

Appendix A.11 SAR Test Plots for WLAN Body Worn

Date: 2018-07-07

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [WLAN 2.4GHz_802.11b_Rear_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; $\sigma = 1.952$ S/m; $\epsilon_r = 51.885$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

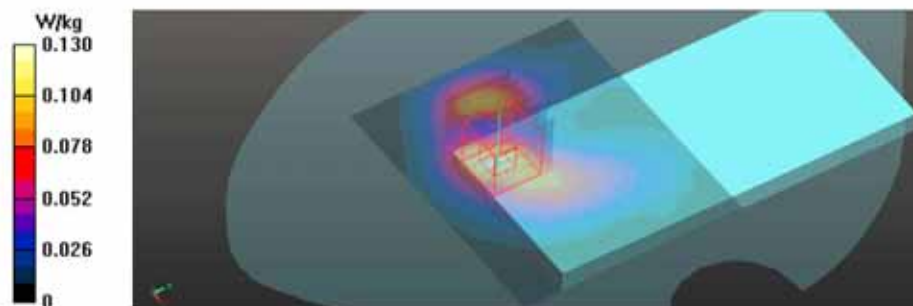
DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(7.99, 7.99, 7.99); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/WLAN 2.4GHz_802.11b_Rear_CH6_Ant2/Area Scan (121x101x1): Interpolated grid:
dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 0.130 W/kg

Body/WLAN 2.4GHz_802.11b_Rear_CH6_Ant2/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.533 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.162 W/kg
SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.043 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.130 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)
 File Name: WLAN_5.3GHz_802.11a_Rear_CH52_Ant2.da53-0

Ambient Temp : 23.1 °C Tissue Temp : 21.9 °C

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

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5260 MHz; Duty Cycle: 1:1
 Medium parameters used: $f = 5260 \text{ MHz}$; $\sigma = 5.293 \text{ S/m}$; $\epsilon_r = 49.499$; $\rho = 1000 \text{ kg/m}^3$
 Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.58, 4.58, 4.58); 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/WLAN_5.3GHz_802.11a_Rear_CH52_Ant2/Area Scan (121x101x1): Interpolated grid:

$dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 0.809 W/kg

Body/WLAN_5.3GHz_802.11a_Rear_CH52_Ant2/Zoom Scan (8x8x7)/Cube 0: Measurement grid:

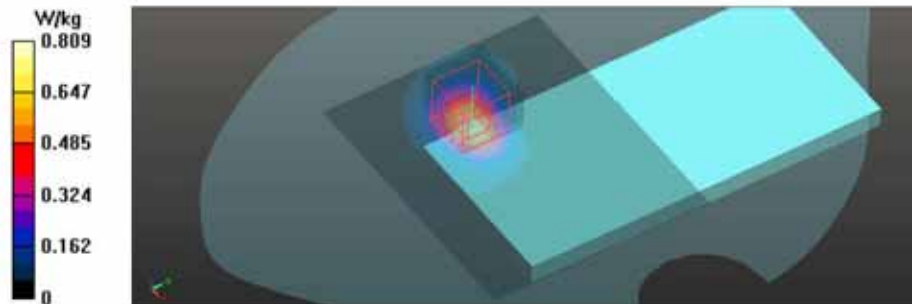
$dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 4.541 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.362 W/kg; SAR(10 g) = 0.130 W/kg

Maximum value of SAR (measured) = 0.809 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WLAN 5.6GHz_802.11a_Rear_CH144_Ant2.da53:0

Ambient Temp : 23.1 °C Tissue Temp : 21.9 °C

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

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5720 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5720$ MHz; $\sigma = 5.762$ S/m; $\epsilon_r = 47.062$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

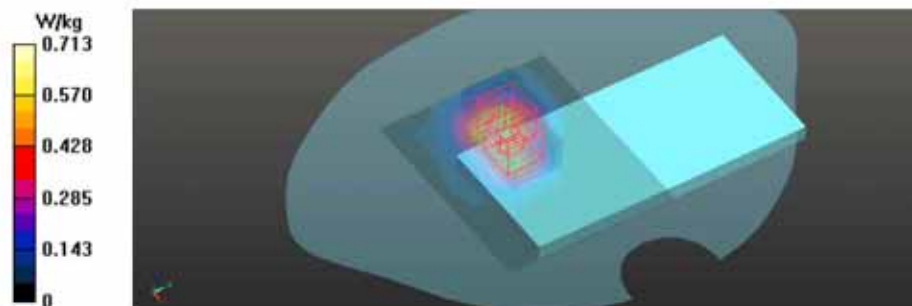
DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.24, 4.24, 4.24); 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/WLAN 5.6GHz_802.11a_Rear_CH144_Ant2/Area Scan (121x101x1): Interpolated
grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.713 W/kg

Body/WLAN 5.6GHz_802.11a_Rear_CH144_Ant2/Zoom Scan (9x9x7)/Cube 0:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 6.660 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.286 W/kg; SAR(10 g) = 0.121 W/kg
Maximum value of SAR (measured) = 0.647 W/kg

Body/WLAN 5.6GHz_802.11a_Rear_CH144_Ant2/Zoom Scan (9x9x7)/Cube 1:
Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 6.660 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.987 W/kg
SAR(1 g) = 0.267 W/kg; SAR(10 g) = 0.114 W/kg
Maximum value of SAR (measured) = 0.634 W/kg



Date: 2018-07-13

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [WLAN 5.8GHz_802.11a_Rear_CH157_Ant2.da53:0](#)

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

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

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 5785$ MHz; $\sigma = 5.911$ S/m; $\epsilon_r = 46.251$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.24, 4.24, 4.24); 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/WLAN 5.8GHz_802.11a_Rear_CH157_Ant2/Area Scan (121x101x1): Interpolated grid:
 $dx=1.000$ mm, $dy=1.000$ mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.542 W/kg

Body/WLAN 5.8GHz_802.11a_Rear_CH157_Ant2/Zoom Scan (9x9x7)/Cube 0: Measurement grid:

$dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

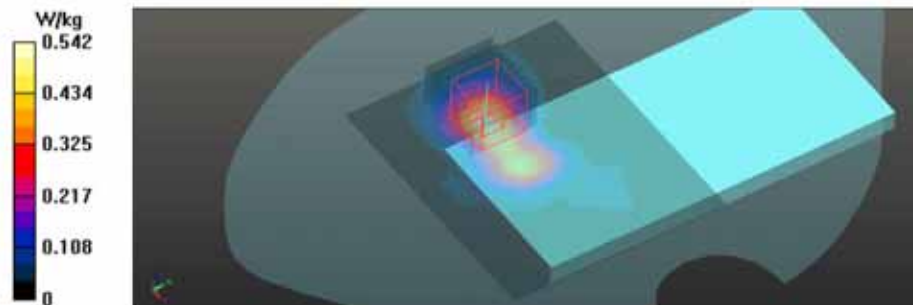
Reference Value = 2.882 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.925 W/kg

SAR(1 g) = 0.229 W/kg; SAR(10 g) = 0.084 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.552 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [WLAN 2.4GHz_802.11b_Rear_CH6_Ant2_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, WLAN 2.45GHz (0); Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 2437$ MHz; $\sigma = 1.915$ S/m; $\epsilon_r = 52.63$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.99, 7.99, 7.99); 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/WLAN 2.4GHz_802.11b_Rear_CH6_Ant2_With Cover/Area Scan (121x101x1): Interpolated grid:
dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.0922 W/kg

Body/WLAN 2.4GHz_802.11b_Rear_CH6_Ant2_With Cover/Zoom Scan (7x7x7)/Cube 0: Measurement
grid: dx=5mm, dy=5mm, dz=5mm

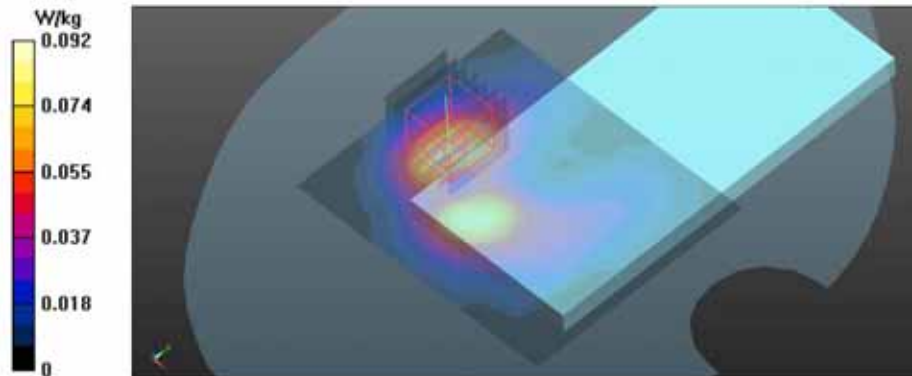
Reference Value = 1.994 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.149 W/kg

SAR(1 g) = 0.065 W/kg; SAR(10 g) = 0.033 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.109 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: WLAN_5.3GHz_802.11a_Rear_CH52_Ant2_With Cover.da53.0

Ambient Temp : 23.1 °C Tissue Temp : 21.9 °C

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

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5260 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5260$ MHz; $\sigma = 5.293$ S/m; $\epsilon_r = 49.499$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.58, 4.58, 4.58); 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/WLAN_5.3GHz_802.11a_Rear_CH52_Ant2_With Cover/Area Scan (121x101x1):

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

Maximum value of SAR (interpolated) = 0.698 W/kg

Body/WLAN_5.3GHz_802.11a_Rear_CH52_Ant2_With Cover/Zoom Scan (7x7x7)/Cube 0:

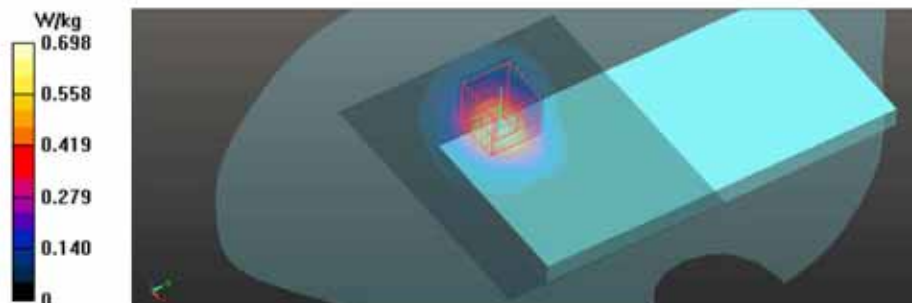
Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 3.047 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.338 W/kg; SAR(10 g) = 0.131 W/kg

