



ANNEX A Graph Results

GSM850 Head

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 848.8 MHz; $\sigma = 0.882 \text{ S/m}$; $\varepsilon_r = 44.017$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, GSM 850 (0) Frequency: 848.8 MHz Duty Cycle: 1:8.30042

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 848.8 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.104 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 3.808 V/m; Power Drift = 0.14 dB Peak SAR (extrapolated) = 0.115 W/kg SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.065 W/kg Smallest distance from peaks to all points 3 dB below = 23.9 mm Ratio of SAR at M2 to SAR at M1 = 75.1%

Maximum value of SAR (measured) = 0.102 W/kg







GSM1900 Head

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma = 1.457 \text{ S/m}$; $\varepsilon_r = 41.084$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, GSM 1900MHz GPRS-3 (0) Frequency: 1850.2 MHz Duty Cycle: 1:2.66993

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1850.2 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.188 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 2.214 V/m; Power Drift = 0.09dB Peak SAR (extrapolated) = 0.210 W/kg SAR(1 g) = 0.134 W/kg; SAR(10 g) = 0.083 W/kg Smallest distance from peaks to all points 3 dB below = 13.2 mm Ratio of SAR at M2 to SAR at M1 = 66.2%

Maximum value of SAR (measured) = 0.181 W/kg



A.2





W1900 Head

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma = 1.458 \text{ S/m}$; $\varepsilon_r = 41.078$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 1900 (0) Frequency: 1852.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1852.4 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.458 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 4.799 V/m; Power Drift = 0.08 dB Peak SAR (extrapolated) = 0.508 W/kg SAR(1 g) = 0.330 W/kg; SAR(10 g) = 0.207 W/kg Smallest distance from peaks to all points 3 dB below = 13.6 mm Ratio of SAR at M2 to SAR at M1 = 67.7%

Maximum value of SAR (measured) = 0.440 W/kg



A.3





WCDMA1700 Head

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 1752.6 MHz; $\sigma = 1.386 \text{ S/m}$; $\varepsilon_r = 41.445$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 1700 Band4 (0) Frequency: 1752.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.4, 8.4, 8.4) @ 1752.6 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.490 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 4.434 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 0.544 W/kg SAR(1 g) = 0.355 W/kg; SAR(10 g) = 0.224 W/kg Smallest distance from peaks to all points 3 dB below = 15.2 mm Ratio of SAR at M2 to SAR at M1 = 67.3%

Maximum value of SAR (measured) = 0.477 W/kg







WCDMA850 Head

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 826.4 MHz; $\sigma = 0.871 \text{ S/m}$; $\varepsilon_r = 44.084$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 850 (0) Frequency: 826.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 826.4 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.810 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 14.10 V/m; Power Drift = -0.01 dB Peak SAR (extrapolated) = 1.05 W/kg SAR(1 g) = 0.461 W/kg; SAR(10 g) = 0.239 W/kg Smallest distance from peaks to all points 3 dB below = 6.4 mm Ratio of SAR at M2 to SAR at M1 = 43%

Maximum value of SAR (measured) = 0.795 W/kg







LTE Band12 Head

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 707.5 MHz; $\sigma = 0.815 \text{ S/m}$; $\varepsilon_r = 44.419$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band12 (0) Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 707.5 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.840 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.77 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.580 W/kg; SAR(10 g) = 0.303 W/kg
Smallest distance from peaks to all points 3 dB below = 8.6 mm
Ratio of SAR at M2 to SAR at M1 = 44.2%

Maximum value of SAR (measured) = 1.00 W/kg







LTE Band25 Head

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1905 MHz; $\sigma = 1.477 \text{ S/m}$; $\varepsilon_r = 40.95$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band25 (0) Frequency: 1905 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1905 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 0.278 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 4.355 V/m; Power Drift = 0.13 dB Peak SAR (extrapolated) = 0.329 W/kg SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.136 W/kg Smallest distance from peaks to all points 3 dB below = 14.9 mm Ratio of SAR at M2 to SAR at M1 = 67.3% Maximum value of SAR (measured) = 0.284 W/kg







