FCC SAR TEST REPORT

Application No.:	SZCR2505002127AT
Applicant:	DT Research, Inc.
Address of Applicant:	3RD FL NO 36 WUQUAN 7TH RD WUGU DISTRICT, NEW TAIPEI, Taiwan
Manufacturer:	DT Research, Inc.
Address of Manufacturer:	2000 Concourse Drive, San Jose, CA 95131, USA
EUT Description:	Rugged Tablet
Model No.:	DT382WH, DT382xxxxx(x= 0-9, A~Z, - or null) ♣
♣	Please refer to section 1.1 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	DT Research
FCC ID:	YE3600-AX210NG
Standards:	FCC 47CFR §2.1093
Date of Receipt:	2025-06-23
Date of Test:	2025-06-26 to 2025-07-21
Date of Issue:	2025-07-31
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		2025-07-31		Original

Authorized for issue by:				
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TEST SUMMARY

Frequency Band	Maximum Reported SAR(W/kg)
	Body
LTE Band 2	1.10
LTE Band 4	1.27
LTE Band 5	0.82
LTE Band 12	0.66
LTE Band 14	0.68
LTE Band 17	0.64
LTE Band 30	1.03
LTE Band 48	1.06
LTE Band 66	**1.36**
WI-FI (2.4GHz)	1.26
WI-FI (5GHz)	1.13
WI-FI 6E	1.19
BT	0.20
SAR Limited(W/kg)	1.6
Maximum Simultaneous Transmission SAR (W/kg)	
Scenario	Body
Sum SAR	1.58

Frequency Band	Reported PD (W/m²)
WIFI 6E	8.92
PD Limit	10.00

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Contents

1 General Information

1.1 General Description of EUT

Product Name:	Rugged Tablet		
Model No.:	DT382WH		
Trade Mark:	DT Research		
Product Phase:	production unit		
Device Type:	portable device		
Exposure Category:	uncontrolled environment / general population		
IMEI:	038WW25172062; 038WW25172063		
Hardware Version:	R13		
Software Version:	Windows11		
Intel AX210NGW module's Antenna Type:	PIFA Antenna		
Antenna Gain:	Band	Antenna 1	Antenna 2
	WIFI 2.4G	2.6dBi	2.8dBi
	WIFI 5G	3.2dBi	3.1dBi
	WIFI 6G	4.0dBi	3.4dBi
	BT/BLE	2.6dBi	
	(Provided by Manufacturer)		
LRBT module's Antenna Type:	PCB Antenna3		
LRBT module's Antenna Gain:	BT	2dBi (Provided by manufacturer)	
LRBT module's Antenna Type:	2.4G Terminal Antenna4		
LRBT module's Antenna Gain:	BT	10dBi (Provided by manufacturer)	
LTE's Antenna Type:	PIFA Antenna5		
LTE's Antenna Gain:	1.9dBi@700-960MHz, 2.1dBi@1710-2180MHz, 2.7dBi@2300-2700MHz, 3.9dBi@3400-3800MHz. (Provided by manufacturer)		
Device Operating Configurations:			
Modulation Mode:	**LTE**:QPSK,16QAM,64QAM, **WIFI**:DSSS,OFDM,OFDMA; **BT**:GFSK, π/4DQPSK,8DPSK **BLE**:GFSK		

Frequency Bands:	Band	Tx(MHz)
	LTE Band 2	1850 ~1910
	LTE Band 4	1710~1755
	LTE Band 5	824~849
	LTE Band 12	699~716
	LTE Band 14	788~798
	LTE Band 17	704~716
	LTE Band 30	2305~2315
	LTE Band 48	3550~3700
	LTE Band 66	1710~1780
	WIFI 2.4G	2412~2472
	WIFI 5G	5150~5250
		5250~5350
		5470~5725
		5725~5850
	Wi-Fi 6E	5925~6425
		6425~6525
		6525~6875
		6875~7125
	BT	2402~2480
RF Cable:	☒Provided by applicant ☐Provided by the laboratory	
Battery Information:	Model1:	ACC-006-60K(3ICP9/36/115)
	Normal Voltage:	DC 11.4V
	Rated capacity:	5400mAh
	Manufacturer:	Guangdong Pow-Tech New Power Co., Ltd.
	Model2:	PT352044-2S(2ICP4/20/44)
	Normal Voltage:	DC 7.4
	Rated capacity:	250mAh
	Manufacturer:	Guangdong Pow-Tech New Power Co., Ltd.

Note:
*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.: DT382WH, DT382xxxxx(x= 0-9, A~Z, - or null)

Only the model DT382WH was tested, since according to the declaration from the applicant, the electrical circuit design, PCB layout, components used and internal wiring and functions were identical for the above models, with only difference on model No..

This device is built-in with two certified modules: FSC-BT909C Bluetooth Module(LRBT Module) and Telit LN920 module;

FSC-BT909C Bluetooth Module(LRBT Module):

FCC ID:YE3FSC-BT909C, Granted at 06/13/2023;

Telit LN920 module:

FCC ID:YE3600-LN920A120, Granted at 05/23/2025;

1.1.1 DUT Antenna Locations

The DUT Antenna Locations can be referred to Appendix D

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) The proximity sensor is used to indicate when the device is held close to a user's body exposure condition. It utilizes the proximity sensor to reduce the output power in specific wireless and operating modes of main antenna to ensure SAR compliance (Refer to section 5.4 for detailed proximity Sensor information and validation data per KDB 616217).

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 D05	SAR for LTE Devices v02r05
KDB 941225 D05A	LTE Rel.10 KDB Inquiry Sheet v01r02
KDB 248227 D01	SAR Guidance for IEEE 802 11 Wi-Fi SAR v02r02
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
KDB 616217 D04	SAR for laptop and tablets v01r02

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 10.0 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.	

3 SAR Measurements System Configuraion

3.1 The SAR Measurement System

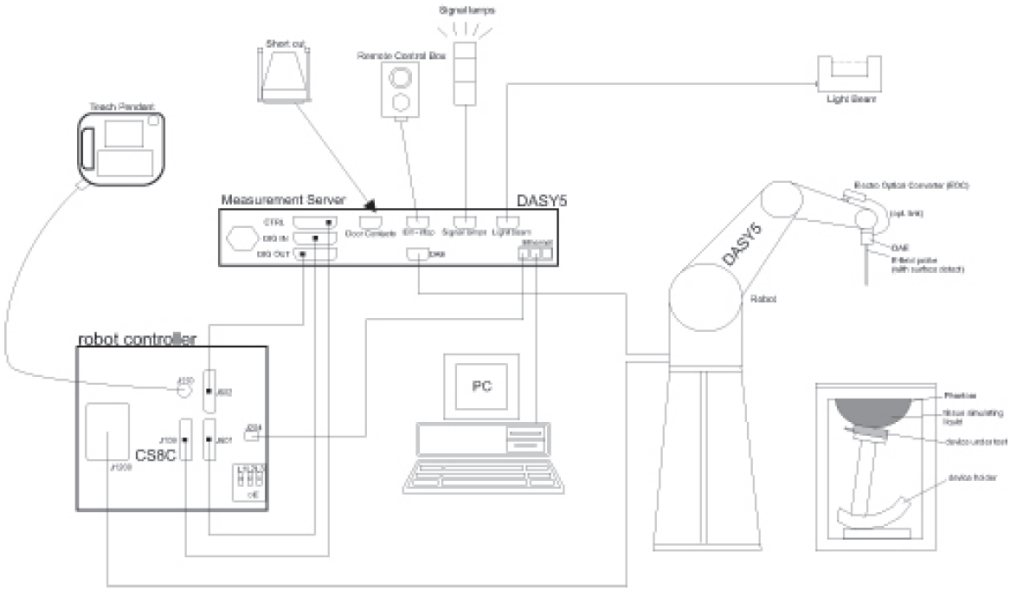
This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY professional system). A E-field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ (|Ei|2)/ ρ where σ and ρ are the conductivity and mass density of the tissue-Simulate.

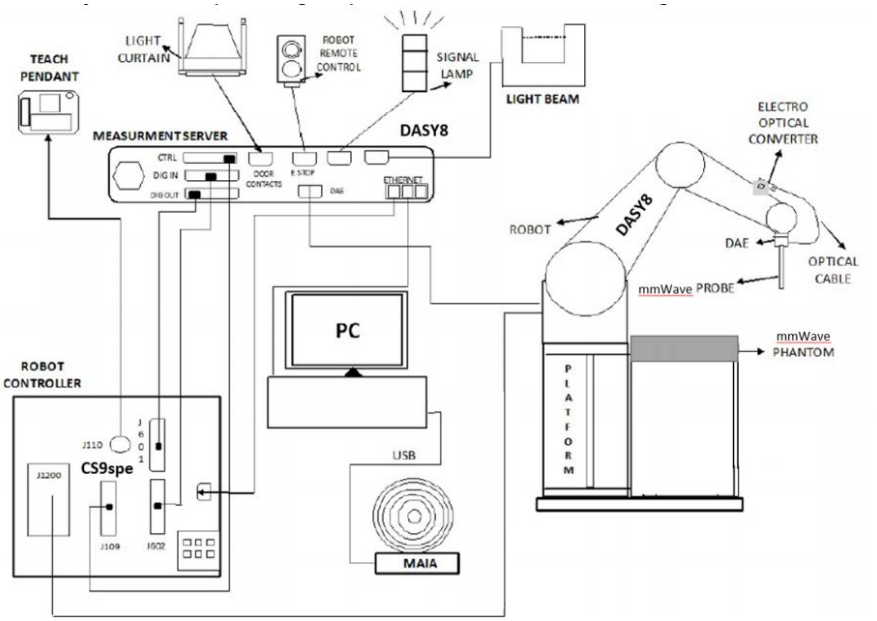
The DASY system for performing compliance tests consists of the following items:
A standard high precision 6-axis robot (Stabile RX family) with controller, teach pendant and software. An arm extension for accommodation the data acquisition electronics (DAE).

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

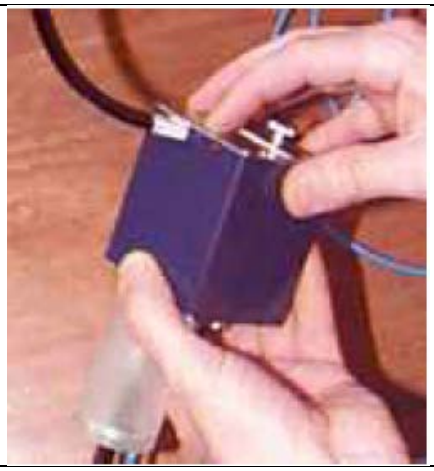
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows system.
- DASY 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.

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

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

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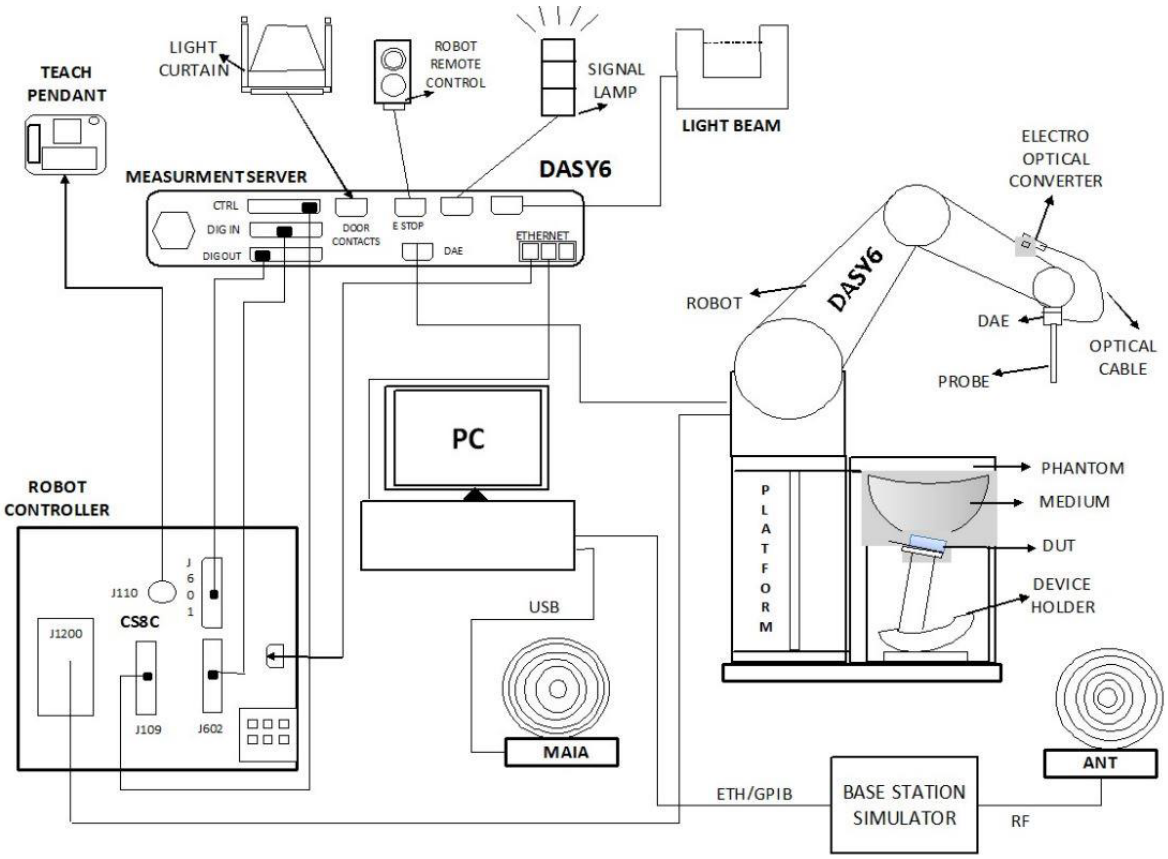
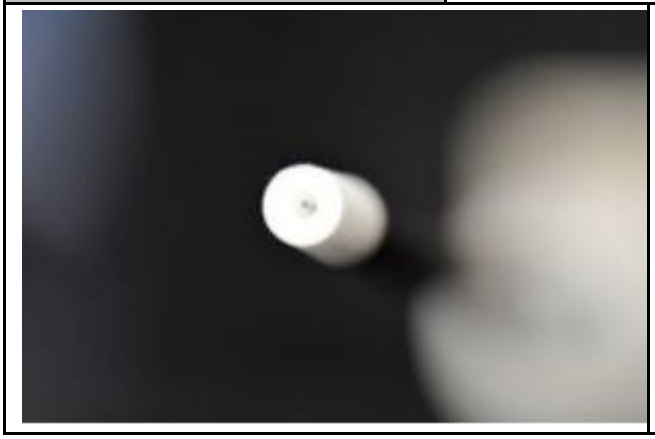
4 Power density measurement system