Maximum value of SAR (measured) = 0.726 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [WLAN 5.6GHz_802.11a_Rear_CH144_Ant2_With_Cover_da53-0](#)

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

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

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5720 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5720$ MHz; $\sigma = 5.762$ S/m; $\epsilon_r = 47.062$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.24, 4.24, 4.24); 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/WLAN 5.6GHz_802.11a_Rear_CH144_Ant2_With_Cover/Area Scan (121x101x1):

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

Maximum value of SAR (interpolated) = 0.637 W/kg

Body/WLAN 5.6GHz_802.11a_Rear_CH144_Ant2_With_Cover/Zoom Scan (9x9x7)/Cube
0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 6.610 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.274 W/kg; SAR(10 g) = 0.106 W/kg

Maximum value of SAR (measured) = 0.633 W/kg

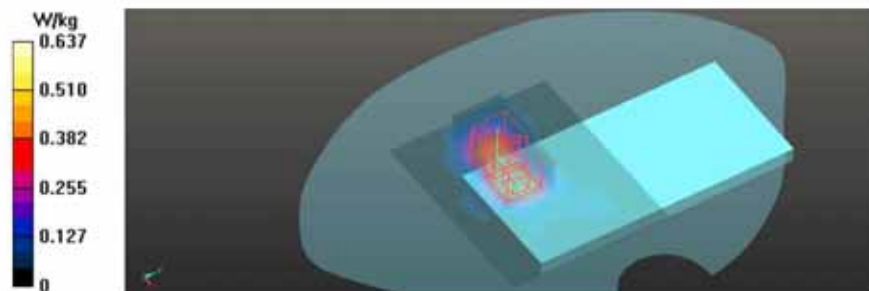
Body/WLAN 5.6GHz_802.11a_Rear_CH144_Ant2_With_Cover/Zoom Scan (9x9x7)/Cube
1: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 6.610 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.882 W/kg

SAR(1 g) = 0.235 W/kg; SAR(10 g) = 0.094 W/kg

Maximum value of SAR (measured) = 0.547 W/kg



Date: 2018-07-13

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: WLAN 5.8GHz_802.11a_Rear_CH157_Ant2_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, 5GHz WLAN (0); Frequency: 5785 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 5785$ MHz; $\sigma = 5.911$ S/m; $\epsilon_r = 46.251$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.24, 4.24, 4.24); 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/WLAN 5.8GHz_802.11a_Rear_CH157_Ant2_With Cover/Area Scan (121x101x1):

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

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 0.410 W/kg

Body/WLAN 5.8GHz_802.11a_Rear_CH157_Ant2_With Cover/Zoom Scan (9x9x7)/Cube 0:

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

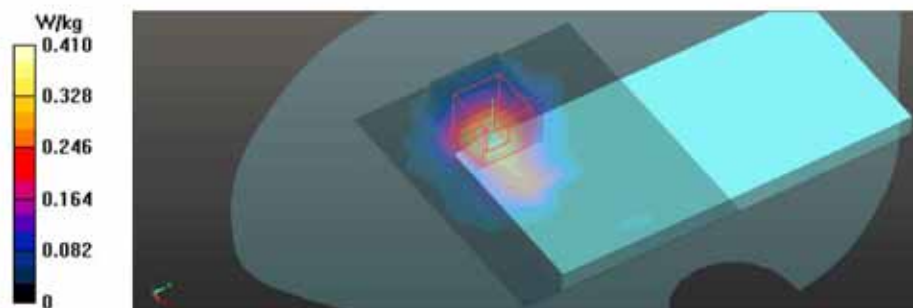
Reference Value = 6.126 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.677 W/kg

SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.067 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

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



Appendix A.12 SAR Test Plots for NII MIMO Body Worn

Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [WLAN_5.3GHz_802.11n_HT20_Rear_CH64_Ant1+Ant2_da53:0](#)

Ambient Temp : 23.1 °C Tissue Temp : 21.9 °C

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

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5320 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 5320$ MHz; $\sigma = 5.385$ S/m; $\epsilon_r = 49.39$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:
- Probe: EX3DV4 - SN3986; ConvF(4.58, 4.58, 4.58); 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/WLAN 5.3GHz_802.11n_HT20_Rear_CH64_Ant1+Ant2/Area Scan (121x101x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm
Maximum value of SAR (interpolated) = 1.10 W/kg

Body/WLAN 5.3GHz_802.11n_HT20_Rear_CH64_Ant1+Ant2/Zoom Scan

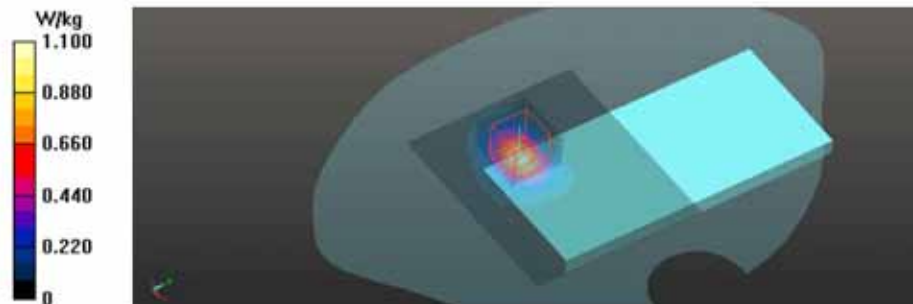
(9x9x7)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 2.642 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 2.19 W/kg

SAR(1 g) = 0.528 W/kg; SAR(10 g) = 0.174 W/kg

Maximum value of SAR (measured) = 1.32 W/kg



Date: 2018-07-12

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [WLAN 5.3GHz_802.11n_HT20_Rear_CH64_Ant1+Ant2_With Cover.da53:0](#)

Ambient Temp : 23.1 °C Tissue Temp : 21.9 °C

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

Communication System: UID 0, 5GHz WLAN (0); Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5320 \text{ MHz}$; $\sigma = 5.385 \text{ S/m}$; $\epsilon_r = 49.39$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(4.58, 4.58, 4.58); 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/WLAN 5.3GHz_802.11n_HT20_Rear_CH64_Ant1+Ant2_With Cover/Area Scan
(121x101x1): Interpolated grid: $dx=1.000 \text{ mm}$, $dy=1.000 \text{ mm}$

Maximum value of SAR (interpolated) = 1.21 W/kg

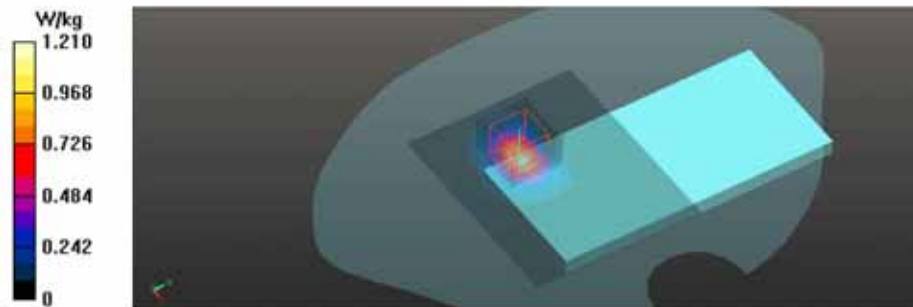
Body/WLAN 5.3GHz_802.11n_HT20_Rear_CH64_Ant1+Ant2_With Cover/Zoom Scan
(9x9x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 2.640 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 2.02 W/kg

SAR(1 g) = 0.499 W/kg; SAR(10 g) = 0.167 W/kg

Maximum value of SAR (measured) = 1.23 W/kg



Appendix A.13 SAR Test Plots for Bluetooth Body Worn

Date: 2018-07-07

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [Bluetooth_GFSK_DH5_Rear_CH78_Body Worn.da53:0](#)

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

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

Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 2480$ MHz; $\sigma = 1.999$ S/m; $\epsilon_r = 51.781$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

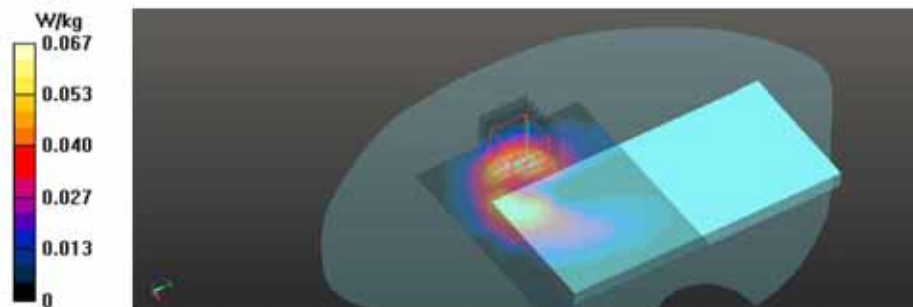
- Probe: EX3DV4 - SN3986; ConvF(7.99, 7.99, 7.99); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/Bluetooth_GFSK_DH5_Rear_CH78_Body Worn/Area Scan (121x101x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm
Maximum value of SAR (interpolated) = 0.0665 W/kg

Body/Bluetooth_GFSK_DH5_Rear_CH78_Body Worn/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm
Reference Value = 1.353 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.0700 W/kg
SAR(1 g) = 0.036 W/kg; SAR(10 g) = 0.017 W/kg
Maximum value of SAR (measured) = 0.0556 W/kg



Date: 2018-07-07

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [Bluetooth_GFSK_DH5_Rear_CH78_With_Cover_Body_Worn.da53:0](#)

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

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

Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2480$ MHz; $\sigma = 1.999$ S/m; $\epsilon_r = 51.781$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY52 Configuration:

