SAR Report

Applicant	:	unitech electronics co., ltd..
Product Type	:	Rugged Handheld Computer
Trade Name	:	unitech
Model Number	:	EA630
Applicable Standard	:	ANSI/IEEE C95.1 / IEEE Std. 1528-2013 47 CFR Part §2.1093 KDB 447498 D01 / KDB 865664 D01 / KDB 865664 D02 KDB 648474 D04 / KDB 248227 D01 / KDB 941225 D01 KDB 941225 D05 / KDB 941225 D06
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Issued by

Approved By : (Mark Duan)

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Taiwan Accreditation Foundation accreditation number: 1330
Test Firm MRA designation number: TW0010

Note:

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Revision History

Rev.	Issued Date	Revisions	Revised By
00	Jun. 02, 2020	Initial Issue	Nicole Chu
01	Jun. 30, 2020	P05 Add note 3 P06 Revised Frequency and BW P16 & 72 Deleted Frequency 5610 MHz P70 Add power P242 Revised Report	Nicole Chu

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1. General Information

1.1 Reference Applicable Standard

Standard	Description	Version
ANSI/IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	1992
IEEE 1528	Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques.	2013
47 CFR Part §2.1093	Radiofrequency radiation exposure evaluation: portable devices.	-
KDB 447498 D01	RF exposure procedures and equipment authorization policies for mobile and portable devices	v06
KDB 865664 D01	SAR measurement requirement for 100 MHz to 6 GHz.	v01r04
KDB 865664 D02	RF exposure compliance reporting and documentation considerations.	v01r02
KDB 648474 D04	SAR evaluation considerations for Wireless Handsets	v01r03
KDB 248227 D01	SAR guidance for IEEE 802.11 (Wi-Fi) transmitters	v02r02
KDB 941225 D01	3G SAR Procedures	v03r01
KDB 941225 D05	SAR for LTE Devices	v02r05
KDB 941225 D06	Hotspot Mode SAR	v02r01

1.2 Test Site Environment

Items	Required (IEEE 1528-2013)	Actual
Temperature (°C)	18-25	21-23

2. Summary of Maximum Reported SAR Value

Equipment Class	Mode	Highest Reported $_{1g}$ SAR (W/kg)			
		Head standalone SAR $_{1g}$(W/kg)	Hotspot standalone SAR $_{1g}$(W/kg)	Body standalone SAR $_{1g}$(W/kg)	Extremity standalone SAR$_{10g}$ (W/kg)
Licensed	GSM850	0.04	0.05	0.05	0.00
	GSM1900	0.45	0.39	0.39	0.00
	WCDMA Band II	0.81	0.87	0.87	0.00
	WCDMA Band V	0.10	0.12	0.12	0.00
	LTE Band 2	0.74	0.71	0.71	0.00
	LTE Band 4	0.32	0.57	0.57	0.00
	LTE Band 5	0.08	0.13	0.13	0.00
	LTE Band 7	0.08	**1.06**	0.72	0.00
	LTE Band 12	0.04	0.09	0.09	0.00
	LTE Band 17	0.06	0.11	0.11	0.00
	LTE Band 40	0.17	0.77	0.60	0.00
	LTE Band 38 / 41	0.13	0.75	0.53	0.00
DTS	WLAN2.4GHz	0.14	0.09	0.09	0.00
U-NII	WLAN5GHz	0.77	0.30	0.30	0.48
DSS	Bluetooth	0.07	0.05	0.05	0.00
Highest Simultaneous Transmission Position		Highest Simultaneous Transmission			
Right-Cheek		1.58	-	-	---
Side3		-	1.06	-	---
Front		-	-	1.04	---

NOTE: 1. The SAR limit (Head & Body: SAR1g 1.6 W/kg) for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.

2. Device supported frequency span for LTE B41 falls completely within the supports frequency span for LTE B38, and they have the same target power. SAR was only test for LTE B41.

2. For dual SIM operation, SIM1 and SIM2 shares the same antenna and module, it can't be transmitted simultaneously, so we only perform tests for one SIM.

3. Description of Equipment under Test (EUT)

Applicant	unitech electronics co., ltd.. 5F., No.136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist, New Taipei City, Taiwan	
Manufacture	unitech electronics co., ltd. 5F., No.136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist, New Taipei City, Taiwan	
Product Type	Rugged Handheld Computer	
Trade Name	unitech	
Model Number	EA630	
IMEI No.	IMEI 1: 355239110051120, IMEI 2: 355239115204005	
FCC ID	HLEEA630BTNFL	
RF Function	Operate Bands	Operate Frequency (MHz)
	GSM/GPRS/EGPRS 850	824.2 - 848.8
	GSM/GPRS/EGPRS 1900	1850.2 - 1909.8
	WCDMA(RMC 12.2K) / HSDPA / HSUPA Band II	1852.4 - 1907.6
	WCDMA (RMC 12.2K) / HSDPA / HSUPA Band V	826.4 - 846.6
	LTE Band 2 (BW 1.4, 3, 5, 10, 15, 20 MHz)	1850.0 - 1910.0
	LTE Band 4 (BW 1.4, 3, 5, 10, 15, 20 MHz)	1710.0 - 1754.9
	LTE Band 5 (BW 1.4, 3, 5, 10 MHz)	824.0 - 849.0
	LTE Band 7 (BW 5, 10, 15, 20 MHz)	2500 - 2570
	LTE Band 12 (BW 1.4, 3, 5, 10 MHz)	699 - 716
	LTE Band 17 (BW 5, 10 MHz)	704.0 - 715.9
	LTE Band 38 (BW 5, 10, 15, 20 MHz)	2570 - 2620
	LTE Band 40 (BW 5, 10 MHz)	2300 - 2400
	LTE Band 41 (BW 5, 10, 15, 20 MHz)	2496 - 2690
	IEEE 802.11b / 802.11g / 802.11n 2.4 GHz 20 MHz	2412 - 2472
	IEEE 802.11n 2.4 GHz 40 MHz	2422 - 2462
	IEEE 802.11a	5180 - 5825
	IEEE 802.11ac / 802.11n 5 GHz 20 MHz	5180 - 5825
	IEEE 802.11ac / 802.11n 5 GHz 40 MHz	5190 - 5795
	IEEE 802.11ac 80 MHz	5210 - 5775
	Bluetooth BR/EDR	2402 - 2480
	Bluetooth LE	2402 - 2480
	*GPRS Multi Class: 12	
Antenna Type	PIFA Antenna	
Battery Option	Standard	
	Trade Name: ZhuHai CosMX Battery Co., Ltd. Model: 1400-900057G Spec: DC 3.85 V / 4000 mAh	
Device Category	Portable Device	
Application Type	Certification	

Note:The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

4. Introduction

The A Test Lab Techno Corp. has performed measurements of the maximum potential exposure to the user.The test procedures, as described in American National Standards, Institute C95.1-1992〔1〕were employed and they specify 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 between user and EUT in the uncontrolled environment. A description of the product and operating configuration, detailed summary of the test results, methodology and procedures used in the equipment used are included within this test report.

4.1 SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative (rate) of the incremental energy (dw) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below :

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

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

SAR measurement can be related to the electrical field in the tissue by

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

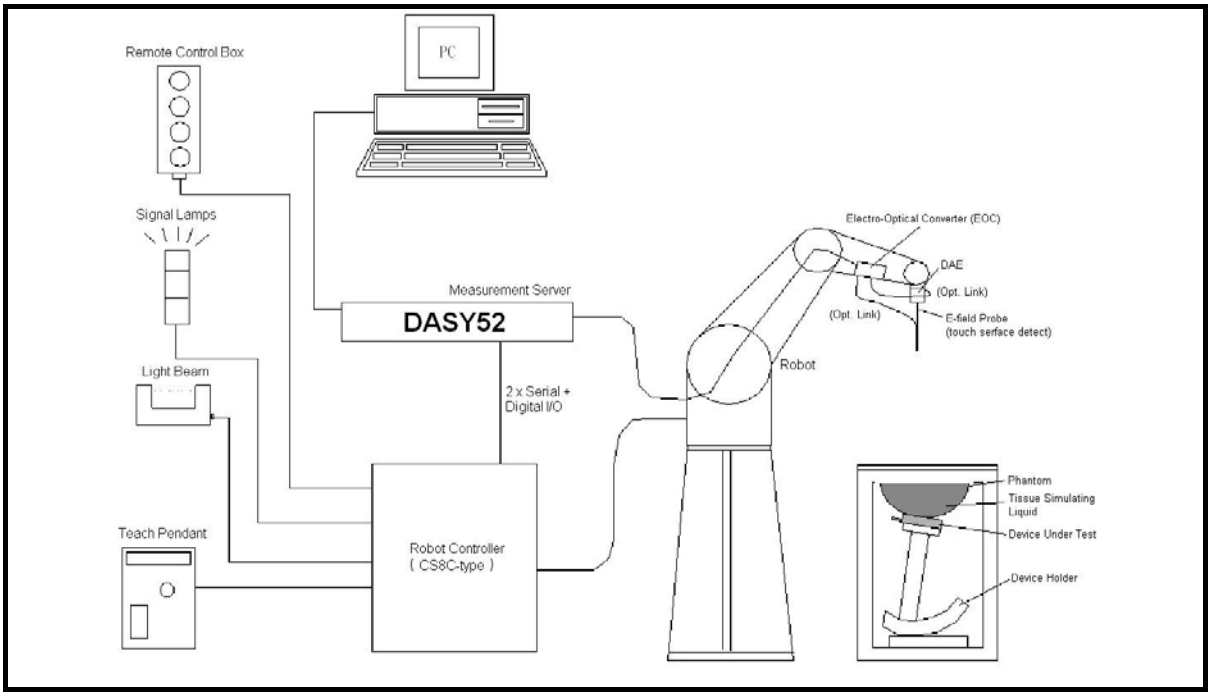
Where：

σ = conductivity of the tissue (S/m)

ρ = mass density of the tissue (kg/m3)

E = RMS electric field strength (V/m)

5. SAR Measurement Setup



The DASY52 system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli TX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
4. 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.
5. A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
6. A computer operating Windows 7 or Windows 8.
7. DASY52 software.
8. Remote controls with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
9. The SAM twin phantom enabling testing left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. Validation dipole kits allowing validating the proper functioning of the system.

5.1 DASY E-Field Probe System

The SAR measurements were conducted with the dosimetric probe (manufactured by SPEAG), designed in the classical triangular configuration〔3〕and optimized for dosimetric evaluation. The probes is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped when reaching the maximum.

5.1.1 E-Field Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	±0.3 dB in brain tissue (rotation around probe axis) ±0.5 dB in brain tissue (rotation normal probe axis)
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Calibration	ISO/IEC 17025 calibration service available

EX3DV4 E-Field Probe

Probe setup on robot

5.2 Data Acquisition Electronic (DAE) System

Model	DAE4	
Construction	Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop.	
Measurement Range	-100 to +300 mV (16 bit resolution and two range settings: 4 mV, 400 mV)	
Input Offset Voltage	< 5 µV (with auto zero)	
Input Bias Current	< 50 fA	
Dimensions	60 x 60 x 68 mm	

5.3 Robot

Positioner	Stäubli Unimation Corp.	
Robot Model	TX90XL	
Number of Axes	6	
Norminal Load	5 kg	
Reach	1450 mm	
Repeatability	± 0.035 mm	

5.4 Measurement Server

Processor	Stäubli Unimation Corp.	
I/O-board	TX90XL	
Number of Axes	Link to DAE4 16-bit A/D converter for surface detection system Digital I/O interface Serial link to robot Direct emergency stop output for robot	

5.5 Device Holder

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

Device Holder 1	Device Holder 2

5.6 Phantom - SAM v4.0

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.

Shell Thickness	2 ±0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	1000×500 mm (L×W)

Table 1. Specification of SAM v4.0

6. Tissue Simulating Liquids

IEEE SCC-34/SC-2 in 1528 recommended Tissue Dielectric Parameters

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in human head. Other head and body tissue parameters that have not been specified in 1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equation and extrapolated according to the head parameter specified in 1528.

Target Frequency	Head		Body	
(MHz)	εr	σ (S/m)	εr	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 - 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00
(εr = relative permittivity, σ = conductivity and ρ = 1000 kg/m3)				

Table 2. Tissue dielectric parameters for head and body phantoms

6.1 The composition of the tissue simulating liquid

Ingredients (% by weight)	Frequency (MHz)												Frequency (GHz)	
	750		835		1750		1900		2450		2600		5 GHz	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	39.28	51.30	41.45	52.40	54.50	40.20	54.90	40.40	62.70	73.20	60.30	71.40	65.5	78.6
Salt (NaCl)	1.47	1.42	1.45	1.50	0.17	0.49	0.18	0.50	0.50	0.10	0.60	0.20	0.00	0.00
Sugar	58.15	46.18	56.00	45.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEC	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bactericide	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.2	10.7
DGBE	0.00	0.00	0.00	0.00	45.33	59.31	44.92	59.10	36.80	26.70	39.10	28.40	0.00	0.00
Dielectric Constant	41.88	54.60	42.54	56.10	40.10	53.60	39.90	54.00	39.80	52.50	39.80	52.50	35.1~ 36.2	47.9~ 49.3
Conductivity (S/m)	0.90	0.97	0.91	0.95	1.39	1.49	1.42	1.45	1.88	1.78	1.88	1.78	4.45~ 5.48	5.07~ 6.23
Diethylene Glycol Mono-hexlether	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.3	10.7

6.2 Liquid Parameters

1. The dielectric parameters of the liquids were verified prior to the SAR evaluation using an DAKS 3.5 Probe Kit.
2. The SAR testing with IEC tissue parameters as an alternative option to FCC Head and body parameters. We used head TSL for body SAR tests. There are some limitations though:

(a) The mixing and matching of head TSL and body TSL for body SAR testing in a single application are not permitted. For example, we cannot start testing body SAR with head TSL and then switch to testing Body SAR with Body TSL.

(b) The TSL used for body SAR testing can be changed via a Permissive Change. However, if the body SAR increases and the original Body SAR was > 1.2 W/kg, additional SAR measurements may be required.

Tissue Temp (°C)	Head / Body	Frequency	Cond.	Perm.	target Cond.	target Perm.	σ (Delta) (%)	εr (Delta) (%)	Limit (%)	Date
			σ	εr	σ	εr				
22.3	Head	824.2 MHz	0.90	42.673	0.90	41.55	-0.03	2.70	±5	May. 18, 2020
22.3	Head	836.6 MHz	0.91	42.519	0.90	41.50	0.94	2.45	±5	May. 18, 2020
22.3	Head	848.8 MHz	0.92	42.343	0.91	41.50	0.71	2.03	±5	May. 18, 2020
22.3	Head	826.4 MHz	0.90	42.650	0.90	41.54	0.21	2.67	±5	May. 18, 2020
22.3	Head	836.4 MHz	0.91	42.521	0.90	41.50	0.93	2.46	±5	May. 18, 2020
22.3	Head	846.6 MHz	0.92	42.373	0.91	41.50	0.84	2.10	±5	May. 18, 2020
22.3	Head	829 MHz	0.90	42.621	0.90	41.53	0.48	2.63	±5	May. 18, 2020

Tissue Temp (°C)	Head / Body	Frequency	Cond. σ	Perm. εr	target Cond. σ	target Perm. εr	σ (Delta) (%)	εr (Delta) (%)	Limit (%)	Date
22.3	Head	836.5 MHz	0.91	42.519	0.90	41.50	0.94	2.45	±5	May. 18, 2020
22.3	Head	844 MHz	0.92	42.407	0.91	41.50	0.82	2.18	±5	May. 18, 2020
22.3	Head	704 MHz	0.86	42.707	0.89	42.15	-3.47	1.32	±5	May. 18, 2020
22.3	Head	707.5 MHz	0.86	42.654	0.89	42.13	-3.06	1.24	±5	May. 18, 2020
22.3	Head	711 MHz	0.86	42.603	0.89	42.11	-2.67	1.17	±5	May. 18, 2020
22.3	Head	709 MHz	0.86	42.632	0.89	42.12	-2.89	1.21	±5	May. 18, 2020
22.3	Head	710 MHz	0.86	42.618	0.89	42.11	-2.78	1.21	±5	May. 18, 2020
22.3	Head	711 MHz	0.86	42.603	0.89	42.11	-2.67	1.17	±5	May. 18, 2020
22.5	Head	1850.2 MHz	1.41	40.262	1.40	40.00	1.04	0.65	±5	May. 20, 2020
22.5	Head	1880 MHz	1.44	40.132	1.40	40.00	2.95	0.33	±5	May. 20, 2020
22.5	Head	1909.8 MHz	1.47	40.053	1.40	40.00	4.76	0.13	±5	May. 20, 2020
22.5	Head	1852.4 MHz	1.41	40.261	1.40	40.00	1.05	0.65	±5	May. 20, 2020
22.5	Head	1880 MHz	1.44	40.132	1.40	40.00	2.95	0.33	±5	May. 20, 2020
22.5	Head	1907.6 MHz	1.46	40.059	1.40	40.00	4.64	0.15	±5	May. 20, 2020
22.5	Head	1860 MHz	1.42	40.216	1.40	40.00	1.70	0.54	±5	May. 20, 2020
22.5	Head	1880 MHz	1.44	40.132	1.40	40.00	2.95	0.33	±5	May. 20, 2020
22.5	Head	1900 MHz	1.46	40.078	1.40	40.00	4.21	0.19	±5	May. 20, 2020
22.5	Head	1720 MHz	1.31	40.693	1.35	40.11	-3.40	1.45	±5	May. 20, 2020
22.5	Head	1732.5 MHz	1.32	40.661	1.36	40.13	-3.36	1.32	±5	May. 20, 2020
22.5	Head	1745 MHz	1.33	40.620	1.37	40.08	-3.12	1.35	±5	May. 20, 2020
22.6	Head	2510 MHz	1.870	39.91	1.86	39.12	0.32	2.01	±5	May. 21, 2020
22.6	Head	2535 MHz	1.90	39.877	1.89	39.09	0.53	2.01	±5	May. 21, 2020
22.6	Head	2560 MHz	1.929	39.80	1.92	39.05	0.63	1.92	±5	May. 21, 2020
22.6	Head	2565MHz	1.94	39.777	1.92	39.05	0.62	1.86	±5	May. 21, 2020
22.6	Head	2591MHz	1.97	39.666	1.95	39.01	1.18	1.68	±5	May. 21, 2020
22.6	Head	2618MHz	2.01	39.586	1.98	38.98	1.57	1.55	±5	May. 21, 2020
22.6	Head	2645MHz	2.04	39.498	2.01	38.94	1.64	1.43	±5	May. 21, 2020
22.3	Head	2565MHz	1.93	39.441	1.92	39.05	0.10	1.00	±5	May. 22, 2020

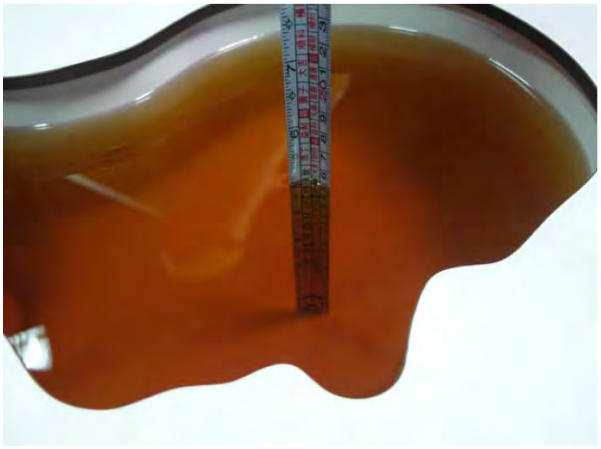
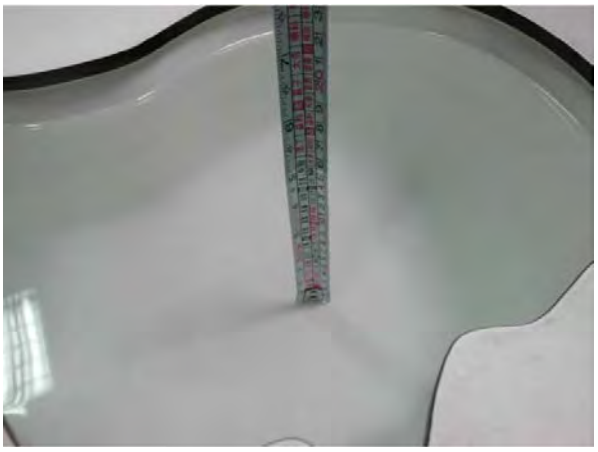
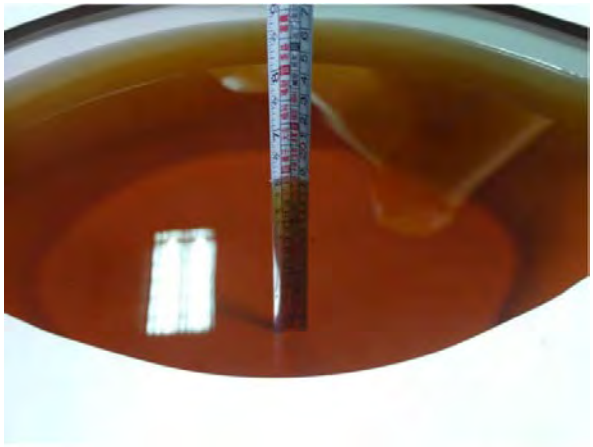
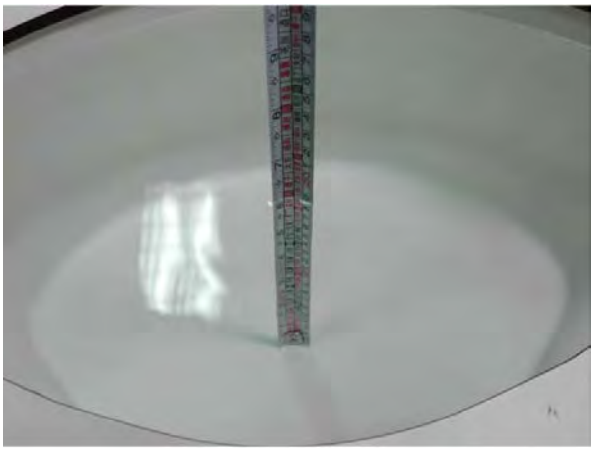
Tissue Temp (°C)	Head / Body	Frequency	Cond. σ	Perm. εr	target Cond. σ	target Perm. εr	σ (Delta) (%)	εr (Delta) (%)	Limit (%)	Date
22.3	Head	2591MHz	1.96	39.330	1.95	39.01	0.67	0.82	±5	May. 22, 2020
22.3	Head	2618MHz	2.00	39.250	1.98	38.98	1.01	0.69	±5	May. 22, 2020
22.3	Head	2645MHz	2.03	39.162	2.01	38.94	1.09	0.57	±5	May. 22, 2020
22.3	Head	2510 MHz	1.86	39.571	1.86	39.12	-0.21	1.15	±5	May. 22, 2020
22.3	Head	2535 MHz	1.89	39.541	1.89	39.09	0.00	1.15	±5	May. 22, 2020
22.3	Head	2560 MHz	1.92	39.462	1.92	39.05	0.10	1.06	±5	May. 22, 2020
22.4	Head	2412 MHz	1.73	39.619	1.77	39.27	-1.80	0.89	±5	May. 23, 2020
22.4	Head	2422 MHz	1.75	39.582	1.78	39.25	-1.63	0.85	±5	May. 23, 2020
22.4	Head	2437 MHz	1.76	39.544	1.79	39.22	-1.40	0.83	±5	May. 23, 2020
22.4	Head	2452 MHz	1.78	39.509	1.80	39.20	-1.16	0.79	±5	May. 23, 2020
22.4	Head	2462 MHz	1.79	39.480	1.81	39.18	-1.09	0.77	±5	May. 23, 2020
22.4	Head	2402 MHz	1.722	39.66	1.76	39.28	-1.97	0.97	±5	May. 23, 2020
22.4	Head	2441 MHz	1.768	39.54	1.79	39.22	-1.34	0.80	±5	May. 23, 2020
22.4	Head	2480 MHz	1.816	39.43	1.83	39.16	-0.90	0.70	±5	May. 23, 2020
22.2	Head	2310 MHz	1.64	40.017	1.68	39.44	-2.27	1.46	±5	May. 24, 2020
22.2	Head	2355 MHz	1.69	39.837	1.72	39.36	-1.63	1.21	±5	May. 24, 2020
22.6	Head	5180 MHz	4.53	36.673	4.64	36.02	-2.35	1.81	±5	May. 25, 2020
22.6	Head	5190 MHz	4.54	36.653	4.65	36.01	-2.32	1.78	±5	May. 25, 2020
22.6	Head	5200 MHz	4.56	36.632	4.66	36.00	-2.24	1.76	±5	May. 25, 2020
22.6	Head	5220 MHz	4.58	36.599	4.68	35.98	-2.06	1.72	±5	May. 25, 2020
22.6	Head	5230 MHz	4.60	36.584	4.69	35.97	-1.97	1.71	±5	May. 25, 2020
22.6	Head	5240 MHz	4.61	36.567	4.70	35.96	-1.91	1.69	±5	May. 25, 2020
22.6	Head	5250 MHz	4.62	36.550	4.71	35.95	-1.83	1.67	±5	May. 25, 2020
22.6	Head	5260 MHz	4.64	36.534	4.72	35.94	-1.74	1.65	±5	May. 25, 2020
22.6	Head	5270 MHz	4.65	36.520	4.73	35.93	-1.65	1.64	±5	May. 25, 2020
22.6	Head	5280 MHz	4.67	36.509	4.74	35.92	-1.55	1.64	±5	May. 25, 2020
22.6	Head	5290 MHz	4.68	36.500	4.75	35.91	-1.46	1.64	±5	May. 25, 2020

Tissue Temp (°C)	Head / Body	Frequency	Cond. σ	Perm. εr	target Cond. σ	target Perm. εr	σ (Delta) (%)	εr (Delta) (%)	Limit (%)	Date
22.6	Head	5300 MHz	4.70	36.492	4.76	35.90	-1.36	1.65	±5	May. 25, 2020
22.6	Head	5310 MHz	4.71	36.483	4.77	35.89	-1.26	1.65	±5	May. 25, 2020
22.6	Head	5320 MHz	4.72	36.476	4.78	35.88	-1.17	1.66	±5	May. 25, 2020
22.4	Head	5500 MHz	5.00	36.726	4.97	35.65	0.65	3.02	±5	May. 26, 2020
22.4	Head	5510 MHz	5.01	36.693	4.98	35.64	0.63	2.95	±5	May. 26, 2020
22.4	Head	5530 MHz	5.03	36.622	5.00	35.61	0.66	2.84	±5	May. 26, 2020
22.4	Head	5550 MHz	5.05	36.549	5.02	35.58	0.66	2.72	±5	May. 26, 2020
22.4	Head	5570 MHz	5.08	36.478	5.04	35.55	0.76	2.61	±5	May. 26, 2020
22.4	Head	5580 MHz	5.09	36.441	5.05	35.53	0.88	2.56	±5	May. 26, 2020
22.4	Head	5620 MHz	5.16	36.320	5.09	35.48	1.40	2.37	±5	May. 26, 2020
22.4	Head	5630 MHz	5.18	36.294	5.10	35.47	1.54	2.32	±5	May. 26, 2020
22.4	Head	5660 MHz	5.23	36.224	5.13	35.44	1.90	2.21	±5	May. 26, 2020
22.4	Head	5670 MHz	5.24	36.207	5.14	35.43	1.98	2.19	±5	May. 26, 2020
22.4	Head	5690 MHz	5.27	36.177	5.16	35.41	2.04	2.17	±5	May. 26, 2020
22.4	Head	5700 MHz	5.28	36.161	5.17	35.40	2.04	2.15	±5	May. 26, 2020
22.4	Head	5710 MHz	5.28	36.144	5.18	35.39	2.02	2.13	±5	May. 26, 2020
22.4	Head	5720 MHz	5.29	36.130	5.19	35.38	1.98	2.12	±5	May. 26, 2020
22.4	Head	5745 MHz	5.31	36.091	5.22	35.36	1.73	2.07	±5	May. 26, 2020
22.4	Head	5755 MHz	5.31	36.076	5.23	35.35	1.60	2.05	±5	May. 26, 2020
22.4	Head	5775 MHz	5.31	36.051	5.25	35.33	1.28	2.04	±5	May. 26, 2020
22.4	Head	5785 MHz	5.31	36.039	5.26	35.32	1.09	2.04	±5	May. 26, 2020
22.4	Head	5795 MHz	5.31	36.025	5.27	35.31	0.90	2.02	±5	May. 26, 2020
22.6	Head	5260 MHz	4.64	36.534	4.72	35.94	-1.74	1.65	±5	May. 25, 2020
22.4	Head	5825 MHz	5.31	35.970	5.30	35.28	0.36	1.96	±5	May. 26, 2020
22.6	Head	1720 MHz	1.34	40.384	1.35	40.16	-1.04	0.56	±5	May. 27, 2020

Tissue Temp (°C)	Head / Body	Frequency	Cond. σ	Perm. εr	target Cond. σ	target Perm. εr	σ (Delta) (%)	εr (Delta) (%)	Limit (%)	Date
22.6	Head	1732.5 MHz	1.35	40.352	1.36	40.13	-1.14	0.55	±5	May. 27, 2020
22.6	Head	1745 MHz	1.36	40.312	1.37	40.09	-1.11	0.55	±5	May. 27, 2020
22.6	Head	1850.2 MHz	1.40	39.941	1.40	40.00	-0.21	-0.15	±5	May. 27, 2020
22.6	Head	1880 MHz	1.42	39.811	1.40	40.00	1.68	-0.47	±5	May. 27, 2020
22.6	Head	1909.8 MHz	1.45	39.732	1.40	40.00	3.47	-0.67	±5	May. 27, 2020
22.6	Head	1852.4 MHz	1.40	39.940	1.40	40.00	-0.20	-0.15	±5	May. 27, 2020
22.6	Head	1880 MHz	1.42	39.811	1.40	40.00	1.68	-0.47	±5	May. 27, 2020
22.6	Head	1907.6 MHz	1.45	39.738	1.40	40.00	3.35	-0.66	±5	May. 27, 2020
22.6	Head	1860 MHz	1.41	39.895	1.40	40.00	0.44	-0.26	±5	May. 27, 2020
22.6	Head	1880 MHz	1.42	39.811	1.40	40.00	1.68	-0.47	±5	May. 27, 2020
22.6	Head	1900 MHz	1.44	39.757	1.40	40.00	2.93	-0.61	±5	May. 27, 2020
22.5	Head	824.2 MHz	0.90	42.607	0.90	41.55	-0.21	2.54	±5	May. 28, 2020
22.5	Head	836.6 MHz	0.91	42.453	0.90	41.50	0.76	2.30	±5	May. 28, 2020
22.5	Head	848.8 MHz	0.92	42.277	0.91	41.50	0.53	1.87	±5	May. 28, 2020
22.5	Head	826.4 MHz	0.90	42.584	0.90	41.54	0.03	2.51	±5	May. 28, 2020
22.5	Head	836.4 MHz	0.91	42.455	0.90	41.50	0.75	2.30	±5	May. 28, 2020
22.5	Head	846.6 MHz	0.92	42.307	0.91	41.50	0.66	1.94	±5	May. 28, 2020
22.5	Head	829 MHz	0.90	42.555	0.90	41.53	0.30	2.47	±5	May. 28, 2020
22.5	Head	836.5 MHz	0.91	42.453	0.90	41.50	0.76	2.30	±5	May. 28, 2020
22.5	Head	844 MHz	0.92	42.341	0.91	41.50	0.64	2.03	±5	May. 28, 2020
22.5	Head	704 MHz	0.86	42.631	0.89	42.15	-3.60	1.14	±5	May. 28, 2020
22.5	Head	707.5 MHz	0.86	42.578	0.89	42.13	-3.19	1.06	±5	May. 28, 2020
22.5	Head	711 MHz	0.86	42.527	0.89	42.11	-2.80	0.99	±5	May. 28, 2020
22.5	Head	709 MHz	0.86	42.555	0.89	42.12	-3.02	1.03	±5	May. 28, 2020
22.5	Head	710 MHz	0.86	42.542	0.89	42.11	-2.91	1.03	±5	May. 28, 2020
22.5	Head	711 MHz	0.86	42.527	0.89	42.11	-2.80	0.99	±5	May. 28, 2020

6.3 Liquid Depth

According to KDB865664 ,the depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm with ≤ ± 0.5 cm variation for SAR measurements ≤ 3 GHz and ≥ 10.0 cm with ≤ ± 0.5 cm variation for measurements > 3 GHz.

	
Liquid Height for Head SAR (Low Freq.)	Liquid Height for Head SAR (High Freq.)
	
Liquid Height for Body SAR (Low Freq.)	Liquid Height for Body SAR (High Freq.)

7. SAR Testing with RF Transmitters

7.1 SAR Testing with GSM / GPRS / EGPRS

<General requirements>

1. The following procedures may be considered for each frequency band to determine SAR test reduction for devices operating in GSM/GPRS/EDGE modes to demonstrate RF exposure compliance. GSM voice mode transmits with 1 time slot.
2. GPRS and EDGE may transmit up to 4 time slots in the 8 time-slot frame according to the multislot class implemented in a device.
3. The SAR test reduction procedures for GSM/(E)GPRS devices may be considered in conjunction with the applicable SAR test reduction provisions in KDB Publication 447498 D01.
4. SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance.
5. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.
6. The GMSK and 8-PSK EDGE configurations are considered separately for SAR compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

<Setup >

Configure the basestation to support GMSK and 8PSK call respectively, and set timeslot transmission for GMSK GSM/GPRS and 8PSK EDGE. Measure and record power outputs for both modulations, that test is applicable.

7.2 SAR Testing with WCDMA

<General requirements>

1. The default test configuration is to measure SAR with an established radio link between the handset and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1.
2. SAR must be measured according to these maximum output conditions and requirements in KDB Publication 447498 D01.
3. **Head SAR**:
   - SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
4. **Body-Worn Accessory SAR**:
   - SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
   - The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode.

<Setup >

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

- Step1: set a Test Mode 1 loop back with a 12.2 kbps Reference Measurement Channel (RMC).
- Step 2: set and send continuously up power control commands to the device.
- Step 3: measure the power at the device antenna connector using the power meter with average detector and test SAR.

7.3 SAR Testing with LTE

<General requirements>

1. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.
3. When the highest reported SAR for 1 RB and 50% RB allocation are > 0.8 W/kg, SAR is measured for the highest output power channel in 100%RB.
4. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.
5. The procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation.
6. For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
7. SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.
8. According to 5.3 of KDB 941225 D05, that about the test reduction for other channel bandwidth, if the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg, then SAR need to test.
9. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M, and L channels may not fully apply.

<FDD Setup >

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements.Configure the basestation to support LTE tests in respect to the 3GPP 36.521-1,and set ch , RB allocation number ,RB allocation offset , and send continuously Up power control commands to the device.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

<TDD Setup >

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements.Configure the basestation to support LTE tests in respect to the 3GPP 36.521-1,and set ch , TDD mode , RB allocation number ,RB allocation offset , and send continuously Up power control commands to the device.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

For 3GPP table 4.2.1 as below, support configurations and worst-case UpPTS information into the table.

3GPP Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink			EUT Support Special subframe	Worst case UpPTS
	DwPTS	UpPTS		DwPTS	UpPTS			
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		
0	6592×Ts	2192×Ts	2560×Ts	7680×Ts	2192×Ts	2560×Ts	□	□
1	19760×Ts			20480×Ts			□	□
2	21952×Ts			23040×Ts			□	□
3	24144×Ts			25600×Ts			■	□
4	26336×Ts			7680×Ts	4384×Ts	5120×Ts	■	□
5	6592×Ts	4384×Ts	5120×Ts	20480×Ts			□	□
6	19760×Ts			23040×Ts			□	□
7	21952×Ts			12800×Ts			■	■
8	24144×Ts			-	-	-	□	□
9	13168×Ts			-	-	-	□	□
Duty cycle$_{(maximum)}$								43.33 %

The EUT only supports the 40 % case, which is Table 4.2.2, configuration #1 below.

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

<Maximum power reduction (MPR) >

Identify the LTE voice/data requirements in each operating mode and exposure condition with respect to head and body test configurations, antenna locations, handset flip-cover or slide positions, antenna diversity conditions etc.

The voice and data transmission:

- Data only device.

Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design:

- Maximum Power Reduction (MPR) is mandatory, i.e. built-in by design.
- A-MPR (additional MPR) must be disabled
- A-MPR was disabled during testing.