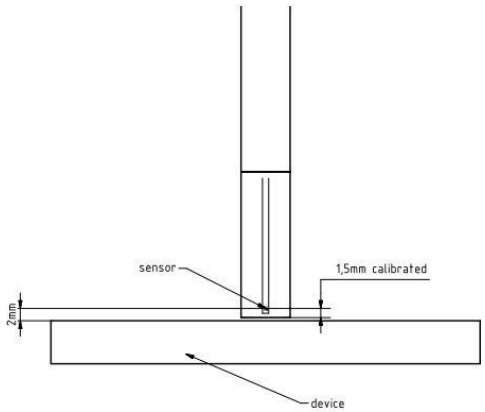
Power density measurements for mmWave frequencies were performed using SPEAG DASY6 with cDASY6 5G module. The DASY6 included a high precision robotics system (Staubli), robot controller, desktop computer, near-field probe, probe alignment sensor, and the 5G phantom cover.



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.

5 SAR measurement variability and uncertainty

5.1 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.

5.2 SAR measurement uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

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5.3 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.

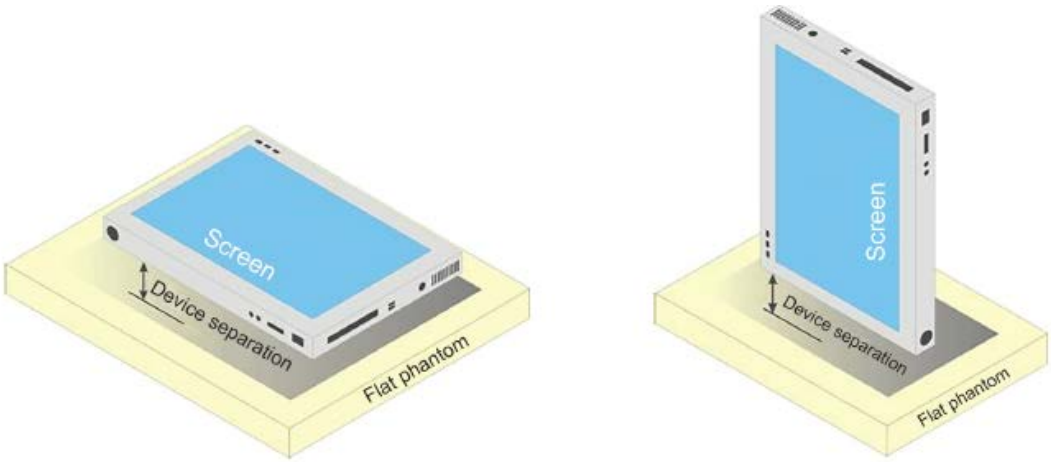
Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined s The judgment of conformity in thereport is based on the measurement results excluding the 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	

6 Desciption of Test Position

6.1 Tablet Computers used next to or against the body

The overall diagonal dimension of the display section of a tablet is > 20 cm, Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. SAR evaluation for the front surface of tablet display screens are generally not necessary. The SAR Exclusion Threshold in KDB 447498 D04 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

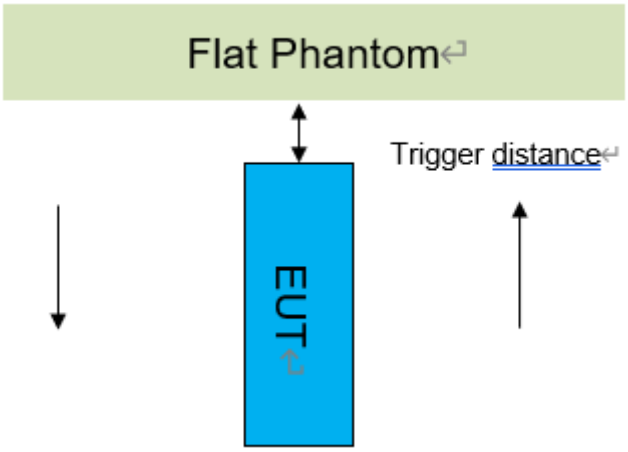


a) Tablet form factor portable computer

6.2 Proximity Sensor Triggering Test

Proximity sensor triggering distances：

The Proximity sensor triggering was applied to WWAN antenna. Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed.



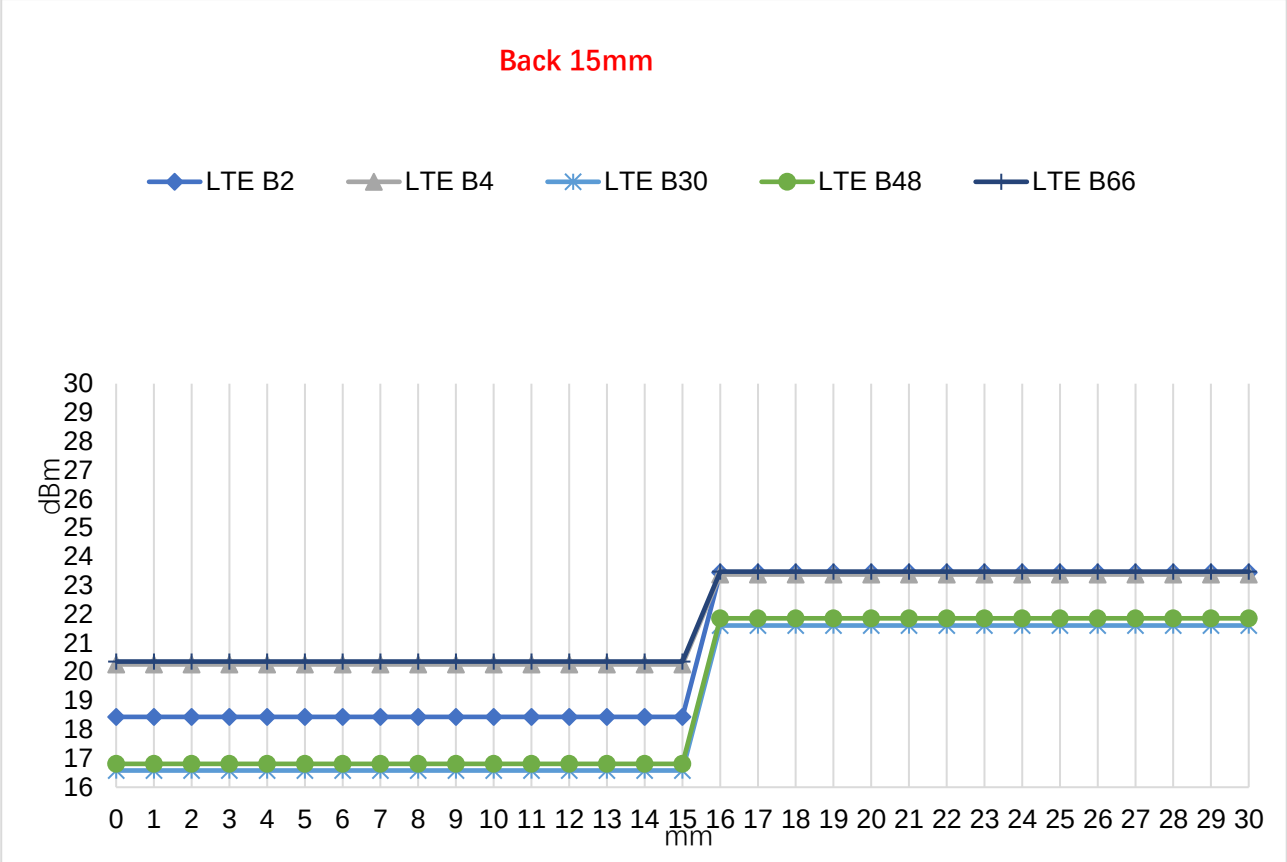
Proximity Sensor Triggering Distance(mm)	
Ant	Ant1
Band	LTE B2/4/30/48/66
Position	Back Side 15mm Top Side 20mm

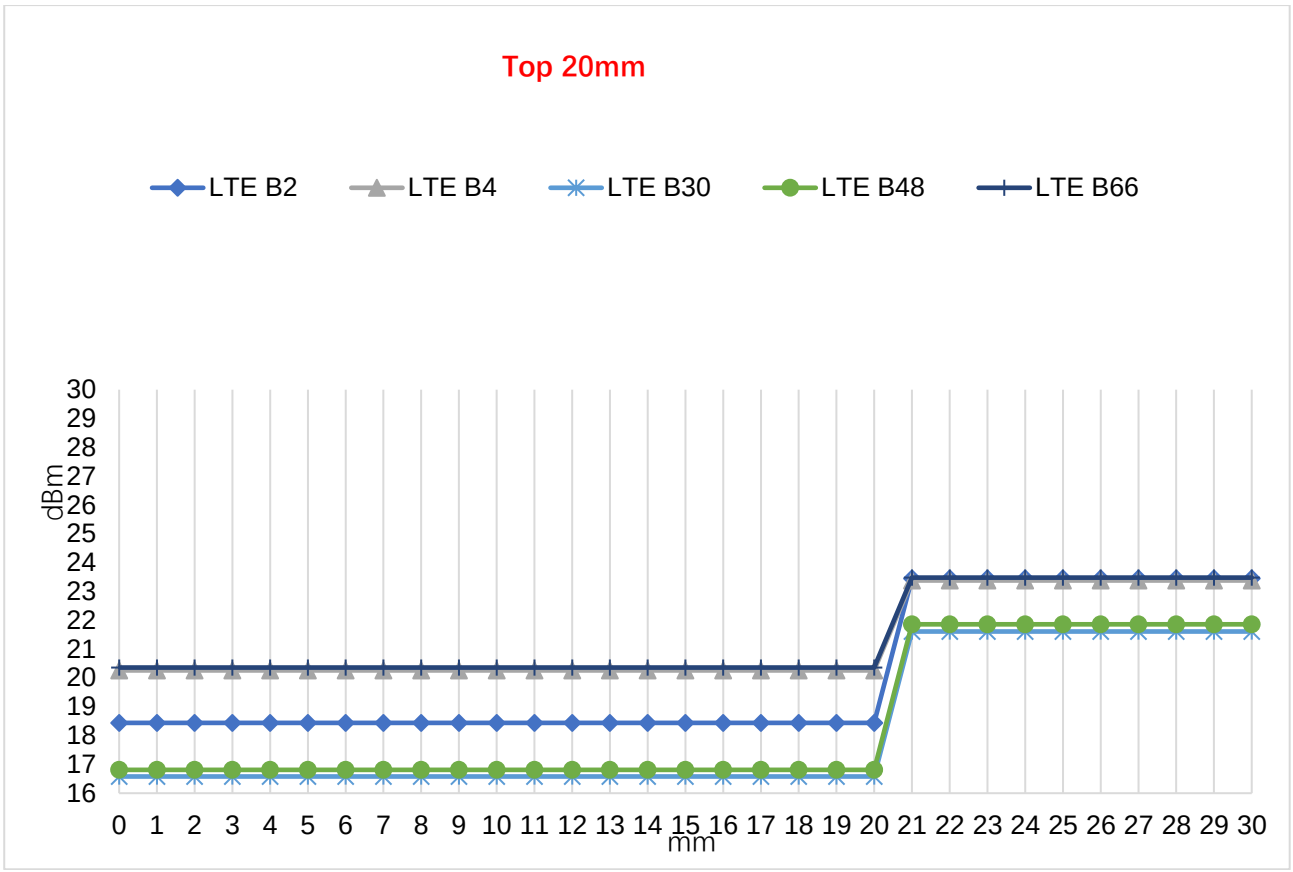
Note:

SAR tests with proximity sensor power reduction are only required for the sides of frequency bands in the table above. For the other sides or other frequency bands of the device, SAR is still tested at the maximum power level with sensor off.