- Probe: EX3DV4 - SN3986; ConvF(7.99, 7.99, 7.99); 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/Bluetooth_GFSK_DH5_Rear_CH78_With_Cover_Body Worn/Area Scan
(121x101x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 0.0330 W/kg

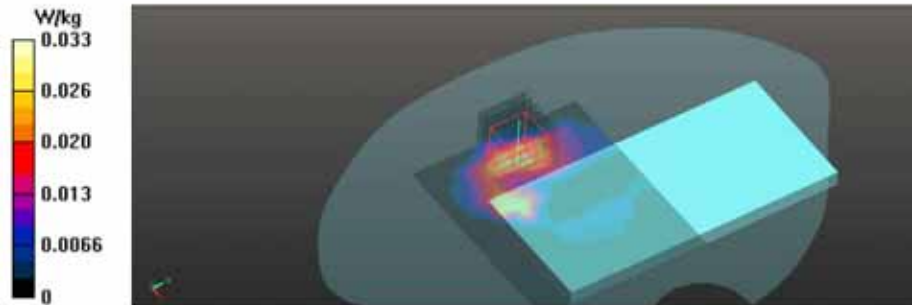
Body/Bluetooth_GFSK_DH5_Rear_CH78_With_Cover_Body Worn/Zoom Scan
(7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 0.8150 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.0490 W/kg

SAR(1 g) = 0.019 W/kg; SAR(10 g) = 0.00788 W/kg

Maximum value of SAR (measured) = 0.0321 W/kg



Appendix A.14 SAR Test Plots for GSM/UMTS/CDMA Hotspot

Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [GPRS 850_Rear_CH251_4TX_Hotspot.da53.0](#)

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

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

Communication System: UID 0, GPRS850 4TX (0); Frequency: 848.8 MHz; Duty Cycle: 1:2.07491
Medium parameters used: $f = 849$ MHz; $\sigma = 0.989$ S/m; $\epsilon_r = 54.944$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY52 Configuration:

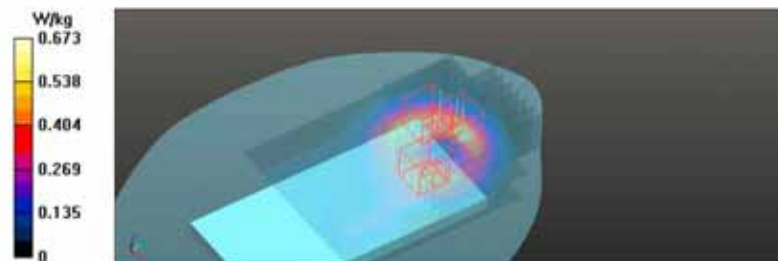
- Probe: EX3DV4 - SN3986; ConvF(10.83, 10.83, 10.83); Calibrated: 2018-03-23;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1430; Calibrated: 2018-03-16
- Phantom: SAM Phantom TP-1645; Type: SAM Phantom; Serial: TP-1645
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/GPRS 850_Rear_CH251_4TX_Hotspot/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm,
dy=1.500 mm
Maximum value of SAR (interpolated) = 0.673 W/kg

Body/GPRS 850_Rear_CH251_4TX_Hotspot/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=8mm,
dy=8mm, dz=5mm
Reference Value = 12.10 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 2.00 W/kg
SAR(1 g) = 0.561 W/kg; SAR(10 g) = 0.329 W/kg
Maximum value of SAR (measured) = 0.832 W/kg

Body/GPRS 850_Rear_CH251_4TX_Hotspot/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=8mm,
dy=8mm, dz=5mm
Reference Value = 12.10 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 0.970 W/kg
SAR(1 g) = 0.561 W/kg; SAR(10 g) = 0.317 W/kg
Maximum value of SAR (measured) = 0.775 W/kg

Body/GPRS 850_Rear_CH251_4TX_Hotspot/Zoom Scan (7x7x7)/Cube 2: Measurement grid: dx=8mm,
dy=8mm, dz=5mm
Reference Value = 12.10 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.431 W/kg; SAR(10 g) = 0.279 W/kg
Maximum value of SAR (measured) = 0.730 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [GPRS 1900_Bottom_CH661_3TX_Hotspot.da53.0](#)

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

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

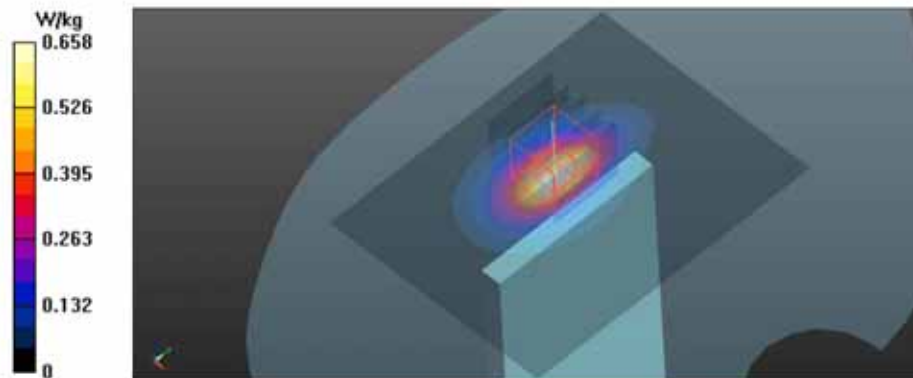
Communication System: UID 0, GPRS1900 3TX (0); Frequency: 1880 MHz; Duty Cycle: 1:2.77013
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.514$ S/m; $\epsilon_r = 53.41$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

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/GPRS 1900_Bottom_CH661_3TX_Hotspot/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.658 W/kg

Body/GPRS 1900_Bottom_CH661_3TX_Hotspot/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.34 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.680 W/kg
SAR(1 g) = 0.441 W/kg; SAR(10 g) = 0.236 W/kg
Maximum value of SAR (measured) = 0.639 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [UMTS 850_Rear_CH4233_Hotspot_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: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 847$ MHz; $\sigma = 0.987$ S/m; $\epsilon_r = 54.956$; $\rho = 1000$ 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_CH4233_Hotspot/Area Scan (81x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.02 W/kg

Body/UMTS 850_Rear_CH4233_Hotspot/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.09 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.747 W/kg; SAR(10 g) = 0.439 W/kg

Maximum value of SAR (measured) = 1.04 W/kg

Body/UMTS 850_Rear_CH4233_Hotspot/Zoom Scan (6x6x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.09 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.750 W/kg; SAR(10 g) = 0.423 W/kg

Maximum value of SAR (measured) = 1.05 W/kg

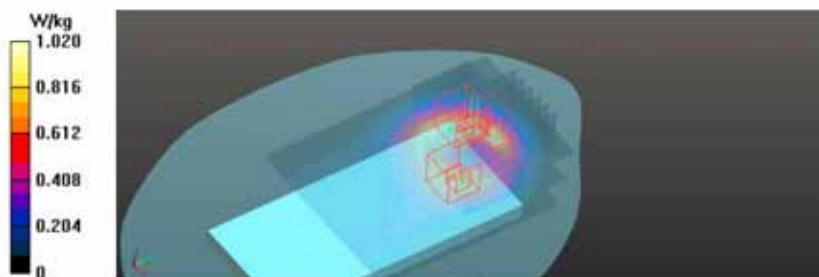
Body/UMTS 850_Rear_CH4233_Hotspot/Zoom Scan (6x6x7)/Cube 2: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.09 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.887 W/kg

SAR(1 g) = 0.599 W/kg; SAR(10 g) = 0.391 W/kg

Maximum value of SAR (measured) = 0.781 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [UMTS 1750_Bottom_CH1513_Hotspot.da53:0](#)

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

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

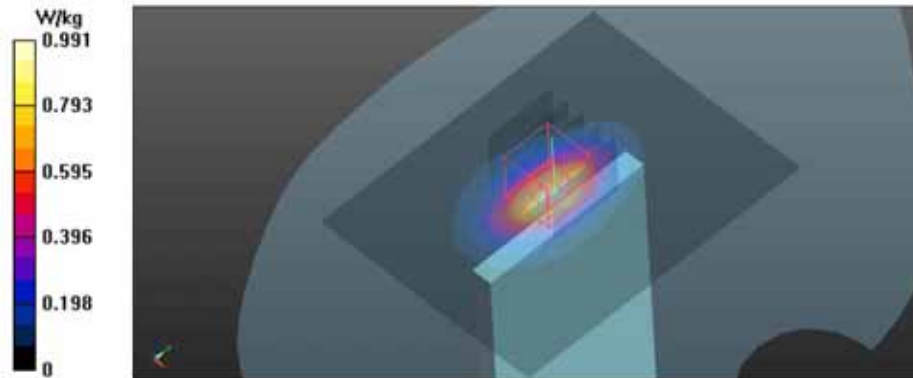
Communication System: UID 0, WCDMA4 (0); Frequency: 1752.6 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1753$ MHz; $\sigma = 1.492$ S/m; $\epsilon_r = 55.228$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

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_Bottom_CH1513_Hotspot/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.991 W/kg

Body/UMTS 1750_Bottom_CH1513_Hotspot/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.143 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.690 W/kg; SAR(10 g) = 0.386 W/kg
Maximum value of SAR (measured) = 0.993 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [UMTS 1900_Bottom_CH9538_Hotspot.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: 1907.6 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1908$ MHz; $\sigma = 1.543$ S/m; $\epsilon_r = 53.297$; $\rho = 1000$ 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_Bottom_CH9538_Hotspot/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.38 W/kg

Body/UMTS 1900_Bottom_CH9538_Hotspot/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

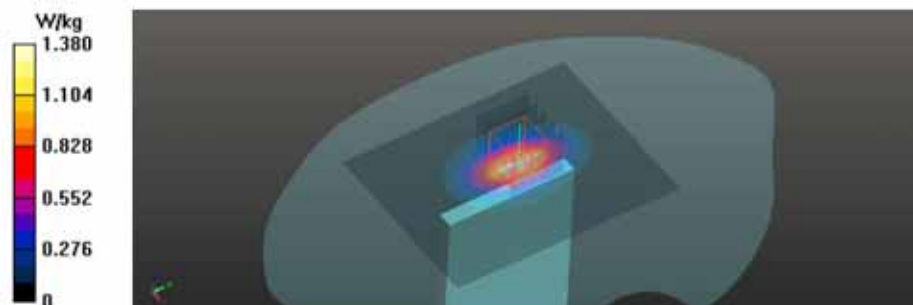
dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.02 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.63 W/kg

