SAR EVALUATION REPORT

For

DDM Brands LLC

1616 NW, 84TH Ave. Miami, Florida, U.S.A 33126

FCC ID: A4JANDY5ELTE

Report Type:	**Product Type:**
Original Report	4G Mobile Phone

Test Engineer:	Terry XiaHou
Report Number:	RSZ151102002-20
Report Date:	2015-11-13
Reviewed By:	Bell Hu SAR Engineer
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Attestation of Test Results			
EUT Information	**Company Name**	DDM Brands LLC	
	EUT Description	4G Mobile Phone	
	FCC ID	A4JANDY5ELTE	
	Model Number	Tested Model: ANDY 5E LTE Multiple Model: ANDY 5EL LTE, AM5EL191, AM5EL192, ANDY C5E LTE, ANDY C5EL LTE, AC5EL191, AC5EL192, AM5EL151, AC5EL192, AC5EL151	
	Test Date	2015-09-23	
Frequency	**Max. SAR Level(s) Reported**		**Limit(W/Kg)**
GSM 850	0.381 W/kg 1g Head SAR 0.539 W/kg 1g Body SAR		**1. 6**
PCS 1900	0.275 W/kg 1g Head SAR 0.529 W/kg 1g Body SAR		
WCDMA 850	0.105 W/kg 1g Head SAR 0.147 W/kg 1g Body SAR		
WCDMA 1900	0.352 W/kg 1g Head SAR 0.706 W/kg 1g Body SAR		
LTE Band 2	0.256 W/kg 1g Head SAR 0.716 W/kg 1g Body SAR		
LTE Band 4	0.365 W/kg 1g Head SAR 1.036 W/kg 1g Body SAR		
LTE Band 7	0.114 W/kg 1g Head SAR 0.244 W/kg 1g Body SAR		
LTE Band 17	0.141 W/kg 1g Head SAR 0.227 W/kg 1g Body SAR		
Simultaneous	0.772 W/kg 1g Head SAR 1.231 W/kg 1g Body SAR		
Hotspot	1.231 W/kg 1g Body SAR		
Applicable Standards	**ANSI / IEEE C95.1 : 2005** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fileds,3 kHz to 300 GHz.		
	ANSI / IEEE C95.3 : 2002 IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to SuchFields,100 kHz—300 GHz.		
	FCC 47 CFR part 2.1093 Radiofrequency radiation exposure evaluation: portable devices		
	IEEE1528:2013 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques		
	IEC 62209-2:2010 Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices-Human models, instrumentation, and procedures-Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)		
	KDB procedures KDB 447498 D01 General RF Exposure Guidance v05r02. KDB 648474 D04 Handset SAR v01r02. KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03		

	KDB 865664 D02 RF Exposure Reporting v01r01 KDB 941225 D01 3G SAR Procedures v03 KDB 941225 D05 SAR for LTE Devices v02r03 KDB 941225 D06 Hotspot Mode v02

Note: This wireless device has been shown to be capable of compliance for localized specific absorption rate (SAR) for General Population/Uncontrolled Exposure limits specified in ANSI/IEEE Standards and has been tested in accordance with the measurement procedures specified in IEEE 1528-2013 and RF exposure KDB procedures.

The results and statements contained in this report pertain only to the device(s) evaluated.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RSZ151102002-20	Original Report	2015-11-13

EUT DESCRIPTION

This report has been prepared on behalf of DDM Brands LLC and their product, FCC ID: A4JANDY5ELTE, Model: ANDY 5E LTE or the EUT (Equipment under Test) as referred to in the rest of this report.

**Note: This series products model: ANDY 5EL LTE, AM5EL191, AM5EL192, ANDY C5E LTE, ANDY C5EL LTE, AC5EL191, AC5EL192, AM5EL151, AC5EL192 , AC5EL151 and ANDY 5E LTE, we select model: ANDY 5E LTE to test, there is no electrical change has been made to the equipment, please refer to the product similarity letter.*

Technical Specification

Product Type	Portable
Exposure Category:	Population / Uncontrolled
Antenna Type(s):	Internal Antenna
Body-Worn Accessories:	Headset
Face-Head Accessories:	None
Multi-slot Class:	Class12
Operation Mode :	GSM Voice, EGPRS/GPRS Data, WCDMA(Rel99, HSUPA, HSDPA, DC-HSPA，HSPA+),LTE, Wi-Fi and Bluetooth
Frequency Band:	GSM 850 : 824-849 MHz(TX) ; 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX) ; 1930-1990 MHz(RX) WCDMA 850: 824-849 MHz(TX) ; 869-894 MHz(RX) WCDMA 1900: 1850-1910 MHz(TX) ; 1930-1990 MHz(RX) LTE Band 2: 1850-1910 MHz(TX) ; 1930-1990 MHz(RX) LTE Band 4: 1710-1755 MHz(TX) ; 2110-2155 MHz(RX) LTE Band 7: 2500-2570 MHz(TX) ; 2620-2690 MHz(RX) LTE Band 17: 704-716 MHz(TX) ; 734-746 MHz(RX) Wi-Fi(802.11b/g/n20): 2412 MHz-2462 MHz Wi-Fi(802.11n40): 2422 MHz-2452 MHz Bluetooth3.0 : 2402 MHz-2480 MHz, BLE:2402 MHz-2480 MHz
Conducted RF Power:	GSM 850 : 32.30 dBm PCS 1900: 28.88 dBm WCDMA 850: 22.58 dBm WCDMA 1900: 22.64 dBm LTE Band 2: 22.31 dBm LTE Band 4: 21.60 dBm LTE Band 7: 22.15 dBm LTE Band 17: 21.86 dBm Wi-Fi(802.11b/g/n20): 9.67 dBm Wi-Fi(802.11n40) : 8.49 dBm Bluetooth3.0: -1.08 dBm BLE: -8.96 dBm
Dimensions (L*W*H):	142 mm (L) × 73 mm (W) × 9 mm (H)
Power Source:	3.8 V_{DC} Rechargeable Battery
Normal Operation:	Head and Body-worn

REFERENCE, STANDARDS, AND GUILDELINES

FCC:

The Report and Order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g as recommended by the ANSI/IEEE standard C95.1-1992 [6] for an uncontrolled environment (Paragraph 65). According to the Supplement C of OET Bulletin 65 “Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in North America is 1.6 mW/g average over 1 gram of tissue mass.

CE:

The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 2 mW/g as recommended by EN62209-1 for an uncontrolled environment. According to the Standard, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in Europe is 2 mW/g average over 10 gram of tissue mass.

The test configurations were laid out on a specially designed test fixture to ensure the reproducibility of measurements. Each configuration was scanned for SAR. Analysis of each scan was carried out to characterize the above effects in the device.

SAR Limits

FCC Limit (1g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	1.60	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

CE Limit (10g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 10 g of tissue)	2.0	10
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual 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 people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg (FCC) & 2 W/kg (CE) applied to the EUT.

FACILITIES

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect data is located at 6/F, the 3rd Phase of WanLi Industrial Building, Shi Hua Road, Fu Tian Free Trade Zone, Shenzhen, Guangdong, P.R. of China

DESCRIPTION OF TEST SYSTEM

These measurements were performed with ALSAS 10 Universal Integrated SAR Measurement system from APREL Laboratories.

ALSAS-10U System Description

ALSAS-10-U is fully compliant with the technical and scientific requirements of IEEE 1528, IEC 62209, CENELEC, ARIB, ACA, and the Federal Communications Commission. The system comprises of a six axes articulated robot which utilizes a dedicated controller.
ALSAS-10U uses the latest methodologies. And FDTD modeling to provide a platform which is repeatable with minimum uncertainty.

Applications

Predefined measurement procedures compliant with the guidelines of CENELEC, IEEE, IEC, FCC, etc are utilized during the assessment for the device. Automatic detection for all SAR maxima are embedded within the core architecture for the system, ensuring that peak locations used for centering the zoom scan are within a 1mm resolution and a 0.05mm repeatable position. System operation range currently available up-to 6 GHz in simulated tissue.

Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10mm2 step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

Zoom Scan (Cube Scan Averaging)

The averaging zoom scan volume utilized in the ALSAS-10U software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m3 is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm,with the side length of the 10 g cube 21,5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 5x5x8 (8mmx8mmx5mm) providing a volume of 32mm in the X & Y axis, and 35mm in the Z axis.

ALSAS-10U Interpolation and Extrapolation Uncertainty

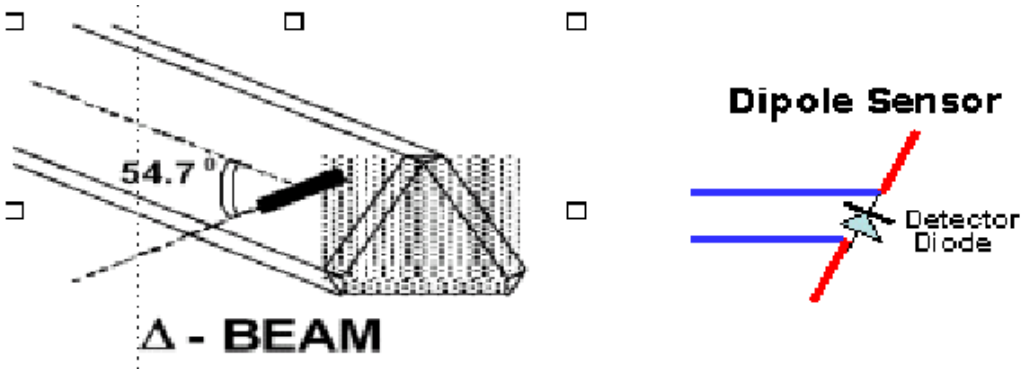
The overall uncertainty for the methodology and algorithms the used during the SAR calculation was evaluated using the data from IEEE 1528 based on the example f3 algorithm:

$$f_3(x,y,z) = A \frac{a^2}{\frac{a^2}{4} + x'^2 + y'^2} \cdot \left(e^{-\frac{2z}{a}} + \frac{a^2}{2(a+2z)^2} \right)$$

Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



SAR is assessed with a calibrated probe which moves at a default height of 5mm from the center of the diode, which is mounted to the sensor, to the phantom surface (in the Z Axis). The 5mm offset height has been selected so as to minimize any resultant boundary effect due to the probe being in close proximity to the phantom surface.

The following algorithm is an example of the function used by the system for linearization of the output from the probe when measuring complex modulation schemes.

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

Isotropic E-Field Probe Specification

Calibration Method	Frequency Dependent Below 1 GHz Calibration in air performed in a TEM Cell Above 1 GHz Calibration in air performed in waveguide
Sensitivity	0.70 μV/(V/m)^2 to 0.85 μV/(V/m)^2
Dynamic Range	0.0005 W/kg to 100 W/kg
Isotropic Response	Better than 0.1 dB
Diode Compression Point (DCP)	Calibration for Specific Frequency
Probe Tip Diameter	< 2.9 mm
Sensor Offset	1.56 (+/- 0.02 mm)
Probe Length	289 mm
Video Bandwidth	@ 500 Hz: 1 dB @ 1.02 kHz: 3 dB
Boundary Effect	Less than 2.1% for distance greater than 0.58 mm
Spatial Resolution	The spatial resolution uncertainty is less than 1.5% for 4.9mm diameter probe. The spatial resolution uncertainty is less than 1.0% for 2.5mm diameter probe

Boundary Detection Unit and Probe Mounting Device

ALSAS-10U incorporates a boundary detection unit with a sensitivity of 0.05mm for detecting all types of surfaces. The robust design allows for detection during probe tilt (probe normalize) exercises, and utilizes a second stage emergency stop. The signal electronics are fed directly into the robot controller for high accuracy surface detection in lateral and axial detection modes (X, Y, & Z).

The probe is mounted directly onto the Boundary Detection unit for accurate tooling and displacement calculations controlled by the robot kinematics. The probe is connect to an isolated probe interconnect where the output stage of the probe is fed directly into the amplifier stage of the Daq-Paq.

Daq-Paq (Analog to Digital Electronics)

ALSAS-10U incorporates a fully calibrated Daq-Paq (analog to digital conversion system) which has a 4 channel input stage, sent via a 2 stage auto-set amplifier module. The input signal is amplified accordingly so as to offer a dynamic range from 5μV to 800mV. Integration of the fields measured is carried out at board level utilizing a Co-Processor which then sends the measured fields down into the main computational module in digitized form via an RS232 communications port. Probe linearity and duty cycle compensation is carried out within the main Daq-Paq module.

