FCC SAR TEST REPORT

Application No.:	SZCR2504001565WM
Applicant:	FCNT LLC.
Address of Applicant:	Sanki Yamato Bldg. 3F, 7-10-1, Chuorinkan, Yamato-shi, Kanagawa, 242-0007, Japan
Manufacturer:	FCNT LLC.
Address of Manufacturer:	Sanki Yamato Bldg. 3F, 7-10-1, Chuorinkan, Yamato-shi, Kanagawa, 242-0007, Japan
EUT Description:	Mobile Cellular Phone
Model No.:	M08, F-51F ♣
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	FCNT.LLC
FCC ID:	2BEPUFMP203
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2025-04-20
Date of Test:	2025-04-24 to 2025-05-22
Date of Issue:	2025-06-06
Test Result :	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Keny Xu
EMC Laboratory Manager

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Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2025-05-27		Original
02		2025-06-06		Revise the comments raised by TCB

Authorized for issue by:				
		Calvin Weng **Calvin Weng/Project Engineer**		
		Eric Fu **Eric Fu/Reviewer**		

TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)			
	Head	Body-worn	Hotspot	Product specific 10g SAR
GSM850	0.48	1.23	1.23	1.89
GSM1900	0.29	1.12	1.19	/
WCDMA Band V	0.30	1.08	1.08	/
LTE Band 2	0.35	1.17	1.25	2.25
LTE Band 4	0.27	**1.27**	**1.27**	**2.25**
LTE Band 5	0.39	1.19	1.19	/
LTE Band 12	0.30	0.97	0.97	/
LTE Band 41/38	0.21	1.07	1.26	1.91
LTE Band 42	0.84	0.88	0.59	1.56
NR Band n41	0.26	1.03	0.91	2.22
NR Band n77/78	0.87	0.78	0.59	1.18
WI-FI (2.4GHz)	**1.23**	1.23	0.53	2.22
WI-FI (5GHz)	1.17	1.07	0.55	1.59
WI-FI 6E	0.67	0.73	/	0.43
BT	0.36	0.11	0.21	/
SAR Limited(W/kg)	1.6			4.0
Maximum Simultaneous Transmission SAR (W/kg)				
Scenario	Head	Body-worn	Hotspot	Product specific 10g SAR
Sum SAR	1.49	1.58	1.58	2.76
SPLSR	/	/	/	/
SPLSR Limited	0.04			0.1

Note: The Simultaneous transmission SAR is the same test position of the WWAN Antenna + WiFi/BT Antenna.
According to TCB workshop (Overlapping LTE Bands): SAR in LTE band 38 is covered by LTE band 41. The SAR in NR Band n78 is covered by NR Band n77. Because the frequency range is similar, the maximum tuning limit is the same, and the channel bandwidth and other operating parameters for the smaller band is fully supported by the larger band.

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Frequency Band	Reported PD (W/m²)
WIFI 6E	9.86
PD Limit	10.00

Contents

1 General Information

1.1 General Description of EUT

Product Name:	Mobile Cellular Phone		
Model No.:	M08, F-51F		
Trade Mark:	FCNT.LLC		
Product Phase:	production unit		
Device Type:	portable device		
Exposure Category:	uncontrolled environment / general population		
IMEI:	354977560032683; 354977560032485; 354977560034127; 354977560032725		
Hardware Version:	DVT2		
Software Version:	V2VH35.58-5		
Antenna Type:	Fixed Internal Antenna		
Device Operating Configurations:			
Modulation Mode:	**GSM**:GMSK,8PSK; **WCDMA**:QPSK,16QAM **LTE**:QPSK,16QAM,64QAM, **5G NR**:DFT-s-OFDM(PI/2 BPSK,QPSK,16QAM,64QAM,256QAM) CP-OFDM(QPSK,16QAM,64QAM,256QAM) **WIFI**:DSSS,OFDM,OFDMA; **BT**:GFSK, π/4DQPSK,8DPSK **NFC**: ASK		
Device Class:	B		
GPRS Multi-slots Class:	12	EGPRS Multi-slots Class:	12
HSDPA UE Category:	24	HSUPA UE Category:	7
DC-HSDPA UE Category:	24		
Power Class:	4, tested with power level 5(GSM850		
	1, tested with power level 0(GSM1900)		
	3, tested with power control “all 1”(WCDMA Band)		
	3, tested with power control “max power”(LTE Band)		
Frequency Bands:	Band	Tx(MHz)	
	GSM850	824~849	
	GSM1900	1850~1910	
	WCDMA Band V	824~849	
	LTE Band 2	1850 ~1910	
	LTE Band 4	1710~1755	

	LTE Band 5	824~849
	LTE Band 12	699~716
	LTE Band 38	2570~2620
	LTE Band 41(Class 2/3)	2496~2690
	LTE Band 42	1710~1780
	NR Band n41)	2496~2690
	NR Band n77	3700~3980
	NR Band n78	3700~3800
	WIFI 2.4G	2412~2462
	WIFI 5G	5150~5250
		5250~5350
		5470~5725
		5725~5850
	WIFI 6E	5925~6425
		6425~6525
		6525~6875
		6875~7125
	BT	2402~2480
	NFC	13.56
RF Cable:	☒Provided by applicant ☐Provided by the laboratory	
Battery Information:	Model:	RA075404-1091
	Normal Voltage:	3.91V
	Rated capacity:	5000mAh
	Manufacturer:	FCNT LLC

Note:
The hotspot mode is not supported for WIFI 5G U-NII-2A and WIFI 5G U-NII-2C.
*Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
Remark:
As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

Remark:
Model No.: M08, F-51F
The two models named M08(Retail) and F-51F(DCM) are the same product except that their model names are different for different market segments.

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1.1.1 DUT Antenna Locations (Back View)

The DUT Antenna Locations can be referred to Appendix D

Note:

1) The test device is a smart phone. The overall diagonal dimension of this device is 175mm. Per KDB 648474 D04, because the diagonal distance of this device is ≥160mm, so it is a phablet.

According to the distance between the antennas and the sides of the EUT we can draw the conclusion that:

Distance of the Antenna to the EUT surface/edge						
Mode	Front	Back	Left	Right	Top	Bottom
Ant0	≤25mm	≤25mm	≤25mm	>25mm	>25mm	≤25mm
Ant1	≤25mm	≤25mm	≤25mm	>25mm	≤25mm	>25mm
Ant2	≤25mm	≤25mm	>25mm	≤25mm	>25mm	≤25mm
Ant3	≤25mm	≤25mm	>25mm	≤25mm	≤25mm	>25mm
Ant4	≤25mm	≤25mm	>25mm	≤25mm	≤25mm	>25mm
Ant5	≤25mm	≤25mm	>25mm	≤25mm	≤25mm	>25mm
Ant6	≤25mm	≤25mm	>25mm	≤25mm	>25mm	>25mm
Ant7	≤25mm	≤25mm	≤25mm	>25mm	>25mm	>25mm
Ant8	≤25mm	≤25mm	>25mm	>25mm	>25mm	>25mm
Ant9	≤25mm	≤25mm	≤25mm	>25mm	>25mm	>25mm

Table 1： Distance of the Antenna to the EUT surface/edge

Note:

1) When the antenna-to-edge distance is greater than 25mm, such position does not need to be tested.

1.1.2 Power reduction specification

This device uses a single fixed level of power reduction through static table look-up for SAR compliance and it is triggered by a single event or operation:

1) This device uses the receiver to indicate whether the user is making a voice call in head scenario or not. The selection between head and body power levels is based on the receiver detection mechanism. A fixed level power reduction is applied for some frequency bands when the audio receiver is on.

2) A fixed level power reduction is applied for some frequency bands when hotspot mode becomes active. When the hotspot is disabled, the power value will be recovered.

3) A fixed level power reduction is applied for WLAN frequency bands when simultaneously transmitting with the WWAN antennas in certain simultaneous transmission conditions.

The detailed power reduction information can be referred to Appendix E Conducted RF Output Power.

1.2 Test Specification

Identity	Document Title
FCC 47CFR §2.1093	Radiofrequency Radiation Exposure Evaluation: Portable Devices
ANSI/IEEE C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz – 300 GHz.
IEEE 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
IEC/IEEE 62209-1528:2020	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices –Part 1528: Human models, instrumentation, and procedures(Frequency range of 4 MHz to 10 GHz)
IEC/IEEE 63195-1:2022	Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) – Part 1: Measurement procedure
KDB 941225 D01	3G SAR Measurement Procedures v03r01
KDB 941225 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 941225 D06	Hotspot Mode SAR v02r01
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
KDB 648474 D04	Handset SAR v01r03
KDB 447498 D04	Interim General RF Exposure Guidance v01
KDB 865664 D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02	RF Exposure Reporting v01r02
KDB 690783 D01	SAR Listings on Grants v01r03

1.3 RF exposure limits

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain*Trunk)	1.60 mW/g	8.00 mW/g
Spatial Average SAR** (Whole Body)	0.08 mW/g	0.40 mW/g
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 mW/g	20.00 mW/g

Notes:
* The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time
** The Spatial Average value of the SAR averaged over the whole body.
*** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.
Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation.)

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.
Peak Spatially Averaged Power Density was evaluated over a circular area of 4cm2 per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

Note: 1.0 mW/cm^2 is equal to 10 W/m^2

1.4 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.
Tel: +86 755 2601 2053 Fax: +86 755 2671 0594
No tests were sub-contracted.

1.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.
Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.
CAB identifier: CN0006.
IC#: 4620C.

2 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

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3 SAR Measurements System Configuraion

3.1 The SAR Measurement System

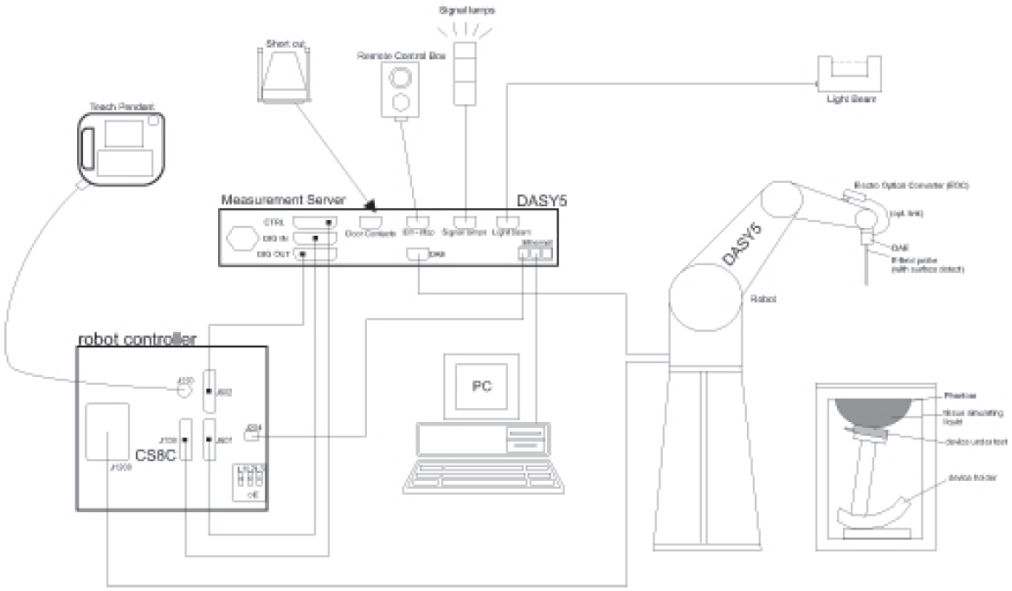
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

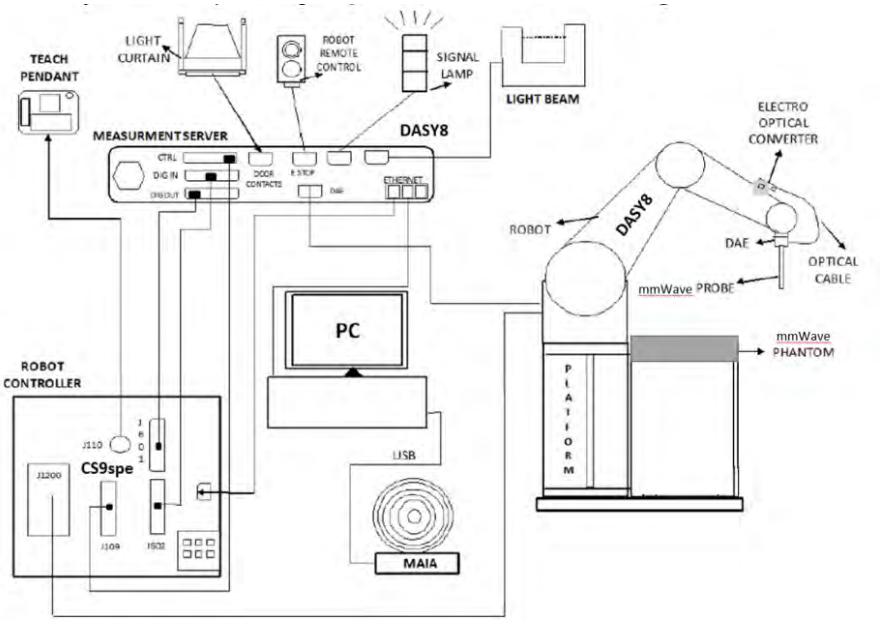
The DASY system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodation the data acquisition electronics (DAE).

A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

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 between optical and electrical of the signals for the digital communication to DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.





F-1. SAR Measurement System Configuration

- 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.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows system.
- DASY software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand, right-hand and Body Worn usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validating the proper functioning of the system.

3.2 Isotropic E-field Proble EX3DV4

	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)
Dynamic Range	10 µW/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields); the only probe that enables compliance testing for frequencies up to 6 GHz with precision of better 30%.
Compatibility	DASY52 SAR and higher, EASY4/MRI

3.3 Data Acquisition Electronics (DAE)

Model	DAE
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY4/5 embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4mV,400mV)
Input Offset Voltage	< 5µV (with auto zero)
Input Bias Current	< 50 f A
Dimensions	60 x 60 x 68 mm

3.4 SAM Twin Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2 ± 0.2 mm (6 ± 0.2 mm at ear point)
Dimensions (incl. Wooden Support)	Length: 1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	pprox.. 25 liters
Wooden Support	SPEAG standard phantom table

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.
Twin SAM V5.0 has the same shell geometry and is manufactured from the same material as Twin SAM V4.0, but has reinforced top structure.

3.5 ELI Phantom

Material	Vinylester, glass fiber reinforced (VE-GF)
Liquid Compatibility	Compatible with all SPEAG tissue simulating liquids (incl. DGBE type)
Shell Thickness	2.0 ± 0.2 mm(bottom plate)
Dimensions	Major axis: 600 mm Minor axis: 400 mm
Filling Volume	pprox.. 30 liters
Wooden Support	SPEAG standard phantom table

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEEE 1528 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.
ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4 but has reinforced top structure.

3.6 Device Holder for Transmitters

F-2. Device Holder for Transmitters

- The DASY device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation centres for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

- The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

3.7 Measurement Procedure

3.7.1 Scanning procedure

Step 1: Power reference measurement

The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure.

Step 2: Area scan

The SAR distribution at the exposed side of the head was measured at a distance of 4mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 15mm*15mm or 12mm*12mm or 10mm*10mm.Based on the area scan data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Zoom scan

Around this point, a volume of 32mm*32mm*30mm (f≤2GHz), 30mm*30mm*30mm (f for 2-3GHz) and 24mm*24mm*22mm (f for 5-6GHz) was assessed by measuring 5x5x7 points (f≤2GHz), 7x7x7 points (f for 2-3GHz) and 7x7x12 points (f for 5-6GHz). On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

The data at the surface was extrapolated, since the centre of the dipoles is 2.0mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2mm. (This can be variable. Refer to the probe specification).The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The volume was integrated with the trapezoidal algorithm. One thousand points were interpolated to calculate the average. All neighbouring volumes were evaluated until no neighboring volume with a higher average value was found.

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std. 1528-2013.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Step 4: Power reference measurement (drift)

The Power Drift Measurement job measures the field at the same location as the most recent power reference measurement job within the same procedure, and with the same settings. The indicated drift is mainly the variation of the DUT's output power and should vary max ± 5 %.

3.7.2 Data storage

The DASY software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension “DAE”. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated. The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [m W/g], [m W/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.7.3 Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	ε
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents, or they can be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

With Vi = compensated signal of channel I (I = x, y, z)
Ui = input signal of channel I (I = x, y, z)
cf = crest factor of exciting field (DASY parameter)
dcp I = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:
E-field probes:

$$E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$$

H-field probes:

$$H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$$

With Vi = compensated signal of channel I (I = x, y, z)
Normi = sensor sensitivity of channel I (I = x, y, z)
[mV/(V/m)2] for E-field Probes
ConvF = sensitivity enhancement in solution
aij = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
Ei = electric field strength of channel I in V/m
Hi = magnetic field strength of channel I in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$SAR = (Etot^2 \cdot \sigma) / (\varepsilon \cdot 1000)$$

with SAR = local specific absorption rate in mW/g
Etot = total field strength in V/m
σ= conductivity in [mho/m] or [Siemens/m]
ε= equivalent tissue density in g/cm3

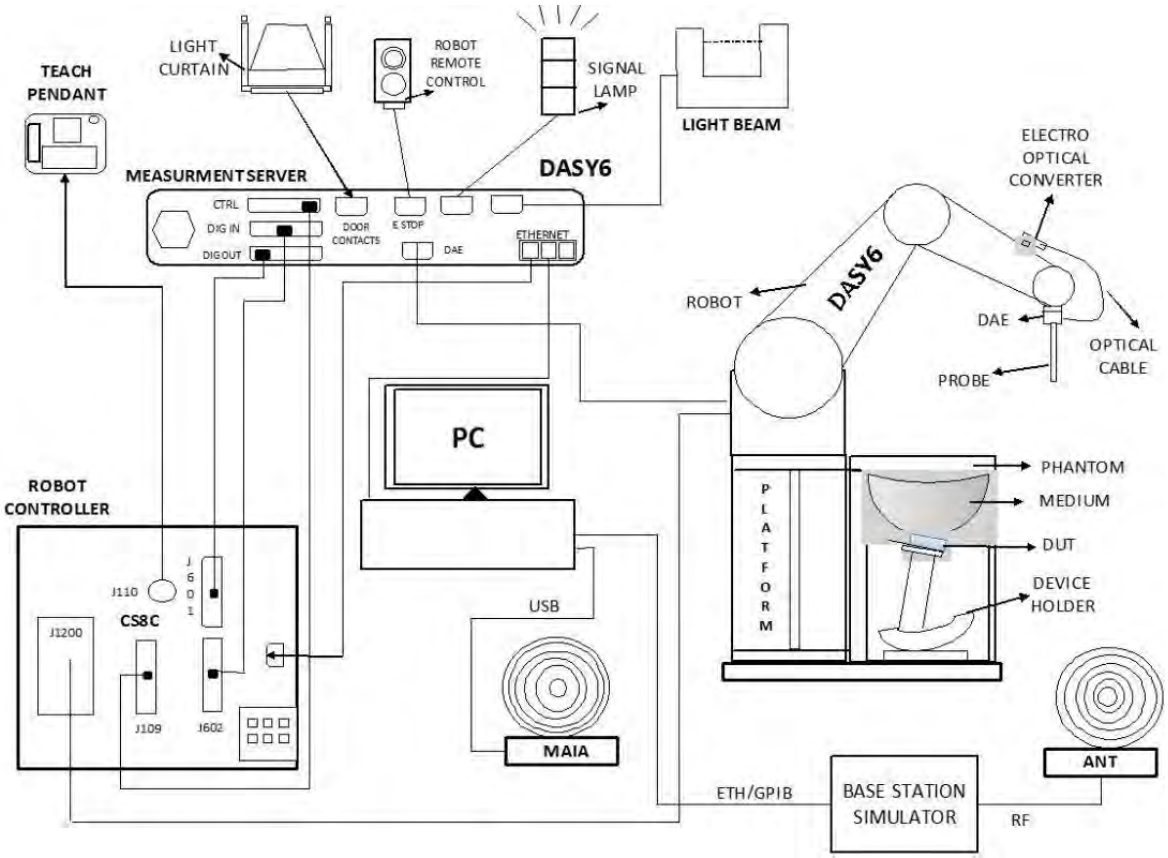
Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}{}^2{}_2 / 3770 \text{ or } P_{pwe} = H_{tot}^2 \cdot 37.7$$

with Ppwe = equivalent power density of a plane wave in mW/cm2
Etot = total electric field strength in V/m
Htot = total magnetic field strength in A/m

4 Power density measurement system

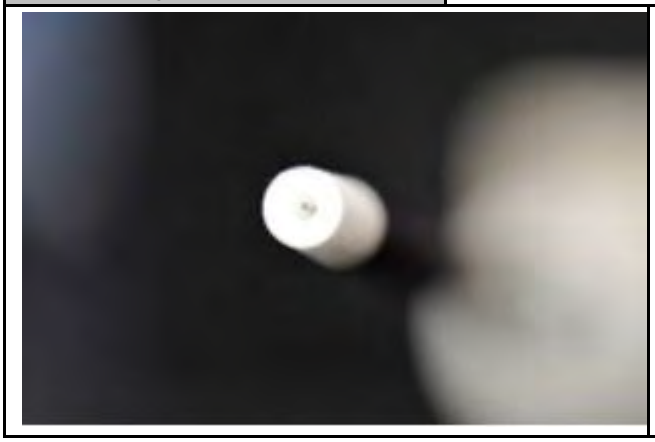
Power density measurements for mmWave frequencies were performed using SPEAG DASY6 with cDASY6 5G module. The DASY6 included a high precision robotics system (Staubli), robot controller, desktop computer, near-field probe, probe alignment sensor, and the 5G phantom cover.

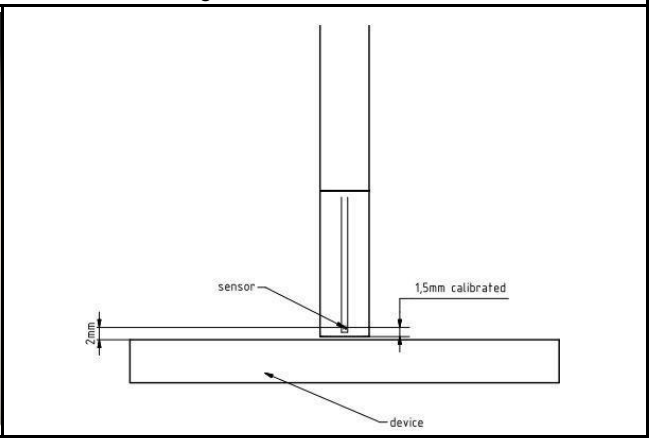


Measurement System Configuration

4.1 EUmmWaVe probe

Frequency	750 MHz – 110 GHz
Probe Overall Length	320 mm
Probe Body Diameter	8.0 mm
Tip Length	23.0 mm
Tip Diameter	8.0 mm
Probe's two dipoles length	0.9 mm – Diode loaded
Dynamic Range	< 20 V/m - 10000 V/m with PRE-10 (min < 50 V/m - 3000 V/m)
Position Precision	< 0.2 mm
Distance between diode sensors and probe's tip	1.5 mm
Minimum Mechanical separation between probe tip and a Surface	0.5 mm
Applications	E-field measurements of 5G devices and other mm-wave transmitters operating above 10GHz in < 2 mm distance from device (free-space) Power density, H-field and far-field analysis using total field reconstruction.
Compatibility	cDASY6 + 5G-Module SW1.0 and higher





The EUmmWaVe probe is based on the pseudo-vector probe design, which not only measures the field magnitude but also derives its polarization ellipse. The design entails two small 0.8mm dipole sensors mechanically protected by high-density foam, printed on both sides of a 0.9mm wide and 0.12mm thick glass substrate. The body of the probe is specifically constructed to minimize distortion by the scattered fields. The probe consists of two sensors with different angles (1 and 2) arranged in the same plane in the probe axis. Three or more measurements of the two sensors are taken for different probe rotational angles to derive the amplitude and polarization information. The probe design allows measurements at distances as small as 2mm from the sensors to the surface of the device under test (DUT). The typical sensor to probe tip distance is 1.5 mm. The exact distance is calibrated.

4 SAR measurement variability and uncertainty

4.1 SAR measurement variability

Per KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.

2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

4.2 SAR measurement uncertainty

Measurements and results are all in compliance with the standards listed. All measurements and results are recorded and maintained at the laboratory performing the tests and measurement uncertainties are taken into account when comparing measurements to pass/ fail criteria. The expanded uncertainty (95% CONFIDENCE INTERVAL) is 28.50%.

IEC/IEEE 62209-1528:2020 Input quantity X_i (source of uncertainty)	Unc. (±)	Prob. Dist. PDF_i	Unc. $a(x_i)$	c_i (1g)	c_i (10g)	U_i (1g) (%)	U_i (10g) (%)
Probe calibration	18.6	N (k = 2)	2	1	1	9.3	9.3
Probe calibration drift	1.7	R	√3	1	1	1.0	1.0
Probe linearity and detection limit	0.6	R	√3	1	1	0.3	0.3
Broadband signal	0.5	R	√3	1	1	0.3	0.3
Probe isotropy	2.6	R	√3	1	1	1.5	1.5
Other probe and data acquisition errors	0.6	N	1	1	1	0.6	0.6
RF ambient and noise	3.0	R	√3	1	1	1.7	1.7
Probe positioning errors	0.5	N	1	0.33	0.33	0.2	0.2
Data processing errors	4.0	R	√3	1	1	2.3	2.3
Measurement of phantom conductivity(σ)	2.5	N	1	0.78	0.71	2.0	1.8
Temperature effects (medium)	2.7	R	√3	0.78	0.71	1.2	1.1
Shell permittivity	14.0	R	√3	0.5	0.5	4.0	4.0
Distance between the radiating element of the DUT and the phantom medium	2.0	N	1	2	2	4.0	4.0
Repeatability of positioning the DUT or source against the phantom	2.9	N	1	1	1	2.9	2.9
Device holder effects	3.6	N	1	1	1	3.6	3.6
Effect of operating mode on probe sensitivity	2.4	R	√3	1	1	1.4	1.4
Time-average SAR	0.0	R	√3	1	1	0.0	0.0
Variation in SAR due to drift in output of DUT	2.5	N	1	1	1	2.5	2.5
Validation antenna uncertainty (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Uncertainty in accepted power (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Phantom deviation from target (ε',σ)	1.9	N	1	1	0.84	1.9	1.6
SAR scaling	0.0	R	√3	1	1	0.0	0.0
Combined uncertainty	\					14.25	14.15
Expanded uncertainty and effective degrees of freedom （k = 2）	\					28.50	28.30

4.3 PD measurement uncertainty

Declaration of Conformity:
The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The e valuation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed stand ard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quan tify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience and knowle dge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtai ned from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangu lar distributions indicated in t able below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi plying Factor[a]	1/k[b]	1/√3	1/√6	1/√2

Standard Uncertainty for Assumed Distribution
(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in thefollowing tables.
Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined s The judgment of conformity in thereport is based on the measurement results excluding the measurement uncertainty.

a	b	c	d	e	f=b*e/d	g
Error Description	Uncertainty Value (±dB)	Probability	Div.	Ci	Standard Uncertainty (±dB)	Vi (Veff)
Probe Calibration	0.49	N	1	1	0.49	∞
Probe correction	0.00	R	1.732	1	0.00	∞
Frequency response (BW ≤1 GHz)	0.20	R	1.732	1	0.12	∞
Sensor cross coupling	0.00	R	1.732	1	0.00	∞
Isotropy	0.50	R	1.732	1	0.29	∞
Linearity	0.20	R	1.732	1	0.12	∞
Probe scattering	0.00	R	1.732	1	0.00	∞
Probe positioning offset	0.30	R	1.732	1	0.17	∞
Probe positioning repeatability	0.04	R	1.732	1	0.02	∞
Sensor mechanical offset	0.00	R	1.732	1	0.00	∞
Probe spatial resolution	0.00	R	1.732	1	0.00	∞
Field impedance dependance	0.00	R	1.732	1	0.00	∞
Amplitude and phase drift	0.00	R	1.732	1	0.00	∞
Amplitude and phase noise	0.04	R	1.732	1	0.02	∞
Measurement area truncation	0.00	R	1.732	1	0.00	∞
Data acquisition	0.03	N	1	1	0.03	∞
Sampling	0.00	R	1.732	1	0.00	∞
Field reconstruction	2.00	R	1.732	1	1.15	∞
Forward transformation	0.00	R	1.732	1	0.00	∞
Power density scaling	0.00	R	1.732	1	0.00	∞
Spatial averaging	0.10	R	1.732	1	0.06	∞
System detection limit	0.04	R	1.732	1	0.02	∞
Probe coupling with DUT	0.00	R	1.732	1	0.00	∞
Modulation response	0.40	R	1.732	1	0.23	∞
Integration time	0.00	R	1.732	1	0.00	∞
Response time	0.00	R	1.732	1	0.00	∞
Device holder influence	0.10	R	1.732	1	0.06	∞
DUT alignment	0.00	R	1.732	1	0.00	∞
RF ambient conditions	0.04	R	1.732	1	0.02	∞
Ambient reflections	0.04	R	1.732	1	0.02	∞
Immunity / secondary reception	0.00	R	1.732	1	0.00	∞
Drift of the DUT		R	1.732	1	0.00	∞
Combined Std. Uncertainty					1.33	
Expanded STD Uncertainty (95%)，K=2					2.67	

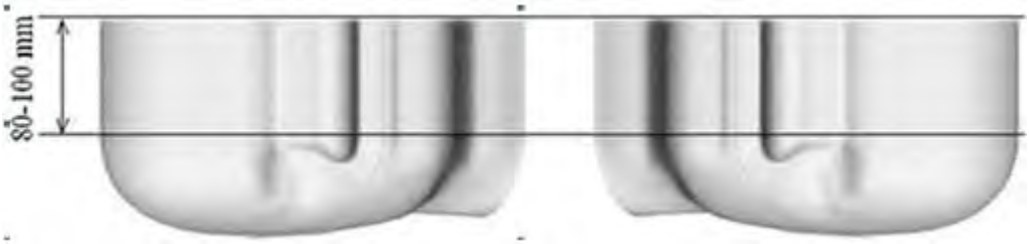
5 Desciption of Test Position

5.1 The Head Test Position

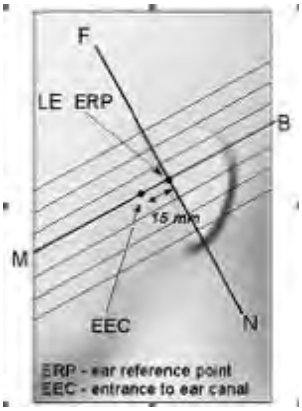
5.1.1 SAM Phantom Shape

F-3. Front, back, and side views of SAM (model for the phantom shell). Full-head model is for illustration purposes only-procedures in this recommended practice are intended primarily for the phantom setup.

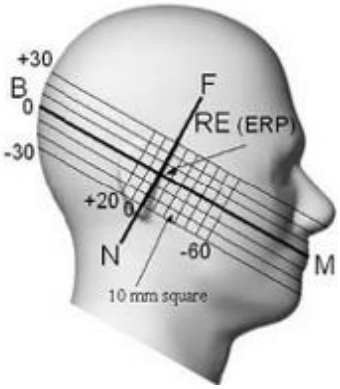
Note: The centre strip including the nose region has a different thickness tolerance.



