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CLASS II PERMISSIVE CHANGE
IC RSS-102 ISSUE 3

SAR EVALUATION REPORT

For

CDMA/1x EVDO Rel 0 / EVDO Rev. A with 802.11b/g and Bluetooth Phone

MODEL: P101EWW

FCC ID: O8F-CASC

IC: 3905A-CASC

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Prepared for

PALM
950 MAUDE AVENUE
SUNNYVALE, CA. 94085
UNITED STATES

Prepared by

COMPLIANCE CERTIFICATION SERVICES
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	October 9, 2009	Initial Issue	--

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	PALM 950 MAUDE AVENUE SUNNYVALE, CA. 94085, UNITED STATES
EUT DESCRIPTION:	CDMA/1x EVDO Rel 0 / EVDO Rev. A with 802.11b/g and Bluetooth Phone
MODEL NUMBER:	P101EWW
DEVICE CATEGORY:	Portable
EXPOSURE CATEGORY:	General Population/Uncontrolled Exposure
DATE TESTED:	September 30 & October 7, 2009

THE HIGHEST SAR VALUES:

FCC / IC Rule Parts	Frequency Range [MHz]	The Highest SAR Values (1g_mW/g)	Limit (mW/g)
22H / RSS-132	824 - 849	Head: 0.785	1.6
24E / RSS-133	1850 - 1910	Head: 0.620; Body: 0.738	
15.247 / RSS-210	2412 – 2462	Head: 0.416	

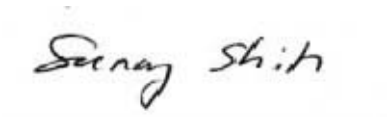
APPLICABLE STANDARDS AND TEST PROCEDURES:

STANDARDS AND TEST PROCEDURES	TEST RESULTS
• FCC OET Bulletin 65 Supplement C and the following specific Test Procedure: o KDB 941225 SAR test for 3G devices o KDB 248227 SAR measurement procedures for 802.11 a/b/g transmitters o KDB 648474 D01 SAR evaluation considerations for handsets with multiple transmitters and antennas	Pass
• RSS-102 ISSUE 3	Pass

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For CCS By:



SUNNY SHIH
ENGINEERING SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

CHAO YEN LIN
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC OET Bulletin 65 Supplement C, IC RSS 102 Issue 3, and the following specific FCC Test Procedure.

- KDB 941225 SAR test for 3G devices
- KDB 248227 SAR measurement procedures for 802.11 a/b/g transmitters
- KDB 648474 D01 SAR evaluation considerations for handsets with multiple transmitters and antennas

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due date		
				MM	DD	Year
Robot - Six Axes	Stäubli	RX90BL	N/A	N/A		
Robot Remote Control	Stäubli	CS7MB	3403-91535	N/A		
DASY4 Measurement Server	SPEAG	SEUMS001BA	1041	N/A		
Probe Alignment Unit	SPEAG	LB (V2)	261	N/A		
SAM Phantom (SAM1)	SPEAG	QD000P40CA	1185	N/A		
SAM Phantom (SAM2)	SPEAG	QD000P40CA	1050	N/A		
Oval Flat Phantom (ELI 4.0)	SPEAG	QD OVA001 B	1003	N/A		
Electronic Probe kit	HP	85070C	N/A	N/A		
S-Parameter Network Analyzer	Agilent	8753ES-6	MY40001647	11	14	2009
Signal Generator	Agilent	8753ES-6	MY40001647	11	14	2009
E-Field Probe	SPEAG	EX3DV4	3686	3	23	2010
Thermometer	ERTCO	639-1S	1718	5	1	2010
Data Acquisition Electronics	SPEAG	DAE3 V1	427	10	20	2009
System Validation Dipole	SPEAG	D835V2	4d002	4	23	2011
System Validation Dipole	SPEAG	D900V2	108	1	21	2010
System Validation Dipole	SPEAG	D1800V2	294	1	29	2010
System Validation Dipole	SPEAG	D1900V2	5d043	1	29	2010
System Validation Dipole	SPEAG	D2450V2	748	4	14	2010
System Validation Dipole	SPEAG	D5GHzV2	1003	11	21	2009
MXA Signal Analyzer	Agilent	N9020A	US48350984	10	23	2009
ESG Vector Signal Generator	Agilent	E4438C	US44271090	9	17	2010
Power Meter	Giga-tronics	8651A	8651404	1	11	2010
Power Sensor	Giga-tronics	80701A	1834588	1	11	2010
Amplifier	Mini-Circuits	ZVE-8G	90606	N/A		
Amplifier	Mini-Circuits	ZHL-42W	D072701-5	N/A		
Simulating Liquid	CCS	H1900	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	M1900	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	H1800	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	M1800	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	H1700	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	M1700	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	H835	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	M835	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	H900	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	M900	N/A	Within 24 hrs of first test		
Simulating Liquid	SPAEG	H2450	N/A	Within 24 hrs of first test		
Simulating Liquid	SPAEG	M2450	N/A	Within 24 hrs of first test		