ADC	12 Bit
Amplifier Range	20 mV to 200 mV and 150 mV to 800 mV
Field Integration	Local Co-Processor utilizing proprietary integration algorithms
Number of Input Channels	4 in total 3 dedicated and 1 spare
Communication	Packet data via RS232

Axis Articulated Robot

ALSAS-10U utilizes a six axis articulated robot, which is controlled using a Pentium based real-time movement controller. The movement kinematics engine utilizes proprietary (Thermo CRS) interpolation and extrapolation algorithms, which allow full freedom of movement for each of the six joints within the working envelope. Utilization of joint 6 allows for full probe rotation with a tolerance better than 0.05mm around the central axis.

Robot/Controller Manufacturer	Thermo CRS
Number of Axis	Six independently controlled axis
Positioning Repeatability	0.05 mm
Controller Type	Single phase Pentium based C500C
Robot Reach	710 mm
Communication	RS232 and LAN compatible

ALSAS Universal Workstation

ALSAS Universal workstation allows for repeatability and fast adaptability. It allows users to do calibration, testing and measurements using different types of phantoms with one set up, which significantly speeds up the measurement process.

Universal Device Positioner

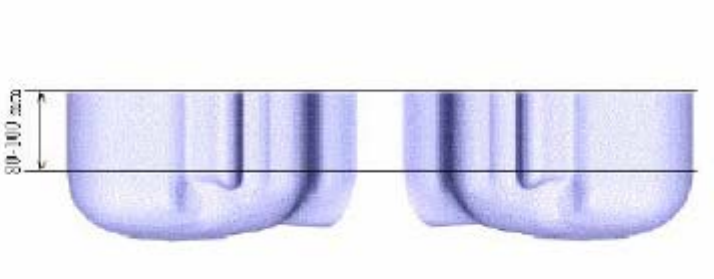
The universal device positioner allows complete freedom of movement of the EUT. Developed to hold a EUT in a free-space scenario any additional loading attributable to the material used in the construction of the positioner has been eliminated. Repeatability has been enhanced through the linear scales which form the design used to indicate positioning for any given test scenario in all major axes. A 15° tilt indicator is included for the of aid cheek to tilt movements for head SAR analysis. Overall uncertainty for measurements have been reduced due to the design of the Universal device positioner, which allows positioning of a device in as near to a free-space scenario as possible, and by providing the means for complete repeatability.

Phantom Types

The ALSAS-10U allows the integration of multiple phantom types. SAM Phantoms fully compliant with IEEE 1528, Universal Phantom, and Universal Flat.

APREL SAM Phantoms

The SAM phantoms developed using the IEEE SAM CAD file. They are fully compliant with the requirements for both IEEE 1528 and FCC Supplement C. Both the left and right SAM phantoms are interchangeable, transparent and include the IEEE 1528 grid with visible NF and MB lines.



APREL Laboratories Universal Phantom

The Universal Phantom is used on the ALSAS-10U as a system validation phantom. The Universal Phantom has been fully validated both experimentally from 800MHz to 6GHz and numerically using XFDTD numerical software.

The shell thickness is 2mm overall, with a 4mm spacer located at the NF/MB intersection providing an overall thickness of 6mm in line with the requirements of IEEE-1528.

The design allows for fast and accurate measurements, of handsets, by allowing the conservative SAR to be evaluated at on frequency for both left and right head experiments in one measurement.

Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Ingredients (% by weight)	Frequency (MHz)									
	450		835		915		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (Nacl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton x-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (s/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

Recommended Tissue Dielectric Parameters for Head and Body

Frequency (MHz)	Head Tissue		Body Tissue	
	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

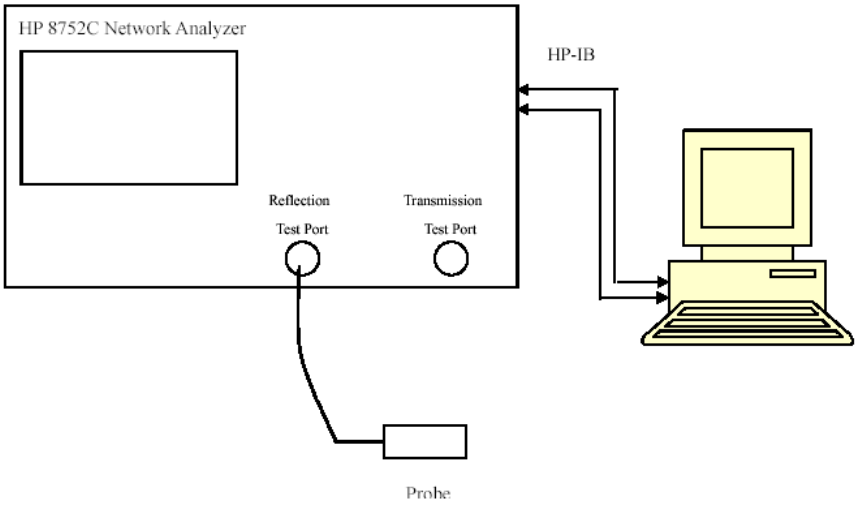
EQUIPMENT LIST AND CALIBRATION

Equipments List & Calibration Information

Equipment	Model	Calibration Date	Calibration Due Date	S/N
CRS F3 robot	ALS-F3	N/A	N/A	RAF0805352
CRS F3 Software	ALS-F3-SW	N/A	N/A	N/A
CRS C500C controller	ALS-C500	N/A	N/A	RCF0805379
Probe mounting device & Boundary Detection Sensor System	ALS-PMDPS-3	N/A	N/A	120-00270
Universal Work Station	ALS-UWS	N/A	N/A	100-00157
Data Acquisition Package	ALS-DAQ-PAQ-3	2014-10-14	2015-10-14	110-00212
Miniature E-Field Probe	ALS-E-020	2014-10-14	2015-10-14	500-00283
Dipole, 750MHz	ALS-D-750-S-2	2013-10-08	2016-10-08	177-00505
Dipole, 835MHz	ALS-D-835-S-2	2014-10-08	2017-10-08	180-00558
Dipole, 1750MHz	ALS-D-1750-S-2	2013-10-08	2016-10-08	198-00304
Dipole, 1900MHz	ALS-D-1900-S-2	2014-10-09	2017-10-09	210-00710
Dipole, 2450MHz	ALS-D-2450-S-2	2014-10-09	2017-10-09	220-00758
Dipole Spacer	ALS-DS-U	N/A	N/A	250-00907
Device holder/Positioner	ALS-H-E-SET-2	N/A	N/A	170-00510
Left ear SAM phantom	ALS-P-SAM-L	N/A	N/A	130-00311
Right ear SAM phantom	ALS-P-SAM-R	N/A	N/A	140-00359
UniPhantom	ALS-P-UP-1	N/A	N/A	150-00413
Simulated Tissue 750 MHz Head	ALS-TS-750-H	Each Time	/	270-01001
Simulated Tissue 750 MHz Body	ALS-TS-750-B	Each Time	/	270-02100
Simulated Tissue 835 MHz Head	ALS-TS-835-H	Each Time	/	270-01002
Simulated Tissue 835 MHz Body	ALS-TS-835-B	Each Time	/	270-02101
Simulated Tissue 1750 MHz Head	ALS-TS-1750-H	Each Time	/	295-01103
Simulated Tissue 1750 MHz Body	ALS-TS-1750-B	Each Time	/	295-02102
Simulated Tissue 1900 MHz Head	ALS-TS-1900-H	Each Time	/	295-01103
Simulated Tissue 1900 MHz Body	ALS-TS-1900-B	Each Time	/	295-02102
Simulated Tissue 2450 MHz Head	ALS-TS-2450-H	Each Time	/	290-01108
Simulated Tissue 2450 MHz Body	ALS-TS-2450-B	Each Time	/	290-01109
Directional couple	DC6180A	N/A	N/A	0325849
Power Amplifier	5S1G4	N/A	N/A	71377
Attenuator	3dB	N/A	N/A	5402
Dielectric probe kit	HP85070B	2015-06-13	2016-06-13	US33020324
Network analyzer	8752C	2015-06-03	2016-06-03	3410A02356
Synthesized Sweeper	HP 8341B	2015-06-03	2016-06-03	2624A00116
UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	2014-11-23	2015-11-23	106891
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	2015-04-19	2016-04-19	114772
EMI Test Receiver	ESCI	2015-06-13	2016-06-13	101746

SAR MEASUREMENT SYSTEM VERIFICATION

Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

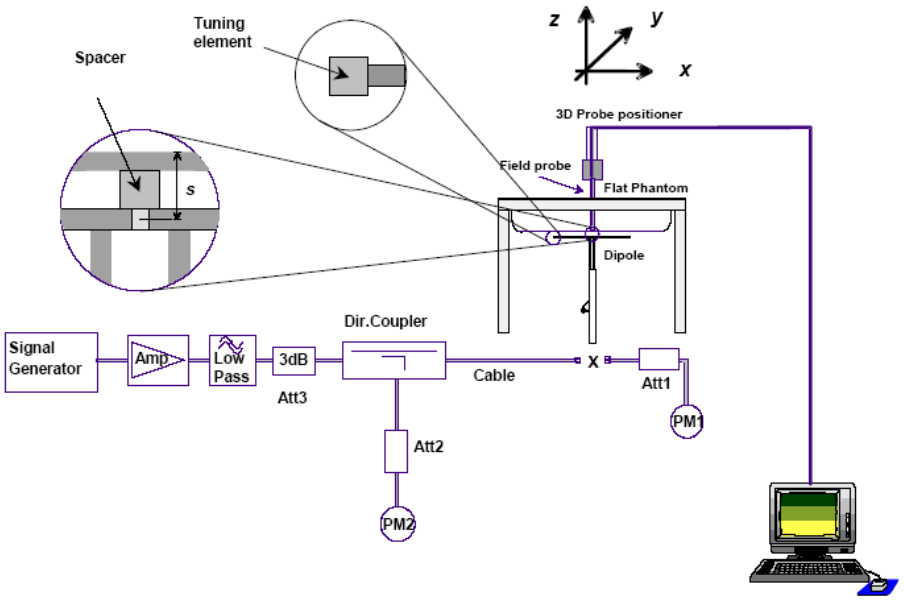
Frequency (MHz)	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	$\Delta\sigma$ (S/m)	
709.0	Head	42.31	0.89	41.95	0.89	0.858	0.000	±5
	Body	54.57	0.93	55.50	0.96	-1.676	-3.125	±5
710.0	Head	42.34	0.88	41.95	0.89	0.930	-1.124	±5
	Body	54.64	0.94	55.50	0.96	-1.550	-2.083	±5
711.0	Head	41.89	0.88	41.95	0.89	-0.143	-1.124	±5
	Body	54.54	0.93	55.50	0.96	-1.730	-3.125	±5
824.2	Head	41.03	0.90	41.50	0.90	-1.133	0.000	±5
	Body	53.84	0.95	55.20	0.97	-2.464	-2.062	±5
826.4	Head	41.03	0.90	41.50	0.90	-1.133	0.000	±5
	Body	53.83	0.95	55.20	0.97	-2.482	-2.062	±5
836.6	Head	41.07	0.92	41.50	0.90	-1.036	2.222	±5
	Body	53.77	0.96	55.20	0.97	-2.591	-1.031	±5
846.6	Head	41.09	0.91	41.50	0.90	-0.988	1.111	±5
	Body	53.80	0.97	55.20	0.97	-2.536	0.000	±5
848.8	Head	41.10	0.92	41.50	0.90	-0.964	2.222	±5
	Body	53.78	0.98	55.20	0.97	-2.572	1.031	±5
1720.0	Head	39.39	1.38	40.08	1.37	-1.722	0.730	±5
	Body	51.92	1.49	53.43	1.49	-2.826	0.000	±5
1732.5	Head	39.40	1.38	40.08	1.37	-1.697	0.730	±5
	Body	51.95	1.50	53.43	1.49	-2.770	0.671	±5
1745.0	Head	39.46	1.40	40.08	1.37	-1.547	2.190	±5
	Body	51.85	1.52	53.43	1.49	-2.957	2.013	±5
1850.2	Head	39.73	1.38	40.00	1.40	-0.675	-1.429	±5
	Body	51.85	1.50	53.30	1.52	-2.720	-1.316	±5
1852.4	Head	39.58	1.38	40.00	1.40	-1.050	-1.429	±5
	Body	51.95	1.49	53.30	1.52	-2.533	-1.974	±5
1860.0	Head	39.66	1.38	40.00	1.40	-0.850	-1.429	±5
	Body	51.92	1.51	53.30	1.52	-2.589	-0.658	±5
1880.0	Head	39.56	1.39	40.00	1.40	-1.100	-0.714	±5
	Body	51.78	1.52	53.30	1.52	-2.852	0.000	±5
1900.0	Head	39.70	1.42	40.00	1.40	-0.750	1.429	±5
	Body	52.05	1.52	53.30	1.52	-2.345	0.000	±5
1907.6	Head	39.72	1.41	40.00	1.40	-0.700	0.714	±5
	Body	52.08	1.53	53.30	1.52	-2.289	0.658	±5
1909.8	Head	39.62	1.42	40.00	1.40	-0.950	1.429	±5
	Body	52.09	1.54	53.30	1.52	-2.270	1.316	±5
2510	Head	39.73	1.89	39.12	1.87	1.559	1.070	±5
	Body	51.85	2.03	52.62	2.04	-1.463	-0.490	±5
2535	Head	39.68	1.87	39.09	1.89	1.509	-1.058	±5
	Body	51.79	2.05	52.59	2.07	-1.521	-0.966	±5
2560	Head	39.67	1.91	39.06	1.92	1.562	-0.521	±5
	Body	51.90	2.10	52.56	2.11	-1.256	-0.474	±5

