

APPENDIX 1

SAR Measurement Data

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EXHIBIT 1. HEAD SAR MEASUREMENTS

Head SAR Measurement Summary

Antenna	Power (dBm)	CH	CH. Freq	HEAD SAR1g (W/Kg)	HEAD SAR10g (W/Kg)
				BP-300	BP-300
			(MHz)		
FA-S102U	36.55	1	1616	0.187	0.12
	36.27	2	1621	0.181	0.121
	36.46	3	1626	0.197	0.128

FILE NAME: ICOM-503Q HEAD FA-S102U 1616 MHZ.DA52:0

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

Communication System: UID 0, CW (0); Frequency: 1616 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1616$ MHz; $\sigma = 1.27$ S/m; $\epsilon_r = 38.306$; $\rho = 1000$ kg/m³; Phantom section:
Flat Section; Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.04, 8.04, 8.04); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASYS 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Head_IC-SAT100/Head Front, P=7W, d=25mm/Area Scan (61x151x1):

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

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

Configuration_Head_IC-SAT100/Head Front, P=7W, d=25mm/Zoom Scan (5x5x7)

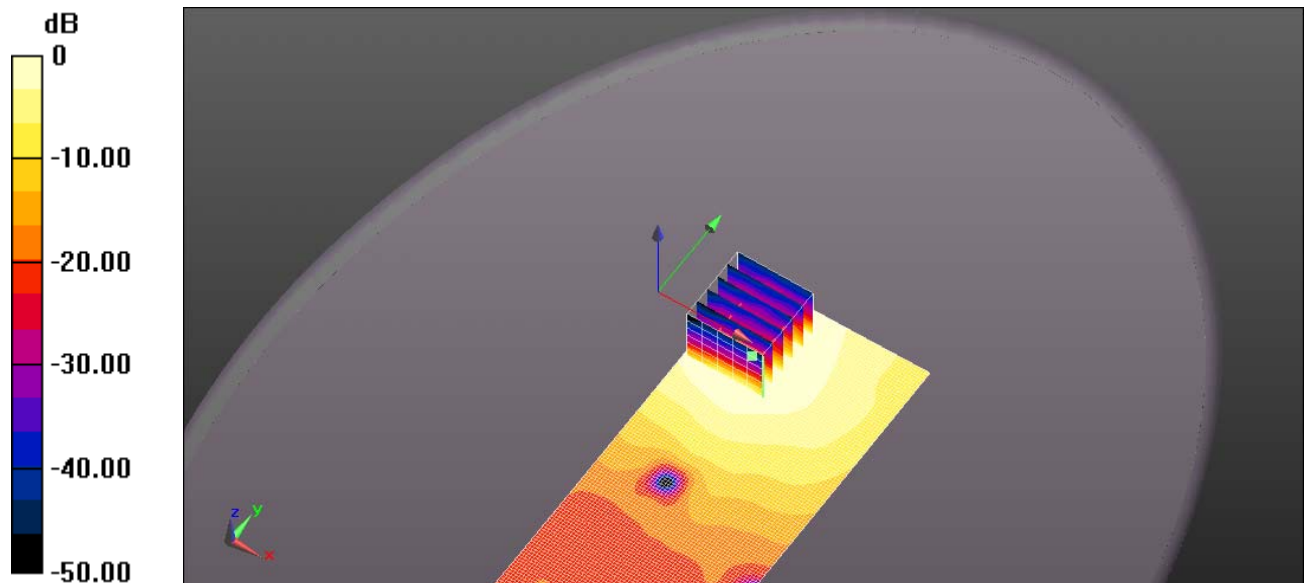
(6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.358 V/m; Power Drift = 0.74 dB

Peak SAR (extrapolated) = 0.279 W/kg

SAR(1 g) = 0.187 W/kg; SAR(10 g) = 0.120 W/kg (SAR corrected for target medium)

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



0 dB = 0.263 W/kg = -5.79 dBW/kg

FILE NAME: ICOM-503Q HEAD FA-S102U 1621 MHZ.DA52:0

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

Communication System: UID 0, CW (0); Frequency: 1621 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1621$ MHz; $\sigma = 1.287$ S/m; $\epsilon_r = 38.495$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.04, 8.04, 8.04); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Head_IC-SAT100/Head Front, P=7W, d=25mm/Area Scan (61x151x1):

