

APPENDIX D: 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 D-1
SAR System Validation Summary – 1g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point	Cond. (σ)	Perm. (ϵ_r)	CW VALIDATION			MOD. VALIDATION		
							SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
E	750	01/13/2021	7571	750	Head	0.907	42.099	PASS	PASS	PASS	N/A	N/A
G	750	05/20/2021	7357	750	Head	0.923	43.830	PASS	PASS	PASS	N/A	N/A
P	835	09/10/2020	7308	835	Head	0.936	43.197	PASS	PASS	PASS	GMSK	PASS
J	835	06/01/2021	7526	835	Head	0.932	41.465	PASS	PASS	PASS	GMSK	PASS
J	1750	04/02/2021	7526	1750	Head	1.364	41.162	PASS	PASS	PASS	N/A	N/A
G	1750	05/16/2021	7357	1750	Head	1.393	40.373	PASS	PASS	PASS	N/A	N/A
E	1900	02/23/2021	7571	1900	Head	1.407	39.000	PASS	PASS	PASS	GMSK	PASS
P	2300	09/09/2020	7308	2300	Head	1.750	41.206	PASS	PASS	PASS	N/A	N/A
P	2450	09/09/2020	7308	2450	Head	1.865	40.971	PASS	PASS	PASS	OFDM/TDD	PASS
E	2450	01/07/2021	7571	2450	Head	1.847	39.716	PASS	PASS	PASS	OFDM/TDD	PASS
L	2450	04/06/2021	7539	2450	Head	1.846	39.842	PASS	PASS	PASS	OFDM/TDD	PASS
P	2600	09/09/2020	7308	2600	Head	1.992	40.743	PASS	PASS	PASS	TDD	PASS
L	2600	04/07/2021	7539	2600	Head	2.011	39.334	PASS	PASS	PASS	TDD	PASS
L	3500	04/08/2021	7539	3500	Head	2.827	39.168	PASS	PASS	PASS	TDD	PASS
L	3700	04/08/2021	7539	3700	Head	3.020	38.831	PASS	PASS	PASS	TDD	PASS
L	3900	04/09/2021	7539	3900	Head	3.227	38.502	PASS	PASS	PASS	TDD	PASS
K	5250	03/24/2021	7538	5250	Head	4.577	36.451	PASS	PASS	PASS	OFDM	N/A
K	5600	03/24/2021	7538	5600	Head	4.972	37.736	PASS	PASS	PASS	OFDM	N/A
K	5750	03/24/2021	7538	5750	Head	5.166	35.643	PASS	PASS	PASS	OFDM	N/A
G	750	02/22/2021	7406	750	Body	0.972	54.171	PASS	PASS	PASS	N/A	N/A
P	835	09/08/2020	7308	835	Body	0.977	54.534	PASS	PASS	PASS	GMSK	PASS
H	835	03/31/2021	7410	835	Body	0.988	54.762	PASS	PASS	PASS	GMSK	PASS
H	1750	03/31/2021	7410	1750	Body	1.471	53.269	PASS	PASS	PASS	N/A	N/A
E	1900	02/23/2021	7571	1900	Body	1.538	53.192	PASS	PASS	PASS	GMSK	PASS
D	1900	03/02/2021	3589	1900	Body	1.587	53.150	PASS	PASS	PASS	GMSK	PASS
E	2300	01/27/2021	7571	2300	Body	1.890	53.089	PASS	PASS	PASS	N/A	N/A
K	2300	03/26/2021	7538	2300	Body	1.791	51.401	PASS	PASS	PASS	N/A	N/A
L	2300	04/05/2021	7539	2300	Body	1.746	51.746	PASS	PASS	PASS	N/A	N/A
E	2450	02/02/2021	7571	2450	Body	2.066	53.136	PASS	PASS	PASS	OFDM/TDD	PASS
K	2450	03/26/2021	7538	2450	Body	1.962	51.166	PASS	PASS	PASS	OFDM/TDD	PASS
L	2450	03/30/2021	7539	2450	Body	2.017	50.784	PASS	PASS	PASS	OFDM/TDD	PASS
E	2600	01/27/2021	7571	2600	Body	2.167	52.620	PASS	PASS	PASS	TDD	PASS
K	2600	03/26/2021	7538	2600	Body	2.150	50.900	PASS	PASS	PASS	TDD	PASS
L	2600	03/31/2021	7539	2600	Body	2.152	50.557	PASS	PASS	PASS	TDD	PASS
I	3500	03/29/2021	7551	3500	Body	3.199	50.517	PASS	PASS	PASS	TDD	PASS
L	3500	03/30/2021	7539	3500	Body	3.155	49.807	PASS	PASS	PASS	TDD	PASS
I	3700	03/29/2021	7551	3700	Body	3.438	50.196	PASS	PASS	PASS	TDD	PASS
L	3700	03/30/2021	7539	3700	Body	3.384	49.498	PASS	PASS	PASS	TDD	PASS
I	3900	03/29/2021	7551	3900	Body	3.694	49.853	PASS	PASS	PASS	TDD	PASS
L	3900	03/30/2021	7539	3900	Body	3.624	49.191	PASS	PASS	PASS	TDD	PASS
J	5250	03/22/2021	7526	5250	Body	5.322	47.650	PASS	PASS	PASS	OFDM	N/A
J	5600	03/22/2021	7526	5600	Body	5.811	47.004	PASS	PASS	PASS	OFDM	N/A
J	5750	22/03/2021	7526	5750	Body	6.027	46.709	PASS	PASS	PASS	OFDM	N/A

