

PCS1900_CH661 Left Cheek

Date: 3/1/2021

Electronics: DAE4 Sn536

Medium: head 1900 MHz

Medium parameters used: $f = 1880$; $\sigma = 1.409$ mho/m; $\epsilon_r = 40.01$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: PCS1900 1880 Duty Cycle: 1:8.3

Probe: EX3DV4 – SN7307 ConvF(8.33,8.33,8.33)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.302 W/kg

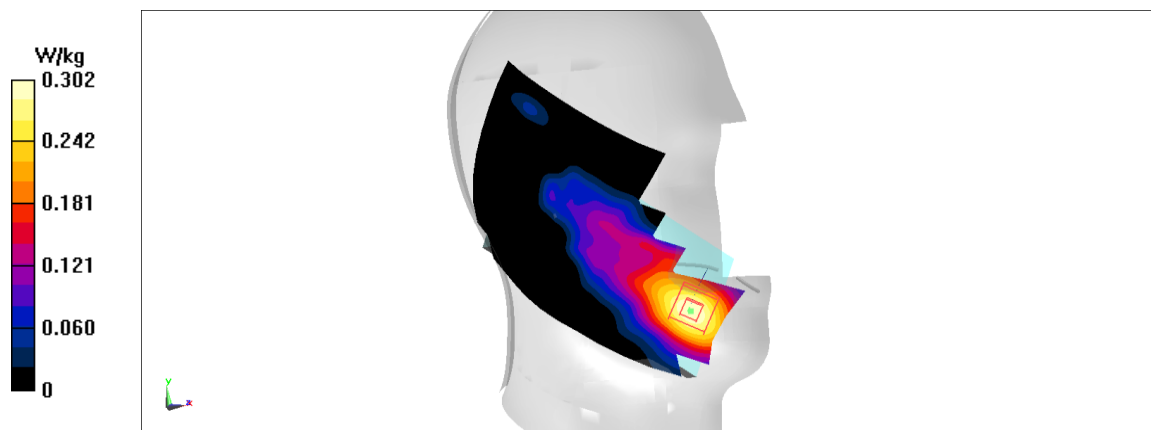
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.449 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.362 W/kg

SAR(1 g) = 0.228 W/kg; SAR(10 g) = 0.145 W/kg

Maximum value of SAR (measured) = 0.316 W/kg

**Fig A.3**

PCS1900_CH512 Rear unfold

Date: 3/1/2021

Electronics: DAE4 Sn536

Medium: head 1900 MHz

Medium parameters used: $f = 1850.2$; $\sigma = 1.38$ mho/m; $\epsilon_r = 40.05$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: PCS1900 1850.2 Duty Cycle: 1:2.67

Probe: EX3DV4 – SN7307 ConvF(8.33,8.33,8.33)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.18 W/kg

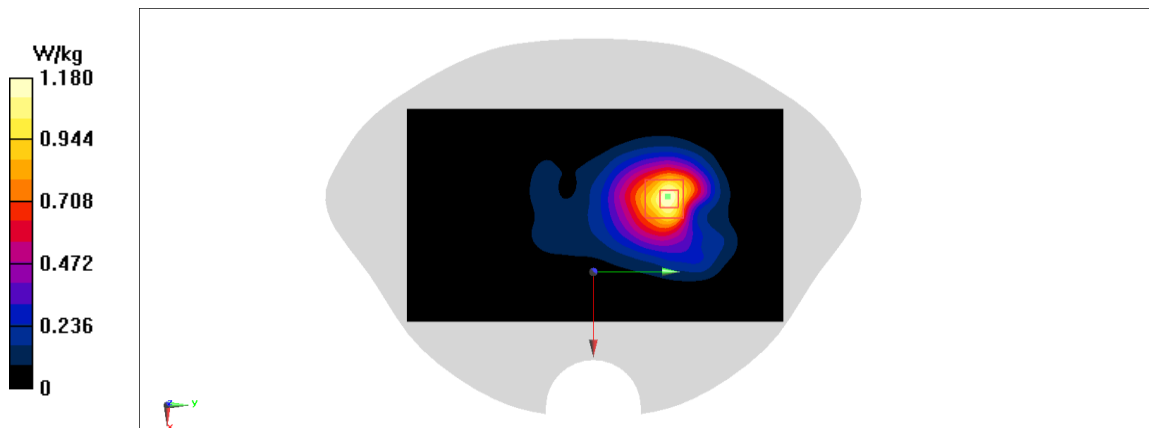
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.28 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.793 W/kg; SAR(10 g) = 0.469 W/kg

Maximum value of SAR (measured) = 1.11 W/kg

**Fig A.4**

WCDMA1900-BII_CH9400 Left Cheek

Date: 3/1/2021

Electronics: DAE4 Sn536

Medium: head 1900 MHz

Medium parameters used: $f = 1880$; $\sigma = 1.409$ mho/m; $\epsilon_r = 40.01$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1900-BII 1880 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.33,8.33,8.33)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.653 W/kg

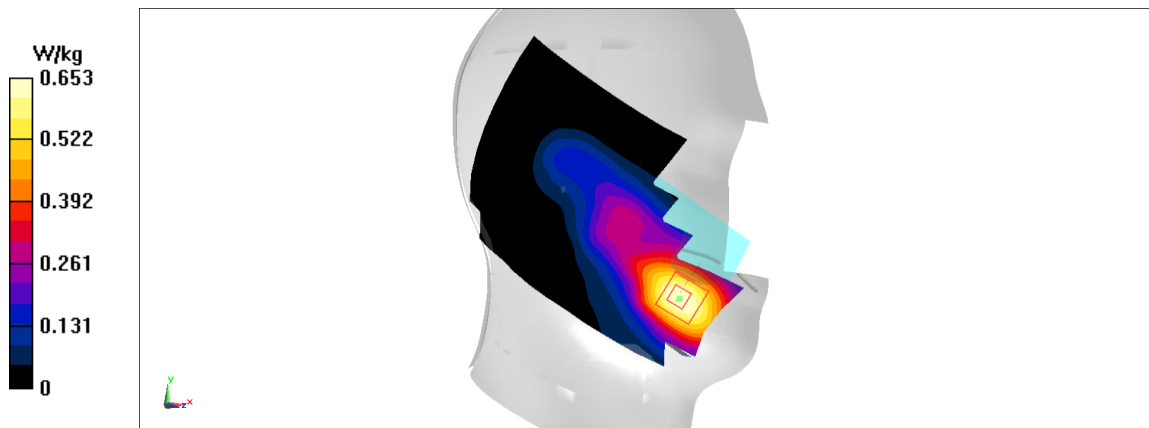
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.266 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.807 W/kg

SAR(1 g) = 0.518 W/kg; SAR(10 g) = 0.316 W/kg

Maximum value of SAR (measured) = 0.701 W/kg

**Fig A.5**

WCDMA1900-BII_CH9262 Rear

Date: 3/1/2021

Electronics: DAE4 Sn536

Medium: head 1900 MHz

Medium parameters used: $f = 1852.4$; $\sigma = 1.382$ mho/m; $\epsilon_r = 40.05$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1900-BII 1852.4 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.33,8.33,8.33)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.56 W/kg

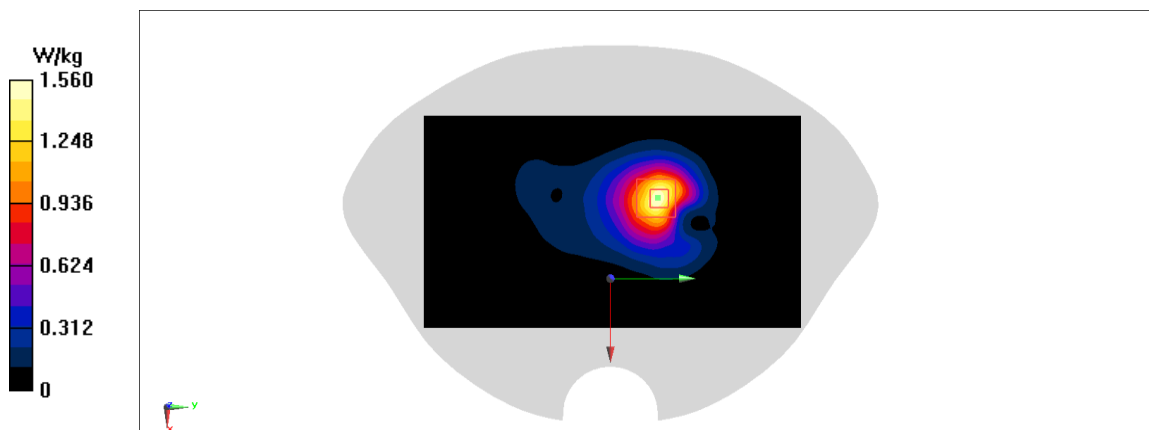
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.02 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.74 W/kg

SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.584 W/kg

Maximum value of SAR (measured) = 1.46 W/kg

**Fig A.6**

WCDMA1900-BII_CH9262 Rear

Date: 3/1/2021

Electronics: DAE4 Sn536

Medium: head 1900 MHz

Medium parameters used: $f = 1852.4$; $\sigma = 1.382$ mho/m; $\epsilon_r = 40.05$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1900-BII 1852.4 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.33,8.33,8.33)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.14 W/kg

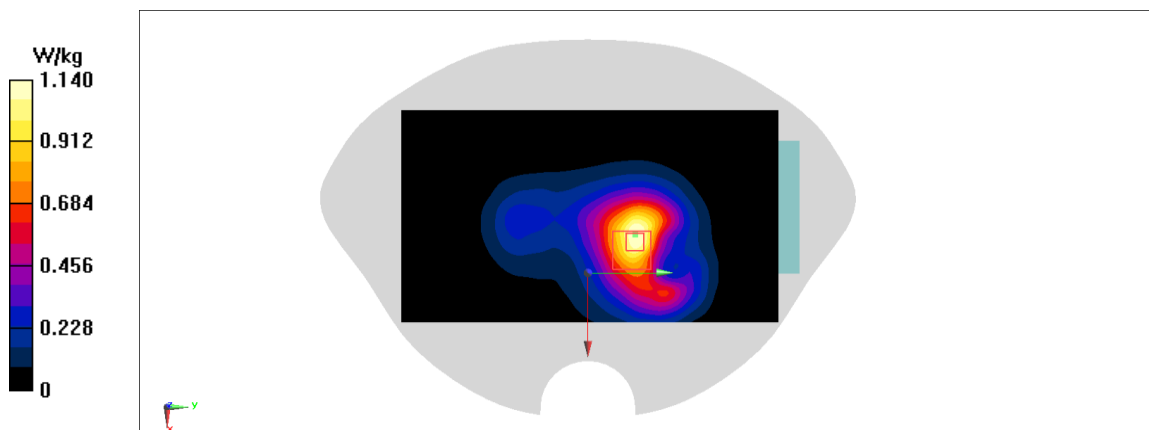
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 16.36 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 2.62 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.492 W/kg