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

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

Configuration_Head_IC-SAT100/Head Front, P=7W, d=25mm/Zoom Scan (5x5x7)

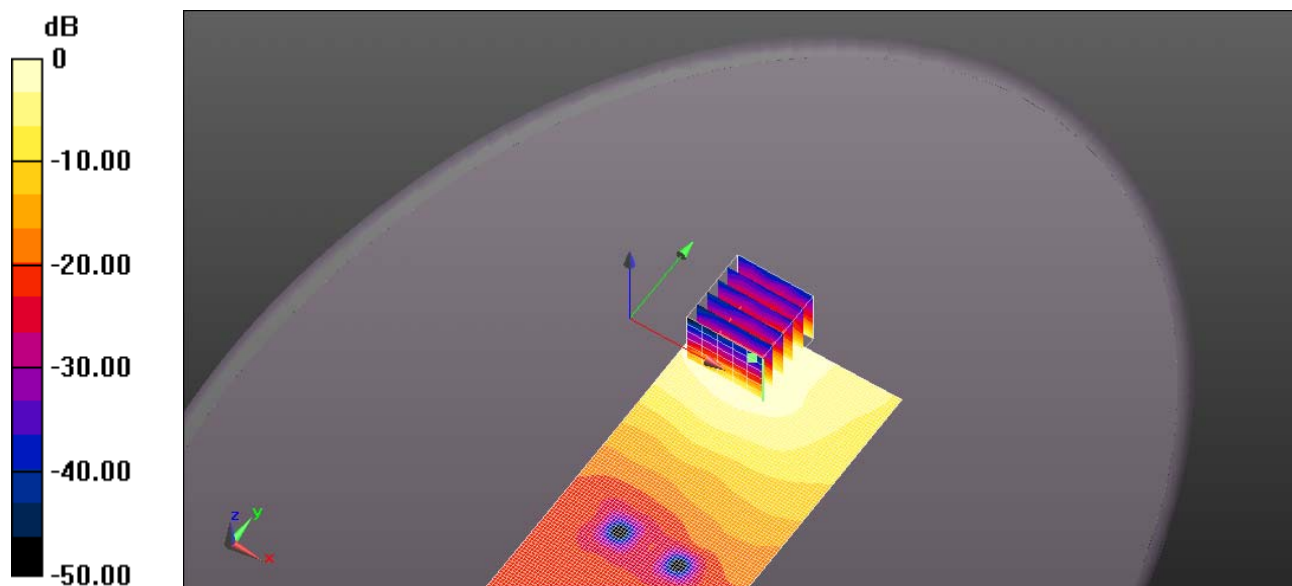
(6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.91 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.296 W/kg

SAR(1 g) = 0.181 W/kg; SAR(10 g) = 0.121 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.256 W/kg



0 dB = 0.269 W/kg = -5.71 dBW/kg

FILE NAME: ICOM-503Q HEAD FA-S102U 1626 MHZ.DA52:0

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

Communication System: UID 0, CW (0); Frequency: 1626 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1626$ MHz; $\sigma = 1.301$ S/m; $\epsilon_r = 38.714$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.04, 8.04, 8.04); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Head_IC-SAT100/Head Front, P=7W, d=25mm/Area Scan (61x151x1):

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

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

Configuration_Head_IC-SAT100/Head Front, P=7W, d=25mm/Zoom Scan (5x5x7)

(7x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 14.49 V/m; Power Drift = 0.48 dB

Peak SAR (extrapolated) = 0.335 W/kg

SAR(1 g) = 0.197 W/kg; SAR(10 g) = 0.128 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.284 W/kg