F-4. Sagittally bisected phantom with extended perimeter (shown placed on its side as used for SAR measurements)

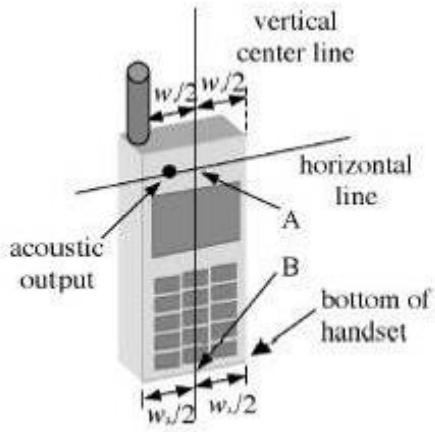


F-5. Close-up side view of phantom, showing the ear region, N-F and B-M lines, and seven cross-sectional plane locations

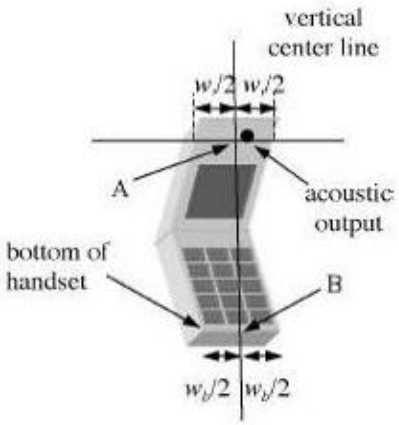


F-6.Side view of the phantom showing relevant markings and seven cross-sectional plane locations

5.1.2 EUT constructions



F-7. Handset vertical and horizontal reference lines- "fixed case"



F-8.Handset vertical and horizontal reference lines- "clam-shell case"

5.1.3 Definition of the “check” position

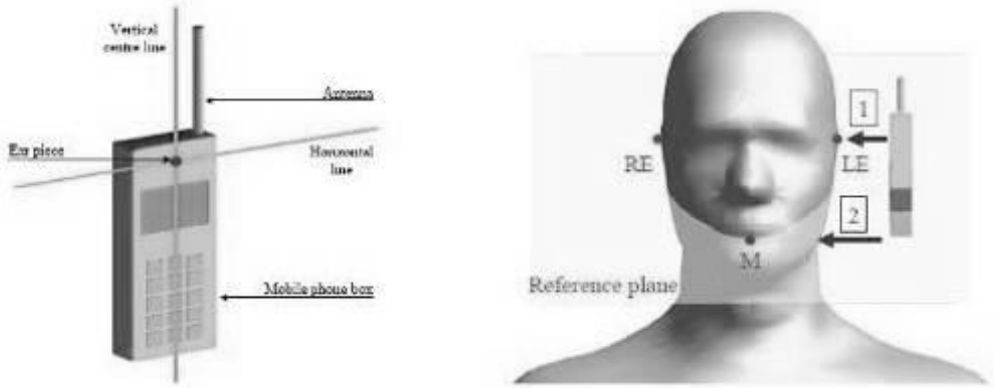
a) Position the device with the vertical centre line of the body of the device and the horizontal line crossing the centre of the ear piece in a plane parallel to the sagittal plane of the phantom (“initial position”). While maintaining the device in this plane, align the vertical centre line with the reference plane containing the three ear and mouth reference points (M, RE and LE) and align the centre of the ear piece with the line RE-LE.

b) Translate the mobile phone box towards the phantom with the ear piece aligned with the line LE-RE until telephone touches the ear. While maintaining the device in the reference plane and maintaining the phone contact with the ear, move the bottom of the box until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.

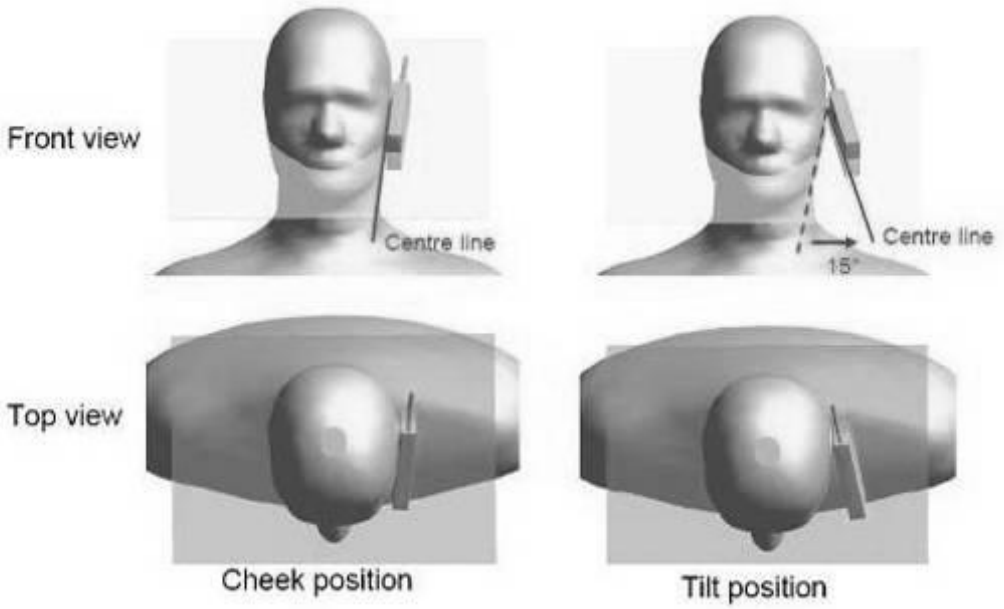
5.1.4 Definition of the “tilted” position

a) Position the device in the “cheek” position described above.

b) While maintaining the device in the reference plane described above and pivoting against the ear, move it outward away from the mouth by an angle of 15 degrees or until contact with the ear is lost.



F-9.Definition of the reference lines and points, on the phone and on the phantom and initial position



F-10. “Cheek” and “tilt” positions of the mobile phone on the left side

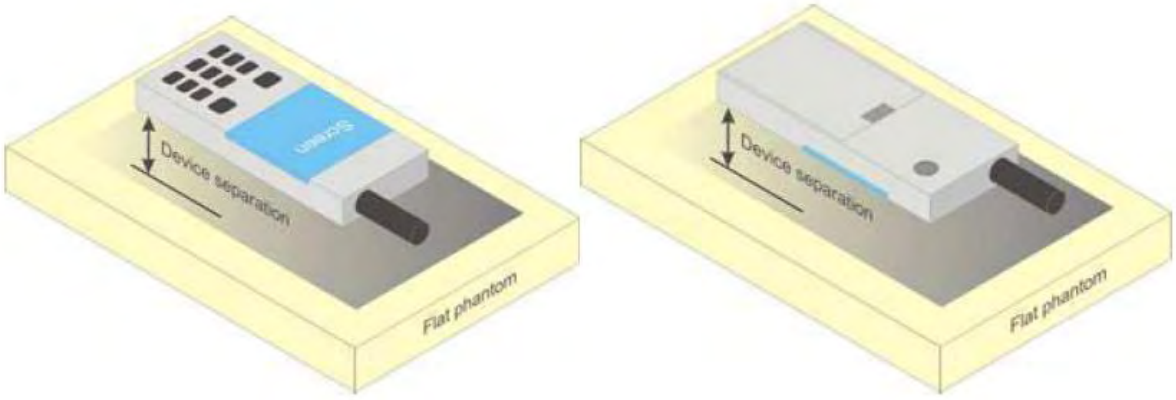
5.2 The Body Test Position

5.2.1 Body-worn accessory exposure conditions

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.
Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D04 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.



F-11.Test positions for body-worn devices

5.2.2 Wireless Router exposure conditions

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed-use conditions for this type of devices. For devices with form factors smaller than 9 cm x 5 cm, a test separation distance of 5 mm is required.

5.3 Extremity exposure conditions

Per FCC KDB 648474D04, for smart phones with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm that provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets that support voice calls next to the ear, the device is marketed as “Phablet”.
The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for Product Specific 10-g SAR according to the body-equivalent tissue dielectric parameters in KDB 865664 to address interactive hand use exposure conditions. The UMPC mini-tablet 1-g SAR at 5 mm is not required. When hotspot mode applies, Product Specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Due to the SAR result, only the following frequency bands need to test with 0mm for the Product Specific 10-g SAR, the others are not required.

GSM850 SAR Test Record												
Ant 0 Test Record												
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data(Separate 5mm) ECI 7												
Front side	GPRS 4TS	128/824.2	1:2.075	0.897	0.502	-0.10	29.06	30.00	1.242	1.114	22.1	Yes
Back side	GPRS 4TS	128/824.2	1:2.075	0.992	0.573	-0.05	29.06	30.00	1.242	**1.232**	22.1	No
Back side-Repeated	GPRS 4TS	128/824.2	1:2.075	0.977	0.565	-0.03	29.06	30.00	1.242	1.213	22.1	No
Left side	GPRS 4TS	128/824.2	1:2.075	0.926	0.518	-0.07	29.06	30.00	1.242	1.150	22.1	Yes
Bottom side	GPRS 4TS	128/824.2	1:2.075	0.607	0.309	-0.03	29.06	30.00	1.242	0.754	22.1	Yes
Front side	GPRS 4TS	190/836.6	1:2.075	0.854	0.473	-0.11	28.97	30.00	1.268	1.083	22.1	Yes
Front side	GPRS 4TS	251/848.8	1:2.075	0.688	0.387	0.01	29.05	30.00	1.245	0.856	22.1	Yes
Back side	GPRS 4TS	190/836.6	1:2.075	0.944	0.540	-0.04	28.97	30.00	1.268	1.197	22.1	Yes
Back side	GPRS 4TS	251/848.8	1:2.075	0.761	0.442	-0.08	29.05	30.00	1.245	0.947	22.1	Yes
Left side	GPRS 4TS	190/836.6	1:2.075	0.881	0.488	0.09	28.97	30.00	1.268	1.117	22.1	Yes
Left side	GPRS 4TS	251/848.8	1:2.075	0.710	0.400	0.15	29.05	30.00	1.245	0.884	22.1	Yes

LTE Band 2 SAR Test Record													
Ant 2 Test Record													
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data (Separate 5mm 1RB) ECI 7													
Front side	20	QPSK 1_50	19100/1900	1:1	0.831	0.423	-0.13	19.32	21.00	1.472	1.223	22.3	No
Back side	20	QPSK 1_50	19100/1900	1:1	0.681	0.404	0.03	19.32	21.00	1.472	1.003	22.3	Yes
Right side	20	QPSK 1_50	19100/1900	1:1	0.372	0.214	0.10	19.32	21.00	1.472	0.548	22.3	Yes
Bottom side	20	QPSK 1_50	19100/1900	1:1	0.934	0.482	-0.18	19.32	21.00	1.472	1.375	22.3	No
Front side	20	QPSK 1_0	18700/1860	1:1	0.770	0.406	0.02	19.25	21.00	1.496	1.152	22.3	Yes
Front side	20	QPSK 1_50	18900/1880	1:1	0.803	0.418	0.13	19.26	21.00	1.493	1.199	22.3	Yes
Back side	20	QPSK 1_0	18700/1860	1:1	0.655	0.397	-0.02	19.25	21.00	1.496	0.980	22.3	Yes
Back side	20	QPSK 1_50	18900/1880	1:1	0.685	0.409	0.16	19.26	21.00	1.493	1.023	22.3	Yes
Bottom side	20	QPSK 1_0	18700/1860	1:1	0.898	0.474	0.01	19.25	21.00	1.496	1.344	22.3	No
Bottom side	20	QPSK 1_50	18900/1880	1:1	0.940	0.488	0.02	19.26	21.00	1.493	**1.403**	22.3	No
Bottom side-Repeated	20	QPSK 1_50	18900/1880	1:1	0.927	0.481	0.03	19.26	21.00	1.493	1.384	22.3	No
Hotspot Test data (Separate 5mm 50%RB) ECI 7													
Front side	20	QPSK 50_50	19100/1900	1:1	0.816	0.411	0.07	19.29	21.00	1.483	1.210	22.3	No
Back side	20	QPSK 50_50	19100/1900	1:1	0.651	0.391	0.09	19.29	21.00	1.483	0.965	22.3	Yes
Right side	20	QPSK 50_50	19100/1900	1:1	0.368	0.209	-0.16	19.29	21.00	1.483	0.546	22.3	Yes
Bottom side	20	QPSK 50_50	19100/1900	1:1	0.918	0.471	-0.16	19.29	21.00	1.483	1.361	22.3	No
Front side	20	QPSK 50_50	18700/1860	1:1	0.760	0.388	-0.17	19.16	21.00	1.528	1.161	22.3	Yes
Front side	20	QPSK 50_50	18900/1880	1:1	0.796	0.410	0.08	19.23	21.00	1.503	1.197	22.3	Yes
Back side	20	QPSK 50_50	18700/1860	1:1	0.614	0.369	0.16	19.16	21.00	1.528	0.938	22.3	Yes
Back side	20	QPSK 50_50	18900/1880	1:1	0.645	0.390	0.02	19.23	21.00	1.503	0.970	22.3	Yes
Bottom side	20	QPSK 50_50	18700/1860	1:1	0.866	0.445	0.15	19.16	21.00	1.528	1.323	22.3	No
Bottom side	20	QPSK 50_50	18900/1880	1:1	0.909	0.470	-0.01	19.23	21.00	1.503	1.366	22.3	No
Hotspot Test data (Separate 5mm 100%RB) ECI 7													
Front side	20	QPSK 100_0	18900/1880	1:1	0.764	0.397	0.04	19.31	21.00	1.476	1.127	22.3	Yes
Back side	20	QPSK 100_0	18900/1880	1:1	0.617	0.378	0.19	19.31	21.00	1.476	0.911	22.3	Yes
Bottom side	20	QPSK 100_0	18900/1880	1:1	0.870	0.455	0.04	19.31	21.00	1.476	1.284	22.3	No

LTE Band 4 SAR Test Record													
Ant 2 Test Record													
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data (Separate 5mm 1RB) ECI 7													
Front side	20	QPSK 1_99	20175/1732.5	1:1	0.755	0.379	0.04	17.91	21.00	2.037	1.538	22.3	No
Back side	20	QPSK 1_99	20175/1732.5	1:1	0.587	0.313	-0.15	17.91	21.00	2.037	1.196	22.3	Yes
Right side	20	QPSK 1_99	20175/1732.5	1:1	0.238	0.120	-0.08	17.91	21.00	2.037	0.485	22.3	Yes
Bottom side	20	QPSK 1_99	20175/1732.5	1:1	0.929	0.486	0.00	17.91	21.00	2.037	1.892	22.3	No
Bottom side-Repeated	20	QPSK 1_99	20175/1732.5	1:1	0.912	0.468	0.03	17.91	21.00	2.037	1.858	22.3	No

Hotspot Test data (Separate 5mm 50%RB) ECI 7													
Front side	20	QPSK 50_0	20175/1732.5	1:1	0.738	0.377	-0.12	17.81	21.00	2.084	1.538	22.3	No
Back side	20	QPSK 50_0	20175/1732.5	1:1	0.572	0.315	0.05	17.81	21.00	2.084	1.192	22.3	Yes
Right side	20	QPSK 50_0	20175/1732.5	1:1	0.241	0.122	-0.18	17.81	21.00	2.084	0.502	22.3	Yes
Bottom side	20	QPSK 50_0	20175/1732.5	1:1	0.922	0.471	0.04	17.81	21.00	2.084	1.922	22.3	No
Hotspot Test data (Separate 5mm 100%RB) ECI 7													
Front side	20	QPSK 100_0	20175/1732.5	1:1	0.740	0.379	-0.01	17.62	21.00	2.178	1.612	22.3	No
Bottom side	20	QPSK 100_0	20175/1732.5	1:1	0.924	0.474	-0.04	17.62	21.00	2.178	**2.012**	22.3	No
Bottom side-sample2	20	QPSK 100_0	20175/1732.5	1:1	0.885	0.466	0.06	17.62	21.00	2.178	1.927	22.3	No

LTE Band 41 SAR Test Record

Ant 2 Test Record

Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data (Separate 5mm 1RB) ECI 7													
Front side	20	QPSK 1_50	41490/2680	1:1.58	0.627	0.267	0.05	19.40	21.50	1.622	1.017	22.6	Yes
Back side	20	QPSK 1_50	41490/2680	1:1.58	0.454	0.201	0.03	19.40	21.50	1.622	0.736	22.6	Yes
Right side	20	QPSK 1_50	41490/2680	1:1.58	0.114	0.056	0.07	19.40	21.50	1.622	0.185	22.6	Yes
Bottom side	20	QPSK 1_50	41490/2680	1:1.58	0.868	0.383	0.06	19.40	21.50	1.622	1.408	22.6	No
Front side	20	QPSK 1_0	39750/2506	1:1.58	0.519	0.236	0.10	19.38	21.50	1.629	0.846	22.6	Yes
Front side	20	QPSK 1_0	40185/2549.5	1:1.58	0.589	0.261	0.09	19.37	21.50	1.633	0.962	22.6	Yes
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.647	0.282	0.01	19.39	21.50	1.626	1.052	22.6	Yes
Front side	20	QPSK 1_0	41055/2636.5	1:1.58	0.670	0.288	0.03	19.36	21.50	1.637	1.097	22.6	Yes
Bottom side	20	QPSK 1_0	39750/2506	1:1.58	0.866	0.392	0.01	19.38	21.50	1.629	1.411	22.6	No
Bottom side	20	QPSK 1_0	40185/2549.5	1:1.58	0.913	0.410	0.01	19.37	21.50	1.633	1.491	22.6	No
Bottom side	20	QPSK 1_0	40620/2593	1:1.58	0.910	0.410	0.04	19.39	21.50	1.626	1.479	22.6	No
Bottom side	20	QPSK 1_0	41055/2636.5	1:1.58	0.881	0.394	0.08	19.36	21.50	1.637	1.442	22.6	No
Bottom side	20	PCC QPSK 1_99	40185/2549.5	1:1.58	0.897	0.401	0.12	19.40	21.50	1.622	1.455	22.3	No
		SCC QPSK 1_0	40383/2569.3										
Hotspot Test data (Separate 5mm 50%RB) ECI 7													
Front side	20	QPSK 50_0	41490/2680	1:1.58	0.663	0.292	0.10	19.43	21.50	1.611	1.068	22.6	Yes
Back side	20	QPSK 50_0	41490/2680	1:1.58	0.467	0.206	0.01	19.43	21.50	1.611	0.752	22.6	Yes
Right side	20	QPSK 50_0	41490/2680	1:1.58	0.116	0.057	0.06	19.43	21.50	1.611	0.187	22.6	Yes
Bottom side	20	QPSK 50_0	41490/2680	1:1.58	0.984	0.422	-0.10	19.43	21.50	1.611	**1.585**	22.6	No
Bottom side-Repeated	20	QPSK 50_0	41490/2680	1:1.58	0.942	0.403	0.10	19.43	21.50	1.611	1.517	22.6	No
Front side	20	QPSK 50_0	39750/2506	1:1.58	0.536	0.240	0.02	19.28	21.50	1.667	0.894	22.6	Yes
Front side	20	QPSK 50_0	40185/2549.5	1:1.58	0.594	0.267	0.09	19.41	21.50	1.618	0.961	22.6	Yes
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.577	0.264	0.05	19.34	21.50	1.644	0.949	22.6	Yes
Front side	20	QPSK 50_25	41055/2636.5	1:1.58	0.613	0.283	0.05	19.38	21.50	1.629	0.999	22.6	Yes
Bottom side	20	QPSK 50_0	39750/2506	1:1.58	0.864	0.390	0.03	19.28	21.50	1.667	1.441	22.6	No
Bottom side	20	QPSK 50_0	40185/2549.5	1:1.58	0.933	0.418	0.06	19.41	21.50	1.618	1.510	22.6	No
Bottom side	20	QPSK 50_0	40620/2593	1:1.58	0.962	0.426	0.01	19.34	21.50	1.644	1.582	22.6	No
Bottom side	20	QPSK 50_25	41055/2636.5	1:1.58	0.878	0.392	0.11	19.38	21.50	1.629	1.431	22.6	No

Bottom side with HPUE	20	QPSK 50_0	41490/2680	1:2.31	0.985	0.425	-0.05	21.44	23.50	1.607	1.583	22.6	No
Hotspot Test data (Separate 5mm 50%RB) ECI 7													
Front side	20	QPSK 100_0	40620/2593	1:1.58	0.645	0.287	0.03	19.45	21.50	1.603	1.034	22.6	Yes
Bottom side	20	QPSK 100_0	40620/2593	1:1.58	0.983	0.426	0.04	19.45	21.50	1.603	1.576	22.6	No

LTE Band 42 SAR Test Record

Ant 7 Test Record

Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data (Separate 5mm 1RB) ECI 7													
Front side	20	QPSK 1_0	42590/3500	1:1.58	0.255	0.115	-0.16	15.05	20.00	3.126	0.797	22.3	Yes
Back side	20	QPSK 1_0	42590/3500	1:1.58	0.194	0.091	-0.07	15.05	20.00	3.126	0.606	22.3	Yes
Left side	20	QPSK 1_0	42590/3500	1:1.58	0.420	0.157	-0.10	15.05	20.00	3.126	**1.313**	22.3	No
Left side	20	PCC QPSK 1_0	42990/3540	1:1.58	0.425	0.156	0.08	14.85	20.00	3.273	1.391	22.3	No
		SCC QPSK 1_99	42792/3520.2										
Hotspot Test data (Separate 5mm 50%RB) ECI 7													
Front side	20	QPSK 50_50	42990/3540	1:1.58	0.244	0.113	0.16	15.02	20.00	3.148	0.768	22.3	Yes
Back side	20	QPSK 50_50	42990/3540	1:1.58	0.209	0.095	0.12	15.02	20.00	3.148	0.658	22.3	Yes
Left side	20	QPSK 50_50	42990/3540	1:1.58	0.468	0.168	0.07	15.02	20.00	3.148	**1.473**	22.3	No

N41 SAR Test Record

Ant 2 Test Record

Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data (Separate 10mm 1RB) ECI 7													
Front side	100	QPSK 1_1	518598/2592.99	100%	0.487	0.220	-0.10	16.49	19.50	2.000	0.974	22.3	Yes
Back side	100	QPSK 1_1	518598/2592.99	100%	0.392	0.176	0.06	16.49	19.50	2.000	0.784	22.3	Yes
Right side	100	QPSK 1_1	518598/2592.99	100%	0.143	0.066	-0.06	16.49	19.50	2.000	0.286	22.3	Yes
Bottom side	100	QPSK 1_1	518598/2592.99	100%	0.722	0.326	0.19	16.49	19.50	2.000	**1.444**	22.1	No
Hotspot Test data (Separate 10mm 50%RB) ECI 7													
Front side	100	QPSK 135_69	518598/2592.99	100%	0.485	0.205	0.15	16.80	19.50	1.862	0.903	22.3	Yes
Back side	100	QPSK 135_69	518598/2592.99	100%	0.346	0.160	0.00	16.80	19.50	1.862	0.644	22.3	Yes
Right side	100	QPSK 135_69	518598/2592.99	100%	0.115	0.055	0.17	16.80	19.50	1.862	0.214	22.3	Yes
Bottom side	100	QPSK 135_69	518598/2592.99	100%	0.705	0.315	0.07	16.80	19.50	1.862	1.313	22.3	No
Hotspot Test data (Separate 10mm 50%RB) ECI 7													
Bottom side	100	QPSK 270_0	518598/2592.99	100%	0.562	0.231	-0.03	15.70	18.50	1.905	1.071	22.3	Yes

N77(3700-3980) SAR Test Record													
Ant 7 Test Record													
Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data (Separate 10mm 1RB) ECI 7													
Front side	100	QPSK 1_271	650000/3750	100%	0.310	0.117	-0.11	13.45	18.00	2.851	0.884	22.3	Yes
Back side	100	QPSK 1_271	650000/3750	100%	0.189	0.077	0.13	13.45	18.00	2.851	0.539	22.3	Yes
Left side	100	QPSK 1_271	650000/3750	100%	0.431	0.102	-0.17	13.45	18.00	2.851	1.229	22.3	No
Left side	100	QPSK 1_271	662000/3930	100%	0.439	0.109	0.01	13.23	18.00	2.999	**1.317**	22.1	No
Hotspot Test data (Separate 10mm 50%RB) ECI 7													
Front side	100	QPSK 135_69	650000/3750	100%	0.281	0.104	-0.07	13.72	18.00	2.679	0.753	22.3	Yes
Back side	100	QPSK 135_69	650000/3750	100%	0.167	0.069	0.12	13.72	18.00	2.679	0.447	22.3	Yes
Left side	100	QPSK 135_69	650000/3750	100%	0.421	0.100	0.13	13.72	18.00	2.679	1.128	22.3	Yes
Left side	100	QPSK 135_69	662000/3930	100%	0.430	0.106	0.11	13.49	18.00	2.825	1.215	22.3	No

Wi-Fi 2.4G SAR Test Record													
MIMO Test Record													
Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)	Product Specific 10-g SAR Exclusion
Hotspot Test data (Separate 5mm)													
Front side	802.11b	1/2412	99.56%	1.004	0.220	0.120	0.19	16.78	22.50	3.733	0.825	22.3	Yes
Back side	802.11b	1/2412	99.56%	1.004	0.271	0.143	-0.16	16.78	22.50	3.733	1.016	22.3	Yes
Right side	802.11b	1/2412	99.56%	1.004	0.220	0.098	0.05	16.78	22.50	3.733	0.825	22.3	Yes
Top side	802.11b	1/2412	99.56%	1.004	0.500	0.227	0.11	16.78	22.50	3.733	**1.874**	22.3	No

6 SAR System Verificaion Procedure

6.1 Tissue Simulate Liquid

6.1.1 Recipes for Tissue Simulate Liquid

The bellowing tables give the recipes for tissue simulating liquids to be used in different frequency bands:

Ingredients (% by weight)	Frequency (MHz)				
	450	700-1000	1700-2000	2300-2500	2500-2700
Water	38.56	40.30	55.24	55.00	54.92
Salt (NaCl)	3.95	1.38	0.31	0.2	0.23
Sucrose	56.32	57.90	0	0	0
HEC	0.98	0.24	0	0	0
Bactericide	0.19	0.18	0	0	0
Tween	0	0	44.45	44.80	44.85
Salt: 99+% Pure Sodium Chloride Water: De-ionized, 16 MΩ+ resistivity Tween: Polyoxyethylene (20) sorbitan monolaurate			Sucrose: 98+% Pure Sucrose HEC: Hydroxyethyl Cellulose		
HSL5GHz is composed of the following ingredients: (Manufactured by SPEAG) Water: 50-65% Mineral oil: 10-30% Emulsifiers: 8-25% Sodium salt: 0-1.5%					

Table 2： Recipe of Tissue Simulate Liquid

6.1.2 Measurement for Tissue Simulate Liquid

The Conductivity (σ) and Permittivity (εr) are listed in Table 2. For the SAR measurement given in this report.

The temperature variation of the Tissue Simulate Liquids was 22±2°C.

Tissue Type	Measured Frequency (MHz)	Measured Tissue		Target Tissue (±5%)		Deviation (Within ±5%)		Liquid Temp. (℃)	Test Date
		ε_r	σ(S/m)	ε_r	σ(S/m)	ε_r	σ(S/m)		
750 Head	750	42.729	0.886	41.90	0.89	1.98%	-0.45%	22.3	2025/4/24
835 Head	835	42.981	0.880	41.50	0.90	3.57%	-2.19%	22.5	2025/5/4
1750 Head	1750	40.704	1.346	40.10	1.37	1.51%	-1.74%	22.3	2025/5/2
1950 Head	1950	41.145	1.422	40.00	1.40	2.86%	1.54%	22.5	2025/5/5
2450 Head	2450	40.622	1.768	39.20	1.80	3.63%	-1.75%	22.3	2025/5/21
2600 Head	2600	39.764	1.956	39.00	1.96	1.96%	-0.20%	22.3	2025/4/29
2600 Head	2600	39.917	1.962	39.00	1.96	2.35%	0.10%	22.3	2025/5/8
3500 Head	3500	38.079	2.890	37.90	2.91	0.47%	-0.69%	22.3	2025/5/5
3700 Head	3700	37.363	3.082	37.70	3.12	-0.89%	-1.22%	22.3	2025/4/28
3900 Head	3900	36.653	3.296	37.50	3.32	-2.26%	-0.72%	22.3	2025/4/28
5250 Head	5250	36.051	4.647	35.90	4.71	0.42%	-1.34%	22.1	2025/5/14
5600 Head	5600	35.183	5.026	35.50	5.07	-0.89%	-0.87%	22.1	2025/5/14
5750 Head	5750	35.002	5.217	35.40	5.22	-1.12%	-0.06%	22.1	2025/5/14
6500 Head	6500	34.300	6.220	34.50	6.07	-0.58%	2.47%	22.3	2025/5/21

Table 3： Measurement result of Tissue electric parameters

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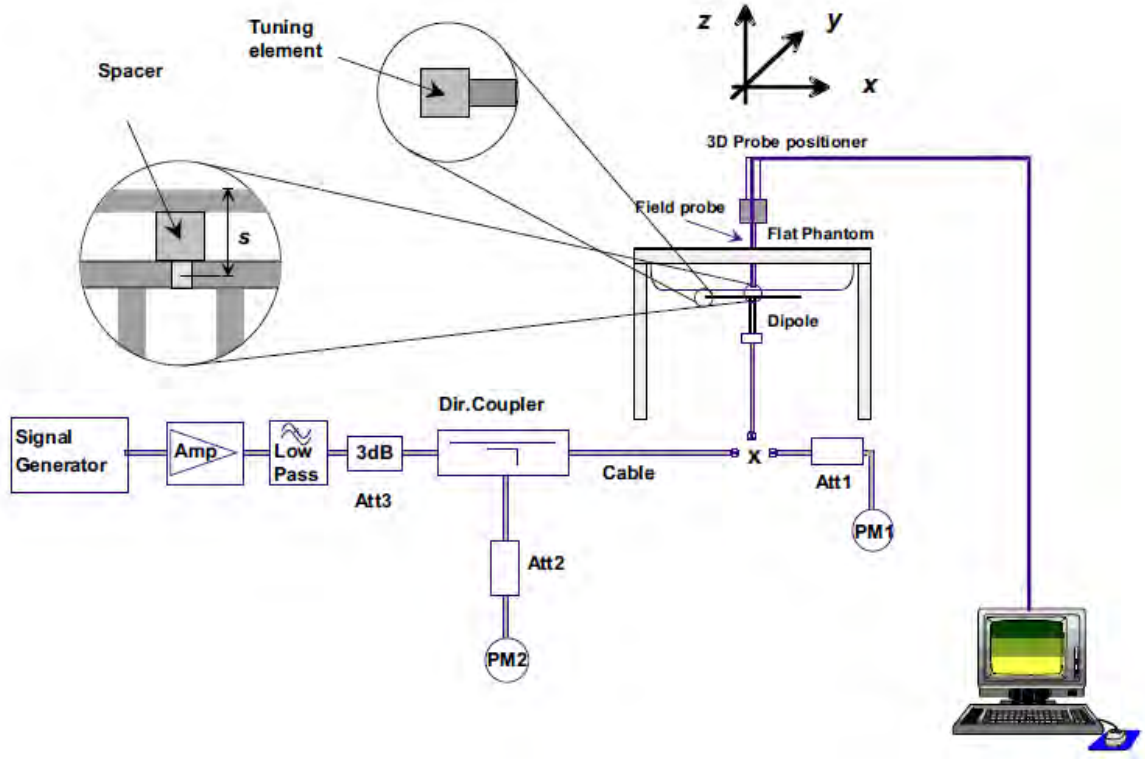
6.2 SAR System Check

The microwave circuit arrangement for system Check is sketched in F-12. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. The tests were conducted on the same days as the measurement of the EUT. The obtained results from the system accuracy verification are displayed in the following table (A power level of 250mW (below 3GHz) or 100mW (3-6GHz) was input to the dipole antenna). During the tests, the ambient temperature of the laboratory was in the range 22±2°C, the relative humidity was in the range 60% and the liquid depth above the ear reference points was above 15±0.5 cm in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.