Maximum value of SAR (measured) = 1.14 W/kg

**Fig A.7**

WCDMA1700-BIV_CH1312 Left Cheek

Date: 2/28/2021

Electronics: DAE4 Sn536

Medium: head 1750 MHz

Medium parameters used: $f = 1712.4$; $\sigma = 1.341$ mho/m; $\epsilon_r = 40.87$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1700-BIV 1712.4 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.64,8.64,8.64)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.513 W/kg

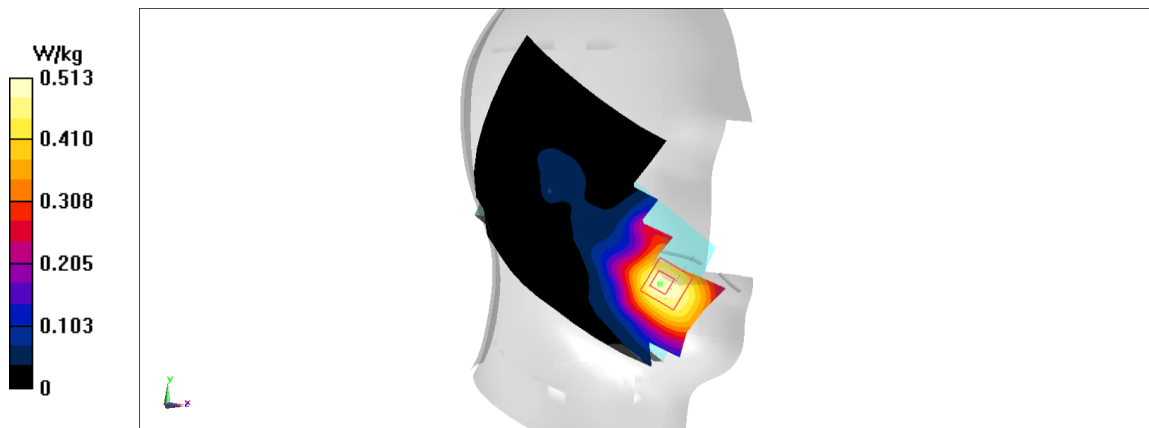
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.695 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.559 W/kg

SAR(1 g) = 0.386 W/kg; SAR(10 g) = 0.264 W/kg

Maximum value of SAR (measured) = 0.493 W/kg

**Fig A.8**

WCDMA1700-BIV_CH1312 Rear

Date: 2/28/2021

Electronics: DAE4 Sn536

Medium: head 1750 MHz

Medium parameters used: $f = 1712.4$; $\sigma = 1.341$ mho/m; $\epsilon_r = 40.87$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1700-BIV 1712.4 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.64,8.64,8.64)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.75 W/kg

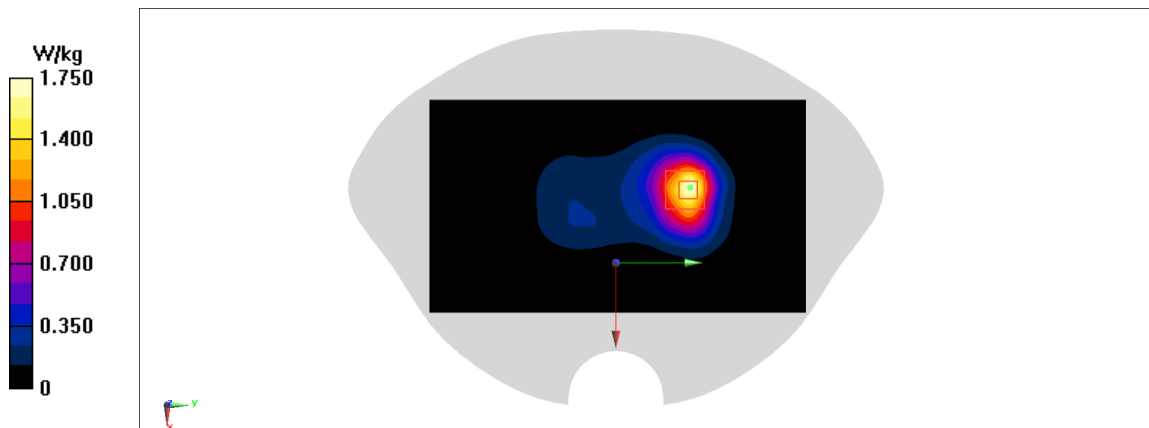
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.99 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.96 W/kg

SAR(1 g) = 1.04 W/kg; SAR(10 g) = 0.575 W/kg

Maximum value of SAR (measured) = 1.57 W/kg

**Fig A.9**

WCDMA1700-BIV_CH1312 Rear

Date: 2/28/2021

Electronics: DAE4 Sn536

Medium: head 1750 MHz

Medium parameters used: $f = 1712.4$; $\sigma = 1.341$ mho/m; $\epsilon_r = 40.87$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA1700-BIV 1712.4 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.64,8.64,8.64)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.27 W/kg

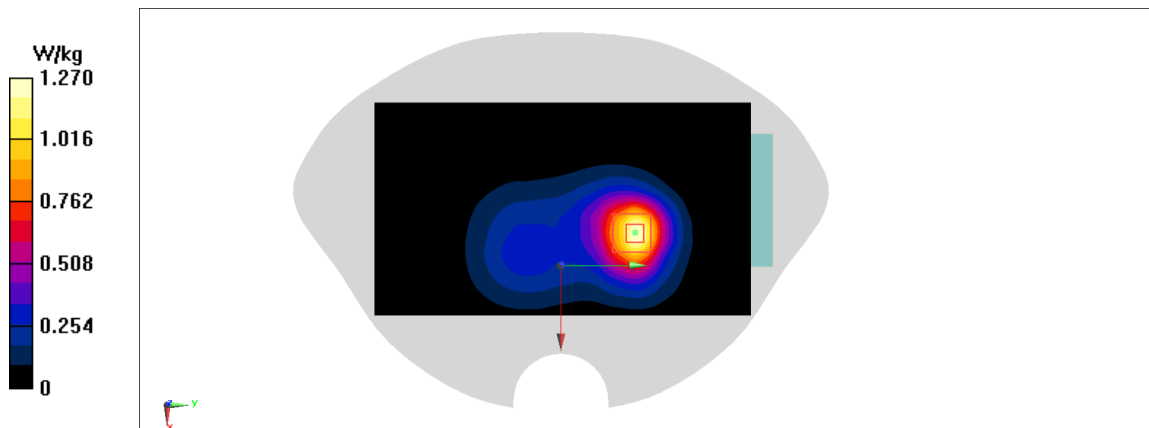
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.69 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.806 W/kg; SAR(10 g) = 0.463 W/kg

Maximum value of SAR (measured) = 1.19 W/kg

**Fig A.10**

WCDMA850-BV_CH4233 Right Cheek

Date: 2/27/2021

Electronics: DAE4 Sn536

Medium: head 835 MHz

Medium parameters used: $f = 846.6$; $\sigma = 0.903$ mho/m; $\epsilon_r = 41.09$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA850-BV 846.6 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(10.2,10.2,10.2)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.838 W/kg

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

Reference Value = 6.69 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.527 W/kg; SAR(10 g) = 0.312 W/kg

Maximum value of SAR (measured) = 0.841 W/kg

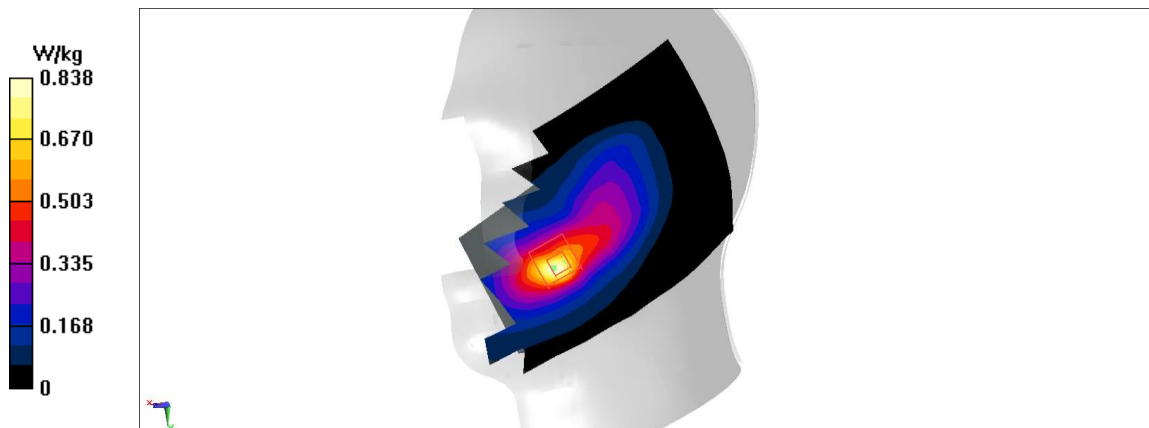


Fig A.11

WCDMA850-BV_CH4132 Rear

Date: 2/27/2021

Electronics: DAE4 Sn536

Medium: head 835 MHz

Medium parameters used: $f = 826.4$; $\sigma = 0.883$ mho/m; $\epsilon_r = 41.11$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WCDMA850-BV 826.4 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(10.2,10.2,10.2)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.835 W/kg

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

Reference Value = 31.02 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.967 W/kg

