FCC SAR Compliance Test Report

For

TECNO MOBILE LIMITED

FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET

FOTAN NT HONGKONG

Model: K15SRA

Test Engineer:	Zeng Longhao Zeng Longhao
Report Number:	WSCT-ANAB-R&E250600047A-SAR
Report Date:	01 September 2025
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Modified History

REV.	Modification Description	Issued Date	Remark
REV.1.0	Initial Test Report Relesse	01 September 2025	Li Huaibi

1 General information

1.1 Notes

The test results of this test report relate exclusively to the test item specified in this test report. QTC Certification & Testing Co., Ltd. does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report is not to be reproduced or published in full without the prior written permission.

1.2 Application details

Date of receipt of test item: 2025-06-20
Start of test: 2025-06-23
End of test: 2025-08-18

1.3 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for K15SRA is as below:

Band	Position	MAX ReportedSAR$_{1g}$(W/kg)	Limit (W/kg)
2.4G WIFI	Body-Worn 0mm	1.104	1.6
5.2G WIFI	Body-Worn 0mm	1.435	
5.4G WIFI	Body-Worn 0mm	1.478	
5.6G WIFI	Body-Worn 0mm	1.292	
5.8G WIFI	Body-Worn 0mm	1.378	
WIFI6E	Body-Worn 0mm	0.536	
BT	Body-Worn 0mm	0.115	
Max.Simultaneous Transmission SAR(W/kg)			
Items	Body SAR (Gap 0mm)		1.6
Sum SAR	1.508		

The device is in compliance with Specific Absorption Rate（SAR）for general population/uncontraolled exposure limits of 1.6W/Kg as averaged over any 1g tissue according to the FCC rule§2.1093,the ANSI/IEEEC95.1:2005,the NCRP Report Number 86 forun controlled environment,according to the Industry Canada Radio Standards Specification RSS-102 for General Population/ Uncontrolled exposure, and had been tested in accord ance with the measurement methods and proceduresspecified in IEEE Std1528-2013.

1.4 EUT Information

Device Information:	
Product Type:	Laptop Computer
Model:	K15SRA
Brand Name:	TECNO
Device Type:	Portable device
Exposure Category:	uncontrolled environment / general population
Production Unit or Identical Prototype:	Production Unit
Antenna Type :	Integral Antenna
Antenna Gain:	BT: 1.49dBi 2.4GWIFI: MAIN ANT: 1.49dBi /AUX ANT: 1.96 dBi 5GWIFI: MAIN ANT: 2.86dBi /AUX ANT: 2.28 dBi WIFI6E: MAIN ANT:2.97dBi /AUX ANT: 2.73 dBi
Device Operating Configurations:	
Supporting Mode(s) :	Wi-Fi , BT
Software version:	Windows 11
Hardware version:	N160DRL01_MB_V10
Modulation:	(GFSK, π/4-DQPSK, 8-DPSK) for BT DSSS (DBPSK, DQPSK, CCK) for IEEE 802.11b OFDM/OFDMA(BPSK,QPSK,16QAM,64QAM,256QAM,1024QAM) for IEEE 802.11g/n/ax IEEE 802.11a/n/ac/ax: OFDM/OFDMA (BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM)
Device Class :	Class B, No DTM Mode

Note:Antenna gain provided by the customer.

Operating Frequency Range(s):	Band	TX(MHz)	RX(MHz)
	Wi-Fi	2412~2462	
	Wi-Fi (5G)	Band 1: 5180-5240 MHz Band 2: 5260-5320 MHz Band 3: 5500-5700 MHz Band 4: 5745-5825 MHz	
	Wi-Fi6E	U-NII-5: 5925-6425MHz U-NII-6: 6425-6525MHz U-NII-7: 6525-6875MHz U-NII-8: 6875-7125MHz	
	BT	2402~2480	2402~2480
Power Source:	Rechargeable Li-ion Polymer Battery: 156 Nominal Voltage: 11.55V Rated Capacity:6060mAh/70Wh Typical Capacity: 6160mAh/71.14Wh Limited Charge Voltage: 13.2V		

Configuration differences

Model	Processor
K15SRA	i5
K15SRA	i7
Note: The prototypes of both configurations have been tested, and the K15SRA (i7) has the worst test result, which is the main test model reported	

Note:

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2. Per KDB 616217 D04 SAR for laptop and tablets, The standalone and simultaneous transmission SAR tests required for tablets are more conservative than the hotspot mode use configurations;therefore, additional testing for hotspot SAR is not required.

2 Testing laboratory

Test Site	World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.
Laboratory:	Building A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China
TEL:	+86-755-23695561
FAX:	+86-755-86376605

3 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:2017.

China	**CNAS (Registration Number: L3732)**
USA	**ANAB (Certificate Number: AT-3951**
Canada	**ISED (CAB identifier:CN0111)**

Copies of granted accreditation certificates are available for downloading from our web site, http://www.wsct-cert.com

Test Environment

4 Test Environment

	Required	Actual
Ambient temperature:	18 – 25 °C	22 ± 2 °C
Tissue Simulating liquid:	22 ± 2 °C	22 ± 2 °C
Relative humidity content:	30 – 70 %	30 – 70 %

5 Applicant and Manufacturer

Applicant/Client Name:	TECNO MOBILE LIMITED
Applicant Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
Manufacturer Name:	TECNO MOBILE LIMITED
Manufacturer Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG

6 Test standards:

IEC/IEEE 62209-1528	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices:Measurement Techniques
RSS-102	Radio Frequency Exposure Compliance of Radio communication Apparatus (All Frequency Bands(Issue 6 December 2023)
KDB447498 D04	Interim General RF Exposure Guidance v01
KDB616217 D04	SAR for laptop and tabletsv01r03
KDB248227D01	SARmeas for 802.11a/b/g v02r02
KDB865664D01	SAR Measurement 100 MHz to 6 GHz v01r04
KDB865664D02	RF Exposure Reporting v01r02

6.1 RF exposure limits

HumanExposure	UncontrolledEnvironment GeneralPopulation	ControlledEnvironment Occupational
SpatialPeakSAR* (Brain/Body/Arms/Legs)	**1.60mW/g**	8.00mW/g
SpatialAverageSAR** (WholeBody)	0.08mW/g	0.40mW/g
SpatialPeakSAR*** (Heads/Feet/Ankle/Wrist)	4.00mW/g	20.00mW/g

The limit applied in this test report is shown in bold letters

Notes:

* TheSpatial PeakvalueoftheSAR averagedover any1gram oftissue(definedasatissue volumeintheshapeofacube) andovertheappropriateaveragingtime.

** TheSpatial AveragevalueoftheSARaveragedoverthewholebody.

*** TheSpatial PeakvalueoftheSAR averagedover any10gramsoftissue(definedasatissue volumeintheshapeofacube) andovertheappropriateaveragingtime.

UncontrolledEnvironmentsaredefinedaslocationswherethereistheexposureofindividuals whohavenoknowledgeor control oftheir exposure.

ControlledEnvironmentsaredefinedaslocationswherethereisexposurethatmaybeincurred bypersonswhoareawareofthepotential for exposure,(i.e.asaresultofemploymentor occupation.

6.2 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (dW) absorbed by(dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ).

$$SAR = \frac{d}{dt}\left(\frac{dW}{dm}\right) = \frac{d}{dt}\left(\frac{dW}{\rho dV}\right)$$

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

$$SAR = \frac{\sigma |E|^2}{\rho}$$

where:

σ = conductivity of the tissue (S/m)

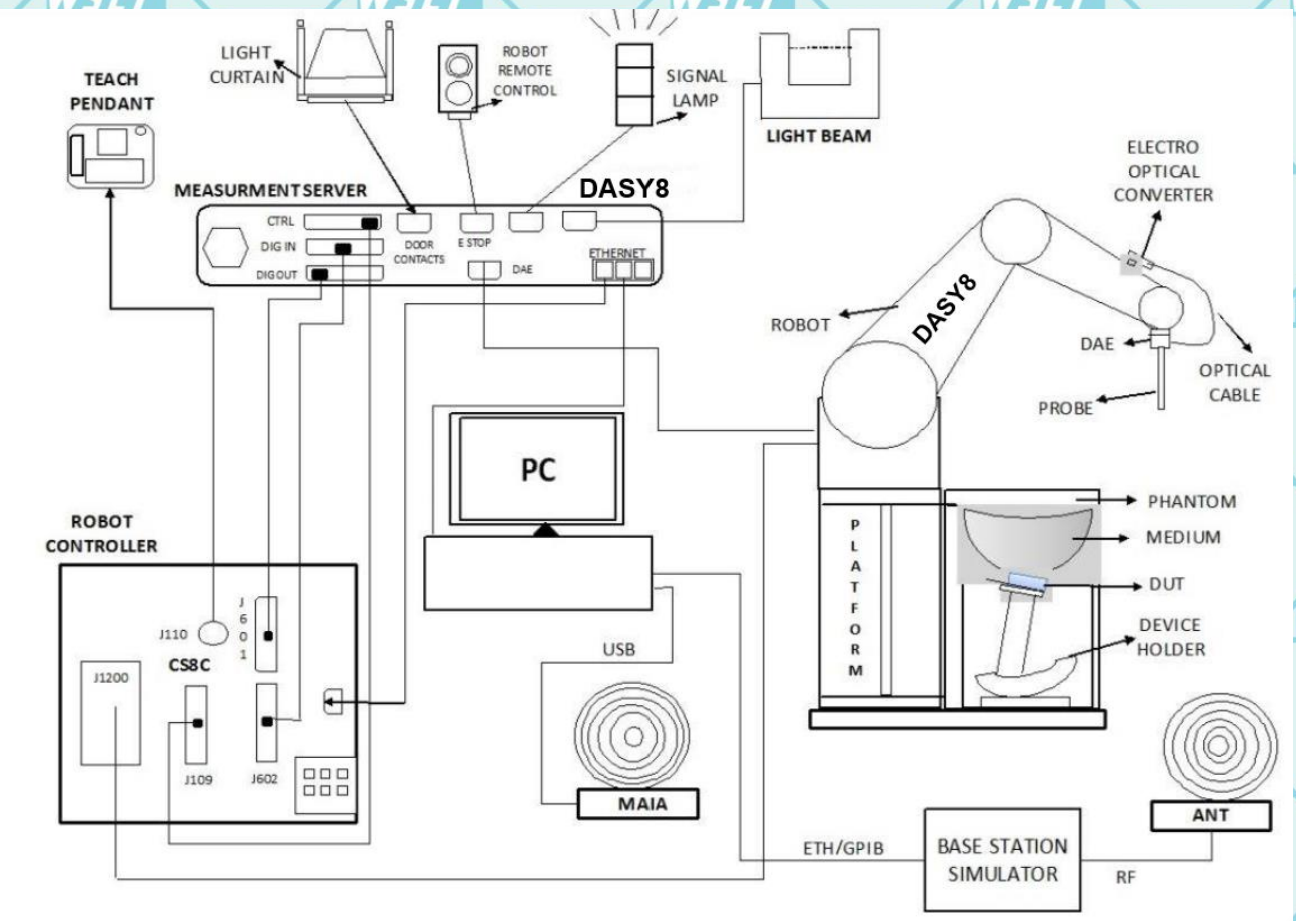
ρ = mass density of the tissue (kg/m^3)

E = rms electric field strength (V/m)

7 SAR Measurement System

7.1 The Measurement System

DASY8 is a flexible, high-precision near-field scanner optimized for automated measurements in free-space and tissue simulating liquids (TSL), using the most advanced probes covering the frequency range from 3 kHz to 110 GHz. The software enables point, area, and volume measurements and conformal scanning of complex geometries.



The DASY8 SAR module consists of an isotropic dosimetric probe (SAR) mounted on the TX2 precision robot, which allows field scanning inside anthropomorphic phantoms filled with tissue-simulating liquids. The probes are miniaturized, sensitive, isotopic, linear, stable and calibrated with precise boundary compensation. The spatial accuracy of probe positioning within the phantom is better than 0.2 mm. Scanning is optimized and adaptive to the induced field. The spatial SAR peak is determined without reconstruction.

