

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0701M**

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

Medium: 2450 Head Medium parameters used:

$f = 2310 \text{ MHz}$ ;  $\sigma = 1.704 \text{ S/m}$ ;  $\epsilon_r = 38.954$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 12-12-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78) @ 2310 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 30, Right Head, Tilt, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

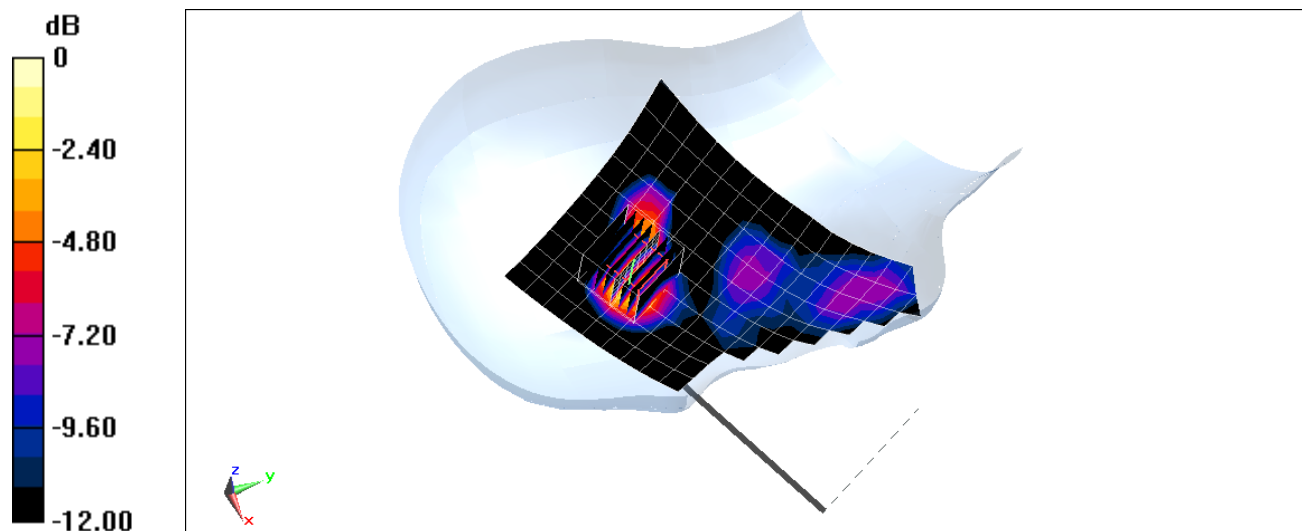
**Area Scan (11x18x1):** Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 5.758 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.0880 W/kg

**SAR(1 g) = 0.051 W/kg**



0 dB = 0.0746 W/kg = -11.27 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0701M**

Communication System: UID 0, LTE Band 7; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2510 \text{ MHz}$ ;  $\sigma = 1.921 \text{ S/m}$ ;  $\epsilon_r = 38.2$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 12-12-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5) @ 2510 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 7 Antenna B, Left Head, Cheek, Low.ch, QPSK,  
20 MHz Bandwidth, 1 RB, 99 RB Offset**

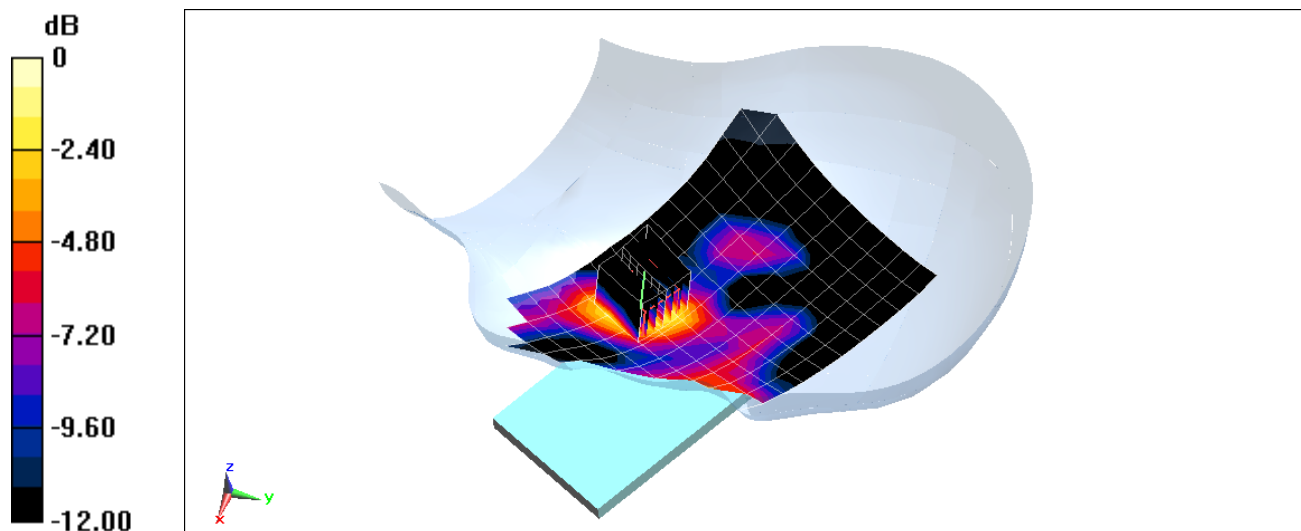
**Area Scan (11x18x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

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

Reference Value = 7.398 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.143 W/kg

**SAR(1 g) = 0.076 W/kg**



0 dB = 0.117 W/kg = -9.32 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0701M**

Communication System: UID 0, LTE Band 48; Frequency: 3690 MHz; Duty Cycle: 1:1.58

Medium: 3500-3700 MHz Head Medium parameters used (interpolated):

$f = 3690 \text{ MHz}$ ;  $\sigma = 3.078 \text{ S/m}$ ;  $\epsilon_r = 37.125$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

Test Date: 12-14-2018; Ambient Temp: 21.1°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3949; ConvF(7.24, 7.24, 7.24) @ 3690 MHz; Calibrated: 8/24/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 48, Left Head, Cheek, High.ch, QPSK,  
20 MHz Bandwidth, 1 RB, 0 RB Offset**

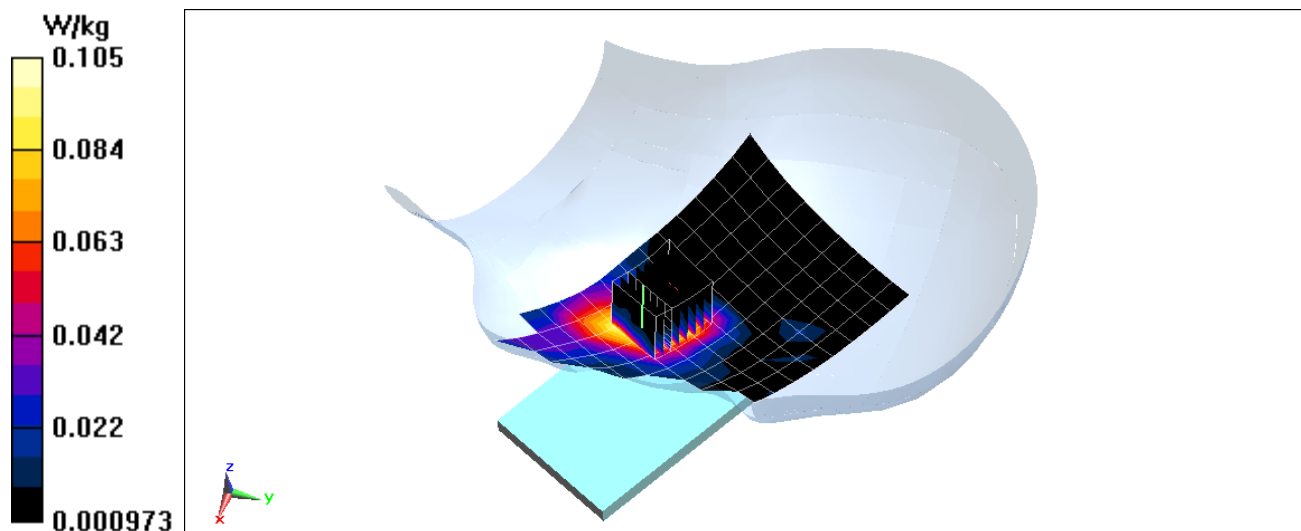
**Area Scan (10x17x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

**Zoom Scan (7x8x8)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 5.023 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 0.239 W/kg

**SAR(1 g) = 0.061 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0840M**

Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2549.5 MHz; Duty Cycle: 1:2.31

Medium: 2450 Head Medium parameters used:

$f = 2550$  MHz;  $\sigma = 1.907$  S/m;  $\epsilon_r = 39.929$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

Test Date: 01-07-2019; Ambient Temp: 21.7°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7410; ConvF(7.24, 7.24, 7.24) @ 2549.5 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 41 Power Class 2, Right Head, Tilt**

**PCC: 20 MHz Bandwidth, QPSK, Ch. 40185, 1 RB, 0 RB Offset**

**SCC: 20 MHz Bandwidth, QPSK, Ch. 39987, 1 RB, 99 RB Offset**

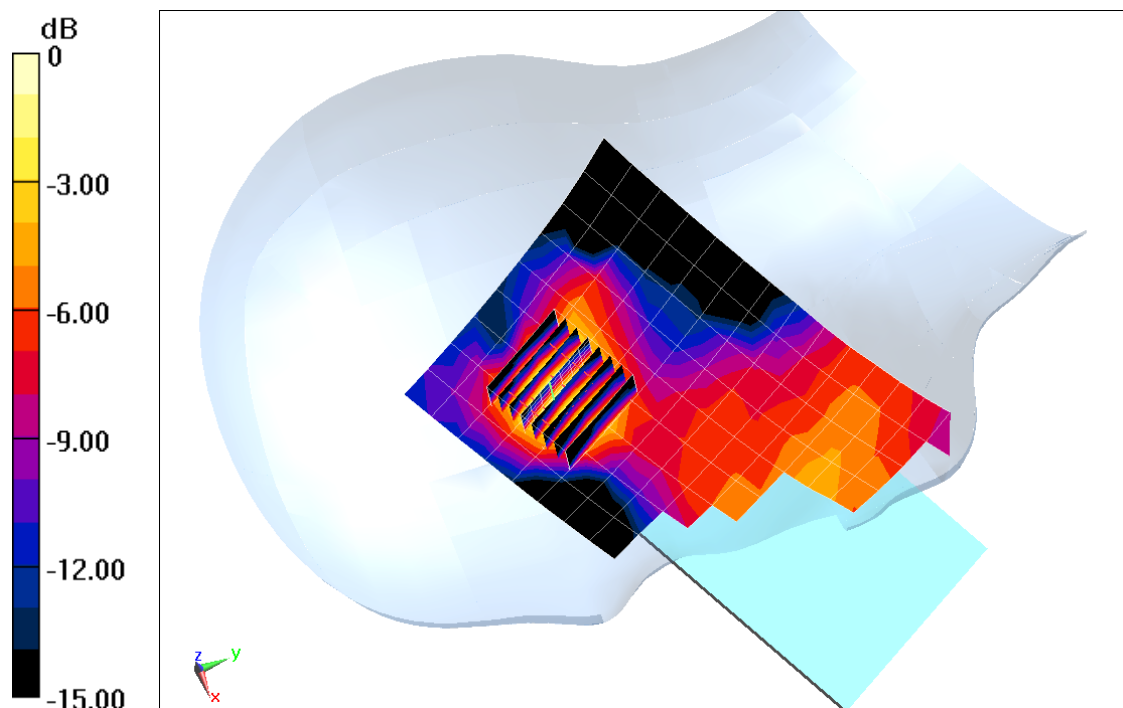
**Area Scan (10x17x1):** Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 5.869 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.123 W/kg

**SAR(1 g) = 0.070 W/kg**



0 dB = 0.101 W/kg = -9.96 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 1.852 \text{ S/m}$ ;  $\epsilon_r = 38.307$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 12-17-2018; Ambient Temp: 21.9°C; Tissue Temp: 22.0°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5) @ 2441 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: Bluetooth, Right Head, Cheek, Ch 39, 1Mbps**

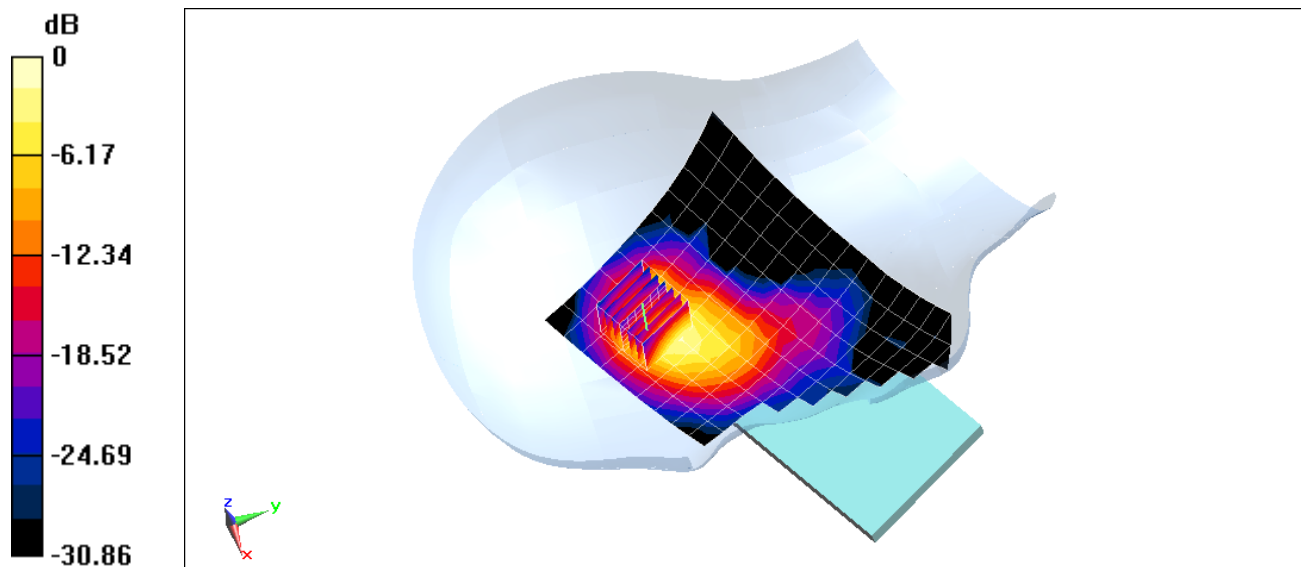
**Area Scan (11x19x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

**Zoom Scan (7x8x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 20.66 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.80 W/kg

**SAR(1 g) = 0.716 W/kg**



0 dB = 1.18 W/kg = 0.72 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2462 \text{ MHz}$ ;  $\sigma = 1.868 \text{ S/m}$ ;  $\epsilon_r = 38.811$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 12-03-2018; Ambient Temp: 22.0°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5) @ 2462 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11b, Antenna 2, 22 MHz Bandwidth, Right Head, Tilt, Ch 11, 1 Mbps**

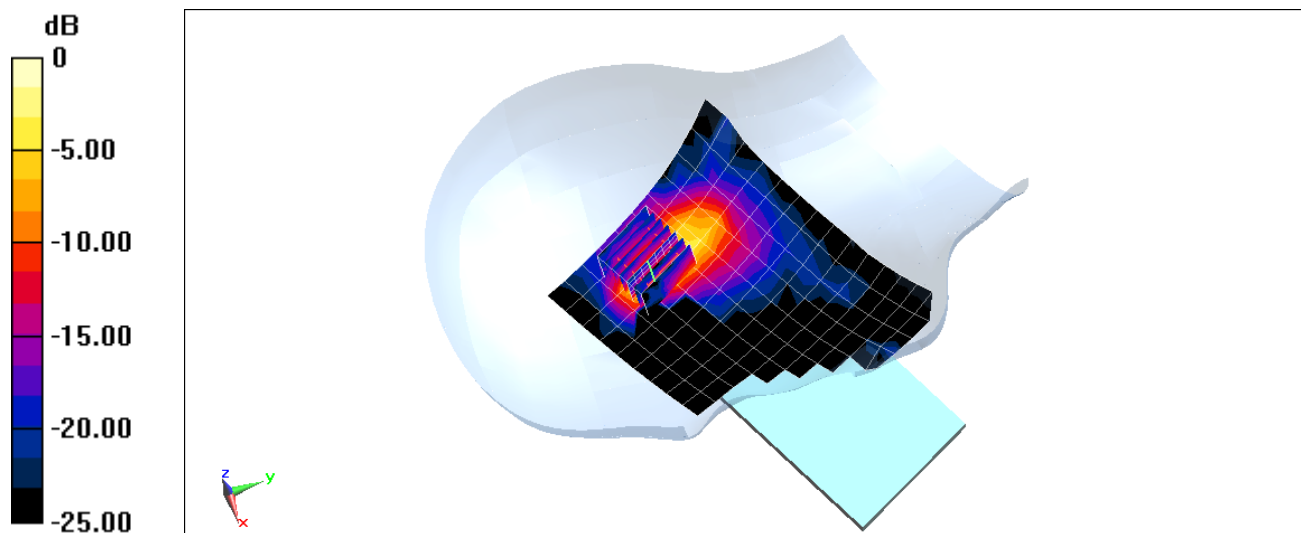
**Area Scan (11x18x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

**Zoom Scan (8x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 4.976 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.371 W/kg

**SAR(1 g) = 0.137 W/kg**



0 dB = 0.232 W/kg = -6.35 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5270 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5270 \text{ MHz}$ ;  $\sigma = 4.617 \text{ S/m}$ ;  $\epsilon_r = 35.276$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 12-26-2018; Ambient Temp: 20.5°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7409; ConvF(5.2, 5.2, 5.2) @ 5270 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11n, MIMO, U-NII-2A, 40 MHz Bandwidth,  
Right Head, Tilt, Ch 54, 27 Mbps**

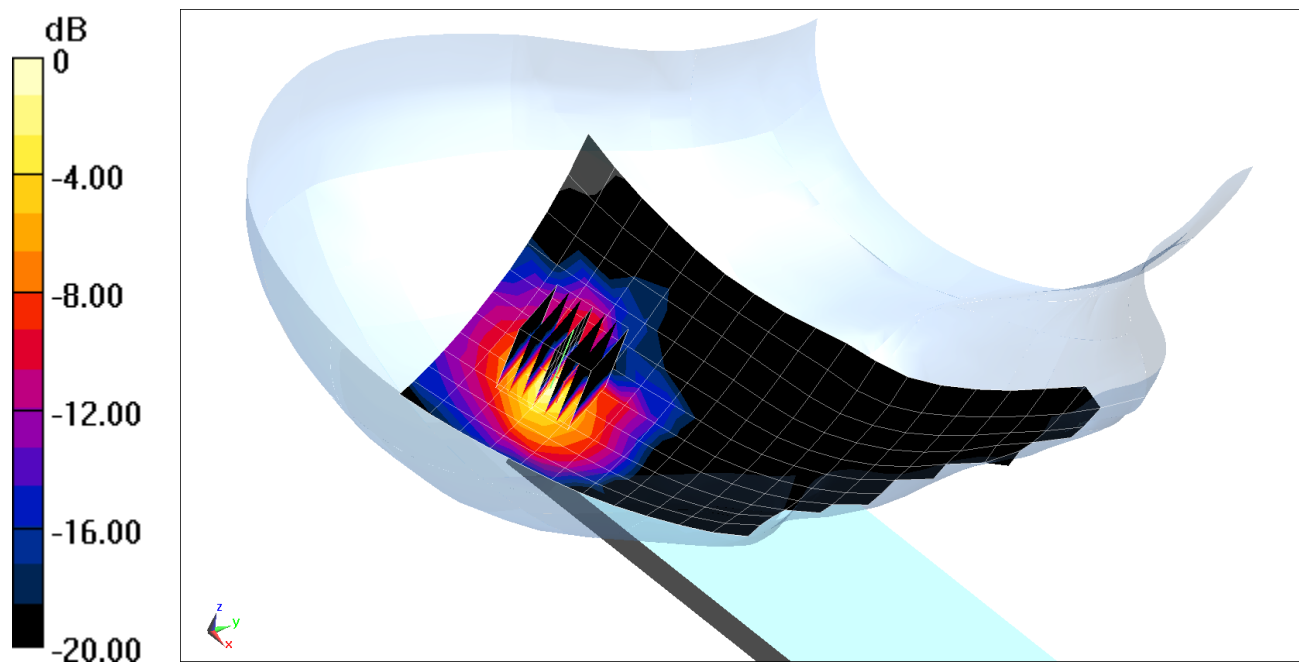
**Area Scan (12x20x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 0.7220 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.262 W/kg**



0 dB = 0.695 W/kg = -1.58 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0770M**

Communication System: UID 0, GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$ ;  $\sigma = 0.975 \text{ S/m}$ ;  $\epsilon_r = 54.657$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-11-2018; Ambient Temp: 22.3°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61) @ 836.6 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: GSM 850, Body SAR, Back side, Mid.ch**

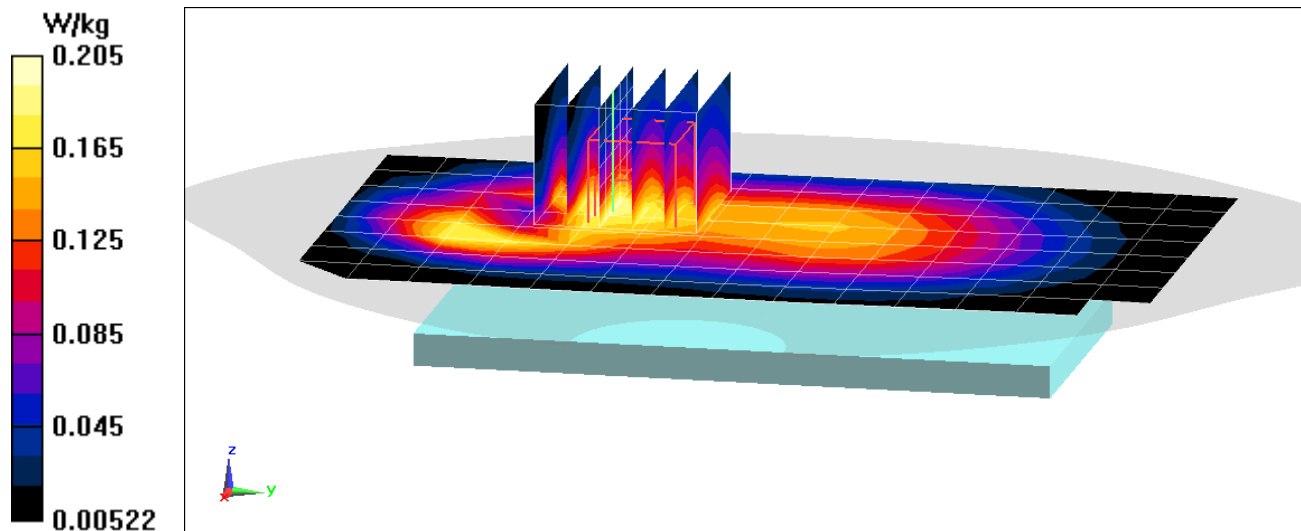
**Area Scan (9x15x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 13.11 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.231 W/kg

**SAR(1 g) = 0.163 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0770M**

Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 848.8 MHz; Duty Cycle: 1:2.76

Medium: 835 MHz Body Medium parameters used (interpolated):

$f = 848.8 \text{ MHz}$ ;  $\sigma = 1.001 \text{ S/m}$ ;  $\epsilon_r = 52.552$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 848.8 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: GPRS 850, Body SAR, Back side, High.ch, 3 Tx Slots**

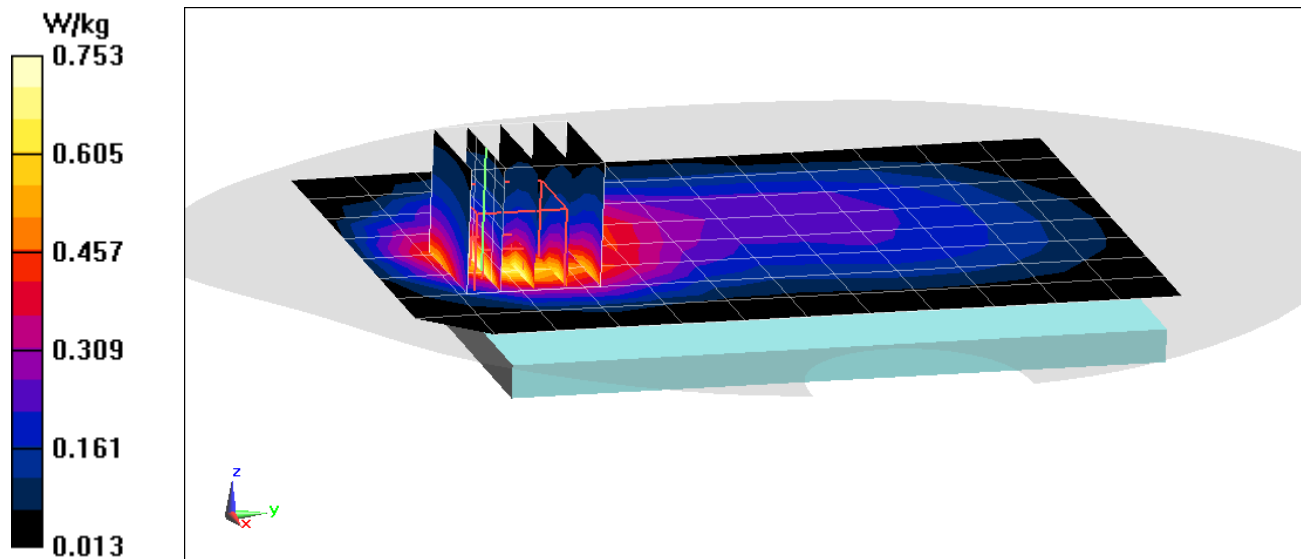
**Area Scan (9x13x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 25.65 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.08 W/kg

**SAR(1 g) = 0.633 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$ ;  $\sigma = 1.529 \text{ S/m}$ ;  $\epsilon_r = 51.157$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1880 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: GSM 1900, Body SAR, Back side, Mid.ch**

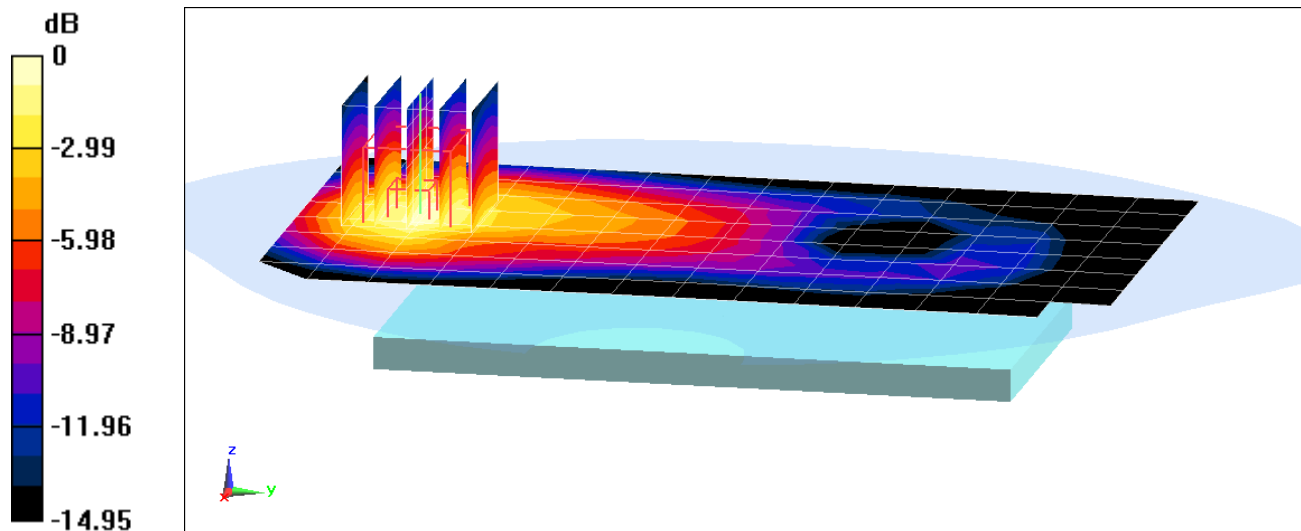
**Area Scan (9x15x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 11.90 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.300 W/kg

**SAR(1 g) = 0.190 W/kg**



0 dB = 0.227 W/kg = -6.44 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.76

Medium: 1900 Body Medium parameters used:

$f = 1910 \text{ MHz}$ ;  $\sigma = 1.57 \text{ S/m}$ ;  $\epsilon_r = 51.1$ ;  $\rho = 1000 \text{ kg/m}^3$ ,

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1909.8 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: GPRS 1900, Body SAR, Bottom Edge, High.ch, 3 Tx Slots**

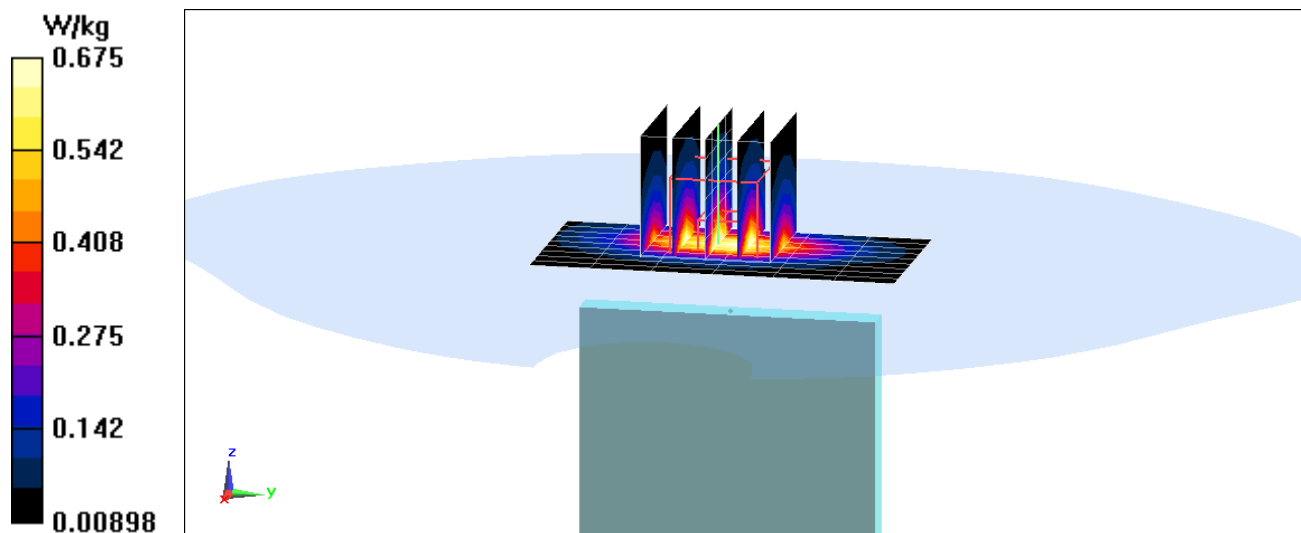
**Area Scan (10x7x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 22.59 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.675 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0770M**

Communication System: UID 0, UMTS; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$ ;  $\sigma = 0.975 \text{ S/m}$ ;  $\epsilon_r = 54.657$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-11-2018; Ambient Temp: 22.3°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61) @ 836.6 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 850, Body SAR, Back side, Mid.ch**

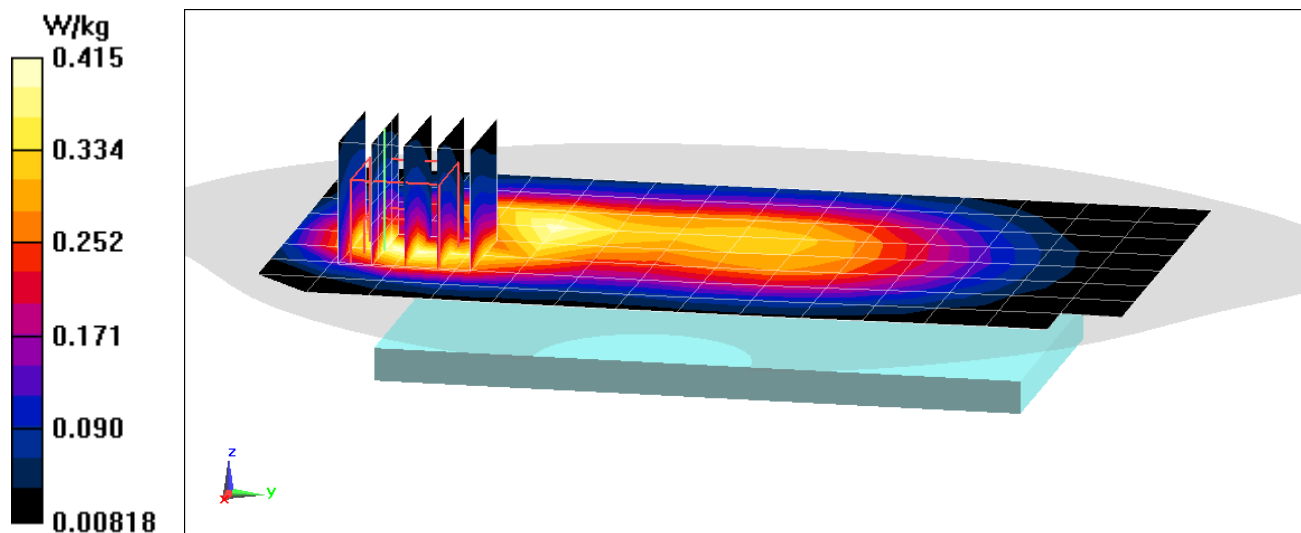
**Area Scan (9x15x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 17.87 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.501 W/kg

**SAR(1 g) = 0.301 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0770M**

Communication System: UID 0, UMTS; Frequency: 846.6 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used (interpolated):

$f = 846.6 \text{ MHz}$ ;  $\sigma = 0.979 \text{ S/m}$ ;  $\epsilon_r = 54.63$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-11-2018; Ambient Temp: 22.3°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61) @ 846.6 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 850, Body SAR, Back side, High.ch**

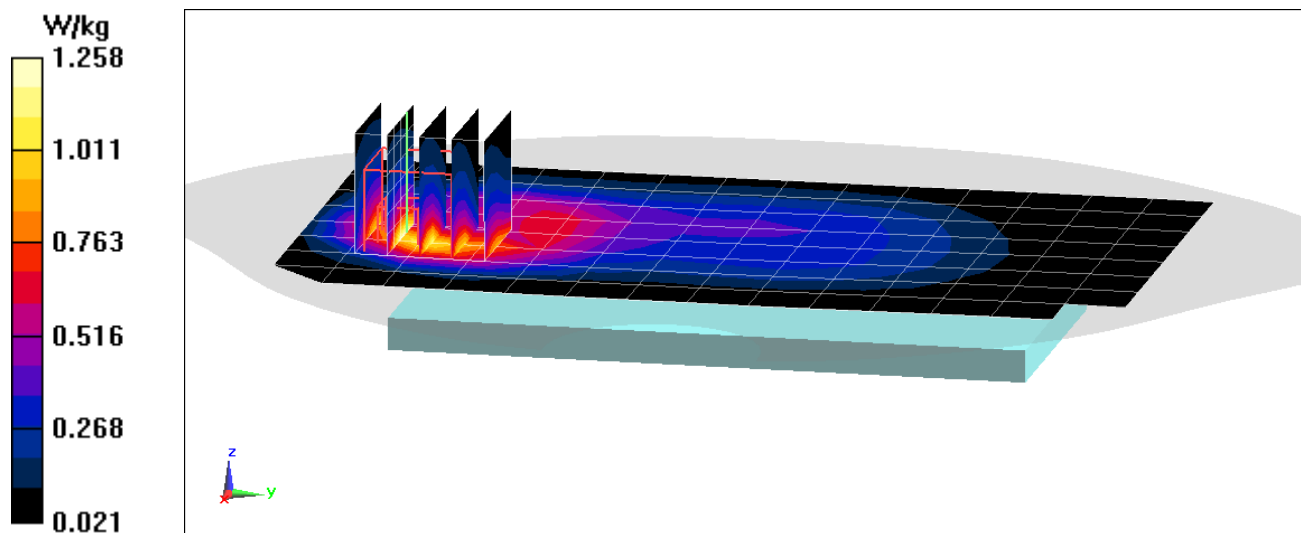
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 29.65 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.55 W/kg

**SAR(1 g) = 0.865 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0695M**

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$ ;  $\sigma = 1.465 \text{ S/m}$ ;  $\epsilon_r = 51.638$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-16-2018; Ambient Temp: 21.7°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7308; ConvF(8.13, 8.13, 8.13) @ 1732.4 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 1750, Body SAR, Back side, Mid.ch**

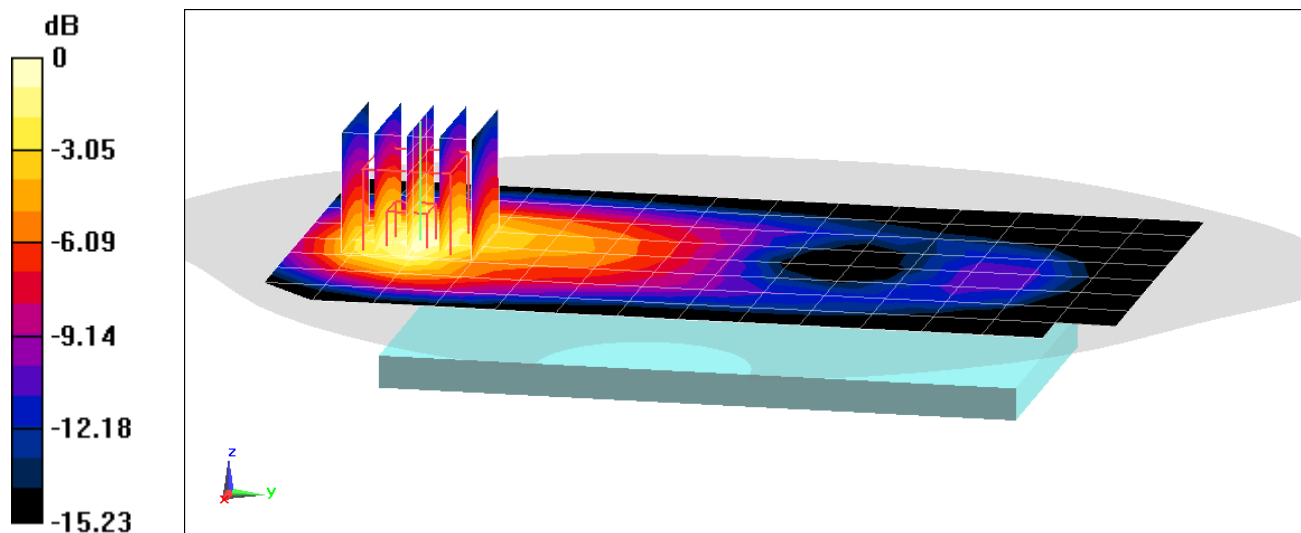
**Area Scan (9x15x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 24.35 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.28 W/kg

**SAR(1 g) = 0.804 W/kg**



0 dB = 1.11 W/kg = 0.45 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0695M**

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$ ;  $\sigma = 1.465 \text{ S/m}$ ;  $\epsilon_r = 51.638$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-16-2018; Ambient Temp: 21.7°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7308; ConvF(8.13, 8.13, 8.13) @ 1732.4 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 1750, Body SAR, Bottom Edge, Mid.ch**

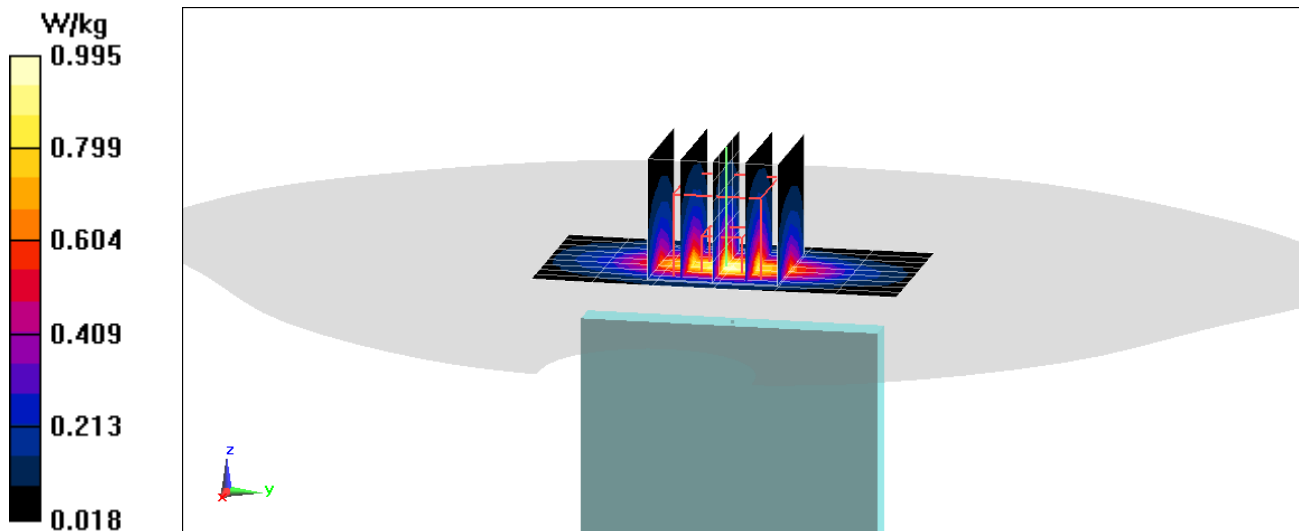
**Area Scan (10x7x1):** Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 22.68 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.675 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$ ;  $\sigma = 1.529 \text{ S/m}$ ;  $\epsilon_r = 51.157$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1880 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 1900, Body SAR, Back side, Mid.ch**

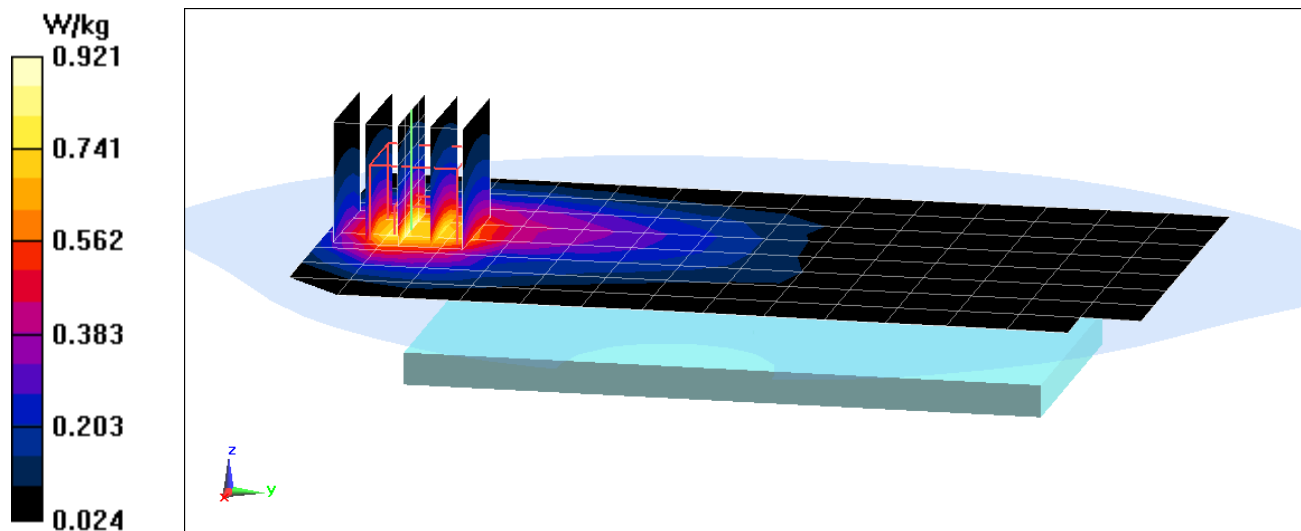
**Area Scan (9x15x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 24.00 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.21 W/kg

**SAR(1 g) = 0.768 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$ ;  $\sigma = 1.529 \text{ S/m}$ ;  $\epsilon_r = 51.157$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1880 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 1900, Body SAR, Bottom Edge, Mid.ch**

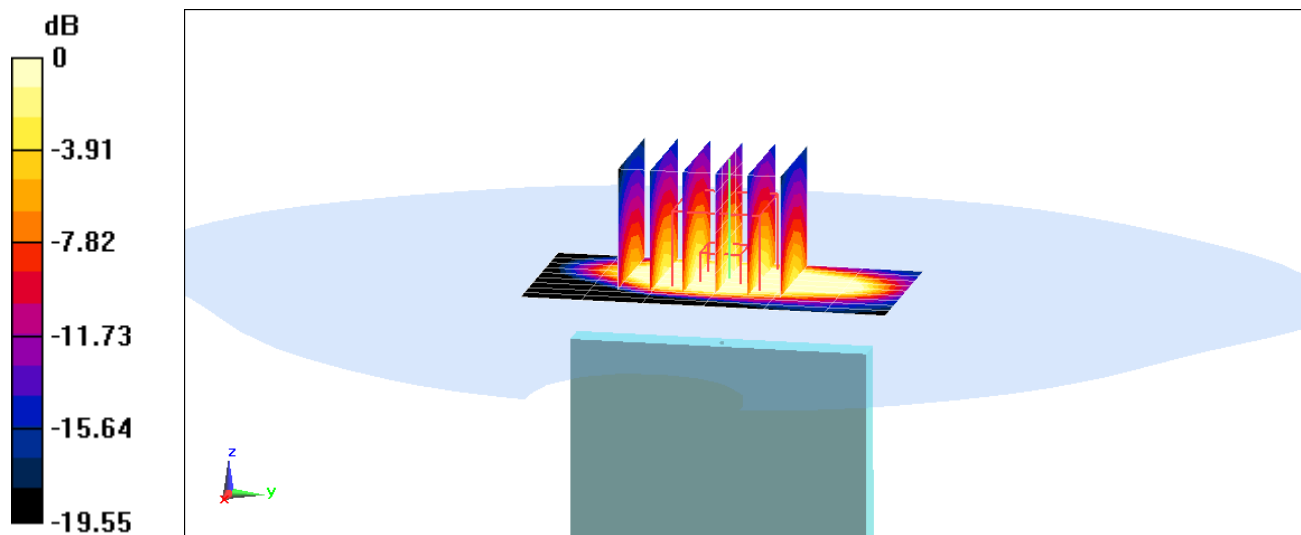
**Area Scan (10x7x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 28.86 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.96 W/kg

**SAR(1 g) = 1.16 W/kg**



0 dB = 1.44 W/kg = 1.58 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0770M**

Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium: 835 MHz Body Medium parameters used (interpolated):

$f = 820.1 \text{ MHz}$ ;  $\sigma = 0.99 \text{ S/m}$ ;  $\epsilon_r = 52.657$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 820.1 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: Cell. CDMA BC10, Body SAR, Back side, Mid.ch**

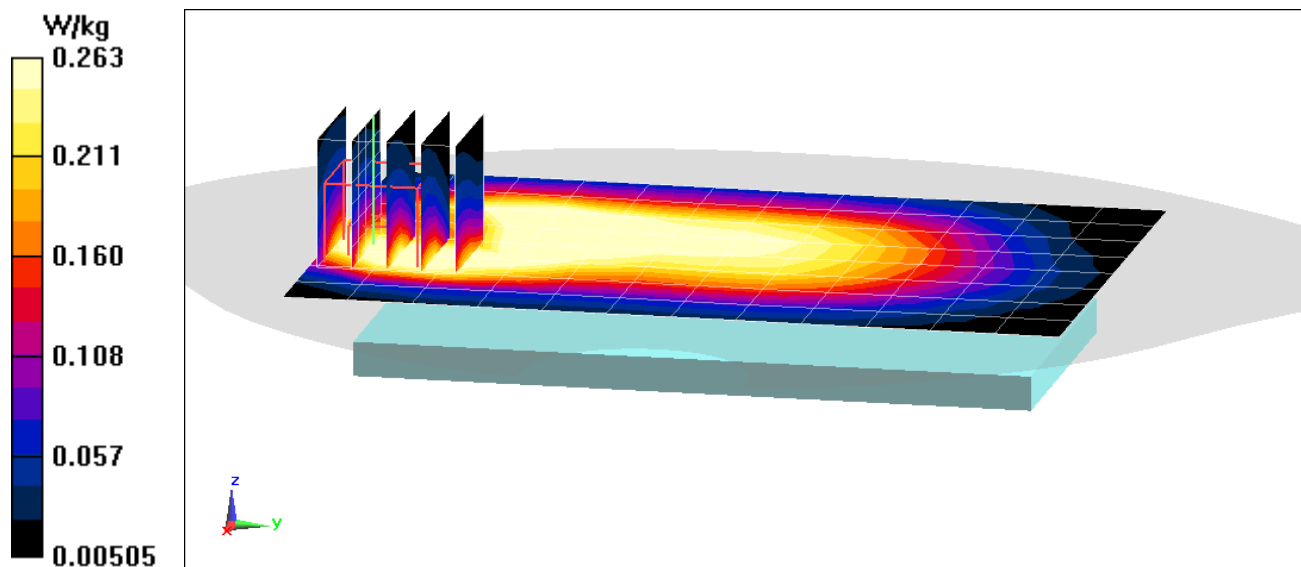
**Area Scan (9x13x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 16.47 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.371 W/kg

**SAR(1 g) = 0.225 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, CDMA; Frequency: 820.1 MHz; Duty Cycle: 1:1

Medium: 835 MHz Body Medium parameters used (interpolated):

$f = 820.1 \text{ MHz}$ ;  $\sigma = 0.99 \text{ S/m}$ ;  $\epsilon_r = 52.657$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 820.1 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: Cell. EVDO Rev.0 BC10, Body SAR, Back side, Mid.ch**

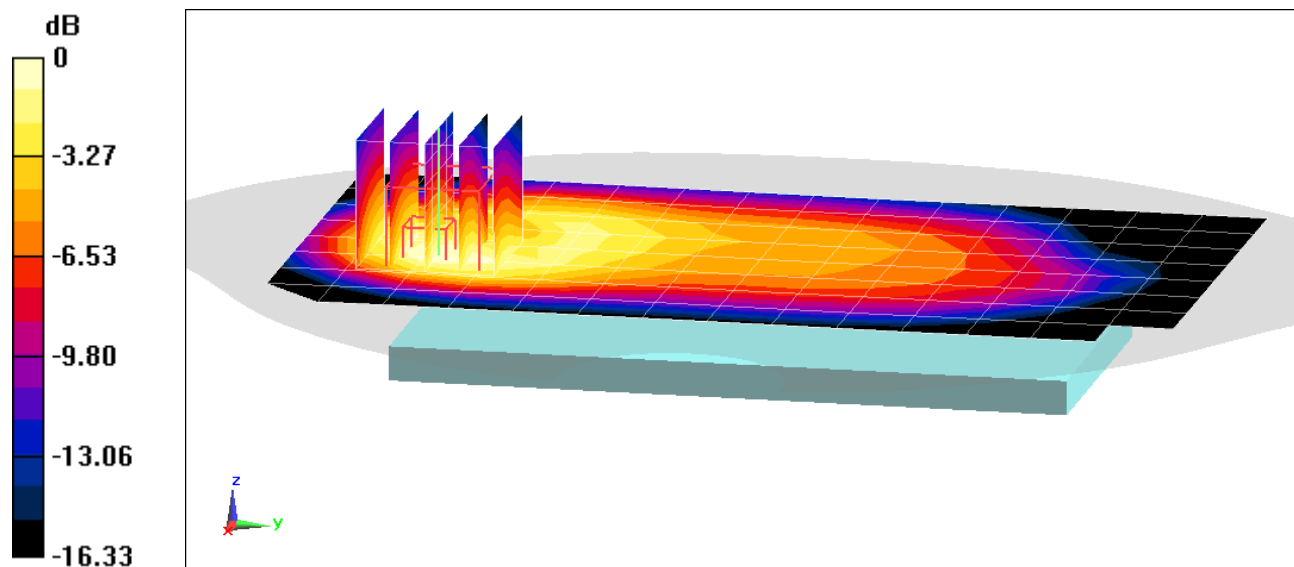
**Area Scan (9x15x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 23.21 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.891 W/kg

**SAR(1 g) = 0.508 W/kg**



0 dB = 0.614 W/kg = -2.12 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0770M**

Communication System: UID 0, CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: 835 MHz Body Medium parameters used (interpolated):

$f = 836.52 \text{ MHz}$ ;  $\sigma = 0.996 \text{ S/m}$ ;  $\epsilon_r = 52.599$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 836.52 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: Cell. CDMA, Body SAR, Back side, Mid.ch**

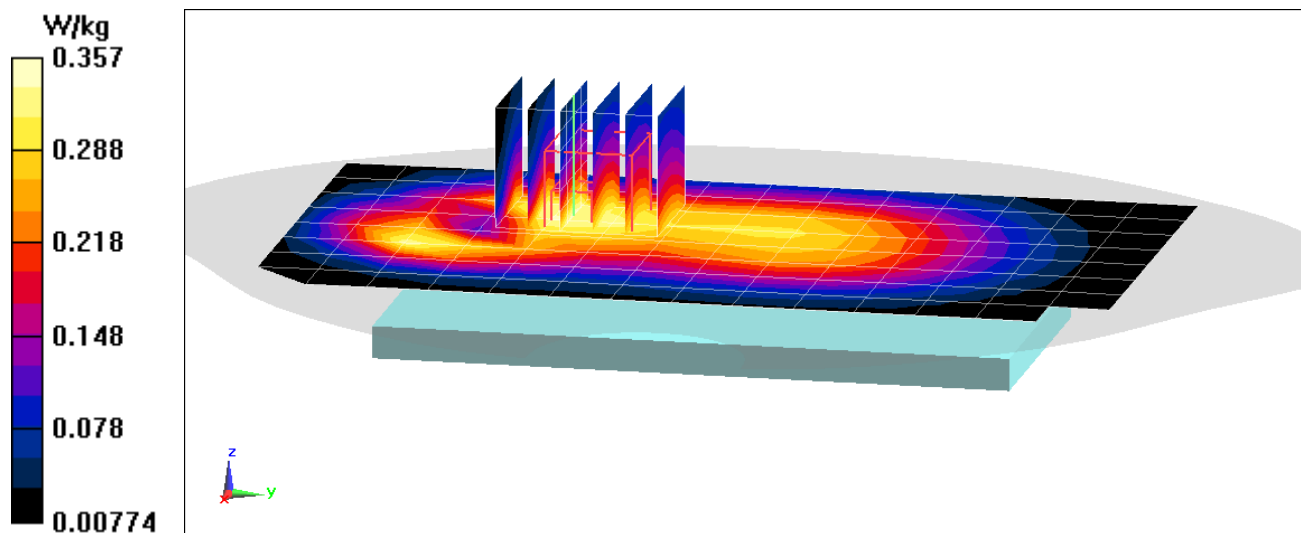
**Area Scan (9x15x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 18.57 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.430 W/kg

**SAR(1 g) = 0.317 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, CDMA; Frequency: 848.31 MHz; Duty Cycle: 1:1

Medium: 835 MHz Body Medium parameters used (interpolated):

$f = 848.31 \text{ MHz}$ ;  $\sigma = 1 \text{ S/m}$ ;  $\epsilon_r = 52.554$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 848.31 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: Cell. EVDO Rev.0, Body SAR, Back side, High.ch**

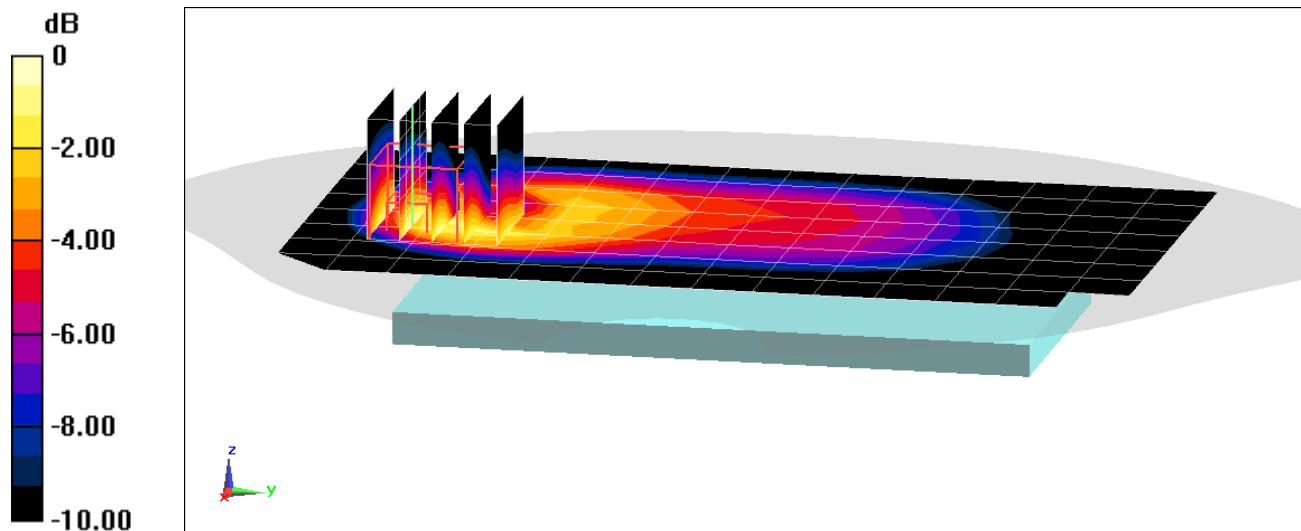
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 24.66 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.672 W/kg**



0 dB = 0.827 W/kg = -0.82 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0732M**

Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$ ;  $\sigma = 1.552 \text{ S/m}$ ;  $\epsilon_r = 53.508$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1880 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: PCS CDMA, Body SAR, Back side, Mid.ch**

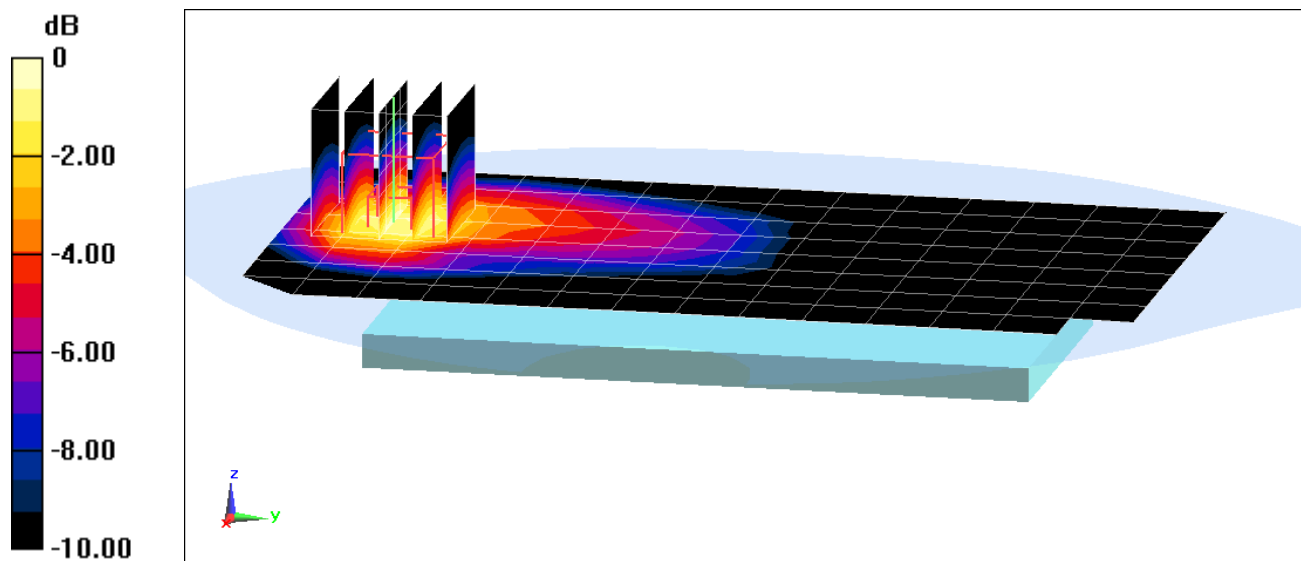
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 23.23 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.13 W/kg

**SAR(1 g) = 0.728 W/kg**



0 dB = 0.874 W/kg = -0.58 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1908.75 \text{ MHz}$ ;  $\sigma = 1.568 \text{ S/m}$ ;  $\epsilon_r = 51.102$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1908.75 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: PCS EVDO Rev.0, Body SAR, Bottom Edge, High.ch**

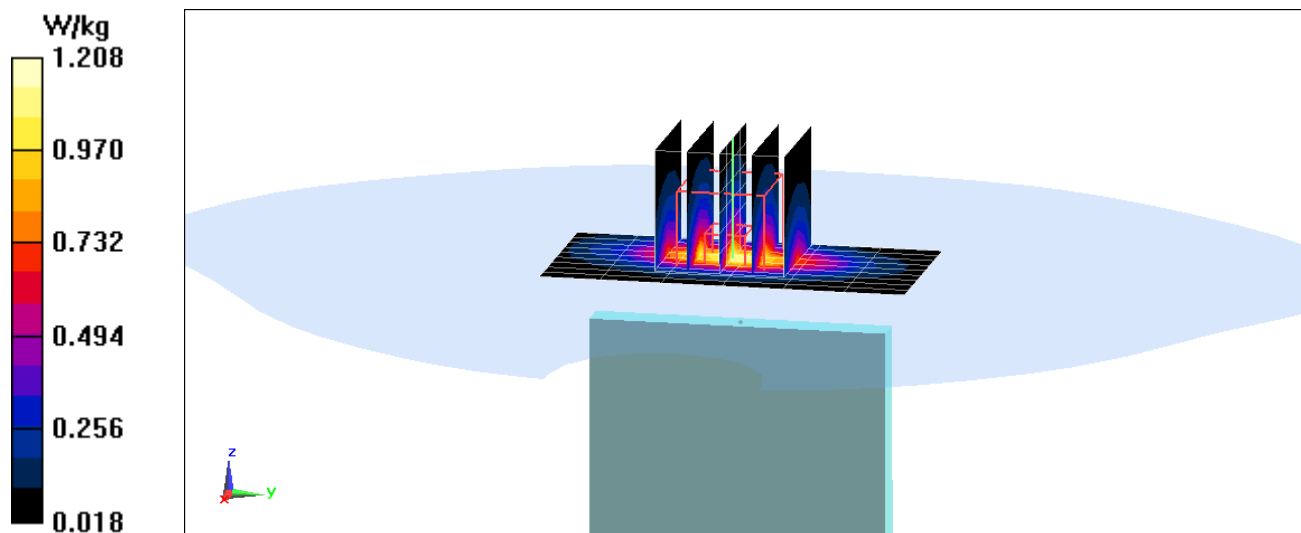
**Area Scan (10x7x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 26.99 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.65 W/kg

**SAR(1 g) = 0.961 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 680.5 \text{ MHz}$ ;  $\sigma = 0.93 \text{ S/m}$ ;  $\epsilon_r = 54.888$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 680.5 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 71, Body SAR, Back side, Mid.ch,  
20 MHz Bandwidth, QPSK, 1 RB, 0 RB**

