

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3962

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
450	43.5	0.87	11.00	11.00	11.00	0.15	1.30	± 13.4 %
750	41.9	0.89	10.67	10.67	10.67	0.50	0.80	± 12.0 %
835	41.5	0.90	10.17	10.17	10.17	0.50	0.80	± 12.0 %
1750	40.1	1.37	8.77	8.77	8.77	0.37	0.80	± 12.0 %
1900	40.0	1.40	8.49	8.49	8.49	0.28	0.93	± 12.0 %
2300	39.5	1.67	8.02	8.02	8.02	0.25	1.09	± 12.0 %
2450	39.2	1.80	7.65	7.65	7.65	0.38	0.80	± 12.0 %
2600	39.0	1.96	7.35	7.35	7.35	0.22	1.23	± 12.0 %
5250	35.9	4.71	5.14	5.14	5.14	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.56	4.56	4.56	0.45	1.80	± 13.1 %
5750	35.4	5.22	4.79	4.79	4.79	0.45	1.80	± 13.1 %

^C 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.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) 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 (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G 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: EX3DV4 - SN:3962

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
450	56.7	0.94	11.33	11.33	11.33	0.08	1.20	± 13.4 %
750	55.5	0.96	10.41	10.41	10.41	0.50	0.80	± 12.0 %
835	55.2	0.97	10.16	10.16	10.16	0.50	0.80	± 12.0 %
1750	53.4	1.49	8.49	8.49	8.49	0.32	0.88	± 12.0 %
1900	53.3	1.52	8.20	8.20	8.20	0.33	0.89	± 12.0 %
2300	52.9	1.81	7.96	7.96	7.96	0.39	0.80	± 12.0 %
2450	52.7	1.95	7.70	7.70	7.70	0.38	0.80	± 12.0 %
2600	52.5	2.16	7.63	7.63	7.63	0.37	0.80	± 12.0 %
5250	48.9	5.36	4.15	4.15	4.15	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.61	3.61	3.61	0.60	1.90	± 13.1 %
5750	48.3	5.94	3.70	3.70	3.70	0.60	1.90	± 13.1 %

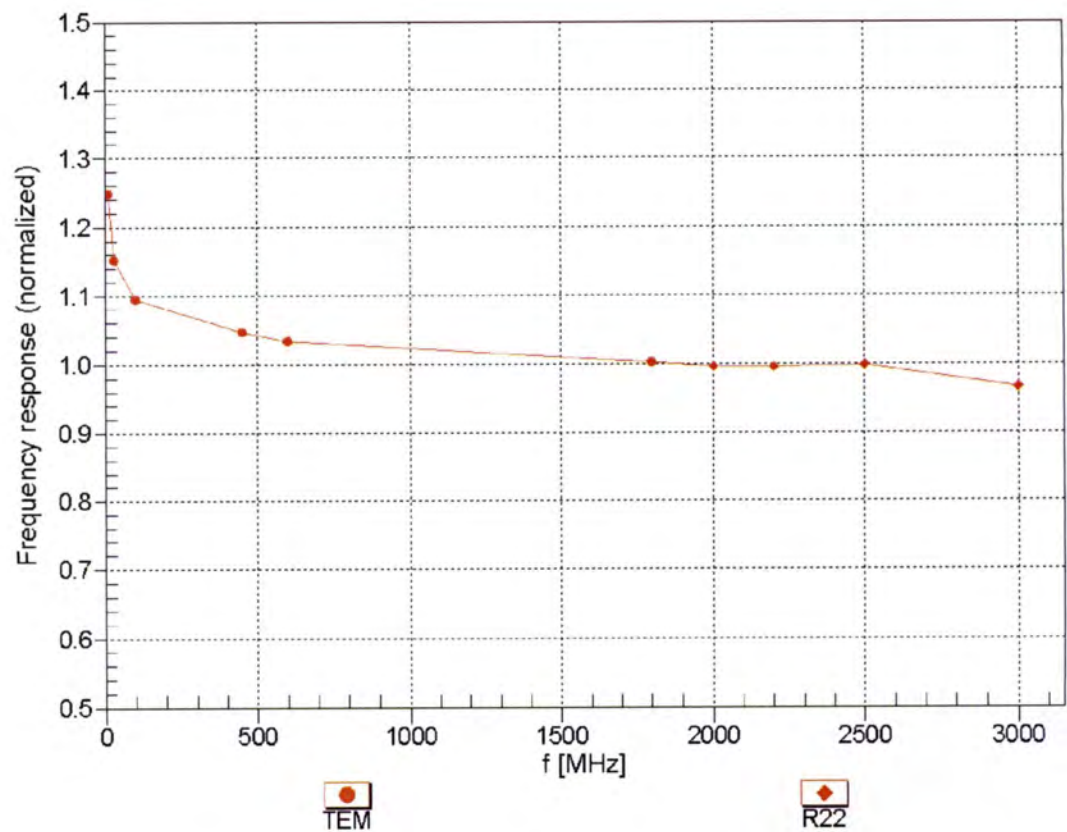
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Frequency Response of E-Field

