802.11ax (HE160)		15	10	Rear	12.60	0.033	27.41	27.41
Bodyworn & Hotspot	1	WiFi 6E SISO Ant. 2	D	802.11ax (HE160)		143	10	Rear	12.50	0.190	19.71	19.71
Bodyworn & Hotspot	1	WiFi 6E MIMO	G+D	802.11ax (HE160)		207	10	Rear	12.95	0.241	19.13	19.13
Bodyworn & Hotspot	1	Bluetooth Ant. 1	G	GFSK DH5		39	10	Rear	18.25	0.093	28.57	28.04
							10	Front	18.25	0.023	34.63	
							10	Right	18.25	0.105	28.04	
Bodyworn & Hotspot	1	Bluetooth Ant. 2	F	GFSK DH5		39	10	Rear	17.93	0.185	25.26	23.66
							10	Front	17.93	0.054	30.61	
							10	Top	17.93	0.267	23.66	
							10	Left	17.93	0.009	38.39	
							10	Right	17.93	0.031	33.02	
Bodyworn & Hotspot	1	Bluetooth MIMO	G+F	GFSK DH5		0	10	Rear	15.51	0.084	26.27	26.17
							10	Front	14.98	0.029	30.36	
							10	Top	14.98	0.056	27.50	
							10	Left	14.98	0.002	41.97	
							10	Right	15.51	0.086	26.17	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Product Specific 10-g exposure (DSI = 1)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Product Specific-10g	1	GSM 850	A	GPRS 2 Slots		190	0	Rear	25.00	1.100	28.57	26.75
							0	Front	25.00	0.089	39.49	
							0	Bottom	25.00	0.973	29.10	
							0	Right	25.00	1.390	27.55	
			A+B	GPRS 2 Slots		190	0	Rear	25.00	1.280	27.91	
							0	Front	25.00	0.152	37.16	
							0	Left	25.00	0.073	40.35	
							0	Bottom	25.00	1.670	26.75	
Bodyworn & Hotspot	1	GSM 1900	B	GPRS 4 Slots		661	0	Right	25.00	1.030	28.85	20.86
							0	Rear	18.43	0.828	23.23	
							0	Front	18.43	0.395	26.44	
							0	Left	18.43	0.143	30.86	
							0	Bottom	18.43	1.430	20.86	
Bodyworn & Hotspot	1	WCDMA 5	A	Rel 99		4183	0	Right	18.43	0.362	26.82	24.66
							0	Rear	24.43	2.370	24.66	
							0	Front	24.43	0.208	35.23	
							0	Bottom	24.43	1.880	25.67	
			A+B	Rel 99		4183	0	Right	24.43	1.940	25.53	
							0	Rear	24.43	1.940	25.53	
							0	Front	24.43	0.204	35.31	
							0	Left	24.43	0.080	39.38	
Bodyworn & Hotspot	1	LTE Band 5	A	QPSK BW = 10	1/0	20525	0	Bottom	24.43	1.410	26.92	24.99
							0	Right	24.43	1.590	26.40	
							0	Rear	24.31	2.140	24.99	
							0	Front	24.31	0.236	34.56	
			A+B	QPSK BW = 10	1/0	20525	0	Bottom	24.31	2.120	25.03	
							0	Right	24.31	1.970	25.34	
							0	Rear	24.31	1.850	25.62	
							0	Front	24.31	0.198	35.32	
Bodyworn & Hotspot	1	LTE Band 12	A	QPSK BW = 10	1/49	23095	0	Left	24.31	0.083	39.10	25.02
							0	Bottom	24.31	1.340	27.02	
							0	Right	24.31	1.560	26.36	
							0	Rear	23.76	1.260	26.74	
			A+B	QPSK BW = 10	1/49	23095	0	Front	23.76	0.182	35.14	
							0	Bottom	23.76	1.470	26.07	
							0	Right	23.76	1.870	25.02	
							0	Rear	23.76	1.630	25.62	
