<Model: ZX1>

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2008/3/19

Body_802.11b Ch1_Front Face with 1.5cm Gap_EUT1+Battery2+Earphone_2D

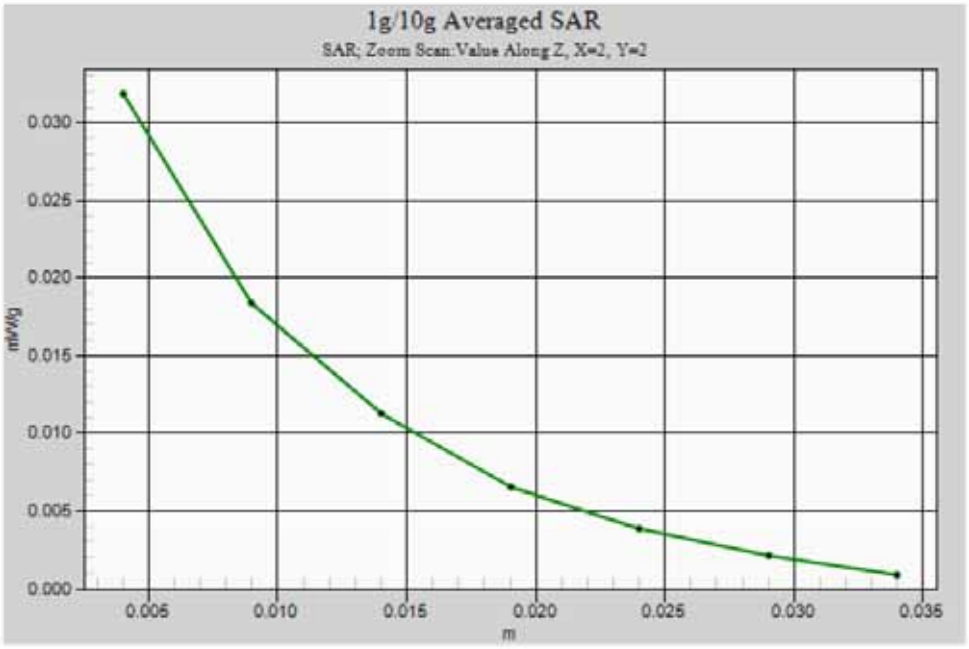
DUT: 830315

Communication System: 802.11b ; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Ambient Temperature : 22.2 ℃; Liquid Temperature : 21.3 ℃

DASY5 Configuration:
- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91; SEMCAD X Version 12.4 Build 52

Ch1/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.031 mW/g

Ch1/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.3 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 0.054 W/kg
SAR(1 g) = 0.030 mW/g; SAR(10 g) = 0.017 mW/g
Maximum value of SAR (measured) = 0.032 mW/g



<Model: P560>

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2008/3/19

Body_802.11b Ch1_Front Face with 1.5cm Gap_EUT2+Battery2+Earphone_2D

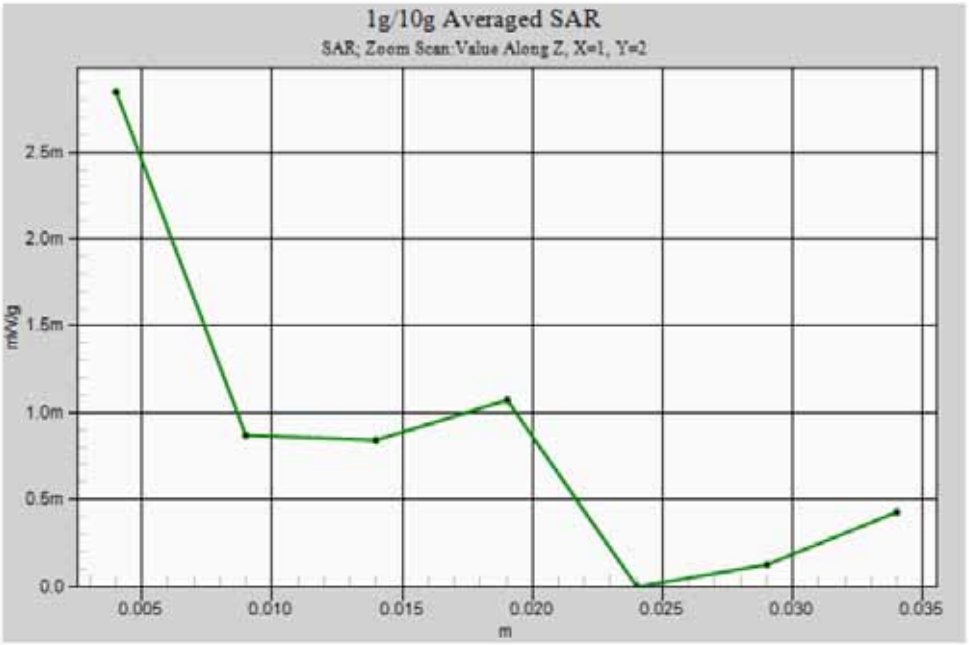
DUT: 830315

Communication System: 802.11b ; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Ambient Temperature : 22.5 ℃; Liquid Temperature : 21.3 ℃

DASY5 Configuration:
- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91; SEMCAD X Version 12.4 Build 52

Ch1/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.0043 mW/g

Ch1/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.701 V/m; Power Drift = -0.105 dB
Peak SAR (extrapolated) = 0.00781 W/kg
SAR(1 g) = 0.00257 mW/g; SAR(10 g) = 0.00126 mW/g
Maximum value of SAR (measured) = 0.00285 mW/g



<Model: P560>

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2008/3/19

Body_802.11b Ch1_Rear Face with 1.5cm Gap_EUT2+Battery2+Earphone_2D

DUT: 830315

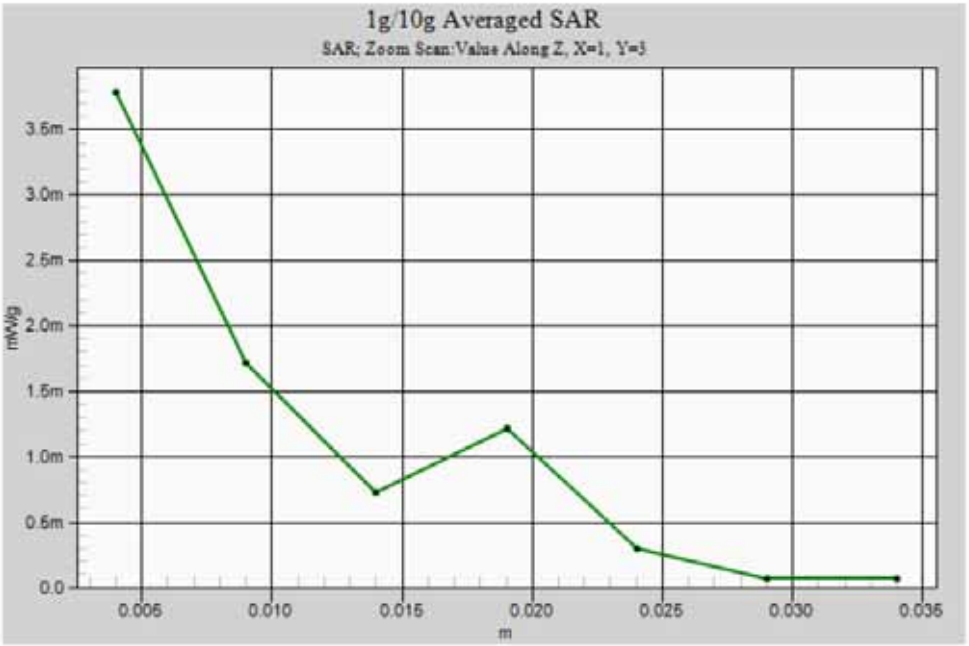
Communication System: 802.11b ; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Ambient Temperature : 22.5 ℃; Liquid Temperature : 21.3 ℃

DASY5 Configuration:
- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91; SEMCAD X Version 12.4 Build 52

Ch1/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.00621 mW/g

Ch1/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.759 V/m; Power Drift = -0.109 dB
Peak SAR (extrapolated) = 0.013 W/kg
SAR(1 g) = 0.00362 mW/g; SAR(10 g) = 0.0015 mW/g
Maximum value of SAR (measured) = 0.00379 mW/g

Ch1/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.759 V/m; Power Drift = -0.109 dB
Peak SAR (extrapolated) = 0.013 W/kg
SAR(1 g) = 0.000553 mW/g; SAR(10 g) = 6.25e-005 mW/g
Maximum value of SAR (measured) = 0.00323 mW/g



<Model: ZX1>

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2008/4/9

Body_Bluetooth Ch0_Rear Face with 1.5cm Gap_3DH1_PDA1_Battery B_2D

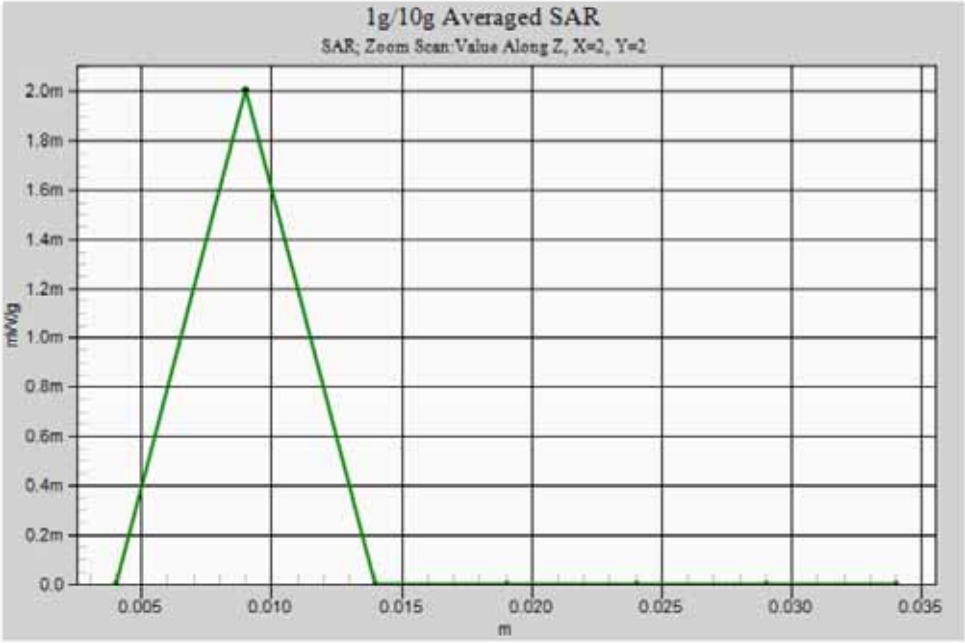
DUT: 830315

Communication System: Bluetooth; Frequency: 2402 MHz;Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.88 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Ambient Temperature : 22.4 ℃; Liquid Temperature : 21.1 ℃

DASY5 Configuration:
- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91; SEMCAD X Version 12.4 Build 52

Ch0/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.00155 mW/g

Ch0/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.206 V/m; Power Drift = -0.101 dB
Peak SAR (extrapolated) = 0.00201 W/kg
SAR(1 g) = 6.85e-005 mW/g; SAR(10 g) = 1.01e-005 mW/g
Maximum value of SAR (measured) = 0.00201 mW/g