4.2. MEASUREMENT UNCERTAINTY

Measurement uncertainty for 300 MHz – 3000 MHz

Uncertainty component	Tol. (±%)	Probe Dist.	Div.	Ci (1g)	Ci (10g)	Std. Unc.(±%)	
						Ui (1g)	Ui(10g)
Measurement System							
Probe Calibration	4.80	N	1	1	1	4.80	4.80
Axial Isotropy	4.70	R	1.732	0.707	0.707	1.92	1.92
Hemispherical Isotropy	9.60	R	1.732	0.707	0.707	3.92	3.92
Boundary Effects	1.00	R	1.732	1	1	0.58	0.58
Linearity	4.70	R	1.732	1	1	2.71	2.71
System Detection Limits	1.00	R	1.732	1	1	0.58	0.58
Readout Electronics	1.00	N	1	1	1	1.00	1.00
Response Time	0.80	R	1.732	1	1	0.46	0.46
Integration Time	2.60	R	1.732	1	1	1.50	1.50
RF Ambient Conditions - Noise	1.59	R	1.732	1	1	0.92	0.92
RF Ambient Conditions - Reflections	0.00	R	1.732	1	1	0.00	0.00
Probe Positioner Mechnical Tolerance	0.40	R	1.732	1	1	0.23	0.23
Probe Positioning With Respect to Phantom Shell	2.90	R	1.732	1	1	1.67	1.67
Extrapolation, interpolation, and integration algorithms for max. SAR evaluation	3.90	R	1.732	1	1	2.25	2.25
Test sample Related							
Test Sample Positioning	1.10	N	1	1	1	1.10	1.10
Device Holder Uncertainty	3.60	N	1	1	1	3.60	3.60
Power and SAR Drift Measurement	5.00	R	1.732	1	1	2.89	2.89
Phantom and Tissue Parameters							
Phantom Uncertainty	4.00	R	1.732	1	1	2.31	2.31
Liquid Conductivity - Target	5.00	R	1.732	0.64	0.43	1.85	1.24
Liquid Conductivity - Meas.	8.60	N	1	0.64	0.43	5.50	3.70
Liquid Permittivity - Target	5.00	R	1.732	0.6	0.49	1.73	1.41
Liquid Permittivity - Meas.	3.30	N	1	0.6	0.49	1.98	1.62
Combined Standard Uncertainty	RSS					11.44	10.49
Expanded Uncertainty (95% Confidence Interval)	K=2					22.87	20.98

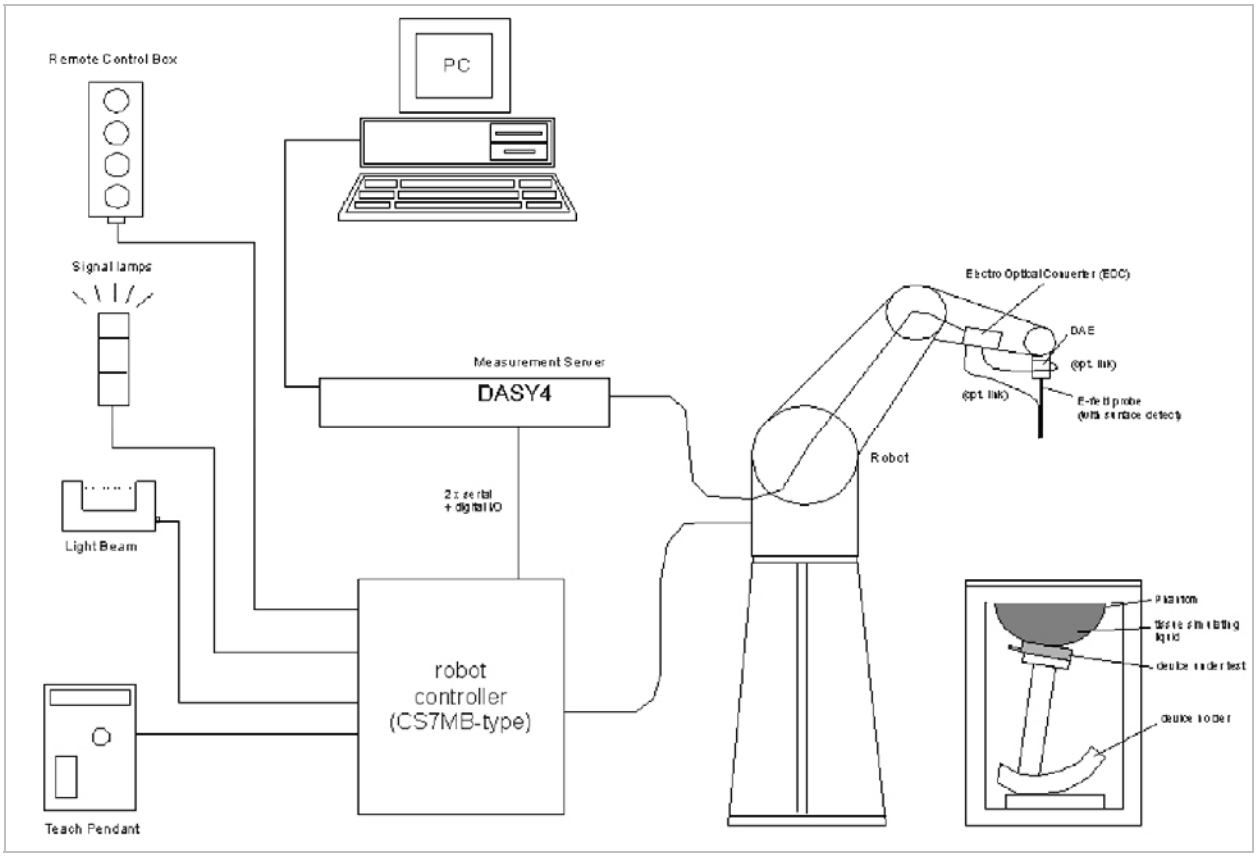
Notesfor table
1. Tol. - tolerance in influence quaitity
2. N - Nomal
3. R - Rectangular
4. Div. - Divisor used to obtain standard uncertainty
5. Ci - is te sensitivity coefficient