SAR(1 g) = 0.638 W/kg; SAR(10 g) = 0.445 W/kg

Maximum value of SAR (measured) = 0.831 W/kg

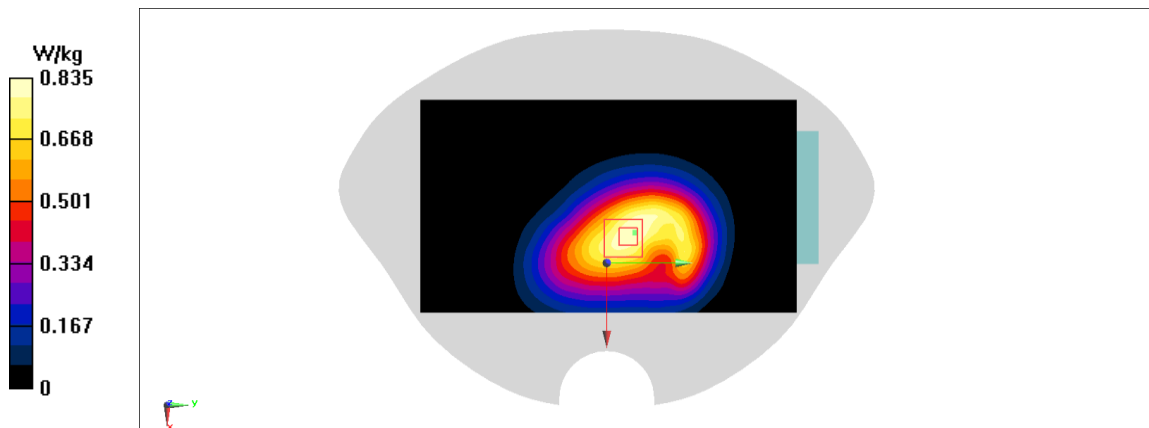


Fig A.12

LTE700-FDD12_CH23130 Right Cheek

Date: 2/26/2021

Electronics: DAE4 Sn536

Medium: head 750 MHz

Medium parameters used: $f = 711 \text{ MHz}$; $\sigma = 0.851 \text{ mho/m}$; $\epsilon_r = 41.4$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.5°C , Liquid Temperature: 22.3°C

Communication System: LTE700-FDD12 711 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(10.41,10.41,10.41)

Area Scan (71x121x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.838 W/kg

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

Reference Value = 4.172 V/m ; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.946 W/kg

SAR(1 g) = 0.464 W/kg ; SAR(10 g) = 0.283 W/kg

Maximum value of SAR (measured) = 0.709 W/kg

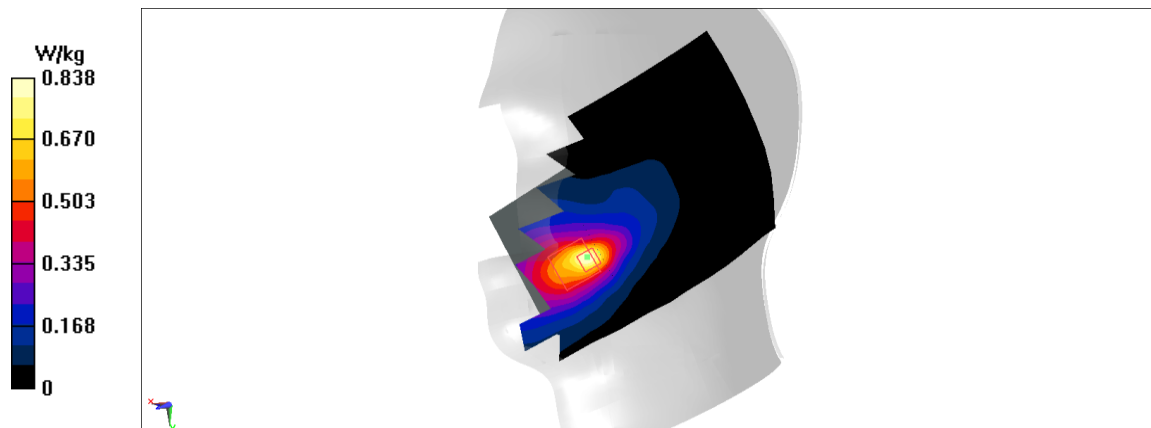


Fig A.13

LTE700-FDD12_CH23060 Rear unfold

Date: 2/26/2021

Electronics: DAE4 Sn536

Medium: head 750 MHz

Medium parameters used: $f = 704$ MHz; $\sigma = 0.844$ mho/m; $\epsilon_r = 41.41$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE700-FDD12 704 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(10.41,10.41,10.41)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.792 W/kg

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

Reference Value = 29.45 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.876 W/kg

SAR(1 g) = 0.614 W/kg; SAR(10 g) = 0.449 W/kg

Maximum value of SAR (measured) = 0.77 W/kg

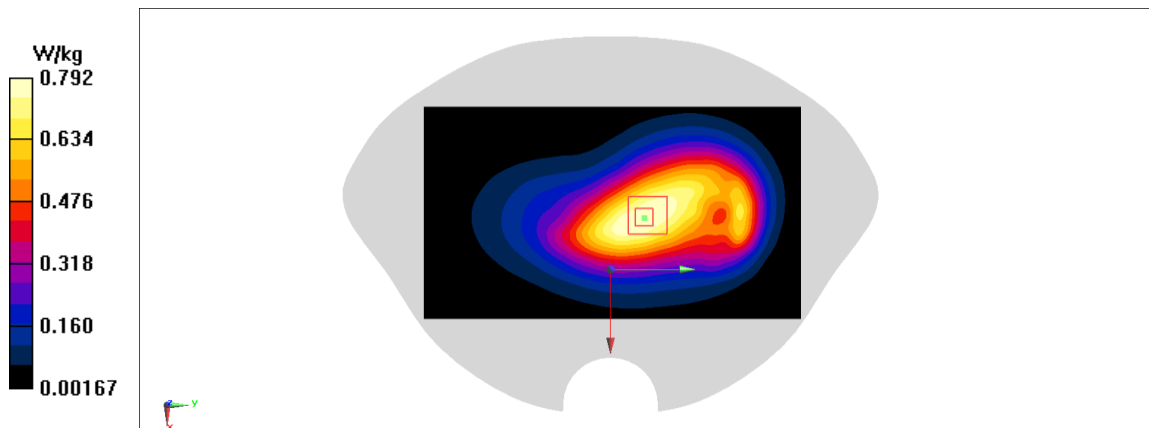


Fig A.14

LTE1700-FDD66_CH132572 Left Cheek

Date: 2/28/2021

Electronics: DAE4 Sn536

Medium: head 1750 MHz

Medium parameters used: $f = 1770$; $\sigma = 1.396$ mho/m; $\epsilon_r = 40.76$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD66 1770 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.64,8.64,8.64)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.467 W/kg

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

Reference Value = 4.499 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.6 W/kg

SAR(1 g) = 0.377 W/kg; SAR(10 g) = 0.244 W/kg

Maximum value of SAR (measured) = 0.511 W/kg

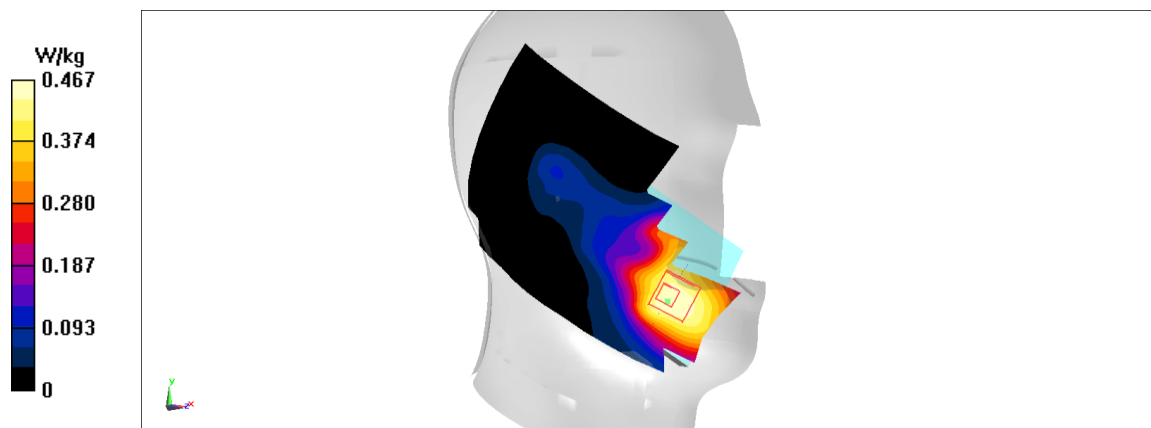


Fig A.15

LTE1700-FDD66_CH132072 Rear

Date: 2/28/2021

Electronics: DAE4 Sn536

Medium: head 1750 MHz

Medium parameters used: $f = 1720$; $\sigma = 1.361$ mho/m; $\epsilon_r = 40.89$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD66 1720 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.64,8.64,8.64)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.53 W/kg

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

Reference Value = 11.03 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.78 W/kg

SAR(1 g) = 0.974 W/kg; SAR(10 g) = 0.538 W/kg

Maximum value of SAR (measured) = 1.47 W/kg

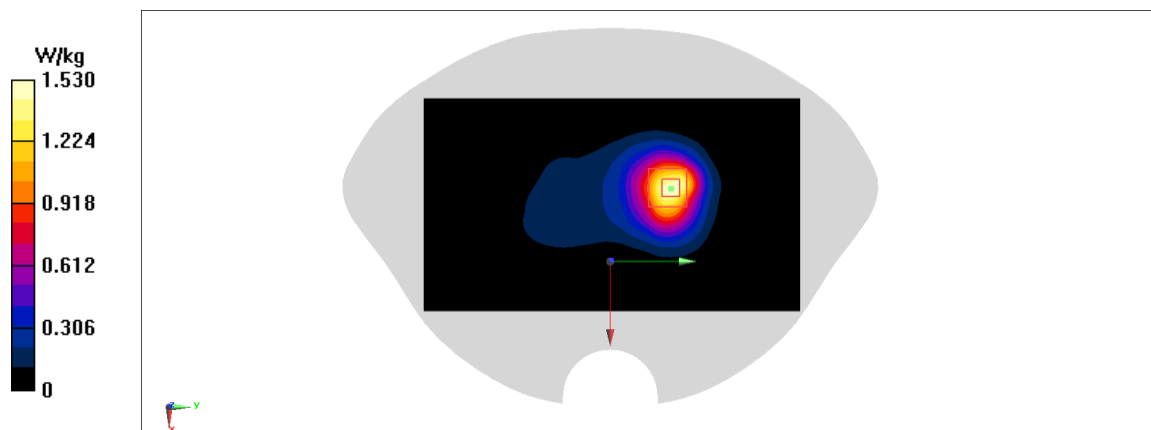


Fig A.16

LTE1700-FDD66_CH132072 Rear

Date: 2/28/2021

Electronics: DAE4 Sn536

Medium: head 1750 MHz

Medium parameters used: $f = 1720$; $\sigma = 1.361$ mho/m; $\epsilon_r = 40.89$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: LTE1700-FDD66 1720 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.64,8.64,8.64)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.27 W/kg