<Model: P560>

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2008/4/9

Body_Bluetooth Ch0_Rear Face with 1.5cm Gap_3DH1_PDA2_Battery B_2D

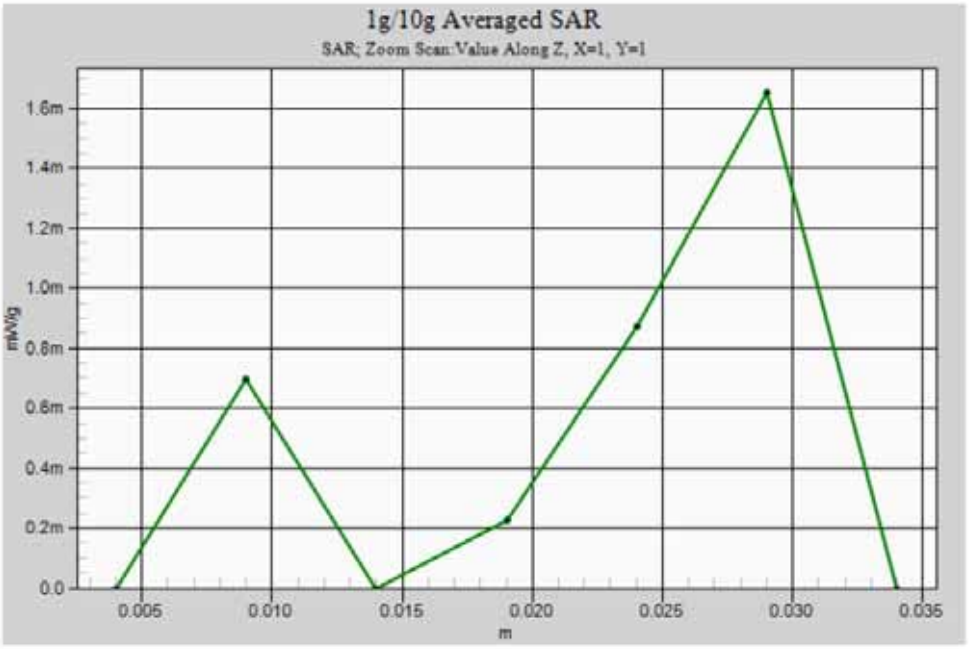
DUT: 830314

Communication System: Bluetooth; Frequency: 2402 MHz;Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.88 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Ambient Temperature : 22.4 ℃; Liquid Temperature : 21.1 ℃

DASY5 Configuration:
- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91; SEMCAD X Version 12.4 Build 52

Ch0/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.00146 mW/g

Ch0/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 0.00326 W/kg
SAR(1 g) = 0.000212 mW/g; SAR(10 g) = 2.43e-005 mW/g
Maximum value of SAR (measured) = 0.00165 mW/g



<Volume Scan>
<Model: ZX1>

DASY5 Configuration for Left Cheek/Ch251/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_GSM850 Ch251_Battery 1_PDA1_Volume
DUT: 830315
Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL_850 Medium parameters used: f = 849 MHz; σ = 0.926 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

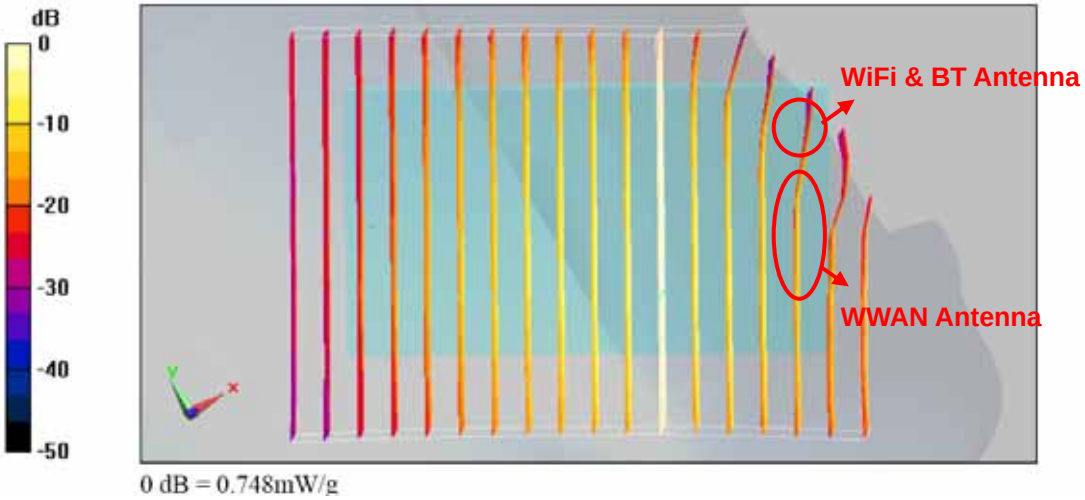
- Probe: ET3DV6 - SN1788; ConvF(6.54, 6.54, 6.54); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Cheek/Ch1/Volume Scan:

Date: 2008/3/19
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_802.11b Ch1_EUT1+Battery1_Volume
DUT: 830315; Type
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.668 mW/g; SAR(10 g) = 0.401 mW/g
Maximum value of SAR (measured) = 0.748 mW/g



0 dB = 0.748mW/g

DASY5 Configuration for Left Cheek/Ch251/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_GSM850 Ch251_Battery 1_PDA1_Volume
DUT: 830315
Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL_850 Medium parameters used: f = 849 MHz; σ = 0.926 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

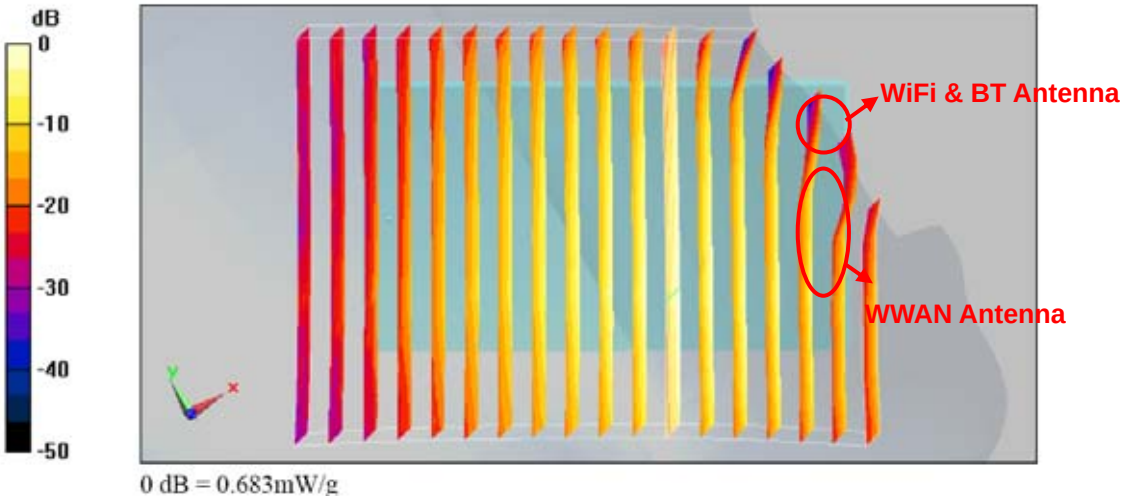
- Probe: ET3DV6 - SN1788; ConvF(6.54, 6.54, 6.54); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY4 Configuration for Left Cheek/Ch0/Volume Scan:

Date: 2008/4/7
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_Bluetooth Ch00_3DH3_Battery A_PDA1_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.8 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.612 mW/g; SAR(10 g) = 0.371 mW/g
Maximum value of SAR (measured) = 0.683 mW/g



0 dB = 0.683mW/g

DASY5 Configuration for Left Check/Ch512/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_PCS Ch512_EUT1+Battery1_Volume
DUT: 830315
Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: HSL_1900 Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.38 mho/m; ε_r =39.1; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

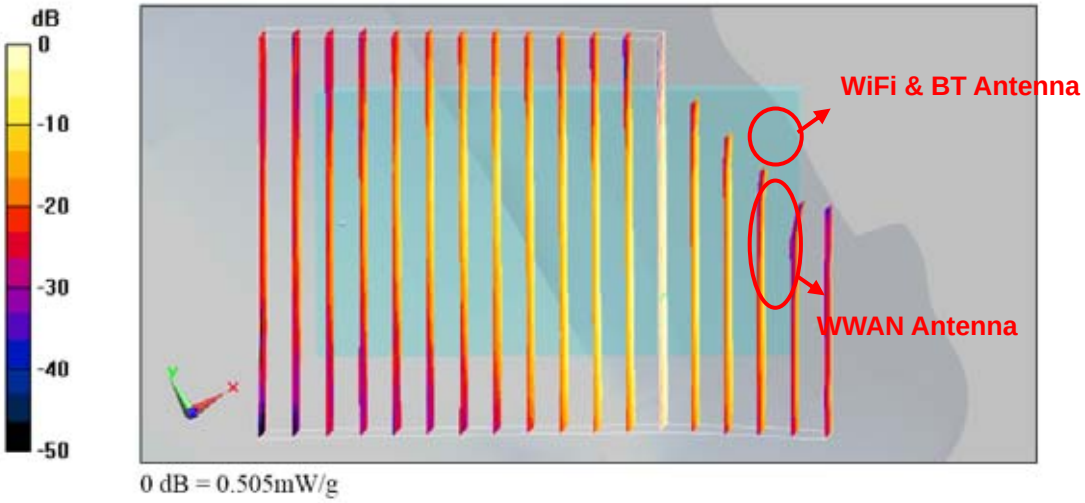
- Probe: ET3DV6 - SN1788; ConvF(5.28, 5.28, 5.28); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Check/Ch1/Volume Scan:

Date: 2008/3/19
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_802.11b Ch1_EUT1+Battery1_Volume
DUT: 830315
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.487 mW/g; SAR(10 g) = 0.293 mW/g
Maximum value of SAR (measured) = 0.505 mW/g



0 dB = 0.505mW/g

DASY5 Configuration for Left Check/Ch512/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_PCS Ch512_EUT1+Battery1_Volume
DUT: 830315
Communication System: PCS; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: HSL_1900 Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.38 mho/m; ε_r =39.1; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

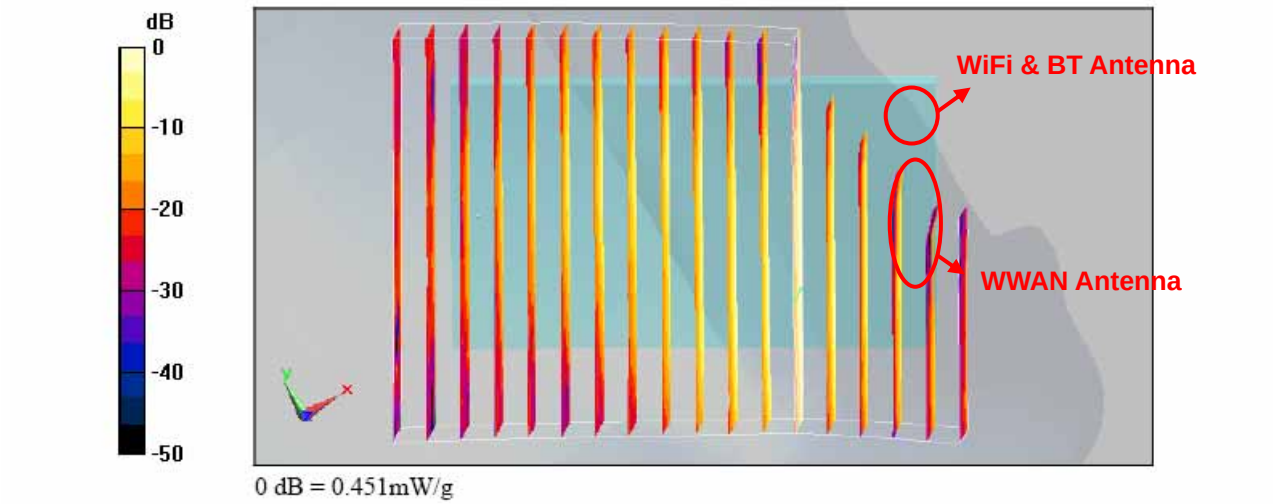
- Probe: ET3DV6 - SN1788; ConvF(5.28, 5.28, 5.28); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Check/Ch0/Volume Scan:

