

SAR DATA SUMMARY

Mixture Type: 2450MHz Muscle

14.1 MEASUREMENT RESULTS (DSSS Body SAR)								
FREQUENCY		Modulation	Begin / End POWER [‡]			Separation Distance ^{**} (cm)	Antenna Position	SAR (W/kg)
MHz	Ch.		dBm		Battery			
2412	1	DSSS	0.100	0.100	Standard	TOUCH	Fixed	0.29
2437	6	DSSS	0.100	0.100	Standard	TOUCH	Fixed	0.29
2462	11	DSSS	0.100	0.100	Standard	TOUCH	Fixed	0.28
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Muscle 1.6 W/kg (mW/g) averaged over 1 gram		

NOTES:


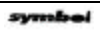
1. The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
2. All modes of operation were investigated, and worst-case results are reported.
3. Battery is fully charged for all readings.

- | | | | | | | |
|---------------------------|-------------------------------------|----------------|-------------------------------------|------------------------|--------------------------|-----------|
| 4. SAR Measurement System | <input checked="" type="checkbox"/> | Conducted | <input type="checkbox"/> | ERP | <input type="checkbox"/> | EIRP |
| 5. Phantom Configuration | <input type="checkbox"/> | DASY3 | <input checked="" type="checkbox"/> | IDX | <input type="checkbox"/> | |
| 6. SAR Configuration | <input type="checkbox"/> | Left Head | <input checked="" type="checkbox"/> | Flat Phantom | <input type="checkbox"/> | Left Head |
| 7. Test Signal Call Mode | <input type="checkbox"/> | Head | <input checked="" type="checkbox"/> | Body | <input type="checkbox"/> | Hand |
| 8. **Test Configuration | <input checked="" type="checkbox"/> | Software | <input type="checkbox"/> | Base Station Simulator | | |
| | <input checked="" type="checkbox"/> | With Belt Clip | <input type="checkbox"/> | Without Belt Clip | | |


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Figure 14.1 Body SAR Test Setup

PCTEST SAR TEST REPORT	 FCC CLASS II PERM. CHG. 	Reviewed by: Quality Manager
SAR Filename: SAR.220424196.H9P	Test Dates: July 11, 2002	EUT Type: Portable Network Printer
	FCC ID: H9PLA4137	Page 16 of 20

SAR DATA SUMMARY (Continued)

Mixture Type: 2450MHz Muscle

14.2 MEASUREMENT RESULTS (DSSS Hand SAR – Paper Side)								
FREQUENCY		Modulation	Begin / End POWER [‡]			Separation Distance (cm)	Antenna Position	SAR (W/kg)
MHz	Ch.		WATTS		Battery			
2412	1	DSSS	0.100	0.100	Standard	TOUCH	Fixed	0.13
2437	6	DSSS	0.100	0.100	Standard	TOUCH	Fixed	0.14
2462	11	DSSS	0.100	0.100	Standard	TOUCH	Fixed	0.12
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Hand 4.0 W/kg (mW/g) averaged over 10 grams		

NOTES:

1. The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
2. All modes of operation were investigated, and worst-case results are reported.
3. Battery is fully charged for all readings.

- | | | | | | | |
|---------------------------|-------------------------------------|-----------|-------------------------------------|------------------------|-------------------------------------|-----------|
| ‡Power Measured | <input checked="" type="checkbox"/> | Conducted | <input type="checkbox"/> | ERP | <input type="checkbox"/> | EIRP |
| 4. SAR Measurement System | <input type="checkbox"/> | DASY3 | <input checked="" type="checkbox"/> | IDX | <input type="checkbox"/> | |
| Phantom Configuration | <input type="checkbox"/> | Left Head | <input checked="" type="checkbox"/> | Flat Phantom | <input type="checkbox"/> | Left Head |
| 5. SAR Configuration | <input type="checkbox"/> | Head | <input type="checkbox"/> | Body | <input checked="" type="checkbox"/> | Hand |
| 6. Test Signal Call Mode | <input checked="" type="checkbox"/> | Software | <input type="checkbox"/> | Base Station Simulator | | |

7. Tissue parameters and temperatures are listed on the SAR plots.

Alfred

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Figure 14.2 Hand SAR Test Setup

PCTEST SAR TEST REPORT	FCC CLASS II PERM. CHG.	Reviewed by: Quality Manager
SAR Filename: SAR.220424196.H9P	Test Dates: July 11, 2002	EUT Type: Portable Network Printer
		FCC ID: H9PLA4137
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SAR Data Report 02071103

