

July 20, 2004

Re: Application review, FCC ID: OVFKWC-K4X3

To David Chernomordik:

Thank you for your feedback on the FCC application that I have submitted. Please find my responses to your questions below.

Question:

Exhibit 9, SAR report

a) For body-worn configuration, the phones were tested in a position where the back of the phone is facing the phantom. I agree with this test configuration for the phone with the belt clip TXLCC10048B, but it is not obvious that the phone with Sport Clip TXLCC10045B may not be used in a reverse position, as the phone may hang somewhere. Please clarify. If reverse position is available, submit additional data.

Response:

The sport clip accessory is not to be used as a body-worn accessory by itself. It is intended and marketed as follows: "Sport clip attaches your phone to a backpack or purse for easy, effortless access. Doubles as a stand for your phone. *Sport clip is not designed to be a body-worn accessory". The sport clip may be used with other approved body-worn accessories (phone case or belt clip). When used with the other body-accessories, the phone can only be positioned with the back facing the phantom.

Question:

b) I could not locate Probe calibration for body (ConvF(5, 5, 5)). On the SAR graphs for body, it is written "Probe not calibrated". Please explain.

Response:

The probe in question, serial number 1772, was last calibrated on 10-10-2003. Previous to 10-10-2003 the probe was calibrated for both head and body. The probe vendor was contacted and it was found that when the probe was re-calibrated on 10-10-2003, only head calibration was performed. Therefore, the calibration certificate date for body testing using probe 1712 has expired. The body testing that occurred used the calibration factors that were valid up to 10-10-2003.

The SAR values that were tested using probe 1712 were verified to be valid by re-testing the worse-case positions using another probe, serial number 1663, which has valid calibration for both head and body. The re-test data taken with probe 1663 on 7/14/2004 was found to be equivalent with the original reported data that was taken with probe 1712 on 6/14/2004 and 6/15/2004. The SAR results were within 0.085 mW/g of the original values. Please see Appendix A of this correspondence for the 7/14/2004 validation plot and the re-test data of the worse case position plots.

Question:

c) Please comment the low level of the validation SAR (3.81 mW/g on 6/2/04 and 3.8 mW/g on 6/03/04) which is 19.7% lower than SPEAG reference level (page 11 of the SAR report) - FCC requirement is 10% max.

Response:

The system validation data from 6/2/2004 and 6/3/2004 data was checked. The liquid parameters have been found to be correct for that day. It appears that the positioning of the dipole under the phantom must have been slightly incorrect when performing the validation test. If the positioning of the dipole is not correct, then the validation SAR values that are measured may become out of tolerance.

The SAR data for the phones tested 6/2/2004 and 6/3/2004 was verified and found to be correct by re-testing the worse-case position again on 7/15/2004. The delta of the worse-case SAR results were within the 10.32% combined standard uncertainty of each other. Please see Appendix B of this correspondence for the 7/15/2004 validation plot and the re-test data of the worse-case position plot.

Question:

Please also explain "Probe not calibrated" on all Validation graphs (pages 21-26 of the SAR report).

Response:

The "Probe not calibrated" on the validation plots is related to the calibration issue discussed in question b above. The validation is performed using head liquid and tested at the flat section of the phantom. The validation data is correct since head liquid was used.

I hope the responses I have submitted answered all your concerns regarding filing OVFKWC-K4X3.

Please contact me at Tel: (858) 882-1552 or Email: <mailto:pbowen@kyocera-wireless.com> if there are any questions or if any additional information is needed.

