

Appendix A.3 SAR Test Plots for LTE FDD Head

Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 71_20MHz_1RB_50 Offset_QPSK_Right Touch_CH133297.da53.0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 71 (0); Frequency: 680.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 680.5$ MHz; $\sigma = 0.847$ S/m; $\epsilon_r = 43.965$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Right Touch_CH133297/Area Scan (81x101x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.149 W/kg

Head/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Right Touch_CH133297/Zoom Scan (5x5x7)/Cube

0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

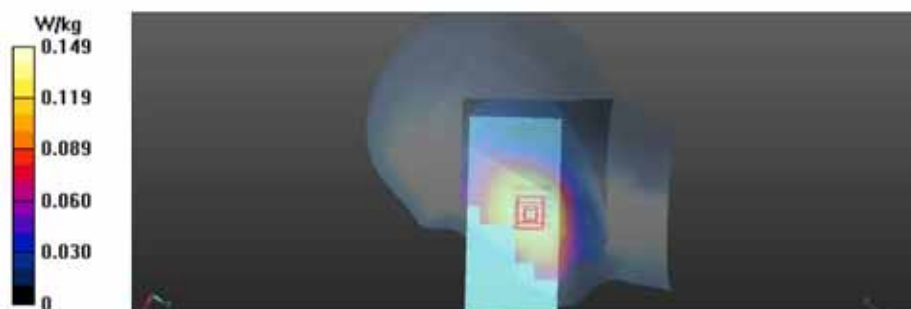
Reference Value = 4.106 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.157 W/kg

SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.112 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.151 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 12_10MHz_1RB_0 Offset_QPSK_Right Touch_CH23095.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.874$ S/m; $\epsilon_r = 43.589$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Right Touch_CH23095/Area Scan (81x101x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.172 W/kg

Head/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Right Touch_CH23095/Zoom Scan (6x6x7)/Cube

0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

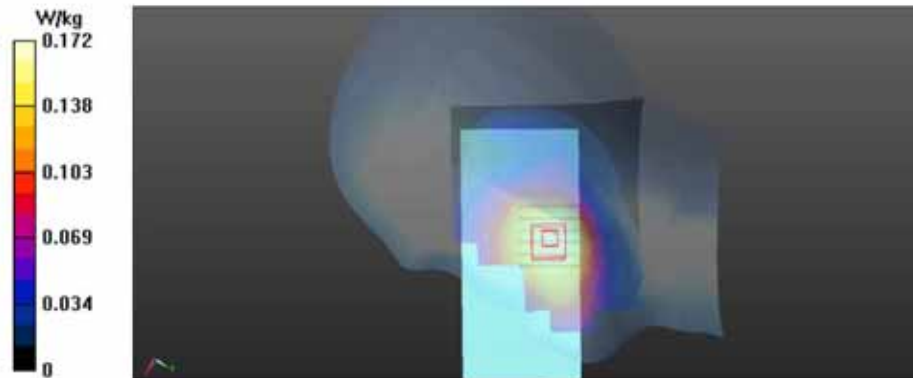
Reference Value = 5.963 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.185 W/kg

SAR(1 g) = 0.147 W/kg; SAR(10 g) = 0.119 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.172 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 13_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23230.da53-0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.895 \text{ S/m}$; $\epsilon_r = 42.827$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23230/Area Scan (81x101x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.233 W/kg

Head/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23230/Zoom Scan (6x6x7)/Cube

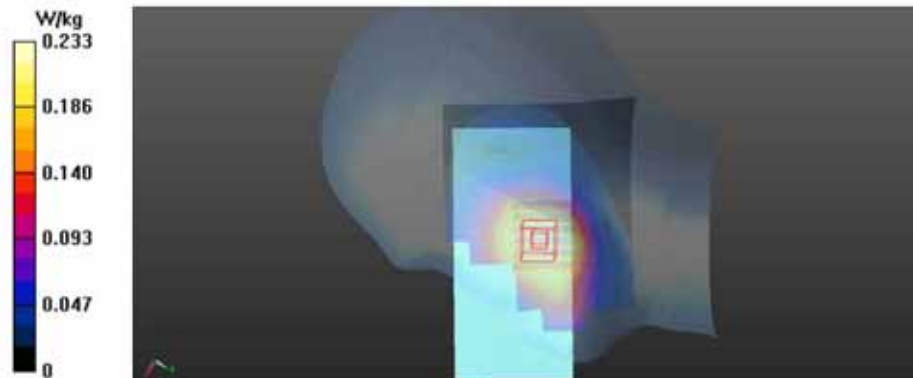
0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.843 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.243 W/kg

SAR(1 g) = 0.198 W/kg; SAR(10 g) = 0.157 W/kg

Maximum value of SAR (measured) = 0.229 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 14_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23330.da53-0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 14 (0); Frequency: 793 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 793 \text{ MHz}$; $\sigma = 0.906 \text{ S/m}$; $\epsilon_r = 42.671$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 14_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23330/Area Scan (81x101x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.208 W/kg

Head/LTE Band 14_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23330/Zoom Scan (6x6x7)/Cube

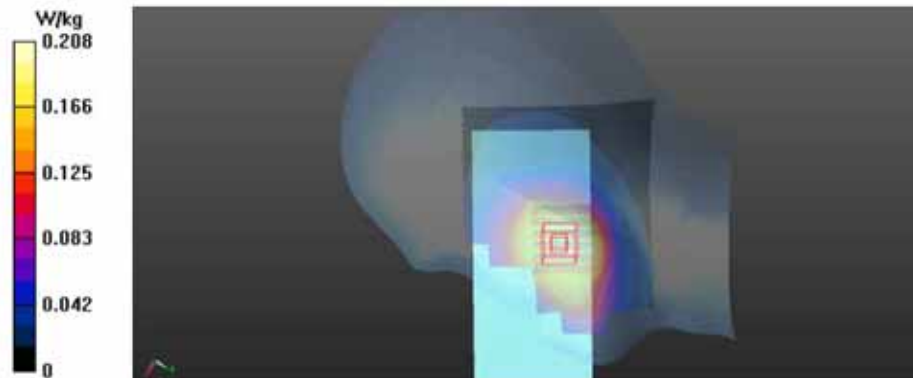
0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.545 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.222 W/kg

SAR(1 g) = 0.180 W/kg; SAR(10 g) = 0.143 W/kg

Maximum value of SAR (measured) = 0.208 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 26_15MHz_1RB_0 Offset_QPSK_Right Touch_CH26865.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.918$ S/m; $\epsilon_r = 40.699$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.88, 10.88, 10.88); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 26_15MHz_1RB_0 Offset_QPSK_Right Touch_CH26865/Area Scan (81x101x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.246 W/kg

Head/LTE Band 26_15MHz_1RB_0 Offset_QPSK_Right Touch_CH26865/Zoom Scan (6x6x7)/Cube

0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

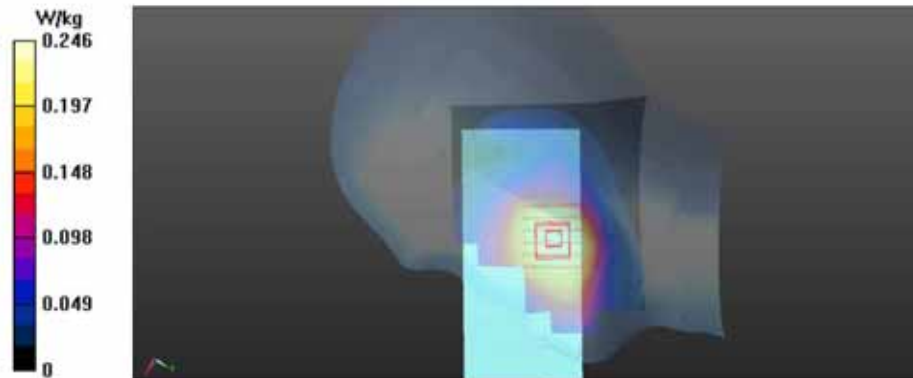
Reference Value = 6.581 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.265 W/kg

SAR(1 g) = 0.204 W/kg; SAR(10 g) = 0.160 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.240 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 5_10MHz_1RB_25 Offset_QPSK_Right Touch_CH20525.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.922$ S/m; $\epsilon_r = 40.647$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.88, 10.88, 10.88); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Right Touch_CH20525/Area Scan (81x101x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.278 W/kg

Head/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Right Touch_CH20525/Zoom Scan (6x6x7)/Cube

0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

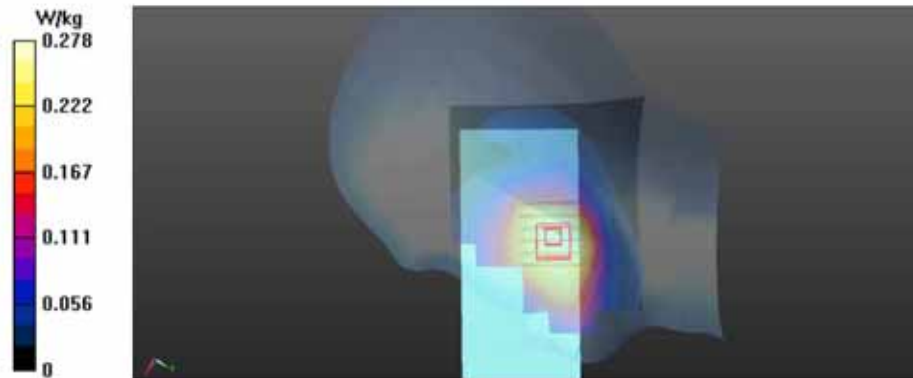
Reference Value = 6.323 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.298 W/kg

SAR(1 g) = 0.229 W/kg; SAR(10 g) = 0.179 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.269 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 66_20MHz_1RB_0 Offset_QPSK_Left Touch_CH132322.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 66 (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1745$ MHz; $\sigma = 1.395$ S/m; $\epsilon_r = 38.682$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(9.13, 9.13, 9.13); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 66_20MHz_1RB_0 Offset_QPSK_Left Touch_CH132322/Area Scan (81x101x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.144 W/kg

Head/LTE Band 66_20MHz_1RB_0 Offset_QPSK_Left Touch_CH132322/Zoom Scan (6x5x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

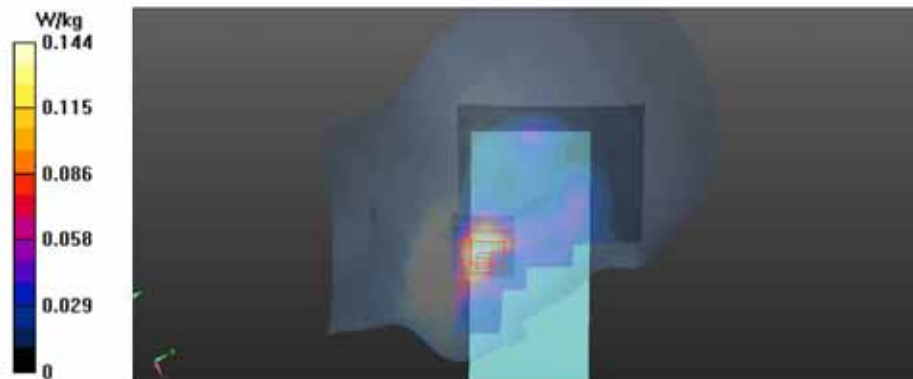
Reference Value = 7.314 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.168 W/kg

SAR(1 g) = 0.101 W/kg; SAR(10 g) = 0.065 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.141 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 25_20MHz_1RB_0 Offset_QPSK_Left Touch_CH26590.da53:0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 25 (0); Frequency: 1905 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1905$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 39.14$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.84, 8.84, 8.84); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 25_20MHz_1RB_0 Offset_QPSK_Left Touch_CH26590/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.210 W/kg

Head/LTE Band 25_20MHz_1RB_0 Offset_QPSK_Left Touch_CH26590/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.806 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.237 W/kg

SAR(1 g) = 0.146 W/kg; SAR(10 g) = 0.090 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.202 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 30_10MHz_1RB_0 Offset_QPSK_Right Touch_CH27710.da53:0

Ambient Temp : 23.5 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 30 (0); Frequency: 2310 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2310$ MHz; $\sigma = 1.625$ S/m; $\epsilon_r = 38.453$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3933; ConvF(8.34, 8.34, 8.34); Calibrated: 2017-09-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Right Touch_CH27710/Area Scan (121x151x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.184 W/kg

Head/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Right Touch_CH27710/Zoom Scan (8x8x7)/Cube

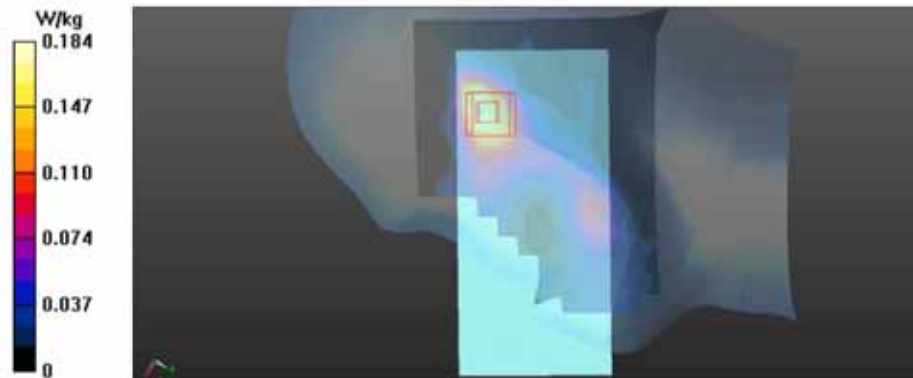
0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.751 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.221 W/kg

SAR(1 g) = 0.120 W/kg; SAR(10 g) = 0.067 W/kg

Maximum value of SAR (measured) = 0.182 W/kg



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 7 20MHz 1RB 0 Offset QPSK Left Touch CH21350.da53.0

Ambient Temp : 23.2 °C Tissue Temp : 22.5 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 7 (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2560$ MHz; $\sigma = 2.015$ S/m; $\epsilon_r = 38.165$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.7, 7.7, 7.7); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 7 20MHz 1RB 0 Offset QPSK Left Touch CH21350/Area Scan (121x151x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