Maximum Power Reduction (MPR) for Power Class 3							
Channel bandwidth / Transmission bandwidth configuration (RB)							
Modulation	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20MHz	MPR (dB)
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

7.4 LTE Frequency range and channel bandwidth

Channel bandwidth support:

Band	BW (MHz)					
	1.4	3	5	10	15	20
LTE Band 2	V	V	V	V	V	V
LTE Band 4	V	V	V	V	V	V
LTE Band 5	V	V	V	V	---	---
LTE Band 7	---	---	V	V	V	V
LTE Band 12	V	V	V	V	---	---
LTE Band 17	---	---	V	V	---	---
LTE Band 38	---	---	V	V	V	V
LTE Band 40	---	---	V	V	---	---
LTE Band 41	---	---	V	V	V	V

LTE Band	Bandwidth (MHz)	Test requency ID	N_{UL}	Frequency of Uplink (MHz)
LTE Band 2	1.4	Low Range	18607	1850.7
		Mid Range	18900	1880.0
		High Range	19193	1909.3
	3	Low Range	18615	1851.5
		Mid Range	18900	1880.0
		High Range	19185	1908.5
	5	Low Range	18625	1852.5
		Mid Range	18900	1880.0
		High Range	19175	1907.5
	10	Low Range	18650	1855.0
		Mid Range	18900	1880.0
		High Range	19150	1905.0
	15	Low Range	18675	1857.5
		Mid Range	18900	1880.0
		High Range	19125	1902.5
	20	Low Range	18700	1860.0
		Mid Range	18900	1880.0
		High Range	19100	1900.0

LTE Band	Bandwidth (MHz)	Test requency ID	N_{UL}	Frequency of Uplink (MHz)
LTE Band 4	1.4	Low Range	19957	1710.7
		Mid Range	20175	1732.5
		High Range	20393	1754.3
	3	Low Range	19965	1711.5
		Mid Range	20175	1732.5
		High Range	20385	1753.5
	5	Low Range	19975	1712.5
		Mid Range	20175	1732.5
		High Range	20375	1752.5
	10	Low Range	20000	1715.0
		Mid Range	20175	1732.5
		High Range	20350	1750.0
	15	Low Range	20025	1717.5
		Mid Range	20175	1732.5
		High Range	20325	1747.5
	20	Low Range	20050	1720.0
		Mid Range	20175	1732.5
		High Range	20300	1745.0
LTE Band 5	1.4	Low Range	20407	824.7
		Mid Range	20525	836.5
		High Range	20643	848.3
	3	Low Range	20415	825.5
		Mid Range	20525	836.5
		High Range	20635	847.5
	5	Low Range	20425	826.5
		Mid Range	20525	836.5
		High Range	20625	846.5
	10	Low Range	20450	829.0
		Mid Range	20525	836.5
		High Range	20600	844.0

LTE Band	Bandwidth (MHz)	Test frequency ID	N_{UL}	Frequency of Uplink (MHz)
LTE Band 7	5	Low Range	20775	2502.5
		Mid Range	21100	2535.0
		High Range	21425	2567.5
	10	Low Range	20800	2505.0
		Mid Range	21100	2535.0
		High Range	21400	2565.0
	15	Low Range	20825	2507.5
		Mid Range	21100	2535.0
		High Range	21375	2562.5
	20	Low Range	20850	2510.0
		Mid Range	21100	2535.0
		High Range	21350	2560.0
LTE Band 12	1.4	Low Range	23017	699.7
		Mid Range	23095	707.5
		High Range	23173	715.3
	3	Low Range	23025	700.5
		Mid Range	23095	707.5
		High Range	23165	714.5
	5	Low Range	23035	701.5
		Mid Range	23095	707.5
		High Range	23155	713.5
	10	Low Range	23060	704.0
		Mid Range	23095	707.5
		High Range	23130	711.0
LTE Band 17	5	Low Range	23755	706.5
		Mid Range	23790	710.0
		High Range	23825	713.5
	10	Low Range	23780	709.0
		Mid Range	23790	710.0
		High Range	23800	711.0

LTE Band	Bandwidth (MHz)	Test frequency ID	N_{UL}	Frequency of Uplink (MHz)
LTE Band 38	5	Low Range	37775	2572.5
		Mid Range	38000	2595.0
		High Range	38225	2617.5
	10	Low Range	37800	2575.0
		Mid Range	38000	2595.0
		High Range	38200	2615.0
	15	Low Range	37825	2577.5
		Mid Range	38000	2595.0
		High Range	38175	2612.5
	20	Low Range	37850	2580.0
		Mid Range	38000	2595.0
		High Range	38150	2610.0
LTE Band 40	5	Low Range	38725	2307.5
		Mid Range	38750	2310.0
		High Range	38775	2312.5
	10	Mid Range	38750	2310.0
	5	Low Range	39175	2352.5
		Mid Range	39200	2355.0
		High Range	39225	2357.5
	10	Mid Range	39200	2355.0
LTE Band 41	5	Low Range	40265	2557.5
		Mid Range	40585	2589.5
		Mid Range	40905	2621.5
		High Range	41215	2652.5
	10	Low Range	40290	2560.0
		Mid Range	40590	2590.0
		Mid Range	40890	2620.0
		High Range	41190	2650.0
	15	Low Range	40315	2562.5
		Mid Range	40590	2590.5
		Mid Range	40885	2619.5
		High Range	41165	2647.5
	20	Low Range	40340	2565.0
		Mid Range	40600	2591.0
		Mid Range	40870	2618.0
		High Range	41140	2645.0

7.5 SAR Testing with 802.11 Wi-Fi

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the initial test position(s) by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The initial test position(s) is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the reported SAR for the initial test position is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.
  - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
  - When it is unclear, all equivalent conditions must be tested.

- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required test channels are considered.
  - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

7.6 Conducted Power

< GSM / GPRS / EGPRS >

Band	Modulation	Test Mode	CH		Frequency (MHz)	Source-Time Average (dBm)		Average burst (dBm)	
						Conducted power	Tune-up power	Conducted power	Tune-up power
GSM 850	GMSK	1Down1Up Duty factor 1/8	Lowest	128	824.2	23.64	23.97	32.67	33.00
			Middle	190	836.6	23.60	23.97	32.63	33.00
			Highest	251	848.8	23.51	23.97	32.54	33.00
GPRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5		4Down1Up Duty factor 1/8	Lowest	128	824.2	23.44	23.47	32.47	32.50
			Middle	190	836.6	23.42	23.47	32.45	32.50
			Highest	251	848.8	23.31	23.47	32.34	32.50
		3Down2Up Duty factor 2/8	Lowest	128	824.2	26.29	26.48	32.31	32.50
			Middle	190	836.6	26.27	26.48	32.29	32.50
			Highest	251	848.8	26.15	26.48	32.17	32.50
		2Down3Up Duty factor 3/8	Lowest	128	824.2	27.86	28.24	32.12	32.50
			Middle	190	836.6	27.81	28.24	32.07	32.50
			Highest	251	848.8	27.74	28.24	32.00	32.50
		1Down4Up Duty factor 4/8	Lowest	128	824.2	28.90	28.99	31.91	32.00
			Middle	190	836.6	28.84	28.99	31.85	32.00
			Highest	251	848.8	28.76	28.99	31.77	32.00
EGPRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up Duty factor 1/8	Lowest	128	824.2	16.89	16.97	25.92	26.00
			Middle	190	836.6	16.91	16.97	25.94	26.00
			Highest	251	848.8	16.94	16.97	25.97	26.00
		3Down2Up Duty factor 2/8	Lowest	128	824.2	19.68	19.98	25.70	26.00
			Middle	190	836.6	19.72	19.98	25.74	26.00
			Highest	251	848.8	19.73	19.98	25.75	26.00
		2Down3Up Duty factor 3/8	Lowest	128	824.2	21.18	21.74	25.44	26.00
			Middle	190	836.6	21.25	21.74	25.51	26.00
			Highest	251	848.8	21.29	21.74	25.55	26.00
		1Down4Up Duty factor 4/8	Lowest	128	824.2	22.21	22.49	25.22	25.50
			Middle	190	836.6	22.24	22.49	25.25	25.50
			Highest	251	848.8	22.26	22.49	25.27	25.50

Note: 1. Time Average power slot duty cycle factor calculate:

1up: Average burst power+10*LOG(1/8)

2up: Average burst power+10*LOG(2/8)

3up: Average burst power+10*LOG(3/8)

4up: Average burst power+10*LOG(4/8)

Band	Modulation	Test Mode	CH		Frequency (MHz)	Source-Time Average (dBm)		Average burst (dBm)	
						Conducted power	Tune-up power	Conducted power	Tune-up power
PCS 1900	GMSK	1Down1Up Duty factor 1/8	Lowest	512	1850.2	21.53	21.97	30.56	31.00
			Middle	661	1880.0	21.46	21.97	30.49	31.00
			Highest	810	1909.8	21.30	21.97	30.33	31.00
GPRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5		4Down1Up Duty factor 1/8	Lowest	512	1850.2	21.34	21.47	30.37	30.50
			Middle	661	1880.0	21.27	21.47	30.30	30.50
			Highest	810	1909.8	21.11	21.47	30.14	30.50
		3Down2Up Duty factor 2/8	Lowest	512	1850.2	24.14	24.48	30.16	30.50
			Middle	661	1880.0	24.07	24.48	30.09	30.50
			Highest	810	1909.8	23.91	24.48	29.93	30.50
		2Down3Up Duty factor 3/8	Lowest	512	1850.2	25.72	25.74	29.98	30.00
			Middle	661	1880.0	25.65	25.74	29.91	30.00
			Highest	810	1909.8	25.49	25.74	29.75	30.00
		1Down4Up Duty factor 4/8	Lowest	512	1850.2	26.78	26.99	29.79	30.00
			Middle	661	1880.0	26.71	26.99	29.72	30.00
			Highest	810	1909.8	26.55	26.99	29.56	30.00
EGPRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up Duty factor 1/8	Lowest	512	1850.2	16.81	16.97	25.84	26.00
			Middle	661	1880.0	16.67	16.97	25.70	26.00
			Highest	810	1909.8	16.56	16.97	25.59	26.00
		3Down2Up Duty factor 2/8	Lowest	512	1850.2	19.61	19.98	25.63	26.00
			Middle	661	1880.0	19.46	19.98	25.48	26.00
			Highest	810	1909.8	19.34	19.98	25.36	26.00
		2Down3Up Duty factor 3/8	Lowest	512	1850.2	21.11	21.24	25.37	25.50
			Middle	661	1880.0	20.98	21.24	25.24	25.50
			Highest	810	1909.8	20.86	21.24	25.12	25.50
		1Down4Up Duty factor 4/8	Lowest	512	1850.2	22.13	22.49	25.14	25.50
			Middle	661	1880.0	22.00	22.49	25.01	25.50
			Highest	810	1909.8	21.88	22.49	24.89	25.50

Note: 1. Time Average power slot duty cycle factor calculate:
1up: Average burst power+10*LOG(1/8)
2up: Average burst power+10*LOG(2/8)
3up: Average burst power+10*LOG(3/8)
4up: Average burst power+10*LOG(4/8)

< WCDMA / HSDPA / HSUPA >

Band	Modulation	Sub-test	CH	Frequency (MHz)	Average (dBm)	
					Conducted power	Tune-up power
WCDMA Band II (RMC12.2K)	QPSK	---	Lowest	1852.4	24.65	25.00
			Middle	1880.0	24.68	25.00
			Highest	1907.6	24.75	25.00
HSDPA Band II	QPSK	1	Lowest	1852.4	23.79	24.00
			Middle	1880.0	23.85	24.00
			Highest	1907.6	23.90	24.00
		2	Lowest	1852.4	23.22	23.50
			Middle	1880.0	23.27	23.50
			Highest	1907.6	23.31	23.50
		3	Lowest	1852.4	23.16	23.50
			Middle	1880.0	23.21	23.50
			Highest	1907.6	23.24	23.50
		4	Lowest	1852.4	23.61	24.00
			Middle	1880.0	23.68	24.00
			Highest	1907.6	23.71	24.00
HSDPA Band II	QPSK	1	Lowest	1852.4	23.16	23.50
			Middle	1880.0	23.25	23.50
			Highest	1907.6	23.27	23.50
		2	Lowest	1852.4	21.16	21.50
			Middle	1880.0	21.24	21.50
			Highest	1907.6	21.26	21.50
		3	Lowest	1852.4	22.11	22.50
			Middle	1880.0	22.22	22.50
			Highest	1907.6	22.21	22.50
		4	Lowest	1852.4	21.13	21.50
			Middle	1880.0	21.24	21.50
			Highest	1907.6	21.25	21.50
		5	Lowest	1852.4	22.96	23.50
			Middle	1880.0	23.04	23.50
			Highest	1907.6	23.08	23.50

Band	Modulation	Date Rate or Sub-test	CH		Frequency (MHz)	Average (dBm)	
						Conducted power	Tune-up power
WCDMA V	RMC12.2K	---	Lowest	4132	826.4	23.82	24.50
			Middle	4183	836.6	24.02	24.50
			Highest	4233	846.6	23.76	24.50
HSDPA V	QPSK	1	Lowest	4132	826.4	22.94	23.50
			Middle	4183	836.6	23.17	23.50
			Highest	4233	846.6	22.89	23.50
		2	Lowest	4132	826.4	22.34	23.00
			Middle	4183	836.6	22.55	23.00
			Highest	4233	846.6	22.29	23.00
		3	Lowest	4132	826.4	22.32	23.00
			Middle	4183	836.6	22.51	23.00
			Highest	4233	846.6	22.24	23.00
		4	Lowest	4132	826.4	22.74	23.00
			Middle	4183	836.6	22.99	23.00
			Highest	4233	846.6	22.68	23.00
HSUPA V		1	Lowest	4132	826.4	22.34	23.00
			Middle	4183	836.6	22.58	23.00
			Highest	4233	846.6	22.28	23.00
		2	Lowest	4132	826.4	20.31	21.00
			Middle	4183	836.6	20.54	21.00
			Highest	4233	846.6	20.25	21.00
		3	Lowest	4132	826.4	21.27	22.00
			Middle	4183	836.6	21.55	22.00
			Highest	4233	846.6	21.24	22.00
		4	Lowest	4132	826.4	20.28	21.00
			Middle	4183	836.6	20.54	21.00
			Highest	4233	846.6	20.26	21.00
		5	Lowest	4132	826.4	22.14	22.50
			Middle	4183	836.6	22.37	22.50
			Highest	4233	846.6	22.01	22.50

< LTE >

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 2	1.4MHz	QPSK	18607	1850.7	1	0	23.69	24.00
					1	2	23.77	24.00
					1	5	23.68	24.00
					3	0	23.76	24.00
					3	1	23.80	24.00
					3	3	23.75	24.00
					6	0	22.80	23.00
			18900	1880.0	1	0	23.77	24.00
					1	2	23.87	24.00
					1	5	23.78	24.00
					3	0	23.83	24.00
					3	1	23.88	24.00
					3	3	23.83	24.00
					6	0	22.86	23.00
			19193	1909.3	1	0	23.66	24.00
					1	2	23.75	24.00
					1	5	23.67	24.00
					3	0	23.70	24.00
					3	1	23.80	24.00
					3	3	23.74	24.00
					6	0	22.79	23.00
		16QAM	18607	1850.7	1	0	22.96	23.50
					1	2	23.06	23.50
					1	5	23.02	23.50
					3	0	22.93	23.50
					3	1	22.97	23.50
					3	3	22.92	23.50
					6	0	21.95	22.50
			18900	1880.0	1	0	23.21	23.50
					1	2	23.21	23.50
					1	5	23.13	23.50
					3	0	23.05	23.50
					3	1	23.10	23.50
					3	3	23.04	23.50
					6	0	22.05	22.50
			19193	1909.3	1	0	22.90	23.50
					1	2	22.92	23.50
					1	5	22.85	23.50
					3	0	22.82	23.50
					3	1	22.87	23.50
					3	3	22.82	23.50
					6	0	21.89	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 2	3MHz	QPSK	18615	1851.5	1	0	23.76	24.00
					1	7	23.91	24.00
					1	14	23.77	24.00
					8	0	22.88	23.00
					8	3	22.90	23.00
					8	7	22.86	23.00
					15	0	22.99	23.00
			18900	1880.0	1	0	23.85	24.00
					1	7	23.97	24.00
					1	14	23.83	24.00
					8	0	22.94	23.00
					8	3	22.97	23.00
					8	7	22.92	23.00
					15	0	22.92	23.00
			19185	1908.5	1	0	23.74	24.00
					1	7	23.83	24.00
					1	14	23.72	24.00
					8	0	22.82	23.00
					8	3	22.88	23.00
					8	7	22.83	23.00
					15	0	22.86	23.00
		16QAM	18615	1851.5	1	0	23.08	23.50
					1	7	23.18	23.50
					1	14	23.07	23.50
					8	0	22.02	22.50
					8	3	22.05	22.50
					8	7	22.00	22.50
					15	0	22.04	22.50
			18900	1880.0	1	0	23.21	23.50
					1	7	23.34	23.50
					1	14	23.22	23.50
					8	0	22.11	22.50
					8	3	22.14	22.50
					8	7	22.10	22.50
					15	0	21.98	22.50
			19185	1908.5	1	0	23.00	23.50
					1	7	23.09	23.50
					1	14	22.86	23.50
					8	0	21.94	22.50
					8	3	21.99	22.50
					8	7	21.94	22.50
					15	0	21.94	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm	
							Conducted power	Tune-up power
LTE Band 2	5MHz	QPSK	18625	1852.5	1	0	23.79	24.00
					1	12	23.78	24.00
					1	24	23.74	24.00
					12	0	22.88	23.00
					12	6	22.93	23.00
					12	13	22.96	23.00
					25	0	22.98	23.00
			18900	1880.0	1	0	23.90	24.00
					1	12	23.91	24.00
					1	24	23.86	24.00
					12	0	22.95	23.00
					12	6	22.98	23.00
					12	13	22.94	23.00
					25	0	22.94	23.00
			19175	1907.5	1	0	23.75	24.00
					1	12	23.74	24.00
					1	24	23.74	24.00
					12	0	22.84	23.00
					12	6	22.87	23.00
					12	13	22.84	23.00
					25	0	22.86	23.00
		16QAM	18625	1852.5	1	0	23.10	23.50
					1	12	23.09	23.50
					1	24	23.00	23.50
					12	0	22.13	22.50
					12	6	22.13	22.50
					12	13	22.10	22.50
					25	0	22.07	22.50
			18900	1880.0	1	0	23.23	23.50
					1	12	23.25	23.50
					1	24	23.19	23.50
					12	0	22.14	22.50
					12	6	22.13	22.50
					12	13	22.09	22.50
					25	0	22.04	22.50
			19175	1907.5	1	0	22.99	23.50
					1	12	23.00	23.50
					1	24	22.91	23.50
					12	0	21.94	22.50
					12	6	21.96	22.50
					12	11	21.94	22.50
					25	0	21.92	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 2	10MHz	QPSK	18650	1855.0	1	0	23.91	24.00
					1	24	23.85	24.00
					1	49	23.83	24.00
					25	0	23.03	23.50
					25	12	23.02	23.50
					25	25	22.98	23.50
					50	0	23.01	23.50
			18900	1880.0	1	0	24.00	24.00
					1	24	23.95	24.00
					1	49	23.93	24.00
					25	0	22.98	23.50
					25	12	22.98	23.50
					25	25	22.94	23.50
					50	0	22.98	23.50
			19150	1905.0	1	0	23.82	24.00
					1	24	23.80	24.00
					1	49	23.73	24.00
					25	0	22.89	23.50
					25	12	22.92	23.50
					25	25	22.84	23.50
					50	0	22.87	23.50
		16QAM	18650	1855.0	1	0	23.35	23.50
					1	24	23.18	23.50
					1	49	23.14	23.50
					25	0	22.13	22.50
					25	12	22.10	22.50
					25	25	22.06	22.50
					50	0	22.09	22.50
			18900	1880.0	1	0	23.32	23.50
					1	24	23.32	23.50
					1	49	23.24	23.50
					25	0	22.08	22.50
					25	12	22.09	22.50
					25	25	22.07	22.50
					50	0	22.07	22.50
			19150	1905.0	1	0	22.96	23.50
					1	24	23.01	23.50
					1	49	22.95	23.50
					25	0	21.94	22.50
					25	12	21.96	22.50
					25	25	21.94	22.50
					50	0	21.94	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 2	15MHz	QPSK	18675	1857.5	1	0	23.82	24.00
					1	37	23.76	24.00
					1	74	23.70	24.00
					36	0	22.99	23.50
					36	19	23.01	23.50
					36	39	22.92	23.50
					75	0	22.98	23.00
			18900	1880.0	1	0	23.90	24.00
					1	37	23.86	24.00
					1	74	23.81	24.00
					36	0	22.95	23.50
					36	19	22.97	23.50
					36	39	22.95	23.50
					75	0	22.94	23.00
			19125	1902.5	1	0	23.78	24.00
					1	37	23.73	24.00
					1	74	23.73	24.00
					36	0	22.85	23.50
					36	19	22.88	23.50
					36	39	22.84	23.50
					75	0	22.87	23.00
		16QAM	18675	1857.5	1	0	23.08	23.50
					1	37	23.02	23.50
					1	74	22.97	23.50
					36	0	22.05	22.50
					36	19	22.12	22.50
					36	39	22.01	22.50
					75	0	22.03	22.50
			18900	1880.0	1	0	23.21	23.50
					1	37	23.23	23.50
					1	74	23.11	23.50
					36	0	22.09	22.50
					36	19	22.13	22.50
					36	39	22.08	22.50
					75	0	22.05	22.50
			19125	1902.5	1	0	22.96	23.50
					1	37	22.96	23.50
					1	74	22.94	23.50
					36	0	21.90	22.50
					36	19	21.94	22.50
					36	39	21.94	22.50
					75	0	21.92	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 2	20MHz	QPSK	18700	1860.0	1	0	23.94	24.00
					1	49	23.89	24.00
					1	99	23.92	24.00
					50	0	23.01	23.50
					50	25	23.01	23.50
					50	50	23.03	23.50
					100	0	23.04	23.50
			18900	1880.0	1	0	23.91	24.00
					1	49	23.91	24.00
					1	99	23.82	24.00
					50	0	22.95	23.50
					50	25	22.97	23.50
					50	50	22.93	23.50
					100	0	22.96	23.50
			19100	1900.0	1	0	23.77	24.00
					1	49	23.76	24.00
					1	99	23.71	24.00
					50	0	22.89	23.50
					50	25	22.89	23.50
					50	50	22.85	23.50
					100	0	22.89	23.50
		16QAM	18700	1860.0	1	0	23.22	23.50
					1	49	23.13	23.50
					1	99	23.22	23.50
					50	0	22.09	22.50
					50	25	22.09	22.50
					50	50	22.10	22.50
					100	0	22.11	22.50
			18900	1880.0	1	0	23.24	23.50
					1	49	23.25	23.50
					1	99	23.12	23.50
					50	0	22.08	22.50
					50	25	22.10	22.50
					50	50	22.05	22.50
					100	0	22.06	22.50
			19100	1900.0	1	0	23.12	23.50
					1	49	22.98	23.50
					1	99	22.96	23.50
					50	0	21.96	22.50
					50	25	21.94	22.50
					50	50	21.92	22.50
					100	0	21.92	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 4	1.4MHz	QPSK	19957	1710.7	1	0	23.67	24.00
					1	2	23.76	24.00
					1	5	23.66	24.00
					3	0	23.74	24.00
					3	1	23.77	24.00
					3	3	23.78	24.00
					6	0	22.73	23.00
			20175	1732.5	1	0	23.71	24.00
					1	2	23.81	24.00
					1	5	23.69	24.00
					3	0	23.75	24.00
					3	1	23.83	24.00
					3	3	23.78	24.00
					6	0	22.78	23.00
			20393	1754.3	1	0	23.66	24.00
					1	2	23.74	24.00
					1	5	23.68	24.00
					3	0	23.72	24.00
					3	1	23.78	24.00
					3	3	23.71	24.00
					6	0	22.72	23.00
		16QAM	19957	1710.7	1	0	22.91	23.50
					1	2	23.05	23.50
					1	5	22.96	23.50
					3	0	22.88	23.00
					3	1	22.93	23.00
					3	3	22.87	23.00
					6	0	21.89	22.00
			20175	1732.5	1	0	22.91	23.50
					1	2	23.00	23.50
					1	5	22.95	23.50
					3	0	22.87	23.00
					3	1	22.94	23.00
					3	3	22.87	23.00
					6	0	21.91	22.00
			20393	1754.3	1	0	22.96	23.50
					1	2	23.02	23.50
					1	5	22.90	23.50
					3	0	22.84	23.00
					3	1	22.88	23.00
					3	3	22.88	23.00
					6	0	21.87	22.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 4	3MHz	QPSK	19965	1711.5	1	0	23.70	24.00
					1	7	23.83	24.00
					1	14	23.66	24.00
					8	0	22.80	23.00
					8	3	22.80	23.00
					8	7	22.75	23.00
					15	0	22.77	23.00
			20175	1732.5	1	0	23.77	24.00
					1	7	23.87	24.00
					1	14	23.71	24.00
					8	0	22.81	23.00
					8	3	22.86	23.00
					8	7	22.76	23.00
					15	0	22.83	23.00
			20385	1753.5	1	0	23.70	24.00
					1	7	23.80	24.00
					1	14	23.68	24.00
					8	0	22.76	23.00
					8	3	22.80	23.00
					8	7	22.73	23.00
					15	0	22.77	23.00
		16QAM	19965	1711.5	1	0	22.95	23.50
					1	7	23.10	23.50
					1	14	22.99	23.50
					8	0	21.89	22.00
					8	3	21.93	22.00
					8	7	21.90	22.00
					15	0	21.85	22.00
			20175	1732.5	1	0	23.05	23.50
					1	7	23.08	23.50
					1	14	22.95	23.50
					8	0	21.92	22.00
					8	3	21.94	22.00
					8	7	21.92	22.00
					15	0	21.88	22.00
			20385	1753.5	1	0	22.97	23.50
					1	7	23.09	23.50
					1	14	22.94	23.50
					8	0	21.89	22.00
					8	3	21.93	22.00
					8	7	21.86	22.00
					15	0	21.83	22.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 4	5MHz	QPSK	19975	1712.5	1	0	23.77	24.00
					1	12	23.75	24.00
					1	24	23.65	24.00
					12	0	22.73	23.00
					12	6	22.79	23.00
					12	13	22.73	23.00
					25	0	22.74	23.00
			20175	1732.5	1	0	23.73	24.00
					1	12	23.73	24.00
					1	24	23.69	24.00
					12	0	22.78	23.00
					12	6	22.84	23.00
					12	13	22.77	23.00
					25	0	22.78	23.00
			20375	1752.5	1	0	23.71	24.00
					1	12	23.71	24.00
					1	24	23.64	24.00
					12	0	22.73	23.00
					12	6	22.80	23.00
					12	13	22.70	23.00
					25	0	22.73	23.00
		16QAM	19975	1712.5	1	0	22.99	23.50
					1	12	22.99	23.50
					1	24	22.95	23.50
					12	0	21.88	22.00
					12	6	21.90	22.00
					12	13	21.87	22.00
					25	0	21.84	22.00
			20175	1732.5	1	0	23.07	23.50
					1	12	23.03	23.50
					1	24	22.98	23.50
					12	0	21.92	22.00
					12	6	21.94	22.00
					12	13	21.88	22.00
					25	0	21.88	22.00
			20375	1752.5	1	0	22.97	23.50
					1	12	22.96	23.50
					1	24	22.92	23.50
					12	0	21.87	22.00
					12	6	21.90	22.00
					12	11	21.83	22.00
					25	0	21.82	22.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 4	10MHz	QPSK	20000	1715.0	1	0	23.72	24.00
					1	24	23.73	24.00
					1	49	23.69	24.00
					25	0	22.76	23.00
					25	12	22.75	23.00
					25	25	22.70	23.00
					50	0	22.76	23.00
			20175	1732.5	1	0	23.83	24.00
					1	24	23.77	24.00
					1	49	23.69	24.00
					25	0	22.82	23.00
					25	12	22.81	23.00
					25	25	22.80	23.00
					50	0	22.80	23.00
			20350	1750.0	1	0	23.77	24.00
					1	24	23.75	24.00
					1	49	23.64	24.00
					25	0	22.77	23.00
					25	12	22.77	23.00
					25	25	22.73	23.00
					50	0	22.77	23.00
		16QAM	20000	1715.0	1	0	23.01	23.50
					1	24	23.01	23.50
					1	49	23.00	23.50
					25	0	21.87	22.00
					25	12	21.88	22.00
					25	25	21.82	22.00
					50	0	21.85	22.00
			20175	1732.5	1	0	23.14	23.50
					1	24	23.07	23.50
					1	49	22.93	23.50
					25	0	21.93	22.00
					25	12	21.93	22.00
					25	25	21.85	22.00
					50	0	21.90	22.00
			20350	1750.0	1	0	23.01	23.50
					1	24	23.05	23.50
					1	49	22.90	23.50
					25	0	21.90	22.00
					25	12	21.87	22.00
					25	25	21.80	22.00
					50	0	21.84	22.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 4	15MHz	QPSK	20025	1717.5	1	0	23.76	24.00
					1	37	23.72	24.00
					1	74	23.74	24.00
					36	0	22.80	23.00
					36	19	22.79	23.00
					36	39	22.84	23.00
					75	0	22.85	23.00
			20175	1732.5	1	0	23.85	24.00
					1	37	23.74	24.00
					1	74	23.66	24.00
					36	0	22.84	23.00
					36	19	22.85	23.00
					36	39	22.76	23.00
					75	0	22.78	23.00
			20325	1747.5	1	0	23.80	24.00
					1	37	23.73	24.00
					1	74	23.63	24.00
					36	0	22.80	23.00
					36	19	22.80	23.00
					36	39	22.76	23.00
					75	0	22.79	23.00
		16QAM	20025	1717.5	1	0	23.02	23.50
					1	37	23.01	23.50
					1	74	23.06	23.50
					36	0	21.89	22.00
					36	19	21.93	22.00
					36	39	21.92	22.00
					75	0	21.94	22.00
			20175	1732.5	1	0	23.19	23.50
					1	37	23.01	23.50
					1	74	22.88	23.50
					36	0	21.98	22.00
					36	19	21.92	22.00
					36	39	21.87	22.00
					75	0	21.88	22.00
			20325	1747.5	1	0	23.03	23.50
					1	37	23.01	23.50
					1	74	22.94	23.50
					36	0	21.92	22.00
					36	19	21.88	22.00
					36	39	21.83	22.00
					75	0	21.84	22.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 4	20MHz	QPSK	20050	1720.0	1	0	23.74	24.00
					1	49	23.75	24.00
					1	99	23.70	24.00
					50	0	22.80	23.00
					50	25	22.87	23.00
					50	50	22.81	23.00
					100	0	22.84	23.00
			20175	1732.5	1	0	23.78	24.00
					1	49	23.76	24.00
					1	99	23.65	24.00
					50	0	22.86	23.00
					50	25	22.85	23.00
					50	50	22.76	23.00
					100	0	22.83	23.00
			20300	1745.0	1	0	23.80	24.00
					1	49	23.75	24.00
					1	99	23.61	24.00
					50	0	22.84	23.00
					50	25	22.82	23.00
					50	50	22.73	23.00
					100	0	22.80	23.00
		16QAM	20050	1720.0	1	0	23.02	23.50
					1	49	23.04	23.50
					1	99	22.95	23.50
					50	0	21.90	22.00
					50	25	21.98	22.00
					50	50	21.89	22.00
					100	0	21.95	22.00
			20175	1732.5	1	0	23.07	23.50
					1	49	23.05	23.50
					1	99	22.88	23.50
					50	0	21.97	22.00
					50	25	21.93	22.00
					50	50	21.87	22.00
					100	0	21.90	22.00
			20300	1745.0	1	0	23.07	23.50
					1	49	23.05	23.50
					1	99	22.98	23.50
					50	0	21.90	22.00
					50	25	21.89	22.00
					50	50	21.82	22.00
					100	0	21.85	22.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 5	1.4MHz	QPSK	20407	824.7	1	0	22.57	23.00
					1	2	22.65	23.00
					1	5	22.55	23.00
					3	0	22.60	23.00
					3	1	22.66	23.00
					3	3	22.61	23.00
					6	0	21.61	22.00
			20525	836.5	1	0	22.79	23.00
					1	2	22.85	23.00
					1	5	22.80	23.00
					3	0	22.84	23.00
					3	1	22.86	23.00
					3	3	22.82	23.00
					6	0	21.85	22.00
			20643	848.3	1	0	22.69	23.00
					1	2	22.76	23.00
					1	5	22.70	23.00
					3	0	22.76	23.00
					3	1	22.78	23.00
					3	3	22.75	23.00
					6	0	21.73	22.00
		16QAM	20407	824.7	1	0	21.78	22.50
					1	2	21.85	22.50
					1	5	21.76	22.50
					3	0	21.72	22.50
					3	1	21.77	22.50
					3	3	21.70	22.50
					6	0	20.70	21.00
			20525	836.5	1	0	22.13	22.50
					1	2	22.16	22.50
					1	5	22.08	22.50
					3	0	22.00	22.50
					3	1	22.05	22.50
					3	3	22.00	22.50
					6	0	20.96	21.00
			20643	848.3	1	0	21.89	22.50
					1	2	22.02	22.50
					1	5	21.93	22.50
					3	0	21.84	22.50
					3	1	21.81	22.50
					3	3	21.85	22.50
					6	0	20.81	21.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 5	3MHz	QPSK	20415	825.5	1	0	22.60	23.00
					1	7	22.69	23.00
					1	14	22.67	23.00
					8	0	21.64	22.00
					8	3	21.65	22.00
					8	7	21.72	22.00
					15	0	21.78	22.00
			20525	836.5	1	0	22.84	23.00
					1	7	22.92	23.00
					1	14	22.82	23.00
					8	0	21.88	22.00
					8	3	21.88	22.00
					8	7	21.85	22.00
					15	0	21.88	22.00
			20635	847.5	1	0	22.68	23.00
					1	7	22.76	23.00
					1	14	22.64	23.00
					8	0	21.73	22.00
					8	3	21.74	22.00
					8	7	21.69	22.00
					15	0	21.76	22.00
		16QAM	20415	825.5	1	0	21.82	22.50
					1	7	21.87	22.50
					1	14	21.85	22.50
					8	0	20.73	21.50
					8	3	20.73	21.50
					8	7	20.79	21.50
					15	0	20.80	21.00
			20525	836.5	1	0	22.17	22.50
					1	7	22.23	22.50
					1	14	22.12	22.50
					8	0	21.00	21.50
					8	3	21.01	21.50
					8	7	21.00	21.50
					15	0	20.92	21.00
			20635	847.5	1	0	21.91	22.50
					1	7	21.98	22.50
					1	14	21.87	22.50
					8	0	20.78	21.50
					8	3	20.80	21.50
					8	7	20.79	21.50
					15	0	20.76	21.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 5	5MHz	QPSK	20425	826.5	1	0	22.58	23.00
					1	12	22.66	23.00
					1	24	22.64	23.00
					12	0	21.73	22.00
					12	6	21.78	22.00
					12	13	21.71	22.00
					25	0	21.77	22.00
			20525	836.5	1	0	22.74	23.00
					1	12	22.83	23.00
					1	24	22.82	23.00
					12	0	21.88	22.00
					12	6	21.91	22.00
					12	13	21.84	22.00
					25	0	21.87	22.00
			20625	846.5	1	0	22.71	23.00
					1	12	22.67	23.00
					1	24	22.63	23.00
					12	0	21.74	22.00
					12	6	21.76	22.00
					12	13	21.72	22.00
					25	0	21.75	22.00
		16QAM	20425	826.5	1	0	21.83	22.50
					1	12	21.92	22.50
					1	24	21.93	22.50
					12	0	20.79	21.50
					12	6	20.83	21.50
					12	13	20.80	21.50
					25	0	20.78	21.00
			20525	836.5	1	0	22.08	22.50
					1	12	22.15	22.50
					1	24	22.12	22.50
					12	0	20.99	21.50
					12	6	21.03	21.50
					12	13	20.96	21.50
					25	0	20.97	21.00
			20625	846.5	1	0	21.89	22.50
					1	12	21.89	22.50
					1	24	21.85	22.50
					12	0	20.81	21.50
					12	6	20.82	21.50
					12	11	20.77	21.50
					25	0	20.78	21.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 5	10MHz	QPSK	20450	829.0	1	0	22.59	23.00
					1	24	22.67	23.00
					1	49	22.72	23.00
					25	0	21.78	22.00
					25	12	21.89	22.00
					25	25	21.82	22.00
					50	0	21.83	22.00
			20525	836.5	1	0	22.76	23.00
					1	24	22.83	23.00
					1	49	22.76	23.00
					25	0	21.90	22.00
					25	12	21.91	22.00
					25	25	21.85	22.00
					50	0	21.85	22.00
			20600	844.0	1	0	22.82	23.00
					1	24	22.68	23.00
					1	49	22.59	23.00
					25	0	21.87	22.00
					25	12	21.88	22.00
					25	25	21.73	22.00
					50	0	21.84	22.00
		16QAM	20450	829.0	1	0	21.81	22.50
					1	24	21.98	22.50
					1	49	22.08	22.50
					25	0	20.82	21.00
					25	12	20.95	21.00
					25	25	20.89	21.00
					50	0	20.87	21.00
			20525	836.5	1	0	22.11	22.50
					1	24	22.19	22.50
					1	49	22.08	22.50
					25	0	20.97	21.00
					25	12	20.95	21.00
					25	25	20.89	21.00
					50	0	20.91	21.00
			20600	844.0	1	0	22.11	22.50
					1	24	21.90	22.50
					1	49	21.82	22.50
					25	0	20.95	21.00
					25	12	20.91	21.00
					25	25	20.83	21.00
					50	0	20.88	21.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 7	5MHz	QPSK	20775	2502.5	1	0	21.64	22.00
					1	12	21.66	22.00
					1	24	21.58	22.00
					12	0	20.72	21.00
					12	6	20.75	21.00
					12	13	20.63	21.00
					25	0	20.63	21.00
			21100	2535.0	1	0	21.56	22.00
					1	12	21.60	22.00
					1	24	21.58	22.00
					12	0	20.61	21.00
					12	6	20.66	21.00
					12	13	20.66	21.00
					25	0	20.66	21.00
			21425	2567.5	1	0	21.52	22.00
					1	12	21.54	22.00
					1	24	21.55	22.00
					12	0	20.55	21.00
					12	6	20.60	21.00
					12	13	20.59	21.00
					25	0	20.60	21.00
		16QAM	20775	2502.5	1	0	20.95	21.00
					1	12	20.99	21.00
					1	24	20.92	21.00
					12	0	19.86	20.00
					12	6	19.89	20.00
					12	13	19.80	20.00
					25	0	19.72	20.00
			21100	2535.0	1	0	20.78	21.00
					1	12	20.83	21.00
					1	24	20.83	21.00
					12	0	19.69	20.00
					12	6	19.73	20.00
					12	13	19.72	20.00
					25	0	19.71	20.00
			21425	2567.5	1	0	20.84	21.00
					1	12	20.84	21.00
					1	24	20.83	21.00
					12	0	19.70	20.00
					12	6	19.75	20.00
					12	11	19.71	20.00
					25	0	19.69	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 7	10MHz	QPSK	20800	2505.0	1	0	21.67	22.00
					1	24	21.59	22.00
					1	49	21.53	22.00
					25	0	20.65	21.00
					25	12	20.66	21.00
					25	25	20.64	21.00
					50	0	20.63	21.00
			21100	2535.0	1	0	21.72	22.00
					1	24	21.61	22.00
					1	49	21.69	22.00
					25	0	20.68	21.00
					25	12	20.71	21.00
					25	25	20.70	21.00
					50	0	20.69	21.00
			21400	2565.0	1	0	21.54	22.00
					1	24	21.55	22.00
					1	49	21.60	22.00
					25	0	20.57	21.00
					25	12	20.61	21.00
					25	25	20.63	21.00
					50	0	20.61	21.00
		16QAM	20800	2505.0	1	0	20.93	21.00
					1	24	20.92	21.00
					1	49	20.94	21.00
					25	0	19.75	20.00
					25	12	19.79	20.00
					25	25	19.78	20.00
					50	0	19.77	20.00
			21100	2535.0	1	0	20.89	21.00
					1	24	20.82	21.00
					1	49	20.96	21.00
					25	0	19.74	20.00
					25	12	19.75	20.00
					25	25	19.77	20.00
					50	0	19.76	20.00
			21400	2565.0	1	0	20.92	21.00
					1	24	20.91	21.00
					1	49	20.87	21.00
					25	0	19.70	20.00
					25	12	19.76	20.00
					25	25	19.70	20.00
					50	0	19.68	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 7	15MHz	QPSK	20825	2507.5	1	0	21.71	22.00
					1	37	21.57	22.00
					1	74	21.71	22.00
					36	0	20.67	21.00
					36	19	20.73	21.00
					36	39	20.72	21.00
					75	0	20.69	21.00
			21100	2535.0	1	0	21.75	22.00
					1	37	21.62	22.00
					1	74	21.74	22.00
					36	0	20.67	21.00
					36	19	20.73	21.00
					36	39	20.72	21.00
					75	0	20.69	21.00
			21375	2562.5	1	0	21.69	22.00
					1	37	21.58	22.00
					1	74	21.66	22.00
					36	0	20.73	21.00
					36	19	20.76	21.00
					36	39	20.65	21.00
					75	0	20.74	21.00
		16QAM	20825	2507.5	1	0	21.04	21.50
					1	37	20.97	21.50
					1	74	21.15	21.50
					36	0	19.85	20.00
					36	19	19.86	20.00
					36	39	19.87	20.00
					75	0	19.87	20.00
			21100	2535.0	1	0	20.95	21.50
					1	37	20.90	21.50
					1	74	21.03	21.50
					36	0	19.75	20.00
					36	19	19.80	20.00
					36	39	19.85	20.00
					75	0	19.77	20.00
			21375	2562.5	1	0	21.11	21.50
					1	37	21.00	21.50
					1	74	20.94	21.50
					36	0	19.88	20.00
					36	19	19.90	20.00
					36	39	19.75	20.00
					75	0	19.85	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 7	20MHz	QPSK	20850	2510.0	1	0	21.69	22.00
					1	49	21.54	22.00
					1	99	21.66	22.00
					50	0	20.67	21.00
					50	25	20.70	21.00
					50	50	20.68	21.00
					100	0	20.67	21.00
			21100	2535.0	1	0	21.69	22.00
					1	49	21.62	22.00
					1	99	21.72	22.00
					50	0	20.70	21.00
					50	25	20.75	21.00
					50	50	20.78	21.00
					100	0	20.74	21.00
			21350	2560.0	1	0	21.67	22.00
					1	49	21.60	22.00
					1	99	21.62	22.00
					50	0	20.71	21.00
					50	25	20.76	21.00
					50	50	20.65	21.00
					100	0	20.76	21.00
		16QAM	20850	2510.0	1	0	20.99	21.50
					1	49	20.91	21.50
					1	99	20.90	21.50
					50	0	19.77	20.00
					50	25	19.80	20.00
					50	50	19.83	20.00
					100	0	19.82	20.00
			21100	2535.0	1	0	20.94	21.50
					1	49	20.89	21.50
					1	99	21.11	21.50
					50	0	19.75	20.00
					50	25	19.82	20.00
					50	50	19.85	20.00
					100	0	19.81	20.00
			21350	2560.0	1	0	21.09	21.50
					1	49	20.94	21.50
					1	99	20.90	21.50
					50	0	19.85	20.00
					50	25	19.87	20.00
					50	50	19.73	20.00
					100	0	19.88	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 12	1.4MHz	QPSK	23017	699.7	1	0	21.52	22.00
					1	2	21.58	22.00
					1	5	21.50	22.00
					3	0	21.57	22.00
					3	1	21.60	22.00
					3	3	21.55	22.00
					6	0	20.59	21.00
			23095	707.5	1	0	21.44	22.00
					1	2	21.53	22.00
					1	5	21.45	22.00
					3	0	21.51	22.00
					3	1	21.54	22.00
					3	3	21.51	22.00
					6	0	20.48	21.00
			23173	715.3	1	0	21.40	22.00
					1	2	21.47	22.00
					1	5	21.37	22.00
					3	0	21.44	22.00
					3	1	21.45	22.00
					3	3	21.46	22.00
					6	0	20.42	21.00
		16QAM	23017	699.7	1	0	20.87	21.00
					1	2	20.98	21.00
					1	5	20.87	21.00
					3	0	20.79	21.00
					3	1	20.82	21.00
					3	3	20.77	21.00
					6	0	19.73	20.00
			23095	707.5	1	0	20.84	21.00
					1	2	20.86	21.00
					1	5	20.79	21.00
					3	0	20.70	21.00
					3	1	20.74	21.00
					3	3	20.68	21.00
					6	0	19.66	20.00
			23173	715.3	1	0	20.76	21.00
					1	2	20.80	21.00
					1	5	20.67	21.00
					3	0	20.62	21.00
					3	1	20.68	21.00
					3	3	20.65	21.00
					6	0	19.60	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 12	3MHz	QPSK	23025	700.5	1	0	21.56	22.00
					1	7	21.65	22.00
					1	14	21.57	22.00
					8	0	20.59	21.00
					8	3	20.62	21.00
					8	7	20.60	21.00
					15	0	20.60	21.00
			23095	707.5	1	0	21.50	22.00
					1	7	21.60	22.00
					1	14	21.52	22.00
					8	0	20.53	21.00
					8	3	20.57	21.00
					8	7	20.53	21.00
					15	0	20.55	21.00
			23165	714.5	1	0	21.44	22.00
					1	7	21.54	22.00
					1	14	21.41	22.00
					8	0	20.48	21.00
					8	3	20.52	21.00
					8	7	20.52	21.00
					15	0	20.49	21.00
		16QAM	23025	700.5	1	0	20.87	21.00
					1	7	20.99	21.00
					1	14	20.90	21.00
					8	0	19.76	20.00
					8	3	19.77	20.00
					8	7	19.72	20.00
					15	0	19.68	20.00
			23095	707.5	1	0	20.85	21.00
					1	7	20.95	21.00
					1	14	20.86	21.00
					8	0	19.71	20.00
					8	3	19.74	20.00
					8	7	19.69	20.00
					15	0	19.63	20.00
			23165	714.5	1	0	20.80	21.00
					1	7	20.88	21.00
					1	14	20.76	21.00
					8	0	19.59	20.00
					8	3	19.67	20.00
					8	7	19.62	20.00
					15	0	19.59	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 12	5MHz	QPSK	23035	701.5	1	0	21.55	22.00
					1	12	21.54	22.00
					1	24	21.54	22.00
					12	0	20.61	21.00
					12	6	20.63	21.00
					12	13	20.61	21.00
					25	0	20.61	21.00
			23095	707.5	1	0	21.51	22.00
					1	12	21.51	22.00
					1	24	21.52	22.00
					12	0	20.55	21.00
					12	6	20.61	21.00
					12	13	20.59	21.00
					25	0	20.58	21.00
			23155	713.5	1	0	21.46	22.00
					1	12	21.48	22.00
					1	24	21.45	22.00
					12	0	20.51	21.00
					12	6	20.53	21.00
					12	13	20.48	21.00
					25	0	20.52	21.00
		16QAM	23035	701.5	1	0	20.88	21.00
					1	12	20.87	21.00
					1	24	20.88	21.00
					12	0	19.71	20.00
					12	6	19.75	20.00
					12	13	19.71	20.00
					25	0	19.68	20.00
			23095	707.5	1	0	20.86	21.00
					1	12	20.86	21.00
					1	24	20.87	21.00
					12	0	19.69	20.00
					12	6	19.71	20.00
					12	13	19.68	20.00
					25	0	19.64	20.00
			23155	713.5	1	0	20.83	21.00
					1	12	20.84	21.00
					1	24	20.79	21.00
					12	0	19.65	20.00
					12	6	19.64	20.00
					12	11	19.64	20.00
					25	0	19.62	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 12	10MHz	QPSK	23060	704.0	1	0	21.51	22.00
					1	24	21.55	22.00
					1	49	21.54	22.00
					25	0	20.60	21.00
					25	12	20.61	21.00
					25	25	20.60	21.00
					50	0	20.57	21.00
			23095	707.5	1	0	21.50	22.00
					1	24	21.54	22.00
					1	49	21.54	22.00
					25	0	20.55	21.00
					25	12	20.58	21.00
					25	25	20.58	21.00
					50	0	20.55	21.00
			23130	711.0	1	0	21.46	22.00
					1	24	21.50	22.00
					1	49	21.50	22.00
					25	0	20.54	21.00
					25	12	20.56	21.00
					25	25	20.52	21.00
					50	0	20.55	21.00
		16QAM	23060	704.0	1	0	20.85	21.00
					1	24	20.89	21.00
					1	49	20.91	21.00
					25	0	19.72	20.00
					25	12	19.69	20.00
					25	25	19.66	20.00
					50	0	19.69	20.00
			23095	707.5	1	0	20.86	21.00
					1	24	20.91	21.00
					1	49	20.90	21.00
					25	0	19.66	20.00
					25	12	19.70	20.00
					25	25	19.68	20.00
					50	0	19.67	20.00
			23130	711.0	1	0	20.81	21.00
					1	24	20.85	21.00
					1	49	20.79	21.00
					25	0	19.62	20.00
					25	12	19.66	20.00
					25	25	19.63	20.00
					50	0	19.61	20.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 17	5MHz	QPSK	23755	706.5	1	0	22.61	23.00
					1	12	22.62	23.00
					1	24	22.66	23.00
					12	0	21.67	22.00
					12	6	21.69	22.00
					12	13	21.70	22.00
					25	0	21.68	22.00
			23790	710.0	1	0	22.59	23.00
					1	12	22.60	23.00
					1	24	22.59	23.00
					12	0	21.65	22.00
					12	6	21.70	22.00
					12	13	21.63	22.00
					25	0	21.65	22.00
			23825	713.5	1	0	22.67	23.00
					1	12	22.68	23.00
					1	24	22.63	23.00
					12	0	21.71	22.00
					12	6	21.73	22.00
					12	13	21.68	22.00
					25	0	21.71	22.00
		16QAM	23755	706.5	1	0	21.91	22.00
					1	12	21.94	22.00
					1	24	21.91	22.00
					12	0	20.77	21.00
					12	6	20.80	21.00
					12	13	20.79	21.00
					25	0	20.75	21.00
			23790	710.0	1	0	21.88	22.00
					1	12	21.93	22.00
					1	24	21.87	22.00
					12	0	20.74	21.00
					12	6	20.81	21.00
					12	13	20.74	21.00
					25	0	20.71	21.00
			23825	713.5	1	0	21.99	22.00
					1	12	21.92	22.00
					1	24	21.90	22.00
					12	0	20.82	21.00
					12	6	20.81	21.00
					12	11	20.77	21.00
					25	0	20.76	21.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 17	10MHz	QPSK	23780	709.0	1	0	22.57	23.00
					1	24	22.63	23.00
					1	49	22.60	23.00
					25	0	21.63	22.00
					25	12	21.70	22.00
					25	25	21.67	22.00
					50	0	21.66	22.00
			23790	710.0	1	0	22.58	23.00
					1	24	22.61	23.00
					1	49	22.57	23.00
					25	0	21.66	22.00
					25	12	21.70	22.00
					25	25	21.64	22.00
					50	0	21.67	22.00
			23800	711.0	1	0	22.57	23.00
					1	24	22.60	23.00
					1	49	22.55	23.00
					25	0	21.63	22.00
					25	12	21.67	22.00
					25	25	21.64	22.00
					50	0	21.65	22.00
		16QAM	23780	709.0	1	0	21.88	22.00
					1	24	21.93	22.00
					1	49	21.88	22.00
					25	0	20.73	21.00
					25	12	20.76	21.00
					25	25	20.72	21.00
					50	0	20.72	21.00
			23790	710.0	1	0	21.88	22.00
					1	24	21.93	22.00
					1	49	21.83	22.00
					25	0	20.71	21.00
					25	12	20.79	21.00
					25	25	20.72	21.00
					50	0	20.71	21.00
			23800	711.0	1	0	21.89	22.00
					1	24	21.95	22.00
					1	49	21.82	22.00
					25	0	20.70	21.00
					25	12	20.74	21.00
					25	25	20.71	21.00
					50	0	20.73	21.00