- DUT Moving Toward(Trigger)the Phantom

- DUT Moving Away(Release) from the Phantom



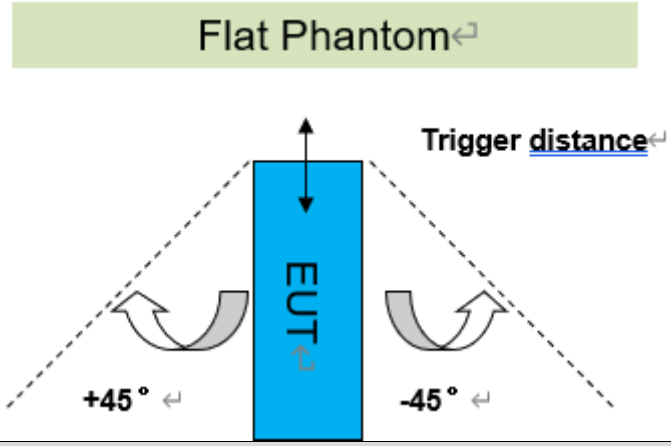


Proximity sensor coverage

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user, but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.
The proximity sensor and main antenna use same metallic electrode, so there is no spatial offset.

Device tilt angle influences on proximity sensor triggering

The influence of device tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom.
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



Summary of Tablet Tilt Angle Influence on Proximity Sensor Triggering for Edge Side												
Band (MHz)	Minimum trigger distance Per KDB616217§6.2	Minimum trigger distance at which power reduction was maintained over ±45°	Power Reduction Status									
			-45°	-35°	-25°	-15°	-5°	0°	5°	15°	25°	35°	45°
Ant 1: LTE B2/4/30/48/66	Top Side20mm	Top Side20mm	on	on	on	on	on	on	on	on	on	on	on

7 SAR System Verificaion Procedure

7.1 Tissue Simulate Liquid

7.1.1 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 1□ Recipe of Tissue Simulate Liquid

7.1.2 Measurement for Tissue Simulate Liquid

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

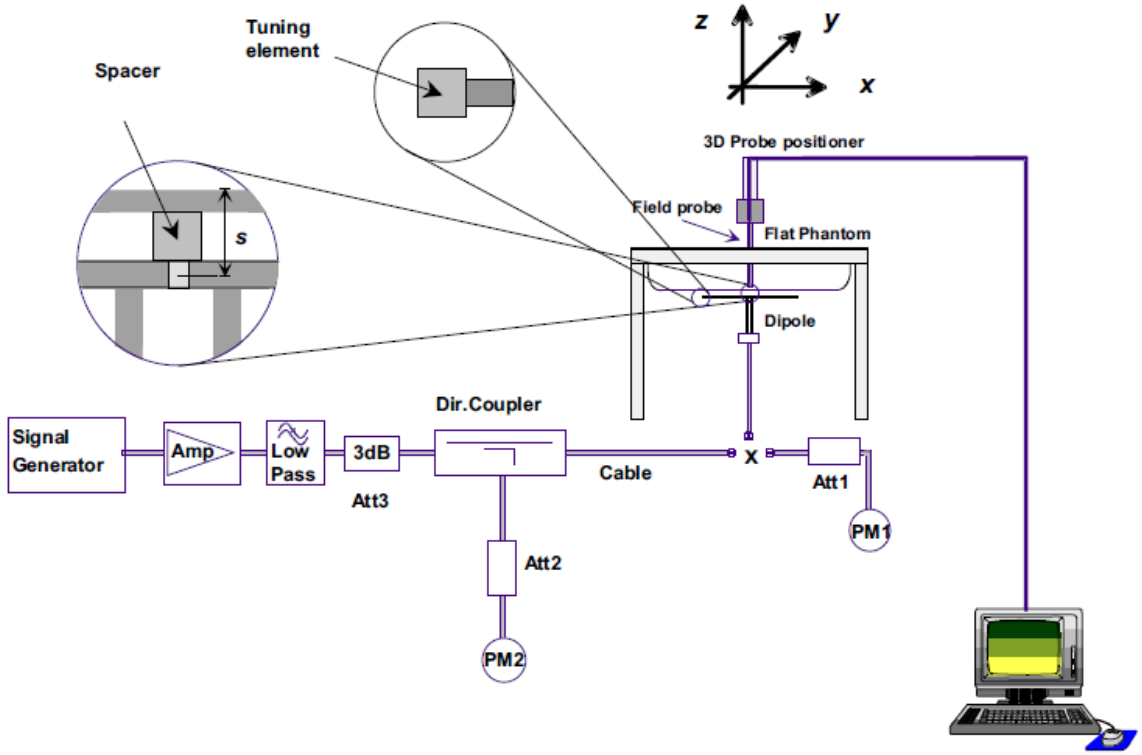
The temperature variation of the Tissue Simulate Liquids was 22±2°C.

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	40.322	0.897	41.90	0.89	-3.77%	0.76%	22.1	2025/7/10
835 Head	835	40.095	0.925	41.50	0.90	-3.39%	2.78%	22.2	2025/7/12
1750 Head	1750	40.454	1.350	40.10	1.37	0.88%	-1.43%	22.2	2025/7/1
1950 Head	1950	40.091	1.444	40.00	1.40	0.23%	3.14%	22.2	2025/7/2
2300 Head	2300	39.277	1.660	39.50	1.67	-0.57%	-0.60%	22.2	2025/7/3
2450 Head	2450	38.392	1.784	39.20	1.80	-2.06%	-0.89%	22.2	2025/7/4
2450 Head	2450	38.394	1.786	39.20	1.80	-2.06%	-0.76%	21.9	2025/7/9
3500 Head	3500	38.082	2.904	37.90	2.91	0.48%	-0.21%	22.2	2025/7/5
3700 Head	3700	37.366	3.097	37.70	3.12	-0.89%	-0.73%	22.2	2025/7/6
5250 Head	5250	36.532	4.779	35.90	4.71	1.76%	1.48%	22.2	2025/7/7
5600 Head	5600	35.629	5.191	35.50	5.07	0.36%	2.39%	22.2	2025/7/8
5750 Head	5750	35.202	5.353	35.40	5.22	-0.56%	2.54%	22.2	2025/7/9
6500 Head	6500	34.300	6.280	34.50	6.07	-0.58%	3.46%	22.3	2025/7/10

Table 2□ Measurement result of Tissue electric parameters

7.2 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

7.2.1 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.

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7.2.2 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	2.13	1.42	8.52	5.68	8.42	5.49	1.19%	3.46%	22.1	2025/7/10
D835V2_Head	2.39	1.63	9.56	6.52	9.53	6.29	0.31%	3.66%	22.2	2025/7/12
D1750V2_Head	9.23	4.98	36.92	19.92	36.20	19.10	1.99%	4.29%	22.3	2025/7/1
D1950V3_Head	10.8	5.61	43.20	22.44	40.50	20.80	6.67%	7.88%	22.3	2025/7/2
D2300V2_Head	12.70	6.03	50.80	24.12	48.90	23.20	3.89%	3.97%	22.3	2025/7/3
D2450V2_Head	12.50	6.28	50.00	25.12	52.20	24.30	-4.21%	3.37%	21.9	2025/7/9
D2450V2_Head	13.20	6.13	52.80	24.52	52.20	24.30	1.15%	0.91%	22.3	2025/7/4
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	6.28	2.50	62.80	25.00	65.80	25.70	-4.56%	-2.72%	22.3	2025/7/5
D3700V2_Head	6.17	2.40	61.70	24.00	66.10	24.70	-6.66%	-2.83%	22.3	2025/7/6
D5GHzV2_5.25G_Head	7.36	2.14	73.60	21.40	77.30	22.10	-4.79%	-3.17%	22.3	2025/7/7
D5GHzV2_5.6G_Head	8.45	2.39	84.50	23.90	81.30	23.10	3.94%	3.46%	22.3	2025/7/8
D5GHzV2_5.75G_Head	7.38	2.12	73.80	21.20	77.10	21.30	-4.28%	-0.47%	22.3	2025/7/9
D6500V2_Head	30.60	5.87	306.00	58.70	291.00	53.90	5.15%	8.91%	22.1	2025/7/10

Table 3□ SAR System Check Result

7.2.3 Detailed System Check Results

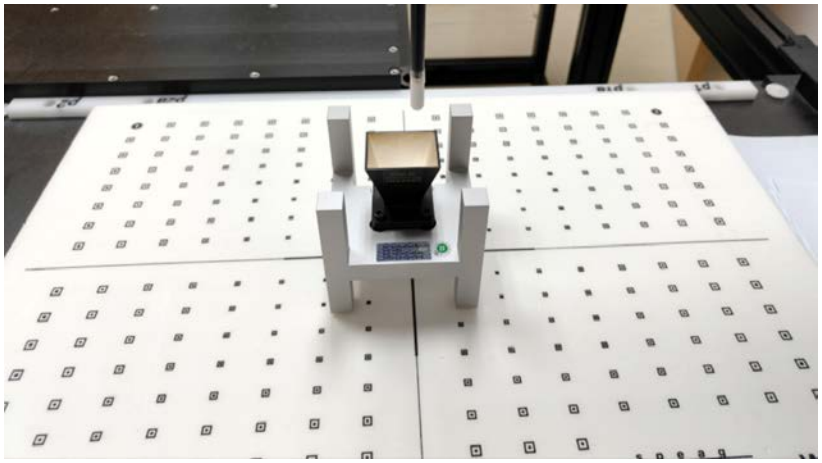
Please see the Appendix A

7.3 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	187	183	0.09	2025/7/21

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



8 Test Configuration

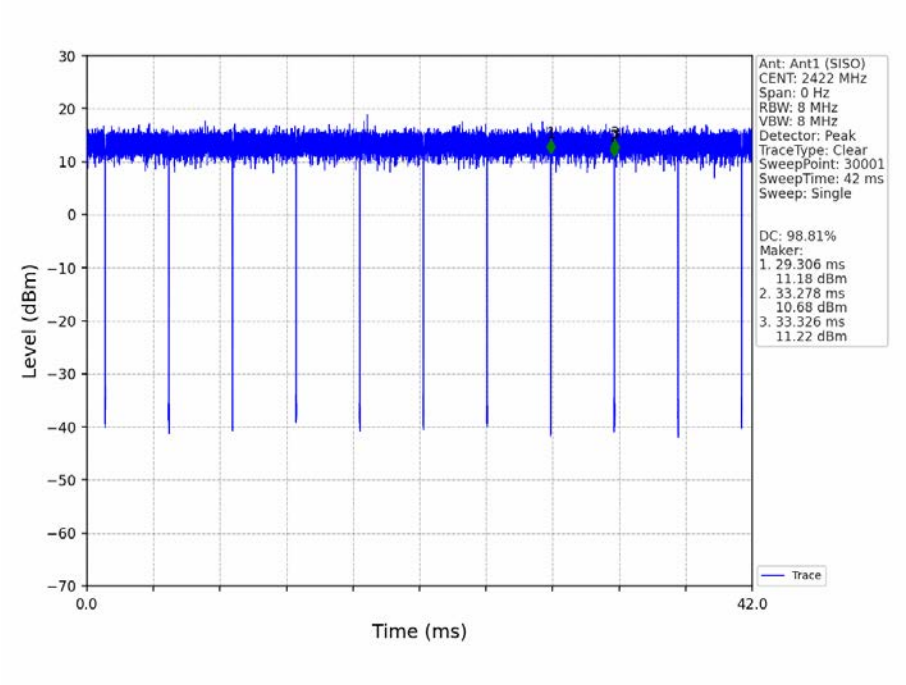
8.1 Operation Configurations

8.1.1 WIFI Test Configuration

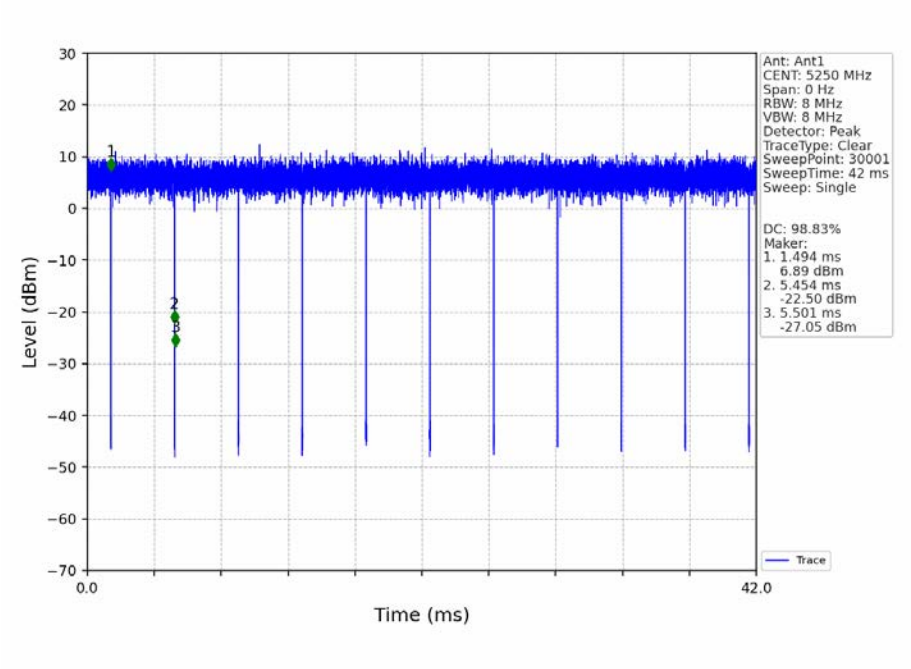
A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

