APPENDIX F: SAR SYSTEM VALIDATION

Per FCC KDB Publication 865664 D02v01r02, SAR system validation status should be documented to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

Table F-1
SAR System Validation Summary – 1g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
L	750	01/10/2022	7670	750	Head	0.904	43.321	PASS	PASS	PASS	N/A	N/A	N/A
K4	750	04/15/2022	7637	750	Head	0.873	43.945	PASS	PASS	PASS	N/A	N/A	N/A
L	835	01/10/2022	7670	835	Head	0.935	43.035	PASS	PASS	PASS	GMSK	PASS	N/A
K4	835	04/15/2022	7637	835	Head	0.923	43.560	PASS	PASS	PASS	GMSK	PASS	N/A
L	1750	01/10/2022	7670	1750	Head	1.380	41.113	PASS	PASS	PASS	N/A	N/A	N/A
K5	1750	02/15/2022	7491	1750	Head	1.358	39.215	PASS	PASS	PASS	N/A	N/A	N/A
K2	1750	04/04/2022	7640	1750	Head	1.371	39.708	PASS	PASS	PASS	N/A	N/A	N/A
K2	1900	04/04/2022	7640	1900	Head	1.462	39.493	PASS	PASS	PASS	GMSK	PASS	N/A
G	1900	04/20/2022	7527	1900	Head	1.458	39.624	PASS	PASS	PASS	GMSK	PASS	N/A
J	2450	02/24/2022	7570	2450	Head	1.836	40.313	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K4	2450	04/21/2022	7637	2450	Head	1.849	41.019	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
P	2600	01/19/2022	7410	2600	Head	1.990	38.359	PASS	PASS	PASS	TDD	PASS	N/A
K4	2600	04/21/2022	7637	2600	Head	1.967	40.773	PASS	PASS	PASS	TDD	PASS	N/A
E	3500	03/10/2022	7538	3500	Head	2.793	37.511	PASS	PASS	PASS	TDD	PASS	N/A
E	3700	03/10/2022	7538	3700	Head	2.975	37.207	PASS	PASS	PASS	TDD	PASS	N/A
E	3900	03/11/2022	7538	3900	Head	3.225	36.586	PASS	PASS	PASS	TDD	PASS	N/A
G	5250	04/04/2022	7527	5250	Head	4.840	35.964	PASS	PASS	PASS	OFDM	N/A	PASS
G	5600	04/04/2022	7527	5600	Head	5.237	35.320	PASS	PASS	PASS	OFDM	N/A	PASS
G	5750	04/04/2022	7527	5750	Head	5.427	35.065	PASS	PASS	PASS	OFDM	N/A	PASS
G	5800	04/04/2022	7527	5800	Head	5.500	34.891	PASS	PASS	PASS	OFDM	N/A	PASS
K1	750	10/21/2021	7558	750	Body	0.968	54.027	PASS	PASS	PASS	N/A	N/A	N/A
I	750	06/07/2022	7660	750	Body	0.590	53.834	PASS	PASS	PASS	N/A	N/A	N/A
K1	835	10/21/2021	7558	835	Body	1.002	53.813	PASS	PASS	PASS	GMSK	PASS	N/A
L	835	01/06/2022	7670	835	Body	0.994	55.452	PASS	PASS	PASS	GMSK	PASS	N/A
K4	835	04/12/2022	7637	835	Body	0.988	55.438	PASS	PASS	PASS	GMSK	PASS	N/A
L	1750	01/05/2022	7670	1750	Body	1.477	53.736	PASS	PASS	PASS	N/A	N/A	N/A
AM4	1750	03/15/2022	3837	1750	Body	1.492	51.753	PASS	PASS	PASS	N/A	N/A	N/A
AM8	1750	05/09/2022	7546	1750	Body	1.430	52.100	PASS	PASS	PASS	N/A	N/A	N/A
I	1750	07/01/2022	7660	1750	Body	1.467	53.907	PASS	PASS	PASS	N/A	N/A	N/A
A	1900	01/10/2022	7406	1900	Body	1.545	53.143	PASS	PASS	PASS	GMSK	PASS	N/A
AM7	1900	02/10/2022	7674	1900	Body	1.544	52.642	PASS	PASS	PASS	GMSK	PASS	N/A
E	1900	03/22/2022	7538	1900	Body	1.583	50.883	PASS	PASS	PASS	GMSK	PASS	N/A
S	2450	01/25/2022	7552	2450	Body	2.016	52.250	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
J	2450	02/16/2022	7570	2450	Body	2.008	54.126	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM3	2450	03/16/2022	7427	2450	Body	1.993	51.672	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
S	2600	01/25/2022	7552	2600	Body	2.147	51.997	PASS	PASS	PASS	TDD	PASS	N/A
AM4	2600	03/09/2022	3837	2600	Body	2.064	53.545	PASS	PASS	PASS	TDD	PASS	N/A
AM3	2600	03/16/2022	7427	2600	Body	2.210	51.100	PASS	PASS	PASS	TDD	PASS	N/A
AM7	3500	11/16/2021	7674	3500	Body	3.160	50.800	PASS	PASS	PASS	TDD	PASS	N/A
AM1	3500	03/03/2022	7639	3500	Body	3.179	50.981	PASS	PASS	PASS	TDD	PASS	N/A
L	3700	10/13/2021	7670	3700	Body	3.637	50.037	PASS	PASS	PASS	TDD	PASS	N/A
AM7	3700	11/16/2021	7674	3700	Body	3.391	50.479	PASS	PASS	PASS	TDD	PASS	N/A
L	3900	10/13/2021	7670	3900	Body	3.873	49.714	PASS	PASS	PASS	TDD	PASS	N/A
AM7	3900	01/05/2022	7674	3900	Body	3.852	49.136	PASS	PASS	PASS	TDD	PASS	N/A
G	5250	03/31/2022	7527	5250	Body	5.484	47.982	PASS	PASS	PASS	OFDM	N/A	PASS
G	5600	03/31/2022	7527	5600	Body	5.957	47.085	PASS	PASS	PASS	OFDM	N/A	PASS
G	5750	03/31/2022	7527	5750	Body	6.114	46.924	PASS	PASS	PASS	OFDM	N/A	PASS
G	5800	04/01/2022	7527	5800	Body	6.295	46.793	PASS	PASS	PASS	OFDM	N/A	PASS