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

Reference Value = 12.48 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.52 W/kg

SAR(1 g) = 0.841 W/kg; SAR(10 g) = 0.474 W/kg

Maximum value of SAR (measured) = 1.26 W/kg

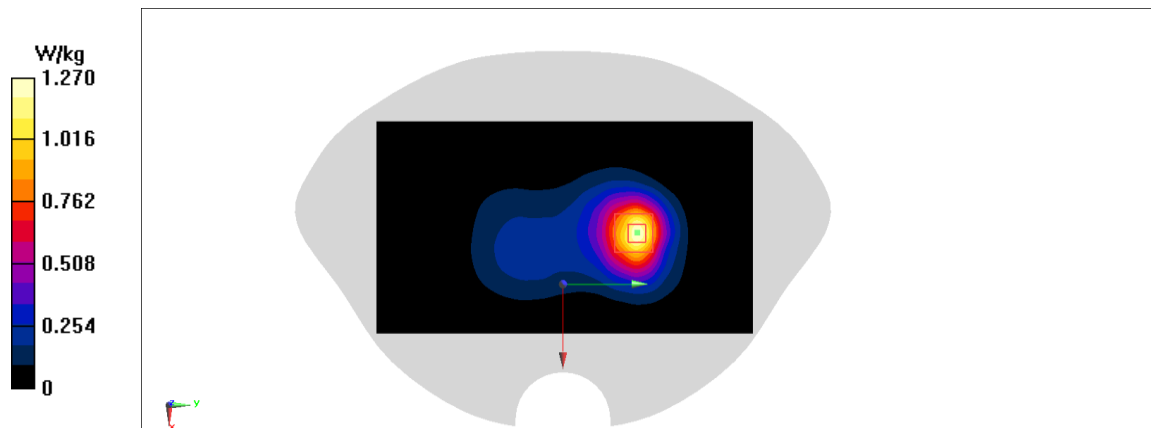


Fig A.17

WLAN2450_CH11 Right Cheek

Date: 3/2/2021

Electronics: DAE4 Sn536

Medium: head 2450 MHz

Medium parameters used: $f = 2462$; $\sigma = 1.791$ mho/m; $\epsilon_r = 38.98$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WLAN2450 2462 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(7.77,7.77,7.77)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.961 W/kg

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

Reference Value = 4.861 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.603 W/kg; SAR(10 g) = 0.309 W/kg

Maximum value of SAR (measured) = 0.954 W/kg

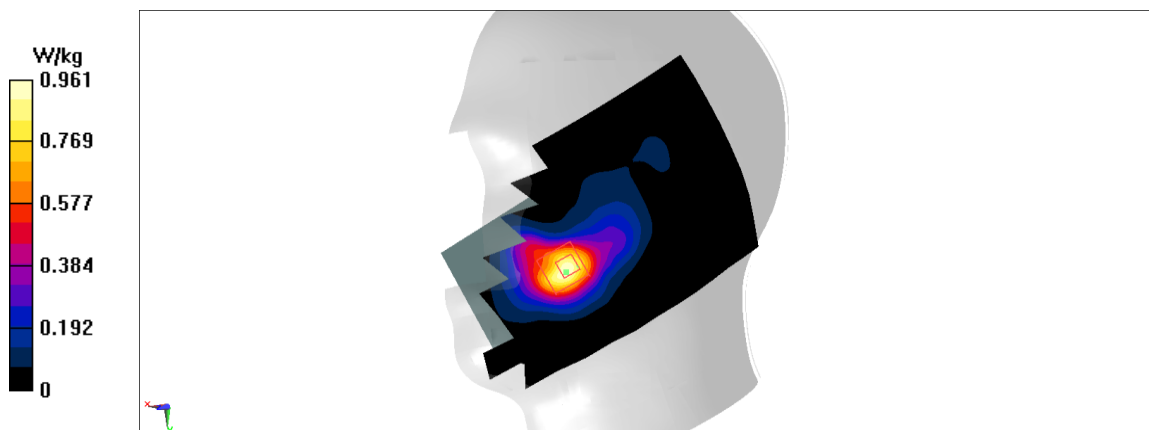


Fig A.18

WLAN2450_CH11 Rear unfold

Date: 3/2/2021

Electronics: DAE4 Sn536

Medium: head 2450 MHz

Medium parameters used: $f = 2462$; $\sigma = 1.791$ mho/m; $\epsilon_r = 38.98$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C

Communication System: WLAN2450 2462 Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(7.77,7.77,7.77)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.311 W/kg

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

Reference Value = 13.16 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.405 W/kg

SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.117 W/kg

Maximum value of SAR (measured) = 0.326 W/kg

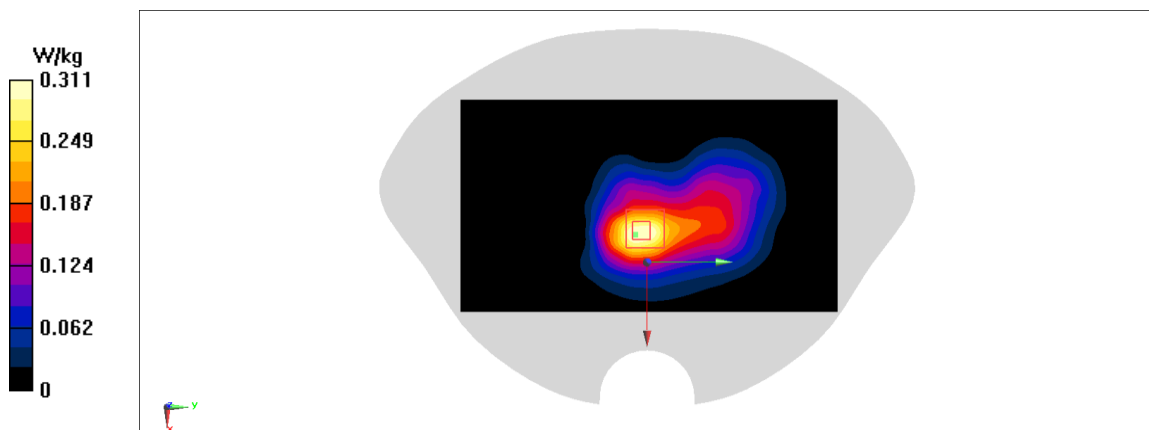


Fig A.19

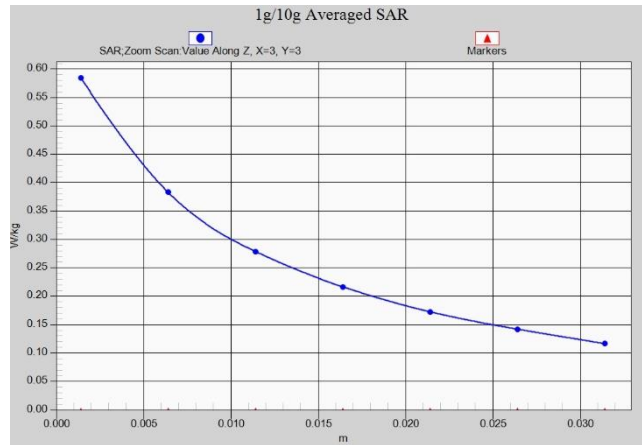


Fig. 1-1 Z-Scan at power reference point (850 MHz)

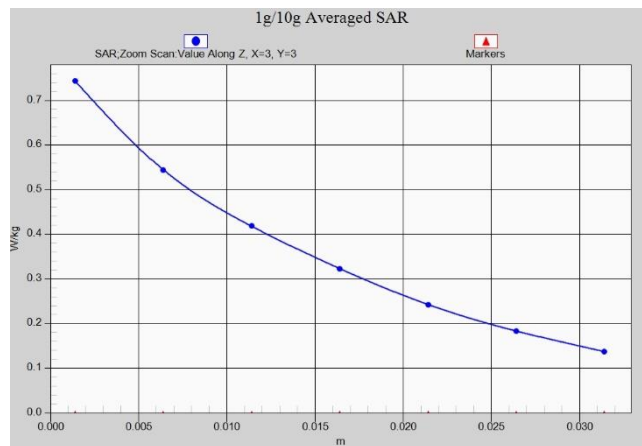


Fig. 1-2 Z-Scan at power reference point (850 MHz)

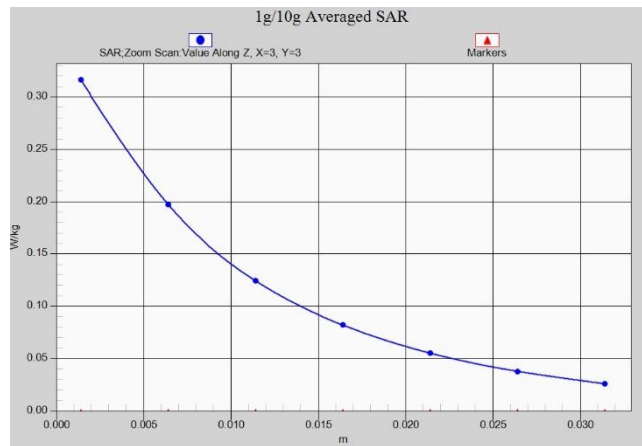


Fig. 1-3 Z-Scan at power reference point (1900 MHz)

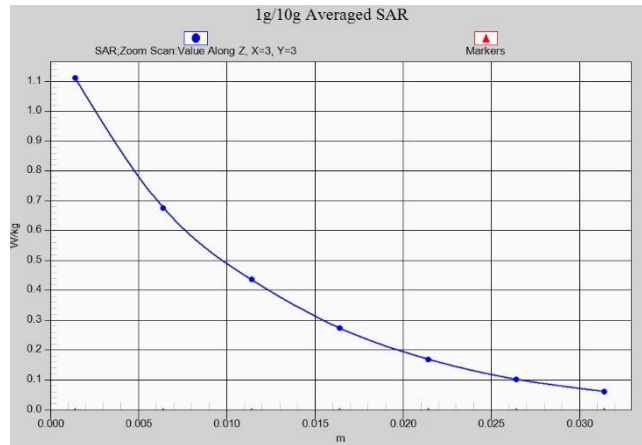


Fig. 1-4 Z-Scan at power reference point (1900 MHz)