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

Head/LTE Band 7 20MHz 1RB 0 Offset QPSK Left Touch CH21350/Zoom Scan (7x7x7)/Cube 0:

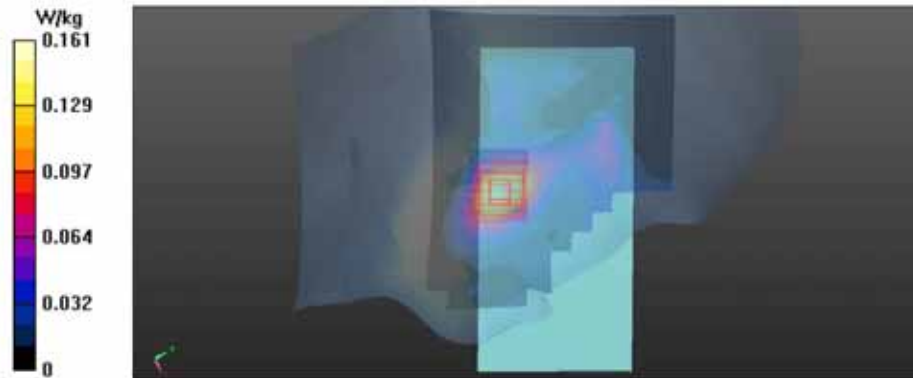
Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 2.867 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.191 W/kg

SAR(1 g) = 0.105 W/kg; SAR(10 g) = 0.055 W/kg

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



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 71_20MHz_1RB_50 Offset_QPSK_Right Touch_CH133297_With Cover.da53:0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 71 (0); Frequency: 680.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 680.5$ MHz; $\sigma = 0.847$ S/m; $\epsilon_r = 43.965$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Right Touch_CH133297_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.143 W/kg

Head/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Right Touch_CH133297_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

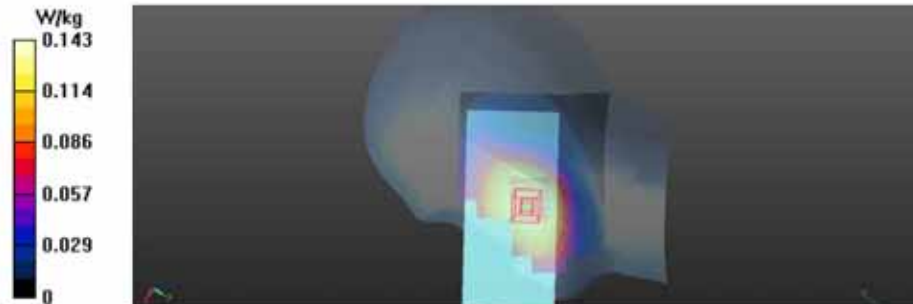
Reference Value = 3.981 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.148 W/kg

SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.108 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.142 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 12_10MHz_1RB_0 Offset_QPSK_Right Touch_CH23095_With Cover da53.0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.874$ S/m; $\epsilon_r = 43.589$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Right Touch_CH23095_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.157 W/kg

Head/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Right Touch_CH23095_With Cover/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

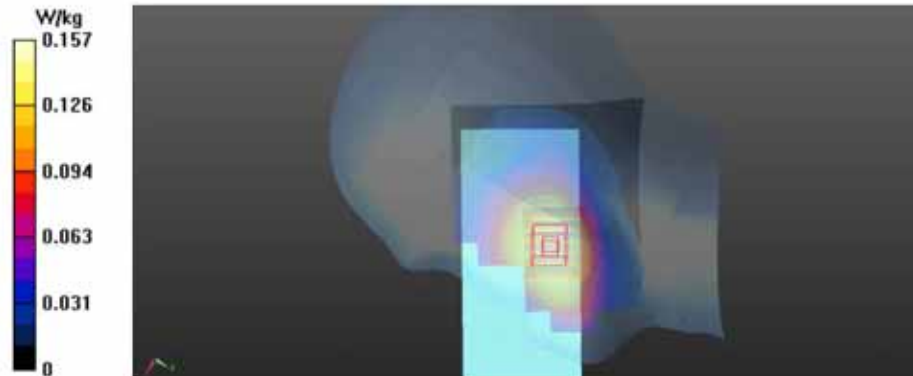
Reference Value = 5.208 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.162 W/kg

SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.109 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.153 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 13_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23230_With Cover.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.895 \text{ S/m}$; $\epsilon_r = 42.827$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23230_With Cover/Area Scan

(81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.159 W/kg

Head/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23230_With Cover/Zoom Scan

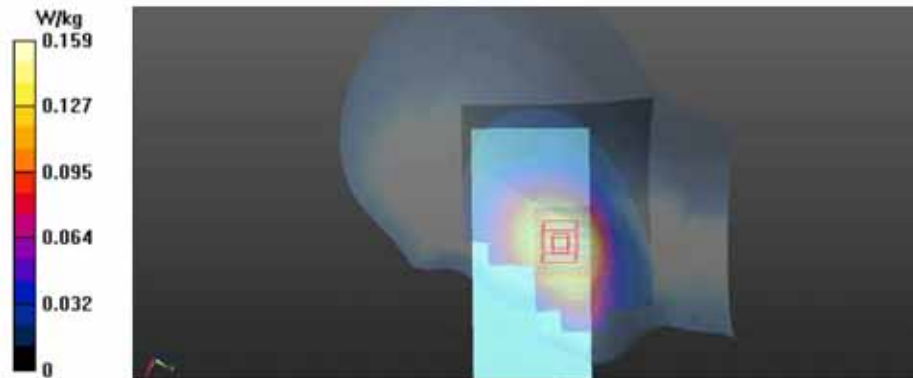
(6x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.276 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.164 W/kg

SAR(1 g) = 0.135 W/kg; SAR(10 g) = 0.108 W/kg

Maximum value of SAR (measured) = 0.155 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 14_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23330_With Cover.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 14 (0); Frequency: 793 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 793 \text{ MHz}$; $\sigma = 0.906 \text{ S/m}$; $\epsilon_r = 42.671$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.55, 11.55, 11.55); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 14_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23330_With Cover/Area Scan

(81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.154 W/kg

Head/LTE Band 14_10MHz_1RB_49 Offset_QPSK_Right Touch_CH23330_With Cover/Zoom Scan

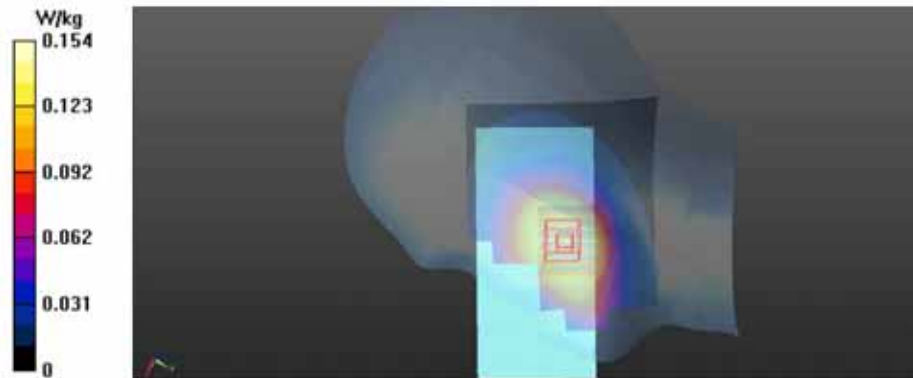
(6x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 4.370 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.158 W/kg

SAR(1 g) = 0.130 W/kg; SAR(10 g) = 0.104 W/kg

Maximum value of SAR (measured) = 0.150 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 26_15MHz_1RB_0 Offset_QPSK_Right Touch_CH26865_With Cover da53.0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.918$ S/m; $\epsilon_r = 40.699$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.88, 10.88, 10.88); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band26_15MHz_1RB_0 Offset_QPSK_Right Touch_CH26865_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.182 W/kg

Head/LTE Band26_15MHz_1RB_0 Offset_QPSK_Right Touch_CH26865_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

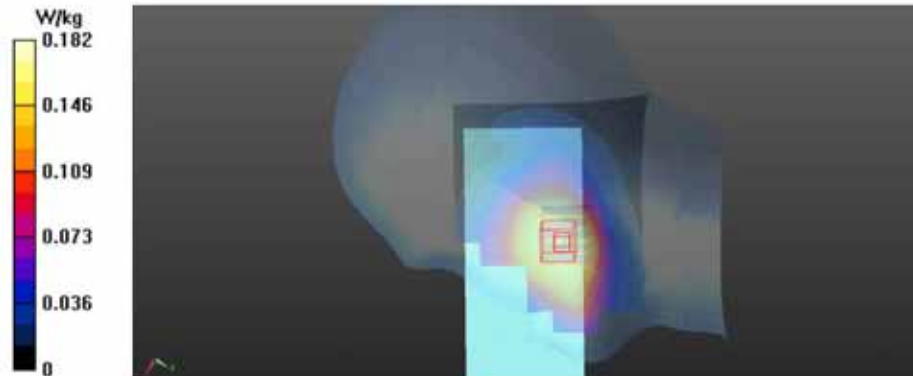
Reference Value = 5.455 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.197 W/kg

SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.120 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.176 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 5_10MHz_1RB_25 Offset_QPSK_Right Touch_CH20525_With Cover da53-0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.922$ S/m; $\epsilon_r = 40.647$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.88, 10.88, 10.88); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Right Touch_CH20525_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.214 W/kg

Head/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Right Touch_CH20525_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

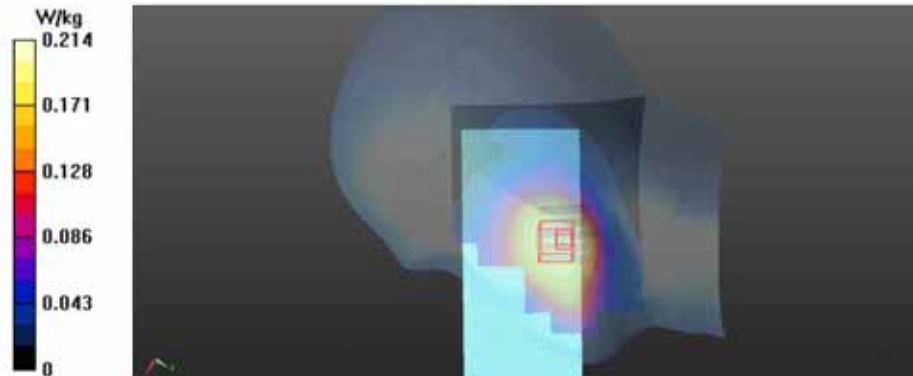
Reference Value = 5.428 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.238 W/kg

SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.138 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.211 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 66_20MHz_1RB_0 Offset_QPSK_Left Touch_CH132322_With Cover.da53.0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 66 (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1745$ MHz; $\sigma = 1.395$ S/m; $\epsilon_r = 38.682$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(9.13, 9.13, 9.13); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 66_20MHz_1RB_0 Offset_QPSK_Left Touch_CH132322_With Cover/Area Scan (71x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.157 W/kg

Head/LTE Band 66_20MHz_1RB_0 Offset_QPSK_Left Touch_CH132322_With Cover/Zoom Scan (6x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

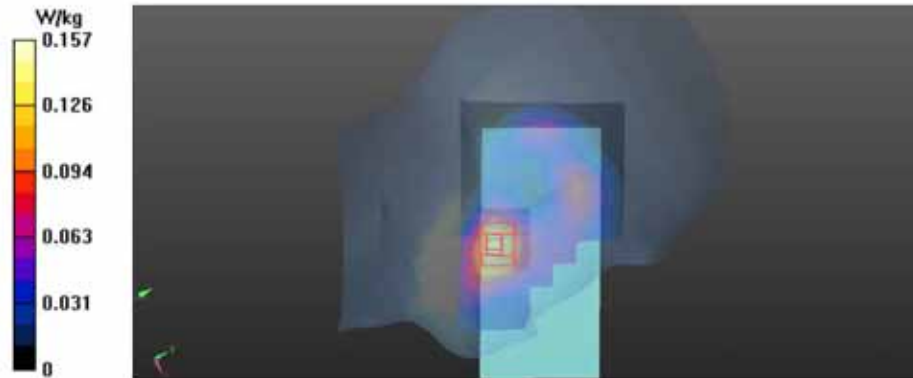
Reference Value = 7.290 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.170 W/kg

SAR(1 g) = 0.114 W/kg; SAR(10 g) = 0.076 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.151 W/kg



Date: 2018-06-28

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 25_20MHz_1RB_0 Offset_QPSK_Left Touch_CH26590_With Cover.da53:0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 25 (0); Frequency: 1905 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1905$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 39.14$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.84, 8.84, 8.84); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 25_20MHz_1RB_0 Offset_QPSK_Left Touch_CH26590_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

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

Maximum value of SAR (interpolated) = 0.174 W/kg

Head/LTE Band 25_20MHz_1RB_0 Offset_QPSK_Left Touch_CH26590_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.367 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.208 W/kg

SAR(1 g) = 0.126 W/kg; SAR(10 g) = 0.077 W/kg

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

Maximum value of SAR (measured) = 0.177 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 30_10MHz_1RB_0 Offset_QPSK_Right Touch_CH27710_With Cover da53.0

Ambient Temp : 23.5 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 30 (0); Frequency: 2310 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2310$ MHz; $\sigma = 1.625$ S/m; $\epsilon_r = 38.453$; $\rho = 1000$ kg/m³

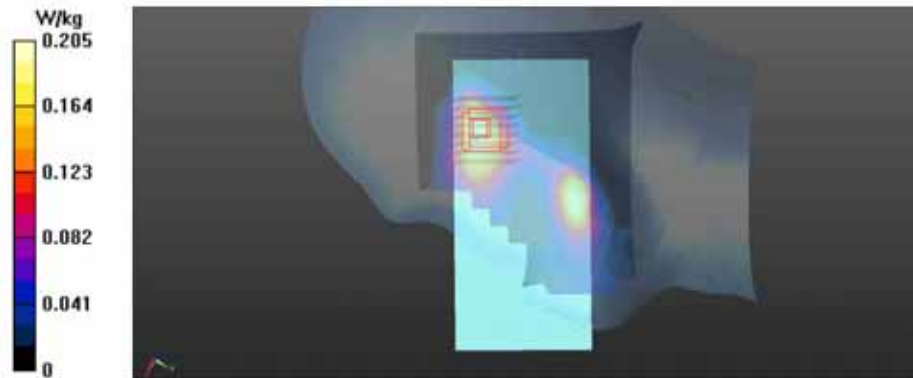
Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3933; ConvF(8.34, 8.34, 8.34); Calibrated: 2017-09-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Right Touch_CH27710_With Cover/Area Scan (121x151x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm
Maximum value of SAR (interpolated) = 0.205 W/kg