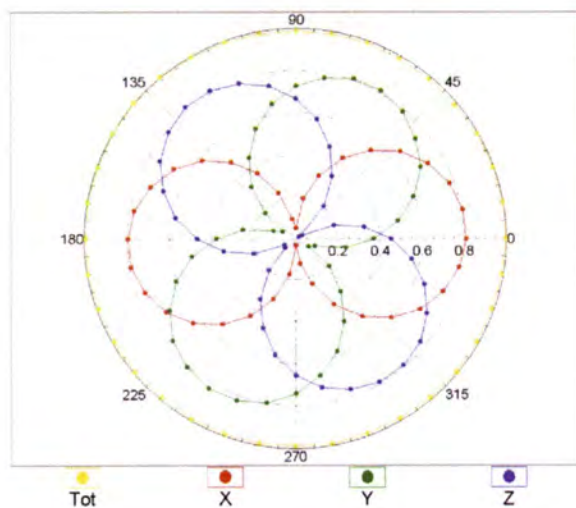
(TEM-Cell:ifi1110 EXX, Waveguide: R22)



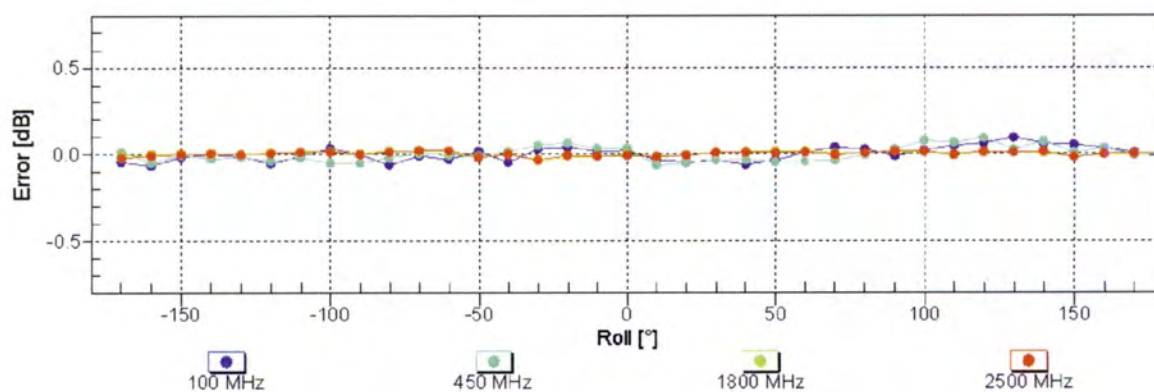
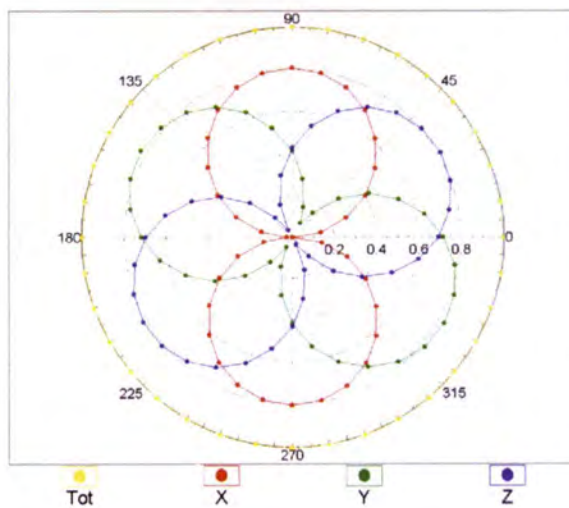
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$