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Test Dates: 04/08/21 – 06/03/21	DUT Type: Portable Handset			Appendix D Page 1 of 2

Table D-2
SAR System Validation Summary – 10g

SAR System	Freq. (MHz)	Date	Probe SN	Probe Cal Point		Cond. (σ)	Perm. (ϵ_r)	CW VALIDATION			MOD. VALIDATION		
								SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
H	1750	03/31/2021	7410	1750	Body	1.471	53.269	PASS	PASS	PASS	N/A	N/A	N/A
D	1900	03/02/2021	3589	1900	Body	1.587	53.150	PASS	PASS	PASS	GMSK	PASS	N/A
K	2300	03/26/2021	7538	2300	Body	1.791	51.401	PASS	PASS	PASS	N/A	N/A	N/A
L	2300	04/05/2021	7539	2300	Body	1.746	51.746	PASS	PASS	PASS	N/A	N/A	N/A
E	2450	02/02/2021	7571	2450	Body	2.066	53.136	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
K	2450	03/26/2021	7538	2450	Body	1.962	51.166	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
L	2450	03/30/2021	7539	2450	Body	2.017	50.784	PASS	PASS	PASS	OFDM/TDD	PASS	PASS
E	2600	01/27/2021	7571	2600	Body	2.167	52.620	PASS	PASS	PASS	TDD	PASS	N/A
K	2600	03/26/2021	7538	2600	Body	2.150	50.900	PASS	PASS	PASS	TDD	PASS	N/A
L	2600	03/31/2021	7539	2600	Body	2.152	50.557	PASS	PASS	PASS	TDD	PASS	N/A
I	3500	03/29/2021	7551	3500	Body	3.199	50.517	PASS	PASS	PASS	TDD	PASS	N/A
L	3500	03/30/2021	7539	3500	Body	3.155	49.807	PASS	PASS	PASS	TDD	PASS	N/A
I	3700	03/29/2021	7551	3700	Body	3.438	50.196	PASS	PASS	PASS	TDD	PASS	N/A
L	3700	03/30/2021	7539	3700	Body	3.384	49.498	PASS	PASS	PASS	TDD	PASS	N/A
I	3900	03/29/2021	7551	3900	Body	3.694	49.853	PASS	PASS	PASS	TDD	PASS	N/A
L	3900	03/30/2021	7539	3900	Body	3.624	49.191	PASS	PASS	PASS	TDD	PASS	N/A
J	5250	03/22/2021	7526	5250	Body	5.322	47.650	PASS	PASS	PASS	OFDM	N/A	PASS
J	5600	22/03/2021	7526	5600	Body	5.811	47.004	PASS	PASS	PASS	OFDM	N/A	PASS
J	5750	22/03/2021	7526	5750	Body	6.027	46.709	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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