Kyocera Wireless Corporation



Patrick Bowen
Staff Engineer

Appendix A

Page 1 of 1

Date/Time: 07/14/04 08:13:11

Test Laboratory: Kyocera

1900MHz Validation, Probe 1663, DAE 530, Dipole #5d005

Communication System: CW 1900, Frequency: 1900 MHz, Duty Cycle: 1:1

Medium: Head 1900 MHz, Medium parameters used (interpolated): $f = 1900$ MHz; $\sigma = 1.47$ mho/m; $\epsilon_r = 41.3$; $\rho = 1000$ kg/m³

Phantom: SAM 12, Phantom section: Flat Section

DASY4 Configuration:

Probe: ET3DV6 - SN1663, ConvF(5.2, 5.2, 5.2), Calibrated: 10/10/2003

Sensor-Surface: 4mm (Mechanical And Optical Surface Detection),

Electronics: DAE3 Sn530, Calibrated: 12/22/2003

Measurement SW: DASY4, V4.2 Build 44

Postprocessing SW: SEMCAD, V1.8 Build 112

Temperature:

Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

1900Mhz/Zoom Scan (7x7x7)/Cube 0; Measurement grid: dx=5mm, dy=5mm, dz=5mm

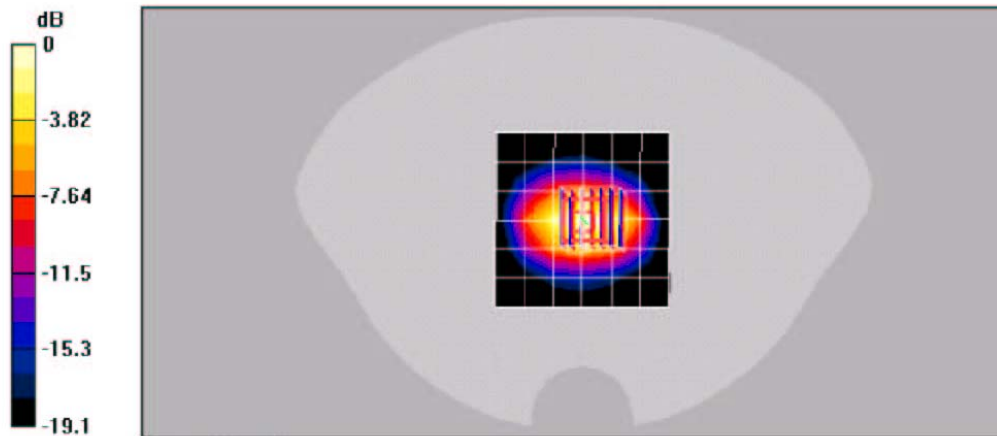
Reference Value = 61.1 V/m, Power Drift = -0.0001 dB

Maximum value of SAR (measured) = 4.99 mW/g

Peak SAR (extrapolated) = 7.75 W/kg

SAR(1g) = 4.39 mW/g; SAR(10g) = 2.28 mW/g

Info: Interpolated medium parameters used for SAR evaluation!



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Date/Time: 07/14/04 22:49:27

Test Laboratory: Kyocera

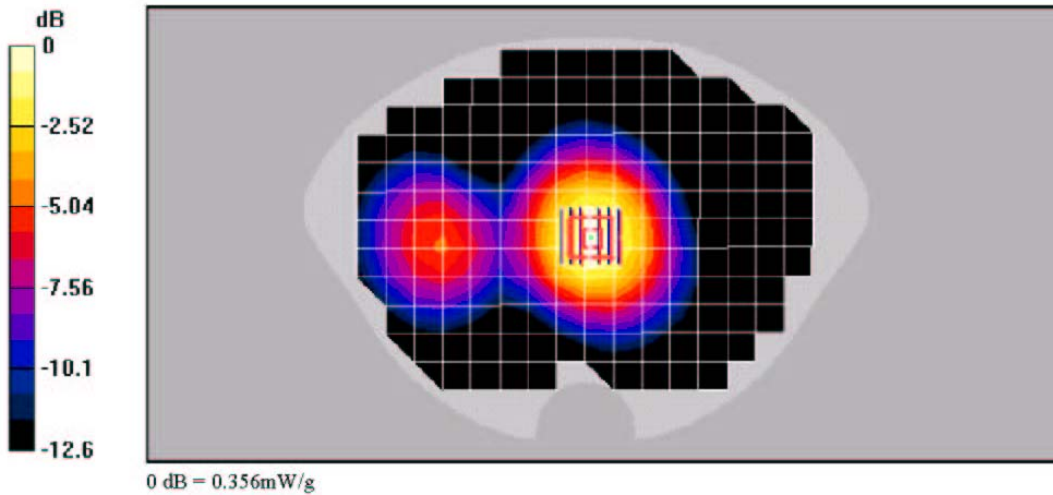
K433L #B812, CDMA-1900 FLAT Ch600, with 22.5mm Air Space