F-12.The microwave circuit arrangement used for SAR system Check

6.2.1 Justification for Extended SAR Dipole Calibrations

1) Instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

a) There is no physical damage on the dipole;

b) System check with specific dipole is within 10% of calibrated value;

c) Return-loss is within 20% of calibrated measurement;

d) Impedance is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

6.2.2 Summary System Check Result(s)

Validation Kit	Measured SAR 250mW	Measured SAR 250mW	Measured SAR (normalized to 1W)	Measured SAR (normalized to 1W)	Target SAR (normalized to 1W)	Target SAR (normalized to 1W)	Deviation (Within ±10%)		Liquid Temp. (℃)	Test Date
	1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)	10-g(W/kg)		
D750V3_Head	2.01	1.34	8.04	5.36	8.37	5.53	-3.94%	-3.07%	22.3	2025/4/24
D835V2_Head	2.46	1.62	9.84	6.48	9.53	6.29	3.25%	3.02%	22.5	2025/5/4
D1750V2_Head	9.12	4.93	36.48	19.72	36.60	19.30	-0.33%	2.18%	22.3	2025/5/2
D1950V3_Head	10.00	5.37	40.00	21.48	40.50	20.80	-1.23%	3.27%	22.5	2025/5/5
D2450V2_Head	12.60	6.05	50.40	24.20	52.20	24.30	-3.45%	-0.41%	22.3	2025/5/21
D2600V2_Head	14.40	6.55	57.60	26.20	57.70	25.80	-0.17%	1.55%	22.3	2025/4/29
D2600V2_Head	14.10	6.43	56.40	25.72	57.70	25.80	-2.25%	-0.31%	22.3	2025/5/8
Validation Kit	**Measured SAR 100mW**	**Measured SAR 100mW**	**Measured SAR (normalized to 1W)**	**Measured SAR (normalized to 1W)**	**Target SAR (normalized to 1W)**	**Target SAR (normalized to 1W)**	**Deviation (Within ±10%)**		**Liquid Temp. (℃)**	**Test Date**
	1g (W/kg)	10g (W/kg)	1g (W/kg)	10g (W/kg)	1-g(W/kg)	10-g(W/kg)	1-g(W/kg)	10-g(W/kg)		
D3500V2_3.5GHz_Head	6.34	2.36	63.40	23.60	65.80	25.70	-3.65%	-8.17%	22.3	2025/5/5
D3700V2_Head	6.92	2.58	69.20	25.80	66.10	24.70	4.69%	4.45%	22.3	2025/4/28
D3900V2_3.9GHz_Head	7.04	2.52	70.40	25.20	66.70	23.80	5.55%	5.88%	22.3	2025/4/28
D5GHzV2_5.25G_Head	7.21	2.06	72.10	20.60	77.30	22.10	-6.73%	-6.79%	22.1	2025/5/14
D5GHzV2_5.6G_Head	8.03	2.27	80.30	22.70	81.30	23.10	-1.23%	-1.73%	22.1	2025/5/14
D5GHzV2_5.75G_Head	7.89	2.22	78.90	22.20	77.10	21.30	2.33%	4.23%	22.1	2025/5/14
D6500V2_Head	29.90	5.59	299.00	55.90	291.00	53.90	2.75%	3.71%	22.3	2025/5/21

Table 4： SAR System Check Result

6.2.3 Detailed System Check Results

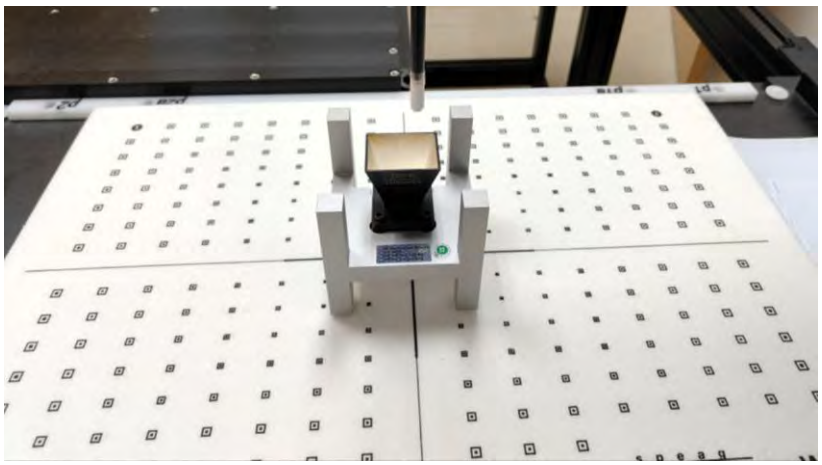
Please see the Appendix A

7 PD System Check

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user's manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG's mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check. The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

Frequent	Measured PD W/m²	Target PD W/m²	Circular Deviation (Within ±0.66dB)	Test Date
	4cm²	4cm²	4cm²	
10G HZ Source	189.00	183	0.14	2025/5/22

Note: 1. Measured PD after normalized to Pard power with DASY Calibration Certificate in Appendix A.



8 Test Configuration

8.1 3G SAR Test Reduction Procedure

According to KDB 941225D01, in the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode. This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

8.2 Operation Configurations

8.2.1 GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a base station by air link. Using Radio Communication Analyzer, the power lever is set to “5”and “0” in SAR of GSM 850 and GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslot is 5. The EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink, and at most 4 timeslots in downlink, the maximum total timeslot is 5.

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power, the higher number time-slot configuration should be tested.

When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

8.2.2 WCDMA Test Configuration

1）. Output Power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1’s” for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are required in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

2）. Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

3）. Body SAR

SAR for body configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreaing code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

4）. HSDPA / HSUPA

RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power for production units in HSDPA / HSUPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest measured SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power of HSDPA / HSUPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.5 W/kg, SAR measurement is not required for HSDPA / HSUPA.

a) HSDPA

HSDPA is configured according to the applicable UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms and a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) are set according to values indicated in the following table The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Sub-test	βc	Bd	βd(SF)	βc/βd	βhs	CM(dB)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1: △ACK, △NACK and △CQI= 8 Ahs = βhs/βc=30/15 βhs=30/15*βc

Note2:For the HS-DPCCH power mask requirement test in clause 5.2C,5.7A,and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A,and HSDPA EVM with phase discontinuity in clause 5.13.1AA, △ACK and △NACK= 8 (Ahs=30/15) with βhs=30/15*βc,and △CQI= 7 (Ahs=24/15) with βhs=24/15*βc.

Note3: CM=1 forβc/βd =12/15, βhs/βc=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

The measurements were performed with a Fixed Reference Channel (FRC) and H-Set 1 QPSK.

Parameter	Value
Nominal average inf. bit rate	534 kbit/s
Inter-TTI Distance	3 TTI"s
Number of HARQ Processes	2 Processes
Information Bit Payload	3202 Bits
MAC-d PDU size	336 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	4800 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	9600 SMLs
Coding Rate	0.67
Number of Physical Channel Codes	5

Table 5： settings of required H-Set 1 QPSK acc. to 3GPP 34.121

HS-DSCH Category	MaximumHS-DSCH Codes Received	Minimum Inter-TTI Interval	MaximumHS-DSCH TransportBlockBits/HS-DSCH TTI	TotalSoft Channel Bits
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

Table 6： HSDPA UE category

b) HSUPA

Due to inner loop power control requirements in HSUPA, a commercial communication test set should be used for the output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSUPA should be configured according to the values indicated below as well as other applicable procedures described in the WCDMA Handset and Release 5 HSUPA Data Device sections of 3G device.

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs}(1)	β_{ec}	β_{ed}	β_{ec} (SF)	β_{ed} (code)	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference

Note 3 : For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$

Note 4 : For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$

Note 5 : Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Table 5.1g

Note 6: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Table 7： Subtests for UMTS Release 6 HSUPA

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI(ms)	Minimum Speading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	10	2SF2&2SF4	11484	5.76
	4	4	2		20000	2.00
7 (No DPDCH)	4	8	2	2SF2&2SF4	22996	?
	4	4	10		20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.UE categories 1 to 6 support QPSK only. UE category 7 supports QPSK and 16QAM.(TS25.306-7.3.0).

Table 8： HSUPA UE category

c) DC-HSDPA

SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a Second serving HS-DSCH Cell are required

to perform the power measurement and for the results to be acceptable.

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS 34.108 v9.5.0.

A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13.

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

The measurements were performed with a Fixed Reference Channel (FRC) H-Set 12 with QPSK.

Parameter	Value
Nominal average inf. bit rate	60 kbit/s
Inter-TTI Distance	1 TTI's
Number of HARQ Processes	6 Processes
Information Bit Payload	120 Bits
Number Code Blocks	1 Block
Binary Channel Bits Per TTI	960 Bits
Total Available SMLs in UE	19200 SMLs
Number of SMLs per HARQ Process	3200 SMLs
Coding Rate	0.15
Number of Physical Channel Codes	1

Table 9： settings of required H-Set 12 QPSK acc. To 3GPP 34.121

Note:

1. The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table above.
2. Maximum number of transmission is limited to 1,i.e.,retransmission is not allowed. The redundancy and constellation version 0 shall be used.

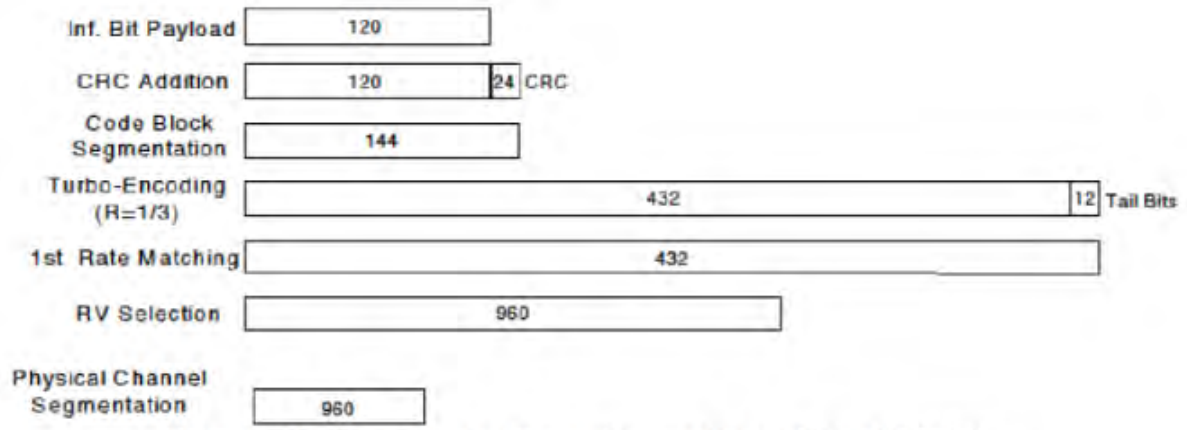


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 5 procedures. A summary of subtest settings are illustrated below:

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	CM(dB)(2)	MPR (dB)
1	2/15	15/15	64	2/15	4/15	0.0	0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0	0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ ACK, Δ NACK and Δ CQI = 8 $A_{hs} = \beta_{hs}/\beta_c = 30/15$ $\beta_{hs} = 30/15 * \beta_c$

Note 2: CM=1 for β_c/β_d= 12/15, β_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15

Up commands are set continuously to set the UE to Max power.

Note:

1. The Dual Carriers transmission only applies to HSDPA physical channels
2. The Dual Carriers belong to the same Node and are on adjacent carriers.
3. The Dual Carriers do not support MIMO to serve Ues configured for dual cell operation
4. The Dual Carriers operate in the same frequency band.
5. The device doesn't support the modulation of 16QAM in uplink but 64QAM in downlink for DC-HSDPA mode.
6. The device doesn't support carrier aggregation for it just can operate in Release 8.

d) HSPA+

SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

Table C.11.1.4: β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	$\beta_{ed}1$: 30/15 $\beta_{ed}2$: 30/15	$\beta_{ed}3$: 24/15 $\beta_{ed}4$: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c .

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.

Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.

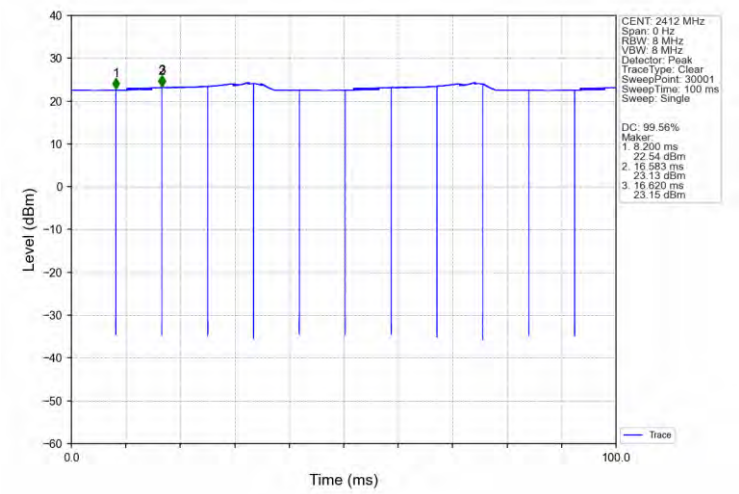
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

8.2.3 WIFI Test Configuration

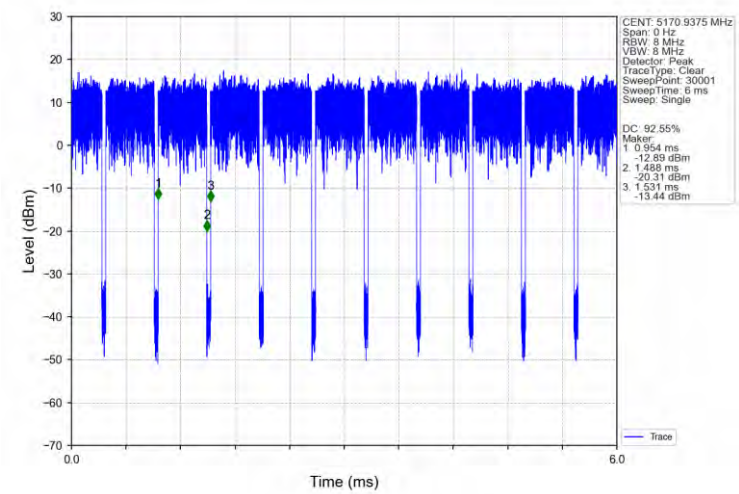
A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

8.2.3.1 Duty cycle

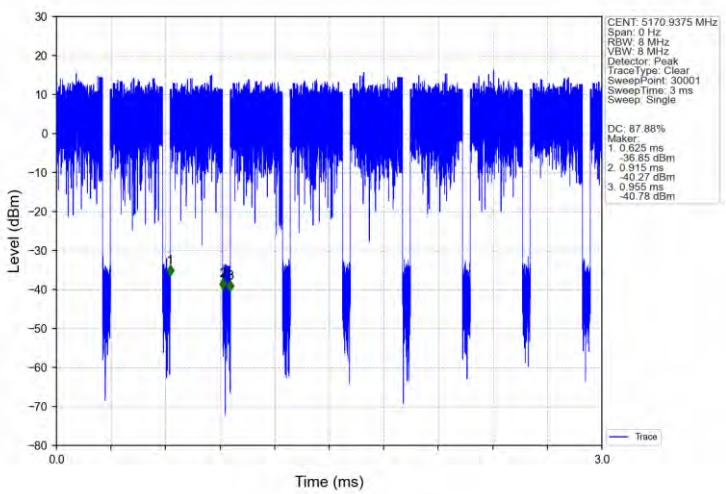
1) Wi-Fi 2.4GHz 802.11b:Duty cycle=99.56%



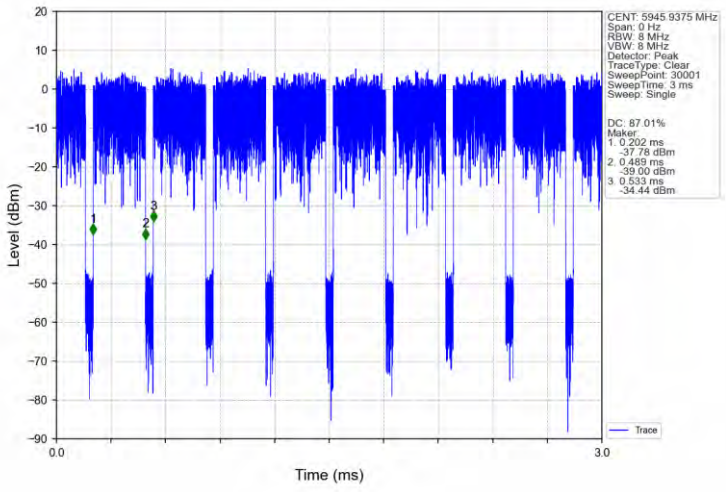
2) Wi-Fi 5GHz 802.11n40:Duty cycle=92.55%



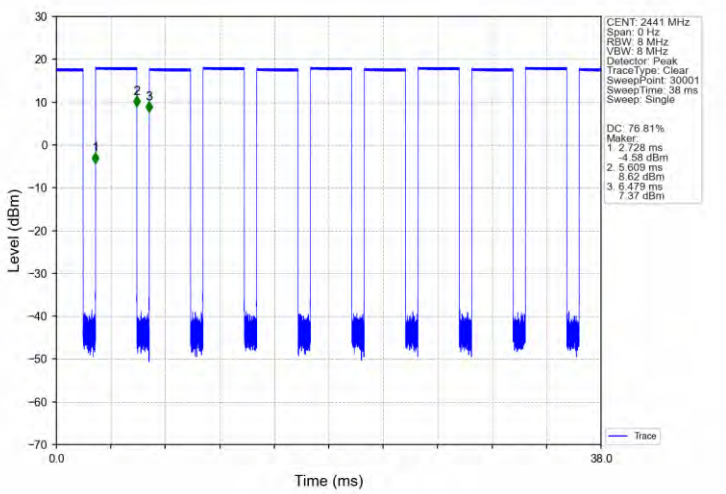
3) Wi-Fi 5GHz 802.11ac80:Duty cycle=87.88%



4) Wi-Fi 6E 802.11ax:Duty cycle=87.01%



5) DH5 Duty Cycle=76.81%



8.2.3.2 Initial Test Position SAR Test Reduction Procedure

DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:

1）. When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
2）. When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
3）. For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. a) Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

8.2.3.3 Subsequent Test Configuration Procedures

SAR measurement requirements for the remaining 802.11 transmission mode configurations that have not been tested in the initial test configuration are determined separately for each standalone and aggregated frequency band, in each exposure condition, according to the maximum output power specified for production units. The initial test position procedure is applied to next to the ear, UMPC mini-tablet and hotspot mode configurations. When the same maximum output power is specified for multiple transmission modes, additional power measurements may be required to determine if SAR measurements are required for subsequent highest output power channels in a subsequent test configuration. The subsequent test configuration and SAR measurement procedures are described in the following.

1）. When SAR test exclusion provisions of KDB Publication 447498 are applicable and SAR measurement is not required for the initial test configuration, SAR is also not required for the next highest maximum output power transmission mode subsequent test configuration(s) in that frequency band or aggregated band and exposure configuration.

2）. When the highest reported SAR for the initial test configuration (when applicable, include subsequent highest output channels), according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.

3）. The number of channels in the initial test configuration and subsequent test configuration can be different due to differences in channel bandwidth. When SAR measurement is required for a subsequent test configuration and the channel bandwidth is smaller than that in the initial test configuration, all channels in the subsequent test configuration that overlap with the larger bandwidth channel tested in the initial test configuration should be used to determine the highest maximum output power channel. This step requires additional power measurement to identify the highest maximum output power channel in the subsequent test configuration to determine SAR test reduction.

a) SAR should first be measured for the channel with highest measured output power in the subsequent test configuration.

b) SAR for subsequent highest measured maximum output power channels in the subsequent test configuration is required only when the reported SAR of the preceding higher maximum output power channel(s) in the subsequent test configuration is > 1.2 W/kg or until all required channels are tested. i) For channels with the same measured maximum output power, SAR should be measured using the channel closest to the center frequency of the larger channel bandwidth channel in the initial test configuration.

4）. SAR measurements for the remaining highest specified maximum output power OFDM transmission mode configurations that have not been tested in the initial test configuration (highest maximum output) or subsequent test configuration(s) (subsequent next highest maximum output power) is determined by recursively applying the subsequent test configuration procedures in this section to the remaining configurations according to the following:

a) replace “subsequent test configuration” with “next subsequent test configuration” (i.e., subsequent next highest specified maximum output power configuration)

b) replace “initial test configuration” with “all tested higher output power configurations”

8.2.3.4 2.4 GHz WiFi SAR Procedures

Separate SAR procedures are applied to DSSS and OFDM configurations in the 2.4 GHz band to simplify DSSS test requirements. For 802.11b DSSS SAR measurements, DSSS SAR procedure applies to fixed exposure test position and initial test position procedure applies to multiple exposure test positions. When SAR measurement is required for an OFDM configuration, the initial test configuration, subsequent test configuration and initial test position procedures are applied. The SAR test exclusion requirements for 802.11g/n OFDM configurations are described in following.

- **802.11b DSSS SAR Test Requirements**

SAR is measured for 2.4 GHz 802.11b DSSS using either a fixed test position or, when applicable, the initial test position procedure. SAR test reduction is determined according to the following:

1）. When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.

2）. When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel; i.e., all channels require testing.

- **2.4 GHz 802.11g/n OFDM SAR Test Exclusion Requirements**

When SAR measurement is required for 2.4 GHz 802.11g/n OFDM configurations, the measurement and test reduction procedures for OFDM are applied (section 5.3, including sub-sections). SAR is not required for the following 2.4 GHz OFDM conditions.

1）. When KDB Publication 447498 SAR test exclusion applies to the OFDM configuration.

2）. When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

- **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 g/n OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

8.2.3.5 5 GHz WiFi SAR Procedures

- **U-NII-1 and U-NII-2A Bands**
  For devices that operate in only one of the U-NII-1 and U-NII-2A bands, the normally required SAR procedures for OFDM configurations are applied. For devices that operate in both U-NII bands using the same transmitter and antenna(s), SAR test reduction is determined according to the following：

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration (802.11 mode and exposure condition); otherwise, both bands are tested independently for SAR.
2) When different maximum output power is specified for the bands, begin SAR measurement in the band with higher specified maximum output power. The highest reported SAR for the tested configuration is adjusted by the ratio of lower to higher specified maximum output power for the two bands. When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the band with lower maximum output power in that test configuration; otherwise, both bands are tested independently for SAR.
3) The two U-NII bands may be aggregated to support a 160 MHz channel on channel number 50. Without additional testing, the maximum output power for this is limited to the lower of the maximum output power certified for the two bands. When SAR measurement is required for at least one of the bands and the highest reported SAR adjusted by the ratio of specified maximum output power of aggregated to standalone band is > 1.2 W/kg, SAR is required for the 160 MHz channel. This procedure does not apply to an aggregated band with maximum output higher than the standalone band(s); the aggregated band must be tested independently for SAR. SAR is not required when the 160 MHz channel is operating at a reduced maximum power and also qualifies for SAR test exclusion.

- **U-NII-2C and U-NII-3 Bands**
  The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. when Terminal Doppler Weather Radar (TDWR) restriction applies, all channels that operate at 5.60 – 5.65 GHz must be included to apply the SAR test reduction and measurement procedures.

  When the same transmitter and antenna(s) are used for U-NII-2C band and U-NII-3 band or 5.8 GHz band of §15.247, the bands may be aggregated to enable additional channels with 20, 40 or 80 MHz bandwidth to span across the band gap, as illustrated in Appendix B. The maximum output power for the additional band gap channels is limited to the lower of those certified for the bands. Unless band gap channels are permanently disabled, they must be considered for SAR testing. The frequency range covered by these bands is 380 MHz (5.47 – 5.85 GHz), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. To maintain SAR measurement accuracy and to facilitate test reduction, the channels in U-NII-2C band above 5.65 GHz may be grouped with the 5.8 GHz channels in U-NII-3 or §15.247 band to enable two SAR probe calibration frequency points to cover the bands, including the band gap channels. When band gap channels are supported and the bands are not aggregated for SAR testing, band gap channels must be considered independently in each band according to the normally required OFDM SAR measurement and probe calibration frequency points requirements.

OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements

The initial test configuration for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. When multiple configurations in a frequency band have the same specified maximum output power, the initial test configuration is determined according to the following steps applied sequentially.

1) The largest channel bandwidth configuration is selected among the multiple configurations with the same specified maximum output power.
2) If multiple configurations have the same specified maximum output power and largest channel bandwidth, the lowest order modulation among the largest channel bandwidth configurations is selected.
3) If multiple configurations have the same specified maximum output power, largest channel bandwidth and lowest order modulation, the lowest data rate configuration among these configurations is selected.
4) When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. After an initial test configuration is determined, if multiple test channels have the same measured maximum output power, the channel chosen for SAR measurement is determined according to the following. These channel selection procedures apply to both the initial test configuration and subsequent test configuration(s), with respect to the default power measurement procedures or additional power measurements required for further SAR test reduction. The same procedures also apply to subsequent highest output power channel(s) selection.
    a) The channel closest to mid-band frequency is selected for SAR measurement.
    b) For channels with equal separation from mid-band frequency; for example, high and low channels or two mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

- **SAR Test Requirements for OFDM configurations**

When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the same transmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction applies. When band gap channels between U-NII-2C band and 5.8 GHz U-NII-3 or §15.247 band are supported, the highest maximum output power transmission mode configuration and maximum output power channel across the bands must be used to determine SAR test reduction, according to the initial test configuration and subsequent test configuration requirements. In applying the initial test configuration and subsequent test configuration procedures, the 802.11 transmission configuration with the highest specified maximum output power and the channel within a test configuration with the highest measured maximum output power should be clearly distinguished to apply the procedures.

8.2.3.6 6 GHz WiFi PD Procedures

Power Density General Notes:

1. The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermalcharacteristics and are within operational tolerances expected for production units.

2. Batteries are fully charged at the beginning of the measurements.

3. Absorbed power density (APD) using a 4cm^2 averaging area is reported based on SAR measurements.

4. Power density was calculated by repeated E-field measurements on two measurement planes separatedby λ/4.

5. The device was configured to transmit continuously at the required data rate, channel bandwidth andsignal modulation, using the highest transmission duty factor supported by the test mode tools.

6. Per FCC guidance and equipment manufacturer guidance, power density results were scaled accordingto IEC 62479:2010 for the portion of the measurement uncertainty > 30%. Total expanded uncertainty of2.67 dB (84.9%) was used to determine the psPD measurement scaling factor.

7. Per April 2021 TCB Workshop, For the highest SAR test configurations also measure incident PD (total) usingpower-density reconstruction methodin 2 mm closest measurement plane.

8. Since this device is considered a phablet and there is no different PD limit ondifferent exposure conditions, therefore select highestphablet SAR at 0 mm test distance and configurations evaluate power density. Since there is no different PD limit on different exposure conditions, therefore the PD test was performed of a 2mm separation between Probe sensor and EUT surface to cover all exposure conditions of phablet.

9. IPD is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.

10. Per October 2020 TCB Workshop,PTP-PR algorithm was used during psPD measurement and calculations.

11. The measurement procedure consists of measuring the PDinc at two different distances: 2 mm (compliance distance) and λ/5. Thegrid extents should be large enough to fully capture the transmitted energy. The grid step should be fine enough to demonstrate that the integrated Power Density iPDn fulfill the criterion described below. Since iPD ratio between the two distances is≥-1dB, the grid step (0.0625) was sufficient for determining compliance at d=2mm.

$$10*\log_{10}\frac{\mathrm{iPDn}(2mm)}{\mathrm{iPDn}(\lambda/5)} \geq -1$$

8.2.4 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The Radio Communication Analyzer was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

TDD LTE test consideration
For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.
SAR was tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7.
LTE TDD Band support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Frame structure type 2:

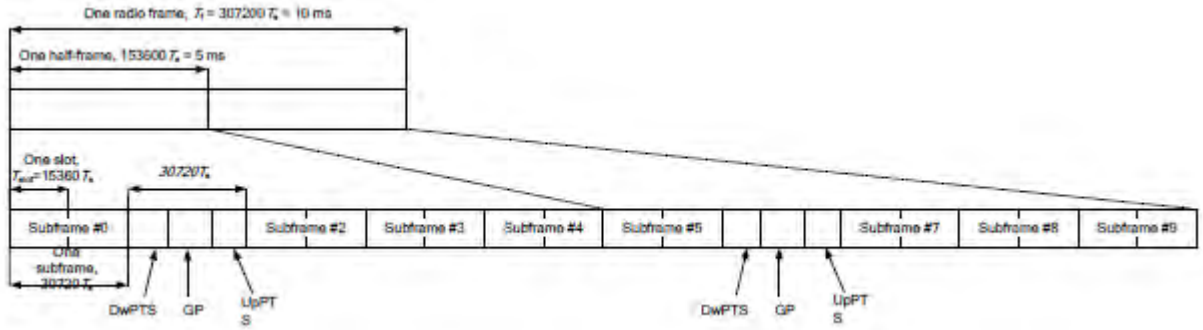


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592.Ts	2192.Ts	2560.Ts	7680.Ts	2192.Ts	2560.Ts
1	19760.Ts			20480.Ts		
2	21952.Ts			23040.Ts		
3	24144.Ts			25600.Ts		
4	26336.Ts			7680.Ts	4384.Ts	5120.Ts
5	6592.Ts	4384.Ts	5120.Ts	20480.Ts		
6	19760.Ts			23040.Ts		
7	21952.Ts			25600.Ts		
8	24144.Ts			-	-	-
9	13168.Ts			-	-	-

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Calculated Duty Cycle=[Extended cyclic prefix in uplink x (Ts) x # of S + # of U]/10ms

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

A) Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

Modulation	Channel bandwidth/Transmission bandwidth						MPR (dB)
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	0
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1
16QAM	> 5	> 4	> 8	> 12	> 16	> 18	2
64QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	2
64QAM	> 5	> 4	> 8	> 12	> 16	> 18	3
256QAM	≥1						5

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest channel bandwidth standalone SAR test requirements

1) QPSK with 1 RB allocation

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

2) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

3) QPSK with 100% RB allocation

For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

4) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other channel bandwidth standalone SAR test requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

F) LTE CA additional specification

The device supports intra-band contiguous and inter-band discontinuous uplink and downlink LTE Carrier Aggregation (CA). When carrier aggregation applies, implementation and measurement details for the following are necessary.

a) Intra-band carrier aggregation requirements for uplink.

b) Intra-band and inter-band carrier aggregation requirements for downlink.

Per 3GPP TS 36.101 V15.4.0, The conducted power measurement results of downlink and uplink LTE CA are provided in Appendix E (Conducted RF Output Power). The downlink LTE CA SAR test is not required since the maximum output power for downlink LTE CA was not more than 0.25dB higher than the maximum output power for without downlink LTE CA.

SAR test procedure for intra-band contiguous UL LTE CA is as below:

1)Maximum output power is measured for each UL CA configuration for the required test channels described in KDB 941225 D05

– UL PCC configuration is determined by the required test channel

– SCC and subsequent CCs are added alternatively to either side of the PCC or within the transmission band for channels at the ends of a frequency band.

2)SAR for UL CA is required in each exposure condition and frequency band combination

3)For this device , as the maximum output for Intra-band uplink LTE CA is ≤ standalone LTE mode (without CA),

- PCC is configured according to the highest standalone SAR configuration tested.

- SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC

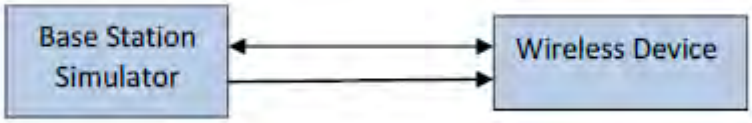
4)When the reported SAR for UL CA configuration, described above, is > 1.2 W/kg, UL CA SAR is also required for all required test channels (PCC based)

5)UL CA SAR is also required for standalone SAR configurations > 1.2 W/kg when they are scaled to the UL CA power level.