5. EQUIPMENT UNDER TEST

CDMA/1x EVDO Rel 0 / EVDO Rev. A with 802.11b/g and Bluetooth Phone

Normal operation:	• Held to head (open and closed – by sliding) • Worn on body
Body Worn Accessory	Headset
Antenna(s):	Internal
Other radio modules in host:	Bluetooth and 802.11bg

6. SYSTEM SPECIFICATIONS



The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- 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.
- 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.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 2000 or Windows XP.
- DASY4 software.
- Remote controls with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing to validate the proper functioning of the system.

7. COMPOSITION OF INGREDIENTS FOR TISSUE SIMULATING LIQUIDS

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

Ingredients (% by weight)	Frequency (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

Salt: 99+% Pure Sodium Chloride Sugar: 98+% Pure Sucrose
Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose
DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

8. LIQUID PARAMETERS CHECK

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectric parameters are within the tolerances of the specified target values. The relative permittivity and conductivity of the tissue material should be within ± 5% of the values given in the table below.

Reference Values of Tissue Dielectric Parameters for Head and Body Phantom (for 150 – 3000 MHz and 5800 MHz)

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in IEEE Standard 1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head 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 and extrapolated according to the head parameters specified in IEEE Standard 1528.

Target Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.8
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.9	55.2	0.97
900	41.5	0.97	55	1.05
915	41.5	0.98	55	1.06
1450	40.5	1.2	54	1.3
1610	40.3	1.29	53.8	1.4
1800 – 2000	40	1.4	53.3	1.52
2450	39.2	1.8	52.7	1.95
3000	38.5	2.4	52	2.73
5800	35.3	5.27	48.2	6

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

8.1. LIQUID CHECK RESULTS FOR 835 MHZ

Simulating Liquid Dielectric Parameters for Head 835 MHz

Room Ambient Temperature = 24°C; Relative humidity = 40% Measured by: Chaoyen Lin

f (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit (%)
835	e'	41.97	Relative Permittivity (ϵ_r):	41.973	41.5	1.14	± 5
	e"	19.56	Conductivity (σ):	0.909	0.90	0.98	± 5
900	e'	41.36	Relative Permittivity (ϵ_r):	41.359	41.5	-0.34	± 5
	e"	19.14	Conductivity (σ):	0.958	0.97	-1.20	± 5

Liquid temperature: 23 deg. C
September 30, 2009 3:25 PM

Frequency	e'	e"
800000000	42.2977	19.5547
805000000	42.2884	19.5654
810000000	42.2495	19.5465
815000000	42.2144	19.5751
820000000	42.1666	19.575
825000000	42.1368	19.5965
830000000	42.0733	19.5904
835000000	**41.973**	**19.5638**
840000000	41.8963	19.5412
845000000	41.8188	19.4775
850000000	41.7826	19.4439
855000000	41.6757	19.3802
860000000	41.607	19.3368
865000000	41.561	19.2974
870000000	41.4792	19.2388
875000000	41.4283	19.2121
880000000	41.3783	19.1856
885000000	41.3503	19.1626
890000000	41.3498	19.1614
895000000	41.3831	19.1394
900000000	**41.3591**	**19.1403**
905000000	41.3193	19.1362
910000000	41.2766	19.1825
915000000	41.195	19.2114
920000000	41.1179	19.2046
925000000	41.0359	19.2095
930000000	40.9612	19.1735
935000000	40.8672	19.1346
940000000	40.815	19.0732
945000000	40.775	19.0181
950000000	40.7726	18.9893
955000000	40.722	18.9574
960000000	40.692	18.9287

