FCC SAR TEST REPORT

Test File No : F690501-RF-SAR000094

Equipment Under Test	Mobile Hotspot
Model Name	R717V
Applicant	Franklin Technology Inc.
Address of Applicant	906(Gasan-Dong, JEI Platz), 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, Korea(08502)
FCC ID	XHG-R717V
Exposure Category	General Population/Uncontrolled Exposure
Standards	FCC 47 CFR Part 2 (2.1093) IEEE 1528, 2013
Receipt No.	GPWL2006001280SR
Date of Receipt	2020-06-26
Date of Test(s)	2020-08-28 ~2020-09-16
Date of Issue	2020-09-16
Test Result	Refer to the Page 5

In the configuration tested, the EUT complied with the standards specified above.

This test report does not assure KOLAS accreditation.

Remarks:

1) The results of this test report are effective only to the items tested.
2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.

Report prepared by /
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Test Engineer

Approved by /
Minhyuk Han
Technical Manager

Revision history

Revision	Date of issue	Revisions	Revised By
-	September 16, 2020	Initial issue	-

Contents

1 Testing Laboratory

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2 Details of Manufacturer

Applicant	Franklin Technology Inc.
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Phone No.	+82-10-9079-8595

3 Description of EUT(s)

EUT Type	Mobile Hotspot
Model Name	R717V
Serial Number	359241040003615
Mode of Operation	LTE Band 2 / LTE Band 4 / LTE Band 5 / LTE Band 13 / LTE Band 66 / WLAN
Tx Frequency Range	LTE Band 13 : 779.5 ~ 784.5 MHz LTE Band 5 (Cell) : 824.7 ~ 848.3 MHz LTE Band 66 (AWS) : 1710.7 ~ 1779.3 MHz LTE Band 4 (AWS) : 1710.7 ~ 1754.3 MHz LTE Band 2 (PCS) : 1850.7 ~ 1909.3 MHz WLAN 2.4 GHz : 2412.0 ~ 2462.0 MHz WLAN 5.2 GHz : 5180.0 ~ 5240.0 MHz WLAN 5.8 GHz : 5745.0 ~ 5825.0 MHz

4 The Highest Reported SAR Values

Equipment Class	Band	Highest Reported SAR Hotspot 1g (W/kg)
PCE	LTE Band 13	1.06
PCE	LTE Band 5 (Cell)	1.01
PCE	LTE Band 66 (AWS)	1.26
PCE	LTE Band 4 (AWS)	N/A
PCE	LTE Band 2 (PCS)	1.28
DTS	WLAN 2.4 GHz	0.53
NII	WLAN 5.2 GHz	0.48
NII	WLAN 5.8 GHz	0.29
Simultaneous SAR per KDB 690783 D01v01r03		1.58

5 Test Methodology

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. It specifies the maximum exposure limit of 1.6 W/kg as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

Test tests documented in this report were performed in accordance with IEEE Standard 1528-2013 and the following published KDB procedures.

In additions;

☒	**KDB 865664 D01v01r04**	**SAR Measurement Requirements for 100 MHz to 6 GHz**
☒	**KDB 865664 D02v01r02**	**RF Exposure Compliance Reporting and Documentation Considerations**
☒	**KDB 447498 D01v06**	**Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies**
☐	KDB 447498 D02v02r01	SAR Measurement Procedures for USB Dongle Transmitters
☒	**KDB 248227 D01v02r02**	**SAR Guidance For IEEE 802.11 (Wi-Fi) Transmitters**
☐	KDB 615223 D01v01r01	802.16e/WiMax SAR Measurement Guidance
☐	KDB 616217 D04v01r02	SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers
☐	KDB 643646 D01v01r03	SAR Test Reduction Considerations for Occupational PTT Radios
☐	KDB 648474 D03v01r04	Evaluation and Approval Considerations for Handsets with Specific Wireless Charging Battery Covers
☒	**KDB 648474 D04v01r03**	**SAR Evaluation Considerations for Wireless Handsets**
☐	KDB 680106 D01v03	RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications
☒	**KDB 941225 D01v03r01**	**3G SAR Measurement Procedures**
☒	**KDB 941225 D05v02r05**	**SAR Evaluation Considerations for LTE Devices**
☒	**KDB 941225 D06v02r01**	**SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities**
☐	KDB 941225 D07v01r02	SAR Evaluation Procedures for UMPC Mini-Tablet Devices

6 Testing Environment

Ambient temperature	: 18°C ~ 25°C
Relative humidity	: 30% ~ 70%
Liquid temperature of during the test	: <± 2°C
Ambient noise & Reflection	: < 0.012 W/kg

7 Specific Absorption Rate (SAR)

7.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled

7.2 SAR Definition

The SAR definition is 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). The equation description is as below:

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

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$\mathbf{SAR} = C\left(\frac{\delta T}{\delta t}\right)$$

Where: C is the specific head capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

7.3 Test Standards and Limits

According to FCC 47CFR §2.1093(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate ("SAR") in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 ㎑ to 300 ㎓," ANSI/IEEE C95.3–2003, Copyright 2003 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 ㎑ to 6 ㎓. Portable devices that transmit at frequencies above 6 ㎓ are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter. Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 ㎓ should be made at a minimum distance of 5 cm from the radiating source.

(1) Limits for Occupational/Controlled exposure: 0.4 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 8 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 20 W/kg, as averaged over an 10 grams of tissue (defined as a tissue volume in the shape of a cube). Occupational/Controlled limits apply when persons are exposed as a consequence of their employment provided these persons are fully aware of and exercise control over their exposure. Awareness of exposure can be accomplished by use of warning labels or by specific training or education through appropriate means, such as an RF safety program in a work environment.

(2) Limits for General Population/Uncontrolled exposure: 0.08 W/kg as averaged over the whole-body and spatial peak SAR not exceeding 1.6 W/kg as averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube). Exceptions are the hands, wrists, feet and ankles where the spatial peak SAR shall not exceed 4 W/kg, as averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube). General Population/Uncontrolled limits apply when the general public may be exposed, or when persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or do not exercise control over their exposure. Warning labels placed on consumer devices such as cellular telephones will not be sufficient reason to allow these devices to be evaluated subject to limits for occupational/controlled exposure in paragraph (d)(1) of this section.

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

1. The spatial Peak value of the SAR averaged over any 1g gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

8 The SAR Measurement System

A block diagram of the SAR measurement System is given in Fig. 1. This SAR Measurement System uses a Computer-controlled 3-D stepper motor system (SPEAG DASY system). The model EX3DV4 field probe is used to determine the internal electric fields. The SAR can be obtained from the equation SAR= σ ($|Ei|^2$)/ ρ where σ and ρ are the conductivity and mass density of the tissue-simulant.

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

- A standard high precision 6-axis robot (Staubli TX family) with controller, teach pendant and software. An arm extension is for accommodating the data acquisition electronics (DAE).
- A dosimeter probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- Data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

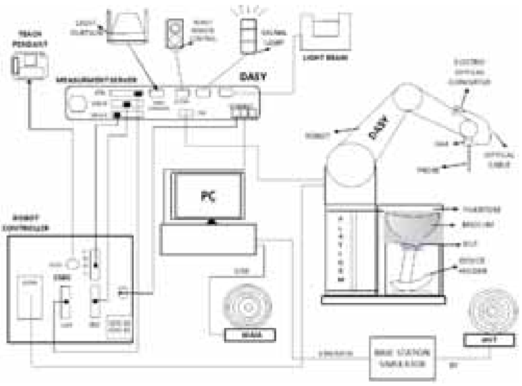


Fig a. The microwave circuit arrangement used for SAR system verification

- The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows.
- DASY software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Verification dipole kits allowing to validate the proper functioning of the system.

9 System Components

9.1 Probe


EX3DV4 E-Field Probe

Construction	:	Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	:	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 835 and HSL1900. Additional CF-Calibration for other liquids and frequencies upon request.
Frequency	:	10 ㎒ to 6 ㎓; Linearity: ± 0.2 ㏈ (30 ㎒ to 6 ㎓)
Directivity	:	± 0.3 ㏈ in HSL (rotation around probe axis) ± 0.5 ㏈ in tissue material (rotation normal to probe axis)
Dynamic Range	:	10µW/g to > 100 m W/g; Linearity: ± 0.2 ㏈(noise: typically < 1 µW/g)
Dimensions	:	Overall length: 337 ㎜ (Tip length: 20 ㎜) Tip diameter: 2.5 ㎜ (Body diameter: 12 ㎜) Distance from probe tip to dipole centers: 1 ㎜
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 6 ㎓ with precision of better 30%

NOTE:

1. The Probe parameters have been calibrated by the SPEAG. Please reference “APPENDIX C” for the Calibration Certification Report.

9.2 SAM Phantom


SAM Phantom

Construction	:	The SAM Phantom is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90 % of all users. 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 evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot ELI V5.0 has the same shell geometry and is manufactured from the same material as ELI4, but has reinforced top structure
Shell Thickness	:	2.0 ㎜ ± 0.1 ㎜
Filling Volume	:	Approx. 25 liters

9.3 Device Holder

Construction: **:** In combination with the Twin SAM PhantomV4.0/V4.0C or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

Device Holder

10 SAR Measurement Procedures

10.1 Normal SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The Minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 1.4 ㎜. This distance cannot be smaller than the Distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2 and 3: Area Scan & Zoom Scan Procedures

The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. The extraction of the measured data (grid and values) from the Zoom Scan.
2. The calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. The generation of a high-resolution mesh within the measured volume
4. The interpolation of all measured values from the measurement grid to the high-resolution grid
5. The extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. The calculation of the averaged SAR within masses of 1 g and 10 g.

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1. SAR drift shall be kept within ± 5 % and if it without ± 5 %, SAR retest according to measurement procedure step 1~4.

< Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01r04 >

			$\le$ 3 GHz	$>$ 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 mm ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			$\le$ 2 GHz: $\le$ 15 mm 2 – 3 GHz: $\le$ 12 mm	3 – 4 GHz: $\le$ 12 mm 4 – 6 GHz: $\le$ 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 $\le$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			$\le$ 2 GHz: $\le$ 8 mm 2 – 3 GHz: $\le$ 5 mm*	3 – 4 GHz: $\le$ 5 mm* 4 – 6 GHz: $\le$ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		$\le$ 5 mm	3 – 4 GHz: $\le$ 4 mm 4 – 5 GHz: $\le$ 3 mm 5 – 6 GHz: $\le$ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	$\le$ 4 mm	3 – 4 GHz: $\le$ 3 mm 4 – 5 GHz: $\le$ 2.5 mm 5 – 6 GHz: $\le$ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\le 1.5 \cdot \Delta z_{Zoom}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		$\ge$ 30 mm	3 – 4 GHz: $\ge$ 28 mm 4 – 5 GHz: $\ge$ 25 mm 5 – 6 GHz: $\ge$ 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 $\le$ 1.4 W/kg, $\le$ 8 mm, $\le$ 7 mm and $\le$ 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.

11 Definition of Reference

11.1 Body-Worn Accessory Configurations

Body-worn operation configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. A device with a headset output is tested with a headset connected to the device.

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

Body-worn accessories may not always be supplied of available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration where a separation distances between the back of the device and the flat phantom is used. Test position spacing was documented.

11.2 Wireless Router Configurations

Some battery-operated handsets have the capability to transmit and receive user data through simultaneous transmission of WLAN simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W $\geq$ 9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device containing transmitting antennas within 2.5 cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WLAN transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WLAN transmitter according to FCC KDB Publication 447498 D01v06 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

12 SAR System Verification

The microwave circuit arrangement for system verification is sketched in Fig. 1. The daily system accuracy verification occurs within the flat section of the SAM phantom. A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR values. These tests were done at 750 / 835 / 1750 / 1900 / 2450 / 5200 / 5800 ㎒. The tests were conducted on the same days as the measurement of the DUT. The obtained results from the system accuracy verification are displayed in the table 1. (SAR values are normalized to 1W forward power delivered to the dipole). During the tests, the ambient temperature of the laboratory was in the range 18 ~ 25° C, the relative humidity was in the range 30 ~ 70 % R.H and the liquid depth above the ear reference points was ≥ 15 cm ± 5 mm (frequency ≤ 3 GHz) or ≥ 10 cm ± 5 mm (frequency > 3 G Hz)in all the cases. It is seen that the system is operating within its specification, as the results are within acceptable tolerance of the reference values.