**Liquid Verification was performed on 2015-09-23.*

System Accuracy Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of ±10%. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

System Verification Setup Block Diagram



Probe and dipole antenna List and Detail

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
APREL	Probe	ALS-E-020	500-00283	2014-10-14	2015-10-14
APREL	Dipole antenna(750MHz)	ALS-D-750-S-2	177-00505	2013-10-08	2016-10-08
APREL	Dipole antenna(835MHz)	ALS-D-835-S-2	180-00558	2014-10-08	2017-10-07
APREL	Dipole antenna(1750MHz)	ALS-D-1750-S-2	198-00304	2013-10-08	2016-10-07
APREL	Dipole antenna(1900MHz)	ALS-D-1900-S-2	210-00710	2014-10-09	2017-10-08
APREL	Dipole antenna(2450MHz)	ALS-D-2450-S-2	220-00758	2014-10-09	2017-10-08

System Accuracy Check Results:

Date	Frequency Band	Liquid Type	Measured SAR (W/Kg)		Target Value (W/Kg)	Delta (%)	Tolerance (%)
2015-09-23	750	Head	1g	8.472	8.5	-0.329	±10
		Body	1g	8.513	8.54	-0.316	±10
	835	Head	1g	10.130	9.773	3.653	±10
		Body	1g	9.552	9.736	-1.890	±10
	1750	Head	1g	35.637	37.020	-3.736	±10
		Body	1g	36.315	36.650	-0.914	±10
	1900	Head	1g	40.533	39.481	2.665	±10
		Body	1g	39.877	39.715	0.408	±10
	2450	Head	1g	51.696	54.916	-5.864	±10
		Body	1g	52.966	52.418	1.045	±10

*All SAR values are normalized to 1 Watt forward power.

SAR SYSTEM VALIDATION DATA

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 750 MHz Head Liquid

Dipole 750 MHz; Type: ALS-D-750-S-2; S/N: 177-00505

Product Data
Device Name : Dipole 750 MHz
Serial No. : 177-00505
Type : Dipole
Model : ALS-D-750-S-2
Frequency Band : 750
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 8.223 W/kg
Power Drift-Finish : 8.376 W/kg
Power Drift (%) : 1.861

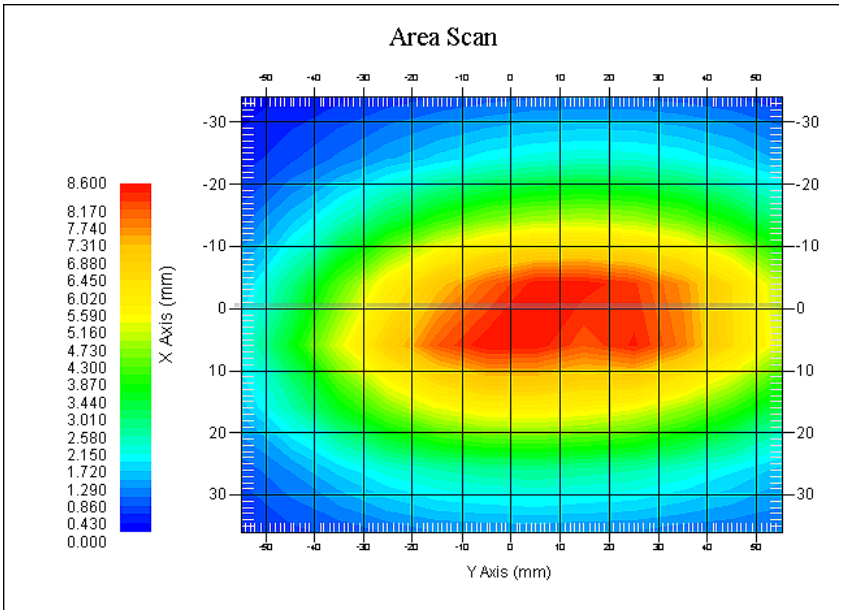
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default
Phantom Data

Tissue Data
Type : Head
Serial No. : 270-01001
Frequency : 750.0 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 42.13 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 750
Duty Cycle Factor : 1
Conversion Factor : 6.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 21.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 8.472 W/kg
10 gram SAR value : 5.232 W/kg
Area Scan Peak SAR : 8.539 W/kg
Zoom Scan Peak SAR : 17.759 W/kg



750 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 750 MHz Body Liquid

Dipole 750 MHz; Type: ALS-D-750-S-2; S/N: 177-00505

Product Data
Device Name : Dipole 750 MHz
Serial No. : 177-00505
Type : Dipole
Model : ALS-D-750-S-2
Frequency Band : 750
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 8.337 W/kg
Power Drift-Finish : 8.547 W/kg
Power Drift (%) : 2.519

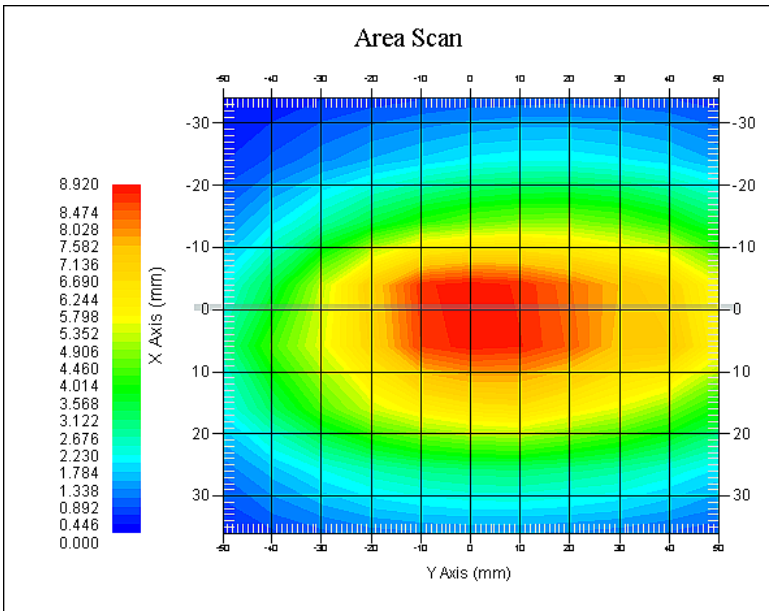
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default
Phantom Data

Tissue Data
Type : Body
Serial No. : 270-02100
Frequency : 750.0 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 55.55 F/m
Sigma : 0.94 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 750
Duty Cycle Factor : 1
Conversion Factor : 5.5
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 21.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 8.513 W/kg
10 gram SAR value : 5.322 W/kg
Area Scan Peak SAR : 8.820 W/kg
Zoom Scan Peak SAR : 17.598 W/kg



750 MHz System Validation with Body Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 835 MHz Head Liquid

Dipole 835 MHz; Type: ALS-D-835-S-2; S/N: 180-00558

Product Data
Device Name : Dipole 835 MHz
Serial No. : 180-00558
Type : Dipole
Model : ALS-D-835-S-2
Frequency Band : 835
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 10.038 W/kg
Power Drift-Finish : 9.923 W/kg
Power Drift (%) : -1.061

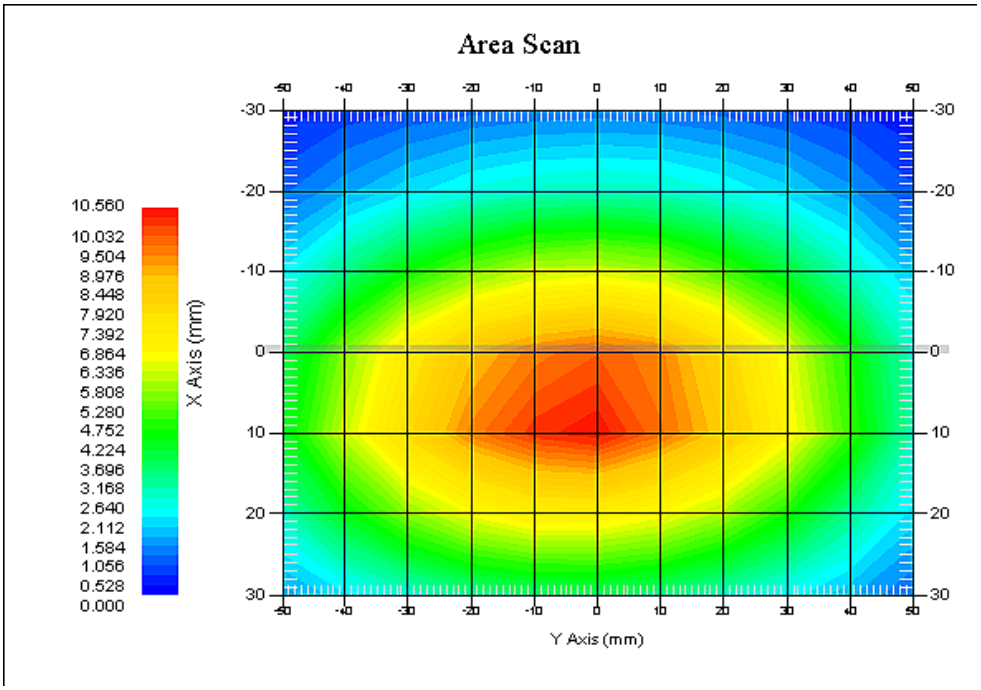
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default
Phantom Data

Tissue Data
Type : Head
Serial No. : 270-01002
Frequency : 835.0 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 41.02 F/m
Sigma : 0.92 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 5.9
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 21.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 10.130 W/kg
10 gram SAR value : 6.582 W/kg
Area Scan Peak SAR : 10.536 W/kg
Zoom Scan Peak SAR : 17.362 W/kg



835 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 835 MHz Body Liquid

Dipole 835 MHz; Type: ALS-D-835-S-2; S/N: 180-00558

Product Data
Device Name : Dipole 835 MHz
Serial No. : 180-00558
Type : Dipole
Model : ALS-D-835-S-2
Frequency Band : 835
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 9.655 W/kg
Power Drift-Finish : 9.521 W/kg
Power Drift (%) : 1.379

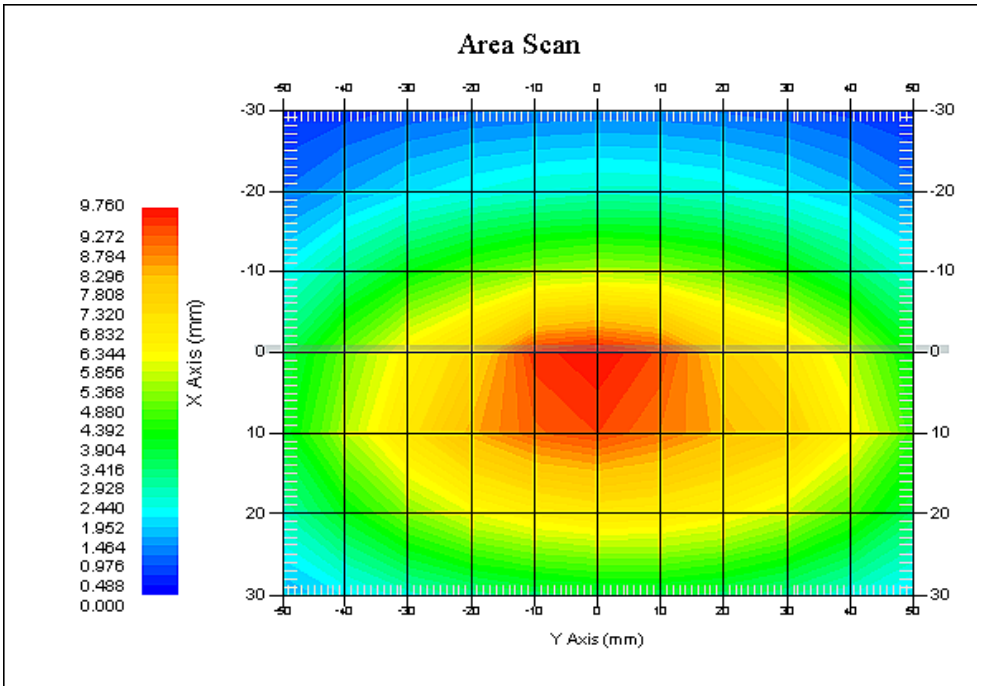
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default
Phantom Data

