

APPENDIX G: 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 G-1
SAR System Validation Summary - Head

SAR System	Freq. (MHz)	Date	Probe SN	DAE	Probe Cal Point		Cond. (σ)	Perm. (ε _r)	CW VALIDATION			MOD. VALIDATION		
									Sensitivity	Probe Linearity	Probe Isotropy	Mod. Type	Duty Factor	PAR
G	13	02/28/2023	7417	665	13	Head	0.745	55.517	PASS	PASS	PASS	N/A	N/A	N/A
K	750	08/04/2022	7659	1407	750	Head	0.906	42.472	PASS	PASS	PASS	N/A	N/A	N/A
K1	750	08/23/2022	7491	1532	750	Head	0.886	41.040	PASS	PASS	PASS	N/A	N/A	N/A
S	750	02/17/2023	7713	1530	750	Head	0.876	40.585	PASS	PASS	PASS	N/A	N/A	N/A
K5	835	06/27/2022	7402	1502	835	Head	0.922	41.230	PASS	PASS	PASS	GMSK	PASS	N/A
L	835	08/10/2022	7410	1583	835	Head	0.912	42.550	PASS	PASS	PASS	GMSK	PASS	N/A
K1	835	08/23/2022	7491	1532	835	Head	0.916	40.801	PASS	PASS	PASS	GMSK	PASS	N/A
C	1750	08/10/2022	7406	1677	1750	Head	1.343	38.815	PASS	PASS	PASS	N/A	N/A	N/A
K2	1750	02/20/2023	7565	1466	1750	Head	1.321	40.030	PASS	PASS	PASS	N/A	N/A	N/A
L	1900	08/10/2022	7410	1583	1900	Head	1.460	40.503	PASS	PASS	PASS	GMSK	PASS	N/A
K2	1900	02/20/2023	7565	1466	1900	Head	1.407	39.834	PASS	PASS	PASS	GMSK	PASS	N/A
P	2300	08/01/2022	7409	1334	2300	Head	1.753	39.718	PASS	PASS	PASS	N/A	N/A	N/A
J	2300	01/10/2023	7539	1450	2300	Head	1.748	40.613	PASS	PASS	PASS	N/A	N/A	N/A
K2	2300	02/20/2023	7565	1466	2300	Head	1.666	39.366	PASS	PASS	PASS	N/A	N/A	N/A
L	2450	08/11/2022	7410	1583	2450	Head	1.862	39.716	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K2	2450	02/21/2023	7565	1466	2450	Head	1.817	39.941	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
L	2600	08/11/2022	7410	1583	2600	Head	1.987	39.461	PASS	PASS	PASS	TDD	PASS	N/A
K2	2600	02/22/2023	7565	1466	2600	Head	1.931	39.782	PASS	PASS	PASS	TDD	PASS	N/A
AM8	2600	03/31/2023	7421	604	2600	Head	1.962	40.186	PASS	PASS	PASS	TDD	PASS	N/A
C	3500	08/12/2022	7406	1677	3500	Head	2.829	37.515	PASS	PASS	PASS	TDD	PASS	N/A
AM4	3500	01/09/2023	7490	1644	3500	Head	2.921	37.328	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3500	02/08/2023	3837	793	3500	Head	2.807	39.033	PASS	PASS	PASS	TDD	PASS	N/A
AM6	3500	05/24/2023	7638	1408	3500	Head	2.794	39.657	PASS	PASS	PASS	TDD	PASS	N/A
C	3700	08/12/2022	7406	1677	3700	Head	3.016	37.068	PASS	PASS	PASS	TDD	PASS	N/A
AM4	3700	01/09/2023	7490	1644	3700	Head	3.082	37.064	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3700	02/09/2023	3837	793	3700	Head	3.003	38.691	PASS	PASS	PASS	TDD	PASS	N/A
AM6	3700	05/25/2023	7638	1408	3700	Head	2.991	39.276	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3900	02/09/2023	3837	793	3900	Head	3.209	38.360	PASS	PASS	PASS	TDD	PASS	N/A
O	5250	02/16/2023	7570	1558	5250	Head	4.531	35.226	PASS	PASS	PASS	OFDM	N/A	PASS
O	5600	02/16/2023	7570	1558	5600	Head	4.926	34.639	PASS	PASS	PASS	OFDM	N/A	PASS
O	5750	02/16/2023	7570	1558	5750	Head	5.077	34.397	PASS	PASS	PASS	OFDM	N/A	PASS
O	5800	02/20/2023	7570	1558	5850	Head	5.237	33.586	PASS	PASS	PASS	OFDM	N/A	PASS

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Table G-2
SAR System Validation Summary - Body