Start : 11-Jul-02 09:29:03 am
End : 11-Jul-02 09:36:12 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : ZEBRA
Model Number : QL320
Frequency : 2412 MHz
Transmit Pwr : 0.100 W
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-FLAT
Phantom Type : Uniphantom
Tissue Type : Muscle
Tissue Dielectric : 52.300
Tissue Conductivity : 1.920
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT25
Probe Type : E Fld Triangle
Frequency : 2450 MHz
Tissue Type : Muscle
Calibrated Dielectric : 49.200
Calibrated Conductivity : 1.950
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 16.500
Probe Sensitivity : 0.753 0.726 0.683 mV/(mW/cm²)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

DSSS Mode CH-1
Body SAR
CF=1; Amb. Temp= 22.4 'C; Liq. Temp=22.1 'C

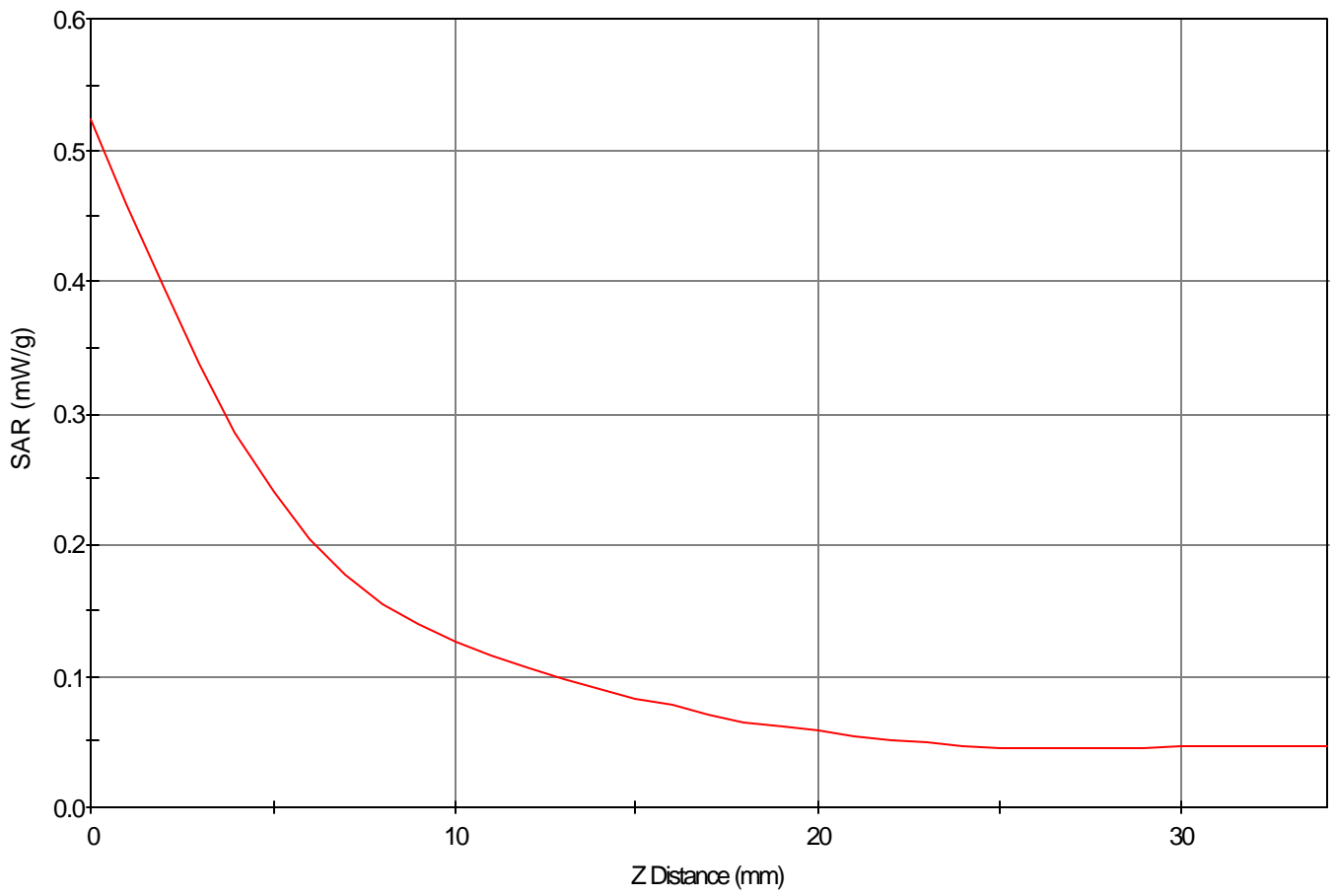
Area Scan - Max Peak SAR Value at x=20.0 y=-46.0 = 0.27 W/kg