SAR(1 g) = 0.964 W/kg; SAR(10 g) = 0.530 W/kg

Maximum value of SAR (measured) = 1.40 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [CDMA DCN EVDO_REV.0_Rear_CH564_Hotspot.dn53.0](#)

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_EVDO_REV.0_Rear_CH564_Hotspot/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) = 1.19 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH564_Hotspot/Zoom Scan (5x5x7)/Cube 0: Measurement grid:

$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 13.97 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.661 W/kg; SAR(10 g) = 0.404 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.934 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH564_Hotspot/Zoom Scan (5x5x7)/Cube 1: Measurement grid:

$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 13.97 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.668 W/kg; SAR(10 g) = 0.375 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.928 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH564_Hotspot/Zoom Scan (5x5x7)/Cube 2: Measurement grid:

$dx=8$ mm, $dy=8$ mm, $dz=5$ mm

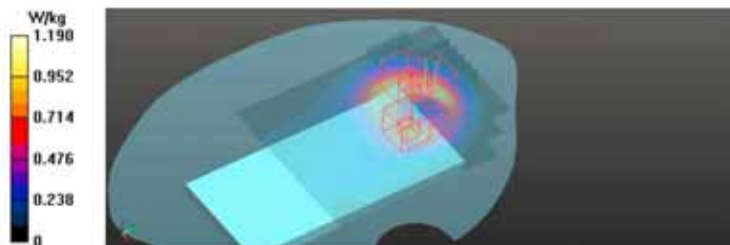
Reference Value = 13.97 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.791 W/kg

SAR(1 g) = 0.541 W/kg; SAR(10 g) = 0.355 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.689 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [CDMA DCN_EVDO_REV.0_Rear_CH777_Hotspot.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: 848.31 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.988$ S/m; $\epsilon_r = 54.942$; $\rho = 1000$ 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_EVDO_REV.0_Rear_CH777_Hotspot/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) = 0.960 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH777_Hotspot/Zoom Scan (5x5x7)/Cube 0:

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

Reference Value = 13.55 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.748 W/kg; SAR(10 g) = 0.437 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.02 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH777_Hotspot/Zoom Scan (5x5x7)/Cube 1:

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

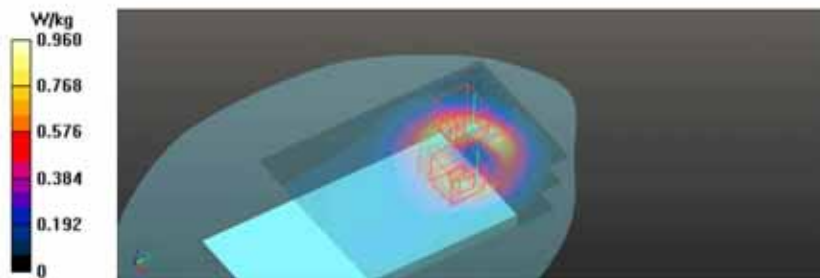
Reference Value = 13.55 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.865 W/kg

SAR(1 g) = 0.584 W/kg; SAR(10 g) = 0.382 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.739 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [CDMA PCS EVDO Rev.0 Bottom CH1175 Hotspot.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: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.544$ S/m; $\epsilon_r = 53.292$; $\rho = 1000$ 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_EVDO_Rev.0_Bottom_CH1175_Hotspot/Area Scan (71x91x1):

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

Maximum value of SAR (interpolated) = 1.43 W/kg

Body/CDMA PCS_EVDO_Rev.0_Bottom_CH1175_Hotspot/Zoom Scan (5x5x7)/Cube

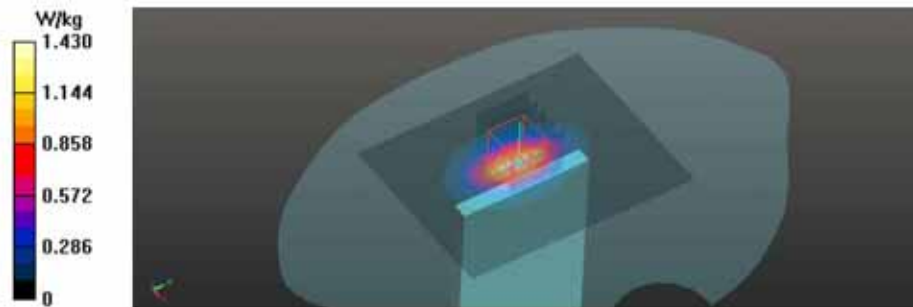
0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.441 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.532 W/kg

Maximum value of SAR (measured) = 1.42 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: GPRS 850_Rear_CH251_4TX_Hotspot_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, GPRS850 4TX (0); Frequency: 848.8 MHz; Duty Cycle: 1:2.07491

Medium parameters used: $f = 849$ MHz; $\sigma = 0.989$ S/m; $\epsilon_r = 54.944$; $\rho = 1000$ 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/GPRS 850_Rear_CH251_4TX_Hotspot_With Cover/Area Scan (81x101x1): Interpolated grid:
dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.329 W/kg

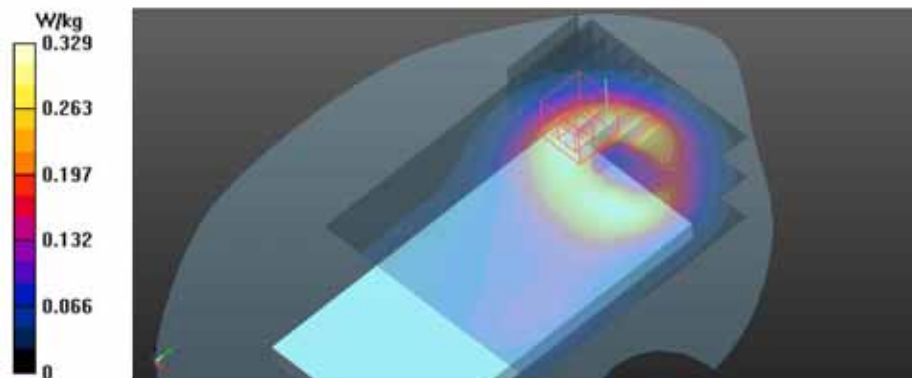
Body/GPRS 850_Rear_CH251_4TX_Hotspot_With Cover/Zoom Scan (7x6x7)/Cube 0: Measurement
grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.761 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.367 W/kg

SAR(1 g) = 0.240 W/kg; SAR(10 g) = 0.154 W/kg

Maximum value of SAR (measured) = 0.320 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: GPRS 1900_Bottom_CH661_3TX_Hotspot_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, GPRS1900 3TX (0); Frequency: 1880 MHz; Duty Cycle: 1:2.77013

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/GPRS 1900_Bottom_CH661_3TX_Hotspot_With Cover/Area Scan (71x91x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.689 W/kg

Body/GPRS 1900_Bottom_CH661_3TX_Hotspot_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement

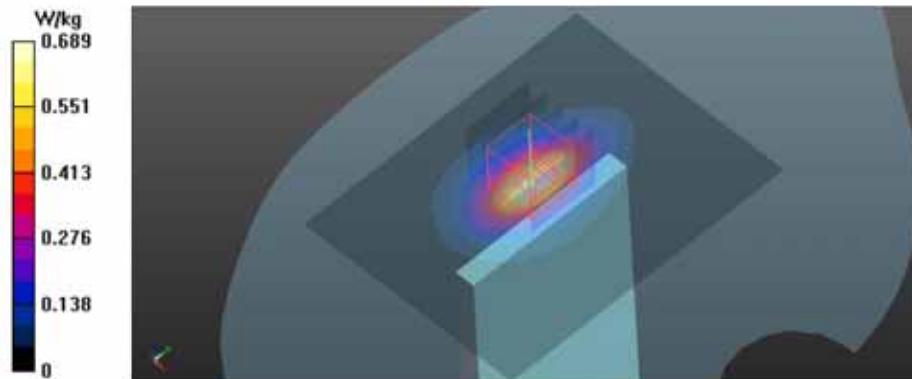
grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 12.29 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.62 W/kg

SAR(1 g) = 0.474 W/kg; SAR(10 g) = 0.259 W/kg

Maximum value of SAR (measured) = 0.669 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [UMTS 850_Rear_CH4233_Hotspot_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: 846.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 847$ MHz; $\sigma = 0.987$ S/m; $\epsilon_r = 54.956$; $\rho = 1000$ 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_CH4233_Hotspot_With Cover/Area Scan (81x101x1): Interpolated grid:

dx=1,500 mm, dy=1,500 mm

Maximum value of SAR (interpolated) = 0.663 W/kg

Body/UMTS 850_Rear_CH4233_Hotspot_With Cover/Zoom Scan (6x7x7)/Cube 0: Measurement

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

Reference Value = 15.22 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.819 W/kg

SAR(1 g) = 0.501 W/kg; SAR(10 g) = 0.299 W/kg

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

Body/UMTS 850_Rear_CH4233_Hotspot_With Cover/Zoom Scan (6x7x7)/Cube 1: Measurement

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

Reference Value = 15.22 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.730 W/kg

SAR(1 g) = 0.480 W/kg; SAR(10 g) = 0.315 W/kg

Maximum value of SAR (measured) = 0.634 W/kg

Body/UMTS 850_Rear_CH4233_Hotspot_With Cover/Zoom Scan (6x7x7)/Cube 2: Measurement

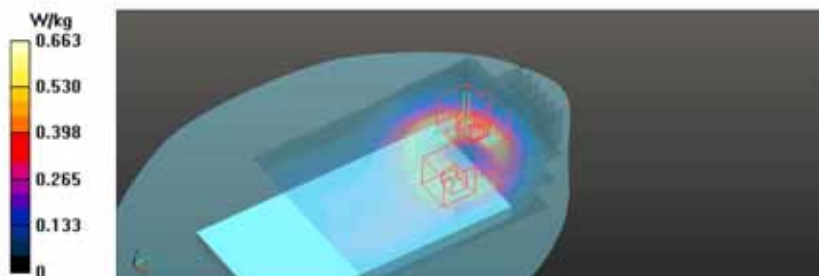
grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.22 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.819 W/kg