The conductivity (σ) can be given as:

$$\sigma = \omega \varepsilon_0 e'' = 2 \pi f \varepsilon_0 e''$$

where f = target f * 10^6

$\varepsilon_0 = 8.854 * 10^{-12}$

8.2. LIQUID CHECK RESULTS FOR 1900 MHZ

Simulating Liquid Dielectric Parameters for Muscle 1900 MHz

Room Ambient Temperature = 24°C; Relative humidity = 40% Measured by: Chaoyen Lin

f (MHz)	Muscle Liquid Parameters			Measured	Target	Delta (%)	Limit (%)
1900	e'	53.905	Relative Permittivity (ϵ_r):	53.9045	53.3	1.13	± 5
	e"	14.735	Conductivity (σ):	1.55751	1.52	2.47	± 5

Liquid temperature: 23 deg. C
September 30, 2009 8:34 AM

Frequency	e'	e"
1710000000	54.5064	14.2044
1720000000	54.4957	14.2699
1730000000	54.4945	14.3568
1740000000	54.4912	14.4379
1750000000	54.4908	14.4717
1760000000	54.4343	14.4725
1770000000	54.399	14.4404
1780000000	54.3377	14.4021
1790000000	54.2789	14.4028
1800000000	54.2154	14.4377
1810000000	54.1425	14.4925
1820000000	54.0749	14.5507
1830000000	54.0224	14.6473
1840000000	54.0181	14.7373
1850000000	53.9941	14.7866
1860000000	53.9666	14.8135
1870000000	53.9515	14.7997
1880000000	53.9518	14.7534
1890000000	53.9253	14.7285
1900000000	**53.9045**	**14.7353**
1910000000	53.8253	14.7718

The conductivity (σ) can be given as:

$$\sigma = \omega \varepsilon_0 e'' = 2 \pi f \varepsilon_0 e''$$

where f = target f * 10^6

$\varepsilon_0 = 8.854 * 10^{-12}$

Simulating Liquid Dielectric Parameters for Head 1900 MHz

Room Ambient Temperature = 25°C; Relative humidity = 35% Measured by: Chao Lin

f (MHz)	Liquid Parameters		Measured Results		Target	Delta (%)	Limit (%)
1900	e'	40.326	Relative Permittivity (ϵ_r):	40.3256	40.0	0.81	± 5
	e"	13.398	Conductivity (σ):	1.41612	1.40	1.15	± 5

Liquid temperature: 23 deg. C
September 30, 2009 08:30 AM

Frequency	e'	e"
1710000000	41.3773	12.7345
1720000000	41.329	12.7506
1730000000	41.311	12.7891
1740000000	41.2672	12.8646
1750000000	41.2343	12.9704
1760000000	41.1382	13.0402
1770000000	41.0324	13.1008
1780000000	40.9418	13.088
1790000000	40.8939	13.0926
1800000000	40.851	13.1034
1810000000	40.7954	13.092
1820000000	40.7468	13.0705
1830000000	40.7411	13.0678
1840000000	40.7344	13.1624
1850000000	40.6898	13.2805
1860000000	40.5675	13.3726
1870000000	40.4324	13.413
1880000000	40.3627	13.3795
1890000000	40.348	13.3651
1900000000	**40.3256**	**13.3976**
1910000000	40.294	13.4003

The conductivity (σ) can be given as:

$$\sigma = \omega \varepsilon_0 e'' = 2 \pi f \varepsilon_0 e''$$

where f = target f * 10^6

$\varepsilon_0 = 8.854 * 10^{-12}$

8.3. LIQUID CHECK RESULTS FOR 2450 MHZ

Simulating Liquid Dielectric Parameters for Head 2450 MHz

Room Ambient Temperature = 24°C; Relative humidity = 40% Measured by: Sunny Shih

f (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit (%)
2450	e'	39.19	Relative Permittivity (ϵ_r):	39.192	39.2	-0.02	± 5
	e"	13.45	Conductivity (σ):	1.833	1.80	1.82	± 5

Liquid Temperature: 23 deg. C
October 7, 2009 4:47 PM

Frequency	e'	e"
2400000000	39.3433	13.2496
2405000000	39.3265	13.3191
2410000000	39.3095	13.3577
2415000000	39.3044	13.4034
2420000000	39.2908	13.4252
2425000000	39.2757	13.4483
2430000000	39.2655	13.4503
2435000000	39.2546	13.4644
2440000000	39.2429	13.4707
2445000000	39.2148	13.4741
2450000000	**39.1922**	**13.4475**
2455000000	39.1231	13.4583
2460000000	39.1031	13.441
2465000000	39.0496	13.4107
2470000000	39.0268	13.3766
2475000000	38.988	13.3566
2480000000	38.9811	13.3539
2485000000	38.9767	13.3603
2490000000	38.962	13.3869
2495000000	38.9466	13.4254
2500000000	38.9476	13.4888

The conductivity (σ) can be given as:

$$\sigma = \omega \varepsilon_0 e'' = 2 \pi f \varepsilon_0 e''$$

where f = target f * 10^6

$\varepsilon_0 = 8.854 * 10^{-12}$

9. SYSTEM CHECK

The system performance check is performed prior to any usage of the system in order to guarantee reproducible results. The system performance check verifies that the system operates within its specifications of ±10%.