6)General PCC and SCC configuration selection procedure
- PCC uplink channel, channel bandwidth, modulation and RB configurations were selected based on section C)3)b)ii) of KDB 941225 D05 V01r02. All LTE bandwidth conducted powers needed for PCC uplink configuration selection can be found in appendix E. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.

- To maximize aggregated bandwidth, highest channel bandwidth available for that CA combination was selected for SCC. For inter-band CA, the SCC downlink channels were selected near the middle of their transmission bands. For contiguous intra-band CA, the downlink channel spacing between the component carriers was set to multiple of 300 kHz less than the nominal channel spacing defined in

section 5.4.1A of 3GPP TS 36.521. For non-contiguous intra-band CA, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
All selected PCC and SCC(s) remained fully within the uplink/downlink transmission band of the respective component carrier.



DL CA Power Measurement Setup

8.2.5 NR Band Test Configuration

1. NR Band n41/n77/n78 support SA mode and n77/n78 support NSA mode. LTE+NR Band operations are possible only with LTE under EN-DC mode and the operations are possible as following table:

Band/Antenna		n77		n78	
		Ant3	Ant7	Ant3	Ant7
LTE B41	Ant2		√		√

2. The general information supported by the NR band is as following table:

Band			n41	n77	n78
Modulation	DFT-s-OFDM	PI/2 BPSK	Yes	Yes	Yes
		QPSK	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes
	CP-OFDM	QPSK	Yes	Yes	Yes
		16QAM	Yes	Yes	Yes
		64QAM	Yes	Yes	Yes
		256QAM	Yes	Yes	Yes
Max Duty Cycle			100%	100%	100%

Band	SCS	Bandwidth														
		5MHz	10MHz	15MHz	20MHz	25MHz	30MHz	35MHz	40MHz	45MHz	50MHz	60MHz	70MHz	80MHz	90MHz	100MHz
n41	15 kHz	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30 kHz	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
n77	15 kHz	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30 kHz	N/A	Yes	Yes	Yes	Yes	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes
n78	15 kHz	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	30 kHz	N/A	Yes	Yes	Yes	Yes	Yes	N/A	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes

3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
a. For DFT-OFDM and CP-OFDM output power measurement reduction, according to 3GPP 38.101 maximum power reduction for power class 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg; CP-OFDM testing is not required.
b. For DFT-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, for PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the PI/2 BPSK/16QAM/64QMA/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.
c. SAR testing start with the largest SCS and largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
d. 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure
e. QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
f. PI/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, PI/2 BPSK/16QAM/64QAM/256QAM SAR testing are not required.
g. Smaller SCS/bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device

4. MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS 38.101-1 Section 6.2.2 under Table 6.2.2 -1.

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	PI/2 BPSK	≤ 3.5[1]	≤ 1.2[1]	≤ 0.2[1]
		≤ 0.5[2]	≤ 0.5[2]	0[2]
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM	≤ 2.5		
	256 QAM	≤ 4.5		
CP-OFDM	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM	≤ 3.5		
	256 QAM	≤ 6.5		

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability powerBoosting-pi2BPSK and if the IE powerBoostPi2BPSK is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE powerBoostPi2BPSK is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

5. For FDD NR Band operation does not have the fixed UL/DL frame structure, but during the transmitting/ receiving it can be operated in the slot structure of 100% UL duty cycle, we are proposing the conservative way to evaluate SAR at 100% duty cycle. For the purpose of test NR Band standalone SAR, and also test SAR level at 100% TX duty cycle.

6. For 5G NR Sub6GHz SISO Mode, SAR Test plan as below:

1) For 5G NR NSA mode with the same UL EN_DC combination but different DL EN_DC combinations, eg: EN-DC configuration: UL DC_7A_n5 (UL two bands) with DL DC_7C_n5 (DL two bands)

a) The UL EN-DC configuration, including the Tx antenna configuration, RF path, the channel bandwidth and other operating parameters are the same.

b) The maximum output power, including tolerance, for the UL EN-DC configuration with DL two or more bands must be ≤ the same UL EN-DC configuration with DL two bands only to qualify for the SAR test exclusion.

7. For EN-DC SAR, as the existing SAR test system cannot test the multiple different frequency bands simultaneous Transmission SAR at the same time, we suggest that the conservative “max + max” multi-Tx and SAR scaling method can be used to evaluate the inter-band Uplink EN-DC SAR from standalone SAR test results of each LTE and NR EN-DC component band and the conservative “max + max” multi-Tx method to combine the scaled SAR value from each EN-DC component band as the inter-band Uplink EN-DC SAR. All Simultaneous Transmission Scenarios will be evaluated independently in the final SAR report.

8. When the reported SAR for and EN DC configuration is greater than 1.2 W/kg, EN DC SAR is also required for other NR based test channels.

9. EN DC SAR is also required for standalone NR configurations greater than 1.2 W/kg when scaled to the EN DC power level.

9 Test Result

9.1 Measurement of RF Conducted Power

The detailed conducted power can be referred to Appendix E.

Note:

1）. For SAR the time based average power is relevant. The difference in between depends on the duty cycle of the TDMA signal:

No. of timeslots	1	2	3	4
Duty Cycle	1:8.3	1:4.15	1:2.77	1:2.075
Time based avg. power compared to slotted avg. power	-9.19	-6.18	-4.42	-3.17

2）. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum burst-averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = 10 x log (Burst-averaged power mW x Slot used / 8.

3）. When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

4）. According to FCC guidance, the output power with uplink CA active was measured for the high / middle / low channel configuration with the highest reported SAR for each exposure condition, the power was measured with wideband signal integration over both component carriers.

5）. In applying the power measurement procedures of KDB 941225 D05A for DL CA to qualify for UL SAR test exclusion, power measurement is required only for the subset in each row with the largest combination of frequency bands and CCs.

6）. Maximum output power measurement is required for each UL CA configuration for the required test channels described in KDB 941225 D05.

7）. Conducted power measurement results of downlink LTE carrier aggregation are provided to quantify downlink only carrier aggregation SAR test exclusion per KDB 941225 D05A.Uplink maximum output power is measured with downlink carrier aggregation active, using the channel with highest measured maximum output power when downlink carrier aggregation is inactive, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive, therefore SAR evaluation with downlink carrier aggregation can be excluded.

The possible downlink LTE CA combinations supported by this device are as below tables per 3GPP TS 36.101 V15.4.0. The detailed conducted power measurement results of downlink LTE CA are provided in the SAR report per 3GPP TS 36.521-1 V14.4.0. According to KDB 941225 D05A, the downlink only carrier aggregation conditions for this device can be excluded from SAR testing.

The conducted power measurement results of downlink LTE CA Conducted Power are as Appendix E conducted RF output power, so the downlink only carrier aggregation conditions for this device can be excluded from SAR testing.

8）. For conducted power of WIFI must be measured at each transmit antenna port according to the DSSS and OFDM transmission configurations in each standalone and aggregated frequency band. For each transmission mode configuration, power must be measured for the highest and lowest channels; and at the mid-band channel(s) when there are at least 3 channels. For configurations with multiple mid-band channels, due to an even number of channels, both channels should be measured. Power measurement is required for the transmission mode configuration with the highest maximum output power specified for production units.

1) When the same highest maximum output power specification applies to multiple transmission modes, the largest channel bandwidth configuration with the lowest order modulation and lowest data rate is measured.

2) When the same highest maximum output power is specified for multiple largest channel bandwidth configurations with the same lowest order modulation or lowest order modulation and lowest data rate, power measurement is required for all equivalent 802.11 configurations with the same maximum output power.

9.2 Measurement of SAR Data

Note:

1) The maximum Scaled SAR value is marked in bold. Graph results refer to Appendix B.

2) Per KDB447498 D04, testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- ≤ 0.8W/kg for 1-g or 2.0W/kg for 10-g respectively, when the transmission band is ≤ 100MHz.
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz.

3) The simultaneous transmission is reduced by XdB (the detailed power reduced can be referred to Conducted Power Appendix E), therefore, those SAR of simultaneous transmission mode are scaled based on standalone SAR results.

WiFi 2.4G:

1) When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

WiFi 5G:

1) When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. As the highest reported SAR for a test configuration is ⩽ 1.2 W/kg, SAR is not required for U-NII-1 band for that configuration.
2) For Wi-Fi 5G, U-NII-2A (5250-5350 MHz) and U-NII-2C (5470-5725 MHz) bands does not support hotspot function.

When the highest reported SAR for the initial test configuration is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ⩽ 1.2 W/kg, SAR test for the other 802.11 modes are not required.

9.2.1 SAR Result of GSM850

GSM850 SAR Test Record											
Ant 0 Test Record											
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data ECI 2											
Left cheek	GPRS 4TS	128/824.2	1:2.075	0.363	0.283	0.01	29.30	30.50	1.318	**0.479**	22.1
Left cheek-sample2	GPRS 4TS	128/824.2	1:2.075	0.347	0.276	0.01	29.30	30.50	1.318	0.457	22.1
Left tilted	GPRS 4TS	128/824.2	1:2.075	0.223	0.164	0.02	29.30	30.50	1.318	0.294	22.1
Right cheek	GPRS 4TS	128/824.2	1:2.075	0.248	0.173	0.03	29.30	30.50	1.318	0.327	22.1
Right tilted	GPRS 4TS	128/824.2	1:2.075	0.136	0.101	-0.15	29.30	30.50	1.318	0.179	22.1
Body worn Test data(Separate 5mm) ECI 4											
Front side	GPRS 4TS	128/824.2	1:2.075	0.897	0.502	-0.10	29.06	30.00	1.242	1.114	22.1
Back side	GPRS 4TS	128/824.2	1:2.075	0.992	0.573	-0.05	29.06	30.00	1.242	**1.232**	22.1
Back side-Repeated	GPRS 4TS	128/824.2	1:2.075	0.977	0.565	-0.03	29.06	30.00	1.242	1.213	22.1
Front side	GPRS 4TS	190/836.6	1:2.075	0.854	0.473	-0.11	28.97	30.00	1.268	1.083	22.1
Front side	GPRS 4TS	251/848.8	1:2.075	0.688	0.387	0.01	29.05	30.00	1.245	0.856	22.1
Back side	GPRS 4TS	190/836.6	1:2.075	0.944	0.540	-0.04	28.97	30.00	1.268	1.197	22.1
Back side	GPRS 4TS	251/848.8	1:2.075	0.761	0.442	-0.08	29.05	30.00	1.245	0.947	22.1
Back side with Headset	GPRS 4TS	128/824.2	1:2.075	0.624	0.352	0.04	29.06	30.00	1.242	0.775	22.1
Hotspot Test data(Separate 5mm) ECI 7											
Front side	GPRS 4TS	128/824.2	1:2.075	0.897	0.502	-0.10	29.06	30.00	1.242	1.114	22.1
Back side	GPRS 4TS	128/824.2	1:2.075	0.992	0.573	-0.05	29.06	30.00	1.242	**1.232**	22.1
Back side-Repeated	GPRS 4TS	128/824.2	1:2.075	0.977	0.565	-0.03	29.06	30.00	1.242	1.213	22.1
Left side	GPRS 4TS	128/824.2	1:2.075	0.926	0.518	-0.07	29.06	30.00	1.242	1.150	22.1
Bottom side	GPRS 4TS	128/824.2	1:2.075	0.607	0.309	-0.03	29.06	30.00	1.242	0.754	22.1
Front side	GPRS 4TS	190/836.6	1:2.075	0.854	0.473	-0.11	28.97	30.00	1.268	1.083	22.1
Front side	GPRS 4TS	251/848.8	1:2.075	0.688	0.387	0.01	29.05	30.00	1.245	0.856	22.1
Back side	GPRS 4TS	190/836.6	1:2.075	0.944	0.540	-0.04	28.97	30.00	1.268	1.197	22.1
Back side	GPRS 4TS	251/848.8	1:2.075	0.761	0.442	-0.08	29.05	30.00	1.245	0.947	22.1
Left side	GPRS 4TS	190/836.6	1:2.075	0.881	0.488	0.09	28.97	30.00	1.268	1.117	22.1
Left side	GPRS 4TS	251/848.8	1:2.075	0.710	0.400	0.15	29.05	30.00	1.245	0.884	22.1
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10gSAR SAR Test data (Separate 0mm 1RB) ECI 4											
Back side	GPRS 4TS	128/824.2	1:2.075	2.830	1.520	0.02	29.06	30.00	1.242	**1.887**	22.1

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Back side 5mm	128/824.2	0.992	0.977	1.015	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

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9.2.2 SAR Result of GSM1900

GSM1900 SAR Test Record											
Ant 2 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data ECI 2											
Left cheek	GPRS 4TS	810/1909.8	1:2.075	0.134	0.081	0.12	25.81	26.50	1.172	0.157	22.1
Left tilted	GPRS 4TS	810/1909.8	1:2.075	0.088	0.051	-0.08	25.81	26.50	1.172	0.103	22.1
Right cheek	GPRS 4TS	810/1909.8	1:2.075	0.243	0.156	-0.07	25.81	26.50	1.172	**0.285**	22.1
Right tilted	GPRS 4TS	810/1909.8	1:2.075	0.102	0.060	0.04	25.81	26.50	1.172	0.120	22.1
Body worn Test data(Separate 5mm) ECI 4											
Front side	GPRS 4TS	810/1909.8	1:2.075	0.833	0.431	-0.05	23.20	24.50	1.349	**1.124**	22.1
Front side-Repeated	GPRS 4TS	810/1909.8	1:2.075	0.774	0.400	-0.02	23.20	24.50	1.349	1.044	22.1
Back side	GPRS 4TS	810/1909.8	1:2.075	0.588	0.323	-0.12	23.20	24.50	1.349	0.793	22.5
Front side	GPRS 4TS	512/1850.2	1:2.075	0.736	0.372	-0.05	23.17	24.50	1.358	1.000	22.5
Front side	GPRS 4TS	661/1880	1:2.075	0.765	0.390	0.05	23.13	24.50	1.371	1.049	22.5
Hotspot Test data(Separate 5mm) ECI 7											
Front side	GPRS 4TS	810/1909.8	1:2.075	0.833	0.431	-0.05	23.20	24.50	1.349	1.124	22.1
Back side	GPRS 4TS	810/1909.8	1:2.075	0.588	0.323	-0.02	23.20	24.50	1.349	0.793	22.5
Right side	GPRS 4TS	810/1909.8	1:2.075	0.349	0.184	-0.14	23.20	24.50	1.349	0.471	22.5
Bottom side	GPRS 4TS	810/1909.8	1:2.075	0.881	0.445	-0.04	23.20	24.50	1.349	**1.188**	22.5
Bottom side-Repeated	GPRS 4TS	810/1909.8	1:2.075	0.818	0.413	0.06	23.20	24.50	1.349	1.103	22.5
Front side	GPRS 4TS	512/1850.2	1:2.075	0.736	0.372	-0.05	23.17	24.50	1.358	1.000	22.5
Front side	GPRS 4TS	661/1880	1:2.075	0.765	0.390	0.05	23.13	24.50	1.371	1.049	22.5
Bottom side	GPRS 4TS	512/1850.2	1:2.075	0.781	0.400	0.14	23.17	24.50	1.358	1.061	22.5
Bottom side	GPRS 4TS	661/1880	1:2.075	0.780	0.392	-0.11	23.13	24.50	1.371	1.069	22.5

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Front side 5mm	810/1909.8	0.833	0.774	1.076	N/A	N/A
Bottom side 5mm	810/1909.8	0.881	0.818	1.077	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

9.2.3 SAR Result of WCDMA Band V

WB5 SAR Test Record											
Ant 0 Test Record											
Test position	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data ECI 2											
Left cheek	RMC	4182/836.4	1:1	0.265	0.199	-0.10	23.44	24.00	1.138	**0.301**	22.3
Left tilted	RMC	4182/836.4	1:1	0.215	0.156	0.09	23.44	24.00	1.138	0.245	22.3
Right cheek	RMC	4182/836.4	1:1	0.204	0.146	-0.01	23.44	24.00	1.138	0.232	22.3
Right tilted	RMC	4182/836.4	1:1	0.139	0.102	0.13	23.44	24.00	1.138	0.158	22.3
Body worn Test data(Separate 5mm) ECI 4											
Front side	RMC	4182/836.4	1:1	0.809	0.431	0.17	23.44	24.00	1.138	0.920	22.5
Back side	RMC	4182/836.4	1:1	0.881	0.514	0.05	23.44	24.00	1.138	1.002	22.5
Front side	RMC	4132/826.4	1:1	0.857	0.442	0.13	23.35	24.00	1.161	0.995	22.3
Front side	RMC	4233/846.6	1:1	0.799	0.427	0.11	23.40	24.00	1.148	0.917	22.5
Back side	RMC	4132/826.4	1:1	0.933	0.527	-0.05	23.35	24.00	1.161	**1.084**	22.3
Back side-Repeated	RMC	4132/826.4	1:1	0.926	0.536	0.13	23.35	24.00	1.161	1.076	22.3
Back side	RMC	4233/846.6	1:1	0.870	0.509	-0.10	23.40	24.00	1.148	0.999	22.5
Hotspot Test data(Separate 5mm) ECI 7											
Front side	RMC	4182/836.4	1:1	0.809	0.431	0.17	23.44	24.00	1.138	0.920	22.5
Back side	RMC	4182/836.4	1:1	0.881	0.514	0.05	23.44	24.00	1.138	1.002	22.5
Left side	RMC	4182/836.4	1:1	0.754	0.379	0.14	23.44	24.00	1.138	0.858	22.5
Bottom side	RMC	4182/836.4	1:1	0.568	0.282	-0.06	23.44	24.00	1.138	0.646	22.5
Front side	RMC	4132/826.4	1:1	0.857	0.442	0.13	23.35	24.00	1.161	0.995	22.3
Front side	RMC	4233/846.6	1:1	0.799	0.427	0.11	23.40	24.00	1.148	0.917	22.5
Back side	RMC	4132/826.4	1:1	0.933	0.527	-0.05	23.35	24.00	1.161	**1.084**	22.3
Back side-Repeated	RMC	4132/826.4	1:1	0.926	0.536	0.13	23.35	24.00	1.161	1.076	22.3
Back side	RMC	4233/846.6	1:1	0.870	0.509	-0.10	23.40	24.00	1.148	0.999	22.5
Left side	RMC	4132/826.4	1:1	0.799	0.389	0.00	23.35	24.00	1.161	0.928	22.3
Left side	RMC	4233/846.6	1:1	0.745	0.375	-0.12	23.40	24.00	1.148	0.855	22.5

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Back side 5mm	4132/826.4	0.933	0.926	1.008	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

9.2.4 SAR Result of LTE Band 2

LTE Band 2 SAR Test Record												
Ant 2 Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	20	QPSK 1_50	19100/1900	1:1	0.163	0.100	0.01	23.00	24.00	1.259	0.205	22.3
Left tilted	20	QPSK 1_50	19100/1900	1:1	0.119	0.071	-0.12	23.00	24.00	1.259	0.150	22.3
Right cheek	20	QPSK 1_50	19100/1900	1:1	0.274	0.177	0.09	23.00	24.00	1.259	**0.345**	22.3
Right tilted	20	QPSK 1_50	19100/1900	1:1	0.126	0.075	-0.10	23.00	24.00	1.259	0.159	22.3
Head Test Data (50%RB) ECI 2												
Left cheek	20	QPSK 50_25	19100/1900	1:1	0.129	0.080	-0.06	21.82	23.00	1.312	0.169	22.3
Left tilted	20	QPSK 50_25	19100/1900	1:1	0.093	0.055	-0.16	21.82	23.00	1.312	0.122	22.3
Right cheek	20	QPSK 50_25	19100/1900	1:1	0.226	0.140	-0.07	21.82	23.00	1.312	0.297	22.3
Right tilted	20	QPSK 50_25	19100/1900	1:1	0.094	0.056	0.15	21.82	23.00	1.312	0.123	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	20	QPSK 1_50	19100/1900	1:1	0.890	0.459	0.17	19.92	21.00	1.282	1.141	22.3
Back side	20	QPSK 1_50	19100/1900	1:1	0.729	0.419	0.15	19.92	21.00	1.282	0.935	22.3
Front side	20	QPSK 1_50	18700/1860	1:1	0.852	0.445	-0.03	19.70	21.00	1.349	1.149	22.3
Front side	20	QPSK 1_0	18900/1880	1:1	0.882	0.465	-0.17	19.89	21.00	1.291	1.139	22.3
Back side	20	QPSK 1_50	18700/1860	1:1	0.690	0.398	-0.04	19.70	21.00	1.349	0.931	22.3
Back side	20	QPSK 1_0	18900/1880	1:1	0.723	0.415	-0.16	19.89	21.00	1.291	0.934	22.3
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	20	QPSK 50_50	19100/1900	1:1	0.896	0.457	-0.06	19.86	21.00	1.300	**1.165**	22.3
Front side-Repeated	20	QPSK 50_50	19100/1900	1:1	0.883	0.451	-0.02	19.86	21.00	1.300	1.148	22.3
Back side	20	QPSK 50_50	19100/1900	1:1	0.758	0.415	0.07	19.86	21.00	1.300	0.986	22.3
Front side	20	QPSK 50_0	18700/1860	1:1	0.849	0.434	0.09	19.79	21.00	1.321	1.122	22.3
Front side	20	QPSK 50_0	18900/1880	1:1	0.880	0.448	-0.19	19.85	21.00	1.303	1.147	22.3
Back side	20	QPSK 50_0	18700/1860	1:1	0.718	0.394	0.06	19.79	21.00	1.321	0.949	22.3
Back side	20	QPSK 50_0	18900/1880	1:1	0.744	0.407	0.14	19.85	21.00	1.303	0.970	22.3
Body worn Test data (Separate 5mm 100%RB) ECI 4												
Front side	20	QPSK 100_0	18900/1880	1:1	0.873	0.450	0.05	19.83	21.00	1.309	1.143	22.3
Back side	20	QPSK 100_0	18900/1880	1:1	0.739	0.409	-0.08	19.83	21.00	1.309	0.967	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	20	QPSK 1_50	19100/1900	1:1	0.831	0.423	-0.13	19.32	20.50	1.312	1.090	22.3
Back side	20	QPSK 1_50	19100/1900	1:1	0.681	0.404	0.03	19.32	20.50	1.312	0.894	22.3
Right side	20	QPSK 1_50	19100/1900	1:1	0.372	0.214	0.10	19.32	20.50	1.312	0.488	22.3
Bottom side	20	QPSK 1_50	19100/1900	1:1	0.934	0.482	-0.18	19.32	20.50	1.312	1.226	22.3
Front side	20	QPSK 1_0	18700/1860	1:1	0.770	0.406	0.02	19.25	20.50	1.334	1.027	22.3
Front side	20	QPSK 1_50	18900/1880	1:1	0.803	0.418	0.13	19.26	20.50	1.330	1.068	22.3
Back side	20	QPSK 1_0	18700/1860	1:1	0.655	0.397	-0.02	19.25	20.50	1.334	0.873	22.3
Back side	20	QPSK 1_50	18900/1880	1:1	0.685	0.409	0.16	19.26	20.50	1.330	0.911	22.3
Bottom side	20	QPSK 1_0	18700/1860	1:1	0.898	0.474	0.01	19.25	20.50	1.334	1.198	22.3

Bottom side	20	QPSK 1_50	18900/1880	1:1	0.940	0.488	0.02	19.26	20.50	1.330	**1.251**	22.3
Bottom side-Repeated	20	QPSK 1_50	18900/1880	1:1	0.927	0.481	0.03	19.26	20.50	1.330	1.233	22.3
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	20	QPSK 50_50	19100/1900	1:1	0.816	0.411	0.07	19.29	20.50	1.321	1.078	22.3
Back side	20	QPSK 50_50	19100/1900	1:1	0.651	0.391	0.09	19.29	20.50	1.321	0.860	22.3
Right side	20	QPSK 50_50	19100/1900	1:1	0.368	0.209	-0.16	19.29	20.50	1.321	0.486	22.3
Bottom side	20	QPSK 50_50	19100/1900	1:1	0.918	0.471	-0.16	19.29	20.50	1.321	1.213	22.3
Front side	20	QPSK 50_50	18700/1860	1:1	0.760	0.388	-0.17	19.16	20.50	1.361	1.035	22.3
Front side	20	QPSK 50_50	18900/1880	1:1	0.796	0.410	0.08	19.23	20.50	1.340	1.066	22.3
Back side	20	QPSK 50_50	18700/1860	1:1	0.614	0.369	0.16	19.16	20.50	1.361	0.836	22.3
Back side	20	QPSK 50_50	18900/1880	1:1	0.645	0.390	0.02	19.23	20.50	1.340	0.864	22.3
Bottom side	20	QPSK 50_50	18700/1860	1:1	0.866	0.445	0.15	19.16	20.50	1.361	1.179	22.3
Bottom side	20	QPSK 50_50	18900/1880	1:1	0.909	0.470	-0.01	19.23	20.50	1.340	1.218	22.3
Hotspot Test data (Separate 5mm 100%RB) ECI 7												
Front side	20	QPSK 100_0	18900/1880	1:1	0.764	0.397	0.04	19.31	20.50	1.315	1.005	22.3
Back side	20	QPSK 100_0	18900/1880	1:1	0.617	0.378	0.19	19.31	20.50	1.315	0.811	22.3
Bottom side	20	QPSK 100_0	18900/1880	1:1	0.870	0.455	0.04	19.31	20.50	1.315	1.144	22.3
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**SAR (W/kg)10-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled 10-g SAR(W/kg)**	**Liquid Temp.**
Product specific 10gSAR SAR Test data (Separate 0mm 1RB) ECI 4												
Front side	20	QPSK 1_50	19100/1900	1:1	3.840	1.670	0.06	19.92	21.00	1.282	2.141	22.3
Bottom side	20	QPSK 1_50	19100/1900	1:1	4.150	1.460	0.00	19.92	21.00	1.282	1.872	22.3
Front side	20	QPSK 1_50	18700/1860	1:1	3.390	1.510	0.13	19.70	21.00	1.349	2.037	22.3
Front side	20	QPSK 1_0	18900/1880	1:1	3.590	1.600	-0.07	19.89	21.00	1.291	2.066	22.3
Product specific 10gSAR SAR Test data (Separate 0mm 50%RB) ECI 4												
Front side	20	QPSK 50_50	19100/1900	1:1	4.220	1.730	0.06	19.86	21.00	1.300	**2.249**	22.3
Bottom side	20	QPSK 50_50	19100/1900	1:1	3.660	1.360	0.05	19.86	21.00	1.300	1.768	22.3
Front side	20	QPSK 50_0	18700/1860	1:1	3.880	1.550	-0.02	19.79	21.00	1.321	2.048	22.3
Front side	20	QPSK 50_0	18900/1880	1:1	4.070	1.610	-0.15	19.85	21.00	1.303	2.098	22.3
Product specific 10gSAR SAR Test data (Separate 0mm 100%RB) ECI 4												
Front side	20	QPSK 100_0	18900/1880	1:1	4.210	1.670	0.04	19.83	21.00	1.309	2.186	22.3

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Front side 5mm	19100/1900	0.896	0.883	1.015	N/A	N/A
Bottom side 5mm	18900/1880	0.940	0.927	1.014	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

9.2.5 SAR Result of LTE Band 4

LTE Band 4 SAR Test Record												
Ant 2 Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	20	QPSK 1_99	20175/1732.5	1:1	0.164	0.102	0.04	22.90	24.00	1.288	0.211	22.3
Left tilted	20	QPSK 1_99	20175/1732.5	1:1	0.143	0.083	-0.17	22.90	24.00	1.288	0.184	22.3
Right cheek	20	QPSK 1_99	20175/1732.5	1:1	0.208	0.137	0.12	22.90	24.00	1.288	**0.268**	22.3
Right tilted	20	QPSK 1_99	20175/1732.5	1:1	0.097	0.061	-0.03	22.90	24.00	1.288	0.125	22.3
Head Test Data (50%RB) ECI 2												
Left cheek	20	QPSK 50_25	20175/1732.5	1:1	0.134	0.084	0.14	21.84	23.00	1.306	0.175	22.3
Left tilted	20	QPSK 50_25	20175/1732.5	1:1	0.093	0.054	0.18	21.84	23.00	1.306	0.121	22.3
Right cheek	20	QPSK 50_25	20175/1732.5	1:1	0.151	0.094	-0.06	21.84	23.00	1.306	0.197	22.3
Right tilted	20	QPSK 50_25	20175/1732.5	1:1	0.092	0.057	0.01	21.84	23.00	1.306	0.120	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	20	QPSK 1_99	20175/1732.5	1:1	0.993	0.512	0.00	19.94	21.00	1.276	**1.268**	22.3
Front side-Repeated	20	QPSK 1_99	20175/1732.5	1:1	0.978	0.506	0.03	19.94	21.00	1.276	1.248	22.3
Front side-sample2	20	QPSK 1_99	20175/1732.5	1:1	0.890	0.471	0.13	19.94	21.00	1.276	1.136	22.3
Back side	20	QPSK 1_99	20175/1732.5	1:1	0.883	0.485	0.06	19.94	21.00	1.276	1.127	22.3
Front side with Headset	20	QPSK 1_99	20175/1732.5	1:1	0.767	0.386	-0.08	19.94	21.00	1.276	0.979	22.3
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	20	QPSK 50_25	20175/1732.5	1:1	0.952	0.489	0.05	19.90	21.00	1.288	1.226	22.3
Back side	20	QPSK 50_25	20175/1732.5	1:1	0.904	0.494	0.01	19.90	21.00	1.288	1.165	22.3
Body worn Test data (Separate 5mm 100%RB) ECI 4												
Front side	20	QPSK 100_0	20175/1732.5	1:1	0.945	0.484	-0.09	19.75	21.00	1.334	1.260	22.3
Back side	20	QPSK 100_0	20175/1732.5	1:1	0.840	0.458	-0.03	19.75	21.00	1.334	1.120	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	20	QPSK 1_99	20175/1732.5	1:1	0.755	0.379	0.04	17.91	19.00	1.285	0.970	22.3
Back side	20	QPSK 1_99	20175/1732.5	1:1	0.587	0.313	-0.15	17.91	19.00	1.285	0.754	22.3
Right side	20	QPSK 1_99	20175/1732.5	1:1	0.238	0.120	-0.08	17.91	19.00	1.285	0.306	22.3
Bottom side	20	QPSK 1_99	20175/1732.5	1:1	0.929	0.486	0.00	17.91	19.00	1.285	1.194	22.3
Bottom side-Repeated	20	QPSK 1_99	20175/1732.5	1:1	0.912	0.468	0.03	17.91	19.00	1.285	1.172	22.3
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	20	QPSK 50_0	20175/1732.5	1:1	0.738	0.377	-0.12	17.81	19.00	1.315	0.971	22.3
Back side	20	QPSK 50_0	20175/1732.5	1:1	0.572	0.315	0.05	17.81	19.00	1.315	0.752	22.3
Right side	20	QPSK 50_0	20175/1732.5	1:1	0.241	0.122	-0.18	17.81	19.00	1.315	0.317	22.3
Bottom side	20	QPSK 50_0	20175/1732.5	1:1	0.922	0.471	0.04	17.81	19.00	1.315	1.213	22.3
Hotspot Test data (Separate 5mm 100%RB) ECI 7												
Front side	20	QPSK 100_0	20175/1732.5	1:1	0.740	0.379	-0.01	17.62	19.00	1.374	1.017	22.3
Bottom side	20	QPSK 100_0	20175/1732.5	1:1	0.924	0.474	-0.04	17.62	19.00	1.374	**1.270**	22.3
Bottom side-sample2	20	QPSK 100_0	20175/1732.5	1:1	0.885	0.466	0.06	17.62	19.00	1.374	1.216	22.3

Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10gSAR SAR Test data (Separate 0mm 1RB) ECI 4												
Front side	20	QPSK 1_99	20175/1732.5	1:1	3.540	1.560	0.05	19.84	21.00	1.306	2.038	22.3
Bottom side	20	QPSK 1_99	20175/1732.5	1:1	3.800	1.570	0.07	19.84	21.00	1.306	2.051	22.3
Product specific 10gSAR SAR Test data (Separate 0mm 50%RB) ECI 4												
Front side	20	QPSK 50_25	20175/1732.5	1:1	3.710	1.620	0.11	19.80	21.00	1.318	2.136	22.3
Bottom side	20	QPSK 50_25	20175/1732.5	1:1	3.920	1.610	0.04	19.80	21.00	1.318	2.122	22.3
Product specific 10gSAR SAR Test data (Separate 0mm 100%RB) ECI 4												
Front side	20	QPSK 50_25	20175/1732.5	1:1	3.940	1.650	0.02	19.65	21.00	1.365	**2.252**	22.3
Front side-sample2	20	QPSK 50_25	20175/1732.5	1:1	3.910	1.630	0.00	19.65	21.00	1.365	2.224	22.3
Bottom side	20	QPSK 50_25	20175/1732.5	1:1	3.670	1.630	0.03	19.65	21.00	1.365	2.224	22.3

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Front side 5mm	20175/1732.5	0.993	0.978	1.015	N/A	N/A
Bottom side 5mm	20175/1732.5	0.929	0.912	1.019	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

9.2.6 SAR Result of LTE Band 5

LTE Band 5 SAR Test Record												
Ant 0 Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	10	QPSK 1_0	20525/836.5	1:1	0.316	0.250	-0.17	23.05	24.00	1.245	**0.393**	22.3
Left tilted	10	QPSK 1_0	20525/836.5	1:1	0.246	0.180	-0.13	23.05	24.00	1.245	0.306	22.3
Right cheek	10	QPSK 1_0	20525/836.5	1:1	0.228	0.164	0.08	23.05	24.00	1.245	0.284	22.3
Right tilted	10	QPSK 1_0	20525/836.5	1:1	0.115	0.115	0.12	23.05	24.00	1.245	0.143	22.3
Head Test Data (50%RB) ECI 2												
Left cheek	10	QPSK 25_0	20525/836.5	1:1	0.243	0.182	0.05	21.92	23.00	1.282	0.312	22.3
Left tilted	10	QPSK 25_0	20525/836.5	1:1	0.193	0.141	-0.17	21.92	23.00	1.282	0.247	22.3
Right cheek	10	QPSK 25_0	20525/836.5	1:1	0.182	0.131	0.16	21.92	23.00	1.282	0.233	22.3
Right tilted	10	QPSK 25_0	20525/836.5	1:1	0.119	0.089	-0.09	21.92	23.00	1.282	0.153	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	10	QPSK 1_0	20525/836.5	1:1	0.843	0.496	0.18	23.05	24.00	1.245	1.049	22.1
Back side	10	QPSK 1_0	20525/836.5	1:1	0.959	0.545	0.02	23.05	24.00	1.245	**1.193**	22.3
Back side-Repeated	10	QPSK 1_0	20525/836.5	1:1	0.915	0.520	0.01	23.05	24.00	1.245	1.139	22.3
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	10	QPSK 25_0	20525/836.5	1:1	0.666	0.393	-0.02	21.92	23.00	1.282	0.854	22.1
Back side	10	QPSK 25_0	20525/836.5	1:1	0.867	0.493	-0.13	21.92	23.00	1.282	1.112	22.1
Body worn Test data (Separate 5mm 100%RB) ECI 4												
Front side	10	QPSK 50_0	20525/836.5	1:1	0.580	0.347	0.08	21.83	23.00	1.309	0.759	22.3
Back side	10	QPSK 50_0	20525/836.5	1:1	0.757	0.430	0.14	21.83	23.00	1.309	0.991	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	10	QPSK 1_0	20525/836.5	1:1	0.843	0.496	0.18	23.05	24.00	1.245	1.049	22.1
Back side	10	QPSK 1_0	20525/836.5	1:1	0.959	0.545	0.02	23.05	24.00	1.245	**1.193**	22.3
Back side-Repeated	10	QPSK 1_0	20525/836.5	1:1	0.915	0.520	0.01	23.05	24.00	1.245	1.139	22.3
Left side	10	QPSK 1_0	20525/836.5	1:1	0.907	0.458	-0.06	23.05	24.00	1.245	1.129	22.1
Bottom side	10	QPSK 1_0	20525/836.5	1:1	0.627	0.326	-0.15	23.05	24.00	1.245	0.780	22.1
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	10	QPSK 25_0	20525/836.5	1:1	0.666	0.393	-0.02	21.92	23.00	1.282	0.854	22.1
Back side	10	QPSK 25_0	20525/836.5	1:1	0.867	0.493	-0.13	21.92	23.00	1.282	1.112	22.1
Left side	10	QPSK 25_0	20525/836.5	1:1	0.742	0.361	-0.16	21.92	23.00	1.282	0.951	22.1
Bottom side	10	QPSK 25_0	20525/836.5	1:1	0.516	0.265	-0.17	21.92	23.00	1.282	0.662	22.1
Hotspot Test data (Separate 5mm 100%RB) ECI 7												
Front side	10	QPSK 50_0	20525/836.5	1:1	0.580	0.347	0.08	21.83	23.00	1.309	0.759	22.3
Back side	10	QPSK 50_0	20525/836.5	1:1	0.757	0.430	0.14	21.83	23.00	1.309	0.991	22.3
Left side	10	QPSK 50_0	20525/836.5	1:1	0.658	0.323	-0.06	21.83	23.00	1.309	0.861	22.3

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Back side 5mm	20525/836.5	0.959	0.915	1.048	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

9.2.7 SAR Result of LTE Band 12

LTE Band 12 SAR Test Record												
Ant 0 Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	10	QPSK 1_0	23095/707.5	1:1	0.240	0.193	0.06	23.04	24.00	1.247	**0.299**	22.3
Left tilted	10	QPSK 1_0	23095/707.5	1:1	0.160	0.118	0.15	23.04	24.00	1.247	0.200	22.3
Right cheek	10	QPSK 1_0	23095/707.5	1:1	0.141	0.102	-0.04	23.04	24.00	1.247	0.176	22.3
Right tilted	10	QPSK 1_0	23095/707.5	1:1	0.088	0.066	0.03	23.04	24.00	1.247	0.110	22.3
Head Test Data (50%RB) ECI 2												
Left cheek	10	QPSK 25_0	23095/707.5	1:1	0.199	0.146	-0.04	22.09	23.00	1.233	0.245	22.3
Left tilted	10	QPSK 25_0	23095/707.5	1:1	0.128	0.094	0.16	22.09	23.00	1.233	0.158	22.3
Right cheek	10	QPSK 25_0	23095/707.5	1:1	0.108	0.079	0.12	22.09	23.00	1.233	0.133	22.3
Right tilted	10	QPSK 25_0	23095/707.5	1:1	0.066	0.048	0.04	22.09	23.00	1.233	0.081	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	10	QPSK 1_0	23095/707.5	1:1	0.689	0.398	0.03	23.04	24.00	1.247	0.859	22.1
Back side	10	QPSK 1_0	23095/707.5	1:1	0.777	0.441	-0.09	23.04	24.00	1.247	**0.969**	22.3
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	10	QPSK 25_0	23095/707.5	1:1	0.558	0.323	0.15	22.09	23.00	1.233	0.688	22.1
Back side	10	QPSK 25_0	23095/707.5	1:1	0.656	0.369	0.09	22.09	23.00	1.233	0.809	22.1
Body worn Test data (Separate 5mm 100%RB) ECI 4												
Front side	10	QPSK 50_0	23095/707.5	1:1	0.505	0.287	-0.15	22.00	23.00	1.259	0.636	22.3
Back side	10	QPSK 50_0	23095/707.5	1:1	0.583	0.330	0.05	22.00	23.00	1.259	0.734	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	10	QPSK 1_0	23095/707.5	1:1	0.689	0.398	0.03	23.04	24.00	1.247	0.859	22.1
Back side	10	QPSK 1_0	23095/707.5	1:1	0.777	0.441	-0.09	23.04	24.00	1.247	**0.969**	22.3
Left side	10	QPSK 1_0	23095/707.5	1:1	0.738	0.402	-0.04	23.04	24.00	1.247	0.921	22.1
Bottom side	10	QPSK 1_0	23095/707.5	1:1	0.553	0.270	-0.11	23.04	24.00	1.247	0.690	22.1
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	10	QPSK 25_0	23095/707.5	1:1	0.558	0.323	0.15	22.09	23.00	1.233	0.688	22.1
Back side	10	QPSK 25_0	23095/707.5	1:1	0.656	0.369	0.09	22.09	23.00	1.233	0.809	22.1
Left side	10	QPSK 25_0	23095/707.5	1:1	0.629	0.303	0.03	22.09	23.00	1.233	0.776	22.1
Bottom side	10	QPSK 25_0	23095/707.5	1:1	0.433	0.213	0.01	22.09	23.00	1.233	0.534	22.1
Hotspot Test data (Separate 5mm 100%RB) ECI 7												
Front side	10	QPSK 50_0	23095/707.5	1:1	0.505	0.287	-0.15	22.00	23.00	1.259	0.636	22.3
Back side	10	QPSK 50_0	23095/707.5	1:1	0.583	0.330	0.05	22.00	23.00	1.259	0.734	22.3
Left side	10	QPSK 50_0	23095/707.5	1:1	0.571	0.289	0.01	22.00	23.00	1.259	0.719	22.3

9.2.8 SAR Result of LTE Band 41

LTE Band 41 SAR Test Record												
Ant 2 Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	20	QPSK 1_50	41490/2680	1:1.58	0.116	0.055	0.01	23.09	24.00	1.233	0.143	22.3
Left tilted	20	QPSK 1_50	41490/2680	1:1.58	0.077	0.038	-0.06	23.09	24.00	1.233	0.095	22.3
Right cheek	20	QPSK 1_50	41490/2680	1:1.58	0.089	0.045	0.07	23.09	24.00	1.233	0.110	22.3
Right tilted	20	QPSK 1_50	41490/2680	1:1.58	0.008	0.004	-0.01	23.09	24.00	1.233	0.010	22.3
Left cheek with HPUE	20	QPSK 1_50	41490/2680	1:2.31	0.160	0.086	0.01	25.93	27.00	1.279	**0.205**	22.3
Left cheek	20	PCC QPSK 1_0	41490/2680	1:1.58	0.145	0.072	0.10	22.84	24.00	1.306	0.189	22.3
		SCC QPSK 1_99	41292/2660.2									
Head Test Data (50%RB) ECI 2												
Left cheek	20	QPSK 50_0	41490/2680	1:1.58	0.075	0.036	0.11	22.12	23.00	1.225	0.092	22.3
Left tilted	20	QPSK 50_0	41490/2680	1:1.58	0.066	0.033	-0.08	22.12	23.00	1.225	0.081	22.3
Right cheek	20	QPSK 50_0	41490/2680	1:1.58	0.072	0.038	0.13	22.12	23.00	1.225	0.088	22.3
Right tilted	20	QPSK 50_0	41490/2680	1:1.58	0.006	0.003	0.07	22.12	23.00	1.225	0.007	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	20	QPSK 1_50	41490/2680	1:1.58	0.726	0.334	0.01	20.60	21.50	1.230	0.893	22.6
Back side	20	QPSK 1_50	41490/2680	1:1.58	0.683	0.290	0.04	20.60	21.50	1.230	0.840	22.6
Front side	20	QPSK 1_0	39750/2506	1:1.58	0.624	0.291	0.03	20.52	21.50	1.253	0.782	22.6
Front side	20	QPSK 1_0	40185/2549.5	1:1.58	0.706	0.321	0.10	20.54	21.50	1.247	0.881	22.6
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.752	0.335	0.06	20.59	21.50	1.233	0.927	22.6
Front side	20	QPSK 1_0	41055/2636.5	1:1.58	0.774	0.336	0.02	20.43	21.50	1.279	0.990	22.6
Back side	20	QPSK 1_0	39750/2506	1:1.58	0.562	0.253	0.09	20.52	21.50	1.253	0.704	22.6
Back side	20	QPSK 1_0	40185/2549.5	1:1.58	0.623	0.280	0.04	20.54	21.50	1.247	0.777	22.6
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.638	0.285	0.08	20.59	21.50	1.233	0.787	22.6
Back side	20	QPSK 1_0	41055/2636.5	1:1.58	0.635	0.285	0.04	20.43	21.50	1.279	0.812	22.6
Front side	20	PCC QPSK 1_0	41055/2636.5	1:1.58	0.753	0.325	0.02	20.44	21.50	1.276	0.961	22.3
		SCC QPSK 1_99	40857/2616.7									
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	20	QPSK 50_0	41490/2680	1:1.58	0.778	0.331	0.04	20.50	21.50	1.259	0.979	22.6
Back side	20	QPSK 50_0	41490/2680	1:1.58	0.656	0.288	0.04	20.50	21.50	1.259	0.826	22.6
Front side	20	QPSK 50_0	39750/2506	1:1.58	0.701	0.300	0.03	20.45	21.50	1.274	0.893	22.6
Front side	20	QPSK 50_0	40185/2549.5	1:1.58	0.782	0.335	0.01	20.41	21.50	1.285	1.005	22.6
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.821	0.351	-0.01	20.45	21.50	1.274	1.046	22.6
Front side-Repeated	20	QPSK 50_0	40620/2593	1:1.58	0.820	0.349	0.08	20.45	21.50	1.274	1.044	22.6
Front side	20	QPSK 50_25	41055/2636.5	1:1.58	0.811	0.348	0.08	20.45	21.50	1.274	1.033	22.6
Back side	20	QPSK 50_0	39750/2506	1:1.58	0.576	0.261	0.07	20.45	21.50	1.274	0.734	22.6
Back side	20	QPSK 50_0	40185/2549.5	1:1.58	0.639	0.287	0.09	20.41	21.50	1.285	0.821	22.6
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.649	0.288	0.09	20.45	21.50	1.274	0.827	22.6

Back side	20	QPSK 50_25	41055/2636.5	1:1.58	0.637	0.284	0.01	20.45	21.50	1.274	0.811	22.6
Front side with HPUE	20	QPSK 50_0	40620/2593	1:2.31	0.817	0.350	0.04	22.33	23.50	1.309	**1.070**	22.6
Body worn Test data (Separate 5mm 100%RB) ECI 4												
Front side	20	QPSK 100_0	40620/2593	1:1.58	0.787	0.338	0.08	20.55	21.50	1.245	0.979	22.6
Back side	20	QPSK 100_0	40620/2593	1:1.58	0.686	0.309	0.01	20.55	21.50	1.245	0.854	22.6
Body worn Test data (Separate 5mm 1RB) ECI 4 with ENDC												
Front side	20	QPSK 1_50	41490/2680	1:1.58	0.726	0.334	0.01	20.60	18.50	0.617	0.448	22.6
Back side	20	QPSK 1_50	41490/2680	1:1.58	0.683	0.290	0.04	20.60	18.50	0.617	0.421	22.6
Front side	20	QPSK 1_0	39750/2506	1:1.58	0.624	0.291	0.03	20.52	18.50	0.628	0.392	22.6
Front side	20	QPSK 1_0	40185/2549.5	1:1.58	0.706	0.321	0.10	20.54	18.50	0.625	0.441	22.6
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.752	0.335	0.06	20.59	18.50	0.618	0.465	22.6
Front side	20	QPSK 1_0	41055/2636.5	1:1.58	0.774	0.336	0.02	20.43	18.50	0.641	0.496	22.6
Back side	20	QPSK 1_0	39750/2506	1:1.58	0.562	0.253	0.09	20.52	18.50	0.628	0.353	22.6
Back side	20	QPSK 1_0	40185/2549.5	1:1.58	0.623	0.280	0.04	20.54	18.50	0.625	0.389	22.6
Back side	20	QPSK 1_0	40620/2593	1:1.58	0.638	0.285	0.08	20.59	18.50	0.618	0.394	22.6
Back side	20	QPSK 1_0	41055/2636.5	1:1.58	0.635	0.285	0.04	20.43	18.50	0.641	0.407	22.6
Body worn Test data (Separate 5mm 50%RB) ECI 4 with ENDC												
Front side	20	QPSK 50_0	41490/2680	1:1.58	0.778	0.331	0.04	20.50	18.50	0.631	0.491	22.6
Back side	20	QPSK 50_0	41490/2680	1:1.58	0.656	0.288	0.04	20.50	18.50	0.631	0.414	22.6
Front side	20	QPSK 50_0	39750/2506	1:1.58	0.701	0.300	0.03	20.45	18.50	0.638	0.447	22.6
Front side	20	QPSK 50_0	40185/2549.5	1:1.58	0.782	0.335	0.01	20.41	18.50	0.644	0.504	22.6
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.821	0.351	-0.01	20.45	18.50	0.638	0.524	22.6
Front side-Repeated	20	QPSK 50_0	40620/2593	1:1.58	0.820	0.349	0.08	20.45	18.50	0.638	0.523	22.6
Front side	20	QPSK 50_25	41055/2636.5	1:1.58	0.811	0.348	0.08	20.45	18.50	0.638	0.518	22.6
Back side	20	QPSK 50_0	39750/2506	1:1.58	0.576	0.261	0.07	20.45	18.50	0.638	0.368	22.6
Back side	20	QPSK 50_0	40185/2549.5	1:1.58	0.639	0.287	0.09	20.41	18.50	0.644	0.412	22.6
Back side	20	QPSK 50_0	40620/2593	1:1.58	0.649	0.288	0.09	20.45	18.50	0.638	0.414	22.6
Back side	20	QPSK 50_25	41055/2636.5	1:1.58	0.637	0.284	0.01	20.45	18.50	0.638	0.407	22.6
Body worn Test data (Separate 5mm 100%RB) ECI 4 with ENDC												
Front side	20	QPSK 100_0	40620/2593	1:1.58	0.787	0.338	0.08	20.55	18.50	0.624	0.491	22.6
Back side	20	QPSK 100_0	40620/2593	1:1.58	0.686	0.309	0.01	20.55	18.50	0.624	0.428	22.6
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	20	QPSK 1_50	41490/2680	1:1.58	0.627	0.267	0.05	19.40	20.50	1.288	0.808	22.6
Back side	20	QPSK 1_50	41490/2680	1:1.58	0.454	0.201	0.03	19.40	20.50	1.288	0.585	22.6
Right side	20	QPSK 1_50	41490/2680	1:1.58	0.114	0.056	0.07	19.40	20.50	1.288	0.147	22.6
Bottom side	20	QPSK 1_50	41490/2680	1:1.58	0.868	0.383	0.06	19.40	20.50	1.288	1.118	22.6
Front side	20	QPSK 1_0	39750/2506	1:1.58	0.519	0.236	0.10	19.38	20.50	1.294	0.672	22.6
Front side	20	QPSK 1_0	40185/2549.5	1:1.58	0.589	0.261	0.09	19.37	20.50	1.297	0.764	22.6
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.647	0.282	0.01	19.39	20.50	1.291	0.835	22.6
Front side	20	QPSK 1_0	41055/2636.5	1:1.58	0.670	0.288	0.03	19.36	20.50	1.300	0.871	22.6
Bottom side	20	QPSK 1_0	39750/2506	1:1.58	0.866	0.392	0.01	19.38	20.50	1.294	1.121	22.6
Bottom side	20	QPSK 1_0	40185/2549.5	1:1.58	0.913	0.410	0.01	19.37	20.50	1.297	1.184	22.6
Bottom side	20	QPSK 1_0	40620/2593	1:1.58	0.910	0.410	0.04	19.39	20.50	1.291	1.175	22.6
Bottom side	20	QPSK 1_0	41055/2636.5	1:1.58	0.881	0.394	0.08	19.36	20.50	1.300	1.145	22.6

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Bottom side	20	PCC QPSK 1_99 SCC QPSK 1_0	40185/2549.5 40383/2569.3	1:1.58	0.897	0.401	0.12	19.40	20.50	1.288	1.156	22.3
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	20	QPSK 50_0	41490/2680	1:1.58	0.663	0.292	0.10	19.43	20.50	1.279	0.848	22.6
Back side	20	QPSK 50_0	41490/2680	1:1.58	0.467	0.206	0.01	19.43	20.50	1.279	0.597	22.6
Right side	20	QPSK 50_0	41490/2680	1:1.58	0.116	0.057	0.06	19.43	20.50	1.279	0.148	22.6
Bottom side	20	QPSK 50_0	41490/2680	1:1.58	0.984	0.422	-0.10	19.43	20.50	1.279	**1.259**	22.6
Bottom side-Repeated	20	QPSK 50_0	41490/2680	1:1.58	0.942	0.403	0.10	19.43	20.50	1.279	1.205	22.6
Front side	20	QPSK 50_0	39750/2506	1:1.58	0.536	0.240	0.02	19.28	20.50	1.324	0.710	22.6
Front side	20	QPSK 50_0	40185/2549.5	1:1.58	0.594	0.267	0.09	19.41	20.50	1.285	0.763	22.6
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.577	0.264	0.05	19.34	20.50	1.306	0.754	22.6
Front side	20	QPSK 50_25	41055/2636.5	1:1.58	0.613	0.283	0.05	19.38	20.50	1.294	0.793	22.6
Bottom side	20	QPSK 50_0	39750/2506	1:1.58	0.864	0.390	0.03	19.28	20.50	1.324	1.144	22.6
Bottom side	20	QPSK 50_0	40185/2549.5	1:1.58	0.933	0.418	0.06	19.41	20.50	1.285	1.199	22.6
Bottom side	20	QPSK 50_0	40620/2593	1:1.58	0.962	0.426	0.01	19.34	20.50	1.306	1.257	22.6
Bottom side	20	QPSK 50_25	41055/2636.5	1:1.58	0.878	0.392	0.11	19.38	20.50	1.294	1.136	22.6
Bottom side with HPUE	20	QPSK 50_0	41490/2680	1:2.31	0.985	0.425	-0.05	21.44	22.50	1.276	1.257	22.6
Hotspot Test data (Separate 5mm 100%RB) ECI 7												
Front side	20	QPSK 100_0	40620/2593	1:1.58	0.645	0.287	0.03	19.45	20.50	1.274	0.821	22.6
Bottom side	20	QPSK 100_0	40620/2593	1:1.58	0.983	0.426	0.04	19.45	20.50	1.274	1.252	22.6
Hotspot Test data (Separate 5mm 1RB) ECI 7 with ENDC												
Front side	20	QPSK 1_50	41490/2680	1:1.58	0.627	0.267	0.05	19.40	17.50	0.646	0.405	22.6
Back side	20	QPSK 1_50	41490/2680	1:1.58	0.454	0.201	0.03	19.40	17.50	0.646	0.293	22.6
Right side	20	QPSK 1_50	41490/2680	1:1.58	0.114	0.056	0.07	19.40	17.50	0.646	0.074	22.6
Bottom side	20	QPSK 1_50	41490/2680	1:1.58	0.868	0.383	0.06	19.40	17.50	0.646	0.560	22.6
Front side	20	QPSK 1_0	39750/2506	1:1.58	0.519	0.236	0.10	19.38	17.50	0.649	0.337	22.6
Front side	20	QPSK 1_0	40185/2549.5	1:1.58	0.589	0.261	0.09	19.37	17.50	0.650	0.383	22.6
Front side	20	QPSK 1_0	40620/2593	1:1.58	0.647	0.282	0.01	19.39	17.50	0.647	0.419	22.6
Front side	20	QPSK 1_0	41055/2636.5	1:1.58	0.670	0.288	0.03	19.36	17.50	0.652	0.437	22.6
Bottom side	20	QPSK 1_0	39750/2506	1:1.58	0.866	0.392	0.01	19.38	17.50	0.649	0.562	22.6
Bottom side	20	QPSK 1_0	40185/2549.5	1:1.58	0.913	0.410	0.01	19.37	17.50	0.650	0.594	22.6
Bottom side	20	QPSK 1_0	40620/2593	1:1.58	0.910	0.410	0.04	19.39	17.50	0.647	0.589	22.6
Bottom side	20	QPSK 1_0	41055/2636.5	1:1.58	0.881	0.394	0.08	19.36	17.50	0.652	0.574	22.6
Hotspot Test data (Separate 5mm 50%RB) ECI 7 with ENDC												
Front side	20	QPSK 50_0	41490/2680	1:1.58	0.663	0.292	0.10	19.43	17.50	0.641	0.425	22.6
Back side	20	QPSK 50_0	41490/2680	1:1.58	0.467	0.206	0.01	19.43	17.50	0.641	0.299	22.6
Right side	20	QPSK 50_0	41490/2680	1:1.58	0.116	0.057	0.06	19.43	17.50	0.641	0.074	22.6
Bottom side	20	QPSK 50_0	41490/2680	1:1.58	0.984	0.422	-0.10	19.43	17.50	0.641	0.631	22.6
Bottom side-Repeated	20	QPSK 50_0	41490/2680	1:1.58	0.942	0.403	0.10	19.43	17.50	0.641	0.604	22.6
Front side	20	QPSK 50_0	39750/2506	1:1.58	0.536	0.240	0.02	19.28	17.50	0.664	0.356	22.6
Front side	20	QPSK 50_0	40185/2549.5	1:1.58	0.594	0.267	0.09	19.41	17.50	0.644	0.383	22.6
Front side	20	QPSK 50_0	40620/2593	1:1.58	0.577	0.264	0.05	19.34	17.50	0.655	0.378	22.6
Front side	20	QPSK 50_25	41055/2636.5	1:1.58	0.613	0.283	0.05	19.38	17.50	0.649	0.398	22.6
Bottom side	20	QPSK 50_0	39750/2506	1:1.58	0.864	0.390	0.03	19.28	17.50	0.664	0.573	22.6

Bottom side	20	QPSK 50_0	40185/2549.5	1:1.58	0.933	0.418	0.06	19.41	17.50	0.644	0.601	22.6
Bottom side	20	QPSK 50_0	40620/2593	1:1.58	0.962	0.426	0.01	19.34	17.50	0.655	0.630	22.6
Bottom side	20	QPSK 50_25	41055/2636.5	1:1.58	0.878	0.392	0.11	19.38	17.50	0.649	0.570	22.6
Hotspot Test data (Separate 5mm 100%RB) ECI 7 with ENDC												
Front side	20	QPSK 100_0	40620/2593	1:1.58	0.645	0.287	0.03	19.45	17.50	0.638	0.412	22.6
Bottom side	20	QPSK 100_0	40620/2593	1:1.58	0.983	0.426	0.04	19.45	17.50	0.638	0.627	22.6
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**SAR (W/kg)10-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled 10-g SAR(W/kg)**	**Liquid Temp.**
Product specific 10gSAR SAR Test data (Separate 0mm 1RB) ECI 4												
Bottom side	20	QPSK 1_50	41490/2680	1:1.58	4.070	1.390	0.06	20.60	21.50	1.230	1.710	22.6
Bottom side	20	PCC QPSK 1_0	41490/2680	1:1.58	4.150	1.400	0.08	20.52	21.50	1.253	1.754	22.3
		SCC QPSK 1_99	41292/2660.2									
Product specific 10gSAR SAR Test data (Separate 0mm 50%RB) ECI 4												
Bottom side	20	QPSK 50_0	41490/2680	1:1.58	4.220	1.440	0.02	20.50	21.50	1.259	1.813	22.6
Bottom side with HPUE	20	QPSK 50_0	41490/2680	1:2.31	4.240	1.470	0.06	22.36	23.50	1.300	**1.911**	22.6
Product specific 10gSAR SAR Test data (Separate 0mm 100%RB) ECI 4												
Bottom side	20	QPSK 100_0	40620/2593	1:1.58	4.250	1.450	0.11	20.55	21.50	1.245	1.805	22.6

Test Position	**Test ch./Freq.**	**Measured SAR (W/kg)**	**1st Repeated**	**Ratio**	**2nd Repeated**	**3rd Repeated**
Front side 5mm	40620/2593	0.821	0.820	1.001	N/A	N/A
Bottom side 5mm	41490/2680	0.984	0.942	1.045	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

9.2.9 SAR Result of LTE Band 42

LTE Band 42 SAR Test Record												
Ant 7 Test Record												
Test position	BW.	Test mode	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	20	QPSK 1_0	42590/3500	1:1.58	0.225	0.096	-0.02	15.05	16.00	1.245	0.280	22.3
Left tilted	20	QPSK 1_0	42590/3500	1:1.58	0.106	0.044	-0.08	15.05	16.00	1.245	0.132	22.3
Right cheek	20	QPSK 1_0	42590/3500	1:1.58	0.656	0.265	0.05	15.05	16.00	1.245	0.816	22.6
Right tilted	20	QPSK 1_0	42590/3500	1:1.58	0.221	0.089	-0.18	15.04	16.00	1.247	0.276	22.3
Right cheek	20	QPSK 1_0	42190/3460	1:1.58	0.653	0.265	0.11	15.04	16.00	1.247	0.815	22.3
Right cheek	20	QPSK 1_99	42990/3540	1:1.58	0.641	0.260	0.04	15.04	16.00	1.247	0.800	22.3
Right cheek	20	PCC QPSK 1_99	42590/3500	1:1.58	0.612	0.245	0.02	14.70	16.00	1.349	0.826	22.3
		SCC QPSK 1_0	42788/3519.8									
Head Test Data (50%RB) ECI 2												
Left cheek	20	QPSK 50_50	42990/3540	1:1.58	0.230	0.098	-0.05	15.02	16.00	1.253	0.288	22.3
Left tilted	20	QPSK 50_50	42990/3540	1:1.58	0.110	0.043	-0.10	15.02	16.00	1.253	0.138	22.3
Right cheek	20	QPSK 50_50	42990/3540	1:1.58	0.645	0.259	0.01	15.02	16.00	1.253	0.808	22.3
Right tilted	20	QPSK 50_50	42990/3540	1:1.58	0.225	0.090	0.12	15.02	16.00	1.253	0.282	22.3
Right cheek	20	QPSK 50_0	42190/3460	1:1.58	0.652	0.262	-0.11	14.93	16.00	1.279	0.834	22.3
Right cheek	20	QPSK 50_25	42590/3500	1:1.58	0.658	0.264	0.03	14.95	16.00	1.274	**0.838**	22.3
Head Test Data (100%RB) ECI 2												
Right cheek	20	QPSK 100_0	42990/3540	1:1.58	0.635	0.255	0.02	15.05	16.00	1.245	0.790	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	20	QPSK 1_99	42990/3540	1:1.58	0.660	0.297	-0.13	19.14	20.00	1.219	0.805	22.3
Back side	20	QPSK 1_99	42990/3540	1:1.58	0.509	0.225	-0.11	19.14	20.00	1.219	0.620	22.3
Front side	20	QPSK 1_0	42190/3460	1:1.58	0.600	0.236	0.07	19.06	20.00	1.242	0.745	22.6
Front side	20	QPSK 1_99	42590/3500	1:1.58	0.644	0.295	0.02	18.85	20.00	1.303	0.839	22.3
Front side	20	PCC QPSK 1_99	42590/3500	1:1.58	0.652	0.287	0.04	18.73	20.00	1.340	0.873	22.3
		SCC QPSK 1_0	42788/3519.8									
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	20	QPSK 50_50	42990/3540	1:1.58	0.660	0.297	-0.08	19.09	20.00	1.233	0.814	22.3
Back side	20	QPSK 50_50	42990/3540	1:1.58	0.501	0.224	-0.08	19.09	20.00	1.233	0.618	22.3
Front side	20	QPSK 50_0	42190/3460	1:1.58	0.683	0.301	0.06	19.02	20.00	1.253	0.856	22.3
Front side	20	QPSK 50_25	42590/3500	1:1.58	0.707	0.280	-0.07	19.04	20.00	1.247	**0.882**	22.3
Body worn Test data (Separate 5mm 100%RB) ECI 4												
Front side	20	QPSK 100_0	42990/3540	1:1.58	0.704	0.306	0.18	19.03	20.00	1.250	0.880	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	20	QPSK 1_0	42590/3500	1:1.58	0.255	0.115	-0.16	15.05	16.00	1.245	0.317	22.3
Back side	20	QPSK 1_0	42590/3500	1:1.58	0.194	0.091	-0.07	15.05	16.00	1.245	0.241	22.3
Left side	20	QPSK 1_0	42590/3500	1:1.58	0.420	0.157	-0.10	15.05	16.00	1.245	0.523	22.3
Left side	20	PCC QPSK 1_0	42990/3540	1:1.58	0.425	0.156	0.08	14.85	16.00	1.303	0.554	22.3
		SCC QPSK 1_99	42792/3520.2									

Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	20	QPSK 50_50	42990/3540	1:1.58	0.244	0.113	0.16	15.02	16.00	1.253	0.306	22.3
Back side	20	QPSK 50_50	42990/3540	1:1.58	0.209	0.095	0.12	15.02	16.00	1.253	0.262	22.3
Left side	20	QPSK 50_50	42990/3540	1:1.58	0.468	0.168	0.07	15.02	16.00	1.253	**0.586**	22.3
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**SAR (W/kg)10-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled 10-g SAR(W/kg)**	**Liquid Temp.**
Product specific 10gSAR SAR Test data (Separate 0mm 1RB) ECI 4												
Left side	20	QPSK 1_99	42990/3540	1:1.58	4.210	1.280	0.07	19.14	20.00	1.219	**1.560**	22.6
Left side	20	PCC QPSK 1_0	42990/3540	1:1.58	4.050	1.170	0.11	18.86	20.00	1.300	1.521	22.3
		SCC QPSK 1_99	42792/3520.2									
Product specific 10gSAR SAR Test data (Separate 0mm 50%RB) ECI 4												
Left side	20	QPSK 50_50	42990/3540	1:1.58	4.160	1.260	0.10	19.09	20.00	1.233	1.554	22.3

9.2.10 SAR Result of NR Band n41

N41 SAR Test Record												
Ant2 Test Record												
Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	100	QPSK 1_1	518598/2592.99	100%	0.190	0.100	0.03	22.80	24.00	1.318	0.250	22.1
Left tilted	100	QPSK 1_1	518598/2592.99	100%	0.088	0.043	-0.18	22.80	24.00	1.318	0.116	22.1
Right cheek	100	QPSK 1_1	518598/2592.99	100%	0.168	0.088	0.07	22.80	24.00	1.318	0.221	22.1
Right tilted	100	QPSK 1_1	518598/2592.99	100%	0.076	0.038	0.08	22.80	24.00	1.318	0.100	22.1
Head Test Data (50%RB) ECI 2												
Left cheek	100	QPSK 135_69	518598/2592.99	100%	0.200	0.106	0.04	22.86	24.00	1.300	**0.260**	22.1
Left tilted	100	QPSK 135_69	518598/2592.99	100%	0.091	0.046	-0.07	22.86	24.00	1.300	0.118	22.1
Right cheek	100	QPSK 135_69	518598/2592.99	100%	0.176	0.093	-0.02	22.86	24.00	1.300	0.229	22.1
Right tilted	100	QPSK 135_69	518598/2592.99	100%	0.073	0.037	-0.06	22.86	24.00	1.300	0.095	22.1
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	100	QPSK 1_1	518598/2592.99	100%	0.776	0.319	-0.04	18.40	19.50	1.288	1.000	22.3
Back side	100	QPSK 1_1	518598/2592.99	100%	0.551	0.252	-0.18	18.40	19.50	1.288	0.710	22.3
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	100	QPSK 135_69	518598/2592.99	100%	0.831	0.356	0.04	18.55	19.50	1.245	**1.034**	22.1
Front side-Repeated	100	QPSK 135_69	518598/2592.99	100%	0.818	0.351	0.02	18.55	19.50	1.245	1.018	22.1
Back side	100	QPSK 135_69	518598/2592.99	100%	0.610	0.277	0.19	18.55	19.50	1.245	0.759	22.3
Body worn Test data (Separate 5mm 100%RB) ECI 4												
Front side	100	QPSK 270_0	518598/2592.99	100%	0.693	0.274	0.16	17.57	18.50	1.239	0.858	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	100	QPSK 1_1	518598/2592.99	100%	0.487	0.220	-0.10	16.49	17.50	1.262	0.615	22.3
Back side	100	QPSK 1_1	518598/2592.99	100%	0.392	0.176	0.06	16.49	17.50	1.262	0.495	22.3
Right side	100	QPSK 1_1	518598/2592.99	100%	0.143	0.066	-0.06	16.49	17.50	1.262	0.180	22.3
Bottom side	100	QPSK 1_1	518598/2592.99	100%	0.722	0.326	0.19	16.49	17.50	1.262	**0.911**	22.1
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	100	QPSK 135_69	518598/2592.99	100%	0.485	0.205	0.15	16.80	17.50	1.175	0.570	22.3
Back side	100	QPSK 135_69	518598/2592.99	100%	0.346	0.160	0.00	16.80	17.50	1.175	0.407	22.3
Right side	100	QPSK 135_69	518598/2592.99	100%	0.115	0.055	0.17	16.80	17.50	1.175	0.135	22.3
Bottom side	100	QPSK 135_69	518598/2592.99	100%	0.705	0.315	0.07	16.80	17.50	1.175	0.828	22.3
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Bottom side	100	QPSK 270_0	518598/2592.99	100%	0.562	0.231	-0.03	15.70	16.50	1.202	0.676	22.3
Test position	**BW.**	**Test mode**	**Test Ch./Freq.**	**Duty Cycle**	**SAR (W/kg)1-g**	**SAR (W/kg)10-g**	**Power Drift(dB)**	**Conducted power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled 10-g SAR(W/kg)**	**Liquid Temp.**
Product specific 10gSAR SAR Test data (Separate 0mm 1RB) ECI 4												
Bottom side	100	QPSK 1_1	518598/2592.99	100%	4.760	1.650	0.13	18.40	19.50	1.288	2.126	22.3
Product specific 10gSAR SAR Test data (Separate 0mm 50%RB) ECI 4												
Bottom side	100	QPSK 135_69	518598/2592.99	100%	5.180	1.780	0.09	18.55	19.50	1.245	**2.215**	22.5
Product specific 10gSAR SAR Test data (Separate 0mm 100%RB) ECI 4												
Bottom side	100	QPSK 270_0	518598/2592.99	100%	3.980	1.520	-0.11	17.57	18.50	1.239	1.883	22.3

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Front side 5mm	518598/2592.99	0.831	0.818	1.016	N/A	N/A
Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.						
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).						
3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.						
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg						
5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.						

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9.2.11 SAR Result of NR Band n77

N77 SAR Test Record												
Ant3 Test Record												
Test position	BW.	Modulation	Test ch./Freq.	Duty Cycle	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data (1RB) ECI 2												
Left cheek	100	QPSK 1_137	650000/3750	100%	0.496	0.159	0.09	10.89	12.50	1.449	0.719	22.3
Left tilted	100	QPSK 1_137	650000/3750	100%	0.426	0.117	-0.05	10.89	12.50	1.449	0.617	22.3
Right cheek	100	QPSK 1_137	650000/3750	100%	0.162	0.048	0.16	10.89	12.50	1.449	0.235	22.3
Right tilted	100	QPSK 1_137	650000/3750	100%	0.157	0.049	-0.05	10.89	12.50	1.449	0.227	22.3
Left cheek	100	QPSK 1_137	662000/3930	100%	0.318	0.093	-0.02	10.86	12.50	1.459	0.464	22.3
Left tilted	100	QPSK 1_137	662000/3930	100%	0.307	0.082	-0.11	10.86	12.50	1.459	0.448	22.3
Head Test Data (50%RB) ECI 2												
Left cheek	100	QPSK 135_69	650000/3750	100%	0.459	0.128	-0.04	11.06	12.50	1.393	0.639	22.3
Left tilted	100	QPSK 135_69	650000/3750	100%	0.369	0.096	-0.05	11.06	12.50	1.393	0.514	22.3
Right cheek	100	QPSK 135_69	650000/3750	100%	0.161	0.041	-0.10	11.06	12.50	1.393	0.224	22.3
Right tilted	100	QPSK 135_69	650000/3750	100%	0.137	0.036	0.09	11.06	12.50	1.393	0.191	22.3
Left cheek	100	QPSK 135_69	662000/3930	100%	0.311	0.087	0.19	11.02	12.50	1.406	0.437	22.3
Left tilted	100	QPSK 135_69	662000/3930	100%	0.298	0.078	-0.03	11.02	12.50	1.406	0.419	22.3
Head Test Data (1RB) ECI 2 with ENDC												
Left cheek	100	QPSK 1_137	650000/3750	100%	0.496	0.159	0.09	10.89	9.50	0.726	0.360	22.3
Left tilted	100	QPSK 1_137	650000/3750	100%	0.426	0.117	-0.05	10.89	9.50	0.726	0.309	22.3
Right cheek	100	QPSK 1_137	650000/3750	100%	0.162	0.048	0.16	10.89	9.50	0.726	0.118	22.3
Right tilted	100	QPSK 1_137	650000/3750	100%	0.157	0.049	-0.05	10.89	9.50	0.726	0.114	22.3
Left cheek	100	QPSK 1_137	662000/3930	100%	0.318	0.093	-0.02	10.86	9.50	0.731	0.233	22.3
Left tilted	100	QPSK 1_137	662000/3930	100%	0.307	0.082	-0.11	10.86	9.50	0.731	0.224	22.3
Head Test Data (50%RB) ECI 2 with ENDC												
Left cheek	100	QPSK 135_69	650000/3750	100%	0.459	0.128	-0.04	11.06	9.50	0.698	0.320	22.3
Left tilted	100	QPSK 135_69	650000/3750	100%	0.369	0.096	-0.05	11.06	9.50	0.698	0.258	22.3
Right cheek	100	QPSK 135_69	650000/3750	100%	0.161	0.041	-0.10	11.06	9.50	0.698	0.112	22.3
Right tilted	100	QPSK 135_69	650000/3750	100%	0.137	0.036	0.09	11.06	9.50	0.698	0.096	22.3
Left cheek	100	QPSK 135_69	662000/3930	100%	0.311	0.087	0.19	11.02	9.50	0.705	0.219	22.3
Left tilted	100	QPSK 135_69	662000/3930	100%	0.298	0.078	-0.03	11.02	9.50	0.705	0.210	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	100	QPSK 1_137	650000/3750	100%	0.524	0.144	0.03	15.85	17.50	1.462	0.766	22.1
Back side	100	QPSK 1_137	650000/3750	100%	0.418	0.156	0.04	15.85	17.50	1.462	0.611	22.3
Front side	100	QPSK 1_137	662000/3930	100%	0.446	0.179	-0.17	15.83	17.50	1.469	0.655	22.3
Back side	100	QPSK 1_137	662000/3930	100%	0.300	0.114	0.12	15.83	17.50	1.469	0.441	22.3
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	100	QPSK 135_69	650000/3750	100%	0.505	0.139	0.07	16.09	17.50	1.384	0.699	22.3
Back side	100	QPSK 135_69	650000/3750	100%	0.411	0.155	0.09	16.09	17.50	1.384	0.569	22.3
Front side	100	QPSK 135_69	662000/3930	100%	0.453	0.179	0.19	16.05	17.50	1.396	0.633	22.3
Back side	100	QPSK 135_69	662000/3930	100%	0.314	0.121	0.01	16.05	17.50	1.396	0.438	22.3

Body worn Test data (Separate 5mm 1RB) ECI 4 with ENDC												
Front side	100	QPSK 1_137	650000/3750	100%	0.524	0.144	0.03	15.85	14.50	0.733	0.384	22.1
Back side	100	QPSK 1_137	650000/3750	100%	0.418	0.156	0.04	15.85	14.50	0.733	0.306	22.3
Front side	100	QPSK 1_137	662000/3930	100%	0.446	0.179	-0.17	15.83	14.50	0.736	0.328	22.3
Back side	100	QPSK 1_137	662000/3930	100%	0.300	0.114	0.12	15.83	14.50	0.736	0.221	22.3
Body worn Test data (Separate 5mm 50%RB) ECI 4 with ENDC												
Front side	100	QPSK 135_69	650000/3750	100%	0.505	0.139	0.07	16.09	14.50	0.693	0.350	22.3
Back side	100	QPSK 135_69	650000/3750	100%	0.411	0.155	0.09	16.09	14.50	0.693	0.285	22.3
Front side	100	QPSK 135_69	662000/3930	100%	0.453	0.179	0.19	16.05	14.50	0.700	0.317	22.3
Back side	100	QPSK 135_69	662000/3930	100%	0.314	0.121	0.01	16.05	14.50	0.700	0.220	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	100	QPSK 1_137	650000/3750	100%	0.365	0.095	0.01	14.46	16.00	1.426	0.520	22.1
Back side	100	QPSK 1_137	650000/3750	100%	0.357	0.096	0.16	14.46	16.00	1.426	0.509	22.3
Right side	100	QPSK 1_137	650000/3750	100%	0.201	0.070	0.13	14.46	16.00	1.426	0.287	22.3
Top side	100	QPSK 1_137	650000/3750	100%	0.248	0.090	0.09	14.46	16.00	1.426	0.354	22.3
Front side	100	QPSK 1_137	662000/3930	100%	0.280	0.074	0.04	14.38	16.00	1.452	0.407	22.3
Back side	100	QPSK 1_137	662000/3930	100%	0.300	0.068	-0.05	14.38	16.00	1.452	0.436	22.3
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	100	QPSK 135_69	650000/3750	100%	0.370	0.100	0.14	14.55	16.00	1.396	0.517	22.3
Back side	100	QPSK 135_69	650000/3750	100%	0.360	0.092	0.10	14.55	16.00	1.396	0.503	22.3
Right side	100	QPSK 135_69	650000/3750	100%	0.206	0.073	-0.15	14.55	16.00	1.396	0.288	22.3
Top side	100	QPSK 135_69	650000/3750	100%	0.252	0.095	0.17	14.55	16.00	1.396	0.352	22.3
Front side	100	QPSK 135_69	662000/3930	100%	0.316	0.091	0.07	14.43	16.00	1.435	0.454	22.3
Back side	100	QPSK 135_69	662000/3930	100%	0.292	0.069	0.01	14.43	16.00	1.435	0.419	22.3
Ant 7 Test Record												
Test position	**BW.**	**Modulation**	**Test ch./Freq.**	**Duty Cycle**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 1-g (W/kg)**	**Liquid Temp.(℃)**
Head Test Data (1RB) ECI 2												
Left cheek	100	QPSK 1_271	650000/3750	100%	0.162	0.072	0.16	13.45	14.50	1.274	0.206	22.3
Left tilted	100	QPSK 1_271	650000/3750	100%	0.149	0.047	0.09	13.45	14.50	1.274	0.190	22.3
Right cheek	100	QPSK 1_271	650000/3750	100%	0.671	0.240	0.10	13.45	14.50	1.274	0.855	22.3
Right tilted	100	QPSK 1_271	650000/3750	100%	0.168	0.007	-0.14	13.45	14.50	1.274	0.214	22.3
Right cheek	100	QPSK 1_271	662000/3930	100%	0.640	0.248	-0.04	13.23	14.50	1.340	0.857	22.3
Head Test Data (50%RB) ECI 2												
Left cheek	100	QPSK 135_69	650000/3750	100%	0.165	0.075	0.01	13.72	14.50	1.197	0.197	22.3
Left tilted	100	QPSK 135_69	650000/3750	100%	0.175	0.055	-0.13	13.72	14.50	1.197	0.209	22.3
Right cheek	100	QPSK 135_69	650000/3750	100%	0.730	0.271	0.02	13.72	14.50	1.197	**0.874**	22.1
Right cheek-sample2	100	QPSK 135_69	650000/3750	100%	0.679	0.244	0.07	13.72	14.50	1.197	0.813	22.1
Right tilted	100	QPSK 135_69	650000/3750	100%	0.206	0.086	-0.14	13.72	14.50	1.197	0.247	22.3
Right cheek	100	QPSK 135_69	662000/3930	100%	0.678	0.239	0.14	13.49	14.50	1.262	0.856	22.3
Head Test Data (100%RB) ECI 2												
Right cheek	100	QPSK 270_0	650000/3750	100%	0.612	0.201	0.03	12.45	13.50	1.274	0.779	22.3

Body worn Test data (Separate 5mm 1RB) ECI 4												
Front side	100	QPSK 1_271	650000/3750	100%	0.564	0.240	-0.08	17.18	18.00	1.208	0.681	22.3
Back side	100	QPSK 1_271	650000/3750	100%	0.395	0.164	0.18	17.18	18.00	1.208	0.477	22.3
Front side	100	QPSK 1_271	662000/3930	100%	0.616	0.179	0.09	16.96	18.00	1.271	**0.783**	22.1
Back side	100	QPSK 1_271	662000/3930	100%	0.431	0.122	0.03	16.96	18.00	1.271	0.548	22.1
Body worn Test data (Separate 5mm 50%RB) ECI 4												
Front side	100	QPSK 135_69	650000/3750	100%	0.552	0.234	0.00	17.16	18.00	1.213	0.670	22.3
Back side	100	QPSK 135_69	650000/3750	100%	0.398	0.170	0.12	17.16	18.00	1.213	0.483	22.3
Front side	100	QPSK 135_69	662000/3930	100%	0.608	0.179	0.09	16.96	18.00	1.271	0.773	22.3
Back side	100	QPSK 135_69	662000/3930	100%	0.426	0.122	0.08	16.96	18.00	1.271	0.541	22.3
Body worn Test data (Separate 5mm 1RB) ECI 4 with ENDC												
Front side	100	QPSK 1_271	650000/3750	100%	0.564	0.240	-0.08	17.18	15.00	0.605	0.341	22.3
Back side	100	QPSK 1_271	650000/3750	100%	0.395	0.164	0.18	17.18	15.00	0.605	0.239	22.3
Front side	100	QPSK 1_271	662000/3930	100%	0.616	0.179	0.09	16.96	15.00	0.637	0.392	22.1
Back side	100	QPSK 1_271	662000/3930	100%	0.431	0.122	0.03	16.96	15.00	0.637	0.274	22.1
Body worn Test data (Separate 5mm 50%RB) ECI 4 with ENDC												
Front side	100	QPSK 135_69	650000/3750	100%	0.552	0.234	0.00	17.16	15.00	0.608	0.336	22.3
Back side	100	QPSK 135_69	650000/3750	100%	0.398	0.170	0.12	17.16	15.00	0.608	0.242	22.3
Front side	100	QPSK 135_69	662000/3930	100%	0.608	0.179	0.09	16.96	15.00	0.637	0.387	22.3
Back side	100	QPSK 135_69	662000/3930	100%	0.426	0.122	0.08	16.96	15.00	0.637	0.271	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7												
Front side	100	QPSK 1_271	650000/3750	100%	0.310	0.117	-0.11	13.45	14.50	1.274	0.395	22.3
Back side	100	QPSK 1_271	650000/3750	100%	0.189	0.077	0.13	13.45	14.50	1.274	0.241	22.3
Left side	100	QPSK 1_271	650000/3750	100%	0.431	0.102	-0.17	13.45	14.50	1.274	0.549	22.3
Left side	100	QPSK 1_271	662000/3930	100%	0.439	0.109	0.01	13.23	14.50	1.340	**0.588**	22.1
Hotspot Test data (Separate 5mm 50%RB) ECI 7												
Front side	100	QPSK 135_69	650000/3750	100%	0.281	0.104	-0.07	13.72	14.50	1.197	0.336	22.3
Back side	100	QPSK 135_69	650000/3750	100%	0.167	0.069	0.12	13.72	14.50	1.197	0.200	22.3
Left side	100	QPSK 135_69	650000/3750	100%	0.421	0.100	0.13	13.72	14.50	1.197	0.504	22.3
Left side	100	QPSK 135_69	662000/3930	100%	0.430	0.106	0.11	13.49	14.50	1.262	0.543	22.3
Hotspot Test data (Separate 5mm 1RB) ECI 7 with ENDC												
Front side	100	QPSK 1_271	650000/3750	100%	0.310	0.117	-0.11	13.45	11.50	0.638	0.198	22.3
Back side	100	QPSK 1_271	650000/3750	100%	0.189	0.077	0.13	13.45	11.50	0.638	0.121	22.3
Left side	100	QPSK 1_271	650000/3750	100%	0.431	0.102	-0.17	13.45	11.50	0.638	0.275	22.3
Left side	100	QPSK 1_271	662000/3930	100%	0.439	0.109	0.01	13.23	11.50	0.671	0.295	22.1
Hotspot Test data (Separate 5mm 50%RB) ECI 7 with ENDC												
Front side	100	QPSK 135_69	650000/3750	100%	0.281	0.104	-0.07	13.72	11.50	0.600	0.169	22.3
Back side	100	QPSK 135_69	650000/3750	100%	0.167	0.069	0.12	13.72	11.50	0.600	0.100	22.3
Left side	100	QPSK 135_69	650000/3750	100%	0.421	0.100	0.13	13.72	11.50	0.600	0.253	22.3
Left side	100	QPSK 135_69	662000/3930	100%	0.430	0.106	0.11	13.49	11.50	0.632	0.272	22.3

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Test position	BW.	Test mode	Test Ch./Freq.	Duty Cycle	SAR (W/kg)1-g	SAR (W/kg)10-g	Power Drift(dB)	Conducted power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled 10-g SAR(W/kg)	Liquid Temp.
Product specific 10gSAR SAR Test data (Separate 0mm 1RB) ECI 4												
Left side	100	QPSK 1_271	650000/3750	100%	4.030	0.915	0.05	17.18	18.00	1.208	1.105	22.3
Left side	100	QPSK 1_271	662000/3930	100%	4.250	0.925	-0.12	16.96	18.00	1.271	1.175	22.3
Product specific 10gSAR SAR Test data (Separate 0mm 50%RB) ECI 4												
Left side	100	QPSK 135_69	650000/3750	100%	4.070	0.920	0.10	17.16	18.00	1.213	1.116	22.3
Left side	100	QPSK 135_69	662000/3930	100%	4.330	0.932	0.03	16.96	18.00	1.271	**1.184**	22.1

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9.2.12 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR Test Record												
MIMO Test Record												
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data												
Left cheek	802.11b	1/2412	99.56%	1.004	1.160	0.567	0.00	19.27	19.50	1.054	**1.228**	22.3
Left cheek-Repeated	802.11b	1/2412	99.56%	1.004	1.090	0.534	0.05	19.27	19.50	1.054	1.154	22.3
Left cheek-sample2	802.11b	1/2412	99.56%	1.004	0.923	0.417	-0.02	19.27	19.50	1.054	0.978	22.3
Left tilted	802.11b	1/2412	99.56%	1.004	0.752	0.387	-0.04	19.27	19.50	1.054	0.796	22.3
Right cheek	802.11b	1/2412	99.56%	1.004	0.491	0.255	0.10	19.27	19.50	1.054	0.520	22.3
Right tilted	802.11b	1/2412	99.56%	1.004	0.633	0.313	0.10	19.27	19.50	1.054	0.670	22.3
Left cheek	802.11b	6/2437	99.56%	1.004	0.784	0.390	-0.03	17.75	19.50	1.496	1.178	22.3
Left cheek	802.11b	11/2462	99.56%	1.004	0.697	0.386	-0.01	18.59	19.50	1.233	0.863	22.3
Head Test Data with Simultaneous transmission												
Left cheek	802.11b	1/2412	99.56%	1.004	1.160	0.567	0.00	19.27	14.50	0.333	0.388	22.3
Left cheek-Repeated	802.11b	1/2412	99.56%	1.004	1.090	0.534	0.05	19.27	14.50	0.333	0.365	22.3
Left tilted	802.11b	1/2412	99.56%	1.004	0.752	0.387	-0.04	19.27	14.50	0.333	0.252	22.3
Right cheek	802.11b	1/2412	99.56%	1.004	0.491	0.255	0.10	19.27	14.50	0.333	0.164	22.3
Right tilted	802.11b	1/2412	99.56%	1.004	0.633	0.313	0.10	19.27	14.50	0.333	0.212	22.3
Left cheek	802.11b	6/2437	99.56%	1.004	0.784	0.390	-0.03	17.75	14.50	0.473	0.373	22.3
Left cheek	802.11b	11/2462	99.56%	1.004	0.697	0.386	-0.01	18.59	14.50	0.390	0.273	22.3
Body worn Test data (Separate 5mm)												
Front side	802.11b	1/2412	99.56%	1.004	1.040	0.496	-0.07	22.22	22.50	1.067	1.114	22.3
Back side	802.11b	1/2412	99.56%	1.004	1.150	0.592	0.00	22.22	22.50	1.067	**1.232**	22.3
Back side-Repeated	802.11b	1/2412	99.56%	1.004	1.080	0.557	0.08	22.22	22.50	1.067	1.157	22.3
Front side	802.11b	6/2437	99.56%	1.004	0.625	0.335	0.10	20.71	22.50	1.510	0.948	22.3
Front side	802.11b	11/2462	99.56%	1.004	0.755	0.392	-0.15	21.55	22.50	1.245	0.944	22.3
Back side	802.11b	6/2437	99.56%	1.004	0.762	0.409	-0.10	20.71	22.50	1.510	1.156	22.3
Back side	802.11b	11/2462	99.56%	1.004	0.782	0.421	0.00	21.55	22.50	1.245	0.978	22.3
Body worn Test data (Separate 5mm) with Simultaneous transmission												
Front side	802.11b	1/2412	99.56%	1.004	1.040	0.496	-0.07	22.22	17.00	0.301	0.314	22.3
Back side	802.11b	1/2412	99.56%	1.004	1.150	0.592	0.00	22.22	17.00	0.301	0.347	22.3
Back side-Repeated	802.11b	1/2412	99.56%	1.004	1.080	0.557	0.08	22.22	17.00	0.301	0.326	22.3
Front side	802.11b	6/2437	99.56%	1.004	0.625	0.335	0.10	20.71	17.00	0.426	0.267	22.3
Front side	802.11b	11/2462	99.56%	1.004	0.755	0.392	-0.15	21.55	17.00	0.351	0.266	22.3
Back side	802.11b	6/2437	99.56%	1.004	0.762	0.409	-0.10	20.71	17.00	0.426	0.326	22.3
Back side	802.11b	11/2462	99.56%	1.004	0.782	0.421	0.00	21.55	17.00	0.351	0.276	22.3
Hotspot Test data (Separate 5mm)												
Front side	802.11b	1/2412	99.56%	1.004	0.220	0.120	0.19	16.78	17.00	1.052	0.232	22.3
Back side	802.11b	1/2412	99.56%	1.004	0.271	0.143	-0.16	16.78	17.00	1.052	0.286	22.3
Right side	802.11b	1/2412	99.56%	1.004	0.220	0.098	0.05	16.78	17.00	1.052	0.232	22.3
Top side	802.11b	1/2412	99.56%	1.004	0.500	0.227	0.11	16.78	17.00	1.052	**0.528**	22.3

Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 10-g (W/kg)	Liquid Temp.(℃)
Product specific 10gSAR Test data (Separate 0mm)												
Top side	802.11b	1/2412	99.56%	1.004	5.610	2.070	0.09	22.22	22.50	1.067	**2.218**	22.3
Top side-Repeated	802.11b	1/2412	99.56%	1.004	5.440	2.010	0.02	22.22	22.50	1.067	2.153	22.3
Top side	802.11b	6/2437	99.56%	1.004	2.870	1.220	0.05	20.71	22.50	1.510	1.850	22.3
Top side	802.11b	11/2462	99.56%	1.004	3.470	1.450	-0.18	21.55	22.50	1.245	1.813	22.3
Product specific 10gSAR Test data (Separate 0mm) with Simultaneous transmission												
Top side	802.11b	1/2412	99.56%	1.004	5.610	2.070	0.09	22.22	17.00	0.301	0.625	22.3
Top side-Repeated	802.11b	1/2412	99.56%	1.004	5.440	2.010	0.02	22.22	17.00	0.301	0.607	22.3
Top side	802.11b	6/2437	99.56%	1.004	2.870	1.220	0.05	20.71	17.00	0.426	0.522	22.3
Top side	802.11b	11/2462	99.56%	1.004	3.470	1.450	-0.18	21.55	17.00	0.351	0.511	22.3

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Left cheek	1/2412	1.160	1.090	1.064	N/A	N/A
Back side 5mm	1/2412	1.150	1.080	1.065	N/A	N/A
Top side 0mm	1/2412	2.070	2.010	1.030	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

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9.2.13 SAR Result of WIFI 5G

Wi-Fi 5G SAR Test Record												
MIMO Test Record												
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data of U-NII-1												
Left cheek	802.11n-HT40	38/5190	92.55%	1.080	0.679	0.181	0.19	14.79	16.00	1.321	0.969	22.3
Left tilted	802.11n-HT40	38/5190	92.55%	1.080	0.511	0.143	-0.10	14.79	16.00	1.321	0.730	22.3
Right cheek	802.11n-HT40	38/5190	92.55%	1.080	0.334	0.101	0.01	14.79	16.00	1.321	0.477	22.3
Right tilted	802.11n-HT40	38/5190	92.55%	1.080	0.297	0.088	-0.18	14.79	16.00	1.321	0.424	22.3
Left cheek	802.11n-HT40	46/5230	92.55%	1.080	0.677	0.181	0.07	14.77	16.00	1.327	0.971	22.3
Head Test Data of U-NII-2C												
Left cheek	802.11ac-VHT80	138/5690	87.88%	1.138	0.719	0.191	-0.06	16.37	17.50	1.297	1.061	22.3
Left tilted	802.11ac-VHT80	138/5690	87.88%	1.138	0.581	0.153	0.04	16.37	17.50	1.297	0.858	22.3
Right cheek	802.11ac-VHT80	138/5690	87.88%	1.138	0.237	0.072	0.16	16.37	17.50	1.297	0.350	22.3
Right tilted	802.11ac-VHT80	138/5690	87.88%	1.138	0.202	0.065	0.07	16.37	17.50	1.297	0.298	22.3
Left cheek	802.11ac-VHT80	106/5530	87.88%	1.138	0.787	0.217	0.08	16.34	17.50	1.306	**1.170**	22.3
Head Test Data of U-NII-3												
Left cheek	802.11ac-VHT80	155/5775	87.88%	1.138	0.627	0.178	0.08	15.35	16.50	1.303	0.930	22.3
Left tilted	802.11ac-VHT80	155/5775	87.88%	1.138	0.484	0.137	-0.13	15.35	16.50	1.303	0.718	22.3
Right cheek	802.11ac-VHT80	155/5775	87.88%	1.138	0.213	0.060	-0.08	15.35	16.50	1.303	0.316	22.3
Right tilted	802.11ac-VHT80	155/5775	87.88%	1.138	0.189	0.057	0.15	15.35	16.50	1.303	0.280	22.3
Head Test Data of U-NII-1 with Simultaneous transmission												
Left cheek	802.11n-HT40	38/5190	92.55%	1.080	0.679	0.181	0.19	14.79	12.00	0.526	0.386	22.3
Left tilted	802.11n-HT40	38/5190	92.55%	1.080	0.511	0.143	-0.10	14.79	12.00	0.526	0.290	22.3
Right cheek	802.11n-HT40	38/5190	92.55%	1.080	0.334	0.101	0.01	14.79	12.00	0.526	0.190	22.3
Right tilted	802.11n-HT40	38/5190	92.55%	1.080	0.297	0.088	-0.18	14.79	12.00	0.526	0.169	22.3
Left cheek	802.11n-HT40	46/5230	92.55%	1.080	0.677	0.181	0.07	14.77	12.00	0.528	0.387	22.3
Head Test Data of U-NII-2C with Simultaneous transmission												
Left cheek	802.11ac-VHT80	138/5690	87.88%	1.138	0.719	0.191	-0.06	16.37	12.50	0.410	0.336	22.3
Left tilted	802.11ac-VHT80	138/5690	87.88%	1.138	0.581	0.153	0.04	16.37	12.50	0.410	0.271	22.3
Right cheek	802.11ac-VHT80	138/5690	87.88%	1.138	0.237	0.072	0.16	16.37	12.50	0.410	0.111	22.3
Right tilted	802.11ac-VHT80	138/5690	87.88%	1.138	0.202	0.065	0.07	16.37	12.50	0.410	0.094	22.3
Left cheek	802.11ac-VHT80	106/5530	87.88%	1.138	0.787	0.217	0.08	16.34	12.50	0.413	0.370	22.3
Head Test Data of U-NII-3 with Simultaneous transmission												
Left cheek	802.11ac-VHT80	155/5775	87.88%	1.138	0.627	0.178	0.08	15.35	12.50	0.519	0.370	22.3
Left tilted	802.11ac-VHT80	155/5775	87.88%	1.138	0.484	0.137	-0.13	15.35	12.50	0.519	0.286	22.3
Right cheek	802.11ac-VHT80	155/5775	87.88%	1.138	0.213	0.060	-0.08	15.35	12.50	0.519	0.126	22.3
Right tilted	802.11ac-VHT80	155/5775	87.88%	1.138	0.189	0.057	0.15	15.35	12.50	0.519	0.112	22.3
Body worn Test data of U-NII-2A (Separate 5mm)												
Front side	802.11n-HT40	54/5270	92.55%	1.080	0.829	0.273	0.04	18.80	19.50	1.175	1.052	22.3
Front side-Repeated	802.11n-HT40	54/5270	92.55%	1.080	0.817	0.266	0.02	18.80	19.50	1.175	1.037	22.3