Bodyworn & Hotspot	1	LTE Band 13	A	QPSK BW = 10	1/25	23230	0	Front	23.76	0.184	35.09	25.77
							0	Left	23.76	0.062	39.82	
							0	Bottom	23.76	0.984	27.81	
							0	Right	23.76	1.140	27.17	
			A+B	QPSK BW = 10	1/25	23230	0	Rear	24.78	1.990	25.77	
							0	Front	24.78	0.145	37.15	
							0	Bottom	24.78	1.970	25.81	
							0	Right	24.78	1.620	26.66	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Product Specific 10-g exposure (DSI = 1)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Bodyworn & Hotspot	1	LTE Band 2	B	QPSK BW = 20	1/0	18700	0	Rear	19.01	2.240	19.49	19.12
							0	Front	19.01	0.535	25.71	
							0	Left	19.01	0.165	30.81	
							0	Bottom	19.01	2.440	19.12	
							0	Right	19.01	0.404	26.93	
Bodyworn & Hotspot	1	LTE Band 66(4)	B	QPSK BW = 20	1/0	132072	0	Rear	19.09	1.390	21.64	21.46
							0	Front	19.09	0.116	32.42	
							0	Left	19.09	0.108	32.74	
							0	Bottom	19.09	1.450	21.46	
							0	Right	19.09	0.217	29.70	
Bodyworn & Hotspot	1	LTE Band 41 PC3	B	QPSK BW = 20	1/0	39750	0	Rear	18.56	1.490	20.81	18.09
							0	Front	18.56	0.244	28.67	
							0	Left	18.56	0.098	32.63	
					50/0	41055	0	Bottom	18.41	2.690	18.09	
					1/0	39750	0	Right	18.56	0.161	30.47	
Bodyworn & Hotspot	1	LTE Band 41 PC3	E	QPSK BW = 20	1/49	41055	0	Rear	19.03	0.472	26.27	21.11
							0	Front	19.03	0.131	31.84	
							0	Top	19.03	1.550	21.11	
							0	Left	19.03	0.150	31.25	
							0	Rear	24.25	1.900	25.44	
Bodyworn & Hotspot	1	NR Band n5	A	DFT-s OFDM QPSK BW= 20	1/1	167300	0	Front	24.25	0.157	36.27	24.84
							0	Bottom	24.25	1.910	25.42	
							0	Right	24.25	2.180	24.84	
							0	Rear	24.25	1.270	27.19	
			A+B	DFT-s OFDM QPSK BW= 20	1/1	167300	0	Front	24.25	0.144	36.65	
							0	Left	24.25	0.071	39.72	
							0	Bottom	24.25	1.700	25.92	
							0	Right	24.25	1.290	27.12	
							0	Rear	19.29	1.520	21.45	
							0	Front	19.29	0.451	26.73	
Bodyworn & Hotspot	1	NR Band n66	B	DFT-s OFDM QPSK BW=40	1/1	349000	0	Left	19.29	0.114	32.70	21.45
							0	Bottom	19.29	1.480	21.57	
							0	Right	19.29	0.167	31.04	
							0	Rear	19.89	0.829	24.68	
Bodyworn & Hotspot	1	NR Band n66	E	DFT-s OFDM QPSK BW=40	1/1	34900	0	Front	19.89	0.243	30.01	21.04
							0	Top	19.89	1.920	21.04	
							0	Left	19.89	0.225	30.35	
							0	Rear	19.75	0.500	26.74	
Bodyworn & Hotspot	1	NR Band n41	E	DFT-s OFDM QPSK BW=100	1/1	518598	0	Front	19.75	0.127	32.69	20.41
							0	Top	19.75	2.150	20.41	
							0	Left	19.75	0.204	30.63	
							0	Rear	18.78	2.340	19.07	
Bodyworn & Hotspot	1	NR Band n41	B	DFT-s OFDM QPSK BW=100	1/1	518598	0	Front	18.78	0.248	28.81	18.46
							0	Left	18.78	0.126	31.76	
							0	Bottom	18.78	2.690	18.46	