Date: 2008/4/7
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_Bluetooth Ch00_3DH3_Battery A_PDA1_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.8 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.435 mW/g; SAR(10 g) = 0.264 mW/g
Maximum value of SAR (measured) = 0.451 mW/g



0 dB = 0.451mW/g

DASY5 Configuration for Left Cheek/Ch4233/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Check_WCDMA Ch4233_EUT1+Battery1_Volume
DUT: 830315
Communication System: WCDMA Band 5; Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: f = 847 MHz; σ = 0.924 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

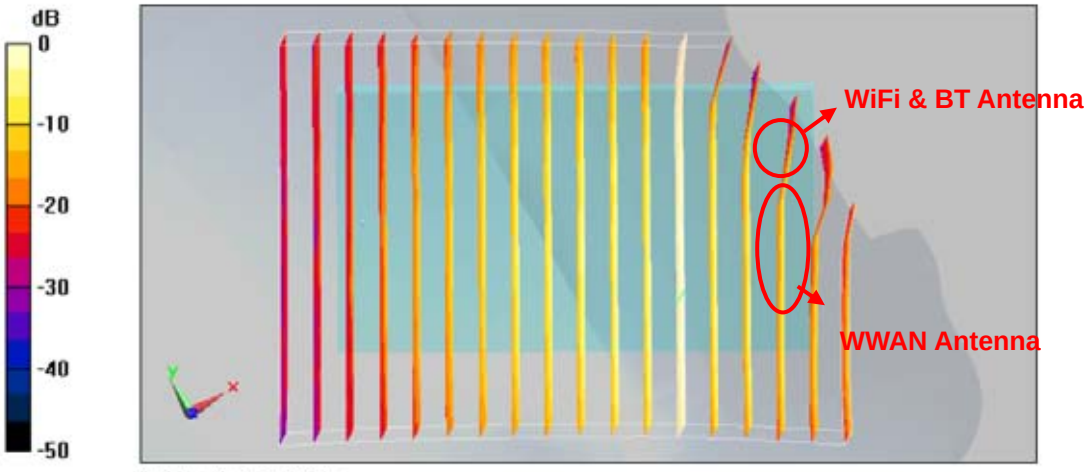
- Probe: ET3DV6 - SN1788; ConvF(6.54, 6.54, 6.54); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Check/Ch1/Volume Scan:

Date: 2008/3/19
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_802.11b Ch1_EUT1+Battery1_Volume
DUT: 830315
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.571 mW/g; SAR(10 g) = 0.371 mW/g
Maximum value of SAR (measured) = 0.603 mW/g



0 dB = 0.603mW/g

DASY5 Configuration for Left Cheek/Ch4233/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Check_WCDMA Ch4233_EUT1+Battery1_Volume
DUT: 830315
Communication System: WCDMA Band 5; Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: HSL_850 Medium parameters used: f = 847 MHz; σ = 0.924 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

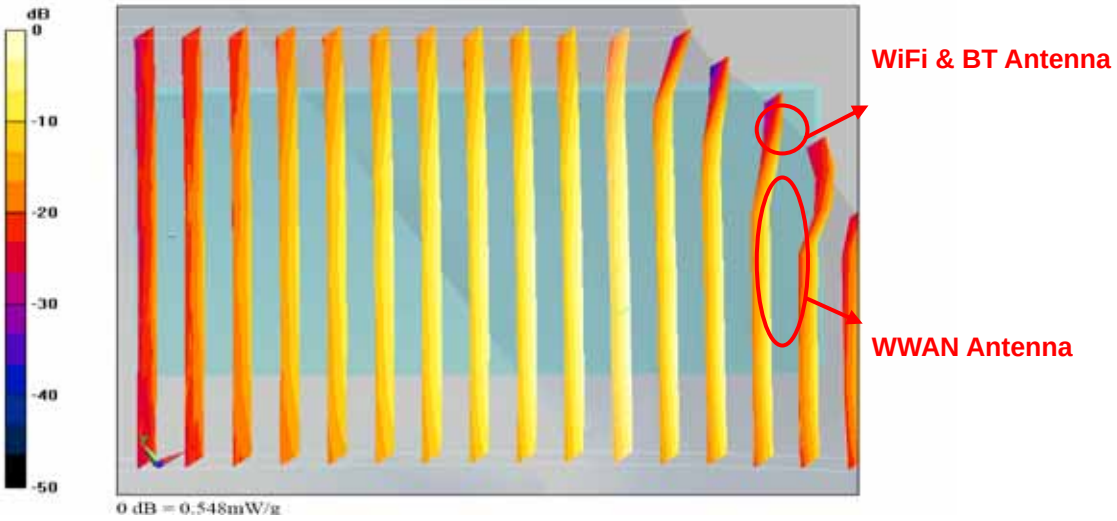
- Probe: ET3DV6 - SN1788; ConvF(6.54, 6.54, 6.54); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Check/Ch0/Volume Scan:

Date: 2008/4/7
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_Bluetooth Ch00_3DH3_Battery A_PDA1_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.8 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.522 mW/g; SAR(10 g) = 0.342 mW/g
Maximum value of SAR (measured) = 0.548 mW/g



DASY5 Configuration for Left Check/Ch9400/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_WCDMA Ch9400_EUT1+Battery1_Volume
DUT: 830315
Communication System: WCDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

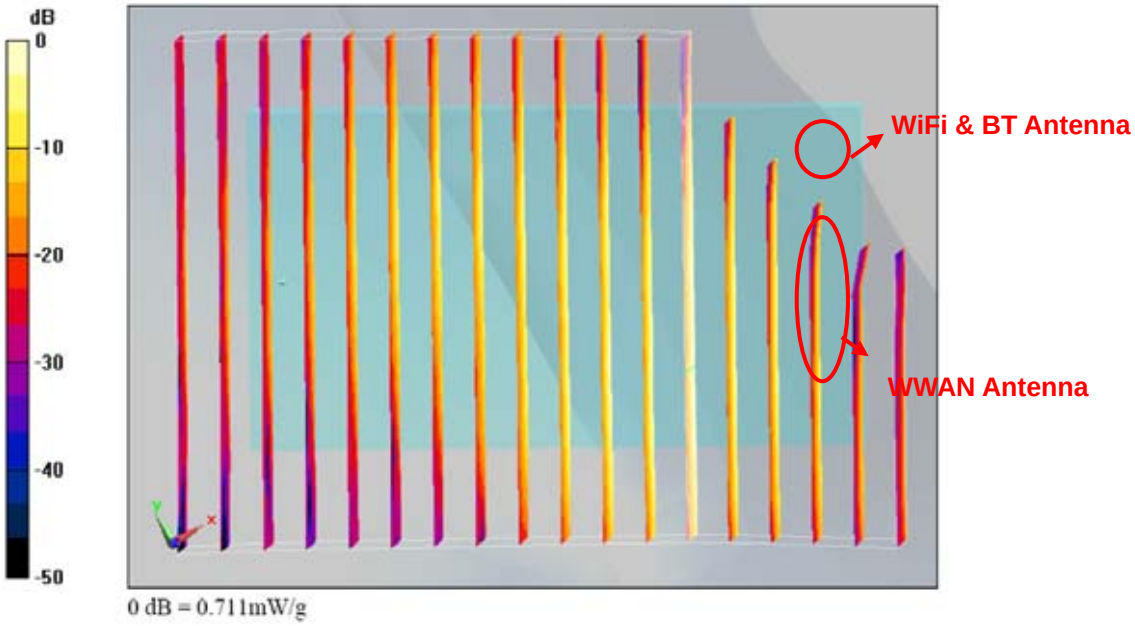
- Probe: ET3DV6 - SN1788; ConvF(5.28, 5.28, 5.28); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Check/Ch1/Volume Scan:

Date/Time: 2008/3/19
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_802.11b Ch1_EUT1+Battery1_Volume
DUT: 830315
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.688 mW/g; SAR(10 g) = 0.413 mW/g
Maximum value of SAR (measured) = 0.711 mW/g



0 dB = 0.711mW/g

DASY5 Configuration for Left Check/Ch9400/Volume Scan:

Date: 2008/3/17
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_WCDMA Ch9400_EUT1+Battery1_Volume
DUT: 830315
Communication System: WCDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

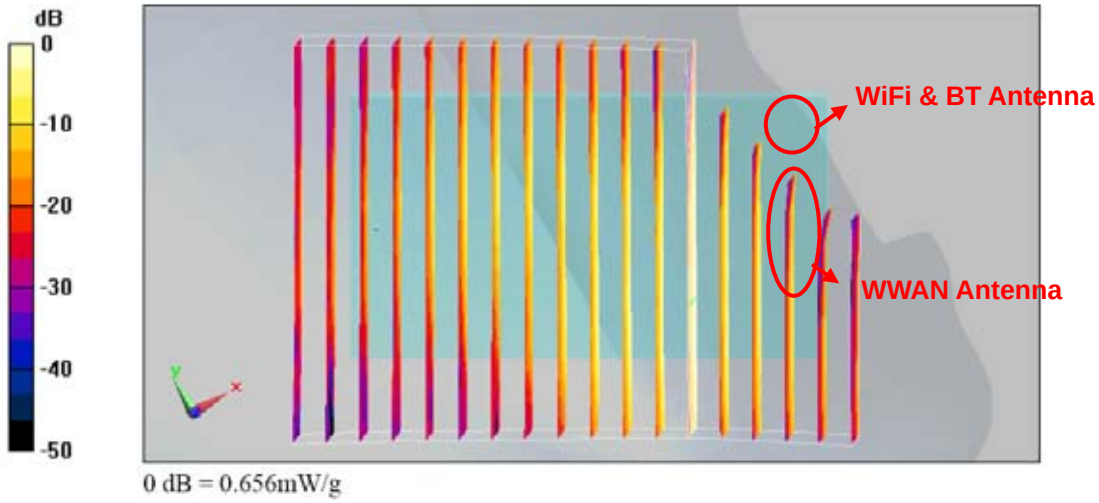
- Probe: ET3DV6 - SN1788; ConvF(5.28, 5.28, 5.28); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Right Check/Ch0/Volume Scan:

Date: 2008/4/7
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_Bluetooth Ch00_3DH3_Battery A_PDA1_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.8 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.638 mW/g; SAR(10 g) = 0.385 mW/g
Maximum value of SAR (measured) = 0.656 mW/g