Head/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Right Touch_CH27710_With Cover/Zoom Scan (8x8x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
Reference Value = 2.846 V/m; Power Drift = -0.20 dB
Peak SAR (extrapolated) = 0.197 W/kg
SAR(1 g) = 0.112 W/kg; SAR(10 g) = 0.065 W/kg
Maximum value of SAR (measured) = 0.165 W/kg



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 7_20MHz_1RB_0 Offset_QPSK_Left Touch_CH21350_With Cover.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.5 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 7 (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2560$ MHz; $\sigma = 2.015$ S/m; $\epsilon_r = 38.165$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.7, 7.7, 7.7); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 7_20MHz_1RB_0 Offset_QPSK_Left Touch_CH21350_With Cover/Area Scan
(121x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.169 W/kg

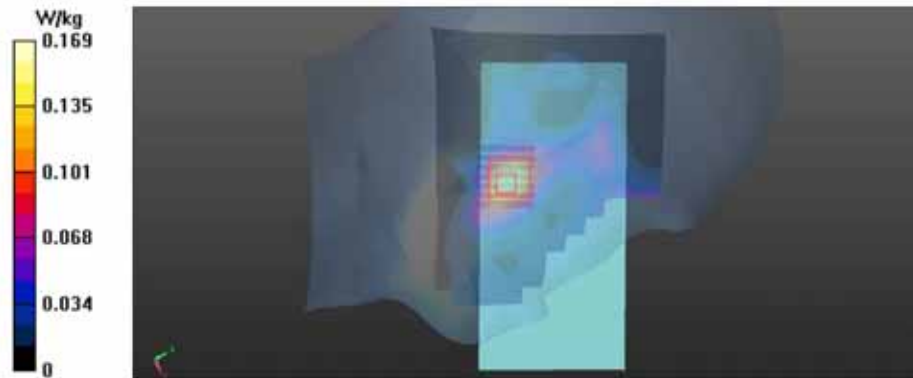
Head/LTE Band 7_20MHz_1RB_0 Offset_QPSK_Left Touch_CH21350_With Cover/Zoom Scan
(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.712 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.217 W/kg

SAR(1 g) = 0.099 W/kg; SAR(10 g) = 0.052 W/kg

Maximum value of SAR (measured) = 0.163 W/kg



Appendix A.4 SAR Test Plots for LTE TDD Head

Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [LTE Band 41_20MHz_1RB_0 Offset_QPSK_Right Tilt_CH40185.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.5 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 41 (0); Frequency: 2549.5 MHz; Duty Cycle: 1:1.58016
Medium parameters used (interpolated): $f = 2549.5$ MHz; $\sigma = 1.995$ S/m; $\epsilon_r = 38.165$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(7.7, 7.7, 7.7); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 41_20MHz_1RB_0 Offset_QPSK_Right Tilt_CH40185/Area Scan (121x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.137 W/kg

Head/LTE Band 41_20MHz_1RB_0 Offset_QPSK_Right Tilt_CH40185/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.765 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.156 W/kg
SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.042 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.128 W/kg



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 41_20MHz_1RB_0 Offset_QPSK_Right Tilt_CH40185_With Cover.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.5 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 41 (0); Frequency: 2549.5 MHz; Duty Cycle: 1:1.58016

Medium parameters used (interpolated): $f = 2549.5$ MHz; $\sigma = 1.995$ S/m; $\epsilon_r = 38.165$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.7, 7.7, 7.7); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/LTE Band 41_20MHz_1RB_0 Offset_QPSK_Right Tilt_CH40185_With Cover/Area Scan (121x151x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.107 W/kg

Head/LTE Band 41_20MHz_1RB_0 Offset_QPSK_Right Tilt_CH40185_With Cover/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 3.428 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.146 W/kg

SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.036 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.118 W/kg



Appendix A.5 SAR Test Plots for WLAN Head

Date: 2018-07-07

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [WLAN 2.4GHz_802.11b_Right Touch_CH6_Ant2.da53.0](#)

Ambient Temp : 23.1 °C Tissue Temp : 22.5 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, WLAN 2.45GHz (0); Frequency: 2437 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.783$ S/m; $\epsilon_r = 38.239$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(7.98, 7.98, 7.98); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 2.4GHz_802.11b_Right Touch_CH6_Ant2/Area Scan (121x81x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.79 W/kg

Head/WLAN 2.4GHz_802.11b_Right Touch_CH6_Ant2/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.55 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 2.91 W/kg
SAR(1 g) = 1.19 W/kg; SAR(10 g) = 0.544 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 2.12 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN_5.3GHz_802.11ac_VHT80_Right Touch_CH58_Ant2_da53.0

Ambient Temp : 23.1 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5290 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5290$ MHz; $\sigma = 4.745$ S/m; $\epsilon_r = 34.544$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(5.2, 5.2, 5.2); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN_5.3GHz_802.11ac_VHT80_Right Touch_CH58_Ant2/Area Scan (111x81x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.803 W/kg

Head/WLAN_5.3GHz_802.11ac_VHT80_Right Touch_CH58_Ant2/Zoom Scan (8x8x7)/Cube 0:

Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 4.335 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.985 W/kg

SAR(1 g) = 0.199 W/kg; SAR(10 g) = 0.056 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

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



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN_5.6GHz_802.11ac_VHT80_RightTouch_CH138_Ant2.da53.0

Ambient Temp : 23.1 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5690 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5690$ MHz; $\sigma = 5.065$ S/m; $\epsilon_r = 34.293$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.94, 4.94, 4.94); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN_5.6GHz_802.11ac_VHT80_RightTouch_CH138_Ant2/Area Scan (111x81x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Info: Interpolated medium parameters used for SAR evaluation.

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

Head/WLAN_5.6GHz_802.11ac_VHT80_RightTouch_CH138_Ant2/Zoom Scan (9x8x7)/Cube 0:

Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

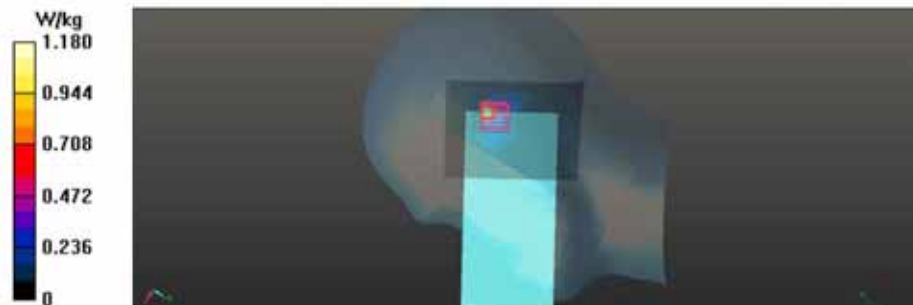
Reference Value = 3.033 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.253 W/kg; SAR(10 g) = 0.084 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.802 W/kg



Date: 2018-07-13

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant1.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5775 \text{ MHz}$; $\sigma = 5.109 \text{ S/m}$; $\epsilon_r = 34.195$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.91, 4.91, 4.91); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant1/Area Scan (111x81x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.120 W/kg

Head/WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant1/Zoom Scan (10x9x7)/Cube

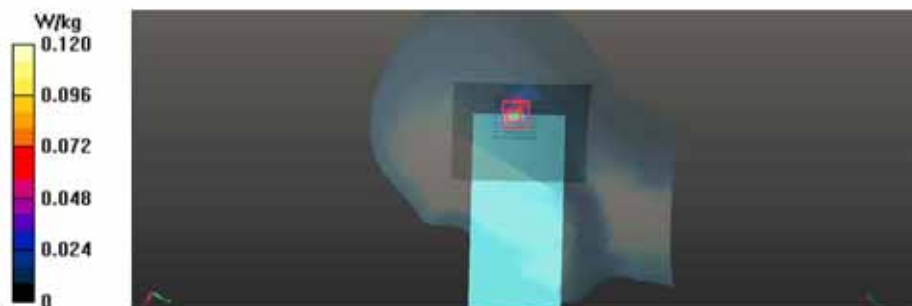
0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 2.913 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.216 W/kg

SAR(1 g) = 0.032 W/kg; SAR(10 g) = 0.010 W/kg

Maximum value of SAR (measured) = 0.117 W/kg



Date: 2018-07-13

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant2.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5775 \text{ MHz}$; $\sigma = 5.109 \text{ S/m}$; $\epsilon_r = 34.195$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.91, 4.91, 4.91); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant2/Area Scan (111x81x1):

Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.901 W/kg

Head/WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant2/Zoom Scan (10x9x7)/Cube

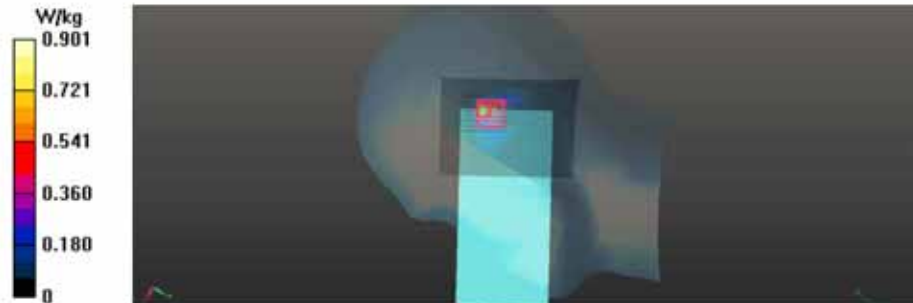
0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 2.481 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.198 W/kg; SAR(10 g) = 0.067 W/kg

Maximum value of SAR (measured) = 0.685 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [WLAN 2.4GHz_802.11b_Right Touch_CH6_Ant2_With Cover.da53.0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, WLAN 2.45GHz (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.756$ S/m; $\epsilon_r = 38.085$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.98, 7.98, 7.98); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 2.4GHz_802.11b_Right Touch_CH6_Ant2_With Cover/Area Scan (121x81x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.917 W/kg

Head/WLAN 2.4GHz_802.11b_Right Touch_CH6_Ant2_With Cover/Zoom Scan (7x8x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

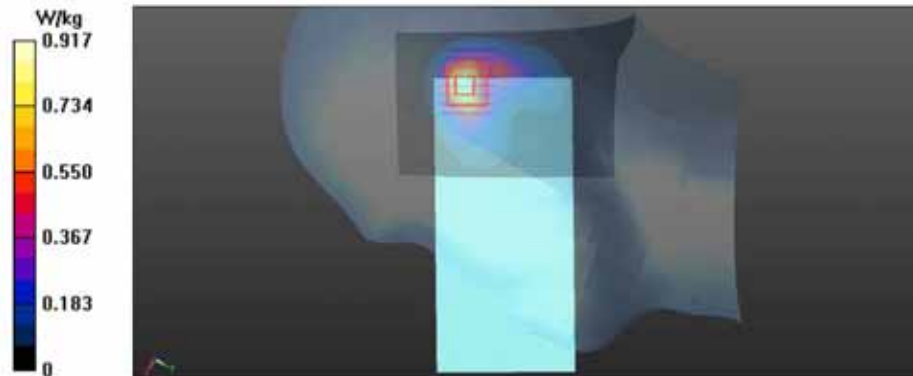
Reference Value = 14.35 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.549 W/kg; SAR(10 g) = 0.261 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.887 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN_5.3GHz_802.11ac_VHT80_Right Touch_CH58_Ant2_With Cover.da53-0

Ambient Temp : 23.1 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5290 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5290$ MHz; $\sigma = 4.745$ S/m; $\epsilon_r = 34.544$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(5.2, 5.2, 5.2); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN_5.3GHz_802.11ac_VHT80_Right Touch_CH58_Ant2_With Cover/Area Scan (111x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.299 W/kg

Head/WLAN_5.3GHz_802.11ac_VHT80_Right Touch_CH58_Ant2_With Cover/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 4.313 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.478 W/kg

SAR(1 g) = 0.110 W/kg; SAR(10 g) = 0.031 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.297 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN 5.6GHz_802.11ac_VHT80_Right Touch_CH138_Ant2_With Cover.da53:0

Ambient Temp : 23.1 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5690 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5690$ MHz; $\sigma = 5.065$ S/m; $\epsilon_r = 34.293$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.94, 4.94, 4.94); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 5.6GHz_802.11ac_VHT80_Right Touch_CH138_Ant2_With Cover/Area Scan (111x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.537 W/kg

Head/WLAN 5.6GHz_802.11ac_VHT80_Right Touch_CH138_Ant2_With Cover/Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 3.109 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.478 W/kg

SAR(1 g) = 0.092 W/kg; SAR(10 g) = 0.029 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.293 W/kg



Date: 2018-07-13

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN_5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant1_With Cover.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5775 \text{ MHz}$; $\sigma = 5.109 \text{ S/m}$; $\epsilon_r = 34.195$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.91, 4.91, 4.91); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN_5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant1_With Cover/Area Scan

(111x81x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.143 W/kg

Head/WLAN_5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant1_With Cover/Zoom Scan

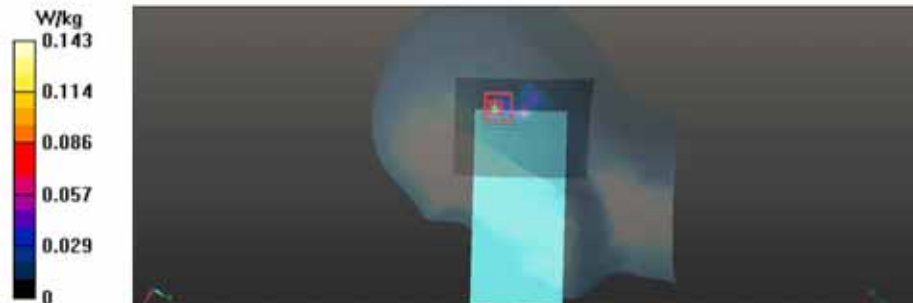
(9x9x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 2.974 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 0.136 W/kg

