

## APPENDIX D: SAR TISSUE SPECIFICATIONS

|                                   |                           |                                          |
|-----------------------------------|---------------------------|------------------------------------------|
| <b>FCC ID:</b> BCGA3459           | <b>RF EXPOSURE REPORT</b> | <b>Approved by:</b><br>Technical Manager |
| <b>DUT Type:</b><br>Tablet Device |                           | APPENDIX D:<br>Page 1 of 4               |

## 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>Ethanediol</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.

|                                   |                           |                                          |
|-----------------------------------|---------------------------|------------------------------------------|
| <b>FCC ID:</b> BCGA3459           | <b>RF EXPOSURE REPORT</b> | <b>Approved by:</b><br>Technical Manager |
| <b>DUT Type:</b><br>Tablet Device |                           | <b>APPENDIX D:</b><br>Page 2 of 4        |

### Measurement Certificate / Material Test

|              |                                                 |
|--------------|-------------------------------------------------|
| Item Name    | Head Tissue Simulating Liquid (HBBL600-10000V6) |
| Product No.  | SL AAH U16 CA (Batch: 250317-1)                 |
| Manufacturer | SPEAG                                           |

#### Measurement Method

TSL dielectric parameters measured using calibrated DAK probe.

#### Target Parameters

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

#### Test Condition

Ambient Condition 22°C ; 30% humidity

TSL Temperature 22°C

Test Date 20-Mar-25

Operator CL

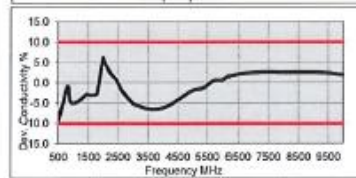
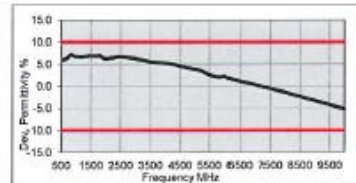
#### Additional Information

TSL Density

TSL Heat-capacity

#### Results

| Measured |             |              |          | Target |          | DW to Target [%]  |                    |
|----------|-------------|--------------|----------|--------|----------|-------------------|--------------------|
| f [MHz]  | $\epsilon'$ | $\epsilon''$ | $\sigma$ | nps    | $\sigma$ | $\Delta\epsilon'$ | $\Delta\epsilon''$ |
| 600      | 45.3        | 24.6         | 0.82     | 42.7   | 0.88     | 6.0               | -7.0               |
| 750      | 44.7        | 20.9         | 0.87     | 41.9   | 0.89     | 6.6               | -2.6               |
| 900      | 44.6        | 20.0         | 0.89     | 41.7   | 0.90     | 7.0               | -0.8               |
| 925      | 44.5        | 19.8         | 0.90     | 41.6   | 0.91     | 7.0               | -0.7               |
| 935      | 44.5        | 19.4         | 0.91     | 41.5   | 0.91     | 7.1               | -0.2               |
| 950      | 44.4        | 19.2         | 0.91     | 41.5   | 0.92     | 7.0               | -0.7               |
| 990      | 44.3        | 18.5         | 0.93     | 41.5   | 0.97     | 6.7               | -4.1               |
| 1400     | 43.4        | 14.7         | 1.14     | 40.6   | 1.18     | 6.9               | -3.3               |
| 1450     | 43.3        | 14.5         | 1.17     | 40.5   | 1.20     | 6.9               | -2.5               |
| 1000     | 43.1        | 14.0         | 1.25     | 40.3   | 1.28     | 6.9               | -2.7               |
| 1035     | 43.1        | 13.9         | 1.26     | 40.3   | 1.30     | 7.0               | -3.0               |
| 1040     | 43.1        | 13.9         | 1.27     | 40.3   | 1.31     | 7.1               | -2.8               |
| 1050     | 43.0        | 13.9         | 1.27     | 40.2   | 1.31     | 6.9               | -3.3               |
| 1700     | 42.9        | 13.6         | 1.30     | 40.2   | 1.34     | 6.8               | -3.1               |
| 1750     | 42.8        | 13.7         | 1.33     | 40.1   | 1.37     | 6.8               | -3.0               |
| 1900     | 42.8        | 13.6         | 1.36     | 40.0   | 1.40     | 7.0               | -2.9               |
| 1910     | 42.8        | 13.6         | 1.37     | 40.0   | 1.40     | 7.0               | -2.1               |
| 1925     | 42.8        | 13.6         | 1.38     | 40.0   | 1.40     | 7.0               | -1.4               |
| 1950     | 42.7        | 13.5         | 1.39     | 40.0   | 1.40     | 6.8               | -0.7               |
| 1990     | 42.6        | 13.4         | 1.42     | 40.0   | 1.40     | 6.5               | 1.4                |
| 1990     | 42.5        | 13.4         | 1.45     | 40.0   | 1.40     | 6.3               | 3.6                |
| 2000     | 42.5        | 13.4         | 1.49     | 40.0   | 1.40     | 6.3               | 6.4                |
| 2050     | 42.4        | 13.3         | 1.52     | 39.9   | 1.44     | 6.2               | 5.2                |
| 2100     | 42.3        | 13.3         | 1.55     | 39.8   | 1.49     | 6.2               | 4.1                |
| 2150     | 42.3        | 13.3         | 1.59     | 39.7   | 1.53     | 6.5               | 3.7                |
| 2200     | 42.2        | 13.3         | 1.62     | 39.6   | 1.58     | 6.4               | 2.7                |
| 2250     | 42.1        | 13.3         | 1.66     | 39.6   | 1.62     | 6.4               | 2.3                |
| 2300     | 42.0        | 13.3         | 1.70     | 39.5   | 1.67     | 6.4               | 2.0                |
| 2350     | 42.0        | 13.3         | 1.74     | 39.4   | 1.71     | 6.7               | 1.7                |
| 2400     | 41.9        | 13.3         | 1.77     | 39.3   | 1.76     | 6.6               | 0.8                |
| 2450     | 41.8        | 13.3         | 1.81     | 39.2   | 1.80     | 6.6               | 0.6                |
| 2500     | 41.8        | 13.3         | 1.85     | 39.1   | 1.85     | 6.8               | -0.2               |
| 2550     | 41.7        | 13.3         | 1.89     | 39.1   | 1.91     | 6.7               | -1.0               |
| 2600     | 41.6        | 13.4         | 1.93     | 39.0   | 1.96     | 6.6               | -1.7               |