7.2 Robot

The DASY8 system uses the high-precision industrial robots TX2-60L and TX2-90XL from Stäubli SA (France). The TX2 family of robots provides the ideal combination of speed, rigidity, size, and precision:

- High precision (repeatability 0.03 mm)
- High reliability and low maintenance costs (industrial design)
- ELF interference (motor control fields are shielded by the closed metallic construction)
- Hygienic encapsulated 6-axis arm enabled by a hollow shaft gearbox, no external cables.

7.3 Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and callbrated for use in liquid with high pemitivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

For the measurements the Specific Dosimetric E-Field Probe EX3DV4-SN:7895&7391 with following specifications is used

Frequency: 4MHz – 10GHz ;
Linearity: ±0.2dB (30MHz – 10GHz)

Dynamic Range: 10μW/g–>100 mW/g
Linearity: ±0.2dB (noise: typically <1μW/g)

Directivity (typical): ±0.1 dB in TSL (rotation around probe axis)
±0.3 dB in TSL (rotation normal to probe axis)

Sensor Arrangement	Triangular
Connector Angle	46.9°
Probe Overall Length	337mm
Probe Body Diameter	10mm
Tip Length	9mm
Tip Diameter	2.5mm
Probe Tip to Sensor X Calibration Point	1mm
Probe Tip to Sensor Y Calibration Point	1mm
Probe Tip to Sensor Z Calibration Point	1mm
Recommended Measurement Distance from Surface	1.4mm

5G Power Density Probe:EUmmWV4-SN:9430

E-Field mm-Wave Probe for General Near-Field Measurements

Frequency: 750MHz – 110GHz

Dynamic Range:<20 V/m – 10'000 V/m with PRE-10 (min <20 V/m – 2000 V/m)

Overall length: 320 mm (tip: 20 mm)

Tip diameter: encapsulation 8 mm (internal sensor <1mm)

Distance from probe tip to dipole centers: <2 mm

Sensor displacement to probe's calibration point: <0.3 mm

Two dipoles optimally arranged to obtain pseudo-vector information

Minimum three measurements/point, 120º rotated around probe axis

Sensors (0.8 mm length) printed on glass substrate protected by high density foam

Low perturbation of the measured field

Requires positioner which can do accurate probe rotation

7.4 DAE

DAE4ip– Data Acquisition Electronics 4 with Integrated Power

Data Acquisition Electronics 4 with an integrated power supply for time unlimited measurements.

Performance:

- Measurement range: -100–+300 mV (16-bit resolution and two range settings: 4 mV, 400 mV)
- Input offset voltage:<5μV (with auto zero)
- Input resistance:200MOhm
- Input bias current:<50 FA
- Power supply: integrated (from the DASY8 measurement server)
- Dimensions(L × W × H):60×60×68 mm
- Calibration: ISO/IEC 17025 calibration service available.

7.5 Phantom

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEC/IEEE 62209-1528. 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 the liquid from evaporating. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

Material	Vinyl ester, fiberglass reinforced (VE-GF)
Liquid Compatibility	The phantom shell is compatible with SPEAG's tissue-simulating liquids (sugar and oil-based). However, using other liquids may render the phantom warranty void (see note or consult SPEAG support).
Shell Thickness	2 ± 0.2mm (6 ± 0.2mm at ear point)
Dimensions (incl. Wooden Support)	Length:1000 mm Width: 500 mm Height: adjustable feet
Filling Volume	approx.25 liters
Support	DASY6/8: standard-size platform slot DASY52 stand-alone: SPEAG standard phantom table
Accessories	Mounting Device and Adaptors

mmWave Phantom&DUT Holder

The mmWave phantom has been designed to support EUT during 5G testing. The mmWave phantom approximates free-space conditions, allowing to evaluate not only the antenna side of the device but also the front (screen) or any opposite-radiating side of wireless devices operating above 10 GHz without distorting the radiofrequency (RF) field. It consists of a 40 mm thick Rohacell plate used as a test bed which has a loss tangent (tan δ) ≤0.05 and a relative permittivity (εr) ≤1.2. The high-performance RF absorbers are placed below the foam. The mmWave phantom is designed to be placed into a standard slot of a DASY8 platform.

The solid low-density mmWave device under test (DUT) holder warrants no impact on the DUT radiation performance and an easy positioning of the DUT in a vertical test configuration.

7.6 Device Holder

The DASY instrument holder is designed to accommodate the various positions specified in the standard. It has two scales for instrument rotation (with respect to the body axis) and instrument tilt (with respect to the line between the ear reference points). The center of rotation for both scales is the Ear Reference Point (ERP). This eliminates the need to reposition the instrument when changing angles.

The DASY instrument holder is made of low-loss POM material with the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material in the immediate vicinity of the device was reduced because measurements indicated that the influence of the clamp on the test results could be reduced.

Device holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1°.

7.7 SAR Scan General Requirement

According to kdb865664 D01 v01r04:

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.The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports, unless further guidance has been provided by the FCC.

			≤ 3 GHz	>3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 mm ± 1 mm	½ δ ln(2) mm ±0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area sean spatial resolution: Δ x 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: ΔxZoom , ΔyZoom			≤ 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: Δz Zoom (n)		≤5 mm	3- 4 GHz: ≤4 mm 4- 5 GHz: ≤ 3 mm 5- 6 GHz: ≤ 2 mm
	graded grid	Δ zZoom (1): between 1 st two points closest to phantom surface	≤4 mm	3-4 GHz: ≤ 3 mm 4-5 GHz: ≤ 2.5 mm 5-6 GHz: ≤ 2 mm
		Δ zZoom (n>1): between subsequent points	≤1.5·ΔzZoom (n-1) mm	
Minimum zoom scan volume	x, y,z		≥30 mm	3 -4 GHz: ≥ 28 mm 4- 5 GHz: ≥ 25 mm 5- 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.

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

7.8 Measurement procedure

Power Drift :

All SAR tests were performed with a fully charged battery under the DUT and transmitting at maximum output power. The DASY measurement software uses the power reference measurement and power drift measurement procedures to monitor the power drift of the DUT during SAR testing. Both methods measure the field value at a specified reference position before and after the SAR test. The software calculates the field difference in dB. If the power drift exceeds 5%, the SAR is retested.

Area scan:

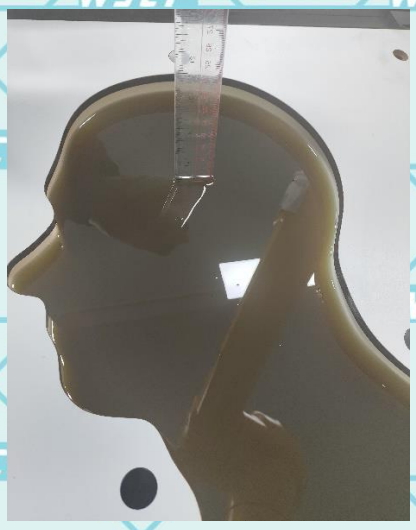
All antennas and radiating structures that may contribute to the measured SAR or influence the SAR distribution must be included in the area scan. The areas of the transmitter(s), antenna(s) and host device, when projected onto the phantom, must be within the area scan measurement region. The area scan measurement resolution must enable the extrapolation algorithms of the SAR system to correctly identify the peak SAR location(s) for subsequent zoom scan measurements to correctly determine the 1-g SAR. Area scans are performed at a constant distance from the phantom surface, determined by the measurement frequencies.

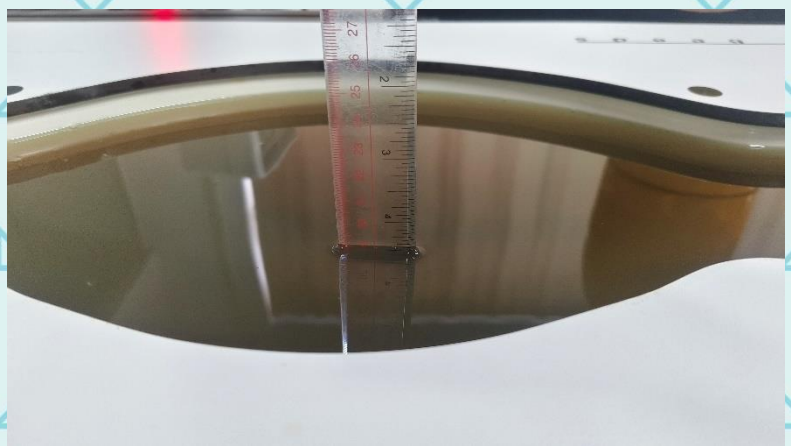
Zoom Scan:

Except when area scan based 1-g SAR estimation applies, a zoom scan measurement is required at the highest peak SAR location determined in the area scan to determine the 1-g SAR. When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR. The zoom scan volume must be larger than the required minimum dimensions described 7.7. There must be at least one measurement point within the first 5 mm from the phantom surface for measurements ≤ 3 GHz, two measurement points for measurements ≤ 5 GHz and three measurement points for measurements above 5 GHz.When graded grids are used, which only applies in the direction normal to the phantom surface, the initial grid separation closest to the phantom surface and subsequent graded grid increment ratios must satisfy the required protocols in 7.7 .The 1-g SAR averaging volume must be fully contained within the zoom scan measurement volume oundaries;otherwise, the measurement must be repeated by shifting or expanding the zoom scan volume. The similar requirements also apply to 10-g SAR measurements.

7.9 Tissue simulating liquids: dielectric properties

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectic parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within ± 5% of the target values.





Simulating Head Liquid for 5G(HBBL600-10000MHz V6), Manufactured by SPEAG:

Ingredients	(% by weight)
Water	50-65%
Mineral oil	10-30%
Emulsifiers	8-25%
Sodium salt	0-1.5%

7.10 Tissue simulating liquids: parameters

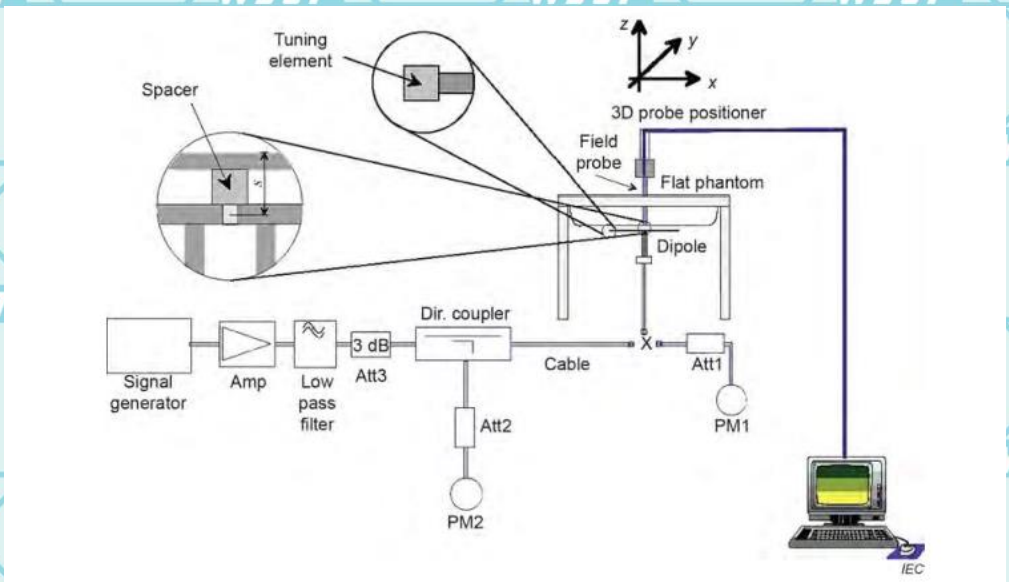
Used Target Frequency	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
	ε_r (+/-5%)	σ (S/m) (+/-5%)	ε_r	σ (S/m)		
2450MHz Head	39.20 (37.24~41.16)	1.80 (1.71~1.89)	40.27	1.82	21.6°C	2025-07-31
2550MHz Head	39.10 (37.15~41.05)	1.91 (1.82~2.01)	40.80	1.90	21.6°C	2025-08-02
5200MHz Head	36.00 (34.20~37.80)	4.66 (4.43~4.89)	36.30	4.54	21.6°C	2025-08-05
5500MHz Head	35.60 (33.82~37.38)	4.96 (4.71~5.20)	35.80	4.88	21.6°C	2025-08-08
5800MHz Head	35.30 (33.54~37.06)	5.27 (5.01~5.53)	35.30	5.23	21.6°C	2025-08-12
6.5GHz Head	34.5 (32.78~36.22)	6.07 (33.54~37.06)	34.00	6.08	21.6°C	2025-08-15-
ε_r= Relative permittivity, σ= Conductivity						

8 System Check

8.1 System check procedure

The System check is performed by using a System check dipole which is positioned parallel to the planar part of the SAM phantom at the reference point. The distance of the dipole to the SAM phantom is determined by a spacer. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100 mW. To adjust this power a power meter is used. The power sensor is connected to the cable before the System check to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the validation to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

System check results have to be equal or near the values determined during dipole calibration (target SAR in table above) with the relevant liquids and test system.



