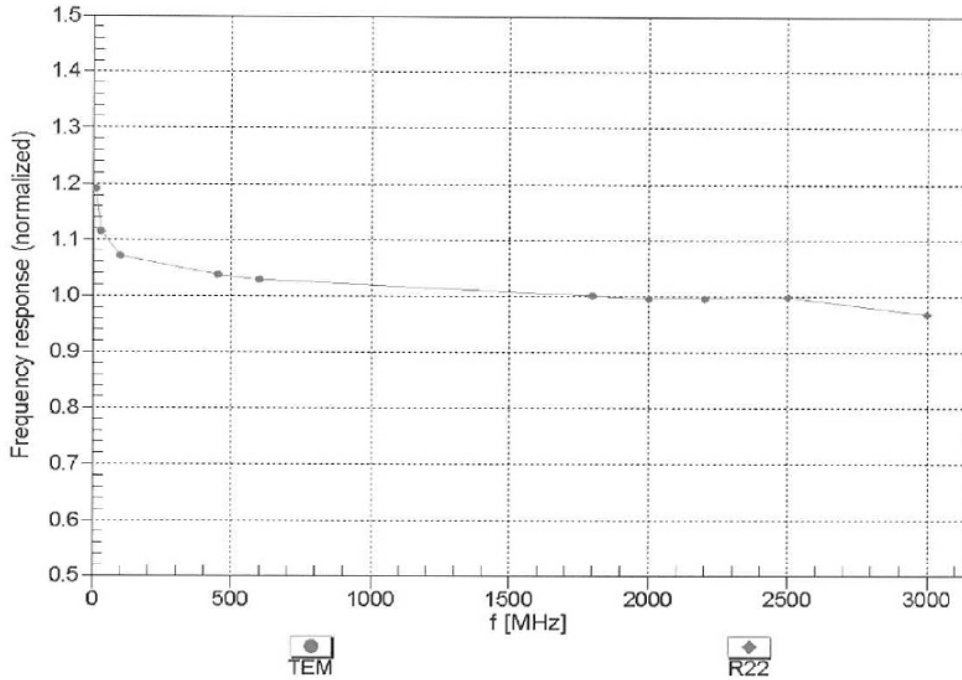
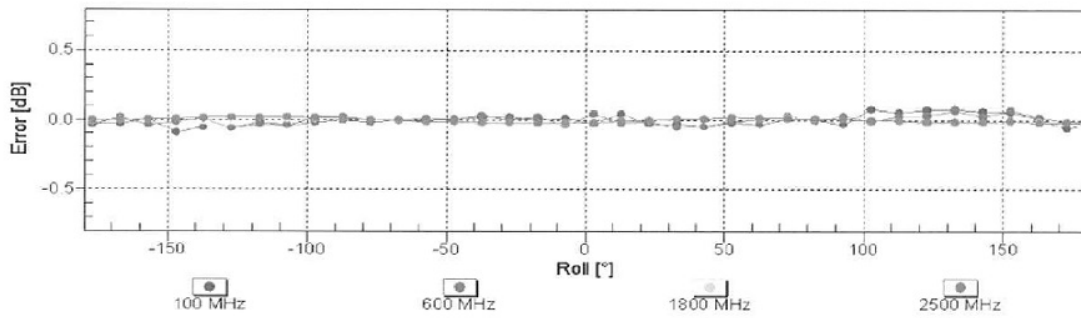
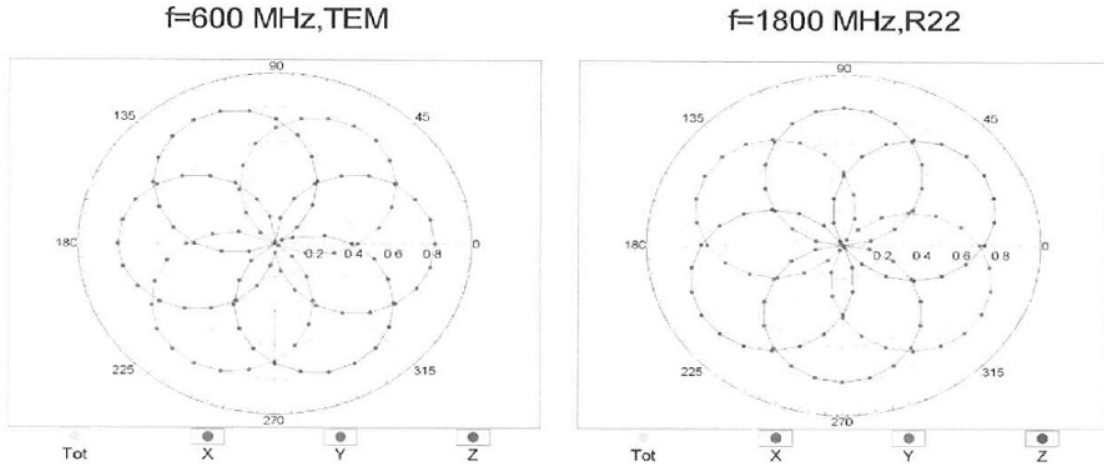


Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



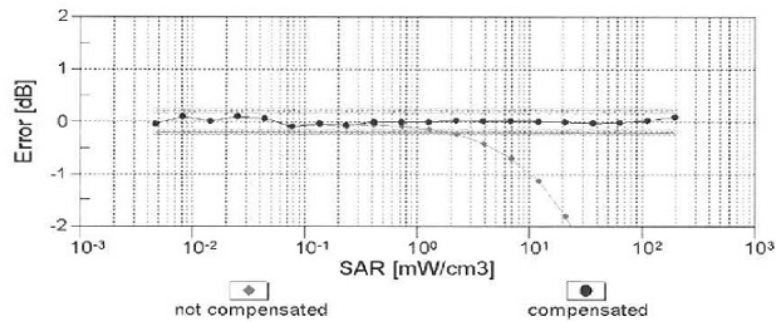
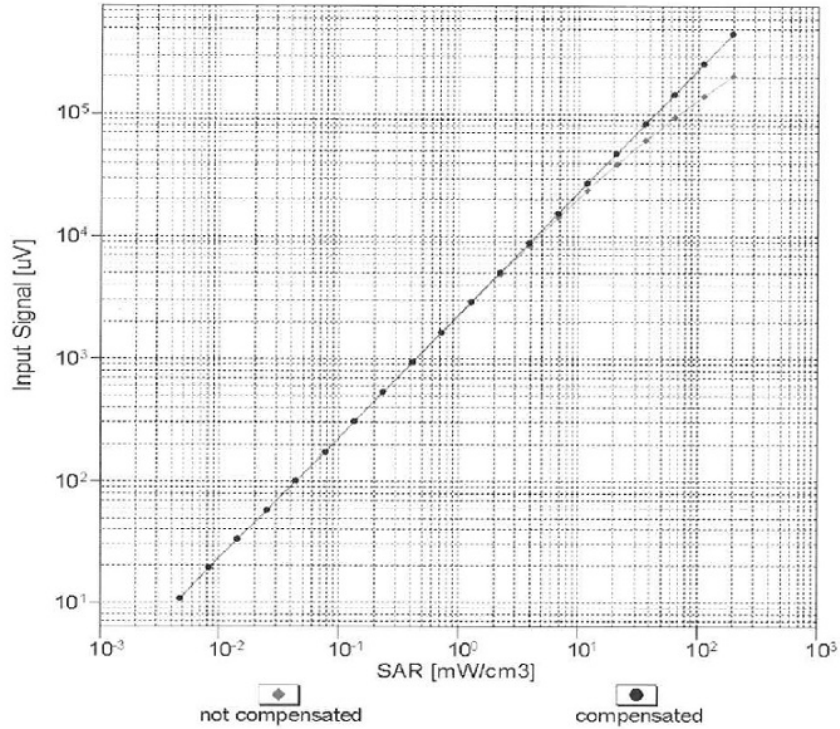
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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