|       |      |      |       |      |       |      |      |
|-------|------|------|-------|------|-------|------|------|
| 3500  | 40.0 | 14.0 | 2.72  | 37.9 | 2.91  | 5.5  | -6.5 |
| 3750  | 39.7 | 14.1 | 2.91  | 37.7 | 3.12  | 5.4  | -6.6 |
| 4000  | 39.2 | 14.3 | 3.12  | 37.0 | 3.35  | 5.5  | -1.6 |
| 4250  | 38.7 | 14.5 | 3.35  | 36.0 | 3.60  | 4.71 | -3.3 |
| 4500  | 38.1 | 14.7 | 3.60  | 35.0 | 3.86  | 4.76 | -3.2 |
| 4750  | 37.5 | 14.9 | 3.86  | 34.0 | 4.13  | 4.86 | -2.6 |
| 5000  | 36.8 | 15.1 | 4.13  | 33.0 | 4.41  | 4.97 | -2.3 |
| 5250  | 36.2 | 15.3 | 4.41  | 32.0 | 4.70  | 5.07 | -2.1 |
| 5500  | 35.6 | 15.5 | 4.70  | 31.0 | 5.00  | 5.17 | -2.0 |
| 5750  | 35.0 | 15.7 | 5.00  | 30.0 | 5.30  | 5.27 | -2.0 |
| 6000  | 34.4 | 15.9 | 5.30  | 29.0 | 5.61  | 5.37 | -2.0 |
| 6250  | 33.8 | 16.1 | 5.61  | 28.0 | 5.92  | 5.47 | -2.0 |
| 6500  | 33.2 | 16.3 | 5.92  | 27.0 | 6.23  | 5.57 | -2.0 |
| 6750  | 32.6 | 16.5 | 6.23  | 26.0 | 6.54  | 5.67 | -2.0 |
| 7000  | 32.0 | 16.7 | 6.54  | 25.0 | 6.85  | 5.77 | -2.0 |
| 7250  | 31.4 | 16.9 | 6.85  | 24.0 | 7.16  | 5.87 | -2.0 |
| 7500  | 30.8 | 17.1 | 7.16  | 23.0 | 7.47  | 5.97 | -2.0 |
| 7750  | 30.2 | 17.3 | 7.47  | 22.0 | 7.78  | 6.07 | -2.0 |
| 8000  | 29.6 | 17.5 | 7.78  | 21.0 | 8.09  | 6.17 | -2.0 |
| 8250  | 29.0 | 17.7 | 8.09  | 20.0 | 8.40  | 6.27 | -2.0 |
| 8500  | 28.4 | 17.9 | 8.40  | 19.0 | 8.71  | 6.37 | -2.0 |
| 8750  | 27.8 | 18.1 | 8.71  | 18.0 | 9.02  | 6.47 | -2.0 |
| 9000  | 27.2 | 18.3 | 9.02  | 17.0 | 9.33  | 6.57 | -2.0 |
| 9250  | 26.6 | 18.5 | 9.33  | 16.0 | 9.64  | 6.67 | -2.0 |
| 9500  | 26.0 | 18.7 | 9.64  | 15.0 | 9.95  | 6.77 | -2.0 |
| 9750  | 25.4 | 18.9 | 9.95  | 14.0 | 10.26 | 6.87 | -2.0 |
| 10000 | 24.8 | 19.1 | 10.26 | 13.0 | 10.57 | 6.97 | -2.0 |