8.2 System check results

The system Check is performed for verifying the accuracy of the complete measurement system and performance of the software.The following table shows System check results for all frequency bands and tissue liquids used during the tests (plot(s) see annex A).

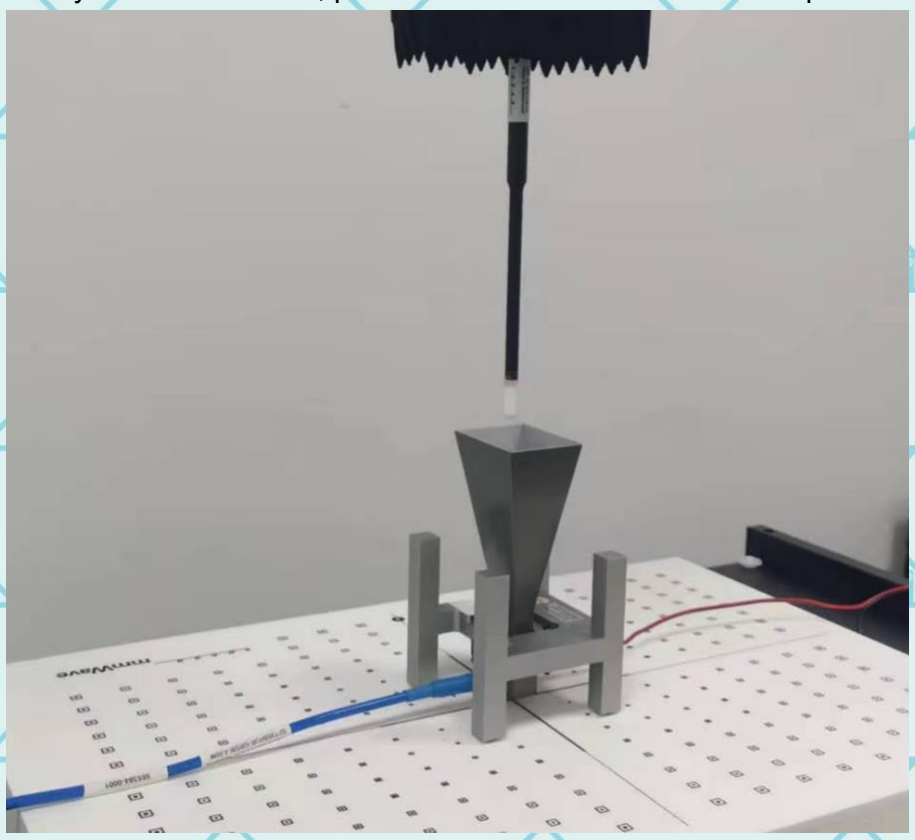
System Check	Target SAR (1W) (+/-10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/kg)	10-g (W/kg)	1-g (W/kg)	10-g (W/kg)		
D2550V2 Body	54.10 (48.69~59.51)	24.70 (22.23~27.17)	55.80	25.60	21.6°C	2025-08-02
D5200V2 Body	76.00 (68.40~83.60)	22.00 (19.80~24.20)	71.70	20.70	21.6°C	2025-08-05
D5300V2 Body	80.60 (72.54~88.66)	23.30 (20.97~25.63)	80.80	23.10	21.6°C	2025-08-05
D5500V2 Body	85.60 (77.04~94.16)	24.50 (22.05~26.95)	79.00	22.50	21.6°C	2025-08-08
D5600V2 Body	83.30 (74.97~91.63)	24.10 (21.69~26.51)	78.70	22.40	21.6°C	2025-08-08
D5800V2 Body	79.00 (71.10~86.90)	22.70 (20.43~24.97)	77.60	22.00	21.6°C	2025-08-12
D6.5GHzV2 Body	298.00 (268.20~327.80)	54.90 (49.41~60.39)	290.00	54.40	21.6°C	2025-08-15

Note: 1.All SAR values are normalized to 1W forward power.
2. The actual forward power output to the dipole antenna is 20dbm(100mw), so the measured value differs ten times from the table

8.3 Power Density Test System Verification

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



System Verification Setup Photo

Frequency (GHz)	PD Verification Source	Distance (mm)	Measured 4cm^2 (W/m^2)	Target 4cm^2 (W/m^2)	Deviation (dB)	Measured Date
10G	10GHz_1075	10	55.30	57.00	-0.13	2025-02-21
10G	10GHz_1075	10	55.60	57.00	-0.11	2025-02-21

Detailed System Check Results Please see the annex A.

9 SAR Test Test Configuration

9.1 Wi-Fi Test Configuration

For the 802.11b/g SAR tests, a communication link is set up with the test mode software for Wi-Fi mode test. The Absolute Radio Frequency Channel Number(ARFCN) is allocated to 1 ,6 and 11 respectively in the case of 2450 MHz.During the test,at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate. 802.11b/g operating modes are tested independently according to the service requirements in each frquency band. 802.11b/g modes are tested on channel 1, 6, 11; however,if output power reduction is necessary for channels 1 and/or 11 to meet restricted band requirements the highest output channel closest to each of these channels must be tested instead.

SAR is not required for 802.11g/n channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels.

Mode	Band	GHz	Channel	"Default Test Channels"	
				802.11b	802.11g
802.11b/g	2.4 GHz	2412	1#	√	△
		2437	6	√	△
		2462	11#	√	△

Notes:

√ = "default test channels"

△= possible 802.11g channels with maximum average output ¼ dB the "default test channels"

= when output power is reduced for channel 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested.

802.11 Test Channels per FCC Requirements

9.2 WiFi 5G SAR Test Procedures

A)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 theband 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.

B)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.

C)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 thesame specified maximum output power.

2)If multiple configurations have the same specified maximum output power and largest channelbandwidth, 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 bandwidthand 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.

1)The channel closest to mid-band frequency is selected for SAR measurement.

2)For channels with equal separation from mid-band frequency; for example, high and low channels ortwo mid-band channels, the higher frequency (number) channel is selected for SAR measurement.

D)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.

9.3 RF Exposure Limits for Frequencies Above 6 GHz

Per §1.1310 (d)(3),the MPE limits are applied for frequencies above 6 GHz. Power Density isexpressed in unitsof W/m² or mW/cm².

Peak Spatially Averaged Power Density was evaluated over a circular area of 4 cm²per interim FCC Guidance fornear-field power density evaluations per October 2018 TCB Workshop notes.

Human Exposure Limits Specified in FCC 47 CFR §1.1310

Human Exposure to Radiofrequency (RF) Radiation Limits		
Frequency Range [MHz]	**Power Density** [mW/cm²]	**Average Time** [Minutes]
(A) Limits For Occupational / Controlled Environments		
1,500 – 100,000	5.0	6
(B) Limits For General Population / Uncontrolled Environments		
1,500 – 100,000	1.0	30

Note: 1.0 mW/cm² is 10 W/m²

9.4 Miscellaneous Testing Considerations

Per FCC guidance,SAR was performed using 6.5 GHz SAR probe calibration factors.FCC KDB 648474 and FCC KDB 248227 were followed for test positions, distances, and modes.Per TCB workshop October 2020notes, 5 channels were tested.Absorbed power density (APD) using a 4cm² averagingarea is reported based onSAR measurements. Incident power density is evaluated at 2mm ensuring that the resolution is sufficient suchthat integrated power density (iPD) between d=2mm and d=15mmvaries by < 1dB per equipment manufacturerguidance.Power density results are scaled up foruncertainty above 30%.

Per FCC KDB Publication 648474 D04v01r03, this device is considered a "phablet" since the diagonal dimensionis greater than 160mm and less than200mm.Therefore, phablet SAR tests are required when wireless routermode does not apply or if wireless router 1g SAR> 1.2 W/kg.

6 GHz WIFI SAR results are used for simultaneous transmission analysis with the other transmitters and totalexposure ratio(TER).Analysis can be found in SAR report and Near Field PD Report.

10 Detailed Test Results

10.1 Conducted Power measurements

The measuring conducted average power(Uni t:dBm) is shown as below.

10.1.1 Conducted Power of Wi-Fi 2.4G

MAIN ANT1

Mode	802.11b		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	11.78	11.45	11.59
Mode	802.11g		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBM)	13.80	13.40	13.45
Mode	802.11n(HT20)		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBM)	13.52	13.51	13.51
Mode	802.11n(HT40)		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	13.58	13.62	13.43
Mode	802.11ax 20		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	13.74	13.59	13.40
Mode	802.11ax 40		
Channel/Frequency(MHz)	3(2422)	6(2437)	9(2452)
Average Power(dBm)	13.58	13.48	13.29

AUX ANT2

Mode	802.11b		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	11.61	11.27	11.53
Mode	802.11g		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBM)	13.70	13.11	13.53
Mode	802.11n(HT20)		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBM)	13.30	13.43	13.45
Mode	802.11n(HT40)		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	13.42	13.13	13.39
Mode	802.11ax 20		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	13.37	13.24	12.95
Mode	802.11ax 40		
Channel/Frequency(MHz)	3(2422)	6(2437)	9(2452)
Average Power(dBm)	13.34	13.50	13.36

MIMO Mode

Mode	802.11n(HT20)		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBM)	11.61	11.27	16.42
Mode	802.11n(HT40)		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	16.48	16.49	16.51
Mode	802.11ax 20		
Channel/Frequency(MHz)	1(2412)	6(2437)	11(2462)
Average Power(dBm)	16.39	16.42	16.57
Mode	802.11ax 40		
Channel/Frequency(MHz)	3(2422)	6(2437)	9(2452)
Average Power(dBm)	16.43	16.19	16.47

<KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters>

(1) For handsets operating next to ear, hotspot mode or mini-tablet configurations, the initial test position procedures were applied. The test position with the highest extrapolated peak SAR will be used as the initial test position. When the reported SAR of initial test position is <= 0.4 W/kg, SAR testing for remaining test positions is not required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR result is <= 0.8 W/kg or all test positions are measured.

(2) For Wi-Fi 2.4 GHz, the highest measured maximum output power channel for DSSS was selected for SAR measurement. When the reported SAR is <= 0.8 W/kg, no further SAR testing is required. Otherwise, SAR is evaluated at the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and it is <= 1.2 W/kg.

