

13.2 SAR results for 5G NR

Head

ANT	RF Exposure Conditions	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	Figure No./Note	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Reported SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Reported SAR 10g (W/kg)	Power Drift
11	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 18dB	Cheek Left	0mm	\	18.39	19.3	0.078	0.10	0.039	0.05	-0.04
11	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 18dB	Tilt Left	0mm	\	18.39	19.3	0.035	0.04	0.017	0.02	-0.07
11	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 18dB	Cheek Right	0mm	Fig A. 73	18.39	19.3	0.251	0.31	0.105	0.13	0.15
11	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 18dB	Tilt Right	0mm	\	18.39	19.3	0.087	0.11	0.039	0.05	-0.08
11	Head	N7	512000	2560	15k 20M CP-OFDM QPSK 50RB-25 18dB	Cheek Right	0mm	\	18.35	19.3	0.229	0.28	0.092	0.11	-0.12
13	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 16dB	Cheek Left	0mm	\	15.76	16.8	0.125	0.16	0.059	0.07	-0.15
13	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 16dB	Tilt Left	0mm	\	15.76	16.8	0.175	0.22	0.08	0.10	0.10
13	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 16dB	Cheek Right	0mm	Fig A. 74	15.76	16.8	0.436	0.55	0.2	0.25	0.18
13	Head	N7	512000	2560	15k 20M DFT-s-OFDM QPSK 50RB-25 16dB	Tilt Right	0mm	\	15.76	16.8	0.428	0.54	0.197	0.25	-0.06
13	Head	N7	512000	2560	15k 20M CP-OFDM QPSK 53RB-26 16dB	Tilt Left	0mm	\	15.73	16.8	0.407	0.52	0.17	0.22	-0.10
11	Head	N66	346000	1730	15k 40M DFT-s-OFDM QPSK 108RB-54 19.5dB	Cheek Left	0mm	\	19.08	20	<0.01	<0.01	<0.01	<0.01	/
11	Head	N66	346000	1730	15k 40M DFT-s-OFDM QPSK 108RB-54 19.5dB	Tilt Left	0mm	\	19.08	20	<0.01	<0.01	<0.01	<0.01	/
11	Head	N66	346000	1730	15k 40M DFT-s-OFDM QPSK 108RB-54 19.5dB	Cheek Right	0mm	Fig A. 75	19.08	20	0.082	0.10	0.041	0.05	0.01
11	Head	N66	346000	1730	15k 40M DFT-s-OFDM QPSK 108RB-54 19.5dB	Tilt Right	0mm	\	19.08	20	0.03	0.04	0.016	0.02	-0.15
11	Head	N66	346000	1730	15k 40M CP-OFDM QPSK 108RB-54 19.5dB	Cheek Right	0mm	\	19.06	20	0.072	0.09	0.034	0.04	0.09
13	Head	N66	346000	1730	15k 40M DFT-s-OFDM 16QAM 108RB-54 15.5dB	Cheek Left	0mm	\	14.09	15	0.148	0.18	0.082	0.10	0.09
13	Head	N66	346000	1730	15k 40M DFT-s-OFDM 16QAM 108RB-54 15.5dB	Tilt Left	0mm	\	14.09	15	0.211	0.26	0.114	0.14	0.07
13	Head	N66	346000	1730	15k 40M DFT-s-OFDM 16QAM 108RB-54 15.5dB	Cheek Right	0mm	\	14.09	15	0.238	0.29	0.125	0.15	0.16
13	Head	N66	346000	1730	15k 40M DFT-s-OFDM 16QAM 108RB-54 15.5dB	Tilt Right	0mm	Fig A. 76	14.09	15	0.413	0.51	0.191	0.24	-0.11
13	Head	N66	346000	1730	15k 40M CP-OFDM 16QAM 108RB-54 15.5dB	Tilt Right	0mm	\	14.07	15	0.387	0.48	0.179	0.22	-0.01
11	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Cheek Left	0mm	\	13.75	14.5	0.072	0.09	0.03	0.04	0.03
11	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Tilt Left	0mm	\	13.75	14.5	0.036	0.04	0.015	0.02	0.15
11	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Cheek Right	0mm	Fig A. 77	13.75	14.5	0.23	0.27	0.073	0.09	0.02
11	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Tilt Right	0mm	\	13.75	14.5	0.046	0.05	0.019	0.02	0.15
11	Head	N77(3450-3550)	633334	3500.01	30k 10M DFT-s-OFDM 16QAM 1RB-1 13.5dB	Cheek Right	0mm	\	13.61	14.5	0.197	0.24	0.064	0.08	0.17
12	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Cheek Left	0mm	\	16.36	17.5	0.137	0.18	0.055	0.07	-0.08
12	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Tilt Left	0mm	\	16.36	17.5	0.122	0.16	0.049	0.06	0.01
12	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Cheek Right	0mm	Fig A. 78	16.36	17.5	0.367	0.48	0.135	0.18	-0.08
12	Head	N77(3450-3550)	633334	3500.01	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Tilt Right	0mm	\	16.36	17.5	0.233	0.30	0.086	0.11	0.01
12	Head	N77(3450-3550)	633334	3500.01	30k 10M DFT-s-OFDM 16QAM 1RB-1 17dB	Cheek Right	0mm	\	16.29	17.5	0.289	0.38	0.107	0.14	-0.08
11	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Cheek Left	0mm	\	13.83	14.5	0.114	0.13	0.05	0.06	-0.10
11	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Tilt Left	0mm	\	13.83	14.5	0.045	0.05	0.021	0.02	-0.02
11	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Cheek Right	0mm	Fig A. 79	13.83	14.5	0.334	0.39	0.124	0.14	0.09
11	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 13.5dB	Tilt Right	0mm	\	13.83	14.5	0.08	0.09	0.035	0.04	0.00
11	Head	N77(3700-3980)	647000	3705	30k 10M DFT-s-OFDM 16QAM 1RB-1 13.5dB	Cheek Right	0mm	\	13.79	14.5	0.297	0.35	0.108	0.13	-0.10
12	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Cheek Left	0mm	\	16.36	17	0.138	0.16	0.055	0.06	-0.06
12	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Tilt Left	0mm	\	16.36	17	0.122	0.14	0.051	0.06	-0.11
12	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Cheek Right	0mm	Fig A. 80	16.36	17	0.248	0.29	0.091	0.11	0.08
12	Head	N77(3700-3980)	647000	3705	30k 10M CP-OFDM 16QAM 1RB-1 17dB	Tilt Right	0mm	\	16.36	17	0.241	0.28	0.08	0.09	0.00
12	Head	N77(3700-3980)	647000	3705	30k 10M DFT-s-OFDM 16QAM 1RB-1 17dB	Cheek Right	0mm	\	16.33	17	0.214	0.25	0.08	0.09	0.04
11	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 1RB-22 13dB	Cheek Left	0mm	\	14.26	15.5	0.116	0.15	0.054	0.07	-0.02
11	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 1RB-22 13dB	Tilt Left	0mm	\	14.26	15.5	0.048	0.06	0.022	0.03	0.02
11	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 1RB-22 13dB	Cheek Right	0mm	Fig A. 81	14.26	15.5	0.379	0.50	0.151	0.20	0.05
11	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 1RB-22 13dB	Tilt Right	0mm	\	14.26	15.5	0.091	0.12	0.044	0.06	-0.01
11	Head	N78	647000	3705	30k 10M DFT-s-OFDM 16QAM 1RB-22 13dB	Cheek Right	0mm	\	14.18	15.5	0.372	0.50	0.148	0.20	-0.08
12	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 12RB6 17dB	Cheek Left	0mm	\	17.31	18	0.136	0.16	0.054	0.06	-0.06
12	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 12RB6 17dB	Tilt Left	0mm	\	17.31	18	0.17	0.20	0.065	0.08	-0.02
12	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 12RB6 17dB	Cheek Right	0mm	Fig A. 82	17.31	18	0.285	0.33	0.104	0.12	0.07
12	Head	N78	647000	3705	30k 10M CP-OFDM 16QAM 12RB6 17dB	Tilt Right	0mm	\	17.31	18	0.246	0.29	0.089	0.10	-0.15
12	Head	N78	647000	3705	30k 10M DFT-s-OFDM 16QAM 12RB6 17dB	Cheek Right	0mm	\	17.16	18	0.261	0.32	0.099	0.12	-0.11