System Performance Check Measurement Conditions

- The measurements were performed in the flat section of the SAM twin phantom filled with Head or Body simulating liquid of the following parameters.
- The DASY4 system with an Isotropic E-Field Probe EX3DV4 was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 fine cube was chosen for cube
- Distance between probe sensors and phantom surface was set to 3 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 250 mW±3%.
- The results are normalized to 1 W input power.

IEEE Standard 1528-2003 Numerical reference SAR values (W/kg) for reference dipole and flat phantom

Frequency (MHz)	Distance (mm)	1g SAR [W/kg]	10g SAR [W/kg]	Local SAR at surface (above feed-point)
300	15	3	2	4.4
450	15	4.9	3.3	7.2
835	15	9.5	6.2	4.1
900	15	10.8	6.9	16.4
1450	10	29	16	5.02
1800	10	38.1	19.8	69.5
1900	10	39.7	20.5	72.1
2000	10	41.1	21.1	74.6
2450	10	52.4	24	104.2
3000	10	63.8	25.7	104.2

Reference SAR Values for Body-tissue (From SPEAG)

Dipole Type	Distance	Frequency	SAR (1g)	SAR (10g)	SAR (peak)
	(mm)	(MHz)	[W/kg]	[W/kg]	[W/kg]
D835V2	15	835	9.71	6.38	14.1
D1900V2	10	1900	39.8	20.8	69.6

9.1. SYSTEM CHECK RESULTS FOR D1900V2

System Validation Dipole: D1900V2 SN: 5d043

Date: September 30, 2009

Ambient Temperature = 24°C; Relative humidity = 35% Measured by: Chaoyen Lin

Medium	CW Signal (MHz)	Forward power (mW)	Measured (Normalized to 1 W)		Target	Delta (%)	Tolerance (%)
Body	1900	250	1g SAR:	41.8	39.8	5.03	±10
			10g SAR:	21.9	20.8	5.29	

9.2. SYSTEM CHECK RESULTS FOR D835V2

System Validation Dipole: D835V2 SN:4d002

Date: September 30, 2009

Ambient Temperature = 25°C; Relative humidity = 40% Measured by: Chaoyen Lin

Medium	CW Signal (MHz)	Forward power (mW)	Measured (Normalized to 1 W)		Target	Delta (%)	Tolerance (%)
Head	835	250	1g SAR:	9.73	9.5	2.42	±10
			10g SAR:	6.38	6.2	2.90	

9.3. SYSTEM CHECK RESULTS FOR D2450V2

System Validation Dipole: D2450V2 SN: 748

Date: October 07, 2009

Ambient Temperature = 24°C; Relative humidity = 40% Measured by: Chaoyen Lin

Medium	CW Signal (MHz)	Forward power (mW)	Measured (Normalized to 1 W)		Target	Delta (%)	Tolerance (%)
Body	2450	250	1g SAR:	53.2	51.2	3.91	±10
			10g SAR:	25	23.7	5.49	

10. OUTPUT POWER VERIFICATION

10.1. RF Output Power for WWAN

Maximum output power is verified on the Low, Middle and High channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E for 1xRTT, section 3.1.2.3.4 of 3GPP2 C.S0033-0/TIA-866 for Rel. 0 and section 4.3.4 of 3GPP2 C.S0033-A for Rev. A

10.2. RF Output Power for 1XRTT

This procedure assumes the CMU200

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 3333 for cell band
- Cell Info > Cell Parameters > System ID (SID) > 3333 for cell band
  > Network ID (NID) > 3333 for cell and PCS bands.
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)

RF Power Output for 1xRTT - Cell Band				
Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)		
		Ch. 1013/824.7MHz	Ch. 384/836.52MHz	Ch. 777/848.31MHz
		Average	Average	Average
RC3 (Fwd3, Rvs3)	1 (Voice)			
	2 (Loopback)	24.35	24.34	24.21
	3 (Voice)			
	55 (Loopback)	24.44	24.46	24.28
	32 (+ F-SCH)	24.32	24.36	24.24
	32 (+ SCH)	24.21	24.12	24.21
	68 (Voice)			

RF Power Output for 1xRTT - PCS Band				
Radio Configuration (RC)	Service Option (SO)	Conducted Output Power (dBm)		
		Ch. 25/1851.25MHz	Ch. 600/1880MHz	Ch. 1175/1908.75 MHz
		Average	Average	Average
RC3 (Fwd3, Rvs3)	1 (Voice)			
	2 (Loopback)	24.06	24.11	23.82
	3 (Voice)			
	55 (Loopback)	23.95	24.17	23.94
	32 (+ F-SCH)	24.02	24.16	24.02
	32 (+ SCH)	24.05	24.06	23.87
	68 (Voice)			
	32768 (Voice)			