Zoom Scan - Max Peak SAR Value at x=21.0 y=-51.0 z=0.0 = 0.53 W/kg

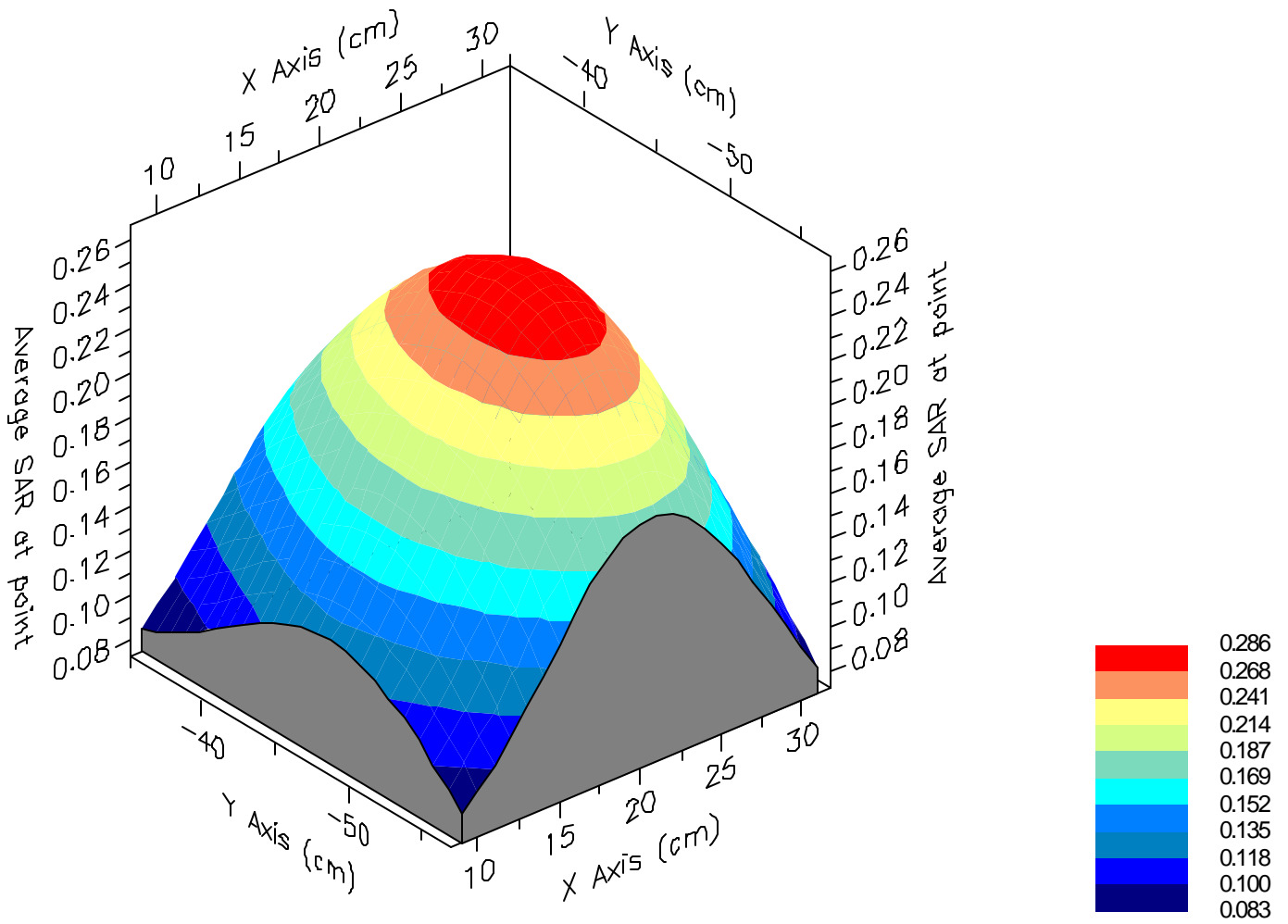
Max 1g SAR at x=21.0 y=-48.0 z=0.0 = 0.29 W/kg

