

## APPENDIX D: SAR TISSUE SPECIFICATIONS

### Measurement Procedure for Tissue verification:

- 1) The network analyzer and probe system was configured and calibrated.
- 2) The probe was immersed in the tissue. The tissue was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
- 3) The complex admittance with respect to the probe aperture was measured
- 4) The complex relative permittivity  $\epsilon'$  can be calculated from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\epsilon_r\epsilon_0}{[\ln(b/a)]^2} \int_a^b \int_a^b \int_0^\pi \cos\phi' \frac{\exp[-j\omega r(\mu_0\epsilon_r'\epsilon_0)^{1/2}]}{r} d\phi' d\rho' d\rho$$

where  $Y$  is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively,  $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$ ,  $\omega$  is the angular frequency, and  $j = \sqrt{-1}$ .

### 3 Composition / Information on ingredients

#### 3.2 Mixtures

**Description:** Aqueous solution with surfactants and inhibitors

**Declarable, or hazardous components:**

|                                                                        |                                                                                                                       |           |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------|
| CAS: 107-21-1<br>EINECS: 203-473-3<br>Reg.nr.: 01-2119456816-28-0000   | <b>Ethanedial</b><br>STOT RE 2, H373;<br>Acute Tox. 4, H302                                                           | >1.0-4.9% |
| CAS: 68608-26-4<br>EINECS: 271-781-5<br>Reg.nr.: 01-2119527859-22-0000 | <b>Sodium petroleum sulfonate</b><br>Eye Irrit. 2, H319                                                               | < 2.9%    |
| CAS: 107-41-5<br>EINECS: 203-489-0<br>Reg.nr.: 01-2119539582-35-0000   | <b>Hexylene Glycol / 2-Methyl-pentane-2,4-diol</b><br>Skin Irrit. 2, H315; Eye Irrit. 2, H319                         | < 2.9%    |
| CAS: 68920-66-1<br>NLP: 500-236-9<br>Reg.nr.: 01-2119489407-26-0000    | <b>Alkoxyated alcohol, &gt; C<sub>16</sub></b><br>Aquatic Chronic 2, H411;<br>Skin Irrit. 2, H315; Eye Irrit. 2, H319 | < 2.0%    |

**Additional information:**

For the wording of the listed risk phrases refer to section 16.

Not mentioned CAS-, EINECS- or registration numbers are to be regarded as Proprietary/Confidential.

The specific chemical identity and/or exact percentage concentration of proprietary components is withheld as a trade secret.

**Figure D-1**

Note: Liquid recipes are proprietary SPEAG. Since the composition is approximate to the actual liquids utilized, the manufacturer tissue-equivalent liquid data sheets are provided below.

|                               |                         |                                   |
|-------------------------------|-------------------------|-----------------------------------|
| FCC ID: 2A6WXWCSKD12A         | RF Exposure Test Report | Approved by:<br>Technical Manager |
| DUT Type:<br>Wireless Charger |                         | APPENDIX D<br>Page 1 of 2         |

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### Measurement Certificate / Material Test

|              |                                             |
|--------------|---------------------------------------------|
| Item Name    | Head Tissue Simulating Liquid (HBBL4-250V3) |
| Product No.  | SL AAH 005 AD (Batch: 250129-1)             |
| Manufacturer | SPEAG                                       |

### Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

### Setup Validation

Validation results were within  $\pm 2.5\%$  towards the target values of Methanol.

### Target Parameters

Target parameters as defined in the IEEE 1528 and IEC 62209 compliance standards.