Communication System: CDMA 1900, Frequency: 1880 MHz, Duty Cycle: 1:1
 Medium: M1800, Medium parameters used: $f = 1880$ MHz, $\sigma = 1.53$ mho/m, $\epsilon_r = 53.8$, $\rho = 1000$ kg/m³
 Phantom: SAM 12 Phantom section: Flat Section

DASY4 Configuration:
 Probe: ET3DV6 - SN1663, ConvF(4.9, 4.9, 4.9), Calibrated: 10/10/2003
 Sensor-Surface: 4mm (Mechanical And Optical Surface Detection),
 Electronics: DAE3 Sn530, Calibrated: 12/22/2003
 Measurement SW: DASY4, V4.2 Build 44
 Postprocessing SW: SEMCAD, V1.8 Build 112

Temperature:
 Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

CDMA-1900 Ch600/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 16 V/m, Power Drift = 0.0 dB
 Maximum value of SAR (measured) = 0.356 mW/g
 Peak SAR (extrapolated) = 0.498 W/kg
 SAR(1 g) = 0.334 mW/g; SAR(10 g) = 0.219 mW/g



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Test Laboratory: Kyocera

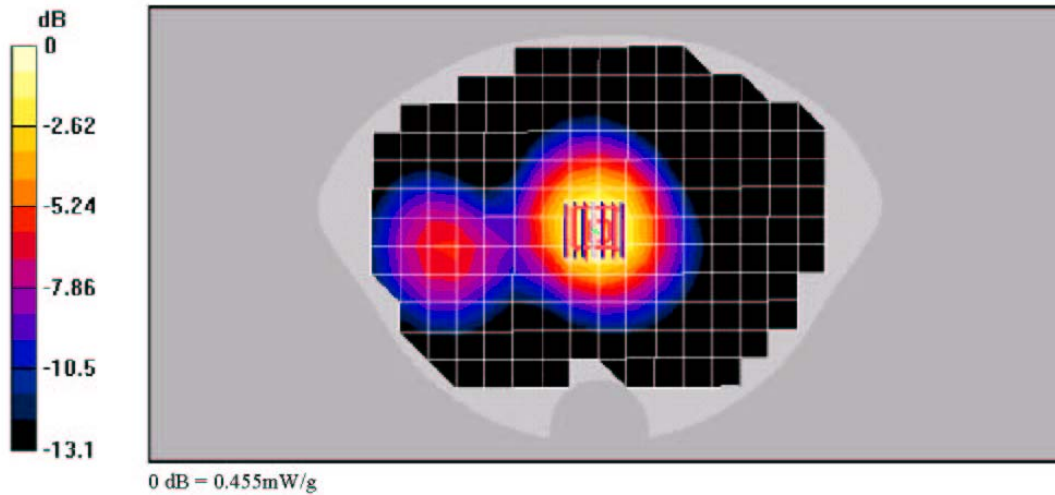
K433LC #B79M, CDMA-1900 Flat Belt Clip with Backpack Clip

Communication System: CDMA 1900, Frequency: 1880 MHz, Duty Cycle: 1:1
 Medium: M1800, Medium parameters used: $f = 1880$ MHz, $\sigma = 1.53$ mho/m, $\epsilon_r = 53.8$, $\rho = 1000$ kg/m³
 Phantom: SAM 12 Phantom section: Flat Section

DASY4 Configuration:
 Probe: ET3DV6 - SN1663, ConvF(4.9, 4.9, 4.9), Calibrated: 10/10/2003
 Sensor-Surface: 4mm (Mechanical And Optical Surface Detection),
 Electronics: DAE3 Sn530, Calibrated: 12/22/2003
 Measurement SW: DASY4, V4.2 Build 44
 Postprocessing SW: SEMCAD, V1.8 Build 112