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 38	5MHz	QPSK	37775	2572.5	1	0	24.12	24.50
					1	12	24.16	24.50
					1	24	24.13	24.50
					12	0	23.23	23.50
					12	6	23.25	23.50
					12	13	23.25	23.50
					25	0	23.24	23.50
			38000	2595.0	1	0	23.87	24.50
					1	12	23.93	24.50
					1	24	23.90	24.50
					12	0	22.99	23.50
					12	6	23.01	23.50
					12	13	23.01	23.50
					25	0	23.00	23.50
			38225	2617.5	1	0	23.96	24.50
					1	12	23.99	24.50
					1	24	23.98	24.50
					12	0	23.09	23.50
					12	6	23.11	23.50
					12	13	23.11	23.50
					25	0	23.12	23.50
		16QAM	37775	2572.5	1	0	23.41	24.00
					1	12	23.43	24.00
					1	24	23.41	24.00
					12	0	22.35	22.50
					12	6	22.39	22.50
					12	13	22.36	22.50
					25	0	22.29	22.50
			38000	2595.0	1	0	23.15	24.00
					1	12	23.14	24.00
					1	24	23.16	24.00
					12	0	22.08	22.50
					12	6	22.12	22.50
					12	13	22.10	22.50
					25	0	22.02	22.50
			38225	2617.5	1	0	23.25	24.00
					1	12	23.24	24.00
					1	24	23.30	24.00
					12	0	22.18	22.50
					12	6	22.20	22.50
					12	11	22.19	22.50
					25	0	22.14	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 38	10MHz	QPSK	37800	2575.0	1	0	24.14	24.50
					1	24	24.18	24.50
					1	49	24.07	24.50
					25	0	23.25	23.50
					25	12	23.31	23.50
					25	25	23.18	23.50
					50	0	23.20	23.50
			38000	2595.0	1	0	24.02	24.50
					1	24	23.96	24.50
					1	49	23.96	24.50
					25	0	23.01	23.50
					25	12	23.07	23.50
					25	25	23.05	23.50
					50	0	23.07	23.50
			38200	2615.0	1	0	24.00	24.50
					1	24	24.02	24.50
					1	49	24.03	24.50
					25	0	23.09	23.50
					25	12	23.15	23.50
					25	25	23.14	23.50
					50	0	23.14	23.50
		16QAM	37800	2575.0	1	0	23.45	24.00
					1	24	23.44	24.00
					1	49	23.37	24.00
					25	0	22.34	22.50
					25	12	22.35	22.50
					25	25	22.22	22.50
					50	0	22.26	22.50
			38000	2595.0	1	0	23.28	24.00
					1	24	23.19	24.00
					1	49	23.19	24.00
					25	0	22.04	22.50
					25	12	22.05	22.50
					25	25	22.05	22.50
					50	0	22.12	22.50
			38200	2615.0	1	0	23.25	24.00
					1	24	23.26	24.00
					1	49	23.28	24.00
					25	0	22.11	22.50
					25	12	22.18	22.50
					25	25	22.15	22.50
					50	0	22.20	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 38	15MHz	QPSK	37825	2577.5	1	0	24.20	24.50
					1	37	24.13	24.50
					1	74	24.10	24.50
					36	0	23.33	23.50
					36	19	23.25	23.50
					36	39	23.22	23.50
					75	0	23.25	23.50
			38000	2595.0	1	0	24.04	24.50
					1	37	23.89	24.50
					1	74	23.98	24.50
					36	0	23.04	23.50
					36	19	23.10	23.50
					36	39	23.07	23.50
					75	0	23.06	23.50
			38175	2612.5	1	0	24.02	24.50
					1	37	24.02	24.50
					1	74	24.06	24.50
					36	0	23.11	23.50
					36	19	23.16	23.50
					36	39	23.13	23.50
					75	0	23.17	23.50
		16QAM	37825	2577.5	1	0	23.52	24.00
					1	37	23.44	24.00
					1	74	23.39	24.00
					36	0	22.40	22.50
					36	19	22.33	22.50
					36	39	22.32	22.50
					75	0	22.31	22.50
			38000	2595.0	1	0	23.30	24.00
					1	37	23.18	24.00
					1	74	23.20	24.00
					36	0	22.16	22.50
					36	19	22.17	22.50
					36	39	22.13	22.50
					75	0	22.15	22.50
			38175	2612.5	1	0	23.27	24.00
					1	37	23.26	24.00
					1	74	23.33	24.00
					36	0	22.21	22.50
					36	19	22.23	22.50
					36	39	22.21	22.50
					75	0	22.26	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 38	20MHz	QPSK	37850	2580.0	1	0	24.19	24.50
					1	49	24.05	24.50
					1	99	23.99	24.50
					50	0	23.23	23.50
					50	25	23.26	23.50
					50	50	23.16	23.50
					100	0	23.25	23.50
			38000	2595.0	1	0	24.04	24.50
					1	49	23.94	24.50
					1	99	23.93	24.50
					50	0	23.09	23.50
					50	25	23.09	23.50
					50	50	23.13	23.50
					100	0	23.13	23.50
			38150	2610.0	1	0	24.00	24.50
					1	49	24.01	24.50
					1	99	24.02	24.50
					50	0	23.17	23.50
					50	25	23.20	23.50
					50	50	23.18	23.50
					100	0	23.17	23.50
		16QAM	37850	2580.0	1	0	23.48	23.50
					1	49	23.38	23.50
					1	99	23.26	23.50
					50	0	22.32	22.50
					50	25	22.33	22.50
					50	50	22.23	22.50
					100	0	22.36	22.50
			38000	2595.0	1	0	23.30	23.50
					1	49	23.17	23.50
					1	99	23.20	23.50
					50	0	22.15	22.50
					50	25	22.16	22.50
					50	50	22.16	22.50
					100	0	22.23	22.50
			38150	2610.0	1	0	23.22	23.50
					1	49	23.25	23.50
					1	99	23.31	23.50
					50	0	22.20	22.50
					50	25	22.25	22.50
					50	50	22.24	22.50
					100	0	22.26	22.50

Low Band								
Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 40	5MHz	QPSK	38725	2307.5	1	0	21.57	22.00
					1	12	21.56	22.00
					1	24	21.53	22.00
					12	0	20.70	21.00
					12	6	20.75	21.00
					12	13	20.73	21.00
					25	0	20.68	21.00
			38750	2310.0	1	0	21.61	22.00
					1	12	21.56	22.00
					1	24	21.56	22.00
					12	0	20.75	21.00
					12	6	20.75	21.00
					12	13	20.70	21.00
					25	0	20.71	21.00
			38775	2312.5	1	0	21.57	22.00
					1	12	21.58	22.00
					1	24	21.44	22.00
					12	0	20.74	21.00
					12	6	20.65	21.00
					12	13	20.65	21.00
					25	0	20.61	21.00
		16QAM	38725	2307.5	1	0	20.88	21.00
					1	12	20.94	21.00
					1	24	20.91	21.00
					12	0	19.82	20.00
					12	6	19.90	20.00
					12	13	19.86	20.00
					25	0	19.88	20.00
			38750	2310.0	1	0	20.94	21.00
					1	12	20.97	21.00
					1	24	20.97	21.00
					12	0	19.86	20.00
					12	6	19.90	20.00
					12	13	19.84	20.00
					25	0	19.91	20.00
			38775	2312.5	1	0	20.97	21.00
					1	12	20.97	21.00
					1	24	20.89	21.00
					12	0	19.86	20.00
					12	6	19.80	20.00
					12	11	19.82	20.00
					25	0	19.83	20.00

Low Band								
Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 40	10MHz	QPSK	38750	2310.0	1	0	21.60	22.00
					1	24	21.55	22.00
					1	49	21.47	22.00
					25	0	20.78	21.00
					25	12	20.76	21.00
					25	25	20.64	21.00
					50	0	20.71	21.00
		16QAM	38750	2310.0	1	0	20.97	21.00
					1	24	20.96	21.00
					1	49	20.88	21.00
					25	0	19.92	20.00
					25	12	19.96	20.00
					25	25	19.81	20.00
					50	0	19.92	20.00

High Band								
Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 40	5MHz	QPSK	39175	2352.5	1	0	21.37	21.50
					1	12	21.31	21.50
					1	24	21.22	21.50
					12	0	20.50	21.00
					12	6	20.54	21.00
					12	13	20.39	21.00
					25	0	20.44	21.00
			39200	2355.0	1	0	21.44	21.50
					1	12	21.22	21.50
					1	24	21.24	21.50
					12	0	20.50	21.00
					12	6	20.61	21.00
					12	13	20.37	21.00
					25	0	20.52	21.00
			39225	2357.5	1	0	21.28	21.50
					1	12	21.28	21.50
					1	24	21.21	21.50
					12	0	20.39	21.00
					12	6	20.33	21.00
					12	13	20.58	21.00
					25	0	20.34	21.00
		16QAM	39175	2352.5	1	0	20.82	21.00
					1	12	20.62	21.00
					1	24	20.78	21.00
					12	0	19.70	20.00
					12	6	19.54	20.00
					12	13	19.60	20.00
					25	0	19.48	20.00
			39200	2355.0	1	0	20.65	21.00
					1	12	20.72	21.00
					1	24	20.86	21.00
					12	0	19.64	20.00
					12	6	19.64	20.00
					12	13	19.61	20.00
					25	0	19.58	20.00
			39225	2357.5	1	0	20.82	21.00
					1	12	20.66	21.00
					1	24	20.61	21.00
					12	0	19.53	20.00
					12	6	19.58	20.00
					12	11	19.49	20.00
					25	0	19.62	20.00

High Band								
Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 40	10MHz	QPSK	39200	2355.0	1	0	21.29	22.00
					1	24	21.22	22.00
					1	49	21.22	22.00
					25	0	20.45	21.00
					25	12	20.39	21.00
					25	25	20.37	21.00
					50	0	20.41	20.50
		16QAM	39200	2355.0	1	0	20.77	21.00
					1	24	20.64	21.00
					1	49	20.64	21.00
					25	0	19.60	20.00
					25	12	19.60	20.00
					25	25	19.55	20.00
					50	0	19.43	19.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 41	5MHz	QPSK	40265	2557.5	1	0	24.18	24.50
					1	12	24.16	24.50
					1	24	24.15	24.50
					12	0	23.21	23.50
					12	6	23.25	23.50
					12	13	23.25	23.50
					25	0	23.26	23.50
			40585	2589.5	1	0	23.94	24.50
					1	12	23.98	24.50
					1	24	23.96	24.50
					12	0	23.05	23.50
					12	6	23.11	23.50
					12	13	23.10	23.50
					25	0	23.07	23.50
			40905	2621.5	1	0	24.01	24.50
					1	12	24.04	24.50
					1	24	23.99	24.50
					12	0	23.11	23.50
					12	6	23.15	23.50
					12	13	23.14	23.50
					25	0	23.10	23.50
			41215	2652.5	1	0	24.05	24.50
					1	12	24.05	24.50
					1	24	24.06	24.50
					12	0	23.09	23.50
					12	6	23.14	23.50
					12	13	23.12	23.50
					25	0	23.12	23.50
		16QAM	40265	2557.5	1	0	23.57	24.00
					1	12	23.56	24.00
					1	24	23.56	24.00
					12	0	22.38	22.50
					12	6	22.41	22.50
					12	13	22.42	22.50
					25	0	22.37	22.50
			40585	2589.5	1	0	23.27	24.00
					1	12	23.29	24.00
					1	24	23.28	24.00
					12	0	22.16	22.50
					12	6	22.22	22.50
					12	13	22.16	22.50
					25	0	22.11	22.50
			40905	2621.5	1	0	23.30	24.00
					1	12	23.31	24.00
					1	24	23.37	24.00
					12	0	22.22	22.50
					12	6	22.27	22.50
					12	13	22.25	22.50
					25	0	22.21	22.50
			41215	2652.5	1	0	23.44	24.00
					1	12	23.43	24.00
					1	24	23.44	24.00
					12	0	22.31	22.50
					12	6	22.30	22.50
					12	13	22.31	22.50
					25	0	22.22	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 41	10MHz	QPSK	40290	2560.0	1	0	24.20	24.50
					1	24	24.19	24.50
					1	49	24.17	24.50
					25	0	23.24	23.50
					25	12	23.26	23.50
					25	25	23.27	23.50
					50	0	23.24	23.50
			40590	2590.0	1	0	23.98	24.50
					1	24	23.98	24.50
					1	49	23.98	24.50
					25	0	23.04	23.50
					25	12	23.07	23.50
					25	25	23.05	23.50
					50	0	23.11	23.50
			40890	2620.0	1	0	24.04	24.50
					1	24	24.04	24.50
					1	49	24.06	24.50
					25	0	23.11	23.50
					25	12	23.17	23.50
					25	25	23.11	23.50
					50	0	23.17	23.50
			41190	2650.0	1	0	24.08	24.50
					1	24	24.05	24.50
					1	49	24.08	24.50
					25	0	23.11	23.50
					25	12	23.16	23.50
					25	25	23.13	23.50
					50	0	23.17	23.50
		16QAM	40290	2560.0	1	0	23.58	24.00
					1	24	23.55	24.00
					1	49	23.56	24.00
					25	0	22.34	22.50
					25	12	22.37	22.50
					25	25	22.38	22.50
					50	0	22.39	22.50
			40590	2590.0	1	0	23.27	24.00
					1	24	23.27	24.00
					1	49	23.28	24.00
					25	0	22.13	22.50
					25	12	22.15	22.50
					25	25	22.15	22.50
					50	0	22.15	22.50
			40890	2620.0	1	0	23.33	24.00
					1	24	23.33	24.00
					1	49	23.37	24.00
					25	0	22.20	22.50
					25	12	22.24	22.50
					25	25	22.20	22.50
					50	0	22.23	22.50
			41190	2650.0	1	0	23.48	24.00
					1	24	23.43	24.00
					1	49	23.45	24.00
					25	0	22.25	22.50
					25	12	22.27	22.50
					25	25	22.24	22.50
					50	0	22.30	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 41	15MHz	QPSK	40315	2562.5	1	0	24.26	24.50
					1	37	24.20	24.50
					1	74	24.10	24.50
					36	0	23.33	23.50
					36	19	23.34	23.50
					36	39	23.19	23.50
					75	0	23.19	23.50
			40590	2590.5	1	0	24.10	24.50
					1	37	23.96	24.50
					1	74	24.01	24.50
					36	0	23.11	23.50
					36	19	23.13	23.50
					36	39	23.10	23.50
					75	0	23.10	23.50
			40885	2619.5	1	0	24.07	24.50
					1	37	24.05	24.50
					1	74	24.12	24.50
					36	0	23.16	23.50
					36	19	23.17	23.50
					36	39	23.17	23.50
					75	0	23.17	23.50
			41165	2647.5	1	0	24.14	24.50
					1	37	24.09	24.50
					1	74	24.11	24.50
					36	0	23.19	23.50
					36	19	23.24	23.50
					36	39	23.19	23.50
					75	0	23.19	23.50
		16QAM	40315	2562.5	1	0	23.66	24.00
					1	37	23.57	24.00
					1	74	23.47	24.00
					36	0	22.49	22.50
					36	19	22.49	22.50
					36	39	22.35	22.50
					75	0	22.34	22.50
			40590	2590.5	1	0	23.46	24.00
					1	37	23.25	24.00
					1	74	23.30	24.00
					36	0	22.25	22.50
					36	19	22.21	22.50
					36	39	22.20	22.50
					75	0	22.19	22.50
			40885	2619.5	1	0	23.33	24.00
					1	37	23.33	24.00
					1	74	23.47	24.00
					36	0	22.28	22.50
					36	19	22.30	22.50
					36	39	22.33	22.50
					75	0	22.28	22.50
			41165	2647.5	1	0	23.53	24.00
					1	37	23.49	24.00
					1	74	23.48	24.00
					36	0	22.38	22.50
					36	19	22.40	22.50
					36	39	22.34	22.50
					75	0	22.35	22.50

Band	Bandwidth	Modulation	Channel	Freq. (MHz)	RB Size	RB Offset	Average (dBm)	
							Conducted power	Tune-up power
LTE Band 41	20MHz	QPSK	40340	2565.0	1	0	24.27	24.50
					1	49	24.20	24.50
					1	99	24.07	24.50
					50	0	23.33	23.50
					50	25	23.23	23.50
					50	50	23.22	23.50
					100	0	23.20	23.50
			40600	2591.0	1	0	24.08	24.50
					1	49	23.99	24.50
					1	99	24.00	24.50
					50	0	23.13	23.50
					50	25	23.15	23.50
					50	50	23.14	23.50
					100	0	23.15	23.50
			40870	2618.0	1	0	24.04	24.50
					1	49	24.04	24.50
					1	99	24.08	24.50
					50	0	23.17	23.50
					50	25	23.20	23.50
					50	50	23.18	23.50
					100	0	23.23	23.50
			41140	2645.0	1	0	24.12	24.50
					1	49	24.11	24.50
					1	99	24.09	24.50
					50	0	23.17	23.50
					50	25	23.20	23.50
					50	50	23.15	23.50
					100	0	23.19	23.50
		16QAM	40340	2565.0	1	0	23.70	24.00
					1	49	23.57	24.00
					1	99	23.42	24.00
					50	0	22.41	22.50
					50	25	22.31	22.50
					50	50	22.27	22.50
					100	0	22.37	22.50
			40600	2591.0	1	0	23.41	24.00
					1	49	23.27	24.00
					1	99	23.26	24.00
					50	0	22.24	22.50
					50	25	22.26	22.50
					50	50	22.21	22.50
					100	0	22.30	22.50
			40870	2618.0	1	0	23.30	24.00
					1	49	23.35	24.00
					1	99	23.42	24.00
					50	0	22.26	22.50
					50	25	22.30	22.50
					50	50	22.27	22.50
					100	0	22.31	22.50
			41140	2645.0	1	0	23.54	24.00
					1	49	23.46	24.00
					1	99	23.46	24.00
					50	0	22.32	22.50
					50	25	22.30	22.50
					50	50	22.27	22.50
					100	0	22.38	22.50

Band	Date Rate or Sub-test	CH	Frequency (MHz)	Average Conducted power	Average Tune-up power
				Ant-0	Ant-0
IEEE 802.11b	1M	1	2412.0	16.42	16.50
		6	2437.0	16.31	16.50
		11	2462.0	16.32	16.50
		12	2467.0	16.27	16.50
		13	2472.0	16.39	16.50
IEEE 802.11g	6M	1	2412.0	13.35	14.00
		6	2437.0	13.50	14.00
		11	2462.0	13.35	14.00
		12	2467.0	13.26	14.00
		13	2472.0	3.79	4.00
IEEE 802.11n 2.4 GHz 20 MHz	6.5M	1	2412.0	13.61	14.00
		6	2437.0	13.48	14.00
		11	2462.0	13.57	14.00
		12	2467.0	13.54	14.00
		13	2472.0	3.59	4.00
IEEE 802.11n 2.4 GHz 40 MHz	13.5M	3	2422.0	13.37	14.00
		6	2437.0	13.62	14.00
		9	2452.0	13.58	14.00
		10	2457.0	13.32	14.00
		11	2462.0	8.76	9.00

Band		Date Rate or Sub-test	CH	Frequency (MHz)	Average Conducted power	Average Tune-up power
					Ant-0	Ant-0
802.11a	U-NII-1	6M	36	5180.0	13.40	14.00
			40	5200.0	13.52	14.00
			44	5220.0	13.38	14.00
			48	5240.0	13.56	14.00
	U-NII-2A		52	5260.0	13.54	14.00
			56	5280.0	13.56	14.00
			60	5300.0	13.35	14.00
			64	5320.0	13.38	14.00
	U-NII-2C		100	5500.0	13.53	14.00
			104	5520.0	13.57	14.00
			108	5540.0	13.54	14.00
			112	5560.0	13.55	14.00
			116	5580.0	13.62	14.00
			120	5600.0	13.46	14.00
			124	5620.0	13.42	14.00
			128	5640.0	13.54	14.00
			132	5660.0	13.60	14.00
			136	5680.0	13.38	14.00
			140	5700.0	13.56	14.00
	U-NII-3		149	5745.0	13.55	14.00
			153	5765.0	13.60	14.00
			157	5785.0	13.38	14.00
			161	5805.0	13.40	14.00
			165	5825.0	13.51	14.00
IEEE 802.11ac 20 MHz	U-NII-1	6.5M	36	5180.0	13.34	14.00
			40	5200.0	13.32	14.00
			44	5220.0	13.58	14.00
			48	5240.0	13.55	14.00
	U-NII-2A		52	5260.0	13.53	14.00
			56	5280.0	13.39	14.00
			60	5300.0	13.55	14.00
			64	5320.0	13.54	14.00
	U-NII-2C		100	5500.0	13.41	14.00
			104	5520.0	13.31	14.00
			108	5540.0	13.44	14.00
			112	5560.0	13.31	14.00
			116	5580.0	13.51	14.00
			120	5600.0	13.32	14.00
			124	5620.0	13.31	14.00
			128	5640.0	13.41	14.00
			132	5660.0	13.55	14.00
			136	5680.0	13.51	14.00
			140	5700.0	13.32	14.00
	U-NII-3		149	5745.0	13.35	14.00
			153	5765.0	13.57	14.00
			157	5785.0	13.53	14.00
			161	5805.0	13.58	14.00
			165	5825.0	13.39	14.00

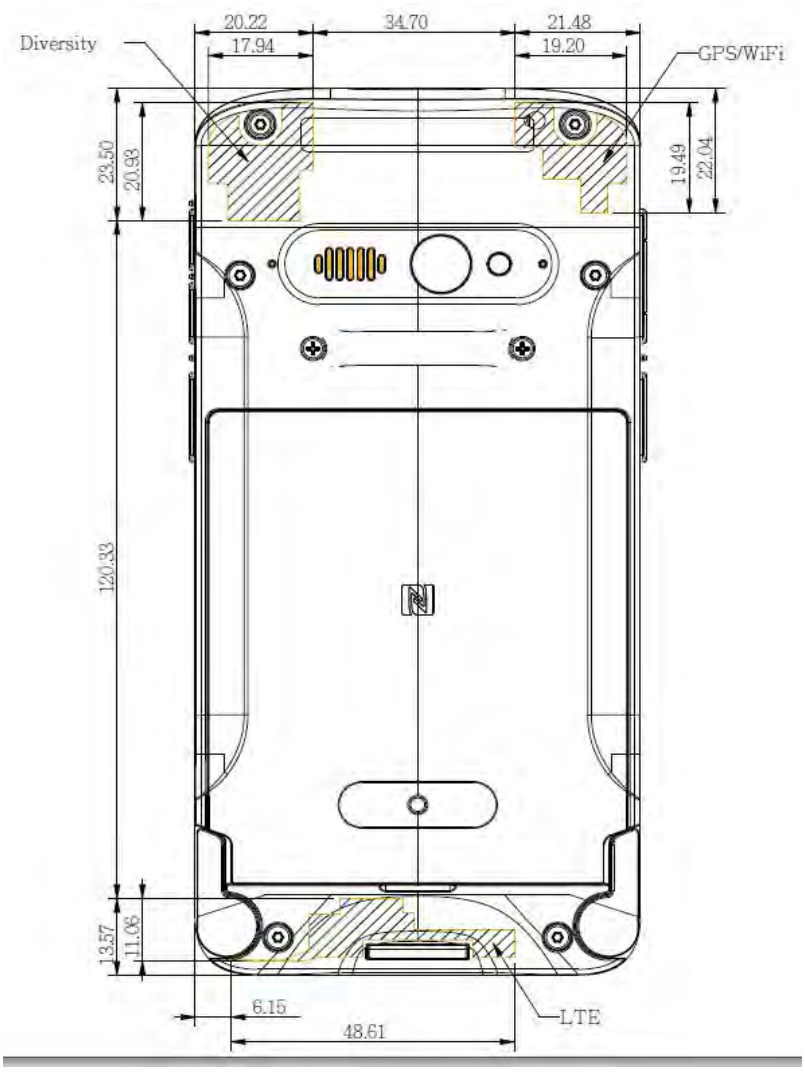
Band		Date Rate or Sub-test	CH	Frequency (MHz)	Average Conducted power	Average Tune-up power
					Ant-0	Ant-0
IEEE 802.11ac 40 MHz	U-NII-1	13.5M	38	5190.0	13.56	14.00
			46	5230.0	13.55	14.00
	U-NII-2A		54	5270.0	13.34	14.00
			62	5310.0	13.44	14.00
	U-NII-2C		102	5510.0	13.35	14.00
			110	5550.0	13.43	14.00
			118	5590.0	13.57	14.00
			126	5630.0	13.33	14.00
			134	5670.0	13.53	14.00
	U-NII-3		151	5755.0	13.36	14.00
			159	5795.0	13.59	14.00
IEEE 802.11ac 80 MHz	U-NII-1	29.3M	42	5210.0	12.53	13.00
	U-NII-2A		58	5290.0	12.35	13.00
	U-NII-2C		106	5530.0	12.38	13.00
	U-NII-3		155	5775.0	12.44	13.00

Band	CH	Frequency (MHz)	Packet Type	Average Power	Average Tune-up Power
				dBm	dBm
Bluetooth BR 1Mbps (GFSK)	0	2402.0	DH1	11.33	12.00
			DH3	11.36	12.00
			DH5	11.41	12.00
	39	2441.0	DH1	10.76	12.00
			DH3	10.78	12.00
			DH5	10.82	12.00
	78	2480.0	DH1	11.01	12.00
			DH3	11.05	12.00
			DH5	11.10	12.00
Bluetooth EDR 2Mbps (π/4-DQPSK)	0	2402.0	DH1	9.28	10.00
			DH3	9.32	10.00
			DH5	9.64	10.00
	39	2441.0	DH1	8.34	9.00
			DH3	8.37	9.00
			DH5	8.68	9.00
	78	2480.0	DH1	8.99	9.50
			DH3	9.04	9.50
			DH5	9.35	9.50
Bluetooth EDR 3Mbps (8DPSK)	0	2402.0	DH1	9.30	10.00
			DH3	9.34	10.00
			DH5	9.65	10.00
	39	2441.0	DH1	8.37	9.00
			DH3	8.39	9.00
			DH5	8.69	9.00
	78	2480.0	DH1	9.02	9.50
			DH3	9.06	9.50
			DH5	9.37	9.50
Bluetooth LE 1M	0	2402.0	---	-0.09	1.50
	19	2440.0		-0.28	1.50
	39	2480.0		1.16	1.50
Bluetooth LE 2M	0	2402.0	---	-0.15	1.50
	19	2440.0		-0.31	1.50
	39	2480.0		1.14	1.50

7.7 Antenna location

Ant. Used	Antenna to user distance (mm)					
	Front	Back	Side 1	Side 2	Side 3	Side 4
WWAN Antenna	≤ 25mm	≤ 25mm	> 25mm	≤ 25mm	≤ 25mm	≤ 25mm
WLAN Antenna	≤ 25mm	≤ 25mm	≤ 25mm	> 25mm	> 25mm	≤ 25mm
Bluetooth Antenna	≤ 25mm	≤ 25mm	≤ 25mm	> 25mm	> 25mm	≤ 25mm

Antenna location



7.8 Simultaneous Transmitting Evaluate

Simultaneous transmission configurations as below:

Condition(s)	Band			
	WWAN Ant	WLAN 2.4 GHz Ant	WLAN 5 GHz Ant	Bluetooth Ant
1	V	V	---	V
2	---	V	---	V
3	---	---	V	V
4	V	V	-	---
5	V	---	V	---
6	V	---	---	V

7.8.1 Sum of 1-g SAR of all simultaneously transmitting

When the sum of 1-g SAR of all simultaneously transmitting antennas in and operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration.