SAR System	Freq. (MHz)	Date	Probe SN	DAE	Probe Cal Point		Cond. (σ)	Perm. (εr)	CW VALIDATION			MOD. VALIDATION		
									SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
K	750	05/24/2022	7659	1407	750	Body	0.964	55.448	PASS	PASS	PASS	N/A	N/A	N/A
P	750	08/17/2022	7409	1334	750	Body	0.954	55.653	PASS	PASS	PASS	N/A	N/A	N/A
K1	750	08/29/2022	7491	1532	750	Body	0.936	53.526	PASS	PASS	PASS	N/A	N/A	N/A
K3	750	12/08/2022	7547	1322	750	Body	0.941	54.158	PASS	PASS	PASS	N/A	N/A	N/A
O	750	02/03/2023	7570	1558	750	Body	0.922	55.235	PASS	PASS	PASS	N/A	N/A	N/A
K5	835	07/11/2022	7402	1502	835	Body	1.002	55.056	PASS	PASS	PASS	GMSK	PASS	N/A
C	835	08/15/2022	7406	1677	835	Body	0.978	54.692	PASS	PASS	PASS	GMSK	PASS	N/A
K1	835	08/29/2022	7491	1532	835	Body	0.967	53.325	PASS	PASS	PASS	GMSK	PASS	N/A
P	1750	08/16/2022	7409	1334	1750	Body	1.422	53.473	PASS	PASS	PASS	N/A	N/A	N/A
K3	1750	12/09/2022	7547	1322	1750	Body	1.429	51.001	PASS	PASS	PASS	N/A	N/A	N/A
P	1900	08/16/2022	7409	1334	1900	Body	1.521	53.285	PASS	PASS	PASS	GMSK	PASS	N/A
D	1900	11/29/2022	7551	1323	1900	Body	1.566	53.795	PASS	PASS	PASS	GMSK	PASS	N/A
J	1900	01/05/2023	7539	1450	1900	Body	1.523	52.651	PASS	PASS	PASS	GMSK	PASS	N/A
AM1	1900	01/09/2023	7420	1333	1900	Body	1.577	52.563	PASS	PASS	PASS	GMSK	PASS	N/A
AM4	1900	01/11/2023	7490	1644	1900	Body	1.456	53.828	PASS	PASS	PASS	GMSK	PASS	N/A
AM3	1900	02/13/2023	3837	793	1900	Body	1.521	52.102	PASS	PASS	PASS	GMSK	PASS	N/A
K2	1900	03/02/2023	7565	1466	1900	Body	1.490	51.732	PASS	PASS	PASS	GMSK	PASS	N/A
J	2300	01/04/2023	7539	1450	2300	Body	1.887	53.461	PASS	PASS	PASS	N/A	N/A	N/A
AM1	2300	01/09/2023	7420	1333	2300	Body	1.889	52.039	PASS	PASS	PASS	N/A	N/A	N/A
AM3	2300	02/02/2023	3837	793	2300	Body	1.779	53.000	PASS	PASS	PASS	N/A	N/A	N/A
O	2300	02/14/2023	7570	1558	2300	Body	1.820	51.150	PASS	PASS	PASS	N/A	N/A	N/A
S	2300	02/27/2023	7713	1530	2300	Body	1.815	54.296	PASS	PASS	PASS	N/A	N/A	N/A
L	2450	08/08/2022	7410	1583	2450	Body	2.042	53.429	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K3	2450	12/08/2022	7547	1322	2450	Body	2.018	51.623	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
G	2450	04/30/2023	7417	665	2450	Body	2.017	50.232	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
P	2600	08/02/2022	7409	1334	2600	Body	2.209	51.069	PASS	PASS	PASS	TDD	PASS	N/A
K3	2600	12/08/2022	7547	1322	2600	Body	2.158	51.377	PASS	PASS	PASS	TDD	PASS	N/A
AM1	2600	01/09/2023	7420	1333	2600	Body	2.168	51.636	PASS	PASS	PASS	TDD	PASS	N/A
AM7	2600	04/03/2023	7416	701	2600	Body	2.221	51.964	PASS	PASS	PASS	TDD	PASS	N/A
C	3500	08/15/2022	7406	1677	3500	Body	3.242	52.372	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3500	02/03/2023	3837	793	3500	Body	3.157	52.209	PASS	PASS	PASS	TDD	PASS	N/A
C	3700	08/15/2022	7406	1677	3700	Body	3.443	50.933	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3700	02/03/2023	3837	793	3700	Body	3.408	51.882	PASS	PASS	PASS	TDD	PASS	N/A
AM3	3900	02/03/2023	3837	793	3900	Body	3.669	51.556	PASS	PASS	PASS	TDD	PASS	N/A
O	5250	02/23/2023	7570	1558	5250	Body	5.290	48.037	PASS	PASS	PASS	OFDM	N/A	PASS
G	5250	03/24/2023	7417	665	5250	Body	5.456	48.095	PASS	PASS	PASS	OFDM	N/A	PASS
O	5600	02/23/2023	7570	1558	5600	Body	5.787	47.388	PASS	PASS	PASS	OFDM	N/A	PASS
G	5600	03/24/2023	7417	665	5600	Body	5.960	47.405	PASS	PASS	PASS	OFDM	N/A	PASS
O	5750	02/23/2023	7570	1558	5750	Body	6.084	47.053	PASS	PASS	PASS	OFDM	N/A	PASS
G	5750	03/24/2023	7417	665	5750	Body	6.181	47.162	PASS	PASS	PASS	OFDM	N/A	PASS
O	5800	02/24/2023	7570	1558	5850	Body	6.000	47.053	PASS	PASS	PASS	OFDM	N/A	PASS
G	5800	03/27/2023	7417	665	5850	Body	6.256	46.546	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.

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