8.1.1.1 Duty cycle

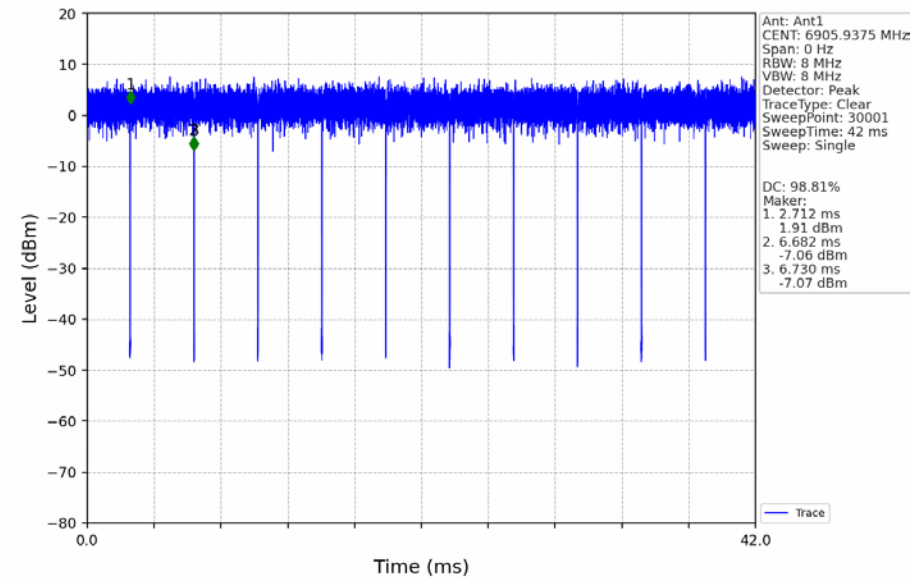
1) Wi-Fi 2.4GHz 802.11n40:Duty cycle=98.81%



2) Wi-Fi 5GHz 802.11ac160:Duty cycle=98.83%



3) Wi-Fi 6GHz 802.11ax160:Duty cycle=98.81%



8.1.1.2 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.

8.1.1.3 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”

8.1.1.4 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.

8.1.1.5 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**

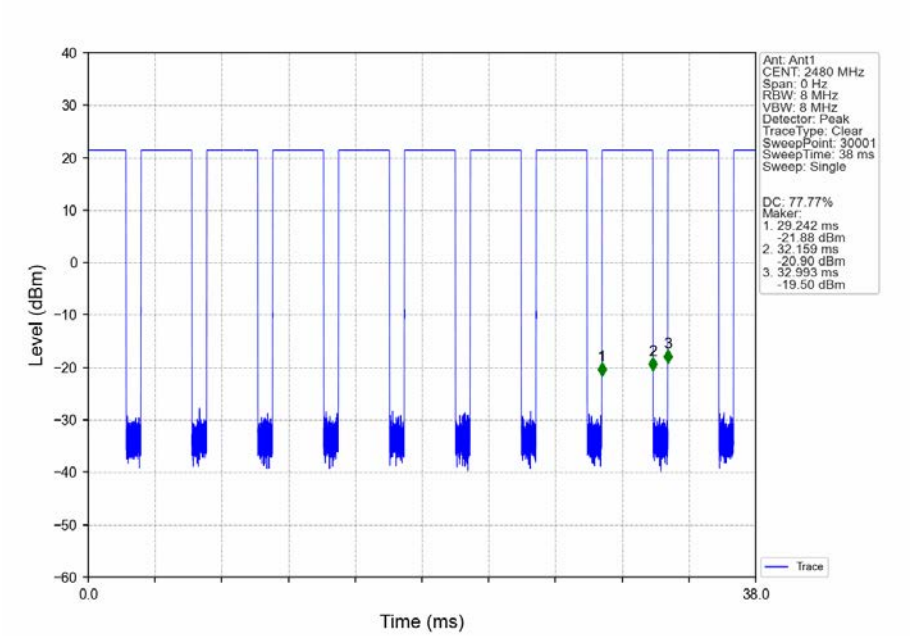
When SAR measurement is required for 802.11 a/n/ac OFDM configurations, each standalone and frequency aggregated band is considered separately for SAR test reduction. When the same transmitter and antenna(s) are used for U-NII-1 and U-NII-2A bands, additional SAR test reduction applies. When band gap 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.

8.1.2 BT Test Configuration

For the Bluetooth SAR tests, a communication link is set up with the test mode software for BT mode test. Bluetooth USES frequency hopping technology to divide the transmitted data into packets and transmit the packets respectively through 79 designated Bluetooth channels, frequency hops at 1600 hops/second per the Bluetooth standard, the EUT is operated at the RF continuous emission mode.

8.1.2.1 Duty cycle

1) DH5 Duty Cycle=77.77%



8.1.3 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:

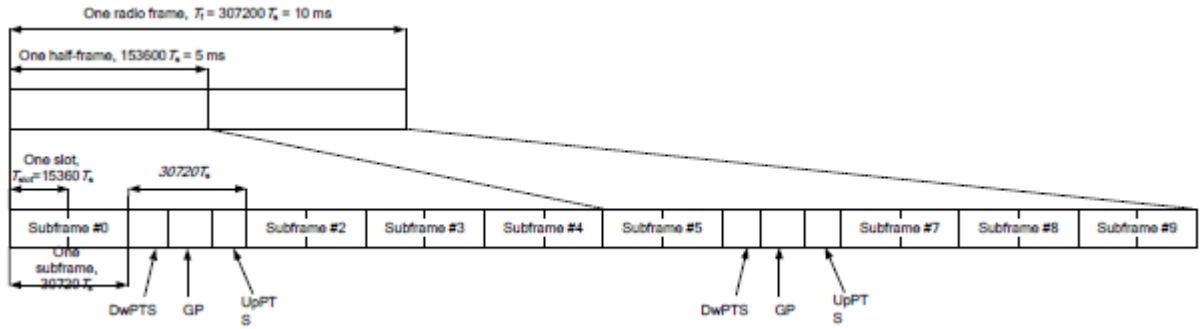


Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

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.

9 Test Result

9.1 Measurement of RF Conducted Power

The detailed conducted power can be referred to Appendix E.

9.2 Measurement of SAR Data

Note:

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

2) For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M, and L channels may not fully apply.

3) 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.

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 LTE Band 2

LTE Band 2 SAR 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.(℃)
Sensor on Test data (Separate 0mm 1RB)												
Back side	20	QPSK 1_50	18900/1880	1:1	0.418	0.216	0.00	18.44	18.50	1.014	0.424	21.9
Top side	20	QPSK 1_50	18900/1880	1:1	0.878	0.424	-0.05	18.44	18.50	1.014	0.890	21.9
Top side	20	QPSK 1_50	18700/1860	1:1	0.768	0.372	0.10	18.34	18.50	1.038	0.797	21.9
Top side	20	QPSK 1_50	19100/1900	1:1	0.948	0.436	0.01	18.42	18.50	1.019	0.966	21.9
Sensor on Test data (Separate 0mm 50%RB)												
Back side	20	QPSK 50_0	18900/1880	1:1	0.420	0.217	0.00	17.55	18.00	1.109	0.466	21.9
Top side	20	QPSK 50_0	18900/1880	1:1	0.993	0.510	0.02	17.55	18.00	1.109	**1.101**	21.9
Top side with Repeat	20	QPSK 50_0	18900/1880	1:1	0.864	0.445	0.03	17.55	18.00	1.109	0.958	21.9
Top side	20	QPSK 50_0	18700/1860	1:1	0.785	0.364	0.03	17.46	18.00	1.132	0.889	21.9
Top side	20	QPSK 50_0	19100/1900	1:1	0.929	0.438	0.06	17.37	18.00	1.156	1.074	21.9
Sensor on Test data (Separate 0mm 100%RB)												
Top side	20	QPSK 100_0	18900/1880	1:1	0.927	0.436	0.07	17.39	18.00	1.151	1.067	21.9
Sensor off Test data (1RB)												
Back side_14mm	20	QPSK 1_50	18900/1880	1:1	0.338	0.201	-0.06	23.45	23.50	1.012	0.342	21.9
Left side_0mm	20	QPSK 1_50	18900/1880	1:1	0.018	0.009	-0.02	23.45	23.50	1.012	0.018	21.9
Right side_0mm	20	QPSK 1_50	18900/1880	1:1	0.055	0.030	-0.02	23.45	23.50	1.012	0.056	21.9
Top side_19mm	20	QPSK 1_50	18900/1880	1:1	0.756	0.451	-0.04	23.45	23.50	1.012	0.765	21.9
Bottom side_0mm	20	QPSK 1_50	18900/1880	1:1	0.118	0.067	-0.06	23.45	23.50	1.012	0.119	21.9
Sensor offTest data (50%RB)												
Top side_19mm	20	QPSK 50_0	18900/1880	1:1	0.300	0.174	0.03	22.52	23.00	1.117	0.335	21.9
Left side_0mm	20	QPSK 50_0	18900/1880	1:1	0.016	0.006	0.03	22.52	23.00	1.117	0.018	21.9
Right side_0mm	20	QPSK 50_0	18900/1880	1:1	0.062	0.033	0.07	22.52	23.00	1.117	0.069	21.9
Top side_19mm	20	QPSK 50_0	18900/1880	1:1	0.672	0.361	0.04	22.52	23.00	1.117	0.751	21.9
Bottom side_0mm	20	QPSK 50_0	18900/1880	1:1	0.097	0.059	0.10	22.52	23.00	1.117	0.108	21.9

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Top side 0mm	18900/1880	0.993	0.864	1.149	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 performed 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 performed 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.

9.2.2 SAR Result of LTE Band 4

LTE Band 4 SAR 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.(℃)
Sensor on Test data (Separate 0mm 1RB)												
Back side	20	QPSK 1_0	20175/1732.5	1:1	0.407	0.224	-0.10	20.26	20.50	1.057	0.430	21.9
Top side	20	QPSK 1_0	20175/1732.5	1:1	1.020	0.507	0.01	20.26	20.50	1.057	1.078	21.9
Sensor on Test data (Separate 0mm 50%RB)												
Back side	20	QPSK 50_0	20175/1732.5	1:1	0.417	0.228	0.09	19.80	20.00	1.047	0.437	21.9
Top side	20	QPSK 50_0	20175/1732.5	1:1	1.210	0.630	0.07	19.80	20.00	1.047	**1.267**	21.9
Top side with Repeat	20	QPSK 50_0	20175/1732.5	1:1	1.060	0.552	0.01	19.80	20.00	1.047	1.110	21.9
Sensor on Test data (Separate 0mm 100%RB)												
Top side	20	QPSK 100_0	20175/1732.5	1:1	1.020	0.504	0.03	19.58	20.00	1.102	1.124	21.9
Sensor off Test data (1RB)												
Back side_14mm	20	QPSK 1_0	20175/1732.5	1:1	0.247	0.149	0.04	23.38	23.50	1.028	0.254	21.9
Left side	20	QPSK 1_0	20175/1732.5	1:1	0.022	0.010	-0.07	23.38	23.50	1.028	0.023	21.9
Right side	20	QPSK 1_0	20175/1732.5	1:1	0.073	0.043	-0.10	23.38	23.50	1.028	0.075	21.9
Top side_19mm	20	QPSK 1_0	20175/1732.5	1:1	0.614	0.331	-0.06	23.38	23.50	1.028	0.631	21.9
Bottom side	20	QPSK 1_0	20175/1732.5	1:1	0.054	0.033	0.09	23.38	23.50	1.028	0.056	21.9
Sensor offTest data (50%RB)												
Back side_14mm	20	QPSK 50_0	20175/1732.5	1:1	0.263	0.157	-0.01	22.72	23.00	1.067	0.281	21.9
Left side_0mm	20	QPSK 50_0	20175/1732.5	1:1	0.019	0.008	0.06	22.72	23.00	1.067	0.020	21.9
Right side_0mm	20	QPSK 50_0	20175/1732.5	1:1	0.070	0.041	-0.01	22.72	23.00	1.067	0.075	21.9
Top side_19mm	20	QPSK 50_0	20175/1732.5	1:1	0.505	0.273	0.04	22.72	23.00	1.067	0.539	21.9
Bottom side_0mm	20	QPSK 50_0	20175/1732.5	1:1	0.046	0.028	0.07	22.72	23.00	1.067	0.049	21.9

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Top side 0mm	20175/1732.5	1.210	1.060	1.142	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 performed 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 performed 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 LTE Band 5