SAR(1 g) = 0.497 W/kg; SAR(10 g) = 0.283 W/kg

Maximum value of SAR (measured) = 0.696 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: UMTS 1750_Bottom_CH1513_Hotspot_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: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.492$ S/m; $\epsilon_r = 55.228$; $\rho = 1000$ 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_Bottom_CH1513_Hotspot_With Cover/Area Scan (71x91x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 0.798 W/kg

Body/UMTS 1750_Bottom_CH1513_Hotspot_With Cover/Zoom Scan (5x5x7)/Cube 0:

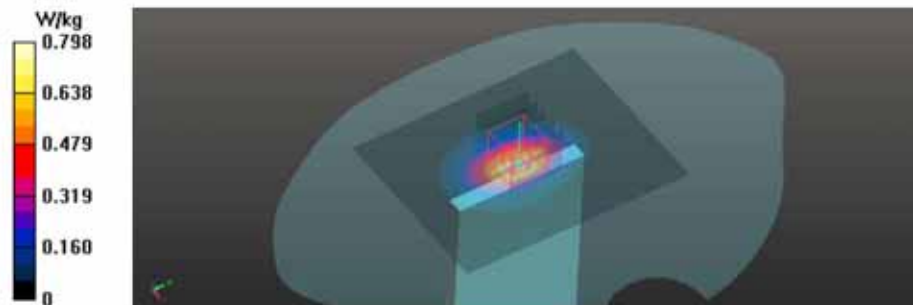
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 14.89 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.660 W/kg; SAR(10 g) = 0.374 W/kg

Maximum value of SAR (measured) = 0.944 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: UMTS 1900_Bottom_CH9538_Hotspot_With Cover.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: 1907.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.543$ S/m; $\epsilon_r = 53.297$; $\rho = 1000$ 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: TP1720
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/UMTS 1900_Bottom_CH9538_Hotspot_With Cover/Area Scan (71x91x1): Interpolated grid:

$dx=1.500$ mm, $dy=1.500$ mm

Maximum value of SAR (interpolated) = 1.31 W/kg

Body/UMTS 1900_Bottom_CH9538_Hotspot_With Cover/Zoom Scan (5x5x7)/Cube 0:

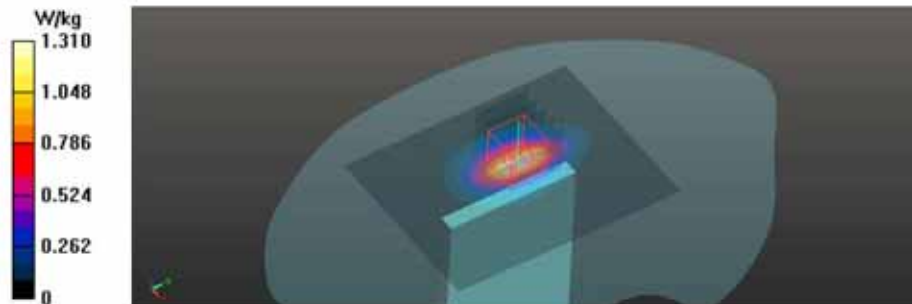
Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 12.01 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.51 W/kg

SAR(1 g) = 0.883 W/kg; SAR(10 g) = 0.478 W/kg

Maximum value of SAR (measured) = 1.30 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [CDMA DCN_EVDO_REV.0_Rear_CH564_Hotspot_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 with CRP v5.0_TP-1721; Type: QD000P40CD; Serial: TP-1721
- DASY52 52.10.0(1446)SEMCAD X 14.6.10(7417)

Body/CDMA DCN_EVDO_REV.0_Rear_CH564_Hotspot_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) = 0.558 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH564_Hotspot_With_Cover/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.75 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.643 W/kg

SAR(1 g) = 0.413 W/kg; SAR(10 g) = 0.264 W/kg

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

Maximum value of SAR (measured) = 0.559 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH564_Hotspot_With_Cover/Zoom Scan

(5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

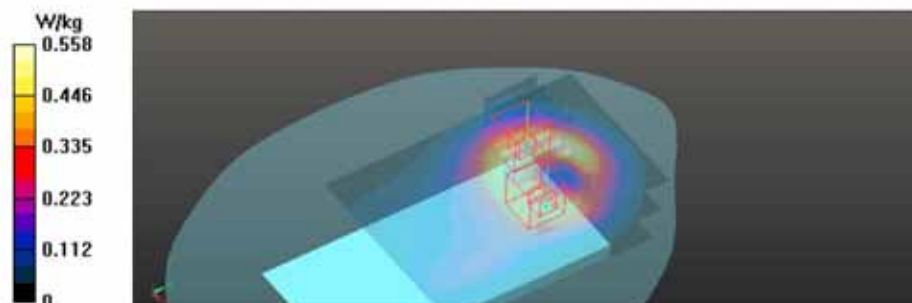
Reference Value = 12.75 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.614 W/kg

SAR(1 g) = 0.412 W/kg; SAR(10 g) = 0.273 W/kg

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

Maximum value of SAR (measured) = 0.542 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [CDMA DCN_EVDO_REV.0_Rear_CH777_Hotspot_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: 848.31 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 848.31$ MHz; $\sigma = 0.988$ S/m; $\epsilon_r = 54.942$; $\rho = 1000$ 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_EVDO_REV.0_Rear_CH777_Hotspot_With Cover 2/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) = 0.630 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH777_Hotspot_With Cover 2/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.31 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.686 W/kg

SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.310 W/kg

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

Maximum value of SAR (measured) = 0.607 W/kg

Body/CDMA DCN_EVDO_REV.0_Rear_CH777_Hotspot_With Cover 2/Zoom Scan

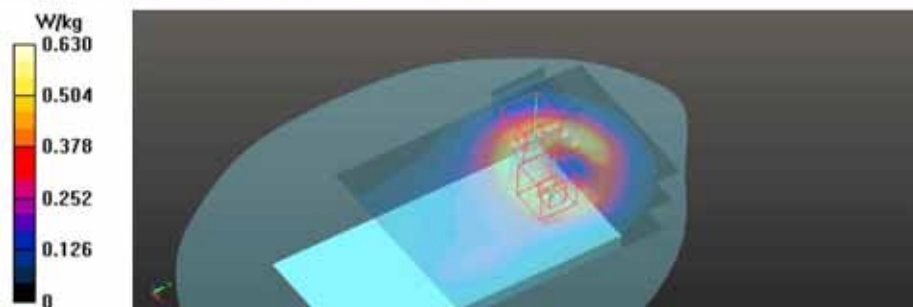
(5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.31 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.690 W/kg

SAR(1 g) = 0.457 W/kg; SAR(10 g) = 0.293 W/kg

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



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [CDMA PCS EVDO REV.0 Bottom CH1175 Hotspot 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: 1908.75 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1909$ MHz; $\sigma = 1.544$ S/m; $\epsilon_r = 53.292$; $\rho = 1000$ 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 EVDO REV.0 Bottom CH1175 Hotspot With Cover/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 1.39 W/kg

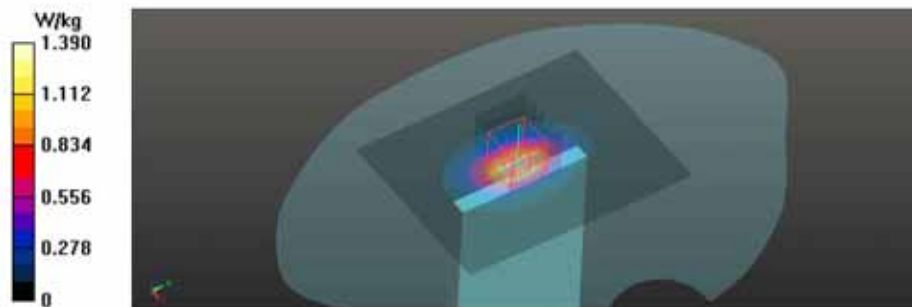
Body/CDMA PCS EVDO REV.0 Bottom CH1175 Hotspot With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.225 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.952 W/kg; SAR(10 g) = 0.528 W/kg

Maximum value of SAR (measured) = 1.38 W/kg



Appendix A.15 SAR Test Plots for LTE FDD Hotspot

Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297_Hotspot.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_Hotspot/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) = 0.586 W/kg

Body/LTE Band 71_20MHz_1RB_50 Offset_QPSK_Rear_CH133297_Hotspot/Zoom Scan

(6x8x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

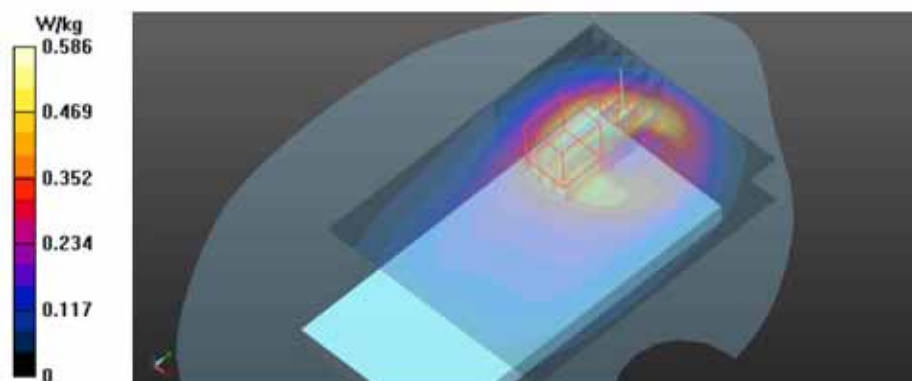
Reference Value = 15.10 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.707 W/kg

SAR(1 g) = 0.422 W/kg; SAR(10 g) = 0.267 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.602 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 12_10MHz_1RB_0 Offset_QPSK_Rear_CH23095_Hotspot.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_Hotspot/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) = 0.606 W/kg