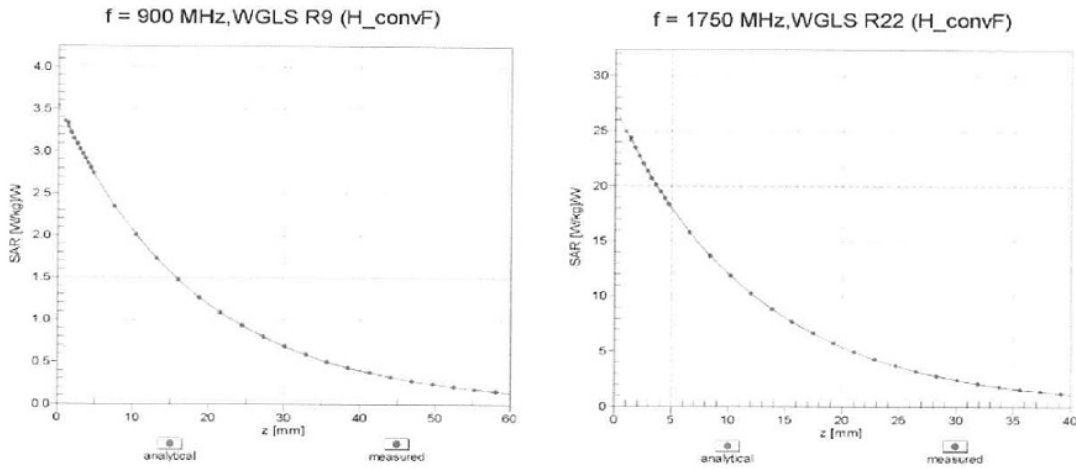
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range f(SAR_{head}) (TEM cell , f_{eval}= 1900 MHz)



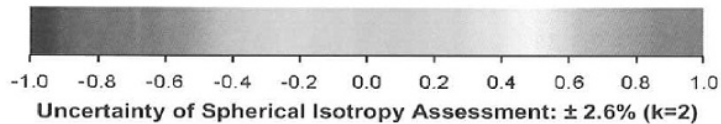
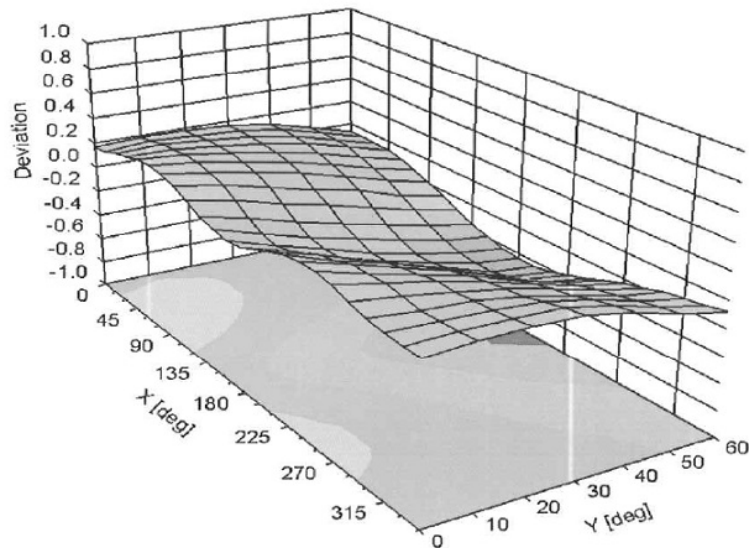
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ , ϑ), f = 900 MHz



EX3DV4- SN:3825

December 11, 2015

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3825

Other Probe Parameters

| | |
|---|------------|
| Sensor Arrangement | Triangular |
| Connector Angle (°) | -27.3 |
| 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 |

System check uncertainty

The uncertainty budget has been determined for the DASY5 measurement system according to the SPEAG documents and is given in the following Table.

