APPENDIX C – DIPOLE CALIBRATION CERTIFICATES

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

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **BACL**

Certificate No: **D450V2-1010_Nov06**

CALIBRATION CERTIFICATE

Object	D450V2 - SN: 1010
Calibration procedure(s)	QA CAL-15.v4 Calibration Procedure for dipole validation kits below 800 MHz
Calibration date:	November 23, 2006
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41495277	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Power sensor E4412A	MY41498087	5-Apr-06 (METAS, No. 251-00557)	Apr-07
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-06 (METAS, No. 217-00592)	Aug-07
Reference 20 dB Attenuator	SN: S5086 (20b)	4-Apr-06 (METAS, No. 251-00558)	Apr-07
Reference Probe ET3DV6	SN 1507	19-Oct-06 (SPEAG, No. ET3-1507_Oct06)	Oct-07
DAE4	SN 601	15-Dec-05 (SPEAG, No. DAE4-601_Dec05)	Dec-06

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Nov-05)	In house check: Nov-07
Network Analyzer HP 8753E	US37390585	19-Oct-01 (SPEAG, in house check Oct-06)	In house check: Oct 07

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: November 27, 2006

Certificate No: D450V2-1010_Nov06 Page 1 of 1

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Accreditation No.: **SCS 108**

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

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

Measurement Conditions

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

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Flat Phantom V4.4	Shell thickness: 6 ± 0.2 mm
Distance Dipole Center - TSL	15 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	43.5	0.87 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	43.6 ± 6 %	0.86 mho/m ± 6 %
Head TSL temperature during test	(22.1 ± 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	condition	
SAR measured	398 mW input power	2.06 mW / g
SAR normalized	normalized to 1W	5.18 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**5.21 mW / g ± 18.1 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	398 mW input power	1.39 mW / g
SAR normalized	normalized to 1W	3.49 mW / g
SAR for nominal Head TSL parameters [1]	normalized to 1W	**3.50 mW / g ± 17.6 % (k=2)**

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.4 Ω - 9.5 jΩ
Return Loss	- 20.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.363 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 18, 2002

DASY4 Validation Report for Head TSL

Date/Time: 23.11.2006 11:09:54

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 450 MHz; Type: D450V2; Serial: D450V2 - SN:1010

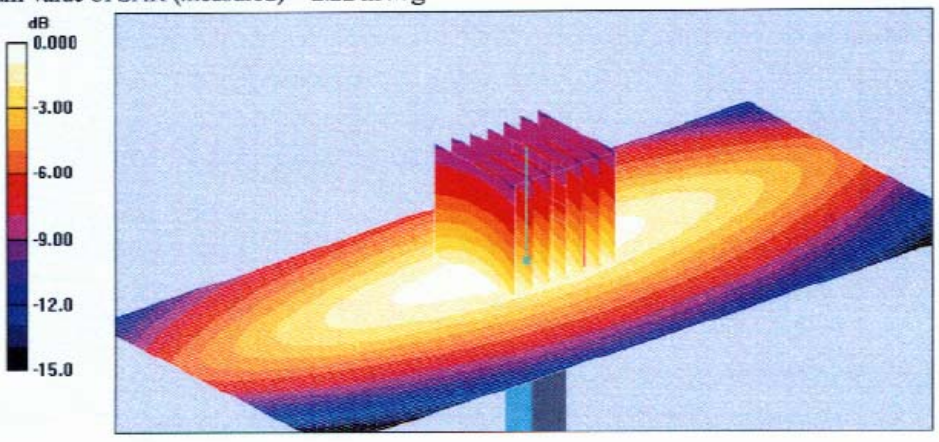
Communication System: CW; Frequency: 450 MHz;Duty Cycle: 1:1
Medium: HSL450;
Medium parameters used: f = 450 MHz; σ = 0.86 mho/m; ε_r = 43.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (LF); ConvF(6.61, 6.61, 6.61); Calibrated: 19.10.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 4.4; Type: Flat Phantom 4.4; ;
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

d=15mm, Pin=398mW 2/Area Scan (61x131x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 2.17 mW/g

