

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.	PERM.	CW VALIDATION			MOD. VALIDATION		
					(σ)	(ϵ_r)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
D	750	3/17/2020	7488	750	Head	0.875	42.352	PASS	PASS	PASS	N/A	N/A
E	750	2/20/2020	3589	750	Head	0.889	43.647	PASS	PASS	PASS	N/A	N/A
P	750	9/10/2020	7308	750	Head	0.904	43.44	PASS	PASS	PASS	N/A	N/A
E	835	2/20/2020	3589	835	Head	0.922	43.402	PASS	PASS	PASS	GMSK	PASS
D	835	3/16/2020	7488	835	Head	0.907	42.124	PASS	PASS	PASS	GMSK	PASS
E	1750	2/20/2020	3589	1750	Head	1.39	41.519	PASS	PASS	PASS	N/A	N/A
L	1750	11/15/2020	7539	1750	Head	1.398	40.7	PASS	PASS	PASS	N/A	N/A
L	1900	7/7/2020	7406	1900	Head	1.403	40.885	PASS	PASS	PASS	GMSK	PASS
E	2300	2/5/2020	3589	2300	Head	1.717	39.033	PASS	PASS	PASS	N/A	N/A
E	2450	2/5/2020	3589	2450	Head	1.823	38.835	PASS	PASS	PASS	OFDM/TDD	PASS
E	2600	2/5/2020	3589	2600	Head	1.933	38.635	PASS	PASS	PASS	TDD	PASS
L	3500	11/6/2020	7539	3500	Head	2.792	37.55	PASS	PASS	PASS	TDD	PASS
L	3700	11/2/2020	7539	3700	Head	2.961	37.284	PASS	PASS	PASS	TDD	PASS
L	3900	11/2/2020	7539	3900	Head	3.179	36.957	PASS	PASS	PASS	TDD	PASS
H	5250	5/7/2020	7357	5250	Head	4.644	35.12	PASS	PASS	PASS	OFDM	N/A
H	5600	5/7/2020	7357	5600	Head	5.03	34.51	PASS	PASS	PASS	OFDM	N/A
H	5750	5/7/2020	7357	5750	Head	5.207	34.26	PASS	PASS	PASS	OFDM	N/A
O	750	9/9/2020	7547	750	Body	0.948	54.67	PASS	PASS	PASS	N/A	N/A
I	835	10/12/2020	7570	835	Body	0.946	52.84	PASS	PASS	PASS	GMSK	PASS
D	835	2/20/2020	7488	835	Body	1.001	53.45	PASS	PASS	PASS	GMSK	PASS
G	1750	8/5/2020	7538	1750	Body	1.503	52.226	PASS	PASS	PASS	N/A	N/A
P	1750	9/8/2020	7308	1750	Body	1.478	52.86	PASS	PASS	PASS	N/A	N/A
D	1750	2/20/2020	7488	1750	Body	1.525	51.76	PASS	PASS	PASS	N/A	N/A
H	1900	6/1/2020	7357	1900	Body	1.555	51.21	PASS	PASS	PASS	GMSK	PASS
J	1900	1/1/2020	7571	1900	Body	1.579	51.919	PASS	PASS	PASS	GMSK	PASS
K	2300	7/7/2020	7409	2300	Body	1.85	51.59	PASS	PASS	PASS	N/A	N/A
K	2450	7/7/2020	7409	2450	Body	2.018	51.18	PASS	PASS	PASS	OFDM/TDD	PASS
P	2450	9/9/2020	7308	2450	Body	2.028	52.65	PASS	PASS	PASS	OFDM/TDD	PASS
K	2600	7/8/2020	7409	2600	Body	2.194	50.73	PASS	PASS	PASS	TDD	PASS
D	3500	2/12/2020	7488	3500	Body	3.373	50.003	PASS	PASS	PASS	TDD	PASS
L	3500	11/5/2020	7539	3500	Body	3.176	50.634	PASS	PASS	PASS	TDD	PASS
D	3700	2/12/2020	7488	3700	Body	3.585	49.719	PASS	PASS	PASS	TDD	PASS
L	3700	11/3/2020	7539	3700	Body	3.423	50.88	PASS	PASS	PASS	TDD	PASS
L	3900	11/2/2020	7539	3900	Body	3.674	50.52	PASS	PASS	PASS	TDD	PASS
G	5250	8/16/2020	7538	5250	Body	5.476	47.185	PASS	PASS	PASS	OFDM	N/A
G	5250	11/2/2020	7406	5250	Body	5.533	47.08	PASS	PASS	PASS	OFDM	N/A
G	5600	8/16/2020	7538	5600	Body	5.937	46.607	PASS	PASS	PASS	OFDM	N/A
G	5600	11/2/2020	7406	5600	Body	6.006	46.43	PASS	PASS	PASS	OFDM	N/A
G	5750	8/16/2020	7538	5750	Body	6.14	46.354	PASS	PASS	PASS	OFDM	N/A
G	5750	11/2/2020	7406	5750	Body	6.21	46.185	PASS	PASS	PASS	OFDM	N/A






FCC ID A3LSMG998U		SAR EVALUATION REPORT		Approved by: Quality Manager
Test Dates: 09/29/20 - 12/14/20	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.	PERM.	CW VALIDATION			MOD. VALIDATION		
					(σ)	(ε _r)	SENSITIVITY	PROBE LINEARITY	PROBE ISOTROPY	MOD. TYPE	DUTY FACTOR	PAR
G	1750	8/5/2020	7538	1750	Body	1.503	52.226	PASS	PASS	PASS	N/A	N/A
H	1750	5/14/2020	7357	1750	Body	1.531	51.7	PASS	PASS	PASS	N/A	N/A
J	1900	1/1/2020	7571	1900	Body	1.579	51.919	PASS	PASS	PASS	GMSK	PASS
K	2300	7/7/2020	7409	2300	Body	1.85	51.59	PASS	PASS	PASS	N/A	N/A
K	2450	7/7/2020	7409	2450	Body	2.018	51.18	PASS	PASS	PASS	OFDM/TDD	PASS
K	2600	7/8/2020	7409	2600	Body	2.194	50.73	PASS	PASS	PASS	TDD	PASS
L	3700	11/3/2020	7539	3700	Body	3.423	50.88	PASS	PASS	PASS	TDD	PASS
L	3900	11/2/2020	7539	3900	Body	3.674	50.52	PASS	PASS	PASS	TDD	PASS
G	5250	8/16/2020	7538	5250	Body	5.476	47.185	PASS	PASS	PASS	OFDM	N/A
G	5600	8/16/2020	7538	5600	Body	5.937	46.607	PASS	PASS	PASS	OFDM	N/A
G	5750	8/16/2020	7538	5750	Body	6.14	46.354	PASS	PASS	PASS	OFDM	N/A

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. 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.

FCC ID A3LSMG998U	 PCTEST <small>Proud to be part of</small> 	SAR EVALUATION REPORT		Approved by: Quality Manager
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