							0	Right	18.78	0.140	31.30	
Bodyworn & Hotspot	1	DTS SISO Ant. 1	G	802.11b 1Mbps		1	0	Right	17.21	0.580	23.56	23.56
Bodyworn & Hotspot	1	DTS SISO Ant. 2	F	802.11b 1Mbps		1	0	Top	17.96	1.730	19.56	19.56
Bodyworn & Hotspot	1	DTS MIMO	G+F	802.11b 1Mbps		1	0	Top	17.93	1.680	19.66	19.66

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

Product Specific 10-g exposure (DSI = 1)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 10g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Bodyworn & Hotspot	1	UNII-2A SISO Ant. 1	G	802.11n (HT40)		54	0	Right	16.68	1.110	20.21	20.21
Bodyworn & Hotspot	1	UNII-2A SISO Ant. 2	D	802.11n (HT40)		54	0	Top	17.30	0.826	22.11	22.11
Bodyworn & Hotspot	1	UNII-2A MIMO	G+D	802.11n (HT40)		54	0	Right	16.70	1.320	19.47	19.47
Bodyworn & Hotspot	1	UNII-2C SISO Ant. 1	G	802.11ac (VHT80)		122	0	Right	17.08	1.150	20.45	20.45
Bodyworn & Hotspot	1	UNII-2C SISO Ant. 2	D	802.11ac (VHT80)		122	0	Top	17.59	1.160	20.92	20.92
Bodyworn & Hotspot	1	UNII-2C MIMO	G+D	802.11ac (VHT80)		122	0	Top	17.50	1.420	19.96	19.96
Bodyworn & Hotspot	1	UNII-3 SISO Ant. 1	G	802.11ac (VHT80)		155	0	Right	17.05	0.973	21.15	21.15
Bodyworn & Hotspot	1	UNII-3 SISO Ant. 2	D	802.11ac (VHT80)		155	0	Top	17.51	1.170	20.81	20.81
Bodyworn & Hotspot	1	UNII-3 MIMO	G+D	802.11ac (VHT80)		155	0	Top	17.42	1.230	20.50	20.50
Bodyworn & Hotspot	1	UNII-4 SISO Ant. 1	G	802.11ac (VHT80)		171	0	Right	17.04	0.816	21.90	21.90
Bodyworn & Hotspot	1	UNII-4 SISO Ant. 2	D	802.11ac (VHT80)		171	0	Top	17.33	0.908	21.73	21.73
Bodyworn & Hotspot	1	UNII-4 MIMO	G+D	802.11ac (VHT80)		171	0	Right	16.91	1.160	20.24	20.24
Bodyworn & Hotspot	1	WiFi 6E SISO Ant. 1	G	802.11ax (HE160)		15	0	Right	12.60	0.404	20.52	20.52
Bodyworn & Hotspot	1	WiFi 6E SISO Ant. 2	D	802.11ax (HE160)		143	0	Rear	12.50	0.299	21.72	21.72
Bodyworn & Hotspot	1	WiFi 6E MIMO	G+D	802.11ax (HE160)		207	0	Rear	12.95	0.252	22.92	22.92
Bodyworn & Hotspot	1	Bluetooth Ant. 1	G	GFSK DH5		39	0	Rear	18.25	0.232	28.57	26.20
							0	Front	18.25	0.040	36.21	
							0	Right	18.25	0.401	26.20	
Bodyworn & Hotspot	1	Bluetooth Ant. 2	F	GFSK DH5		39	0	Rear	17.93	0.374	26.18	20.98
							0	Front	17.93	0.136	30.57	
							0	Top	17.93	1.240	20.98	
							0	Left	17.93	0.028	37.44	
							0	Right	17.93	0.064	33.85	
Bodyworn & Hotspot	1	Bluetooth MIMO	G+F	GFSK DH5		0	0	Rear	15.51	0.147	27.82	23.68
							0	Front	14.98	0.029	34.34	
							0	Top	14.98	0.337	23.68	
							0	Left	14.98	0.003	44.19	
							0	Right	15.51	0.251	25.49	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

UMPC Body-1g Exposure (DSI = 0)

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)