Body/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Rear_CH23095_Hotspot/Zoom Scan (6x6x7)/Cube

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

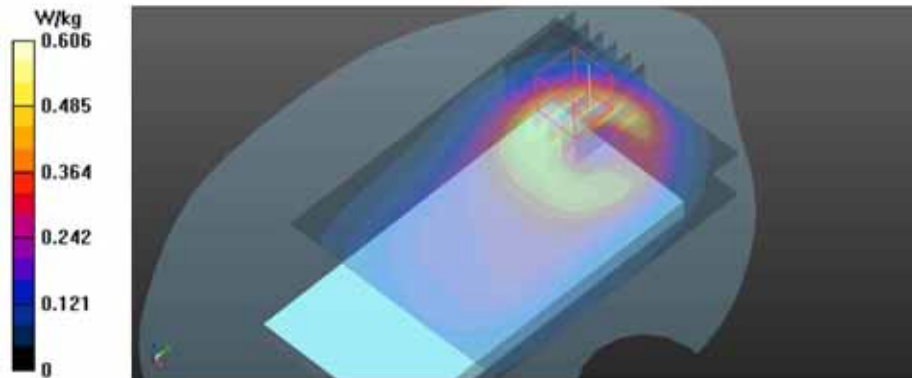
Reference Value = 16.60 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.756 W/kg

SAR(1 g) = 0.452 W/kg; SAR(10 g) = 0.271 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.644 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 13_10MHz_1RB_49 Offset_QPSK_Rear_CH23230_Hotspot.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_Hotspot/Area Scan (81x101x1):

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

Maximum value of SAR (interpolated) = 0.676 W/kg

Body/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Rear_CH23230_Hotspot/Zoom Scan

(5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.88 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.870 W/kg

SAR(1 g) = 0.529 W/kg; SAR(10 g) = 0.322 W/kg

Maximum value of SAR (measured) = 0.744 W/kg

Body/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Rear_CH23230_Hotspot/Zoom Scan

(5x5x7)/Cube 1: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.88 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.636 W/kg

SAR(1 g) = 0.466 W/kg; SAR(10 g) = 0.327 W/kg

Maximum value of SAR (measured) = 0.572 W/kg

Body/LTE Band 13_10MHz_1RB_49 Offset_QPSK_Rear_CH23230_Hotspot/Zoom Scan

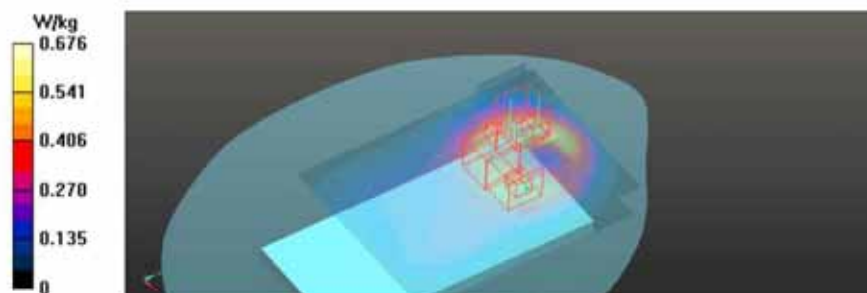
(5x5x7)/Cube 2: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.88 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.782 W/kg

SAR(1 g) = 0.487 W/kg; SAR(10 g) = 0.296 W/kg

Maximum value of SAR (measured) = 0.660 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: [LTE Band 14_10MHz_IRB_49_Offset_QPSK_Rear_CH23330_Hotspot.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: $f = 793 \text{ MHz}$; $\sigma = 0.98 \text{ S/m}$; $\epsilon_r = 54.643$; $\rho = 1000 \text{ kg/m}^3$
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_Hotspot/Area Scan (81x101x1):

Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
Maximum value of SAR (interpolated) = 0.772 W/kg

Body/LTE Band 14_10MHz_IRB_49_Offset_QPSK_Rear_CH23330_Hotspot/Zoom Scan

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

Reference Value = 15.44 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.620 W/kg; SAR(10 g) = 0.366 W/kg

Maximum value of SAR (measured) = 0.883 W/kg

Body/LTE Band 14_10MHz_IRB_49_Offset_QPSK_Rear_CH23330_Hotspot/Zoom Scan

(6x6x7)/Cube 1: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.44 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.724 W/kg

SAR(1 g) = 0.518 W/kg; SAR(10 g) = 0.357 W/kg

Maximum value of SAR (measured) = 0.633 W/kg

Body/LTE Band 14_10MHz_IRB_49_Offset_QPSK_Rear_CH23330_Hotspot/Zoom Scan

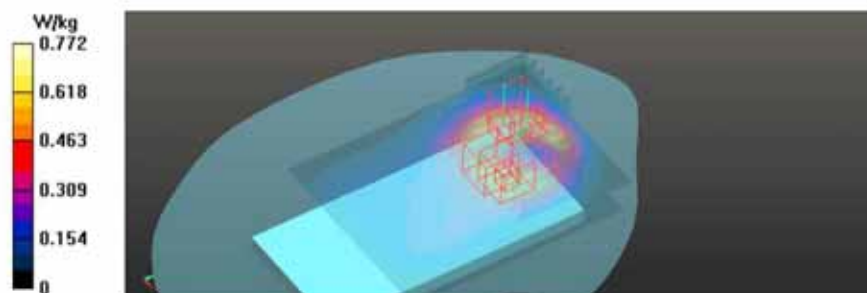
(6x6x7)/Cube 2: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.44 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.965 W/kg

SAR(1 g) = 0.547 W/kg; SAR(10 g) = 0.346 W/kg

Maximum value of SAR (measured) = 0.798 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 26_15MHz_1RB_0_Offset_QPSK_Rear_CH26865_Hotspot.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_Hotspot/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) = 1.01 W/kg

Body/LTE Band 26_15MHz_1RB_0_Offset_QPSK_Rear_CH26865_Hotspot/Zoom Scan (5x5x7)/Cube

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

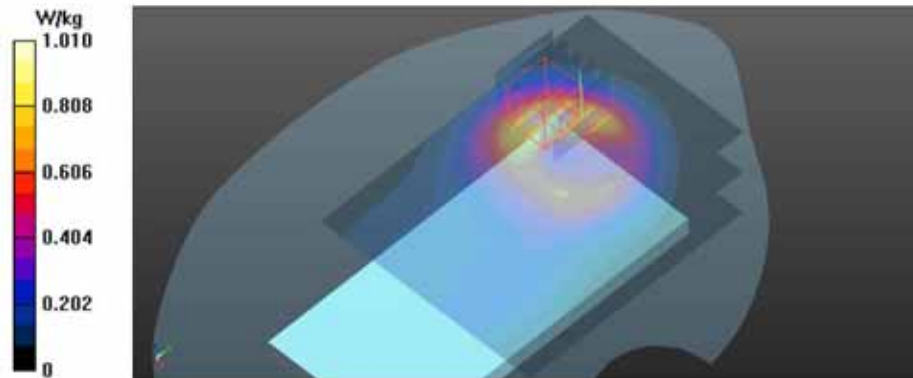
Reference Value = 15.33 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.683 W/kg; SAR(10 g) = 0.412 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.972 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_Hotspot_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_Hotspot/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) = 0.802 W/kg

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_Hotspot/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.95 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.27 W/kg

SAR(1 g) = 0.735 W/kg; SAR(10 g) = 0.439 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.04 W/kg

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_Hotspot/Zoom Scan (6x6x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

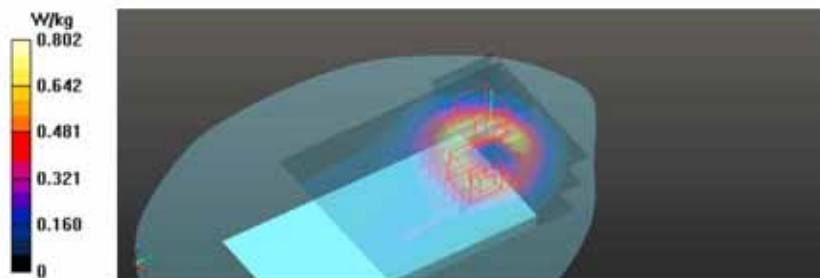
Reference Value = 12.95 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.842 W/kg

SAR(1 g) = 0.535 W/kg; SAR(10 g) = 0.349 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.694 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 66_20MHz_1RB_0 Offset_QPSK_Bottom_CH132072_Hotspot.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_1RB_0 Offset_QPSK_Bottom_CH132072_Hotspot/Area Scan (71x91x1):

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

Maximum value of SAR (interpolated) = 0.970 W/kg

Body/LTE Band 66_20MHz_1RB_0 Offset_QPSK_Bottom_CH132072_Hotspot/Zoom Scan

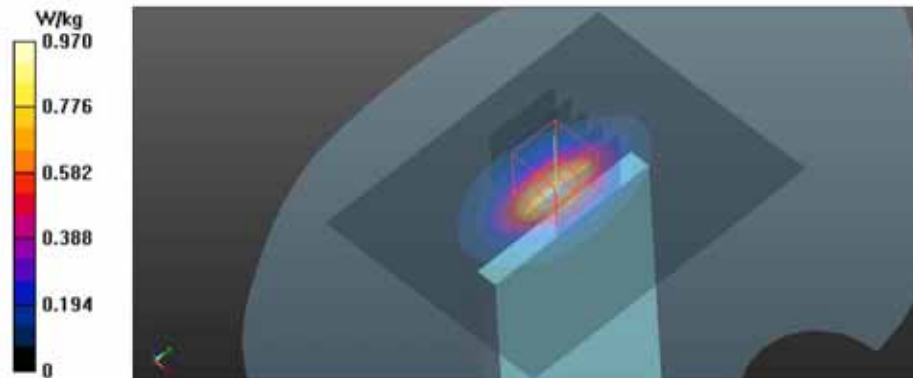
(5x5x7)/Cube 0: Measurement grid: $dx=8$ mm, $dy=8$ mm, $dz=5$ mm