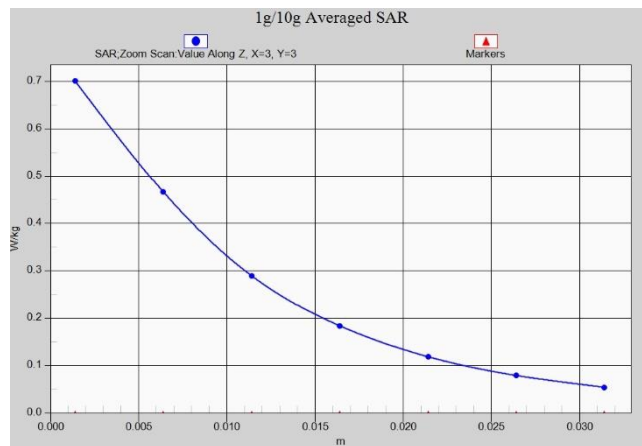


Fig. 1-5 Z-Scan at power reference point (WCDMA1900)

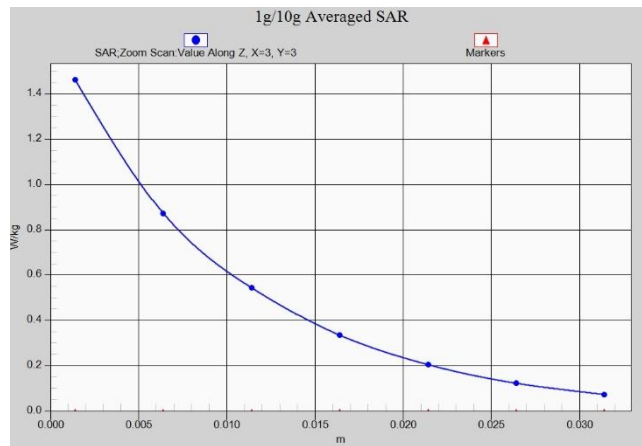


Fig. 1-6 Z-Scan at power reference point (WCDMA1900)

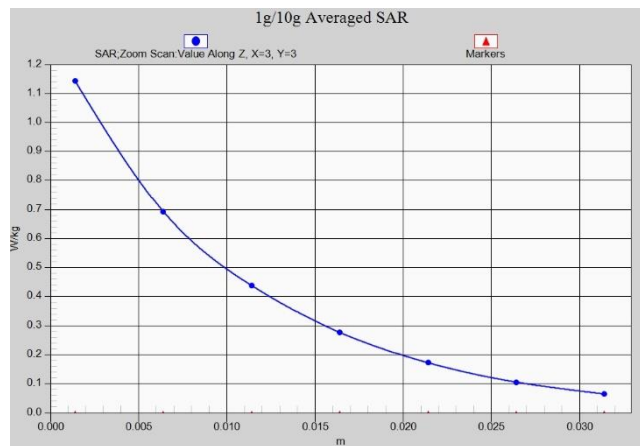


Fig. 1-7 Z-Scan at power reference point (WCDMA1900)



Fig. 1-8 Z-Scan at power reference point (WCDMA1700)

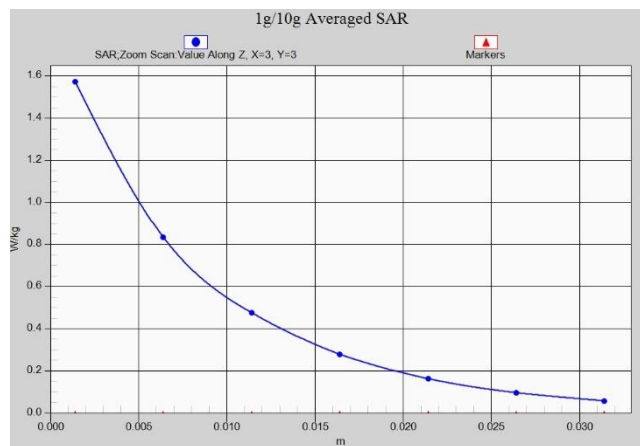


Fig. 1-9 Z-Scan at power reference point (WCDMA1700)

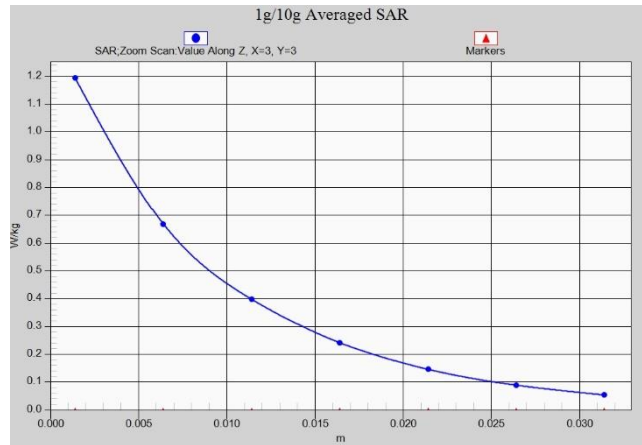


Fig. 1-10 Z-Scan at power reference point (WCDMA1700)

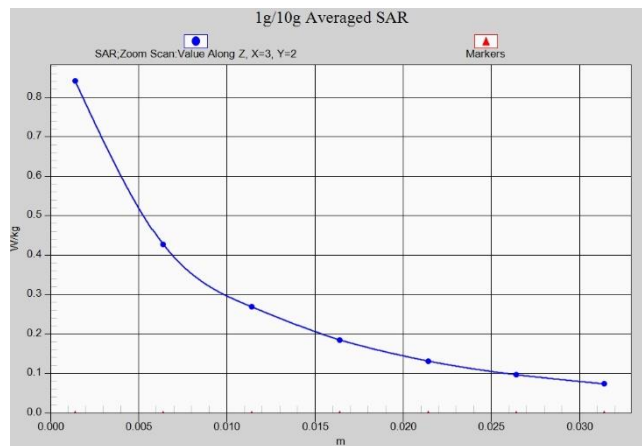


Fig. 1-11 Z-Scan at power reference point (WCDMA850)

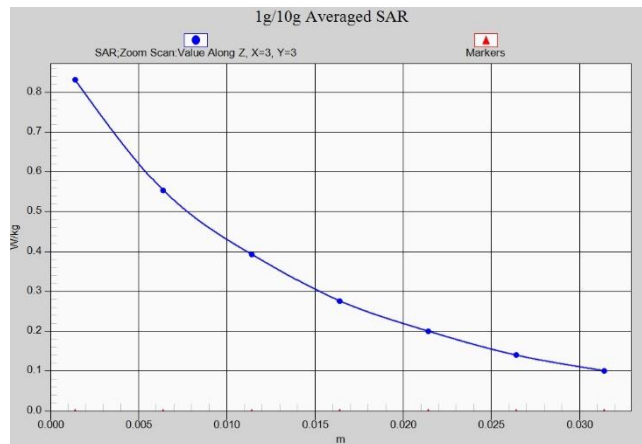


Fig. 1-12 Z-Scan at power reference point (WCDMA850)

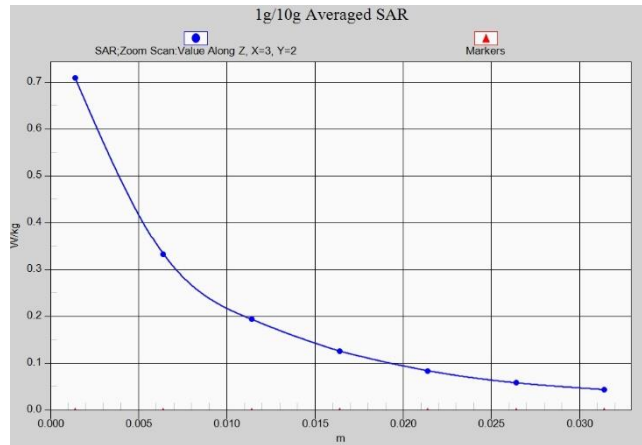


Fig. 1-13 Z-Scan at power reference point (LTE Band12)

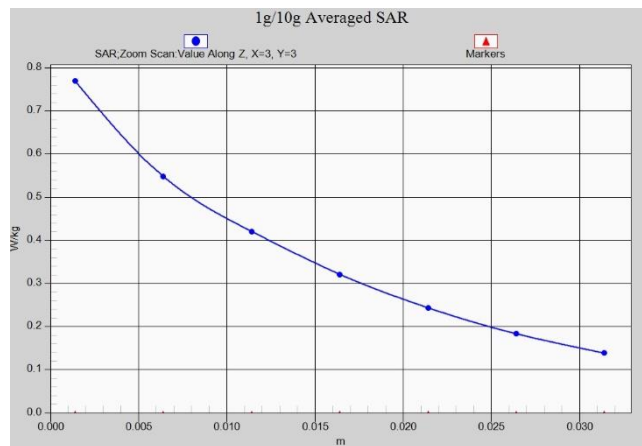


Fig. 1-14 Z-Scan at power reference point (LTE Band12)

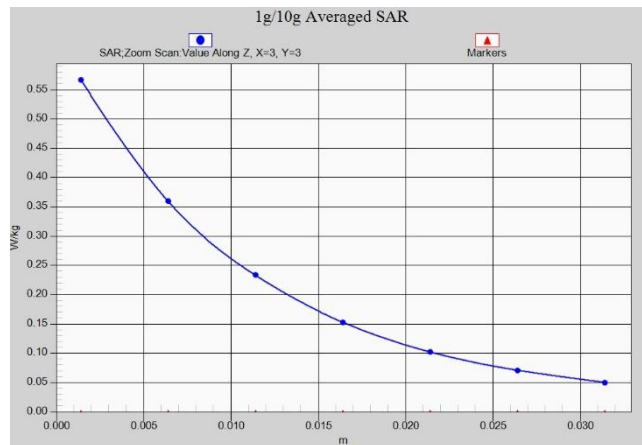


Fig. 1-15 Z-Scan at power reference point (LTE Band25)



Fig. 1-16 Z-Scan at power reference point (LTE Band25)

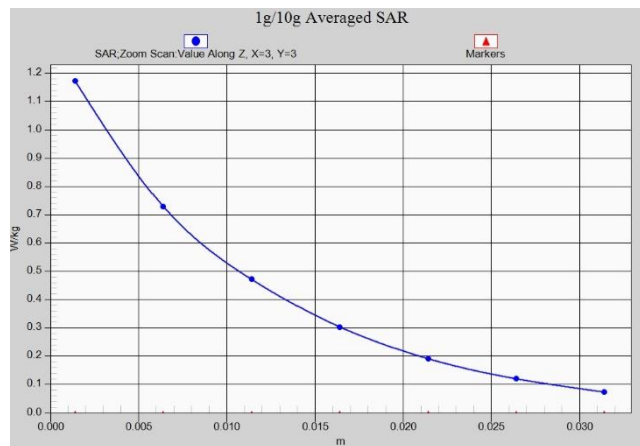


Fig. 1-17 Z-Scan at power reference point (LTE Band25)