Body	0	GSM 850	A+B	GPRS 2 Slots		251	10	Rear	24.74	0.702	26.28	26.28
						190	10	Front	25.00	0.478	28.21	
							10	Bottom	25.00	0.187	32.28	
							10	Right	25.00	0.427	28.70	
Body	0	GSM 1900	B	GPRS 4 Slots		661	10	Rear	18.43	0.542	21.09	21.09
						10	Front	18.43	0.334	23.19		
							10	Bottom	18.43	0.505	21.40	
							10	Right	18.43	0.127	27.39	
Body	0	WCDMA 5	A+B	Rel 99 (RMC, 12.2 kbps)		4183	10	Rear	24.43	0.858	25.10	25.10
						10	Front	24.43	0.404	28.37		
							10	Bottom	24.43	0.208	31.25	
							10	Right	24.43	0.240	30.63	
Body	0	LTE Band 5	A+B	QPSK	1/0	20525	10	Rear	24.31	0.639	26.25	26.25
						10	Front	24.31	0.402	28.27		
							10	Bottom	24.31	0.249	30.35	
							10	Right	24.31	0.255	30.24	
Body	0	LTE Band 12	A+B	QPSK	1/49	23095	10	Rear	23.76	0.519	26.61	26.61
						10	Front	23.76	0.262	29.58		
							10	Bottom	23.76	0.245	29.87	
							10	Right	23.76	0.342	28.42	
Body	0	LTE Band 13	A+B	QPSK	1/25	23230	10	Rear	24.78	0.628	26.80	26.80
						10	Front	24.78	0.409	28.66		
							10	Bottom	24.78	0.265	30.55	
							10	Right	24.78	0.304	29.95	
Body	0	LTE Band 2	B	QPSK	50/24	18700	10	Rear	17.93	0.528	20.70	19.86
						10	Front	17.93	0.288	23.34		
							10	Bottom	17.93	0.641	19.86	
							10	Right	17.93	0.153	26.08	
Body	0	LTE Band 66(4)	B	QPSK	50/0	132072	10	Rear	19.12	0.561	21.63	21.63
						10	Front	19.12	0.305	24.28		
							10	Bottom	19.12	0.524	21.93	
							10	Right	19.12	0.150	27.36	
Body	0	LTE Band 41 PC3	B	QPSK	50/0	39750	10	Rear	16.01	0.265	21.78	19.84
						10	Front	16.01	0.180	23.46		
							10	Bottom	16.01	0.414	19.84	
							10	Right	16.01	0.055	28.61	
Body	0	LTE Band 41 PC3	E	QPSK	1/49	41055	10	Rear	19.03	0.451	22.49	19.83
					50/50	41490	10	Front	19.03	0.396	23.05	
						10	Top	18.85	0.798	19.83		
						10	Rear	24.25	0.572	26.68		
Body	0	NR Band n5	A+B	DFT-s-OFDM QPSK	1/1	167300	10	Front	24.25	0.365	28.63	26.68
						10	Bottom	24.25	0.201	31.22		
							10	Right	24.25	0.252	30.24	
							10	Rear	19.32	0.371	23.63	
Body	0	NR Band n66	B	DFT-s-OFDM QPSK	108/54	349000	10	Front	19.32	0.430	22.99	21.71
					108/54	10	Bottom	19.32	0.577	21.71		
						10	Right	19.32	0.097	29.45		
						10	Rear	19.86	0.751	21.10		
Body	0	NR Band n66	E	DFT-s-OFDM QPSK	1/1	349000	10	Front	19.89	0.335	24.64	21.10
					1/1	10	Top	19.89	0.613	22.02		
						10	Rear	19.59	0.564	22.08		
						10	Front	19.59	0.311	24.66		
Body	0	NR Band n41	E	DFT-s-OFDM QPSK	135/69	518598	10	Top	19.59	0.708	21.09	21.09
						10	Rear	17.26	0.446	20.77		
							10	Front	17.26	0.339	21.96	
							10	Bottom	17.26	0.661	19.06	
Body	0	NR Band n41	B	DFT-s-OFDM QPSK	1/1	518598	10	Right	17.26	0.067	29.00	19.06