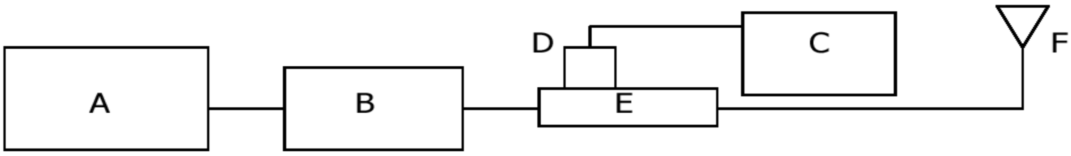


Fig 1. The microwave circuit arrangement used for SAR system verification

A. Agilent Model E4438C Signal Generator
   Agilent Model E8247C Signal Generator
B. EMPOWER Model 2002-BBS2C4AEL Power Amplifier
   BONN ELEKTRONIK Model BLMA1060-10 RF Amplifier
C. Agilent Model E4419B Power Meter
D. Agilent Model E9300H Power Sensor
E. Agilent Model 772D / 778D Dual Directional Coupler
F. Reference dipole Antenna

Photo of the dipole Antenna

SAR System Verification

Verification Kit	Probe S/N	Tissue	Target SAR 1 g from Calibration Certificate (1 W)	Measured SAR 1 g (0.1 W)	Normalized SAR 1 g (1 W)	Deviation (%)	Date	Liquid Temp. (°C)
D750V2 SN:1085	3791	750 Head	8.37	0.805	8.05	-3.82	2020-08-31	22.1
D835V2 SN:490	3791	835 Head	9.47	1.01	10.10	6.65	2020-08-29	21.3
D1750V2 SN:1070	3791	1750 Head	36.10	3.69	36.90	2.22	2020-08-28	21.3
D1900V2 SN:5d033	3791	1900 Head	39.40	3.79	37.90	-3.81	2020-08-28	21.1
D2450V2 SN:734	3791	2450 Head	53.70	5.17	51.70	-3.72	2020-09-04	21.5
D5 GHz V2 SN:1130	3791	5200 Head	79.10	8.25	82.50	4.30	2020-09-16	21.4
D5 GHz V2 SN:1130	3791	5800 Head	82.20	8.12	81.20	-1.22	2020-09-07	21.7

Table1. Results system verification

13 Tissue Simulant Fluid for the Frequency Band

The dielectric properties for this simulant fluid were measured by using the Speag Model DAK-3.5 Dielectric Probe in conjunction with Agilent E5071C Network Analyzer (300 ㎑ - 6 ㎓) by using a procedure detailed in Section V.

f (㎒)	Tissue type	Limits / Measured	Dielectric Parameters		
			Permittivity	Conductivity	Simulated Tissue Temp(℃)
750.0	Head	Measured, 2020-08-31	43.37	0.90	22.1
		Target Tissue	*41.90*	*0.89*	
		Deviation (%)	**3.51**	**1.12**	
782.0		Measured, 2020-08-31	42.98	0.93	
		Deviation (%)	**2.58**	**4.49**	
835.0	Head	Measured, 2020-08-29	41.51	0.92	21.3
		Target Tissue	*41.50*	*0.90*	
		Deviation (%)	**0.02**	**2.22**	
829.0		Measured, 2020-08-29	41.59	0.91	
		Deviation (%)	**0.22**	**1.11**	
844.0		Measured, 2020-08-29	41.39	0.93	
		Deviation (%)	**-0.27**	**3.33**	
1750.0	Head	Measured, 2020-08-28	41.28	1.41	21.3
		Target Tissue	*40.10*	*1.37*	
		Deviation (%)	**2.94**	**2.92**	
1720.0		Measured, 2020-08-28	41.38	1.38	
		Deviation (%)	**3.19**	**0.73**	
1770.0		Measured, 2020-08-28	41.14	1.42	
		Deviation (%)	**2.59**	**3.65**	
1900.0	Head	Measured, 2020-08-28	41.11	1.40	21.1
		Target Tissue	*40.00*	*1.40*	
		Deviation (%)	**2.78**	**0.00**	
1860.0		Measured, 2020-08-28	41.27	1.37	
		Deviation (%)	**3.18**	**-2.14**	
1900.0		Measured, 2020-08-28	41.11	1.40	
		Deviation (%)	**2.78**	**0.00**	
2450.0	Head	Measured, 2020-09-04	39.35	1.81	21.5
		Target Tissue	*39.20*	*1.80*	
		Deviation (%)	**0.38**	**0.56**	
2412.0		Measured, 2020-09-04	39.56	1.78	
		Deviation (%)	**0.92**	**-1.11**	
5200.0	Head	Measured, 2020-09-16	36.15	4.63	21.4
		Target Tissue	*36.00*	*4.66*	
		Deviation (%)	**0.42**	**-0.64**	
5180.0		Measured, 2020-09-16	36.18	4.61	
		Deviation (%)	**0.50**	**-1.07**	
5800.0	Head	Measured, 2020-09-07	35.53	5.10	21.7
		Target Tissue	*35.30*	*5.27*	
		Deviation (%)	**0.65**	**-3.23**	
5775.0		Measured, 2020-09-07	35.51	5.07	
		Deviation (%)	**0.59**	**-3.80**	

The composition of the brain & muscle tissue simulating liquid

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% by weight)	Frequency (㎒)									
	450		835		900		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.91	46.21	40.29	50.75	40.29	50.75	55.24	70.17	55.00	68.64
Salt (NaCl)	3.79	2.34	1.38	0.94	1.38	0.94	0.31	0.39	-	-
Sugar	56.93	51.17	57.90	-	57.90	-	-	-	-	-
HEC	0.25	0.15	0.24	0.10	0.24	0.10	-	-	-	-
Bactericide	0.12	0.08	0.18	-	0.18	-	-	-	-	-
Triton X-100	-	-	-	-	-	-	-	-	-	-
DGBE	-	-	-	-	-	-	44.45	70.17	45.00	31.37
Dielectric Constant	43.5	56.7	41.5	55.2	41.5	55.0	40.0	53.3	39.2	52.7
Conductivity (S/m)	0.87	0.94	0.90	0.97	0.97	1.05	1.40	1.52	1.80	1.95

Salt: 99 $^{+}$% Pure Sodium Chloride
Sugar: 98 $^{+}$% Pure Sucrose

Water: De-ionized, 16 MΩ^{+} resistivity
HEC: Hydroxyethyl Cellulose

DGBE: 99 $^{+}$% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]

Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

Simulating Liquids for 5 ㎓, Manufactured by SPEAG

Ingredients	(% by weight)
Water	78
Mineral Oil	11
Emulsifiers	9
Additives and Salt	2

14 Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (< -20 ㏈, within 20 % of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB publication 865664 D01V01r04:

750V3_Head (SN : 1085)				
750 GHz				
Measurement Date	Return Loss (㏈)	Δ%	Impedance (Ω)	ΔΩ
2019 / 03 / 21	-27.10	-	54.60	-
2020 / 04 / 23	-27.66	-2.02	53.76	-0.84

15 Instruments List

Test Platform	SPEAG DASY System				
Manufacture	SPEAG				
Description	SAR Test System (Frequency range 300 MHz – 6 GHz)				
Software Reference	DASY52: 52.10.4(1527) SEMCAD X: 14.6.14(7483)				
Equipment	**Type**	**Serial Number**	**Cal Date**	**Cal Interval**	**Cal Due**
Phantom	SAM Phantom	TP-1843	N/A	N/A	N/A
Verification Dipole	D750V3	1085	2019-03-21	Biennial	2021-03-21
Verification Dipole	D835V2	490	2020-05-19	Biennial	2022-05-19
Verification Dipole	D1750V2	1070	2020-07-22	Biennial	2022-07-22
Verification Dipole	D1900V2	5d033	2020-05-26	Biennial	2022-05-26
Verification Dipole	D2450V2	734	2020-02-04	Biennial	2022-02-04
Verification Dipole	D5GHzV2	1130	2020-05-20	Biennial	2022-05-20
DAE	DAE4	1430	2020-03-20	Annual	2021-03-20
E-Field Probe	EX3DV4	3791	2020-05-27	Annual	2021-05-27
Dielectric Assessment Kit	DAK-3.5	1228	2019-11-19	Annual	2020-11-19
Network Analyzer	E5071C	MY46111535	2020-05-13	Annual	2021-05-13
Power Meter	E4419B	GB43311125	2020-04-29	Annual	2021-04-29
Power Meter	E4419B	GB43311715	2020-03-06	Annual	2021-03-06
Power Sensor	E9300H	MY41495307	2020-05-15	Annual	2021-05-15
Power Sensor	E9300H	MY41495314	2020-04-29	Annual	2021-04-29
Signal Generator	E4438C	MY44270498	2020-03-03	Annual	2021-03-03
Signal Generator	E8247C	MY43321024	2020-06-03	Annual	2021-06-03
Power Amplifier	2002-BBS2C4AEL	1029 D/C 0341	2019-12-02	Annual	2020-12-02
Power Amplifier	BLMA1060-10	1711221	2020-06-05	Annual	2021-06-05
Dual Directional Coupler	778D	MY52180497	2020-03-06	Annual	2021-03-06
Dual Directional Coupler	772D	MY52180226	2020-03-06	Annual	2021-03-06
LP Filter	LA-15N	LF02	2020-03-06	Annual	2021-03-06
LP Filter	LA-30N	LF03	2020-03-06	Annual	2021-03-06
LP Filter	LA-60N	LF04	2020-03-06	Annual	2021-03-06
Attenuator	05AS102-K03	A1	2019-12-03	Annual	2020-12-03
Attenuator	05AS102-K20	A4	2019-12-03	Annual	2020-12-03
Hygro-Thermometer	303C	180718830	2019-12-03	Annual	2020-12-03
Digital Thermometer	SDT25	19041500179	2019-10-01	Annual	2020-10-01
Communication Tester	MT8820C	6201074216	2019-12-20	Annual	2020-12-20
Spectrum Analyzer	FSV7	103082	2020-03-03	Annual	2021-03-03

16 FCC Power Measurement Procedures

The SAR measurement Software calculates a reference point at the start and end of the test to check for power drifts. If conducted power deviations of more than 5 % occurred, the tests were repeated.

17 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, When SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as reported SAR. Test highest reported SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

18 Maximum Output Power Specifications

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB Publication 447498 D01v06

LTE Power - Hotspot Mode Activated

Mode / Band		Modulated Average
LTE Band 13	**Maximum**	**23.0**
	Nominal	22.5
LTE Band 5	**Maximum**	**23.5**
	Nominal	23.0
LTE Band 66	**Maximum**	**22.0**
	Nominal	21.5
LTE Band 4	**Maximum**	**22.0**
	Nominal	21.5
LTE Band 2	**Maximum**	**22.3**
	Nominal	21.8

WLAN Power

Mode / Band			Modulated Average
WLAN 2.4 GHz	IEEE 802.11b	**Maximum**	**19.0**
		Nominal	18.0
	IEEE 802.11g	**Maximum**	**16.0**
		Nominal	15.0
	IEEE 802.11n	**Maximum**	**14.0**
		Nominal	13.0
WLAN 5.2 GHz	IEEE 802.11n_HT20 (MCS0~MCS4)	**Maximum**	**18.0**
		Nominal	17.0
	IEEE 802.11n_HT20 (MCS5~MCS6)	**Maximum**	**15.5**
		Nominal	14.5
	IEEE 802.11n_HT20 (MCS7)	**Maximum**	**14.0**
		Nominal	13.0
	IEEE 802.11n_HT40 (MCS0~MCS7)	**Maximum**	**14.0**
		Nominal	13.0
WLAN 5.8 GHz	IEEE 802.11ac (MCS0~MCS4)	**Maximum**	**18.0**
		Nominal	17.0
	IEEE 802.11ac (MCS5~MCS6)	**Maximum**	**15.5**
		Nominal	14.5
	IEEE 802.11ac (MCS7)	**Maximum**	**14.0**
		Nominal	13.0
	IEEE 802.11ac (MCS8)	**Maximum**	**13.5**
		Nominal	12.5
	IEEE 802.11ac (MCS9)	**Maximum**	**12.5**
		Nominal	11.5

19 RF Conducted Power Measurement

The device in LTE was controlled by using a Communication tester (MT8820C). The EUT was set to maximum power level during all tests. The DASY system measures power drift during SAR testing by comparing e-field in the same location at the beginning and at the end of measurement.

19.1 LTE

19.1.1 SAR measurement Conditions for LTE

LTE modes were tested according to FCC KDB 941225 D05v02r05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluation SAR. Anritsu MT8820C was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

19.1.2 Spectrum Plots for RB Configurations

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

19.1.3 MPR

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

19.1.4 A-MPR

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

19.1.5 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05V02r05

a. Per Section 5.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
   i. The required channel and offset combination with the highest maximum output power is required for SAR.
   ii. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel
   iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.

b. Per Section 5.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Section 5.2.1.

c. Per Section 5.2.3, QPSK SAR is not required for the 100% allocation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.

d. Per Section 5.2.4 and 5.3, SAR tests for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Section 5.2.1, through 5.2.3 is less than or equal to 1/2 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/kg.

20 WLAN

20.1 General Device Setup

The normal network operating configurations are not suitable for measuring the SAR of 802.11 a/b/g transmitters. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable.

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.

A periodic duty factor is required for current generation SAR systems to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92 – 96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

20.2 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII-2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg. When different maximum output powers is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg.

20.3 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 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, the channels at 5.60 – 5.65 GHz in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification.

Unless band gap channels are permanently disabled, SAR must be considered for these channels.

When band gap channels are disabled, each band is tested independently according to the normally required OFDM SAR measurement and probe calibration frequency point requirements.

20.4 2.4 GHz SAR Test Requirements

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

1) When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration.
2) When the reported SAR is > 0.8 W/kg, SAR is required for that position using the next highest measured output power channel; i.e., all channels require testing.

2.4 GHz 802.11g/n OFDM are additionally evaluated for SAR if highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg. When SAR is required for OFDM modes in 2.4 GHz band, the Initial Test Configuration Procedures should be followed.

20.5 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz band, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate. When the maximum output power of a channel is the same for equivalent OFDM congigurations; for example, 802.11a, 802.11n and 802.11ac or 802.11g and 802.11n with the same channel bandwith, modulation and data rate etc., the lower order 802.11 mode i.e., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When thereare multiple channels with the same maximum output power, SAR is measured using the higher number channel.

20.6 Initial Test Configuration Procedure

For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, and lowest data rate. If the average RF output powers of the highest identical transmission modes are within 0.25 dB of each other, mid channel of the transmission mode with highest average RF output power is the initial test channel. Otherwise, the channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is ≤ 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements

20.7 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg, no additional SAR tests for the subsequent test configurations are required.