$f=450$ MHz, TEM

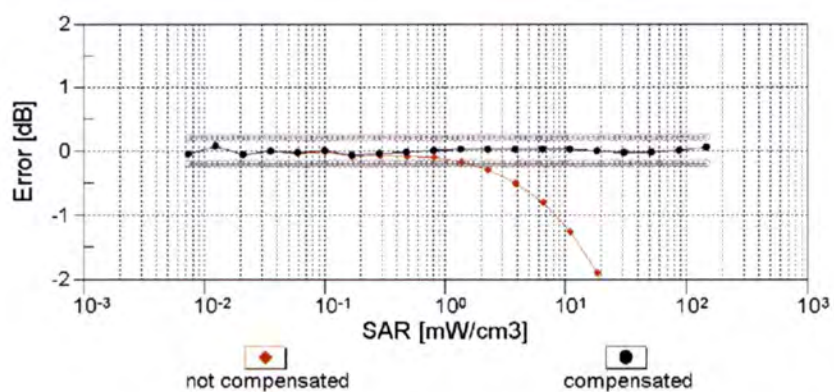
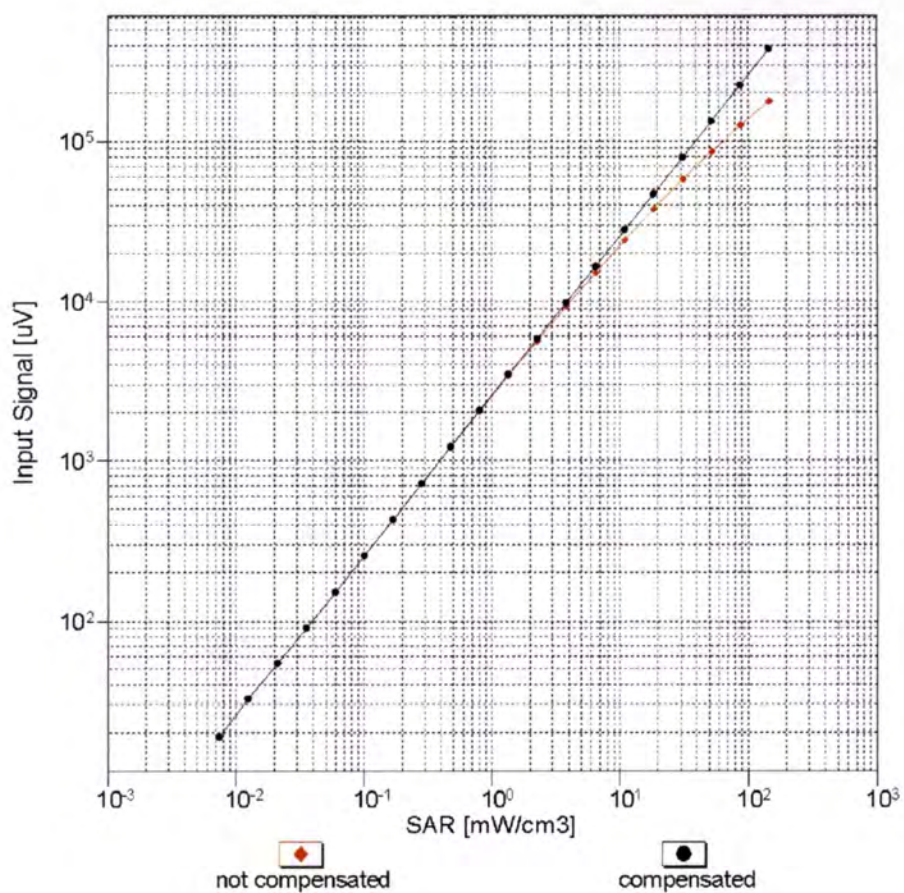