Sum of 1-g SAR of summary as below:

Phantom Position		Spacing (mm)	ASSY	WWAN Ant (1) Band	WWAN Ant (1) SAR_{1g} (W/Kg)	2.4 GHz WLAN Ant (2) Band	2.4 GHz WLAN Ant (2) SAR_{1g} (W/Kg)	5 GHz WLAN Ant (3) Band	5 GHz WLAN Ant (3) SAR_{1g} (W/Kg)	Bluetooth Ant (4) Band	Bluetooth Ant (4) SAR_{1g} (W/Kg)	(1)+(2)+(4) Σ SAR_{1g} (W/Kg)	(2)+(4) Σ SAR_{1g} (W/Kg)	(3)+(4) Σ SAR_{1g} (W/Kg)	(1)+(2) Σ SAR_{1g} (W/Kg)	(1)+(3) Σ SAR_{1g} (W/Kg)	(1)+(4) Σ SAR_{1g} (W/Kg)	Event
Head Mode																		
Flat	Right Cheek	0	N/A	WWAN Band	0.81	IEEE 802.11	0.14	IEEE 802.11	0.77	Bluetooth	0.07	1.02	0.21	0.85	0.95	1.58	0.88	<1.6
	Right Tilted	0	N/A	WWAN Band	0.52	IEEE 802.11	0.10	IEEE 802.11	0.59	Bluetooth	0.05	0.68	0.16	0.64	0.63	1.12	0.58	<1.6
	Left Cheek	0	N/A	WWAN Band	0.59	IEEE 802.11	0.10	IEEE 802.11	0.47	Bluetooth	0.05	0.74	0.15	0.52	0.69	1.06	0.64	<1.6
	Left Tilted	0	N/A	WWAN Band	0.47	IEEE 802.11	0.10	IEEE 802.11	0.49	Bluetooth	0.05	0.62	0.14	0.54	0.57	0.96	0.52	<1.6
Hotspot Mode																		
Flat	Front	10	N/A	WWAN Band	0.87	IEEE 802.11	0.05	IEEE 802.11	0.17	Bluetooth	0.02	0.94	0.07	0.19	0.91	1.04	0.89	<1.6
	Back	10	N/A	WWAN Band	0.72	IEEE 802.11	0.09	IEEE 802.11	0.30	Bluetooth	0.05	0.85	0.14	0.35	0.81	1.02	0.76	<1.6
	Side 1	10	N/A	WWAN Band	0.00	IEEE 802.11	0.07	IEEE 802.11	0.19	Bluetooth	0.04	0.11	0.11	0.22	0.07	0.19	0.04	<1.6
	Side 2	10	N/A	WWAN Band	0.61	IEEE 802.11	0.00	IEEE 802.11	0.00	Bluetooth	0.00	0.61	0.00	0.00	0.61	0.61	0.61	<1.6
	Side 3	10	N/A	WWAN Band	1.06	IEEE 802.11	0.00	IEEE 802.11	0.00	Bluetooth	0.00	1.06	0.00	0.00	1.06	1.06	1.06	<1.6
	Side 4	10	N/A	WWAN Band	0.16	IEEE 802.11	0.04	IEEE 802.11	0.18	Bluetooth	0.02	0.21	0.06	0.19	0.20	0.33	0.17	<1.6
Body wron Mode																		
Flat	Front	15	N/A	WWAN Band	0.87	IEEE 802.11	0.05	IEEE 802.11	0.17	Bluetooth	0.02	0.94	0.07	0.19	0.91	1.04	0.89	<1.6
	Back	15	N/A	WWAN Band	0.72	IEEE 802.11	0.09	IEEE 802.11	0.30	Bluetooth	0.05	0.85	0.14	0.35	0.81	1.02	0.76	<1.6
	Front	15	Headset	WWAN Band	0.00	IEEE 802.11	0.00	IEEE 802.11	0.00	Bluetooth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<1.6
	Back	15	Headset	WWAN Band	0.05	IEEE 802.11	0.00	IEEE 802.11	0.00	Bluetooth	0.00	0.05	0.00	0.00	0.05	0.05	0.05	<1.6

7.8.2 SAR to peak location separation ratio (SPLSR)

When the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by (SAR1 + SAR2)^1.5/Ri, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

All of sum of SAR < 1.6 W/kg, therefore SPLSR is not required.

7.9 SAR test reduction according to KDB

General:

- The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used were according to FCC, Supplement C [June 2001], IEEE1528-2013.
- All modes of operation were investigated, and worst-case results are reported.
- Tissue parameters and temperatures are listed on the SAR plots.
- Batteries are fully charged for all readings.
- When the Channel's SAR 1 g of maximum conducted power is > 0.8 mW/g, low, middle and high channel are supposed to be tested.

KDB 447498:

- The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used were according to IEEE1528-2013.

KDB 865664:

- Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg.
- When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg.
- Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

KDB 941225:

For 2G

- In order to qualify for the above test reduction, the maximum burst-averaged output power for each mode (GMS/GPRS/EDGE) and the corresponding multi-slot class must be clearly identified in the SAR report for each frequency band.We perform worst case SAR with maximum time-average power on GMS/GPRS/EDGE mode.

For 3G-3GPP

- When HSDPA & (HSUPA / HSPA+ uplink with QPSK) power are not more than WCDMA 12.2K RMC 0.25 dB and the SAR value of WCDMA BII/BV<1.2 W/kg ,therefore HSDPA & HSUPA / HSPA+ Stand-alone SAR is not required.

For 4G

- When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation, otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.
- For QPSK with 100 % RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 5.2.1 and 5.2.2 are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
- SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.
- For smaller channel bandwidth SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

For Hot-spot mode

- SAR must be measured for all sides and surfaces with a transmitting antenna located within 25 mm from that surface or edge.

For Mini tablet & UMPC

- UMPC mini-tablet devices must be tested on all sides and edges with a transmitting antenna within 25 mm from that surface or edge.

KDB 248227:

- Refer 7.5 SAR Testing with 802.11 Transmitters.

8. System Verification and Validation

8.1 Symmetric Dipoles for System Verification

Construction	Symmetrical dipole with l/4 balun enables measurement of feed point impedance with NWA matched for use near flat phantoms filled with head simulating solutions Includes distance holder and tripod adaptor Calibration Calibrated SAR value for specified position and input power at the flat phantom in head simulating solutions.
Return Loss	> 20 dB at specified verification position
Options	Dipoles for other frequencies or solutions and other calibration conditions are available upon request

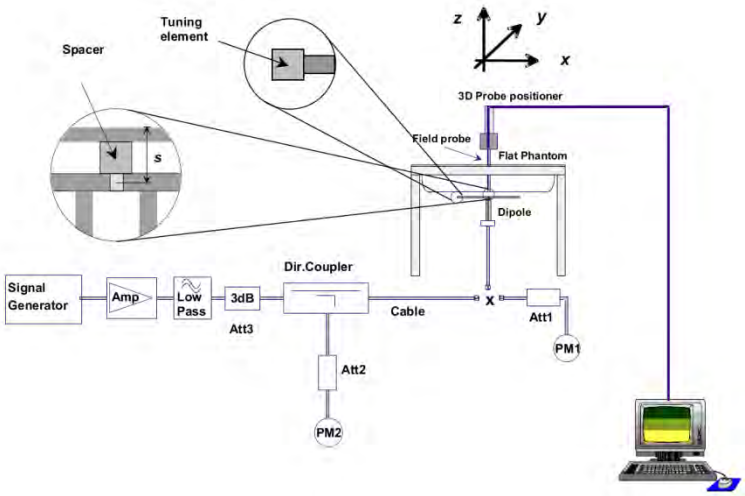


Figure 1. System Verification Setup Diagram

Figure 2. Validation Kit

8.2 Verification Summary

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ± 10 %. The measured SAR will be normalized to 1 W input power.

Mixture Type	Frequency (MHz)	Power	Probe	Dipole	SAR_{1g} (W/Kg)	Normalize to 1 Watt 1 g (W/Kg)	1 W Target SAR_{1g} (W/Kg)	SAR_{10g} (W/Kg)	Normalize to 1 Watt 10 g (W/Kg)	1 W Target SAR_{10g} (W/Kg)	Difference percentage 1 g	Difference percentage 10 g	Date
			Model / Serial No.	Model / Serial No.									
Head	750	250 mW	EX3DV4-SN3977	D750V3 – SN1004	2.15	8.6	8.42	1.43	5.72	5.61	2.1%	1.9%	May. 18, 2020
Head	750	250 mW	EX3DV4-SN3977	D750V3 – SN1004	2.13	8.52	8.42	1.41	5.64	5.61	1.2%	0.5%	May. 28, 2020
Head	835	250 mW	EX3DV4-SN3977	D835V2 – SN4d082	2.56	10.24	9.39	1.68	6.72	6.33	8.3%	5.8%	May. 18, 2020
Head	835	250 mW	EX3DV4-SN3977	D835V2 – SN4d082	2.55	10.2	9.39	1.64	6.56	6.33	7.9%	3.5%	May. 28, 2020
Head	1750	250 mW	EX3DV4-SN3977	D1750V2 – SN1023	9.03	36.12	36.10	4.76	19.04	18.90	0.1%	0.7%	May. 20, 2020
Head	1750	250 mW	EX3DV4-SN3977	D1750V2 – SN1023	9.23	36.92	36.10	4.87	19.48	18.90	2.2%	3.0%	May. 27, 2020
Head	1900	250 mW	EX3DV4-SN3977	D1900V2 – SN5d111	10.4	41.6	39.90	5.32	21.28	20.60	4.1%	3.2%	May. 20, 2020
Head	1900	250 mW	EX3DV4-SN3977	D1900V2 – SN5d111	10.3	41.2	39.90	5.26	21.04	20.60	3.2%	2.1%	May. 27, 2020
Head	2300	250 mW	EX3DV4-SN3887	D2300V2 – SN1092	12.7	50.8	47.90	5.9	23.6	23.00	5.7%	2.5%	May. 24, 2020
Head	2450	250 mW	EX3DV4-SN3977	D2450V2 – SN903	13.8	55.2	51.10	6.43	25.72	23.40	7.4%	9.0%	May. 23, 2020
Head	2600	250 mW	EX3DV4-SN3977	D2600V2 – SN1007	13.2	52.8	56.00	5.82	23.28	24.80	-6.1%	-6.5%	May. 21, 2020
Head	2600	250 mW	EX3DV4-SN3977	D2600V2 – SN1007	13.5	54	56.00	6.01	24.04	24.80	-3.7%	-3.2%	May. 22, 2020
Head	5250	100 mW	EX3DV4-SN3977	D5250V2 – SN1145	8.18	81.8	78.80	2.29	22.9	22.60	3.7%	1.3%	May. 25, 2020
Head	5600	100 mW	EX3DV4-SN3977	D5600V2 – SN1145	7.98	79.8	81.00	2.25	22.5	23.20	-1.5%	-3.1%	May. 26, 2020
Head	5750	100 mW	EX3DV4-SN3977	D5750V2 – SN1145	8.29	82.9	78.80	2.31	23.1	22.40	4.9%	3.0%	May. 26, 2020

9. Test Equipment List

Testing Engineer: Kris Pan , Jason Tsao

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Cal. Date	Cal.Period
SPEAG	750MHz System Validation Kit	D750V3	1004	2019/11/20	1 year
SPEAG	835MHz System Validation Kit	D835V2	4d082	2019/09/19	1 year
SPEAG	1750MHz System Validation Kit	D1750V2	1023	2019/06/20	1 year
SPEAG	1900MHz System Validation Kit	D1900V2	5d111	2019/09/19	1 year
SPEAG	2300MHz System Validation Kit	D2300V2	1092	2019/12/13	1 year
SPEAG	2450MHz System Validation Kit	D2450V2	903	2019/10/15	1 year
SPEAG	2600MHz System Validation Kit	D2600V2	1007	2019/10/24	1 year
SPEAG	5GHz System Validation Kit	D5GHzV2	1145	2019/10/16	1 year
SPEAG	Dosimetric E-Field Probe	EX3DV4	3977	2019/08/30	1 year
SPEAG	Dosimetric E-Field Probe	EX3DV4	3887	2019/09/20	1 year
SPEAG	Data Acquisition Electronics	DAE4	779	2019/11/29	1 year
SPEAG	Measurement Server	SE UMS 011 AA	1025	NCR	
SPEAG	Device Holder	N/A	N/A	NCR	
SPEAG	Phantom	SAM V4.0	TP-1009	NCR	
SPEAG	Robot	Staubli TX90XL	F07/564ZA1/A/01	NCR	
SPEAG	Software	DASY52 V52.10 (3)	N/A	NCR	
R&S	Wireless Communication Test Set	CMU200	112387	2020/03/15	
Anritsu	Radio Communication Analyzer	MT8820C	6201342039	2019/12/11	1 year
HILA	Digital Thermometer	TM-906A	1500033	2019/10/28	1 year
Agilent	Power Sensor	8481H	3318A20779	2019/06/11	1 year
Agilent	Power Meter	EDM Series E4418B	GB40206143	2019/06/11	1 year
Agilent	Signal Generator	E8257D	MY44320425	2020/03/04	1 year
Agilent	Dual Directional Coupler	778D	50334	NCR	
Woken	Dual Directional Coupler	0100AZ20200801O	11012409517	NCR	
Mini-Circuits	Power Amplifier	EMC014225P	980292	NCR	
Mini-Circuits	Power Amplifier	EMC2830P	980293	NCR	
Aisi	Attenuator	IEAT 3dB	N/A	NCR	

Table 1. Test Equipment List

10. Measurement Uncertainty

Decision Rule

■ Uncertainty is not included.

□ Uncertainty is included.

IEEE 1528-2013 & IEC 62209-1 Measurement uncertainty evaluation template for SAR test (300 MHz~3 GHz)								
Uncertainty component	**Tol.**	**Prob. Dist.**	**Div.**	**C_i - 1g**	**C_i - 10g**	**u_i - 1g (± %)**	**u_i - 10g (± %)**	**v_i**
Measurement system								
Probe calibration	6.1	N	1	1	1	6.1	6.1	∞
Axial isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9	∞
Hemispherical isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9	∞
Boundary effect	1.0	R	1.732	1	1	0.6	0.6	∞
Linearity	4.7	R	1.732	1	1	2.7	2.7	∞
System detection limits	0.25	R	1.732	1	1	0.1	0.1	∞
Readout electronics	0.3	N	1	1	1	0.3	0.3	∞
Response time	0.0	R	1.732	1	1	0.0	0.0	∞
Integration time	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7	∞
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7	∞
Probe Positioner	0.02	R	1.732	1	1	0.01	0.01	∞
Probe Positioning	0.4	R	1.732	1	1	0.2	0.2	∞
Max. SAR evaluation	2.0	R	1.732	1	1	1.2	1.2	∞
Test sample related								
Test sample positioning	2.9	N	1	1	1	2.9	2.9	145
Device holder uncertainty	3.6	N	1	1	1	3.6	3.6	7
SAR drift measurement	5.0	R	1.732	1	1	2.9	2.9	∞
Phantom and tissue parameters								
Phantom shell uncertainty	6.1	R	1.732	1	1	3.5	3.5	∞
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0	∞
Liquid Conductivity (measurement)	4.8	R	1.732	0.78	0.71	2.2	2.0	∞
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8	∞
Liquid Permittivity (measurement)	4.8	R	1.732	0.23	0.26	0.6	0.7	∞
Combined standard uncertainty								
-	-	RSS	-	-	-	11.2	11.2	642
Expanded uncertainty (95% confidence interval)								
-	-	k =2	-	-	-	22.4	22.3	-

IEEE 1528-2013 & IEC 62209-1 Measurement uncertainty evaluation template for SAR test (3 GHz~6 GHz)								
Uncertainty component	**Tol.**	**Prob. Dist.**	**Div.**	**C_i - 1g**	**C_i - 10g**	**u_i - 1g (± %)**	**u_i - 10g (± %)**	**v_i**
Measurement system								
Probe calibration	6.7	N	1	1	1	6.7	6.7	∞
Axial isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9	∞
Hemispherical isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9	∞
Boundary effect	2.0	R	1.732	1	1	1.2	1.2	∞
Linearity	4.7	R	1.732	1	1	2.7	2.7	∞
System detection limits	0.25	R	1.732	1	1	0.1	0.1	∞
Readout electronics	0.3	N	1	1	1	0.3	0.3	∞
Response time	0.0	R	1.732	1	1	0.0	0.0	∞
Integration time	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7	∞
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7	∞
Probe Positioner	0.04	R	1.732	1	1	0.02	0.02	∞
Probe Positioning	0.8	R	1.732	1	1	0.5	0.5	∞
Max. SAR evaluation	4.0	R	1.732	1	1	2.3	2.3	∞
Test sample related								
Test sample positioning	2.9	N	1	1	1	2.9	2.9	145
Device holder uncertainty	3.6	N	1	1	1	3.6	3.6	7
SAR drift measurement	5.0	R	1.732	1	1	2.9	2.9	∞
Phantom and tissue parameters								
Phantom shell uncertainty	6.6	R	1.732	1	1	3.8	3.8	∞
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0	∞
Liquid Conductivity (measurement)	4.8	R	1.732	0.78	0.71	2.2	2.0	∞
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8	∞
Liquid Permittivity (measurement)	4.8	R	1.732	0.23	0.26	0.6	0.7	∞
Combined standard uncertainty								
-	-	RSS	-	-	-	11.9	11.8	804
Expanded uncertainty (95% confidence interval)								
-	-	k =2	-	-	-	23.7	23.6	-

IEC 62209-2 Measurement uncertainty evaluation template for SAR test (300 MHz~3 GHz)								
Uncertainty component	**Tol.**	**Prob. Dist.**	**Div.**	**C_i - 1g**	**C_i - 10g**	**u_i - 1g (± %)**	**u_i - 10g (± %)**	**v_i**
Measurement system								
Probe calibration	6.1	N	1	1	1	6.1	6.1	∞
Axial isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9	∞
Hemispherical isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9	∞
Boundary effect	1.0	R	1.732	1	1	0.6	0.6	∞
Linearity	4.7	R	1.732	1	1	2.7	2.7	∞
System detection limits	0.25	R	1.732	1	1	0.1	0.1	∞
Readout electronics	0.3	N	1	1	1	0.3	0.3	∞
Response time	0.0	R	1.732	1	1	0.0	0.0	∞
Integration time	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7	∞
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7	∞
Probe Positioner	0.02	R	1.732	1	1	0.01	0.01	∞
Probe Positioning	0.4	R	1.732	1	1	0.2	0.2	∞
Max. SAR evaluation	2.0	R	1.732	1	1	1.2	1.2	∞
Test sample related								
Test sample positioning	2.9	N	1	1	1	2.9	2.9	145
Device holder uncertainty	3.6	N	1	1	1	3.6	3.6	7
SAR drift measurement	5.0	R	1.732	1	1	2.9	2.9	∞
Phantom and tissue parameters								
Phantom shell uncertainty	7.2	R	1.732	1	1	4.2	4.2	∞
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0	∞
Liquid Conductivity (measurement)	4.8	R	1.732	0.78	0.71	2.2	2.0	∞
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8	∞
Liquid Permittivity (measurement)	4.8	R	1.732	0.23	0.26	0.6	0.7	∞
Combined standard uncertainty								
-	-	RSS	-	-	-	11.4	11.4	693
Expanded uncertainty (95% confidence interval)								
-	-	k =2	-	-	-	22.9	22.7	-

IEC 62209-2 Measurement uncertainty evaluation template for SAR test (3 GHz~6 GHz)								
Uncertainty component	**Tol.**	**Prob. Dist.**	**Div.**	**C_i - 1g**	**C_i - 10g**	**u_i - 1g (± %)**	**u_i - 10g (± %)**	**v_i**
Measurement system								
Probe calibration	6.1	N	1	1	1	6.1	6.1	∞
Axial isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9	∞
Hemispherical isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9	∞
Boundary effect	1.0	R	1.732	1	1	0.6	0.6	∞
Linearity	4.7	R	1.732	1	1	2.7	2.7	∞
System detection limits	0.25	R	1.732	1	1	0.1	0.1	∞
Readout electronics	0.3	N	1	1	1	0.3	0.3	∞
Response time	0.0	R	1.732	1	1	0.0	0.0	∞
Integration time	2.6	R	1.732	1	1	1.5	1.5	∞
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7	∞
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7	∞
Probe Positioner	0.02	R	1.732	1	1	0.01	0.01	∞
Probe Positioning	0.4	R	1.732	1	1	0.2	0.2	∞
Max. SAR evaluation	2.0	R	1.732	1	1	1.2	1.2	∞
Test sample related								
Test sample positioning	2.9	N	1	1	1	2.9	2.9	145
Device holder uncertainty	3.6	N	1	1	1	3.6	3.6	7
SAR drift measurement	5.0	R	1.732	1	1	2.9	2.9	∞
Phantom and tissue parameters								
Phantom shell uncertainty	7.6	R	1.732	1	1	4.4	4.4	∞
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0	∞
Liquid Conductivity (measurement)	4.8	R	1.732	0.78	0.71	2.2	2.0	∞
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8	∞
Liquid Permittivity (measurement)	4.8	R	1.732	0.23	0.26	0.6	0.7	∞
Combined standard uncertainty								
-	-	RSS	-	-	-	12.1	12.0	859
Expanded uncertainty (95% confidence interval)								
-	-	k =2	-	-	-	24.1	24.0	-

11. Measurement Procedure

The measurement procedures are as follows:

1. For WLAN function, engineering testing software installed on DUTs can provide continuous transmitting signal.
2. Measure output power through RF cable and power meter
3. Set scan area, grid size and other setting on the DASY software
4. Find out the largest SAR result on these testing positions of each band
5. Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

1. Power reference measurement
2. Area scan
3. Zoom scan
4. Power drift measurement

11.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1 g and 10 g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.
The base for the evaluation is a "cube" measurement. The measured volume must include the 1 g and 10 g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.
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. Extraction of the measured data (grid and values) from the Zoom Scan
2. Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. Generation of a high-resolution mesh within the measured volume
4. Interpolation of all measured values form the measurement grid to the high-resolution grid
5. Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. Calculation of the averaged SAR within masses of 1 g and 10 g

11.2 Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures points and step size follow as below. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 mm ± 1 mm</td><td>½·δ·ln(2) mm ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.
* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

(Our measure settings are refer KDB Publication 865664 D01v01r04)

11.3 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1 g aggregate SAR, the DUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

11.4 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation. Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

11.5 Power Drift Monitoring

All SAR testing is under the DUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of DUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5 %, the SAR will be retested.

11.6 Positioning of the DUT in relation to the phantom

<Used at the ear>

1. Specifies two handset test positions against the head phantom – the "Cheek" position and the "Tilt" position. The DUT shall be tested in both of these positions on the left and right sides of the SAM phantom. In some cases (e.g. asymmetric handsets) the DUT positioning procedures representing intended use conditions cannot be used.
2. The cheek position is established as follows:
   (a) Configure the DUT for talk operation, if necessary. For example, for a DUT with a flip, swivel or slide cover piece, open the cover if this is consistent with talk operation. If the DUT can also be used with the cover closed, both configurations shall be tested.
   (b) Define two imaginary lines on the DUT, the vertical centreline and the horizontal line, for the DUT in vertical orientation as shown in figure as below. The vertical centreline passes through two points on the front side of the DUT: the midpoint of the width wt of the handset at the level of the acoustic output (Point A), and the midpoint of the width wb at the bottom of the handset (Point B). The horizontal line is perpendicular to the vertical centreline and passes through the centre of the acoustic output. The two lines intersect at Point A.
   (c) Position the DUT close to the surface of the phantom such that Point A is on the (virtual) extension of the line passing through Points RE (right ear) and LE (left ear) on the phantom. The plane defined by the vertical centreline and the horizontal line of the DUT shall be parallel to the sagittal plane of the phantom.
   (d) Translate the DUT towards the phantom along the line passing through RE and LE until the handset touches the ear.
   (e) Rotate the DUT around its vertical centreline until the plane defined by the DUT vertical centreline and horizontal line is parallel to the N-F line, and then translate the DUT towards the phantom along the LE-RE line until DUT Point A touches the ear at the ERP (ear reference point).
   (f) While keeping Point A on the line passing through RE and LE and maintaining the DUT in contact with the pinna, rotate the handset about the line N-F until any point on the DUT is in contact with a phantom point below the pinna (cheek). The physical angles of rotation shall be documented.
   (g) While keeping DUT Point A in contact with the ERP, rotate the handset around a line perpendicular to the plane defined by the DUT vertical centreline and horizontal line and passing through DUT Point A, until the DUT vertical centreline is in the reference plane.

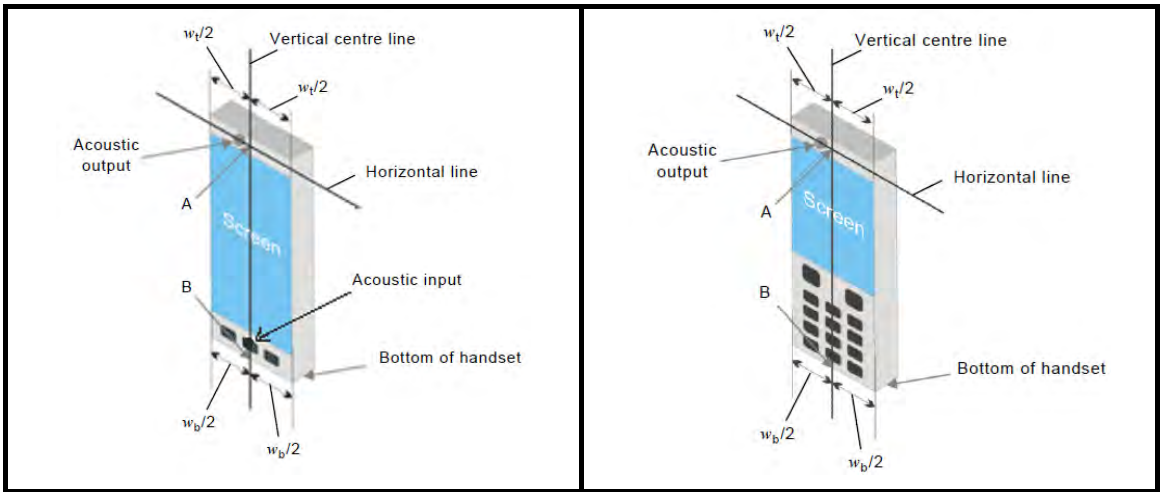


Figure - Vertical and horizontal reference lines and reference Points A, B on two example device types: a full touch screen smart phone (top) and a keyboard handset (bottom).

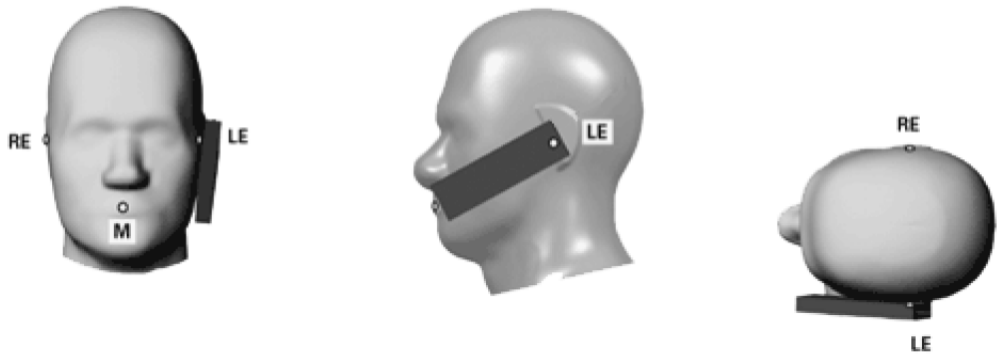


Figure - The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

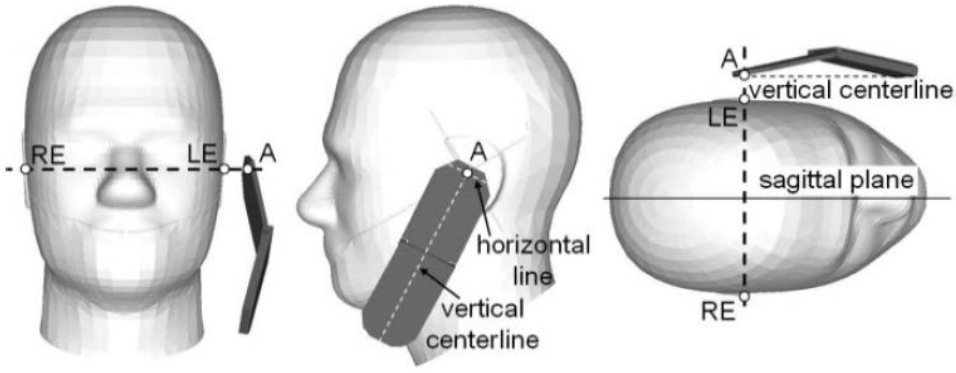


Figure - One possible DUT position against the head after Step (c).

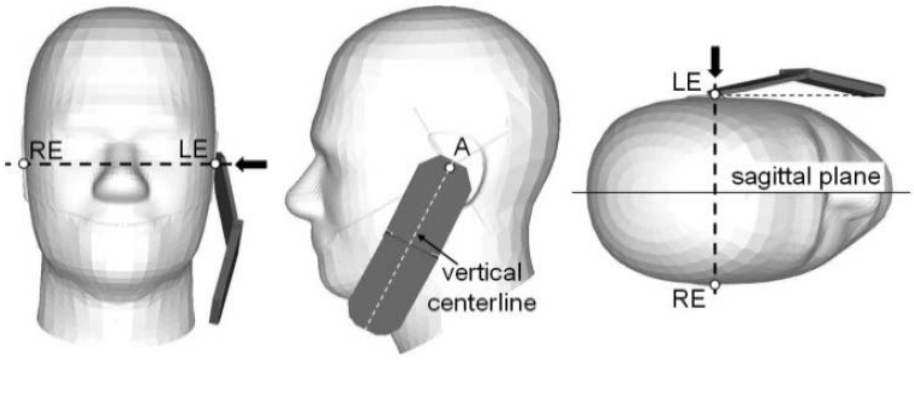


Figure - One possible DUT position against the head after Step (d).

3. The Tilt position is established as follows:
   (a) Repeat Steps (a) to (g) of cheek procedure to place the DUT in the cheek position.
   (b) While maintaining the orientation of the DUT, move the DUT away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
   (c) Rotate the DUT around the horizontal line by 15°.
   (d) While maintaining the orientation of the DUT, move the DUT towards the phantom on a line passing through RE and LE until any part of the DUT touches the ear. The tilt position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, e.g. extended antenna on the back of the phantom head, the angle of the DUT shall be reduced. In this case, the tilt position is obtained if any part of the DUT is in contact with the pinna and a second part of the DUT is in contact with the phantom, e.g. the antenna with the back of the head.

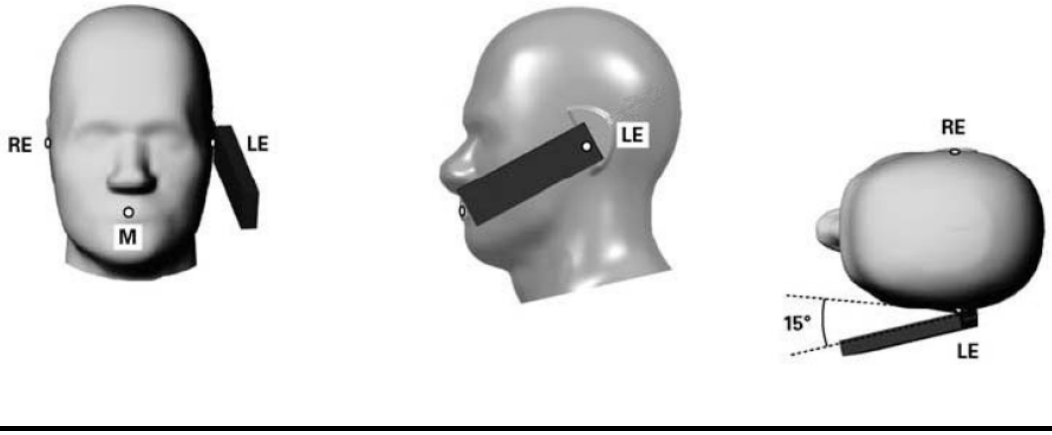


Figure - Tilt position of the wireless device on the left side of SAM.

<Hotspot mode exposure conditions>

According to KDB 648474 D04, for cellphones that support wireless routing capabilities, the relevant hand and near-body exposure conditions are tested according to the hotspot mode SAR procedures in KDB Publication 941225 D06. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge. When the form factor of a handset is smaller than 9 cm × 5 cm, a test separation distance of 5 mm (instead of 10 mm) is required for testing hotspot mode. When the separation distance required for body-worn accessory testing is greater than or equal to that tested for hotspot mode, using the same wireless mode test configuration for voice and data, such as WCDMA, LTE and Wi-Fi, and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).

<Body-worn accessory exposure conditions>

According to the KDB 648474 D04, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. When the same wireless transmission configuration is used for testing body-worn accessory and hotspot mode SAR, respectively, in voice and data mode, SAR results for the most conservative test separation distance configuration may be used to support both SAR conditions. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.