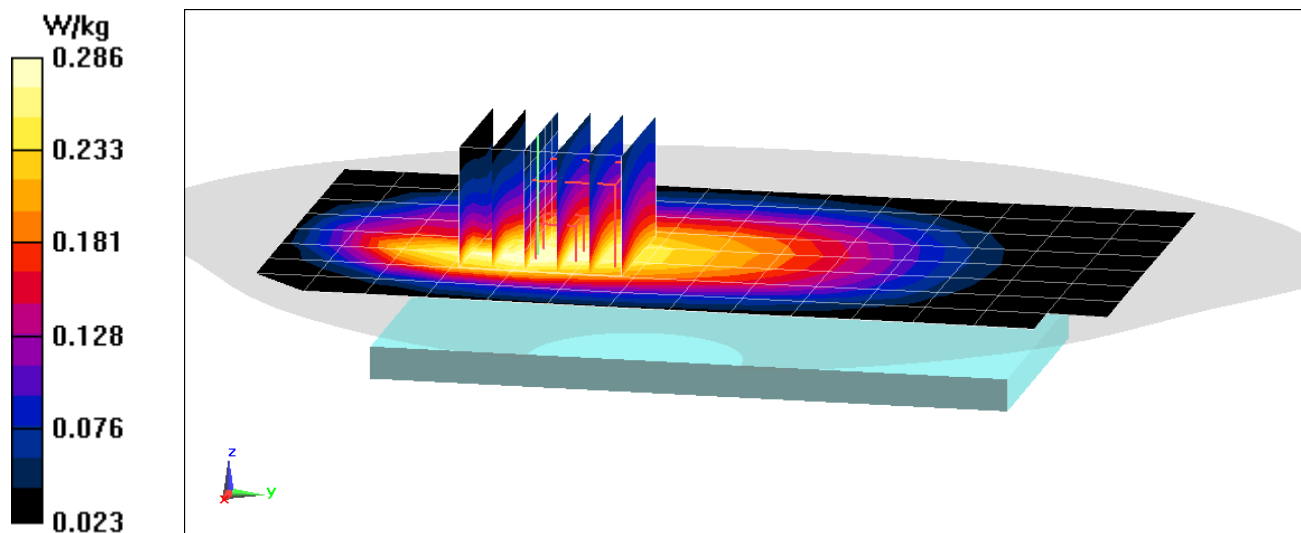
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 15.93 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.323 W/kg

**SAR(1 g) = 0.228 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 680.5 \text{ MHz}$ ;  $\sigma = 0.93 \text{ S/m}$ ;  $\epsilon_r = 54.888$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 680.5 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 71, Body SAR, Back side, Mid.ch,  
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

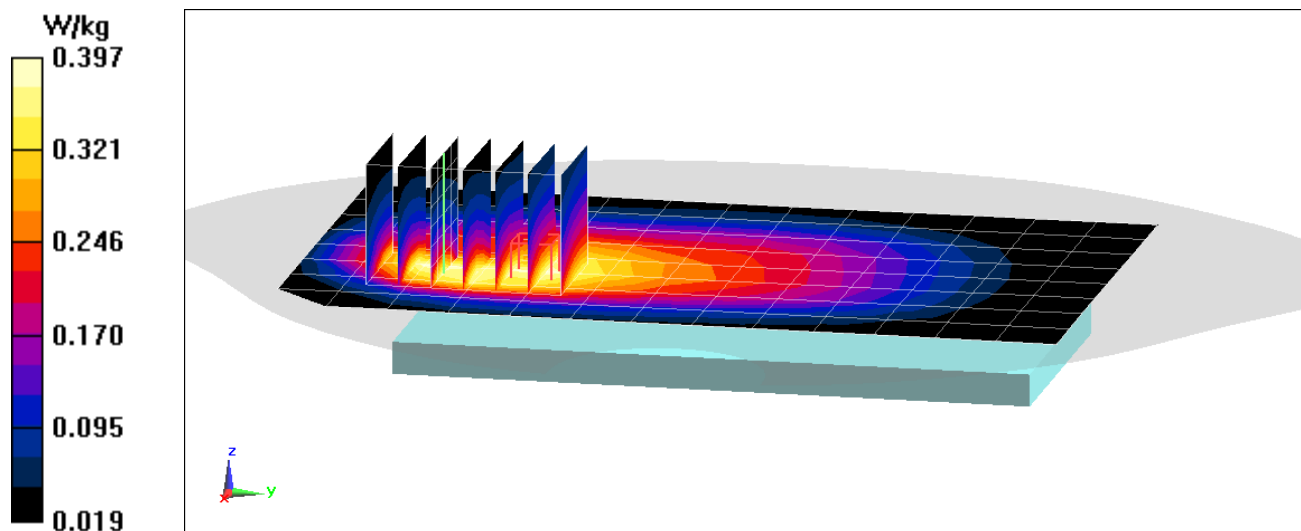
**Area Scan (9x14x1):** Measurement grid: dx=15mm, dy=15mm

**Zoom Scan (5x7x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.83 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.479 W/kg

**SAR(1 g) = 0.301 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$ ;  $\sigma = 0.939 \text{ S/m}$ ;  $\epsilon_r = 54.824$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 707.5 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 12, Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

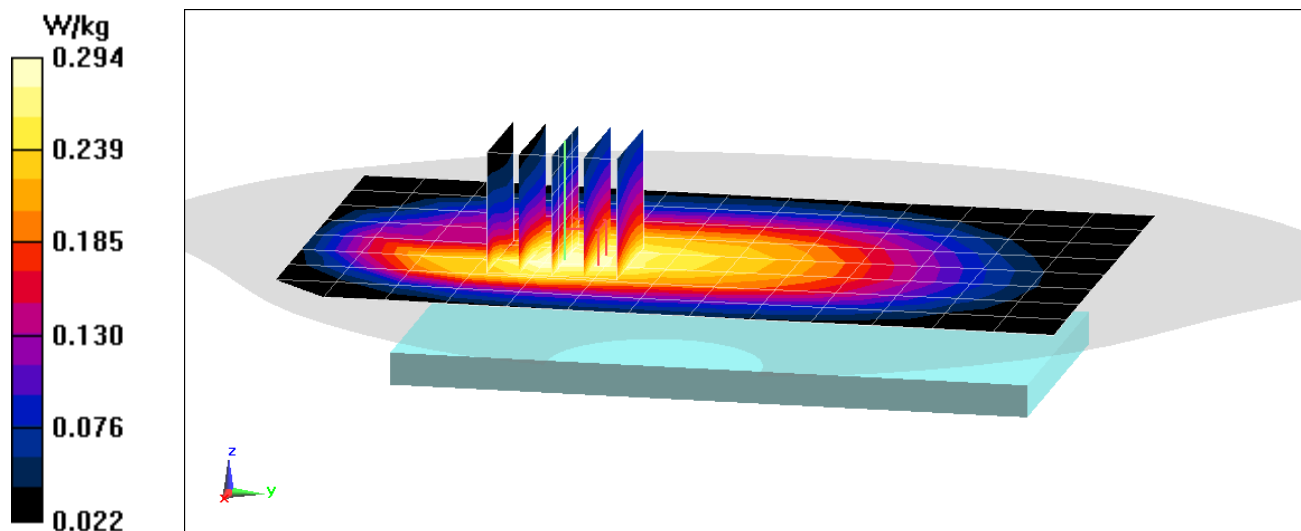
**Area Scan (9x14x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 16.08 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.338 W/kg

**SAR(1 g) = 0.235 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 707.5 \text{ MHz}$ ;  $\sigma = 0.939 \text{ S/m}$ ;  $\epsilon_r = 54.824$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 707.5 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 12, Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

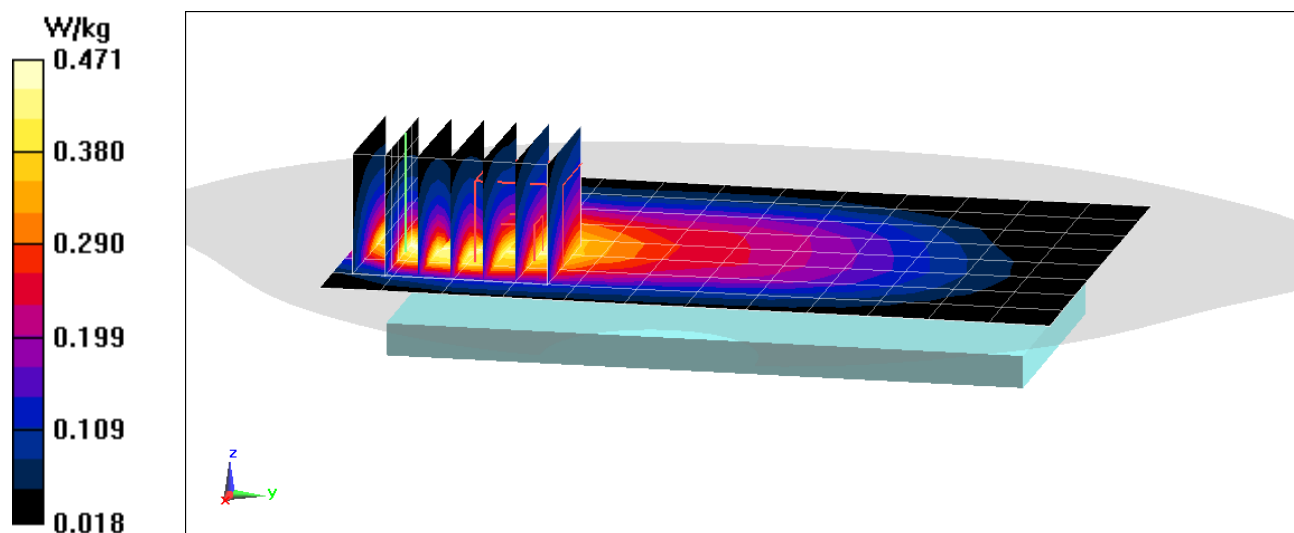
**Area Scan (9x13x1):** Measurement grid: dx=15mm, dy=15mm

**Zoom Scan (6x7x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 19.24 V/m; Power Drift = -0.07 dB

Peak SAR (extrapolated) = 0.584 W/kg

**SAR(1 g) = 0.335 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 782 \text{ MHz}$ ;  $\sigma = 0.968 \text{ S/m}$ ;  $\epsilon_r = 54.625$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 782 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 13, Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

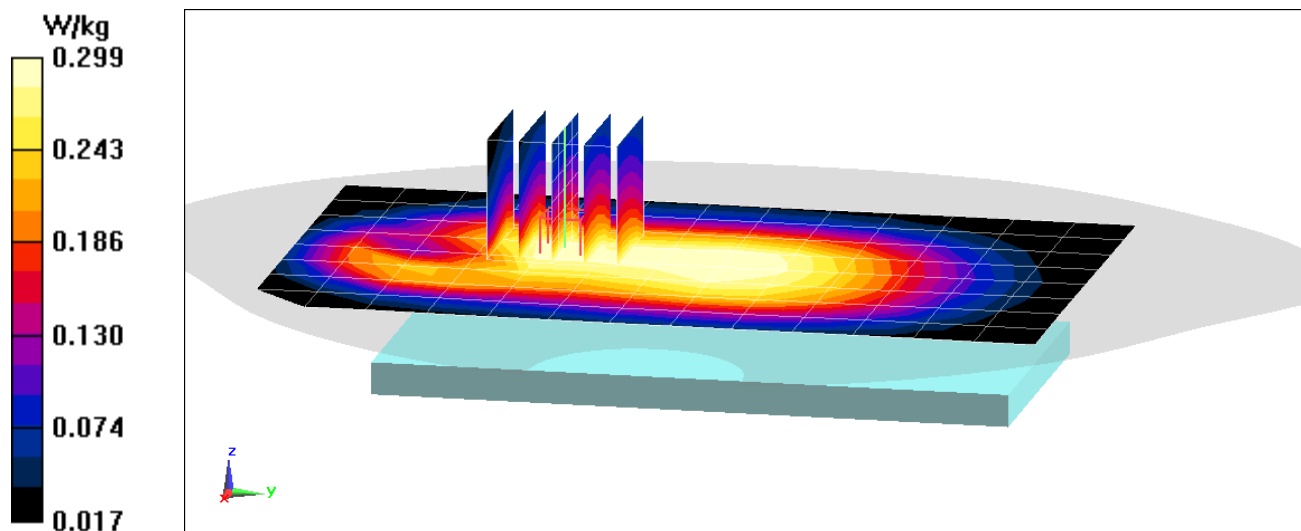
**Area Scan (9x14x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 16.04 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.326 W/kg

**SAR(1 g) = 0.238 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 782 \text{ MHz}$ ;  $\sigma = 0.968 \text{ S/m}$ ;  $\epsilon_r = 54.625$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 782 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 13, Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

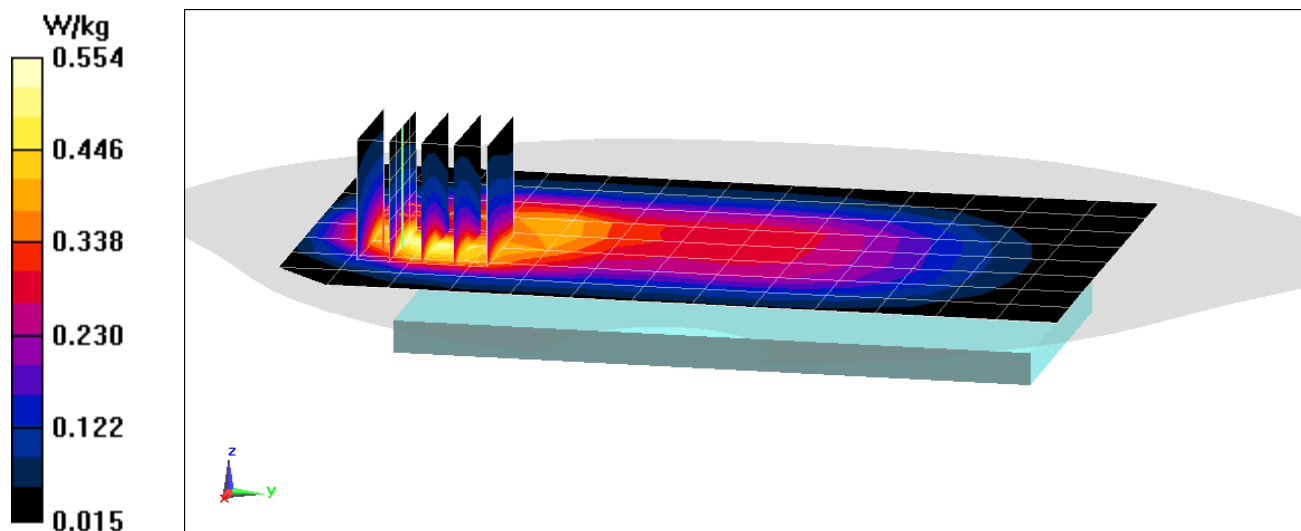
**Area Scan (9x14x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 19.78 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.691 W/kg

**SAR(1 g) = 0.375 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 793 \text{ MHz}$ ;  $\sigma = 0.972 \text{ S/m}$ ;  $\epsilon_r = 54.596$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 793 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 14, Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset**

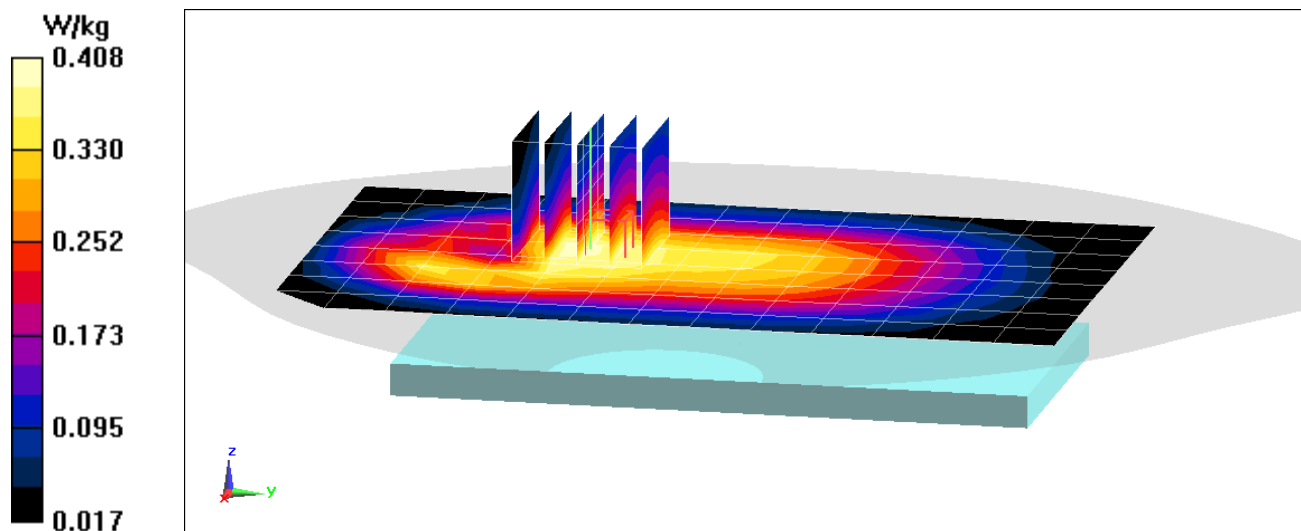
**Area Scan (9x14x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 18.60 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.458 W/kg

**SAR(1 g) = 0.330 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 793 \text{ MHz}$ ;  $\sigma = 0.972 \text{ S/m}$ ;  $\epsilon_r = 54.596$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 793 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 14, Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset**

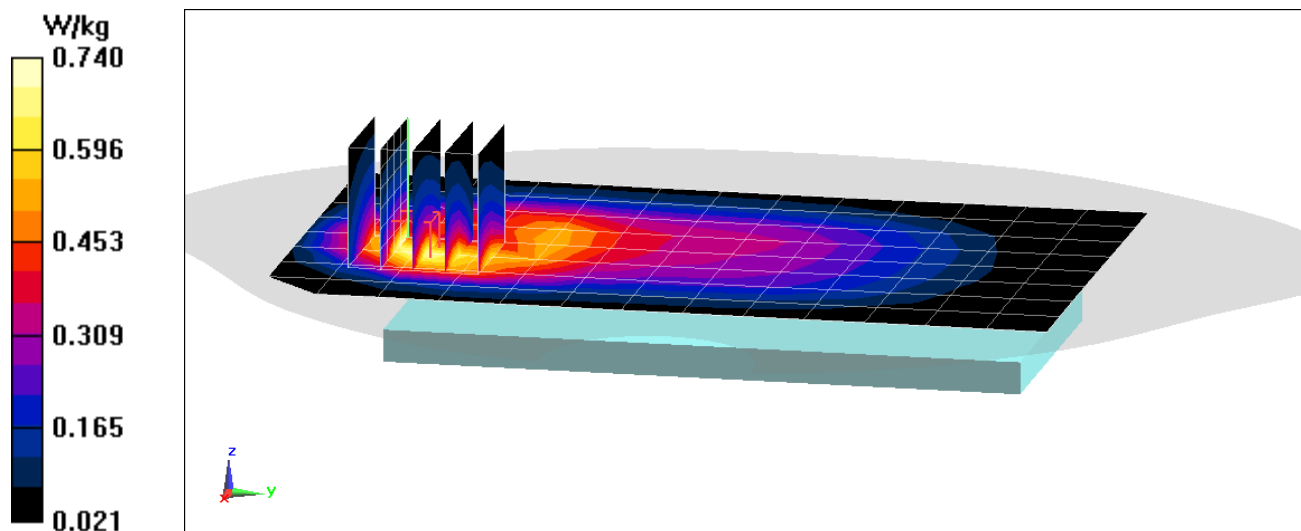
**Area Scan (9x14x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 22.94 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.906 W/kg

**SAR(1 g) = 0.504 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 835 Body Medium parameters used (interpolated):

$f = 831.5 \text{ MHz}$ ;  $\sigma = 0.973 \text{ S/m}$ ;  $\epsilon_r = 54.669$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-11-2018; Ambient Temp: 22.3°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61) @ 831.5 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 26 (Cell.), Body SAR, Back side, Mid.ch,  
15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

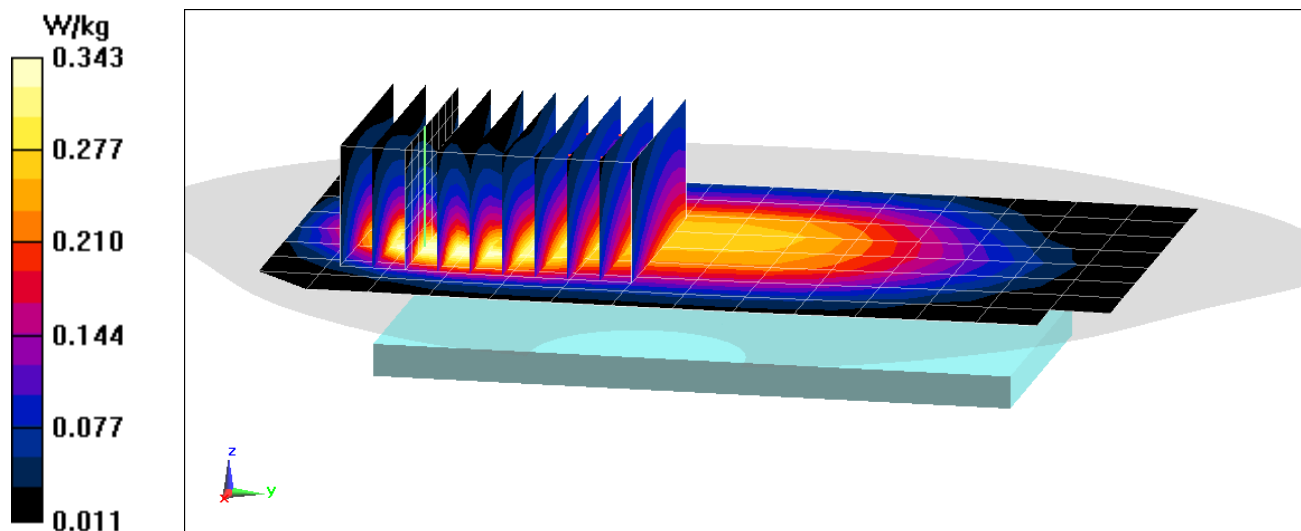
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

**Zoom Scan (9x10x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.53 V/m; Power Drift = -0.18 dB

Peak SAR (extrapolated) = 0.402 W/kg

**SAR(1 g) = 0.249 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 835 Body Medium parameters used (interpolated):

$f = 831.5 \text{ MHz}$ ;  $\sigma = 0.973 \text{ S/m}$ ;  $\epsilon_r = 54.669$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-11-2018; Ambient Temp: 22.3°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61) @ 831.5 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 26 (Cell.), Body SAR, Back side, Mid.ch,  
15 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

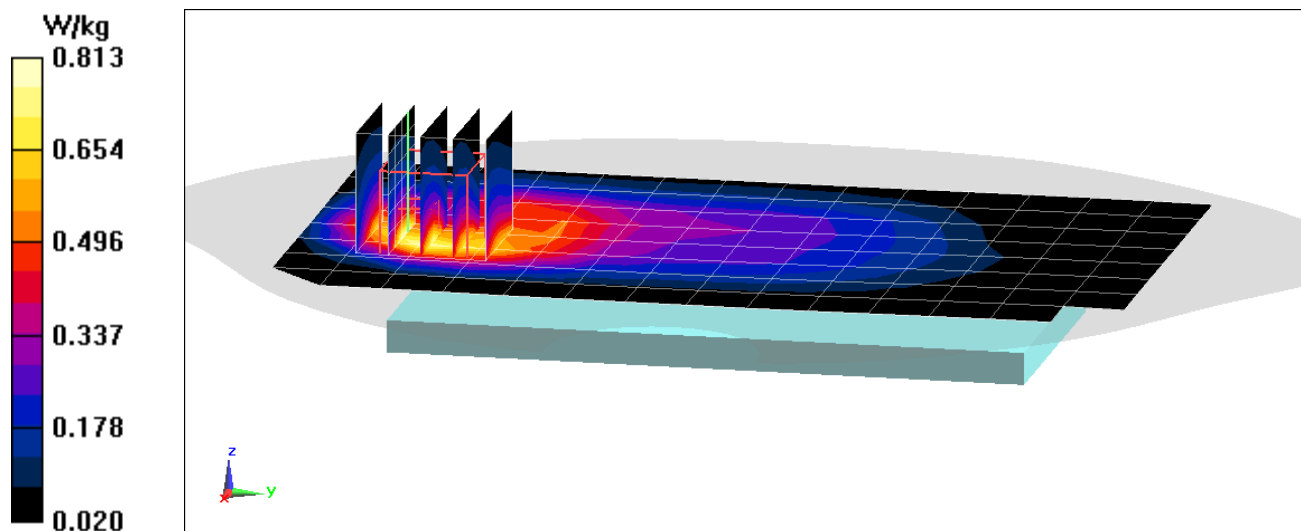
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 24.47 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.00 W/kg

**SAR(1 g) = 0.560 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 835 MHz Body Medium parameters used (interpolated):

$f = 836.5 \text{ MHz}$ ;  $\sigma = 0.996 \text{ S/m}$ ;  $\epsilon_r = 52.599$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 836.5 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 5 (Cell.) ULCA, Body SAR, Back side,**  
**PCC: 10 MHz Bandwidth, QPSK, Ch. 20525, 1 RB, 49 RB Offset**  
**SCC: 5 MHz Bandwidth, QPSK, Ch. 20597, 1 RB, 0 RB Offset**

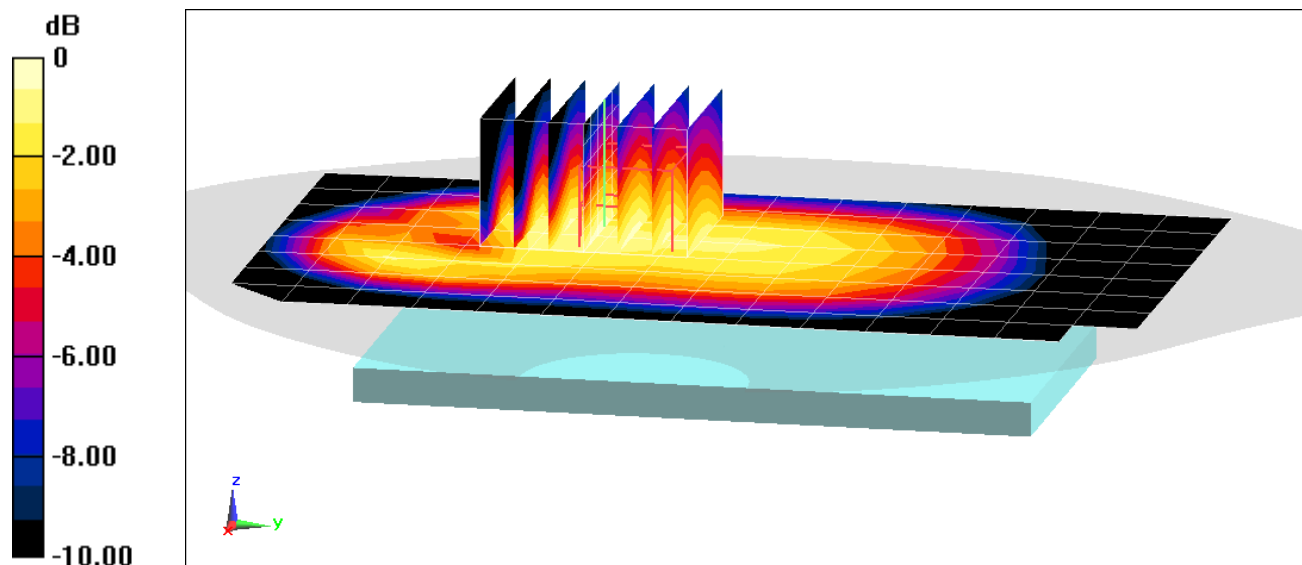
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

**Zoom Scan (6x7x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.99 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.466 W/kg

**SAR(1 g) = 0.342 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0762M**

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

Medium: 835 MHz Body Medium parameters used (interpolated):

$f = 836.5 \text{ MHz}$ ;  $\sigma = 0.996 \text{ S/m}$ ;  $\epsilon_r = 52.599$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 836.5 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 5 (Cell.), Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 49 RB Offset**

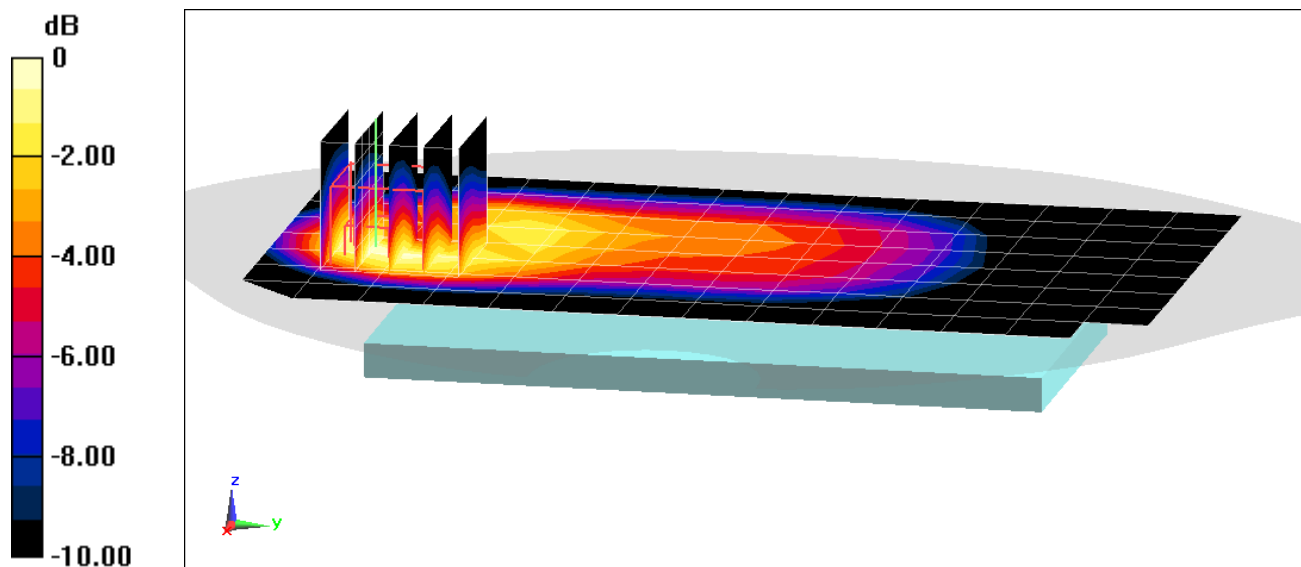
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 24.25 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.970 W/kg

**SAR(1 g) = 0.555 W/kg**



0 dB = 0.667 W/kg = -1.76 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0589M**

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

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1745 \text{ MHz}$ ;  $\sigma = 1.524 \text{ S/m}$ ;  $\epsilon_r = 51.352$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-19-2018; Ambient Temp: 22.7°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7357; ConvF(8.43, 8.43, 8.43) @ 1745 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 66 (AWS) ULCA CA\_66B, Body SAR, Back side**

**PCC: 10 MHz Bandwidth, QPSK, Ch 132322, 1 RB, 0 RB Offset**

**SCC: 10 MHz Bandwidth, QPSK, Ch 132223, 1 RB, 49 RB Offset**

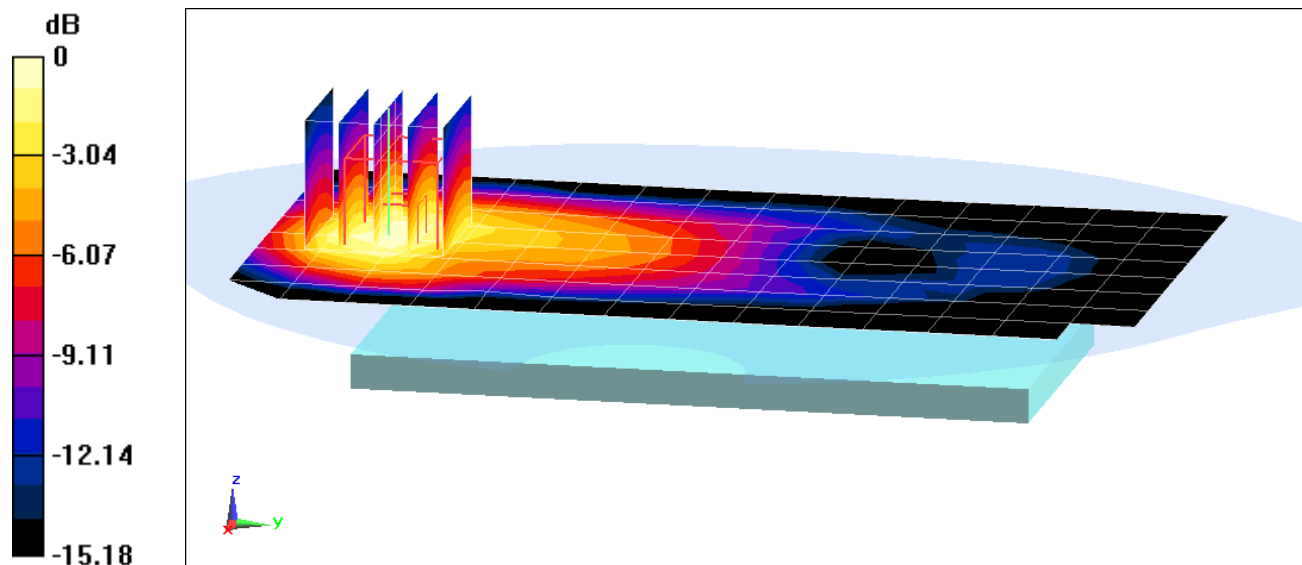
**Area Scan for plot (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 18.70 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.781 W/kg

**SAR(1 g) = 0.493 W/kg**



0 dB = 0.673 W/kg = -1.72 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0589M**

Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1770 \text{ MHz}$ ;  $\sigma = 1.552 \text{ S/m}$ ;  $\epsilon_r = 51.254$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-19-2018; Ambient Temp: 22.7°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7357; ConvF(8.43, 8.43, 8.43) @ 1770 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 66 (AWS) ULCA CA\_66C, Body SAR, Bottom Edge,**

**PCC: 20 MHz Bandwidth, QPSK, Ch 132572, 50 RB, 0 RB Offset**

**SCC: 20 MHz Bandwidth, QPSK, Ch 132374, 50 RB, 50 RB Offset**

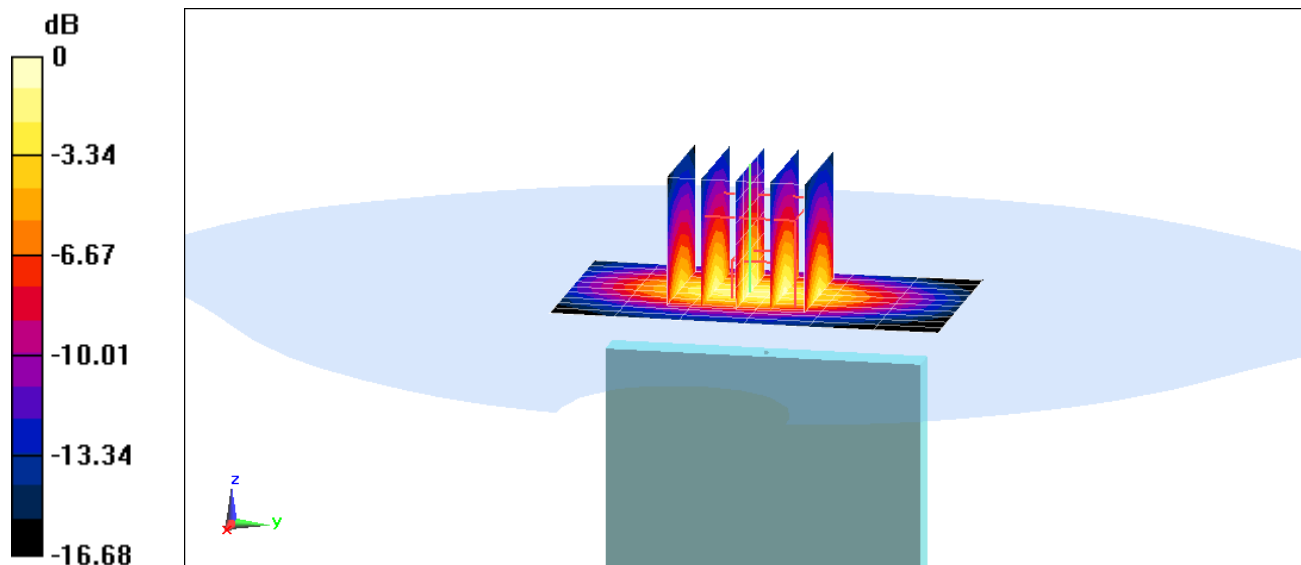
**Area Scan (11x7x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 22.86 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.722 W/kg**



0 dB = 1.05 W/kg = 0.21 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0732M**

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

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1905 \text{ MHz}$ ;  $\sigma = 1.581 \text{ S/m}$ ;  $\epsilon_r = 53.399$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1905 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 25 (PCS), Body SAR, Back side, High.ch,  
20 MHz Bandwidth, QPSK, 1 RB, 99 RB Offset**

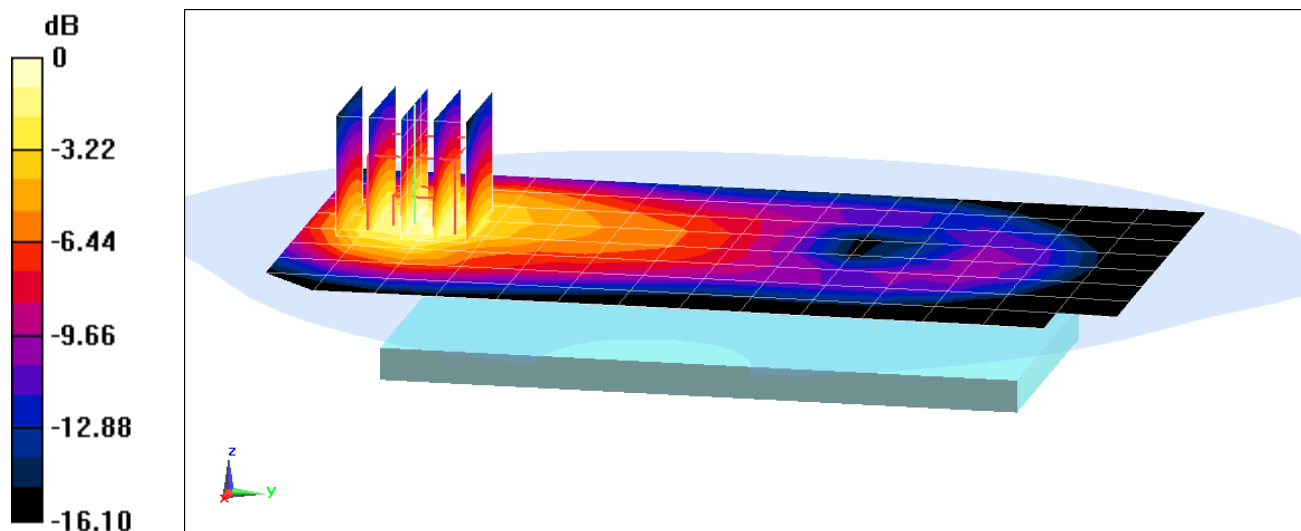
**Area Scan (9x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 22.08 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 1.07 W/kg

**SAR(1 g) = 0.674 W/kg**



0 dB = 0.806 W/kg = -0.94 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0732M**

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

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1905 \text{ MHz}$ ;  $\sigma = 1.581 \text{ S/m}$ ;  $\epsilon_r = 53.399$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1905 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 25 (PCS), Body SAR, Bottom Edge, High.ch,  
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

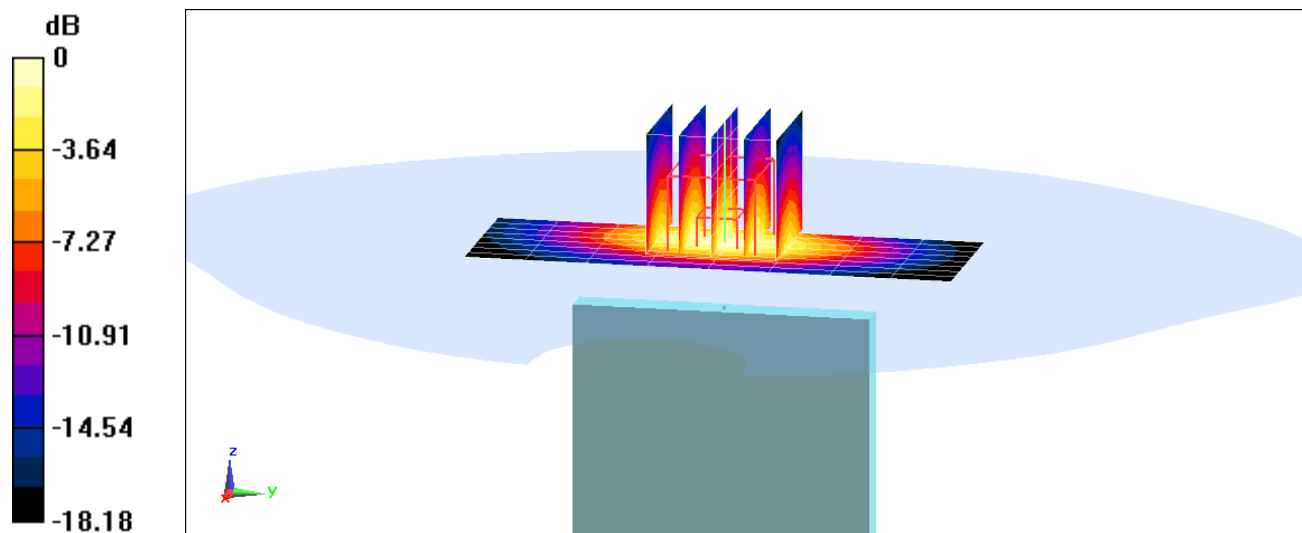
**Area Scan (9x9x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 26.78 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.64 W/kg

**SAR(1 g) = 0.959 W/kg**



0 dB = 1.20 W/kg = 0.79 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0252M**

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

Medium: 2450 Body Medium parameters used:

$f = 2310 \text{ MHz}$ ;  $\sigma = 1.879 \text{ S/m}$ ;  $\epsilon_r = 52.114$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 22.7°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63) @ 2310 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 30, Body SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

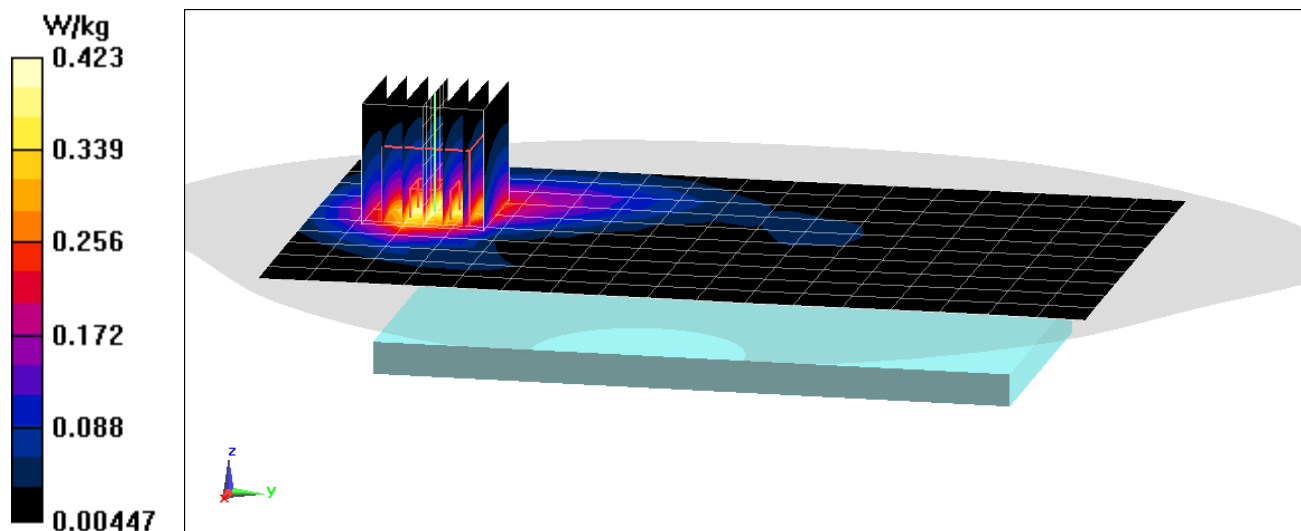
**Area Scan (11x18x1):** Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 14.56 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.610 W/kg

**SAR(1 g) = 0.346 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0252M**

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

Medium: 2450 Body Medium parameters used:

$f = 2310 \text{ MHz}$ ;  $\sigma = 1.879 \text{ S/m}$ ;  $\epsilon_r = 52.114$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 22.7°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63) @ 2310 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 30, Body SAR, Bottom Edge, Mid.ch,  
10 MHz Bandwidth, QPSK, 25 RB, 0RB Offset**

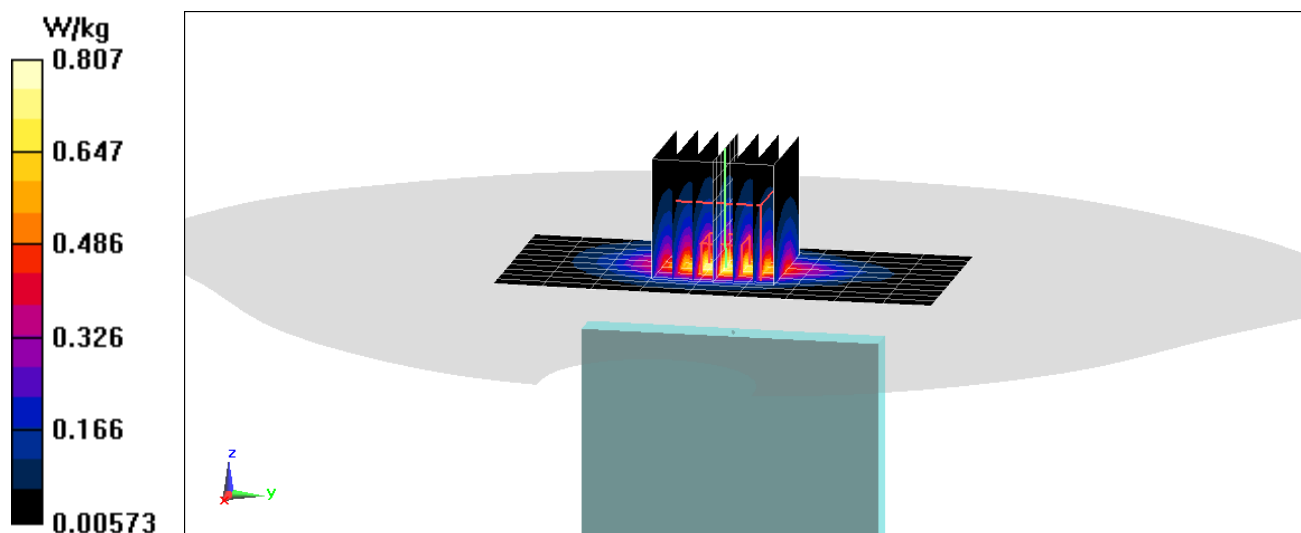
**Area Scan (11x10x1):** Measurement grid: dx=5mm, dy=12mm

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

Reference Value = 19.97 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.19 W/kg

**SAR(1 g) = 0.629 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0252M**

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

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2560 \text{ MHz}$ ;  $\sigma = 2.153 \text{ S/m}$ ;  $\epsilon_r = 50.46$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-14-2018; Ambient Temp: 22.3°C; Tissue Temp: 20.7°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33) @ 2560 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 7 Antenna A, Body SAR, Back side, High.ch,  
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

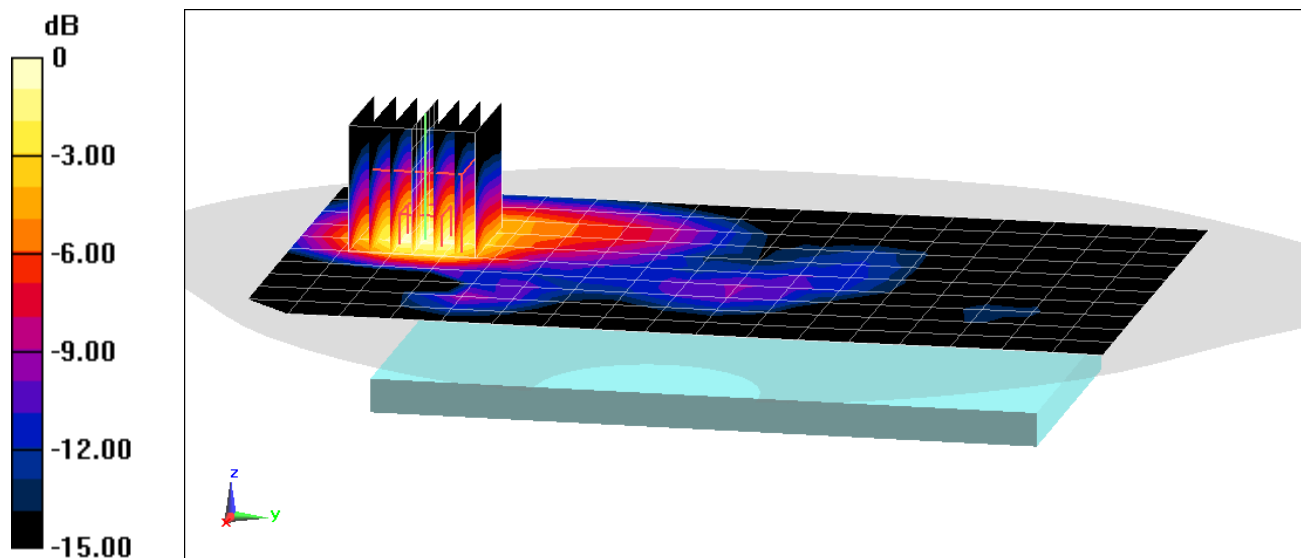
**Area Scan (11x18x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

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

Reference Value = 14.40 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.731 W/kg

**SAR(1 g) = 0.381 W/kg**



0 dB = 0.484 W/kg = -3.15 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0252M**

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

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2560$  MHz;  $\sigma = 2.147$  S/m;  $\epsilon_r = 52.478$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33) @ 2560 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 7 Antenna A, Body SAR, Bottom Edge, High.ch,  
20 MHz Bandwidth, QPSK, 100 RB, 0 RB Offset**

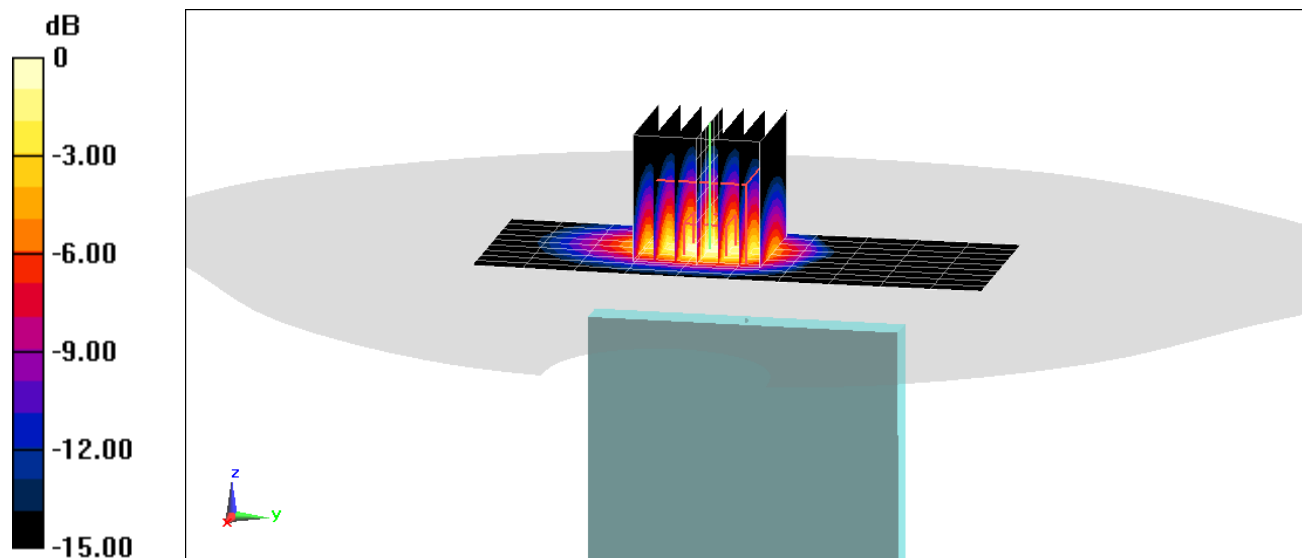
**Area Scan (10x11x1):** Measurement grid: dx=5mm, dy=12mm

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

Reference Value = 19.36 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 1.42 W/kg

**SAR(1 g) = 0.673 W/kg**



0 dB = 0.901 W/kg = -0.45 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0695M**

Communication System: UID 0, LTE Band 48; Frequency: 3690 MHz; Duty Cycle: 1:1.58

Medium: 3500-3700 Body Medium parameters used (interpolated):

$f = 3690$  MHz;  $\sigma = 3.424$  S/m;  $\epsilon_r = 49.607$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-14-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3914; ConvF(6.64, 6.64, 6.64) @ 3690 MHz; Calibrated: 2/14/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 48, Body SAR, Back side, High.ch,  
20 MHz Bandwidth, QPSK, 1 RB, 0 RB Offset**

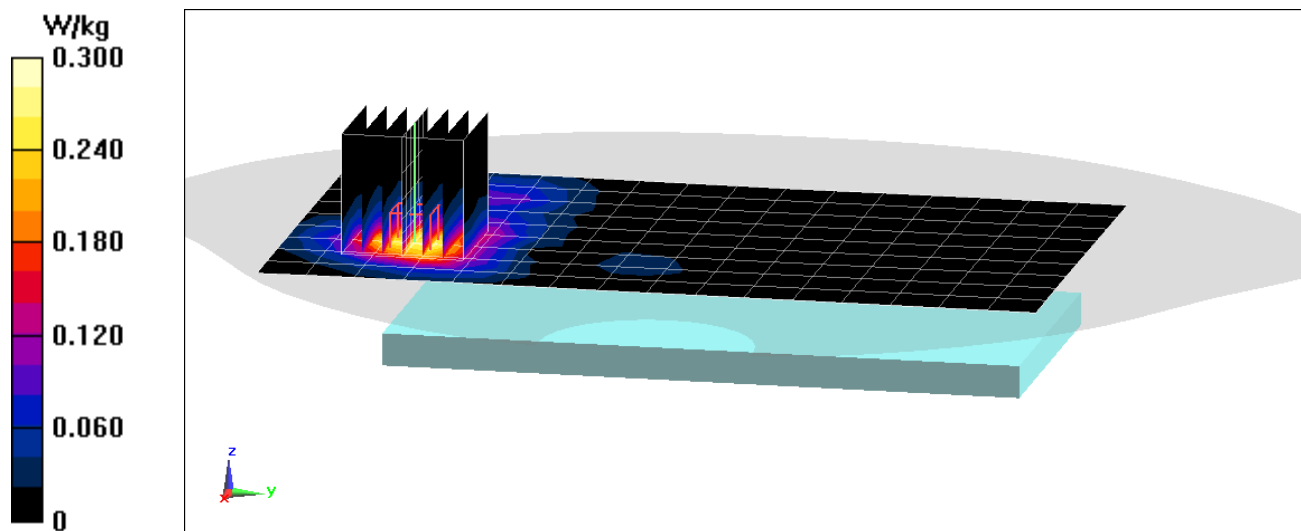
**Area Scan (10x17x1):** Measurement grid: dx=12mm, dy=12mm

**Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 7.457 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.423 W/kg

**SAR(1 g) = 0.164 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0695M**

Communication System: UID 0, LTE Band 48; Frequency: 3560 MHz; Duty Cycle: 1:1.58

Medium: 3500-3700 Body Medium parameters used (interpolated):

$f = 3560 \text{ MHz}$ ;  $\sigma = 3.266 \text{ S/m}$ ;  $\epsilon_r = 49.862$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-14-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3914; ConvF(6.81, 6.81, 6.81) @ 3560 MHz; Calibrated: 2/14/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 48, Body SAR, Bottom Edge, Low.ch,  
20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset**

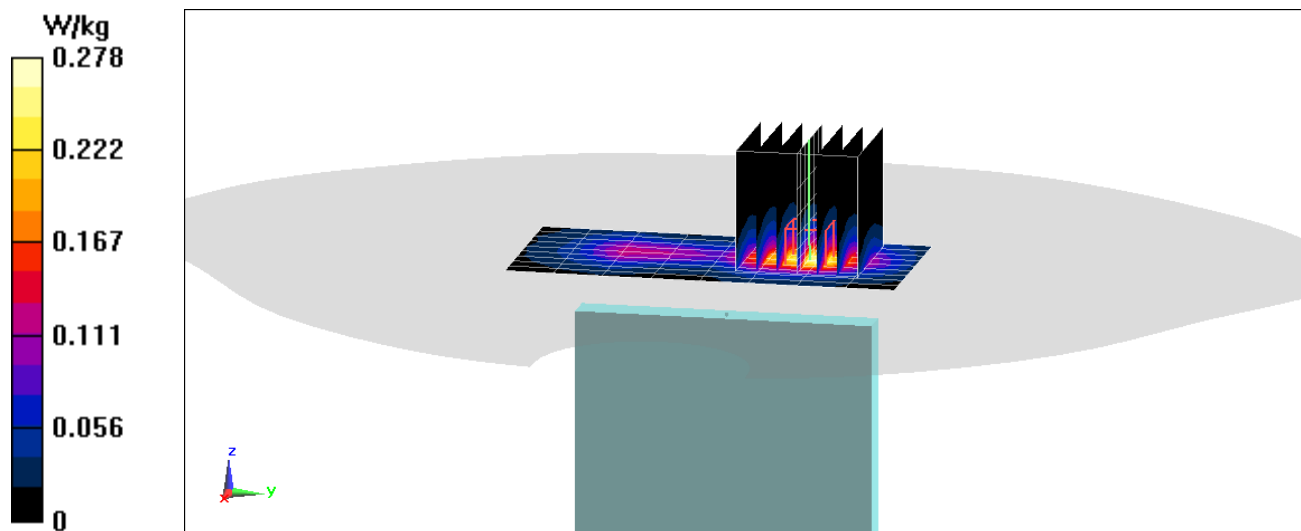
**Area Scan (10x9x1):** Measurement grid: dx=5mm, dy=12mm

**Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 7.048 V/m; Power Drift = 0.19 dB

Peak SAR (extrapolated) = 0.384 W/kg

**SAR(1 g) = 0.146 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0840M**

Communication System: UID 0, LTE Band 41 (Class 2); Frequency: 2549.5 MHz; Duty Cycle: 1:2.31

Medium: 2450 Body Medium parameters used:

$f = 2550$  MHz;  $\sigma = 2.156$  S/m;  $\epsilon_r = 52.545$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-07-2019; Ambient Temp: 22.6°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33) @ 2549.5 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 41 Power Class 2, Body SAR, Back side,**  
**PCC: 20 MHz Bandwidth, QPSK, Ch. 40185, 1 RB, 0 RB Offset**  
**SCC: 20 MHz Bandwidth, QPSK, Ch. 39987, 1 RB, 99 RB Offset**

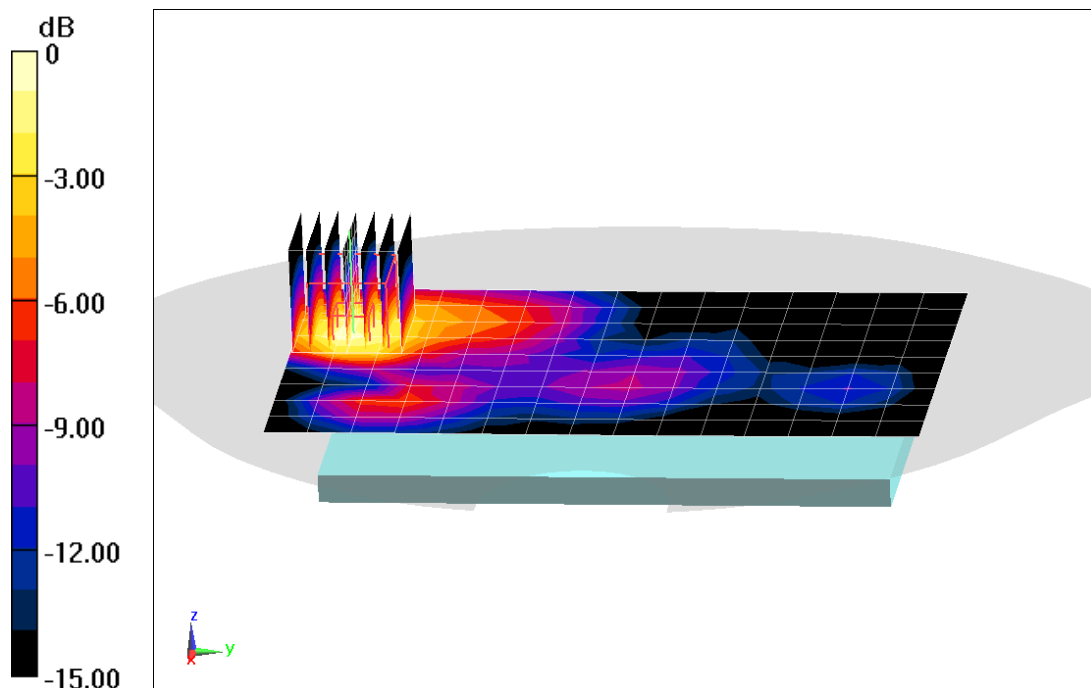
**Area Scan (10x16x1):** Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 17.66 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 1.13 W/kg

**SAR(1 g) = 0.580 W/kg**



0 dB = 0.743 W/kg = -1.29 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0744M**

Communication System: UID 0, LTE Band 41; Frequency: 2506 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2506 \text{ MHz}$ ;  $\sigma = 2.087 \text{ S/m}$ ;  $\epsilon_r = 52.626$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.51, 4.51, 4.51) @ 2506 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 41 ULCA Power Class 3, Body SAR, Bottom Edge**

**PCC: 20 MHz Bandwidth, QPSK, Ch. 39750, 50 RB, 50 RB Offset**

**SCC: 20 MHz Bandwidth, QPSK, Ch. 39948, 50 RB, 0 RB Offset**

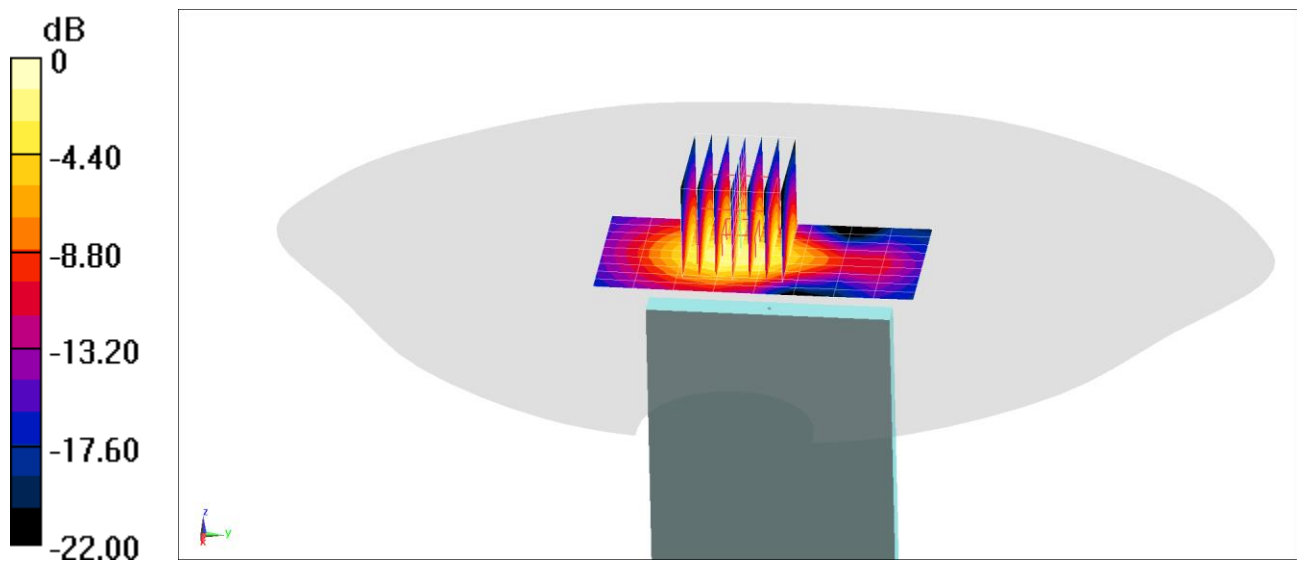
**Area Scan (10x9x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=12\text{mm}$

