FCC OET BULLETIN 65 SUPPLEMENT C
&
INDUSTRY CANADA RSS-102

SAR EVALUATION REPORT

FOR

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

MODEL: P100EWW

FCC ID: O8F-CASC

IC: 3905A-CASC

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Revision History

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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 802.11 b/g and Bluetooth Phone
MODEL:	P100EWW
DEVICE CATEGORY:	Portable
EXPOSURE CATEGORY:	General Population/Uncontrolled Exposure
DATE TESTED:	January 30 and February 2-5, 2009

THE HIGHEST SAR VALUES:

FCC / IC Rule Parts	Frequency Range [MHz]	The Highest SAR(1g) Values	Limit (1g_mW/g)
22H / RSS-132	824 - 849	Head: 0.919 mW/g (Right Touch) Body: 0.656 mW/g (Face Down)	1.6
24E / RSS-133	1850 - 1910	Head: 0.634 mW/g (Right Touch) Body: 0.936 mW/g (Face Down)	1.6
15.247 / RSS-210	2400 – 2483.5	Head: 0.365 mW/g (Left Tilt) Body: 0.029 mW/g (Face Up)	1.6

REFERENCE STANDARDS/TEST PROCEDURES
FCC OET BULLETIN 65 SUPPLEMENT C, and the following specific FCC Test Procedures. o KDB 941225 D01 SAR Test for 3G devices v02 o KDB 248227 D01 SAR Measurement for 802.11abg v01r02 o KDB 648474 D01 SAR Handsets Multi Xmiter and Ant v01r05 IC RSS 102 Issue 2

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. 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. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Sunny Shih

SUNNY SHIH
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

Carol Baumann

CAROL BAUMANN
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 2 and the following specific FCC Test Procedures.

- KDB 941225 D01 SAR Test for 3G devices v02
- KDB 248227 D01 SAR Measurement for 802.11abg v01r02
- KDB 648474 D01 SAR Handsets Multi Xmiter and Ant v01r05

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://ts.nist.gov/Standards/scopes/2000650.htm.

4 CALIBRATION AND UNCERTAINTY

4.1 MEASURING INSTRUMENT CALIBRATION

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

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

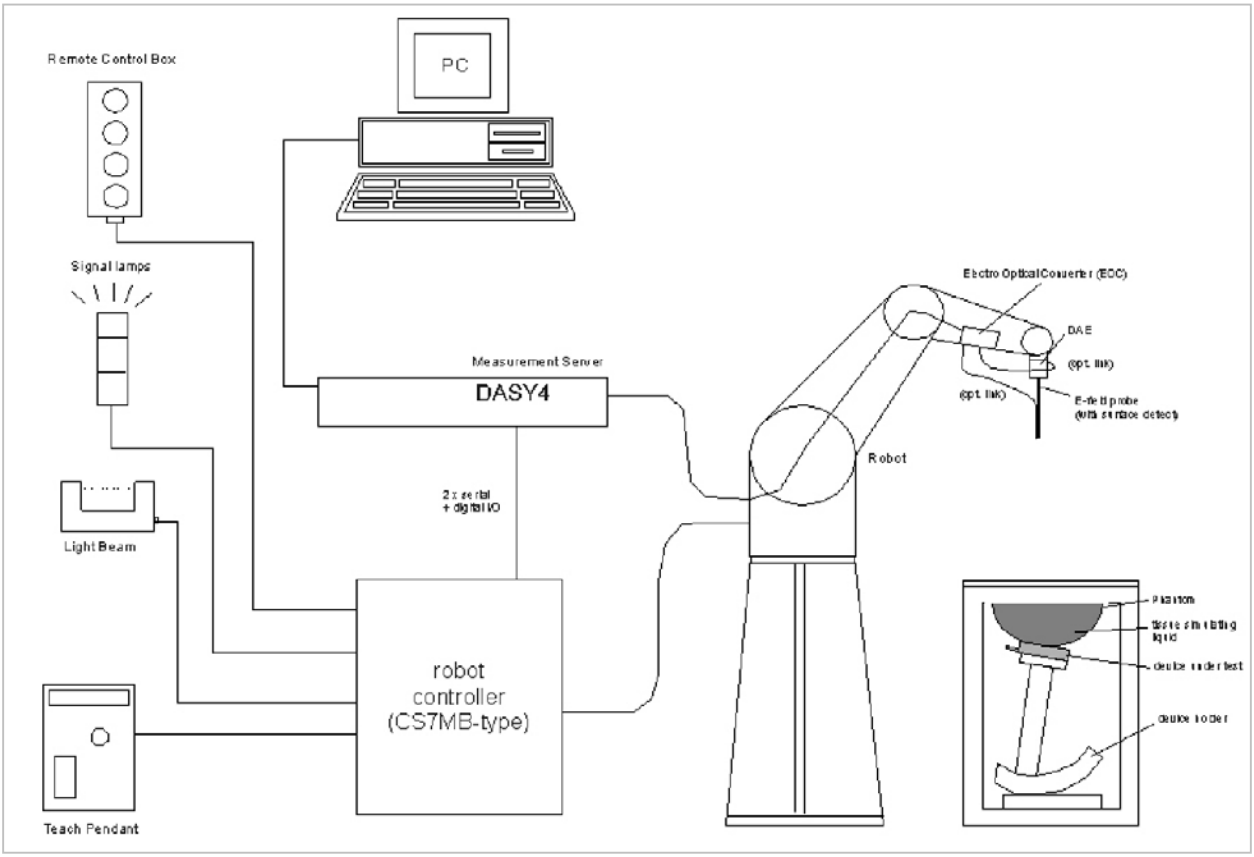
Notesfor table
1. Tol. - tolerance in influence quaitity
2. N - Nomal
3. R - Rectangular
4. Div. - Divisor used to obtain standard uncertainty
5. Ci - is te sensitivity coefficient

5 DEVICE UNDER TEST (DUT) DESCRIPTION

5.1 DESCRIPTION OF EUT

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:	• 802.11bg • Bluetooth 802.11bg and Bluetooth transmitters share a common antenna

6 SYSTEM DESCRIPTION



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 to validate the proper functioning of the system.