LTE Band26 Head

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 841.5 MHz; $\sigma = 0.879$ S/m; $\varepsilon_r = 44.041$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band26 (0) Frequency: 841.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 841.5 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.787 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 17.66 V/m; Power Drift = -0.12 dB Peak SAR (extrapolated) = 1.13 W/kg SAR(1 g) = 0.523 W/kg; SAR(10 g) = 0.271 W/kg Smallest distance from peaks to all points 3 dB below = 8.1 mm Ratio of SAR at M2 to SAR at M1 = 46%

Maximum value of SAR (measured) = 0.893 W/kg







LTE Band41 Pc2 Head

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 2506 MHz; $\sigma = 1.945$ S/m; $\varepsilon_r = 40.039$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band41 (0) Frequency: 2506 MHz Duty Cycle: 1:1.5787

Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68) @ 2506 MHz

Area Scan (91x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.0783 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 0.102 W/kg
SAR(1 g) = 0.048 W/kg; SAR(10 g) = 0.023 W/kg
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 15 mm)
Ratio of SAR at M2 to SAR at M1 = 46.1%

Maximum value of SAR (measured) = 0.0782 W/kg







LTE Band41 Pc3 Head 32a WC 6.19

Date/Time: 2023-06-19 3:12:08 PM

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 2680 MHz; $\sigma = 2.086 \text{ S/m}$; $\varepsilon_r = 39.682$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band41 (0) Frequency: 2680 MHz Duty Cycle: 1:1.5787

Probe: EX3DV4 - SN3617 ConvF(7.46, 7.46, 7.46) @ 2680 MHz

Configuration/Cheek/Area Scan (91x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 0.176 W/kg

Configuration/Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 0 V/m; Power Drift = 999.00 dB Peak SAR (extrapolated) = 0.220 W/kg SAR(1 g) = 0.110 W/kg; SAR(10 g) = 0.056 W/kg Smallest distance from peaks to all points 3 dB below = 9.4 mm Ratio of SAR at M2 to SAR at M1 = 49.1% Maximum value of SAR (measured) = 0.177 W/kg







LTE Band66 Head

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1770 MHz; $\sigma = 1.397 \text{ S/m}$; $\varepsilon_r = 41.361$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band66 (0) Frequency: 1770 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.4, 8.4, 8.4) @ 1770 MHz

Area Scan (91x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 0.758 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 5.018 V/m; Power Drift = 0.06 dB Peak SAR (extrapolated) = 0.844 W/kg SAR(1 g) = 0.554 W/kg; SAR(10 g) = 0.350 W/kg Smallest distance from peaks to all points 3 dB below = 14.5 mm Ratio of SAR at M2 to SAR at M1 = 65.5% Maximum value of SAR (measured) = 0.739 W/kg







LTE Band71 Head

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (extrapolated): f = 688 MHz; $\sigma = 0.808 \text{ S/m}$; $\varepsilon_r = 44.514$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band71 (0) Frequency: 688 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 688 MHz

Area Scan (71x131x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.561 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 17.25 V/m; Power Drift = -0.13 dB Peak SAR (extrapolated) = 0.681 W/kg SAR(1 g) = 0.313 W/kg; SAR(10 g) = 0.177 W/kg Smallest distance from peaks to all points 3 dB below = 11.8 mm Ratio of SAR at M2 to SAR at M1 = 44.2%

Maximum value of SAR (measured) = 0.517 W/kg



A.12





GSM850 Body

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 848.8 MHz; $\sigma = 0.882 \text{ S/m}$; $\varepsilon_r = 44.017$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, GSM 850 GPRS-3 (0) Frequency: 848.8 MHz Duty Cycle: 1:2.66993

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 848.8 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.160 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.10 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.180 W/kg
SAR(1 g) = 0.131 W/kg; SAR(10 g) = 0.100 W/kg
Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 16 mm)
Ratio of SAR at M2 to SAR at M1 = 72.6%