SAR(1 g) = 0.021 W/kg; SAR(10 g) = 0.00509 W/kg

Maximum value of SAR (measured) = 0.0763 W/kg



Date: 2018-07-13

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant2_With Cover.da53:0

Ambient Temp : 23.3 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5775 \text{ MHz}$; $\sigma = 5.109 \text{ S/m}$; $\epsilon_r = 34.195$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.91, 4.91, 4.91); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant2_With Cover/Area Scan

(111x81x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.322 W/kg

Head/WLAN 5.8GHz_802.11ac_VHT80_Right Touch_CH155_Ant2_With Cover/Zoom Scan

(10x9x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 2.974 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.399 W/kg

SAR(1 g) = 0.071 W/kg; SAR(10 g) = 0.021 W/kg

Maximum value of SAR (measured) = 0.247 W/kg



Appendix A.6 SAR Test Plots for DTS MIMO Head

Date: 2018-07-16

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [WLAN_2.4GHz_802.11n_RightTilt_CH1_Ant1+Ant2.da53:0](#)

Ambient Temp : 23.1 °C Tissue Temp : 22.1 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, WLAN 2.45GHz (0); Frequency: 2412 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2412$ MHz; $\sigma = 1.75$ S/m; $\epsilon_r = 38.203$; $\rho = 1000$ kg/m³
Phantom section: Right Section

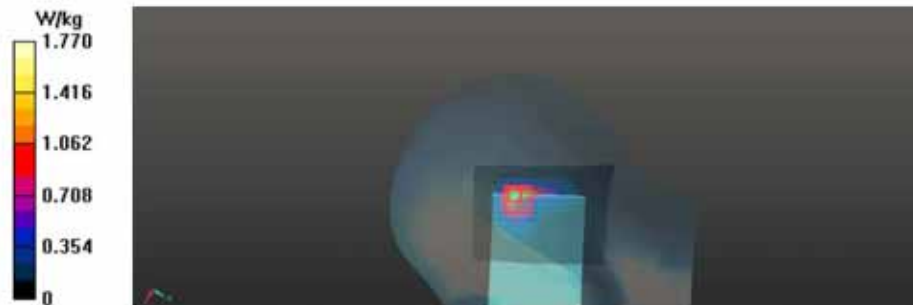
DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(7.98, 7.98, 7.98); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 2.4GHz_802.11n_RightTilt_CH1_Ant1+Ant2/Area Scan (111x81x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm
Maximum value of SAR (interpolated) = 1.77 W/kg

Head/WLAN 2.4GHz_802.11n_RightTilt_CH1_Ant1+Ant2/Zoom Scan (8x8x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
Reference Value = 16.14 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.91 W/kg
SAR(1 g) = 0.823 W/kg; SAR(10 g) = 0.385 W/kg
Maximum value of SAR (measured) = 1.50 W/kg



Date: 2018-07-16

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN 2.4GHz_802.11n_Right Tilt_CH1_Ant1+Ant2_With Cover.da53.0

Ambient Temp : 23.1 °C Tissue Temp : 22.1 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, WLAN 2.45GHz (0); Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412$ MHz; $\sigma = 1.75$ S/m; $\epsilon_r = 38.203$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.98, 7.98, 7.98); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1 430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/WLAN 2.4GHz_802.11n_Right Tilt_CH1_Ant1+Ant2_With Cover/Area Scan

(111x81x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.811 W/kg

Head/WLAN 2.4GHz_802.11n_Right Tilt_CH1_Ant1+Ant2_With Cover/Zoom Scan

(8x8x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 12.84 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.897 W/kg

SAR(1 g) = 0.448 W/kg; SAR(10 g) = 0.225 W/kg

Maximum value of SAR (measured) = 0.733 W/kg



Appendix A.7 SAR Test Plots for Bluetooth Head

Date: 2018-07-07

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [Bluetooth_GFSK_DH5_Right Touch_CH39_Head.da53:0](#)

Ambient Temp : 23.1 °C Tissue Temp : 22.5 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz; Duty Cycle: 1:1.30617

Medium parameters used (interpolated): $f = 2441$ MHz; $\sigma = 1.787$ S/m; $\epsilon_r = 38.221$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.98, 7.98, 7.98); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/Bluetooth_GFSK_DH5_Right Touch_CH39_Head/Area Scan (121x81x1): Interpolated grid:
dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 1.44 W/kg

Head/Bluetooth_GFSK_DH5_Right Touch_CH39_Head/Zoom Scan (7x7x7)/Cube 0: Measurement grid:

dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.29 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.76 W/kg

SAR(1 g) = 0.766 W/kg; SAR(10 g) = 0.347 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.29 W/kg



Date: 2018-07-07

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [Bluetooth_GFSK_DH5_Right Touch_CH39_With Cover_Head da53:0](#)

Ambient Temp : 23.1 °C Tissue Temp : 22.5 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2441 MHz; Duty Cycle: 1:1.30617

Medium parameters used (interpolated): $f = 2441$ MHz; $\sigma = 1.787$ S/m; $\epsilon_r = 38.221$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.98, 7.98, 7.98); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Head/Bluetooth_GFSK_DH5_Right Touch_CH39_With Cover_Head/Area Scan (121x81x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Maximum value of SAR (interpolated) = 0.702 W/kg

Head/Bluetooth_GFSK_DH5_Right Touch_CH39_With Cover_Head/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

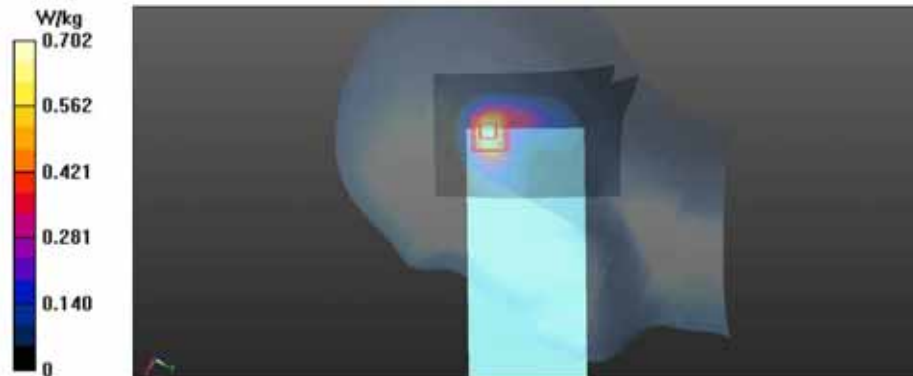
Reference Value = 11.32 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 0.861 W/kg

SAR(1 g) = 0.421 W/kg; SAR(10 g) = 0.200 W/kg

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

Maximum value of SAR (measured) = 0.700 W/kg



Appendix A.8 SAR Test Plots for GSM/UMTS/CDMA Body Worn

Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: GSM850_Rear_CH190_da53-0

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, GSM850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 54.997$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/GSM 850_Rear_CH190/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.331 W/kg

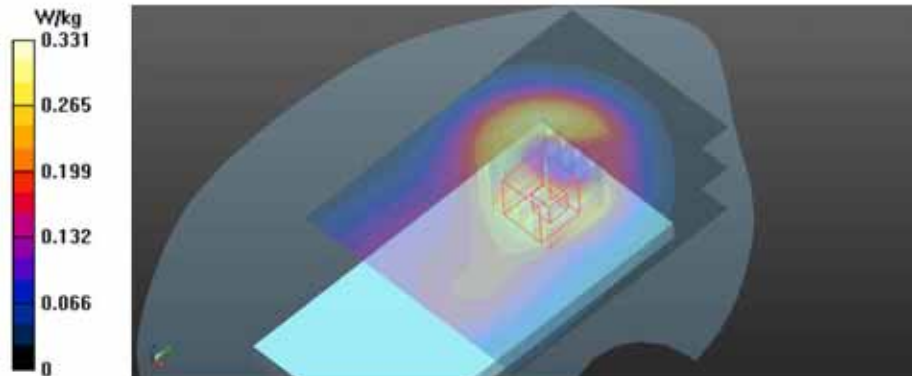
Body/GSM 850_Rear_CH190/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.81 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.365 W/kg

SAR(1 g) = 0.260 W/kg; SAR(10 g) = 0.181 W/kg

Maximum value of SAR (measured) = 0.324 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [GSM1900_Rear_CH661_da53:0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, GSM1900 (0); Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/GSM 1900_Rear_CH661/Area Scan (81x101x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.327 W/kg

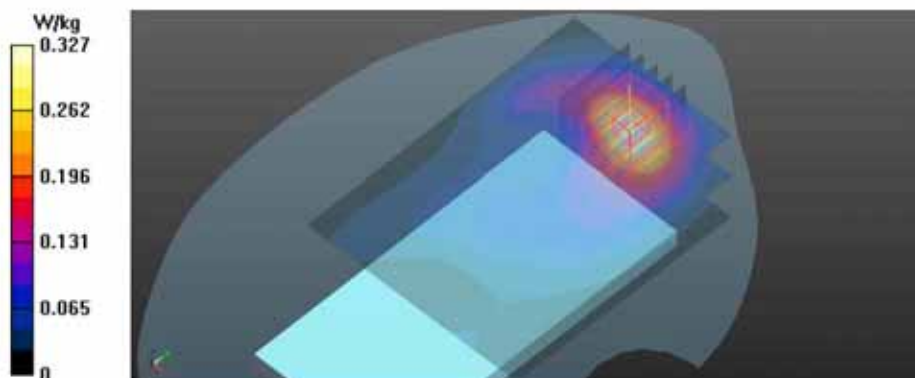
Body/GSM 1900_Rear_CH661/Zoom Scan (5x6x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 4.988 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.384 W/kg

SAR(1 g) = 0.244 W/kg; SAR(10 g) = 0.148 W/kg

Maximum value of SAR (measured) = 0.337 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [UMTS 850_Rear_CH4183.da53:0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

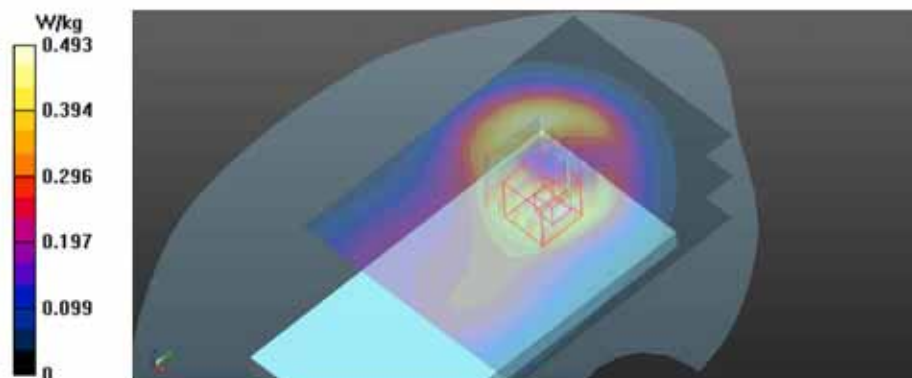
Communication System: UID 0, WCDMA5 (0); Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 54.997$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/UMTS 850_Rear_CH4183/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.493 W/kg

Body/UMTS 850_Rear_CH4183/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.10 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.545 W/kg
SAR(1 g) = 0.388 W/kg; SAR(10 g) = 0.269 W/kg
Maximum value of SAR (measured) = 0.479 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [UMTS 1750_Rear_CH1412.da53.0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, WCDMA4 (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.469$ S/m; $\epsilon_r = 55.323$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.87, 8.87, 8.87); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/UMTS 1750_Rear_CH1412/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

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

Body/UMTS 1750_Rear_CH1412/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

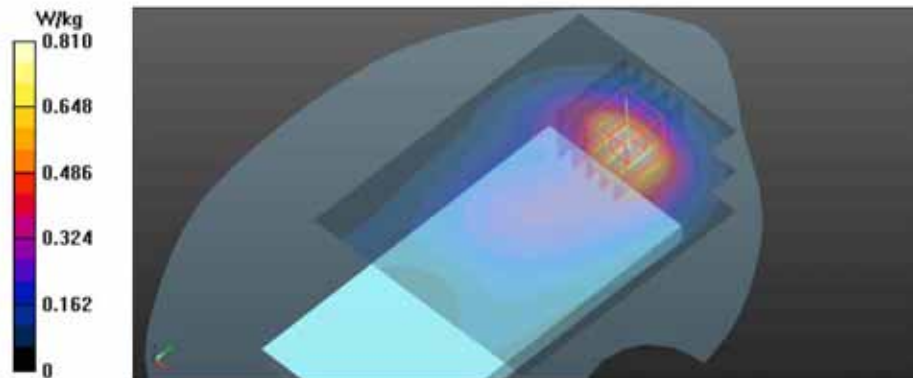
Reference Value = 10.90 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.869 W/kg

SAR(1 g) = 0.572 W/kg; SAR(10 g) = 0.359 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.770 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
 File Name: [UMTS 1900_Rear_CH9400.da53.0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, WCDMA2 (0); Frequency: 1880 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 1880$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/UMTS 1900_Rear_CH9400/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Maximum value of SAR (interpolated) = 0.935 W/kg

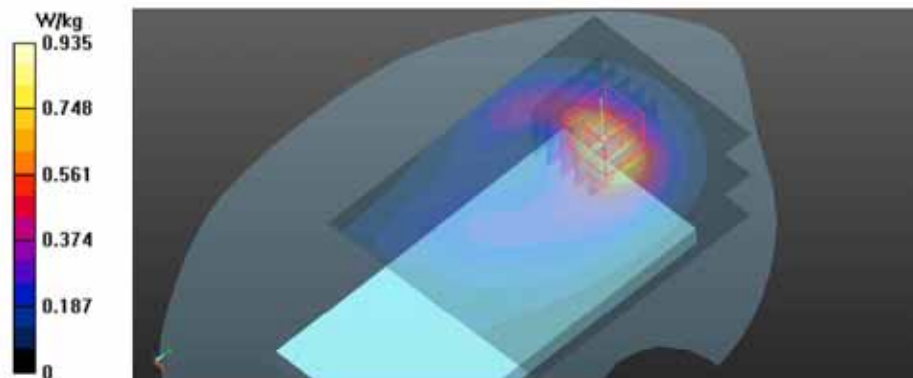
Body/UMTS 1900_Rear_CH9400/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.28 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.656 W/kg; SAR(10 g) = 0.397 W/kg