**Zoom Scan (8x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 18.82 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.54 W/kg

**SAR(1 g) = 0.768 W/kg**



0 dB = 0.999 W/kg = 0.00 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 MHz Body Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 2.032 \text{ S/m}$ ;  $\epsilon_r = 50.864$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-20-2018; Ambient Temp: 19.7°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3347; ConvF(4.64, 4.64, 4.64) @ 2441 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side**

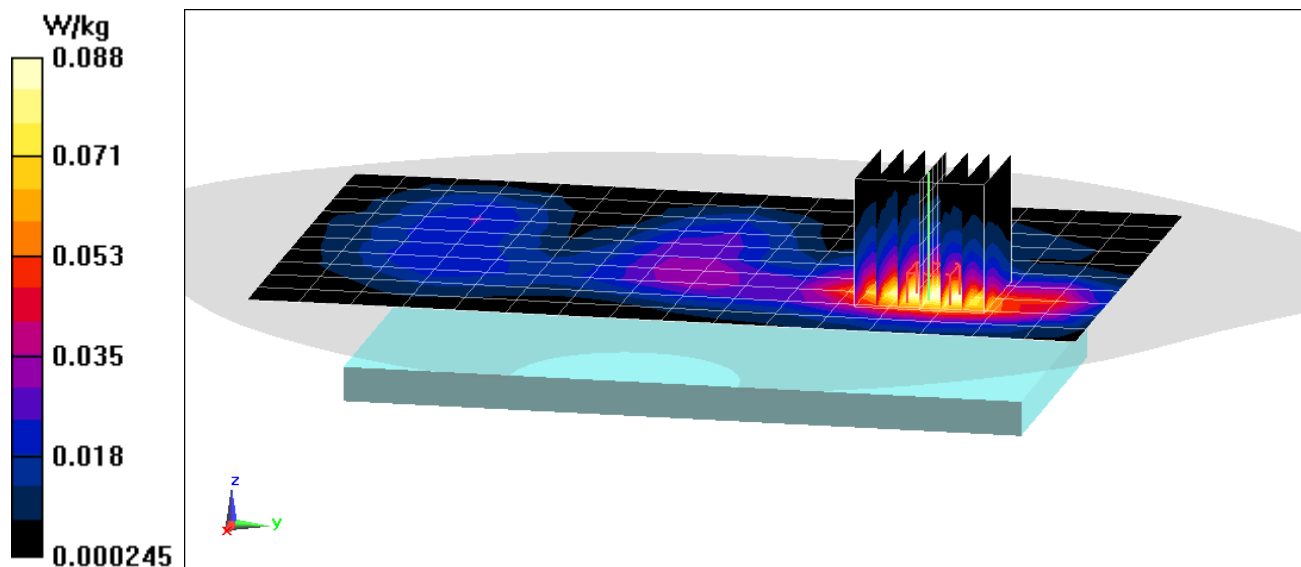
**Area Scan (11x17x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

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

Reference Value = 6.642 V/m; Power Drift = -0.15 dB

Peak SAR (extrapolated) = 0.134 W/kg

**SAR(1 g) = 0.072 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 MHz Body Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 2.032 \text{ S/m}$ ;  $\epsilon_r = 50.864$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-20-2018; Ambient Temp: 19.7°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3347; ConvF(4.64, 4.64, 4.64) @ 2441 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side**

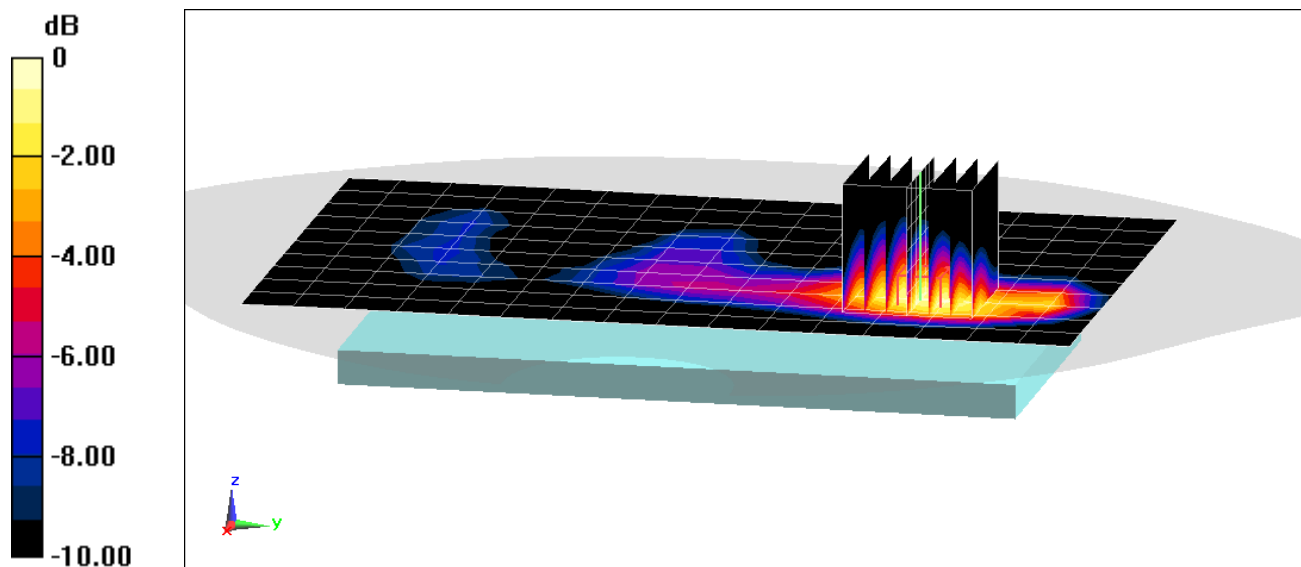
**Area Scan (11x17x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

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

Reference Value = 9.210 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.289 W/kg

**SAR(1 g) = 0.152 W/kg**



0 dB = 0.189 W/kg = -7.24 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$ ;  $\sigma = 1.98 \text{ S/m}$ ;  $\epsilon_r = 52.251$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-09-2018; Ambient Temp: 21.8°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3319; ConvF(4.51, 4.51, 4.51) @ 2437 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11b, Antenna 2, 22 MHz Bandwidth, Body SAR, Ch 06, 1 Mbps, Back Side**

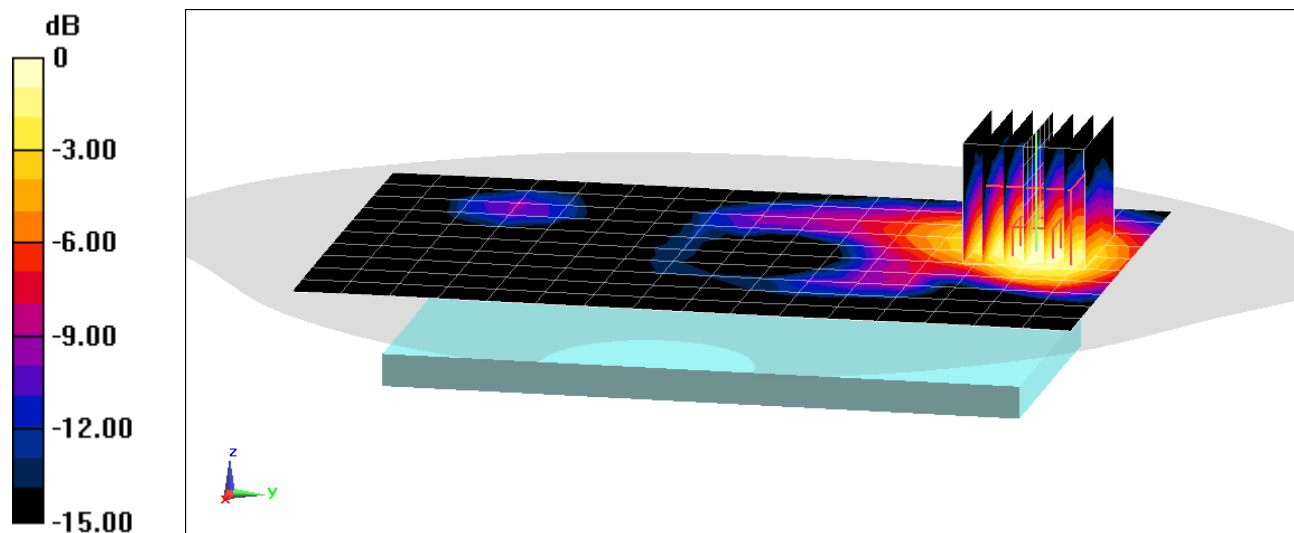
**Area Scan (11x17x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

**Zoom Scan (8x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 5.430 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 0.0950 W/kg

**SAR(1 g) = 0.051 W/kg**



0 dB = 0.0636 W/kg = -11.97 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$ ;  $\sigma = 1.98 \text{ S/m}$ ;  $\epsilon_r = 52.251$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-09-2018; Ambient Temp: 21.8°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3319; ConvF(4.51, 4.51, 4.51) @ 2437 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11b, Antenna 2, 22 MHz Bandwidth, Body SAR, Ch 6, 1 Mbps, Top Edge**

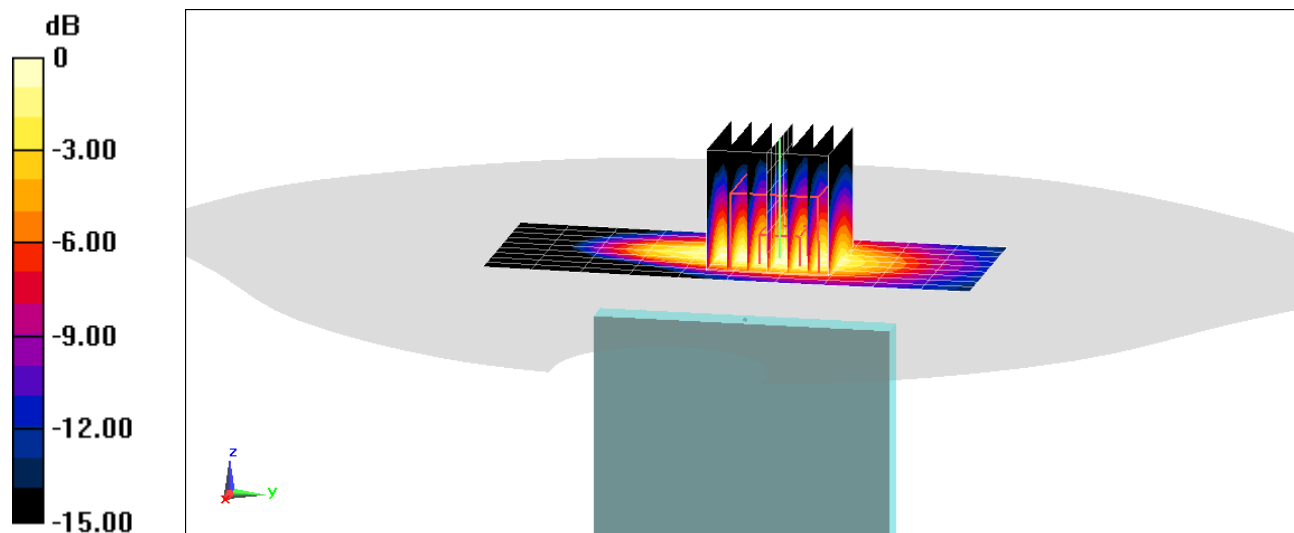
**Area Scan (10x11x1):** Measurement grid: dx=5mm, dy=12mm

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

Reference Value = 7.572 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.209 W/kg

**SAR(1 g) = 0.107 W/kg**



0 dB = 0.135 W/kg = -8.70 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0627M**

Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.267 \text{ S/m}$ ;  $\epsilon_r = 46.663$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 23.0°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7308; ConvF(4.18, 4.18, 4.18) @ 5825 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11n, MIMO, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 13 Mbps,  
Back Side**

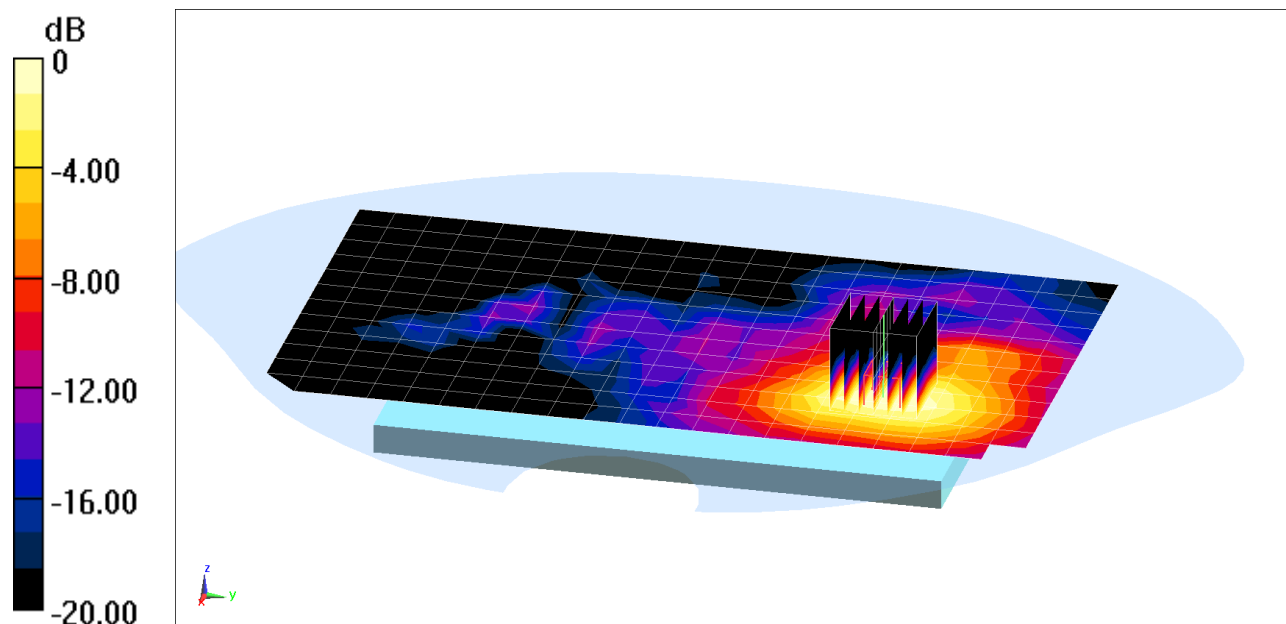
**Area Scan (9x9x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 11.07 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.12 W/kg

**SAR(1 g) = 0.771 W/kg**



0 dB = 1.55 W/kg = 1.90 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0627M**

Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.267 \text{ S/m}$ ;  $\epsilon_r = 46.663$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.0°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7308; ConvF(4.18, 4.18, 4.18) @ 5825 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11n, MIMO, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 13 Mbps, Back Side**

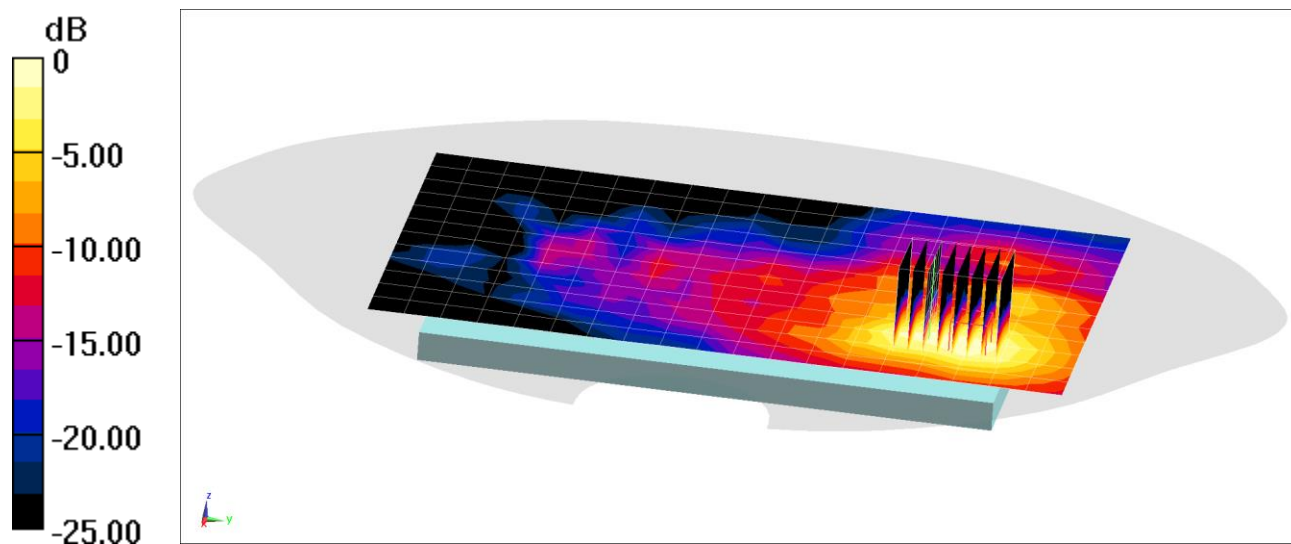
**Area Scan (13x20x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (7x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 13.25 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 4.71 W/kg

**SAR(1 g) = 1.11 W/kg**



0 dB = 2.67 W/kg = 4.27 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, GSM GPRS; 3 Tx slots; Frequency: 1909.8 MHz; Duty Cycle: 1:2.76

Medium: 1900 Body Medium parameters used:

$f = 1910 \text{ MHz}$ ;  $\sigma = 1.57 \text{ S/m}$ ;  $\epsilon_r = 51.1$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332, ConvF(4.77, 4.77, 4.77) @ 1909.8 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: GPRS 1900, Phablet SAR, Bottom Edge, High.ch, 3 Tx Slots**

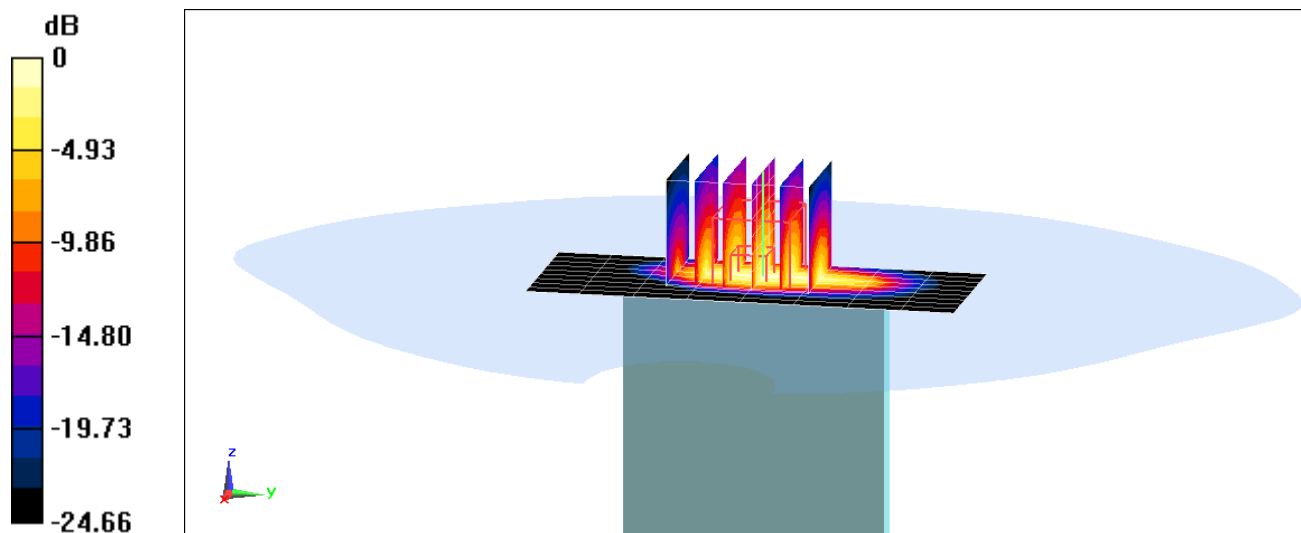
**Area Scan (10x9x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 63.02 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 10.9 W/kg

**SAR(10 g) = 2.32 W/kg**



0 dB = 7.08 W/kg = 8.50 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0695M**

Communication System: UID 0, UMTS; Frequency: 1732.4 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1732.4 \text{ MHz}$ ;  $\sigma = 1.476 \text{ S/m}$ ;  $\epsilon_r = 51.868$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-21-2019; Ambient Temp: 21.5-C; Tissue Temp: 20.9-C

Probe: ES3DV3 - SN3347; ConvF(5.17, 5.17, 5.17) @ 1732.4 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 1750, Phablet SAR, Bottom Edge, Mid.ch**

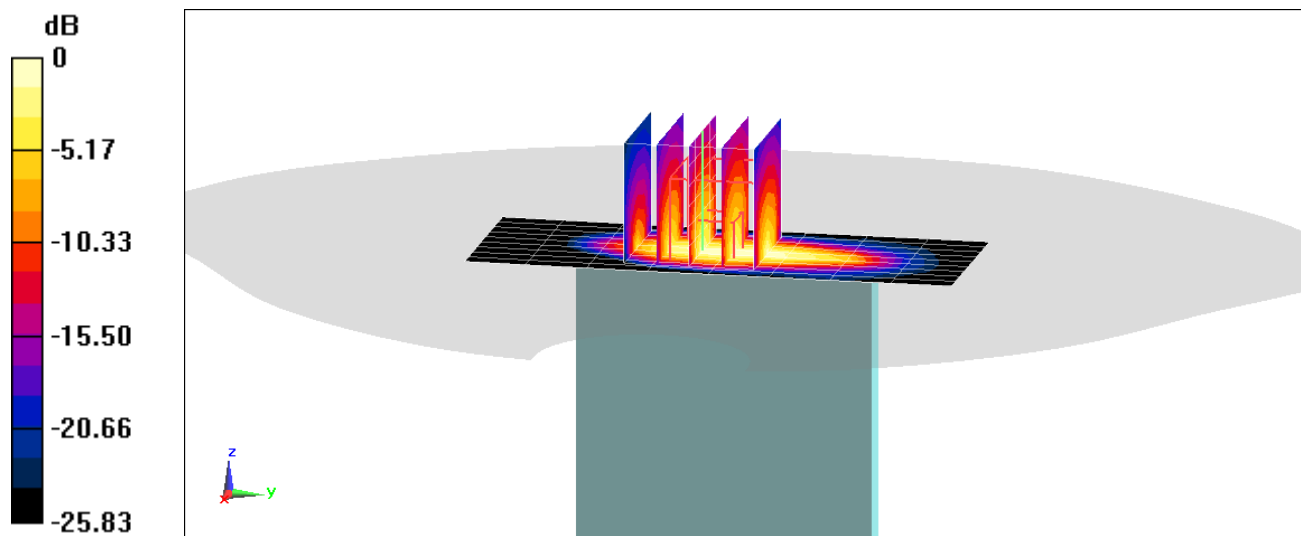
**Area Scan (10x9x1):** Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 69.61 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 11.8 W/kg

**SAR(10 g) = 2.71 W/kg**



0 dB = 8.71 W/kg = 9.40 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, UMTS; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$ ;  $\sigma = 1.529 \text{ S/m}$ ;  $\epsilon_r = 51.157$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1880 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: UMTS 1900, Phablet SAR, Bottom Edge, Mid.ch**

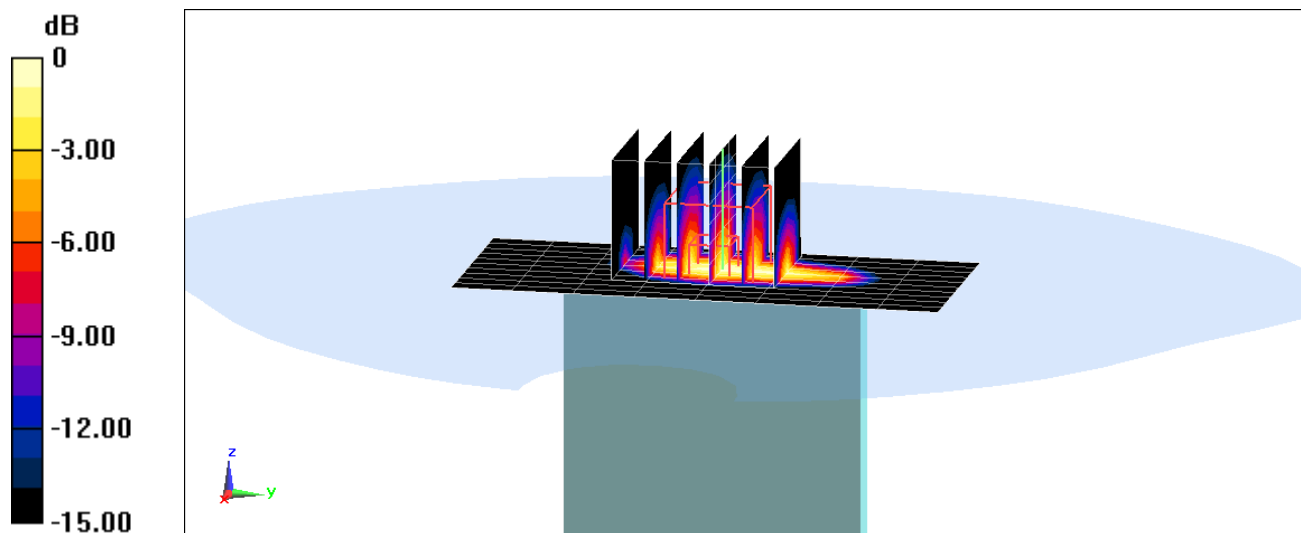
**Area Scan (11x9x1):** Measurement grid:  $dx=5\text{mm}$ ,  $dy=15\text{mm}$

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

Reference Value = 72.06 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 13.9 W/kg

**SAR(10 g) = 3.05 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0666M**

Communication System: UID 0, CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used:

$f = 1880 \text{ MHz}$ ;  $\sigma = 1.55 \text{ S/m}$ ;  $\epsilon_r = 53.385$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 01-10-2019; Ambient Temp: 23.0°C; Tissue Temp: 20.8°C

Probe: ES3DV3 - SN3287; ConvF(4.83, 4.83, 4.83) @ 1880 MHz; Calibrated: 10/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

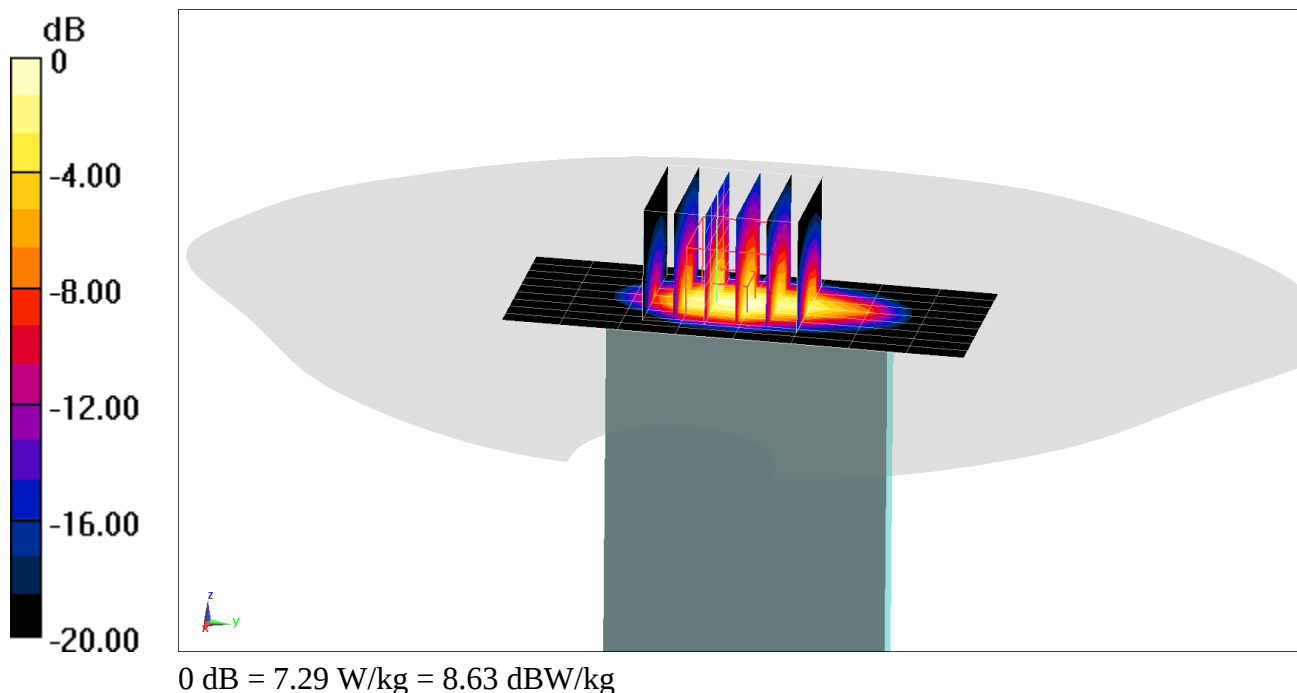
**Mode: PCS EVDO Rev.0, Body SAR, Bottom Edge, Mid.ch**

**Area Scan (10x9x1):** Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 64.42 V/m; Power Drift = -0.05 dB

**SAR(10 g) = 2.35 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0589M**

Communication System: UID 0, LTE Band 66 (AWS); Frequency: 1770 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used (interpolated):

$f = 1770 \text{ MHz}$ ;  $\sigma = 1.552 \text{ S/m}$ ;  $\epsilon_r = 51.254$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-19-2018; Ambient Temp: 22.7°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7357; ConvF(8.43, 8.43, 8.43) @ 1770 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 66 (AWS) CA\_66C, Phablet SAR, Bottom Edge**

**PCC: 20 MHz Bandwidth, QPSK, Ch.132572 50 RB, 0 RB Offset**

**PCC: 20 MHz Bandwidth, QPSK, Ch.132374 50 RB, 50 RB Offset**

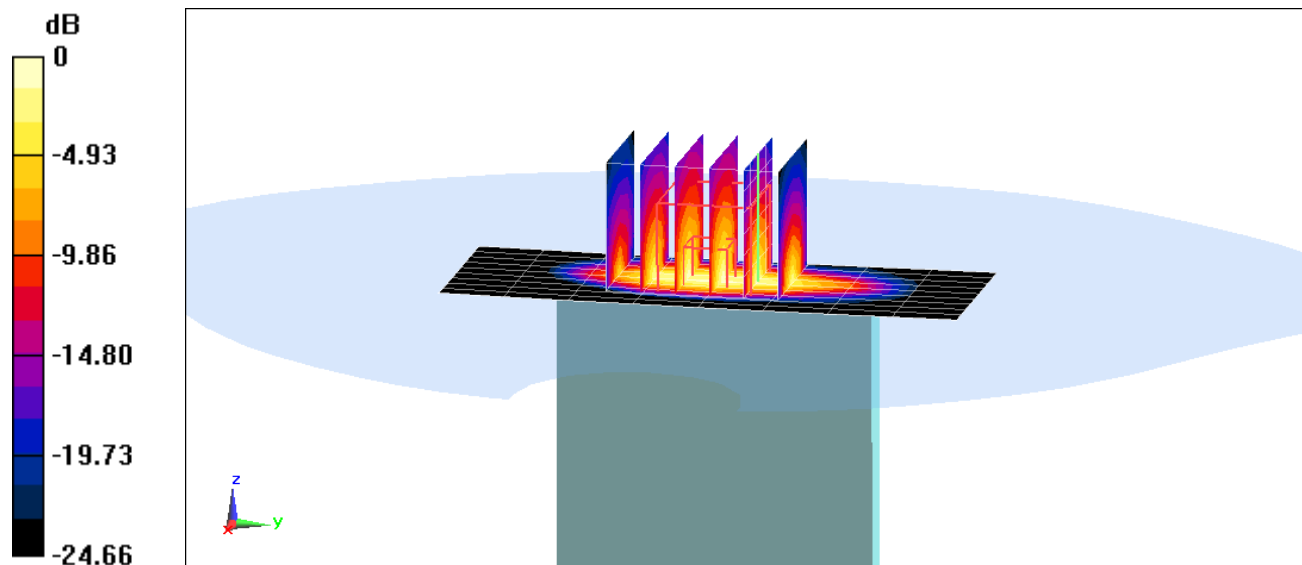
**Area Scan (10x9x1):** Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 68.66 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 13.3 W/kg

**SAR(10 g) = 2.74 W/kg**



0 dB = 10.5 W/kg = 10.21 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0732M**

Communication System: UID 0, LTE Band 25 (PCS); Frequency: 1882.5 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1882.5 \text{ MHz}$ ;  $\sigma = 1.555 \text{ S/m}$ ;  $\epsilon_r = 53.497$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-17-2018; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1882.5 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 25 (PCS), Phablet SAR, Bottom Edge, Mid.ch,  
20 MHz Bandwidth, QPSK, 50 RB, 0 RB Offset**

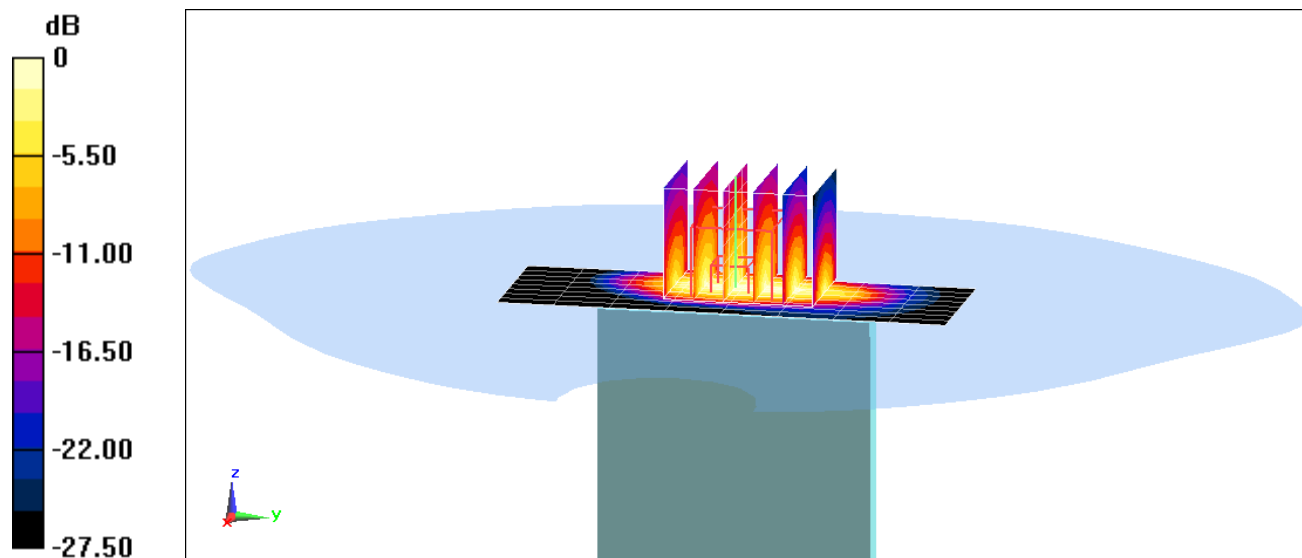
**Area Scan (9x9x1):** Measurement grid: dx=5mm, dy=15mm

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

Reference Value = 67.73 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 13.7 W/kg

**SAR(10 g) = 2.8 W/kg**



0 dB = 8.75 W/kg = 9.42 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0252M**

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

Medium: 2450 Body Medium parameters used:

$f = 2310 \text{ MHz}$ ;  $\sigma = 1.861 \text{ S/m}$ ;  $\epsilon_r = 53.184$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63) @ 2310 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 30, Phablet SAR, Back side, Mid.ch,  
10 MHz Bandwidth, QPSK, 25 RB, 0 RB Offset**

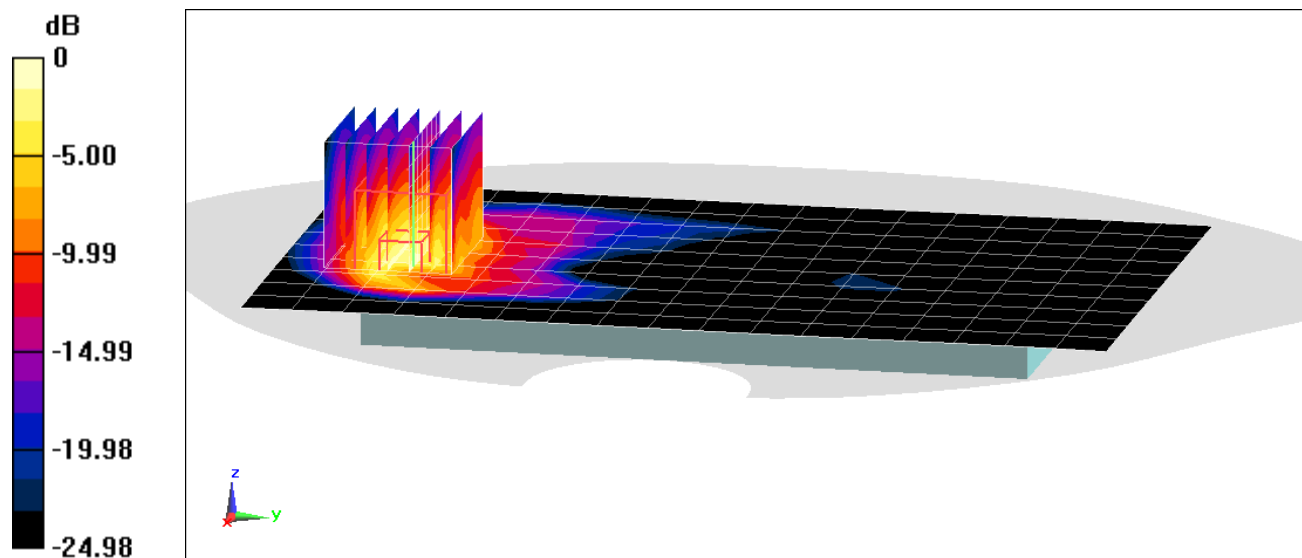
**Area Scan (11x18x1):** Measurement grid: dx=12mm, dy=12mm

**Zoom Scan (8x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 37.92 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 5.90 W/kg

**SAR(10 g) = 1.11 W/kg**



0 dB = 3.49 W/kg = 5.43 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0252M**

Communication System: UID 0, LTE Band 7; Frequency: 2510 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2510 \text{ MHz}$ ;  $\sigma = 2.092 \text{ S/m}$ ;  $\epsilon_r = 52.616$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.51, 4.51, 4.51) @ 2510 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 7 Antenna B, Phablet SAR, Back side, Low.ch,  
20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset**

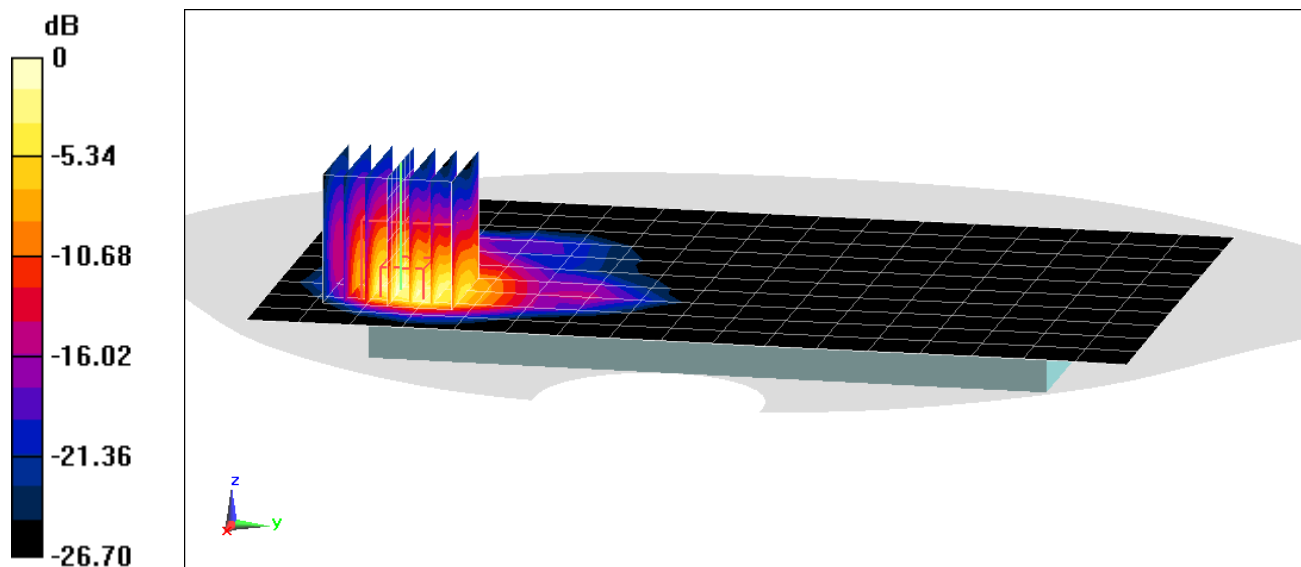
**Area Scan (11x18x1):** Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 56.74 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 13.7 W/kg

**SAR(10 g) = 2.13 W/kg**



0 dB = 7.67 W/kg = 8.85 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0695M**

Communication System: UID 0, LTE Band 48; Frequency: 3560 MHz; Duty Cycle: 1:1.58

Medium: 3500-3700 Body Medium parameters used (interpolated):

$f = 3560 \text{ MHz}$ ;  $\sigma = 3.266 \text{ S/m}$ ;  $\epsilon_r = 49.862$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-14-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3914; ConvF(6.81, 6.81, 6.81) @ 3560 MHz; Calibrated: 2/14/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 48, Phablet SAR, Back side, Low.ch,  
20 MHz Bandwidth, QPSK, 50 RB, 50 RB Offset**

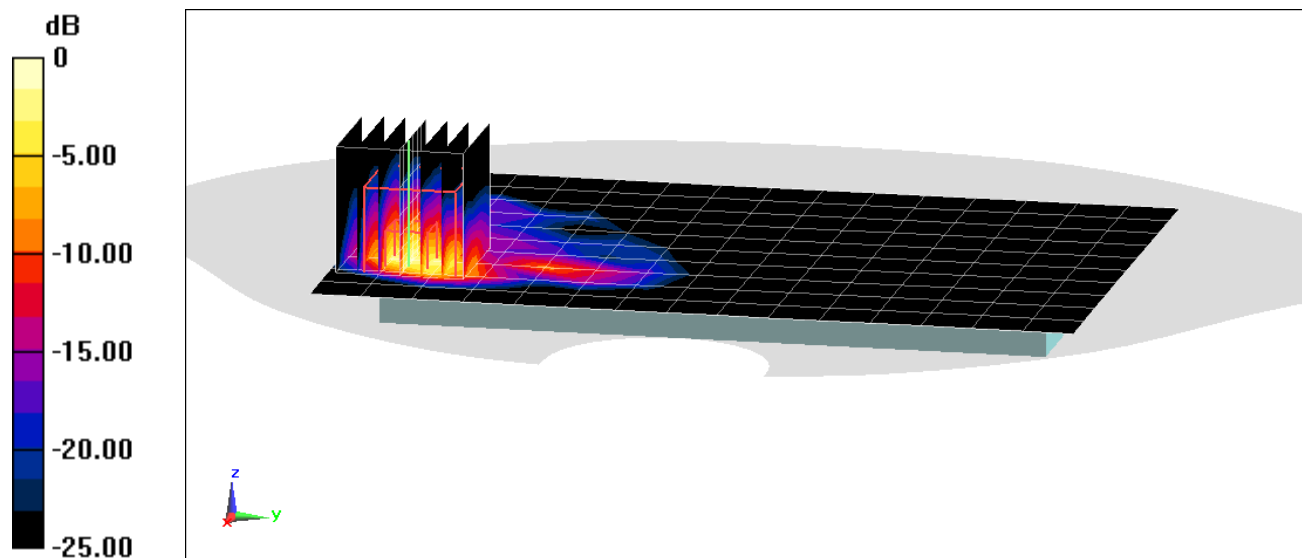
**Area Scan (11x16x1):** Measurement grid: dx=12mm, dy=12mm

**Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4

Reference Value = 28.30 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 8.02 W/kg

**SAR(10 g) = 0.765 W/kg**



0 dB = 5.53 W/kg = 7.43 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0744M**

Communication System: UID 0, LTE Band 41; Frequency: 2593 MHz; Duty Cycle: 1:1.58

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2593 \text{ MHz}$ ;  $\sigma = 2.208 \text{ S/m}$ ;  $\epsilon_r = 51.144$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-26-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.7°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33) @ 2593 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: LTE Band 41 ULCA PC3, Body SAR, Back side**

**PCC: 20 MHz Bandwidth, QPSK, Ch. 40620, 50 RB, 0 RB Offset**

**SCC: 20 MHz Bandwidth, QPSK, Ch. 40422, 50 RB, 50 RB Offset**

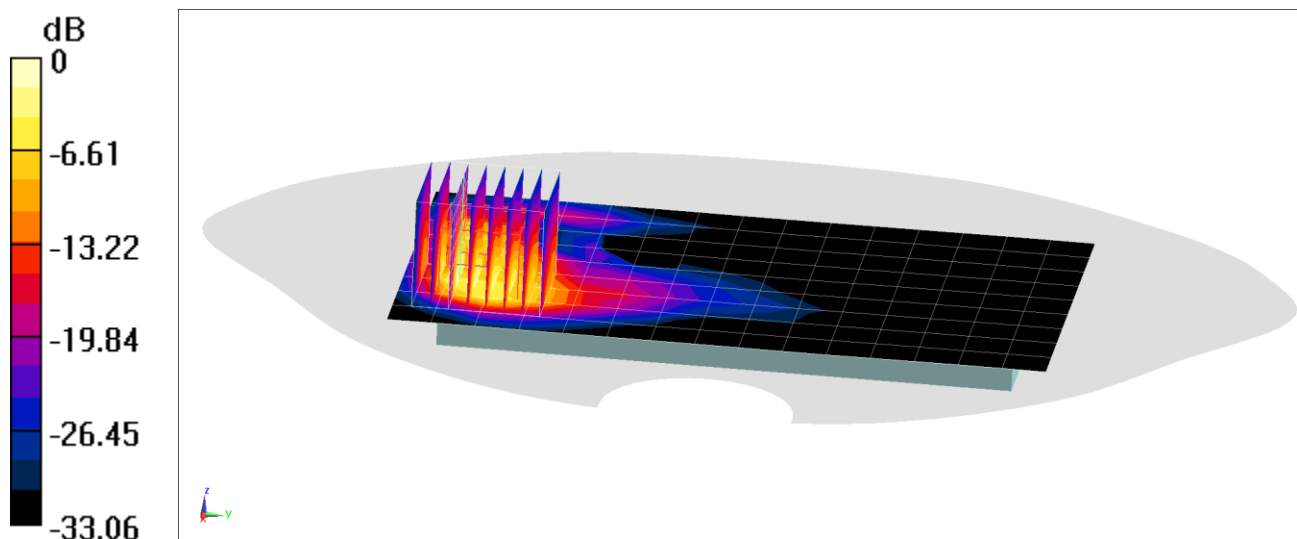
**Area Scan (10x16x1):** Measurement grid: dx=12mm, dy=12mm

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

Reference Value = 45.84 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 22.5 W/kg

**SAR(10 g) = 2.82 W/kg**



0 dB = 11.3 W/kg = 10.53 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0627M**

Communication System: UID 0, IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5720 MHz; Duty Cycle: 1:1

Medium: 5GHz Body Medium parameters used (interpolated):

$f = 5720 \text{ MHz}$ ;  $\sigma = 6.166 \text{ S/m}$ ;  $\epsilon_r = 46.629$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 12-11-2018; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(4.21, 4.21, 4.21) @ 5720 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

**Mode: IEEE 802.11a, Antenna 2, U-NII-2C, 20 MHz Bandwidth, Phablet SAR,  
Ch 144, 6 Mbps, Back Side**

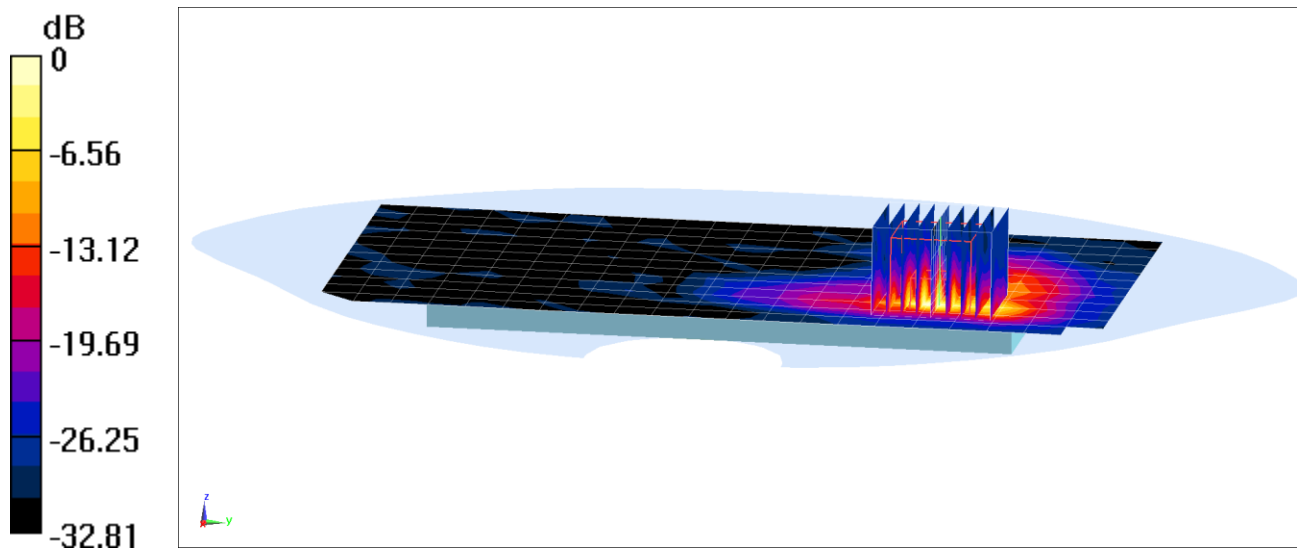
**Area Scan (13x22x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

**Zoom Scan (9x9x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 4.906 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 147 W/kg

**SAR(10 g) = 2.34 W/kg**



0 dB = 41.0 W/kg = 16.13 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.297

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2480 \text{ MHz}$ ;  $\sigma = 1.853 \text{ S/m}$ ;  $\epsilon_r = 40.047$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 01-07-2019; Ambient Temp: 21.7°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5) @ 2480 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

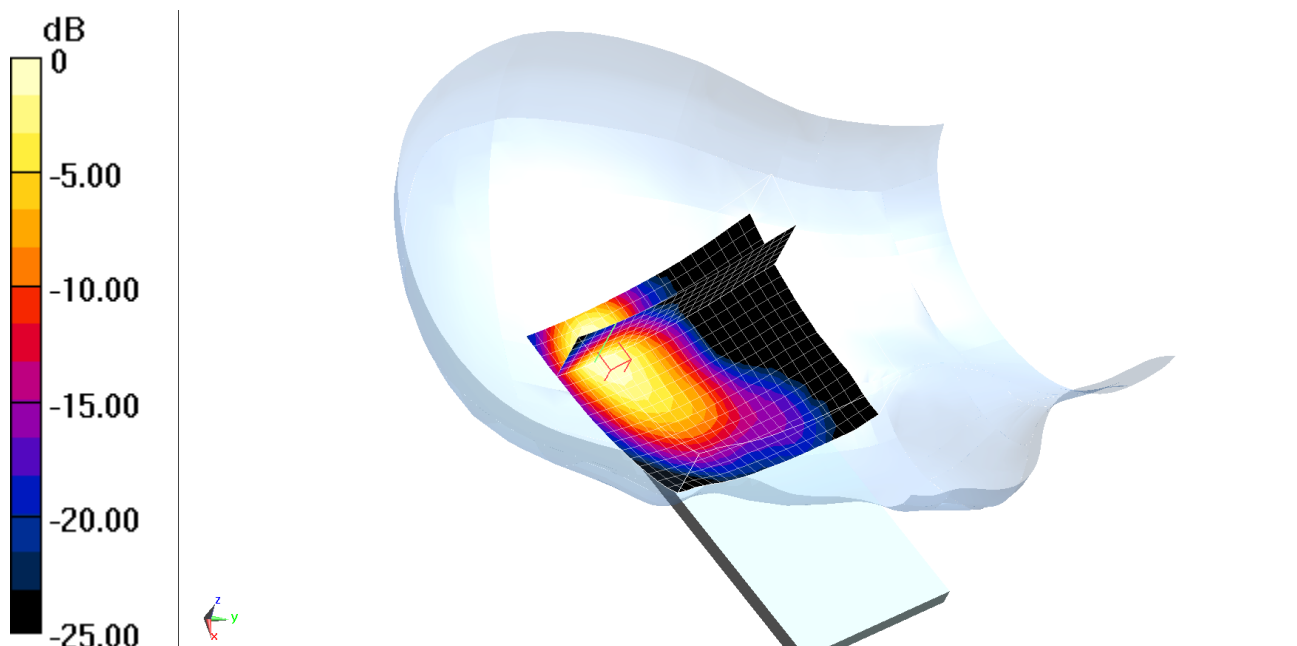
**Mode: Bluetooth, Right Head, Cheek, Ch 78, 1 Mbps**

**Zoom Scan (22x19x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 3.189 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.49 W/kg

**SAR(1 g) = 0.694 W/kg**



0 dB = 1.12 W/kg = 0.49 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5270 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5270 \text{ MHz}$ ;  $\sigma = 4.588 \text{ S/m}$ ;  $\epsilon_r = 35.267$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 01-07-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7409; ConvF(5.2, 5.2, 5.2) @ 5270 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

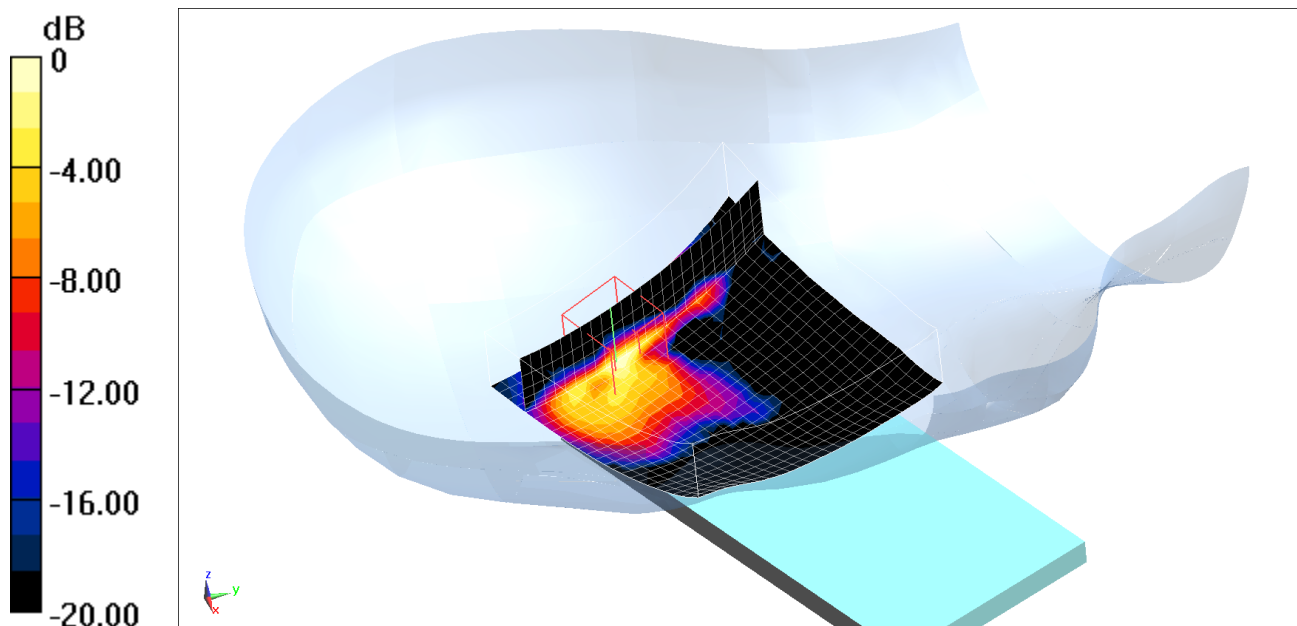
**Mode: IEEE 802.11n, Antenna 1, U-NII-2A, 40 MHz Bandwidth,  
Right Head, Cheek, Ch 54, 13.5 Mbps**

**Zoom Scan (25x25x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 1.717 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.883 W/kg

**SAR(1 g) = 0.212 W/kg**



0 dB = 0.553 W/kg = -2.57 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, 802.11n 5.2-5.8 GHz Band; Frequency: 5270 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5270 \text{ MHz}$ ;  $\sigma = 4.588 \text{ S/m}$ ;  $\epsilon_r = 35.267$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

Test Date: 01-07-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7409; ConvF(5.2, 5.2, 5.2) @ 5270 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

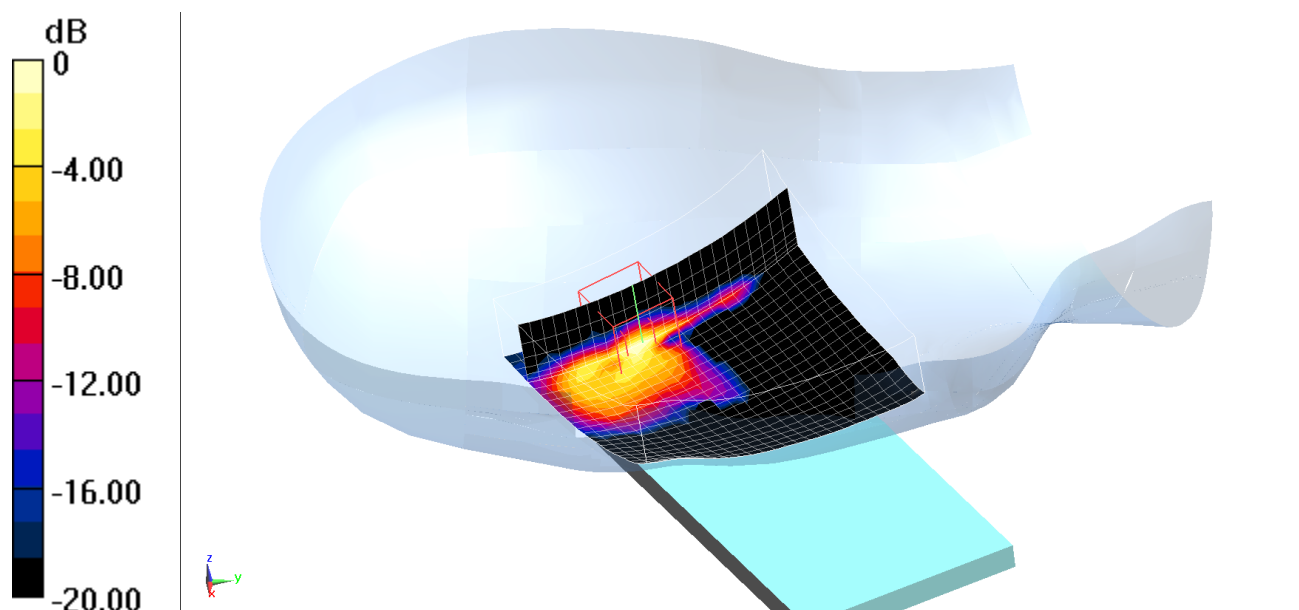
**Mode: IEEE 802.11n, MIMO, U-NII-2A, 40 MHz Bandwidth,  
Right Head, Cheek, Ch 54, 27 Mbps**

**Zoom Scan (25x25x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 1.408 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.929 W/kg

**SAR(1 g) = 0.223 W/kg**



0 dB = 0.559 W/kg = -2.53 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 2.025 \text{ S/m}$ ;  $\epsilon_r = 52.29$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-09-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(7.3, 7.3, 7.3) @ 2441 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

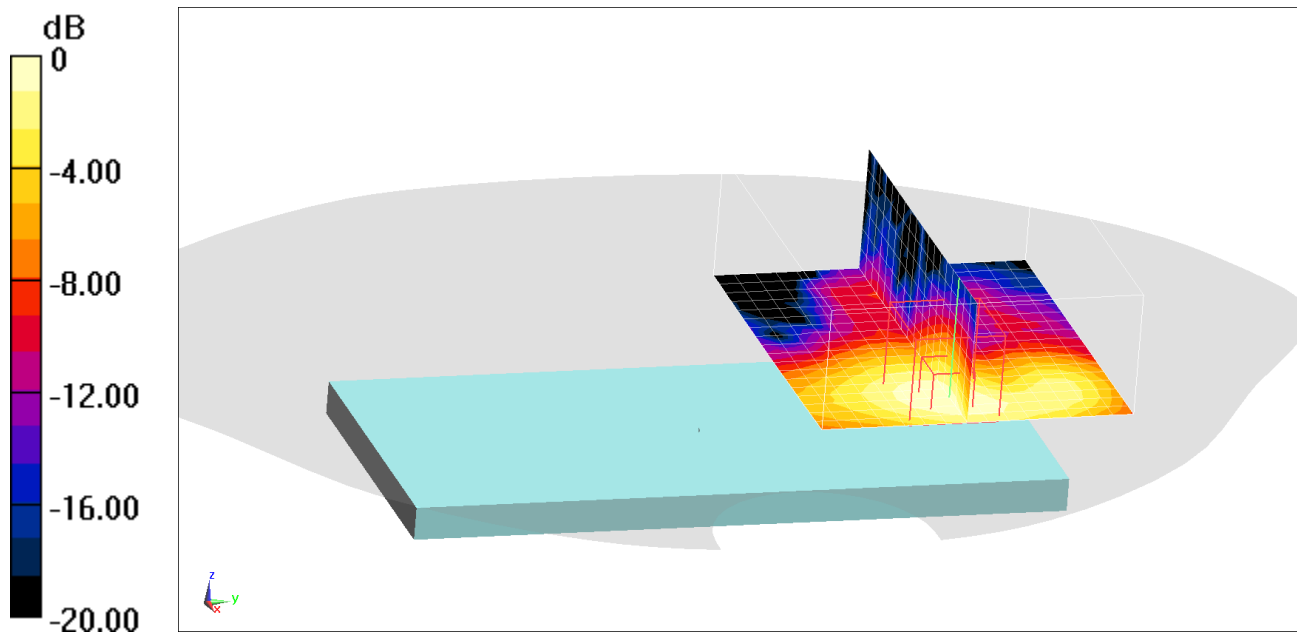
**Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side**