10.3. RF Output Power for EVDO Release 0

This procedure assumes the CMU200

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > RTAP
  - RTAP Rate > 153.6 kbps
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:
  - Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
  - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
  - Cell Power > -105.5 dBm/1.23 MHz
  - Cell Band > (Select US Cellular or US PCS)
  - Channel > (Enter channel number)
  - Application Config > Enhanced Test Application Protocol > FTAP (default)
  - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
  - Rvs Power Ctrl > Active bits
  - Protocol Rel > 0 (1xEV-DO)
- Press “Start Data Connection” when “Session Open” appear in “Active Cell”
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RF Power Output for EV-DO Rel 0

Cell Band

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted power (dBm) Average
307.2 kbps (2 slot, QPSK)	153.6 kbps	1013	824.70	23.66
		384	836.52	23.75
		777	848.31	23.74

PCS Band

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted power (dBm) Average
307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	23.27
		600	1880.00	23.51
		1175	1908.75	23.36

10.4. RF Output Power for EVDO Release A

This procedure assumes the CMU200

EVDO Release A – RETAP
- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
> PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Release A - FETAP
- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
> PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)
- Access Network Info > Cell Parameters > Sector ID > 00000000 > Subnet Mask > 0
- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

RF Power Output Results for EV-DO Rev A

Cell Band

FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f (MHz)	Conducted power (dBm) Average
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	1013	824.70	23.86
		384	836.52	24.03
		777	848.31	23.91

PCS Band

FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f (MHz)	Conducted power (dBm) Average
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	23.93
		600	1880.00	24.07
		1175	1908.75	23.91

10.5. KDB 941225 Test Reduction Consideration

Head SAR Measurement
Based upon the power measurement in section 10.3 and 10.4 for 1xEVDO, Rev.0 and Rev. A power measurement is not ¼ dB higher than RC3. Thus, RC3/SO55 is used for head SAR measurement.

Body SAR Measurement
Based upon the power measurement in section 10.3 and 10.4, SAR for 1xEVDO Rev.0 and Rev. A power measurement is not ¼ dB higher than RC3. Thus, RC3/SO32 is used for body SAR measurement.

10.6. KDB 648474 Simultaneous Transmission Consideration

Bluetooth Antenna Transmitter
Since the output power of Bluetooth transmitter is less than 60/f(GHz) and its antenna is separate more than 5.0 (cm) from WWAN antenna, stand-alone SAR evaluation is not required.

Simultaneous Transmission
Since stand-alone SAR evaluation is not required for Bluetooth antenna and its antenna is more than 5.0 (cm) from other antennas, simultaneous transmission SAR evaluation is not required.

10.7. RF POWER OUTPUT FOR WLAN

802.11b

Channel	Frequency (MHz)	Power (dBm)
Low	2412	12.38
Middle	2437	13.54
High	2462	13.95

802.11g

Channel	Frequency (MHz)	Power (dBm)
Low	2412	9.12
Middle	2437	9.95
High	2462	10.94

11. SUMMARY OF TEST RESULTS

11.1. PCS Band

11.1.1. RIGHT HAND SIDE – Slide Open

Test position	Mode	UL Ch No.	f (MHz)	1g SAR (mW/g)	Limit (mW/g)
Touch	SO55, RC3	600	1880.00	0.62	1.6

11.1.2. BODY WORN – Slide

Test position	Mode	Separation distance (mm)	UL Ch No.	f (MHz)	1g SAR (mW/g)	Limit (mW/g)
LCD down	SO32, RC3	15	1175	1908.75	0.738	1.6

11.2. Cell Band

11.2.1. RIGHT HAND SIDE – Slide Close

Test position	Mode	UL Ch No.	f (MHz)	1g SAR (mW/g)	Limit (mW/g)
Touch	SO55, RC3	384	836.52	0.785	1.6

11.3. WLAN – Slide Open

11.3.1. LEFT HAND SIDE

Test position	Mode	Channel	f (MHz)	1g SAR (mW/g)	Limit (mW/g)
Touch	802.11b	6	2437.00	0.416	1.6

12. WORST-CASE SAR TEST PLOTS

WORST-CASE SAR PLOT for CDMA1900 **HEAD** POSITION

Date/Time: 9/30/2009 12:14:04 PM

Test Laboratory: Compliance Certification Services

Right Hand Side

DUT: Palm; Type: N/A; Serial: N/A

Communication System: CDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Right Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3686; ConvF(7.51, 7.51, 7.51); Calibrated: 3/23/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 10/20/2008
- Phantom: SAM 2 (Twin); Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Touch position - M-ch/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.717 mW/g

Touch position - M-ch/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.3 V/m; Power Drift = -0.234 dB
Peak SAR (extrapolated) = 0.889 W/kg
SAR(1 g) = 0.620 mW/g; SAR(10 g) = 0.411 mW/g
Maximum value of SAR (measured) = 0.713 mW/g