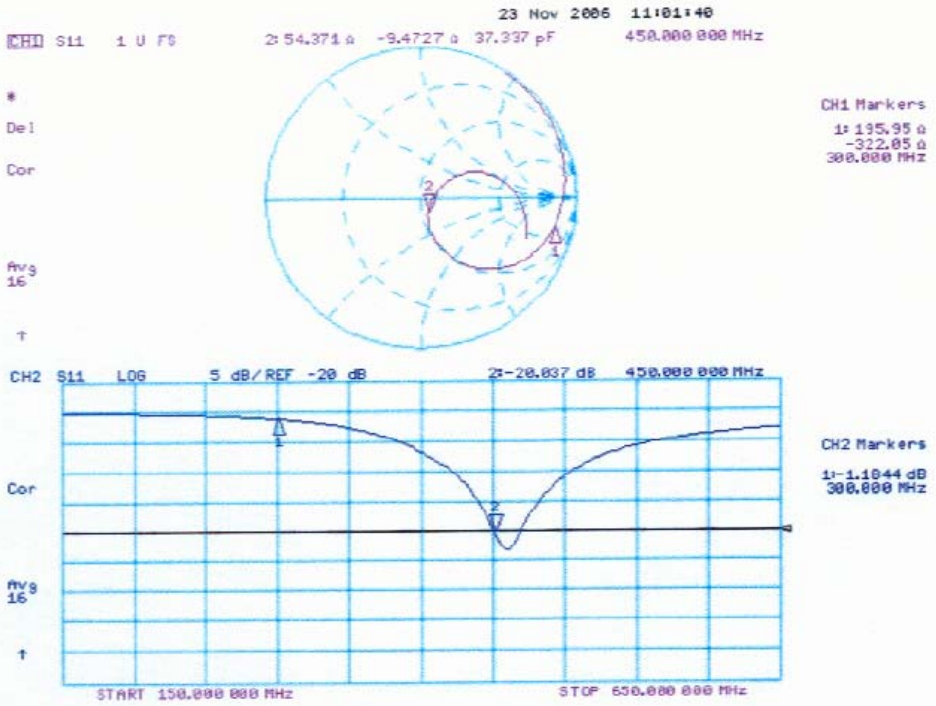
d=15mm, Pin=398mW 2/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.1 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 3.03 W/kg
SAR(1 g) = 2.06 mW/g; SAR(10 g) = 1.39 mW/g
Maximum value of SAR (measured) = 2.22 mW/g



0 dB = 2.22mW/g

Certificate No: D450V2-1010_Nov06 Page 5 of 6

Impedance Measurement Plot for Head TSL



APPENDIX D – DAE3 CALIBRATION CERTIFICATES

Calibration Laboratory of
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Accreditation No.: SCS 108

Client BACL

Certificate No: DAE3-456_Nov06

CALIBRATION CERTIFICATE

Object	DAE3 - SD 000 D03 AA - SN: 456
Calibration procedure(s)	QA CAL-06.v12 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	November 22, 2006
Condition of the calibrated item	In Tolerance

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Fluke Process Calibrator Type 702	SN: 6295803	13-Oct-06 (Elcal AG, No: 5492)	Oct-07
Keithley Multimeter Type 2001	SN: 0810278	03-Oct-06 (Elcal AG, No: 5478)	Oct-07
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Calibrator Box V1.1	SE UMS 006 AB 1002	15-Jun-06 (SPEAG, in house check)	In house check Jun-07

	Name	Function	Signature
Calibrated by:	Eric Hainfeld	Technician	
Approved by:	Fin Bomholt	R&D Director	

Issued: November 22, 2006

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

Certificate No: DAE3-456_Nov06 Page 1 of 5

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Accreditation No.: SCS 108

Glossary

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

Methods Applied and Interpretation of Parameters

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

DC Voltage Measurement

A/D - Converter Resolution nominal

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

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

Calibration Factors	X	Y	Z
High Range	404.439 ± 0.1% (k=2)	403.906 ± 0.1% (k=2)	403.969 ± 0.1% (k=2)
Low Range	3.93438 ± 0.7% (k=2)	3.91686 ± 0.7% (k=2)	3.94495 ± 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	146 ° ± 1 °

Appendix

1. DC Voltage Linearity

High Range		Input (μV)	Reading (μV)	Error (%)
Channel X	+ Input	200000	200000	0.00
Channel X	+ Input	20000	20006.42	0.03
Channel X	- Input	20000	-20005.03	0.03
Channel Y	+ Input	200000	199999.6	0.00
Channel Y	+ Input	20000	20004.36	0.02
Channel Y	- Input	20000	-20008.05	0.04
Channel Z	+ Input	200000	199999.8	0.00
Channel Z	+ Input	20000	20005.63	0.03
Channel Z	- Input	20000	-20006.88	0.03

Low Range		Input (μV)	Reading (μV)	Error (%)
Channel X	+ Input	2000	2000.1	0.00
Channel X	+ Input	200	200.25	0.13
Channel X	- Input	200	-200.34	0.17
Channel Y	+ Input	2000	2000.1	0.00
Channel Y	+ Input	200	199.41	-0.30
Channel Y	- Input	200	-200.64	0.32
Channel Z	+ Input	2000	2000.1	0.00
Channel Z	+ Input	200	199.56	-0.22
Channel Z	- Input	200	-200.99	0.50

2. Common mode sensitivity

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

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-3.41	-4.27
	- 200	4.45	4.86
Channel Y	200	-7.35	-6.80
	- 200	5.01	5.93
Channel Z	200	9.73	10.44
	- 200	-12.17	-11.92

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	-0.13	-2.47
Channel Y	200	0.11	-	1.24
Channel Z	200	-1.80	-0.38	-

4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	16305	15799
Channel Y	15832	14878
Channel Z	16026	16094

5. Input Offset Measurement

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

Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	-0.23	-1.20	1.19	0.30
Channel Y	-0.80	-1.80	0.08	0.26
Channel Z	-0.31	-1.66	1.10	0.31

6. Input Offset Current

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

7. Input Resistance

	Zeroing (MOhm)	Measuring (MOhm)
Channel X	0.2001	199.8
Channel Y	0.2001	199.5
Channel Z	0.2000	199.8

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

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

9. Power Consumption (verified during pre test)

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

APPENDIX E - TEST SYSTEM VERIFICATIONS SCANS

Measurement Result

System Validation Dipole: D450V2 SN: 1010

Environmental Conditions

Ambient Temperature:	23° C
Relative Humidity:	72%
ATM Pressure:	1033 mbar

* Testing was performed by Eric Hong on 2007-04-30.