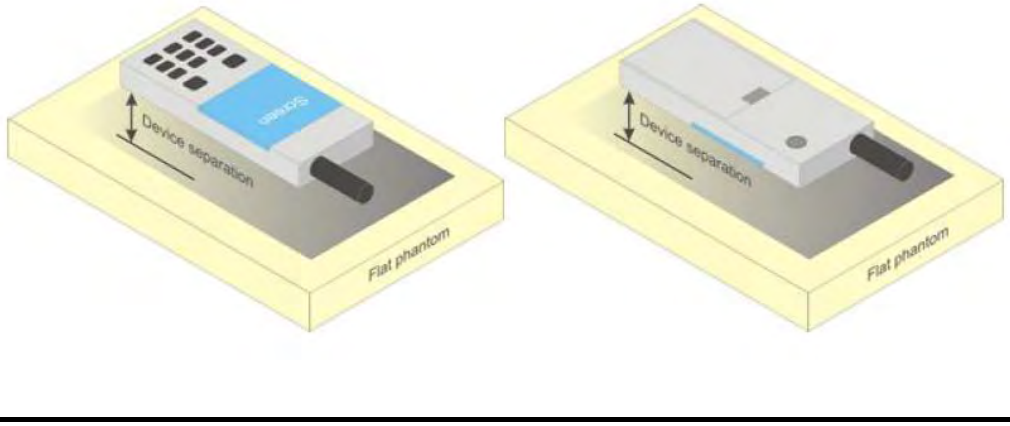


Figure - Test positions for body-worn devices.

<Phablet SAR test considerations>

1. The UMPC mini-tablet SAR procedures in KDB Publication 941225 D07 are primarily intended for devices with an overall diagonal dimensions ≤ 20 cm that operate like a tablet and mainly support hand-held interactive use next to or near the body of users, with no provision for next to the ear voice mode operations.
2. For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension >16.0 cm, devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.
   (a) The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
   (b) The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions.
   (c) The 1-g SAR at 5 mm for UMPC mini-tablets is not required. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
   (d) The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is > 20.0 cm. Hotspot mode and extremity 10-g SAR is not required when normal tablet procedures are applied.

12. SAR Test Results Summary

1. A test separation distance of 10 mm is required between the phantom and all surfaces and edges with a transmitting antenna located within 25 mm from that surface or edge.
2. When the WWAN band channel's reported SAR1g of the position is > 0.8 W/kg, low, middle and high channel are supposed to be tested.
3. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.
4. The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) configurations with 12.2 kbps RMC as the primary mode.
5. SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power.
6. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions.
7. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.
8. Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge,middle and lower edge of each required test channel.
9. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M, and L channels may not fully apply.
10. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel.
11. When the highest reported SAR for 1 RB and 50% RB allocation are > 0.8 W/kg,SAR is measured for the highest output power channel in 100%RB.
12. The procedures required for 1 RB allocation are applied to measure the SAR for QPSK with 50% RB allocation.
13. For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise,SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
14. As per KDB 248227 D01, SAR testing are not required for 802.11g/n channels when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2W/kg.
15. When the reported SAR of the highest measured maximum output power channel is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS, otherwise, SAR is required using the next highest measured output power channel for 802.11b DSSS.
16. When the highest reported SAR for the initial test configuration, according to the initial test position or fixed exposure position requirements, is adjusted by the ratio of the subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for that subsequent test configuration.
17. SAR for the initial test configuration is measured using the highest maximum output power channel, when the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤ 1.2 W/kg or all required channels are tested.
18. When the same maximum output power is specified for both bands, begin SAR measurement in U-NII-2A band by applying the OFDM SAR requirements. If the highest reported SAR for a test configuration is ≤ 1.2 W/kg, SAR is not required for U-NII-1 band.

19. When multiple transmission modes (802.11a/g/n/ac) have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, lowest order 802.11 mode is selected (i.e. a, g, n then ac).
20. The largest channel bandwidth configuration is selected among the multiple configurations in a frequency band with the same specified maximum output power.

12.1 Head SAR Measurement

Index.	Band	Frequency		Test Mode	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Reported SAR 1g
		Ch.	MHz			(mm)	(W/Kg)			
	GSM850	128	824.2	GPRS (4 Tx slots)	Right-Cheek	0	0.020	31.91	32.00	0.02
	GSM850	128	824.2	GPRS (4 Tx slots)	Right-Tilted	0	0.010	31.91	32.00	0.01
	GSM850	128	824.2	GPRS (4 Tx slots)	Left-Cheek	0	0.028	31.91	32.00	0.03
	GSM850	190	836.6	GPRS (4 Tx slots)	Left-Cheek	0	0.029	31.85	32.00	0.03
#246	GSM850	251	848.8	GPRS (4 Tx slots)	Left-Cheek	0	0.034	31.77	32.00	0.04
	GSM850	128	824.2	GPRS (4 Tx slots)	Left-Tilted	0	0.011	31.91	32.00	0.01
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Right-Cheek	0	0.320	29.79	30.00	0.34
	GSM1900	661	1880.0	GPRS (4 Tx slots)	Right-Cheek	0	0.368	29.72	30.00	0.39
#240	GSM1900	810	1909.8	GPRS (4 Tx slots)	Right-Cheek	0	0.405	29.56	30.00	0.45
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Right-Tilted	0	0.196	29.79	30.00	0.21
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Left-Cheek	0	0.236	29.79	30.00	0.25
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Left-Tilted	0	0.159	29.79	30.00	0.17

Index.	Band	Frequency		Modulation or Sub-Test	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Reported SAR 1g
		Ch.	MHz			(mm)	(W/Kg)			
#229	WCDMA Band II	9538	1907.6	RMC12.2K	Right-Cheek	0	0.765	24.75	25.00	0.81
	WCDMA Band II	9262	1852.4	RMC12.2K	Right-Cheek	0	0.709	24.65	25.00	0.77
	WCDMA Band II	9400	1880.0	RMC12.2K	Right-Cheek	0	0.747	24.68	25.00	0.80
	WCDMA Band II	9538	1907.6	RMC12.2K	Right-Tilted	0	0.495	24.75	25.00	0.52
	WCDMA Band II	9538	1907.6	RMC12.2K	Left-Cheek	0	0.557	24.75	25.00	0.59
	WCDMA Band II	9538	1907.6	RMC12.2K	Left-Tilted	0	0.446	24.75	25.00	0.47
	WCDMA Band V	4183	836.6	RMC12.2K	Right-Cheek	0	0.082	24.02	24.50	0.09
	WCDMA Band V	4183	836.6	RMC12.2K	Right-Tilted	0	0.044	24.02	24.50	0.05
	WCDMA Band V	4183	836.6	RMC12.2K	Left-Cheek	0	0.085	24.02	24.50	0.10
	WCDMA Band V	4132	826.4	RMC12.2K	Left-Cheek	0	0.080	23.82	24.50	0.09
#252	WCDMA Band V	4233	846.6	RMC12.2K	Left-Cheek	0	0.088	23.76	24.50	0.10
	WCDMA Band V	4183	836.6	RMC12.2K	Left-Tilted	0	0.036	24.02	24.50	0.04

Index.	Band	Frequency		Bandwidth	Modulation	RB Size	RB Offset	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
		Ch.	MHz						(mm)	(W/Kg)				
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Right-Cheek	0	0.662	23.94	24.00	---	0.67
	LTE Band 2	18900	1880.0	20M	QPSK	1	0	Right-Cheek	0	0.679	23.91	24.00	---	0.69
#219	LTE Band 2	19100	1900.0	20M	QPSK	1	0	Right-Cheek	0	0.704	23.77	24.00	---	0.74
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Right-Cheek	0	0.540	23.03	23.50	---	0.60
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Right-Tilted	0	0.418	23.94	24.00	---	0.42
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Right-Tilted	0	0.328	23.03	23.50	---	0.37
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Left-Cheek	0	0.434	23.94	24.00	---	0.44
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Left-Cheek	0	0.360	23.03	23.50	---	0.40
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Left-Tilted	0	0.378	23.94	24.00	---	0.38
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Left-Tilted	0	0.311	23.03	23.50	---	0.35
#221	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Right-Cheek	0	0.306	23.78	24.00	---	0.32
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Right-Cheek	0	0.249	22.86	23.00	---	0.26
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Right-Tilted	0	0.232	23.78	24.00	---	0.24
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Right-Tilted	0	0.187	22.86	23.00	---	0.19
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Left-Cheek	0	0.260	23.78	24.00	---	0.27
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Left-Cheek	0	0.218	22.86	23.00	---	0.23
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Left-Tilted	0	0.174	23.78	24.00	---	0.18
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Left-Tilted	0	0.144	22.86	23.00	---	0.15
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Right-Cheek	0	0.071	22.83	23.00	---	0.07
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Right-Cheek	0	0.047	21.91	22.00	---	0.05
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Right-Tilted	0	0.034	22.83	23.00	---	0.04
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Right-Tilted	0	0.028	21.91	22.00	---	0.03
#257	LTE Band 5	20525	836.5	10M	QPSK	1	24	Left-Cheek	0	0.076	22.83	23.00	---	0.08
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Left-Cheek	0	0.054	21.91	22.00	---	0.06
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Left-Tilted	0	0.033	22.83	23.00	---	0.03
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Left-Tilted	0	0.025	21.91	22.00	---	0.03
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Right-Cheek	0	0.051	21.72	22.00	---	0.05
#188	LTE Band 7	20850	2510.0	20M	QPSK	1	0	Right-Cheek	0	0.070	21.69	22.00	---	0.08
	LTE Band 7	21350	2560.0	20M	QPSK	1	0	Right-Cheek	0	0.047	21.67	22.00	---	0.05
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Right-Cheek	0	0.042	20.78	21.00	---	0.04
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Right-Tilted	0	0.039	21.72	22.00	---	0.04
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Right-Tilted	0	0.031	20.78	21.00	---	0.03
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Left-Cheek	0	0.028	21.72	22.00	---	0.03
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Left-Cheek	0	0.022	20.78	21.00	---	0.02
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Left-Tilted	0	0.044	21.72	22.00	---	0.05
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Left-Tilted	0	0.036	20.78	21.00	---	0.04
#261	LTE Band 12	23095	707.5	10M	QPSK	1	24	Right-Cheek	0	0.040	21.54	22.00	---	0.04
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Right-Cheek	0	0.029	20.58	21.00	---	0.03
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Right-Tilted	0	0.026	21.54	22.00	---	0.03
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Right-Tilted	0	0.021	20.58	21.00	---	0.02
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Left-Cheek	0	0.039	21.54	22.00	---	0.04
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Left-Cheek	0	0.032	20.58	21.00	---	0.04
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Left-Tilted	0	0.025	21.54	22.00	---	0.03
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Left-Tilted	0	0.020	20.58	21.00	---	0.02

Index.	Band	Frequency		Bandwidth	Modulation	RB Size	RB Offset	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
		Ch.	MHz						(mm)	(W/Kg)				
#270	LTE Band 17	23790	710.0	10M	QPSK	1	24	Right-Cheek	0	0.052	22.61	23.00	---	0.06
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Right-Cheek	0	0.040	21.70	22.00	---	0.04
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Right-Tilted	0	0.034	22.61	23.00	---	0.04
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Right-Tilted	0	0.026	21.70	22.00	---	0.03
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Left-Cheek	0	0.051	22.61	23.00	---	0.06
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Left-Cheek	0	0.040	21.70	22.00	---	0.04
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Left-Tilted	0	0.030	22.61	23.00	---	0.03
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Left-Tilted	0	0.026	21.70	22.00	---	0.03
#163	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Right-Cheek	0	0.136	21.60	22.00	62.9	0.15
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Right-Cheek	0	0.078	20.78	21.00	62.9	0.08
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Right-Tilted	0	0.103	21.60	22.00	62.9	0.11
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Right-Tilted	0	0.076	20.78	21.00	62.9	0.08
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Left-Cheek	0	0.098	21.60	22.00	62.9	0.11
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Left-Cheek	0	0.062	20.78	21.00	62.9	0.07
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Left-Tilted	0	0.079	21.60	22.00	62.9	0.09
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Left-Tilted	0	0.059	20.78	21.00	62.9	0.06
#172	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Right-Cheek	0	0.142	21.29	22.00	62.9	0.17
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Right-Cheek	0	0.082	20.45	21.00	62.9	0.09
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Right-Tilted	0	0.113	21.29	22.00	62.9	0.13
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Right-Tilted	0	0.082	20.45	21.00	62.9	0.09
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Left-Cheek	0	0.101	21.29	22.00	62.9	0.12
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Left-Cheek	0	0.066	20.45	21.00	62.9	0.08
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Left-Tilted	0	0.082	21.29	22.00	62.9	0.10
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Left-Tilted	0	0.063	20.45	21.00	62.9	0.07
#191	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Right-Cheek	0	0.120	24.27	24.50	62.9	0.13
	LTE Band 38	37850	2580.0	20M	QPSK	1	0	Right-Cheek	0	0.094	24.19	24.50	62.9	0.10
	LTE Band 41	40600	2591.0	20M	QPSK	1	0	Right-Cheek	0	0.072	24.08	24.50	62.9	0.08
	LTE Band 41	40870	2618.0	20M	QPSK	1	99	Right-Cheek	0	0.056	24.08	24.50	62.9	0.06
	LTE Band 41	41140	2645.0	20M	QPSK	1	0	Right-Cheek	0	0.049	24.12	24.50	62.9	0.05
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Right-Cheek	0	0.092	23.33	23.50	62.9	0.10
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Right-Tilted	0	0.104	24.27	24.50	62.9	0.11
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Right-Tilted	0	0.079	23.33	23.50	62.9	0.08
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Left-Cheek	0	0.095	24.27	24.50	62.9	0.10
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Left-Cheek	0	0.076	23.33	23.50	62.9	0.08
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Left-Tilted	0	0.080	24.27	24.50	62.9	0.09
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Left-Tilted	0	0.062	23.33	23.50	62.9	0.07

Index.	Band	Mode	Frequency		Data Rate	Test Position	Spacing	EUT & Accessory	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
			Ch.	MHz			(mm)		(W/Kg)				
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Right-Cheek	0	---	0.116	16.42	16.50	99.50	0.12
#410	WLAN2.4GHz	802.11b	6	2437.0	1 Mbps	Right-Cheek	0	---	0.134	16.31	16.50	99.50	0.14
	WLAN2.4GHz	802.11b	11	2462.0	1 Mbps	Right-Cheek	0	---	0.102	16.32	16.50	99.50	0.11
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Right-Tilted	0	---	0.101	16.42	16.50	99.50	0.10
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Left-Cheek	0	---	0.093	16.42	16.50	99.50	0.10
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Left-Tilted	0	---	0.093	16.42	16.50	99.50	0.10
	Bluetooth	---	0	2402.0	1 Mbps	Right-Cheek	0	---	0.050	11.41	12.00	83.30	0.07
#417	Bluetooth	---	39	2441.0	1 Mbps	Right-Cheek	0	---	0.046	10.82	12.00	83.30	0.07
	Bluetooth	---	78	2480.0	1 Mbps	Right-Cheek	0	---	0.035	11.10	12.00	83.30	0.05
	Bluetooth	---	0	2402.0	1 Mbps	Right-Tilted	0	---	0.038	11.41	12.00	83.30	0.05
	Bluetooth	---	0	2402.0	1 Mbps	Left-Cheek	0	---	0.038	11.41	12.00	83.30	0.05
	Bluetooth	---	0	2402.0	1 Mbps	Left-Tilted	0	---	0.036	11.41	12.00	83.30	0.05
#430	WLAN5GHz	802.11n 40 MHz	62	5310.0	HT40	Right-Cheek	0	---	0.625	13.44	14.00	91.80	0.77
	WLAN5GHz	802.11n 40 MHz	54	5270.0	HT40	Right-Cheek	0	---	0.559	13.34	14.00	91.80	0.71
	WLAN5GHz	802.11n 40 MHz	62	5310.0	HT40	Right-Tilted	0	---	0.477	13.44	14.00	91.80	0.59
	WLAN5GHz	802.11n 40 MHz	62	5310.0	HT40	Left-Cheek	0	---	0.375	13.44	14.00	91.80	0.47
	WLAN5GHz	802.11n 40 MHz	62	5310.0	HT40	Left-Tilted	0	---	0.392	13.44	14.00	91.80	0.49
	WLAN5GHz	802.11n 40 MHz	134	5670.0	HT40	Right-Cheek	0	---	0.473	13.53	14.00	91.80	0.57
	WLAN5GHz	802.11n 40 MHz	102	5510.0	HT40	Right-Cheek	0	---	0.500	13.35	14.00	91.80	0.63
	WLAN5GHz	802.11n 40 MHz	110	5550.0	HT40	Right-Cheek	0	---	0.502	13.43	14.00	91.80	0.62
#506	WLAN5GHz	802.11n 40 MHz	126	5630.0	HT40	Right-Cheek	0	---	0.527	13.33	14.00	91.80	0.67
	WLAN5GHz	802.11n 40 MHz	134	5670.0	HT40	Right-Tilted	0	---	0.349	13.53	14.00	91.80	0.42
	WLAN5GHz	802.11n 40 MHz	134	5670.0	HT40	Left-Cheek	0	---	0.298	13.53	14.00	91.80	0.36
	WLAN5GHz	802.11n 40 MHz	134	5670.0	HT40	Left-Tilted	0	---	0.334	13.53	14.00	91.80	0.41
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Right-Cheek	0	---	0.353	13.59	14.00	91.80	0.42
#512	WLAN5GHz	802.11n 40 MHz	151	5755.0	HT40	Right-Cheek	0	---	0.355	13.36	14.00	91.80	0.45
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Right-Tilted	0	---	0.307	13.59	14.00	91.80	0.37
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Left-Cheek	0	---	0.240	13.59	14.00	91.80	0.29
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Left-Tilted	0	---	0.236	13.59	14.00	91.80	0.28

12.2 Body SAR Measurement

Index.	Band	Frequency		Test Mode	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Reported SAR 1g
		Ch.	MHz			(mm)	(W/Kg)			
	GSM850	128	824.2	GPRS (4 Tx slots)	Front	10	0.030	31.91	32.00	0.03
	GSM850	128	824.2	GPRS (4 Tx slots)	Back	10	0.035	31.91	32.00	0.04
	GSM850	190	836.6	GPRS (4 Tx slots)	Back	10	0.041	31.85	32.00	0.04
	GSM850	251	848.8	GPRS (4 Tx slots)	Back	10	0.050	31.77	32.00	0.05
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Front	10	0.336	29.79	30.00	0.35
	GSM1900	661	1880.0	GPRS (4 Tx slots)	Front	10	0.350	29.72	30.00	0.37
	GSM1900	810	1909.8	GPRS (4 Tx slots)	Front	10	0.350	29.56	30.00	0.39
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Back	10	0.229	29.79	30.00	0.24

Index.	Band	Frequency		Modulation or Sub-Test	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Reported SAR 1g
		Ch.	MHz			(mm)	(W/Kg)			
	WCDMA Band II	9538	1907.6	RMC12.2K	Front	10	0.819	24.75	25.00	0.87
	WCDMA Band II	9262	1852.4	RMC12.2K	Front	10	0.700	24.65	25.00	0.76
	WCDMA Band II	9400	1880.0	RMC12.2K	Front	10	0.778	24.68	25.00	0.84
	WCDMA Band II	9538	1907.6	RMC12.2K	Back	10	0.668	24.75	25.00	0.71
	WCDMA Band V	4183	836.6	RMC12.2K	Front	10	0.058	24.02	24.50	0.07
	WCDMA Band V	4183	836.6	RMC12.2K	Back	10	0.092	24.02	24.50	0.10
	WCDMA Band V	4132	826.4	RMC12.2K	Back	10	0.073	23.82	24.50	0.09
	WCDMA Band V	4233	846.6	RMC12.2K	Back	10	0.104	23.76	24.50	0.12

Index.	Band	Frequency		Bandwidth	Modulation	RB Size	RB Offset	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
		Ch.	MHz						(mm)	(W/Kg)				
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Front	10	0.690	23.94	24.00	---	0.70
	LTE Band 2	18900	1880.0	20M	QPSK	1	0	Front	10	0.693	23.91	24.00	---	0.71
	LTE Band 2	19100	1900.0	20M	QPSK	1	0	Front	10	0.672	23.77	24.00	---	0.71
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Front	10	0.541	23.03	23.50	---	0.60
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Back	10	0.595	23.94	24.00	---	0.60
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Back	10	0.479	23.03	23.50	---	0.53
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Front	10	0.541	23.78	24.00	---	0.57
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Front	10	0.438	22.86	23.00	---	0.45
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Back	10	0.329	23.78	24.00	---	0.35
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Back	10	0.262	22.86	23.00	---	0.27
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Front	10	0.045	22.83	23.00	---	0.05
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Front	10	0.035	21.91	22.00	---	0.04
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Back	10	0.120	22.83	23.00	---	0.13
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Back	10	0.094	21.91	22.00	---	0.10
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Front	10	0.131	21.72	22.00	---	0.14
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Front	10	0.112	20.78	21.00	---	0.12
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Back	10	0.519	21.72	22.00	---	0.55
	LTE Band 7	20850	2510.0	20M	QPSK	1	0	Back	10	0.666	21.69	22.00	---	0.72
	LTE Band 7	21350	2560.0	20M	QPSK	1	0	Back	10	0.492	21.67	22.00	---	0.53
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Back	10	0.443	20.78	21.00	---	0.47
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Front	10	0.032	21.54	22.00	---	0.04
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Front	10	0.025	20.58	21.00	---	0.03
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Back	10	0.079	21.54	22.00	---	0.09
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Back	10	0.063	20.58	21.00	---	0.07
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Front	10	0.042	22.61	23.00	---	0.05
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Front	10	0.032	21.70	22.00	---	0.03
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Back	10	0.101	22.61	23.00	---	0.11
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Back	10	0.080	21.70	22.00	---	0.09
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Front	10	0.151	21.60	22.00	62.9	0.17
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Front	10	0.128	20.78	21.00	62.9	0.14
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Back	10	0.542	21.60	22.00	62.9	0.60
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Back	10	0.461	20.78	21.00	62.9	0.49
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Front	10	0.160	21.29	22.00	62.9	0.19
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Front	10	0.124	20.45	21.00	62.9	0.14
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Back	10	0.478	21.29	22.00	62.9	0.57
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Back	10	0.351	20.45	21.00	62.9	0.40
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Front	10	0.146	24.27	24.50	62.9	0.16
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Front	10	0.116	23.33	23.50	62.9	0.12
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Back	10	0.502	24.27	24.50	62.9	0.53
	LTE Band 38	37850	2580.0	20M	QPSK	1	0	Back	10	0.448	24.19	24.50	62.9	0.48
	LTE Band 41	40600	2591.0	20M	QPSK	1	0	Back	10	0.406	24.08	24.50	62.9	0.45
	LTE Band 41	40870	2618.0	20M	QPSK	1	99	Back	10	0.311	24.08	24.50	62.9	0.35
	LTE Band 41	41140	2645.0	20M	QPSK	1	0	Back	10	0.306	24.12	24.50	62.9	0.34
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Back	10	0.396	23.33	23.50	62.9	0.41

Index.	Band	Mode	Frequency		Data Rate	Test Position	Spacing	EUT & Accessory	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
			Ch.	MHz			(mm)		(W/Kg)				
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Front	10	---	0.044	16.42	16.50	99.50	0.05
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Back	10	---	0.089	16.42	16.50	99.50	0.09
	WLAN2.4GHz	802.11b	6	2437.0	1 Mbps	Back	10	---	0.086	16.31	16.50	99.50	0.09
	WLAN2.4GHz	802.11b	11	2462.0	1 Mbps	Back	10	---	0.065	16.32	16.50	99.50	0.07
	Bluetooth	---	0	2402.0	1 Mbps	Front	10	---	0.016	11.41	12.00	83.30	0.02
	Bluetooth	---	0	2402.0	1 Mbps	Back	10	---	0.032	11.41	12.00	83.30	0.04
	Bluetooth	---	39	2440.0	1 Mbps	Back	10	---	0.029	10.82	12.00	83.30	0.05
	Bluetooth	---	78	2480.0	1 Mbps	Back	10	---	0.021	11.10	12.00	83.30	0.03
	WLAN5GHz	802.11n 40 MHz	62	5310.0	HT40	Front	10	---	0.138	13.44	14.00	91.80	0.17
	WLAN5GHz	802.11n 40 MHz	62	5310.0	HT40	Back	10	---	0.139	13.44	14.00	91.80	0.17
#452	WLAN5GHz	802.11n 40 MHz	54	5270.0	HT40	Back	10	---	0.143	13.34	14.00	91.80	0.18
	WLAN5GHz	802.11n 40 MHz	134	5670.0	HT40	Front	10	---	0.114	13.53	14.00	91.80	0.14
#524	WLAN5GHz	802.11n 40 MHz	134	5670.0	HT40	Back	10	---	0.247	13.53	14.00	91.80	0.30
	WLAN5GHz	802.11n 40 MHz	102	5510.0	HT40	Back	10	---	0.177	13.35	14.00	91.80	0.22
	WLAN5GHz	802.11n 40 MHz	110	5550.0	HT40	Back	10	---	0.195	13.43	14.00	91.80	0.24
	WLAN5GHz	802.11n 40 MHz	126	5630.0	HT40	Back	10	---	0.214	13.33	14.00	91.80	0.27

12.3 Hot-spot mode SAR Measurement

Index.	Band	Frequency		Test Mode	Test Position	Spacing	SAR 1 g	Burst Avg Power (dBm)	Max tune-up (dBm)	Reported SAR 1 g
		Ch.	MHz			(mm)	(W/Kg)			
	GSM850	128	824.2	GPRS (4 Tx slots)	Front	10	0.030	31.91	32.00	0.03
	GSM850	128	824.2	GPRS (4 Tx slots)	Back	10	0.035	31.91	32.00	0.04
	GSM850	190	836.6	GPRS (4 Tx slots)	Back	10	0.041	31.85	32.00	0.04
#16	GSM850	251	848.8	GPRS (4 Tx slots)	Back	10	0.050	31.77	32.00	0.05
	GSM850	128	824.2	GPRS (4 Tx slots)	Side 1	10	0.001	31.91	32.00	0.00
	GSM850	128	824.2	GPRS (4 Tx slots)	Side 2	10	0.029	31.91	32.00	0.03
	GSM850	128	824.2	GPRS (4 Tx slots)	Side 3	10	0.023	31.91	32.00	0.02
	GSM850	128	824.2	GPRS (4 Tx slots)	Side 4	10	0.033	31.91	32.00	0.03
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Front	10	0.336	29.79	30.00	0.35
	GSM1900	661	1880.0	GPRS (4 Tx slots)	Front	10	0.350	29.72	30.00	0.37
#91	GSM1900	810	1909.8	GPRS (4 Tx slots)	Front	10	0.350	29.56	30.00	0.39
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Back	10	0.229	29.79	30.00	0.24
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Side 2	10	0.220	29.79	30.00	0.23
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Side 3	10	0.244	29.79	30.00	0.26
	GSM1900	512	1850.2	GPRS (4 Tx slots)	Side 4	10	0.050	29.79	30.00	0.05

Index.	Band	Frequency		Modulation or Sub-Test	Test Position	Spacing	SAR 1 g	Burst Avg Power (dBm)	Max tune-up (dBm)	Reported SAR 1 g	Note
		Ch.	MHz			(mm)	(W/Kg)				
#78	WCDMA Band II	9538	1907.6	RMC12.2K	Front	10	0.819	24.75	25.00	0.87	---
	WCDMA Band II	9538	1907.6	RMC12.2K	Front	10	0.795	24.75	25.00	0.84	Repeat
	WCDMA Band II	9262	1852.4	RMC12.2K	Front	10	0.700	24.65	25.00	0.76	---
	WCDMA Band II	9400	1880.0	RMC12.2K	Front	10	0.778	24.68	25.00	0.84	---
	WCDMA Band II	9538	1907.6	RMC12.2K	Back	10	0.668	24.75	25.00	0.71	---
	WCDMA Band II	9538	1907.6	RMC12.2K	Side 2	10	0.580	24.75	25.00	0.61	---
	WCDMA Band II	9538	1907.6	RMC12.2K	Side 3	10	0.543	24.75	25.00	0.58	---
	WCDMA Band II	9538	1907.6	RMC12.2K	Side 4	10	0.149	24.75	25.00	0.16	---
	WCDMA Band V	4183	836.6	RMC12.2K	Front	10	0.058	24.02	24.50	0.07	---
	WCDMA Band V	4183	836.6	RMC12.2K	Back	10	0.092	24.02	24.50	0.10	---
	WCDMA Band V	4132	826.4	RMC12.2K	Back	10	0.073	23.82	24.50	0.09	---
#8	WCDMA Band V	4233	846.6	RMC12.2K	Back	10	0.104	23.76	24.50	0.12	---
	WCDMA Band V	4183	836.6	RMC12.2K	Side 1	10	0.003	24.02	24.50	0.00	---
	WCDMA Band V	4183	836.6	RMC12.2K	Side 2	10	0.045	24.02	24.50	0.05	---
	WCDMA Band V	4183	836.6	RMC12.2K	Side 3	10	0.060	24.02	24.50	0.07	---
	WCDMA Band V	4183	836.6	RMC12.2K	Side 4	10	0.060	24.02	24.50	0.07	---

Index.	Band	Frequency		Bandwidth	Modulation	RB Size	RB Offset	Test Position	Spacing	SAR 1 g	Burst Avg Power (dBm)	Max tune-up (dBm)	Reported SAR 1 g	Note
		Ch.	MHz						(mm)	(W/Kg)				
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Front	10	0.690	23.94	24.00	0.70	---
	LTE Band 2	18900	1880.0	20M	QPSK	1	0	Front	10	0.693	23.91	24.00	0.71	---
#66	LTE Band 2	19100	1900.0	20M	QPSK	1	0	Front	10	0.672	23.77	24.00	0.71	---
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Front	10	0.541	23.03	23.50	0.60	---
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Back	10	0.595	23.94	24.00	0.60	---
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Back	10	0.479	23.03	23.50	0.53	---
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Side 2	10	0.512	23.94	24.00	0.52	---
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Side 2	10	0.414	23.03	23.50	0.46	---
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Side 3	10	0.501	23.94	24.00	0.51	---
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Side 3	10	0.406	23.03	23.50	0.45	---
	LTE Band 2	18700	1860.0	20M	QPSK	1	0	Side 4	10	0.123	23.94	24.00	0.13	---
	LTE Band 2	18700	1860.0	20M	QPSK	50	50	Side 4	10	0.096	23.03	23.50	0.11	---
#68	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Front	10	0.541	23.78	24.00	0.57	---
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Front	10	0.438	22.86	23.00	0.45	---
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Back	10	0.329	23.78	24.00	0.35	---
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Back	10	0.262	22.86	23.00	0.27	---
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Side 2	10	0.315	23.78	24.00	0.33	---
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Side 2	10	0.250	22.86	23.00	0.26	---
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Side 3	10	0.349	23.78	24.00	0.37	---
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Side 3	10	0.281	22.86	23.00	0.29	---
	LTE Band 4	20175	1732.5	20M	QPSK	1	0	Side 4	10	0.047	23.78	24.00	0.05	---
	LTE Band 4	20175	1732.5	20M	QPSK	50	0	Side 4	10	0.036	22.86	23.00	0.04	---
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Front	10	0.045	22.83	23.00	0.05	---
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Front	10	0.035	21.91	22.00	0.04	---
#19	LTE Band 5	20525	836.5	10M	QPSK	1	24	Back	10	0.120	22.83	23.00	0.13	---
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Back	10	0.094	21.91	22.00	0.10	---
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Side 2	10	0.038	22.83	23.00	0.04	---
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Side 2	10	0.028	21.91	22.00	0.03	---
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Side 3	10	0.051	22.83	23.00	0.05	---
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Side 3	10	0.040	21.91	22.00	0.04	---
	LTE Band 5	20525	836.5	10M	QPSK	1	24	Side 4	10	0.047	22.83	23.00	0.05	---
	LTE Band 5	20525	836.5	10M	QPSK	25	12	Side 4	10	0.037	21.91	22.00	0.04	---
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Front	10	0.131	21.72	22.00	0.14	---
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Front	10	0.112	20.78	21.00	0.12	---
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Back	10	0.519	21.72	22.00	0.55	---
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Back	10	0.443	20.78	21.00	0.47	---
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Side 2	10	0.065	21.72	22.00	0.07	---
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Side 2	10	0.054	20.78	21.00	0.06	---
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Side 3	10	0.752	21.72	22.00	0.80	---
#100	LTE Band 7	20850	2510.0	20M	QPSK	1	0	Side 3	10	0.989	21.69	22.00	1.06	---
	LTE Band 7	20850	2510.0	20M	QPSK	1	0	Side 3	10	0.972	21.69	22.00	1.04	Repeat
	LTE Band 7	21350	2560.0	20M	QPSK	1	0	Side 3	10	0.711	21.67	22.00	0.77	---
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Side 3	10	0.633	20.78	21.00	0.67	---
	LTE Band 7	21350	2560.0	20M	QPSK	100	0	Side 3	10	0.565	20.76	21.00	0.60	---
	LTE Band 7	21100	2535.0	20M	QPSK	1	99	Side 4	10	0.012	21.72	22.00	0.01	---
	LTE Band 7	21100	2535.0	20M	QPSK	50	50	Side 4	10	0.010	20.78	21.00	0.01	---

Index.	Band	Frequency		Bandwidth	Modulation	RB Size	RB Offset	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Front	10	0.032	21.54	22.00	---	0.04
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Front	10	0.025	20.58	21.00	---	0.03
#32	LTE Band 12	23095	707.5	10M	QPSK	1	24	Back	10	0.079	21.54	22.00	---	0.09
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Back	10	0.063	20.58	21.00	---	0.07
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Side 2	10	0.053	21.54	22.00	---	0.06
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Side 2	10	0.045	20.58	21.00	---	0.05
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Side 3	10	0.014	21.54	22.00	---	0.02
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Side 3	10	0.010	20.58	21.00	---	0.01
	LTE Band 12	23095	707.5	10M	QPSK	1	24	Side 4	10	0.053	21.54	22.00	---	0.06
	LTE Band 12	23095	707.5	10M	QPSK	25	12	Side 4	10	0.041	20.58	21.00	---	0.05
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Front	10	0.042	22.61	23.00	---	0.05
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Front	10	0.032	21.70	22.00	---	0.03
#45	LTE Band 17	23790	710.0	10M	QPSK	1	24	Back	10	0.101	22.61	23.00	---	0.11
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Back	10	0.080	21.70	22.00	---	0.09
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Side 2	10	0.069	22.61	23.00	---	0.08
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Side 2	10	0.055	21.70	22.00	---	0.06
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Side 3	10	0.018	22.61	23.00	---	0.02
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Side 3	10	0.014	21.70	22.00	---	0.02
	LTE Band 17	23790	710.0	10M	QPSK	1	24	Side 4	10	0.065	22.61	23.00	---	0.07
	LTE Band 17	23790	710.0	10M	QPSK	25	12	Side 4	10	0.051	21.70	22.00	---	0.06
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Front	10	0.151	21.60	22.00	62.9	0.17
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Front	10	0.128	20.78	21.00	62.9	0.14
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Back	10	0.542	21.60	22.00	62.9	0.60
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Back	10	0.461	20.78	21.00	62.9	0.49
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Side 2	10	0.117	21.60	22.00	62.9	0.13
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Side 2	10	0.093	20.78	21.00	62.9	0.10
#147	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Side 3	10	0.701	21.60	22.00	62.9	0.77
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Side 3	10	0.542	20.78	21.00	62.9	0.57
	LTE Band 40	38750	2310.0	10M	QPSK	50	0	Side 3	10	0.521	20.71	21.00	62.9	0.56
	LTE Band 40	38750	2310.0	10M	QPSK	1	0	Side 4	10	0.073	21.60	22.00	62.9	0.08
	LTE Band 40	38750	2310.0	10M	QPSK	25	0	Side 4	10	0.058	20.78	21.00	62.9	0.06
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Front	10	0.160	21.29	22.00	62.9	0.19
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Front	10	0.124	20.45	21.00	62.9	0.14
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Back	10	0.478	21.29	22.00	62.9	0.57
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Back	10	0.351	20.45	21.00	62.9	0.40
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Side 2	10	0.113	21.29	22.00	62.9	0.13
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Side 2	10	0.072	20.45	21.00	62.9	0.08
#158	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Side 3	10	0.645	21.29	22.00	62.9	0.76
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Side 3	10	0.492	20.45	21.00	62.9	0.56
	LTE Band 40	39200	2355.0	10M	QPSK	1	0	Side 4	10	0.066	21.29	22.00	62.9	0.08
	LTE Band 40	39200	2355.0	10M	QPSK	25	0	Side 4	10	0.051	20.45	21.00	62.9	0.06

