



#### Test report No.: 2520796R-SAUSV01S-A

## SAR Test Report

Product Name	Gaming Mouse
Trademark	ASUS
Model and /or type reference	P722
Applicant´s name / address	G.Tech Technology Ltd. No.8, Jinyuan 1st Road, Tangjiawan Town High-tech Zone, Zhuhai, 519085, China
Manufacturer's name	ASUSTeK COMPUTER INC.
FCC ID	OO9P722
Applicable Standard	IEEE 1528-2013 KDB 447498 D01 v06 KDB 865664 D01 v01r04
Test Result	 Max. SAR Measurement (1g) 2.4 GHz: <b>0.031</b> W/kg
Verdict Summary	IN COMPLIANCE
Documented By (Senior Project Specialist / Ida Tung)	Ida Tung
Tested By (Senior Engineer / Luke Cheng)	Ida Tung Luke cheng Lan Vin
Approved By (Assistant Manager / San Lin)	Som Vin
Date of Receipt	2025/02/24
Date of Issue	2025/04/24
Report Version	V1.0



#### INDEX

			Page
1.	General	Information	
	1.1	EUT Description	
	1.2	Antenna List	
	1.3	SAR Test Exclusion Calculation	
	1.4	Test Environment	
	1.5	Measurement procedures	
2.	SAR Mea	asurement System	
	2.1	DASY System Description	
	2.2	Area Scans	
	2.3	DASY E-Field Probe	
	2.4	DATA Acquisition Electronics (DAE) and Measurement Server	12
	2.5	Robot	13
	2.6	Device Holder	13
	2.7	Phantom	14
3.	Tissue S	Simulating Liquid	15
	3.1	The composition of the tissue simulating liquid	15
	3.2	Tissue Calibration Result	15
	3.3	Tissue Dielectric Parameters for Phantoms	16
4.	Measure	ment Procedure	17
	4.1	SAR System Check	17
	4.2	SAR Measurement Procedure	
5.	RF Expo	sure Limits	19
6.	Test Equ	lipment List	20
7.	Measure	ment Uncertainty	22
8.	Conduct	ed Power Measurement (Including tolerance allowed for product	ion unit)
		· · ·	
9.	Test Res	sults	25
	9.1	Test Results Summary	25
	Appendix	A. System Check Data	
	Appendix	B. Highest measurement Data	
	Appendix	C. Test Setup Photographs	
	Appendix	D. Probe Calibration Data	
	Appendix	E. Dipole & Source Calibration	
	Appendix	F. Product Photos-Please refer to the file: 2520796R-Product Photos	

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- 5. Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.



## **Revision History**

Report No.	Version	Description	Issued Date
2520796R-SAUSV01S-A	V1.0	Initial issue of report.	2025/04/24



## 1. General Information

## 1.1 EUT Description

Product Name	Gaming Mouse
Trademark	ASUS
Model and /or type reference	P722
FCC ID	OO9P722
Frequency Range	2.4GHz wireless: 2402-2480MHz
	BT: 2402-2480MHz
Type of Modulation	GFSK
Antenna Type	Metal
Device Category	Portable
RF Exposure Environment	Uncontrolled

#### 1.2 Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Zhuhai Zhidi Technology		Nastal	4.00 JD: for 0.400 MU
	Co., LTD	WJ.05.0000016	Metal	1.93 dBi for 2400 MHz

Note: The above EUT information by manufacturer.

#### 1.3 SAR Test Exclusion Calculation

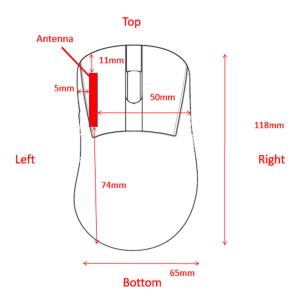
According to KDB Publication 447498 D01, section 4.3.1, per the calculations of item 1 (Power(mW)/separation (mm)\*sqrt(f(GHz)≤3.0), SAR is required as shown in the table below where calculated values are greater than 3.0:

Antenna	Тх		Output Power Separation distances (mm)							Calculated Threshold Value (≦3.0 SAR is not required)						
			dBm	mW	Back	Right	Left	Тор	Bottom	Front	Back	Right	Left	Тор	Bottom	Front
Main	2.4GHz wireless	2480	5	3	5	50	5	11	74	12	1.0	0.1	1.0	0.5	>50mm	0.4
Main	BLE	2480	5	3	5	50	5	11	74	12	1.0	0.1	1.0	0.5	>50mm	0.4

#### SAR exclusion calculations for antenna < 50mm from the user :

#### SAR exclusion calculations for antenna > 50mm from the user :

		Output	Power	Separation distances (mm)						Calculated Threshold Value						
Antenna	Tx	(MHz)	Output Power Separation distances (mm)						(SAR test exclusion power,mW)							
			dBm	mW	Back	Right	Left	Тор	Bottom	Front	Back	Right	Left	Тор	Bottom	Front
Main	2.4GHz wireless	2480	5	3	5	50	5	11	74	12	<50mm	95.3	<50mm	<50mm	335.3	<50mm
Main	BLE	2480	5	3	5	50	5	11	74	12	<50mm	95.3	<50mm	<50mm	335.3	<50mm





#### 1.4 Test Environment

Ambient conditions in the laboratory:

Test Date: 2025/03/07

Items	Required	Actual
Temperature (°C)	18-25	23 ± 2
Humidity (%RH)	30-70	50 ± 20

FCC Designation Number: TW0033
CAB Identifier Number: TW3023 / Company Number: 26930
Accredited by TAF
Accredited Number: 3023
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#### 1.5 Measurement procedures

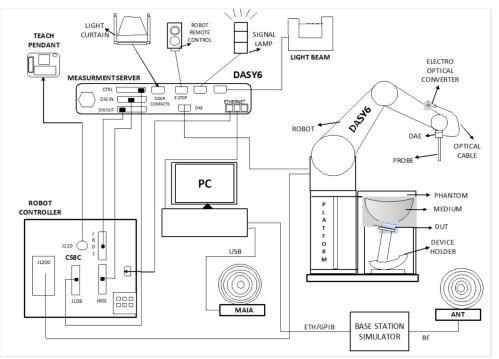
IEEE 1528-2013 47CFR § 2.1093 KDB 248227 D01 v02r02 KDB 447498 D01 v06 KDB 865664 D01 v01r04



## 2. SAR Measurement System

#### 2.1 DASY System Description

SAR Configurations is shown below:



The DASY system for performing compliance tests consists of the following items:

- > A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, ADconversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7/8/10 and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- > The phantom, the device holder and other accessories according to the targeted measurement.

#### 2.2 Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for utilize a 10mm<sup>2</sup> step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing.

#### 2.2.1 Zoom Scan (Cube Scan Averaging)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m<sup>3</sup> is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 5x5x7 (8mmx8mmx5mm) providing a volume of 32mm in the X & Y axis, and 30mm in the Z axis.

#### 2.2.2 SAR measurement drifts

Before an area scan and after the zoom scan, single point SAR measurements are performed at defined locations to estimate the SAR measurement drift due to device output power variations. If a device is known to drift randomly, additional single point drift reference measurements should be performed at regular intervals throughout the area and zoom scan test durations. The SAR drift shall be kept within ± 5%, whether there are substantial drifts or not. The field difference will be calculated in dB units in the DASY software.

#### 2.2.3 Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Postprocessor, DASY allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions.

#### 2.3 DASY E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SPEAG. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

SPEAG conducts the probe calibration in compliance with international and national standards under ISO 17025. The calibration data are in Appendix D.

Model	Ex3DV4						
Construction	Symmetrical design with triangular core Built-in shielding against static charges						
	EK enclosure material (resistant to organic solvents, e.g., DGBE)						
Frequency	4 MHz – 10 GHz						
	Linearity: ± 0.2 dB (30 MHz to 10 GHz)						
Directivity	± 0.1 dB in TSL (rotation around probe axis)						
	± 0.3 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). Only probe which enables compliance testing for frequencies up to						
	GHz with precision of better 30%.						