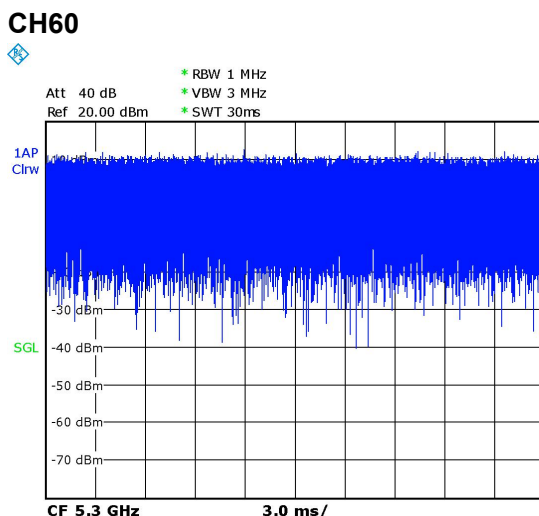
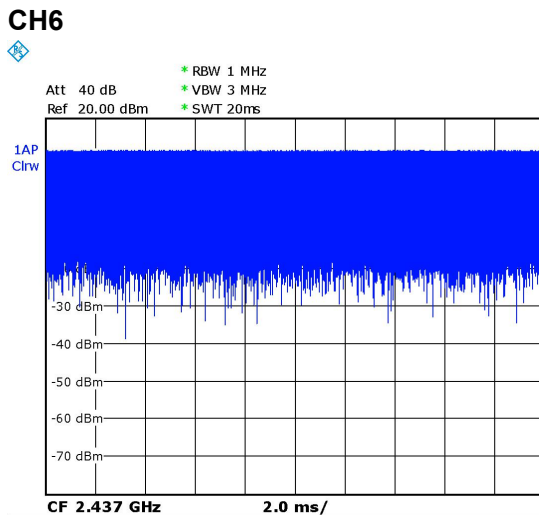
13.3 SAR results for WLAN

The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

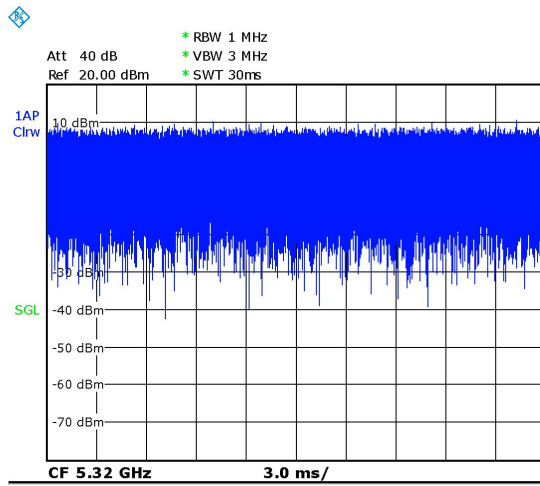
When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.

SAR Test reduction was applied from KDB 248227 guidance, when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

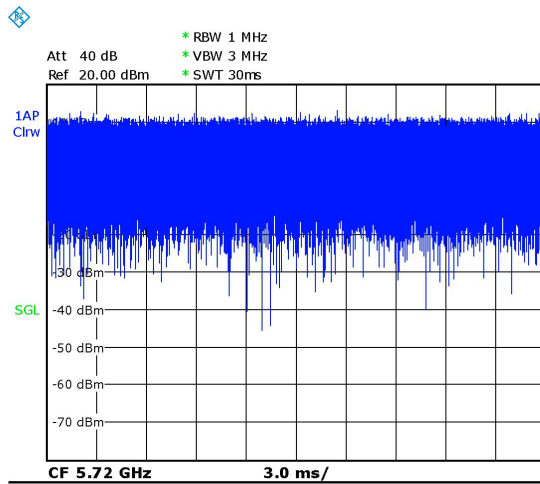
Duty factor plot



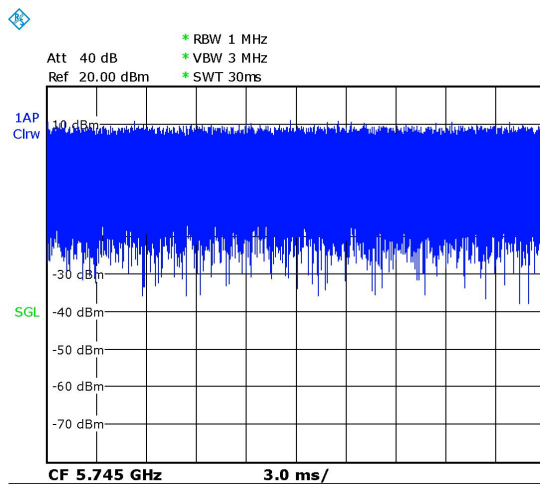
CH64



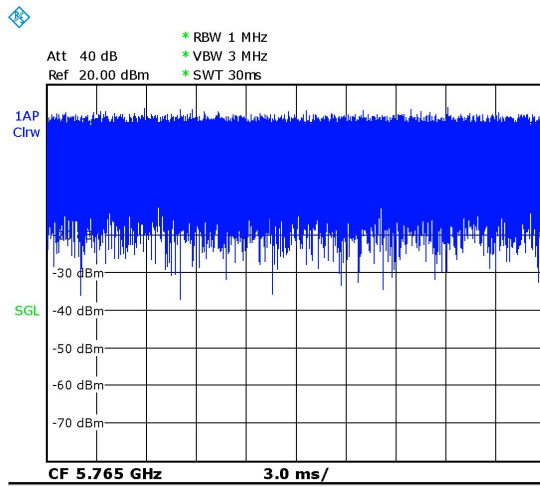
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CH149