Index	Band	Frequency		Bandwidth	Modulation	RB Size	RB Offset	Test Position	Spacing	SAR 1g	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Front	10	0.146	24.27	24.50	62.9	0.16
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Front	10	0.116	23.33	23.50	62.9	0.12
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Back	10	0.502	24.27	24.50	62.9	0.53
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Back	10	0.396	23.33	23.50	62.9	0.41
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Side 2	10	0.114	24.27	24.50	62.9	0.12
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Side 2	10	0.091	23.33	23.50	62.9	0.10
#129	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Side 3	10	0.705	24.27	24.50	62.9	0.75
	LTE Band 38	37850	2580.0	20M	QPSK	1	0	Side 3	10	0.534	24.19	24.50	62.9	0.58
	LTE Band 41	40600	2591.0	20M	QPSK	1	0	Side 3	10	0.594	24.08	24.50	62.9	0.66
	LTE Band 41	40870	2618.0	20M	QPSK	1	99	Side 3	10	0.460	24.08	24.50	62.9	0.51
	LTE Band 41	41140	2645.0	20M	QPSK	1	0	Side 3	10	0.441	24.12	24.50	62.9	0.48
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Side 3	10	0.560	23.33	23.50	62.9	0.59
	LTE Band 41	40870	2618.0	20M	QPSK	100	0	Side 3	10	0.450	23.23	23.50	62.9	0.48
	LTE Band 41	40340	2565.0	20M	QPSK	1	0	Side 4	10	0.071	24.27	24.50	62.9	0.08
	LTE Band 41	40340	2565.0	20M	QPSK	50	0	Side 4	10	0.057	23.33	23.50	62.9	0.06

Index.	Band	Mode	Frequency		Data Rate	Test Position	Spacing	EUT & Accessory	SAR 1g	Burst Avg Powe (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR 1g
			Ch.	MHz			(mm)		(W/Kg)				
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Front	10	---	0.044	16.42	16.50	99.50	0.05
#401	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Back	10	---	0.089	16.42	16.50	99.50	0.09
	WLAN2.4GHz	802.11b	6	2437.0	1 Mbps	Back	10	---	0.086	16.31	16.50	99.50	0.09
	WLAN2.4GHz	802.11b	11	2462.0	1 Mbps	Back	10	---	0.065	16.32	16.50	99.50	0.07
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Side 1	10	---	0.066	16.42	16.50	99.50	0.07
	WLAN2.4GHz	802.11b	1	2412.0	1 Mbps	Side 4	10	---	0.040	16.42	16.50	99.50	0.04
	Bluetooth	---	0	2402.0	1 Mbps	Front	10	---	0.016	11.41	12.00	83.30	0.02
	Bluetooth	---	0	2402.0	1 Mbps	Back	10	---	0.032	11.41	12.00	83.30	0.04
#422	Bluetooth	---	39	2441.0	1 Mbps	Back	10	---	0.029	10.82	12.00	83.30	0.05
	Bluetooth	---	78	2480.0	1 Mbps	Back	10	---	0.021	11.10	12.00	83.30	0.03
	Bluetooth	---	0	2402.0	1 Mbps	Side 1	10	---	0.027	11.41	12.00	83.30	0.04
	Bluetooth	---	0	2402.0	1 Mbps	Side 4	10	---	0.011	11.41	12.00	83.30	0.02
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Front	10	---	0.097	13.59	14.00	91.80	0.12
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Back	10	---	0.198	13.59	14.00	91.80	0.24
#467	WLAN5GHz	802.11n 40 MHz	151	5755.0	HT40	Back	10	---	0.217	13.36	14.00	91.80	0.27
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Side 1	10	---	0.156	13.59	14.00	91.80	0.19
	WLAN5GHz	802.11n 40 MHz	159	5795.0	HT40	Side 4	10	---	0.146	13.59	14.00	91.80	0.18

12.4 Extremity SAR Measurement

Index.	Band	Mode	Frequency		Data Rate	Test Position	Spacing	EUT & Accessory	SAR_{10g}	Burst Avg Power (dBm)	Max tune-up (dBm)	Duty Cycle (%)	Reported SAR_{10g}
			Ch.	MHz			(mm)		(W/Kg)				
#453	WLAN 5GHz	802.11n 40 MHz	62	5310.0	HT40	Front	0	---	0.306	13.44	14.00	91.80	0.379
	WLAN 5GHz	802.11n 40 MHz	54	5270.0	HT40	Front	0	---	0.299	13.34	14.00	91.80	0.379
	WLAN 5GHz	802.11n 40 MHz	62	5310.0	HT40	Back	0	---	0.276	13.44	14.00	91.80	0.342
	WLAN 5GHz	802.11n 40 MHz	62	5310.0	HT40	Side 1	0	---	0.183	13.44	14.00	91.80	0.227
	WLAN 5GHz	802.11n 40 MHz	62	5310.0	HT40	Side 4	0	---	0.171	13.44	14.00	91.80	0.212
	WLAN 5GHz	802.11n 40 MHz	134	5670.0	HT40	Front	0	---	0.214	13.53	14.00	91.80	0.260
#516	WLAN 5GHz	802.11n 40 MHz	134	5670.0	HT40	Back	0	---	0.397	13.53	14.00	91.80	0.482
	WLAN 5GHz	802.11n 40 MHz	102	5510.0	HT40	Back	0	---	0.287	13.35	14.00	91.80	0.363
	WLAN 5GHz	802.11n 40 MHz	110	5550.0	HT40	Back	0	---	0.314	13.43	14.00	91.80	0.390
	WLAN 5GHz	802.11n 40 MHz	126	5630.0	HT40	Back	0	---	0.358	13.33	14.00	91.80	0.455
	WLAN 5GHz	802.11n 40 MHz	134	5670.0	HT40	Side 1	0	---	0.202	13.53	14.00	91.80	0.245
	WLAN 5GHz	802.11n 40 MHz	134	5670.0	HT40	Side 4	0	---	0.194	13.53	14.00	91.80	0.235

12.5 Std. C95.1-1992 RF Exposure Limit

Human Exposure	Population Uncontrolled Exposure (W/kg) or (mW/g)	Occupational Controlled Exposure (W/kg) or (mW/g)
Spatial Peak SAR* (head)	1.60	8.00
Spatial Peak SAR** (Whole Body)	0.08	0.40
Spatial Peak SAR*** (Partial-Body)	1.60	8.00
Spatial Peak SAR**** (Hands / Feet / Ankle / Wrist)	4.00	20.00

Table 2. Safety Limits for Partial Body Exposure

Notes：

***** The Spatial Peak value of the SAR averaged over any 1 gram of tissue.
(defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

****** The Spatial Average value of the SAR averaged over the whole – body.

******* The Spatial Average value of the SAR averaged over the partial – body.

******** The Spatial Peak value of the SAR averaged over any 10 grams of tissue.
(defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

Population / Uncontrolled Environments： are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

Occupational / Controlled Environments： are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

13. References

[1] Std. C95.1-1999, "*American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300KHz to 100GHz",* New York.

[2] NCRP, National Council on Radiation Protection and Measurements, "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields", NCRP report NO. 86, 1986.

[3] T. Schmid, O. Egger, and N. Kuster, "Automatic E-field scanning system for dosimetric assessments", IEEE Transactions on Microwave Theory and Techniques, vol. 44, pp, 105-113, Jan. 1996.

[4] K. Pokovi ć, T. Schmid, and N. Kuster, "Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequency", in ICECOM'97, Dubrovnik, October 15-17, 1997, pp.120-124.

[5] K. Pokovi ć, T. Schmid, and N. Kuster, "E-field probe with improved isotropy in brain simulating liquids", in Proceedings of the ELMAR, Zadar, Croatia, 23-25 June, 1996, pp.172-175.

[6] N. Kuster, and Q. Balzano, "Energy absorption mechanism by biological bodies in the near field of dipole antennas above 300MHz", IEEE Transaction on Vehicular Technology, vol. 41, no. 1, Feb. 1992, pp. 17-23.

[7] Robert J. Renka, "Multivariate Interpolation Of Large Sets Of Scattered Data", University of North Texas ACM Transactions on Mathematical Software, vol. 14, no. 2, June 1988 , pp. 139-148.

[8] N. Kuster, R. Kastle, T. Schmid, Dosimetric evaluation of mobile communications equipment with known precision, IEEE Transaction on Communications, vol. E80-B, no. 5, May 1997, pp. 645-652.

[9] Std. C95.3-1991, "IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave, New York: IEEE, Aug. 1992.

[10] CENELEC CLC/SC111B, European Prestandard (prENV 50166-2), Human Exposure to Electromagnetic Fields High-frequency: 10KHz-300GHz, Jan. 1995.

[11] IEEE Std 1528™-2013 - IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head From Wireless Communications Devices: Measurement Techniques

Appendix A - System Performance Check

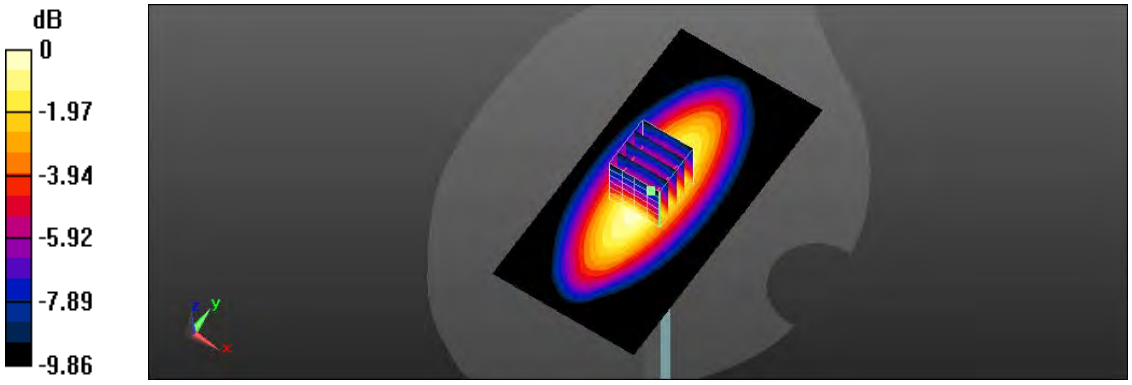
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/18
System Performance Check at 750MHz_20200518_Head
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1004

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.899 S/m; ε_r = 42.046; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(10.19, 10.19, 10.19) @ 750 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 750MHz/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.89 W/kg

System Performance Check at 750MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 57.61 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 3.31 W/kg
SAR(1 g) = 2.15 W/kg; SAR(10 g) = 1.43 W/kg
Smallest distance from peaks to all points 3 dB below = 20.5 mm
Ratio of SAR at M2 to SAR at M1 = 65.3%
Maximum value of SAR (measured) = 2.89 W/kg



0 dB = 2.89 W/kg = 4.61 dBW/kg

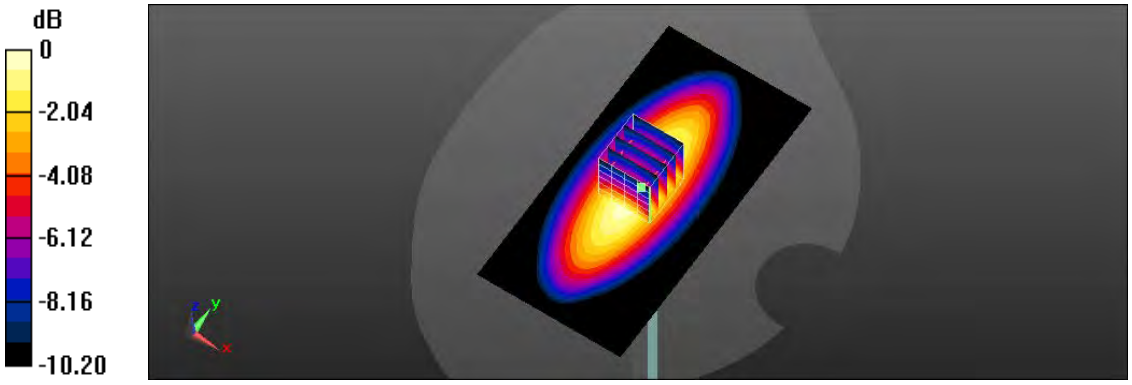
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/28
System Performance Check at 750MHz_20200528_Head
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1004

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.898 S/m; ε_r = 41.969; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(10.19, 10.19, 10.19) @ 750 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 750MHz/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.87 W/kg

System Performance Check at 750MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.14 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 3.34 W/kg
SAR(1 g) = 2.13 W/kg; SAR(10 g) = 1.41 W/kg
Smallest distance from peaks to all points 3 dB below = 16.3 mm
Ratio of SAR at M2 to SAR at M1 = 64%
Maximum value of SAR (measured) = 2.90 W/kg



0 dB = 2.87 W/kg = 4.59 dBW/kg

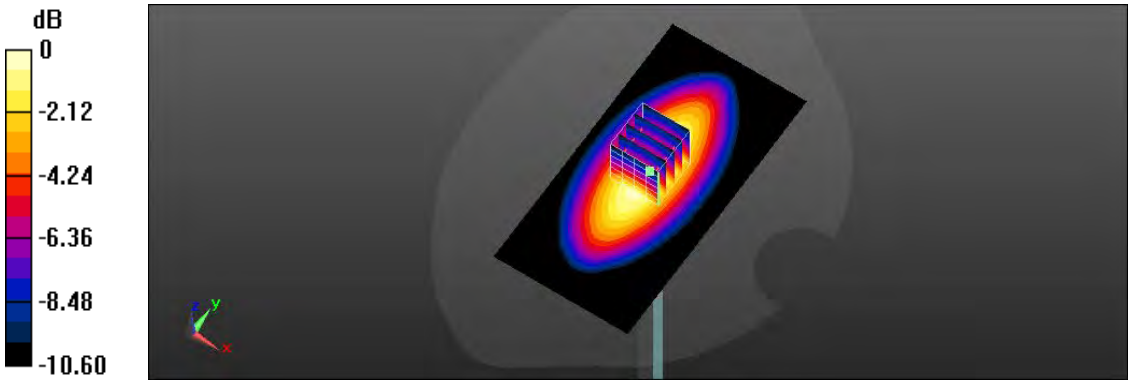
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/18
System Performance Check at 835MHz_20200518_Head
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.909 S/m; ε_r = 42.54; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 835 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 835MHz/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.52 W/kg

System Performance Check at 835MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 63.37 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 4.10 W/kg
SAR(1 g) = 2.56 W/kg; SAR(10 g) = 1.68 W/kg
Smallest distance from peaks to all points 3 dB below = 20.5 mm
Ratio of SAR at M2 to SAR at M1 = 62.8%
Maximum value of SAR (measured) = 3.51 W/kg



0 dB = 3.51 W/kg = 5.45 dBW/kg

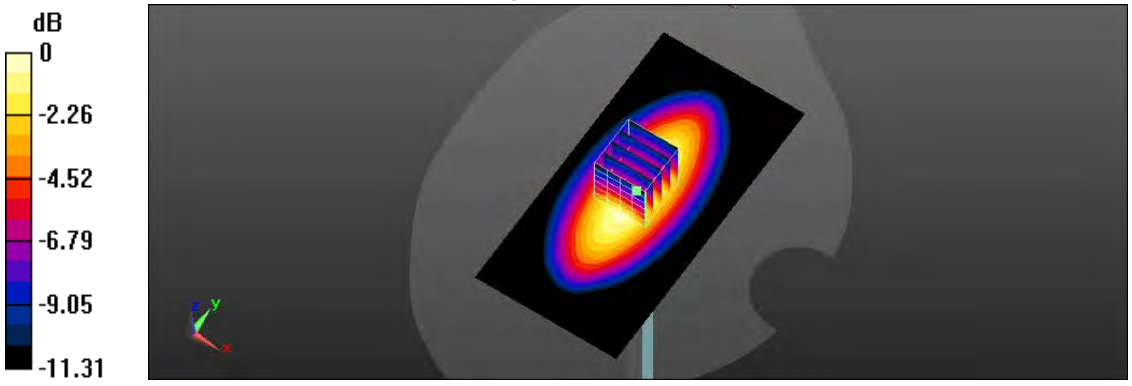
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/28
System Performance Check at 835MHz_20200528_Head
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d082

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.907 S/m; ε_r = 42.474; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 835 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 835MHz/Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.52 W/kg

System Performance Check at 835MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 63.26 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 4.09 W/kg
SAR(1 g) = 2.55 W/kg; SAR(10 g) = 1.64 W/kg
Smallest distance from peaks to all points 3 dB below = 16 mm
Ratio of SAR at M2 to SAR at M1 = 62.3%
Maximum value of SAR (measured) = 3.53 W/kg



0 dB = 3.53 W/kg = 5.47 dBW/kg

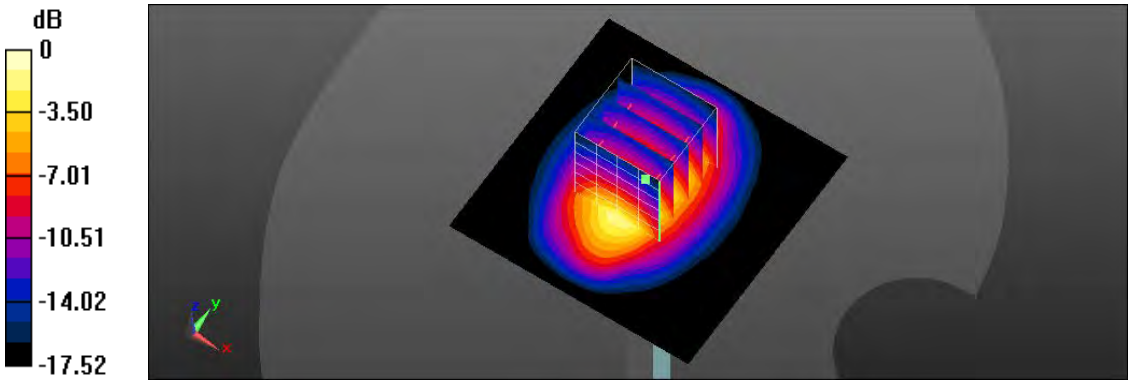
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/20
System Performance Check at 1750MHz_20200520_Head
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1023

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.33 S/m; ε_r = 40.606; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.47, 8.47, 8.47) @ 1750 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1750MHz/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.9 W/kg

System Performance Check at 1750MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 102.6 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 16.7 W/kg
SAR(1 g) = 9.03 W/kg; SAR(10 g) = 4.76 W/kg
Smallest distance from peaks to all points 3 dB below = 10.7 mm
Ratio of SAR at M2 to SAR at M1 = 54%
Maximum value of SAR (measured) = 14.0 W/kg



0 dB = 13.9 W/kg = 11.43 dBW/kg

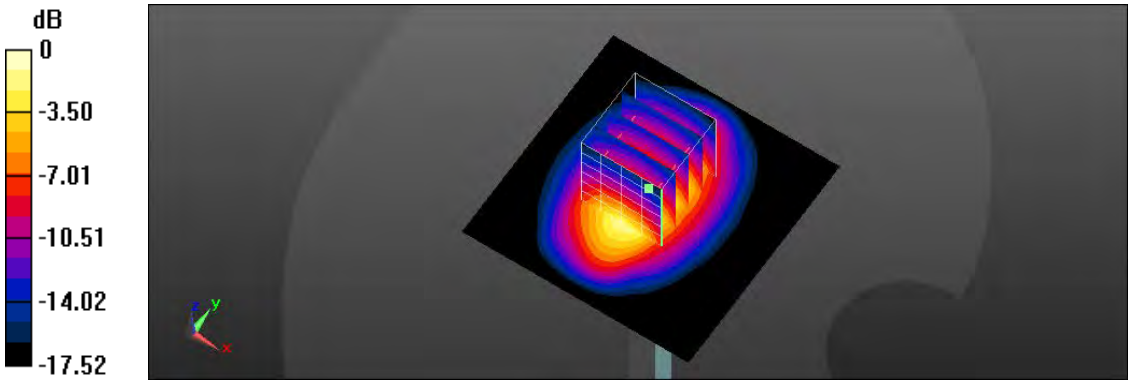
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/27
System Performance Check at 1750MHz_20200527_Head
DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1023

Communication System: UID 0, CW (0); Frequency: 1750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1750 MHz; σ = 1.361 S/m; ε_r = 40.297; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.47, 8.47, 8.47) @ 1750 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1750MHz/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 12.4 W/kg

System Performance Check at 1750MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 102.6 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 15.0 W/kg
SAR(1 g) = 9.23 W/kg; SAR(10 g) = 4.87 W/kg
Smallest distance from peaks to all points 3 dB below = 11.2 mm
Ratio of SAR at M2 to SAR at M1 = 53.7%
Maximum value of SAR (measured) = 12.5 W/kg



0 dB = 12.5 W/kg = 10.97 dBW/kg

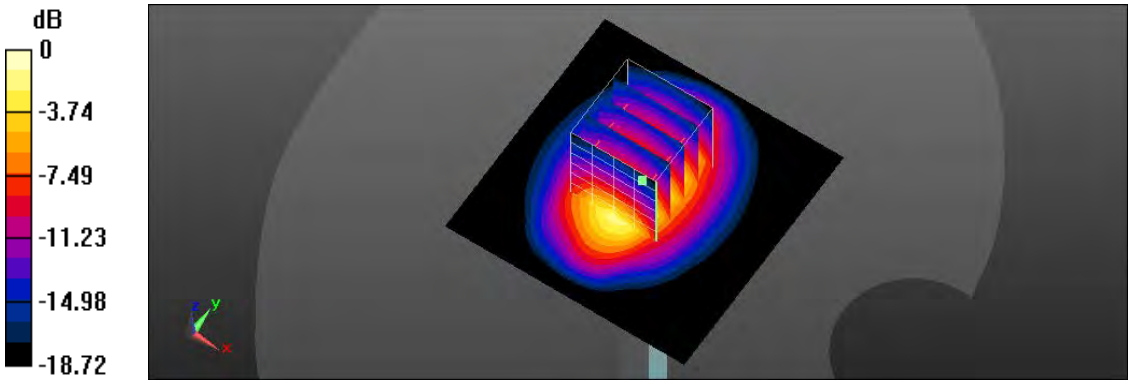
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/20
System Performance Check at 1900MHz_20200520_Head
DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.459 S/m; ε_r = 40.078; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1900 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1900MHz/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 16.5 W/kg

System Performance Check at 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 106.4 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 20.0 W/kg
SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.32 W/kg
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 52.1%
Maximum value of SAR (measured) = 16.6 W/kg



0 dB = 16.5 W/kg = 12.17 dBW/kg

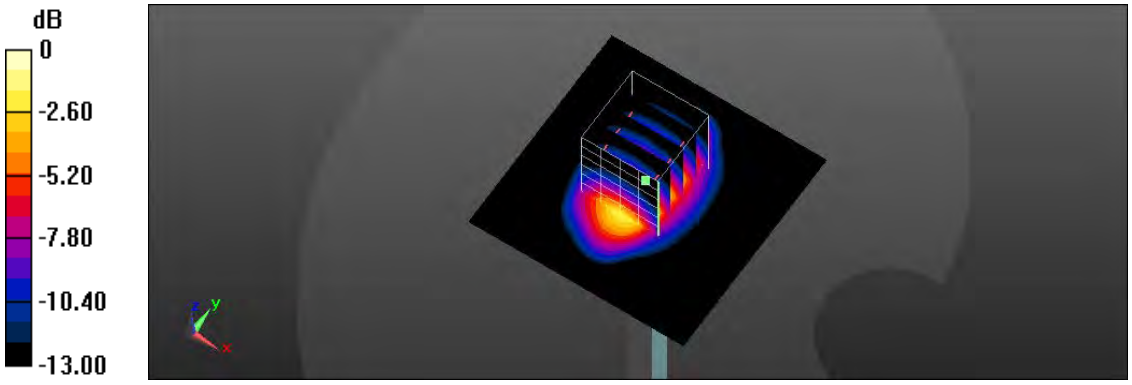
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/27
System Performance Check at 1900MHz_20200527_Head
DUT: Dipole D1900V2_SN5d111; Type: D1900V2; Serial: D1900V2 - SN:5d111

Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.441 S/m; ε_r = 39.757; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1900 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 1900MHz/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 13.7 W/kg

System Performance Check at 1900MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 106.4 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 16.6 W/kg
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.26 W/kg
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 52.3%
Maximum value of SAR (measured) = 13.8 W/kg



0 dB = 13.8 W/kg = 11.40 dBW/kg

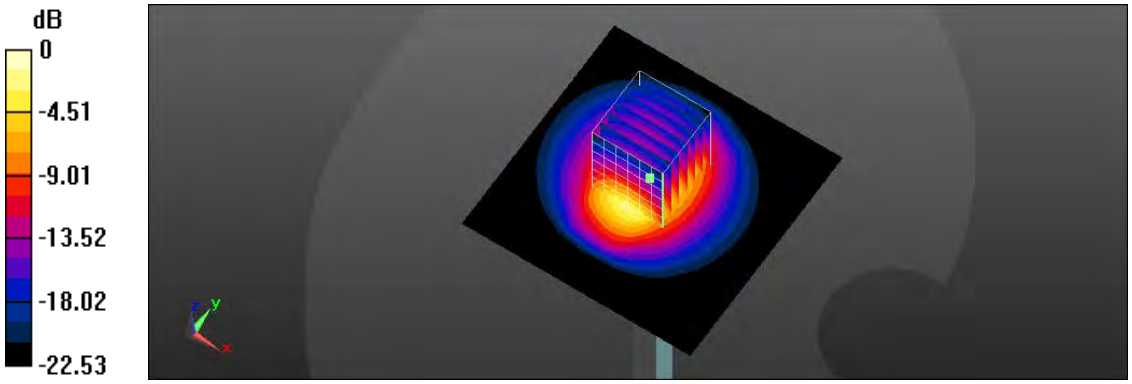
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/24
System Performance Check at 2300MHz_20200524_Head
DUT: Dipole 2300 MHz; Type: D2300V2; Serial: D2300V2 - SN:1092

Communication System: UID 0, CW (0); Frequency: 2300 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2300 MHz; σ = 1.628 S/m; ε_r = 40.072; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3887; ConvF(7.7, 7.7, 7.7) @ 2300 MHz; Calibrated: 2019/9/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 2300MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 24.3 W/kg

System Performance Check at 2300MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 116.1 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 30.6 W/kg
SAR(1 g) = 12.7 W/kg; SAR(10 g) = 5.9 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 47.5%
Maximum value of SAR (measured) = 24.3 W/kg



0 dB = 24.3 W/kg = 13.86 dBW/kg

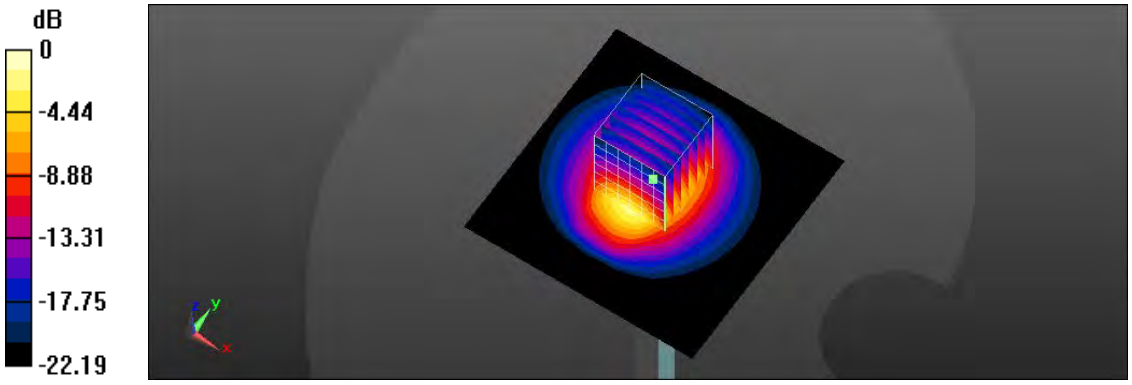
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/23
System Performance Check at 2450MHz_20200523_Head
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:903

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.779 S/m; ε_r = 39.515; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.65, 7.65, 7.65) @ 2450 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 2450MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 18.8 W/kg

System Performance Check at 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.1 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 23.2 W/kg
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.43 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 48.9%
Maximum value of SAR (measured) = 18.8 W/kg



0 dB = 18.8 W/kg = 12.74 dBW/kg

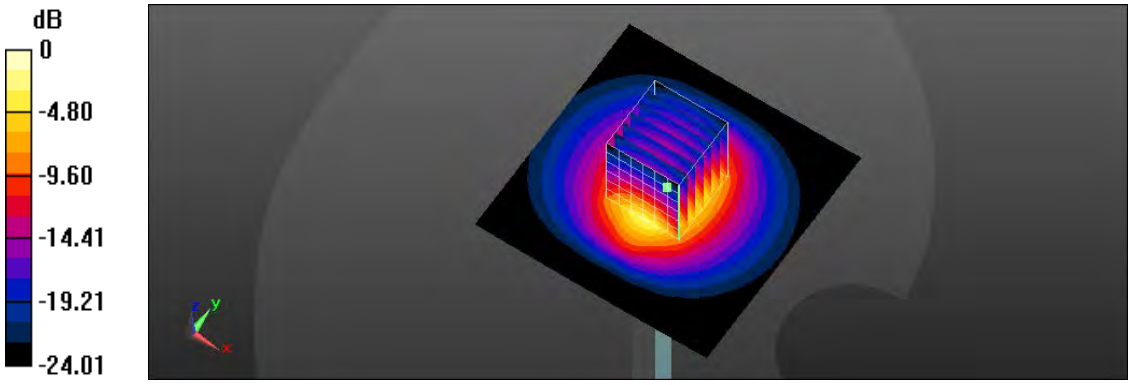
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/21
System Performance Check at 2600MHz_20200521_Head
DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1007

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.987 S/m; ε_r = 39.64; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.43, 7.43, 7.43) @ 2600 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 2600MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 17.6 W/kg

System Performance Check at 2600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.63 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 22.5 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 5.82 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 46.2%
Maximum value of SAR (measured) = 17.8 W/kg



0 dB = 17.8 W/kg = 12.50 dBW/kg

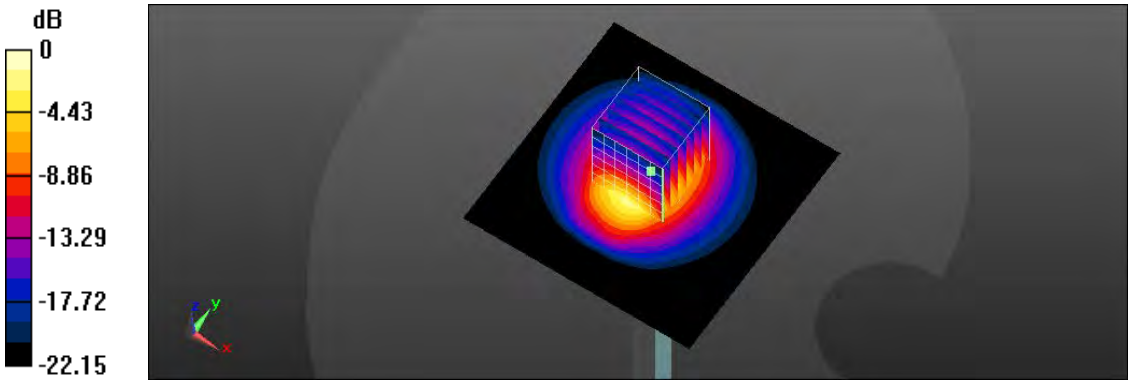
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/22
System Performance Check at 2600MHz_20200522_Head
DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1007

Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 1.974 S/m; ε_r = 39.124; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.43, 7.43, 7.43) @ 2600 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 2600MHz/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 21.3 W/kg

System Performance Check at 2600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.2 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 26.2 W/kg
SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.01 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 49.4%
Maximum value of SAR (measured) = 21.3 W/kg



0 dB = 21.3 W/kg = 13.28 dBW/kg

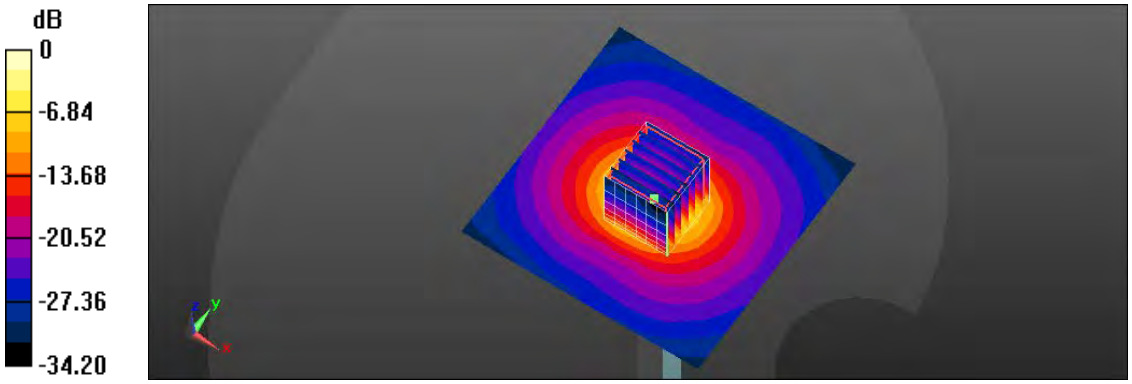
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/25
System Performance Check at 5250MHz_20200525_Head
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1145

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.624 S/m; ε_r = 36.55; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.57, 5.57, 5.57) @ 5250 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5250MHz/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.6 W/kg

System Performance Check at 5250MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.8 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 28.3 W/kg
SAR(1 g) = 8.18 W/kg; SAR(10 g) = 2.29 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 65.1%
Maximum value of SAR (measured) = 17.1 W/kg



0 dB = 17.1 W/kg = 12.33 dBW/kg

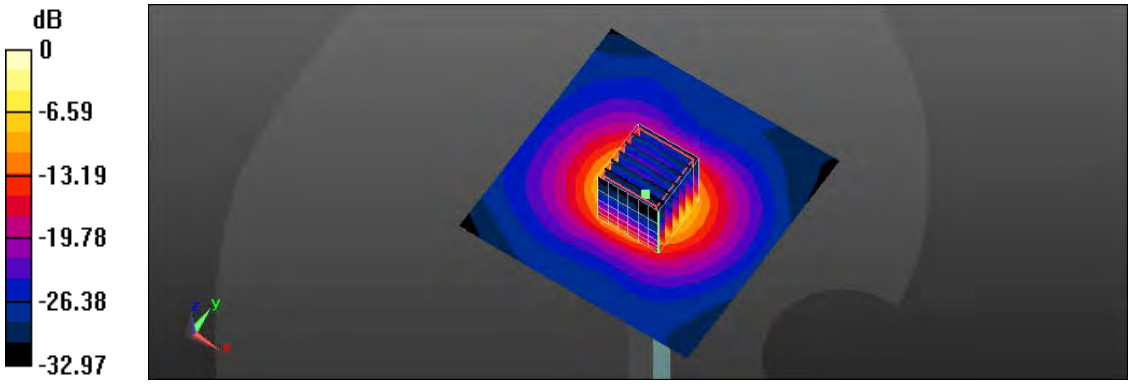
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/26
System Performance Check at 5600MHz_20200526_Head
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1145

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.127 S/m; ε_r = 36.374; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81) @ 5600 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5600MHz/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.6 W/kg

System Performance Check at 5600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.81 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 33.5 W/kg
SAR(1 g) = 7.98 W/kg; SAR(10 g) = 2.25 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 63.2%
Maximum value of SAR (measured) = 20.6 W/kg



0 dB = 20.6 W/kg = 13.14 dBW/kg

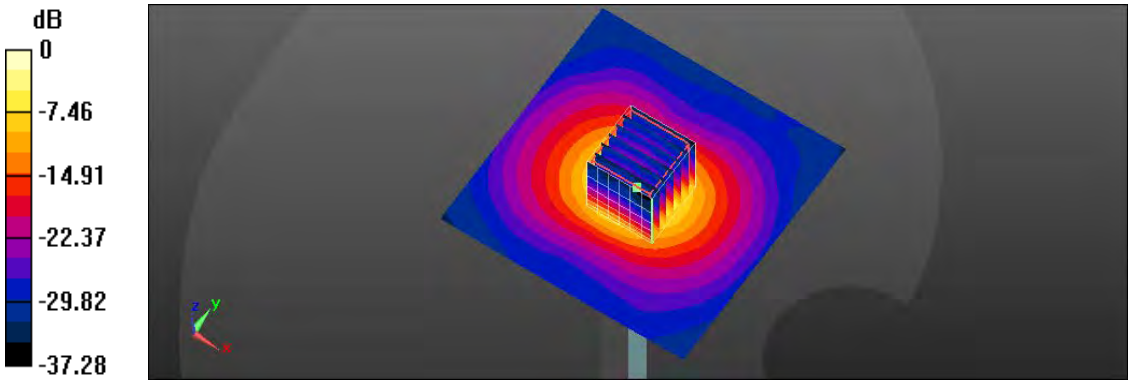
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/26
System Performance Check at 5750MHz_20200526_Head
DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1145

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.307 S/m; ε_r = 36.083; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.06, 5.06, 5.06) @ 5750 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

System Performance Check at 5750MHz/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.1 W/kg

System Performance Check at 5750MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.08 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 31.3 W/kg
SAR(1 g) = 8.29 W/kg; SAR(10 g) = 2.31 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 61.3%
Maximum value of SAR (measured) = 17.4 W/kg