10.1.2 Conducted Power of Wi-Fi 5G

Ant 1						
Band	Mode	Channel	Frequency(MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-1 (5150-5250)	802.11a	36	5180	10.50±1.0	10.19	No
		48	5240	10.50 ±1.0	10.13	No
	802.11n-HT20	36	5180	10.50 ±1.0	10.46	No
		48	5240	10.50 ±1.0	10.17	No
	802.11n-HT40	38	5190	9.00 ±1.0	8.51	No
		46	5230	9.00 ±1.0	8.72	No
	802.11ac-VHT20	36	5180	11.00 ±1.0	10.63	No
		48	5240	11.50 ±1.0	11.46	No
	802.11ac-VHT40	38	5190	8.50 ±1.0	8.10	No
		46	5230	8.50 ±1.0	8.29	No
	802.11ac-VHT80	42	5210	9.00 ±1.0	8.58	No
	802.11ax-HT20	36	5180	10.00 ±1.0	9.53	No
		48	5240	9.50 ±1.0	9.48	No
	802.11ax-HT40	38	5190	15.50 ±1.0	15.20	No
		46	5230	15.50 ±1.0	15.21	Yes
	802.11ax-HT80	42	5210	11.00 ±1.0	10.91	No
	802.11ax- HT160	50	5250	15.00 ±1.0	14.79	No
Ant 2						
Band	Mode	Channel	Frequency(MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-1 (5150-5250)	802.11a	36	5180	13.50 ±1.0	13.20	No
		48	5240	13.00 ±1.0	12.95	No
	802.11n-HT20	36	5180	13.00 ±1.0	12.99	No
		48	5240	13.50 ±1.0	13.09	No
	802.11n-HT40	38	5190	15.00 ±1.0	14.76	No
		46	5230	15.00 ±1.0	14.92	No
	802.11ac-VHT20	36	5180	15.50 ±1.0	15.27	No
		48	5240	15.00 ±1.0	14.69	No
	802.11ac-VHT40	38	5190	15.00 ±1.0	14.85	No
		46	5230	15.00 ±1.0	14.87	No
	802.11ac-VHT80	42	5210	15.00 ±1.0	14.70	No
	802.11ax-HT20	36	5180	13.50 ±1.0	13.31	No
		48	5240	13.50 ±1.0	13.30	No
	802.11ax-HT40	38	5190	15.50 ±1.0	15.40	No
		46	5230	15.00 ±1.0	14.74	No
	802.11ax-HT80	42	5210	15.50 ±1.0	15.37	No
	802.11ax- HT160	50	5250	15.50 ±1.0	15.45	Yes
MIMO						
Band	Mode	Channel	Frequency(MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-1 (5150-5250)	802.11n-HT20	36	5180	17.50 ±1.0	17.43	No
		48	5240	17.50 ±1.0	17.39	No
	802.11n-HT40	38	5190	19.00 ±1.0	18.71	No
		46	5230	19.00 ±1.0	18.89	No
	802.11ac-VHT20	36	5180	18.50 ±1.0	18.27	No
		48	5240	18.50 ±1.0	18.34	No
	802.11ac-VHT40	38	5190	18.50 ±1.0	18.45	No
		46	5230	18.50 ±1.0	18.32	No
	802.11ac-VHT80	42	5210	19.00 ±1.0	18.61	No
	802.11ax-HT20	36	5180	18.00 ±1.0	17.80	No
		48	5240	18.00 ±1.0	17.92	No
	802.11ax-HT40	38	5190	18.50 ±1.0	18.31	No
		46	5230	18.00 ±1.0	17.99	No
	802.11ax-HT80	42	5210	19.00 ±1.0	18.97	Yes
	802.11ax- HT160	50	5250	18.50 ±1.0	18.31	No

Ant 1						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-2a (5250-5350)	802.11a	52	5260	10.00 ±1.0	9.93	No
		64	5320	11.00 ±1.0	10.54	No
	802.11n-HT20	52	5260	10.50 ±1.0	10.08	No
		64	5320	10.00 ±1.0	9.93	No
	802.11n-HT40	54	5270	9.00 ±1.0	8.76	No
		62	5310	15.50 ±1.0	15.08	No
	802.11ac-VHT20	52	5260	11.00 ±1.0	10.95	No
		64	5320	9.50 ±1.0	9.10	No
	802.11ac-VHT40	54	5270	10.00 ±1.0	9.92	No
		62	5310	8.50 ±1.0	8.42	No
	802.11ac-VHT80	58	5290	7.50 ±1.0	7.24	No
	802.11ax-HT20	52	5260	9.50 ±1.0	9.33	No
		64	5320	14.00 ±1.0	13.54	No
	802.11ax-HT40	54	5270	15.00 ±1.0	14.87	No
		62	5310	15.50 ±1.0	15.28	Yes
	802.11ax-HT80	58	5290	12.00 ±1.0	11.62	No
Ant 2						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-2a (5250-5350)	802.11a	52	5260	13.00 ±1.0	12.92	No
		64	5320	13.50 ±1.0	13.31	No
	802.11n-HT20	52	5260	13.00 ±1.0	12.84	No
		64	5320	13.00 ±1.0	12.73	No
	802.11n-HT40	54	5270	15.50 ±1.0	15.21	No
		62	5310	15.00 ±1.0	14.84	No
	802.11ac-VHT20	52	5260	15.50 ±1.0	15.34	No
		64	5320	15.00 ±1.0	14.79	No
	802.11ac-VHT40	54	5270	15.00 ±1.0	14.89	No
		62	5310	15.50 ±1.0	15.16	No
	802.11ac-VHT80	58	5290	14.50 ±1.0	14.36	No
	802.11ax-HT20	52	5260	14.00 ±1.0	13.52	No
		64	5320	13.50 ±1.0	13.30	No
	802.11ax-HT40	54	5270	16.00 ±1.0	15.52	Yes
		62	5310	15.50 ±1.0	15.23	No
	802.11ax-HT80	58	5290	15.00 ±1.0	14.88	No
MIMO						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-2a (5250-5350)	802.11n-HT20	52	5260	17.00 ±1.0	16.82	No
		64	5320	17.00 ±1.0	16.70	No
	802.11n-HT40	54	5270	19.50 ±1.0	19.08	No
		62	5310	18.00 ±1.0	17.97	No
	802.11ac-VHT20	52	5260	18.50 ±1.0	18.45	No
		64	5320	18.50 ±1.0	18.30	No
	802.11ac-VHT40	54	5270	18.50 ±1.0	18.39	No
		62	5310	19.50 ±1.0	19.41	Yes
	802.11ac-VHT80	58	5290	19.00 ±1.0	18.63	No
	802.11ax-HT20	52	5260	17.00 ±1.0	16.67	No
		64	5320	16.50 ±1.0	16.43	No
	802.11ax-HT40	54	5270	18.50 ±1.0	18.22	No
		62	5310	18.50 ±1.0	18.27	No
	802.11ax-HT80	58	5290	19.00 ±1.0	18.77	No

Ant 1						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-2c (5470-5725)	802.11a	100	5500	10.50 ±1.0	10.02	No
		140	5700	10.50 ±1.0	10.24	No
	802.11n-HT20	100	5500	10.50 ±1.0	10.43	No
		140	5700	11.00 ±1.0	10.80	No
	802.11n-HT40	102	5510	16.00 ±1.0	15.53	No
		134	5670	10.00 ±1.0	9.69	No
	802.11ac-VHT20	100	5500	11.00 ±1.0	10.86	No
		140	5700	11.50 ±1.0	11.25	No
	802.11ac-VHT40	102	5510	3.50 ±1.0	3.11	No
		134	5670	13.50 ±1.0	13.10	No
	802.11ac-VHT80	106	5530	3.00 ±1.0	2.77	No
		122	5610	7.50 ±1.0	7.18	No
	802.11ax-HT20	100	5500	10.00 ±1.0	9.64	No
		140	5700	10.00 ±1.0	9.56	No
	802.11ax-HT40	102	5510	16.00 ±1.0	15.53	Yes
		134	5670	15.50 ±1.0	15.42	No
	802.11ax-HT80	106	5530	15.00 ±1.0	14.97	No
		122	5610	15.00 ±1.0	14.83	No
	802.11ax- HT160	114	5570	15.00 ±1.0	14.76	No

Ant 2						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power(dBm)	SAR Test(Yes/No)
U-NII-2c (5470-5725)	802.11a	100	5500	13.00 ±1.0	12.80	No
		140	5700	13.50 ±1.0	13.37	No
	802.11n-HT20	100	5500	13.50 ±1.0	13.15	No
		140	5700	13.00 ±1.0	12.78	No
	802.11n-HT40	102	5510	15.50 ±1.0	15.19	No
		134	5670	15.00 ±1.0	14.74	No
	802.11ac-VHT20	100	5500	15.50 ±1.0	15.20	No
		140	5700	15.50 ±1.0	15.17	No
	802.11ac-VHT40	102	5510	15.50 ±1.0	15.31	No
		134	5670	15.00 ±1.0	14.99	No
	802.11ac-VHT80	106	5530	14.50 ±1.0	14.50	No
		122	5610	15.50 ±1.0	15.49	Yes
	802.11ax-HT20	100	5500	13.50 ±1.0	13.10	No
		140	5700	14.00 ±1.0	13.57	No
	802.11ax-HT40	102	5510	15.00 ±1.0	14.80	No
		134	5670	15.00 ±1.0	14.95	No
	802.11ax-HT80	106	5530	15.00 ±1.0	14.88	No
		122	5610	15.50 ±1.0	15.29	No
	802.11ax- HT160	114	5570	15.50 ±1.0	15.09	No

MIMO						
Band	Mode	Channel	Frequency (MHz)	Tune-up	AveragePower(dBm)	SAR Test(Yes/No)
U-NII-2c (5470-5725)	802.11n-HT20	100	5500	17.50 ±1.0	17.15	No
		140	5700	17.00 ±1.0	16.62	No
	802.11n-HT40	102	5510	18.50 ±1.0	18.37	No
		134	5670	18.50 ±1.0	18.03	No
	802.11ac-VHT20	100	5500	18.50 ±1.0	18.36	No
		140	5700	19.50 ±1.0	19.26	No
	802.11ac-VHT40	102	5510	19.50 ±1.0	19.09	No
		134	5670	19.00 ±1.0	18.74	No
	802.11ac-VHT80	106	5530	19.00 ±1.0	18.83	No
		122	5610	20.50 ±1.0	20.07	Yes
	802.11ax-HT20	100	5500	17.50 ±1.0	17.44	No
		140	5700	18.00 ±1.0	17.68	No
	802.11ax-HT40	102	5510	18.50 ±1.0	18.19	No
		134	5670	18.50 ±1.0	18.20	No
	802.11ax-HT80	106	5530	18.00 ±1.0	17.94	No
		122	5610	18.50 ±1.0	18.08	No
	802.11ax- HT160	114	5570	18.00 ±1.0	17.94	No