CH153



WLAN 2.4G

Test Position	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	Figure No./Note	EUT Measured Power (dBm)	Tune up (dBm)	Duty Cycle	Duty Cycle scaling factor	Measured SAR 1g (W/kg)	Reported SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Reported SAR 10g (W/kg)	Power Drift
Head	WLAN 2.4G	6	2437	11b	Cheek Left	0mm	Fig A.103	12.65	13	100%	1	0.146	0.16	0.069	0.07	-0.06
Head	WLAN 2.4G	6	2437	11b	Tilt Left	0mm	\	12.85	13	100%	1	0.130	0.14	0.061	0.07	0.19
Head	WLAN 2.4G	6	2437	11b	Cheek Right	0mm	\	12.85	13	100%	1	0.057	0.06	0.031	0.03	-0.13
Head	WLAN 2.4G	6	2437	11b	Tilt Right	0mm	\	12.85	13	100%	1	0.074	0.08	0.036	0.04	0.03
Body	WLAN 2.4G	6	2437	11b	Front	10mm	\	19.18	20	100%	1	0.073	0.09	0.040	0.05	0.15
Body	WLAN 2.4G	6	2437	11b	Rear	10mm	\	19.18	20	100%	1	0.082	0.10	0.045	0.05	-0.16
Body	WLAN 2.4G	6	2437	11b	Right	10mm	\	19.18	20	100%	1	0.077	0.09	0.040	0.05	-0.02
Body	WLAN 2.4G	6	2437	11b	Top	10mm	Fig A.104	19.18	20	100%	1	0.101	0.12	0.055	0.07	-0.03
Body	WLAN 2.4G	6	2437	11b	Front	10mm	\	14.36	15	100%	1	0.038	0.04	0.019	0.02	-0.12
Body	WLAN 2.4G	6	2437	11b	Rear	10mm	\	14.36	15	100%	1	0.044	0.05	0.037	0.04	0.02
Body	WLAN 2.4G	6	2437	11b	Right	10mm	\	14.36	15	100%	1	0.039	0.05	0.020	0.02	0.04
Body	WLAN 2.4G	6	2437	11b	Top	10mm	\	14.36	15	100%	1	0.059	0.07	0.030	0.03	-0.16
Body	WLAN 2.4G	6	2437	11b	Front	15mm	\	14.36	15	100.00%	1	0.027	0.03	0.015	0.02	0.17
Body	WLAN 2.4G	6	2437	11b	Rear	15mm	\	14.36	15	100.00%	1	0.033	0.04	0.019	0.02	0.07