Repeatability Budget for System Check

<0.3 – 3GHz range Body>

| Error Description | Uncertainty value ± % | Probability distribution | divisor | (ci) 1g | Standard (1g) | vi or v _{eff} |
|--|-----------------------|--------------------------|---------|---------|---------------|------------------------|
| Measurement System | | | | | | |
| Probe calibration | ± 1.8 | Normal | 1 | 1 | ± 1.8 | ∞ |
| Axial isotropy of the probe | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Spherical isotropy of the probe | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Boundary effects | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Probe linearity | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Detection limit | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Modulation response | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Readout electronics | ± 0.0 | Normal | 1 | 1 | ± 0.0 | ∞ |
| Response time | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Integration time | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| RF ambient Noise | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| RF ambient Reflections | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Probe Positioner | ± 0.4 | Rectangular | √3 | 1 | ± 0.2 | ∞ |
| Probe positioning | ± 2.9 | Rectangular | √3 | 1 | ± 1.7 | ∞ |
| Max.SAR Eval. | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Test Sample Related | | | | | | |
| Deviation of wxp.dipole | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Dipole Axis to Liquid Distance | ± 2.0 | Rectangular | √3 | 1 | ± 1.2 | ∞ |
| Input power and SAR drift meas. | ± 3.4 | Rectangular | √3 | 1 | ± 2.0 | ∞ |
| Phantom and Setup | | | | | | |
| Phantom uncertainty | ± 4.0 | Rectangular | √3 | 1 | ± 2.3 | ∞ |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | ± 1.9 | Rectangular | √3 | 1 | ± 1.1 | ∞ |
| Liquid conductivity (meas.) | ± 5.0 | Normal | 1 | 0.78 | + 3.9 | ∞ |
| Liquid permittivity (meas.) | ± 5.0 | Normal | 1 | 0.26 | - 1.3 | ∞ |
| Liquid conductivity - temp.unc (below 2deg.C.) | ± 1.7 | Rectangular | √3 | 0.78 | ± 0.8 | ∞ |
| Liquid permittivity - temp.unc (below 2deg.C.) | ± 0.3 | Rectangular | √3 | 0.23 | ± 0.0 | ∞ |
| Combined Standard Uncertainty | | | | | ± 5.945 | |
| Expanded Uncertainty (k=2) | | | | | ± 11.9 | |

UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone: +81 596 24 8999

Facsimile: +81 596 24 8124

<3 – 6GHz range Body>

| Error Description | Uncertainty value ± % | Probability distribution | divisor | (ci) lg | Standard (1g) | vi or veff |
|--|-----------------------|--------------------------|---------|---------|---------------|--------------|
| Measurement System | | | | | | |
| Probe calibration | ± 1.8 | Normal | 1 | 1 | ± 1.8 | ∞ |
| Axial isotropy of the probe | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Spherical isotropy of the probe | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Boundary effects | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Probe linearity | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Detection limit | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Modulation response | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Readout electronics | ± 0.0 | Normal | 1 | 1 | ± 0.0 | ∞ |
| Response time | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Integration time | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| RF ambient Noise | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| RF ambient Reflections | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Probe Positioner | ± 0.8 | Rectangular | √3 | 1 | ± 0.5 | ∞ |
| Probe positioning | ± 6.7 | Rectangular | √3 | 1 | ± 3.9 | ∞ |
| Max.SAR Eval. | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Test Sample Related | | | | | | |
| Deviation of wxp.dipole | ± 0.0 | Rectangular | √3 | 1 | ± 0.0 | ∞ |
| Dipole Axis to Liquid Distance | ± 2.0 | Rectangular | √3 | 1 | ± 1.2 | ∞ |
| Input power and SAR drift meas. | ± 3.4 | Rectangular | √3 | 1 | ± 2.0 | ∞ |
| Phantom and Setup | | | | | | |
| Phantom uncertainty | ± 4.0 | Rectangular | √3 | 1 | ± 2.3 | ∞ |
| Algorithm for correcting SAR for deviations in permittivity and conductivity | ± 1.9 | Rectangular | √3 | 1 | ± 1.1 | ∞ |
| Liquid conductivity (meas.) | ± 5.0 | Normal | 1 | 0.78 | + 3.9 | ∞ |
| Liquid permittivity (meas.) | ± 5.0 | Normal | 1 | 0.26 | - 1.3 | ∞ |
| Liquid conductivity - temp.unc (below 2deg.C.) | ± 1.7 | Rectangular | √3 | 0.78 | ± 0.8 | ∞ |
| Liquid permittivity - temp.unc (below 2deg.C.) | ± 0.3 | Rectangular | √3 | 0.23 | ± 0.0 | ∞ |
| Combined Standard Uncertainty | | | | | ± | 6.906 |
| Expanded Uncertainty (k=2) | | | | | ± | 13.8 |