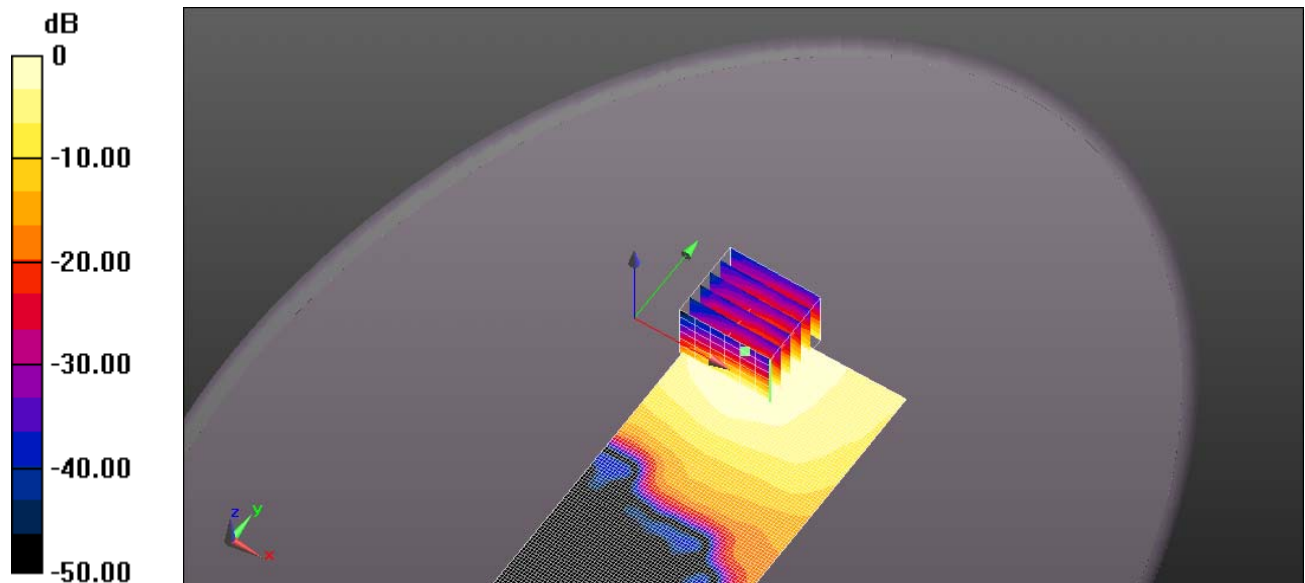


EXHIBIT 2. BODY SAR MEASUREMENTS

PRESCAN MEASUREMENTS

Adapter	Antenna	Power (dBm)	CH	CH. Freq	BODY SAR1g (W/Kg)	BODY SAR10g (W/Kg)
					BP-300	BP-300
				(MHz)	MBB-5	MBB-5
AD-118	FA-S102U	36.46	3	1626	0.0693	0.0469
HM-222		36.46	3	1626	0.0735	0.049
AD-135		36.46	3	1626	0.0727	0.0476
VS-5MC		36.46	3	1626	0.0716	0.0482

HM-222 Resulted in the Highest SAR Values.

FILE NAME: [ICOM-503Q BODY PRESCAN FA-S102U 1626MHZ AD-118.DA52:0](#)

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

Communication System: UID 0, CW (0); Frequency: 1626 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1626$ MHz; $\sigma = 1.504$ S/m; $\epsilon_r = 51.671$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.05, 8.05, 8.05); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASYS 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Body Prescan_IC-SAT100/Head Front, P=7W, d=0mm/Area Scan

(61x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0962 W/kg

Configuration_Body Prescan_IC-SAT100/Head Front, P=7W, d=0mm/Zoom Scan

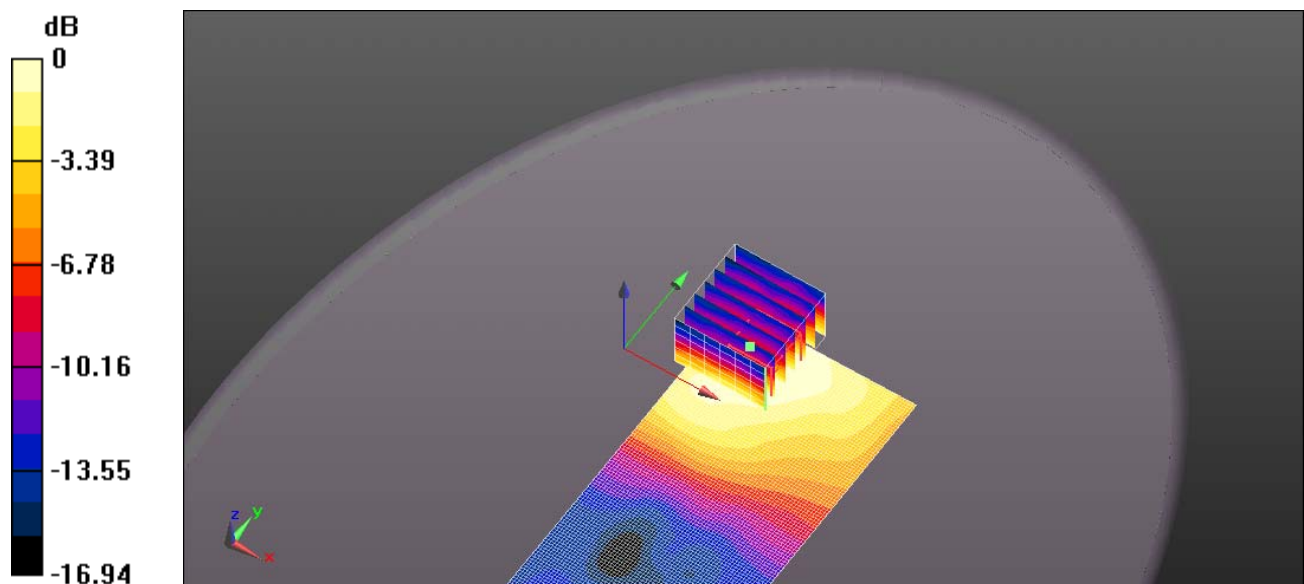
(5x5x7) (7x7x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.510 V/m; Power Drift = 0.42 dB