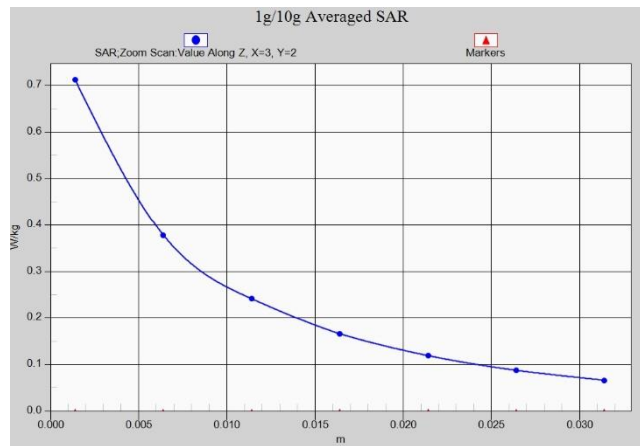


Fig. 1-18 Z-Scan at power reference point (LTE Band26)



Fig. 1-19 Z-Scan at power reference point (LTE Band26)

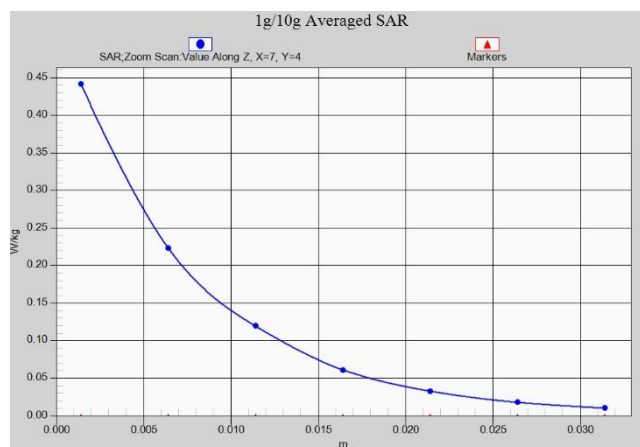


Fig. 1-20 Z-Scan at power reference point (LTE Band41)

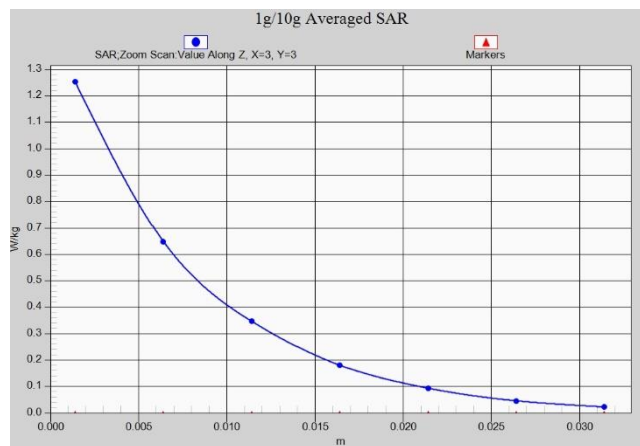


Fig. 1-21 Z-Scan at power reference point (LTE Band41)

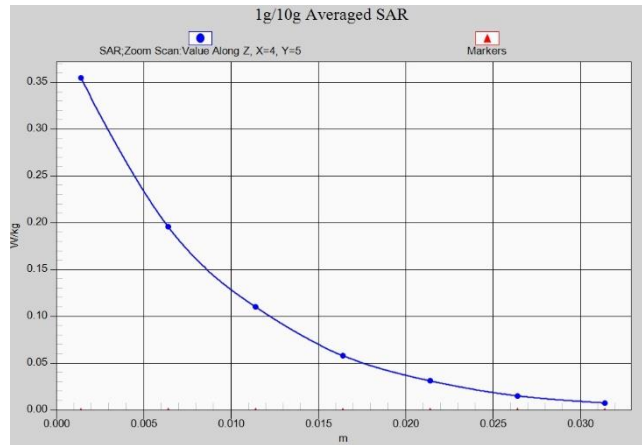


Fig. 1-22 Z-Scan at power reference point (LTE Band41)

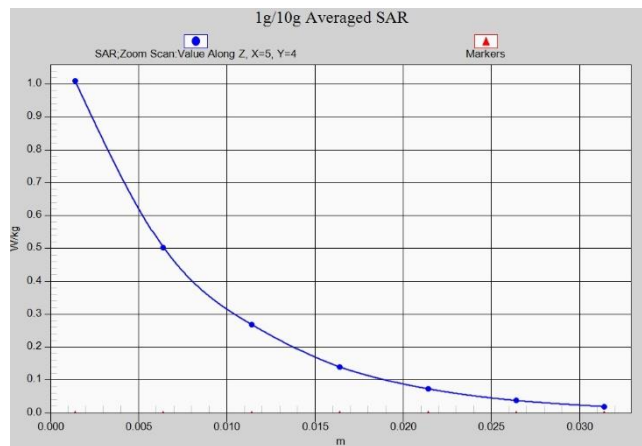


Fig. 1-23 Z-Scan at power reference point (LTE Band41)

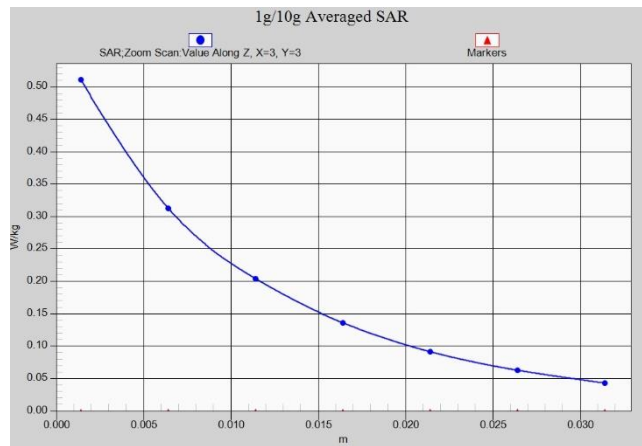


Fig. 1-24 Z-Scan at power reference point (LTE Band66)

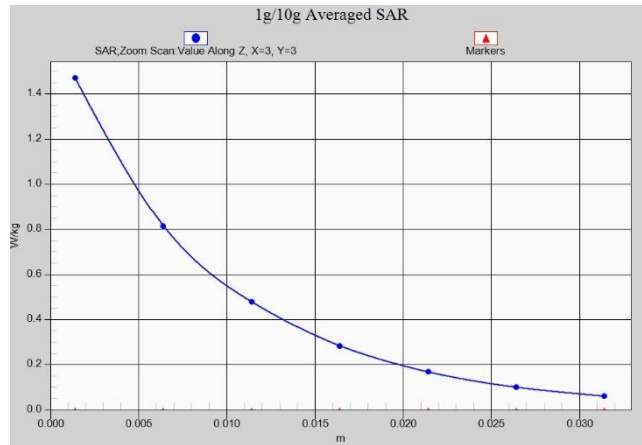


Fig. 1-25 Z-Scan at power reference point (LTE Band66)

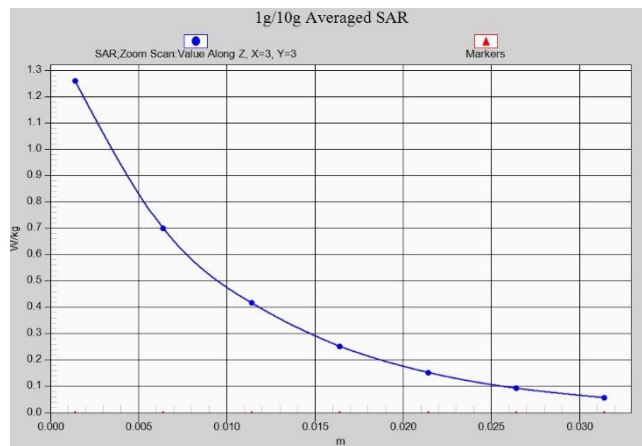


Fig. 1-26 Z-Scan at power reference point (LTE Band66)

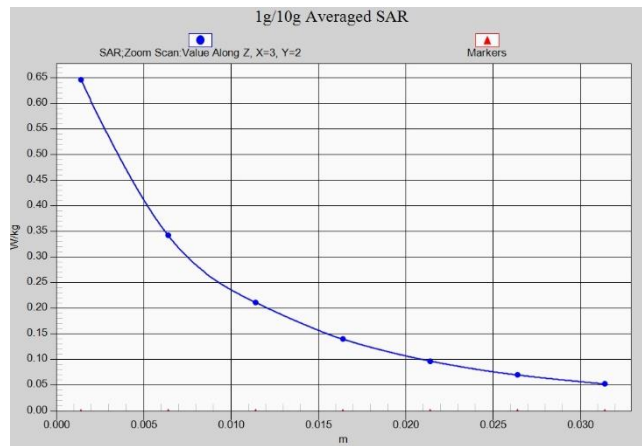


Fig. 1-27 Z-Scan at power reference point (LTE Band71)

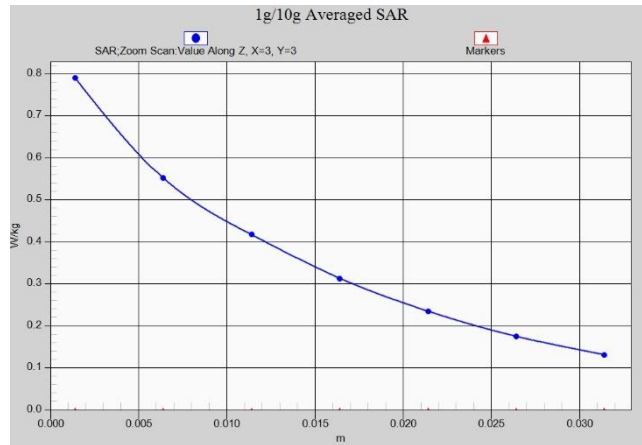


Fig. 1-28 Z-Scan at power reference point (LTE Band71)