#### Isotropic E-Field Probe Specification



Model	EUmmWVx							
Construction	wo dipoles optimally arranged to obtain pseudo-vector information							
	Minimum three measurements/point, 120° rotated around pro	/inimum three measurements/point, 120º rotated around probe axis						
	Sensors (0.8 mm length) printed on glass substrate protected	d by high density foam						
Frequency	750 MHz to 110 GHz							
Dynamic Range	< 20 V/m to 10000 V/m with PRE-10							
	(min < 20 V/m to 2000 V/m)							
<b>Position Precision</b>	< 0.2 mm							
Dimensions	Overall length: 337 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							
Application	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						

#### E-Field mm-Wave Probe Specification

#### 2.4 DATA Acquisition Electronics (DAE) and Measurement Server

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit.

Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE4 is 200M Ohm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.



#### 2.5 Robot

The DASY system uses the high precision robots TX90 XL type out of the newer series from Stäubli SA (France). For the 6-axis controller DASY system, the CS8C robot controller version from Stäubli is used.

The XL robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller

#### 2.6 Device Holder

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 center for both scales is the ear reference point (EPR).

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  $\varepsilon r = 3$  and loss tangent  $\delta = 0.02$ . 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.









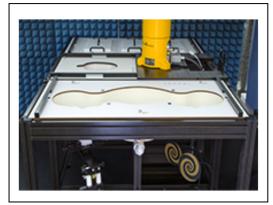


#### 2.7 Phantom

#### 2.7.1 SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

- Left head
- Right head
- Flat phantom



The device holder positions are adjusted to the standard measurement positions in the three sections. A cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

#### 2.7.2 mmWave Phantom

The mmWave Phantom approximates free-space conditions, allowing to evaluate not only the antenna side of the device but also the front (screen) side or any opposite-radiating side of wireless devices operating above 10 GHz without distorting the RF field. It consists of a 40 mm thick Rohacell plate used as a test bed, which has a loss tangent  $(\tan \delta) \le 0.05$  and a relative permittivity ( $\epsilon_r$ )  $\le$  1.2. High-performance RF absorbers are placed below the foam.





## 3. Tissue Simulating Liquid

#### 3.1 The composition of the tissue simulating liquid

**Description:** Aqueous solution with surfactants and inhibitors **Declarable. or hazardous components:** 

Decialable, of hazardous components.								
CAS: 107-21-1	Ethanediol	< 5.2%						
EINECS: 203-473-3	STOT RE 2, H373;							
Reg.nr.: 01-2119456816-28-0000	Acute Tox. 4, H302							
CAS: 68608-26-4	Sodium petroleum sulfonate	< 2.9%						
EINECS: 271-781-5	Eye Irrit. 2, H319							
Reg.nr.: 01-2119527859-22-0000								
CAS: 107-41-5	Hexylene Glycol / 2-Methyl-pentane-2,4-diol	< 2.9%						
EINECS: 203-489-0	Skin Irrit. 2, H315; Eye Irrit. 2, H319							
Reg.nr.: 01-2119539582-35-0000								
CAS: 68920-66-1	Alkoxylated alcohol, > C <sub>16</sub>	< 2.0%						
NLP: 500-236-9	Aquatic Chronic 2, H411;							
Reg.nr.: 01-2119489407-26-0000	Skin Irrit. 2, H315; Eye Irrit. 2, H319							

#### 3.2 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using Dielectric Probe Kit and Vector Network Analyzer.

	Tiaqua	Tissue Frequency -		Relative Permittivity (cr)			uctivity (σ)	Tiesus Tomp	
Date		Measured	Target	Delta (%)	Measured	Target	Delta (%)	Tissue Temp. (°C)	
2025/3/7	Head	2450	39.05	39.20	-0.38	1.79	1.80	-0.56	22.1
2025/3/7	Head	2402	39.23	39.30	-0.18	1.73	1.76	-1.70	22.1
2025/3/7	Head	2440	39.08	39.22	-0.36	1.77	1.79	-1.12	22.1
2025/3/7	Head	2480	38.93	39.16	-0.59	1.82	1.83	-0.55	22.1

#### **3.3 Tissue Dielectric Parameters for Phantoms**

The head tissue dielectric parameters recommended by the IEC/IEEE 62209-1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head tissue parameters that have not been specified are interpolated according to the head parameters specified in IEC/IEEE 62209-1528.

