

APPENDIX C: SAR TISSUE SPECIFICATIONS

FCC ID: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX C: Page 1 of 3

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 ϵ' 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, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω 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 EINECS: 203-473-3 Reg.nr.: 01-2119456816-28-0000	Ethanediol STOT RE 2, H373; Acute Tox. 4, H302	>1.0-4.9%
CAS: 68608-26-4 EINECS: 271-781-5 Reg.nr.: 01-2119527859-22-0000	Sodium petroleum sulfonate Eye Irrit. 2, H319	< 2.9%
CAS: 107-41-5 EINECS: 203-489-0 Reg.nr.: 01-2119539582-35-0000	Hexylene Glycol / 2-Methyl-pentane-2,4-diol Skin Irrit. 2, H315; Eye Irrit. 2, H319	< 2.9%
CAS: 68920-66-1 NLP: 500-236-9 Reg.nr.: 01-2119489407-26-0000	Alkoxylated alcohol, > C₁₆ Aquatic Chronic 2, H411; 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 C-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: BCGA2436	SAR EVALUATION REPORT	Approved by: Technical Manager
DUT Type: Tablet Device		APPENDIX C: Page 2 of 3

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Measurement Certificate / Material Test

Item Name	Head Tissue Simulating Liquid (HBBL600-10000V6)
Product No.	SL AAH U16 BC (Batch: 210629-3)
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 1-Jul-21
 Operator WM

Additional Information

 TSL Density
 TSL Heat-capacity

Results

f [MHz]	Measured		Target		Diff.to Target [%]	
	e'	e" sigma	eps	sigma	Δ-eps	Δ-sigma
600	44.7	25.5	0.85	42.7 0.88	4.6	-3.6
750	44.1	21.6	0.90	41.9 0.89	5.1	0.7
800	44.0	20.6	0.92	41.7 0.90	5.6	2.5
825	44.0	20.2	0.93	41.6 0.91	5.8	2.6
835	44.0	20.0	0.93	41.5 0.91	5.9	2.0
850	43.9	19.8	0.93	41.5 0.92	5.8	1.5
900	43.8	19.0	0.95	41.5 0.97	5.5	-2.1
1400	42.8	15.1	1.18	40.6 1.18	5.4	0.0
1450	42.7	14.9	1.20	40.5 1.20	5.4	0.0
1600	42.4	14.4	1.28	40.3 1.28	5.2	-0.3
1625	42.4	14.3	1.30	40.3 1.30	5.3	0.1
1640	42.4	14.3	1.31	40.3 1.31	5.3	0.3
1650	42.3	14.3	1.31	40.2 1.31	5.1	-0.2
1700	42.3	14.2	1.34	40.2 1.34	5.3	-0.2
1750	42.2	14.1	1.37	40.1 1.37	5.3	-0.1
1800	42.1	14.0	1.40	40.0 1.40	5.3	0.0
1810	42.1	13.9	1.41	40.0 1.40	5.3	0.7
1825	42.1	13.8	1.42	40.0 1.40	5.3	1.4
1850	42.0	13.9	1.43	40.0 1.40	5.0	2.1
1900	42.0	13.8	1.46	40.0 1.40	5.0	4.3
1950	41.9	13.8	1.49	40.0 1.40	4.7	6.4
2000	41.8	13.7	1.53	40.0 1.40	4.5	9.3
2050	41.8	13.7	1.56	39.9 1.44	4.7	8.0
2100	41.7	13.7	1.59	39.8 1.49	4.7	6.8
2150	41.6	13.6	1.63	39.7 1.53	4.7	6.3
2200	41.6	13.6	1.67	39.6 1.58	4.9	5.8
2250	41.5	13.6	1.70	39.6 1.62	4.9	4.8
2300	41.4	13.6	1.74	39.5 1.67	4.9	4.4
2350	41.3	13.6	1.78	39.4 1.71	4.9	4.0
2400	41.3	13.6	1.82	39.3 1.76	5.1	3.7
2450	41.2	13.6	1.86	39.2 1.80	5.1	3.3
2500	41.1	13.6	1.90	39.1 1.85	5.0	2.5
2550	41.0	13.7	1.94	39.1 1.91	4.9	1.6
2600	41.0	13.7	1.98	39.0 1.96	5.1	0.8

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

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DUT Type: Tablet Device		APPENDIX C: Page 3 of 3