LTE Conducted power - Hotspot Mode Activated

LTE Band 13 5MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			23205 (779.5 MHz)	23230 (782.0 MHz)	23255 (784.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	22.63	22.62	22.60	0
	1	12	22.75	22.61	22.88	
	1	24	22.79	22.67	22.84	
	12	0	21.62	21.40	21.61	
	12	6	21.59	21.46	21.64	
	12	13	21.64	21.34	21.53	
	25	0	21.65	21.39	21.58	0-1
16QAM	1	0	21.40	21.29	21.55	0-1
	1	12	21.68	21.33	21.52	
	1	24	21.56	21.40	21.53	
	12	0	20.69	20.49	20.73	
	12	6	20.66	20.59	20.74	
	12	13	20.81	20.46	20.68	
	25	0	20.82	20.51	20.84	0-2

LTE Band 13 10MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			23230 (782.0 MHz)	23230 (782.0 MHz)	23230 (782.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	-	22.57	-	0
	1	25	-	**22.65**	-	
	1	49	-	22.60	-	
	25	0	-	21.43	-	0-1
	25	12	-	21.46	-	
	25	25	-	21.34	-	
	50	0	-	21.37	-	
16QAM	1	0	-	21.31	-	0-1
	1	25	-	21.57	-	
	1	49	-	21.36	-	
	25	0	-	20.36	-	0-2
	25	12	-	20.54	-	
	25	25	-	20.32	-	
	50	0	-	20.50	-	

LTE Band 5 1.4MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			20407 (824.7 MHz)	20525 (836.5 MHz)	20643 (848.3 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	23.14	23.16	22.97	0
	1	2	23.21	23.10	23.31	
	1	5	23.03	23.18	23.49	
	3	0	23.04	23.07	22.91	
	3	2	23.08	23.09	22.92	
	3	3	23.08	23.10	23.18	
	6	0	22.04	21.91	21.85	0-1
16QAM	1	0	22.06	21.84	21.83	0-1
	1	2	21.83	21.99	21.88	
	1	5	21.77	21.95	21.82	
	3	0	22.00	21.81	21.86	
	3	2	22.21	21.78	21.97	
	3	3	22.32	21.77	21.92	
	6	0	21.11	20.80	20.89	0-2

LTE Band 5 3MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			20415 (825.5 MHz)	20525 (836.5 MHz)	20635 (847.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	23.17	23.20	23.30	0
	1	7	23.22	23.31	23.08	
	1	14	23.14	23.26	23.19	
	8	0	22.13	22.05	22.10	0-1
	8	4	22.01	22.04	22.07	
	8	7	22.07	21.97	21.92	
	15	0	22.07	22.02	22.00	
16QAM	1	0	21.96	21.96	21.98	0-1
	1	7	21.75	22.00	21.97	
	1	14	21.90	22.06	21.93	
	8	0	21.07	20.86	21.29	0-2
	8	4	21.15	21.14	21.13	
	8	7	21.21	21.16	21.10	
	15	0	21.08	20.75	21.00	

LTE Band 5 5MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			20425 (826.5 MHz)	20525 (836.5 MHz)	20625 (846.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	23.10	23.27	23.12	0
	1	12	23.26	23.31	23.32	
	1	24	23.13	23.17	23.45	
	12	0	22.04	21.99	22.08	0-1
	12	6	22.12	21.95	22.13	
	12	13	22.07	21.94	21.93	
	25	0	21.97	22.01	22.03	
16QAM	1	0	21.93	22.07	21.95	0-1
	1	12	21.86	21.98	21.79	
	1	24	21.81	21.94	21.81	
	12	0	20.94	20.92	21.05	0-2
	12	6	21.02	20.96	20.98	
	12	13	20.99	20.93	20.93	
	25	0	21.16	21.04	21.17	

LTE Band 5 10MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			20450 (829.0 MHz)	20525 (836.5 MHz)	20600 (844.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	23.18	23.08	23.10	0
	1	25	23.22	**23.40**	23.34	
	1	49	23.20	23.15	23.11	
	25	0	22.09	21.92	22.04	0-1
	25	12	22.16	21.96	22.10	
	25	25	21.91	22.09	21.97	
	50	0	21.89	21.85	22.04	
16QAM	1	0	21.97	21.81	22.03	0-1
	1	25	22.12	22.26	22.15	
	1	49	22.19	21.96	21.93	
	25	0	21.05	21.00	21.16	0-2
	25	12	21.12	21.04	21.06	
	25	25	21.08	21.19	21.15	
	50	0	21.13	20.98	21.12	

LTE Band 66 1.4MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			131979 (1710.7 MHz)	132322 (1745.0 MHz)	132665 (1779.3 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.62	21.45	21.57	0
	1	2	21.64	21.65	21.67	
	1	5	21.66	21.50	21.63	
	3	0	21.53	21.51	21.55	
	3	2	21.56	21.47	21.58	
	3	3	21.54	21.42	21.57	
	6	0	20.54	20.51	20.43	0-1
16QAM	1	0	20.44	20.38	20.50	0-1
	1	2	20.44	20.39	20.53	
	1	5	20.38	20.35	20.51	
	3	0	20.41	20.25	20.46	
	3	2	20.52	20.39	20.45	
	3	3	20.49	20.43	20.38	
	6	0	19.45	19.26	19.28	0-2

LTE Band 66 3MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			131987 (1711.5 MHz)	132322 (1745.0 MHz)	132657 (1778.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.61	21.59	21.62	0
	1	7	21.68	21.60	21.82	
	1	14	21.60	21.50	21.62	
	8	0	20.50	20.62	20.75	0-1
	8	4	20.64	20.47	20.66	
	8	7	20.60	20.44	20.64	
	15	0	20.52	20.44	20.62	
16QAM	1	0	20.24	20.53	20.59	0-1
	1	7	20.50	20.47	20.64	
	1	14	20.49	20.35	20.15	
	8	0	19.62	19.25	19.43	0-2
	8	4	19.67	19.27	19.44	
	8	7	19.70	19.37	19.44	
	15	0	19.30	19.33	19.70	

LTE Band 66 5MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			131997 (1712.5 MHz)	132322 (1745.0 MHz)	132647 (1777.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.69	21.67	21.70	0
	1	12	21.76	21.68	21.80	
	1	24	21.68	21.58	21.70	
	12	0	20.58	20.70	20.83	0-1
	12	6	20.72	20.55	20.74	
	12	13	20.68	20.52	20.72	
	25	0	20.60	20.52	20.70	
16QAM	1	0	20.32	20.61	20.67	0-1
	1	12	20.58	20.55	20.72	
	1	24	20.57	20.43	20.23	
	12	0	19.70	19.33	19.51	0-2
	12	6	19.75	19.35	19.52	
	12	13	19.78	19.45	19.52	
	25	0	19.38	19.41	19.78	

LTE Band 66 10MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			132022 (1715.0 MHz)	132322 (1745.0 MHz)	132622 (1775.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.71	21.69	21.72	0
	1	25	21.78	21.70	21.79	
	1	49	21.70	21.60	21.72	
	25	0	20.60	20.72	20.85	0-1
	25	12	20.74	20.57	20.76	
	25	25	20.70	20.54	20.74	
	50	0	20.62	20.54	20.72	
16QAM	1	0	20.34	20.63	20.69	0-1
	1	25	20.60	20.57	20.74	
	1	49	20.59	20.45	20.25	
	25	0	19.72	19.35	19.53	0-2
	25	12	19.77	19.37	19.54	
	25	25	19.80	19.47	19.54	
	50	0	19.40	19.43	19.80	

LTE Band 66 15MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			132047 (1717.5 MHz)	132322 (1745.0 MHz)	132597 (1772.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.58	21.56	21.59	0
	1	36	21.65	21.57	21.66	
	1	74	21.57	21.47	21.59	
	36	0	20.47	20.59	20.72	0-1
	36	18	20.61	20.44	20.63	
	36	37	20.57	20.41	20.61	
	75	0	20.49	20.41	20.59	
16QAM	1	0	20.21	20.50	20.56	0-1
	1	36	20.47	20.44	20.61	
	1	74	20.46	20.32	20.12	
	36	0	19.59	19.22	19.40	0-2
	36	18	19.64	19.24	19.41	
	36	37	19.67	19.34	19.41	
	75	0	19.27	19.30	19.67	

LTE Band 66 20MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			132072 (1720.0 MHz)	132322 (1745.0 MHz)	132572 (1770.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.60	21.59	21.53	0
	1	50	**21.88**	21.76	21.60	
	1	99	21.49	21.51	21.50	
	50	0	20.55	20.62	20.50	0-1
	50	25	20.65	20.64	20.51	
	50	50	20.44	20.33	20.48	
	100	0	20.47	20.50	20.43	
16QAM	1	0	20.50	20.48	20.36	0-1
	1	50	20.74	20.41	20.56	
	1	99	20.27	20.25	20.34	
	50	0	19.70	19.64	19.43	0-2
	50	25	19.47	19.46	19.47	
	50	50	19.38	19.47	19.44	
	100	0	19.46	19.47	19.49	

LTE Band 4 1.4MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			19957 (1710.7 MHz)	20175 (1732.5 MHz)	20393 (1754.3 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.68	21.54	21.57	0
	1	2	21.66	21.71	21.70	
	1	5	21.69	21.59	21.67	
	3	0	21.56	21.53	21.44	
	3	2	21.58	21.59	21.46	
	3	3	21.64	21.59	21.60	
	6	0	20.80	20.55	20.59	0-1
16QAM	1	0	20.93	20.30	20.48	0-1
	1	2	20.94	20.50	20.53	
	1	5	20.62	20.47	20.58	
	3	0	20.74	20.51	20.44	
	3	2	20.42	20.67	20.76	
	3	3	20.27	20.61	20.71	
	6	0	19.46	19.53	19.63	0-2

LTE Band 4 3MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			19965 (1711.5 MHz)	20175 (1732.5 MHz)	20385 (1753.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.60	21.64	21.49	0
	1	7	21.83	21.66	21.53	
	1	14	21.78	21.58	21.58	
	8	0	20.65	20.57	20.53	0-1
	8	4	20.79	20.65	20.61	
	8	7	20.75	20.51	20.54	
	15	0	20.61	20.56	20.53	
16QAM	1	0	20.58	20.70	20.42	0-1
	1	7	20.65	20.42	20.53	
	1	14	20.65	20.40	20.58	
	8	0	19.36	19.59	19.37	0-2
	8	4	19.77	19.77	19.74	
	8	7	19.83	19.40	19.66	
	15	0	19.69	19.52	19.59	

LTE Band 4 5MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			19975 (1712.5 MHz)	20175 (1732.5 MHz)	20375 (1752.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.56	21.60	21.45	0
	1	12	21.84	21.62	21.49	
	1	24	21.74	21.54	21.54	
	12	0	20.61	20.53	20.49	0-1
	12	6	20.75	20.61	20.57	
	12	13	20.71	20.47	20.50	
	25	0	20.57	20.52	20.49	
16QAM	1	0	20.54	20.66	20.38	0-1
	1	12	20.61	20.38	20.49	
	1	24	20.61	20.36	20.54	
	12	0	19.32	19.55	19.33	0-2
	12	6	19.73	19.73	19.70	
	12	13	19.79	19.36	19.62	
	25	0	19.65	19.48	19.55	

LTE Band 4 10MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			20000 (1715.0 MHz)	20175 (1732.5 MHz)	20350 (1750.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.67	21.71	21.56	0
	1	25	21.83	21.73	21.60	
	1	49	21.83	21.65	21.65	
	25	0	20.72	20.64	20.60	0-1
	25	12	20.86	20.72	20.68	
	25	25	20.82	20.58	20.61	
	50	0	20.68	20.63	20.60	
16QAM	1	0	20.65	20.77	20.49	0-1
	1	25	20.72	20.49	20.60	
	1	49	20.72	20.47	20.65	
	25	0	19.43	19.66	19.44	0-2
	25	12	19.84	19.84	19.81	
	25	25	19.90	19.47	19.73	
	50	0	19.76	19.59	19.66	

LTE Band 4 15MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			20025 (1717.5 MHz)	20175 (1732.5 MHz)	20325 (1747.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.60	21.64	21.49	0
	1	36	21.80	21.66	21.53	
	1	74	21.78	21.58	21.58	
	36	0	20.65	20.57	20.53	0-1
	36	18	20.79	20.65	20.61	
	36	37	20.75	20.51	20.54	
	75	0	20.61	20.56	20.53	
16QAM	1	0	20.58	20.70	20.42	0-1
	1	36	20.65	20.42	20.53	
	1	74	20.65	20.40	20.58	
	36	0	19.36	19.59	19.37	0-2
	36	18	19.77	19.77	19.74	
	36	37	19.83	19.40	19.66	
	75	0	19.69	19.52	19.59	

LTE Band 4 20MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			20050 (1720.0 MHz)	20175 (1732.5 MHz)	20300 (1745.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.77	**21.84**	21.80	0
	1	50	21.83	21.51	21.40	
	1	99	21.78	21.56	21.80	
	50	0	20.97	20.85	20.84	0-1
	50	25	20.88	20.76	20.59	
	50	50	20.80	20.51	20.48	
	100	0	20.87	20.58	20.61	
16QAM	1	0	20.73	20.53	20.72	0-1
	1	50	20.73	20.55	20.58	
	1	99	20.53	20.26	20.37	
	50	0	20.04	19.70	19.73	0-2
	50	25	19.97	19.68	19.58	
	50	50	19.71	19.43	19.46	
	100	0	19.75	19.48	19.66	