Maximum value of SAR (measured) = 0.907 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [CDMA DCN_Rear_CH564.da53-0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, CDMA DCN (0); Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 820.1$ MHz; $\sigma = 0.96$ S/m; $\epsilon_r = 55.074$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/CDMA DCN_Rear_CH564/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.473 W/kg

Body/CDMA DCN_Rear_CH564/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

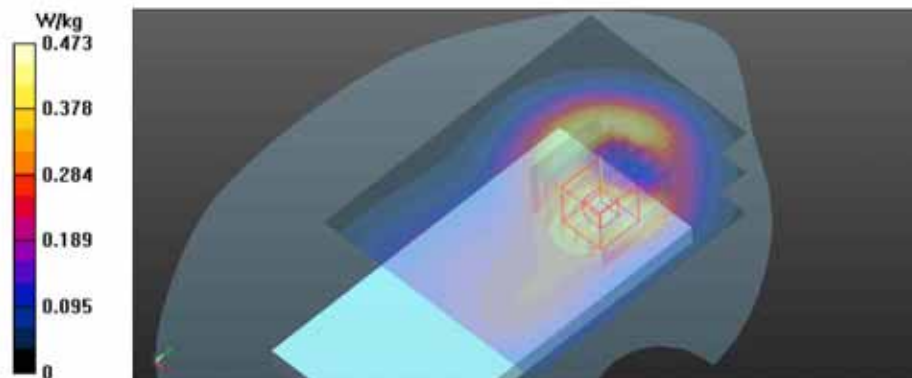
Reference Value = 15.46 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.501 W/kg

SAR(1 g) = 0.358 W/kg; SAR(10 g) = 0.251 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.448 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
 File Name: [CDMA DCN_Rear_CH384.da53-0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

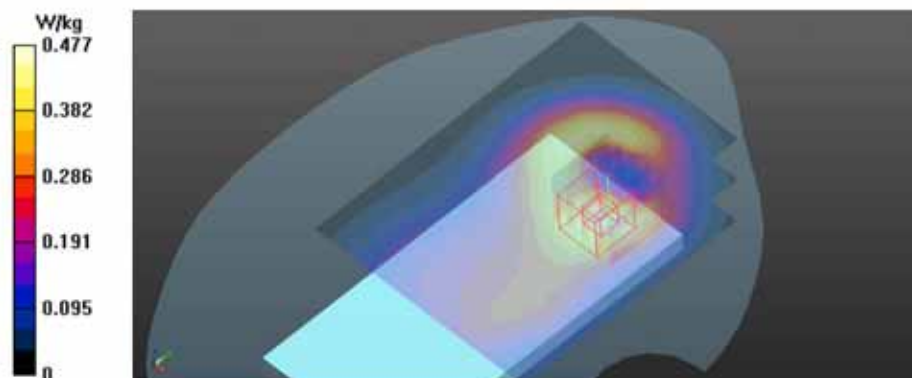
Communication System: UID 0, CDMA DCN (0); Frequency: 836.52 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 54.997$; $\rho = 1000$ kg/m³
 Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/CDMA DCN_Rear_CH384/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
 Maximum value of SAR (interpolated) = 0.477 W/kg

Body/CDMA DCN_Rear_CH384/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
 Reference Value = 15.81 V/m; Power Drift = -0.04 dB
 Peak SAR (extrapolated) = 0.522 W/kg
SAR(1 g) = 0.373 W/kg; SAR(10 g) = 0.257 W/kg
 Maximum value of SAR (measured) = 0.466 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: CDMA PCS Rear_CH600.da53-0

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

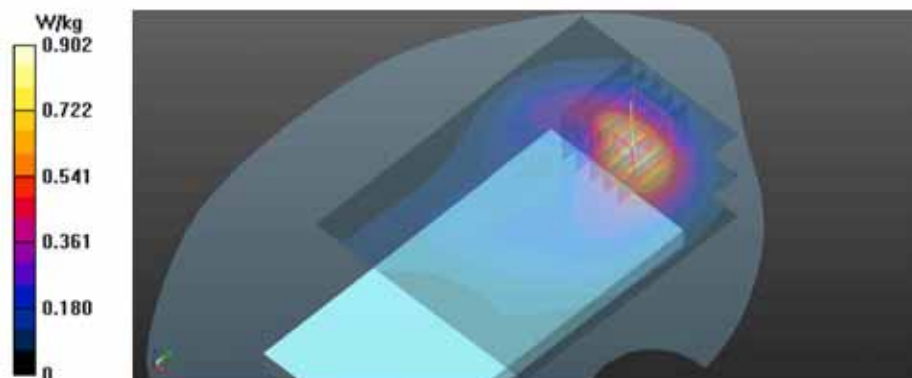
Communication System: UID 0, CDMA PCS 1xRTT/EVDO (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/CDMA PCS Rear_CH600/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.902 W/kg

Body/CDMA PCS Rear_CH600/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.504 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.639 W/kg; SAR(10 g) = 0.388 W/kg
Maximum value of SAR (measured) = 0.885 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [GSM850_Rear_CH190_With_Cover.da53:0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, GSM850 (0); Frequency: 836.6 MHz; Duty Cycle: 1:8.30042
Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 54.997$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/GSM 850_Rear_CH190_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.252 W/kg

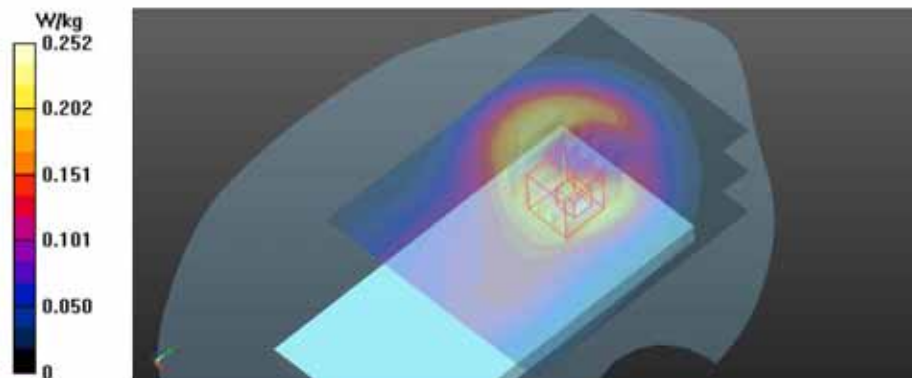
Body/GSM 850_Rear_CH190_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.56 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.282 W/kg

SAR(1 g) = 0.199 W/kg; SAR(10 g) = 0.137 W/kg

Maximum value of SAR (measured) = 0.252 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: GSM1900_Rear_CH661_With_Cover.da53:0

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

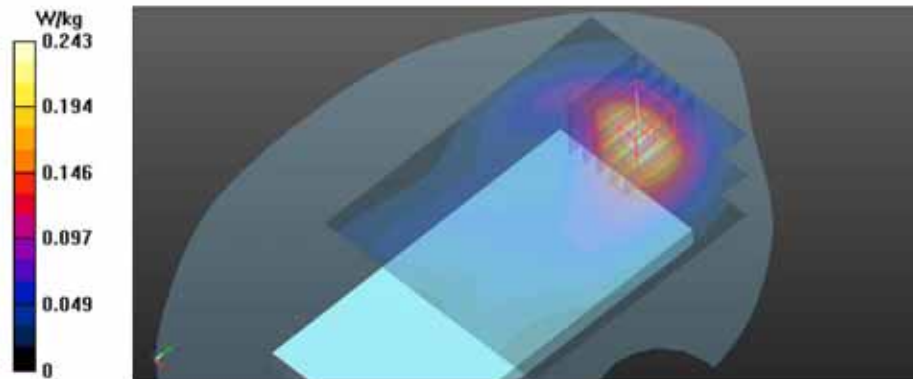
Communication System: UID 0, GSM1900 (0); Frequency: 1880 MHz; Duty Cycle: 1:8.30042
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/GSM1900_Rear_CH661_With_Cover/Area Scan (81x101x1): Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm
Maximum value of SAR (interpolated) = 0.243 W/kg

Body/GSM1900_Rear_CH661_With_Cover/Zoom Scan (5x6x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm
Reference Value = 5.192 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.273 W/kg
SAR(1 g) = 0.175 W/kg; SAR(10 g) = 0.108 W/kg
Maximum value of SAR (measured) = 0.240 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [UMTS 850_Rear_CH4183_With Cover.da53-0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

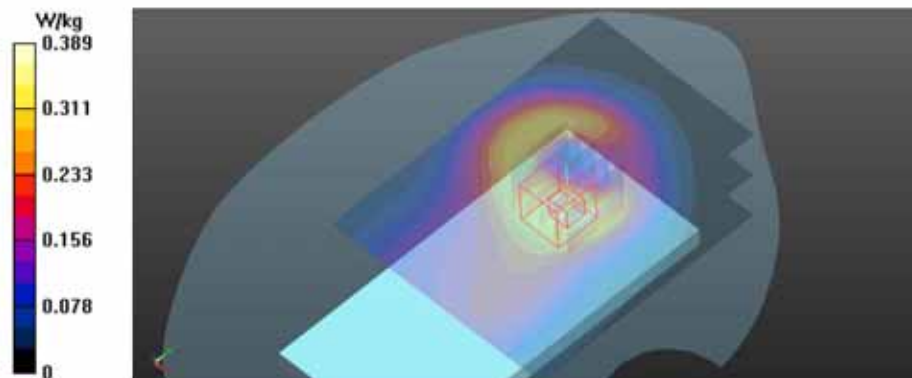
Communication System: UID 0, WCDMA5 (0); Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 54.997$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/UMTS 850_Rear_CH4183_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.389 W/kg

Body/UMTS 850_Rear_CH4183_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.82 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.422 W/kg
SAR(1 g) = 0.300 W/kg; SAR(10 g) = 0.208 W/kg
Maximum value of SAR (measured) = 0.382 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [UMTS 1750_Rear_CH1412_With Cover.da53:0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, WCDMA4 (0); Frequency: 1732.4 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1732.4$ MHz; $\sigma = 1.469$ S/m; $\epsilon_r = 55.323$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.87, 8.87, 8.87); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/UMTS 1750_Rear_CH1412_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.664 W/kg

Body/UMTS 1750_Rear_CH1412_With Cover/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

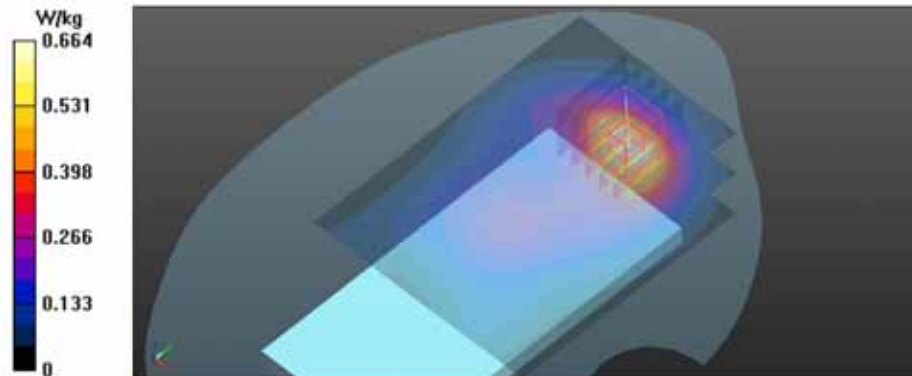
Reference Value = 11.61 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.744 W/kg

SAR(1 g) = 0.493 W/kg; SAR(10 g) = 0.310 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.657 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [UMTS 1900_Rear_CH9400_With Cover.da53:0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

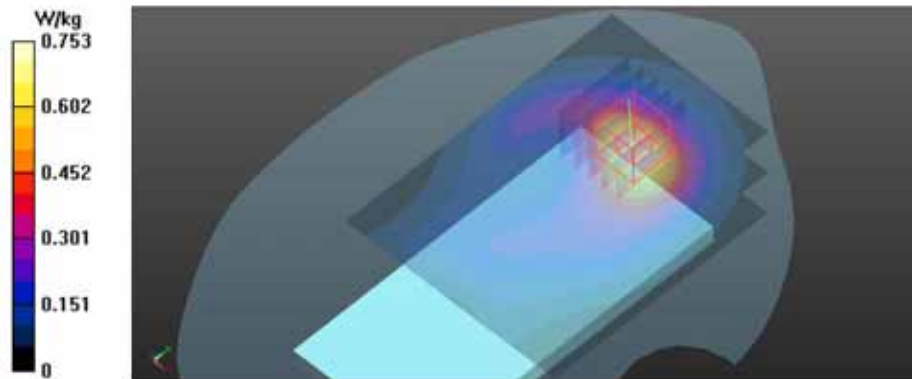
Communication System: UID 0, WCDMA2 (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/UMTS 1900_Rear_CH9400_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.753 W/kg

Body/UMTS 1900_Rear_CH9400_With Cover/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.82 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 0.864 W/kg
SAR(1 g) = 0.551 W/kg; SAR(10 g) = 0.340 W/kg
Maximum value of SAR (measured) = 0.755 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [CDMA DCN_Rear_CH564_With Cover_da53:0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, CDMA DCN (0); Frequency: 820.1 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 820.1$ MHz; $\sigma = 0.96$ S/m; $\epsilon_r = 55.074$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/CDMA DCN_Rear_CH564_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.368 W/kg

Body/CDMA DCN_Rear_CH564_With Cover/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