0 dB = 0.713mW/g

WORST-CASE SAR PLOT for CDMA1900 **BODY** POSITION

Date/Time: 9/30/2009 10:58:05 AM

Test Laboratory: Compliance Certification Services

Body Worn PCS Band

DUT: Palm; Type: NA; Serial: NA

Communication System: CDMA; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium parameters used (extrapolated): f = 1908.75 MHz; σ = 1.56 mho/m; ε_r = 53.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3686; ConvF(6.85, 6.85, 6.85); Calibrated: 3/23/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 10/20/2008
- Phantom: SAM 2 (Twin); Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

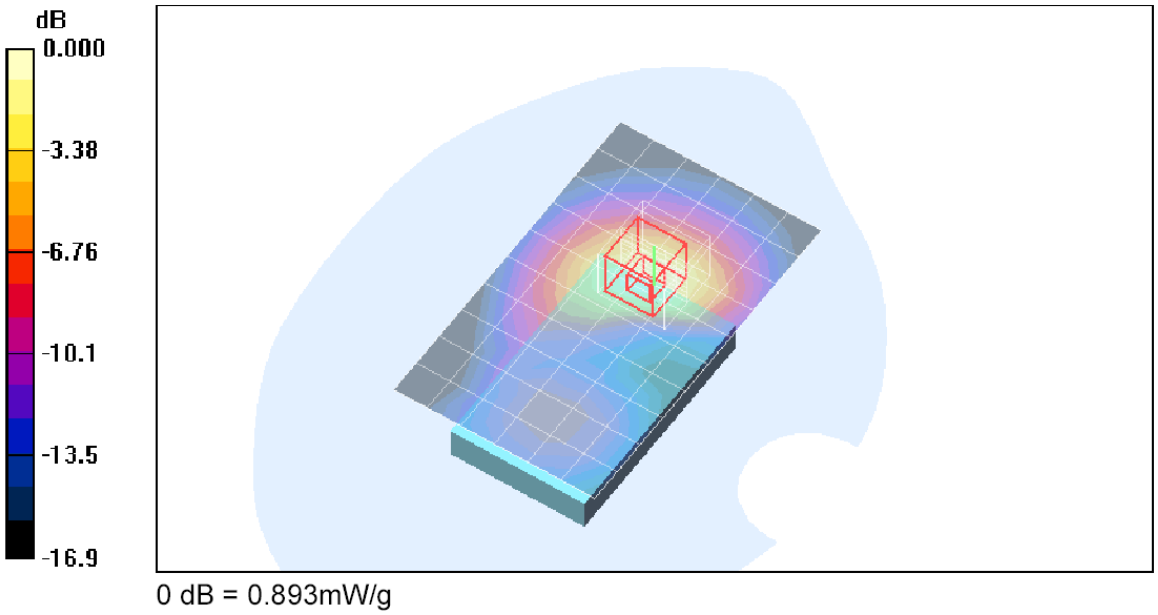
LCD Face down - M-ch/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.835 mW/g

LCD Face down - M-ch/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 5.38 V/m; Power Drift = 0.246 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.423 mW/g

Maximum value of SAR (measured) = 0.893 mW/g



0 dB = 0.893mW/g

WORST-CASE SAR PLOT for CDMA850 - **HEAD** POSITION

Date/Time: 9/30/2009 6:15:25 PM

Test Laboratory: Compliance Certification Services

Right Hand Side

DUT: Palm; Type: NA; Serial: NA

Communication System: CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.91 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Phantom section: Right Section

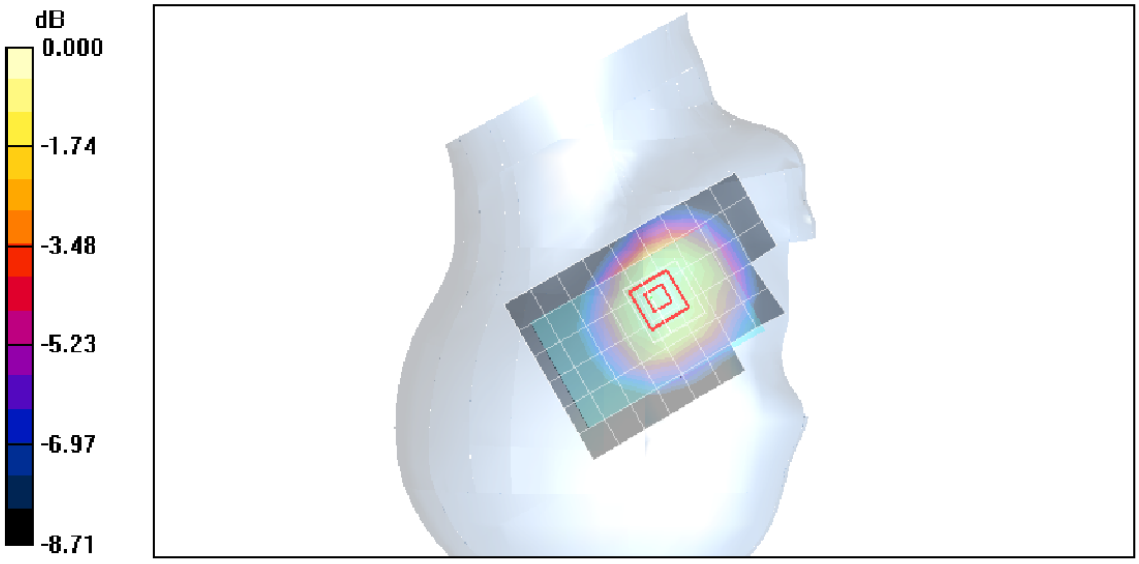
Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3686; ConvF(8.72, 8.72, 8.72); Calibrated: 3/23/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 10/20/2008
- Phantom: SAM 2 (Twin); Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