Reference Value = 7.344 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.622 W/kg; SAR(10 g) = 0.350 W/kg

Maximum value of SAR (measured) = 0.889 W/kg



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 25_20MHz_100RB_0 Offset_QPSK_Bottom_CH26590_Hotspot_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_100RB_0 Offset_QPSK_Bottom_CH26590_Hotspot/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

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

Body/LTE Band 25_20MHz_100RB_0 Offset_QPSK_Bottom_CH26590_Hotspot/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

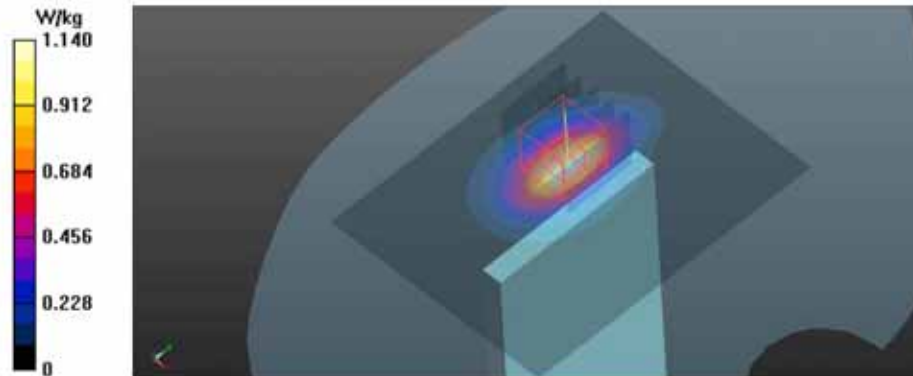
Reference Value = 11.00 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.799 W/kg; SAR(10 g) = 0.436 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.17 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 30_10MHz_50RB_0 Offset_QPSK_Bottom_CH27710_Ant B_Hotspot.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

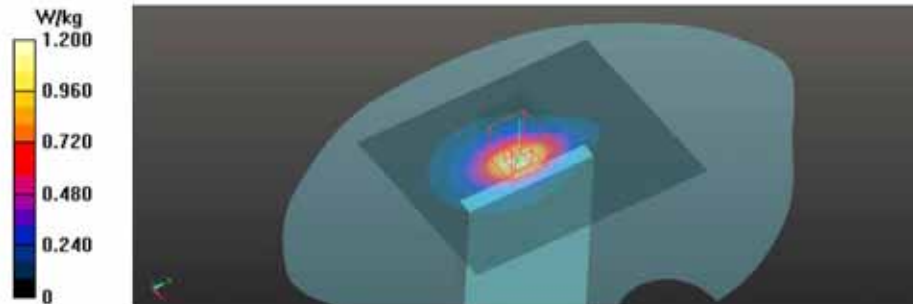
Phantom section: Flat Section

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_50RB_0 Offset_QPSK_Bottom_CH27710_Ant B_Hotspot/Area Scan (111x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.20 W/kg

Body/LTE Band 30_10MHz_50RB_0 Offset_QPSK_Bottom_CH27710_Ant B_Hotspot/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.882 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.783 W/kg; SAR(10 g) = 0.419 W/kg
Maximum value of SAR (measured) = 1.19 W/kg



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 7 20MHz 1RB 50 Offset QPSK Bottom CH21350 Ant B Hotspot.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

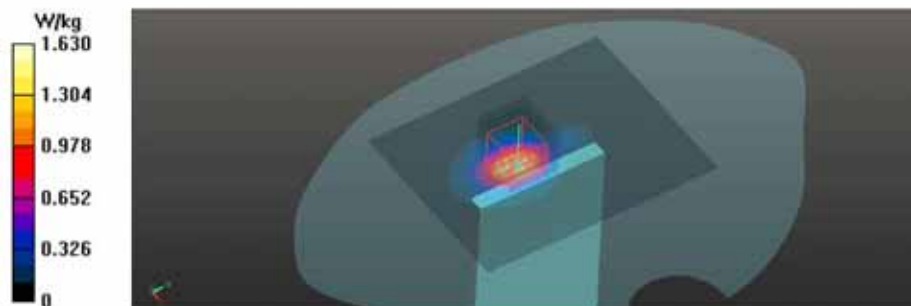
Phantom section: Flat Section

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 Sn1 430; 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 50 Offset QPSK Bottom CH21350 Ant B Hotspot/Area Scan (111x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.63 W/kg

Body/LTE Band 7 20MHz 1RB 50 Offset QPSK Bottom CH21350 Ant B Hotspot/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.985 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.99 W/kg
SAR(1 g) = 0.993 W/kg; SAR(10 g) = 0.478 W/kg
Maximum value of SAR (measured) = 1.60 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 71_20MHz_IRB_50 Offset_QPSK_Rear_CH133297_Hotspot_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_IRB_50 Offset_QPSK_Rear_CH133297_Hotspot_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) = 0.414 W/kg

Body/LTE Band 71_20MHz_IRB_50 Offset_QPSK_Rear_CH133297_Hotspot_With Cover/Zoom

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

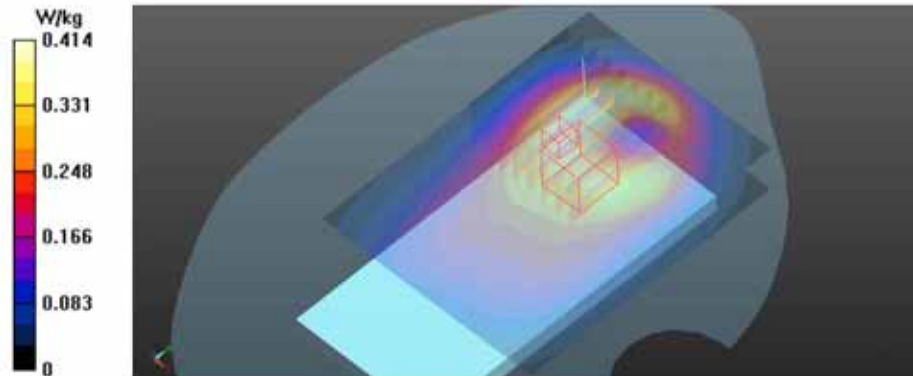
Reference Value = 15.66 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 0.467 W/kg

SAR(1 g) = 0.315 W/kg; SAR(10 g) = 0.234 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

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



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 12_10MHz_1RB_0 Offset_QPSK_Rear_CH23095_Hotspot_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_1RB_0 Offset_QPSK_Rear_CH23095_Hotspot_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) = 0.444 W/kg

Body/LTE Band 12_10MHz_1RB_0 Offset_QPSK_Rear_CH23095_Hotspot_With Cover/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

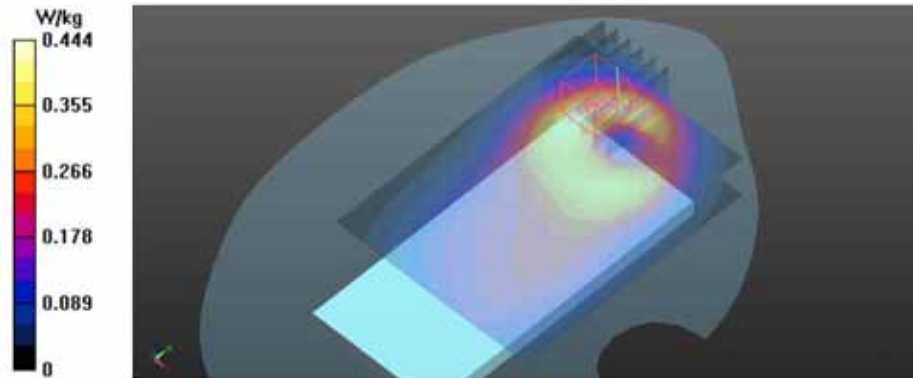
Reference Value = 15.16 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.519 W/kg

SAR(1 g) = 0.327 W/kg; SAR(10 g) = 0.203 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.450 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 13_10MHz_IRB_49 Offset_QPSK_Rear_CH23230_Hotspot_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_Hotspot_With Cover/Area
Scan (81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$

Maximum value of SAR (interpolated) = 0.415 W/kg

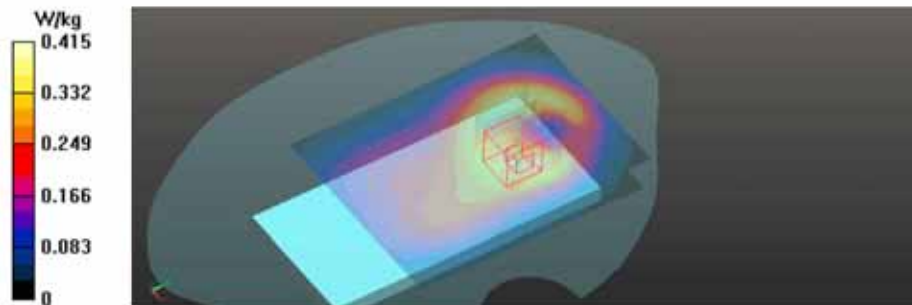
Body/LTE Band 13_10MHz_IRB_49 Offset_QPSK_Rear_CH23230_Hotspot_With Cover/Zoom
Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 15.87 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.452 W/kg

SAR(1 g) = 0.341 W/kg; SAR(10 g) = 0.245 W/kg

Maximum value of SAR (measured) = 0.412 W/kg



Date: 2018-06-29

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 14_10MHz_IRB_49_Offset_QPSK_Rear_CH23330_Hotspot_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: $f = 793 \text{ MHz}$; $\sigma = 0.98 \text{ S/m}$; $\epsilon_r = 54.643$; $\rho = 1000 \text{ kg/m}^3$