$f=1800$ MHz, R22



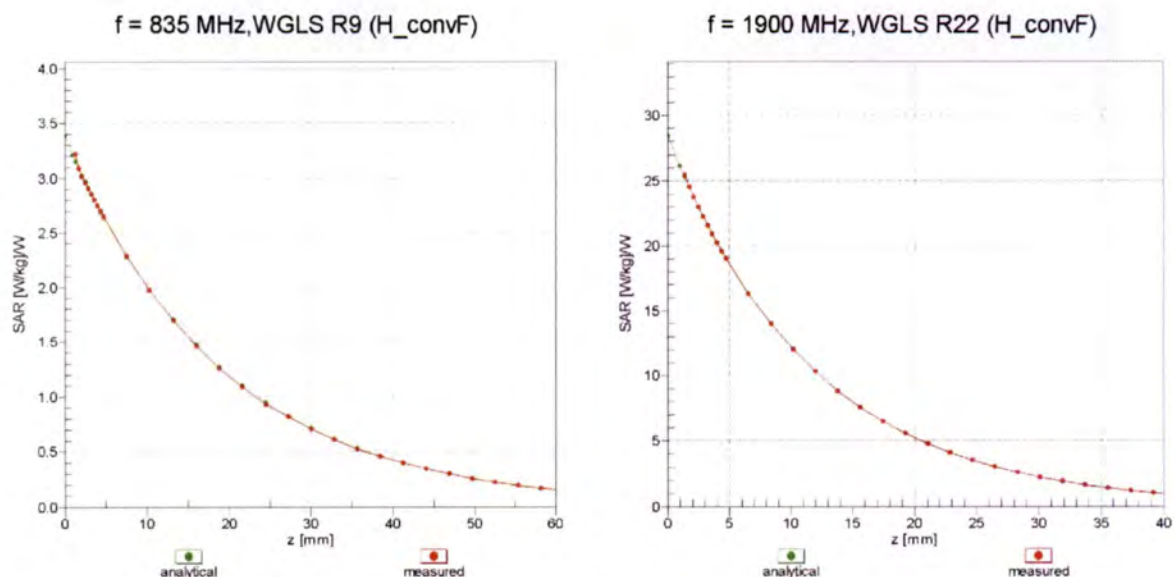
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f_{\text{eval}} = 1900 \text{ MHz}$)



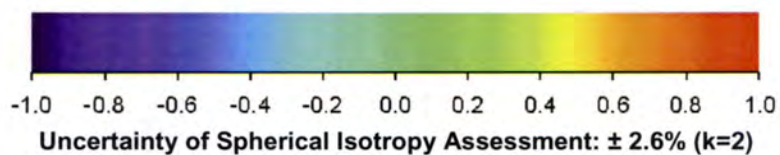
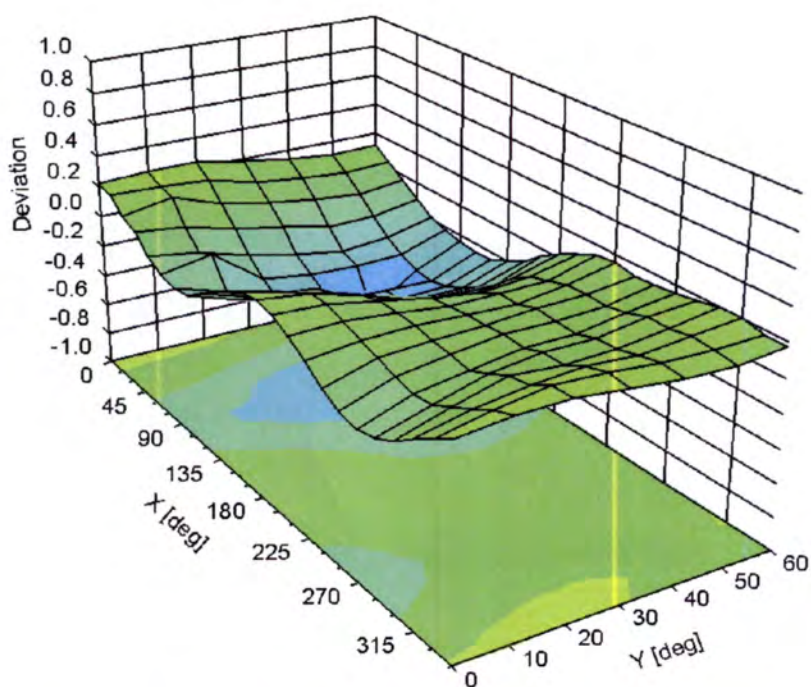
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ , θ), $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

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Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-30.1
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm



Appendix D

Photographs

1. SAR measurement System
2. Photographs of Tissue Simulate Liquid
3. Photographs of EUT test position
4. EUT Constructional Details