Maximum value of SAR (measured) = 0.161 W/kg









GSM1900 Body 10mm

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1910 MHz; $\sigma = 1.479 \text{ S/m}$; $\varepsilon_r = 40.943$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, GSM 1900MHz GPRS-3 (0) Frequency: 1909.8 MHz Duty Cycle: 1:2.66993

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1909.8 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 0.173 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 3.677 V/m; Power Drift = 0.12 dB Peak SAR (extrapolated) = 0.205 W/kg SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.062 W/kg Smallest distance from peaks to all points 3 dB below = 12.2 mm Ratio of SAR at M2 to SAR at M1 = 58.2% Maximum value of SAR (measured) = 0.162 W/kg



A.14





GSM1900 Body 15mm

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1910 MHz; $\sigma = 1.479 \text{ S/m}$; $\varepsilon_r = 40.943$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, GSM 1900MHz GPRS-3 (0) Frequency: 1909.8 MHz Duty Cycle: 1:2.66993

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1909.8 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 0.118 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 3.738 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 0.128 W/kg **SAR(1 g) = 0.070 W/kg; SAR(10 g) = 0.039 W/kg Smallest distance from peaks to all points 3 dB below = 13.6 mm Ratio of SAR at M2 to SAR at M1 = 57\% Maximum value of SAR (measured) = 0.105 W/kg**



A.15





WCDMA1900 Body 10mm

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma = 1.478 \text{ S/m}$; $\varepsilon_r = 40.946$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 1900 (0) Frequency: 1907.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1907.6 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.556 W/kg

Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 7.809 V/m; Power Drift = 0.14 dB Peak SAR (extrapolated) = 0.653 W/kg SAR(1 g) = 0.352 W/kg; SAR(10 g) = 0.191 W/kg Smallest distance from peaks to all points 3 dB below = 11.5 mm Ratio of SAR at M2 to SAR at M1 = 56.1%

Maximum value of SAR (measured) = 0.534 W/kg



A.16





WCDMA1900 Body 15mm

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma = 1.478 \text{ S/m}$; $\varepsilon_r = 40.946$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 1900 (0) Frequency: 1907.6 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1907.6 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.273 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 5.574 V/m; Power Drift = 0.08 dB Peak SAR (extrapolated) = 0.306 W/kg SAR(1 g) = 0.170 W/kg; SAR(10 g) = 0.095 W/kg Smallest distance from peaks to all points 3 dB below = 12.5 mm Ratio of SAR at M2 to SAR at M1 = 57.1%

Maximum value of SAR (measured) = 0.249 W/kg



A.17





WCDMA1700 Body 10mm

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 1712.4 MHz; $\sigma = 1.361 \text{ S/m}$; $\varepsilon_r = 41.575$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 1700 Band4 (0) Frequency: 1712.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.4, 8.4, 8.4) @ 1712.4 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.710 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 8.357 V/m; Power Drift = 0.10 dB Peak SAR (extrapolated) = 0.942 W/kg SAR(1 g) = 0.514 W/kg; SAR(10 g) = 0.274 W/kg Smallest distance from peaks to all points 3 dB below = 8.6 mm Ratio of SAR at M2 to SAR at M1 = 55.5%

Maximum value of SAR (measured) = 0.748 W/kg



A.18





WCDMA1700 Body 15mm

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 1712.4 MHz; $\sigma = 1.361 \text{ S/m}$; $\varepsilon_r = 41.575$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 1700 Band4 (0) Frequency: 1712.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.4, 8.4, 8.4) @ 1712.4 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.432 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.577 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.524 W/kg
SAR(1 g) = 0.307 W/kg; SAR(10 g) = 0.177 W/kg
Smallest distance from peaks to all points 3 dB below = 11.6 mm
Ratio of SAR at M2 to SAR at M1 = 61.2%

Maximum value of SAR (measured) = 0.420 W/kg



A.19





WCDMA850 Body 10mm

Date/Time: 2023-06-21

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 826.4 MHz; $\sigma = 0.871 \text{ S/m}$; $\varepsilon_r = 44.084$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WCDMA 850 (0) Frequency: 826.4 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 826.4 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.581 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 13.87 V/m; Power Drift = -0.06 dB Peak SAR (extrapolated) = 0.743 W/kg SAR(1 g) = 0.387 W/kg; SAR(10 g) = 0.217 W/kg Smallest distance from peaks to all points 3 dB below = 10.1 mm Ratio of SAR at M2 to SAR at M1 = 53.8%

