

Celltech Uncertainty Assessment - Multi-Band Evaluations using Grid Summation

	Error Description	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	Uncertainty Value ±% (1g)
Measurement System	Probe calibration	5.9	Normal	1	1	5.9
	Axial isotropy of the probe	4.7	Rectangular	1.732050808	0.7	1.899482386
	Spherical isotropy of the probe	9.6	Rectangular	1.732050808	0.7	3.879793809
	Spatial resolution	0	Rectangular	1.732050808	1	0
	Boundary effects	1	Rectangular	1.732050808	1	0.577350269
	Probe linearity	4.7	Rectangular	1.732050808	1	2.713546265
	Detection limit	1	Rectangular	1.732050808	1	0.577350269
	Readout electronics	0.3	Normal	1	1	0.3
	Response time	0.8	Rectangular	1.732050808	1	0.461880215
	Integration time	2.6	Rectangular	1.732050808	1	1.5011107
	RF ambient conditions	3	Rectangular	1.732050808	1	1.732050808
	Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.230940108
	Probe positioning	2.9	Rectangular	1.732050808	1	1.674315781
	Extrapolation & integration	1	Rectangular	1.732050808	1	0.577350269
Test Sample Related	Device positioning	2.9	Normal	1	1	2.9
	Device holder uncertainty	3.6	Normal	1	1	3.6
	Power drift	5	Rectangular	1.732050808	1	2.886751346
Phantom and Setup	Phantom uncertainty	4	Rectangular	1.732050808	1	2.309401077
	Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.847520861
	Liquid conductivity (measured)	2.5	Normal	1	0.64	1.6
	Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.732050808
	Liquid permittivity (measured)	2.5	Normal	1	0.6	1.5
Measurement System	Probe calibration	5.5	Normal	1	1	5.5
	Probe linearity	4.7	Rectangular	1.732050808	1	2.713546265
	Detection limit	1	Rectangular	1.732050808	1	0.577350269
	Response time	0.8	Rectangular	1.732050808	1	0.461880215
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	Spatial resolution	0	Rectangular	1.732050808	1	0
	Boundary effects	1	Rectangular	1.732050808	1	0.577350269
	Readout electronics	0.3	Normal	1	1	0.3
	Integration time	2.6	Rectangular	1.732050808	1	1.5011107
	Mech. constraints of robot	0.4	Rectangular	1.732050808	1	0.230940108
	Probe positioning	2.9	Rectangular	1.732050808	1	1.674315781
	Test Sample Related	Device positioning	2.9	Normal	1	1
Device holder uncertainty		3.6	Normal	1	1	3.6
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Phantom and Setup	Phantom uncertainty	4	Rectangular	1.732050808	1	2.309401077
	Liquid conductivity (target)	5	Rectangular	1.732050808	0.64	1.847520861
	Liquid conductivity (measured)	2.5	Normal	1	0.64	1.6
	Liquid permittivity (target)	5	Rectangular	1.732050808	0.6	1.732050808
	Liquid permittivity (measured)	2.5	Normal	1	0.6	1.5
Combined Standard Uncertainty					Sum	228.1216667
Expanded Uncertainty					k=1	15.10369712
					k=2	30.20739424

Notes:

1. All uncertainty components are accounted for twice with the exception of Extrapolation and Interpolation, which is excluded because it is only performed once in a multi-band evaluation.
2. The blue section is taken from the uncertainty of the 2450 MHz SAR evaluation.
3. The yellow section is taken from the uncertainty of the 835 MHz SAR evaluation.
4. The uncertainty of the 1900 MHz SAR evaluation is the same as the uncertainty of the 835 MHz SAR evaluation; therefore this uncertainty table can be applied to both the cellular and PCS multi-band evaluation combinations.