Temperature:
 Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

CDMA-1900 Ch600/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
 Reference Value = 18.3 V/m, Power Drift = 0.0 dB
 Maximum value of SAR (measured) = 0.455 mW/g
 Peak SAR (extrapolated) = 0.643 W/kg
 SAR(1 g) = 0.424 mW/g; SAR(10 g) = 0.270 mW/g



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Test Laboratory: Kyocera

K483L #B805, CDMA-1900 Ch600 Flat with Belt Clip

Communication System: CDMA 1900, Frequency: 1880 MHz, Duty Cycle: 1:1
Medium: M1800, Medium parameters used: $f = 1880$ MHz, $\sigma = 1.53$ mho/m, $\epsilon_r = 53.8$, $\rho = 1000$ kg/m³
Phantom: SAM 12 Phantom section: Flat Section

DASY4 Configuration:

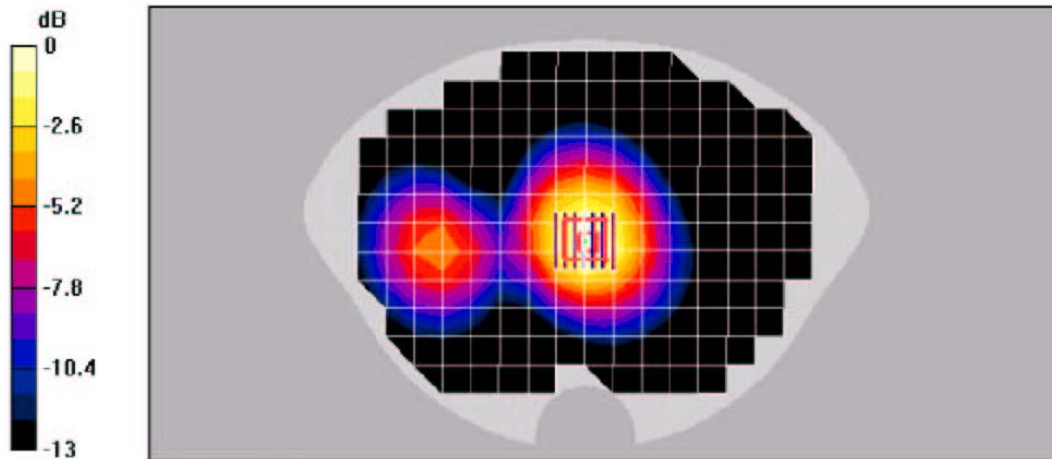
Probe: ET3DV6 - SN1663, ConvF(4.9, 4.9, 4.9), Calibrated: 10/10/2003
Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
Sensor-Surface: 0mm (Fix Surface)
Electronics: DAE3 Sn530, Calibrated: 12/22/2003
Measurement SW: DASY4, V4.2 Build 44
Postprocessing SW: SEMCAD, V1.8 Build 112

Temperature:

Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

CDMA-1900 Ch600/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.4 V/m, Power Drift = -0.1 dB
Maximum value of SAR (measured) = 0.432 mW/g
Peak SAR (extrapolated) = 0.609 W/kg
SAR(1 g) = 0.401 mW/g; SAR(10 g) = 0.256 mW/g



0 dB = 0.432mW/g

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Date/Time: 07/14/04 16:40:48

Test Laboratory: Kyocera

K483LC #B7BF, CDMA-1900 Flat with Belt Clip

Communication System: CDMA 1900, Frequency: 1880 MHz, Duty Cycle: 1:1
Medium: M1800, Medium parameters used: $f = 1880$ MHz, $\sigma = 1.53$ mho/m, $\epsilon_r = 53.8$, $\rho = 1000$ kg/m³
Phantom: SAM 12 Phantom section: Flat Section

DASY4 Configuration:

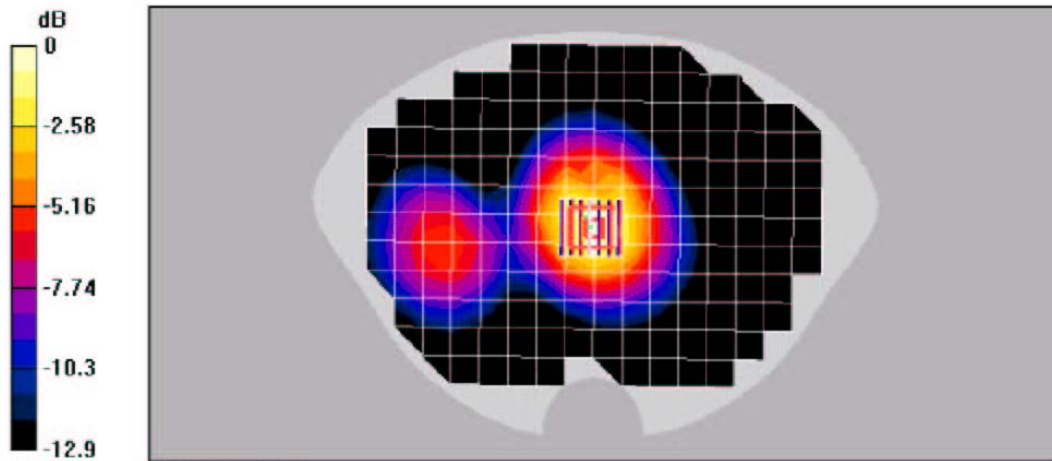
Probe: ET3DV6 - SN1663, ConvF(4.9, 4.9, 4.9), Calibrated: 10/10/2003
Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
Sensor-Surface: 0mm (Fix Surface)
Electronics: DAE3 Sn530, Calibrated: 12/22/2003
Measurement SW: DASY4, V4.2 Build 44
Postprocessing SW: SEMCAD, V1.8 Build 112

Temperature:

Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

CDMA-1900 Ch600/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.1 V/m, Power Drift = -0.1 dB
Maximum value of SAR (measured) = 0.439 mW/g
Peak SAR (extrapolated) = 0.612 W/kg
SAR(1 g) = 0.406 mW/g; SAR(10 g) = 0.261 mW/g



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Appendix B

Date/Time: 07/15/04 09:26:41

Test Laboratory: Kyocera

1900MHz Validation, Probe 1712, DAE 530, Dipole #5d005

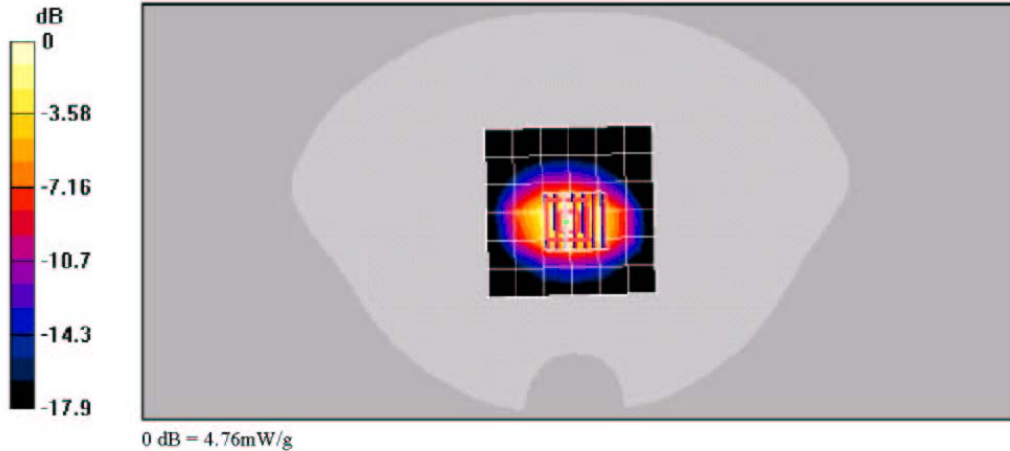
Communication System: CW 1900, Frequency: 1900 MHz, Duty Cycle: 1:1
 Medium: Head 1900 MHz, Medium parameters used (interpolated): $f = 1900 \text{ MHz}$, $\sigma = 1.45 \text{ mho/m}$, $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$
 Phantom: SAM 12, Phantom section: Flat Section