Ant 1						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Powe(dBm)	SAR Test(Yes/No)
U-NII-3 (5725-5825)	802.11a	149	5745	3.50 ±1.0	3.27	No
		165	5825	3.50 ±1.0	3.20	No
	802.11n-HT20	149	5745	3.50 ±1.0	3.11	No
		165	5825	3.00 ±1.0	2.91	No
	802.11n-HT40	151	5755	6.00 ±1.0	5.97	Yes
		159	5795	6.00 ±1.0	5.61	No
	802.11ac-VHT20	149	5745	1.00 ±1.0	0.99	No
		165	5825	2.00 ±1.0	1.52	No
	802.11ac-VHT40	151	5755	6.00 ±1.0	5.74	No
		159	5795	6.00 ±1.0	5.64	No
	802.11ac-VHT80	155	5775	5.50 ±1.0	5.13	No
	802.11ax-HT20	149	5745	1.50 ±1.0	1.17	No
		165	5825	2.00 ±1.0	1.79	No
	802.11ax-HT40	151	5755	5.50 ±1.0	5.47	No
		159	5795	6.00 ±1.0	5.67	No
	802.11ax-HT80	155	5775	5.50 ±1.0	5.38	No
Ant 2						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Powe(dBm)	SAR Test(Yes/No)
U-NII-3 (5725-5825)	802.11a	149	5745	5.00 ±1.0	4.98	No
		165	5825	5.00 ±1.0	4.85	No
	802.11n-HT20	149	5745	6.00 ±1.0	5.64	No
		165	5825	5.50 ±1.0	5.25	No
	802.11n-HT40	151	5755	5.50 ±1.0	5.42	No
		159	5795	5.50 ±1.0	5.37	No
	802.11ac-VHT20	149	5745	5.50 ±1.0	5.49	No
		165	5825	6.00 ±1.0	5.68	No
	802.11ac-VHT40	151	5755	6.00 ±1.0	5.64	No
		159	5795	5.50 ±1.0	5.42	No
	802.11ac-VHT80	155	5775	6.00 ±1.0	5.59	No
	802.11ax-HT20	149	5745	6.00 ±1.0	5.81	Yes
		165	5825	5.50 ±1.0	5.45	No
	802.11ax-HT40	151	5755	5.00 ±1.0	4.70	No
		159	5795	5.50 ±1.0	5.06	No
	802.11ax-HT80	155	5775	5.50 ±1.0	5.37	No
MIMO						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Powe(dBm)	SAR Test(Yes/No)
U-NII-3 (5725-5825)	802.11n-HT20	149	5745	9.00 ±1.0	8.87	No
		165	5825	9.00 ±1.0	8.58	No
	802.11n-HT40	151	5755	9.00 ±1.0	8.71	No
		159	5795	8.50 ±1.0	8.50	No
	802.11ac-VHT20	149	5745	9.50 ±1.0	9.36	No
		165	5825	10.00 ±1.0	9.68	Yes
	802.11ac-VHT40	151	5755	9.00 ±1.0	8.70	No
		159	5795	9.00 ±1.0	8.54	No
	802.11ac-VHT80	155	5775	8.50 ±1.0	8.38	No
	802.11ax-HT20	149	5745	10.00 ±1.0	9.65	No
		165	5825	9.50 ±1.0	9.20	No
	802.11ax-HT40	151	5755	8.50 ±1.0	8.35	No
		159	5795	9.00 ±1.0	8.63	No
	802.11ax-HT80	155	5775	8.50 ±1.0	8.39	No

<KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters>

For WLAN 5 GHz, the initial test configuration was selected according to the transmission mode with thehighest maximum output power. When the reported SAR of initial test configuration is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SAR result is <= 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and it is <= 1.2 W/kg.

10.1.3 Conducted Power of Wi-Fi 6E

ANT 1						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
Wi-Fi 6E	802.11ax-HE20	1	5955	5.00	4.75	No
		45	6175	4.50	4.26	No
		117	6535	5.00	4.71	No
		185	6875	5.00	4.91	No
		229	7095	10.50	10.13	No
	802.11ax-HE40	3	5965	5.50	5.14	No
		43	6165	5.50	5.45	No
		115	6525	5.50	5.41	No
		179	6845	6.00	5.60	No
		227	7085	6.00	5.84	No
	802.11ax-HE80	7	5985	11.00	10.81	No
		39	6145	11.50	11.06	No
		103	6465	5.00	4.59	No
		151	6705	5.00	4.74	No
		215	7025	5.50	5.13	No
	802.11ax-HE160	15	6025	4.50	4.20	Yes
		47	6185	11.50	11.17	Yes
		111	6505	10.50	10.06	Yes
		175	6825	-5.50	-5.63	Yes
		207	6985	3.50	3.46	Yes

ANT2						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
Wi-Fi 6E	802.11ax-HE20	1	5955	10.50	10.46	No
		45	6175	10.00	9.99	No
		117	6535	11.00	10.54	No
		185	6875	10.50	10.35	No
		229	7095	11.00	10.78	No
	802.11ax-HE40	3	5965	11.00	10.89	Yes
		43	6165	11.50	11.21	Yes
		115	6525	12.00	11.70	Yes
		179	6845	11.50	11.13	Yes
		227	7085	12.00	11.93	Yes
	802.11ax-HE80	7	5985	12.00	11.65	No
		39	6145	11.50	11.33	No
		103	6465	11.50	11.15	No
		151	6705	11.50	11.35	No
		215	7025	11.50	11.35	No
	802.11ax-HE160	15	6025	12.00	11.87	No
		47	6185	12.00	11.65	No
		111	6505	12.00	11.66	No
		175	6825	11.50	11.33	No
		207	6985	12.00	11.66	No

MIMO mode						
Band	Mode	Channel	Frequency (MHz)	Tune-up	Average Power (dBm)	SAR Test (Yes/No)
Wi-Fi 6E	802.11ax-HE20	1	5955	14.00	13.72	No
		45	6175	13.50	13.25	No
		117	6535	14.00	13.64	No
		185	6875	14.00	13.61	No
		229	7095	13.50	13.48	No
	802.11ax-HE40	3	5965	14.00	13.69	No
		43	6165	14.00	13.98	No
		115	6525	15.50	15.20	No
		179	6845	15.00	14.73	No
		227	7085	15.50	15.46	No
	802.11ax-HE80	7	5985	14.50	14.26	No
		39	6145	14.50	14.25	No
		103	6465	14.50	14.35	No
		151	6705	15.00	14.53	No
		215	7025	14.50	14.20	No
	802.11ax-HE160	15	6025	16.00	15.82	Yes
		47	6185	14.50	14.43	Yes
		111	6505	16.00	15.58	Yes
		175	6825	15.50	15.27	Yes
		207	6985	14.50	14.06	Yes

Note:

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

2. Batteries are fully charged at the beginning of the measurements. The DUT was connected to a wallcharger for some measurements due to the test duration. It was confirmed that the charger plugged intothis DUT did not impact the near-field PD test results.

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

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

5. Per FCC guidance and equipment manufacturer guidance, power density results were scaled accordingto IEC 62479:2010 for the portion of the measurement uncertainty > 30%. Total expanded uncertainty of2.66 dB (84.5%) was used to determine thepsPD measurement scaling factor.

6. Per equipment manufacturer guidance, power density was measured at d=2mm and d=N/5mm using thesame grid size and grid step sizefor some frequencies and surfaces. The integrated Power Density (iPD)was calculated based on these measurements.Since iPD ratiobetween the two distances is < 1dB, thegrid step was sufficient for determining compliance at d=2mm.

7.psPD for MIMO was evaluated by making a measurement with both antennas transmitting simultaneously.

10.2 Conducted Power of BT

EDR	Mode	Maximum Tune-up(dBm)	Average Conducted Output Power (dBm)		
			0	39	78
			2402MHz	2441MHz	2480MHz
	GFSK	12.00	11.80	11.02	11.27
	π/4QPSK	9.00	8.65	8.92	8.23
	8DPSK	9.00	8.67	7.92	7.23
BLE	**Mode**	**Maximum Tune-up(dBm)**	**Average Conducted Output Power (dBm)**		
			0	19	39
			2402MHz	2440MHz	2480MHz
	1Mbps	7.00	6.98	6.23	6.44
	2Mbps	7.00	6.85	6.25	6.46

Channel	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Power (dBm)	Exclusion thresholds for 1-g SAR(dBm)	SAR evaluation required
0	2402	12.00	11.80	4.77	Yes
0	2402	7.00	6.98	4.77	Yes

Note

1. Per KDB 447498 D04 Interim General RF Exposure Guidance v01, the 1-g SAR test exclusion thresholds for 300 MHz to 6 GHz at test separation distances ≤ 40 cm are determined by:

$$P_{\text{th}}\,(\text{mW}) = ERP_{20\,\text{cm}}\,(\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases} \quad \text{(B. 1)}$$

$$P_{\text{th}}\,(\text{mW}) = \begin{cases} ERP_{20\,\text{cm}}(d/20\ \text{cm})^x & d \le 20\ \text{cm} \\ ERP_{20\,\text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases} \quad \text{(B. 2)}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,\text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

*When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine estimated SAR.

2. Per KDB 248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion.

3 . The output power of all data rate were prescan, just the worst case (the lowest data rate) of all mode were shown in report.

10.3 Tune-up powertolerance

Band	Tune-up power tolerance(dBm)			
WIFI	2.4G (MAIN ANT1)		802.11b	Max output power =12.00±1.0dbm
			802.11g	Max output power =14.00±1.0dbm
			802.11n (HT20)	Max output power =14.00±1.0dbm
			802.11n (HT40)	Max output power =14.00±1.0dbm
			802.11ax20	Max output power =14.00±1.0dbm
			802.11ax40	Max output power =14.00±1.0dbm
	2.4G (AUX ANT2)		802.11b	Max output power =12.00±1.0dbm
			802.11g	Max output power =14.00±1.0dbm
			802.11n (HT20)	Max output power =13.50±1.0dbm
			802.11n (HT40)	Max output power =13.50±1.0dbm
			802.11ax20	Max output power =13.50±1.0dbm
			802.11ax40)	Max output power =14.00±1.0dbm
	2.4G (MIMO Mode)		802.11n (HT20)	Max output power =16.50±1.0dbm
			802.11n (HT40)	Max output power =17.00±1.0dbm
			802.11ax20	Max output power =17.00±1.0dbm
			802.11ax40	Max output power =16.50±1.0dbm
	U-NII-1 (5150-5250)	Ant 1	802.11ax-HT40	Max output power =15.50±1.0dbm
		Ant 2	802.11ax- HT160	Max output power =15.50±1.0dbm
		MIMO	802.11ax-HT80	Max output power =19.50±1.0dbm
	U-NII-2a (5250-5350)	Ant 1	802.11ax-HT40	Max output power =15.50±1.0dbm
		Ant 2	802.11ax-HT40	Max output power =16.00±1.0dbm
		MIMO	802.11ac-VHT40	Max output power =20.00±1.0dbm
	U-NII-2c (5470-5725)	Ant 1	802.11ax-HT40	Max output power =16.00±1.0dbm
		Ant 2	802.11ac-VHT80	Max output power =15.50±1.0dbm
		MIMO	802.11ac-VHT80	Max output power =20.50±1.0dbm
	U-NII-3 (5725-5825)	Ant 1	802.11n-HT40	Max output power =6.00±1.0dbm
		Ant 2	802.11ax-HT20	Max output power =6.00±1.0dbm
		MIMO	802.11ac-VHT20	Max output power =10.00±1.0dbm
WIFI 6E	U-NII-5 (5925-6425)	Ant 1	802.11ax-HE160	Max output power =11.50±1.0dbm
		Ant 2	802.11ax-HE40	Max output power =11.50±1.0dbm
		MIMO	802.11ax-HE160	Max output power =16.00±1.0dbm
	U-NII-6 (6425-6525)	Ant 1	802.11ax-HE160	Max output power =10.50±1.0dbm
		Ant 2	802.11ax-HE40	Max output power =12.00±1.0dbm
		MIMO	802.11ax-HE160	Max output power =16.00±1.0dbm
	U-NII-7 (6525-6875)	Ant 1	802.11ax-HE160	Max output power =-5.50±1.0dbm
		Ant 2	802.11ax-HE40	Max output power =11.50±1.0dbm
		MIMO	802.11ax-HE160	Max output power =15.50±1.0dbm
	U-NII-8 (6875-7125)	Ant 1	802.11ax-HE160	Max output power =3.50±1.0dbm
		Ant 2	802.11ax-HE40	Max output power =12.00±1.0dbm
		MIMO	802.11ax-HE160	Max output power =14.50±1.0dbm
BT	GFSK mode			Max output power =12.00±1.0dbm
	Pi/4DQPSK mode			Max output power =9.00±1.0dbm
	8DPSK mode			Max output power =9.00±1.0dbm
BLE	1Mbps Power			Max output power =7.00±1.0dbm
	2Mbps Power			Max output power =7.00±1.0dbm

11 SAR test results

Notes:

1) Per KDB447498,the SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the scaled SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8 W/kg), testing at the high and low channels is optional.

2) Per KDB447498, 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: ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz. When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.

3)Per KDB447498, All measurement SAR result is scaled-up to account for tune-up tolerance is compliant.

4) Per KDB648474 D04v01r03, body-worn accessory testing is typically associated with voice operations. Therefore, GSM voice was evaluated for body-worn with headset SAR.