**Zoom Scan (19x16x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 2.851 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.120 W/kg

**SAR(1 g) = 0.065 W/kg**



0 dB = 0.0993 W/kg = -10.03 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0627M**

Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.184 \text{ S/m}$ ;  $\epsilon_r = 46.671$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 01-08-2019; Ambient Temp: 23.0°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7357; ConvF(4.21, 4.21, 4.21) @ 5825 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

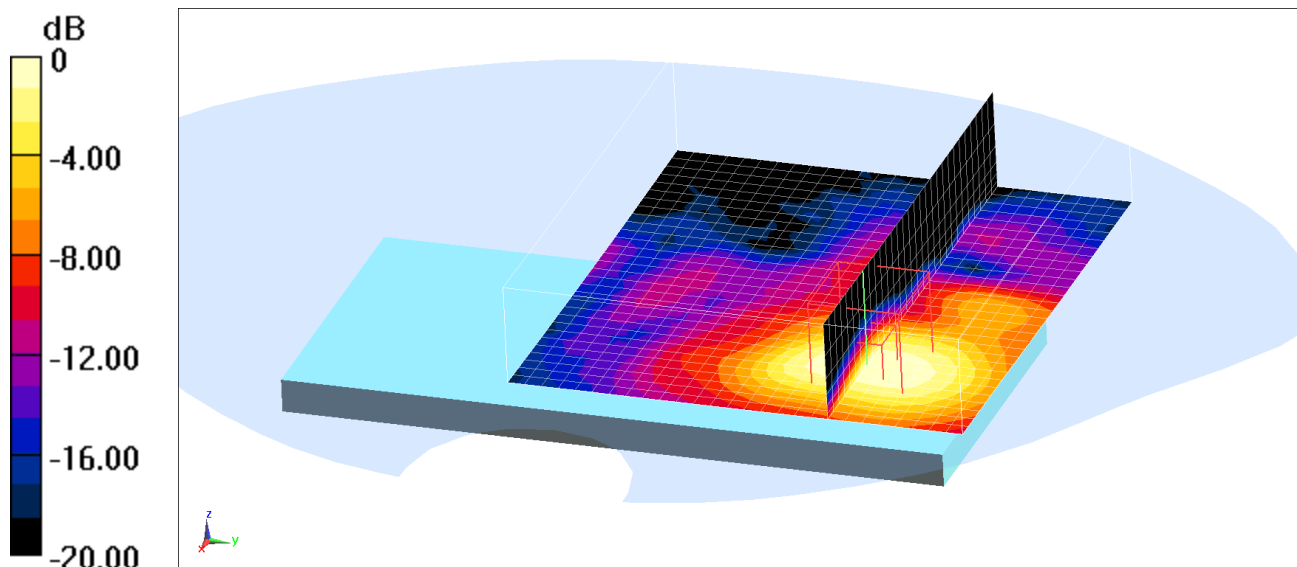
**Mode: IEEE 802.11n, MIMO, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 13 Mbps,  
Back Side**

**Zoom Scan (31x28x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 2.526 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 3.03 W/kg

**SAR(1 g) = 0.676 W/kg**



0 dB = 1.53 W/kg = 1.85 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0274M**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 2.025 \text{ S/m}$ ;  $\epsilon_r = 52.29$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-09-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(7.3, 7.3, 7.3) @ 2441 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

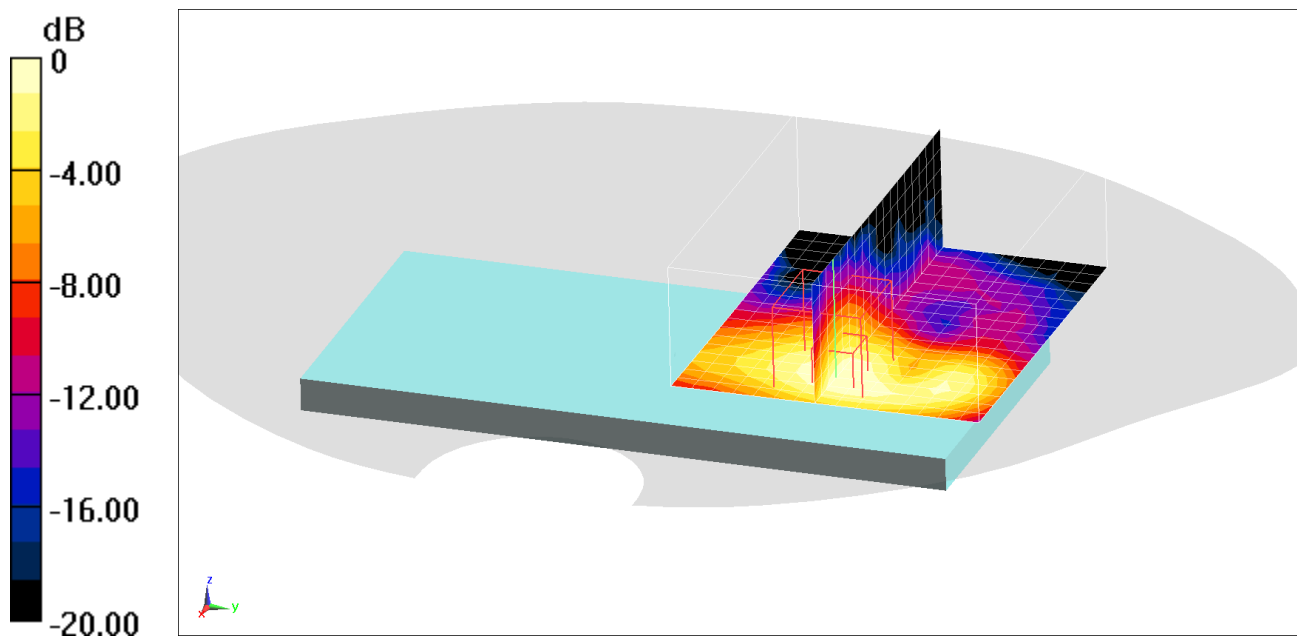
**Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side**

**Zoom Scan (19x16x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value = 3.648 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.230 W/kg

**SAR(1 g) = 0.126 W/kg**



0 dB = 0.189 W/kg = -7.24 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0627M**

Communication System: UID 0, IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.184 \text{ S/m}$ ;  $\epsilon_r = 46.671$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-08-2019; Ambient Temp: 23.0°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7357; ConvF(4.21, 4.21, 4.21) @ 5825 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

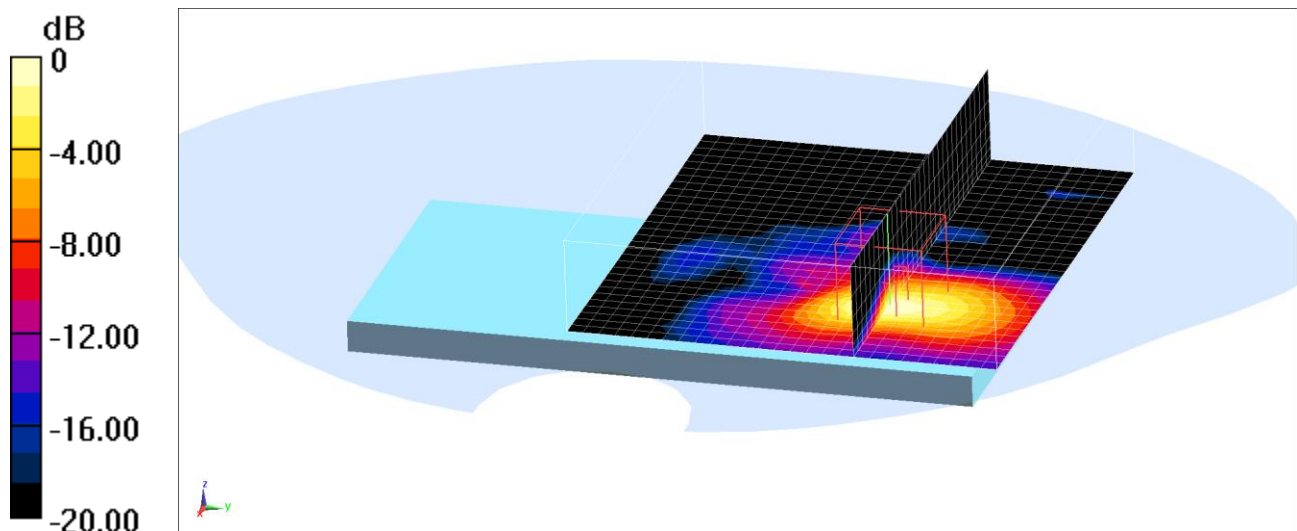
**Mode: IEEE 802.11a, Antenna 2, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 6 Mbps, Back Side**

**Zoom Scan (31x28x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 11.64 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 3.21 W/kg

**SAR(1 g) = 0.781 W/kg**



0 dB = 2.01 W/kg = 3.03 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset; Serial: 0627M**

Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.184 \text{ S/m}$ ;  $\epsilon_r = 46.671$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-08-2019; Ambient Temp: 23.0°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7357; ConvF(4.21, 4.21, 4.21) @ 5825 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

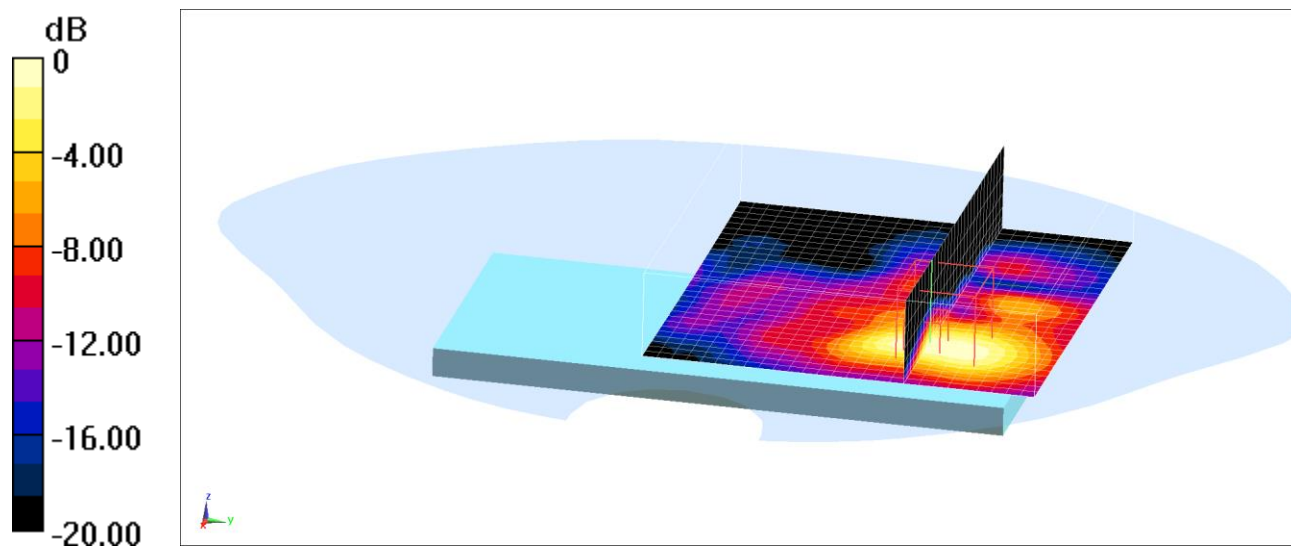
**Mode: IEEE 802.11n, MIMO, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 13 Mbps,  
Back Side**

**Zoom Scan (31x28x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Reference Value = 3.519 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 4.28 W/kg

**SAR(1 g) = 1.02 W/kg**



0 dB = 2.36 W/kg = 3.73 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset**

**Mode: Bluetooth, Right Head, Cheek, Ch 78, 1 Mbps, Scaling Factor: 1.641**

Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.297

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2480 \text{ MHz}$ ;  $\sigma = 1.853 \text{ S/m}$ ;  $\epsilon_r = 40.047$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

**Mode: IEEE 802.11n, Antenna 1, U-NII-2A, 40 MHz Bandwidth,  
Right Head, Cheek, Ch 54, 13.5 Mbps, Scaling Factor: 1.051**

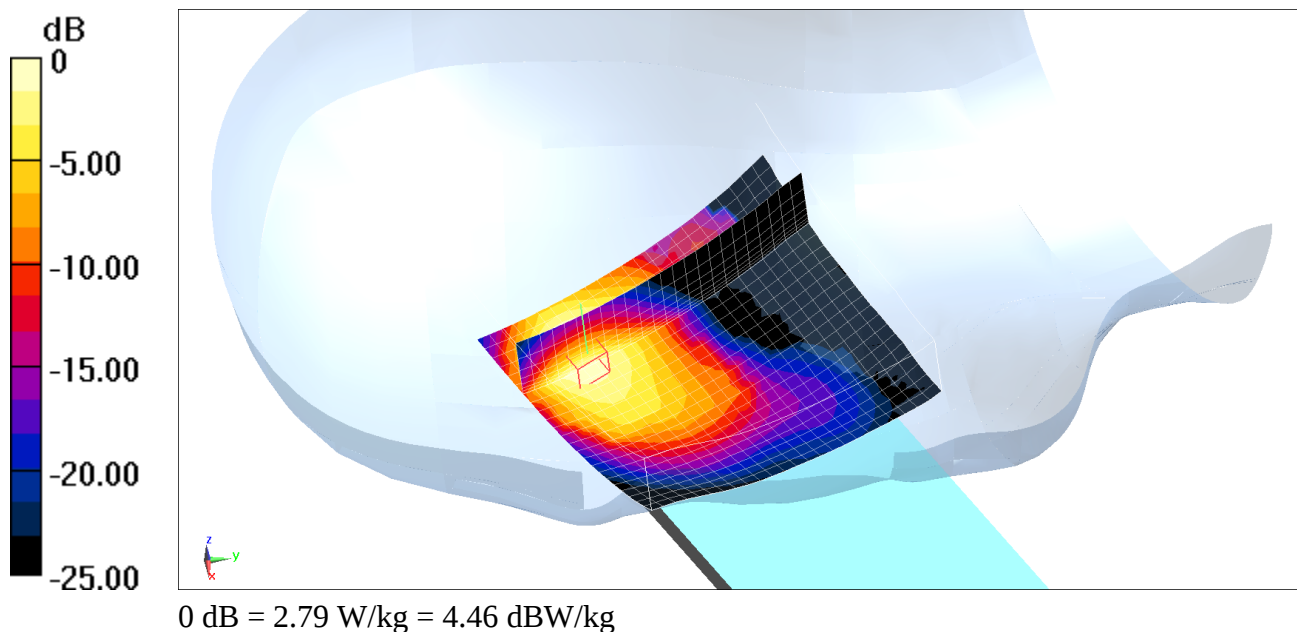
Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5270 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5270 \text{ MHz}$ ;  $\sigma = 4.588 \text{ S/m}$ ;  $\epsilon_r = 35.267$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

**Multi Band Result:  
SAR(1 g) = 1.21 W/kg**



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset**

**Mode: Bluetooth, Right Head, Cheek, Ch 78, 1 Mbps, Scaling Factor: 1.641**

Communication System: UID 0, Bluetooth; Frequency: 2480 MHz; Duty Cycle: 1:1.297

Medium: 2450 Head Medium parameters used (interpolated):

$f = 2480$  MHz;  $\sigma = 1.853$  S/m;  $\epsilon_r = 40.047$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

**Mode: IEEE 802.11n, MIMO, U-NII-2A, 40 MHz Bandwidth,  
Right Head, Cheek, Ch 54, 27 Mbps, Scaling Factor: 1.115**

Communication System: UID 0, 802.11n 5.2-5.8 GHz Band; Frequency: 5270 MHz; Duty Cycle: 1:1

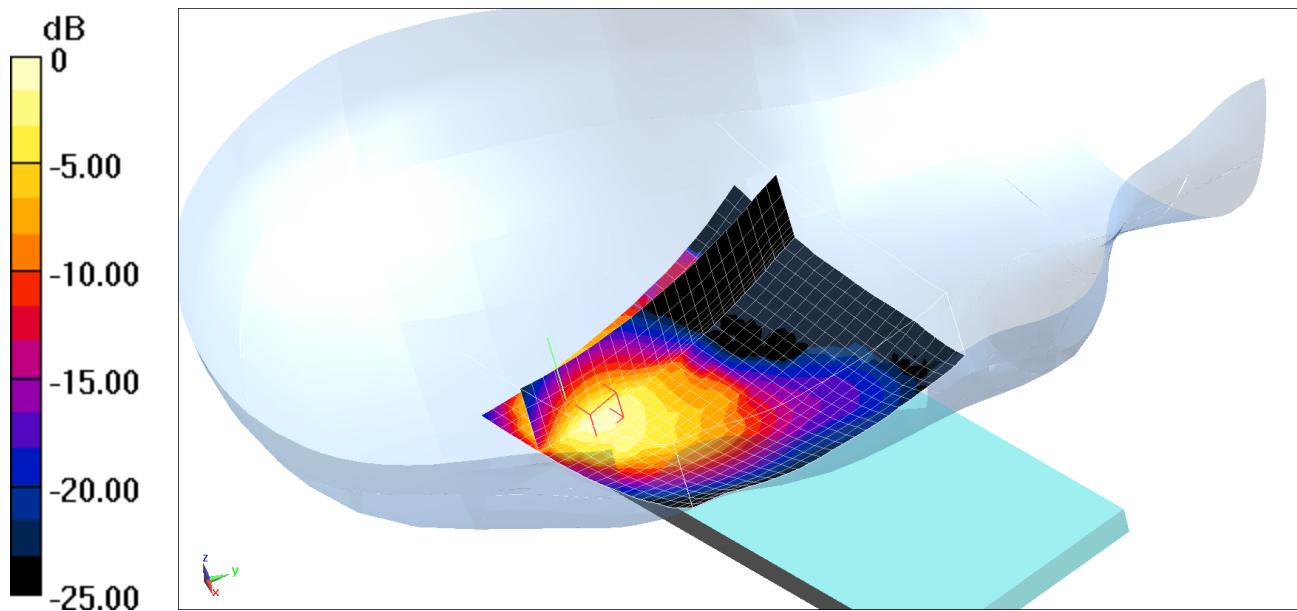
Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5270$  MHz;  $\sigma = 4.588$  S/m;  $\epsilon_r = 35.267$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Right Section

**Multi Band Result:**

**SAR(1 g) = 1.2 W/kg**



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

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset**

**Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side, Scaling Factor: 1.336**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 2.025 \text{ S/m}$ ;  $\epsilon_r = 52.29$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

**Mode: IEEE 802.11n, MIMO, UNII-3, 20 MHz Bandwidth,  
Body SAR, Ch 165, 13 Mbps, Back Side, Scaling Factor: 1.176**

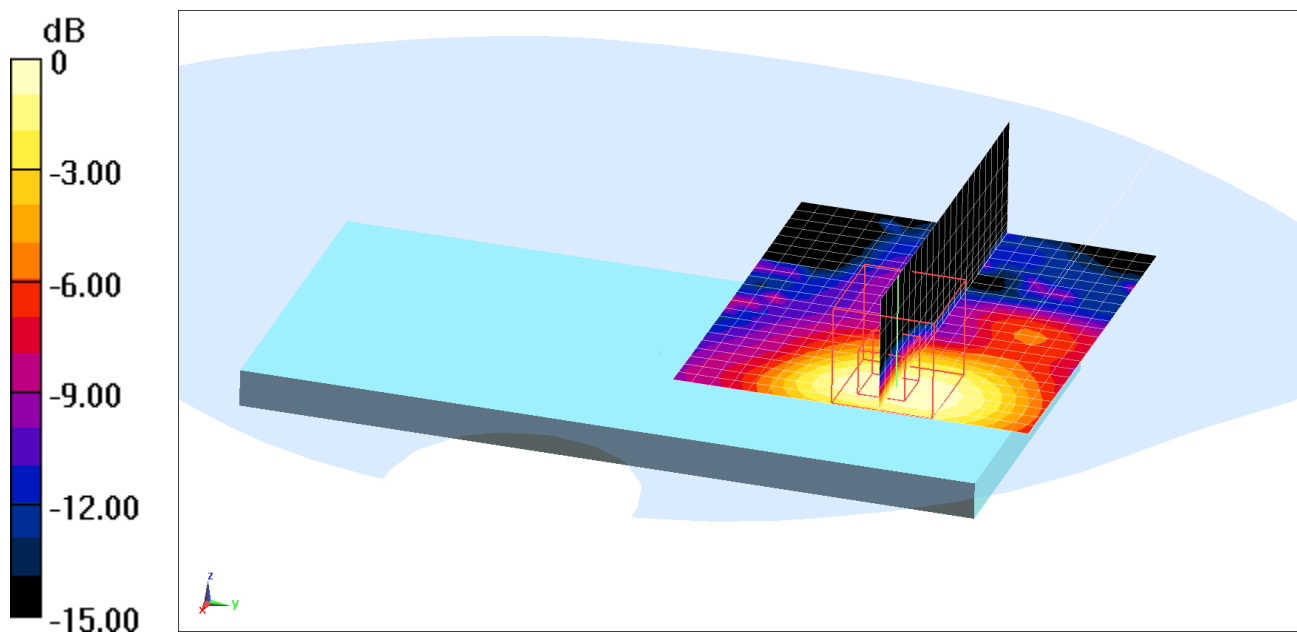
Communication System: UID 0, IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.184 \text{ S/m}$ ;  $\epsilon_r = 46.671$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

**Multi Band Result:  
SAR(1 g) = 0.863 W/kg**



0 dB = 3.00 W/kg = 4.77 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset**

**Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side, Scaling Factor: 1.336**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 2.025 \text{ S/m}$ ;  $\epsilon_r = 52.29$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

**Mode: IEEE 802.11a, Antenna 2, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 6 Mbps, Back Side, Scaling Factor: 1.161**

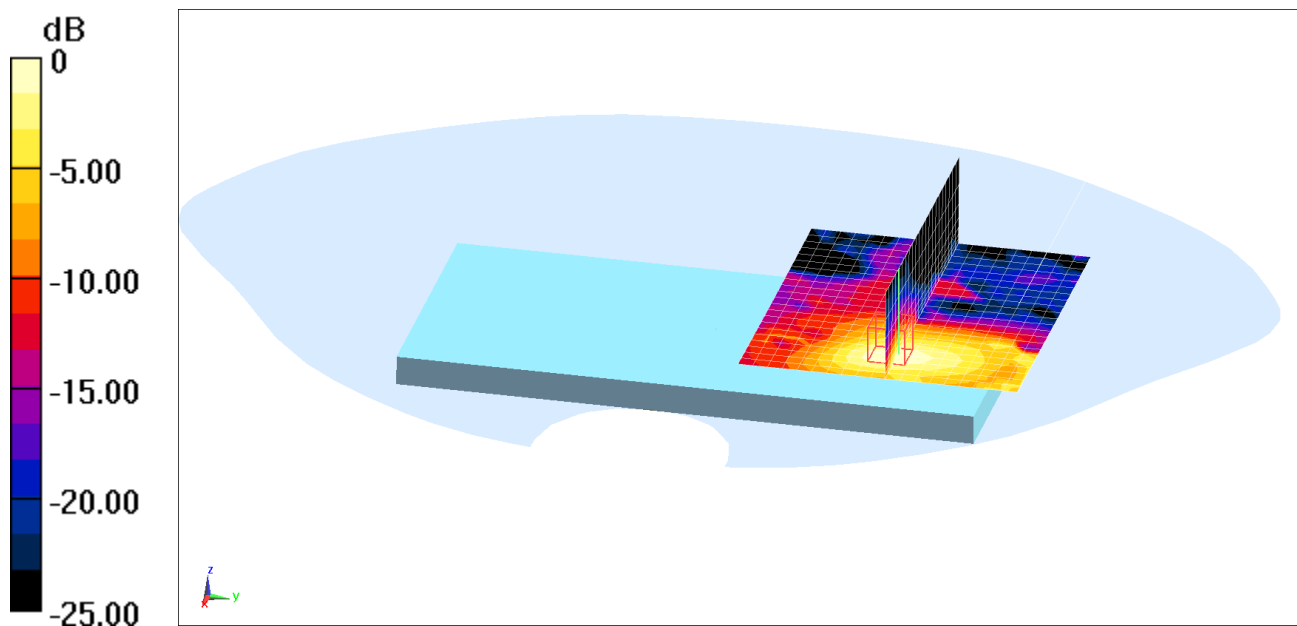
Communication System: UID 0, IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.184 \text{ S/m}$ ;  $\epsilon_r = 46.671$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

**Multi Band Result:**  
**SAR(1 g) = 1.09 W/kg**



0 dB = 3.97 W/kg = 5.99 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: A3LSMG975U; Type: Portable Handset**

**Mode: Bluetooth, Body SAR, Ch 39, 1 Mbps, Back Side, Scaling Factor: 1.336**

Communication System: UID 0, Bluetooth; Frequency: 2441 MHz; Duty Cycle: 1:1.297

Medium: 2450 Body Medium parameters used (interpolated):

$f = 2441 \text{ MHz}$ ;  $\sigma = 2.025 \text{ S/m}$ ;  $\epsilon_r = 52.29$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

**Mode: IEEE 802.11n, MIMO, UNII-3, 20 MHz Bandwidth, Body SAR, Ch 165, 13 Mbps, Back Side, Scaling Factor: 1.176**

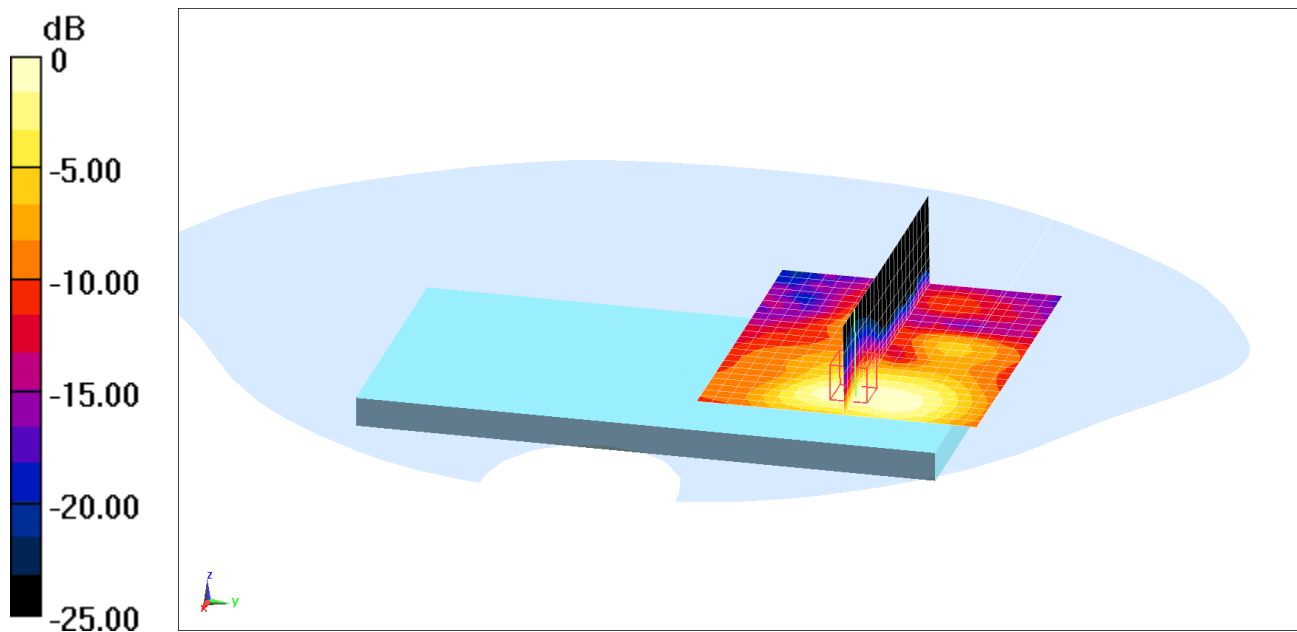
Communication System: UID 0, IEEE 802.11n 5.2-5.8 GHz Band; Frequency: 5825 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used:

$f = 5825 \text{ MHz}$ ;  $\sigma = 6.184 \text{ S/m}$ ;  $\epsilon_r = 46.671$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

**Multi Band Result:  
SAR(1 g) = 1.37 W/kg**



## APPENDIX B: SYSTEM VERIFICATION

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 750 MHz; Type: D750V3; Serial: 1054**

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: 750 Head; Medium parameters used (interpolated):

$f = 750 \text{ MHz}$ ;  $\sigma = 0.878 \text{ S/m}$ ;  $\epsilon_r = 42.325$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-19-2018; Ambient Temp: 21.3°C; Tissue Temp: 19.8°C

Probe: ES3DV3 - SN3287; ConvF(6.76, 6.76, 6.76) @ 750 MHz; Calibrated: 10/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## **750 MHz System Verification at 23.0 dBm (200 mW)**

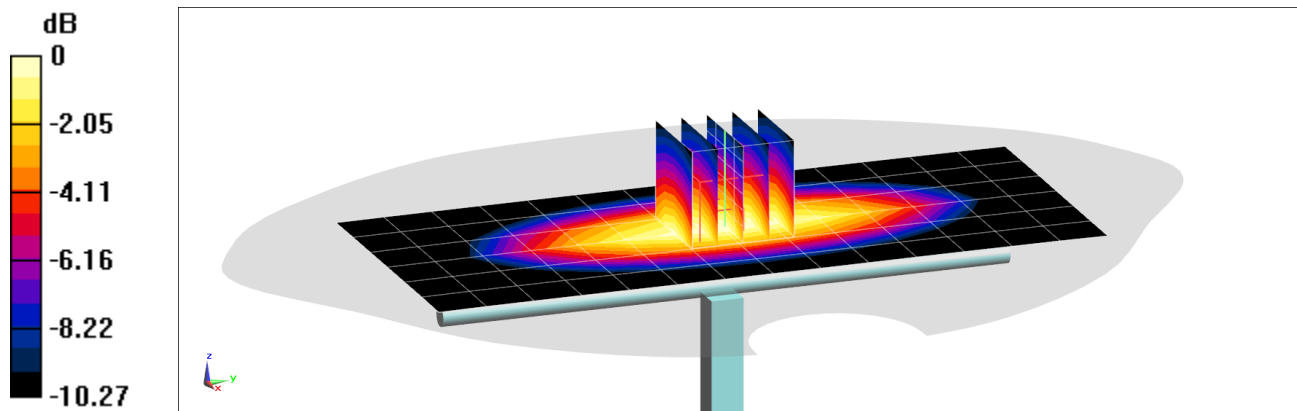
**Area Scan (7x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 2.59 W/kg

**SAR(1 g) = 1.73 W/kg**

Deviation(1 g) = 3.35%



0 dB = 2.03 W/kg = 3.07 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132**

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Head; Medium parameters used:

$f = 835 \text{ MHz}$ ;  $\sigma = 0.89 \text{ S/m}$ ;  $\epsilon_r = 40.179$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 22.3°C; Tissue Temp: 20.1°C

Probe: ES3DV3 - SN3287; ConvF(6.61, 6.61, 6.61) @ 835 MHz; Calibrated: 10/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## **835 MHz System Verification at 23.0 dBm (200 mW)**

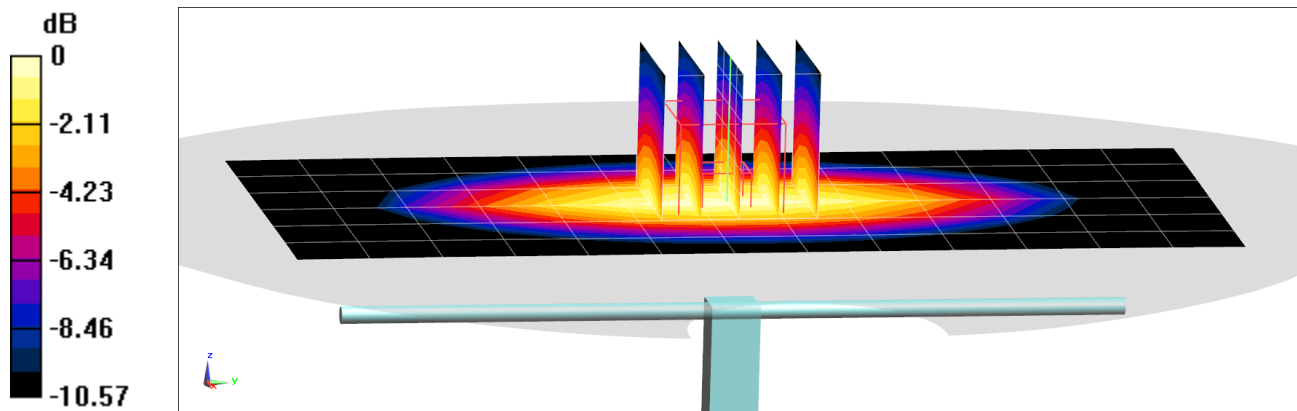
**Area Scan (7x14x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Peak SAR (extrapolated) = 2.87 W/kg

**SAR(1 g) = 1.91 W/kg**

Deviation(1 g) = 2.03%



0 dB = 1.65 W/kg = 2.17 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047**

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Head Medium parameters used:

$f = 835 \text{ MHz}$ ;  $\sigma = 0.899 \text{ S/m}$ ;  $\epsilon_r = 40.516$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-24-2018; Ambient Temp: 21.5°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7410; ConvF(9.81, 9.81, 9.81) @ 835 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## **835 MHz System Verification at 23.0 dBm (200 mW)**

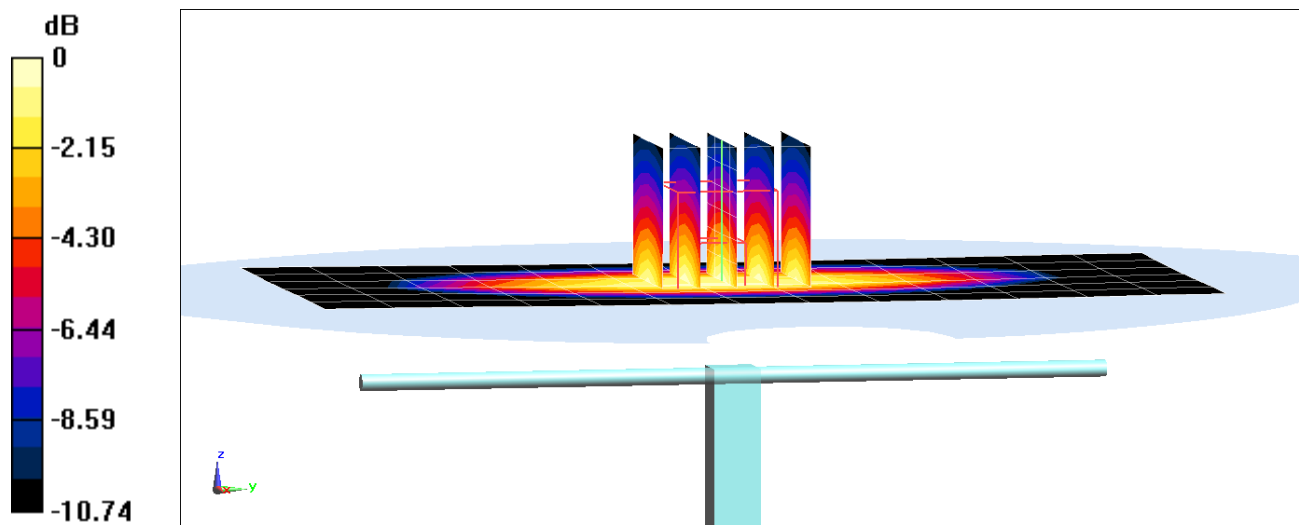
**Area Scan (7x14x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Peak SAR (extrapolated) = 3.01 W/kg

**SAR(1 g) = 1.98 W/kg**

Deviation(1 g) = 4.54%



0 dB = 2.66 W/kg = 4.25 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1150**

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Head; Medium parameters used:

$f = 1750 \text{ MHz}$ ;  $\sigma = 1.374 \text{ S/m}$ ;  $\epsilon_r = 39.46$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-14-2018; Ambient Temp: 21.7°C; Tissue Temp: 20.3°C

Probe: ES3DV3 - SN3287; ConvF(5.48, 5.48, 5.48) @ 1750 MHz; Calibrated: 10/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 1750 MHz System Verification at 20.0 dBm (100 mW)

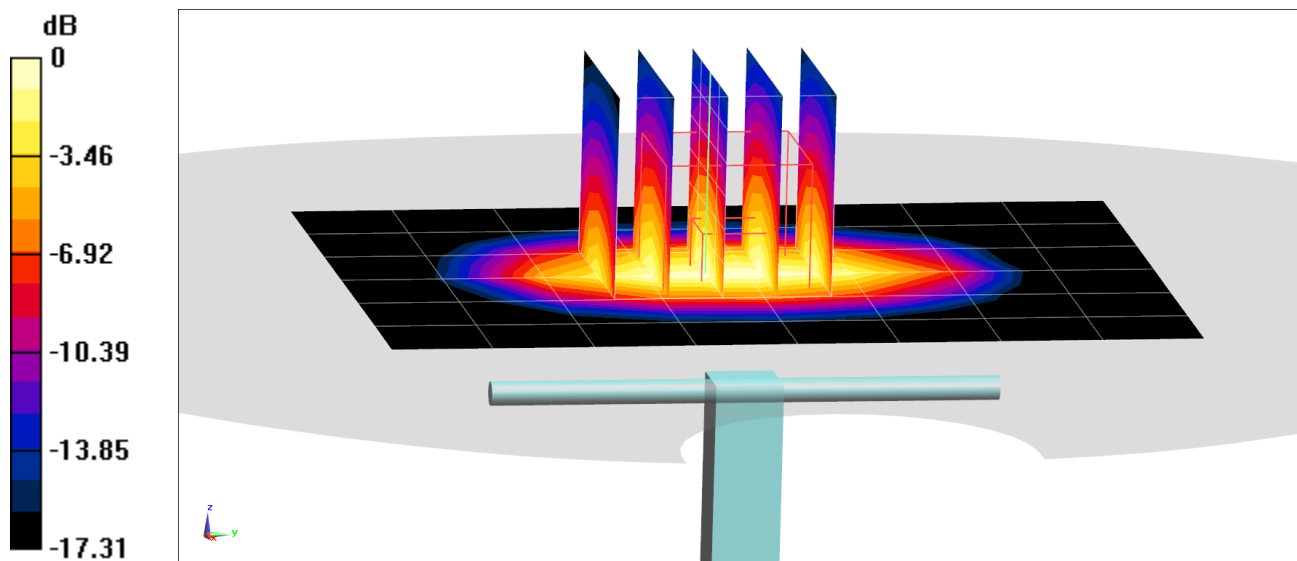
**Area Scan (7x9x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 6.83 W/kg

**SAR(1 g) = 3.78 W/kg**

Deviation(1 g) = 3.56%



0 dB = 4.70 W/kg = 6.72 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080**

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Head Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$ ;  $\sigma = 1.44 \text{ S/m}$ ;  $\epsilon_r = 40.081$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-19-2018; Ambient Temp: 21.6°C; Tissue Temp: 21.5°C

Probe: EX3DV4 - SN7409; ConvF(8.05, 8.05, 8.05) @ 1900 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 1900 MHz System Verification at 20.0 dBm (100 mW)

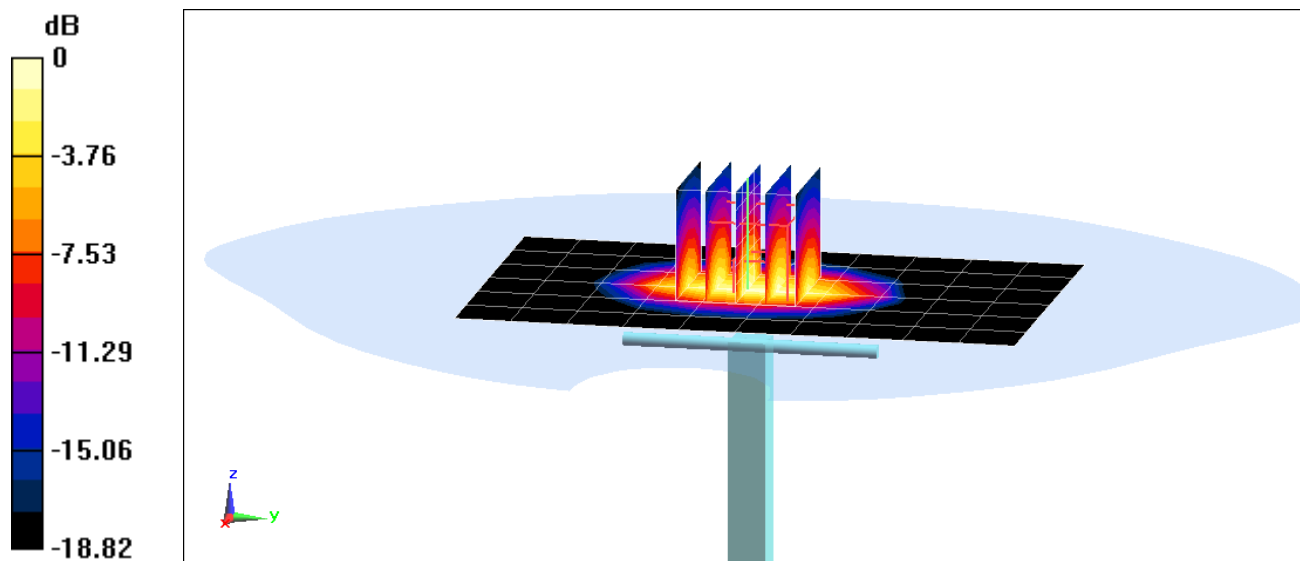
**Area Scan (7x11x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 7.87 W/kg

**SAR(1 g) = 4.11 W/kg**

Deviation(1 g) = 3.27%



0 dB = 6.50 W/kg = 8.13 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064**

Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:

$f = 2300 \text{ MHz}$ ;  $\sigma = 1.685 \text{ S/m}$ ;  $\epsilon_r = 38.984$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7410; ConvF(7.78, 7.78, 7.78) @ 2300 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 2300 MHz System Verification at 20.0 dBm (100 mW)

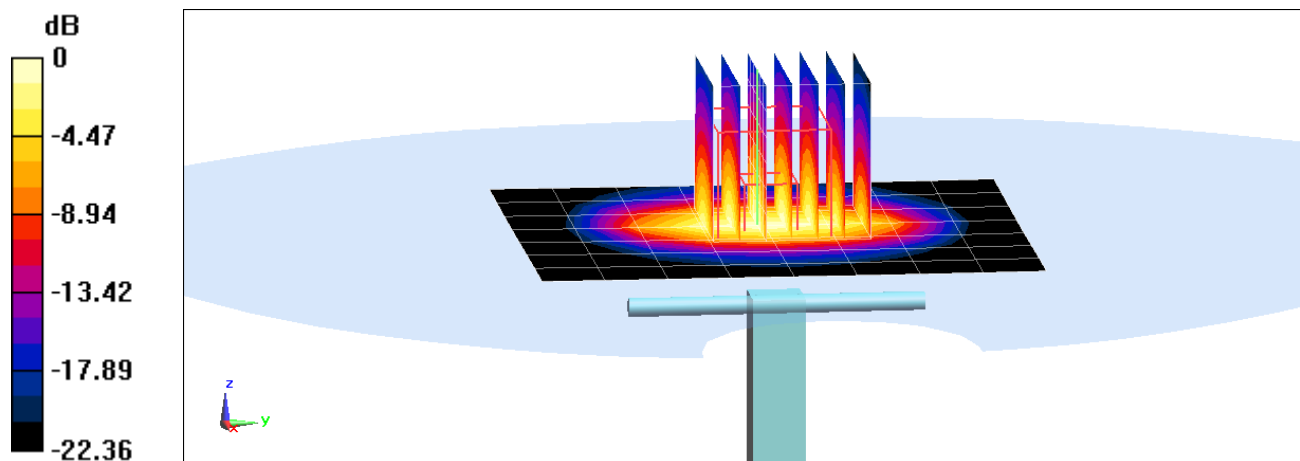
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 10.3 W/kg

**SAR(1 g) = 4.99 W/kg**

Deviation(1 g) = 4.83%



0 dB = 8.27 W/kg = 9.18 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 981**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:

$f = 2450 \text{ MHz}$ ;  $\sigma = 1.855 \text{ S/m}$ ;  $\epsilon_r = 38.862$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-03-2018; Ambient Temp: 22.0°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5) @ 2450 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 2450 MHz System Verification at 20.0 dBm (100 mW)

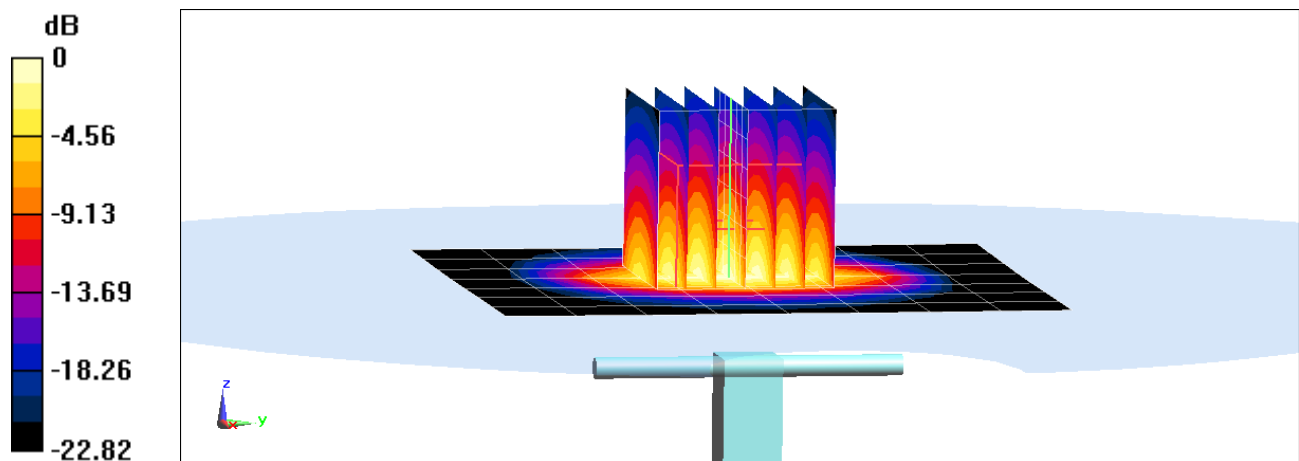
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 11.6 W/kg

**SAR(1 g) = 5.53 W/kg**

Deviation(1 g) = 5.74%



0 dB = 9.34 W/kg = 9.70 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:

$f = 2450 \text{ MHz}$ ;  $\sigma = 1.869 \text{ S/m}$ ;  $\epsilon_r = 40.474$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-09-2019; Ambient Temp: 22.4°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN7410; ConvF(7.5, 7.5, 7.5) @ 2450 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 2450 MHz System Verification at 20.0 dBm (100 mW)

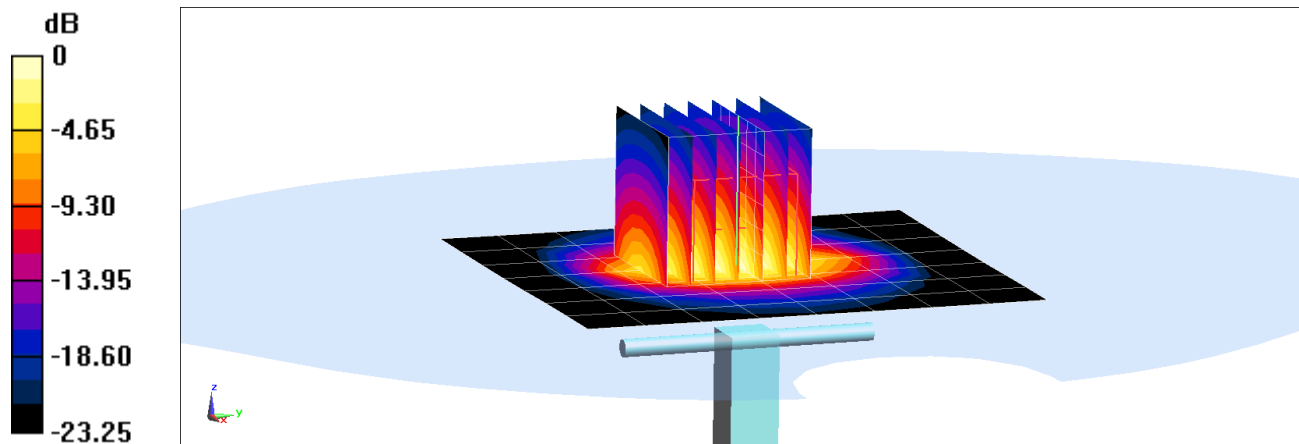
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 11.4 W/kg

**SAR(1 g) = 5.45 W/kg**

Deviation(1 g) = 3.42%



0 dB = 9.10 W/kg = 9.59 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1004**

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2450 Head Medium parameters used:

$f = 2600 \text{ MHz}$ ;  $\sigma = 2.022 \text{ S/m}$ ;  $\epsilon_r = 37.86$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 22.2°C; Tissue Temp: 21.9°C

Probe: EX3DV4 - SN7410; ConvF(7.24, 7.24, 7.24) @ 2600 MHz; Calibrated: 7/20/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1322; Calibrated: 7/11/2018

Phantom: SAM Front; Type: SAM; Serial: 1686

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## **2600 MHz System Verification at 20.0 dBm (100 mW)**

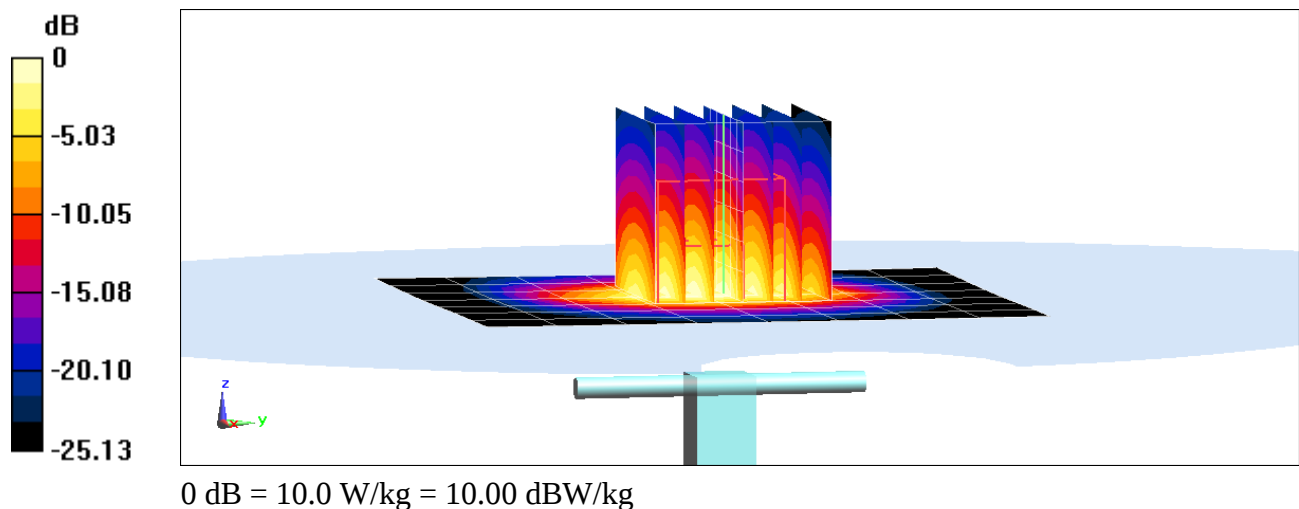
**Area Scan (8x9x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 12.9 W/kg

**SAR(1 g) = 5.8 W/kg**

Deviation(1 g) = 3.76%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 3700 MHz; Type: D3700V2; Serial: 1002**

Communication System: UID 0, CW; Frequency: 3700 MHz; Duty Cycle: 1:1

Medium: 3500-3700 MHz Head Medium parameters used (interpolated):

$f = 3700$  MHz;  $\sigma = 3.085$  S/m;  $\epsilon_r = 37.109$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-14-2018; Ambient Temp: 21.1°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN3949; ConvF(7.24, 7.24, 7.24) @ 3700 MHz; Calibrated: 8/24/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 3700 MHz System Verification at 20.0 dBm (100 mW)

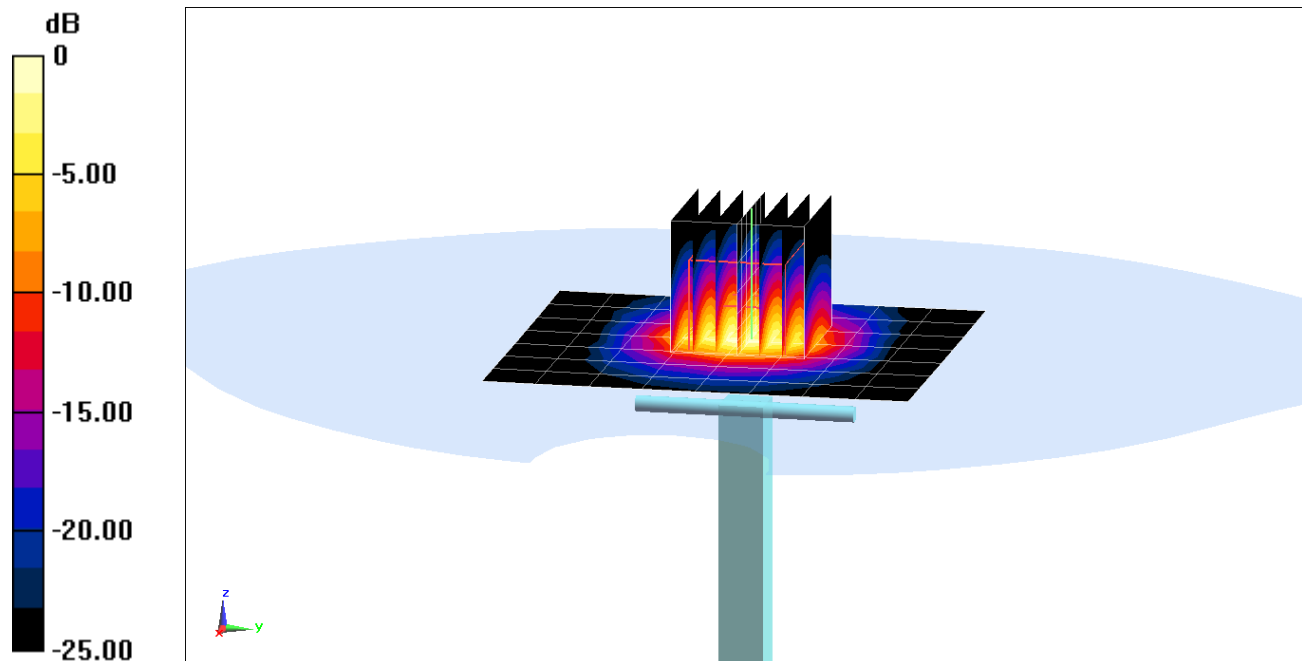
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

**Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 22.0 W/kg

**SAR(1 g) = 7.07 W/kg**

Deviation(1 g) = 4.12%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057**

Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5250 \text{ MHz}$ ;  $\sigma = 4.593 \text{ S/m}$ ;  $\epsilon_r = 35.307$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2018; Ambient Temp: 20.5°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7409; ConvF(5.2, 5.2, 5.2) @ 5250 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 5250 MHz System Verification at 17.0 dBm (50 mW)

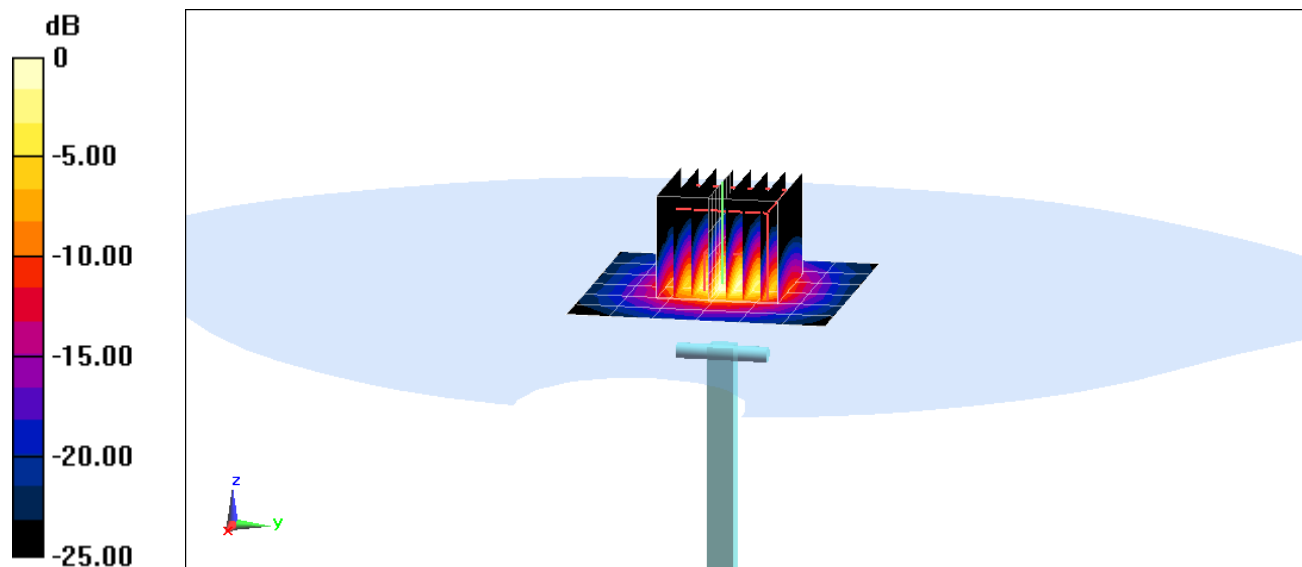
**Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 15.8 W/kg

**SAR(1 g) = 3.87 W/kg**

Deviation(1 g) = -2.27%



0 dB = 9.09 W/kg = 9.59 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191**

Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5250 \text{ MHz}$ ;  $\sigma = 4.564 \text{ S/m}$ ;  $\epsilon_r = 35.313$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-07-2019; Ambient Temp: 21.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7409; ConvF(5.2, 5.2, 5.2) @ 5250 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP (Left); Type: SAM; Serial: 1715

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 5250 MHz System Verification at 17.0 dBm (50 mW)

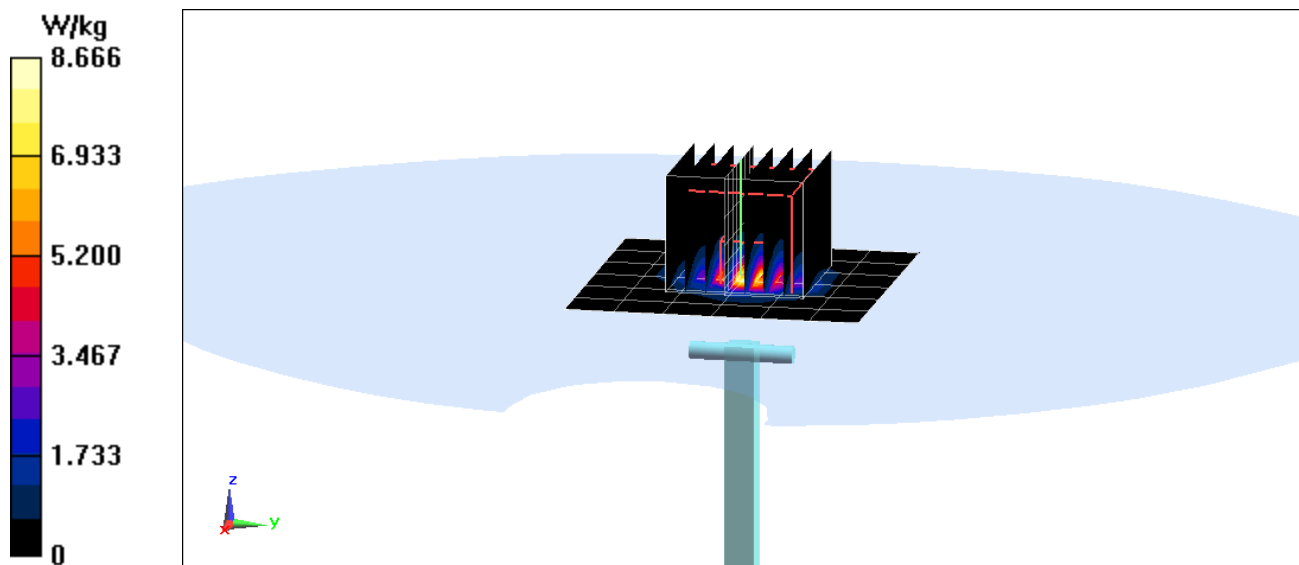
**Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 15.1 W/kg

**SAR(1 g) = 3.65 W/kg**

Deviation(1 g) = -7.48%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057**

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used:

$f = 5600 \text{ MHz}$ ;  $\sigma = 4.957 \text{ S/m}$ ;  $\epsilon_r = 34.816$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2018; Ambient Temp: 20.5°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7409; ConvF(4.77, 4.77, 4.77) @ 5600 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## **5600 MHz System Verification at 17.0 dBm (50 mW)**

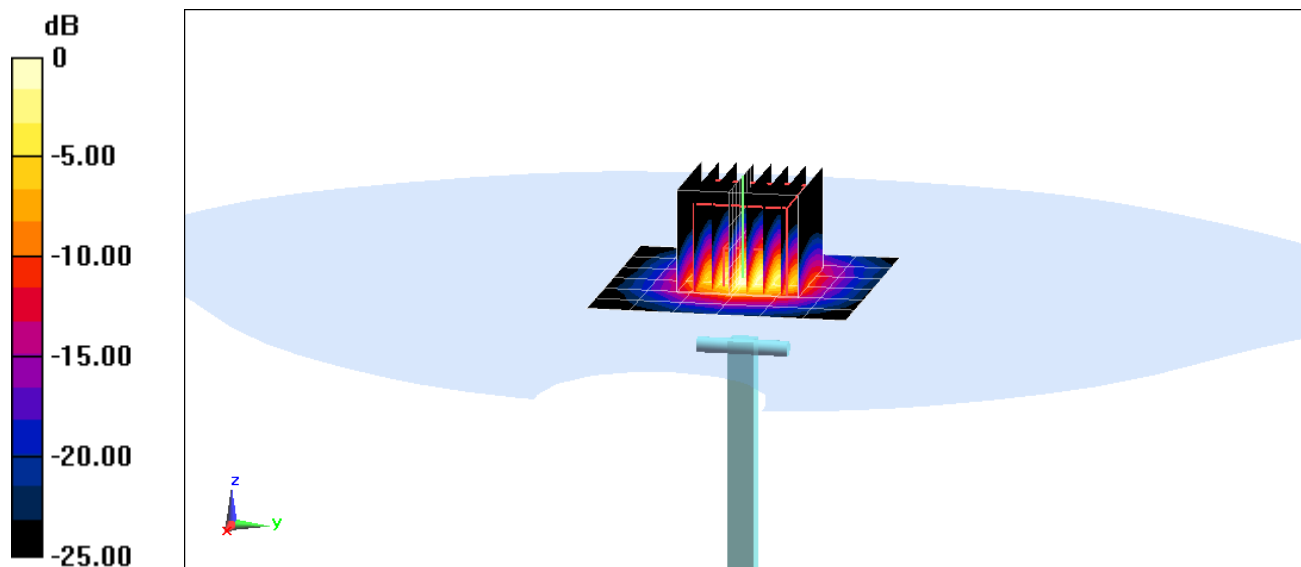
**Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 18.2 W/kg