WLAN 5G

Test Position	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	Figure No./Note	EUT Measured Power (dBm)	Tune up (dBm)	Duty Cycle	Duty Cycle scaling factor	Measured SAR 1g (W/kg)	Reported SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Reported SAR 10g (W/kg)	Power Drift
Head	WLAN 5G	60	5300	11a 6M 10dB	Cheek Left	0mm	\	10.8	12	100%	1	0.190	0.25	0.041	0.05	0
Head	WLAN 5G	60	5300	11a 6M 10dB	Tilt Left	0mm	Fig A.105	10.8	12	100%	1	0.259	0.34	0.057	0.08	-0.07
Head	WLAN 5G	60	5300	11a 6M 10dB	Cheek Right	0mm	\	10.8	12	100%	1	0.123	0.16	0.027	0.04	0.16
Head	WLAN 5G	60	5300	11a 6M 10dB	Tilt Right	0mm	\	10.8	12	100%	1	0.146	0.19	0.033	0.04	0.02
Head	WLAN 5G	144	5720	11a 6M 12dB	Cheek Left	0mm	\	13.99	15	100%	1	0.178	0.22	0.058	0.07	0.07
Head	WLAN 5G	144	5720	11a 6M 12dB	Tilt Left	0mm	\	13.99	15	100%	1	0.145	0.18	0.045	0.06	-0.15
Head	WLAN 5G	144	5720	11a 6M 12dB	Cheek Right	0mm	\	13.99	15	100%	1	0.078	0.10	0.024	0.03	0.06
Head	WLAN 5G	144	5720	11a 6M 12dB	Tilt Right	0mm	\	13.99	15	100%	1	0.083	0.10	0.025	0.03	-0.14
Head	WLAN 5G	153	5765	11a 6M 12.5dB	Cheek Left	0mm	\	14.45	16	100%	1	0.220	0.31	0.068	0.10	0.1
Head	WLAN 5G	153	5765	11a 6M 12.5dB	Tilt Left	0mm	\	14.45	16	100%	1	0.178	0.25	0.052	0.07	-0.17
Head	WLAN 5G	153	5765	11a 6M 12.5dB	Cheek Right	0mm	\	14.45	16	100%	1	0.087	0.12	0.026	0.04	-0.1
Head	WLAN 5G	153	5765	11a 6M 12.5dB	Tilt Right	0mm	\	14.45	16	100%	1	0.098	0.14	0.028	0.04	0.06
Body	WLAN 5G	64	5320	11a 6M 17dB	Front	10mm	\	17.63	19	100%	1	0.174	0.24	0.062	0.08	0.13
Body	WLAN 5G	64	5320	11a 6M 17dB	Rear	10mm	\	17.63	19	100%	1	0.269	0.37	0.100	0.14	-0.15
Body	WLAN 5G	64	5320	11a 6M 17dB	Right	10mm	\	17.63	19	100%	1	0.240	0.33	0.096	0.13	0.15
Body	WLAN 5G	64	5320	11a 6M 17dB	Top	10mm	Fig A.106	17.63	19	100%	1	0.490	0.67	0.166	0.23	0.09
Body	WLAN 5G	144	5720	11a 6M 17dB	Front	10mm	\	18.18	19	100%	1	0.185	0.22	0.074	0.09	0.01
Body	WLAN 5G	144	5720	11a 6M 17dB	Rear	10mm	\	18.18	19	100%	1	0.270	0.33	0.093	0.11	0.01
Body	WLAN 5G	144	5720	11a 6M 17dB	Right	10mm	\	18.18	19	100%	1	0.216	0.26	0.073	0.09	0.07
Body	WLAN 5G	144	5720	11a 6M 17dB	Top	10mm	\	18.18	19	100%	1	0.286	0.35	0.105	0.13	0.02
Body	WLAN 5G	149	5745	11a 6M 17dB	Front	10mm	\	18.35	19.5	100%	1	0.186	0.24	0.073	0.10	0.08
Body	WLAN 5G	149	5745	11a 6M 17dB	Rear	10mm	\	18.35	19.5	100%	1	0.269	0.35	0.101	0.13	0.04
Body	WLAN 5G	149	5745	11a 6M 17dB	Right	10mm	\	18.35	19.5	100%	1	0.220	0.29	0.075	0.10	-0.02
Body	WLAN 5G	149	5745	11a 6M 17dB	Top	10mm	\	18.35	19.5	100%	1	0.253	0.33	0.090	0.12	0.07
Body	WLAN 5G	64	5320	11a 6M 12.5dB	Front	10mm	\	14.49	15.5	100%	1	0.063	0.08	0.021	0.03	0.19
Body	WLAN 5G	64	5320	11a 6M 12.5dB	Rear	10mm	\	14.49	15.5	100%	1	0.106	0.13	0.038	0.05	0.11
Body	WLAN 5G	64	5320	11a 6M 12.5dB	Right	10mm	\	14.49	15.5	100%	1	0.085	0.11	0.034	0.04	0.11
Body	WLAN 5G	64	5320	11a 6M 12.5dB	Top	10mm	\	14.49	15.5	100%	1	0.170	0.21	0.055	0.07	0.06
Body	WLAN 5G	144	5720	11a 6M 13.5dB	Front	10mm	\	16.59	17.5	100%	1	0.078	0.10	0.030	0.04	-0.06
Body	WLAN 5G	144	5720	11a 6M 13.5dB	Rear	10mm	\	16.59	17.5	100%	1	0.129	0.16	0.044	0.05	-0.1
Body	WLAN 5G	144	5720	11a 6M 13.5dB	Right	10mm	\	16.59	17.5	100%	1	0.097	0.12	0.032	0.04	-0.04
Body	WLAN 5G	144	5720	11a 6M 13.5dB	Top	10mm	\	16.59	17.5	100%	1	0.140	0.17	0.050	0.06	0.08
Body	WLAN 5G	149	5745	11a 6M 15.5dB	Front	10mm	\	17.28	18.5	100%	1	0.124	0.16	0.050	0.07	-0.01
Body	WLAN 5G	149	5745	11a 6M 15.5dB	Rear	10mm	\	17.28	18.5	100%	1	0.157	0.21	0.061	0.08	0.04
Body	WLAN 5G	149	5745	11a 6M 15.5dB	Right	10mm	\	17.28	18.5	100%	1	0.148	0.20	0.049	0.06	-0.15
Body	WLAN 5G	149	5745	11a 6M 15.5dB	Top	10mm	\	17.28	18.5	100%	1	0.183	0.24	0.068	0.09	0.04

13.4 SAR results for BT

Test Position	Frequency Band	Channel Number	Frequency (MHz)	Mode/RB	Test Position	Distance	Figure No./Note	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Reported SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Reported SAR 10g (W/kg)	Power Drift
Head	BT	78	2480	11b	Cheek Left	0mm	Fig A. 107	9.61	10.5	0.065	0.08	0.029	0.04	-0.18
Head	BT	78	2480	11b	Tilt Left	0mm	\	9.61	10.5	0.052	0.06	0.022	0.03	0.01
Head	BT	78	2480	11b	Cheek Right	0mm	\	9.61	10.5	0.025	0.03	0.013	0.02	-0.03
Head	BT	78	2480	11b	Tilt Right	0mm	\	9.61	10.5	<0.01	<0.01	<0.01	<0.01	/
Body	BT	78	2480	11b	Front	10mm	\	9.61	10.5	<0.01	<0.01	<0.01	<0.01	/
Body	BT	78	2480	11b	Rear	10mm	Fig A. 108	9.61	10.5	0.024	0.03	0.012	0.01	0.03
Body	BT	78	2480	11b	Right	10mm	\	9.61	10.5	<0.01	<0.01	<0.01	<0.01	/
Body	BT	78	2480	11b	Top	10mm	\	9.61	10.5	<0.01	<0.01	<0.01	<0.01	/

13.5 SAR results for Phablet

According to the KDB648474 D04, for smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.

1. The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
2. The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold. The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is > 20.0 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. Extremity 10-g SAR is also not required for the front (top) surface of larger form factor full size tablets. The more conservative normal tablet SAR results can be used to support phablet mode 10-g extremity SAR.
3. The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and mini-tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless modes and exposure conditions

For the device of this project, the display diagonal dimension is 170.349 cm (> 15.0 cm) and the overall diagonal dimension is 174.45 cm (> 16.0 cm), so this device is a phone as “phablet”.

14 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required.

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

15 Evaluation of Simultaneous

15.1 Introduction

The following procedures adopted from “FCC SAR Considerations for Cell Phones with Multiple Transmitters” are applicable to handsets with built-in unlicensed transmitters such as WLAN and Bluetooth devices which may simultaneously transmit with the licensed transmitter. KDB 447498 D01 provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

15.1.1 Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

15.1.2 SAR to Peak Location Ratio (SPLSR)

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR1 + SAR2)^{1.5} / Ri$$

Where:

SAR1 is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition.

SAR2 is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first .