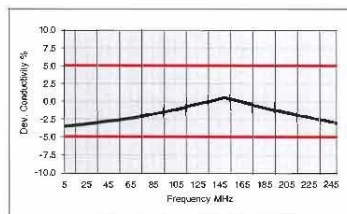
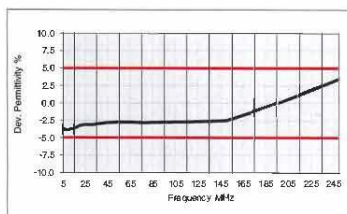
### Test Condition

|                 |                                                            |
|-----------------|------------------------------------------------------------|
| Ambient         | Environment temperatur ( $22 \pm 3$ )°C and humidity < 70% |
| TSL Temperature | 22°C                                                       |
| Test Date       | 5-Feb-25                                                   |
| Operator        | CL                                                         |

### Additional Information

|                   |                         |
|-------------------|-------------------------|
| TSL Density       | 1.042 g/cm <sup>3</sup> |
| TSL Heat-capacity | 3.574 kJ/(kg·K)         |

| f [MHz] | Measured    |              |                     | Target      |              |                     | Diff. to Target [%] |                    |
|---------|-------------|--------------|---------------------|-------------|--------------|---------------------|---------------------|--------------------|
|         | $\epsilon'$ | $\epsilon''$ | $\sigma/\text{S/m}$ | $\epsilon'$ | $\epsilon''$ | $\sigma/\text{S/m}$ | $\Delta\epsilon'$   | $\Delta\epsilon''$ |
| 5       | 53.4        | 2602.47      | 0.72                | 55.5        | 0.75         |                     | -3.7                | -4.0               |
| 10      | 53.3        | 1301.69      | 0.72                | 55.5        | 0.75         |                     | -3.9                | -5.0               |
| 15      | 53.3        | 868.51       | 0.72                | 55.3        | 0.75         |                     | -3.7                | -4.0               |
| 20      | 53.3        | 651.94       | 0.73                | 55.1        | 0.75         |                     | -3.3                | -2.7               |
| 25      | 53.3        | 522.09       | 0.73                | 55.0        | 0.75         |                     | -3.1                | -2.7               |
| 30      | 53.3        | 435.45       | 0.73                | 55.0        | 0.75         |                     | -3.1                | -2.7               |
| 35      | 53.2        | 379.64       | 0.73                | 54.9        | 0.75         |                     | -3.1                | -2.7               |
| 40      | 53.2        | 327.33       | 0.73                | 54.8        | 0.75         |                     | -2.9                | -2.7               |
| 45      | 53.1        | 291.35       | 0.73                | 54.7        | 0.75         |                     | -2.9                | -2.7               |
| 50      | 53.0        | 262.60       | 0.73                | 54.6        | 0.75         |                     | -2.8                | -2.7               |
| 55      | 52.9        | 236.10       | 0.73                | 54.4        | 0.75         |                     | -2.8                | -2.8               |
| 60      | 52.8        | 219.54       | 0.73                | 54.3        | 0.75         |                     | -2.8                | -2.9               |
| 65      | 52.7        | 203.02       | 0.73                | 54.2        | 0.75         |                     | -2.8                | -2.9               |
| 70      | 52.6        | 186.87       | 0.74                | 54.1        | 0.75         |                     | -2.8                | -1.6               |
| 75      | 52.5        | 176.62       | 0.74                | 54.0        | 0.75         |                     | -2.8                | -1.7               |
| 80      | 52.4        | 165.91       | 0.74                | 53.9        | 0.75         |                     | -2.7                | -1.7               |
| 85      | 52.3        | 156.47       | 0.74                | 53.8        | 0.75         |                     | -2.7                | -1.8               |
| 90      | 52.2        | 148.09       | 0.74                | 53.7        | 0.75         |                     | -2.7                | -1.9               |
| 95      | 52.1        | 140.60       | 0.74                | 53.5        | 0.75         |                     | -2.7                | -1.9               |
| 100     | 52.0        | 133.87       | 0.74                | 53.4        | 0.75         |                     | -2.7                | -2.0               |
| 105     | 51.9        | 127.78       | 0.75                | 53.3        | 0.76         |                     | -2.6                | -0.7               |
| 110     | 51.8        | 122.26       | 0.75                | 53.2        | 0.76         |                     | -2.6                | -0.7               |