Maximum value of SAR (measured) = 0.587 W/kg



A.20





LTE Band12 Body

Date/Time: 2023-06-18

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 707.5 MHz; $\sigma = 0.815 \text{ S/m}$; $\varepsilon_r = 44.419$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band12 (0) Frequency: 707.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 707.5 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.590 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.34 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.729 W/kg
SAR(1 g) = 0.393 W/kg; SAR(10 g) = 0.239 W/kg
Smallest distance from peaks to all points 3 dB below = 13.8 mm
Ratio of SAR at M2 to SAR at M1 = 54.3%

Maximum value of SAR (measured) = 0.586 W/kg



A.21





LTE Band25 Body 10mm

Date/Time: 2023-06-18

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1905 MHz; $\sigma = 1.477 \text{ S/m}$; $\varepsilon_r = 40.95$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band25 (0) Frequency: 1905 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1905 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 1.05 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 20.14 V/m; Power Drift = 0.04 dB Peak SAR (extrapolated) = 1.22 W/kg SAR(1 g) = 0.669 W/kg; SAR(10 g) = 0.348 W/kg Smallest distance from peaks to all points 3 dB below = 9.2 mm Ratio of SAR at M2 to SAR at M1 = 56% Maximum value of SAR (measured) = 1.03 W/kg



A.22





LTE Band25 Body 15mm

Date/Time: 2023-06-18

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1905 MHz; $\sigma = 1.477 \text{ S/m}$; $\varepsilon_r = 40.95$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band25 (0) Frequency: 1905 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14) @ 1905 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 0.335 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 7.291 V/m; Power Drift = 0.14 dB Peak SAR (extrapolated) = 0.386 W/kg SAR(1 g) = 0.221 W/kg; SAR(10 g) = 0.127 W/kg Smallest distance from peaks to all points 3 dB below = 13.9 mm Ratio of SAR at M2 to SAR at M1 = 57% Maximum value of SAR (measured) = 0.324 W/kg



A.23





LTE Band26 Body 10mm

Date/Time: 2023-06-18

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 841.5 MHz; $\sigma = 0.879$ S/m; $\varepsilon_r = 44.041$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band26 (0) Frequency: 841.5 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 841.5 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.658 W/kg

Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 14.54 V/m; Power Drift = -0.15 dB Peak SAR (extrapolated) = 0.801 W/kg SAR(1 g) = 0.433 W/kg; SAR(10 g) = 0.252 W/kg Smallest distance from peaks to all points 3 dB below = 9.6 mm Ratio of SAR at M2 to SAR at M1 = 54.2%

Maximum value of SAR (measured) = 0.600 W/kg







LTE Band41 pc2 10mm Body

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 2506 MHz; $\sigma = 1.945$ S/m; $\varepsilon_r = 40.039$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band41 (0) Frequency: 2506 MHz Duty Cycle: 1:1.5787

Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68) @ 2506 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.408 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 0.2100 V/m; Power Drift = 0.09 dB Peak SAR (extrapolated) = 0.577 W/kg SAR(1 g) = 0.263 W/kg; SAR(10 g) = 0.111 W/kg Smallest distance from peaks to all points 3 dB below = 7 mm Ratio of SAR at M2 to SAR at M1 = 48.2%

Maximum value of SAR (measured) = 0.453 W/kg



A.25





LTE Band41 pc2 Body 15mm

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 2506 MHz; $\sigma = 1.945$ S/m; $\varepsilon_r = 40.039$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band41 (0) Frequency: 2506 MHz Duty Cycle: 1:1.5787

Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68) @ 2506 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.276 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 2.186 V/m; Power Drift = 0.08dB Peak SAR (extrapolated) = 0.325 W/kg SAR(1 g) = 0.158 W/kg; SAR(10 g) = 0.072 W/kg Smallest distance from peaks to all points 3 dB below = 8 mm Ratio of SAR at M2 to SAR at M1 = 50.2%