Tissue Data
Type : Body
Serial No. : 270-02101
Frequency : 835.0 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 53.86 F/m
Sigma : 0.96 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 5.9
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 21.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 9.552 W/kg
10 gram SAR value : 6.222 W/kg
Area Scan Peak SAR : 9.720 W/kg
Zoom Scan Peak SAR : 15.598 W/kg



835 MHz System Validation with Body Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 1750 MHz Head Liquid

Dipole 1750 MHz; Type: ALS-D-1750-S-2; S/N: 198-00304

Product Data
Device Name : Dipole 1750MHz
Serial No. : 198-00304
Type : Dipole
Model : ALS-D-1750-S-2
Frequency Band : 1700
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 32.132 W/kg
Power Drift-Finish : 32.831 W/kg
Power Drift (%) : 2.151

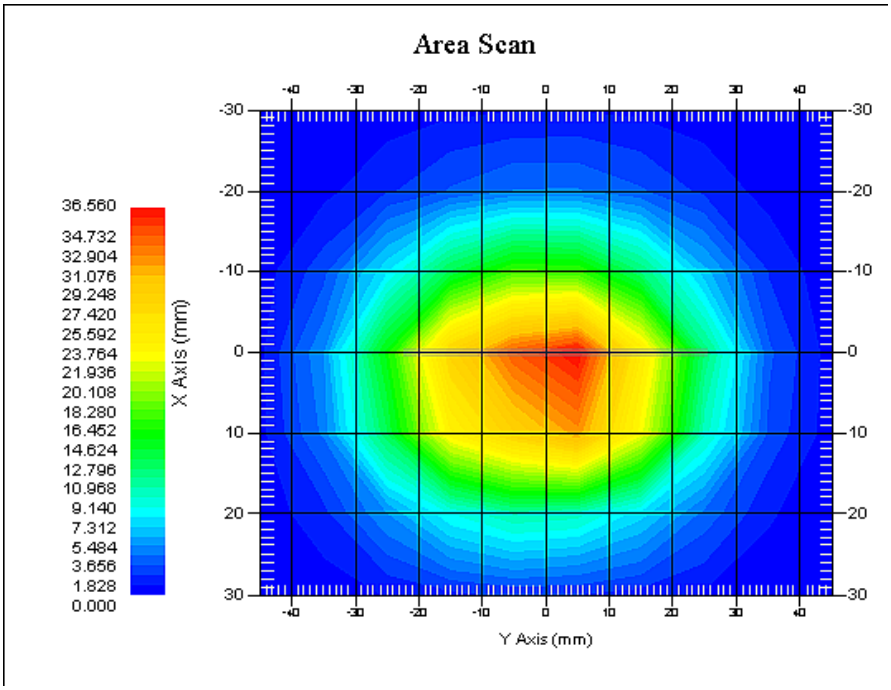
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Head
Serial No. : 295-01101
Frequency : 1750.00 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 39.30 F/m
Sigma : 1.39 S/m
Density : 1000.00 kg/cu. M

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 1750
Duty Cycle Factor : 1
Conversion Factor : 5.4
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 20.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 35.637 W/kg
10 gram SAR value : 19.739 W/kg
Area Scan Peak SAR : 36.538 W/kg
Zoom Scan Peak SAR : 68.793 W/kg



1750 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 1750 MHz Body Liquid

Dipole 1750 MHz; Type: ALS-D-1750-S-2; S/N: 198-00304

Product Data
Device Name : Dipole 1750MHz
Serial No. : 198-00304
Type : Dipole
Model : ALS-D-1750-S-2
Frequency Band : 1700
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 35.233 W/kg
Power Drift-Finish : 35.756 W/kg
Power Drift (%) : 1.426

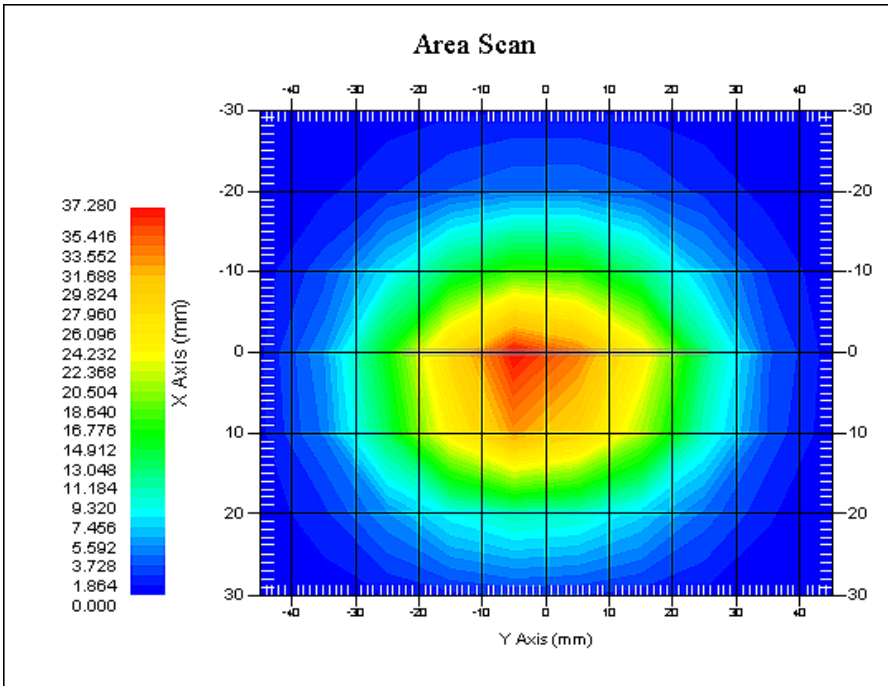
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Body
Serial No. : 295-02105
Frequency : 1750.00 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 51.89 F/m
Sigma : 1.52 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 1750
Duty Cycle Factor : 1
Conversion Factor : 5.3
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 36.315 W/kg
10 gram SAR value : 19.137 W/kg
Area Scan Peak SAR : 37.157 W/kg
Zoom Scan Peak SAR : 66.537 W/kg



1750 MHz System Validation with Body Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 1900 MHz Head Liquid

Dipole 1900 MHz; Type: ALS-D-1900-S-2; S/N: 210-00710

Product Data
Device Name : Dipole 1900MHz
Serial No. : 210-00710
Type : Dipole
Model : ALS-D-1900-S-2
Frequency Band : 1900
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 37.862 W/kg
Power Drift-Finish : 37.331 W/kg
Power Drift (%) : -1.316

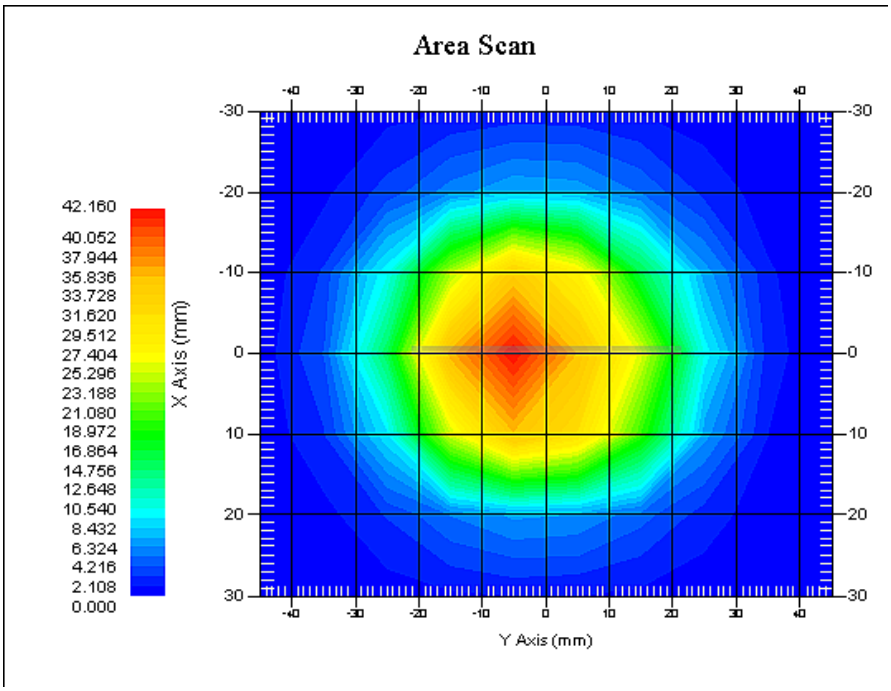
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Head
Serial No. : 295-01103
Frequency : 1900.00 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 39.70 F/m
Sigma : 1.41 S/m
Density : 1000.00 kg/cu. M

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 4.8
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 20.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 40.533 W/kg
10 gram SAR value : 20.926 W/kg
Area Scan Peak SAR : 42.010 W/kg
Zoom Scan Peak SAR : 71.280 W/kg



1900 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 1900 MHz Body Liquid

Dipole 1900 MHz; Type: ALS-D-1900-S-2; S/N: 210-00710

Product Data
Device Name : Dipole 1900MHz
Serial No. : 210-00710
Type : Dipole
Model : ALS-D-1900-S-2
Frequency Band : 1900
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 38.436 W/kg
Power Drift-Finish : 38.899 W/kg
Power Drift (%) : 1.185

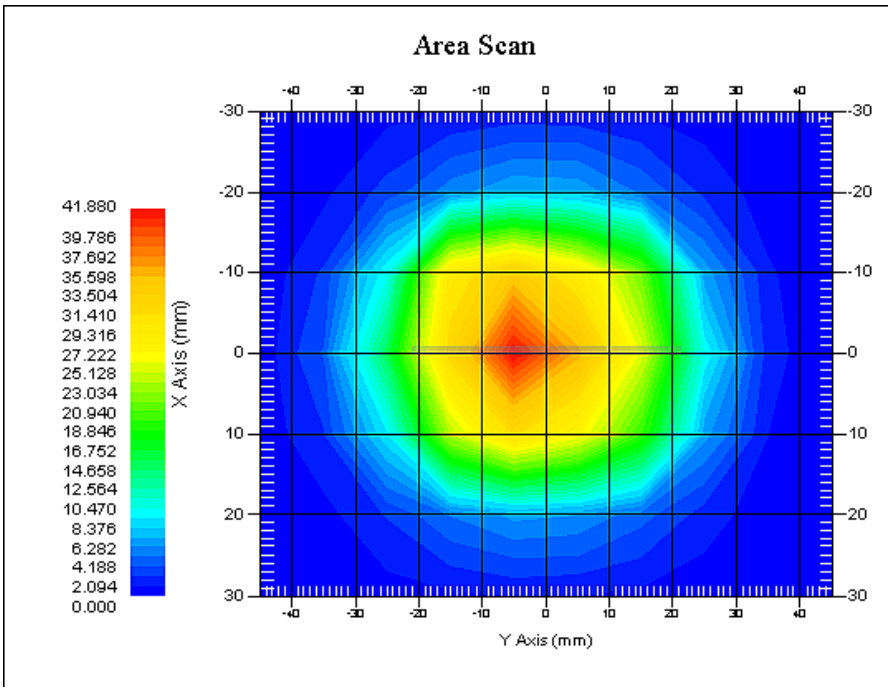
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Body
Serial No. : 295-02102
Frequency : 1900.00 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 52.04 F/m
Sigma : 1.52 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 4.5
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 39.877 W/kg
10 gram SAR value : 21.233 W/kg
Area Scan Peak SAR : 41.840 W/kg
Zoom Scan Peak SAR : 73.802 W/kg



1900 MHz System Validation with Body Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 2450 MHz Head Liquid

Dipole 2450 MHz; Type: ALS-D-2450-S-2; S/N: 220-00758

Product Data
Device Name : Dipole 2450MHz
Serial No. : 220-00758
Type : Dipole
Model : ALS-D-2450-S-2
Frequency Band : 2450 MHz
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 48.374 W/kg
Power Drift-Finish : 49.269 W/kg
Power Drift (%) : 1.736