**SAR(1 g) = 4.09 W/kg**

Deviation(1 g) = -2.73%



0 dB = 9.74 W/kg = 9.89 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1057**

Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: 5GHz Head Medium parameters used (interpolated):

$f = 5750 \text{ MHz}$ ;  $\sigma = 5.111 \text{ S/m}$ ;  $\epsilon_r = 34.607$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-26-2018; Ambient Temp: 20.5°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7409; ConvF(4.82, 4.82, 4.82) @ 5750 MHz; Calibrated: 6/25/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1334; Calibrated: 6/18/2018

Phantom: SAM with CRP v5.0 (Right); Type: QD000P40CD; Serial: TP:1759

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 5750 MHz System Verification at 17.0 dBm (50 mW)

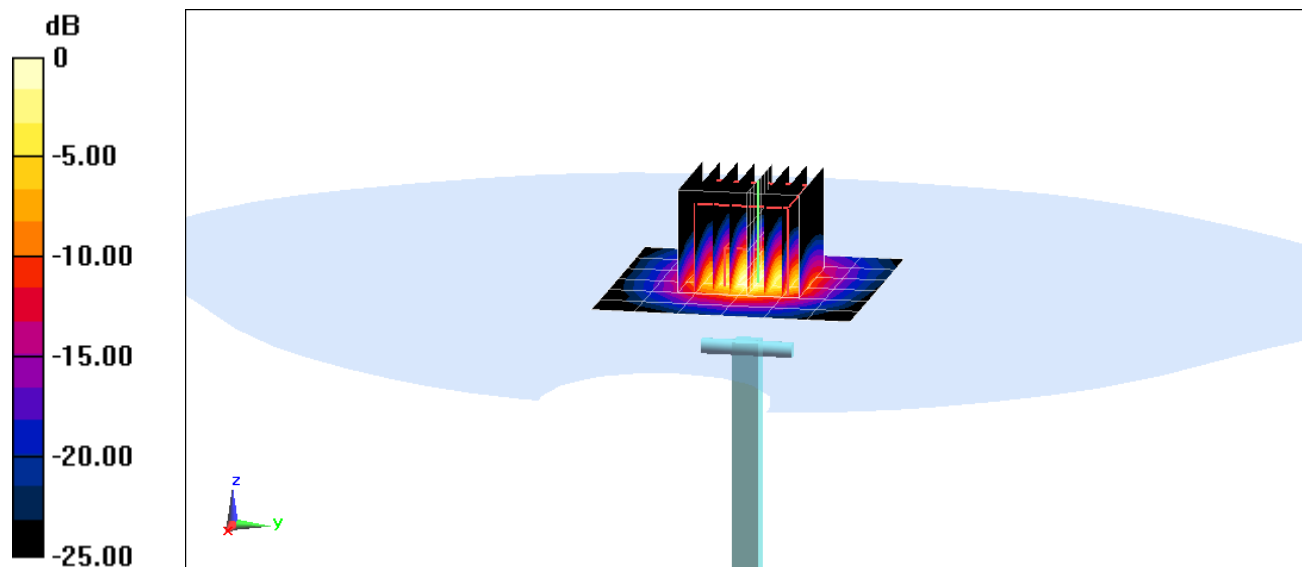
**Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 18.0 W/kg

**SAR(1 g) = 3.79 W/kg**

Deviation(1 g) = -5.84%



0 dB = 9.34 W/kg = 9.70 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003**

Communication System: UID 0, CW; Frequency: 750 MHz; Duty Cycle: 1:1

Medium: 750 MHz Body Medium parameters used (interpolated):

$f = 750 \text{ MHz}$ ;  $\sigma = 0.956 \text{ S/m}$ ;  $\epsilon_r = 54.708$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-12-2018; Ambient Temp: 21.8°C; Tissue Temp: 20.2°C

Probe: EX3DV4 - SN7308; ConvF(10.38, 10.38, 10.38) @ 750 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 750 MHz System Verification at 23.0 dBm (200 mW)

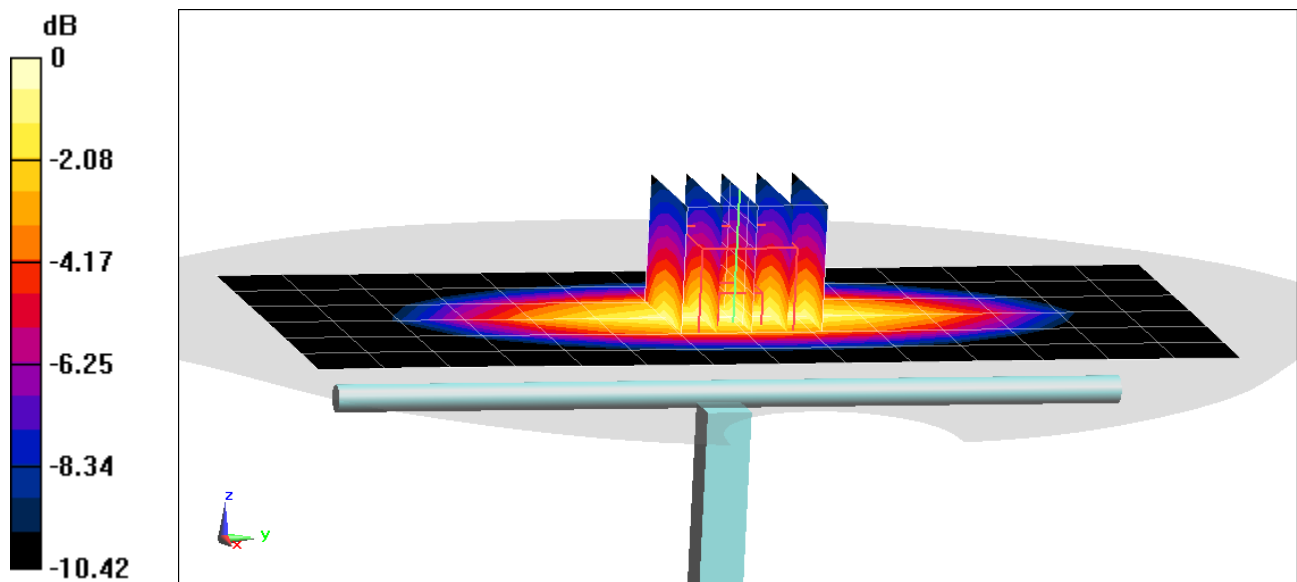
**Area Scan (7x15x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 2.50 W/kg

**SAR(1 g) = 1.65 W/kg**

Deviation(1 g) = -3.85%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d132**

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body; Medium parameters used:

$f = 835 \text{ MHz}$ ;  $\sigma = 0.974 \text{ S/m}$ ;  $\epsilon_r = 54.661$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-11-2018; Ambient Temp: 22.3°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(9.61, 9.61, 9.61) @ 835 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V4.0 Front Right; Type: QD 000 P40 CC; Serial: 1167

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 835 MHz System Verification at 23.0 dBm (200 mW)

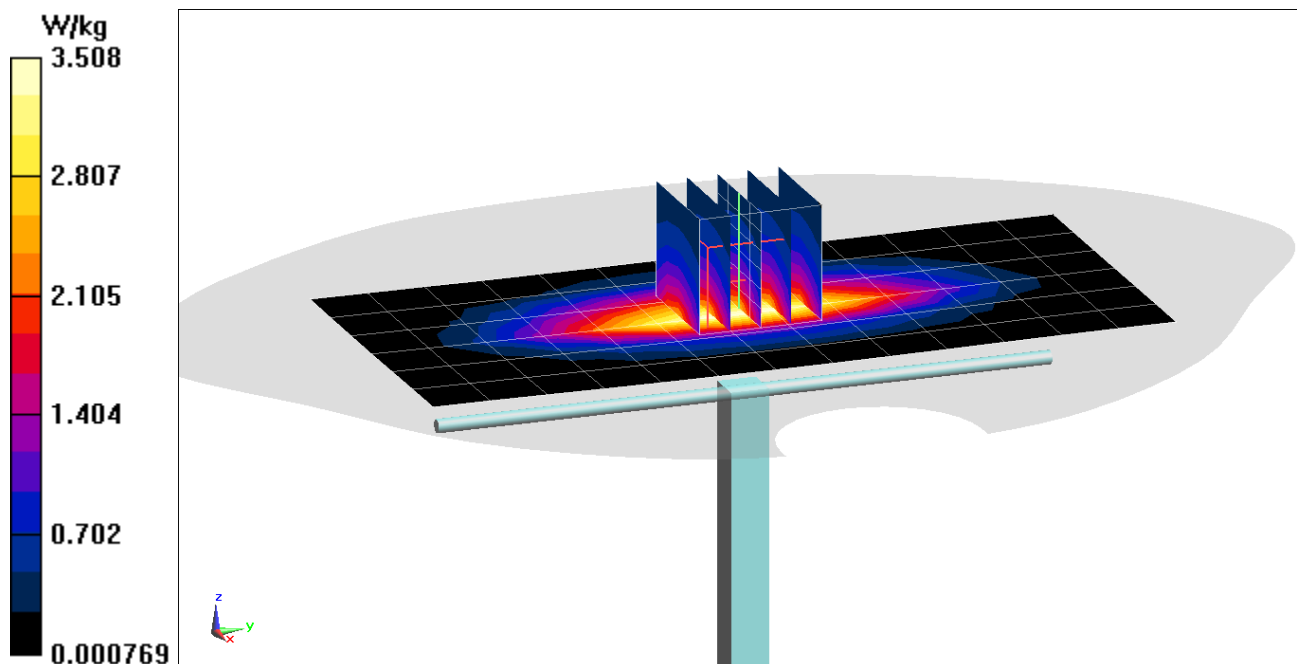
**Area Scan (7x14x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 2.99 W/kg

**SAR(1 g) = 1.98 W/kg**

Deviation(1 g) = 1.96%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047**

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 MHz Body Medium parameters used:

$f = 835 \text{ MHz}$ ;  $\sigma = 0.995 \text{ S/m}$ ;  $\epsilon_r = 52.605$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-17-2018; Ambient Temp: 20.1°C; Tissue Temp: 20.5°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 835 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## **835 MHz System Verification at 23.0 dBm (200 mW)**

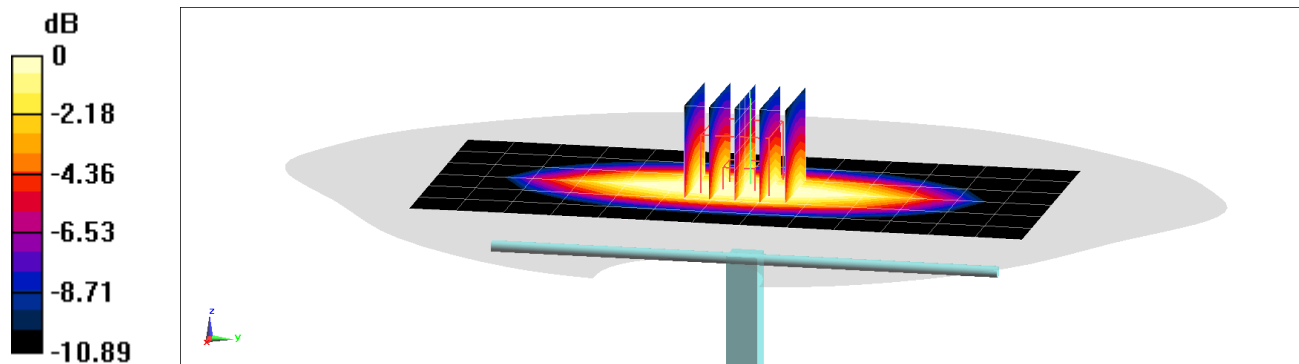
**Area Scan (7x14x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Peak SAR (extrapolated) = 2.95 W/kg

**SAR(1 g) = 1.97 W/kg**

Deviation(1 g) = 1.44%



0 dB = 2.24 W/kg = 3.50 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d133**

Communication System: UID 0, CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Body Medium parameters used:

$f = 835 \text{ MHz}$ ;  $\sigma = 0.965 \text{ S/m}$ ;  $\epsilon_r = 53.598$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 12-26-2018; Ambient Temp: 19.9°C; Tissue Temp: 19.1°C

Probe: ES3DV3 - SN3347; ConvF(6.37, 6.37, 6.37) @ 835 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## **835 MHz System Verification at 23.0 dBm (200 mW)**

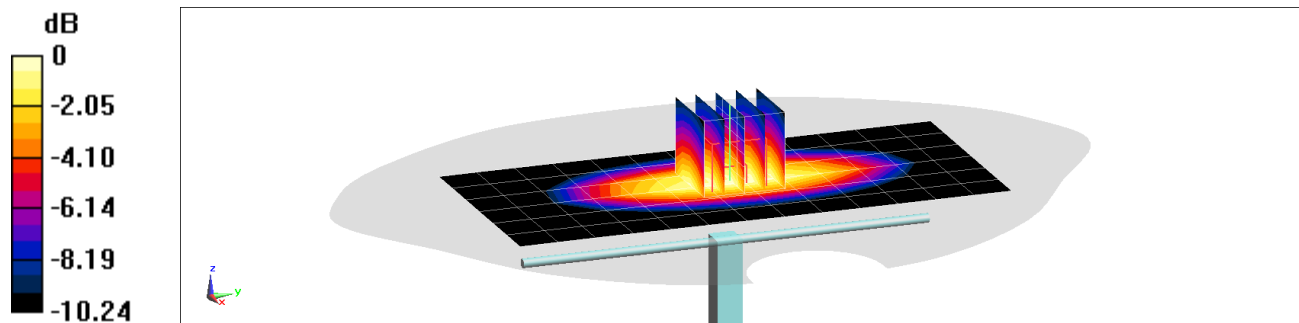
**Area Scan (7x14x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Peak SAR (extrapolated) = 2.85 W/kg

**SAR(1 g) = 1.96 W/kg**

Deviation(1 g) = 0.51%



0 dB = 2.28 W/kg = 3.58 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1150**

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used:

$f = 1750 \text{ MHz}$ ;  $\sigma = 1.477 \text{ S/m}$ ;  $\epsilon_r = 51.59$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-16-2018; Ambient Temp: 21.7°C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN7308; ConvF(8.13, 8.13, 8.13) @ 1750 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 1750 MHz System Verification at 20.0 dBm (100 mW)

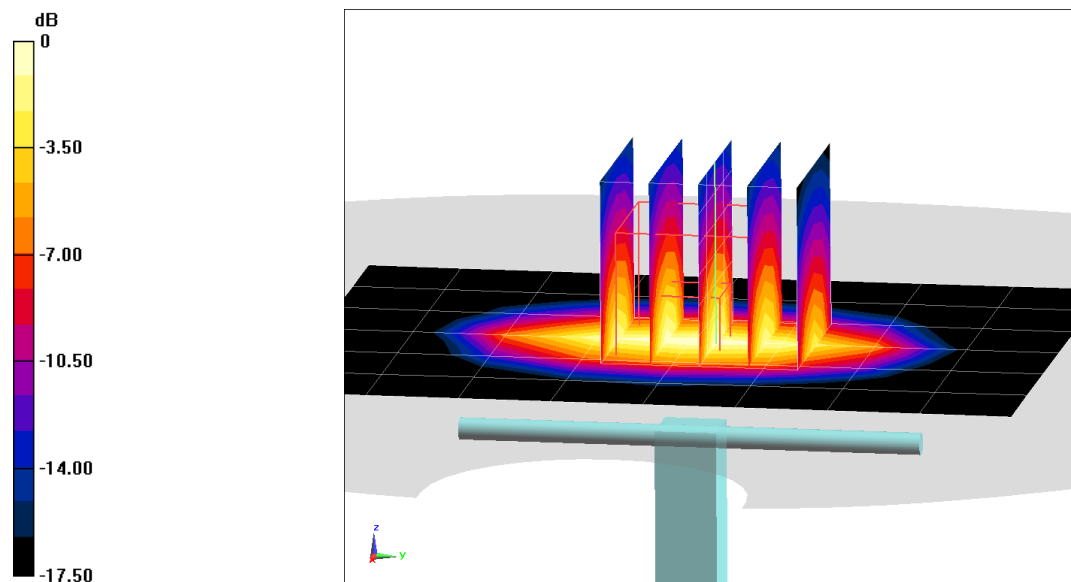
**Area Scan (7x9x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 6.86 W/kg

**SAR(1 g) = 3.8 W/kg**

Deviation(1 g) = 3.83%



0 dB = 5.72 W/kg = 7.57 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1750 MHz; Type: D1750V2; Serial: 1150**

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used:

$f = 1750 \text{ MHz}$ ;  $\sigma = 1.53 \text{ S/m}$ ;  $\epsilon_r = 51.337$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-19-2018; Ambient Temp: 22.7°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7357; ConvF(8.43, 8.43, 8.43) @ 1750 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 1750 MHz System Verification at 20.0 dBm (100 mW)

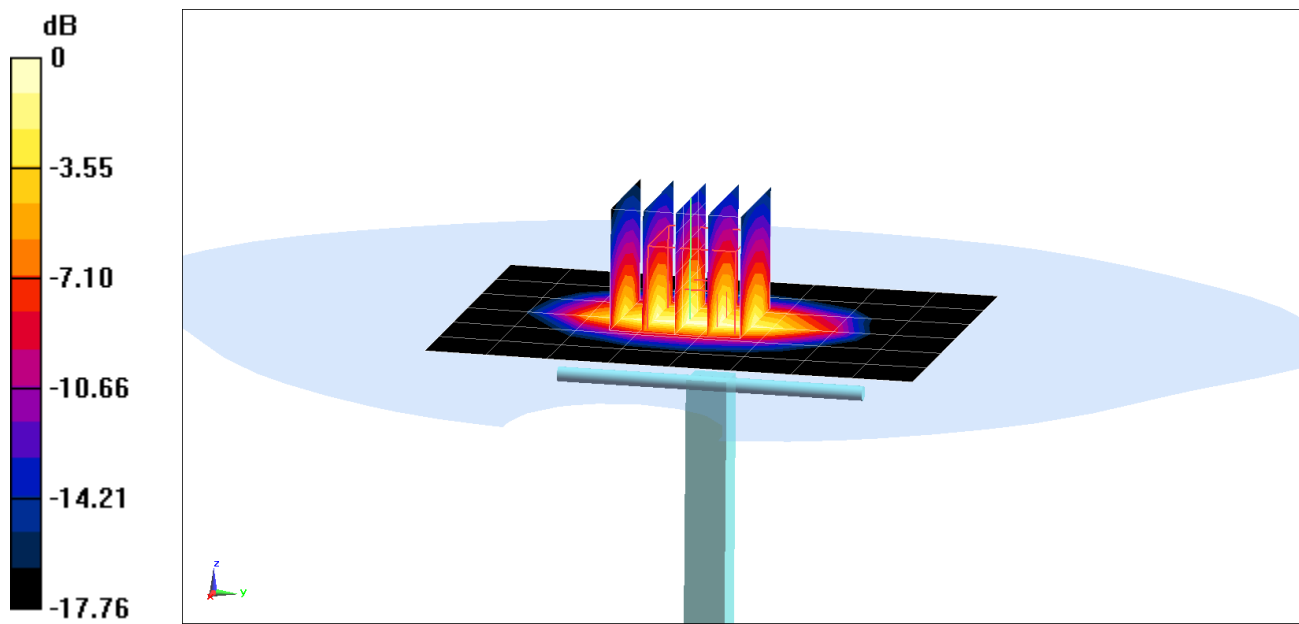
**Area Scan (7x9x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Peak SAR (extrapolated) = 6.99 W/kg

**SAR(1 g) = 3.78 W/kg; SAR(10 g) = 1.99 W/kg**

Deviation(1 g) = 3.28%; Deviation(10 g) = 2.58%



0 dB = 5.84 W/kg = 7.66 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1750 MHz; Type: D1765V2; Serial: 1008**

Communication System: UID 0, CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium: 1750 Body Medium parameters used:

$f = 1750 \text{ MHz}$ ;  $\sigma = 1.488 \text{ S/m}$ ;  $\epsilon_r = 51.84$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-21-2019; Ambient Temp: 21.5°C; Tissue Temp: 20.9°C

Probe: ES3DV3 - SN3347; ConvF(5.17, 5.17, 5.17) @ 1750 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 1750 MHz System Verification at 20.0 dBm (100 mW)

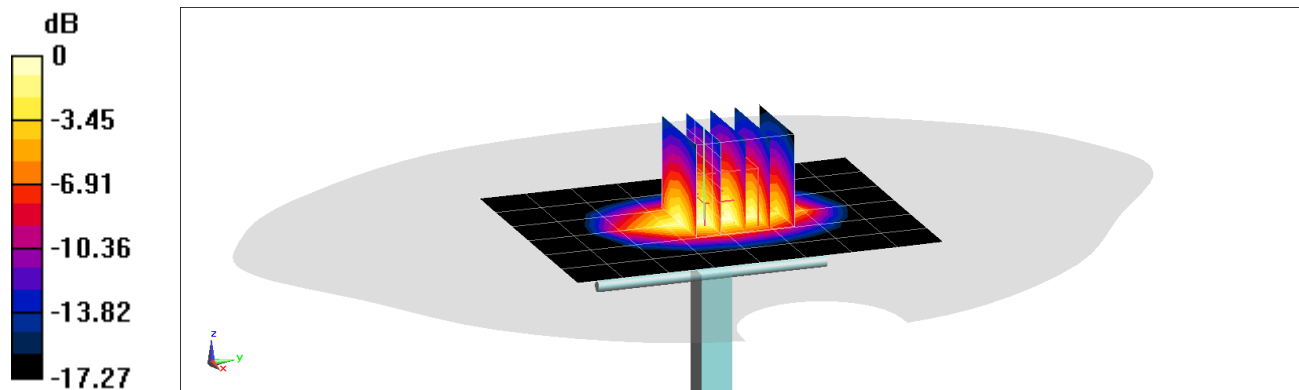
**Area Scan (7x9x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 6.33 W/kg

**SAR(10 g) = 1.92 W/kg**

Deviation(10 g) = -3.52%



0 dB = 4.47 W/kg = 6.50 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d080**

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$ ;  $\sigma = 1.556 \text{ S/m}$ ;  $\epsilon_r = 51.119$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 23.6°C; Tissue Temp: 22.0°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1900 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 1900 MHz System Verification at 20.0 dBm (100 mW)

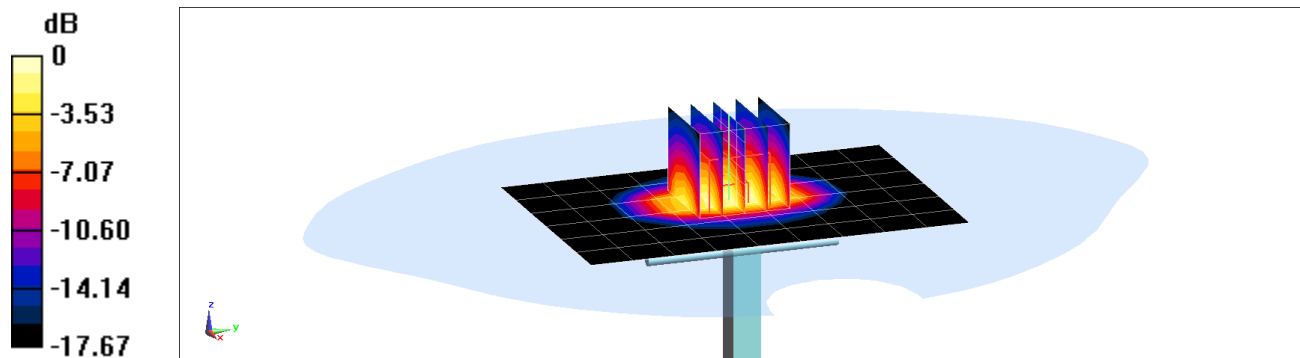
**Area Scan (7x10x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 7.50 W/kg

**SAR(1 g) = 4.2 W/kg; SAR(10 g) = 2.17 W/kg**

Deviation(1 g) = 7.14%; Deviation(10 g) = 5.34%



0 dB = 5.36 W/kg = 7.29 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d149**

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$ ;  $\sigma = 1.575 \text{ S/m}$ ;  $\epsilon_r = 53.421$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 21.6°C; Tissue Temp: 21.3°C

Probe: ES3DV3 - SN3332; ConvF(4.77, 4.77, 4.77) @ 1900 MHz; Calibrated: 8/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1272; Calibrated: 2/9/2018

Phantom: SAM V5.0 Right; Type: QD000P40CD; Serial: 1647

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 1900 MHz System Verification at 20.0 dBm (100 mW)

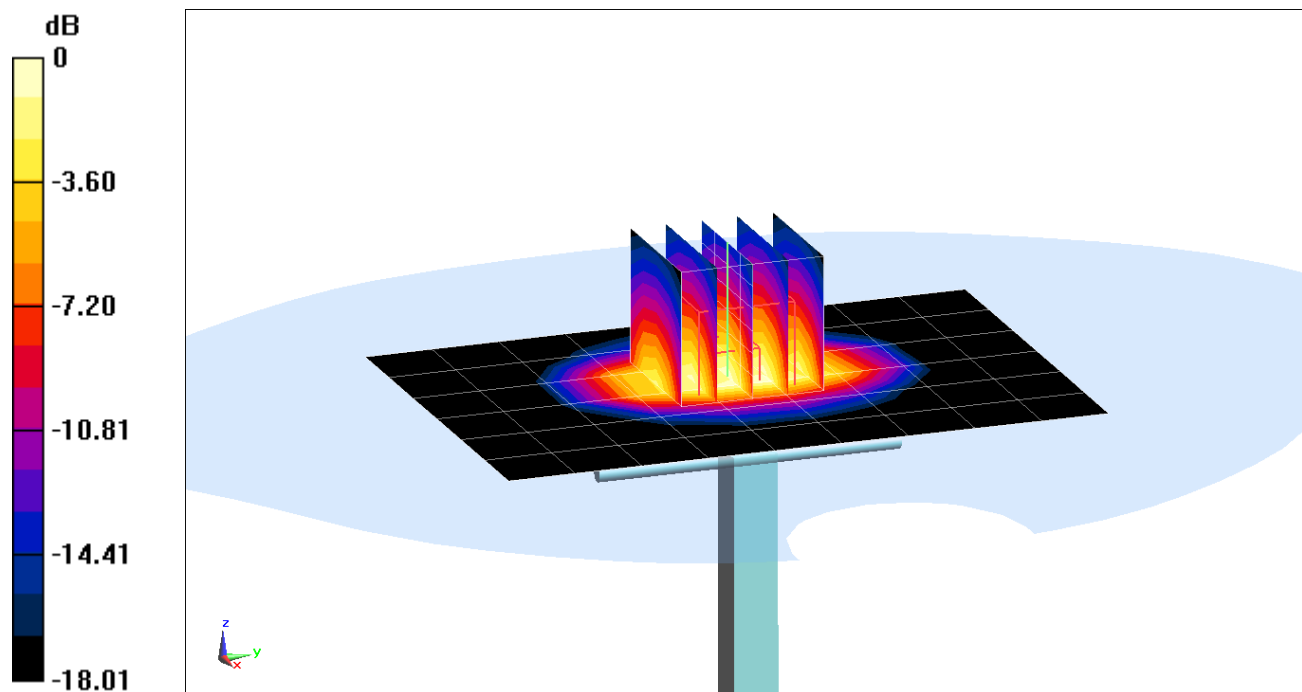
**Area Scan (7x10x1):** Measurement grid: dx=15mm, dy=15mm

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

Peak SAR (extrapolated) = 6.90 W/kg

**SAR(1 g) = 3.84 W/kg; SAR(10 g) = 1.98 W/kg**

Deviation(1 g) = -2.54%; Deviation(10 g) = -4.35%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 5d148**

Communication System: UID 0, CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Body; Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$ ;  $\sigma = 1.575 \text{ S/m}$ ;  $\epsilon_r = 53.31$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-10-2019; Ambient Temp: 23.00°C; Tissue Temp: 20.80°C

Probe: ES3DV3 - SN3287; ConvF(4.83, 4.83, 4.83) @ 1900 MHz; Calibrated: 10/22/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1333; Calibrated: 10/18/2018

Phantom: Twin-SAM V8.0; Type: QD 000 P41 Ax; Serial: 1964

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## **1900 MHz System Verification at 20.0 dBm (100 mW)**

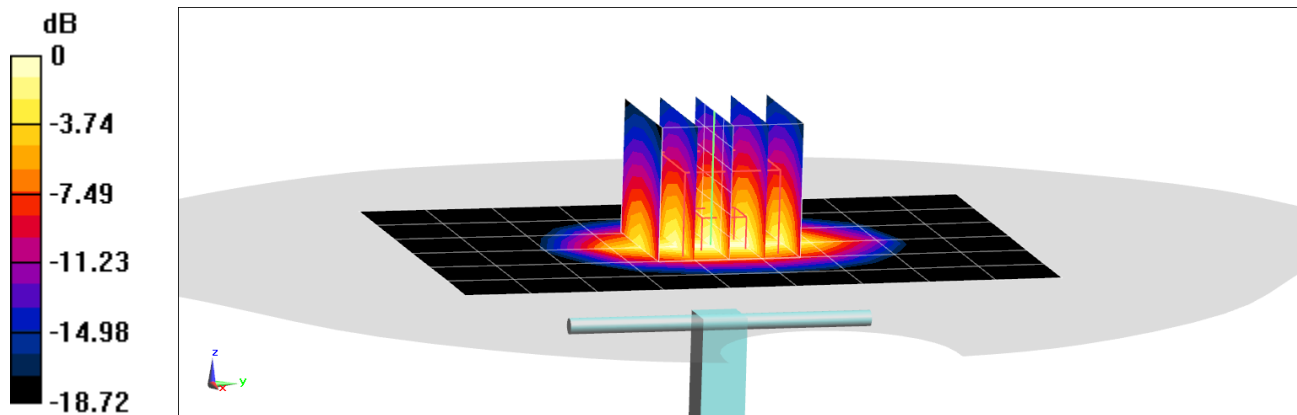
**Area Scan (7x10x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

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

Peak SAR (extrapolated) = 7.87 W/kg

**SAR(1 g) = 4.26 W/kg; SAR(10 g) = 2.18 W/kg**

Deviation(1 g) = 7.58%; Deviation(10 g) = 4.31%



0 dB = 5.39 W/kg = 7.32 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064**

Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2300 \text{ MHz}$ ;  $\sigma = 1.867 \text{ S/m}$ ;  $\epsilon_r = 52.137$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-12-2018; Ambient Temp: 22.7°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63) @ 2300 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 2300 MHz System Verification at 20.0 dBm (100 mW)

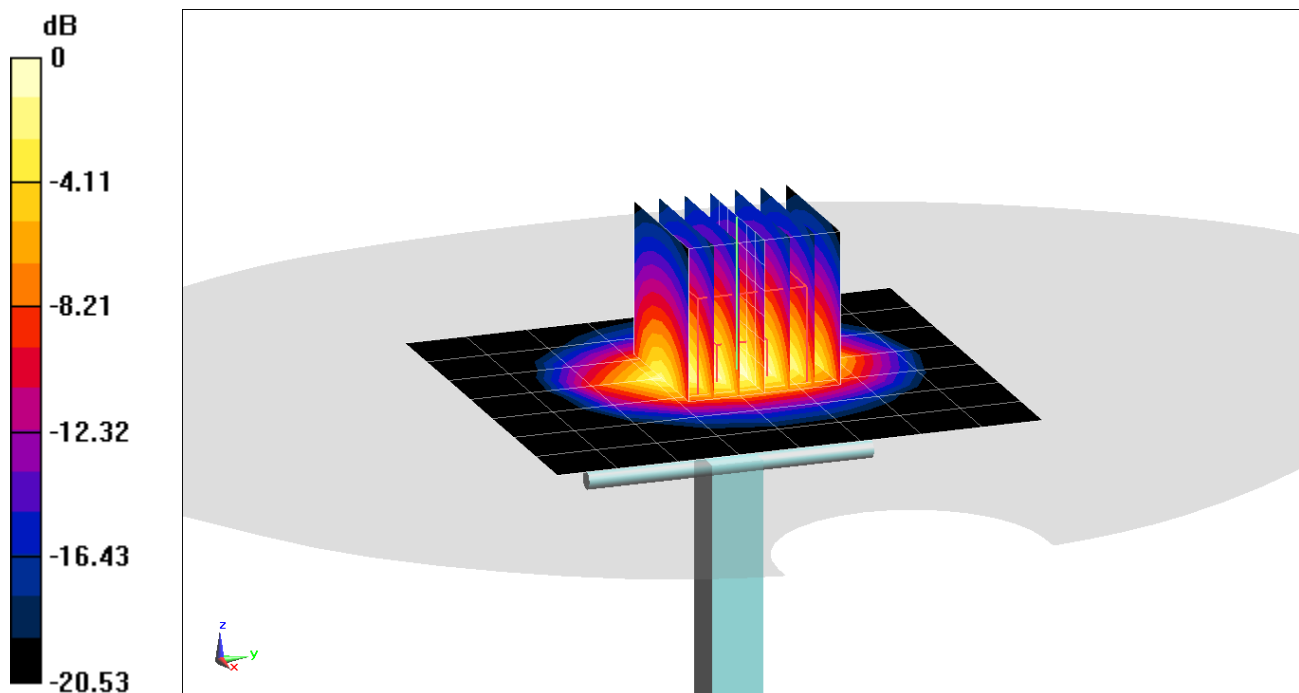
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 9.88 W/kg

**SAR(1 g) = 5.01 W/kg**

Deviation(1 g) = 7.74%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2300 MHz; Type: D2300V2; Serial: 1064**

Communication System: UID 0, CW; Frequency: 2300 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2300 \text{ MHz}$ ;  $\sigma = 1.849 \text{ S/m}$ ;  $\epsilon_r = 53.207$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.63, 4.63, 4.63) @ 2300 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 2300 MHz System Verification at 20.0 dBm (100 mW)

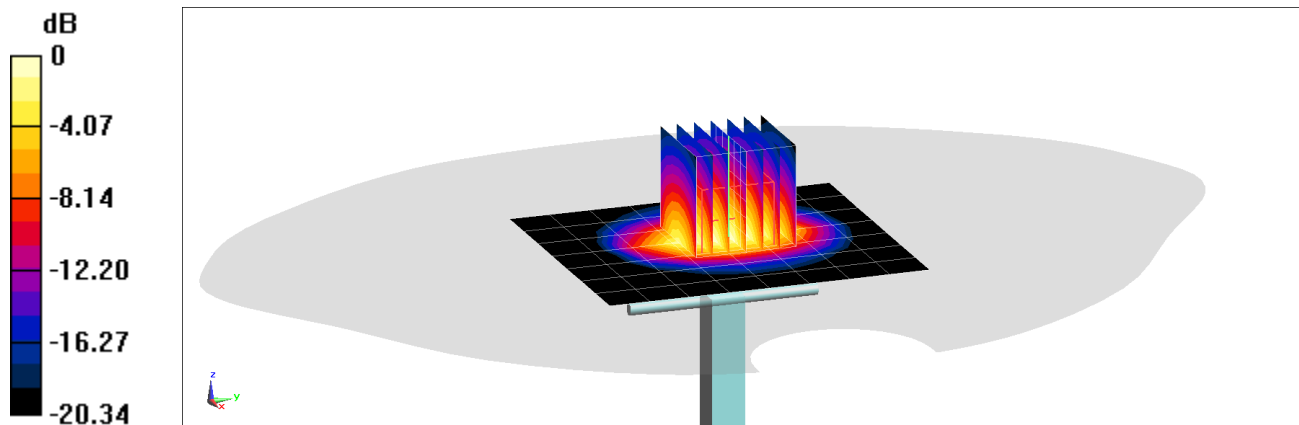
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 9.62 W/kg

**SAR(10 g) = 2.37 W/kg**

Deviation(10 g) = 4.87%



0 dB = 6.45 W/kg = 8.10 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2450 \text{ MHz}$ ;  $\sigma = 1.994 \text{ S/m}$ ;  $\epsilon_r = 52.216$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-09-2018; Ambient Temp: 21.8°C; Tissue Temp: 22.8°C

Probe: ES3DV3 - SN3319; ConvF(4.51, 4.51, 4.51) @ 2450 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 2450 MHz System Verification at 20.0 dBm (100 mW)

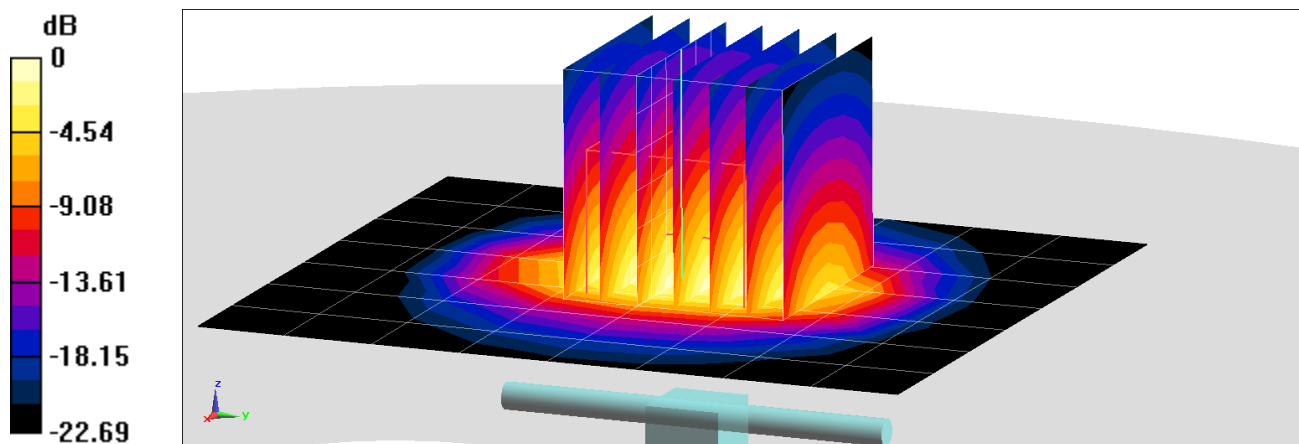
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 11.1 W/kg

**SAR(1 g) = 5.37 W/kg**

Deviation(1 g) = 7.19%



0 dB = 7.00 W/kg = 8.45 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2450 \text{ MHz}$ ;  $\sigma = 2.021 \text{ S/m}$ ;  $\epsilon_r = 52.821$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.51, 4.51, 4.51) @ 2450 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 2450 MHz System Verification at 20.0 dBm (100 mW)

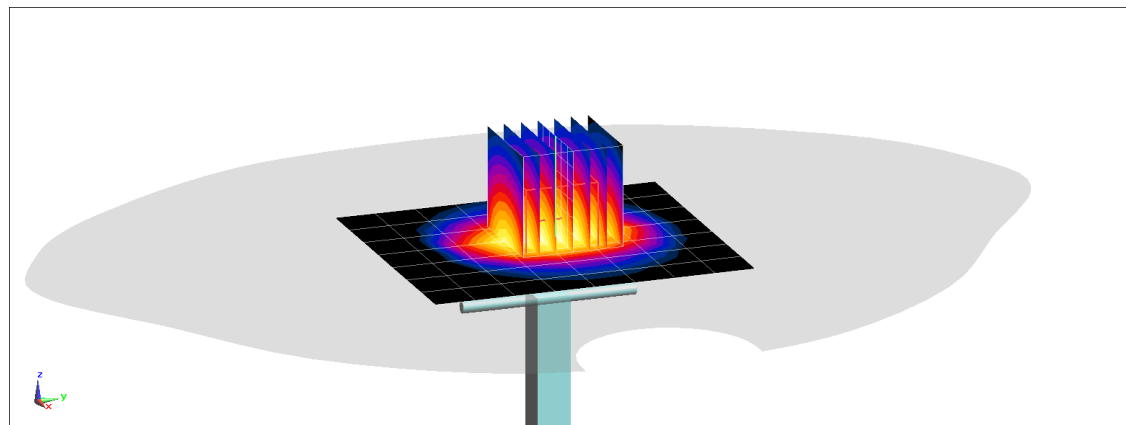
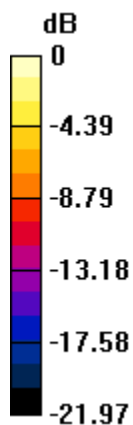
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 10.2 W/kg

**SAR(1 g) = 4.95 W/kg; SAR(10 g) = 2.28 W/kg**

Deviation(1 g) = -3.13%; Deviation(10 g) = -5.79%



0 dB = 6.51 W/kg = 8.14 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 719**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 MHz Body Medium parameters used:

$f = 2450 \text{ MHz}$ ;  $\sigma = 2.04 \text{ S/m}$ ;  $\epsilon_r = 50.852$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-20-2018; Ambient Temp: 19.7°C; Tissue Temp: 22.6°C

Probe: ES3DV3 - SN3347; ConvF(4.64, 4.64, 4.64) @ 2450 MHz; Calibrated: 3/27/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 2/15/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1800

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 2450 MHz System Verification at 20.0 dBm (100 mW)

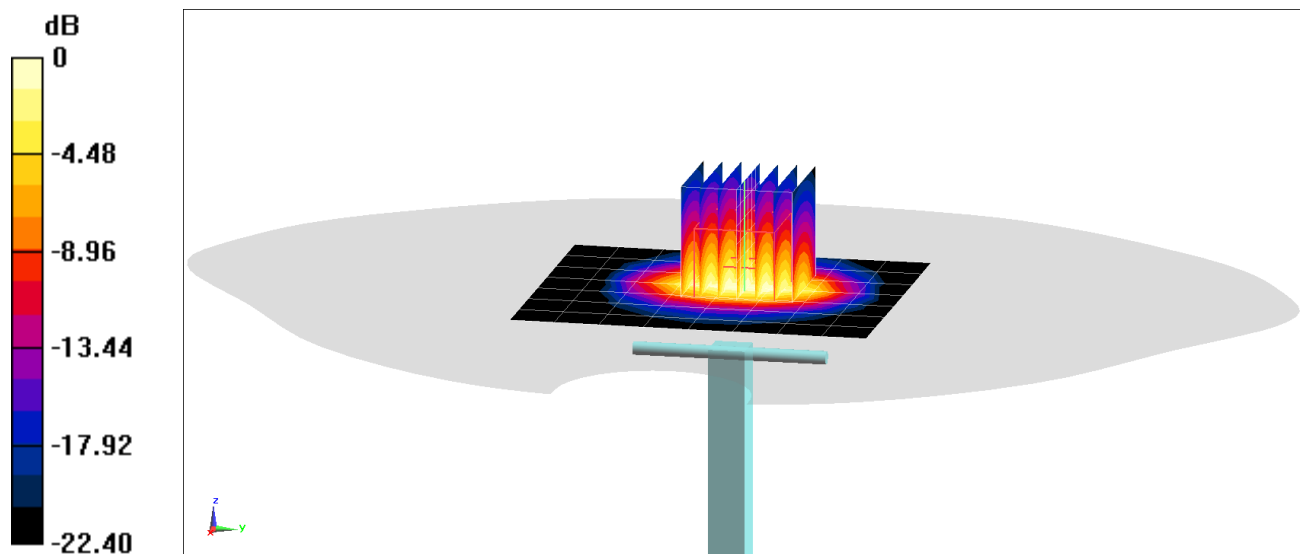
**Area Scan (8x9x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 11.1 W/kg

**SAR(1 g) = 5.23 W/kg**

Deviation(1 g) = 4.39%



0 dB = 6.58 W/kg = 8.18 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: 797**

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Body; Medium parameters used:

$f = 2450 \text{ MHz}$ ;  $\sigma = 2.033 \text{ S/m}$ ;  $\epsilon_r = 52.283$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-09-2019; Ambient Temp: 23.4°C; Tissue Temp: 21.0°C

Probe: EX3DV4 - SN7406; ConvF(7.3, 7.3, 7.3) @ 2450 MHz; Calibrated: 5/22/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn859; Calibrated: 5/22/2018

Phantom: Twin-SAM V5.0 Back Right; Type: QD 000 P40 CD; Serial: 1692

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 2450 MHz System Verification at 20.0 dBm (100 mW)

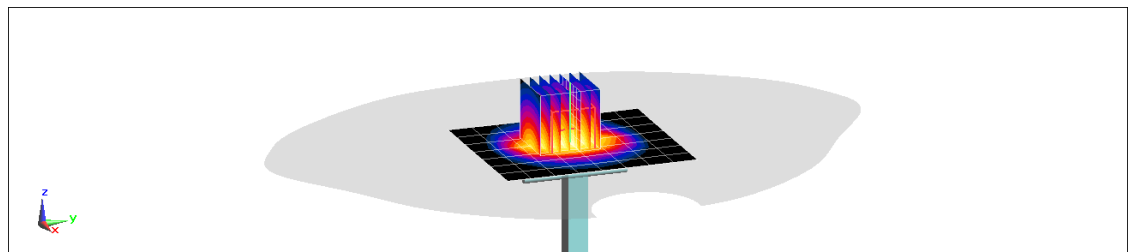
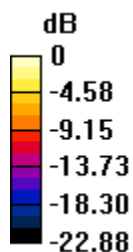
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 10.8 W/kg

**SAR(1 g) = 5.27 W/kg; SAR(10 g) = 2.44 W/kg**

Deviation(1 g) = 3.13%; Deviation(10 g) = 0.83%



0 dB = 8.54 W/kg = 9.31 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1126**

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2600$  MHz;  $\sigma = 2.203$  S/m;  $\epsilon_r = 50.349$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-14-2018; Ambient Temp: 22.3°C; Tissue Temp: 20.7°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33) @ 2600 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 2600 MHz System Verification at 20.0 dBm (100 mW)

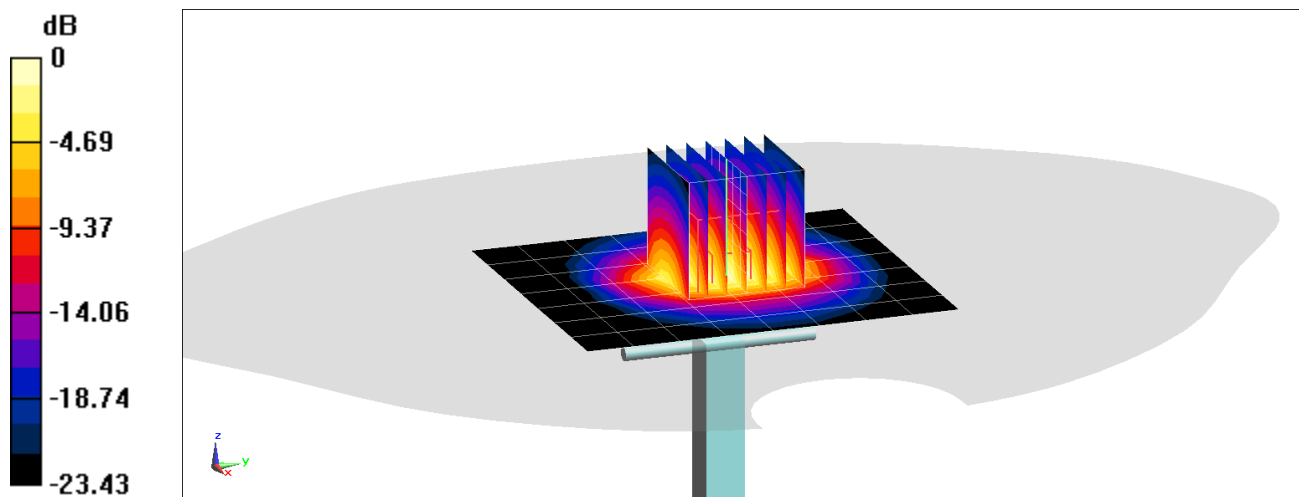
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 11.8 W/kg

**SAR(1 g) = 5.4 W/kg**

Deviation(1 g) = -0.18%



0 dB = 7.20 W/kg = 8.57 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071**

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2600 \text{ MHz}$ ;  $\sigma = 2.194 \text{ S/m}$ ;  $\epsilon_r = 52.324$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.2°C; Tissue Temp: 22.3°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33) @ 2600 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 2600 MHz System Verification at 20.0 dBm (100 mW)

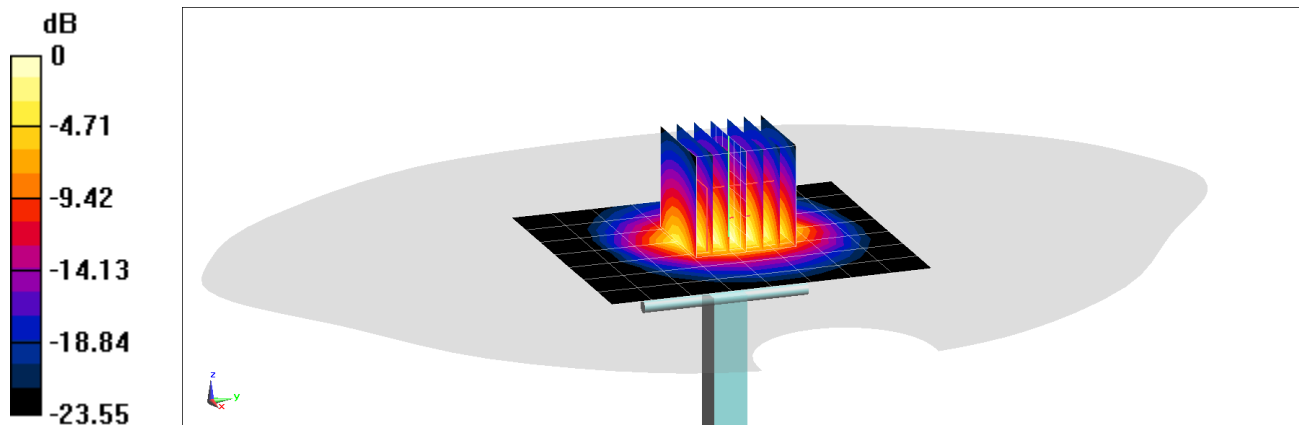
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

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

Peak SAR (extrapolated) = 11.7 W/kg

**SAR(1 g) = 5.35 W/kg; SAR(10 g) = 2.36 W/kg**

Deviation(1 g) = -1.29%; Deviation(10 g) = -3.67%



0 dB = 7.17 W/kg = 8.56 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 2600 MHz; Type: D2600V2; Serial: 1071**

Communication System: UID 0, CW; Frequency: 2600 MHz; Duty Cycle: 1:1

Medium: 2450 Body Medium parameters used:

$f = 2600 \text{ MHz}$ ;  $\sigma = 2.22 \text{ S/m}$ ;  $\epsilon_r = 52.401$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-07-2019; Ambient Temp: 22.6°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3319; ConvF(4.33, 4.33, 4.33) @ 2600 MHz; Calibrated: 3/13/2018

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1368; Calibrated: 3/7/2018

Phantom: LeftTwin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP1375

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 2600 MHz System Verification at 20.0 dBm (100 mW)

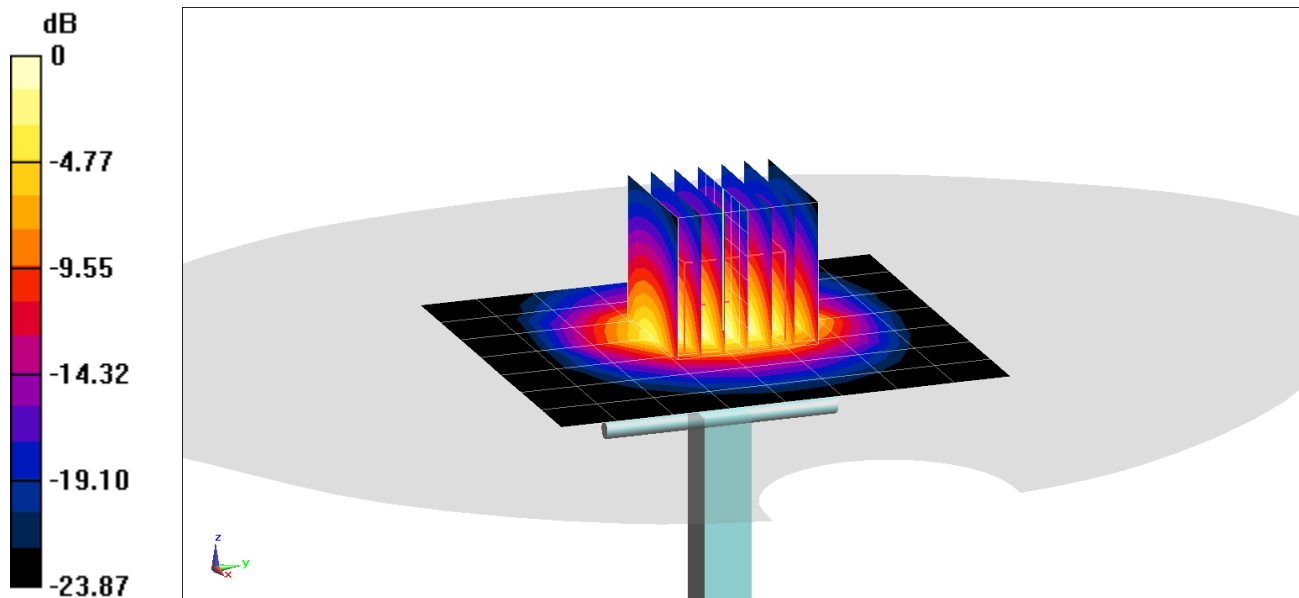
**Area Scan (8x9x1):** Measurement grid:  $dx=12\text{mm}$ ,  $dy=12\text{mm}$

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

Peak SAR (extrapolated) = 12.2 W/kg

**SAR(1 g) = 5.52 W/kg**

Deviation(1 g) = 1.85%



0 dB = 7.32 W/kg = 8.65 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 3500 MHz; Type: D3500V2; Serial: 1055**

Communication System: UID 0, CW; Frequency: 3500 MHz; Duty Cycle: 1:1

Medium: 3500-3700 Body Medium parameters used:

$f = 3500 \text{ MHz}$ ;  $\sigma = 3.197 \text{ S/m}$ ;  $\epsilon_r = 49.995$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-14-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3914; ConvF(6.81, 6.81, 6.81) @ 3500 MHz; Calibrated: 2/14/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 3500 MHz System Verification at 20.0 dBm (100 mW)

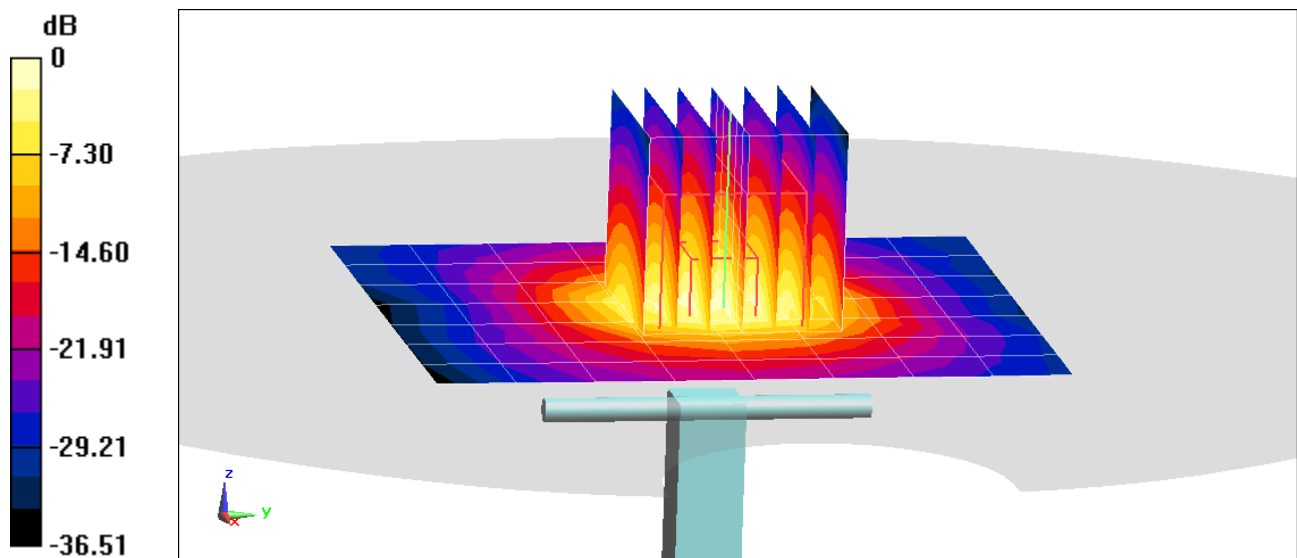
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

**Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 16.1 W/kg

**SAR(1 g) = 6.06 W/kg; SAR(10 g) = 2.26 W/kg**

Deviation(1 g) = -6.19%; Deviation(10 g) = -6.22%



0 dB = 11.7 W/kg = 10.68 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 3700 MHz; Type: D3700V2; Serial: 1002**

Communication System: UID 0, CW; Frequency: 3700 MHz; Duty Cycle: 1:1

Medium: 3500-3700 Body Medium parameters used (interpolated):

$f = 3700$  MHz;  $\sigma = 3.434$  S/m;  $\epsilon_r = 49.588$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-14-2018; Ambient Temp: 22.2°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN3914; ConvF(6.64, 6.64, 6.64) @ 3700 MHz; Calibrated: 2/14/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## **3700 MHz System Verification at 20.0 dBm (100 mW)**

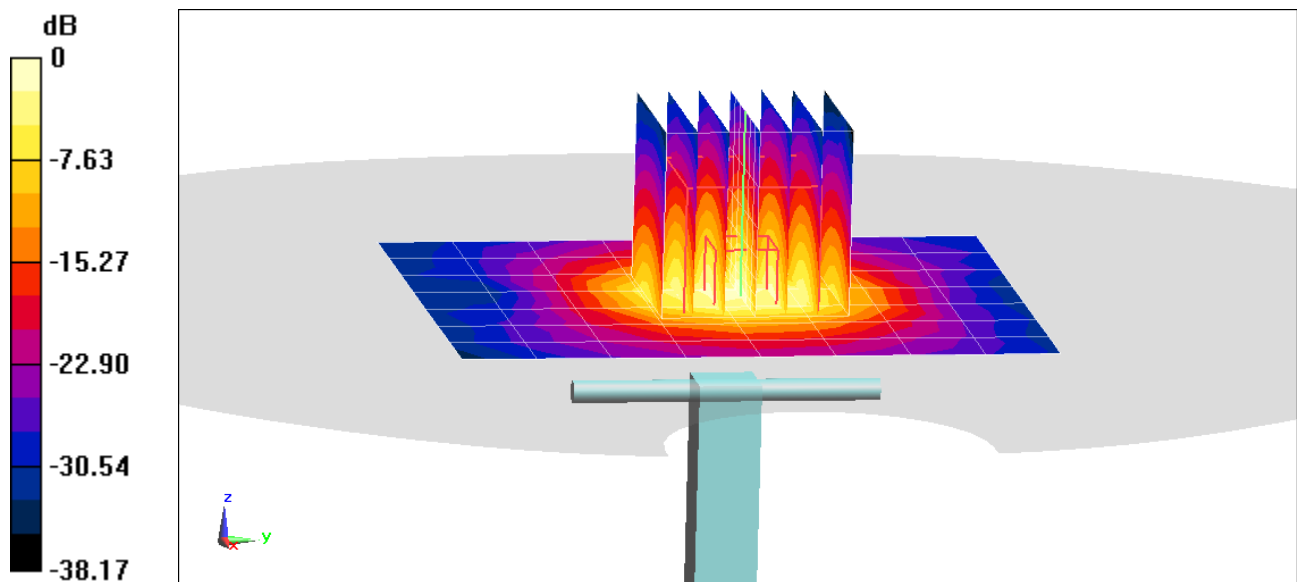
**Area Scan (8x9x1):** Measurement grid: dx=12mm, dy=12mm

**Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 17.6 W/kg

**SAR(1 g) = 6.26 W/kg; SAR(10 g) = 2.25 W/kg**

Deviation(1 g) = -3.69%; Deviation(10 g) = -2.60%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237**

Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: 5GHz Body Medium parameters used (interpolated):

$f = 5250 \text{ MHz}$ ;  $\sigma = 5.413 \text{ S/m}$ ;  $\epsilon_r = 47.853$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.0°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7308; ConvF(4.48, 4.48, 4.48) @ 5250 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 5250 MHz System Verification at 17.0 dBm (50 mW)

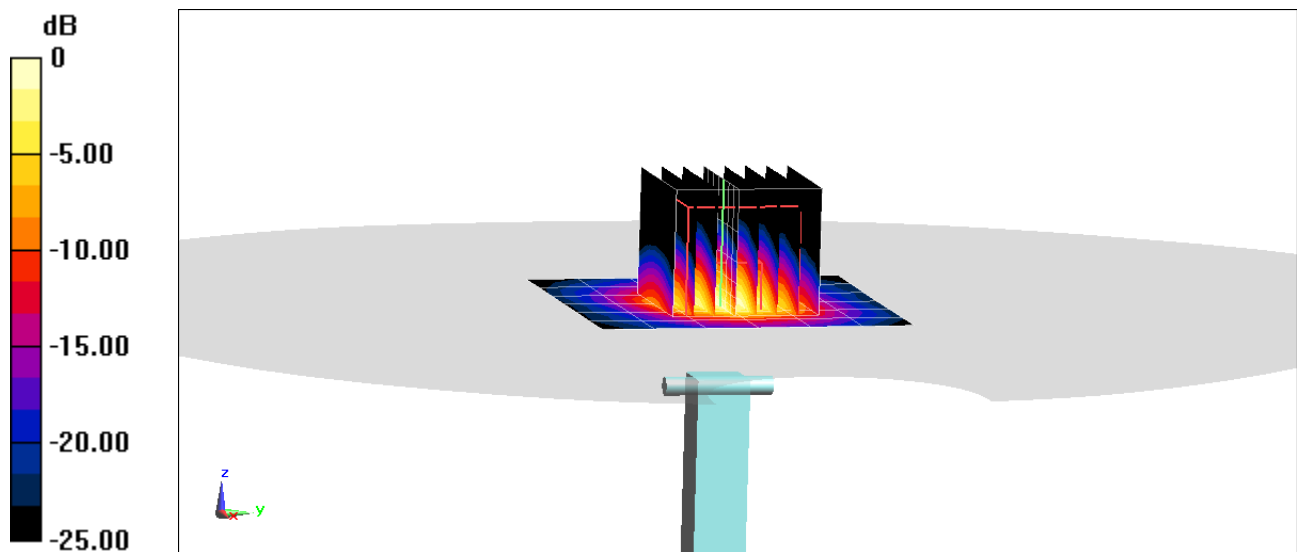
**Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 15.0 W/kg

**SAR(1 g) = 3.63 W/kg**

Deviation(1 g) = -3.97%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191**

Communication System: UID 0, CW; Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used (interpolated):

$f = 5250 \text{ MHz}$ ;  $\sigma = 5.35 \text{ S/m}$ ;  $\epsilon_r = 47.761$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-08-2019; Ambient Temp: 23.0°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7357; ConvF(4.78, 4.78, 4.78) @ 5250 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 5250 MHz System Verification at 17.0 dBm (50 mW)