LTE Band 2 1.4MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			18607 (1850.7 MHz)	18900 (1880.0 MHz)	19193 (1909.3 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.72	21.83	21.68	0
	1	2	21.81	21.84	21.77	
	1	5	21.88	21.81	21.73	
	3	0	21.71	21.81	21.64	
	3	2	21.77	21.76	21.63	
	3	3	21.75	21.72	21.66	
	6	0	20.67	20.77	20.61	0-1
16QAM	1	0	20.73	20.66	20.40	0-1
	1	2	20.86	20.72	20.56	
	1	5	20.75	20.70	20.58	
	3	0	20.64	20.62	20.68	
	3	2	20.50	20.73	20.71	
	3	3	20.63	20.67	20.65	
	6	0	19.47	19.26	19.60	0-2

LTE Band 2 3MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			18615 (1851.5 MHz)	18900 (1880.0 MHz)	19185 (1908.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.78	21.83	21.78	0
	1	7	21.87	21.83	21.75	
	1	14	21.74	21.93	21.71	
	8	0	20.67	20.78	20.72	0-1
	8	4	20.77	20.79	20.70	
	8	7	20.76	20.74	20.75	
	15	0	20.68	20.77	20.71	
16QAM	1	0	20.64	20.75	20.44	0-1
	1	7	20.79	20.73	20.41	
	1	14	20.61	20.72	20.65	
	8	0	19.49	19.49	19.72	0-2
	8	4	19.71	19.57	19.71	
	8	7	19.79	19.78	19.69	
	15	0	19.74	19.43	19.60	

LTE Band 2 5MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			18625 (1852.5 MHz)	18900 (1880.0 MHz)	19175 (1907.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.71	21.76	21.71	0
	1	12	21.80	21.76	21.68	
	1	24	21.67	21.86	21.64	
	12	0	20.60	20.71	20.65	0-1
	12	6	20.70	20.72	20.63	
	12	13	20.69	20.67	20.68	
	25	0	20.61	20.70	20.64	
16QAM	1	0	20.57	20.68	20.37	0-1
	1	12	20.72	20.66	20.34	
	1	24	20.54	20.65	20.58	
	12	0	19.42	19.42	19.65	0-2
	12	6	19.64	19.50	19.64	
	12	13	19.72	19.71	19.62	
	25	0	19.67	19.36	19.53	

LTE Band 2 10MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			18650 (1855.0 MHz)	18900 (1880.0 MHz)	19150 (1905.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.80	21.85	21.80	0
	1	25	21.89	21.85	21.77	
	1	49	21.76	21.95	21.73	
	25	0	20.69	20.80	20.74	0-1
	25	12	20.79	20.81	20.72	
	25	25	20.78	20.76	20.77	
	50	0	20.70	20.79	20.73	
16QAM	1	0	20.66	20.77	20.46	0-1
	1	25	20.81	20.75	20.43	
	1	49	20.63	20.74	20.67	
	25	0	19.51	19.51	19.74	0-2
	25	12	19.73	19.59	19.73	
	25	25	19.81	19.80	19.71	
	50	0	19.76	19.45	19.62	

LTE Band 2 15MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			18675 (1857.5 MHz)	18900 (1880.0 MHz)	19125 (1902.5 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	21.91	21.96	21.91	0
	1	36	21.90	21.96	21.88	
	1	74	21.87	21.90	21.84	
	36	0	20.80	20.91	20.85	0-1
	36	18	20.90	20.92	20.83	
	36	37	20.89	20.87	20.88	
	75	0	20.81	20.90	20.84	
16QAM	1	0	20.77	20.88	20.57	0-1
	1	36	20.92	20.86	20.54	
	1	74	20.74	20.85	20.78	
	36	0	19.62	19.62	19.85	0-2
	36	18	19.84	19.70	19.84	
	36	37	19.92	19.91	19.82	
	75	0	19.87	19.56	19.73	

LTE Band 2 20MHz Bandwidth						
Modulation	RB Size	RB Offset	Low Channel	Mid Channel	High Channel	MPR Allowed Per 3GPP[dB]
			18700 (1860.0 MHz)	18900 (1880.0 MHz)	19100 (1900.0 MHz)	
			Conducted Power [dBm]			
QPSK	1	0	22.00	21.83	22.02	0
	1	50	**22.17**	22.04	22.05	
	1	99	21.76	21.89	21.61	
	50	0	20.77	20.63	20.81	0-1
	50	25	20.85	20.73	20.81	
	50	50	20.66	20.61	20.79	
	100	0	20.73	20.74	20.77	
16QAM	1	0	20.77	20.69	20.87	0-1
	1	50	20.78	20.90	20.97	
	1	99	20.60	20.41	20.64	
	50	0	19.90	19.72	19.92	0-2
	50	25	19.91	19.86	19.97	
	50	50	19.76	19.68	19.85	
	100	0	19.85	19.75	19.91	

2.4GHz WLAN Maximum Conducted power

Mode	Freq. (MHz)	Ch. #	Rate	Conducted Power (dBm)
802.11b	2412	1	1	18.74
	2437	6	1	17.74
	2462	11	1	17.93
802.11g	2412	1	6	Not Measured
	2437	6	6	
	2462	11	6	
802.11n HT20	2412	1	MCS0	
	2437	6	MCS0	
	2462	11	MCS0	

5GHz WLAN Maximum Conducted power

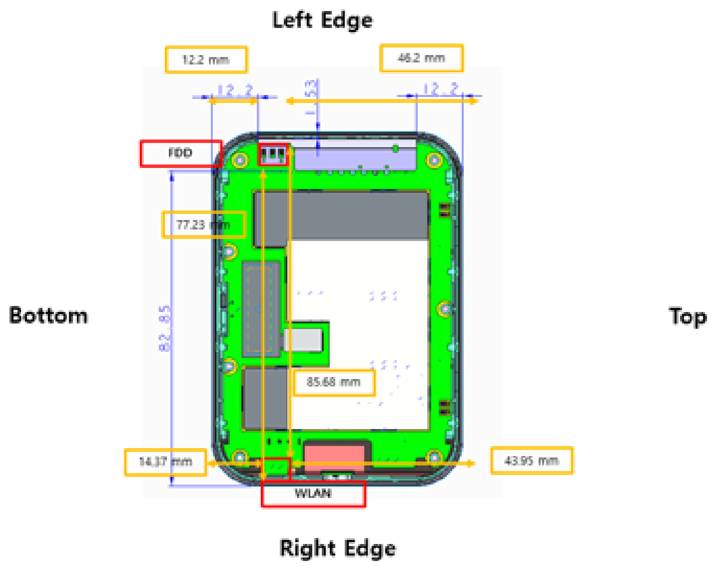
Mode	Freq. (MHz)	Ch. #	Rate	Conducted Power (dBm)
802.11n HT20	5180	36	MCS0	17.26
	5200	40	MCS0	17.25
	5220	44	MCS0	16.93
	5240	48	MCS0	16.82
802.11n HT40	5190	38	MCS0	Not Measured
	5230	42	MCS0	
802.11ac VHT20	5745	149	MCS0	
	5785	157	MCS0	
	5825	165	MCS0	
802.11ac VHT40	5755	151	MCS0	
	5795	159	MCS0	
802.11ac VHT80	5775	155	MCS0	16.95

Note. Justification for test configurations for WLAN per KDB Publication 248227 D01 Wi-Fi SAR v02r02:

1. Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.
2. For transmission modes with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.
3. For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.
4. For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For channels were measured.

21 DUT Antenna Locations

Front View



FDD	LTE B2, 4, 5, 13, 66
WLAN	2.45GHz 5.2GHz 5.8GHz

<The Distance information of Antenna to Edges of Wireless Router>

22 SAR Test Exclusions Applied

Based on the maximum tune-up tolerance limit of FDD, TDD, and WLAN, and the antenna to use separation distance, Table “EXEMPT” SAR was not required and Table “Measure” SAR was required.

Frequency (MHz)	Output power		Separation distances (mm)						SAR Exemption					
	dBm	mW	Rear	Right Edg	Left Edge	Top	Bottom	Front	Rear	Right Edge	Left Edge	Top	Bottom	Front
FDD Antenna														
784.5	23.00	200	5	77.23	5	46.20	12.20	5	Measure	EXEMPT	Measure	Measure	Measure	Measure
848.3	23.50	224	5	77.23	5	46.20	12.20	5	Measure	EXEMPT	Measure	Measure	Measure	Measure
1779.3	22.00	158	5	77.23	5	46.20	12.20	5	Measure	EXEMPT	Measure	Measure	Measure	Measure
1909.3	22.30	170	5	77.23	5	46.20	12.20	5	Measure	EXEMPT	Measure	Measure	Measure	Measure
WLAN Antenna														
2462.0	19.00	79	5	5	85.68	43.95	14.37	5	Measure	Measure	EXEMPT	EXEMPT	Measure	Measure
5240.0	18.00	63	5	5	85.68	43.95	14.37	5	Measure	Measure	EXEMPT	Measure	Measure	Measure
5825.0	18.00	63	5	5	85.68	43.95	14.37	5	Measure	Measure	EXEMPT	Measure	Measure	Measure

Note

1. Maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. For distances < 5mm, a distance of 5mm is used to determine SAR exclusion and estimated SAR value.
3. Output power is the maximum rated power (including tune-up or manufacturing tolerances).
4. If the antenna separation distance is > 50mm then the value listed is the output power threshold, above which SAR measurement is required. For separation ≤ 50mm the value is the KDB 447498 D01v06 calculated value and must be less than 3 for SAR exemption.
5. Formulas round separation distance to nearest mm and power to nearest ㎽ before calculating thresholds or exemption values.
6. Particular DUT edges were not required to be evaluated for Wireless Router SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC Publication 941225 D06v02r01 guidance, page 2. The antenna document shows the distances between the transmit antennas and the edges of the device.

23 SAR Data Summary

23.1 Hotspot SAR data

LTE Band 13 Hotspot SAR

EUT Position	Mode	Battery	Traffic Channel		RB Size	RB Offset	Separation Distance (mm)	Power(dBm)		Scaling Factor (Power)	Cube	1g SAR(W/Kg)		Plot No.
			Frequency (MHz)	Channel				Measured Power	Tune-Up Limit			Measured SAR	Scaled SAR	
Front	QPSK	Standard	782.0	23230	1	25	10	22.65	23.00	1.084	-	**0.976**	**1.058**	**A8**
			782.0	23230	25	12	10	21.46	22.00	1.132	-	0.782	0.885	-
			782.0	23230	50	0	10	21.37	22.00	1.156	-	0.755	0.873	-
Rear	QPSK	Standard	782.0	23230	1	25	10	22.65	23.00	1.084	-	0.736	0.798	-
			782.0	23230	25	12	10	21.46	22.00	1.132	-	0.559	0.633	-
Left Edge	QPSK	Standard	782.0	23230	1	25	10	22.65	23.00	1.084	-	0.206	0.223	-
			782.0	23230	25	12	10	21.46	22.00	1.132	-	0.155	0.175	-
Top	QPSK	Standard	782.0	23230	1	25	10	22.65	23.00	1.084	-	0.280	0.304	-
			782.0	23230	25	12	10	21.46	22.00	1.132	-	0.212	0.240	-
Bottom	QPSK	Standard	782.0	23230	1	25	10	22.65	23.00	1.084	-	0.371	0.402	-
			782.0	23230	25	12	10	21.46	22.00	1.132	-	0.284	0.321	-
Additional Repeat Test														
Front	QPSK	Standard	782.0	23230	1	25	10	22.65	23.00	1.084	-	0.947	1.027	-

LTE Band 5 Hotspot SAR

EUT Position	Mode	Battery	Traffic Channel		RB Size	RB Offset	Separation Distance (mm)	Power(dBm)		Scaling Factor (Power)	Cube	1g SAR(W/Kg)		Plot No.
			Frequency (MHz)	Channel				Measured Power	Tune-Up Limit			Measured SAR	Scaled SAR	
Front	QPSK	Standard	829.0	20450	1	25	10	23.22	23.50	1.067	-	**0.946**	**1.009**	**A9**
			836.5	20525	1	25	10	23.40	23.50	1.023	-	0.815	0.834	-
			844.0	20600	1	25	10	23.34	23.50	1.038	-	0.707	0.734	-
			829.0	20450	25	12	10	22.16	22.50	1.081	-	0.688	0.744	-
Rear	QPSK	Standard	836.5	20525	1	25	10	23.40	23.50	1.023	-	0.669	0.684	-
			829.0	20450	25	12	10	22.16	22.50	1.081	-	0.556	0.601	-
Left Edge	QPSK	Standard	836.5	20525	1	25	10	23.40	23.50	1.023	-	0.071	0.073	-
			829.0	20450	25	12	10	22.16	22.50	1.081	-	0.054	0.058	-
Top	QPSK	Standard	836.5	20525	1	25	10	23.40	23.50	1.023	-	0.304	0.311	-
			829.0	20450	25	12	10	22.16	22.50	1.081	-	0.241	0.261	-
Bottom	QPSK	Standard	836.5	20525	1	25	10	23.40	23.50	1.023	-	0.269	0.275	-
			829.0	20450	25	12	10	22.16	22.50	1.081	-	0.236	0.255	-
Additional Repeat Test														
Front	QPSK	Standard	829.0	20450	1	25	10	23.22	23.50	1.067	-	0.915	0.976	-

