

## Annex C. Tissue & System Verification

The measuring results for tissue simulating liquid and system check are shown as below.

**Note:**

1. For Section 4.3, the dielectric properties of the tissue simulating liquid have been measured within 24 hours before the SAR testing and within  $\pm 10\%$  of the target values. Liquid temperature during the SAR testing has kept within  $\pm 2^\circ\text{C}$ .
2. For Section 4.4, The SAR measurement system was validated according to procedures in KDB 865664 D01. The validation status in tabulated summary is as below.
3. For Section 4.5, Comparing to the reference SAR value provided by SPEAG in dipole calibration certificate, the deviation of system check results is within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots please refer to Annex A of this report.

Tissue Verification									Validation for CW			Validation for Modulation			System Validation					Note			
Plot No.	Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (εr)	Targeted Conductivity (σ)	Targeted Permittivity (εr)	Deviation Conductivity (σ)	Deviation Permittivity (εr)	Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR	Date	Frequency (MHz)	Targeted 1g SAR (W/kg)	Measured 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
S01	1900	23.2	1.459	40.615	1.4	40	4.21	1.54	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 29, 2021	1900	40.40	2.02	40.40	0.00	5d036	7555	1589
S02	1750	23.2	1.319	40.264	1.37	40.1	-3.72	0.41	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 09, 2021	1750	36.00	1.67	33.40	-7.22	1055	3971	1431
S03	835	23.3	0.918	41.553	0.9	41.5	2.00	0.13	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 17, 2021	835	9.52	0.512	10.24	7.56	4d121	7472	579
S04	835	23.3	0.918	41.553	0.9	41.5	2.00	0.13	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 17, 2021	835	9.52	0.512	10.24	7.56	4d121	7472	579
S05	2600	23.2	2.045	39.306	1.96	39	4.34	0.78	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 08, 2021	2600	55.50	2.66	53.20	-4.14	1020	3887	861
S06	750	23.3	0.886	43.446	0.89	41.9	-0.45	3.69	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 06, 2021	750	8.48	0.408	8.16	-3.77	1013	7555	1589
S07	750	23.3	0.895	42.84	0.89	41.9	0.56	2.24	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 17, 2021	750	8.48	0.447	8.94	5.42	1013	7472	579
S08	750	23.3	0.895	42.84	0.89	41.9	0.56	2.24	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 17, 2021	750	8.48	0.447	8.94	5.42	1013	7472	579
S09	1900	23.2	1.459	40.615	1.4	40	4.21	1.54	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 29, 2021	1900	40.40	2.02	40.40	0.00	5d036	7555	1589
S10	2600	23.2	2.045	39.306	1.96	39	4.34	0.78	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 08, 2021	2600	55.50	2.66	53.20	-4.14	1020	3887	861
S11	1750	23.3	1.326	39.032	1.37	40.1	-3.21	-2.66	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 06, 2021	1750	36.00	1.88	37.60	4.44	1055	7555	1589
S12	750	23.5	0.9	42.446	0.89	41.9	1.12	1.30	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	750	8.48	0.406	8.12	-4.25	1013	3887	861
S13	1900	23.5	1.456	39.288	1.4	40	4.00	-1.78	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 06, 2021	1900	40.40	1.88	37.60	-6.93	5d036	7472	579
S14	835	23.3	0.919	41.829	0.9	41.5	2.11	0.79	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 27, 2021	835	9.52	0.451	9.02	-5.25	4d121	3971	1431
S15	2600	23.5	2.005	38.283	1.96	39	2.30	-1.84	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 06, 2021	2600	55.50	2.94	58.80	5.95	1020	7472	579
S16	1750	23.5	1.326	39.842	1.37	40.1	-3.21	-0.64	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 06, 2021	1750	36.00	1.73	34.60	-3.89	1055	7472	579
S17	750	23.5	0.899	43.573	0.89	41.9	1.01	3.99	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 06, 2021	750	8.48	0.409	8.18	-3.54	1013	7472	579
S18a	3700	23.3	2.979	37.856	3.12	37.7	-4.52	0.41	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 09, 2021	3700	65.90	3.45	69.00	4.70	1017	7472	579
S18b	3900	23.3	3.155	37.605	3.25	36.6	-2.92	2.75	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 09, 2021	3900	70.90	3.58	71.60	0.99	1020	7472	579
S19	2450	23.3	1.876	39.282	1.8	39.2	4.22	0.21	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 29, 2021	2450	51.60	2.69	53.80	4.26	737	3971	1431
S20	5250	23.2	4.741	36.971	4.71	35.9	0.66	2.98	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 30, 2021	5250	80.60	3.95	79.00	-1.99	1019	3971	1431
S21	5600	23.3	5.096	36.498	5.07	35.5	0.51	2.81	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 30, 2021	5600	82.40	3.78	75.60	-8.25	1019	3971	1431
S22	5750	23.3	5.256	36.276	5.22	35.4	0.69	2.47	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 30, 2021	5750	79.40	3.6	72.00	-9.32	1019	3971	1431
S23	2450	23.1	1.87	38.896	1.8	39.2	3.89	-0.78	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 10, 2021	2450	51.60	2.74	54.80	6.20	737	7537	1585
S24	1900	23.5	1.459	39.97	1.4	40	4.21	-0.08	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	1900	40.40	1.92	38.40	-4.95	5d036	3887	861
S25	1750	23.5	1.328	41.494	1.37	40.1	-3.07	3.48	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	1750	36.00	1.69	33.80	-6.11	1055	3887	861
S26	835	23.1	0.918	41.553	0.9	41.5	2.00	0.13	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 20, 2021	835	9.52	0.446	8.92	-6.30	4d121	7472	579
S27	835	23.1	0.918	41.553	0.9	41.5	2.00	0.13	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 20, 2021	835	9.52	0.446	8.92	-6.30	4d121	7472	579
S28	2600	23.5	2.046	38.525	1.96	39	4.39	-1.22	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	2600	55.50	2.52	50.40	-9.19	1020	3887	861
S29	750	23.1	0.899	43.573	0.89	41.9	1.01	3.99	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 20, 2021	750	8.48	0.409	8.18	-3.54	1013	7472	579
S30	750	23.1	0.899	43.573	0.89	41.9	1.01	3.99	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 20, 2021	750	8.48	0.409	8.18	-3.54	1013	7472	579
S31	750	23.1	0.899	43.573	0.89	41.9	1.01	3.99	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 20, 2021	750	8.48	0.409	8.18	-3.54	1013	7472	579
S32	1900	23.5	1.459	39.97	1.4	40	4.21	-0.08	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	1900	40.40	1.92	38.40	-4.95	5d036	3887	861
S33	2600	23.5	2.046	38.525	1.96	39	4.39	-1.22	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	2600	55.50	2.52	50.40	-9.19	1020	3887	861
S34	1750	23.5	1.328	41.494	1.37	40.1	-3.07	3.48	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	1750	36.00	1.69	33.80	-6.11	1055	3887	861
S35	750	23.1	0.899	43.573	0.89	41.9	1.01	3.99	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 20, 2021	750	8.48	0.409	8.18	-3.54	1013	7472	579
S36	1900	23.5	1.459	39.97	1.4	40	4.21	-0.08	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	1900	40.40	1.92	38.40	-4.95	5d036	3887	861
S37	835	23.3	0.919	41.829	0.9	41.5	2.11	0.79	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 27, 2021	835	9.52	0.451	9.02	-5.25	4d121	3971	1431
S38	2600	23.5	2.046	38.525	1.96	39	4.39	-1.22	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	2600	55.50	2.52	50.40	-9.19	1020	3887	861
S39	1750	23.5	1.328	41.494	1.37	40.1	-3.07	3.48	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 07, 2021	1750	36.00	1.69	33.80	-6.11	1055	3887	861
S40	750	23.3	0.928	43.42	0.89	41.9	4.27	3.63	Pass	Pass	Pass	N/A	N/A	N/A	Jul. 27, 2021	750	8.48	0.417	8.34	-1.65	1013	3971	1431
S41a	3700	23.3	2.979	37.856	3.12	37.7	-4.52	0.41	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 09, 2021	3700	65.90	3.45	69.00	4.70	1017	7472	579
S41b	3900	23.3	3.155	37.605	3.25	36.6	-2.92	2.75	Pass	Pass	Pass	N/A	N/A	N/A	Aug. 09, 2021	3900	70.90	3.58	71.60	0.99	1020	7472	579
S42	2450	23.2	1.89	38.349	1.8	39.2	5.00	-2.17	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 09, 2021	2450	51.60	2.6	52.00	0.78	737	7555	1589
S43	5250	23.2	4.878	37.061	4.71	35.9	3.57	3.23	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 09, 2021	5250	80.60	4.31	86.20	6.95	1019	7555	1589
S44	5600	23.2	5.278	36.522	5.07	35.5	4.10	2.88	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 09, 2021	5600	82.40	3.79	75.80	-8.01	1019	7555	1589
S45	5750	23.2	5.418	36.517	5.22	35.4	3.79	3.16	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 09, 2021	5750	79.40	3.92	78.40	-1.26	1019	7555	1589
S46	2450	23.2	1.89	38.349	1.8	39.2	5.00	-2.17	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 09, 2021	2450	51.60	2.6	52.00	0.78	737	7555	1589