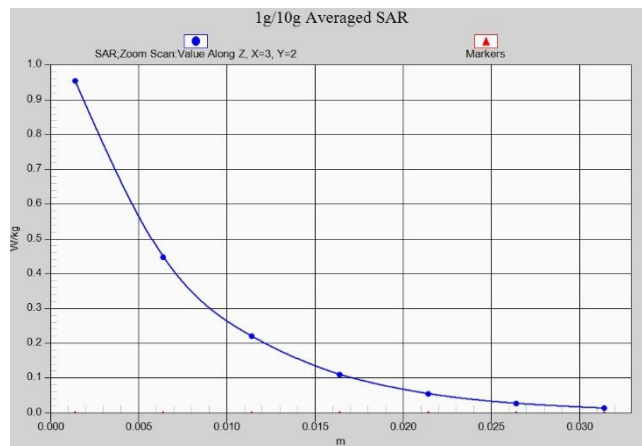


Fig. 1-29 Z-Scan at power reference point (wifi2450)

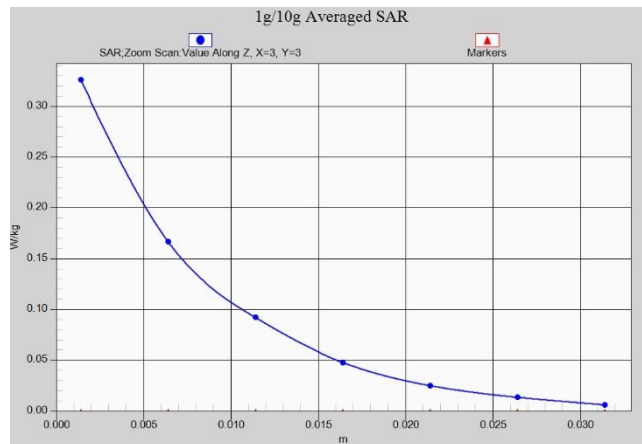


Fig. 1-30 Z-Scan at power reference point (wifi2450)

ANNEX B System Verification Results

750 MHz

Date: 2/26/2021

Electronics: DAE4 Sn536

Medium: Head 750 MHz

Medium parameters used: $f = 750 \text{ MHz}$; $\sigma = 0.888 \text{ mho/m}$; $\epsilon_r = 41.35$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(10.41,10.41,10.41)

System Validation /Area Scan (81x191x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Reference Value = 60.48 V/m ; Power Drift = -0.08

Fast SAR: SAR(1 g) = 2.12 W/kg ; SAR(10 g) = 1.37 W/kg

Maximum value of SAR (interpolated) = 2.85 W/kg

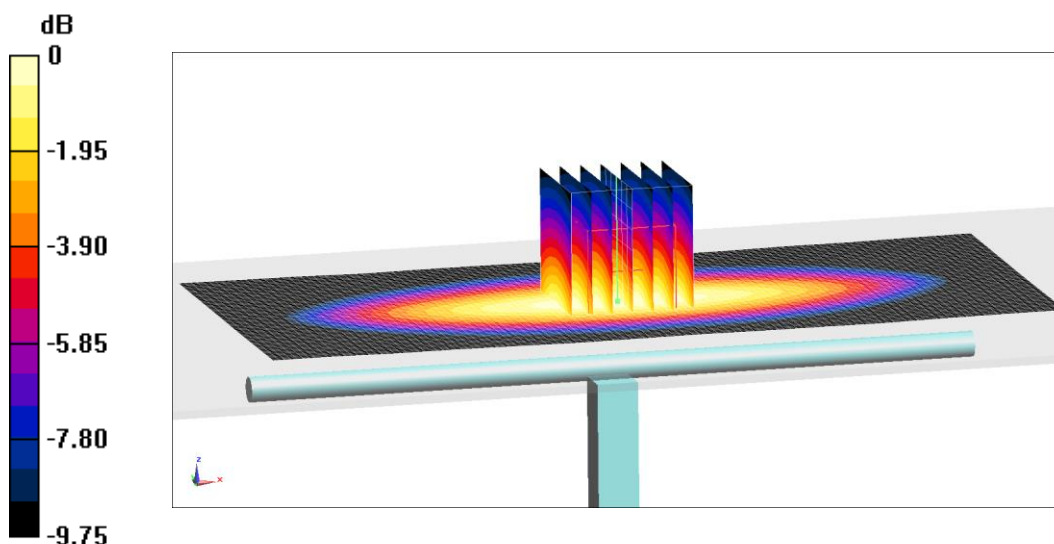
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 60.48 V/m ; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 3.25 W/kg

SAR(1 g) = 2.13 W/kg ; SAR(10 g) = 1.41 W/kg

Maximum value of SAR (measured) = 2.86 W/kg



0 dB = 2.86 W/kg = 4.56 dB W/kg

Fig.B.1 validation 750 MHz 250mW

835 MHz

Date: 2/27/2021

Electronics: DAE4 Sn536

Medium: Head 835 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.892 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(10.2,10.2,10.2)

System Validation /Area Scan (81x191x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Reference Value = 61.96 V/m; Power Drift = 0.06

Fast SAR: SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.53 W/kg

Maximum value of SAR (interpolated) = 3.19 W/kg

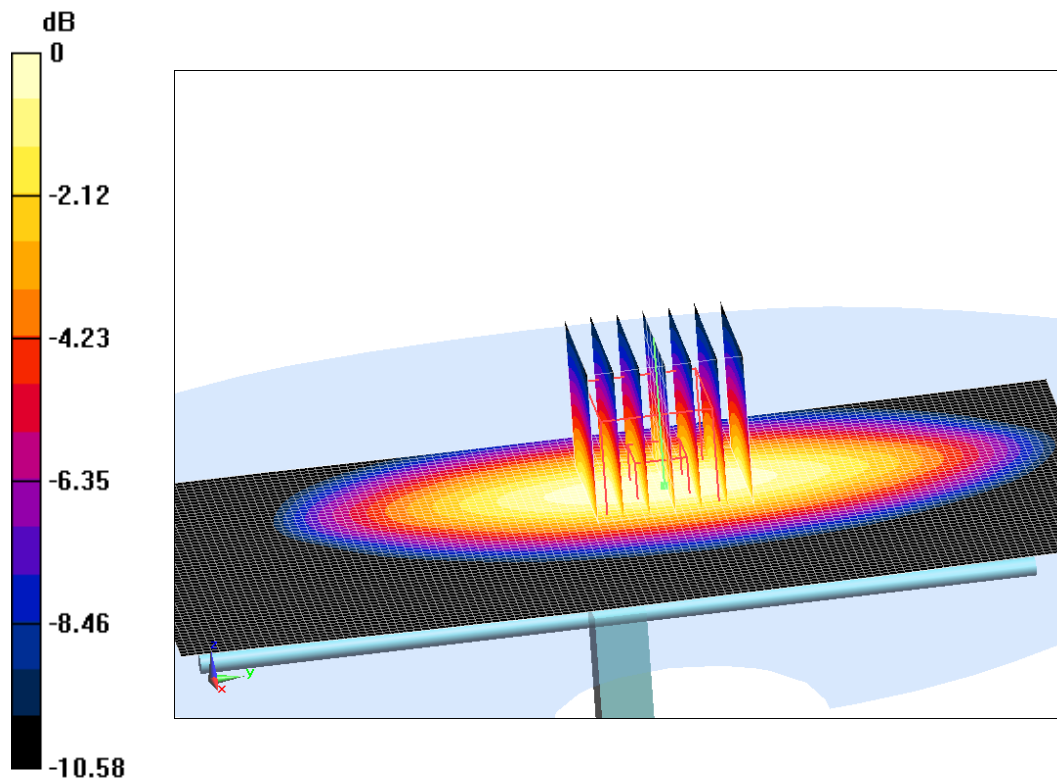
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 61.96 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 3.61 W/kg

SAR(1 g) = 2.37 W/kg; SAR(10 g) = 1.57 W/kg

Maximum value of SAR (measured) = 3.32 W/kg



0 dB = 3.32 W/kg = 5.21 dB W/kg

Fig.B.2 validation 835 MHz 250mW

1750 MHz

Date: 2/28/2021

Electronics: DAE4 Sn536

Medium: Head 1750 MHz

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.377$ mho/m; $\epsilon_r = 40.82$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 1750 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(8.64,8.64,8.64)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 107.9 V/m; Power Drift = -0.03

Fast SAR: SAR(1 g) = 9.31 W/kg; SAR(10 g) = 4.69 W/kg

Maximum value of SAR (interpolated) = 14.15 W/kg

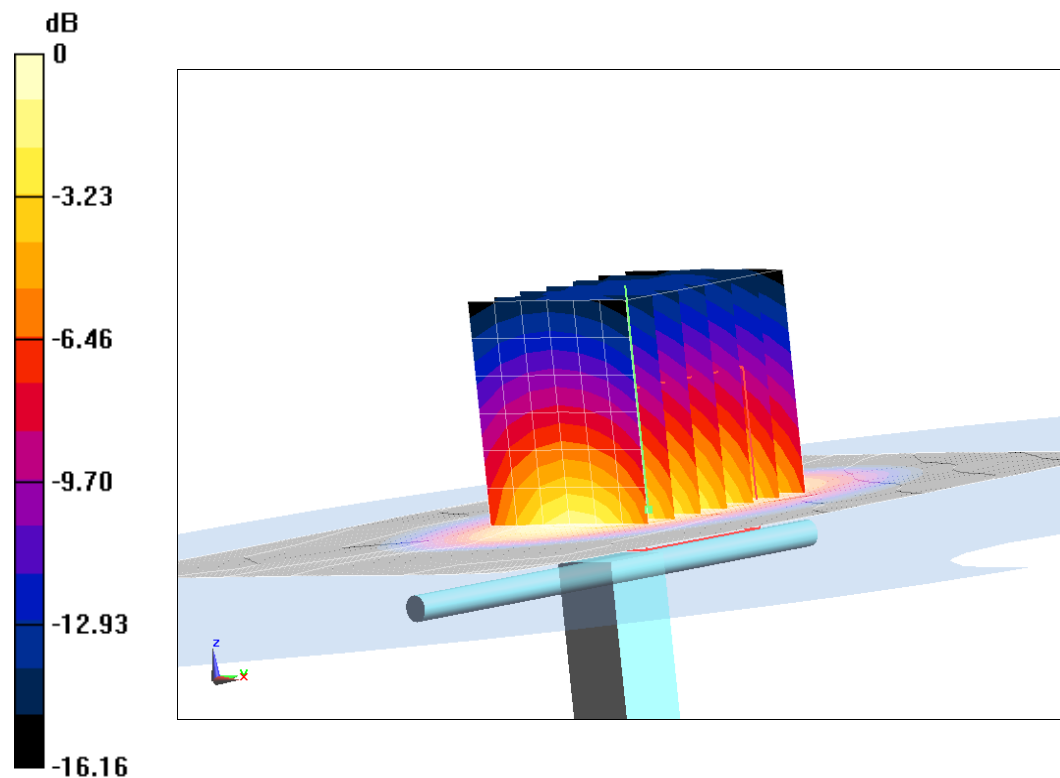
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 107.9 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 16.79 W/kg