1. SAR measurement System



2. Photographs of Tissue Simulate Liquid

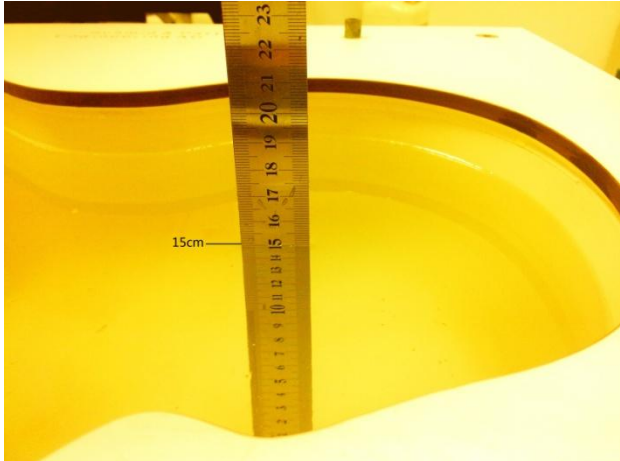
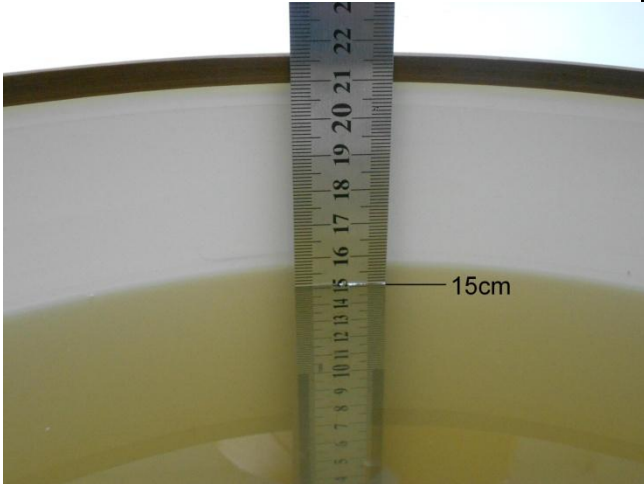
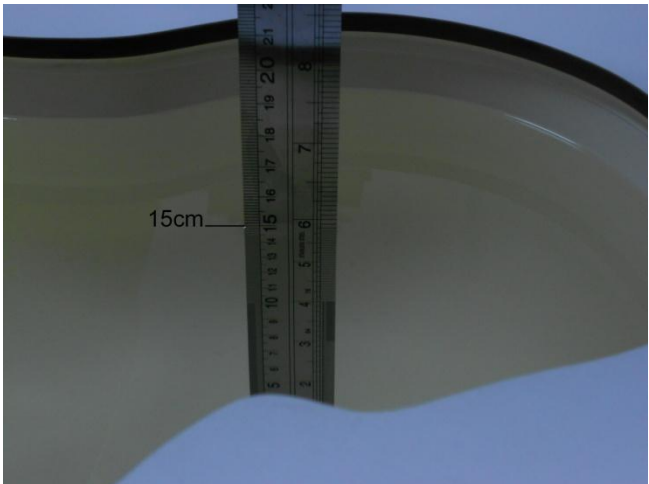
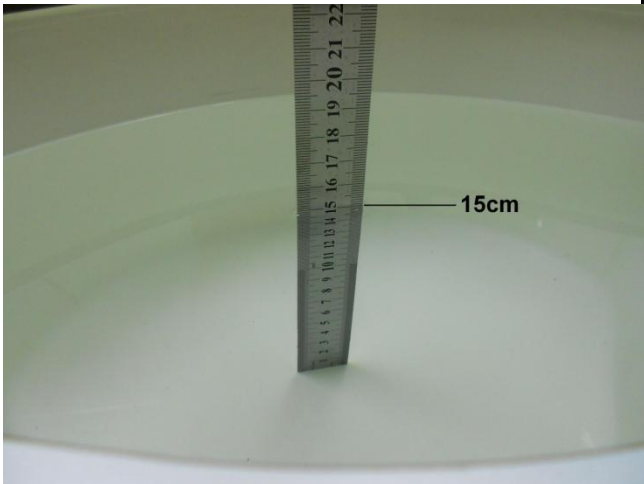
Photo 1: Tissue Simulant Liquid for Head 835	Photo 2: Tissue Simulant Liquid for Body 835
	