0 dB = 0.656mW/g

DASY5 Configuration for Body Rear/Ch251/Volume Scan:

Date: 2008/3/18
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_GSM850 Ch251_Rear Face with 1.5cm Gap_GPRS10_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:4
Medium: MSL_850 Medium parameters used: f = 849 MHz; σ = 0.988 mho/m; ε_r = 56.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

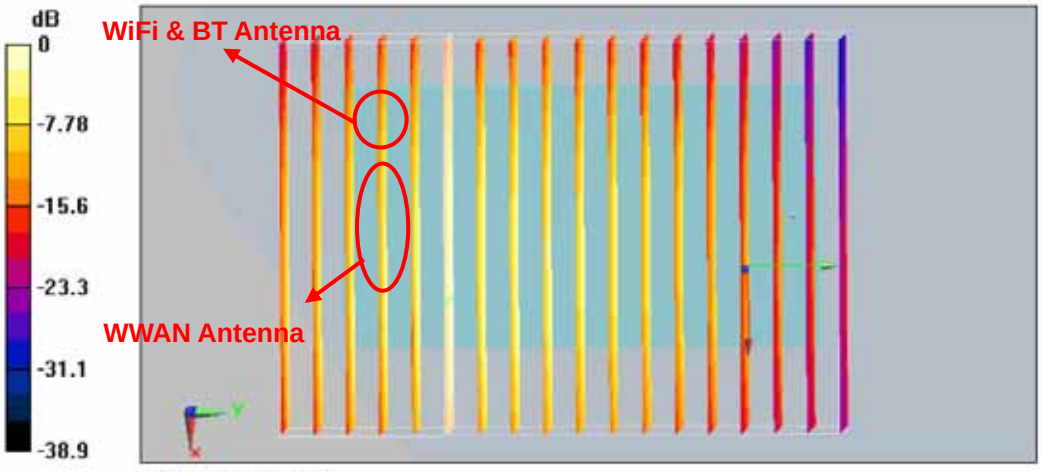
- Probe: ET3DV6 - SN1788; ConvF(6.37, 6.37, 6.37); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch1/Volume Scan:

Date: 2008/4/9
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_802.11b Ch1_Rear Face with 1.5cm Gap_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.921 mW/g; SAR(10 g) = 0.662 mW/g
Maximum value of SAR (measured) = 0.979 mW/g



0 dB = 0.979mW/g

DASY5 Configuration for Body Rear/Ch251/Volume Scan:

Date: 2008/3/18
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_GSM850 Ch251_Rear Face with 1.5cm Gap_GPRS10_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:4
Medium: MSL_850 Medium parameters used: f = 849 MHz; σ = 0.988 mho/m; ε_r = 56.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

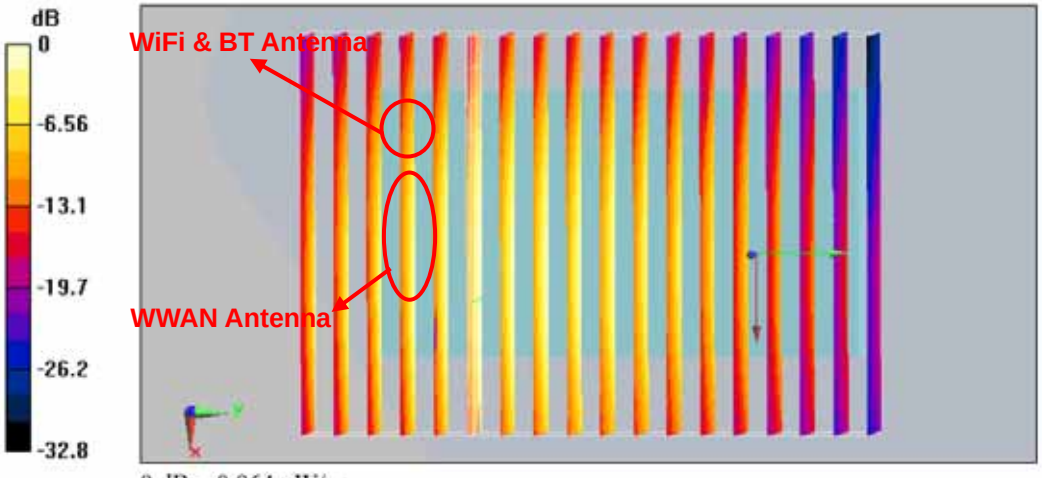
- Probe: ET3DV6 - SN1788; ConvF(6.37, 6.37, 6.37); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch0/Volume Scan:

Date: 2008/4/9
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_Bluetooth Ch0_Rear Face with 1.5cm Gap_3DH1_PDA1_Battery B_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.88 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.906 mW/g; SAR(10 g) = 0.654 mW/g
Maximum value of SAR (measured) = 0.964 mW/g



0 dB = 0.964mW/g

DASY5 Configuration for Body Rear/Ch512/Volume Scan:

Date: 2008/3/17
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_PCS Ch512_Rear Face with 1.5cm Gap_GPRS10_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4
Medium: MSL_1900 Medium parameters used: f = 1850.2 MHz; σ = 1.47 mho/m; ε_r = 51.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

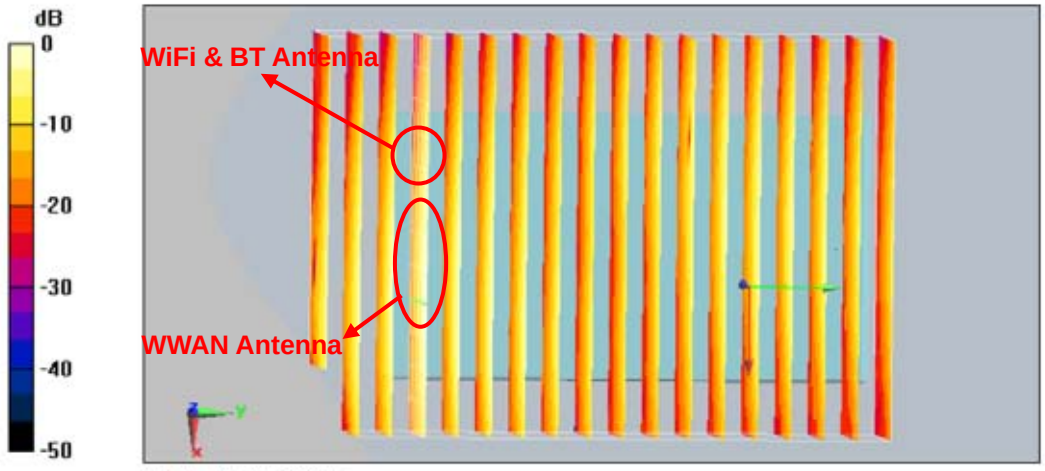
- Probe: ET3DV6 - SN1788; ConvF(4.75, 4.75, 4.75); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch1/Volume Scan:

Date: 2008/3/19
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_802.11b Ch1_Rear Face with 1.5cm Gap_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.421 mW/g; SAR(10 g) = 0.267 mW/g
Maximum value of SAR (measured) = 0.448 mW/g



0 dB = 0.448mW/g

DASY5 Configuration for Body Rear/Ch512/Volume Scan:

Date: 2008/3/17
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_PCS Ch512_Rear Face with 1.5cm Gap_GPRS10_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4
Medium: MSL_1900 Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.47 mho/m; ε_r = 1.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

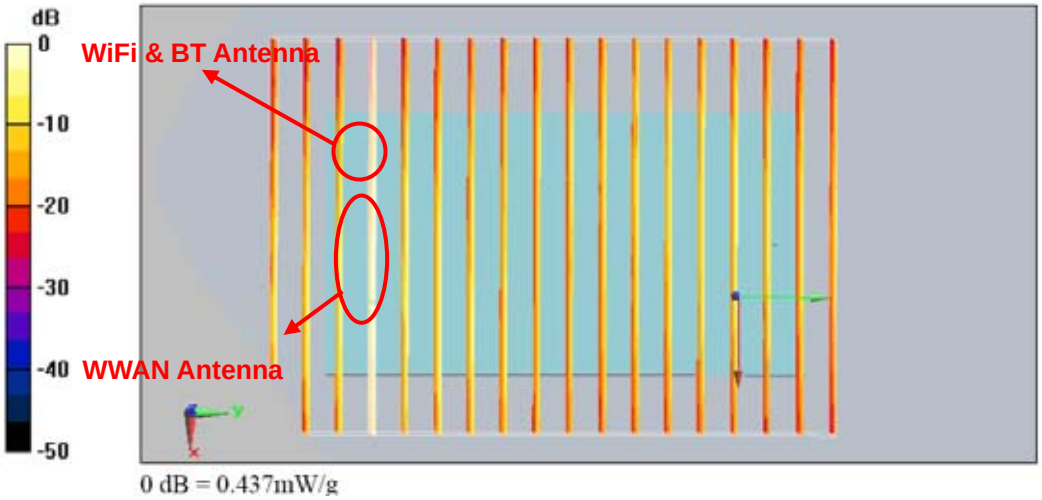
- Probe: ET3DV6 - SN1788; ConvF(4.75, 4.75, 4.75); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch0/Volume Scan:

Date: 2008/4/9
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_Bluetooth Ch0_Rear Face with 1.5cm Gap_3DH1_PDA1_Battery B_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.88 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.261 mW/g
Maximum value of SAR (measured) = 0.437 mW/g



0 dB = 0.437mW/g

DASY5 Configuration for Body Rear/Ch4233/Volume Scan:

Date: 2008/3/18
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_WCDMA Ch4233_Rear Face with 1.5cm Gap_RMC12.2K_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: WCDMA; Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: MSL_850 Medium parameters used: f = 847 MHz; σ = 0.987 mho/m; ε_r = 56.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

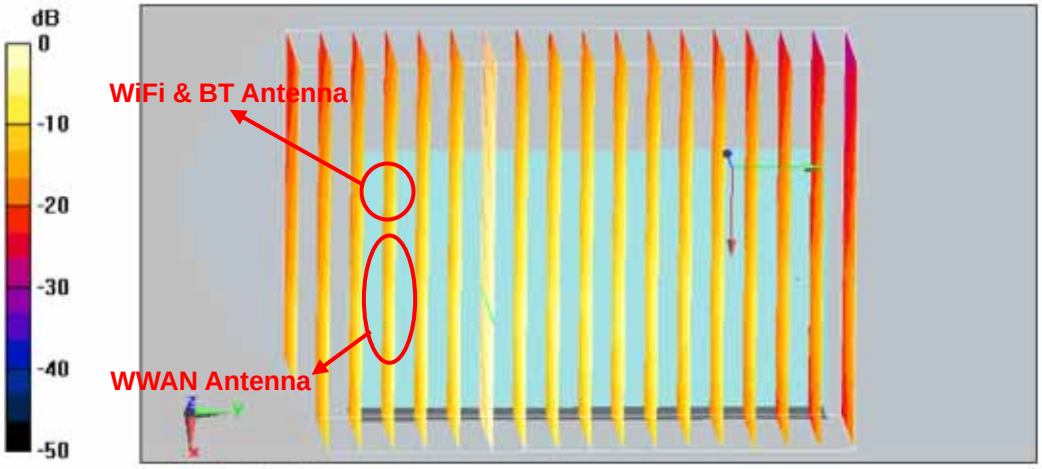
- Probe: ET3DV6 - SN1788; ConvF(6.37, 6.37, 6.37); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch1/Volume Scan:

Date: 2008/3/19
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_802.11b Ch1_Rear Face with 1.5cm Gap_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.374 mW/g; SAR(10 g) = 0.246 mW/g
Maximum value of SAR (measured) = 0.398 mW/g



0 dB = 0.398mW/g

DASY5 Configuration for Body Rear/Ch4233/Volume Scan:

Date: 2008/3/18
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_WCDMA Ch4233_Rear Face with 1.5cm Gap_RMC12.2K_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: WCDMA; Frequency: 846.6 MHz; Duty Cycle: 1:1
Medium: MSL_850 Medium parameters used: f = 847 MHz; σ = 0.987 mho/m; ε_r = 56.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

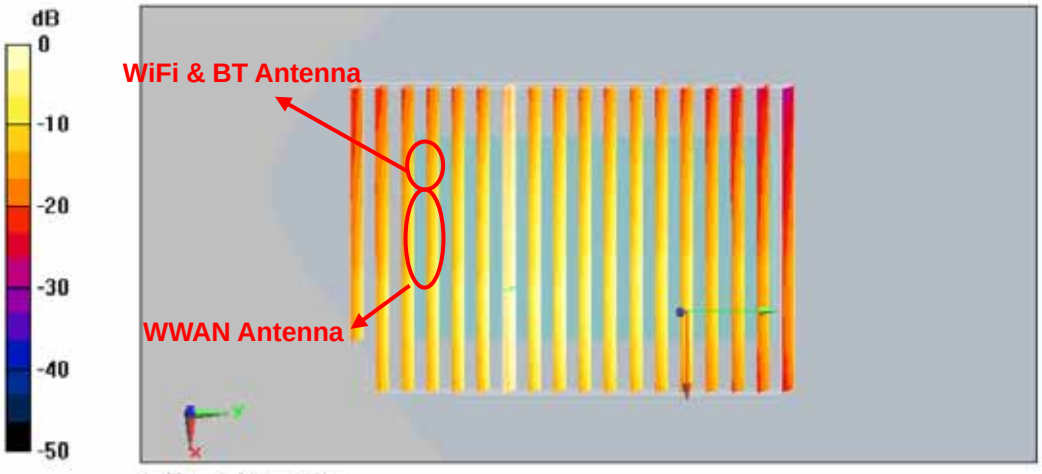
- Probe: ET3DV6 - SN1788; ConvF(6.37, 6.37, 6.37); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch0/Volume Scan:

Date: 2008/4/9
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_Bluetooth Ch0_Rear Face with 1.5cm Gap_3DH1_PDA1_Battery B_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.88 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.361 mW/g; SAR(10 g) = 0.240 mW/g
Maximum value of SAR (measured) = 0.383 mW/g



0 dB = 0.383mW/g

DASY5 Configuration for Body Rear/Ch9400/Volume Scan:

Date: 2008/3/18
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_WCDMA Ch9400_Rear Face with 1.5cm Gap_RMC12.2K_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: WCDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: MSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 51.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

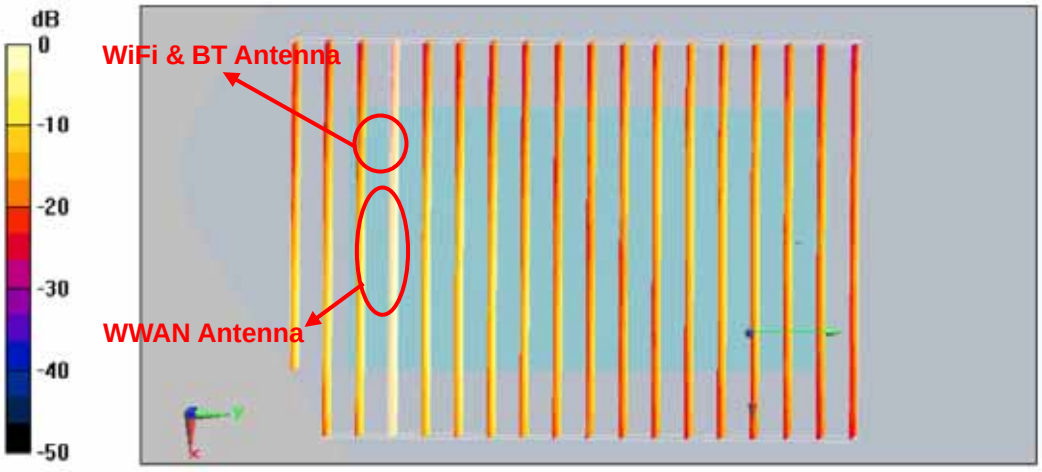
- Probe: ET3DV6 - SN1788; ConvF(4.75, 4.75, 4.75); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch1/Volume Scan:

Date: 2008/4/9
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_802.11b Ch1_Rear Face with 1.5cm Gap_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.194 mW/g
Maximum value of SAR (measured) = 0.322 mW/g



0 dB = 0.322mW/g

DASY5 Configuration for Body Rear/Ch9400/Volume Scan:

Date/Time: 2008/3/18
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_WCDMA Ch9400_Rear Face with 1.5cm Gap_RMC12.2K_EUT1+Battery2+Earphone_Volume
DUT: 830315
Communication System: WCDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: MSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 51.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

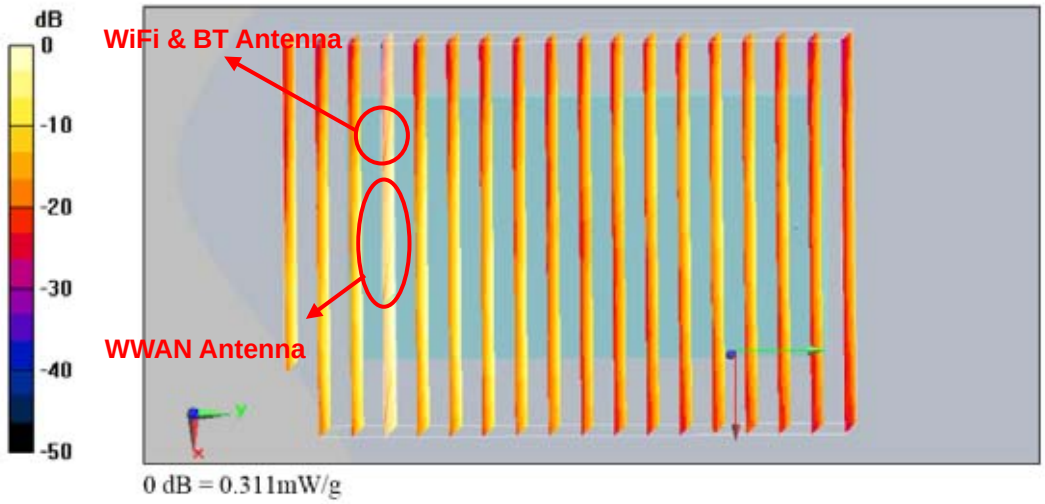
- Probe: ET3DV6 - SN1788; ConvF(4.75, 4.75, 4.75); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch0/Volume Scan:

Date: 2008/4/9
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_Bluetooth Ch0_Rear Face with 1.5cm Gap_3DH1_PDA1_Battery B_Volume
DUT: 830315
Communication System: Bluetooth; Frequency: 2402 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2402 MHz; σ = 1.88 mho/m; ε_r = 54; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.188 mW/g
Maximum value of SAR (measured) = 0.311 mW/g



0 dB = 0.311mW/g

<Model: P560>

DASY5 Configuration for Left Cheek/Ch1/Volume Scan:

Date: 2008/4/12
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_802.11b Ch1_EUT2+Battery1_Volume
DUT: 830314
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

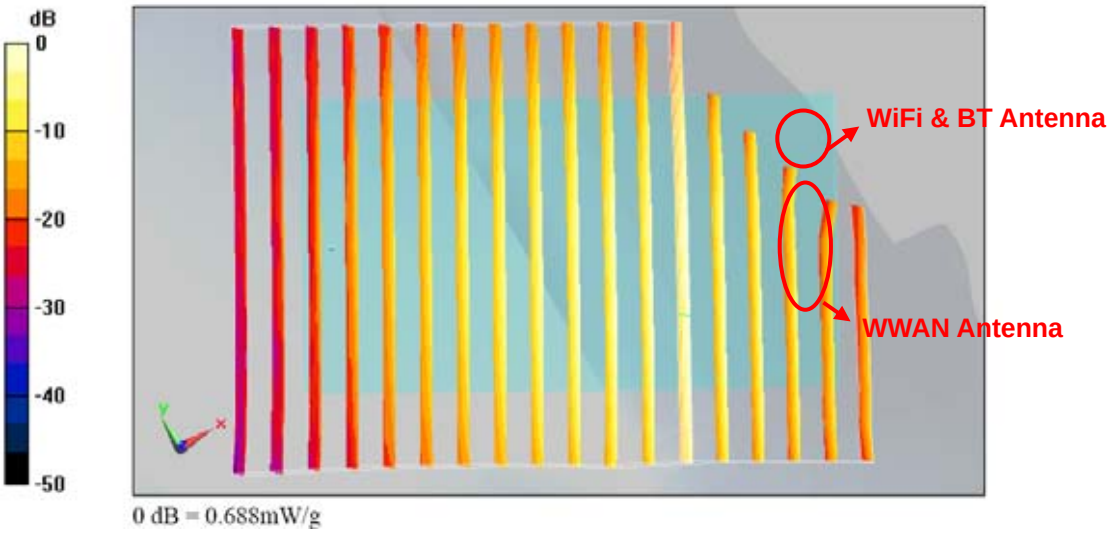
- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Cheek/Ch251/Volume Scan:

Date: 2008/4/12
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_GSM850 Ch251_EUT2+Battery1_Volume
DUT: 830314
Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL_850 Medium parameters used: f = 849 MHz; σ = 1.3 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(6.54, 6.54, 6.54); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.666 mW/g; SAR(10 g) = 0.455 mW/g
Maximum value of SAR (measured) = 0.688 mW/g



0 dB = 0.688mW/g

DASY5 Configuration for Left Cheek/Ch9400/Volume Scan:

Date: 2008/3/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_WCDMA1900 Ch9400_EUT2+Battery1_Volume
DUT: 830314
Communication System: WCDMA Band 2; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: HSL_1900 Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 39; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