Frequency [MHz]	Parameters	Liquid Temp [°C]	Target Value	Measured Value	Deviation [%]	Limits [%]
450	ε_r	22	43.5	43.7	0.46	±5
	σ	22	0.87	0.86	-1.15	±5
	1g SAR	22	4.9	4.75	-3.06	±10

ε_r = relative permittivity, σ = conductivity and ρ=1000kg/m^3

Test Laboratory: Bay Area Compliance Laboratories Corp. (BACL)

System Performance Check DUT: Dipole 450 MHz; Type: D450V2; Serial: D450V2 - SN: 1010

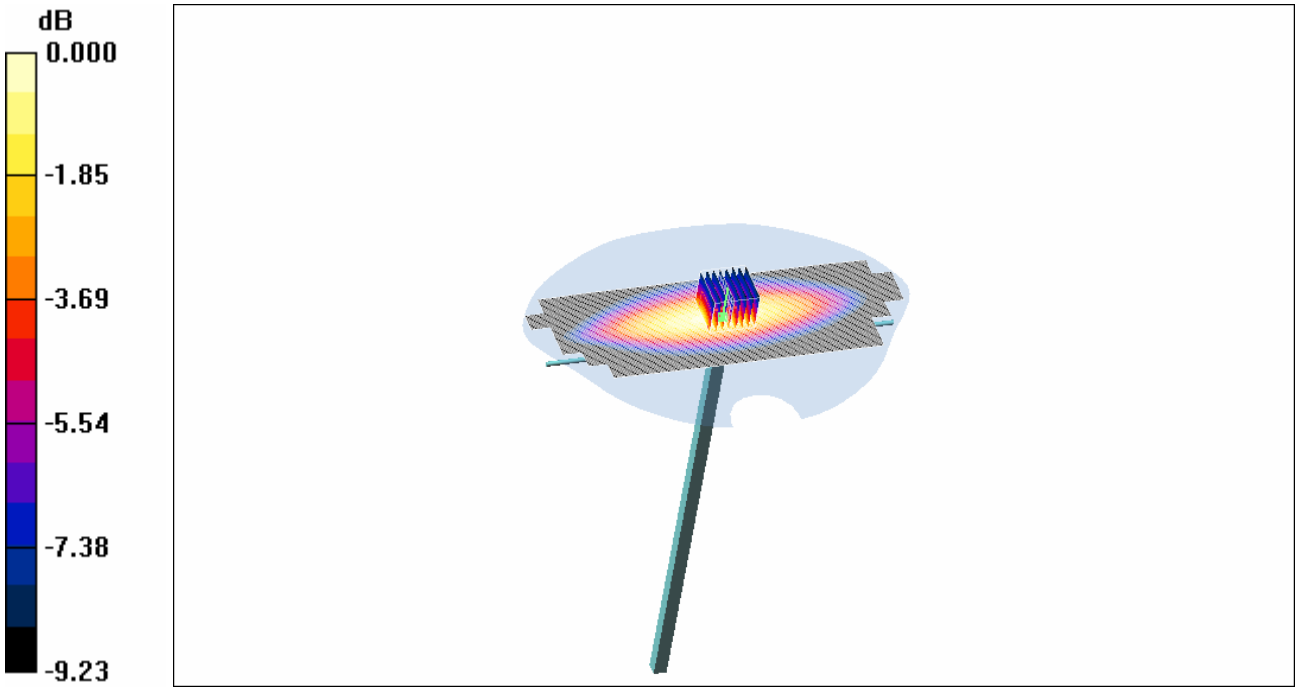
Communication System: CW; Frequency: 450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.86 mho/m; εr = 43.7; ρ = 1000 kg/m3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF (7.14, 7.14, 7.14); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3-Sn456; Calibrated: 11/22/2006
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Post processing SW: SEMCAD, V1.8 Build 161

d=15mm, Pin=1W/Area Scan (61x201x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 5.12 mW/g

d=15mm, Pin=1W/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 62.4 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 5.04 W/kg
SAR(1 g) = 4.75 mW/g; SAR(10 g) = 3.22 mW/g
Maximum value of SAR (measured) = 5.08 mW/g



0 dB = 5.08 mW/g

APPENDIX F - EUT SCANS

Bay Area Compliance Lab Corp. (BACL)

EUT face 2.5 cm separation to flat phantom (Middle Channel)