						10	Rear	17.21	0.172	24.85		
							10	Front	17.21	0.141	25.72	
							10	Right	17.21	0.228	23.63	
Body	0	DTS SISO Ant. 1	G	802.11b 1Mbps		1	10	Rear	17.96	0.252	23.95	23.55
						1	10	Top	17.96	0.276	23.55	
							10	Rear	17.11	0.378	21.34	
							10	Rear	16.68	0.303	21.87	
Body	0	UNII-2A SISO Ant. 1	G	802.11n HT40		54	10	Front	16.68	0.272	22.33	21.18
						10	Right	16.68	0.355	21.18		
							10	Rear	17.30	0.286	22.74	
							10	Front	17.30	0.191	24.49	
Body	0	UNII-2A SISO Ant. 2	D	802.11n HT40		54	10	Top	17.30	0.170	25.00	22.74
						10	Right	17.30	0.214	24.00		
							10	Rear	17.34	0.567	19.80	
							10	Front	17.34	0.378	21.57	
Body	0	UNII-2A MIMO	G+D	802.11n HT40		54	10	Right	16.70	0.533	19.43	19.43
						10	Rear	17.08	0.230	23.46		
							10	Front	17.08	0.148	25.38	
							10	Right	17.08	0.264	22.86	
Body	0	UNII-2C SISO Ant. 1	G	802.11ac MCS0		122	10	Rear	17.59	0.330	22.40	22.86
						10	Front	17.59	0.204	24.49		
							10	Top	17.59	0.318	22.57	
							10	Right	17.59	0.158	25.60	
Body	0	UNII-2C SISO Ant. 2	D	802.11ac MCS0		122	10	Rear	17.50	0.439	21.08	22.40
						10	Front	17.50	0.328	22.34		
							10	Top	17.50	0.548	20.11	
							10	Right	17.02	0.406	20.93	
Body	0	UNII-2C MIMO	G+D	802.11ac MCS0		122	10	Rear	17.50	0.439	21.08	20.11
						10	Front	17.50	0.328	22.34		
							10	Top	17.50	0.548	20.11	
							10	Right	17.02	0.406	20.93	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

UMPC Body-1g Exposure (DSI = 0)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Body	0	UNII-3 SISO Ant. 1	G	802.11ac MCS0		155	10	Rear	17.05	0.155	25.15	20.85
							10	Front	17.05	0.203	23.98	
							10	Right	17.05	0.417	20.85	
Body	0	UNII-3 SISO Ant. 2	D	802.11ac MCS0		155	10	Rear	17.51	0.322	22.43	21.92
							10	Front	17.51	0.241	23.69	
							10	Top	17.51	0.362	21.92	
Body	0	UNII-3 MIMO	G+D	802.11ac MCS0		155	10	Right	17.51	0.174	25.10	19.78
							10	Rear	17.42	0.581	19.78	
							10	Front	16.98	0.467	20.29	
Body	0	UNI-4 SISO Ant. 1	G	802.11ac MCS0		171	10	Top	17.42	0.558	19.95	20.56
							10	Right	16.98	0.487	20.10	
							10	Rear	17.04	0.095	27.26	
Body	0	UNI-4 SISO Ant. 2	D	802.11ac MCS0		171	10	Front	17.04	0.445	20.56	21.40
							10	Right	17.04	0.445	20.56	
							10	Rear	17.33	0.320	22.28	
Body	0	UNI-4 MIMO	G+D	802.11ac MCS0		171	10	Front	17.33	0.206	24.19	19.70
							10	Top	17.33	0.392	21.40	
							10	Right	17.33	0.110	26.92	
Body	0	WiFi 6E SISO Ant. 1	G	802.11ax MCS 0		143	10	Rear	17.24	0.567	19.70	19.20
							10	Front	17.24	0.469	20.53	
							10	Top	17.24	0.448	20.73	
Body	0	WiFi 6E SISO Ant. 2	D	802.11ax MCS 0		79	10	Right	16.91	0.408	20.80	19.84