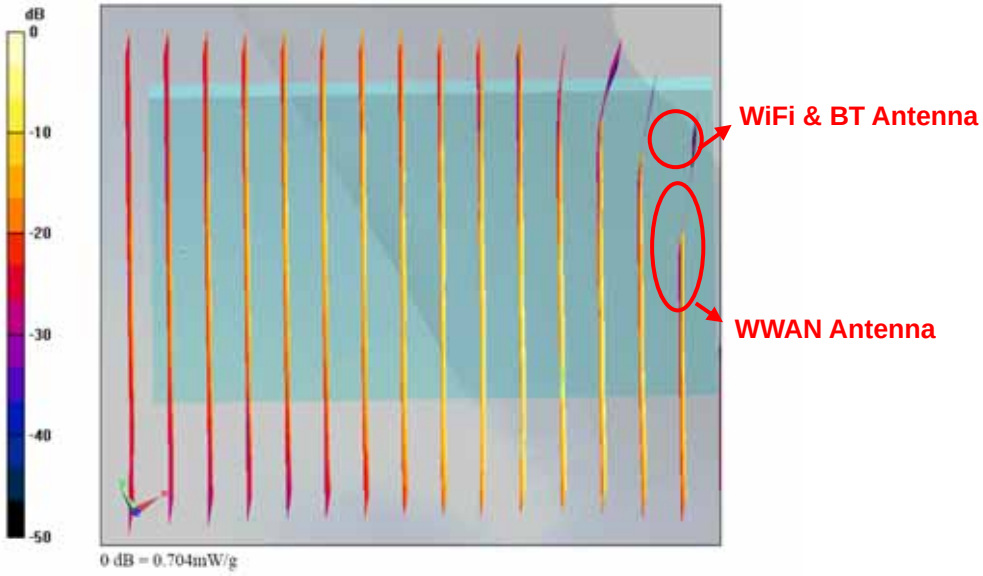
- Probe: ET3DV6 - SN1788; ConvF(5.28, 5.28, 5.28); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Left Cheek/Ch1/Volume Scan:

Date: 2008/3/19
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Left Cheek_802.11b Ch1_EUT2+Battery1_Volume
DUT: 830314
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: HSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.82 mho/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.58, 4.58, 4.58); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.653 mW/g; SAR(10 g) = 0.392 mW/g
Maximum value of SAR (measured) = 0.704 mW/g



DASY5 Configuration for Body Rear/Ch1/Volume Scan:

Date: 2008/4/12
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_802.11b Ch1_Rear Face with 1.5cm Gap_EUT2+Battery2+Earphone_Volume
DUT: 830314
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

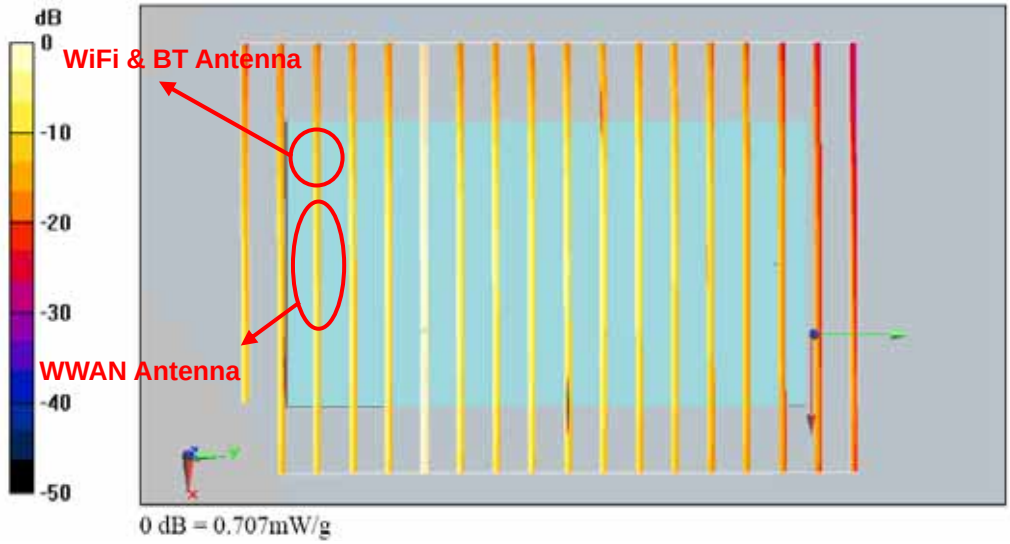
- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

DASY5 Configuration for Body Rear/Ch251/Volume Scan:

Date: 2008/4/14
Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab
Body_GSM850 Ch251_Rear Face with 1.5cm Gap_GPRS10_EUT2+Battery2+Earphone_Volume
DUT: 830314
Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:4
Medium: MSL_850 Medium parameters used: f = 849 MHz; σ = 1.4 mho/m; ε_r = 56.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(6.37, 6.37, 6.37); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.466 mW/g
Maximum value of SAR (measured) = 0.707 mW/g



0 dB = 0.707mW/g

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2008/3/17

Body_GSM1900 Ch512_Rear Face with 1.5cm Gap_GPRS10_EUT2+Battery2+Earphone_Volume
DUT: 830314
Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:4
Medium: MSL_1900 Medium parameters used: f = 1850.2 MHz; σ = 1.47 mho/m; ε_r = 51.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

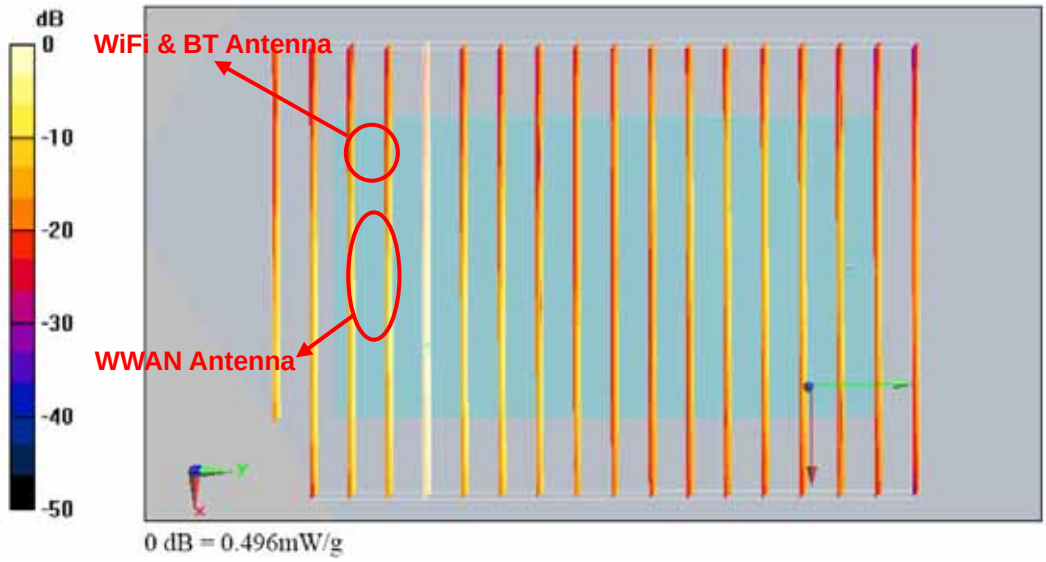
- Probe: ET3DV6 - SN1788; ConvF(4.75, 4.75, 4.75); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2008/3/19

Body_802.11b Ch1_Rear Face with 1.5cm Gap_EUT2+Battery2+Earphone_Volume
DUT: 830314
Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1
Medium: MSL_2450 Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; ε_r = 53.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

- Probe: ET3DV6 - SN1788; ConvF(4.17, 4.17, 4.17); Calibrated: 2007/9/26
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2007/11/16
- Phantom: SAM with CRP; Type: SAM; Serial: TP-1446
- Measurement SW: DASY5, V5.0 Build 91

Multi Band Result:
SAR(1 g) = 0.471 mW/g; SAR(10 g) = 0.299 mW/g
Maximum value of SAR (measured) = 0.496 mW/g



0 dB = 0.496mW/g

Appendix C – Calibration Data

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Accreditation No.: SCS 108

Client: Sporton (Auden)

Certificate No: D2450V2-736_Jul07

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 736
Calibration procedure(s)	QA CAL-05.v6 Calibration procedure for dipole validation kits
Calibration date:	July 12, 2007
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Power sensor HP 8481A	US37292783	03-Oct-06 (METAS, No. 217-00608)	Oct-07
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-06 (METAS, No 217-00591)	Aug-07
Reference Probe ES3DV3	SN 3025	19-Oct-06 (SPEAG, No. ES3-3025_Oct06)	Oct-07
DAE4	SN 601	30-Jan-07 (SPEAG, No. DAE4-601_Jan07)	Jan-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-05)	In house check: Oct-07
RF generator Agilent E4421B	MY41000675	11-May-05 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Mike Meli	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 12, 2007

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Certificate No: D2450V2-736_Jul07 Page 1 of 9

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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.6 ± 6 %	1.81 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C	-------	------

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	13.3 mW / g
SAR normalized	normalized to 1W	53.2 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**52.7 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.17 mW / g
SAR normalized	normalized to 1W	24.7 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**24.5 mW / g ± 16.5 % (k=2)**

[1] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.5 ± 6 %	1.94 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 0.2) °C	-----	-----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.0 mW / g
SAR normalized	normalized to 1W	52.0 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**52.5 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	Condition	
SAR measured	250 mW input power	6.05 mW / g
SAR normalized	normalized to 1W	24.2 mW / g
SAR for nominal Body TSL parameters [2]	normalized to 1W	**24.4 mW / g ± 16.5 % (k=2)**

[2] Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.1 Ω + 3.0 jΩ
Return Loss	- 27.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7 Ω + 4.6 jΩ
Return Loss	- 26.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.158 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	August 26, 2003

DASY4 Validation Report for Head TSL

Date/Time: 12.07.2007 11:00:03

Test Laboratory: SPEAG, Zurich, Switzerland

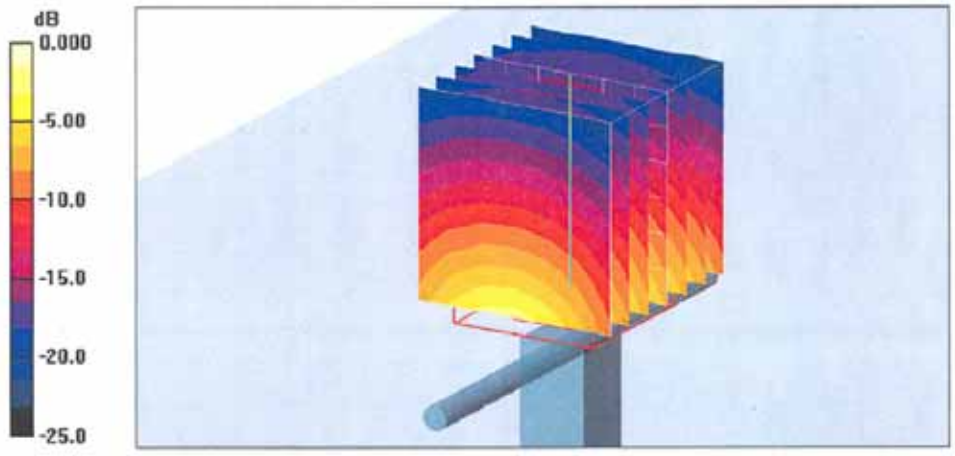
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN736

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: HSL U10 BB;
Medium parameters used: f = 2450 MHz; σ = 1.81 mho/m; ε_r = 38.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