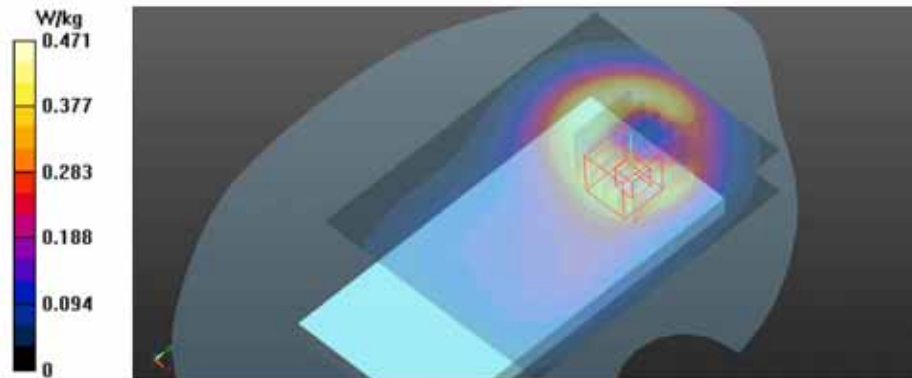
Phantom section: Flat Section

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_Hotspot_With_Cover/Area Scan (81x101x1): Interpolated grid: $dx=1.500 \text{ mm}$, $dy=1.500 \text{ mm}$
Maximum value of SAR (interpolated) = 0.471 W/kg

Body/LTE Band 14_10MHz_IRB_49_Offset_QPSK_Rear_CH23330_Hotspot_With_Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 13.13 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.499 W/kg
SAR(1 g) = 0.366 W/kg; SAR(10 g) = 0.254 W/kg
Maximum value of SAR (measured) = 0.458 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 26_15MHz_IRB_0_Offset_QPSK_Rear_CH26865_Hotspot_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_Hotspot_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) = 0.588 W/kg

Body/LTE Band 26_15MHz_IRB_0_Offset_QPSK_Rear_CH26865_Hotspot_With_Cover/Zoom Scan (6x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

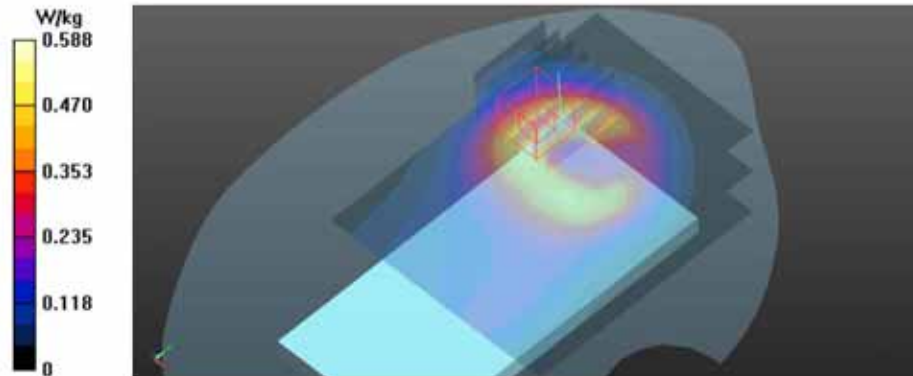
Reference Value = 13.22 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.648 W/kg

SAR(1 g) = 0.423 W/kg; SAR(10 g) = 0.273 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.562 W/kg



Date: 2018-06-30

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_Hotspot_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_Hotspot_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) = 0.579 W/kg

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_Hotspot_With Cover/Zoom

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

Reference Value = 12.81 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.642 W/kg

SAR(1 g) = 0.419 W/kg; SAR(10 g) = 0.269 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.563 W/kg

Body/LTE Band 5_10MHz_1RB_25 Offset_QPSK_Rear_CH20525_Hotspot_With Cover/Zoom

Scan (6x6x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

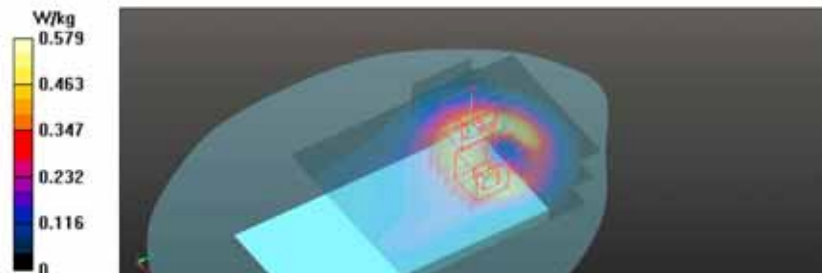
Reference Value = 12.81 V/m; Power Drift = -0.17 dB

Peak SAR (extrapolated) = 0.600 W/kg

SAR(1 g) = 0.413 W/kg; SAR(10 g) = 0.274 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 0.536 W/kg



Date: 2018-07-05

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 66_20MHz_1RB_0 Offset_QPSK_Bottom_CH132072_Hotspot_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: $f = 1720$ 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_1RB_0 Offset_QPSK_Bottom_CH132072_Hotspot_With Cover/Area
Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.866 W/kg

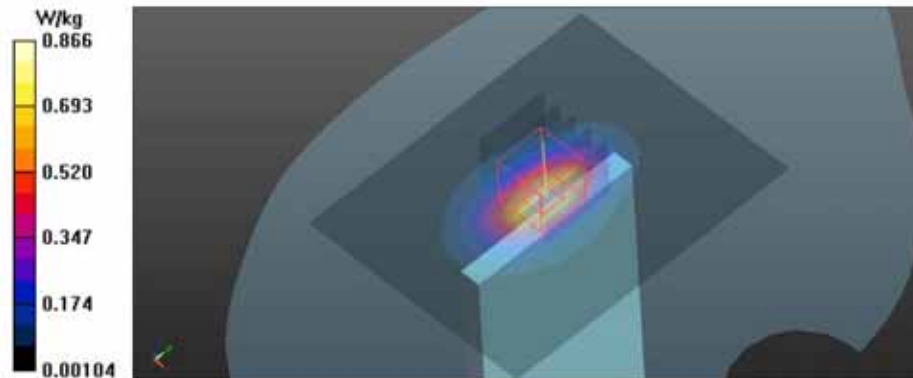
Body/LTE Band 66_20MHz_1RB_0 Offset_QPSK_Bottom_CH132072_Hotspot_With Cover/Zoom
Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.381 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.963 W/kg

SAR(1 g) = 0.593 W/kg; SAR(10 g) = 0.339 W/kg

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



Date: 2018-07-03

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: [LTE Band 25_20MHz_100RB_0 Offset_QPSK_Bottom_CH26590_Hotspot_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_100RB_0 Offset_QPSK_Bottom_CH26590_Hotspot_With Cover/Area Scan (71x91x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (interpolated) = 1.23 W/kg

Body/LTE Band 25_20MHz_100RB_0 Offset_QPSK_Bottom_CH26590_Hotspot_With Cover/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

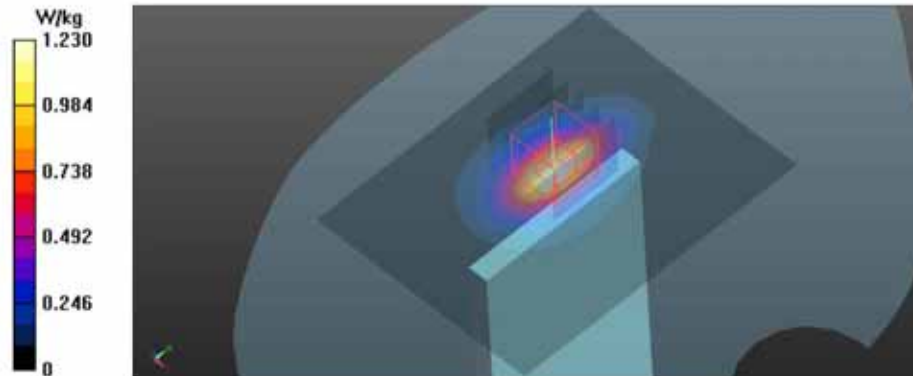
Reference Value = 11.04 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.41 W/kg

SAR(1 g) = 0.836 W/kg; SAR(10 g) = 0.460 W/kg

Info: Interpolated medium parameters used for SAR evaluation.

Maximum value of SAR (measured) = 1.21 W/kg



Date: 2018-07-11

Test Laboratory : SGS Korea (Gunpo Laboratory)

File Name: LTE Band 30_10MHz_50RB_0 Offset_QPSK_Bottom_CH27710_Ant B_Hotspot_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_50RB_0 Offset_QPSK_Bottom_CH27710_Ant

B_Hotspot_With Cover/Area Scan (111x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.76 W/kg

Body/LTE Band 30_10MHz_50RB_0 Offset_QPSK_Bottom_CH27710_Ant

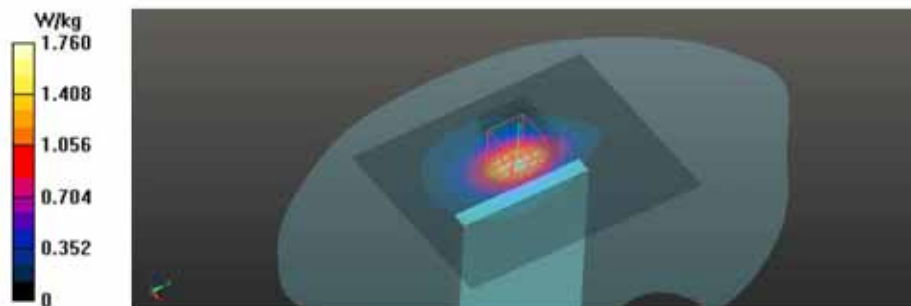
B_Hotspot_With Cover/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.371 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.60 W/kg

SAR(1 g) = 0.848 W/kg; SAR(10 g) = 0.443 W/kg

Maximum value of SAR (measured) = 1.32 W/kg



Date: 2018-07-10

Test Laboratory : SGS Korea (Gunpo Laboratory)
File Name: LTE Band 7 20MHz 1RB 50 Offset QPSK Bottom CH21350 Ant B Hotspot 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 50 Offset QPSK Bottom CH21350 Ant B Hotspot With Cover/Area Scan (111x141x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.62 W/kg

Body/LTE Band 7 20MHz 1RB 50 Offset QPSK Bottom CH21350 Ant B Hotspot With Cover/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.013 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 1.99 W/kg
SAR(1 g) = 0.982 W/kg; SAR(10 g) = 0.471 W/kg
Maximum value of SAR (measured) = 1.61 W/kg