Maximum value of SAR (measured) = 0.257 W/kg



A.26





LTE Band41 pc3 Body 10mm

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 2506 MHz; $\sigma = 1.945$ S/m; $\varepsilon_r = 40.039$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band41 (0) Frequency: 2506 MHz Duty Cycle: 1:1.5787

Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68) @ 2506 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.362 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mmReference Value = 4.416 V/m; Power Drift = 0.18 dB Peak SAR (extrapolated) = 0.474 W/kg SAR(1 g) = 0.213 W/kg; SAR(10 g) = 0.088 W/kg Smallest distance from peaks to all points 3 dB below = 6.7 mm Ratio of SAR at M2 to SAR at M1 = 47.1%

Maximum value of SAR (measured) = 0.365 W/kg







LTE Band41 Pc3 Body 15mm

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 2506 MHz; $\sigma = 1.945$ S/m; $\varepsilon_r = 40.039$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band41 (0) Frequency: 2506 MHz Duty Cycle: 1:1.5787

Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68) @ 2506 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.175 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 2.212 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 0.214 W/kg SAR(1 g) = 0.104 W/kg; SAR(10 g) = 0.048 W/kg Smallest distance from peaks to all points 3 dB below = 9 mm Ratio of SAR at M2 to SAR at M1 = 50%

Maximum value of SAR (measured) = 0.171 W/kg



A.28





LTE Band66 Body 10mm

Date/Time: 2023-06-18

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1770 MHz; $\sigma = 1.397 \text{ S/m}$; $\varepsilon_r = 41.361$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band66 (0) Frequency: 1770 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.4, 8.4, 8.4) @ 1770 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 0.622 W/kg

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 9.683 V/m; Power Drift = 0.12 dB Peak SAR (extrapolated) = 0.769 W/kg SAR(1 g) = 0.405 W/kg; SAR(10 g) = 0.215 W/kg Smallest distance from peaks to all points 3 dB below = 9.2 mm Ratio of SAR at M2 to SAR at M1 = 53.4% Maximum value of SAR (measured) = 0.625 W/kg







LTE Band66 Body 15mm

Date/Time: 2023-06-19

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used: f = 1770 MHz; $\sigma = 1.397 \text{ S/m}$; $\varepsilon_r = 41.361$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band66 (0) Frequency: 1770 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(8.4, 8.4, 8.4) @ 1770 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 0.230 W/kg

Zoom Scan (8x9x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 9.149 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 0.265 W/kg SAR(1 g) = 0.164 W/kg; SAR(10 g) = 0.103 W/kg Smallest distance from peaks to all points 3 dB below = 18.7 mm Ratio of SAR at M2 to SAR at M1 = 62.4% Maximum value of SAR (measured) = 0.227 W/kg







LTE Band71 Body 10mm

Date/Time: 2023-06-20

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (extrapolated): f = 688 MHz; $\sigma = 0.808 \text{ S/m}$; $\varepsilon_r = 44.514$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, LTE Band71 (0) Frequency: 688 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(10.1, 10.1, 10.1) @ 688 MHz

Area Scan (71x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.407 W/kg

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm Reference Value = 17.14 V/m; Power Drift = -0.11 dB Peak SAR (extrapolated) = 0.503 W/kg SAR(1 g) = 0.248 W/kg; SAR(10 g) = 0.142 W/kg Smallest distance from peaks to all points 3 dB below = 11.6 mm Ratio of SAR at M2 to SAR at M1 = 49.1%

Maximum value of SAR (measured) = 0.387 W/kg



A.31





WiFi2.4G Head

Date/Time: 2023-06-22

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 2462 MHz; $\sigma = 1.904 \text{ S/m}$; $\varepsilon_r = 40.128$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WLan 2450 (0) Frequency: 2462 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68) @ 2462 MHz

Area Scan (91x161x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.69 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 9.871 V/m; Power Drift = 0.13 dB Peak SAR (extrapolated) = 2.85 W/kg SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.485 W/kg Smallest distance from peaks to all points 3 dB below = 6 mm Ratio of SAR at M2 to SAR at M1 = 40.6%

