

APPENDIX A: SAR TEST RESULTS FOR P_{LIMIT} CALCULATIONS

Table A-1
DSI = 2 P_{Limit} Calculations – n48 Head SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Bandwidth [MHz]	Form Factor	Conducted Power [dBm]	Antenna Config	Side	Test Position	Waveform	Modulation	RB Size	RB Offset	Duty Cycle	SAR (1g)	P _{limit}	Overall P _{limit}	
MHz	Ch.													(W/kg)			
3570.00	638000	Low	NR Band n48	40	Open	15.16	F	Right	Cheek	DFT-S-OFDM	QPSK	1	104	1:1	0.525	17.96	17.09
3624.99	641666	Mid	NR Band n48	40	Open	15.37	F	Right	Cheek	DFT-S-OFDM	QPSK	1	104	1:1	0.673	17.09	
3679.98	645332	High	NR Band n48	40	Open	15.63	F	Right	Cheek	DFT-S-OFDM	QPSK	1	104	1:1	0.598	17.86	
3570.00	638000	Low	NR Band n48	40	Open	15.24	F	Right	Cheek	DFT-S-OFDM	QPSK	50	56	1:1	0.526	18.03	
3624.99	641666	Mid	NR Band n48	40	Open	15.28	F	Right	Cheek	DFT-S-OFDM	QPSK	50	56	1:1	0.649	17.16	
3679.98	645332	High	NR Band n48	40	Open	15.48	F	Right	Cheek	DFT-S-OFDM	QPSK	50	56	1:1	0.606	17.66	
3679.98	645332	High	NR Band n48	40	Open	15.44	F	Right	Cheek	DFT-S-OFDM	QPSK	100	0	1:1	0.604	17.63	
3679.98	645332	High	NR Band n48	40	Open	15.35	F	Right	Cheek	CP-OFDM	QPSK	1	1	1:1	0.612	17.48	
3679.98	645332	High	NR Band n48	40	Open	15.63	F	Right	Tilt	DFT-S-OFDM	QPSK	1	104	1:1	0.524	18.44	
3679.98	645332	High	NR Band n48	40	Open	15.48	F	Right	Tilt	DFT-S-OFDM	QPSK	50	56	1:1	0.509	18.41	
3679.98	645332	High	NR Band n48	40	Open	15.63	F	Left	Cheek	DFT-S-OFDM	QPSK	1	104	1:1	0.175	23.20	
3679.98	645332	High	NR Band n48	40	Open	15.48	F	Left	Cheek	DFT-S-OFDM	QPSK	50	56	1:1	0.171	23.15	
3679.98	645332	High	NR Band n48	40	Open	15.63	F	Left	Tilt	DFT-S-OFDM	QPSK	1	104	1:1	0.108	25.30	
3679.98	645332	High	NR Band n48	40	Open	15.48	F	Left	Tilt	DFT-S-OFDM	QPSK	50	56	1:1	0.116	24.84	

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

Table A-2
DSI = 0 P_{Limit} Calculations – n48 Body-Worn SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Bandwidth [MHz]	Cover Type	Conducted Power [dBm]	Antenna Config	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	P _{limit}	Overall P _{limit}	
MHz	Ch.													(W/kg)			
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	15 mm	back	1:1	0.137	27.54	27.16
3679.98	645332	High	NR Band n48	40	Open	18.86	F	DFT-S-OFDM	QPSK	50	56	15 mm	back	1:1	0.148	27.16	
3679.98	645332	High	NR Band n48	40	Open	18.82	F	CP-OFDM	QPSK	1	1	15 mm	back	1:1	0.146	27.18	
3679.98	645332	High	NR Band n48	40	Closed	18.91	F	DFT-S-OFDM	QPSK	1	104	15 mm	back	1:1	0.055	31.51	
3679.98	645332	High	NR Band n48	40	Closed	18.86	F	DFT-S-OFDM	QPSK	50	56	15 mm	back	1:1	0.050	31.87	
3679.98	645332	High	NR Band n48	40	Closed	18.82	F	CP-OFDM	QPSK	1	1	15 mm	back	1:1	0.053	31.58	

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.