SAR(1 g) = 9.14 W/kg; SAR(10 g) = 4.78 W/kg

Maximum value of SAR (measured) = 14.3 W/kg



0 dB = 14.3 W/kg = 11.55 dB W/kg

Fig.B.3 validation 1750 MHz 250mW

1900 MHz

Date: 3/1/2021

Electronics: DAE4 Sn536

Medium: Head 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.428$ mho/m; $\epsilon_r = 39.99$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

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

Probe: EX3DV4 – SN7307 ConvF(8.33,8.33,8.33)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 109.75 V/m; Power Drift = -0.02

Fast SAR: SAR(1 g) = 9.87 W/kg; SAR(10 g) = 5.09 W/kg

Maximum value of SAR (interpolated) = 14.95 W/kg

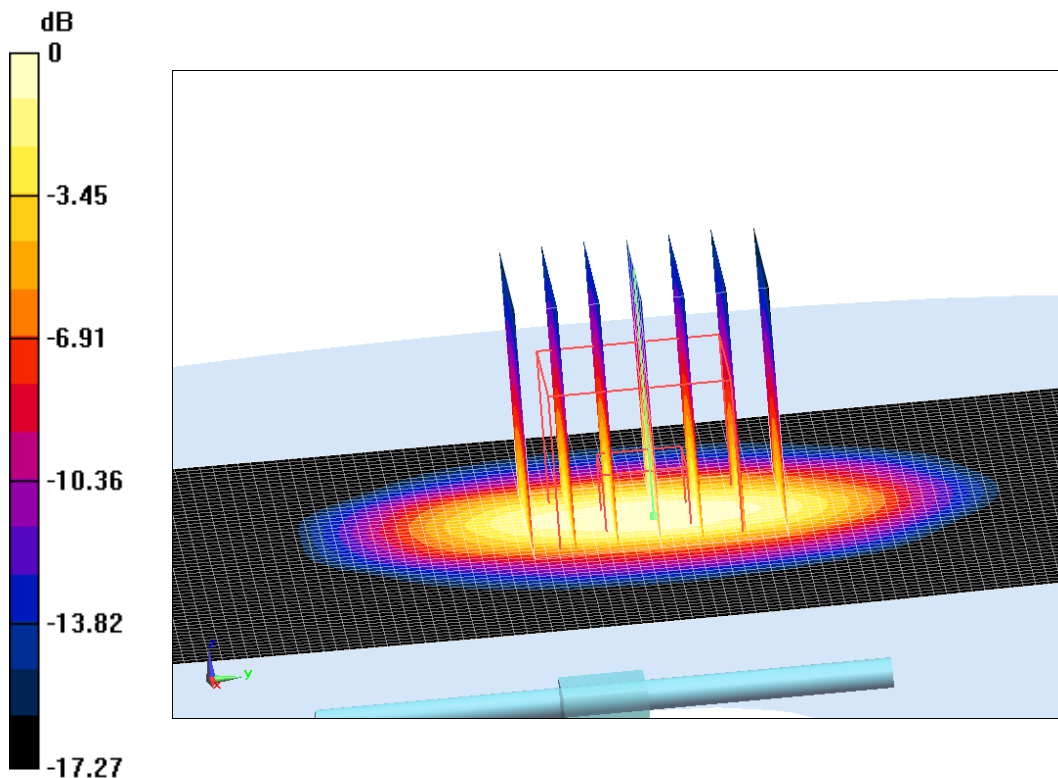
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 109.75 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 18.43 W/kg

SAR(1 g) = 9.9 W/kg; SAR(10 g) = 5.23 W/kg

Maximum value of SAR (measured) = 15.08 W/kg



0 dB = 15.08 W/kg = 11.78 dB W/kg

Fig.B.4 validation 1900 MHz 250mW

2450 MHz

Date: 3/2/2021

Electronics: DAE4 Sn536

Medium: Head 2450 MHz

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.78$ mho/m; $\epsilon_r = 38.99$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.5°C Liquid Temperature: 22.3°C

Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1

Probe: EX3DV4 – SN7307 ConvF(7.77,7.77,7.77)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Reference Value = 118.1 V/m; Power Drift = 0.04

Fast SAR: SAR(1 g) = 12.95 W/kg; SAR(10 g) = 6.05 W/kg

Maximum value of SAR (interpolated) = 21.38 W/kg

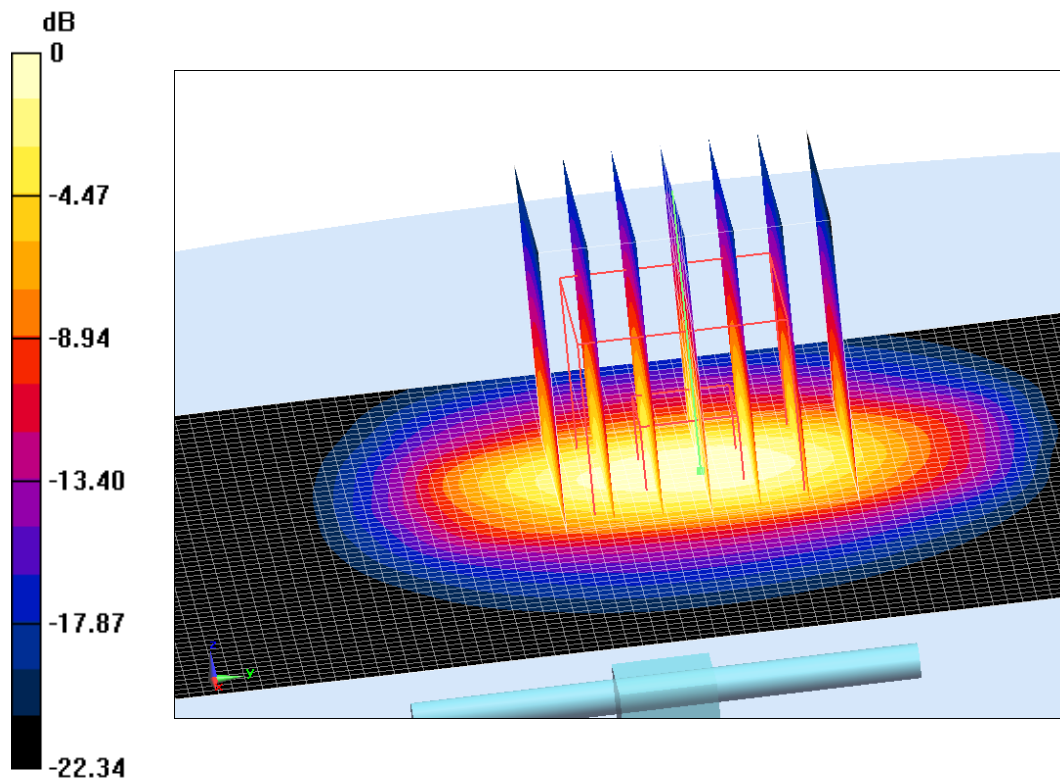
System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 118.1 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 26.32 W/kg

SAR(1 g) = 12.9 W/kg; SAR(10 g) = 6.2 W/kg

Maximum value of SAR (measured) = 21.77 W/kg



0 dB = 21.77 W/kg = 13.38 dB W/kg

Fig.B.5 validation 2450 MHz 250mW



The SAR system verification must be required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR.

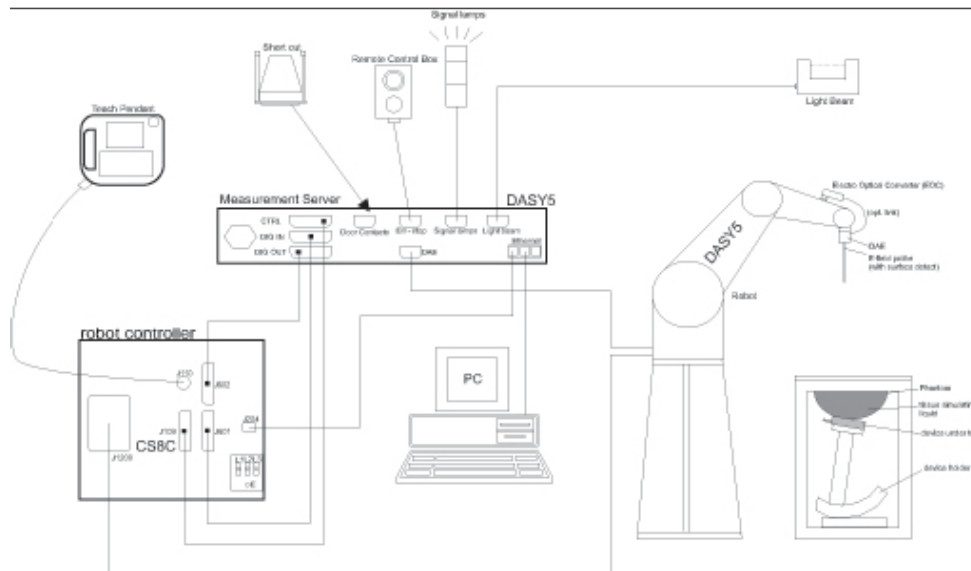
Table B.1 Comparison between area scan and zoom scan for system verification

Date	Band	Position	Area scan (1g)	Zoom scan (1g)	Drift (%)
2021-2-26	750	Head	2.12	2.13	-0.47
2021-2-27	835	Head	2.38	2.37	0.42
2021-2-28	1750	Head	9.31	9.14	1.86
2021-3-1	1900	Head	9.87	9.9	-0.30
2021-3-2	2450	Head	12.95	12.9	0.39

ANNEX C SAR Measurement Setup

C.1 Measurement Set-up

The Dasy4 or DASY5 system for performing compliance tests is illustrated above graphically. This system consists of the following items:



Picture C.1 SAR Lab Test Measurement Set-up

- A standard high precision 6-axis robot (StäubliTX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- 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 Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- 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.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP and the DASY4 or DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.