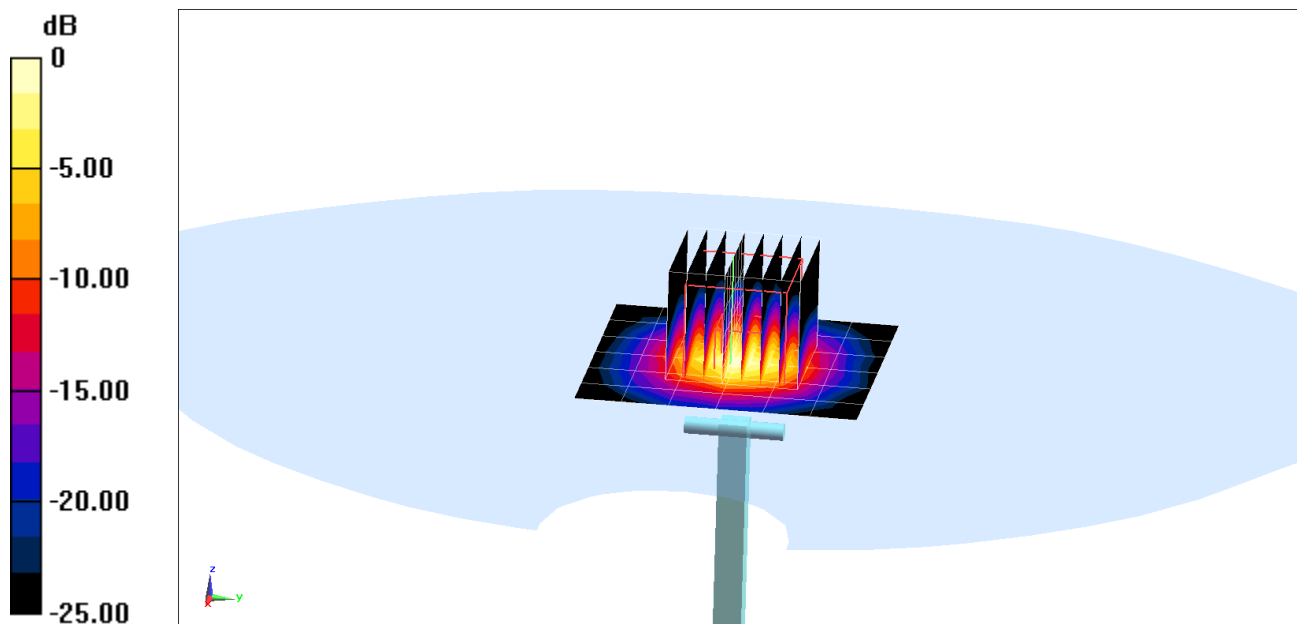
**Area Scan (7x7x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Peak SAR (extrapolated) = 13.8 W/kg

**SAR(10 g) = 1.01 W/kg**

Deviation(10 g) = -6.48%



0 dB = 8.13 W/kg = 9.10 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191**

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5GHz Body Medium parameters used:

$f = 5600 \text{ MHz}$ ;  $\sigma = 5.965 \text{ S/m}$ ;  $\epsilon_r = 46.889$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-11-2018; Ambient Temp: 23.3°C; Tissue Temp: 21.1°C

Probe: EX3DV4 - SN7357; ConvF(4.2, 4.2, 4.2) @ 5600 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Front; Type: QD000P40CD; Serial: 1646

Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7450)

## 5600 MHz System Verification at 17.0 dBm (50 mW)

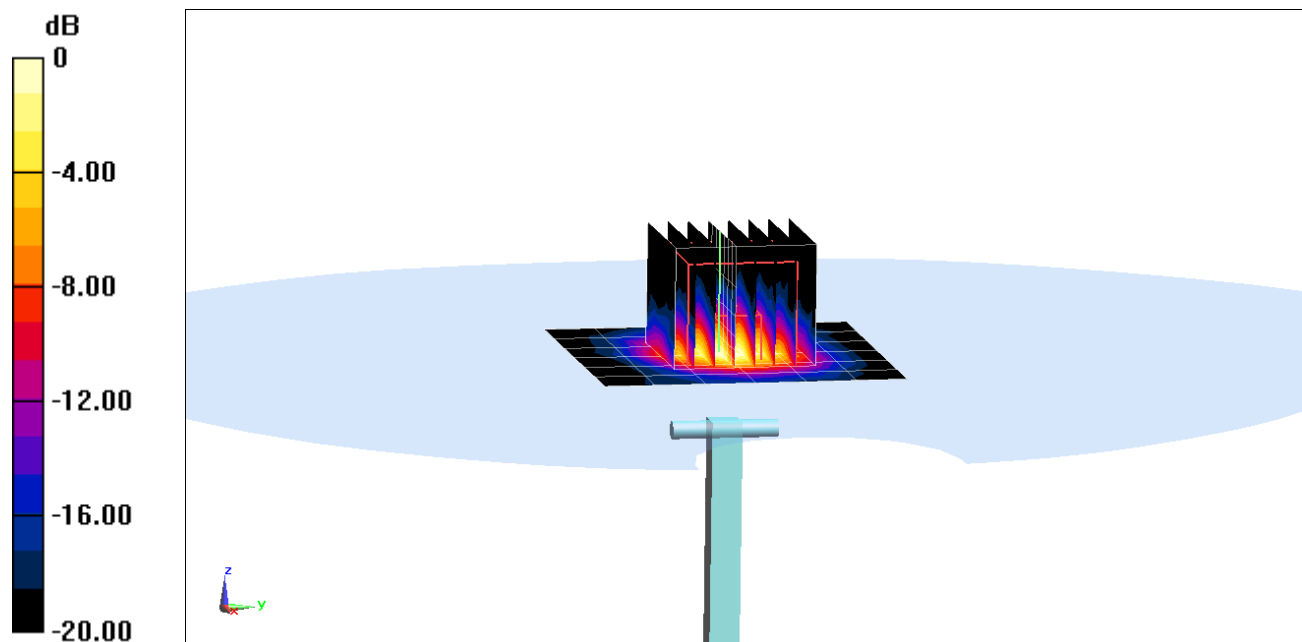
**Area Scan (7x7x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Peak SAR (extrapolated) = 18.0 W/kg

**SAR(10 g) = 1.2 W/kg**

Deviation(10 g) = 8.11%



0 dB = 9.73 W/kg = 9.88 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237**

Communication System: UID 0, CW; Frequency: 5600 MHz; Duty Cycle: 1:1

Medium: 5GHz Body Medium parameters used:

$f = 5600 \text{ MHz}$ ;  $\sigma = 5.91 \text{ S/m}$ ;  $\epsilon_r = 47.181$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.0°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7308; ConvF(4, 4, 4) @ 5600 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 5600 MHz System Verification at 17.0 dBm (50 mW)

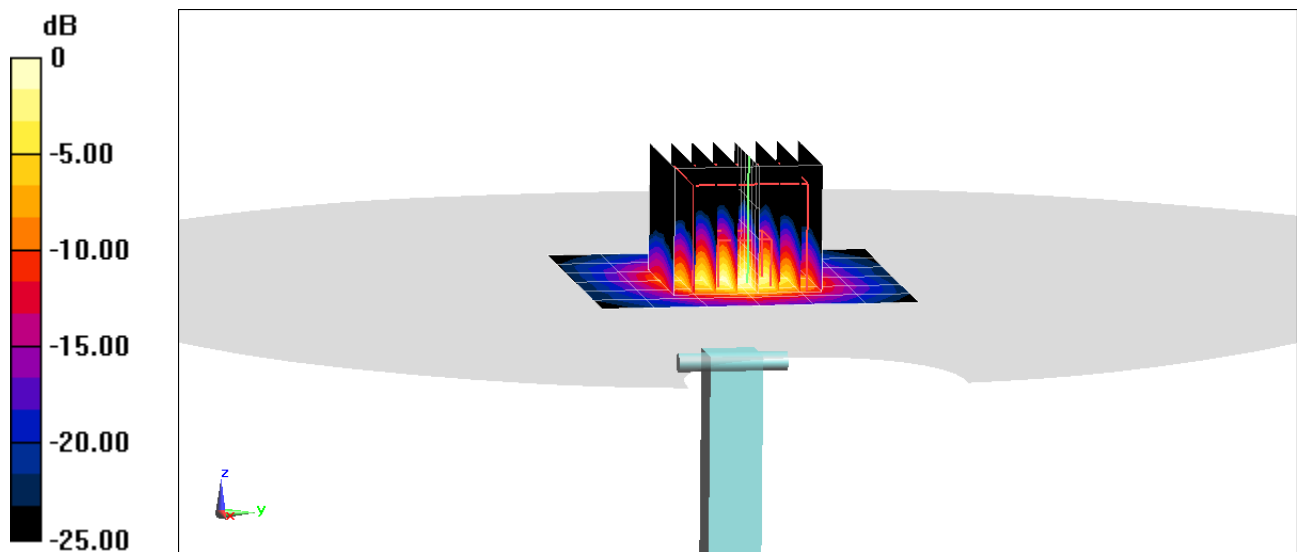
**Area Scan (7x7x1):** Measurement grid:  $dx=10\text{mm}$ ,  $dy=10\text{mm}$

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4\text{mm}$ ,  $dy=4\text{mm}$ ,  $dz=1.4\text{mm}$ ; Graded Ratio: 1.4

Peak SAR (extrapolated) = 17.6 W/kg

**SAR(1 g) = 3.83 W/kg**

Deviation(1 g) = -2.42%



0 dB = 9.66 W/kg = 9.85 dBW/kg

# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1237**

Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: 5GHz Body Medium parameters used (interpolated):

$f = 5750 \text{ MHz}$ ;  $\sigma = 6.145 \text{ S/m}$ ;  $\epsilon_r = 46.834$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 12-17-2018; Ambient Temp: 23.0°C; Tissue Temp: 20.6°C

Probe: EX3DV4 - SN7308; ConvF(4.18, 4.18, 4.18) @ 5750 MHz; Calibrated: 8/23/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1558; Calibrated: 10/3/2018

Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: 1630

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 5750 MHz System Verification at 17.0 dBm (50 mW)

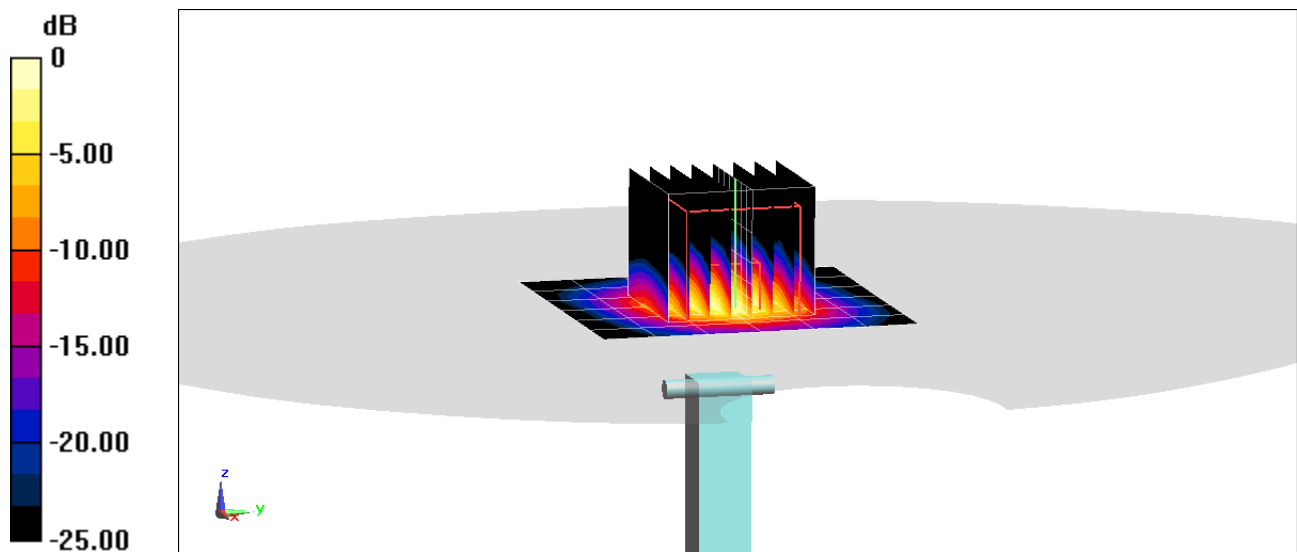
**Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 16.7 W/kg

**SAR(1 g) = 3.49 W/kg**

Deviation(1 g) = -8.04%



# PCTEST ENGINEERING LABORATORY, INC.

**DUT: Dipole 5 GHz; Type: D5GHzV2; Serial: 1191**

Communication System: UID 0, CW; Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: 5 GHz Body Medium parameters used (interpolated):

$f = 5750 \text{ MHz}$ ;  $\sigma = 6.08 \text{ S/m}$ ;  $\epsilon_r = 46.861$ ;  $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-08-2019; Ambient Temp: 23.0°C; Tissue Temp: 22.8°C

Probe: EX3DV4 - SN7357; ConvF(4.21, 4.21, 4.21) @ 5750 MHz; Calibrated: 4/18/2018

Sensor-Surface: 1.4mm (Mechanical Surface Detection)

Electronics: DAE4 Sn1407; Calibrated: 4/11/2018

Phantom: SAM with CRP v5.0 Left; Type: QD000P40CD; Serial: 1687

Measurement SW: DASY52, Version 52.10 (2);SEMCAD X Version 14.6.12 (7450)

## 5750 MHz System Verification at 17.0 dBm (50 mW)

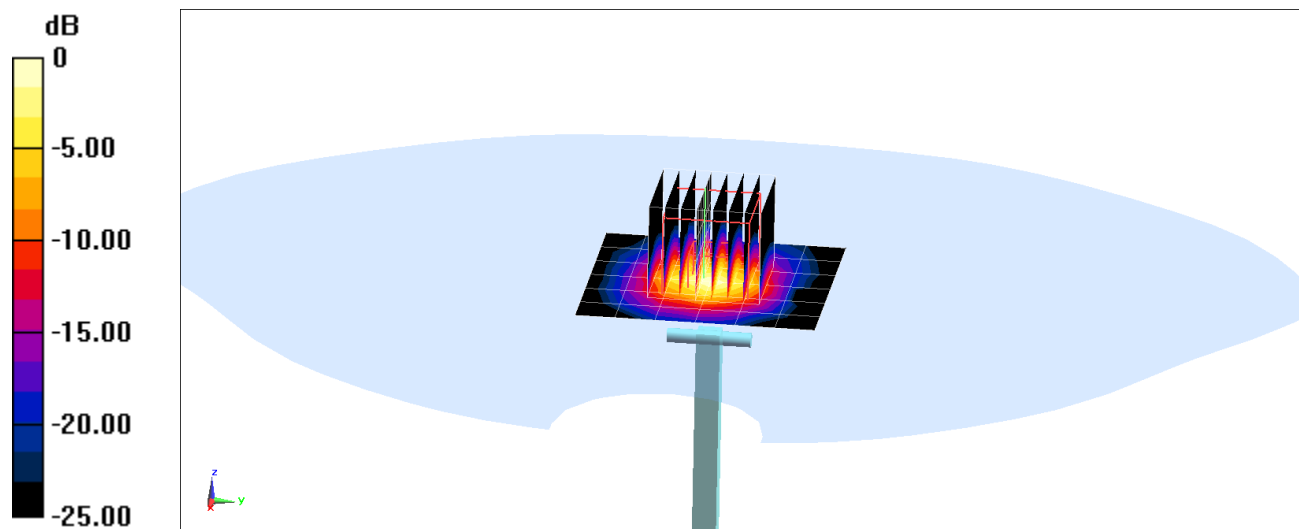
**Area Scan (7x7x1):** Measurement grid: dx=10mm, dy=10mm

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm; Graded Ratio: 1.4

Peak SAR (extrapolated) = 16.7 W/kg

**SAR(1 g) = 3.6 W/kg; SAR(10 g) = 0.995 W/kg**

Deviation(1 g) = -5.39%; Deviation(10 g) = -6.13%



0 dB = 8.93 W/kg = 9.51 dBW/kg

## APPENDIX C: PROBE CALIBRATION



Accredited by the Swiss Accreditation Service (SAS)  
 The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **PC Test**

Certificate No: **ES3-3287\_Oct18**

## CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3287**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-23.v5, QA CAL-25.v6**  
**Calibration procedure for dosimetric E-field probes**

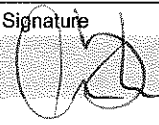
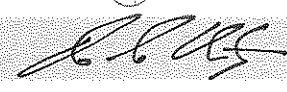
Calibration date: **October 22, 2018**

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  $(22 \pm 3)^\circ\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP            | SN: 104778       | 04-Apr-18 (No. 217-02672/02673)   | Apr-19                 |
| Power sensor NRP-Z91       | SN: 103244       | 04-Apr-18 (No. 217-02672)         | Apr-19                 |
| Power sensor NRP-Z91       | SN: 103245       | 04-Apr-18 (No. 217-02673)         | Apr-19                 |
| Reference 20 dB Attenuator | SN: S5277 (20x)  | 04-Apr-18 (No. 217-02682)         | Apr-19                 |
| Reference Probe ES3DV2     | SN: 3013         | 30-Dec-17 (No. ES3-3013_Dec17)    | Dec-18                 |
| DAE4                       | SN: 660          | 21-Dec-17 (No. DAE4-660_Dec17)    | Dec-18                 |
| Secondary Standards        | ID               | Check Date (in house)             | Scheduled Check        |
| Power meter E4419B         | SN: GB41293874   | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| Power sensor E4412A        | SN: MY41498087   | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| Power sensor E4412A        | SN: 000110210    | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| RF generator HP 8648C      | SN: US3642U01700 | 04-Aug-99 (in house check Jun-18) | In house check: Jun-20 |
| Network Analyzer E8358A    | SN: US41080477   | 31-Mar-14 (in house check Oct-18) | In house check: Oct-19 |

|                                                                                                                 |                                |                                          |                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------|
| Calibrated by:                                                                                                  | Name<br><b>Claudio Leubler</b> | Function<br><b>Laboratory Technician</b> | Signature<br> |
| Approved by:                                                                                                    | Name<br><b>Katja Pokovic</b>   | Function<br><b>Technical Manager</b>     | Signature<br> |
|                                                                                                                 |                                |                                          | Issued: October 23, 2018                                                                           |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |                                |                                          |                                                                                                    |



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

### Glossary:

|                          |                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                      | tissue simulating liquid                                                                                                                                |
| NORM <sub>x,y,z</sub>    | sensitivity in free space                                                                                                                               |
| ConvF                    | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                              |
| DCP                      | diode compression point                                                                                                                                 |
| CF                       | crest factor (1/duty_cycle) of the RF signal                                                                                                            |
| A, B, C, D               | modulation dependent linearization parameters                                                                                                           |
| Polarization $\varphi$   | $\varphi$ rotation around probe axis                                                                                                                    |
| Polarization $\vartheta$ | $\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),<br>i.e., $\vartheta = 0$ is normal to probe axis |
| Connector Angle          | information used in DASY system to align probe sensor X to the robot coordinate system                                                                  |

### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the  $E^2$ -field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* 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.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  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 NORM<sub>x,y,z</sub> \* 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  $\pm 50$  MHz to  $\pm 100$  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.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).

# Probe ES3DV3

## SN:3287

Manufactured: June 7, 2010  
Calibrated: October 22, 2018

Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

### Basic Calibration Parameters

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|-----------------------------------------------------------|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 0.88     | 0.99     | 1.01     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                                     | 106.5    | 104.5    | 106.2    |               |

### Modulation Calibration Parameters

| UID | Communication System Name |   | A<br>dB | B<br>dB $\sqrt{\mu\text{V}}$ | C   | D<br>dB | VR<br>mV | Unc <sup>E</sup><br>(k=2) |
|-----|---------------------------|---|---------|------------------------------|-----|---------|----------|---------------------------|
| 0   | CW                        | X | 0.0     | 0.0                          | 1.0 | 0.00    | 170.5    | $\pm 3.3 \%$              |
|     |                           | Y | 0.0     | 0.0                          | 1.0 |         | 183.9    |                           |
|     |                           | Z | 0.0     | 0.0                          | 1.0 |         | 185.7    |                           |

Note: For details on UID parameters see Appendix.

### Sensor Model Parameters

|   | C1<br>fF | C2<br>fF | $\alpha$<br>$\text{V}^{-1}$ | T1<br>$\text{ms}\cdot\text{V}^{-2}$ | T2<br>$\text{ms}\cdot\text{V}^{-1}$ | T3<br>ms | T4<br>$\text{V}^{-2}$ | T5<br>$\text{V}^{-1}$ | T6    |
|---|----------|----------|-----------------------------|-------------------------------------|-------------------------------------|----------|-----------------------|-----------------------|-------|
| X | 63.21    | 438.0    | 33.52                       | 29.02                               | 2.824                               | 5.044    | 1.538                 | 0.382                 | 1.009 |
| Y | 66.95    | 483.3    | 35.70                       | 29.79                               | 3.474                               | 5.100    | 0.294                 | 0.696                 | 1.011 |
| Z | 55.14    | 387.3    | 34.16                       | 28.13                               | 2.433                               | 5.100    | 1.594                 | 0.322                 | 1.010 |

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%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the  $E^2$ -field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 41.9                               | 0.89                            | 6.76    | 6.76    | 6.76    | 0.28               | 1.78                    | ± 12.0 %  |
| 835                  | 41.5                               | 0.90                            | 6.61    | 6.61    | 6.61    | 0.60               | 1.20                    | ± 12.0 %  |
| 1750                 | 40.1                               | 1.37                            | 5.48    | 5.48    | 5.48    | 0.53               | 1.28                    | ± 12.0 %  |
| 1900                 | 40.0                               | 1.40                            | 5.24    | 5.24    | 5.24    | 0.41               | 1.52                    | ± 12.0 %  |
| 2300                 | 39.5                               | 1.67                            | 4.82    | 4.82    | 4.82    | 0.42               | 1.57                    | ± 12.0 %  |
| 2450                 | 39.2                               | 1.80                            | 4.63    | 4.63    | 4.63    | 0.55               | 1.39                    | ± 12.0 %  |
| 2600                 | 39.0                               | 1.96                            | 4.38    | 4.38    | 4.38    | 0.58               | 1.43                    | ± 12.0 %  |

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

### Calibration Parameter Determined in Body Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 55.5                               | 0.96                            | 6.43    | 6.43    | 6.43    | 0.72               | 1.15                    | ± 12.0 %  |
| 835                  | 55.2                               | 0.97                            | 6.34    | 6.34    | 6.34    | 0.52               | 1.32                    | ± 12.0 %  |
| 1750                 | 53.4                               | 1.49                            | 4.98    | 4.98    | 4.98    | 0.28               | 2.12                    | ± 12.0 %  |
| 1900                 | 53.3                               | 1.52                            | 4.83    | 4.83    | 4.83    | 0.43               | 1.57                    | ± 12.0 %  |
| 2300                 | 52.9                               | 1.81                            | 4.55    | 4.55    | 4.55    | 0.62               | 1.36                    | ± 12.0 %  |
| 2450                 | 52.7                               | 1.95                            | 4.29    | 4.29    | 4.29    | 0.72               | 1.17                    | ± 12.0 %  |
| 2600                 | 52.5                               | 2.16                            | 4.19    | 4.19    | 4.19    | 0.50               | 1.20                    | ± 12.0 %  |

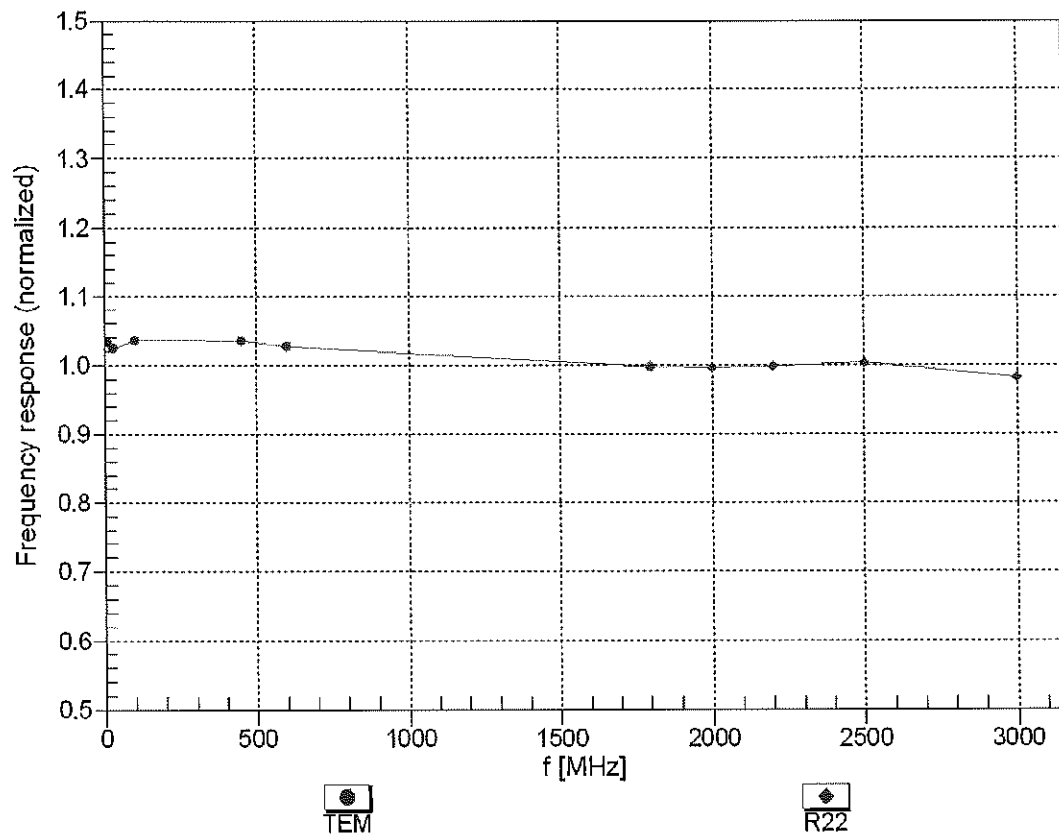
<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## Frequency Response of E-Field

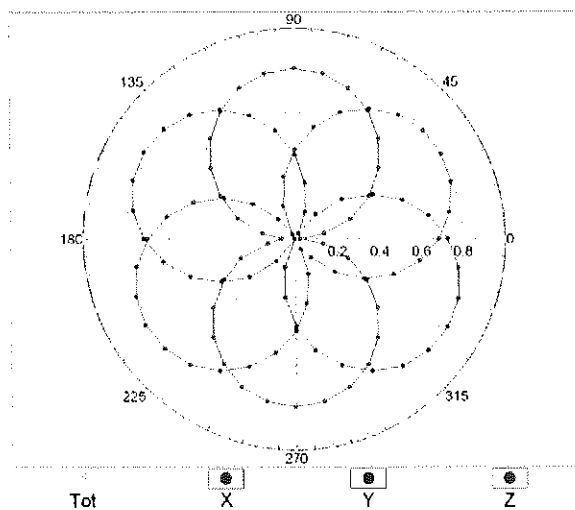
(TEM-Cell:ifi110 EXX, Waveguide: R22)



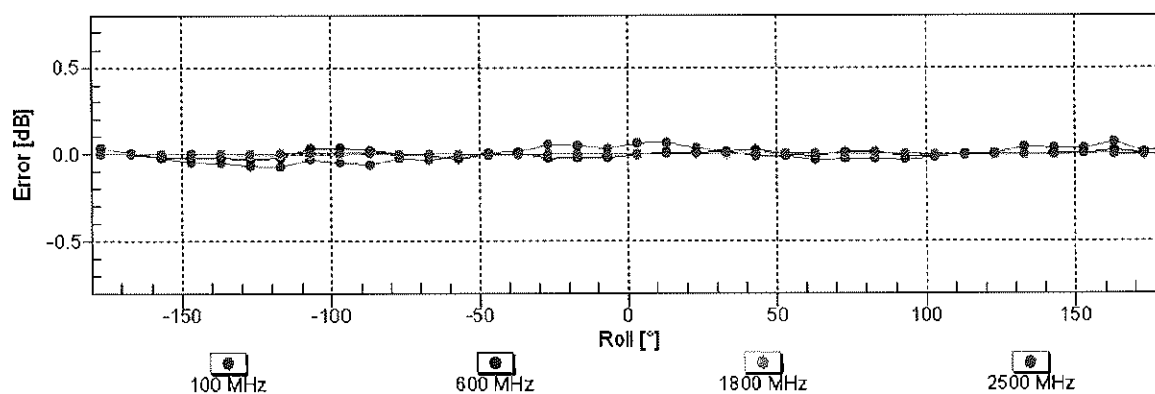
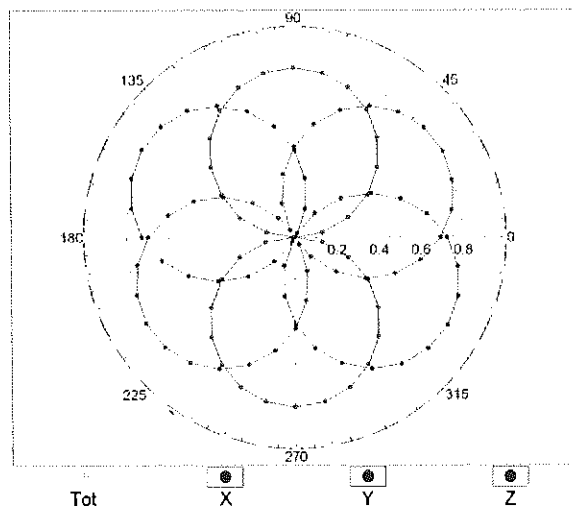
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$

f=600 MHz, TEM

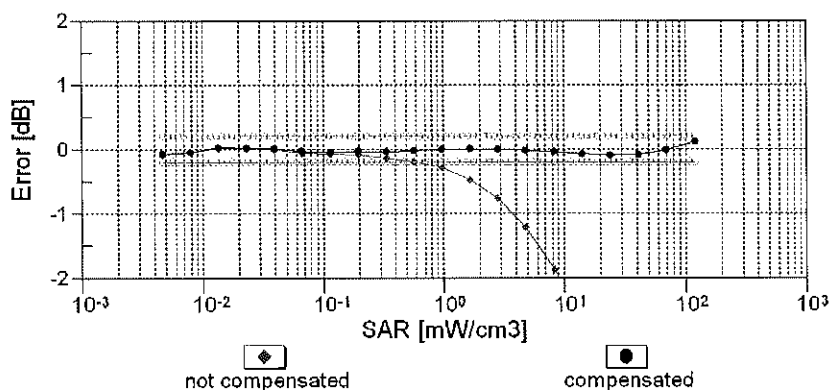
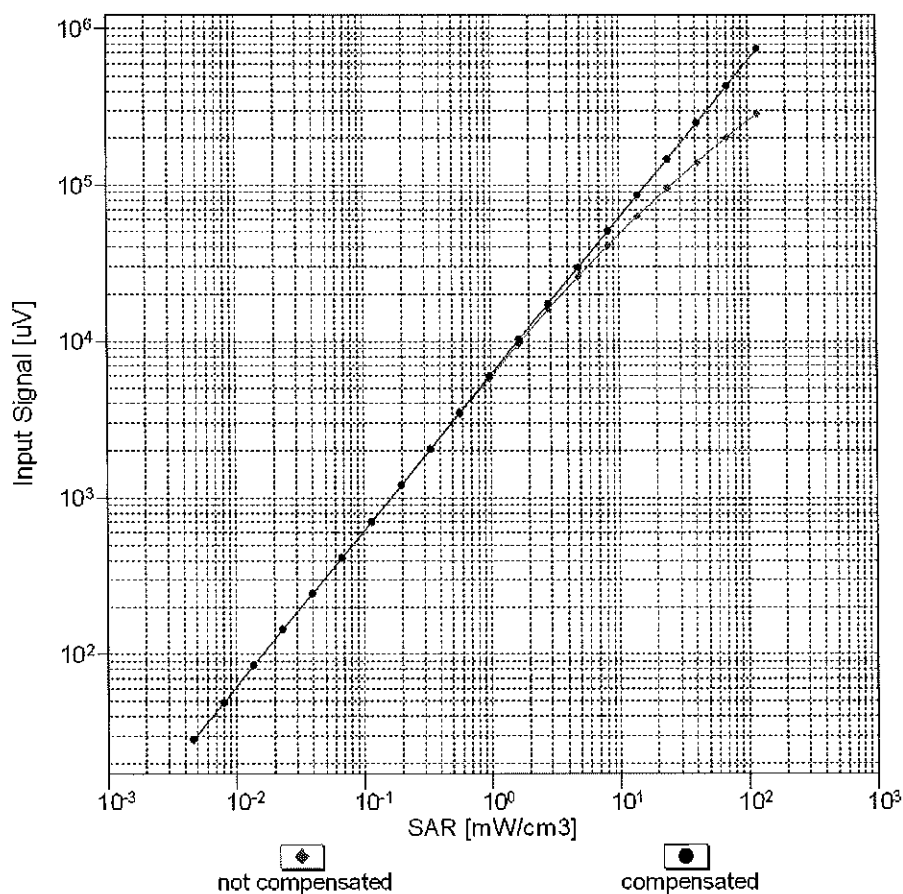


f=1800 MHz, R22



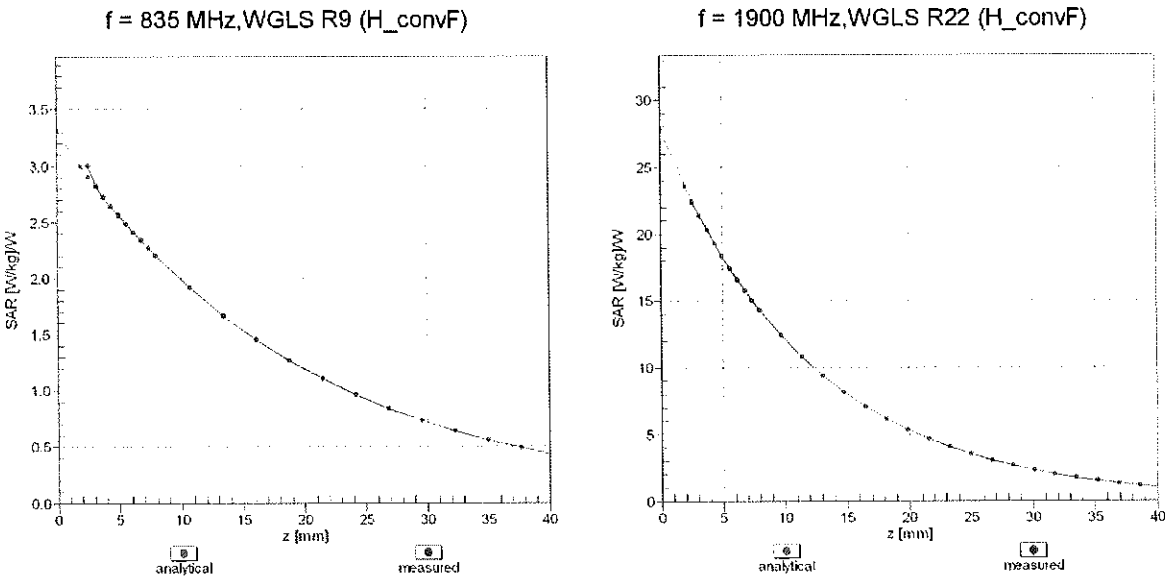
Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

## Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f_{\text{eval}} = 1900 \text{ MHz}$ )



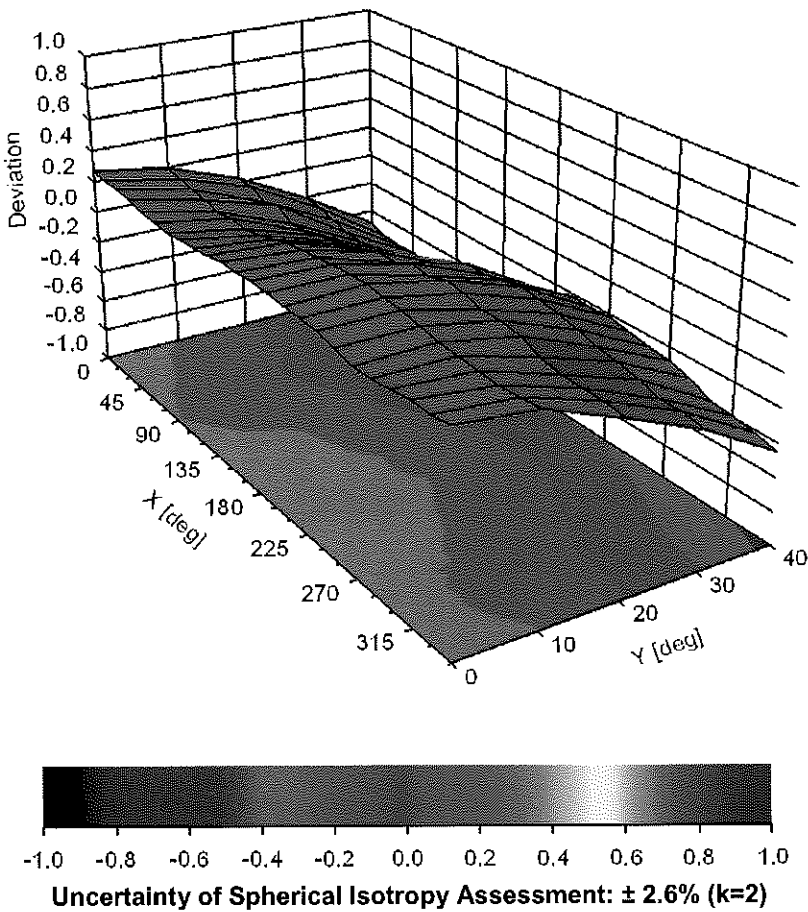
Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

# Conversion Factor Assessment



## Deviation from Isotropy in Liquid

Error ( $\phi, \vartheta$ ), f = 900 MHz



## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3287

### Other Probe Parameters

|                                               |            |
|-----------------------------------------------|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle (°)                           | 93.1       |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 10 mm      |
| Tip Diameter                                  | 4 mm       |
| Probe Tip to Sensor X Calibration Point       | 2 mm       |
| Probe Tip to Sensor Y Calibration Point       | 2 mm       |
| Probe Tip to Sensor Z Calibration Point       | 2 mm       |
| Recommended Measurement Distance from Surface | 3 mm       |

**Appendix: Modulation Calibration Parameters**

| UID           | Communication System Name                     |   | A<br>dB | B<br>dB $\mu$ V | C     | D<br>dB | VR<br>mV | Max<br>Unc <sup>E</sup><br>(k=2) |
|---------------|-----------------------------------------------|---|---------|-----------------|-------|---------|----------|----------------------------------|
| 0             | CW                                            | X | 0.00    | 0.00            | 1.00  | 0.00    | 170.5    | $\pm 3.3 \%$                     |
|               |                                               | Y | 0.00    | 0.00            | 1.00  |         | 183.9    |                                  |
|               |                                               | Z | 0.00    | 0.00            | 1.00  |         | 185.7    |                                  |
| 10010-<br>CAA | SAR Validation (Square, 100ms, 10ms)          | X | 7.53    | 77.06           | 17.83 | 10.00   | 25.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 8.14    | 78.38           | 19.04 |         | 25.0     |                                  |
|               |                                               | Z | 9.25    | 80.89           | 19.28 |         | 25.0     |                                  |
| 10011-<br>CAB | UMTS-FDD (WCDMA)                              | X | 1.43    | 73.85           | 18.87 | 0.00    | 150.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 0.97    | 66.02           | 14.16 |         | 150.0    |                                  |
|               |                                               | Z | 1.09    | 68.86           | 15.96 |         | 150.0    |                                  |
| 10012-<br>CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)      | X | 1.37    | 66.92           | 17.13 | 0.41    | 150.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 1.26    | 64.41           | 15.18 |         | 150.0    |                                  |
|               |                                               | Z | 1.30    | 65.60           | 16.10 |         | 150.0    |                                  |
| 10013-<br>CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps) | X | 5.15    | 67.38           | 17.44 | 1.46    | 150.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 5.18    | 67.06           | 17.28 |         | 150.0    |                                  |
|               |                                               | Z | 5.09    | 67.36           | 17.42 |         | 150.0    |                                  |
| 10021-<br>DAC | GSM-FDD (TDMA, GMSK)                          | X | 14.53   | 88.52           | 23.56 | 9.39    | 50.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 14.96   | 89.86           | 24.90 |         | 50.0     |                                  |
|               |                                               | Z | 31.90   | 102.69          | 28.16 |         | 50.0     |                                  |
| 10023-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0)                   | X | 13.53   | 87.25           | 23.18 | 9.57    | 50.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 14.02   | 88.59           | 24.52 |         | 50.0     |                                  |
|               |                                               | Z | 26.42   | 99.51           | 27.28 |         | 50.0     |                                  |
| 10024-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1)                 | X | 52.08   | 107.25          | 27.36 | 6.56    | 60.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 41.48   | 106.06          | 28.00 |         | 60.0     |                                  |
|               |                                               | Z | 100.00  | 118.06          | 30.27 |         | 60.0     |                                  |
| 10025-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0)                   | X | 16.26   | 99.58           | 37.07 | 12.57   | 50.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 13.58   | 93.24           | 34.70 |         | 50.0     |                                  |
|               |                                               | Z | 21.87   | 110.76          | 41.97 |         | 50.0     |                                  |
| 10026-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1)                 | X | 18.41   | 99.97           | 33.81 | 9.56    | 60.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 15.35   | 95.05           | 32.27 |         | 60.0     |                                  |
|               |                                               | Z | 21.72   | 105.96          | 36.44 |         | 60.0     |                                  |
| 10027-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2)               | X | 100.00  | 115.09          | 28.07 | 4.80    | 80.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 117.60          | 29.52 |         | 80.0     |                                  |
|               |                                               | Z | 100.00  | 116.87          | 28.79 |         | 80.0     |                                  |
| 10028-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)             | X | 100.00  | 115.09          | 27.27 | 3.55    | 100.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 116.90          | 28.32 |         | 100.0    |                                  |
|               |                                               | Z | 100.00  | 116.94          | 28.01 |         | 100.0    |                                  |
| 10029-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2)               | X | 13.44   | 93.53           | 30.58 | 7.80    | 80.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 11.59   | 89.61           | 29.29 |         | 80.0     |                                  |
|               |                                               | Z | 14.19   | 96.32           | 32.08 |         | 80.0     |                                  |
| 10030-<br>CAA | IEEE 802.15.1 Bluetooth (GFSK, DH1)           | X | 100.00  | 114.89          | 28.31 | 5.30    | 70.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 92.82   | 116.56          | 29.65 |         | 70.0     |                                  |
|               |                                               | Z | 100.00  | 116.45          | 28.94 |         | 70.0     |                                  |
| 10031-<br>CAA | IEEE 802.15.1 Bluetooth (GFSK, DH3)           | X | 100.00  | 116.79          | 26.49 | 1.88    | 100.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 115.79          | 26.19 |         | 100.0    |                                  |
|               |                                               | Z | 100.00  | 117.41          | 26.65 |         | 100.0    |                                  |

|           |                                                     |   |        |        |       |       |       |         |
|-----------|-----------------------------------------------------|---|--------|--------|-------|-------|-------|---------|
| 10032-CAA | IEEE 802.15.1 Bluetooth (GFSK, DH5)                 | X | 100.00 | 123.13 | 28.06 | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 100.00 | 116.53 | 25.36 |       | 100.0 |         |
|           |                                                     | Z | 100.00 | 121.10 | 27.07 |       | 100.0 |         |
| 10033-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)           | X | 15.49  | 93.49  | 25.39 | 5.30  | 70.0  | ± 9.6 % |
|           |                                                     | Y | 12.09  | 89.66  | 24.64 |       | 70.0  |         |
|           |                                                     | Z | 22.85  | 100.72 | 27.71 |       | 70.0  |         |
| 10034-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)           | X | 11.69  | 94.03  | 24.43 | 1.88  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 5.21   | 81.43  | 20.33 |       | 100.0 |         |
|           |                                                     | Z | 10.45  | 92.04  | 23.50 |       | 100.0 |         |
| 10035-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)           | X | 7.19   | 89.07  | 22.83 | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 3.19   | 76.15  | 18.09 |       | 100.0 |         |
|           |                                                     | Z | 5.32   | 84.13  | 20.72 |       | 100.0 |         |
| 10036-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH1)               | X | 18.47  | 96.50  | 26.38 | 5.30  | 70.0  | ± 9.6 % |
|           |                                                     | Y | 13.77  | 92.00  | 25.46 |       | 70.0  |         |
|           |                                                     | Z | 29.42  | 105.03 | 29.00 |       | 70.0  |         |
| 10037-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH3)               | X | 11.12  | 93.30  | 24.16 | 1.88  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 5.06   | 81.04  | 20.15 |       | 100.0 |         |
|           |                                                     | Z | 9.78   | 91.13  | 23.19 |       | 100.0 |         |
| 10038-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH5)               | X | 7.70   | 90.38  | 23.33 | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 3.27   | 76.73  | 18.38 |       | 100.0 |         |
|           |                                                     | Z | 5.57   | 85.06  | 21.13 |       | 100.0 |         |
| 10039-CAB | CDMA2000 (1xRTT, RC1)                               | X | 3.68   | 82.65  | 21.02 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.70   | 69.59  | 15.11 |       | 150.0 |         |
|           |                                                     | Z | 2.11   | 74.03  | 16.84 |       | 150.0 |         |
| 10042-CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate) | X | 23.70  | 95.06  | 24.07 | 7.78  | 50.0  | ± 9.6 % |
|           |                                                     | Y | 21.98  | 95.27  | 24.98 |       | 50.0  |         |
|           |                                                     | Z | 100.00 | 116.88 | 29.97 |       | 50.0  |         |
| 10044-CAA | IS-91/EIA/TIA-553 FDD (FDMA, FM)                    | X | 0.00   | 115.10 | 1.28  | 0.00  | 150.0 | ± 9.6 % |
|           |                                                     | Y | 0.01   | 122.01 | 1.58  |       | 150.0 |         |
|           |                                                     | Z | 0.00   | 110.42 | 5.98  |       | 150.0 |         |
| 10048-CAA | DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)           | X | 9.90   | 79.84  | 22.32 | 13.80 | 25.0  | ± 9.6 % |
|           |                                                     | Y | 10.52  | 80.91  | 23.58 |       | 25.0  |         |
|           |                                                     | Z | 12.94  | 86.06  | 24.76 |       | 25.0  |         |
| 10049-CAA | DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)         | X | 11.07  | 83.29  | 22.21 | 10.79 | 40.0  | ± 9.6 % |
|           |                                                     | Y | 11.66  | 84.62  | 23.55 |       | 40.0  |         |
|           |                                                     | Z | 15.99  | 90.77  | 24.97 |       | 40.0  |         |
| 10056-CAA | UMTS-TDD (TD-SCDMA, 1.28 Mcps)                      | X | 11.47  | 84.45  | 23.20 | 9.03  | 50.0  | ± 9.6 % |
|           |                                                     | Y | 11.19  | 84.08  | 23.66 |       | 50.0  |         |
|           |                                                     | Z | 14.67  | 89.92  | 25.31 |       | 50.0  |         |
| 10058-DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)                   | X | 10.29  | 88.76  | 28.24 | 6.55  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 9.12   | 85.50  | 27.09 |       | 100.0 |         |
|           |                                                     | Z | 10.20  | 89.78  | 29.04 |       | 100.0 |         |
| 10059-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)            | X | 1.61   | 69.65  | 18.33 | 0.61  | 110.0 | ± 9.6 % |
|           |                                                     | Y | 1.43   | 66.43  | 16.16 |       | 110.0 |         |
|           |                                                     | Z | 1.49   | 68.00  | 17.26 |       | 110.0 |         |
| 10060-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)          | X | 100.00 | 131.01 | 33.54 | 1.30  | 110.0 | ± 9.6 % |
|           |                                                     | Y | 22.84  | 107.12 | 27.36 |       | 110.0 |         |
|           |                                                     | Z | 100.00 | 130.89 | 33.42 |       | 110.0 |         |

|           |                                                |   |       |        |       |      |       |         |
|-----------|------------------------------------------------|---|-------|--------|-------|------|-------|---------|
| 10061-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)      | X | 18.52 | 105.45 | 29.38 | 2.04 | 110.0 | ± 9.6 % |
|           |                                                | Y | 6.96  | 88.43  | 24.11 |      | 110.0 |         |
|           |                                                | Z | 15.38 | 103.23 | 28.94 |      | 110.0 |         |
| 10062-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)       | X | 4.90  | 67.27  | 16.85 | 0.49 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.89  | 66.79  | 16.55 |      | 100.0 |         |
|           |                                                | Z | 4.81  | 67.12  | 16.71 |      | 100.0 |         |
| 10063-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)       | X | 4.93  | 67.42  | 16.97 | 0.72 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.94  | 66.96  | 16.70 |      | 100.0 |         |
|           |                                                | Z | 4.85  | 67.28  | 16.85 |      | 100.0 |         |
| 10064-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)      | X | 5.27  | 67.73  | 17.21 | 0.86 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.30  | 67.34  | 16.98 |      | 100.0 |         |
|           |                                                | Z | 5.17  | 67.59  | 17.11 |      | 100.0 |         |
| 10065-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)      | X | 5.17  | 67.74  | 17.34 | 1.21 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.20  | 67.39  | 17.15 |      | 100.0 |         |
|           |                                                | Z | 5.08  | 67.64  | 17.28 |      | 100.0 |         |
| 10066-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)      | X | 5.22  | 67.85  | 17.55 | 1.46 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.26  | 67.54  | 17.39 |      | 100.0 |         |
|           |                                                | Z | 5.14  | 67.77  | 17.52 |      | 100.0 |         |
| 10067-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)      | X | 5.52  | 67.92  | 17.94 | 2.04 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.59  | 67.70  | 17.86 |      | 100.0 |         |
|           |                                                | Z | 5.46  | 67.96  | 17.98 |      | 100.0 |         |
| 10068-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)      | X | 5.67  | 68.31  | 18.30 | 2.55 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.76  | 68.13  | 18.25 |      | 100.0 |         |
|           |                                                | Z | 5.59  | 68.29  | 18.34 |      | 100.0 |         |
| 10069-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)      | X | 5.74  | 68.18  | 18.44 | 2.67 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.83  | 68.02  | 18.41 |      | 100.0 |         |
|           |                                                | Z | 5.67  | 68.25  | 18.53 |      | 100.0 |         |
| 10071-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)  | X | 5.29  | 67.59  | 17.79 | 1.99 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.34  | 67.32  | 17.67 |      | 100.0 |         |
|           |                                                | Z | 5.24  | 67.60  | 17.81 |      | 100.0 |         |
| 10072-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps) | X | 5.36  | 68.17  | 18.10 | 2.30 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.42  | 67.91  | 18.00 |      | 100.0 |         |
|           |                                                | Z | 5.30  | 68.17  | 18.14 |      | 100.0 |         |
| 10073-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps) | X | 5.49  | 68.49  | 18.48 | 2.83 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.57  | 68.29  | 18.43 |      | 100.0 |         |
|           |                                                | Z | 5.44  | 68.53  | 18.57 |      | 100.0 |         |
| 10074-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps) | X | 5.52  | 68.57  | 18.73 | 3.30 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.62  | 68.40  | 18.71 |      | 100.0 |         |
|           |                                                | Z | 5.48  | 68.62  | 18.83 |      | 100.0 |         |
| 10075-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps) | X | 5.69  | 69.08  | 19.21 | 3.82 | 90.0  | ± 9.6 % |
|           |                                                | Y | 5.81  | 68.98  | 19.24 |      | 90.0  |         |
|           |                                                | Z | 5.63  | 69.10  | 19.33 |      | 90.0  |         |
| 10076-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps) | X | 5.69  | 68.85  | 19.30 | 4.15 | 90.0  | ± 9.6 % |
|           |                                                | Y | 5.82  | 68.76  | 19.35 |      | 90.0  |         |
|           |                                                | Z | 5.65  | 68.92  | 19.46 |      | 90.0  |         |
| 10077-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps) | X | 5.73  | 68.94  | 19.41 | 4.30 | 90.0  | ± 9.6 % |
|           |                                                | Y | 5.86  | 68.86  | 19.45 |      | 90.0  |         |
|           |                                                | Z | 5.70  | 69.02  | 19.57 |      | 90.0  |         |

|           |                                                     |   |        |        |       |      |       |         |
|-----------|-----------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10081-CAB | CDMA2000 (1xRTT, RC3)                               | X | 1.50   | 74.73  | 17.78 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 0.85   | 64.97  | 12.38 |      | 150.0 |         |
|           |                                                     | Z | 0.93   | 67.53  | 13.57 |      | 150.0 |         |
| 10082-CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate) | X | 2.13   | 63.53  | 8.53  | 4.77 | 80.0  | ± 9.6 % |
|           |                                                     | Y | 2.34   | 64.23  | 9.30  |      | 80.0  |         |
|           |                                                     | Z | 2.05   | 63.65  | 8.54  |      | 80.0  |         |
| 10090-DAC | GPRS-FDD (TDMA, GMSK, TN 0-4)                       | X | 49.50  | 106.58 | 27.22 | 6.56 | 60.0  | ± 9.6 % |
|           |                                                     | Y | 40.33  | 105.69 | 27.94 |      | 60.0  |         |
|           |                                                     | Z | 100.00 | 118.15 | 30.33 |      | 60.0  |         |
| 10097-CAB | UMTS-FDD (HSDPA)                                    | X | 2.07   | 70.20  | 17.39 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.76   | 66.51  | 15.04 |      | 150.0 |         |
|           |                                                     | Z | 1.86   | 68.23  | 16.00 |      | 150.0 |         |
| 10098-CAB | UMTS-FDD (HSUPA, Subtest 2)                         | X | 2.03   | 70.21  | 17.38 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.72   | 66.45  | 14.99 |      | 150.0 |         |
|           |                                                     | Z | 1.83   | 68.21  | 15.97 |      | 150.0 |         |
| 10099-DAC | EDGE-FDD (TDMA, 8PSK, TN 0-4)                       | X | 18.31  | 99.80  | 33.74 | 9.56 | 60.0  | ± 9.6 % |
|           |                                                     | Y | 15.30  | 94.94  | 32.23 |      | 60.0  |         |
|           |                                                     | Z | 21.61  | 105.78 | 36.38 |      | 60.0  |         |
| 10100-CAE | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | X | 3.71   | 73.39  | 18.12 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.14   | 69.82  | 16.14 |      | 150.0 |         |
|           |                                                     | Z | 3.27   | 71.18  | 16.96 |      | 150.0 |         |
| 10101-CAE | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | X | 3.51   | 69.02  | 16.73 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.32   | 67.43  | 15.69 |      | 150.0 |         |
|           |                                                     | Z | 3.32   | 68.05  | 16.10 |      | 150.0 |         |
| 10102-CAE | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | X | 3.59   | 68.86  | 16.77 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.42   | 67.38  | 15.79 |      | 150.0 |         |
|           |                                                     | Z | 3.42   | 67.96  | 16.18 |      | 150.0 |         |
| 10103-CAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | X | 8.68   | 77.91  | 20.86 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 8.39   | 76.97  | 20.64 |      | 65.0  |         |
|           |                                                     | Z | 8.88   | 79.01  | 21.52 |      | 65.0  |         |
| 10104-CAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | X | 8.68   | 76.81  | 21.30 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 8.50   | 76.03  | 21.10 |      | 65.0  |         |
|           |                                                     | Z | 8.59   | 77.26  | 21.68 |      | 65.0  |         |
| 10105-CAG | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | X | 8.09   | 75.44  | 21.00 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 7.65   | 73.94  | 20.48 |      | 65.0  |         |
|           |                                                     | Z | 7.67   | 75.03  | 21.01 |      | 65.0  |         |
| 10108-CAG | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)            | X | 3.25   | 72.47  | 17.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.79   | 69.04  | 15.96 |      | 150.0 |         |
|           |                                                     | Z | 2.87   | 70.38  | 16.80 |      | 150.0 |         |
| 10109-CAG | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)          | X | 3.18   | 68.93  | 16.75 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.99   | 67.17  | 15.59 |      | 150.0 |         |
|           |                                                     | Z | 2.98   | 67.88  | 16.03 |      | 150.0 |         |
| 10110-CAG | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)             | X | 2.67   | 71.57  | 17.72 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.28   | 68.03  | 15.59 |      | 150.0 |         |
|           |                                                     | Z | 2.34   | 69.49  | 16.47 |      | 150.0 |         |
| 10111-CAG | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)           | X | 2.93   | 69.90  | 17.29 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.67   | 67.50  | 15.78 |      | 150.0 |         |
|           |                                                     | Z | 2.69   | 68.60  | 16.34 |      | 150.0 |         |

|           |                                                |   |      |       |       |      |       |         |
|-----------|------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10112-CAG | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)     | X | 3.29 | 68.76 | 16.73 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 3.11 | 67.13 | 15.65 |      | 150.0 |         |
|           |                                                | Z | 3.10 | 67.82 | 16.07 |      | 150.0 |         |
| 10113-CAG | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)      | X | 3.07 | 69.85 | 17.32 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 2.83 | 67.62 | 15.92 |      | 150.0 |         |
|           |                                                | Z | 2.84 | 68.68 | 16.45 |      | 150.0 |         |
| 10114-CAC | IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)  | X | 5.26 | 67.69 | 16.67 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.23 | 67.13 | 16.29 |      | 150.0 |         |
|           |                                                | Z | 5.17 | 67.44 | 16.47 |      | 150.0 |         |
| 10115-CAC | IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)  | X | 5.63 | 67.96 | 16.80 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.62 | 67.49 | 16.48 |      | 150.0 |         |
|           |                                                | Z | 5.52 | 67.74 | 16.63 |      | 150.0 |         |
| 10116-CAC | IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM) | X | 5.39 | 67.95 | 16.72 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.36 | 67.40 | 16.35 |      | 150.0 |         |
|           |                                                | Z | 5.29 | 67.69 | 16.52 |      | 150.0 |         |
| 10117-CAC | IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)       | X | 5.27 | 67.71 | 16.70 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.24 | 67.16 | 16.33 |      | 150.0 |         |
|           |                                                | Z | 5.16 | 67.39 | 16.47 |      | 150.0 |         |
| 10118-CAC | IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)       | X | 5.69 | 68.10 | 16.87 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.66 | 67.55 | 16.52 |      | 150.0 |         |
|           |                                                | Z | 5.60 | 67.91 | 16.73 |      | 150.0 |         |
| 10119-CAC | IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)      | X | 5.36 | 67.90 | 16.71 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.33 | 67.36 | 16.35 |      | 150.0 |         |
|           |                                                | Z | 5.26 | 67.63 | 16.50 |      | 150.0 |         |
| 10140-CAE | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)     | X | 3.65 | 68.85 | 16.68 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 3.47 | 67.39 | 15.72 |      | 150.0 |         |
|           |                                                | Z | 3.46 | 67.97 | 16.10 |      | 150.0 |         |
| 10141-CAE | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)     | X | 3.76 | 68.83 | 16.80 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 3.60 | 67.45 | 15.88 |      | 150.0 |         |
|           |                                                | Z | 3.58 | 68.02 | 16.25 |      | 150.0 |         |
| 10142-CAE | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)        | X | 2.48 | 71.91 | 17.76 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 2.05 | 67.79 | 15.33 |      | 150.0 |         |
|           |                                                | Z | 2.12 | 69.52 | 16.24 |      | 150.0 |         |
| 10143-CAE | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)      | X | 2.90 | 71.18 | 17.49 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 2.52 | 67.93 | 15.59 |      | 150.0 |         |
|           |                                                | Z | 2.57 | 69.41 | 16.20 |      | 150.0 |         |
| 10144-CAE | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)      | X | 2.62 | 68.68 | 15.85 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 2.38 | 66.30 | 14.35 |      | 150.0 |         |
|           |                                                | Z | 2.36 | 67.27 | 14.69 |      | 150.0 |         |
| 10145-CAF | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)      | X | 2.00 | 71.99 | 16.45 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 1.42 | 65.89 | 13.07 |      | 150.0 |         |
|           |                                                | Z | 1.41 | 66.95 | 13.17 |      | 150.0 |         |
| 10146-CAF | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)    | X | 5.79 | 80.59 | 18.98 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 3.05 | 71.20 | 15.41 |      | 150.0 |         |
|           |                                                | Z | 3.43 | 73.13 | 15.30 |      | 150.0 |         |
| 10147-CAF | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)    | X | 9.98 | 88.43 | 21.82 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 3.72 | 74.13 | 16.84 |      | 150.0 |         |
|           |                                                | Z | 4.87 | 77.77 | 17.26 |      | 150.0 |         |

|           |                                            |   |      |       |       |      |       |         |
|-----------|--------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10149-CAE | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)  | X | 3.19 | 69.00 | 16.80 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.00 | 67.22 | 15.63 |      | 150.0 |         |
|           |                                            | Z | 2.99 | 67.94 | 16.08 |      | 150.0 |         |
| 10150-CAE | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)  | X | 3.30 | 68.82 | 16.78 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.12 | 67.17 | 15.69 |      | 150.0 |         |
|           |                                            | Z | 3.11 | 67.87 | 16.11 |      | 150.0 |         |
| 10151-CAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)    | X | 9.20 | 80.06 | 21.79 | 3.98 | 65.0  | ± 9.6 % |
|           |                                            | Y | 8.68 | 78.68 | 21.42 |      | 65.0  |         |
|           |                                            | Z | 9.50 | 81.45 | 22.55 |      | 65.0  |         |
| 10152-CAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)  | X | 8.32 | 76.99 | 21.17 | 3.98 | 65.0  | ± 9.6 % |
|           |                                            | Y | 8.10 | 76.11 | 20.95 |      | 65.0  |         |
|           |                                            | Z | 8.24 | 77.53 | 21.54 |      | 65.0  |         |
| 10153-CAG | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)  | X | 8.68 | 77.73 | 21.81 | 3.98 | 65.0  | ± 9.6 % |
|           |                                            | Y | 8.45 | 76.81 | 21.57 |      | 65.0  |         |
|           |                                            | Z | 8.63 | 78.31 | 22.20 |      | 65.0  |         |
| 10154-CAG | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)    | X | 2.76 | 72.22 | 18.09 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.34 | 68.47 | 15.87 |      | 150.0 |         |
|           |                                            | Z | 2.39 | 69.94 | 16.75 |      | 150.0 |         |
| 10155-CAG | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)  | X | 2.93 | 69.90 | 17.30 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.67 | 67.50 | 15.78 |      | 150.0 |         |
|           |                                            | Z | 2.69 | 68.61 | 16.35 |      | 150.0 |         |
| 10156-CAG | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)     | X | 2.40 | 72.73 | 18.02 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 1.91 | 67.88 | 15.23 |      | 150.0 |         |
|           |                                            | Z | 1.98 | 69.77 | 16.17 |      | 150.0 |         |
| 10157-CAG | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   | X | 2.54 | 69.89 | 16.32 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.20 | 66.71 | 14.41 |      | 150.0 |         |
|           |                                            | Z | 2.21 | 67.97 | 14.84 |      | 150.0 |         |
| 10158-CAG | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)  | X | 3.08 | 69.91 | 17.37 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.83 | 67.66 | 15.96 |      | 150.0 |         |
|           |                                            | Z | 2.85 | 68.73 | 16.49 |      | 150.0 |         |
| 10159-CAG | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   | X | 2.68 | 70.46 | 16.65 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.30 | 67.13 | 14.70 |      | 150.0 |         |
|           |                                            | Z | 2.33 | 68.43 | 15.13 |      | 150.0 |         |
| 10160-CAE | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)    | X | 3.08 | 70.59 | 17.38 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.80 | 68.13 | 15.84 |      | 150.0 |         |
|           |                                            | Z | 2.83 | 69.23 | 16.52 |      | 150.0 |         |
| 10161-CAE | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)  | X | 3.19 | 68.74 | 16.75 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.01 | 67.04 | 15.62 |      | 150.0 |         |
|           |                                            | Z | 3.00 | 67.79 | 16.05 |      | 150.0 |         |
| 10162-CAE | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)  | X | 3.29 | 68.74 | 16.78 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.12 | 67.09 | 15.70 |      | 150.0 |         |
|           |                                            | Z | 3.11 | 67.88 | 16.13 |      | 150.0 |         |
| 10166-CAF | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)   | X | 4.20 | 71.91 | 20.30 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.97 | 69.88 | 19.20 |      | 150.0 |         |
|           |                                            | Z | 4.01 | 71.48 | 20.04 |      | 150.0 |         |
| 10167-CAF | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) | X | 5.82 | 76.43 | 21.33 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 5.06 | 72.83 | 19.70 |      | 150.0 |         |
|           |                                            | Z | 5.46 | 75.92 | 21.03 |      | 150.0 |         |