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of

$$[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$$

In order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR1 + SAR2)^{1.5} / Ri \leq 0.04$$

When an individual antenna transmits at on two bands simultaneously, the sum of the highest reported SAR for the frequency bands should be used to determine SAR1 or SAR2. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

15.2 Simultaneous Transmission Capabilities

The simultaneous transmission possibilities for this device are listed as below:

Capable Transmit Configurations	Head	Body-worn	Hotspot
WWAN+WLAN2.4G	Yes	Yes	Yes
WWAN+WLAN5G	Yes	Yes	Yes
WWAN+BT	Yes	Yes	Yes
WWAN+WLAN5G+BT	Yes	Yes	Yes

Note:

1. The reported SAR summation is calculated based on the same configuration and test position.
2. For the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR, we determined the SAR of these edges were less than 0.01. For the convenience of simultaneous transmission calculation, all SAR values less than or equal to 0.01 are uniformly written as 0.00

15.3 SAR Simultaneous Transmission Analysis

The sum of reported SAR values for 2/3/4G ANT13+WIFI+BT

reported SAR by (W/kg)																				
Head	GSM850	GSM1900	WCDMA 1900	WCDMA 1700	WCDMA 850	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band12	LTE Band13	LTE Band28	LTE Band38	LTE Band41	LTE Band66	2.4G	5G	BT	Cellular+WIFI2.4G	Cellular+WIFISG+BT
Cheek	L	0.09	0.26	0.45	0.54	0.08	0.44	0.36	0.11	0.17	0.12	0.14	0.09	0.06	0.21	0.16	0.31	0.09	0.7	0.94
	L	0.07	0.36	0.57	0.49	0.07	0.58	0.50	0.10	0.21	0.11	0.13	0.14	0.09	0.05	0.21	0.14	0.34	0.07	0.99
	R	0.23	0.46	0.62	0.58	0.22	0.60	0.47	0.25	0.52	0.22	0.20	0.24	0.27	0.20	0.33	0.06	0.16	0.03	0.68
	R	0.15	0.55	0.84	0.76	0.11	0.72	0.58	0.15	0.52	0.22	0.14	0.20	0.26	0.16	0.41	0.08	0.19	<0.01	0.92
Tilt																				1.03

Body	GSM850	GSM1900	WCDMA 1900	WCDMA 1700	WCDMA 850	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band12	LTE Band13	LTE Band28	LTE Band38	LTE Band41	LTE Band66	2.4G	5G	BT	Cellular+WIFI2.4G	Cellular+WIFISG+BT
Front	10mm	0.25	0.29	0.28	0.26	0.20	0.26	0.19	0.20	0.22	0.04	0.10	0.05	0.20	0.21	0.22	0.04	0.16	<0.01	0.33
	10mm	0.31	0.31	0.30	0.29	0.24	0.30	0.20	0.24	0.43	0.06	0.12	0.06	0.38	0.30	0.23	0.05	0.21	0.03	0.48
	10mm	0.09	0.07	0.07	0.07	0.08	0.07	0.04	0.10	0.23	0.02	0.06	0.06	0.23	0.26	0.05	/	/	/	0.26
	10mm	0.15	<0.01	<0.01	<0.01	0.11	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.2	<0.01	/	0.20
	10mm	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.00
	10mm	0.27	0.71	0.53	0.51	0.21	0.51	0.34	0.17	0.58	0.07	0.12	0.07	0.47	0.42	0.41	0.07	0.24	<0.01	0.78
Top																				0.95

Body	GSM850	GSM1900	WCDMA 1900	WCDMA 1700	WCDMA 850	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band12	LTE Band13	LTE Band28	LTE Band38	LTE Band41	LTE Band66	2.4G	5G	BT	Cellular+WIFI2.4G	Cellular+WIFISG+BT
Front	15mm	/	0.34	0.66	0.52	/	0.44	0.27	/	0.40	/	/	/	0.15	0.15	0.42	0.04	0.16	<0.01	0.70
	15mm	/	0.45	0.69	0.64	/	0.49	0.30	/	0.64	/	/	/	0.23	0.19	0.43	0.05	0.21	<0.01	0.82
	15mm	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.90

The sum of reported SAR values for 2/3/4G ANT31/41+WIFI+BT

reported SAR by (W/kg)																				
Head	GSM850	GSM1900	WCDMA 1900	WCDMA 1700	WCDMA 850	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band12	LTE Band13	LTE Band28	LTE Band38	LTE Band41	LTE Band66	2.4G	5G	BT	Cellular+WIFI2.4G	Cellular+WIFISG+BT
Cheek	L	0.27	0.17	0.23	0.25	0.21	0.33	0.24	0.16	0.24	0.11	0.22	0.09	0.08	0.23	0.16	0.31	0.09	0.49	0.73
	L	0.44	0.11	0.11	0.10	0.12	0.10	0.07	0.10	0.14	0.12	0.07	0.12	0.06	0.05	0.10	0.14	0.34	0.07	0.55
	R	0.20	0.05	0.14	0.19	0.19	0.15	0.23	0.17	0.34	0.15	0.08	0.17	0.16	0.14	0.11	0.06	0.16	0.03	0.40
	R	0.08	0.06	0.09	0.08	0.08	0.13	0.06	0.09	0.15	0.00	0.09	0.08	0.07	0.13	0.08	0.19	<0.01	0.23	0.34
Tilt																				

Body	GSM850	GSM1900	WCDMA 1900	WCDMA 1700	WCDMA 850	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band12	LTE Band13	LTE Band28	LTE Band38	LTE Band41	LTE Band66	2.4G	5G	BT	Cellular+WIFI2.4G	Cellular+WIFISG+BT
Front	10mm	0.29	0.15	0.19	0.29	0.24	0.38	0.28	0.22	0.27	0.15	0.10	0.18	0.21	0.23	0.31	0.04	0.16	<0.01	0.42
	10mm	0.47	0.26	0.35	0.48	0.40	0.53	0.44	0.32	0.26	0.24	0.15	0.22	0.28	0.32	0.38	0.05	0.21	0.03	0.58
	10mm	0.21	<0.01	0.05	0.09	0.29	0.00	0.00	0.22	<0.01	0.20	0.12	0.23	<0.01	<0.01	<0.01	/	/	/	0.29
	10mm	<0.01	0.08	0.10	0.15	0.10	0.15	0.08	<0.01	0.10	<0.01	<0.01	<0.01	0.09	0.06	0.16	0.05	0.2	<0.01	0.21
	10mm	0.14	0.45	0.44	0.53	0.11	0.54	0.49	0.13	0.13	0.06	<0.01	<0.01	0.10	0.14	0.45	/	/	/	0.54
	10mm	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	0.07
Top																				0.31

Body	GSM850	GSM1900	WCDMA 1900	WCDMA 1700	WCDMA 850	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band12	LTE Band13	LTE Band28	LTE Band38	LTE Band41	LTE Band66	2.4G	5G	BT	Cellular+WIFI2.4G	Cellular+WIFISG+BT
Front	15mm	/	0.10	0.21	0.18	/	0.16	0.18	/	0.14	/	/	/	/	/	0.14	0.04	0.16	<0.01	0.37
	15mm	/	0.22	0.40	0.32	/	0.28	0.28	/	0.16	/	/	/	/	/	0.24	0.05	0.21	<0.01	0.61