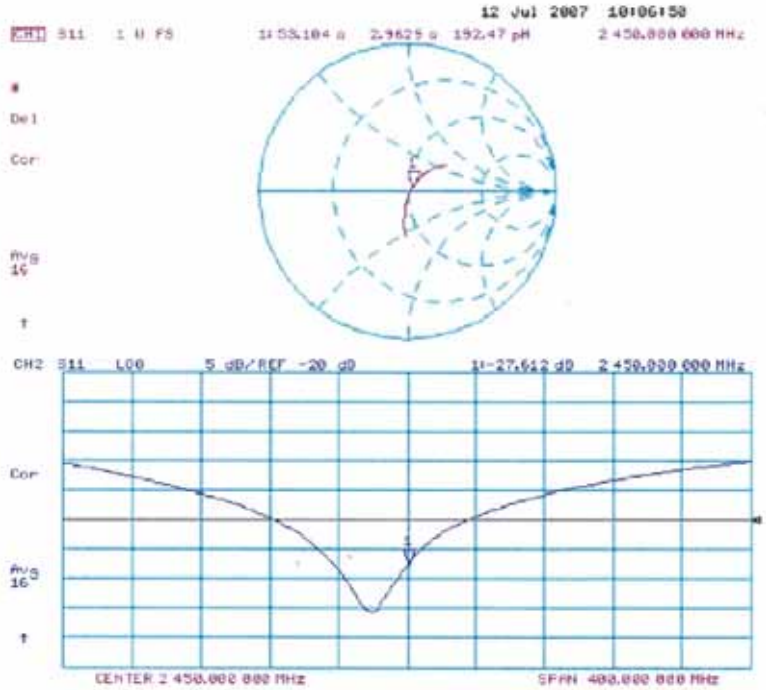
- Probe: ES3DV2 - SN3025 (HF); ConvF(4.5, 4.5, 4.5); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.0 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 28.1 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.17 mW/g
Maximum value of SAR (measured) = 15.0 mW/g



0 dB = 15.0mW/g

Impedance Measurement Plot for Head TSL



DASY4 Validation Report for Body TSL

Date/Time: 12.07.2007 12:28:49

Test Laboratory: SPEAG, Zurich, Switzerland

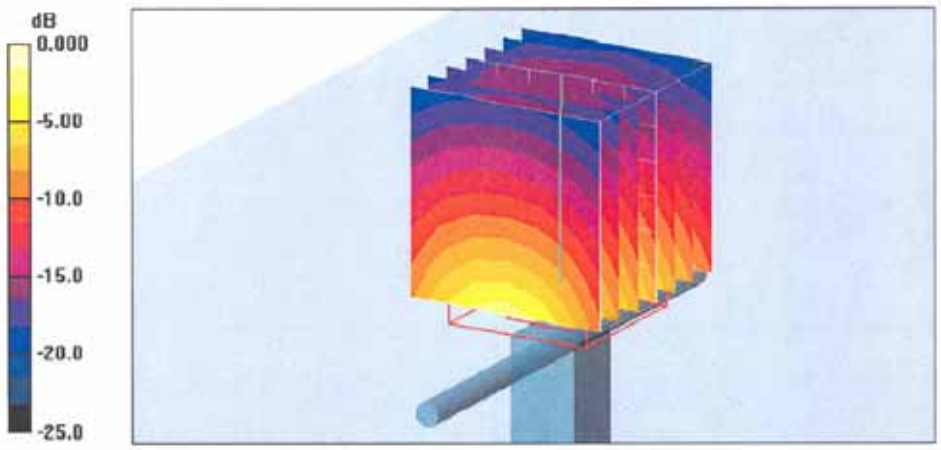
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN736

Communication System: CW-2450; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium: MSL U10 BB;
Medium parameters used: f = 2450 MHz; σ = 1.94 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

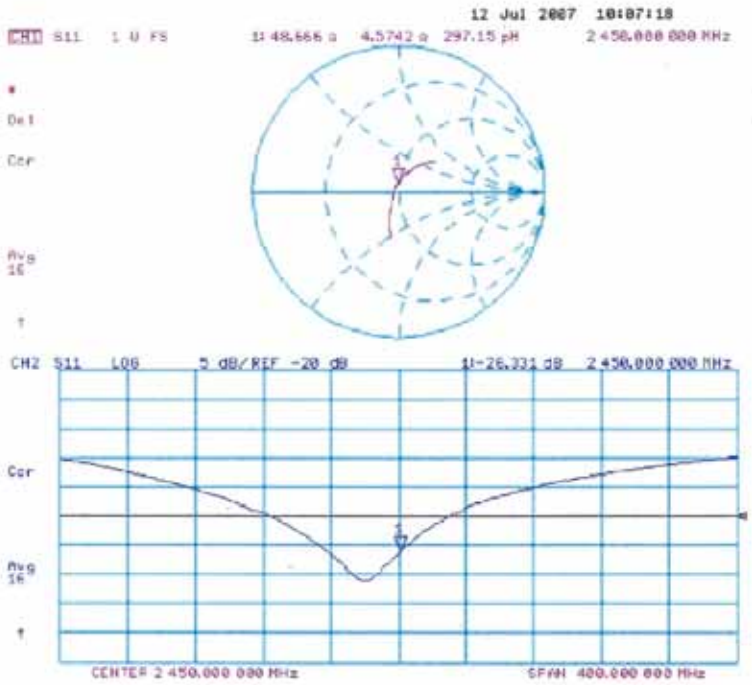
- Probe: ES3DV2 - SN3025 (HF); ConvF(4.16, 4.16, 4.16); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2007
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.6 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 27.0 W/kg
SAR(1 g) = 13 mW/g; SAR(10 g) = 6.05 mW/g
Maximum value of SAR (measured) = 14.8 mW/g



0 dB = 14.8mW/g

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client **Sporton (Auden)**

Certificate No: **DAE3-577_Nov07**

CALIBRATION CERTIFICATE

Object	DAE3 - SD 000 D03 AA - SN: 577
Calibration procedure(s)	QA CAL-06.v12 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	November 16, 2007
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Fluke Process Calibrator Type 702	SN: 6295803	04-Oct-07 (Elcal AG, No: 6467)	Oct-08
Keithley Multimeter Type 2001	SN: 0810278	03-Oct-07 (Elcal AG, No: 6465)	Oct-08
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Calibrator Box V1.1	SE UMS 006 AB 1004	25-Jun-07 (SPEAG, in house check)	In house check Jun-08

	Name	Function	Signature
Calibrated by:	Dominique Steffen	Technician	
Approved by:	Fin Bomholt	R&D Director	

Issued: November 16, 2007

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Accreditation No.: SCS 108

Glossary

DAE	data acquisition electronics
Connector angle	information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement*: Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle*: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement*: Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV, full range = -100...+300 mV
Low Range: 1LSB = 61nV, full range = -1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	404.432 ± 0.1% (k=2)	403.884 ± 0.1% (k=2)	404.331 ± 0.1% (k=2)
Low Range	3.94218 ± 0.7% (k=2)	3.94771 ± 0.7% (k=2)	3.94526 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	268 ° ± 1 °

Appendix

1. DC Voltage Linearity

High Range		Input (μV)	Reading (μV)	Error (%)
Channel X	+ Input	200000	199999.3	0.00
Channel X	+ Input	20000	20005.75	0.03
Channel X	- Input	20000	-19997.67	-0.01
Channel Y	+ Input	200000	199999.5	0.00
Channel Y	+ Input	20000	20002.82	0.01
Channel Y	- Input	20000	-20004.40	0.02
Channel Z	+ Input	200000	199999.6	0.00
Channel Z	+ Input	20000	20005.54	0.03
Channel Z	- Input	20000	-20001.11	0.01

Low Range		Input (μV)	Reading (μV)	Error (%)
Channel X	+ Input	2000	2000.1	0.00
Channel X	+ Input	200	199.12	-0.44
Channel X	- Input	200	-200.64	0.32
Channel Y	+ Input	2000	2000	0.00
Channel Y	+ Input	200	199.96	-0.02
Channel Y	- Input	200	-201.00	0.50
Channel Z	+ Input	2000	1999.9	0.00
Channel Z	+ Input	200	199.05	-0.47
Channel Z	- Input	200	-201.08	0.54

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	13.88	12.97
	- 200	-12.40	-14.29
Channel Y	200	-6.32	-6.22
	- 200	5.34	5.31
Channel Z	200	1.08	0.59
	- 200	-1.42	-1.66

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	1.14	0.16
Channel Y	200	1.52	-	3.87
Channel Z	200	0.23	0.75	-

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	15969	16269
Channel Y	15848	16148
Channel Z	16203	16661

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.12	-1.70	1.72	0.50
Channel Y	-2.46	-3.42	-1.39	0.44
Channel Z	-0.78	-2.16	0.00	0.29

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance

	Zeroing (MOhm)	Measuring (MOhm)
Channel X	0.2000	199.3
Channel Y	0.2001	199.9
Channel Z	0.1999	199.4

8. Low Battery Alarm Voltage (verified during pre test)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (verified during pre test)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.0	+6	+14
Supply (- Vcc)	-0.01	-8	-9

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S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

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Accreditation No.: SCS 108

Client **Sporton (Auden)**

Certificate No: ET3-1788_Sep07

CALIBRATION CERTIFICATE

Object	ET3DV6 - SN:1788
Calibration procedure(s)	QA CAL-01.v6 Calibration procedure for dosimetric E-field probes
Calibration date:	September 26, 2007
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41495277	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Power sensor E4412A	MY41498087	29-Mar-07 (METAS, No. 217-00670)	Mar-08
Reference 3 dB Attenuator	SN: S5054 (3c)	8-Aug-07 (METAS, No. 217-00719)	Aug-08
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-07 (METAS, No. 217-00671)	Mar-08
Reference 30 dB Attenuator	SN: S5129 (30b)	8-Aug-07 (METAS, No. 217-00720)	Aug-08
Reference Probe ES3DV2	SN: 3013	4-Jan-07 (SPEAG, No. ES3-3013_Jan07)	Jan-08
DAE4	SN: 654	20-Apr-07 (SPEAG, No. DAE4-654_Apr07)	Apr-08

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct-07

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Niels Kuster	Quality Manager	

Issued: September 26, 2007

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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Calibration Laboratory of
Schmid & Partner
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Zeughausstrasse 43, 8004 Zurich, Switzerland

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ET3DV6

SN:1788

Manufactured:	May 28, 2003
Last calibrated:	September 19, 2006
Modified:	September 24, 2007
Recalibrated:	September 26, 2007

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

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DASY - Parameters of Probe: ET3DV6 SN:1788

Sensitivity in Free Space[A]

Diode Compression[B]

NormX	**1.72** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**91** mV
NormY	**1.66** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**93** mV
NormZ	**1.70** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**94** mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		**3.7 mm**	**4.7 mm**
SAR_{be} [%]	Without Correction Algorithm	6.2	3.3
SAR_{be} [%]	With Correction Algorithm	0.4	1.0

TSL **1810 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**3.7 mm**	**4.7 mm**
SAR_{be} [%]	Without Correction Algorithm	12.0	8.1
SAR_{be} [%]	With Correction Algorithm	0.2	0.1

Sensor Offset

Probe Tip to Sensor Center	**2.7** mm

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).

[B] Numerical linearization parameter: uncertainty not required.