|           |                                            |   |        |        |       |      |       |         |
|-----------|--------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10168-CAF | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) | X | 6.57   | 79.03  | 22.72 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 5.52   | 74.71  | 20.84 |      | 150.0 |         |
|           |                                            | Z | 6.17   | 78.53  | 22.43 |      | 150.0 |         |
| 10169-CAE | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)      | X | 4.18   | 75.15  | 21.66 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.68   | 71.43  | 19.79 |      | 150.0 |         |
|           |                                            | Z | 3.71   | 73.29  | 20.84 |      | 150.0 |         |
| 10170-CAE | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)    | X | 8.28   | 87.06  | 25.72 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 5.41   | 77.71  | 22.06 |      | 150.0 |         |
|           |                                            | Z | 6.71   | 83.81  | 24.55 |      | 150.0 |         |
| 10171-AAE | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)    | X | 5.78   | 79.38  | 21.89 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.38   | 73.23  | 19.30 |      | 150.0 |         |
|           |                                            | Z | 4.93   | 77.24  | 21.04 |      | 150.0 |         |
| 10172-CAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)      | X | 34.48  | 110.68 | 33.22 | 6.02 | 65.0  | ± 9.6 % |
|           |                                            | Y | 19.27  | 99.23  | 30.20 |      | 65.0  |         |
|           |                                            | Z | 64.25  | 125.69 | 37.96 |      | 65.0  |         |
| 10173-CAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)    | X | 43.93  | 109.49 | 31.07 | 6.02 | 65.0  | ± 9.6 % |
|           |                                            | Y | 20.84  | 96.83  | 28.02 |      | 65.0  |         |
|           |                                            | Z | 100.00 | 126.58 | 36.03 |      | 65.0  |         |
| 10174-CAG | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)    | X | 30.93  | 102.12 | 28.52 | 6.02 | 65.0  | ± 9.6 % |
|           |                                            | Y | 17.32  | 92.53  | 26.25 |      | 65.0  |         |
|           |                                            | Z | 61.98  | 116.33 | 32.90 |      | 65.0  |         |
| 10175-CAG | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)      | X | 4.10   | 74.63  | 21.33 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.62   | 71.04  | 19.52 |      | 150.0 |         |
|           |                                            | Z | 3.65   | 72.87  | 20.55 |      | 150.0 |         |
| 10176-CAG | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)    | X | 8.30   | 87.09  | 25.74 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 5.42   | 77.74  | 22.07 |      | 150.0 |         |
|           |                                            | Z | 6.72   | 83.85  | 24.57 |      | 150.0 |         |
| 10177-CAI | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       | X | 4.15   | 74.88  | 21.47 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.66   | 71.24  | 19.64 |      | 150.0 |         |
|           |                                            | Z | 3.69   | 73.07  | 20.66 |      | 150.0 |         |
| 10178-CAG | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)     | X | 8.06   | 86.52  | 25.50 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 5.33   | 77.40  | 21.91 |      | 150.0 |         |
|           |                                            | Z | 6.59   | 83.44  | 24.39 |      | 150.0 |         |
| 10179-CAG | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)    | X | 6.83   | 82.82  | 23.58 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.83   | 75.24  | 20.50 |      | 150.0 |         |
|           |                                            | Z | 5.71   | 80.26  | 22.61 |      | 150.0 |         |
| 10180-CAG | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)     | X | 5.73   | 79.20  | 21.80 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.36   | 73.12  | 19.23 |      | 150.0 |         |
|           |                                            | Z | 4.90   | 77.11  | 20.97 |      | 150.0 |         |
| 10181-CAE | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)      | X | 4.14   | 74.86  | 21.46 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.65   | 71.22  | 19.63 |      | 150.0 |         |
|           |                                            | Z | 3.68   | 73.05  | 20.65 |      | 150.0 |         |
| 10182-CAE | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)    | X | 8.05   | 86.48  | 25.49 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 5.32   | 77.37  | 21.89 |      | 150.0 |         |
|           |                                            | Z | 6.57   | 83.40  | 24.38 |      | 150.0 |         |
| 10183-AAD | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)    | X | 5.72   | 79.16  | 21.78 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.35   | 73.09  | 19.22 |      | 150.0 |         |
|           |                                            | Z | 4.89   | 77.08  | 20.96 |      | 150.0 |         |

|           |                                               |   |      |       |       |      |       |         |
|-----------|-----------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10184-CAE | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)          | X | 4.16 | 74.92 | 21.48 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 3.67 | 71.26 | 19.65 |      | 150.0 |         |
|           |                                               | Z | 3.70 | 73.10 | 20.68 |      | 150.0 |         |
| 10185-CAE | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)        | X | 8.10 | 86.60 | 25.54 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 5.35 | 77.45 | 21.93 |      | 150.0 |         |
|           |                                               | Z | 6.62 | 83.51 | 24.42 |      | 150.0 |         |
| 10186-AAE | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)        | X | 5.76 | 79.27 | 21.83 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.38 | 73.16 | 19.26 |      | 150.0 |         |
|           |                                               | Z | 4.92 | 77.18 | 21.00 |      | 150.0 |         |
| 10187-CAF | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)        | X | 4.17 | 74.96 | 21.54 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 3.67 | 71.29 | 19.69 |      | 150.0 |         |
|           |                                               | Z | 3.71 | 73.16 | 20.74 |      | 150.0 |         |
| 10188-CAF | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)      | X | 8.67 | 87.99 | 26.14 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 5.56 | 78.25 | 22.35 |      | 150.0 |         |
|           |                                               | Z | 6.98 | 84.62 | 24.93 |      | 150.0 |         |
| 10189-AAF | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)      | X | 5.99 | 80.05 | 22.22 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.49 | 73.64 | 19.55 |      | 150.0 |         |
|           |                                               | Z | 5.09 | 77.84 | 21.35 |      | 150.0 |         |
| 10193-CAC | IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)  | X | 4.70 | 67.14 | 16.49 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.65 | 66.50 | 16.06 |      | 150.0 |         |
|           |                                               | Z | 4.58 | 66.86 | 16.22 |      | 150.0 |         |
| 10194-CAC | IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM) | X | 4.90 | 67.52 | 16.60 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.86 | 66.88 | 16.17 |      | 150.0 |         |
|           |                                               | Z | 4.77 | 67.20 | 16.34 |      | 150.0 |         |
| 10195-CAC | IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM) | X | 4.94 | 67.52 | 16.60 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.90 | 66.89 | 16.18 |      | 150.0 |         |
|           |                                               | Z | 4.81 | 67.23 | 16.35 |      | 150.0 |         |
| 10196-CAC | IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)       | X | 4.72 | 67.25 | 16.53 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.68 | 66.61 | 16.10 |      | 150.0 |         |
|           |                                               | Z | 4.60 | 66.94 | 16.25 |      | 150.0 |         |
| 10197-CAC | IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)      | X | 4.91 | 67.54 | 16.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.87 | 66.90 | 16.18 |      | 150.0 |         |
|           |                                               | Z | 4.78 | 67.23 | 16.35 |      | 150.0 |         |
| 10198-CAC | IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)      | X | 4.94 | 67.54 | 16.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.90 | 66.90 | 16.19 |      | 150.0 |         |
|           |                                               | Z | 4.81 | 67.24 | 16.37 |      | 150.0 |         |
| 10219-CAC | IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)       | X | 4.67 | 67.27 | 16.50 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.63 | 66.62 | 16.06 |      | 150.0 |         |
|           |                                               | Z | 4.54 | 66.96 | 16.22 |      | 150.0 |         |
| 10220-CAC | IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)    | X | 4.91 | 67.53 | 16.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.87 | 66.90 | 16.18 |      | 150.0 |         |
|           |                                               | Z | 4.78 | 67.21 | 16.35 |      | 150.0 |         |
| 10221-CAC | IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)    | X | 4.95 | 67.46 | 16.60 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.91 | 66.85 | 16.18 |      | 150.0 |         |
|           |                                               | Z | 4.82 | 67.17 | 16.35 |      | 150.0 |         |
| 10222-CAC | IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)        | X | 5.25 | 67.74 | 16.71 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 5.22 | 67.19 | 16.33 |      | 150.0 |         |
|           |                                               | Z | 5.14 | 67.40 | 16.47 |      | 150.0 |         |

|           |                                           |   |        |        |       |      |       |         |
|-----------|-------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10223-CAC | IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)  | X | 5.62   | 68.04  | 16.87 | 0.00 | 150.0 | ± 9.6 % |
|           |                                           | Y | 5.61   | 67.57  | 16.55 |      | 150.0 |         |
|           |                                           | Z | 5.46   | 67.62  | 16.59 |      | 150.0 |         |
| 10224-CAC | IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM) | X | 5.30   | 67.86  | 16.69 | 0.00 | 150.0 | ± 9.6 % |
|           |                                           | Y | 5.27   | 67.29  | 16.31 |      | 150.0 |         |
|           |                                           | Z | 5.18   | 67.50  | 16.44 |      | 150.0 |         |
| 10225-CAB | UMTS-FDD (HSPA+)                          | X | 3.00   | 67.11  | 16.18 | 0.00 | 150.0 | ± 9.6 % |
|           |                                           | Y | 2.89   | 65.79  | 15.26 |      | 150.0 |         |
|           |                                           | Z | 2.86   | 66.46  | 15.54 |      | 150.0 |         |
| 10226-CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)  | X | 47.57  | 111.04 | 31.57 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 21.77  | 97.71  | 28.37 |      | 65.0  |         |
|           |                                           | Z | 100.00 | 126.78 | 36.17 |      | 65.0  |         |
| 10227-CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)  | X | 33.21  | 103.47 | 29.00 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 18.61  | 93.88  | 26.76 |      | 65.0  |         |
|           |                                           | Z | 72.01  | 119.09 | 33.69 |      | 65.0  |         |
| 10228-CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)    | X | 43.41  | 115.45 | 34.63 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 21.18  | 101.54 | 31.02 |      | 65.0  |         |
|           |                                           | Z | 73.36  | 128.78 | 38.85 |      | 65.0  |         |
| 10229-CAC | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)    | X | 43.98  | 109.51 | 31.08 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 20.89  | 96.85  | 28.04 |      | 65.0  |         |
|           |                                           | Z | 100.00 | 126.58 | 36.04 |      | 65.0  |         |
| 10230-CAC | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)    | X | 31.28  | 102.35 | 28.60 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 17.95  | 93.18  | 26.47 |      | 65.0  |         |
|           |                                           | Z | 65.65  | 117.34 | 33.17 |      | 65.0  |         |
| 10231-CAC | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)      | X | 40.51  | 113.99 | 34.16 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 20.32  | 100.64 | 30.68 |      | 65.0  |         |
|           |                                           | Z | 66.72  | 126.73 | 38.25 |      | 65.0  |         |
| 10232-CAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)    | X | 43.98  | 109.51 | 31.08 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 20.87  | 96.85  | 28.04 |      | 65.0  |         |
|           |                                           | Z | 100.00 | 126.58 | 36.04 |      | 65.0  |         |
| 10233-CAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)    | X | 31.31  | 102.37 | 28.61 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 17.95  | 93.19  | 26.47 |      | 65.0  |         |
|           |                                           | Z | 65.78  | 117.38 | 33.18 |      | 65.0  |         |
| 10234-CAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)      | X | 37.61  | 112.37 | 33.61 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 19.46  | 99.66  | 30.29 |      | 65.0  |         |
|           |                                           | Z | 60.59  | 124.57 | 37.59 |      | 65.0  |         |
| 10235-CAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)   | X | 44.16  | 109.59 | 31.10 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 20.90  | 96.88  | 28.05 |      | 65.0  |         |
|           |                                           | Z | 100.00 | 126.59 | 36.05 |      | 65.0  |         |
| 10236-CAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)   | X | 31.57  | 102.49 | 28.64 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 18.06  | 93.27  | 26.50 |      | 65.0  |         |
|           |                                           | Z | 66.68  | 117.58 | 33.22 |      | 65.0  |         |
| 10237-CAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)     | X | 40.98  | 114.23 | 34.22 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 20.43  | 100.76 | 30.72 |      | 65.0  |         |
|           |                                           | Z | 67.89  | 127.10 | 38.35 |      | 65.0  |         |
| 10238-CAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)   | X | 44.02  | 109.54 | 31.08 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 20.87  | 96.85  | 28.04 |      | 65.0  |         |
|           |                                           | Z | 100.00 | 126.59 | 36.04 |      | 65.0  |         |

|           |                                            |   |       |        |       |      |      |         |
|-----------|--------------------------------------------|---|-------|--------|-------|------|------|---------|
| 10239-CAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)    | X | 31.34 | 102.40 | 28.62 | 6.02 | 65.0 | ± 9.6 % |
|           |                                            | Y | 17.95 | 93.19  | 26.48 |      | 65.0 |         |
|           |                                            | Z | 65.90 | 117.43 | 33.19 |      | 65.0 |         |
| 10240-CAF | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)      | X | 40.84 | 114.17 | 34.21 | 6.02 | 65.0 | ± 9.6 % |
|           |                                            | Y | 20.37 | 100.72 | 30.70 |      | 65.0 |         |
|           |                                            | Z | 67.60 | 127.02 | 38.33 |      | 65.0 |         |
| 10241-CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) | X | 13.50 | 87.98  | 27.59 | 6.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 11.90 | 84.56  | 26.53 |      | 65.0 |         |
|           |                                            | Z | 14.12 | 90.28  | 28.72 |      | 65.0 |         |
| 10242-CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) | X | 13.27 | 87.58  | 27.38 | 6.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 11.12 | 83.03  | 25.85 |      | 65.0 |         |
|           |                                            | Z | 12.87 | 88.25  | 27.90 |      | 65.0 |         |
| 10243-CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)   | X | 9.24  | 81.69  | 25.97 | 6.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 9.29  | 80.98  | 25.85 |      | 65.0 |         |
|           |                                            | Z | 9.97  | 84.60  | 27.47 |      | 65.0 |         |
| 10244-CAC | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)   | X | 10.07 | 81.06  | 21.15 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 9.37  | 79.84  | 21.15 |      | 65.0 |         |
|           |                                            | Z | 10.40 | 82.17  | 21.43 |      | 65.0 |         |
| 10245-CAC | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   | X | 9.92  | 80.58  | 20.93 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 9.29  | 79.47  | 20.97 |      | 65.0 |         |
|           |                                            | Z | 10.13 | 81.50  | 21.13 |      | 65.0 |         |
| 10246-CAC | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)     | X | 9.36  | 82.64  | 21.70 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 8.42  | 80.73  | 21.28 |      | 65.0 |         |
|           |                                            | Z | 9.87  | 84.16  | 22.17 |      | 65.0 |         |
| 10247-CAF | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   | X | 7.85  | 77.75  | 20.44 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 7.56  | 76.79  | 20.29 |      | 65.0 |         |
|           |                                            | Z | 7.78  | 78.21  | 20.53 |      | 65.0 |         |
| 10248-CAF | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   | X | 7.84  | 77.28  | 20.24 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 7.59  | 76.41  | 20.13 |      | 65.0 |         |
|           |                                            | Z | 7.72  | 77.63  | 20.29 |      | 65.0 |         |
| 10249-CAF | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)     | X | 10.16 | 84.10  | 22.78 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 9.02  | 81.83  | 22.19 |      | 65.0 |         |
|           |                                            | Z | 11.03 | 86.34  | 23.62 |      | 65.0 |         |
| 10250-CAF | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)  | X | 8.66  | 79.41  | 22.21 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 8.28  | 78.20  | 21.90 |      | 65.0 |         |
|           |                                            | Z | 8.69  | 80.22  | 22.63 |      | 65.0 |         |
| 10251-CAF | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)  | X | 8.19  | 77.31  | 21.11 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 7.93  | 76.33  | 20.88 |      | 65.0 |         |
|           |                                            | Z | 8.16  | 77.97  | 21.45 |      | 65.0 |         |
| 10252-CAF | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)    | X | 9.91  | 83.04  | 22.96 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 9.02  | 81.03  | 22.39 |      | 65.0 |         |
|           |                                            | Z | 10.55 | 85.09  | 23.89 |      | 65.0 |         |
| 10253-CAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)  | X | 8.10  | 76.42  | 20.99 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 7.91  | 75.57  | 20.78 |      | 65.0 |         |
|           |                                            | Z | 8.03  | 76.94  | 21.33 |      | 65.0 |         |
| 10254-CAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)  | X | 8.47  | 77.16  | 21.59 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 8.27  | 76.28  | 21.37 |      | 65.0 |         |
|           |                                            | Z | 8.42  | 77.71  | 21.94 |      | 65.0 |         |

|           |                                             |   |       |       |       |      |      |         |
|-----------|---------------------------------------------|---|-------|-------|-------|------|------|---------|
| 10255-CAF | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)     | X | 8.92  | 79.74 | 21.91 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.44  | 78.38 | 21.54 |      | 65.0 |         |
|           |                                             | Z | 9.16  | 81.05 | 22.63 |      | 65.0 |         |
| 10256-CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM) | X | 8.96  | 78.82 | 19.56 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.66  | 78.38 | 19.92 |      | 65.0 |         |
|           |                                             | Z | 8.87  | 79.14 | 19.45 |      | 65.0 |         |
| 10257-CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM) | X | 8.76  | 78.15 | 19.23 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.57  | 77.86 | 19.65 |      | 65.0 |         |
|           |                                             | Z | 8.54  | 78.21 | 19.01 |      | 65.0 |         |
| 10258-CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)   | X | 8.23  | 80.27 | 20.30 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 7.69  | 79.06 | 20.18 |      | 65.0 |         |
|           |                                             | Z | 8.13  | 80.56 | 20.22 |      | 65.0 |         |
| 10259-CAC | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)   | X | 8.16  | 78.29 | 21.04 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 7.83  | 77.23 | 20.83 |      | 65.0 |         |
|           |                                             | Z | 8.14  | 78.91 | 21.27 |      | 65.0 |         |
| 10260-CAC | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)   | X | 8.18  | 78.05 | 20.97 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 7.89  | 77.07 | 20.79 |      | 65.0 |         |
|           |                                             | Z | 8.12  | 78.59 | 21.15 |      | 65.0 |         |
| 10261-CAC | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)     | X | 9.70  | 83.10 | 22.69 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.75  | 81.03 | 22.13 |      | 65.0 |         |
|           |                                             | Z | 10.33 | 85.06 | 23.50 |      | 65.0 |         |
| 10262-CAF | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)   | X | 8.65  | 79.37 | 22.18 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.27  | 78.16 | 21.87 |      | 65.0 |         |
|           |                                             | Z | 8.68  | 80.17 | 22.59 |      | 65.0 |         |
| 10263-CAF | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)   | X | 8.18  | 77.31 | 21.11 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 7.93  | 76.34 | 20.88 |      | 65.0 |         |
|           |                                             | Z | 8.15  | 77.96 | 21.45 |      | 65.0 |         |
| 10264-CAF | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)     | X | 9.85  | 82.90 | 22.89 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.97  | 80.91 | 22.33 |      | 65.0 |         |
|           |                                             | Z | 10.47 | 84.92 | 23.82 |      | 65.0 |         |
| 10265-CAF | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)  | X | 8.32  | 77.00 | 21.17 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.10  | 76.11 | 20.95 |      | 65.0 |         |
|           |                                             | Z | 8.24  | 77.53 | 21.55 |      | 65.0 |         |
| 10266-CAF | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)  | X | 8.68  | 77.72 | 21.80 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.45  | 76.80 | 21.57 |      | 65.0 |         |
|           |                                             | Z | 8.63  | 78.31 | 22.20 |      | 65.0 |         |
| 10267-CAF | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)    | X | 9.19  | 80.02 | 21.78 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.67  | 78.65 | 21.41 |      | 65.0 |         |
|           |                                             | Z | 9.48  | 81.42 | 22.54 |      | 65.0 |         |
| 10268-CAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)  | X | 8.76  | 76.52 | 21.32 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.60  | 75.79 | 21.15 |      | 65.0 |         |
|           |                                             | Z | 8.66  | 76.94 | 21.68 |      | 65.0 |         |
| 10269-CAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)  | X | 8.68  | 76.12 | 21.24 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.54  | 75.43 | 21.08 |      | 65.0 |         |
|           |                                             | Z | 8.58  | 76.51 | 21.57 |      | 65.0 |         |
| 10270-CAF | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)    | X | 8.76  | 77.59 | 20.98 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 8.48  | 76.66 | 20.76 |      | 65.0 |         |
|           |                                             | Z | 8.82  | 78.43 | 21.53 |      | 65.0 |         |

|           |                                                                    |   |       |        |       |      |       |         |
|-----------|--------------------------------------------------------------------|---|-------|--------|-------|------|-------|---------|
| 10274-CAB | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)                          | X | 2.75  | 67.54  | 16.13 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 2.59  | 65.84  | 14.97 |      | 150.0 |         |
|           |                                                                    | Z | 2.62  | 66.79  | 15.44 |      | 150.0 |         |
| 10275-CAB | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)                           | X | 1.98  | 71.72  | 17.77 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.57  | 66.85  | 14.80 |      | 150.0 |         |
|           |                                                                    | Z | 1.68  | 68.85  | 15.99 |      | 150.0 |         |
| 10277-CAA | PHS (QPSK)                                                         | X | 5.52  | 68.98  | 13.68 | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 6.18  | 70.61  | 15.13 |      | 50.0  |         |
|           |                                                                    | Z | 5.33  | 69.04  | 13.51 |      | 50.0  |         |
| 10278-CAA | PHS (QPSK, BW 884MHz, Rolloff 0.5)                                 | X | 8.68  | 78.27  | 19.91 | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 9.24  | 79.43  | 21.04 |      | 50.0  |         |
|           |                                                                    | Z | 9.06  | 79.61  | 20.36 |      | 50.0  |         |
| 10279-CAA | PHS (QPSK, BW 884MHz, Rolloff 0.38)                                | X | 8.84  | 78.47  | 20.00 | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 9.40  | 79.62  | 21.12 |      | 50.0  |         |
|           |                                                                    | Z | 9.21  | 79.79  | 20.45 |      | 50.0  |         |
| 10290-AAB | CDMA2000, RC1, SO55, Full Rate                                     | X | 2.53  | 76.75  | 18.53 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.47  | 67.51  | 13.90 |      | 150.0 |         |
|           |                                                                    | Z | 1.65  | 70.41  | 15.02 |      | 150.0 |         |
| 10291-AAB | CDMA2000, RC3, SO55, Full Rate                                     | X | 1.44  | 74.15  | 17.52 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 0.84  | 64.78  | 12.27 |      | 150.0 |         |
|           |                                                                    | Z | 0.91  | 67.24  | 13.41 |      | 150.0 |         |
| 10292-AAB | CDMA2000, RC3, SO32, Full Rate                                     | X | 2.94  | 86.43  | 22.66 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 0.94  | 67.21  | 13.88 |      | 150.0 |         |
|           |                                                                    | Z | 1.25  | 72.55  | 16.26 |      | 150.0 |         |
| 10293-AAB | CDMA2000, RC3, SO3, Full Rate                                      | X | 8.52  | 104.26 | 28.75 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.19  | 70.50  | 15.89 |      | 150.0 |         |
|           |                                                                    | Z | 2.08  | 80.22  | 19.81 |      | 150.0 |         |
| 10295-AAB | CDMA2000, RC1, SO3, 1/8th Rate 25 fr.                              | X | 9.77  | 81.63  | 23.08 | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 9.82  | 81.44  | 23.46 |      | 50.0  |         |
|           |                                                                    | Z | 11.19 | 84.96  | 24.41 |      | 50.0  |         |
| 10297-AAD | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)                            | X | 3.27  | 72.60  | 18.02 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 2.80  | 69.13  | 16.02 |      | 150.0 |         |
|           |                                                                    | Z | 2.88  | 70.48  | 16.86 |      | 150.0 |         |
| 10298-AAD | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)                             | X | 2.28  | 73.12  | 17.57 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.68  | 67.21  | 14.31 |      | 150.0 |         |
|           |                                                                    | Z | 1.73  | 69.06  | 15.02 |      | 150.0 |         |
| 10299-AAD | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)                           | X | 5.83  | 80.69  | 19.80 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 3.42  | 72.22  | 16.49 |      | 150.0 |         |
|           |                                                                    | Z | 4.30  | 76.07  | 17.39 |      | 150.0 |         |
| 10300-AAD | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)                           | X | 3.42  | 71.78  | 15.52 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 2.69  | 67.85  | 13.82 |      | 150.0 |         |
|           |                                                                    | Z | 2.73  | 68.87  | 13.61 |      | 150.0 |         |
| 10301-AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)                 | X | 5.57  | 67.67  | 18.57 | 4.17 | 80.0  | ± 9.6 % |
|           |                                                                    | Y | 5.78  | 67.86  | 18.57 |      | 80.0  |         |
|           |                                                                    | Z | 5.72  | 68.56  | 18.87 |      | 80.0  |         |
| 10302-AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols) | X | 6.16  | 68.78  | 19.58 | 4.96 | 80.0  | ± 9.6 % |
|           |                                                                    | Y | 6.30  | 68.51  | 19.30 |      | 80.0  |         |
|           |                                                                    | Z | 6.18  | 69.12  | 19.60 |      | 80.0  |         |

|           |                                                                     |   |       |       |       |       |       |         |
|-----------|---------------------------------------------------------------------|---|-------|-------|-------|-------|-------|---------|
| 10303-AAA | IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)                 | X | 6.02  | 68.90 | 19.67 | 4.96  | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 6.17  | 68.65 | 19.39 |       | 80.0  |         |
|           |                                                                     | Z | 6.04  | 69.21 | 19.66 |       | 80.0  |         |
| 10304-AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)                 | X | 5.66  | 68.19 | 18.86 | 4.17  | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 5.77  | 67.85 | 18.54 |       | 80.0  |         |
|           |                                                                     | Z | 5.66  | 68.44 | 18.81 |       | 80.0  |         |
| 10305-AAA | IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)    | X | 7.03  | 75.37 | 23.25 | 6.02  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 9.48  | 82.40 | 26.40 |       | 50.0  |         |
|           |                                                                     | Z | 9.45  | 83.47 | 26.75 |       | 50.0  |         |
| 10306-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)    | X | 6.41  | 71.60 | 21.68 | 6.02  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 6.61  | 71.33 | 21.32 |       | 50.0  |         |
|           |                                                                     | Z | 6.53  | 72.26 | 21.74 |       | 50.0  |         |
| 10307-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)     | X | 6.53  | 72.42 | 21.88 | 6.02  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 6.71  | 72.00 | 21.44 |       | 50.0  |         |
|           |                                                                     | Z | 6.64  | 73.01 | 21.90 |       | 50.0  |         |
| 10308-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)                | X | 6.58  | 72.85 | 22.10 | 6.02  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 7.88  | 77.20 | 24.23 |       | 50.0  |         |
|           |                                                                     | Z | 6.72  | 73.52 | 22.14 |       | 50.0  |         |
| 10309-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols) | X | 6.53  | 71.94 | 21.86 | 6.02  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 6.73  | 71.62 | 21.48 |       | 50.0  |         |
|           |                                                                     | Z | 6.64  | 72.61 | 21.93 |       | 50.0  |         |
| 10310-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)  | X | 6.43  | 71.87 | 21.71 | 6.02  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 6.62  | 71.53 | 21.32 |       | 50.0  |         |
|           |                                                                     | Z | 6.55  | 72.54 | 21.77 |       | 50.0  |         |
| 10311-AAD | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)                            | X | 3.66  | 71.76 | 17.57 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 3.14  | 68.49 | 15.73 |       | 150.0 |         |
|           |                                                                     | Z | 3.24  | 69.73 | 16.49 |       | 150.0 |         |
| 10313-AAA | IDEN 1:3                                                            | X | 6.89  | 76.52 | 17.70 | 6.99  | 70.0  | ± 9.6 % |
|           |                                                                     | Y | 6.61  | 75.87 | 17.81 |       | 70.0  |         |
|           |                                                                     | Z | 7.80  | 79.06 | 18.82 |       | 70.0  |         |
| 10314-AAA | IDEN 1:6                                                            | X | 8.95  | 82.07 | 22.06 | 10.00 | 30.0  | ± 9.6 % |
|           |                                                                     | Y | 7.91  | 79.82 | 21.63 |       | 30.0  |         |
|           |                                                                     | Z | 10.67 | 86.11 | 23.72 |       | 30.0  |         |
| 10315-AAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)           | X | 1.22  | 66.52 | 17.02 | 0.17  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 1.11  | 63.83 | 14.85 |       | 150.0 |         |
|           |                                                                     | Z | 1.15  | 65.06 | 15.82 |       | 150.0 |         |
| 10316-AAB | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)       | X | 4.79  | 67.26 | 16.63 | 0.17  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.77  | 66.71 | 16.27 |       | 150.0 |         |
|           |                                                                     | Z | 4.69  | 67.06 | 16.44 |       | 150.0 |         |
| 10317-AAC | IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)             | X | 4.79  | 67.26 | 16.63 | 0.17  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.77  | 66.71 | 16.27 |       | 150.0 |         |
|           |                                                                     | Z | 4.69  | 67.06 | 16.44 |       | 150.0 |         |
| 10400-AAD | IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)                 | X | 4.91  | 67.58 | 16.59 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.87  | 66.94 | 16.16 |       | 150.0 |         |
|           |                                                                     | Z | 4.77  | 67.27 | 16.35 |       | 150.0 |         |
| 10401-AAD | IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)                 | X | 5.51  | 67.53 | 16.59 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 5.48  | 67.02 | 16.26 |       | 150.0 |         |
|           |                                                                     | Z | 5.43  | 67.39 | 16.46 |       | 150.0 |         |

|           |                                                                                 |   |        |        |       |      |       |         |
|-----------|---------------------------------------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10402-AAD | IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)                             | X | 5.82   | 68.12  | 16.73 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 5.79   | 67.61  | 16.40 |      | 150.0 |         |
|           |                                                                                 | Z | 5.71   | 67.82  | 16.52 |      | 150.0 |         |
| 10403-AAB | CDMA2000 (1xEV-DO, Rev. 0)                                                      | X | 2.53   | 76.75  | 18.53 | 0.00 | 115.0 | ± 9.6 % |
|           |                                                                                 | Y | 1.47   | 67.51  | 13.90 |      | 115.0 |         |
|           |                                                                                 | Z | 1.65   | 70.41  | 15.02 |      | 115.0 |         |
| 10404-AAB | CDMA2000 (1xEV-DO, Rev. A)                                                      | X | 2.53   | 76.75  | 18.53 | 0.00 | 115.0 | ± 9.6 % |
|           |                                                                                 | Y | 1.47   | 67.51  | 13.90 |      | 115.0 |         |
|           |                                                                                 | Z | 1.65   | 70.41  | 15.02 |      | 115.0 |         |
| 10406-AAB | CDMA2000, RC3, SO32, SCH0, Full Rate                                            | X | 100.00 | 121.33 | 30.70 | 0.00 | 100.0 | ± 9.6 % |
|           |                                                                                 | Y | 17.68  | 98.28  | 25.62 |      | 100.0 |         |
|           |                                                                                 | Z | 100.00 | 119.36 | 29.52 |      | 100.0 |         |
| 10410-AAF | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4) | X | 100.00 | 117.12 | 29.14 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                                 | Y | 100.00 | 119.43 | 30.56 |      | 80.0  |         |
|           |                                                                                 | Z | 100.00 | 119.33 | 29.99 |      | 80.0  |         |
| 10415-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)                       | X | 1.05   | 64.70  | 16.09 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 0.96   | 62.34  | 13.96 |      | 150.0 |         |
|           |                                                                                 | Z | 1.00   | 63.43  | 14.88 |      | 150.0 |         |
| 10416-AAA | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)                   | X | 4.70   | 67.17  | 16.53 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.65   | 66.53  | 16.09 |      | 150.0 |         |
|           |                                                                                 | Z | 4.59   | 66.90  | 16.28 |      | 150.0 |         |
| 10417-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)                       | X | 4.70   | 67.17  | 16.53 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.65   | 66.53  | 16.09 |      | 150.0 |         |
|           |                                                                                 | Z | 4.59   | 66.90  | 16.28 |      | 150.0 |         |
| 10418-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)   | X | 4.69   | 67.33  | 16.54 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.64   | 66.65  | 16.08 |      | 150.0 |         |
|           |                                                                                 | Z | 4.57   | 67.05  | 16.29 |      | 150.0 |         |
| 10419-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)  | X | 4.71   | 67.28  | 16.55 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.66   | 66.62  | 16.10 |      | 150.0 |         |
|           |                                                                                 | Z | 4.60   | 67.00  | 16.30 |      | 150.0 |         |
| 10422-AAB | IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)                                    | X | 4.83   | 67.27  | 16.55 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.79   | 66.64  | 16.13 |      | 150.0 |         |
|           |                                                                                 | Z | 4.72   | 67.01  | 16.31 |      | 150.0 |         |
| 10423-AAB | IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)                                 | X | 5.04   | 67.66  | 16.69 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 5.01   | 67.04  | 16.28 |      | 150.0 |         |
|           |                                                                                 | Z | 4.90   | 67.36  | 16.44 |      | 150.0 |         |
| 10424-AAB | IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)                                 | X | 4.95   | 67.60  | 16.66 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.91   | 66.97  | 16.23 |      | 150.0 |         |
|           |                                                                                 | Z | 4.82   | 67.30  | 16.41 |      | 150.0 |         |
| 10425-AAB | IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)                                     | X | 5.50   | 67.84  | 16.74 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 5.49   | 67.38  | 16.43 |      | 150.0 |         |
|           |                                                                                 | Z | 5.41   | 67.63  | 16.57 |      | 150.0 |         |
| 10426-AAB | IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)                                   | X | 5.52   | 67.88  | 16.76 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 5.51   | 67.41  | 16.44 |      | 150.0 |         |
|           |                                                                                 | Z | 5.41   | 67.63  | 16.57 |      | 150.0 |         |

|           |                                                                |   |        |        |       |      |       |         |
|-----------|----------------------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10427-AAB | IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)                 | X | 5.54   | 67.91  | 16.77 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 5.52   | 67.43  | 16.44 |      | 150.0 |         |
|           |                                                                | Z | 5.42   | 67.62  | 16.56 |      | 150.0 |         |
| 10430-AAD | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)                               | X | 4.52   | 71.31  | 18.76 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.32   | 69.77  | 17.85 |      | 150.0 |         |
|           |                                                                | Z | 4.28   | 70.66  | 18.14 |      | 150.0 |         |
| 10431-AAD | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)                              | X | 4.46   | 67.83  | 16.68 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.39   | 67.02  | 16.13 |      | 150.0 |         |
|           |                                                                | Z | 4.30   | 67.47  | 16.32 |      | 150.0 |         |
| 10432-AAC | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)                              | X | 4.74   | 67.68  | 16.66 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.69   | 66.98  | 16.18 |      | 150.0 |         |
|           |                                                                | Z | 4.59   | 67.35  | 16.37 |      | 150.0 |         |
| 10433-AAC | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)                              | X | 4.97   | 67.65  | 16.69 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.93   | 67.02  | 16.26 |      | 150.0 |         |
|           |                                                                | Z | 4.83   | 67.34  | 16.43 |      | 150.0 |         |
| 10434-AAA | W-CDMA (BS Test Model 1, 64 DPCH)                              | X | 4.66   | 72.23  | 18.86 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.38   | 70.37  | 17.81 |      | 150.0 |         |
|           |                                                                | Z | 4.38   | 71.47  | 18.13 |      | 150.0 |         |
| 10435-AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 100.00 | 116.95 | 29.06 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                | Y | 100.00 | 119.28 | 30.50 |      | 80.0  |         |
|           |                                                                | Z | 100.00 | 119.16 | 29.91 |      | 80.0  |         |
| 10447-AAD | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)                 | X | 3.81   | 68.11  | 16.36 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.69   | 66.93  | 15.60 |      | 150.0 |         |
|           |                                                                | Z | 3.61   | 67.54  | 15.77 |      | 150.0 |         |
| 10448-AAD | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)                | X | 4.28   | 67.62  | 16.54 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.20   | 66.78  | 15.97 |      | 150.0 |         |
|           |                                                                | Z | 4.13   | 67.25  | 16.18 |      | 150.0 |         |
| 10449-AAC | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)                | X | 4.52   | 67.52  | 16.57 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.46   | 66.78  | 16.07 |      | 150.0 |         |
|           |                                                                | Z | 4.39   | 67.18  | 16.27 |      | 150.0 |         |
| 10450-AAC | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)                | X | 4.69   | 67.43  | 16.56 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.64   | 66.74  | 16.10 |      | 150.0 |         |
|           |                                                                | Z | 4.58   | 67.10  | 16.28 |      | 150.0 |         |
| 10451-AAA | W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)                | X | 3.77   | 68.52  | 16.20 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.62   | 67.16  | 15.35 |      | 150.0 |         |
|           |                                                                | Z | 3.52   | 67.79  | 15.46 |      | 150.0 |         |
| 10456-AAB | IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)           | X | 6.36   | 68.45  | 16.90 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 6.35   | 68.04  | 16.63 |      | 150.0 |         |
|           |                                                                | Z | 6.26   | 68.19  | 16.72 |      | 150.0 |         |
| 10457-AAA | UMTS-FDD (DC-HSDPA)                                            | X | 3.87   | 65.81  | 16.29 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.82   | 65.17  | 15.81 |      | 150.0 |         |
|           |                                                                | Z | 3.80   | 65.53  | 16.00 |      | 150.0 |         |
| 10458-AAA | CDMA2000 (1xEV-DO, Rev. B, 2 carriers)                         | X | 4.22   | 71.17  | 18.26 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.94   | 69.22  | 17.15 |      | 150.0 |         |
|           |                                                                | Z | 4.01   | 70.71  | 17.59 |      | 150.0 |         |
| 10459-AAA | CDMA2000 (1xEV-DO, Rev. B, 3 carriers)                         | X | 5.26   | 68.17  | 18.33 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 5.16   | 67.29  | 17.83 |      | 150.0 |         |
|           |                                                                | Z | 5.10   | 68.13  | 18.06 |      | 150.0 |         |

|           |                                                                   |   |        |        |       |      |       |         |
|-----------|-------------------------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10460-AAA | UMTS-FDD (WCDMA, AMR)                                             | X | 1.33   | 76.50  | 20.68 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                   | Y | 0.81   | 66.18  | 14.61 |      | 150.0 |         |
|           |                                                                   | Z | 0.95   | 69.86  | 16.92 |      | 150.0 |         |
| 10461-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 100.00 | 120.53 | 30.78 | 3.29 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 100.00 | 120.99 | 31.37 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 124.03 | 32.20 |      | 80.0  |         |
| 10462-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 100.00 | 105.89 | 23.78 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 68.65  | 104.80 | 24.72 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 107.80 | 24.46 |      | 80.0  |         |
| 10463-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 34.22  | 92.48  | 19.99 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 20.78  | 89.39  | 20.30 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 104.65 | 22.95 |      | 80.0  |         |
| 10464-AAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 100.00 | 118.59 | 29.74 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 100.00 | 119.30 | 30.44 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 122.02 | 31.12 |      | 80.0  |         |
| 10465-AAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 100.00 | 105.43 | 23.55 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 36.42  | 97.15  | 22.76 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 107.28 | 24.20 |      | 80.0  |         |
| 10466-AAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 17.89  | 85.74  | 18.15 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 13.99  | 84.78  | 18.93 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 104.18 | 22.73 |      | 80.0  |         |
| 10467-AAE | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 100.00 | 118.79 | 29.83 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 100.00 | 119.47 | 30.52 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 122.25 | 31.22 |      | 80.0  |         |
| 10468-AAE | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 100.00 | 105.55 | 23.61 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 42.04  | 98.90  | 23.22 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 107.44 | 24.27 |      | 80.0  |         |
| 10469-AAE | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 18.42  | 86.04  | 18.22 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 14.20  | 84.95  | 18.97 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 104.18 | 22.73 |      | 80.0  |         |
| 10470-AAE | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 100.00 | 118.81 | 29.83 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 100.00 | 119.49 | 30.52 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 122.27 | 31.22 |      | 80.0  |         |
| 10471-AAE | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 100.00 | 105.50 | 23.58 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 42.06  | 98.87  | 23.20 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 107.39 | 24.25 |      | 80.0  |         |
| 10472-AAE | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | X | 18.24  | 85.92  | 18.18 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 14.18  | 84.92  | 18.95 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 104.13 | 22.70 |      | 80.0  |         |
| 10473-AAE | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 100.00 | 118.78 | 29.81 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 100.00 | 119.47 | 30.51 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 122.24 | 31.21 |      | 80.0  |         |
| 10474-AAE | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 100.00 | 105.51 | 23.58 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 41.44  | 98.71  | 23.16 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 107.39 | 24.25 |      | 80.0  |         |
| 10475-AAE | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | X | 18.00  | 85.79  | 18.14 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 14.03  | 84.82  | 18.92 |      | 80.0  |         |
|           |                                                                   | Z | 100.00 | 104.14 | 22.70 |      | 80.0  |         |

|           |                                                                     |   |        |        |       |      |      |         |
|-----------|---------------------------------------------------------------------|---|--------|--------|-------|------|------|---------|
| 10477-AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)    | X | 100.00 | 105.36 | 23.51 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 37.47  | 97.45  | 22.82 |      | 80.0 |         |
|           |                                                                     | Z | 100.00 | 107.23 | 24.17 |      | 80.0 |         |
| 10478-AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)    | X | 17.45  | 85.46  | 18.04 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 13.87  | 84.66  | 18.87 |      | 80.0 |         |
|           |                                                                     | Z | 100.00 | 104.09 | 22.68 |      | 80.0 |         |
| 10479-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 19.39  | 97.98  | 26.98 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 9.97   | 87.11  | 23.93 |      | 80.0 |         |
|           |                                                                     | Z | 31.86  | 106.57 | 29.32 |      | 80.0 |         |
| 10480-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 21.21  | 93.58  | 24.05 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 10.89  | 84.18  | 21.64 |      | 80.0 |         |
|           |                                                                     | Z | 36.29  | 101.38 | 25.98 |      | 80.0 |         |
| 10481-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 17.21  | 89.86  | 22.63 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 9.94   | 82.29  | 20.73 |      | 80.0 |         |
|           |                                                                     | Z | 25.83  | 95.66  | 24.06 |      | 80.0 |         |
| 10482-AAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 7.29   | 82.03  | 20.94 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 4.92   | 75.71  | 18.70 |      | 80.0 |         |
|           |                                                                     | Z | 6.76   | 81.31  | 20.47 |      | 80.0 |         |
| 10483-AAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 10.85  | 84.57  | 21.63 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 7.87   | 79.68  | 20.28 |      | 80.0 |         |
|           |                                                                     | Z | 11.75  | 85.89  | 21.77 |      | 80.0 |         |
| 10484-AAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 9.90   | 83.05  | 21.15 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 7.49   | 78.74  | 19.95 |      | 80.0 |         |
|           |                                                                     | Z | 10.27  | 83.81  | 21.11 |      | 80.0 |         |
| 10485-AAE | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 7.24   | 82.21  | 21.64 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 5.20   | 76.44  | 19.53 |      | 80.0 |         |
|           |                                                                     | Z | 6.79   | 81.80  | 21.44 |      | 80.0 |         |
| 10486-AAE | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.34   | 74.77  | 18.72 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 4.58   | 71.87  | 17.58 |      | 80.0 |         |
|           |                                                                     | Z | 5.06   | 74.40  | 18.37 |      | 80.0 |         |
| 10487-AAE | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.26   | 74.21  | 18.50 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 4.59   | 71.54  | 17.46 |      | 80.0 |         |
|           |                                                                     | Z | 4.97   | 73.79  | 18.13 |      | 80.0 |         |
| 10488-AAE | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 6.65   | 79.53  | 21.12 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 5.36   | 75.42  | 19.52 |      | 80.0 |         |
|           |                                                                     | Z | 6.19   | 79.05  | 21.03 |      | 80.0 |         |
| 10489-AAE | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 5.18   | 73.29  | 18.99 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 4.74   | 71.24  | 18.12 |      | 80.0 |         |
|           |                                                                     | Z | 4.94   | 73.02  | 18.87 |      | 80.0 |         |
| 10490-AAE | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | X | 5.20   | 72.84  | 18.84 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 4.81   | 70.96  | 18.04 |      | 80.0 |         |
|           |                                                                     | Z | 4.98   | 72.63  | 18.73 |      | 80.0 |         |
| 10491-AAE | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 6.09   | 76.27  | 20.02 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 5.32   | 73.47  | 18.88 |      | 80.0 |         |
|           |                                                                     | Z | 5.74   | 75.88  | 19.98 |      | 80.0 |         |
| 10492-AAE | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 5.29   | 71.86  | 18.63 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 5.01   | 70.36  | 17.98 |      | 80.0 |         |
|           |                                                                     | Z | 5.08   | 71.61  | 18.56 |      | 80.0 |         |

|           |                                                                      |   |      |       |       |      |      |         |
|-----------|----------------------------------------------------------------------|---|------|-------|-------|------|------|---------|
| 10493-AAE | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.33 | 71.59 | 18.55 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.07 | 70.18 | 17.93 |      | 80.0 |         |
|           |                                                                      | Z | 5.12 | 71.37 | 18.48 |      | 80.0 |         |
| 10494-AAF | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 7.00 | 78.56 | 20.67 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.85 | 75.11 | 19.32 |      | 80.0 |         |
|           |                                                                      | Z | 6.51 | 77.97 | 20.58 |      | 80.0 |         |
| 10495-AAF | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.43 | 72.52 | 18.88 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.10 | 70.90 | 18.18 |      | 80.0 |         |
|           |                                                                      | Z | 5.18 | 72.18 | 18.80 |      | 80.0 |         |
| 10496-AAF | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.43 | 71.99 | 18.72 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.15 | 70.54 | 18.08 |      | 80.0 |         |
|           |                                                                      | Z | 5.20 | 71.70 | 18.65 |      | 80.0 |         |
| 10497-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 5.92 | 78.88 | 19.20 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 4.08 | 73.19 | 17.18 |      | 80.0 |         |
|           |                                                                      | Z | 5.11 | 76.97 | 18.12 |      | 80.0 |         |
| 10498-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 4.00 | 70.80 | 15.33 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.45 | 68.39 | 14.47 |      | 80.0 |         |
|           |                                                                      | Z | 3.24 | 68.34 | 13.80 |      | 80.0 |         |
| 10499-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.89 | 70.09 | 14.92 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.42 | 67.98 | 14.18 |      | 80.0 |         |
|           |                                                                      | Z | 3.10 | 67.51 | 13.31 |      | 80.0 |         |
| 10500-AAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 6.64 | 80.28 | 21.17 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.11 | 75.52 | 19.37 |      | 80.0 |         |
|           |                                                                      | Z | 6.26 | 79.98 | 21.06 |      | 80.0 |         |
| 10501-AAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.23 | 73.99 | 18.74 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 4.64 | 71.50 | 17.74 |      | 80.0 |         |
|           |                                                                      | Z | 4.99 | 73.73 | 18.51 |      | 80.0 |         |
| 10502-AAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.24 | 73.65 | 18.58 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 4.68 | 71.29 | 17.63 |      | 80.0 |         |
|           |                                                                      | Z | 5.01 | 73.41 | 18.34 |      | 80.0 |         |
| 10503-AAE | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 6.55 | 79.28 | 21.02 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.29 | 75.23 | 19.44 |      | 80.0 |         |
|           |                                                                      | Z | 6.10 | 78.82 | 20.93 |      | 80.0 |         |
| 10504-AAE | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.15 | 73.20 | 18.93 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 4.72 | 71.16 | 18.07 |      | 80.0 |         |
|           |                                                                      | Z | 4.91 | 72.93 | 18.81 |      | 80.0 |         |
| 10505-AAE | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 5.17 | 72.74 | 18.78 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 4.79 | 70.88 | 17.99 |      | 80.0 |         |
|           |                                                                      | Z | 4.95 | 72.53 | 18.68 |      | 80.0 |         |
| 10506-AAE | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 6.92 | 78.38 | 20.59 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.80 | 74.97 | 19.25 |      | 80.0 |         |
|           |                                                                      | Z | 6.45 | 77.80 | 20.51 |      | 80.0 |         |
| 10507-AAE | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 5.40 | 72.45 | 18.84 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 5.08 | 70.84 | 18.14 |      | 80.0 |         |
|           |                                                                      | Z | 5.16 | 72.12 | 18.76 |      | 80.0 |         |

|           |                                                                     |   |      |       |       |      |       |         |
|-----------|---------------------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10508-AAE | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 5.41 | 71.92 | 18.67 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 5.13 | 70.47 | 18.04 |      | 80.0  |         |
|           |                                                                     | Z | 5.18 | 71.63 | 18.60 |      | 80.0  |         |
| 10509-AAE | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 6.58 | 75.63 | 19.59 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 5.87 | 73.25 | 18.62 |      | 80.0  |         |
|           |                                                                     | Z | 6.22 | 75.16 | 19.53 |      | 80.0  |         |
| 10510-AAE | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 5.77 | 71.69 | 18.60 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 5.53 | 70.43 | 18.05 |      | 80.0  |         |
|           |                                                                     | Z | 5.54 | 71.36 | 18.54 |      | 80.0  |         |
| 10511-AAE | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 5.76 | 71.27 | 18.48 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 5.55 | 70.11 | 17.98 |      | 80.0  |         |
|           |                                                                     | Z | 5.55 | 70.97 | 18.43 |      | 80.0  |         |
| 10512-AAF | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 7.41 | 78.14 | 20.36 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 6.29 | 75.00 | 19.14 |      | 80.0  |         |
|           |                                                                     | Z | 6.91 | 77.49 | 20.25 |      | 80.0  |         |
| 10513-AAF | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 5.76 | 72.30 | 18.82 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 5.46 | 70.89 | 18.20 |      | 80.0  |         |
|           |                                                                     | Z | 5.50 | 71.88 | 18.73 |      | 80.0  |         |
| 10514-AAF | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 5.67 | 71.64 | 18.62 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 5.42 | 70.37 | 18.07 |      | 80.0  |         |
|           |                                                                     | Z | 5.44 | 71.27 | 18.55 |      | 80.0  |         |
| 10515-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)           | X | 1.02 | 65.05 | 16.27 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 0.92 | 62.47 | 13.97 |      | 150.0 |         |
|           |                                                                     | Z | 0.96 | 63.65 | 14.96 |      | 150.0 |         |
| 10516-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)         | X | 2.27 | 97.97 | 29.12 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 0.48 | 66.91 | 14.54 |      | 150.0 |         |
|           |                                                                     | Z | 0.71 | 74.58 | 19.09 |      | 150.0 |         |
| 10517-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)          | X | 0.95 | 69.11 | 18.10 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 0.76 | 63.96 | 14.22 |      | 150.0 |         |
|           |                                                                     | Z | 0.83 | 66.01 | 15.81 |      | 150.0 |         |
| 10518-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)           | X | 4.70 | 67.26 | 16.52 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.65 | 66.61 | 16.07 |      | 150.0 |         |
|           |                                                                     | Z | 4.58 | 66.98 | 16.26 |      | 150.0 |         |
| 10519-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)          | X | 4.92 | 67.55 | 16.65 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.88 | 66.92 | 16.23 |      | 150.0 |         |
|           |                                                                     | Z | 4.78 | 67.24 | 16.39 |      | 150.0 |         |
| 10520-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)          | X | 4.77 | 67.56 | 16.60 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.73 | 66.89 | 16.14 |      | 150.0 |         |
|           |                                                                     | Z | 4.63 | 67.21 | 16.32 |      | 150.0 |         |
| 10521-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)          | X | 4.71 | 67.58 | 16.60 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.66 | 66.89 | 16.12 |      | 150.0 |         |
|           |                                                                     | Z | 4.57 | 67.22 | 16.30 |      | 150.0 |         |
| 10522-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)          | X | 4.75 | 67.52 | 16.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.70 | 66.83 | 16.14 |      | 150.0 |         |
|           |                                                                     | Z | 4.62 | 67.26 | 16.37 |      | 150.0 |         |

|           |                                                            |   |      |       |       |      |       |         |
|-----------|------------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10523-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) | X | 4.62 | 67.46 | 16.49 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.57 | 66.74 | 16.00 |      | 150.0 |         |
|           |                                                            | Z | 4.50 | 67.13 | 16.21 |      | 150.0 |         |
| 10524-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) | X | 4.70 | 67.49 | 16.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.65 | 66.81 | 16.14 |      | 150.0 |         |
|           |                                                            | Z | 4.57 | 67.19 | 16.34 |      | 150.0 |         |
| 10525-AAB | IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)          | X | 4.66 | 66.53 | 16.20 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.60 | 65.83 | 15.72 |      | 150.0 |         |
|           |                                                            | Z | 4.54 | 66.22 | 15.93 |      | 150.0 |         |
| 10526-AAB | IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)          | X | 4.87 | 66.95 | 16.34 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.81 | 66.24 | 15.87 |      | 150.0 |         |
|           |                                                            | Z | 4.73 | 66.61 | 16.08 |      | 150.0 |         |
| 10527-AAB | IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)          | X | 4.78 | 66.94 | 16.31 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.72 | 66.21 | 15.82 |      | 150.0 |         |
|           |                                                            | Z | 4.64 | 66.58 | 16.02 |      | 150.0 |         |
| 10528-AAB | IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)          | X | 4.80 | 66.96 | 16.34 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.74 | 66.23 | 15.85 |      | 150.0 |         |
|           |                                                            | Z | 4.66 | 66.60 | 16.06 |      | 150.0 |         |
| 10529-AAB | IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)          | X | 4.80 | 66.96 | 16.34 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.74 | 66.23 | 15.85 |      | 150.0 |         |
|           |                                                            | Z | 4.66 | 66.60 | 16.06 |      | 150.0 |         |
| 10531-AAB | IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)          | X | 4.82 | 67.12 | 16.37 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.76 | 66.38 | 15.88 |      | 150.0 |         |
|           |                                                            | Z | 4.66 | 66.73 | 16.08 |      | 150.0 |         |
| 10532-AAB | IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)          | X | 4.67 | 67.01 | 16.33 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.60 | 66.25 | 15.82 |      | 150.0 |         |
|           |                                                            | Z | 4.52 | 66.59 | 16.02 |      | 150.0 |         |
| 10533-AAB | IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)          | X | 4.82 | 66.98 | 16.32 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.75 | 66.24 | 15.83 |      | 150.0 |         |
|           |                                                            | Z | 4.67 | 66.63 | 16.04 |      | 150.0 |         |
| 10534-AAB | IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)          | X | 5.30 | 67.05 | 16.34 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 5.26 | 66.45 | 15.95 |      | 150.0 |         |
|           |                                                            | Z | 5.18 | 66.72 | 16.10 |      | 150.0 |         |
| 10535-AAB | IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)          | X | 5.37 | 67.19 | 16.39 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 5.33 | 66.59 | 16.00 |      | 150.0 |         |
|           |                                                            | Z | 5.25 | 66.87 | 16.17 |      | 150.0 |         |
| 10536-AAB | IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)          | X | 5.25 | 67.20 | 16.39 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 5.19 | 66.57 | 15.97 |      | 150.0 |         |
|           |                                                            | Z | 5.12 | 66.85 | 16.14 |      | 150.0 |         |
| 10537-AAB | IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)          | X | 5.31 | 67.16 | 16.37 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 5.26 | 66.55 | 15.97 |      | 150.0 |         |
|           |                                                            | Z | 5.18 | 66.81 | 16.12 |      | 150.0 |         |
| 10538-AAB | IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)          | X | 5.42 | 67.22 | 16.43 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 5.38 | 66.65 | 16.06 |      | 150.0 |         |
|           |                                                            | Z | 5.28 | 66.86 | 16.19 |      | 150.0 |         |
| 10540-AAB | IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)          | X | 5.32 | 67.17 | 16.43 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 5.28 | 66.57 | 16.03 |      | 150.0 |         |
|           |                                                            | Z | 5.20 | 66.84 | 16.19 |      | 150.0 |         |

|           |                                                    |   |      |       |       |      |       |         |
|-----------|----------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10541-AAB | IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)  | X | 5.31 | 67.10 | 16.39 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.26 | 66.51 | 16.00 |      | 150.0 |         |
|           |                                                    | Z | 5.17 | 66.72 | 16.13 |      | 150.0 |         |
| 10542-AAB | IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)  | X | 5.45 | 67.10 | 16.40 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.41 | 66.53 | 16.03 |      | 150.0 |         |
|           |                                                    | Z | 5.33 | 66.78 | 16.17 |      | 150.0 |         |
| 10543-AAB | IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)  | X | 5.54 | 67.11 | 16.42 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.50 | 66.55 | 16.05 |      | 150.0 |         |
|           |                                                    | Z | 5.41 | 66.81 | 16.20 |      | 150.0 |         |
| 10544-AAB | IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)  | X | 5.58 | 67.14 | 16.31 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.53 | 66.57 | 15.94 |      | 150.0 |         |
|           |                                                    | Z | 5.48 | 66.82 | 16.09 |      | 150.0 |         |
| 10545-AAB | IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)  | X | 5.78 | 67.52 | 16.44 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.75 | 66.98 | 16.08 |      | 150.0 |         |
|           |                                                    | Z | 5.68 | 67.24 | 16.24 |      | 150.0 |         |
| 10546-AAB | IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)  | X | 5.68 | 67.44 | 16.42 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.63 | 66.87 | 16.05 |      | 150.0 |         |
|           |                                                    | Z | 5.56 | 67.08 | 16.18 |      | 150.0 |         |
| 10547-AAB | IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)  | X | 5.77 | 67.50 | 16.44 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.72 | 66.94 | 16.07 |      | 150.0 |         |
|           |                                                    | Z | 5.64 | 67.14 | 16.20 |      | 150.0 |         |
| 10548-AAB | IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)  | X | 6.03 | 68.45 | 16.88 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 6.07 | 68.12 | 16.63 |      | 150.0 |         |
|           |                                                    | Z | 5.92 | 68.14 | 16.67 |      | 150.0 |         |
| 10550-AAB | IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)  | X | 5.70 | 67.38 | 16.39 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.65 | 66.81 | 16.02 |      | 150.0 |         |
|           |                                                    | Z | 5.58 | 67.05 | 16.17 |      | 150.0 |         |
| 10551-AAB | IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)  | X | 5.71 | 67.48 | 16.40 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.68 | 66.94 | 16.05 |      | 150.0 |         |
|           |                                                    | Z | 5.59 | 67.11 | 16.16 |      | 150.0 |         |
| 10552-AAB | IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)  | X | 5.61 | 67.24 | 16.31 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.57 | 66.68 | 15.94 |      | 150.0 |         |
|           |                                                    | Z | 5.50 | 66.90 | 16.07 |      | 150.0 |         |
| 10553-AAB | IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)  | X | 5.71 | 67.29 | 16.35 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.66 | 66.72 | 15.98 |      | 150.0 |         |
|           |                                                    | Z | 5.59 | 66.95 | 16.12 |      | 150.0 |         |
| 10554-AAC | IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle) | X | 5.97 | 67.50 | 16.39 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.93 | 66.97 | 16.05 |      | 150.0 |         |
|           |                                                    | Z | 5.88 | 67.19 | 16.18 |      | 150.0 |         |
| 10555-AAC | IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle) | X | 6.13 | 67.85 | 16.53 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 6.09 | 67.34 | 16.20 |      | 150.0 |         |
|           |                                                    | Z | 6.02 | 67.50 | 16.31 |      | 150.0 |         |
| 10556-AAC | IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle) | X | 6.13 | 67.85 | 16.53 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 6.09 | 67.32 | 16.19 |      | 150.0 |         |
|           |                                                    | Z | 6.04 | 67.54 | 16.32 |      | 150.0 |         |
| 10557-AAC | IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle) | X | 6.12 | 67.82 | 16.54 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 6.09 | 67.31 | 16.21 |      | 150.0 |         |
|           |                                                    | Z | 6.01 | 67.47 | 16.31 |      | 150.0 |         |

|           |                                                                 |   |        |        |       |      |       |         |
|-----------|-----------------------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10558-AAC | IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)              | X | 6.18   | 68.01  | 16.64 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 6.16   | 67.51  | 16.32 |      | 150.0 |         |
|           |                                                                 | Z | 6.06   | 67.65  | 16.41 |      | 150.0 |         |
| 10560-AAC | IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)              | X | 6.18   | 67.85  | 16.60 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 6.14   | 67.33  | 16.27 |      | 150.0 |         |
|           |                                                                 | Z | 6.06   | 67.49  | 16.37 |      | 150.0 |         |
| 10561-AAC | IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)              | X | 6.09   | 67.79  | 16.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 6.05   | 67.28  | 16.28 |      | 150.0 |         |
|           |                                                                 | Z | 5.98   | 67.45  | 16.39 |      | 150.0 |         |
| 10562-AAC | IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)              | X | 6.24   | 68.26  | 16.85 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 6.23   | 67.81  | 16.55 |      | 150.0 |         |
|           |                                                                 | Z | 6.12   | 67.89  | 16.61 |      | 150.0 |         |
| 10563-AAC | IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)              | X | 6.53   | 68.65  | 16.98 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 6.51   | 68.18  | 16.68 |      | 150.0 |         |
|           |                                                                 | Z | 6.46   | 68.48  | 16.85 |      | 150.0 |         |
| 10564-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)  | X | 5.03   | 67.33  | 16.65 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.00   | 66.77  | 16.28 |      | 150.0 |         |
|           |                                                                 | Z | 4.92   | 67.10  | 16.44 |      | 150.0 |         |
| 10565-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle) | X | 5.29   | 67.82  | 16.98 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.27   | 67.28  | 16.62 |      | 150.0 |         |
|           |                                                                 | Z | 5.16   | 67.55  | 16.76 |      | 150.0 |         |
| 10566-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle) | X | 5.13   | 67.71  | 16.82 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.10   | 67.14  | 16.44 |      | 150.0 |         |
|           |                                                                 | Z | 5.00   | 67.42  | 16.59 |      | 150.0 |         |
| 10567-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle) | X | 5.16   | 68.12  | 17.17 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.12   | 67.51  | 16.77 |      | 150.0 |         |
|           |                                                                 | Z | 5.02   | 67.79  | 16.92 |      | 150.0 |         |
| 10568-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle) | X | 5.03   | 67.41  | 16.55 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.01   | 66.85  | 16.18 |      | 150.0 |         |
|           |                                                                 | Z | 4.92   | 67.21  | 16.38 |      | 150.0 |         |
| 10569-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle) | X | 5.10   | 68.15  | 17.20 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.06   | 67.52  | 16.78 |      | 150.0 |         |
|           |                                                                 | Z | 4.97   | 67.85  | 16.96 |      | 150.0 |         |
| 10570-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle) | X | 5.14   | 67.95  | 17.12 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.10   | 67.36  | 16.72 |      | 150.0 |         |
|           |                                                                 | Z | 5.01   | 67.70  | 16.91 |      | 150.0 |         |
| 10571-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)       | X | 1.44   | 68.10  | 17.64 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 1.29   | 65.22  | 15.55 |      | 130.0 |         |
|           |                                                                 | Z | 1.34   | 66.59  | 16.56 |      | 130.0 |         |
| 10572-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)       | X | 1.48   | 69.02  | 18.14 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 1.31   | 65.80  | 15.88 |      | 130.0 |         |
|           |                                                                 | Z | 1.37   | 67.32  | 16.97 |      | 130.0 |         |
| 10573-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)     | X | 100.00 | 147.85 | 39.47 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 2.24   | 82.28  | 20.72 |      | 130.0 |         |
|           |                                                                 | Z | 17.41  | 116.36 | 31.42 |      | 130.0 |         |
| 10574-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)      | X | 2.28   | 80.74  | 23.27 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 1.50   | 71.42  | 18.45 |      | 130.0 |         |
|           |                                                                 | Z | 1.74   | 75.30  | 20.61 |      | 130.0 |         |