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Test Dates: 12/14/21 - 12/21/21 & 02/07/22	DUT Type: Portable Handset	APPENDIX A: Page 1 of 3

Table A-3
DSI = 3 P_{Limit} Calculations – n48 Hotspot SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Bandwidth [MHz]	Form Factor	Conducted Power [dBm]	Antenna Config	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (1g)	P _{limit}	Overall P _{limit}	
MHz	Ch.													(W/kg)			
3679.98	645332	High	NR Band n48	40	Open	18.20	F	DFT-S-OFDM	QPSK	1	104	10 mm	back	1:1	0.235	24.49	18.21
3679.98	645332	High	NR Band n48	40	Open	18.25	F	DFT-S-OFDM	QPSK	50	56	10 mm	back	1:1	0.230	24.63	
3679.98	645332	High	NR Band n48	40	Open	18.20	F	DFT-S-OFDM	QPSK	1	104	10 mm	front	1:1	0.213	24.92	
3679.98	645332	High	NR Band n48	40	Open	18.25	F	DFT-S-OFDM	QPSK	50	56	10 mm	front	1:1	0.211	25.01	
3679.98	645332	High	NR Band n48	40	Open	18.20	F	DFT-S-OFDM	QPSK	1	104	10 mm	top	1:1	0.202	25.15	
3679.98	645332	High	NR Band n48	40	Open	18.25	F	DFT-S-OFDM	QPSK	50	56	10 mm	top	1:1	0.200	25.24	
3679.98	645332	High	NR Band n48	40	Open	18.20	F	DFT-S-OFDM	QPSK	1	104	10 mm	left	1:1	0.335	22.95	
3679.98	645332	High	NR Band n48	40	Open	18.25	F	DFT-S-OFDM	QPSK	50	56	10 mm	left	1:1	0.337	22.97	
3679.98	645332	High	NR Band n48	40	Open	18.30	F	CP-OFDM	QPSK	1	1	10 mm	left	1:1	0.354	22.81	
3679.98	645332	High	NR Band n48	40	Closed	18.20	F	DFT-S-OFDM	QPSK	1	104	5 mm	back	1:1	0.102	28.11	
3679.98	645332	High	NR Band n48	40	Closed	18.25	F	DFT-S-OFDM	QPSK	50	56	5 mm	back	1:1	0.104	28.08	
3570.00	638000	Low	NR Band n48	40	Closed	17.87	F	DFT-S-OFDM	QPSK	1	104	5 mm	front	1:1	0.545	20.51	
3624.99	641666	Mid	NR Band n48	40	Closed	17.97	F	DFT-S-OFDM	QPSK	1	104	5 mm	front	1:1	0.551	20.56	
3679.98	645332	High	NR Band n48	40	Closed	18.20	F	DFT-S-OFDM	QPSK	1	104	5 mm	front	1:1	0.560	20.72	
3570.00	638000	Low	NR Band n48	40	Closed	17.79	F	DFT-S-OFDM	QPSK	50	56	5 mm	front	1:1	0.523	20.60	
3624.99	641666	Mid	NR Band n48	40	Closed	17.90	F	DFT-S-OFDM	QPSK	50	56	5 mm	front	1:1	0.560	20.42	
3679.98	645332	High	NR Band n48	40	Closed	18.25	F	DFT-S-OFDM	QPSK	50	56	5 mm	front	1:1	0.551	20.84	
3679.98	645332	High	NR Band n48	40	Closed	18.19	F	DFT-S-OFDM	QPSK	100	0	5 mm	front	1:1	0.561	20.70	
3679.98	645332	High	NR Band n48	40	Closed	18.20	F	DFT-S-OFDM	QPSK	1	104	5 mm	bottom	1:1	0.297	23.47	
3679.98	645332	High	NR Band n48	40	Closed	18.25	F	DFT-S-OFDM	QPSK	50	56	5 mm	bottom	1:1	0.313	23.29	
3570.00	638000	Low	NR Band n48	40	Closed	17.87	F	DFT-S-OFDM	QPSK	1	104	5 mm	left	1:1	0.775	18.98	
3624.99	641666	Mid	NR Band n48	40	Closed	17.97	F	DFT-S-OFDM	QPSK	1	104	5 mm	left	1:1	0.933	18.27	
3679.98	645332	High	NR Band n48	40	Closed	18.20	F	DFT-S-OFDM	QPSK	1	104	5 mm	left	1:1	0.932	18.51	
3570.00	638000	Low	NR Band n48	40	Closed	17.79	F	DFT-S-OFDM	QPSK	50	56	5 mm	left	1:1	0.870	18.39	
3624.99	641666	Mid	NR Band n48	40	Closed	17.90	F	DFT-S-OFDM	QPSK	50	56	5 mm	left	1:1	0.932	18.21	
3679.98	645332	High	NR Band n48	40	Closed	18.25	F	DFT-S-OFDM	QPSK	50	56	5 mm	left	1:1	0.931	18.56	
3679.98	645332	High	NR Band n48	40	Closed	18.19	F	DFT-S-OFDM	QPSK	100	0	5 mm	left	1:1	0.917	18.57	
3679.98	645332	High	NR Band n48	40	Closed	18.30	F	CP-OFDM	QPSK	1	1	5 mm	left	1:1	1.010	18.26	

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.