Kirmuss & Associates/Infinity Advanced; Type: P-1010; Serial: 070424C0004

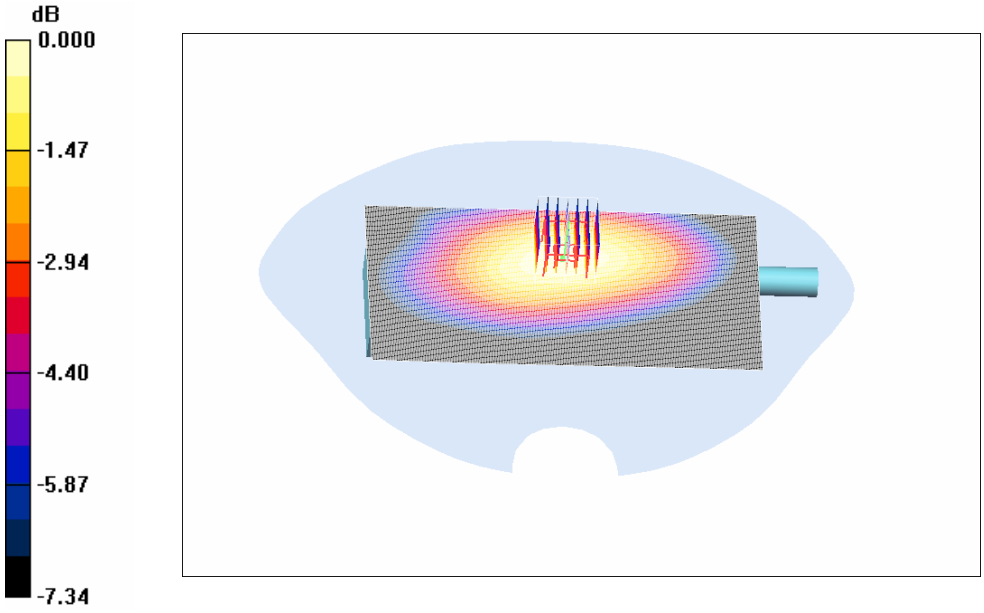
Communication System: CW; Frequency: 445.250 MHz; Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.86 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(7.14, 7.14, 7.14); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 11/22/2006
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Post processing SW: SEMCAD, V1.8 Build 161

EUT face 2.5 cm separation to flat phantom/Area Scan (61x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 4.14 mW/g

EUT face 2.5 cm separation to flat phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 41.3 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 4.11 W/kg
SAR(1 g) = 3.98 mW/g; SAR(10 g) = 2.34 mW/g
Maximum value of SAR (measured) = 4.02 mW/g



0 dB = 4.02 mW/g

Plot#1

Bay Area Compliance Lab Corp. (BACL)

EUT face 2.5 cm separation to flat phantom (Low Channel)

Kirmuss & Associates/Infinity Advanced; Type: P-1010; Serial: 070424C0004

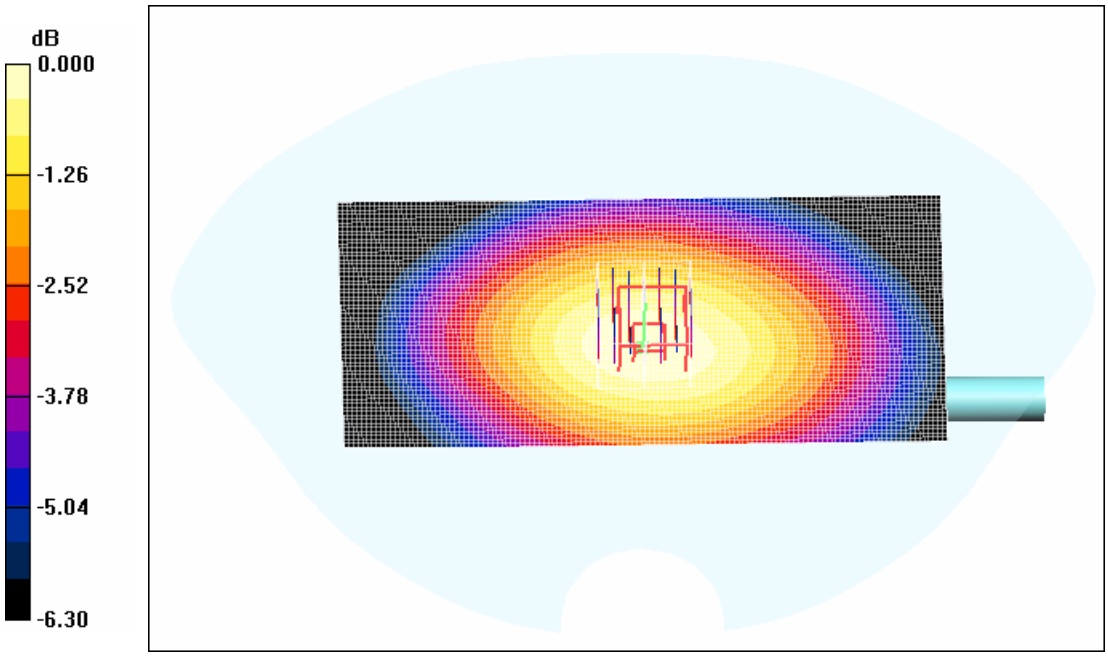
Communication System: CW; Frequency: 410.005 MHz; Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.86 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(7.14, 7.14, 7.14); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 11/22/2006
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Post processing SW: SEMCAD, V1.8 Build 161