							10	Rear	10.31	0.129	19.20	
							10	Front	10.61	0.065	22.48	
Body	0	WiFi 6E MIMO	G+D	802.11ax MCS 0		111	10	Right	10.61	0.004	34.59	20.26
							10	Rear	10.77	0.124	19.84	
							10	Front	10.99	0.051	23.91	
Body	0	Bluetooth Ant. 1	G	GFSK DHS		207	10	Top	10.99	0.070	22.54	26.40
							10	Right	10.99	0.021	27.77	
							10	Rear	10.98	0.118	20.26	
Body	0	Bluetooth Ant. 2	F	GFSK DHS		39	10	Front	10.98	0.104	20.81	25.50
							10	Top	10.98	0.083	21.79	
							10	Right	10.60	0.052	23.44	
Body	0	Bluetooth MIMO	G+F	GFSK DHS		0	10	Right	18.25	0.140	26.79	26.47
							10	Front	18.25	0.131	27.08	
							10	Right	18.25	0.153	26.40	
Body	0						10	Rear	17.93	0.168	25.68	26.47
							10	Front	17.93	0.069	29.54	
							10	Top	17.93	0.175	25.50	
Body	0						10	Right	17.93	0.025	33.95	26.47
							10	Rear	15.51	0.018	32.96	
							10	Front	14.98	0.071	26.47	
Body	0						10	Top	14.98	0.051	27.90	26.47
							10	Right	15.51	0.056	28.03	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

UMPC Extremity-10g Exposure (DSI = 0)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Extremity	0	GSM 850	A+B	GPRS 2 Slots		190	0	Rear	25.00	1.210	28.15	28.15
							0	Front	25.00	0.930	29.29	
							0	Bottom	25.00	0.694	30.57	
							0	Right	25.00	0.850	29.69	
Extremity	0	GSM 1900	B	GPRS 4 Slots		661	0	Rear	18.43	0.960	22.59	20.51
							0	Front	18.43	0.826	23.24	
							0	Bottom	18.43	1.550	20.51	
							0	Right	18.43	0.377	26.65	
Extremity	0	WCDMA 5	A+B	Rel 99 (RMC, 12.2 kbps)		4183	0	Rear	24.43	1.280	27.34	27.24
							0	Front	24.43	0.970	28.54	
							0	Bottom	24.43	0.885	28.94	
							0	Right	24.43	1.310	27.24	
Extremity	0	LTE Band 5	A+B	QPSK	1/0	20525	0	Rear	24.31	1.160	27.64	26.86
							0	Front	24.31	1.080	27.96	
							0	Bottom	24.31	0.963	28.45	
							0	Right	24.31	1.390	26.86	
Extremity	0	LTE Band 12	A+B	QPSK	1/49	23095	0	Rear	23.76	0.938	28.02	26.22
							0	Front	23.76	1.100	27.33	
							0	Bottom	23.76	0.626	29.77	
							0	Right	23.76	1.420	26.22	
Extremity	0	LTE Band 13	A+B	QPSK	1/25	23230	0	Rear	24.78	0.914	29.15	28.04
							0	Front	24.78	0.790	29.78	
							0	Bottom	24.78	0.464	32.09	
							0	Right	24.78	1.180	28.04	
Extremity	0	LTE Band 2	B	QPSK	50/24	18700	0	Rear	17.93	1.350	20.61	18.81
							0	Front	17.93	0.981	21.99	
							0	Bottom	17.93	2.040	18.81	
							0	Right	17.93	0.434	25.53	
Extremity	0	LTE Band 66(4)	B	QPSK	50/0	132072	0	Rear	19.12	1.050	22.89	19.20
							0	Front	19.12	0.896	23.58	
						132322	0	Bottom	19.02	2.400	19.20	
						132072	0	Right	19.12	0.288	28.51	
Extremity	0	LTE Band 41 PC3	B	QPSK	50/0	39750	0	Rear	16.01	0.650	21.86	17.17