Maximum value of SAR (measured) = 2.17 W/kg



A.32





WiFi2.4G Body

Date/Time: 2023-06-22

Electronics: DAE4 Sn1556

Medium: H700-6000M(All4

Medium parameters used (interpolated): f = 2437 MHz; $\sigma = 1.881$ S/m; $\varepsilon_r = 40.161$; $\rho = 1000$ kg/m³

Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C

Communication System: UID 0, WLan 2450 (0) Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68) @ 2437 MHz

Area Scan (91x151x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

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

Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 9.018 V/m; Power Drift = 0.14 dB Peak SAR (extrapolated) = 0.593 W/kg SAR(1 g) = 0.298 W/kg; SAR(10 g) = 0.153 W/kg Smallest distance from peaks to all points 3 dB below = 13 mm Ratio of SAR at M2 to SAR at M1 = 49.9%

Maximum value of SAR (measured) = 0.474 W/kg



A.33





ANNEX B SYSTEM VALIDATION RESULTS

750 MHz

Date: 6/20/2023Electronics: DAE4 Sn1556 Medium: H700-6000M Medium parameters used: f = 750 MHz; σ = 0.8308 S/m; ϵ r = 44.23; ρ = 1000 kg/m3 Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C Communication System: CW (0) Frequency: 750 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(10.10, 10.10, 10.10)

Area Scan (131x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 2.77 W/kg

Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 53.72 V/m; Power Drift = -0.08 dB Peak SAR (extrapolated) = 3.25 W/kg SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.38 W/kg Maximum value of SAR (measured) = 2.83 W/kg



0 dB = 2.83 W/kg = 4.52 dBW/kg





Date: 6/21/2023Electronics: DAE4 Sn1556 Medium: H700-6000M Medium parameters used: f = 835 MHz; σ = 0.8757 S/m; ϵ r = 44.06; ρ = 1000 kg/m3 Ambient Temperature: 23.3°C Liquid Temperature: 22.5°C Communication System: CW (0) Frequency: 835 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(9.68, 9.68, 9.68)

Area Scan (131x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 3.12 W/kg

Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 59.25 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 3.61 W/kg SAR(1 g) = 2.38 W/kg; SAR(10 g) = 1.54 W/kg Maximum value of SAR (measured) = 3.22 W/kg



0 dB = 3.22 W/kg = 5.08 dBW/kg





Date: 6/22/2023Electronics: DAE4 Sn1556 Medium: H700-6000M Medium parameters used: f = 1750 MHz; σ = 1.384 S/m; ε r = 41.46; ρ = 1000 kg/m3 Ambient Temperature:23.3°C Liquid Temperature: 22.5°C Communication System: CW (0) Frequency: 1750 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(8.40, 8.40, 8.40)

Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 13.65 W/kg

Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 97.51 V/m; Power Drift = 0.07 dB Peak SAR (extrapolated) = 16.75 W/kg SAR(1 g) = 8.85 W/kg; SAR(10 g) = 4.68 W/kg Maximum value of SAR (measured) = 13.87 W/kg



0 dB = 13.87 W/kg = 11.41 dBW/kg





Date: 6/28/2023Electronics: DAE4 Sn1556 Medium: H700-6000M Medium parameters used: f = 1900 MHz; σ = 1.475 S/m; ϵ r = 40.96; ρ = 1000 kg/m3 Ambient Temperature:23.3°C Liquid Temperature: 22.5°C Communication System: CW (0) Frequency: 1900 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(8.14, 8.14, 8.14)

Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm Maximum value of SAR (interpolated) = 15.77 W/kg

Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 100.8 V/m; Power Drift = 0.08 dB Peak SAR (extrapolated) = 19.1 W/kg SAR(1 g) = 10.06 W/kg; SAR(10 g) = 5.09 W/kg Maximum value of SAR (measured) = 15.1 W/kg