6.1 COMPOSITION OF INGREDIENTS FOR TISSUE SIMULATING LIQUIDS

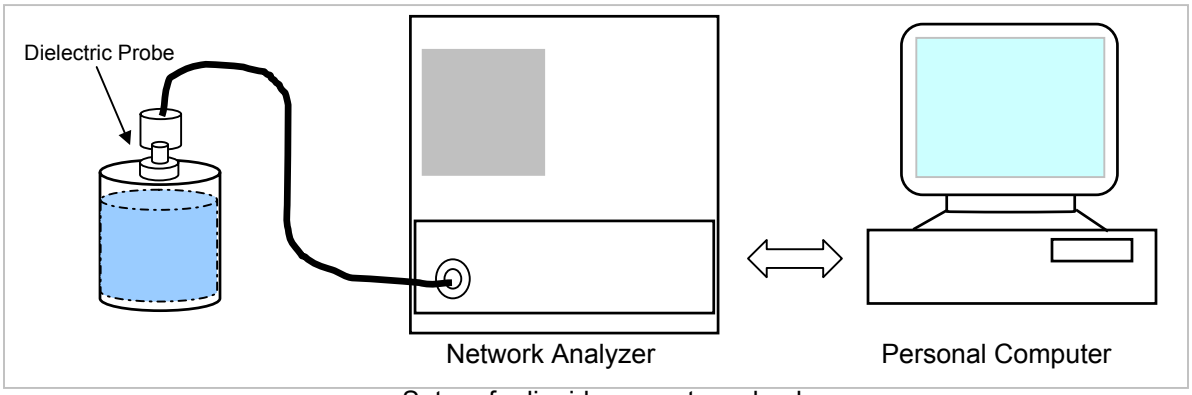
The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

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

7 SIMULATING LIQUID 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.



Set-up for liquid parameters check

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	0.80
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

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

7.1 SIMULATING LIQUID PARAMETER CHECK RESULT

Simulating Liquid Dielectric Parameters Check Result @ Muscle 1900 MHz

Room Ambient Temperature = 25°C; Relative humidity = 28% Measured by: Carol Baumann

Simulating Liquid		Parameters			Measured	Target	Deviation (%)	Limit (%)
f (MHz)	Depth (cm)							
1900	15	e'	50.9328	Relative Permittivity (ϵ_r):	50.9328	53.3	-4.44	± 5
		e"	15.0464	Conductivity (σ):	1.59040	1.52	4.63	± 5

Liquid Check
Ambient temperature: 25 deg. C; Liquid temperature: 24 deg. C
January 30, 2009 08:46 AM

Frequency	e'	e"
1710000000.	51.9816	14.1736
1720000000.	51.9553	14.1633
1730000000.	51.9206	14.1993
1740000000.	51.9129	14.2932
1750000000.	51.8657	14.4511
1760000000.	51.7374	14.6028
1770000000.	51.5961	14.6901
1780000000.	51.5081	14.7027
1790000000.	51.4711	14.7139
1800000000.	51.4354	14.7029
1810000000.	51.4089	14.6453
1820000000.	51.3730	14.5497
1830000000.	51.4179	14.5539
1840000000.	51.4469	14.6638
1850000000.	51.3585	14.8590
1860000000.	51.1648	14.9981
1870000000.	50.9832	15.0392
1880000000.	50.9065	15.0134
1890000000.	50.9242	15.0136
1900000000.	**50.9328**	**15.0464**
1910000000.	50.9057	15.0323

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 Check Result @ Head 1900 MHz

Room Ambient Temperature = 25°C; Relative humidity = 28% Measured by: Carol Baumann

Simulating Liquid		Parameters			Measured	Target	Deviation (%)	Limit (%)
f (MHz)	Depth (cm)							
1900	15	e'	39.5591	Relative Permittivity (ϵ_r):	39.5591	40.0	-1.10	± 5
		e"	13.1323	Conductivity (σ):	1.38808	1.40	-0.85	± 5

Liquid Check
Ambient temperature: 25 deg. C; Liquid temperature: 24 deg. C
January 30, 2009 11:37 AM

Frequency	e'	e"
1710000000.	40.3534	12.5091
1720000000.	40.3448	12.5540
1730000000.	40.3497	12.6400
1740000000.	40.3214	12.7298
1750000000.	40.3178	12.8012
1760000000.	40.2583	12.8383
1770000000.	40.1949	12.8563
1780000000.	40.1124	12.8405
1790000000.	40.0302	12.8282
1800000000.	39.9599	12.8185
1810000000.	39.8723	12.8379
1820000000.	39.8165	12.8624
1830000000.	39.7715	12.9166
1840000000.	39.7658	13.0123
1850000000.	39.7401	13.1022
1860000000.	39.6926	13.1784
1870000000.	39.6458	13.1915
1880000000.	39.6197	13.1648
1890000000.	39.5878	13.1420
1900000000.	**39.5591**	**13.1323**
1910000000.	39.4856	13.1250

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 Check Result @ Head 835 MHz

Room Ambient Temperature = 25°C; Relative humidity = 28% Measured by: Carol Baumann

Simulating Liquid			Parameters			Measured	Target	Deviation (%)	Limit (%)
f (MHz)	Temp. (°C)	Depth (cm)							
835	24	15	e'	42.1585	Relative Permittivity (ϵ_r):	42.1585	41.5	1.59	± 5
			e"	18.6060	Conductivity (σ):	0.86429	0.90	-3.97	± 5

Liquid Check
Ambient temperature: 25 deg. C; Liquid temperature: 24 deg. C
February 02, 2009 09:04 AM

Frequency	e'	e"
750000000.	43.3294	18.8002
755000000.	43.2871	18.8270
760000000.	43.2748	18.8341
765000000.	43.2792	18.8591
770000000.	43.2841	18.8835
775000000.	43.2347	18.9109
780000000.	43.2032	18.9999
785000000.	43.1558	19.0260
790000000.	43.0872	19.0907
795000000.	42.9577	19.1279
800000000.	42.8145	19.1473
805000000.	42.6721	19.1234
810000000.	42.5305	19.0570
815000000.	42.4227	18.9716
820000000.	42.3207	18.8646
825000000.	42.2333	18.7497
830000000.	42.1705	18.6820
835000000.	**42.1585**	**18.6060**
840000000.	42.1303	18.5457
845000000.	42.0807	18.5543
850000000.	42.0607	18.5545
855000000.	42.0780	18.5746
860000000.	42.0684	18.5714
865000000.	42.0394	18.6044
870000000.	42.0315	18.6715
875000000.	41.9843	18.7395
880000000.	41.9418	18.7854
885000000.	41.8625	18.8721
890000000.	41.7284	18.9048
895000000.	41.6089	18.9134
900000000.	41.4776	18.8616

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 Check Result @ Muscle 835 MHz

Room Ambient Temperature = 25°C; Relative humidity = 28% Measured by: Carol Baumann

Simulating Liquid		Parameters			Measured	Target	Deviation (%)	Limit (%)
f (MHz)	Depth (cm)							
835	15	e'	54.0199	Relative Permittivity (ε_r):	54.0199	55.2	-2.14	± 5
		e"	20.6552	Conductivity (σ):	0.95948	0.97	-1.08	± 5