							0	Front	16.01	0.631	21.99	
						41055	0	Bottom	15.82	1.830	17.17	
						39750	0	Right	16.01	0.083	30.80	
Extremity	0	LTE Band 41 PC3	E	QPSK	50/50	41055	0	Rear	19.05	0.725	24.43	19.04
							0	Front	19.05	0.963	23.19	
						40185	0	Top	18.90	2.420	19.04	
							0	Rear	24.25	1.120	27.74	
Extremity	0	NR Band n5	A+B	DFT-s-OFDM QPSK	1/1	167300	0	Front	24.25	0.891	28.73	26.80
							0	Bottom	24.25	0.868	28.84	
							0	Right	24.25	1.390	26.80	
							0	Rear	19.32	1.200	22.51	
Extremity	0	NR Band n66	B	DFT-s-OFDM QPSK	108/54	349000	0	Front	19.32	1.220	22.44	19.80
					216/0		0	Bottom	19.28	2.220	19.80	
					108/54		0	Right	19.32	0.387	27.42	
							0	Rear	19.86	1.420	22.32	
Extremity	0	NR Band n66	E	DFT-s-OFDM QPSK	108/54	349000	0	Front	19.86	1.220	22.98	21.08
					216/0		0	Top	19.98	1.940	21.08	
							0	Rear	19.75	0.859	24.39	
							0	Front	19.75	0.997	23.74	
Extremity	0	NR Band n41	E	DFT-s-OFDM QPSK	1/1	518598	0	Top	19.75	2.840	19.20	19.20
							0	Rear	17.07	1.170	20.37	
							0	Front	17.26	0.850	21.95	
							0	Bottom	17.26	2.450	17.35	
Extremity	0	NR Band n41	B	DFT-s-OFDM QPSK	135/69	518598	0	Right	17.07	0.119	30.29	17.35
					1/1		0	Rear	17.21	0.347	25.79	
							0	Front	17.21	0.638	23.14	
							0	Right	17.21	0.722	22.60	
Extremity	0	DTS SISO Ant. 1	G	802.11b 1Mbps		1	0	Rear	17.96	0.626	23.97	22.60
							0	Front	17.96	0.433	25.57	
							0	Top	17.96	1.270	20.90	
							0	Rear	17.93	0.778	23.00	
Extremity	0	DTS MIMO	G+F	802.11b 1Mbps		1	0	Top	17.93	1.610	19.84	19.84
							0	Right	17.11	0.542	23.75	
							0	Rear	16.68	0.426	24.37	
							0	Front	16.68	0.772	21.78	
Extremity	0	UNII-2A SISO Ant. 1	G	802.11n HT40		54	0	Right	16.68	1.150	20.05	20.05
							0	Rear	17.30	0.362	25.69	
							0	Front	17.30	0.843	22.02	
							0	Top	17.30	0.816	22.16	
Extremity	0	UNII-2A SISO Ant. 2	D	802.11n HT40		54	0	Right	17.30	0.449	24.76	22.02
							0	Rear	17.34	0.720	22.75	
							0	Front	16.70	1.460	19.04	
							0	Right	16.70	1.210	19.85	
Extremity	0	UNII-2A MIMO	G+D	802.11n HT40		54	0	Rear	17.08	0.364	25.45	19.04
							0	Front	17.08	0.895	21.54	
							0	Right	17.08	0.873	21.65	
							0	Rear	17.59	0.447	25.07	
Extremity	0	UNII-2C SISO Ant. 1	G	802.11ac MCS0		122	0	Front	17.59	0.771	22.70	21.54
							0	Top	17.59	0.998	21.58	
							0	Right	17.59	0.213	28.29	
							0	Rear	17.59	0.998	21.58	
Extremity	0	UNII-2C SISO Ant. 2	D	802.11ac MCS0		122	0	Front	17.59	0.771	22.70	21.58
							0	Top	17.59	0.998	21.58	
							0	Right	17.59	0.213	28.29	
							0	Rear	17.59	0.998	21.58	

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 part.1 report.