LTE Band 66 Hotspot SAR

EUT Position	Mode	Battery	Traffic Channel		RB Size	RB Offset	Separation Distance (mm)	Power(dBm)		Scaling Factor (Power)	Cube	1g SAR(W/Kg)		Plot No.
			Frequency (MHz)	Channel				Measured Power	Tune-Up Limit			Measured SAR	Scaled SAR	
Front	QPSK	Standard	1720.0	132072	1	50	10	21.88	22.00	1.028	-	1.160	1.192	-
			1745.0	132322	1	50	10	21.76	22.00	1.057	-	**1.190**	**1.258**	**A10**
			1770.0	132572	1	50	10	21.60	22.00	1.096	-	1.070	1.173	-
			1720.0	132072	50	25	10	20.65	21.00	1.084	-	0.968	1.049	-
			1745.0	132322	50	25	10	20.64	21.00	1.086	-	0.954	1.036	-
			1770.0	132572	50	25	10	20.51	21.00	1.119	-	0.855	0.957	-
			1745.0	132322	100	0	10	20.50	21.00	1.122	-	0.958	1.075	-
Rear	QPSK	Standard	1720.0	132072	1	50	10	21.88	22.00	1.028	-	1.190	1.223	-
			1745.0	132322	1	50	10	21.76	22.00	1.057	-	1.120	1.184	-
			1770.0	132572	1	50	10	21.60	22.00	1.096	0	1.040	1.140	-
											1	0.716	0.785	-
			1720.0	132072	50	25	10	20.65	21.00	1.084	-	0.936	1.015	-
			1745.0	132322	50	25	10	20.64	21.00	1.086	-	0.920	0.999	-
			1770.0	132572	50	25	10	20.51	21.00	1.119	0	0.826	0.924	-
											1	0.581	0.644	-
			1745.0	132322	100	0	10	20.50	21.00	1.122	-	0.909	1.020	-
Left Edge	QPSK	Standard	1720.0	132072	1	50	10	21.88	22.00	1.028	-	1.210	1.244	-
			1745.0	132322	1	50	10	21.76	22.00	1.057	-	1.110	1.173	-
			1770.0	132572	1	50	10	21.60	22.00	1.096	-	1.050	1.151	-
			1720.0	132072	50	25	10	20.65	21.00	1.084	-	0.995	1.079	-
			1745.0	132322	50	25	10	20.64	21.00	1.086	-	0.896	0.973	-
			1770.0	132572	50	25	10	20.51	21.00	1.119	-	0.825	0.923	-
			1745.0	132322	100	0	10	20.50	21.00	1.122	-	0.888	0.996	-
Top	QPSK	Standard	1720.0	132072	1	50	10	21.88	22.00	1.028	-	0.209	0.215	-
			1720.0	132072	50	25	10	20.65	21.00	1.084	-	0.159	0.172	-
Bottom	QPSK	Standard	1720.0	132072	1	50	10	21.88	22.00	1.028	-	0.627	0.645	-
			1720.0	132072	50	25	10	20.65	21.00	1.084	-	0.509	0.552	-
Additional Repeat Test														
Left Edge	QPSK	Standard	1720.0	132072	1	50	10	21.88	22.00	1.028	-	1.160	1.192	-

LTE Band 2 Hotspot SAR

EUT Position	Mode	Battery	Traffic Channel		RB Size	RB Offset	Separation Distance (mm)	Power(dBm)		Scaling Factor (Power)	Cube	1g SAR(W/Kg)		Plot No.
			Frequency (MHz)	Channel				Measured Power	Tune-Up Limit			Measured SAR	Scaled SAR	
Front	QPSK	Standard	1860.0	18700	1	50	10	22.17	22.30	1.030	-	**1.240**	**1.277**	**A11**
			1880.0	18900	1	50	10	22.04	22.30	1.062	-	1.160	1.232	-
			1900.0	19100	1	50	10	22.05	22.30	1.059	-	1.150	1.218	-
			1860.0	18700	50	25	10	20.85	21.30	1.109	-	1.040	1.153	-
			1880.0	18900	50	25	10	20.73	21.30	1.140	-	0.964	1.099	-
			1900.0	19100	50	25	10	20.81	21.30	1.119	-	0.887	0.993	-
			1900.0	19100	100	0	10	20.77	21.30	1.130	-	0.899	1.016	-
Rear	QPSK	Standard	1860.0	18700	1	50	10	22.17	22.30	1.030	0	1.050	1.082	-
											1	0.758	0.781	-
			1880.0	18900	1	50	10	22.04	22.30	1.062	0	0.968	1.028	-
											1	0.824	0.875	-
			1900.0	19100	1	50	10	22.05	22.30	1.059	0	0.882	0.934	-
											1	0.768	0.813	-
			1860.0	18700	50	25	10	20.85	21.30	1.109	0	0.794	0.881	-
											1	0.618	0.685	-
			1880.0	18900	50	25	10	20.73	21.30	1.140	0	0.631	0.719	-
											1	0.572	0.652	-
			1900.0	19100	50	25	10	20.81	21.30	1.119	0	0.564	0.631	-
											1	0.558	0.624	-
			1900.0	19100	100	0	10	20.77	21.30	1.130	0	0.576	0.651	-
											1	0.558	0.631	-
Left Edge	QPSK	Standard	1860.0	18700	1	50	10	22.17	22.30	1.030	-	0.771	0.794	-
			1860.0	18700	50	25	10	20.85	21.30	1.109	-	0.615	0.682	-
Top	QPSK	Standard	1860.0	18700	1	50	10	22.17	22.30	1.030	-	0.208	0.214	-
			1860.0	18700	50	25	10	20.85	21.30	1.109	-	0.167	0.185	-
Bottom	QPSK	Standard	1860.0	18700	1	50	10	22.17	22.30	1.030	-	0.591	0.609	-
			1860.0	18700	50	25	10	20.85	21.30	1.109	-	0.486	0.539	-
Additional Repeat Test														
Front	QPSK	Standard	1860.0	18700	1	50	10	22.17	22.30	1.030	-	1.230	1.267	-

WLAN 2.4GHz Hotspot SAR

EUT Position	Mode	Battery	Traffic Channel		Separation Distance (mm)	Power(dBm)		Scaling Factor (Power)	Scaling Factor (Duty cycle)	Peak SAR of Area Scan (W/kg)	Cube	1g SAR(W/Kg)		Plot No.
			Frequency (MHz)	Channel		Measured Power	Tune-Up Limit					Measured SAR	Scaled SAR	
Front	802.11b	Standard	2412.0	1	10	18.74	19.00	1.062	1.015	0.800	-	0.487	0.525	-
Rear	802.11b	Standard	2412.0	1	10	18.74	19.00	1.062	1.015	0.732	-	0.465	0.501	-
Right Edge	802.11b	Standard	2412.0	1	10	18.74	19.00	1.062	1.015	0.437	-	0.281	0.303	-
Bottom	802.11b	Standard	2412.0	1	10	18.74	19.00	1.062	1.015	0.759	-	**0.491**	**0.529**	**A12**

WLAN 5.2GHz Hotspot SAR

EUT Position	Mode	Battery	Traffic Channel		Separation Distance (mm)	Power(dBm)		Scaling Factor (Power)	Scaling Factor (Duty cycle)	Peak SAR of Area Scan (W/kg)	Cube	1g SAR(W/Kg)		Plot No.
			Frequency (MHz)	Channel		Measured Power	Tune-Up Limit					Measured SAR	Scaled SAR	
Front	802.11n HT20	Standard	5180.0	36	10	17.26	18.00	1.186	1.098	0.320	-	0.132	0.172	-
Rear	802.11n HT20	Standard	5180.0	36	10	17.26	18.00	1.186	1.098	0.821	-	**0.368**	**0.479**	**A13**
Right Edge	802.11n HT20	Standard	5180.0	36	10	17.26	18.00	1.186	1.098	0.799	-	0.358	0.466	-
Top	802.11n HT20	Standard	5180.0	36	10	17.26	18.00	1.186	1.098	0.057	-	0.015	0.020	-
Bottom	802.11n HT20	Standard	5180.0	36	10	17.26	18.00	1.186	1.098	0.144	-	0.064	0.083	-

WLAN 5.8GHz Hotspot SAR

EUT Position	Mode	Battery	Traffic Channel		Separation Distance (mm)	Power(dBm)		Scaling Factor (Power)	Scaling Factor (Duty cycle)	Peak SAR of Area Scan (W/kg)	Cube	1g SAR(W/Kg)		Plot No.
			Frequency (MHz)	Channel		Measured Power	Tune-Up Limit					Measured SAR	Scaled SAR	
Front	802.11ac VHT80	Standard	5775.0	155	10	16.95	18.00	1.274	1.369	0.197	-	0.049	0.085	-
Rear	802.11ac VHT80	Standard	5775.0	155	10	16.95	18.00	1.274	1.369	0.339	-	0.147	0.256	-
Right Edge	802.11ac VHT80	Standard	5775.0	155	10	16.95	18.00	1.274	1.369	0.393	-	**0.164**	**0.286**	**A14**
Top	802.11ac VHT80	Standard	5775.0	155	10	16.95	18.00	1.274	1.369	N/A	-	N/A	N/A	-
Bottom	802.11ac VHT80	Standard	5775.0	155	10	16.95	18.00	1.274	1.369	0.143	-	0.062	0.108	-

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in FCC KDB Publication 447498 D01v06.
2. Liquid tissue depth was at least 15 cm for all frequencies.
3. All modes of operation were investigated, and worst-case results are reported.
4. The EUT is tested 2nd hot-spot peak, if it is less than 2 dB below the highest peak.
5. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
6. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB Publication 447498 D01v06.
7. Batteries are fully charged at the beginning of the SAR measurements.
8. Per FCC KDB 865664 D01V01r04, variability SAR tests were performed when the measured SAR results for a frequency band were greater than or equal to 0.8W/kg. Repeated SAR measurements are highlighted in the tables above for clarity. Please see Section 23 for variability analysis.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Considerations for LTE Devices in FCC KDB Publication 941225 D05v02r05. The general test procedures used for testing can be found in Section 8.4.4.
2. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3-6.2.5 under Table 6.2.3-1.
3. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
4. This device supports LTE capabilities with overlapping transmission frequency rages. When the supported frequency range of an LTE Band falls completely within an LTE band with a larger transmission frequency range, both LTE bands have the same target power (or the band with the larger transmission frequency range has a higher target power), and both LTE bands share the same transmission path and signal characteristics, SAR was only assessed for the band with larger transmission frequency range.

WLAN Notes:

1. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 2.4GHz WIFI operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4GHz 802.11g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
2. Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02 for 5GHz WIFI operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission modes were not investigated since the highest reported SAR for initial test configuration

adjusted by the ratio of maximum output powers is less than 1.2W/kg.

3. When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.
4. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance.
5. WLAN transmission was verified using a spectrum analyzer.
6. When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a,g, n then ac) is selected.
7. When the specified maximum output power is the same for both UNII Band1 and UNII Band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is ≤ 1.2W/kg, SAR is not required for UNII band1 > 1.2W/kg, both bands should be tested independently for SAR. When different maximum output powers is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg.
8. 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.

24 SAR Measurement Variability

24.1 Measurement Variability

Per FCC KDB Publication 865664 D01v01r04, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

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

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

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

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

EUT Position	Mode	Traffic Channel		Separation Distance (mm)	Measured 1g SAR (W/kg)	1st Repeated 1g SAR(W/kg)	Ratio
		Frequency (MHz)	Channel				
Front	LTE Band 13	782.0	23230	10	0.976	0.947	1.03
Front	LTE Band 5	829.0	20450	10	0.946	0.915	1.03
Left Edge	LTE Band 66	1720.0	132072	10	1.210	1.160	1.04
Front	LTE Band 2	1860.0	18700	10	1.240	1.230	1.01

24.2 Measurement Uncertainty

The measured SAR was < 1.5 W/kg for all frequency bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE 1528-2013 was not required.

25 Simultaneous Multi-band Transmission Evaluation

25.1 Introduction

The following procedures adopted from FCC KDB Publication 447498 D01v06 are applicable to handsets with built-in unlicensed transmitters such as Bluetooth devices which may simultaneously transmit with the licensed transmitter.

25.2 The Simultaneous Transmission possibilities are listed as below

No	Capable TX Configuration	Operation
1	Main + 2.4GHz WLAN	Yes
2	Main + 5GHz WLAN	Yes

Note:

- The simultaneous transmission possibilities are listed as below.
- WLAN Aux Ant and Bluetooth Aux Ant share the same antenna and cannot transmit simultaneously.