Liquid Check
Ambient temperature: 25 deg. C; Liquid temperature: 24 deg. C
February 02, 2009 11:45 AM

Frequency	e'	e"
750000000.	54.9393	21.0669
755000000.	54.8706	21.1005
760000000.	54.8811	21.0834
765000000.	54.9170	21.1044
770000000.	54.8967	21.0620
775000000.	54.8886	21.1204
780000000.	54.8603	21.1503
785000000.	54.8294	21.1690
790000000.	54.7659	21.2220
795000000.	54.6552	21.2340
800000000.	54.5392	21.2254
805000000.	54.3941	21.1936
810000000.	54.2940	21.1243
815000000.	54.1846	21.0256
820000000.	54.1010	20.9024
825000000.	54.0322	20.8030
830000000.	54.0133	20.7474
835000000.	**54.0199**	**20.6552**
840000000.	53.9654	20.5752
845000000.	53.9603	20.5976
850000000.	53.9477	20.5680
855000000.	53.9523	20.5537
860000000.	53.9231	20.5626
865000000.	53.9207	20.5828
870000000.	53.9110	20.6374
875000000.	53.8765	20.6796
880000000.	53.8372	20.7338
885000000.	53.7552	20.7831
890000000.	53.6400	20.8241
895000000.	53.5650	20.8287
900000000.	53.4369	20.7342

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 Parameter Check Result @ Head 2450 MHz

Room Ambient Temperature = 25°C; Relative humidity = 37% Measured by: Carol Baumann

Simulating Liquid		Parameters			Measured	Target	Deviation (%)	Limit (%)
f (MHz)	Depth (cm)							
2450	15	e'	38.3618	Relative Permittivity (ϵ_r):	38.3618	39.2	-2.14	± 5
		e"	13.3996	Conductivity (σ):	1.82632	1.80	1.46	± 5

Liquid Check
Ambient temperature: 25 deg. C; Liquid temperature: 24 deg. C
February 05, 2009 09:06 AM

Frequency	e'	e"
2400000000.	38.6401	13.4608
2405000000.	38.5937	13.4168
2410000000.	38.6410	13.3016
2415000000.	38.5609	13.2335
2420000000.	38.5343	13.2870
2425000000.	38.4585	13.2874
2430000000.	38.4635	13.3452
2435000000.	38.3596	13.3609
2440000000.	38.3882	13.3965
2445000000.	38.3063	13.4248
2450000000.	**38.3618**	**13.3996**
2455000000.	38.3041	13.5621
2460000000.	38.3918	13.6807
2465000000.	38.3730	13.6842
2470000000.	38.5572	13.7743
2475000000.	38.4732	13.8050
2480000000.	38.4563	13.8426
2485000000.	38.4718	13.8918
2490000000.	38.4468	13.8701
2495000000.	38.2798	13.8140
2500000000.	38.4065	13.8241

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 SYSTEM PERFORMANCE 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 Body simulating liquid of the following parameters.
- The DASY4 system with an Isotropic E-Field Probe EX3DV3-SN: 3531 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 7 x 7 x 7 fine cube was chosen for cube integration(dx=dy=5mm; dz=5mm).
  For 5 GHz band - Special 7 x 7 x 7 fine cube was chosen for cube integration (dx=dy=4.3mm; dz=3mm)
- Distance between probe sensors and phantom surface was set to 4 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.0mm
- The dipole input power (forward power) was 250 mW±3%.
- The results are normalized to 1 W input power.

Reference SAR Values for Body-Tissue

In the table below, the numerical reference SAR values of a SPEAG validation dipoles placed below the flat phantom filled with body-tissue simulating liquid are given. The reference SAR values were calculated using the finite-difference time-domain method and the geometry parameters.

Dipole Type	Distance (mm)	Frequency (MHz)	SAR (1g) [W/kg]	SAR (10g) [W/kg]	SAR (peak) [W/kg]
D450V2	15	450	5.01	3.36	7.22
D835V2	15	835	**9.71**	**6.38**	14.1
D900V2	15	900	11.1	7.17	16.3
D1450V2	10	1450	29.6	16.6	49.8
D1800V2	10	1800	38.5	20.3	67.5
D1900V2	10	1900	**39.8**	**20.8**	69.6
D2000V2	10	2000	40.9	21.2	71.5
D2450V2	10	2450	51.2	23.7	97.6

Note: All SAR values normalized to 1 W forward power.

8.1 SYSTEM PERFORMANCE CHECK RESULTS

System Validation Dipole: D1900V2 SN:5d043

The dipole input power (forward power): 250 mW

Results

Date: January 30, 2009

Ambient Temperature = 25°C; Relative humidity = 28% Measured by: Carol Baumann

Body Simulating Liquid			Normalized to 1 W		Target	Deviation (%)	Limit (%)
f (MHz)	Temp. (°C)	Depth (cm)					
1900	24	15	1g	38.8	39.8	-2.51	± 10
			10g	20.1	20.8	-3.37	± 10

System Validation Dipole: D835V2 SN:4d002

The dipole input power (forward power): 250 mW

Results

Date: February 2, 2009

Ambient Temperature = 25°C; Relative humidity = 28% Measured by: Carol Baumann

Body Simulating Liquid			Normalized to 1 W		Target	Deviation (%)	Limit (%)
f (MHz)	Temp. (°C)	Depth (cm)					
835	24	15	1g	8.99	9.5	-5.37	± 10
			10g	5.89	6.2	-5.00	± 10

System Validation Dipole: D2450V2 SN: 748

The dipole input power (forward power): 250 mW

Results

Date: February 5, 2009

Ambient Temperature = 25°C; Relative humidity = 37% Measured by: Carol Baumann

Body Simulating Liquid			Normalized to 1 W		Target	Deviation (%)	Limit (%)
f (MHz)	Temp. (°C)	Depth (cm)					
2450	24	15	1g	49.2	52.4	-6.11	± 10
			10g	22.2	24.0	-7.50	± 10

9 OUTPUT POWER VERIFICATION

9.1 RF POWER OUTPUT 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

9.1.1 RF POWER OUTPUT FOR 1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 8
  > Network ID (NID) > 65535
- 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 Results for 1XRTT