Tissue Verification									Validation for CW			Validation for Modulation			Date	System Validation					Note		
Plot No.	Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε <sub>r</sub> )	Targeted Conductivity (σ)	Targeted Permittivity (ε <sub>r</sub> )	Deviation Conductivity (σ)	Deviation Permittivity (ε <sub>r</sub> )	Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR		Frequency (MHz)	Targeted 1g SAR (W/kg)	Measured 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N
S47	6500	23.1	6.19	33.8	6.07	34.5	1.98	-2.03	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 20, 2021	6500	285.00	27.5	275.00	-3.51	1008	7537	1585
S48	6500	23.3	6.15	34.2	6.07	34.5	1.32	-0.87	Pass	Pass	Pass	OFDM	N/A	Pass	Jul. 30, 2021	6500	285.00	29.5	295.00	3.51	1008	3971	1431

Plot No.	Test Date	Frequency [GHz]	mmWave Probe S/N	Verification Source S/N	Averaging Area [cm <sup>2</sup> ]	Distance [mm]	Target Power Density [W/m <sup>2</sup> ]	Measured Power Density [W/m <sup>2</sup> ]	Deviation [%]
S47	Jul. 31, 2021	10	9361	1025	4	10.0	45.8	42.4	-7.42%
S48	Jul. 21, 2021	10	9361	1025	4	10.0	45.8	42.6	-6.99%