LTE Band 5 SAR 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.(℃)
Body Test data (Separate 0mm 1RB)												
Back side	10	QPSK 1_0	20525/836.5	1:1	0.786	0.524	-0.01	23.33	23.50	1.040	**0.817**	22.1
Left side	10	QPSK 1_0	20525/836.5	1:1	0.026	0.016	-0.03	23.33	23.50	1.040	0.027	22.1
Right side	10	QPSK 1_0	20525/836.5	1:1	0.171	0.108	-0.08	23.33	23.50	1.040	0.178	22.1
Top side	10	QPSK 1_0	20525/836.5	1:1	0.567	0.303	0.09	23.33	23.50	1.040	0.590	22.1
Bottom side	10	QPSK 1_0	20525/836.5	1:1	0.061	0.041	0.02	23.33	23.50	1.040	0.063	22.1
Body Test data (Separate 0mm 50%RB)												
Back side	10	QPSK 25_0	20525/836.5	1:1	0.640	0.376	0.05	22.32	23.00	1.169	0.748	22.1
Left side	10	QPSK 25_0	20525/836.5	1:1	0.020	0.011	0.01	22.32	23.00	1.169	0.023	22.1
Right side	10	QPSK 25_0	20525/836.5	1:1	0.138	0.088	0.07	22.32	23.00	1.169	0.161	22.1
Top side	10	QPSK 25_0	20525/836.5	1:1	0.486	0.254	0.09	22.32	23.00	1.169	0.568	22.1
Bottom side	10	QPSK 25_0	20525/836.5	1:1	0.038	0.024	0.04	22.32	23.00	1.169	0.044	22.1
Body Test data (Separate 0mm 100%RB)												
Back side	10	QPSK 50_0	20525/836.5	1:1	0.689	0.445	0.03	22.29	23.00	1.178	0.811	22.1

9.2.4 SAR Result of LTE Band 12

LTE Band 12 SAR 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.(℃)
Body Test data (Separate 0mm 1RB)												
Back side	10	QPSK 1_25	23095/707.5	1:1	0.621	0.422	0.14	23.22	23.50	1.067	**0.662**	22.1
Left side	10	QPSK 1_25	23095/707.5	1:1	0.029	0.018	-0.03	23.22	23.50	1.067	0.031	22.1
Right side	10	QPSK 1_25	23095/707.5	1:1	0.169	0.115	0.09	23.22	23.50	1.067	0.180	22.1
Top side	10	QPSK 1_25	23095/707.5	1:1	0.350	0.218	0.01	23.22	23.50	1.067	0.373	22.1
Bottom side	10	QPSK 1_25	23095/707.5	1:1	0.022	0.011	-0.03	23.22	23.50	1.067	0.023	22.1
Body Test data (Separate 0mm 50%RB)												
Back side	10	QPSK 25_0	23095/707.5	1:1	0.538	0.367	-0.03	22.32	23.00	1.169	0.629	22.1
Left side	10	QPSK 25_0	23095/707.5	1:1	0.025	0.017	0.09	22.32	23.00	1.169	0.029	22.1
Right side	10	QPSK 25_0	23095/707.5	1:1	0.148	0.091	0.01	22.32	23.00	1.169	0.173	22.1
Top side	10	QPSK 25_0	23095/707.5	1:1	0.309	0.186	-0.03	22.32	23.00	1.169	0.361	22.1
Bottom side	10	QPSK 25_0	23095/707.5	1:1	0.017	0.008	0.02	22.32	23.00	1.169	0.020	22.1

9.2.5 SAR Result of LTE Band 14

LTE Band 14 SAR 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.(℃)
Body Test data (Separate 0mm 1RB)												
Back side	10	QPSK 1_0	23330/793	1:1	0.646	0.437	0.13	23.27	23.50	1.054	**0.681**	22.1
Left side	10	QPSK 1_0	23330/793	1:1	0.033	0.018	0.05	23.27	23.50	1.054	0.035	22.1
Right side	10	QPSK 1_0	23330/793	1:1	0.138	0.086	-0.03	23.27	23.50	1.054	0.146	22.1
Top side	10	QPSK 1_0	23330/793	1:1	0.404	0.209	-0.04	23.27	23.50	1.054	0.426	22.1
Bottom side	10	QPSK 1_0	23330/793	1:1	0.023	0.010	-0.03	23.27	23.50	1.054	0.024	22.1
Body Test data (Separate 0mm 50%RB)												
Back side	10	QPSK 25_13	23330/793	1:1	0.524	0.310	-0.03	22.32	23.00	1.169	0.613	22.1
Left side	10	QPSK 25_13	23330/793	1:1	0.028	0.015	-0.07	22.32	23.00	1.169	0.033	22.1
Right side	10	QPSK 25_13	23330/793	1:1	0.106	0.066	0.06	22.32	23.00	1.169	0.124	22.1
Top side	10	QPSK 25_13	23330/793	1:1	0.321	0.177	-0.02	22.32	23.00	1.169	0.375	22.1
Bottom side	10	QPSK 25_13	23330/793	1:1	0.020	0.010	0.03	22.32	23.00	1.169	0.023	22.1

9.2.6 SAR Result of LTE Band 17

LTE Band 17 SAR 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.(℃)
Body Test data (Separate 0mm 1RB)												
Back side	10	QPSK 1_25	23790/710	1:1	0.605	0.408	-0.01	23.23	23.50	1.064	**0.644**	22.1
Left side	10	QPSK 1_25	23790/710	1:1	0.038	0.014	0.12	23.23	23.50	1.064	0.040	22.1
Right side	10	QPSK 1_25	23790/710	1:1	0.161	0.101	0.00	23.23	23.50	1.064	0.171	22.1
Top side	10	QPSK 1_25	23790/710	1:1	0.324	0.202	-0.06	23.23	23.50	1.064	0.345	22.1
Bottom side	10	QPSK 1_25	23790/710	1:1	0.029	0.020	-0.10	23.23	23.50	1.064	0.031	22.1
Body Test data (Separate 0mm 50%RB)												
Back side	10	QPSK 25_0	23790/710	1:1	0.510	0.343	-0.03	22.32	23.00	1.169	0.596	22.1
Left side	10	QPSK 25_0	23790/710	1:1	0.026	0.010	0.09	22.32	23.00	1.169	0.030	22.1
Right side	10	QPSK 25_0	23790/710	1:1	0.125	0.074	0.01	22.32	23.00	1.169	0.146	22.1
Top side	10	QPSK 25_0	23790/710	1:1	0.283	0.168	-0.03	22.32	23.00	1.169	0.331	22.1
Bottom side	10	QPSK 25_0	23790/710	1:1	0.030	0.013	0.07	22.32	23.00	1.169	0.035	22.1

9.2.7 SAR Result of LTE Band 30

LTE Band 30 SAR 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.(℃)
Sensor on Test data (Separate 0mm 1RB)												
Back side	10	QPSK 1_0	27710/2310	1:1	0.732	0.289	0.07	16.58	17.00	1.102	0.806	21.9
Top side	10	QPSK 1_0	27710/2310	1:1	0.922	0.417	0.06	16.58	17.00	1.102	1.016	21.9
Sensor on Test data (Separate 0mm 50%RB)												
Back side	10	QPSK 25_0	27710/2310	1:1	0.721	0.278	0.03	15.58	16.00	1.102	0.794	21.9
Top side	10	QPSK 25_0	27710/2310	1:1	0.939	0.476	0.09	15.58	16.00	1.102	**1.034**	21.9
Top side with Repeat	10	QPSK 25_0	27710/2310	1:1	0.848	0.430	0.09	15.58	16.00	1.102	0.934	21.9
Sensor on Test data (Separate 0mm 100%RB)												
Top side	10	QPSK 50_0	27710/2310	1:1	0.925	0.428	0.01	15.61	16.00	1.094	1.012	21.9
Sensor off Test data (1RB)												
Back side_14mm	10	QPSK 1_0	27710/2310	1:1	0.489	0.235	0.03	21.61	22.00	1.094	0.535	21.9
Left side_0mm	10	QPSK 1_0	27710/2310	1:1	0.017	0.009	-0.04	21.61	22.00	1.094	0.019	21.9
Right side_0mm	10	QPSK 1_0	27710/2310	1:1	0.081	0.046	-0.02	21.61	22.00	1.094	0.089	21.9
Top side_19mm	10	QPSK 1_0	27710/2310	1:1	0.721	0.382	0.09	21.61	22.00	1.094	0.789	21.9
Bottom side_0mm	10	QPSK 1_0	27710/2310	1:1	0.041	0.018	-0.10	21.61	22.00	1.094	0.045	21.9
Sensor offTest data (50%RB)												
Back side_14mm	10	QPSK 25_0	27710/2310	1:1	0.415	0.207	0.01	20.58	21.00	1.102	0.457	21.9
Left side_0mm	10	QPSK 25_0	27710/2310	1:1	0.015	0.007	0.05	20.58	21.00	1.102	0.017	21.9
Right side_0mm	10	QPSK 25_0	27710/2310	1:1	0.058	0.035	-0.02	20.58	21.00	1.102	0.064	21.9
Top side_19mm	10	QPSK 25_0	27710/2310	1:1	0.551	0.292	-0.11	20.58	21.00	1.102	0.607	21.9
Bottom side_0mm	10	QPSK 25_0	27710/2310	1:1	0.030	0.015	-0.07	20.58	21.00	1.102	0.033	21.9

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Top side 0mm	27710/2310	0.936	0.845	1.108	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 performed 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 performed 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.

9.2.8 SAR Result of LTE Band 48

LTE Band 48 SAR 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.(℃)
Sensor on Test data (Separate 0mm 1RB)												
Back side	20	QPSK 1_0	55990/3625	1:1.58	0.752	0.271	0.04	16.81	17.00	1.045	0.786	21.9
Top side	20	QPSK 1_0	55990/3625	1:1.58	0.840	0.335	-0.05	16.81	17.00	1.045	0.878	21.9
Top side	20	QPSK 1_0	55340/3560	1:1.58	0.928	0.433	0.02	16.44	17.00	1.138	**1.056**	21.9
Top side with Repeat	20	QPSK 1_0	55340/3560	1:1.58	0.874	0.408	0.01	16.44	17.00	1.138	0.994	21.9
Top side	20	QPSK 1_0	56640/3690	1:1.58	0.680	0.307	0.01	16.43	17.00	1.140	0.775	21.9
Sensor on Test data (Separate 0mm 50%RB)												
Back side	20	QPSK 50_0	55990/3625	1:1.58	0.710	0.276	0.04	16.21	16.50	1.069	0.759	21.9
Top side	20	QPSK 50_0	55990/3625	1:1.58	0.816	0.338	0.01	16.21	16.50	1.069	0.872	21.9
Top side	20	QPSK 50_0	55340/3560	1:1.58	0.799	0.348	0.06	16.00	16.50	1.122	0.896	21.9
Top side	20	QPSK 50_0	56640/3690	1:1.58	0.545	0.226	0.07	16.18	16.50	1.076	0.587	21.9
Sensor on Test data (Separate 0mm 100%RB)												
Back side	20	QPSK 100_0	55340/3560	1:1.58	0.549	0.267	0.09	14.95	16.50	1.429	0.784	21.9
Sensor off Test data (1RB)												
Back side_14mm	20	QPSK 1_0	55990/3625	1:1.58	0.768	0.352	0.02	21.86	22.00	1.033	0.793	21.9
Left side_0mm	20	QPSK 1_0	55990/3625	1:1.58	0.010	0.005	0.07	21.86	22.00	1.033	0.010	21.9
Right side_0mm	20	QPSK 1_0	55990/3625	1:1.58	0.048	0.024	-0.05	21.86	22.00	1.033	0.050	21.9
Top side_19mm	20	QPSK 1_0	55990/3625	1:1.58	0.723	0.309	0.04	21.86	22.00	1.033	0.747	21.9
Bottom side_0mm	20	QPSK 1_0	55990/3625	1:1.58	0.045	0.018	0.01	21.86	22.00	1.033	0.046	21.9
Sensor offTest data (50%RB)												
Back side_14mm	20	QPSK 50_0	55990/3625	1:1.58	0.642	0.311	0.06	21.23	21.50	1.064	0.683	21.9
Left side_0mm	20	QPSK 50_0	55990/3625	1:1.58	0.009	0.005	-0.07	21.23	21.50	1.064	0.010	21.9
Right side_0mm	20	QPSK 50_0	55990/3625	1:1.58	0.054	0.026	0.07	21.23	21.50	1.064	0.057	21.9
Top side_19mm	20	QPSK 50_0	55990/3625	1:1.58	0.593	0.286	0.04	21.23	21.50	1.064	0.631	21.9
Bottom side_0mm	20	QPSK 50_0	55990/3625	1:1.58	0.042	0.017	0.09	21.23	21.50	1.064	0.045	21.9
Sensor off Test data (100%RB)												
Back side_14mm	20	QPSK 100_0	55340/3560	1:1.58	0.523	0.274	0.02	20.02	21.50	1.406	0.735	21.9

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Top side 0mm	55340/3560	0.928	0.874	1.062	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 performed 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 performed 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 66