EUT face 2.5 cm separation to flat phantom/Area Scan (61x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 4.67 mW/g

EUT face 2.5 cm separation to flat phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 42.3 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 4.24 W/kg
SAR(1 g) = 4.18 mW/g; SAR(10 g) = 2.44 mW/g
Maximum value of SAR (measured) = 4.25 mW/g



0 dB = 4.25 mW/g

Plot#2

Bay Area Compliance Lab Corp. (BACL)

EUT face 2.5 cm separation to flat phantom (Low Channel)

Kirmuss & Associates/Infinity Advanced; Type: P-1010; Serial: 070424C0004

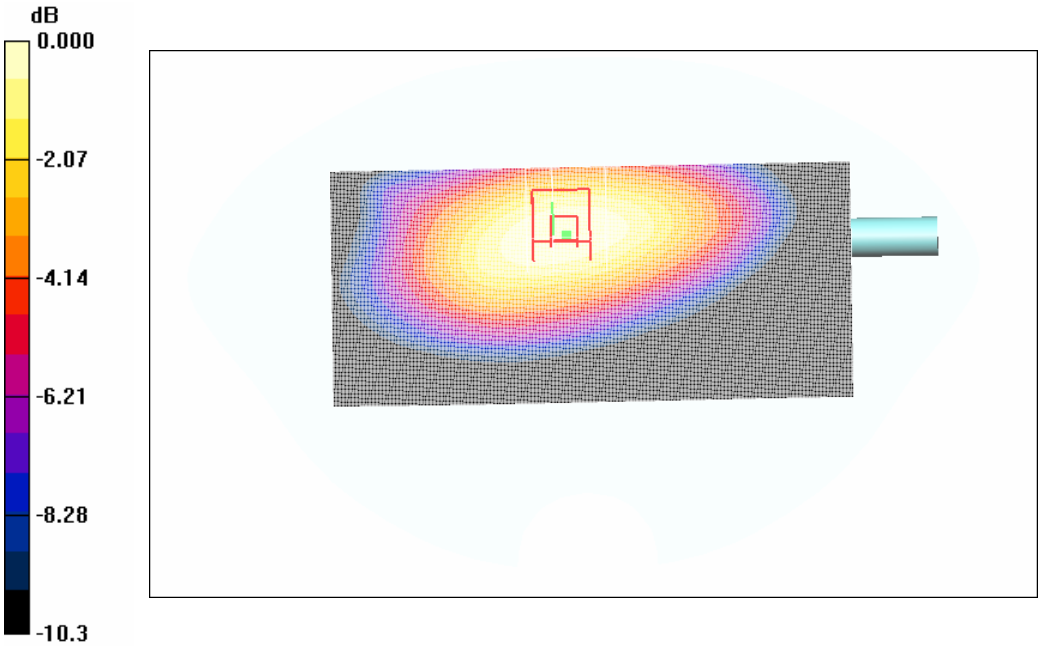
Communication System: CW; Frequency: 479.987 MHz; Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.86 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(7.14, 7.14, 7.14); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 11/22/2006
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Post processing SW: SEMCAD, V1.8 Build 161

EUT face 2.5 cm separation to flat phantom/Area Scan (61x131x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 3.89 mW/g

EUT face 2.5 cm separation to flat phantom/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 40.3 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 4.04 W/kg
SAR(1 g) = 3.86 mW/g; SAR(10 g) = 2.31 mW/g
Maximum value of SAR (measured) = 3.94 mW/g



0 dB = 3.94 mW/g

Plot#3

Test Laboratory: Bay Area Compliance Lab Corp. (BACL)