Photo 3: Tissue Simulant Liquid for Head 1800	Photo 4: Tissue Simulant Liquid for Body 1800
	

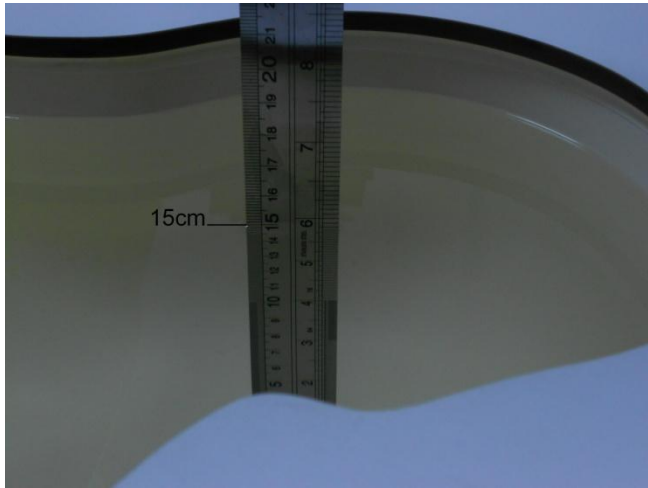
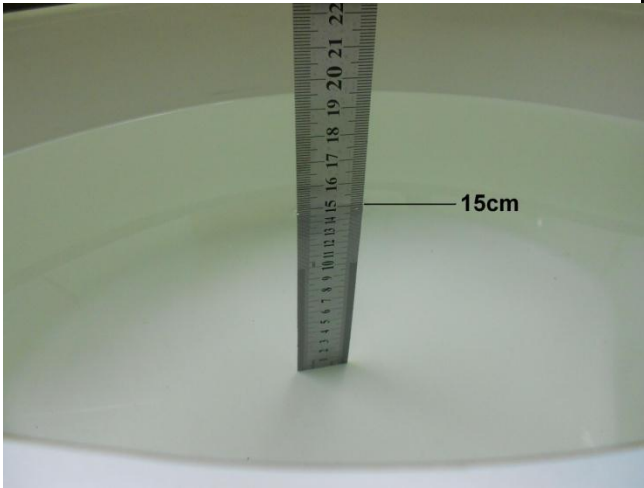
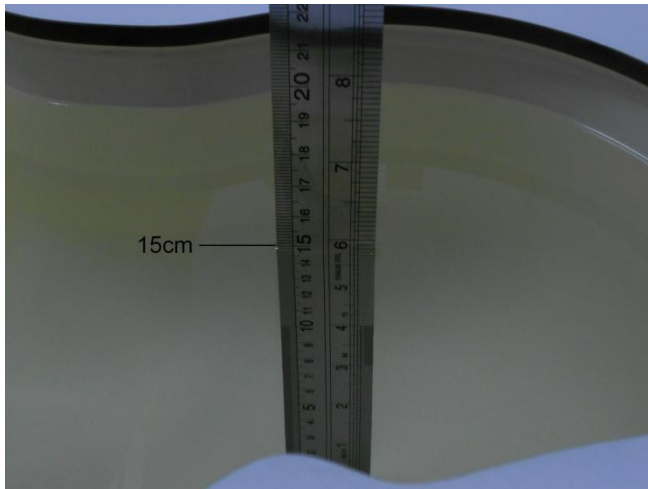