The sum of reported SAR values for NR SA+WiFi+BT

reported SAR 1g (W/kg)																
Head		N7 ANT11	N7 ANT13	N66 ANT11	N66 ANT13	N77 (3450-3550) ANT11	N77 (3450-3550) ANT12	N77 (3700-3980) ANT11	N77 (3700-3980) ANT12	N78 ANT11	N78 ANT12	2.4G	5G	BT	Cellular+WiFi2.4G	Cellular+WiFi5G+BT
Cheek	L	0.10	0.18	<0.01	0.18	0.09	0.20	0.13	0.20	0.14	0.16	0.16	0.31	0.09	0.36	0.6
Tilt	L	0.04	0.25	<0.01	0.26	0.04	0.18	0.05	0.18	0.06	0.20	0.14	0.34	0.07	0.40	0.67
Cheek	R	0.31	0.62	0.11	0.29	0.27	0.54	0.39	0.36	0.45	0.33	0.06	0.16	0.03	0.68	0.81
Tilt	R	0.11	0.61	0.04	0.51	0.05	0.34	0.09	0.35	0.11	0.29	0.08	0.19	<0.01	0.69	0.80
Body		N7 ANT11	N7 ANT13	N66 ANT11	N66 ANT13	N77 (3450-3550) ANT11	N77 (3450-3550) ANT12	N77 (3700-3980) ANT11	N77 (3700-3980) ANT12	N78 ANT11	N78 ANT12	2.4G	5G	BT	Cellular+WiFi2.4G	Cellular+WiFi5G+BT
Front	10mm	0.12	0.27	<0.01	0.20	0.15	0.23	0.24	0.11	0.15	0.09	0.04	0.16	<0.01	0.31	0.43
Rear	10mm	0.31	0.54	0.06	0.19	0.20	0.49	0.22	0.16	0.16	0.16	0.05	0.21	0.03	0.59	0.78
Left	10mm	0.39	0.23	0.09	<0.01	0.42	0.25	0.58	0.10	0.39	0.07	/	/	/	0.58	0.58
Right	10mm	/	/	/	/	/	/	/	/	/	/	0.05	0.2	<0.01	0.05	0.25
Bottom	10mm	/	/	/	/	/	/	/	/	/	/	/	/	/	0.00	0.00
Top	10mm	<0.01	0.38	0.00	0.28	<0.01	0.31	0.04	0.13	0.02	0.07	0.07	0.24	<0.01	0.45	0.62
Body		N7 ANT11	N7 ANT13	N66 ANT11	N66 ANT13	N77 (3450-3550) ANT11	N77 (3450-3550) ANT12	N77 (3700-3980) ANT11	N77 (3700-3980) ANT12	N78 ANT11	N78 ANT12	2.4G	5G	BT	Cellular+WiFi2.4G	Cellular+WiFi5G+BT
Front	15mm	0.14	0.45	0.03	0.24	0.34	0.14	0.49	0.07	0.17	0.06	0.04	0.16	<0.01	0.53	0.65
Rear	15mm	0.33	0.70	0.06	0.25	0.43	0.27	0.39	0.10	0.23	0.08	0.05	0.21	<0.01	0.75	0.91

The sum of reported SAR values for NR NSA

N7 ANT11+LTE ANT31/41

reported SAR 1g (W/kg)								
Head		N7 ANT11	LTE Band2	LTE Band5	LTE Band66	N7 ANT11+B2	N7 ANT11+B5	N7 ANT11+B66
Cheek	L	0.10	0.21	0.24	0.23	0.31	0.34	0.33
Tilt	L	0.04	0.10	0.10	0.10	0.14	0.14	0.14
Cheek	R	0.31	0.15	0.17	0.11	0.46	0.48	0.42
Tilt	R	0.11	0.13	0.09	0.13	0.24	0.20	0.24
Body		N7 ANT11	LTE Band2	LTE Band5	LTE Band66	N7 ANT11+B2	N7 ANT11+B5	N7 ANT11+B66
Front	10mm	0.12	0.38	0.22	0.31	0.50	0.34	0.43
Rear	10mm	0.31	0.53	0.32	0.38	0.84	0.63	0.69
Left	10mm	0.39	0.00	0.22	<0.01	0.39	0.61	0.39
Right	10mm	/	0.15	<0.01	0.16	0.15	0.00	0.16
Bottom	10mm	/	0.54	0.13	0.46	0.54	0.13	0.46
Top	10mm	<0.01	/	/	/	0.00	0.00	0.00
Body		N7 ANT11	LTE Band2	LTE Band5	LTE Band66	N7 ANT11+B2	N7 ANT11+B5	N7 ANT11+B66
Front	15mm	0.14	0.16	0.22	0.14	0.30	0.36	0.28
Rear	15mm	0.33	0.28	0.32	0.24	0.61	0.65	0.57

N7 ANT13+LTE ANT31/41

reported SAR 1g (W/kg)								
Head		N7 ANT13	LTE Band2	LTE Band5	LTE Band66	N7 ANT13+B2	N7 ANT13+B5	N7 ANT13+B6 6
Cheek	L	0.16	0.21	0.24	0.23	0.37	0.40	0.39
Tilt	L	0.22	0.10	0.10	0.10	0.32	0.32	0.32
Cheek	R	0.55	0.15	0.17	0.11	0.70	0.72	0.66
Tilt	R	0.54	0.13	0.09	0.13	0.67	0.63	0.67
Body		N7 ANT13	LTE Band2	LTE Band5	LTE Band66	N7 ANT13+B2	N7 ANT13+B5	N7 ANT13+B6 6
Front	10mm	0.22	0.38	0.22	0.31	0.60	0.44	0.53
Rear	10mm	0.45	0.53	0.32	0.38	0.98	0.77	0.83
Left	10mm	0.19	0.00	0.22	<0.01	0.19	0.41	0.19
Right	10mm	/	0.15	<0.01	0.16	0.15	0.00	0.16
Bottom	10mm	/	0.54	0.13	0.46	0.54	0.13	0.46
Top	10mm	0.32	/	/	/	0.32	0.32	0.32
Body		N7 ANT13	LTE Band2	LTE Band5	LTE Band66	N7 ANT13+B2	N7 ANT13+B5	N7 ANT13+B6 6
Front	15mm	0.40	0.16	0.22	0.14	0.56	0.62	0.54
Rear	15mm	0.63	0.28	0.32	0.24	0.91	0.95	0.87