EUT touching to flat phantom with belt clip and headset

Kirmuss & Associates/Infinity Advanced; Type: P-1010; Serial: 070424C0004

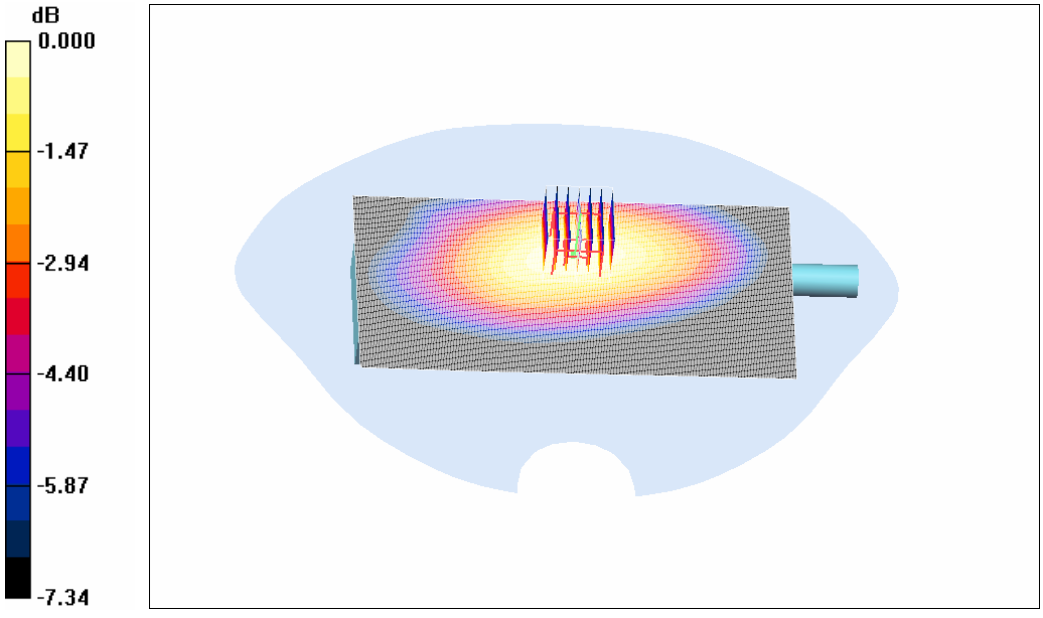
Communication System: CW; Frequency: 445.250 MHz; Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.95 mho/m; ε_r = 56.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(7.42, 7.42, 7.42); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 11/22/2006
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Post processing SW: SEMCAD, V1.8 Build 161

EUT back touching to flat phantom with belt clip and headset/Area Scan (141x281x1): Measurement grid: dx=7mm, dy=7mm
Maximum value of SAR (interpolated) = 7.58 mW/g

EUT back touching to flat phantom with belt clip and headset/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.1 V/m; Power Drift = -0.216 dB
Peak SAR (extrapolated) = 7.99 W/kg
SAR(1 g) = 7.16 mW/g; SAR(10 g) = 5.85 mW/g
Maximum value of SAR (measured) = 7.25 mW/g



0 dB = 7.25 mW/g

Plot#4

Test Laboratory: Bay Area Compliance Lab Corp. (BACL)

EUT touch to flat phantom with belt clip and headset (Low Channel)

Kirmuss & Associates/Infinity Advanced; Type: P-1010; Serial: 070424C0004

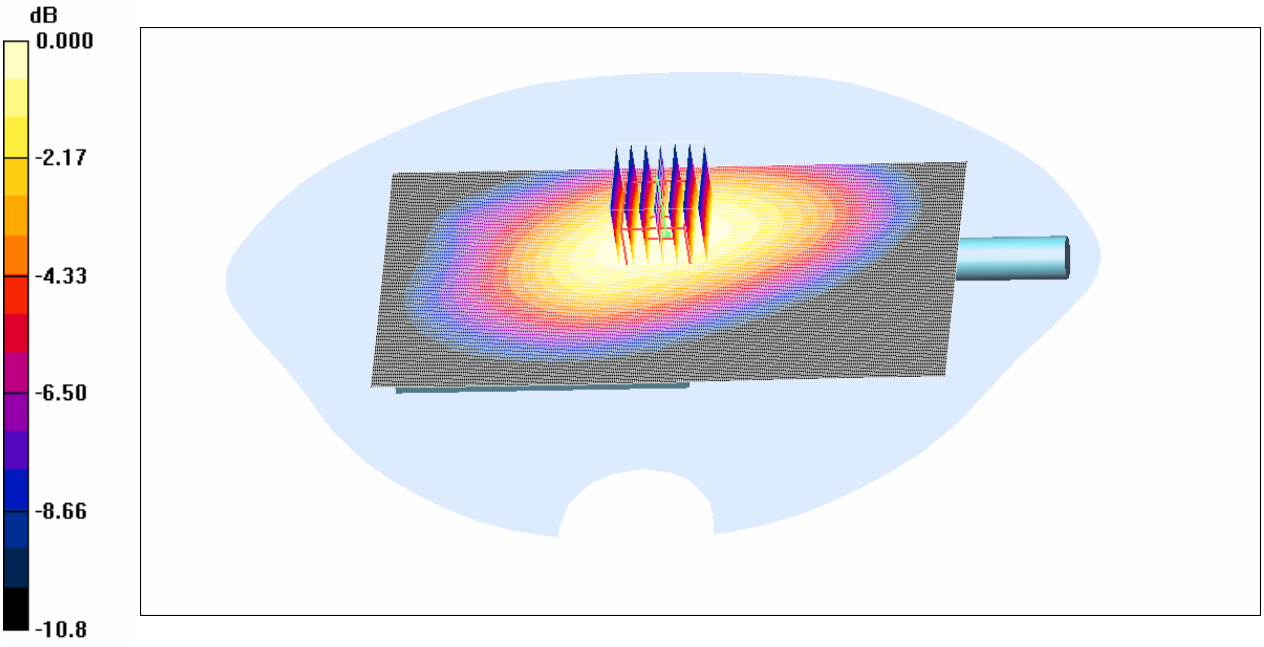
Communication System: CW; Frequency: 410.005 MHz; Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.95 mho/m; ε_r = 56.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(7.42, 7.42, 7.42); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 11/22/2006
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Post processing SW: SEMCAD, V1.8 Build 161