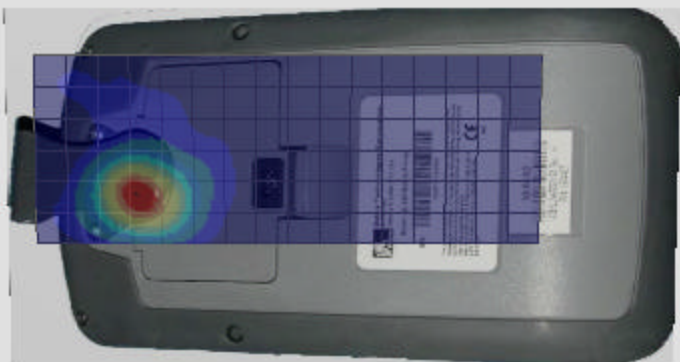
Max 10g SAR at x=21.0 y=-46.0 z=0.0 = 0.13 W/kg

SAR - Z Axis
at Hotspot x:21.0 y:-51.0



1g SAR Values





SAR Data Report 02071102

Start : 11-Jul-02 09:21:02 am
End : 11-Jul-02 09:28:19 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : ZEBRA
Model Number : QL320
Frequency : 2437 MHz
Transmit Pwr : 0.100 W
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-FLAT
Phantom Type : Uniphantom
Tissue Type : Muscle
Tissue Dielectric : 52.300
Tissue Conductivity : 1.920
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT25
Probe Type : E Fld Triangle
Frequency : 2450 MHz
Tissue Type : Muscle
Calibrated Dielectric : 49.200
Calibrated Conductivity : 1.950
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 16.500
Probe Sensitivity : 0.753 0.726 0.683 mV/(mW/cm²)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

DSSS Mode CH-6
Body SAR
CF=1; Amb. Temp= 22.4 'C; Liq. Temp=22.1 'C

Area Scan - Max Peak SAR Value at x=19.0 y=-47.0 = 0.26 W/kg

Zoom Scan - Max Peak SAR Value at x=20.0 y=-48.0 z=0.0 = 0.53 W/kg

Max 1g SAR at x=21.0 y=-48.0 z=0.0 = 0.29 W/kg

Max 10g SAR at x=21.0 y=-47.0 z=0.0 = 0.12 W/kg

SAR Data Report 02071104

Start : 11-Jul-02 10:11:03 am
End : 11-Jul-02 10:18:08 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : ZEBRA
Model Number : QL320
Frequency : 2462 MHz
Transmit Pwr : 0.100 W
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-FLAT
Phantom Type : Uniphantom
Tissue Type : Muscle
Tissue Dielectric : 52.300
Tissue Conductivity : 1.920
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT25
Probe Type : E Fld Triangle
Frequency : 2450 MHz
Tissue Type : Muscle
Calibrated Dielectric : 49.200
Calibrated Conductivity : 1.950
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 16.500
Probe Sensitivity : 0.753 0.726 0.683 mV/(mW/cm²)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

DSSS Mode CH-11
Body SAR
CF=1; Amb. Temp= 22.4 'C; Liq. Temp=22.1 'C

Area Scan - Max Peak SAR Value at x=20.0 y=-47.0 = 0.26 W/kg

Zoom Scan - Max Peak SAR Value at x=21.0 y=-47.0 z=0.0 = 0.51 W/kg

Max 1g SAR at x=21.0 y=-47.0 z=0.0 = 0.28 W/kg

Max 10g SAR at x=21.0 y=-47.0 z=0.0 = 0.12 W/kg

SAR Data Report 02071105

Start : 11-Jul-02 10:40:31 am
End : 11-Jul-02 10:47:46 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : ZEBRA
Model Number : QL320
Frequency : 2412 MHz
Transmit Pwr : 0.100 W
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-FLAT
Phantom Type : Uniphantom
Tissue Type : Muscle
Tissue Dielectric : 52.300
Tissue Conductivity : 1.920
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT25
Probe Type : E Fld Triangle
Frequency : 2450 MHz
Tissue Type : Muscle
Calibrated Dielectric : 49.200
Calibrated Conductivity : 1.950
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 16.500
Probe Sensitivity : 0.753 0.726 0.683 mV/(mW/cm²)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