5)Per KDB248227 D01v02r02,the procedures required to establish specific device operating configurations for testing the SAR of 802.11 a/b/g transmitters.

6) Per KDB865664 D01v01r04,for each frequency band,repeated SAR measurement is required only when the measured SAR is ≥0.8W/Kg; if the deviation among the repeated measurement is ≤20%,and the measured SAR <1.45W/Kg,only one repeated measurement is required.

7) Per KDB865664 D02v01r02, SAR plot is only required for the highest measured SAR in each exposure configuration, wireless mode and frequency band combination; Plots are also required when the measured SAR is > 1.5 W/kg, or > 7.0 W/kg for occupational exposure. The published RF exposure KDB procedures may require additional plots; for example, to support SAR to peak location separation ratio test exclusion and/or volume scan post-processing(Refer to appendix B for details).

8) Per KDB6162147 D04v01r02, the SAR requirements for laptop and tablet computers, and its to determine the minimum test separation distance .

11.1 Results overview of Wi-Fi

11.1.1 Results overview of Wi-Fi 2.4G

Mode	Test Position of Body with 0mm	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor
			1-g	10-g					
WLAN2.4g(gap 0mm)									
802.11g MAIN ANT1	Front	1/2412	0.470	0.215	0.000	13.80	14.00	0.492	1.047
	Back	1/2412	0.707	0.326	-0.020	13.80	14.00	0.740	1.047
	Top	1/2412	0.490	0.215	0.030	13.80	14.00	0.513	1.047
802.11g AUX ANT2	Front	1/2412	0.411	0.204	0.080	13.70	14.00	0.440	1.072
	Back	1/2412	0.502	0.473	0.040	13.70	14.00	0.538	1.072
	Top	1/2412	0.764	0.341	0.020	13.70	14.00	0.819	1.072
802.11ax 20 MIMO	Front	1/2412	1.000	0.306	0.060	16.57	17.00	1.104	1.104
	Back	1/2412	0.747	0.352	0.010	16.57	17.00	0.825	1.104
	Top[	1/2412	0.586	0.265	0.020	16.57	17.00	0.647	1.104

11.1.2 Results overview of Wi-Fi 5G

Mode	Test Position of Body with 0mm	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor
			1-g	10-g					
WLAN5.2g(gap 0mm)									
802.11ax-HT40 ANT1	Front	46/5230	1.230	0.342	0.040	15.21	15.50	1.315	1.069
	Back	46/5230	0.763	0.248	-0.010	15.21	15.50	0.816	1.069
	Top	46/5230	0.510	0.182	-0.010	15.21	15.50	0.545	1.069
802.11ax- HT160 ANT2	Front	50/5250	1.250	0.349	0.090	15.45	15.50	1.264	1.012
	Back	50/5250	0.959	0.318	-0.060	15.45	15.50	0.970	1.012
	Top	50/5250	0.696	0.251	-0.160	15.45	15.50	0.704	1.012
802.11ax-HT80 MIMO-ANT	Front	42/5210	1.270	0.409	0.050	18.97	19.50	1.435	1.130
	Back	42/5210	0.859	0.298	0.050	18.97	19.50	0.970	1.130
	Top	42/5210	0.758	0.279	-0.130	18.97	19.50	0.856	1.130
Mode	Test Position of Body with 0mm	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor
			1-g	10-g					
WLAN5.4g(gap 0mm)									
802.11ax-HT40 ANT1	Front	62/5310	1.180	0.350	0.150	15.28	15.50	1.241	1.052
	Back	62/5310	0.489	0.135	0.040	15.28	15.50	0.514	1.052
	Top	62/5310	0.625	0.215	-0.040	15.28	15.50	0.657	1.052
802.11ax-HT40 ANT2	Front	54/5270	1.260	0.368	0.010	15.52	16.00	1.407	1.117
	Back	54/5270	1.030	0.332	0.350	15.52	16.00	1.150	1.117
	Top	54/5270	0.733	0.267	-0.040	15.52	16.00	0.819	1.117
802.11ac-VHT40 MIMO-ANT	Front	62/5310	1.290	0.406	-0.080	19.41	20.00	1.478	1.146
	Back	62/5310	0.832	0.282	0.010	19.41	20.00	0.953	1.146
	Top	62/5310	0.605	0.222	-0.110	19.41	20.00	0.693	1.146

Mode	Test Position of Body with 0mm	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor
			1-g	10-g					
WLAN5.6g(gap 0mm)									
802.11ax-HT40 ANT1	Front	102/5510	0.863	0.210	0.010	15.53	16.00	0.962	1.114
	Back	102/5510	0.618	0.185	0.040	15.53	16.00	0.689	1.114
	Top	102/5510	0.922	0.306	0.140	15.53	16.00	1.027	1.114
802.11ac-VHT80 ANT2	Front	122/5610	1.090	0.315	0.130	15.49	15.50	1.093	1.002
	Back	122/5610	0.902	0.481	0.030	15.49	15.50	0.904	1.002
	Top	122/5610	1.140	0.381	-0.310	15.49	15.50	1.143	1.002
802.11ac-VHT80 MIMO-ANT	Front	122/5610	1.170	0.280	0.060	20.07	20.50	1.292	1.104
	Back	122/5610	0.964	0.301	-0.100	20.07	20.50	1.064	1.104
	Top	122/5610	1.060	0.377	-0.180	20.07	20.50	1.170	1.104
Mode	Test Position of Body with 0mm	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor
			1-g	10-g					
WLAN5.8g(gap 0mm)									
802.11n-HT40 ANT1	Front	151/5755	1.220	0.322	0.110	5.97	6.00	1.228	1.007
	Back	151/5755	0.688	0.209	0.070	5.97	6.00	0.693	1.007
	Top	151/5755	0.921	0.312	-0.150	5.97	6.00	0.927	1.007
802.11ax-HT20 ANT2	Front	149/5745	1.250	0.334	0.080	5.81	6.00	1.306	1.045
	Back	149/5745	0.935	0.290	-0.080	5.81	6.00	0.977	1.045
	Top	149/5745	0.824	0.270	0.130	5.81	6.00	0.861	1.045
802.11ac-VHT20 MIMO-ANT	Front	165/5825	1.280	0.351	0.150	9.68	10.00	1.378	1.076
	Back	165/5825	1.180	0.349	0.030	9.68	10.00	1.270	1.076
	Top	165/5825	1.020	0.364	0.040	9.68	10.00	1.098	1.076

11.1.3 Results overview of Wi-Fi 6E&PD

Mode	Position	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Duty cycle (%)	Duty cycle Factor	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor	Measured APD (W/m^2) 4cm²	Report APD (W/m^2)
			1-g	10-g									
WIFI6E ANT1	Front side	47/6185	0.275	0.089	-0.130	100	1.00	11.17	11.50	0.297	1.079	1.990	2.147
	Rear side	47/6185	0.497	0.159	-0.040	100	1.00	11.17	11.50	0.536	1.079	3.620	3.906
	Top side	47/6185	0.340	0.111	0.230	100	1.00	11.17	11.50	0.367	1.079	2.510	2.708
	Top side	15/6025	0.401	0.129	-0.060	100	1.00	11.17	11.50	0.433	1.079	2.930	3.161
	Top side	111/6505	0.354	0.116	-0.090	100	1.00	11.17	11.50	0.382	1.079	2.660	2.870
	Top side	175/6825	0.253	0.078	-0.020	100	1.00	11.17	11.50	0.273	1.079	1.770	1.910
	Top side	207/6985	0.245	0.076	0.070	100	1.00	11.17	11.50	0.264	1.079	1.730	1.867

Mode	Position	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Duty cycle (%)	Duty cycle Factor	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor	Measured APD (W/m^2) 4cm²	Report APD (W/m^2)
			1-g	10-g									
WIFI6E ANT2	Front side	227/7085	0.212	0.083	-0.660	100	1.00	11.93	12.00	0.215	1.016	1.840	1.870
	Rear side	227/7085	0.442	0.142	0.050	100	1.00	11.93	12.00	0.449	1.016	3.270	3.323
	Top side	227/7085	0.379	0.131	-0.120	100	1.00	11.93	12.00	0.385	1.016	2.950	2.998
	Top side	3/5965	0.250	0.087	-0.310	100	1.00	11.93	12.00	0.254	1.016	1.720	1.748
	Top side	43/6165	0.354	0.118	-0.090	100	1.00	11.93	12.00	0.360	1.016	2.660	2.703
	Top side	115/6525	0.283	0.088	-0.180	100	1.00	11.93	12.00	0.288	1.016	2.000	2.032
	Top side	179/6845	0.458	0.154	-0.130	100	1.00	11.93	12.00	0.465	1.016	3.280	3.333

Mode	Position	Test channel /Freq.(MHz)	SAR Value (W/kg)		Power Drift (dB)	Duty cycle (%)	Duty cycle Factor	Conducted Power (dBm)	Tune-up Limit (dBm)	Scaled SAR1-g (W/kg)	Scaling Factor	Measured APD (W/m^2) 4cm²	Report APD (W/m^2)
			1-g	10-g									
WIFI6E MIMO	Front side	15/6025	0.225	0.071	-0.290	100	1.00	15.82	16.00	0.235	1.042	1.610	1.678
	Rear side	15/6025	0.289	0.095	-0.020	100	1.00	15.82	16.00	0.301	1.042	1.540	1.605
	Top side	15/6025	0.299	0.104	-0.450	100	1.00	15.82	16.00	0.312	1.042	2.340	2.439
	Top side	47/6185	0.288	0.097	0.020	100	1.00	15.82	16.00	0.300	1.042	2.190	2.283
	Top side	111/6505	0.238	0.080	0.180	100	1.00	15.82	16.00	0.248	1.042	1.800	1.876
	Top side	175/6825	0.178	0.062	0.180	100	1.00	15.82	16.00	0.186	1.042	1.390	1.449
	Top side	207/6985	0.232	0.077	0.200	100	1.00	15.82	16.00	0.242	1.042	1.740	1.814

IPD data

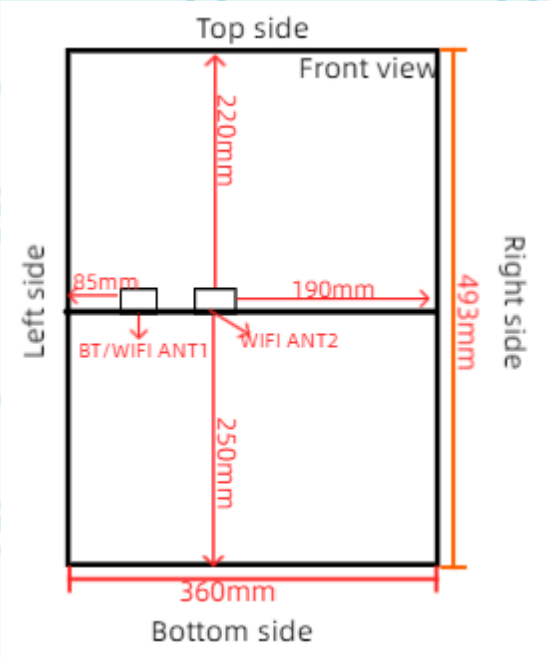
Mode	Position	Test channel /Freq.(MHz)	Gap (mm)	Grid Step (λ)	Normal IPD (W/m^2)	Total IPD (W/m^2)	Duty cycle (%)	Duty cycle Factor	Meas. Power (dBm)	Max. tune-up power (dBm)	Scaling Factor	Reported Normal psPD (W/m^2)	Reported Total psPD (W/m^2)
WIFI6E ANT1	Rear side	47/6185	2.000	0.0625	1.140	1.720	100	1.00	11.17	11.50	1.079	1.230	1.856

11.2 Results overview of BT

Test Position of Body with 0mm	Test channel /Freq.(MHz)	Test Mode	SAR Value (W/kg)		Power Drift (dB)	Conducted Power (dBm)	Tune-up Limit(dBm)	Scaled SAR_{1-g} (W/kg)	Scalig factor
			1-g	10-g					
BTantenna to side									
Front side	0/2402	GFSK	0.029	0.010	0.150	11.80	12.00	0.030	1.047
Rear side	0/2402	GFSK	0.025	0.008	-0.120	11.80	12.00	0.026	1.047
Top side	0/2402	GFSK	0.110	0.041	-0.090	11.80	12.00	0.115	1.047

12 Multiple Transmitter Information

The SAR measurement positions of each side are as below:



<Rear Side>

Mode	Front side	Rear side	Left side	Right side	Top side	Bottom side
Wi-Fi/BT Antenna	Yes	Yes	No	No	Yes	No
Per KDB 616217 Laptop host platform test requirements: When antennas are incorporated in the keyboard section of a laptop computer, SAR is required for the bottom surface of the keyboard. Provided tablet use conditions are not supported by the laptop computer, SAR tests for bystander exposure from the edges of the keyboard and display screen of laptop computers are generally not required.						