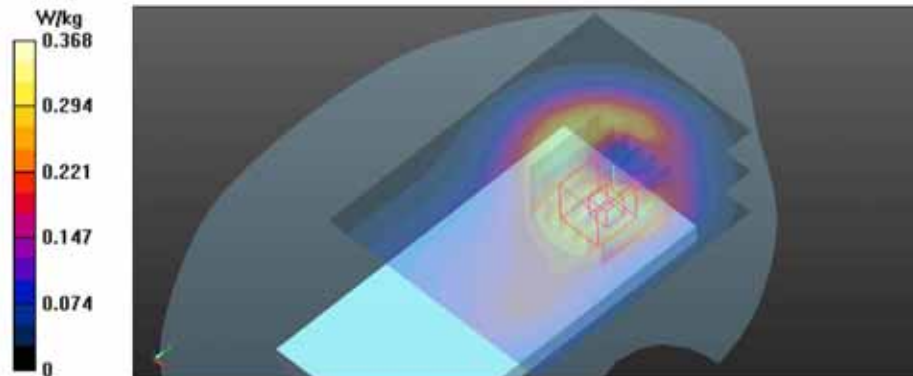
Reference Value = 13.23 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.417 W/kg

SAR(1 g) = 0.294 W/kg; SAR(10 g) = 0.202 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.372 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [CDMA DCN_Rear_CH384_With Cover_da53:0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

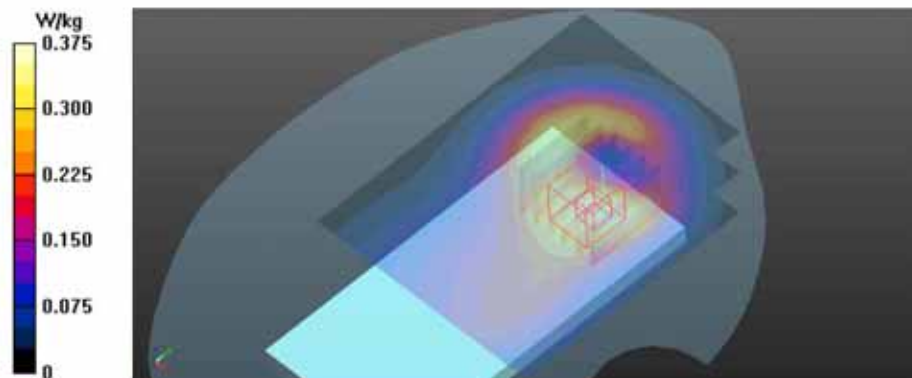
Communication System: UID 0, CDMA DCN (0); Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 837$ MHz; $\sigma = 0.976$ S/m; $\epsilon_r = 54.997$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/CDMA DCN_Rear_CH384_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.375 W/kg

Body/CDMA DCN_Rear_CH384_With Cover/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.34 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.420 W/kg
SAR(1 g) = 0.297 W/kg; SAR(10 g) = 0.205 W/kg
Maximum value of SAR (measured) = 0.375 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [CDMA PCS Rear CH600 With Cover.da53-0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

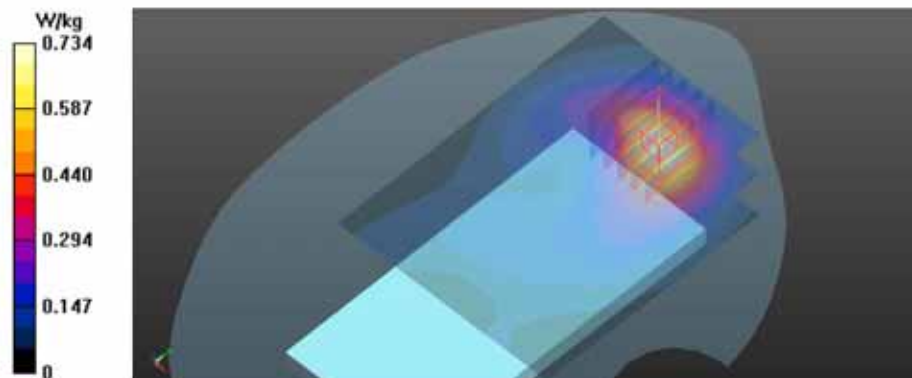
Communication System: UID 0, CDMA PCS 1xRTT/EVDO (0); Frequency: 1880 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/CDMA PCS_Rear_CH600_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.734 W/kg

Body/CDMA PCS_Rear_CH600_With Cover/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.194 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.805 W/kg
SAR(1 g) = 0.524 W/kg; SAR(10 g) = 0.325 W/kg
Maximum value of SAR (measured) = 0.709 W/kg



Appendix A.9 SAR Test Plots for LTE FDD Body Worn

Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 71 (0); Frequency: 680.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 680.5$ MHz; $\sigma = 0.925$ S/m; $\epsilon_r = 55.448$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297/Area Scan (81x101x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.353 W/kg

Body/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297/Zoom Scan (7x8x7)/Cube 0:

Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

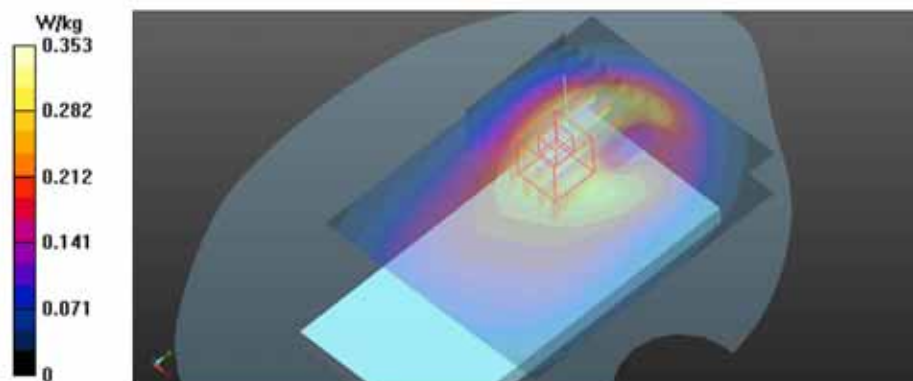
Reference Value = 14.87 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.393 W/kg

SAR(1 g) = 0.275 W/kg; SAR(10 g) = 0.199 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.349 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: LTE Band 12_10MHz_1RB_0 Offset_QPSK_Rear_CH23095.da53:0

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.954$ S/m; $\epsilon_r = 55.114$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

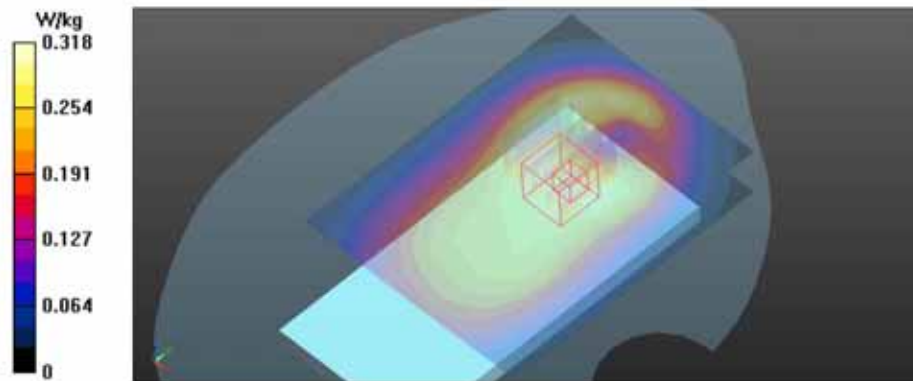
Body/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Rear_CH23095/Area Scan (81x101x1): Interpolated
grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.318 W/kg

Body/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Rear_CH23095/Zoom Scan (5x5x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.01 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 0.335 W/kg
SAR(1 g) = 0.262 W/kg; SAR(10 g) = 0.203 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.309 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 13_10MHz_1RB_49 Offset_QPSK_Rear_CH23230_da53-0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.969 \text{ S/m}$; $\epsilon_r = 54.765$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Rear_CH23230/Area Scan (81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.395 W/kg

Body/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Rear_CH23230/Zoom Scan (5x5x7)/Cube 0:

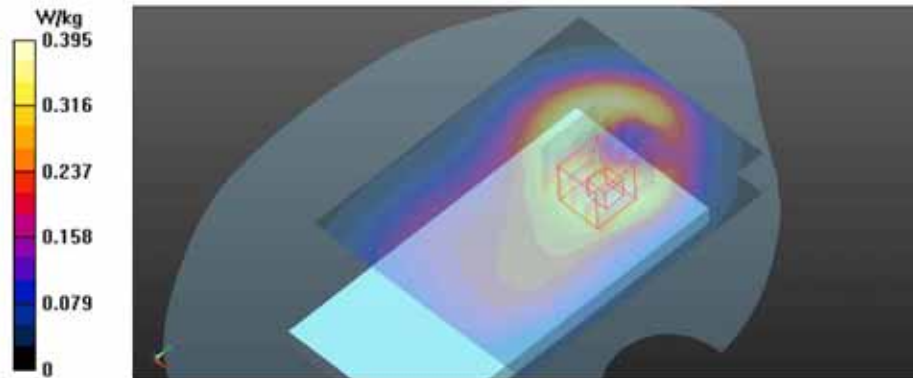
Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.48 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.423 W/kg

SAR(1 g) = 0.317 W/kg; SAR(10 g) = 0.227 W/kg

Maximum value of SAR (measured) = 0.381 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 14_10MHz_1RB_49 Offset_QPSK_Rear_CH23330_da53-0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 14 (0); Frequency: 793 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 793$ MHz; $\sigma = 0.98$ S/m; $\epsilon_r = 54.643$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 14_10MHz_1RB_49 Offset_QPSK_Rear_CH23330/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.413 W/kg

Body/LTE Band 14_10MHz_1RB_49 Offset_QPSK_Rear_CH23330/Zoom Scan (5x5x7)/Cube 0:

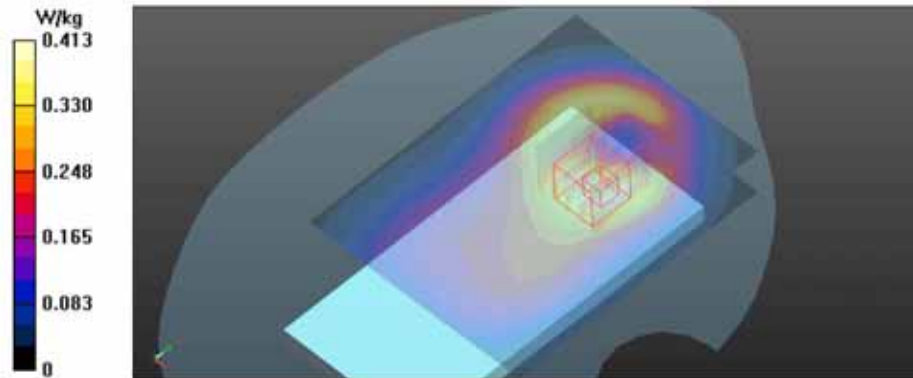
Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.42 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.456 W/kg

SAR(1 g) = 0.339 W/kg; SAR(10 g) = 0.242 W/kg

Maximum value of SAR (measured) = 0.409 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [LTE Band 26_15MHz_1RB_0 Offset_QPSK_Rear_CH26865.da53:0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.97$ S/m; $\epsilon_r = 55.019$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

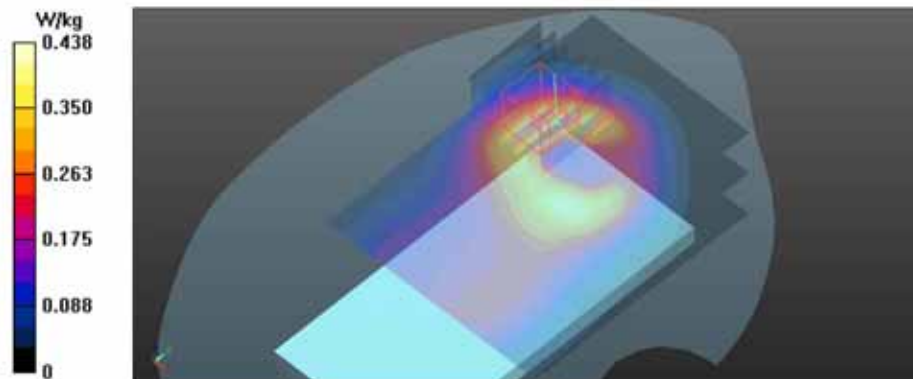
DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 26_15MHz_1RB_0 Offset_QPSK_Rear_CH26865/Area Scan (81x101x1): Interpolated
grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.438 W/kg

Body/LTE Band 26_15MHz_1RB_0 Offset_QPSK_Rear_CH26865/Zoom Scan (6x6x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.07 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.494 W/kg
SAR(1 g) = 0.315 W/kg; SAR(10 g) = 0.199 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.430 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525.da53:0

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.975$ S/m; $\epsilon_r = 54.999$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

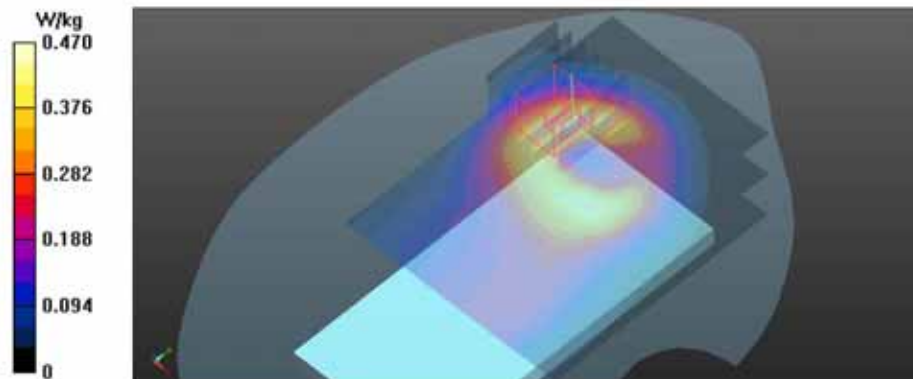
Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525/Area Scan (81x101x1): Interpolated
grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.470 W/kg

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525/Zoom Scan (6x6x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.68 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.529 W/kg
SAR(1 g) = 0.340 W/kg; SAR(10 g) = 0.217 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.460 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 66_20MHz_50RB_0 Offset_QPSK_Rear_CH132072_da53.0