Peak SAR (extrapolated) = 0.110 W/kg

SAR(1 g) = 0.069 W/kg; SAR(10 g) = 0.047 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.0963 W/kg



0 dB = 0.0962 W/kg = -10.17 dBW/kg

FILE NAME: ICOM-503Q BODY PRESCAN FA-S102U 1626MHZ HM-222.DA52:0

DUT: IC-SAT100; **Type:** Satellite Transceiver; **Serial:** 11000402

Communication System: UID 0, CW (0); Frequency: 1626 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1626$ MHz; $\sigma = 1.504$ S/m; $\epsilon_r = 51.671$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.05, 8.05, 8.05); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASYS 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Body Prescan_IC-SAT100/Head Front, P=7W, d=0mm/Area Scan

(61x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0989 W/kg

Configuration_Body Prescan_IC-SAT100/Head Front, P=7W, d=0mm/Zoom Scan

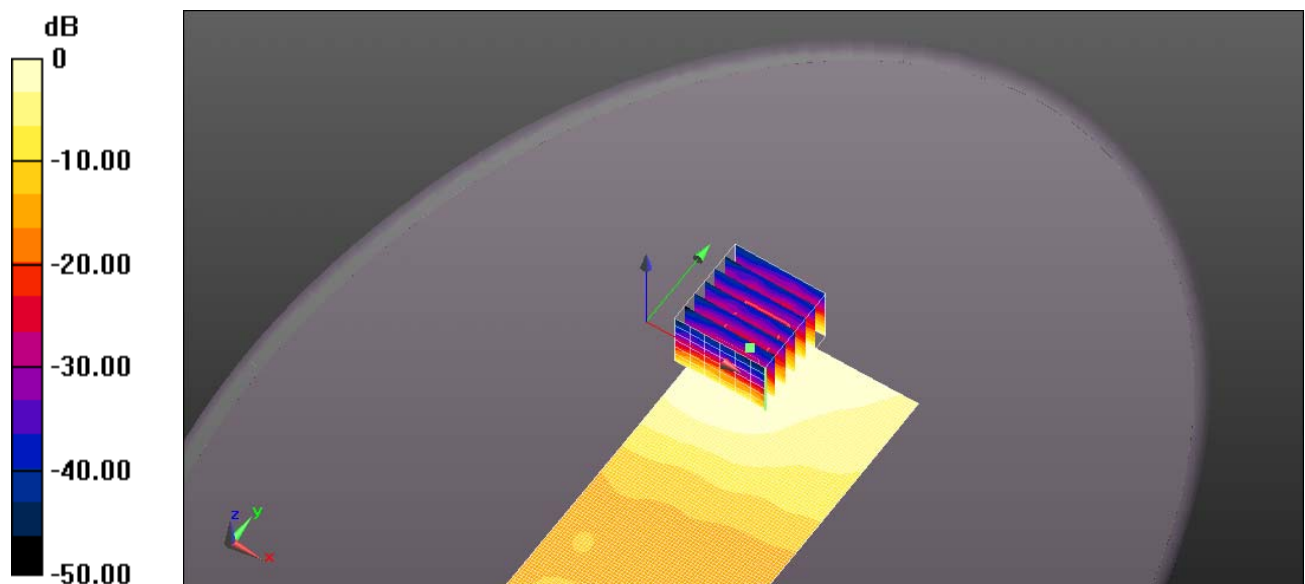
(5x5x7) (7x7x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.896 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 0.114 W/kg

SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.049 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.100 W/kg



0 dB = 0.0989 W/kg = -10.05 dBW/kg

FILE NAME: [ICOM-503Q BODY PRESCAN FA-S102U 1626MHZ AD-135.DA52:0](#)

DUT: IC-SAT100; **Type:** Satellite Transceiver; **Serial:** 11000402

Communication System: UID 0, CW (0); Frequency: 1626 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1626$ MHz; $\sigma = 1.504$ S/m; $\epsilon_r = 51.671$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.05, 8.05, 8.05); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASYS 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Area Scan

(71x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0919 W/kg

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Zoom Scan (5x5x7)

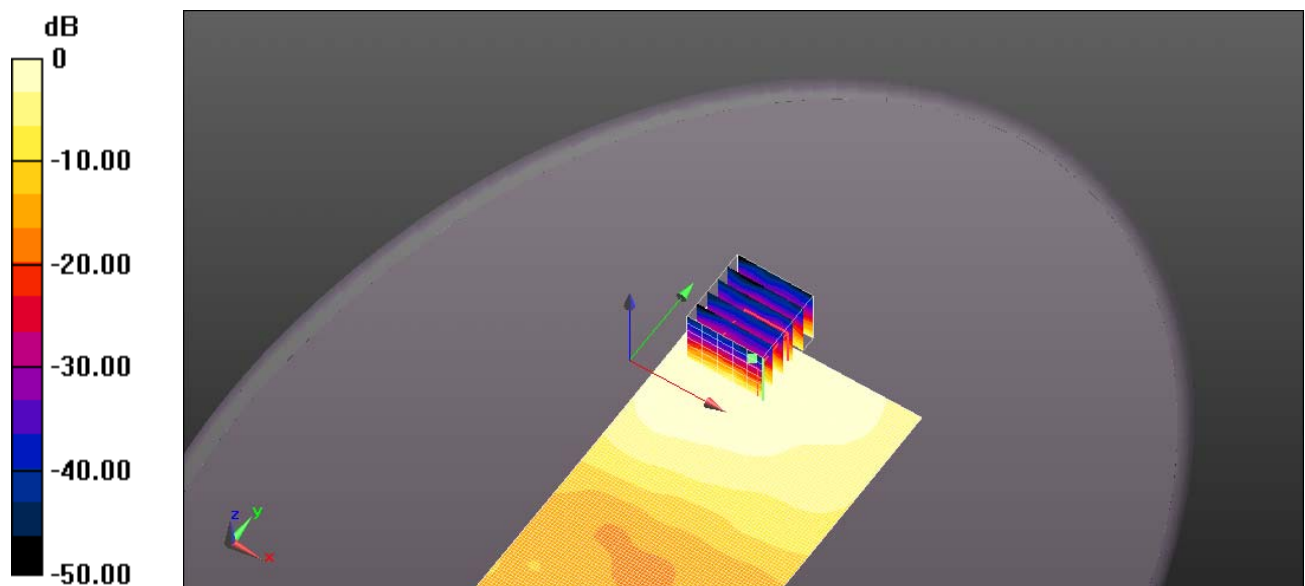
(6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.329 V/m; Power Drift = 0.88 dB

Peak SAR (extrapolated) = 0.110 W/kg

SAR(1 g) = 0.073 W/kg; SAR(10 g) = 0.048 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.0966 W/kg



0 dB = 0.0919 W/kg = -10.37 dBW/kg

FILE NAME: [ICOM-503Q BODY PRESCAN FA-S102U 1626MHZ VS-5MC.DA52:0](#)

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

Communication System: UID 0, CW (0); Frequency: 1626 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1626$ MHz; $\sigma = 1.504$ S/m; $\epsilon_r = 51.671$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.05, 8.05, 8.05); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASYS 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Area Scan

(61x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.101 W/kg

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Zoom Scan (5x5x7)