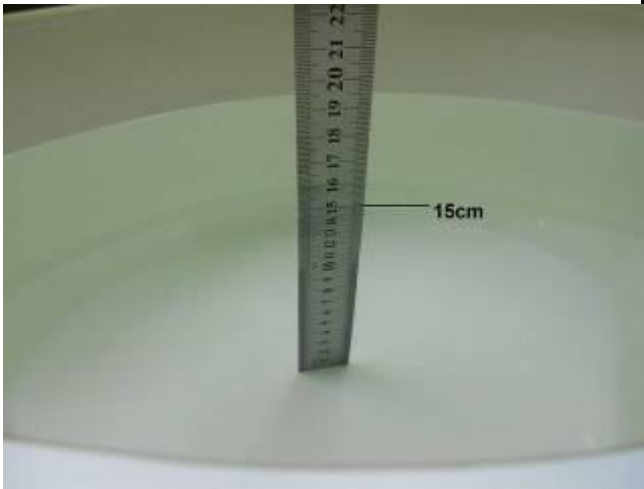
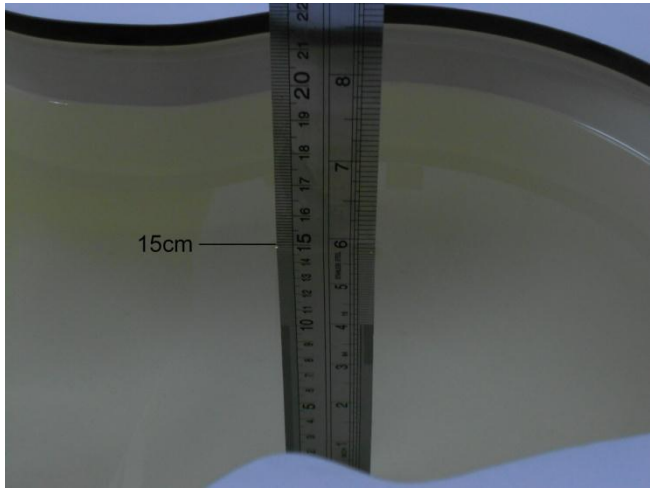
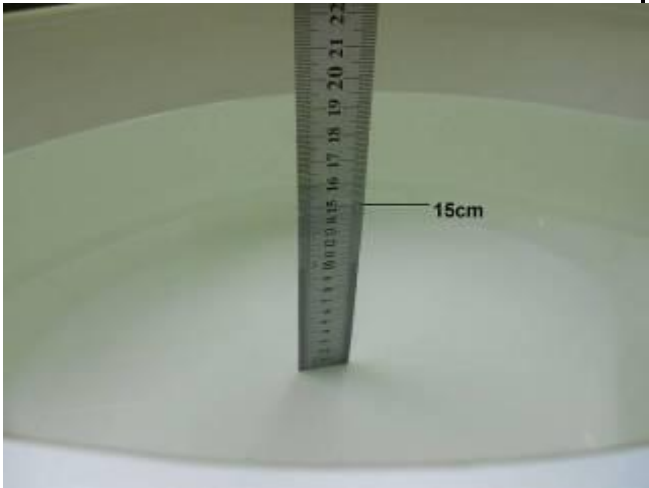
Photo 5: Tissue Simulant Liquid for Head 1900	Photo 6: Tissue Simulant Liquid for Body 1900
	