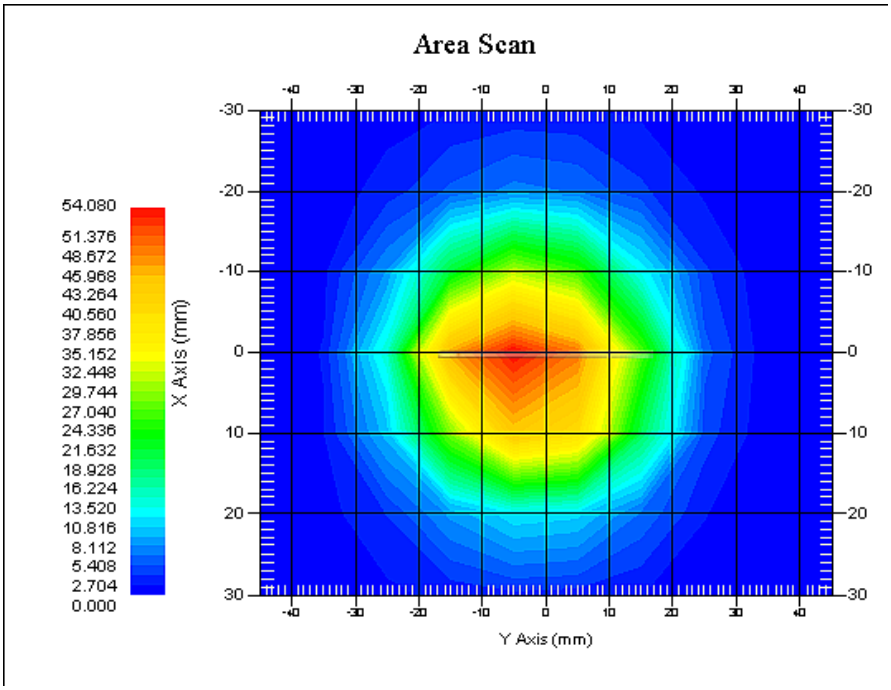
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Head
Serial No. : 290-01109
Frequency : 2450.0 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 50.00 RH%
Epsilon : 39.61 F/m
Sigma : 1.80 S/m
Density : 1000.00 kg/cu. M

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 $\mu V/(V/m)^2$
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 20.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 51.696 W/kg
10 gram SAR value : 22.718 W/kg
Area Scan Peak SAR : 54.025 W/kg
Zoom Scan Peak SAR : 92.689 W/kg



2450 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 2450 MHz Body Liquid

Dipole 2450 MHz; Type: ALS-D-2450-S-2; S/N: 220-00758

Product Data
Device Name : Dipole 2450MHz
Serial No. : 220-00758
Type : Dipole
Model : ALS-D-2450-S-2
Frequency Band : 2450 MHz
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 54.355 W/kg
Power Drift-Finish : 52.986 W/kg
Power Drift (%) : 2.367

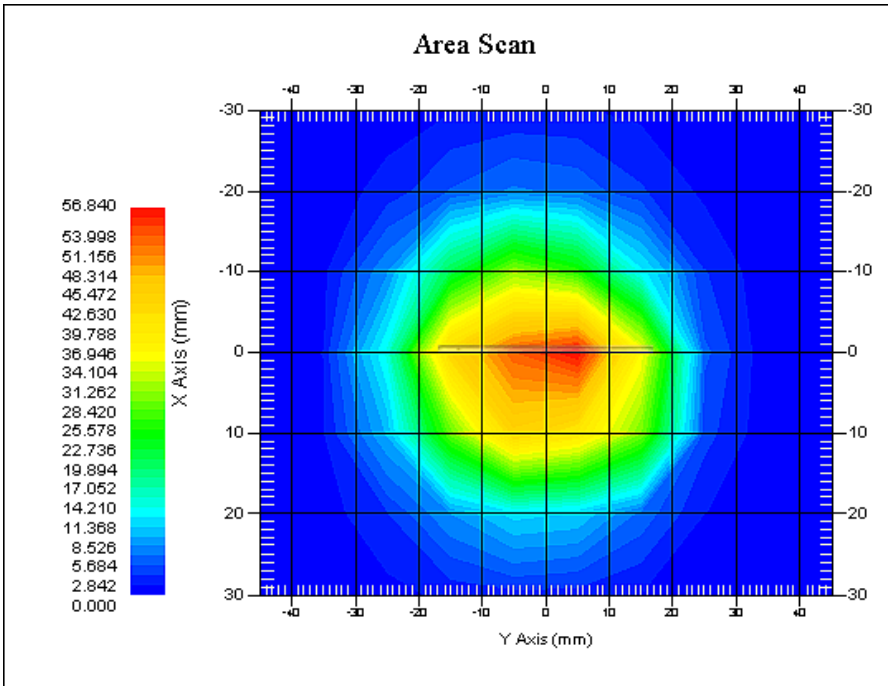
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : BODY
Serial No. : 290-01109
Frequency : 2450.0 MHz
Last Calib. Date : 23-Sep-2015
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 50.00 RH%
Epsilon : 51.74 F/m
Sigma : 1.90 S/m
Density : 1000.00 kg/cu. M

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 14-Oct-2014
Frequency Band : 2450 MHz
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 $\mu V/(V/m)^2$
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 20.00 °C
Area Scan : 8x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 52.966 W/kg
10 gram SAR value : 23.711 W/kg
Area Scan Peak SAR : 56.655 W/kg
Zoom Scan Peak SAR : 95.396 W/kg



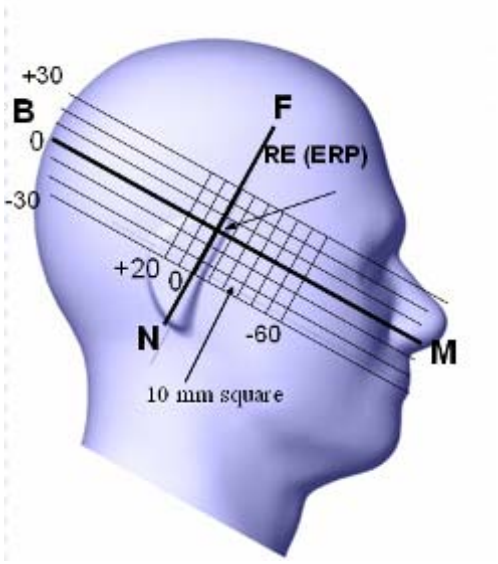
2450 MHz System Validation with Body Tissue

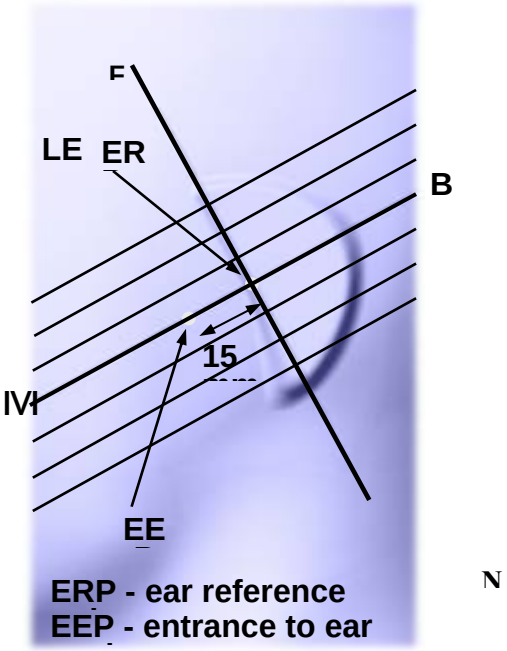
EUT TEST STRATEGY AND METHODOLOGY

Test Positions for Device Operating Next to a Person's Ear

This category includes most wireless handsets with fixed, retractable or internal antennas located toward the top half of the device, with or without a foldout, sliding or similar keypad cover. The handset should have its earpiece located within the upper ¼ of the device, either along the centerline or off-centered, as perceived by its users. This type of handset should be positioned in a normal operating position with the "test device reference point" located along the "vertical centerline" on the front of the device aligned to the "ear reference point". The "test device reference point" should be located at the same level as the center of the earpiece region. The "vertical centerline" should bisect the front surface of the handset at its top and bottom edges. A "ear reference point" is located on the outer surface of the head phantom on each ear spacer. It is located 1.5 cm above the center of the ear canal entrance in the "phantom reference plane" defined by the three lines joining the center of each "ear reference point" (left and right) and the tip of the mouth.

A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom. For the SCC-34/SC-2 head phantom, the device should be positioned parallel to the "N-F" line defined along the base of the ear spacer that contains the "ear reference point". For interim head phantoms, the device should be positioned parallel to the cheek for maximum RF energy coupling. The "test device reference point" is aligned to the "ear reference point" on the head phantom and the "vertical centerline" is aligned to the "phantom reference plane". This is called the "initial ear position". While maintaining these three alignments, the body of the handset is gradually adjusted to each of the following positions for evaluating SAR:





Cheek/Touch Position

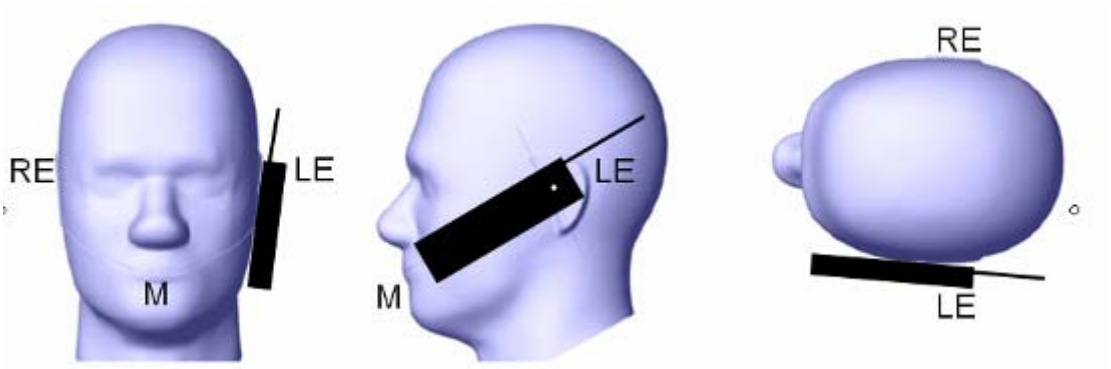
The device is brought toward the mouth of the head phantom by pivoting against the "ear reference point" or along the "N-F" line for the SCC-34/SC-2 head phantom.

This test position is established:

- When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.
- (or) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

For existing head phantoms – when the handset loses contact with the phantom at the pivoting point, rotation should continue until the device touches the cheek of the phantom or breaks its last contact from the ear spacer.

Cheek /Touch Position



Ear/Tilt Position

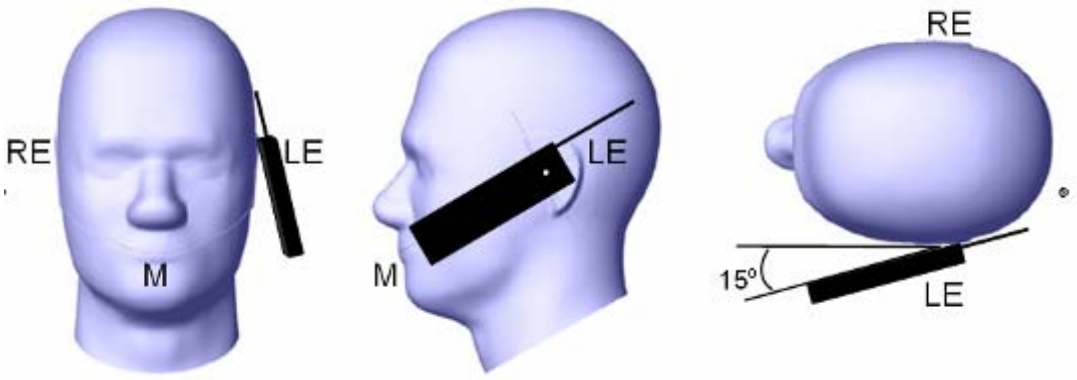
With the handset aligned in the "Cheek/Touch Position":

1) If the earpiece of the handset is not in full contact with the phantom's ear spacer (in the "Cheek/Touch position") and the peak SAR location for the "Cheek/Touch" position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the "initial ear position" by rotating it away from the mouth until the earpiece is in full contact with the ear spacer.

2) (otherwise) The handset should be moved (translated) away from the cheek perpendicular to the line passes through both "ear reference points" (note: one of these ear reference points may not physically exist on a split head model) for approximate 2-3 cm. While it is in this position, the device handset is tilted away from the mouth with respect to the "test device reference point" until the inside angle between the vertical centerline on the front surface of the phone and the horizontal line passing through the ear reference point isby 15 80°. After the tilt, it is then moved (translated) back toward the head perpendicular to the line passes through both "ear reference points" until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously. This test position may require a device holder or positioner to achieve the translation and tilting with acceptable positioning repeatability.