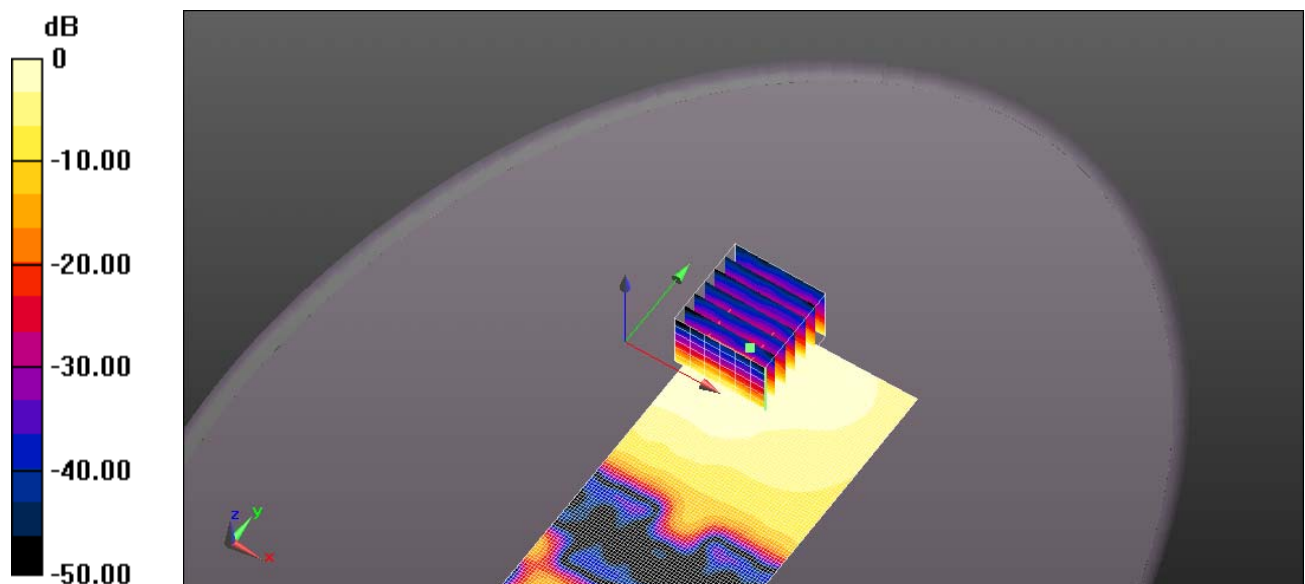
(7x7x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 6.185 V/m; Power Drift = -0.57 dB

Peak SAR (extrapolated) = 0.111 W/kg

SAR(1 g) = 0.072 W/kg; SAR(10 g) = 0.048 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.0990 W/kg



Final Body SAR Measurements

Antenna	Power (dBm)	CH	CH. Freq	BODY SAR1g (W/Kg)	BODY SAR10g (W/Kg)
				BP-300	BP-300
			(MHz)	MBB-5 & HM-222	MBB-5 & HM-222
FA-S102U	36.55	1	1616	0.0792	0.0532
	36.27	2	1621	0.0766	0.0452
	36.46	3	1626	0.0735	0.049

FILE NAME: ICOM-503Q BODY FA-S102U 1616MHZ HM-222.DA52:0

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

Communication System: UID 0, CW (0); Frequency: 1616 MHz; Duty Cycle: 1:1
Medium parameters used: $f = 1616$ MHz; $\sigma = 1.567$ S/m; $\epsilon_r = 50.774$; $\rho = 1000$ kg/m³; Phantom section:
Flat Section; Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.05, 8.05, 8.05); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Area Scan

(61x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.111 W/kg

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Zoom Scan (5x5x7)