12.1 Simultaneous Transmission SAR Summation Scenario

Mode	Position	WIFI MaxSAR 1g(W/kg)	Ant 1 BT 1g(W/kg)	WIFI + BT 1g(W/kg)
2.4Gwifi	Front	1.104	0.030	1.134
	Back	0.825	0.026	0.851
	Top	0.819	0.115	0.934
5.2Gwifi	Front	1.435	0.030	1.465
	Back	0.970	0.026	0.996
	Top	0.856	0.115	0.971
5.4Gwifi	Front	1.478	0.030	1.508
	Back	1.150	0.026	1.176
	Top	0.819	0.115	0.934
5.6Gwifi	Front	1.064	0.030	1.094
	Back	1.292	0.026	1.318
	Top	1.143	0.115	1.258
5.8Gwifi	Front	1.378	0.030	1.408
	Back	1.270	0.026	1.296
	Top	1.098	0.115	1.213
WIFI6E	Front	0.297	0.030	0.327
	Back	0.536	0.026	0.562
	Top	0.385	0.115	0.500

12.2 Measurement uncertainty evaluation for SAR test

The following table includes the uncertainty table of the IEEE 1528. The values are determined by SPEAG.The breakdown of the individual uncertainties is as follows:

DASY8 Uncertainty Budget According to IEC/IEEE 62209-1528 (Frequency band: 300MHz–3GHz range)								
Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1g)	(c_i) (10g)	Std.Unc. (1g)	Std.Unc. (10g)
Measurement System Errors								
CF	Probe Calibration	±13.3%	N	2	1	1	±6.7%	±6.7%
CF_{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.8%	R	$\sqrt{3}$	1	1	±1.6%	±1.6%
ISO	Probe Isotropy	±7.6%	R	$\sqrt{3}$	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±0.8%	N	1	1	1	±0.8%	±0.8%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ_{sys}	Probe Positioning	±0.006 mm	N	1	0.14	0.14	±0.10%	±0.10%
DAT	Data Processing	±1.2%	N	1	1	1	±1.2%	±1.2%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)DAK	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)BB	±3.3%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0	0	±0%	±0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D_{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation^m	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
RF_{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc.^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
RF_{in}	Unc.Input Power^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling^p	±0.0%	R	$\sqrt{3}$	1	1	±0.0%	±0.0%
u(ΔSAR)	Combined Uncertainty						±11.3%	±11.2%
U	**Expanded Uncertainty**						±22.6%	±22.5%

DASY8 Uncertainty Budget According to IEC/IEEE 62209-1528 (Frequency band: 3GHz–6GHz range)								
Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1g)	(c_i) (10g)	Std.Unc. (1g)	Std.Unc. (10g)
Measurement System Errors								
CF	Probe Calibration	±13.1%	N	2	1	1	±6.55%	±6.55%
CF_{drift}	Probe Calibration Drift	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%
ISO	Probe Isotropy	±7.6%	R	$\sqrt{3}$	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±1.2%	N	1	1	1	±1.2%	±1.2%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ_{sys}	Probe Positioning	±0.005 mm	N	1	0.29	0.29	±0.2%	±0.20%
DAT	Data Processing	±2.3%	N	1	1	1	±2.3%	±2.3%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)DAK	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)BB	±3.4%	R	$\sqrt{3}$	0.78	0.71	±1.5%	±1.4%
EPS	Phantom Permittivity	±14.0%	R	$\sqrt{3}$	0.25	0.25	±2.0%	±2.0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D_{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation^{m}	±2.4%	R	$\sqrt{3}$	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	$\sqrt{3}$	1	1	±1.0%	±1.0%
RF_{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc.^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
RF_{in}	Unc.Input Power^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling^{p}	±0.0%	R	$\sqrt{3}$	1	1	±0.0%	±0.0%
u(ΔSAR)	Combined Uncertainty						±11.6%	±11.6%
U	**Expanded Uncertainty**						±23.3%	±23.1%

DASY8 Uncertainty Budget

According to IEC/IEEE 62209-1528

(Frequency band: 6 GHz–10 GHz range)

Symbol	Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) (1 g)	(c_i) (10 g)	Std. Unc. (1 g)	Std. Unc. (10 g)
Measurement System Errors								
CF	Probe Calibration	±18.6%	N	2	1	1	±9.3%	±9.3%
CF_{drift}	Probe Calibration Drift	±1.7%	R	√3	1	1	±1.0%	±1.0%
LIN	Probe Linearity	±4.7%	R	√3	1	1	±2.7%	±2.7%
BBS	Broadband Signal	±2.6%	R	√3	1	1	±1.5%	±1.5%
ISO	Probe Isotropy	±7.6%	R	√3	1	1	±4.4%	±4.4%
DAE	Other Probe+Electronic	±2.4%	N	1	1	1	±2.4%	±2.4%
AMB	RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Δ_{sys}	Probe Positioning	±0.005 mm	N	1	0.50	0.50	±0.3%	±0.3%
DAT	Data Processing	±3.5%	N	1	1	1	±3.5%	±3.5%
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)^{DAK}	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
LIQ(T_σ)	Conductivity (temp.)^{BB}	±2.4%	R	√3	0.78	0.71	±1.1%	±1.0%
EPS	Phantom Permittivity	±14.0%	R	√3	0.5	0.5	±4.0%	±4.0%
DIS	Distance DUT – TSL	±2.0%	N	1	2	2	±4.0%	±4.0%
D_{xyz}	Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
H	Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
MOD	DUT Modulation^{m}	±2.4%	R	√3	1	1	±1.4%	±1.4%
TAS	Time-average SAR	±1.7%	R	√3	1	1	±1.0%	±1.0%
RF_{drift}	DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
VAL	Val Antenna Unc.^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
RF_{in}	Unc. Input Power^{val}	±0.0%	N	1	1	1	±0.0%	±0.0%
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
C(R)	SAR scaling^{p}	±0.0%	R	√3	1	1	±0.0%	±0.0%
u(ΔSAR)	Combined Uncertainty						±14.2%	±14.1%
U	**Expanded Uncertainty**						±28.4%	±28.3%

DASY8 Uncertainty Budget for PD (avg ≥1 cm²) Evaluation Distances to the Antennas ≥ λ/25 in Compliance with IEC/IEEE 63195							
Error Description		Unc. Value (±dB)	Probab. Distri.	Div.	(c_i)	Std. Unc. (±dB)	(v_i) v_{eff}
Uncertainty terms dependent on the measurement system							
CAL	Calibration	0.49	N	1	1	0.49	∞
COR	Probe correction	0	R	√3	1	0	∞
FRS	Frequency response (BW ≤ 1 GHz)	0.20	R	√3	1	0.12	∞
SCC	Sensor cross coupling	0	R	√3	1	0	∞
ISO	Isotropy	0.50	R	√3	1	0.29	∞
LIN	Linearity	0.20	R	√3	1	0.12	∞
PSC	Probe scattering	0	R	√3	1	0	∞
PPO	Probe positioning offset	0.30	R	√3	1	0.17	∞
PPR	Probe positioning repeatability	0.04	R	√3	1	0.02	∞
SMO	Sensor mechanical offset	0	R	√3	1	0	∞
PSR	Probe spatial resolution	0	R	√3	1	0	∞
FLD	Field impedance dependence	0	R	√3	1	0	∞
MED	Measurement drift	0.05	R	√3	1	0.03	∞
APN	Amplitude and phase noise	0.04	R	√3	1	0.02	∞
TR	Measurement area truncation	0	R	√3	1	0	∞
DAQ	Data acquisition	0.03	N	1	1	0.03	∞
SMP	Sampling	0	R	√3	1	0	∞
REC	Field reconstruction	0.60	R	√3	1	0.35	∞
SNR	Signal-to-Noise Ratio	0	R	√3	1	0	∞
TRA	FTE/MEO	0	R	√3	1	0 (0)	∞
SCA	Power density scaling	–	R	√3	1	–	∞
SAV	Spatial averaging	0.10	R	√3	1	0.06	∞
Uncertainty terms dependent on the DUT and environmental factors							
PC	Probe coupling with DUT	0	R	√3	1	0	∞
MOD	Modulation response	0.40	R	√3	1	0.23	∞
IT	Integration time	0	R	√3	1	0	∞
RT	Response time	0	R	√3	1	0	∞
DH	Device holder influence	0.10	R	√3	1	0.06	∞
DA	DUT alignment	0	R	√3	1	0	∞
AC	RF ambient conditions	0.04	R	√3	1	0.02	∞
TEM	Laboratory Temperature	0.05	R	√3	1	0.03	∞
REF	Laboratory Reflections	0.04	R	√3	1	0.02	∞
MSI	Immunity / secondary reception	0	R	√3	1	0	∞
DRI	Drift of the DUT	–	R	√3	1	–	∞
Combined Std Uncertainty (w/ FTE/MEO)						0.75	∞
Expanded Std Uncertainty (w/ FTE/MEO)						**1.51**	

DASY8 Uncertainty Budget for relative PD (avg ≥1 cm²) Evaluation Distances to the Antennas ≥ λ/25 in Compliance with IEC/IEEE 63195							
Error Description		Unc. Value (±dB)	Probab. Distri.	Div.	(c_i)	Std. Unc. (±dB)	(v_i) v_{eff}
Uncertainty terms dependent on the measurement system							
CAL	Calibration	0.49	N	1	0	0.0	∞
COR	Probe correction	0	R	√3	1	0	∞
FRS	Frequency response (BW ≤ 1 GHz)	0.20	R	√3	0	0.0	∞
SCC	Sensor cross coupling	0	R	√3	1	0	∞
ISO	Isotropy	0.50	R	√3	0.5	0.14	∞
LIN	Linearity	0.20	R	√3	0.5	0.06	∞
PSC	Probe scattering	0	R	√3	1	0	∞
PPO	Probe positioning offset	0.30	R	√3	0	0.0	∞
PPR	Probe positioning repeatability	0.04	R	√3	1	0.02	∞
SMO	Sensor mechanical offset	0	R	√3	1	0	∞
PSR	Probe spatial resolution	0	R	√3	1	0	∞
FLD	Field impedance dependence	0	R	√3	1	0	∞
MED	Measurement drift	0.05	R	√3	1	0.03	∞
APN	Amplitude and phase noise	0.04	R	√3	1	0.02	∞
TR	Measurement area truncation	0	R	√3	1	0	∞
DAQ	Data acquisition	0.03	N	1	1	0.03	∞
SMP	Sampling	0	R	√3	1	0	∞
REC	Field reconstruction	0.6	R	√3	0.5	0.17	∞
SNR	Signal-to-Noise Ratio	0	R	√3	1	0	∞
TRA	FTE/MEO	0 (0)	R	√3	0.5	0	∞
SCA	Power density scaling	–	R	√3	1	–	∞
SAV	Spatial averaging	0.10	R	√3	1	0.06	∞
Uncertainty terms dependent on the DUT and environmental factors							
PC	Probe coupling with DUT	0	R	√3	1	0	∞
MOD	Modulation response	0.40	R	√3	1	0.23	∞
IT	Integration time	0	R	√3	1	0	∞
RT	Response time	0	R	√3	1	0	∞
DH	Device holder influence	0.10	R	√3	0	0.0	∞
DA	DUT alignment	0	R	√3	1	0	∞
AC	RF ambient conditions	0.04	R	√3	1	0.02	∞
TEM	Laboratory Temperature	0.05	R	√3	1	0.03	∞
REF	Laboratory Reflections	0.04	R	√3	1	0.02	∞
MSI	Immunity / secondary reception	0	R	√3	1	0	∞
DRI	Drift of the DUT	–	R	√3	1	–	∞
Combined Std Uncertainty (w/ FTE/MEO)						0.34	∞
Expanded Std Uncertainty (w/ FTE/MEO)						**0.68**	