Back side	802.11n-HT40	54/5270	92.55%	1.080	0.362	0.124	0.07	18.80	19.50	1.175	0.460	22.3
Front side	802.11n-HT40	62/5310	92.55%	1.080	0.431	0.136	-0.12	16.08	17.00	1.236	0.576	22.3
Body worn Test data of U-NII-2C (Separate 5mm)												
Front side	802.11ac-VHT80	138/5690	87.88%	1.138	0.571	0.179	0.00	20.35	21.50	1.303	0.847	22.3
Back side	802.11ac-VHT80	138/5690	87.88%	1.138	0.349	0.126	0.15	20.35	21.50	1.303	0.518	22.3
Front side	802.11ac-VHT80	106/5530	87.88%	1.138	0.694	0.224	0.04	20.20	21.50	1.349	**1.065**	22.3
Body worn Test data of U-NII-3 (Separate 5mm)												
Front side	802.11ac-VHT80	155/5775	87.88%	1.138	0.677	0.206	0.00	20.42	21.50	1.282	0.988	22.3
Back side	802.11ac-VHT80	155/5775	87.88%	1.138	0.485	0.152	-0.12	20.42	21.50	1.282	0.708	22.3
Body worn Test data of U-NII-2A (Separate 5mm) with Simultaneous transmission												
Front side	802.11n-HT40	54/5270	92.55%	1.080	0.829	0.273	0.04	18.80	14.50	0.372	0.333	22.3
Front side-Repeated	802.11n-HT40	54/5270	92.55%	1.080	0.817	0.266	0.02	18.80	14.50	0.372	0.328	22.3
Back side	802.11n-HT40	54/5270	92.55%	1.080	0.362	0.124	0.07	18.80	14.50	0.372	0.145	22.3
Front side	802.11n-HT40	62/5310	92.55%	1.080	0.431	0.136	-0.12	16.08	14.50	0.695	0.324	22.3
Body worn Test data of U-NII-2C (Separate 5mm) with Simultaneous transmission												
Front side	802.11ac-VHT80	138/5690	87.88%	1.138	0.571	0.179	0.00	20.35	16.50	0.412	0.268	22.3
Back side	802.11ac-VHT80	138/5690	87.88%	1.138	0.349	0.126	0.15	20.35	16.50	0.412	0.164	22.3
Front side	802.11ac-VHT80	106/5530	87.88%	1.138	0.694	0.224	0.04	20.20	16.50	0.427	0.337	22.3
Body worn Test data of U-NII-3 (Separate 5mm) with Simultaneous transmission												
Front side	802.11ac-VHT80	155/5775	87.88%	1.138	0.677	0.206	0.00	20.42	17.00	0.455	0.351	22.3
Back side	802.11ac-VHT80	155/5775	87.88%	1.138	0.485	0.152	-0.12	20.42	17.00	0.455	0.251	22.3
Hotspot Test data of U-NII-1 (Separate 5mm)												
Front side	802.11n-HT40	38/5190	92.55%	1.080	0.387	0.123	0.00	16.34	17.50	1.306	**0.546**	22.3
Back side	802.11n-HT40	38/5190	92.55%	1.080	0.139	0.046	-0.10	16.34	17.50	1.306	0.196	22.3
Right side	802.11n-HT40	38/5190	92.55%	1.080	0.258	0.078	-0.15	16.34	17.50	1.306	0.364	22.3
Top side	802.11n-HT40	38/5190	92.55%	1.080	0.219	0.073	0.14	16.34	17.50	1.306	0.309	22.3
Hotspot Test data of U-NII-3 (Separate 5mm)												
Front side	802.11ac-VHT80	155/5775	87.88%	1.138	0.367	0.107	0.00	17.41	18.50	1.285	0.537	22.3
Back side	802.11ac-VHT80	155/5775	87.88%	1.138	0.263	0.079	0.12	17.41	18.50	1.285	0.385	22.3
Right side	802.11ac-VHT80	155/5775	87.88%	1.138	0.242	0.068	0.13	17.41	18.50	1.285	0.354	22.3
Top side	802.11ac-VHT80	155/5775	87.88%	1.138	0.145	0.042	-0.02	17.41	18.50	1.285	0.212	22.3
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10gSAR Test data of U-NII-2A (Separate 0mm)												
Front side	802.11n-HT40	54/5270	92.55%	1.080	3.320	1.050	0.13	18.80	19.50	1.175	1.333	22.3
Back side	802.11n-HT40	54/5270	92.55%	1.080	1.010	0.299	-0.18	18.80	19.50	1.175	0.380	22.3
Right side	802.11n-HT40	54/5270	92.55%	1.080	3.570	0.889	-0.11	18.80	19.50	1.175	1.129	22.3
Top side	802.11n-HT40	54/5270	92.55%	1.080	2.060	0.648	-0.12	18.80	19.50	1.175	0.823	22.3
Product specific 10gSAR Test data of U-NII-2C (Separate 0mm)												
Front side	802.11ac-VHT80	138/5690	87.88%	1.138	4.220	1.070	0.00	20.35	21.50	1.303	**1.587**	22.3
Back side	802.11ac-VHT80	138/5690	87.88%	1.138	0.905	0.322	-0.12	20.35	21.50	1.303	0.477	22.3
Right side	802.11ac-VHT80	138/5690	87.88%	1.138	1.970	0.624	-0.01	20.35	21.50	1.303	0.925	22.3
Top side	802.11ac-VHT80	138/5690	87.88%	1.138	1.320	0.409	-0.09	20.35	21.50	1.303	0.607	22.3

Product specific 10gSAR Test data of U-NII-2A (Separate 0mm) with Simultaneous transmission												
Front side	802.11n-HT40	54/5270	92.55%	1.080	3.320	1.050	0.13	22.24	14.50	0.168	0.191	22.3
Back side	802.11n-HT40	54/5270	92.55%	1.080	1.010	0.299	-0.18	22.24	14.50	0.168	0.054	22.3
Right side	802.11n-HT40	54/5270	92.55%	1.080	3.570	0.889	-0.11	22.24	14.50	0.168	0.162	22.3
Top side	802.11n-HT40	54/5270	92.55%	1.080	2.060	0.648	-0.12	22.24	14.50	0.168	0.118	22.3
Product specific 10gSAR Test data of U-NII-2C (Separate 0mm) with Simultaneous transmission												
Front side	802.11ac-VHT80	138/5690	87.88%	1.138	4.220	1.070	0.00	20.35	16.50	0.412	0.502	22.3
Back side	802.11ac-VHT80	138/5690	87.88%	1.138	0.905	0.322	-0.12	20.35	16.50	0.412	0.151	22.3
Right side	802.11ac-VHT80	138/5690	87.88%	1.138	1.970	0.624	-0.01	20.35	16.50	0.412	0.293	22.3
Top side	802.11ac-VHT80	138/5690	87.88%	1.138	1.320	0.409	-0.09	20.35	16.50	0.412	0.192	22.3

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Front side 5mm	54/5270	0.829	0.817	1.015	N/A	N/A

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was preformed only if the original, first or second repeated measurement was ⩾ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

5) The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds. The repeated measurement results must be clearly identified in the SAR report.

9.2.14 SAR Result of Wifi 6E

Wi-Fi 6E SAR Test Record													
MIMO Test Record													
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	APD W/m² (4cm²)	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data of U-NII-5													
Left cheek	802.11ax 160M	79/6345	87.01%	1.149	0.420	0.122	2.950	-0.03	16.54	17.00	1.112	0.537	22.3
Left tilted	802.11ax 160M	79/6345	87.01%	1.149	0.263	0.087	1.850	0.14	16.54	17.00	1.112	0.336	22.3
Right cheek	802.11ax 160M	79/6345	87.01%	1.149	0.126	0.040	0.880	0.13	16.54	17.00	1.112	0.161	22.3
Right tilted	802.11ax 160M	79/6345	87.01%	1.149	0.117	0.039	0.820	-0.15	16.54	17.00	1.112	0.150	22.3
Left cheek	802.11ax 160M	47/6185	87.01%	1.149	0.429	0.127	3.010	-0.03	16.35	17.00	1.161	0.573	22.3
Head Test Data of U-NII-6													
Left cheek	802.11ax 160M	111/6505	87.01%	1.149	0.486	0.148	3.430	0.01	15.73	16.50	1.195	**0.668**	22.3
Left tilted	802.11ax 160M	111/6505	87.01%	1.149	0.264	0.075	1.860	0.07	15.73	16.50	1.195	0.363	22.3
Right cheek	802.11ax 160M	111/6505	87.01%	1.149	0.139	0.038	0.980	-0.10	15.73	16.50	1.195	0.191	22.3
Right tilted	802.11ax 160M	111/6505	87.01%	1.149	0.110	0.031	0.780	0.11	15.73	16.50	1.195	0.151	22.3
Head Test Data of U-NII-7													
Left cheek	802.11ax 160M	175/6825	87.01%	1.149	0.339	0.119	2.390	-0.01	16.11	17.00	1.227	0.478	22.3
Left tilted	802.11ax 160M	175/6825	87.01%	1.149	0.240	0.054	1.690	-0.03	16.11	17.00	1.227	0.338	22.3
Right cheek	802.11ax 160M	175/6825	87.01%	1.149	0.083	0.020	0.590	-0.06	16.11	17.00	1.227	0.117	22.3
Right tilted	802.11ax 160M	175/6825	87.01%	1.149	0.074	0.021	0.520	-0.08	16.11	17.00	1.227	0.104	22.3
Head Test Data of U-NII-8													
Left cheek	802.11ax 160M	207/6985	87.01%	1.149	0.422	0.149	2.980	0.10	17.57	18.50	1.237	0.600	22.3
Left tilted	802.11ax 160M	207/6985	87.01%	1.149	0.323	0.101	2.280	-0.10	17.57	18.50	1.237	0.459	22.3
Right cheek	802.11ax 160M	207/6985	87.01%	1.149	0.134	0.043	0.950	0.13	17.57	18.50	1.237	0.191	22.3
Right tilted	802.11ax 160M	207/6985	87.01%	1.149	0.122	0.036	0.860	-0.13	17.57	18.50	1.237	0.174	22.3
Head Test Data of U-NII-5 with Simultaneous transmission													
Left cheek	802.11ax 160M	79/6345	87.01%	1.149	0.420	0.122	2.950	-0.03	16.54	15.00	0.702	0.339	22.3
Left tilted	802.11ax 160M	79/6345	87.01%	1.149	0.263	0.087	1.850	0.14	16.54	15.00	0.702	0.212	22.3
Right cheek	802.11ax 160M	79/6345	87.01%	1.149	0.126	0.040	0.880	0.13	16.54	15.00	0.702	0.102	22.3
Right tilted	802.11ax 160M	79/6345	87.01%	1.149	0.117	0.039	0.820	-0.15	16.54	15.00	0.702	0.094	22.3
Left cheek	802.11ax 160M	47/6185	87.01%	1.149	0.429	0.127	3.010	-0.03	16.35	15.00	0.733	0.361	22.3
Head Test Data of U-NII-6 with Simultaneous transmission													
Left cheek	802.11ax 160M	111/6505	87.01%	1.149	0.486	0.148	3.430	0.01	15.73	14.00	0.672	0.375	22.3
Left tilted	802.11ax 160M	111/6505	87.01%	1.149	0.264	0.075	1.860	0.07	15.73	14.00	0.672	0.204	22.3
Right cheek	802.11ax 160M	111/6505	87.01%	1.149	0.139	0.038	0.980	-0.10	15.73	14.00	0.672	0.107	22.3
Right tilted	802.11ax 160M	111/6505	87.01%	1.149	0.110	0.031	0.780	0.11	15.73	14.00	0.672	0.085	22.3
Head Test Data of U-NII-7 with Simultaneous transmission													
Left cheek	802.11ax 160M	175/6825	87.01%	1.149	0.339	0.119	2.390	-0.01	16.11	16.00	0.975	0.380	22.3
Left tilted	802.11ax 160M	175/6825	87.01%	1.149	0.240	0.054	1.690	-0.03	16.11	16.00	0.975	0.269	22.3
Right cheek	802.11ax 160M	175/6825	87.01%	1.149	0.083	0.020	0.590	-0.06	16.11	16.00	0.975	0.093	22.3
Right tilted	802.11ax 160M	175/6825	87.01%	1.149	0.074	0.021	0.520	-0.08	16.11	16.00	0.975	0.083	22.3
Head Test Data of U-NII-8 with Simultaneous transmission													

Left cheek	802.11ax 160M	207/6985	87.01%	1.149	0.422	0.149	2.980	0.10	17.57	16.50	0.781	0.379	22.3
Left tilted	802.11ax 160M	207/6985	87.01%	1.149	0.323	0.101	2.280	-0.10	17.57	16.50	0.781	0.290	22.3
Right cheek	802.11ax 160M	207/6985	87.01%	1.149	0.134	0.043	0.950	0.13	17.57	16.50	0.781	0.120	22.3
Right tilted	802.11ax 160M	207/6985	87.01%	1.149	0.122	0.036	0.860	-0.13	17.57	16.50	0.781	0.109	22.3
Body worn Test data of U-NII-5 (Separate 5mm)													
Front side	802.11ax 160M	79/6345	87.01%	1.149	0.139	0.045	0.980	0.02	15.04	15.50	1.112	0.178	22.3
Back side	802.11ax 160M	79/6345	87.01%	1.149	0.185	0.059	1.310	-0.03	15.04	15.50	1.112	0.236	22.3
Body worn Test data of U-NII-6 (Separate 5mm)													
Front side	802.11ax 160M	111/6505	87.01%	1.149	0.207	0.065	1.470	-0.15	15.73	16.50	1.195	0.284	22.3
Back side	802.11ax 160M	111/6505	87.01%	1.149	0.362	0.107	2.560	0.06	15.73	16.50	1.195	0.497	22.3
Body worn Test data of U-NII-7 (Separate 5mm)													
Front side	802.11ax 160M	175/6825	87.01%	1.149	0.237	0.077	1.680	-0.17	16.11	17.00	1.227	0.334	22.3
Back side	802.11ax 160M	175/6825	87.01%	1.149	0.518	0.162	3.670	0.07	16.11	17.00	1.227	**0.731**	22.3
Back side	802.11ax 160M	143/6665	87.01%	1.149	0.490	0.147	3.520	-0.03	15.98	17.00	1.265	0.712	22.3
Body worn Test data of U-NII-8 (Separate 5mm)													
Front side	802.11ax 160M	207/6985	87.01%	1.149	0.078	0.022	0.560	-0.07	13.63	14.50	1.222	0.110	22.3
Back side	802.11ax 160M	207/6985	87.01%	1.149	0.231	0.058	1.360	-0.09	13.63	14.50	1.222	0.324	22.3
Body worn Test data of U-NII-6 (Separate 5mm) with Simultaneous transmission													
Front side	802.11ax 160M	111/6505	87.01%	1.149	0.207	0.065	1.470	-0.15	15.73	14.00	0.672	0.160	22.3
Back side	802.11ax 160M	111/6505	87.01%	1.149	0.362	0.107	2.560	0.06	15.73	14.00	0.672	0.280	22.3
Body worn Test data of U-NII-7 (Separate 5mm) with Simultaneous transmission													
Front side	802.11ax 160M	175/6825	87.01%	1.149	0.237	0.077	1.680	-0.17	16.11	14.00	0.615	0.168	22.3
Back side	802.11ax 160M	175/6825	87.01%	1.149	0.518	0.162	3.670	0.07	16.11	14.00	0.615	0.366	22.3
Back side	802.11ax 160M	143/6665	87.01%	1.149	0.490	0.147	3.520	-0.03	15.98	14.00	0.634	0.357	22.3
Test position	**Test mode**	**Test ch./Freq.**	**Duty Cycle**	**Duty Cycle Scaled factor**	**SAR (W/kg) 1-g**	**SAR (W/kg) 10-g**	**APD W/m² (4cm²)**	**Power drift (dB)**	**Conducted Power(dBm)**	**Tune up Limit(dBm)**	**Scaled factor**	**Scaled SAR 10-g (W/kg)**	**Liquid Temp.(℃)**
Product specific 10gSAR Test data of U-NII-5 (Separate 0mm)													
Front side	802.11ax 160M	79/6345	87.01%	1.149	0.656	0.210	3.860	-0.06	15.04	15.50	1.112	0.268	22.3
Back side	802.11ax 160M	79/6345	87.01%	1.149	0.586	0.153	3.450	-0.14	15.04	15.50	1.112	0.195	22.3
Right side	802.11ax 160M	79/6345	87.01%	1.149	0.722	0.202	4.250	-0.05	15.04	15.50	1.112	0.258	22.3
Top side	802.11ax 160M	79/6345	87.01%	1.149	0.173	0.068	1.010	-0.16	15.04	15.50	1.112	0.087	22.3
Product specific 10gSAR Test data of U-NII-6 (Separate 0mm)													
Front side	802.11ax 160M	111/6505	87.01%	1.149	0.965	0.262	5.670	-0.10	15.73	16.50	1.195	0.360	22.3
Back side	802.11ax 160M	111/6505	87.01%	1.149	0.769	0.168	4.520	-0.11	15.73	16.50	1.195	0.231	22.3
Right side	802.11ax 160M	111/6505	87.01%	1.149	1.250	0.315	7.300	0.13	15.73	16.50	1.195	**0.433**	22.3
Top side	802.11ax 160M	111/6505	87.01%	1.149	0.259	0.069	1.520	0.16	15.73	16.50	1.195	0.095	22.3
Product specific 10gSAR Test data of U-NII-7 (Separate 0mm)													
Front side	802.11ax 160M	175/6825	87.01%	1.149	0.648	0.236	3.810	0.05	16.11	17.00	1.227	0.333	22.3
Back side	802.11ax 160M	175/6825	87.01%	1.149	0.838	0.252	4.930	0.00	16.11	17.00	1.227	0.355	22.3
Right side	802.11ax 160M	175/6825	87.01%	1.149	0.384	0.141	2.260	0.03	16.11	17.00	1.227	0.199	22.3
Top side	802.11ax 160M	175/6825	87.01%	1.149	0.435	0.131	2.560	0.17	16.11	17.00	1.227	0.185	22.3
Back side	802.11ax 160M	143/6665	87.01%	1.149	0.816	0.240	4.760	-0.05	15.98	17.00	1.265	0.349	22.3
Product specific 10gSAR Test data of U-NII-8 (Separate 0mm)													
Front side	802.11ax 160M	207/6985	87.01%	1.149	0.263	0.079	1.710	-0.17	13.63	14.50	1.222	0.111	22.3

Back side	802.11ax 160M	207/6985	87.01%	1.149	0.349	0.092	2.070	0.07	13.63	14.50	1.222	0.129	22.3
Right side	802.11ax 160M	207/6985	87.01%	1.149	0.191	0.049	1.240	-0.09	13.63	14.50	1.222	0.069	22.3
Top side	802.11ax 160M	207/6985	87.01%	1.149	0.203	0.048	1.320	0.05	13.63	14.50	1.222	0.067	22.3

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9.2.15 SAR Result of BT

Bluetooth SAR Test Record												
Ant 4 Test Record												
Test position	Test mode	Test ch./Freq.	Duty Cycle	Duty Cycle Scaled factor	SAR (W/kg) 1-g	SAR (W/kg) 10-g	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaled factor	Scaled SAR 1-g (W/kg)	Liquid Temp.(℃)
Head Test Data												
Left cheek	DH5	39/2441	76.81%	1.302	0.201	0.089	-0.16	12.17	12.50	1.079	0.282	22.3
Left tilted	DH5	39/2441	76.81%	1.302	0.254	0.111	0.14	12.17	12.50	1.079	**0.357**	22.3
Right cheek	DH5	39/2441	76.81%	1.302	0.154	0.074	0.10	12.17	12.50	1.079	0.216	22.3
Right tilted	DH5	39/2441	76.81%	1.302	0.184	0.084	-0.14	12.17	12.50	1.079	0.258	22.3
Body worn Test data (Separate 5mm)												
Front side	DH5	39/2441	76.81%	1.302	0.077	0.036	-0.05	12.17	12.50	1.079	**0.108**	22.3
Back side	DH5	39/2441	76.81%	1.302	0.068	0.034	0.17	12.17	12.50	1.079	0.096	22.3
Hotspot Test data (Separate 5mm)												
Front side	DH5	39/2441	76.81%	1.302	0.065	0.029	0.06	12.17	12.50	1.079	0.091	22.3
Back side	DH5	39/2441	76.81%	1.302	0.063	0.030	-0.03	12.17	12.50	1.079	0.088	22.3
Right side	DH5	39/2441	76.81%	1.302	0.020	0.009	0.08	12.17	12.50	1.079	0.028	22.3
Top side	DH5	39/2441	76.81%	1.302	0.152	0.068	-0.01	12.17	12.50	1.079	**0.214**	22.3

9.3 Measurement of PD Data

9.3.1 PD Result of Wifi 6E

Wi-Fi 6E PD Test Record MIMO															
Test position	Test mode	Test ch./Freq.	Distance (mm)	Grid Step (λ)	Duty Cycle	Duty Cycle Scaled factor	iPDn	iPD ratio	Measured PD 4cm^2 (W/m^2)	Power drift (dB)	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor for measurement uncertainty	Tune up Scaled factor	Scaled PD 4cm^2 (W/m^2)
Power Density Test DATA															
Front side	802.11ax 160M	175/6825	2	0.0625	87.01%	1.149	/	/	3.82	0.06	16.11	17.00	1.5493	1.227	8.345
Back side	802.11ax 160M	175/6825	2	0.0625	87.01%	1.149	28.50	0.99	3.97	0.12	16.11	17.00	1.5493	1.227	8.672
Back side	802.11ax 160M	175/6825	8.8	0.0625	87.01%	1.149	22.70		1.21	0.06	16.11	17.00	1.5493	1.227	2.643
Right side	802.11ax 160M	175/6825	2	0.0625	87.01%	1.149	/	/	2.39	-0.09	16.11	17.00	1.5493	1.227	5.221
Top side	802.11ax 160M	175/6825	2	0.0625	87.01%	1.149	/	/	2.12	-0.18	16.11	17.00	1.5493	1.227	4.631
Back side	802.11ax 160M	47/6185	2	0.0625	87.01%	1.149	/	/	3.89	-0.01	14.85	15.50	1.5493	1.161	8.042
Back side	802.11ax 160M	111/6505	2	0.0625	87.01%	1.149	/	/	2.73	-0.01	15.73	16.50	1.5493	1.195	5.809
Back side	802.11ax 160M	143/6665	2	0.0625	87.01%	1.149	/	/	4.03	0.09	15.98	17.00	1.5493	1.266	9.080
Back side	802.11ax 160M	207/6985	2	0.0625	87.01%	1.149	/	/	4.53	-0.14	13.63	14.50	1.5493	1.223	**9.860**

9.4 Multiple Transmitter Evaluation

9.4.1 Simultaneous SAR test evaluation

No.	Simultaneous Tx Combination	Head	Body-Worn	Hotspot	Product Specific 10-g (0mm)
1	WWAN+WIFI2.4G	Yes	Yes	Yes	Yes
2	WWAN+BT	Yes	Yes	Yes	Yes
3	WWAN+WIFI5G&6E	Yes	Yes	Yes	Yes
4	WWAN+NFC	/	/	/	Yes
5	WLAN WIFI2.4G(chain 0)+WLAN 5G/6E(chain 1)	Yes	Yes	Yes	Yes
6	WLAN WIFI5G&6E+BT	Yes	Yes	Yes	Yes
7	WWAN+WIFI2.4G(chain 0)+WLAN 5G/6E(chain 1)	Yes	Yes	Yes	Yes
8	WWAN+WIFI5G&6E+BT	Yes	Yes	Yes	Yes
9	WLAN WIFI2.4G(chain 0)+WLAN 5G/6E(chain 1)+NFC	/	/	/	Yes
10	WWAN+WIFI5G&6E+BT+NFC	/	/	/	Yes

Note:
1) The device does not support DTM function.
2) NFC is different from the working scenario of WWAN/WIFI(Head/Body-worn/Hotspot) and does not participate in the simultaneous transmission.
3) The NFC test data can be referred to NFC SAR test report (Report NO.: SUCR250400034210).

9.4.2 Simultaneous Transmission SAR Summation Scenario

Head:

LTE Band (EN_DC)	Exposure position	Ant2	n77	EN_DC Summed SAR
			Ant7	
		1	2	1+2
Band 41	Left Touch	0.205	0.206	0.411
	Left Tilt	0.095	0.209	0.304
	Right Touch	0.110	0.874	0.984
	Right Tilt	0.010	0.247	0.257

Body-Worn:

LTE Band (EN_DC)	Exposure position	Ant2	n77	EN_DC Summed SAR
			Ant7	
		1	2	1+2
Band 41	Front side	0.524	0.392	0.916
	Back side	0.428	0.274	0.702

Hotspot:

LTE Band (EN_DC)	Exposure position	Ant2	n77	EN_DC Summed SAR
			Ant7	
		1	2	1+2
Band 41	Front side	0.437	0.198	0.635
	Back side	0.299	0.121	0.420
	Left side	/	0.295	0.295
	Right side	0.074	/	0.074
	Top side	/	/	/
	Bottom side	0.631	/	0.631

0mm:

LTE Band (EN_DC)	Exposure position	Ant2	n77	EN_DC Summed SAR
			Ant7	
		1	2	1+2
Band 41	Front side	/	/	/
	Back side	/	/	/
	Left side	/	1.184	1.184
	Right side	/	/	/
	Top side	/	/	/
	Bottom side	1.911	/	1.911

Head:

LTE Band (EN_DC)	Exposure position	Ant3	n77 Ant7	UL MIMO Summed SAR
		1	2	1+2
n77	Left Touch	0.360	0.206	0.566
	Left Tilt	0.309	0.209	0.518
	Right Touch	0.118	0.874	0.992
	Right Tilt	0.114	0.247	0.361

Body-Worn:

LTE Band (EN_DC)	Exposure position	Ant3	n77 Ant7	UL MIMO Summed SAR
		1	2	1+2
n77	Front side	0.384	0.392	0.776
	Back side	0.306	0.274	0.580

Hotspot:

LTE Band (EN_DC)	Exposure position	Ant3	n77 Ant7	UL MIMO Summed SAR
		1	2	1+2
n77	Front side	0.520	0.198	0.718
	Back side	0.509	0.121	0.630
	Left side	/	0.295	0.295
	Right side	0.288	/	0.288
	Top side	0.354	/	0.354
	Bottom side	/	/	/

0mm:

LTE Band (EN_DC)	Exposure position	Ant3	n77 Ant7	UL MIMO Summed SAR
		1	2	1+2
n77	Front side	/	/	/
	Back side	/	/	/
	Left side	/	1.184	1.184
	Right side	/	/	/
	Top side	/	/	/
	Bottom side	/	/	/

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Head:

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant0	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
GSM850	Left cheek	0.479	0.388	0.387	0.282	1.254	1.148
	Left tilted	0.294	0.252	0.290	0.357	0.836	0.941
	Right cheek	0.327	0.164	0.190	0.216	0.681	0.733
	Right tilted	0.179	0.212	0.169	0.258	0.560	0.606
WB5	Left cheek	0.301	0.388	0.387	0.282	1.076	0.970
	Left tilted	0.245	0.252	0.290	0.357	0.787	0.892
	Right cheek	0.232	0.164	0.190	0.216	0.586	0.638
	Right tilted	0.158	0.212	0.169	0.258	0.539	0.585
LTE B5	Left cheek	0.393	0.388	0.387	0.282	1.168	1.062
	Left tilted	0.306	0.252	0.290	0.357	0.848	0.953
	Right cheek	0.284	0.164	0.190	0.216	0.638	0.690
	Right tilted	0.153	0.212	0.169	0.258	0.534	0.580
LTE B12	Left cheek	0.299	0.388	0.387	0.282	1.074	0.968
	Left tilted	0.200	0.252	0.290	0.357	0.742	0.847
	Right cheek	0.176	0.164	0.190	0.216	0.530	0.582
	Right tilted	0.110	0.212	0.169	0.258	0.491	0.537

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant2	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
GSM1900	Left cheek	0.157	0.388	0.387	0.282	0.932	0.826
	Left tilted	0.103	0.252	0.290	0.357	0.645	0.750
	Right cheek	0.285	0.164	0.190	0.216	0.639	0.691
	Right tilted	0.120	0.212	0.169	0.258	0.501	0.547
LTE B2	Left cheek	0.205	0.388	0.387	0.282	0.980	0.874
	Left tilted	0.150	0.252	0.290	0.357	0.692	0.797
	Right cheek	0.345	0.164	0.190	0.216	0.699	0.751
	Right tilted	0.159	0.212	0.169	0.258	0.540	0.586
LTE B4	Left cheek	0.211	0.388	0.387	0.282	0.986	0.880
	Left tilted	0.184	0.252	0.290	0.357	0.726	0.831
	Right cheek	0.268	0.164	0.190	0.216	0.622	0.674
	Right tilted	0.125	0.212	0.169	0.258	0.506	0.552
LTE B41	Left cheek	0.205	0.388	0.387	0.282	0.980	0.874
	Left tilted	0.095	0.252	0.290	0.357	0.637	0.742
	Right cheek	0.110	0.164	0.190	0.216	0.464	0.516
	Right tilted	0.010	0.212	0.169	0.258	0.391	0.437
N41	Left cheek	0.260	0.388	0.387	0.282	1.035	0.929
	Left tilted	0.118	0.252	0.290	0.357	0.660	0.765
	Right cheek	0.229	0.164	0.190	0.216	0.583	0.635
	Right tilted	0.100	0.212	0.169	0.258	0.481	0.527

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant3	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77	Left cheek	0.719	0.388	0.387	0.282	1.494	1.388
	Left tilted	0.617	0.252	0.290	0.357	1.159	1.264
	Right cheek	0.235	0.164	0.190	0.216	0.589	0.641
	Right tilted	0.227	0.212	0.169	0.258	0.608	0.654