If a device is also designed to transmit with its keypad cover closed for operating in the head position, such positions should also be considered in the SAR evaluation. The device should be tested on the left and right side of the head phantom in the "Cheek/Touch" and "Ear/Tilt" positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA. If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tilt/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s). If the transmission band of the test device is less than 10 MHz, testing at the high and low frequency channels is optional.

Ear /Tilt 15° Position



Test positions for body-worn and other configurations

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. A separation distance of 1.5 cm between the back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances. Other separation distances may be used, but they should not exceed 2.5 cm. In these cases, the device may use body-worn accessories that provide a separation distance greater than that tested for the device provided however that the accessory contains no metallic components.

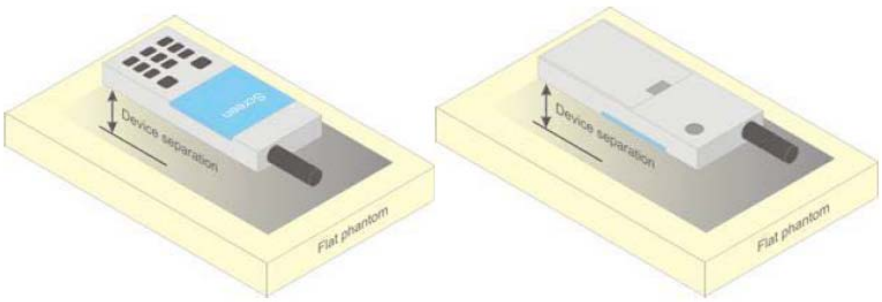


Figure 5 – Test positions for body-worn devices

SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head or EUT and the horizontal grid spacing was 10 mm x 10 mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 35 mm x 35 mm x 35 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the “Not a knot"-condition (in x, y and z-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

Test methodology

KDB 447498 D01 General RF Exposure Guidance v05r02.
KDB 648474 D04 Handset SAR v01r02.
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03
KDB 865664 D02 RF Exposure Reporting v01r01
KDB 941225 D01 3G SAR Procedures v03
KDB 941225 D05 SAR for LTE Devices v02r03
KDB 941225 D06 Hotspot Mode v02

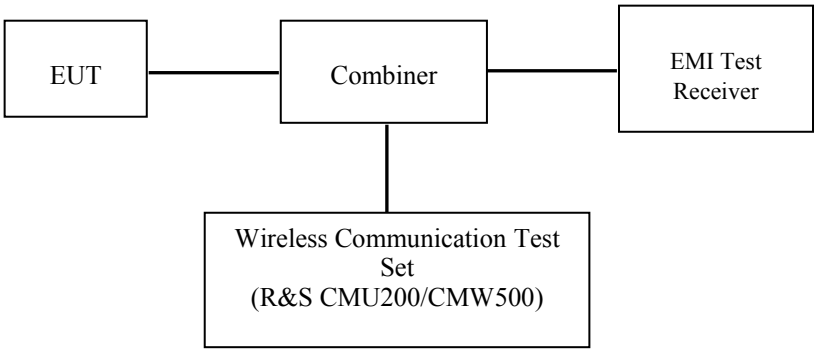
CONDUCTED OUTPUT POWER MEASUREMENT

Provision Applicable

The measured peak output power should be greater and within 5% than EMI measurement.

Test Procedure

The RF output of the transmitter was connected to the input of the EMI Test Receiver through sufficient attenuation.



GSM/WCDMA/LTE

Radio Configuration

The power measurement was configured by the Wireless Communication Test Set CMU200 & CMW500 for all Radio configurations.

GSM

Function: Menu select > GSM Mobile Station > GSM 850/1900
Press Connection control to choose the different menus
Press RESET > choose all the reset all settings
Connection: Press Signal Off to turn off the signal and change settings
Network Support > GSM + only
MS Signal
> 33 dBm for GSM 850
> 30 dBm for PCS 1900
BS Signal:Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset >+ 0 Hz
Mode > BCCH and TCH
BCCH Level > -85 dBm (May need to adjust if link is not stabe)
BCCH Channel >choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
Channel Type > Off
P0 > 4 dB
TCH > choose desired test channel
Hopping >Off
AF/RF: Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection: Press Signal on to turn on the signal and change settings

GPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900
Press Connection control to choose the different menus
Press RESET > choose all the reset all settings
Connection:Press Signal Off to turn off the signal and change settings
Network Support > GSM + GPRS or GSM + EGSM
Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off
MS Signal:Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting
> Slot configuration > Uplink/Gamma
> 33 dBm for GPRS 850
> 30 dBm for GPRS 1900
BS Signal: Enter the same channel number for TCH channel (test channel) and BCCH channel
Frequency Offset >+ 0 Hz
Mode >BCCH and TCH
BCCH Level >-85 dBm (May need to adjust if link is not stabe)
BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off
P0 > 4 dB
Slot Config > Unchanged (if already set under MS signal)
TCH > choose desired test channel
Hopping >Off
Main Timeslot >3
Network:Coding Scheme >CS4 (GPRS)
Bit Stream >2E9-1 PSR Bit Stream
AF/RF: Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
Connection: Press Signal on to turn on the signal and change settings

WCDMA Release 99

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc / βd	8/15

HSDPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subset	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	β c	2/15	12/15	15/15	15/15
	β d	15/15	15/15	8/15	4/15
	β d (SF)	64			
	β c/ β d	2/15	12/15	15/8	15/4
	β hs	4/15	24/15	30/15	30/15
	MPR(dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs= β hs/ β c	30/15			

HSUPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/ βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
	MPR(dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	Ahs= βhs/ βc	30/15				
HSUPA Specific Settings	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_FCIs	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	

LTE

For UE Power Class 1 and 3, the allowed Maximum Power Reduction (MPR) for the maximum output power in Table 6.2.2-1due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
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

For UE Power Class 1 and 3 the specific requirements and identified subclauses are specified in Table 6.2.4-1 along with the allowed A-MPR values that may be used to meet these requirements. The allowed A-MPR values specified below in Table 6.2.4.-1 to 6.2.4-15 are in addition to the allowed MPR requirements specified in subclause 6.2.3.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (subclause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	N/A
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	N/A
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	
NS_11	6.6.2.2.1	23	1.4, 3, 5, 10, 15, 20	Table 6.2.4-5	
NS_12	6.6.3.3.5	26	1.4, 3, 5	Table 6.2.4-6	
NS_13	6.6.3.3.6	26	5	Table 6.2.4-7	
NS_14	6.6.3.3.7	26	10, 15	Table 6.2.4-8	
NS_15	6.6.3.3.8	26	1.4, 3, 5, 10, 15	Table 6.2.4-9 Table 6.2.4-10	
NS_16	6.6.3.3.9	27	3, 5, 10	Table 6.2.4-11, Table 6.2.4-12, Table 6.2.4-13	
NS_17	6.6.3.3.10	28	5, 10	Table 5.6-1	N/A
NS_18	6.6.3.3.11	28	5	≥ 2	≤ 1
			10, 15, 20	≥ 1	≤ 4
NS_19	6.6.3.3.12	44	10, 15, 20	Table 6.2.4-14	
NS_20	6.2.2 6.6.2.2.1 6.6.3.2	23	5, 10, 15, 20	Table 6.2.4-15	
...					
NS_32	-	-	-	-	-

Maximum Output Power among production units

Max Target Power for Production Unit (dBm)				
Mode/Band		Channel		
		Low	Middle	High
GSM 850		32.40	32.40	32.40
GPRS 1 TX Slot		32.40	32.40	32.40
GPRS 2 TX Slot		31.70	31.70	31.70
GPRS 3 TX Slot		30.10	30.10	30.10
GPRS 4 TX Slot		29.10	29.10	29.10
EDGE 1 TX Slot		25.80	25.80	25.80
EDGE 2 TX Slot		24.90	24.90	24.90
EDGE 3 TX Slot		22.70	22.70	22.70
EDGE 4 TX Slot		21.60	21.60	21.60
PCS 1900		28.90	28.90	28.90
GPRS 1 TX Slot		29.00	29.00	29.00
GPRS 2 TX Slot		28.30	28.30	28.30
GPRS 3 TX Slot		26.50	26.50	26.50
GPRS 4 TX Slot		25.40	25.40	25.40
EDGE 1 TX Slot		26.10	26.10	26.10
EDGE 2 TX Slot		25.10	25.10	25.10
EDGE 3 TX Slot		23.00	23.00	23.00
EDGE 4 TX Slot		21.90	21.90	21.90
WCDMA 850	RMC	22.60	22.60	22.40
	HSDPA	21.80	21.80	21.60
	HSUPA	21.80	21.80	21.40
	DC-HSDPA	21.80	21.80	21.80
	HSPA+	21.70	21.70	21.70
WCDMA 1900	RMC	22.70	22.70	22.70
	HSDPA	21.90	21.90	21.90
	HSUPA	21.90	21.90	21.80
	DC-HSDPA	21.80	21.80	21.80
	HSPA+	21.80	21.80	21.80
LTE Band 2		22.40	22.40	22.40
LTE Band 4		21.70	21.70	21.70
LTE Band 7		22.20	22.20	22.20
LTE Band 17		21.90	21.90	21.90
Wi-Fi(b/g/n20)		9.70	9.70	9.70
Wi-Fi(n40)		8.50	8.50	8.50
Bluetooth		-1.00	-1.00	-1.00
BLE		-8.90	-8.90	-8.90

Test Results:

GSM:

Band	Channel No.	Frequency (MHz)	Conducted Output Power	
			Meas. Power (dBm)	Meas. Power (W)
GSM 850	128	824.2	**32.30**	1.698
	190	836.6	32.29	1.694
	251	848.8	32.26	1.683
PCS 1900	512	1850.2	**28.88**	0.773
	661	1880.0	28.50	0.708
	810	1909.8	28.09	0.644

GPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	32.30	31.69	30.08	29.02
	190	836.6	32.29	31.62	29.96	28.87
	251	848.8	32.28	31.57	29.81	28.74
PCS 1900	512	1850.2	28.98	28.23	26.46	25.30
	661	1880.0	28.69	28.03	26.43	25.38
	810	1909.8	28.13	27.61	26.22	25.28

EGPRS:

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	25.77	24.81	22.69	21.51
	190	836.6	25.67	24.67	22.58	21.40
	251	848.8	25.46	24.45	22.29	21.15
PCS 1900	512	1850.2	25.57	24.46	22.38	21.24
	661	1880.0	25.86	24.79	22.70	21.58
	810	1909.8	26.03	25.02	22.97	21.82

For SAR, the time based average power is relevant, the difference in between depends on the duty cycle of the TDMA signal.

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Time based Ave. power compared to slotted Ave. power	-9 dB	-6 dB	-4.25 dB	-3 dB
Crest Factor	8	4	2.66	2

The time based average power for GPRS

Band	Channel No.	Frequency (MHz)	Time based average Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	23.30	25.69	25.83	**26.02**
	190	836.6	23.29	25.62	25.71	25.87
	251	848.8	23.28	25.57	25.56	25.74
PCS 1900	512	1850.2	19.98	22.23	22.21	22.30
	661	1880.0	19.69	22.03	22.18	**22.38**
	810	1909.8	19.13	21.61	21.97	22.28

The time based average power for EGPRS

Band	Channel No.	Frequency (MHz)	Time based average Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
GSM 850	128	824.2	16.77	**18.81**	18.44	18.51
	190	836.6	16.67	18.67	18.33	18.40
	251	848.8	16.46	18.45	18.04	18.15
PCS 1900	512	1850.2	16.57	18.46	18.13	18.24
	661	1880.0	16.86	18.79	18.45	18.58
	810	1909.8	17.03	**19.02**	18.72	18.82

Note:
1. Rohde & Schwarz Radio Communication Tester (CMU200) was used for the measurement of GSM peak and average output power for active timeslots.
2. For GSM voice, 1 timeslot has been activated with power level 5 (850 MHz band) and 0 (1900 MHz band).
3. For GPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 3(850 MHz band) and 3(1900 MHz band).
4. For EGPRS, 1, 2, 3 and 4 timeslots has been activated separately with power level 6(850 MHz band) and 5(1900 MHz band).
5. According to KDB941225D01-SAR for GPRS and EDGE modes are not required when the source-based time-averaged output power for each data mode is lower than that in the normal GSM voice mode

WCDMA 850

Test Condition	Test Mode	3GPP Sub Test	Averaged Mean Power (dBm)		
			Low Frequency	Mid Frequency	High Frequency
	RMC12.2k		**22.58**	22.37	21.71
	HSDPA	1	**21.77**	21.51	20.90
		2	21.71	21.53	20.82
		3	21.74	21.48	20.87
		4	21.70	21.50	20.88
	HSUPA	1	21.73	21.48	20.87
		2	21.75	21.56	20.84
		3	21.75	21.54	20.90
		4	21.70	21.54	20.84
		5	**21.78**	21.56	20.88
	DC-HSDPA	1	21.54	21.35	20.75
		2	21.62	21.36	20.81
		3	**21.71**	21.42	20.69
		4	21.48	21.29	20.84
	HSPA+	1	**21.69**	21.36	20.87