N66 ANT11+LTE ANT31/41

reported SAR 1g (W/kg)								
Head		N66 ANT11	LTE Band2	LTE Band5	LTE Band7	N66 ANT11+B2	N66 ANT11+B5	N66 ANT11+B7
Cheek	L	<0.01	0.21	0.24	0.16	0.21	0.24	0.16
Tilt	L	<0.01	0.10	0.10	0.14	0.10	0.10	0.14
Cheek	R	0.10	0.15	0.17	0.34	0.25	0.27	0.44
Tilt	R	0.04	0.13	0.09	0.15	0.17	0.13	0.19
Body		N66 ANT11	LTE Band2	LTE Band5	LTE Band7	N66 ANT11+B2	N66 ANT11+B5	N66 ANT11+B7
Front	10mm	<0.01	0.38	0.22	0.27	0.38	0.22	0.27
Rear	10mm	0.06	0.53	0.32	0.26	0.59	0.38	0.32
Left	10mm	0.08	0.00	0.22	<0.01	0.08	0.30	0.08
Right	10mm	/	0.15	<0.01	0.10	0.15	0.00	0.10
Bottom	10mm	/	0.54	0.13	0.13	0.54	0.13	0.13
Top	10mm	<0.01	/	/	/	0.00	0.00	0.00
Body		N66 ANT11	LTE Band2	LTE Band5	LTE Band7	N66 ANT11+B2	N66 ANT11+B5	N66 ANT11+B7
Front	15mm	0.02	0.16	0.22	0.14	0.18	0.24	0.16
Rear	15mm	0.05	0.28	0.32	0.16	0.33	0.37	0.21

N66 ANT13+LTE ANT31/41

reported SAR 1g (W/kg)								
Head		N66 ANT13	LTE Band2	LTE Band5	LTE Band7	N66 ANT13+B2	N66 ANT13+B5	N66 ANT13+B7
Cheek	L	0.18	0.21	0.24	0.16	0.39	0.42	0.34
Tilt	L	0.26	0.10	0.10	0.14	0.36	0.36	0.40
Cheek	R	0.29	0.15	0.17	0.34	0.44	0.46	0.63
Tilt	R	0.51	0.13	0.09	0.15	0.64	0.60	0.66
Body		N66 ANT13	LTE Band2	LTE Band5	LTE Band7	N66 ANT13+B2	N66 ANT13+B5	N66 ANT13+B7
Front	10mm	0.20	0.38	0.22	0.27	0.58	0.42	0.47
Rear	10mm	0.19	0.53	0.32	0.26	0.72	0.51	0.45
Left	10mm	<0.01	0.00	0.22	<0.01	0.00	0.22	0.00
Right	10mm	/	0.15	<0.01	0.10	0.15	0.00	0.10
Bottom	10mm	/	0.54	0.13	0.13	0.54	0.13	0.13
Top	10mm	0.28	/	/	/	0.28	0.28	0.28
Body		N66 ANT13	LTE Band2	LTE Band5	LTE Band7	N66 ANT13+B2	N66 ANT13+B5	N66 ANT13+B7
Front	15mm	0.24	0.16	0.22	0.14	0.40	0.46	0.38
Rear	15mm	0.25	0.28	0.32	0.16	0.53	0.57	0.41

N78 ANT11+LTE ANT31/41

reported SAR 1g (W/kg)																
Head		N78 ANT11	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT11+B2	N78 ANT11+B4	N78 ANT11+B5	N78 ANT11+B7	N78 ANT11+B3	N78 ANT11+B41	N78 ANT11+B6
Cheek	L	0.15	0.21	0.33	0.24	0.16	0.09	0.08	0.23	0.36	0.48	0.39	0.31	0.24	0.23	0.38
Tilt	L	0.06	0.10	0.07	0.10	0.14	0.06	0.05	0.10	0.16	0.13	0.16	0.20	0.12	0.11	0.16
Cheek	R	0.50	0.15	0.23	0.17	0.34	0.16	0.14	0.11	0.65	0.73	0.67	0.84	0.66	0.64	0.61
Tilt	R	0.12	0.13	0.06	0.09	0.15	0.08	0.07	0.13	0.25	0.18	0.21	0.27	0.20	0.19	0.25
Body		N78 ANT11	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT11+B2	N78 ANT11+B4	N78 ANT11+B5	N78 ANT11+B7	N78 ANT11+B3	N78 ANT11+B41	N78 ANT11+B6
Front	10mm	0.15	0.38	0.28	0.22	0.27	0.21	0.23	0.31	0.53	0.43	0.37	0.42	0.36	0.38	0.46
Rear	10mm	0.18	0.53	0.44	0.32	0.26	0.28	0.32	0.38	0.71	0.62	0.50	0.44	0.46	0.50	0.56
Left	10mm	0.44	0	<0.01	0.22	<0.01	<0.01	<0.01	<0.01	0.44	0.44	0.66	0.44	0.44	0.44	0.44
Right	10mm	/	0.15	0.08	<0.01	0.10	0.09	0.05	0.16	0.15	0.08	0.00	0.10	0.09	0.05	0.16
Bottom	10mm	/	0.54	0.49	0.13	0.13	0.10	0.14	0.46	0.54	0.49	0.13	0.13	0.10	0.14	0.46
Top	10mm	0.02	/	/	/	/	/	/	/	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Body		N78 ANT11	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT11+B2	N78 ANT11+B4	N78 ANT11+B5	N78 ANT11+B7	N78 ANT11+B3	N78 ANT11+B41	N78 ANT11+B6
Front	15mm	0.19	0.16	0.18	/	0.14	/	/	0.14	0.35	0.37	0.19	0.33	0.19	0.19	0.33
Rear	15mm	0.26	0.28	0.28	/	0.16	/	/	0.24	0.54	0.54	0.26	0.42	0.26	0.26	0.50