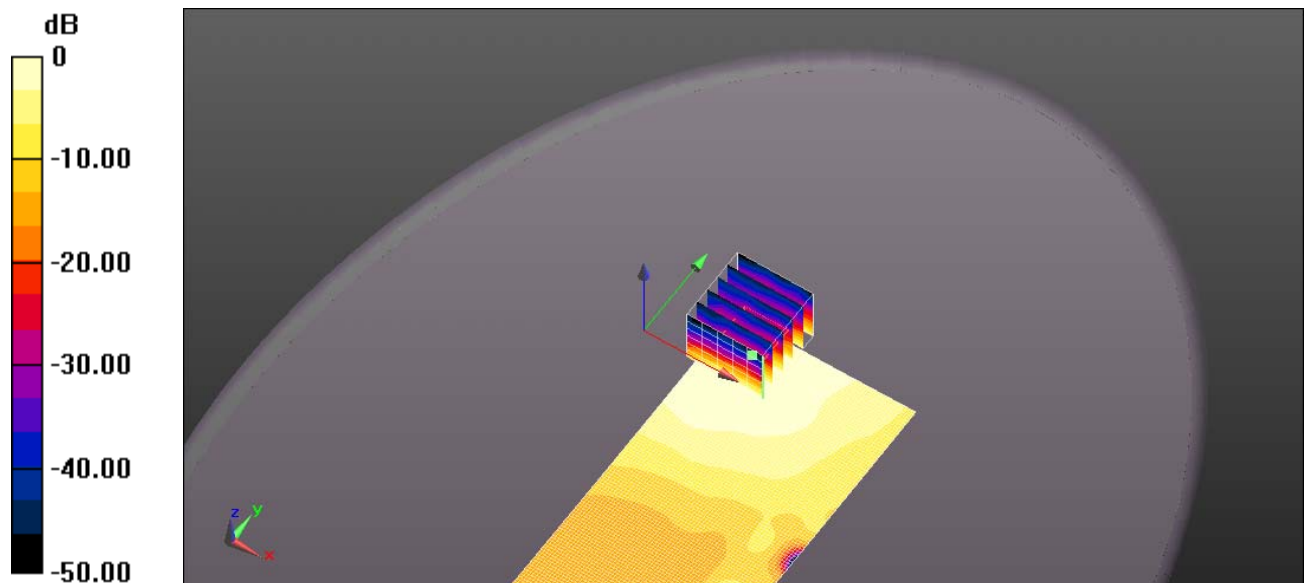
(6x6x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm

Reference Value = 5.650 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.118 W/kg

SAR(1 g) = 0.079 W/kg; SAR(10 g) = 0.053 W/kg (SAR corrected for target medium)

Maximum value of SAR (measured) = 0.106 W/kg



0 dB = 0.111 W/kg = -9.53 dBW/kg

FILE NAME: ICOM-503Q BODY FA-S102U 1621MHZ HM-222.DA52:0

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

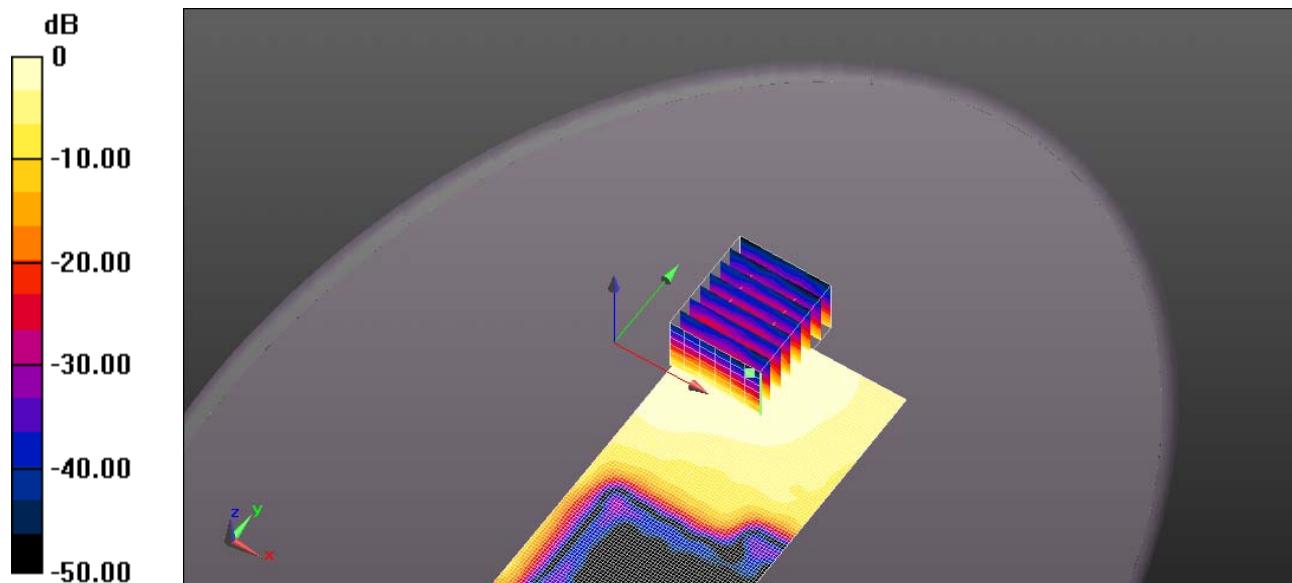
Communication System: UID 0, CW (0); Frequency: 1621 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1621$ MHz; $\sigma = 1.538$ S/m; $\epsilon_r = 51.249$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.05, 8.05, 8.05); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Area Scan (61x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0963 W/kg