| 115     | 51.7        | 117.22       | 0.75                | 53.1        | 0.76         |                     | -2.6                | -0.8               |
| 120     | 51.6        | 112.61       | 0.75                | 53.0        | 0.76         |                     | -2.6                | -0.9               |
| 125     | 51.5        | 108.37       | 0.75                | 52.9        | 0.76         |                     | -2.6                | -0.9               |
| 130     | 51.4        | 104.46       | 0.76                | 52.8        | 0.76         |                     | -2.6                | 0.4                |
| 135     | 51.3        | 100.85       | 0.76                | 52.6        | 0.76         |                     | -2.5                | 0.3                |
| 140     | 51.2        | 97.49        | 0.76                | 52.5        | 0.76         |                     | -2.5                | 0.2                |
| 145     | 51.1        | 94.37        | 0.76                | 52.4        | 0.76         |                     | -2.5                | 0.2                |
| 150     | 51.0        | 91.46        | 0.76                | 52.3        | 0.76         |                     | -2.5                | 0.1                |
| 155     | 50.9        | 88.74        | 0.77                | 52.1        | 0.76         |                     | -2.2                | 1.0                |
| 160     | 50.8        | 86.20        | 0.77                | 51.8        | 0.77         |                     | -2.0                | 0.5                |
| 165     | 50.7        | 83.81        | 0.77                | 51.6        | 0.77         |                     | -1.7                | 0.0                |
| 170     | 50.6        | 81.56        | 0.77                | 51.4        | 0.77         |                     | -1.5                | -0.5               |
| 175     | 50.5        | 79.45        | 0.77                | 51.1        | 0.78         |                     | -1.2                | -0.9               |
| 180     | 50.4        | 77.45        | 0.78                | 50.9        | 0.78         |                     | -1.0                | -0.1               |
| 185     | 50.3        | 75.56        | 0.78                | 50.7        | 0.78         |                     | -0.7                | -0.6               |
| 190     | 50.3        | 73.78        | 0.78                | 50.4        | 0.79         |                     | -0.3                | -1.0               |
| 195     | 50.2        | 72.09        | 0.78                | 50.2        | 0.79         |                     | 0.0                 | -1.5               |
| 200     | 50.1        | 70.48        | 0.78                | 50.0        | 0.80         |                     | 0.3                 | -2.0               |
| 205     | 50.0        | 68.95        | 0.79                | 49.7        | 0.80         |                     | 0.5                 | -1.2               |
| 210     | 49.9        | 67.51        | 0.79                | 49.5        | 0.80         |                     | 0.8                 | -1.6               |
| 215     | 49.8        | 66.13        | 0.79                | 49.3        | 0.81         |                     | 1.1                 | -2.1               |
| 220     | 49.8        | 64.81        | 0.79                | 49.0        | 0.81         |                     | 1.6                 | -2.5               |
| 225     | 49.7        | 63.56        | 0.80                | 48.8        | 0.81         |                     | 1.8                 | -1.7               |
| 230     | 49.6        | 62.35        | 0.80                | 48.6        | 0.82         |                     | 2.1                 | -2.1               |
| 235     | 49.5        | 61.21        | 0.80                | 48.3        | 0.82         |                     | 2.4                 | -2.6               |
| 240     | 49.4        | 60.10        | 0.80                | 48.1        | 0.82         |                     | 2.7                 | -3.0               |
| 245     | 49.4        | 59.05        | 0.80                | 47.9        | 0.83         |                     | 3.2                 | -3.4               |
| 250     | 49.3        | 58.04        | 0.81                | 47.6        | 0.83         |                     | 3.5                 | -2.7               |



**Figure D-2**  
**5– 250 MHz Head Tissue Equivalent Matter**

|                               |                         |                                   |
|-------------------------------|-------------------------|-----------------------------------|
| FCC ID: 2A6WXWCSKD12A         | RF Exposure Test Report | Approved by:<br>Technical Manager |
| DUT Type:<br>Wireless Charger |                         | APPENDIX D<br>Page 2 of 2         |