Target Frequency	He	ead		
(MHz)	εг	σ (S/m)		
450	43.5	0.87		
750	41.9	0.89		
835	41.5	0.90		
900	41.5	0.97		
1450	40.5	1.20		
1640	40.2	1.31		
1750	40.1	1.37		
1800 – 2000	40.0	1.40		
2450	39.2	1.80		
3000	38.5	2.40		
5000	36.2	4.45		
5200	36.0	4.66		
5400	35.8	4.86		
5600	35.5	5.07		
5800	35.3	5.27		
6000	35.1	5.48		
6500	34.5	6.07		
7000	33.9	6.65		
7500	33.3	7.24		



## 4. Measurement Procedure

#### 4.1 SAR System Check

#### 4.1.1 Dipoles



The SAR dipoles are optimized symmetrical dipole with $\lambda$ /4 balun matched to a Flat phantom section filled with tissue simulating liquids. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC signals. They are available for the variety of frequencies between 300MHz and 10 GHz. The provided tripod is used to hold the dipole below the phantom. As the distance between the dipole center and the TSL is critical, a spacer is placed between the dipole and the phantom. The spacing distance is frequency dependent.

#### 4.1.2 SAR System Check Result

- 1. Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %.
- 2. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

	Fraguanay		Measured	Targeted	Normalized	Delta 1g	Measured	Targeted	Normalized	Delta 10g	Tissue Temp.
Date	Frequency	Power	1g SAR	1g SAR	1g SAR	±10	10g SAR	10g SAR	10g SAR	±10	
(MHz)	(mW)	(W/kg)	(W/kg)	(W/kg)	(%)	(W/kg)	(W/kg)	(W/kg)	(%)	(°C)	
2025/3/7	2450	250	13.20	52.50	52.8	0.57	6.40	24.70	25.6	3.64	22.1



#### 4.2 SAR Measurement Procedure

The Dasy calculates SAR using the following equation,

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

Where :

 $\boldsymbol{\sigma}:$  represents the simulated tissue conductivity

 $\boldsymbol{\rho}:$  represents the tissue density

E :RMS electric field strength (V/m)

The SAR / APD measurements for the EUT should be performed on the channel that produces the highest rated output power of each transmitting antenna.

Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR / APD distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR / APD location (interpolated resolution set at 1mm<sup>2</sup>) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at 1mm<sup>3</sup>).

## 5. RF Exposure Limits

SAR assessments have been made in line with the requirements of IEEE-1528, RSS-102 Issue 6, and comply with ANSI/IEEE C95.1-1992 "Uncontrolled Environments" limits. These limits apply to a location which is deemed as "Uncontrolled Environment" which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

Type Exposure	Uncontrolled Environment Limit					
Spatial Peak SAR (1g cube tissue for brain or body)	1.60 W/kg					
Spatial Average SAR (whole body)	0.08 W/kg					
Spatial Peak SAR (10g for hands, feet, ankles and wrist)	4.00 W/kg					
Power density <sup>1</sup>	1 mW/cm²					

#### Limits for General Population/Uncontrolled Exposure (W/kg)

Note:  $1 \text{ mW/cm}^2 = 10 \text{ W/m}^2$ 



## 6. Test Equipment List

Instrument	Manufacturer	Model No.	Serial No.	Last Calibration	Next Calibration
Reference Dipole 2450MHz	Speag	D2450V2	1053	2024/02/19	2027/02/18
Device Holder	Speag	N/A	N/A	N/A	N/A
Data Acquisition Electronic	Speag	DAE4	1425	2024/11/18	2025/11/17
E-Field Probe	Speag	EX3DV4	3979	2024/11/20	2025/11/19
SAR Software	Speag	DASY52	V52.10.4.1535	N/A	N/A
Power Amplifier	Mini-Circuit	ZVE-8G+	447202211	N/A	N/A
Directional Coupler	Agilent	87300C	MY44300353	N/A	N/A <sup>1</sup>
Attenuator	Woken	WATT-218FS-10	N/A	N/A	N/A <sup>1</sup>
Attenuator	Mini-Circuit	BW-S20W2+	N/A	N/A	N/A <sup>1</sup>
Vector Network Analyzer	Keysight	E5071C	MY46106342	2024/11/06	2025/11/05
Signal Generator	Anritsu	MG3694A	041902	2024/08/20	2025/08/19
Power Meter	Anritsu	ML2487A	6K00001447	2024/10/19	2025/10/18
Power Sensor	Anritsu	MA2411B	1339194	2024/10/19	2025/10/18

Note: 1. System Check, the path loss measured by the network analyzer, includes the signal generator, amplifier, cable, attenuator and directional coupler.