Photo 7: Tissue Simulant Liquid for Head 2450	Photo 8: Tissue Simulant Liquid for Body 2450
	



Photo 9: Tissue Simulant Liquid for Head 2600 	Photo 10: Tissue Simulant Liquid for Body 2600 
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3. Photographs of EUT test position

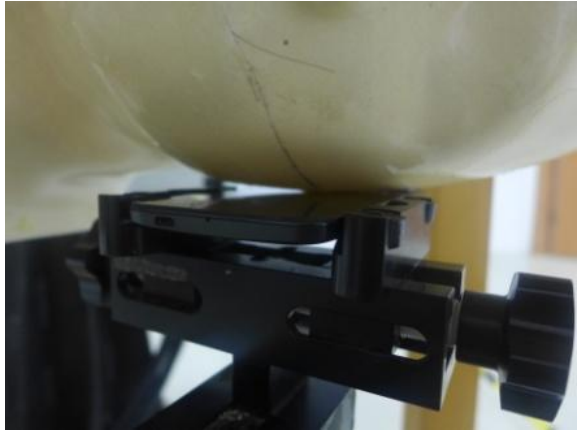
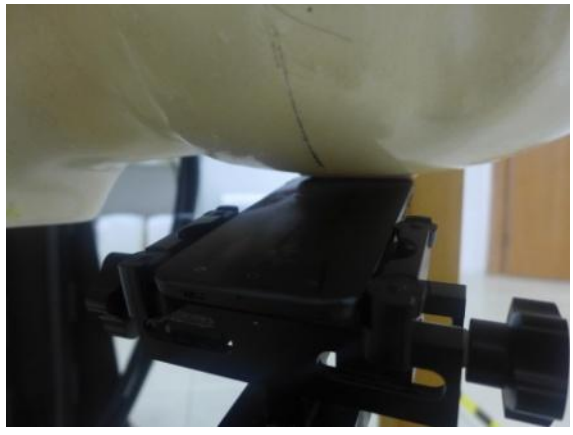
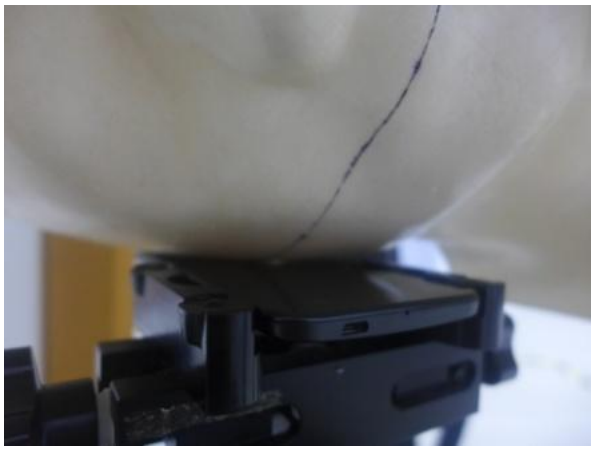
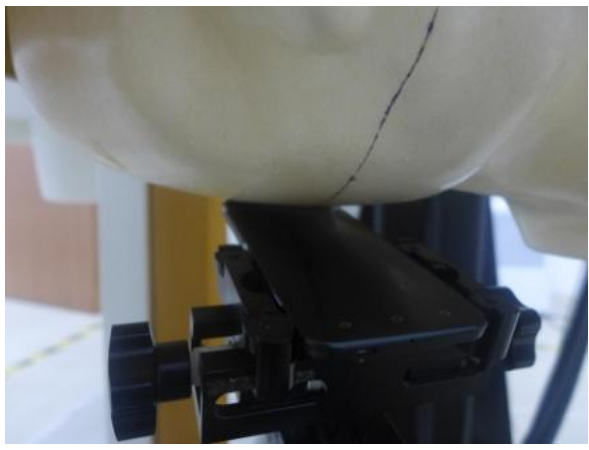
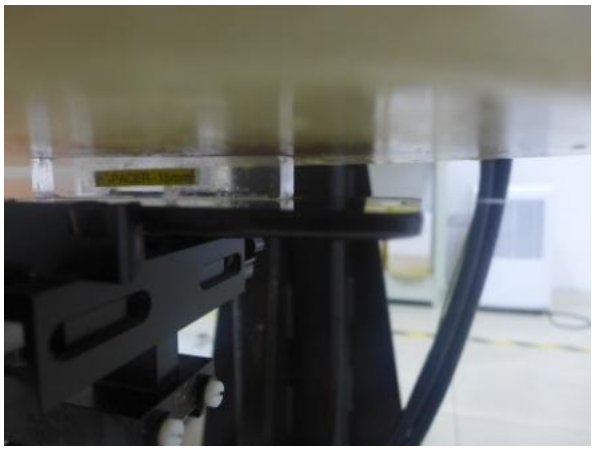
Photo 11: Left touch cheek	Photo 12: Left tilted 15 degree
	
Photo 13: Right touch cheek	Photo 14: Right tilted 15 degree
	
Photo 15: Front side 15mm	Photo 16: Back side 15mm
	



Photo 17: Right side 10mm

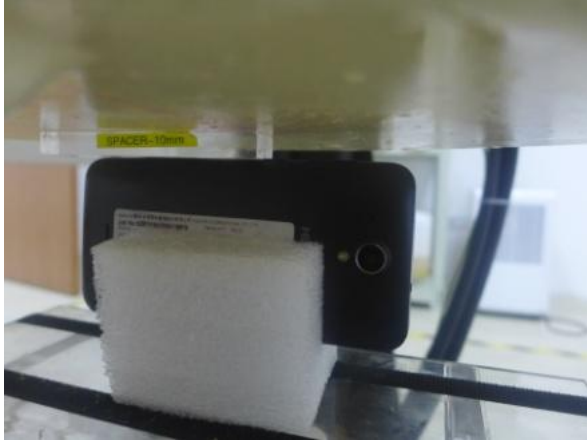


Photo 18: Bottom side 10mm



4. EUT Constructional Details

Photo 19: Front View	Photo 20: Back View
	
Photo 21: Accessory	N/A
	N/A