DSSS Mode CH-1
Hand SAR (front)
CF=1; Amb. Temp= 22.4 'C; Liq. Temp=22.1 'C

Area Scan - Max Peak SAR Value at x=19.0 y=-48.0 = 0.27 W/kg

Zoom Scan - Max Peak SAR Value at x=19.0 y=-48.0 z=0.0 = 0.57 W/kg

Max 1g SAR at x=20.0 y=-47.0 z=0.0 = 0.29 W/kg

Max 10g SAR at x=20.0 y=-46.0 z=0.0 = 0.13 W/kg

SAR Data Report 02071106

Start : 11-Jul-02 10:52:15 am
End : 11-Jul-02 10:59:19 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : ZEBRA
Model Number : QL320
Frequency : 2437 MHz
Transmit Pwr : 0.100 W
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-FLAT
Phantom Type : Uniphantom
Tissue Type : Muscle
Tissue Dielectric : 52.300
Tissue Conductivity : 1.920
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT25
Probe Type : E Fld Triangle
Frequency : 2450 MHz
Tissue Type : Muscle
Calibrated Dielectric : 49.200
Calibrated Conductivity : 1.950
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 16.500
Probe Sensitivity : 0.753 0.726 0.683 mV/(mW/cm²)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

DSSS Mode CH-6
Hand SAR (front)
CF=1; Amb. Temp= 22.4 'C; Liq. Temp=22.1 'C

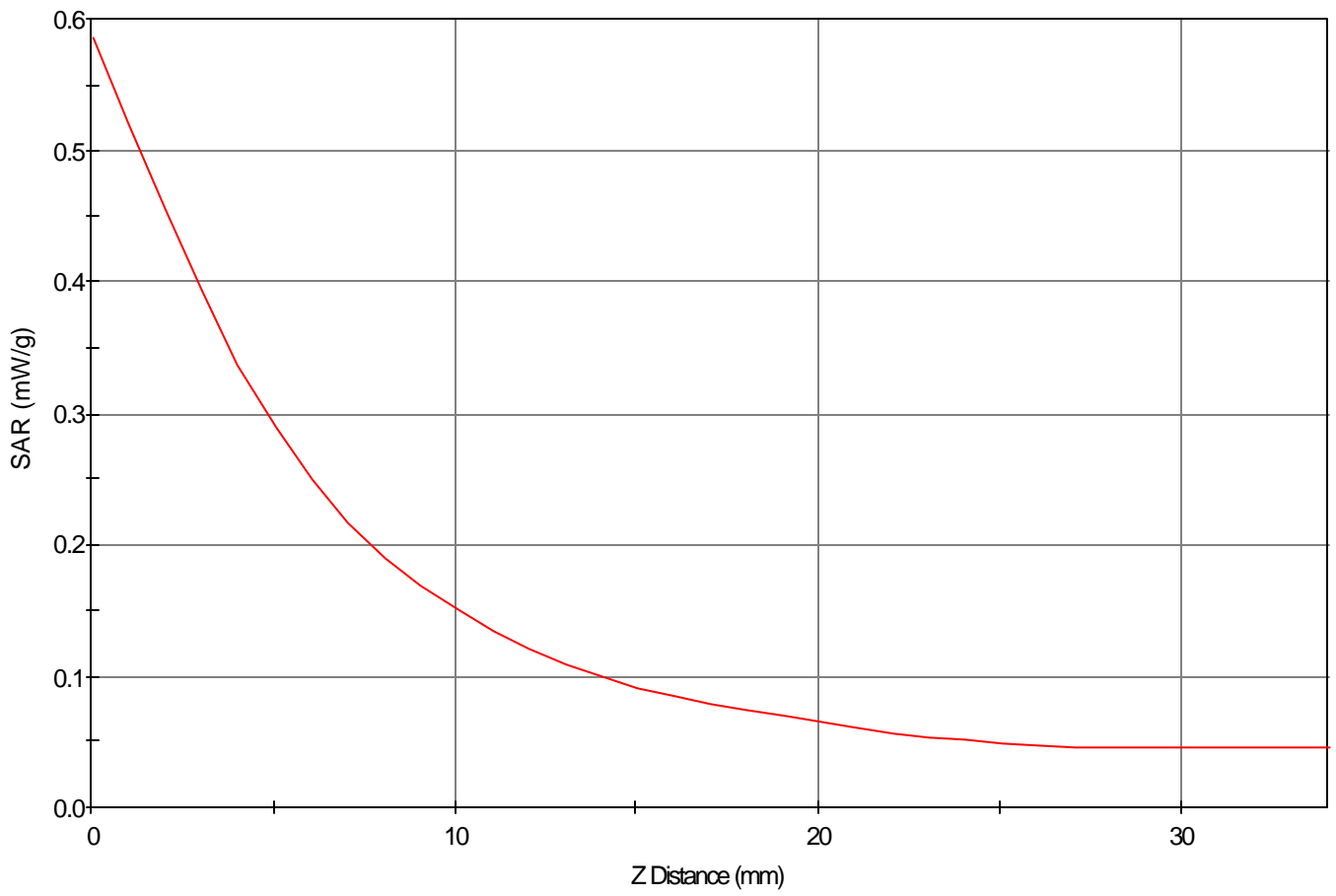
Area Scan - Max Peak SAR Value at x=20.0 y=-48.0 = 0.30 W/kg