Simultaneous Transmission Scenario for Hotspot SAR

Front

Exposure Condition	Mode	4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	∑ SAR (W/kg)
		1	2	1+2
Hotspot	LTE Band 13	1.058	0.525	1.583
	LTE Band 5 (Cell)	1.009	0.525	1.534
	LTE Band 66 (AWS)	1.258	0.525	**1.783**
	LTE Band 2 (PCS)	1.277	0.525	**1.802**

Exposure Condition	Mode	4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	∑ SAR (W/kg)
		1	2	1+2
Hotspot	LTE Band 13	1.058	0.172	1.230
	LTE Band 5 (Cell)	1.009	0.172	1.181
	LTE Band 66 (AWS)	1.258	0.172	1.430
	LTE Band 2 (PCS)	1.277	0.172	1.449

Rear

Exposure Condition	Mode	4G SAR (W/kg)	2.4 GHz WLAN SAR (W/kg)	∑ SAR (W/kg)
		1	2	1+2
Hotspot	LTE Band 13	0.798	0.501	1.299
	LTE Band 5 (Cell)	0.684	0.501	1.185
	LTE Band 66 (AWS)	1.223	0.501	**1.724**
	LTE Band 2 (PCS)	1.082	0.501	1.583

Exposure Condition	Mode	4G SAR (W/kg)	5 GHz WLAN SAR (W/kg)	∑ SAR (W/kg)
		1	2	1+2
Hotspot	LTE Band 13	0.798	0.479	1.277
	LTE Band 5 (Cell)	0.684	0.479	1.163
	LTE Band 66 (AWS)	1.223	0.479	**1.702**
	LTE Band 2 (PCS)	1.082	0.479	1.561

25.3 SPLSR Evaluation and Analysis

FCC KDB Publication 447498 D01v06, when the sum of the standalone transmitters is more than 1.6 W/kg, the SAR sum to peak locations can be analyzed to determine SAR distribution overlaps. When the SAR peak to location ratio for each pair of antennas is ≤ 0.04, simultaneous SAR evaluation is not required. The distance between the transmitters was calculated using the following formal.

$$\text{Distance} = R_i = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$$

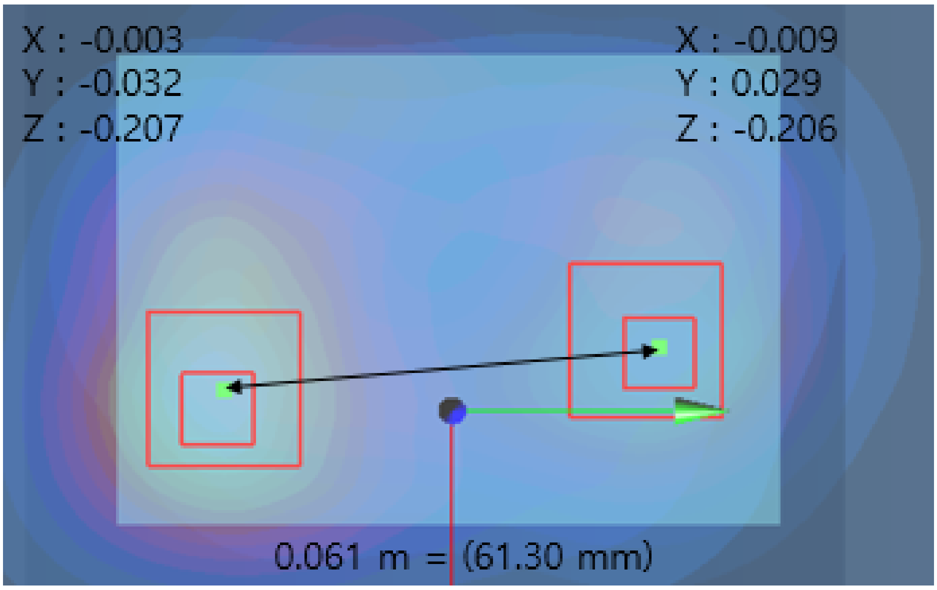
$$\text{SPLS Ratio} = \frac{(SAR_1 + SAR_2)^{1.5}}{R_i}$$

SAR Peak Location Separation Ratio (SPLSR)

Simultaneous Tx	Position	Main Ant	WLAN 2.4GHz Ant	∑SAR (W/kg)	Calculated Distance (mm)	SPLSR (≤0.04)	Volume Scan	Page No
LTE Band 66 (AWS)	Front	1.258	0.525	1.783	61.30	0.039	No	50
LTE Band 2 (PCS)	Front	1.277	0.525	1.802	61.33	0.039	No	50
LTE Band 66 (AWS)	Rear	1.223	0.501	1.724	57.57	0.039	No	51

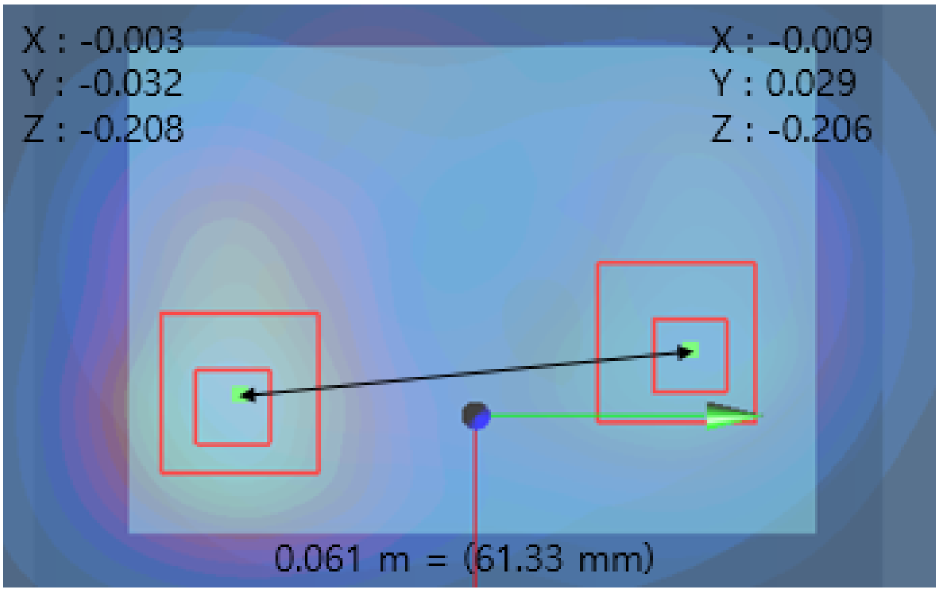
Simultaneous Tx	Position	Main Ant	WLAN 5GHz Ant	∑SAR (W/kg)	Calculated Distance (mm)	SPLSR (≤0.04)	Volume Scan	Page No
LTE Band 66 (AWS)	Rear	1.223	0.479	1.702	73.55	0.030	No	51

Front - LTE Band 66 (Main Ant + WLAN 2.4GHz Ant)



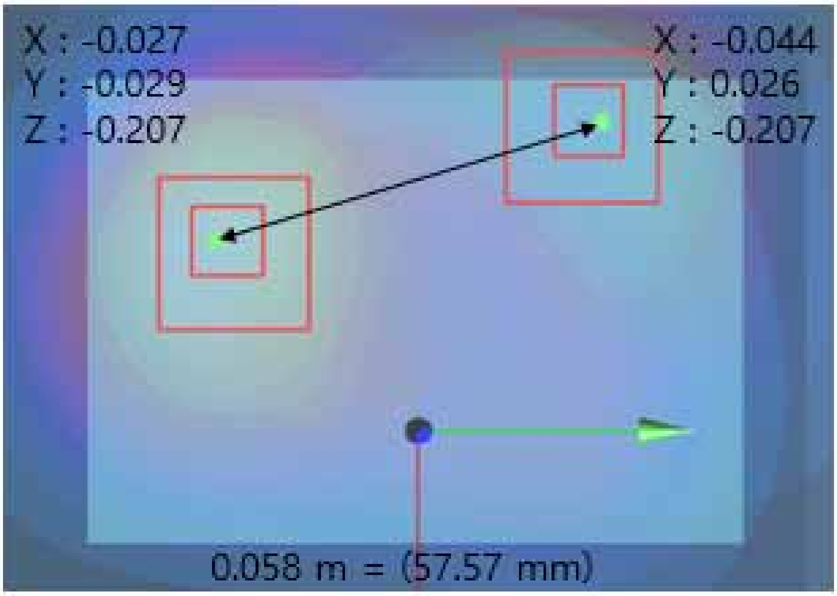
Main Ant			WLAN 2.45GHz Ant			R_i		∑SAR (W/kg)	SPLSR (≤0.04)	Volume Scan SAR [W/kg]	Plot No
X, m	Y, m	Z, m	X, m	Y, m	Z, m	m	mm				
-0.003	-0.032	-0.207	-0.009	0.029	-0.206	0.061	61.30	1.783	0.039	-	-

Front - LTE Band 2 (Main Ant + WLAN 2.4GHz Ant)



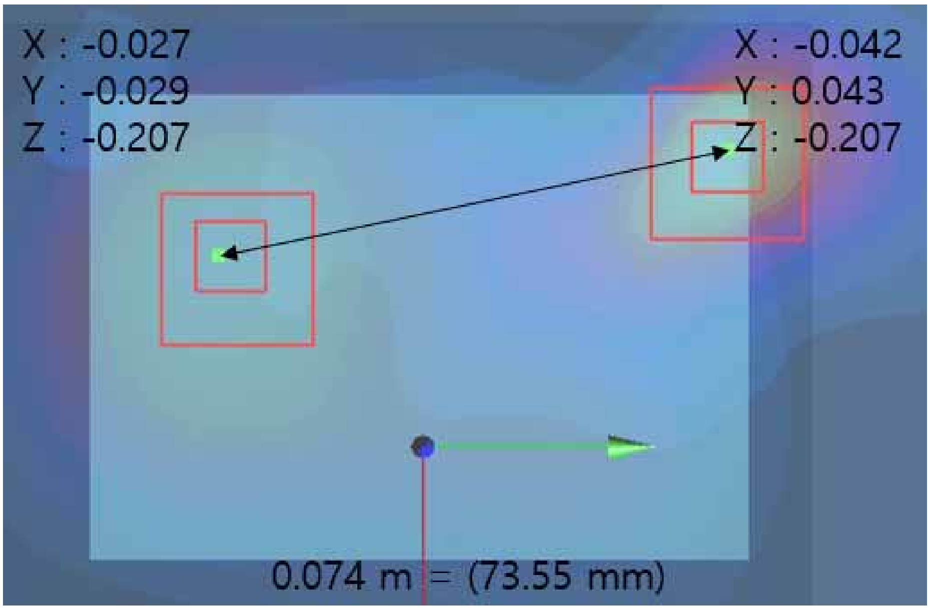
Main Ant			WLAN 2.45GHz Ant			R_i		∑SAR (W/kg)	SPLSR (≤0.04)	Volume Scan SAR [W/kg]	Plot No
X, m	Y, m	Z, m	X, m	Y, m	Z, m	m	mm				
-0.003	-0.032	-0.208	-0.009	0.029	-0.206	0.061	61.33	1.802	0.039	-	-

Rear - LTE Band 66 (Main Ant + WLAN 2.4GHz Ant)



Main Ant			WLAN 2.45GHz Ant			R_i		∑SAR (W/kg)	SPLSR (≤0.04)	Volume Scan SAR [W/kg]	Plot No
X, m	Y, m	Z, m	X, m	Y, m	Z, m	m	mm				
-0.027	-0.029	-0.207	-0.044	0.026	-0.207	0.058	57.57	1.724	0.039	-	-

Rear - LTE Band 66 (Main Ant + WLAN 5GHz Ant)



Main Ant			WLAN 5GHz Ant			R_i		∑SAR (W/kg)	SPLSR (≤0.04)	Volume Scan SAR [W/kg]	Plot No
X, m	Y, m	Z, m	X, m	Y, m	Z, m	m	mm				
-0.027	-0.029	-0.207	-0.042	0.043	-0.207	0.074	73.55	1.702	0.030	-	-

Appendixes List

Appendix A	A.1 Verification Test Plots for 750MHz A.2 Verification Test Plots for 835MHz A.3 Verification Test Plots for 1750MHz A.4 Verification Test Plots for 1900MHz A.5 Verification Test Plots for 2450MHz A.6 Verification Test Plots for 5200MHz A.7 Verification Test Plots for 5800MHz A.8 SAR Test Plots for LTE Band 13 Hotspot A.9 SAR Test Plots for LTE Band 5 Hotspot A.10 SAR Test Plots for LTE Band 66 Hotspot A.11 SAR Test Plots for LTE Band 2 Hotspot A.12 SAR Test Plots for WLAN 2.4GHz Hotspot A.13 SAR Test Plots for WLAN 5.2GHz Hotspot A.14 SAR Test Plots for WLAN 5.8GHz Hotspot
Appendix B	B.1 Calibration certificate for Probe B.2 Calibration certificate for DAE B.3 Calibration certificate for Dipole

Appendix A.1 Verification Test Plots for 750MHz

Date: 2020-08-31

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 750MHz Verification 2020 08 31.da53:0

Input Power : 100 mW

Ambient Temp : 22.2 °C Tissue Temp : 22.1 °C

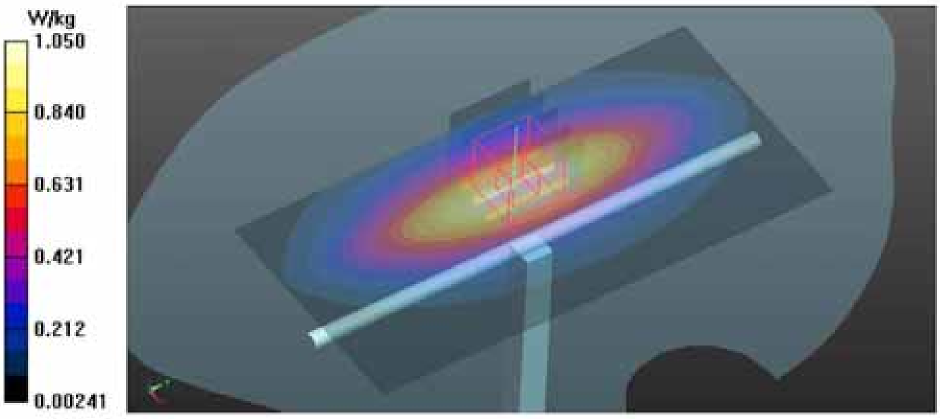
DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN:1085

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.895 S/m; ε_r = 43.37; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(9.28, 9.28, 9.28) @ 750 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Verification/750MHz Verification/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.05 W/kg

Verification/750MHz Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.68 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.805 W/kg; SAR(10 g) = 0.538 W/kg
Smallest distance from peaks to all points 3 dB below = 17.9 mm
Ratio of SAR at M2 to SAR at M1 = 67.9%
Maximum value of SAR (measured) = 1.06 W/kg



Appendix A.2 Verification Test Plots for 835MHz

Date: 2020-08-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 835MHz Verification 2020_08_29.da53:0