Configuration_Body Prescan_IC-SAT100/Body Back, P=7W, d=0mm/Zoom Scan (5x5x7) (7x8x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 6.181 V/m; Power Drift = -0.59 dB
Peak SAR (extrapolated) = 0.124 W/kg
SAR(1 g) = 0.077 W/kg; SAR(10 g) = 0.045 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.103 W/kg



0 dB = 0.0963 W/kg = -10.16 dBW/kg

FILE NAME: ICOM-503Q BODY FA-S102U 1626MHZ HM-222.DA52:0

DUT: IC-SAT100; Type: Satellite Transceiver; Serial: 11000402

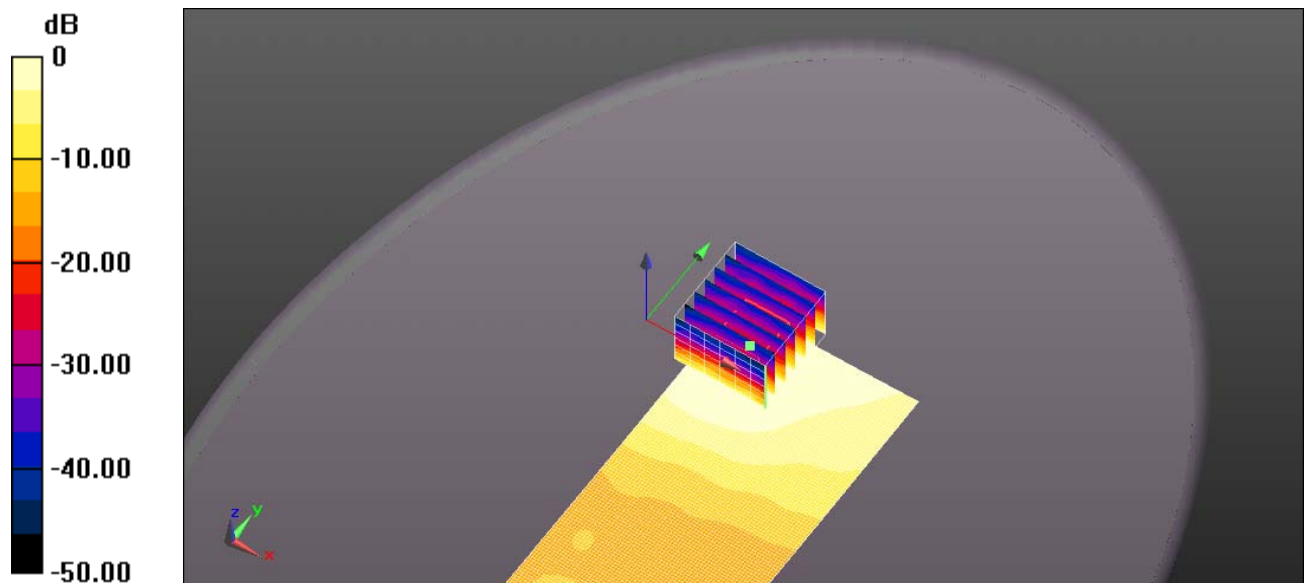
Communication System: UID 0, CW (0); Frequency: 1626 MHz; Duty Cycle: 1:1
Medium parameters used (interpolated): $f = 1626$ MHz; $\sigma = 1.504$ S/m; $\epsilon_r = 51.671$; $\rho = 1000$ kg/m³ ;
Phantom section: Flat Section ; Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3673; ConvF(8.05, 8.05, 8.05); Calibrated: 8/23/2018;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn874; Calibrated: 8/14/2018
- Phantom: ELI 4.0; Type: QD OVA 001 BB; Serial: 1057
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

Configuration_Body Prescan_IC-SAT100/Head Front, P=7W, d=0mm/Area Scan (61x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.0989 W/kg

Configuration_Body Prescan_IC-SAT100/Head Front, P=7W, d=0mm/Zoom Scan (5x5x7) (7x7x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.896 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.114 W/kg
SAR(1 g) = 0.074 W/kg; SAR(10 g) = 0.049 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.100 W/kg



0 dB = 0.0989 W/kg = -10.05 dBW/kg