Zoom Scan - Max Peak SAR Value at x=20.0 y=-47.0 z=0.0 = 0.59 W/kg

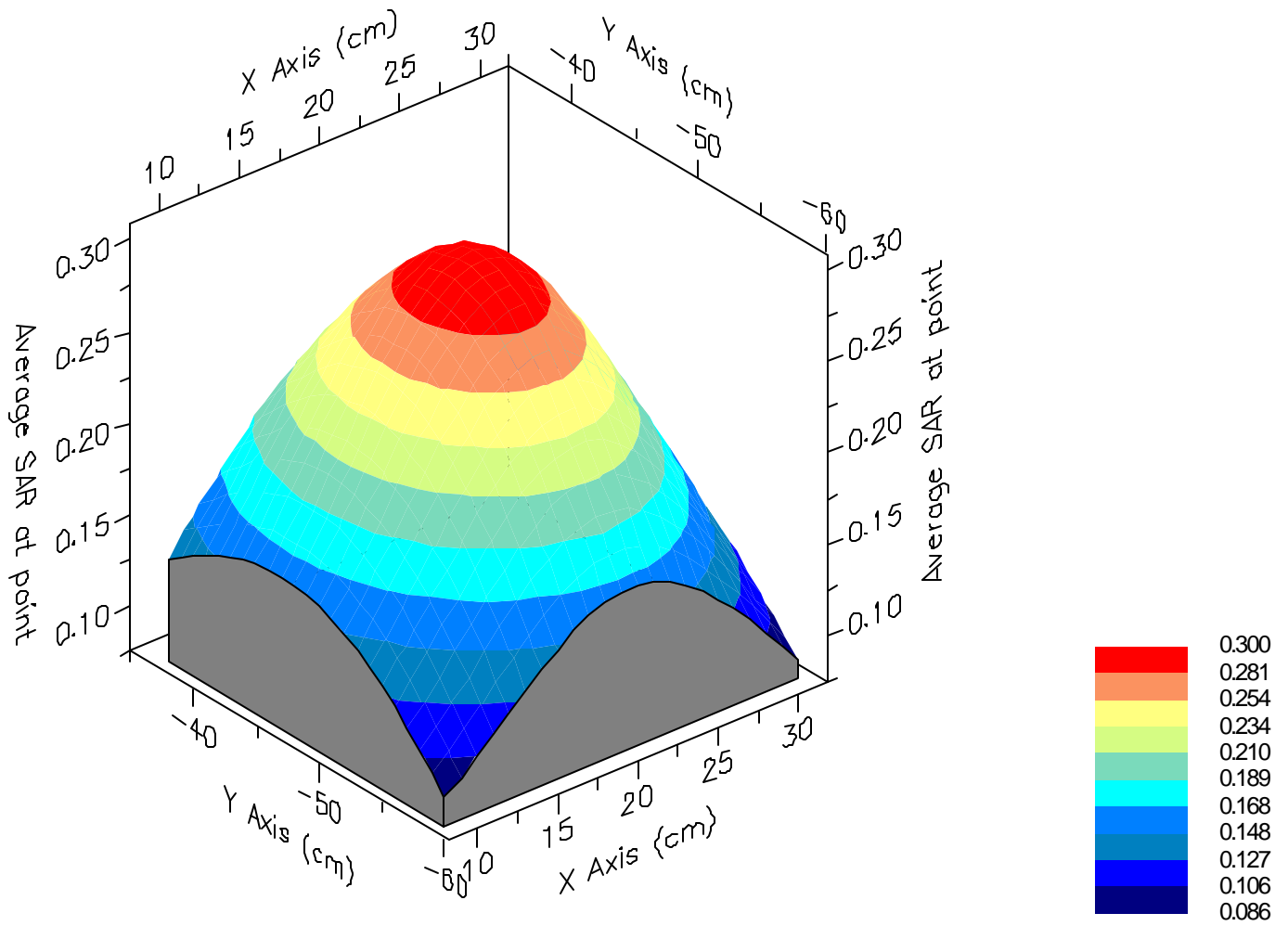
Max 1g SAR at x=21.0 y=-46.0 z=0.0 = 0.31 W/kg