|           |                                                                 |   |      |       |       |      |       |         |
|-----------|-----------------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10575-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)  | X | 4.83 | 67.17 | 16.72 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.82 | 66.65 | 16.39 |      | 130.0 |         |
|           |                                                                 | Z | 4.74 | 66.99 | 16.56 |      | 130.0 |         |
| 10576-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)  | X | 4.86 | 67.33 | 16.79 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.85 | 66.81 | 16.45 |      | 130.0 |         |
|           |                                                                 | Z | 4.77 | 67.14 | 16.61 |      | 130.0 |         |
| 10577-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) | X | 5.10 | 67.66 | 16.96 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 5.09 | 67.16 | 16.64 |      | 130.0 |         |
|           |                                                                 | Z | 4.98 | 67.44 | 16.78 |      | 130.0 |         |
| 10578-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) | X | 5.00 | 67.86 | 17.08 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.98 | 67.32 | 16.73 |      | 130.0 |         |
|           |                                                                 | Z | 4.88 | 67.61 | 16.88 |      | 130.0 |         |
| 10579-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) | X | 4.77 | 67.23 | 16.44 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.76 | 66.70 | 16.10 |      | 130.0 |         |
|           |                                                                 | Z | 4.66 | 66.98 | 16.25 |      | 130.0 |         |
| 10580-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) | X | 4.81 | 67.17 | 16.42 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.81 | 66.65 | 16.08 |      | 130.0 |         |
|           |                                                                 | Z | 4.70 | 66.98 | 16.26 |      | 130.0 |         |
| 10581-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) | X | 4.91 | 67.97 | 17.05 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.89 | 67.40 | 16.68 |      | 130.0 |         |
|           |                                                                 | Z | 4.78 | 67.68 | 16.84 |      | 130.0 |         |
| 10582-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) | X | 4.72 | 66.95 | 16.22 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.72 | 66.45 | 15.89 |      | 130.0 |         |
|           |                                                                 | Z | 4.61 | 66.75 | 16.05 |      | 130.0 |         |
| 10583-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)       | X | 4.83 | 67.17 | 16.72 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.82 | 66.65 | 16.39 |      | 130.0 |         |
|           |                                                                 | Z | 4.74 | 66.99 | 16.56 |      | 130.0 |         |
| 10584-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)       | X | 4.86 | 67.33 | 16.79 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.85 | 66.81 | 16.45 |      | 130.0 |         |
|           |                                                                 | Z | 4.77 | 67.14 | 16.61 |      | 130.0 |         |
| 10585-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)      | X | 5.10 | 67.66 | 16.96 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 5.09 | 67.16 | 16.64 |      | 130.0 |         |
|           |                                                                 | Z | 4.98 | 67.44 | 16.78 |      | 130.0 |         |
| 10586-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)      | X | 5.00 | 67.86 | 17.08 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.98 | 67.32 | 16.73 |      | 130.0 |         |
|           |                                                                 | Z | 4.88 | 67.61 | 16.88 |      | 130.0 |         |
| 10587-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)      | X | 4.77 | 67.23 | 16.44 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.76 | 66.70 | 16.10 |      | 130.0 |         |
|           |                                                                 | Z | 4.66 | 66.98 | 16.25 |      | 130.0 |         |
| 10588-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)      | X | 4.81 | 67.17 | 16.42 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.81 | 66.65 | 16.08 |      | 130.0 |         |
|           |                                                                 | Z | 4.70 | 66.98 | 16.26 |      | 130.0 |         |
| 10589-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)      | X | 4.91 | 67.97 | 17.05 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.89 | 67.40 | 16.68 |      | 130.0 |         |
|           |                                                                 | Z | 4.78 | 67.68 | 16.84 |      | 130.0 |         |
| 10590-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)      | X | 4.72 | 66.95 | 16.22 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.72 | 66.45 | 15.89 |      | 130.0 |         |
|           |                                                                 | Z | 4.61 | 66.75 | 16.05 |      | 130.0 |         |

|           |                                                       |   |      |       |       |      |       |         |
|-----------|-------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10591-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle) | X | 4.98 | 67.21 | 16.80 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.97 | 66.72 | 16.49 |      | 130.0 |         |
|           |                                                       | Z | 4.89 | 67.03 | 16.64 |      | 130.0 |         |
| 10592-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle) | X | 5.16 | 67.56 | 16.92 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.15 | 67.07 | 16.61 |      | 130.0 |         |
|           |                                                       | Z | 5.05 | 67.37 | 16.77 |      | 130.0 |         |
| 10593-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle) | X | 5.09 | 67.52 | 16.84 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.09 | 67.03 | 16.52 |      | 130.0 |         |
|           |                                                       | Z | 4.98 | 67.31 | 16.67 |      | 130.0 |         |
| 10594-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle) | X | 5.14 | 67.66 | 16.97 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.13 | 67.17 | 16.66 |      | 130.0 |         |
|           |                                                       | Z | 5.03 | 67.46 | 16.81 |      | 130.0 |         |
| 10595-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle) | X | 5.12 | 67.64 | 16.89 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.12 | 67.15 | 16.57 |      | 130.0 |         |
|           |                                                       | Z | 5.00 | 67.42 | 16.71 |      | 130.0 |         |
| 10596-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle) | X | 5.06 | 67.64 | 16.89 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.05 | 67.13 | 16.56 |      | 130.0 |         |
|           |                                                       | Z | 4.94 | 67.43 | 16.72 |      | 130.0 |         |
| 10597-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle) | X | 5.01 | 67.59 | 16.80 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.00 | 67.08 | 16.47 |      | 130.0 |         |
|           |                                                       | Z | 4.89 | 67.36 | 16.62 |      | 130.0 |         |
| 10598-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle) | X | 5.00 | 67.87 | 17.08 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.98 | 67.33 | 16.73 |      | 130.0 |         |
|           |                                                       | Z | 4.87 | 67.59 | 16.87 |      | 130.0 |         |
| 10599-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle) | X | 5.63 | 67.75 | 16.95 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.64 | 67.37 | 16.71 |      | 130.0 |         |
|           |                                                       | Z | 5.54 | 67.56 | 16.82 |      | 130.0 |         |
| 10600-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle) | X | 5.83 | 68.33 | 17.20 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.90 | 68.12 | 17.06 |      | 130.0 |         |
|           |                                                       | Z | 5.71 | 68.07 | 17.05 |      | 130.0 |         |
| 10601-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle) | X | 5.69 | 67.99 | 17.05 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.72 | 67.66 | 16.84 |      | 130.0 |         |
|           |                                                       | Z | 5.58 | 67.77 | 16.91 |      | 130.0 |         |
| 10602-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle) | X | 5.78 | 67.98 | 16.97 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.82 | 67.70 | 16.78 |      | 130.0 |         |
|           |                                                       | Z | 5.67 | 67.76 | 16.83 |      | 130.0 |         |
| 10603-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle) | X | 5.89 | 68.37 | 17.29 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.93 | 68.09 | 17.10 |      | 130.0 |         |
|           |                                                       | Z | 5.76 | 68.08 | 17.11 |      | 130.0 |         |
| 10604-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle) | X | 5.64 | 67.73 | 16.96 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.66 | 67.36 | 16.73 |      | 130.0 |         |
|           |                                                       | Z | 5.55 | 67.52 | 16.82 |      | 130.0 |         |
| 10605-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle) | X | 5.74 | 67.99 | 17.09 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.77 | 67.65 | 16.87 |      | 130.0 |         |
|           |                                                       | Z | 5.66 | 67.85 | 16.99 |      | 130.0 |         |
| 10606-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle) | X | 5.53 | 67.51 | 16.73 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.54 | 67.14 | 16.49 |      | 130.0 |         |
|           |                                                       | Z | 5.44 | 67.32 | 16.59 |      | 130.0 |         |

|           |                                                   |   |      |       |       |      |       |         |
|-----------|---------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10607-AAB | IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle) | X | 4.82 | 66.53 | 16.43 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.79 | 65.97 | 16.07 |      | 130.0 |         |
|           |                                                   | Z | 4.72 | 66.33 | 16.26 |      | 130.0 |         |
| 10608-AAB | IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle) | X | 5.04 | 66.97 | 16.59 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.01 | 66.40 | 16.23 |      | 130.0 |         |
|           |                                                   | Z | 4.92 | 66.75 | 16.42 |      | 130.0 |         |
| 10609-AAB | IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle) | X | 4.93 | 66.86 | 16.46 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.90 | 66.28 | 16.10 |      | 130.0 |         |
|           |                                                   | Z | 4.81 | 66.62 | 16.28 |      | 130.0 |         |
| 10610-AAB | IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle) | X | 4.98 | 67.02 | 16.62 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.96 | 66.44 | 16.25 |      | 130.0 |         |
|           |                                                   | Z | 4.86 | 66.77 | 16.43 |      | 130.0 |         |
| 10611-AAB | IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle) | X | 4.90 | 66.85 | 16.48 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.88 | 66.29 | 16.12 |      | 130.0 |         |
|           |                                                   | Z | 4.78 | 66.60 | 16.29 |      | 130.0 |         |
| 10612-AAB | IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle) | X | 4.92 | 67.00 | 16.52 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.90 | 66.42 | 16.15 |      | 130.0 |         |
|           |                                                   | Z | 4.80 | 66.76 | 16.34 |      | 130.0 |         |
| 10613-AAB | IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle) | X | 4.94 | 66.93 | 16.43 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.91 | 66.35 | 16.06 |      | 130.0 |         |
|           |                                                   | Z | 4.81 | 66.67 | 16.24 |      | 130.0 |         |
| 10614-AAB | IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle) | X | 4.87 | 67.14 | 16.68 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.84 | 66.54 | 16.29 |      | 130.0 |         |
|           |                                                   | Z | 4.74 | 66.84 | 16.45 |      | 130.0 |         |
| 10615-AAB | IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle) | X | 4.90 | 66.65 | 16.25 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.88 | 66.09 | 15.90 |      | 130.0 |         |
|           |                                                   | Z | 4.79 | 66.44 | 16.08 |      | 130.0 |         |
| 10616-AAB | IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle) | X | 5.46 | 67.05 | 16.59 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.45 | 66.60 | 16.30 |      | 130.0 |         |
|           |                                                   | Z | 5.36 | 66.82 | 16.44 |      | 130.0 |         |
| 10617-AAB | IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle) | X | 5.52 | 67.16 | 16.60 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.52 | 66.71 | 16.32 |      | 130.0 |         |
|           |                                                   | Z | 5.42 | 66.95 | 16.47 |      | 130.0 |         |
| 10618-AAB | IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle) | X | 5.42 | 67.26 | 16.68 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.41 | 66.77 | 16.37 |      | 130.0 |         |
|           |                                                   | Z | 5.32 | 67.01 | 16.51 |      | 130.0 |         |
| 10619-AAB | IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle) | X | 5.44 | 67.06 | 16.51 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.43 | 66.58 | 16.21 |      | 130.0 |         |
|           |                                                   | Z | 5.34 | 66.85 | 16.37 |      | 130.0 |         |
| 10620-AAB | IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle) | X | 5.56 | 67.16 | 16.61 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.56 | 66.73 | 16.34 |      | 130.0 |         |
|           |                                                   | Z | 5.44 | 66.90 | 16.45 |      | 130.0 |         |
| 10621-AAB | IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle) | X | 5.53 | 67.24 | 16.76 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.52 | 66.78 | 16.47 |      | 130.0 |         |
|           |                                                   | Z | 5.42 | 66.97 | 16.59 |      | 130.0 |         |
| 10622-AAB | IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle) | X | 5.53 | 67.34 | 16.81 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.52 | 66.87 | 16.51 |      | 130.0 |         |
|           |                                                   | Z | 5.43 | 67.11 | 16.66 |      | 130.0 |         |

|           |                                                    |   |      |       |       |      |       |         |
|-----------|----------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10623-AAB | IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)  | X | 5.42 | 66.95 | 16.50 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.42 | 66.51 | 16.22 |      | 130.0 |         |
|           |                                                    | Z | 5.31 | 66.68 | 16.33 |      | 130.0 |         |
| 10624-AAB | IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)  | X | 5.60 | 67.07 | 16.62 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.60 | 66.64 | 16.35 |      | 130.0 |         |
|           |                                                    | Z | 5.51 | 66.87 | 16.48 |      | 130.0 |         |
| 10625-AAB | IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)  | X | 5.97 | 68.00 | 17.12 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 6.00 | 67.65 | 16.90 |      | 130.0 |         |
|           |                                                    | Z | 5.91 | 67.94 | 17.06 |      | 130.0 |         |
| 10626-AAB | IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)  | X | 5.71 | 67.08 | 16.51 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.70 | 66.63 | 16.24 |      | 130.0 |         |
|           |                                                    | Z | 5.64 | 66.86 | 16.37 |      | 130.0 |         |
| 10627-AAB | IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)  | X | 5.96 | 67.58 | 16.71 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.96 | 67.18 | 16.47 |      | 130.0 |         |
|           |                                                    | Z | 5.89 | 67.42 | 16.61 |      | 130.0 |         |
| 10628-AAB | IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)  | X | 5.78 | 67.26 | 16.49 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.78 | 66.83 | 16.23 |      | 130.0 |         |
|           |                                                    | Z | 5.69 | 67.01 | 16.35 |      | 130.0 |         |
| 10629-AAB | IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)  | X | 5.87 | 67.32 | 16.51 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.88 | 66.93 | 16.27 |      | 130.0 |         |
|           |                                                    | Z | 5.78 | 67.09 | 16.38 |      | 130.0 |         |
| 10630-AAB | IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)  | X | 6.37 | 68.98 | 17.34 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 6.50 | 68.90 | 17.25 |      | 130.0 |         |
|           |                                                    | Z | 6.28 | 68.77 | 17.22 |      | 130.0 |         |
| 10631-AAB | IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)  | X | 6.28 | 68.81 | 17.44 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 6.32 | 68.50 | 17.24 |      | 130.0 |         |
|           |                                                    | Z | 6.15 | 68.46 | 17.24 |      | 130.0 |         |
| 10632-AAB | IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)  | X | 5.95 | 67.71 | 16.91 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.94 | 67.27 | 16.65 |      | 130.0 |         |
|           |                                                    | Z | 5.85 | 67.45 | 16.76 |      | 130.0 |         |
| 10633-AAB | IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)  | X | 5.89 | 67.53 | 16.65 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.90 | 67.16 | 16.42 |      | 130.0 |         |
|           |                                                    | Z | 5.76 | 67.17 | 16.45 |      | 130.0 |         |
| 10634-AAB | IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)  | X | 5.86 | 67.52 | 16.71 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.87 | 67.11 | 16.46 |      | 130.0 |         |
|           |                                                    | Z | 5.74 | 67.18 | 16.52 |      | 130.0 |         |
| 10635-AAB | IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)  | X | 5.74 | 66.83 | 16.11 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.74 | 66.43 | 15.86 |      | 130.0 |         |
|           |                                                    | Z | 5.63 | 66.58 | 15.96 |      | 130.0 |         |
| 10636-AAC | IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle) | X | 6.11 | 67.45 | 16.59 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 6.11 | 67.04 | 16.35 |      | 130.0 |         |
|           |                                                    | Z | 6.05 | 67.24 | 16.46 |      | 130.0 |         |
| 10637-AAC | IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle) | X | 6.29 | 67.85 | 16.76 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 6.30 | 67.47 | 16.54 |      | 130.0 |         |
|           |                                                    | Z | 6.21 | 67.62 | 16.63 |      | 130.0 |         |
| 10638-AAC | IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle) | X | 6.28 | 67.80 | 16.72 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 6.28 | 67.40 | 16.49 |      | 130.0 |         |
|           |                                                    | Z | 6.21 | 67.59 | 16.60 |      | 130.0 |         |

|           |                                                        |   |        |        |       |       |       |         |
|-----------|--------------------------------------------------------|---|--------|--------|-------|-------|-------|---------|
| 10639-AAC | IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)     | X | 6.29   | 67.84  | 16.79 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.29   | 67.45  | 16.56 |       | 130.0 |         |
|           |                                                        | Z | 6.20   | 67.57  | 16.63 |       | 130.0 |         |
| 10640-AAC | IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)     | X | 6.31   | 67.90  | 16.76 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.33   | 67.56  | 16.55 |       | 130.0 |         |
|           |                                                        | Z | 6.21   | 67.63  | 16.61 |       | 130.0 |         |
| 10641-AAC | IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)     | X | 6.30   | 67.63  | 16.64 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.31   | 67.25  | 16.42 |       | 130.0 |         |
|           |                                                        | Z | 6.23   | 67.43  | 16.53 |       | 130.0 |         |
| 10642-AAC | IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)     | X | 6.38   | 68.00  | 16.99 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.38   | 67.59  | 16.75 |       | 130.0 |         |
|           |                                                        | Z | 6.28   | 67.72  | 16.83 |       | 130.0 |         |
| 10643-AAC | IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)     | X | 6.20   | 67.66  | 16.73 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.21   | 67.28  | 16.50 |       | 130.0 |         |
|           |                                                        | Z | 6.12   | 67.42  | 16.59 |       | 130.0 |         |
| 10644-AAC | IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)     | X | 6.43   | 68.34  | 17.09 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.47   | 68.05  | 16.91 |       | 130.0 |         |
|           |                                                        | Z | 6.32   | 68.03  | 16.92 |       | 130.0 |         |
| 10645-AAC | IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)     | X | 6.73   | 68.76  | 17.24 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.75   | 68.40  | 17.03 |       | 130.0 |         |
|           |                                                        | Z | 6.77   | 68.92  | 17.31 |       | 130.0 |         |
| 10646-AAF | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)  | X | 30.32  | 110.51 | 35.84 | 9.30  | 60.0  | ± 9.6 % |
|           |                                                        | Y | 21.24  | 102.23 | 33.62 |       | 60.0  |         |
|           |                                                        | Z | 57.15  | 128.16 | 41.75 |       | 60.0  |         |
| 10647-AAF | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7) | X | 31.53  | 112.13 | 36.44 | 9.30  | 60.0  | ± 9.6 % |
|           |                                                        | Y | 21.67  | 103.39 | 34.10 |       | 60.0  |         |
|           |                                                        | Z | 60.26  | 130.33 | 42.49 |       | 60.0  |         |
| 10648-AAA | CDMA2000 (1x Advanced)                                 | X | 1.02   | 68.95  | 14.63 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                        | Y | 0.73   | 63.24  | 10.94 |       | 150.0 |         |
|           |                                                        | Z | 0.74   | 64.50  | 11.46 |       | 150.0 |         |
| 10652-AAD | LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)         | X | 4.61   | 69.49  | 17.77 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 4.42   | 68.17  | 17.13 |       | 80.0  |         |
|           |                                                        | Z | 4.44   | 69.19  | 17.56 |       | 80.0  |         |
| 10653-AAD | LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)        | X | 5.02   | 68.51  | 17.69 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 4.91   | 67.60  | 17.24 |       | 80.0  |         |
|           |                                                        | Z | 4.88   | 68.24  | 17.54 |       | 80.0  |         |
| 10654-AAD | LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)        | X | 4.94   | 68.17  | 17.67 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 4.84   | 67.30  | 17.24 |       | 80.0  |         |
|           |                                                        | Z | 4.81   | 67.88  | 17.53 |       | 80.0  |         |
| 10655-AAE | LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)        | X | 4.99   | 68.20  | 17.71 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 4.89   | 67.36  | 17.28 |       | 80.0  |         |
|           |                                                        | Z | 4.87   | 67.89  | 17.57 |       | 80.0  |         |
| 10658-AAA | Pulse Waveform (200Hz, 10%)                            | X | 10.67  | 82.28  | 21.32 | 10.00 | 50.0  | ± 9.6 % |
|           |                                                        | Y | 11.44  | 83.93  | 22.76 |       | 50.0  |         |
|           |                                                        | Z | 15.38  | 89.40  | 23.97 |       | 50.0  |         |
| 10659-AAA | Pulse Waveform (200Hz, 20%)                            | X | 21.33  | 93.47  | 23.49 | 6.99  | 60.0  | ± 9.6 % |
|           |                                                        | Y | 21.39  | 94.92  | 24.80 |       | 60.0  |         |
|           |                                                        | Z | 100.00 | 116.73 | 29.85 |       | 60.0  |         |

|           |                             |   |        |        |       |      |       |         |
|-----------|-----------------------------|---|--------|--------|-------|------|-------|---------|
| 10660-AAA | Pulse Waveform (200Hz, 40%) | X | 100.00 | 113.01 | 26.63 | 3.98 | 80.0  | ± 9.6 % |
|           |                             | Y | 100.00 | 115.25 | 27.91 |      | 80.0  |         |
|           |                             | Z | 100.00 | 114.49 | 27.21 |      | 80.0  |         |
| 10661-AAA | Pulse Waveform (200Hz, 60%) | X | 100.00 | 114.40 | 25.85 | 2.22 | 100.0 | ± 9.6 % |
|           |                             | Y | 100.00 | 114.52 | 26.06 |      | 100.0 |         |
|           |                             | Z | 100.00 | 115.33 | 26.15 |      | 100.0 |         |
| 10662-AAA | Pulse Waveform (200Hz, 80%) | X | 100.00 | 122.98 | 27.56 | 0.97 | 120.0 | ± 9.6 % |
|           |                             | Y | 100.00 | 113.64 | 23.74 |      | 120.0 |         |
|           |                             | Z | 100.00 | 119.02 | 25.78 |      | 120.0 |         |
| 10670-AAA | Bluetooth Low Energy        | X | 100.00 | 114.95 | 26.37 | 2.19 | 100.0 | ± 9.6 % |
|           |                             | Y | 100.00 | 115.10 | 26.57 |      | 100.0 |         |
|           |                             | Z | 100.00 | 115.80 | 26.64 |      | 100.0 |         |

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



Accredited by the Swiss Accreditation Service (SAS)  
 The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **PC Test**

Certificate No: **ES3-3319\_Mar18**

## CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3319**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-23.v5, QA CAL-25.v6**  
**Calibration procedure for dosimetric E-field probes**

BN ✓  
 03/30/2018

Calibration date: **March 13, 2018**

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 ( $22 \pm 3$ )°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP            | SN: 104778       | 04-Apr-17 (No. 217-02521/02522)   | Apr-18                 |
| Power sensor NRP-Z91       | SN: 103244       | 04-Apr-17 (No. 217-02521)         | Apr-18                 |
| Power sensor NRP-Z91       | SN: 103245       | 04-Apr-17 (No. 217-02525)         | Apr-18                 |
| Reference 20 dB Attenuator | SN: S5277 (20x)  | 07-Apr-17 (No. 217-02528)         | Apr-18                 |
| Reference Probe ES3DV2     | SN: 3013         | 30-Dec-17 (No. ES3-3013_Dec17)    | Dec-18                 |
| DAE4                       | SN: 660          | 21-Dec-17 (No. DAE4-660_Dec17)    | Dec-18                 |
| Secondary Standards        | ID               | Check Date (in house)             | Scheduled Check        |
| Power meter E4419B         | SN: GB41293874   | 06-Apr-16 (in house check Jun-16) | In house check: Jun-18 |
| Power sensor E4412A        | SN: MY41498087   | 06-Apr-16 (in house check Jun-16) | In house check: Jun-18 |
| Power sensor E4412A        | SN: 000110210    | 06-Apr-16 (in house check Jun-16) | In house check: Jun-18 |
| RF generator HP 8648C      | SN: US3642U01700 | 04-Aug-99 (in house check Jun-16) | In house check: Jun-18 |
| Network Analyzer HP 8753E  | SN: US37390585   | 18-Oct-01 (in house check Oct-17) | In house check: Oct-18 |

|                                                                                                                 |                        |                                   |                        |
|-----------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------|------------------------|
| Calibrated by:                                                                                                  | Name<br>Jeton Kastrati | Function<br>Laboratory Technician | Signature<br>          |
| Approved by:                                                                                                    | Katja Pokovic          | Technical Manager                 |                        |
|                                                                                                                 |                        |                                   | Issued: March 15, 2018 |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |                        |                                   |                        |



Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

The Swiss Accreditation Service is one of the signatories to the EA  
 Multilateral Agreement for the recognition of calibration certificates

### Glossary:

|                          |                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                      | tissue simulating liquid                                                                                                                                |
| NORM <sub>x,y,z</sub>    | sensitivity in free space                                                                                                                               |
| ConvF                    | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                              |
| DCP                      | diode compression point                                                                                                                                 |
| CF                       | crest factor (1/duty_cycle) of the RF signal                                                                                                            |
| A, B, C, D               | modulation dependent linearization parameters                                                                                                           |
| Polarization $\phi$      | $\phi$ rotation around probe axis                                                                                                                       |
| Polarization $\vartheta$ | $\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),<br>i.e., $\vartheta = 0$ is normal to probe axis |
| Connector Angle          | information used in DASY system to align probe sensor X to the robot coordinate system                                                                  |

### Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* 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.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  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 NORM<sub>x,y,z</sub> \* 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  $\pm 50$  MHz to  $\pm 100$  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.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).

# Probe ES3DV3

## SN:3319

Manufactured: January 10, 2012  
Calibrated: March 13, 2018

Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

### Basic Calibration Parameters

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|-----------------------------------------------------------|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 1.08     | 1.05     | 1.12     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                                     | 104.0    | 103.0    | 104.0    |               |

### Modulation Calibration Parameters

| UID | Communication System Name |   | A<br>dB | B<br>dB $\sqrt{\mu\text{V}}$ | C   | D<br>dB | VR<br>mV | Unc <sup>E</sup><br>(k=2) |
|-----|---------------------------|---|---------|------------------------------|-----|---------|----------|---------------------------|
| 0   | CW                        | X | 0.0     | 0.0                          | 1.0 | 0.00    | 197.9    | $\pm 3.8 \%$              |
|     |                           | Y | 0.0     | 0.0                          | 1.0 |         | 198.2    |                           |
|     |                           | Z | 0.0     | 0.0                          | 1.0 |         | 200.6    |                           |

Note: For details on UID parameters see Appendix.

### Sensor Model Parameters

|   | C1<br>fF | C2<br>fF | $\alpha$<br>$\text{V}^{-1}$ | T1<br>$\text{ms}\cdot\text{V}^{-2}$ | T2<br>$\text{ms}\cdot\text{V}^{-1}$ | T3<br>ms | T4<br>$\text{V}^{-2}$ | T5<br>$\text{V}^{-1}$ | T6    |
|---|----------|----------|-----------------------------|-------------------------------------|-------------------------------------|----------|-----------------------|-----------------------|-------|
| X | 60.52    | 430.8    | 35.08                       | 29.64                               | 3.011                               | 5.10     | 0.615                 | 0.538                 | 1.010 |
| Y | 55.79    | 400.8    | 35.48                       | 29.01                               | 2.492                               | 5.10     | 0.600                 | 0.518                 | 1.009 |
| Z | 63.98    | 455.3    | 34.93                       | 29.72                               | 3.442                               | 5.10     | 0.679                 | 0.571                 | 1.011 |

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%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the  $E^2$ -field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

<sup>E</sup> Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 41.9                               | 0.89                            | 6.70    | 6.70    | 6.70    | 0.80               | 1.21                    | ± 12.0 %  |
| 835                  | 41.5                               | 0.90                            | 6.44    | 6.44    | 6.44    | 0.80               | 1.17                    | ± 12.0 %  |
| 1750                 | 40.1                               | 1.37                            | 5.49    | 5.49    | 5.49    | 0.65               | 1.43                    | ± 12.0 %  |
| 1900                 | 40.0                               | 1.40                            | 5.29    | 5.29    | 5.29    | 0.76               | 1.30                    | ± 12.0 %  |
| 2300                 | 39.5                               | 1.67                            | 5.06    | 5.06    | 5.06    | 0.72               | 1.29                    | ± 12.0 %  |
| 2450                 | 39.2                               | 1.80                            | 4.71    | 4.71    | 4.71    | 0.77               | 1.30                    | ± 12.0 %  |
| 2600                 | 39.0                               | 1.96                            | 4.55    | 4.55    | 4.55    | 0.80               | 1.31                    | ± 12.0 %  |

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

### Calibration Parameter Determined in Body Tissue Simulating Media

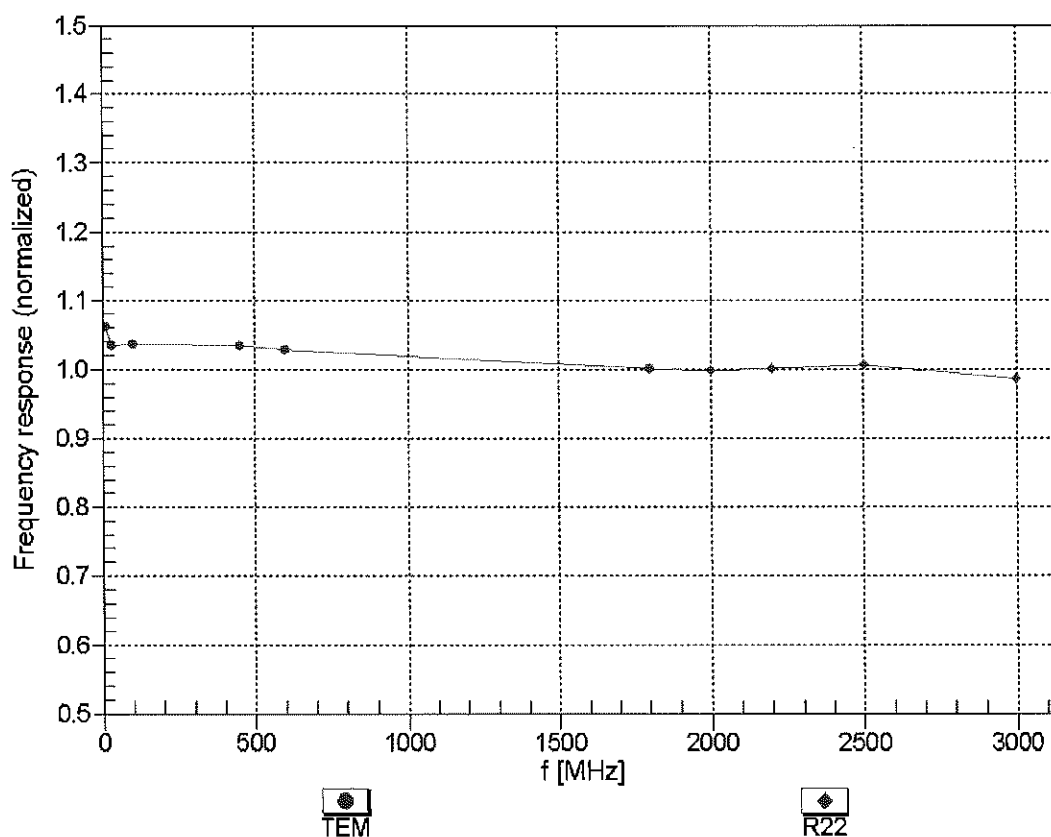
| f (MHz) <sup>c</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 55.5                               | 0.96                            | 6.32    | 6.32    | 6.32    | 0.65               | 1.26                    | ± 12.0 %  |
| 835                  | 55.2                               | 0.97                            | 6.20    | 6.20    | 6.20    | 0.80               | 1.14                    | ± 12.0 %  |
| 1750                 | 53.4                               | 1.49                            | 5.05    | 5.05    | 5.05    | 0.76               | 1.27                    | ± 12.0 %  |
| 1900                 | 53.3                               | 1.52                            | 4.84    | 4.84    | 4.84    | 0.55               | 1.56                    | ± 12.0 %  |
| 2300                 | 52.9                               | 1.81                            | 4.63    | 4.63    | 4.63    | 0.80               | 1.30                    | ± 12.0 %  |
| 2450                 | 52.7                               | 1.95                            | 4.51    | 4.51    | 4.51    | 0.80               | 1.25                    | ± 12.0 %  |
| 2600                 | 52.5                               | 2.16                            | 4.33    | 4.33    | 4.33    | 0.80               | 1.20                    | ± 12.0 %  |

<sup>c</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

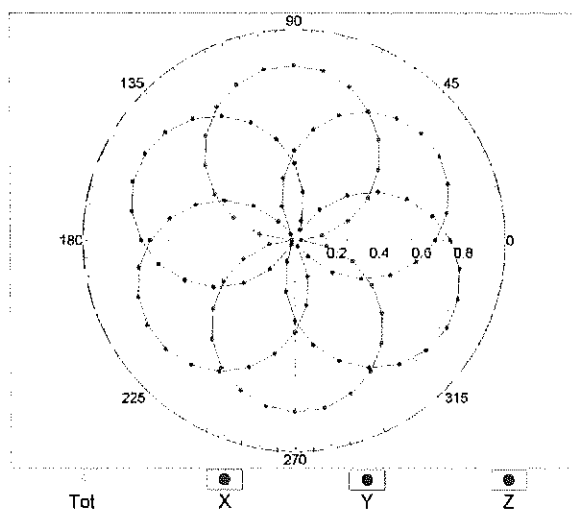
## Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



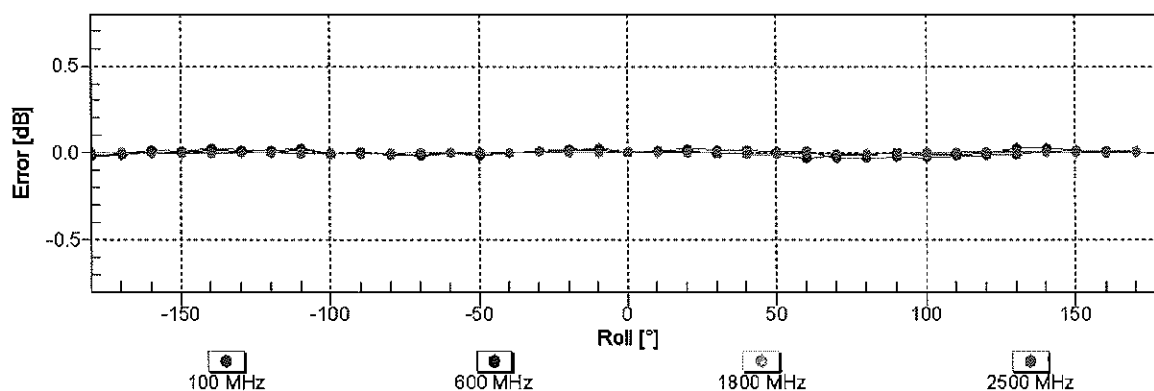
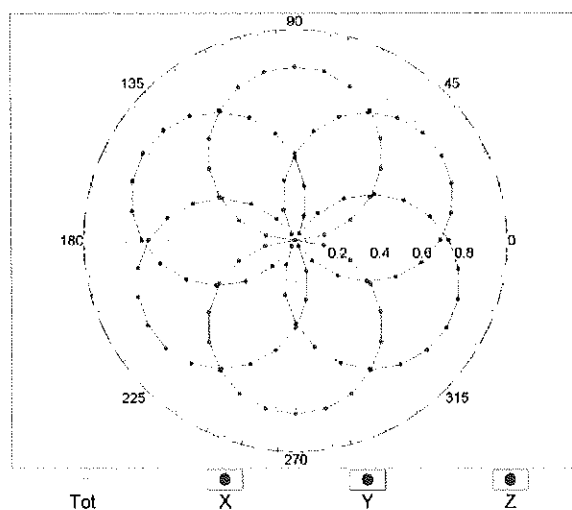
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$

f=600 MHz,TEM

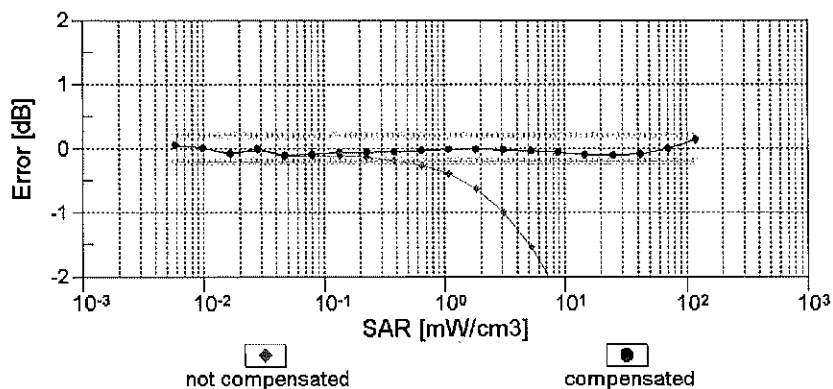
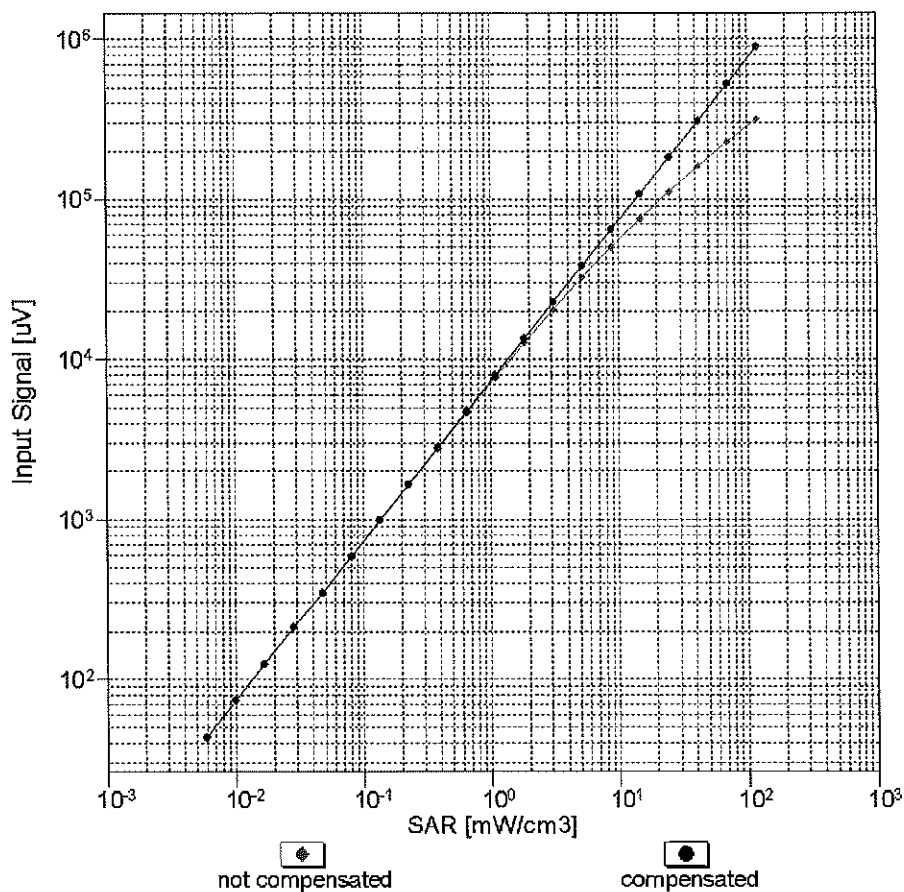


f=1800 MHz,R22



Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  (k=2)

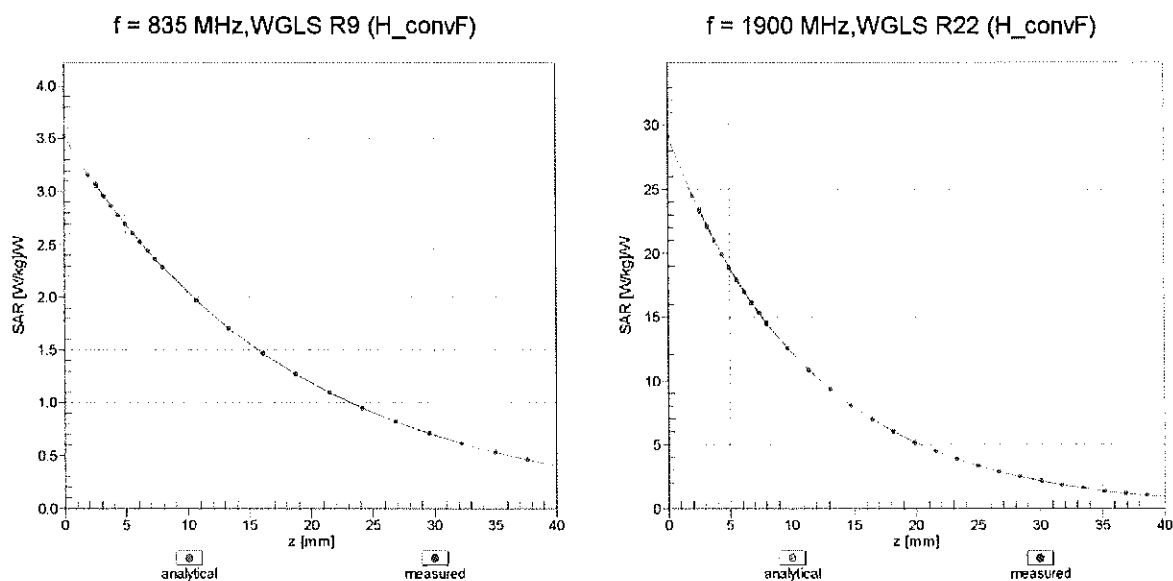
# Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f_{\text{eval}} = 1900 \text{ MHz}$ )



Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

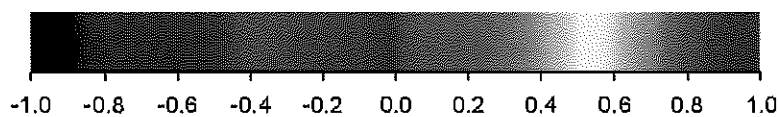
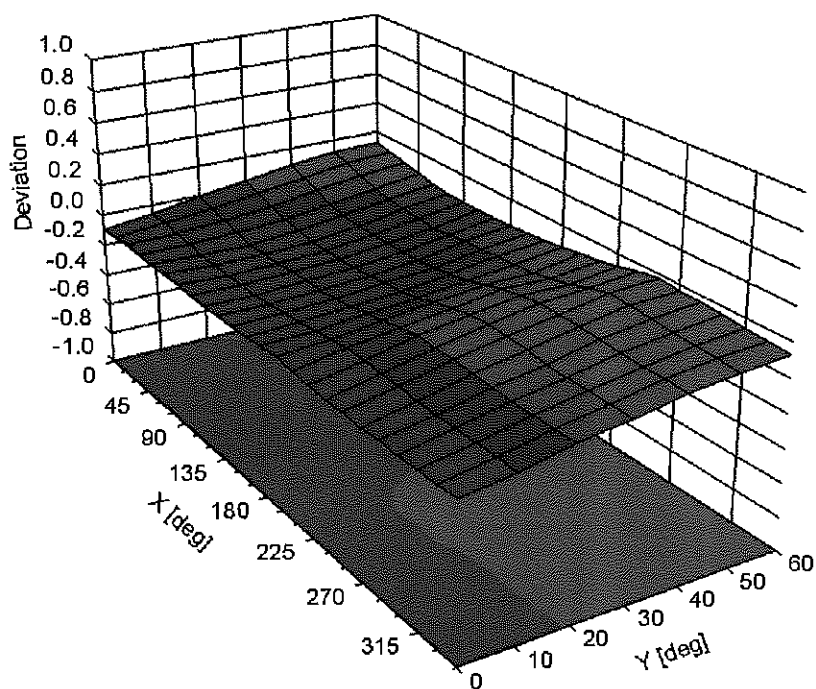


## Conversion Factor Assessment



## Deviation from Isotropy in Liquid

Error ( $\phi, \theta$ ),  $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment:  $\pm 2.6\%$  ( $k=2$ )

## DASY/EASY - Parameters of Probe: ES3DV3 - SN:3319

### Other Probe Parameters

|                                               |            |
|-----------------------------------------------|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle (°)                           | 60.4       |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 10 mm      |
| Tip Diameter                                  | 4 mm       |
| Probe Tip to Sensor X Calibration Point       | 2 mm       |
| Probe Tip to Sensor Y Calibration Point       | 2 mm       |
| Probe Tip to Sensor Z Calibration Point       | 2 mm       |
| Recommended Measurement Distance from Surface | 3 mm       |

**Appendix: Modulation Calibration Parameters**

| UID           | Communication System Name                     |   | A<br>dB | B<br>dB $\mu$ V | C     | D<br>dB | VR<br>mV | Max<br>Unc <sup>E</sup><br>(k=2) |
|---------------|-----------------------------------------------|---|---------|-----------------|-------|---------|----------|----------------------------------|
| 0             | CW                                            | X | 0.00    | 0.00            | 1.00  | 0.00    | 197.9    | $\pm 3.8 \%$                     |
|               |                                               | Y | 0.00    | 0.00            | 1.00  |         | 198.2    |                                  |
|               |                                               | Z | 0.00    | 0.00            | 1.00  |         | 200.6    |                                  |
| 10010-<br>CAA | SAR Validation (Square, 100ms, 10ms)          | X | 9.56    | 81.28           | 19.98 | 10.00   | 25.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 8.09    | 78.70           | 18.35 |         | 25.0     |                                  |
|               |                                               | Z | 8.70    | 79.52           | 19.57 |         | 25.0     |                                  |
| 10011-<br>CAB | UMTS-FDD (WCDMA)                              | X | 1.34    | 72.37           | 18.08 | 0.00    | 150.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 0.99    | 67.12           | 14.82 |         | 150.0    |                                  |
|               |                                               | Z | 1.12    | 68.87           | 16.00 |         | 150.0    |                                  |
| 10012-<br>CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)      | X | 1.37    | 66.58           | 17.00 | 0.41    | 150.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 1.25    | 64.92           | 15.59 |         | 150.0    |                                  |
|               |                                               | Z | 1.32    | 65.58           | 16.11 |         | 150.0    |                                  |
| 10013-<br>CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps) | X | 5.18    | 67.48           | 17.64 | 1.46    | 150.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 5.08    | 67.20           | 17.36 |         | 150.0    |                                  |
|               |                                               | Z | 5.20    | 67.32           | 17.47 |         | 150.0    |                                  |
| 10021-<br>DAC | GSM-FDD (TDMA, GMSK)                          | X | 20.40   | 95.52           | 26.57 | 9.39    | 50.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 29.46   | 101.11          | 27.60 |         | 50.0     |                                  |
|               |                                               | Z | 14.66   | 89.52           | 24.83 |         | 50.0     |                                  |
| 10023-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0)                   | X | 18.37   | 93.61           | 26.02 | 9.57    | 50.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 24.41   | 97.95           | 26.72 |         | 50.0     |                                  |
|               |                                               | Z | 13.84   | 88.39           | 24.49 |         | 50.0     |                                  |
| 10024-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1)                 | X | 100.00  | 119.56          | 31.31 | 6.56    | 60.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 117.39          | 29.93 |         | 60.0     |                                  |
|               |                                               | Z | 47.21   | 108.31          | 28.71 |         | 60.0     |                                  |
| 10025-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0)                   | X | 21.09   | 108.48          | 41.18 | 12.57   | 50.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 17.11   | 102.80          | 38.82 |         | 50.0     |                                  |
|               |                                               | Z | 18.44   | 103.12          | 38.97 |         | 50.0     |                                  |
| 10026-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1)                 | X | 21.59   | 105.09          | 36.25 | 9.56    | 60.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 18.95   | 102.20          | 35.03 |         | 60.0     |                                  |
|               |                                               | Z | 18.49   | 100.22          | 34.38 |         | 60.0     |                                  |
| 10027-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2)               | X | 100.00  | 118.49          | 29.83 | 4.80    | 80.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 115.83          | 28.28 |         | 80.0     |                                  |
|               |                                               | Z | 100.00  | 118.30          | 29.89 |         | 80.0     |                                  |
| 10028-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)             | X | 100.00  | 118.84          | 29.14 | 3.55    | 100.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 115.36          | 27.25 |         | 100.0    |                                  |
|               |                                               | Z | 100.00  | 118.10          | 28.92 |         | 100.0    |                                  |
| 10029-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2)               | X | 15.08   | 97.16           | 32.49 | 7.80    | 80.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 12.90   | 93.80           | 31.06 |         | 80.0     |                                  |
|               |                                               | Z | 13.60   | 93.82           | 31.09 |         | 80.0     |                                  |
| 10030-<br>CAA | IEEE 802.15.1 Bluetooth (GFSK, DH1)           | X | 100.00  | 118.11          | 30.01 | 5.30    | 70.0     | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 115.58          | 28.50 |         | 70.0     |                                  |
|               |                                               | Z | 100.00  | 118.16          | 30.20 |         | 70.0     |                                  |
| 10031-<br>CAA | IEEE 802.15.1 Bluetooth (GFSK, DH3)           | X | 100.00  | 121.01          | 28.44 | 1.88    | 100.0    | $\pm 9.6 \%$                     |
|               |                                               | Y | 100.00  | 114.03          | 25.11 |         | 100.0    |                                  |
|               |                                               | Z | 100.00  | 118.73          | 27.54 |         | 100.0    |                                  |

|           |                                                     |   |        |        |       |       |       |         |
|-----------|-----------------------------------------------------|---|--------|--------|-------|-------|-------|---------|
| 10032-CAA | IEEE 802.15.1 Bluetooth (GFSK, DH5)                 | X | 100.00 | 127.26 | 29.88 | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 100.00 | 114.89 | 24.38 |       | 100.0 |         |
|           |                                                     | Z | 100.00 | 122.11 | 27.79 |       | 100.0 |         |
| 10033-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)           | X | 21.21  | 99.84  | 27.91 | 5.30  | 70.0  | ± 9.6 % |
|           |                                                     | Y | 19.09  | 97.43  | 26.61 |       | 70.0  |         |
|           |                                                     | Z | 13.98  | 92.26  | 25.56 |       | 70.0  |         |
| 10034-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)           | X | 14.93  | 98.23  | 25.94 | 1.88  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 7.46   | 86.71  | 21.62 |       | 100.0 |         |
|           |                                                     | Z | 7.45   | 87.10  | 22.42 |       | 100.0 |         |
| 10035-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)           | X | 7.98   | 90.77  | 23.49 | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 3.97   | 79.58  | 18.90 |       | 100.0 |         |
|           |                                                     | Z | 4.48   | 81.52  | 20.27 |       | 100.0 |         |
| 10036-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH1)               | X | 26.12  | 103.52 | 29.04 | 5.30  | 70.0  | ± 9.6 % |
|           |                                                     | Y | 24.16  | 101.42 | 27.84 |       | 70.0  |         |
|           |                                                     | Z | 15.99  | 94.67  | 26.38 |       | 70.0  |         |
| 10037-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH3)               | X | 14.25  | 97.55  | 25.70 | 1.88  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 7.04   | 85.92  | 21.32 |       | 100.0 |         |
|           |                                                     | Z | 7.24   | 86.72  | 22.25 |       | 100.0 |         |
| 10038-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH5)               | X | 8.53   | 92.07  | 23.99 | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 4.13   | 80.37  | 19.27 |       | 100.0 |         |
|           |                                                     | Z | 4.65   | 82.31  | 20.62 |       | 100.0 |         |
| 10039-CAB | CDMA2000 (1xRTT, RC1)                               | X | 2.96   | 79.09  | 19.43 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.75   | 71.10  | 15.36 |       | 150.0 |         |
|           |                                                     | Z | 2.10   | 73.23  | 16.92 |       | 150.0 |         |
| 10042-CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate) | X | 53.77  | 109.05 | 28.70 | 7.78  | 50.0  | ± 9.6 % |
|           |                                                     | Y | 79.10  | 112.95 | 28.86 |       | 50.0  |         |
|           |                                                     | Z | 23.46  | 96.42  | 25.41 |       | 50.0  |         |
| 10044-CAA | IS-91/EIA/TIA-553 FDD (FDMA, FM)                    | X | 0.00   | 123.18 | 1.26  | 0.00  | 150.0 | ± 9.6 % |
|           |                                                     | Y | 0.02   | 127.84 | 0.07  |       | 150.0 |         |
|           |                                                     | Z | 0.00   | 110.77 | 4.52  |       | 150.0 |         |
| 10048-CAA | DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)           | X | 11.41  | 83.11  | 24.20 | 13.80 | 25.0  | ± 9.6 % |
|           |                                                     | Y | 12.66  | 85.48  | 24.49 |       | 25.0  |         |
|           |                                                     | Z | 10.45  | 80.79  | 23.56 |       | 25.0  |         |
| 10049-CAA | DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)         | X | 13.41  | 87.55  | 24.40 | 10.79 | 40.0  | ± 9.6 % |
|           |                                                     | Y | 15.25  | 89.77  | 24.55 |       | 40.0  |         |
|           |                                                     | Z | 11.61  | 84.53  | 23.55 |       | 40.0  |         |
| 10056-CAA | UMTS-TDD (TD-SCDMA, 1.28 Mcps)                      | X | 13.37  | 87.98  | 25.03 | 9.03  | 50.0  | ± 9.6 % |
|           |                                                     | Y | 13.72  | 88.51  | 24.74 |       | 50.0  |         |
|           |                                                     | Z | 11.72  | 85.02  | 24.05 |       | 50.0  |         |
| 10058-DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)                   | X | 11.14  | 91.28  | 29.72 | 6.55  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 9.52   | 87.98  | 28.26 |       | 100.0 |         |
|           |                                                     | Z | 10.41  | 88.91  | 28.62 |       | 100.0 |         |
| 10059-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)            | X | 1.60   | 69.38  | 18.31 | 0.61  | 110.0 | ± 9.6 % |
|           |                                                     | Y | 1.43   | 67.15  | 16.67 |       | 110.0 |         |
|           |                                                     | Z | 1.53   | 67.97  | 17.25 |       | 110.0 |         |
| 10060-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)          | X | 100.00 | 133.15 | 34.60 | 1.30  | 110.0 | ± 9.6 % |
|           |                                                     | Y | 100.00 | 128.63 | 32.36 |       | 110.0 |         |
|           |                                                     | Z | 100.00 | 130.16 | 33.31 |       | 110.0 |         |

|           |                                                |   |       |        |       |      |       |         |
|-----------|------------------------------------------------|---|-------|--------|-------|------|-------|---------|
| 10061-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)      | X | 24.68 | 111.64 | 31.63 | 2.04 | 110.0 | ± 9.6 % |
|           |                                                | Y | 11.26 | 97.49  | 27.04 |      | 110.0 |         |
|           |                                                | Z | 10.95 | 96.57  | 26.98 |      | 110.0 |         |
| 10062-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)       | X | 4.90  | 67.24  | 16.94 | 0.49 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.79  | 66.94  | 16.63 |      | 100.0 |         |
|           |                                                | Z | 4.90  | 67.05  | 16.74 |      | 100.0 |         |
| 10063-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)       | X | 4.95  | 67.42  | 17.09 | 0.72 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.84  | 67.10  | 16.77 |      | 100.0 |         |
|           |                                                | Z | 4.95  | 67.23  | 16.89 |      | 100.0 |         |
| 10064-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)      | X | 5.28  | 67.75  | 17.35 | 0.86 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.16  | 67.43  | 17.04 |      | 100.0 |         |
|           |                                                | Z | 5.30  | 67.59  | 17.17 |      | 100.0 |         |
| 10065-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)      | X | 5.19  | 67.81  | 17.53 | 1.21 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.07  | 67.47  | 17.22 |      | 100.0 |         |
|           |                                                | Z | 5.21  | 67.65  | 17.35 |      | 100.0 |         |
| 10066-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)      | X | 5.25  | 67.95  | 17.76 | 1.46 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.12  | 67.61  | 17.44 |      | 100.0 |         |
|           |                                                | Z | 5.27  | 67.80  | 17.59 |      | 100.0 |         |
| 10067-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)      | X | 5.57  | 68.10  | 18.21 | 2.04 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.44  | 67.80  | 17.92 |      | 100.0 |         |
|           |                                                | Z | 5.60  | 67.97  | 18.05 |      | 100.0 |         |
| 10068-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)      | X | 5.73  | 68.50  | 18.60 | 2.55 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.58  | 68.13  | 18.28 |      | 100.0 |         |
|           |                                                | Z | 5.77  | 68.41  | 18.46 |      | 100.0 |         |
| 10069-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)      | X | 5.81  | 68.43  | 18.78 | 2.67 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.66  | 68.09  | 18.46 |      | 100.0 |         |
|           |                                                | Z | 5.84  | 68.33  | 18.64 |      | 100.0 |         |
| 10071-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)  | X | 5.34  | 67.73  | 18.04 | 1.99 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.22  | 67.44  | 17.75 |      | 100.0 |         |
|           |                                                | Z | 5.35  | 67.60  | 17.87 |      | 100.0 |         |
| 10072-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps) | X | 5.42  | 68.35  | 18.39 | 2.30 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.29  | 68.00  | 18.07 |      | 100.0 |         |
|           |                                                | Z | 5.44  | 68.21  | 18.22 |      | 100.0 |         |
| 10073-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps) | X | 5.57  | 68.74  | 18.83 | 2.83 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.42  | 68.36  | 18.50 |      | 100.0 |         |
|           |                                                | Z | 5.60  | 68.62  | 18.66 |      | 100.0 |         |
| 10074-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps) | X | 5.61  | 68.84  | 19.10 | 3.30 | 100.0 | ± 9.6 % |
|           |                                                | Y | 5.46  | 68.44  | 18.75 |      | 100.0 |         |
|           |                                                | Z | 5.65  | 68.74  | 18.95 |      | 100.0 |         |
| 10075-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps) | X | 5.79  | 69.40  | 19.63 | 3.82 | 90.0  | ± 9.6 % |
|           |                                                | Y | 5.61  | 68.91  | 19.24 |      | 90.0  |         |
|           |                                                | Z | 5.85  | 69.35  | 19.51 |      | 90.0  |         |
| 10076-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps) | X | 5.80  | 69.20  | 19.75 | 4.15 | 90.0  | ± 9.6 % |
|           |                                                | Y | 5.64  | 68.73  | 19.37 |      | 90.0  |         |
|           |                                                | Z | 5.86  | 69.15  | 19.63 |      | 90.0  |         |
| 10077-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps) | X | 5.84  | 69.30  | 19.86 | 4.30 | 90.0  | ± 9.6 % |
|           |                                                | Y | 5.68  | 68.82  | 19.47 |      | 90.0  |         |
|           |                                                | Z | 5.90  | 69.25  | 19.74 |      | 90.0  |         |

|           |                                                     |   |        |        |       |      |       |         |
|-----------|-----------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10081-CAB | CDMA2000 (1xRTT, RC3)                               | X | 1.29   | 72.14  | 16.36 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 0.81   | 65.51  | 12.24 |      | 150.0 |         |
|           |                                                     | Z | 0.99   | 67.68  | 14.05 |      | 150.0 |         |
| 10082-CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate) | X | 2.36   | 64.73  | 9.48  | 4.77 | 80.0  | ± 9.6 % |
|           |                                                     | Y | 1.97   | 63.15  | 8.18  |      | 80.0  |         |
|           |                                                     | Z | 2.45   | 64.78  | 9.67  |      | 80.0  |         |
| 10090-DAC | GPRS-FDD (TDMA, GMSK, TN 0-4)                       | X | 100.00 | 119.65 | 31.37 | 6.56 | 60.0  | ± 9.6 % |
|           |                                                     | Y | 100.00 | 117.49 | 29.99 |      | 60.0  |         |
|           |                                                     | Z | 45.52  | 107.81 | 28.61 |      | 60.0  |         |
| 10097-CAB | UMTS-FDD (HSDPA)                                    | X | 2.00   | 69.44  | 16.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.78   | 67.32  | 15.42 |      | 150.0 |         |
|           |                                                     | Z | 1.87   | 67.93  | 15.97 |      | 150.0 |         |
| 10098-CAB | UMTS-FDD (HSUPA, Subtest 2)                         | X | 1.97   | 69.46  | 16.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.74   | 67.28  | 15.38 |      | 150.0 |         |
|           |                                                     | Z | 1.84   | 67.91  | 15.95 |      | 150.0 |         |
| 10099-DAC | EDGE-FDD (TDMA, 8PSK, TN 0-4)                       | X | 21.45  | 104.88 | 36.18 | 9.56 | 60.0  | ± 9.6 % |
|           |                                                     | Y | 18.89  | 102.07 | 34.98 |      | 60.0  |         |
|           |                                                     | Z | 18.39  | 100.05 | 34.32 |      | 60.0  |         |
| 10100-CAD | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | X | 3.55   | 72.46  | 17.74 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.14   | 70.29  | 16.48 |      | 150.0 |         |
|           |                                                     | Z | 3.35   | 71.19  | 16.95 |      | 150.0 |         |
| 10101-CAD | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | X | 3.45   | 68.62  | 16.57 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.26   | 67.61  | 15.85 |      | 150.0 |         |
|           |                                                     | Z | 3.39   | 68.08  | 16.14 |      | 150.0 |         |
| 10102-CAD | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | X | 3.54   | 68.46  | 16.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.37   | 67.56  | 15.95 |      | 150.0 |         |
|           |                                                     | Z | 3.49   | 67.97  | 16.20 |      | 150.0 |         |
| 10103-CAD | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | X | 8.98   | 78.82  | 21.57 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 8.50   | 78.15  | 21.17 |      | 65.0  |         |
|           |                                                     | Z | 8.60   | 77.58  | 20.95 |      | 65.0  |         |
| 10104-CAD | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | X | 8.85   | 77.44  | 21.89 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 8.45   | 76.83  | 21.49 |      | 65.0  |         |
|           |                                                     | Z | 8.72   | 76.72  | 21.48 |      | 65.0  |         |
| 10105-CAD | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | X | 8.33   | 76.23  | 21.66 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 7.79   | 75.22  | 21.09 |      | 65.0  |         |
|           |                                                     | Z | 7.71   | 74.28  | 20.69 |      | 65.0  |         |
| 10108-CAE | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)            | X | 3.11   | 71.64  | 17.59 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.75   | 69.54  | 16.32 |      | 150.0 |         |
|           |                                                     | Z | 2.95   | 70.37  | 16.78 |      | 150.0 |         |
| 10109-CAE | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)          | X | 3.12   | 68.50  | 16.56 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.92   | 67.41  | 15.75 |      | 150.0 |         |
|           |                                                     | Z | 3.06   | 67.87  | 16.07 |      | 150.0 |         |
| 10110-CAE | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)             | X | 2.56   | 70.84  | 17.38 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.24   | 68.61  | 15.94 |      | 150.0 |         |
|           |                                                     | Z | 2.42   | 69.44  | 16.48 |      | 150.0 |         |
| 10111-CAE | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)           | X | 2.84   | 69.29  | 16.96 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.62   | 68.02  | 15.99 |      | 150.0 |         |
|           |                                                     | Z | 2.75   | 68.36  | 16.33 |      | 150.0 |         |