N78 ANT11+LTE ANT13

reported SAR 1g (W/kg)														
Head		N78 ANT11	LTE Band2	LTE Band4	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT11+B2	N78 ANT11+B4	N78 ANT11+B7	N78 ANT11+B8	N78 ANT11+B3+B4	N78 ANT11+B6
Cheek	L	0.15	0.44	0.36	0.17	0.08	0.06	0.21	0.59	0.51	0.32	0.23	0.21	0.36
Tilt	L	0.06	0.58	0.50	0.21	0.09	0.05	0.21	0.64	0.56	0.27	0.15	0.11	0.27
Cheek	R	0.50	0.60	0.47	0.52	0.27	0.20	0.33	1.10	0.97	1.02	0.77	0.70	0.83
Tilt	R	0.12	0.72	0.58	0.52	0.26	0.16	0.41	0.84	0.70	0.64	0.38	0.28	0.53
Body		N78 ANT11	LTE Band2	LTE Band4	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT11+B2	N78 ANT11+B4	N78 ANT11+B7	N78 ANT11+B8	N78 ANT11+B3+B4	N78 ANT11+B6
Front	10mm	0.15	0.26	0.19	0.22	0.20	0.21	0.22	0.41	0.34	0.37	0.35	0.36	0.37
Rear	10mm	0.18	0.30	0.20	0.43	0.38	0.30	0.23	0.48	0.38	0.61	0.56	0.48	0.41
Left	10mm	0.44	0.07	0.04	0.23	0.23	0.26	0.05	0.51	0.48	0.67	0.67	0.70	0.49
Right	10mm		0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
Bottom	10mm								0.00	0.00	0.00	0.00	0.00	0.00
Top	10mm	0.02	0.51	0.34	0.58	0.47	0.42	0.41	0.53	0.36	0.60	0.49	0.44	0.43
Body		N78 ANT11	LTE Band2	LTE Band4	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT11+B2	N78 ANT11+B4	N78 ANT11+B7	N78 ANT11+B8	N78 ANT11+B3+B4	N78 ANT11+B6
Front	15mm	0.19	0.44	0.27	0.40	0.15	0.15	0.42	0.63	0.46	0.59	0.34	0.34	0.61
Rear	15mm	0.26	0.49	0.30	0.64	0.23	0.19	0.43	0.75	0.56	0.90	0.49	0.45	0.69

N78 ANT12+LTE ANT31/41

reported SAR 1g (W/kg)																
Head		N78 ANT12	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT12+B2	N78 ANT12+B4	N78 ANT12+B5	N78 ANT12+B7	N78 ANT12+B8	N78 ANT12+B3+B4	N78 ANT12+B6
Cheek	L	0.16	0.21	0.33	0.24	0.16	0.09	0.08	0.23	0.37	0.49	0.40	0.32	0.25	0.24	0.39
Tilt	L	0.20	0.10	0.07	0.10	0.14	0.06	0.05	0.10	0.30	0.27	0.30	0.34	0.26	0.25	0.30
Cheek	R	0.33	0.15	0.23	0.17	0.34	0.16	0.14	0.11	0.48	0.56	0.50	0.67	0.49	0.47	0.44
Tilt	R	0.29	0.13	0.06	0.09	0.15	0.08	0.07	0.13	0.42	0.35	0.38	0.44	0.37	0.36	0.42
Body		N78 ANT12	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT12+B2	N78 ANT12+B4	N78 ANT12+B5	N78 ANT12+B7	N78 ANT12+B8	N78 ANT12+B3+B4	N78 ANT12+B6
Front	10mm	0.09	0.38	0.28	0.22	0.27	0.21	0.23	0.31	0.47	0.37	0.31	0.36	0.30	0.32	0.40
Rear	10mm	0.16	0.53	0.44	0.32	0.26	0.28	0.32	0.38	0.69	0.60	0.48	0.42	0.44	0.48	0.54
Left	10mm	0.07	0	<0.01	0.22	<0.01	<0.01	<0.01	<0.01	0.07	0.07	0.29	0.07	0.07	0.07	0.07
Right	10mm	/	0.15	0.08	<0.01	0.10	0.09	0.05	0.16	0.15	0.08	0.00	0.10	0.09	0.05	0.16
Bottom	10mm	/	0.54	0.49	0.13	0.13	0.10	0.14	0.46	0.54	0.49	0.13	0.13	0.10	0.14	0.46
Top	10mm	0.07	/	/	/	/	/	/	/	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Body		N78 ANT12	LTE Band2	LTE Band4	LTE Band5	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT12+B2	N78 ANT12+B4	N78 ANT12+B5	N78 ANT12+B7	N78 ANT12+B8	N78 ANT12+B3+B4	N78 ANT12+B6
Front	15mm	0.06	0.16	0.18	/	0.14	/	/	0.14	0.22	0.24	0.06	0.20	0.06	0.06	0.20
Rear	15mm	0.08	0.28	0.28	/	0.16	/	/	0.24	0.36	0.36	0.08	0.24	0.08	0.08	0.32

N78 ANT12+LTE ANT13

reported SAR 1g (W/kg)														
Head		N78 ANT12	LTE Band2	LTE Band4	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT12+B2	N78 ANT12+B4	N78 ANT12+B7	N78 ANT12+B8	N78 ANT12+B3+B4	N78 ANT12+B6
Cheek	L	0.16	0.44	0.36	0.17	0.08	0.06	0.21	0.60	0.52	0.33	0.24	0.22	0.37
Tilt	L	0.20	0.58	0.50	0.21	0.09	0.05	0.21	0.78	0.70	0.41	0.29	0.25	0.41
Cheek	R	0.33	0.60	0.47	0.52	0.27	0.20	0.33	0.93	0.80	0.85	0.60	0.53	0.66
Tilt	R	0.29	0.72	0.58	0.52	0.26	0.16	0.41	1.01	0.87	0.81	0.55	0.45	0.70
Body		N78 ANT12	LTE Band2	LTE Band4	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT12+B2	N78 ANT12+B4	N78 ANT12+B7	N78 ANT12+B8	N78 ANT12+B3+B4	N78 ANT12+B6
Front	10mm	0.09	0.26	0.19	0.22	0.20	0.21	0.22	0.35	0.28	0.31	0.29	0.30	0.31
Rear	10mm	0.16	0.30	0.20	0.43	0.38	0.30	0.23	0.46	0.36	0.59	0.54	0.46	0.39
Left	10mm	0.07	0.07	0.04	0.23	0.23	0.26	0.05	0.14	0.11	0.30	0.30	0.33	0.12
Right	10mm		0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
Bottom	10mm								0.00	0.00	0.00	0.00	0.00	0.00
Top	10mm	0.07	0.51	0.34	0.58	0.47	0.42	0.41	0.58	0.41	0.65	0.54	0.49	0.48
Body		N78 ANT12	LTE Band2	LTE Band4	LTE Band7	LTE Band38	LTE Band41	LTE Band66	N78 ANT12+B2	N78 ANT12+B4	N78 ANT12+B7	N78 ANT12+B8	N78 ANT12+B3+B4	N78 ANT12+B6
Front	15mm	0.06	0.44	0.27	0.40	0.15	0.15	0.42	0.50	0.33	0.46	0.21	0.21	0.48
Rear	15mm	0.08	0.49	0.30	0.64	0.23	0.19	0.43	0.57	0.38	0.72	0.31	0.27	0.51