DASY8 Uncertainty Budget for peak PD or H-field Evaluation Distances to the Antennas ≥ λ/25 in Compliance with IEC/IEEE 63195							
Error Description		Unc. Value (±dB)	Probab. Distri.	Div.	(c_i)	Std. Unc. (±dB)	(v_i) v_{eff}
Uncertainty terms dependent on the measurement system							
CAL	Calibration	0.49	N	1	1	0.49	∞
COR	Probe correction	0	R		1	0	∞
FRS	Frequency response (BW ≤ 1 GHz)	0.20	R	√3	1	0.12	∞
SCC	Sensor cross coupling	0	R	√3	1	0	∞
ISO	Isotropy	0.50	R	√3	1	0.29	∞
LIN	Linearity	0.20	R	√3	1	0.12	∞
PSC	Probe scattering	0	R	√3	1	0	∞
PPO	Probe positioning offset	0.30	R	√3	1	0.17	∞
PPR	Probe positioning repeatability	0.04	R	√3	1	0.02	∞
SMO	Sensor mechanical offset	0	R	√3	1	0	∞
PSR	Probe spatial resolution	0	R	√3	1	0	∞
FLD	Field impedance dependence	0	R	√3	1	0	∞
MED	Measurement drift	0	R	√3	1	0	∞
APN	Amplitude and phase noise	0.04	R	√3	1	0.02	∞
TR	Measurement area truncation	0	R	√3	1	0	∞
DAQ	Data acquisition	0.03	N	1	1	0.03	∞
SMP	Sampling	0	R	√3	1	0	∞
REC	Field reconstruction	0.8	R	√3	1	0.46	∞
SNR	Signal-to-Noise Ratio	0	R	√3	1	0	∞
TRA	FTE/MEO	0 (0)	R	√3	1	0	∞
SCA	Power density scaling	–	R	√3	1	–	∞
SAV	Spatial averaging	0.10	R	√3	1	0.06	∞
Uncertainty terms dependent on the DUT and environmental factors							
PC	Probe coupling with DUT	0	R	√3	1	0	∞
MOD	Modulation response	0.40	R	√3	1	0.23	∞
IT	Integration time	0	R	√3	1	0	∞
RT	Response time	0	R	√3	1	0	∞
DH	Device holder influence	0.10	R	√3	1	0.06	∞
DA	DUT alignment	0	R	√3	1	0	∞
AC	RF ambient conditions	0.04	R	√3	1	0.02	∞
TEM	Laboratory Temperature	0.05	R	√3	1	0.03	∞
REF	Laboratory Reflections	0.04	R	√3	1	0.02	∞
MSI	Immunity / secondary reception	0	R	√3	1	0	∞
DRI	Drift of the DUT	–	R	√3	1	–	∞
Combined Std Uncertainty (w/ FTE/MEO)						0.81	∞
Expanded Std Uncertainty (w/ FTE/MEO)						**1.62**	

DASY8 Uncertainty Budget for *E*-field Evaluation Distances to the Antennas ≥ $\lambda/25$ in Compliance with IEC/IEEE 63195							
Error Description		Unc. Value (±dB)	Probab. Distri.	Div.	(c_i)	Std. Unc. (±dB)	(v_i) v_{eff}
Uncertainty terms dependent on the measurement system							
CAL	Calibration	0.49	N	1	1	0.49	∞
COR	Probe correction	0	R	√3	1	0	∞
FRS	Frequency response (BW ≤ 1 GHz)	0.20	R	√3	1	0.12	∞
SCC	Sensor cross coupling	0	R	√3	1	0	∞
ISO	Isotropy	0.50	R	√3	1	0.29	∞
LIN	Linearity	0.20	R	√3	1	0.12	∞
PSC	Probe scattering	0	R	√3	1	0	∞
PPO	Probe positioning offset	0.30	R	√3	1	0.17	∞
PPR	Probe positioning repeatability	0.04	R	√3	1	0.02	∞
SMO	Sensor mechanical offset	0	R	√3	1	0	∞
PSR	Probe spatial resolution	0	R	√3	1	0	∞
FLD	Field impedance dependence	0	R	√3	1	0	∞
MED	Measurement drift	0.05	R	√3	1	0.03	∞
APN	Amplitude and phase noise	0.04	R	√3	1	0.02	∞
TR	Measurement area truncation	0	R	√3	1	0	∞
DAQ	Data acquisition	0.03	N	1	1	0.03	∞
SMP	Sampling	0	R	√3	1	0	∞
REC	Field reconstruction	0 (0)	R	√3	1	0	∞
SNR	Signal-to-Noise Ratio	0	R	√3	1	0	∞
TRA	Forward transformation	0 (0)	R	√3	1	0	∞
SCA	Power density scaling	–	R	√3	1	–	∞
SAV	Spatial averaging	0.10	R	√3	1	0.06	∞
Uncertainty terms dependent on the DUT and environmental factors							
PC	Probe coupling with DUT	0	R	√3	1	0	∞
MOD	Modulation response	0.40	R	√3	1	0.23	∞
IT	Integration time	0	R	√3	1	0	∞
RT	Response time	0	R	√3	1	0	∞
DH	Device holder influence	0.10	R	√3	1	0.06	∞
DA	DUT alignment	0	R	√3	1	0	∞
AC	RF ambient conditions	0.04	R	√3	1	0.02	∞
TEM	Laboratory Temperature	0.05	R	√3	1	0.03	∞
REF	Laboratory Reflections	0.04	R	√3	1	0.02	∞
MSI	Immunity / secondary reception	0	R	√3	1	0	∞
DRI	Drift of the DUT	–	R	√3	1	–	∞
Combined Std Uncertainty (w/ FTE/MEO)						0.67	∞
Expanded Std Uncertainty (w/ FTE/MEO)						**1.33**	

12.3 Measurement uncertainty evaluation for system check

The following table includes the uncertainty table of the IEEE 1528. The values are determined by SPEAG.The breakdown of the individual uncertainties is as follows:

Uncertainty For System Performance Check								
Uncertainty Component	Tol. (±%)	Prob. Dist.	Div.	C_i 1g	C_i 10g	1g U_i(±%)	10g U_i (±%)	V_i
measurement system								
Probe Calibration	6.7	N	1	1	1	6.70	6.70	∞
Axial Isotropy	4.7	R	$\sqrt{3}$	0.7	0.7	1.90	1.90	∞
Hemispherical Isotropy	9.6	R	$\sqrt{3}$	0.7	0.7	3.88	3.88	∞
Boundary Effect	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	4.7	R	$\sqrt{3}$	1	1	2.71	2.71	∞
system detection Limits	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation response	0	N	1	1	1	0.00	0.00	∞
Readout Electronics	0.3	N	1	1	1	0.30	0.30	∞
Response Time	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
RF ambient Conditions - Noise	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
RF ambient Conditions – Reflections	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Probe positioned Mechanical Tolerance	0.8	R	$\sqrt{3}$	1	1	0.46	0.46	∞
Probe positioning with respect to Phantom Shell	6.7	R	$\sqrt{3}$	1	1	3.87	3.87	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Dipole								
Deviation of experimental source from numerical source	5.5	N	1	1	1	3.18	3.18	∞
Input power and SAR drift measurement	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Dipole axis to liquid Distance	3.4	R	$\sqrt{3}$	1	1	1.96	1.96	∞
Phantom and Tissue Parameters								
Phantom Uncertainty (shape and thickness tolerances)	4.0	R	$\sqrt{3}$	1	1	2.31	2.31	∞
Uncertainty in SAR correction for deviation (in permittivity and conductivity)	2	N	1	1	0.84	2.0	1.68	∞
Liquid conductivity（meas.）	2.5	N	1	0.78	0.71	1.13	1.03	5
Liquid conductivity (target.)	5	R	$\sqrt{3}$	0.78	0.71	3.90	3.55	5
Liquid Permittivity（meas.）	2.5	N	1	0.23	0.26	0.33	0.38	∞
Liquid Permittivity (target.)	5	R	$\sqrt{3}$	0.23	0.26	1.15	1.30	∞
Combined Standard Uncertainty		Rss				11.29	11.18	
Expanded Uncertainty (95% Confidence interval)		k				20.57	19.95	

13 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

	Manufacturer	Device Type	Type(Model)	Serial number	calibration	
					Last Cal.	Due Date
☒	SPEAG	E-Field PROBE	EX3DV4	7895	2024-11-28	2025-11-27
☒	SPEAG	E-Field PROBE	EX3DV4	7391	2024-11-16	2025-11-15
☒	SPEAG	mmWV PROBE	EUmmWV4	9430	2024-11-15	2025-11-14
☒	SPEAG	Validation Kits	D750V3	1151	2024-08-19	2027-08-18
☒	SPEAG	Validation Kits	D835V2	4d203	2024-08-20	2027-08-19
☒	SPEAG	Validation Kits	D1750V2	1143	2024-08-20	2027-08-19
☒	SPEAG	Validation Kits	D1900V2	5d211	2024-08-19	2027-08-18
☒	SPEAG	Validation Sources	D2550V2	1015	2024-08-16	2027-08-15
☒	SPEAG	Validation Sources	D3500V2	1164	2024-10-17	2027-10-16
☒	SPEAG	Validation Sources	D3700V2	1139	2024-10-17	2027-10-16
☒	SPEAG	Validation Sources	D3900V2	1106	2024-10-17	2027-10-16
☒	SPEAG	Validation Sources	D4600V2	1097	2024-10-17	2027-10-16
☒	SPEAG	Validation Sources	D4900V2	1093	2024-10-08	2027-10-07
☒	SPEAG	Validation Sources	D5GHzV2	1412	2024-10-17	2027-10-16
☒	SPEAG	Validation Sources	D6.5GHzV2	1116	2024-10-14	2027-10-13
☒	SPEAG	DAE	DAE4ip	1872	2024-10-18	2025-10-17
☒	SPEAG	Dielectric parameter probes	DAK-3.5	1363	2024-11-05	2025-11-04
☒	R & S	Universal Radio Communication Tester	CMU 200	119733	2024-10-21	2025-10-20
☒	R & S	Universal Radio Communication Tester	CMW500	144459	2024-10-21	2025-10-20
☒	R & S	UXM5G Wireless Test Platform	E7515B	MY60192341	2024-10-21	2025-10-20
☒	HP	Network Analyser	8753D	3410A08889	2024-10-21	2025-10-20
☒	HP	Signal Generator	E4421B	GB39340770	2024-10-28	2025-10-27
☒	Keithley	Multimeter	Keithley 2000	4014539	2024-10-28	2025-10-27
☒	SATIMO	Amplifier	Power Amplifier	MODU-023-A-0004	2024-10-21	2025-10-20
☒	Agilent	Power Meter	E4418B	GB43312909	2024-10-21	2025-10-20
☒	Agilent	Power Meter Sensor	E4412A	MY41500046	2024-10-21	2025-10-20

Annex A: System performance verification

(Please See the SAR Measurement Plots of annex A.)

Annex B: Measurement results

(Please See the SAR Measurement Plots of annex B.)

Annex C: Calibrationreports

(Please See the Calibration reports of annex C.)

Annex D: Test setup photos