Input Power : 100 mW

Ambient Temp : 22.0 ℃ Tissue Temp : 21.3 ℃

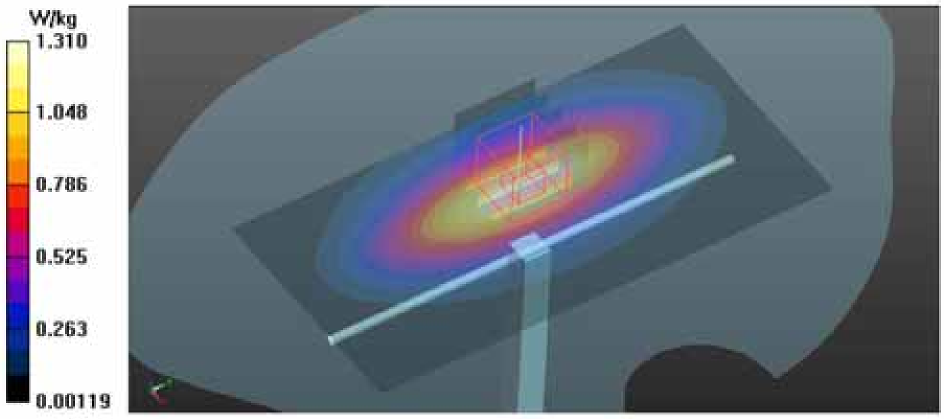
DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:490

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.918 S/m; ε_r = 41.509; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(8.97, 8.97, 8.97) @ 835 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Verification/835MHz Verification/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.31 W/kg

Verification/835MHz Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.07 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 1.01 W/kg; SAR(10 g) = 0.661 W/kg
Smallest distance from peaks to all points 3 dB below = 17.2 mm
Ratio of SAR at M2 to SAR at M1 = 66.6%
Maximum value of SAR (measured) = 1.34 W/kg



Appendix A.3 Verification Test Plots for 1750MHz

Date: 2020-08-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 1750MHz Verification 2020_08_28.da53:0

Input Power : 100 mW

Ambient Temp : 22.3°C Tissue Temp : 21.3°C

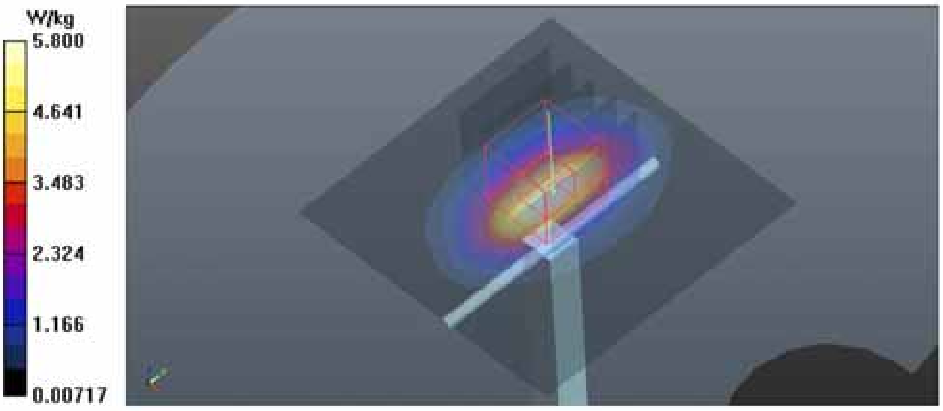
DUT: Dipole 1750 MHz D1750V2; Type: D1750V2; Serial: D1750V2 - SN:1070

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.407 S/m; ε_r = 41.276; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(7.74, 7.74, 7.74) @ 1750 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Verification/1750MHz Verification/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 5.80 W/kg

Verification/1750MHz Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 63.33 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 6.99 W/kg
SAR(1 g) = 3.69 W/kg; SAR(10 g) = 1.92 W/kg
Smallest distance from peaks to all points 3 dB below = 9.7 mm
Ratio of SAR at M2 to SAR at M1 = 52.3%
Maximum value of SAR (measured) = 5.76 W/kg



Appendix A.4 Verification Test Plots for 1900MHz

Date: 2020-08-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 1900MHz Verification_2020_08_28.da53:0

Input Power : 100 mW

Ambient Temp : 22.3 ℃ Tissue Temp : 21.3 ℃

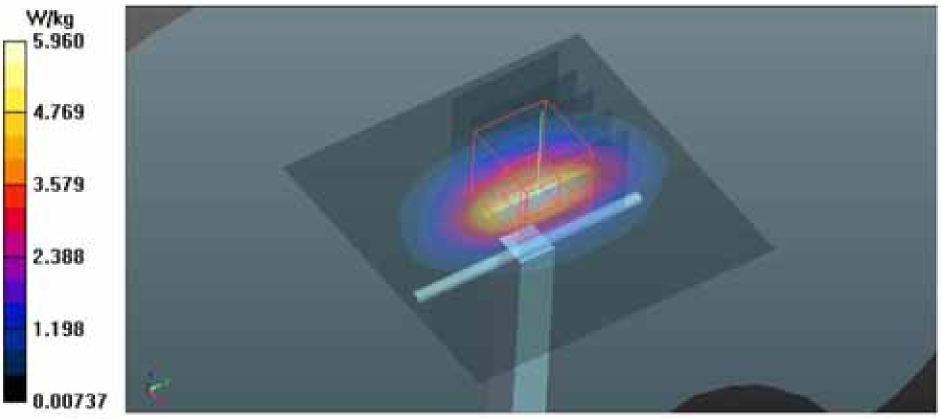
DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN:5d033

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.402 S/m; ε_r = 41.11; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(7.52, 7.52, 7.52) @ 1900 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Verification/1900MHz Verification/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 5.96 W/kg

Verification/1900MHz Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 64.35 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 7.22 W/kg
SAR(1 g) = 3.79 W/kg; SAR(10 g) = 1.97 W/kg
Smallest distance from peaks to all points 3 dB below = 10.7 mm
Ratio of SAR at M2 to SAR at M1 = 52%
Maximum value of SAR (measured) = 5.98 W/kg



Appendix A.5 Verification Test Plots for 2450MHz

Date: 2020-09-04

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 2450MHz Verification 2020_09_04.da53:0

Input Power : 100 mW

Ambient Temp : 22.0 ℃ Tissue Temp : 21.5 ℃

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:734

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2450 MHz; σ = 1.812 S/m; ε_r = 39.354; ρ = 1000 kg/m^3
Phantom section: Flat Section

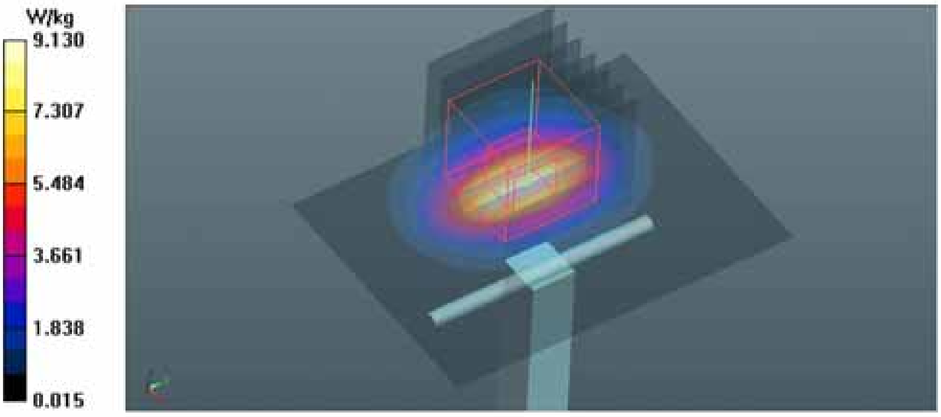
DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(6.86, 6.86, 6.86) @ 2450 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Verification/2450MHz Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 9.13 W/kg

Verification/2450MHz Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 46.98 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 11.1 W/kg
SAR(1 g) = 5.17 W/kg; SAR(10 g) = 2.35 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 45.8%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 8.85 W/kg



Appendix A.6 Verification Test Plots for 5200MHz

Date: 2020-09-16

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5200MHz Verification 2020_09_16.da53:0

Input Power : 100 mW

Ambient Temp : 21.9°C Tissue Temp : 21.4°C

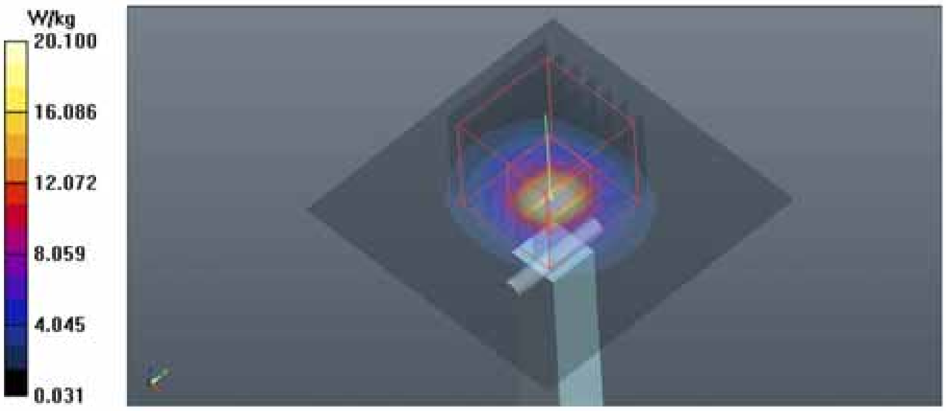
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1130

Communication System: UID 0, CW (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 4.631 S/m; ε_r = 36.148; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(4.9, 4.9, 4.9) @ 5200 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Verification/5200MHz Verification/Area Scan (61x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.1 W/kg

Verification/5200MHz Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.14 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 32.4 W/kg
SAR(1 g) = 8.25 W/kg; SAR(10 g) = 2.39 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 65.5%
Maximum value of SAR (measured) = 20.7 W/kg



Appendix A.7 Verification Test Plots for 5800MHz

Date: 2020-09-07

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5800MHz Verification 2020_09_07.da53:0

Input Power : 100 mW

Ambient Temp : 21.9 °C Tissue Temp : 21.7 °C

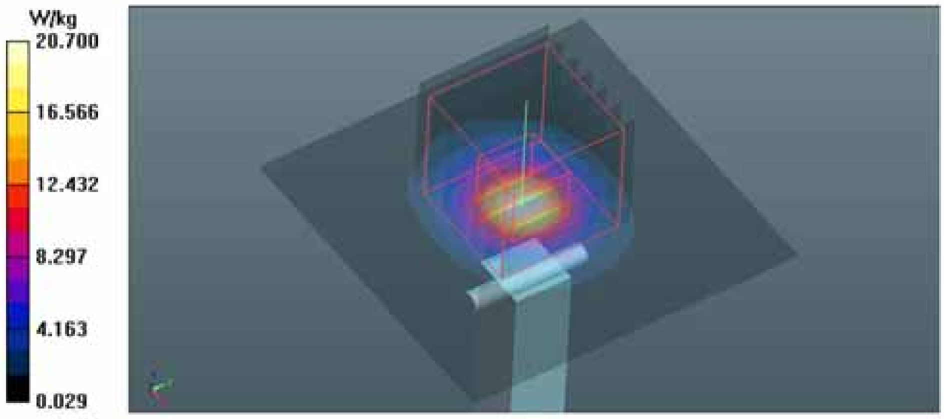
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1130

Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 5.097 S/m; ε_r = 35.533; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(4.45, 4.45, 4.45) @ 5800 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Verification/5800MHz Verification/Area Scan (61x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.7 W/kg

Verification/5800MHz Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.02 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 36.8 W/kg
SAR(1 g) = 8.12 W/kg; SAR(10 g) = 2.3 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 60.9%
Maximum value of SAR (measured) = 21.2 W/kg



Appendix A.8 SAR Test Plots for LTE Band 13 Hotspot

Date: 2020-08-31

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: LTE Band 13_10MHz_1RB_25 Offset_QPSK_Front_CH23230.da53:0

Ambient Temp : 22.2 °C Tissue Temp : 22.1 °C

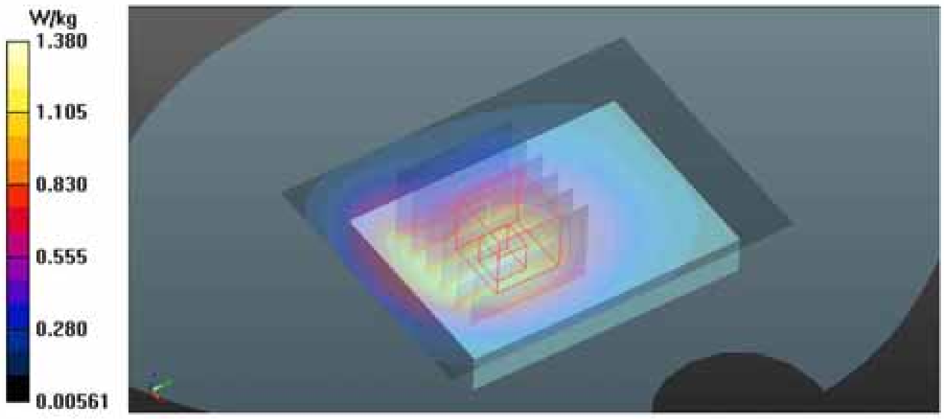
DUT: R717V; Type: Franklin Technology; Serial: 359241040003615

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used: f = 782 MHz; $\sigma = 0.927$ S/m; $\varepsilon_r = 42.981$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(9.28, 9.28, 9.28) @ 782 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Body/LTE Band 13_10MHz_1RB_25 Offset_QPSK_Front_CH23230/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.38 W/kg

Body/LTE Band 13_10MHz_1RB_25 Offset_QPSK_Front_CH23230/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.51 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.976 W/kg; SAR(10 g) = 0.653 W/kg
Smallest distance from peaks to all points 3 dB below = 20.4 mm
Ratio of SAR at M2 to SAR at M1 = 62%
Maximum value of SAR (measured) = 1.30 W/kg