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 66 (0); Frequency: 1720 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1720$ MHz; $\sigma = 1.455$ S/m; $\epsilon_r = 55.361$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.87, 8.87, 8.87); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 66_20MHz_50RB_0 Offset_QPSK_Rear_CH132072/Area Scan (81x101x1):

Interpolated grid: $dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.718 W/kg

Body/LTE Band 66_20MHz_50RB_0 Offset_QPSK_Rear_CH132072/Zoom Scan (5x6x7)/Cube 0:

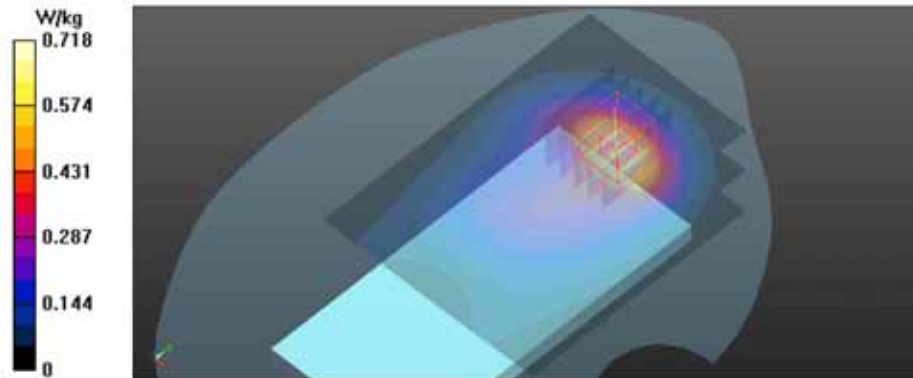
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 9.812 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 0.844 W/kg

SAR(1 g) = 0.550 W/kg; SAR(10 g) = 0.342 W/kg

Maximum value of SAR (measured) = 0.727 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [LTE Band 25_20MHz_1RB_0 Offset_QPSK_Rear_CH26590.da53:0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 25 (0); Frequency: 1905 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1905$ MHz; $\sigma = 1.54$ S/m; $\epsilon_r = 53.308$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

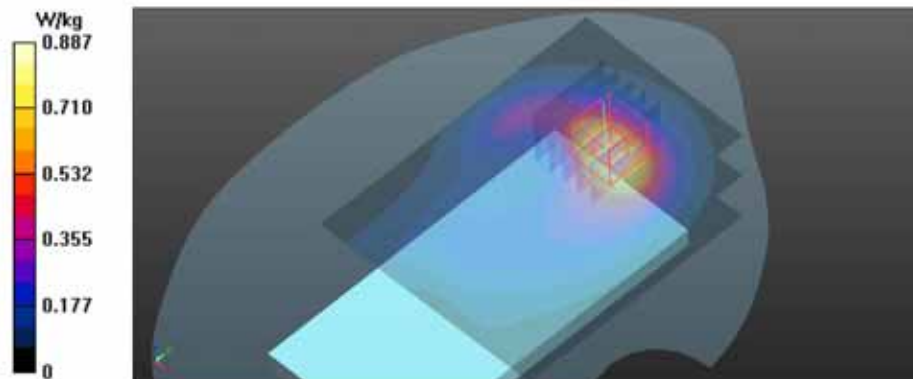
Body/LTE Band 25_20MHz_1RB_0 Offset_QPSK_Rear_CH26590/Area Scan (81x101x1): Interpolated
grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.887 W/kg

Body/LTE Band 25_20MHz_1RB_0 Offset_QPSK_Rear_CH26590/Zoom Scan (5x6x7)/Cube 0:

Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.81 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.639 W/kg; SAR(10 g) = 0.387 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.885 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [LTE Band 30_10MHz_1RB_0 Offset_QPSK_Rear_CH27710.da53:0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.1 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 30 (0); Frequency: 2310 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2310$ MHz; $\sigma = 1.786$ S/m; $\epsilon_r = 52.906$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

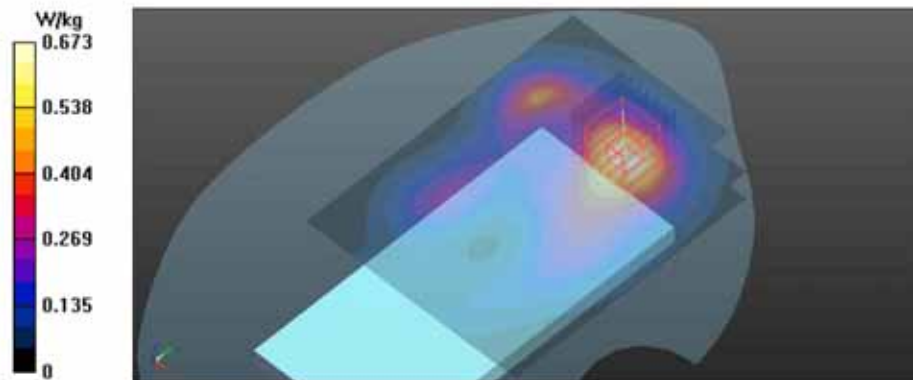
DASY52 Configuration:

- Probe: EX3DV4 - SN3933; ConvF(8.26, 8.26, 8.26); Calibrated: 2017-09-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Rear_CH27710/Area Scan (121x151x1): Interpolated
grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.673 W/kg

Body/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Rear_CH27710/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.509 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.724 W/kg
SAR(1 g) = 0.424 W/kg; SAR(10 g) = 0.244 W/kg
Maximum value of SAR (measured) = 0.617 W/kg



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 7_20MHz_1RB_0 Offset_QPSK_Rear_CH21350.da53.0](#)

Ambient Temp : 23.2 °C Tissue Temp : 21.9 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 7 (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2560$ MHz; $\sigma = 2.204$ S/m; $\epsilon_r = 51.378$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.85, 7.85, 7.85); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 7_20MHz_1RB_0 Offset_QPSK_Rear_CH21350/Area Scan (121x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Body/LTE Band 7_20MHz_1RB_0 Offset_QPSK_Rear_CH21350/Zoom Scan (7x7x7)/Cube 0:

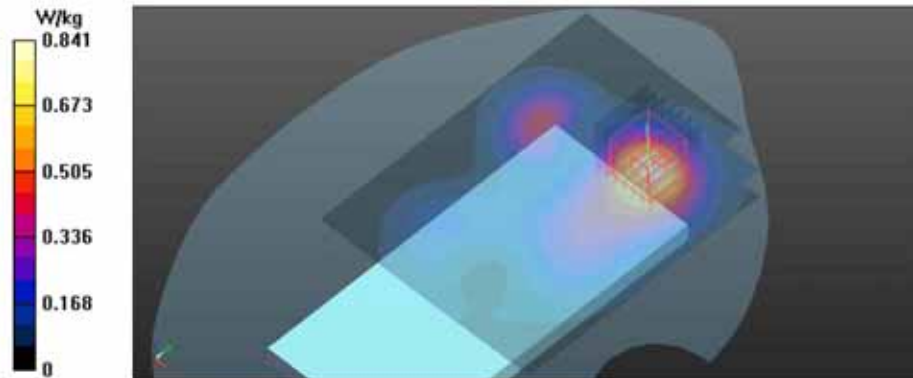
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.783 V/m; Power Drift = 0.20 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.577 W/kg; SAR(10 g) = 0.307 W/kg

Maximum value of SAR (measured) = 0.899 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297_With Cover.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 71 (0); Frequency: 680.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 680.5$ MHz; $\sigma = 0.925$ S/m; $\epsilon_r = 55.448$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.263 W/kg

Body/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297_With Cover/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

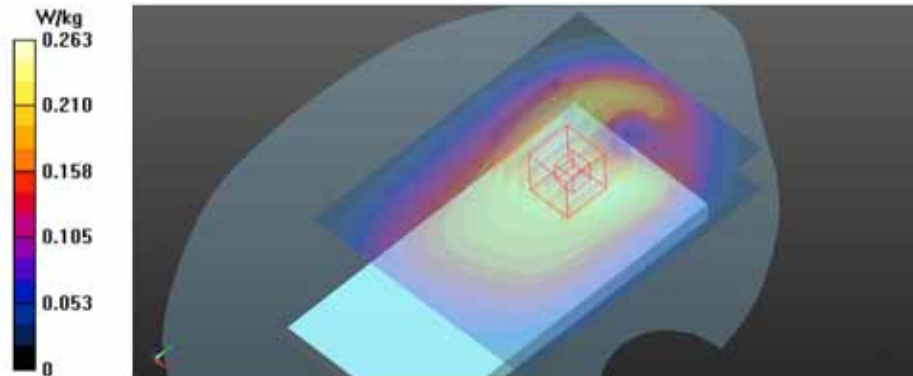
Reference Value = 14.72 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.283 W/kg

SAR(1 g) = 0.218 W/kg; SAR(10 g) = 0.169 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.260 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 12_10MHz_IRB_0_Offset_QPSK_Rear_CH23095_With_Cover.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 12 (0); Frequency: 707.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 707.5$ MHz; $\sigma = 0.954$ S/m; $\epsilon_r = 55.114$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 12_10MHz_IRB_0_Offset_QPSK_Rear_CH23095_With_Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.262 W/kg

Body/LTE Band 12_10MHz_IRB_0_Offset_QPSK_Rear_CH23095_With_Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

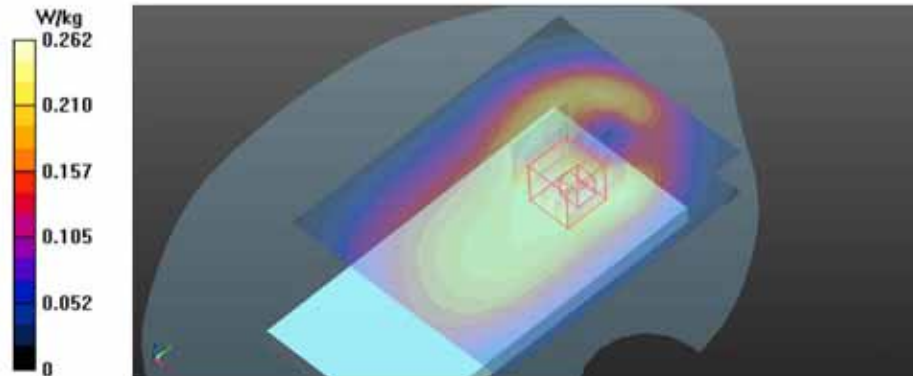
Reference Value = 15.28 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.285 W/kg

SAR(1 g) = 0.223 W/kg; SAR(10 g) = 0.170 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.263 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 13_10MHz_IRB_49_Offset_QPSK_Rear_CH23230_With_Cover.da53.0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 13 (0); Frequency: 782 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 782 \text{ MHz}$; $\sigma = 0.969 \text{ S/m}$; $\epsilon_r = 54.765$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 13_10MHz_IRB_49_Offset_QPSK_Rear_CH23230_With_Cover/Area Scan

(81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.314 W/kg

Body/LTE Band 13_10MHz_IRB_49_Offset_QPSK_Rear_CH23230_With_Cover/Zoom Scan

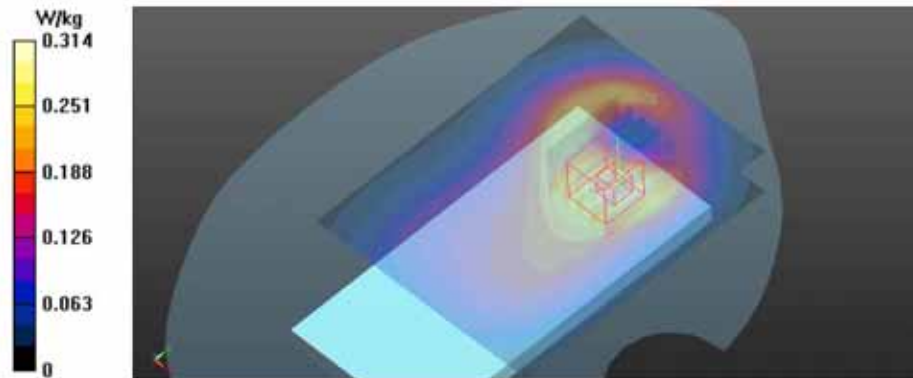
(5x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 13.29 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.334 W/kg

SAR(1 g) = 0.249 W/kg; SAR(10 g) = 0.179 W/kg

Maximum value of SAR (measured) = 0.307 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 14_10MHz_IRB_49 Offset_QPSK_Rear_CH23330_With Cover.da53.0](#)

Ambient Temp : 23.2 °C Tissue Temp : 22.2 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 14 (0); Frequency: 793 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 793 \text{ MHz}$; $\sigma = 0.98 \text{ S/m}$; $\epsilon_r = 54.643$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(11.34, 11.34, 11.34); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 14_10MHz_IRB_49 Offset_QPSK_Rear_CH23330_With Cover/Area Scan
(81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.307 W/kg

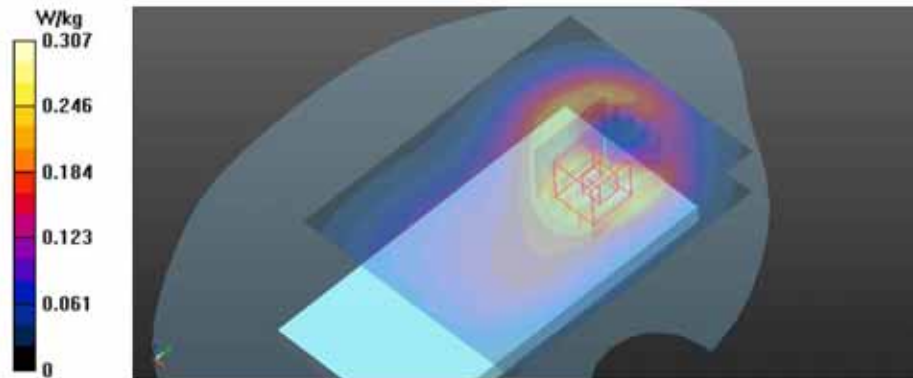
Body/LTE Band 14_10MHz_IRB_49 Offset_QPSK_Rear_CH23330_With Cover/Zoom Scan
(5x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.48 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.323 W/kg