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	Peak	Average	Peak	Average	Peak
RC1 (Fwd1, Rvs1)	1 (Voice)	n/a	n/a	n/a	n/a	n/a	n/a
	2 (Loopback)	24.35	28.16	24.30	28.25	24.22	28.47
	3 (Voice)	24.30	28.33	24.34	28.38	24.32	28.48
	55 (Loopback)	24.40	28.28	24.44	**28.51**	24.27	28.32
	68 (Voice)	24.32	28.36	24.35	28.35	24.36	28.41
RC2 (Fwd2, Rvs2)	9 (Loopback)	24.37	28.46	24.35	28.36	24.3	28.35
	17 (Voice)	24.36	28.31	24.37	28.33	24.37	28.42
	55 (Loopback)	24.32	28.29	23.34	28.36	24.27	28.35
	32768 (Voice)	24.38	28.36	24.35	28.47	24.38	28.28
RC3 (Fwd3, Rvs3)	1 (Voice)	n/a	n/a	n/a	n/a	n/a	n/a
	2 (Loopback)	24.37	27.96	24.35	28.17	24.20	28.2
	3 (Voice)	24.30	27.90	24.30	28.17	24.20	28.27
	55 (Loopback)	24.42	28.00	**24.45**	28.01	24.27	28.10
	32 (+ F-SCH)	24.33	27.94	**24.35**	28.10	24.25	28.20
	32 (+ SCH)	24.20	27.81	24.10	28.19	24.20	28.10
	68 (Voice)	23.87	27.55	24.05.	27.80	24.05	28.15
RC4 (Fwd4, Rvs3)	1 (Voice)	n/a	n/a	n/a	n/a	n/a	n/a
	2 (Loopback)	24.20	27.82	24.32	28.03	24.20	28.07
	3 (Voice)	24.22	27.95	24.28	28.10	24.10	24.14
	55 (Loopback)	24.37	28.00	24.30	28.17	24.10	27.93
	32 (+ F-SCH)	24.10	27.87	24.37	28.11	24.12	28.02
	32 (+ SCH)	24.10	27.89	24.12	28.09	24.12	28.17
	68 (Voice)	24.20	28.01	24.35	28.18	24.10	28.04
RC5 (Fwd5, Rvs4)	9 (Loopback)	24.22	27.82	24.35	28.03	24.20	28.44
	17 (Voice)	24.20	28.05	24.36	28.09	24.33	28.16
	55 (Loopback)	24.25	28.01	24.18	28.02	24.25	28.01
	32768 (Voice)	24.26	27.74	24.31	27.91	24.16	28.17

RF Power Output Results for 1XRTT

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	Peak	Average	Peak	Average	Peak
RC1 (Fwd1, Rvs1)	1 (Voice)	n/a	n/a	n/a	n/a	n/a	n/a
	2 (Loopback)	24.10	28.71	24.10	28.44	24.03	28.30
	3 (Voice)	24.13	28.24	24.13	28.34	24.00	28.60
	55 (Loopback)	24.00	28.75	24.12	**28.75**	24.05	28.33
	68 (Voice)	24.15	28.35	24.25	28.69	24.04	28.55
RC2 (Fwd2, Rvs2)	9 (Loopback)	24.10	28.44	24.14	28.61	23.90	28.63
	17 (Voice)	24.19	28.68	24.17	28.43	24.07	28.42
	55 (Loopback)	24.13	28.61	24.12	28.48	24.10	28.51
	32768 (Voice)	24.10	28.73	24.18	28.60	24.15	28.49
RC3 (Fwd3, Rvs3)	1 (Voice)	n/a	n/a	n/a	n/a	n/a	n/a
	2 (Loopback)	24.07	28.36	24.10	28.39	23.80	28.29
	3 (Voice)	23.95	28.52	24.00	28.56	23.91	28.13
	55 (Loopback)	23.94	28.64	**24.15**	28.28	23.92	28.12
	32 (+ F-SCH)	24.03	28.33	**24.14**	28.34	24.01	28.39
	32 (+ SCH)	24.03	28.25	24.05	28.45	23.85	28.06
	68 (Voice)	23.90	28.47	24.01	28.26	24.00	28.28
RC4 (Fwd4, Rvs3)	1 (Voice)	n/a	n/a	n/a	n/a	n/a	n/a
	2 (Loopback)	23.96	28.58	23.92	28.41	23.80	28.52
	3 (Voice)	23.92	28.65	23.91	28.32	23.82	28.40
	55 (Loopback)	23.96	28.56	23.90	28.43	23.77	28.32
	32 (+ F-SCH)	23.92	28.69	23.93	28.34	23.81	28.09
	32 (+ SCH)	23.92	28.18	23.84	28.12	23.75	28.51
	68 (Voice)	23.71	28.29	23.92	28.25	23.80	28.20
RC5 (Fwd5, Rvs4)	9 (Loopback)	23.90	28.34	23.95	28.28	23.80	28.46
	17 (Voice)	23.70	28.61	23.88	28.27	23.80	28.18
	55 (Loopback)	23.90	28.13	23.91	28.22	23.79	28.07
	32768 (Voice)	23.71	28.46	23.88	28.32	23.72	28.20

9.1.2 RF POWER OUTPUT FOR EVDO REV 0

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

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	Peak
307.2 kbps (2 slot, QPSK)	153.6 kbps	1013	824.70	23.68	27.82
		384	836.52	23.77	28.13
		777	848.31	23.77	28.04

PCS Band

FTAP Rate	RTAP Rate	Channel	f (MHz)	Conducted power (dBm)	
				Average	Peak
307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	23.29	28.30
		600	1880.00	23.50	28.53
		1175	1908.75	23.38	28.22

9.1.3 RF POWER OUTPUT FOR EVDO REV A

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

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	Peak
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	1013	824.70	23.87	28.49
		384	836.52	24.04	28.47
		777	848.31	23.90	28.13

PCS Band

FETAP-Traffic Format	RETAP-Data Payload Size	Channel	f (MHz)	Conducted power (dBm)	
				Average	Peak
307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	23.94	28.66
		600	1880.00	24.08	28.58
		1175	1908.75	23.92	28.67

9.1.4 KDB 941225 TEST REDUCTION CONSIDERATION

Head SAR Measurement
Based upon the power measurement in section 9.1.1, SAR for RC1 is not required due to the output power is not ¼ dB higher than RC3.
Based upon the power measurement in section 9.1.2 and 9.1.3 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 9.1.1, SAR for multiple code channel (FCH+SCH) is not required due to the output power is not ¼ dB higher than RC3/SO32.
Based upon the power measurement in section 9.1.2 and 9.1.3, 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.