Appendix A.9 SAR Test Plots for LTE Band 5 Hotspot

Date: 2020-08-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: LTE Band 5_10MHz_1RB_25 Offset_QPSK_Front_CH20450.da53:0

Ambient Temp : 22.0 °C Tissue Temp : 21.3 °C

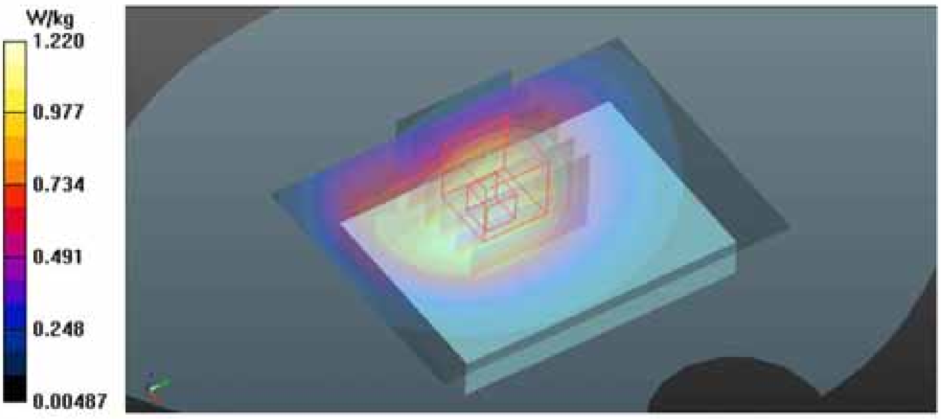
DUT: R717V; Type: Franklin Technology; Serial: 359241040003615

Communication System: UID 0, LTE Band 5 (0); Frequency: 829 MHz;Duty Cycle: 1:1
Medium parameters used: f = 829 MHz; σ = 0.912 S/m; ε_r = 41.587; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(8.97, 8.97, 8.97) @ 829 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Front_CH20450/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.22 W/kg

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Front_CH20450/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.68 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.946 W/kg; SAR(10 g) = 0.659 W/kg
Smallest distance from peaks to all points 3 dB below = 23.8 mm
Ratio of SAR at M2 to SAR at M1 = 66.5%
Maximum value of SAR (measured) = 1.25 W/kg



Appendix A.10 SAR Test Plots for LTE Band 66 Hotspot

Date: 2020-08-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: LTE Band 66_20MHz_1RB_50 Offset_QPSK_Front_CH132322.da53:0

Ambient Temp : 22.3℃ Tissue Temp : 21.3℃

DUT: R717V; Type: Franklin Technology; Serial: 359241040003615

Communication System: UID 0, LTE Band 66 (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1745 MHz; σ = 1.404 S/m; ε_r = 41.302; ρ = 1000 kg/m^3
Phantom section: Flat Section

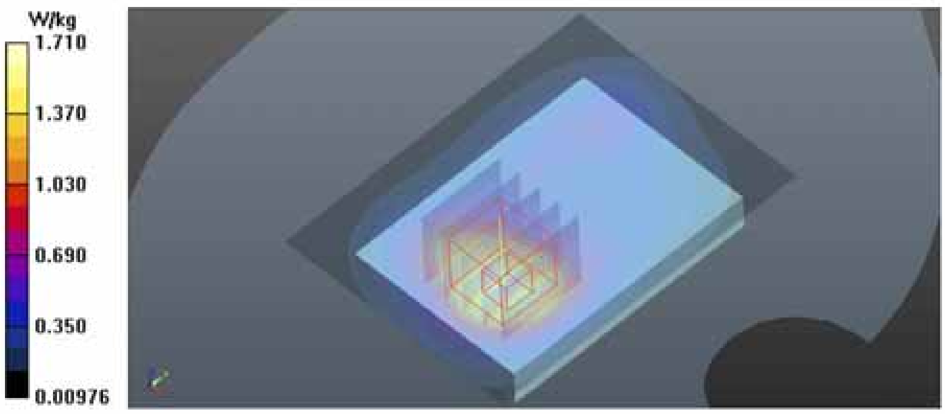
DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(7.74, 7.74, 7.74) @ 1745 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Body/LTE Band 66_20MHz_1RB_50 Offset_QPSK_Front_CH132322/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.71 W/kg

Body/LTE Band 66_20MHz_1RB_50 Offset_QPSK_Front_CH132322/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.07 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.708 W/kg
Smallest distance from peaks to all points 3 dB below = 15.8 mm
Ratio of SAR at M2 to SAR at M1 = 60.8%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.65 W/kg



Appendix A.11 SAR Test Plots for LTE Band 2 Hotspot

Date: 2020-08-28

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: LTE Band 2_20MHz_1RB_50 Offset_QPSK_Front_CH18700.da53:0

Ambient Temp : 22.3 °C Tissue Temp : 21.1 °C

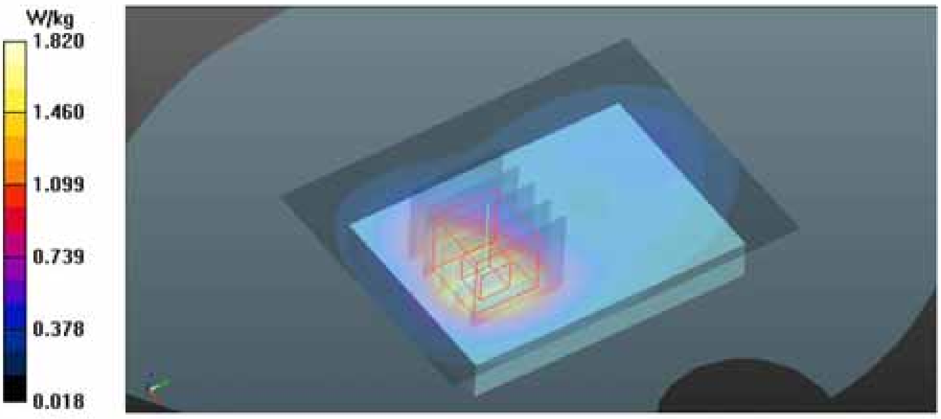
DUT: R717V; Type: Franklin Technology; Serial: 359241040003615

Communication System: UID 0, LTE Band 2 (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.374 S/m; ε_r = 41.266; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(7.52, 7.52, 7.52) @ 1860 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Body/LTE Band 2_20MHz_1RB_50 Offset_QPSK_Front_CH18700/Area Scan (61x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.82 W/kg

Body/LTE Band 2_20MHz_1RB_50 Offset_QPSK_Front_CH18700/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.71 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 2.07 W/kg
SAR(1 g) = 1.24 W/kg; SAR(10 g) = 0.737 W/kg
Smallest distance from peaks to all points 3 dB below = 17 mm
Ratio of SAR at M2 to SAR at M1 = 60.9%
Maximum value of SAR (measured) = 1.72 W/kg



Appendix A.12 SAR Test Plots for WLAN 2.4GHz Hotspot

Date: 2020-09-04

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 2.45GHz_WLAN_802.11b_Bottom_CH1.da53:0

Ambient Temp : 22.0 ℃ Tissue Temp : 21.5 ℃

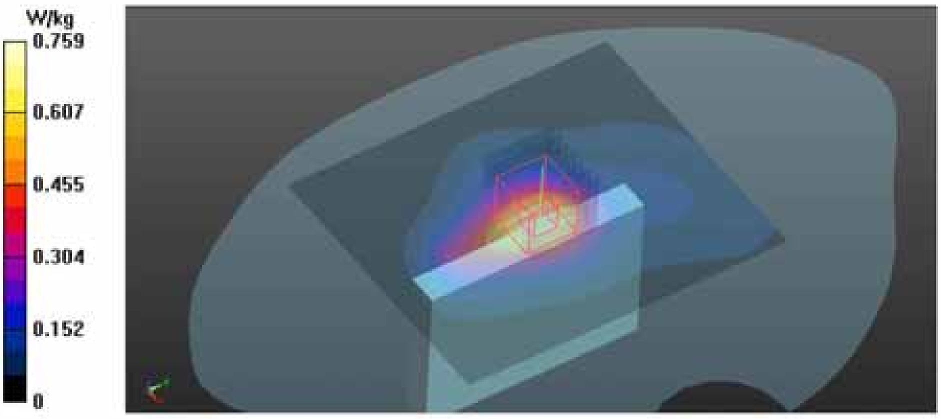
DUT: R717V; Type: Franklin Technology; Serial: 359241040003615

Communication System: UID 0, WLAN 2.45GHz (0); Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; $\sigma = 1.78$ S/m; $\varepsilon_r = 39.56$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(6.86, 6.86, 6.86) @ 2412 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Body/2.45GHz_WLAN_802.11b_Bottom_CH1/Area Scan (121x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.759 W/kg

Body/2.45GHz_WLAN_802.11b_Bottom_CH1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.39 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.923 W/kg
SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.263 W/kg
Smallest distance from peaks to all points 3 dB below = 16.6 mm
Ratio of SAR at M2 to SAR at M1 = 51.8%
Maximum value of SAR (measured) = 0.758 W/kg



Appendix A.13 SAR Test Plots for WLAN 5.2GHz Hotspot

Date: 2020-09-16

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.2GHz_WLAN_802.11n_HT20_Rear_CH36.da53:0

Ambient Temp : 21.9°C Tissue Temp : 21.4°C

DUT: R717V; Type: Franklin Technology; Serial: 359241040003615

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5220 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5220 MHz; σ = 4.656 S/m; ε_r = 36.108; ρ = 1000 kg/m^3
Phantom section: Flat Section

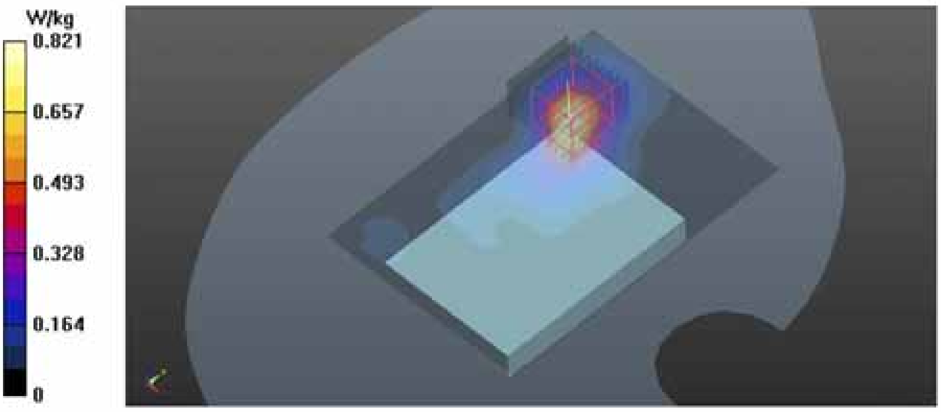
DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(4.9, 4.9, 4.9) @ 5220 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Body/5.2GHz_WLAN_802.11n_HT20_Rear_CH36/Area Scan (101x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.821 W/kg

Body/5.2GHz_WLAN_802.11n_HT20_Rear_CH36/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 4.971 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.368 W/kg; SAR(10 g) = 0.139 W/kg
Smallest distance from peaks to all points 3 dB below = 10.2 mm
Ratio of SAR at M2 to SAR at M1 = 66.1%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.802 W/kg



Appendix A.14 SAR Test Plots for WLAN 5.8GHz Hotspot

Date: 2020-09-07

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: 5.8GHz_WLAN_802.11ac_VHT80_Right Edge_CH155.da53:0

Ambient Temp : 21.9 °C Tissue Temp : 21.7 °C

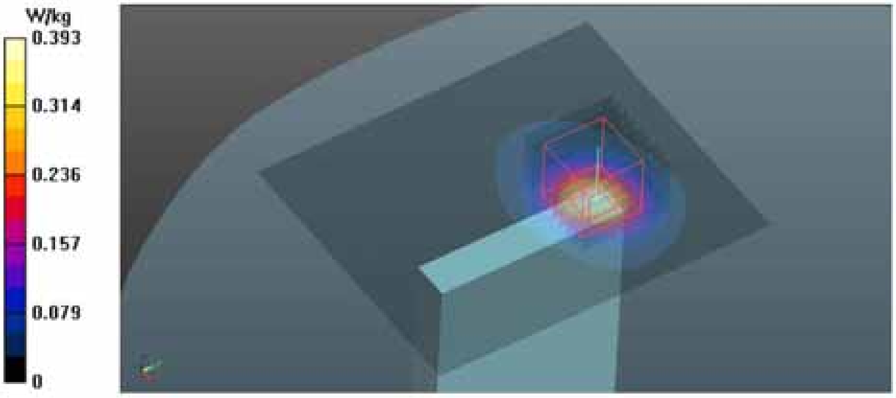
DUT: R717V; Type: Franklin Technology; Serial: 359241040003615

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5775 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5775 MHz; σ = 5.069 S/m; ε_r = 35.514; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3791; ConvF(4.45, 4.45, 4.45) @ 5775 MHz; Calibrated: 2020-05-27
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2020-03-20
- Phantom: SAM 1843 (20deg probe tilt); Type: QD000P40CD; Serial: TP1843
- DASY52 52.10.4(1527)SEMCAD X 14.6.14(7483)

Body/5.8GHz_WLAN_802.11ac_VHT80_Right Edge_CH155/Area Scan (101x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.393 W/kg

Body/5.8GHz_WLAN_802.11ac_VHT80_Right Edge_CH155/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.232 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.705 W/kg
SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.057 W/kg
Smallest distance from peaks to all points 3 dB below = 10.4 mm
Ratio of SAR at M2 to SAR at M1 = 59.5%
Maximum value of SAR (measured) = 0.402 W/kg



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