0 dB = 15.1 W/kg = 11.79 dBW/kg





Date: 6/26/2023Electronics: DAE4 Sn1556 Medium: H700-6000M Medium parameters used: f = 2450 MHz; σ = 1.893 S/m; ϵ r = 40.15; ρ = 1000 kg/m3 Ambient Temperature:23.3°C Liquid Temperature: 22.5°C Communication System: CW (0) Frequency: 2450 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(7.68, 7.68, 7.68)

Area Scan (61x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 21.1 W/kg

Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 98.58 V/m; Power Drift = 0.09 dB Peak SAR (extrapolated) = 27.4 W/kg SAR(1 g) = 12.8 W/kg; SAR(10 g) = 6.02 W/kg Maximum value of SAR (measured) = 21.2 W/kg



0 dB = 21.2 W/kg = 13.26 dBW/kg





Date: 6/23/2023Electronics: DAE4 Sn1556 Medium: H700-6000M Medium parameters used: f = 2600 MHz; σ = 2.025 S/m; ϵ r = 39.88; ρ = 1000 kg/m3 Ambient Temperature:23.3°C Liquid Temperature: 22.5°C Communication System: CW (0) Frequency: 2600 MHz Duty Cycle: 1:1 Probe: EX3DV4 - SN3617 ConvF(7.46, 7.46, 7.46)

Area Scan (61x61x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm Maximum value of SAR (interpolated) = 24.4 W/kg

Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 103.8 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 31.1 W/kgSAR(1 g) = 14.5 W/kg; SAR(10 g) = 6.37 W/kgMaximum value of SAR (measured) = 24.7 W/kg



0 dB = 24.7 W/kg = 13.93 dBW/kg

ANNEX C SAR Measurement Setup

C.1 Measurement Set-up

The Dasy5 or DASY6 system for performing compliance tests is illustrated above graphically. This system consists of the following items:







Picture C.1SAR 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 DASY5 or DASY6 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.

C.2 Dasy5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multifiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are

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connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY5 or DASY6 software reads the reflection durning a software approach and looks for the maximum using 2nd ord curve fitting. The approach is stopped at reaching the maximum.

Probe Specifications:

| Model: | ES3DV3, EX3DV4 |
|-------------------|---------------------------------------|
| Frequency | 10MHz — 6.0GHz(EX3DV4) |
| Range: | 10MHz — 4GHz(ES3DV3) |
| Calibration: | In head and body simulating tissue at |
| | Frequencies from 835 up to 5800MHz |
| Linearity: | ± 0.2 dB(30 MHz to 6 GHz) for EX3DV4 |
| ± 0.2 dB(30 MHz | to 4 GHz) for ES3DV3 |
| DynamicRange: | 10 mW/kg — 100W/kg |
| Probe Length: | 330 mm |
| Probe Tip | |
| Length: | 20 mm |
| Body Diameter: | 12 mm |
| Tip Diameter: | 2.5 mm (3.9 mm for ES3DV3) |
| Tip-Center: | 1 mm (2.0mm for ES3DV3) |
| Application:SAF | R Dosimetry Testing |
| | Compliance tests of mobile phones |
| | Dosimetry in strong gradient fields |
| Picture C.3E-fiel | d Probe |



Picture C.2Near-field Probe



C.3 E-field Probe Calibration

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm²) using an RF Signal generator, TEM cell, and RF Power Meter.

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and inn a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm².

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based





temperature probe is used in conjunction with the E-field probe.

$$SAR = C \frac{\Delta T}{\Delta t}$$

Where:

 $\Delta t = Exposure time (30 seconds),$

C = Heat capacity of tissue (brain or muscle),

 ΔT = Temperature increase due to RF exposure.

$$SAR = \frac{\left|E\right|^2 \cdot \sigma}{\rho}$$

Where: σ = Simulated tissue conductivity, ρ = Tissue density (kg/m³).

C.4 Other Test Equipment

C.4.1 Data Acquisition Electronics(DAE)

The data acquisition electronics consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



PictureC.4: DAE

C.4.2 Robot

The SPEAG DASY system uses the high precision robots (DASY5: RX160L) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)

Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives) ©Copyright. All rights reserved by CTTL.