Figure D-2  
600 – 10000 MHz Head Tissue Equivalent Matter

|                            |                    |                                   |
|----------------------------|--------------------|-----------------------------------|
| FCC ID: BCGA3459           | RF EXPOSURE REPORT | Approved by:<br>Technical Manager |
| DUT Type:<br>Tablet Device |                    | APPENDIX D:<br>Page 3 of 4        |

## 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 $22 \pm 3^\circ\text{C}$ and humidity $< 70\%$ |
| TSL Temperature | $22^\circ\text{C}$                                                    |
| 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 [%]         |                                |
|---------|-----------|------------|--------------------------|------------------------|----------------------|----------------------------|--------------------------------|
|         | $\sigma'$ | $\sigma''$ | $\epsilon_{\text{imag}}$ | $\epsilon_{\text{ps}}$ | $\sigma_{\text{ps}}$ | $\Delta\sigma_{\text{ps}}$ | $\Delta\epsilon_{\text{imag}}$ |
| 5       | 53.4      | 2002.47    | 0.72                     | 55.5                   | 0.75                 | -3.7                       | -4.6                           |
| 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                       | -4.6                           |
| 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      | 53.0      | 435.46     | 0.73                     | 55.0                   | 0.75                 | -3.1                       | -2.7                           |
| 35      | 53.2      | 373.64     | 0.73                     | 54.9                   | 0.75                 | -3.1                       | -2.7                           |
| 40      | 53.2      | 327.39     | 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      | 210.54     | 0.73                     | 54.3                   | 0.75                 | -2.8                       | -2.9                           |
| 65      | 52.7      | 189.02     | 0.73                     | 54.2                   | 0.75                 | -2.8                       | -2.9                           |
| 70      | 52.6      | 168.87     | 0.74                     | 54.1                   | 0.75                 | -2.8                       | -1.6                           |
| 75      | 52.5      | 149.62     | 0.74                     | 54.0                   | 0.75                 | -2.8                       | -1.3                           |
| 80      | 52.4      | 131.91     | 0.74                     | 53.9                   | 0.75                 | -2.7                       | -1.7                           |
| 85      | 52.3      | 115.47     | 0.74                     | 53.8                   | 0.75                 | -2.7                       | -1.8                           |
| 90      | 52.2      | 100.09     | 0.74                     | 53.7                   | 0.75                 | -2.7                       | -1.9                           |
| 95      | 52.1      | 86.60      | 0.74                     | 53.5                   | 0.75                 | -2.7                       | -1.9                           |
| 100     | 52.0      | 74.87      | 0.74                     | 53.4                   | 0.75                 | -2.7                       | -2.0                           |
| 105     | 51.9      | 64.78      | 0.75                     | 53.3                   | 0.76                 | -2.6                       | -3.7                           |
| 110     | 51.8      | 56.29      | 0.75                     | 53.2                   | 0.76                 | -2.6                       | -3.7                           |
| 115     | 51.7      | 49.22      | 0.75                     | 53.1                   | 0.76                 | -2.6                       | -3.8                           |
| 120     | 51.6      | 43.41      | 0.76                     | 53.0                   | 0.76                 | -2.6                       | -4.9                           |
| 125     | 51.5      | 38.77      | 0.76                     | 52.9                   | 0.76                 | -2.6                       | -5.9                           |
| 130     | 51.4      | 35.46      | 0.76                     | 52.8                   | 0.76                 | -2.6                       | -6.4                           |