0 dB = 17.4 W/kg = 12.41 dBW/kg

Appendix B - SAR Measurement Data

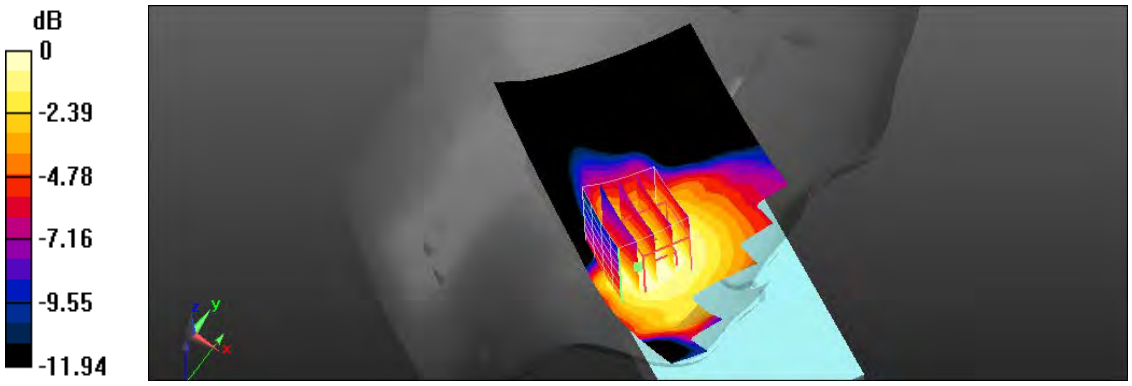
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/28
246_GSM850 CH 251_GPRS (4 Tx slots)_Left-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, GPRS 850 (1Down, 4Up) (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.08
Medium parameters used: f = 849 MHz; σ = 0.92 S/m; ε_r = 42.273; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 848.8 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0458 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.993 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.0490 W/kg
SAR(1 g) = 0.034 W/kg; SAR(10 g) = 0.025 W/kg
Ratio of SAR at M2 to SAR at M1 = 71.8%
Maximum value of SAR (measured) = 0.0423 W/kg



0 dB = 0.0423 W/kg = -13.74 dBW/kg

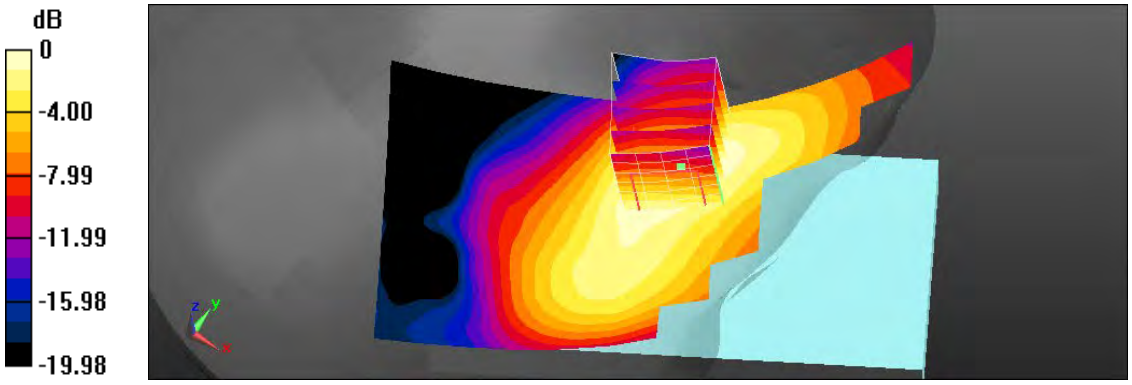
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/27
240_GSM1900 CH 810_GPRS (4 Tx slots)_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, GPRS PCS (1Down,4Up) (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium parameters used: f = 1910 MHz; σ = 1.449 S/m; ε_r = 39.731; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1909.8 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.590 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.97 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.655 W/kg
SAR(1 g) = 0.405 W/kg; SAR(10 g) = 0.258 W/kg
Smallest distance from peaks to all points 3 dB below = 14.2 mm
Ratio of SAR at M2 to SAR at M1 = 60.9%
Maximum value of SAR (measured) = 0.555 W/kg



0 dB = 0.555 W/kg = -2.56 dBW/kg

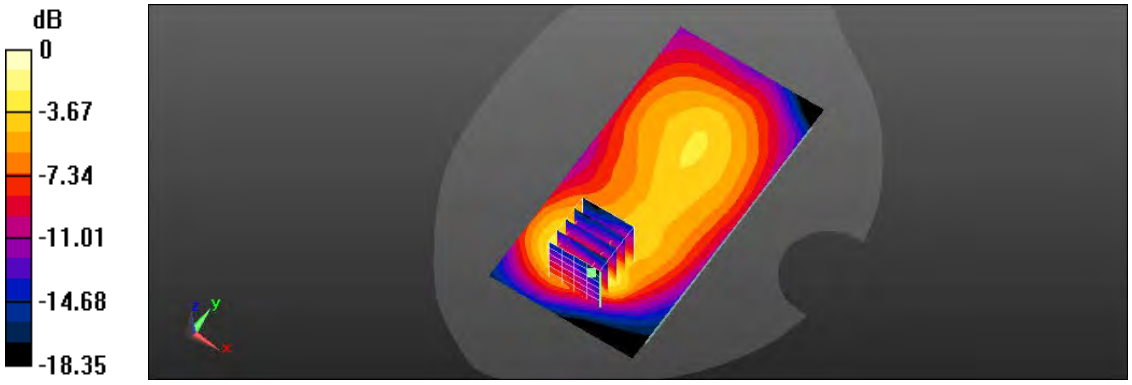
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/18
16_GSM850 CH 251_GPRS (4 Tx slots)_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, GPRS 850 (1Down, 4Up) (0); Frequency: 848.8 MHz;Duty Cycle: 1:2.08
Medium parameters used: f = 849 MHz; σ = 0.922 S/m; ε_r = 42.339; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 848.8 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0852 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.086 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.116 W/kg
SAR(1 g) = 0.050 W/kg; SAR(10 g) = 0.025 W/kg
Ratio of SAR at M2 to SAR at M1 = 43.9%
Maximum value of SAR (measured) = 0.0861 W/kg



0 dB = 0.0861 W/kg = -10.65 dBW/kg

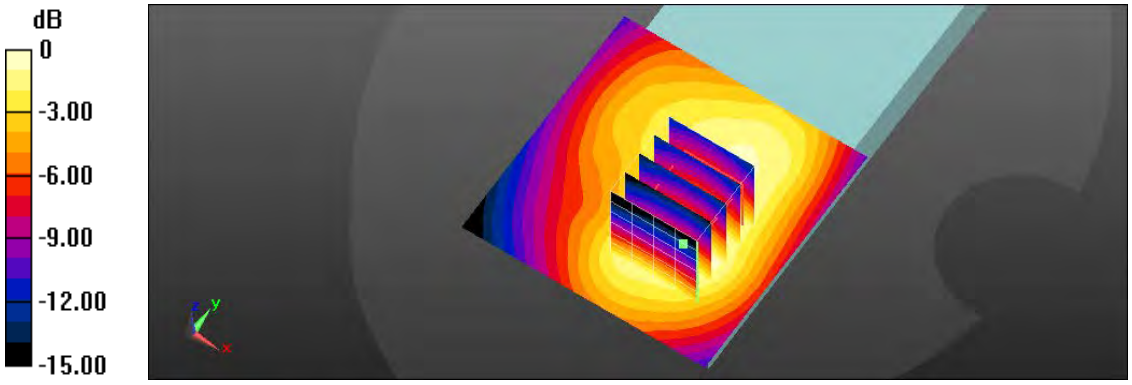
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/20
91_GSM1900 CH 810_GPRS (4 Tx slots)_Front_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, GPRS PCS (1Down,4Up) (0); Frequency: 1909.8 MHz;Duty Cycle: 1:2.08
Medium parameters used: f = 1910 MHz; σ = 1.467 S/m; ε_r = 40.052; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1880 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.503 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.94 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.573 W/kg
SAR(1 g) = 0.350 W/kg; SAR(10 g) = 0.215 W/kg
Smallest distance from peaks to all points 3 dB below = 17 mm
Ratio of SAR at M2 to SAR at M1 = 61.2%
Maximum value of SAR (measured) = 0.478 W/kg



0 dB = 0.478 W/kg = -3.21 dBW/kg

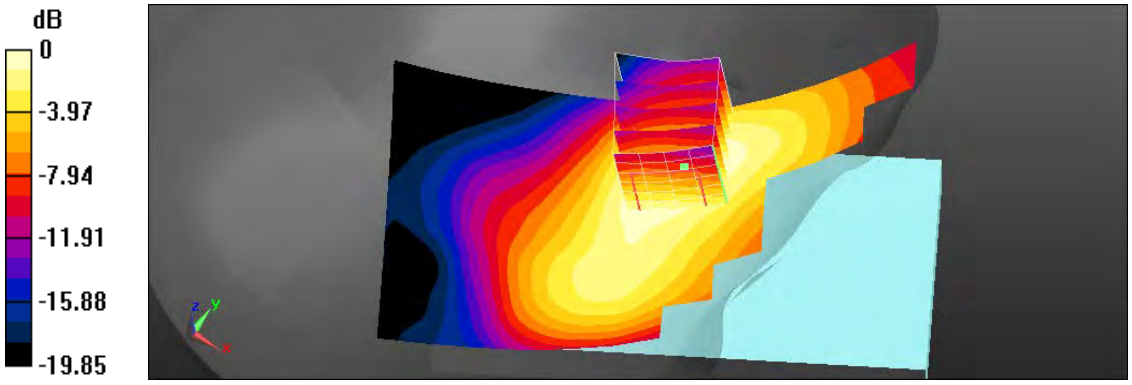
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/27
229_WCDMA Band II CH 9538_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, WCDMA Band II (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.447 S/m; ε_r = 39.736; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1907.6 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.13 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.57 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.23 W/kg
SAR(1 g) = 0.765 W/kg; SAR(10 g) = 0.501 W/kg
Smallest distance from peaks to all points 3 dB below = 14.6 mm
Ratio of SAR at M2 to SAR at M1 = 63.1%
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

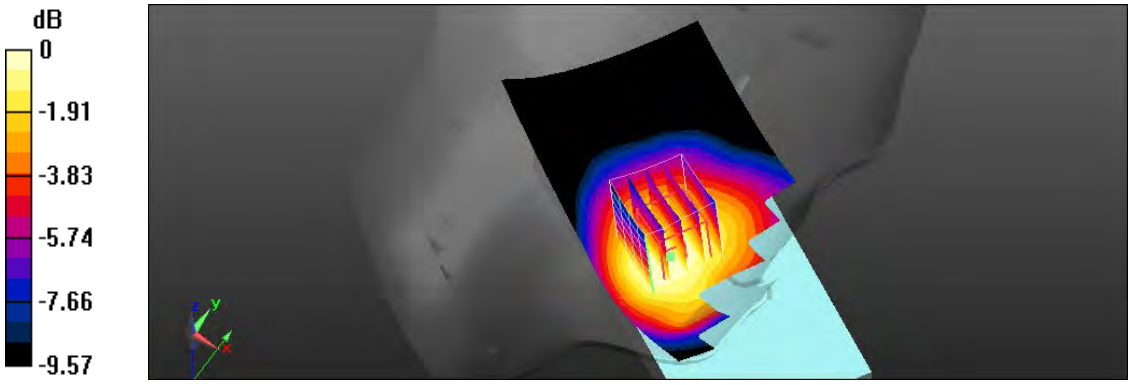
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/28
252_WCDMA Band V CH 4233_Left-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, WCDMA Band V (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 0.919 S/m; ε_r = 42.3; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 846.6 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.114 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.30 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.088 W/kg; SAR(10 g) = 0.066 W/kg
Smallest distance from peaks to all points 3 dB below = 20 mm
Ratio of SAR at M2 to SAR at M1 = 69.6%
Maximum value of SAR (measured) = 0.108 W/kg



0 dB = 0.108 W/kg = -9.67 dBW/kg

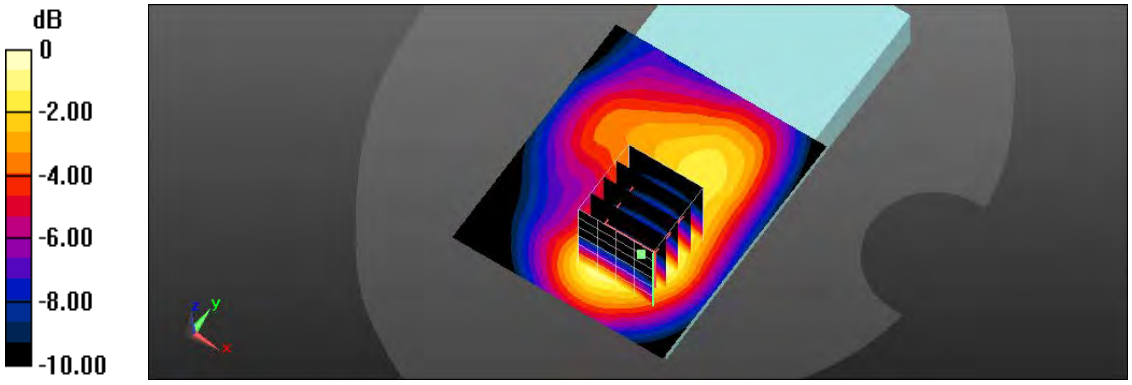
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/20
78_WCDMA Band II CH 9538_Front_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, WCDMA Band II (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.465 S/m; ε_r = 40.057; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1907.6 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.18 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 29.37 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.819 W/kg; SAR(10 g) = 0.476 W/kg
Smallest distance from peaks to all points 3 dB below = 17 mm
Ratio of SAR at M2 to SAR at M1 = 59.1%
Maximum value of SAR (measured) = 1.16 W/kg



0 dB = 1.16 W/kg = 0.64 dBW/kg

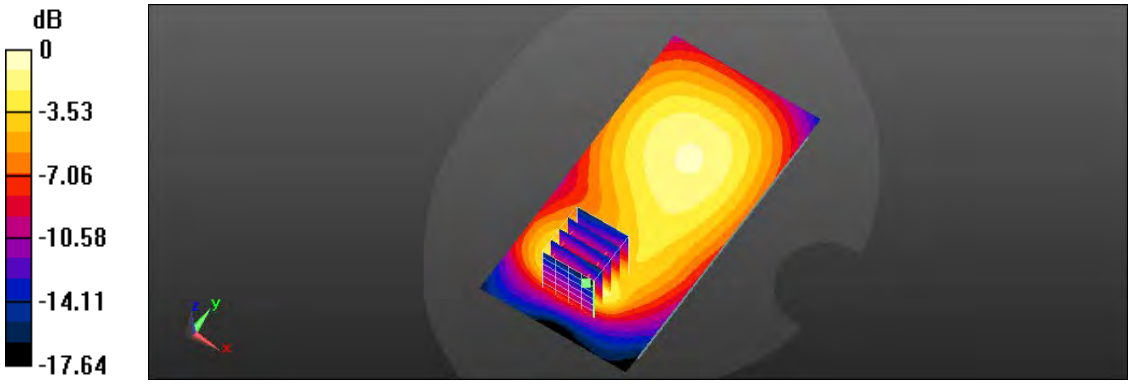
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/18
08_WCDMA Band V CH 4233_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, WCDMA Band V (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 847 MHz; σ = 0.92 S/m; ε_r = 42.366; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 846.6 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.187 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.96 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.237 W/kg
SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.054 W/kg
Smallest distance from peaks to all points 3 dB below = 9.6 mm
Ratio of SAR at M2 to SAR at M1 = 45.2%
Maximum value of SAR (measured) = 0.177 W/kg



0 dB = 0.177 W/kg = -7.52 dBW/kg

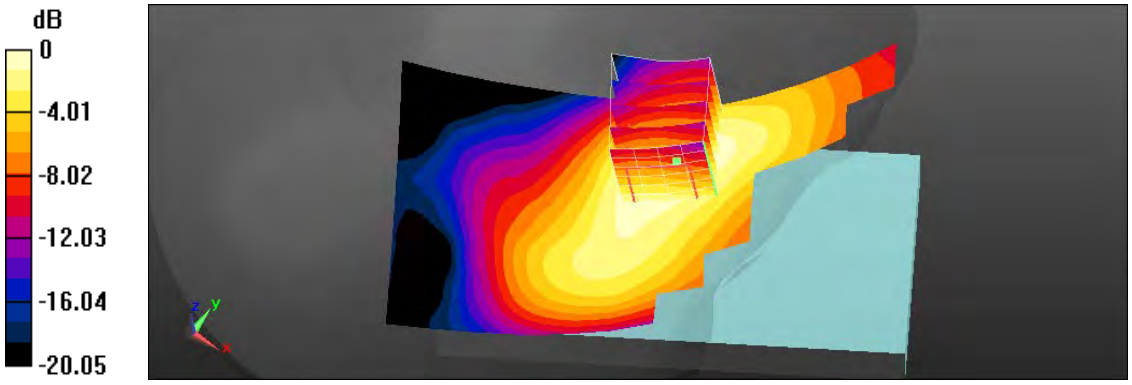
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/27
219_LTE Band 2 CH 19100_QPSK_BW 20M_1RB Size 0RB Offset_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.441 S/m; ε_r = 39.757; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1900 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.01 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.95 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.704 W/kg; SAR(10 g) = 0.455 W/kg
Smallest distance from peaks to all points 3 dB below = 14.8 mm
Ratio of SAR at M2 to SAR at M1 = 64.7%
Maximum value of SAR (measured) = 0.936 W/kg



0 dB = 0.936 W/kg = -0.29 dBW/kg

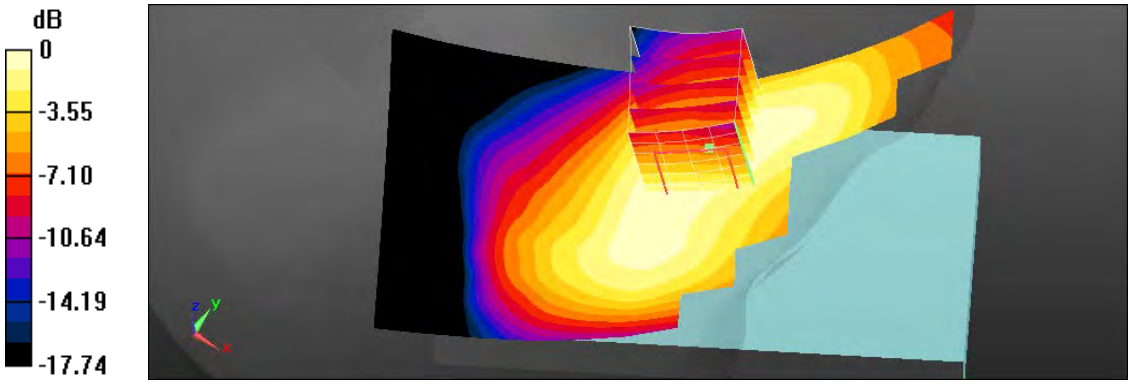
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/27
221_LTE Band 4 CH 20175_QPSK_BW 20M_1RB Size 0RB Offset_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.347 S/m; ε_r = 40.352; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.47, 8.47, 8.47) @ 1732.5 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.420 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.21 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.452 W/kg
SAR(1 g) = 0.306 W/kg; SAR(10 g) = 0.210 W/kg
Smallest distance from peaks to all points 3 dB below = 17.8 mm
Ratio of SAR at M2 to SAR at M1 = 66.6%
Maximum value of SAR (measured) = 0.399 W/kg



0 dB = 0.399 W/kg = -3.99 dBW/kg

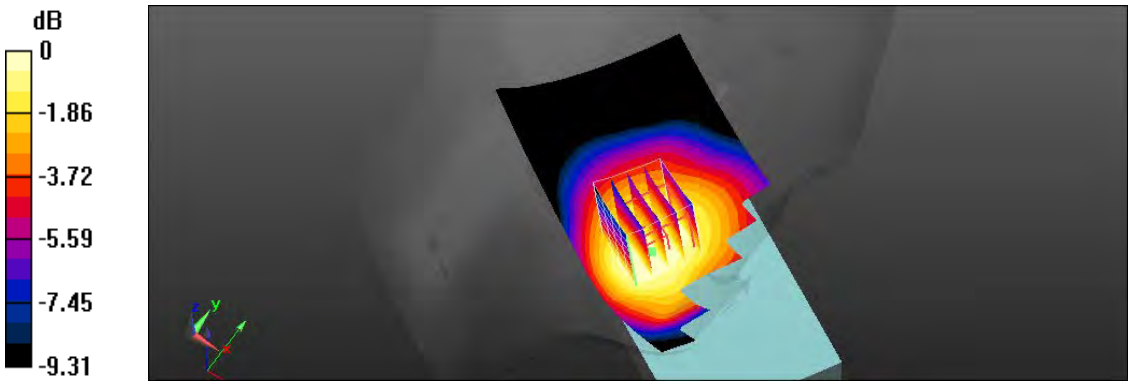
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/28
257_LTE Band 5 CH 20525_QPSK_BW 10M_1RB Size 24RB Offset_Left-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.909 S/m; ε_r = 42.453; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 836.5 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.101 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.92 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.103 W/kg
SAR(1 g) = 0.076 W/kg; SAR(10 g) = 0.058 W/kg
Ratio of SAR at M2 to SAR at M1 = 76%
Maximum value of SAR (measured) = 0.0929 W/kg



0 dB = 0.0929 W/kg = -10.32 dBW/kg

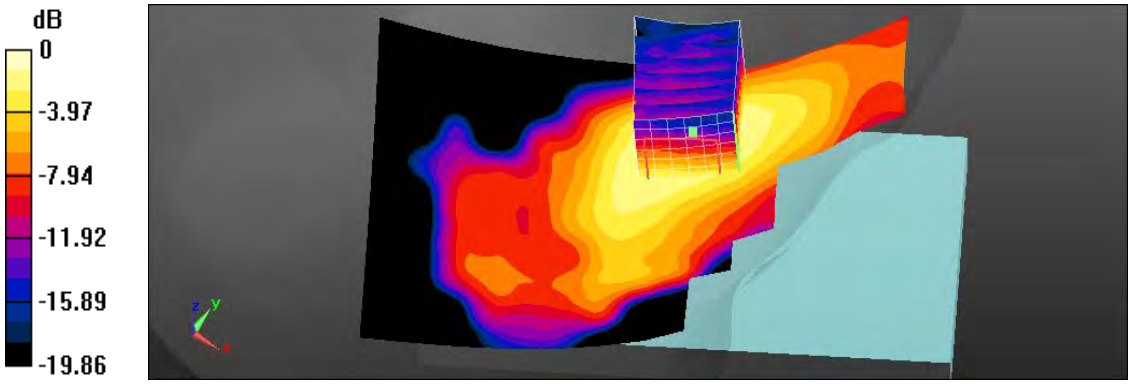
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/22
188_LTE Band 7 CH 20850_QPSK_BW 20M_1RB Size 0RB Offset_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 1.86 S/m; ε_r = 39.571; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.65, 7.65, 7.65) @ 2510 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0998 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.323 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.128 W/kg
SAR(1 g) = 0.070 W/kg; SAR(10 g) = 0.038 W/kg
Smallest distance from peaks to all points 3 dB below = 10.1 mm
Ratio of SAR at M2 to SAR at M1 = 54.7%
Maximum value of SAR (measured) = 0.106 W/kg



0 dB = 0.106 W/kg = -9.75 dBW/kg

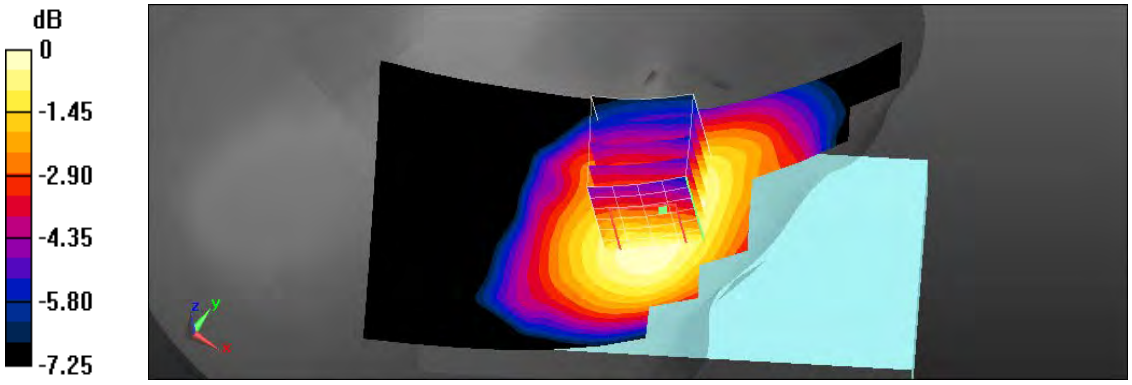
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/28
261_LTE Band 12 CH 23095_QPSK_BW 10M_1RB Size 24RB Offset_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.859 S/m; ε_r = 42.578; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(10.19, 10.19, 10.19) @ 707.5 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0483 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.620 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.0500 W/kg
SAR(1 g) = 0.040 W/kg; SAR(10 g) = 0.033 W/kg
Ratio of SAR at M2 to SAR at M1 = 79.6%
Maximum value of SAR (measured) = 0.0465 W/kg



0 dB = 0.0465 W/kg = -13.33 dBW/kg

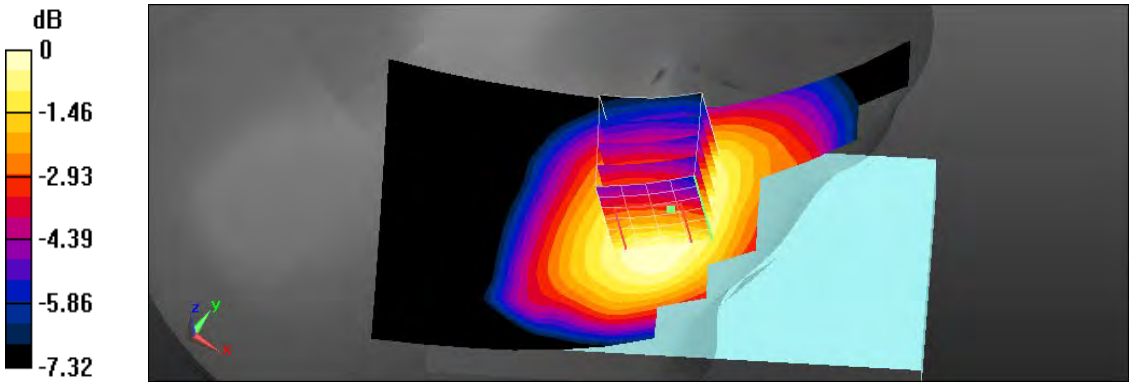
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/28
270_LTE Band 17 CH 23790_QPSK_BW 10M_1RB Size 24RB Offset_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.861 S/m; ε_r = 42.542; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(10.19, 10.19, 10.19) @ 710 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0626 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.586 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.0630 W/kg
SAR(1 g) = 0.052 W/kg; SAR(10 g) = 0.042 W/kg
Ratio of SAR at M2 to SAR at M1 = 83.2%
Maximum value of SAR (measured) = 0.0589 W/kg



0 dB = 0.0589 W/kg = -12.30 dBW/kg

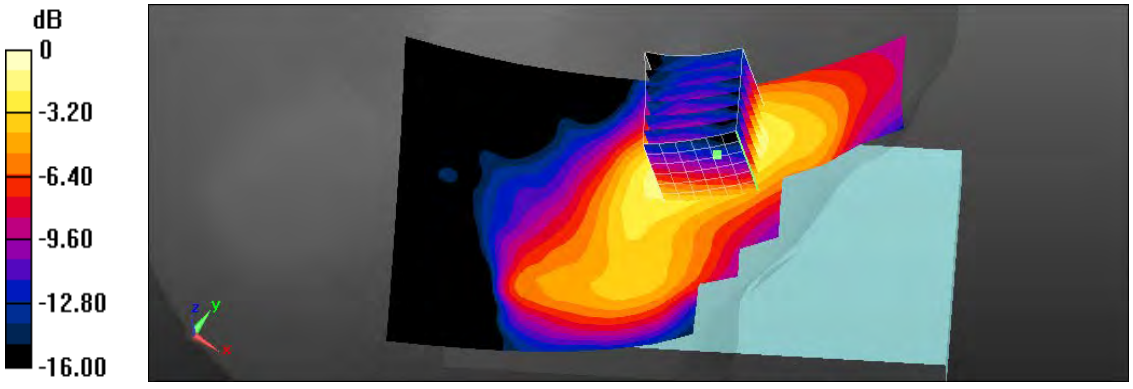
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/24
163_LTE Band 40 CH 38750_QPSK_BW 10M_1RB Size 0RB Offset_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2310 MHz;Duty Cycle: 1:1.59
Medium parameters used: f = 2310 MHz; σ = 1.638 S/m; ε_r = 40.017; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3887; ConvF(7.7, 7.7, 7.7) @ 2310 MHz; Calibrated: 2019/9/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.175 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.970 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.238 W/kg
SAR(1 g) = 0.136 W/kg; SAR(10 g) = 0.077 W/kg
Smallest distance from peaks to all points 3 dB below = 9.5 mm
Ratio of SAR at M2 to SAR at M1 = 61.5%
Maximum value of SAR (measured) = 0.194 W/kg



0 dB = 0.194 W/kg = -7.12 dBW/kg

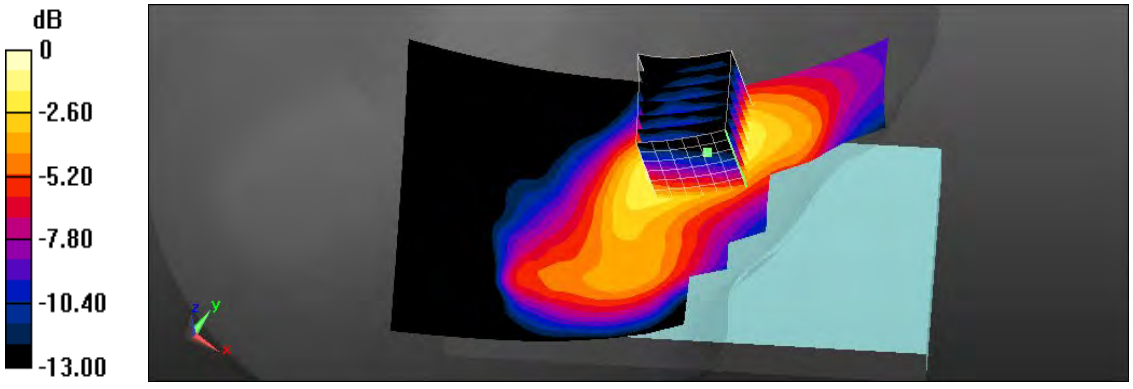
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/24
172_LTE Band 40 CH 39200_QPSK_BW 10M_1RB Size 0RB Offset_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2355 MHz;Duty Cycle: 1:1.59
Medium parameters used (interpolated): f = 2355 MHz; σ = 1.688 S/m; ε_r = 39.837; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3887; ConvF(7.7, 7.7, 7.7) @ 2355 MHz; Calibrated: 2019/9/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.183 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.038 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.249 W/kg
SAR(1 g) = 0.142 W/kg; SAR(10 g) = 0.080 W/kg
Smallest distance from peaks to all points 3 dB below = 9.5 mm
Ratio of SAR at M2 to SAR at M1 = 61.5%
Maximum value of SAR (measured) = 0.203 W/kg



0 dB = 0.203 W/kg = -6.93 dBW/kg

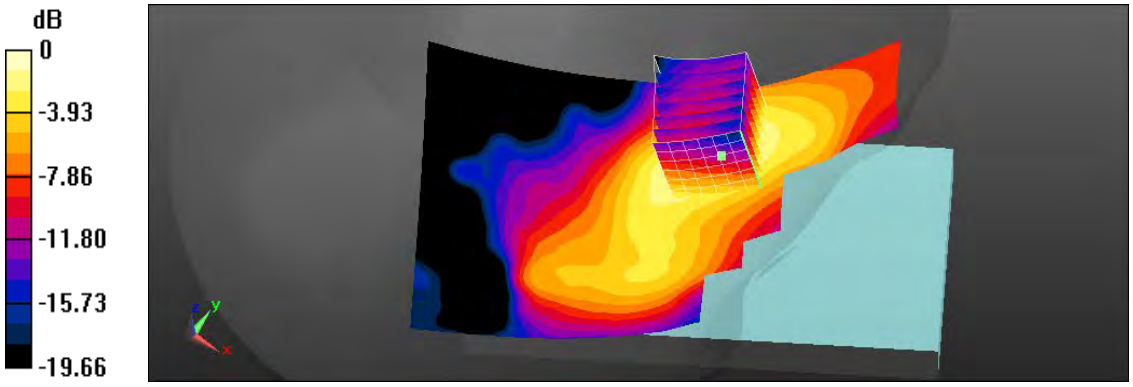
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/22
191_LTE Band 41 CH 40340_QPSK_BW 20M_1RB Size 0RB Offset_Right Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2565 MHz;Duty Cycle: 1:1.59
Medium parameters used (interpolated): f = 2565 MHz; σ = 1.925 S/m; ε_r = 39.441; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.43, 7.43, 7.43) @ 2565 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.154 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.823 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.200 W/kg
SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.068 W/kg
Smallest distance from peaks to all points 3 dB below = 10.4 mm
Ratio of SAR at M2 to SAR at M1 = 63.3%
Maximum value of SAR (measured) = 0.170 W/kg



0 dB = 0.170 W/kg = -7.70 dBW/kg

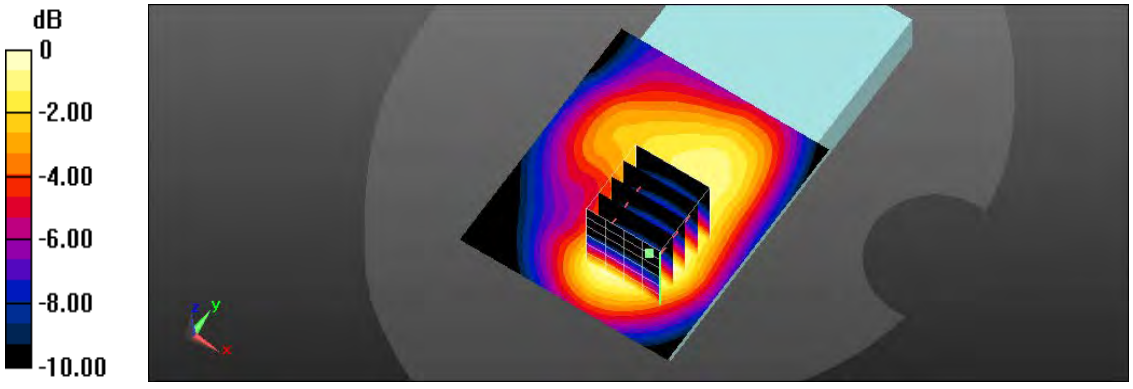
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/20
66_LTE Band 2 CH 19100_QPSK_BW 20M_1RB Size 0RB Offset_Front_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.459 S/m; ε_r = 40.078; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.24, 8.24, 8.24) @ 1900 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.03 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.67 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.672 W/kg; SAR(10 g) = 0.394 W/kg
Smallest distance from peaks to all points 3 dB below = 17 mm
Ratio of SAR at M2 to SAR at M1 = 56.4%
Maximum value of SAR (measured) = 0.922 W/kg



0 dB = 0.922 W/kg = -0.35 dBW/kg

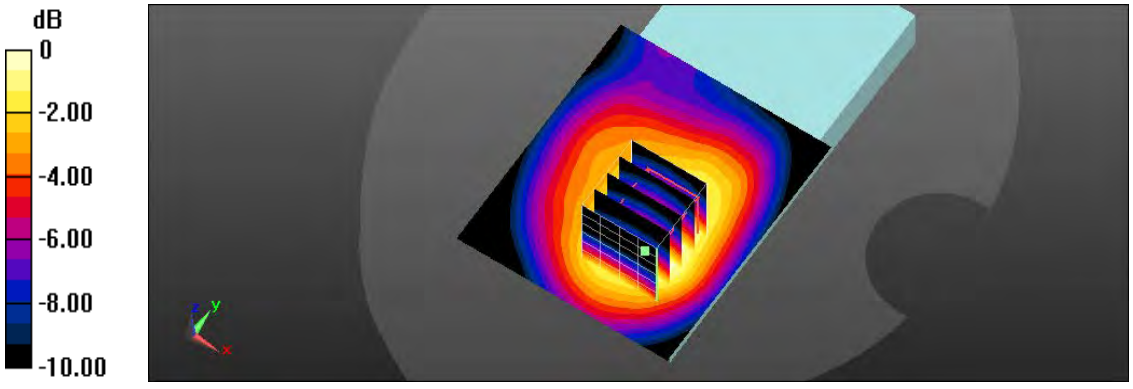
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/20
68_LTE Band 4 CH 20175_QPSK_BW 20M_1RB Size 0RB Offset_Front_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.316 S/m; ε_r = 40.661; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(8.47, 8.47, 8.47) @ 1732.5 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x71x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.762 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.33 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.847 W/kg
SAR(1 g) = 0.541 W/kg; SAR(10 g) = 0.345 W/kg
Smallest distance from peaks to all points 3 dB below = 18.2 mm
Ratio of SAR at M2 to SAR at M1 = 64.6%
Maximum value of SAR (measured) = 0.721 W/kg