9.1.5 RF POWER OUTPUT FOR WLAN

The cable assembly insertion loss of 17 dB (including 10 dB pad and 7 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

802.11b

Channel	Frequency (MHz)	Power (dBm)
Low	2412	12.37
Middle	2437	13.53
High	2462	13.90

802.11g

Channel	Frequency (MHz)	Power (dBm)
Low	2412	9.02
Middle	2437	9.80
High	2462	10.92

10 SAR MEASURMENT RESULTS FOR WWAN

10.1 PCS BAND

10.1.1 LEFT HAND SIDE

CDMA2000 1xRTT - Radio Configuration (RC): 3, Service Option (SO): 55				
Test Position	Channel	f (MHz)	1g_SAR (mW/g)	
			Measured	Limit
Touch (closed)	25	1851.25		1.6
	600	1880	0.460	
	1175	1908.75		
Touch (open)	25	1851.25		1.6
	600	1880	0.546	
	1175	1908.75		
Tilt (15°) (closed)	25	1851.25		1.6
	600	1880	0.145	
	1175	1908.75		
Tilt (15°) (open)	25	1851.25		1.6
	600	1880	0.354	
	1175	1908.75		

10.1.2 RIGHT HAND SIDE

CDMA2000 1xRTT - Radio Configuration (RC): 3, Service Option (SO): 55				
Test Position	Channel	f (MHz)	1g_SAR (mW/g)	
			Measured	Limit
Touch (closed)	25	1851.25		1.6
	600	1880	0.461	
	1175	1908.75		
Touch (open)	25	1851.25		1.6
	600	1880	**0.634**	
	1175	1908.75		
Touch (open, w/ inductive backcover)	600	1880	0.581	1.6
Tilt (15°) (closed)	25	1851.25		1.6
	600	1880	0.246	
	1175	1908.75		
Tilt (15°) (open)	25	1851.25		1.6
	600	1880	0.438	
	1175	1908.75		

Note: SAR for head exposure configurations is measured in RC3 with the DUT configured to transmit at full rate using Loopback Service Option SO55.

10.1.3 BODY WORN

CDMA2000 1xRTT - Radio Configuration (RC): 3, Service Option (SO): 32					
Body Test Configuration	Separation Distance (mm)	Channel	f (MHz)	1g_SAR (mW/g)	
				Measured	Limit
Face Down	15	25	1851.25	0.843	1.6
		600	1880	0.886	
		1175	1908.75	**0.936**	
Face Down (w/ inductive backcover)	15	1175	1908.75	0.766	1.6
Face Up	15	25	1851.25		1.6
		600	1880	0.225	
		1175	1908.75		

Notes:

1. The modes with highest output power channel were chosen for the testing.
2. The SAR measured at the middle channel for this configuration is at least 3 dB lower (0.8 mW/g) than SAR limit (1.6 mW/g), thus testing at low & high channel is optional.
3. SAR for body exposure configurations is measured in RC3 with the DUT configured using TDSO / SO32, to transmit at full rate on FCH with all other code channels disabled.

10.2 CELL BAND

10.2.1 LEFT HAND SIDE

CDMA2000 1xRTT - Radio Configuration (RC): 3, Service Option (SO): 55				
Test Position	Channel	f (MHz)	1g_SAR (mW/g)	
			Measured	Limit
Touch (closed)	1013	824.7		1.6
	384	836.52	0.757	
	777	848.31		
Touch (open)	1013	824.7		1.6
	384	836.52	0.710	
	777	848.31		
Tilt (15°) (closed)	1013	824.7		1.6
	384	836.52	0.372	
	777	848.31		
Tilt (15°) (open)	1013	824.7		1.6
	384	836.52	0.305	
	777	848.31		

10.2.2 RIGHT HAND SIDE

CDMA2000 1xRTT - Radio Configuration (RC): 3, Service Option (SO): 55				
Test Position	Channel	f (MHz)	1g_SAR (mW/g)	
			Measured	Limit
Touch (closed)	1013	824.7	0.762	1.6
	384	836.52	**0.919**	
	777	848.31	0.779	
Touch (closed, w/ inductive backcover)	384	836.52	0.890	1.6
Touch (open)	1013	824.7		1.6
	384	836.52	0.678	
	777	848.31		
Tilt (15°) (closed)	1013	824.7		1.6
	384	836.52	0.438	
	777	848.31		
Tilt (15°) (open)	1013	824.7		1.6
	384	836.52	0.299	
	777	848.31		

Note: SAR for head exposure configurations is measured in RC3 with the DUT configured to transmit at full rate using Loopback Service Option SO55.

10.2.3 BODY WORN

CDMA2000 1xRTT - Radio Configuration (RC): 3, Service Option (SO): 32					
Body Test Configuration	Separation Distance (mm)	Channel	f (MHz)	1g_SAR (mW/g)	
				Measured	Limit
Face Down	15	1013	824.7		1.6
		384	836.52	**0.656**	
		777	848.31		
Face Down (w/ inductive backcover)	15	384	836.52	0.614	1.6
Face Up	15	1013	824.7		1.6
		384	836.52	0.368	
		777	848.31		

Notes:

1. The modes with highest output power channel were chosen for the testing.
2. The SAR measured at the middle channel for this configuration is at least 3 dB lower (0.8 mW/g) than SAR limit (1.6 mW/g), thus testing at low & high channel is optional.
3. SAR for body exposure configurations is measured in RC3 with the DUT configured using TDSO / SO32, to transmit at full rate on FCH with all other code channels disabled.

11 SAR MEASUREMENT RESULTS FOR WLAN

Since WLAN and Bluetooth share a common antenna, simultaneous transmission evaluation was performed for worst-case test positions.

11.1 LEFT HAND SIDE

802.11b mode				
Test Position	Channel	f (MHz)	1g_SAR (mW/g)	
			Measured	Limit
Touch (closed)	1	2412		1.6
	6	2437	0.282	
	11	2462		
Touch (open)	1	2412		1.6
	6	2437	0.364	
	11	2462		
Tilt (15°) (closed)	1	2412		1.6
	6	2437	0.227	
	11	2462		
Tilt (15°) (open)	1	2412		1.6
	6	2437	**0.365**	
	11	2462		
Tilt (15°) (open w/ inductive backcover)	6	2437	0.344	1.6
Tilt (15°) (open, Co-Tx w/ BT)	6	2437	0.345	1.6

11.2 RIGHT HAND SIDE

802.11b mode				
Test Position	Channel	f (MHz)	1g_SAR (mW/g)	
			Measured	Limit
Touch (closed)	1	2412		1.6
	6	2437	0.104	
	11	2462		
Touch (open)	1	2412		1.6
	6	2437	0.243	
	11	2462		
Tilt (15°) (closed)	1	2412		1.6
	6	2437	0.118	
	11	2462		
Tilt (15°) (open)	1	2412		1.6
	6	2437	0.321	
	11	2462		