| 135     | 51.3      | 33.45      | 0.76                     | 52.6                   | 0.76                 | -2.5                       | -6.3                           |
| 140     | 51.2      | 32.49      | 0.76                     | 52.5                   | 0.76                 | -2.5                       | -6.2                           |
| 145     | 51.1      | 32.47      | 0.76                     | 52.4                   | 0.76                 | -2.5                       | -6.2                           |
| 150     | 51.0      | 33.46      | 0.76                     | 52.3                   | 0.76                 | -2.5                       | -6.1                           |
| 155     | 50.9      | 34.74      | 0.77                     | 52.1                   | 0.76                 | -2.5                       | -1.6                           |
| 160     | 50.8      | 36.50      | 0.77                     | 51.8                   | 0.77                 | -2.0                       | -0.5                           |
| 165     | 50.7      | 38.81      | 0.77                     | 51.6                   | 0.77                 | -1.7                       | -0.6                           |
| 170     | 50.6      | 41.56      | 0.77                     | 51.4                   | 0.77                 | -1.5                       | -0.5                           |
| 175     | 50.5      | 44.45      | 0.77                     | 51.1                   | 0.78                 | -1.2                       | -0.9                           |
| 180     | 50.4      | 47.45      | 0.78                     | 50.9                   | 0.78                 | -1.0                       | -0.1                           |
| 185     | 50.3      | 50.56      | 0.78                     | 50.7                   | 0.78                 | -0.7                       | -0.6                           |
| 190     | 50.3      | 53.79      | 0.78                     | 50.4                   | 0.79                 | -0.3                       | -1.0                           |
| 195     | 50.2      | 57.09      | 0.78                     | 50.2                   | 0.79                 | 0.6                        | -1.5                           |
| 200     | 50.1      | 60.46      | 0.78                     | 50.0                   | 0.80                 | 0.3                        | -2.0                           |
| 205     | 49.9      | 63.96      | 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      | 71.13      | 0.79                     | 49.3                   | 0.81                 | 1.1                        | -2.1                           |
| 220     | 49.8      | 74.81      | 0.79                     | 49.0                   | 0.81                 | 1.6                        | -2.5                           |
| 225     | 49.7      | 78.56      | 0.80                     | 48.8                   | 0.81                 | 1.8                        | -1.7                           |
| 230     | 49.6      | 82.35      | 0.80                     | 48.6                   | 0.82                 | 2.1                        | -2.1                           |
| 235     | 49.5      | 86.12      | 0.80                     | 48.3                   | 0.82                 | 2.4                        | -2.6                           |
| 240     | 49.4      | 89.90      | 0.80                     | 48.1                   | 0.82                 | 2.7                        | -3.0                           |
| 245     | 49.4      | 93.68      | 0.80                     | 47.9                   | 0.83                 | 3.0                        | -3.4                           |
| 250     | 49.3      | 97.44      | 0.81                     | 47.6                   | 0.83                 | 3.5                        | -3.7                           |

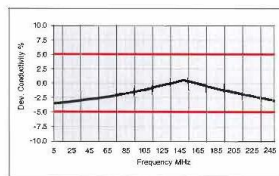
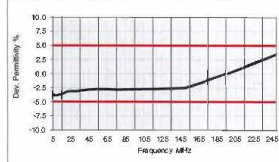


Figure D-3  
5– 250 MHz Head Tissue Equivalent Matter

|                            |                    |                                   |
|----------------------------|--------------------|-----------------------------------|
| FCC ID: BCGA3459           | RF EXPOSURE REPORT | Approved by:<br>Technical Manager |
| DUT Type:<br>Tablet Device |                    | APPENDIX D:<br>Page 4 of 4        |