## UNCERTAINTY EVALUATION FOR HANDSET SAR TEST

UNCERTAINTY EVALUATION FOR HANDSET SAR TEST										
a	b	c	d	e=f(d,k)	f	g	h=	i=	k	
							c*f/e	c*g/e		
Uncertainty Component	Sec.	Tol	Prob.	Div.	Ci (1g)	Ci	1g Ui	10g Ui	Vi	
		(+-	Dist.			(10g)	(+-%)	(+-%)		
		%)								
Measurement System	1	1		1	1	1	_		ı	
Probe calibration	E.2.1	6.0	N	1	1	1	6.0	6.0	∞	
Axial Isotropy	E.2.2	3.0	R	√3	(1-Cp) <sup>1/2</sup>	(1-Cp) <sup>1/2</sup>	1.2	1.2	~	
Hemispherical Isotropy	E.2.2	5.4	R	√3	V <sub>Cp</sub>	V <sub>Cp</sub>	2.2	2.2	8	
Boundary effect	E.2.3	1.0	R	√3	1	1	0.6	0.6	8	
Linearity	E.2.4	3.9	R	V3	1	1	2.3	2.3		
System detection limits	E.2.5	1.0	R	V3	1	1	0.6	0.6		
Readout Electronics	E.2.6	0.5	N	1	1	1	0.5	0.5	∞	
Reponse Time	E.2.7	0.2	R	√3	1	1	0.1	0.1	~	
Integration Time	E.2.8	2.0	R	V3	1	1	1.2	1.2		
RF ambient Conditions	E.6.1	3.0	R	V3	1	1	1.7	1.7		
Probe positioner Mechanical	E.6.2	2.0	R	_	1	1	1.2	1.2		
Tolerance				₹3						
Probe positioning with respect to	E.6.3	1.0	R	√3	1	1	0.6	0.6	∞	
Phantom Shell				13						
Extrapolation, interpolation and	E.5.2	1.5	R	_, ا	1	1	0.9	0.9	∞	
integration Algoritms for Max.				V3						
SAR Evaluation										
Test sample Related	1	T		1	1	1	1			
Test sample positioning	E.4.2.1	1.5	N	1	1	1	1.5	1.5	N-1	
Device Holder Uncertainty	E.4.1.1	5.0	N	1	1	1	5.0	5.0		
Output power Variation - SAR	6.6.2	1.0	R		1	1	0.6	0.6	000	
drift measurement				¥3						
Phantom and Tissue Parameters										
Phantom Uncertainty (Shape and	E.3.1	4.0	R		1	1	2.3	2.3		
thickness tolerances)				√3					∞	
Liquid conductivity - deviation	E.3.2	0.4	R		0.64	0.43	0.2	0.1		
from target value				√3						
Liquid conductivity -	E.3.3	2.5	N	1	0.64	0.43	1.6	1.1	M	
measurement uncertainty										

Liquid permitivity - deviation	E.3.2	0.0	R		0.6	0.49	0.0	0.0	
from target value				₹3					
Liquid permitivity -	E.3.3	2.5	N	1	0.6	0.49	1.5	1.2	M
measurement uncertainty									
Combined Standard Uncertainty			RSS				9.3	9.2	
Expanded Uncertainty			k				18.2	18.0	
(95% Confidence interval)									

## UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK

a	b	С	d	e=f(d,k)	f	g	h=	i=	k
	_		<b>_</b>			~	c*f/e	c*g/e	
Uncertainty Component	Sec.	Tol	Prob.	Div.	Ci (1g)	Ci	1g Ui	10g Ui	Vi
		(+-	Dist.			(10g)	(+-%)	(+-%)	
7.5		%)							
Measurement System	T-0.1	1.0						1.0	<u> </u>
Probe calibration	E.2.1	6.0	N	1	1	1	6.0	6.0	
Axial Isotropy	E.2.2	3.0	R	√3	(1-Cp) <sup>1/2</sup>	(1-Cp) <sup>1/2</sup>	1.2	1.2	
Hemispherical Isotropy	E.2.2	5.4	R	√3	V <sub>Cp</sub>	VCp	2.2	2.2	
Boundary effect	E.2.3	1.0	R	√3	1	1	0.6	0.6	00
Linearity	E.2.4	3.9	R	V3	1	1	2.3	2.3	00
System detection limits	E.2.5	1.0	R	V3	1	1	0.6	0.6	
Readout Electronics	E.2.6	0.5	N	1	1	1	0.5	0.5	00
Reponse Time	E.2.7	0.2	R	V3	1	1	0.1	0.1	
Integration Time	E.2.8	2.0	R	V3	1	1	1.2	1.2	
RF ambient Conditions	E.6.1	3.0	R	V3	1	1	1.7	1.7	00
Probe positioner Mechanical	E.6.2	2.0	R		1	1	1.2	1.2	
Tolerance				¥3					
Probe positioning with respect to	E.6.3	1.0	R	√3	1	1	0.6	0.6	00
Phantom Shell				15					
Extrapolation, interpolation and	E.5.2	1.5	R	,	1	1	0.9	0.9	00
integration Algoritms for Max.				₹3					
SAR Evaluation									
Dipole		1		Т	Т		Т	1	
Dipole axis to liquid Distance	8,E.4.2	1.0	N	√3	1	1	0.6	0.6	N-1
Input power and SAR drift measurement	8,6.6.2	1.0	R	√3	1	1	0.6	0.6	
measurement				13					
Phantom and Tissue Parameters	5								

Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	4.0	R	√3	1	1	2.3	2.3	00
Liquid conductivity - deviation from target value	E.3.2	0.4	R	√3	0.64	0.43	0.2	0.1	00
Liquid conductivity - measurement uncertainty	E.3.3	2.5	N	1	0.64	0.43	1.6	1.1	M
Liquid permitivity - deviation from target value	E.3.2	0.0	R	√3	0.6	0.49	0.0	0.0	00
Liquid permitivity - measurement uncertainty	E.3.3	2.5	N	1	0.6	0.49	1.5	1.2	M
Combined Standard Uncertainty			RSS				7.7	7.6	
Expanded Uncertainty (95% Confidence interval)			k				15.1	14.9	