11.3 BODY WORN

802.11b mode					
Body Test Configuration	Separation Distance (mm)	Channel	f (MHz)	1g_SAR (mW/g)	
				Measured	Limit
Face Down	15	1	2412		1.6
		6	2437	0.018	
		11	2462		
Face Up	15	1	2412		1.6
		6	2437	**0.029**	
		11	2462		
Face Up (w/ inductive backcover)	15	6	2437	0.020	1.6
Face Up (Co-Tx w/ BT)	15	6	2437	0.020	1.6

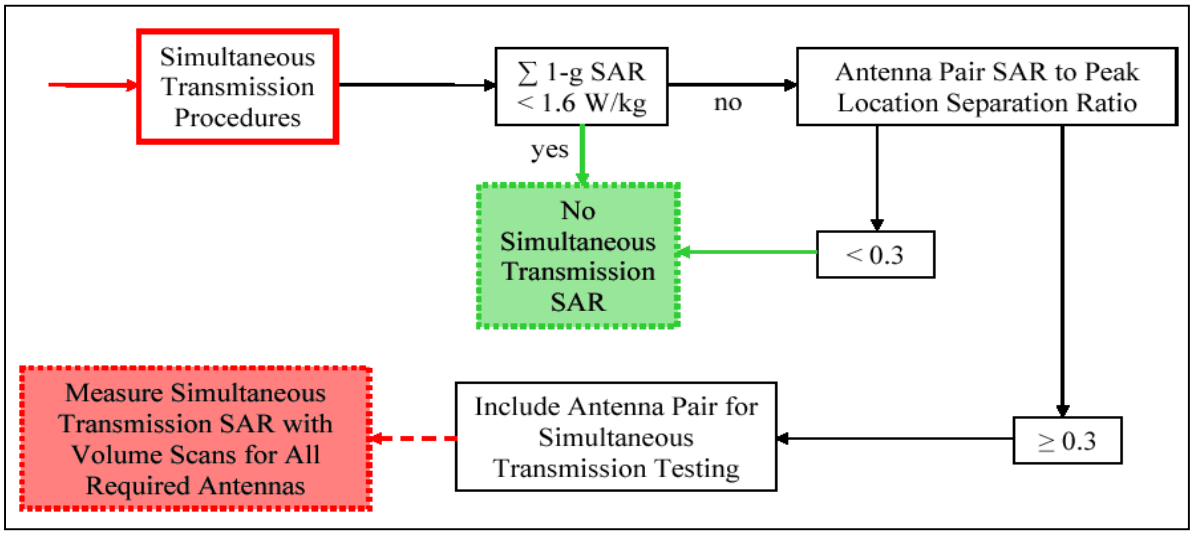
Notes:

1. The modes with highest output power channel were chosen for the testing.
2. The SAR measured at the middle channel for this configuration is at least 3 dB lower (0.8 mW/g) than SAR limit (1.6 mW/g), thus testing at low & high channel is optional.

12 KDB 648474 D01 SAR HANDSETS MULTI XMITER ASSESSMENT

SAR evaluation for simultaneous transmission is not required for all transmitters and antennas due to the following:

- Antenna separation distance between WWAN and WLAN/BT is greater than 5 cm.
- The sum of the 1-g SAR measured for all simultaneous transmitting antennas is less than the SAR limit.



KDB 648474 SAR evaluation for handsets that contain multiple transmitters and antennas

The stand alone SAR values and sum of the highest SAR value:

FCC / IC Rule Parts	Frequency Range [MHz]	The Highest SAR(1g) Values	
		Positions	mW/g
22H / RSS-132	824 - 849	Head (Right Touch)	**0.919**
		Body (Face Down)	0.656
24E / RSS-133	1850 - 1910	Head (Right Touch)	0.634
		Body (Face Down)	**0.936**
15.247 / RSS-210	2400 – 2483.5	Head (Left Tilt)	0.365
		Body (Face up)	0.029
		Sum of the highest 1-g SAR for Head:	**1.284**
		Body:	**0.965**

Notes:

1. Sum of the highest 1-g SAR for Head is the highest Head SAR value for WWAN (0.919 mW/g) + the highest Head SAR value for WLAN (0.365 mW/g).
2. Sum of the highest 1-g SAR for Body is the highest Body SAR value for WWAN (0.936 mW/g) + the highest Body SAR value for WLAN (0.029 mW/g).

As the result, simultaneous SAR evaluation for WWAN and WLAN is not required.

PART 22H WORST-CASE SAR TEST PLOT: RIGHT HAND SIDE – TOUCH (OPEN)

Date/Time: 2/2/2009 1:19:25 PM

Test Laboratory: Compliance Certification Services

Right Hand Side

DUT: Palm; Type: Smartphone; Serial: 7141

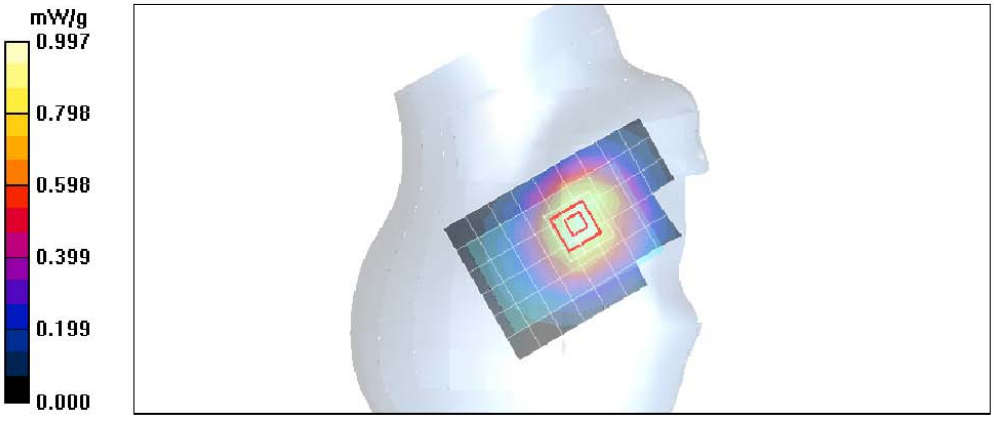
Communication System: CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.865 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Phantom section: Right Section

Room Ambient Temperature: 25.0 deg. C; Liquid Temperature: 24.0 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: EX3DV3 - SN3531; ConvF(10.95, 10.95, 10.95); Calibrated: 4/23/2008
- 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 71; Postprocessing SW: SEMCAD, V1.8 Build 184

R-Touch - M-ch (closed)/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.997 mW/g

R-Touch - M-ch (closed)/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.2 V/m; Power Drift = 0.138 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.919 mW/g; SAR(10 g) = 0.670 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.05 mW/g