EUT back touching to flat phantom with belt clip and headset/Area Scan (141x281x1): Measurement grid: dx=7mm, dy=7mm
Maximum value of SAR (interpolated) = 7.69 mW/g

EUT back touching to flat phantom with belt clip and headset/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.4 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 8.03 W/kg
SAR(1 g) = 7.22 mW/g; SAR(10 g) = 5.88 mW/g
Maximum value of SAR (measured) = 7.28 mW/g



0 dB = 7.28 mW/g

Plot#5

Test Laboratory: Bay Area Compliance Lab Corp. (BACL)

Body Touch to flat phantom with belt clip and headset (High Channel)

Kirmuss & Associates/Infinity Advanced; Type: P-1010; Serial: 070424C0004

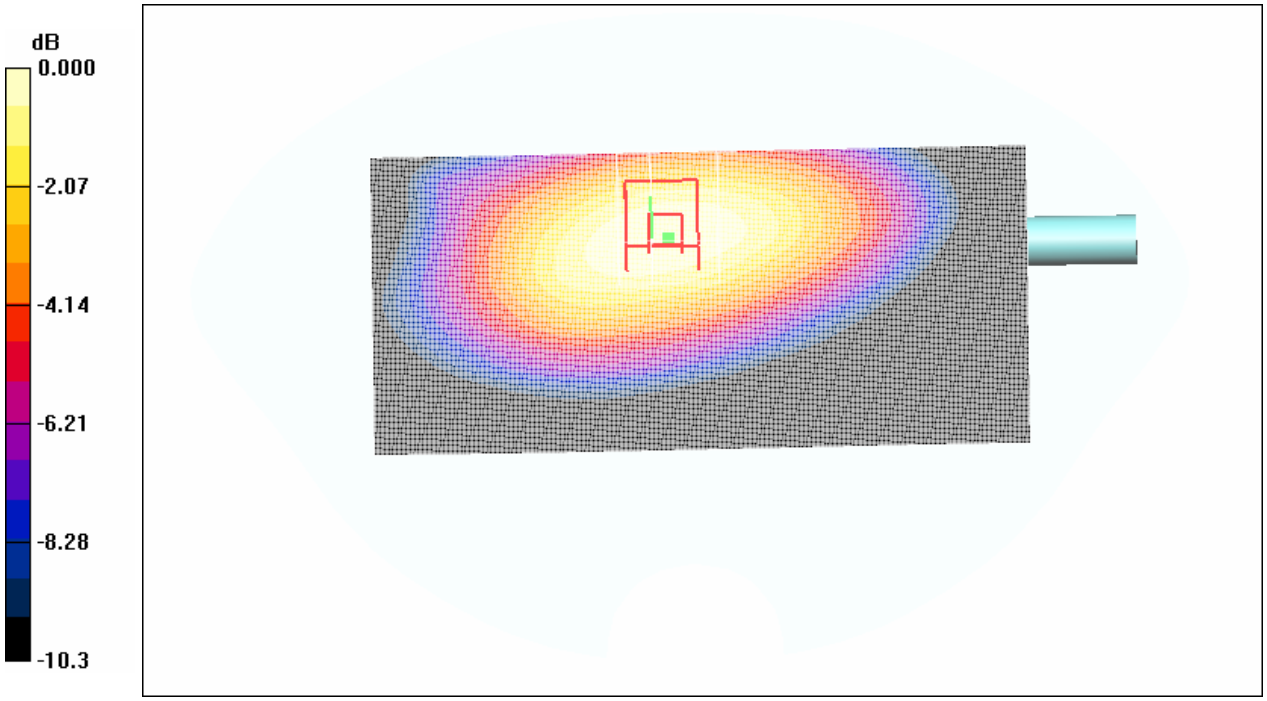
Communication System: CW; Frequency: 479.987 MHz; Duty Cycle: 1:1
Medium parameters used: f = 450 MHz; σ = 0.95 mho/m; ε_r = 56.9; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1604; ConvF(7.42, 7.42, 7.42); Calibrated: 5/2/2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn456; Calibrated: 11/22/2006
- Phantom: SAM with CRP; Type: Twin SAM; Serial: TP-1032
- Measurement SW: DASY4, V4.6 Build 23; Post processing SW: SEMCAD, V1.8 Build 161

EUT back touching to flat phantom with belt clip and headset/Area Scan (141x281x1): Measurement grid: dx=7mm, dy=7mm
Maximum value of SAR (interpolated) = 7.34 mW/g

EUT back touching to flat phantom with belt clip and headset/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.6 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 7.97 W/kg
SAR(1 g) = 7.11 mW/g; SAR(10 g) = 5.82 mW/g
Maximum value of SAR (measured) = 7.23 mW/g



0 dB = 7.23 mW/g

Plot#6

APPENDIX G – CONDUCTED OUTPUT POWER MEASUREMENT

Provision Applicable

The measured peak output power should be greater and within 5% than EMI measurement.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