LTE Band 66 SAR 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.(℃)
Sensor on Test data (Separate 0mm 1RB)												
Back side	20	QPSK 1_0	132322/1745	1:1	0.442	0.240	0.07	20.36	20.50	1.033	0.456	21.9
Top side	20	QPSK 1_0	132322/1745	1:1	1.010	0.494	0.06	20.36	20.50	1.033	1.043	21.9
Top side	20	QPSK 1_0	132072/1720	1:1	1.040	0.504	0.01	20.13	20.50	1.089	1.132	21.9
Top side	20	QPSK 1_0	132572/1770	1:1	1.120	0.559	-0.13	20.21	20.50	1.069	1.197	21.9
Sensor on Test data (Separate 0mm 50%RB)												
Back side	20	QPSK 50_0	132322/1745	1:1	0.473	0.258	0.06	19.61	20.00	1.094	0.517	21.9
Top side	20	QPSK 50_0	132322/1745	1:1	1.050	0.535	0.07	19.61	20.00	1.094	1.149	21.9
Top side	20	QPSK 50_0	132072/1720	1:1	1.210	0.629	0.06	19.48	20.00	1.127	**1.364**	21.9
Top side with Repeat	20	QPSK 50_0	132072/1720	1:1	1.160	0.541	0.06	19.48	20.00	1.127	1.308	21.9
Top side	20	QPSK 50_0	132572/1770	1:1	1.120	0.574	0.03	19.53	20.00	1.114	1.248	21.9
Sensor on Test data (Separate 0mm 100%RB)												
Top side	20	QPSK 50_0	132322/1745	1:1	1.100	0.557	0.06	19.64	20.00	1.086	1.195	21.9
Sensor off Test data (1RB)												
Back side_14mm	20	QPSK 1_0	132322/1745	1:1	0.269	0.155	0.01	23.48	23.50	1.005	0.270	21.9
Left side_0mm	20	QPSK 1_0	132322/1745	1:1	0.026	0.018	0.05	23.48	23.50	1.005	0.026	21.9
Right side_0mm	20	QPSK 1_0	132322/1745	1:1	0.070	0.041	0.07	23.48	23.50	1.005	0.070	21.9
Top side_19mm	20	QPSK 1_0	132322/1745	1:1	0.633	0.340	0.07	23.48	23.50	1.005	0.636	21.9
Bottom side_0mm	20	QPSK 1_0	132322/1745	1:1	0.030	0.014	-0.07	23.48	23.50	1.005	0.030	21.9
Sensor offTest data (50%RB)												
Back side_14mm	20	QPSK 50_0	132322/1745	1:1	0.192	0.115	0.06	22.74	23.00	1.062	0.204	21.9
Left side_0mm	20	QPSK 50_0	132322/1745	1:1	0.020	0.015	0.10	22.74	23.00	1.062	0.021	21.9
Right side_0mm	20	QPSK 50_0	132322/1745	1:1	0.054	0.032	-0.08	22.74	23.00	1.062	0.057	21.9
Top side_19mm	20	QPSK 50_0	132322/1745	1:1	0.493	0.265	0.09	22.74	23.00	1.062	0.523	21.9
Bottom side_0mm	20	QPSK 50_0	132322/1745	1:1	0.017	0.090	-0.08	22.74	23.00	1.062	0.018	21.9

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Top side 0mm	132072/1720	1.210	1.160	1.043	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 performed 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 performed 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.

9.2.10 SAR Result of WIFI 2.4G

Wi-Fi 2.4G SAR Test Record												
Wi-Fi 2.4G SAR Test Record ANT1（chain0）												
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.(℃)
Body Test Data (0mm)												
Back side	802.11b	7/2442	96.00%	1.042	0.047	0.022	0.08	11.57	12.50	1.239	0.061	21.9
Left side	802.11b	7/2442	96.00%	1.042	0.090	0.031	0.03	11.57	12.50	1.239	0.116	21.9
Right side	802.11b	7/2442	96.00%	1.042	0.035	0.010	0.01	11.57	12.50	1.239	0.045	21.9
Top side	802.11b	7/2442	96.00%	1.042	0.021	0.010	0.00	11.57	12.50	1.239	0.027	21.9
Bottom side	802.11b	7/2442	96.00%	1.042	0.548	0.214	0.08	11.57	12.50	1.239	0.707	21.9
Wi-Fi 2.4G SAR Test Record ANT2（chain1）												
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.(℃)
Body Test Data (0mm)												
Back side	802.11b	1/2412	96.00%	1.042	0.418	0.199	0.05	11.69	12.50	1.205	0.525	21.9
Left side	802.11b	1/2412	96.00%	1.042	0.007	0.003	0.10	11.69	12.50	1.205	0.009	21.9
Right side	802.11b	1/2412	96.00%	1.042	0.635	0.232	-0.08	11.69	12.50	1.205	0.797	21.9
Top side	802.11b	1/2412	96.00%	1.042	0.014	0.006	0.00	11.69	12.50	1.205	0.018	21.9
Bottom side	802.11b	1/2412	96.00%	1.042	0.011	0.004	-0.03	11.69	12.50	1.205	0.014	21.9
Wi-Fi 2.4G SAR Test Record（MIMO）												
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.(℃)
Body Test Data (0mm)												
Back side	802.11n HT40	3/2422	98.81%	1.012	0.096	0.045	0.04	14.67	15.50	1.211	0.118	21.9
Left side	802.11n HT40	3/2422	98.81%	1.012	0.011	0.005	0.04	14.67	15.50	1.211	0.013	21.9
Right side	802.11n HT40	3/2422	98.81%	1.012	1.030	0.453	-0.04	14.67	15.50	1.211	**1.262**	21.9
Right side with Repeat	802.11n HT40	3/2422	98.81%	1.012	0.923	0.406	-0.03	14.67	15.50	1.211	1.131	21.9
Top side	802.11n HT40	3/2422	98.81%	1.012	0.009	0.005	-0.10	14.67	15.50	1.211	0.011	21.9
Bottom side	802.11n HT40	3/2422	98.81%	1.012	0.191	0.092	0.09	14.67	15.50	1.211	0.234	21.9
Right side	802.11n HT40	7/2442	98.81%	1.012	0.933	0.367	-0.09	14.59	15.50	1.233	1.164	21.9
Right side	802.11n HT40	13/2472	96.00%	1.042	0.929	0.363	-0.02	14.61	15.50	1.227	1.188	21.9

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Right side 0mm	3/2422	1.030	0.923	1.116	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 performed 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 performed 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.

9.2.11 SAR Result of WIFI 5G

Wi-Fi 5GSAR Test Record ANT1（chain0）												
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.(℃)
Body Test Data (0mm) U-NII-2A												
Back side	802.11ac VHT160	50/5250	98.83%	1.012	0.044	0.013	-0.04	11.21	12.00	1.199	0.053	21.9
Left side	802.11ac VHT160	50/5250	98.83%	1.012	0.033	0.008	0.02	11.21	12.00	1.199	0.040	21.9
Right side	802.11ac VHT160	50/5250	98.83%	1.012	0.041	0.009	-0.02	11.21	12.00	1.199	0.050	21.9
Top side	802.11ac VHT160	50/5250	98.83%	1.012	0.030	0.008	-0.10	11.21	12.00	1.199	0.036	21.9
Bottom side	802.11ac VHT160	50/5250	98.83%	1.012	0.409	0.123	0.08	11.21	12.00	1.199	0.496	21.9
Body Test Data (0mm) U-NII-2C												
Back side	802.11ac VHT160	114/5570	98.83%	1.012	0.081	0.018	-0.01	10.28	11.50	1.324	0.109	21.9
Left side	802.11ac VHT160	114/5570	98.83%	1.012	0.058	0.023	0.05	10.28	11.50	1.324	0.078	21.9
Right side	802.11ac VHT160	114/5570	98.83%	1.012	0.060	0.023	-0.07	10.28	11.50	1.324	0.080	21.9
Top side	802.11ac VHT160	114/5570	98.83%	1.012	0.046	0.018	-0.04	10.28	11.50	1.324	0.062	21.9
Bottom side	802.11ac VHT160	114/5570	98.83%	1.012	0.308	0.104	-0.10	10.28	11.50	1.324	0.413	21.9
Body Test Data (0mm) U-NII-3												
Back side	802.11ac VHT80	155/5775	98.78%	1.012	0.068	0.025	-0.05	7.54	8.00	1.112	0.077	21.9
Left side	802.11ac VHT80	155/5775	98.78%	1.012	0.044	0.018	0.08	7.54	8.00	1.112	0.050	21.9
Right side	802.11ac VHT80	155/5775	98.78%	1.012	0.061	0.020	-0.06	7.54	8.00	1.112	0.069	21.9
Top side	802.11ac VHT80	155/5775	98.78%	1.012	0.035	0.015	0.02	7.54	8.00	1.112	0.039	21.9
Bottom side	802.11ac VHT80	155/5775	98.78%	1.012	0.086	0.038	0.03	7.54	8.00	1.112	0.097	21.9
Wi-Fi 5G SAR Test Record ANT2（chain1）												
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.(℃)
Body Test Data (0mm) U-NII-2A												
Back side	802.11ac VHT160	50/5250	98.83%	1.012	0.086	0.029	0.06	11.34	12.00	1.164	0.101	21.9
Left side	802.11ac VHT160	50/5250	98.83%	1.012	0.029	0.011	-0.09	11.34	12.00	1.164	0.034	21.9
Right side	802.11ac VHT160	50/5250	98.83%	1.012	0.866	0.249	-0.05	11.34	12.00	1.164	1.020	21.9
Top side	802.11ac VHT160	50/5250	98.83%	1.012	0.107	0.040	0.10	11.34	12.00	1.164	0.126	21.9
Bottom side	802.11ac VHT160	50/5250	98.83%	1.012	0.044	0.016	0.08	11.34	12.00	1.164	0.052	21.9
Body Test Data (0mm) U-NII-2C												
Back side	802.11ac VHT160	114/5570	98.83%	1.012	0.094	0.035	0.05	10.54	11.50	1.247	0.119	21.9
Left side	802.11ac VHT160	114/5570	98.83%	1.012	0.025	0.010	-0.10	10.54	11.50	1.247	0.032	21.9
Right side	802.11ac VHT160	114/5570	98.83%	1.012	0.805	0.230	-0.05	10.54	11.50	1.247	1.016	21.9
Top side	802.11ac VHT160	114/5570	98.83%	1.012	0.081	0.034	-0.07	10.54	11.50	1.247	0.102	21.9
Bottom side	802.11ac VHT160	114/5570	98.83%	1.012	0.033	0.008	-0.07	10.54	11.50	1.247	0.042	21.9
Body Test Data (0mm) U-NII-3												
Back side	802.11ac VHT80	155/5775	98.78%	1.012	0.067	0.016	-0.08	6.65	7.50	1.216	0.082	21.9
Left side	802.11ac VHT80	155/5775	98.78%	1.012	0.033	0.014	-0.07	6.65	7.50	1.216	0.041	21.9

Right side	802.11ac VHT80	155/5775	98.78%	1.012	0.447	0.128	0.09	6.65	7.50	1.216	0.550	21.9
Top side	802.11ac VHT80	155/5775	98.78%	1.012	0.093	0.031	-0.02	6.65	7.50	1.216	0.114	21.9
Bottom side	802.11ac VHT80	155/5775	98.78%	1.012	0.049	0.022	-0.06	6.65	7.50	1.216	0.060	21.9

Wi-Fi 5G SAR Test Record (MIMO)

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.(℃)
Body Test Data (0mm) U-NII-2A												
Back side	802.11ac VHT160	50/5250	98.83%	1.012	0.087	0.031	-0.10	14.29	14.50	1.050	0.092	21.9
Left side	802.11ac VHT160	50/5250	98.83%	1.012	0.034	0.007	0.06	14.29	14.50	1.050	0.036	21.9
Right side	802.11ac VHT160	50/5250	98.83%	1.012	1.060	0.272	-0.09	14.29	14.50	1.050	**1.126**	21.9
Right side with Repeat	802.11ac VHT160	50/5250	98.83%	1.012	0.958	0.246	-0.09	14.29	14.50	1.050	1.018	21.9
Top side	802.11ac VHT160	50/5250	98.83%	1.012	0.088	0.033	-0.01	14.29	14.50	1.050	0.093	21.9
Bottom side	802.11ac VHT160	50/5250	98.83%	1.012	0.354	0.117	-0.09	14.29	14.50	1.050	0.376	21.9
Body Test Data (0mm) U-NII-2C												
Back side	802.11ac VHT160	114/5570	98.83%	1.012	0.118	0.038	0.03	13.42	13.50	1.019	0.122	21.9
Left side	802.11ac VHT160	114/5570	98.83%	1.012	0.025	0.010	0.06	13.42	13.50	1.019	0.026	21.9
Right side	802.11ac VHT160	114/5570	98.83%	1.012	1.020	0.258	0.00	13.42	13.50	1.019	1.051	21.9
Top side	802.11ac VHT160	114/5570	98.83%	1.012	0.087	0.034	-0.06	13.42	13.50	1.019	0.090	21.9
Bottom side	802.11ac VHT160	114/5570	98.83%	1.012	0.179	0.060	0.07	13.42	13.50	1.019	0.185	21.9
Body Test Data (0mm) U-NII-3												
Back side	802.11ac VHT80	155/5775	98.78%	1.012	0.064	0.020	0.02	10.13	10.50	1.089	0.071	21.9
Left side	802.11ac VHT80	155/5775	98.78%	1.012	0.032	0.013	-0.03	10.13	10.50	1.089	0.035	21.9
Right side	802.11ac VHT80	155/5775	98.78%	1.012	0.466	0.126	-0.10	10.13	10.50	1.089	0.514	21.9
Top side	802.11ac VHT80	155/5775	98.78%	1.012	0.068	0.020	0.10	10.13	10.50	1.089	0.075	21.9
Bottom side	802.11ac VHT80	155/5775	98.78%	1.012	0.094	0.026	-0.04	10.13	10.50	1.089	0.104	21.9

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Right side 0mm	50/5250	1.060	0.958	1.106	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 performed 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 performed 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.