WCDMA 1900

	Test Mode	3GPP Sub Test	Averaged Mean Power (dBm)		
			Low Frequency	Mid Frequency	High Frequency
Test Condition	RMC12.2k		**22.64**	22.53	22.45
	HSDPA	1	21.81	21.67	21.59
		2	**21.83**	21.69	21.64
		3	21.77	21.65	21.59
		4	21.77	21.65	21.62
	HSUPA	1	21.81	21.69	21.60
		2	**21.83**	21.67	21.60
		3	21.76	21.71	21.62
		4	21.81	21.67	21.64
		5	21.83	21.66	21.57
	DC-HSDPA	1	21.65	21.61	21.52
		2	21.72	21.52	21.62
		3	21.69	21.58	21.48
		4	**21.75**	21.49	21.63
	HSPA+	1	**21.74**	21.61	21.57

Note:

1. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model 1.
2. KDB 941225 D01-Body SAR is not required for HSDPA/HSUPA/HSPA+/DC-HSPA when the maximum average output of each RF channel is less than ¼ dB higher than measured 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

LTE Band 2:

BW	Modulation	Resource Block Size& Resource Block Offset	Target MPR	Meas MPR	Ave Tx Power (dBm)		
					Low Channel	Mid Channel	High Channel
					1850.7MHz	1880MHz	1909.3MHz
1.4M	QPSK	RB Size=1, RB Offset=0	0	0	22.03	22.03	22.11
		RB Size=1, RB Offset=2	0	0	22.10	22.10	22.18
		RB Size=1, RB Offset=5	0	0	22.10	22.07	22.15
		RB Size=3, RB Offset=0	1	1	21.93	21.93	21.97
		RB Size=3, RB Offset=1	1	1	22.03	22.03	22.06
		RB Size=3, RB Offset=2	1	1	21.85	21.87	21.90
		RB Size=6, RB Offset=0	1	1	21.65	21.60	21.71
	16QAM	RB Size=1, RB Offset=0	1	1	21.55	21.59	21.58
		RB Size=1, RB Offset=2	1	1	22.07	22.07	22.09
		RB Size=1, RB Offset=5	1	1	21.65	21.61	21.72
		RB Size=3, RB Offset=0	2	2	21.92	21.88	21.98
		RB Size=3, RB Offset=1	2	2	21.61	21.62	21.67
		RB Size=3, RB Offset=2	2	2	21.89	21.93	21.92
		RB Size=6, RB Offset=0	2	2	21.64	21.66	21.69
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1851.5MHz	1880MHz	1908.5MHz
3M	QPSK	RB Size=1, RB Offset=0	0	0	21.78	21.76	21.80
		RB Size=1, RB Offset=7	0	0	21.08	21.04	21.17
		RB Size=1, RB Offset=14	0	0	21.77	21.79	21.79
		RB Size=8, RB Offset=0	1	1	21.54	21.58	21.56
		RB Size=8, RB Offset=4	1	1	21.08	21.13	21.11
		RB Size=8, RB Offset=7	1	1	21.61	21.59	21.63
		RB Size=15, RB Offset=0	1	1	21.37	21.33	21.45
	16QAM	RB Size=1, RB Offset=0	1	1	21.44	21.43	21.51
		RB Size=1, RB Offset=7	1	1	22.26	22.30	22.29
		RB Size=1, RB Offset=14	1	1	21.64	21.65	21.72
		RB Size=8, RB Offset=0	2	2	21.76	21.76	21.82
		RB Size=8, RB Offset=4	2	2	21.96	21.98	22.03
		RB Size=8, RB Offset=7	2	2	21.86	21.91	21.87
		RB Size=15, RB Offset=0	2	2	21.63	21.60	21.71
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1852.5MHz	1880MHz	1907.5MHz
5M	QPSK	RB Size=1, RB Offset=0	0	0	22.02	22.06	22.03
		RB Size=1, RB Offset=12	0	0	22.03	22.01	22.08
		RB Size=1, RB Offset=24	0	0	21.71	21.72	21.73
		RB Size=12, RB Offset=0	1	1	21.63	21.67	21.65
		RB Size=12, RB Offset=6	1	1	21.70	21.65	21.78
		RB Size=12, RB Offset=11	1	1	21.53	21.54	21.56
		RB Size=25, RB Offset=0	1	1	21.68	21.67	21.76
	16QAM	RB Size=1, RB Offset=0	1	1	21.71	21.72	21.71
		RB Size=1, RB Offset=12	1	1	21.72	21.72	21.73

		RB Size=1, RB Offset=24	1	1	21.63	21.70	21.65
		RB Size=12, RB Offset=0	2	2	20.75	20.68	20.83
		RB Size=12, RB Offset=6	2	2	20.47	20.56	20.47
		RB Size=12, RB Offset=11	2	2	21.74	21.70	21.79
		RB Size=25, RB Offset=0	2	2	21.49	21.54	21.53
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1855MHz	1880MHz	1905MHz
10M	QPSK	RB Size=1, RB Offset=0	0	0	21.89	21.89	21.97
		RB Size=1, RB Offset=24	0	0	22.00	21.94	22.09
		RB Size=1, RB Offset=49	0	0	22.10	22.10	22.15
		RB Size=25, RB Offset=0	1	1	21.94	21.99	21.98
		RB Size=25, RB Offset=12	1	1	22.01	21.95	22.08
		RB Size=25, RB Offset=24	1	1	21.68	21.75	21.68
		RB Size=50, RB Offset=0	1	1	22.00	21.95	22.05
	16QAM	RB Size=1, RB Offset=0	1	1	22.11	22.08	22.19
		RB Size=1, RB Offset=24	1	1	22.03	22.05	22.09
		RB Size=1, RB Offset=49	1	1	21.81	21.85	21.82
		RB Size=25, RB Offset=0	2	2	21.63	21.61	21.68
		RB Size=25, RB Offset=12	2	2	21.70	21.70	21.72
		RB Size=25, RB Offset=24	2	2	21.61	21.63	21.65
		RB Size=50, RB Offset=0	2	2	21.72	21.66	21.81
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1857.5MHz	1880MHz	1902.5MHz
15M	QPSK	RB Size=1, RB Offset=0	0	0	21.91	21.88	21.97
		RB Size=1, RB Offset=37	0	0	21.70	21.68	21.72
		RB Size=1, RB Offset=74	0	0	21.71	21.69	21.73
		RB Size=36, RB Offset=0	1	1	21.88	21.91	21.94
		RB Size=36, RB Offset=18	1	1	21.79	21.82	21.81
		RB Size=36, RB Offset=37	1	1	21.58	21.63	21.62
		RB Size=75, RB Offset=0	1	1	22.04	21.96	22.13
	16QAM	RB Size=1, RB Offset=0	1	1	21.81	21.82	21.81
		RB Size=1, RB Offset=37	1	1	21.62	21.66	21.65
		RB Size=1, RB Offset=74	1	1	21.72	21.72	21.78
		RB Size=36, RB Offset=0	2	2	21.90	21.95	21.94
		RB Size=36, RB Offset=18	2	2	21.99	21.99	22.07
		RB Size=36, RB Offset=37	2	2	22.05	22.07	22.10
		RB Size=75, RB Offset=0	2	2	22.40	22.37	22.43
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1860MHz	1880MHz	1900MHz
20M	QPSK	RB Size=1, RB Offset=0	0	0	22.00	22.00	22.01
		RB Size=1, RB Offset=49	0	0	22.26	22.28	**22.31**
		RB Size=1, RB Offset=99	0	0	21.77	21.69	21.86
		RB Size=50, RB Offset=0	1	1	22.12	22.15	**22.16**
		RB Size=50, RB Offset=24	1	1	21.50	21.46	21.55
		RB Size=50, RB Offset=49	1	1	22.03	22.03	22.09

		RB Size=100, RB Offset=0	1	1	21.77	21.81	21.80
	16QAM	RB Size=1, RB Offset=0	1	1	21.37	21.38	21.40
		RB Size=1, RB Offset=49	1	1	21.72	21.75	21.75
		RB Size=1, RB Offset=99	1	1	21.70	21.64	21.77
		RB Size=50, RB Offset=0	2	2	21.73	21.67	21.80
		RB Size=50, RB Offset=24	2	2	21.92	21.92	21.97
		RB Size=50, RB Offset=49	2	2	21.66	21.61	21.73
		RB Size=100, RB Offset=0	2	2	20.79	20.78	20.85

LTE Band 4:

BW	Modulation	Resource Block Size& Resource Block Offset	Target MPR	Meas MPR	Ave Tx Power (dBm)		
					Low Channel	Mid Channel	High Channel
					1710.7MHz	1732.5MHz	1754.3MHz
1.4M	QPSK	RB Size=1, RB Offset=0	0	0	21.32	21.32	21.36
		RB Size=1, RB Offset=2	0	0	21.33	21.34	21.39
		RB Size=1, RB Offset=5	0	0	21.32	21.33	21.36
		RB Size=3, RB Offset=0	1	1	21.07	21.09	21.14
		RB Size=3, RB Offset=1	1	1	21.19	21.21	21.24
		RB Size=3, RB Offset=2	1	1	21.18	21.15	21.21
		RB Size=6, RB Offset=0	1	1	20.87	20.90	20.91
	16QAM	RB Size=1, RB Offset=0	1	1	20.91	20.95	20.96
		RB Size=1, RB Offset=2	1	1	21.42	21.40	21.46
		RB Size=1, RB Offset=5	1	1	21.11	21.15	21.14
		RB Size=3, RB Offset=0	2	2	21.41	21.39	21.46
		RB Size=3, RB Offset=1	2	2	21.03	21.02	21.12
		RB Size=3, RB Offset=2	2	2	21.40	21.42	21.47
		RB Size=6, RB Offset=0	2	2	21.12	21.14	21.13
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1711.5MHz	1732.5MHz	1753.5MHz
3M	QPSK	RB Size=1, RB Offset=0	0	0	21.24	21.19	21.32
		RB Size=1, RB Offset=7	0	0	20.66	20.63	20.69
		RB Size=1, RB Offset=14	0	0	21.21	21.29	21.22
		RB Size=8, RB Offset=0	1	1	21.09	21.09	21.11
		RB Size=8, RB Offset=4	1	1	20.63	20.66	20.65
		RB Size=8, RB Offset=7	1	1	21.01	21.04	21.01
		RB Size=15, RB Offset=0	1	1	20.93	20.87	20.99
	16QAM	RB Size=1, RB Offset=0	1	1	20.98	20.90	21.07
		RB Size=1, RB Offset=7	1	1	21.63	21.56	21.70
		RB Size=1, RB Offset=14	1	1	20.93	20.92	21.02
		RB Size=8, RB Offset=0	2	2	21.04	21.04	21.06
		RB Size=8, RB Offset=4	2	2	21.25	21.28	21.30
		RB Size=8, RB Offset=7	2	2	21.06	21.07	21.12
		RB Size=15, RB Offset=0	2	2	20.93	20.95	20.96
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1712.5MHz	1732.5MHz	1752.5MHz
5M	QPSK	RB Size=1, RB Offset=0	0	0	20.89	20.89	20.93