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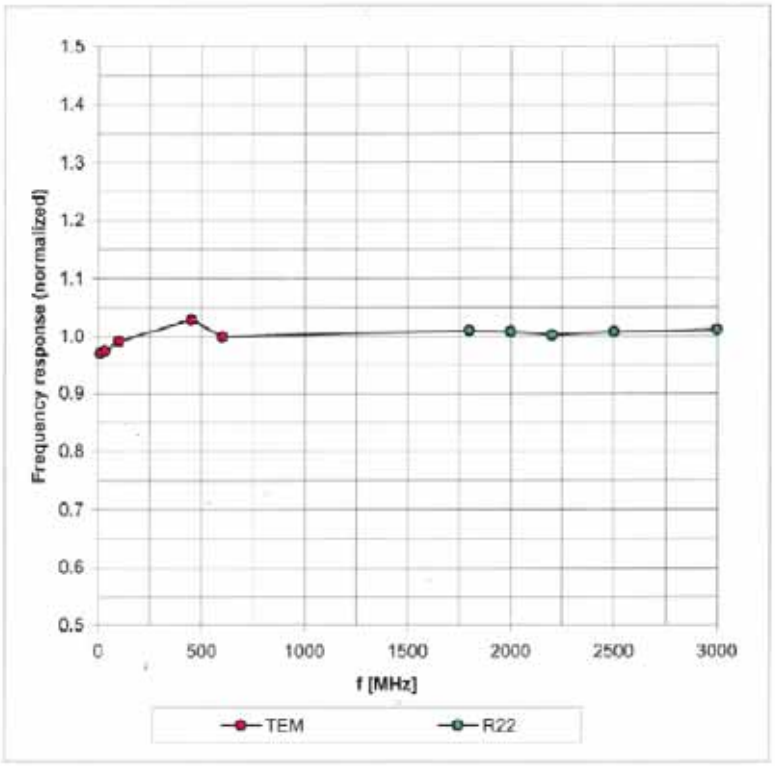
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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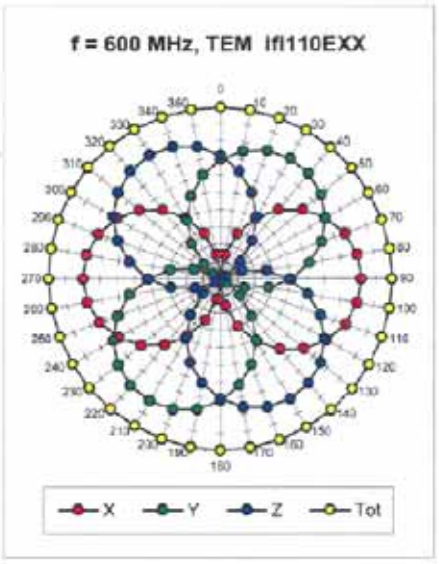
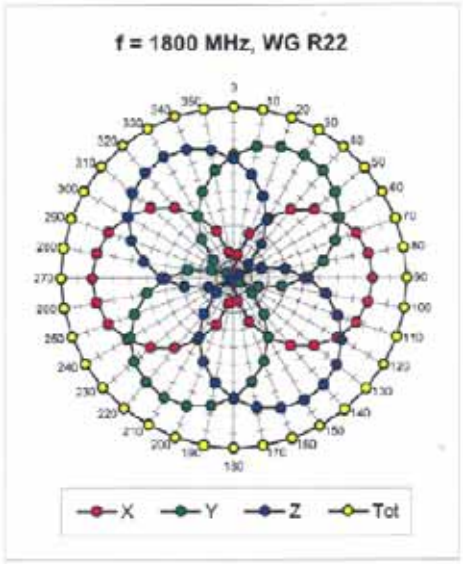
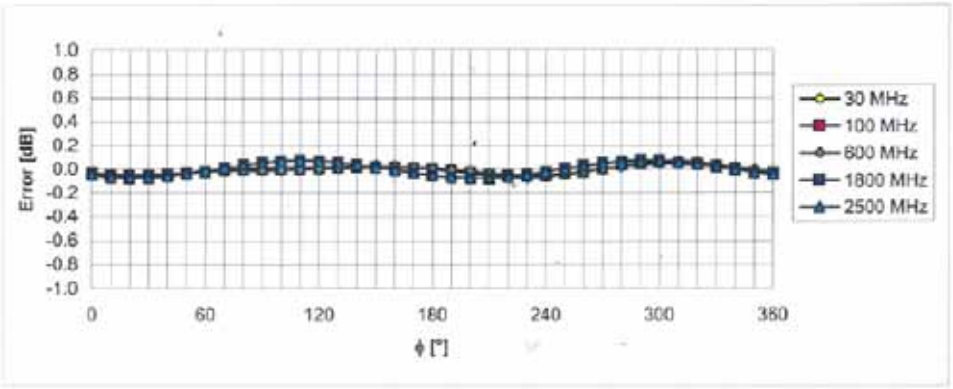
Receiving Pattern (ϕ), ϑ = 0°







Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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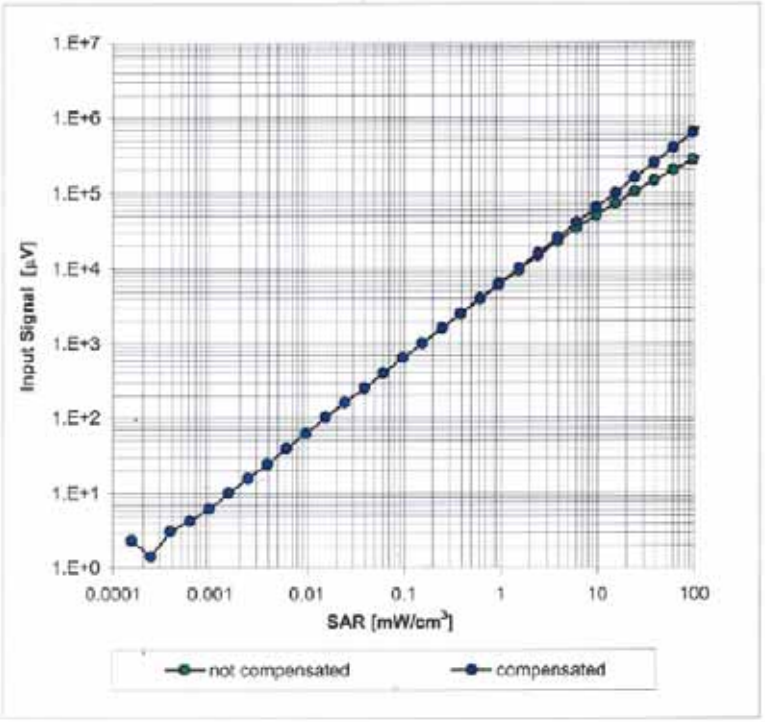
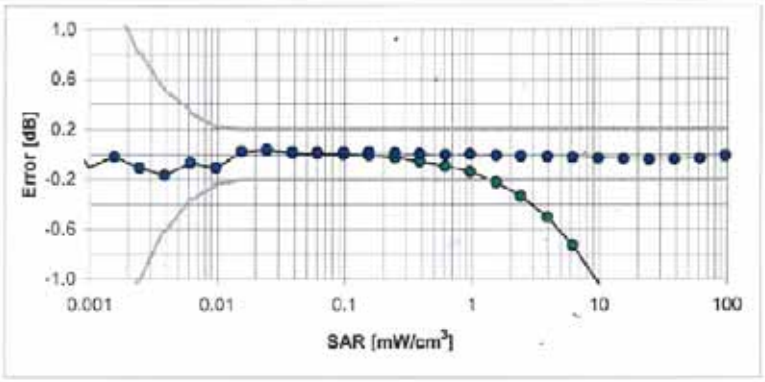
Dynamic Range f(SAR_{head})

(Waveguide R22, f = 1800 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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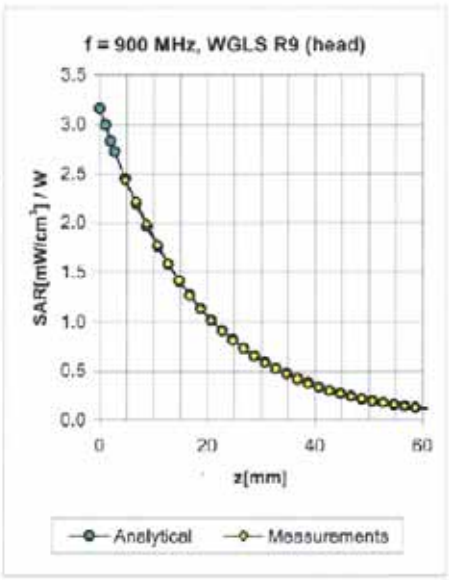
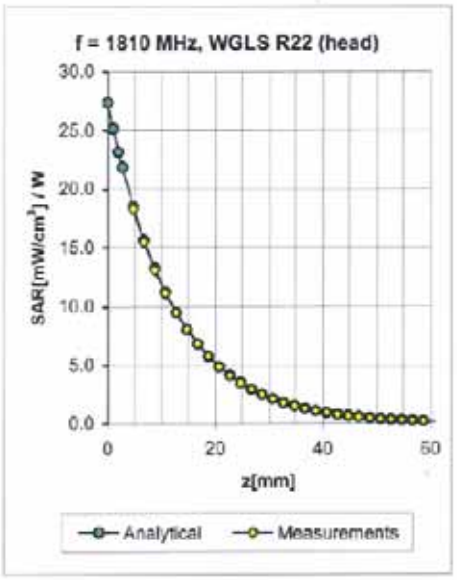
Conversion Factor Assessment





f [MHz]	Validity [MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.22	3.28	6.54 ± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.59	2.15	5.28 ± 11.0% (k=2)
2000	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.60	2.23	4.87 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.61	2.39	4.58 ± 11.8% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.28	2.94	6.37 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.63	2.39	4.75 ± 11.0% (k=2)
2000	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.63	2.33	4.36 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.61	2.58	4.17 ± 11.8% (k=2)

[C] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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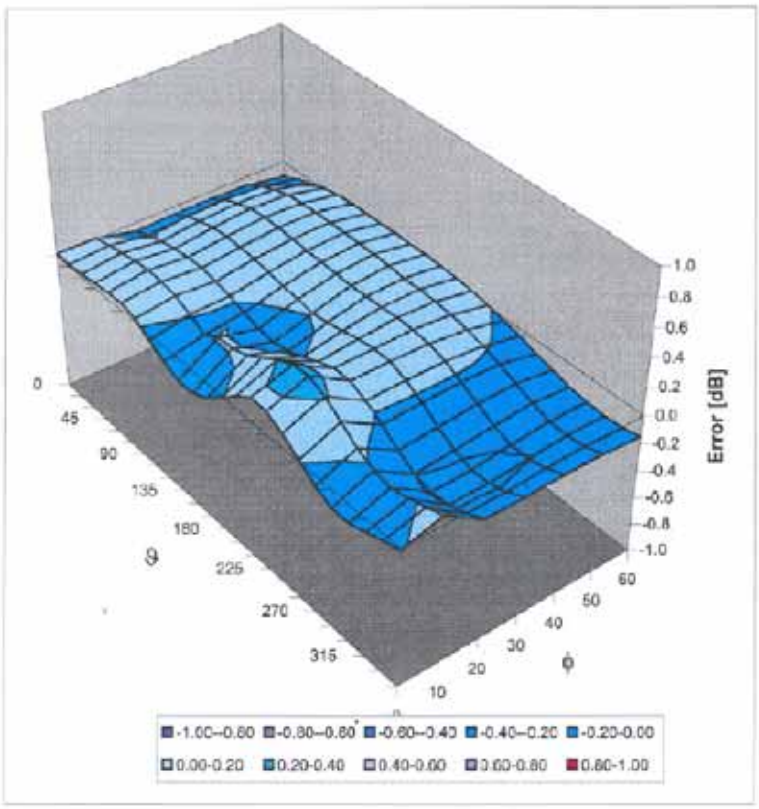
Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)