SAR(1 g) = 0.240 W/kg; SAR(10 g) = 0.172 W/kg

Maximum value of SAR (measured) = 0.296 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 26_15MHz_IRB_0_Offset_QPSK_Rear_CH26865_With_Cover.da53:0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 26 (0); Frequency: 831.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 831.5$ MHz; $\sigma = 0.97$ S/m; $\epsilon_r = 55.019$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 26_15MHz_IRB_0_Offset_QPSK_Rear_CH26865_With_Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.346 W/kg

Body/LTE Band 26_15MHz_IRB_0_Offset_QPSK_Rear_CH26865_With_Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

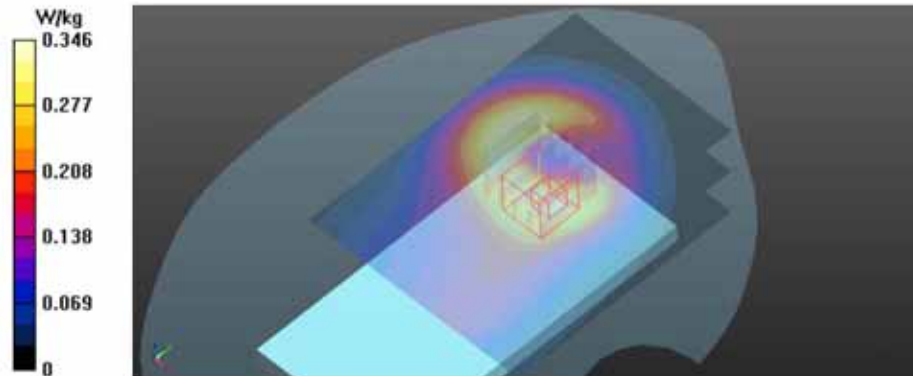
Reference Value = 12.97 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 0.377 W/kg

SAR(1 g) = 0.268 W/kg; SAR(10 g) = 0.185 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.336 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_With Cover.da53:0](#)

Ambient Temp : 23.4 °C Tissue Temp : 22.3 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.5$ MHz; $\sigma = 0.975$ S/m; $\epsilon_r = 54.999$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_With Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.349 W/kg

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

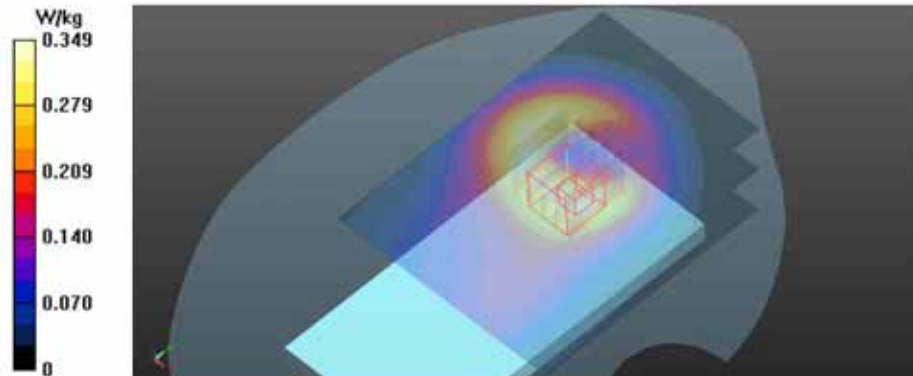
Reference Value = 12.90 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.381 W/kg

SAR(1 g) = 0.271 W/kg; SAR(10 g) = 0.187 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.343 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 66_20MHz_50RB_0 Offset_QPSK_Rear_CH132072_With Cover.da53:0](#)

Ambient Temp : 23.3 °C Tissue Temp : 22.1 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 66 (0); Frequency: 1720 MHz; Duty Cycle: 1:1

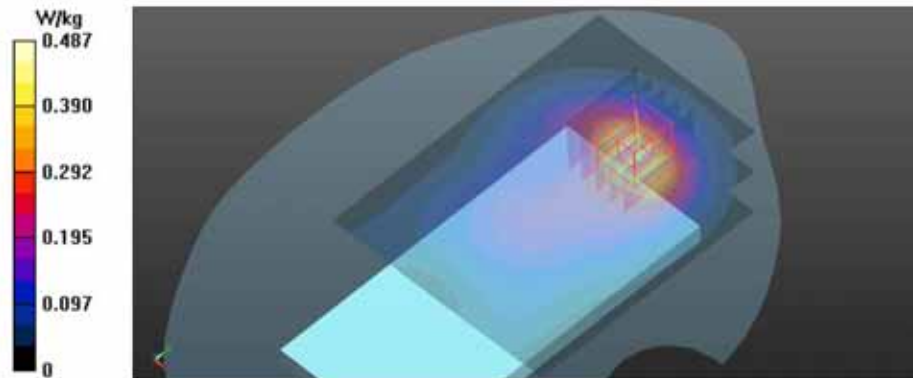
Medium parameters used: $f = 1720 \text{ MHz}$; $\sigma = 1.455 \text{ S/m}$; $\epsilon_r = 55.361$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.87, 8.87, 8.87); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 66_20MHz_50RB_0 Offset_QPSK_Rear_CH132072_With Cover/Area Scan (81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
Maximum value of SAR (interpolated) = 0.487 W/kg

Body/LTE Band 66_20MHz_50RB_0 Offset_QPSK_Rear_CH132072_With Cover/Zoom Scan (5x6x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 9.542 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.555 W/kg
SAR(1 g) = 0.366 W/kg; SAR(10 g) = 0.230 W/kg
Maximum value of SAR (measured) = 0.486 W/kg


Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 25_20MHz_IRB_0_Offset_QPSK_Rear_CH26590_With_Cover.da53:0](#)

Ambient Temp : 23.5 °C Tissue Temp : 22.4 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 25 (0); Frequency: 1905 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1905$ MHz; $\sigma = 1.54$ S/m; $\epsilon_r = 53.308$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(8.39, 8.39, 8.39); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP; Type: SAM; Serial: TP:1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 25_20MHz_IRB_0_Offset_QPSK_Rear_CH26590_With_Cover/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.799 W/kg

Body/LTE Band 25_20MHz_IRB_0_Offset_QPSK_Rear_CH26590_With_Cover/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

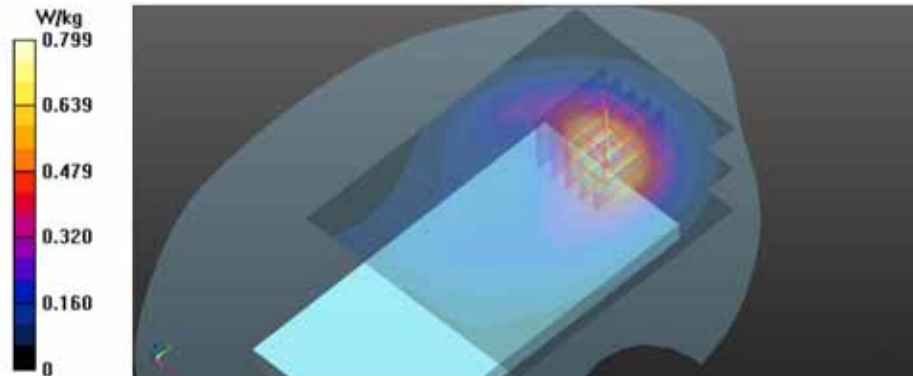
Reference Value = 10.87 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.910 W/kg

SAR(1 g) = 0.578 W/kg; SAR(10 g) = 0.354 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.788 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 30_10MHz_1RB_0 Offset_QPSK_Rear_CH27710_With Cover.da53:0

Ambient Temp : 23.5 °C Tissue Temp : 22.1 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 30 (0); Frequency: 2310 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2310$ MHz; $\sigma = 1.786$ S/m; $\epsilon_r = 52.906$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3933; ConvF(8.26, 8.26, 8.26); Calibrated: 2017-09-28;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Rear_CH27710_With Cover/Area Scan

(121x151x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.515 W/kg

Body/LTE Band 30_10MHz_1RB_0 Offset_QPSK_Rear_CH27710_With Cover/Zoom Scan

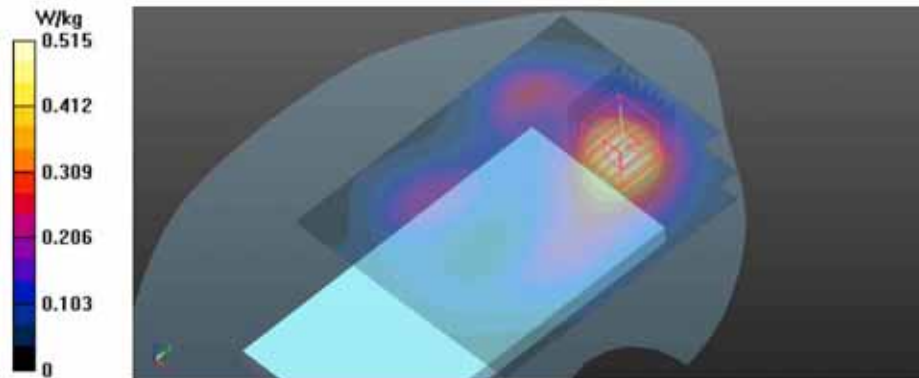
(7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 5.926 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.607 W/kg

SAR(1 g) = 0.359 W/kg; SAR(10 g) = 0.210 W/kg

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



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 7_20MHz_1RB_0 Offset_QPSK_Rear_CH21350_With Cover.da53:0

Ambient Temp : 23.2 °C Tissue Temp : 21.9 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 7 (0); Frequency: 2560 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2560$ MHz; $\sigma = 2.204$ S/m; $\epsilon_r = 51.378$; $\rho = 1000$ kg/m³

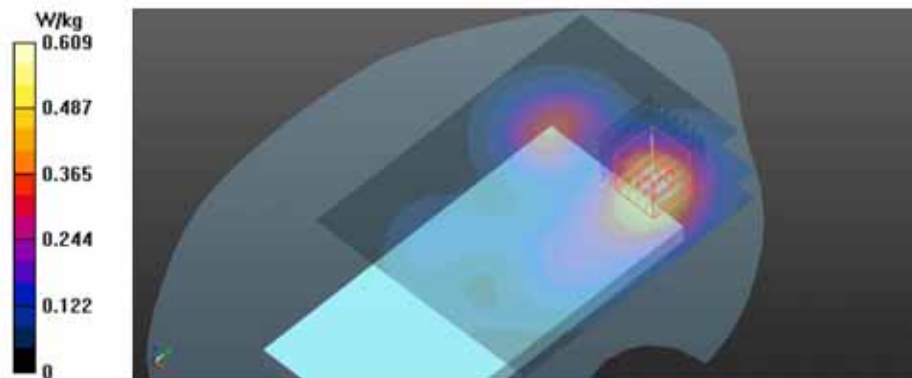
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.85, 7.85, 7.85); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 7_20MHz_1RB_0 Offset_QPSK_Rear_CH21350_With Cover/Area Scan (121x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.609 W/kg

Body/LTE Band 7_20MHz_1RB_0 Offset_QPSK_Rear_CH21350_With Cover/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.971 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.745 W/kg
SAR(1 g) = 0.390 W/kg; SAR(10 g) = 0.216 W/kg
Maximum value of SAR (measured) = 0.604 W/kg



Appendix A.10 SAR Test Plots for LTE TDD Body Worn

Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 41_20MHz_1RB_0 Offset_QPSK_Rear_CH40185.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 21.9 °C

DUT: SM-N960U; Type: Portable Handset; Serial: R38K40917LP

Communication System: UID 0, LTE Band 41 (0); Frequency: 2549.5 MHz; Duty Cycle: 1:1.58016

Medium parameters used (interpolated): $f = 2549.5$ MHz; $\sigma = 2.183$ S/m; $\epsilon_r = 51.362$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.85, 7.85, 7.85); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

**Body/LTE Band 41_20MHz_1RB_0 Offset_QPSK_Rear_CH40185/Area Scan
(121x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.

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

**Body/LTE Band 41_20MHz_1RB_0 Offset_QPSK_Rear_CH40185/Zoom Scan
(7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

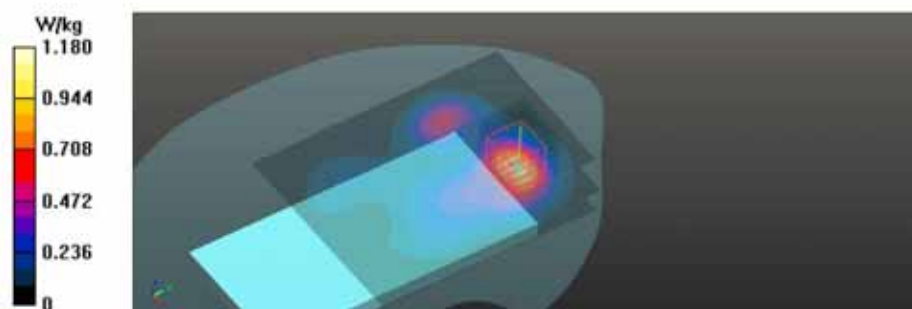
Reference Value = 4.562 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 0.694 W/kg; SAR(10 g) = 0.350 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

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



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 41_20MHz_1RB_0_Offset_QPSK_Rear_CH40185_With_Cover.da53:0](#)

Ambient Temp : 23.2 °C Tissue Temp : 21.9 °C

DUT: SM-N960U & EF-NN960; Type: Portable Handset & LED View Cover; Serial: R38K40917LP & R37K36R1MAXHB3

Communication System: UID 0, LTE Band 41 (0); Frequency: 2549.5 MHz; Duty Cycle: 1:1.58016

Medium parameters used (interpolated): $f = 2549.5$ MHz; $\sigma = 2.183$ S/m; $\epsilon_r = 51.362$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.85, 7.85, 7.85); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/LTE Band 41_20MHz_1RB_0_Offset_QPSK_Rear_CH40185_With_Cover/Area Scan (121x151x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

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

Maximum value of SAR (interpolated) = 0.646 W/kg

Body/LTE Band 41_20MHz_1RB_0_Offset_QPSK_Rear_CH40185_With_Cover/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.970 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.777 W/kg

SAR(1 g) = 0.407 W/kg; SAR(10 g) = 0.220 W/kg

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

Maximum value of SAR (measured) = 0.629 W/kg