Table F-2
SAR System Validation Summary – 10g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (εr)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
G	13	06/09/2022	7527	13	Head	0.762	52.537	PASS	PASS	PASS	OFDM	N/A	PASS
K1	750	10/21/2021	7558	750	Body	0.968	54.027	PASS	PASS	PASS	N/A	N/A	N/A
I	750	06/07/2022	7660	750	Body	0.590	53.834	PASS	PASS	PASS	N/A	N/A	N/A
K1	835	10/21/2021	7558	835	Body	1.002	53.813	PASS	PASS	PASS	GMSK	PASS	N/A
L	835	01/06/2022	7670	835	Body	0.994	55.452	PASS	PASS	PASS	GMSK	PASS	N/A
L	1750	01/05/2022	7670	1750	Body	1.477	53.736	PASS	PASS	PASS	N/A	N/A	N/A
AM8	1750	05/09/2022	7546	1750	Body	1.430	52.100	PASS	PASS	PASS	N/A	N/A	N/A
I	1750	07/01/2022	7660	1750	Body	1.467	53.907	PASS	PASS	PASS	N/A	N/A	N/A
A	1900	01/10/2022	7406	1900	Body	1.545	53.143	PASS	PASS	PASS	GMSK	PASS	N/A
AM7	1900	02/10/2022	7674	1900	Body	1.544	52.642	PASS	PASS	PASS	GMSK	PASS	N/A
E	1900	03/22/2022	7538	1900	Body	1.583	50.883	PASS	PASS	PASS	GMSK	PASS	N/A
S	2450	01/25/2022	7552	2450	Body	2.016	52.250	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
J	2450	02/16/2022	7570	2450	Body	2.008	54.126	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
AM3	2450	03/16/2022	7427	2450	Body	1.993	51.672	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
S	2600	01/25/2022	7552	2600	Body	2.147	51.997	PASS	PASS	PASS	TDD	PASS	N/A
AM4	2600	03/09/2022	3837	2600	Body	2.064	53.545	PASS	PASS	PASS	TDD	PASS	N/A
AM3	2600	03/16/2022	7427	2600	Body	2.210	51.100	PASS	PASS	PASS	TDD	PASS	N/A
AM7	3500	11/16/2021	7674	3500	Body	3.160	50.800	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3500	04/07/2022	7427	3500	Body	3.430	50.138	PASS	PASS	PASS	TDD	PASS	N/A
AM1	3700	03/03/2022	7639	3700	Body	3.430	50.700	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3700	04/06/2022	7427	3700	Body	3.650	49.800	PASS	PASS	PASS	TDD	PASS	N/A
AM1	3900	03/03/2022	7639	3900	Body	3.680	50.300	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3900	04/06/2022	7427	3900	Body	3.890	49.500	PASS	PASS	PASS	TDD	PASS	N/A
G	5250	03/31/2022	7527	5250	Body	5.484	47.982	PASS	PASS	PASS	OFDM	N/A	PASS
K	5250	05/03/2022	7659	5250	Body	5.389	47.450	PASS	PASS	PASS	OFDM	N/A	PASS
G	5600	03/31/2022	7527	5600	Body	5.957	47.085	PASS	PASS	PASS	OFDM	N/A	PASS
K	5600	05/03/2022	7659	5600	Body	5.891	46.819	PASS	PASS	PASS	OFDM	N/A	PASS
G	5750	03/31/2022	7527	5750	Body	6.114	46.924	PASS	PASS	PASS	OFDM	N/A	PASS
K	5750	05/03/2022	7659	5750	Body	6.105	46.554	PASS	PASS	PASS	OFDM	N/A	PASS
G	5800	04/01/2022	7527	5800	Body	6.295	46.793	PASS	PASS	PASS	OFDM	N/A	PASS
K	5800	05/03/2022	7659	5800	Body	6.178	46.433	PASS	PASS	PASS	OFDM	N/A	PASS

NOTE: The probes have been calibrated for both CW and modulated signals. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to FCC KDB Publication 865664 D01v01r04.