R-Touch - M-ch (closed)/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.825 mW/g

R-Touch - M-ch (closed)/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 9.8 V/m; Power Drift = 0.092 dB
Peak SAR (extrapolated) = 1.10W/kg
SAR(1 g) = 0.785 mW/g; SAR(10 g) = 0.523 mW/g
Maximum value of SAR (measured) = 1.01 mW/g



0 dB = 1.01mW/g

WORST-CASE SAR PLOT for WLAN - **HEAD** POSITION

Date/Time: 10/7/2009 6:14:02 PM

Test Laboratory: Compliance Certification Services

Left Hand Side

DUT: Palm; Type: N/A; Serial: N/A

Communication System: 802.11bg; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.83 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3
Phantom section: Left Section

Room Ambient Temperature: 24.0 deg. C; Liquid Temperature: 23.0 deg. C

DASY4 Configuration:
- Area Scan setting - Find Secondary Maximum Within: 2.0 dB and with a peak SAR value greater than 0.0012W/kg
- Probe: EX3DV4 - SN3686; ConvF(6.81, 6.81, 6.81); Calibrated: 3/23/2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 10/20/2008
- Phantom: SAM 2 (Twin); Type: SAM 2; Serial: 1050
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

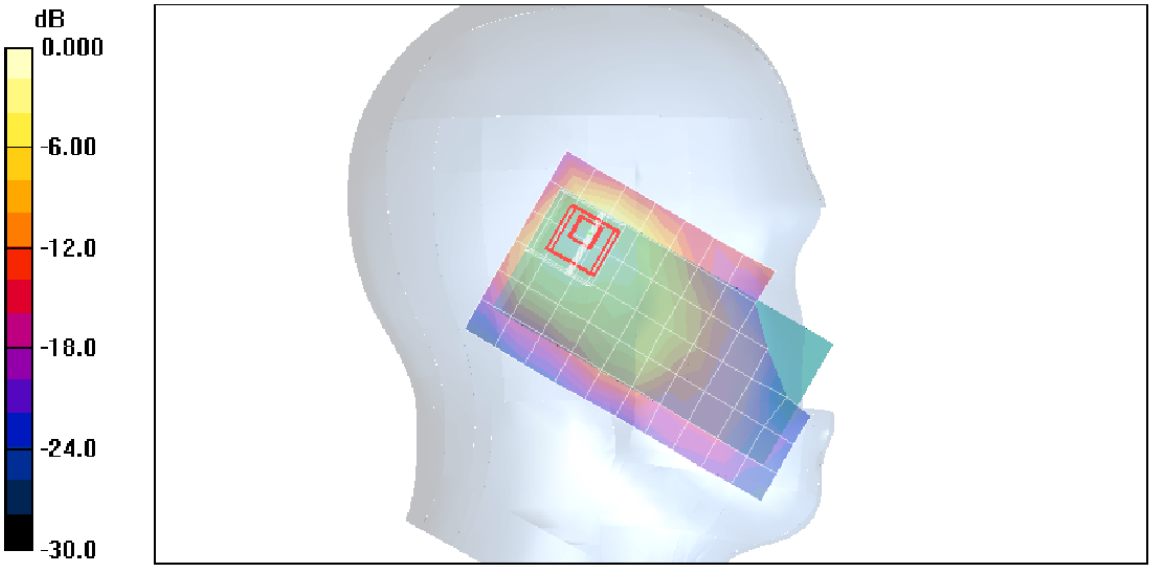
Tilt position - Mid-ch/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.526 mW/g

Tilt position - Mid-ch/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm

Reference Value = 15.6 V/m; Power Drift = -0.885 dB
Peak SAR (extrapolated) = 1.17 W/kg
SAR(1 g) = 0.416 mW/g; SAR(10 g) = 0.190 mW/g

Maximum value of SAR (measured) = 0.549 mW/g



0 dB = 0.549mW/g

13. ATTACHMENTS

No.	Contents	No. of page (s)
1	System Performance Check Plots	4
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3	Certificate of E-Field Probe – EX3DV4 SN3686	10
4	Certificate of System Validation Dipole - D835V2 SN:4d002	9
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