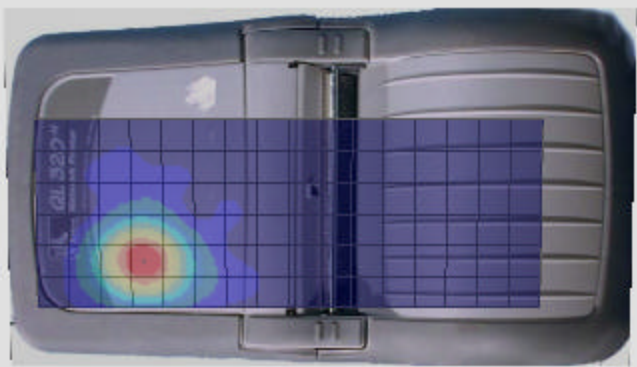
Max 10g SAR at x=20.0 y=-46.0 z=0.0 = 0.14 W/kg

SAR - Z Axis
at Hotspot x:20.0 y:-47.0



1g SAR Values





SAR Data Report 02071107

Start : 11-Jul-02 11:01:13 am
End : 11-Jul-02 11:08:16 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : ZEBRA
Model Number : QL320
Frequency : 2462 MHz
Transmit Pwr : 0.100 W
Antenna Posn. : Internal

Measurement Data:

Phantom Name : SAM-FLAT
Phantom Type : Uniphantom
Tissue Type : Muscle
Tissue Dielectric : 52.300
Tissue Conductivity : 1.920
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT25
Probe Type : E Fld Triangle
Frequency : 2450 MHz
Tissue Type : Muscle
Calibrated Dielectric : 49.200
Calibrated Conductivity : 1.950
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 16.500
Probe Sensitivity : 0.753 0.726 0.683 mV/(mW/cm²)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

DSSS Mode CH-11
Hand SAR (front)
CF=1; Amb. Temp= 22.4 'C; Liq. Temp=22.1 'C

Area Scan - Max Peak SAR Value at x=20.0 y=-47.0 = 0.25 W/kg

Zoom Scan - Max Peak SAR Value at x=18.0 y=-46.0 z=0.0 = 0.53 W/kg

Max 1g SAR at x=20.0 y=-46.0 z=0.0 = 0.26 W/kg

Max 10g SAR at x=20.0 y=-46.0 z=0.0 = 0.12 W/kg

SAR Data Report 02071101

Start : 11-Jul-02 09:01:42 am
End : 11-Jul-02 09:13:50 am
Code Version : 4.08
Robot Version: 4.08

Product Data:

Type : Validation
Frequency : 2450 MHz
Transmit Pwr : 0.250 W
Antenna Type : Dipole

Measurement Data:

Phantom Name : SAM-FLAT
Phantom Type : Uniphantom
Tissue Type : Brain
Tissue Dielectric : 40.100
Tissue Conductivity : 1.790
Tissue Density : 1.000
Robot Name : CRS

Probe Data:

Probe Name : PCT25
Probe Type : E Fld Triangle
Frequency : 2450 MHz
Tissue Type : Brain
Calibrated Dielectric : 37.100
Calibrated Conductivity : 1.840
Calibrated Density : 1.000
Probe Offset : 2.400 mm
Conversion Factor : 16.400
Probe Sensitivity : 0.753 0.726 0.683 mV/(mW/cm^2)
Amplifier Gains : 20.00 20.00 20.00

Sample:

Rate: 6000 Samples/Sec
Count: 100 Samples
NIDAQ Gain: 5

Comments:

2450 MHz Validation
SN: 146
CF=1; Amb. Temp.=22.4'C; Liq. Temp.=22.0'C

Area Scan - Max Peak SAR Value at x=-1.0 y=-2.0 = 15.28 W/kg

Zoom Scan - Max Peak SAR Value at x=-1.0 y=-2.0 z=0.0 = 25.33 W/kg

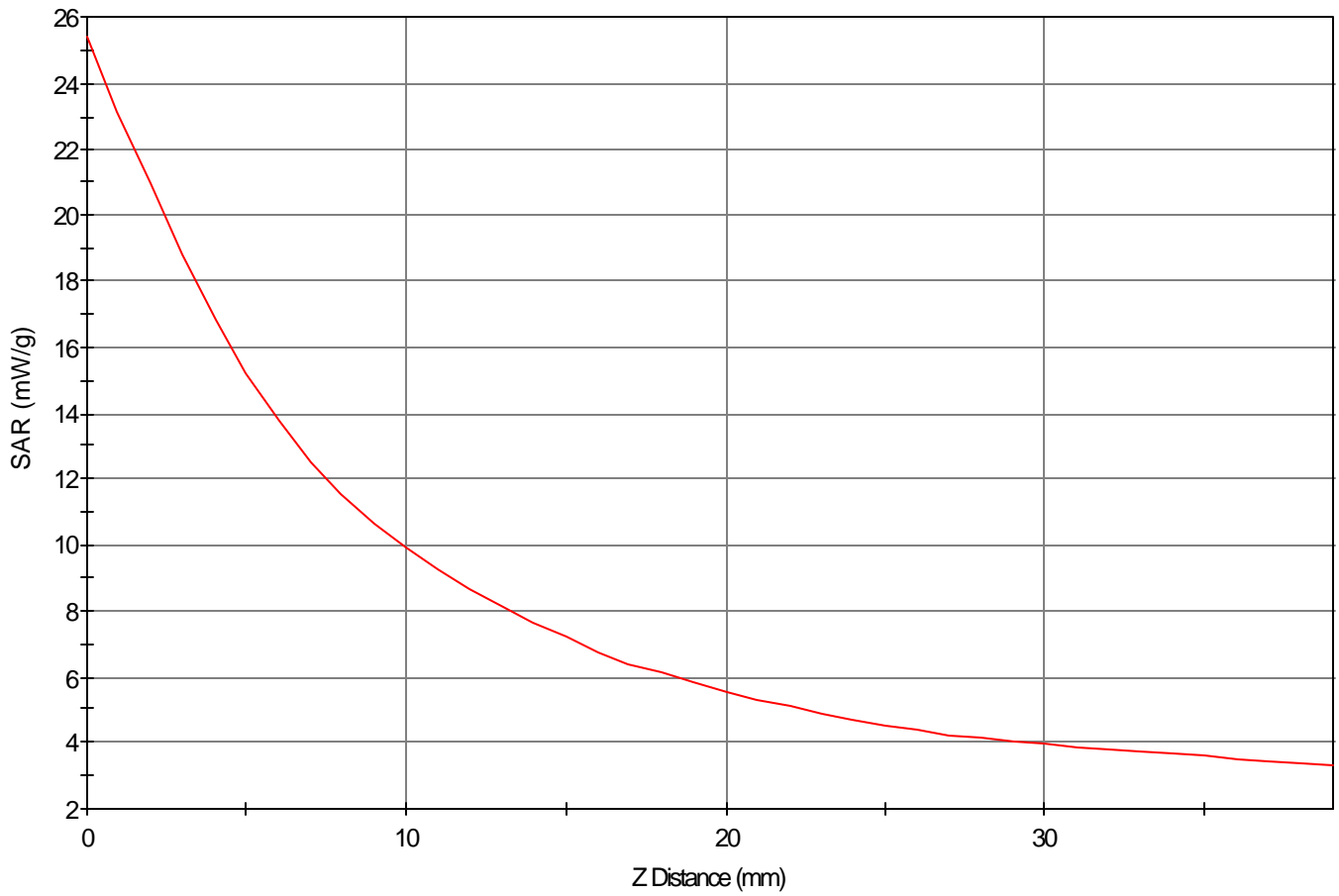
Max 1g SAR at x=-1.0 y=-2.0 z=0.0 = 12.75 W/kg

Max 10g SAR at x=-1.0 y=-2.0 z=0.0 = 8.58 W/kg

Validation Results at 0.25 W:

Peak Nominal = 26.0, Error: -2.58 %
1g Nominal = 13.1, Error: -2.70 %
10g Nominal = 8.5, Error: 0.09 %

SAR - Z Axis
at Hotspot x:-1.0 y:-2.0



1g SAR Values