Note:

Per KDB 865664 D01 requirements for dipole calibration, the following are recommended FCC procedures for SAR dipole calibration.

- 1. After a dipole is damaged and properly repaired to meet required specifications.
- 2. When the measured SAR deviates from the calibrated SAR value by more than 10% due to changes in physical, mechanical, electrical or other relevant dipole conditions.
- 3. When the most recent return-loss, measured at least annually, deviates by more than 20% from the previous measurement (i.e. 0.2 of the dB value) or not meeting the required -20 dB return-loss specification.

D2450V2-1053

	Frequency	Tissue	Return loss	Limit	Date
Calibration	2450 MHz	Head	-24.3	Within 20%	2024/2/19
Measurement	2450 MHz	Head	-24.57	VVILIIII 20%	2025/2/18

4. When the most recent measurement of the real or imaginary parts of the impedance, measured at least annually, deviates by more than 5  $\Omega$  from the previous measurement.

D2450V2-1053

	Frequency	Tissue	Impedance	Limit	Date
Calibration	2450 MHz	Head	51.4	Within 5Ω	2024/2/19
Measurement	2450 MHz	Head	52.25	VVIUIIII 522	2025/2/18



## 7. Measurement Uncertainty

Meas	urement un	certain	ty for	300 N	/Hz to	o 3 GHz	
Error Description	Uncert.	Prob.	Div.	(Ci)	(Ci)	Std. Unc.	Std. Unc.
	value	Dist.		1g	10g	(1g)	(10g)
Measurement System Err	ors					·	·
Probe Calibration	±12.0%	Ν	2	1	1	±6.0%	±6.0%
Probe Calibration Drift	±1.7%	R	1.732	1	1	±1.0%	±1.0%
Probe Linearity	±4.7%	R	1.732	1	1	±2.7%	±2.7%
Broadband Signal	±2.8%	R	1.732	1	1	±1.6%	±1.6%
Probe Isotropy	±7.6%	R	1.732	1	1	±4.4%	±4.4%
Other Probe+Electronic	±0.8%	Ν	1	1	1	±0.8%	±0.8%
RF Ambient	±1.8%	Ν	1	1	1	±1.8%	±1.8%
Probe Positioning	±0.006 mm	Ν	1	0.14	0.14	±0.1%	±0.1%
Data Processing	±1.2%	Ν	1	1	1	±1.2%	±1.2%
Phantom and Device Erro	ors		•		_		
Conductivity (meas.)	±2.5%	Ν	1	0.78	0.71	±2.0%	±1.8%
Conductivity (temp.)	±3.3%	R	1.732	0.78	0.71	±1.5%	±1.4%
Phantom Permittivity	±14.0%	R	1.732	0	0	±0.0%	±0.0%
Distance DUT - TSL	±2.0%	Ν	1	2	2	±4.0%	±4.0%
Device Positioning	±1.0%	Ν	1	1	1	±1.0%	±1.0%
Device Holder	±3.6%	Ν	1	1	1	±3.6%	±3.6%
DUT Modulation	±2.4%	R	1.732	1	1	±1.4%	±1.4%
Time-average SAR	±1.7%	R	1.732	1	1	±1.0%	±1.0%
DUT drift	±2.5%	Ν	1	1	1	±2.5%	±2.5%
Val Antenna Unc.	±0.0%	Ν	1	1	1	±0.0%	±0.0%
Unc. Input Power	±0.0%	Ν	1	1	1	±0.0%	±0.0%
Correction to the SAR res	sults					·	·
Deviation to Target	±1.9%	Ν	1	1	0.84	±1.9%	±1.6%
SAR scaling	±0.0%	R	1.732	1	1	±0.0%	±0.0%
Combined Uncertainty						±11.0%	±10.9%
Expanded Uncertainty						±21.9%	±21.7%