DASY4 Configuration:
 Probe: ET3DV6 - SN1712, ConvF(5.3, 5.3, 5.3), Calibrated: 9/19/2003
 Sensor: Surface: 4mm (Mechanical And Optical Surface Detection),
 Electronics: DAE3 Sn530, Calibrated: 12/22/2003
 Measurement SW: DASY4, V4.2 Build 44
 Postprocessing SW: SEMCAD, V1.8 Build 112

Temperature:
 Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

1900Mhz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$
 Reference Value = 55.9 V/m, Power Drift = 0.0 dB
 Maximum value of SAR (measured) = 4.76 mW/g
 Peak SAR (extrapolated) = 7.42 W/kg
SAR(1 g) = 4.22 mW/g; SAR(10 g) = 2.24 mW/g

Info: Interpolated medium parameters used for SAR evaluation!



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Test Laboratory: Kyocera

K433LC RAVE #B79M, CDMA-1900 Left Cheek with Backpack Clip Ch1175

Communication System: CDMA 1900, Frequency: 1909 MHz, Duty Cycle: 1:1
 Medium: Head 1900 MHz, Medium parameters used (interpolated): $f = 1909 \text{ MHz}$, $\sigma = 1.45 \text{ mho/m}$, $\epsilon_r = 41.1$, $\rho = 1000 \text{ kg/m}^3$
 Phantom: SAM 12, Phantom section: Left Section

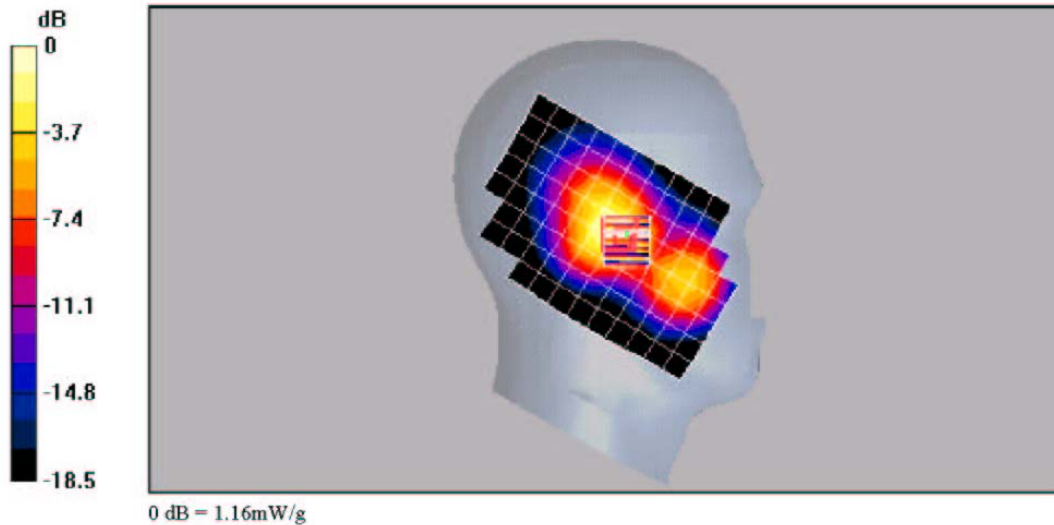
DASY4 Configuration:
 Probe: ET3DV6 - SN1712, ConvF(5.3, 5.3, 5.3), Calibrated: 9/19/2003
 Sensor-Surface: 4mm (Mechanical And Optical Surface Detection),
 Electronics: DAE3 Sn530, Calibrated: 12/22/2003
 Measurement SW: DASY4, V4.2 Build 44
 Postprocessing SW: SEMCAD, V1.8 Build 112

Temperature:
 Room T = 21.8 +/- 1 deg C, Liquid T = 22.0 +/- 1 deg C

1900-CDMA 1175 LC/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 25.6 V/m, Power Drift = -0.1 dB
 Maximum value of SAR (measured) = 1.16 mW/g
 Peak SAR (extrapolated) = 1.64 W/kg
SAR(1g) = 1.05 mW/g; SAR(10g) = 0.615 mW/g

Info: [Interpolated medium parameters used for SAR evaluation!](#)



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