PART 22H WORST-CASE SAR TEST PLOT: BODY WORN-FACE DOWN

Date/Time: 2/2/2009 5:58:11 PM

Test Laboratory: Compliance Certification Services

Body Worn

DUT: Palm; Type: Smartphone; Serial: 7141

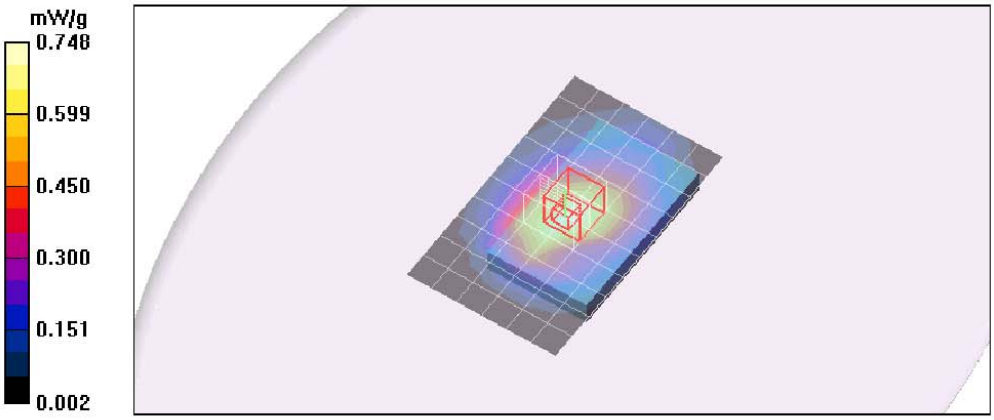
Communication System: CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.96 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section

Room Ambient Temperature: 25.0 deg. C; Liquid Temperature: 24.0 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: EX3DV3 - SN3531; ConvF(10.22, 10.22, 10.22); Calibrated: 4/23/2008
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 10/20/2008
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:XXXX
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

EUT 7141 Face down - M-ch/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.748 mW/g

EUT 7141 Face down - M-ch/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.1 V/m; Power Drift = -0.033 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.656 mW/g; SAR(10 g) = 0.442 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.755 mW/g



PART 24E WORST-CASE SAR TEST PLOT: RIGHT HAND SIDE – TOUCH (OPEN)

Date/Time: 1/30/2009 5:42:30 PM

Test Laboratory: Compliance Certification Services

Right Hand Side

DUT: Palm; Type: Smartphone; Serial: 7141

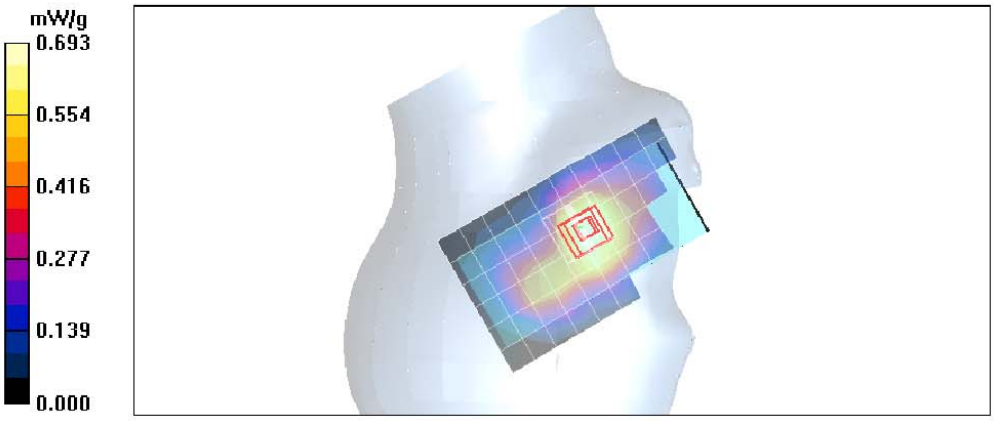
Communication System: CDMA PCS band; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 39.6; ρ = 1000 kg/m^3
Phantom section: Right Section

Room Ambient Temperature: 25.0 deg. C; Liquid Temperature: 24.0 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: EX3DV3 - SN3531; ConvF(8.99, 8.99, 8.99); Calibrated: 4/23/2008
- 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 71; Postprocessing SW: SEMCAD, V1.8 Build 184

R-Touch - M-ch (open)/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.693 mW/g

R-Touch - M-ch (open)/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 10.8 V/m; Power Drift = -0.516 dB
Peak SAR (extrapolated) = 0.898 W/kg
SAR(1 g) = 0.634 mW/g; SAR(10 g) = 0.424 mW/g
Maximum value of SAR (measured) = 0.728 mW/g



PART 24E WORST-CASE SAR TEST PLOT: BODY WORN-FACE DOWN

Date/Time: 1/30/2009 11:01:24 AM

Test Laboratory: Compliance Certification Services

Body Worn

DUT: Palm; Type: Smartphone; Serial: 7141

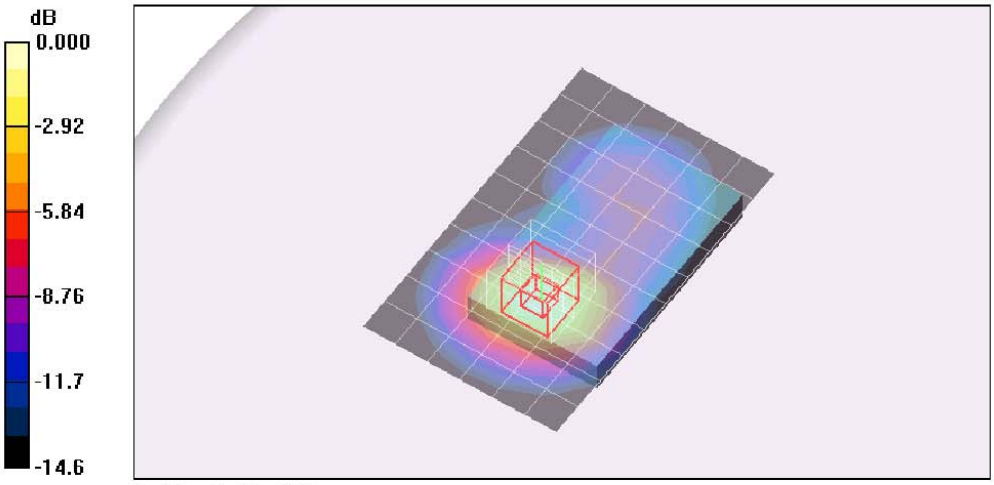
Communication System: CDMA PCS band; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1908.75 MHz; σ = 1.6 mho/m; ε_r = 50.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