0 dB = 0.721 W/kg = -1.42 dBW/kg

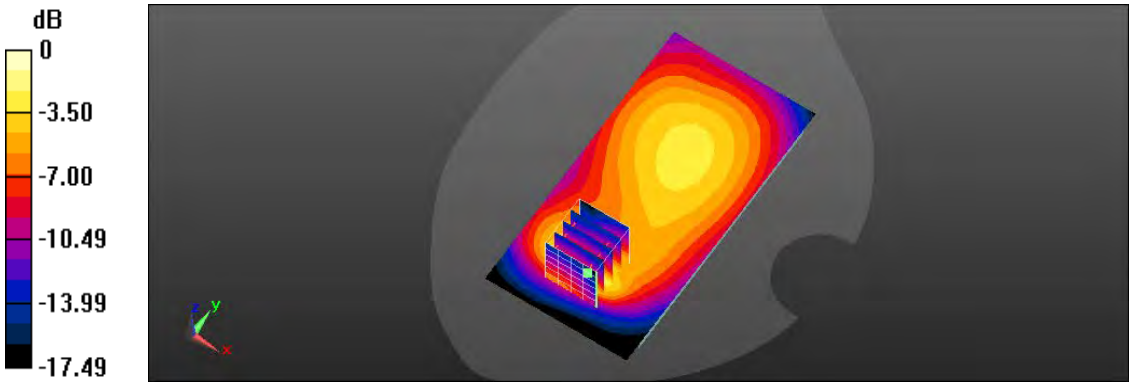
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/18
19_LTE Band 5 CH 20525_QPSK_BW 10M_1RB Size 24RB Offset_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.911 S/m; ε_r = 42.519; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(9.79, 9.79, 9.79) @ 836.5 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.152 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.28 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.274 W/kg
SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.060 W/kg
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 44.7%
Maximum value of SAR (measured) = 0.203 W/kg



0 dB = 0.203 W/kg = -6.93 dBW/kg

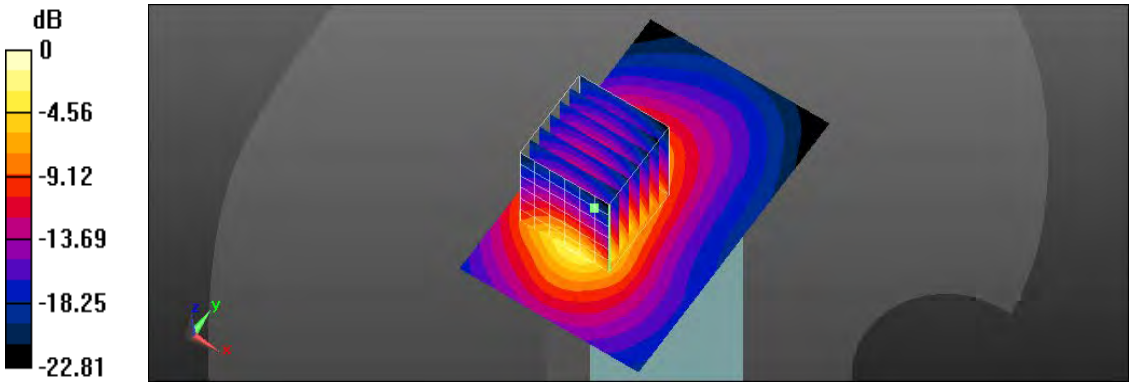
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/21
100_LTE Band 7 CH 20850_QPSK_BW 20M_1RB Size 0RB Offset_Side 3_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2510 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2510 MHz; σ = 1.87 S/m; ε_r = 39.907; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.65, 7.65, 7.65) @ 2510 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (51x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.69 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.59 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 2.02 W/kg
SAR(1 g) = 0.989 W/kg; SAR(10 g) = 0.463 W/kg
Smallest distance from peaks to all points 3 dB below = 9.4 mm
Ratio of SAR at M2 to SAR at M1 = 50.2%
Maximum value of SAR (measured) = 1.62 W/kg



0 dB = 1.62 W/kg = 2.10 dBW/kg

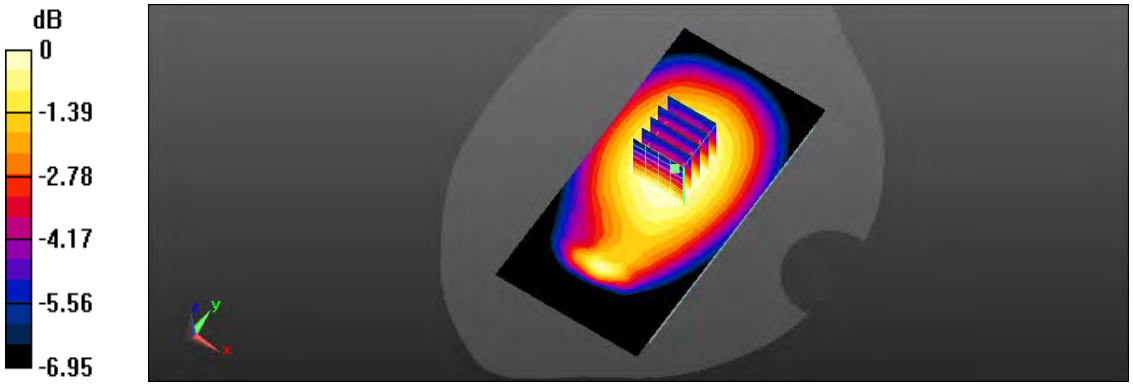
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/18
32_LTE Band 12 CH 23095_QPSK_BW 10M_1RB Size 24RB Offset_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.86 S/m; ε_r = 42.654; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(10.19, 10.19, 10.19) @ 707.5 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0985 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.38 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.103 W/kg
SAR(1 g) = 0.079 W/kg; SAR(10 g) = 0.061 W/kg
Ratio of SAR at M2 to SAR at M1 = 76.8%
Maximum value of SAR (measured) = 0.0945 W/kg



0 dB = 0.0945 W/kg = -10.25 dBW/kg

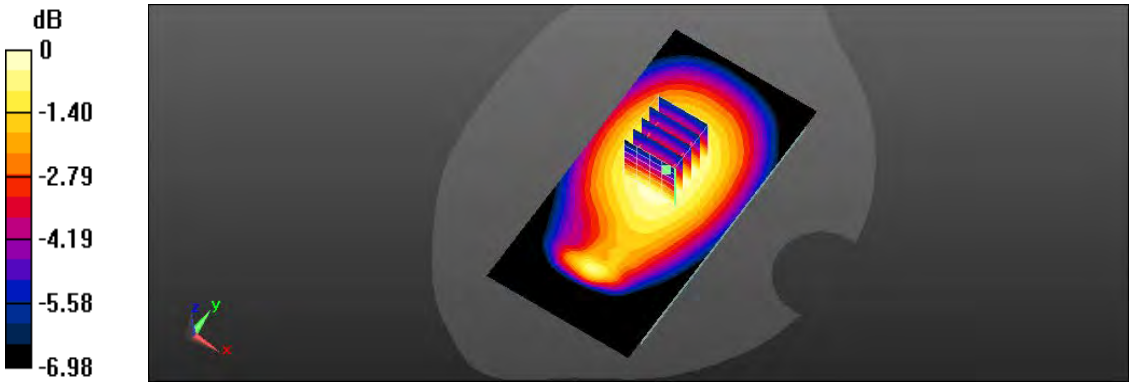
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/18
45_LTE Band 17 CH 23790_QPSK_BW 10M_1RB Size 24RB Offset_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium parameters used: f = 710 MHz; σ = 0.862 S/m; ε_r = 42.618; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(10.19, 10.19, 10.19) @ 710 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (61x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.121 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.61 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.130 W/kg
SAR(1 g) = 0.101 W/kg; SAR(10 g) = 0.078 W/kg
Ratio of SAR at M2 to SAR at M1 = 77.2%
Maximum value of SAR (measured) = 0.120 W/kg



0 dB = 0.120 W/kg = -9.21 dBW/kg

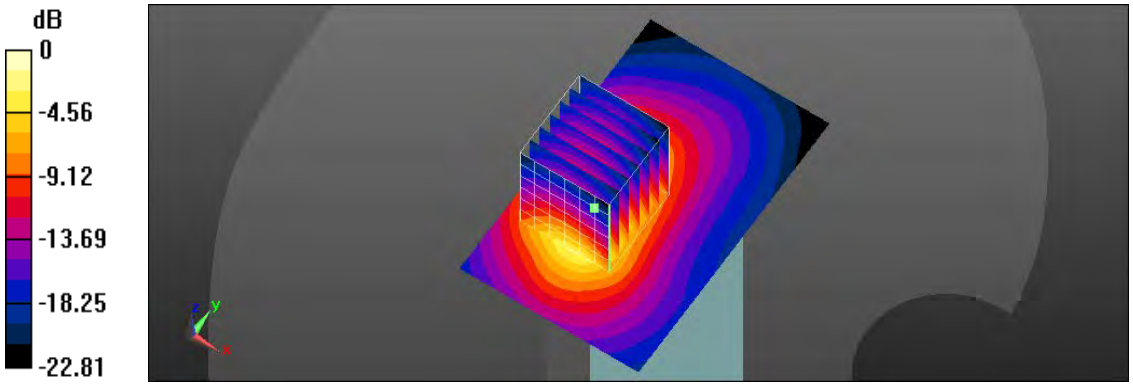
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/24
147_LTE Band 40 CH 38750_QPSK_BW 10M_1RB Size 0RB Offset_Side 3_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2310 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2310 MHz; σ = 1.634 S/m; ε_r = 40.542; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3887; ConvF(7.7, 7.7, 7.7) @ 2310 MHz; Calibrated: 2019/9/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (51x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.72 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.701 W/kg; SAR(10 g) = 0.328 W/kg
Smallest distance from peaks to all points 3 dB below = 9.4 mm
Ratio of SAR at M2 to SAR at M1 = 50.2%
Maximum value of SAR (measured) = 1.15 W/kg



0 dB = 1.15 W/kg = 0.60 dBW/kg

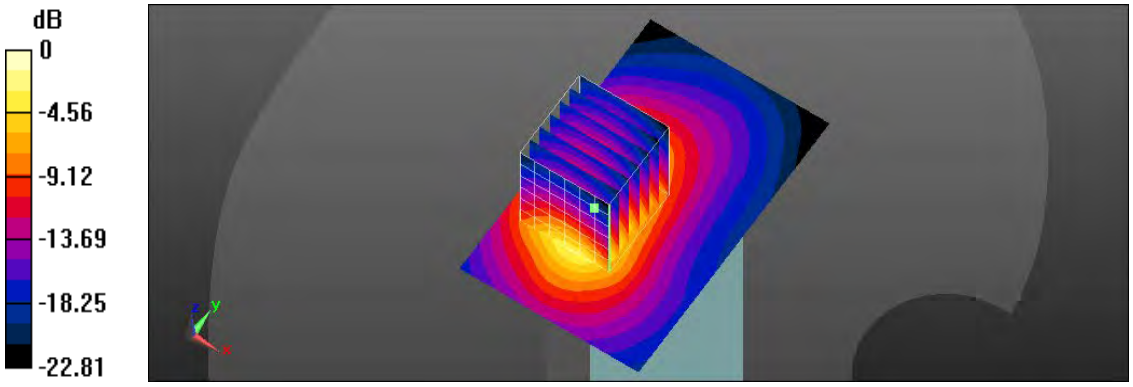
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/24
158_LTE Band 40 CH 39200_QPSK_BW 10M_1RB Size 0RB Offset_Side 3_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2355 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2355 MHz; σ = 1.684 S/m; ε_r = 40.362; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3887; ConvF(7.7, 7.7, 7.7) @ 2355 MHz; Calibrated: 2019/9/20
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (51x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.11 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.38 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.645 W/kg; SAR(10 g) = 0.302 W/kg
Smallest distance from peaks to all points 3 dB below = 9.1 mm
Ratio of SAR at M2 to SAR at M1 = 49.8%
Maximum value of SAR (measured) = 1.06 W/kg



0 dB = 1.06 W/kg = 0.25 dBW/kg

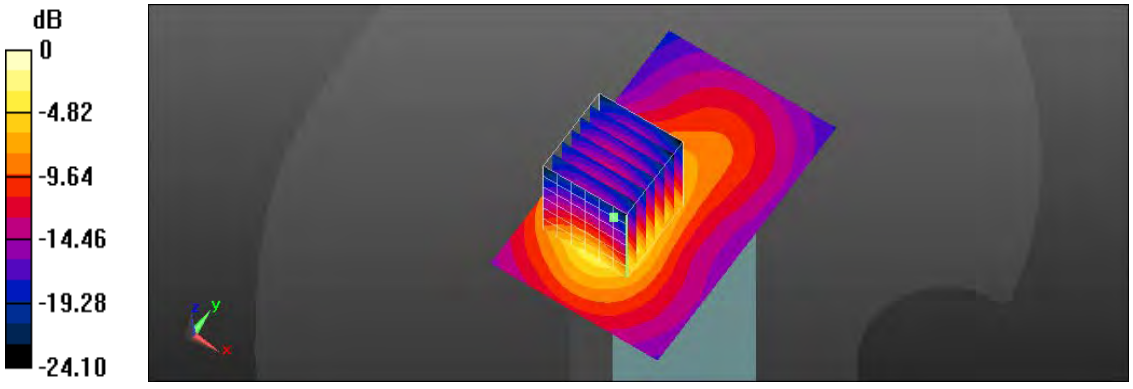
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/21
129_LTE Band 41 CH 40340_QPSK_BW 20M_1RB Size 0RB Offset_Side 3_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Generic LTE (0); Frequency: 2565 MHz;Duty Cycle: 1:1.59
Medium parameters used (interpolated): f = 2565 MHz; σ = 1.935 S/m; ε_r = 39.777; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.43, 7.43, 7.43) @ 2565 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (51x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.18 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.38 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.705 W/kg; SAR(10 g) = 0.330 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 49.1%
Maximum value of SAR (measured) = 1.17 W/kg



0 dB = 1.17 W/kg = 0.68 dBW/kg

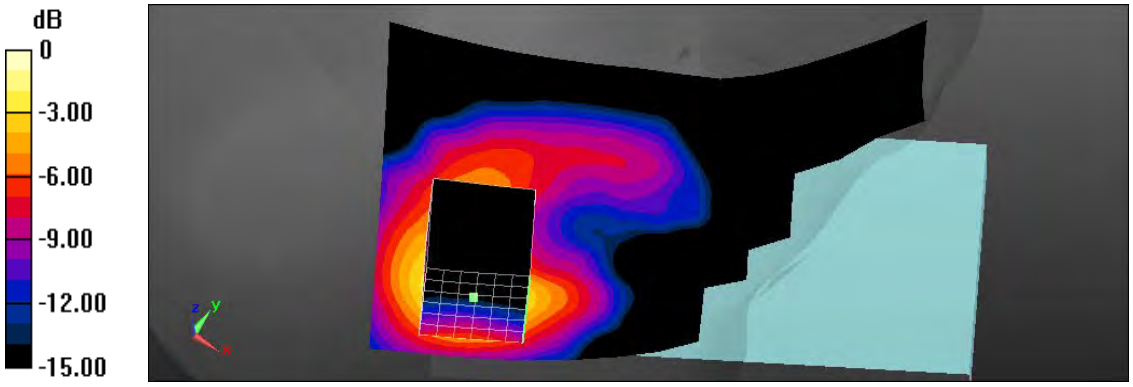
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/23
410_IEEE 802.11b CH6_1M_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1.005
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.763 S/m; ε_r = 39.544; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.65, 7.65, 7.65) @ 2437 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.205 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.340 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.298 W/kg
SAR(1 g) = 0.134 W/kg; SAR(10 g) = 0.060 W/kg
Smallest distance from peaks to all points 3 dB below = 8.3 mm
Ratio of SAR at M2 to SAR at M1 = 46.5%
Maximum value of SAR (measured) = 0.234 W/kg



0 dB = 0.234 W/kg = -6.31 dBW/kg

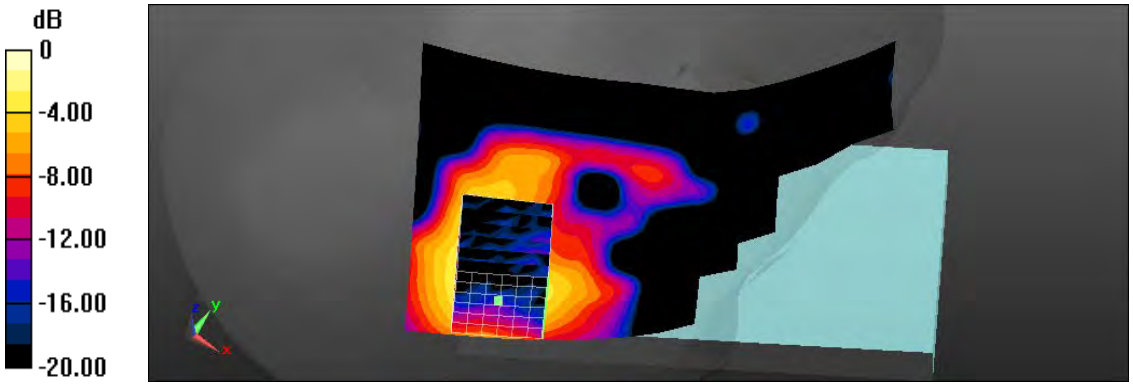
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/23
417_Bluetooth CH39_1M_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Bluetooth 3.0 (0); Frequency: 2441 MHz;Duty Cycle: 1:1.2
Medium parameters used (interpolated): f = 2441 MHz; σ = 1.768 S/m; ε_r = 39.535; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.65, 7.65, 7.65) @ 2441 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (81x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0654 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.166 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.101 W/kg
SAR(1 g) = 0.046 W/kg; SAR(10 g) = 0.020 W/kg
Ratio of SAR at M2 to SAR at M1 = 46.2%
Maximum value of SAR (measured) = 0.0781 W/kg



0 dB = 0.0781 W/kg = -11.07 dBW/kg

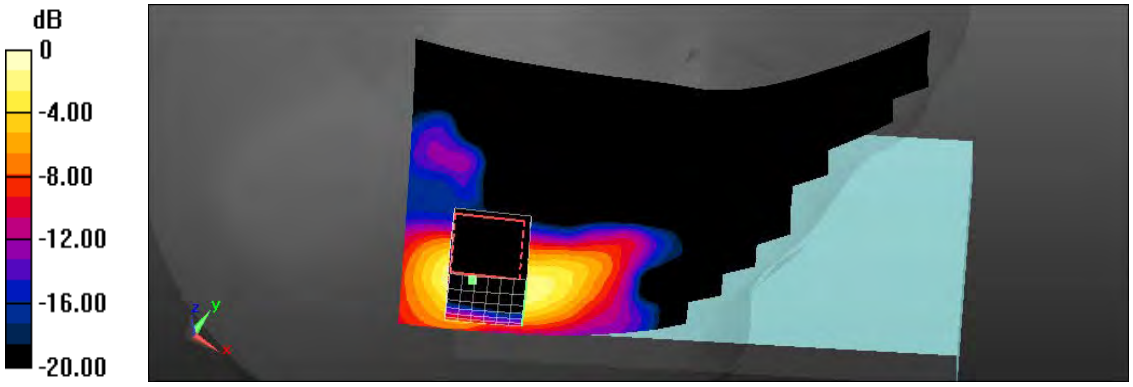
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/25
430_IEEE 802.11n_HT40_CH62_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5310 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5310 MHz; σ = 4.71 S/m; ε_r = 36.483; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.57, 5.57, 5.57) @ 5310 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (91x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.57 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 9.379 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 2.27 W/kg
SAR(1 g) = 0.625 W/kg; SAR(10 g) = 0.220 W/kg
Smallest distance from peaks to all points 3 dB below = 8.1 mm
Ratio of SAR at M2 to SAR at M1 = 67.4%
Maximum value of SAR (measured) = 1.49 W/kg



0 dB = 1.49 W/kg = 1.73 dBW/kg

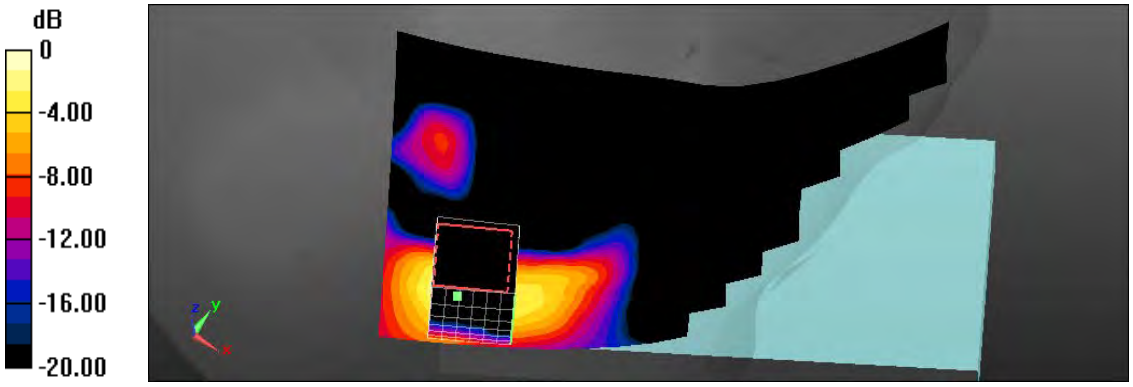
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/26
506_IEEE 802.11n_HT40_CH126_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5630 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5630 MHz; σ = 5.179 S/m; ε_r = 36.294; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81) @ 5630 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (91x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.30 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 7.022 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 2.11 W/kg
SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.165 W/kg
Smallest distance from peaks to all points 3 dB below = 8 mm
Ratio of SAR at M2 to SAR at M1 = 62.9%
Maximum value of SAR (measured) = 1.30 W/kg



0 dB = 1.30 W/kg = 1.14 dBW/kg

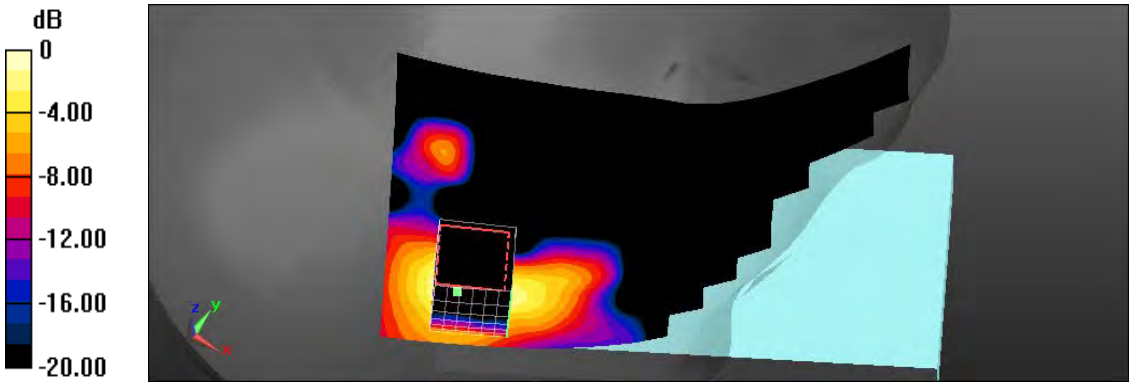
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/26
512_IEEE 802.11n_HT40_CH151_Right-Cheek
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5755 MHz; σ = 5.308 S/m; ε_r = 36.076; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.06, 5.06, 5.06) @ 5755 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (91x181x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.879 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 6.014 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.355 W/kg; SAR(10 g) = 0.119 W/kg
Smallest distance from peaks to all points 3 dB below = 8.3 mm
Ratio of SAR at M2 to SAR at M1 = 63.7%
Maximum value of SAR (measured) = 0.868 W/kg



0 dB = 0.868 W/kg = -0.61 dBW/kg

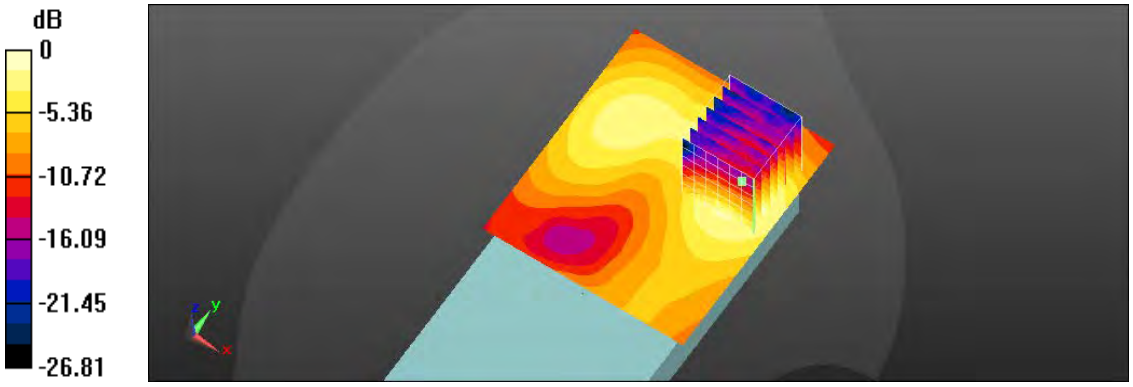
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/23
401_IEEE 802.11b CH1_1M_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2412 MHz;Duty Cycle: 1:1.005
Medium parameters used: f = 2412 MHz; σ = 1.734 S/m; ε_r = 39.618; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.65, 7.65, 7.65) @ 2412 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (71x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.136 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.690 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.177 W/kg
SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.046 W/kg
Smallest distance from peaks to all points 3 dB below = 12 mm
Ratio of SAR at M2 to SAR at M1 = 48%
Maximum value of SAR (measured) = 0.142 W/kg



0 dB = 0.142 W/kg = -8.48 dBW/kg

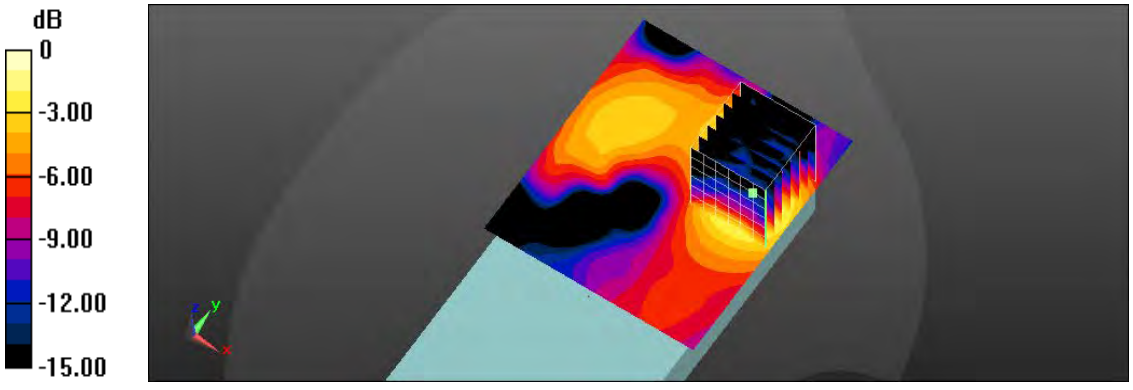
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/23
422_Bluetooth CH39_1M_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, Bluetooth 3.0 (0); Frequency: 2441 MHz;Duty Cycle: 1:1.2
Medium parameters used (interpolated): f = 2441 MHz; σ = 1.768 S/m; ε_r = 39.535; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.65, 7.65, 7.65) @ 2441 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (71x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.0453 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.276 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.0560 W/kg
SAR(1 g) = 0.029 W/kg; SAR(10 g) = 0.015 W/kg
Ratio of SAR at M2 to SAR at M1 = 50.6%
Maximum value of SAR (measured) = 0.0457 W/kg



0 dB = 0.0457 W/kg = -13.40 dBW/kg

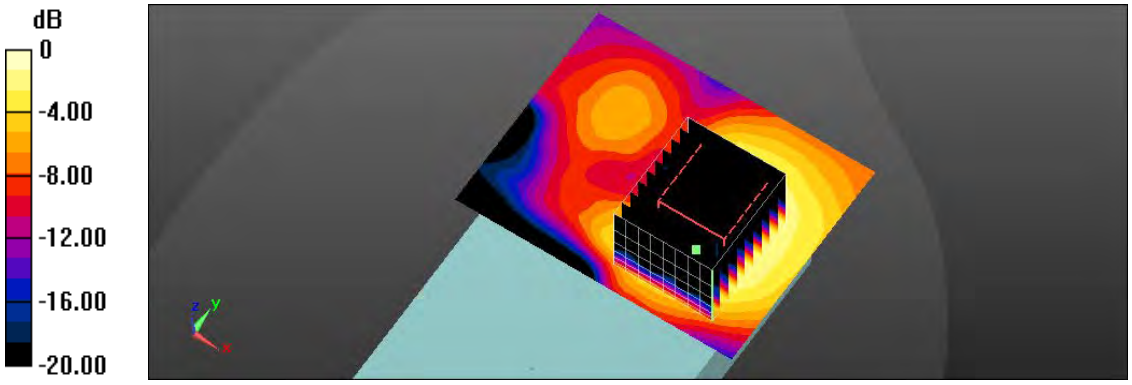
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/26
467_IEEE 802.11n_HT40_CH151_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5755 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5755 MHz; σ = 5.308 S/m; ε_r = 36.076; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.06, 5.06, 5.06) @ 5755 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (91x71x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.508 W/kg

Zoom Scan (9x10x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 9.846 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.838 W/kg
SAR(1 g) = 0.217 W/kg; SAR(10 g) = 0.090 W/kg
Smallest distance from peaks to all points 3 dB below = 13.2 mm
Ratio of SAR at M2 to SAR at M1 = 61.9%
Maximum value of SAR (measured) = 0.491 W/kg



0 dB = 0.491 W/kg = -3.09 dBW/kg

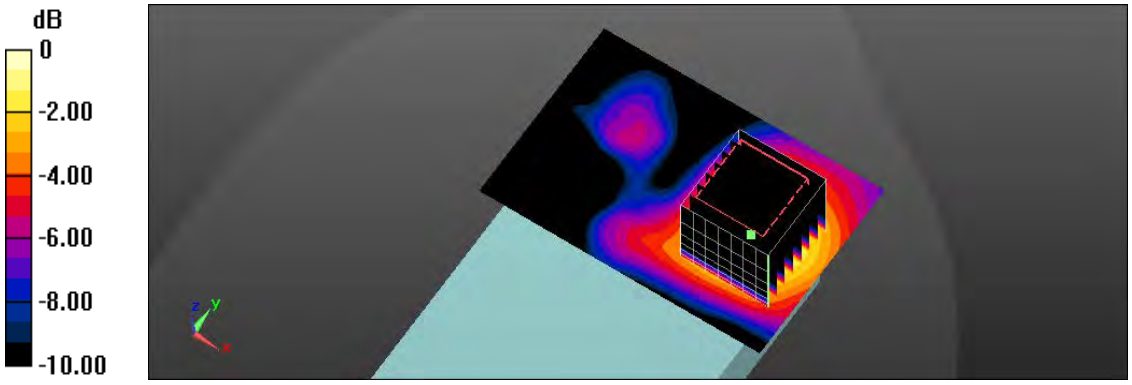
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/25
452_IEEE 802.11n_HT40_CH54_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5270 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5270 MHz; σ = 4.652 S/m; ε_r = 36.52; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.57, 5.57, 5.57) @ 5270 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (91x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.333 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 7.487 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.502 W/kg
SAR(1 g) = 0.143 W/kg; SAR(10 g) = 0.057 W/kg
Smallest distance from peaks to all points 3 dB below = 15.2 mm
Ratio of SAR at M2 to SAR at M1 = 66.6%
Maximum value of SAR (measured) = 0.318 W/kg



0 dB = 0.318 W/kg = -4.98 dBW/kg

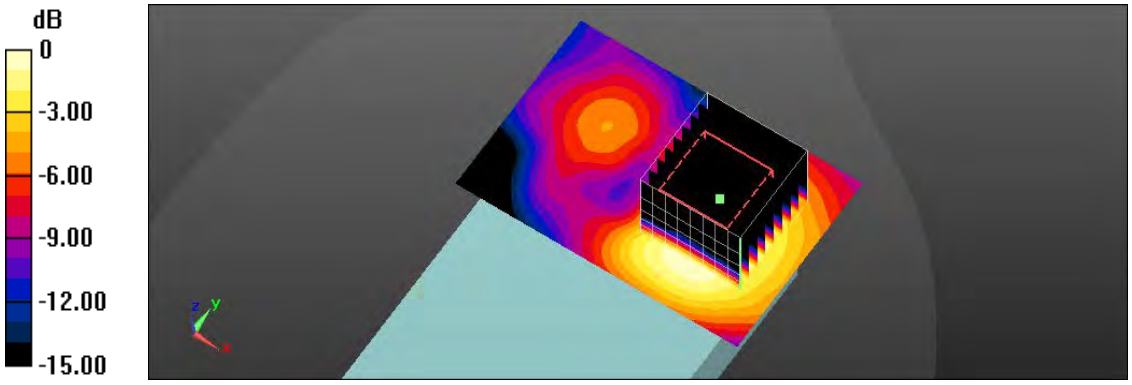
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/26
524_IEEE 802.11n_HT40_CH134_Back_10mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5670 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5670 MHz; σ = 5.242 S/m; ε_r = 36.207; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81) @ 5670 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (91x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.575 W/kg

Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 10.67 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.974 W/kg
SAR(1 g) = 0.247 W/kg; SAR(10 g) = 0.103 W/kg
Smallest distance from peaks to all points 3 dB below = 13.6 mm
Ratio of SAR at M2 to SAR at M1 = 59.7%
Maximum value of SAR (measured) = 0.566 W/kg



0 dB = 0.566 W/kg = -2.47 dBW/kg

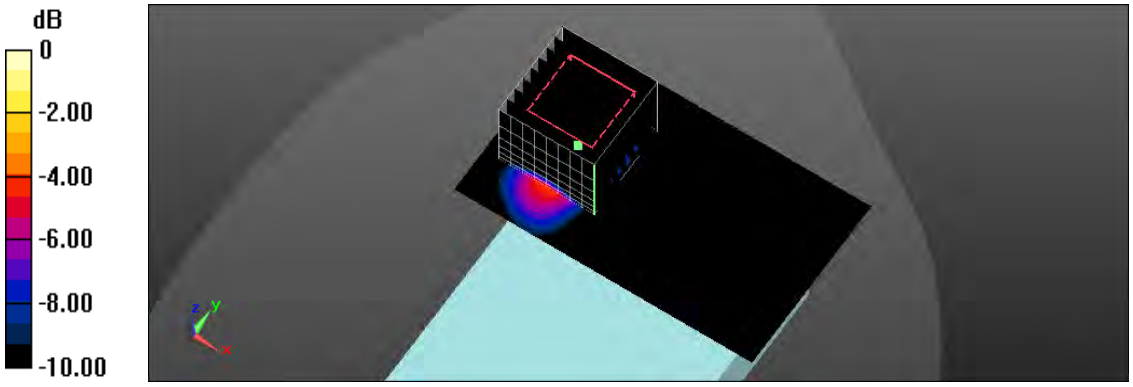
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/25
453_IEEE 802.11n_HT40_CH62_Front_0mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5310 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5310 MHz; σ = 4.71 S/m; ε_r = 36.483; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.57, 5.57, 5.57) @ 5310 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (101x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.45 W/kg

Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 9.385 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 4.29 W/kg
SAR(1 g) = 0.990 W/kg; SAR(10 g) = 0.306 W/kg
Smallest distance from peaks to all points 3 dB below = 6.4 mm
Ratio of SAR at M2 to SAR at M1 = 62.8%
Maximum value of SAR (measured) = 2.45 W/kg



0 dB = 2.45 W/kg = 3.89 dBW/kg

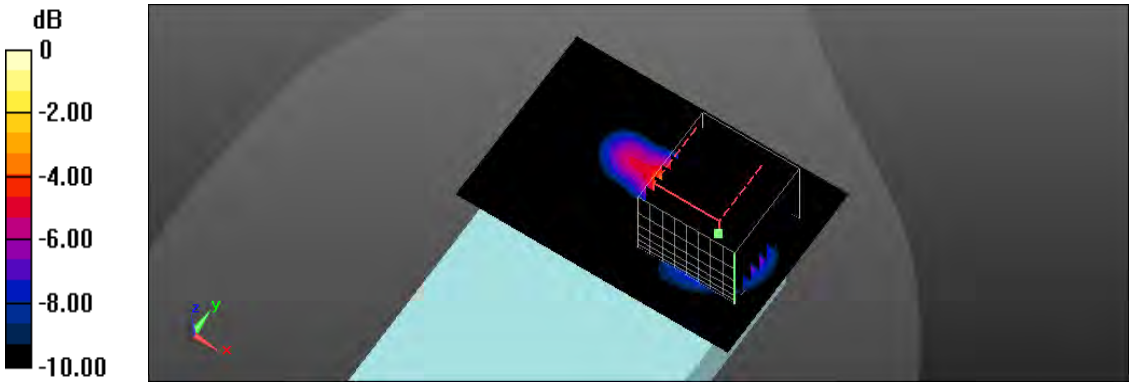
Test Laboratory: A Test Lab Techno Corp.
Date: 2020/5/26
516_IEEE 802.11n_HT40_CH134_Back_0mm
DUT: EA630 ; Type: Rugged Handheld Computer

Communication System: UID 0, IEEE 802.11n(5GHz)HT40 (0); Frequency: 5670 MHz;Duty Cycle: 1:1.089
Medium parameters used: f = 5670 MHz; σ = 5.242 S/m; ε_r = 36.207; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.81, 4.81, 4.81) @ 5670 MHz; Calibrated: 2019/8/30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2019/11/29
- Phantom: Twin-SAM V4.0 (20deg probe tilt); Type: QD 000 P40 CD; Serial: TP-1009
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.10 (7331)

Area Scan (91x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 3.02 W/kg

Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 12.90 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 6.62 W/kg
SAR(1 g) = 1.33 W/kg; SAR(10 g) = 0.397 W/kg
Smallest distance from peaks to all points 3 dB below = 5.4 mm
Ratio of SAR at M2 to SAR at M1 = 61.2%
Maximum value of SAR (measured) = 3.70 W/kg



0 dB = 3.70 W/kg = 5.68 dBW/kg