9.2.12 SAR Result of WIFI 6E

Wi-Fi 6E SAR Test Record												
Ant1 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.(℃)
Body Test data of U-NII-5 (Separate 0mm)												
Back side	802.11ax-HEW160	15/6025	98.81%	1.012	0.041	0.016	0.10	7.58	8.00	1.102	0.046	22.1
Left side	802.11ax-HEW160	15/6025	98.81%	1.012	0.050	0.016	0.03	7.58	8.00	1.102	0.056	22.1
Right side	802.11ax-HEW160	15/6025	98.81%	1.012	0.028	0.007	-0.07	7.58	8.00	1.102	0.031	22.1
Top side	802.11ax-HEW160	15/6025	98.81%	1.012	0.028	0.007	0.04	7.58	8.00	1.102	0.031	22.1
Bottom side	802.11ax-HEW160	15/6025	98.81%	1.012	0.173	0.062	-0.09	7.58	8.00	1.102	0.193	22.1
Bottom side	802.11ax-HEW160	47/6185	98.81%	1.012	0.183	0.066	-0.12	7.57	8.00	1.104	0.204	22.1
Bottom side	802.11ax-HEW160	79/6345	98.81%	1.012	0.199	0.070	0.08	7.55	8.00	1.109	0.223	22.1
Body Test data of U-NII-6 (Separate 0mm)												
Back side	802.11ax-HEW160	111/6505	98.81%	1.012	0.049	0.019	-0.10	6.88	8.00	1.294	0.064	22.1
Left side	802.11ax-HEW160	111/6505	98.81%	1.012	0.068	0.025	0.05	6.88	8.00	1.294	0.089	22.1
Right side	802.11ax-HEW160	111/6505	98.81%	1.012	0.030	0.009	-0.13	6.88	8.00	1.294	0.039	22.1
Top side	802.11ax-HEW160	111/6505	98.81%	1.012	0.024	0.008	-0.11	6.88	8.00	1.294	0.031	22.1
Bottom side	802.11ax-HEW160	111/6505	98.81%	1.012	0.358	0.112	0.07	6.88	8.00	1.294	0.469	22.1
Body Test data of U-NII-7 (Separate 0mm)												
Back side	802.11ax-HEW160	175/6825	98.81%	1.012	0.026	0.010	-0.05	7.46	8.00	1.132	0.030	22.1
Left side	802.11ax-HEW160	175/6825	98.81%	1.012	0.037	0.012	0.07	7.46	8.00	1.132	0.042	22.1
Right side	802.11ax-HEW160	175/6825	98.81%	1.012	0.021	0.007	-0.15	7.46	8.00	1.132	0.024	22.1
Top side	802.11ax-HEW160	175/6825	98.81%	1.012	0.017	0.007	-0.16	7.46	8.00	1.132	0.019	22.1
Bottom side	802.11ax-HEW160	175/6825	98.81%	1.012	0.309	0.097	0.16	7.46	8.00	1.132	0.354	22.1
Bottom side	802.11ax-HEW160	143/6665	98.81%	1.012	0.407	0.114	0.04	7.43	8.00	1.140	0.470	22.1
Body Test data of U-NII-8 (Separate 0mm)												
Back side	802.11ax-HEW160	207/6985	98.81%	1.012	0.072	0.028	0.05	7.86	8.50	1.159	0.084	22.1
Left side	802.11ax-HEW160	207/6985	98.81%	1.012	0.107	0.033	-0.10	7.86	8.50	1.159	0.125	22.1
Right side	802.11ax-HEW160	207/6985	98.81%	1.012	0.055	0.017	-0.19	7.86	8.50	1.159	0.065	22.1
Top side	802.11ax-HEW160	207/6985	98.81%	1.012	0.038	0.011	0.01	7.86	8.50	1.159	0.045	22.1
Bottom side	802.11ax-HEW160	207/6985	98.81%	1.012	0.466	0.155	0.06	7.86	8.50	1.159	0.546	22.1
Ant2 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.(℃)
Body Test data of U-NII-5 (Separate 0mm)												
Back side	802.11ax-HEW160	79/6345	98.81%	1.012	0.080	0.029	-0.15	7.33	8.00	1.167	0.094	22.1
Left side	802.11ax-HEW160	79/6345	98.81%	1.012	0.018	0.008	-0.03	7.33	8.00	1.167	0.021	22.1
Right side	802.11ax-HEW160	79/6345	98.81%	1.012	0.867	0.225	-0.15	7.33	8.00	1.167	1.024	22.1
Top side	802.11ax-HEW160	79/6345	98.81%	1.012	0.120	0.045	-0.04	7.33	8.00	1.167	0.142	22.1
Bottom side	802.11ax-HEW160	79/6345	98.81%	1.012	0.036	0.010	0.09	7.33	8.00	1.167	0.043	22.1

Right side	802.11ax-HEW160	15/6025	98.81%	1.012	0.848	0.315	0.04	7.23	8.00	1.194	1.025	22.1
Right side	802.11ax-HEW160	47/6185	98.81%	1.012	0.853	0.238	0.03	7.30	8.00	1.175	1.014	22.1
Body Test data of U-NII-6 (Separate 0mm)												
Back side	802.11ax-HEW160	111/6505	98.81%	1.012	0.119	0.040	0.00	7.51	8.00	1.119	0.135	22.1
Left side	802.11ax-HEW160	111/6505	98.81%	1.012	0.025	0.010	0.14	7.51	8.00	1.119	0.028	22.1
Right side	802.11ax-HEW160	111/6505	98.81%	1.012	1.010	0.280	-0.07	7.51	8.00	1.119	1.144	22.1
Top side	802.11ax-HEW160	111/6505	98.81%	1.012	0.142	0.059	-0.19	7.51	8.00	1.119	0.161	22.1
Bottom side	802.11ax-HEW160	111/6505	98.81%	1.012	0.044	0.009	0.10	7.51	8.00	1.119	0.050	22.1
Body Test data of U-NII-7 (Separate 0mm)												
Back side	802.11ax-HEW160	175/6825	98.81%	1.012	0.078	0.029	-0.16	7.47	8.00	1.130	0.089	22.1
Left side	802.11ax-HEW160	175/6825	98.81%	1.012	0.016	0.008	-0.03	7.47	8.00	1.130	0.018	22.1
Right side	802.11ax-HEW160	175/6825	98.81%	1.012	0.642	0.210	-0.05	7.47	8.00	1.130	0.734	22.1
Top side	802.11ax-HEW160	175/6825	98.81%	1.012	0.124	0.041	-0.18	7.47	8.00	1.130	0.142	22.1
Bottom side	802.11ax-HEW160	175/6825	98.81%	1.012	0.036	0.007	0.12	7.47	8.00	1.130	0.041	22.1
Right side	802.11ax-HEW160	143/6665	98.81%	1.012	0.996	0.227	0.12	7.47	8.00	1.130	1.139	22.1
Body Test data of U-NII-8 (Separate 0mm)												
Back side	802.11ax-HEW160	207/6985	98.81%	1.012	0.074	0.027	0.09	7.94	8.50	1.138	0.085	22.1
Left side	802.11ax-HEW160	207/6985	98.81%	1.012	0.017	0.008	-0.04	7.94	8.50	1.138	0.020	22.1
Right side	802.11ax-HEW160	207/6985	98.81%	1.012	1.020	0.233	0.04	7.94	8.50	1.138	1.174	22.1
Top side	802.11ax-HEW160	207/6985	98.81%	1.012	0.159	0.055	0.03	7.94	8.50	1.138	0.183	22.1
Bottom side	802.11ax-HEW160	207/6985	98.81%	1.012	0.038	0.010	0.01	7.94	8.50	1.138	0.044	22.1
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.(℃)**
Body Test data of U-NII-5 (Separate 0mm)												
Back side	802.11ax-HEW160	79/6345	98.81%	1.012	0.092	0.034	-0.09	10.45	10.50	1.011	0.094	22.1
Left side	802.11ax-HEW160	79/6345	98.81%	1.012	0.046	0.015	0.12	10.45	10.50	1.011	0.047	22.1
Right side	802.11ax-HEW160	79/6345	98.81%	1.012	0.843	0.214	-0.05	10.45	10.50	1.011	0.863	22.1
Top side	802.11ax-HEW160	79/6345	98.81%	1.012	0.102	0.042	-0.07	10.45	10.50	1.011	0.104	22.1
Bottom side	802.11ax-HEW160	79/6345	98.81%	1.012	0.137	0.047	0.02	10.45	10.50	1.011	0.140	22.1
Right side	802.11ax-HEW160	15/6025	98.81%	1.012	1.150	0.271	0.00	10.42	10.50	1.019	1.186	22.1
Right side	802.11ax-HEW160	47/6185	98.81%	1.012	0.986	0.235	0.04	10.45	10.50	1.012	1.010	22.1
Body Test data of U-NII-6 (Separate 0mm)												
Back side	802.11ax-HEW160	111/6505	98.81%	1.012	0.110	0.036	0.07	10.22	10.50	1.067	0.119	22.1
Left side	802.11ax-HEW160	111/6505	98.81%	1.012	0.039	0.011	-0.06	10.22	10.50	1.067	0.042	22.1
Right side	802.11ax-HEW160	111/6505	98.81%	1.012	1.100	0.262	0.00	10.22	10.50	1.067	**1.188**	22.1
Right side with Repeat	802.11ax-HEW160	111/6505	98.81%	1.012	0.986	0.235	0.06	10.22	10.50	1.067	1.065	22.1
Top side	802.11ax-HEW160	111/6505	98.81%	1.012	0.150	0.053	-0.04	10.22	10.50	1.067	0.162	22.1
Bottom side	802.11ax-HEW160	111/6505	98.81%	1.012	0.314	0.091	0.06	10.22	10.50	1.067	0.339	22.1
Body Test data of U-NII-7 (Separate 0mm)												
Back side	802.11ax-HEW160	175/6825	98.81%	1.012	0.048	0.015	-0.09	10.48	10.50	1.006	0.049	22.1
Left side	802.11ax-HEW160	175/6825	98.81%	1.012	0.022	0.008	0.07	10.48	10.50	1.006	0.022	22.1
Right side	802.11ax-HEW160	175/6825	98.81%	1.012	0.372	0.130	-0.02	10.48	10.50	1.006	0.379	22.1

Top side	802.11ax-HEW160	175/6825	98.81%	1.012	0.078	0.028	-0.03	10.48	10.50	1.006	0.079	22.1
Bottom side	802.11ax-HEW160	175/6825	98.81%	1.012	0.192	0.064	0.12	10.48	10.50	1.006	0.195	22.1
Right side	802.11ax-HEW160	143/6665	98.81%	1.012	0.421	0.126	0.01	10.46	10.50	1.009	0.430	22.1
Body Test data of U-NII-8 (Separate 0mm)												
Back side	802.11ax-HEW160	207/6985	98.81%	1.012	0.058	0.021	-0.15	10.91	11.00	1.021	0.060	22.1
Left side	802.11ax-HEW160	207/6985	98.81%	1.012	0.022	0.008	0.02	10.91	11.00	1.021	0.023	22.1
Right side	802.11ax-HEW160	207/6985	98.81%	1.012	0.481	0.139	-0.17	10.91	11.00	1.021	0.497	22.1
Top side	802.11ax-HEW160	207/6985	98.81%	1.012	0.103	0.034	-0.14	10.91	11.00	1.021	0.106	22.1
Bottom side	802.11ax-HEW160	207/6985	98.81%	1.012	0.170	0.052	0.08	10.91	11.00	1.021	0.176	22.1

Test Position	Test ch./Freq.	Measured SAR (W/kg)	1st Repeated	Ratio	2nd Repeated	3rd Repeated
Right side 0mm	111/6505	1.100	0.986	1.116	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 performed 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 performed 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.