		RB Size=1, RB Offset=12	0	0	21.23	21.19	21.29
		RB Size=1, RB Offset=24	0	0	21.21	21.27	21.22
		RB Size=12, RB Offset=0	1	1	20.93	20.92	20.96
		RB Size=12, RB Offset=6	1	1	20.84	20.83	20.88
		RB Size=12, RB Offset=11	1	1	20.81	20.86	20.85
		RB Size=25, RB Offset=0	1	1	20.73	20.74	20.81
	16QAM	RB Size=1, RB Offset=0	1	1	20.94	20.94	20.95
		RB Size=1, RB Offset=12	1	1	20.83	20.84	20.89
		RB Size=1, RB Offset=24	1	1	20.79	20.84	20.79
		RB Size=12, RB Offset=0	2	2	20.85	20.85	20.90
		RB Size=12, RB Offset=6	2	2	19.99	19.94	20.07
		RB Size=12, RB Offset=11	2	2	19.74	19.75	19.77
		RB Size=25, RB Offset=0	2	2	20.87	20.87	20.87
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1715MHz	1732.5MHz	1750MHz
10M	QPSK	RB Size=1, RB Offset=0	0	0	20.71	20.72	20.79
		RB Size=1, RB Offset=24	0	0	21.18	21.12	21.25
		RB Size=1, RB Offset=49	0	0	21.36	21.31	21.43
		RB Size=25, RB Offset=0	1	1	21.24	21.22	21.31
		RB Size=25, RB Offset=12	1	1	21.19	21.23	21.24
		RB Size=25, RB Offset=24	1	1	20.99	21.05	21.00
		RB Size=50, RB Offset=0	1	1	21.30	21.34	21.31
	16QAM	RB Size=1, RB Offset=0	1	1	21.04	21.07	21.09
		RB Size=1, RB Offset=24	1	1	20.80	20.83	20.83
		RB Size=1, RB Offset=49	1	1	20.86	20.93	20.87
		RB Size=25, RB Offset=0	2	2	20.92	20.93	20.93
		RB Size=25, RB Offset=12	2	2	20.97	20.94	21.05
		RB Size=25, RB Offset=24	2	2	21.19	21.20	21.22
		RB Size=50, RB Offset=0	2	2	20.81	20.84	20.84
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					1717.5MHz	1732.5MHz	1747.5MHz
15M	QPSK	RB Size=1, RB Offset=0	0	0	20.95	20.92	21.00
		RB Size=1, RB Offset=37	0	0	21.17	21.19	21.20
		RB Size=1, RB Offset=74	0	0	21.04	21.00	21.12
		RB Size=36, RB Offset=0	1	1	20.86	20.83	20.95
		RB Size=36, RB Offset=18	1	1	21.05	21.04	21.12
		RB Size=36, RB Offset=37	1	1	20.90	20.88	20.95
		RB Size=75, RB Offset=0	1	1	21.28	21.29	21.31
	16QAM	RB Size=1, RB Offset=0	1	1	21.04	21.11	21.04
		RB Size=1, RB Offset=37	1	1	20.92	20.95	20.96
		RB Size=1, RB Offset=74	1	1	21.20	21.11	21.29
		RB Size=36, RB Offset=0	2	2	21.24	21.24	21.27
		RB Size=36, RB Offset=18	2	2	21.28	21.26	21.34
		RB Size=36, RB Offset=37	2	2	21.62	21.59	21.68
		RB Size=75, RB Offset=0	2	2	21.19	21.13	21.28
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low	**Mid**	**High**

					Channel	Channel	Channel
					1720MHz	1732.5MHz	1745MHz
20M	QPSK	RB Size=1, RB Offset=0	0	0	21.54	21.48	**21.60**
		RB Size=1, RB Offset=49	0	0	20.92	20.95	20.92
		RB Size=1, RB Offset=99	0	0	21.35	21.35	21.39
		RB Size=50, RB Offset=0	1	1	20.67	20.71	20.68
		RB Size=50, RB Offset=24	1	1	21.24	21.26	**21.27**
		RB Size=50, RB Offset=49	1	1	20.95	21.02	20.96
		RB Size=100, RB Offset=0	1	1	20.51	20.51	20.57
	16QAM	RB Size=1, RB Offset=0	1	1	20.94	20.92	20.97
		RB Size=1, RB Offset=49	1	1	20.90	20.87	20.94
		RB Size=1, RB Offset=99	1	1	20.88	20.89	20.93
		RB Size=50, RB Offset=0	2	2	21.03	21.05	21.05
		RB Size=50, RB Offset=24	2	2	20.87	20.88	20.92
		RB Size=50, RB Offset=49	2	2	20.89	20.85	20.94
		RB Size=100, RB Offset=0	2	2	20.03	20.05	20.07

LTE Band 7:

BW	Modulation	Resource Block Size& Resource Block Offset	Target MPR	Meas MPR	Ave Tx Power (dBm)		
					Low Channel	Mid Channel	High Channel
					2502.5MHz	2535MHz	2567.5MHz
5M	QPSK	RB Size=1, RB Offset=0	0	0	21.24	21.25	21.27
		RB Size=1, RB Offset=12	0	0	21.33	21.34	21.39
		RB Size=1, RB Offset=24	0	0	21.68	21.67	21.74
		RB Size=12, RB Offset=0	1	1	21.66	21.61	21.74
		RB Size=12, RB Offset=6	1	1	21.69	21.72	21.74
		RB Size=12, RB Offset=11	1	1	21.72	21.76	21.74
		RB Size=25, RB Offset=0	1	1	21.60	21.61	21.68
	16QAM	RB Size=1, RB Offset=0	1	1	21.72	21.73	21.72
		RB Size=1, RB Offset=12	1	1	20.85	20.82	20.91
		RB Size=1, RB Offset=24	1	1	20.59	20.65	20.59
		RB Size=12, RB Offset=0	2	2	21.78	21.72	21.86
		RB Size=12, RB Offset=6	2	2	21.83	21.84	21.90
		RB Size=12, RB Offset=11	2	2	21.78	21.84	21.79
		RB Size=25, RB Offset=0	2	2	21.69	21.71	21.71
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					2505MHz	2535MHz	2565MHz
10M	QPSK	RB Size=1, RB Offset=0	0	0	21.37	21.39	21.43
		RB Size=1, RB Offset=24	0	0	21.70	21.68	21.79
		RB Size=1, RB Offset=49	0	0	21.41	21.46	21.44
		RB Size=25, RB Offset=0	1	1	21.44	21.45	21.47
		RB Size=25, RB Offset=12	1	1	21.51	21.54	21.51
		RB Size=25, RB Offset=24	1	1	21.26	21.26	21.34
		RB Size=50, RB Offset=0	1	1	21.25	21.27	21.30
	16QAM	RB Size=1, RB Offset=0	1	1	21.73	21.74	21.79
		RB Size=1, RB Offset=24	1	1	21.60	21.65	21.61
		RB Size=1, RB Offset=49	1	1	21.83	21.86	21.84

		RB Size=25, RB Offset=0	2	2	21.75	21.72	21.81
		RB Size=25, RB Offset=12	2	2	21.78	21.72	21.85
		RB Size=25, RB Offset=24	2	2	21.64	21.67	21.70
		RB Size=50, RB Offset=0	2	2	20.83	20.79	20.87
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					2507.5MHz	2535MHz	2562.5MHz
15M	QPSK	RB Size=1, RB Offset=0	0	0	21.92	21.92	21.95
		RB Size=1, RB Offset=37	0	0	21.80	21.87	21.82
		RB Size=1, RB Offset=74	0	0	21.76	21.75	21.84
		RB Size=36, RB Offset=0	1	1	21.58	21.66	21.59
		RB Size=36, RB Offset=18	1	1	21.77	21.75	21.82
		RB Size=36, RB Offset=37	1	1	21.64	21.69	21.68
		RB Size=75, RB Offset=0	1	1	21.99	21.96	22.03
	16QAM	RB Size=1, RB Offset=0	1	1	21.32	21.32	21.39
		RB Size=1, RB Offset=37	1	1	21.49	21.47	21.58
		RB Size=1, RB Offset=74	1	1	21.29	21.24	21.38
		RB Size=36, RB Offset=0	2	2	21.30	21.25	21.38
		RB Size=36, RB Offset=18	2	2	21.66	21.70	21.66
		RB Size=36, RB Offset=37	2	2	21.38	21.43	21.40
		RB Size=75, RB Offset=0	2	2	21.33	21.36	21.35
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					2510MHz	2535MHz	2560MHz
20M	QPSK	RB Size=1, RB Offset=0	0	0	22.10	**22.15**	22.13
		RB Size=1, RB Offset=49	0	0	21.80	21.78	21.86
		RB Size=1, RB Offset=99	0	0	21.43	21.41	21.50
		RB Size=50, RB Offset=0	1	1	21.41	21.41	21.47
		RB Size=50, RB Offset=24	1	1	21.40	21.42	**21.47**
		RB Size=50, RB Offset=49	1	1	21.24	21.22	21.32
		RB Size=100, RB Offset=0	1	1	21.27	21.25	21.34
	16QAM	RB Size=1, RB Offset=0	1	1	21.76	21.79	21.78
		RB Size=1, RB Offset=49	1	1	21.72	21.69	21.79
		RB Size=1, RB Offset=99	1	1	21.70	21.72	21.71
		RB Size=50, RB Offset=0	2	2	21.69	21.74	21.69
		RB Size=50, RB Offset=24	2	2	21.65	21.69	21.68
		RB Size=50, RB Offset=49	2	2	20.80	20.81	20.84
		RB Size=100, RB Offset=0	2	2	21.02	20.97	21.07

LTE Band 17:

BW	Modulation	Resource Block Size& Resource Block Offset	Target MPR	Meas MPR	Ave Tx Power (dBm)		
					Low Channel	Mid Channel	High Channel
					706.5 MHz	710 MHz	713.5 MHz
5M	QPSK	RB Size=1, RB Offset=0	0	0	21.74	21.70	21.83
		RB Size=1, RB Offset=12	0	0	21.47	21.51	21.50
		RB Size=1, RB Offset=24	0	0	21.39	21.39	21.43
		RB Size=12, RB Offset=0	1	1	21.43	21.39	21.50
		RB Size=12, RB Offset=6	1	1	21.43	21.47	21.43
		RB Size=12, RB Offset=11	1	1	21.41	21.39	21.45
		RB Size=25, RB Offset=0	1	1	21.31	21.29	21.36
	16QAM	RB Size=1, RB Offset=0	1	1	21.38	21.45	21.40
		RB Size=1, RB Offset=12	1	1	21.42	21.41	21.46
		RB Size=1, RB Offset=24	1	1	21.44	21.43	21.47
		RB Size=12, RB Offset=0	2	2	21.40	21.48	21.40
		RB Size=12, RB Offset=6	2	2	20.52	20.51	20.59
		RB Size=12, RB Offset=11	2	2	20.25	20.29	20.29
		RB Size=25, RB Offset=0	2	2	21.44	21.41	21.49
BW	**Modulation**	**Resource Block Size& Resource Block Offset**	**Target MPR**	**Meas MPR**	**Ave Tx Power (dBm)**		
					Low Channel	**Mid Channel**	**High Channel**
					709 MHz	710 MHz	711 MHz
10M	QPSK	RB Size=1, RB Offset=0	0	0	21.34	21.34	21.39
		RB Size=1, RB Offset=24	0	0	21.78	21.78	21.80
		RB Size=1, RB Offset=49	0	0	21.82	21.85	**21.86**
		RB Size=25, RB Offset=0	1	1	21.77	**21.82**	21.77
		RB Size=25, RB Offset=12	1	1	21.73	21.74	21.77
		RB Size=25, RB Offset=24	1	1	21.53	21.48	21.61
		RB Size=50, RB Offset=0	1	1	21.79	21.86	21.79
	16QAM	RB Size=1, RB Offset=0	1	1	21.73	21.71	21.79
		RB Size=1, RB Offset=24	1	1	21.50	21.45	21.58
		RB Size=1, RB Offset=49	1	1	21.36	21.37	21.37
		RB Size=25, RB Offset=0	2	2	21.46	21.43	21.49
		RB Size=25, RB Offset=12	2	2	21.27	21.32	21.31
		RB Size=25, RB Offset=24	2	2	21.40	21.36	21.48
		RB Size=50, RB Offset=0	2	2	21.47	21.49	21.50

Note:

1. SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02.

2. The CMW500 Wideband Radio Communication tester is used for LTE output power measurements and SAR testing. Closed loop power control is used to keep the radio transmitters the max output power during the test.
3. KDB941225D05v02- SAR for higher order modulation 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

Bluetooth

Mode	Channel No.	Frequency (MHz)	Conducted Output Power	
			(dBm)	(mw)
BDR(GFSK)	0	2402	-1.68	0.679
	39	2441	-3.28	0.470
	78	2480	**-1.08**	0.780
EDR(4-DQPSK)	0	2402	-2.79	0.526
	39	2441	-3.9	0.407
	78	2480	-2.17	0.607
EDR-8DPSK	0	2402	-2.54	0.557
	39	2441	-3.78	0.419
	78	2480	-1.80	0.661
BT4.0	0	2402	-9.72	0.107
	19	2440	-9.46	0.113
	39	2480	-8.96	0.127

Wi-Fi

Band	Channel No.	Frequency (MHz)	Conducted Output Power	
			(dBm)	(mw)
802.11b	1	2412	8.76	7.516
	6	2437	**9.67**	9.268
	11	2462	9.66	9.247
802.11g	1	2412	7.48	5.598
	6	2437	9.23	8.375
	11	2462	8.51	7.096
802.11n HT20	1	2412	7.72	5.916
	6	2437	9.56	9.036
	11	2462	8.43	6.966
802.11n HT40	1	2422	4.84	3.048
	5	2442	8.49	7.063
	7	2452	5.04	3.192

Note:

1. The output power was tested under data rate 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n HT20, 13.5Mbps for 802.11n HT40.