Table A-4
DSI = 0 P_{Limit} Calculations – n48 Phablet SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Bandwidth [MHz]	Form Factor	Conducted Power [dBm]	Antenna Config	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	P _{limit}	Overall P _{limit}	
MHz	Ch.													(W/kg)			
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	back	1:1	1.130	22.36	18.70
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	front	1:1	1.150	22.28	
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	top	1:1	0.619	24.97	
3570.00	638000	Low	NR Band n48	40	Open	18.60	F	DFT-S-OFDM	QPSK	1	104	0 mm	left	1:1	2.250	19.06	
3624.99	641666	Mid	NR Band n48	40	Open	18.79	F	DFT-S-OFDM	QPSK	1	104	0 mm	left	1:1	2.300	19.15	
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	left	1:1	2.440	19.02	
3570.00	638000	Low	NR Band n48	40	Open	18.59	F	DFT-S-OFDM	QPSK	50	56	0 mm	left	1:1	2.060	19.43	
3624.99	641666	Mid	NR Band n48	40	Open	18.64	F	DFT-S-OFDM	QPSK	50	56	0 mm	left	1:1	2.360	18.89	
3679.98	645332	High	NR Band n48	40	Open	18.86	F	DFT-S-OFDM	QPSK	50	56	0 mm	left	1:1	2.330	19.17	
3679.98	645332	High	NR Band n48	40	Open	18.82	F	DFT-S-OFDM	QPSK	100	0	0 mm	left	1:1	2.380	19.03	
3679.98	645332	High	NR Band n48	40	Open	18.82	F	CP-OFDM	QPSK	1	1	0 mm	left	1:1	2.570	18.70	

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.
Data highlighted in blue was tested and provided by the manufacturer.







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Table A-5
DSI = 1 P_{Limit} Calculations – n48 Phablet SAR

MEASUREMENT RESULTS																	
FREQUENCY		Mode	Bandwidth [MHz]	Form Factor	Conducted Power [dBm]	Antenna Config	Waveform	Modulation	RB Size	RB Offset	Spacing	Side	Duty Cycle	SAR (10g)	P _{limit}	Overall P _{limit}	
MHz	Ch.													(W/kg)			
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	back	1:1	1.130	22.36	18.70
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	front	1:1	1.150	22.28	
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	top	1:1	0.619	24.97	
3570.00	638000	Low	NR Band n48	40	Open	18.60	F	DFT-S-OFDM	QPSK	1	104	0 mm	left	1:1	2.250	19.06	
3624.99	641666	Mid	NR Band n48	40	Open	18.79	F	DFT-S-OFDM	QPSK	1	104	0 mm	left	1:1	2.300	19.15	
3679.98	645332	High	NR Band n48	40	Open	18.91	F	DFT-S-OFDM	QPSK	1	104	0 mm	left	1:1	2.440	19.02	
3570.00	638000	Low	NR Band n48	40	Open	18.59	F	DFT-S-OFDM	QPSK	50	56	0 mm	left	1:1	2.060	19.43	
3624.99	641666	Mid	NR Band n48	40	Open	18.64	F	DFT-S-OFDM	QPSK	50	56	0 mm	left	1:1	2.360	18.89	
3679.98	645332	High	NR Band n48	40	Open	18.86	F	DFT-S-OFDM	QPSK	50	56	0 mm	left	1:1	2.330	19.17	
3679.98	645332	High	NR Band n48	40	Open	18.82	F	DFT-S-OFDM	QPSK	100	0	0 mm	left	1:1	2.380	19.03	
3679.98	645332	High	NR Band n48	40	Open	18.82	F	CP-OFDM	QPSK	1	1	0 mm	left	1:1	2.570	18.70	

For some bands/modes, a lower P_{Limit} was selected as a more conservative evaluation.
Data highlighted in blue was tested and provided by the manufacturer.

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