Room Ambient Temperature: 25.0 deg. C; Liquid Temperature: 24.0 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: EX3DV3 - SN3531; ConvF(8.7, 8.7, 8.7); Calibrated: 4/23/2008
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 10/20/2008
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:XXXX
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

EUT 7141 Face down - H-ch/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.10 mW/g

EUT 7141 Face down - H-ch/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.0 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.936 mW/g; SAR(10 g) = 0.529 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.16 mW/g



0 dB = 1.16mW/g

PART 15.247 WORST-CASE SAR TEST PLOT: LEFT HAND SIDE – TILT (OPEN)

Date/Time: 2/5/2009 11:43:02 AM

Test Laboratory: Compliance Certification Services

Left Hand Side

DUT: Palm; Type: Phone; Serial: 7235

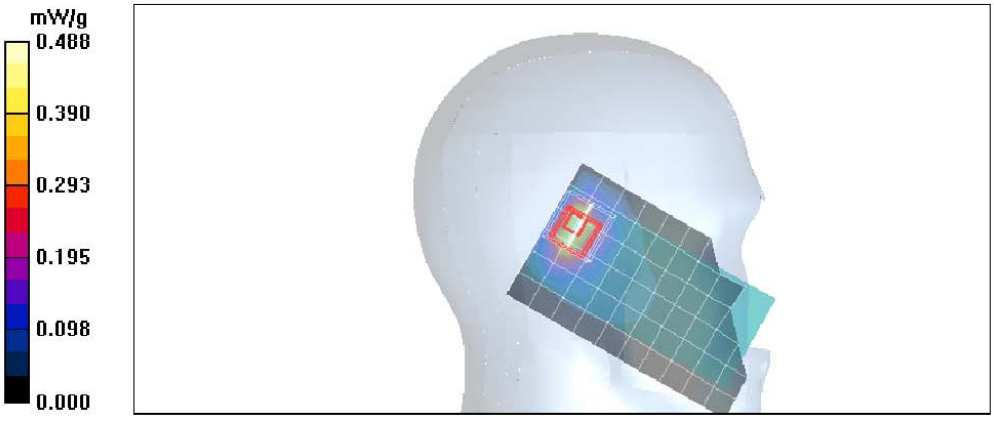
Communication System: 802.11bg; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.81 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3
Phantom section: Left Section

Room Ambient Temperature: 25.0 deg. C; Liquid Temperature: 24.0 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: EX3DV3 - SN3531; ConvF(8.05, 8.05, 8.05); Calibrated: 4/23/2008
- 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 71; Postprocessing SW: SEMCAD, V1.8 Build 184

L-Tilt - M-ch (open)/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.488 mW/g

L-Tilt - M-ch (open)/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 15.7 V/m; Power Drift = -0.169 dB
Peak SAR (extrapolated) = 0.958 W/kg
SAR(1 g) = 0.365 mW/g; SAR(10 g) = 0.173 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.478 mW/g



PART 15.247 WORST-CASE SAR TEST PLOT: BODY WORN-FACE UP

Date/Time: 2/5/2009 5:58:11 PM

Test Laboratory: Compliance Certification Services

Body Worn

DUT: Palm; Type: Phone; Serial: 7235

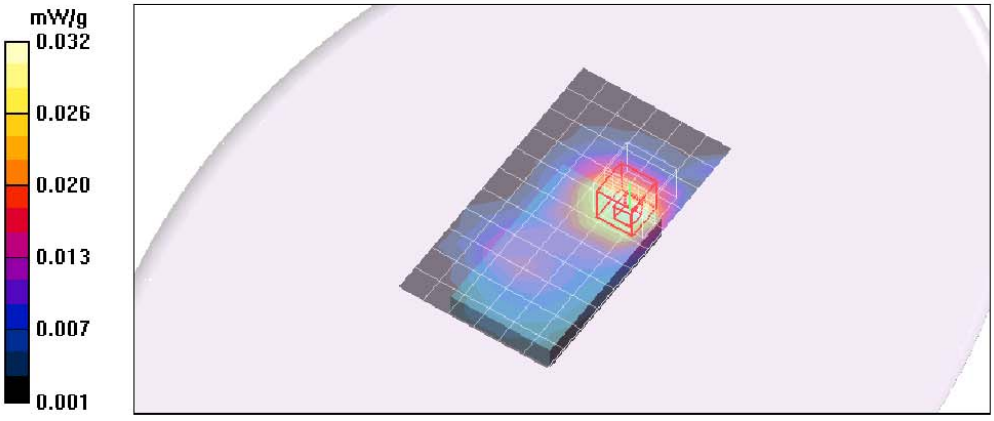
Communication System: 802.11bg; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 2.04 mho/m; ε_r = 51.4; ρ = 1000 kg/m^3
Phantom section: Flat Section

Room Ambient Temperature: 25.0 deg. C; Liquid Temperature: 24.0 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: EX3DV3 - SN3531; ConvF(7.91, 7.91, 7.91); Calibrated: 4/23/2008
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn427; Calibrated: 10/20/2008
- Phantom: Flat Phantom ELI4.0; Type: QDOVA001BA; Serial: SN:XXXX
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

EUT Face up - M-ch/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.032 mW/g

EUT Face up - M-ch/Zoom Scan (7x7x9)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=3mm
Reference Value = 1.09 V/m; Power Drift = 3.89 dB
Peak SAR (extrapolated) = 0.052 W/kg
SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.016 mW/g
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.035 mW/g



13 EQUIPMENT LIST AND CALIBRATION

Name of Equipment	Manufacturer	Type/Model	Serial Number	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	22	2010
E-Field Probe	SPEAG	EX3DV3	3531	4	24	2009
Thermometer	ERTCO	639-1S	1718	5	28	2009
Data Acquisition Electronics	SPEAG	DAE3 V1	427	10	20	2009
System Validation Dipole	SPEAG	D835V2	4d002	6	22	2009
System Validation Dipole	SPEAG	D1900V2	5d043	1	29	2010
System Validation Dipole	SPEAG	D2450V2	748	4	14	2010
Signal Generator	R&S	SMP 04	DE34210	2	16	2009
Power Meter	Giga-tronics	8651A	8651404	1	11	2010
Power Sensor	Giga-tronics	80701A	1834588	1	11	2010
Amplifier	Mini-Circuits	ZHL-42W	D072701-5		N/A	
Radio Communication Tester	R&S	CMU200	106291	5	16	2009
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	H1900	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	M1900	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	H2450	N/A	Within 24 hrs of first test		
Simulating Liquid	CCS	M2450	N/A	Within 24 hrs of first test		

14 ATTACHMENTS

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4	Certificate of System Validation Dipole - D835V2 SN:4d002	9
5	Certificate of System Validation Dipole - D1900V2 SN:5d043	9
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