9.2.13 SAR Result of BT

Bluetooth SAR Test Record ANT1												
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.(℃)
Body Test Data (0mm)												
Back side	DH5	78/2480	76.93%	1.3	0.028	0.016	0.10	14.26	14.50	1.057	0.038	22.1
Left side	DH5	78/2480	76.93%	1.3	0.016	0.007	-0.02	14.26	14.50	1.057	0.022	22.1
Right side	DH5	78/2480	76.93%	1.3	0.019	0.008	0.01	14.26	14.50	1.057	0.026	22.1
Top side	DH5	78/2480	76.93%	1.3	0.011	0.005	-0.04	14.26	14.50	1.057	0.015	22.1
Bottom side	DH5	78/2480	76.93%	1.3	0.072	0.034	-0.06	14.26	14.50	1.057	0.099	22.1
Bottom side	DH5	0/2402	76.93%	1.3	0.054	0.023	-0.06	13.37	14.50	1.297	0.091	22.1
Bottom side	DH5	39/2441	76.93%	1.3	0.064	0.029	0.06	14.05	14.50	1.109	0.092	22.1
Bluetooth SAR Test Record ANT4												
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.(℃)
Body Test data In Unfold (0mm)												
Back side	DH5	78/2480	77.77%	1.286	0.122	0.069	-0.01	12.85	14.00	1.303	0.204	22.1
Left side	DH5	78/2480	77.77%	1.286	0.006	0.003	0.07	12.85	14.00	1.303	0.010	22.1
Right side	DH5	78/2480	77.77%	1.286	0.007	0.003	-0.09	12.85	14.00	1.303	0.012	22.1
Top side	DH5	78/2480	77.77%	1.286	0.011	0.004	-0.10	12.85	14.00	1.303	0.018	22.1
Bottom side	DH5	78/2480	77.77%	1.286	0.005	0.002	-0.10	12.85	14.00	1.303	0.008	22.1
Back side	DH5	0/2402	77.78%	1.286	0.111	0.054	-0.13	12.71	14.00	1.346	0.192	22.1
Back side	DH5	39/2441	77.81%	1.285	0.115	0.057	0.00	12.79	14.00	1.321	0.195	22.1
Bluetooth SAR Test Record ANT3												
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.(℃)
Body Test data (0mm)												
Back side	DH5	78/2480	77.77%	1.286	0.101	0.045	-0.03	12.85	14.00	1.303	0.169	22.1
Left side	DH5	78/2480	77.77%	1.286	0.003	0.001	0.01	12.85	14.00	1.303	0.005	22.1
Right side	DH5	78/2480	77.77%	1.286	0.005	0.003	0.03	12.85	14.00	1.303	0.008	22.1
Top side	DH5	78/2480	77.77%	1.286	0.009	0.002	0.02	12.85	14.00	1.303	0.015	22.1
Bottom side	DH5	78/2480	77.77%	1.286	0.001	0.001	0.06	12.85	14.00	1.303	0.002	22.1
Back side	DH5	0/2402	77.78%	1.286	0.084	0.046	0.08	12.71	14.00	1.346	0.145	22.1
Back side	DH5	39/2441	77.81%	1.285	0.080	0.042	0.04	12.79	14.00	1.321	0.136	22.1

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 HEW160	207/6985	2	0.0625	98.81%	1.012	/	/	5.46	-0.07	10.91	11.00	1.5493	1.021	8.739
Back side	802.11ax HEW160	207/6985	2	0.0625	98.81%	1.012	/	/	1.09	0.06	10.91	11.00	1.5493	1.021	1.745
Left side	802.11ax HEW160	207/6985	2	0.0625	98.81%	1.012	/	/	0.348	0.01	10.91	11.00	1.5493	1.021	0.557
Right side	802.11ax HEW160	207/6985	2	0.0625	98.81%	1.012	/	/	5.29	0.08	10.91	11.00	1.5493	1.021	8.467
Top side	802.11ax HEW160	207/6985	2	0.0625	98.81%	1.012	/	/	0.582	0.03	10.91	11.00	1.5493	1.021	0.932
Bottom side	802.11ax HEW160	207/6985	2	0.0625	98.81%	1.012	/	/	0.819	0.05	10.91	11.00	1.5493	1.021	1.311
Front side	802.11ax HEW160	207/6985	2	0.0625	98.81%	1.012	102	0.95	5.46	-0.07	10.91	11.00	1.5493	1.021	8.739
Front side	802.11ax HEW160	207/6985	8.6	0.0625	98.81%	1.012	82		2.350	0.01	10.91	11.00	1.5493	1.021	3.761
Front side	802.11ax HEW160	79/6345	2	0.0625	98.81%	1.012	/	/	5.58	-0.05	10.45	10.50	1.5493	1.011	8.847
Front side	802.11ax HEW160	111/6505	2	0.0625	98.81%	1.012	/	/	5.26	-0.01	10.22	10.50	1.5493	1.067	8.803
Front side	802.11ax HEW160	143/6665	2	0.0625	98.81%	1.012	/	/	5.64	-0.02	10.46	10.50	1.5493	1.009	**8.924**
Front side	802.11ax HEW160	175/6825	2	0.0625	98.81%	1.012	/	/	5.41	-0.06	10.48	10.50	1.5493	1.006	8.531

9.4 Multiple Transmitter Evaluation

9.4.1 Simultaneous SAR test evaluation

NO.	Simultaneous Transmission Configuration	Body
1	WWAN + WIFI 2.4GHz Ant 2+BT Ant 1+BT Ant 3+BT Ant 4	Yes
2	WWAN + WIFI 5GHz Ant 2+BT Ant 1+BT Ant 3+BT Ant 4	Yes
3	WWAN + WIFI 2.4GHz MIMO+BT Ant 3+BT Ant 4	Yes
4	WWAN + WIFI 5GHz MIMO+BT Ant 3+BT Ant 4	Yes

Note:

1). BT Antenna 1 power is the power of the Intel AX210NGW network card, and antenna 3+4 power is the power of the LRBT module.

2). One antenna port of the LRBT module has both PCB and 2.4G terminal antennas.

9.4.2 Simultaneous Transmission SAR Summation Scenario

Body:

Test position		SARmax (W/kg)								Summed SAR			
		WiFi 2.4G Ant1(chain0)	WiFi 2.4G Ant2(chain1)	WiFi 2.4G MIMO	WiFi 5G&6E Ant1(chain0)	WiFi 5G&6E Ant2(chain1)	WiFi 5G&6E MIMO	BT Ant1	BT Ant3&4				
		1	2	3	4	5	6	7	8	2+7+8	5+7+8	3+8	6+8
WLAN	Back side	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	0.061	0.525	0.118	0.109
	Left side	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.116	0.009	0.013	0.125
	Right side	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	0.045	0.797	1.262	0.080
	Top side	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	0.027	0.018	0.011	0.062
	Bottom side	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.707	0.014	0.234	0.546

Test position		SARmax (W/kg)									Summed SAR			
		Max SAR	WiFi 2.4G Ant1(chain0)	WiFi 2.4G Ant2(chain1)	WiFi 2.4G MIMO	WiFi 5G&6E Ant1(chain0)	WiFi 5G&6E Ant2(chain1)	WiFi 5G&6E MIMO	BT Ant1	BT Ant3&4				
		1	2	3	4	5	6	7	8	9	1+3+8+9	1+6+8+9	1+4+9	1+7+9
LTE B2	Back side	0.466	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.233	0.843	0.788	0.792
	Left side	0.018	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.059	0.091	0.041	0.075
	Right side	0.069	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	0.904	1.281	1.343	1.269
	Top side	1.101	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	1.152	1.317	1.130	1.281
	Bottom side	0.119	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.240	0.286	0.361	0.503
LTE B4	Back side	0.437	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.204	0.814	0.759	0.763
	Left side	0.023	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.064	0.096	0.046	0.080
	Right side	0.075	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	0.910	1.287	1.349	1.275
	Top side	1.267	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	1.318	1.483	1.296	1.447
	Bottom side	0.056	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.177	0.223	0.298	0.440
LTE B5	Back side	0.817	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	**1.584**	1.194	1.139	1.143
	Left side	0.027	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.068	0.100	0.050	0.084
	Right side	0.178	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	1.013	1.390	1.452	1.378
	Top side	0.590	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	0.641	0.806	0.619	0.770
	Bottom side	0.063	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.184	0.230	0.305	0.447
LTE B12	Back side	0.662	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.429	1.039	0.984	0.988
	Left side	0.031	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.072	0.104	0.054	0.088
	Right side	0.180	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	1.015	1.392	1.454	1.380
	Top side	0.373	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	0.424	0.589	0.402	0.553
	Bottom side	0.023	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.144	0.190	0.265	0.407
LTE B14	Back side	0.681	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.448	1.058	1.003	1.007
	Left side	0.035	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.076	0.108	0.058	0.092
	Right side	0.146	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	0.981	1.358	1.420	1.346
	Top side	0.426	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	0.477	0.642	0.455	0.606
	Bottom side	0.024	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.145	0.191	0.266	0.408
LTE B17	Back side	0.644	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.411	1.021	0.966	0.970
	Left side	0.040	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.081	0.113	0.063	0.097
	Right side	0.171	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	1.006	1.383	1.445	1.371
	Top side	0.345	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	0.396	0.561	0.374	0.525
	Bottom side	0.035	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.156	0.202	0.277	0.419
LTE	Back side	0.806	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.573	1.183	1.128	1.132

B30	Left side	0.019	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.060	0.092	0.042	0.076
	Right side	0.089	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	0.924	1.301	1.363	1.289
	Top side	1.034	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	1.085	1.250	1.063	1.214
	Bottom side	0.045	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.166	0.212	0.287	0.429
LTE B48	Back side	0.793	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.560	1.170	1.115	1.119
	Left side	0.010	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.051	0.083	0.033	0.067
	Right side	0.057	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	0.892	1.269	1.331	1.257
	Top side	1.056	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	1.107	1.272	1.085	1.236
	Bottom side	0.046	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.167	0.213	0.288	0.430
LTE B66	Back side	0.517	0.061	0.525	0.118	0.109	0.135	0.122	0.038	0.204	1.284	0.894	0.839	0.843
	Left side	0.026	0.116	0.009	0.013	0.125	0.041	0.047	0.022	0.010	0.067	0.099	0.049	0.083
	Right side	0.070	0.045	0.797	1.262	0.080	1.174	1.188	0.026	0.012	0.905	1.282	1.344	1.270
	Top side	1.364	0.027	0.018	0.011	0.062	0.183	0.162	0.015	0.018	1.415	1.580	1.393	1.544
	Bottom side	0.030	0.707	0.014	0.234	0.546	0.060	0.376	0.099	0.008	0.151	0.197	0.272	0.414

10 Equipment list

Test Platform	SPEAG DASY Professional
Description	SAR 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-020	NCR	NCR
☒	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-022	NCR	NCR
☒	Test Phantom	SPEAG	SAM Twin	SZ-WSR-A-027	NCR	NCR
☒	Test Phantom	SPEAG	mmWave	SZ-WSR-A-029	NCR	NCR
☒	DAE	SPEAG	DAE4	SZ-WSR-M-029	2025/01/20	2026/01/19
☒	DAE	SPEAG	DAE4ip	SZ-WSR-M-074	2024/08/08	2025/08/07
☒	DAE	SPEAG	DAE4	SZ-WSR-M-081	2024/08/15	2025/08/14
☒	DAE	SPEAG	DAE4ip	SZ-WSR-R-020	2025/02/17	2026/02/16
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-069	2024/07/29	2025/07/28
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-079	2024/11/20	2025/11/19
☒	E-Field Probe	SPEAG	EX3DV4	SZ-WSR-M-082	2024/09/19	2025/09/18
☒	E-Field Probe	SPEAG	EUmmWV4	SZ-WSR-M-048	2024/08/23	2025/08/22
☒	Validation Kits	SPEAG	D750V3	SZ-WSR-M-032	2025/06/18	2028/06/17
☒	Validation Kits	SPEAG	D835V2	SZ-WSR-M-033	2022/11/02	2025/11/01
☒	Validation Kits	SPEAG	D1750V2	SZ-WSR-M-035	2025/06/18	2028/06/17
☒	Validation Kits	SPEAG	D1950V3	SZ-WSR-M-037	2022/10/31	2025/10/30
☒	Validation Kits	SPEAG	D2300V2	SZ-WSR-M-038	2025/06/19	2028/06/18
☒	Validation Kits	SPEAG	D2450V2	SZ-WSR-M-039	2022/11/02	2025/11/01
☒	Validation Kits	SPEAG	D3500V2	SZ-WSR-M-041	2022/9/19	2025/9/18
☒	Validation Kits	SPEAG	D3700V2	SZ-WSR-M-042	2022/9/15	2025/9/14
☒	Validation Kits	SPEAG	D5GHzV2	SZ-WSR-M-046	2022/11/01	2025/10/31
☒	Validation Kits	SPEAG	D5GHzV2	SEM060-21	2025/06/17	2028/06/16
☒	Validation Kits	SPEAG	D6.5GHzV2	SZ-WSR-M-080	2023/09/11	2026/09/10
☒	5G Verification Source	SPEAG	10GHz	SZ-WSR-M-049	2024/08/20	2025/08/19
☒	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
☒	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	2025/05/19	2026/05/18
☒	Temperature	MingGao	T809	SZ-WSR-M-015	2025/05/19	2026/05/18
☒	Temperature	MingGao	T809	SZ-WSR-M-016	2025/05/19	2026/05/18
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-013	2025/05/16	2026/05/15
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-012	2025/05/16	2026/05/15
☒	Humidity and Temperature Indicator	CHIGAO	HTC-1	SZ-WSR-M-011	2025/05/19	2026/05/18

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

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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 ---