3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

UMPC Extremity-10g Exposure (DSI = 0)

RF Exposure Conditions	DSI	band	Antenna	mode	RB	Ch.	Test distance (mm)	Test position	Output power (dbm)	meas SAR 1g (W/kg)	P _{limit} (dBm)	Minimum P _{limit} (dBm)
Extremity	0	UNII-2C MIMO	G+D	802.11ac MCS0		122	0	Rear	17.50	0.539	24.16	19.51
							0	Front	17.02	1.410	19.51	
							0	Right	17.02	0.928	21.32	
Extremity	0	UNII-3 SISO Ant. 1	G	802.11ac MCS0		155	0	Rear	17.05	0.400	25.01	19.86
							0	Front	17.05	1.310	19.86	
							0	Right	17.05	1.140	20.46	
Extremity	0	UNII-3 SISO Ant. 2	D	802.11ac MCS0		155	0	Rear	17.51	0.385	25.63	21.20
							0	Front	17.51	1.070	21.20	
							0	Top	17.51	0.963	21.65	
Extremity	0	UNII-3 MIMO	G+D	802.11ac MCS0		155	0	Right	17.51	0.249	27.53	19.29
							0	Rear	17.42	0.503	24.38	
							0	Front	16.98	1.470	19.29	
Extremity	0	UNI-4 SISO Ant. 1	G	802.11ac MCS0		171	0	Right	16.98	1.160	20.31	19.29
							0	Rear	17.04	0.337	25.74	
							0	Front	17.04	1.490	19.29	
Extremity	0	UNI-4 SISO Ant. 2	D	802.11ac MCS0		171	0	Right	17.04	1.130	20.49	20.74
							0	Rear	17.33	0.482	24.48	
							0	Front	17.33	1.140	20.74	
Extremity	0	UNI-4 MIMO	G+D	802.11ac MCS0		171	0	Top	17.33	0.863	21.95	19.22
							0	Right	17.33	0.201	28.28	
							0	Rear	17.24	0.551	23.81	
Extremity	0	WiFi 6E SISO Ant. 1	G	802.11ax MCS 0		171	0	Front	16.91	1.470	19.22	17.00
							0	Top	17.24	0.993	21.25	
							0	Right	16.91	1.040	20.72	
Extremity	0	WiFi 6E SISO Ant. 2	D	802.11ax MCS 0		171	79	Rear	10.61	0.127	23.55	18.88
							143	Front	10.31	0.536	17.00	
							79	Right	10.61	0.164	22.44	
Extremity	0	WiFi 6E MIMO	G+D	802.11ax MCS 0		171	207	Rear	10.99	0.173	22.59	18.16
							111	Front	10.77	0.386	18.88	
							207	Top	10.99	0.133	23.73	
Extremity	0	Bluetooth Ant. 1	G	GFSK DH5		39	0	Right	10.99	0.078	26.05	26.18
							79	Rear	10.98	0.169	22.68	
							111	Front	10.81	0.460	18.16	
Extremity	0	Bluetooth Ant. 2	F	GFSK DH5		39	79	Top	10.98	0.229	21.36	22.29
							0	Right	10.60	0.182	21.98	
							0	Rear	18.25	0.210	29.01	
Extremity	0	Bluetooth MIMO	G+F	GFSK DH5		0	0	Front	18.25	0.403	26.18	23.42
							0	Right	18.25	0.390	26.32	
							0	Rear	17.93	0.315	26.93	
Extremity	0						0	Front	17.93	0.312	26.97	22.29
							0	Top	17.93	0.917	22.29	
							0	Right	17.93	0.049	35.01	
Extremity	0						0	Rear	15.51	0.311	24.56	23.42
							0	Front	15.51	0.266	25.24	
							0	Top	14.98	0.358	23.42	
Extremity	0						0	Right	15.51	0.243	25.63	23.42
							0	Front	15.51	0.243	25.63	
							0	Right	15.51	0.243	25.63	

Notes:

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3. Some bands were determined more conservative P_{limit} instead of calculation P_{limit} .

END OF REPORT