Meas	surement u	ncertai	nty fo	r 3 G	Hz to	6 GHz	
Error Description	Uncert.	Prob.	Div.	(Ci)	(Ci)	Std. Unc.	Std. Unc.
	value	Dist.		1g	10g	(1g)	(10g)
Measurement System Err	ors			•	_		
Probe Calibration	±14.0%	Ν	2	1	1	±7.0%	±7.0%
Probe Calibration Drift	±1.7%	R	1.732	1	1	±1.0%	±1.0%
Probe Linearity	±4.7%	R	1.732	1	1	±2.7%	±2.7%
Broadband Signal	±2.6%	R	1.732	1	1	±1.5%	±1.5%
Probe Isotropy	±7.6%	R	1.732	1	1	±4.4%	±4.4%
Other Probe+Electronic	±1.2%	N	1	1	1	±1.2%	±1.2%
RF Ambient	±1.8%	N	1	1	1	±1.8%	±1.8%
Probe Positioning	±0.005 mm	N	1	0.29	0.29	±0.2%	±0.2%
Data Processing	±2.3%	N	1	1	1	±2.3%	±2.3%
Phantom and Device Erro	ors	·					
Conductivity (meas.)	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%
Conductivity (temp.)	±3.4%	R	1.732	0.78	0.71	±1.5%	±1.4%
Phantom Permittivity	±14.0%	R	1.732	0.25	0.25	±2.0%	±2.0%
Distance DUT - TSL	±2.0%	Ν	1	2	2	±4.0%	±4.0%
Device Positioning	±1.0%	N	1	1	1	±1.0%	±1.0%
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%
DUT Modulation	±2.4%	R	1.732	1	1	±1.4%	±1.4%
Time-average SAR	±1.7%	R	1.732	1	1	±1.0%	±1.0%
DUT drift	±2.5%	N	1	1	1	±2.5%	±2.5%
Val Antenna Unc.	±0.0%	N	1	1	1	±0.0%	±0.0%
Unc. Input Power	±0.0%	N	1	1	1	±0.0%	±0.0%
Correction to the SAR res	sults						
Deviation to Target	±1.9%	N	1	1	0.84	±1.9%	±1.6%
SAR scaling	±0.0%	R	1.732	1	1	±0.0%	±0.0%
Combined Uncertainty						±11.9%	±11.8%
Expanded Uncertainty						±23.8%	±23.6%



# 8. Conducted Power Measurement (Including tolerance allowed for production unit)

Frequency		SISO-Main				
	Mode		AV	AV		
		СН	Power	Target		
		0	3.67	5		
RF 2.4GHz	2.4GHz wireless	38	4.07	5		
		78	4.56	5		

Frequency		SISO-Main				
	Mode	СН	AV	AV		
		СП	Power	Target		
	BLE	0	3.63	5		
BT 2.4GHz		19	4.03	5		
		39	4.53	5		



## 9. Test Results

## 9.1 Test Results Summary

SAR MEASUREM	ENT									
Ambient Temperat	ture (°C): 22	2.9±2			Relative Humidity (%): 53%					
Liquid Temperature (°C): 22.1 ±2					Depth of Liquid (c	:m): >15				
Test Dist.	Dist.	Frequency		-	cted Power dBm)	SAR (W/kg)				
Position	(mm)	Ch.	Ch. MHz Meas. Tune-Up Limit			Meas-1g	Scaled-1g	- Plot No.		
Test Mode: 2.4G V	Vireless				•		•			
Back	0	0	2402	3.67	5	0.012	0.029	6		
Back	0	38	2440	4.07	5	0.012	0.026			
Back	0	78	2480	4.56	5	0.012	0.023			
Left-side	0	78	2480	4.56	5	0.00766	0.015			
Test Mode: BLE										
Back	0	0	2402	3.63	5	0.014	0.031	7		
Back	0	19	2440	4.03	5	0.013	0.027			
Back	0	39	2480	4.53	5	0.012	0.022			
Left-side	0	39	2480	4.53	5	0.00686	0.013			

Note: 2.4G Wireless Duty Cycle: 57%, BLE Duty Cycle: 61%



#### Appendix

- Appendix A. System Check Data
- Appendix B. Highest measurement Data
- Appendix C. Test Setup Photographs
- Appendix D. Probe Calibration Data
- Appendix E. Dipole Calibration Data
- Appendix F. Product Photos-Please refer to the file: 2520796R-Product Photos