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant7	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
LTE B42	Left cheek	0.288	0.388	0.387	0.282	1.063	0.957
	Left tilted	0.138	0.252	0.290	0.357	0.680	0.785
	Right cheek	0.838	0.164	0.190	0.216	1.192	1.244
	Right tilted	0.282	0.212	0.169	0.258	0.663	0.709
n77	Left cheek	0.206	0.388	0.387	0.282	0.981	0.875
	Left tilted	0.209	0.252	0.290	0.357	0.751	0.856
	Right cheek	0.874	0.164	0.190	0.216	1.228	1.280
	Right tilted	0.247	0.212	0.169	0.258	0.628	0.674

Test position		SARmax (W/kg)				Summed SAR	
		UL MIMO	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77	Left cheek	0.566	0.388	0.387	0.282	1.341	1.235
	Left tilted	0.518	0.252	0.290	0.357	1.060	1.165
	Right cheek	0.992	0.164	0.190	0.216	1.346	1.398
	Right tilted	0.361	0.212	0.169	0.258	0.742	0.788

Test position		SARmax (W/kg)				Summed SAR	
		EN-DC Max SAR	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77-B41	Left cheek	0.411	0.388	0.387	0.282	1.186	1.080
	Left tilted	0.304	0.252	0.290	0.357	0.846	0.951
	Right cheek	0.984	0.164	0.190	0.216	1.338	1.390
	Right tilted	0.257	0.212	0.169	0.258	0.638	0.684

Body-Worn:

Test position		SARmax (W/kg)				Summed SAR			
		Main Ant0	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT				
		1	2	3	4	1+2+3	Case No.	1+3+4	Case No.
GSM850	Front side	1.114	0.314	0.351	0.108	1.779	1#	1.573	/
	Back side	1.232	0.347	0.366	0.096	1.945	2#	1.694	3#
WB5	Front side	0.995	0.314	0.351	0.108	1.660	4#	1.454	/
	Back side	1.084	0.347	0.366	0.096	1.797	5#	1.546	/
LTE B5	Front side	1.049	0.314	0.351	0.108	1.714	6#	1.508	/
	Back side	1.193	0.347	0.366	0.096	1.906	7#	1.655	8#
LTE B12	Front side	0.859	0.314	0.351	0.108	1.524	/	1.318	/
	Back side	0.969	0.347	0.366	0.096	1.682	9#	1.431	/

Test position		SARmax (W/kg)				Summed SAR			
		Main Ant2	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT				
		1	2	3	4	1+2+3	Case No.	1+3+4	Case No.
GSM1900	Front side	1.124	0.314	0.351	0.108	1.789	10#	1.583	/
	Back side	0.793	0.347	0.366	0.096	1.506	/	1.255	/
LTE B2	Front side	1.165	0.314	0.351	0.108	1.830	11#	1.624	12#
	Back side	0.986	0.347	0.366	0.096	1.699	13#	1.448	/
LTE B4	Front side	1.268	0.314	0.351	0.108	1.933	14#	1.727	15#
	Back side	1.165	0.347	0.366	0.096	1.878	16#	1.627	17#
LTE B41	Front side	1.070	0.314	0.351	0.108	1.735	18#	1.529	/
	Back side	0.854	0.347	0.366	0.096	1.567	/	1.316	/
N41	Front side	1.034	0.314	0.351	0.108	1.699	19#	1.493	/
	Back side	0.759	0.347	0.366	0.096	1.472	/	1.221	/

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant3	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77	Front side	0.766	0.314	0.351	0.108	1.431	1.225
	Back side	0.611	0.347	0.366	0.096	1.324	1.073

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant7	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
LTE B42	Front side	0.882	0.314	0.351	0.108	1.547	1.341
	Back side	0.620	0.347	0.366	0.096	1.333	1.082
n77	Front side	0.392	0.314	0.351	0.108	1.057	0.851
	Back side	0.274	0.347	0.366	0.096	0.987	0.736

Test position		SARmax (W/kg)				Summed SAR	
		UL MIMO	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77	Front side	0.776	0.314	0.351	0.108	1.441	1.235
	Back side	0.580	0.347	0.366	0.096	1.293	1.042

Test position		SARmax (W/kg)				Summed SAR	
		EN-DC Max SAR	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77-B41	Front side	0.916	0.314	0.351	0.108	1.581	1.375
	Back side	0.702	0.347	0.366	0.096	1.415	1.164

Hotspot:

Test position		SARmax (W/kg)				Summed SAR			
		Main Ant0	WiFi 2.4G MIMO	WiFi 5G MIMO	BT				
		1	2	3	4	1+2+3	Case No.	1+3+4	Case No.
GSM850	Front side	1.114	0.232	0.546	0.091	1.892	20#	1.751	21#
	Back side	1.232	0.286	0.385	0.088	1.903	22#	1.705	23#
	Left side	1.150	/	/	/	1.150	/	1.150	/
	Right side	/	0.232	0.364	0.028	0.596	/	0.392	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	0.754	/	/	/	0.754	/	0.754	/
WB5	Front side	0.995	0.232	0.546	0.091	1.773	24#	1.632	25#
	Back side	1.084	0.286	0.385	0.088	1.755	26#	1.557	/
	Left side	0.928	/	/	/	0.928	/	0.928	/
	Right side	/	0.232	0.364	0.028	0.596	/	0.392	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	0.646	/	/	/	0.646	/	0.646	/
LTE B5	Front side	1.049	0.232	0.546	0.091	1.827	27#	1.686	28#
	Back side	1.193	0.286	0.385	0.088	1.864	29#	1.666	30#
	Left side	1.129	/	/	/	1.129	/	1.129	/
	Right side	/	0.232	0.364	0.028	0.596	/	0.392	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	0.780	/	/	/	0.780	/	0.780	/
LTE B12	Front side	0.859	0.232	0.546	0.091	1.637	31#	1.496	/
	Back side	0.969	0.286	0.385	0.088	1.640	32#	1.442	/
	Left side	0.921	/	/	/	0.921	/	0.921	/
	Right side	/	0.232	0.364	0.028	0.596	/	0.392	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	0.690	/	/	/	0.690	/	0.690	/

Test position		SARmax (W/kg)				Summed SAR			
		Main Ant2	WiFi 2.4G MIMO	WiFi 5G MIMO	BT				
		1	2	3	4	1+2+3	Case No.	1+3+4	Case No.
GSM1900	Front side	1.124	0.232	0.546	0.091	1.902	33#	1.761	34#
	Back side	0.793	0.286	0.385	0.088	1.464	/	1.266	/
	Left side	/	/	/	/	/	/	/	/
	Right side	0.471	0.232	0.364	0.028	1.067	/	0.863	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	1.188	/	/	/	1.188	/	1.188	/
LTE B2	Front side	1.090	0.232	0.546	0.091	1.868	35#	1.727	36#
	Back side	0.911	0.286	0.385	0.088	1.582	/	1.384	/
	Left side	/	/	/	/	/	/	/	/
	Right side	0.488	0.232	0.364	0.028	1.084	/	0.880	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	1.251	/	/	/	1.251	/	1.251	/
LTE B4	Front side	1.017	0.232	0.546	0.091	1.795	37#	1.654	38#
	Back side	0.754	0.286	0.385	0.088	1.425	/	1.227	/
	Left side	/	/	/	/	/	/	/	/
	Right side	0.317	0.232	0.364	0.028	0.913	/	0.709	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	1.270	/	/	/	1.270	/	1.270	/
LTE B41	Front side	0.871	0.232	0.546	0.091	1.649	39#	1.508	/
	Back side	0.597	0.286	0.385	0.088	1.268	/	1.070	/
	Left side	/	/	/	/	/	/	/	/
	Right side	0.148	0.232	0.364	0.028	0.744	/	0.540	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	1.259	/	/	/	1.259	/	1.259	/
N41	Front side	0.615	0.232	0.546	0.091	1.393	/	1.252	/
	Back side	0.495	0.286	0.385	0.088	1.166	/	0.968	/
	Left side	/	/	/	/	/	/	/	/
	Right side	0.180	0.232	0.364	0.028	0.776	/	0.572	/
	Top side	/	0.528	0.309	0.214	0.837	/	0.523	/
	Bottom side	0.911	/	/	/	0.911	/	0.911	/

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant3	WiFi 2.4G MIMO	WiFi 5G MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77	Front side	0.520	0.232	0.546	0.091	1.298	1.157
	Back side	0.509	0.286	0.385	0.088	1.180	0.982
	Left side	/	/	/	/	/	/
	Right side	0.288	0.232	0.364	0.028	0.884	0.680
	Top side	0.354	0.528	0.309	0.214	1.191	0.877
	Bottom side	/	/	/	/	/	/

Test position		SARmax (W/kg)				Summed SAR	
		Main Ant7	WiFi 2.4G MIMO	WiFi 5G MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
LTE B42	Front side	0.317	0.232	0.546	0.091	1.095	0.954
	Back side	0.262	0.286	0.385	0.088	0.933	0.735
	Left side	0.586	/	/	/	0.586	0.586
	Right side	/	0.232	0.364	0.028	0.596	0.392
	Top side	/	0.528	0.309	0.214	0.837	0.523
	Bottom side	/	/	/	/	/	/
n77	Front side	0.395	0.232	0.546	0.091	1.173	1.032
	Back side	0.241	0.286	0.385	0.088	0.912	0.714
	Left side	0.588	/	/	/	0.588	0.588
	Right side	/	0.232	0.364	0.028	0.596	0.392
	Top side	/	0.528	0.309	0.214	0.837	0.523
	Bottom side	/	/	/	/	/	/

Test position		SARmax (W/kg)				Summed SAR	
		UL MIMO	WiFi 2.4G MIMO	WiFi 5G MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77	Front side	0.718	0.232	0.546	0.091	1.496	1.355
	Back side	0.630	0.286	0.385	0.088	1.301	1.103
	Left side	0.295	/	/	/	0.295	0.295
	Right side	0.288	0.232	0.364	0.028	0.884	0.680
	Top side	0.354	0.528	0.309	0.214	1.191	0.877
	Bottom side	/	/	/	/	/	/

Test position		SARmax (W/kg)				Summed SAR	
		EN-DC Max SAR	WiFi 2.4G MIMO	WiFi 5G MIMO	BT		
		1	2	3	4	1+2+3	1+3+4
n77-B41	Front side	0.635	0.232	0.546	0.091	1.413	1.272
	Back side	0.420	0.286	0.385	0.088	1.091	0.893
	Left side	0.295	/	/	/	0.295	0.295
	Right side	0.074	0.232	0.364	0.028	0.670	0.466
	Top side	/	0.528	0.309	0.214	0.837	0.523
	Bottom side	0.631	/	/	/	0.631	0.631

0mm:

Test position		SARmax (W/kg)				Summed SAR
		Main Ant0	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	NFC	
		1	2	3	4	1+2+3+4
GSM850	Front side	/	/	0.502	0.006	0.508
	Back side	1.887	/	0.355	0.054	2.296
	Left side	/	/	/	/	/

	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	/	/	/	/	/

Test position		SARmax (W/kg)				Summed SAR
		Main Ant2	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	NFC	
		1	2	3	4	1+2+3+4
LTE B2	Front side	2.249	/	0.502	0.006	2.757
	Back side	/	/	0.355	0.054	0.409
	Left side	/	/	/	/	/
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	1.872	/	/	/	1.872
LTE B4	Front side	2.252	/	0.502	0.006	2.760
	Back side	/	/	0.355	0.054	0.409
	Left side	/	/	/	/	/
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	2.224	/	/	/	2.224
LTE B41	Front side	/	/	0.502	0.006	0.508
	Back side	/	/	0.355	0.054	0.409
	Left side	/	/	/	/	/
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	1.911	/	/	/	1.911
N41	Front side	/	/	0.502	0.006	0.508
	Back side	/	/	0.355	0.054	0.409
	Left side	/	/	/	/	/
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	2.215	/	/	/	2.215

Test position		SARmax (W/kg)				Summed SAR
		Main Ant7	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	NFC	
		1	2	3	4	1+2+3+4
LTE B42	Front side	/	/	0.502	0.006	0.508
	Back side	/	/	0.355	0.054	0.409
	Left side	1.560	/	/	/	1.560
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	/	/	/	/	/
n77	Front side	/	/	0.502	0.006	0.508
	Back side	/	/	0.355	0.054	0.409
	Left side	1.184	/	/	/	1.184
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	/	/	/	/	/

Test position		SARmax (W/kg)				Summed SAR
		UL MIMO	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	NFC	
		1	2	3	4	1+2+3+4
n77	Front side	/	/	0.502	0.006	0.508
	Back side	/	/	0.355	0.054	0.409
	Left side	1.184	/	/	/	1.184
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	/	/	/	/	/

Test position		SARmax (W/kg)				Summed SAR
		EN-DC Max SAR	WiFi 2.4G MIMO	WiFi 5G&6E MIMO	NFC	
		1	2	3	4	1+2+3+4
n77-B41	Front side	/	/	0.502	0.006	0.508
	Back side	/	/	0.355	0.054	0.409
	Left side	1.184	/	/	/	1.184
	Right side	/	/	0.433	/	0.433
	Top side	/	0.625	0.192	/	0.817
	Bottom side	1.911	/	/	/	1.911

SPLSR General Note:

1. When standalone SAR is measured for both antennas in the pair, the peak location separation distance is computed by the square root of [(x1−x2)2 + (y1−y2)2 + (z1−z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates in the area scans or extrapolated peak SAR locations in the zoom scans, as appropriate.
2. SPLSR = (SAR1 + SAR2)1.5 / (min. separation distance, mm). If SPLSR ⩽ 0.04 for 1g SAR, or SPLSR ⩽ 0.10 for 10g SAR simultaneously transmission SAR measurement is not necessary.
3. Per April 2022 TCB Workshop Notes, WLAN antenna 4/5 was summed algebraically with the BT Antenna 4 separately for the purposes of hybrid SPLSR combination and they are located at the top of the device.
4. Per April 2022 TCB Workshop, instead of doing a small volume scan over a co-located antenna pair, used summing the SAR values of the co-located pair and using that value in SPLSR calculation. In the calculation used the minimum distance between the spatially separated antenna and the closest antenna of the co-located antenna pair to be conservative.

SPLSR:

Case No.	Position	Band	SAR (W/kg)	SAR peak location (cm)			3D distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
				X	Y	Z				
1#	Front side 5mm	GSM 850(Ant0)	1.114	-35.6	-64.2	-2.88	145.597	**1.779**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	GSM 850(Ant0)	1.114	-35.6	-64.2	-2.88	144.657	**1.779**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	16.8	70.6	0.08				
2#	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	145.925	**1.945**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.713	-15.2	72.6	-3.53				
	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	145.816	**1.945**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.713	-16.9	71.8	0.05				
3#	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	145.816	**1.694**	0.02	Not Required
		WiFi 5G&6E MIMO+BT（WiFi 5G&6E）	0.462	-16.9	71.8	0.05				
	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	146.244	**1.694**	0.02	Not Required
		WiFi 5G&6E MIMO+BT（BT）	0.462	-8.1	75.3	-3.23				
4#	Front side 5mm	WB5(Ant0)	0.995	-33.1	-64.5	-3.26	145.015	**1.660**	0.01	Not Required

		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	WB5(Ant0)	0.995	-33.1	-64.5	-3.26	144.060	**1.660**	0.01	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	16.8	70.6	0.08				
5#	Back side 5mm	WB5(Ant0)	1.084	34.5	-63	-3.77	144.421	**1.797**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.713	-15.2	72.6	-3.53				
	Back side 5mm	WB5(Ant0)	1.084	34.5	-63	-3.77	144.318	**1.797**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.713	-16.9	71.8	0.05				
6#	Front side 5mm	LTE B5(Ant0)	1.049	-34.9	-64.2	-3.42	145.361	**1.714**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	LTE B5(Ant0)	1.049	-34.9	-64.2	-3.42	144.417	**1.714**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	16.8	70.6	0.08				
7#	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	144.422	**1.906**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.713	-15.2	72.6	-3.53				
	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	144.321	**1.906**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.713	-16.9	71.8	0.05				
8#	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	144.321	**1.655**	0.01	Not Required
		WiFi 5G&6E MIMO+BT（WiFi 5G&6E）	0.462	-16.9	71.8	0.05				
	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	144.714	**1.655**	0.01	Not Required
		WiFi 5G&6E MIMO+BT（BT）	0.462	-8.1	75.3	-3.23				
9#	Back side 5mm	LTE B12(Ant0)	0.969	36.1	-59.8	-3.88	141.991	**1.682**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.713	-15.2	72.6	-3.53				
	Back side 5mm	LTE B12(Ant0)	0.969	36.1	-59.8	-3.88	141.926	**1.682**	0.02	Not Required

		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.713	-16.9	71.8	0.05				
10#	Front side 5mm	GSM 1900(Ant2)	1.124	21	-85.8	-3.89	157.721	**1.789**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	GSM 1900(Ant2)	1.124	21	-85.8	-3.89	157.290	**1.789**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	17.4	71.4	0.03				
11#	Front side 5mm	LTE B2(Ant2)	1.165	13.2	-80.1	-3.91	151.985	**1.830**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	LTE B2(Ant2)	1.165	13.2	-80.1	-3.91	151.609	**1.830**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	17.4	71.4	0.03				
12#	Front side 5mm	LTE B2(Ant2)	1.165	13.2	-80.1	-3.91	151.609	**1.624**	0.01	Not Required
		WiFi 5G&6E MIMO+BT（WiFi 5G&6E）	0.459	17.4	71.4	0.03				
	Front side 5mm	LTE B2(Ant2)	1.165	13.2	-80.1	-3.91	157.000	**1.624**	0.01	Not Required
		WiFi 5G&6E MIMO+BT（BT）	0.459	7.6	76.8	-3.48				
13#	Back side 5mm	LTE B2(Ant2)	0.986	-12.8	-78.6	-3.57	151.219	**1.699**	0.01	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.713	-15.2	72.6	-3.53				
	Back side 5mm	LTE B2(Ant2)	0.986	-12.8	-78.6	-3.57	150.499	**1.699**	0.01	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.713	-16.9	71.8	0.05				
14#	Front side 5mm	LTE B4(Ant2)	1.268	16.4	-69.2	-3.96	141.058	**1.933**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	LTE B4(Ant2)	1.268	16.4	-69.2	-3.96	140.660	**1.933**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	17.4	71.4	0.03				
15#	Front side 5mm	LTE B4(Ant2)	1.268	16.4	-69.2	-3.96	140.660	**1.727**	0.02	Not Required

		WiFi 5G&6E MIMO+BT（WiFi 5G&6E）	0.459	17.4	71.4	0.03				
	Front side 5mm	LTE B4(Ant2)	1.268	16.4	-69.2	-3.96	146.266	**1.727**	0.02	Not Required
		WiFi 5G&6E MIMO+BT（BT）	0.459	7.6	76.8	-3.48				
16#	Back side 5mm	LTE B4(Ant2)	1.165	-15.5	-67.9	-0.93	140.524	**1.878**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.713	-15.2	72.6	-3.53				
	Back side 5mm	LTE B4(Ant2)	1.165	-15.5	-67.9	-0.93	139.710	**1.878**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.713	-16.9	71.8	0.05				
17#	Back side 5mm	LTE B4(Ant2)	1.165	-15.5	-67.9	-0.93	139.710	**1.627**	0.01	Not Required
		WiFi 5G&6E MIMO+BT（WiFi 5G&6E）	0.462	-16.9	71.8	0.05				
	Back side 5mm	LTE B4(Ant2)	1.165	-15.5	-67.9	-0.93	143.410	**1.627**	0.01	Not Required
		WiFi 5G&6E MIMO+BT（BT）	0.462	-8.1	75.3	-3.23				
18#	Front side 5mm	LTE B41(Ant2)	1.070	-15.2	-74.2	-0.71	149.362	**1.735**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	LTE B41(Ant2)	1.070	-15.2	-74.2	-0.71	149.207	**1.735**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	17.4	71.4	0.03				
19#	Front side 5mm	n41(Ant2)	1.034	-10.8	-70.8	-0.69	145.154	**1.699**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G&6E MIMO（WiFi 2.4G）	0.665	16.3	71.8	0.1				
	Front side 5mm	n41(Ant2)	1.034	-10.8	-70.8	-0.69	144.971	**1.699**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G&6E MIMO（WiFi 5G&6E）	0.665	17.4	71.4	0.03				
20#	Front side 5mm	GSM 850(Ant0)	1.114	-35.6	-64.2	-2.88	146.350	**1.892**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	GSM 850(Ant0)	1.114	-35.6	-64.2	-2.88	144.084	**1.892**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				

21#	Front side 5mm	GSM 850(Ant0)	1.114	-35.6	-64.2	-2.88	144.084	**1.751**	0.02	Not Required
		WiFi 5G MIMO+BT（WiFi 5G）	0.637	16.5	70.1	0.19				
	Front side 5mm	GSM 850(Ant0)	1.114	-35.6	-64.2	-2.88	146.875	**1.751**	0.02	Not Required
		WiFi 5G MIMO+BT（BT）	0.637	7.2	76.3	-3.19				
22#	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	145.063	**1.903**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.671	-14.6	71.9	-3.37				
	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	146.485	**1.903**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.671	-17.2	72.4	0.12				
23#	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	146.485	**1.705**	0.02	Not Required
		WiFi 5G MIMO+BT（WiFi 5G）	0.473	-17.2	72.4	0.12				
	Back side 5mm	GSM 850(Ant0)	1.232	34.5	-64.6	-3.89	146.228	**1.705**	0.02	Not Required
		WiFi 5G MIMO+BT（BT）	0.473	-8.7	75.1	-3.29				
24#	Front side 5mm	WB5(Ant0)	0.995	-33.1	-64.5	-3.26	145.758	**1.773**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	WB5(Ant0)	0.995	-33.1	-64.5	-3.26	143.489	**1.773**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				
25#	Front side 5mm	WB5(Ant0)	0.995	-33.1	-64.5	-3.26	143.489	**1.632**	0.01	Not Required
		WiFi 5G MIMO+BT（WiFi 5G）	0.637	16.5	70.1	0.19				
	Front side 5mm	WB5(Ant0)	0.995	-33.1	-64.5	-3.26	146.454	**1.632**	0.01	Not Required
		WiFi 5G MIMO+BT（BT）	0.637	7.2	76.3	-3.19				
26#	Back side 5mm	WB5(Ant0)	1.084	34.5	-63	-3.77	143.558	**1.755**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.671	-14.6	71.9	-3.37				
	Back side 5mm	WB5(Ant0)	1.084	34.5	-63	-3.77	144.987	**1.755**	0.02	Not Required

		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.671	-17.2	72.4	0.12				
27#	Front side 5mm	LTE B5(Ant0)	1.049	-34.9	-64.2	-3.42	146.111	**1.827**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	LTE B5(Ant0)	1.049	-34.9	-64.2	-3.42	143.845	**1.827**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				
28#	Front side 5mm	LTE B5(Ant0)	1.049	-34.9	-64.2	-3.42	143.845	**1.686**	0.02	Not Required
		WiFi 5G MIMO+BT（WiFi 5G）	0.637	16.5	70.1	0.19				
	Front side 5mm	LTE B5(Ant0)	1.049	-34.9	-64.2	-3.42	146.672	**1.686**	0.01	Not Required
		WiFi 5G MIMO+BT（BT）	0.637	7.2	76.3	-3.19				
29#	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	143.559	**1.864**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.671	-14.6	71.9	-3.37				
	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	144.990	**1.864**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.671	-17.2	72.4	0.12				
30#	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	144.990	**1.666**	0.01	Not Required
		WiFi 5G MIMO+BT（WiFi 5G）	0.473	-17.2	72.4	0.12				
	Back side 5mm	LTE B5(Ant0)	1.193	34.5	-63	-3.89	144.700	**1.666**	0.01	Not Required
		WiFi 5G MIMO+BT（BT）	0.473	-8.7	75.1	-3.29				
31#	Front side 5mm	LTE B12(Ant0)	0.859	-35.3	-61.2	-3.61	143.462	**1.637**	0.01	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	LTE B12(Ant0)	0.859	-35.3	-61.2	-3.61	141.200	**1.637**	0.01	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				
32#	Back side 5mm	LTE B12(Ant0)	0.969	36.1	-59.8	-3.88	141.123	**1.640**	0.01	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.671	-14.6	71.9	-3.37				

	Back side 5mm	LTE B12(Ant0)	0.969	36.1	-59.8	-3.88	142.596	**1.640**	0.01	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.671	-17.2	72.4	0.12				
33#	Front side 5mm	GSM 1900(Ant2)	1.124	21	-85.8	-3.89	158.197	**1.902**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	GSM 1900(Ant2)	1.124	21	-85.8	-3.89	156.018	**1.902**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				
34#	Front side 5mm	GSM 1900(Ant2)	1.124	21	-85.8	-3.89	156.018	**1.761**	0.01	Not Required
		WiFi 5G MIMO+BT（WiFi 5G）	0.637	16.5	70.1	0.19				
	Front side 5mm	GSM 1900(Ant2)	1.124	21	-85.8	-3.89	162.688	**1.761**	0.01	Not Required
		WiFi 5G MIMO+BT（BT）	0.637	7.2	76.3	-3.19				
35#	Front side 5mm	LTE B2(Ant2)	1.090	13.8	-78.6	-3.54	150.979	**1.868**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	LTE B2(Ant2)	1.090	13.8	-78.6	-3.54	148.771	**1.868**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				
36#	Front side 5mm	LTE B2(Ant2)	1.090	13.8	-78.6	-3.54	148.771	**1.727**	0.02	Not Required
		WiFi 5G MIMO+BT（WiFi 5G）	0.637	16.5	70.1	0.19				
	Front side 5mm	LTE B2(Ant2)	1.090	13.8	-78.6	-3.54	155.041	**1.727**	0.01	Not Required
		WiFi 5G MIMO+BT（BT）	0.637	7.2	76.3	-3.19				
37#	Front side 5mm	LTE B4(Ant2)	1.017	16.1	-69.8	-3.81	142.156	**1.795**	0.02	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	LTE B4(Ant2)	1.017	16.1	-69.8	-3.81	139.958	**1.795**	0.02	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				
38#	Front side 5mm	LTE B4(Ant2)	1.017	16.1	-69.8	-3.81	139.958	**1.654**	0.02	Not Required

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		WiFi 5G MIMO+BT（WiFi 5G）	0.637	16.5	70.1	0.19				
	Front side 5mm	LTE B4(Ant2)	1.017	16.1	-69.8	-3.81	146.372	**1.654**	0.01	Not Required
		WiFi 5G MIMO+BT（BT）	0.637	7.2	76.3	-3.19				
39#	Front side 5mm	LTE B41(Ant2)	0.871	-14.8	-73.6	-0.62	149.348	**1.649**	0.01	Not Required
		WiFi 2.4G MIMO +WiFi 5G MIMO（WiFi 2.4G）	0.778	17.1	72.3	0.06				
	Front side 5mm	LTE B41(Ant2)	0.871	-14.8	-73.6	-0.62	147.072	**1.649**	0.01	Not Required
		WiFi 2.4G MIMO+WiFi 5G MIMO（WiFi 5G）	0.778	16.5	70.1	0.19				

10 Equipment list

Test Platform	SPEAG DASY Professional
Description	SAR Test System / PD Test System
Software Reference	DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483) cDASY8 V16.4.0.5005 cDASY6 Module mmWave_V3.2.0.1840

Hardware Reference

	Equipment	Manufacturer	Model	Inventory No.	Calibration Date	Due date of calibration
☒	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-025	NCR	NCR
☒	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-026	NCR	NCR
☒	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-031	NCR	NCR
☒	Test Phantom	SPEAG	mmWave	SZ-WSR-A-029	NCR	NCR
☒	DAE	SPEAG	DAE4	SZ-WSR-M-031	2025/3/27	2026/3/26
☒	DAE	SPEAG	DAE4ip	SZ-WSR-M-078	2024/10/18	2025/10/17
☒	DAE	SPEAG	DAE4	SZ-WSR-M-100	2024/12/31	2025/12/30
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-068	2025/01/15	2026/01/14
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-027	2024/07/17	2025/07/16
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-075	2024/08/29	2025/08/28
☒	Validation Kits	SPEAG	D750V3	SZ-WSR-M-032	2022/06/06	2025/06/05
☒	Validation Kits	SPEAG	D835V2	SZ-WSR-M-033	2022/11/02	2025/11/01
☒	Validation Kits	SPEAG	D1750V2	SZ-WSR-M-035	2022/06/17	2025/06/16
☒	Validation Kits	SPEAG	D1950V3	SZ-WSR-M-037	2022/10/31	2025/10/30
☒	Validation Kits	SPEAG	D2450V2	SZ-WSR-M-039	2022/11/02	2025/11/01
☒	Validation Kits	SPEAG	D2600V2	SZ-WSR-M-040	2022/06/14	2025/06/13
☒	Validation Kits	SPEAG	D3500V2	SZ-WSR-M-041	2022/09/19	2025/09/18
☒	Validation Kits	SPEAG	D3700V2	SZ-WSR-M-042	2022/09/15	2025/09/14
☒	Validation Kits	SPEAG	D3900V2	SZ-WSR-M-043	2022/09/16	2025/09/15
☒	Validation Kits	SPEAG	D5GHzV2	SZ-WSR-M-046	2022/11/01	2025/10/31
☒	Validation Kits	SPEAG	D6.5GHzV2	SZ-WSR-M-080	2023/09/11	2026/09/10
☒	Dielectric parameter probes	SPEAG	DAK-3.5	SZ-WSR-M-093	2024/11/18	2025/11/17
☒	Agilent Network Analyzer	Agilent	E5071C	SZ-WSR-M-067	2024/12/19	2025/12/18
☒	Radio Communication Analyzer	Anritsu	MT8820C	SZ-WSR-M-005	2025/01/08	2026/01/07
☒	Radio Communication Analyzer	Anritsu	MT8820C	SZ-WSR-M-018	2024/05/24	2025/05/23
☒	Radio Communication Analyzer	Anritsu	MT8820C	SZ-WSR-M-020	2024/08/19	2025/08/18
☒	RF Bi-Directional Coupler	Agilent	86205-60001	SZ-WSR-A-004	NCR	NCR
☒	Signal Generator	Agilent	N5171B	SZ-WSR-M-006	2025/01/07	2026/01/06
☒	Preamplifier	Mini-Circuits	ZHL-42W	SZ-WSR-A-001	NCR	NCR

☒	Preamplifier	Compliance Directions Systems Inc.	AMP28-3W	SZ-WSR-A-002	NCR	NCR
☒	Power Meter	Agilent	E4416A	SZ-WSR-M-007	2025/01/07	2026/01/06
☒	Power Sensor	Agilent	8481H	SZ-WSR-M-008	2025/01/07	2026/01/06
☒	Power Sensor	R&S	NRP-Z92	SZ-WSR-M-009	2025/01/08	2026/01/07
☒	Attenuator	SHX	TS2-3dB	SZ-WSR-A-012	NCR	NCR
☒	Speed reading thermometer	Zhengzhou Boyang Instrument	TP3001	SZ-WSR-M-014	2024/05/30	2025/05/29
☒	Temperature	MingGao	T809	SZ-WSR-M-015	2024/05/30	2025/05/29
☒	Temperature	MingGao	T809	SZ-WSR-M-016	2024/05/30	2025/05/29
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-013	2024/05/28	2025/05/27
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-012	2024/05/28	2025/05/27
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-011	2024/05/28	2025/05/27

Note: All the equipment are within the valid period when the tests are performed.

11 Calibration certificate

Please see the Appendix C

12 Photographs

Please see the Appendix D

Appendix A: Detailed System Check Results

Appendix B: Detailed Test Results

Appendix C: Calibration certificate

Appendix D: Photographs

Appendix E: Conducted RF Output Power

--- End of report ---