Test Equipment

Equipment Description	Model Number	Serial Number	Calibration Date
Agilent Spectrum Analyzer	8565EC	3946A00131	2007-01-24

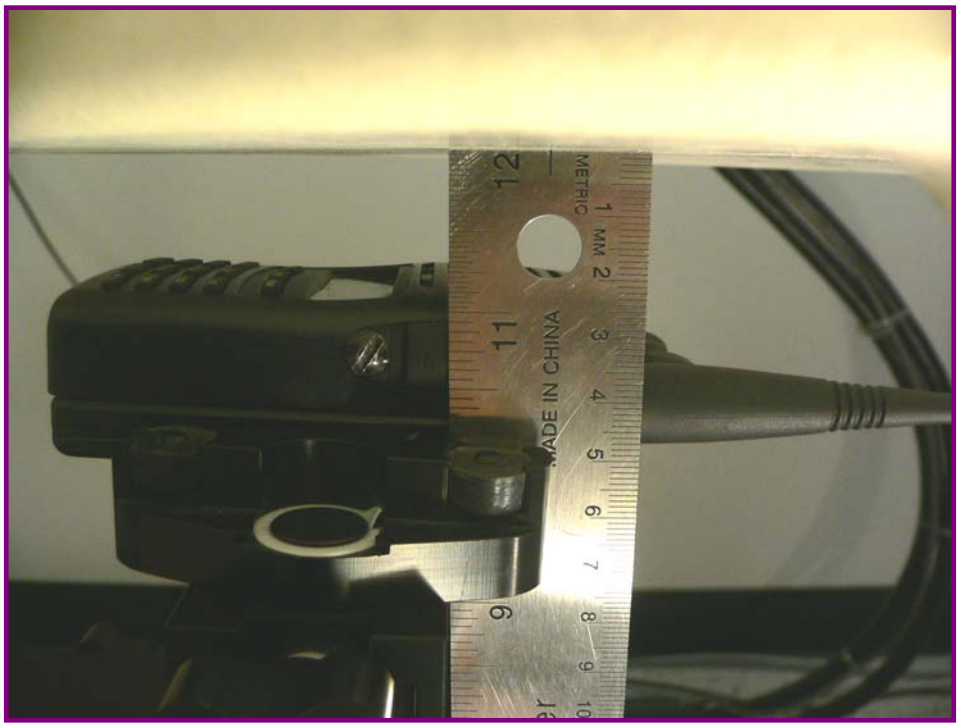
Test Results

Channel	Frequency (MHz)	Conducted Output Power (dBm)
Low	410.005	35.10
Middle	445.250	36.20
High	479.987	34.75

APPENDIX H – EUT TEST SET UP PHOTOS

Body-worn Belt clip with Headset back touching to the flat phantom

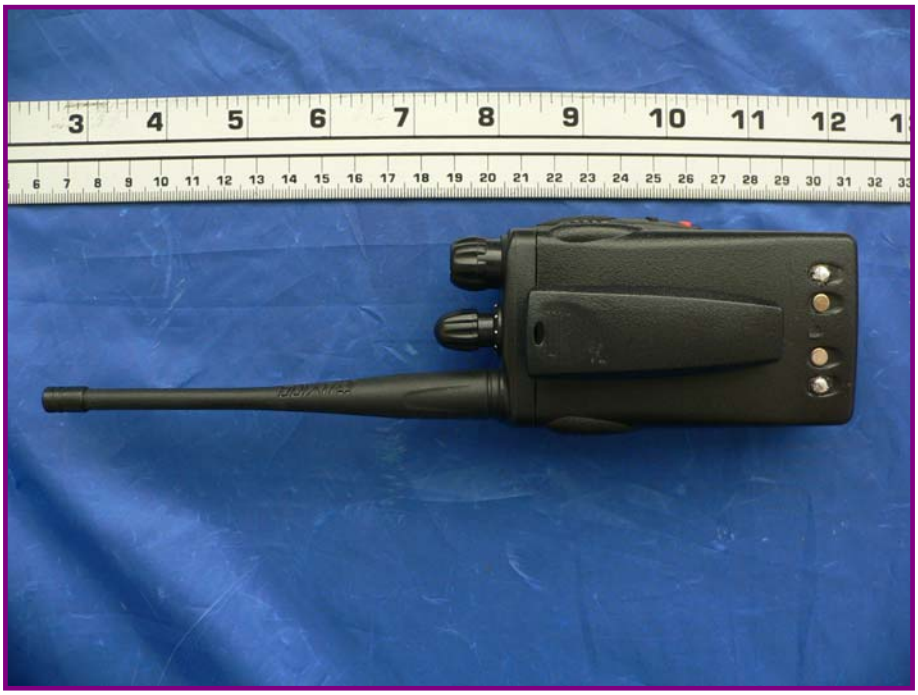
EUT Face-held 2.5 cm separation to flat phantom



APPENDIX I– EUT PHOTO

EUT – Front View

EUT – Rear View



EUT – Battery off View

APPENDIX J - INFORMATIVE REFERENCES

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END OF REPORT